

CADDELL

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PRODUCT DATA

SPECIFICATION SECTION:

274100

CADDELL PROJECT #: 2015

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SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

PRODUCT LIST AND INDEX

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ITEM	PRODUCT DATASHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
A. SMALL CONFERENCE ROOM (4027/3102)								
A.1	Set E - Page 2	274100.2.3.P.5.a	MIDDLE/LANTIC	BRK12	BRK Series Rack, BRK12	6	ea	
A.2	Set E - Page 5	274100.2.3.P.5.a	MIDDLE/LANTIC	RK-RR12	Rackrail, 10-32, 12 RU, Laminate Racks	6	ea	
A.3	Set B - Page 11	274100.2.3.P.5.c	MIDDLE/LANTIC	QIP-2-119	Fan Panel, 100 CFM, Textured, 220V	6	ea	
A.4	Set E - Page 13	274100.2.3.P.5.d	MIDDLE/LANTIC	BP-15	Lace Bar, 1.5" Offset, Round, 10 pc.	6	ea	
A.5	Set E - Page 7	274100.2.3.P.5.a	MIDDLE/LANTIC	VT1	Vent Panel, 1 RU, Perforated, 64% Open Area	6	ea	
A.6	Set E - Page 9	274100.2.3.P.5.a	MIDDLE/LANTIC	BR2	Brush Grommet Panel, 2 RU	6	ea	
A.7	Set E - Page 16	274100.2.3.P.5.e	MIDDLE/LANTIC	FEB1	Blank Panel, 1 RU, Steel	18	ea	
A.8	Set E - Page 10	274100.2.3.P.5.e	MIDDLE/LANTIC	EB4	Blank Panel, 4 RU, Steel, Flanged	12	ea	
A.9	Set F - Page 2	274100.2.3.P.5.a	MIDDLE/LANTIC	HP	Rackscrews, 10-32, Truss-Head, 100 pc.	4	ea	
A.10	Set F - Page 2	274100.2.3.1.10.a	TANNOY	CVS 6	6" Ceiling Speaker	4	ea	
A.11	Set F - Page 9	274100.2.3.0.9.a	APC	SUA3000R2X38	Smart UPS 3000VA 230V RM 2U with UI Approval	2	ea	
A.12	Set F - Page 14	274100.2.3.P.5.b	APC	AP9559	Rack PDU Basic, 1U, 16A, 208&230V, (10)C13 & (2)C19	2	ea	
A.13	Set F - Page 14	274100.2.3.D.9.a	APC	AP9875	APC BFT PWR CORD SHUKO CEE-7E/U1-16P TO IEC 320 C19	6	ea	
A.14	Set A - Page 8	274100.2.3.D.13.a	NEC	P553-AVT	55" LED Backlit Professional-Grade Large Screen Display with Integrated Tuner	2	ea	
A.15	Set A - Page 8	274100.2.3.D.13.c (RH 375)	NEC	ST-5220	Stand for Large Screen Display	2	ea	
A.16	Set A - Page 41	274100.2.3.D.13.b	FURMAN	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	2	ea	REPLACEMENT FOR Surge X FlatPak (L10)
A.17	Set I	274100.2.15	RCI CUSTOM	FOT001-160768B-11	Custom Wall Plate (CP) 2 Gang Clear Anodized Plate - Engraved text ink fill black Assembly of (1) 2043V HH Smith rubber grommet (1.00" dia.)	2	ea	[CP] in shop drawing sheet AV0.07 and AV0.08
A.18	Set I	274100.2.15	RCI CUSTOM	FOT001-160768B-13	Custom Wall Plate (FP) 2 Gang Clear Anodized Plate - Engraved text ink fill black Assembly of (1) 2043V HH Smith rubber grommet (1.00" dia.)	2	ea	[FP] in shop drawing sheet AV0.07 and AV0.08
A.19	Set B - Page 2	274100.2.3.C.25.p	CRESTRON	DM-TX-200-C-26-B-T	Wall Plate DigitalMedia 865™ Transmitter 200, Black Textured	2	ea	
A.20	Set B - Page 7	274100.2.3.C.25.f	CRESTRON	DM-865-CONN-100	Connector for DM-CBL-86 DigitalMedia 865™ Cable	As Required	ea	
A.21	Set B - Page 8	274100.2.3.C.25.g	CRESTRON	DM-CBL-86-P-SP-1000	DigitalMedia 865™ Cable, aluminum 1,000 feet	As Required	ea	
A.22	Refer to Electrical Submittals	274100.2.3.N.1.a	WIREMOLD	8AT (FBSW)	Evolution Multi-Service Poke-Thru Devices	1	ea	BY ELECTRICAL CONTRACTOR
A.23	Set H - Page 2	274100.2.3.N.1.b	WIREMOLD	8DEC	Device Plate, 1-Gang, Duplex Receptacle	2	ea	BY ELECTRICAL CONTRACTOR
A.24	Set H - Page 2	274100.2.3.N.1.c	WIREMOLD	8OP	Device Plate, 1-Gang, Duplex Receptacle	1	ea	BY ELECTRICAL CONTRACTOR
A.25	Set H - Page 2	274100.2.3.N.1.d	WIREMOLD	68MA4AP	1/2 Gang Extra Snap Plate	2	ea	
A.26	Set H - Page 4	274100.2.3.N.1.e	EXTRON	0N4971	One RJ-45 Female to Punch Down for CAT 6 - Leaton	2	ea	
A.27	Set H - Page 4	274100.2.3.N.1.f	EXTRON	0N4951	Two Mini XLR 3-pin Male to Solder Cups - Switchcraft	2	ea	
A.28	Set H - Page 4	274100.2.3.N.1.g	EXTRON	0N4950	Blank Plate - Single	1	ea	
A.29	Refer to Electrical Submittals	274100.2.3.N.1.a (RH 247)	LEGAND	FSR 500P-6 (FBS)	Floor Box FSR 500P series Boxes and Covers	1	ea	BY ELECTRICAL CONTRACTOR
A.30	Set I	274100.2.15	RCI CUSTOM	FOT001-160768B-1	Custom Wall Plate (FBS) 4 Gang Clear Anodized Plate - Engraved text ink fill black, Punching and rear milling for (1) Creston DM Transmitter (device not included) Assembly of (2) NC3FD-1-1 Neutrik XLR 3 pin with nickel shell	1	ea	[FBS-AV] in shop drawing sheet AV0.07 and AV0.08
A.31	Refer to Telecom Submittals	274100.2.15	SEMTRON	31M-09E-AMP-LAB	2-port Single Gang Stainless Steel Faceplate	1	ea	BY TELECOM CONTRACTOR, see Submittal 271543
A.32	Refer to Electrical Submittals	274100.2.3.N.1.c (RH 247)	AS-Approved	AS-Approved	Power Receptacle 2 Gang Stainless Steel	1	ea	BY ELECTRICAL CONTRACTOR
B. MEDIUM CONFERENCE ROOM (2249.25.01.3004.3203.3071.4004.4021.4081.5004.5081)								
B.1	Set E - Page 2	274100.2.4.R.5.a	MIDDLE/LANTIC	BRK12	BRK Series Rack, BRK12	30	ea	
B.2	Set E - Page 5	274100.2.4.R.5.a	MIDDLE/LANTIC	RK-RR12	Rackrail, 10-32, 12 RU, Laminate Racks	30	ea	
B.3	Set E - Page 11	274100.2.4.R.5.b	MIDDLE/LANTIC	QIP-2-119	Fan Panel, 100 CFM, Textured, 220V	30	ea	
B.4	Set E - Page 13	274100.2.4.R.5.c	MIDDLE/LANTIC	BP-15	Lace Bar, 1.5" Offset, Round, 10 pc.	30	ea	
B.5	Set E - Page 7	274100.2.4.R.5.a	MIDDLE/LANTIC	VT1	Vent Panel, 1 RU, Perforated, 64% Open Area	30	ea	
B.6	Set E - Page 9	274100.2.4.R.5.a	MIDDLE/LANTIC	BR2	Brush Grommet Panel, 2 RU	30	ea	
B.7	Set E - Page 16	274100.2.4.R.5.d	MIDDLE/LANTIC	FEB1	Blank Panel, 1 RU, Steel	90	ea	
B.8	Set E - Page 10	274100.2.4.R.5.d	MIDDLE/LANTIC	EB4	Blank Panel, 4 RU, Steel, Flanged	60	ea	
B.9	Set E - Page 2	274100.2.4.R.5.a	MIDDLE/LANTIC	HP	Rackscrews, 10-32, Truss-Head, 100 pc.	14	ea	
B.10	Set F - Page 2	274100.2.4.K.10.a	TANNOY	CVS 6	6" Ceiling Speaker	40	ea	
B.11	Set F - Page 9	274100.2.4.S.9.a	APC	SUA3000R2X38	Smart UPS 3000VA 230V RM 2U with UI Approval	10	ea	
B.12	Set F - Page 14	274100.2.4.R.5.e	APC	AP9559	Rack PDU Basic, 1U, 16A, 208&230V, (10)C13 & (2)C19	30	ea	
B.13	Set F - Page 14	274100.2.4.S.9.b	APC	AP9875	APC BFT PWR CORD SHUKO CEE-7E/U1-16P TO IEC 320 C19	10	ea	
B.14	Set A - Page 8	274100.2.4.E.15.a	NEC	P553-AVT	55" LED Backlit Professional-Grade Large Screen Display with Integrated Tuner	10	ea	
B.15	Set A - Page 8	274100.2.4.E.15.c	NEC	ST-5220	Stand for Large Screen Display	3	ea	
B.16	Set A - Page 27	274100.2.4.E.15.c	CHIEF	UTM10U	Large Performance ED-Backlit Commercial-Grade Display w/ AV Inputs & Integrated Digital Tuner	2	ea	for rooms 3003, 2043, 2091, for room 201
B.17	Set A - Page 4	274100.2.4.E.15.b	NEC	V652-AVT	55" High Performance ED-Backlit Commercial-Grade Display w/ AV Inputs & Integrated Digital Tuner	2	ea	for rooms 3004, 3071, 4004, 4021, 4081, 5004, 5081
B.18	Set A - Page 16	274100.2.4.E.15.c	NEC	ST-651	Table Top Stand for 55"	4	ea	for rooms 1004, 1004, 5004, 5004
B.19	Set A - Page 27	274100.2.4.E.15.c	CHIEF	UTM10U	Large Performance ED-Backlit Commercial-Grade Display w/ AV Inputs & Integrated Digital Tuner	3	ea	for rooms 1001, 1001, 5081
B.20	Set A - Page 41	274100.2.4.F.15.b	FURMAN	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	10	ea	REPLACEMENT FOR Surge X FlatPak (L10)
B.21	Set I	274100.2.15	RCI CUSTOM	FOT001-160768B-11	Custom Wall Plate (CP) 2 Gang Clear Anodized Plate - Engraved text ink fill black Assembly of (2) 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded	10	ea	[CP] in shop drawing sheet AV0.07 and AV0.08
B.22	Set I	274100.2.15	RCI CUSTOM	FOT001-160768B-13	Custom Wall Plate (FP) 2 Gang Clear Anodized Plate - Engraved text ink fill black Assembly of (2) 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded	10	ea	[FP] in shop drawing sheet AV0.07 and AV0.08
B.23	Set B - Page 2	274100.2.4.D.25.f	CRESTRON	DM-TX-200-C-26-B-T	Wall Plate DigitalMedia 865™ Transmitter 200, Black Textured	16	ea	
B.24	Set B - Page 7	274100.2.4.D.25.g	CRESTRON	DM-865-CONN-100	Connector for DM-CBL-86 DigitalMedia 865™ Cable	As Required	ea	

ITEM	PRODUCT DATASHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
B-25	Set B - Page 8	2741002.2.4.D.25.1	CRESTRON	DIM-FBI-8G-P-SP-1000	DigitalMedia 8G™ Cable, plenum 1000' feet	As Required	ea	
B-26	Refer to Electrical Submittals	2741002.2.4.F.1.3	WIREKOLD	8AT (FBW)	Evolution Multi-Service Peke Thin Devices	5	ea	BY ELECTRICAL CONTRACTOR
B-27	Set H - Page 2	2741002.2.4.F.1.10	WIREKOLD	8DEC	Device Mounting Plate, 1-Gang, ETS, Decorator Style Devices	10	ea	
B-28	Set H - Page 2	2741002.2.4.F.1.10	WIREKOLD	8DPC	Device Plates, 1-Gang, Duplex Receptacle	5	ea	BY ELECTRICAL CONTRACTOR
B-29	Set H - Page 2	2741002.2.4.F.1.10	WIREKOLD	68M4AP	1/2 Gang, Essential Strip Plate	10	ea	
B-30	Set H - Page 4	2741002.2.4.F.1.10	EXTON	IN9271	One 9x15 Essential Strip Plate for CAT 6 - Leiton	10	ea	
B-31	Set H - Page 4	2741002.2.4.F.1.10	EXTON	IN9451	Two 9x15 XLR 3-pin Male to 3-pin Female - Switchcraft	10	ea	
B-32	Refer to Electrical Submittals	2741002.2.4.P.1.C (RFI 247)	LEGRAND	FSR 500P-6 (FB)	Floor Box FSR 500P-series boxes and covers	11	ea	BY ELECTRICAL CONTRACTOR
B-33	Set I	2741002.2.15	RCI CUSTOM	FOT001-160726B1-7	Custom Wall Plate (FB-AV) 4 Gang Powder-coat White Plate - Engraved text ink fill black Punching and rear milling for (1) Creston DM Transmitter (device not included) Assembly of (4) NCFD-D-1-1 Neutrik XLR F 3 pin with nickel shell.	22	ea	[FB-AV] in shop drawing sheet AV0.07 and AV0.08
B-34	Refer to Telecom Submittals	2741002.2.15	SEMTRON	3FM-ØØE-AMP-LAB	2 port Single Gang Stainless Steel Faceplate	11	ea	BY TELECOM CONTRACTOR, see Submittal 271543
B-35	Refer to Electrical Submittals	2741002.2.4.P.1.C (RFI 247)	As Approved	As Approved	Power Receptacle 2 Gang, Stainless Steel	11	ea	BY ELECTRICAL CONTRACTOR
C. MEDIUM CONFERENCE ROOM (C1206, 1207)								
C.1	Set E - Page 2	2741002.2.5.R.5.9	MIDDLE/LANTIC	BRK12	BRK Series Rack, BRK12	6	ea	
C.2	Set E - Page 5	2741002.2.5.R.5.9	MIDDLE/LANTIC	RK-RR12	Rackrail, 10-32, 12 RU, Laminare Racks	6	ea	
C.3	Set E - Page 11	2741002.2.5.R.5.9	MIDDLE/LANTIC	QIP-2-119	Fan Panel, 100 CFM, Textured, 220V	6	ea	
C.4	Set E - Page 13	2741002.2.5.R.5.9	MIDDLE/LANTIC	IBP-1.5	Lace Bar, 1.5" Offset, Round, 10 pc.	6	ea	
C.5	Set E - Page 7	2741002.2.5.R.5.9	MIDDLE/LANTIC	VT1	Vent Panel, 1 RU, Perforated, 64% Open Area	6	ea	
C.6	Set E - Page 9	2741002.2.5.R.5.9	MIDDLE/LANTIC	BR2	Brush Grommet Panel, 2 RU	6	ea	
C.7	Set E - Page 14	2741002.2.5.R.5.9	MIDDLE/LANTIC	FB1	Blank Panel, 1 RU, Steel	18	ea	
C.8	Set E - Page 16	2741002.2.5.R.5.9	MIDDLE/LANTIC	EB4	Blank Panel, 4 RU, Steel, Flanged	12	ea	
C.9	Set E - Page 10	2741002.2.5.R.5.9	MIDDLE/LANTIC	HP	Rackscrews, 10-32, Truss-Head, 100 pc.	4	ea	
C.10	Set E - Page 2	2741002.2.5.K.10.9	TANNOY	CVS 6	6" Ceiling Speaker	8	ea	
C.11	Set F - Page 8	2741002.2.5.R.5.9	AHC	SUA3000RDX38	Smart UPS 3000VA, 230V, RM, 2U with UL Approval	2	ea	
C.12	Set F - Page 14	2741002.2.5.R.5.9	AHC	AP9559	Smart PDU Basic, 1U, 16A, 208/240V, (10)C15 & (2)C19	6	ea	
C.13	Set F - Page 14	2741002.2.5.R.5.9	AHC	AP9875	APC BFT PWR CORP SHUKO CEE-7RJ13-16P TO IEC 320 C19	2	ea	
C.14	Set A - Page 18	2741002.2.5.E.15.9	NEC	P703-AVIT	70" LED Backlit Professional Grade Large Screen Display with integrated tuner	1	ea	Four room C1207
C.15	Set A - Page 30	2741002.2.5.E.15.9	CHIEF	XTM11U	Surge Protector Micro-Adjustable Trip With Inlet	1	ea	Four room C1207
C.16	Set A - Page 4	2741002.2.5.E.15.9	CHIEF	VG52-AVIT	52" High Performance LED Backlit Commercial Grade Display w/ AV inputs & integrated Digital Tuner	1	ea	Four room C1206
C.17	Set A - Page 27	2741002.2.5.E.15.9	CHIEF	CTM10	Judge Nelson Micro-Adjustable Trip With Inlet	1	ea	Four room C1206
C.18	Set A - Page 41	2741002.2.5.E.15.9	FURMAN	AC210UA E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	1	ea	Four room C1206
C.19	Set I	2741002.2.15	RCI CUSTOM	FOT001-160726B1-11	Custom Wall Plate (CP) 2 Gang Clear Anodized Plate - Engraved text ink fill black Assembly of (2) 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded	2	ea	[CP] in shop drawing sheet AV0.07 and AV0.08
C.20	Set I	2741002.2.15	RCI CUSTOM	FOT001-160726B1-13	Custom Wall Plate (FP) 2 Gang Clear Anodized Plate - Engraved text ink fill black Assembly of (2) 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded	2	ea	[FP] in shop drawing sheet AV0.07 and AV0.08
C.21	Set B - Page 2	2741002.2.5.D.25.5	CRESTRON	DM-TX-200-C-26-B-T	Custom Wall Plate (R) 2 Gang Clear Anodized Plate - Engraved text ink fill black	4	ea	
C.22	Set B - Page 7	2741002.2.5.D.25.5	CRESTRON	DM-8G-COMM-100	Wall Plate DigitalMedia 8G™ Transmitter 200, Black Textured	4	ea	
C.23	Set B - Page 8	2741002.2.5.D.25.5	CRESTRON	DM-FBI-8G-P-SP-1000	Connector for DM-FBI-8G DigitalMedia 8G™ Cable	As Required	ea	
C.24	Set B - Page 10	2741002.2.5.D.25.5	CRESTRON	CRESFIBER-P-SP1000	DigitalMedia 8G™ Cable, plenum 1000' feet	As Required	ea	
C.25	Set B - Page 12	2741002.2.5.D.25.5	CRESTRON	CRESFIBER-COMM-SC500UM-12	CrestFiber™ 8G Multimode Fiber Optic Cable, 50/125 µm, Plenum, 1000' feet	As Required	ea	
C.26	Refer to Electrical Submittals	2741002.2.5.P.1.A (RFI 247)	LEGRAND	FSR 500P-6 (FB)	Connector for CrestFiber™ 8G Multimode Fiber Optic Cable, SC 50µm, 12-Pack	As Required	ea	
C.27	Set I	2741002.2.15	RCI CUSTOM	FOT001-160726B1-7	Floor Box FSR 500P-series boxes and covers	4	ea	BY ELECTRICAL CONTRACTOR
C.28	Refer to Telecom Submittals	2741002.2.15	SEMTRON	3FM-ØØE-AMP-LAB	Custom Wall Plate (FB-AV) 4 Gang Powder-coat White Plate - Engraved text ink fill black Punching and rear milling for (1) Creston DM Transmitter (device not included) Assembly of (4) NCFD-D-1-1 Neutrik XLR F 3 pin with nickel shell.	4	ea	[FB-AV] in shop drawing sheet AV0.07 and AV0.08
C.29	Refer to Electrical Submittals	2741002.2.5.P.1.C (RFI 247)	As Approved	As Approved	2 port Single Gang Stainless Steel Faceplate	4	ea	BY TELECOM CONTRACTOR, see Submittal 271543
C.30	Set I	2741002.2.15	RCI CUSTOM	FOT001-160726B1-13	Power Receptacle 2 Gang, Stainless Steel	4	ea	BY ELECTRICAL CONTRACTOR
C.31	Set I	2741002.2.15	RCI CUSTOM	FOT001-160726B1-10	Custom Wall Plate (R) 2 Gang Clear Anodized Plate - Engraved text ink fill black Assembly of (1) 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded (1) 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded (1) NCF3D-D-1-1 Neutrik XLR F 3 pin with nickel shell Punching for (1) Braher EK86S Connector	2	ea	[R] in shop drawing sheet AV0.07 and AV0.08 [TSO] in shop drawing sheet AV0.07 and AV0.08
D. LARGE CONFERENCE ROOM (4005/5005)								
D.1	Set E - Page 2	2741002.2.6.R.5.9	MIDDLE/LANTIC	BRK12	BRK Series Rack, BRK12	6	ea	
D.2	Set E - Page 5	2741002.2.6.R.5.9	MIDDLE/LANTIC	RK-RR12	Rackrail, 10-32, 12 RU, Laminare Racks	6	ea	
D.3	Set E - Page 11	2741002.2.6.R.5.9	MIDDLE/LANTIC	QIP-2-119	Fan Panel, 100 CFM, Textured, 220V	6	ea	
D.4	Set E - Page 13	2741002.2.6.R.5.9	MIDDLE/LANTIC	IBP-1.5	Lace Bar, 1.5" Offset, Round, 10 pc.	6	ea	
D.5	Set E - Page 7	2741002.2.6.R.5.9	MIDDLE/LANTIC	VT1	Vent Panel, 1 RU, Perforated, 64% Open Area	6	ea	
D.6	Set E - Page 9	2741002.2.6.R.5.9	MIDDLE/LANTIC	BR2	Brush Grommet Panel, 2 RU	6	ea	
D.7	Set E - Page 14	2741002.2.6.R.5.9	MIDDLE/LANTIC	FB1	Blank Panel, 1 RU, Steel	18	ea	
D.8	Set E - Page 16	2741002.2.6.R.5.9	MIDDLE/LANTIC	EB4	Blank Panel, 4 RU, Steel, Flanged	12	ea	
D.9	Set E - Page 10	2741002.2.6.R.5.9	TANNOY	CVS 6	Rackscrews, 10-32, Truss-Head, 100 pc.	4	ea	
D.10	Set F - Page 2	2741002.2.6.K.10.9	AHC	SUA3000RDX38	6" Ceiling Speaker	12	ea	
D.11	Set F - Page 9	2741002.2.6.K.10.9	AHC	AP9559	Smart UPS 3000VA, 230V, RM, 2U with UL Approval	2	ea	

ITEM	PRODUCT DATASHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
D.12	Set E - Page 14	274100.2.6.R15.d	APC	AP9259	Back PDU Basic, 1U, 16A, 2088230V, (10)C13 & (2)C19	6	ea	
D.13	Set E - Page 14	274100.2.6.R15.g	APC	AP9275	APC BFT PWR CORD SHUKO CEE-7/FU11-16P TO IEC 320 C19	2	ea	
D.14	Set A - Page 4	274100.2.6.E.15.a	NEC	VG52-AVT	55" High Performance LED Backlit Commercial-Grade Display w/ AV Inputs & Integrated Digital Tuner	2	ea	
D.15	Set A - Page 41	274100.2.6.E.15.b	FURMAN	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	2	ea	REPLACEMENT FOR Surges X FlapPak (110v)
D.16	Set A - Page 16	274100.2.6.E.15.c (RFI 375)	NEC	ST-5220	Table Top Stand for 65"	2	ea	
D.17	Set I	274100.2.15	RCI CUSTOM	FOT001-160766B-11	Custom Wall Plate (FP) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (2) 1375188-1 TE Connectors w/ 4-5 Con & punch down, shielded	2	ea	(CP) in shop drawing sheet AV0.07 and AV0.08
D.18	Set I	274100.2.15	RCI CUSTOM	FOT001-160766B-13	Custom Wall Plate (FP) 2 Gang Clear Anodized Plate - Engraved text ink fill black	2	ea	(FP) in shop drawing sheet AV0.07 and AV0.08
D.19	Set B - Page 2	274100.2.6.D.25.v	CRESTRON	DM-TX-200-C-26-B-T	Assembly of (1) 2043V HH Smith rubber grommet (1.00" dia.)	4	ea	
D.20	Set B - Page 7	274100.2.6.D.25.t	CRESTRON	DM-8C-COM-100	Wall Plate DigitalMedia 86c** Transmitter 200, Black Textured	As Required	ea	
D.21	Set B - Page 8	274100.2.6.D.25.s	CRESTRON	DM-8C-SP-SP-1000	Connector for DM-8C-86 DigitalMedia 86c** Cable, plenum 1100 feet	As Required	ea	
D.22	Refer to Electrical Submittals	274100.2.6.P.1.a (RFI 247)	LEGRAND	FSR-500P-6 (FB)	Floor Box FSR-500P-series boxes and covers	4	ea	BY ELECTRICAL CONTRACTOR
D.23	Set I	274100.2.15	RCI CUSTOM	FOT001-160766B-7	Custom DM Transmitter (device not included) Assembly of (4) NCEFD-L1 Neutrik XLRB 3 pin with nickel shell.	4	ea	(FB-AV) in shop drawing sheet AV0.07 and AV0.08
D.24	Refer to Telecom Submittals	274100.2.15	SEMTRON	1FM-Ø9E-AMP-LAB	2-port Single Gang Stainless Steel Faceplate	4	ea	BY TELECOM CONTRACTOR, see Submittal 271543
D.25	Refer to Electrical Submittals	274100.2.6.P.1.c (RFI 247)	As Approved	As Approved	Power Receptacle 2 Gang Stainless Steel	4	ea	BY ELECTRICAL CONTRACTOR
E. CLASS ROOM (4082, 4084)								
E.1	Set D - Page 4	274100.2.7.B.11.a	Extron	DTP-DVI-4K-230-D-Tx (60-1214-12)	DVI Twisted Pair Extender - Decora Wallplate Black 60-1214-12	2	ea	REPLACEMENT
E.2	Set D - Page 6	274100.2.7.C.11.a	Extron	DTP-DVI-4K-230-Rx	DTP Receiver for DVI	2	ea	REPLACEMENT
E.3	Set A - Page 8	274100.2.7.D.14.a	NEC	PS53-AVT	55" LED Backlit Professional-Grade Large Screen Display with integrated tuner	2	ea	
E.4	Set A - Page 14	274100.2.7.D.14.b (RFI 375)	NEC	ST-5220	Stand for Large Screen Display	2	ea	
E.5	Set A - Page 41	274100.2.7.D.14.c	FURMAN	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	2	ea	REPLACEMENT FOR Surges X FlapPak (110v)
E.6	Refer to Electrical Submittals	274100.2.7.E.1.a (RFI 247)	LEGRAND	FSR-500P-6 (FBWC)	Floor Box FSR-500P-series boxes and covers	2	ea	BY ELECTRICAL CONTRACTOR
E.7	Set I	274100.2.15	RCI CUSTOM	FOT001-160766B-13	Custom Wall Plate (FP) 2 Gang Clear Anodized Plate - Engraved text ink fill black	2	ea	(FP) in shop drawing sheet AV0.07 and AV0.08
E.8	Set I	274100.2.15	RCI CUSTOM	FOT001-160766B-5	Custom Wall Plate (FBCW-AV) 2 Gang Clear Anodized Plate - Engraved text ink fill black Punching and rear milling for (1) Assembly of (1) 2043V HH Smith rubber grommet (1.00" dia.)	2	ea	[FBCW-AV] in shop drawing sheet AV0.07 and AV0.08
E.9	Refer to Telecom Submittals	274100.2.15	SEMTRON	1FM-Ø9E-AMP-LAB	2-port Single Gang Stainless Steel Faceplate	2	ea	BY TELECOM CONTRACTOR, see Submittal 271543
E.10	Refer to Electrical Submittals	274100.2.7.E.1.c (RFI 247)	As Approved	As Approved	Power Receptacle 2 Gang Stainless Steel	2	ea	BY ELECTRICAL CONTRACTOR
F. WORK ROOM (3072, 3074)								
F.1	Set D - Page 4	274100.2.8.B.11.a	Extron	DTP-DVI-4K-230-D-Tx (60-1214-12)	DVI Twisted Pair Extender - Decora Wallplate Black 60-1214-12	2	ea	REPLACEMENT
F.2	Set D - Page 6	274100.2.8.C.11.a	Extron	DTP-DVI-4K-230-Rx	DTP Receiver for DVI	2	ea	REPLACEMENT
F.3	Set A - Page 8	274100.2.8.D.14.a	NEC	PS53-AVT	55" LED Backlit Professional-Grade Large Screen Display with integrated tuner	2	ea	
F.4	Set A - Page 14	274100.2.8.D.14.b (RFI 375)	NEC	ST-5220	Stand for Large Screen Display	2	ea	
F.5	Set A - Page 41	274100.2.8.D.14.c	FURMAN	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	2	ea	REPLACEMENT FOR Surges X FlapPak (110v)
F.6	Set I	274100.2.15	RCI CUSTOM	FOT001-160766B-13	Custom Wall Plate (FP) 2 Gang Clear Anodized Plate - Engraved text ink fill black	2	ea	(FP) in shop drawing sheet AV0.07 and AV0.08
F.7	Refer to Electrical Submittals	274100.2.8.H.1.a (RFI 247)	LEGRAND	FSR-500P-6 (FBWC)	Floor Box FSR-500P-series boxes and covers	2	ea	BY ELECTRICAL CONTRACTOR
F.8	Set I	274100.2.15	RCI CUSTOM	FOT001-160766B-5	Custom Wall Plate (FBCW-AV) 2 Gang Clear Anodized Plate - Engraved text ink fill black Punching and rear milling for (1)	2	ea	[FBCW-AV] in shop drawing sheet AV0.07 and AV0.08
F.9	Refer to Telecom Submittals	274100.2.15	SEMTRON	1FM-Ø9E-AMP-LAB	2-port Single Gang Stainless Steel Faceplate	2	ea	BY TELECOM CONTRACTOR, see Submittal 271543
F.10	Refer to Electrical Submittals	274100.2.8.H.1.c (RFI 247)	As Approved	As Approved	Power Receptacle 2 Gang Stainless Steel	2	ea	BY ELECTRICAL CONTRACTOR
G. TRAINING ROOM (3005)								
G.1	Set E - Page 2	274100.2.9.T.5.a	MIDDLE/LANTIC	BRK12	BRK Series Rack, BRK12	3	ea	
G.2	Set E - Page 5	274100.2.9.T.5.b	MIDDLE/LANTIC	RR-RR12	Rackrail, 10-32, 12 RU, Laminate racks	3	ea	
G.3	Set E - Page 11	274100.2.9.T.5.b	MIDDLE/LANTIC	GFP-2-119	Fan Panel, 100 CFM, Textured, 220V	3	ea	
G.4	Set E - Page 7	274100.2.9.T.5.c	MIDDLE/LANTIC	1BP-1.5	Lace Bar, 1.5" Offset, Round, 10 pc.	3	ea	
G.5	Set E - Page 7	274100.2.9.T.5.a	MIDDLE/LANTIC	V71	Vent Panel, 1 RU, Perforated, 64% Open Area	3	ea	
G.6	Set E - Page 9	274100.2.9.T.5.a	MIDDLE/LANTIC	BR2	Brush Grommet Panel, 2 RU	3	ea	
G.7	Set E - Page 14	274100.2.9.T.5.e	MIDDLE/LANTIC	FEB1	Blank Panel, 1 RU, Steel	9	ea	
G.8	Set E - Page 10	274100.2.9.T.5.e	MIDDLE/LANTIC	EB4	Blank Panel, 4 RU, Steel, Flanged	6	ea	
G.9	Set E - Page 10	274100.2.9.T.5.e	MIDDLE/LANTIC	HP	Rackscrews, 10-32, Truss-Head, 100 pc.	2	ea	
G.10	Set F - Page 2	274100.2.9.L.10.a	TANNDY	CVS.6	6" Ceiling Speaker	6	ea	
G.11	Set F - Page 9	274100.2.9.L.9.a	APC	SUA3000R-DX38	Smart UPS 3000VA 230V RM 2U with UI Approval	1	ea	
G.12	Set F - Page 14	274100.2.9.L.5.f	APC	AP9559	APC PDU Basic, 1U, 16A, 2088230V, (10)C13 & (2)C19	3	ea	
G.13	Set F - Page 14	274100.2.9.L.9.a	APC	AP9875	APC BFT PWR CORD SHUKO CEE-7/EU11-16P TO IEC 320 C19	1	ea	
G.23	No datasheet available	274100.2.9.E.17.c	SHARP	PH-25609	INTERACTIVE PANEL TABLE STAND	1	ea	REPLACEMENT FOR Surges X FlapPak (110v)
G.14	Set A - Page 41	274100.2.9.E.17.b	FURMAN	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	1	ea	

ITEM	PRODUCT DATA SHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
G-15	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-11	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (2) 1375188-1 TE Connectivity RI-45 Cat 6, punchdown, shielded	1	ea	(P) In shop drawing sheet AY0.07 and AY0.08
G-16	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-13	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) 2043V HH Single Rubber grommet (1.00" dia)	1	ea	(P) In shop drawing sheet AY0.07 and AY0.08
G-17	Set B - Page 2	274100.2.10.25.5	CRESTRON	DM-TX-900-C-3G-W-T	Wall Plate Digital Media 3G 3m Transmitter 300, White	2	ea	
G-18	Set B - Page 7	274100.2.10.25.17	CRESTRON	DM-SC-COM-100	Connector for DM-C8-4G Digital Media 8G Cable	As Required	ea	
G-19	Set B - Page 8	274100.2.10.25.17	CRESTRON	DM-EB-3G-P-SP-1000	Digital Media 8G Cable, plenum, 1.000 feet	As Required	ea	
G-20	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-1	Custom Wall Plate (WP-AV) 4 Gang Clear Anodized Plate - Engraved text ink fill black. Punching and rear milling for (1) Custom DM Transmitter (device not included) Assembly of (2) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell	2	ea	(WP-AV) In shop drawing sheet AY0.07 and AY0.08
G-21	Refer to Telecom Submittals	274100.2.9	SEMTRON	3HM-60E-AMP-LAB	2 port Single Gang Stainless Steel Faceplate	2	ea	BY TELECOM CONTRACTOR, see Submittal 271543
G-22	Refer to Electrical Submittals	274100.2.9	As Approved	As Approved	Power Receptacle 2 Gang Stainless Steel	2	ea	BY ELECTRICAL CONTRACTOR
H. MULTIPURPOSE ROOM (1111.1115)								
H-1	Set E - Page 2	274100.2.10.00.9.a	MIDDLE/LANTIC	BRK12-22	BRK Series Rack, BRK12-22	1	ea	
H-2	Set E - Page 5	274100.2.10.00.9.b	MIDDLE/LANTIC	RK-R12	Rackrail, 10-32, 12 RU, Laminate Racks	1	ea	
H-3	Set E - Page 11	274100.2.10.00.9.b	MIDDLE/LANTIC	QIP-2-119	Fan Panel, 100 CFM, Textured, 220V	2	ea	
H-4	Set E - Page 13	274100.2.10.00.9.a	MIDDLE/LANTIC	LPB-1.5	Lace Bar, 1.5" Offset, Round, 10 pc.	1	ea	
H-5	Set E - Page 7	274100.2.10.00.9.a	MIDDLE/LANTIC	V71	Vent Panel, 1 RU, Perforated, 64% Open Area	1	ea	
H-6	Set E - Page 9	274100.2.10.00.9.a	MIDDLE/LANTIC	BR2	Brush Grommet Panel, 2 RU	2	ea	
H-7	Set E - Page 14	274100.2.10.00.9.b	MIDDLE/LANTIC	FB2	Blank Panel, 1 RU, Steel	2	ea	
H-8	Set E - Page 16	274100.2.10.00.9.b	MIDDLE/LANTIC	EB4	Blank Panel, 2 RU, Steel	2	ea	
H-9	Set E - Page 10	274100.2.10.00.9.b	MIDDLE/LANTIC	HP	Blank Panel, 4 RU, Steel, Flanged	2	ea	
H-10	Set E - Page 14	274100.2.10.00.15.h	APC	AP955-59	Rack PDU Basic, 1U, 16A, 208-230V, (1) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell	1	ea	
H-11	Set E - Page 18	274100.2.10.00.15.b	FURMAN	PS-8RE III	PS-8RE III POWER CONDITIONER/SECURNCER	1	ea	REPLACEMENT FOR ETA PD11P
H-12	Set E - Page 17	274100.2.10.00.15.b	MIDDLE/LANTIC	MRK-0036	MRK Series Rack, 44 RU, 367D	3	ea	
H-13	Set E - Page 10	274100.2.10.00.15.b	MIDDLE/LANTIC	SPN-00-36	Slot Panels, 44 RU, 367D Backs	3	ea	
H-14	Set E - Page 20	274100.2.10.00.15.b	MIDDLE/LANTIC	MM-ATC	MM-ATC 48" x 48" x 4" Backs	3	ea	
H-15	Set E - Page 21	274100.2.10.00.15.g	MIDDLE/LANTIC	GFAN-119	Fan 30 CFM, 360BA, 4 1/2", 220V	12	ea	
H-16	Set E - Page 23	274100.2.10.00.15.g	MIDDLE/LANTIC	GUARD	Fan Guard 4 1/2"	12	ea	
H-17	Set E - Page 9	274100.2.10.00.15.a	MIDDLE/LANTIC	BR2	Brush Grommet Panel, 2 RU	2	ea	
H-18	Set E - Page 24	274100.2.10.00.15.a	MIDDLE/LANTIC	MP-RH40	Rackrail, 10-32, 40 RU, MKV/VRK Series	6	ea	
H-19	Set E - Page 14	274100.2.10.00.15.g	MIDDLE/LANTIC	FB2	Blank Panel, 1 RU, Steel	36	ea	
H-20	Set E - Page 14	274100.2.10.00.15.g	MIDDLE/LANTIC	FB2	Blank Panel, 2 RU, Steel	6	ea	
H-21	Set E - Page 16	274100.2.10.00.15.g	MIDDLE/LANTIC	FB2	Blank Panel, 4 RU, Steel, Flanged	6	ea	
H-22	Set E - Page 10	274100.2.10.00.15.f	HP	HP	Rack screws, 10-32, Truss-Head, 100 pc.	3	ea	
H-23	Set E - Page 7	274100.2.10.00.15.f	MIDDLE/LANTIC	LPB-4A	Lace Bar, 4" Offset, L-shaped, 10 pc.	3	ea	
H-24	Set E - Page 25	274100.2.10.00.15.f	MIDDLE/LANTIC	V71	Vent Panel, 1 RU, Perforated, 64% Open Area	3	ea	
H-25	Set F - Page 9	274100.2.10.00.15.c	APC	SUA3000R-2X38	Smart UPS 3000VA, 230V RM, 2U with UI Approval	3	ea	
H-26	Set F - Page 14	274100.2.10.00.15.c	APC	AP7552	Rack PDU Basic, Zero U, 16A, 230V, (2) C13 & (4) C15; IEC C20	3	ea	
H-27	Set F - Page 14	274100.2.10.00.15.c	APC	AP9875	APC BFT PWR COND SHMO CEE-7E/UJ-16P TO IEC 320 C19	6	ea	
H-28	Set F - Page 20	274100.2.10.00.15.c	LG	BP 540	Bluray Disc Player	2	ea	REPLACEMENT
H-29	Set F - Page 22	274100.2.10.00.15.c	SHURE	MX418S/J	18" Attached XLR Preamp, Shock & Flange Mount, Snap-Fit Foam Windscreen, Mute Switch, LED Indicator	2	ea	REPLACEMENT
H-30	Set F - Page 22	274100.2.10.00.15.c	SHURE	included	Lectern Shock Mount	2	ea	REPLACEMENT
H-31	Set F - Page 26	274100.2.10.00.15.c	EXTRON	WPB 109	One-Gang WPB - Waipalate for HDMI, VGA, and Stereo Audio	2	ea	
H-32	Set F - Page 18	274100.2.10.00.15.c	FURMAN	PS-8RE III	PS-8RE III POWER CONDITIONER/SECURNCER	2	ea	REPLACEMENT FOR ETA PD11P
H-33	Set F - Page 64	274100.2.10.00.15.c	TASCAM	CD-RW 900MKII	CD Recorder & Player	2	ea	REPLACEMENT
H-34	Set F - Page 25	274100.2.10.00.15.c	Aurora	V-Tune Pro 4K	Worldwide 4K ATSC/QAM/DVB/NTSC/PAL/J Tuner	2	ea	REPLACEMENT
H-35	Set F - Page 20	274100.2.10.00.15.c	LG	BP 540	Bluray Disc Player	2	ea	REPLACEMENT
H-36	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-4	Custom Wall Plate (P) 4 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (4) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell (4) 1375188-1 TE Connectivity Cat 6, punchdown, shielded	4	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-37	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-6	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (3) 1375188-1 TE Connectivity RI-45 Cat 6, punchdown, shielded	7	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-38	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-9	Custom Wall Plate (TSM) 3 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) 1375188-1 TE Connectivity RI-45 Cat 6, punchdown, shielded Punching for (1) Brahler EIS8G Connector	2	ea	(TSM) In shop drawing sheet AY0.07 and AY0.08
H-39	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-8	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of 2 each 1375188-1 TE Connectivity RI-45 Cat 6, punchdown, shielded Punching for (1) Brahler EIS8G Connector	2	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-40	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-3	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell (1) 1375188-1 TE Connectivity RI-45 Cat 6, punchdown, shielded	4	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-41	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-13	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell (1) 2043V HH Single Rubber grommet (1.00" dia)	4	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-42	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-11	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell (1) 2043V HH Single Rubber grommet (1.00" dia)	2	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-43	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-13	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell (1) 2043V HH Single Rubber grommet (1.00" dia)	4	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-44	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-13	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) NCFD-L-1 Neutrik XLR F 3 pin with nickel shell (1) 2043V HH Single Rubber grommet (1.00" dia)	4	ea	(P) In shop drawing sheet AY0.07 and AY0.08
H-45	Set 1	274100.2.15	RC CUSTOM	FOT001-16072681-12	Custom Wall Plate (P) 2 Gang Clear Anodized Plate - Engraved text ink fill black. Assembly of (1) CH-355R5-4 RC BNC Bulkhead (80 Ohm)	2	ea	(P) In shop drawing sheet AY0.07 and AY0.08

ITEM	PRODUCT DATASHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
H-46	Set 1	2741002.2.15	RCI CUSTOM	FOT001-16072681-1	Custom Wall Plate (WPPF-AV) 4 Gang Clear Anodized Plate - Engraved text ink fill black. Punching and rear milling for (1) Crestrom DM Transmitter (device not included) Assembly of (2) NC3FD-L-1 Neutrlix XLRB 3 pin with nickel shell	1	ea	[WPPF-AV] in shop drawing sheet AV0.07 and AV0.08
H-47	Refer to Telecom Submittals	2741002.2.15	SEMTRON	3FM-60E-AMP-LAB	2. port Single Gang Stainless Steel Faceplate	2	ea	BY TELECOM CONTRACTOR, see Submittal 271543
H-48	Refer to Electrical Submittals	2741002.2.15 (RFI 247)	As Approved	As Approved	Power Receptacle 2 Gang Stainless Steel	2	ea	BY ELECTRICAL CONTRACTOR
H-49	Refer to Electrical Submittals	2741002.2.15 (RFI 247)	LEGRAND	FSR 500P-6 (FBL)	Floor Box FSR 500P-series Boxes and Covers	2	ea	BY ELECTRICAL CONTRACTOR
H-50	Set 1	2741002.2.15	RCI CUSTOM	FOT001-16072681-14	4 Gang Clear Anodized Plate - Engraved text ink fill black. Punching and rear milling for (1) Crestrom DM Transmitter (device not included) Assembly of (3) D10SP-Mouser 5Pin (Wide) D sub with solder pins (Amp 205817-1, hardware incl) (2) NC3FD-L-1 Neutrlix XLRB 3 pin with nickel shell	2	ea	[FBL-AV] in shop drawing sheet AV0.07 and AV0.08
H-51	Set 1	2741002.2.15	RCI CUSTOM	FOT001-16072681-2	Custom Wall Plate (DB9) 1 Gang Clear Anodized Plate - Engraved text ink fill black. Punching for (1) Brahrer EIS86 Connector	2	ea	[DB9] in shop drawing sheet AV0.07 and AV0.08
H-52	Refer to Telecom Submittals	2741002.2.15	SEMTRON	3FM-60E-AMP-LAB	2. port Single Gang Stainless Steel Faceplate	2	ea	BY TELECOM CONTRACTOR, see Submittal 271543
H-53	Refer to Electrical Submittals	2741002.2.15 (RFI 247)	As Approved	As Approved	Power Receptacle 2 Gang Stainless Steel	2	ea	BY ELECTRICAL CONTRACTOR
H-54	Refer to Electrical Submittals	2741002.2.15 (RFI 247)	LEGRAND	FSR 500P-6 (FBM)	Floor Box FSR 500P-series Boxes and Covers	6	ea	BY ELECTRICAL CONTRACTOR
H-55	Set 1	2741002.2.15	RCI CUSTOM	FOT001-16072681-7	Custom Wall Plate (FBM-AV) 4 Gang Powdercoat White Plate - Engraved text ink fill black. Punching and rear milling for (1) Crestrom DM Transmitter (device not included) Assembly of (4) NC3FD-L-1 Neutrlix XLRB 3 pin with nickel shell.	6	ea	[FBM-AV] in shop drawing sheet AV0.07 and AV0.08
H-56	Set 1	2741002.2.15	RCI CUSTOM	FOT001-16072681-2	Custom Wall Plate (DB9) 1 Gang Clear Anodized Plate - Engraved text ink fill black. Punching for (1) Brahrer EIS86 Connector	6	ea	[DB9] in shop drawing sheet AV0.07 and AV0.08
H-57	Refer to Telecom Submittals	2741002.2.15	SEMTRON	3FM-60E-AMP-LAB	Power Receptacle 2 Gang Stainless Steel	6	ea	BY TELECOM CONTRACTOR, see Submittal 271543
H-58	Refer to Electrical Submittals	2741002.2.10 (RFI 247)	As Approved	As Approved	Wall Plate DigitalMedia 8G+™ Transmitter 200, Black Textured	6	ea	BY ELECTRICAL CONTRACTOR
H-59	Set B - Page 2	2741002.2.10 (25.k)	CRESTRON	DM-TX-200-C-2G-B-T	Wall Plate DigitalMedia 8G+™ Transmitter 200, Black Textured	8	ea	
H-60	Set B - Page 2	2741002.2.10 (25.k)	CRESTRON	DM-TX-200-C-2G-W-T	Wall Plate DigitalMedia 8G+™ Transmitter 200, Black Textured	1	ea	
H-61	Set B - Page 7	2741002.2.10 (25.l)	CRESTRON	DM-8G-COMM-100	Connector for DM-8G DigitalMedia 8G+™ cable	As Required	ea	
H-62	Set B - Page 8	2741002.2.10 (25.m)	CRESTRON	DM-CBL-8G-P-SP-1000	DigitalMedia 8G+™ Cable, plenum 1000 feet	As Required	ea	
H-63	Set B - Page 10	2741002.2.10 (25.y)	CRESTRON	CRESFIBER-P-SP5000	CresFiber™ 8G Multimode Fiber, Optic Cable, 50/125 µm, plenum 500 feet	As Required	ea	
H-64	Set B - Page 12	2741002.2.10 (25.aa)	CRESTRON	CRESFIBER-P-SP1000	CresFiber™ 8G Multimode Fiber, Optic Cable, 50/125 µm, plenum 1000 feet	As Required	ea	
H-65	Set B - Page 13	2741002.2.10 (25.ab)	CRESTRON	CRESFIBER-COMM-SC50UM-12	Connectors for CresFiber™ 8G Multimode Fiber Optic Cable, SC 50µm, 12-Pack	As Required	ea	
H-66	Set B - Page 22	2741002.2.10 (25.d)	CRESTRON	DM-IMD3-2X32	32x32 DigitalMedia™ Switcher	1	ea	
H-67	Set B - Page 22	2741002.2.10 (25.d)	CRESTRON	DMC-4K-C-DSP	HDBaseT™ Certified 4K DigitalMedia 8G+™ Input Card for DWA™ Switchers	11	ea	REPLACEMENT
H-68	Set B - Page 28	2741002.2.10 (25.e)	CRESTRON	DMC-4K-HD-DSP	HDBaseT™ Certified 4K DigitalMedia 8G+™ Input Card w/Downstreaming for DWA™ Switchers	6	ea	REPLACEMENT
H-69	Set B - Page 30	2741002.2.10 (25.f)	CRESTRON	DMC-4K-VID-RCA-A	RCA Analog Video Input Card w/Analog Audio for DWA™ Switchers	7	ea	REPLACEMENT
H-70	Set B - Page 30	2741002.2.10 (25.f)	CRESTRON	DMC-4K-VID-HDCP2 (6507483)	2-Channel HDBaseT™ Certified 4K DigitalMedia 8G+™ Output Card for DWA™ Switchers	7	ea	REPLACEMENT
H-71	Set B - Page 35	2741002.2.10 (25.g)	CRESTRON	DMC-4K-HDO * (6507120)	2-Channel 4K Scaling HDMI™ Output Card for DWA™ Switchers	6	ea	REPLACEMENT
H-72	Set B - Page 35	2741002.2.10 (25.m)	CRESTRON	DM-RMC-SCALER	DigitalMedia 8G+™ Receiver & Room Controller w/Scaler	6	ea	
H-73	Set B - Page 40	2741002.2.10 (25.m)	CRESTRON	DM-RMC-4K-100-C	4K DigitalMedia 8G+™ Receiver & Room Controller 100	4	ea	
H-74	Set B - Page 45	2741002.2.10 (25.l)	CRESTRON	DM-TX-201-C	DigitalMedia 8G+™ Transmitter 201	5	ea	
H-75	Set B - Page 50	2741002.2.10 (25.n)	CRESTRON	DM-TX-201-S	DigitalMedia 8G+™ Fiber Transmitter 201	4	ea	
H-76	Set B - Page 55	2741002.2.10 (25.oo)	CRESTRON	CBL-HD-DWA-12	16-Port PoDM Power Supply for DM 8G+™ I/O Cards	2	ea	
H-77	Set B - Page 58	2741002.2.10 (25.oo)	CRESTRON	DM-PSU-16	Crestrom™ Certified HDMI™ to DVI Interface Cable, 12 ft	2	ea	
H-78	Set B - Page 58	2741002.2.10 (25.oo)	CRESTRON	CBL-HD-3	Crestrom™ Certified HDMI™ Interface Cable, 3 ft	2	ea	
H-79	Set B - Page 58	2741002.2.10 (25.oo)	CRESTRON	CBL-HD-6	Crestrom™ Certified HDMI™ Interface Cable, 6 ft	2	ea	
H-80	Set B - Page 58	2741002.2.10 (25.oo)	CRESTRON	CBL-HD-12	Crestrom™ Certified HDMI™ Interface Cable, 12 ft	2	ea	
H-81	Set B - Page 58	2741002.2.10 (25.oo)	CRESTRON	CBL-HD-15	Crestrom™ Certified HDMI™ Interface Cable, 15 ft	2	ea	
H-82	Set B - Page 59	2741002.2.10 (25.u)	CRESTRON	CBL-HD-16	Crestrom™ Certified HDMI™ Interface Cable, 16 ft	2	ea	
H-83	Set B - Page 60	2741002.2.10 (25.u)	CRESTRON	CBL-RC43-12	Crestrom™ Certified RCA Component Video Interface Cable, 12 ft	6	ea	
H-84	Set B - Page 61	2741002.2.10 (25.a)	CRESTRON	AV3	Crestrom™ Certified RCA Stereo Audio Interface Cable, 12 ft	12	ea	
H-85	Set B - Page 66	2741002.2.10 (25.e)	CRESTRON	CSCOM-3	3-Series Control Card - 3 COM Ports	1	ea	REPLACEMENT
H-86	Set B - Page 68	2741002.2.10 (25.b)	CRESTRON	CAGE3	Control Cabinet Expansion Cage	1	ea	REPLACEMENT
H-87	Set B - Page 70	2741002.2.10 (25.b)	CRESTRON	151-602-B-1	151-602-DSW-B-1	1	ea	REPLACEMENT
H-88	Set B - Page 76	2741002.2.10 (25.c)	CRESTRON	CEN-GWEPER	MINNET EX™ ER Wireless Gateway	2	ea	REPLACEMENT
H-89	Set B - Page 79	2741002.2.10 (25.c)	CRESTRON	TS-1542-B-S	15.6" HD Touch Screen w/DM 8G+™ Input	1	ea	REPLACEMENT
H-90	Set B - Page 83	2741002.2.10 (25.a)	CRESTRON	DGE2	Digital Graphics Engine	1	ea	REPLACEMENT
H-91	Set B - Page 96	2741002.2.10 (25.a)	CRESTRON	FSA1015	19" Equipment Rack Accessory	1	ea	
H-92	Set B - Page 99	2741002.2.10 (25.a)	CHIEF	FTR4100	Small Flat Panel Tilt Wall Mount	1	ea	
H-93	Set B - Page 99	2741002.2.10 (25.a)	CHIEF	TS-1542-TILT-C-B-S	15.6" HD Touch Screen, Tabletop Tilt, Black Smooth	2	ea	REPLACEMENT
H-94	Set B - Page 83	2741002.2.10 (25.b)	CRESTRON	DGE2	Digital Graphics Engine	2	ea	
H-95	Set A - Page 51	2741002.2.10 (25.c)	DA-LITE	370022EL	Projector Screen, LOW VOLTAGE CONTROLLER, WALL PLATE	2	ea	
H-96	Set A - Page 51	2741002.2.10 (25.c)	CHRISTIE	DH0851-Q	Christie DH0851-Q DLP Projector	2	ea	REPLACEMENT
H-97	Set A - Page 43	2741002.2.10 (25.b)	CHRISTIE	121-119102-Q	12.1" 119102-Q 1.7 short throw zoom	2	ea	REPLACEMENT
H-98	Set A - Page 43	2741002.2.10 (25.b)	CHRISTIE	003-005160-01	Replacement Lamp	2	ea	REPLACEMENT
H-99	Set A - Page 41	2741002.2.10 (25.c)	FURMAN	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	2	ea	REPLACEMENT FOR Surge X FlatPak (110V)
H-100	Set A - Page 41	2741002.2.10 (25.c)	FURMAN	RPMBU	RPA Elite Universal Projector Mount with Keyed Locking (B version)	2	ea	
H-101	Set A - Page 36	2741002.2.10 (25.d)	CHIEF	CM43-30	8" (203 mm) Offset Ceiling Plate	2	ea	
H-102	Set A - Page 35	2741002.2.10 (25.d)	CHIEF	CM5012018	12-18" Adjustable Extension Column	2	ea	
H-103	Set A - Page 34	2741002.2.10 (25.f)	CHIEF	VE52-AVT	65" High-Performance LED-Backlit Commercial-Grade Display w/ AV Inputs & Integrated Digital Tuner	4	ea	
H-104	Set A - Page 41	2741002.2.10 (25.a)	NEC	AC-210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	4	ea	REPLACEMENT FOR Surge X FlatPak (110V)
H-105	Set A - Page 41	2741002.2.10 (25.a)	FURMAN	LTW11U	Large Fusion™ Micro-Adjustable Tilt Wall Mount	4	ea	
H-106	Set A - Page 27	2741002.2.10 (25.a)	NEC	E201W-BK	20" Eco-Friendly Widescreen Desktop Monitor	4	ea	
H-107	Set A - Page 12	2741002.2.10 (25.a)	CRESTRON	CBL-HD-DWA-12	Crestrom™ Certified HDMI™ to DVI Interface Cable, 12 ft	4	ea	
H-108	Set B - Page 57	2741002.2.10 (25.s)	CRESTRON	CBL-HD-DWA-12	Crestrom™ Certified HDMI™ to DVI Interface Cable, 12 ft	4	ea	

ITEM	PRODUCT DATASHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
H.109	Set F - Page 27	274100.2.10.N.10.a	SHURE	M3393/C	Microflex Boundary Microphones	24	ea	
H.110	Set F - Page 30	274100.2.10.T.11.a	SHURE	SM-58S	Vocal Microphone	12	ea	
H.111	Set F - Page 36	274100.2.10.I.11.b	WHA/SHURE	MIC-25	25-Foot Connect Microphone Cable	12	ea	
H.112	Set F - Page 37	274100.2.10.I.11.b	SHURE	UX9732A/B5	Combo Wireless System	4	ea	
H.113	Set F - Page 37	274100.2.10.I.11.b	SHURE	UX1616S	SV Microphone System	5	ea	
H.114	Set F - Page 41	274100.2.10.S.21.b	SHURE	AUDITELEX CM	AUDITELEX CM (with Cabinet)	5	ea	
H.115	Set F - Page 43	274100.2.10.S.21.b	SHURE	AEC-24HD	2-channel Echo Canceller Card	15	ea	
H.116	Set F - Page 45	274100.2.10.S.21.c	SHURE	OP-2E	2-channel IMC/Line Input Card	17	ea	
H.117	Set F - Page 47	274100.2.10.S.21.c	SHURE	VOIP-2	VOIP Interface Card	5	ea	REPLACEMENT
H.118	Set F - Page 49	274100.2.10.S.21.d	SHURE	CIS-2200	Four-channel, 260W Power Amplifier	2	ea	REPLACEMENT
H.119	Set F - Page 51	274100.2.10.N.7.a	CROWN	CVS 8	8" Ceiling Speaker	25	ea	
H.120	Set F - Page 53	274100.2.10.N.7.a	TANNAY	LS-04-883	Assisted Listening Device	2	ea	
H.121	Set F - Page 55	274100.2.10.N.7.a	Extron	MTP DN8	Eight Output MTP Twisted Pair Distribution Amplifiers	2	ea	
H.122	Set D - Page 17	274100.2.10.I.7.a	Extron	DTP DVI 330 TX	Long Distance DTP Transmitter for DVI	2	ea	
H.123	Set D - Page 2	274100.2.10.I.7.b	Extron	DTP DVI 330 RX	Long Distance DTP Receiver for DVI	2	ea	
H.124	Set D - Page 20	274100.2.10.IH.7.a	Extron	INI1606	Six Input HDCP-Compliant Scaling Presentation Switcher	16	ea	
H.125	Set F - Page 56	274100.2.10.FE.13.a	RCI CUSTOM	BM-16DB	RCI Custom Professional Series BM-16DB Active Broadcast Mult	2	ea	REPLACEMENT
H.126	Set F - Page 58	274100.2.10.DD.14.a	Analog Way	SSV1600	Scan 1600 SSV1600	4	ea	
H.127	Set F - Page 60	274100.2.10.NN.7.a	AJA	FS-1	Universal Frame Synchronizer/Converter	1	ea	
H.128	Set C - Page 2	274100.2.10.FE.10.a	BRAHLER	DCEN	BRAHLER DCEN DIGIMIC CENTRAL CONTROL UNIT INCLUDESRACK MOUNT BRACKETS	2	ea	
H.129	Set C - Page 3	274100.2.10.FE.10.b	BRAHLER	CCHAIR CSV TMD-D	BRAHLER CCHAIR CSV TMD-D DIGIMIC CLASSIC WIRED CHAIRMAN MIC	2	ea	
H.130	Set C - Page 3	274100.2.10.FE.10.c	BRAHLER	CMIC CSV TMD-M	BRAHLER CMIC CSV TMD-M DIGIMIC CLASSIC WIRED DELEGATE UNIT	59	ea	
H.131	Set C - Page 4	274100.2.10.FE.10.d	BRAHLER	MS8D	BRAHLER MS8D INFRACOM COMPACT CONTROL CONSOLE	1	ea	
H.132	Set C - Page 5	274100.2.10.FE.10.e	BRAHLER	IRAD	BRAHLER IRAD INFRACOM INFRARED RADIATOR	6	ea	
H.133	Set C - Page 6	274100.2.10.FE.10.f	BRAHLER	IRAD	BRAHLER IRAD INFRACOM INFRARED RADIATOR	1	ea	
H.134	Set C - Page 8	274100.2.10.FE.10.f	BRAHLER	BB	BRAHLER BB 8 CHANNEL A/D, D/A CONVERTER	6	ea	
H.135	Set C - Page 9	274100.2.10.FE.10.g	BRAHLER	DDOL	BRAHLER DDOL DIGIMIC DIGITAL INTERPRETER CONSOLE	8	ea	
H.136	Set C - Page 10	274100.2.10.FE.10.g	BRAHLER	TK50-BUNDLE CHARGING	BRAHLER TK50-BUNDLE CHARGING STORAGE AND TRANSPORT CASE	3	ea	
H.137	Set C - Page 11	274100.2.10.FE.10.i	BRAHLER	IRX32	BRAHLER IRX32 32 CHANNEL INFRARED RECEIVER	150	ea	
H.138	Set C - Page 12	274100.2.10.FE.10.j	BRAHLER	LKC-50	BRAHLER LKC-50 CHARGING TRAY CONTROLLER AND SOFTWARE	1	ea	
H.139	Set C - Page 7	274100.2.10.FE.10.k	BRAHLER	WR-8	BRAHLER Wall Mounting Bracket	6	ea	
H.140	Set C - Page 13	274100.2.10.FE.10.l	BRAHLER	DEXT	BRAHLER DEXT DIGIMIC EXTENSION POWER SUPPLY	2	ea	
H.141	Set C - Page 14	274100.2.10.FE.10.m	BRAHLER	D9 IS-CM9	BRAHLER D9 IS-CM9 ADAPTER DIGIMIC ADAPTER CABLE	6	ea	
H.142	Set C - Page 15	274100.2.10.FE.10.n	BRAHLER	PS460	BRAHLER PS460 PROFESSIONAL INTERPRETER HEADSET	8	ea	
H.143	Set C - Page 18	274100.2.10.GG.3.a	Middle Atlantic	PTK-21MDK	PTK Series Rack, PTK-21MDK	1	ea	
H.144	Set C - Page 16	274100.2.10.GG.3.b	BRAHLER	IRAD	Brahlr Infracom IRad Thread for Portable Setup	4	ea	
H.145	Set C - Page 16	274100.2.10.GG.3.b	BRAHLER	IRAD ADAPTOR	Brahlr Infracom IRad Thread for Portable Setup	4	ea	
H.146	Set C - Page 5	274100.2.10.GG.3.c	BRAHLER	MS8D	BRAHLER MS8D INFRACOM COMPACT CONTROL CONSOLE	1	ea	
H.147	Set C - Page 6	274100.2.10.GG.3.c	BRAHLER	IRAD	BRAHLER IRAD INFRACOM INFRARED RADIATOR	4	ea	
H.148	Set C - Page 11	274100.2.10.GG.3.e	BRAHLER	TK50-BUNDLE CHARGING	BRAHLER TK50-BUNDLE CHARGING STORAGE AND TRANSPORT CASE	2	ea	
H.149	Set C - Page 11	274100.2.10.GG.3.f	BRAHLER	IRX32	BRAHLER IRX32 32 CHANNEL INFRARED RECEIVER	75	ea	
H.150	Set C - Page 17	274100.2.10.GG.3.g	BRAHLER	DOL7ZE	Brahlr Infracom Dual Interpreter Console	2	ea	
H.151	Set C - Page 15	274100.2.10.GG.3.h	BRAHLER	PS460	BRAHLER PS460 PROFESSIONAL INTERPRETER HEADSET	2	ea	
I. CATV SYSTEM								
I.1	Set A - Page 24	274100.2.11.F.6.a	GHIEF	MTM11U	Medium Fusion™ Micro-Adjustable Tilt Wall Mount	40	ea	REPLACEMENT
I.2	Set A - Page 32	274100.2.11.F.6.a	GHIEF	LCM11U	Large Fusion™ Micro-Adjustable Tilt Wall Mount	1	ea	REPLACEMENT
I.3	Set A - Page 35	274100.2.11.F.6.a	GHIEF	CMA330	8" (203 mm) Offset Ceiling Plate	1	ea	REPLACEMENT
I.4	Set A - Page 34	274100.2.11.F.6.a	GHIEF	CVS012018	12-18" Adjustable Extension Column	1	ea	REPLACEMENT
I.5	Set D - Page 27	274100.2.11.A.7.a	BlonderTounge	BIDA 100A-30	Indoor Distribution Amplifier 30dB, 49-1000MHz, Integrated Active Return (5-35MHz)	9	ea	
I.6	Set D - Page 30	274100.2.11.C.7.a	BlonderTounge	SRT-4A	4 Output Directional Tap	18	ea	
I.7	Set D - Page 30	274100.2.11.D.7.a	BlonderTounge	SRT-8A	8 Output Directional Tap	16	ea	
I.8	Set D - Page 29	274100.2.11.B.6.a	BlonderTounge	SKRS-8	8-WAY INDOOR LINE SPLITTER 5-1000MHZ 25 PER PACK	1	ea	
I.9	Set D - Page 32	274100.2.11.E.5.a	BlonderTounge	TF-GF-FT	VersaTap Feed Thru Plate	128	ea	
J. Digital Signage and Room Scheduling								
J.1	Set A - Page 2	274100.2.12.C.10.a	American Dynamics	AD-CD37H48	Multiple Input Monitor 37"	19	ea	
J.2	Set A - Page 22	274100.2.12.C.10.b	NEC	FR6100	Small Flat Panel Tilt Wall Mount	19	ea	
J.3	Set A - Page 4	274100.2.12.B.11.a	NEC	V465-AVT	46" High-Performance LED-Backlit Commercial-Grade Display w/ AV Inputs & Integrated Digital Tuner	5	ea	
J.4	Set A - Page 27	274100.2.12.B.11.b	GHIEF	LTW11U	Large Fusion™ Micro-Adjustable Tilt Wall Mount	5	ea	REPLACEMENT FOR Surge X FlatPak (110)
J.5	Set A - Page 41	274100.2.12.B.11.c	FURMAN	AC210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	5	ea	
J.6	Set A - Page 4	274100.2.12.A.7.a	NEC	V233-AVT	32" High-Performance LED-Backlit Commercial-Grade Display with Integrated Tuner	7	ea	2 Spare
J.7	Set A - Page 22	274100.2.12.A.7.b	GHIEF	FR6100	Small Flat Panel Tilt Wall Mount	7	ea	2 Spare, REPLACED WITH FTR 4100 DUE TO SIZE
J.8	Set A - Page 41	274100.2.12.A.7.c	FURMAN	AC210A-E	COMPACT POWER CONDITIONER WITH AUTO-RESETTING VOLTAGE PROTECTION	7	ea	REPLACEMENT FOR Surge X FlatPak (110); 2 ea SPARE
J.9	Set A - Page 18	274100.2.12.G.9.a	SunBrite	TV 59-557HD [Black]	SunBrite TV Pro Series Direct-Sun Outdoor	2	ea	
J.10	Set A - Page 20	274100.2.12.G.9.b	SunBrite	TV WM46NA	42" / 36" / 55" / 65" Non-Articulating Mount - WM46NA	1	ea	

ITEM	PRODUCT DATASHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
J11	Set A - Page 20	274100.2.12.6.9.c	Subrite	TV-CM46412	42"/46"/55" Ceiling Mount - CM46412	1	ea	
J12	Set A - Page 20	274100.2.12.6.9.d	Subrite	TV-58-CM50203	58" Slim-Channel 204" - 36" Extension Column	1	ea	
J13	Set D - Page 2	274100.2.12.11.2.a	Extron	DTP-HDMI-4K-330-Tx	Long Distance HDMI Twisted Pair Extender Tx	31	ea	
J14	Set D - Page 2	274100.2.12.11.2.b	Extron	DTP-HDMI-4K-330-Rx	Long Distance HDMI Twisted Pair Extender Rx	31	ea	
J15	Set D - Page 10	274100.2.12.11.3.a	Extron	HDMI Pro/3	3' (90 cm) 4K/UHD Ready	31	ea	
J16	Set D - Page 10	274100.2.12.11.3.b	Extron	HDMI Pro/6	6' (1.8 m) 4K/UHD Ready	31	ea	
J17	Set D - Page 10	274100.2.12.11.3.c	Extron	HDMI Pro/12	12' (3.6 m) 4K/UHD Ready	31	ea	
J18	Set D - Page 14	274100.2.12.11.3.d	Extron	FOXBOX Tx HDMI MM (60-1174-11)	Fiber Optic Transmitter for HDMI, Audio, and RS-232 (60-1174-11) MM	5	ea	3 Spare
J19	Set D - Page 14	274100.2.12.11.3.e	Extron	FOXBOX Rx HDMI MM (60-1174-21)	Fiber Optic Receiver for HDMI, Audio, and RS-232 (60-1174-21) MM	5	ea	3 Spare
J20	Set D - Page 10	274100.2.12.11.3.f	Extron	HDMI Pro/3	3' (90 cm) 4K/UHD Ready	10	ea	6 Spare
J21	Set D - Page 10	274100.2.12.11.3.g	Extron	HDMI Pro/6	6' (1.8 m) 4K/UHD Ready	10	ea	6 Spare
J22	Set D - Page 10	274100.2.12.11.3.h	Extron	HDMI Pro/12	12' (3.6 m) 4K/UHD Ready	10	ea	6 Spare
J23	Set D - Page 9	274100.2.12.11.3.i	GHIF	GMS440	Speed-Connect Above-Tile Suspended Ceiling Kit	19	ea	
J24	Set D - Page 8	274100.2.12.11.3.j	GHIF	CMA470	Plenum Rated Above-Tile Storage Accessory	19	ea	
K. Queuing System								
K.1	Set A - Page 2	274100.2.13.A.12.a	American Dynamics	ADICD17MB	Multiple Input Monitor 17"	45	ea	
K.2	Set A - Page 22	274100.2.13.A.12.b	CHIEF	FTR4100	Small Flat Panel Tilt Wall Mount	45	ea	
K.3	Set D - Page 2	274100.2.13.A.12.c	Extron	DTP-HDMI-4K-330-Tx	Long Distance HDMI Twisted Pair Extender Tx	45	ea	
K.4	Set D - Page 2	274100.2.13.A.12.d	Extron	DTP-HDMI-4K-330-Rx	Long Distance HDMI Twisted Pair Extender Rx	45	ea	
K.5	Set D - Page 10	274100.2.13.A.12.e	Extron	HDMI Pro/3	3' (90 cm) 4K/UHD Ready	45	ea	
K.6	Set D - Page 10	274100.2.13.A.12.f	Extron	HDMI Pro/6	6' (1.8 m) 4K/UHD Ready	45	ea	
K.7	Set D - Page 10	274100.2.13.A.12.g	Extron	HDMI Pro/12	12' (3.6 m) 4K/UHD Ready	45	ea	
K.8	Set A - Page 4	274100.2.13.B.13.a	NEC	V463-AVT	46" High-Performance LED-Backlit Commercial-Grade Display w/ AV Inputs & Integrated Digital Tuner	7	ea	
K.9	Set A - Page 37	274100.2.13.B.13.b	CHIEF	MTMP-10	Medium-Tilt/Steer - Flat Panel Tilt Wall Mount	7	ea	
K.10	Set D - Page 2	274100.2.13.B.13.c	Extron	DTP-HDMI-4K-330-Tx	Long Distance HDMI Twisted Pair Extender Tx	7	ea	
K.11	Set D - Page 2	274100.2.13.B.13.d	Extron	DTP-HDMI-4K-330-Rx	Long Distance HDMI Twisted Pair Extender Rx	7	ea	
K.12	Set D - Page 10	274100.2.13.B.13.e	Extron	HDMI Pro/3	3' (90 cm) 4K/UHD Ready	7	ea	
K.13	Set D - Page 10	274100.2.13.B.13.f	Extron	HDMI Pro/6	6' (1.8 m) 4K/UHD Ready	7	ea	
K.14	Set D - Page 10	274100.2.13.B.13.g	Extron	HDMI Pro/12	12' (3.6 m) 4K/UHD Ready	7	ea	
K.15	Set A - Page 8	274100.2.13.C.13.a	NEC	P553-AVT	55" LED Backlit Professional-Grade Large Screen Display with Integrated Tuner	4	ea	
K.16	Set A - Page 27	274100.2.13.C.13.b	CHIEF	LTW10	Large Flat Panel Micro-Adjustable Tilt Wall Mount	4	ea	
K.17	Set D - Page 2	274100.2.13.C.13.c	Extron	DTP-HDMI-4K-330-Tx	Long Distance HDMI Twisted Pair Extender Tx	1	ea	
K.18	Set D - Page 2	274100.2.13.C.13.d	Extron	DTP-HDMI-4K-330-Rx	Long Distance HDMI Twisted Pair Extender Rx	4	ea	
K.19	Set D - Page 10	274100.2.13.C.13.e	Extron	HDMI Pro/3	3' (90 cm) 4K/UHD Ready	4	ea	
K.20	Set D - Page 10	274100.2.13.C.13.f	Extron	HDMI Pro/6	6' (1.8 m) 4K/UHD Ready	4	ea	
K.21	Set D - Page 10	274100.2.13.C.13.g	Extron	HDMI Pro/12	12' (3.6 m) 4K/UHD Ready	4	ea	
L. SECURITY INTERCOM								
L.1	Set H - Page 8	274100.2.14.A.6.A	QUAM	DT51	Desktop Intercom Station, With Replaceable Gooseneck Mic.	12	ea	
L.2	Set H - Page 9	274100.2.14.B.7.a	QUAM	C154/8	2-Gang Call-in Station, with Integral Speaker/microphone, Stainless, 80	12	ea	
L.3	Set H - Page 10	274100.2.14.B.8.b	QUAM	SE65VP	Surface Mount Enclosure for C154/XX (2-gang), Call-in Stations	12	ea	
L.4	Set H - Page 11	274100.2.14.C.6.a	BDL	ST-CCI	Intercom Amplifier	12	ea	
L.5	Set H - Page 13	274100.2.14.C.6.b	BDL	PS-24AX	24 Vdc Switching Power Supply, 100 to 240 VAC input	12	ea	
L.6	Set H - Page 14	274100.2.14.C.6.c	BDL	SR-4	STICC-ON Series Mounting Bracket - 7 modules	12	ea	
L.7	Set H - Page 15	274100.2.14.C.6.c	BDL	SR-1810	Terminal Block Assembly for SR-4	12	ea	
L.8	Set H - Page 16	274100.2.14.C.9	BDL	WB-210	Universal Wall Box - Double-Mount RDL remote controls & wall plates	12	ea	

ITEM	PRODUCT DATASHEET SET AND PAGE NUMBER	SPECIFICATION	MANUFACTURER	MODEL	DESCRIPTION	QUANTITY	UNIT	NOTES
M.1	Set G - Page 2	274100 2.16	WEST PENN	25291B	2/2 Stranded bare copper conductors, shielded with an overall jacket. (Line/Mic Cable)	As Required	feet	
M.2	Set G - Page 3	274100 2.16	WEST PENN	25292B	16/2 Stranded bare copper conductors, unshielded with an overall jacket. (70V Speaker Cable)	As Required	feet	
M.3	Set G - Page 4	274100 2.16	WEST PENN	25297B	1/2 Stranded bare copper conductors, unshielded with an overall jacket. (70V Speaker Cable)	As Required	feet	
M.4	Set G - Page 5	274100 2.16	WEST PENN	250841	RG6/U Type CATV Coaxial Cable Quad-Shield Plenum	As Required	feet	
M.5	Set G - Page 6	274100 2.16	WEST PENN	250821	RG6/U Type CATV Coaxial Cable Quad-Shield Plenum	As Required	feet	
M.6	Set G - Page 7	274100 2.16	WEST PENN	CN-F56P12	RG11/U Type CATV Coaxial Cable Plenum Quad-Shield	As Required	feet	
M.7	Set G - Page 7	274100 2.16	WEST PENN	CN-F511P12	F CONNECTOR FOR RG6	As Required	ea	
M.8	Set G - Page 7	274100 2.16	WEST PENN	CN-F511P12	F CONNECTOR FOR RG11	As Required	ea	
M.9	Set G - Page 8	274100 2.16	WEST PENN	CN-F59T	75 OHM TERMINATOR	As Required	ea	
M.10	Set G - Page 8	274100 2.16	COMMSCOPE	60037341	Indoor/Outdoor Plenum Rated DM3 Distribution Cable, 2 fiber single unit	As Required	feet	
M.11	Set G - Page 11	274100 2.16	WEST PENN	210454	Stereo Speaker Cable	As Required	feet	
M.12	Set G - Page 12	274100 2.16	WEST PENN	D254851	24/2 Stranded tinned copper conductors, shielded with an overall jacket. (RS2.32)	As Required	feet	
M.13	Set G - Page 13	274100 2.16	WEST PENN	254812	RG-58/U Type Plenum	As Required	feet	
M.14	Set G - Page 14	274100 2.16	WEST PENN	CN-BW63-25	Straight Plug Male Connectors 50 Ohm BNC	As Required	ea	
M.15	Set G - Page 15	274100 2.16	WEST PENN	CN-MX9F	PREMIUM DB9 (F) Terminal Block RS-232	As Required	ea	
M.16	Set G - Page 15	274100 2.16	WEST PENN	CN-MX9M	PREMIUM DB9 (M) Terminal Block RS-232	As Required	ea	
M.17	Set G - Page 15	274100 2.16	WEST PENN	CN-MX915H	Hood for PREMIUM Terminal Blocks	As Required	ea	
M.18	Set G - Page 15	274100 2.16	WEST PENN	19-1268	RCA Plug- Black	As Required	ea	
M.19	Set G - Page 17	274100 2.16	WEST PENN	19-1207	RCA Plug- Red	As Required	ea	
M.20	Refer to Telecom Submittals	274100 2.16	APC	AP9890	APC Power Cord kit (5 ea), C13 to C14, 0.6m (5ea)	As Required	ea	BY TELECOM CONTRACTOR. See Submittal 271543
M.21	Refer to Telecom Submittals	274100 2.16	TE CONNECTIVITY	6-2111889-3	Modular Plug, Category 6, Shielded, Cable Diameter 5, 7-7.0 mm, 100 pcs	As Required	ea	BY TELECOM CONTRACTOR. See Submittal 271543
M.22	Refer to Telecom Submittals	274100 2.16	TE CONNECTIVITY	2153257-1	Modular Plug Shielded Slim-Line Boot for Category 6A/6 and Category 5e EMT Plugs, 5.7 to 7.0 mm, transparent	As Required	ea	BY TELECOM CONTRACTOR. See Submittal 271543
M.23	Refer to Telecom Submittals	274100 2.16	TE CONNECTIVITY	1325188-1	SL Series 110C connect Jack, Cat. 6 Shielded	As Required	ea	BY TELECOM CONTRACTOR. See Submittal 271543
				TE620PF-WT02	Category 6 Shielded plenum Cable, White, (805 meter) - UL Listed	As Required	feet	BY TELECOM CONTRACTOR. See Submittal 271505

SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET A

Multiple Input Monitors

Performance Series

17" and 19" Displays

Features That Make a Difference:

- High quality and cost effective
- HDMI and VGA input for DVRs or PC applications
- 1x CVBS looping and 1x S-Video input
- Supports up to 1280 x 1024 (SXGA) resolution
- 3D de-interlace and 3D comb filter
- Auto scale digital and analog video inputs
- Key lock to prevent unauthorized access
- Low power consumption (<25W)
- PIP (Picture-in-Picture)
- Auto power recovery from outages
- Auto-shift option to prevent pixel burn-in
- Built-in stereo audio speakers
- HDMI to DVI adapter cable included



ADLCD17MB

American Dynamics 17" and 19" Multiple Input Monitors Performance Series is a proven, cost effective and high quality line of video display monitors, supporting both digital and analog composite video input signals. These monitors are an excellent choice for price sensitive markets, providing a high quality monitor solution.

American Dynamics Multiple Input Monitors produce sharp, true color images even at wide viewing angles. These monitors are an excellent choice as part of your video surveillance needs. Each monitor features user friendly, on-screen menus and front panel controls for adjusting monitor display parameters to your specific preference.



ADLCD19MB

American Dynamics Performance Series monitors deliver exceptionally sharp, crisp pictures with a brightness of 250 cd/m², a contrast ratio of 1000:1 and a response time of 5ms.

The monitors are slim, lightweight requiring less power and space. These monitors have a desktop stand that tilts to a 90 degree angle, and can be used as a "picture frame" wall mount. Monitors also feature a standard 100 x 100 (mm) VESA™ mounting pattern.

Long-life fluorescent backlights help maintain consistent brightness levels, providing an advantage over aging CRT monitors that become progressively dimmer over time.

Specifications

General

Panel size 17" / 19" Diagonal
 Backlight type CCFL 2 lamps
 Native aspect ratio 5:4
 Native resolution 1280 x 1024
 Brightness 250 cd/m²
 Pixel pitch H/V 17" 0.264 mm x 0.264 mm
 19" 0.294 mm x 0.294 mm
 Contrast ratio 1000:1
 Viewing angle H/V 160 / 160, 170 / 160
 Response time 5ms
 OSD Language English (US), French (Fr), German, Spanish (Int),
 Italian, Portuguese (Brazilian), Chinese (Si), Dutch

Input / Output

VGA input 1 VGA (15pins D-Sub)
 HDMI input 1 HDMI
 CVBS input BNC input with passive loop through output x1
 S-Video input Mini-din 4pins
 Audio input OD3.5mm Stereo phone jack input with loop
 through output x1
 Speaker output 1W x2 embedded

Video

Video format NTSC / PAL auto detect
 Scanning frequency NTSC: 15750Hz ± 500Hz / 60Hz
 PAL: 15625Hz ± 500Hz / 50Hz
 TVL 700

Electrical

Power input
 (AC/DC power adapter) 100~240Vac, 50/60Hz
 Power input (display) 12V DC/3A
 Power consumption 22W, 23W (17", 19")
 Stand-by mode PC 1.7W
 Off mode PC 0.3W

Environment

Operating temperature 0°C to 40°C (32°F to 104°F)
 Operating humidity 10% to 85%RH (non-condensing)
 Storage temperature -20°C to 60°C (-4°F to 140°F)
 Storage humidity 10% to 95%RH (non-condensing)

Mechanical

Cabinet ABS plastic
 Color Black
 Desktop stand Wall mountable desktop stand
 Stand tilt / Swivel / Lift 90° Tilt
 VESATM 100 x 100 (mm)
 Dimension (monitor only)
 Dimension (W x H x D)
 Monitor only 17" 371 x 325 x 54 mm (14.61 x 12.80 x 2.13 in)
 19" 419 x 358 x 54 mm (16.5 x 14.09 x 2.13 in)
 Including stand 17" 371 x 376 x 197 mm (14.61 x 14.80 x 7.76 in)
 19" 419 x 423 x 197 mm (16.50 x 16.65 x 7.76 in)

Weight

Monitor only (net) 17" 2.7 kg (5.95 lb)
 19" 3.3 kg (7.28 lb)
 Including stand (gross) 17" 3.5 kg (7.72 lb)
 19" 4.1 kg (9.04 lb)
 Shipping weight 17" 5.6 kg (12.35 lb)
 19" 6.3 kg (13.89 lb)

Regulatory

Safety and Regulatory UL/cUL, FCC, CE, RoHS, WEEE

Accessories (included)

CD (user's guide), power cord, universal AC/DC power adapter, VGA cable, HDMI to DVI cable, audio cable

Section 274100 2.12 C.10.a - Comply
 Section 274100 2.13 A.12.a - Comply

Ordering Information

Model Numbers	Description
Monitors	
ADLCD17MB	17" LCD 1280 x 1024, HDMI, VGA, Y/C, 1xBNC IN w/loop, audio, 3D CF & DI
ADLCD19MB	19" LCD 1280 x 1024, HDMI, VGA, Y/C, 1xBNC IN w/loop, audio, 3D CF & DI
Optional Accessories	
ADWTR75100B	Tilt/rotate wall mount for displays up to 24", black
ADWA1TR75100B	Articulating wall mount for displays up to 24", black
ADWA2TR75100B	Articulating wall mount (dual) for displays up to 24", black
ADCT75100B	Ceiling mount for 15 - 24" displays, black
ADCT75100W	Ceiling mount for 15 - 24" displays, white

Related Products



ADTVR Series



HDVR



Intellex

www.americandynamics.net

Maximum Message. Minimal Expense.

NEC V Series

32" Flat Panel Display
46" Flat Panel Display
65" Flat Panel Display

Large Screen LED-backlit LCD 32" | 42" | 46" | 55" | 65" | 80"

Available with embedded
Windows PC or Jelly Bean
4.2.2 Digital Signage Player!



Commercial-Grade LCD Displays for the Cost-Conscious

Commercial-Grade

Promote extended use with a high-performance design

- LED backlighting delivers both environmental and economic benefits
- Temperature sensors and fans protect the panel from damage
- High definition, high brightness and contrast ratio deliver superior visual quality
- Internal 10W speakers and built-in handles enable a simplified installation

Adaptable

- Unrivaled flexibility enables seamless integration of accessories
- Expanded connectivity with built-in expansion slot for maximum versatility
- Protective-glass and touch-panel ready design provide opportunities for module security and interactivity
- Landscape and portrait orientations allow for flexible content placement to maximize audience awareness

Connected

- Extensive control and diagnostic communication provide the highest level of remote management
- Comprehensive input panel connects to latest peripherals
- RS-232 and ethernet connectivity allow individual and group-addressable control, including email diagnostics
- DDC/CI standard allows for PC control of the display
- Custom input detect for content protection

Maximum Adaptability with the NEC Option Slot

Future-proof your display with the NEC option slot. This slot provides connectivity for Open Pluggable Specification (OPS)-compliant devices, creating a seamless integration across a variety of accessories.

- No external connections required – DVI video, stereo audio, RS-232 control and power are all passed internally from the display to the OPS device
- Simple integration and maintenance results in easier and less expensive installations and operation
- -PC bundles available where the OPS slot is occupied by AMD Dual Core fusion based OPS-PCAF-WS PC
- -DRD bundles available where the OPS slot is occupied by Jelly Bean 4.2.2 based OPS-DRD Digital Signage Player



Corporate Applications



Everything you need to communicate with coworkers and visitors. NEC V Series displays offer an integral part of corporate communications. Displaying information is easy and dynamic, and lobby messaging can be easily adapted to match the needs of the business.

- Automatic input detect allows built-in system redundancy to reassure content will always be displayed
- Protect your display from damaging heat with integrated temperature sensors and fans
- High-definition panels with up to 500 cd/m² brightness and 5000:1 contrast ratio enable superior images sure to capture customer attention

Retail Applications



Maximize messaging and connect on a new level with in-store customers. Whether its promoting the latest sale, pointing shoppers in the right direction or communicating the latest price information, the NEC V Series effectively delivers your message without breaking the bank.

- Landscape and portrait orientations enable design flexibility for seamless in-store installation
- High brightness and contrast ratio deliver stunning imagery
- Built-in text ticker can display valuable information across a user-defined portion of the screen

Maximum Efficiency with LED Backlighting*

Not all backlights are created equal. Loaded with state-of-the-art innovation, select NEC V Series displays incorporate LED backlights that deliver an array of benefits.

- Reduced power consumption leads to a reduced total cost of ownership
- Solid state LED backlights increase durability
- Lighter, thinner products increase installation options, and decrease installation and shipping costs



Specifications for V323/V423/V463/V552/V652/V801

V323-2-AVT
Section 274100 2.12 A.7.a - Comply

MODEL	V323-2	V423	V463	V552	V652	V801
LCD MODULE						
Panel Technology	S-IPS	S-IPS	A-MVA	A-MVA	SPVA	UV2A
Viewable Image Size	32"	42"	46"	55"	65"	80"
Native Resolution			1920 x 1080			
Brightness (Typical/Max)	320 cd/m ² / 450 cd/m ²	320 cd/m ² / 450 cd/m ²	350 cd/m ² / 500 cd/m ²	320 cd/m ² / 450 cd/m ²	320 cd/m ² / 460 cd/m ²	
Contrast Ratio (Typical)	1300:1	1300:1	4000:1		5000:1	
Viewing Angle			178° Vert., 178° Hor. (89L/89D/89L/89R) @ CR>10			
Aspect Ratio			16:9			
Active Screen Area (W x H)	27.5 x 15.5 in. / 698.4 x 392.9mm	36.6 x 20.6 in. / 930.2 x 523.3mm	40.1 x 22.5 in. / 1018.1 x 572.7mm	47.6 x 26.8 in. / 1209.6 x 680.4mm	56.2 x 31.6 in. / 1428.5 x 803.5mm	69.7 x 39.2 in. / 1771.2 x 996.3mm
Orientation			Landscape/Portrait			
Displayable Colors	More than 16.7 million		More than 1 billion			
CONNECTIVITY						
PC/Mac Signal Compatibility			Yes			
Input Terminals						
Digital			DisplayPort, HDMI, DVI-D			
Analog	VGA 15-pin D-sub	VGA 15-pin D-sub (shared S-Video, Video, Component), BNC Composite		VGA 15-pin D-sub, 5 BNC (RGBHV, DVD/HD, S-Video or Video), BNC Composite		
Audio			Stereo Mini-Jack, HDMI Audio, DisplayPort Audio			
External Control			RS-232C, Ethernet (RJ45), IR Remote			
Output Terminals						
Digital			DVI-D			
Analog			N/A			
Audio			Stereo Mini-Jack, External Speaker Jack (2)			
External Control			RS-232C			
Speakers	Integrated (8W)			Integrated (10W x 2)		
POWER CONSUMPTION						
On (Typical)	48W	88W	76W	100W	185W	230W
ECO Mode Standby	<1W	<0.5W			<1W	
PHYSICAL SPECIFICATIONS						
Bezel Width (L/R, T/B)	0.9in./0.9 in., 0.9 in./0.9 in.; 24.0mm/24.0mm, 24.0mm/24.0mm	0.7 in./0.7 in., 0.7 in./0.7 in.; 18.3mm/18.3mm, 18.3mm/18.3mm		2.1 in./2.1 in., 2 in./2.1 in.; 53.5mm/53.5mm, 50.5mm/50.5mm		1.2 in./1.2 in., 1.2in./1.2in.; 29.7mm/29.7mm, 29.7mm/29.7mm
Net Dimensions (without stand; WxHxD)	29.5 x 17.5 x 2.4 in. / 750.0 x 445.5 x 60.8mm	38.3 x 22.3 x 2.7 in. / 972.5 x 565.4 x 68.3mm	41.7 x 24.1 x 2.6in. / 1058.2 x 612.8 x 65.1mm	49.2 x 28.4 x 2.5 in. / 1249.7 x 720.5 x 63mm	60.6 x 35.8 x 3.5 in. / 1540.4 x 909.2 x 88.3mm	72.3 x 41.8 x 3.4 in. / 1836.2 x 1061.3 x 86.9mm
Net Weight (without stand)	20.9lbs / 9.5kg	37 lbs. / 16.8 kg	41.7 lbs. / 18.9 kg	58 lbs. / 26.3 kg	114.4 lbs. / 52 kg	132.3 lbs / 60 kg
VESA Hole Configuration	200 x 200mm (4-hole)			300 x 300mm (4-hole)		400 x 400mm (4-hole)
ENVIRONMENTAL CONDITIONS						
Operating Temperature			41-104°F / 5-40°C			
Operating Humidity			20 - 80%			
Operating Altitude			9843 ft. / 3000m			
LIMITED WARRANTY						
	3 years parts and labor, including backlight*					
ADDITIONAL FEATURES						
	Advanced thermal capabilities; Advanced cooling system; TileMatrix (10x10); TileComp; Separate group/Monitor ID function; Ethernet Control and Communication; RS-232 Control and Communication; Carbon footprint meter; Plug and Play (DDC/CI, DDC2B); Scheduler (w/ real-time clock); Screen saver function; POP; Side-by-Side; Kensington lock; Handles (for V552/V652 /V801); Touch- and protective screen-ready; Variable picture modes; Advanced video settings (Noise Reduction, Adaptive Contrast); Input labeling; Backlight adjust; Aspect ratio control; Built-in speakers; OPS-Compliant slot					
SHIPS WITH						
	Power cord; 1.8m DVI-D cable; Wireless remote control; Batteries; CD-ROM (user manual)					
OPTIONAL ACCESSORIES						
Single Board Computers	External Single Board Computer (TNETPC-AF-WH); All NEC OPS computers*					
Other	Speakers (SP-RM2 for V423; SP-RM1 for V463, V552, V652 & V801) SP-TF1 (Thin rear or side mounted speaker for V463, V552, V652 and V801); Stand (ST-322 for V323-2, V423 & V463; ST-4620 for V552; ST-651 for V652; ST-801 for V801); Internal HD-SDI Card (SB-01HC); Internal 3G-SDI Card (SB-04HC); Digital IP Tuner (SB-03TM); Wall Mount Kit (WMK-3257); OPS-DRD (ARM based Digital Signage Media Player) WMK-3255S (Thin wall mount for V323-2, V423, V463 and V552)					

* Warranty restrictions apply. Contact your representative for details.
** For non -AVT, -PC, -DRD displays only.

-AVT= with integrated tuner

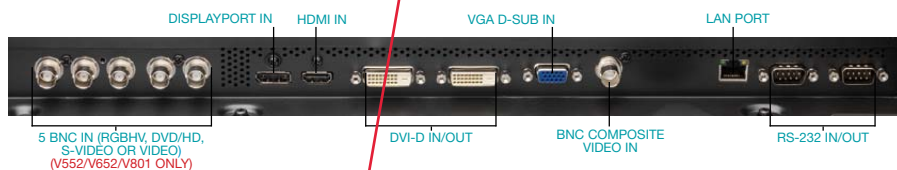
V323-2



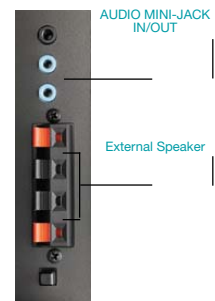
V323-2



V423/V463/V552/V652/V801



V423/V463/V552/V652/V801



V463-AVT
Section 274100 2.12 B.11.a - Comply
Section 274100 2.13 B.13.a - Comply

V652-AVT
Section 274100 2.4 F.15.a- Comply
Section 274100 2.5 E.15.a-Comply
Section 274100 2.6 E.15.a-Comply
Section 274100 2.10 L.13.a-Comply

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866-NEC-MORE

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Pure. Professional. Performance.

NEC P Series

55" Flat Panel Display
70" Flat Panel Display

Large Screen LCD 40" | 46" | 55" | 70"

Available with embedded
Windows PC or Jelly Bean
4.2.2 Digital Signage Player!

**40" - 70" professional-grade, LED edge-lit displays for
the most harsh install environments**



Quality is Never an Accident

Professional-grade display construction with proven thermal and mechanical design ensures a flawless 24/7 operation in even the harshest environments.

It's Not Easy Being Green

Eco-friendly features are aplenty, with LED backlighting decreasing energy consumption, lowering total cost of ownership and contributing to environmental consciousness.

Beauty is in the Eye of the Beholder

Providing a first-class solution for digital signage applications with bright, high-contrast, full high-definition panels across a variety of product sizes.

Impact. Delivered.

Select NEC P Series displays' thin bezel design, advanced feature set, and enhanced video wall capabilities allow you to expand your messaging options.

Key Features

Quality is never an accident.

Meeting the requirements for rugged 24/7 use, the NEC P Series professional-grade LCD displays deliver a perfect picture. Every time.

What's more, this new generation of display supplies faster internal processing speeds, is lighter and thinner than its predecessor, and supports customizable connectivity options.

P Series panel construction includes:

- **Open Pluggable Specification and Interface Expansion slots** offer the flexibility customers require.
- **Higher quality standards** for components means each display is made of only the best of the best.
- **Integrated temperature sensors and fans** maximize heat dissipation and the lifetime of the display while a metal rear chassis protects your investment
- **Reduced depth and weight** means faster and easier installations
- **Improved processing** capabilities with faster start up and response times
- **Browser control** capabilities enable LAN and tablet display control
- **-PC bundles** available where the OPS slot is occupied by AMD Dual Core fusion based OPS-PCAF-WS PC
- **-DRD bundles** available where the OPS slot is occupied by Jelly Bean 4.2.2 based OPS-DRD Digital Signage Player



Beauty is in the eye of the beholder.

Display design delivers smooth video and crisp imagery. Bright, high-contrast, full high definition panels in concert with unrivaled control, communication and accessory options deliver brilliant content to customers. Gorgeous signage is further simplified with some of the advanced technologies integrated into the new P Series displays.



- **700 cd/m2 maximum brightness** ensures display and content are visible in the brightest of ambient lighting environments
- **Full high definition** panel allows for the tiniest details to be seen on screen
- **Input switching speed** can be set via the on screen menu thereby minimizing any black screens during source transitions
- **Two port LAN hub** simplifies installation and monitoring of deployed displays
- **Simple point and zoom** feature allows presenters to zoom in to parts of a presentation via the remote
- **Enhanced Picture-in-Picture** provides flexibility for displaying two sources simultaneously

It's not easy being green.



LED backlighting delivers both environmental and economic impact. With a mercury-free display, the NEC P series is easier to dispose when replacement is necessary. LED-backlit displays consume less power which further reduce their impact on the environment. Additionally, intelligent, built-in eco features allow display to measure and adjust to its ambient environment, thereby efficiently using and ultimately reducing power consumption.

These include:

- **LED edge-lit backlighting** reduces power consumption and allows a slimmer cabinet depth
- **Ambient light sensor** ensures consistent brightness no matter the lighting conditions, while allowing the user to set the brightness level to a pre-determined lower level in order to automatically compensate and reduce the brightness, thus decreasing power consumption
- **Carbon footprint meter** helps track and calculate the conservation of green gas emissions in real time
- **Real-time clock/round-the-clock scheduling** allows for advanced scheduling of monitor powering up/down, increasing panel lifetime, reducing power consumption and saving the time and expense of finding and purchasing a third-party scheduling solution
- **Human sensor** accessory allows for dynamic control of brightness, audio and source input while saving operating costs

Impact delivered.

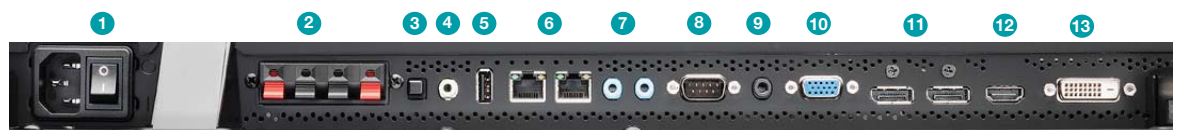
With a new chassis design, these displays deliver more than high quality images and durability.

These displays are designed to create impact with a host of new features to maximize usability and minimize costs.

- **Built in NFC sensor** reduces installation and maintenance cost
- **Multiple programmable gammas** enables superior display performance in a variety of ambient lighting conditions
- **Image Flip** supported in the on screen menu to ease mirroring images for on-set displays
- **Memo function** can assist with both set up and support by directing the user to the most appropriate contact
- **Proof of play** to show content that was paid for was shown
- **Intelligent Wireless Data** functionality enables read/write communications from a tablet that supports near field communications (NFC) to ease installations and service
- **Improved daisy chain capabilities** for video and control signals (DisplayPort and LAN) which reduce cabling requirements

Input Panel

1. Vacation Switch
2. External Speaker Terminal
3. Internal/External speaker switch
4. Audio Mini Jack Out
5. USB Service Port
6. LAN Ports
7. Audio Mini Jack In
8. RS-232C In
9. Remote In
10. VGA D-Sub In
11. DisplayPort In/Out
12. HDMI In
13. DVI-D In



Specifications

P553-AVT
 Section 274100 2.3.D.13.a-Comply
 Section 274100 2.4.E.15.a-Comply
 Section 274100 2.7.D.14.a-Comply
 Section 274100 2.8.D.14.a-Comply
 Section 274100 2.13.C.13.a-Comply

P703-AVT
 Section 274100 2.5.F.15.a -
 Comply

MODEL	P403	P463	P553	P703
LCD MODULE				
Panel Technology	SPVA (P-DID)			
Viewable Image Size	40"	46"	55"	70"
Native Resolution	1920 x 1080			
Backlight Type	LED Edge-lit			
Brightness (Typical/Max)	550/700 cd/m ²			
Contrast Ratio (Typical)	4000:1			
Viewing Angle	178° Vert., 178° Hor. (89U/89D/89L/89R) @ CR>10			
Response Time (G-to-G)	8ms			
Aspect Ratio	16:9			
Active Screen Area (W x H)	35.1 x 19.9 in. / 892.6 x 504.2mm	40.4 x 22.8 in. / 1025.4 x 578.6mm	47.9 x 27.1 in. / 1216.6 x 687.4mm	60.6 x 34.1 in. / 1538.9 x 865.6mm
Orientation	Landscape/Portrait			
Displayable Colors	More than 16.7 million			
CONNECTIVITY				
PC/Mac Signal Compatibility	Yes			
Input Terminals				
Digital	DisplayPort, HDMI, DVI-D			
Analog	VGA 15-pin D-sub			
Audio	Audio Mini-Jack, DisplayPort Audio, HDMI Audio			
External Control	RS-232C, LAN, DDC/CI, IR			
Output Terminals				
Digital	DisplayPort (DisplayPort, HDMI, DVI-D or Option Signals out of this port)			
Analog	n/a			
Audio	Audio Mini-Jack, External Speaker Jack (2), HDMI Audio (through DisplayPort Out), DisplayPort Audio			
External Control	LAN			
Digital Tuner	P403-AVT	P463-AVT	P553-AVT	P703-AVT
OPS Windows PC	P403-PC	P463-PC	P553-PC	P703-PC
OPS Digital Signage Player	P403-DRD	P463-DRD	P553-DRD	P703-DRD
POWER CONSUMPTION				
On (Typical)	110	120	150	150
ECO Mode Standby	<0.5W			
PHYSICAL SPECIFICATIONS				
Bezel Width (L/R, T/B)	0.6in./0.6in., 0.6in./0.6in. ; 15.5mm/15.5mm, 15.5mm/15.5mm	0.6in./0.6in., 0.6in./0.6in. ; 16.5mm/16.5mm, 16.5mm/16.5mm	0.7in./0.7in., 0.7in./0.7in. ; 18.5mm/18.5mm, 18.5mm/18.5mm	0.9in./0.9in., 0.9in./0.9in. ; 23.0mm/23.0mm, 23.0mm/23.0mm
Net Dimensions (without stand; WxHxD)	36.2 x 21.0 x 2.6 in. / 920.6 x 532.2 x 66.5mm	41.6 x 24.0 x 2.5 in. / 1055.4 x 608.6 x 64.5mm	49.2 x 28.4 x 2.5 in. / 1250.2 x 721 x 64.5mm	62.5 x 36.2 x 3.4 in. / 1587 x 919.6 x 86.9mm
Net Weight (without stand)	39.7 lbs. / 18 kg	46.3 lbs. / 21 kg	55.8 lbs. / 25.3 kg	103.6 lbs. / 47.0 kg
VESA Hole Configuration	300 x 300mm (4-hole)			
ENVIRONMENTAL CONDITIONS				
Operating Temperature	32-104°F / 0-40°C			
Operating Humidity	20 - 80%			
Operating Altitude	9843 ft. / 3000m			
LIMITED WARRANTY	3 years parts and labor, including backlight*			
ADDITIONAL FEATURES	Advanced thermal capabilities; Ethernet Control and Communication; RS-232 Control and Communication; Landscape/portrait capable; Carbon footprint meter; Scheduler (w/ real-time clock); Screen saver function; Ambient light sensor; Optional human sensor; Intelligent Wireless Data (Near Field Communication); Second expansion slot; Expanded daisy chain (DP 1.2); 6-axis color adjustment; Metal rear cabinet; POP/PIP/Side-by-Side; Handles; Variable picture modes; Fixed/Variable Audio Out; Input labeling; Backlight adjust; Aspect ratio control; Built-in speakers; LED edge-lit backlighting; OPS/Expansion slot			
SHIPS WITH	Power cord; 1.8m DVI-D cable; Wireless remote control; Batteries; CD-ROM (user manual); Option board slot cover; Screws; Thumbscrews			
OPTIONAL ACCESSORIES	Display Wall Calibrator Kit (KT-LFD-CC); Stand (ST-322 for P403/P463, ST-5220 for P553, ST-801 for P703), Wall mount (WMK-3257), Slim wall mount (WMK-3255S for P403, P463 and P553), Video Wall kit (KT-TMX4C, KT-TMX9C)			

* Warranty restrictions apply. Contact your representative for details.

-AVT= with integrated tuner



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NEC Display Solutions

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 866-NEC-MORE

NEC MultiSync® E Series

Eco-friendly desktop LCD monitors ideal for corporate environments

Elevate the eco-friendliness of your work environment. The NEC MultiSync E Series, featuring LED-backlit, widescreen LCD displays, raises the standard for "green" computing. Compared to previous generation NEC LCDs, these models consume less power overall, radiate less heat, use less packaging, weigh less and utilize more recycled plastics in their production.

It's easy to be green. The MultiSync E Series is loaded with features that promote environmental consciousness. These displays consume less power by using energy-efficient LED backlighting, also utilize ECO Mode™, Intelligent Power Manager (IPM), an off timer and an ambient light sensor that automatically dims the screen to further reduce energy consumption. In addition, these models tout a built-in carbon footprint meter that tracks the conservation of green gas emissions and are free of hazardous materials such as mercury and arsenic.



A new perspective on productivity. These displays' wide-format screens (16:9 and 16:10 aspect ratios) provide roughly the same work area as two smaller-sized LCD screens, allowing you to work simultaneously in multiple/side-by-side application windows (All models except E171M). This functionality, combined with contrast ratios of up to 25,000:1 (dynamic), full connectivity with a DisplayPort input and an ergonomic design, allows the MultiSync E Series to deliver the best in form and function to your desktop.

Highlights

- **10-point multi-touch** provides flexible navigation and control for various applications (E232WMT)
- **LED backlight technology** provides for industry-leading low power consumption and less hazardous materials
- **Four-way ergonomic stand** boasts pivot, tilt, swivel and height adjustment to maximize your viewing comfort (E171M - tilt and height)
- **Displayport input** provides expanded connectivity with advanced technology (Widescreen models)
- **Ambient light sensor** minimizes power consumption by automatically adjusting the brightness to the optimal setting depending on ambient lighting, screen content or both (Widescreen models)
- **Full HD web cam** provides crisp, clear video for video conferencing (E232WMT)
- **ECO Mode®** allows you to manually adjust the display's brightness to two preset settings, including ENERGY STAR®, saving more power and reducing your energy costs
- **Intelligent Power Manager (IPM) system and off timer** provide innovative, power-saving methods and reduce CO₂ emissions by shifting to a lower power consumption level or automatically powering down when the monitor is on but not in use
- **Carbon footprint meter** helps track and calculate the reduction of green gas emissions, while the resettable cost meter (via On Screen Display) indicates electricity cost savings based on currency settings
- **Dynamic Video Mode** enhances video and images with real-time optimization of brightness, color and contrast
- **Integrated speakers** provide crisp localized sound for various applications (E171M, E243WMI and E232WMT)
- **EPEAT Silver / Gold compliance** ensures the displays reduce hazardous waste and electricity usage, resulting in lower energy costs and increased protection for the environment
- **ENERGY STAR 6.0 compliance** reduces electrical costs and lowers total cost of ownership
- **NEC Display Solutions' quality and reliability** provide peace of mind with a 3-year limited parts and labor warranty (including backlight) and unrivaled customer service and technical support

Specifications for MultiSync E171M/E201W/E223W/E224Wi/E231W/E243Wmi/E232WMT

MODEL	E171M	E201W	E223W	E224Wi	E231W	E243Wmi	E232WMT	
DISPLAY								
Panel Technology		TN		AH-IPS	TN	AH-IPS	AH-IPS	
Backlight Type	W-LED							
Viewable Image Size	17"	20.1"	22"	21.5"	23"	23.8"	23"	
Aspect Ratio	5:4	16:9	16:10		16:9			
Native Resolution	1280x1024	1600 x 900	1680 x 1050	1920 x 1080				
Pixel Pitch	0.26mm	0.28mm	0.28mm	0.25mm	0.27mm	0.28mm	0.27mm	
Pixels Per Inch	96 @ native resolution		90 @ native resolution	102 @ native resolution	96 @ native resolution	93 @ native resolution	96 @ native resolution	
Brightness (typical)	250 cd/m ²							
Contrast Ratio (typical)	1000:1 (25,000: dynamic)							
Viewing Angle (typical)	170° Vert., 176° Hor. (85U/85D/88L/88R) @ CR>5	178° Vert., 178° Hor. (89U/89D/89L/89R) @ CR>5		178° Vert., 178° Hor. (89U/89D/89L/89R) @ CR>10	170° Vert., 176° Hor. (85U/85D/88L/88R) @ CR>10	178° Vert., 178° Hor. (89U/89D/89L/89R) @ CR>10	170° Vert., 170° Hor. (85U/85D/85L/85R) @ CR>10	
Response Time (typical)		5ms		6ms	5ms			
Displayable Colors	More than 16.7 million							
Synchronization Range								
Horizontal (Analog/Digital)	31.5-81.1kHz	31.5-82.3 kHz		31.5-81.1 kHz	31.5-83 kHz	31.5-81.1 kHz	31.5-83 kHz	
Vertical	45-76Hz	56-75 Hz	56-75 Hz	56-76 Hz	56-75 Hz	56-76 Hz	56-75 Hz	
Input Signal								
Video	Analog RGB 0.7 Vp-p/75 Ohms							
Sync	Separate Sync: TTL Level (Positive/Negative); Composite Sync: TTL Level (Positive/Negative); Composite Sync on Green: (0.3Vp-p negative 0.7Vp-p positive)							
Input Connectors	DVI-D and VGA 15-pin D-sub	DisplayPort, DVI-D, VGA 15-pin D-sub					DVI-D, HDMI, VGA 15-pin D-Sub	
POWER CONSUMPTION								
On (typical)	12W	28W	24W	26W	28W	19W	24W	
Power Savings Mode (typical)	0.15W	0.34W	0.35W	0.4W	0.34W	0.4W	0.8W	
PHYSICAL SPECIFICATIONS								
Dimensions (WxHxD)								
Net (with stand)	14.5 x 14.1-16.1 x 9.1 in. / 368 x 358.5-408.5 x 230mm	18.8 x 14.1-18.5 x 8.4 in. / 477 x 359.3-469.3 x 213.9mm	19.8 x 15.1-19.4 x 8.4 in. / 503.5 x 383.3-493.3 x 213.9mm	20 x 14.4-18.7 x 8.4 in. / 507.4 x 364.5-474.5 x 213.9mm	21.7 x 15-19.4 x 8.4 in. / 551.2 x 381-492.8 x 213.4mm	22.0 x 14.9-19.3 x 8.4 in. / 557.8 x 379.6-489.6 x 213.9mm	22.1 x 14.0-16.4 x 9.8 in. / 561 x 354.9-416.7 x 249.7mm	
Net (without stand)	14.5 x 12.6 x 2.4 in. / 368 x 320.5 x 61mm	18.8 x 11.2 x 2.2 in. / 477 x 285.6 x 55mm	19.8 x 13.0 x 2.4 in. / 503.5 x 329.7 x 60.5mm	20 x 11.9 x 2.3 in. / 507.4 x 301.1 x 58.5mm	21.7 x 13 x 2.8 in. / 551.2 x 330.2 x 71.1mm	22.0 x 13.0 x 2.3 in. / 557.8 x 331.4 x 58.5 mm	21.4 x 12.7 x 2.4 in. / 561 x 354.2 x 57.2 mm	
Weight								
Net (with stand)	9.3 lbs / 4.2 kg	11.9 lbs. / 5.4 kg	10.8 lbs. / 4.9 kg	13.0 lbs. / 5.9 kg	13.7 lbs. / 6.2 kg	13.9 lbs. / 6.3 kg	16.8 lbs. / 7.6 kg	
Net (without stand)	6.6 lbs. / 3.0 kg	7.6 lbs. / 3.4 kg	7.1 lbs. / 3.2 kg	8.6 lbs. / 3.9 kg	9.3 lbs. / 4.2 kg	9.5 lbs. / 4.3 kg	11.7 lbs. / 5.3 kg	
VESA Hole Configuration	100 x 100mm							
ENVIRONMENTAL CONDITIONS								
Operating Temperature	41-95°F / 5-35°C							
Operating Humidity	20 - 80%							
Operating Altitude	6562 ft. / 2000m							
Storage Temperature	14-140°F / -10-60°C							
Storage Humidity	10-85%							
Storage Altitude	40,000 ft. / 12,192m							
ENVIRONMENTAL COMPLIANCE								
ENERGY STAR	6.0							
TCO	6.0	5.0		6.0	5.0	6.0		
EPEAT	Silver							
RoHS	Yes							
LIMITED WARRANTY								
	3 years parts and labor, including backlight*							
ADDITIONAL FEATURES								
	Auto brightness with ambient light sensor (select models); ECO Mode; Carbon footprint meter(select models); Resettable cost meter(select models); Thin frame; Tilt; Swivel(select models); Pivot(select models); Height-adjustable stand; Carrying handle(select models); Rapid Response; USB 3.0 Hub (E232WMT); FHD Web cam (E232WMT); Integrated speakers(Select models); Ambix; XtraView; OSD* user controls; OSD Lock Out; NaViKey; NaViSet software; Hot key; Cable management; NaViSet™ Administrator 2; VESA mount; HDMI-capable via DVI adapter; HDCP; DDC/CI; No Touch Auto Adjust; Plug and Play (VESA DDC 2B); VESA DPMS power management; Dynamic Video Mode; AccuColor color control; Digital smoothing; Digital controls; ISO 9241-307 Class I; Windows 7- and 8-certified							
SHIPS WITH								
	Setup sheet; User manual; Power cord; 15-pin D-sub cable; DVI-D cable							



E232WMT with multi-touch LCD and FHD webcam



Ergonomic capabilities



Touch-sensitive OSD controls (select models)



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NEC Display Solutions

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866-NEC-MORE

necdisplay.com

NEC



Large Screen Display Wall Mounts/Stand

Flat Panel Display Table Stand (for 55")



Stand
MODEL: **ST-5220**

Easily adapt your display for surface viewing

Section 274100 2.3.D.13.c (RFI 375) -Comply
Section 274100 2.4.E.15.c (RFI 375) -Comply
Section 274100 2.7.D.14.b (RFI 375) -Comply
Section 274100 2.8.D.14.b (RFI 375) -Comply

Works With

compatible with the following products:

Models

- [LCD5220-AV](#)
- [LCD5220-AVT](#)
- [MDG5MP-BNDL](#)
- [P521](#)
- [P521-AVT](#)
- [P551](#)

- [P551-AVT](#)
- [P552](#)
- [P552-AVT](#)
- [P552-TMX4D](#)
- [P553](#)
- [P553-AVT](#)
- [P553-DRD](#)
- [P553-PC](#)
- [S521](#)
- [S521-AVT](#)
- [V551](#)
- [V551-AVT](#)
- [X551S](#)
- [X551UN](#)
- [X554UN](#)
- [X554UN-2](#)

Flat Panel Display Table Stand (for 65")

Large Screen Display Wall Mounts/Stand



Works With

compatible with the following products:

Models

• V651

• V651-AVT

• V651-TM

• V651-TOUCH

• **V652**

- V652-DRD

- V652-TM

- X651UHD

DISPLAY

AVAILABLE COLORS



White



Silver



Black



SHOWN IN BLACK

KEY FEATURES

- 55" Pro Series True Outdoor All-Weather LED Television for permanent outdoor installation
- Ultra-Bright (700 NIT) 55" full HD, 1080p LED screen for improved outdoor viewing
- Direct Sunlight-Readable
- High temperature Enhanced Solar Tolerance (EST) technology prevents isotropic backout
- Exterior designed to protect internal components from rain, snow, dust, insects, humidity, and salt air.
- Powder-coated rust-proof aluminum exterior for strength and durability.
- Multi-fan airflow system keeps the unit cool and dry in temperatures up to 122 degrees F.
- Ability to operate in cold weather (-40 degrees F).
- Ambient Light Sensor provides automatic dimming of backlight for night time viewing.
- Front tempered anti-reflective glass window provides added protection to LED screen, and safeguards against vandalism & abuse.
- RS232 serial control with discrete on, off, and input control.
- Rear IR receiver (located in the cable-entry compartment).
- Innovative water-tight Cable Entry System seals out moisture and allows for easy hook-ups.
- Optional media player compartment door to house a digital media player, Pro:Idiom set top box, or fan-less PC's.
- Weatherproof detachable 20W speaker module (included), remote control, and control buttons.
- Side control button lock-out prevents unauthorized users from changing the programming.
- Includes warranty and manual
- Landscape installation only. (For Portrait installation see DS-5517P)

<p>SCREEN</p>	<p>SCREEN 55-inch Diagonal Color Active Matrix TFT LED</p> <p>RESOLUTION 1920 x 1080 Full-HD 1080p</p> <p>ASPECT RATIO 16:9</p> <p>CONTRAST RATIO 1300:1</p>	<p>FRAME RATE 120 Hz</p> <p>VIEWING ANGLE 178° x 178°</p> <p>RESPONSE TIME 12 milliseconds</p> <p>TV FORMATS 1080p, 1080i, 720p, 720i, 480p, 480i</p>
<p>CONNECTIONS</p>	<p>RF Antenna/CATV (ATSC/QAM/NTSC) x1</p> <p>HDMI HDMI™ Input x2</p> <p>VIDEO COMPOSITE S-Video x1 and Composite Video x1, L/R Audio Inputs x1</p> <p>VIDEO COMPONENT YPbPr plus Stereo Audio x2</p> <p>PC 15-pin D-sub VGA plus Stereo Audio</p>	<p>CONTROL SET RS232 Serial, Discrete IR Control, Concealed IR Window</p> <p>AUDIO OUT Digital SPDIF Audio(Fixed) Analog 1/8" headphone jack (Variable)</p> <p>SPEAKER 20 WATT speaker bar (included)</p> <p>INPUT POWER 100-240 VAC, 50-60 Hz 2.0 A @ 120v Max (1.25 A @ 120v)</p>
<p>TEMPERATURE TOLERANCES</p>	<p>OPERATING TEMP -40° to 122° F. (-40° to 50°C.)</p> <p>NON-OP. TEMP -40° to 140° F. (-40° to 60°C.)</p> <p>(OFF MODE WITH POWER APPLIED) The non-operating temperature feature requires power to be applied.</p>	
<p>PHYSICAL SPECS</p>	<p>ACCESSORIES INCLUDED Weatherproof remote control</p> <p>EXTERIOR Powder-coated aluminum.</p> <p>EXTERIOR COLORS Black, Silver, White</p> <p>TV DIMENSIONS 52.46" W x 31.44" H (33.50" H with speaker) x 7.80" D</p> <p>TV WEIGHT 115.0 lbs.(120.0 lbs with speaker)</p>	<p>SHIPPING DIMENSIONS 59" W x 41" H x 13" D</p> <p>SHIPPING WEIGHT 134.0 lbs.</p> <p>RESIDENTIAL WARRANTY Two-year parts and labor.</p> <p>COMMERCIAL WARRANTY Two-year parts and labor.</p>

Compare Products

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42\"/>

Section 274100 2.13.G.9.b Comply

SB-WM46NA

- All-weather, strong, non-articulating wall mount with tilt
- Includes stainless steel and/or zinc-plated hardware
- UL Rated

SKU SB-WM46NA

Manufacturer No

Color Black

Rugged, non-articulating flat wall mount for SunBrite TV 42\", 46\", 47\", 55\" and 65\" models (landscape models only, not for portrait digital signage or portrait touch screen models), including:

- SB-4217HD
- SB-4670HD
- SB-5570HD
- SB-5518HD
- SB-5517HD
- DS-5517TSL
- SB-6570HD

Short

Description

All-weather, rust-proof and created specifically for SunBrite TV, the WM46NA wall mount includes a **lifetime guarantee** - offering confidence that this mount will be a long-time, supportive companion for your new outdoor TV. Includes stainless steel hardware.

- [Add to Wishlist](#)

[Remove This Item](#)



42\"/>

Section 274100 2.13.G.9.c Comply

CM46A12

- Includes adjustable extension column providing up to 6\" above unit to ceiling in 1\" increments without dis-assembly and 6\" speed connect ceiling plate
- SB-CM46A12B (Black)
- Wt: 17 lbs
- Ceiling adapter plate is included
- UL Rated

SB-CM46A12SL

N/A

No

Weather-proof, rust-proof, ceiling mount with tilt for 42\", 46\", 47\" & 55\" landscape models, including:

- SB-4217HD
- DS-4717TSL
- SB-4670HD
- SB-5570HD
- SB-5517HD
- SB-5560HD
- SB-5515HD
- 5507 series

Includes 12\"-18\" adjustable extension column in 1\" increments and stainless steel hardware. The back mounting plate is available in black only. A ceiling adapter plate is included.

[Remove This Item](#)



24\"/>

Section 274100 2.13.G.9.d Comply

SB-CMS0203

- Adjustable extension column 24\" - 36\"
- For use with 32\" - 46\" - 55\" ceiling mounts
- UL Rated

SB-CMS0203

N/A

No

Adjustable extension column 24\" to 36\" for 32\", 46\", 55\" ceiling mounts. Silver or black. **NOTE:** This product is available in color black. The product photo may appear as silver even after black is selected.

Solution Type:	Universal
Tilt:	+ 5° , - 15°
Typical Screen Sizes:	10 - 32"
Wall Stud Compatibility (inches):	Single Stud
Weight Capacity:	45 lbs (20.4kg)

Frequently Asked Questions

Q: What if my display is not listed in the cross-reference chart or MountFinder Pro?

A: Chief's mounts fit VESA® compliant displays with a 75 x 75 mm or 100 x 100 mm hole pattern. If your hole pattern does not match the VESA standard, call Customer Service to determine if Chief has a mount to fit your display.

Q: What if my display weighs 45 lbs (20.5 kg) or more?

A: Chief also provides mounts for Medium and Large Flat Panel Displays. See the Medium or Large Flat Panel area for a variety of mounting solutions.

Q: What size padlock can I use to add security?

A: Use a padlock with a maximum diameter of 0.25" (6.4 mm)

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Wall Mount for 17"-32"



FTR4100

Small Flat Panel Tilt Wall Mount

A tilt wall mount for small flat panel TVs or monitors that provides smooth fingertip tilt for viewing from multiple angles.

- Smooth tilt adjustment.
- Portrait or landscape mounting options.
- Chief's exclusive Q-Latch™ Mounting System saves installation time.

Section 274100 2.10.AA.10.c-Comply
 Section 274100 2.12.A.7.b -Comply
 Section 274100 2.12.C.10.b -Comply
 Section 274100 2.13.A.12.b -Comply

Color



Certifications



Features

- Accommodates most 18" VESA® 75 x 75 mm and 100 x 100 mm compliant displays

Specifications

Certifications:	UL Listed
Color:	Black
Drywall:	x
Maximum Screen Thickness:	6"
Minimum Depth:	1.95" (49.5mm)
Mounting Pattern Compatibility (Universal Versions):	75 x 75mm ,100 x 100mm
Orientation:	Landscape, Portrait
Overall Dimensions (H x W x D):	5.4" x 5.3" x 2.0" (137 x 135 x 50mm)
Shipping Weight:	3.00
Solution Type:	Universal
Tilt:	+ 5° , - 15°
Typical Screen Sizes:	10 - 32"
Wall Stud Compatibility (inches):	Single Stud
Weight Capacity:	45 lbs (20.4kg)

Frequently Asked Questions

Q: What if my display is not listed in the cross-reference chart or MountFinder Pro?

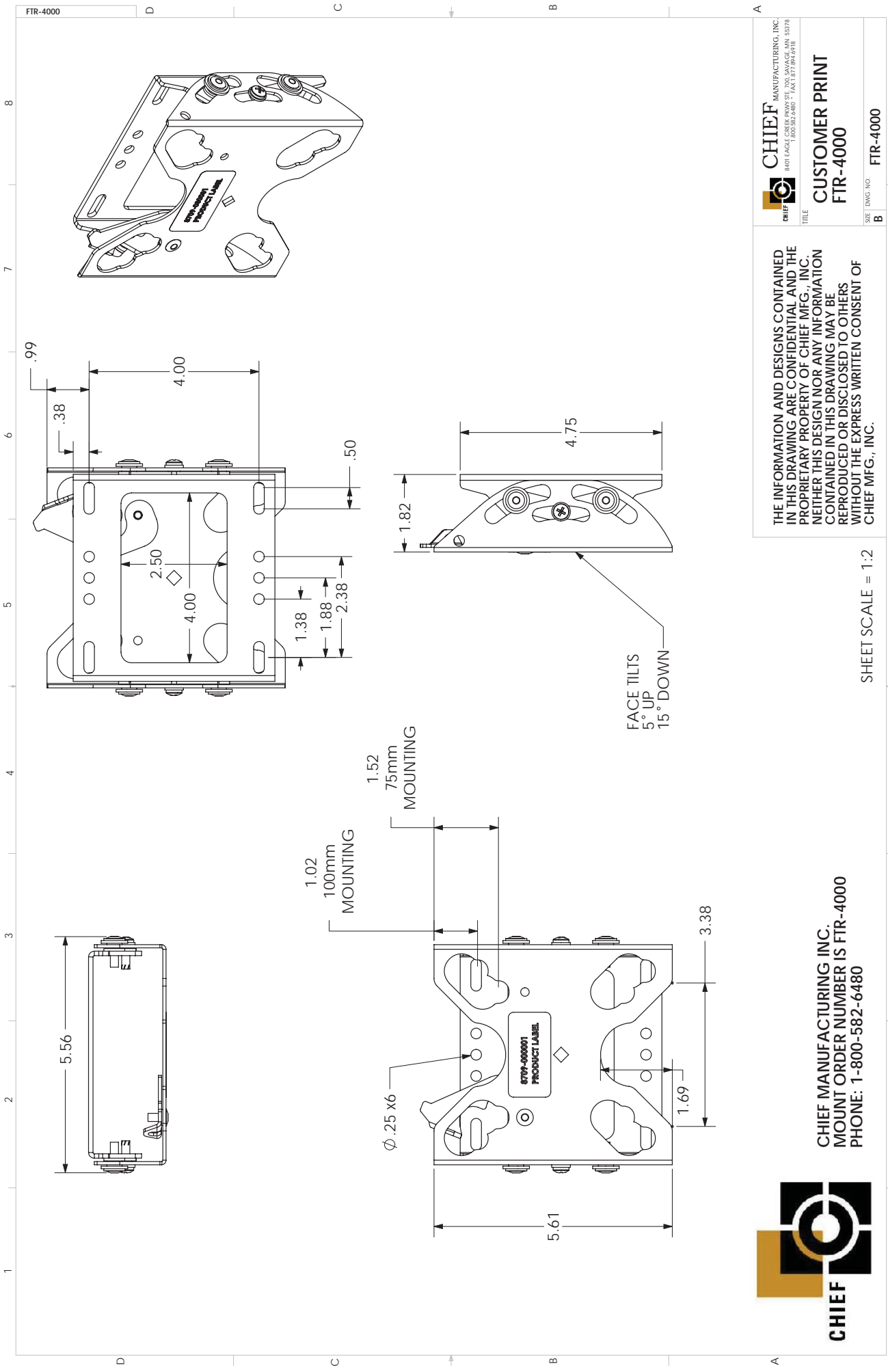
A: Chief's mounts fit VESA® compliant displays with a 75 x 75 mm or 100 x 100 mm hole pattern. If your hole pattern does not match the VESA standard, call Customer Service to determine if Chief has a mount to fit your display.

Q: What if my display weighs 45 lbs (20.5 kg) or more?

A: Chief also provides mounts for Medium and Large Flat Panel Displays. See the Medium or Large Flat Panel area for a variety of mounting solutions.

Q: What size padlock can I use to add security?

A: Use a padlock with a maximum diameter of 0.25" (6.4 mm)



SHEET SCALE = 1:2



CHIEF MANUFACTURING INC.
 MOUNT ORDER NUMBER IS FTR-4000
 PHONE: 1-800-582-6480

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CHIEF MANUFACTURING, INC.
 8401 EAGLE CREEK PKWY STE. 700 AVAAGE, MN 55378
 1-800-582-6480 FAX 1-877-594-6418

CUSTOMER PRINT
FTR-4000

SIZE DWG. NO. **FTR-4000**



MTM1U

Medium Fusion Micro-Adjustable Tilt Wall Display Mount

Chief upgraded fixed wall mounts based on installer feedback and direct observations of installers in the field. Many new features join Fusion favorites like Centerless shift, Centris tilt, ControlZone leveling adjustment and ClickConnect Latching.

New benefits included added stability, faster install, improved lateral shift, easier cable management and enhanced security.

Installer-inspired Fusion tilt mount solves top flat panel installation problems, offering flexible adjustments for large displays with a low-profile display mounting solution.

For single stud applications, order the [FCA1S](#) Single Stud Adaptor Accessory.

Now Available

Color



Certifications



Features

- Integrated teardrop design speeds up wall plate installation by allowing pre-installation of the bolts to the wall
- ControlZone Leveling for post-installation fine tuning of height and leveling
- Centerless Shift provides up to 12.9" (327 mm) of post-installation lateral shift for limitless centering
- Centris low-profile tilt uses the center of gravity to balance the screen while maintaining a low profile
- Set screws keep the mount rigid, stable and secure throughout the life of the installation
- ClickConnect offers an audible click when the screen safely engages with the mount
- Built-in cable stand provides easy access under the screen
- A full line of accessories can be installed with the mount and the entire unit can be adjusted together
- Multiple installation options for various stud distances
- Exclusive nesting spacers can be stacked to achieve any depth
- Quick-Store Cords use magnets to easily store and access pull cords
- Improved cable management with new end caps
- Integrated Security

Section 274100 2.11.G.6.a Comply

Ships with a custom hardware kit that can be hung from mount rails if installing in stages

- Easy Open box with less waste to throw away

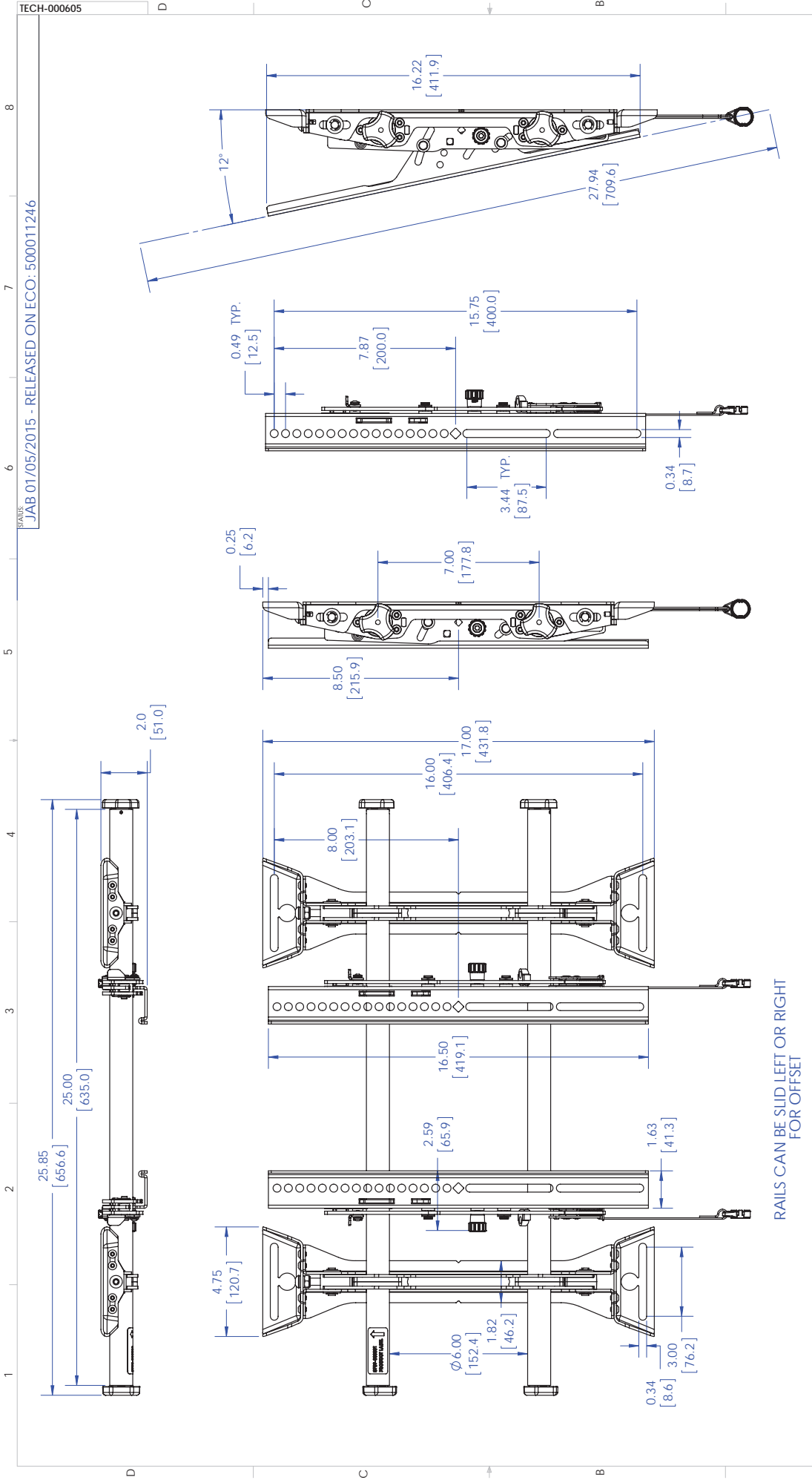
Specifications

Certifications:	UL Listed
Color:	Black
Lateral Shift:	12.9" (327 mm)
Manual Height Adjustment:	1" (25 mm)

Maximum Screen Thickness:	6"
Minimum Depth:	2" (51 mm)
Mounting Pattern Compatibility (Universal Versions):	100 x 100 mm - 650 x 400 mm
Orientation:	Landscape
Overall Dimensions (H x W x D):	17 x 25.75 x 2" (432 x 654 x 51 mm)
Shipping Weight:	19.31
Solution Type:	Universal
Tilt:	+2°, -12°
Typical Screen Sizes:	26 - 47"
Wall Stud Compatibility (inches):	16-24
Weight Capacity:	125 lbs (57 kg)

Frequently Asked Questions

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1. MAXIMUM MOUNTING PATTERN IS 22.25" (565 mm) WITHOUT REVERSING UPRIGHTS
2. MAXIMUM MOUNTING PATTERN IS 25.6" (650 mm) WITH REVERSING UPRIGHTS
3. FOR RECESSED APPLICATIONS, MINIMUM VERTICAL LIFT FOR HOOK ENGAGEMENT IS .75" (19 mm)

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MFG APPROVAL			
QA APPROVAL			
DESCRIPTION		MTM1U CUSTOMER TECHNICAL DRAWING	
MODEL NO.		MTM1U	
SEE TITLES FOR	SCALE	SHEET	REV
B	1:8	1 OF 1	01

CHIEF
 424 CITY WEST PKWY
 EDEN PRARIE, MN 55344
 PHONE: 866-977-3901
 FAX: 972-894-0918

LTM1U

Large Fusion Micro-Adjustable Tilt Wall Mount



Chief upgraded fixed wall mounts based on installer feedback and direct observations of installers in the field. Many new features join Fusion favorites like Centerless shift, Centris tilt, ControlZone leveling adjustment and ClickConnect Latching.

New benefits included added stability, faster install, improved lateral shift, easier cable management and enhanced security.

Installer-inspired Fusion tilt mount solves top flat panel installation problems, offering flexible adjustments for large displays with a low-profile display mounting solution.

Now Available

Section 274100 2.12.B.11.b Comply
Section 274100 2.13.C.13.b Comply
Section 274100 2.4.E.15.c Comply
Section 274100 2.4.F.15.c Comply
Section 274100 2.5.E.15.c Comply
Section 274100 2.10.L.13.c Comply

Color



Certifications



Features

- Integrated teardrop design speeds up wall plate installation by allowing pre-installation of the bolts to the wall
- ControlZone Leveling for post-installation fine tuning of height and leveling
- Centerless Shift provides up to 17.4" (441 mm) of post-installation lateral shift for limitless centering
- Centris low-profile tilt uses the center of gravity to balance the screen while maintaining a low profile
- Set screws keep the mount rigid, stable and secure throughout the life of the installation
- ClickConnect offers an audible click when the screen safely engages with the mount
- Built-in cable stand provides easy access under the screen
- A full line of accessories can be installed with the mount and the entire unit can be adjusted together
- Multiple installation options for various stud distances
- Exclusive nesting spacers can be stacked to achieve any depth
- Quick-Store Cords use magnets to easily store and access pull cords
- Improved cable management with new end caps
- Integrated Security
- Ships with a custom hardware kit that can be hung from mount rails if installing in stages
- Easy Open box with less waste to throw away

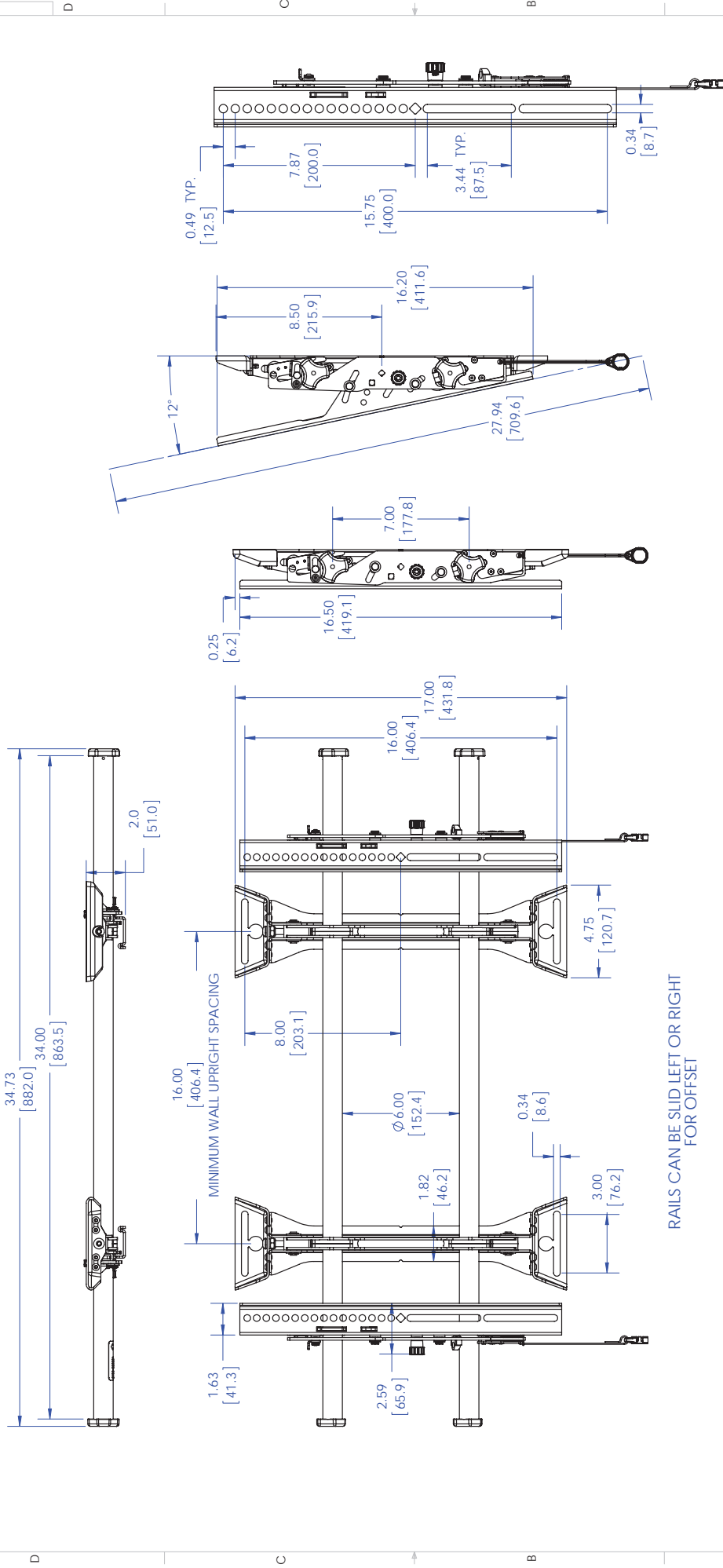
Specifications

Certifications:	UL Listed
Color:	Black
Lateral Shift:	17.4" (441 mm)
Manual Height Adjustment:	1" (25 mm)
Maximum Screen Thickness:	6"

Minimum Depth:	2" (51 mm)
Mounting Pattern Compatibility (Universal Versions):	100 x 100 mm - 870 x 400 mm
Orientation:	Landscape
Overall Dimensions (H x W x D):	17 x 34.75 x 2" (432 x 883 x 51 mm)
Shipping Weight:	22.01
Solution Type:	Universal
Tilt:	+2°, -12°
Typical Screen Sizes:	37 - 63"
Wall Stud Compatibility (inches):	16-32"
Weight Capacity:	200 lbs (91 kg)

Frequently Asked Questions

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RAILS CAN BE SLID LEFT OR RIGHT FOR OFFSET

1. MAXIMUM MOUNTING PATTERN IS 31.25" (793 mm) WITHOUT REVERSING UPRIGHTS
2. MAXIMUM MOUNTING PATTERN IS 34.6" (878 mm) WITH REVERSING UPRIGHTS
3. FOR RECESSED APPLICATIONS, MINIMUM VERTICAL LIFT FOR HOOK ENGAGEMENT IS .75" (19 mm)

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QA APPROVAL		

CHIEF
4624 CITY WEST PKWY
EDEN PRARIE, MN 55344
PHONE: 866-977-3901
FAX: 972-824-6038

DESCRIPTION
LITMTU CUSTOMER TECHNICAL DRAWING

SEE TITMS NO
LITMTU
B TECH-000607

SHEET 1 OF 1

SCALE
1:8

REV
01

Wall Mount for 70"

XTM1U

X-Large Fusion Micro-Adjustable Tilt Wall Mount

Chief upgraded fixed wall mounts based on installer feedback and direct observations of installers in the field. Many new features join Fusion favorites like Centerless shift, Centris tilt, ControlZone leveling adjustment and ClickConnect Latching.

New benefits included added stability, faster install, improved lateral shift, easier cable management and enhanced security.

Installer-inspired Fusion tilt mount solves top flat panel installation problems, offering flexible adjustments for large displays with a low-profile display mounting solution.

Now Available



Color



Certifications



Features

- Integrated teardrop design speeds up wall plate installation by allowing pre-installation of the bolts to the wall
- ControlZone Leveling for post-installation fine tuning of height and leveling
- Centerless Shift provides up to 21.4" (543 mm) of post-installation lateral shift for limitless centering
- Centris low-profile tilt uses the center of gravity to balance the screen while maintaining a low profile
- Set screws keep the mount rigid, stable and secure throughout the life of the installation
- ClickConnect offers an audible click when the screen safely engages with the mount
- Built-in cable stand provides easy access under the screen
- A full line of accessories can be installed with the mount and the entire unit can be adjusted together
- Multiple installation options for various stud distances
- Exclusive nesting spacers can be stacked to achieve any depth
- Quick-Store Cords use magnets to easily store and access pull cords
- Improved cable management with new end caps
- Integrated Security
- Ships with a custom hardware kit that can be hung from mount rails if installing in stages
- Easy Open box with less waste to throw away

Section 274100 2.5.F.15.b Comply

Specifications

Certifications:	UL Listed
Color:	Black
Lateral Shift:	21.4" (542 mm)
Manual Height Adjustment:	1" (25 mm)
Maximum Screen Thickness:	6"

Minimum Depth:	2.5" (64 mm)
Mounting Pattern Compatibility (Universal Versions):	100 x 100 mm - 1070 x 600 mm
Orientation:	Landscape
Overall Dimensions (H x W x D):	24.5 x 42.75 x 2.5" (622 x 1086 x 64 mm)
Shipping Weight:	27.24
Solution Type:	Universal
Tilt:	+5°, -12°
Typical Screen Sizes:	55 - 82"
Wall Stud Compatibility (inches):	24-42
Weight Capacity:	250 lbs (114 kg)

Frequently Asked Questions

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Ceiling Mount for Flat Panel Display



LCM1U

FUSION™ Large Flat Panel Ceiling Mount

Chiefs FUSION™ Flat Panel Ceiling Mounts are installer inspired and offer perfect TV positioning and flexible adjustments for large flat panel screens. Great for digital signage installations.

- Ceiling Plate and extension column are required and must be ordered separately
- Compatible with traditional 1.5" NPT and new CPA pinned ceiling plates and column systems
- See [ceiling plates](#) and extension columns ([Adjustable](#) and [Fixed](#)) for 1.5" NPT compatibility
- See CPA ceiling plates and CPA columns for pin connection compatibility

Color



Certifications



Features

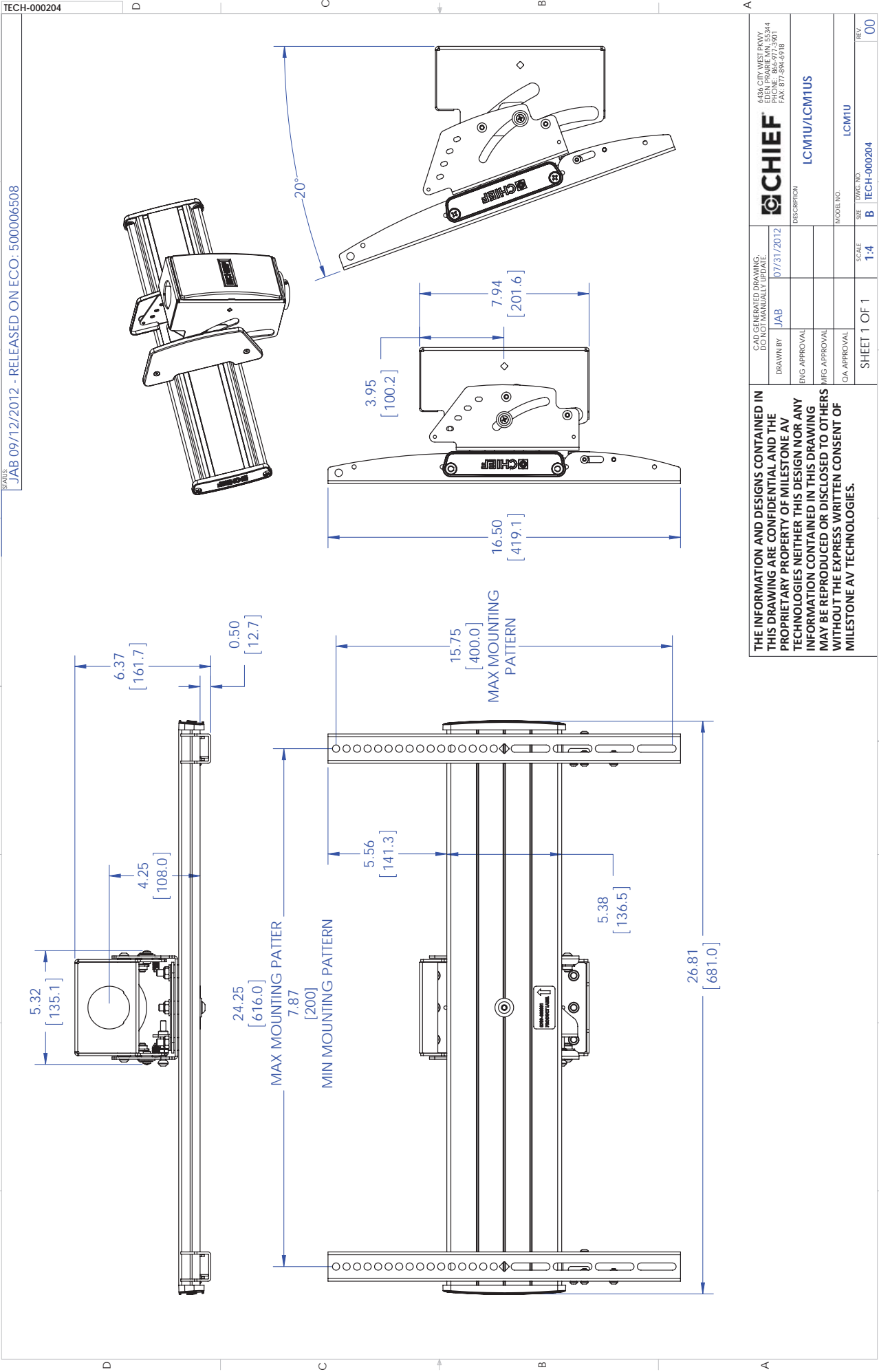
- REPEATABILITY
 - Continuous tilt ranges with four set locking points to eliminate guess work when adjusting multiple screens.
- ACCESSIBILITY
 - Simple on/off connection for ease of installation and service.
- CENTRIS® FINGERTIP TILT
 - Effortlessly adjust display using Centris fingertip tilt technology.
- SIMPLE & SECURE
 - Tool free screen engagement with optional padlock security.
- FLEXIBILITY
 - Mount swivels to any preferred viewing angle.

Section 274100 - 2.11.F.6.a Comply

Specifications

Adjustments:	Roll, +/- 3°
Certifications:	UL Listed
Color:	Black
Equipment Weight Capacity:	125 lbs (56.7 kg)
Mounting Pattern Compatibility (Universal Versions):	200mm x 100mm - 616 x 400mm
Orientation:	Landscape
Overall Dimensions (H x W x D):	16.5" x 26.8" x 6.4" (420 x 681 x 162 mm)
Shipping Weight:	18.87
Tilt:	+ 5° , - 20°

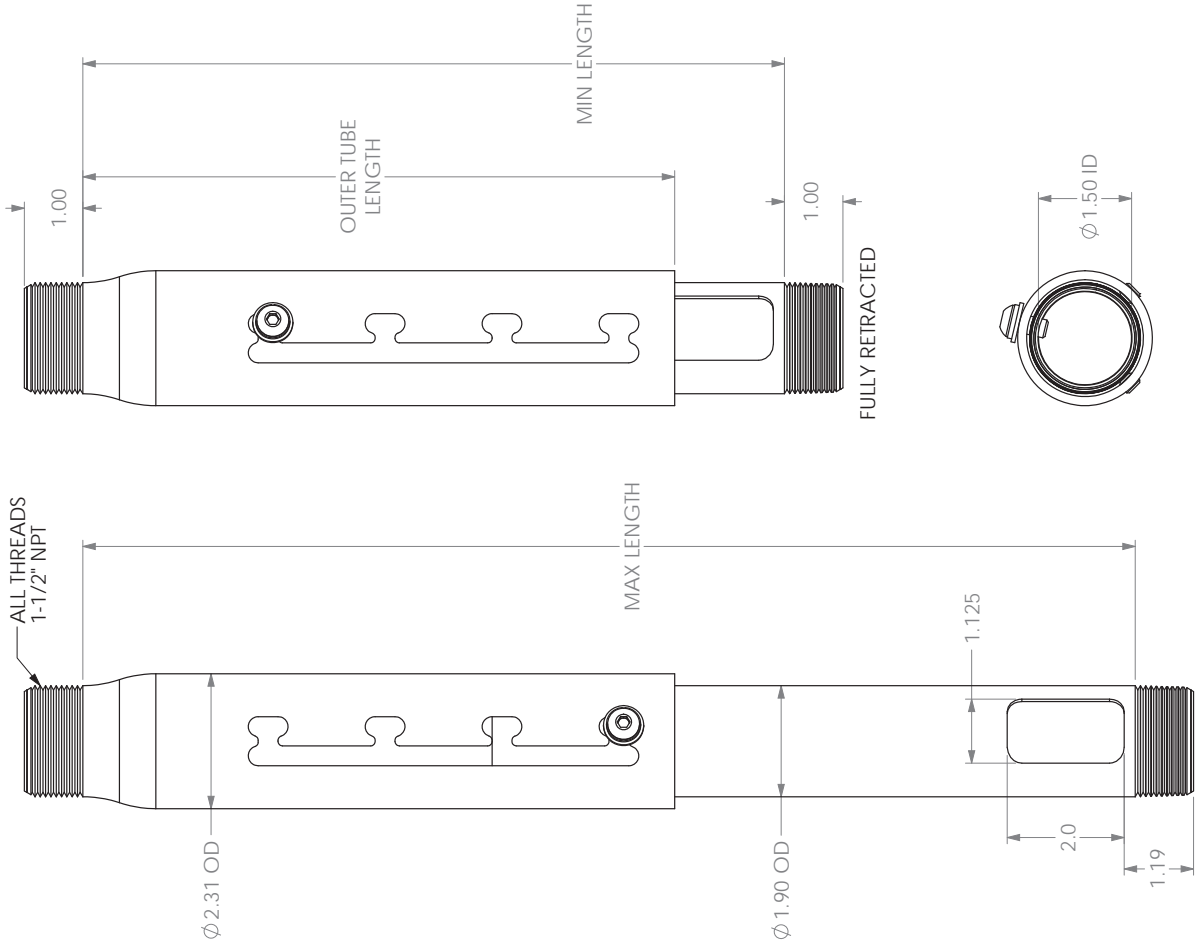
Frequently Asked Questions



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CHIEF	
424 CITY WEST PARK EDEN PRAIRIE, MN 55344 PHONE: 866-977-3901 FAX: 972-894-6918	
DESCRIPTION	LCMTU/LCMTUS
MODEL NO.	LCMTU
SIZE	TOMS NO
SHEET 1 OF 1	SCALE 1:4
REV	00



Section 274100 2.10.K.9.f -Comply

Section 274100 2.11.F.6.a-Comply

CMS EXTENSION COLUMNS

Model #	Minimum Length (")	Maximum Length (")	Outer Tube Length (")
CMS006009	6	9	6.125
CMS009012	9	12	6.125
CMS012018	12	18	10.125
CMS018024	18	24	10.125
CMS0203	24	36	16.125
CMS0305	36	60	28.125
CMS0406	48	72	28.125
CMS0507	60	84	28.125
CMS0608	72	96	28.125
CMS0709	84	108	28.125
CMS0810	96	120	28.125
CMS0911	108	132	28.125
CMS1012	120	144	28.125

ALL PIPES CAN BE ADJUSTED IN 1" INCREMENTS

CABLE ACCESS WINDOW NOT PRESENT ON CMS006009

ALL COLUMNS ARE MADE OF ALUMINUM AND CAN SUPPORT UP TO 500 LB.

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MFG APPROVAL:	QA APPROVAL:	MODEL NO:	REV: 01
SHEET 1 OF 1		DATE: 11/26/2012	REV: 01



424 CITY WEST PARK
EDEN PRAIRIE, MN 55344
PHONE: 866-977-3901
FAX: 972-894-0918



CMA330

8" (203 mm) Offset Ceiling Plate

Allows projector cables to be routed through the extension column and out the top of the ceiling plate for cable management.

Section 274100 2.10.K.9.f -Comply
Section 274100 2.11.F.6.a -Comply

Color



Certifications



Features

- Includes 8" (203 mm) square ceiling plate with 1.75" (44 mm) high offset
- Offset provides cable exit when mounting to a flat ceiling surface
- Attaches to 1.5" NPT threaded extension column
- Overall height is 4.5" (114 mm)

Specifications

Certifications:	UL Listed
Color:	Black
Overall Dimensions (H x W x D):	4.1" x 8.0" x 8.0" (103 x 203 x 203 mm)
Shipping Weight:	6.00
Weight Capacity:	500 lbs (226.8 kg)

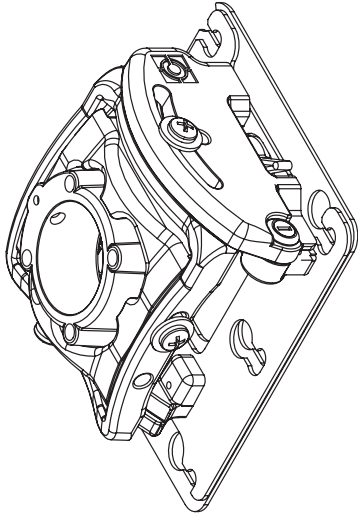
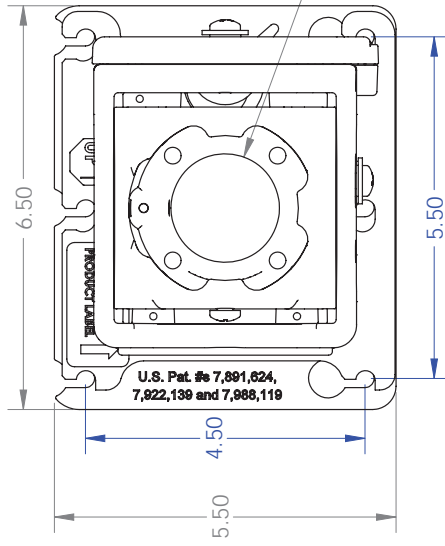
Frequently Asked Questions

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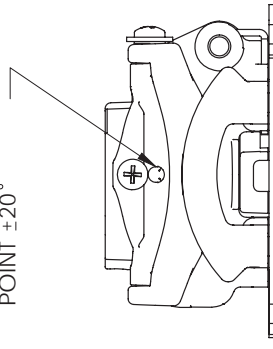
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STATUS
JS 03/15/2016 - RELEASED ON ECO: 500013518

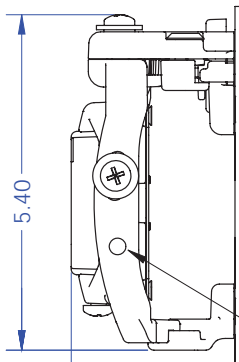
CHIEF RPMBU
Section 274100 2.10.K.9.d - Comply



YAW ADJUSTMENT
POINT $\pm 20^\circ$



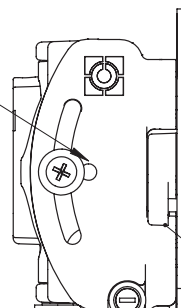
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2.79



ROLL ADJUSTMENT
POINT $\pm 3^\circ$

SECURITY LOCK

PITCH ADJUSTMENT
POINT $\pm 20^\circ$



SECURITY SWITCH

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SHEET 1 OF 1	
SCALE 1:4	

CHIEF	428, CITY WEST PKWY EDEN PRARIE, MN 55344 PHONE: 866-977-3901 FAX: 972-894-6918
DESCRIPTION	RPM ASSEMBLY W/KEYLOCK
MODEL NO.	
SEE TITLES NO.	B TECH-000769
REV	00

1 2 3 4 5 6 7 8

**MTMP1U****Medium Fusion Portrait Tilt Wall Mount**

Chief upgraded fixed wall mounts based on installer feedback and direct observations of installers in the field. Many new features join Fusion favorites like Centerless shift, Centris tilt and ClickConnect Latching.

New benefits included added stability, faster install, improved lateral shift, easier cable management and enhanced security.

Installer-inspired Fusion tilt mount solves top flat panel installation problems, offering flexible adjustments for large displays with a low-profile display mounting solution.

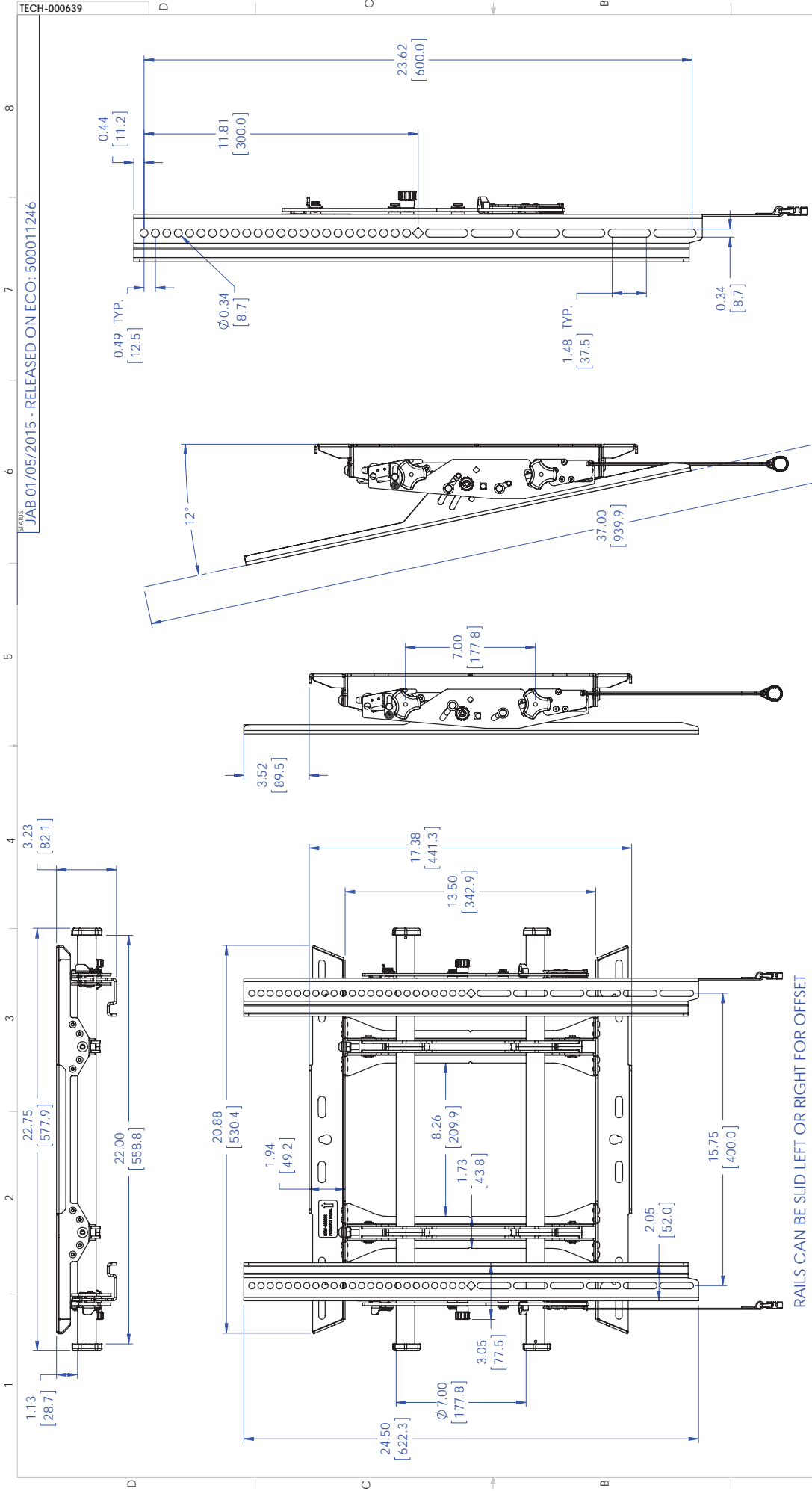
Now Available**Color****Certifications****Features**

- Integrated teardrop design speeds up wall plate installation by allowing pre-installation of the bolts to the wall
- **ControlZone** Leveling for post-installation fine tuning of height and leveling
- Centerless Shift provides up to 10.4" (265 mm) of post-installation lateral shift for limitless centering
- Centris low-profile tilt uses the center of gravity to balance the screen while maintaining a low profile
- Set screws keep the mount rigid, stable and secure throughout the life of the installation
- ClickConnect offers an audible click when the screen safely engages with the mount
- Built-in cable stand provides easy access under the screen
- A full line of accessories can be installed with the mount and the entire unit can be adjusted together
- Multiple installation options for various stud distances
- Exclusive nesting spacers can be stacked to achieve any depth

- Quick-Store Cords use magnets to easily store and access pull cords
- Improved cable management with new end caps
- Integrated Security
- Ships with a custom hardware kit that can be hung from mount rails if installing in stages
- Easy Open box with less waste to throw away

Specifications

Certifications:	UL Listed
Color:	Black
Lateral Shift:	10.4" (265 mm)
Manual Height Adjustment:	1" (25 mm)
Maximum Screen Thickness:	6"
Minimum Depth:	3.2" (81 mm)
Mounting Pattern Compatibility (Universal Versions):	100 x 100 mm - 570 x 600 mm
Orientation:	Portrait
Overall Dimensions (H x W x D):	24.5 x 20.88 x 3.2" (622 x 530 x 81 mm)
Shipping Weight:	25.25
Solution Type:	Universal
Tilt:	+5°, -12°
Typical Screen Sizes:	32 - 47"
Wall Stud Compatibility (inches):	Single stud and 16"
Weight Capacity:	200 lbs (91 kg) Dual Stud - 125 lbs (57 kg) Single Stud



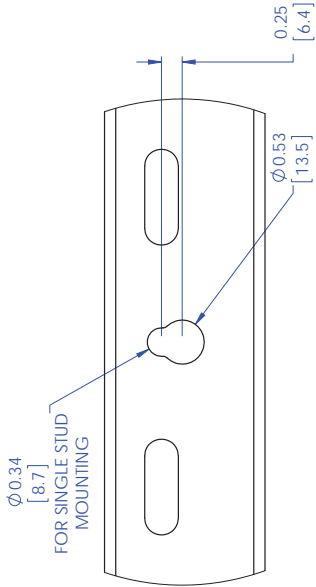
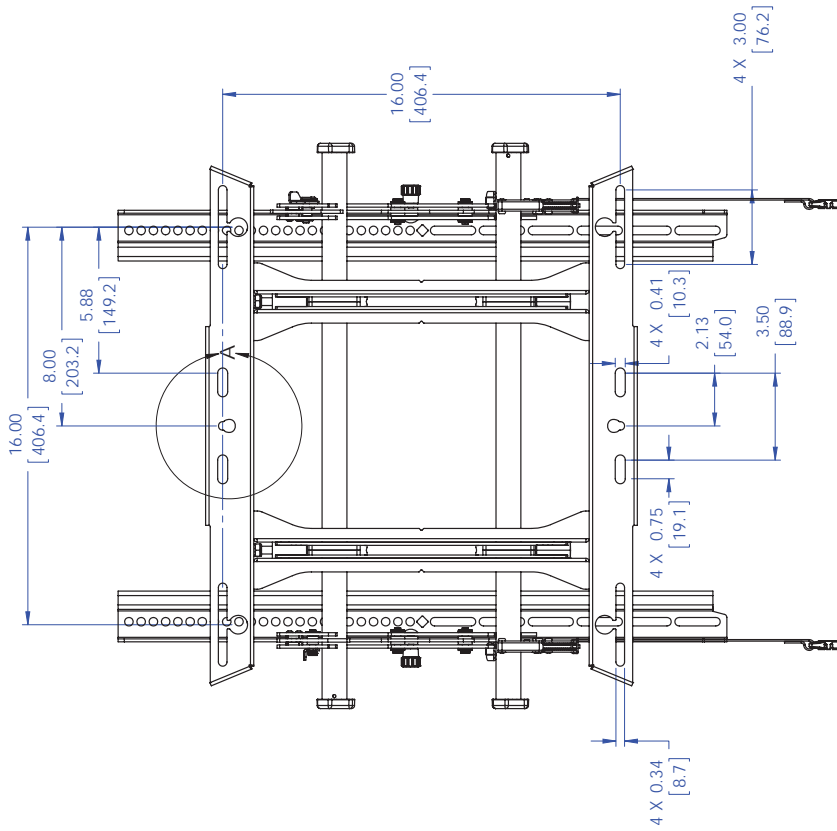
RAILS CAN BE SLID LEFT OR RIGHT FOR OFFSET

1. MAXIMUM MOUNTING PATTERN IS 18.8" (477.5 mm) WITHOUT REVERSING UPRIGHTS
2. MAXIMUM MOUNTING PATTERN IS 22.5" (571.5 mm) WITH REVERSING UPRIGHTS
3. FOR RECESSED APPLICATIONS, MINIMUM VERTICAL LIFT FOR HOOK ENGAGEMENT IS .75" (19 mm)

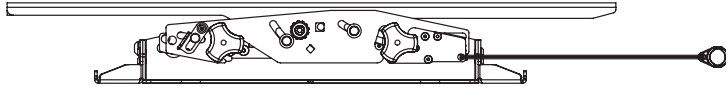
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DATE	7/11/2014
ENG APPROVAL	
MFG APPROVAL	
QA APPROVAL	
SHEET 1 OF 2	SCALE 1:8

 4284 CITY WEST PKWY EDEN PRARIE, MN 55344 PHONE: 866-977-3901 FAX: 972-894-0918	
DESCRIPTION	MTMPTU CUSTOMER TECHNICAL DRAWING
MODEL NO.	MTMPTU
SIZE	TOMAS NO
SCALE	B TECH-000639
REV	01



DETAIL A
SCALE 2 : 3



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ENG APPROVAL		MODEL NO.	MTMP1U
MFG APPROVAL		SIZE	TRIMS NO
QA APPROVAL		SCALE	1:8

CHIEF
424 CITY WEST DRIVE
EDEN PRAIRIE, MN 55344
PHONE: 866-977-3901
FAX: 972-894-6918

SHEET 2 OF 2		REV	01
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Surge Productor



AC-210A E

COMPACT POWER CONDITIONER

Section 274100 2.3.D.13.b -Comply
 Section 274100 2.4.F.15.b -Comply
 Section 274100 2.5.E.15.b -Comply
 Section 274100 2.6.E.15.b -Comply
 Section 274100 2.7.D.14.c -Comply
 Section 274100 2.8.D.14.c -Comply
 Section 274100 2.9.E.17.b -Comply
 Section 274100 2.10.K.9.e -Comply
 Section 274100 2.10.L.13.b -Comply
 Section 274100 2.12.A.7.c -Comply
 Section 274100 2.12.B.11.c -Comply
 (Replacement)

Furman's exclusive SMP Technology provides the highest level of surge & spike protection

LiFT offers linear AC power filtering to ensure clean power for unequaled audio & video

Auto-Reset EVS circuitry detects dangerous voltage irregularities and safely powers down

LED indicators provide information on power quality and operational status of unit

10 amp rating featuring circuit breaker for added protection

Zero ground contamination circuitry protects critical video circuits

Compact chassis design easily attaches to any flat screen television mount or any other remote location

LINEAR FILTERING TECHNOLOGY (LiFT)

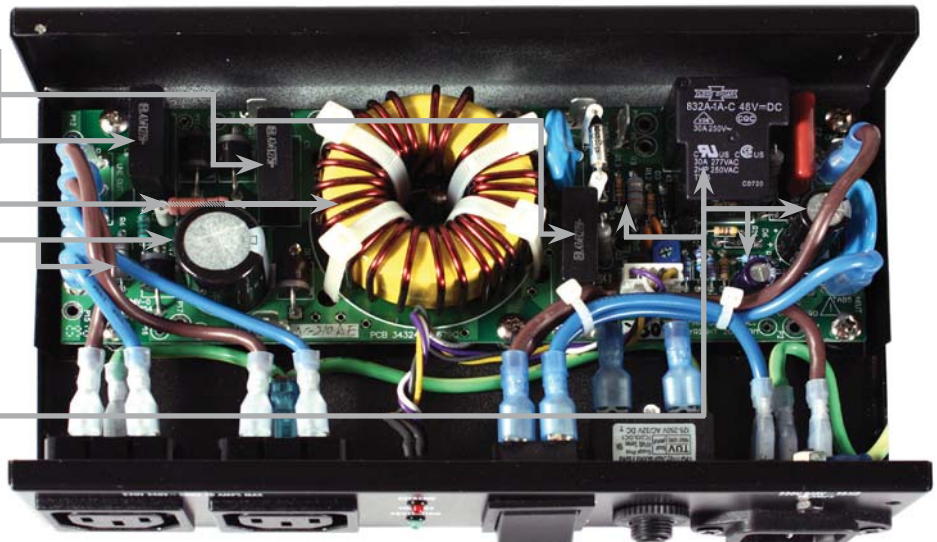
This section filters the incoming AC power in a linear fashion, reducing line noise to unprecedentedly low levels. This ensures optimum performance of all connected equipment.

SERIES MULTI-STAGE PROTECTION (SMP)

These components harness excess voltage in the incoming power and releases it safely, protecting your equipment without sacrificing components or requiring maintenance.

EXTREME VOLTAGE PROTECTION (EVS)

This circuitry senses extreme or prolonged voltage conditions and automatically turns off the unit, safely powering down all connected equipment. When voltage returns to a safe level, the unit is automatically reset.



Please Note: Illustration provides a broad overview of Furman's SMP board and does not reflect the specific complexity of each circuit therein.





CASE STUDY: NEW COPPER PENNY NIGHTCLUB

“The New Copper Penny is serviced by Brownell Sound, a Portland-based audio, video, and lighting installer. The first order of business was to determine what was causing the unusual projector problems at the club. ‘In one case, I had to replace a Viewsonic projector that I had just installed after it took out a bulb in only 175 hours,’ says Kurt Bevers, owner of Brownell Sound. ‘That is very unusual. So I brought the projector in for testing and found nothing wrong with it. But I knew something had to be going on, so I went back to the club for more testing.’ Bevers tested the signal line and the AC voltage, both of which were fine. He just couldn’t find the problem. When he was explaining this to the owner’s son, John, he asked a critical question: ‘Have you installed anything new recently?’ With a big smile, John answered that yes, they had recently installed neon signs that displayed the club’s logo. Bevers asked John to turn on the lights and tested the voltage again. This time, Bevers

discovered that the neon fixtures were releasing voltage onto the load neutral that was oscillating between 2 to 30VAC, eliminating the digital projectors’ ground reference for bulb circuits and leaving them exposed to damaging transients.

With the proper power management in place, the service calls stopped and the bulb life (projector) was not only restored, it was significantly extended. The bulb life of all the projectors increased by a minimum of 40%. ‘With the AC-215 (The AC-210 A E’s 120V equivalent), the Viewsonic projectors that are supposed to last 2,000 hours have been going for 2,900 to 3,000 hours,’ says Bevers. ‘The NEC projectors that have a projected bulb life of 4,000 hours in economy mode have been lasting about 5,400 hours.’ This translates to an extra six months of use for eight video projectors—each running for eight hours per day. It also translated to huge money savings for the New Copper Penny.”

“When Good Projectors Go Bad”

Power Conditioning Saves The Day At An Oregon Club

Source: Lighting&Sound America, June 2008

Reprinted with Permission



AC-210A E mounted inside a guitar amplifier (left) and behind a flat-screen television (above). The slim, compact design is sleek and unobtrusive, allowing for ease of use and discreet mounting anywhere that clean, filtered power is needed.

SPECIFICATIONS AC-210A E

AC Current Capacity

Input: 10 Amp capacity required

Output: 10 Amp RMS (both outlets combined)

AC Noise Attenuation, Transverse (Differential) Mode

>40dB @ 100kHz

>50dB @ 500kHz

(linear attenuation curve from 0.05 to 100Ω line impedance)

Transient Voltage Surge Suppression

230VAC - Series Multi-Stage Protection

Non-Sacrificial with Zero Ground Contamination

376V peak clamping @ 6000V/3000A Input

Extreme Voltage Shutdown

275 VAC (Auto-Reset)

Dimensions & Weight

1.75" (H) x 5" (W) x 8.5" (D)

3 lbs.

Safety Agency Listing

CE

FURMAN

Christie Q Series

Video Projector

Auditoriums

Events

Meeting rooms

Boardrooms

Government

Rental staging

Conference rooms

Health care

Video mapping

Education

Houses of worship



Available in black

Best-in-class brightness and performance in an affordable solution

CHRISTIE[®]

Christie Q Series

When high-brightness, exquisite color reproduction, precise images, powerful performance and a low profile are on your priority list, Christie® Q Series delivers. You can display presentations and videos clearly and vividly with the industry's highest quality dual-lamp 1DLP® projection solution. Christie Q Series offers a range of affordable projection options and ultra-quiet operation for performance you can trust.



Advanced features for superior image quality

eClarity

Christie eClarity advanced image processing enhances your content by improving sharpness, gloss and shading, perfect for making non high-definition content look like HD. Use eClarity to improve your standard and HD content for a brilliant, true-to-life image reproduction.



▲ Unadjusted image

▲ Adjusted image



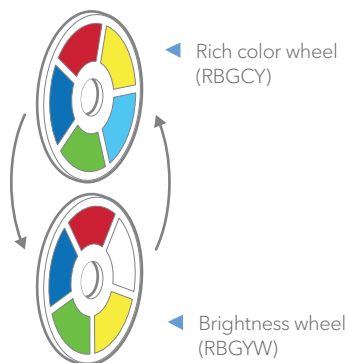
▲ Sharpen

▲ Gloss

▲ Shade

Built-in dual-color wheel

A set of two color wheels are built into the projector and can be selected at a touch of a button. The built-in color wheels allow for easy switching between high-brightness or ultra-rich color reproduction mode, perfect for your presentation needs. In large venues, the high-brightness color wheel gives you maximum output and superior white levels. The ultra-rich color wheel expands the color gamut for incredible reproduction that rivals cinema color standards.



High Dynamic Contrast Range

High Dynamic Contrast Range (HDCR) improves visual contrast to avoid giving content a washed-out effect in environments with a lot of ambient light. HDCR helps by adjusting the dynamic contrast level which will help recapture detail lost by excess ambient light on the screen.



◀ HDCR off



◀ HDCR on

Advanced image control

Motion-adaptive de-interlace delivers improved viewing of video content and fast-moving motion graphics. On-image display of gamma and color balance equalization allows you to manipulate your image configuration in real time.

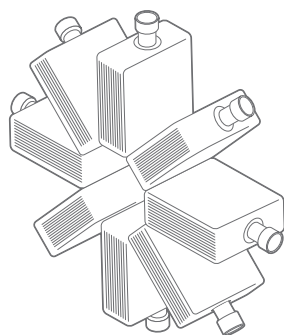


◀ Standard video capture



◀ Digital rapid motion-adaptive de-interlacer

Designed for performance



▲ 360-degree projection



▲ Standard mode



▲ DICOM simulation mode

Blending and warping capabilities

Blending and warping are easy with Christie® Q Series software and the use of off-the-shelf, standard cameras¹. The software and camera option allows for quick and easy edge-blending capabilities. You can also use the software to set up multiple projectors for warping images (advanced geometry correction) or for multi-projector blending to create large, panoramic, seamless displays.

Broad range of lens options

New lens shift capability with our Christie ultra-short throw lenses allows you to install projectors as close as necessary to your projected image without compromising display size.

Multiple screens, or creative projection on multiple areas, are not a problem with up to three memory settings for lens shift, zoom and focus recalls.

Portrait mode and 360-degree projection

Projectors can be used in portrait orientation using existing lamps, reducing your setup time and minimizing extra costs for special lamps. They can also be installed in a 360-degree configuration.

Enhanced lamp options

Dual-lamp design lets you maximize brightness or extend lamp life. Lamps can be used in relay, eco, auto backup and balance mode. Lamp life is up to 2000 hours for standard mode, up to 4000 hours for eco 2-lamp and up to 8000 hours in optional lamp relay modes. The lamps are also designed to be swapped out without shutting down the projector².

Connectivity

HDBaseT provides the latest in intelligent and flexible connectivity, simplifying installation and management by allowing for video content, audio and control to be delivered over low-cost CAT5/6e cabling to HDBaseT-compatible products.

Digital Imaging and Communication in Medical (DICOM) simulation

DICOM simulation mode provides enhanced grey scale levels for medical training³ applications requiring DICOM part 14 specifications.

Built-in LCD information display

The LCD display gives you real-time diagnostic information, assisting in network setup or helping with troubleshooting. Examples of some display options:

Lamp time
Filter hours
Projector usage
IP address

¹ Logitech : HD Pro Webcam C910 / HD Pro Webcam C920; Canon Digital SLR: T1i / T2i / T3 / T3i.

² Please reference manual for activating feature.

³ Simulation mode is for training purposes only, not for medical diagnostics of actual patients.



Section 274100 2.10.K.9.b- Compy
(Replacement)

Lens options⁴

Description	Part number
0.38 ultra-short throw lens	121-127101-01
0.8-1.0 extra short throw zoom	121-118101-01
1.2-1.8/1.1-1.7 short throw zoom	121-119102-01
1.7-2.6/1.6-2.4 standard zoom (WXGA/WUXGA)	121-120104-01
1.7-2.5 standard zoom (XGA)	121-121105-01
2.5-3.8/2.4-3.6 middle throw zoom	121-122106-01
3.6-5.8/3.7-5.9/3.5-5.6 long throw zoom	121-123107-01
5.7-9.1/5.8-9.2/5.5-8.8 extra long throw zoom	121-124108-01



- ▲ The Christie Ultra-short throw (UST) lens allows you to position your projector as close as possible to your screen or display, with a 0.38:1 throw ratio.

Wireless presentation and projector control

Using Christie Q Series projectors and the Christie QuickConnect App you can project photos, documents and websites over Wi-Fi® from your iOS or Android™ devices.



- ▲ Choice between black or white models for most resolutions.

Christie support and service

All Christie products are backed by industry-leading warranties, as well as renowned service and support. We ensure our customers receive training, service and technical assistance through our extensive distribution network.

Christie offers local support on five continents for international installations and global deployments, in a variety of applications.



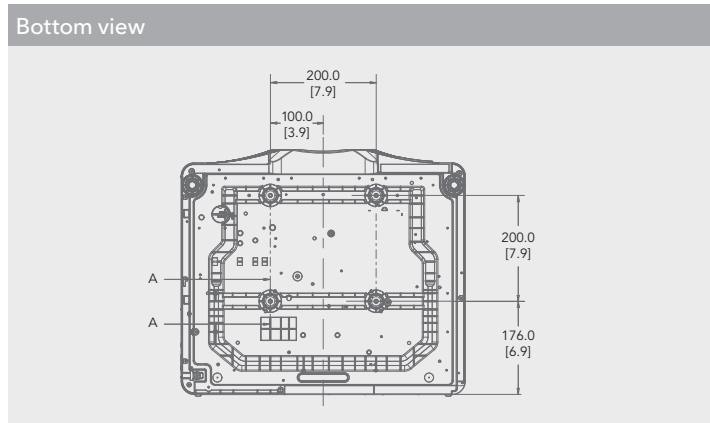
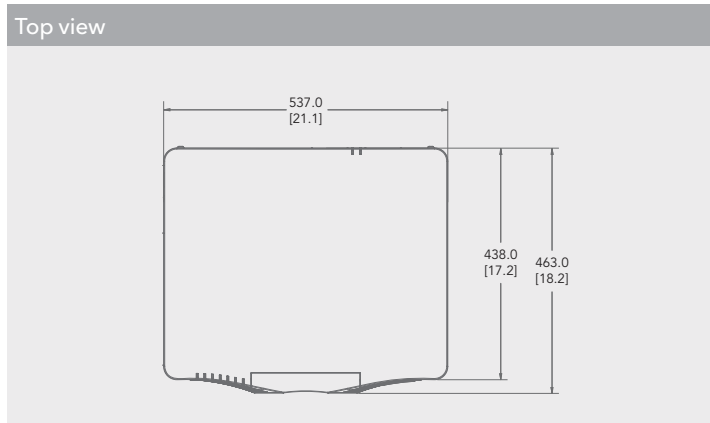
⁴ Throw ratio varies by resolution. See www.christieemea.com for further information.

	Christie DWX851-Q	Christie DHD851-Q	Christie DWU851-Q	Christie DWX951-Q
Image	brightness	• 7900 center lumens - (7500 ANSI lumen)	• 7500 center lumens - (7200 ANSI lumens)	• 7900 center lumens - (7500 ANSI lumens)
	contrast	• 2500:1 full on/off		
	uniformity	• ≤90% brightness uniformity		
Display	type	• 1-chip 0.45" DLP	• HD (1920 x 1080)	• 1-chip 0.65" DLP
	resolutions	• 1920 x 1080	• 1920 x 1080	• WUXGA (1920 x 1200)
Lamp	type	• 350W UHP x 2		• 370W P-VIP x 2
	typical lifetime	• Standard mode: up to 2000 hrs • Eco mode: up to 4000 hrs		• Portrait mode: up to 500 hrs
Inputs	standard	• Computer D-sub 15 pin mini jack x 1 • D-sub 9 pin x 1 (RS232c) • RJ-45 x 1 (LAN) • 5BNC connector x 1 • BNC connector x 1 (composite)	• BNC connector x 1 (composite) • HDMI connector x 2 • DVI-D connector x 1 /RJ-45 x 1 (HDBaseT) • USB type A connector x 1 (Optional Wireless USB or PC-less) • Wired remote control (3.5mm)	• BNC connector x 1 (composite)
	optional	• Optional wireless dongle (USB)	• 3G-SDI (only available on DHD851-Q)	• 5BNC connector x 1
	signals	• 525i(480i) • 525p(480p) • 625i(576i)	• 1125i(1080i@50/60) • 750p(720p@50/60) • 1125p(1080p@50/60)	
	pixel clock	• 27 ~ 150 MHz		
Outputs	standard	• Computer out D-sub 15 pin mini jack x 1 • Wired remote control (3.5mm)		
Control and networking		• RJ-45 x 1 (LAN) • RJ-45 x 1 (HDBaseT) • D-sub 9 pin x 1 (RS232c)		
Lenses		• For further details on lenses, please see www.christieemea.com		
Accessories	standard	• Power cord (US cord, 3m) / (Euro code, 3m) / Power cord (China cord, 3m only for China models) • RGB cable (2m) • Wireless remote control / AA batteries x 2 • Adapter cover • Ferrite core and band x 2 • Cable tie x 2		
	optional	• Replacement lamp (003-005160-01)		• Replacement lamp (003-004774-XX)
Enhanced feature sets		• Replacement hybrid filter (003-004775-X) • 2 HDMI input • eClarity and HDCR	• Optional wireless dongle (USB) (121-116109-XX) • Replacement remote	
Power	operating voltage	• 110-120 VAC • 220-240 VAC		
		• AC110-120V, 50/60Hz 860W • AC220-240V, 50/60Hz 810W		• AC110-120V, 50/60Hz 1060W • AC220-240V, 50/60Hz 990W
		• Less than 0.5W @ standby with saving. (AC230V) • Saving mode disables MONITOR OUT, AUDIO OUT, speaker sound, LAN communication and RS232C control except Power ON command in standby		
	operating current	• 8.8A+10% or less at 110-120 VAC • 4.3A+10% or less at 220-240 VAC		• 10.5A+10% or less at 110-120 VAC • 5.2A+10% or less at 220-240 VAC
	dissipation	• 2935 BTU/hr (110-120V) • 2765 BTU/hr (220-240V)		• 3618 BTU/hr (110-120V) • 3379 BTU/hr (220-240V)
Physical specs	size	• (LxWxH) 18.2 x 21.1 x 6.9" (463 x 537 x 174mm) without lens and feet in minimum position		
	shipping size	• (LxWxH) 22.1 x 29.3 x 12.4" (561 x 743 x 315mm) without lens and feet in minimum position		
	weight	• 37.5lbs (17kg)		
	shipping weight	• 49.6lbs (22.5kg)		
Operating environment	noise	• Standard mode: 36dBA • Eco mode: 29dBA		
	operating temperature	• 32-113°F (0-45°C) from sea level to 5249ft (1600m) • 32-104°F (0-40°C) from 5249ft (1600m) to 10,000ft (3048m)		
	altitude	• 0-10,000ft (3048m)		
	humidity	• 10-80% non-condensing		
Regulatory	• This product conforms to the following regulations related to product safety, environmental requirements and electromagnetic compatibility (EMC) • FCC, Part 15, Subpart B, Class A • EN55022/CISPR22 Class A • ICES/NMB003 (A) • EN55024 / CISPR24 • IEC 60950-1 • UL 60950-1 • EN 60950-1 • CAN/CSA C22.2 No. 60950-1 • Directive 2011/65/EU (RoHS)			
Limited warranty	• Three years parts and labor limited warranty • Lamp: 500 hours or one year (whichever comes first) • Contact an authorized Christie representative for full details of our limited warranty			

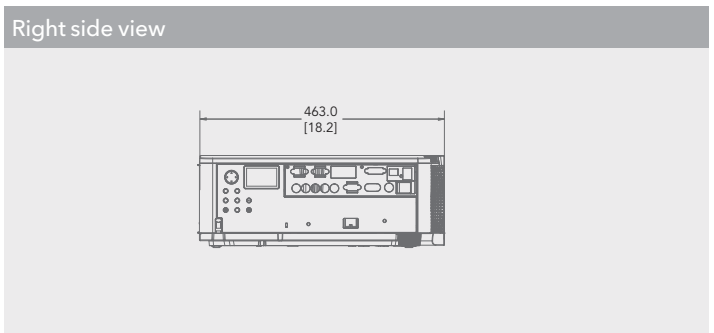
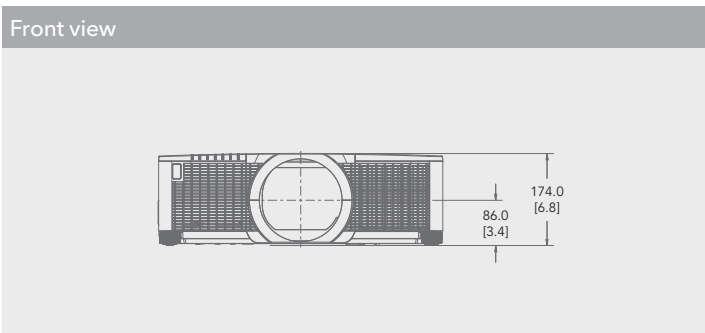
Section 274100 2.10.K.9.a- Comply (Replacement)

Replacement lamp (003-005160-01)

Section 274100 2.10.K.9.c- Comply (Replacement)



Christie DHD951-Q	Christie DWU951-Q	Christie DXG1051-Q	Christie DHD1052-Q	Christie DWU1052-Q
• 8500 center lumens - (8200 ANSI lumens)	• 8900 center lumens - (8500 ANSI lumens)	• 10,400 center lumens - (10,000 ANSI lumens)	• 9,500 center lumens - (8,450 ANSI lumens)	• 10,000 center lumens - (8,900 ANSI lumens)
		• 2000:1 full on/off	• 2500:1 full on/off	
	• 1-chip 0.67" DLP	• 1-chip 0.7" DLP	• 1-chip 0.95" DMD	• 1-chip 0.96" DMD
• HD (1920 x 1080)	• WUXGA (1920 x 1200)	• XGA (1024 x 768)	• HD (1920 x 1080)	• WUXGA (1920 x 1200)
			• 430W UHP x 2	
• Portrait mode: up to 1000 hrs	• Portrait mode: up to 500 hrs		• Portrait mode: up to 1000 hrs	
• 3G-SDI (only available on DHD951-Q)	• 5BNC connector x 1 • BNC connector x 1 (composite)		• HDMI connector x 2 • 3GSDI x 1 (BNC) • DVI-D x 1 (Digital only) • Composite Video x 1 (BNC) • HD15 x 1 (RGBHV or component video) • USB x 1 (type A) - optional wireless or PC-less • HDBaseT (RJ45 x 1)	
			• Ethernet (10/100) RJ45 with ChristieNET™ connectivity • RS232 in • Wired remote control (3.5mm stereo) - Loop out available for daisy chaining • Control via HDBaseT • Built-in backlit keypad	
• User's manual CD (safety guide) • Quick setup guide • Network quick setup guide • Operating guide • Network guide • Instant stack guide • Technical guide • Software license agreement x 1 • User's manual				
• Replacement lamp (003-005053-01)	• Replacement lamp (003-004774-XX)		• Replacement lamp (003-005583-01)	
• Geometric correction • Status monitor display • Motorized zoom, focus and lens shift with memory • PC-less presentation • 3G-SDI (HD models only)				
			• AC220-50/60Hz 1070W ± 10% • AC110-50/60Hz 1090W ± 10%	
			• 10.2A+10% or less at 110-120 VAC • 5.6+10% or less at 220-240 VAC	
			• 3720 BTU/hr (110-120V) • 3652 BTU/hr (220-240V)	
			• 38.6lbs (17.5kg) • 50.7lbs (23.0kg)	
• Directive 2012/19/EU (WEEE) • EU Regulation (EC) No. 1907/2006 (REACH) • Certifications marks (check with Christie® for latest update): cULus (Canada & US), CE (EU), CCC (China), EAC (Russia), RCM (Australia and New Zealand), India (BIS), Mexico, Saudi Arabia, South Africa, Ukraine, TER (Kuwait), PSE/VCCI (Japan)				



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ISO 9001
ISO 14001

Kitchener, Ontario



For the most current specification information, please visit www.christieemea.com



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Printed in Canada on recycled paper. CHRI 4287 May 16

CHRISTIE®

Tensioned Large Advantage Electrol

For larger venue installs, the Tensioned Large Advantage® Electrol® is designed to eliminate the extra step of finishing the screen with trim. The Advantage line of projection screens is designed with ceiling trim already in place. Once the screen is installed, the screen's trim conceals the rough opening eliminating the need to complete additional trim work.

Sliding installation brackets make it easy to attach the screen housing to the structure above the drop ceiling.

Tensioned screens ensure the smoothest surface possible.

The Tensioned Large Advantage Electrol screen features simple in ceiling installation that can be done in two stages. The screen case can be installed during the rough-in construction stage and the fabric assembly can be completed during the finishing stage.

Features

- Standard **Low Voltage Control (LVC)** to keep your screen operation flexible
- Smooth Roll Technology to keep your screen perfectly flat
- Slim-Tab, a lower profile and stronger tab design to keep your screen perfectly taut
- Simple Installation with a new installation kit and user-friendly packaging to keep you on schedule
- Support includes a comprehensive five-year warranty to keep you confident in your purchase
- UL Plenum rated case
- White powder-coated case for a clean aesthetic
- Tensioning Cable System to prevent warping and ensure even lateral tension
- Available with SCB-100 (RS-232 serial control board) built into the case for easy installation
- **Decora-style, three-button wall switch**
- Standard black backing retains projected brightness on front projection surfaces
- Seamless surfaces in all models

Optional Accessories:

- Radio Frequency Wireless Remote
- Infrared Wireless Remote
- Locking Switch Cover Plate
- Red Laser Pointers
- Green Laser Pointers
- RF PowerPoint Remote with Green Laser Pointer



16:9 HDTV Format

Viewing Area (H x W)		Nominal Diagonal		Overall Case Length	
in.	cm	in.	cm	in.	cm
108" x 192"	274 x 488	220"	559	220¾"	561
121" x 216"	307 x 549	247"	627	246½"	627
135" x 240"	343 x 610	275"	699	272½"	693
146" x 260"	371 x 660	298"	757	294¼"	747

16:10 Wide Format

Viewing Area (H x W)		Nominal Diagonal		Overall Case Length	
in.	cm	in.	cm	in.	cm
110" x 176"	279 x 447	208"	528	205"	521
120" x 192"	305 x 488	226"	574	222¼"	565

4:3 Video Format

Viewing Area (H x W)		Nominal Diagonal		Overall Case Length	
in.	cm	in.	cm	in.	cm
126" x 168"	320 x 427	210"	533	199¼"	506
132" x 176"	335 x 447	220"	559	208¼"	529
144" x 192"	366 x 488	240"	610	225¼"	573
162" x 216"	411 x 549	270"	686	251¼"	638



HD Progressive 0.9
Half Angle: 85° Gain: 0.9



HD Progressive 1.1
Half Angle: 85° Gain: 1.1



HD Progressive 1.3
Half Angle: 75° Gain: 1.3



Da-Mat
Half Angle: 60° Gain: 1.0



High Contrast Da-Mat
Half Angle: 45° Gain: 0.8



Cinema Vision
Half Angle: 45° Gain: 1.3



High Contrast Cinema Vision
Half Angle: 50° Gain: 1.1



Pearlescent
Half Angle: 40° Gain: 1.5



Dual Vision
Half Angle: 65° Gain: 0.9

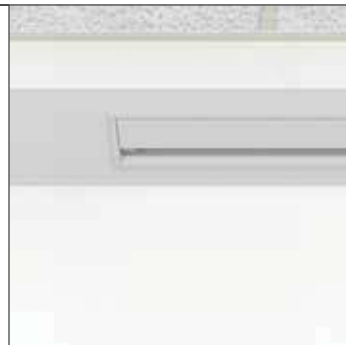


Da-Tex
Half Angle: 30° Gain: 1.3

Product images



Case Profile



In Ceiling (Closed)



In Ceiling (Open)



A Milestone AV Technologies Brand

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Warsaw, Indiana 46582
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F: 574.267.7804 or 877.325.4832
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www.da-lite.com

DL-0422 0714

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Tensioned Large Advantage® Electrol®

Automatic Electric Projection Screen Model



SPECIFICATION DATA

SUGGESTED SPECIFICATIONS: _____ projection screen(s), _____ (H) x _____ (W), electrically operated ~~120-volt (60 Hz)~~ not more than 2.4 amp. with a quick connect male plug-in connector on the motor. Shall have specially designed motor mounted inside the roller, to be three wire with ground, quick reversal type, oiled for life, with automatic thermal overload cutout, integral gears, capacitor and an electric brake to prevent coasting. To have preset but adjustable limit switches to automatically stop picture surface in the "up" and "down" positions. Junction box shall be internally integrated into the housing making it possible to install the housing and wire to the building's electrical system during construction. The junction box shall contain a quick connect connector that is mounted in the housing for easy plug-in connection to the motorized fabric and roller assembly. The motorized fabric and roller assembly to be installed in the case at the factory or at a later time at the job site. The fabric roller to be of 4½" diameter (5¾" if 270" diagonal, 275" diagonal, or 298" diagonal) metal. Screen to be designed for left or right-hand motor

installation. Screen fabric to be seamless, flame retardant and mildew resistant vinyl with black masking borders standard. Each side of the fabric to have tab guide cable system to maintain even lateral tension and hold surface flat. Custom slat bar with added weight maintains vertical tension on the screen surface. The ends of the slat to be protected by heavy duty plastic caps enclosing a preset adjustable mechanism for screen tensioning. Case to be made of extruded aluminum powder coated white. End caps to be of heavy gauge steel powder coated white. Bottom of case to have a removable access door. Door to be of extruded aluminum powder coated white. Bottom of case to be self-trimming, with a built-in flange around the bottom of the case. To be complete with integrated low voltage control unit and three position control switch with cover plate. Suitable for use in environmental air space in accordance with section 300-22 (c) of the National Electric Code, and sections 2-128, 12-010 (3) and 12-100 of the Canadian Electrical Code, part 1, CSA C22.1. Screen to be listed by Underwriters' Laboratories.



Section 274100 EY 5.03 - Comply (370022EL)

HDTV (16:9) Format Dimensions

Viewing Area (H x W)		Nominal Diagonal		Overall Length of Case*		Approx. Ship. Wt.	
In.	Cm	In.	Cm	In.	Cm	Lbs.	Kg
108" x 192"	274 x 488	220"	559	220¾"	561	652	295.7
121" x 216"	307 x 549	247"	627	246¾"	627	727	329.8
135" x 240"	343 x 610	275"	699	272¾"	693	803	364.2
146" x 260"	371 x 660	298"	757	294¼"	747	847	384.2

Wide (16:10) Format Dimensions

Viewing Area (H x W)		Nominal Diagonal		Overall Length of Case*		Approx. Ship. Wt.	
In.	Cm	In.	Cm	In.	Cm	Lbs.	Kg
110" x 176"	279 x 447	208"	528	205½"	522	691	313.4
120" x 192"	305 x 488	226"	574	222¼"	565	729	330.7

Video (NTSC 4:3) Format Dimensions

Viewing Area (H x W)		Nominal Diagonal		Overall Length of Case*		Approx. Ship. Wt.	
In.	Cm	In.	Cm	In.	Cm	Lbs.	Kg
126" x 168"	320 x 427	210"	533	199¼"	506	594	269.4
132" x 176"	335 x 447	220"	559	208¼"	529	620	281.2
144" x 192"	366 x 488	240"	610	225¼"	573	672	304.8
162" x 216"	411 x 549	270"	686	251¼"	638	744	337.5

Square Format Dimensions

Viewing Area (H x W)		Overall Length of Case*		Approx. Ship. Wt.	
In.	Cm	In.	Cm	Lbs.	Kg
10'6" x 14'	320 x 427	199¼"	506	594	269.4
14' x 14'	427 x 427	206¼"	524	620	281.2
12' x 16'	366 x 488	225¼"	573	672	304.8

*Case length does not include flange

PRODUCT NOTES

- All surfaces will be seamless.
- All viewing surfaces are standard with black backing except Da-Tex® and Dual Vision.
- All screens standard with ~~12" black drop at the top~~ except 270" diagonal, which has 2".
- Extra drop may alter case dimensions. Contact Da-Lite for details.
- Overall case length dimensions +/- 1/4".
- Detail dimensional drawings, wiring diagrams and installation instructions available upon request.
- Specifications subject to change without notice.
- Custom formats and sizes available upon request.

WHEN ORDERING, MARK APPROPRIATE SELECTIONS

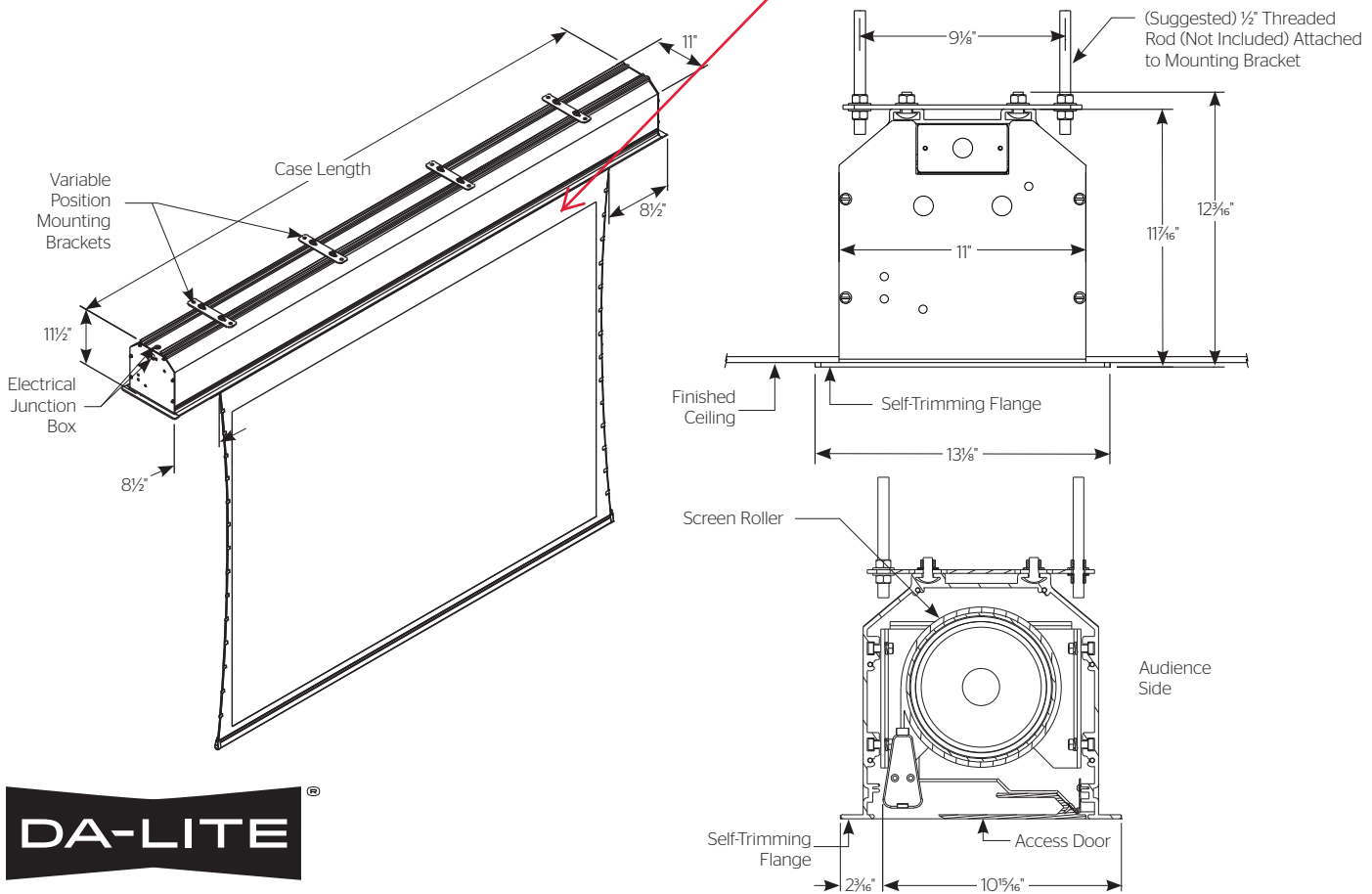
- Select size from charts on the other side.
- Select viewing surface (All Da-Lite surfaces are GREENGUARD GOLD Certified):

<input type="checkbox"/> HD Progressive 0.6	<input type="checkbox"/> Dual Vision
<input type="checkbox"/> HD Progressive 0.9	<input type="checkbox"/> High Contrast Cinema Vision
<input type="checkbox"/> HD Progressive 1.1	<input type="checkbox"/> Cinema Vision
<input type="checkbox"/> HD Progressive 1.3	<input type="checkbox"/> Pearlescent
<input checked="" type="checkbox"/> Da-Mat®	<input type="checkbox"/> Da-Tex® (Rear)
<input type="checkbox"/> High Contrast Da-Mat®	
- Optional accessories:

<input type="checkbox"/> Wireless Remote Control for LVC.	<input type="checkbox"/> Key Locking Cover Plate for LVC Switch.
<input type="checkbox"/> Radio Frequency Remote.	<input checked="" type="checkbox"/> 220 Volt (50 Hz) Motor.
<input type="checkbox"/> Radio Frequency Range Extender available.	<input type="checkbox"/> SCB-100 RS-232 Serial Control Board - built in.
<input type="checkbox"/> Infrared Remote.	<input type="checkbox"/> NET-100 Ethernet-Serial Adapter

18" Black drop

PRODUCT VIEWS



A Milestone AV Technologies Brand

3100 North Detroit Street
 Warsaw, Indiana 46582
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Project Name: _____	
Architect: _____	Phone: _____
Contractor: _____	Phone: _____
Supervisor: _____	Phone: _____
Supplier: _____	Date: _____
Revised: _____	

SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET B

Wall Plate DigitalMedia 8G+[®] Transmitter 200

- > DigitalMedia 8G+[®] transmitter and multimedia interface
- > Built-in 2x1 AV switcher with auto-switching and analog audio-breakaway
- > QuickSwitch HD[™] technology achieves fast, reliable switching
- > Connects to a DM[®] switcher or receiver over a single CAT type twisted pair cable^[1]
- > Supports cable lengths up to 330 ft (100 m) using DM 8G[®] cable or CAT5e^[1]
- > HDBaseT[®] Certified — Enables direct connection to other HDBaseT certified equipment
- > Provides HDMI[®] and RGB/component video inputs^[4]
- > Also supports DVI and Dual-Mode DisplayPort sources^[3]
- > Handles video resolutions up to Full HD 1080p
- > Handles computer resolutions up to WUXGA
- > Handles Dolby Digital[®], DTS[®], and uncompressed 7.1 linear PCM audio
- > HDCP compliant
- > Includes a mini-TRS stereo analog audio input
- > Detects and reports detailed video and audio input information
- > Performs automatic AV signal format management via EDID
- > Enables device control via CEC
- > Enables USB HID signal extension for a local keyboard/mouse
- > Allows quick, easy setup and diagnostics
- > 2-gang wall box mount design
- > Also fits in a typical 6" deep floor box
- > Available in black or white finish
- > Powered via the DM connection or local power pack (included)^[5]

The DM-TX-200-C-2G installs in a double-gang electrical box to provide a convenient interface for computers and high-definition AV sources as part of a complete Crestron[®] DigitalMedia[™] system. It is ideal for wall, lectern, and floor box applications in a boardroom, classroom, auditorium, or residence. It functions as a DM 8G+[®] transmitter and switcher, providing HDMI[®], VGA, and analog audio inputs along with a USB HID host port. In addition to DM 8G+, it is also compatible with HDBaseT[®], allowing it to be connected directly to the input of an HDBaseT certified display device. It connects to the head end or display location using a single CAT type twisted pair cable.^[1] Standard gang-box mounting allows for installation adjacent to an Ethernet jack (Crestron [MP-WP183](#) or equivalent) for a total connectivity solution.^[2]



Faceplates not included.

DigitalMedia 8G+[®]

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM[®]) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility. The latest generation of DM is called DigitalMedia 8G[™] (DM 8G[®]). Engineered for ultra high-bandwidth and ultimate scalability, DM 8G provides a true one-wire lossless transport for moving high-definition video, audio, Ethernet, and control signals over a choice of twisted pair or fiber optic cable.

DM 8G over twisted pair copper wire is called DigitalMedia 8G+ (DM 8G+). DM 8G+ handles uncompressed Full HD 1080p video signals with support for HDCP, as well as computer signals up to WUXGA. All signals are transported over a single CAT type cable, supporting distances up to 330 feet (100 m) using Crestron [DM 8G Cable](#) or CAT5e.^[1]

HDBaseT[®] Certified

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Via its DM 8G+ output, the DM-TX-200-C-2G can be connected directly to an HDBaseT compliant device without requiring a DM receiver.



DM-TX-200-C-2G-B-T – Front and Rear Views

Multimedia Computer/AV Interface

The DM-TX-200-C-2G provides simple switching between two inputs. The inputs can be configured to switch automatically or be selected through a Crestron control system. Inputs include:

- **HDMI** — Provides a digital multimedia input for mobile devices, computers, and AV sources with resolutions up to HD 1080p60 and WUXGA. Also handles DVI and Dual-Mode DisplayPort signals using an appropriate adapter or interface cable.^[3]
- **PC** — This VGA type input handles analog RGB signals up to WUXGA 1920x1200 pixels, as well as analog video up to 1080p60.^[4] A 1/8" (3.5 mm) stereo audio input is included to accommodate the analog audio signal from an unbalanced line-level source or headphone output.

Note: Analog audio breakaway capability enables the analog audio input to be used with either video input.

A single CAT type cable connects the DM-TX-200-C-2G to a DM switcher or receiver, or to an HDBaseT device, transporting video, audio, control, networking, and power signals all through one simple RJ45 connection.^[2,5] Used with a single DM 8G+ Receiver/Room Controller and optional Crestron control system, the DM-TX-200-C-2G affords a simple solution for extending a computer or AV signal to a single display. As part of a larger system using a DM-MD series switcher, multiple DM-TX-200-C-2Gs may be installed to enable the distribution of several sources at different locations to feed multiple displays throughout any room or larger facility.

USB HID Signal Extension

The DM-TX-200-C-2G functions as a keyboard/mouse extender, allowing a USB HID-compliant keyboard and/or mouse to be connected at the wall plate and used to control a computer or other component located at the central equipment rack or some other location.

CEC Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. DigitalMedia provides an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-TX-200-C-2G provides a gateway for controlling the connected source device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

Simple Wall Box Mounting

The DM-TX-200-C-2G is designed to be installed using a 2-gang electrical box or plaster ring. It also fits a 2-gang opening in a typical 6" deep floor box. The DM cable connects to the rear of the transmitter via a shielded RJ45 DM port. The unit can be powered using the wall mount power pack (included), or via PoDM (Power over DigitalMedia) for a true one-wire solution.^[5] An array of indicators is provided for easy setup and troubleshooting.

Please refer to the DigitalMedia Resources Webpage at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Video

Switcher: 2x1 auto-switching, auto-detecting multi-format digital/analog inputs; Crestron QuickSwitch HD™ technology

Input Signal Types: HDMI® (DVI & Dual-Mode DisplayPort compatible^[3]), RGB/VGA (RGBHV, RGBS, RGsB); component (YPbPr); S-Video (Y/C); composite (NTSC, PAL)^[4]

Output Signal Types: DM 8G+® & HDBaseT®

Resolutions, HDMI, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI up to 165 MHz pixel clock

Resolutions, HDMI, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165 MHz pixel clock

Resolutions, RGB: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1152@60Hz

Resolutions, Component^[4]: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080p24, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60

Resolutions, Composite & S-Video^[4]: 480i, 576i

Analog-To-Digital Conversion: 10-bit 165 MHz per each of 3 channels

Audio

Switcher: 2x1 with auto-detecting digital/analog inputs and analog audio breakaway

Input Signal Types: HDMI (Dual-Mode DisplayPort compatible^[3]), analog stereo

Output Signal Types: DM 8G+ & HDBaseT

Digital Formats: Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, LPCM up to 8 channels

Analog Formats: Stereo 2-channel

Analog-To-Digital Conversion: 24-bit 48 kHz

Analog Performance: Frequency Response: 20 Hz to 20 kHz ±0.75 dB;
S/N Ratio: >90 dB, 20 Hz to 20 kHz A-weighted;
THD+N: <0.05% @ 1 kHz;
Stereo Separation: >90 dB

Communications

USB: Supports signal extension of USB HID class devices

DigitalMedia: DM 8G+, HDCP, EDID, CEC, PoDM, Ethernet

HDBaseT: HDCP, EDID, PoH, Ethernet

HDMI: HDCP, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI device and a control system

Connectors – Front

AUDIO IN: (1) 3.5 mm TRS mini phone jack;

Unbalanced stereo line-level audio input;

Input Level: 2 Vrms maximum;

Input Impedance: 10k Ohms

USB HID: (1) USB Type A female; USB 2.0 host port for connection of a mouse/keyboard or other USB HID-compliant device

HDMI IN: (1) 19-pin Type A HDMI female;

HDMI digital video/audio input;

(DVI & Dual-Mode DisplayPort compatible^[3])

PC IN: (1) HD15 female, analog VGA/RGB/video input;

Signal Types: VGA, RGB, component, S-Video, or composite^[4];

Formats: RGBHV, RGBS, RGsB, YPbPr, Y/C, NTSC, PAL;

Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration;

Input Impedance: 75 Ohms;

Sync Input Type: Autodetect RGBHV, RGBS, RGsB, YPbPr;

Sync Input Level: 3 to 5 Vp-p;

Sync Input Impedance: 1k Ohms

Connectors – Rear

DM OUT: (1) 8-pin RJ45 female, shielded;

DM 8G+ output, HDBaseT compliant;

PoDM and PoH PD (Powered Device) port^[5];

Connects to the DM 8G+ input of a DM switcher, receiver/room controller, or other DM device, or to a HDBaseT device, via CAT5e or Crestron DM-CBL-8G cable^[1];

Note: RJ45 jack is recessed to accommodate long male cable connectors

24VDC 0.7A: (1) 2-pin captive screw terminal block;

24 Volt DC power input;

PW-2407WUL power pack included

G: (1) 6-32 screw, chassis ground lug

Controls & Indicators

PWR: (1) Green LED, indicates operating power supplied via PoDM, PoH, or power pack

RESET: (1) Recessed pushbutton for hardware reset

SETUP: (1) Red LED and (1) recessed pushbutton for Ethernet setup

8G LINK: (1) Green LED, indicates DM link status

8G ACTV: (1) Yellow LED, indicates video and HDCP signal presence

HDMI: (1) Green LED, indicates HDMI input is selected

PC: (1) Green LED, indicates PC input is selected

DM OUT (rear): (2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC;
100-240 Volts AC, 50/60 Hz power pack, model PW-2407WUL included

Power over DM (PoDM): PoDM PD (Powered Device), capable of being powered by a PoDM PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W)^[6]

Power over HDBaseT (PoH): PoH PD (Powered Device), capable of being powered by a PoH PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W)^[6]

Environmental

Temperature: 32° to 95° F (0° to 35° C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 36 BTU/hr

Enclosure

Construction: Metal

Flush Mount: Mounts in a 2-gang electrical box or in a 2-gang opening in a typical 6 inch deep floor box, 2.5 inch minimum mounting depth required, decorator style faceplate not included

Dimensions

Height: 4.12 in (105 mm)

Width: 3.50 in (89 mm)

Depth: 2.65 in (68 mm)

Weight

14.2 oz (403 g)

Section 274100 2.3.C.25.p-Comply
Section 274100 2.4.D.25.t Comply
Section 274100 2.5.D.25.w Comply
Section 274100 2.6.D.25.v Comply
Section 274100 2.10.J.25.j Comply

MODELS & ACCESSORIES

Available Models

DM-TX-200-C-2G-B-T: Wall Plate DigitalMedia 8G+® Transmitter 200, Black Textured

DM-TX-200-C-2G-W-T: Wall Plate DigitalMedia 8G+® Transmitter 200, White Textured

Section 274100 2.9.D.25.s Comply
Section 274100 2.10.J.25.k Comply

Included Accessories

PW-2407WUL: Wall Mount Power Pack 24VDC, 0.75A, Universal (Qty. 1 included)

Available Accessories

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum

DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum

DM-8G-CONN: Connector for DM-CBL-8G

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

CBL Series: Crestron® Certified Interface Cables

MP-WP183: Media Presentation Wall Plate – Ethernet

Notes:

1. For DM 8G+ or HDBaseT wiring, use Crestron **DM-CBL-8G** DigitalMedia 8G Cable or third-party CAT5e (or better) UTP or STP. (Crestron legacy **DM-CBL** DigitalMedia Cable or **DM-CBL-D** DigitalMedia D Cable may also be used.) The maximum wire length for DM 8G+ is 330 ft (100 m) between devices. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the **Crestron DigitalMedia Design Guide, Doc. #4546** for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
2. The DM-TX-200-C-2G does not include an external Ethernet port. Local Ethernet connectivity for external devices requires a **MP-WP183** or equivalent Ethernet jack with a dedicated LAN connection.
3. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. **CBL-HD-DVI** interface cables are available separately.
4. The PC/RGB/VGA input can actually accept component, composite, and S-Video signals through an appropriate adapter (not included), or via direct interface to Crestron MPS Series products. However, input sync detection is not provided for composite or S-Video signal types through this connection.
5. Receiving Power over DM (PoDM) or Power over HDBaseT (PoH) requires connection to a switcher or other equipment that has a PoDM or PoH PSE (Power Sourcing Equipment) port. Any wiring that is connected to a PoDM or PoH PSE port is for intra-building use only and should not be connected to a line that runs outside of the building in which the PSE is located.
6. Reference to the IEEE 802.3at standard is used to demonstrate that PoDM and PoH technology is similar in function to PoE and follows the same essential specifications. The DM-TX-200-C-2G cannot be powered over Ethernet, and its DM OUT port should not be connected directly to an Ethernet network or device.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

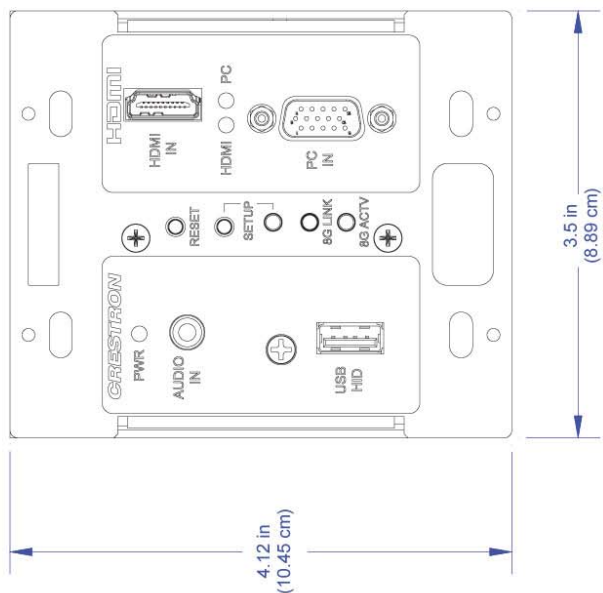
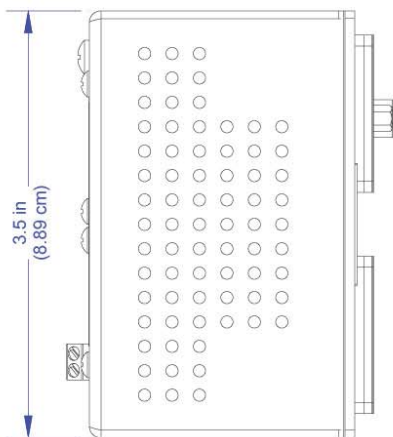
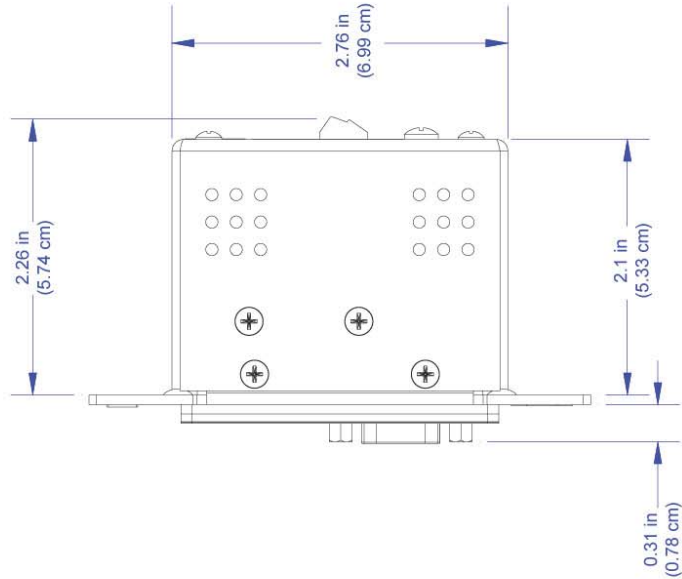
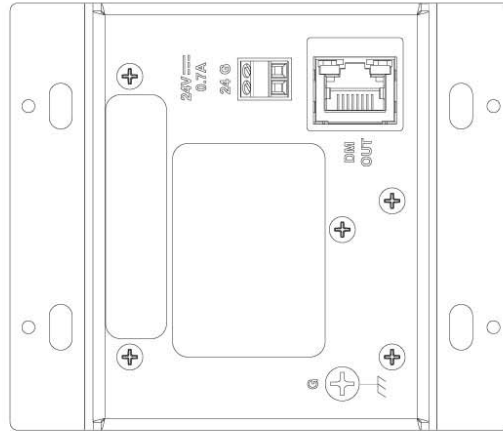
The specific patents that cover Crestron products are listed online at: patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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DM-TX-200-C-2G

Wall Plate DigitalMedia 8G+® Transmitter 200



Connector for DM-CBL-8G DigitalMedia 8G™ Cable

- > High-bandwidth, shielded RJ45 connector
- > Field-installable (crimping tool sold separately)
- > For use with Crestron DM 8G® Cable
- > Sold in packs of 100

The DM-8G-CONN is a shielded RJ45 connector designed for use in terminating Crestron **DM-CBL-8G** DigitalMedia 8G™ Cable. This connector requires the **DM-8G-CRIMP** crimping tool to install, affording fast and reliable termination in the field of the shielded twisted-pair cable.

The DM-8G-CONN is sold in packages of 100 (Model # DM-8G-CONN-100).

NOTE: For termination of DigitalMedia™ Ultra Cable (**DM-CBL-ULTRA**) and legacy DigitalMedia Cable (**DM-CBL**), please see the **DM-CONN**.



Section 274100 2.3.C.25.r-Comply
 Section 274100 2.4.D.25.s-Comply
 Section 274100 2.5.D.25.u-Comply
 Section 274100 2.6.D.25.t-Comply
 Section 274100 2.9.D.25.r-Comply
 Section 274100 2.10.J.25.z-Comply

MODELS & ACCESSORIES

Available Models

DM-8G-CONN-100: Connectors for DM-CBL-8G DigitalMedia 8G™ Cable, 100-Pack

Available Accessories

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

Notes:

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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DM-CBL-8G-P**DigitalMedia 8G™ Cable, Plenum**

- > 350 MHz ultra high-performance shielded CAT5e (F/UTP)
- > Optimized for high-definition digital AV and Ethernet data networking applications
- > Precision manufactured and tested to exceed CAT5e specifications
- > Qualified for use wherever a high-quality shielded CAT5e is required
- > Ensures Crestron® guaranteed performance for DigitalMedia 8G+® and Sonnex® Link
- > Highly recommended for use with HDBaseT®
- > Every spool individually tested and certified
- > Measurement markings on the outer jacket
- > Type CMP “plenum” rated

Crestron® DigitalMedia 8G™ Cable (DM-CBL-8G-P) is a 350MHz-certified twisted-pair cable with overall foil shield (F/UTP) that is engineered to deliver optimum performance for use in data networking and high-definition AV signal distribution applications. It is precision manufactured and tested to significantly exceed the CAT5e specifications for bandwidth, crosstalk, and interference rejection, and is qualified for use wherever a high-quality shielded CAT5e wire is required. DigitalMedia 8G Cable provides a complete Crestron-guaranteed wiring solution for use with DigitalMedia 8G+® devices, and is also highly recommended for use with Sonnex® Multiroom Audio Systems, HDBaseT®, and other CATx based audio, video, and data distribution products.

350MHz Multimedia and Data-Grade Shielded CAT5e

For digital multimedia or Ethernet data networking, DM 8G® Cable provides the finest shielded CAT5e on the market. Every spool is individually certified to ANSI/TIA/EIA-568-B.2 Category 5e, and tested to 350 MHz bandwidth, ensuring ultimate performance for demanding AV and data network applications. Its high-quality 100% foil shield ensures very low EMI/RFI interference, preventing video signal interruption or loss of data — even in noisy environments. Foot markers printed on the cable’s outer jacket make it easy to verify the exact length of each cable during installation.

DigitalMedia 8G+® HD AV Signal Distribution over One Wire

Crestron DigitalMedia™ (DM®) is the world’s most evolved system solution for distributing uncompressed, high-definition digital video and audio throughout a home or commercial structure. DigitalMedia 8G+ is the latest generation of DM, providing a true one-wire transport for moving HD and Ultra HD video, high-bitrate 7.1 audio, high-speed Ethernet, and power over CAT5e. DigitalMedia 8G Cable is specially designed and pre-qualified for use with DM 8G+® transmitters, receivers, and switchers. Compared to ordinary CAT5e, DM 8G Cable affords much higher performance margin to ensure a reliable installation every time.^[1]

HDBaseT® Recommended

HDBaseT technology is a consumer electronic connectivity technology optimized for whole-home and commercial multimedia distribution. HDBaseT converges uncompressed full HD digital video, audio, Ethernet, power, and control signals through a single CAT5e cable. Crestron DM 8G Cable is ideally designed and tested for use with HDBaseT products.^[1]

A Complete Crestron-Guaranteed Solution

Termination of DM 8G cable is accomplished using Crestron DM-8G-CONN or DM-8G-CONN-WG shielded RJ45 type connectors. These connectors are specially designed to maintain maximum bandwidth and provide 100% shielding against interference to ensure consistent, reliable system performance. Quick and easy field-termination if facilitated using the DM-8G-CRIMP or DM-8G-CRIMP-WG crimping tools.^[2]

DM-CBL-8G-P is Type CMP “plenum” rated for installation in environmental air-handling spaces.

DM-CBL-8G-P

DigitalMedia 8G™ Cable, Plenum

See also Crestron DigitalMedia Ultra Cable (*DM-CBL-ULTRA-P*) for applications requiring the transmission of DM 8G+ or HDBaseT signals with resolutions above HD 1080p, 2K, or WUXGA, and cable lengths more than 230 feet (70 m).

SPECIFICATIONS

Construction

F/UTP with four twisted pairs, inner jacket, drain, overall foil shield, ripcord, and overall jacket

Electrical & Performance

Mutual Capacitance: 17.1 pF / ft

Velocity of Propagation: 69%

Propagation Delay Skew: 45ns / 100 m

DC Resistance: 28.6 Ohms / 1000 ft maximum

DC Resistance Unbalance of a Pair: 5% maximum

Capacitance Unbalance: 330 pF / 100 m

Characteristic Impedance: 100 Ohms ±15% (1-250 MHz)

(4) Twisted Pairs

Colors: Blue/white, orange/white, green/white, brown/white

Conductors: 24 AWG solid copper

Insulation: 0.0055 inch thick FEP

Outer Diameter (per conductor): 0.040 inch (1.016 mm) maximum

Inner Jacket

Color: White

Material: Low-smoke PVC

Thickness: 0.0135 ±0.0015 inch (0.3429 ±0.0381 mm)

Shield

Drain: 26 AWG solid tin/copper

Overall Shield: Aluminum foil (100% coverage)

Outer Jacket

Color: Blue

Material: Low-smoke PVC

Thickness: 0.018 inch (0.4572 mm)

Outer Diameter: 0.244 ±0.006 inch (6.2 ±0.15 mm)

Minimum Recommended Bend Radius: 2.75 inches (70 mm)

Maximum Pull Tension: 25 lbf (111 N)

Rating

NEC Article 800; UL Subject 444, Type CMP; CSA Type CMP;
ANSI/TIA/EIA-568-B.2 Category 5e

MODELS & ACCESSORIES

Available Models

DM-CBL-8G-P-SP500: DigitalMedia 8G™ Cable, Plenum, 500 ft spool

DM-CBL-8G-P-SP1000: DigitalMedia 8G™ Cable, Plenum, 1000 ft spool

Available Accessories

DM-8G-CONN: Connectors for DM-CBL-8G DigitalMedia 8G™ Cable

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

DM-8G-CONN-WG: Connectors with Wire Guide for DM-CBL-8G DigitalMedia 8G™ Cable

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

Notes:

- For DM 8G+ or HDBaseT applications transporting video resolutions above HD 1080p, 2K, or WUXGA over cable lengths greater than 230 feet (70 m), please use Crestron DigitalMedia Ultra Cable (*DM-CBL-ULTRA-P*). Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete DM system design guidelines.
- All connectors and crimp tools sold separately.

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Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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Section 274100 2.3.C.25.q-Comply
Section 274100 2.4.D.25.r-Comply
Section 274100 2.5.D.25.t-Comply
Section 274100 2.6.D.25.s-Comply
Section 274100 2.9.D.25.q-Comply
Section 274100 2.10.J.25.w-Comply

CRESFIBER8G-P

CresFiber® 8G Multimode Fiber Optic Cable, 50/125 x4, plenum

High-performance CresFiber® 8G is multimode graded-index fiber optic cable engineered by Crestron® to deliver extended bandwidth for the reliable installation of multimode fiber-based Crestron systems. CresFiber 8G is tested to wavelengths up to 1550 nm, surpassing the performance of previous generation CresFiber as well as generic OM2 and OM3. Featuring ultra high-bandwidth laser-optimized cores, CresFiber 8G guarantees consistent performance over wire runs up to 1000 ft (300 m) for all [DigitalMedia 8G™](#) Fiber solutions, as well as for standard DigitalMedia™ Fiber, Crestron HDMI® over Fiber, and other multimode fiber applications.^[1]

CresFiber 8G provides four individually jacketed fiber strands within a single reinforced outer jacket. Since many Crestron fiber applications require only one or two strands, the extra strands available in CresFiber 8G provide ample spares for backup, or may be utilized to support multiple devices over a single cable run. Breakout cable construction helps simplify termination, eliminating any need for a separate breakout assembly or intermediary splice.

Available in 500 and 1000 ft spools, model CRESFIBER8G-P is plenum-rated for use in an environmental air-handling space. (For non-plenum indoor riser applications, use [CRESFIBER8G-NP](#).) Foot markers are printed on the outer jacket making it easy to determine the exact length of each cable run when commissioning the installed system. Termination of CresFiber 8G cable can be accomplished using Crestron [CRESFIBER-CONN-SC50UM-12](#) connectors and the [CRESFIBER-TK](#) termination kit.

SPECIFICATIONS

Multimode Fiber Strands (x4)

Fiber Core: Type: Multimode graded-index;
Core/Cladding Diameter: 50/125 µm nominal;
Minimum Laser Bandwidth/EMB: 600 MHz*km at 850 nm, 1200 MHz*km at 1300 nm, 600 MHz*km at 1550 nm;
Maximum Attenuation: 2.75 dB/km at 850 nm, 1 dB/km at 1300 nm, 1 dB/km at 1550 nm;
Dispersion: Less than 6 ns/km between 800-850 nm wavelengths

Buffer: Type: Tight;
Diameter: 900 µm nominal;
Colors (1-4): Blue, Orange, Green, Brown

Strength Member: Material: Aramid yarns

Jacket: Colors (1-4): Blue, Orange, Green, Brown;
Material: Low-smoke PVC;
Outer Diameter: 0.094 in (2.4 mm) nominal



Outer Jacket

Construction: Breakout with overall jacket
Material: Low-smoke PVC
Central Strength Member: Fiberglass epoxy rod (dielectric)
Tape Wrap: Polypropylene
Ripcord: Yes
Outer Diameter: 0.313 inch (8.0 mm) nominal or less
Color: Orange w/black text

Mechanical

Maximum Tensile Load: 270 lbf (1200 N) for installation, 110 lbf (500 N) for operation
Minimum Bend Radius: 6.3 in (160 mm) for installation, 3.15 in (80 mm) for operation
Crush Resistance (EIA 455-41): 100 N/cm
Impact Resistance (EIA 455-25): 25 impacts minimum
Flexing, ±90°: 25 cycles minimum

Environmental

Operating Temperature: +32° to +185°F (-0° to +85°C)
Installation Temperature: +32° to +167°F (0° to +75°C)
Storage Temperature: -4° to +185°F (-20° to +85°C)

Weight

40 lb/1000 ft (59 kg/km) nominal

Rating

OFNP (UL 910), CSA FT6

MODELS & ACCESSORIES

Available Models

CRESFIBER8G-P-SP1000: CresFiber® 8G Multimode Fiber Optic Cable, 50/125 x4 breakout, plenum, 1000 ft spool

CRESFIBER8G-P-SP500: CresFiber® 8G Multimode Fiber Optic Cable, 50/125 x4 breakout, plenum, 500 ft spool

Available Accessories

CRESFIBER-COMN-SC50UM-12: CresFiber® Fiber Optic Cable Connector (AFL Telecommunications™), SC 50µm, 12-Pack

CRESFIBER-TK: CresFiber® Termination Kit (AFL Telecommunications™)

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Section 274100 2.10.J.25.y-Comply
Section 274100 2.10.J.25.x-Comply

Notes:

1. Please consult the spec sheet for each product in your system to verify compatibility and wire distance limitations.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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CRESFIBER-CONN-SC50UM-12

Connectors for CresFiber® 8G Multimode Fiber Optic Cable, SC 50µm, 12-Pack

The CRESFIBER-CONN-SC50UM-12 is a pack of twelve SC type fiber optic cable connectors designed for use with Crestron® CresFiber® 8G Multimode Fiber Optic Cable (CRESFIBER8G)^[1]. The connectors are field-installable using the CRESFIBER-TK termination kit^[2].

SPECIFICATIONS

Type

: Connector Type: SC:
: Fiber Type: Multimode 50 µm:
Boot Size: 3.0 mm

Performance

Insertion Loss: 0.1 dB typical, 0.5 dB maximum
: Meets TIA/EIA 568A performance requirements
: Meets TIA/EIA 604 (focis) connector interface requirements

Environmental

Operating Temperature: -40° to +167°F (-40° to +75°C)

Available Models

CRESFIBER-CONN-SC50UM-12 [6503955]: Connectors for CresFiber® 8G Multimode Fiber Optic Cable, SC 50µm, 12-Pack

Available Accessories

CRESFIBER-TK [6503954]: CresFiber® Termination Kit (AFL Telecommunications®)

Notes:

1. Also compatible with legacy CresFiber Multimode Fiber Optic Cable (CRESFIBER). For use only with the current model CRESFIBER-TK termination kit manufactured by AFL Telecommunications®. This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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Section 274100 2.5.D.25.x-Comply
Section 274100 2.10.J.25.aa-Comply

32x32 DigitalMedia™ Switcher

- > Delivers a unified HD signal distribution solution incorporating both point-to-point wired and IP streaming technologies
- > Provides lossless HD AV signal routing over twisted pair copper wire or fiber
- > Integrates video, audio, networking, and control over one wire or fiber strand
- > Enables high-performance H.264 streaming from any input source up to 1080p or WUXGA
- > Affords full matrix switching with ultra high 12.5 Gbps backplane data rate
- > Handles HDMI® with Deep Color, 3D, 4K, and high-bitrate 7.1 encoded audio^[3]
- > HDBaseT™ Certified — Enables direct connection to other HDBaseT certified equipment
- > HDCP 2.2 compliant via compatible 4K input and output cards^[3]
- > Distributes Full HD 1080p, Ultra HD, and 4K signals over CAT type twisted pair cable at distances up to 330 ft (100 m) via DM 8G+® and HDBaseT^[4,9]
- > Distributes 1080p and WUXGA signals over multimode fiber at distances up to 1000 ft (300 m) via DM 8G® Fiber^[5,9]
- > Distributes 1080p and WUXGA signals over single-mode fiber at distances up to 7.5 miles (12 km) via DM 8G SM Fiber^[6,9]
- > Allows streaming of 1080p signals over an IP network with no distance limitations
- > Also supports all first-generation DM® CAT and DM Fiber products^[7,8,9]
- > Configurable with up to 32 DM, HDBaseT, and/or HDMI outputs
- > Configurable with up to 16 streaming outputs^[1]
- > Easy output expansion using multiple DM switchers
- > Modular inputs support a complete range of digital, analog, and streaming signal types
- > QuickSwitch HD™ technology manages HDCP keys for fast, reliable switching
- > Auto-Locking® technology achieves rapid switching between disparate sources
- > Detects and displays detailed video and audio input information
- > Performs automatic AV signal format management via EDID
- > Allows independent scaling for every display through select output cards and DM receivers^[12]
- > Enables device control via CEC
- > Distributes and routes USB HID mouse and keyboard signals^[15]
- > Expanded USB routing capabilities available using USB over Ethernet Extenders^[15]
- > Allows full audio and USB breakaway switching
- > Supports analog audio embedding and de-embedding
- > Integrates with analog audio distribution systems



- > Enables simultaneous output of stereo and surround sound audio
- > Includes integrated Ethernet switch with Gigabit LAN port
- > Private Network Mode — requires just one IP address for the complete DM system
- > Provides easy setup and diagnostics tools via front panel or software
- > Half-million hour rated internal universal power supply
- > 14-space 19-inch rack-mountable

DM-MD32X32 32x32 DigitalMedia™ Switcher

Crestron® DM® Switchers provide the foundation for a complete DigitalMedia™ system, delivering an advanced 4K ultra high-definition AV signal routing solution that's extremely flexible and installer-friendly. The DM-MD32X32 affords ultra fast switching and pure, lossless distribution of HDMI® and other signals to support all the digital media players, HDTV receivers, computers, cameras, and display devices that fill any modern home or commercial facility. DigitalMedia thoughtfully manages all of the disparate AV signals and devices to deliver a transparent user experience, and to ensure an optimum video image and audio signal at every location.

The DM-MD32X32 is field-configurable to handle up to 32 AV sources of virtually any type. The outputs are also field-configurable to provide up to 32 DM, HDBaseT®, and/or HDMI outputs, or up to 16 H.264 streaming outputs, in a single chassis.^[1] A full selection of DM switcher input and output cards, DM transmitters, and DM receivers provides extensive connectivity throughout a residence or commercial facility, supporting a complete range of analog and digital signal types — all through one switcher!

Integrated Ethernet networking and USB distribution provide a complete connectivity solution combined with built-in Crestron control^[2] for managing the displays and other room devices without necessitating any additional wiring. User-friendly operation, setup, and troubleshooting tools are provided through the DM-MD32X32 front panel, or via [Crestron Toolbox™](#) software, to make setting up a complete multiroom 4K video distribution system easy.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the [DigitalMedia Switcher Configuration Tool](#).

4K Ultra HD

Crestron DigitalMedia continues to advance the standard for digital AV signal distribution, delivering the world's first end-to-end 4K system solution. From day one, the DM-MD32X32 was designed to meet the extreme bandwidth requirements for handling 4K and Ultra HD video signals. Support for 4K video also ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA.^[3]



DigitalMedia 8G™

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a room, building, or campus. The latest generation of DM is called DigitalMedia 8G (DM 8G®). Engineered for ultra high-bandwidth and ultimate scalability, DM 8G provides a true one-wire lossless transport for moving high-definition video, audio, Ethernet, and control signals over a choice of twisted pair or fiber optic cable.

DM 8G handles uncompressed Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for 3D, Deep Color, and HDCP 2.2.^[3] Audio capabilities include the simultaneous distribution of stereo and multichannel surround sound signals, with support for high-bitrate 7.1 audio formats like Dolby® TrueHD, Dolby Atmos®, and DTS-HD Master Audio™ as well as uncompressed linear PCM. All signals are transported over one CAT type

twisted pair cable or one strand of multimode or single-mode fiber. DM 8G enables wire distances up to 330 feet (100 m) via DM 8G+® (DM 8G over twisted pair copper wire)^[4,9], 1000 feet (300 m) via DM 8G Fiber (DM 8G over multimode fiber)^[5,9], or 7.5 miles (12 km) via DM 8G SM Fiber (DM 8G over single-mode fiber)^[6,9].

The DM-MD32X32 provides full support for Crestron DM 8G devices as well as all first-generation DM CAT^[7,9] and DM Fiber^[8,9] products, letting you take advantage of the latest Crestron DM 8G technology without compromising your existing investment.

HDBaseT® Certified

Crestron DigitalMedia 8G+® technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Via DM 8G+, the DM-MD32X32 can be connected directly to an HDBaseT compliant device without requiring a DM transmitter or receiver.



H.264 Streaming

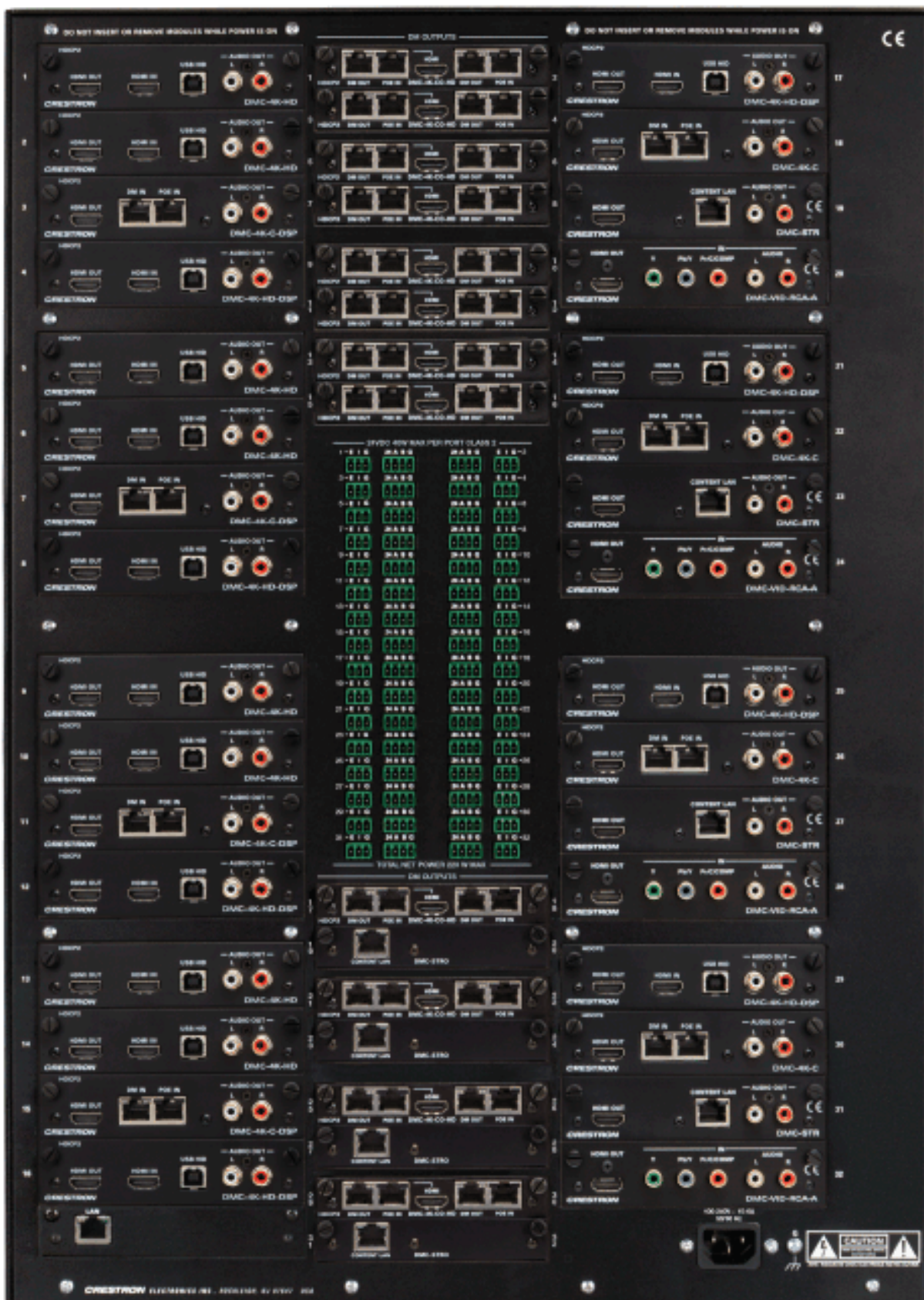
High-performance H.264 streaming capability enables enterprise-wide distribution of HD content over an IP network. Streaming expands the capabilities of DM to remove all distance limitations and allow distribution to virtually any device — anywhere in the world. Streaming is an essential component of any complete DM system, allowing for high-definition signal routing to Crestron touch screens, digital signage displays, remote buildings, and global offices without requiring any new or dedicated wiring. Large-scale streaming to computers and mobile devices can be facilitated through integration with a streaming media system such as Wowza® or Kaltura®.

DigitalMedia with streaming affords the ability to distribute any combination of sources to virtually any device anywhere. Each streaming output supports resolutions up to HD 1080p at bitrates up to 25 Mbps. Built-in scaling enables fast, trouble-free switching between sources of any type or resolution up to 1080p or WUXGA. Audio support includes stereo signals, as well as multichannel audio signals downmixed to stereo via any “DSP” type input card.^[10] High-quality video and audio is maintained using high-performance H.264 video and AAC audio compression. The encoded video and audio can be output as independent RTP streams or encapsulated in an MPEG-TS (MPEG-2 Transport Stream) container. HDCP management ensures that protected content cannot be distributed via streaming.

Each streaming output is actually fed internally by two separate switcher outputs, allowing any two input sources to appear picture-in-picture or side-by-side in a single stream. Instant, single-frame switching between two full screen images is also possible. The audio signals from both input sources can also be mixed, allowing both signals to be heard simultaneously.

The DM-MD32X32 can receive streaming signals as well as transmit them. Streaming input capability enables IP cameras and other H.264 encoded sources to be distributed via DigitalMedia alongside HDMI and other non-streaming sources. It also allows DM switchers to be bridged together across a campus or around the world, enabling simplified routing of HD content between buildings and global offices.

DM-MD32X32 32x32 DigitalMedia™ Switcher



DM-MD32X32 – Rear view with I/O cards installed

DM-MD32X32 32x32 DigitalMedia™ Switcher

DigitalMedia provides many deployment options to address a wide range of streaming applications and accommodate each organization's specific IT requirements. DM with streaming supports both unicast and multicast, with or without RTSP (Real Time Streaming Protocol). Streaming connections can be configured to stream directly to one or more specific IP addresses, or to use RTSP to manage the configuration of numerous connections automatically. Any streaming input or output may be configured to stream via the DM switcher's LAN port or via a dedicated "CONTENT LAN" port, allowing the option to combine control and content on a single network or isolate them onto separate networks.

Modular Architecture

The DM-MD32X32 features a modular architecture with 32 input card slots, and 16 dual output card slots. Each card slot on the DM-MD32X32 is field-installable, allowing for easy and flexible system configuration with the ability to make changes to the system as needs change. A wide selection of input cards is offered to support a complete range of digital and analog AV signal types including HDMI, DVI, Dual-Mode DisplayPort^[1], SDI, RGB/VGA and analog video, SPDIF and analog audio, HDBaseT, H.264 streaming, and all types of DigitalMedia. Available outputs include all types of DigitalMedia, as well as HDBaseT, HDMI, analog audio, and H.264 streaming.^[1]

Output Expansion

An HDMI "pass-through" output is provided on every input card to allow the inputs of up to 5 DM switchers to be daisy-chained, enabling the configuration of very large distribution systems with many outputs. Using five DM-MD32X32 switchers, it is possible to support up to 160 separate outputs.

QuickSwitch HD™

Handling high-definition digital media means handling HDCP (High-bandwidth Digital Content Protection), the encryption scheme that content providers use to protect their DVDs, Blu-ray™ discs, and broadcast signals against unauthorized copying. Viewing HDCP encrypted content requires a source device to "authenticate" each display and signal processor in the system and issue it a "key" before the content can be viewed. Ordinarily this causes a complete loss of signal for up to 15 seconds each time a new source or display is selected anywhere in the system. To make matters worse, every source device has a limited number of keys available, so connect too many displays and the source will simply stop outputting a signal without warning.

Not to worry — Crestron QuickSwitch HD manages the keys for every HDCP-compliant device in the system, maintaining continuous authentication for each device to ensure fast, reliable routing of any source to any number of display devices.

Auto-Locking® Technology

Crestron Auto-Locking Technology enables super fast signal switching by instantaneously configuring every device in the signal path as soon as the signal hits the first device. Whether switching between sources or TV channels, Auto-Locking significantly reduces the time it takes each device to sense the new signal and configure itself to handle the changes, virtually eliminating any noticeable gap while switching.

EDID Format Management

With all of today's varied AV sources comes a multitude of confusing video and audio formats to keep track of, and chances are not every device in your system supports all of the same formats. Such conflicts can wreak havoc any time you route one source to more than one display or audio component. The media player feeding your 1080p or Ultra HD projector in the theater may restrict itself to a lower resolution, or even shut off completely, if someone decides to view the same signal on a smaller TV in another room. And, instead of enjoying your theater's incredible 7.1 surround sound, you may find yourself limited to 5.1 or even plain old stereo.

DigitalMedia eliminates such conflicts by managing the EDID (Extended Display Identification Data) that modern digital devices use to communicate their capabilities. Via Crestron Toolbox software, the format and resolution capabilities of each device can be assessed, allowing the installer to configure EDID signals appropriately for the most desirable and predictable behavior.

A Scaler for Every Display

High-performance scaling capability can be added to any DM system using select output cards and DM receivers with built in HD and 4K scalers. By placing an independent scaler at every display device, DigitalMedia truly delivers the most flexible and user-friendly solution for routing multiple disparate sources to many different display devices. This "Distributed Scaler Approach" ensures an optimal image on every screen no matter what sources are selected. Distributed scaling allows a high-res computer source to be viewed on any display in the building. It also allows an SD, HD, or Ultra HD video source to be viewed simultaneously on the 4K display in your theater and on lower-resolution displays throughout the house.

Versatile Audio Routing

HDMI is the key to handling 7.1 surround sound formats like Dolby TrueHD, Dolby Atmos, and DTS-HD Master Audio. Great for your high-end home theater, but how do you share that same source with other audio zones in the house?

DigitalMedia provides the answer, allowing for the simultaneous distribution of multichannel surround sound and two-channel stereo signals from the same HDMI source. Using a choice of "DSP" type input cards, the DM-MD32X32 employs onboard digital processing to derive a stereo downmix from the original multichannel signal. Both signals can be routed separately or simultaneously from any of the switcher's DM outputs, allowing either signal to be selected for output at each DM receiver location.

Back at the switcher, the digital stereo signal is also converted to analog to enable sharing with every other room in the house via a [Sonnex®](#) Multiroom Audio System or any other audio distribution system. The DM-MD32X32 also allows surround sound processors and amplifiers to be located centrally instead of at the display location via optional local HDMI outputs.

Built-in Ethernet Switch

In addition to transporting digital video and audio, DigitalMedia can also extend 10/100 Ethernet out to each display and source device via select

DM-MD32X32 32x32 DigitalMedia™ Switcher

DM receivers and transmitters, providing high-speed connectivity for any room device that requires a LAN connection. Ethernet is also utilized internally by the Crestron control bus to manage the DM devices in the system and provide display control in each room.

Private Network Mode

To streamline its implementation on a corporate or university LAN, the DM-MD32X32 employs Private Network Mode to provide a single-point connection for the complete system. Using Private Network Mode, the DM-MD32X32 requires just one IP address for the complete DM network including all connected DM receivers and transmitters.

USB Signal Routing

Along with video, audio, and Ethernet, DigitalMedia also provides for the routing of USB HID (Human Interface Device) signals, allowing a USB HID compliant keyboard and/or mouse at one location to control a computer or media server at another location. USB HID connectivity is provided through select DM receivers, transmitters, and input cards.

Crestron also offers USB extenders to enable the routing of virtually any type of USB peripheral to any host device, all managed through the DigitalMedia system. Connect a USB over Ethernet Extender host module ([USB-EXT-DM-LOCAL](#)^[12]) to each computer, media server, game system, annotator, and any other host that you want to control or communicate with. Then, install a device module ([USB-EXT-DM-REMOTE](#)^[12]) at every display location to connect keyboards, mice, game controllers, whiteboards, flash drives, Web cameras, and mobile devices. Every module communicates with the DM switcher over the local Ethernet network or via a direct connection to the LAN port of a DM transmitter or receiver.

CEC Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. DigitalMedia provides an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-MD32X32 provides a gateway for controlling many devices right through their HDMI or HDBaseT connections, potentially eliminating the need for any dedicated control wires or IR emitters.^[13]

Easy Setup

Via the front panel or using Crestron Toolbox software, every step of the DM-MD32X32's setup process is designed to be quick and easy, configuring inputs and outputs automatically while letting the installer make intelligent design decisions along the way. The switcher even tests and measures the length of each DM cable, automatically making the appropriate calibrations for optimal signal transmission to every room. With DigitalMedia, an entire 32x32 system can be commissioned in under an hour.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the [DigitalMedia Switcher Configuration Tool](#).

Are you upgrading an existing DM switcher that has older "multi-gang" DMCO-series output cards? Use the online [Output Card Additions and Upgrades Tool](#) to update your existing output cards and switcher to the new "single-gang" output card format.

Please refer to the [DigitalMedia Resources Webpage](#) at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Maximum DM 8G® Cable Lengths

Cable Type:	DM-CBL-ULTRA DM® Ultra Cable	DM-CBL-8G DM 8G® Cable	3rd-Party CAT5e (or better) UTP or STP
Resolution:	330 ft (100 m) via any DM 8G+ cards		
1080p60 Full HD			
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 2K DCI @24Hz	330 ft (100 m) via "4K" DM 8G+ cards	230 ft (70 m) via "4K" DM 8G+ cards	165 ft (50 m) via "4K" DM 8G+ cards
2048x1080 2K DCI @60Hz			
2560x1440 WQHD			
2560x1600 WQXGA			
3840x2160 Ultra HD			
4096x2160 4K DCI			

Cable Type:	CRESFIBER8G CresFiber® 8G Multimode Fiber	3rd-Party OM3 Multimode Fiber
Resolution:	1000 ft (300 m) via DM 8G Fiber cards	
1080p60 Full HD		
1920x1200 WUXGA		
1600x1200 UXGA		
2048x1080 2K DCI @24Hz	500 ft (150 m) via DM 8G Fiber cards	

Cable Type:	CRESFIBER8G-SM CresFiber 8G Single-Mode Fiber	3rd-Party G.652.D (or better) Single-Mode Fiber
Resolution:	7.5 miles (12 km) via DM 8G SM Fiber cards	
1080p60 Full HD		
1920x1200 WUXGA		
1600x1200 UXGA		
2048x1080 2K DCI @24Hz		

DM-MD32X32 32x32 DigitalMedia™ Switcher

Video

Switcher: 32x32 digital matrix, modular input/output cards, Crestron QuickSwitch HD™

Input Signal Types: Configurable via modular plug-in cards supporting HDMI® (DVI & Dual-Mode DisplayPort compatible^[11]), DVI, 3G-SDI, RGB/VGA, component, S-Video, composite (NTSC & PAL), DM 8G+® & HDBaseT®, DM 8G Fiber, DM 8G SM Fiber, DM® CAT (legacy), DM Fiber (legacy), & H.264 streaming

Output Signal Types: Configurable via modular plug-in cards supporting HDMI (DVI compatible^[14]), DM 8G+ & HDBaseT, DM 8G Fiber, DM 8G SM Fiber, DM CAT (legacy), DM Fiber (legacy), & H.264 streaming (All input cards also include HDMI pass-through outputs)

Backplane Data Rate: 12.5 Gbps

Note: For additional specifications, please refer to the spec sheet for each input and output card.

Audio

Switcher: 32x32 digital multichannel audio-follow-video matrix switching, plus independent 32x32 stereo matrix for audio breakaway

Input Signal Types: Configurable via modular plug-in cards supporting HDMI (Dual-Mode DisplayPort compatible^[11]), 3G-SDI, analog (stereo 2-channel), SPDIF, DM 8G+ & HDBaseT, DM 8G Fiber, DM 8G SM Fiber, DM CAT (legacy), DM Fiber (legacy), & H.264 streaming

Output Signal Types: Configurable via modular plug-in cards supporting HDMI, analog (stereo 2-channel), DM 8G+ & HDBaseT, DM 8G Fiber, DM 8G SM Fiber, DM CAT (legacy), DM Fiber (legacy), & H.264 streaming (All input cards also include HDMI pass-through outputs, and most digital audio input cards also include analog stereo pass-through audio outputs)

Note: For additional specifications, please refer to the spec sheet for each input and output card.

Communications

Ethernet: 10/100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, Private Network Mode

USB: USB signal routing via select input cards, transmitters, receivers, and extenders^[15]; USB computer console port for setup

DigitalMedia: DM 8G+, DM 8G Fiber, DM 8G SM Fiber, DM Fiber, DM CAT, DMNet™, HDCP 2.2^[3], EDID, CEC, PoDM, PoDM+, Ethernet

HDBaseT: HDCP 2.2^[3], EDID, CEC, RS-232, PoH, Ethernet

HDMI: HDCP 2.2^[3], EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between connected HDMI and HDBaseT devices and a control system.^[13] For additional specifications, please refer to the spec sheet for each input and output card.

Card Slots

1 – 32: (32) DM switcher input card slots;
Each slot accepts (1) DMC-series input card

DM OUTPUTS 1 – 32: (16) DM switcher output card slots;
Each slot accepts (1) DMC-series output card

Connectors

LAN: (1) 8-pin RJ45 female;
10Base-T/100Base-TX/1000Base-T Ethernet port

24ABG / EIG 1 – 32: (32) sets of (1) 4-pin and (1) 3-pin 3.5 mm detachable terminal blocks;

Comprises (32) DMNet ports with “EIG” power selection ports, each set is associated with the corresponding DM CAT output port on any installed DM CAT output card;

Each DMNet port provides power and communications for a DM CAT device connected via DM cable;

Each EIG port connects to an external power supply^[16], or to the internal power source via a jumper, to power the DM CAT device connected to the corresponding DMNet port;

Maximum Load: 40 Watts (1.66 Amps @ 24 Volts DC) per port, limited to the available DMNet power from the internal power supply (see “Power Requirements” below) or an external power supply^[16]

100-240V~15-6A 50/60Hz: (1) IEC 60320 C14 main power inlet;
Mates with removable power cord, included

G: (1) 6-32 screw, chassis ground lug

COMPUTER (front): (1) USB Type B female;
USB computer console port (6 ft cable included)

Controls & Indicators

LCD Display: Green LCD dot matrix, 128 x 64 resolution, adjustable LED backlight, displays inputs/outputs by name, video & audio signal information, Ethernet configuration and setup menus

SOFTKEYS: (4) Pushbuttons for activation of LCD driven functions

HW-R: (1) Recessed pushbutton for hardware reset, reboots the switcher

ROUTE: (1) Pushbutton and red LED, selects ROUTE mode to allow routing changes

VIEW: (1) Pushbutton and red LED, selects VIEW mode for viewing current routes

INFO: (1) Pushbutton and red LED, selects INFO mode for viewing AV and device info

MENU: (1) Pushbutton, steps menu back one level

ENTER: (1) Pushbutton, executes highlighted menu or value

AUDIO: (1) Pushbutton & red LED, selects audio routing view

VIDEO: (1) Pushbutton & red LED, selects video routing view

USB: (1) Pushbutton & red LED, selects USB routing view

Quick-Adjust Knob: (1) Continuous turn rotary encoder, adjusts menu parameters

IN 1 – 32: (32) Pushbuttons and red LEDs, each selects the corresponding input for routing

OUT 1 – 32: (32) Pushbuttons and red LEDs, each selects the corresponding output for routing

LAN (rear): (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

DM-MD32X32 32x32 DigitalMedia™ Switcher

Power Requirements

Main Power: 15-6 Amps @ 100-240 Volts AC, 50/60 Hz
Power Consumption: 880 Watts typical
Available DMNet Power: 220 Watts (9.2 Amps @ 24 Volts DC) from internal power supply
Available PoDM/PoH Power: Refer to the specifications for each DM 8G+ input and output card

Environmental

Temperature: 32° to 104° F (0° to 40° C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 3000 BTU/hr
Ambient Noise: 30 to 34 dBA typical;
 29 to 30 dBA idle

Enclosure

Chassis: Metal with black finish, integrated rack ears, vented sides, fan-cooled
Front Panel: Metal, black finish with polycarbonate label overlay
Mounting: 14 RU 19-inch rack-mountable (rack ears built in)

Dimensions

Height: 24.44 in (621 mm)
Width: 19.00 in (483 mm)
Depth: 15.75 in (400 mm) without cards

Weight

64.5 lb (29.3 kg) without cards

Section 274100-2.10 J.25.a-Comply

MODELS & ACCESSORIES

Available Models

DM-MD32X32: 32x32 DigitalMedia™ Switcher

Available Accessories

DMC Series: Input & Output Cards
DM-PSU-8: 8-Port PoDM Power Supply
DM-PSU-16: 16-Port PoDM Power Supply
DM-CBL-ULTRA-NP: DigitalMedia™ Ultra Cable, Non-Plenum Type CMR
DM-CBL-ULTRA-P: DigitalMedia™ Ultra Cable, Plenum Type CMP
DM-CBL-ULTRA-LSZH: DigitalMedia™ Ultra Cable, Low Smoke Zero Halogen
DM-CONN: Connector for DM-CBL & DM-CBL-ULTRA
DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum
DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum
DM-8G-CONN: Connector for DM-CBL-8G
DM-8G-CRIMP: Crimping Tool for DM-8G-CONN
DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G
DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

CRESFIBER8G-NP: CresFiber® 8G Multimode Fiber Optic Cable, 50/125 x4 breakout, non-plenum

CRESFIBER8G-P: CresFiber® 8G Multimode Fiber Optic Cable, 50/125 x4 breakout, plenum

CRESFIBER-CONN-SC50UM-12: Connectors for CresFiber® 8G Multimode Fiber Optic Cable, SC 50µm, 12-Pack

CRESFIBER8G-SM-P: CresFiber® 8G Single-Mode Fiber Optic Cable, plenum

CRESFIBER8G-SM-CONN-LC-12: Connectors for CresFiber® 8G Single-Mode Fiber Optic Cable, LC, 12-Pack

CRESFIBER-TK: CresFiber® Termination Kit

USB-EXT-DM: USB over Ethernet Extender with Routing

Notes:

- All output types are configured in pairs except for streaming (a single streaming output occupies the space of two outputs of any other type). To configure a complete DM switcher with output and input cards, please use the online [DigitalMedia Switcher Configuration Tool](#). Current DM switchers use DMC-series "single-gang" output cards. For older DM switchers with DMC-series "multi-gang" output cards, please use the online [Output Card Additions and Upgrades Tool](#) to update your existing output cards and switcher to the new single-gang output card format.
- Crestron control via the DM network requires a Crestron control system, sold separately.
- 4K, Ultra HD, and HDCP 2.2 are currently supported over HDMI, DM 8G+, and HDBaseT using select input and output cards. Refer to the specifications for each input/output card and each connected device for its full capabilities.
- The maximum cable length for DigitalMedia 8G+ (DM 8G+) or HDBaseT is dependent upon the type of cable, the choice of input/output card, and the resolution of the video signal. Refer to the "Maximum DM 8G Cable Lengths" table for a detailed overview. Crestron legacy cable models [DM-CBL](#) DigitalMedia Cable and [DM-CBL-D](#) DigitalMedia D Cable support the same resolutions and cable lengths as CAT5e. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment.
- The maximum cable length for DigitalMedia 8G Fiber (DM 8G Fiber) is 1000 ft (300 m) using [CRESFIBER8G](#) multimode fiber optic cable, or 500 ft (150 m) using [CRESFIBER](#) (legacy) or third-party OM3 multimode fiber optic cable.
- The maximum cable length for DigitalMedia 8G Single-Mode Fiber (DM 8G SM Fiber) is 7.5 miles (12 km) using [CRESFIBER8G-SM](#) or third-party G.652.D (or better) single-mode fiber optic cable.
- The maximum cable length for DigitalMedia CAT (DM CAT) is 450 ft (137 m) using [DM-CBL](#) DigitalMedia Cable. Actual cable length depends upon multiple factors. Up to two DM Repeaters (Model [DM-DR](#)) may be required.
- The maximum cable length for DigitalMedia Fiber (DM Fiber) is 1000 ft (300 m) using [CRESFIBER](#) (legacy), [CRESFIBER8G](#), or third-party OM2/OM3 duplex multimode fiber optic cable.
- Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. All wire and cables are sold separately.
- Streaming output supports 2-channel stereo audio only. Multichannel surround sound audio sources cannot be streamed unless downmixed to stereo. Stereo downmix capability requires a "DSP" type DM switcher input card, sold separately.
- Any HDMI input can support a DVI or Dual-Mode DisplayPort signal using a suitable adapter or interface cable.
- Item(s) sold separately.
- Control of third-party HDBaseT devices using CEC is only supported via "4K" DM 8G+ input and output cards.
- DVI output is supported via an HDMI output port using a suitable adapter or interface cable. [CBL-HD-DVI](#) interface cables are available separately.
- Manages the routing of USB HID signals between peripheral DM devices and input cards that are equipped with USB HID ports. Also programmable to manage the routing of USB signals between Crestron USB over Ethernet Extender modules ([USB-EXT-DM](#), sold separately). Refer to the USB-EXT-DM spec sheet for more information.
- For external DMNet power, use a Crestron [CNPWS-75](#), [C2N-SPWS300](#), or other Cresnet power supply as required. Do not interconnect DMNet with Cresnet.

DM-MD32X32 32x32 DigitalMedia™ Switcher

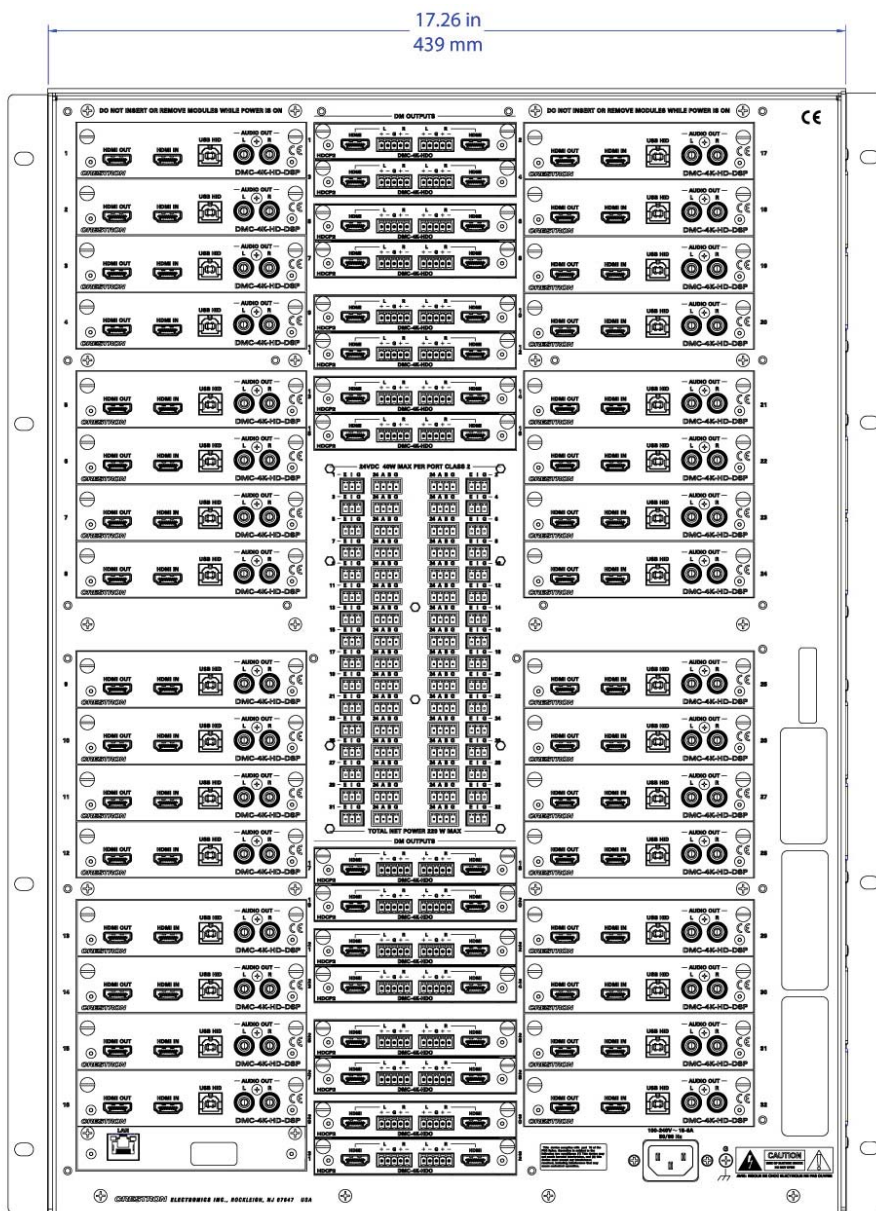
This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

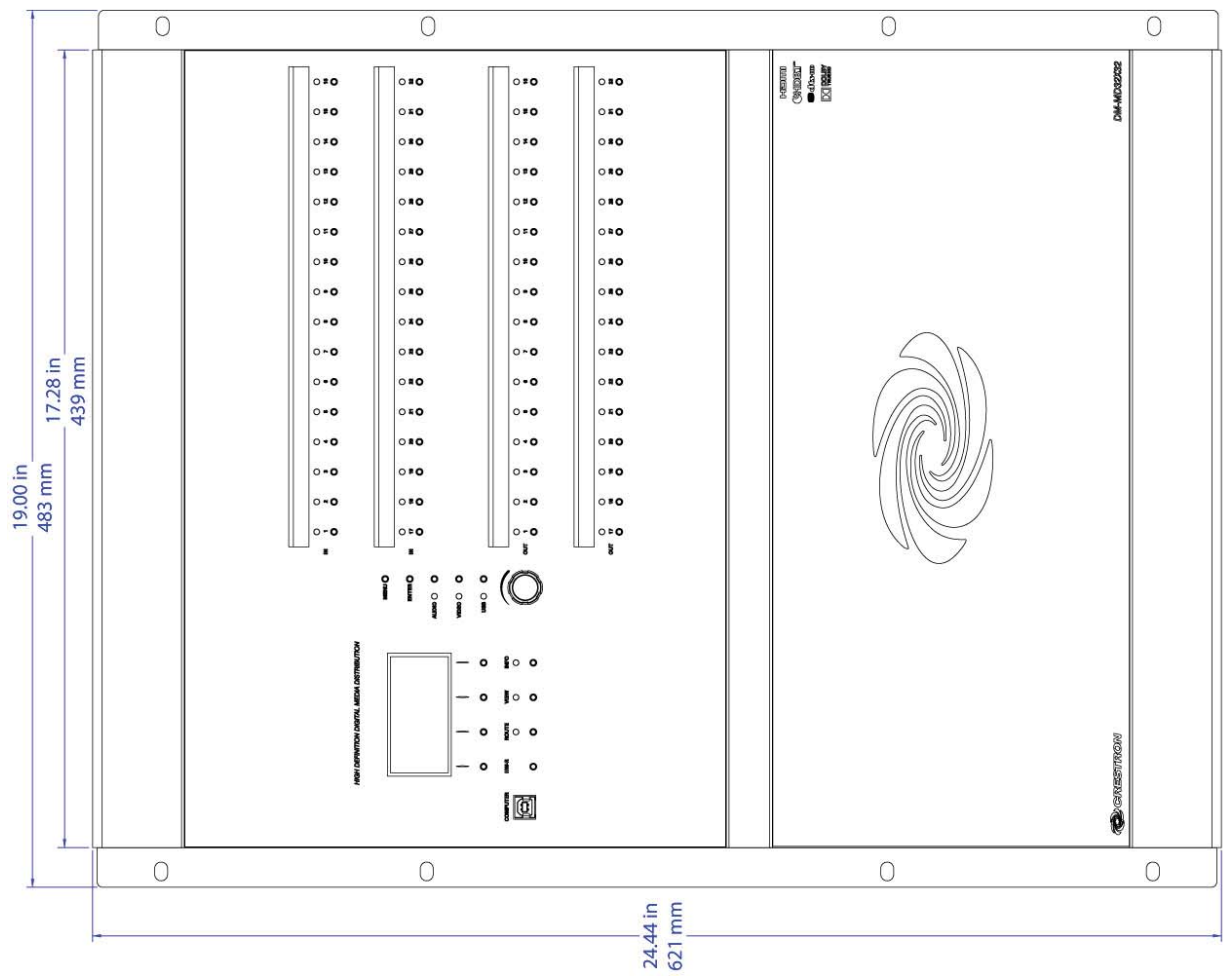
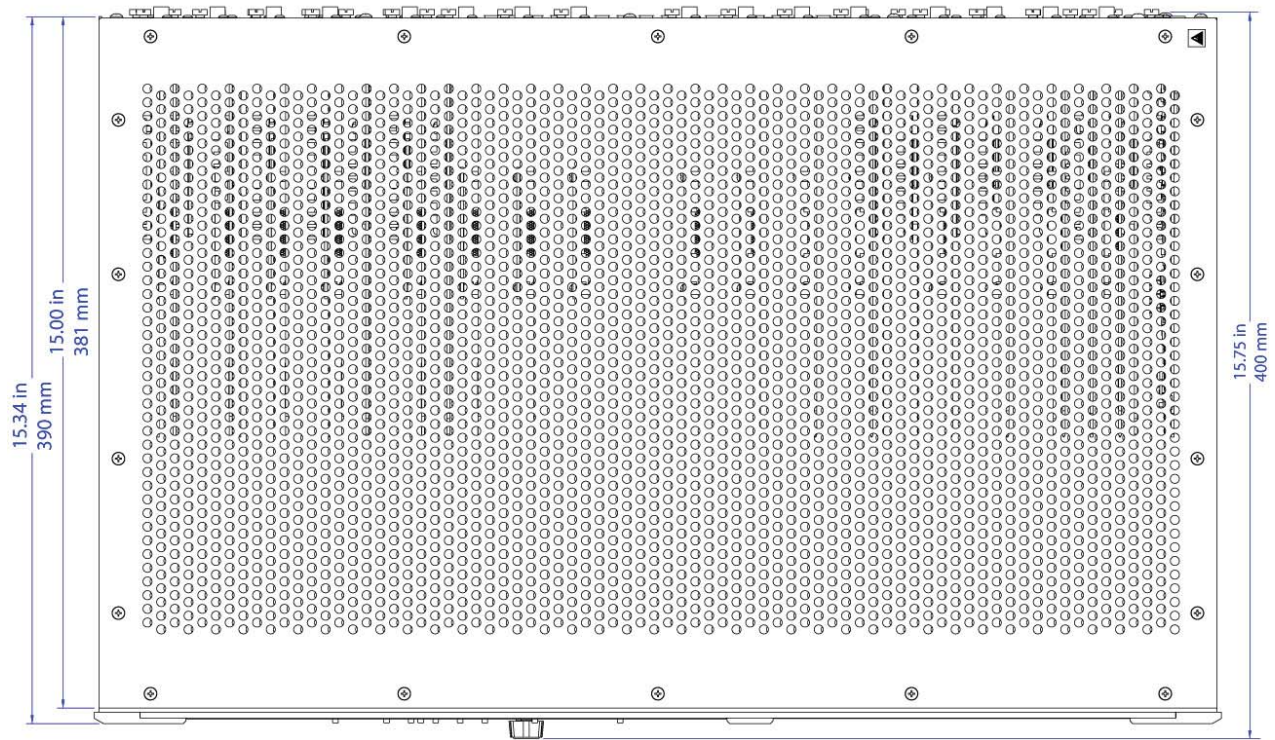
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NOTE: Shown with input and output cards installed. All input and output cards sold separately.

DM-MD32X32 32x32 DigitalMedia™ Switcher



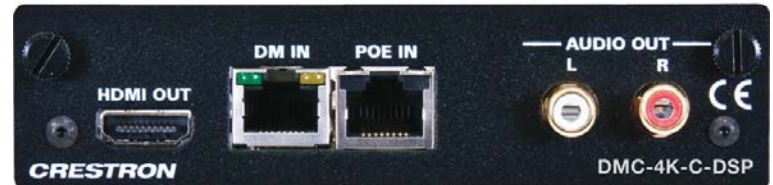
HDBaseT® Certified 4K DigitalMedia 8G+® Input Card w/Downmixing for DM® Switchers

- > Modular input card for a DM-MD8X8, DM-MD16X16, or DM-MD32X32 switcher
- > Provides a single 4K DM 8G+® input
- > HDBaseT® Certified — Enables direct connection to other HDBaseT certified equipment
- > Handles video resolutions up to 4K and Ultra HD
- > Handles 3D video and Deep Color
- > Handles Dolby® TrueHD, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > HDCP 2.2 compliant^[3]
- > Supports cable lengths up to 330 ft (100 m) for all resolutions up to UHD and 4K using DM® Ultra cable^[1]
- > Supports cable lengths up to 330 ft (100 m) for 1080p, WUXGA, and 2K using DM 8G® cable or CAT5e^[1]
- > Supports cable lengths up to 230 ft (70 m) for UHD and 4K using DM 8G cable, or 165 ft (50 m) using CAT5e^[1]
- > Includes an HDMI® output for pass-through of the input signal
- > Includes a stereo analog line-level audio output with volume control
- > Allows extraction of stereo 2-channel audio signals
- > Built-in downmixing enables simultaneous distribution of multi-channel surround sound and 2-channel stereo audio signals
- > Provides up to 100 ms delay adjustment of the downmix signal
- > Enables device control via CEC
- > Supports PoDM and PoH^[2]
- > Occupies a single DM switcher input card slot
- > Provides a rack-mountable DM 8G+ receiver solution using the optional DMCI card interface^[4]

The DMC-4K-C-DSP is an input card designed for use with any card-based Crestron® DigitalMedia™ Switcher. It provides one DM 8G+® input, with complementary HDMI® pass-through and analog audio outputs. The DM 8G+ input enables the connection of a DM 8G+ transmitter, the output of another DM® switcher, or an HDBaseT® certified source, using a single CAT type twisted pair cable.^[1] Power over DM (PoDM) is supplied through the same connection, providing a centralized power source for PoDM compatible transmitters.^[2]

The DMC-4K-C-DSP provides all the features of the [DMC-4K-C](#) with the addition of downmixing to enable the simultaneous distribution of multichannel 7.1 surround sound and 2-channel stereo signals. It is recommended for use with surround sound sources to allow the original multichannel signal to be distributed to rooms with surround sound systems, while simultaneously distributing a 2-channel downmix signal to stereo-only rooms and devices.

NOTE: The latest version of the DMC-4K-C-DSP is model DMC-4K-C-DSP-HDCP2, which is an updated version of the original DMC-4K-C-DSP that adds support for HDCP 2.2. The original DMC-4K-C-DSP supports HDCP 1.1.



4K Ultra HD

The DMC-4K-C-DSP features the latest DM 8G+ technology, providing support for the transport of 4K and Ultra HD video signals. Support for 4K video also ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA.

DigitalMedia 8G+®

Engineered for ultra high-bandwidth and ultimate scalability, DigitalMedia 8G+ (DM 8G+) provides a true one-wire lossless transport for moving high-definition video, audio, power, Ethernet, and control signals over twisted pair copper wire. DM 8G+ handles uncompressed Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for HDCP 2.2^[3], Deep Color, 3D, and high-bitrate 7.1 audio. All signals are transported over a single CAT type cable, supporting 1080p, WUXGA, and 2K signals at distances up to 330 feet (100 m) using Crestron [DM Ultra](#) or [DM 8G® Cable](#), or third-party CAT5e. Higher resolutions up to UHD and 4K are supported at distances up to 330 feet (100 m) using DM Ultra Cable, 230 feet (70 m) using DM 8G Cable, or 165 feet (50 m) using CAT5e.^[1]

HDBaseT® Certified

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. An HDBaseT compliant device can be connected directly to the DM 8G+ input on the DMC-4K-C-DSP without requiring a DM transmitter.

HDMI® Pass-Through

Every DM switcher input card includes an HDMI output port, which can be used to pass the input signal through to a local audio processor or video monitor, or to feed a second DM switcher for output expansion purposes.

Audio Extracting and Downmixing

The DMC-4K-C-DSP also includes an unbalanced analog audio output, allowing stereo audio signals to be extracted from the digital input and fed to a multiroom audio distribution system. Built-in DSP allows multi-channel surround sound signals to be decoded and downmixed to stereo.

The stereo downmix signal is automatically routed to the analog output, and can also be routed via any switcher output for distribution to stereo-only displays and other equipment. The analog output includes volume control that is adjustable via a control system using a keypad, touch screen, handheld remote, or mobile device.

Power over DM®

Power over DM (PoDM) and Power over HDBaseT (PoH) can be supplied through the DMC-4K-C-DSP via its DM 8G+ input port to power a compatible DM 8G+ transmitter or HDBaseT device. To enable PoDM or PoH, simply connect a PoDM Power Supply (model [DM-PSU-8](#) or [DM-PSU-16](#)^[4]) to the POE IN port on the input card. As an alternative to a PoDM Power Supply, a Crestron PoE switch, PoE injector, or other 802.3af or 802.3at compliant PoE PSE may be used.^[2]

Standalone DM 8G+ Receiver

In addition to its use as an input card for DM switchers, the DMC-4K-C-DSP may also be used with the [DMCI](#) DigitalMedia Card Interface^[4] to provide a DM 8G+ receiver solution that's perfect for installation in an equipment rack or AV cart, or as a portable display interface.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the online [DigitalMedia Switcher Configuration Tool](#).

Please refer to the [DigitalMedia Resources Webpage](#) at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Maximum Cable Lengths

Cable Type:	DM-CBL-ULTRA DM® Ultra Cable	DM-CBL-8G DM 8G® Cable	CAT5e (or better) UTP or STP ^[1]
Resolution:			
1080p60 Full HD	330 ft (100 m)	330 ft (100 m)	330 ft (100 m)
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 2K DCI		230 ft (70 m)	165 ft (50 m)
2560x1440 WQHD			
2560x1600 WQXGA			
3840x2160 Ultra HD			
4096x2160 4K DCI			

Video

Input Signal Types: DM 8G+® & HDBaseT® w/Deep Color, 3D, & 4K
Output Signal Types: HDMI® w/Deep Color, 3D, & 4K (DVI compatible^[5])

Maximum Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD1080p	60 Hz	4:4:4	36 bit
Interlaced	1920x1080 HD1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

Audio

Input Signal Types: DM 8G+, HDBaseT

Output Signal Types: HDMI (multichannel pass-through from input), analog stereo (2-channel downmix of input signal), routes simultaneous multichannel and 2-channel downmix signals to the switcher backplane

Digital Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

Analog Format: Stereo 2-channel

Digital-To-Analog Conversion: 24-bit 48 kHz

Analog Performance: Frequency Response: 20 Hz to 20 kHz ±0.5 dB;
 S/N Ratio: >95 dB, 20 Hz to 20 kHz A-weighted;
 THD+N: <0.005% @ 1 kHz;
 Stereo Separation: >90 dB

Analog Volume Adjustment: -80 to 0 dB

Downmix Delay Adjustment: 0.0 to 100.0 ms

Communications

DigitalMedia: DM 8G+, HDCP 2.2^[3], EDID, CEC, PoDM, PoDM+, Ethernet

HDBaseT: HDCP 2.2^[3], EDID, CEC, RS-232, PoH, Ethernet

HDMI: HDCP 2.2^[3], EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDBaseT and HDMI devices and a control system

Connectors

HDMI OUT: (1) 19-pin Type A HDMI female;

HDMI digital video/audio output;

Also supports DVI^[5]

DM IN: (1) 8-pin RJ45 female, shielded;

DM 8G+ input, HDBaseT compliant;

PoDM and PoH PSE (Power Sourcing Equipment) port^[2];

Connects to the DM 8G+ output of a DM transmitter or other DM device, or to an HDBaseT device, via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable^[1]

DMC-4K-C-DSP HDBaseT® Certified 4K DM 8G+® Input Card w/Downmixing for DM® Switchers

POE IN: (1) 8-pin RJ45 female, PoE input;
Connects to a DM-PSU-8 or DM-PSU-16 PoDM Power Supply, or to an 802.3af or 802.3at compliant PoE PSE (Power Sourcing Equipment), to enable PoDM and PoH power sourcing^[2]

AUDIO OUT: (2) RCA female;
Unbalanced stereo line-level audio output;
Output Impedance: 100 Ohms nominal;
Maximum Output Level: 2 Vrms

Indicators

DM IN: (2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

Construction

Plug-in card, occupies (1) DM switcher input card slot, includes metal faceplate w/black finish

Weight

8.0 oz (227 g)

MODELS & ACCESSORIES

Available Models

DMC-4K-C-DSP: HDBaseT® Certified 4K DigitalMedia 8G+® Input Card w/Downmixing for DM® Switchers

DMC-4K-C-DSP-HDCP2: HDBaseT® Certified 4K DigitalMedia 8G+® Input Card w/Downmixing for DM® Switchers

Section 274100- 2.10.J.25.b Comply (Replacement)

Available Accessories

DM-PSU-8: 8-Port PoDM Power Supply

DM-PSU-16: 16-Port PoDM Power Supply

DM-CBL-ULTRA-NP: DigitalMedia™ Ultra Cable, Non-Plenum Type CMR

DM-CBL-ULTRA-P: DigitalMedia™ Ultra Cable, Plenum Type CMP

DM-CBL-ULTRA-LSZH: DigitalMedia™ Ultra Cable, Low Smoke Zero Halogen

DM-CONN: Connector for DM-CBL-ULTRA

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum

DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum

DM-8G-CONN: Connector for DM-CBL-8G

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

CBL Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

DMCI: DigitalMedia™ Card Interface

Notes

1. The maximum cable length for DigitalMedia 8G+ (DM 8G+) or HDBaseT is dependent upon the type of cable and resolution of the video signal. Refer to the "Maximum Cable Lengths" table for a detailed overview. Crestron legacy cable models **DM-CBL** DigitalMedia Cable and **DM-CBL-D** DigitalMedia D Cable support the same resolutions and cable lengths as CAT5e. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
2. Supplying Power over DM (PoDM) or Power over HDBaseT (PoH) via the DM IN port requires connection of the DMC-4K-C-DSP's POE IN port to a PoDM Power Supply (**DM-PSU-8** or **DM-PSU-16**, sold separately) or an 802.3af or 802.3at compliant PoE PSE. Supplying PoDM+ is supported using an 802.3at Type 2 Class 4 compliant PoE+ PSE, such as the Crestron **CEN-SWPOE-16** (sold separately). Refer to the connected DM 8G+ or HDBaseT device for its PoDM or PoH capabilities and requirements. Any wiring that is connected to a PoDM, PoH, or PoE PSE port is for intra-building use only and should not be connected to a line that runs outside of the building in which the PSE is located.
3. HDCP version 2.2 is supported by model DMC-4K-C-DSP-HDCP2 only. The original model DMC-4K-C-DSP supports HDCP 1.1.
4. Item(s) sold separately.
5. DVI is supported via the HDMI output using a suitable adapter or interface cable. **CBL-HD-DVI** interface cables are available separately.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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4K HDMI® Input Card w/Downmixing for DM® Switchers

- > Modular input card for a DM-MD8X8, DM-MD16X16, or DM-MD32X32 switcher
- > Provides a single 4K HDMI® input
- > Handles video resolutions up to 4K and Ultra HD
- > Handles 3D video and Deep Color
- > Handles Dolby® TrueHD, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > HDCP 2.2 compliant^[4]
- > Includes an HDMI output for pass-through of the input signal
- > Includes a stereo analog line-level audio output with volume control
- > Allows extraction of stereo 2-channel audio signals
- > Built-in downmixing enables simultaneous distribution of multichannel surround sound and 2-channel stereo audio signals
- > Provides up to 100 ms delay adjustment of the downmix signal
- > Enables device control via CEC
- > Enables USB HID signal extension for a local computer
- > Compatible with Crestron USB over Ethernet Extenders^[2]
- > Occupies a single DM® switcher input card slot
- > Provides an HDMI problem solving solution using the optional DMCI card interface^[3]

The DMC-4K-HD-DSP is an input card designed for use with any card-based Crestron® DigitalMedia™ Switcher. It provides one HDMI® input, with complementary HDMI pass-through and analog audio outputs. A USB HID port is also provided. The HDMI input handles Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for HDCP, Deep Color, 3D, and high-bitrate 7.1 audio. The HDMI input can also handle DVI and Dual-Mode DisplayPort signals using an appropriate adapter or interface cable.^[1]

The DMC-4K-HD-DSP provides all of the features of the [DMC-4K-HD](#) with the addition of downmixing to enable the simultaneous distribution of multichannel 7.1 surround sound and 2-channel stereo signals. It is recommended for use with surround sound sources to allow the original multichannel signal to be distributed to rooms with surround sound systems, while simultaneously distributing a 2-channel downmix signal to stereo-only rooms and devices.

NOTE: The latest version of the DMC-4K-HD-DSP is model DMC-4K-HD-DSP-HDCP2, which is an updated version of the original DMC-4K-HD-DSP that adds support for HDCP 2.2. The original DMC-4K-HD-DSP supports HDCP 1.1.

4K Ultra HD

The DMC-4K-HD-DSP is capable of handling video resolutions up to 4K and Ultra HD. Support for 4K video also ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA.



HDMI® Pass-Through

Every DM switcher input card includes an HDMI output port, which can be used to pass the input signal through to a local audio processor or video monitor, or to feed a second DM switcher for output expansion purposes.

Audio Extracting and Downmixing

The DMC-4K-HD-DSP also includes an unbalanced analog audio output, allowing stereo audio signals to be extracted from the digital input and fed to a multiroom audio distribution system. Built-in DSP allows multichannel surround sound signals to be decoded and downmixed to stereo. The stereo downmix signal is automatically routed to the analog output, and can also be routed via any switcher output for distribution to stereo-only displays and other equipment. The analog output includes volume control that is adjustable via a control system using a keypad, touch screen, handheld remote, or mobile device.

USB Signal Extension

Built-in USB HID signal routing allows a connected computer (or other USB HID-compliant host) to be controlled by a mouse and/or keyboard located at a presentation lectern, conference table, or some other remote location. Additional USB devices of virtually any type can be supported using Crestron USB over Ethernet Extenders ([USB-EXT-DM](#)).^[2]

CEC Embedded Device Control

DigitalMedia offers an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to a Crestron control system (via the DM switcher), the DMC-4K-HD-DSP provides a gateway for controlling the connected source device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

DMC-4K-HD-DSP 4K HDMI® Input Card w/Downmixing for DM® Switchers

Standalone HDMI Problem Solver

In addition to its use as an input card for DM switchers, the DMC-4K-HD-DSP may also be used with the [DMCI DigitalMedia Card Interface](#)^[3] to provide a handy problem-solving tool with many useful functions. It can be used to extract an analog audio signal from an HDMI stream, to downmix surround sound signals to stereo, to provide a gateway for CEC device control, and to extend a USB HID mouse/keyboard signal over Ethernet. It can also be used to detect a device's video and audio information, manage its EDID, and assess its HDCP capabilities.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the online [DigitalMedia Switcher Configuration Tool](#).

Please refer to the [DigitalMedia Resources Webpage](#) at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Video

Input Signal Types: HDMI® w/Deep Color, 3D, & 4K (DVI & Dual-Mode DisplayPort compatible^[1])

Output Signal Types: HDMI w/Deep Color, 3D, & 4K (DVI compatible^[1])

Maximum Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD1080p	60 Hz	4:4:4	36 bit
Interlaced	1920x1080 HD1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

Audio

Input Signal Types: HDMI (Dual-Mode DisplayPort compatible^[1])

Output Signal Types: HDMI (multichannel pass-through from input), analog stereo (2-channel downmix of input signal), routes simultaneous multichannel and 2-channel downmix signals to the switcher backplane

Digital Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

Analog Format: Stereo 2-channel

Digital-To-Analog Conversion: 24-bit 48 kHz

Analog Performance: Frequency Response: 20 Hz to 20 kHz ±0.5 dB;
S/N Ratio: >95 dB, 20 Hz to 20 kHz A-weighted;
THD+N: <0.005% @ 1 kHz;
Stereo Separation: >90 dB

Analog Volume Adjustment: -80 to 0 dB

Downmix Delay Adjustment: 0.0 to 100.0 ms

Communications

USB: Supports signal extension of USB HID class devices, expandable to support virtually any USB 1.1 or 2.0 device using Crestron USB-EXT-DM USB over Ethernet Extenders^[2]

HDMI: HDCP 2.2^[4], EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI devices and a control system

Connectors

HDMI OUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output;
(DVI compatible^[1])

HDMI IN: (1) 19-pin Type A HDMI female;
HDMI digital video/audio input;
(DVI and Dual-Mode DisplayPort compatible^[1])

USB HID: (1) USB Type B female; USB device port for connection to the USB host interface of a computer or other USB HID-compliant host

AUDIO OUT: (2) RCA female;
Unbalanced stereo line-level audio output;
Output Impedance: 100 Ohms nominal;
Maximum Output Level: 2 Vrms

Construction

Plug-in card, occupies (1) DM switcher input card slot, includes metal faceplate w/black finish

Weight

8.0 oz (227 g)

DMC-4K-HD-DSP 4K HDMI® Input Card w/Downmixing for DM® Switchers

MODELS & ACCESSORIES

Section 274100- 2.10.J.25.d Comply
(Replacement)

Available Models

DMC-4K-HD-DSP: 4K HDMI® Input Card w/Downmixing for DM® Switchers

DMC-4K-HD-DSP-HDCP2: 4K HDMI® Input Card w/Downmixing for DM® Switchers

Available Accessories

CBL Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

USB-EXT-DM: USB over Ethernet Extender with Routing

DMCI: DigitalMedia™ Card Interface

Notes:

1. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. [CBL-HD-DVI](#) interface cables are available separately.
2. USB-EXT-DM USB over Ethernet Extender Modules are sold separately. Refer to the [USB-EXT-DM](#) spec sheet for more information.
3. Item(s) sold separately.
4. HDCP version 2.2 is supported by model DMC-4K-HD-DSP-HDCP2 only. The original model DMC-4K-HD-DSP supports HDCP 1.1.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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RCA Analog Video Input Card w/Analog Audio for DM® Switchers

- > Modular input card for a DM-MD8X8, DM-MD16X16, or DM-MD32X32 switcher
- > Provides a multi-format analog video input with stereo analog audio
- > Accommodates component, S-Video, and composite video sources
- > Handles 480i NTSC and 576i PAL signals
- > Handles HD video resolutions up to Full HD 1080p
- > Converts analog AV signals to digital
- > Employs high-quality 30 bit video and 24 bit audio sampling
- > Includes an HDMI® output for pass-through of the input signal
- > Occupies a single DM® switcher input card slot
- > Provides an analog AV to HDMI convertor using the optional DMCI card interface^[1]

The DMC-VID-RCA-A is an input card designed for use with any card-based Crestron® DigitalMedia™ Switcher. It provides one multi-format analog video input and one stereo analog audio input, with a complementary HDMI® pass-through output. The video input allows for the connection of component, S-Video, and composite video sources. It handles 480i NTSC and 576i PAL signals, as well as HD signals up to 1080p60.

Digital AV Converter

Using high-quality 30 bit sampling, the DMC-VID-RCA-A converts analog video signals to digital for distribution over the DigitalMedia network. Analog audio signals are converted to 24 bit digital.

HDMI® Pass-Through

Every DM® switcher input card includes an HDMI output port, which can be used to pass the audio and video input signals through to a local audio processor or video monitor, or to feed a second DM switcher for output expansion purposes.

Multi-format Analog AV to HDMI Converter

In addition to its use as an input card for DM switchers, the DMC-VID-RCA-A may also be used with the DMCI DigitalMedia Card Interface^[1] to serve as an analog AV to HDMI signal convertor, and to detect and report input signal information to a Crestron control system.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the online [DigitalMedia Switcher Configuration Tool](#).

Please refer to the DigitalMedia Resources Webpage at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.



SPECIFICATIONS

Video

Input Signal Types: Component (YPbPr), S-Video (Y/C), or composite (NTSC, PAL)

Output Signal Types: HDMI® (DVI compatible^[2])

Input Resolutions, Component: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60

Input Resolutions, Composite & S-Video: 480i, 576i

Output Resolutions: Matched to inputs

Analog-To-Digital Conversion: 10-bit 170 MHz per each of 3 channels

Audio

Input Signal Types: Analog stereo

Output Signal Types: HDMI (pass-through from input)

Formats: Stereo 2-channel

Analog-To-Digital Conversion: 24-bit 48 kHz

Input Level Compensation: ±10 dB

Analog Performance: Frequency Response: 20Hz to 20kHz ±0.75dB;

S/N Ratio: >95dB, 20Hz to 20kHz A-weighted;

THD+N: <0.005% @ 1kHz;

Stereo Separation: >90dB

Communications

HDMI: CEC

NOTE: Supports management of CEC between the connected HDMI device and a control system

Connectors

HDMI OUT: (1) 19-pin Type A HDMI female;

HDMI digital video/audio output;

Also supports DVI^[2]

DMC-VID-RCA-A RCA Analog Video Input Card w/Analog Audio for DM® Switchers

IN - Y, Pb/Y, Pr/C/COMP: (3) RCA female comprising (1) auto-sensing multi-format analog video input;
Signal Types: Component (YPbPr), S-Video (Y/C), or composite;
Input Level: 1 Vp-p nominal;
Input Impedance: 75 Ohms nominal

IN - AUDIO L, R: (2) RCA female;
Unbalanced stereo line-level audio input;
Input Level: 2 Vrms maximum;
Input Impedance: 15k Ohms

Construction

Plug-in card, occupies (1) DM switcher input card slot, includes metal faceplate w/black finish

Weight

7.0 oz (199 g)

MODELS & ACCESSORIES

Section 274100- 2.10.J.25.e Comply

Available Models

DMC-VID-RCA-A: RCA Analog Video Input Card w/Analog Audio for DM® Switchers

Available Accessories

CBL Series: Crestron® Certified Interface Cables
MP-WP Series: Media Presentation Wall Plates
MPI-WP Series: Media Presentation Wall Plates - International Version
DMCI: DigitalMedia™ Card Interface

Notes:

1. Item(s) sold separately.
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. [CBL-HD-DVI](#) interface cables are available separately.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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2-Channel HDBaseT® Certified 4K DigitalMedia 8G+® Output Card for DM® Switchers

- > Modular output card for a DM-MD8X8, DM-MD16X16, or DM-MD32X32 switcher
- > Provides two independent 4K DM 8G+® outputs
- > HDBaseT® Certified — Enables direct connection to other HDBaseT certified equipment
- > Includes a parallel HDMI® port on the first output
- > Handles video resolutions up to 4K and Ultra HD
- > Handles 3D video and Deep Color
- > Handles Dolby® TrueHD, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > HDCP 2.2 compliant^[3]
- > Supports cable lengths up to 330 ft (100 m) for all resolutions up to UHD and 4K using DM® Ultra cable^[1]
- > Supports cable lengths up to 330 ft (100 m) for 1080p, WUXGA, and 2K using DM 8G® cable or CAT5e^[1]
- > Supports cable lengths up to 230 ft (70 m) for UHD and 4K using DM 8G cable, or 165 ft (50 m) using CAT5e^[1]
- > Enables HDMI and HDBaseT device control via CEC
- > Supports PoDM and PoH^[2]
- > Occupies a single output card slot



The DMC-4K-CO-HD is an output card designed for use with any card-based Crestron® DigitalMedia™ Switcher. It provides two independent DM 8G+® outputs, plus one HDMI® output. The HDMI output carries the same signal as the first DM 8G+ output. Both DM 8G+ outputs are compatible with HDBaseT®. Each DM 8G+ output enables connection to a DM 8G+ receiver, the input of another DM® switcher, or an HDBaseT certified display device or receiver, using a single CAT type twisted pair cable.^[1] Power over DM (PoDM) is supplied through the same connection, providing a centralized power source for PoDM compatible receivers.^[2]

NOTE: The latest version of the DMC-4K-CO-HD is model DMC-4K-CO-HD-HDCP2, which is an updated version of the original DMC-4K-CO-HD that adds support for HDCP 2.2. The original DMC-4K-CO-HD supports HDCP 1.1.

All outputs on the DMC-4K-CO-HD are capable of handling video resolutions up to 4K and Ultra HD. Support for 4K video also ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA. DM 8G+ transports uncompressed Full HD 1080p, WUXGA, and 2K signals over distances up to 330 feet (100 m) using Crestron DM Ultra or DM 8G® Cable, or third-party CAT5e. Higher resolution signals up to UHD and 4K are supported over distances up to 330 feet (100 m) using DM Ultra Cable, 230 feet (70 m) using DM 8G Cable, or 165 feet (50 m) using CAT5e.^[1]

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Either DM 8G+ output can be connected directly to an HDBaseT compliant device without requiring a DM receiver.

DigitalMedia offers an alternative to conventional RS-232 and IR display control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to a control system (via the DM switcher), the DMC-4K-CO-HD provides a gateway for controlling display devices right through their HDMI or HDBaseT connections, potentially eliminating the need for any dedicated control wires or IR emitters.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the online [DigitalMedia Switcher Configuration Tool](#).

Are you upgrading an existing DM switcher that has older “multi-gang” DMCO-series output cards? Use the online [Output Card Additions and Upgrades Tool](#) to update your existing output cards and switcher to the new “single-gang” output card format.

Please refer to the [DigitalMedia Resources Webpage](#) at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

DMC-4K-CO-HD 2-Channel HDBaseT® Certified 4K DM 8G+® Output Card for DM® Switchers

SPECIFICATIONS

Maximum Cable Lengths

Cable Type:	DM-CBL-ULTRA DM® Ultra Cable	DM-CBL-8G DM 8G® Cable	CAT5e (or better) UTP or STP ^[1]
Resolution:			
1080p60 Full HD	330 ft (100 m)	330 ft (100 m)	330 ft (100 m)
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 2K DCI		230 ft (70 m)	165 ft (50 m)
2560x1440 WQHD			
2560x1600 WQXGA			
3840x2160 Ultra HD			
4096x2160 4K DCI			

Video

Output Signal Types: DM 8G+® & HDBaseT® w/Deep Color, 3D, & 4K; HDMI® w/Deep Color, 3D, & 4K (DVI compatible^[4])

Maximum Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD1080p	60 Hz	4:4:4	36 bit
Interlaced	1920x1080 HD1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

Audio

Output Signal Types: DM 8G+, HDBaseT, HDMI

Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

Communications

DigitalMedia: DM 8G+, HDCP 2.2^[3], EDID, CEC, PoDM, PoDM+, Ethernet

HDBaseT: HDCP 2.2^[3], EDID, CEC, RS-232, PoH, Ethernet

HDMI: HDCP 2.2^[3], EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI and HDBaseT devices and a control system

Connectors

DM OUT: (2) 8-pin RJ45 female, shielded, comprising (2) DM 8G+ outputs (HDBaseT compliant);

PoDM and PoH PSE (Power Sourcing Equipment) ports^[2]; Each connects to the DM 8G+ input of a DM receiver or other DM device, or to an HDBaseT device, via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable^[1]

POE IN: (2) 8-pin RJ45 female comprising (2) PoE inputs;

Each connects to one port of a DM-PSU-8 or DM-PSU-16 PoDM Power Supply, or 802.3af or 802.3at compliant PoE PSE (Power Sourcing Equipment), to enable PoDM and PoH power sourcing via the corresponding DM 8G+ output^[2]

HDMI: (1) 19-pin Type A HDMI, female;

HDMI digital video/audio output, DVI compatible^[4];

Outputs same signal as the left DM 8G+ output

Indicators

DM OUT: (4) LEDs, green LEDs indicate DM link status, amber LEDs indicate video and HDCP signal presence, for each corresponding DM 8G+ output

Construction

Plug-in card, occupies (1) DM switcher output card slot, includes metal faceplate w/black finish

Weight

6.2 oz (176 g)

DMC-4K-CO-HD 2-Channel HDBaseT® Certified 4K DM 8G+® Output Card for DM® Switchers

MODELS & ACCESSORIES

Available Models

DMC-4K-CO-HD: 2-Channel HDBaseT® Certified 4K DigitalMedia 8G+® Output Card for DM® Switchers

DMC-4K-CO-HD-HDCP2: 2-Channel HDBaseT® Certified 4K DigitalMedia 8G+® Output Card for DM® Switchers

Section 274100- 2.10.J.25.(f,g,h,i) Comply (Replacement)

Available Accessories

DM-PSU-8: 8-Port PoDM Power Supply for DM® Switchers

DM-PSU-16: 16-Port PoDM Power Supply for DM® Switchers

DM-CBL-ULTRA-NP: DigitalMedia™ Ultra Cable, Non-Plenum Type CMR

DM-CBL-ULTRA-P: DigitalMedia™ Ultra Cable, Plenum Type CMP

DM-CBL-ULTRA-LSZH: DigitalMedia™ Ultra Cable, Low Smoke Zero Halogen

DM-CONN: Connector for DM-CBL-ULTRA

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum

DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum

DM-8G-CONN: Connector for DM-CBL-8G

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

CBL Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

Notes:

1. The maximum cable length for DigitalMedia 8G+ (DM 8G+) or HDBaseT is dependent upon the type of cable and resolution of the video signal. Refer to the "Maximum Cable Lengths" table for a detailed overview. Crestron legacy cable models [DM-CBL](#) DigitalMedia Cable and [DM-CBL-D](#) DigitalMedia D Cable support the same resolutions and cable lengths as CAT5e. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
2. Supplying Power over DM (PoDM) or Power over HDBaseT (PoH) via either DM 8G+ output requires connection of the corresponding POE IN port to a PoDM Power Supply ([DM-PSU-8](#) or [DM-PSU-16](#), sold separately) or an 802.3af or 802.3at compliant PoE PSE. Supplying PoDM+ is supported using an 802.3at Type 2 Class 4 compliant PoE+ PSE, such as the Crestron [CEN-SWPOE-16](#) (sold separately). Refer to the connected DM 8G+ or HDBaseT device for its PoDM or PoH capabilities and requirements. Any wiring that is connected to a PoDM, PoH, or PoE PSE port is for intra-building use only and should not be connected to a line that runs outside of the building in which the PSE is located.
3. HDCP version 2.2 is supported by model DMC-4K-CO-HD-HDCP2 only. The original model DMC-4K-CO-HD supports HDCP 1.1.
4. DVI is supported via the HDMI output using a suitable adapter or interface cable. [CBL-HD-DVI](#) interface cables are available separately.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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2-Channel 4K Scaling HDMI® Output Card for DM® Switchers

- > Modular output card for a DM-MD8X8, DM-MD16X16, or DM-MD32X32 switcher
- > Provides two independent 4K HDMI® outputs
- > Includes a discrete 4K/60 scaler on each output
- > Upscales video and computer sources to match the native resolution of any screen up to Ultra HD and 4K
- > Downscapes 4K, UHD, and ultra high-resolution computer signals to enable viewing on 1080p and lower-resolution displays
- > Handles any input resolution from standard NTSC 480i or PAL 576i, to UHD and 4K
- > Provides intelligent frame rate conversion
- > Includes content-adaptive noise reduction
- > Includes motion-adaptive de-interlacing
- > Allows adjustable overscan or underscan up to 7.5%
- > Provides automatic 3D to 2D signal conversion^[2]
- > Supports up to 8x8 video wall processing using multiple cards
- > Handles Dolby® TrueHD, Dolby Atmos®, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > HDCP 2.2 compliant
- > Each output includes a balanced analog stereo audio output with volume control^[4]
- > Audio de-embedding allows extraction of stereo 2-channel audio signals
- > Enables device control via CEC
- > Occupies a single output card slot

The DMC-4K-HDO is an output card designed for use with any card-based Crestron® DigitalMedia™ Switcher. It provides two independent HDMI® outputs with complementary balanced analog stereo audio outputs. The HDMI outputs are each capable of handling Full HD 1080p, Ultra HD, 2K, and 4K video signals. Built-in 4K/60 scaling enables devices connected to either HDMI output to handle any video resolution from NTSC 480i to 4K DCI. DVI signals are also supported using HDMI-to-DVI adapters or interface cables.^[1]

4K Ultra HD

The DMC-4K-HDO is capable of handling video resolutions up to 4K and Ultra HD. Support for 4K video also ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA.

4K/60 Scalers

An independent, high-performance 4K scaler is provided at each output to ensure that input sources of any resolution or frame rate can be routed and displayed reliably on virtually any display device without compromising the original input signal. As part of a DM® switcher with many outputs, this allows any video or computer source to be viewed simultaneously on multiple disparate displays, scaling the signal up or down to match the native resolution of each display.

No matter what source is selected, or where it's routed, the DMC-4K-HDO helps to ensure an optimal image on every screen. It can take any input



resolution from standard definition NTSC 480i to ultra high-definition 4K DCI, and scale it beautifully to any output resolution up to 4K DCI (4096 x 2160 @ 60 Hz). Interlaced sources are converted to progressive scan using motion-adaptive deinterlacing. Intelligent frame rate conversion enables support for 24p and PAL format sources. 3D signals are converted to 2D.^[2] Fully automatic operation eliminates any complicated setup by utilizing the displays' EDID to configure each scaler.^[3]

Video Wall Processing

The DMC-4K-HDO has another trick up its sleeve, providing zoom capability and bezel compensation on each output to display just a portion of the source image. Using this feature, up to 32 output cards may be combined to provide processing for a video wall composed of up to 64 individual displays. Video wall configurations up to eight wide by up to eight high are supported.

Audio De-embedding

Each HDMI output on the DMC-4K-HDO is accompanied by a balanced analog audio output, allowing stereo audio signals to be extracted from the digital stream and fed to a sound system. The output volume is adjustable via a control system using a keypad, touch screen, handheld remote, or mobile device.^[4]

CEC Embedded Device Control

DigitalMedia offers an alternative to conventional RS-232 and IR display control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to a control system (via the DM switcher), the DMC-4K-HDO provides a gateway for controlling display devices right through their HDMI connections, potentially eliminating the need for any dedicated control wires or IR emitters.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the online [DigitalMedia Switcher Configuration Tool](#).

Are you upgrading an existing DM switcher that has older “multi-gang” DMCO-series output cards? Use the online [Output Card Additions and Upgrades Tool](#) to update your existing output cards and switcher to the new “single-gang” output card format.

Please refer to the *DigitalMedia Resources Webpage* at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

DMC-4K-HDO 2-Channel 4K Scaling HDMI® Output Card for DM® Switchers

SPECIFICATIONS

Video

Scalers: (2) 4K video scalers with motion-adaptive deinterlacing, intelligent frame rate conversion, Deep Color support, 3D to 2D conversion^[2], content-adaptive noise reduction, widescreen format selection (zoom, stretch, maintain aspect-ratio, or 1:1), and video wall processing (up to 8 wide x up to 8 high using multiple cards)

Output Signal Types: HDMI® w/Deep Color & 4K (DVI compatible^[1])

Maximum Input Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
Interlaced	1920x1080 HD1080p	60 Hz	4:4:4	36 bit

Maximum Output Resolutions^[1]:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
Interlaced	1920x1080 HD1080p	60 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

Audio

Output Signal Types: HDMI, Analog Stereo^[4]

Digital Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

Analog Formats: Stereo 2-channel^[4]

Digital-To-Analog Conversion: 24-bit 48 kHz

Analog Performance: Frequency Response: 20 Hz to 20 kHz ±0.5 dB;
S/N Ratio: >95 dB, 20 Hz to 20 kHz A-weighted;
THD+N: <0.005% @ 1 kHz;
Stereo Separation: >90 dB

Analog Volume Adjustment: -80 to 0 dB

Communications

HDMI: HDCP 2.2, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI devices and a control system

Connectors

HDMI: (2) 19-pin Type A HDMI, female, comprising (2) HDMI digital video/audio outputs (DVI compatible^[1])

L, R: (2) 5-pin 3.5 mm detachable terminal blocks comprising (2) balanced/unbalanced stereo line-level outputs^[4];

Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced;

Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

Construction

Plug-in card, occupies (1) DM switcher output card slot, includes metal faceplate w/black finish

Weight

6.2 oz (176 g)

Section 274100- 2.10.J.25.(f,g,h,i) Comply (Replacement)

MODELS & ACCESSORIES

Available Models

DMC-4K-HDO: 2-Channel 4K Scaling HDMI® Output Card for DM® Switchers

Available Accessories

CBL Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

Notes:

- DVI is supported via either HDMI output using a suitable adapter or interface cable. **CBL-HD-DVI** interface cables are available separately.
- Does not support pass-through or scaling of 3D signals. 3D signals are automatically converted to 2D, then scaled and output as 2D.
- EDID (Extended Display Identification Data) is data embedded in an HDMI or DVI signal that enables a display device to tell the scaler what resolutions and formats it can support.
- The analog stereo audio outputs are only active when the selected input source is outputting a 2-channel stereo signal. For applications using multichannel surround sound sources, the DM switcher should be equipped with "DSP" type input cards, which can downmix the surround sound signals to stereo.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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DM-RMC-SCALER-C

DigitalMedia 8G+® Receiver & Room Controller w/Scaler

- > DigitalMedia 8G+® receiver, high-definition scaler, and display controller
- > Connects to a DM® switcher or transmitter over a single CAT type twisted pair cable^[1]
- > Supports cable lengths up to 330 ft (100 m) using DM 8G+ cable or CAT5e^[1]
- > HDBaseT® Certified — Enables direct connection to other HDBaseT certified equipment
- > Provides one HDMI® or DVI display output^[2]
- > Handles any video resolution from standard NTSC 480i or PAL 576i, to HD 1080p60 w/Deep Color
- > Handles any computer resolution from VGA to UXGA/WUXGA
- > Scales the signal to match the native resolution of virtually any digital video display or computer monitor up to 1080p or WUXGA
- > Provides intelligent frame rate conversion
- > Includes content-adaptive noise reduction
- > Allows motion-adaptive de-interlacing or interlacing
- > Allows adjustable overscan or underscan up to 7.5%
- > Provides automatic 3D to 2D signal conversion^[3]
- > Automatically passes 3D video without scaling to 3D capable displays^[3]
- > Supports left/right eye steering for dual-projector 3D setups^[3]
- > Scalable zoom feature enables 2x2, 3x2, 3x3, 4x3, or 4x4 video wall capability^[6]
- > Handles Dolby® TrueHD, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > HDCP compliant
- > Provides a 10/100 Ethernet LAN connection
- > Enables device control via CEC, IR, RS-232, and Ethernet
- > Enables USB HID signal extension for a local keyboard/mouse
- > Compatible with Crestron® USB over Ethernet Extenders^[5]
- > Allows quick, easy setup and diagnostics
- > Low-profile design mounts to a 2-gang US, UK, or European wall box
- > Universal power pack included

The DM-RMC-SCALER-C provides an advanced one-box interface solution for a single display device as part of a complete Crestron® DigitalMedia™ system. It functions as a DM 8G+® receiver, video scaler, and control interface. It provides a single HDMI® output along with Ethernet, USB HID, RS-232, and IR control ports. In addition to DM 8G+, it is also compatible with HDBaseT®, allowing it to be connected directly to an HDBaseT certified source. Built-in scaling enables the connected display to handle any video resolution up to HD 1080p or WUXGA. Its compact, low-profile design allows the DM-RMC-SCALER-C to be installed discreetly behind a flat panel display or above a ceiling mounted projector. It connects to the head end or source location using a single CAT type twisted pair cable.^[1]



DigitalMedia 8G+®

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM®) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility. The latest generation of DM is called DigitalMedia 8G™ (DM 8G®). Engineered for ultra high-bandwidth and ultimate scalability, DM 8G provides a true one-wire lossless transport for moving high-definition video, audio, Ethernet, and control signals over a choice of twisted pair or fiber optic cable.

DM 8G over twisted pair copper wire is called DigitalMedia 8G+ (DM 8G+). DM 8G+ handles uncompressed Full HD 1080p video signals with support for 3D, Deep Color, and HDCP, as well as computer signals up to WUXGA. Audio capabilities include support for high-bitrate 7.1 audio formats like Dolby® TrueHD and DTS-HD Master Audio™ as well as uncompressed linear PCM. All signals are transported over a single CAT type cable, supporting distances up to 330 feet (100 m) using Crestron [DM 8G Cable](#) or CAT5e.^[1]

HDBaseT® Certified

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Via its DM 8G+ input, the DM-RMC-SCALER-C can be connected directly to an HDBaseT compliant source without requiring a DM transmitter.

Multimedia Display Interface

A single HDMI digital AV output port is provided on the DM-RMC-SCALER-C for connection to a display or other device. The HDMI output can also handle DVI signals using an appropriate adapter or interface cable^[2].

A single CAT type cable connects the DM-RMC-SCALER-C to a DM switcher or transmitter, or to an HDBaseT source, transporting video, audio, control, and networking signals all through one simple RJ45 connection.^[1] Multiple DM-RMC-SCALER-Cs may be installed to handle each display in a multiroom distribution system, all fed from a central DM-MD series

DM-RMC-SCALER-C DigitalMedia 8G+® Receiver & Room Controller w/Scaler



DM-RMC-SCALER-C — Rear, Top, Front, and Bottom Views

switcher. Or, a single DM-RMC-SCALER-C can be fed straight from a DM 8G+ or HDBaseT transmitter, affording a simple solution for extending a computer or AV signal to a single display.

High-Definition Scaler

Through a distributed scaler approach, DigitalMedia truly delivers the most flexible and user-friendly solution for routing multiple disparate sources to many different display devices. By placing an independent high-performance scaler at every display device, DM ensures an optimal image on every screen no matter what sources are selected. Distributed scaling allows a high-res computer source to be viewed on any display in the building. It also allows a high-definition 3D source to be viewed on lower-resolution 2D displays without compromising the original signal, letting you share your theater's full HD 1080p 3D image with smaller, lesser displays in other rooms.

The DM-RMC-SCALER-C accepts any video source from standard NTSC 480i to Full HD 1080p60, as well as computer sources from VGA to UXGA/WUXGA, and scales them perfectly to match the native resolution of your video display. A range of common output resolutions are supported to work with virtually any popular flat-panel display, projector, or computer monitor. Intelligent frame rate conversion enables support for 24p and PAL format sources, and 3D to 2D conversion allows 3D content to be fed simultaneously to separate 3D and 2D displays.^[3] Setup and use of the scaler is simplified through fully automatic operation utilizing the display's EDID^[4].

Dual-Projector 3D Support

A pair of DM-RMC-SCALER-Cs can be used to facilitate a dual-projector 3D setup, steering just the left eye portion of a 3D signal to one projector, and the right eye portion to the other. This is done using the scaler's 3D to 2D conversion mode, enabling 3D capability with scaling.^[3]

Video Wall Processing

The DM-RMC-SCALER-C has another trick up its sleeve, providing zoom capability and bezel compensation on its output to display just a portion of the source image. Using this feature, multiple units may be combined to configure a video wall composed of up to 16 individual displays. Configurations of 2x2, 3x2, 3x3, 4x3, or 4x4 are supported, and all that is required is a separate DM-RMC-SCALER-C for each display, and a DM switcher with sufficient DM 8G+ outputs.

LAN Connectivity

Along with high-definition AV and control, DigitalMedia also integrates high-speed Ethernet networking for a total signal distribution solution. The DM-RMC-SCALER-C includes a 10/100 Ethernet port, providing a convenient LAN connection for a local network device.

USB Signal Extension

DigitalMedia allows for the routing of USB signals alongside video and audio. A USB HID compliant mouse or keyboard can be connected directly to the DM-RMC-SCALER-C and used to control a computer or media server that's located at the central equipment cabinet or some other location. Crestron also offers USB over Ethernet Extender Modules (USB-EXT-DM)^[5], which may be added to enable support for more USB devices of virtually any type.

DM-RMC-SCALER-C DigitalMedia 8G+® Receiver & Room Controller w/Scaler

Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. The DM-RMC-SCALER-C includes built-in RS-232, IR, and Ethernet control ports to allow programmable control of the display device connected to it. But, it can also provide an alternative to such conventional control methods by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-RMC-SCALER-C provides a gateway for controlling the display device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

Low-Profile Installation

Its low-profile design makes the DM-RMC-SCALER-C perfect for installation behind a flat panel display or above a ceiling mounted projector. It mounts to a standard 2-gang US, UK, or European electrical box using the mounting bracket provided, affording a clean installation that protrudes a mere 1-1/8 inches (29 mm) from the mounting surface.

Connections for the display device are all positioned along the top and bottom of the unit for a clean, serviceable installation. The DigitalMedia connection is provided on the rear panel within the electrical box. An array of indicators is provided on the front panel for easy setup and troubleshooting.

Please refer to the DigitalMedia Resources Webpage at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Video

Scaler: HD video scaler, motion-adaptive deinterlacer, interlacer, intelligent frame rate conversion, Deep Color support, 3D to 2D conversion^[3], content-adaptive noise reduction, widescreen format selection (zoom, stretch, maintain aspect-ratio, or 1:1), video wall processing (2x2, 3x2, 3x3, 4x3, or 4x4)^[6]

Input Signal Types: DM 8G+® (DigitalMedia™ over one CAT type twisted pair copper wire), HDBaseT®^[1]

Output Signal Types: HDMI®, DVI^[2]

Formats: DM 8G+, HDBaseT, & HDMI w/Deep Color & 3D^[3]; DVI; HDCP content protection support

Input Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock

Input Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock

Scaler Output Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz^[7], 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz^[7], 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz^[7], 1400x1050@60Hz^[7], 1440x900@60Hz^[7], 1600x900@60Hz^[8], 1600x1200@60Hz, 1680x1050@60Hz^[7], 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz^[8], 2048x1152@60Hz^[8]

Scaler Output Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30)

Pass-Thru Output Resolutions: Matched to input

Audio

Input Signal Types: DM 8G+, HDBaseT

Output Signal Type: HDMI

Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP

USB: Supports signal extension of USB HID class devices, expandable to support virtually any USB 1.1 or 2.0 device using Crestron USB-EXT-DM USB over Ethernet Extenders^[5]

RS-232: 2-way device control and monitoring up to 115.2k baud with hardware and software handshaking

IR/Serial: 1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 Volts) up to 19.2k baud

DigitalMedia: DM 8G+, HDCP, EDID, CEC, Ethernet

HDBaseT: HDCP, EDID, Ethernet

HDMI: HDCP, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI device and a control system

Connectors – Bottom

HDMI OUT: (1) 19-pin Type A HDMI female;

HDMI digital video/audio output;

Also supports DVI^[2]

USB HID: (1) USB Type A female;

USB 2.0 host port for connection of a mouse/keyboard or other USB HID-compliant device

COM: (1) 5-pin 3.5mm detachable terminal block;

Bidirectional RS-232 port;

Up to 115.2k baud, hardware and software handshaking support

IR 1 – 2: (1) 4-pin 3.5mm detachable terminal block comprising (2) IR/Serial ports;
IR output up to 1.1 MHz;
1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud

Connectors – Top

LAN: (1) 8-wire RJ45 female, shielded;
10Base-T/100Base-TX Ethernet port

24VDC 0.75A MAX: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2407WU power pack included

Connectors – Rear

G: (1) 6-32 screw, chassis ground lug

DM IN: (1) 8-pin RJ45 female, shielded;
DM 8G+ input, HDBaseT compliant;
Connects to the DM 8G+ output of a DM switcher, transmitter, or other DM device, or to a HDBaseT device, via CAT5e or Crestron DM-CBL-8G cable^[1]

Controls & Indicators

PWR: (1) green LED, indicates operating power supplied via local power pack

DM LINK: (1) green LED, indicates DM link status

VIDEO: (1) green LED, indicates video signal presence and lock status

USB HID: (1) green LED, indicates a valid device connection and activity on the USB HID port

SETUP: (1) red LED and (1) miniature recessed pushbutton, for Ethernet setup

RESET: (1) miniature recessed pushbutton, for hardware reset

LAN (Top): (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

DM IN (Rear): (2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC;
100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included

Environmental

Temperature: 32° to 104°F (0° to 40°C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 41 BTU/Hr

Enclosure

Chassis: Metal, black finish, vented sides and front

Mounting: Mounts to a 2-gang electrical box, 2-gang UK (BS 4662) electrical box, or 2-gang European (DIN 49073) electrical box

Dimensions

Height: 7.62 in (194 mm)

Width: 7.61 in (194 mm)

Depth: 1.46 in (37 mm)

Weight

1.90 lb (0.87 kg)

Section 274100- 2.10.J.25.m Comply

MODELS & ACCESSORIES

Available Models

DM-RMC-SCALER-C: DigitalMedia 8G+® Receiver & Room Controller w/Scaler

Included Accessories

PW-2407WU: Wall Mount Power Pack 24VDC, 0.75A, Universal (Qty. 1 included)

Available Accessories

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum

DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum

DM-8G-CONN: Connector for DM-CBL-8G DigitalMedia 8G™ Cable

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G DigitalMedia 8G™ Cable

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

CBL Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

CNSP-XX: Custom Serial Interface Cable

IRP2: IR Emitter Probe w/Terminal Block Connector

USB-EXT-DM: USB over Ethernet Extender with Routing

Notes:

- For DM 8G+ or HDBaseT wiring, use Crestron [DM-CBL-8G](#) DigitalMedia 8G Cable or third-party CAT5e (or better) UTP or STP. (Crestron legacy [DM-CBL](#) DigitalMedia Cable or [DM-CBL-D](#) DigitalMedia D Cable may also be used.) The maximum wire length for DM 8G+ is 330 ft (100 m) between devices. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
- The HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal. [CBL-HD-DVI](#) interface cables are available separately.
- Automatically passes 3D video if the display device supports it (reverts to pass-through mode without scaling). Provides automatic 3D-to-2D conversion (with scaling) if the display device does not support 3D. 3D with scaling is only supported using two DM-RMC-SCALER-Cs configured for use with a dual-projector 3D setup.
- EDID (Extended Display Identification Data) is data embedded in an HDMI, DVI, or VGA signal that enables a display device to tell the source device what resolutions and formats it can support, allowing the source to configure itself automatically to feed the best signal that both devices can support.
- USB-EXT-DM USB over Ethernet Extender Modules are sold separately. Refer to the [USB-EXT-DM](#) spec sheet for more information.

DM-RMC-SCALER-C

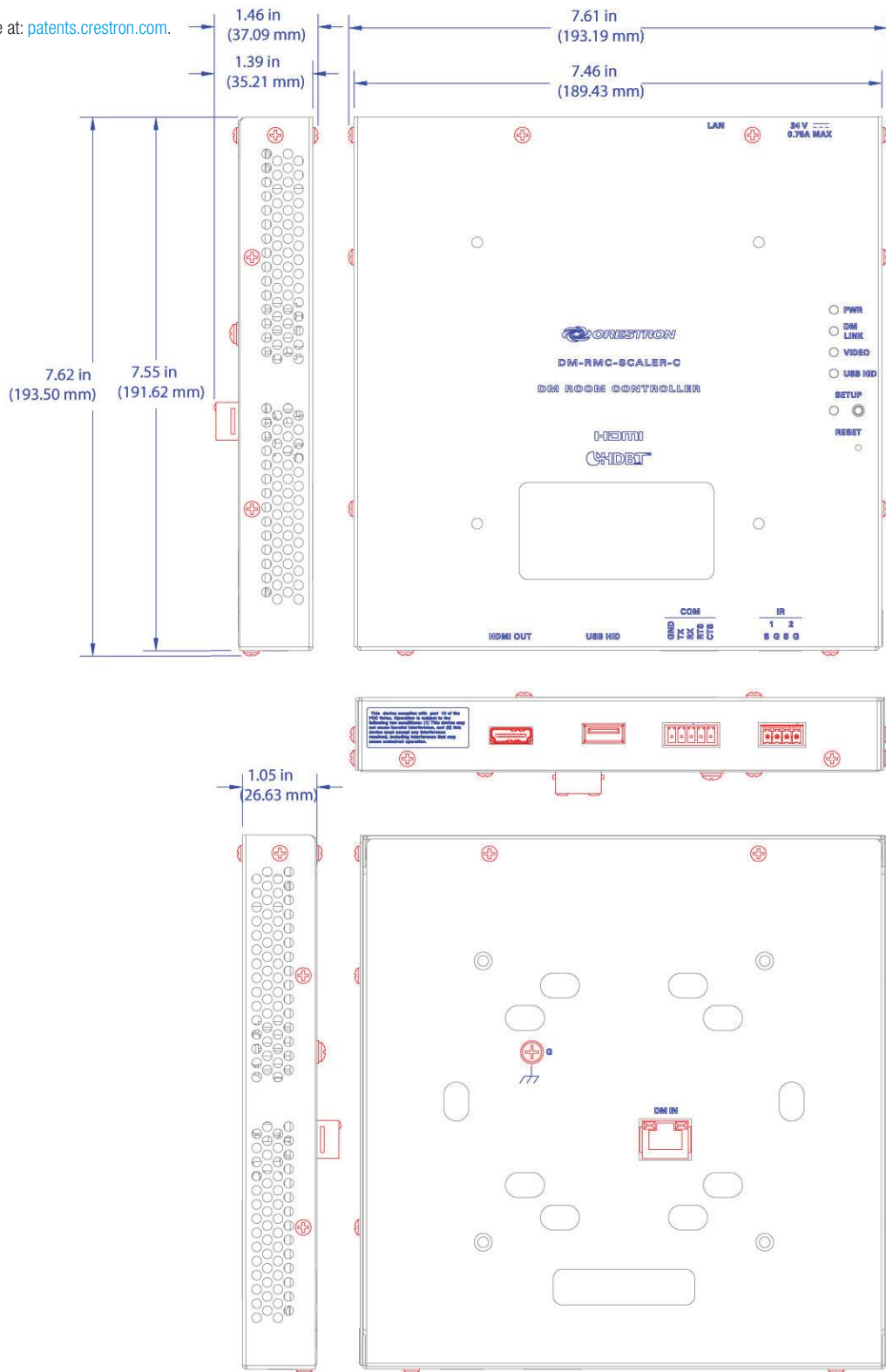
DigitalMedia 8G+® Receiver & Room Controller w/Scaler

6. Video wall processing requires a separate DM-RMC-SCALER-C for each individual display.
7. With or without reduced blanking.
8. With reduced blanking only.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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DM-RMC-4K-100-C

4K DigitalMedia 8G+® Receiver & Room Controller 100

- > DigitalMedia 8G+® receiver and display controller
- > Connects to a DM® switcher or transmitter over a single CAT type twisted pair cable^[1]
- > HDBaseT® Certified — Enables direct connection to other HDBaseT certified equipment
- > Provides one HDMI® or DVI display output^[2]
- > Handles video resolutions up to 4K and Ultra HD
- > Handles 3D video and Deep Color
- > Handles Dolby® TrueHD, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > HDCP 2.2 compliant
- > Supports cable lengths up to 330 ft (100 m) for all resolutions up to UHD and 4K using DM Ultra cable^[1]
- > Supports cable lengths up to 330 ft (100 m) for 1080p, WUXGA, and 2K using DM 8G® cable or CAT5e^[1]
- > Supports cable lengths up to 230 ft (70 m) for UHD and 4K using DM 8G cable, or 165 ft (50 m) using CAT5e^[1]
- > Provides a 10/100 Ethernet LAN connection
- > Enables device control via CEC, IR, RS-232, and Ethernet
- > Compatible with Crestron® USB over Ethernet Extenders^[4]
- > Allows quick, easy setup and diagnostics
- > Low-profile surface mount design
- > Powered via the DM connection or local power pack (included)^[3]



The DM-RMC-4K-100-C provides a simple one-box interface solution for a single display device as part of a complete Crestron® DigitalMedia™ system. It functions as a DM 8G+® receiver and control interface, providing a single HDMI® output along with Ethernet, RS-232, and IR control ports. In addition to DM 8G+, it is also compatible with HDBaseT®, allowing it to be connected directly to an HDBaseT certified source. Its compact, low-profile design allows the DM-RMC-4K-100-C to be installed discreetly behind a flat panel display or above a ceiling mounted projector. It connects to the head end or source location using a single CAT type twisted pair cable.^[1]

4K Ultra HD

Crestron DigitalMedia continues to advance the standard for digital AV signal distribution, delivering the world's first end-to-end 4K system solution. The DM-RMC-4K-100-C features the latest DM 8G+ technology, providing support for the transport of 4K and Ultra HD video signals. Support for 4K video also ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA.

DigitalMedia 8G+®

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM®) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility. The latest generation of DM is called DigitalMedia 8G™ (DM 8G®). Engineered for ultra high-

bandwidth and ultimate scalability, DM 8G provides a true one-wire lossless transport for moving high-definition video, audio, Ethernet, and control signals over a choice of low-cost twisted pair or fiber optic cable.

DM 8G over twisted pair copper wire is called DigitalMedia 8G+ (DM 8G+). DM 8G+ handles uncompressed Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for 3D, Deep Color, and HDCP 2.2. Audio capabilities include support for high-bitrate 7.1 audio formats like Dolby® TrueHD and DTS-HD Master Audio™ as well as uncompressed linear PCM. All signals are transported over a single CAT type cable, supporting 1080p, WUXGA, and 2K signals at distances up to 330 feet (100 m) using Crestron DM Ultra or DM 8G Cable, or third-party CAT5e. Higher resolutions up to UHD and 4K are supported at distances up to 330 feet (100 m) using DM Ultra Cable, 230 feet (70 m) using DM 8G Cable, or 165 feet (50 m) using CAT5e.^[1]

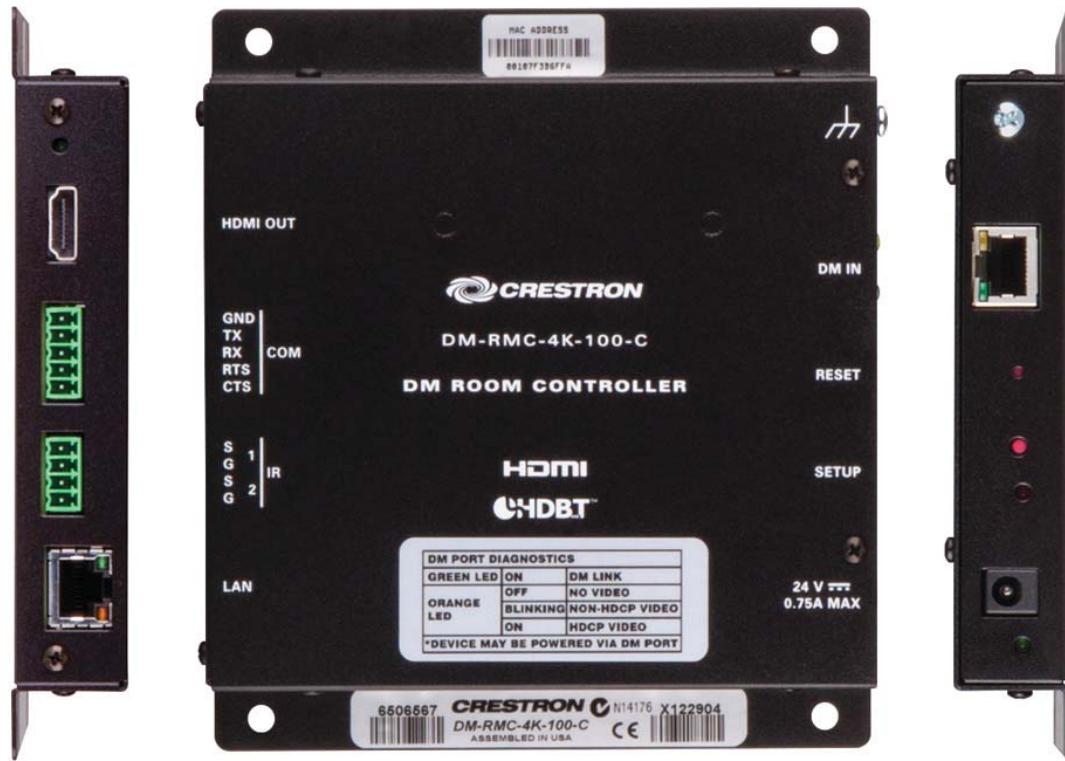
HDBaseT® Certified

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Via its DM 8G+ input, the DM-RMC-4K-100-C can be connected directly to an HDBaseT compliant source without requiring a DM transmitter.

Multimedia Display Interface

A single HDMI digital AV output port is provided on the DM-RMC-4K-100-C for connection to a display or other device. The HDMI output can also handle DVI signals using an appropriate adapter or interface cable.^[2]

A single CAT type cable connects the DM-RMC-4K-100-C to a DM switcher or transmitter, or to an HDBaseT source, transporting video, audio, control, networking, and power signals all through one simple RJ45 connection.^[1,3] Multiple DM-RMC-4K-100-Cs may be installed to handle each display in a multiroom distribution system, all fed from a central DM-MD series switcher. Or, a single DM-RMC-4K-100-C can be fed straight from a DM 8G+ or HDBaseT transmitter, affording a simple solution for extending a computer or AV signal to a single display.



DM-RMC-4K-100-C – Left, Front, and Right Side Views

LAN Connectivity

Along with high-definition AV and control, DigitalMedia also integrates high-speed Ethernet networking for a total signal distribution solution. The DM-RMC-4K-100-C includes a 10/100 Ethernet port, providing a convenient LAN connection for a local network device.

Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. The DM-RMC-4K-100-C includes built-in RS-232, IR, and Ethernet control ports to allow programmable control of the display device connected to it. But, it can also provide an alternative to such conventional control methods by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-RMC-4K-100-C provides a gateway for controlling the display device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

USB Signal Extension (optional)

DigitalMedia allows for the routing of USB signals alongside video and audio. USB signal extension is enabled on the DM-RMC-4K-100-C by adding a [USB-EXT-DM](#) USB over Ethernet Extender Module.^[4]

Low-Profile Installation

The DM-RMC-4K-100-C mounts conveniently to a wall, ceiling, or other flat surface. At just one inch deep, it fits easily behind a flat panel display or above a ceiling-mounted projector. The unit can be powered using the wall

mount power pack (included), or via PoDM (Power over DigitalMedia) for a true one-wire solution.^[3] All connections and LED indicators are positioned on the sides, ensuring optimal access and visibility for a clean, serviceable installation. An array of indicators is provided for easy setup and troubleshooting.

Please refer to the *DigitalMedia Resources Webpage* at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Maximum Cable Lengths

Cable Type:	DM-CBL-ULTRA DM® Ultra Cable	DM-CBL-8G DM 8G® Cable	CAT5e (or better) UTP or STP ^[1]
Resolution:			
1080p60 Full HD	330 ft (100 m)	330 ft (100 m)	330 ft (100 m)
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 2K DCI			
2560x1440 WQHD	230 ft (70 m)	165 ft (50 m)	
2560x1600 WQXGA			
3840x2160 Ultra HD			
4096x2160 4K DCI			

Video

Input Signal Types: DM 8G+® & HDBaseT® w/Deep Color, 3D, & 4K

Output Signal Types: HDMI® w/Deep Color, 3D, & 4K (DVI compatible^[2])

Maximum Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD1080p	60 Hz	4:4:4	36 bit
Interlaced	1920x1080 HD1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

Audio

Input Signal Types: DM 8G+, HDBaseT

Output Signal Type: HDMI

Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP

RS-232: 2-way device control and monitoring up to 115.2k baud with hardware and software handshaking

IR/Serial: 1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 Volts) up to 19.2k baud

DigitalMedia: DM 8G+, HDCP 2.2, EDID, CEC, PoDM, Ethernet

HDBaseT: HDCP 2.2, EDID, PoH, Ethernet

HDMI: HDCP 2.2, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI device and a control system

Connectors

HDMI OUT: (1) 19-pin Type A HDMI female; HDMI digital video/audio output (DVI compatible^[2])

COM: (1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port;

Up to 115.2k baud, hardware and software handshaking support

IR 1 – 2: (1) 4-pin 3.5 mm detachable terminal block; Comprises (2) IR/Serial ports;

IR output up to 1.1 MHz;

1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud

LAN: (1) 8-pin RJ45 female, shielded; 10Base-T/100Base-TX Ethernet port

Ground: (1) 6-32 screw, chassis ground lug

DM IN: (1) 8-pin RJ45 female, shielded;

DM 8G+ input, HDBaseT compliant;

PoDM and PoH PD (Powered Device) port^[3];

Connects to the DM 8G+ output of a DM switcher, transmitter, or other DM device, or to an HDBaseT device, via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable^[1]

24VDC 0.75A MAX: (1) 2.1 x 5.5 mm DC power connector;

24 Volt DC power input;

PW-2407WU power pack included

Controls & Indicators

HDMI OUT: (1) Green LED, indicates video signal presence at the HDMI output

LAN: (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

DM IN: (2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

RESET: (1) Recessed pushbutton, for hardware reset

SETUP: (1) Red LED and (1) recessed pushbutton, for Ethernet setup

24VDC: (1) Green LED, indicates operating power supplied via PoDM, PoH, or local power pack

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC;

100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included

Power over DM (PoDM): PoDM PD (Powered Device), capable of being powered by a PoDM PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W)^[5]

Power over HDBaseT (PoH): PoH PD (Powered Device), capable of being powered by a PoH PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W)^[5]

Environmental

Temperature: 32° to 104° F (0° to 40° C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 29 BTU/hr

Enclosure

Chassis: Metal, black finish, with (2) integral mounting flanges, vented top and bottom

Mounting: Freestanding, surface mount, or attach to a single rack rail

Dimensions

Height: 6.09 in (155 mm)

Width: 5.68 in (145 mm)

Depth: 1.02 in (26 mm)

Weight

16.5 oz (468 g)

Section 274100- 2.10.J.25.m Comply

MODELS & ACCESSORIES

Available Models

DM-RMC-4K-100-C: 4K DigitalMedia 8G+® Receiver & Room Controller 100

Included Accessories

PW-2407WU: Wall Mount Power Pack 24VDC, 0.75A, Universal (Qty. 1 included)

Available Accessories

DM-CBL-ULTRA-NP: DigitalMedia™ Ultra Cable, Non-Plenum Type CMR

DM-CBL-ULTRA-P: DigitalMedia™ Ultra Cable, Plenum Type CMP

DM-CBL-ULTRA-LSZH: DigitalMedia™ Ultra Cable, Low Smoke Zero Halogen

DM-CONN: Connector for DM-CBL-ULTRA

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum

DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum

DM-8G-CONN: Connector for DM-CBL-8G

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

CBL Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

CNSP-XX: Custom Serial Interface Cable

IRP2: IR Emitter Probe w/Terminal Block Connector

USB-EXT-DM: USB over Ethernet Extender with Routing

Notes:

1. The maximum cable length for DigitalMedia 8G+ (DM 8G+) or HDBaseT is dependent upon the type of cable and resolution of the video signal. Refer to the "Maximum Cable Lengths" table for a detailed overview. Crestron legacy cable models **DM-CBL** DigitalMedia Cable and **DM-CBL-D** DigitalMedia D Cable support the same resolutions and cable lengths as CAT5e. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
2. The HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal. **CBL-HD-DVI** interface cables are available separately.
3. Receiving Power over DM (PoDM) or Power over HDBaseT (PoH) requires connection to a switcher or other equipment that has a PoDM or PoH PSE (Power Sourcing Equipment) port. Any wiring that is connected to a PoDM or PoH PSE port is for intra-building use only and should not be connected to a line that runs outside of the building in which the PSE is located.
4. USB-EXT-DM USB over Ethernet Extender Modules are sold separately. Refer to the [USB-EXT-DM](#) spec sheet for more information.
5. References to the IEEE 802.3at standard are used to demonstrate that PoDM and PoH technology is similar in function to PoE and follows the same essential specifications. The DM-RMC-4K-100-C cannot be powered over Ethernet, and its DM IN port should not be connected directly to an Ethernet network or device.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

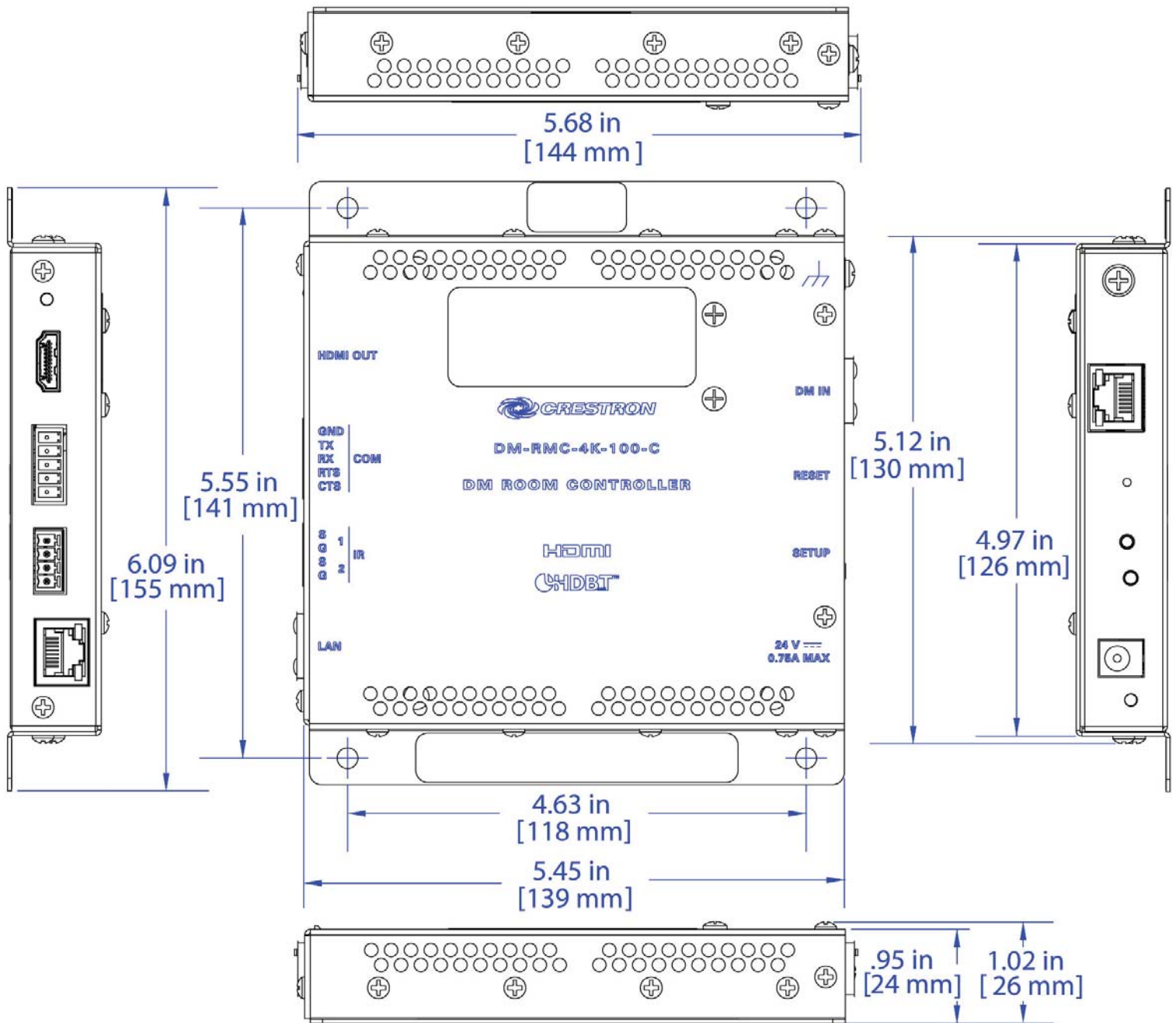
The specific patents that cover Crestron products are listed online at: patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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DM-RMC-4K-100-C

4K DigitalMedia 8G+® Receiver & Room Controller 100



DigitalMedia 8G+® Transmitter 201

- > DigitalMedia 8G+® transmitter and multimedia interface
- > Built-in 2x1 AV switcher with auto-switching and analog audio-breakaway
- > QuickSwitch HD™ technology achieves fast, reliable switching
- > Connects to a DM® switcher or receiver over a single CAT type twisted pair cable^[1]
- > Supports cable lengths up to 330 ft (100 m) using DM 8G® cable or CAT5e^[1]
- > HDBaseT® Certified — Enables direct connection to other HDBaseT certified equipment
- > Provides HDMI® and RGB/component video inputs^[3]
- > Also supports DVI and Dual-Mode DisplayPort sources^[2]
- > Handles video resolutions up to Full HD 1080p
- > Handles computer resolutions up to WUXGA
- > Handles Dolby Digital®, DTS®, and uncompressed 7.1 linear PCM audio
- > Includes an unbalanced stereo analog line-level audio input
- > Allows embedding of stereo 2-channel analog audio signals
- > Includes a local HDMI output
- > HDCP compliant
- > Detects and reports detailed video and audio input information
- > Performs automatic AV signal format management via EDID
- > Provides a 10/100 Ethernet LAN connection
- > Enables device control via CEC and Ethernet
- > Enables USB HID signal extension for a local computer
- > Compatible with Crestron® USB over Ethernet Extenders^[5]
- > Compatible with Crestron Connect It™ Cable Caddies^[6]
- > Allows quick, easy setup and diagnostics
- > Low-profile surface-mount design
- > Powered via the DM connection or local power pack (included)^[4]

The DM-TX-201-C provides a simple interface for computers and high-definition AV sources as part of a complete Crestron® DigitalMedia™ system. Its low-profile, surface-mountable design makes it ideal for installation beneath a conference table, inside a lectern or equipment rack, or at virtually any other location in a boardroom, classroom, auditorium, or residence. It functions as a DM 8G+® transmitter and switcher, providing HDMI®, VGA, and analog audio inputs along with Ethernet and USB HID ports for a total connectivity solution. In addition to DM 8G+, it is also compatible with HDBaseT®, allowing it to be connected directly to the input of an HDBaseT certified display device. It connects to the head end or display location using a single CAT type twisted pair cable.^[1]

DigitalMedia 8G+®

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM®) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility. The latest generation of DM is called DigitalMedia 8G™ (DM 8G®). Engineered for ultra high-bandwidth and



ultimate scalability, DM 8G provides a true one-wire lossless transport for moving high-definition video, audio, Ethernet, and control signals over a choice of twisted pair or fiber optic cable.

DM 8G over twisted pair copper wire is called DigitalMedia 8G+ (DM 8G+). DM 8G+ handles uncompressed Full HD 1080p video signals with support for HDCP, as well as computer signals up to WUXGA. All signals are transported over a single CAT type cable, supporting distances up to 330 feet (100 m) using Crestron [DM 8G Cable](#) or CAT5e.^[1]

HDBaseT® Certified

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Via its DM 8G+ output, the DM-TX-201-C can be connected directly to an HDBaseT compliant device without requiring a DM receiver.

Multimedia Computer/AV Interface

The DM-TX-201-C provides simple switching between two inputs. The inputs can be configured to switch automatically or be controlled through a Crestron control system. Inputs include:

- **HDMI** — Provides a digital multimedia input for mobile devices, computers, and AV sources with resolutions up to HD 1080p60 and WUXGA. Also handles DVI and Dual-Mode DisplayPort signals using an appropriate adapter or interface cable.^[2]
- **RGB** — This VGA type input handles analog RGB signals up to WUXGA 1920x1200 pixels, as well as analog video up to 1080p60.^[3] A 1/8" (3.5 mm) stereo audio input is included to accommodate the analog audio signal from an unbalanced line-level source or headphone output.

Note: Analog audio breakaway capability enables the analog audio input to be used with either video input.

DM-TX-201-C DigitalMedia 8G+® Transmitter 201



DM-TX-201-C – Top, Front, and Bottom Views

A single CAT type cable connects the DM-TX-201-C to a DM switcher or receiver, or to an HDBaseT device, transporting video, audio, control, networking, and power signals all through one simple RJ45 connection.^[1,4] Used with a single DM 8G+ Receiver/Room Controller and optional Crestron control system, the DM-TX-201-C affords a simple solution for extending a computer or AV signal to a single display. As part of a larger system using a DM-MD series switcher, multiple DM-TX-201-Cs may be installed to enable the distribution of several sources at different locations to feed multiple displays throughout any room or larger facility.

Local HDMI Output

An HDMI output is included to enable pass-through of the selected video and audio signals to feed a local display, monitor, or sound system.

LAN Connectivity

Along with high-definition AV and control, DigitalMedia also integrates high-speed Ethernet networking for a total signal distribution solution. The DM-TX-201-C includes a 10/100 Ethernet port, providing a convenient LAN connection for a local network device.

USB Signal Extension

The DM-TX-201-C also functions as a keyboard/mouse extender, allowing the connected computer (or other USB HID-compliant host) to be controlled by a mouse and/or keyboard located at a presentation lectern, conference

table, or some other remote location. Additional USB devices of virtually any type can be supported using Crestron USB over Ethernet Extenders (USB-EXT-DM).^[5]

CEC Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. DigitalMedia provides an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-TX-201-C provides a gateway for controlling the connected source device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

Crestron Connect It™

A Crestron Connect It Cable Caddy (TT-100 series) offers a convenient tabletop connectivity solution that works with the DM-TX-201-C. The cable caddy gets its control from the DM-TX-201-C through a simple USB connection.^[6]

Compact and Versatile

The DM-TX-201-C is designed to be mounted to a flat surface or placed on a shelf. It is compact enough to fit discreetly inside a presentation lectern or beneath a table, and can even be attached to a rack rail in the back of an equipment cabinet. The unit can be powered using the wall mount power pack (included), or via PoDM (Power over DigitalMedia) for a true one-wire solution.^[4] An array of indicators is provided for easy setup and troubleshooting.

A Digital Upgrade for Legacy Systems

The DM-TX-201-C also affords a perfect signal converter for integrating DigitalMedia with analog-based systems like Crestron MPS, QuickMedia®, and the CEN-RGBHV Series. A simple HD15 VGA cable connected between the output of an MPS system and the input of the DM-TX-201-C allows every RGB, component, S-Video, and composite video input on the MPS to be converted to DigitalMedia.^[3] Analog audio is converted similarly through an unbalanced stereo audio cable. The DM-TX-201-C's HDMI input may also be used to expand the input capabilities of the MPS system to handle digital AV sources.

Please refer to the DigitalMedia Resources Webpage at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Video

Switcher: 2x1 auto-switching, auto-detecting multi-format digital/analog inputs; Crestron QuickSwitch HD™ technology

Input Signal Types: HDMI® (DVI & Dual-Mode DisplayPort compatible^[2]), RGB/VGA (RGBHV, RGBS, RGsB); component (YPbPr); S-Video (Y/C); composite (NTSC, PAL)^[3]

Output Signal Types: DM 8G+® & HDBaseT®, HDMI (DVI compatible^[2])

Resolutions, HDMI, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz,

DM-TX-201-C DigitalMedia 8G+[®] Transmitter 201

852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI up to 165 MHz pixel clock

Resolutions, HDMI, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165 MHz pixel clock

Resolutions, RGB: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1152@60Hz

Resolutions, Component^[3]: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080p24, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60

Resolutions, Composite & S-Video^[3]: 480i, 576i

Analog-To-Digital Conversion: 10-bit 165 MHz per each of 3 channels

Audio

Switcher: 2x1 with auto-detecting digital/analog inputs and analog audio breakaway

Input Signal Types: HDMI (Dual-Mode DisplayPort compatible^[2]), analog stereo

Output Signal Types: DM 8G+ & HDBaseT, HDMI

Digital Formats: Dolby Digital[®], Dolby Digital EX, DTS[®], DTS-ES, DTS 96/24, LPCM up to 8 channels

Analog Formats: Stereo 2-channel

Analog-To-Digital Conversion: 24-bit 48 kHz

Analog Performance: Frequency Response: 20 Hz to 20 kHz \pm 0.75 dB;
S/N Ratio: >90 dB, 20 Hz to 20 kHz A-weighted;
THD+N: <0.05% @ 1 kHz;
Stereo Separation: >90 dB

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP

USB: Supports signal extension of USB HID class devices, expandable to support virtually any USB 1.1 or 2.0 device using Crestron USB-EXT-DM USB over Ethernet Extenders^[5]; supports a TT-100 series cable caddy^[6]

DigitalMedia: DM 8G+, HDCP, EDID, CEC, PoDM, Ethernet

HDBaseT: HDCP, EDID, PoH, Ethernet

HDMI: HDCP, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI device and a control system

Connectors

LAN: (1) 8-pin RJ45 female, shielded;
10BaseT/100BaseTX Ethernet port

DM OUT: (1) 8-pin RJ45 female, shielded;
DM 8G+ output, HDBaseT compliant;
PoDM and PoH PD (Powered Device) port^[4];
Connects to the DM 8G+ input of a DM switcher, receiver/room controller, or other DM device, or to a HDBaseT device, via CAT5e or Crestron DM-CBL-8G cable^[1]

HDMI OUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output (DVI compatible^[2])

PWR 24VDC 0.75A: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2407WU power pack included

Ground: (1) 6-32 screw, chassis ground lug

USB HID: (1) USB Type B female;
USB 2.0 device port for connection to the USB host interface of a computer or other USB HID-compliant host, or for connection of a Crestron TT-100 series device (Crestron Connect It)^[6]

HDMI IN: (1) 19-pin Type A HDMI female;
HDMI digital video/audio input;
(DVI & Dual-Mode DisplayPort compatible^[2])

RGB IN: (1) HD15 female, analog VGA/RGB/video input;
Signal Types: VGA, RGB, component, S-Video, or composite^[3];
Formats: RGBHV, RGBS, RGSB, YPbPr, Y/C, NTSC, PAL;
Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration;
Input Impedance: 75 Ohms;
Sync Input Type: Autodetect RGBHV, RGBS, RGSB, YPbPr;
Sync Input Level: 3 to 5 Vp-p;
Sync Input Impedance: 1k Ohms

AUDIO IN: (1) 3.5 mm TRS mini phone jack;
Unbalanced stereo line-level audio input;
Input Level: 2 Vrms maximum;
Input Impedance: 10k Ohms

Controls & Indicators

LAN: (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

DM OUT: (2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

PWR: (1) Green LED, indicates operating power supplied via PoDM, PoH, or local power pack

HDMI IN: (1) Green LED, indicates HDMI input is selected

RGB IN: (1) Green LED, indicates RGB input is selected

SETUP: (1) Red LED and (1) recessed pushbutton for Ethernet setup

RESET: (1) Recessed pushbutton for hardware reset

DM-TX-201-C DigitalMedia 8G+[®] Transmitter 201

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC;
100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included

Power over DM (PoDM): PoDM PD (Powered Device), capable of being powered by a PoDM PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W)^[7]

Power over HDBaseT (PoH): PoH PD (Powered Device), capable of being powered by a PoH PSE (Power Sourcing Equipment), conforms to IEEE 802.3at Type 1 Class 3 (12.95 W)^[7]

Environmental

Temperature: 32° to 104° F (0° to 40° C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 30 BTU/hr

Enclosure

Chassis: Metal, black finish, with (2) integral mounting flanges, vented sides
Mounting: Freestanding, surface mount, or attach to a single rack rail

Dimensions

Height: 6.47 in (165 mm)
Width: 7.36 in (187 mm)
Depth: 1.24 in (32 mm)

Weight

25.4 oz (721 g)

Section 274100- 2.10.J.25.I Comply

MODELS & ACCESSORIES

Available Models

DM-TX-201-C: DigitalMedia 8G+[®] Transmitter 201

Included Accessories

PW-2407WU: Wall Mount Power Pack 24VDC, 0.75A, Universal (Qty. 1 included)

Available Accessories

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum
DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum
DM-8G-CONN: Connector for DM-CBL-8G
DM-8G-CRIMP: Crimping Tool for DM-8G-CONN
DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G
DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG
CBL Series: Crestron[®] Certified Interface Cables
MP-WP Series: Media Presentation Wall Plates
MPI-WP Series: Media Presentation Wall Plates - International Version
USB-EXT-DM: USB over Ethernet Extender with Routing

Notes:

1. For DM 8G+ or HDBaseT wiring, use Crestron **DM-CBL-8G** DigitalMedia 8G Cable or third-party CAT5e (or better) UTP or STP. (Crestron legacy **DM-CBL** DigitalMedia Cable or **DM-CBL-D** DigitalMedia D Cable may also be used.) The maximum wire length for DM 8G+ is 330 ft (100 m) between devices. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. **CBL-HD-DVI** interface cables are available separately.
3. The RGB/VGA input can actually accept component, composite, and S-Video signals through an appropriate adapter (not included), or via direct interface to Crestron MPS Series products. However, input sync detection is not provided for composite or S-Video signal types through this connection.
4. Receiving Power over DM (PoDM) or Power over HDBaseT (PoH) requires connection to a switcher or other equipment that has a PoDM or PoH PSE (Power Sourcing Equipment) port. Any wiring that is connected to a PoDM or PoH PSE port is for intra-building use only and should not be connected to a line that runs outside of the building in which the PSE is located.
5. USB-EXT-DM USB over Ethernet Extender Modules are sold separately. Refer to the **USB-EXT-DM** spec sheet for more information.
6. The DM-TX-201-C has a USB device port, which does not supply USB power. When connected to a **TT-100** series cable caddy (sold separately), the cable caddy must be powered separately through a connection to a Cresnet[®] network or power supply. Refer to the TT-100 spec sheet for more information.
7. Reference to the IEEE 802.3at standard is used to demonstrate that PoDM and PoH technology is similar in function to PoE and follows the same essential specifications. The DM-TX-201-C cannot be powered over Ethernet, and its DM OUT port should not be connected directly to an Ethernet network or device.

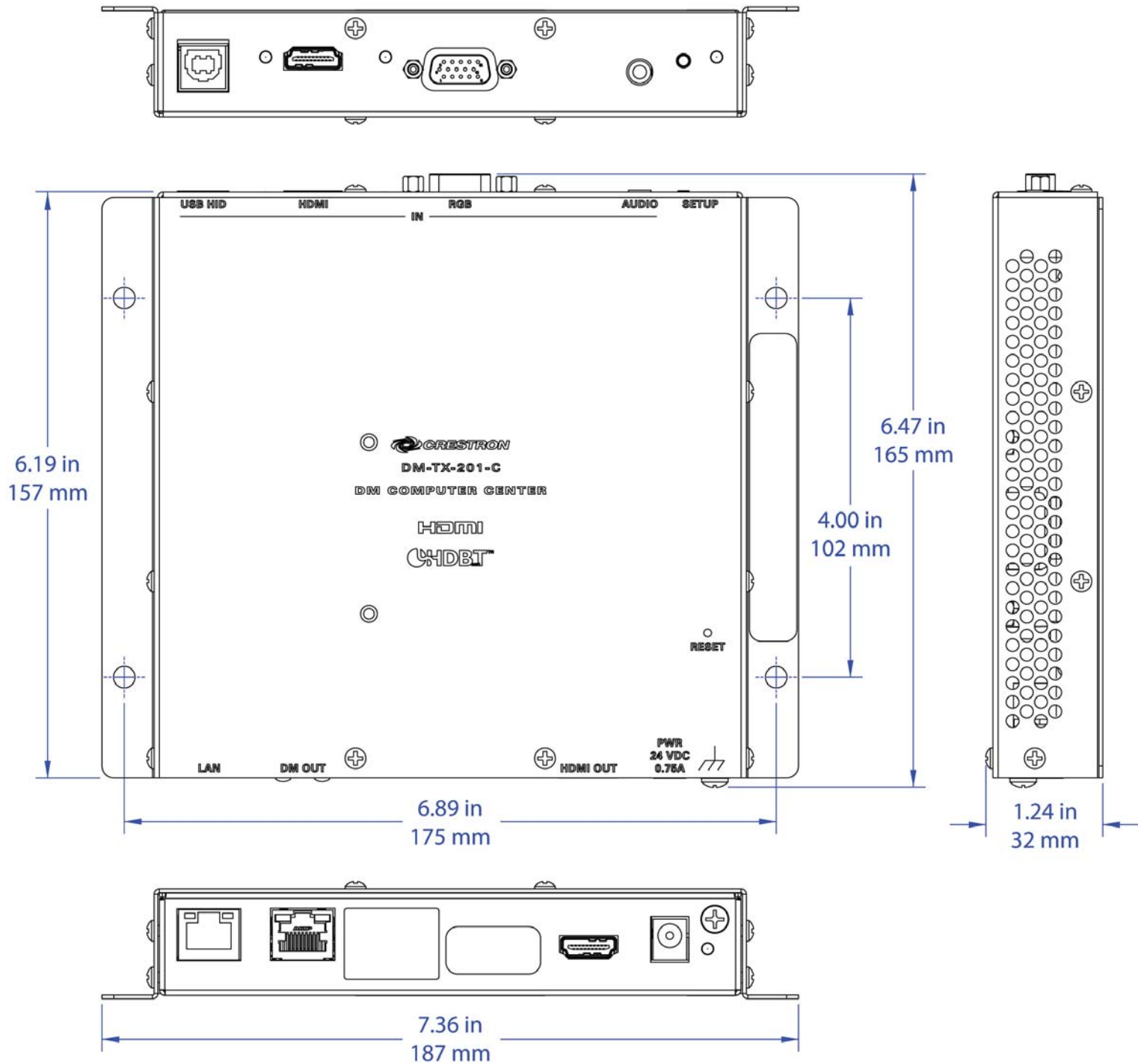
This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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DM-TX-201-C DigitalMedia 8G+® Transmitter 201



DigitalMedia 8G™ Fiber Transmitter 201

- > DigitalMedia 8G™ Fiber transmitter and multimedia interface
- > Built-in 2x1 AV switcher with auto-switching and analog audio-breakaway
- > QuickSwitch HD® technology achieves fast, reliable switching
- > Connects to a DM® switcher or receiver over one multimode fiber strand^[1]
- > Supports cable lengths up to 1000 ft (300 m) using CresFiber® 8G, or 500 ft (150 m) using other multimode fiber^[1]
- > Provides HDMI® and RGB/component video inputs^[3]
- > Also supports DVI and DisplayPort Multimode sources^[2]
- > Handles video resolutions up to Full HD 1080p
- > Handles computer resolutions up to WUXGA
- > Handles Dolby Digital®, DTS®, and uncompressed 7.1 linear PCM audio
- > HDCP compliant
- > Includes a mini-TRS stereo analog audio input
- > Includes a local HDMI monitor output
- > Detects and reports detailed video and audio input information
- > Performs automatic AV signal format management via EDID
- > Provides a 10/100 Ethernet LAN connection
- > Enables device control via CEC and Ethernet
- > Enables USB HID signal extension for a local computer
- > Compatible with Crestron® USB over Ethernet Extenders^[4]
- > Allows quick, easy setup and diagnostics
- > Low-profile surface-mount design
- > Universal power pack included

The DM-TX-201-S provides a simple interface for computers and high-definition AV sources as part of a complete Crestron® DigitalMedia™ system. Its low-profile, surface-mountable design makes it ideal for installation beneath a conference table, inside a lectern or equipment rack, or at virtually any other location in a boardroom, classroom, auditorium, or residence. It functions as a DM 8G® Fiber transmitter and switcher, providing HDMI®, VGA, and analog audio inputs along with Ethernet and USB HID ports for a total connectivity solution. It connects to the head end or display location using a single multimode fiber strand.^[1]

DigitalMedia 8G™ Fiber

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM®) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility. The latest generation of DM is called DigitalMedia 8G (DM 8G). Engineered for ultra high-bandwidth and ultimate scalability, DM 8G provides a true one-wire lossless transport for moving high-definition video, audio, Ethernet, and control signals over a choice of twisted pair or fiber optic cable.

DM 8G Fiber uses multimode fiber to enable signal distribution between buildings and over lengthy wire runs. DM 8G Fiber handles uncompressed



Full HD 1080p video signals with support for HDCP, as well as computer signals up to WUXGA. All signals are transported over one strand of multimode fiber, supporting distances up to 1000 feet (300 m) using CresFiber® 8G, or 500 feet (150 m) using other multimode fiber optic cable.^[1]

Multimedia Computer/AV Interface

The DM-TX-201-S provides simple switching between two inputs. The inputs can be configured to switch automatically or be controlled through a Crestron control system. Inputs include:

- **HDMI** — Provides a digital multimedia input for mobile devices, computers, and AV sources with resolutions up to HD 1080p60 and WUXGA. Also handles DVI and DisplayPort Multimode signals using an appropriate adapter or interface cable^[2].
- **RGB** — This VGA type input handles analog RGB signals up to WUXGA 1920x1200 pixels, as well as analog video up to 1080p60^[3]. A 1/8" (3.5mm) stereo audio input is included to accommodate the analog audio signal from an unbalanced line-level source or headphone output.

Note: Audio breakaway capability enables the analog audio input to be used with either video input.

A single fiber strand connects the DM-TX-201-S to a DM switcher or receiver, transporting video, audio, control, and networking signals all through one simple SC type optical connection.^[1] Used with a single DM 8G Fiber Receiver/Room Controller and optional Crestron control system, the DM-TX-201-S affords a simple solution for extending a computer or AV signal to a single display. As part of a larger system using a DM-MD series switcher, multiple DM-TX-201-Ss may be installed to enable the distribution of several sources at different locations to feed multiple displays throughout any room or larger facility.

In addition to its DM 8G Fiber output, there is also an HDMI output provided to feed a local HDMI or DVI monitor, eliminating the need for an extra outboard distribution amp or other hardware.

DM-TX-201-S DigitalMedia 8G™ Fiber Transmitter 201



DM-TX-201-S – Top, Front, and Bottom Views

LAN Connectivity

Along with high-definition AV and control, DigitalMedia also integrates high-speed Ethernet networking for a total signal distribution solution. The DM-TX-201-S includes a 10/100 Ethernet port, providing a convenient LAN connection for a local network device.

USB Signal Extension

The DM-TX-201-S also functions as a keyboard/mouse extender, allowing the connected computer (or other USB HID-compliant host) to be controlled by a mouse and/or keyboard located at a presentation lectern, conference table, or some other remote location. Additional USB devices of virtually any type can be supported using Crestron USB over Ethernet Extenders ([USB-EXT-DM](#))^[4].

CEC Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. DigitalMedia provides an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-TX-201-S provides a gateway for controlling the connected source device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

Compact and Versatile

The DM-TX-201-S is designed to be mounted to a flat surface or placed on a shelf. It is compact enough to fit discreetly inside a presentation lectern or beneath a table, and can even be attached to a rack rail in the back of an equipment cabinet. An array of indicators is provided for easy setup and troubleshooting.

A Digital Upgrade for Legacy Systems

The DM-TX-201-S also affords a perfect signal converter for integrating DigitalMedia with analog-based systems like Crestron [MPS](#), [QuickMedia](#)[®], and the CEN-RGBHV Series. A simple HD15 VGA cable connected between the output of an MPS system and the input of the DM-TX-201-S allows every RGB, component, S-Video, and composite video input on the MPS to be converted to DigitalMedia^[3]. Analog audio is converted similarly through a simple unbalanced stereo audio cable. The DM-TX-201-S's HDMI input may also be used to expand the input capabilities of the MPS system to handle digital AV sources.

Please refer to the *DigitalMedia Resources Webpage* at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Video

Switcher: 2x1 combination digital/analog switch, Crestron QuickSwitch HD[®]

Input Signal Types: HDMI[®], DVI^[2], DisplayPort Multimode^[2], RGB/VGA, component^[3], S-Video^[3], composite^[3]

Output Signal Types: DM 8G[®] Fiber (DigitalMedia™ over one multimode fiber optic strand), HDMI, DVI^[2]

Formats: DM 8G Fiber, HDMI, DVI, HDCP content protection support, RGBHV, RGBS, RGB, YPbPr, Y/C, NTSC, PAL

Input Resolutions, HDMI & DVI, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock

Input Resolutions, HDMI & DVI, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock

Input Resolutions, RGB: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz,

DM-TX-201-S DigitalMedia 8G™ Fiber Transmitter 201

1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1152@60Hz
Input Resolutions, Component^[3]: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080p24, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60
Input Resolutions, Composite and S-Video^[3]: 480i, 576i
Output Resolutions: Matched to inputs
Analog-To-Digital Conversion: 10-bit 165 MHz per each of 3 channels

Audio

Switcher: 2x1 combination digital/analog switch
Input Signal Types: HDMI, DisplayPort Multimode^[2], analog stereo
Output Signal Types: DM 8G Fiber, HDMI
Formats, HDMI: Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, up to 8ch PCM
Formats, Analog: Stereo 2-channel
Analog-To-Digital Conversion: 24-bit 48 kHz
Performance (analog):
Frequency Response: 20Hz to 20kHz ±0.75dB;
S/N Ratio: >90dB, 20Hz to 20kHz A-weighted;
THD+N: <0.05% @ 1kHz;
Stereo Separation: >90dB

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP
USB: Supports signal extension of USB HID class devices, expandable to support virtually any USB 1.1 or 2.0 device using Crestron USB-EXT-DM USB over Ethernet Extenders^[4]
DigitalMedia: DM 8G Fiber, HDCP, EDID, CEC, Ethernet
HDMI: HDCP, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI device and a control system

Connectors

LAN: (1) 8-wire RJ45 female, shielded; 10Base-T/100Base-TX Ethernet port
DM OUT MMF/SC: (1) SC female optical fiber connector; DM 8G Fiber output ; Connects to DM 8G Fiber input of a DM switcher, receiver/room controller, or other DM device via CresFiber 8G fiber optic cable^[1]
HDMI OUT: (1) 19-pin Type A HDMI female; HDMI digital video/audio output; Also supports DVI^[2]
PWR 24VDC 0.75A: (1) 2.1 x 5.5 mm DC power connector; 24 Volt DC power input; PW-2407WU power pack included
Ground: (1) 6-32 screw, chassis ground lug

USB HID: (1) USB Type B female; USB 2.0 device port for connection to the USB host interface of a computer or other USB HID-compliant host

HDMI IN: (1) 19-pin Type A HDMI female; HDMI digital video/audio input; Also supports DVI and DisplayPort Multimode^[2]

RGB IN: (1) DB15HD female; RGB (VGA), component, S-Video, or composite video input^[3]; Formats: RGBHV, RGBS, RGsB, YPbPr, Y/C, NTSC, PAL; Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration; Input Impedance: 75 Ohms; Sync Input Type: Autodetect RGBHV, RGBS, RGsB, YPbPr; Sync Input Level: 3 to 5 Vp-p; Sync Input Impedance: 1k Ohms

AUDIO IN: (1) 3.5mm TRS mini phone jack; Unbalanced stereo line-level audio input; Input Level: 2 Vrms maximum; Input Impedance: 10k Ohms

Controls & Indicators

LAN: (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity
DM OUT: (1) green LED, indicates DM link status
PWR: (1) green LED, indicates operating power supplied via local power pack
HDMI IN: (1) green LED, indicates HDMI input is selected
RGB IN: (1) green LED, indicates RGB input is selected
SETUP: (1) red LED and (1) miniature recessed pushbutton for Ethernet setup
RESET: (1) miniature recessed pushbutton for hardware reset

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC; 100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included

Environmental

Temperature: 32° to 104°F (0° to 40°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 61 BTU/Hr

Enclosure

Chassis: Metal, black finish, with (2) integral mounting flanges, vented sides
Mounting: Freestanding, surface mount, or attach to a single rack rail

Dimensions

Height: 6.47 in (165 mm)
Width: 7.36 in (187 mm)
Depth: 1.24 in (32 mm)

DM-TX-201-S DigitalMedia 8G™ Fiber Transmitter 201

Weight

24.3 oz (689 g)

Section 274100- 2.10.J.25.n Comply

MODELS & ACCESSORIES

Available Models

DM-TX-201-S: DigitalMedia 8G™ Fiber Transmitter 201

Included Accessories

PW-2407WU: Wall Mount Power Pack 24VDC, 0.75A, Universal (Qty. 1 included)

Available Accessories

CRESFIBER8G-NP: CresFiber® 8G Multimode Fiber Optic Cable, 50/125 x4 breakout, non-plenum

CRESFIBER8G-P: CresFiber® 8G Multimode Fiber Optic Cable, 50/125 x4 breakout, plenum

CRESFIBER-CONN-SC50UM-12: Connectors for CresFiber® 8G Multimode Fiber Optic Cable, SC 50µm, 12-Pack

CRESFIBER-TK: CresFiber® Termination Kit

CRESFIBER-SINGLE-SC-P: CresFiber® Simplex Fiber Optic Cable Assembly, 50/125, SC, Plenum

CBL Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

USB-EXT-DM: USB over Ethernet Extender with Routing

Notes:

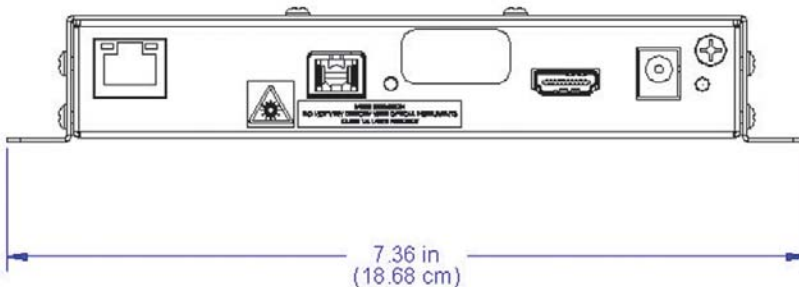
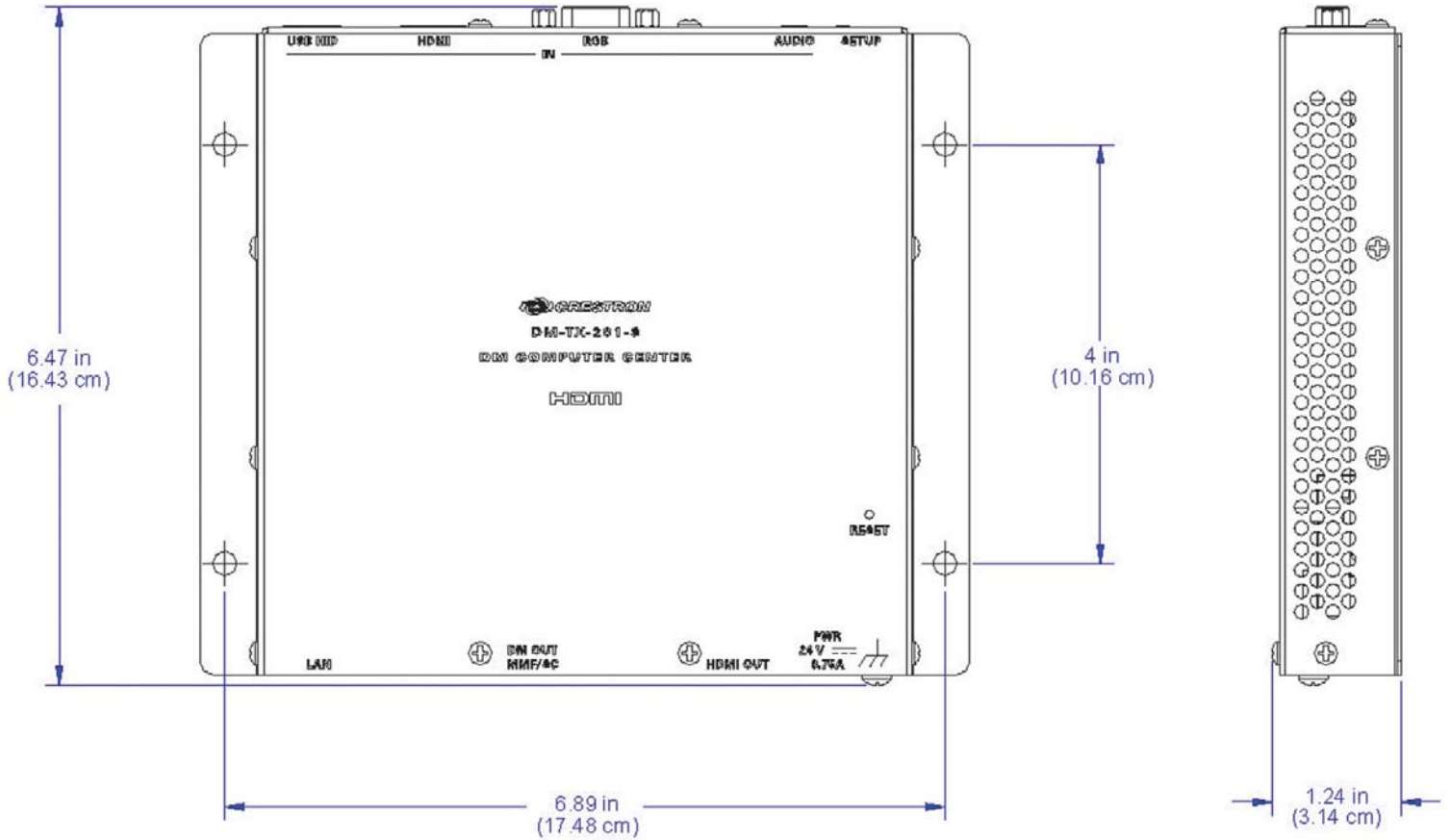
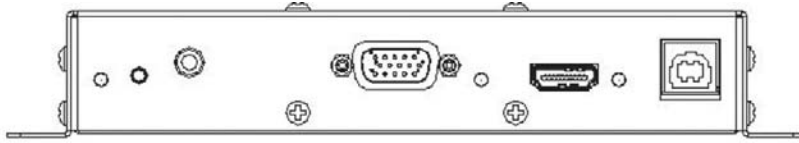
1. The maximum cable length for DigitalMedia 8G Fiber (DM 8G Fiber) is 1000 ft (300 m) using Crestron CRESFIBER8G multimode fiber optic cable, or 500 ft (150 m) using Crestron legacy CRESFIBER, Crestron CRESFIBER-SINGLE-SC, or third-party OM3 simplex multimode fiber optic cable. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. All wire and cables are sold separately.
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cables are available separately.
3. The RGB/VGA input can actually accept component, composite, and S-Video signals through an appropriate adapter (not included), or via direct interface to Crestron MPS Series products. However, input sync detection is not provided for composite or S-Video signal types through this connection.
4. USB-EXT-DM USB over Ethernet Extender Modules are sold separately. Refer to the [USB-EXT-DM](#) spec sheet for more information

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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DM-TX-201-S DigitalMedia 8G™ Fiber Transmitter 201



16-Port PoDM Power Supply for DM 8G+® I/O Cards

- > Provides a centralized power source for up to 16 PoDM powered devices
- > Designed for use with any card-based DigitalMedia™ switcher with DM 8G+® I/O cards installed
- > Compatible with PoH powered HDBaseT® devices
- > Includes front panel indicators for easy troubleshooting
- > Single-space 19" rack-mountable



Power over DM® (PoDM) is a feature of Crestron® DigitalMedia 8G+® technology that enables operating power for DM 8G+® transmitters and receivers to be carried alongside video, audio, and data signals over a single CAT5e cable. As part of a complete DM system, PoDM can be used to deliver a centralized power distribution solution for a facility full of transmitter and receiver devices, eliminating all the bulky power packs and reducing the number of AC power outlets normally required at every device location.

The DM-PSU-16 provides power for up to sixteen PoDM powered devices. It is designed to install at the central switcher location, occupying just a single rack space and requiring just one AC power outlet. Each of its sixteen POWER ports connects to the POE IN port^[1] of a [DMC-4K-C](#) input card, [DMC-4K-C-DSP](#) input card, or [DMC-4K-CO-HD](#) output card. A full 15.4 Watts is supplied by each port to handle sixteen Class 0-3 PoDM devices simultaneously. Connections between the DM-PSU-16 and switcher are made using ordinary CAT5e cables terminated with RJ45 connectors (not included). Front panel LEDs indicate when each port is supplying power to a PoDM powered device.

The DM-PSU-16 is also compatible with HDBaseT® specifications, and may be used to power PoH (Power over HDBaseT) powered devices that are connected to the DM switcher in the same manner as a PoDM powered device. PoDM is intended specifically for use with DM 8G+ based systems.

Note: The DM-PSU-16 is not compatible with PoDM+, and is not capable of supplying power to PoDM+ powered devices. For applications requiring a PoDM+ PSE, use the Crestron [CEN-SWPOE-16](#) or similar 802.3at Type 2 Class 4 compliant PoE+ PSE.

SPECIFICATIONS

Indicators

PWR: (1) green LED, indicates operating power is supplied via the main power input

POWER 1 – 16: (16) green LEDs, each indicates PoDM is active and a PoDM (or PoH) powered device is connected to the corresponding port (via a DMC-Series DM 8G+® I/O card)

Connectors

POWER MAX 15.4W/PORT 1 – 16: (16) 8-wire RJ45, female; PoDM and PoH PSE (Power Sourcing Equipment) ports; Each port connects to the POE IN port^[1] of a DMC-Series DM 8G+ I/O Card; Each port supports one PoDM/PoH PD (Powered Device) up to 15.4W (Class 0-3)

100-240V~50/60Hz 3.5-1.6A: (1) IEC 60320 C14 main power inlet; Mates with removable power cord, included

G: (1) 6-32 screw, chassis ground lug

Power Requirements

Main Power: 3.5-1.6 Amps @ 100-240 Volts AC, 50/60 Hz

Environmental

Temperature: 32° to 104°F (0° to 40°C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 162 BTU/Hr

Enclosure

Chassis: Metal, black finish, fan-cooled, vented sides

Faceplate: Metal, black finish with polycarbonate label overlay

Mounting: Freestanding or 1U 19-inch rack-mountable (adhesive feet and rack ears included)

Dimensions

Height: 1.73 in (44 mm)

Width: 17.28 in (439 mm);

19.00 in (483 mm) with ears

Depth: 8.56 in (218 mm)

Weight

5.2 lb (2.4 kg)

DM-PSU-16 16-Port PoDM Power Supply for DM 8G+® I/O Cards



DM-PSU-16 – Rear View

Section 274100- 2.10.J (RFI 401) Comply

MODELS & ACCESSORIES

Available Models

DM-PSU-16: 16-Port PoDM Power Supply for DM 8G+® I/O Cards

Notes:

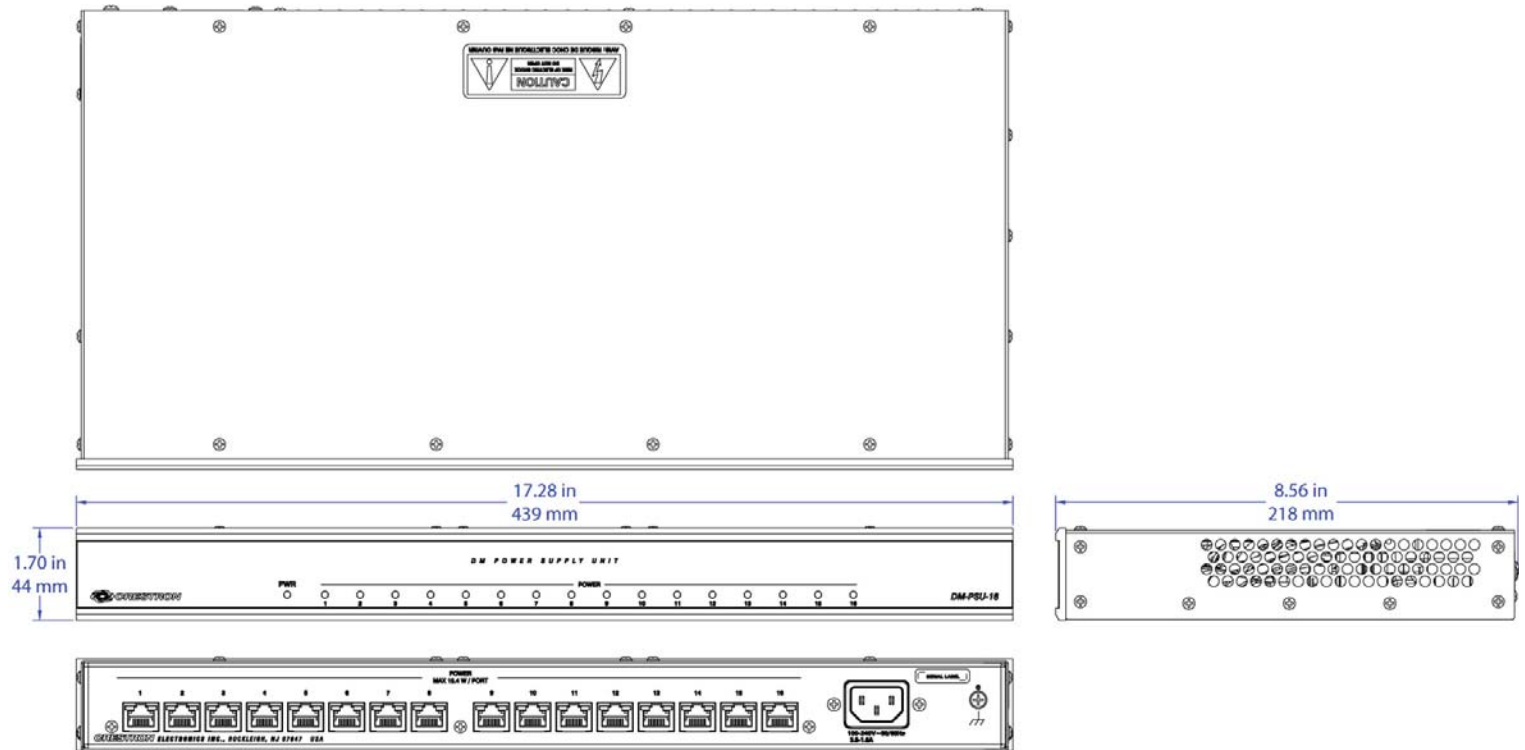
1. PoDM interfaces connected to these ports are for intra-building use only and should not be connected to lines that run outside of the building in which the PoDM PSE is located.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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CBL-HD-DVI

Crestron® Certified HDMI® to DVI Interface Cable

Crestron® Certified Interface Cables complete the total Crestron package, ensuring high-performance and end-to-end Crestron quality for every installation. A variety of cables is offered to support all types of analog and digital video and audio signals. A durable yet flexible CL3-rated jacket affords excellent handling with allowance for in-wall installation. Stylish and rugged connectors achieve an ultra-reliable connection with a designer appearance befitting the most high-end system.

The CBL-HD-DVI model is a high-speed Category 2 HDMI® to DVI conversion cable featuring a male HDMI Type A connector at one end and male DVI-D connector at the other. Both connectors are 24k gold-plated for excellent conductivity. A variety of popular lengths up to 30 feet is offered.

- > High-speed Category 2 HDMI® to DVI cable
- > Converts HDMI to DVI, or DVI to HDMI
- > Supports Full HD 1080p, 2K, and 4K video
- > 24k gold-plated HDMI Type A and DVI-D connectors
- > High-flex CL3-rated jacket
- > Crestron® guaranteed end-to-end system performance
- > RoHS compliant
- > Available in 1.5, 3, 6, 12, 20, and 30 ft lengths

Available Models

CBL-HD-DVI-1.5 [6503569]: Crestron® Certified HDMI® to DVI Interface Cable, 1.5 ft

CBL-HD-DVI-12 [6503572]: Crestron® Certified HDMI® to DVI Interface Cable, 12 ft

CBL-HD-DVI-20 [6503573]: Crestron® Certified HDMI® to DVI Interface Cable, 20 ft

CBL-HD-DVI-3 [6503570]: Crestron® Certified HDMI® to DVI Interface Cable, 3 ft

CBL-HD-DVI-30 [6503574]: Crestron® Certified HDMI® to DVI Interface Cable, 30 ft

CBL-HD-DVI-6 [6503571]: Crestron® Certified HDMI® to DVI Interface Cable, 6 ft

Notes:

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NO PHOTO AVAILABLE

Section 274100- 2.10.J.25.s Comply
Section 274100- 2.10.M.11.b Comply

CBL-HD

Crestron® Certified HDMI® Interface Cable

- > High-speed Category 2 HDMI® cable
- > Supports 4K Ultra HD video
- > Supports Full HD 1080p with Deep Color and 3D
- > 24k gold-plated 19-pin Type A connectors
- > High-flex CL3-rated jacket
- > Crestron® guaranteed end-to-end system performance
- > RoHS compliant
- > Available in 1.5, 3, 6, 12, 20, and 30 ft lengths

Crestron® Certified Interface Cables complete the total Crestron package, ensuring high-performance and end-to-end Crestron quality for every installation. A variety of cables is offered to support all types of analog and digital video and audio signals. A durable yet flexible CL3-rated jacket affords excellent handling with allowance for in-wall installation. Stylish and rugged connectors achieve an ultra-reliable connection with a designer appearance befitting the most high-end system.

The CBL-HD model is a high-speed Category 2 HDMI® cable featuring 24k gold-plated HDMI Type A male connectors at each end. A variety of popular lengths up to 30 feet is offered.



Section 274100- 2.10.J.25.(o,p,t)

Available Models

- CBL-HD-1.5: Crestron® Certified HDMI® Interface Cable, 1.5 ft
- CBL-HD-3: Crestron® Certified HDMI® Interface Cable, 3 ft
- CBL-HD-6: Crestron® Certified HDMI® Interface Cable, 6 ft
- CBL-HD-12: Crestron® Certified HDMI® Interface Cable, 12 ft
- CBL-HD-20: Crestron® Certified HDMI® Interface Cable, 20 ft
- CBL-HD-30: Crestron® Certified HDMI® Interface Cable, 30 ft

Notes:

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CBL-RCA3

Crestron® Certified RCA Component Video Interface Cable

Crestron® Certified Interface Cables complete the total Crestron package, ensuring high-performance and end-to-end Crestron quality for every installation. A variety of cables is offered to support all types of analog and digital video and audio signals. A durable yet flexible CL3-rated jacket affords excellent handling with allowance for in-wall installation. Stylish and rugged connectors achieve an ultra-reliable connection with a designer appearance befitting the most high-end system.

The CBL-RCA3 model is a high-bandwidth, low-loss HD component video cable featuring 24k gold-plated RCA male connectors at each end. A variety of popular lengths up to 12 feet is offered.

- > High-definition component video cable
- > Supports analog 1080p HDTV
- > High-end 24k gold-plated RCA connectors
- > High-flex CL3-rated jacket
- > Crestron® guaranteed end-to-end system performance
- > RoHS compliant
- > Available in 1.5, 3, 6, and 12 ft lengths

Available Models

CBL-RCA3-1.5 [6503468]: Crestron® Certified RCA Component Video Interface Cable, 1.5 ft

CBL-RCA3-12 [6503471]: Crestron® Certified RCA Component Video Interface Cable, 12 ft

CBL-RCA3-3 [6503469]: Crestron® Certified RCA Component Video Interface Cable, 3 ft

CBL-RCA3-6 [6503470]: Crestron® Certified RCA Component Video Interface Cable, 6 ft

NO PHOTO AVAILABLE

Section 274100- 2.10.J.25.u Comply

CBL-RCA2

Crestron® Certified RCA Stereo Audio Interface Cable

Crestron® Certified Interface Cables complete the total Crestron package, ensuring high-performance and end-to-end Crestron quality for every installation. A variety of cables is offered to support all types of analog and digital video and audio signals. A durable yet flexible CL3-rated jacket affords excellent handling with allowance for in-wall installation. Stylish and rugged connectors achieve an ultra-reliable connection with a designer appearance befitting the most high-end system.

The CBL-RCA2 model is a high-quality, low-loss unbalanced stereo audio cable featuring 24k gold-plated RCA male connectors at each end. A variety of popular lengths up to 12 feet is offered.

- > High-quality, low-loss stereo audio cable
- > High-end 24k gold-plated RCA connectors
- > High-flex CL3-rated jacket
- > Crestron® guaranteed end-to-end system performance
- > RoHS compliant
- > Available in 1.5, 3, 6, and 12 ft lengths

Available Models

CBL-RCA2-1.5 [6503464]: Crestron® Certified RCA Stereo Audio Interface Cable, 1.5 ft

CBL-RCA2-12 [6503467]: Crestron® Certified RCA Stereo Audio Interface Cable, 12 ft

CBL-RCA2-3 [6503465]: Crestron® Certified RCA Stereo Audio Interface Cable, 3 ft

CBL-RCA2-6 [6503466]: Crestron® Certified RCA Stereo Audio Interface Cable, 6 ft



Section 274100- 2.10.J.25.v Comply

3-Series Control System®

- > Enterprise-class control system
- > 3-Series® Control Engine — substantially faster and more powerful than other control systems
- > Exclusive modular programming architecture
- > Onboard 1GB RAM & 4GB Flash memory
- > Expandable storage up to 1TB
- > Rear panel memory card slot
- > High-speed USB 2.0 host port
- > Industry-standard Ethernet and Cresnet® wired communications
- > Control Subnet — provides a dedicated local network for Crestron® devices
- > XPanel with Smart Graphics™ computer and Web based control
- > iPhone®, iPac®, and Android™ control app support
- > Crestron Fusion® Enterprise Management Software support
- > SNMP remote management support
- > Two RS-232/422/485 COM ports with hardware and software handshaking
- > Four RS-232 COM ports with software handshaking only
- > Eight IR/serial, eight relay, and eight Versiport I/O ports
- > Three built-in 3-Series control card expansion slots (optional)^[3]
- > Programmable event scheduling with astronomical time clock
- > Native BACnet™/IP support^[2]
- > IEC 61000-4-5 Installation Class 4 surge immunity on COM, Versiport, and network connections^[4]
- > Installer setup via Crestron Toolbox™ software or Web browser
- > C#, symbol based, and drag-and-drop programming environments
- > Full Unicode (multi-language) support
- > Increased network throughput and security
- > Secure access through full user/group management or Active Directory integration
- > Hardware level security using 802.1X authentication
- > TLS, SSL, SSH, and SFTP network security protocols
- > FIPS 140-2 compliant encryption
- > IIS v.6.0 Web Server
- > IPv6 ready
- > Front panel USB computer console port
- > 2-space rack-mountable



3-Series® Control Systems

Today's commercial buildings and custom homes comprise more technology than ever before, and all these systems need to be networked, managed, and controlled in fundamentally new ways. The IP based 3-Series platform is engineered from the ground up to deliver a network-grade server appliance capable of faithfully handling everything from boardroom AV and home theater control to total building management.

3-Series embodies a distinctively robust, dynamic, and secure platform to elevate your system designs to higher levels of performance and reliability. Compared to other control systems, Crestron 3-Series provides a pronounced increase in processing power and speed with more memory, rock solid networking and IP control, and a unique modular programming architecture.

Modular Programming Architecture

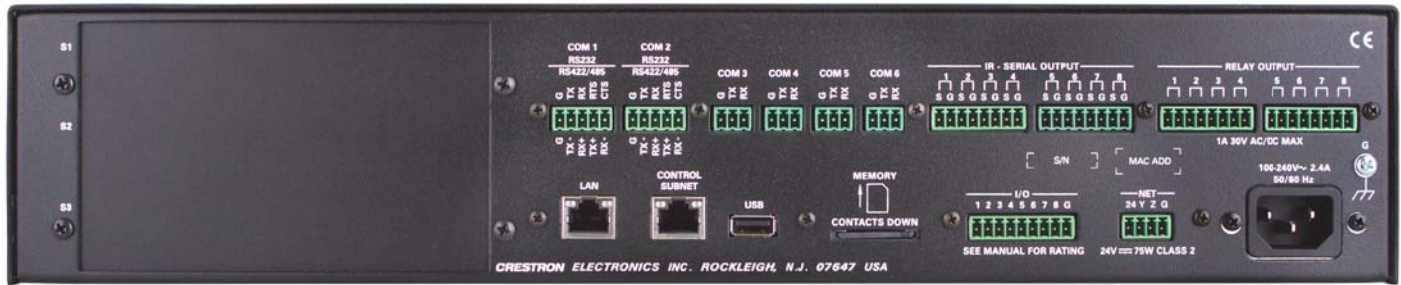
Designed for enhanced scalability, the AV3 affords high-speed, real-time multi-tasking to seamlessly run multiple programs simultaneously. This exclusive modular programming architecture lets programmers independently develop and run device-specific programs for AV, lighting, shades, HVAC, security, etc., allowing for the optimization of each program, and allowing changes to be made to one program without affecting the whole. Even as your system grows, processing resources can easily be shifted from one 3-Series processor to another without rewriting any code. The end benefit is dramatically simplified upgradability with minimal downtime, whether implementing changes on site or remotely via the network.

Robust Ethernet & IP Control

IP technology is the heart of 3-Series, so it should be no surprise that its networking abilities are second to none. Gigabit Ethernet connectivity enables integration with IP-controllable devices and allows the AV3 to be part of a larger managed control network. Whether residing on a sensitive corporate LAN, a home network, or accessing the Internet through a cable modem, the AV3 provides secure, reliable interconnectivity with IP-enabled touch screens, computers, mobile devices, video displays, media servers, security systems, lighting, HVAC, and other equipment — whether on premises or across the globe.

The Crestron® AV3 is an enterprise-class control system with an enhanced feature set including built-in control card expansion slots and a dedicated Control Subnet port. Featuring the 3-Series® control engine, the AV3 forms the core of any modern networked home or commercial building, managing and integrating all the disparate technologies throughout your facility to make life easier, greener, more productive, and more enjoyable.

AV3 3-Series Control System®



AV3 – Rear View

Dedicated Control Subnet

The Crestron Control Subnet is a Gigabit Ethernet network dedicated to Crestron devices. Via the AV3's Control Subnet port, an installer may simply connect a single touch screen or wireless gateway, or add a Crestron PoE switch (CEN-SW-POE-5 or CEN-SWPOE-16)^[1] to handle multiple touch screens, gateways, AV components, and other devices. Auto-configuration of the entire subnet is performed by the AV3, discovering each device and assigning IP addresses without any extra effort from the installer.

A separate LAN port on the AV3 provides a single-point connection to the customer's LAN, requiring just one IP address for the complete control system. The LAN port allows full interconnectivity between devices on the local subnet with other devices, systems, servers, and WAN/Internet connections outside the local subnet. For sensitive applications that require absolute security, the entire Control Subnet can be completely isolated from the customer's LAN using Isolation Mode.

Control Apps & XPanel

Years ago, Crestron pioneered the world's first IP-based control system unleashing vast new possibilities for controlling, monitoring, and managing integrated systems over a LAN, WAN, and the Internet. Today, Crestron offers more ways than ever to control your world the way you want. Using a computer, smartphone, or tablet device, Crestron lets you control anything in your home or workplace from anywhere in the world.

Native to every 3-Series control system, Crestron XPanel technology transforms any laptop or desktop computer into a virtual Crestron touch screen. Crestron control apps deliver the Crestron touch screen experience to iPhone®, iPad®, and Android™ devices, letting you safely monitor and control your entire residence or commercial facility using the one device that goes with you everywhere.

Crestron Fusion® Enterprise Management

Crestron Fusion provides an integrated platform for creating truly smart buildings that save energy, enhance worker productivity, and prolong the life-span of valuable equipment. As part of a complete managed network in a corporate enterprise, college campus, convention center or any other facility, the AV3 works integrally with Fusion RV® Remote Asset Management Software to enable remote scheduling, monitoring, and control of rooms and technology from a central help desk. Fusion EM® Energy Management Software enables organizations to reduce energy consumption by tracking real-time usage and automating control of lighting, shades, and HVAC.



SNMP Support

Built-in SNMP support enables integration with third-party IT management software, allowing network administrators to manage and control Crestron systems on the network in an IT-friendly format.

Cresnet®

Cresnet provides a dependable network wiring solution for Crestron keypads, lighting controls, shade motors, thermostats, occupancy sensors, and other devices that don't require the higher speed of Ethernet. The Cresnet bus offers easy wiring and configuration, carrying bidirectional communication and 24VDC power to each device over a simple 4-conductor cable. To assist with troubleshooting, the AV3 includes our patent-pending Network Analyzer which continuously monitors the integrity of the Cresnet network for wiring faults, marginal performance, and other errors.

Onboard Control Ports

In addition to Ethernet, the AV3 includes six bidirectional COM ports and eight IR ports to interface directly with all of your centralized AV sources, video displays, and other devices. Eight programmable relay ports are included for controlling projection screens, lifts, power controllers, and other contact-closure actuated equipment. Eight "Versiport" I/O ports enable the integration of power sensors, motion detectors, door switches, alarms, or anything else that provides a dry contact closure, low-voltage logic, or 0-10 Volt DC signal.

Optional Control Card Expansion Slots

Additional control ports can be added to the AV3 using 3-Series Control Cards and the CAGE3 Control Card Expansion Cage. ^[1] The CAGE3 accessory installs in the AV3, providing three control card expansion slots on the AV3's rear panel. Adding the CAGE3 option affords great expansion capability without requiring any additional rack space.

BACnet™/IP

Native support for the BACnet/IP communication protocol provides a direct interface to third-party building management systems over Ethernet, simplifying integration with HVAC, security, fire & life safety, voice & data, lighting, shades, and other systems. Using BACnet/IP, each system runs independently with the ability to communicate together on one platform for a truly smart building. ^[2]



AV3 3-Series Control System®

SPECIFICATIONS

Control Engine

Crestron® 3-Series®; real-time, preemptive multi-threaded/multitasking kernel; Transaction-Safe Extended FAT file system; supports up to 10 simultaneously running programs

Memory

SDRAM: 1 GB

Flash: 4 GB

Memory Card: supports SD and SDHC cards up to 32 GB

External Storage: supports USB mass storage devices up to 1 TB

Communications

Ethernet: 10/100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, industry-standard TCP/IP stack, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), FIPS 140-2 compliant encryption, IEEE 802.1X, SNMP, BACnet™/IP^[2], IPv4 or IPv6, Active Directory authentication, IIS v.6.0 Web Server, SMTP e-mail client

Control Subnet: 10/100/1000 Mbps Ethernet, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP server, DNS Server, port forwarding, Isolation Mode

Cresnet®: Cresnet master mode

USB: Supports USB mass storage class devices via rear panel USB 2.0 host port, supports computer console via front panel USB 2.0 device port

RS-232/422/485: For 2-way device control and monitoring, all ports support RS-232 up to 115.2k baud with software handshaking, two ports also support hardware handshaking, RS-422, and RS-485

IR/Serial: Supports 1-way device control via infrared up to 1.2 MHz or serial TTL/RS-232 (0-5 Volts) up to 115.2k baud

Connectors & Card Slots

S1 – S3: (3) 3-Series control card expansion slots (optional)^[3]

COM 1 – 2: (2) 5-pin 3.5mm detachable terminal blocks; Bidirectional RS-232/422/485 ports^[4]; Up to 115.2k baud; hardware and software handshaking support

COM 3 – 6: (4) 3-pin 3.5mm detachable terminal blocks; Bidirectional RS-232 ports^[4]; Up to 115.2k baud; software handshaking support

IR - SERIAL OUTPUT 1 – 8: (2) 8-pin 3.5mm detachable terminal block comprising (8) IR/Serial output ports; IR output up to 1.2 MHz; 1-way serial TTL/RS-232 (0-5 Volts) up to 115.2k baud

RELAY OUTPUT 1 – 8: (2) 8-pin 3.5mm detachable terminal blocks comprising (8) normally open, isolated relays; Rated 1 Amp, 30 Volts AC/DC; MOV arc suppression across contacts

LAN: (1) 8-wire RJ45 jack; 10Base-T/100Base-TX/1000Base-T Ethernet port^[4]; Connects to the customer's LAN

CONTROL SUBNET: (1) 8-wire RJ45 jack; 10Base-T/100Base-TX/1000Base-T Ethernet port^[4]; Provides a dedicated local network for Crestron devices

USB: (1) USB Type A female; USB 2.0 port for storage devices

MEMORY: (1) SD memory card slot; Accepts one SD or SDHC card up to 32 GB for memory expansion

I/O 1 – 8: (1) 9-pin 3.5mm detachable terminal block comprising (8) "Versiport" digital input/output or analog input ports (referenced to GND)^[4];

Digital Input: Rated for 0-24 Volts DC, input impedance 20k Ohms, logic threshold >3.125V low/0 and <1.875V high/1;

Digital Output: 250mA sink from maximum 24 Volts DC, catch diodes for use with "real world" loads;

Analog Input: Rated for 0-10 Volts DC, protected to 24 Volts DC maximum, input impedance 21k Ohms with pull-up resistor disabled;

Programmable 5 Volts, 2k Ohms pull-up resistor per pin

NET: (1) 4-pin 3.5mm detachable terminal block; Cresnet master port, outputs power to Cresnet devices^[4]; See "Power Requirements" for additional specifications

100-240V~2.4A 50/60Hz: (1) IEC 60320 C14 main power inlet; Mates with removable power cord, included

G: (1) 6-32 screw, chassis ground lug

COMPUTER (front): (1) USB Type B female; USB 2.0 computer console port (6 ft cable included); For setup only

Controls & Indicators

PWR: (1) Green LED, indicates operating power supplied from AC line

NET: (1) Amber LED, indicates communication with the Cresnet system

MSG: (1) Red LED, indicates control system has generated an error message

HW-R: (1) Recessed pushbutton for hardware reset

SW-R: (1) Recessed pushbutton for software reset

CNPS FAULT: (1) Red LED and (1) pushbutton, LED indicates an excessive Cresnet load detected at the NET port, pushbutton resets the fault indication

SLOT 1 – 3: (3) Green LEDs, indicate control cards are inserted in the corresponding slots^[3]

LAN (rear): (2) Bi-color green/amber LEDs, left LED indicates Ethernet link status and connection speed, right LED indicates Ethernet activity

CONTROL SUBNET (rear): (2) Bi-color green/amber LEDs, left LED indicates Ethernet link status and connection speed, right LED indicates Ethernet activity

Power Requirements

Main Power: 2.4 Amps @ 100-240 Volts AC, 50/60 Hz

Available Cresnet Power: 75 Watts (3.125 Amps @ 24 Volts DC)

AV3 3-Series Control System®

Environmental

Temperature: 41° to 113°F (5° to 45°C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 45 BTU/Hr with no Cresnet devices, no control cards;

71 BTU/Hr with full Cresnet load, no control cards;

See individual control card spec sheets for additional specifications

Enclosure

Chassis: Metal, black finish, vented top and sides

Faceplate: Extruded metal, black finish, polycarbonate label overlay

Mounting: Freestanding or 2U 19-inch rack-mountable (adhesive feet and rack ears included)

Dimensions

Height: 3.47 in (89 mm) without feet

Width: 17.28 in (439 mm);

19.00 in (483 mm) with rack ears

Depth: 10.06 in (256 mm)

Weight

4.0 lb (1.9 kg)

Section 274100- 2.10.Y.12.a Comply
(Replacement)

MODELS & ACCESSORIES

Available Models

AV3: 3-Series Control System®

Available Accessories

CAGE3: Control Card Expansion Cage for AV3

C3COM-3: 3-Series® Control Card - 3 COM Ports

C3IO-16: 3-Series® Control Card - 16 Versiport I/O Ports

C3IR-8: 3-Series® Control Card - 8 IR Ports

C3RY-8: 3-Series® Control Card - 8 Relay Ports

C3RY-16: 3-Series® Control Card - 16 Relay Ports

PWE-4803RU: PoE Injector

CEN-SW-POE-5: 5-Port PoE Switch

CEN-SWPOE-16: 16-Port Managed PoE Switch

C2N-HBLOCK: Multi-type Cresnet Distribution Block

CNTBLOCK: Cresnet Distribution Block

CNSP-XX: Custom Serial Interface Cable

IRP2: IR Emitter Probe w/Terminal Block Connector

Crestron® App: Control App for Apple® iOS® & Android™

XPanel: Crestron Control® for Computers

myCrestron: Dynamic DNS Service for Crestron Systems

Fusion EM®: Energy Management Software

Fusion RV®: Remote Asset Management Software

RoomView® Express: Remote Help Desk and Resource Management Software

3-Series® BACnet™/IP Support: 3-Series Native BACnet/IP Interface License

CSP-LIR-USB: IR Learner

Notes:

1. Item(s) sold separately.
2. License required. The AV3 supports a maximum of 2000 BACnet objects when dedicated for BACnet use only. Actual capabilities are contingent upon the overall program size and complexity.
3. Requires CAGE3 Control Card Expansion Cage accessory.
4. The following connections comply with IEC 61000-4-5 Installation Class 4 surge immunity levels: COM 1 - 6, I/O 1 - 8, NET, LAN, and CONTROL SUBNET.

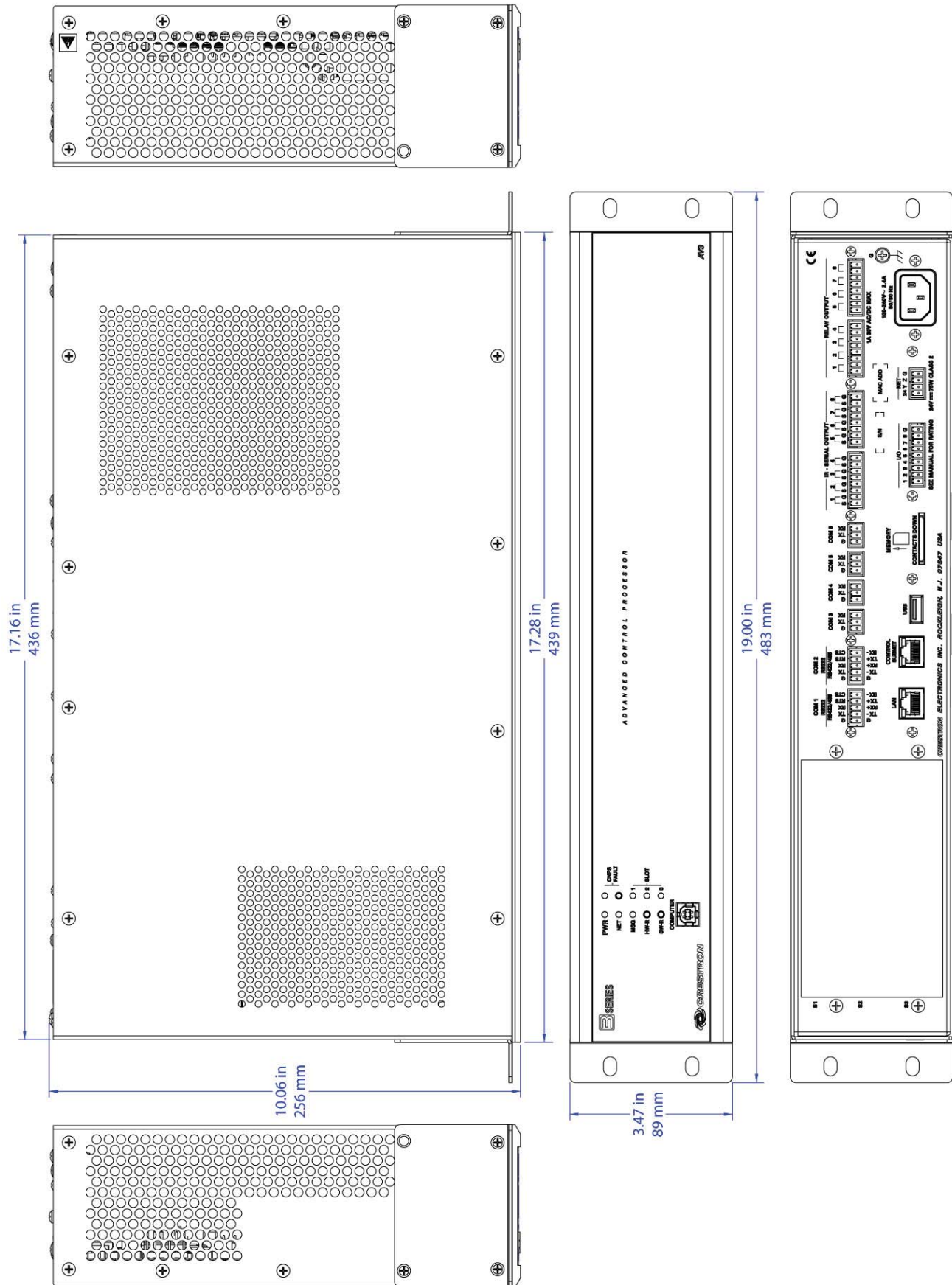
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AV3 3-Series Control System®



C3COM-3

3-Series™ Control Card - 3 COM Ports

The C3COM-3 is a 3-Series™ control card that provides three COM ports. Each COM port supports bidirectional RS-232, RS-422, or RS-485. The card is designed to install in a control card expansion slot of a 3-Series Control System® model **PRO3** or **AV3**^[1], or 3-Series Card Interface model **CEN-CI3-1** or **CEN-CI3-3**.

SPECIFICATIONS

Communications

RS-232/422/485: For 2-way device control and monitoring

Connectors

COM 1 – 3: (3) 5-pin 3.5mm detachable terminal blocks;
Bidirectional RS-232/422/485 ports^[2];
Up to 115.2k baud; hardware and software handshaking support

Environmental

Temperature: 41° to 113°F (5° to 45°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 4 BTU/Hr

Construction

Occupies one control card expansion slot of a 3-Series Control System® or 3-Series™ Card Interface

Weight

4.0 oz (114 g)

Section 274100- 2.10.Y.12.e Comply
(Replacement)

MODELS & ACCESSORIES

Available Models

C3COM-3: 3-Series™ Control Card - 3 COM Ports

Available Accessories

CNSP-XX: Custom Serial Interface Cable



Notes:

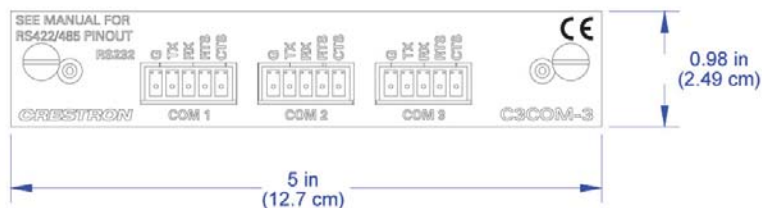
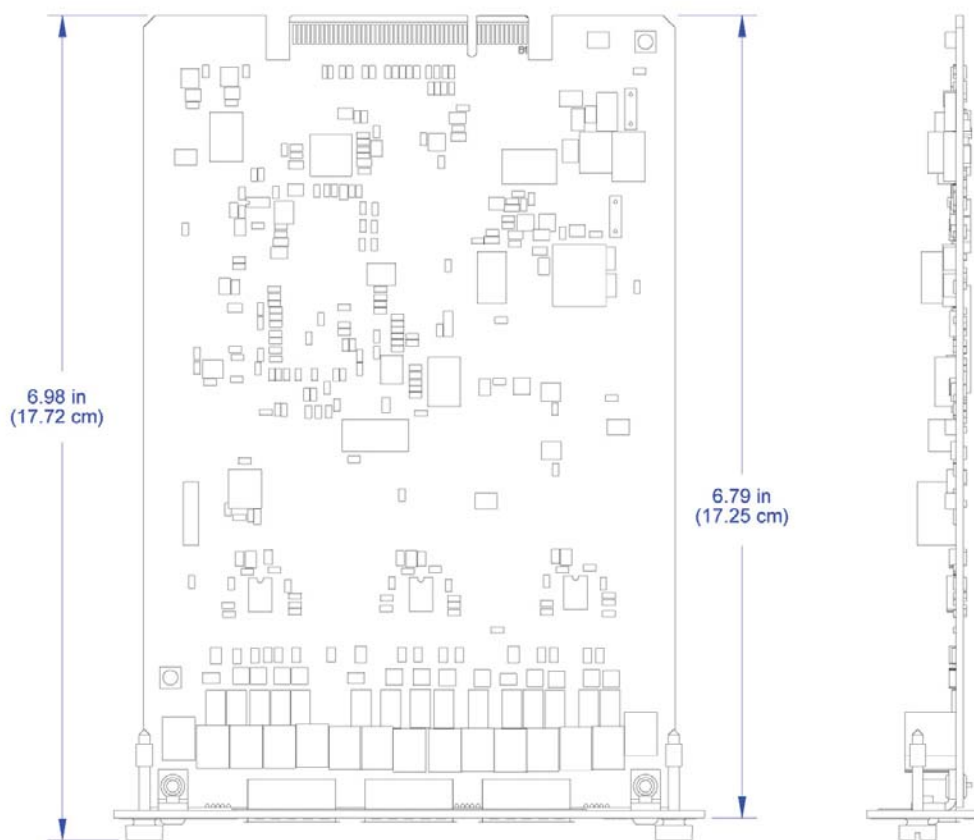
1. AV3 requires **CAGE3** Control Card Expansion Cage accessory to enable use of 3-Series control cards.
2. Complies with IEC 61000-4-5 Installation Class 4 surge immunity levels.

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C3COM-3 3-Series™ Control Card - 3 COM Ports



CAGE3

Control Card Expansion Cage for AV3

The CAGE3 is a field-installable accessory that adds three control card expansion slots to the AV3 3-Series Control System®. The CAGE3 enables installation of up to three 3-Series™ control cards to expand the number and types of control ports in the AV3 chassis.

SPECIFICATIONS

Weight

8.0 oz (227 g)

Section 274100- 2.10.Y.12.b Comply
(Replacement)

MODELS & ACCESSORIES

Available Models

CAGE3: Control Card Expansion Cage for AV3



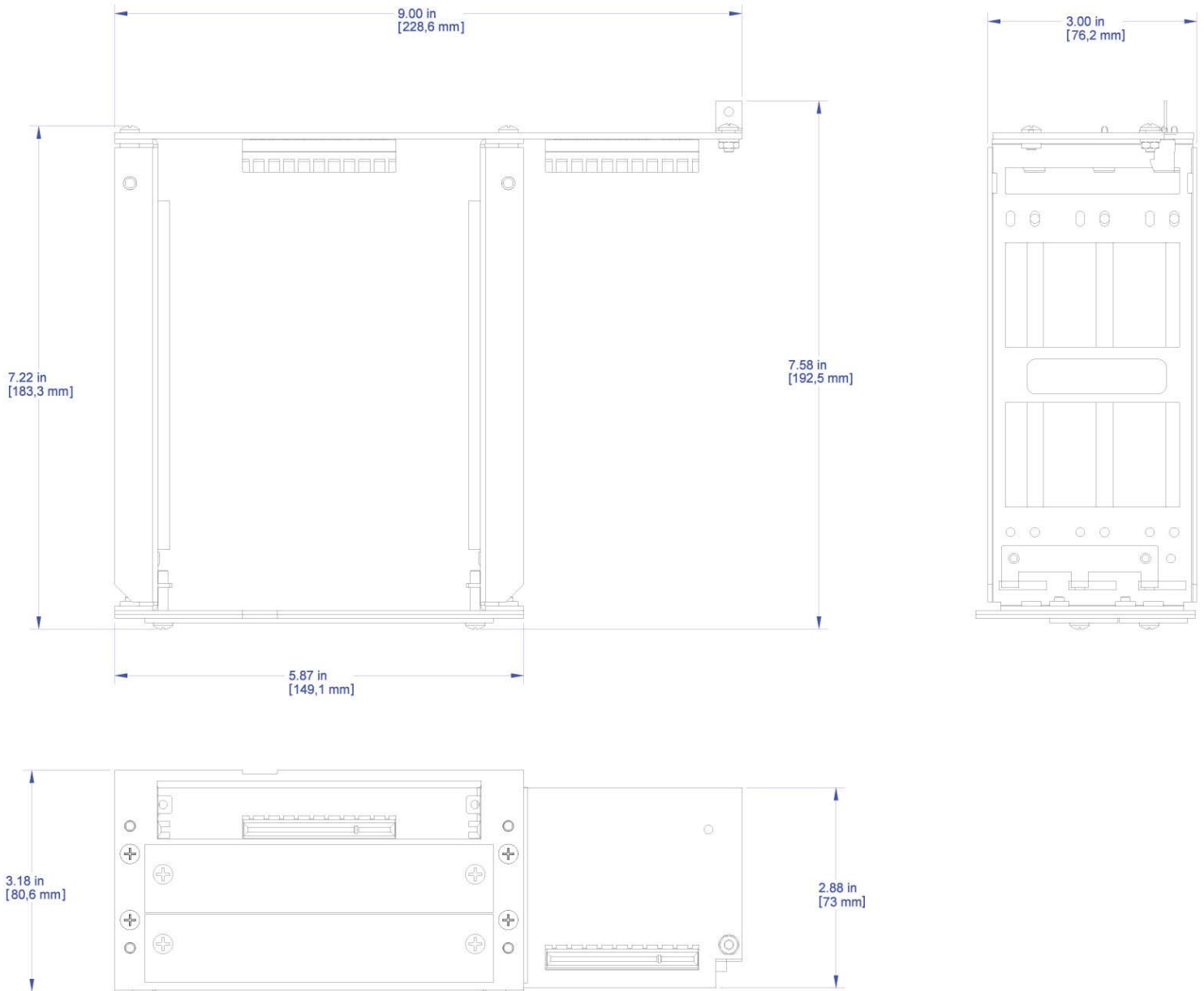
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CAGE3 Control Card Expansion Cage for AV3



TST-602

5.7" Wireless Touch Screen

- > Advanced wireless touch screen controller
- > Compact, lightweight contoured design
- > 5.7" LED Edgelit color LCD display
- > Capacitive touch screen technology
- > Smart Graphics™ support^[1]
- > Voice recognition capability^[1,2]
- > High-performance H.264 streaming video^[1]
- > Rava® SIP intercom and phone technology^[1]
- > Customizable audio feedback
- > Web browsing^[1,2]
- > On-screen keyboard and mouse
- > Customizable screensaver
- > Built-in microphone and speakers
- > Illuminated buttons and engravable backlit text^[3]
- > No-button front bezel option included
- > Dual-mode RF wireless performance — Extended Range 2.4 GHz RF plus Wi-Fi®^[3]
- > Instant-Waking® behavior — like an IR remote with all the benefits of 2-way RF!
- > Supports roaming for extended wireless coverage^[7]
- > Includes wired Ethernet connectivity as an alternative to Wi-Fi^[1]
- > Fast charging, long lasting Li-Ion battery
- > Low-profile table dock charger^[9]
- > Available in smooth black or white, or textured black finishes



The Crestron® TST-602 Wireless Touch Screen delivers enhanced wireless control for the home, boardroom, or classroom in a stylish, ergonomic design. Its curved shape feels natural in the hands, with easy-access thumb-operable buttons placed to either side of a perfectly-sized color touch screen display. Dual-mode wireless performance with roaming capability assures dependable connectivity throughout the home or workplace. Wired Ethernet connectivity is also available via the included table dock.

Featuring a high-contrast 5.7" capacitive touch screen with Smart Graphics™, the TST-602 allows completely customizable control over audio, video, lighting, shades, climate, security, and other technologies. Scrolling menus of media titles and channel presets make it quick and easy to find and select any TV channel, video title, or music track. Optional tactile pushbuttons provide easy, immediate access to commonly used functions such as volume, mute, power, and on-screen menu navigation. Additional advanced features include the abilities to control any function using voice commands, view security cameras and other video sources, communicate using built-in intercom and phone capabilities, and browse the Internet.^[1,2]

Smart Graphics™

Crestron touch screens use Smart Graphics to deliver the ultimate user experience *and* the ultimate value by enabling the creation of dynamically rich user interfaces with incredible efficiency and unparalleled

functionality. Using Smart Graphics, programmers can swiftly integrate fluid gesture-driven controls, animated feedback, rich metadata, embedded apps and widgets, and full-motion video for a deeply engaging and ultra-intuitive touch screen experience.

Crestron Smart Graphics offers these enhancements and more:

- Cool-looking graphical buttons, sliders, knobs, and gauges that are intuitive and fun to use
- Kinetic effects to enhance the feeling of realism, with lists and toolbars that scroll with momentum at the flick of a fingertip
- Drag-and-drop objects that snap into place, offering an easy way to switch sources
- Dashboard widgets to personalize the touch screen with clocks, weather, news, and other information^[2]
- A power-saving screensaver, allowing display of time, temperature, and other text content at a reduced brightness level
- Customizable themes allowing a completely different look and feel for every user, event, or season
- Fully-developed SmartObjects® that enable sophisticated control over complex devices with minimal programming
- A consistent look and feel across multiple touch screens of varying sizes

Tactile Pushbuttons

In addition to its touch screen display, the TST-602 features illuminated tactile pushbuttons for quick access to volume adjustment, channel selection, and on-screen menu navigation functions. Eight additional pushbuttons, elegantly trimmed by illuminated button dividers, flank the edges of the touch screen to support additional programmable functions.

High-quality backlit laser-engraving lends a crisp, legible appearance to button text in both darkened and fully lit rooms. The pushbuttons come

TST-602 5.7" Wireless Touch Screen

pre-engraved with labeling suited to a typical home theater or multimedia presentation application. If needed, [customized engraving](#) can be attained simply using Crestron Engraver software. A [no-button front bezel](#) is also included, which may be installed in place of the button bezel for a very clean appearance with no front panel pushbuttons.^[3]

Two additional itrigger™ style buttons are positioned on top of the TST-602 for easy control of the display brightness, sleep mode, and other programmable functions.

Voice Recognition

Some things are easier *said* than *done*, so why not just *say* what you want and let Crestron *do* it for you? With built-in voice recognition, the TST-602 provides the ability to use spoken commands to control virtually anything. Voice recognition can be used to quickly turn devices on or off, select and play a specific media title or playlist, change the channel, choose a lighting scene, lock the doors, arm the security system, or enter a password. Simply press the Voice Recognition button on the touch screen and say a command and Crestron does the rest.^[1,2]

Streaming Video

High-performance streaming video capability makes it possible to view security cameras and other video sources right on the touch screen. Native support for H.264 and MJPEG formats allows the TST-602 to display live streaming video from an IP camera, a streaming server (Crestron [CEN-NVS200](#), [DM-TXRX-100-STR](#), or similar^[4]), or a [DigitalMedia™ switcher](#).^[1]

Rava® SIP Intercom

[Rava SIP Intercom Technology](#) enables hands-free VoIP communication with other Rava-enabled touch screens and door stations, supporting 2-way intercom, video intercom^[5], and paging. VoIP phone capability is also possible through integration with an SIP-compatible IP phone system or SIP server, allowing hands-free telephone functionality complete with speed-dialing, caller ID, custom ringers, and other enhancements. Built-in echo cancellation affords full-duplex performance for clear, seamless voice communication using the TST-602's integrated microphone and speakers.^[1]

Web Browsing

Using its built-in web browser, the TST-602 provides quick access to online program guides and other web-based services at the touch of a button, allowing enhanced touch screen control of DVRs and other appliances without having to pick up a separate tablet or smartphone. If a device can be controlled or managed through a web browser, it can be integrated into the Crestron system through the TST-602. Of course, the web browser may also be used to simply browse the Internet, watch online videos, and check up on social media.^[1,2]

Multi-Touch Support

The TST-602's capacitive touch screen affords enhanced capabilities for navigating web pages using multi-touch gestures.

On-Screen Keyboard & Mouse

On-screen multi-language keyboard and mouse capabilities provide for entry of passwords, URLs, and text search items, and enable the touch screen to be used as a wireless mouse touchpad to control a computer running TouchPoint® Virtual Mouse & Keyboard Software ([VMK-WIN](#)).

Audio Feedback

Customized audio files can be loaded on the TST-602 to add another dimension to the touch screen graphics using personalized sounds, button feedback, and voice prompts.

Dual-Mode Wireless

To deliver the ultimate in wireless touch screen performance and functionality, the TST-602 employs a combination of Crestron Extended Range 2.4 GHz RF (ER) and Wi-Fi® wireless technologies.

- **Extended Range RF (Required)** — Primary functionality is supported via Crestron ER (Extended Range) wireless communications, providing seamless control with true feedback using the TST-602's tactile buttons and basic touch screen objects. A single [ER gateway](#)^[4] enables ultra dependable wireless performance at a range of up to 200 feet (60 m) indoors.^[6] Roaming capability allows for even greater coverage using up to eight ER gateways.
- **Wi-Fi (Optional)** — While the TST-602 can be operated using only ER wireless, advanced wireless capabilities such as streaming video, intercom, voice recognition, web browsing, and dynamic graphics can only be supported using both ER and Wi-Fi together (dual-mode). Crestron enhanced Wi-Fi wireless performance achieves a remarkable 50 feet (15 m) omnidirectional coverage indoors.^[6] For Wi-Fi networks with multiple access points, the TST-602 supports the ability to hand off communication from one access point to another if the active connection is lost.^[7] The choice of 802.11 b, g, and n protocols affords reliable, high-speed wireless performance in virtually any RF environment. For optimal Wi-Fi performance, Crestron offers the [CEN-WAP-1500](#) High Power Dual-Band Wireless Access Point.

IMPORTANT: EVERY INSTALLATION OF THE TST-602 REQUIRES A CRESTRON ER WIRELESS GATEWAY TO ENABLE ESSENTIAL WIRELESS CAPABILITY. THE TST-602 WILL NOT WORK WITH WI-FI (OR WIRED ETHERNET) ALONE.^[8]

Instant-Waking®

To ensure the most transparent user experience possible, the TST-602 has been engineered to wake instantly at the press of a button or touch of the touch screen. Button presses are sent immediately, just like an IR remote but with none of IR's limitations. So spontaneous actions like muting the audio, pausing the video, or changing the channel can be executed on-the-fly with just a single button press.

Extended Battery Life

Intelligent power management and robust Lithium Ion battery technology afford up to 3.2 hours of continuous operation and several days of typical use between charges.

Table Dock Charger

The TST-602 includes a low-profile [table dock](#) for charging its internal battery. While docked, the touch screen remains fully operational so you're always in control. The table dock can also provide a wired Ethernet connection for the touch screen in the absence of Wi-Fi. The table dock and touch screen look stylish together sitting on a countertop or side table, and can also fit discreetly in a cabinet or drawer. A single cable connects the table dock to a compact [interface module](#), which provides wired

TST-602 5.7" Wireless Touch Screen

connections for power and Ethernet. The interface module can be installed in a wall-mounted electrical box, or simply attached to any flat surface or a single rack rail. Power can be supplied using the included [power pack](#) or 24VDC Cresnet® power.^[9,10]

SPECIFICATIONS

Note: See also TST-600-DS and TST-600-IMCW for additional specifications.

Touch Screen Display

Display Type: TFT Active matrix color LCD
Size: 5.7 inch (145 mm) diagonal
Aspect Ratio: 4:3 VGA
Resolution: 640 x 480 pixels
Brightness: 350 nits (cd/m²)
Contrast: 800:1
Color Depth: 18-bit, 262k colors
Illumination: Edgelit LED
Viewing Angle: ±80° horizontal, ±70° vertical
Touch Screen: Projected capacitive, 2-point multi-touch capable

Buttons, Switches, & Indicators

Sleep: (1) Top-mounted pushbutton (left); programmable, normally initiates "Sleep" mode when docked, turns power on/off when undocked; also resets the unit if held for 5 seconds
Brightness: (1) Top-mounted pushbutton (right); programmable, normally sets display brightness level
Hard Keys: (8) Optional pushbuttons, programmable, engravable backlit text^[3]
Up/Down: (2) Optional backlit translucent "up" and "down" pushbuttons, programmable, engravable backlit text on bezel^[3]
Navigation Pad: (5) Optional backlit translucent pushbuttons for 4-way directional navigation and "select", programmable
Battery Switch: (1) Rear panel recessed slide switch, shuts off battery for long-term storage
Battery LED: (1) Green LED, indicates battery condition and charging status when docked

Memory

LPDDR2 RAM: 1 GB
Flash: 4 GB
Maximum Project Size: 512 MB

Graphics Engine

Supports Smart Graphics™^[11], multi-language web browser^[1,2], multi-language on-screen keyboard, screensaver

Languages

Smart Graphics: Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English (UK), English (US), Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish,

Portuguese, Portuguese (Brazilian), Romanian, Russian, Slovak, Spanish, Swedish, Thai

On-Screen Keyboard: Arabic, Chinese (Simplified), Croatian, Czech, Danish, Dutch, English (UK), English (US), Finnish, French (Canada), French (Switzerland), German, Hebrew, Hungarian, Italian, Japanese, Norwegian Bokmal, Polish, Portuguese, Russian, Serbian, Spanish, Swedish, Turkish
Voice Recognition: Afrikaans (South Africa); Chinese, Mandarin (China, Simplified); Chinese, Mandarin (Hong Kong, Simplified); Chinese, Mandarin (Taiwan, Traditional); Chinese, Yue (Hong Kong, Traditional); Czech (Czech Republic); Dutch (Netherlands); English (Australia); English (Canada); English (Generic); English (India); English (New Zealand); English (South Africa); English (UK); English (US); French (France); German (Germany); isiZulu (South Africa); Italian (Italy); Japanese (Japan); Korean (South Korea); Polish (Poland); Portuguese (Brazil); Russian (Russia); Spanish (Spain); Turkish (Turkey)

Web Browser: Arabic, Bulgarian, Catalan, Chinese, Croatian, Czech, Danish, Dutch, English, Filipino, Finnish, French, German, Greek, Hebrew, Hindi, Hungarian, Indonesian, Italian, Japanese, Korean, Latvian, Lithuanian, Norwegian Bokmal, Pashto, Persian, Polish, Portuguese, Romanian, Romansh, Russian, Serbian, Slovak, Slovenian, Spanish, Swedish, Thai, Turkish, Ukrainian, Vietnamese

Wireless Communication (Primary) – Extended Range RF^[8]

RF Transceiver: 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), IEEE 802.15.4 compliant
Transmitting Power: 75 mW (Ch.11), 100 mW (Ch.12-23), 15 mW (Ch.24), 3.5 mW (Ch.25), 1 mW (Ch.26) @ High Setting; 1 mW (Ch.11-25), 0.5 mW (Ch.26) @ Low Setting
Range (typical): 100 to 200 feet (30 to 60 m) maximum indoor, 1000 feet (300 m) outdoor, subject to site-specific conditions
Gateway: Requires a Crestron Extended Range (ER) Wireless Gateway^[4]
Roaming: Supports roaming between a maximum of eight gateways

Wireless Communication (Secondary) – Wi-Fi^[8]

Transceiver: IEEE 802.11b/g/n Wi-Fi (2.4 GHz 2-way RF), static IP or dynamic IP via DHCP
Security: 64 & 128-bit WEP, WPA™ & WPA2™-PSK with TKIP & AES
Range: Up to 50 feet (15 m), subject to site-specific conditions
Gateway: Requires a CEN-WAP-1500 or similar 802.11b/g/n wireless access point and Ethernet-enabled Crestron control system
Handoff: Supports handoff between a maximum of four Wi-Fi wireless access points^[7]

Wired Communications

Ethernet^[1]: (Via table or wall dock) 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP
USB: USB client for console only

Video

Streaming Formats: H.264 (MPEG-4 part 10 AVC) or MJPEG, up to 1024x720 @ 30 fps^[1]

TST-602 5.7" Wireless Touch Screen

Audio

Features: Built-in microphone and speakers, Rava® SIP Intercom^[1], multi-language voice recognition^[1,2]

Audio Feedback Formats: MP3

Connectors

Docking Connector: (1) Multi-pin connector;
Mates with the docking port on the table or wall dock^[9]

USB: (1) Mini-B USB console port, for installer use only;
Mini-B to A USB cable included

NOTE: See TST-600-IMCW interface module specification for additional connectors^[9]

Battery

Rechargeable Battery: Li-ion, 3.7 Volt, 3200 mAh, model TST-600-BTP^[12]

Usage per Charge: 3.2 hours continuous, 90 hours under normal use (10% active duty cycle with standby/power down enabled)

Charging Time: 2.5 hours with touch screen in standby, 3.5 to 5 hours during use

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC;
100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included
Cresnet® Power Usage: 18 Watts (0.75 Amps @ 24 Volts DC)^[10]

Note: May be powered by power pack or Cresnet network power, not both. All power connections are made via the TST-600-IMCW interface module^[9,10]

Environmental

Temperature: 32° to 112° F (0° to 45° C);
50° to 104° F (10° to 40° C) while charging

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 40 BTU/hr

Construction

Enclosure: Plastic, non-slip grips/feet, integral docking port

Front Bezels: Plastic, button and no-button bezels included, button bezel includes white translucent illuminated Up/Down and Navigation Pad buttons and 8 hardkey buttons with illuminated dividers and default backlit text engraving, optional custom backlit text engraving sold separately^[3]

Dimensions

Height: 5.10 in (130 mm)

Width: 8.08 in (206 mm)

Depth: 1.59 in (41 mm)

Note: Combined height of the TST-602 touch screen docked on the TST-600-DS table dock^[9] is 3.30 in (84 mm)

Weight

22.5 oz (636 g) without table dock or interface module

Section 274100-2.10.Z.14.a Comply (Replacement)

MODELS & ACCESSORIES

Available Models

TST-602-B-S: 5.7" Wireless Touch Screen, Black Smooth

TST-602-B-T: 5.7" Wireless Touch Screen, Black Textured

TST-602-W-S: 5.7" Wireless Touch Screen, White Smooth

Included Accessories

TST-600-BTP: Battery Pack (Qty. 1 included)

TST-600-DS-B-S: Table Dock, Black Smooth (Qty. 1 included with TST-602-B-S)

TST-600-DS-B-T: Table Dock, Black Textured (Qty. 1 included with TST-602-B-T)

TST-600-DS-W-S: Table Dock, White Smooth (Qty. 1 included with TST-602-W-S)

TST-600-IMCW: Interface Module for TST-600-DS (Qty. 1 included)

PW-2407WU: Wall Mount Power Pack, 24VDC, 0.75A, 2.1mm, Universal (Qty. 1 included)

TST-602-FPB-S-NB_FRONT_BEZEL: No-Button Bezel Kit, Black Smooth (Qty. 1 included with TST-602-B-S)

TST-602-FPB-T-NB_FRONT_BEZEL: No-Button Bezel Kit, Black Textured (Qty. 1 include with TST-602-B-T)

TST-602-FPW-S-NB_FRONT_BEZEL: No-Button Bezel Kit, White Smooth (Qty. 1 included with TST-602-W-S)

Available Accessories

TST-602-FP-BKLT-B-S_FRONT_BEZEL_BLANK: Button Bezel Kit, No Engraving, Black Smooth

TST-602-FP-BKLT-B-S_FRONT_BEZEL_ENGRAVED: Button Bezel Kit w/ Custom Backlit Engraving, Black Smooth

TST-602-FP-BKLT-B-T_FRONT_BEZEL_BLANK: Button Bezel Kit, No Engraving, Black Textured

TST-602-FP-BKLT-B-T_FRONT_BEZEL_ENGRAVED: Button Bezel Kit w/ Custom Backlit Engraving, Black Textured

TST-602-FPW-S_FRONT_BEZEL_BLANK: Button Bezel Kit, No Engraving, White Smooth

TST-602-FPW-S_FRONT_BEZEL_ENGRAVED: Button Bezel Kit w/Custom Engraving, White Smooth

TST-600-SMK: Swivel Mount Kit for TST-600-DS

TST-600-DSW: Wall Dock

CEN-GWEXER: infiNET EX® & ER Wireless Gateway

MC3: 3-Series Control System® w/infiNET EX® & ER Wireless Gateway

DIN-AP3MEX: DIN Rail 3-Series® Automation Processor w/infiNET EX® & ER Wireless Gateway

CEN-WAP-1500: High Power Dual-Band Wireless Access Point

CBL-CAT5E-P-50: Ethernet LAN Cable, Plenum, 50 ft

CEN-NVS200: Network Video Streamer

DM-TXRX-100-STR: HD Streaming Transmitter/Receiver

TST-602 5.7" Wireless Touch Screen

SW-VMK-WIN: TouchPoint® Virtual Mouse & Keyboard Software for Windows®

Notes:

1. The TST-602 requires a LAN connection via either Wi-Fi wireless or wired Ethernet to enable advanced functionality including voice recognition, streaming video, intercom, web browsing, and dynamic graphics. In addition to Wi-Fi or Ethernet, the TST-602 requires ER (Extended Range) wireless communications for all applications to enable basic functionality. The TST-602 will not work with Wi-Fi or Ethernet alone. The wired Ethernet connection is only available when docked.
2. Voice recognition, web browsing, weather information, and certain other functions require an Internet connection via Wi-Fi or Ethernet.
3. Text engraving is not backlit on the white model. All models include a button bezel with default engraving. Custom engraving is sold separately. All buttons may be removed using the [TST-602-FP-NB No-Button Bezel](#) (included).
4. Item(s) sold separately.
5. H.264 compatible IP camera required.
6. Wireless range subject to site-specific conditions.
7. True roaming is supported for ER wireless communication only, affording uninterrupted wireless performance for primary touch screen functions. Wi-Fi "handoff" capability enables automatic handoff amongst up to four pre-designated Wi-Fi wireless access points, wherein the last successful Wi-Fi connection is maintained indefinitely until that connection is lost, at which point communication is handed off to the next nearest access point. A very brief interruption to wireless Ethernet communication may occur during the handoff. Primary ER wireless communication is unaffected by the Wi-Fi handoff process.
8. ER (Extended Range) RF wireless communication supports basic wireless touch screen functionality, and is required for all applications. For advanced functionality including streaming video, intercom, voice recognition, web browsing, and dynamic graphics, Wi-Fi wireless communication is also required (dual-mode). The TST-602 will not work with Wi-Fi alone. Advanced functionality can also be enabled while docked through a wired Ethernet LAN connection (in combination with ER wireless).
9. The TST-602 ships with (1) [TST-600-DS Table Dock](#) and (1) [TST-600-IMCW Interface Module](#) included. Additional docking options are available separately. The TST-602 is compatible with any 24VDC powered TPS-6X series docking station (legacy) as long as power is provided using the power pack that ships with the TST-602 (or Cresnet power where supported). When docked in a TPS-6X series docking station, the TST-602 does not interface with Cresnet data or wired analog video. Refer to the spec sheet for each individual docking product for additional information.
10. Connection to a Cresnet power supply or network is for power only. Cresnet communication is not supported.
11. Supports Smart Graphics only. Not compatible with "traditional" UI projects.
12. Internal battery pack included. Battery pack replacement must be performed by a Crestron qualified technician.

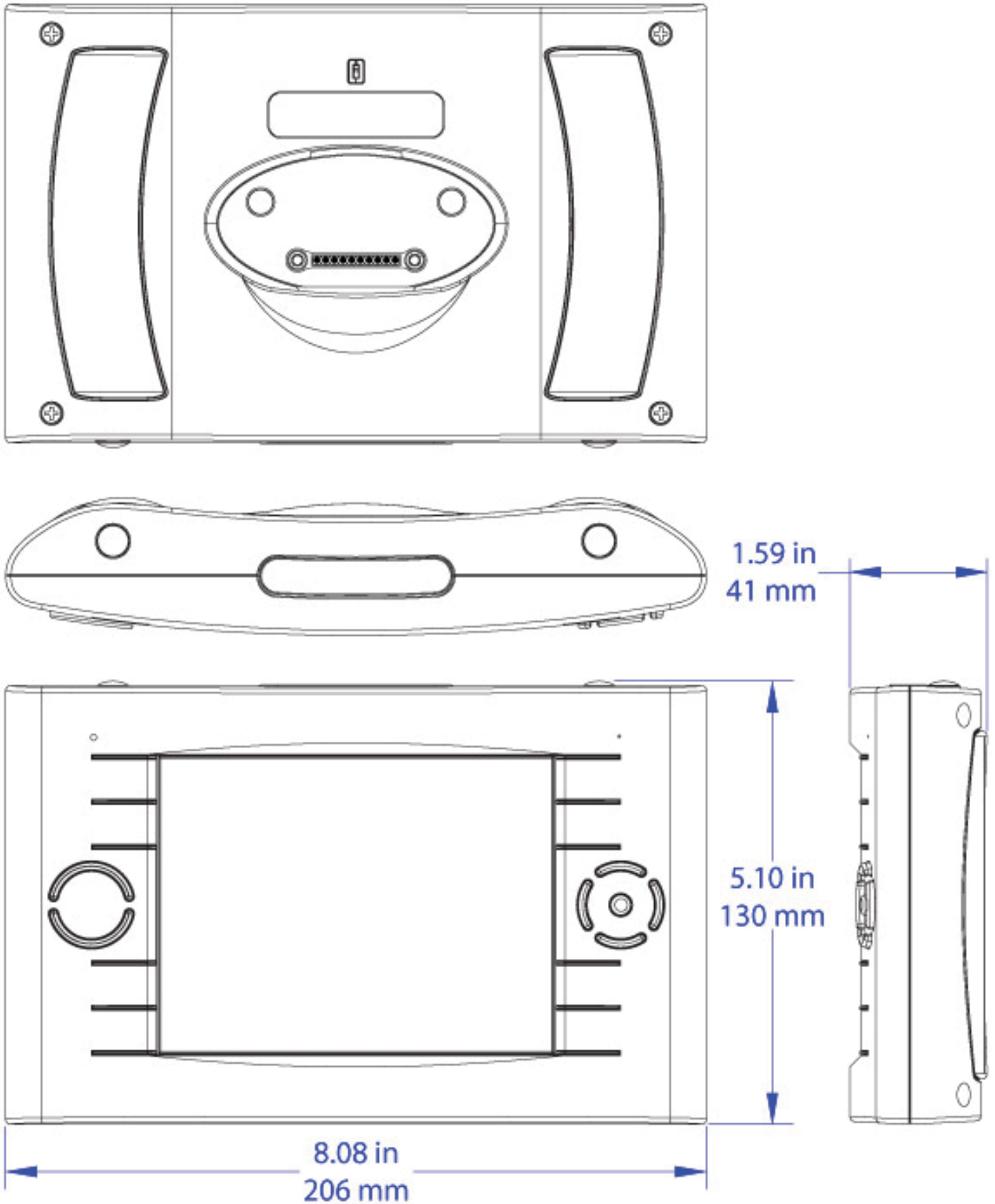
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TST-602 5.7" Wireless Touch Screen



TST-600-DSW

Wall Dock for TST-600 & TST-602

The TST-600-DSW is the wall dock that is included as standard with the [TST-600-WALL](#) and [TST-602-WALL](#) Wall Mount Wireless Touch Screens. It provides a convenient in-wall solution for charging the touch screen's internal battery. It is also available separately as an add-on accessory for the [TST-600](#) and [TST-602](#) Wireless Touch Screens to provide an alternate in-wall charging option.

The TST-600-DSW is designed for easy flush-mount installation in a flat, vertical wall structure^[1]. A variety of mounting accessories (sold separately) is offered for both pre- and post-construction applications.

Placing the touch screen into the wall dock enables its use as a stationary touch screen while simultaneously charging its internal battery. The wall dock can also provide a wired Ethernet connection for the touch screen while docked.

When docked in the TST-600-DSW, the touch screen is partially recessed, affording a clean appearance while inhibiting unauthorized removal. By pressing a button or entering a passcode on the touch screen, the mechanism gently extends the touch screen outward, allowing it to be released for wireless use. A hardware key is included to release the touch screen in the event of a power failure.



SPECIFICATIONS

Connectors

NET: (1) 4-pin 3.5mm detachable terminal block, Cresnet® power port, connects to the Cresnet control network (for power only) or a dedicated Cresnet power supply

LAN: (1) 8-wire RJ45 female, 10Base-T/100Base-TX Ethernet port

Controls

OPEN: (1) Pushbutton, accessible when touch screen is not docked, releases the docking mechanism to allow touch screen to be docked

Power Requirements

Cresnet Power Usage: 43 Watts (1.8 Amps @ 24 Volts DC) with touch screen docked

Note: May be powered by Cresnet network power or a dedicated Cresnet power supply. Does not support Cresnet data communication, only power.

Environmental

Temperature: 41° to 104°F (5° to 40°C);
50° to 104°F (10° to 40°C) while charging

Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 147 BTU/hr (including touch screen)

Enclosure

Chassis: Metal, flush-mountable in a vertical wall structure^[1] (all mounting accessories sold separately)
Faceplate: Plastic

Dimensions

Height: 7.11 in (181 mm)
Width: 9.70 in (247 mm)
Depth: 4.17 in (106 mm)
Total depth with touch screen docked is 4.50 in (115 mm).

Weight

5.2 lb (2.4 kg)

Section 274100- 2.10.Z.14.b Comply (Replacement)

MODELS & ACCESSORIES

Available Models

TST-600-DSW-B-S: Wall Dock for TST-600 & TST-602, Black Smooth
TST-600-DSW-B-T: Wall Dock for TST-600 & TST-602, Black Textured
TST-600-DSW-W-S: Wall Dock for TST-600 & TST-602, White Smooth

TST-600-DSW Wall Dock for TST-600 & TST-602

Available Accessories

TST-600-DSW-BB: Wall Mount Back Box

TST-600-DSW-BBI: Wall Mount Back Box - International Version

TST-600-DSW-PMK: Pre-Construction Wall Mount Kit

TST-600-DSW-MMK: Mud Ring for TST-600-DSW-BB & TST-600-DSW-PMK

TST-600-DSW-TMK: Trim Ring for TST-600-DSW-BB & TST-600-DSW-PMK

TST-600-DSW-WMKM: Post-Construction Wall Mount Kit w/Mud Ring

TST-600-DSW-WMKT: Post-Construction Wall Mount Kit w/Trim Ring

CNPWS-75: Cresnet Power Supply, 75 Watts

CNPWSI-75: Cresnet Power Supply, 75 Watts - International Version, 230V

DIN-PWS50: DIN Rail 50 Watt Cresnet Power Supply

GLA-PWS50: Wall Mount 50 Watt Cresnet Power Supply

GLA-PWS150: Wall Mount 50 Watt Cresnet Power Supply - International Version

CBL-CAT5E-P-50: Ethernet LAN Cable, Plenum, 50 ft

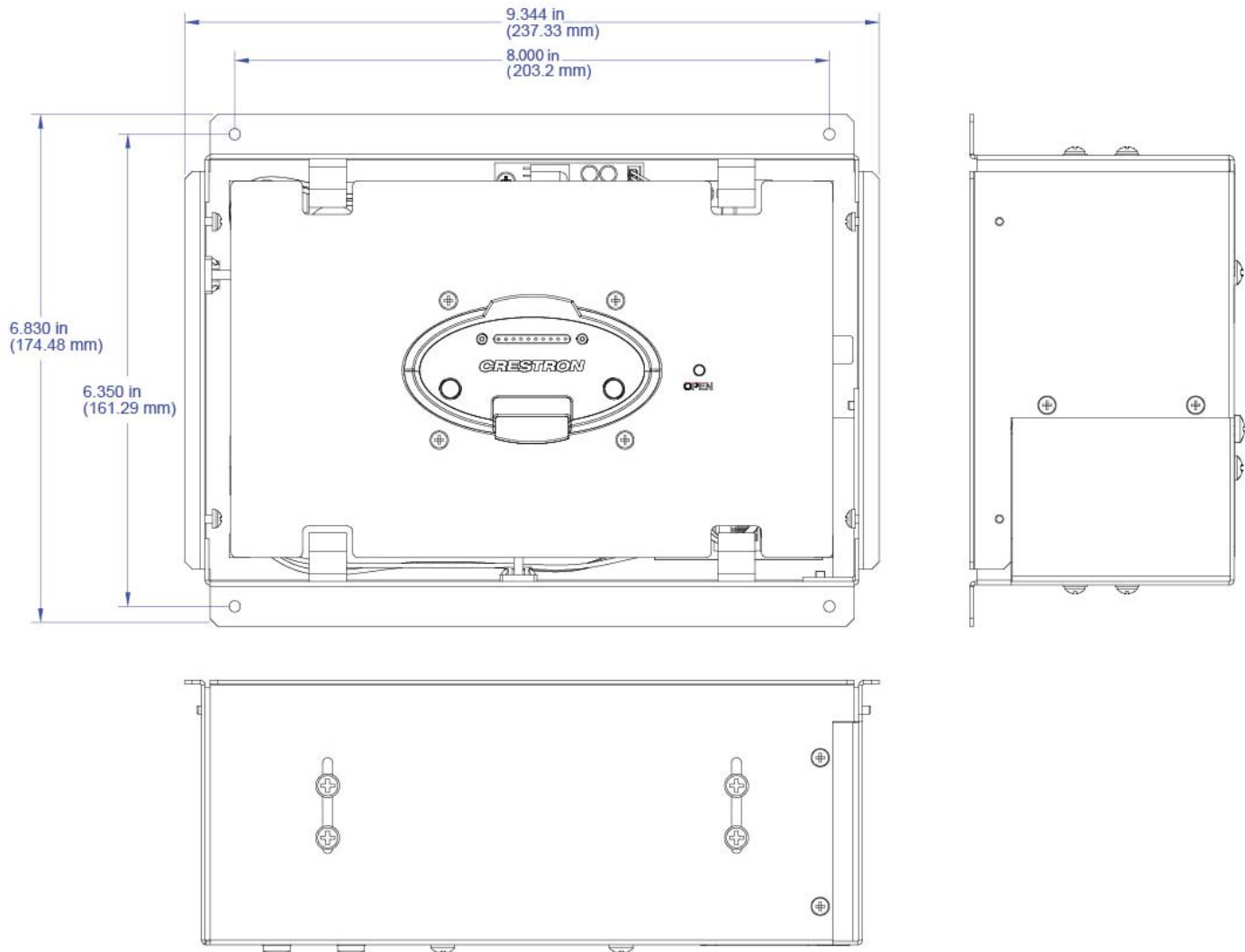
Notes:

1. The TST-600-DSW docking mechanism is designed for proper operation when mounted in a vertical orientation as in a typical wall. The maximum allowable tilt is 18° back or 3° forward. The mechanism will not eject properly at angles greater than these.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

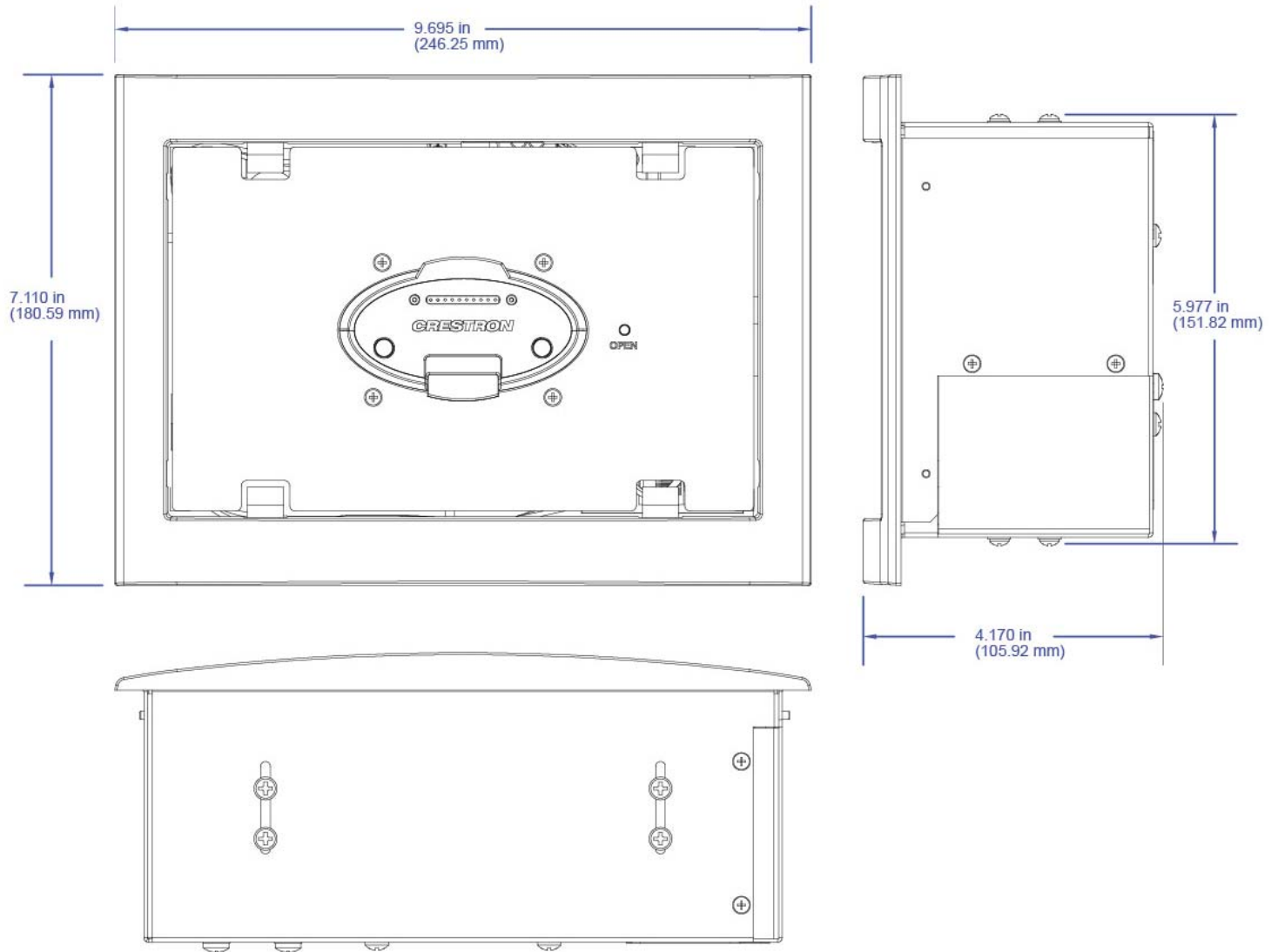
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Shown without front bezel installed

TST-600-DSW Wall Dock for TST-600 & TST-602



Shown with front bezel installed

infiNET EX® & ER Wireless Gateway

- > Multipurpose 2-way RF wireless gateway
- > Simultaneously supports infiNET EX® and Crestron “ER” wireless devices^[2]
- > Ultra dependable infiNET EX mesh network technology
- > “Extended Range” RF technology optimized for wireless touch screen remotes
- > Dynamic discovery for fast, easy setup
- > “Wi-Fi® friendly” channel selection for trouble-free operation
- > Built-in RF network diagnostics
- > Up to 150 feet (46 meters) infiNET EX range indoors, 250 feet (76 m) outdoors^[1]
- > 100 to 200 feet (33 to 66 meters) ER range indoors, 1000 feet outdoors
- > Supports infiNET EX expanders and ER roaming for extended coverage^[1,3]
- > Extendable antenna using optional ANT-EXT^[5]
- > Compact, stackable “IFE small” form factor
- > Surface or DIN rail mountable using bracket provided
- > Available rack mount and pole mount options^[5]
- > High-speed Ethernet control system interface
- > 24VDC or PoE network powered
- > Models available with PoE injector included
- > Optional 24VDC power pack sold separately

The CEN-GWEXER is a 2-way RF wireless transceiver designed for use with Crestron® infiNET EX® and “ER” (Extended Range RF) wireless devices. A single CEN-GWEXER gateway enables an entire wireless network of Crestron remotes, keypads, lighting dimmers, motorized shades, thermostats, door locks, and other devices to communicate with a Crestron control system.

infiNET EX® Technology

Ultra-reliable infiNET EX wireless technology provides steadfast 2-way RF communications throughout a residential or commercial structure without the need for physical control wiring. Employing a 2.4 GHz mesh network topology, nearly every infiNET EX device on the network acts as an “expander,” relaying wireless commands between the gateway and all the other “EX” devices on the network to ensure that every command reaches its intended destination without disruption. Each infiNET EX device that is added to the network effectively increases the range and stability of the entire network by providing multiple redundant signal paths. The wireless range between any two EX devices is typically up to 150 ft (46 m) indoors.^[1]

“ER” Extended Range RF Technology

Crestron Extended Range (ER) wireless technology enables compatibility with certain Crestron wireless touch screens and handheld remotes including the [TSR-302](#), [TST-600](#), [TST-602](#), and [TST-902](#).^[2] Crestron “ER” operates in the same 2.4 GHz spectrum as infiNET EX, and is specifically optimized for use with wireless touch screen devices to ensure robust and dependable bidirectional RF communications. The CEN-GWEXER continuously monitors each ER device on the network, diligently keeping



track when a device goes to sleep, shuts down, or wanders out of range, and restores communications seamlessly when the device reappears on the network. The typical wireless range for ER devices is 100 to 200 feet indoors, or up to 1000 feet outdoors. For even greater coverage, ER supports roaming amongst up to eight gateways.^[3]

Easy Setup

The CEN-GWEXER can manage both infiNET EX and ER wireless devices simultaneously, eliminating the need for separate gateways, antennas, and LAN connections. Setting up a network of infiNET EX and/or ER devices is simple, utilizing dynamic discovery to locate and acquire each wireless device automatically. If no ER devices are acquired, the CEN-GWEXER can support up to 100 infiNET EX devices (inclusive of up to six Crestron [MLX-3](#) handheld remotes^[2]). Each ER device that is added to the network negates ten EX devices, with a maximum of ten ER devices allowed. For a more detailed breakdown, please refer to “Supported Devices” in the specifications section of this spec sheet.^[4]

Single-Wire Hookup

The CEN-GWEXER gateway communicates with a control system over Ethernet and gets its operating power over the same Ethernet connection using PoE technology. PoE (Power over Ethernet) simply requires the presence of an 802.3af or 802.3at PoE power source.

- Crestron offers the [PWE-4803RU](#) PoE Injector, which connects inline with the Ethernet cable, allowing for installation at any convenient location between the gateway and the network switch. The PWE-4803RU is capable of powering a single gateway, and is available separately or packaged with the gateway as model CEN-GWEXER-PWE or CENI-GWEXER-PWE.

CEN-GWEXER infiNET EX® & ER Wireless Gateway



Rear & Front Views

- Crestron also offers Ethernet switches with built-in PoE (models [CEN-SW-POE-5](#) and [CEN-SWPOE-16](#)^[5]), affording a complete high-performance networking solution capable of providing PoE for multiple gateways and other PoE devices. Using an Ethernet switch with built-in PoE eliminates the need for individual PoE Injectors.

As an alternative to PoE, the CEN-GWEXER can be powered using an optional 24VDC power pack, model [PW-2420RU](#).^[5]

Integrator Friendly Enclosure

The CEN-GWEXER features the Crestron IFE form factor, a compact “Integrator Friendly Enclosure” design that fits almost anywhere and enables a variety of installation options. Its shape allows multiple gateways and other IFE compliant devices to be stacked together. Using the included mounting bracket, it can be fastened to any flat surface or snapped onto a standard DIN rail. Rack mount and pole mount kits are also available.^[5]

SPECIFICATIONS

Supported Devices

infiNET EX® Devices: Supports all Crestron and third-party infiNET EX devices including HR-100, HR-150, and MLX-3 handheld remotes^[2]

infiNET EX Expanders: Supports Crestron infiNET EX expander models CLW-EXPEX and GLA-EXPEX

ER “Extended Range” Devices: Supports Crestron wireless touch screen models TSR-302, TST-600, TST-602, & TST-902^[2]

Maximum Devices Allowed^[4]:

infiNET EX Devices*	infiNET EX Expanders	ER “Extended Range” Devices
100	5	0
90	5	1
80	5	2
70	5	3
60	5	4
50	5	5
40	5	6
30	5	7
20	5	8
10	5	9
0	5	10

*Inclusive of a maximum of six MLX-3 remotes

Wireless Communications

RF Transceiver: infiNET EX & ER 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), default channel 15; IEEE 802.15.4 compliant
infiNET EX Range (typical): 150 ft (46 m) indoor, 250 ft (76 m) outdoor, to nearest mesh network device(s); subject to site-specific conditions and individual device capabilities^[1]

ER Range (typical): 100 to 200 ft (33 to 66 m) maximum indoor, 1000 ft (305 m) outdoor, subject to site-specific conditions

ER Roaming: Supports roaming amongst up to 8 gateways^[3]

Wired Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, IEEE 802.3af and 802.3at Type 1 compliant

Controls & Indicators

PWR: (1) Green LED, indicates operating power supplied via PoE or 24VDC

ACT: (1) Green LED, indicates wireless RX and TX data activity

ACQUIRE: (1) Recessed pushbutton with red LED, used to set up connections with wireless devices

SETUP: (1) Recessed pushbutton with red LED, used to set up connection with the control system via Ethernet

RESET: (1) Recessed pushbutton, for hardware reset

LAN PoE: (1) Green and (1) Amber LEDs, green indicates Ethernet link status, amber indicates Ethernet activity

Connectors

ANTENNA: (1) Connection for supplied antenna

COMPUTER: (1) Micro-B USB female; Computer console port, for installer use only; 6 ft (2.83 m) Micro-B to A USB cable included

G: (1) 4-40 screw, chassis ground lug

CEN-GWEXER infiNET EX® & ER Wireless Gateway

Section 274100- 2.10.Z.14.c Comply
(Replacement)

24VDC 0.75A: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2420RU power pack sold separately

LAN PoE: (1) 8-pin RJ45, female;
10Base-T/100Base-TX Ethernet port;
Power over Ethernet compliant

Power Requirements

Power over Ethernet: IEEE 802.3at Type 1 (802.3af compatible) Class 1 (3.84 W) PoE Powered Device; 100-250 Volts AC, 50/60 Hz PoE Injector, model PWE-4803RU included with models CEN-GWEXER-PWE & CENI-GWEXER-PWE

Power Pack: 0.75 Amps (minimum) @ 24 Volts DC; 100-240 Volts AC, 50/60 Hz power pack, model PW-2420RU sold separately

Power Consumption: 2.1 Watts typical

Environmental

Temperature: 41° to 104° F (5° to 40° C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 7 BTU/Hr

Construction

Enclosure: IFE small form factor, black and blue plastic

Mounting: Freestanding, stackable, surface mount, or 35 mm DIN EN 60715 rail mount; occupies 8 DIN module spaces (144 mm); surface/DIN rail mounting bracket included, optional rack mount and pole mount kits sold separately

Dimensions

(Without antenna)

Height: 1.35 in (35 mm), 1.77 in (45 mm) with bracket

Width: 5.04 in (128 mm), 5.36 in (137 mm) with bracket

Depth: 5.20 in (133 mm)

Weight

8.9 oz (253 g) without bracket



Shown with mounting bracket

MODELS & ACCESSORIES

Available Models

CEN-GWEXER: infiNET EX® & ER Wireless Gateway

CEN-GWEXER-PWE: infiNET EX® & ER Wireless Gateway w/PoE Injector

CENI-GWEXER: infiNET EX® & ER Wireless Gateway – International Version

CENI-GWEXER-PWE: infiNET EX® & ER Wireless Gateway w/PoE Injector – International Version

Included Accessories

PWE-4803RU: PoE Injector (Qty. 1 included with CEN-GWEXER-PWE & CENI-GWEXER-PWE)

Available Accessories

ANT-EXT: Antenna Extender

RMK-IFE-1U: IFE Rack Mount Kit

PLMK-IFE-101: IFE Pole Mount Kit

CLW-EXPEX: infiNET EX® Wireless Expander

GLA-EXPEX: Crestron Green Light® Wireless Expander for infiNET EX® Networks

PWE-4803RU: PoE Injector

CEN-SW-POE-5: 5-Port PoE Switch

CEN-SWPOE-16: 16-Port Managed PoE Switch

PW-2420RU: 24 Volt DC Power Pack

Notes:

1. Battery-powered infiNET EX devices do not provide expander functionality, and may have reduced RF range capabilities. Consult the specifications for each network device to confirm its actual wireless capabilities. Crestron also offers dedicated infiNET EX expanders (models [CLW-EXPEX](#) or [GLA-EXPEX](#), sold separately), which may be deployed to fill gaps in coverage and extend the wireless range of the mesh network. infiNET EX expanders are only for infiNET EX networks and offer no benefit to the performance of ER devices. A maximum of five infiNET EX expanders may be deployed on an infiNET EX network.
2. The CEN-GWEXER is not compatible with MTX-3, TPS-6X, or UFO-WPR-3ER model remotes.
3. Roaming capability using multiple gateways is for ER devices only. infiNET EX utilizes only one gateway and does not support roaming.
4. Best practices suggest configuring the system with no more than 50% of the maximum devices allowed per gateway. Additional gateways may be deployed to support more devices, with a maximum of 16 gateways permitted on a complete system (RF conditions allowing).
5. Item(s) sold separately.

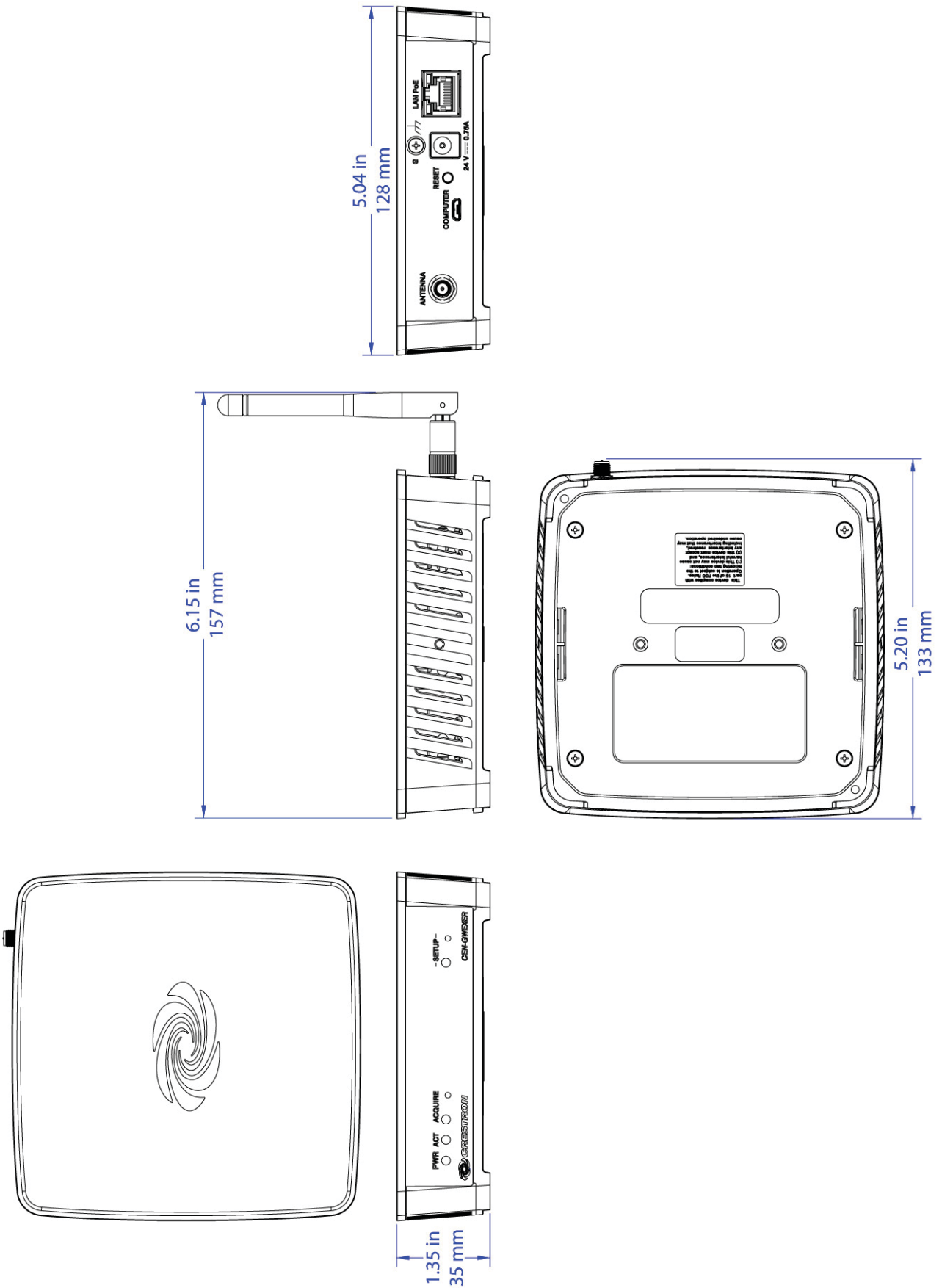
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CEN-GWEXER infiNET EX[®] & ER Wireless Gateway



TS-1542-C

15.6" HD Touch Screen w/DM 8G+® Input

- > Modern, high-end appearance
- > Premium metallic construction
- > Full HD 1080p capacitive touch display
- > Multi-touch capable
- > Auto-brightness control
- > Integrated digital graphics engine
- > Enhanced Smart Graphics™ performance
- > Dual-window HD video display
- > 4K DM 8G+® video input
- > HDCP 2.2 compliant
- > HD streaming video support
- > Remote annotation support
- > Built-in web browsing^[1]
- > On-screen keyboard
- > External USB keyboard support
- > Customizable screensaver
- > Built-in microphone and speakers
- > Voice recognition capability^[1]
- > Full duplex Rava® intercom and phone
- > Customizable audio feedback
- > High-speed Ethernet connectivity via DM 8G+
- > 24VDC or PoDM++ powered^[4]
- > Includes 100-240V universal power pack
- > Choice of surface wall mount or tabletop
- > VESA mount compatible
- > Available in dark gray w/black glass or all white



Featuring enhanced Smart Graphics™ performance and dual-window HD video display, the TS-1542-C delivers an elegant and powerful touch screen control solution for a wide range of applications. Its DM 8G+® input provides a single-wire interface carrying high-speed Ethernet, uncompressed 4K video, H.264 streaming video, and PoDM++ power, all over a single CAT type cable. Additional features include the abilities to control any function using voice commands, browse the Internet, annotate over a video image or whiteboard screen, and communicate using built-in VoIP intercom and phone functions.^[1]

A choice of white or dark gray metallic finishes, with tabletop, wall, or VESA mounting options, comprise an integrator-friendly solution that's easy to install and fits perfectly in any space.

Sleek, Versatile Design

At just 1-3/4 inches (45 mm) deep, the TS-1542-C can be mounted virtually anywhere using the supplied wall mount kit or a third-party VESA 100 compliant mounting arm, bracket, or stand. A tabletop tilt model (TS-1542-TILT-C) is also offered, which features an ultra-stylish, smooth-tilt base for use on a table, desk, podium, or countertop.

Smart Graphics™

Crestron touch screens use Smart Graphics to deliver the ultimate user experience *and* the ultimate value by enabling the creation of dynamically rich user interfaces with incredible efficiency and unparalleled functionality. Using Smart Graphics, programmers can swiftly integrate fluid gesture-driven controls, animated feedback, rich metadata, embedded apps and widgets, and full-motion video for a deeply engaging and ultra-intuitive touch screen experience.

Advanced Touch Screen Control

A Crestron® touch screen offers an ideal user-interface for controlling all the technology in your home, boardroom, classroom, courtroom, or command center. Touch screens do away with piles of remote controls, cluttered wall switches, and cryptic computer screens, simplifying and enhancing the way you use technology. For controlling audio, video, lighting, shades, HVAC, security, and other systems, Crestron touch screens are fully-customizable with easy-to-use controls and icons, true feedback and real-time status display, full-motion video windows, and enhanced navigation of digital media servers, tuners, and other devices.

The Crestron TS-1542-C delivers the ultimate touch screen experience — blending style and function with advanced high-definition graphics. In one slim device, the TS-1542-C integrates a brilliant 15.6" Full HD touch screen display and high-performance digital graphics engine. Its sleek, modern design features premium metallic construction and edge-to-edge glass for a contemporary look that's perfectly at home placed on an executive boardroom table, installed in a high-tech command center, or mounted on the wall in a luxury residence.

TS-1542-C 15.6" HD Touch Screen w/DM 8G+® Input

Crestron Smart Graphics offers these enhancements and more:

- Cool-looking graphical buttons, sliders, knobs, and gauges that are intuitive and fun to use
- Kinetic effects to enhance the feeling of realism, with lists and toolbars that scroll with momentum at the flick of a fingertip
- Drag-and-drop objects that snap into place, offering an easy way to switch sources
- Dashboard widgets to personalize the touch screen with clocks, weather, news, and other information^[1]
- A power-saving screensaver, allowing display of time, temperature, and other text content at a reduced brightness level
- Customizable themes allowing a completely different look and feel for every user, event, or season
- Fully-developed SmartObjects® that enable sophisticated control over complex devices with minimal programming
- A consistent look and feel across multiple touch screens of varying sizes

Auto-Brightness Control

The TS-1542-C maintains optimal visibility under varying lighting conditions by automatically adjusting its display brightness according to changes in the ambient light level in the room.

DigitalMedia 8G+® & 4K Video

Using DM 8G+ technology, the TS-1542-C achieves complete connectivity over a single CAT type twisted pair cable. The cable connects to a Crestron DM® system (i.e., a [DM switcher](#) or [transmitter](#)^[2,3]), which can be located in a central equipment cabinet or some other remote location. The DM system provides the interface for all video, audio, and networking signals to the TS-1542-C. Power for the TS-1542-C can also be carried over the DM 8G+ connection by adding a PoDM++ compatible power source.^[4]

The DM 8G+ connection transports high-speed Ethernet, uncompressed 4K video, and stereo audio signals from the DM system to the TS-1542-C. Support for 4K video and HDCP 2.2 encryption ensures compatibility with a complete range of video sources. Any video source connected to the DM system, including 4K and Ultra HD sources, can be viewed right on the touch screen, either full screen or in a window.

DM 8G+ supports 1080p, WUXGA, and 2K signals over cable lengths up to 330 feet (100 m) using Crestron [DM Ultra](#) or [DM 8G Cable](#), or third-party CAT5e. Higher resolutions up to UHD and 4K are supported at distances up to 330 feet (100 m) using DM Ultra Cable, 230 feet (70 m) using DM 8G Cable, or 165 feet (50 m) using CAT5e.^[5]

HD Streaming Video

High-definition streaming video capability makes it possible to view live streaming video from IP cameras and streaming encoders (Crestron [CEN-NVS200](#), [DM-TXRX-100-STR](#), [DMC-STRO](#), or similar^[2]). Up to two streaming video windows can be displayed simultaneously, or a single streaming window can be displayed alongside a DM 8G+ video window. H.264 and MJPEG streaming formats are supported.



TS-1542-TILT-C-B-S — Rear Side View

Voice Recognition

Some things are easier *said* than *done*, so why not just *say* what you want and let Crestron *do* it for you? With built-in voice recognition, the TS-1542-C provides the ability to use spoken commands to control virtually anything. Voice recognition can be used to quickly turn devices on or off, select and play a specific media title or playlist, change the channel, choose a lighting scene, lock the doors, arm the security system, or enter a password. Simply press the Voice Recognition button and say a command and Crestron does the rest.^[1]

Rava® SIP Intercom

[Rava](#) SIP Intercom Technology enables hands-free VoIP communication with other Rava-enabled touch screens and door stations. Rava works over Ethernet, supporting 2-way intercom, video intercom^[6], and paging without requiring any special wiring. VoIP phone capability is also possible through integration with a SIP-compatible IP phone system or SIP server, allowing hands-free telephone functionality complete with speed-dialing, caller ID, custom ringers, and other enhancements. Built-in echo cancellation affords full-duplex performance for clear, seamless voice communication.

Speakers and Microphone

The built-in speakers and microphone provide clear audio for intercom and phone calls, as well as for listening to multimedia.

Audio Feedback

Customized audio files can be loaded to add another dimension to the touch screen graphics using personalized sounds, button feedback, and voice prompts.

Web Browsing

Using its built-in web browser, the TS-1542-C provides quick access to online program guides and other web-based services at the touch of a button, allowing enhanced touch screen control of DVRs and other appliances without having to pick up a separate tablet or smartphone. If

TS-1542-C 15.6" HD Touch Screen w/DM 8G+[®] Input

a device can be controlled or managed through a web browser, it can be integrated into the Crestron system through the TS-1542-C. Of course, the web browser may also be used to simply browse the Internet, watch online videos, and check up on social media.^[1]

Multi-Touch Support

The TS-1542-C's capacitive touch screen affords enhanced capabilities for browsing web pages using multi-touch gestures.

Keyboard Options

Typing in passwords, URLs, and text searches is facilitated using the on-screen multi-language keyboard. A physical USB keyboard (not included) may also be connected.

Built-in Annotation

Whether conducting a high-level boardroom meeting or training seminar, sharing ideas in a huddle space, or watching sports in your home theater, annotation helps put the fine point on any presentation. Annotation provides the ability to illustrate your thoughts on-the-fly, letting you draw and write over streaming video and computer images, and sketch out ideas on a whiteboard screen.

Native to the TS-1542-C, remote annotation capability allows multiple participants, each with a separate touch screen, to draw with their fingertips over the same video image or whiteboard, enabling enhanced collaboration in a classroom, courtroom, or council chamber. Adding a Crestron Digital Graphics Engine (model [DGE-100](#)^[2]) connected to the room's main display allows the whole annotation session to be viewed by the entire audience.

Power Options

The TS-1542-C ships with a 24V DC power pack, which connects to the back of the touch screen and a nearby 100-240V AC outlet. Alternately, the TS-1542-C can be powered remotely from a Cresnet[®] network or power supply.^[7] For applications requiring a single-wire solution, the TS-1542-C can be powered through its DM 8G+ connection using a PoDM++ injector (model DM-PSU-ULTRA-MIDSPAN^[4]).

Interface Module

Each TS-1542-C ships with a compact interface module ([TS-1542-IMCW](#)), which may be used as required to provide an RJ45 DM 8G+ connection for the touch screen. The module can be mounted in a 1-gang electrical box or floor box, under a table, or in a podium or equipment rack. A 6 foot (1.8 meter) long cable is included for connection between the module and touch screen.

NOTE: When surface mounted using the wall mount kit (included with models TS-1542-C-B-S and TS-1542-C-W-S only), all wiring enters through an electrical box or cut-out and is concealed from view. For this method of installation, the interface module may not be required.

SPECIFICATIONS

Touch Screen Display

Display Type: TFT Active matrix color LCD
Size: 15.6 inch (396 mm) diagonal
Aspect Ratio: 16:9 Full HD
Resolution: 1920 x 1080 pixels
Brightness: 400 nits (cd/m²)
Contrast: 800:1 typical
Response Time: 30 ms G-to-G
Color Depth: 24-bit, 16.7M colors
Illumination: LED w/auto-brightness control
Viewing Angle: ±80° horizontal, +80°/-65° vertical
Touch Screen: Projected Capacitive, 10-point multi-touch capable

Graphics Engine

Crestron[®] Smart Graphics™, local and remote annotation, multi-language web browser^[1], multi-language on-screen keyboard, screensaver, fully-scalable dual video windowing (displays any combination of DM 8G+[®] and streaming sources)

Languages

Smart Graphics: Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English (UK), English (US), Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian, Slovak, Spanish, Swedish, Thai

On-Screen Keyboard: Arabic, Chinese (Simplified), Croatian, Czech, Danish, Dutch, English (UK), English (US), Finnish, French (Canada), French (Switzerland), German, Hebrew, Hungarian, Italian, Japanese, Norwegian Bokmal, Polish, Portuguese, Russian, Serbian, Spanish, Swedish, Turkish

Voice Recognition: Afrikaans (South Africa); Chinese, Mandarin (China, Simplified); Chinese, Mandarin (Hong Kong, Simplified); Chinese, Mandarin (Taiwan, Traditional); Chinese, Yue (Hong Kong, Traditional); Czech (Czech Republic); Dutch (Netherlands); English (Australia); English (Canada); English (Generic); English (India); English (New Zealand); English (South Africa); English (UK); English (US); French (France); German (Germany); isiZulu (South Africa); Italian (Italy); Japanese (Japan); Korean (South Korea); Polish (Poland); Portuguese (Brazil); Russian (Russia); Spanish (Spain); Turkish (Turkey)

Web Browser: Arabic, Bulgarian, Catalan, Chinese, Croatian, Czech, Danish, Dutch, English, Filipino, Finnish, French, German, Greek, Hebrew, Hindi, Hungarian, Indonesian, Italian, Japanese, Korean, Latvian, Lithuanian, Norwegian Bokmal, Pashto, Persian, Polish, Portuguese, Romanian, Romansh, Russian, Serbian, Slovak, Slovenian, Spanish, Swedish, Thai, Turkish, Ukrainian, Vietnamese

Memory

DDR3 SDRAM: 2 GB
Flash: 4 GB
Maximum Project Size: 1 GB

TS-1542-C 15.6" HD Touch Screen w/DM 8G+[®] Input

Communications

DigitalMedia™: DM 8G+, PoDM++, HDCP 2.2, EDID, Ethernet (10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), SNMP, IPv4 or IPv6)

USB Host: Supports USB HID compliant keyboard devices

USB Device: For computer console (installer setup and firmware update)

Streaming Decoder

Video Formats: H.264 (MPEG-4 part 10 AVC), MJPEG

Audio Formats: AAC stereo

Bitrates: Up to 25 Mbps^[6]

Resolutions: Up to 1080p60

Video

Input Signal Type: DM 8G+

Maximum Input Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
1920x1080 HD1080p	60 Hz	4:4:4	36 bit	
Interlaced	1920x1080 HD1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom input resolutions are supported at pixel clock rates up to 300 MHz

Audio

Features: Built-in microphone and speakers, Rava[®] SIP Intercom, multi-language voice recognition^[1]

Input Signal Type: DM 8G+

Input Format: 2 channel LPCM

Audio Feedback Formats: MP3

Connectors

24V DC, 1.8 A: (1) 2-pin 3.5 mm detachable terminal block;

24 Volt DC power input;

Wire Size: 18 AWG maximum;

Connects to the PW-2420RUL power pack (included), or to a Cresnet[®] network or power supply^[7]

USB HID: (1) USB Type A female;

USB 2.0 host port for USB HID-compliant keyboard

CONSOLE: (1) USB Type B female;

USB computer console port (for setup)

G: (1) 6-32 screw, chassis ground lug

DM IN: (1) 8-pin RJ45 female, shielded;

DM 8G+ input & PoDM++ PD (Powered Device) port^[4];

Connects to the DM 8G+ output of a DM[®] switcher, transmitter, or other DM device via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable^[3,5];

6 ft (1.8 m) cable and TS-1542-IMCW interface module included

Buttons & Indicators

RESET: (1) Pushbutton at rear connector panel for hardware reset

DM IN: (2) LEDs at DM IN connector, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

Power Requirements

Power Options: Power pack, Cresnet, or PoDM

Power Pack (included): Output: ≥1.8 Amps @ 24 Volts DC;

Input: 1.3 Amps @ 100-240 Volts AC, 50/60 Hz;

Model: PW-2420RUL

Cresnet: 43 Watts @ 24 Volts DC^[7]

PoDM (Power over DM): 36 Watts PoDM++ PD (Powered Device);

Requires connection to a PoDM++ PSE (Power Sourcing Equipment) with 42 Watts available^[4]

Power Consumption: 36 Watts maximum;

33 Watts typical (display brightness 100%);

20 Watts standby (display backlight off)

Environmental

Temperature: 32° to 113° F (0° to 45° C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 113 BTU/hr typical

Construction

Composition: Aluminum housing with dark gray or white finish, edge-to-edge glass with black or white surround

Mounting (model TS-1542-C): Mounts to a flat wall surface over a 2-gang electrical box, horizontally-oriented 1-gang electrical box, 1-gang UK electrical box (BS 4662), 1-gang European electrical box (DIN 49073), or rough cut-out up to 2" H x 3" W (50 mm H x 75 mm W) using wall mount kit provided; VESA 100 x 100 mm mountable with wall mount kit removed

Mounting (model TS-1542-TILT-C): Includes tabletop base with 23° to 45° adjustable tilt

Dimensions – Model TS-1542-C

Height: 9.42 in (240 mm)

Width: 15.35 in (390 mm)

Depth: 1.80 in (46 mm) with wall mount kit;

1.76 in (45 mm) without wall mount kit (VESA mount)

Dimensions – Model TS-1542-TILT-C

Height: 8.76 in (223 mm) minimum at 45° tilt;

9.90 in (252 mm) maximum at 23° tilt

Width: 15.35 in (390 mm)

TS-1542-C 15.6" HD Touch Screen w/DM 8G+[®] Input

Depth: 6.80 in (173 mm) minimum at 23° tilt;
8.15 in (207 mm) maximum at 45° tilt

Weight

TS-1542-C: 7.3 lb (3.4 kg)

TS-1542-TILT-C: 10.1 lb (4.6 kg)

DM 8G+ Maximum Cable Lengths

Cable Type:	DM-CBL-ULTRA DM [®] Ultra Cable	DM-CBL-8G DM 8G [®] Cable	CAT5e (or better) UTP or STP ^[5]
Resolution:			
1080p60 Full HD	330 ft (100 m)	330 ft (100 m)	330 ft (100 m)
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 2K DCI			
2560x1440 WQHD	230 ft (70 m)	165 ft (50 m)	
2560x1600 WQXGA			
3840x2160 Ultra HD			
4096x2160 4K DCI			

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(Replacement)

MODELS & ACCESSORIES

Available Models

TS-1542-C-B-S: 15.6" HD Touch Screen w/DM 8G+[®] Input, Wall Mount or VESA, Black Smooth

TS-1542-C-W-S: 15.6" HD Touch Screen w/DM 8G+[®] Input, Wall Mount or VESA, White Smooth

TS-1542-TILT-C-B-S: 15.6" HD Touch Screen w/DM 8G+[®] Input, Tabletop Tilt, Black Smooth

TS-1542-TILT-C-W-S: 15.6" HD Touch Screen w/DM 8G+[®] Input, Tabletop Tilt, White Smooth

Included Accessories

TS-1542-IMCW: Interface Module (Qty. 1 included)

PW-2420RUL: Desktop Power Pack, 24VDC, 2A, Flying Leads, Universal (Qty. 1 included)

Available Accessories

DM-PSU-ULTRA-MIDSPAN: DigitalMedia™ Ultra Midspan PoDM/PoE++ Injector (coming soon)

DM-CBL-ULTRA: DigitalMedia™ Ultra Cable

DM-CONN: Connector for DM-CBL-ULTRA

DM-CBL-8G: DigitalMedia 8G™ Cable

DM-8G-CONN: Connector for DM-CBL-8G

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

CEN-NVS200: Network Video Streamer

DM-TXRX-100-STR: HD Streaming Transmitter/Receiver

Notes:

- Voice recognition, web browsing, weather information, and certain other functions require an internet connection.
- Item(s) sold separately.
- The DM device to which the TS-1542-C is connected must have an Ethernet connection to a Crestron control system.
- Optional PoDM++ injector, model DM-PSU-ULTRA-MIDSPAN, coming soon and sold separately. Any wiring carrying PoDM is for intra-building use only and should not be connected to a line that runs outside of the building in which the PoDM PSE (power sourcing equipment) is located.
- The maximum cable length for DigitalMedia 8G+ (DM 8G+) is dependent upon the type of cable and resolution of the video signal. Refer to the "DM 8G+ Maximum Cable Lengths" table for a detailed overview. Crestron legacy cable models DM-CBL DigitalMedia Cable and DM-CBL-D DigitalMedia D Cable support the same resolutions and cable lengths as CAT5e. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete DM system design guidelines. All wire and cables are sold separately unless noted otherwise.
- H.264 compatible IP camera required.
- Connection to a Cresnet network or power supply is for power only. Does not support Cresnet data communications.
- Supports up to two simultaneous streaming inputs with a maximum combined total bitrate of 25 Mbps.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

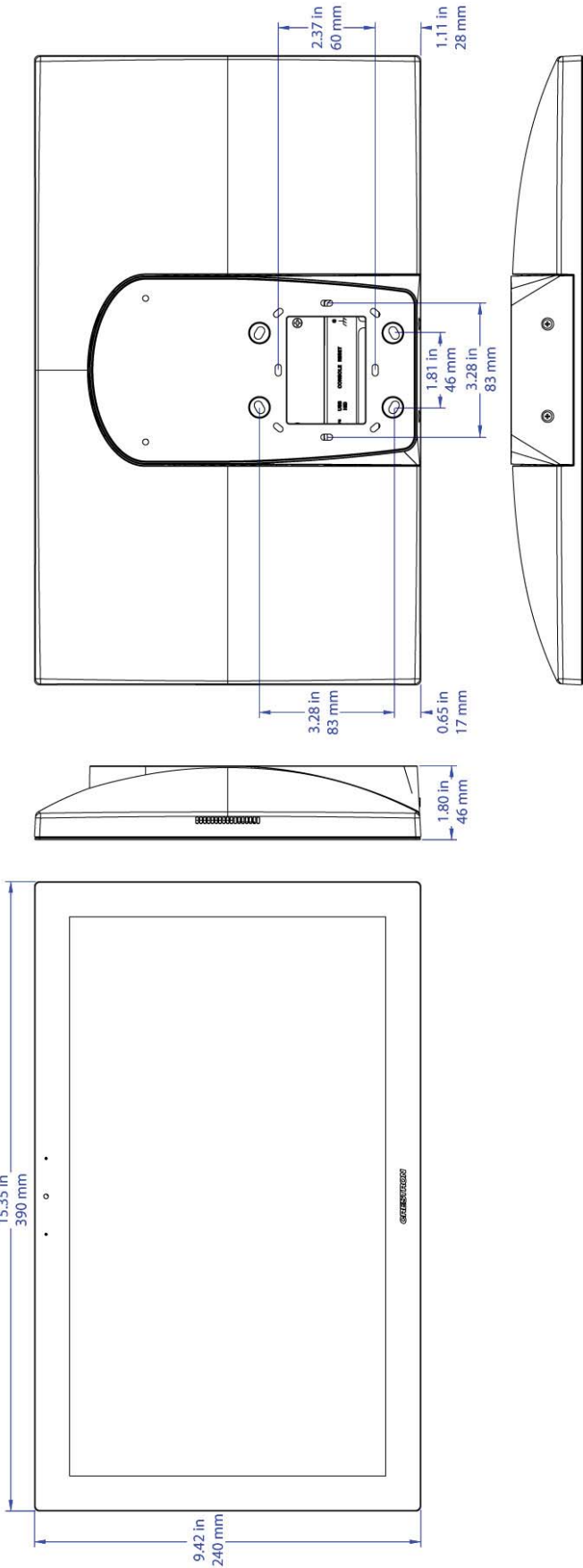
The specific patents that cover Crestron products are listed online at: patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

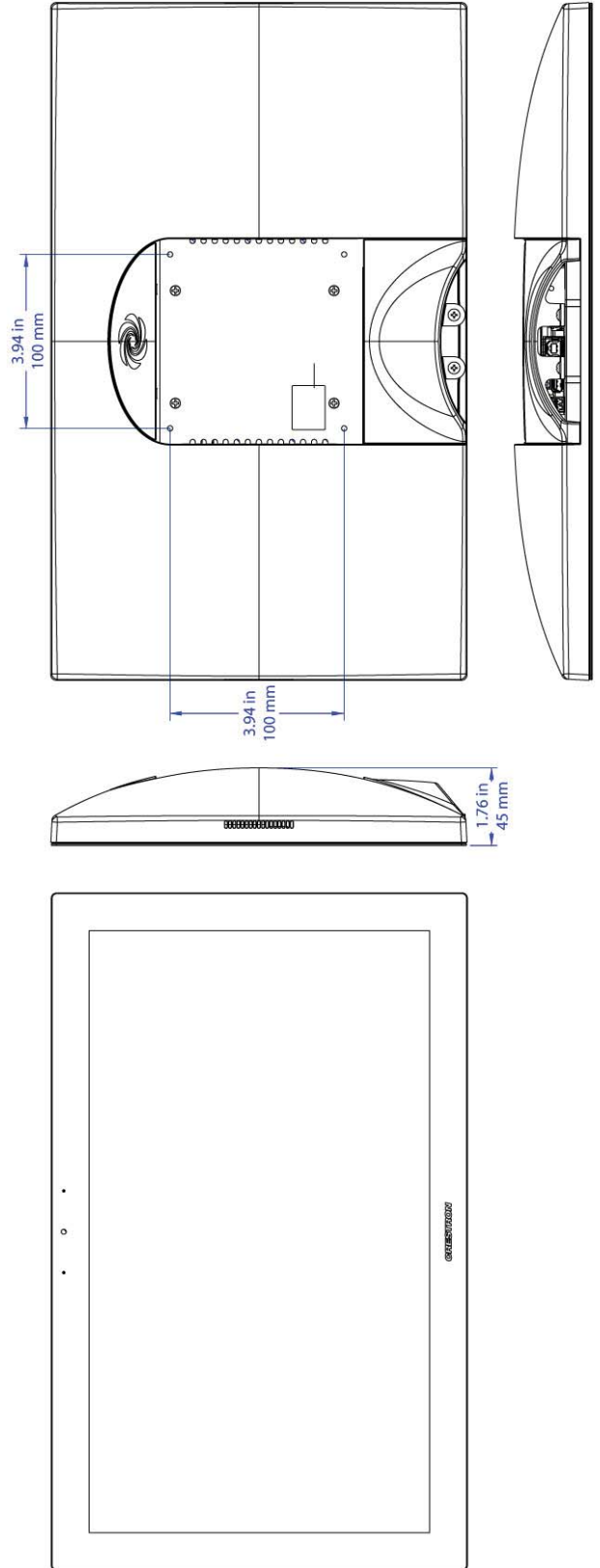
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(Replacement)

TS-1542-C 15.6" HD Touch Screen w/DM 8G+[®] Input

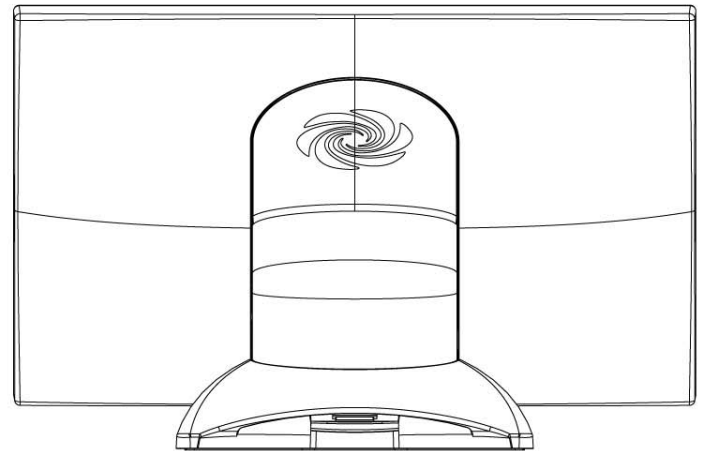
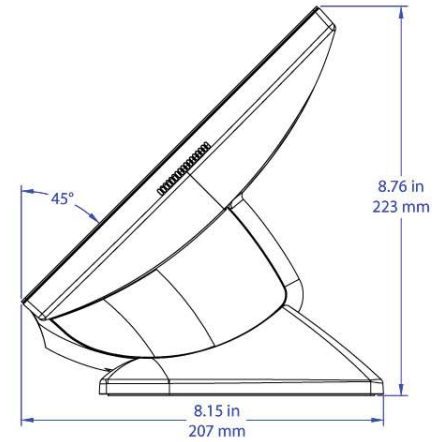
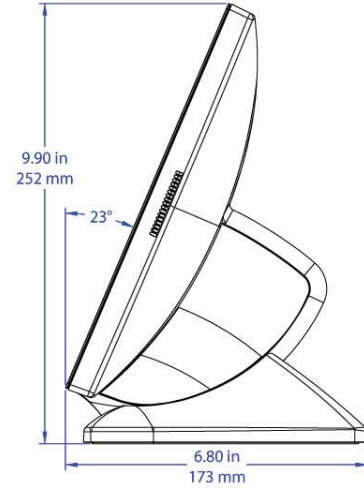
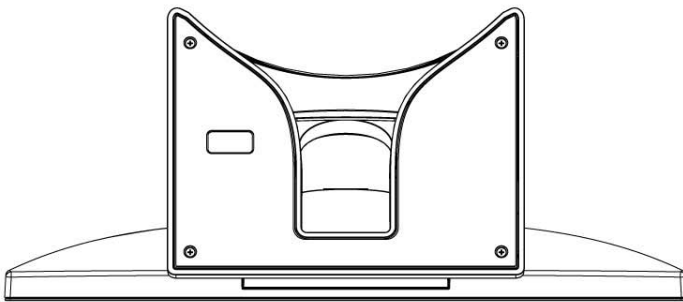
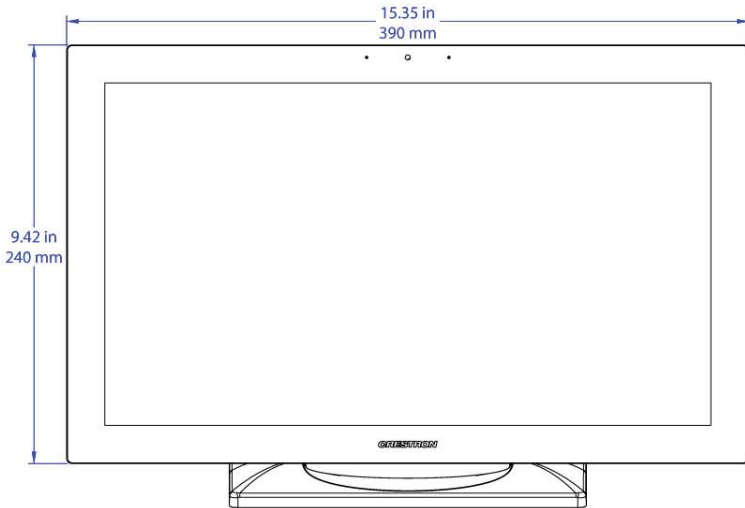
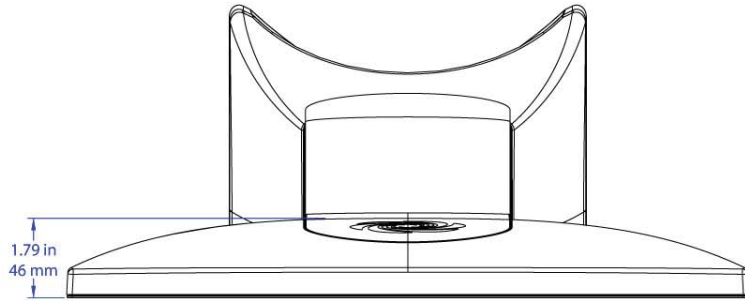


TS-1542-C w/Wall Mount Kit



TS-1542-C VESA Mount

TS-1542-C 15.6" HD Touch Screen w/DM 8G+[®] Input



TS-1542-TILT-C

Digital Graphics Engine w/HDMI® and DigitalMedia™ CAT Connectivity

- > Touch screen graphics and HD video processing for V-Panels®
- > Also compatible with third-party touch screens [2]
- > High-definition 24-bit color graphics
- > Smart Graphics™ support
- > Native H.264 streaming video display
- > Dual-window, full-motion HD video display
- > Allows touch screen viewing of HDCP protected content
- > Handles video sources up to HD 1080p60
- > Handles high-res computer up to UXGA/WUXGA
- > HDMI®, RGB, composite, S-Video, and component video inputs
- > Presentation output via HDMI or DigitalMedia™
- > Built-in annotation
- > Customizable audio feedback
- > Rava® SIP intercom and phone technology [4]
- > Crestron® IP intercom and wired analog intercom capability [4]
- > HDMI output allows direct connection to a third-party display or touch screen [2]
- > Audio input and output via HDMI, DM®, and balanced line-level
- > Crestron Home® (CH) CAT5 bidirectional audio port
- > USB keyboard/mouse ports
- > Onscreen keyboard and mouse capability
- > High-Speed Ethernet and Cresnet®
- > One-wire DigitalMedia connection to V-Panel® or DM switcher [2,3]
- > Two space rack-mountable



widgets, and full-motion video for a deeply engaging and ultra-intuitive touch screen experience.

Crestron Smart Graphics offers these enhancements and more:

- Cool-looking graphical buttons, sliders, knobs, and gauges that are intuitive and fun to use
- Kinetic effects to enhance the feeling of realism, with lists and toolbars that scroll with momentum at the flick of a fingertip
- Drag-and-drop objects that snap into place, offering an easy way to switch sources
- Dashboard widgets to personalize the touch screen with clocks, weather, news, and other information
- Customizable themes allowing a completely different look and feel for every user, event, or season
- Fully-developed SmartObjects® that enable sophisticated control over complex devices with minimal programming

Designed for use with a Crestron® V-Panel® HD Touch Screen Display [1,2], the DGE-2 Digital Graphics Engine allows for a very streamlined touch screen installation by placing the bulk of the electronics out of sight at the central equipment location. Mounted within an equipment rack, the DGE-2 connects directly to the head end AV sources, switchers, and control network, while the touch screen display can be up to 300 feet (91 meters) away with just a single cable between them [3].

The DGE-2 delivers the ultimate touch screen experience with advanced high-definition Smart Graphics™, dual-window HD video, high-performance H.264 streaming video, Rava® SIP Intercom [4], audio feedback, and built-in annotation. Extensive connectivity is provided for displaying HD video from external AV and computer sources via HDMI®, DigitalMedia™, Ethernet, and various analog connections. Support for HDCP ensures compatibility with today's digital sources!

Smart Graphics™

Crestron touch screens use Smart Graphics to deliver the ultimate user experience *and* the ultimate value by enabling the creation of dynamically rich user interfaces with incredible efficiency and unparalleled functionality. Using Smart Graphics, programmers can swiftly integrate fluid gesture-driven controls, animated feedback, rich metadata, embedded apps and

HD Streaming Video

High-definition streaming video capability makes it possible to view security cameras and other video sources over the network right on the touch screen. Native support for H.264 and MJPEG formats allows the DGE-2 to display live streaming video from an IP camera, a streaming server (Crestron [CEN-NVS200](#), [DM-TXRX-100-STR](#), or similar [1]), or a [DigitalMedia](#) switcher.

HDMI® and Analog Video

In addition to handling streaming video, the DGE-2 also provides extensive connectivity for more conventional types of sources including HDMI. The DGE-2 can simultaneously generate two fully-scalable, full-motion video windows, each supporting SD or HD video and high-resolution computer signals from external digital and analog sources.

Input connections include two HDMI, two RGB, and two multi-format analog video. The HDMI inputs support digital HD sources including HDMI, DVI, and DisplayPort Multimode [5]. The RGB inputs handle high-resolution analog VGA computer sources, and the multi-format video inputs accept analog composite, S-Video, and component HD video sources. External

DGE-2 Digital Graphics Engine w/HDMI® and DigitalMedia™ CAT Connectivity



DGE-2 – Rear View

audio signals are handled by the HDMI inputs, and by a single analog line input.

HDCP Support

Industry-leading support for HDCP (High-bandwidth Digital Content Protection) ensures seamless compatibility with content-protected DVD, Blu-ray Disc®, digital HDTV, and multimedia computer sources.

Rava® SIP Intercom^[4]

Rava SIP Intercom Technology enables VoIP communication with other Rava-enabled touch screens and door stations. Rava works over Ethernet, supporting 2-way intercom, video intercom^[6], and paging without requiring any special wiring. VoIP phone capability is also possible through integration with an SIP-compatible IP phone system or SIP server.

The DGE-2 also supports legacy Crestron IP Intercom and Crestron Home® (CH) CAT5 wired intercom. Crestron IP Intercom enables compatibility with older Crestron touch screens that do not support Rava. CH CAT5 wired intercom provides compatibility with the C2N-IADS30X24^[1] and other CH CAT5 based switchers and processors.

Keyboard/Mouse Options

On-screen keyboard and mouse capabilities enable complete control of the DGE-2's embedded Web browser and other applications, and can also be used to control computers running TouchPoint® Virtual Mouse & Keyboard Software (VMK-WIN). USB ports are also provided on the front and rear of the DGE-2, and on some V-Panel displays^[1], allowing for the connection of a physical keyboard and mouse.

Real-Time Annotation

Whether conducting a high-level boardroom meeting, training seminar, or watching sports in your home theater, annotation helps put the fine point on any presentation. Native to the DGE-2, annotation provides the ability to illustrate your thoughts on-the-fly, letting you draw and write over high-definition video and computer images, and sketch out ideas on a whiteboard screen, without leaving the podium or your favorite chair while other viewers watch on the big screen.

Remote Annotation

Remote annotation capability allows multiple touch screen users to draw with their fingertips over the same video image or whiteboard screen, enabling enhanced interaction between several participants in a courtroom, classroom, or council chamber.

Presentation Output

Through its HDMI output, or via a DigitalMedia system, the DGE-2 allows the touch screen image to be sent to additional display devices, allowing videos, PowerPoint presentations, annotation, and other on-screen media to be shared with a live audience.

DigitalMedia™

DigitalMedia (DM®) connectivity opens up new ways to configure a touch screen control system. For instance, using a DM switcher such as the DM-MD8X8^[1], multiple touch screens can be connected to a single DGE-2, providing a simple, cost-effective way for multiple participants to view and control the same graphical interface. DigitalMedia also provides a versatile means for distributing touch screen content to a larger audience, routing the DGE-2's DM output to feed additional video displays and sound equipment.

V-Panel Connectivity

The DGE-2 features a DM CAT type output, supporting the direct connection to a V-Panel touch screen model V12 or V15^[1]. It can also connect to any DM switcher equipped with a DM CAT input. A single DigitalMedia cable carries all video, audio, Ethernet, USB, control, and power signals up to 300 ft (91 m) between the V-Panel and DGE-2.^[2,3]

The DGE-2 is also compatible with the V24R-C series of V-Panel 24" HD Touch Screen Displays^[1]. A DigitalMedia 8G+® transmitter (DM-TX-201-C or equivalent)^[1] provides the interface between the DGE-2's HDMI output and the DM 8G+® input of a V24R-C. Alternately, when feeding a V24R-C display through a DM switcher, the DM 8G+ transmitter is not required.

The DGE-2 is also compatible with the TSD-2020 V-Panel 20" HD Touch Screen Display^[1]. The TSD-2020 can be connected directly to the DGE-2 via HDMI and USB. Longer wire runs are enabled using a DigitalMedia 8G+ transmitter and receiver (DM-TX-201-C and DM-RMC-SCALER-C^[1]).

DGE-2 Digital Graphics Engine w/HDMI® and DigitalMedia™ CAT Connectivity

SPECIFICATIONS

Graphics Engine

Supports Smart Graphics™ or “traditional” GUI projects

Embedded Applications

Microsoft® Internet Explorer® 7 w/Adobe® Flash® plug-in and Java® Runtime plug-in, Windows Media® Player, Remote Desktop, VNC Viewer, Adobe Acrobat® Reader, WordPad, MS Word Viewer 2007, Excel® Viewer 2007, PowerPoint® Viewer 2007

Languages

Arabic, Chinese Simplified, Chinese Traditional, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hebrew, Hungarian, Icelandic, Indonesian, Italian, Japanese, Korean, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Romanian, Russian, Serbian, Slovak, Slovenian, Spanish, Swedish, Turkish

Memory

SDRAM: 2 GB

Flash: 4 GB

Memory Card: Supports SD and SDHC cards up to 32 GB (not included)

Maximum Project Size: 240 MB

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, for control and console

Cresnet®: Cresnet slave mode for control and console

USB: USB 2.0 host, supports USB HID class devices, touch screens, and USB flash drives

DigitalMedia™: DM CAT, DMNet®, HDCP, EDID, 100 Mbps Ethernet

HDMI®: HDCP, EDID, CEC

Touch Screen Device Support

In addition to Crestron® V-Panel®, compatible touch screen products are offered by (but not limited to) the following manufacturers:

3M® Touch Systems

CyberTouch®

Elo® Touch Solutions

HP® Compaq®

PQ Labs®

Please contact the respective manufacturer for further details. For latest touchscreen and mouse device support information, refer to Crestron True Blue Online Help Answer ID 4666, or contact Crestron True Blue Support.

Video

Input Signal Types: HDMI, DVI [5], DisplayPort Multimode [5], RGB, component (YPbPr), S-Video (Y/C), composite

Output Signal Types: DM CAT, HDMI, DVI [5]

Formats: HDMI, DVI, HDCP content protection support, computer up to UXGA/WUXGA, HD up to 1080p60, NTSC or PAL

Input Resolutions, HDMI, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz

Input Resolutions, HDMI, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30)

Input Resolutions, RGB: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz

Input Resolutions, Component: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080p24, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60

Input Resolutions, Composite and S-Video: 480i, 576i

Output Resolutions, HDMI & DM: 800x600@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1600x1200@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz

Color Depth: 24-bit, 16.7M colors

Streaming Formats: H.264 (MPEG-4 part 10 AVC), MJPEG

Audio

Features: Internal volume control and audio mixer, Rava® SIP Intercom [4], Crestron IP Intercom [4]

Input Signal Types: HDMI, DisplayPort Multimode [5], analog stereo, Crestron Home® (CH) CAT5

Output Signal Types: DM CAT, HDMI, analog line-level, CH CAT5

Formats, DM & HDMI: 2ch PCM

Formats, Analog: Stereo 2-Channel

A-D/DA Conversion: 24-bit 48 kHz

Audio Feedback: MP3 using Smart Graphics, WAV using “traditional” graphics

Connectors

AUDIO: (1) 8-pin RJ45 female, shielded;

Bidirectional CAT5 balanced stereo audio port;

Paralleled to AUDIO IN and AUDIO OUT connectors;

Connects to any other Crestron “CH” CAT5 balanced audio port via CresCAT® cable [1];

Maximum Cable Length: 1000 feet

DGE-2 Digital Graphics Engine w/HDMI® and DigitalMedia™ CAT Connectivity

AUDIO IN: (1) 5-pin 3.5mm detachable terminal block;
Balanced/unbalanced stereo line-level input;
Input Impedance: 20k Ohms balanced, 10k Ohms unbalanced;
Maximum Input Level: 4 Vrms balanced, 2 Vrms unbalanced

AUDIO OUT: (1) 5-pin 3.5mm detachable terminal block;
Balanced/unbalanced stereo line-level output;
Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced;
Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

USB 1 – 2: (2) USB Type A female;
USB 2.0 host ports for connection of USB HID-compliant mouse/keyboard, touch screen, or USB flash drives

MEMORY: (1) SD memory card slot;
Accepts one SD or SDHC card up to 32 GB for memory expansion

REMOTE RESET: (1) 2-pin 3.5mm detachable terminal block;
Contact closure sensing input for hardware reset

LAN: (1) 8-wire RJ45 female;
10Base-T/100Base-TX Ethernet port

NET: (2) 4-pin 3.5mm detachable terminal blocks;
Cresnet Slave Ports, paralleled

VIDEO IN 1 – 2, RGB: (2) DB15HD female, RGB (VGA) video inputs;
Formats: RGBHV, RGBS, RGSB;
Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration;
Input Impedance: 75 Ohms;
Sync Input Type: Autodetect RGBHV, RGBS, RGSB;
Sync Input Level: 3 to 5 Vp-p;
Sync Input Impedance: 1k Ohms

VIDEO IN 1 – 2, HDMI: (2) 19-pin Type A HDMI female;
HDMI digital video/audio inputs;
Also supports DVI and DisplayPort Multimode^[5]

VIDEO IN 1 – 2, Y/PB/Y,PR/C/COMP: (2) auto-sensing multi-format analog video inputs, each comprised of (3) BNC female;
Signal Types: Component (YPbPr), S-Video (Y/C), or composite;
Input Level: 1 Vp-p nominal;
Input Impedance: 75 Ohms nominal

VIDEO OUT, HDMI: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output;
Also supports DVI^[5]
Carries same audio and video signals as DM OUT

TO PANEL, DM OUT, D & M: (1) DM CAT output composed of (2) 8-pin RJ45 female, shielded;
Connects to DM CAT input of a V-Panel display, DM switcher, DM receiver, or other DM device via DM-CBL cable^[2,3]

TO PANEL, DM OUT, 24 A B G: (1) 4-pin 3.5mm detachable terminal block, DMNet port;
Connects to DMNet port of a V-Panel display, DM switcher, DM receiver, or other DM device via DM-CBL cable^[2,3]

G: (1) 6-32 screw, chassis ground lug

100-240V~1.8A 50/60Hz: (1) IEC 60320 C14 main power inlet;
Mates with detachable power cord, included

USB (front): (1) USB Type A female;
USB 2.0 host port for connection of a USB HID-compliant mouse/keyboard, touch screen, or USB flash drive

DM CAT Cable Length

Maximum length without, between, before, or after repeater:

150 ft (45 m) for 800x600 @60Hz (V12)
150 ft (45 m) for 1024x768 @60Hz
150 ft (45 m) for 720p
150 ft (45 m) for 1280x768 @60Hz (V15)
150 ft (45 m) for 1280x1024 @60Hz
150 ft (45 m) for 1080p (TSD-2020)
150 ft (45 m) for 1920x1200 @60Hz (V24R-C)
125 ft (38 m) for 1600x1200 @60Hz

Maximum total length using 1 repeater:

300 ft (91 m) for 800x600 @60Hz (V12)
300 ft (91 m) for 1024x768 @60Hz
300 ft (91 m) for 720p
300 ft (91 m) for 1280x768 @60Hz (V15)
300 ft (91 m) for 1280x1024 @60Hz
300 ft (91 m) for 1080p (TSD-2020)
300 ft (91 m) for 1920x1200 @60Hz (V24R-C)
250 ft (76 m) for 1600x1200 @60Hz

Note: A DM 8G+ transmitter is required when used with a V24R-C touch screen display, supporting a maximum cable length of 330 ft (100 m). No repeaters are necessary when used with the V24R-C.

Controls & Indicators

PWR: (1) Green LED, indicates AC line power is connected
NET: (1) Amber LED, indicates communication with Cresnet system
RESET: (1) Recessed miniature pushbutton, resets the DGE
DM LINK: (1) Green LED, indicates connection to a V-Panel or other DM device
LAN (rear): (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity
SETUP (rear): (1) Recessed miniature pushbutton and red LED for Ethernet auto-discovery and TSID

Power Requirements

Main Power: 1.8 Amps @ 100-240 Volts AC, 50/60 Hz
Power Consumption: 120 Watts maximum
Cresnet Power Usage: Does not draw Cresnet power
Available DMNet Power: 50 Watts (2.08 Amps) at 24 Volts DC

Environmental

Temperature: 32° to 113°F (0° to 45°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 410 BTU/Hr

DGE-2 Digital Graphics Engine w/HDMI® and DigitalMedia™ CAT Connectivity

Enclosure

Chassis: Metal, black finish, vented sides, fan-cooled

Faceplate: Metal, black finish, polycarbonate label overlay

Mounting: Freestanding or 2U 19-inch rack-mountable (adhesive feet and rack ears included)

Dimensions

Height: 3.56 in (91 mm);
3.47 in (89 mm) without feet

Width: 17.03 in (433 mm);
19.00 in (483 mm) with ears

Depth: 12.19 in (310 mm)

Weight

8.6 lb (3.9 kg)

Section 274100- 2.10.AA.10.b Comply
Section 274100- 2.10.BB.10.b Comply

MODELS & ACCESSORIES

Available Models

DGE-2: Digital Graphics Engine w/HDMI® and DigitalMedia™ CAT Connectivity

Available Accessories

V12: V-Panel® 12" VESA Mount HD Touch Screen Display, DM CAT

V12-TILT: V-Panel® 12" Tilt HD Touch Screen Display, DM CAT

V12-WALL: V-Panel® 12" Wall Mount HD Touch Screen Display, DM CAT

V15: V-Panel® 15" VESA Mount HD Touch Screen Display, DM CAT

V15-TILT: V-Panel® 15" Tilt HD Touch Screen Display, DM CAT

V15-WALL: V-Panel® 15" Wall Mount HD Touch Screen Display, DM CAT

TSD-2020: V-Panel® 20" HD Touch Screen Display (May require a DM-RMC-SCALER-C and DM-TX-201-C)

V24R-C: V-Panel® 24" VESA Mount HD Touch Screen Display, DM 8G+ (Requires a DM-TX-201-C)

V24R-WALL-C: V-Panel® 24" Wall Mount HD Touch Screen Display, DM 8G+ (Requires a DM-TX-201-C)

V24RL-C: V-Panel® 24" Lectern Mount HD Touch Screen Display, DM 8G+ (Requires a DM-TX-201-C)

DM-CBL-NP: DigitalMedia™ Cable, non-plenum

DM-CBL-P: DigitalMedia™ Cable, plenum-rated

DM-CONN: Connector for DM-CBL

DM-DR: DigitalMedia™ CAT Repeater

CBL Series: Crestron® Certified Interface Cables

CRESNET-NP: Cresnet® Control Cable, non-plenum

CRESNET-P: Cresnet® Control Cable, plenum

CEN-NVS200: Network Video Streamer

DM-TXRX-100-STR: HD Streaming Transmitter/Receiver

SW-VMK-WIN: TouchPoint® Virtual Mouse & Keyboard Software for Windows®

Notes:

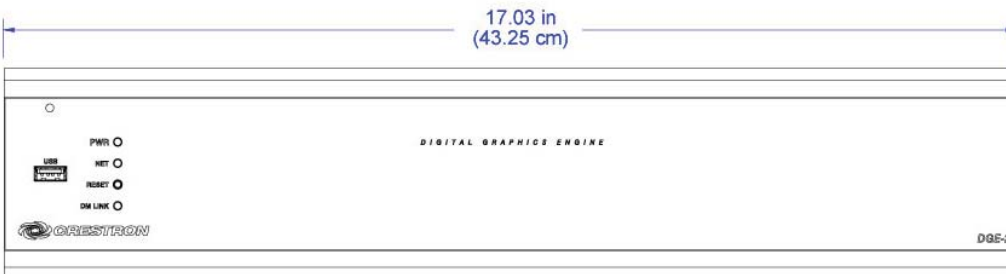
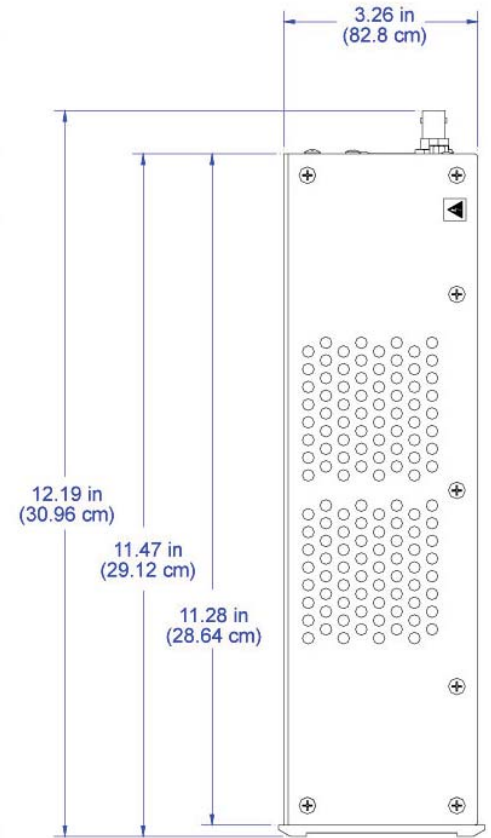
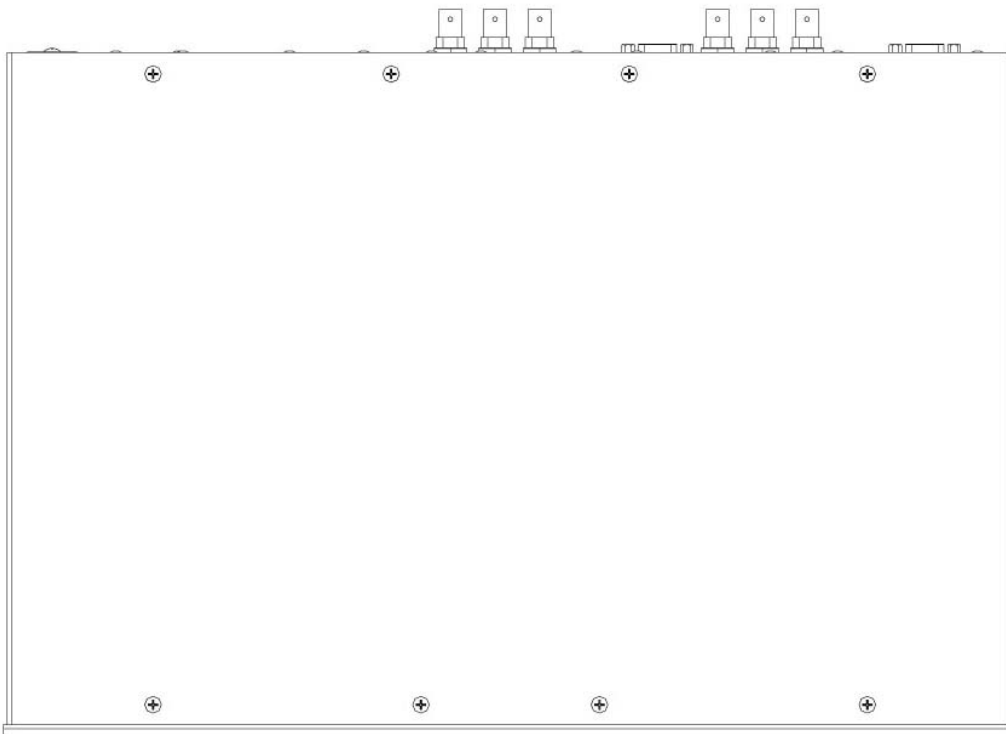
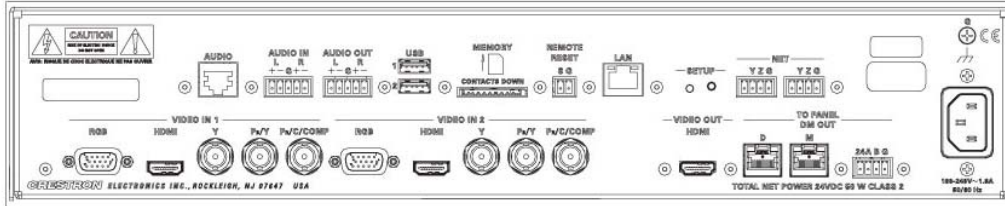
1. Item(s) sold separately.
2. For direct connection to the DGE-2, the V-Panel touch screen must be equipped with a DM CAT type interface. Other V-Panel touch screens that have a DM 8G+ type interface may be connected to the DGE-2 through a DM 8G+ transmitter (DM-TX-201-C) or DigitalMedia switcher. Touch screens with an HDMI interface may be connected to the DGE-2 either directly via HDMI and USB, or remotely through a DM 8G+ transmitter and receiver (DM-TX-201-C and DM-RMC-SCALER-C) or DigitalMedia switcher. Contact your Crestron representative for additional design assistance.
3. For DigitalMedia CAT wiring, use DM-CBL DigitalMedia Cable. The maximum cable length is 300 ft (91 m). A single DM CAT Repeater (Model DM-DR) is required for lengths over 150 ft (45 m). All wire, cables, and repeaters are sold separately. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for DM system design guidelines.
4. Supports [Rava SIP Intercom](#), as well as legacy IP Intercom and wired analog intercom. Supports push-to-talk mode only. Hands-free mode is not supported. Intercom is only supported using a V-Panel model V12 or V15. For Rava or IP Intercom, the V-Panel must connect directly to the DGE-2 via DM CAT with no repeaters or switchers in line.
5. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. CBL-HD-DVI interface cables available separately.
6. H.264 compatible IP camera required.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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DGE-2 Digital Graphics Engine w/HDMI® and DigitalMedia™ CAT Connectivity



FSA1015B

19" Equipment Rack Accessory

The FSA1015 provides ultimate flexibility when mounting small flat panel monitors into a rack system.



Color



Certifications

Features

- Designed to fit within a standard 19" wide vertical rack systems
- Can be installed recessed into rack or flush mounted
- Compatible with VESA 75 x 75, 100 x 100 and 100 x 200 mm patterns for direct attach installations
- Can be used in conjunction with the [FSR](#) and [FTR](#) for quick release capability or [FWD](#) for multiple viewing angles

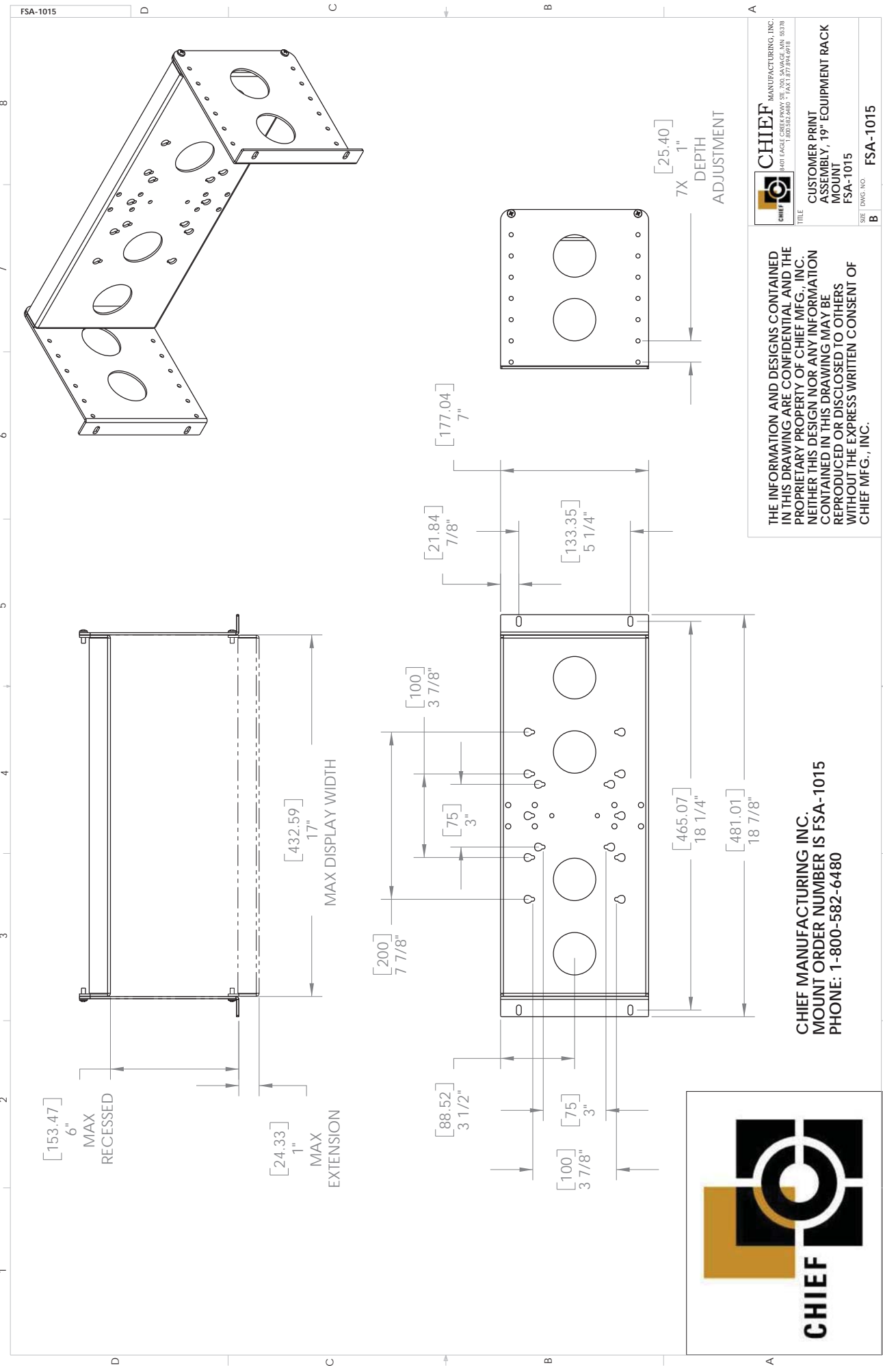
Section 274100- 2.10.AA.10.c Comply

Specifications

Color:	Black
Overall Dimensions (H x W x D):	7.0" x 18.9" x 7.0" (178 x 480 x 178mm)
Shipping Weight:	9.65
Weight Capacity:	30 lbs (13.6kg)

Frequently Asked Questions

Printed from www.chiefmfg.com



CHIEF MANUFACTURING INC.
MOUNT ORDER NUMBER IS FSA-1015
PHONE: 1-800-582-6480

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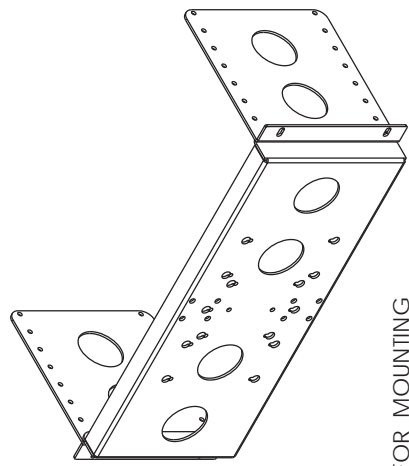
CHIEF MANUFACTURING, INC.
 18005826480 FAX 1373946918
 8401 EAGLE CREEK PARK SE, 700 SAVAGE, MN 55378

CUSTOMER PRINT
ASSEMBLY, 19" EQUIPMENT RACK
MOUNT
FSA-1015

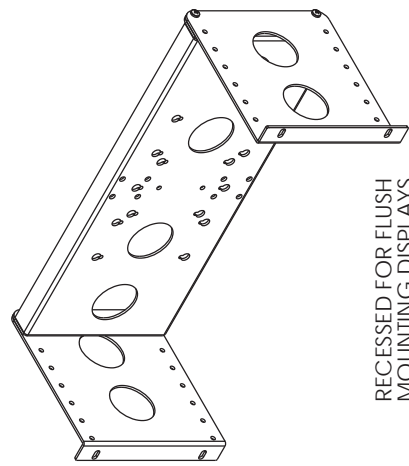
SEE DWG. NO. **FSA-1015**

FSA-1015

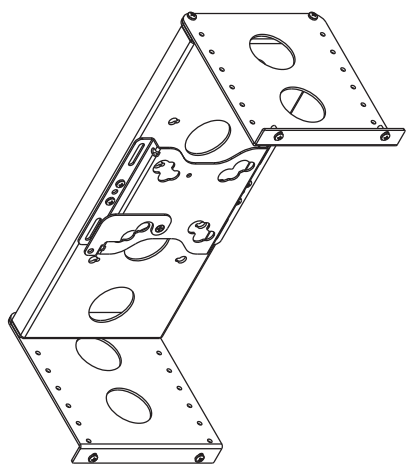
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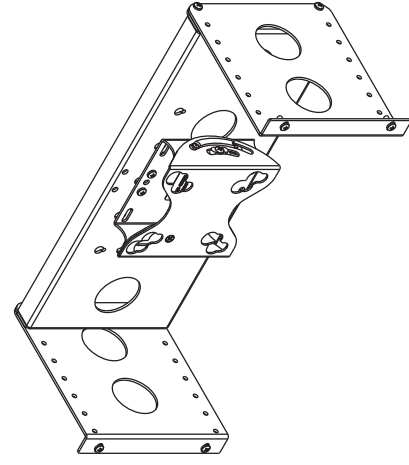
EXTENDED FOR MOUNTING DISPLAYS WIDER THAN 17" WIDE



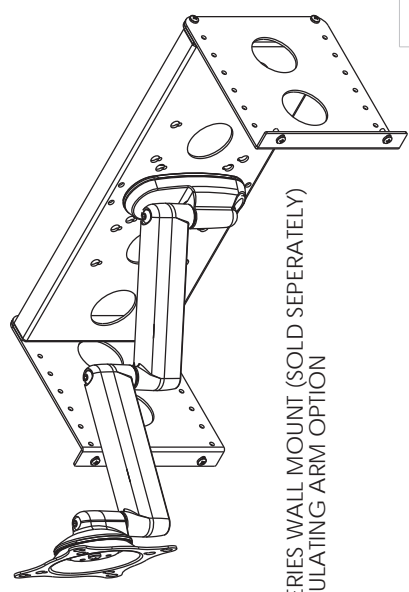
RECESSED FOR FLUSH MOUNTING DISPLAYS LESS THAN 17" WIDE



ATTACH FSR MOUNT (SOLD SEPERATELY) FOR A STATIC QUICK RELEASE OPTION



ATTACH A FTR MOUNT (SOLD SEPERATELY) FOR A TILT QUICK RELEASE OPTION



ATTACH A F-SERIES WALL MOUNT (SOLD SEPERATELY) FOR AN ARTICULATING ARM OPTION



CHIEF MANUFACTURING INC.
MOUNT ORDER NUMBER IS FSA-1015
PHONE: 1-800-582-6480

CHIEF MANUFACTURING, INC.
1801 EAGLE CREEK PARK, SE, 700 SAUSAGE MAN, 55278
1-800-582-6480 FAX: 1-377-946-6418

TITLE
CUSTOMER PRINT ASSEMBLY, 19" EQUIPMENT RACK MOUNT FSA-1015

SEE DWG. NO. **FSA-1015**

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FTR4100

Small Flat Panel Tilt Wall Mount

A tilt wall mount for small flat panel TVs or monitors that provides smooth fingertip tilt for viewing from multiple angles.

- Smooth tilt adjustment.
- Portrait or landscape mounting options.
- Chief's exclusive Q-Latch™ Mounting System saves installation time.

Section 274100- 2.10.AA.10.c Comply

Color



Certifications



Features

- Accommodates most 18" VESA® 75 x 75 mm and 100 x 100 mm compliant displays

Specifications

Certifications:	UL Listed
Color:	Black
Drywall:	x
Maximum Screen Thickness:	6"
Minimum Depth:	1.95" (49.5mm)
Mounting Pattern Compatibility (Universal Versions):	75 x 75mm , 100 x 100mm
Orientation:	Landscape, Portrait
Overall Dimensions (H x W x D):	5.4" x 5.3" x 2.0" (137 x 135 x 50mm)
Shipping Weight:	3.00
Solution Type:	Universal
Tilt:	+ 5° , - 15°
Typical Screen Sizes:	10 - 32"
Wall Stud Compatibility (inches):	Single Stud
Weight Capacity:	45 lbs (20.4kg)

Frequently Asked Questions

Q: What if my display is not listed in the cross-reference chart or MountFinder Pro?

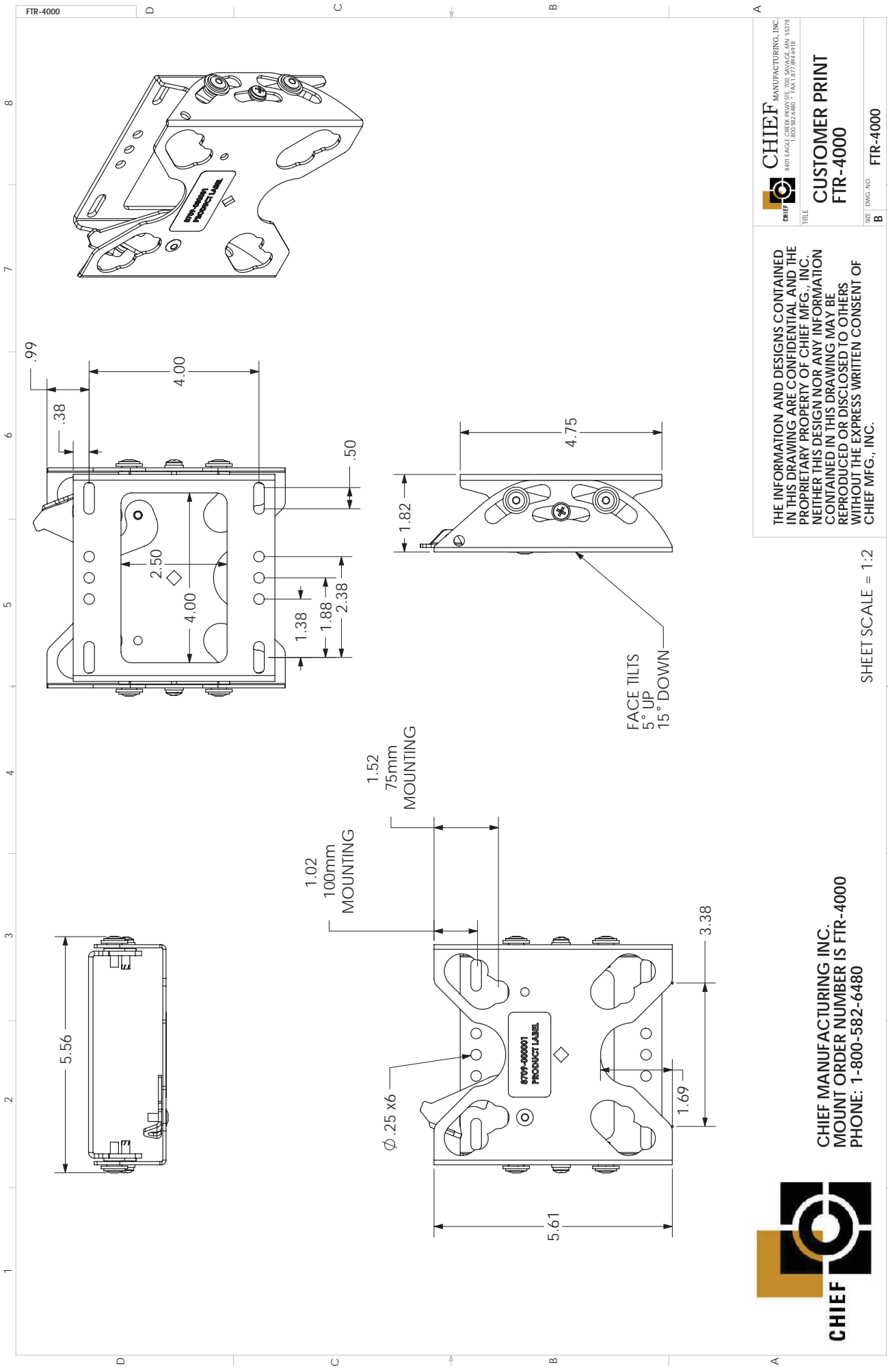
A: Chief's mounts fit VESA® compliant displays with a 75 x 75 mm or 100 x 100 mm hole pattern. If your hole pattern does not match the VESA standard, call Customer Service to determine if Chief has a mount to fit your display.

Q: What if my display weighs 45 lbs (20.5 kg) or more?

A: Chief also provides mounts for Medium and Large Flat Panel Displays. See the Medium or Large Flat Panel area for a variety of mounting solutions.

Q: What size padlock can I use to add security?

A: Use a padlock with a maximum diameter of 0.25" (6.4 mm)



CHIEF MANUFACTURING INC.
MOUNT ORDER NUMBER IS FTR-4000
PHONE: 1-800-582-6480

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CHIEF MANUFACTURING, INC.
 8401 EAGLE CREEK PKWY STE. 700 AVAAGE, MN 55378
 1-800-582-6480 FAX 1-877-594-6418

TITLE
CUSTOMER PRINT
FTR-4000

SIZE DWG. NO.
FTR-4000

SHEET SCALE = 1:2

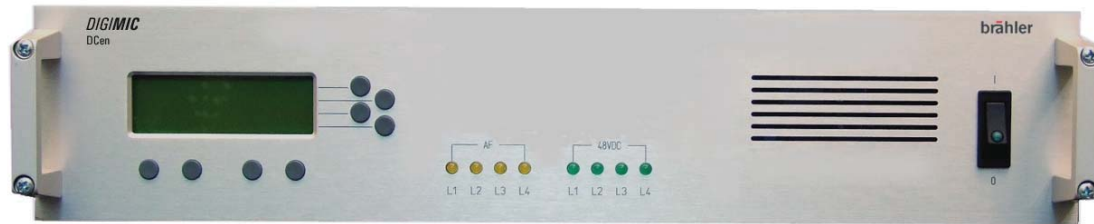
SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET C

DIGIMIC®

Central Control Unit DCen (Discussion/Interpreter System)



Description

The Central Control Unit DCen controls all connected delegate units (required for wired and wireless) within the DIGIMIC discussion system, configures them automatically and routes the digital audio precisely where you need it.

The DCen includes all common microphone modes, including automatic (push to talk) and manual (request to speak), voting (with CMic CSV), chairperson priority and VIP management.

In addition the DCen includes the complete control of interpreter consoles type DDol.

The DCen offers four independently powered D9 outlets to connect up to 100 delegate units on four chains. Alternatively interpreter consoles DDol can be connected to one outlet. Thus, a combined operation of microphone units and interpreter consoles in one system is possible.

Also the wireless expansion unit DSpark is designed to be connected to one of those D9 outlets ensuring that all connected wireless delegate units are working together with the wired ones.

Once a unit is connected to the central control unit it is ready to use immediately without any further adjustment. The DCen provides a user friendly menu driven configuration tool to adjust the setup to the local conditions, if desired. For additional functionalities the DCen is equipped with a network interface to ensure remote control from various applications, e.g. software microphone control on a geographical virtual microphone mimic and name handling.

For professional interfacing with other devices DCen is equipped with analogue and digital interfaces such as ADAT, AES/EBU and 5 x XLR balanced. Two RS232 interfaces allow interfacing with media controls and robotic camera systems.

For enhanced sound reinforcement the DCen has a build-in easy to use 4x5 audio matrix, giving the opportunity to route all incoming audio signals from each microphone line to a

specific output. This ensures clear audio management for even more complex setups with in one single control unit. Additionally, connected Chairpersons' Units can be routed separately to any output for individual mixing.

Technical Data

The DCen complies with international standard IEC914

Digital Audio

- 48 kHz sample rate
- 20 – 20,000 Hz frequency response
- approx. 1 ms latency time
- Low susceptibility to mobile phone interference like bluetooth, UMTS, WiFi etc.

Audio device interfaces

- ADAT input and output
- AES/EBU input and output (XLR)
- One analogue input (IN) XLR balanced
- Five analogue outputs XLR-plug: 1 Master + 1 separate for each line

Control input and output

- Two RS232 interfaces (CR9-socket) for microphone keyboard, media Control, camera systems, etc.
- Network interface (TCP/IP)
- Wordclock input

Connection of units

- UNITS L1 ... L4 (D9)
- up to 100 delegate units on four chains
 - or several interpreter consoles on one chain and delegate units on the other chains
 - line extension with power supply DExt

Features

- Mains switch for power on with indication lamp
- LC Display for menu controlled operation
- 8 buttons for operation of the LCD menu

- 4 green LEDs for indication of the accurate operating voltage at the four outputs L1-L4
- 4 yellow LEDs for indication of AF signal level
- 4 independent power supplies - one for each chain
- 4 x 5 audio matrix allows sophisticated sound reinforcement and audio distribution
- Outputs protected against short circuit and overload
- Expandable for over 2.000 delegate units

Microphone Modes

- AUTomatic - Each delegate can switch himself on and off
- AUTomatic NEXT/FLOAT
- MANual - Each delegate can put himself into a request list
- PRIOrity - Chairperson can override all other delegates
- VOX - Voice activation

Voting

- Standard vote
- Attendance check
- Parliament vote and more

Interpreting

- up to 8 channels

Power Supply

- Mains power: (90 ... 240) AC voltage, (50 ... 60) Hz
- Power consumption: 480 W max.

Housing

- 19", 2 HU, Aluminium, "silver" anodized
- W x H x D: (433 x 88 x 330)mm approx. (17.0 x 3.5 x 13.0) inch (without mounting brackets)

Weight

- 4.5kg

DIGIMIC® classic**Chairman' Conference Unit CChair CSV
with channel selector and voting**

Section 274100- 2.10.FF.10.b Comply

Description

The digital microphone unit CChair CSV is used within the system DIGIMIC as a microphone unit for president or chairperson.

The ultra-slim DIGIMIC CChair CSV microphone unit now has integrated a channel selector and voting functions.

A high-resolution graphical OLED display shows the selected channel in the respective language, including Cyrillic, Arabic or Chinese, in pin sharp detail. The display automatically adjusts to ambient light and is glare-free even in darkened conference rooms.

The clearly structured CChair CSV offers one microphone button for push-to-talk function, lighting up red when activated. As chairman unit the button additional has PRIO functionality. In addition, the CChair CSV has a "mute all" button with a permanent or temporary reset of all active delegate units. When activated, the button is lit. The two integrated loudspeakers provide decentralized voice amplification to increase the speech intelligibility for the delegates.

Furthermore each CChair CSV is equipped with an amplified headphone socket and corresponding volume control.

As a wired component the CChair CSV has a firmly mounted cable with a lockable plug.

Technical Data

The CChair CSV complies with international standard IEC 60914

Digital Audio

- high quality digital audio:
Sample Rate: 48 kHz
Frequency response: 20 - 20,000 Hz
- OR + 7 language channels

Connectors

- System cable firmly fixed (2.50 m, DisplayPort* Connector, lockable)
- Socket for another unit (DisplayPort*)
- Microphone socket (Minicon)
- Headphone socket (stereo/mono), 3.5 mm

Features

- 256 x 32 OLED display (automatic brightness adjustment)
- 5 function keys for channel selection, voting and further functionality
- Illuminated microphone button for indication MIC ON/OFF, PRIO function
- Illuminated "Mute All" button for temporary or permanent resetting of all active delegate units
- two integrated loudspeakers for decentralized audio amplification
- volume control for headphone

Housing

- housing upper part: anodized aluminum
- housing lower part: plastic, black
- W x H x D: (139 x 22 x 142) mm
(5.5 x 0.8 x 5.6) inch
- Weight: 500 g approx.

Other system components

- **CMic** Delegates' Conference Unit classic
- **CChair** Chairpersons' Conference Unit classic
- **CMic CSV Delegates' Conference Unit classic with channel selector and voting**
- **DCen** Central unit for digital discussion system
- **DCen mini** Mini Central unit for digital discussion system
- **TMD/01** Conference Microphone with ring-shaped live indicator and integrated windshield functionality, gooseneck
- **TM58/6** Conference Microphone with ring-shaped live indicator, gooseneck
- **CM9-x** Adapter cable for connecting DCen and extension

DIGIMIC® classic

Delegates' Conference Unit CMic CSV with channel selector and voting



Section 274100- 2.10.FF.10.c Comply

Description

The fully digital, wired microphone unit CMic CSV in the DIGIMIC system serves as the frontend for verbal communication and more.

The ultra-slim DIGIMIC CMic CSV microphone unit now has integrated a channel selector and voting functions.

A high-resolution graphical OLED display shows the selected channel in the respective language, including Cyrillic, Arabic, or Chinese, in pin sharp detail. The display automatically adjusts to ambient light and is glare-free even in darkened conference rooms.

The clearly structured CMic CSV offers one microphone button for push-to-talk and request-to-speak function, lighting up red when activated. The two integrated loudspeakers provide decentralized voice amplification to increase the speech intelligibility for the delegates.

In addition each CMic CSV is equipped with an amplified headphone socket and corresponding volume control.

As a wired component the CMic CSV has a firmly mounted cable (2.50 m) with a lockable plug.

Technical Data

The CMic CSV complies with international standard IEC60914

Digital Audio

- high quality digital audio:
Sample Rate: 48 kHz
Frequency response: 20 - 20,000 Hz
- OR + 7 language channels

Connectors

- System cable firmly fixed (2.50m, DisplayPort* Connector, lockable)
- Socket for another unit (DisplayPort*)
- Microphone socket (Minicon)
- Headphone socket (stereo/mono), 3.5 mm

Features

- 256 x 32 OLED display (automatic brightness adjustment)
- 5 function keys for channel selection, voting and further functionality
- Illuminated microphone button for indication MIC ON/OFF, REQUEST
- two integrated loudspeakers for decentralized audio amplification
- volume control for headphone

Housing

- housing upper part: anodized aluminum
- housing lower part: plastic, black
- W x H x D: (139 x 22 x 142) mm (5.5 x 0.8 x 5.6) inch
- Weight: 470 g approx.

Other system components

- **CMic** Delegates' Conference Unit classic
- **CChair** Chairpersons' Conference Unit classic
- **DMic** Delegates' Conference Unit with data interface for DDoc
- **DChair** Chairpersons' Conference Unit with data interface for DDoc
- **DDoc** Docking Unit for expansion of DChair and DMic to a wireless conference unit
- **TMD/01** Conference Microphone with ring-shaped live indicator and integrated windshield functionality, gooseneck
- **TM58/6** Conference Microphone with ring-shaped live indicator, gooseneck
- **CM9-x** Adapter cable for connecting DGen and extension

WPF05.0166E.130019 BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice.

*DisplayPort is a standardized connection by Video Electronics Standards Association (VESA)

INFRACOM®

Section 274100- 2.10.FF.10.d Comply
Section 274100- 2.10.GG.3.c Comply

Compact Transmitter MSI8D



BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice.

Description

The Compact Transmitter MSI8D is used within the INFRACOM conference system for the transmission of 8 audio channels by infrared light.

The audio signals are converted into frequency modulated infrared light and then transmitted with IRad radiators, which are directly connected to the MSI8D. The original (OR) and up to 7 further languages can simultaneously be transmitted on different carrier frequencies by narrow band frequency modulation.

The transmitted signals are received by the IRX32 receiver and can then be monitored with headphones.

With miniature-switches on the front panel the frequency band can be chosen and the channels can be switched ON or OFF. With a rotating switch it is possible to assign up to 32 transmission channels.

3 infrared transmitter diodes allow monitoring for the technician without radiators.

Eight green LEDs (INT) indicate the status of the interpreter channel.

LEDs on the front panel are indicating the operation mode: channel ON (red) and audio signal available (green).

Technical Data

The unit is complying with the international standard IEC914.

Connections

- OR-IN (1 x XLR-socket) for input of the original language (OR)
- OR-OUT (1 x XLR-plug) for balanced output of the original language, adjustable (-14 ... +6)dBV/600Ohm
- LINE-OUT (8 x XLR-plug) AF outputs for audio recording
- IR-LINK (2 x BNC-socket)
1: Connection for up to 10 radiators IRad
2: Connection for up to 10 further radiators IRad
- RF-LINK (1 x BNC-socket) for cascading (RF) with further transmitters
- INTERPRETER (2 x A36-socket) for connection of interpreter consoles

Features

- Green lighted mains switch for power ON indication
- Red LEDs for channel ON indication
- Green LEDs for Audio available (AF)
- Green LEDs for interpreter control

Transmission frequency:

- 55kHz -975kHz in 40kHz steps up to 1335kHz (channel 31)

Intermediate frequency: 455 kHz

Measurements

- Distortion: < 0.2%
- Signal-to-noise ratio: > 70dB
- Channel separation: > 60dB

Power Supply

- Mains power: (90 ... 250)VAC, (50 ... 60)Hz
- Power consumption: 40VA max

Housing

- 19", 2 HE, Aluminium, "silver" anodized
- W x H x D: (433 x 88 x 305)mm

Weight

- 4.6kg

Accessories (not included in delivery)

- IRad High Power Radiator
- IRX32 Receiver
- DOL7 Interpreter Unit
- BNC Cable (50 Ohm), different lengths available

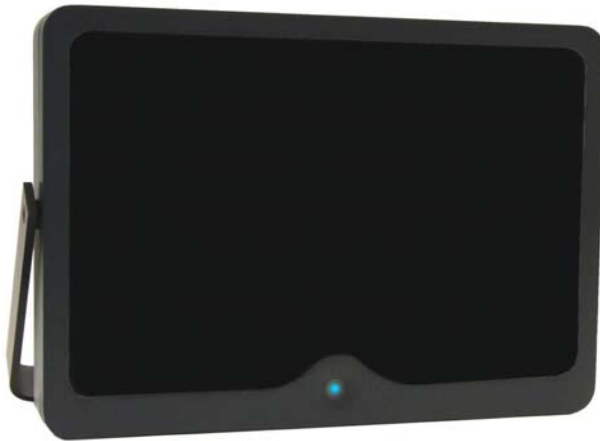
Optional

- extensible up to 32 channels

Product information

brähler**INFRACOM®**Section 274100- 2.10.FF.10.e Comply
Section 274100- 2.10.GG.3.d Comply

IRad - IR Radiator for band II and IV

**Description**

The radiator IRad belongs to the latest generation of infrared power radiators of the INFRACOM wireless audio distribution system.

With a corresponding IR-transmitter up to 32 channels in FM quality can be transmitted simultaneously to the radiator IRad and be emitted in a frequency range within band II and band IV according the IR transmission standards of the conference technology (IEC61603-3 and IEC61603-7).

The metal swivel bracket can be mounted on a wall or ceiling mounting bracket or a tripod. The mounting thread is of 3/8".

The high-power radiator requires no cooling fan; heat exchange is secured by natural convective cooling and heat sink of metal on the rear, thus guaranteeing totally silent continuous operation.

Operation modes:

There are two modes of operation: half IR-power and full IR-power output. The operation modes are selectable using the corresponding switch on the rear side.

Protection circuit:

Additional to the ESD-protection the radiator is equipped with a temperature control. This control decreases the radiator output power or switches completely off in the event that the temperature is too high. This mode is indicated by different colours of LED-light at front.

Status Indication:

A LED (multicolour) displays the current mode of operation:

- OFF (Standby)
- Blue permanent: ON (full IR power out)
- Yellow permanent: ON (half IR power out)
- Red flashing: failure, e.g. excess temperature, one or more diode-lines are defective, other malfunction

Technical Data

The IRad is complying with international standard IEC60914 and IEC61603-3

General

- Carrier frequency range: 40 ... 4000 kHz (band II and band IV)
- Number of transmitter diodes: 336
- Average radial angle of the IR diodes: 30°
- Average IR transmission power: 20W
- Switch for 50% / 100% IR power output
- Switch for line termination
- Highly linear input and output signal quality

Connectors

- Mains power connector on the rear of the radiator (recessed IEC panel plug) with ESD-protection.
- The IEC mains socket connector placed next to the mains power connector can be used for connecting the next radiator in line.
- RF-input with one BNC-connectors (50 Ohms). The second parallel electric BNC socket is used to loop through the signal

Temperature Range

- Operation: +10°C to +40°C
- Storage: -20°C to +50°C
- Humidity: <80%, non condensing
- Convective cooling

Power Supply

- Mains power: (100 ... 240) VAC, (50 ... 60) Hz provided by the built-in switching power supply.
- Power consumption:
Stand-by: 9 W
Half power: 25 W
Full power: 50 W

Housing

- Plastic cabinet, anthracite - other colours on request, both the swivel bracket and the heat sink are in metal
- W x H x D: (420 x 282 x 50) mm

Weight

- 4.9 kg

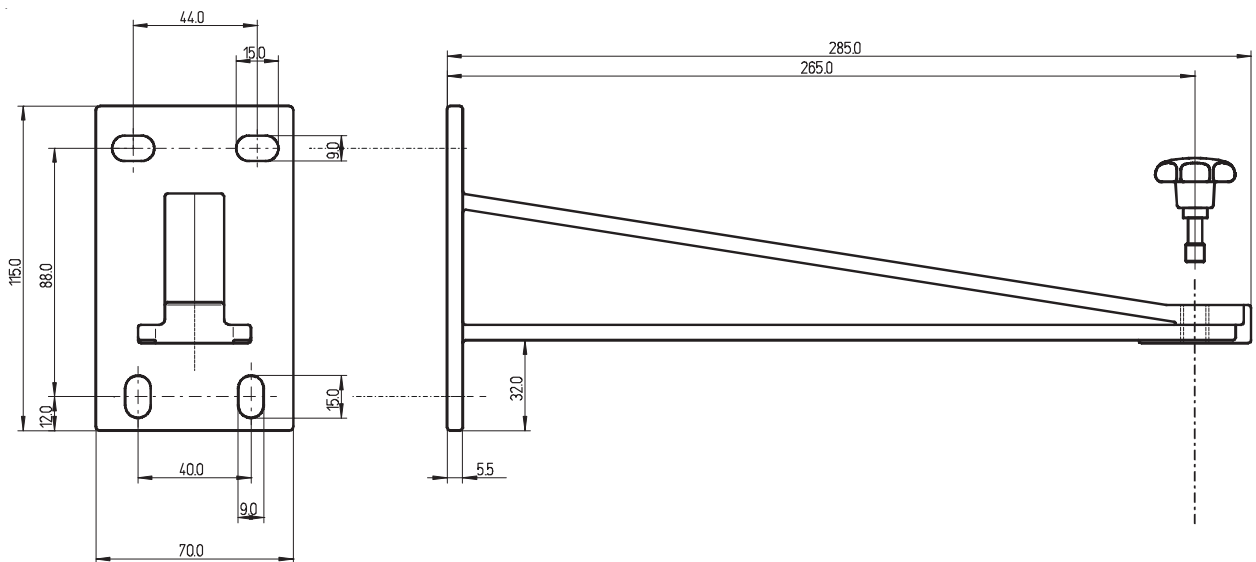
Accessories (in delivery)

- 4.0 m mains connection cable
- 3.5 m BNC - cable

Section 274100- 2.10.FF.10.k Comply

INFRACOM®

WB8 - Wall mounting bracket



BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice.

Description

The wall bracket WB8 is provided for mounting the IRad radiator. The metal wall mounting bracket can be mounted on a wall or ceiling. The mounting thread is of 3/8".

Technical Data

- colour: black
- weight: 0.5 kg
- dimensions: 115 x 70 x 285 mm

System components

- Security cord (06.6700) for wall or ceiling mounting applications
- B3: Mounting bracket for 2 INFRACOM radiators
- IRad radiator

Section 274100- 2.10.FF.10.f Comply

CDSVAN**AD/DA Converter B8**

BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice. WPF07.0250.E.110628

Description

Within the CDSVAN Conference System the AD/DA Converter B8 provides 8 analog in- and output channels.

The analog input signals with line or microphone level can be fed to the digital CDSVAN-system. Vice versa it is possible to convert digital input signals into analog output signals and feed them into 8 sockets with line-level.

With miniature-switches on the rear panel various operation- and synchronisation modes can be selected.

All audio settings can be selected by the CDSVAN software module "B8 Control" or any programmable MIDI control device (i.e. Behringer BCF2000).

For all eight input channels discrete LEDs on the front panel show audio signal presence (green), signal peaks and input sensitivity selected for microphones (red). Phantom power on (red) is indicated once for all microphone level inputs.

Technical Data

Complies with international Standard IEC914.

Inputs analogue (XLR/ ¼")
8 x balanced

Input sensitivity
Line: -12dBu ... +6dBu
Mic: -58dBu ... -40dBu

Input impedance
Line: 5 kOhm
Mic: 1 kOhm

Phantom power for mic-inputs
48V

Outputs analogue (XLR)
8 x balanced
output level: +6dBu
output impedance: 50 Ohm

Digital Interfaces

ADAT @ optical:
IN, OUT, TRHU, 8 channels

ADAT @ electrical (RJ45):
IN/OUT, 16 channels
LINK, channels 9-16

MIDI Interfaces (5 PIN DIN- socket)
MIDI - IN/OUT

Sample rates
Mode Master: 32kHz, 48kHz
Mode Slave: (32 / 44.1 / 48)kHz
Resolution: 24Bit

Power Supply
Mains Power: (90-250) VAC
Power consumption: < 25 VA

Housing (19", 2HU)
Aluminium, silver anodized
W x H x D: (482 x 88 x 300) mm
(19 x 3.5 x 11.8) inches
Weight: 3.5 Kg

Accessories (included in delivery)

Rubber feet (four-piece set)
for table assembly

Mounting brackets (two-piece set)
for rack assembly

DIGIMIC®

Digital Interpreter Console DDol



BRÄHLER/ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice. WPF06.0700.E.1.20906

Description

The tried and tested operating concept of the interpreter console from the high-end CDSVAN series, developed in cooperation with interpreters, also features in the DIGIMIC DDol.

Its clearly arranged controls, its large, bright display and the illuminated buttons allow straight and intuitive operation. Up to 3 selectable output channels and 5 preselectable monitoring languages are just as self-understood as separate speech channels providing a link to technical team or the chairperson.

All common (mono and stereo) headphones can easily be connected to the console and in combination with various microphone types or combined headsets it guarantees maximum comfort for the interpreter. The interpreter console is divided into 3 sections:

Speaking section

- Three outgoing channels (A/B/C)
- Microphone ON/ OFF button
- Mute button to mute the activate microphone temporarily
- Clear indication of active and occupied channels

Listening and relay section

- 5 preselectable relay channels
- separate floor button
- Relay interpretation quality indicator

Monitoring section

- Loudspeaker with channel selector to monitor all languages
- All loudspeakers within one both will be muted automatically, when a DDOL in the booth goes live

Additional features

- Operator and/ or chairman call
- Auto Relay feature
- Various take-over modes programmable
- "Hearing guard" LED to indicate headphone volume level

Technical Data

Complies with the standards IEC914 and IEC2603.2

- Sample rate 48kHz
- Resolution 24 BIT
- Frequency response: 20 - 20,000 Hz
- OR + 7 channels
- Latency end to end 1.5 ms
- LC-Display, 2 x 56 characters, backlit

Connections

- PREVIOUS (D9) for interconnection
- NEXT (D9) for interconnection
- Microphone TM58/6 or TMD01 (Minicon socket) lockable
- Headphones (3.5/6.3 mm jack)
- Electret Headset 8-pin socket (DIN)

Housing

- Lower part: robust plastic, grey
- Operation panel: aluminium, "silver" anodized
- WxHxD: (305 x 96 x 175) mm
- Weight: 1.5 kg

Accessories (not included in delivery)

- **TM58/6** Conference Microphone (01.0560)
- **TM58/6-500** Conference Microphone 500mm (01.0561)
- **TM58/6-2S** Conference Microphone with 2 goosenecks (01.0560.S2)
- **TMD/01** Conference Microphone with integrated windshield functionality (01.0701)
- **K45/6** Dynamic Headphone (03.0270), also with 1.5m cable (K45/16 - 03.0290)
- **PMX60** Dynamic Conference Headphone with neckband (03.5501)
- **HS394** Lightweight Interpreter Headset (03.5530)
- **HS460** Interpreter Headset (03.5550)

Product information

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Section 274100- 2.10.FF.10.h Comply
Section 274100- 2.10.GG.3.e Comply

Transportation Case TK50



BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice.

Description

The TK50 transportation and storage case is designed for storage and transport of 50 INFRACOM® receivers IRX.

Alternatively you may order the TK50 as a charging and transportation case. It comes with an external power supply. You may upgrade your TK50 anytime to a charging case simply by adding the power supply. No other changes would be needed.

For charging, the receivers equipped with charging pins. Only place a unit into one of the charging trays. After the units have been in use for a whole day, it is recommended that they be recharged overnight (approx. 14 hours). A longer charging time will not harm the rechargeable batteries.

The receivers and charging trays are serially numbered. This makes it possible to keep tabs on the distribution and return of the units. It is also a means of ensuring that even at very big events, all units that have been used are recharged regularly.

The storage tray is set into a robust case with a detachable lid. The case is designed to be secured by a padlock and fitted with a sturdy fold-away handle for lifting and carrying purposes.

Technical Data

- 50 storage trays
- Dimensions WxDxH: (640x410x220)mm
- Weight without units: 11.5kg (approx.)
- Internal power supply plug
- Dimensions of power supply tray(WxDxH): (132 x 58 x 30) mm
- Lockable
- Removable lid
- Sturdy fold-away handle

Optional

PSUTK50-A100 Power Supply
to upgrade to a charging case.
prim.: 90-240V, sek.: 12V/8.3A
(part.-no.: 19.0890)

Product information

brähler

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Section 274100- 2.10.FF.10.i Comply
Section 274100- 2.10.GG.3.f Comply

Receiver IRX (band II / IV)



BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice. WPP06.5801.E.100301

Description

The IRX receiver has been designed to receive up to 32 channels within the standard frequency band as well as an extended frequency band (infrared). The use of a PLL-synthesizer (phase-locked-loop) guarantees high quality transmission and also high operation reliability.

This current generation of INFRACOM receivers are now switchable between Band II and Band IV. They allow the use even under direct sunlight where normally the reception would not be possible due to overly brightness.

The receiver is equipped with a 4 key control pad for volume and channel control. Volume level and channel number are displayed on a backlit LC-Display which also shows the system status or the system adjustments, i. e. the battery voltage, the IR field intensity and the shift operation mode.

Using the shift function, the channel spacing can be shifted arbitrarily upwards to avoid interference on the lower IR channels caused by fluorescent lamps.

With the new charging control LED the charging of the receiver is now even easier to control.

Because of their particular operating characteristics and differentiated battery-saving modes a long standby time is guaranteed.

Optional the receiver can be upgraded with an INFRACOM Guard Module which offers together with the CIX1 Guard Controller an efficient protection against getting lost.

Technical Data

Complies with the international standard IEC914, IEC61603-3 and IEC61603-7

Number of channels

- depends on version: 4, 12 or 32

Directional characteristic

- 120° horizontal, 100° vertical

Operation modes

- Superhet receiver with PLL-Synthesizer
- FM-Modulation

Display

- LC-Display (2 digits)
- displays channel number and volume level
- backlit

Carrier frequencies

- (55 - 1335)kHz in 40kHz steps (Band II)
- (1935 - 3175)kHz in 40kHz steps (Band IV)

Inter frequency

- 455kHz

Frequency range

- (125 - 8000)Hz

Distortion

- < 2.0%

Signal-to-noise ratio (S/N)

- > 55dB

Voltage Supply

- Range (3.6 - 4.5)V
 - 3 x NiMH rechargeable battery 1.2V / 750mAh (included in delivery)
Charging time approx. 4-6 hours
- or
- 3 x battery 1.5V
 - type AAA each

Time of operation

- approx. 120 hours (batteries)
- approx. 75 hours (rechargeable batteries)

Connector

- Headphones (3.5mm jack-socket), impedance: (32 - 3000) Ohm

Housing

- Plastic, grey
- W x H x D (50 x 150 x 25)mm

Weight (incl. batteries)

- 150g

Accessories (not included in delivery)

K10/16 Conference headphone (3.5mm jack)

K45/6 Conference headphone (3.5mm jack)

MG07/8 Stethoscopic headphone (3.5mm jack)

Batteries 1.5V, Type AAA

TK50 bundle INFRACOM® transport and storage tray for 50 INFRACOM® receivers

Necklace cord to conveniently carry the IRX

CIX1 INFRACOM®GUARD controller

N2 Guard loop cable

Options

IRX12 - 12 channel receiver
with or without Guard module

IRX4 - 4 channel receiver
with or without Guard module

Label with customized company logo

INFRACOM®

Section 274100- 2.10.FF.10.j Comply

Programming Unit LKC50



Description

The IR receivers within the charging tray TK50 can be programmed simultaneously with the LKC50 programming unit and the included software Tray-setup lite. Various parameters may be set in the SW to program the IR receivers.

The LKC50 programming unit must be connected between the TK50 and the delivered PSU. Several LKC50 can be cascaded via BNC connection cable to program more than 50 receivers in multiple charging trays at once. The LKC50 programming unit connects to a RS232 serial port of a PC or notebook.

Features

Following parameters may be set

- Max Channel
Highest selectable channel number at the IR receiver
- Start-up Channel
Channel number to start with
- Start-up Volume
Volume to start with
- Muting
Selecting the squelch (on / off)
- Channel Shift
selecting the channel offset e.g.8 channels
- Guard
Selecting the guard (on / off)
- Default
Reset all settings to the default (ex factory) values
- IR Band Select
selecting the working RF band (Band II / Band IV), if supported by the receiver

System requirements

Hardware

- PC with one available COM-port (DSUB9)
- INFRACOM charging tray controller LKC50
- INFRACOM storage and charging tray TK50
- INFRACOM receiver IRX

Software

- Windows XP *
- Traysetup lite (included in delivery)

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WIPF06.7080.E.090218

Section 274100- 2.10.FF.10.I Comply

DIGIMIC®

DExt - extension power supply unit



BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice.

Description

The DExt repeater unit is designed for expanding the DIGIMIC system. This allows operating beyond 100 delegate units (25 per chain) with one digital central unit DCen. With the DExt additional 25 microphone units can be used in a chain.

Besides generating sufficient power it also refreshes the digital audio signals.

The DExt can also be used as a line driver to expand the D9 cable connection. This is for instance useful if the connection from the central unit DCen to the first device exceeds the system-defined dimension of 100m. With DExt additional 100m in the chain can be bridged.

There are optionally mounting bracket for the DExt available.

Technical Data

Connections

PREVIOUS (D9 connector)

Connection of previous units with D9 cable

NEXT (D9 socket)

Connection of next units with D9 cable

Plug socket

for power connection

Features

Green LED

for output power indication (48 V)

Power Supply

- Mains Power In: (90 ... 240) VAC, (50 ...60) Hz
- Power Consumption: 120 W max.

Housing

- Aluminium, "silver" anodized
- W x H x L: (100 x 43 x 233)mm

Weight

approx. 1.0 kg

Other system components

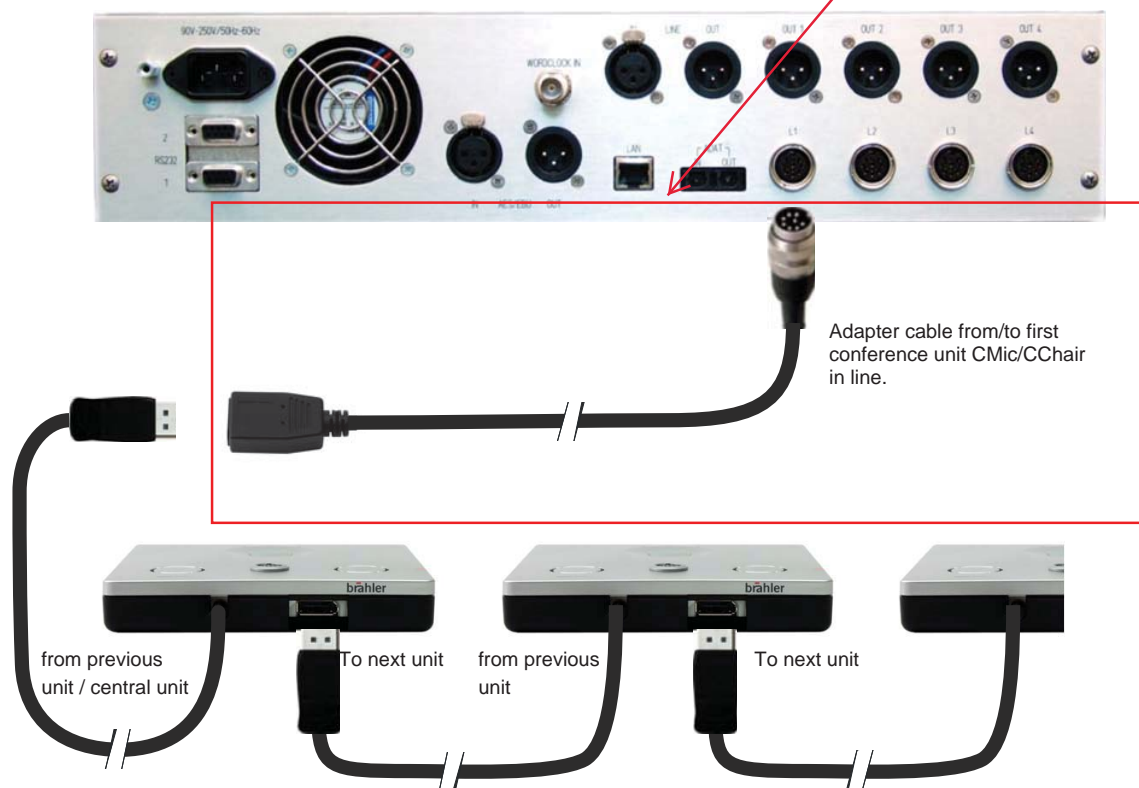
- **DCen** Central unit for digital discussion system
- **CChair** Classic Chairpersons' Conference Unit
- **CMic** Classic Delegates' Conference Unit
- **DMic** Delegates' Conference Unit with interface to DDoc
- **DChair** Chairpersons' Conference Unit with interface to DDoc
- **DDoc** Docking Unit for expansion of DChair and DMic to a wireless conference unit
- **D9** Brähler system cable

CChair and CMic connection

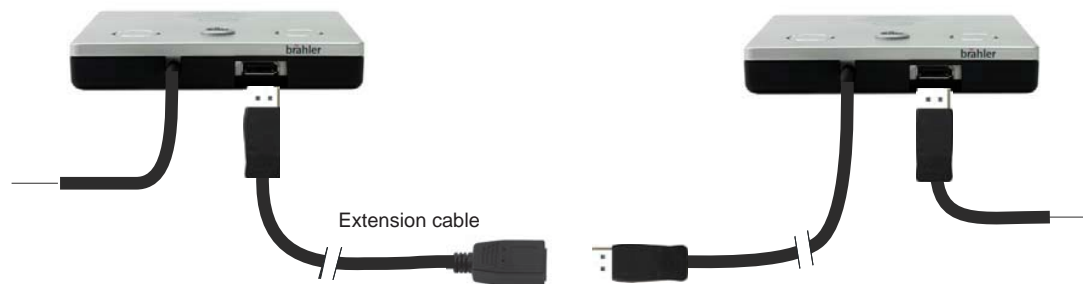
The CChair and / or CMic microphone units each have a fix assembled cable with a DisplayPort connector and a DisplayPort connector. Connect each of the DisplayPort plug into the next unit. The D9-cable system is a highly flexible CAT5 cable with a lockable connector.

The connection to the central unit DCen is done by an adapter cable D9-CM9.

Section 274100- 2.10.FF.10.m Comply



For distances greater than the connection cable extension cables can be used:



For large installations our planning department will be glad to help you (sales@braehler.com).

Interpreter Equipment

Section 274100- 2.10.FF.10.n Comply
Section 274100- 2.10.GG.3.h Comply

Professional Interpreter Headset HS460

customized version Sennheiser HME 46



BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice.

Description

The new Interpreter Headset HS460 combining proven functionality with the latest audio technology and maximum user comfort. The lightweight headsets are ergonomically designed with a two-piece headband for a secure fit.

A noise-compensated condenser microphone ensures superior speech transmission.

The ear pads can be easily replaced.

Features

- Extremely light weight
- Superb wearing comfort due to patented two-piece automatic headband and soft ear pads
- Flip-away headphone allows single-sided listening
- Flexible microphone boom, can be worn on either left or right-hand side
- Noise-compensated condenser microphone ensures excellent speech transmission
- DIN 7 pin connector

Delivery includes

- Headset HS460
- Cable clip
- Wind and pop screen

Technical data**Microphone**

Transducer principle..... pre-polarized condenser microphone, noise compensating
Frequency response..... 100 - 15,000 Hz
Output voltage.....10 mV/Pa
Min. terminating impedance.....2200 Ohm
Supply voltage..... 2 - 10 V_{DC}

Headphones

Transducer principle..... dynamic, open
System impedance..... 300 Ohm
Frequency response..... 20-14000 Hz
Characteristic.....98 dB SPL at 1 kHz, 1 mW
86 dB SPL at 1 kHz, 1 V
THD..... < 1 % at 95 dB SPL (300-3000 Hz)

General

Temperature range:

Operation..... -15 to 55 °C
Storage..... -55 to 70 °C
Weight with connector.....210 g
Cable length2 m

Section 274100- 2.10.GG.3.b Comply

INFRACOM®

BS98 Tripod for radiator

KÖNIG&MEYER 20800



WPF.06.6350.2.E.130207 BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications without notice.

Description

This compact overhead stand is now even lighter and more stable.

Thanks to a new leg combination and a new clamping element, its weight has been reduced to 3.6 kg. The leg base diameter of 1 m affords stability and safety.

A range of different boom arms can be attached using the 3/8" thread adaptor. The stand extends to a height of over 3 m.

Properties

- Base diameter: 1,000 mm
- Height: from 1,350 to 3,100 mm
- Height adjustment: clamping element with locking screw
- Leg construction: tube legs with cross braces
- Material: steel
- Rod combination: 2-piece folding design
- Special features: for special stage and studio applications; adjustable up to 3.10 m
- Threaded connector: 3/8"
- Type: black
- Weight: 4.5 kg

INFRACOM®

Dual Interpreter Console DOL7/2E

Article No.: 04.2541.07



BRÄHLER ICS is committed to continually improving its products and so reserves the right to make technical modifications

Description

The dual interpreter Console DOL7/2 for use by two interpreters is designed for the transmission of 1+6 channels (6 languages). DOL7/2 is interconnected to the control console and the next interpreter console by Daisy-chain technology.

The control panel is divided into clearly organized function-oriented sections: monitoring - speaking - special functions.

The controls are designed in a user-friendly manner and are easy to operate.

Via the two "Monitoring" function sections, one may preselect an interpretation channel using the 6-digit rotary switch. The interpreter can choose between this interpretation channel and the ORIGINAL (floor) channel using the RELAIS toggle switch. Volume, bass, and treble are individually adjustable via separate controls.

Features

- control panel for two interpreters
- 1+6 channels
- compatible with equipment for 1+8 channels and former control consoles
- interconnection using single-cable technology
- A/B/C outgoing channel selection
- processor-controlled functions
- display of the output channel and the language complying to ISO639

Technical Data

Complies with the standards IEC914 and DIN56924 Part 1 "Booths for Simultaneous Interpretation"

- Plug standard : A36K
- Permanently attached connection cable 3.5m and socket A36K standard for hooking up to the control console,
- 3.5mm jack plug for standard headphones
- 2 D7-CB connector sockets for headphones or electret headset
- 2 D5-BS connector sockets for electret microphone TM55/18
- Processor-controlled
- Rotary switch to program all individual settings
- Microphone preamplifier with limiter; balanced output +6dBV, frequency response 125Hz-15kHz,
- S/N ratio >60dB(A),
- Harmonic distortion <1%
- LC-Display consisting of 2x16 characters for displaying the number, language and state of the output channels
- Monitor amplifier for headphone, separate controls for bass, treble, volume,
- Frequency response 100Hz - 20kHz,
- S/N ratio >70dB(A),
- Harmonic distortion <0.5%
- Three locking modes regarding the outgoing channel interlocking function

- Robust plastic lower housing, colour: black
- Operation panel: aluminium, "silver" anodized.
- Dimensions: 305 x 96 x 175mm
- Weight with cable: approx. 1.9kg (with cable)

Accessories

(not included in delivery)

- **K45/6** Dynamic Headphone
- **PMX60** Dynamic Conference Headphone with neckband
- **K15** Conference Headphone
- **TM55/18** Interpreter Microphone, electret
- **HS394** Lightweight Interpreter Headset
- **HS460** Interpreter Headset
- **A36K-5** extension cable 5m
- **A36K-10** extension cable 10m
- **KAD03** Aluminium transport box

WPF04.2541.07 .M.E.:150917

PTRK Series

portable rack

secure rolling steel rack serves a variety of applications

features:

- Fully welded 16-gauge construction
- 1/8" thick structural steel internal braces
- Smooth-rolling 4" locking cushion casters
- Available with solid locking front door, or with graphite laminate top and plexi front door
- Removable Decora® plate for low voltage Decora® accessories
- Standard keylocked front & rear doors
- Rubber-padded spring loaded recessed handles
- Infinitely adjustable 10-32 threaded 11-gauge rackrail
- 500 lb. weight capacity
- Durable textured black powder coat finish



PTRK-14MDK
(shown with optional LCD mount)
Comes standard with wood top
and plexi front door as shown



PTRK-21

specifications:

EIA compliant 19" equipment rack shall be Middle Atlantic Products model # PTRK-___ / PTRK-___MDK (refer to chart). Overall dimensions of rack shall be ___" H x 22.63" W x ___" D (refer to chart). Useable height shall be ___ rackspaces (refer to chart). Rack shall have a 500 lb. weight capacity. Rack shall be of fully welded construction. Top, bottom and sides of PTRK-___ (refer to chart) shall be 16-gauge steel, front door shall be 18-gauge steel. Rack shall include a vented, locking and latching rear door. Removable Decora® plate on the front, top of rack shall accept any low voltage Decora® accessory. Additionally PTRK-___MDK shall include graphite laminate wood top, plexi front door and solid rear door. All structural elements shall be finished in a black powder coat. Rackrail shall be constructed of 11-gauge steel with tapped 10-32 mounting holes in universal EIA spacing with black e-coat finish and numbered rackspaces. Rack shall come equipped with smooth rolling 4" locking cushion casters and solid front and rear doors standard. Grounding and bonding stud shall be 1/4 - 20 threaded, installed in base of enclosure. Rack shall be GREENGUARD Gold Certified. Rack shall comply with the requirements of RoHS EU Directive 2002/95/EC. Rack shall be manufactured by an ISO 9001 and ISO 14001 registered company. Rack shall be warranted to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

Customizable specification clips available at middleatlantic.com

EIA/TIA COMPLIANT



PRODUCT CERTIFIED FOR
LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

options:

- Rear rackrail 10-32 threaded 11-gauge, in universal EIA spacing. Part # PTRK-RRxx (x= # of rack spaces required)
- Single LCD monitor mount accommodates VESA 75 and VESA 100 monitor shall be Middle Atlantic Products part # MMB-1X1-12C
- UCP panel knockouts accommodate commonly used connectors, see middleatlantic.com for details

TEMP-DEC

- Digital Decora® mount temperature display monitors internal enclosure temperature, model # TEMP-DEC

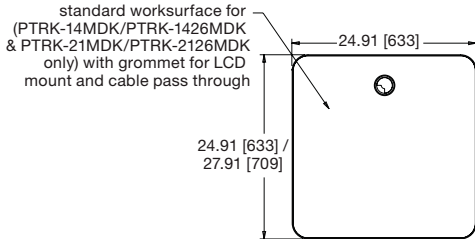
what great systems are built on.™

PTRK Series

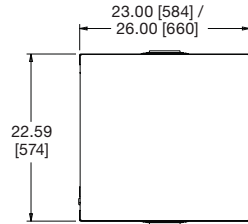
basic dimensions

all dimensions in inches unless otherwise noted [all dimensions in brackets are in millimeters]

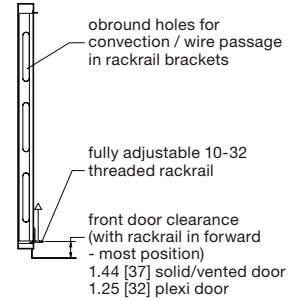
PTRK-XXMDK
top view



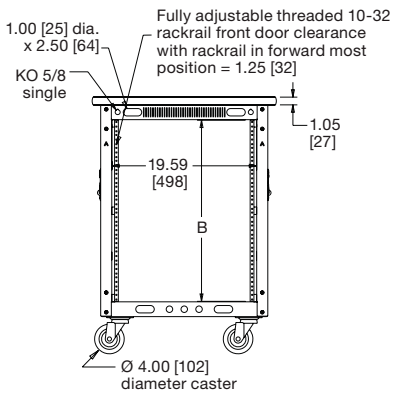
PTRK-XX
top view



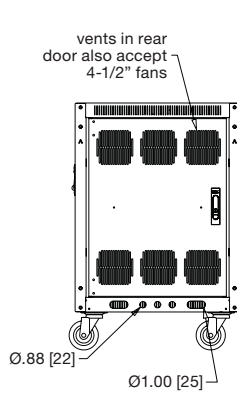
top sectional view
of PTRK side



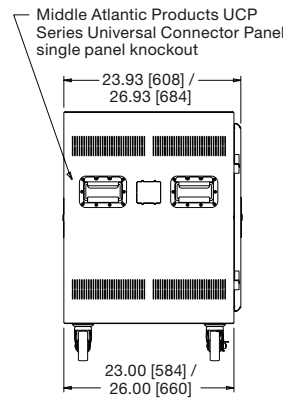
PTRK-XXMDK rear view
(with wood top shown and doors removed to show rackrail)



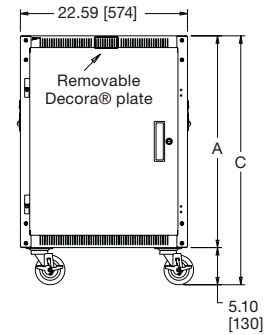
PTRK-XX rear view
(with wood top shown and doors removed to show rackrail)



side view

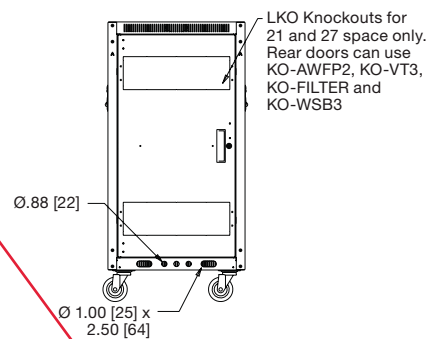


front view

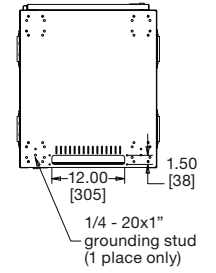


Part #	A Rack Height w/out Casters	B Useable Height	C Overall Height	Useable Depth	Overall Depth	Front Door	Rear Door
PTRK-14	28.62 [727]	24.50 [622] (14 rackspace)	33.73 [857]	21.50 [546]	23.0 [584]	solid	vented
PTRK-21	40.87 [1038]	36.75 [933] (21 rackspace)	46.0 [1168]	21.50 [546]	23.0 [584]	solid	LKO knockouts
PTRK-14MDK	29.67 [754]	24.50 [622] (14 rackspace)	34.79 [884]	21.50 [546]	24.91 [633]	plexi	vented
PTRK-21MDK	41.92 [1065]	36.75 [933] (21 rackspace)	47.0 [1195]	21.50 [546]	24.91 [633]	plexi	LKO knockouts
PTRK-1426	28.62 [727]	24.50 [622] (14 rackspace)	33.73 [857]	24.50 [622]	26.0 [660]	solid	vented
PTRK-2126	40.87 [1038]	36.75 [933] (21 rackspace)	46.0 [1168]	24.50 [622]	26.0 [660]	solid	LKO knockouts
PTRK-2726	51.37 [1305]	47.25 [1200] (27 rackspace)	56.5 [1435]	24.50 [622]	26.0 [660]	solid	LKO knockouts
PTRK-1426MDK	29.67 [754]	24.50 [622] (14 rackspace)	34.79 [884]	24.50 [622]	27.91 [709]	plexi	vented
PTRK-2126MDK	41.92 [1065]	36.75 [933] (21 rackspace)	47.04 [1195]	24.50 [622]	27.91 [709]	plexi	LKO knockouts
PTRK-2726MDK	52.42 [1331]	47.25 [1200] (27 rackspace)	57.52 [1461]	24.50 [622]	27.91 [709]	plexi	LKO knockouts

rear view
(without wood top, 21 and 27 space)



bottom view
(casters removed)



Section 274100- 2.10.GG.3.a Comply

SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET D

Twisted Pair Extender

DTP HDMI 4K 330

LONG DISTANCE HDMI TWISTED PAIR EXTENDER



- ▶ Transmits HDMI plus control and analog audio up to 330 feet (100 meters) over a shielded CATx cable
- ▶ Supports computer and video resolutions up to 4K, including 1080p/60 Deep Color
- ▶ Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance
- ▶ Bidirectional RS-232 and IR pass-through for AV device control
- ▶ Accepts additional analog stereo audio signals
- ▶ Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through
- ▶ HDCP-compliant
- ▶ Supports EDID and HDCP transmission
- ▶ Remote power capability
- ▶ UL 2043 plenum rated receiver
- ▶ Compatible with all DTP™ 330 Series models and DTP 330-enabled products
- ▶ 1" (2.5 cm) high, quarter rack width metal enclosures
- ▶ Highly reliable, energy-efficient external universal power supply included with Tx models



The Extron DTP HDMI 4K 330 extender sends HDMI, analog audio, and bidirectional control signals up to 330 feet (100 meters) over a shielded CATx cable. The HDCP-compliant extender set features a compact enclosure that enables discreet installation in a wide variety of applications.

Section 274100 - 2.12.I.12.a Comply
 Section 274100 - 2.13.A.12.d Comply
 Section 274100 - 2.13.B.13.d Comply
 Section 274100 - 2.13.C.13.d Comply
 Section 274100 - 2.10.JJ.7.b Comply

Section 274100 - 2.12.H.12.a Comply
 Section 274100 - 2.13.A.12.c Comply
 Section 274100 - 2.13.B.13.c Comply
 Section 274100 - 2.13.C.13.c Comply
 Section 274100 - 2.10.JJ.7.a Comply

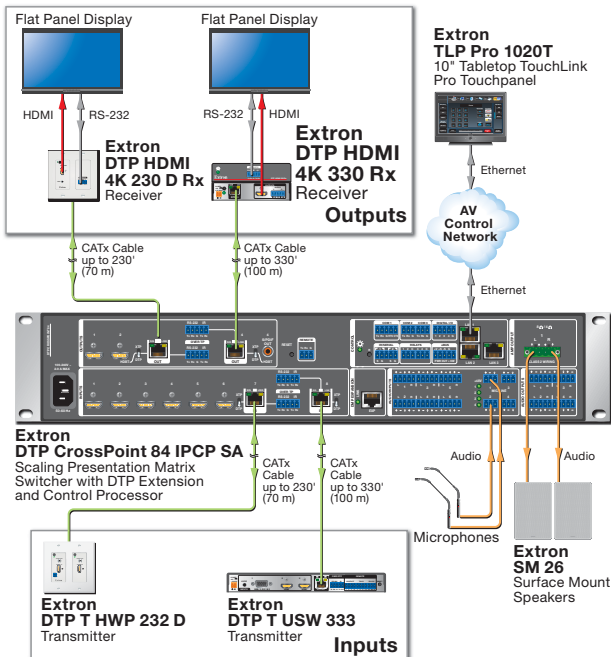


DESCRIPTION

The Extron **DTP HDMI 4K 330** is a long distance transmitter and receiver set for sending HDMI, audio, and bidirectional RS-232 and IR signals up to 330 feet (100 meters) over a shielded CATx cable to Extron DTP™ 330-enabled products. It provides an effective means for extending HDMI with embedded multi-channel audio from HDMI-equipped devices. The DTP HDMI 4K 330 accepts analog stereo audio signals for simultaneous transmission over the same shielded twisted pair cable. It supports video signals at resolutions up to 4K, including 1080p/60 Deep Color. The DTP HDMI 4K 330 enables the reliable, long distance transmission of HDMI signals, supporting Deep Color up to 12-bit, CEC pass-through, and embedded HD lossless audio formats. DDC communication of EDID and HDCP is continuously maintained between a source and display, ensuring direct compatibility and optimal signal transmission between devices.

For installation flexibility, the DTP HDMI 4K 330 transmitter or receiver can be remotely powered over the shielded twisted pair cable by a DTP 330-enabled product. The twisted pair extender also supports simultaneous transmission of bidirectional RS-232 and IR signals from a control system for AV device control. The DTP HDMI 4K 330 can be integrated with an Extron DTP CrossPoint® 84 Presentation Matrix Switcher, or other DTP 330-enabled products to support sources, plus displays and other output devices at remote locations.

APPLICATION DIAGRAM



SPECIFICATIONS

VIDEO		
Maximum data rate	10.2 Gbps (3.4 Gbps per color)	
Resolution range	Up to 2560x1600* @ 60 Hz or 4K (4096x2160) @ 30 Hz; UHD (3840x2160) @ 30 Hz, 4K/UHD @ 60 Hz with 4:2:0 chroma subsampling (* reduced blanking)	
Color bit depth	8, 10, or 12 bits — subject to the maximum data rate limit	
VIDEO INPUT – TRANSMITTER		
Connectors	1 female HDMI type A	
INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER		
Connectors	1 female RJ-45 per unit	
Signal transmission distance	1080p @ 60 Hz Up to 330' (100 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable 2560x1600 @ 60 Hz Up to 330' (100 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable 4K/UHD @ 30Hz and 60 Hz Up to 330' (100 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable	
Cable requirements	Solid conductor, 24 AWG or better	
Cable recommendations	400 MHz bandwidth, STP (shielded twisted pair)	
NOTE:	Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.	
VIDEO OUTPUT – RECEIVER		
Connectors	1 female HDMI type A	
AUDIO INPUT		
Number/signal type	1 PC level stereo, unbalanced	
NOTE:	Analog audio is not embedded onto the digital video signal. Embedded digital audio is not de-embedded from the digital video signal.	
AUDIO OUTPUT		
Number/signal type	1 stereo (2 channel), balanced/unbalanced	
COMMUNICATIONS		
External device (pass-through, unidirectional or bidirectional)		
Serial control port input/output	Transmitter RS-232 via (1) 3.5 mm, 5 pole captive screw connector for RS-232 control (±5 V) (connector is shared with IR control port)	
IR control port	(1) 3.5 mm, captive screw connector, 5 pole (connector is shared with RS-232 control port) TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz	
GENERAL		
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A, 12 watts	
Model	Version Description	Part number
DTP HDMI 4K 330 Tx	HDMI Tx - 330 feet (100 m)	60-1331-12
DTP HDMI 4K 330 Rx	HDMI Rx - 330 feet (100 m)	60-1331-13
Decora Style Models		
Model	Version Description	Part number
DTP HDMI 4K 330 D Tx	Decora Tx, Black - 330 feet (100 m)	60-1464-12
DTP HDMI 4K 330 D Tx	Decora Tx, White - 330 feet (100 m)	60-1464-13
DTP HDMI 4K 330 D Rx	Decora Rx, Black - 330 feet (100 m)	60-1464-22
DTP HDMI 4K 330 D Rx	Decora Rx, White - 330 feet (100 m)	60-1464-23

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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Twisted Pair Extender

DTP DVI 4K 230 DDVI TWISTED PAIR EXTENDER -
DECORA® WALLPLATE**DTP**
SYSTEMS**4K UHD**

- ▶ Transmits single link DVI-D plus control and analog audio up to 230 feet (70 meters) over a shielded CATx cable
- ▶ Supports computer and video resolutions up to 4K, including 1080p/60 Deep Color
- ▶ Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance
- ▶ Bidirectional RS-232 and IR pass-through for AV device control
- ▶ Accepts additional analog stereo audio signals
- ▶ DVI input loop-through
- ▶ HDCP 2.2 compliant
- ▶ DDC routing to local or remote display
- ▶ Remote power capability
- ▶ Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through
- ▶ Compatible with all DTP® 230 Series models and DTP-enabled products
- ▶ Mounts in an included two-gang Decora-style wallplate
- ▶ Highly reliable, energy-efficient external universal power supply included with Tx models

**DTP DVI 4K 230 D Tx****DTP DVI 4K 230 D Rx**

The Extron DTP DVI 4K 230 D is a Decora®-style extender that sends single link DVI-D video, analog audio, and bidirectional control signals up to 230 feet (70 meters) over a shielded CATx cable. Local monitor support enables simplified PC integration. The DTP DVI 4K 230 D features a convenient form factor that offers maximum placement flexibility.

Section 274100 - 2.7.B.11.a Comply
Section 274100 - 2.8.B.11.a Comply
(Replacement)



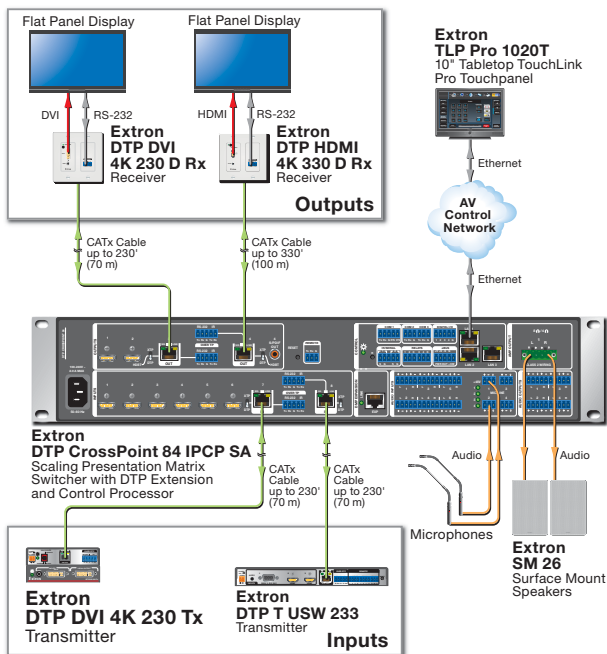
Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

DESCRIPTION

The Extron **DTP DVI 4K 230 D** is a Decora-style transmitter and receiver set for sending DVI-D video, audio, and bidirectional RS-232 and IR signals up to 230 feet (70 meters) over a shielded CATx cable to Extron DTP®-enabled products. It provides an economical and effective means for extending single link DVI-D or HDMI signals. The DTP DVI 4K 230 D accepts analog stereo audio signals for simultaneous transmission over the same shielded twisted pair cable. It supports video signals at resolutions up to 4K, including 1080p/60 Deep Color. The transmitter is equipped with a buffered DVI loop-through output to support a local computer monitor. DDC communication of EDID and HDCP is selectable between the local or remote display and is continuously maintained between a source and display.

The DTP DVI 4K 230 D is fully compatible with HDMI signals when used with the appropriate DVI-HDMI adapters from Extron. For installation flexibility, the transmitter or receiver can be remotely powered over the shielded twisted pair cable by a DTP-enabled product. The twisted pair extender also supports simultaneous transmission of bidirectional RS-232 and IR signals from a control system for AV device control. In addition, the DTP DVI 4K 230 D can be integrated with an Extron DTP CrossPoint® Presentation Matrix Switcher, or other DTP-enabled products to support sources, plus displays or other output devices at remote locations.

APPLICATION DIAGRAM



SPECIFICATIONS

TRUE 4K SPECIFICATION

Max 4K Capabilities		
Resolution and Frame Rate	Chroma Sampling	Max Bit Depth per Color
4096 x 2160 at 30 Hz 3840 x 2160 at 30 Hz	4:4:4	8 bit
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz	4:2:0	8 bit
Frame rate ¹	24, 25, 30, 50, or 60 fps	
Chroma sampling ¹	4:4:4, 4:2:2, or 4:2:0	
Color bit depth ¹	8 bits per color	
Signal type	HDMI, HDCP 2.2	
Max. video data rate	10.2 Gbps (3.4 Gbps per color)	
NOTE: ¹ Subject to the maximum data rate limit. Use our calculator (http://www.extron.com/product/videotools.aspx) to determine video parameters supported by this data rate.		

INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER

DTP signal

Signal transmission distance

1080p @ 60 Hz Up to 230' (70 m) using shielded twisted pair (STP) cable or XTP DTP 24 cable

2560x1600 @ 60 Hz Up to 130' (40 m) using STP cable or XTP DTP 24 cable

4K/UHD @ 30 and 60 Hz Up to 130' (40 m) using STP cable or XTP DTP 24 cable

Cable requirements Solid conductor, 24 AWG or better

Cable recommendations 400 MHz bandwidth STP cable

NOTE: Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.

AUDIO INPUT – TRANSMITTER

Number/signal type 1 PC level stereo, unbalanced

NOTE: Analog audio is not embedded onto the digital video signal. Embedded digital audio is not de-embedded from the digital video signal.

CONTROL/REMOTE

External device (pass-through, unidirectional or bidirectional)

Serial control port input

Transmitter RS-232 via (1) 3.5 mm, 5 pole captive screw connector (connector is shared with IR control port)

IR control port (1) 3.5 mm, captive screw connector, 5 pole (connector is shared with RS-232 control port)

TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz

GENERAL

Power supply External
Input: 100-240 VAC, 50-60 Hz
Output: 12 VDC, 1 A, 12 watts

Box Style

Model	Version Description	Part number
DTP DVI 4K 230 D Tx	Decora Tx, Black - 230 feet (70 m)	60-1214-12
DTP DVI 4K 230 D Tx	Decora Tx, White - 230 feet (70 m)	60-1214-13
DTP DVI 4K 230 D Rx	Decora Rx, Black - 230 feet (70 m)	60-1214-22
DTP DVI 4K 230 D Rx	Decora Rx, White - 230 feet (70 m)	60-1214-23

Model	Version Description	Part number
DTP DVI 4K 230 Tx	DVI Tx - 230 feet (70 m)	60-1272-12
DTP DVI 4K 230 Rx	DVI Rx - 230 feet (70 m)	60-1272-13

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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www.extron.com

Twisted Pair Extender

DTP DVI 4K 230

DVI TWISTED PAIR EXTENDER

DTP
SYSTEMS**4K UHD**

DTP DVI 4K 230 Tx

DTP DVI 4K 230 Rx

The Extron DTP DVI 4K 230 extender sends single link DVI-D video, analog audio, and bidirectional control signals up to 230 feet (70 meters) over a shielded CATx cable. Local monitor support enables simplified PC integration. The DTP DVI 4K 230 features a compact enclosure that enables discreet installation in a wide variety of applications.

Section 274100 - 2.7.C.11.a Comply
Section 274100 - 2.8.C.11.a Comply
(Replacement)

- ▶ Transmits single link DVI-D plus control and analog audio up to 230 feet (70 meters) over a shielded CATx cable
- ▶ Supports computer and video resolutions up to 4K, including 1080p/60 Deep Color
- ▶ Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance
- ▶ Bidirectional RS-232 and IR pass-through for AV device control
- ▶ Accepts additional analog stereo audio signals
- ▶ DVI input loop-through
- ▶ Supports EDID and HDCP transmission
- ▶ DDC routing to local or remote display
- ▶ Remote power capability
- ▶ UL 2043 plenum rated receiver
- ▶ Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through
- ▶ Compatible with all DTP™ 230 Series models and DTP-enabled products
- ▶ 1" (2.5 cm) high, quarter rack width metal enclosures
- ▶ Highly reliable, energy-efficient external universal power supply included with Tx models



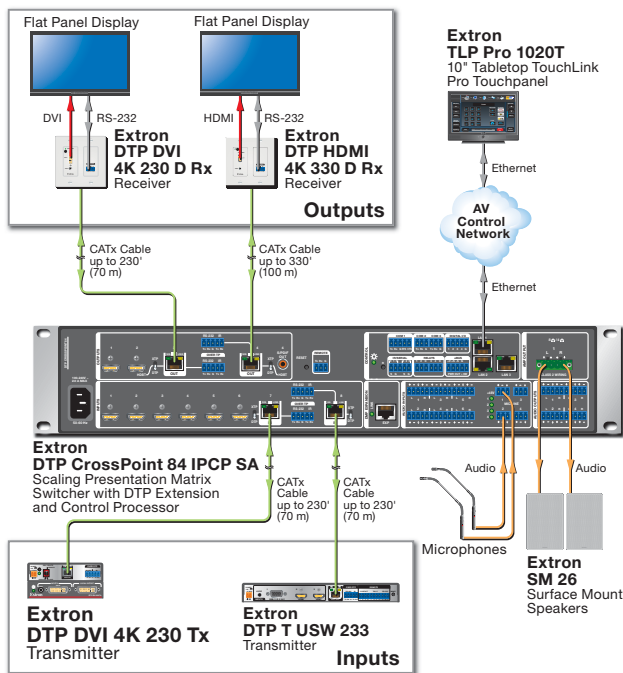
Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

DESCRIPTION

The Extron **DTP DVI 4K 230** is a transmitter and receiver set for sending DVI-D video, audio, and bidirectional RS-232 and IR signals up to 230 feet (70 meters) over a shielded CATx cable to Extron DTP™-enabled products. It provides an economical and effective means for extending single link DVI-D or HDMI signals. The DTP DVI 4K 230 accepts analog stereo audio signals for simultaneous transmission over the same shielded twisted pair cable. It supports video signals at resolutions up to 4K, including 1080p/60 Deep Color. The transmitter is equipped with a buffered DVI loop-through output to support a local computer monitor. DDC communication of EDID and HDCP is selectable between the local or remote display and is continuously maintained between a source and display.

The DTP DVI 4K 230 is fully compatible with HDMI signals when used with the appropriate DVI-HDMI adapters from Extron. For installation flexibility, the transmitter or receiver can be remotely powered over the shielded twisted pair cable by a DTP-enabled product. The twisted pair extender also supports simultaneous transmission of bidirectional RS-232 and IR signals from a control system for AV device control. The DTP DVI 4K 230 can be integrated with an Extron DTP CrossPoint® 84 Presentation Matrix Switcher, or other DTP-enabled products to support sources, plus displays and other output devices at remote locations.

APPLICATION DIAGRAM



SPECIFICATIONS

VIDEO		
Maximum data rate	10.2 Gbps (3.4 Gbps per color)	
Resolution range	Up to 2560x1600* @ 60 Hz or 4K (4096x2160) @ 30 Hz, UHD (3840x2160) @ 30 Hz, 4K/UHD @ 60 Hz with 4:2:0 chroma subsampling (* reduced blanking)	
VIDEO INPUT – TRANSMITTER		
Connectors	2 female DVI-I	
INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER		
Connectors	1 female RJ-45 per unit	
Signal transmission distance		
1080p @ 60 Hz	Up to 230' (70 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable	
2560x1600 @ 60 Hz	Up to 130' (40 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable	
4K/UHD @ 30Hz and 60 Hz	Up to 130' (40 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable	
Cable requirements	Solid conductor, 24 AWG or better	
Cable recommendations	400 MHz bandwidth, STP (shielded twisted pair)	
	NOTE: Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.	
VIDEO OUTPUT – RECEIVER		
Number/signal type	1 single link DVI-D (or HDMI*)	
AUDIO INPUT		
Number/signal type	1 PC level stereo, unbalanced	
	NOTE: Analog audio is not embedded onto the digital video signal. Embedded digital audio is not de-embedded from the digital video signal.	
AUDIO OUTPUT		
Number/signal type	1 stereo (2 channel), balanced/unbalanced	
COMMUNICATIONS		
External device (pass-through, unidirectional or bidirectional)		
Serial control port input/output		
Transmitter	RS-232 via (1) 3.5 mm, 5 pole captive screw connector for RS-232 control (±5 V) (connector is shared with IR control port)	
IR control port	(1) 3.5 mm, captive screw connector, 5 pole (connector is shared with RS-232 control port) TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz	
GENERAL		
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A, 12 watts	
Model	Version Description	Part number
DTP DVI 4K 230 Tx	DVI Tx - 230 feet (70 m)	60-1272-12
DTP DVI 4K 230 Rx	DVI Rx - 230 feet (70 m)	60-1272-13
Decora Style		
Model	Version Description	Part number
DTP DVI 4K 230 D Tx	Decora Tx, Black - 230 feet (70 m)	60-1214-12
DTP DVI 4K 230 D Tx	Decora Tx, White - 230 feet (70 m)	60-1214-13
DTP DVI 4K 230 D Rx	Decora Rx, Black - 230 feet (70 m)	60-1214-22
DTP DVI 4K 230 D Rx	Decora Rx, White - 230 feet (70 m)	60-1214-23

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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CMA470

Plenum Rated Above-Tile Storage Accessory

The above-tile storage enclosure for Chief's suspended ceiling kits is designed to provide convenient storage for your cables and equipment.

Color



Certifications



Section 274100 - 2.12.N.7.a Comply

Features

- Hinged door for easy access
- Multiple knockouts (.75", 1" and 1.5") for ease in routing cables
- Clean installation, enclosure covers the column location on the suspended ceiling kit for routing cables through the ceiling
- Includes support for two dual-gang surface-mount electrical boxes
- Designed for use with new CMS440, CMA440, CMA450 and CMA455
- The bottom would rest on one of the above products.

Specifications

Certifications:	UL Listed
Color:	White
Overall Dimensions (H x W x D):	5.3" x 14.0" x 7.8" (133 x 355 x 198 mm)
Shipping Weight:	6.00

Frequently Asked Questions

Printed from www.chiefmfg.com

CMS440

Speed-Connect Above Tile Suspended Ceiling Kit

This ceiling tile kit provides a host features that make installing most lightweight front projectors faster and more secure. Chief also offers the CMS440P2 ceiling kit with built in surge and filtering.



Color

Certifications



Features

- WireVice Cable Suspension System for quick and easy tie-off
- TwisTile Ceiling Tile Cutter easily pierces a circular hole in the ceiling tile for extension column
- Flexible solution provides infinite column placement within a 2' x 2' or 2' x 4' ceiling tile
- Single and dual electrical outlet cutouts
- All-Points Security System provides exclusive locking hardware at column connection point to protect against theft
- Includes (4) 25' flexible cables, (4) wood eyebolts, (4) concrete anchors and a chrome trim ring
- Fits 24" (600 mm) wide ceiling tile grids
- 1.5" NPT compatible

Section 274100 - 2.12.N.7.b Comply

Specifications

Certifications:	TÜV Certified, UL Listed
Color:	White
Overall Dimensions (H x W x D):	1.3" x 8.0" x 23.4" (32 x 203 x 595 mm)
Shipping Weight:	8.00
Weight Capacity:	50 lbs (22.7 kg)

Frequently Asked Questions

Printed from www.chiefmfg.com

HDMI Ultra Series

Ultra Flexible High Speed HDMI Cables



DESCRIPTION

The Extron **HDMI Ultra Series** cables are designed to transmit high-speed digital video and audio signals. The HDMI Ultra Series is engineered with Extron-exclusive ultra-flexible, 30 AWG cable and features a low bend radius and compact, gold-plated connectors. They are ideal for applications with tight equipment racks or AV presentation furniture, or with wall-mount or pole-mount displays. The HDMI Ultra cables conform to HDMI High Speed cable specifications and are available in lengths from 6 feet to 15 feet (1.8 m to 4.5 m).



Section 274100-2.12.H.12.b Comply
 Section 274100-2.12.I.12.b Comply
 Section 274100-2.12.J.12.b Comply
 Section 274100-2.12.K.12.b Comply
 Section 274100-2.13.A.12.e Comply
 Section 274100-2.13.B.13.e Comply
 Section 274100-2.13.C.13.e Comply

Section 274100-2.12.H.12.c Comply
 Section 274100-2.12.I.12.c Comply
 Section 274100-2.12.J.12.c Comply
 Section 274100-2.12.K.12.c Comply
 Section 274100-2.13.A.12.f Comply
 Section 274100-2.13.B.13.f Comply
 Section 274100-2.13.C.13.f Comply

MODEL	VERSION DESCRIPTION	PART #
HDMI Ultra/6	6' (1.8 m) High Speed	26-663-06
HDMI Ultra/9	9' (2.7 m) High Speed	26-663-09
HDMI Ultra/12	12' (3.6 m) High Speed	26-663-12
HDMI Ultra/15	15' (4.5 m) High Speed	26-663-15

HDMI Pro Series

High Speed and Standard Speed HDMI Cables



DESCRIPTION

Extron **HDMI Pro Series** cables are designed for applications that require high performance transmission of HDMI digital video and audio signals. Cable lengths up to 12 feet conform to HDMI High Speed Cable Specifications and support signals up to 1920 x 1200 @ 60 Hz and 1080p/60. Cable lengths 25 feet and longer conform to HDMI Standard Speed Cable Specifications and support 1920 x 1200 @ 60 Hz and 1080p/60 up to 75 feet without a cable equalizer. An Extron HDMI 101 Cable Equalizer is recommended for use with cables longer than 75 feet.



Section 274100-2.12.H.12.d Comply
 Section 274100-2.12.I.12.d Comply
 Section 274100-2.12.J.12.d Comply
 Section 274100-2.12.K.12.d Comply
 Section 274100-2.13.A.12.g Comply
 Section 274100-2.13.B.13.g Comply
 Section 274100-2.13.C.13.g Comply

MODEL	VERSION DESCRIPTION	PART #
HDMI Pro/3	3' (90 cm) High Speed	26-650-03
HDMI Pro/6	6' (1.8 m) High Speed	26-650-06
HDMI Pro/12	12' (3.6 m) High Speed	26-650-12
HDMI Pro/25	25' (7.6 m) Standard Speed	26-650-25
HDMI Pro/35	35' (10.6 m) Standard Speed	26-650-35
HDMI Pro/50	50' (15.2 m) Standard Speed	26-650-50
HDMI Pro/75	75' (22.8 m) Standard Speed	26-650-75
HDMI Pro/100	100' (30.4 m) Standard Speed	26-650-100
HDMI Pro/125	125' (38 m) Standard Speed	26-650-125
HDMI Pro/150	150' (45.7 m) Standard Speed	26-650-150
HDMI Pro/175	175' (53.2 m) Standard Speed	26-650-175
HDMI Pro/200	200' (60.9 m) Standard Speed	26-650-200

Specifications

HDMI M-M Pro Cables

Performance/electrical

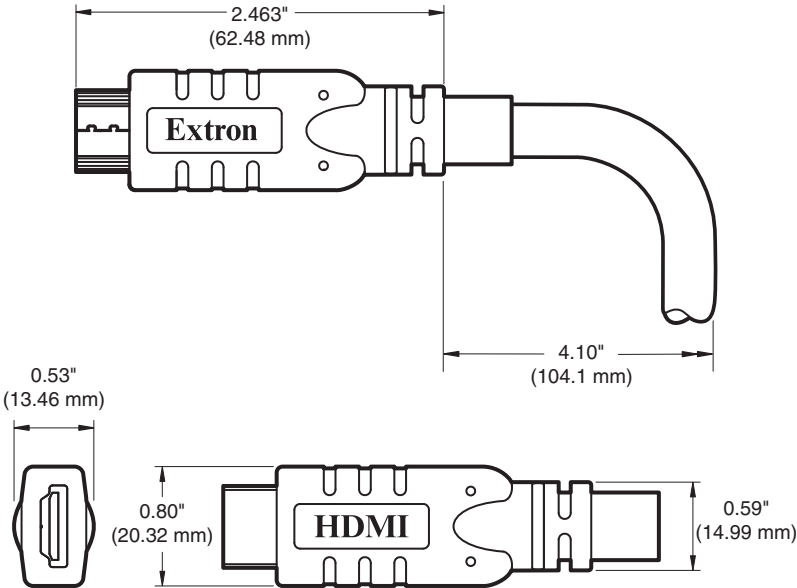
Standards	High speed HDMI® cable
Resolution range	
Up to 50' (15.2 m)	Up to 4K @ 30 Hz (4096x2160) or UHD @ 30 Hz (3840x2160) 8 bit color depth, max. 10.2 Gbps data rate or Up to 1080p @ 60 Hz 16 bit color depth, max. 10.2 Gbps data rate
75' (22.8 m) and longer	Up to 1080p @ 60 Hz 8 bit color depth, max. 4.95 Gbps data rate
Voltage.....	30 V
Pair impedance.....	100 ohms ±10 ohms
Attenuation	At 0.3 - 0.825 GHz: ≤5 dB per 6 m At 0.825 - 2.475 GHz: ≤12 dB per 6 m At 2.475 - 4.125 GHz: ≤20 dB per 6 m At 4.125 - 5.100 GHz: ≤25 dB per 6 m
FEXT.....	≥20 dB per 6 m
Skew	
12 feet and shorter	
Intrapair	≤112 ps per 6 m
Interpair	≤1.78 ns per 6 m
25 feet and longer	
Intrapair	≤112 ps per 8 m
Interpair	≤1.78 ns per 8 m

General – physical characteristics

Connector type.....	1 male type A HDMI to 1 male type A HDMI
Contacts.....	Gold plated
Material	
12 feet and shorter	Conductors: silver coated, tinned copper Drain wire: tinned copper Shielding: aluminum/Mylar® and tinned copper braid Jacket: PVC
25 feet and longer	Conductors: tinned copper Drain wire: tinned copper Shielding: aluminum/Mylar® and tinned copper braid Jacket: PVC
Conductor guage	
12 feet and shorter	Conductors and drain wire: 24 AWG
25 feet and longer	Conductors and drain wire: 22 AWG

Connector dimensions	2.46" L* x 0.80" W x 0.60" thick (62.5 mm L* x 20.3 mm W x 15.0 mm thick) *Length includes plug.
12 feet and shorter	
Cable outer diameter	0.39" (10.0 mm)
Bend radius	4.10" (104.1 mm)

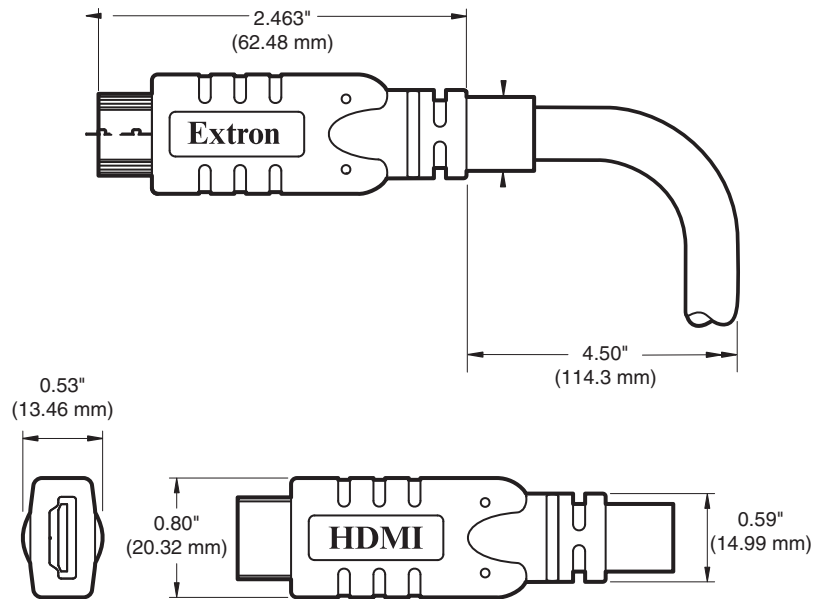
HDMI-M-M Pro
3' (90 cm), 6' (1.8 m), and 12' (3.6 m) Lengths



25 feet and longer

Cable outer diameter 0.47" (12.0 mm)
Bend radius 4.50" (114.3 mm)

HDMI-M-M Pro 25' (7.6 m) - 200' (61.0 m) Lengths



NOTE: Dimensions given above exclude the cable length.

Regulatory compliance

Safety Cable: UL Listed as type CM, CSA FT-1
Temperature rating Minimum: -25 °C
Maximum: 75 °C

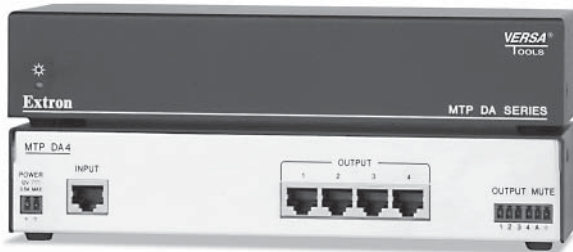
NOTE: Specifications are subject to change without notice.

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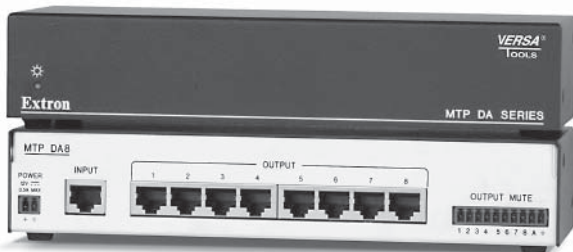
MTP DA4 & MTP DA8

MINI TWISTED PAIR DISTRIBUTION AMPLIFIERS

- Four or eight outputs
- Global and individual output muting via contact closure
- Compatible with all Extron MTP and VTT/VTR transmitters and receivers
- Versatile mounting options
- LED power indicator



MTP DA4



MTP DA8

The Extron MTP DA4 and **MTP DA8** twisted pair distribution amplifiers split the signal from one Extron MTP Series twisted pair transmitter so it can drive four or eight MTP Series receivers. These products are ideal for movie theater lobbies, point of purchase displays, conference centers, airports, and other applications that require multiple displays using twisted pair signal distribution.



Extron® Electronics

DESCRIPTION

The **MTP DA4** and **MTP DA8** Distribution Amplifiers are ideal for systems where high resolution video, audio, and control signals must be transmitted long distances to multiple displays. Each distribution amplifier splits the signal from an Extron Mini Twisted Pair (MTP) Series transmitter, enabling the creation of dynamic multi-display systems and expanding the possibilities for twisted pair based system integration.

Each model is capable of transmitting high resolution computer-video, RGBHV, RGBS, RGsB, HDTV, component video, S-video, composite video and audio or RS-232 control signals (outgoing only) from a compatible MTP Series transmitter to multiple compatible MTP Series receivers. The MTP DA4 and MTP DA8 each accept a single proprietary analog signal from an Extron MTP Series transmitter over any CAT 5, 5e, or 6 twisted pair cable or with Extron Skew-Free A/V UTP cable, and sends a buffered proprietary analog signal to four (MTP DA4) or eight (MTP DA8) MTP Series receivers. Each model features inputs and outputs on female RJ-45 connectors.

The MTP DA4 and MTP DA8 feature video mute control via contact closure for use with a control system. For example, in a courtroom the judge can select which specific displays are receiving a video signal, or mute all displays with a single push of a button. This video muting feature eliminates the need for additional switching devices or complex control system command strings.

As part of the VersaTools family of economical, compact products, the MTP DA 4 and MTP DA8 distribution amplifiers are designed for easy integration into new and existing A/V environments. The entire family of Extron MTP products sets the price/performance standard for audio/video twisted pair technology. Extron manufactures a complete line of twisted pair products including transmitters, receivers, switchers, matrix switchers, distribution amplifiers, cable, and accessories, providing the ability to distribute high resolution video, audio, and control signals over a single UTP cable.

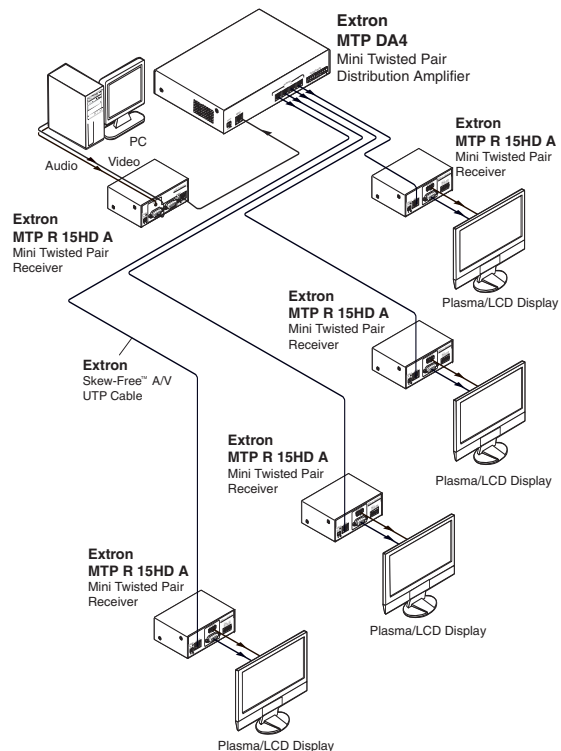
MTP DA distribution amplifiers are compatible with the following Extron transmitters and receivers:

Transmitters	Receivers	Signal Type
MTP T CV	MTP R CV	Composite Video
MTP T AV	MTP R AV	Composite Video & Stereo Audio
MTP T AV RCA	MTP R AV RCA	Composite Video & Stereo Audio
MTP T SV	MTP R SV	S-video
MTP T SV A	MTP R SV A	S-video & Stereo Audio
MTP T SV A RCA	MTP R SV A RCA	S-video & Stereo Audio
MTP T 15HD A	MTP R 15HD A	RGBHV & Audio
SW MTP T 15HD Series	MTP RL 15HD A	RGBHV & Audio
MTP T 15HD RS	MTP R 15HD RS	RGBHV & RS-232
VTT001	VTR001	RGBHV
IN1404XT		RGBHV

NOTE: These DAs do not increase total transmission distance. Please see individual transmitter/receiver specifications for details.

FEATURES

- **Four or eight outputs** – Split the signal from one MTP Series twisted pair transmitter so it can drive four or eight MTP Series receivers
- **Global and individual output muting** – Enables muting of one or more output signals via contact closure, eliminating the need for additional switching devices or complex control system command strings
- **Broad compatibility** – Compatible with all Extron MTP and VTT/VTR transmitters and receivers
- **Video and Audio Compatibility** – MTP DA series units are compatible with composite video, S-Video, component video and audio signals including HDTV signals with bi-level or tri-level sync
- **Computer Video Compatibility** – MTP DA series units are compatible with high resolution RGBHV, RGBS and RGsB computer video signals
- **RS-232 Serial Compatibility** – RS-232 signal distribution is uni-directional meaning that the RS-232 commands from the transmitter are broadcast simultaneously to all receivers. Responses from the receivers are not returned to the transmitter. RS-232 signal distribution is ideal for applications with multiple displays throughout a facility since commands can be broadcast to turn all displays on and off as required.
- **Rack-mountable metal enclosure** – 1U, half rack width metal enclosure
- **Versatile mounting options** – Rack, under-desk, and projector-mountable
- **Power indicator** – Front panel LED for easy troubleshooting
- **Power supply** – External international power supply included (MTP DA4: part number 70-055-01, **MTP DA8: part number 70-380-01**)



VIDEO	
Gain	Unity
VIDEO INPUT — See Transmitter's Specifications	
Number/signal type	1 set of proprietary analog signals
Connectors.....	1 female RJ-45
VIDEO OUTPUT — See Receiver's Specifications	
Number/signal type	
MTP DA 4	4 sets of proprietary analog signals
MTP DA 8	8 sets of proprietary analog signals
Connectors	
MTP DA 4	4 female RJ-45
MTP DA 8	8 female RJ-45
SYNC	
Input type	RGBHV, RGBS, RGsB, RsGsBs
Output type	RGBHV, RGBS, RGsB, RsGsBs
Standards.....	NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level	0.5 V to 5.0 V p-p, 4.0 V p-p normal
Output level.....	AGC to TTL: 4 V to 5 V p-p, unterminated
AUDIO	
Gain	Unity (0 dB)
AUDIO INPUT — See Transmitter's Specifications	
Number/signal type	1 set of proprietary analog signals
Connectors.....	1 female RJ-45
AUDIO OUTPUT — See receiver's specifications	
Number/signal type	
MTP DA 4	4 sets of proprietary analog signals
MTP DA 8	8 sets of proprietary analog signals
Connectors	
MTP DA 4	4 female RJ-45
MTP DA 8	8 female RJ-45
CONTROL/REMOTE — Distribution Amplifier	
Contact closure (latching)	
MTP DA 4	(1) 3.5 mm captive screw connector, 6 pole for contact closure output mute control
MTP DA 8	(1) 3.5 mm captive screw connector, 10 pole for contact closure output mute control
Contact closure pin configurations	
MTP DA 4	1 = mute output 1, 2 = mute output 2, 3 = mute output 3, 4 = mute output 4, 5 = mute all outputs, 6 = GND
MTP DA 8	1 = mute output 1, 2 = mute output 2, 3 = mute output 3, 4 = mute output 4, 5 = mute output 5, 6 = mute output 6, 7 = mute output 7, 8 = mute output 8, 9 = mute all outputs, 10 = GND

External power supply	100 VAC to 240 VAC, 50/60 Hz, external, autoswitchable; 12 VDC, 1 A (DA4) or 12VDC, 3 A (DA8), regulated
Power input requirements	DA4 - 12VDC 0.6 A DA8 - 12VDC 1.2 A
Rack mount	Yes, with optional 1U rack shelf, part #60-190-01 or 60-604-01; or 6" deep shelves, part #60-190-10 or 60-604-10. Also furniture mountable with optional Under-Desk Mounting Kit #70-077-01 or projector mountable with optional kit - part number 70-077-04
Enclosure type	Metal
Enclosure dimensions	1.75" H x 8.75" W x 6" D (1U high, half rack wide) 4.4 cm H x 22.2 cm W x 15.2 cm D (Depth excludes connectors.)
Product weight	1.2 lbs (.54 kg)
Shipping weight.....	4 lbs (2 kg)
Listings.....	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
NOTE: All nominal levels are at ±10%	
Model	
MTP DA4	60-685-01
MTP DA8	60-686-01
Optional Accessories	
6" deep rack shelf kit	60-190-10
1U Universal Rack Shelf Kit.....	60-190-01

Section 274100-2.10.II.8.a Comply

Specifications are subject to change without notice.

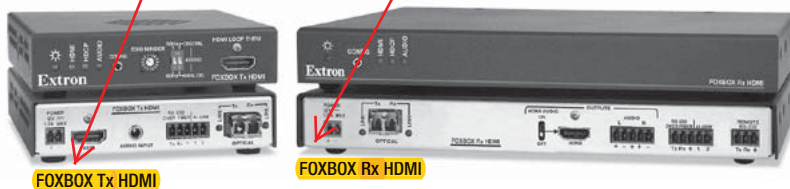
FOXBOX HDMI

FIBER OPTIC EXTENDER FOR
HDMI, AUDIO, AND RS-232

- ▶ Extends HDMI video, stereo audio, and RS-232 control signals very long distances over fiber optic cable
- ▶ Provides pixel-for-pixel performance with signals up to 1920x1200, including HDTV 1080p/60
- ▶ Integrates easily into a wide range of 4K and UHD environments
- ▶ HDCP compliant
- ▶ Key Minder® continuously verifies HDCP compliance
- ▶ EDID Minder® automatically manages EDID communication between connected devices
- ▶ Audio embedding
- ▶ Audio gain and attenuation adjustment capability
- ▶ HDMI audio de-embedding with analog stereo outputs
- ▶ Buffered HDMI input loop-through
- ▶ Auto Input Memory
- ▶ Audio muting capability
- ▶ Available as 850 nm multimode and 1310 nm singlemode models

Section 274100-2.12.J.12.a Comply

Section 274100-2.12.K.12.a Comply



The Extron FOXBOX HDMI is a fiber optic extender for long haul transmission of HDCP-compliant HDMI video, audio, and RS-232 control signals over fiber optic cable. Engineered for reliability and exceptional high resolution image performance, it uses Extron all-digital technology. The FOXBOX HDMI also includes many integrator-friendly features for easier and quicker AV system integration.



Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

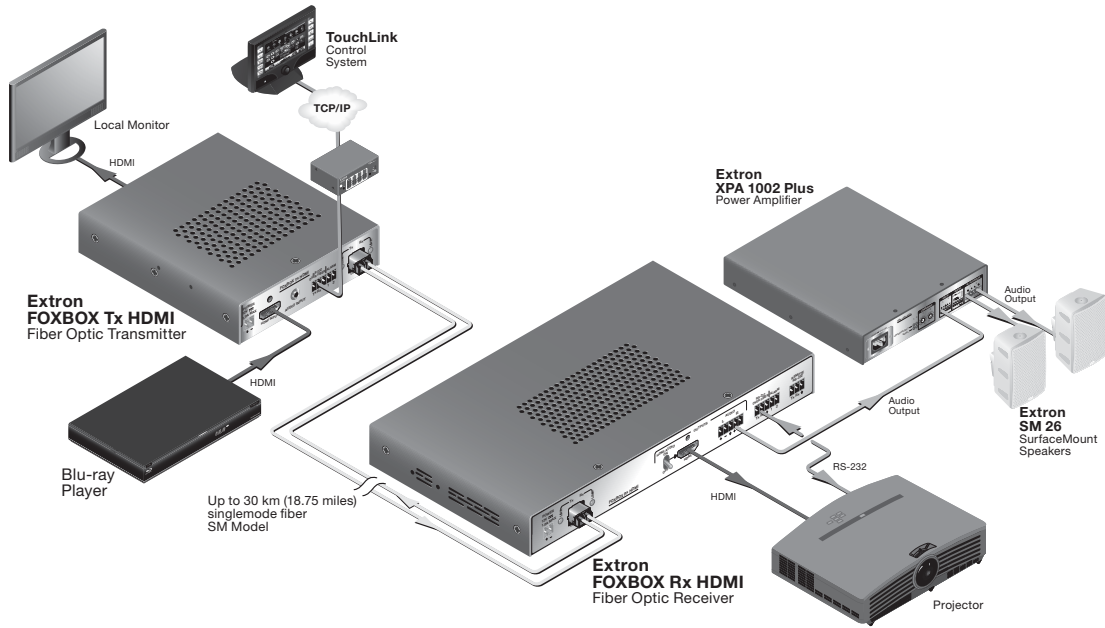
SPECIFICATIONS

NOTE: These transceivers are class 1 laser products. They meet the safety regulations of IEC-60825, FDA 21 CFR 1040.10, and FDA 21 CFR 1040.11.	
OPTICAL FIBER INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER	
Connectors	2 LC connectors
Operating distance	
Singlemode	30 km (18.75 miles) with singlemode (SM) cables
Multimode	300 m (985') with 62.5 µm OM1 multimode (MM) cables 1 km (3280') with 50 µm OM2 multimode (MM) cables 2 km (6561') with 50 µm OM3/OM4 2000 MHz bandwidth laser optimized multimode cable
NOTE: Operating distance is approximate. These are typical maximum distances that may vary depending on factors such as fiber type, fiber bandwidth, connector splicing, losses, modal or chromatic dispersion, environmental factors, and kinks.	
Nominal peak wavelength	850 nm for MM, 1310 nm for SM
Data rate	4.25 Gbps
Transmission power	
Singlemode	-5 dBm, typical
Multimode	-5 dBm, typical
Maximum receiver sensitivity	
Singlemode	-18 dBm, typical
Multimode	-12 dBm, typical
Optical loss budget	
Singlemode	13 dB, maximum
Multimode	7 dB, maximum
VIDEO	
NOTE: *Appropriate HDMI to DVI-D cables or adapters are required for DVI signal input/output.	
Resolution range	640x480 up to 1920x1200 @ 60Hz, including 480p, 576p, 720p, 1080i, 1080p @ 60Hz, sampled pixel for pixel; higher resolution 2K (2048x1080) @ 60 Hz, undersampled
Formats	RGB and YCbCr digital video
EDID	Supports emulation of custom or factory preset Extended Display Identification Data (EDID) tables.
HDCP	Compliant with High-bandwidth Digital Content Protection (HDCP) using DVI and HDMI standards
Standards	DVI 1.0, HDMI, HDCP 1.1, CEA-861E
VIDEO INPUT	
Connectors	1 female HDMI type A
VIDEO OUTPUT	
Connectors	1 female HDMI type A
Nominal level	0.8 Vp-p
Video delay	1-2 frames
AUDIO	
Gain	
Range	Adjustable, -18 dB to +10 dB
Default	Unbalanced output: -6 dB; balanced output: 0 dB
Frequency response	20 Hz to 20 kHz, ±0.5 dB
THD + Noise	0.10% @ 1 kHz at nominal level
S/N	>80 dB at maximum output (unweighted)
CMRR	65 dB @ 20 Hz to 20 kHz
Audio bits per sample	18 bits per channel, 2 channels (L, R)
Sampling rate	48 kHz
AUDIO INPUT — TRANSMITTERS	
Number/signal type	1 unbalanced stereo or 2 unbalanced mono 1 stereo, de-embedded from HDMI (2-ch, PCM only)
Impedance	>10k ohms unbalanced, DC coupled
Nominal level	-10 dBV (316 mVrms)
Maximum level	+8.9 dBV, (unbalanced) at 1% THD+N
NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu	

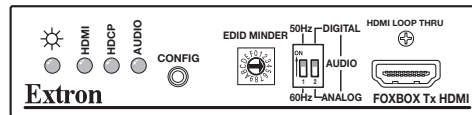
AUDIO OUTPUT — RECEIVERS		
Number/signal type	1 stereo/mono, balanced/unbalanced	
Impedance	50 ohms unbalanced	
Nominal level	-10 dBV (316 mVrms)	
Maximum level (Hi-Z)	>+11.0 dBu, balanced at 1% THD+N	
Maximum level (600 ohm)	>10.0 dBu, balanced at 1% THD+N	
Audio delay	1.5 frames	
CONTROL/REMOTE		
Serial control ports on each unit (transmitter and receiver)		
Control	1 RS-232, 2.5 mm mini stereo jack (front panel) 1 RS-232, 3.5 mm captive screw connector, 3-pole (rear panel) (receiver only)	
Pass-through	1 RS-232, 3.5 mm captive screw connector, 5-pole (3 pins are used) (rear panel)	
Baud rate and protocol		
Control	9600 baud, 8 data bits, 1 stop bit, no parity	
Pass-through	9600 to 115,200 baud	
Program control	Extron control/configuration program for Windows® Extron Simple Instruction Set (SIS™)	
GENERAL		
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A, 12 watts	
Power consumption		
Transmitter		
Device	5.7 watts, 12 VDC	
Device and power supply	7.2 watts, 12 VDC	
Receiver		
Device	6.9 watts, 12 VDC	
Device and power supply	8.7 watts, 12 VDC	
Cooling	Convection, vents on top and side panels	
Thermal dissipation		
Transmitter		
Device	16.1 BTU/hr	
Device and power supply	21.3 BTU/hr	
Receiver		
Device	22.1 BTU/hr	
Device and power supply	28.3 BTU/hr	
Mounting		
Rack mount	Yes, with optional rack shelf	
Furniture mount	Yes, with optional under desk mounting kit	
Enclosure type	Metal	
Enclosure dimensions		
Transmitter	1.0" H x 4.3" W x 6.0" D (quarter rack wide) (2.5 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors.)	
Receiver	1.0" H x 8.75" W x 6.0" D (half rack wide) (2.5 cm H x 22.2 cm W x 15.2 cm D) (Depth excludes connectors and switch.)	
Vibration	ISTA 1A in carton (International Safe Transit Association)	
Regulatory compliance		
Safety	CE, c-UL, FDA Class 1, UL	
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI	
Environmental	Complies with the appropriate requirements of RoHS, WEEE.	
Warranty	3 years parts and labor	
NOTE: All nominal levels are at ±10%.		
Model	Version Description	Part number
FOXBOX Tx HDMI MM	Multimode - Transmitter	60-1174-11
FOXBOX Tx HDMI SM	Singlemode - Transmitter	60-1174-12
FOXBOX Rx HDMI MM	Multimode - Receiver	60-1174-21
FOXBOX Rx HDMI SM	Singlemode - Receiver	60-1174-22

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

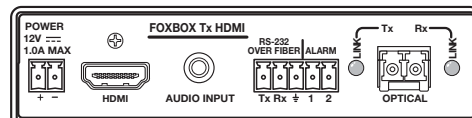
APPLICATION DIAGRAM



PANEL DRAWINGS



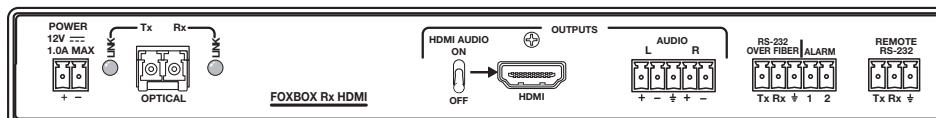
FOXBOX Tx HDMI - Front



FOXBOX Tx HDMI - Back



FOXBOX Rx HDMI - Front



FOXBOX Rx HDMI - Back

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Scaler Switcher for Preview

IN1606

SIX INPUT HDCP-COMPLIANT SCALING PRESENTATION SWITCHER

Complete Video and Audio Switching and Processing for Professional Environments

- ▶ Integrates HDMI, HDTV, RGB, and video sources into presentation systems with audio switching
- ▶ Four HDMI inputs and two universal analog inputs
- ▶ Two simultaneous HDMI outputs
- ▶ Two mic/line inputs with 48 volt phantom power and ducking
- ▶ HDMI audio embedding and de-embedding
- ▶ Selectable output rates from 640x480 to 1920x1200, including HDTV 1080p/60 and 2K



Extron® Electronics
 INTERFACING, SWITCHING AND CONTROL

Introduction

The Extron **IN1606** is a six input, HDCP-compliant video scaler with four HDMI inputs, two universal analog video inputs, and two simultaneous HDMI outputs. The IN1606 accepts a wide variety of video formats including HDMI, HDTV, RGB, and standard definition video. It features an advanced video scaling engine with 1080i deinterlacing and 30-bit processing to deliver uncompromised picture quality for output resolutions up to 1920x1200, including 1080p and 2K. Enhanced audio features include six stereo inputs, two variable stereo outputs, two mic/line inputs with ducking, plus HDMI audio embedding and de-embedding. Designed for professional AV integration, the IN1606 offers flexible control options including Ethernet, RS-232, and USB. The IN1606 provides a complete AV switching system in one rack-mountable enclosure.

Six Input Multi-Format Video Switcher

To accommodate a variety of sources, the IN1606 features four HDMI inputs plus two universal analog video inputs that can scale RGB computer video, HDTV, component video, S-video, and composite video. The IN1606 provides the capability to integrate digital and analog devices, with HDCP compliance.

Built to Handle Digital Video

To enhance and simplify integration of HDMI sources and displays, the IN1606 features two exclusive Extron technologies: EDID Minder® and Key Minder®. EDID Minder manages EDID communication between the display devices and input sources, while Key Minder manages HDCP negotiation to ensure quick and reliable switching. When receiving an HDCP-encrypted HDMI input source, the IN1606 outputs a full-screen green signal on any video

output connected to a non-HDCP compliant display. This provides immediate visual confirmation that the protected content cannot be viewed on this display. Real-time verification of the HDCP status for each HDMI input and output offers valuable feedback to system operators and helpdesk support staff. The IN1606 also features SpeedSwitch® Technology that delivers exceptional switching speed for HDCP-encrypted content.

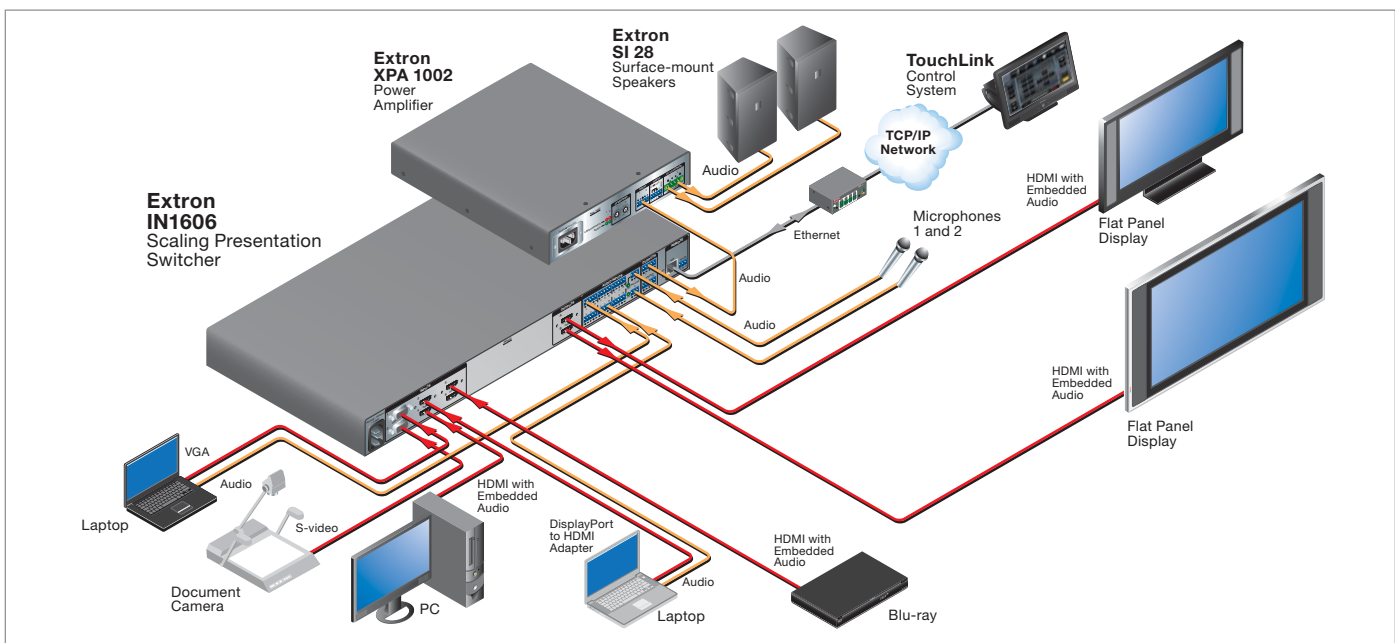
High Performance Video Processing

The IN1606 features an advanced scaling engine that can scale HDMI, RGB, component, and standard definition video signals to a common high resolution output. It provides high performance 1080i deinterlacing and Deep Color processing for optimal image quality. Additionally, the color space and chroma subsampling of the HDMI output can be automatically set to ensure compatibility with a connected DVI or HDMI display.

The IN1606 accepts and outputs signals up to 1920x1200, including HDTV 1080p/60 and 2048x1080. It offers two simultaneous HDMI outputs to drive two displays.

Multiple Options for Control and Operation

The IN1606 features front panel controls and intuitive on-screen menus for quick access to functions. Remote configuration and control are available via USB, RS-232, and Ethernet. The IN1606 is ideal in boardrooms where superior performance is essential, video routing applications where automatic features help simplify system design and keep costs down, and instructional environments for complete integration of digital and analog AV sources and displays.



Features

Four HDMI inputs and two universal analog video inputs

The IN1606 allows for switching between HDMI and analog video sources. Two universal analog inputs accept all standard analog video formats, including RGB, HD component video, S-video, and composite video signals.

Two simultaneous HDMI outputs

Two simultaneous HDMI outputs are available for driving two displays.

Two mic/line inputs with 48 volt phantom power

Two mic or line level audio sources can be independently mixed with program audio and embedded onto the HDMI output. Selectable 48 volt phantom power allows the use of condenser microphones.

Mic ducking

Automatically reduces program audio when a microphone signal is detected.

Auto-switching between inputs

HDMI audio embedding

Analog input audio signals can be embedded onto the HDMI output signal.

HDMI audio de-embedding

Embedded HDMI two-channel PCM audio can be extracted to the analog outputs or bitstream formats can be passed to the HDMI outputs.

Selectable output rates

Available output rates include computer-video up to 1920x1200, HDTV rates up to 1080p/60, and 2048x1080.

Advanced scaling engine with 30-bit processing and 1080i deinterlacing

Image scaling and video format conversion are performed at 30-bit precision for enhanced color accuracy and picture detail. High performance deinterlacing for 1080i signals from HD sources delivers optimized image quality.

HDCP compliant

The IN1606 fully supports HDCP-encrypted sources, with selectable authorization for unencrypted content.

Supported HDMI specification features include data rates up to 6.75 Gbps, Deep Color, and HD lossless audio formats

Key Minder

Authenticates and maintains continuous HDCP encryption between input and

output devices to ensure quick and reliable switching in professional AV environments.

EDID Minder

Automatically manages EDID communication between connected devices. EDID Minder ensures that all sources power up properly and reliably output content for display.

SpeedSwitch Technology

Provides exceptional switching speed for HDCP-encrypted content.

Aspect ratio control

The aspect ratio of the video output can be controlled by selecting a FILL mode, which provides a full screen output, or a FOLLOW mode, which preserves the original aspect ratio of the input signal.

HDCP verification

Provides real-time verification of HDCP status for each digital video input and output. This allows for simple, quick, and easy signal and HDCP verification through front panel LEDs, RS-232, or Ethernet, providing valuable feedback to a system operator or helpdesk support staff.

HDCP Visual Confirmation

When processing HDCP-encrypted content, the IN1606 outputs a full-screen green signal on any video output connected to a non-HDCP compliant display. This provides immediate visual confirmation that protected content cannot be viewed on the display.

HDMI to DVI Interface Format Correction

Automatically enables or disables embedded audio and inframes, and sets the correct color space for proper connection to HDMI and DVI displays.

Seamless switching

Seamless cut through black and fade through black transition effects are available to enhance presentations by eliminating distractions during switching.

Image freeze control

A live image can be frozen using RS-232 serial control, USB, or Ethernet control.

Auto-Image™ setup

When activated, the unit automatically detects the resolution of the incoming video signal and sets the total pixels, active pixels, and active lines, as well as the horizontal and vertical starting points. This can save time and effort in setting up a newly connected source.

Auto Input Memory

When activated, the IN1606 automatically stores size, position, and picture settings based on the incoming signal. When the same signal is detected again, these image settings are automatically recalled from memory.

Output Muting Control

Provides the capability to mute one or all outputs at any time. This allows content to be viewed on a local monitor prior to appearing on the main presentation display.

Output Standby Mode

The unit can be set to automatically mute video and sync output to the display device when no active input signal is detected. This allows the projector or flat-panel display to automatically enter into standby mode to save energy and enhance lamp or panel life.

Power Save Mode

The IN1606 can be placed in a low power standby state to conserve energy when not in use.

Picture controls and user presets

Multiple image adjustments are available including brightness, contrast, color, tint, and detail, as well as horizontal and vertical positioning, and sizing. Memory presets are available for each input to store and recall optimized image settings.

Automatic 3:2 and 2:2 pulldown detection

Quad standard video decoding

A temporal, 3D adaptive comb filter provides advanced decoding of composite NTSC 3.58, NTSC 4.43, PAL, and SECAM for integration into systems worldwide.

Internal test patterns for calibration and setup

The IN1606 offers a crop pattern, grayscale, color bars, alternating pixels, blue mode, and audio pink noise.

Audio switching transitions

The audio output level automatically ramps down and then ramps up to match the video during switching transitions.

Front panel security lockout

Ethernet, USB, and RS-232 control

Rack mountable 1U, full rack width metal enclosure

Overview

HDCP compliant
Worry-free display of protected content from digital video sources.

Advanced scaling
High quality graphics and video upscaling and downscaling, 1080i deinterlacing, and HDMI Deep Color processing.

User-friendly interface
Direct access buttons, adjustment controls, LED status indicators, on-screen menu navigation, and volume control simplify system setup and operation.



IN1606 - Front



IN1606 - Back

HDMI and universal analog inputs
HDMI and universal analog inputs ensure compatibility with a wide variety of video sources.

Simultaneous outputs
Two HDMI outputs can drive two displays simultaneously.

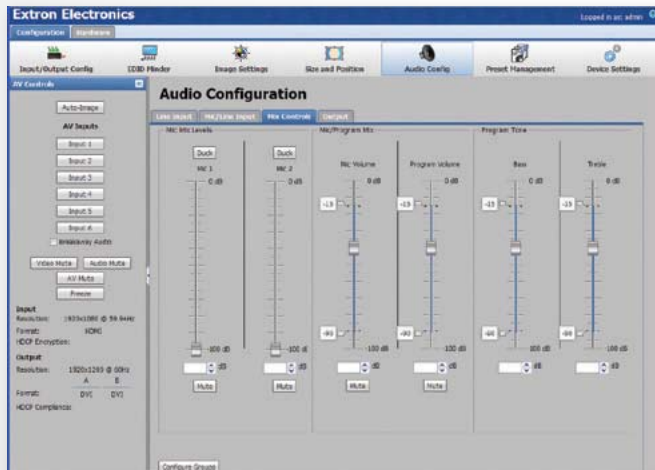
HDMI audio embedding and de-embedding
The IN1606 can embed analog input audio signals onto the HDMI outputs or extract embedded HDMI audio.

Mix inputs with phantom power and ducking
Two mix inputs are available for combining microphones or line level sources onto the audio output.

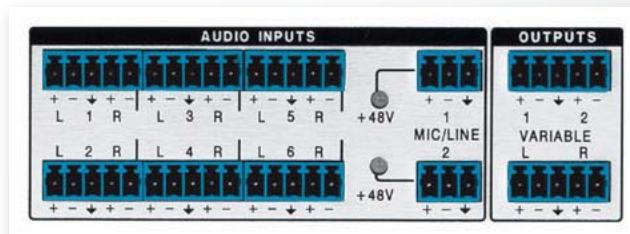
Ethernet and RS-232 control
The IN1606 can be controlled and proactively monitored using serial commands or over Ethernet. An intuitive Web interface enables full operation and control.

ADVANCED AUDIO CAPABILITY

The IN1606 features sophisticated audio functionality, including HDMI audio embedding and de-embedding. To suit the needs of the application, the IN1606 can embed analog input audio signals onto the HDMI outputs or extract embedded HDMI audio. Audio breakaway enables separation of analog audio channels from the corresponding video signals, so that the analog audio channels can operate as an independent switcher. To support integration into presentation environments, the IN1606 features two mic/line inputs with mixing, ducking, and 48 volt phantom power. The IN1606 also provides full control of advanced audio configuration settings, such as audio input and output gain, attenuation, mixing, and ducking parameters, through an intuitive Graphical User Interface.



IN1606 audio control Web page

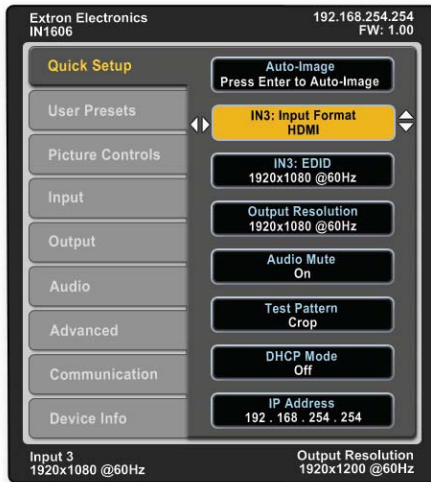


IN1606 audio connections

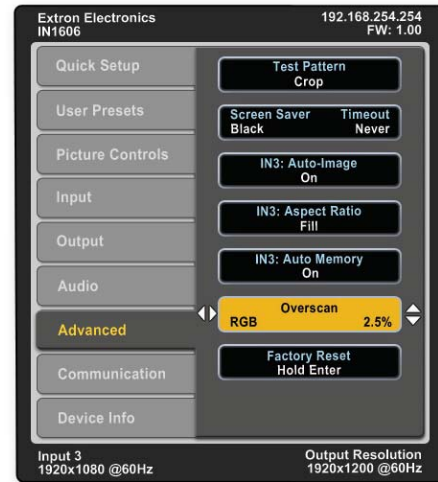
IN1606 User Interface

COMPREHENSIVE ON-SCREEN MENUS

The IN1606 features intuitive on-screen menus for setup using the front panel controls. Key parameters such as input and output video formats and resolutions are conveniently grouped on the initial Quick Setup screen, while additional screens provide full control over the scaler's other functions and settings.



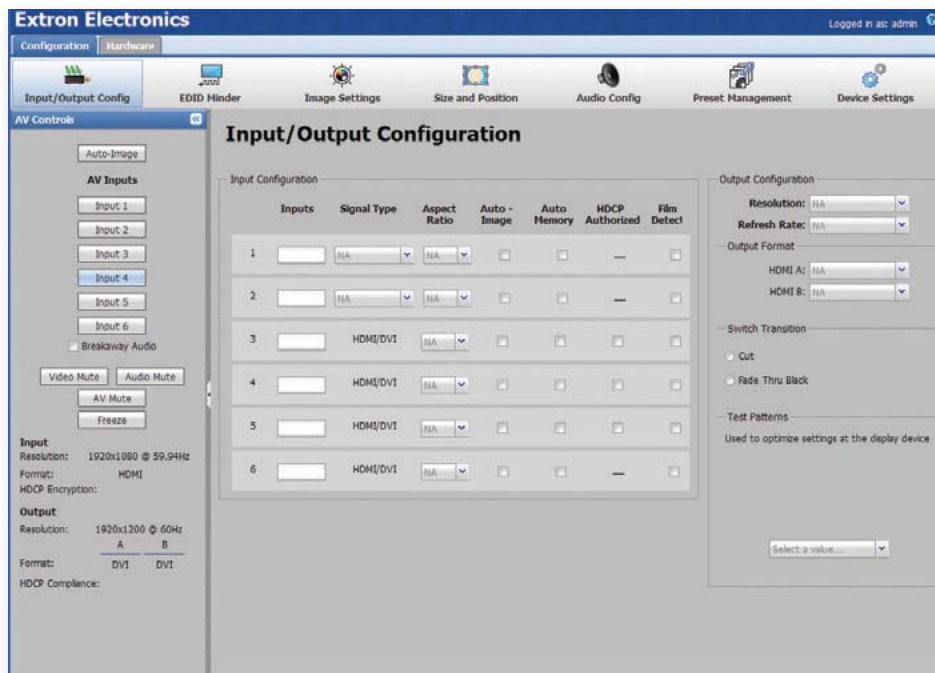
IN1606 Quick Setup on-screen display



IN1606 Advanced on-screen display

FULL CONTROL WITH BUILT-IN WEB PAGES

When connected through Ethernet, built-in Web pages are available to simplify setup and troubleshooting with a user-friendly interface. Users can view details about the current input and output, such as signal format, resolution, and HDCP status. In addition to input selection and Auto-Image, picture and audio settings are available, such as image brightness, contrast, positioning, sizing, and more. The intuitive user-interface also offers preset management and makes it easy to set EDID for any input, giving users the option to choose factory default EDID, EDID captured from connected output devices, or custom loaded EDID. These options can also be accessed when connected through RS-232, Ethernet, or USB using available control software.



Specifications

VIDEO INPUT	
Number/signal type	2 RGB, RGBcV, component video (YUVI or YUVp/HDTV), S-video, composite video 4 HDMI digital video (HDCP compliant)
Connectors	2 female 15-pin HD 4 female HDMI
Resolution range	640x480 to 1600x1200 and 1920x1200* NTSC, PAL, SECAM, 480p, 576p, 720p, 1080i, 1080p, and 2k *reduced blanking
VIDEO PROCESSING	
Decoder	12 bit digital (3D-adaptive comb filter)
Analog sampling	12 bits per color; 13.5 MHz standard (video) 170 MHz standard (RGB)
Digital pixel data bit depth	8, 10, or 12 bits per channel; 165 MHz pixel clock (HDMI)
VIDEO OUTPUT	
Number/signal type	2 HDMI (HDCP)
Connectors	2 female HDMI
Scaled resolution	640x480 ^{6,8,9} , 800x600 ^{6,8,9} , 852x480 ^{6,8,9} , 1024x768 ^{6,8,9} , 1024x852 ^{6,8,9} , 1024x1024 ^{6,8,9} , 1280x768 ^{6,8,9} , 1280x800 ^{6,8,9} , 1280x1024 ^{6,8,9} , 1360x768 ^{6,8,9} , 1360x768 ^{6,8,9} , 1365x768 ^{6,8,9} , 1365x1024 ^{6,8,9} , 1366x768 ^{6,8,9} , 1400x1050 ^{6,8} , 1440x900 ^{6,8,9} , 1600x900 ^{6,8} , 1600x1200 ^{6,8} , 1680x1050 ^{6,8} , 1920x1200 ^{6,8} HDTV 480p ^{7,8} , 576p ⁸ , 720p ^{3,4,5,6,7,8} , 1080i ^{6,7,8} , 1080p ^{1,2,3,4,5,6,7,8} , 2048x1080 ^{1,2,3,4,5,6,7,8} ¹ = at 23.98 Hz, ² = at 24 Hz, ³ = at 25 Hz, ⁴ = at 29.97 Hz, ⁵ = 30 Hz, ⁶ = at 50 Hz, ⁷ = at 59.94 Hz, ⁸ = at 60 Hz, ⁹ = at 75 Hz
AUDIO	
Gain	Unbalanced output: -6 dB; balanced output: 0 dB
Frequency response	Lineout: 20 Hz to 20k Hz, ±0.5 dB
THD + Noise	<0.1%, 20 Hz to 20k Hz at nominal level
S/N	>90 dB at rated max. output (unweighted)
Crosstalk	≤80 dB @ 1 kHz fully loaded
Stereo channel separation	>80 dB @ 1 kHz
AUDIO INPUT	
Number/signal type	6 stereo line balanced or unbalanced; 2 mono mic/line balanced or unbalanced (with available phantom power)
Connectors	(6) 3.5 mm, 5 pole captive screw connectors for line (2) 3.5 mm, 3 pole captive screw connector for Mic/Line
Impedance	10k ohms unbalanced, 20k ohms balanced
Nominal level	-60 dBV, +4 dBu, -10 dBV, adjustable
Maximum level	+12 dBV (2 Vrms) when gain is set to 0 dB
Input gain adjustment	-53 dB to +9 dB, 1 dB steps adjustable per input

AUDIO OUTPUT – LINEOUT		
Number/signal type	1 balanced or unbalanced stereo (variable) 1 balanced or unbalanced stereo; can be configured as stereo or two independently mixed mono	
Connectors	(2) 3.5 mm captive screw connectors, 5 pole	
Impedance	50 ohms unbalanced, 100 ohms balanced	
Gain error	±0.5 dB channel to channel	
Maximum level (Hi-Z)	>+12 dBu, balanced >+6 dBu, unbalanced	
Output volume range	0 to -100 dB in 1 dB steps	
CONTROL/REMOTE		
Serial control port	1 bidirectional RS-232: 1 rear panel 3.5 mm captive screw connector, 3 pole	
USB control ports	1 front panel female mini USB B	
Ethernet control port	1 female RJ-45 connector	
GENERAL		
Power supply	Internal Input: 100-240 VAC, 50-60 Hz	
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing	
Cooling	Passive, side and top vents	
Mounting	Rack mount Yes, with included, pre-installed brackets	
Enclosure dimensions	1.75" H x 17.5" W x 10.5" D (1U high, full rack wide) (4.4 cm H x 44.4 cm W x 26.7 cm D) (Depth excludes connectors and knobs. Width excludes rack ears.)	
Regulatory compliance	Safety CE, c-UL, UL EMI/EMC CE, C-tick, FCC Class A, ICES, VCCI Environmental Complies with the appropriate requirements of RoHS, WEEE.	
Warranty	3 years parts and labor NOTE: All nominal levels are at ±10%.	
Model	Version Description	Part number
IN1606	HDCP-Compliant Scaling Switcher	60-1081-01
<div style="border: 1px solid red; padding: 5px; display: inline-block; color: red; font-weight: bold;">Section 274100-2.10.HH.7.a Comply (Replacement)</div>		

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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MIDDLE EAST

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Specifications

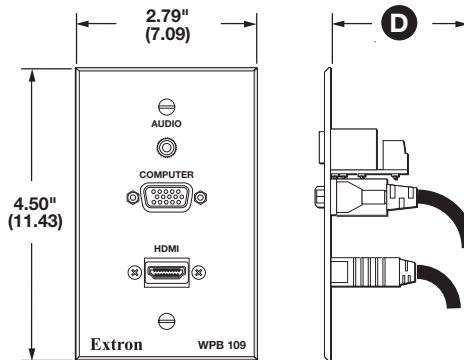
WPB 109

274100 EY 6.04

TRUE 4K

General

Mounting	Surface mount, Extron EWB or SMB 110 Series
Enclosure type	Metal
Connector type	1 female HDMI to 1 female HDMI on a pigtail cable 1 female VGA to 1 female VGA on a pigtail cable 1 female 3.5 mm stereo audio jack to captive screw connector
Resolution range	HDMI cable: Up to 4K @ 60 Hz (4096x2160) or UHD @ 60 Hz (3840x2160) 8 bit color depth, max. 18.0 Gbps data rate
Enclosure dimensions	
Faceplate	4.5" H x 2.8" W x 1.6" D (1 gang) (11.4 cm H x 7.1 cm W x 4.1 cm D)
Enclosure/connectors	Allow 2.25" (5.7 cm) depth for cable management.



D Depths, Including Bend Radius:

Cable	Depth Required (Inch/cm)	Total Cable Length (Inch/cm)
HDMI	1.97 / 5.00	12.75 / 32.38
VGA	2.15 / 5.46	9.00 / 22.86

ATTENTION: Do not bend cable beyond the recommended depth.

Product weight	0.2 lb (0.1 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Environmental	Complies with the appropriate requirements of RoHS, WEEE
Warranty	3 years parts and labor

NOTE: Specifications are subject to change without notice.

NOTE: Shipping weights and dimensions are available at www.extron.com.



CATV-Amplifier

Blonder Tongue

BIDA-5800

Broadband Indoor Distribution Amplifiers - Active Return Path

SOLUTIONS FOR ALL YOUR APPLICATIONS

The Blonder Tongue BIDA-ARP is a completely self-contained broadband indoor distribution amplifier designed specifically for CATV and SMATV signal distribution systems which use a cable drop as a signal source. Seventeen models are available with bandwidths ranging from 49-550 MHz to 49-1000 MHz, gains of either 30 dB or 43 dB, and push-pull or power doubling hybrid technology.

All models have a return path bandwidth of 5-36 MHz and can be configured for either a passive (as shipped) or active return. When field configured to an active return the BIDA-ARP Series have a full gain of 20 dB. All models can be attenuated over a range of 10 dB in the forward path and 18 dB in the return path. Gain and slope controls are located on the front panel for easy set-up and adjustment. Two -30 dB backmatched test points are provided to permit testing without interruption of service.

In applications where input signals are too high or where greater cable equalization is necessary, the BIDA-ARP can be reconfigured by using plug-in fixed attenuators (forward and return) and cable slope equalizers (forward) to meet particular requirements.

Push-pull and power doubling hybrid modules, hybrid IC modules enable the BIDA-ARP to operate at high output levels while retaining low distortion characteristics.

The aluminum chassis is designed to provide excellent heat dissipation thus allowing operation at high ambient temperatures with no degradation of performance or reliability.

Forward

49-550/750/860/1000 MHz →



**5-36 MHz
Return**

Features

- Provides Two-Way Capability with an Active or Passive Return Path Set by Field-Changeable Jumpers.
- Hybrid IC Circuitry for High Output with Low Distortion.
- Front Panel Gain and Slope Controls for Easy Adjustments.
- Sockets for Hybrid IC to Make a Hybrid IC Change in the Field.
- Forward Path Input-Side Plug-In Fixed Attenuator and Cable Equalizer for Optimum Performance.
- Return Path Output-Side Fixed Attenuator for Optimum Performance.
- Externally Accessible Test Points Permit In-Service Testing.
- Exceeds FCC Specs for Both Conducted and Radiated Interference at Full Output Level.
- External "UL Listed" Power Transformer.

Please see other side for ordering information.

Specifications

Section 274100-2.11.A.7.a Comply

Model: BIDA-ARP Stock No:	55A-30 5800-53	55A-30P 5800P53	55A-43 5800-54	55A-43P 5800P54	55A-50 5800-55	75A-30 5800-73	75A-30P 5800P73	75A-43 5800-74	75A-43P 5800P74	86A-30 5800-83	86A-30P 5800P83	86A-43 5800-84	86A-43P 5800P84	100A-30 5800-13	100A-30P 5800P13	100A-43 5800-14	100A-43P 5800P14	Integrated Active Return Path	
Frequency Range:	49-550 MHz				49-750 MHz				49-860 MHz				49-1000 MHz				5-36		
Gain:	30 dB	30 dB	43 dB	43 dB	50 dB	30 dB	30 dB	43 dB	43 dB	30 dB	30 dB	43 dB	43 dB	30 dB	30 dB	43 dB	43 dB	20 dB	
Flatness:	±0.50 dB				±0.75 dB	±0.70 dB				±0.75 dB				±0.75 dB				±0.5§	
Gain Control Range:	10 dB																		18
Slope Control Range:	8 dB																		N/A
Input Return Loss:	16 dB																		16
Output Return Loss:	16 dB																		16
Noise Figure:	7 dB				7.5 dB	8.5 dB				8.5 dB				8.5 dB				6.0	
No. of Channels (for CSO, CTB, & XMD):	77				110				129				150				3		
Output Level:	36/44 dBmV				36/44 dBmV				36/44 dBmV				32/40 dBmV				42		
Composite Triple Beat (CTB):	-64 dB	-71 dB	-63 dB	-68 dB	-63 dB	-60 dB	-64 dB	-56 dB	-64 dB	-54 dB	-62 dB	-56 dB	-60 dB	-59 dB	-70 dB	-65 dB	-70 dB	-60	
Crossmodulation (XMOD):	-67 dB	-74 dB	-66 dB	-69 dB	-60 dB	-62 dB	-68 dB	-60 dB	-68 dB	-54 dB	-62 dB	-60 dB	-65 dB	-60 dB	-66 dB	-58 dB	-66 dB	-60	
2nd Order Composite (CSO):	-61 dB	-65 dB	-60 dB	-58 dB	-65 dB	-56 dB	-61 dB	-59 dB	-61 dB	-57 dB	-61 dB	-59 dB	-59 dB	-59 dB	-69 dB	-63 dB	-69 dB	-60	
Impedance:	75 Ω																		
Hum Modulation:	-70 dB																		-65 dB
Input/Output Test Port Level:	-30 dB; ±2 dB																		
Input/Output Test Port Return Loss:	20 dB																		
Operating Temperature Range:	-20 to +60 °C																		
Power Requirements:	Wall Power Transformer 105-130 VAC, 60 Hz 0.38 AMP Max																		
Dimensions (LxWxH):	10.5" x 7.25" x 3.25" (26.4 cm x 18.42 cm x 8.26 cm)																		
Shipping Weight:	6 lbs (2.7kg)																		
Plug-In Accessories:																			
1) Flat Attenuator: (1-20dB in 1dB steps)	#5411A-(*)																		
2) Cable Equalizer: (3,6,9,12,15,18 dB)	#5475-(*)				#5477-(*)				#5478-(*)				#5479-(*)						

(*) Specify dB § Reference to +1 dB tilt

Ordering Information

Model	Stock #	Description
BIDA 55A-30	5800 53	Broadband Indoor Distribution Amplifier 30 dB, 49-550 MHz, Integrated Active Return (5-36 MHz)
BIDA 55A-30P	5800P53	Broadband Indoor Distribution Amplifier 30 dB, 49-550 MHz, Power Doubling, Active Return (5-36 MHz)
BIDA 55A-43	5800 54	Broadband Indoor Distribution Amplifier 43 dB, 49-550 MHz, Integrated Active Return (5-36 MHz)
BIDA 55A-43P	5800P54	Broadband Indoor Distribution Amplifier 43 dB, 49-550 MHz, Power Doubling, Active Return (5-36 MHz)
BIDA 55A-50	5800 55	Broadband Indoor Distribution Amplifier 50 dB, 49-550 MHz, Integrated Active Return (5-36 MHz)
BIDA 75A-30	5800 73	Broadband Indoor Distribution Amplifier 30 dB, 49-750 MHz, Integrated Active Return (5-36 MHz)
BIDA 75A-30P	5800P73	Broadband Indoor Distribution Amplifier 30 dB, 49-750 MHz, Power Doubling, Active Return (5-36 MHz)
BIDA 75A-43	5800 74	Broadband Indoor Distribution Amplifier 43 dB, 49-750 MHz, Integrated Active Return (5-36 MHz)
BIDA 75A-43P	5800P74	Broadband Indoor Distribution Amplifier 43 dB, 49-750 MHz, Power Doubling, Active Return (5-36 MHz)
BIDA 86A-30	5800 83	Broadband Indoor Distribution Amplifier 30 dB, 49-860 MHz, Integrated Active Return (5-36 MHz)
BIDA 86A-30P	5800P83	Broadband Indoor Distribution Amplifier 30 dB, 49-860 MHz, Power Doubling, Active Return (5-36 MHz)
BIDA 86A-43	5800 84	Broadband Indoor Distribution Amplifier 43 dB, 49-860 MHz, Integrated Active Return (5-36 MHz)
BIDA 86A-43P	5800P84	Broadband Indoor Distribution Amplifier 43 dB, 49-860 MHz, Power Doubling, Active Return (5-36 MHz)
BIDA 100A-30	5800 13	Broadband Indoor Distribution Amplifier 30 dB, 49-1000 MHz, Integrated Active Return (5-36 MHz)
BIDA 100A-30P	5800P13	Broadband Indoor Distribution Amplifier 30 dB, 49-1000 MHz, Power Doubling, Active Return (5-36 MHz)
BIDA 100A-43	5800 14	Broadband Indoor Distribution Amplifier 43 dB, 49-1000 MHz, Integrated Active Return (5-36 MHz)
BIDA 100A-43P	5800P14	Broadband Indoor Distribution Amplifier 43 dB, 49-1000 MHz, Power Doubling, Active Return (5-36 MHz)

Accessories

Model	Stock #	Description
BIDA-CE-5	5475	BIDA Series Plug-In Cable Equalizer 550 MHz, Values: 3,6,9,12,15,18 dB
BIDA-CE-7	5477	BIDA Series Plug-In Cable Equalizer 750 MHz, Values: 3,6,9,12,15,18 dB
BIDA-CE-8	5478	BIDA Series Plug-In Cable Equalizer 860 MHz, Values: 3,6,9,12,15,18 dB
BIDA-CE-10	5479	BIDA Series Plug-In Cable Equalizer 1000 MHz, Values: 3,6,9,12,15,18 dB
BIDA-FA	5411A	BIDA Series Plug-In Fixed Attenuator 1000 MHz, Values: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20 dB

CATV-Splitter

Indoor 5-1000 MHz Splitters

SXRS Series & SCVS Series



SXRS-2



SXRS-3



SXRS-4



SXRS-8

Features & Benefits

- Superior Performance to 1000 MHz
- 2,3,4, 6 (SCVS Only) and 8 Way Models
- Die Cast Housing
- RFI Shielding 120 dB
- Built-in Ground Block



SCVS-2



SCVS-3



SCVS-4



SCVS-6



SCVS-8

Specifications

Section 274100-2.11.B.6.a Comply

Electrical	SCVS/SXRS-2	SCVS/SXRS-3	SCVS/SXRS-4	SCVS-6	SCVS/SXRS-8
Number of Outputs:	2	3	4	6	8
Frequency Range (MHz):	5-1000	5-1000	5-1000	5-1000	5-1000
Splitter Loss (dB) (max)					
5-500 MHz:	3.6	6.1	7.0	9.5	10.5
500-860 MHz:	3.8	6.2	7.5	10.0	11.5
860-1000MHz:	4.2	6.8	8.0	11.0	12.0
Input Return Loss (dB) (min):					
5-40 MHz:	16	16	16	16	16
40-500 MHz:	22	20	20	18	20
500-860 MHz:	20	20	18	18	18
860-1000 MHz:	18	16	16	18	16
Isolation Between Outputs (dB) (min):					
5-40 MHz:	22	22	22	25	22
40-500 MHz:	26	25	25	28	25
500-860 MHz:	26	25	25	23	25
860-1000 MHz:	24	21	22	21	21

Ordering Information

Model	Stock No.	Description	Model	Stock No.	Description
SCVS-2	1902	Splitter, 2 Way Solder Back, 5-1000 MHz, L Style	SXRS-2	1922	Splitter, 2 Way Solder Back, 5-1000 MHz, In-Line Style
SCVS-3	1903	Splitter, 3 Way Solder Back, 5-1000 MHz, L Style	SXRS-3	1923	Splitter, 3 Way Solder Back, 5-1000 MHz, In-Line Style
SCVS-4	1904	Splitter, 4 Way Solder Back, 5-1000 MHz, L Style	SXRS-4	1924	Splitter, 4 Way Solder Back, 5-1000 MHz, In-Line Style
SCVS-6	1906	Splitter, 6 Way Solder Back, 5-1000 MHz, L Style	SXRS-8	1928	Splitter, 8 Way Solder Back, 5-1000 MHz, L Style
SCVS-8	1908	Splitter, 8 Way Solder Back, 5-1000 MHz, L Style			

CATV-Tap

Indoor 5-1000 MHz Taps SRT-a Series



Features & Benefits

- 1 GHz Bandwidth
- 2,4 and 8 Port Models
- 120 dB RFI Shielding
- Diecast Housing
- Built-in Ground Block

Specifications



SRT-2a

Tap Value (dB)

Insertion Loss

	4	8	11	14	17	20	23	26	29	32
5 MHz:	*	4.2	2.4	1.7	1.2	1.0	0.7	0.7	0.7	0.7
300 MHz:	*	4.2	2.4	1.7	1.2	1.0	0.7	0.7	0.7	0.7
450 MHz:	*	4.2	2.4	1.7	1.2	1.0	0.7	0.7	0.7	0.7
500 MHz:	*	4.9	2.8	1.8	1.5	1.1	1.0	1.0	1.0	1.0
600 MHz:	*	5.5	3.0	2.0	1.8	1.3	1.2	1.2	1.2	1.2
1000 MHz:	*	6.0	3.6	2.6	2.1	1.6	1.4	1.4	1.4	1.4

Return Loss

5 - 10 MHz:	18	16	18	18	18	18	18	18	18	18
10 - 50 MHz:	20	18	20	20	20	20	20	20	20	20
50 - 750 MHz:	18	18	20	20	20	20	20	20	20	20
750 - 1000 MHz:	16	16	16	16	16	16	16	16	16	16

Return Loss (Tap)

5 - 10 MHz:	16
10 - 50 MHz:	18
50 - 750 MHz:	20
750 - 1000 MHz:	18

Isolation Tap-to-Tap:

5 - 10 MHz:	22
10 - 450 MHz:	26
450 - 750 MHz:	25
750 - 1000 MHz:	22

Isolation Out-to-Tap

5 - 400 MHz:	-	22	25	28	31	35	36	38	40	40
400 - 500 MHz:	-	20	23	25	28	32	35	39	42	45
500 - 600 MHz:	-	17	21	22	25	29	33	36	39	42
600 - 1000 MHz:	-	15	17	18	20	22	25	25	27	28

Tap Tolerance (± dB)

5 - 10 MHz:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
10 - 550 MHz:	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
550 - 1000 MHz:	1.0	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0

* Terminated

Blonder Tongue's SRT Series of indoor 1GHz taps are the standard for directional couplers used in broadband systems such as those in educational, correctional, commercial, and MDU's. Models are available with 2, 4, and 8 tap ports and have tap values from 35 dB to 4 dB (model dependant) in 3 dB increments. All models have die-cast housings and provide RFI shielding of 120 dB.

CATV PRODUCTS

INDOOR TAPS

Section 274100-2.11.C.7.a Comply

Section 274100-2.11.D.7.a Comply

SRT-a Series

○ Specifications

SRT-4a

Tap Value (dB)	8	11	14	17	20	23	26	29	32	35
Insertion Loss (dB)										
5 MHz:	*	3.5	1.8	1.0	0.7	0.7	0.5	0.5	0.5	0.5
300 MHz:	*	3.5	1.7	1.0	0.7	0.6	0.5	0.5	0.5	0.5
400 MHz:	*	4.0	2.1	1.5	1.1	0.8	0.7	0.7	0.7	0.7
500 MHz:	*	4.5	2.3	1.8	1.3	1.2	1.0	0.8	0.8	0.8
600 MHz:	*	5.5	2.5	2.0	1.5	1.3	1.1	1.0	1.0	1.0
1000 MHz:	*	6.5	3.0	2.5	1.8	1.5	1.3	1.3	1.3	1.3
Return Loss (In/Out) (dB)										
5 - 10 MHz:	18	18	16	18	18	18	18	18	18	18
10 - 50 MHz:	20	20	18	20	20	20	20	20	20	20
50 - 450 MHz:	18	18	18	20	20	20	20	20	20	20
450 - 750 MHz:	18	18	18	18	18	18	18	18	18	18
750 - 1000 MHz:	16	16	16	16	16	16	16	16	16	16
Return Loss (Tap) (dB)										
5 - 10 MHz:							18			
10 - 750 MHz:							20			
750 - 1000 MHz:							18			
Isolation Tap-to-Tap (dB):										
5 - 10 MHz:										22
10 - 450 MHz:										26
450 - 750 MHz:										25
750 - 1000 MHz:										22
Isolation Out-to-Tap (dB)										
5 - 400 MHz:	-	24	27	31	33	37	38	40	43	45
400 - 500 MHz:	-	24	25	26	31	34	37	40	42	45
500 - 600 MHz:	-	21	21	23	27	29	31	35	38	40
1000 MHz:	-	20	20	22	24	26	27	27	30	30
Tap Tolerance (± dB)										
5 - 450 MHz:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
450 - 750 MHz:	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0
750 - 1000 MHz:	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

○ Specifications

SRT-8a

Tap Value (dB)	11	14	17	20	23	26	29	32	35
Insertion Loss (dB)									
5 - 50 MHz:	*	3.5	1.9	1.2	0.8	0.8	0.7	0.7	0.7
50 - 450 MHz:	*	4.0	2.3	1.5	1.0	0.9	0.8	0.8	0.8
450 - 750 MHz:	*	4.2	2.4	1.8	1.2	1.0	1.0	1.0	1.0
750 - 1000 MHz:	*	4.5	2.5	2.0	1.4	1.2	1.0	1.0	1.0
Return Loss (In/Out) (dB)									
5 - 10 MHz:	18	18	16	18	18	18	18	18	18
10 - 50 MHz:	20	20	18	20	20	20	20	20	20
50 - 450 MHz:	20	20	18	20	20	20	20	20	20
450 - 750 MHz:	18	18	18	18	18	18	18	18	18
750 - 1000 MHz:	16	16	16	16	16	16	16	16	16
Return Loss (Tap) (dB)									
5 - 10 MHz:									18
10 - 750 MHz:									18
750 - 1000 MHz:									18
Isolation Tap-to-Tap (dB):									
5 - 10 MHz:									22
10 - 450 MHz:									26
450 - 750 MHz:									25
750 - 1000 MHz:									22
Isolation Out-to-Tap (dB)									
5 - 10 MHz:	-	30	28	36	36	38	38	38	38
10 - 50 MHz:	-	30	28	35	36	35	36	36	36
50 - 450 MHz:	-	26	25	32	33	32	32	32	32
450 - 750 MHz:	-	24	24	30	30	30	30	30	30
750 - 1000 MHz:	-	24	24	26	26	28	28	28	30
Tap Tolerance (± dB)									
5 - 450 MHz:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
450 - 750 MHz:	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
750 - 1000 MHz:	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

* Terminated

○ Ordering Information (Specify Tap Value)

Model	Stock No.	Description
SRT-2a	1942	Directional Tap, 2 Output 5-1000 MHz, In-Line Style, Values: 4, 8, 11, 14, 17, 20, 23, 26, 29, 32 dB
SRT-4a	1944	Directional Tap, 4 Output 5-1000 MHz, In-Line Style, Values: 8, 11, 14, 17, 20, 23, 26, 29, 32, 35 dB
SRT-8a	1948	Directional Tap, 8 Output 5-1000 MHz, In-Line Style, Values: 11, 14, 17, 20, 23, 26, 29, 32, 35 dB

Wall Taps and Wall Plates

VersaTap Series



1



2



3



4



5



6



7

Front Figures

Specifications

	V-3182	V-1G-VU	V-1G-B	V-3889	V-5-DC	V-2WS
Front Figure:	2	2	2	2	1	4
Back Figure:	B	A	A	C	C	1
Number of Outputs:	1	1	1	1	1	2
Impedance (Ω):	75	75	75	75	75	75
Frequency Band:	SUB/VHF/UHF	SUB/VHF/UHF	SUB/VHF/UHF	SUB/VHF/CATV/UHF	SUB/VHF/CATV/UHF	SUB/VHF/CATV/UHF

Connector(s):	"G/F"***			"G/F"***			"G/F"***			Remote Control						"F"			
	12	17	23	12	17	23	12	17	23	"F" 5-PIN DIN									
RF Isolation (dB) Available:										4	6	9	12	16	20	24	27	30	4
ThruLoss (dB)																			
SUB:	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.5	0.2	3.5	3.0	1.2	0.9	0.7	0.6	0.5	0.5	0.5	
VHF:	0.5	0.5	1.0	0.5	0.5	1.0	0.7	0.5	0.5	3.5	3.0	1.2	0.9	0.7	0.6	0.5	0.5	0.5	
UHF:	0.3	0.3	0.5	0.3	0.3	0.5	1.4	1.0	0.8	4.0	3.5	1.6	1.5	0.7	0.7	0.6	0.6	0.6	

Special Characteristics

- Uses DIN Plug #3185
- RFI Shielded Circuitry
- Other

Backmatched
MATV

2-Port
Terminating

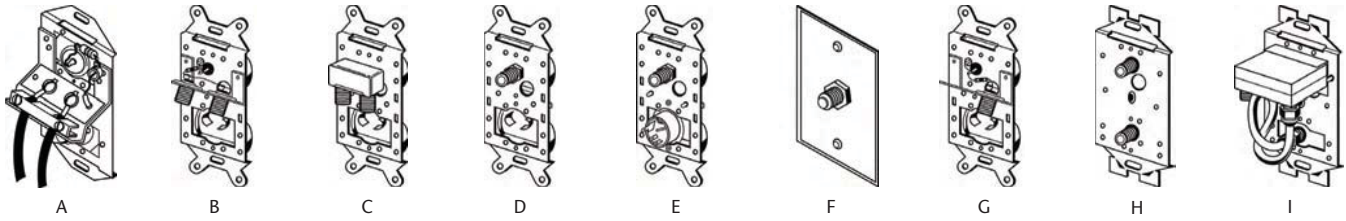
Features & Benefits

- Wide Bandwidth
- Steel Backplate for Mechanical Strength
- Ivory Plastic Front Plate
- RFI Shielded Models Available for CATV and SMATV Applications
- Dual Output Units
- Separate FM Terminal Units
- Terminating Wall Plate Model
- Bedside Control Connectors for Hospital Applications

** U.S. PAT No. 3,858,156

Wall Taps and Wall Plates

VersaTap Series



Back Figures

Section 274100-2.11.E.5.a Comply

○ Specifications

	V-3186	V-1GF-FT	V-5-FT	V-ST	V-2GF-FT	TF-GF-FT	V-3164
Front Figure:	5	2	1	2	4	6	7
Back Figure:	A	D	E	G	H	F	
Number of Outputs:	1	1	1	1	2	1	
Impedance:	75(TV) 300(FM)	75	75	75	75	75	
Frequency Band:	SUB/VHF UHF/FM	SUB/VHF CATV/UHF	SUB/VHF CATV/UHF	SUB/VHF/UHF Remote Control	SUB/VHF CATV/UHF	SUB/VHF UHF/CATV/FM	
Connector:	"G/F" Screw	"G/F"***	"G/F"***	"G"	"G/F"	"G/F"	
RF Isolation (dB) Available:	0 12 17 23						
Thru Loss (dB)							
SUB:	1.6 1.0 0.5						
VHF:	1.6 1.0 0.5						
UHF:	2.1 1.5 0.9						
Special Characteristics							
Uses DIN Plug #3185			X				
RFI Shielded Circuitry		X	X		X	X	
Other	FM Isolation is 10 dB below TV isolation			Self terminating			Single gang frame with blank filler plate ivory plastic

○ Ordering Information

Model	Stock No.	Description
TF-GF-FT	4691	VersaTap Feed-Thru, Type "GF-81C", 75 Ω
V-1G-B	4772	VersaTap Backmatched, Type "G", 75 Ω, Values: 12, 17, 23 dB
V-1G-VU	4771	VersaTap Type "G", 75 Ω, Values: 17, 23 dB
V-1GF-FT	3187	VersaTap Feed-Thru, Type "GF-81C", 75 Ω
V-2GF-FT	3190	VersaTap Feed-Thru, 2 Type "GF-81C", 75 Ω
V-2WS	3191	VersaTap 2 Type "F", 75 Ω
V-3164	3164	VersaTap Blank Wall Plate
V-3182	3182	VersaTap 1 "G/F" Out, "F" Rear Connections, Values: 12, 17, 23 dB
V-3186	3186	VersaTap 1 "F", 75 Ω, 1-300 Ω FM Terminal, Values: 0, 17, 23 dB
V-3889	3889	VersaTap 1 Tap Output, 75 Ω, Values: 4, 6, 9, 12, 16, 20, 24, 27, 30 dB
V-5-DC	3588	VersaTap 1 Tap Output, 5 Pin DIN, Values: 4, 6, 9, 12, 16, 20, 24, 27, 30 dB
V-ST	3184	VersaTap Self-Terminating, Type "G", 75 Ω

Distribution

SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET E



Middle Atlantic Products

EXCEPTIONAL SUPPORT & PROTECTION™

BRK/MBRK/OBRK/RK/SRK/OSR Laminate Racks



EIA/TIA Compliant

The BRK/MBRK/OBRK/RK/SRK/OSR Series 19" Equipment Racks

Features

- High quality equipment rack features an oak, maple or black wood grain finish
- 5/8" or 3/4" furniture grade MDF board construction (depending on model)
- Four depths available to accommodate any permanent installation
- Assembles easily with included hardware
- Rear access panel available for 22" and 28" deep models



RK/BRK/MBRK



SRK



OBRK



OSR

Architects' and Engineers' Specifications

RK/BRK/OBRK/MBRK

EIA compliant Wooden Studio Rack shall be Middle Atlantic Products model # ___RK___ (refer to chart). ___RK___ shall have ___ useable rackspaces with a ___ overall height (refer to chart). ___RK___ shall have a ___ depth. Studio rack shall be constructed of ___ furniture grade MDF board and shall feature a high quality ___ wood grain laminate finish (refer to chart). Rackrail shall be equipped with one set of 11-gauge steel with tapped 10-32 holes in universal EIA spacing (2 sets included for racks with 22" and 28" depths). Assembly hardware shall be 1/4 turn bolts with 1/4 turn cams for MBRK, 22" and 28" deep racks. Other models use joint connector screws. Studio rack shall be rated to ___ lb. weight capacity. Studio Rack shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Studio Rack shall be RoHS EU Directive 2002/95/EC compliant. Studio rack shall be manufactured by an ISO 9001 and ISO 14001 registered company. Studio rack shall be warranted to be free from defects in material or workmanship under normal use and conditions for a period of 7 years.

SRK

EIA compliant Sloped Rolling Equipment Rack shall be Middle Atlantic Products model # SRK. Equipment rack shall provide a 16 rackspace lower bay and an upper 12 rackspace bay sloped back at a 25° angle. SRK shall be constructed of 5/8" furniture grade MDF board and shall feature a high quality black wood grain laminate finish. Pre-installed rackrail shall be 11-gauge steel with tapped 10-32 holes in universal EIA spacing. Assembly hardware shall be 2-1/4" joint connector screws. A hex key shall be included for assembly. Black plastic screw caps shall snap into place to cover the included hardware. Studio rack shall be rated to 200 lb. weight capacity. Studio rack includes four pre-installed casters. Studio rack shall be rated to 200 lb. weight capacity. Studio Rack shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Studio Rack shall be RoHS EU Directive 2002/95/EC compliant. Studio rack shall be manufactured by an ISO 9001 and ISO 14001 registered company. Studio rack shall be warranted to be free from defects in material or workmanship under normal use and conditions for a period of 7 years.

OSR

EIA compliant Sloped Rolling Equipment Rack shall be Middle Atlantic Products model # OSR___ (refer to chart). Equipment rack shall provide a ___ rackspaces (refer to chart) sloped at ___° (refer to chart). OSR shall be constructed of 3/4" furniture grade MDF board and shall feature a high quality Oak laminate finish. Pre-installed rackrail shall be 11-gauge steel with tapped 10-32 holes in universal EIA spacing. Assembly hardware shall be 2-1/4" joint connector screws. A hex key shall be included for assembly. Black plastic screw caps shall snap into place to cover the included hardware. Studio rack shall be rated to 200 lb. weight capacity. Studio rack includes four pre-installed casters. Studio Rack shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Studio Rack shall be RoHS EU Directive 2002/95/EC compliant. Studio rack shall be manufactured by an ISO 9001 and ISO 14001 registered company. Studio rack shall be warranted to be free from defects in material or workmanship under normal use and conditions for a period of 7 years.

OPTIONS (OBRK, BRK and RK)

- Set of four casters shall be model # RKW, RKW shall have a 150 lb. weight capacity.
- Set of 4 heavy duty casters shall be model # RKW-HD. RKW-HD shall have a weight capacity of 250 lbs.
- Additional set of rear rackrail, shall be model # RK-RRX (X = total # of rackspaces)

OPTIONS

- Smoked glass front door shall be model # RK-GD___ (6, 8, 10, 12, 14, 16, 20, 28) for ___ rackspace (M), (O), (B)RK rack
- Quick-Position™ shelf with built-in cable management slots shall be model # SH-BRK. Shelf mounts without rackrail for OBRK/BRK and MBRK-18" depth and accepts horizontal mounting of PD-8155C or PD-8155C-NS power strip

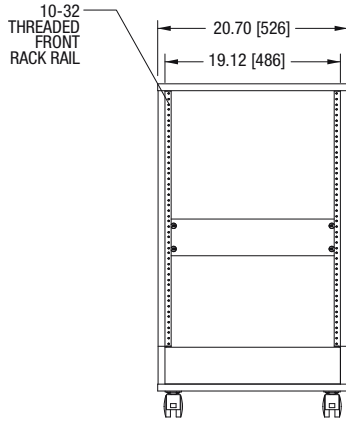
OPTIONS (BRK, MBRK 22" and 28" DEPTHS)

- Rear access panel shall be Middle Atlantic Products model # ___ (refer to chart). Rear access panel shall have an overall height of ___ (refer to chart). Rear access panel shall include a 2-space top vented panel and a 2-space cable management panel.
- Fan kit shall be Middle Atlantic Products model # DCFANKIT-4 (110V), or IDCFANKIT-4 (220V). Fans shall displace 100 CFM of free air and replaces vented panel on rear access panel. Fan kit works with rear access panel.

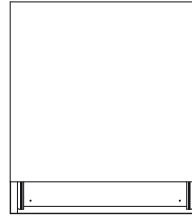
CUSTOMIZABLE SPECIFICATION CLIPS AVAILABLE AT MIDDLEATLANTIC.COM

OSR basic dimensions

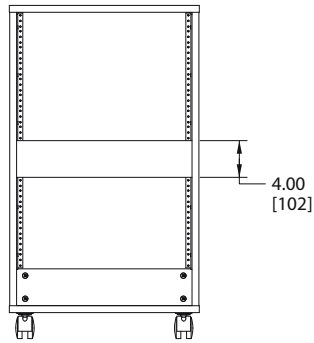
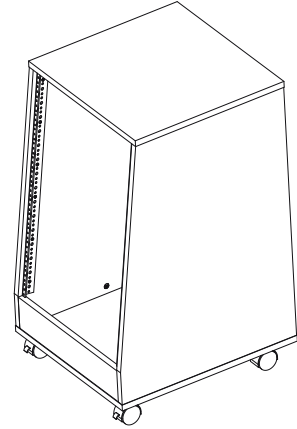
All dimensions in inches [Bracketed dimensions in millimeters]



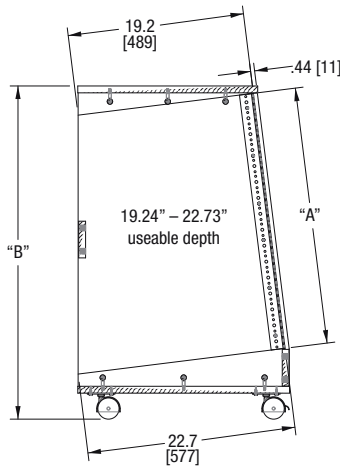
FRONT VIEW



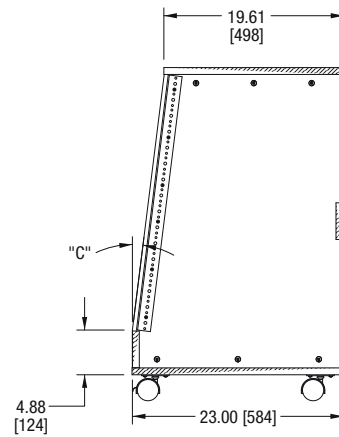
TOP VIEW



REAR VIEW



LEFT SIDE VIEW

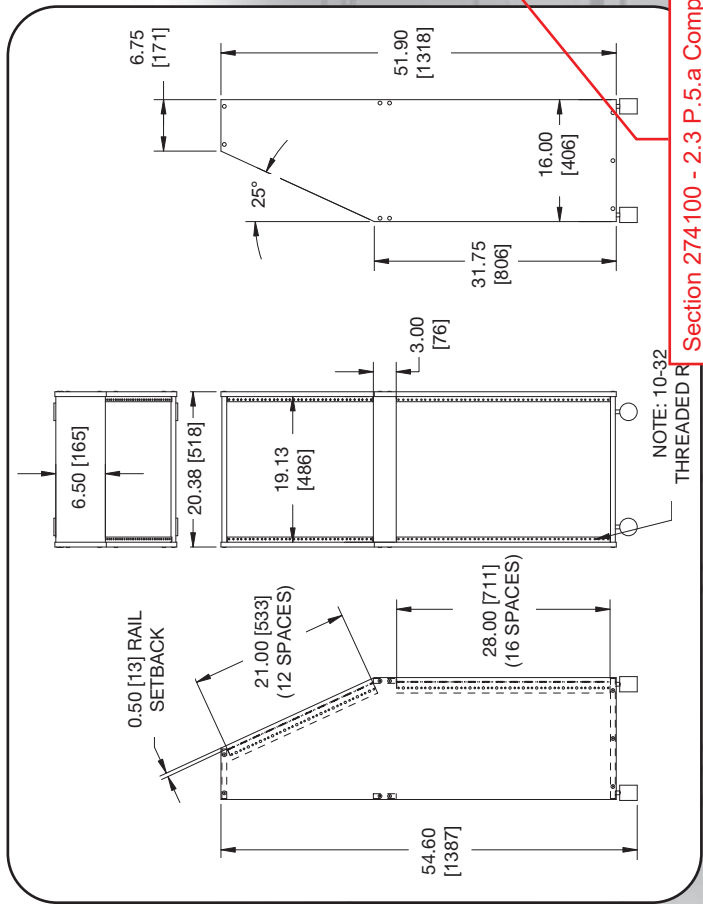


RIGHT SIDE VIEW

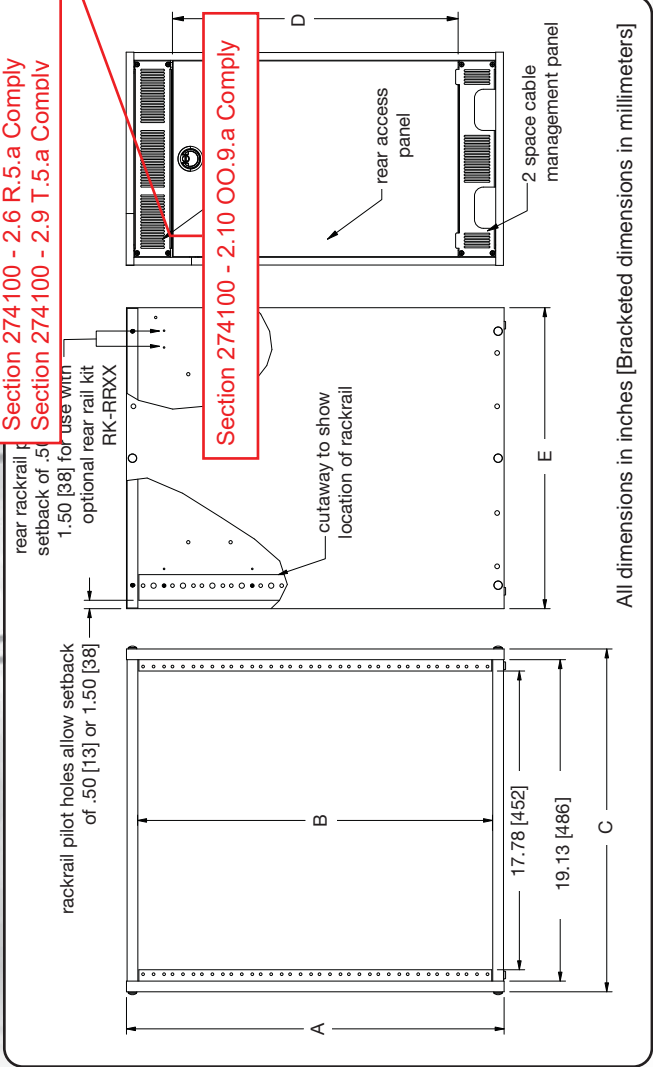
Model Number	Racking Height	"A"	"B" Overall Height	"C" Angle
OSR-16	16 Space	28.00 [711]	36.37 [924]	7°
OSR-24	24 Space	42.00 [1067]	50.37 [1279]	5°



SRK basic dimensions



RK/BRK/OBRK/MBRK basic dimensions



- Section 274100 - 2.3 P.5.a Comply
- Section 274100 - 2.4 R.5.a Comply
- Section 274100 - 2.5 R.5.a Comply
- Section 274100 - 2.6 R.5.a Comply
- Section 274100 - 2.9 T.5.a Comply

Model Number	A Overall Height	B Racking Height	C Outside Width	E Overall Depth	Weight Capacity
RK2	4.98 (126)	3.50 (89)	20.40 (518)	15.91 (404)	200 lbs.
RK4	8.48 (215)	7.00 (178)	20.40 (518)	15.91 (404)	200 lbs.
RK6	11.98 (304)	10.50 (267)	20.40 (518)	15.91 (404)	200 lbs.
RK8	15.48 (393)	14.00 (356)	20.40 (518)	15.91 (404)	200 lbs.
RK10	18.98 (482)	17.50 (445)	20.40 (518)	15.91 (404)	200 lbs.
RK12	22.48 (571)	21.00 (533)	20.40 (518)	15.91 (404)	200 lbs.
RK14	25.98 (660)	24.50 (622)	20.40 (518)	15.91 (404)	200 lbs.
RK16	29.48 (749)	28.00 (711)	20.40 (518)	15.91 (404)	200 lbs.
RK20	36.48 (927)	35.00 (889)	20.40 (518)	15.91 (404)	200 lbs.
BRK6	11.98 (304)	10.50 (267)	20.40 (518)	17.91 (455)	200 lbs.
BRK8	15.48 (393)	14.00 (356)	20.40 (518)	17.91 (455)	200 lbs.
BRK10	18.98 (482)	17.50 (445)	20.40 (518)	17.91 (455)	200 lbs.
BRK12	22.48 (571)	21.00 (533)	20.40 (518)	17.91 (455)	200 lbs.
BRK14	25.98 (660)	24.50 (622)	20.40 (518)	17.91 (455)	200 lbs.
BRK16	29.48 (749)	28.00 (711)	20.40 (518)	17.91 (455)	200 lbs.
BRK20	36.48 (927)	35.00 (889)	20.40 (518)	17.91 (455)	200 lbs.
OBRK8	15.63 (397)	14.00 (356)	20.70 (526)	17.91 (455)	200 lbs.
OBRK12	22.63 (575)	21.00 (533)	20.70 (526)	17.91 (455)	200 lbs.
OBRK16	29.63 (753)	28.00 (711)	20.70 (526)	17.91 (455)	200 lbs.
OBRK20	36.63 (930)	35.00 (889)	20.70 (526)	17.91 (455)	200 lbs.
MBRK8	15.63 (397)	14.00 (356)	20.70 (526)	17.91 (455)	200 lbs.
MBRK12	22.63 (575)	21.00 (533)	20.70 (526)	17.91 (455)	200 lbs.
MBRK16	29.63 (753)	28.00 (711)	20.70 (526)	17.91 (455)	200 lbs.
MBRK20	36.63 (930)	35.00 (889)	20.70 (526)	17.91 (455)	200 lbs.
(M)BRK8-22	15.63 (397)	14.00 (356)	20.70 (526)	22.00 (559)	200 lbs.
(M)BRK12-22	22.63 (575)	21.00 (533)	20.70 (526)	22.00 (559)	200 lbs.
(M)BRK16-22	29.63 (753)	28.00 (711)	20.70 (526)	22.00 (559)	200 lbs.
(M)BRK20-22	36.63 (930)	35.00 (889)	20.70 (526)	22.00 (559)	250 lbs.
(M)BRK28-22	50.63 (1286)	49.00 (1245)	20.70 (526)	22.00 (559)	250 lbs.
(M)BRK12-28	22.63 (575)	21.00 (533)	20.70 (526)	28.00 (711)	200 lbs.
(M)BRK16-28	29.63 (753)	28.00 (711)	20.70 (526)	28.00 (711)	200 lbs.
(M)BRK20-28	36.63 (930)	35.00 (889)	20.70 (526)	28.00 (711)	250 lbs.
(M)BRK28-28	50.63 (1286)	49.00 (1245)	20.70 (526)	28.00 (711)	250 lbs.

RK and BRK (18" depths) racks are constructed of 5/8" furniture grade MDF board construction.
 BRK (22" and 28" depths), MBRK and OBRK racks are constructed of 3/4" furniture grade, MDF board construction.

D	
Model Number	Rear Access Panel
RK-RAP8(-MP)	6.78 (172)
RK-RAP12(-MP)	13.78 (350)
RK-RAP16(-MP)	20.78 (528)
RK-RAP20(-MP)	27.78 (706)
RK-RAP28(-MP)	41.78 (1062)

Model	Color
RK	Black
OBRK	Oak
MBRK	Maple
BRK	Black
SRK	Black



INSTRUCTION SHEET

RK-RRXX
REAR RACKRAIL

Section 274100 - 2.3 P.5.a Comply
Section 274100 - 2.4 R.5.a Comply
Section 274100 - 2.5.R 5.a Comply
Section 274100 - 2.6.R 5.a Comply
Section 274100 - 2.9.T 5.a Comply
Section 274100 - 2.10 OO.9.b Comply

PARTS



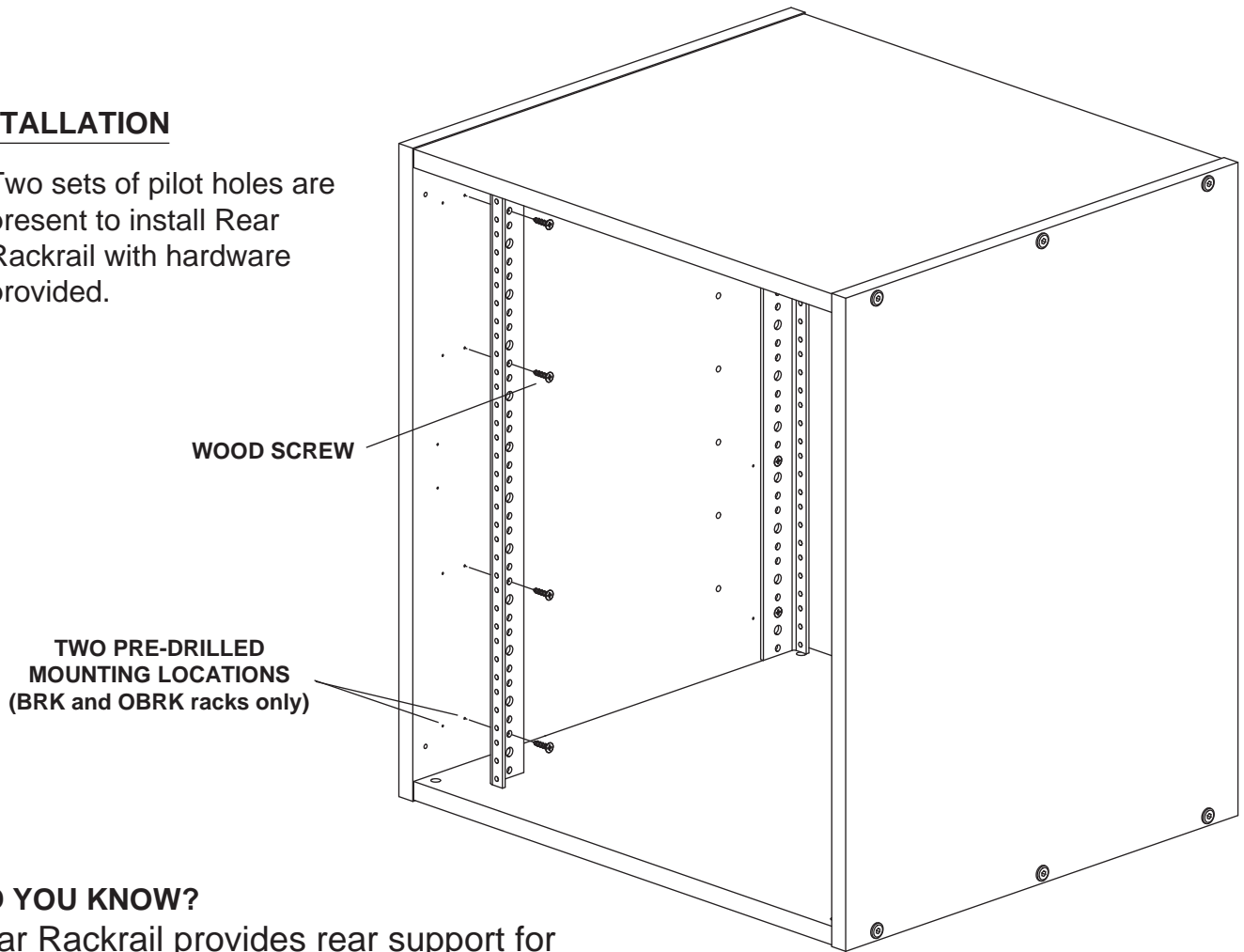
RACKRAIL
(QTY - 2)

WOOD SCREW #8x5/8
(4 Minimum - 12 Maximum,
depending on size of Rackrail)

TIP: Installation is easier prior to assembly of rack, but Rear Rackrail may be installed after assembly if necessary.

INSTALLATION

1) Two sets of pilot holes are present to install Rear Rackrail with hardware provided.



DID YOU KNOW?

Rear Rackrail provides rear support for mounted equipment and a location to mount cable management products such as Lacer Bars, part # LBP-XX.

WARRANTY

Middle Atlantic Products (the "Company") warrants the RK-RRXX Rear Rackrail to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

The Company's entire liability to the purchaser, and the purchaser's (or any other party's) sole and exclusive remedy, under this warranty shall be limited, at the Company's option, to either (a) return of and refund of the price paid for, or (b) repair or replacement at the Company's factory of the products purchased, or any part or parts thereof, which the Company has determined to be defective after inspection thereof at the Company's factory.

This warranty does not cover damage due to acts of God, accident, misuse, abuse or negligence by parties other than the Company, or any modification or alteration of the products. In addition, this warranty does not cover damage due to improper handling, assembly, installation or maintenance.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF THE PRODUCTS PURCHASED, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE COMPANY'S LIABILITY TO THE PURCHASER (OR ANY OTHER PARTY) HEREUNDER, IF ANY, SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PRODUCTS PAID TO THE COMPANY.

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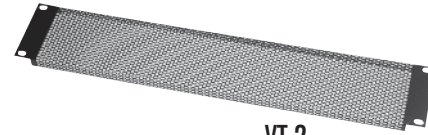
Vent Panels



VT Series

- Highest percent of open area (63%)
- 16-gauge perforated steel
- Flanged for strength
- Available in 1 through 4 rackspaces
- Durable black powder coat finish

* see chart for size information



VT-2

VTF Series

- Tight perforated pattern limits view
- 16-gauge perforated steel
- Flanged for strength
- Available in 1 through 4 rackspaces
- Durable black powder coat finish

* see chart for size information



VTF-2

VTP Series

- Highest aesthetics
- 16-gauge aluminum
- Flanged for strength
- Available in 1 through 3 rackspaces
- Black brushed and anodized finish

* see chart for size information



VTP-2

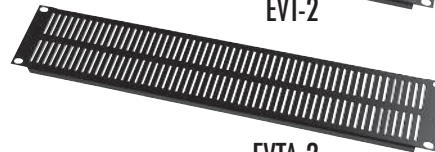
EVT Series

- 16-gauge steel (EVT) or 16-gauge aluminum (EVTA)
- Flanged for strength
- Available in 1 and 2 rackspaces
- Black powder coat or black brushed and anodized finish
- Also available in 1/2 rack sizes

* see chart for size information



EVT-2



EVTA-2



HREVT-1



HREVT-2

CUSTOMIZABLE SPECIFICATION CLIPS AVAILABLE AT MIDDLEATLANTIC.COM

Architects' and Engineers' Specifications

EVT/EVTA/VT/VTF/VTP Models

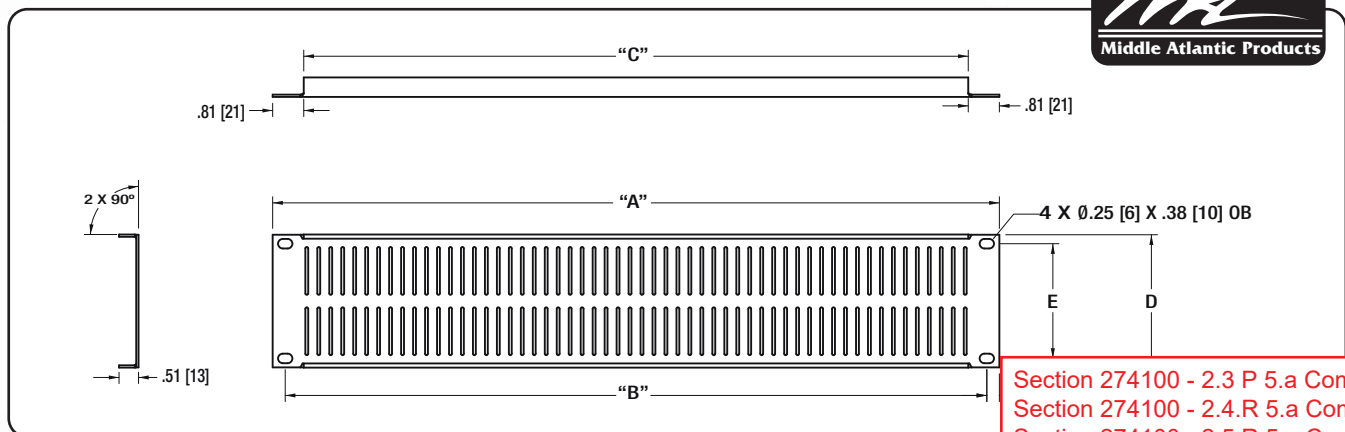
EIA compliant 19" vent panels shall be Middle Atlantic Products model # ___, occupying ___ rackspaces (refer to chart). Vent panel shall be constructed of 16-gauge perforated steel (VT, VTF, EVT) or 16-gauge aluminum (VTP, EVTA) and shall have a ___ finish (refer to chart). Vent panel shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Vent panel shall be RoHS EU Directive 2002/95/EC compliant. Vent panel shall be manufactured by an ISO 9001 and ISO 14001 registered company. Vent panel shall be warranted to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

HR-EVT Models

10.4" Half Rack vent panels shall be Middle Atlantic Products model # HR-EVT ___, occupying ___ rackspaces (refer to chart). Vent panel shall be constructed of 16-gauge aluminum and shall have a black powdercoat finish. Vent panel shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. Vent panel shall be RoHS EU Directive 2002/95/EC compliant. Vent panel shall be manufactured by an ISO 9001 and ISO 14001 registered company. Vent panel shall be warranted to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

- VT perforation pattern shall be: 5/32" dia. hole, with 3/16" staggered centers Open Area 64%
- VTF perforation pattern shall be: 1/16" dia. hole, with 1/8" staggered centers Open Area 25%
- VTP slot pattern shall be: 0.075" x 3.125" obround on 0.313" centers (horiz.) Open Area 20%
- EVT/HR-EVT slot pattern shall be: 0.075" x 1.25" obround on 0.313" centers (vert.) Open Area 17%

Vent Panel basic dimensions



Section 274100 - 2.3 P 5.a Comply
 Section 274100 - 2.4.R 5.a Comply
 Section 274100 - 2.5.R 5.a Comply
 Section 274100 - 2.6.R 5.a Comply
 Section 274100 - 2.9.T 5.a Comply
 Section 274100 - 2.10 OO.9.a Comply
 Section 274100 - 2.10 PP.15.a Comply

MODEL #	"A" OVERALL WIDTH	"B" MOUNTING HOLE WIDTH	"C" FLANGE WIDTH	"D" OVERALL HEIGHT	"E" MOUNTING HOLE DISTANCE	MATERIAL	FINISH
EVT-1	19 [483]	18.344 [466]	17.374 [441]	1.73 [44]	1.25 [32]	Steel	Black Powder Coat
EVT-2	19 [483]	18.344 [466]	17.374 [441]	3.48 [88]	3.00 [76]	Steel	Black Powder Coat
EVTA-1	19 [483]	18.344 [466]	17.374 [441]	1.73 [44]	1.25 [32]	Aluminum	Black Brushed and Anodized
EVTA-2	19 [483]	18.344 [466]	17.374 [441]	3.48 [88]	3.00 [76]	Aluminum	Black Brushed and Anodized
HR-EVT1	10.4 [264]	9.744 [247]	8.774 [223]	1.73 [44]	1.25 [32]	Aluminum	Black Powder Coat
HR-EVT2	10.4 [264]	9.744 [247]	8.774 [223]	3.48 [88]	3.00 [76]	Aluminum	Black Powder Coat
VT1	19 [483]	18.344 [466]	17.374 [441]	1.73 [44]	1.25 [32]	Steel	Black Powder Coat
VT2	19 [483]	18.344 [466]	17.374 [441]	3.48 [88]	3.00 [76]	Steel	Black Powder Coat
VT3	19 [483]	18.344 [466]	17.374 [441]	5.23 [133]	2.25 [57]	Steel	Black Powder Coat
VT4	19 [483]	18.344 [466]	17.374 [441]	6.98 [177]	4.00 [102]	Steel	Black Powder Coat
VTF1	19 [483]	18.344 [466]	17.374 [441]	1.73 [44]	1.25 [32]	Steel	Black Powder Coat
VTF2	19 [483]	18.344 [466]	17.374 [441]	3.48 [88]	3.00 [76]	Steel	Black Powder Coat
VTF3	19 [483]	18.344 [466]	17.374 [441]	5.23 [133]	2.25 [57]	Steel	Black Powder Coat
VTF4	19 [483]	18.344 [466]	17.374 [441]	6.98 [177]	4.00 [102]	Steel	Black Powder Coat
VTP-1	19 [483]	18.344 [466]	17.374 [441]	1.73 [44]	1.25 [32]	Aluminum	Black Brushed and Anodized
VTP-2	19 [483]	18.344 [466]	17.374 [441]	3.48 [88]	3.00 [76]	Aluminum	Black Brushed and Anodized
VTP-3	19 [483]	18.344 [466]	17.374 [441]	5.23 [133]	2.25 [57]	Aluminum	Black Brushed and Anodized



Brush Grommet Panel, 2 RU

BR2

The brush grommet panel provides a clean, organized cable entry method when mounted above any work surface. Features a built-in cable management tray, available in one and two space versions. Also fits in opening on all MW Series top options.

Features

- Provides clean cable entry while slowing dust entry
- Ideal for mounting above work surfaces
- Includes cable management tray with strain relief tie points
- Also fits in MW Series top options

Section 274100 - 2.3.P.5.a Comply
 Section 274100 - 2.4.R.5.a Comply
 Section 274100 - 2.5.R.5.a Comply
 Section 274100 - 2.6.R.5.a Comply
 Section 274100 - 2.9.T.5.a Comply
 Section 274100 - 2.10.OO.9.a Comply
 Section 274100 - 2.10.PP.15.a Comply

Key Specifications

General Info

Finish Type: Black Powder Coat

Component Type: Horizontal

Assembly/Installation Information

Mounting Points: 2

Listing Agencies/Third Party Information

RoHS: Yes

Greenguard: Yes

Dimensions

Depth: 2.92"

Height: 3.5"

Width: 19"

Primary Package Weight (US): 3

Rack Units: 2

Technical Information

Material: Steel



Rackscrews, 10-32, Truss-Head, 100 pc.

HP

Standard 3/4" long rack screws with 10-32 threads feature self-guiding pilot points. HP Series truss head screws provide a clean, modern appearance and fit under optional trim strips, (see pg. 147) for the most attractive finish. Includes factory-installed nylon washer.

Features

- Standard black matte rack screws
- Truss-head style, 10-32 threaded, 3/4" long
- Pre-installed washers and self-guiding pilot points
- Sold in pack of 100 pieces

Section 274100 - 2.3.P.5.a Comply
 Section 274100 - 2.4.R.5.a Comply
 Section 274100 - 2.5.R.5.a Comply
 Section 274100 - 2.6.R.5.a Comply
 Section 274100 - 2.9.T.5.a Comply
 Section 274100 - 2.10.OO.9.a Comply
 Section 274100 - 2.10.PP.15.a Comply

Key Specifications

General Info

Finish Type: Black

Quantity: 100

Listing Agencies/Third Party Information

RoHS: Yes

Greenguard: Yes

Dimensions

Primary Package Weight (US): 0.75

Technical Information

Material: Steel



Fan Panel, 100 CFM, Anodized, 220V

QFP-2-119

Features

- Quiet fan panel assembly
- 3 space panel includes 2 fans and grills

Section 274100 - 2.3.P.5.c Comply
Section 274100 - 2.4.R.5.b Comply
Section 274100 - 2.5.R.5.b Comply
Section 274100 - 2.6.R.5.c Comply
Section 274100 - 2.9.T.5.b Comply
Section 274100 - 2.10.OO.9.b Comply

Key Specifications

General Info

Finish Type: Black Brushed and Anodized

Component Type: active

Assembly/Installation Information

Mounting Points: 2

Listing Agencies/Third Party Information

RoHS: Yes

Greenguard: Yes

Dimensions

CFM: 100

Depth: 2"

Height: 5.25"

Width: 19"

Primary Package Weight (US): 5

Rack Units: 3

Technical Information

Material: Aluminum

Volts: 220



Lace Bar, 1.5" Offset, Round, 10 pc.

LBP-1.5

Use the LBP-1.5 & LBP-1R4 when lacing small bundles or individual cables off the rear of equipment, patch panels and other components to relieve cable stress from the connections. Choose the appropriate offset based on the distance from the rear of equipment to the rackrail. 1/4" diameter rod with flattened ends.

Features

- Economical horizontal cable lacing and support
- Round rod style with angled 1.5" offset
- All lacer bars sold in packs of 10 pieces

Section 274100 - 2.3.P.5.d Comply
 Section 274100 - 2.4.R.5.c Comply
 Section 274100 - 2.5.R.5.c Comply
 Section 274100 - 2.6.R.5.d Comply
 Section 274100 - 2.9.T.5.c Comply
 Section 274100 - 2.10.OO.9.b Comply

Key Specifications

General Info

Finish Type: Black Powder Coat

Quantity: 10

Component Type: Horizontal

Style: 1.5" offset round rod

Technical Information

Material: Steel

Assembly/Installation Information

Mounting Points: 2

Listing Agencies/Third Party Information

RoHS: Yes

Greenguard: Yes

Dimensions

Depth: 1.5"

Height: 0.4"

Width: 19"

Primary Package Weight (US): 3

Blank Panels

accessories

Blank panels cover open areas on an installed rack face, providing a clean, professional appearance.

BL Series

- Highest Aesthetics
- 1/16" thick Aluminum, Flanged Style
- Lightweight, Easy to Machine
- Available in 1 Through 4 Space Sizes
- 1/2 and 1/3 Space Blank Panels Also Available
- Black Brushed and Anodized Finish

Section 274100 - 2.3.P.5.e Comply
 Section 274100 - 2.4.R.5.d Comply
 Section 274100 - 2.5.R.5.d Comply
 Section 274100 - 2.6.R.5.e Comply
 Section 274100 - 2.9.T.5.e Comply
 Section 274100 - 2.10.OO.9.b Comply

EB/FEB Series

- Economical Blank Panel
- EB is 16-gauge Steel, FEB is 14-gauge Steel
- Flat (FEB) or Flanged (EB) Styles
- 1/2 and 1/3 Space Blank Panels Also Available (EB style only)
- Available in 1 Through 6 Space Sizes
- Durable Black Powder Coat Finish
- EB Series available in 23" panel width

HBL Series

- Highest Aesthetics
- 1/8" thick Aluminum
- Lightweight, Easy to Machine
- Available in 1 Through 4 Space Sizes
- Black Brushed and Anodized

PBL Series

- Lightweight, Easy to Machine
- 1/16" thick Aluminum
- Flanged for Strength
- Available in 1 Through 4 Space Sizes
- Durable Black Powder Coat Finish
- Also available in 1/2 rack width (HRBL Series)



BL1



BL1/2



EB1-H



EB1/3



FEB1



HBL2



PBL-2



HRBL-2

Blank Panels

accessories

Blank panels cover open areas on an installed rack face, providing a clean, professional appearance.

PHBL Series

- Lightweight, Easy to Machine
- 1/8" thick Aluminum
- Flat Style
- Available in 1 Through 4 Space Sizes
- Durable Black Powder Coat Finish



PBL-2



PHBL-3

SB/WSB Series

- Heavy Duty
- 16-gauge Steel
- Flanged for Strength
- Available in 1 Through 6 Space Sizes (SB) and 1 Through 4 Space Sizes (WSB)
- Durable Textured Black Powder Coat Finish (SB), Wrinkle Black Powder Coat (WSB)



WSB3

specifications:

Blank panels shall be Middle Atlantic Products model # ___ (refer to chart). Blank panels shall be ___ rackspaces in height with a ___ finish (refer to chart). Blank panels shall be ___" wide (refer to chart). Blank panels shall be constructed of 1/16" thick aluminum (BL, PBL, HRBL), 1/8" thick aluminum (HBL, PHBL), 14-gauge steel (FEB) or 16-gauge steel (EB, SB, WSB). Blank panels shall be RoHS EU Directive 2002/95/EC compliant. Blank panels shall be manufactured by an ISO 9001 and ISO 14001 registered company. Blank panels shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the panel.

EIA/TIA COMPLIANT

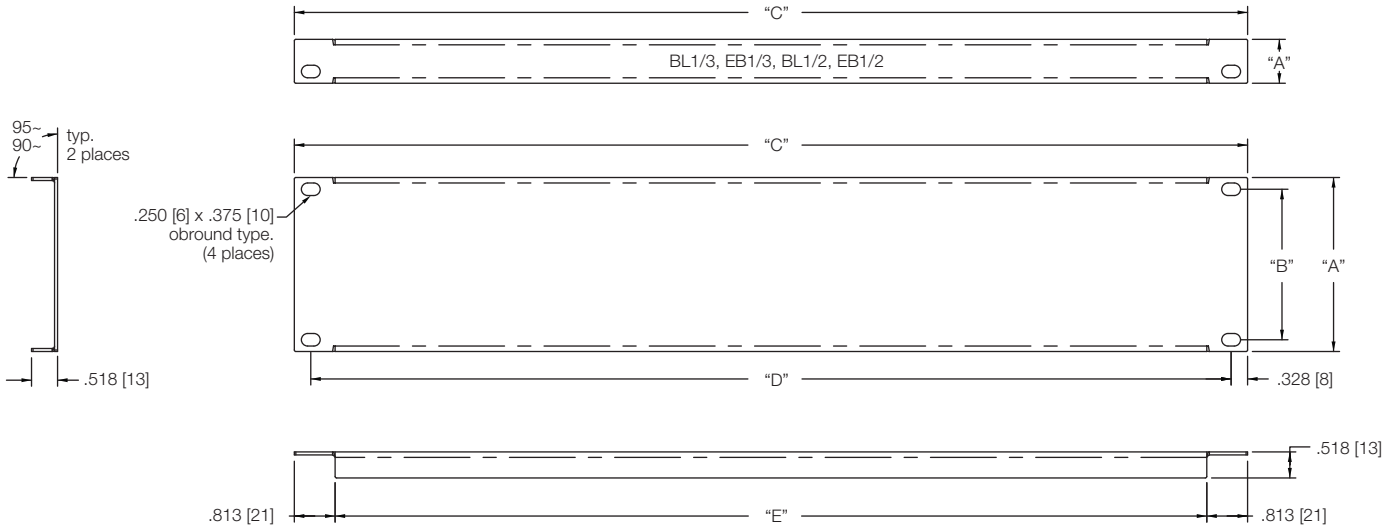


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LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

Blank Panels

basic dimensions

all dimensions in inches unless otherwise noted [all dimensions in brackets are in millimeters]



Section 274100 - 2.3.P.5.e Comply
 Section 274100 - 2.4.R.5.d Comply
 Section 274100 - 2.5.R.5.d Comply
 Section 274100 - 2.6.R.5.e Comply
 Section 274100 - 2.9.T.5.e Comply
 Section 274100 - 2.10.OO.9.b Comply
 Section 274100 - 2.10.PP.15.g Comply

Part #	Dim "A"	Dim "B"	Dim "C"	Dim "D"	Dim "e"
BL1/3, EB1/3	0.583 [15]	n/a	19 [483]	18.344 [466]	17.374 [441]
BL1/2, EB1/2	0.875 [22]	n/a	19 [483]	18.344 [466]	17.374 [441]
BL1, PBL1, EB1, SB1, WSB1	1.718 [44]	1.25 [32]	19 [483]	18.344 [466]	17.374 [441]
BL2, PBL2, EB2, SB2, WSB2	3.468 [88]	3.00 [76]	19 [483]	18.344 [466]	17.374 [441]
BL3, PBL3, EB3, SB3, WSB3	5.218 [133]	2.25 [57]	19 [483]	18.344 [466]	17.374 [441]
BL4, PBL4, EB4, SB4, WSB4	6.968 [177]	4.00 [102]	19 [483]	18.344 [466]	17.374 [441]
EB5, SB5	8.718 [221]	5.75 [146]	19 [483]	18.344 [466]	17.374 [441]
EB6, SB6	10.468 [266]	7.50 [191]	19 [483]	18.344 [466]	17.374 [441]
HRBL1	1.718 [44]	1.25 [32]	10.4 [264]	9.744 [247]	8.774 [223]
HRBL2	3.468 [88]	3.00 [76]	10.4 [264]	9.744 [247]	8.774 [223]

Part #	HRBL	BL	PBL	EB	SB	WSB
Material	16 gauge aluminum	16 gauge aluminum	16 gauge aluminum	16 gauge CR steel	16 gauge CR steel	16 gauge CR steel
Finish	black powder coat	black brushed & anodized	black powder coat	black powder coat	textured black powder coat	wrinkle black powder coat

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MRK Series

19" gangable enclosure

narrow design for large multi-bay jobs

features:

- Fully welded construction provides the following weight capacities: UL Listed load capacity: 2,500 lbs., Static load capacity: 10,000 lbs., seismic certified capacity - 1,050 lbs.
- 1/8" thick structural steel internal braces
- 22" OD width with multiple depths available
- 1/2", 3/4", 1" & 1-1/2" electrical knockouts on split rear plates top & bottom, easily removable for cable pass-through, top plates additionally include UHF/VHF knockouts
- Two wide pairs of 11-gauge, 10-32 threaded rackrail with numbered rackspace increments
- Optional solid, fully vented, plexi and vented plexi front doors available
- Open top with configurable top panel options
- Durable black textured powder coat finish
- Seismic certified (when used with MRK-Z4 option) with an Ip value of 1.5
- UL Listed in the US and Canada



MRK-4426

specifications:

EIA compliant 19" gangable equipment rack shall be Middle Atlantic Products model # MRK-___ (refer to chart). Overall dimensions shall be ___"H x 22"W x ___"D (refer to chart). Useable height shall be ___ rackspace, useable depth shall be ___" (refer to chart). Fully welded construction shall provide a static capacity of 10,000 lbs. and a UL Listed load capacity of 2,500 lbs. Rack shall be constructed of the following materials: top and bottom shall be 14-gauge steel, horizontal braces shall be 16-gauge steel and all structural elements shall be finished in a durable black powder coat. Rack shall include a locking, latching rear door. Rack shall come equipped with two pairs of 11-gauge steel rackrail with tapped 10-32 mounting holes in universal EIA spacing, black e-coat finish and numbered rackspace (select models also available with cage nut style rackrail, refer to chart). Rack shall have removable split rear knockout panels with 1/2", 3/4", 1" and 1-1/2" electrical knockouts and top BNC knockouts for UHF/VHF antennae. Grounding and bonding stud shall be 1/4-20 threaded, installed in base of enclosure. MRK Series enclosures shall satisfy the 2007 & 2010 CBC; 2006, 2009 & 2012 IBC; ASCE 7-05 (2005 Edition) & ASCE 7-10 (2010 Edition) and the 2006 & 2009 editions of NFPA 5000 for use in areas of high seismicity, Seismic Use Group III, Zone 4 or Seismic Design Category (SDC) "D" with lateral force requirements for protecting 1,050 lbs. of essential equipment in locations with the highest level of seismicity and top floor or rooftop installations with an Importance factor (Ip) of 1.5 when used with MRK-Z4 seismic floor anchor bracket. Rack shall be OSHPD approved for fixed equipment anchorage in California healthcare facilities. Rack shall be UL Listed in the US and Canada. MRK shall be GREENGUARD Gold certified. MRK enclosure shall comply with the requirements of RoHS EU Directive 2002 / 95 / EC. MRK shall be manufactured by an ISO 9001 and ISO 14001 registered company. MRK enclosure shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the rack.

Customizable specification clips available at middleatlantic.com

EIA/TIA COMPLIANT



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SEISMIC CERTIFIED

options:

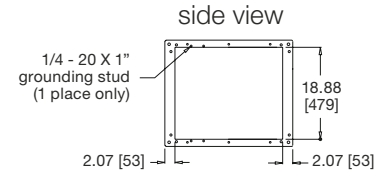
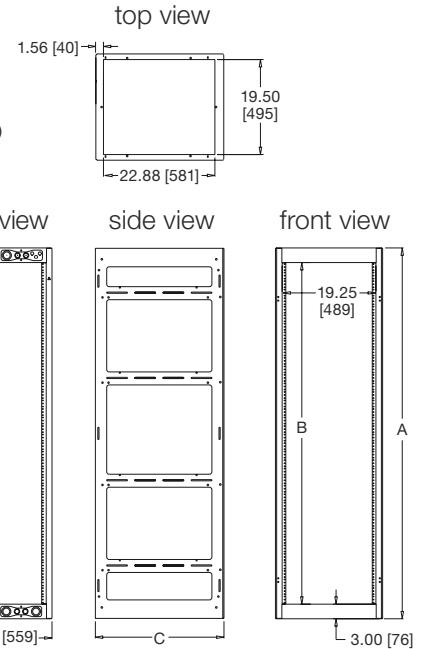
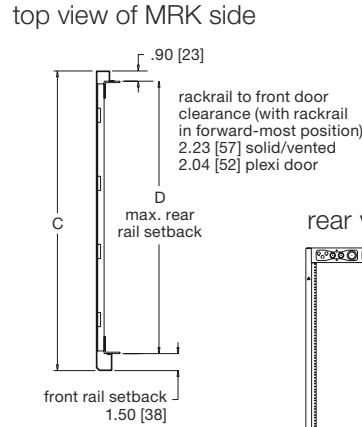
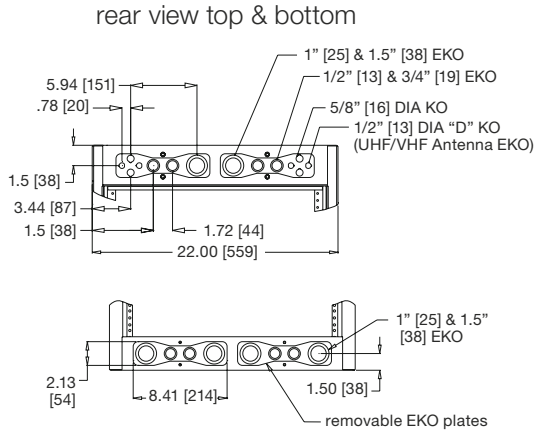
- Front doors shall be reinforced steel, model # FD-x (solid), VFD-x (vented, 25% open area), LVFD-x (vented, 64% open area), PFD-x (plexi), PVFD-44 (vented plexi) (x = # of rackspace)
- Vented steel rear doors shall be model # MW-VRD-44 (vented top and bottom), MW-LVRD-x (vented, 64% open area, excludes 24 and 37 space rack) (x = # of rackspace), MW-CLVRD-44 (split rear door, vented, 79% open area)
- Removable keylocked side panels shall be model # SPN-x (267/312/36/423) (x = # of rackspace), 267 = 26-1/2" cabinet depth, 312 = 31-1/2" cabinet depth, 36 = 36" cabinet depth, 423 = 42" cabinet depth
- Top panels shall be 16-gauge steel, multiple styles available including model # MW-ST (solid), MW-10FT (10" fan), MW-4FT (four 4-1/2" fans), MW-6FT (three 6" fans), MW-VT (vented), MW-LA (accepts 6" and 12" wide cable ladders) and MV-PVT (26/31/36/42) (Vented pagoda adds 1.41" to top of rack)
- Caster base shall add 1" to overall height, featuring four casters with a 1,300 lb. weight capacity, UL Listed in the US and Canada. Model # CBS-MRK-x (x = cabinet depth)
- Fine floor friendly caster base shall have a 700 lb. weight capacity. Model # CBS-MRK-xR (x = cabinet depth)
- Rail bracket adapters shall allow for mounting of panels vertically between rackrail brackets. Available for 44 space enclosures. Model # RBA-MV44-2, 2 rackspace.
- Seismic Zone-4 and Seismic Use Group III compliancy floor anchor kit shall be model # MRK-Z4
- Slide-out AXS enclosure option available (See AXS Spec sheet # 96-0555)

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MRK Series

basic dimensions

all dimensions in inches unless otherwise noted [all dimensions in brackets are in millimeters]



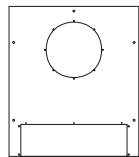
Part #	A Overall	B Useable Height	C Overall Depth	D Useable Depth
MRK-4426	83.125" [2112]	77.125" [1959]	26.40" [671]	24.00" [610]
MRK-4426-AV-AB*	83.125" [2112]	77.125" [1959]	26.40" [671]	24.00" [610]
MRK-4026	76.125" [1934]	70.125" [1781]	26.40" [671]	24.00" [610]
MRK-3726	70.875" [1800]	64.875" [1648]	26.40" [671]	24.00" [610]
MRK-2426	48.125" [1223]	42.125" [1070]	26.40" [671]	24.00" [610]
MRK-4431**	83.125" [2112]	77.125" [1959]	31.40" [798]	29.00" [737]
MRK-4431-AV-AB*	83.125" [2112]	77.125" [1959]	31.40" [798]	29.00" [737]
MRK-4431-DVR-AB*	83.125" [2112]	77.125" [1959]	31.40" [798]	29.00" [737]
MRK-4031	76.125" [1934]	70.125" [1781]	31.40" [798]	29.00" [737]
MRK-3731	70.875" [1800]	64.875" [1648]	31.40" [798]	29.00" [737]
MRK-2431	48.125" [1223]	42.125" [1070]	31.40" [798]	29.00" [737]
MRK-4436**	83.125" [2112]	77.125" [1959]	36.00" [914]	33.60" [853]
MRK-4436-NVR-AB*	83.125" [2112]	77.125" [1959]	36.00" [914]	33.60" [853]
MRK-4036**	76.125" [1934]	70.125" [1781]	36.00" [914]	33.60" [853]
MRK-3736	70.875" [1800]	64.875" [1648]	36.00" [914]	33.60" [853]
MRK-2436	48.125" [1223]	42.125" [1070]	36.00" [914]	33.60" [853]
MRK-4442**	83.125" [2112]	77.125" [1959]	42.00" [1067]	39.60" [1006]
MRK-4042**	76.125" [1934]	70.125" [1781]	42.00" [1067]	39.60" [1006]

* Denotes that AV, DVR and NVR models are also available configured with optional side panels (remove AB suffix for part no. e.g. MRK-4426-AV). Side panels add 1-5/16" [33mm] to overall width of rack.
 ** Available configured with 2 pairs cage nut style rackrail, suffix model number with "PRO".

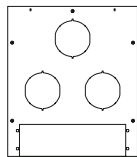
Section 274100 - 2.10.PP.15.a Comply

Top Options

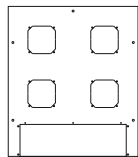
(removable plate opening accommodates 2 space panel)



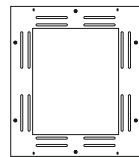
MW-10FT accepts 10" fan
 MW-10FT-550CFM includes 10" fan
 MW-10FT-FC includes 10" fan and fan controller



MW-6FT accepts 6" fans
 MW-6FT-660CFM includes 6" fans



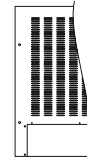
MW-4FT accepts 4-1/2" fans
 MW-4FT-380CFM includes 4-1/2" fans
 MW-4QFT-FC includes 4-1/2" quiet fans and fan controller



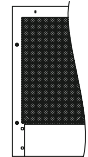
MW-LA accepts 6", 9" and 12" width cable ladder



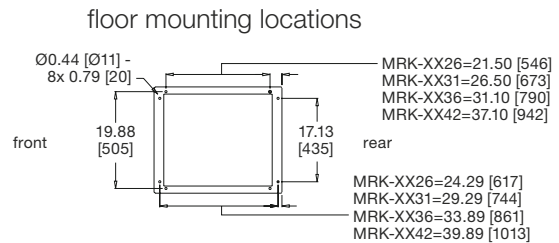
MW-ST solid



MW-VT slot vent



MW-LVT 64% open area





Side Panels, 40 RU, 36"D Racks

SPN-40-36

Features

- Equipped with recessed lift handles for easy installation and removal
- Includes optional user-installed key lock for security
- Steel construction, black powder coat finish
- Each side panel adds 5/8" to overall width
- Sold in pairs (four half-height panels)

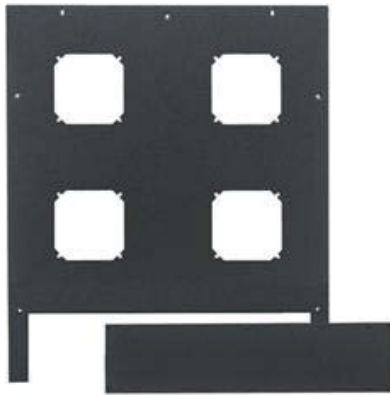
Section 274100 - 2.10.PP.15.b Comply

Key Specifications

General Info

Finish Type: Black

Quantity: 1



Fan Top, Accepts Four 4" Fans

MW-4FT

Top options accept 4-1/2" fans for active thermal management.

Features

- Mounts four 4-1/2" fans
- Fits WR, WRK, MRK, VRK, VMRK, and DRK racks
- Includes removable two space service plate
- Service plate allows top removal without disrupting cable bundles
- Steel construction with black finish

Section 274100 - 2.10.PP.15.d Comply

Key Specifications

General Info

Finish Type: Black

Component Type: active

Listing Agencies/Third Party Information

RoHS: Yes

Greenguard: Yes

Dimensions

Depth: 0.861"

what **great systems** are built on.™

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Middle Atlantic Products

EXCEPTIONAL SUPPORT & PROTECTION™

Fan Options



Control temperature within an enclosure with fan options and accessories

FAN-119

- 230V (50/60 Hz) nominal fan rated at 2.7 m³/min.
- 39 dBA (measurements made 1 meter from source, centered horizontally and vertically)
- Smooth, long life ball-bearing design
- CE compliant



FAN-119

QFAN-119

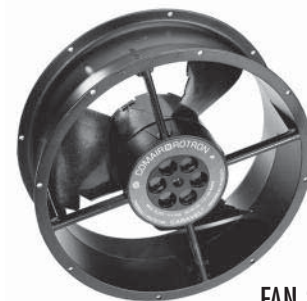
- 230V (50/60 Hz) nominal fan rated at 1.4 m³/min.
- <30 dBA (measurements made 1 meter from source, centered horizontally and vertically)
- Quiet fan includes fan guard with black powder coat finish
- Smooth, long life ball-bearing design
- CE compliant
- Used in:
 - QFP-1-119 (one fan) and QFP-2-119 (two fans) black anodized fan panels; QTFP-1-119 and QTFP-2-119 black textured powder coat fan panels



QFAN-119

FAN-254

- 230V (50/60 Hz) nominal fan rated at 15.6 m³/min.
- 49 dBA (measurements made 1 meter from source, centered horizontally and vertically)
- Smooth, long life ball-bearing design
- CE compliant



FAN-254

CUSTOMIZABLE SPECIFICATION CLIPS AVAILABLE AT MIDDLEATLANTIC.COM

AXS-FAN-119

- 230V (50/60 Hz) nominal fan rated at 1.6 m3/min.
- 30 dBA (measurements made 1 meter from source, centered horizontally and vertically)
- Slim design fits AXS Series rack
- Smooth, long life ball-bearing design
- CE compliant
- Overtemp and fan failure notification via contact closure



AXS-FAN-119

IUQFP Series Ultra Quiet Fan Panel

- 2.8 m3/min. in 4 fan units, 1.4 m3/min. in 2 fan units
- Minimal friction, long-lasting hydrowave-bearing design
- Power supply with 1.8 meter cord
- Quiet operation, 27 dBA at full speed for 4 fan models, 24 dBA at full speed for 2 fan models
- Temperature display, LED indicators and designer-inspired aesthetic treatments available
- Fan speeds proportional to temperature of enclosure to extend fan life, reduce dust and maintenance
- CE compliant



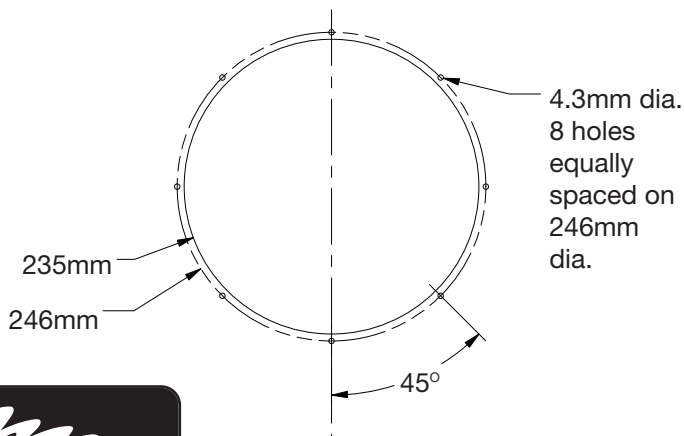
IUQFP-4D

Specifications for Fan Options

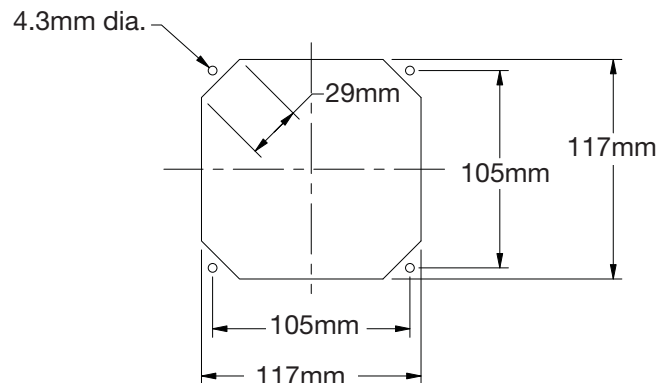
Section 274100 - 2.10.PP.15.d Comply

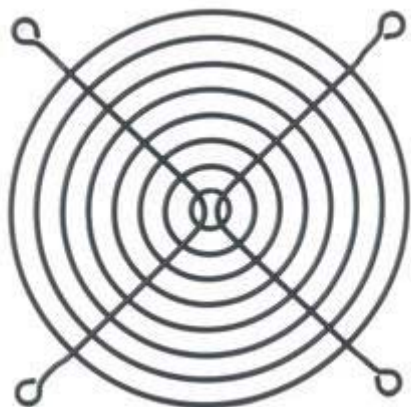
MODEL #	SIZE	VOLTAGE (V nominal)	CURRENT (mA)	SPEED (RPM)	NOISE (dBA)	STATIC PRESSURE (Pa)	AIRFLOW (m3/min)
QFAN-119	119mm x 119mm x 38mm	230	45	1450	<30	17.4	1.4
FAN-119	119mm x 119mm x 38mm	230	100	2750	39	64.8	2.7
FAN-254	254mm x 89mm thk	230	250	1650	49	90.9	15.6
AXS-FAN-119	119mm x 119mm x 25.4mm	230	34	2300	30	22.4	1.6

Mounting hole dimensions for
FAN-254



Mounting hole dimensions for
QFAN-119, FAN-119, AXS-FAN-119





Fan Guard, 4-1/2"

GUARD

Fitting 4-1/2" fans, fan guards are "Hamburger grille" style & have a black powder coat finish, includes hardware.

Features

- Guard for 4-1/2" fans
- "Hamburger grille" style with flat black powder coat finish

Section 274100 - 2.10.PP.15.d Comply

Key Specifications

General Info

Finish Type: Black Powder Coat

Component Type: active

Listing Agencies/Third Party Information

Greenguard: Yes

Dimensions

Depth: 0.25"

Height: 4.52"

Width: 4.52"

Primary Package Weight (US): 0.3



Rackrail, 10-32, 40 RU, MRK/VRK Series

MV-RR40

Features

- Additional rackrail is heavy-gauge, 10-32 threaded
- Sold in pairs
- Includes mounting hardware

Section 274100 - 2.10.PP.15.e Comply

Key Specifications

General Info

Finish Type: Black

Quantity: 1

Listing Agencies/Third Party Information

RoHS: Yes

Greenguard: Yes

Dimensions

Usable Height: 70"

Depth: 1.375"

Height: 70"

Width: 1.406"

Primary Package Weight (US): 14.9

Rack Units: 40



what great systems are built on.™

A Group brand | legrand



Lace Bar, 4" Offset, L-Shaped, 10 pc.

LBP-4A

“L” shaped lacer bars are strong and provide fixed tie points. The LBP-2A, LBP-4A and LBP-6A have a 2”, 4” and 6” offset, respectively. Choose the appropriate offset bar based on the distance from the rear of equipment to the rackrail.

Features

Key Specifications

Resources

Features

- Economical horizontal cable lacing and support
- “L” bar style with angled 4” offset
- All lacer bars sold in packs of 10 pieces

Section 274100 - 2.10.PP.15.f Comply

Key Specifications

General Info

finish: Black Powder Coat

quantity: 10

Component Type: Horizontal

Style: L bar 4" offset

Assembly/Installation Information

Mounting Points: 2

Listing Agencies/Third Party Information

RoHS: Yes

Greenguard: Yes

Dimensions

Depth U S: 4

Height U S: 0.7

Width U S: 19

Technical Information

Material: Steel

Primary Package Weight U S: 4

Resources

CAD Technical Specification Drawings

96-01206_offset-lace

DWG (367.4 KB)

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SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET F



LISTED
UL-1480,
UL-2043

Product Description

The Tannoy CVS6 is a full bandwidth ceiling speaker system. The design comprises a 150mm (6.00") mid bass driver with a coaxially mounted 19mm (0.75") high frequency section mounted in a vented, injection moulded, paintable front baffle manufactured from UV/weather resistant UL94V-0 ABS material.

The mineral loaded polypropylene cone material and nitrile rubber surround enhance durability and long-term reliability. This compact unit is specifically designed for applications requiring the combination of excellent sonic quality for music and speech reinforcement and exceptional reliability.

The CVS6 is equipped with a low insertion loss 60W line transformer easily configurable to the following settings via front baffle mounted rotary tapping switch:

70V systems: 60W / 30W / 15W / 7.5W / OFF & low Impedance operation

100V systems: 60W / 30W / 15W / OFF & low Impedance operation

The CVS6 is supplied with an integral zinc-plated steel back can, with recessed termination box, to satisfy the vast majority of installation application requirements. The removable locking connector has screw terminals for secure wire termination and "loop through" facility. Strain relief is provided by a clamping mechanism for use with plenum rated cable or conduit. Security toggle clamps make for quick and easy installation, while two tile support rails and one C-ring are also included in the package. A plaster (mud) ring is available as an optional accessory.

Features

- Coaxially mounted 150 mm (6.00") mineral loaded woofer with rubber surround and 19mm (0.75") soft dome diffraction loaded tweeter.
- High power & high sensitivity with extended frequency response and very low distortion
- Wide, controlled constant directivity dispersion for optimum coverage.
- UV/weather resistant UL94V-0 ABS front baffle
- Easily accessible tapping switch on front baffle.
- Low insertion loss 60W line transformer
- Ferrofluid cooled neodymium HF
- Packaged with tile rails and C-ring for quick & easy installation and simple stocking logistics

Applications

- Multizone Foreground Music & Paging Systems
- Boardrooms & Offices
- Business Music Systems
- Airports, Convention Centres, Hotels
- Reception / Waiting Rooms
- Houses of Worship
- Retail Outlets / Shopping Malls
- Lounges / Bars
- Cruise Ships
- Courtrooms

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tannoy.com



CVS6

Section 274100 - 2.3.I. 10.a Comply
 Section 274100 - 2.4 K.10.a Comply
 Section 274100 - 2.5.K.10.a Comply
 Section 274100 - 2.6 J.10.a Comply
 Section 274100 - 2.9.L.10.a Comply

TANNOY®

TECHNICAL SPECIFICATIONS

System	CVS6
Frequency Response (-3dB) ⁽¹⁾	79Hz - 21kHz
Frequency Range (-10dB) ⁽¹⁾	60Hz - 24kHz
System Sensitivity (1W @1m) ⁽²⁾	91dB (1W - 2.45V for 6 Ohms)
Nominal Coverage Angle	90 Degrees Conical
Coverage Angle (1kHz to 6kHz)	93 Degrees Conical
Directivity Factor (Q)	7.7 average 1kHz to 6kHz
Directivity Index (DI)	8.0 averaged 1kHz to 6Hz
Rated Maximum SPL	109dB (average) 115dB (peak)
Power Handling	
Average	60W
Programme	120W
Peak	240W
Recommended Amplifier Power	120W @ 6 Ohms
Nominal Impedance	6 Ohms
Transformer Taps (via front rotary switch)	
70V	60W / 30W / 15W / 7.5W / OFF & Low Impedance operation
100V	60W / 30W / 15W / OFF & Low Impedance operation
Distortion	
10% Full Power	2nd Harmonic 3rd Harmonic
250Hz	0.439% 0.140%
1kHz	0.396% 0.458%
10kHz	0.235% 0.023%
1% Full Power	2nd Harmonic 3rd Harmonic
250Hz	1.16% 0.214%
1kHz	1.014% 0.685%
10kHz	0.944% 0.047%
Crossover	2.5kHz

Notes

(1) Average over stated bandwidth. Measured at 1 metre on axis.
 (2) Unweighted pink noise input, measured at 1 metre in an anechoic chamber

A full range of measurements, performance data, and Ease™ Data can be downloaded from www.tannoy.com

Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods will always equal or exceed the published specifications, which Tannoy reserves the right to alter without prior notice. Please verify the latest specifications when dealing with critical applications.

Transducers	
Low Frequency	150mm (6.00") mineral loaded cone
High Frequency	19mm (0.75") softdome
Physical	
System Type	Ceiling speaker with integral (Blind Mount) Back Can
Enclosure	
Backcan	Zinc plated steel
Baffle	Reflex loaded UL 94V-0 rated ABS
Grille	Steel, with weather resistant coating
Safety Features	Safety ring located at rear of enclosure for load bearing safety bond
Clamping Design	Security Toggle Clamp
Backcan Options	
Blind Mount (BM)	Yes
Pre Install (PI)	NA
Cable Entry Options	Cable clamp & squeeze connector for conduit up to 22mm
Connectors	Removable locking connector with screw terminals with "loop through" facility
Safety Agency Rating	UL-1480, UL-2043, CE
BM Hole Cutout Diameter	250mm (9.84")
Dimensions	
Bezel Diameter	279.5mm (11.01")
Net Weight (ea)	6.5kg (14.3 lbs)
Front of ceiling to rear of backcan	246.5mm (9.70")
Front of Ceiling to top of safety loop	258.5mm (10.18")
Included Accessories	C Ring, tile bridge, paint mask, cutout template, grille
Optional Accessories	Plaster (Mud) Ring

Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QTY	PACKED WEIGHT
8001 4240	CVS6	WHITE / PAINTABLE	2	15kg (33.07 lbs)
8001 4181	CVS6 Plaster (Mud) Ring	ZINC PLATED STEEL	10	6.75kg (14.88 lbs)

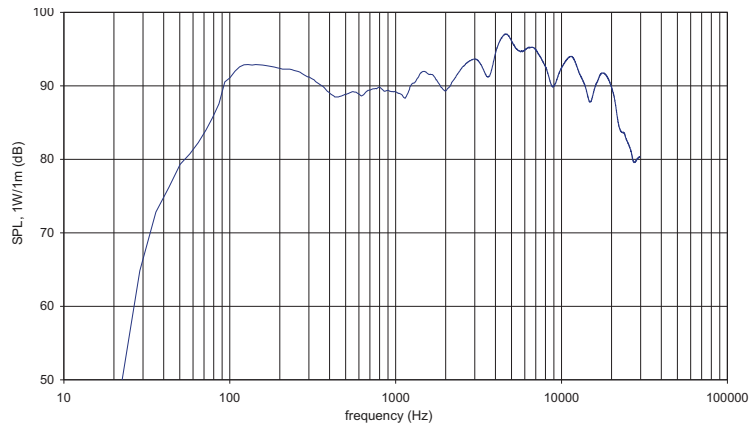
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Tannoy France	T: 00 33 (0) 1 7036 7473	E: ventes@tannoy.com
TC Group Americas	T: 00 1 (519) 745 1158	E: info@tcgroup-americas.com

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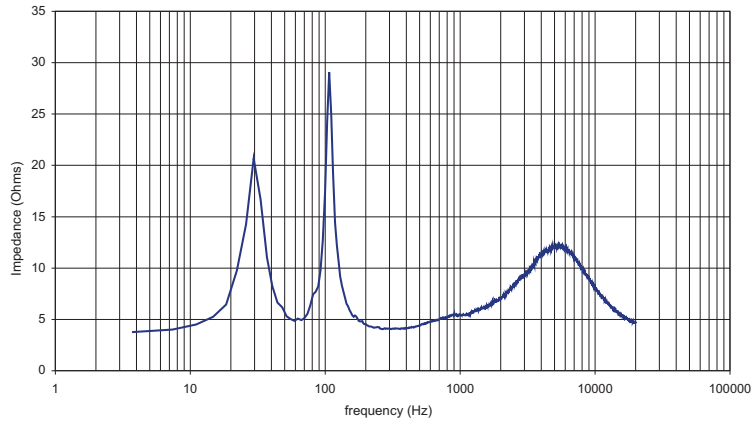
PERFORMANCE MEASUREMENTS

1m on-axis frequency response



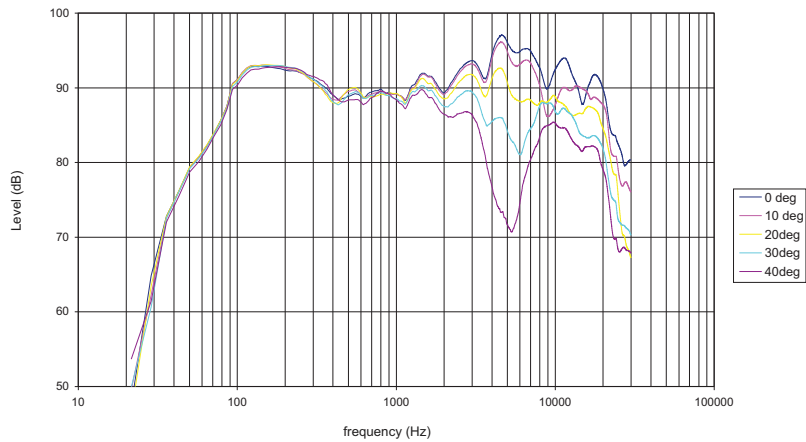
ANECHOIC
FREQUENCY
RESPONSE

Impedance vs frequency



IMPEDANCE

Horizontal off-axis response



OFF AXIS
RESPONSE

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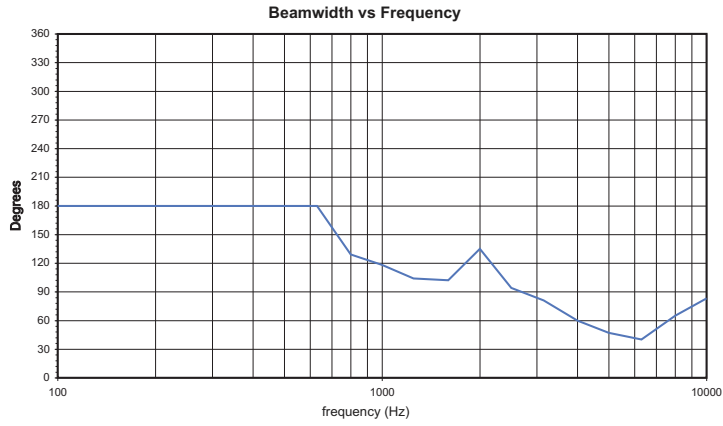
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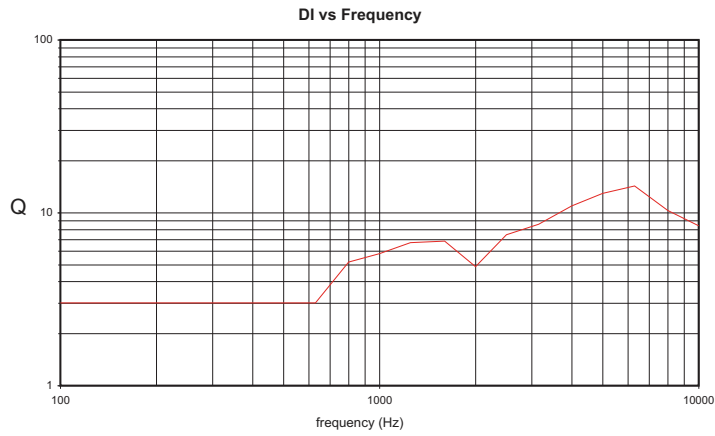
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PERFORMANCE MEASUREMENTS



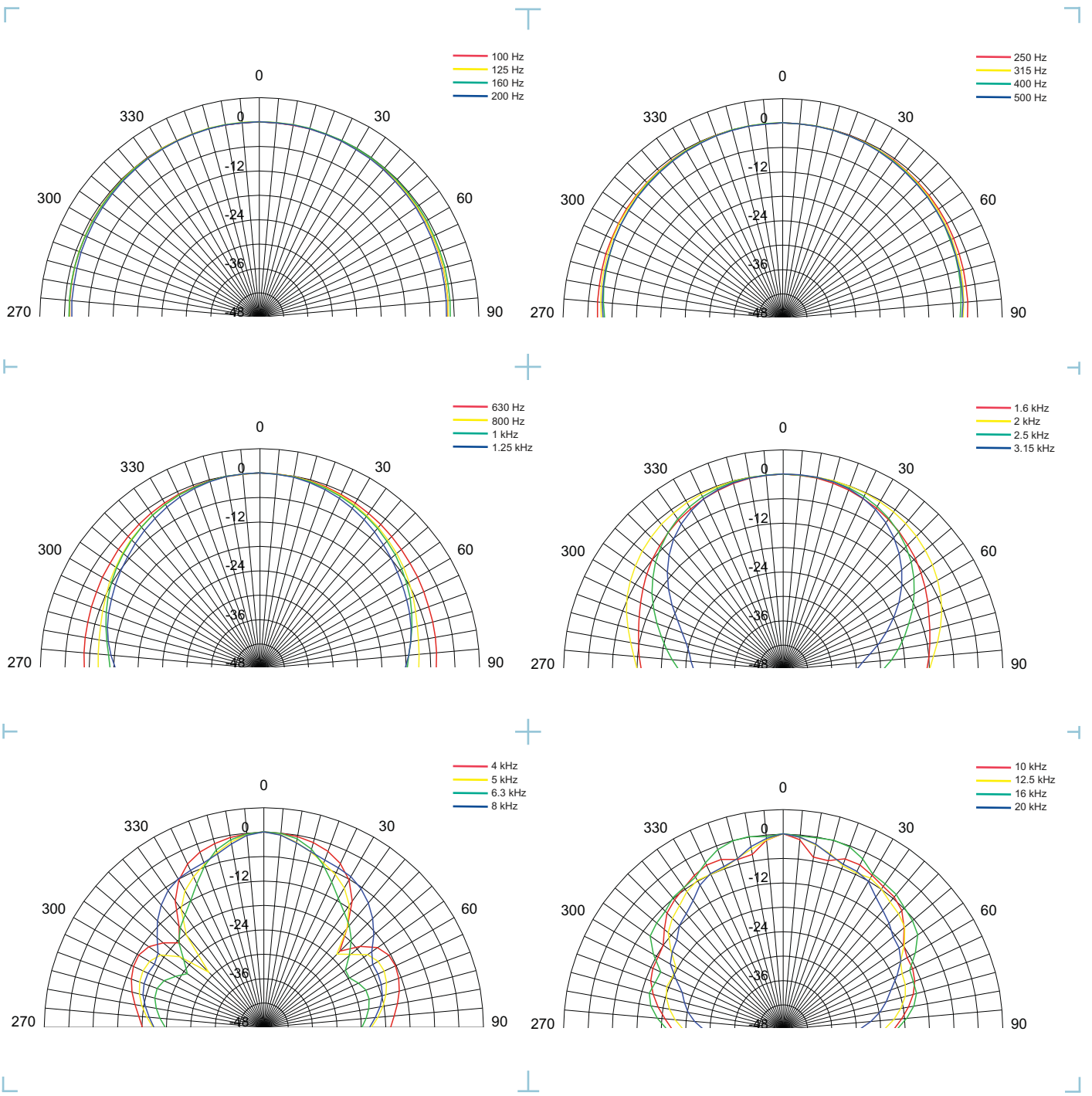
BEAMWIDTH



DIRECTIVITY INDEX



PERFORMANCE MEASUREMENTS POLAR PLOTS (1/3 OCTAVE)



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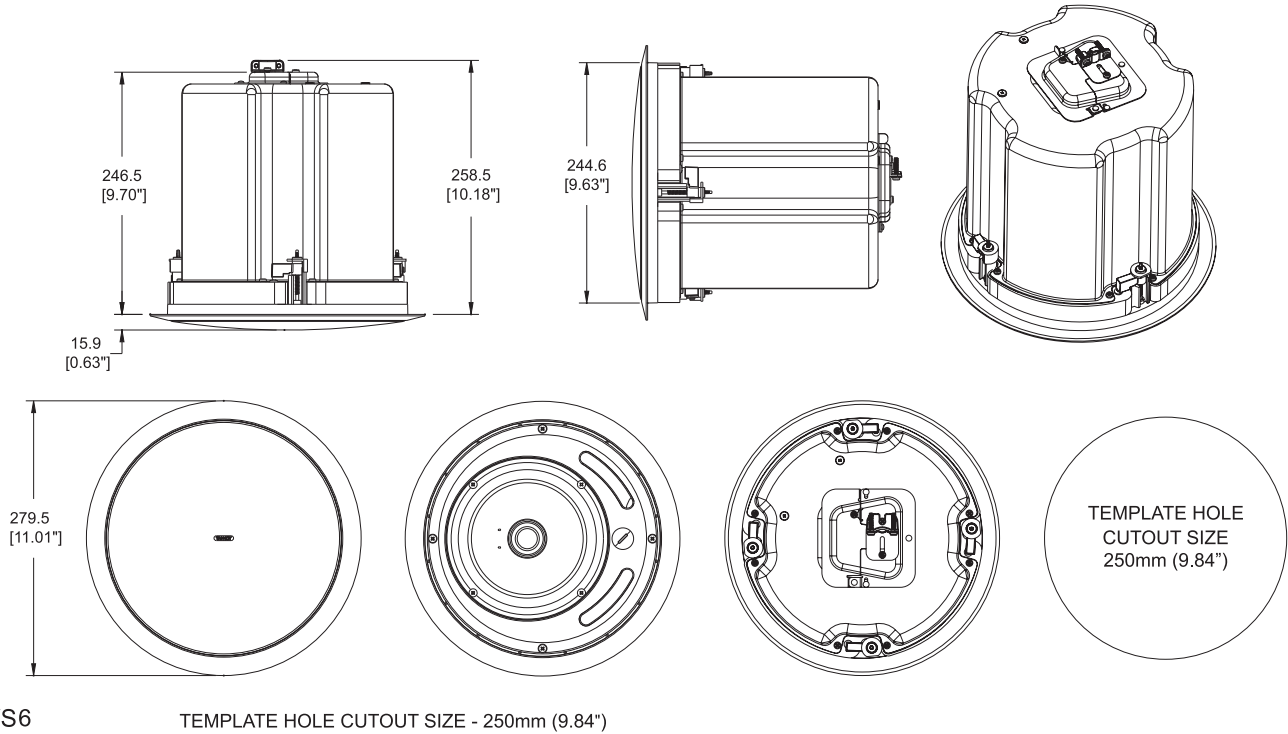
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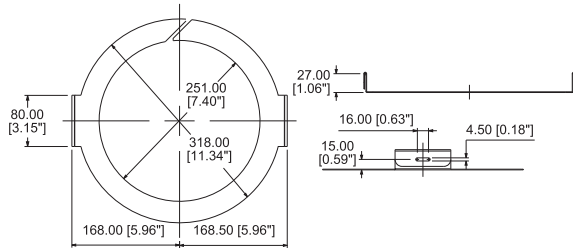
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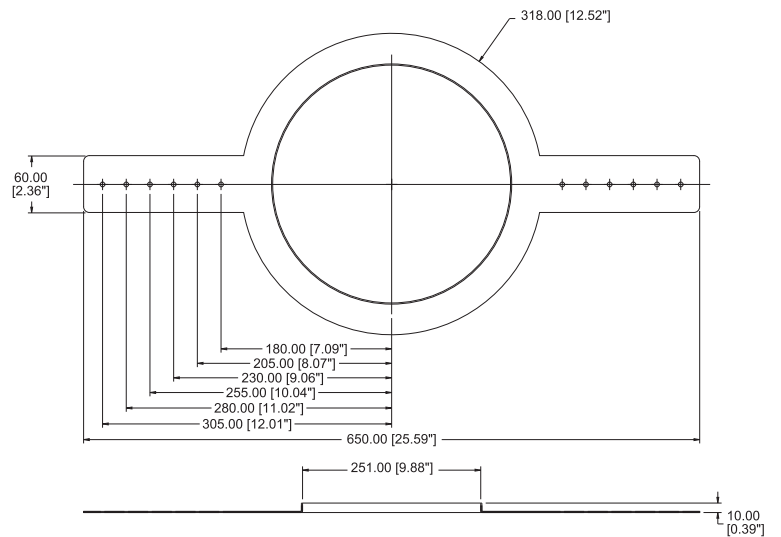
DIMENSIONAL SKETCHES



SUPPLIED ACCESSORIES C-RING



OPTIONAL ACCESSORIES PLASTER (MUD) RING



Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QUANTITY	PACKED WEIGHT
8001 4240	CVS6	WHITE / PAINTABLE	2	15kg (33.07 lbs)
8001 4181	CVS6 Plaster (Mud) Ring	ZINC PLATED STEEL	10	6kg (13.23 lbs)

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Architectural specifications

The Ceiling Speaker System shall consist of a 150mm (6.00") mineral loaded mid bass driver with coaxially mounted 19mm (0.75") high frequency unit and passive frequency dividing network mounted in a vented, injection moulded, paintable front baffle in UL94V-0 ABS material.

The backcan shall be constructed of zinc plated steel. A recessed termination box shall be integrated with the backcan, a removable locking connector with screw terminals for secure wire termination with "loop through" facility shall be provided. Strain relief will be provided by a clamping mechanism for use with plenum rated cable or conduit. A safety ring is located on the rear of the backcan for a load bearing safety bond.

Performance of the ceiling speaker shall meet or exceed the following criteria: The system shall have a conical coverage pattern of 93 degrees (1kHz to 6kHz). Frequency response measured on axis shall be 60Hz -24kHz (-10dB from rated sensitivity, measured in an IEC baffle in an anechoic chamber) with no equalization. Sensitivity shall be 91dB (1W @ 1m). Long term power handling capacity as defined in EIA-426B test shall be 60W, recommended amplifier power 120W. The nominal system impedance shall be 6W (in low impedance setting).

The ceiling speaker system shall be equipped with a 60W high performance line transformer for use in 70.7 or 100 Volt distributed audio systems with 60, 30, 15, 7.5* Watt taps available. An easily accessible rotary switch located on the front baffle shall be available for selecting transformer and low impedance settings. A weather resistant perforated steel grille covers the transducer and switch.

Two support rails and one C-Ring shall be included with the ceiling monitor system. The front face diameter shall not exceed 279.5mm (11.01"), overall depth from the front of the ceiling to the top of the safety loop shall not exceed 258.5mm (10.18").The template cut out diameter shall be 250mm (9.84")

The Ceiling Monitor System shall be the.....CVS6.

*70 Volt only



APC Smart UPS 3000VA 230V RM 2U with UL Approval

SUA3000R2IX38

Section 274100 - 2.3 Q.9.a Comply
 Section 274100 - 2.4 S.9.a Comply
 Section 274100 - 2.5 S.9.a Comply
 Section 274100 - 2.6 S.9.a Comply
 Section 274100 - 2.9 U.9.a Comply
 Section 274100 - 2.10 QQ.9.a Comply

APC Smart UPS 3000VA 230V RM 2U with UL Approval

Includes: CD with software , Documentation CD , Smart UPS signalling RS-232 cable

Output

- **Output power capacity**
2.7 KWatts / 3.0 kVA
- Max Configurable Power (Watts)
2.7 KWatts / 3.0 kVA
- **Nominal Output Voltage**
230V
- Efficiency at Full Load
96.0 %
- Output Voltage Distortion
Less than 5% at full load
- Output Frequency (sync to mains)
47 - 53 Hz for 50 Hz nominal, 57 - 63 Hz for 60 Hz nominal
- Load Crest Factor
--
- Topology
Line Interactive
- Waveform type
Sine wave
- Output Connections
(8) IEC 320 C13 (Battery Backup), (1) IEC 320 C19 (Battery Backup)

Input

- **Nominal Input Voltage**
230V
- Input frequency
50/60 Hz +/- 3 Hz (auto sensing)
- Input Connections
IEC-320 C20
- Input voltage range for main operations
160 - 285 V
- Input voltage adjustable range for mains operation
151 - 302 V
- Number of Power Cords
1
- Efficiency at Full Load
96.0 %

Batteries & Runtime

- Battery type
Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof
- Typical recharge time
3 hour(s)
- Replacement Battery
RBC43
- RBC Quantity
1
- Battery Volt-Amp-Hour Capacity
528
- **Runtime**
3 min (2700 Watts) 11 min (1350 Watts)

Communications & Management

- **Interface Port(s)**
DB-9 RS-232 , Smart-Slot , USB
- Control panel
LED status display with load and battery bar-graphs and On Line : On Battery : Replace Battery : and Overload Indicators
- Audible Alarm
Alarm when on battery : distinctive low battery alarm : overload continuous tone alarm
- Emergency Power Off (EPO)
Yes
- Available SmartSlot™ Interface Quantity
1

Surge Protection and Filtering

- Surge energy rating
480 Joules
- Filtering
Full time multi-pole noise filtering : 0.3% IEEE surge let-through : zero clamping response time : meets UL 1449

Physical

- Maximum Height
89 , 8.9 cm
- Maximum Width
483 , 48.3 cm
- Maximum Depth
660 , 66.0 cm
- **Rack Height**
2 U
- Net Weight
43.64 kg
- Shipping weight
56.82 kg
- Shipping Height
254 , 25.4 cm
- Shipping Width
622 , 62.2 cm
- Shipping Depth
980 , 98.0 cm
- Color
Black
- Units per Pallet
8.0

Environmental

- Operating Environment
0 - 40 °C
- Operating Relative Humidity
0 - 95 %
- Operating Elevation
0-3000 meters
- Storage Temperature
-15 - 45 °C

- Storage Relative Humidity

0 - 95 %

- Storage Elevation

0-15000 meters

- Audible noise at 1 meter from surface of unit

47.0 dBA

- Online thermal dissipation

400.0 BTU/hr

Conformance

- Approvals

C-tick, CE, CSA, EN 50091-1, EN 50091-2, GOST, UL 1778, VDE

- Standard warranty

2 years repair or replace

Sustainable Offer Status

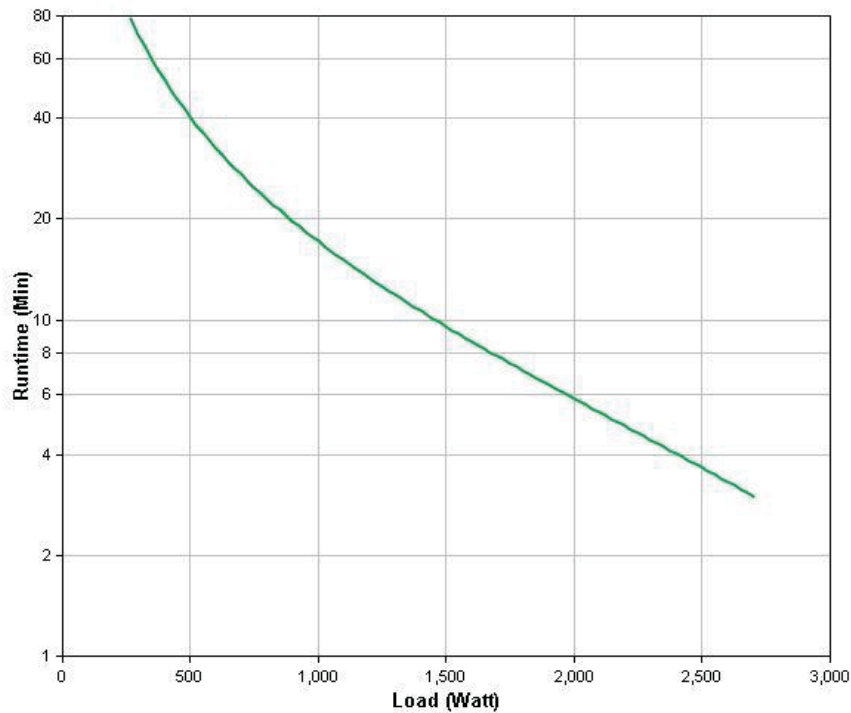
- PEP

Available in Documentation tab

- EOLI

Available in Documentation tab

Runtime Graph



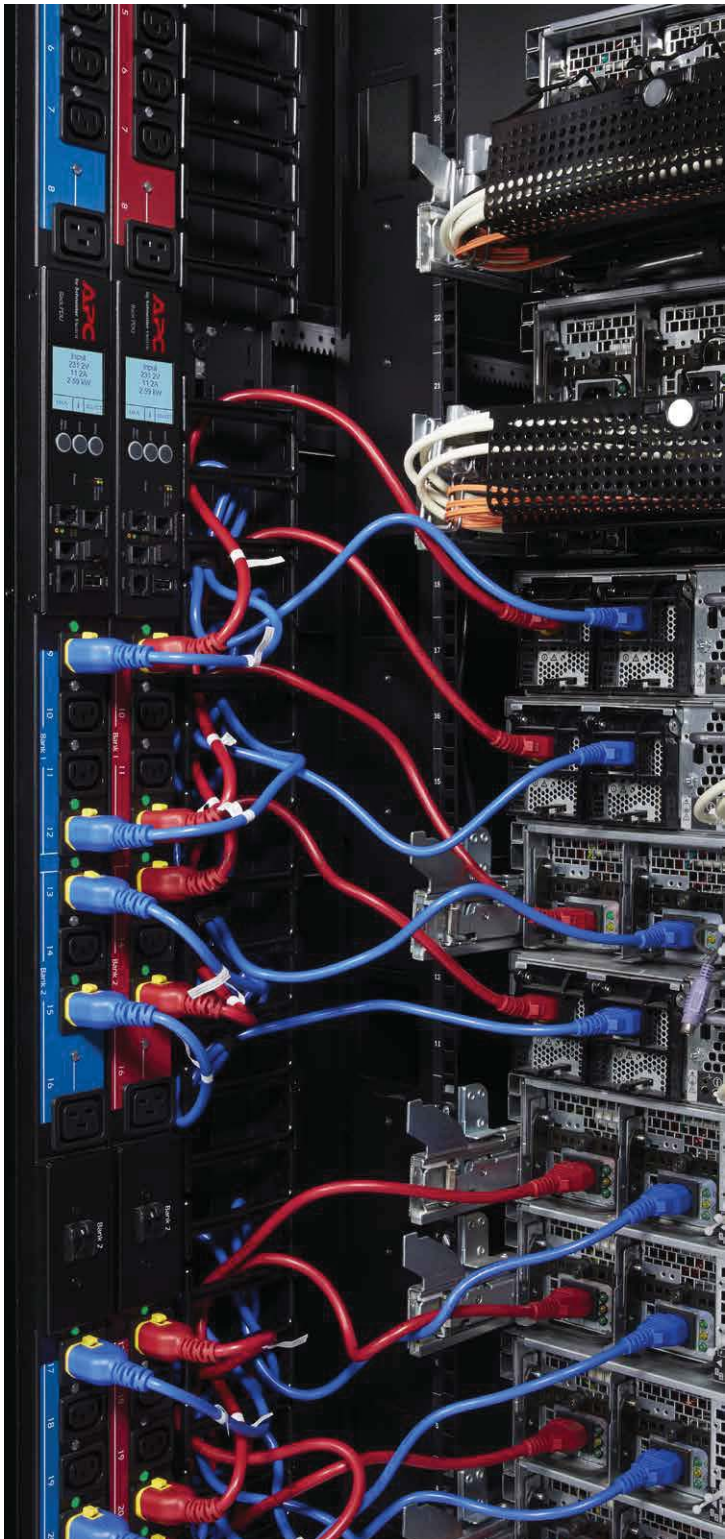
Hover over the line on the graph above to view the runtime at any desired load

Curve fit to measured runtime data. All measurements taken with new, fully charged batteries, at typical environmental conditions, with no electrical input and balanced resistive load (PF = 1.0) output.



Rack Power
Distribution &
Rack Systems
Worldwide





Rack Equipment

Introduction

APC™ by Schneider Electric™ offers a wide array of standardized Rack Power Distribution Units (PDUs) designed to increase manageability and efficiency in your data center.

Basic Rack PDUs

- reliable power distribution

Metered Rack PDUs

- real-time remote monitoring of connected loads
- user-defined alarms warn IT and data center managers of potential circuit overloads to prevent accidental power loss to critical equipment

Switched Rack PDUs

- metered functionality
- individual outlet control to power cycle outlets
- manage on/off equipment sequencing

Metered-by-Outlet Rack PDUs

- provide greater power management
- individual outlet-level power metering
- user-resettable energy (kWh) logs for capacity planning and energy-efficiency initiatives

AP8000 Series Rack PDUs

The AP8000 Series Rack PDU platform will help IT and facilities managers more effectively manage power capacity and functionality for critical network, server, and data center equipment. These Rack PDUs solve rack-level power needs while incorporating intelligent features, such as real power measurement and environmental monitoring, all in a space-efficient, zero-U form factor. AP8000 Series Rack PDUs include active power metering and remote alarming with volts, amps, real power (kW), and energy (kWh) measurements.

Access the latest electronic version of this brochure at: www.apc.com/wp?br=4

Basic Rack PDUs

APC Basic Rack PDUs provide reliable power distribution via a single input with multiple output receptacles and distributes power from low-amperage, single-phase circuits to higher-power, three-phase solutions.



Voltage	Mounting U-space	Nominal Voltage	Region	Input Circuit	Nominal Power	Input Plug Type	Output Receptacles	Cord Length	APC SKU
100 – 120 V Input	Vertical, 0U	100 – 120	NAM, LAM	15 A	1.4 kW	NEMA 5-15P	(14) 5-15	3.6 m	AP9567
	Vertical, 0U	120	NAM	20 A	1.9 kW	NEMA L5-20P	(24) 5-20	3.0 m	AP7530
	Vertical, 0U	100 – 120	NAM	20 A	1.9 kW	NEMA L5-20P	(14) 5-15	3.6 m	AP9551
	Vertical, 0U	100 – 120	Japan	20 A	2.0 kW	NEMA L5-20P	(24) 5-15	3.0 m	AP7530J
	Vertical, 0U	120	NAM	30 A	2.9 kW	NEMA L5-30P	(24) 5-20	3.0 m	AP7532
	Vertical, 0U	100	Japan	30 A	3.0 kW	NEMA L5-30P	(24) 5-15	3.0 m	AP7532J
	Horizontal, 1U	100 – 120	NAM, LAM	15 A	1.4 kW	NEMA 5-15P	(10) 5-15	3.6 m	AP9562
	Horizontal, 1U	100 – 120	NAM	20 A	1.9 kW	NEMA 5-20P	(10) 5-20	3.6 m	AP9563
	Horizontal, 1U	100 – 120	NAM	20 A	1.9 kW	NEMA L5-20P	(10) 5-20	3.6 m	AP9564
	Horizontal, 1U	100 – 120	NAM	30 A	2.9 kW	NEMA L5-30P	(10) 5-20	3.6 m	AP9560
200 – 240 V Input	Vertical, 0U	120 – 240	Worldwide	10 A	2.3 kW	IEC-320 C14*	(15) C13	2.0 m	AP9568
	Vertical, 0U	230	GCN	16 A	3.5 kW	IEC-309 16 A	(14)C13 (4)C19	1.0 m	AP6351CH
	Vertical, 0U	230	GCN	16 A	3.5 kW	IEC-309 16 A	(18)C13 (6)C19	1.0 m	AP6451CH
	Vertical, 0U	120 – 230	Worldwide	16 A	3.3 kW	IEC-320 C20	(15) C13	2.5 m	AP9572
	Vertical, 0U	230	LAM, EMEA, GCN, APJ	16 A	3.7 kW	IEC-309 16 A	(20) C13 (4) C19	1.0 m	AP7551
	Vertical, 0U	230	Worldwide	16 A	3.7 kW	IEC-320 C20*	(20) C13 (4) C19	3.0 m	AP7552
	Vertical, 0U	200 – 240	NAM	20 A	3.3 kW	NEMA L6-20P	(20) C13 (4) C19	3.0 m	AP7540
	Vertical, 0U	200 – 240	NAM	30 A	5.0 kW	NEMA L6-30P	(20) C13 (4) C19	3.0 m	AP7541
	Vertical, 0U	230	GCN	32 A	7.0 kW	IEC-309 32 A	(18)C13 (6)C19	2.0 m	AP6453CH
	Vertical, 0U	230	LAM, EMEA, GCN, APJ	32 A	7.4 kW	IEC-309 32 A	(20) C13 (4) C19	3.0 m	AP7553
	Horizontal, 1U	230	GCN	16 A	3.5 kW	IEC-320 C20	(8) GB	Inlet	AP6201CH
	Horizontal, 1U	230	GCN	16 A	3.5 kW	IEC-320 C20	(20) C13	Inlet	AP6221CH
	Horizontal, 1U	120 – 240	Worldwide	16 A	3.7 kW	IEC-320 C20*	(10) C13 (2) C19	2.5 m	AP9559
	Horizontal, 1U	100 – 240	Worldwide	16 A	3.7 kW	IEC-320 C20*	(12) C13	2.5 m	AP9565
	Horizontal, 1U	208	NAM, LAM	20 A	3.3 kW	NEMA L6-20P	(12) C13	3.6 m	AP9566
	Horizontal, 1U	208	NAM	30 A	5.0 kW	NEMA L6-30P	(4) C19	3.0 m	AP9570
	Horizontal, 1U	200 – 240	NAM, LAM	30 A	5.0 kW	NEMA L6-30P	(10) C13	3.6 m	AP9571A
	Horizontal, 2U	230	LAM, EMEA, GCN, APJ	32 A	7.4 kW	Hardwire	(4) C19	8.5 m	AP7585
Horizontal, 2U	230	LAM, EMEA, GCN, APJ	32 A	7.4 kW	Hardwire	(4) IEC 309 32A	8.5 m	AP7586	

* See page 20/21 for inlet power cord

Rack PDU Mounting Styles

> Horizontal 1/2U mounting



> Vertical 0U mounting with toolless mounting

Section 274100 - 2.3 P.5.b Comply
 Section 274100 - 2.4 R.5.e Comply
 Section 274100 - 2.5 R.5.e Comply
 Section 274100 - 2.6 R.5.d Comply
 Section 274100 - 2.9 T.5.f Comply
 Section 274100 - 2.10 PP.15.h Comply



Section 274100 - 2.3.Q.9.a Comply
Section 274100 - 2.4.S.9.a Comply
Section 274100 - 2.5.S.9.a Comply
Section 274100 - 2.6.S.9.a Comply
Section 274100 - 2.9.U.9.a Comply
Section 274100 - 2.10.QQ.9.a Comply

AP9875

Power Cord, C19 to CEE/7 Schuko, 2.5m

Output

- Overload Protection
No
- Maximum Total Current Draw
16
- Output Connections
(1) IEC 320 C19 (Battery Backup)

Input

- Input frequency
50/60 Hz
- Input Connections
Schuko CEE 7 / EU1-16P
- Cord Length
2.5 meters
- Acceptable Input Voltage
90-250 VAC
- Number of Power Cords
1
- Maximum Input Current
16 A
- Maximum Line Current
16 A

Physical

- Net Weight
0.22 kg
- Shipping weight
0.3 kg
- Shipping Height
51 , 5.1 cm
- Shipping Width
102 , 10.2 cm
- Shipping Depth
203 , 20.3 cm
- Color
Black

Environmental

- Operating Environment
0 - 45 °C
- Operating Relative Humidity
0 - 95 %
- Operating Elevation
0-3000 meters
- Storage Temperature
-25 - 65 °C
- Storage Relative Humidity
0 - 95 %
- Storage Elevation
0-15000 meters

Conformance

- Approvals
VDE
- Standard warranty
2 years repair or replace

Sustainable Offer Status

- RoHS
Compliant
- PEP
Available in Documentation tab
- EOLI
Available in Documentation tab

FURMAN SERIES III

PS-8RE III

10 Amp PowerConditioner and Sequencer



Power Conditioning and Power Sequencing Maximizes System Reliability and Performance for a Wide Variety of Applications



Featuring SMP, LiFT, and EVS Technologies



Features:

- Series Multi-Stage Protection (SMP) for virtually maintenance free protection from surges and spikes - no sacrificed parts, no service calls, and no downtime
- Furman's unequalled Linear Filtering Technology (LiFT) rids systems of AC line noise for consistent audio/video clarity
- Automatic Extreme Voltage Shutdown (E.V.S.) powers down equipment during a prolonged extreme over-voltage
- Six sequenced rear panel outlets (in 3 groups), two switched rear panel outlets, and one front panel switched outlet
- Momentary and Maintained sequencing via rear panel terminal block or front panel switch
- 10 amp rating

New in PS-8RE III:

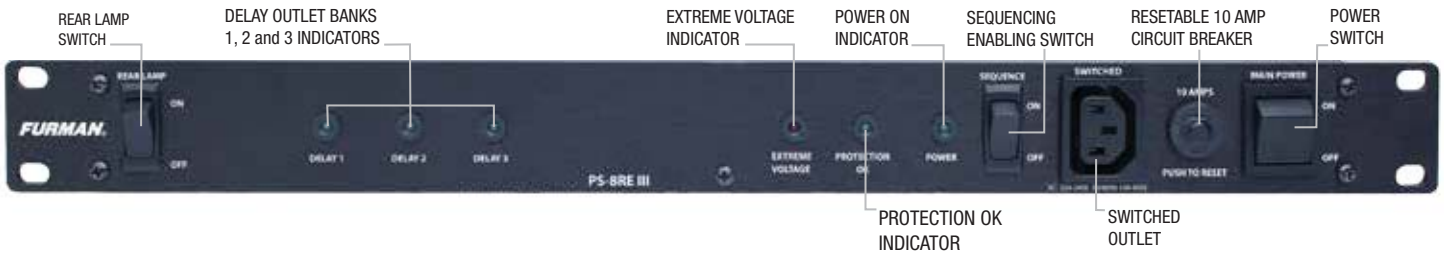
- All settings and configuration available on rear panel
- External delay and remote interface configuration; no need to remove the top cover to adjust potentiometers or jumpers
- Lower profile depth; shorter depth chassis provides more flexibility with rack placement and cable management
- Improved "Start On/Off Sequence" rocker switch; tactile black switch replaces push-button
- Non-illuminated power on/off switch; matte black switch for discreet aesthetics

SERIES III PS-8RE III

Featuring SMP, LiFT, and EVS Technologies



FRONT PANEL FEATURES

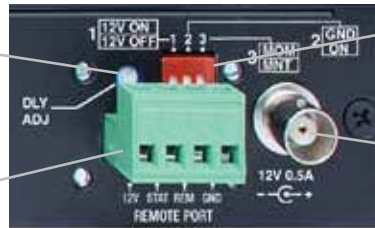


REAR PANEL FEATURES



Delay Adjustment

The delay interval, which is the time between the turn-on / turn-off of consecutive delay outlets 1 and 2, or 2 and 3, is factory preset to approximately 5 seconds. It is possible to lengthen or shorten the delay interval by changing the position of the DLY-ADJ trim pot located on the right side of rear panel.



Dip Switches

A rear panel three position DIP switch is used to set the sequence mode (+12V ON, +12V OFF, GND ON, Mom/ Maint) which defines how the PS-8RE III will react to the signal presented on its REM input.

Remote Interface

The PS-8RE III has a remote interface which can be used to control the PS-8RE III remotely using a Furman RS-1 (Maintained) or RS-2 (Momentary) wall switches (sold separately).

Rear Lamp Socket

The PS-8RE III features a rear rack BNC socket which will accept any 12 VDC or 12VAC up to 1/2 Amp gooseneck lamp assembly, (such as the Furman GN-LED or GN-I).

SPECIFICATIONS

Maximum AC Current Rating:

- 10 Amps, 220 - 240 VAC @ 50 – 60 Hz (Thermal breaker)

AC Cord:

- 1 mm² x 3, 2.5 m length, IEC-C13 (Female) to CEE-7/7 Schuko plug.

AC Inlet:

- IEC-C14 (Male) with metal wire retainer clip

AC Outlets:

- Convenience Outlet (Front Panel) 1 Switched IEC C-13
- Rear Panel Outlets: 2 Switched IEC C-13 (1 duplex),
- 6 Sequenced IEC C-13 (3 duplexes each controlled by separate relay)

AC Surge Protection:

- Spike Protection Mode: Line to neutral, zero ground leakage
- Spike Clamping Voltage: 376VAC peak @ 6,000 Volts/3,000 Amps
- Response Time: 1 nanosecond
- Maximum Surge Current: 6,500 Amps
- AC Over-voltage Protection: EVS, 275VAC+/-5VAC
- AC Over-voltage Reset Modes: Auto
- Series Multi-Stage Protection

AC Filtering:

- LiFT
- Noise Attenuation: 10dB @10KHz, 40dB@100KHz, 50dB@500KH

Specifications subject to change due to product upgrades and improvements.

WEIGHTS, DIMENSIONS AND UPC CODES

MODEL	PRODUCT DIMENSIONS	WEIGHT	CARTON DIMENSIONS	WEIGHT	SINGLE UNIT UPC	MASTER PACK QTY	MASTER PACK UPC
PS-8RE III	7"D x 19"W x 1.75"H	7 lbs	12"D x 22"W x 3.5"H	8.5 lbs	654061041085	6	50654061041080

FURMAN www.furmansound.com

Furman 1800 S. McDowell Blvd., Petaluma, CA 94954

2-28-14

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Section 274100 - 2.10.OO.9.b Comply
Section 274100 - 2.10.F.14.a Comply
(Replacement)

BP540

Smart 3D Blu-ray Disc® Player

KEY FEATURES

2D/3D BLU-RAY DISC® PLAYBACK

DVD PLAYBACK

LG SMART TV

- Built-in Wi-Fi®
- Premium Content Partners
- All-in-One Search
- DLNA Certified®

LG REMOTE APP

PRIVATE SOUND MODE 2.0



OVERVIEW

The LG BP540 Smart Blu-ray Disc™ player lets you access movies, videos, games and apps in a simple-to-use interface. With Built-in Wi-Fi® it's even easier to take advantage of Internet access while keeping your entertainment space tidy by using less wires and clutter. LG's unique Private Sound Mode 2.0 allows you to hear the audio from your Blu-ray, DVD or streaming service through your compatible Smartphone or tablet. Plug in your earphones to your Smartphone and you can have the volume as loud as you want without disturbing anyone around you. And, DLNA® makes sharing media from compatible devices a snap.

HIGHLIGHTS

LG SMART TV

Access premium content from providers like Hulu Plus®, Netflix® and YouTube® directly through your LG Smart TV. Stream your favorite movies and TV shows, enjoy the latest games, apps and more.

PRIVATE SOUND MODE

Hear the audio from your Blu-ray, DVD or streaming service through your compatible Smartphone or tablet. Plug in your earphones to your Smartphone and you can have the volume as loud as you want without disturbing anyone around you.

BLU-RAY 3D

If you have a 3D-capable television, this player lets you enjoy visually spectacular Hollywood blockbusters on Blu-ray 3D Disc™, in stunning quality.

BLU-RAY™ PLAYER



Section 274100 - 2.10.A.16.a Comply
Section 274100 - 2.10.H.16.a Comply
(Replacement)

BP540

Smart 3D Blu-ray Disc® Player

PREMIUM CONTENT PROVIDERS	
Vudu	•
Netflix	•
Hulu	•
CinemaNow	•
Youtube	•
M-GO	•
MLB	•
Amazon	•
Pandora	•
Crackle	•
Spotify	•
Rhapsody	•
Accuweather	•
Vtuner	•
AP	•
Google Maps	•
Facebook	•
Twitter	•
Viewster	•

FEATURES	
3D	•
All-in-One Search	•
USB Playback	•
External HDD Playback (via USB)	•
Private Sound Mode	•
SIMPLINK	•
LG Remote App	•

VIDEO	
1080p Upscaling	•
Noise Reduction	•
NTSC <=> PAL Conversion	•
Deep Color	•
xvYCC	•
Video Enhancement	•

AUDIO	
Dolby® Digital	•
Dolby® Digital Plus	•
Dolby® TrueHD	•
DTS®	•
DTS 2.0+Digital Out®	•
DTS-HD Master Audio®	•

COMPATIBILITY	
BD Profile	5.0
Playback Formats	Video: MPEG-1, MPEG2 PS/TS, MPEG4 AVC (H.264), SMPTE VC1 (VC-9), MKV, AVC Rec, AVC HD, M4V, WMV, 3GP, MP4, MOV, FLV, VOB, TS, DAT Audio: LPCM, MPEG 1/2 L2, MP3, WMA, AAC, FLAC Photo: JPEG, GIF, Animated GIF, PNG
Playback Media	3D Blu-ray, BD, BD-R, BD-RE, DVD, DVD+/-R, DVD+/-RW, CD, CD-R, CD-RW, DTS-CD

CONNECTIVITY	
Wired	•
Wi-Fi® Built-in	•
Wi-Fi Direct	•
DLNA Certified®	•

INPUTS AND OUTPUTS	
HDMI® Output	1 (Rear)
Coaxial Digital Output	1 (Rear)
USB	1 (Front)
Ethernet	1 (Rear)

INCLUDED ACCESSORIES	
Remote Control	•
Batteries	•

POWER	
Voltage	Narrow
Type	SMPS
Power Consumption	12W
Standby Mode	0.5W

DIMENSIONS / WEIGHTS	
Product Size (WxHxD)	14.2" x 1.6" x 7.9"
Shipping Size (WxHxD)	16.5" x 10.4" x 3.2"
Product Weight	3.0 lbs
Shipping Weight	4.3 lbs

WARRANTY	
Limited Warranty	1 Year Parts & Labor
UPC	719192591868

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MODEL MX400 SERIES MICROPHONES



Section 274100 - 2.10 B.11.a Comply
(Replacement)

MODEL VARIATIONS

- **MX412:** 305 mm (12 in.) gooseneck microphone.
- **MX418:** 457 mm (18 in.) gooseneck microphone.
- **MX412S:** 305 mm (12 in.) gooseneck microphone; includes a mute switch and an LED.

SPECIFICATIONS

Frequency Response (Figure 1)

50 to 17,000 Hz

Polar Pattern (Figure 2)

Output Impedance (at 1000 Hz)

Rated at 150 Ω (180 Ω actual)

Open Circuit Sensitivity (at 1 kHz, ref. 1 V/Pascal*)

Cardioid: -35.0 dB (17.8 mV)

Supercardioid: -33.5 dB (21.1 mV)

Omnidirectional: -27.5 dB (42.2 mV)

All settings -12 dB at 0 gain

*1 Pascal = 94 dB SPL

Maximum SPL (1 kHz at 1% THD, 1 k Ω load)

Cardioid: 124.2 dB

Supercardioid: 122.7 dB

Omnidirectional: 116.7 dB

All settings +6 dB at 0 gain

Equivalent Output Noise (A-weighted)

Cardioid: 28.0 dB SPL

Supercardioid: 26.5 dB SPL

Omnidirectional: 20.5 dB SPL

Signal to Noise Ratio (referenced at 94 dB SPL)

Cardioid: 66.0 dB

Supercardioid: 67.5 dB

Omnidirectional: 73.5 dB

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OVERVIEW

Shure Microflex® MX400 Series microphones are miniature gooseneck-mounted electret condenser microphones designed primarily for speech and vocal pickup. They can be mounted on lecterns, pulpits, or conference tables. All models include a preamplifier and are available with interchangeable cardioid, supercardioid, or omnidirectional cartridges.

FEATURES

- Wide dynamic range and frequency response for accurate sound reproduction across the audio spectrum
- Interchangeable cartridges provide the right polar pattern for every application
- Balanced, transformerless output for increased immunity to noise over long cable runs
- Shock mount that provides over 20 dB isolation from surface vibration noise
- Locking flange mount for permanently securing microphone to lecterns, pulpits, or conference tables
- Snap-fit foam windscreen

- **MX418S:** 457 mm (18 in.) gooseneck microphone; includes a mute switch and an LED.

Dynamic Range at 1 k Ω Load

96.2 dB

100 dB at 0 gain

Common Mode Rejection

45.0 dB minimum

Mute Switch Attenuation (switched models only)

50.0 dB minimum

Preamplifier Output Clipping Level (1% THD)

-6.0 dBV (0.5 V)

-12 dB at 0 gain

Polarity

Positive sound pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of output connector.

Power Requirements

11 to 52 Vdc phantom, 2.0 mA

Environmental Requirements

Operating Temperature Range: -18° C to 57° C (0° F to 135° F)

Relative Humidity: 0 to 95%

Dimensions (Figure 3)

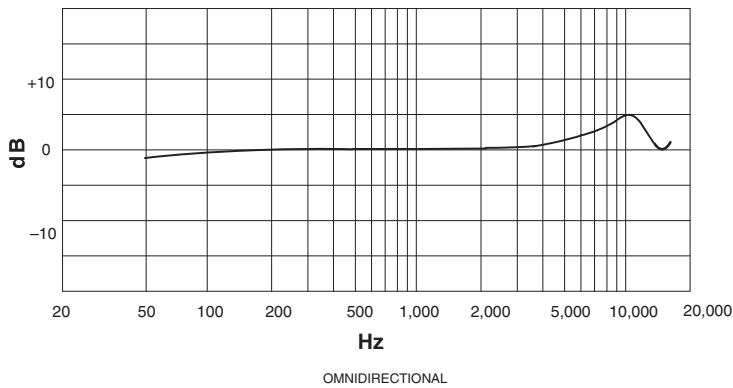
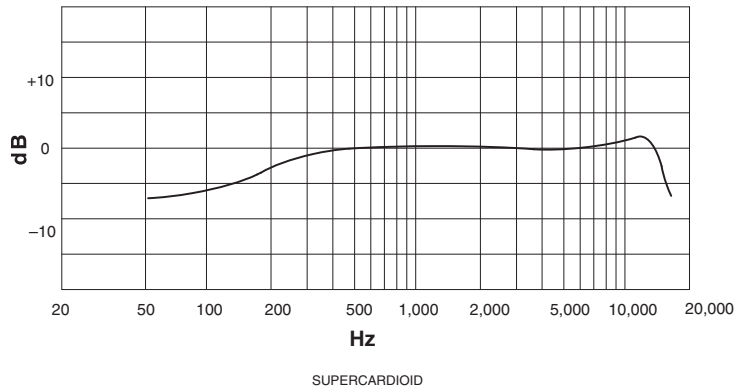
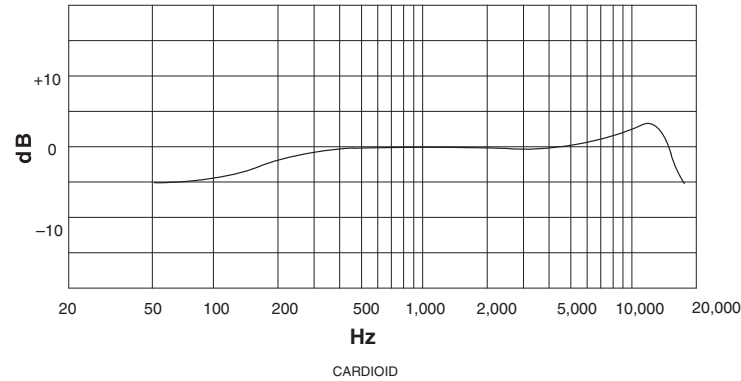
Certification

Eligible to bear CE Marking. Conforms to European EMC Directive 89/336/EEC. Meets applicable tests and performance criteria in European Standard EN55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.

REPLACEMENT PARTS

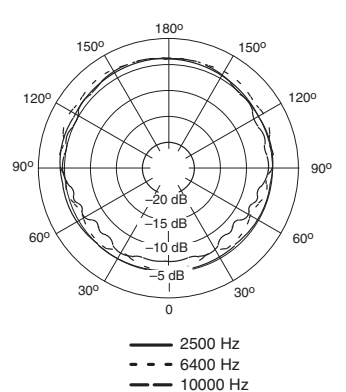
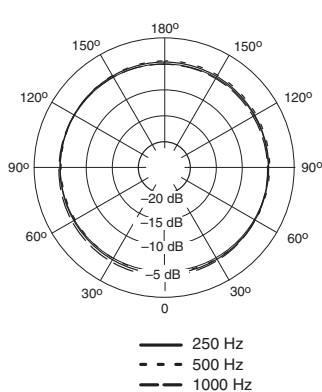
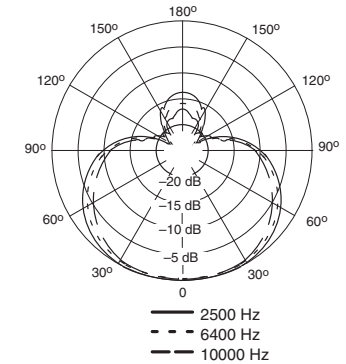
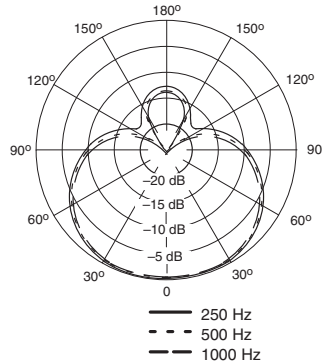
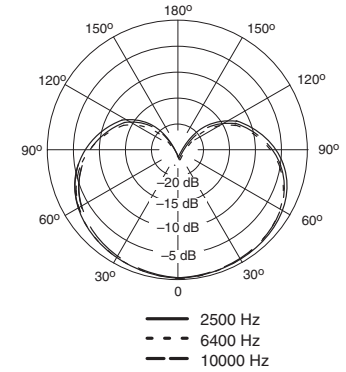
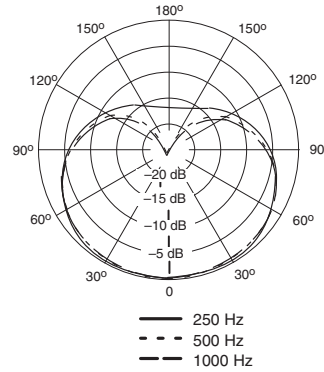
Foam Ball Windscreen	A99WS
Locking Metal Windscreen	A412MWS

Portable Desktop Base	A412B
Stand Adapter	A57E
Omnidirectional Cartridge	R183B
Supercardioid Cartridge	R184B
Cardioid Cartridge	R185B
Snap-fit Foam Windscreen (4)	RK412WS
Shock Mount	A400SM



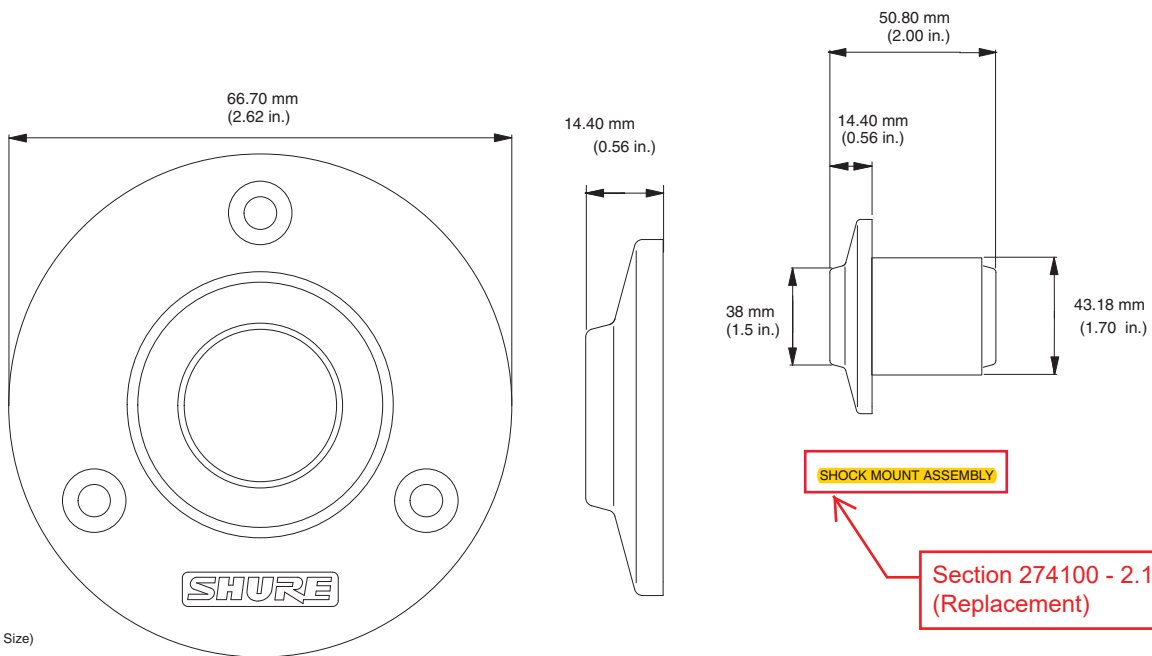
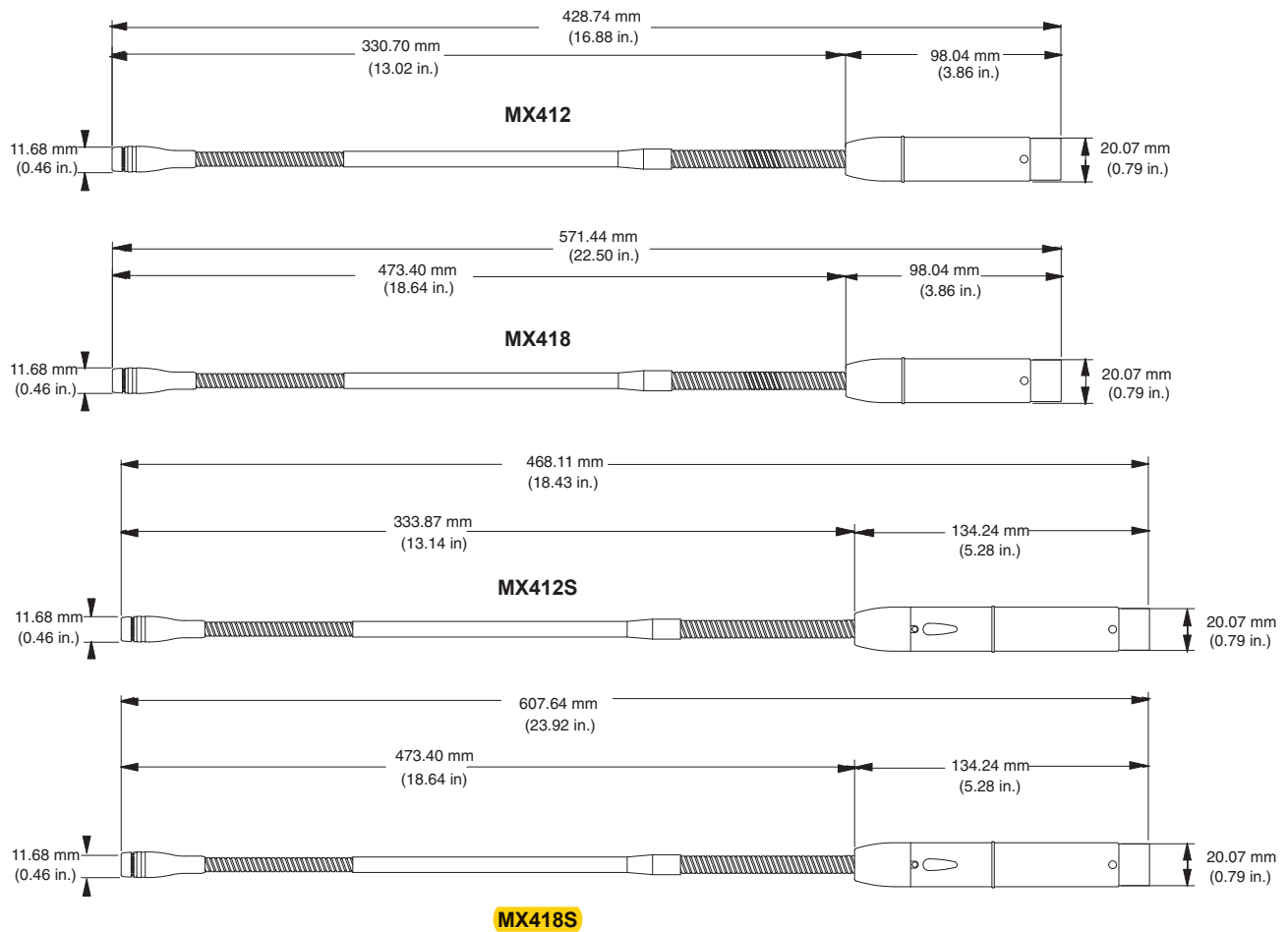
TYPICAL FREQUENCY RESPONSE

Figure 1



TYPICAL POLAR PATTERNS

Figure 2



DIMENSIONS
Figure 3

MOUNTING FLANGE

(Actual Size)

Worldwide 4K ATSC/QAM/DVB/NTSC/PAL/IP Tuner

Features

- ◆ IPTV (UDP/RTP/RTSP Multicast and Unicast)
- ◆ ATSC / QAM / NTSC / PAL / DVB / ISDB-T Worldwide Digital Ultra High Definition Tuning
- ◆ NTSC & PAL Analog Tuning
- ◆ H.265, H.264, MPEG 4, MPEG2, and VC-1 up to 4K2K
- ◆ HDMI 2.0, Composite, and YPbPr Outputs
- ◆ Resolutions: 480i, 480p, 720p, 1080i, 1080p, 4K (UHD), 4K2K (4096x2160 @ 60Hz)
- ◆ Stereo L/R, S/PDIF, and Optical Audio Outputs
- ◆ Dolby Digital Surround Sound
- ◆ OSD Menus, Closed Captioning, V-Chip, & EPG
- ◆ 1RU Single/Dual Rack Mount Ears and IR Remote Included
- ◆ RS-232 / LAN / IR Remote Control
- ◆ Firmware Upgradeable and Cloning via USB port or LAN
- ◆ Built in Web Page Remote Control



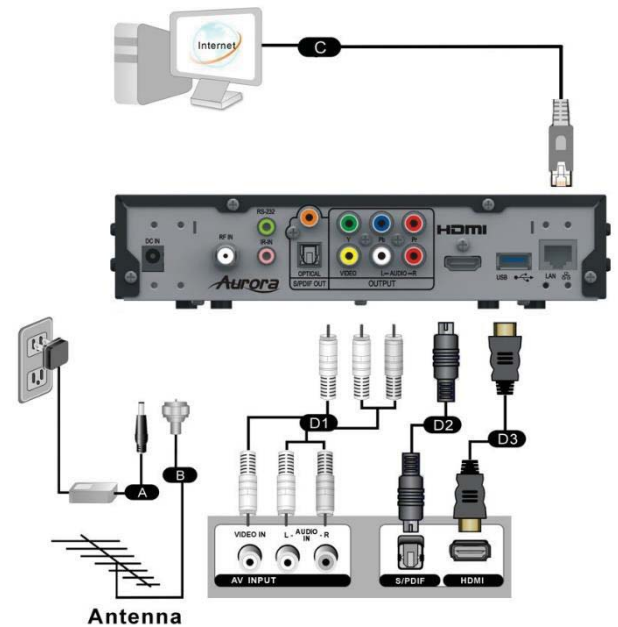
The V-Tune Pro 4K delivers a total 4K2K High Definition worldwide tuning solution for any integrated system which requires IPTV, ATSC, QAM, DVB, NTSC & PAL. The tuner is capable of decoding MPEG2, MPEG4, VC-1, H.264, and H.265 with resolutions up to 4K @ 60Hz via RF and LAN.

The V-Tune 4K is integrator-friendly with IR, RS-232 and IP-based control. The video outputs are HDMI 2.0 for the latest connectivity and composite/YPbPr video for legacy. Audio is provided with unbalanced stereo RCA connections, S/PDIF, and optical. The V-Tune Pro 4K defines versatility as it can be fit into nearly any integrated system topology. There is no other tuner on the market which can support all these features at a cost effective price.

Technical Specifications

Section 274100 - 2.10.I.20.a Comply (Replacement)

Model Name	V-Tune Pro 4K
Technical	
Demodulation	<ul style="list-style-type: none"> • Reception: ATSC/ DVB-T Terrestrial HDTV, NTSC/PAL analog TV • Demodulation: 8-VSB, COFDM, Clear 64/256 QAM, DVB-C, NTSC/PAL • RF Input Format: ATSC All 18 video format input support, NTSC. • Frequency: 54- 860MHz covering 2- 69 off-air channels and 2- 135 STD, IRC, HRC cable channels • Supports demodulation of all TV standards of the world <ul style="list-style-type: none"> - ATSC/QAM : US - DVB-T/C : Europe, Australia - ISDB-T : Japan
Output Resolution	480i, 480p, 576i, 576p, 720p, 1080i, 1080p24/30/50/60, 4K(UHD)p24/25/30/50/60, and 4Kx2K (4096x2160)p24/25/30/50/60
Format Decoding	H.265, H.264, MPEG4, MPEG2, VC-1
Protocols	RTSP, RTP, UDP
Video Output Connectors	HDMI 2.0, YPbPr, Composite
RS-232	9600 Baud (3.5mm TRS)
IR	Input (3.5mm TRS)
USB Connector	USB 3.0 Type A
LAN	10/100/1000M RJ-45
Mechanical	
Housing	Black Enclosure
Dimensions [L x W x H]	8.5" x 7" x 1.75"
Mounting	Included Single and Dual Rack Mount
Power supply	12V DC
Power consumption	20 Watts [max]
Package Contents	1x V-Tune Pro 4K 1x Single Rack Mount Kit 1x Dual Rack Mount Kit 1x 12v DC Power Supply 1x IR Remote Control



Single Rack Mounting



Dual Rack Mounting

Note: Specifications subject to change without notice.

MODEL MX392 AND MX393 MICROPHONES



OVERVIEW

Shure Microflex™ MX300 Series microphones are surface-mounted electret condenser microphones designed primarily for mounting on conference tables, stage floors, and lecterns. Their high sensitivity and wide frequency range make them especially suitable for picking up speech and vocals in sound reinforcement and recording applications. Interchangeable cartridges provide the installer with greater flexibility and make it possible to easily reconfigure microphone coverage as the need arises. The MX392 and MX393 models include an internal pre amplifier.

MX300 Series microphones take advantage of the principle that, at a barrier or boundary, the sound pressure level doubles. When placed near a sufficiently large boundary surface, the microphone has 6 dB higher sensitivity and approximately 3 dB greater direct-to-reverberant sound ratio.

FEATURES

- Flat frequency response across the vocal range for uncolored sound
- Interchangeable cardioid, supercardioid, and omnidirectional cartridges that provide choices for applications
- Sleek, low-profile design for unobtrusive appearance
- Balanced transformerless output for increased immunity to noise over long cable runs
- Low susceptibility to electromagnetic hum and RFI
- Programmable on/off switch and LED on/off indicator
- Logic input/output terminals for remote control or use with automatic mixers (MX392 models only)

MODEL VARIATIONS

- **MX392 Models:** Surface-mount microphone; includes a programmable membrane on/off switch, logic input/ output terminals, an on/off indicator LED, screw terminal connections, and attached unterminated cable.
- **MX393 Models:** Surface-mount microphone; includes a programmable membrane on/off switch, an on/off indicator LED, and a miniature, four pin connector.

MICROPHONE APPLICATION AND SELECTION GUIDE

Application	Mounting Surface	Microphone to Cable Connector	Cable Output Connector	Polar Pattern	Microflex® Model
Sound reinforcement for speech and vocals	Lectern, pulpit, stage floor, or conference table	Hard Wired Hard Wired TA4F TA4F	Hard Wired Hard Wired XLR XLR	Cardioid Supercardioid Cardioid Supercardioid	MX392/C MX392/S MX393/C MX393/S
Recording or remote monitoring of speech and vocals	Lectern, pulpit, stage floor, or conference table	Hard Wired TA4F	Hard Wired XLR	Omnidirectional Omnidirectional	MX392/O MX393/O
Video conferencing or computer telephony	Lectern, pulpit, stage floor, or conference table	Hardwired	TA3F	Cardioid	MX392/C

MX392 AND MX393 MICROPHONES SPECIFICATION SHEET

Section 274100 - 2.10.N.10.a Comply

SPECIFICATIONS

All measurements taken with microphone mounted on a wooden surface 76.2 cm x 76.2 cm (30 in. x 30 in.).

Frequency Response (Figure 1)

50 to 17,000 Hz

Polar Pattern (Figure 2)

Cardioid (MX392/C, MX393/C)

Supercardioid (MX392/S, MX393/S)

Omnidirectional (MX392/O, MX393/O)

Output Impedance

EIA Rated at 150 Ω (180 Ω actual)

Sensitivity (at 1 kHz, open circuit voltage)

Cardioid Cartridge: -27.5 dBV/Pa (4.22 mV)

Supercardioid Cartridge: -26.5 dBV/Pa (4.73 mV)

Omnidirectional: -22.0 dBV/Pa (7.94 mV)

1 Pascal=94 dB SPL

Maximum Sound Pressure Level (1 kHz at 1% Total Harmonic Distortion, 1 k Ω load)

Cardioid: 117.0 dB

Supercardioid: 116.0 dB

Omnidirectional: 111.5 dB

Signal to Noise Ratio (referenced at 94 dB SPL)

Cardioid: 71.0 dB

Supercardioid: 72.0 dB

Omnidirectional: 76.5 dB

Equivalent Output Noise (A-weighted)

Cardioid: 23.0 dB

Supercardioid: 22.0 dB

Omnidirectional: 17.5 dB

Dynamic Range

94.0 dB

Common Mode Rejection

45 dB minimum, 10 Hz to 100 kHz

Switch Attenuation

50 dB minimum

Preamplifier Output Clipping Level

-6 dBV (0.5 V)

Polarity

Positive sound pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of output connector.

Logic Connections (MX392 Only)

LED IN: Active low ($\leq 1.0V$), TTL compatible. Absolute maximum voltage: -0.7V to 50V.

SWITCH OUT: Active low ($\leq 0.5V$), sinks up to 20mA, TTL compatible. Absolute maximum voltage: -0.7V to 24V (up to 50V through 3k Ω).

Power Requirements

11 to 52 Vdc phantom

2.0 mA current consumption

Environmental Requirements

Operating Temperature Range: -18° C to 57° C (0° F to 135° F)

Relative Humidity: 0 to 95%

Dimensions (Figure 3)

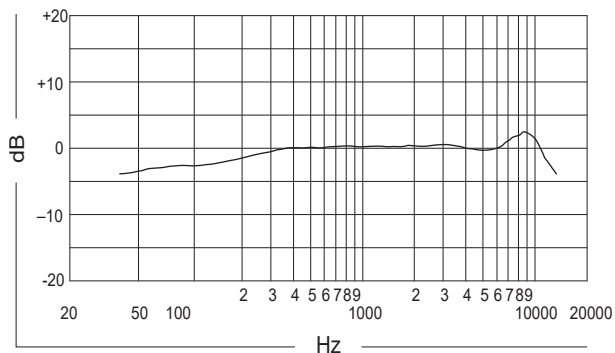
Certification

Eligible to bear CE Marking. Conforms to European EMC Directive 89/336/EEC. Meets applicable tests and performance criteria in European Standard EN55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.

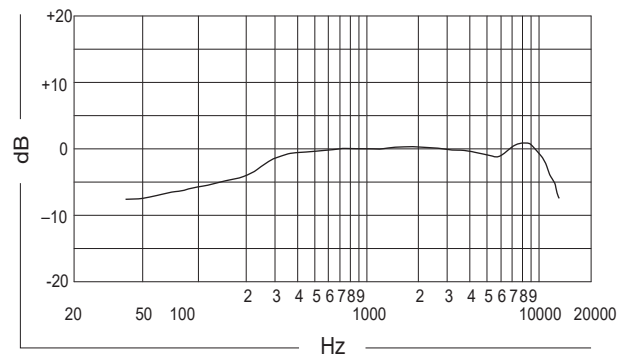
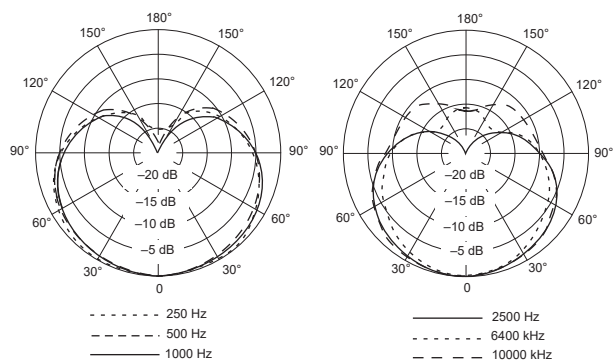
REPLACEMENT PARTS

Omnidirectional Cartridge	R183
Supercardioid Cartridge	R184
Cardioid Cartridge	R185
12' (3.7m) Cable 3-Pin Miniature Connector (TA3F)	
to male XLR	C119

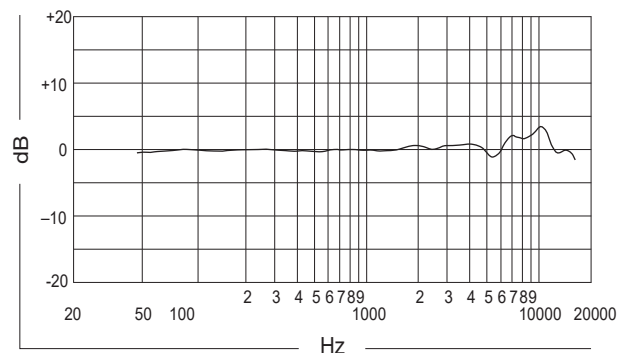
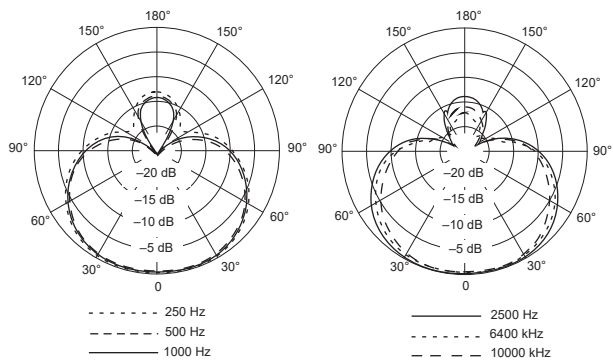
MX392 AND MX393 MICROPHONES SPECIFICATION SHEET



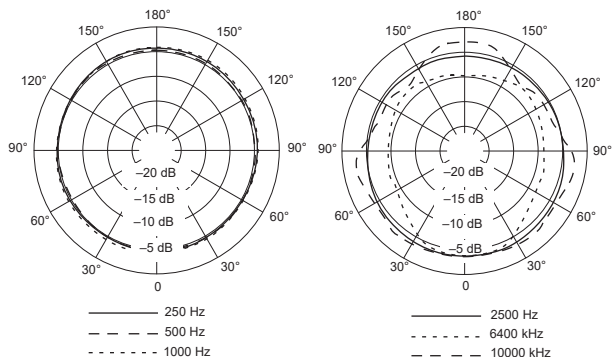
CARDIOID



SUPER-CARDIOID

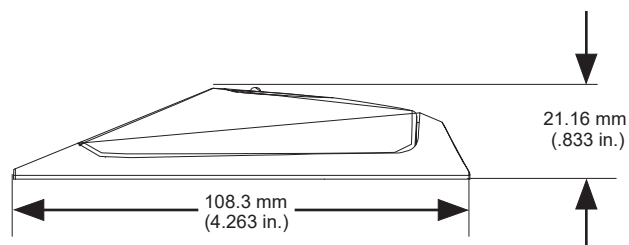
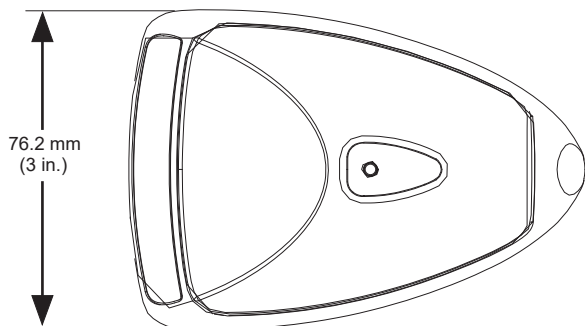


OMNI-DIRECTIONAL



FREQUENCY RESPONSE—FIGURE 1

POLAR PATTERNS—FIGURE 2



DIMENSIONS—FIGURE 3

Hand Held Microphone

SHURE[®]

LEGENDARY
PERFORMANCE™

SM Microphones

**LEGENDARY SOUND.
UNMATCHED PERFORMANCE.**



SM Microphones

INDUSTRY STANDARD. PROFESSIONAL UTILITY.

SM Microphones are equal to the demands of high-energy performance, proven time and time again through decades of rigorous use by performers and engineers of all experience levels.

The renowned sound and construction of the SM Microphone line has remained the metric by which all other microphone performance has been judged, setting standards for minimized handling noise and improved gain before feedback.

In live performance and recording applications, SM Microphones are legendary - virtually indestructible professional gear.



Vocal

SM7B

Shielded, selectable frequency response delivers warm audio reproduction in close-proximity applications.

Close-talk Speech
Vocals
Guitar/Bass Amps



50Hz - 20kHz

SM48

Rugged microphone for vocal, speech and karaoke applications.

Spoken Word
Lead Vocals
Backup Vocals



55Hz - 14kHz

Instrument

SM57

Industry standard, highly versatile microphone tuned for clean reproduction of amplified and acoustic instruments.

Guitar/Bass Amps
Brass
Saxophone
Harmonica
Snare/Tom
Conga

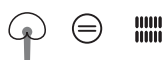


40Hz - 15kHz

SM94

Rugged, battery-powered, flat-response microphone for live performance and remote recording applications.

Guitar/Bass Amps
Brass
Saxophone
Harmonica
Cymbals






40Hz - 16kHz

SM58[®]

Industry standard microphone tailored to deliver warm and clear vocal reproduction.

Lead Vocals
Backup Vocals
Harmonica




  
50Hz - 15kHz

SM86

Rugged microphone with extended high frequency response for smooth reproduction of lead vocals.

Lead Vocals
Backup Vocals



  
50Hz - 18kHz




SM81

Industry-standard, flat-response microphone renown for sonic accuracy in stage and studio performance applications.

Acoustic Guitar
Acoustic Bass
Strings
Piano
Woodwinds
Orchestra

Cymbals
Live Recording
Stereo Pick-Up
Sampling
Ensemble Vocals





  
20Hz - 20kHz

SM137

Versatile, flat-response microphone in both acoustic and high volume performance applications.

Acoustic Guitar
Acoustic Bass
Strings
Piano
Woodwinds
Orchestra



   
20Hz - 20kHz

SM87A

Rugged, lightweight microphone with superior rejection for clear reproduction of lead vocals.

Lead Vocals
Backup Vocals



50Hz - 18kHz

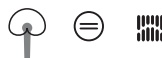
Multi-Purpose

SM27

Large diaphragm, side-address cardioid condenser microphone for the stage and studio.

Studio Vocals
Ensemble Vocals
Live Recording
Acoustic Guitar | Bass
Guitar | Bass Amp

Strings
Cymbals
Woodwinds
Saxophone



20Hz - 20kHz

USB

SM58®+X2u

Vocal Microphone + USB Adapter

Industry-standard SM58 with X2u XLR-to-USB Signal Adapter for digital recording applications.



Drum

DMK57-52

Drum Mic Kit

Industry-standard package of legendary microphones and rugged hardware for all stage and studio drum performances.

Kick Drum
Snare Drum
Rack/Floor Toms



SM57+X2u

Instrument Microphone + USB Adapter

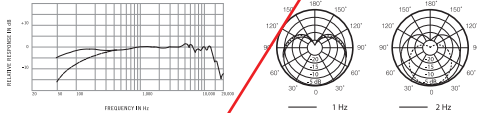
Industry-standard SM57 with X2u XLR-to-USB Signal Adapter for digital recording applications.



Technical Specifications

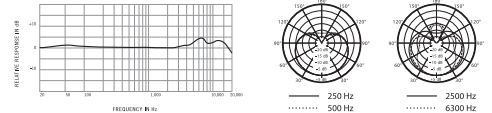
Section 274100 - 2.10.T.11.a Comply

SM7B



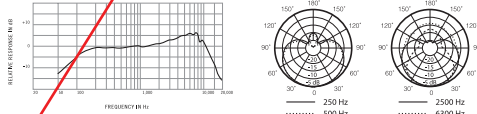
Frequency Response	50 - 20,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	150 Ohms
Output Level (at 1,000 Hz)	-59 dBV/Pa. (1.12 mV)
Construction	Dark gray enamel aluminum and steel case with dark gray foam windscreen.
Net Weight	765 g (1 lb, 11 oz)

SM27



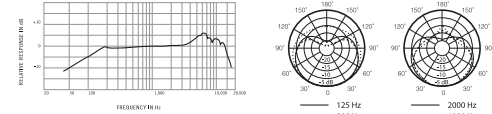
Frequency Response	20 - 20,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	150 Ohms
Output Level (at 1,000 Hz)	-37 dBV/Pa. (14.1 mV)
Construction	Die-cast metal alloy body. Dark gray matte finish. Hardened steel grille assembly.
Net Weight	642 g (22.6 oz)

SM48



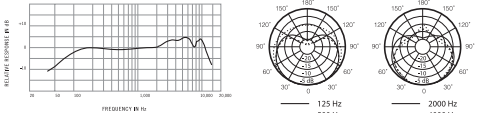
Frequency Response	55 - 14,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	270 Ohms
Output Level (at 1,000 Hz)	-57.5 dBV/Pa. (1.3 mV)
Construction	Die cast metal handle. Dark gray matte finish. Silver colored, spherical steel mesh grille.
Net Weight	370 g (13.1 oz)

SM57



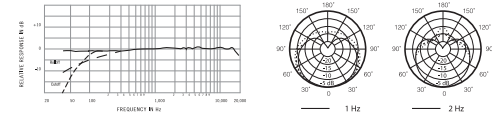
Frequency Response	40 - 15,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	310 Ohms
Output Level (at 1,000 Hz)	-54.5 dBV/Pa. (1.9 mV)
Construction	Die cast metal handle. Dark gray matte finish. Polycarbonate grille with stainless steel screen.
Net Weight	284 g (10 oz)

SM58®



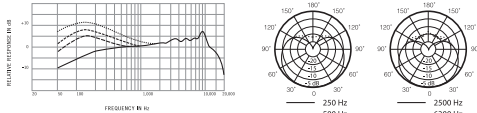
Frequency Response	50 - 15,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	300 Ohms
Output Level (at 1,000 Hz)	-54.5 dBV/Pa. (1.85 mV)
Construction	Die cast metal handle. Dark gray matte finish. Silver colored, spherical steel mesh grille.
Net Weight	298 g (10.5 oz)

SM81



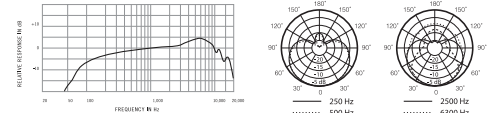
Frequency Response	20 - 20,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	85 Ohms
Output Level (at 1,000 Hz)	-45 dBV/Pa. (5.6 mV)
Construction	Die cast metal handle. Dark gray matte finish. Polycarbonate grille with stainless steel screen.
Net Weight	230 g (8 oz)

SM86



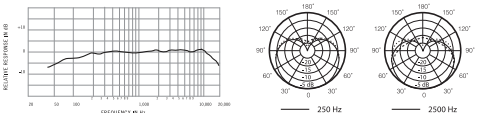
Frequency Response	50 - 18,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	150 Ohms
Output Level (at 1,000 Hz)	-50 dBV/Pa. (3.15 mV)
Construction	Dark gray enamel-painted steel with matte-finished silver colored, steel grille.
Net Weight	278 g (9.8 oz)

SM87A



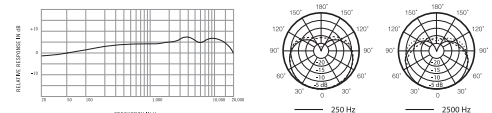
Frequency Response	50 - 18,000 Hz
Polar Pattern	SuperCardioid (unidirectional)
Output Impedance (at 1,000 Hz)	100 Ohms
Output Level (at 1,000 Hz)	-52.5 dBV/Pa. (2.4 mV)
Construction	Aluminum construction with steel grille and satin black finish.
Net Weight	200 g (7 oz)

SM94



Frequency Response	40 - 16,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	200 Ohms
Output Level (at 1,000 Hz)	-49 dBV/Pa. (3.5 mV)
Construction	Steel and brass construction with gray finish and stainless steel mesh grille.
Net Weight	250 g (8.8 oz)

SM137



Frequency Response	20 - 20,000 Hz
Polar Pattern	Cardioid (unidirectional)
Output Impedance (at 1,000 Hz)	150 Ohms
Output Level (at 1,000 Hz)	-41 dBV/Pa. (8.9 mV)
Construction	Steel and brass construction with dark gray matte finish and stainless steel mesh grille.
Net Weight	195 g (6.9 oz)

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Causeway Bay, Hong Kong

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Fax: 852-2893-4055
Email: info@shure.com.hk



MK Series Mic Cable Specifications

Cable

Section 274100 - 2.10.T.11.b Comply

Model	No. of Conductors	Conductor Gauge & Stranding	Shield Type & % Coverage	Overall Diameter (inches)	Nominal Cap. ¹ (pf/ft.)	Nominal Cap. ² (pf/ft.)	Jacket Thickness (inches)	Insulation Thickness (inches)	Weight per 100 ft. (lbs.)
WMKPVC Whirlwind Exclusive Accusonic+2: Heavy duty, flexible two conductor cable with polyethylene insulation and black PVC jacket.	2	22 26x36	B.C. Braid 78% .	.245	19	35	.045	.018	3.2

Connectors

- 1) Whirlwind WI3M male XLR
- 1) Whirlwind WI3F female XLR

Wireless Microphone Receivers

SHURE[®]

LEGENDARY
PERFORMANCE™



ULX[®] WIRELESS SYSTEMS

**SOPHISTICATED, SCALABLE
WIRELESS SOLUTIONS.**

TAKE CONTROL.

Wireless applications of increased complexity and scale require powerful solutions. Experienced audio engineers and sound contractors rely on Shure ULX® wireless systems to achieve clear, hassle-free wireless sound. An ultra-wide tuning range with up to 40 compatible systems* guarantees confident command of demanding installations and live sound productions.

Bulletproof wireless performance.

Ultra-wide 36 MHz bandwidth and automatic frequency selection ensures consistent operation across multiple TV channels with no setup hassles.

Superior sound quality.

Shure's patented Audio Reference Companding delivers crystal-clear audio transmission.

Intuitive operation.

Advanced front panel controls and the large multi-function LCD allow for quick monitoring of system status.



ULXP4 Wireless Diversity Receiver

- Up to 1400 selectable frequencies
- Automatic Frequency Selection with group scan function
- Predictive Diversity
- 5-segment audio meter
- 5-segment RF meter
- Advanced multi-function LCD

- 3-segment transmitter battery fuel gauge
- Squelch adjustment
- ½ rack design
- Remotable ½ wave antennas
- Frequency and volume lockout
- Rugged metal chassis
- Furnished rack hardware
- Locking DC connector
- XLR and ¼" outputs



Handheld or Bodypack Transmitter

- 3-segment battery fuel gauge
- Backlit LCD shows group and channel
- Frequency and power lockout
- 8 hour battery life
- 100m (300 ft.) operating range
- 20dB pad switch on ULX1

* Location dependent

ULX® Professional Wireless Microphone Systems

Systems include: ULXP4 Diversity Receiver and a choice of Handheld Microphone Transmitter.

HANDHELD



SM58°
The legendary choice of vocal performers around the globe.
ULXP24/58



SM86
Tailored frequency response for clear reproduction of vocals.
ULXP24/SM86



SM87A
Smooth sound tailored for warm, accurate reproduction.
ULXP24/87



Beta 58A°
Preferred by touring vocalists and sound professionals.
ULXP24/BETA58




Beta 87A
Brings exceptional clarity to live vocals.
ULXP24/BETA87A



Beta 87C
Adds warmth to the frequency response preferred by in-ear users.
ULXP24/BETA87C

Systems include: ULXP4 Diversity Receiver, ULX1 Bodypack Transmitter and a choice of Microphone or Guitar/Bass Cable.


LAVALIER



WL183
Premium condenser lavalier mic for speech applications. Omnidirectional
ULXP14/83



WL184
Premium condenser lavalier mic for speech applications. Supercardioid
ULXP14/84



WL185
Premium condenser lavalier mic for speech applications. Cardioid
ULXP14/85



MX150/O
Subminiature Omnidirectional lavalier mic provides low visibility with professional audio quality.
ULXP14/150/O



MX150/C
Subminiature Cardioid lavalier mic provides low visibility with professional audio quality. Less susceptible to feedback.
ULXP14/150/C

Section 274100 - 2.10.V.6.a Comply

HEADWORN



WBH53
Beta quality, sensitivity and consistency in a comfortable ultra-thin design. Black or Tan. Omnidirectional
Sold separately as components



WBH54
This Beta microphone features a smooth, tailored response for a warm, natural sound. Black or Tan. Supercardioid
Sold separately as components

GUITAR



WA302
Links a Bodypack Transmitter to a guitar or bass.
ULXP14

INSTRUMENT



WB98H/C
A versatile solution for high volume wind, brass or percussion.
ULXP14/98H

COMBO
Systems include: ULXP4 Diversity Receiver, ULX1 Bodypack Transmitter and ULX2 Handheld Transmitter.

SM58°
Handheld Transmitter

WL185
Lavalier microphone

ULXP124/85

Section 274100 - 2.10.U.13.a Comply

DUAL
Systems include: (2) ULXP4 Diversity Receivers and (2) Transmitters.

SM58°
Handheld Transmitter (2)
ULXP24D/58

SM87
Handheld Transmitter (2)
ULXP24D/87

Beta 58A°
Handheld Transmitter (2)
ULXP24D/BETA58

Beta 87A
Handheld Transmitter (2)
ULXP24D/BETA87A

Beta 87C
Handheld Transmitter (2)
ULXP24D/BETA87C

WA302
Guitar Cable (2)
ULXP14D

DUAL COMBO
Systems include: (2) ULXP4 Diversity Receivers, a ULX1 Bodypack Transmitter and a choice of Handheld Transmitter(s).

SM58°
Handheld Transmitter (2)
ULXP124D/58

SM87
Handheld Transmitter (2)
ULXP124D/87

Beta 58A°
Handheld Transmitter (2)
ULXP124D/BETA58

Beta 87A
Handheld Transmitter (2)
ULXP124D/BETA87A

Beta 87C
Handheld Transmitter (2)
ULXP124D/BETA87C

OPTIONAL ACCESSORIES

PA805 UHF Passive Directional Antenna	UA505 Remote Antenna Bracket and BNC Adapter	UA860 UHF Passive Omni Directional Antenna
RK323G Black grill replacement option for Beta 58A	UA506 Rack Mount Kit for one ULX Receiver	UA870 UHF Active Directional Antenna
RK324G Black grill replacement option for Beta 87	UA507 Rack Mount Kit for two ULX Receivers	UAPF-X1 In-Line RF Filter
UA221 Passive Antenna Splitter	UA830 UHF Active Remote Antenna Amplifier	WA610 Universal Hard Carrying Case
UA440 Front Mount Antenna Cable Kit	UA844 Antenna/Power Distribution System	WA615M Handheld transmitter ID rings (5 assorted colors)

ULX® Wireless Systems Technical Specifications

ULXP4

Professional Diversity Receiver



front panel



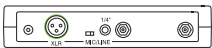
back panel

ULXS4

Standard Diversity Receiver



front panel



back panel

RF Carrier Frequency Range	470-952 MHz (available frequencies depend on applicable country regulations)
Working Range	100 m (300 ft) under typical conditions (NOTE: Operating range depends on many variables, including RF signal absorption, reflection and interference)
Audio Frequency Range	25-15,000 Hz, ± 2 dB (NOTE: Overall system frequency response depends on microphone element)
Audio Output Level (ref. ± 38 kHz deviation, 1 kHz tone)	XLR connector (into 600 Ω load): +8 dBV (line); -10 dBV (mic) 1/4-inch connector (into 3k Ω load): +2 dBV
Impedance	ULXS4 and ULXP4 (output): 3k Ω (1/4-inch phone jack) 20k Ω (XLR Line) 500 Ω (XLR Mic)
Modulation	± 38 kHz deviation compressor-expander system with pre- and de-emphasis
Dynamic Range	>105 dB, A-weighted
RF Sensitivity	1.26 mV for 12 dB SINAD (typical)
Image Rejection	65 dB typical
Spurious Rejection	75 dB typical
System Distortion (ref. ± 15 kHz deviation, 1 kHz modulation)	0.3% (<1%) THD typical
Power Requirements	ULXS4 and ULXP4: 14-18 Vdc (negative ground), 600 mA; external ac adapter supplied.
Operating Temperature Range	-20 to 50 C (-4 to 122 F) (NOTE: Battery characteristics may limit this range)
Overall Dimensions	ULXS4: 41 mm H x 219 mm W x 152 mm D (1 5/8 x 8 5/8 x 6 in.) ULXP4: 44 mm H x 219 mm W x 154 mm D (1 3/4 x 8 5/8 x 6 1/16 in.)
Net Weight	ULXS4: 0.6 kg (1 lbs 4 oz) ULXP4: 1.02 kg (2 lbs 4 oz)

ULX1

Bodypack Transmitter



top panel

Gain Adjustment Range	40 dB (continuously adjustable)
Impedance	input: 1 M Ω
RF Power Output	30 mW maximum (dependent on applicable country regulations)
Power Requirements	9 V alkaline battery (DURACELL® MN1604 recommended); 8.4 V optional
Battery Life	Up to 8 hours
Overall Dimensions	95.2 mm H x 63.5 mm W x 33.3 mm D (3 3/16 x 2 5/8 x 1 1/16 in.)
Net Weight (without battery)	90.7 g (3.2 oz)

ULX2

Handheld Transmitter



Gain Adjustment Range	25 dB (continuously adjustable)
RF Power Output	30 mW maximum (dependent on applicable country regulations)
Power Requirements	9 V alkaline battery (DURACELL® MN1604 recommended); 8.4 V optional
Battery Life	Up to 8 hours
Overall Dimensions	ULX2/58, ULX2/BETA 58: 241 mm L x 50.8 mm Dia. (9 1/2 x 2 in.) ULX2/87, ULX2/BETA 87: 216 mm L x 50.8 mm Dia. (8 1/2 x 2 in.)
Net Weight (without battery)	ULX2/58, ULX2/BETA 58: 298 g (10.4 oz) ULX2/86, ULX2/87, ULX2/BETA 87: 195 g (6.8 oz)

SHURE®

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PERFORMANCE™

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Fax: +852-2893-4055
Email: info@shure.com.hk
www.shureasia.com



AudiaFLEX is an expanded version of Audia,[®] the benchmark in digital audio systems for demanding professional sound installations. AudiaFLEX provides the same easy-to-use software and functional algorithms, but with far greater flexibility in the choice of I/O configurations. Inputs and outputs may be specified by pairs, in any combination, up to a total of 24. All possible I/O configurations are available with or without CobraNet,[®] for multi-device or stand-alone systems. The intuitive software provides audio system design capabilities via PC computer, and allows easy selection, viewing, and calibration of numerous audio components: mixers, combiners, matrixes, equalizers, filters, crossovers, dynamics, routers, delays, remote controls, meters, generators, diagnostics, etc. Once a system design is compiled, it is downloaded into AudiaFLEX, where it can then be controlled via third-party systems such as AMX[®] and Crestron,[®] via *daVinci*[™] software, and/or via dedicated Audia remote control panels.

FEATURES

- up to 24 inputs/outputs, with or without CobraNet
- input (IP-2), echo canceling (AEC-2HD), telephone (TI-2), output (OP-2e), & amplifier (PA-2) cards
- input and output expanders (8-channel/CobraNet)
- on-screen display of the total audio design
- configuration/control via PC/laptop (Ethernet)
- third-party control via RS-232 or TCP/IP
- remote control panels for levels, presets, etc.
- built-in diagnostic tools
- multi-level security coding
- unlimited system size
- RoHS compliance and AES grounding practices
- CE marked and UL/C-UL listed
- covered by Biamp Systems' five-year warranty
- Ability to select, view, and calibrate:
 - Mixers: standard, automatic, matrix, combiners
 - Equalizers: graphic, parametric, feedback
 - Filters: HPF, LPF, high shelf, low shelf, all-pass
 - Crossovers: 2-Way, 3-Way, 4-Way
 - Dynamics: leveler, comp/limiter, ducker, ANC
 - Routers: 2x4 ~ 56x56
 - Delays: 0 ~ 2000 ms
 - Controls: levels, mutes, presets, schedulers, logic gates, RS-232 commands, etc.
 - Meters: signal present, peak, RMS
 - Generators: tone, pink-noise, white-noise
 - Diagnostics: transfer function

ARCHITECTS & ENGINEERS SPECIFICATION

The Digital Audio Platform shall be available in various I/O configurations. Inputs/outputs shall be specified in pairs, up to a total of 24. Mic/line Input (IP-2), Acoustic Echo Cancellation (AEC-2HD), Telephone Interface (TI-2), Mic/Line Output (OP-2e), and Amplifier Output (PA-2) input/output options shall be available. Inputs/outputs shall be analog, with internal 24-bit A/D & D/A converters operating at a sample rate of 48kHz. All internal processing shall be digital (DSP). Electronically balanced inputs and outputs shall be provided on plug-in barrier-strip connectors. Inputs and outputs shall be individually programmable for either microphone or line level signal. Expansion units, utilizing CobraNet,[®] shall be available in 8-channel versions, for adding analog or digital inputs/outputs to a system.

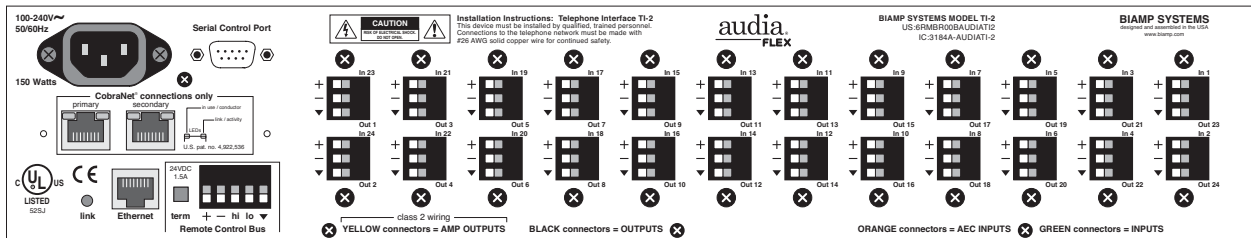
Each hardware configuration shall include six 60MHz 32-bit floating point DSPs. Software shall be provided for creating/connecting DSP system components within each hardware unit. Available system components shall include (but not be limited to) various forms of: mixers, equalizers, filters, crossovers, dynamics/gain controls, routers, delays, remote controls, meters, generators, and diagnostics. Ethernet communications shall be utilized for software control, configuration, and DSP distribution. Each hardware configuration shall be available with CobraNet (for multi-unit applications) or without CobraNet (for stand-alone applications). CobraNet technology shall transport digital audio over fast Ethernet, allowing multiple units to share digital audio. Multi-unit applications shall require an external 10/100Base-T Ethernet switch. All CobraNet and Ethernet connections shall be via CAT5 cable or fiber-optic. After initial programming, systems may be controlled using either TCP/IP or RS-232 serial communication by third party control systems (such as AMX[®] and Crestron[®]), by PC computer, and/or by dedicated remote control devices. Software shall operate on a PC computer, with network card installed, running Windows[®] XP Professional/Vista. The Digital Audio Platform shall be CE marked, UL/C-UL listed, and shall incorporate AES48-2005 Grounding & EMC practices. The Digital Audio Platform shall be compliant with EU Directive 2002/95/EC, the RoHS directive. Warranty shall be 5 years.

The Digital Audio Platform shall be AudiaFLEX.

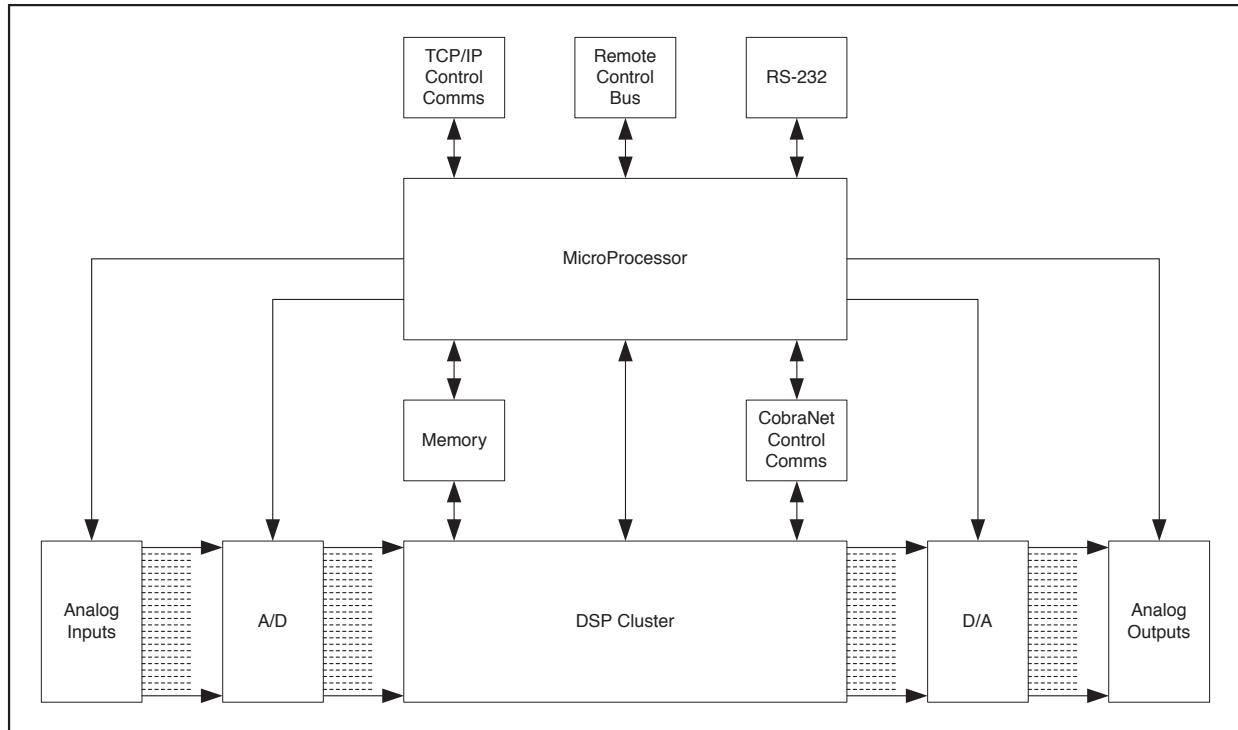
AudiaFLEX SPECIFICATIONS

Frequency Response (20Hz~20kHz @ +4dBu):	+0/-0.4dB	Phantom Power:	+48 VDC (7mA/input)
THD+N (20Hz~20kHz @ +4dBu):		Input Gain Range (variable trim):	0dB ~ +66dB
line level	< 0.006%	Sampling Rate:	48kHz
mic level	< 0.04%	A/D - D/A Converters:	24-bit
Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm):	-125dBu	Power Consumption (100~240VAC 50/60Hz):	< 150 watts
Dynamic Range (20Hz~20kHz, 0dB):	> 107dB	Dimensions:	
Maximum Gain (input channels):	66dB	height	3.5 inches (89mm)
Crosstalk (channel-to-channel @ 1kHz):		width	19 inches (483mm)
line level	< -80dB	depth	11.15 inches (283mm)
mic level	< -75dB	Weight (max. - fully loaded with PA-2 cards):	15.25 lbs. (6.9kg)
Output Impedance (balanced):	200 ohms	Compliance:	AES48-2005 Grounding & EMC practices
Input Impedance (mic/line balanced):	8k ohms		EU Directive 2002/95/EC, RoHS directive
Maximum Output (balanced):	+24dBu		CE marked
Maximum Input (mic/line):	+24dBu		UL / C-UL listed

AudiaFLEX 12x12CM REAR PANEL DIAGRAM

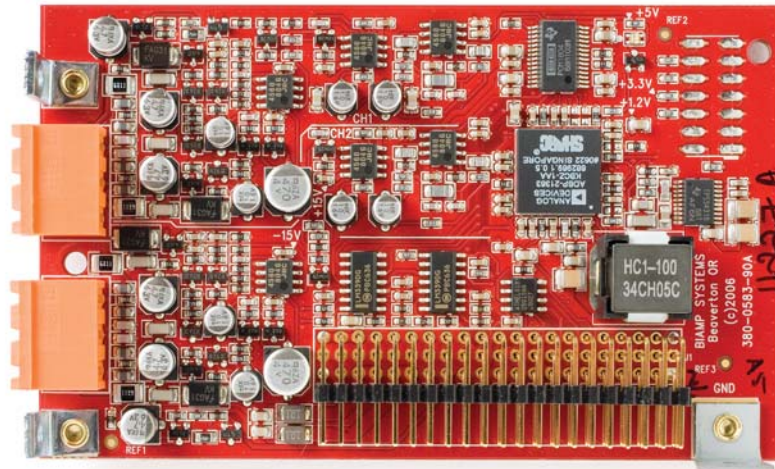


AudiaFLEX BLOCK DIAGRAM





Audia[®] AEC-2HD Input Card Dual-Channel Wide-Band Acoustic Echo Cancellation



Audia has always been ideal for audio and video conferencing. Now, AEC-2HD Input Cards allow each AudiaFLEX installation to have precisely the acoustic echo cancellation needed. With the ability to select AEC on individual input channels, your network conferencing can enjoy the power and flexibility of Audia. Each AEC-2HD Input Card provides two channels of acoustic echo cancellation and background noise reduction, as part of AudiaFLEX hardware. AEC-2HD Input Cards are designed and built using Biamp's Sona™ AEC technology for increased frequency response, improved audio quality, and more natural sound during full-duplex transmission of speech. Additional benefits include greater tolerance for differing signal levels, enhanced intelligibility and fast, easy setup.

FEATURES

- dedicated wide-band processing on each input
- assignable reference point for each AEC input
- suppression of steady-state background noises
- on-board DSP, does not use AudiaFLEX resources
- AEC adapts quickly to changes in room acoustics
- AEC stability ideal for room combining applications
- easy to setup, no complicated training procedure
- integrates seamlessly into AudiaFLEX systems
- RoHS compliance and AES grounding practices
- covered by Biamp Systems' five-year warranty

ARCHITECTS & ENGINEERS SPECIFICATION

The acoustic echo cancellation shall be a two-channel input card for AudiaFLEX hardware. Each input channel shall provide dedicated processing, and include an associated reference point. The acoustic echo cancellation shall utilize on-board DSP, and shall not expend DSP resources of the associated AudiaFLEX hardware. The acoustic echo cancellation shall employ wideband Sona™ AEC technology, producing frequency response up to 20kHz, and shall provide system stability while adapting quickly to changes in the acoustic environment. The acoustic echo cancellation shall additionally provide suppression of steady-state background noises. The acoustic echo cancellation shall incorporate AES48-2005 Grounding & EMC practices, and shall be compliant with EU Directive 2002/95/EC, the RoHS directive. Warranty shall be 5 years.

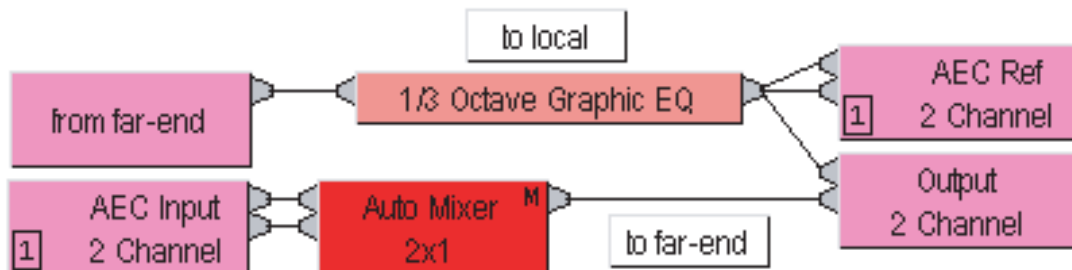
The acoustic echo cancellation shall be an AEC-2HD Input Card for AudiaFLEX.

Audia® AEC-2HD Input Card SPECIFICATIONS

Frequency Response (+4dBu, 0dB gain): AEC on/off +0/-0.4dB 20Hz - 20kHz	Input Impedance (mic/line balanced): 8k ohms
THD +N (20Hz-20kHz @ +4dBu, AEC off): line level (0dB gain) < 0.006% mic level (54dB gain) < 0.055%	Maximum Input (mic/line): +24dBu
Tail Length: up to 300ms	Phantom Power: +48 VDC (7mA/input)
Convergence: up to 100dB/sec	Input Gain Range (variable trim): 0dB - +66dB
Dynamic Range (20Hz-20kHz, 0dB gain, AEC on/off): 107dB	Sampling Rate: 48kHz
Maximum Gain (input channels): 66dB	A/D Converters: 24-bit
Equivalent Input Noise (20Hz-20kHz, 66dB gain, 150 ohm): -125dBu	Weight: 2 oz. (54g)
	Compliance: AES48-2005 Grounding & EMC practices EU Directive 2002/95/EC, RoHS directive



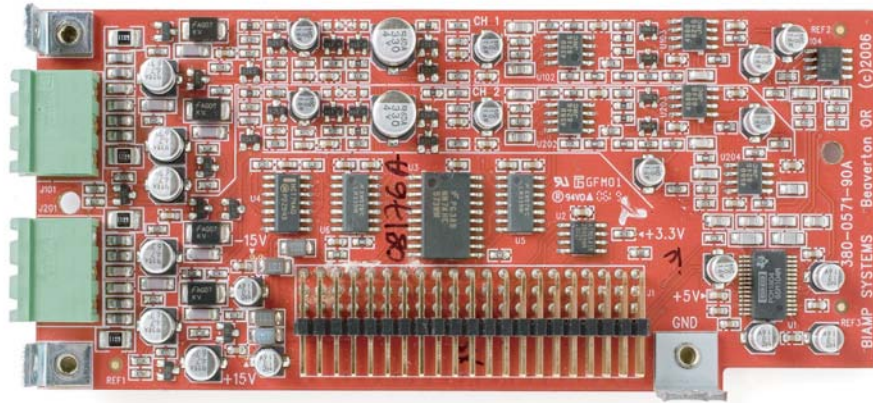
When placed into an Audia design layout, each AEC Input consists of two separate blocks. An AEC Input Block represents the actual audio input, and an AEC Ref block provides the associated signal reference point. In conferencing applications, AEC Ref blocks should receive “far-end” signal only, and be connected as close as possible to the output, so as to include any signal processing applied for local sound reinforcement of that signal. This approach provides the most accurate reference. AEC Ref blocks should never be connected to paths containing signal from corresponding AEC Inputs.



In applications where only background noise reduction is desired, AEC can be turned off and no AEC Ref connection is required. Noise Reduction is intended for “stationary” or steady-state background noises, such as HVAC systems, fans, motors, or other mechanical devices.



Audia® IP-2 Input Cards Dual-Channel Mic/Line Inputs



IP-2 input cards allow each AudiaFLEX installation to have the quantity and type of inputs required. Each IP-2 Card provides two channels of mic/line input, as part of AudiaFLEX hardware. Inputs are balanced, and are provided on plug-in barrier strip connectors. Software control of individual inputs includes: gain w/ peak indication; +48V phantom power; mute; level; and signal invert.

FEATURES

- each card provides two mic/line input channels
- integrates seamlessly into AudiaFLEX systems
- balanced inputs on plug-in barrier strip connectors
- 0~66dB gain range for microphone or line sources
- input peak indication provides 6dB of headroom
- +48V phantom power for condenser microphones
- -100~+12dB level fader range for volume control
- invert function allows 180° signal polarity reversal
- **RoHS** compliance and **AES** grounding practices
- covered by Biamp Systems' five-year warranty

Section 274100 - 2.10.S.21.c Comply

Audia® IP-2 Input Card SPECIFICATIONS

Frequency Response (20Hz~20kHz @ +4dBu):	+0/-0.4dB	Crosstalk (channel-to-channel @ 1kHz):	line level < -80dB mic level < -75dB
THD +N (20Hz~20kHz @ +4dBu):	line level (0dB gain) < 0.006% mic level (54dB gain) < 0.04%	Phantom Power:	+48 VDC (7mA/input)
Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm):	-125dBu	Input Gain Range (variable trim):	0dB ~ +66dB
Dynamic Range (20Hz~20kHz, 0dB):	> 108dB	Sampling Rate:	48kHz
Maximum Gain (input channels):	66dB	A/D Converters:	24-bit
Input Impedance (mic/line balanced):	8k ohms	Compliance:	AES48-2005 Grounding & EMC practices EU Directive 2002/95/EC, RoHS directive
Maximum Input (mic/line):	+24dBu		



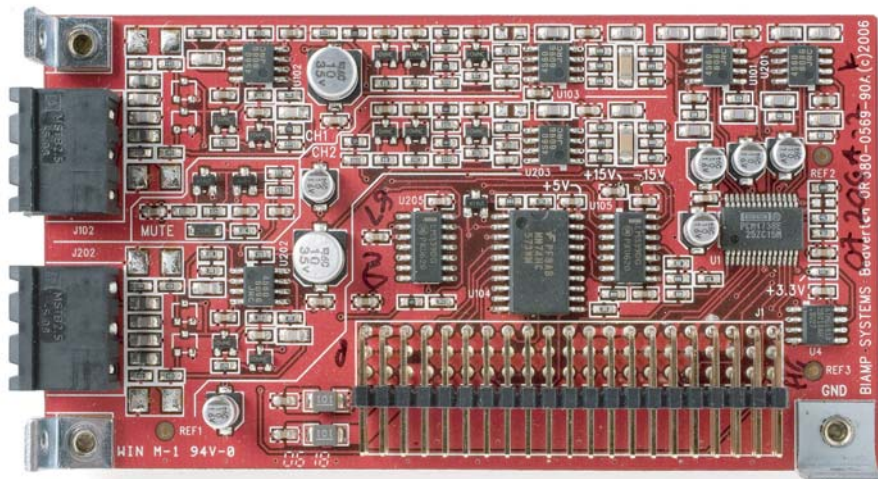
ARCHITECTS & ENGINEERS SPECIFICATION

The mic/line inputs shall be a two-channel input card for AudiaFLEX hardware. Each input channel shall provide two balanced analog mic/line inputs on plug-in barrier strip connectors. Software adjustment of individual inputs shall include: gain w/ peak indication; +48V phantom power; mute; level; and signal invert. Analog-to-Digital conversion shall be 24-bit, with a sampling rate of 48kHz. Performance specifications (20Hz~20kHz) shall be: Frequency Response +0/-0.4dB; THD+N < 0.006% (line) < 0.04% (mic); EIN -125dBu; and Dynamic Range > 108dB. The mic/line input card shall incorporate AES48-2005 Grounding & EMC practices, and shall be compliant with EU Directive 2002/95/EC, the RoHS directive. Warranty shall be 5 years.

The mic/line inputs shall be an IP-2 Input Card for AudiaFLEX.



**Audia® OP-2e Output Cards
Dual-Channel Mic/Line Outputs**



OP-2e output cards allow each AudiaFLEX installation to have the quantity and type of outputs required. Each OP-2e Card provides two channels of mic/line output, as part of AudiaFLEX hardware. Outputs are balanced, and are provided on plug-in barrier strip connectors. Software control of individual outputs includes: mute; level; signal invert; and full-scale output reference.

FEATURES

- each cards provides two mic/line output channels
- integrates seamlessly into AudiaFLEX systems
- balanced outs on plug-in barrier strip connectors
- -100~+12dB level fader range for volume control
- invert function allows 180° signal polarity reversal
- selectable ref level for best interface/performance
- **RoHS** compliance and **AES** grounding practices
- covered by Biamp Systems' five-year warranty

Section 274100 - 2.10.S.21.e Comply

Audia® OP-2e Output Card SPECIFICATIONS

Frequency Response (20Hz-20kHz @ +4dBu):	+0/-0.25dB	Sampling Rate:	48kHz
THD +N (20Hz-20kHz @ +4dBu):	< 0.0035%	D/A Converters:	24-bit
Dynamic Range (20Hz-20kHz, 0dB):	> 110dB	Selectable Full Scale Output Levels:	+24dBu, +18dBu, +12dBu, +6dBu, 0dBu, or -31dBu
Output Impedance (balanced):	200 ohms	Compliance:	AES48-2005 Grounding & EMC practices EU Directive 2002/95/EC, RoHS directive
Maximum Output (balanced):	+24dBu		
Crosstalk (channel-to-channel @ 1kHz):	< -95dB		



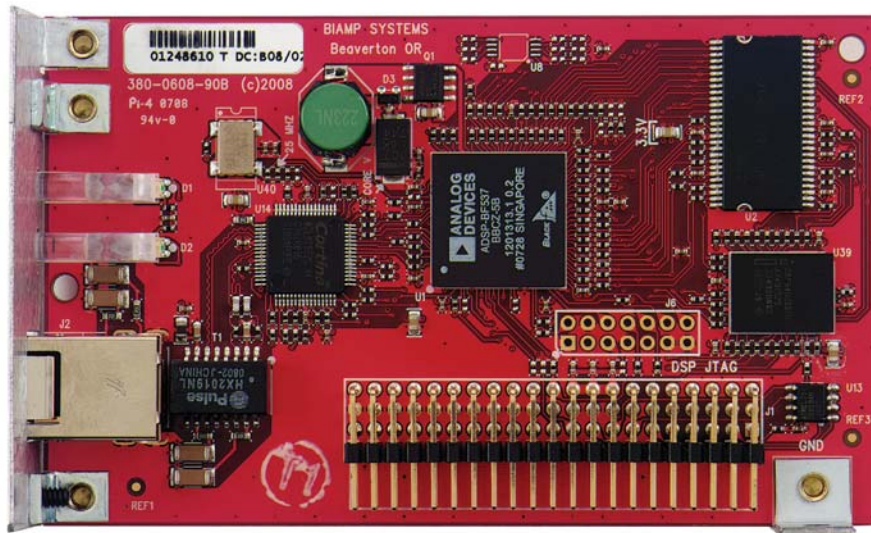
ARCHITECTS & ENGINEERS SPECIFICATION

The mic/line outputs shall be a two-channel output card for AudiaFLEX hardware. Each output card shall provide two balanced analog mic/line outputs on plug-in barrier strip connectors. Software adjustment of individual outputs shall include: mute; level; signal invert; and selectable output reference level. Digital-to-Analog conversion shall be 24-bit, with a sampling rate of 48kHz. Performance specifications (20Hz~20kHz) shall be: Frequency Response +0/-0.25dB; THD+N < 0.0035%; and Dynamic Range > 110dB. The mic/line output card shall incorporate AES48-2005 Grounding & EMC practices, and shall be compliant with EU Directive 2002/95/EC, the RoHS directive. Warranty shall be 5 years.

The mic/line outputs shall be an OP-2e Output Card for AudiaFLEX.



Audia VoIP-2 Card Dual-Channel Voice Over Internet Protocol



VoIP-2 Dual-Channel Voice Over Internet Protocol Cards allow AudiaFLEX to connect directly to IP-based phone systems. Used in conjunction with AEC-2HD Dual-Channel Wideband Acoustic Echo Cancellation Input Cards and TI-2 Dual-Channel Telephone Interface Cards, the VoIP-2 Card makes AudiaFLEX the most powerful, flexible, and affordable telephone conferencing product available. Up to six VoIP-2 Dual-Channel Voice Over Internet Protocol Cards can be installed into a single AudiaFLEX unit.

SYSTEM FEATURES

- Allows AudiaFLEX to connect directly to SIP-based IP PBX phone systems
- Extensive customization options and parameters
- Control via third-party control systems
- Control via Audia and daVinci software
- Logic control from within Audia or RCB devices
- Extensive customization options and parameters
- RoHS compliance
- Covered by Biamp Systems' five-year warranty

TELEPHONY FEATURES

- 2 concurrent independent calls
- Caller ID
- Adjustable auto-answer
- 16-entry speed dial
- Hold capability
- Combined level adjustment for call progress and DTMF tones
- Redial
- Country-specific tone plans

VoIP FEATURES

Section 274100 - 2.10.S.21.d Comply (Replacement)

- SIP v2 (RFC 3261 and companion RFCs)
- SIP Authentication
- Voice activity detection
- Comfort noise generation
- Dynamic jitter buffer
- Packet loss concealment
- On-hook dialing
- Multiple Codec support
 - G.711μ
 - G.711A
 - G.722
 - G.729AB
 - G.723.1

NETWORK FEATURES

- Static or DHCP IP address assignment
- QoS
 - ToS (RFC 791)
 - 802.1p/q

LOGIC CONTROL INPUTS

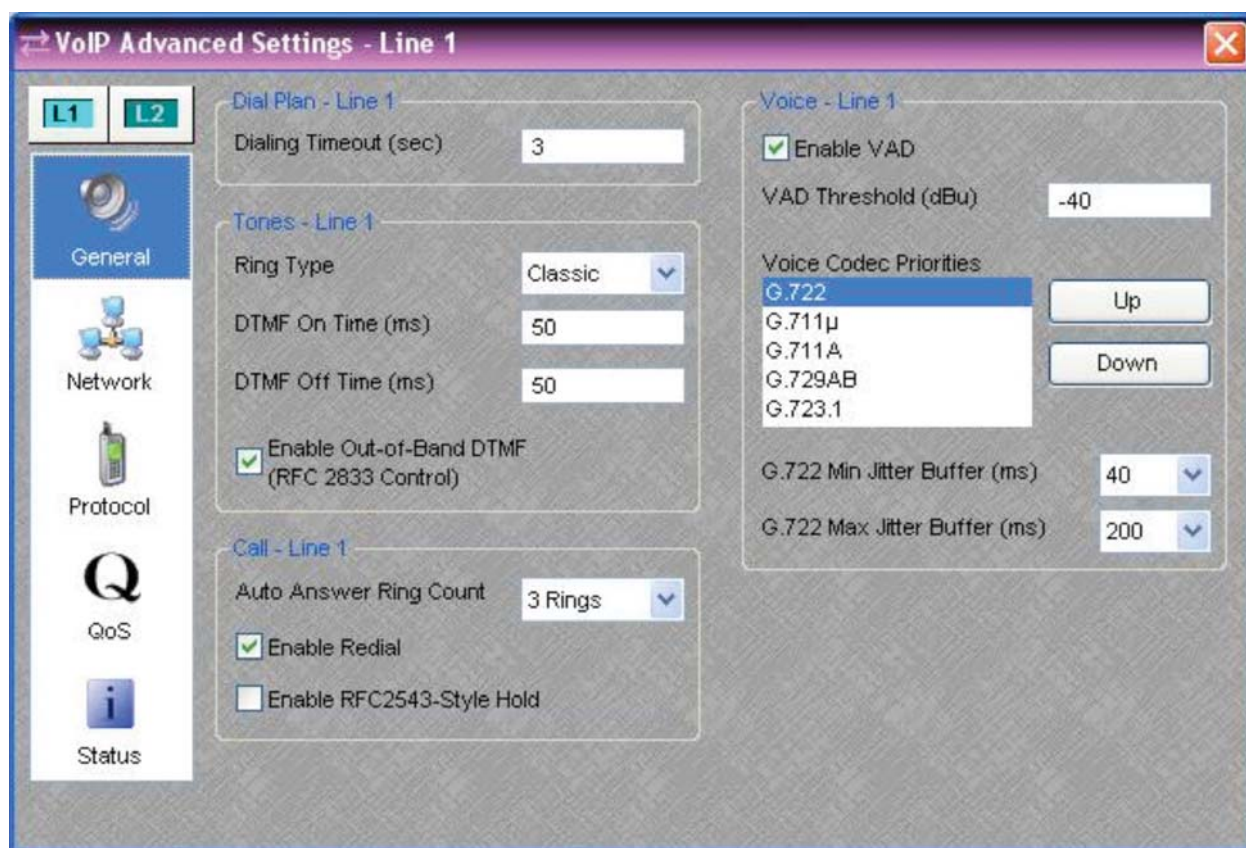
Answer, End.

CONTROL OUTPUTS

Ring Indication, Line In Use, Line Ready.

THIRD-PARTY COMMANDS

Answer, End, Auto-answer, On/Off Hook, Hold, Dial number, Dial speed-dial, Set speed-dial, Redial, Last number dialed, Caller ID Data, Line in use status, Line ready status, Ringing status, Transmit level adjust, Receive level adjust.





Features

- Selectable constant-voltage (70V/100V) or low-impedance (4/8 ohm) operation for each channel pair (channel pair must be operated in Bridge mode for 100V)
- FIT (Fault Isolation Topology) circuitry isolates faults within affected channels
- 5 Year No Fault Warranty with 1 Year Advance Replacement Program
- TLC protection circuitry protects the amplifier from excessive heat by subtly and dynamically reducing the gain only when necessary to reduce heat levels
- Comprehensive array of indicators including Power and Data, along with Bridge, Ready, Signal, Clip, Thermal and Fault for each channel, provide accurate diagnostics
- A fixed 35-Hz (70-Hz in CTs 4200) high-pass filter per channel pair is automatically inserted when the mode switch is set to either of the constant-voltage settings. The high-pass filter corner frequency in the CTs 8200 can be set to 70 Hz, or bypassed, with a service option

Section 274100 - 2.10.W.7.a Comply (Replacement)

Specifications

	CTs 4200	CTs 8200
Channels	4	8
Sensitivity	1.4V	1.4V
Signal to Noise Ratio (below rated power 20Hz to 20kHz, Unweighted)	100dB	100dB
Total Harmonic Distortion (THD) (full rated power, 20Hz - 20kHz)	< 0.05%	< 0.05%
Intermodulation Distortion (from 0dB down to -40dB)	< 0.05%	< 0.05%
Frequency Response (at 1W into 4/8 ohms)	± 0.5dB	± 0.5dB
Phase Response (at 1 watt, 10 Hz - 20 kHz)	± 35°	± 35°
Crosstalk (below rated power 20Hz to 1kHz)	> 80dB	> 80dB
Common Mode Rejection (20Hz to 1KHz)	> 50dB	> 50dB
Maximum Input Level (before input compression)	+20dBu	+20dBu
Load impedance	70V (4/8/16 Ohm)	70V (4/8/16 Ohm)
Voltage Gain (at maximum level settings) (8/4 ohm operation)	20:1 (26dB)	20:1 (26dB)
Power Draw at Idle (120VAC mains: standby mode)	58W	58W
Dimension (H x W X D)	3.5" x 19" x 16.25"	5.25" x 19" x 16.25"
Net Weight	27 lbs 8 oz	36 lbs 6 oz
Net Shipping Weight	32 lbs	47 lbs

General

CTs 4200		Maximum Average Power in watts with 0.1% THD.	
Dual			
4 Channels Driven	1 kHz	20 Hz-20 kHz	
4-ohm (per ch.)	260W	215W	
8-ohm (per ch.)	180W	190W	
70V (per ch.)	220W	220W*	
1 Channel Driven	1 kHz	20 Hz-20 kHz	
4-ohm (per ch.)	270W	225W	
8-ohm (per ch.)	220W	210W	
70V (per ch.)	250W	245W*	
Bridge-Mono			
2 Channel-Pairs Driven	1 kHz	20 Hz-20 kHz	
8-ohm (per ch. pair)	520W	430W	
16-ohm (per ch. pair)	400W	380W	
100V (per ch. pair)	220W	220W*	
1 Channel-Pair Driven	1 kHz	20 Hz-20 kHz	
8-ohm (per ch. pair)	560W	450W	
16-ohm (per ch. pair)	440W	420W	
100V (per ch. pair)	250W	245W*	

CTs 8200		Maximum Average Power in watts with 0.1% THD.	
Dual			
4 Channels Driven	1 kHz	20 Hz-20 kHz	
4-ohm (per ch.)	200W	175W	
8-ohm (per ch.)	160W	155W	
70V (per ch.)	200W	285W*	
1 Channel Driven	1 kHz	20 Hz-20 kHz	
4-ohm (per ch.)	270W	230W	
8-ohm (per ch.)	220W	220W	
70V (per ch.)	250W	230W*	
Bridge-Mono			
2 Channel-Pairs Driven	1 kHz	20 Hz-20 kHz	
8-ohm (per ch. pair)	400W	350W	
16-ohm (per ch. pair)	320W	310W	
100V (per ch. pair)	200W	185W*	
1 Channel-Pair Driven	1 kHz	20 Hz-20 kHz	
8-ohm (per ch. pair)	540W	460W	
16-ohm (per ch. pair)	440W	440W	
100V (per ch. pair)	250W	230W*	

* Constant Voltage full bandwidth power ratings support 100Hz - 20kHz due to automatic High-Pass Filters.

* Constant Voltage full bandwidth power ratings support 100Hz - 20kHz due to automatic High-Pass Filters.

Crown's Five-Year, No-Fault, Fully Transferable Warranty

Crown offers a Five-Year, No-Fault, Fully Transferable Warranty for every new Crown amplifier—an unsurpassed industry standard. With this unprecedented No-Fault protection, your new Crown amplifier is warranted to meet or exceed original specifications for the first five years of ownership. During this time, if your amplifier fails, or does not perform to original specifications, it will be repaired or replaced at our expense. About the only things not covered by this warranty are those losses normally covered by insurance and those caused by intentional abuse. And the coverage is transferable, should you sell your amplifier. See your authorized Crown dealer for full warranty disclosure and details. For customers outside of the USA, please contact your authorized Crown distributor for warranty information or call 574-294-8200.

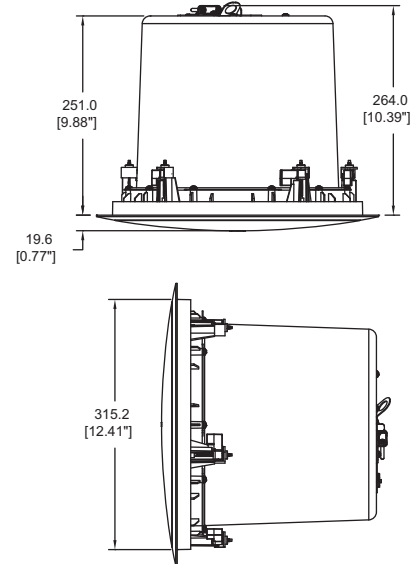


CROWN
by HARMAN

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Product Description

The Tannoy CVS 8 is a full bandwidth large-format in-ceiling speaker system of class-leading performance and exceptional value. The design comprises of 200mm (8.00") mid bass driver with a coaxially mounted 19mm (0.75") high frequency section mounted in a vented, injection moulded, paintable front baffle manufactured from UV/ weather resistant UL94V-0 ABS material. The new device is currently pending UL Listed status (UL-1480 and UL-2043).

The mineral loaded polypropylene cone material and nitrile rubber surround provide durability and long-term reliability, minimising system maintenance costs and future disruption to any facility. This compact unit is specifically designed for applications requiring the combination of music and speech reinforcement at higher SPLs with consistent functionality and full bandwidth sound quality. Typical applications include shopping malls, large conference facilities, hotel lobbies and ballrooms, and larger bars and high-end restaurants where higher BGM specifications are often specified and demanded.

The CVS 8 is equipped with a low insertion loss 60W line transformer easily configurable to the following settings via front baffle mounted rotary tapping switch:

70V systems: 60W / 30W / 15W / 7.5W / OFF & low Impedance operation
 100V systems: 60W / 30W / 15W / OFF & low Impedance operation

The CVS 8 is supplied with an integral painted steel back can, with recessed termination box, to satisfy the vast majority of installation application requirements. The removable locking connector has screw terminals for secure wire termination and "loop through" facility. Strain relief is provided by a clamping mechanism for use with plenum rated cable or conduit. Security toggle clamps make for quick and easy installation, while two tile support rails and one C-ring are also included in the package. A plaster (mud) ring is available as an optional accessory.

Features

- Coaxially mounted 200mm (8.00") mineral loaded woofer with rubber surround and 19mm (0.75") soft dome diffraction loaded tweeter
- High power & high sensitivity with extended frequency response and very low distortion
- Wide, controlled constant directivity dispersion for optimum coverage
- UV/weather resistant UL94V-0 ABS front baffle
- Easily accessible tapping switch on front baffle
- Low insertion loss 60W line transformer
- Ferrofluid cooled neodymium HF
- Packaged with tile rails and C-ring for quick & easy installation and simple stocking logistics

Applications

- Multizone Foreground Music & Paging Systems
- Boardrooms & Offices
- Business Music Systems
- Airports, Convention Centres, Hotels
- Reception / Waiting Rooms
- Houses of Worship
- Retail Outlets / Shopping Malls
- Lounges / Bars
- Cruise Ships
- Courtrooms

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tannoy.com



CVS 8

Section 274100 - 2.10.X.10.a Comply

TANNOY®

TECHNICAL SPECIFICATIONS

System	CVS 8
Frequency Response (-3dB) ⁽¹⁾	79Hz - 21kHz
Frequency Range (-10dB) ⁽¹⁾	60Hz - 24kHz
System Sensitivity (1W @1m) ⁽²⁾	93dB (1W = 2.45V for 6 Ohms)
Nominal Coverage Angle	90 degrees conical
Coverage Angle (1kHz to 6kHz)	84 degrees conical
Directivity Factor (Q)	14.7 averaged 1kHz to 6kHz
Directivity Index (DI)	11.7 averaged 1kHz to 6kHz
Rated Maximum SPL ⁽²⁾	111dB (average) 117dB (peak)
Power Handling ⁽³⁾	
Average	60W
Programme	120W
Peak	240W
Recommended Amplifier Power	120W @ 6 Ohms
Nominal Impedance	6 Ohms
Transformer Taps (via front rotary switch)	
70V	60W / 30W / 15W / 7.5W / OFF & low impedance operation
100V	60W / 30W / 15W / OFF & low impedance operation
Distortion	
1% Full Power	2nd Harmonic 3rd Harmonic
250Hz	0.33% 0.25%
1kHz	0.15% 0.63%
10kHz	0.12% 0.03%
10% Full Power	2nd Harmonic 3rd Harmonic
250Hz	1.10% 0.25%
1kHz	0.55% 0.70%
10kHz	0.52% 0.03%
Crossover Point	6kHz
Notes	
(1) 1. Average over stated Bandwidth. Measured in an IEC baffle in an Anechoic Chamber	
(2) Unweighted Pink noise input, measured at 1m on axis	
(3) Long term power handling capacity as defined in EIA - 426B test	
A full range of measurements, performance data, CLF and Ease™ Data can be downloaded from www.tannoy.com	
Full independent verification of published specifications carried out by NWA Labs, Washington can also be obtained from the downloads section of www.tannoy.com	
Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods will always equal or exceed the published specifications, which Tannoy reserves the right to alter without prior notice. Please verify the latest specifications when dealing with critical applications.	

Transducers	
Low Frequency	Coaxial 200mm (8.00") mineral loaded cone material
High Frequency	19mm (0.75")
Physical	
Enclosure	Blind Mount (BM) Painted steel
Back can	Reflex loaded UL 94V-0 rated ABS
Baffle	Steel, with weather resistant coating
Grille	
Safety Features	Safety ring located at rear of enclosure for load bearing safety bond
Clamping Design	Security toggle clamp
Back Can	
Cable Entry Options	Cable clamp & squeeze connector for conduit up to 22mm
Connectors	Removable locking connector with screw terminals with "loop through" facility
Safety Agency Ratings (pending)	UL-1480, UL-2043, CE
Hole Cutout Diameter	320mm (12.6")
Dimensions	
Bezel diameter	355.6mm (14.00")
Front of ceiling to rear of back can	251.0mm (9.88")
Front of ceiling to top of safety loop	264.0mm (10.39")
Template hole cutout size	250mm (9.84")
Net Weight (ea)	5.3kg (11.68lbs)
Included Accessories	C-ring, Tile bridge, paint mask, cutout template, grille
Optional Accessories	Plaster (mud) ring

6483 1140 / 0311

Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QUANTITY
8001 6290	CVS 8	WHITE / PAINTABLE	2

Tannoy (Direct UK)
TCGI (ROW sales)
TCGA (Americas sales)
Tannoy Middle East

T: 00 44 (0) 1236 420199
T: 00 45 8742 7000
T: 00 1 (519) 745 1158
T: 00 971 (04) 4401208

E: enquiries@tannoy.com
E: info@tcgroup-international.com
E: info@tcgroup-americas.com
E: enquiries@tannoy.com

tannoy.com

LS-04 Advanced Installed FM System

Section 274100 - 2.10 RR.17.a Comply



Configuration

LS-04-072
LS-04-216
LS-04-863

This stationary system can easily be integrated into your existing audio source. Your guests can change the channel by simply pressing the seek button on the receivers. The case is designed to charge all four units at the same time, making this system convenient for frequent users.

Highlights

- Perfect for where your guest changes the channel to find the audio source.
- Superior Audio Quality – 80 dB (70 dB with 863 MHz) signal-to-noise ratio, setting the industry's sound quality standard.
- A choice between 57 channels (17 channels with 863 MHz) - ideal for a wide range of applications.
- Long transmission range ensures coverage for the entire venue.
- Programmability – Unneeded channels can be locked so this receiver will access only one or more channels of your choice.
- 100 % Digital – Listen receivers are digitally-tuned so transmission won't drift.
- Uses standard alkaline or NiMH batteries.
- Built in SmartCharge™ won't allow batteries to over charge.
- Limited Lifetime Warranty with hassle-free support.

Accessories



LA-321 8-Unit Portable FM Product Charging/Carrying Case

Store and charge up to 8 portable FM units in this hard sided, locking case. Features easy, drop in, automatic charging. Use to power individual portable units without batteries, or to charge units with NiMH batteries.

Includes

- (1) LT-800 Stationary FM Transmitter (72, 216 or 863 MHz)
- (1) LA-122 Universal Antenna Kit (72 and 216 MHz)
- (1) LA-130 Remote Antenna Kit (863 MHz)
- (1) LA-326 Universal Rack Mounting Kit
- (4) LR-500 Portable Programmable Display FM Receiver (72, 216 or 863 MHz)
- (4) LA-164 Ear Speaker
- (1) LA-317 4-Unit FM Product Charging/Carrying Case
- (4) LA-362 NiMH AA Rechargeable Batteries (pkg. of 2)
- (1) LA-304 Assistive Listening Notification Signage Kit



FEATURES

- Mic/line switchable input
- 16 isolated mic/line switchable outputs
- Jensen® transformers
- Level control
- XLR, 1/4" phone, RCA and mini outputs
- VU output level meter
- Active electronics
- AC or battery powered
- Professional signal levels
- High signal to noise ratio
- Professional quality construction
- Compact size (14H x 18W x 5D inches)
- Rugged Zero Haliburton aluminum case
- 220 V European adapter available
- Rack or wall mount versions available
- Made in the USA

The RCI **BM-16DB** is a 16 output portable active Broadcast Media Mult Box, designed with the needs of the professional news, conference and production organization in mind. The BM-16DB enables a single mic or line level audio source to feed 16 mic/line switchable outputs.

The balanced input of the BM-16DB is mic/line switchable and designed to operate with the line feed from a mixer or directly with a microphone. Phantom power is switched on in the mic position. A level control and VU meter provide the means for setting proper output level, adjusting for various source levels. The 16 balanced XLR outputs are mic/line switchable. Additionally, 1/4" phone, RCA and mini outputs are provided on four of the sixteen outputs for unbalanced equipment. The outputs are highly isolated to prevent problems in equipment connected to one feed from affecting the other feeds. Multiple BM-16DB's can be linked together via the link output XLR.

The BM-16DB is powered by 120 VAC 60 Hz. Alternately, it may also be powered by four 9V batteries (approximately 2 1/2 hours at full load with fresh alkaline batteries). The batteries serve as a backup power source when used with standard AC power, automatically going into battery backup under power failure.

Designed for professional broadcast industry use, the BM-16DB utilizes high performance Jensen® transformers. Housed in a rugged Zero Haliburton aluminum case. 220 V. European adapter available. (Model # XXXXX)

Rack mount (BM-16DBRM), surface wall mount (BM-16DBSM), and flush wall mount (BM-16DBFM) versions also available. Note: Rack mount and wall mount versions do not include battery section and standard color is black anodize. Custom configurations and colors available.

Section 274100 - 2.10 EE.13.a Comply

SPECIFICATIONS:

Input: Mic/line switchable
Mic Input: -46dBu transformer balanced, 1.2k ohm, -72dBu sensitivity, 18VDC phantom
Line Input: +4dBu transformer balanced, 20k ohm, -20dBu sensitivity
Link Output: +4dBu transformer balanced, 600 ohm
Output: Mic/line switchable
Mic Output: -46dBu transformer balanced, 150 ohm
XL Line Output: +4dBu transformer balanced, 600 ohm, +23dBu clip
Unbalanced Line Output: -20dBV unbalanced, 600 ohm
Frequency Response: 20Hz – 20kHz, ± 0.5 dB
THD: Less than .01%
Noise: 75 dB signal to noise
Output Isolation: 120dB mic to mic/line, 80dB line to mic/line
Dimensions: 355 mmH x 457 mmW x 127 mmD (14" x 18" x 5")
Weight: 7.3 Kg (16 lbs.)
Power: 110 VAC, 60 Hz or 4-9V batteries
Finish: Clear anodize

A & E SPECIFICATIONS

The broadcast media multiple output unit shall be a RCI Custom Products Model _____ (BM-16DB, BM-16DBSM, BM-16DBFM, BM-16DBRM). The input shall be one (1) female XLR connector and be switchable between mic (-72dBu) and line (+4dBu) level. The link output shall be one (1) male XLR connector. Multiple units may be linked together for increase output capacity. There shall be sixteen (16) outputs of male XLR connectors and be switchable between mic (-46dBu) and line (+4dBu) level. Additionally there shall be a 1/4" phone, RCA and mini unbalanced (-20dBV) connectors on four of the sixteen outputs. Frequency response shall be 20Hz-20 KHz ± 0.5 dB. Total harmonic distortion shall be less than .01% and signal to noise ratio at least 75dB. Isolation shall be at least 120dB mic to mic/line and 80dB line to mic/line outputs. The portable unit version shall be constructed of a clear anodized, AVD-Series aluminum panel with black engraved legends and enclosed in an aluminum attaché case with a thermoplastic steel core handle, clip latches, and aluminum frame. External dimensions shall not exceed 355mmH x 457mmW x 127mmD (14" x 18" x 5") and shall weigh no more than 7.3Kg.

Scan 1600

Ref. SSV1600

High Resolution Scan Converter



Scan 1600 at a glance

- > Totally Auto-Scan and converts in real time
- > Up to 1600 x 1200 input resolution
- > Up to 16 different input formats are stored in the device permanent memory
- > Provides High Quality Video Signal
- > Ideal and very useful for multi-computer applications or rental

Key Features

Inputs

- PC, Mac compatible input
- DVI and RGB Computer Input up to 1600x1200

Outputs

- Composite Video NTSC/PAL, S.Video and RGB/YUV
- All Video outputs are available simultaneously

Features

- 8 level anti-flicker
- Auto-Scan to 130 kHz
- Linear Pan & zoom resizing up to 500 %
- Menu control with LCD
- Freeze Button
- Automatic Button
- RS232 Upgradable
- Remote Control Software (PC Only)
- 1/2 19" 1U rackable

Reference

- > [SSV1600: Scan 1600](#)

Options

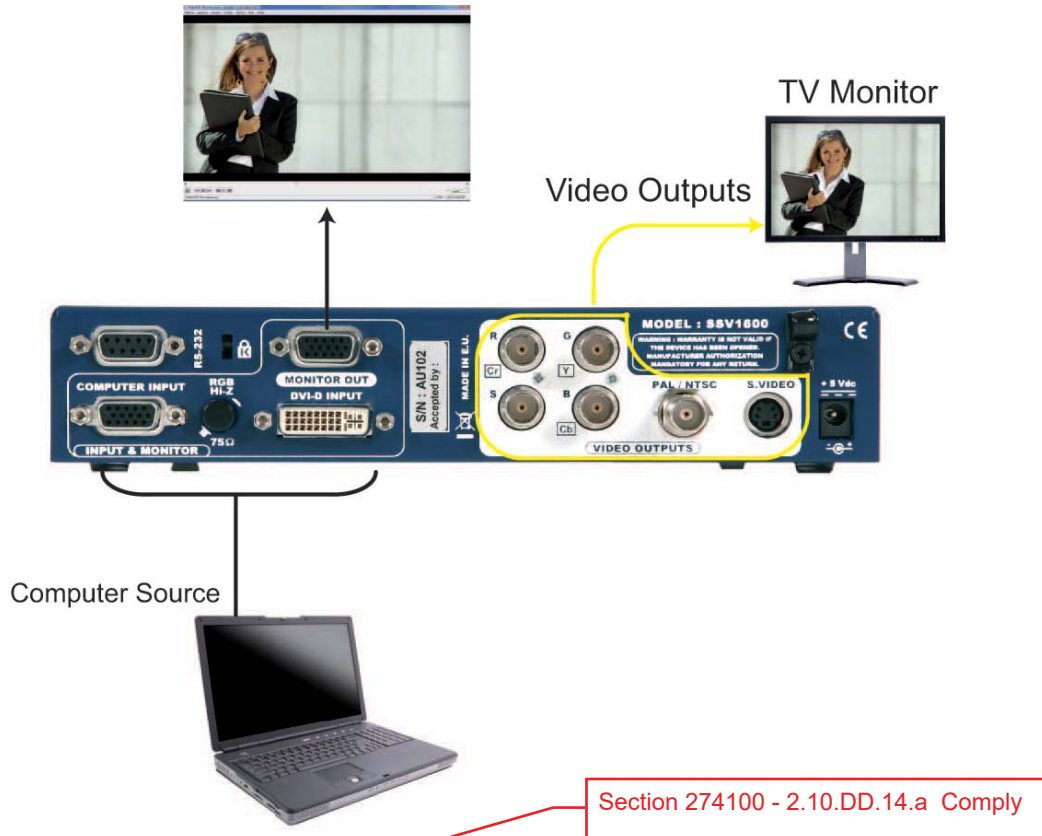
- > [OPT-RMK2](#): Optional rack-mounting kit (allows mounting of 1 or 2 Scan 1600 in a 1U 19" rack)
- > [OPT-S05-BU](#): Blue Half Rack Shutter



Diagram

Example of application with Scan 1600:

Output and capture any video file on your computer through media players such as Quicktime™, VLC™ and Windows Media Player™ to video outputs.



Technical Specifications

Computer Input

- For PC, Mac and Workstation
- RGsB, RGBS, RGBHV and DVI-D with Automatic synchronization detection
- Resolution up to 1600x1200/60Hz
- Horizontal frequency from 31.5 to 130 KHz

Outputs

- Composite Video PAL/NTSC (1Vp/p)
- S. Video (Y/C) (0.7 Vp/p + 0.3 Vp/p)
- RGB/S, RGBS or Component (0.7 Vp/p + 0.3Vp/p)
- Formats :
 - PAL 625L 15.625 kHz/50 Hz (CCIR)
 - NTSC 525 PL 15.735 kHz/60 Hz (RS170.A)
- Computer monitor loop through:

User Controls and Connectors - Front Panel

- LCD screen & control buttons for Input, output, Image and miscellaneous user settings
- Frame Freeze: Push button + 1 LED
- Image position: horizontal and vertical position and size adjustments
- Zoom mode (continuous up to 500%) with horizontal and vertical position and size adjustments

Connectors - Rear Panel

- Input Connectors:
 - HD 15 pin female (Computer in)
 - DVI-D (Digital Computer in only)
- Output Connectors:
 - BNC (NTSC/PAL/Composite Video)
 - 4 pin mini DIN (S.Video)
 - 4 BNC (RGB/S, RGsB or Component)
 - HD15 pin female (Computer out)
- Miscellaneous:
 - Hi.Z/75 Ohms: Switch for Computer input
 - RS232 input for remote control
 - Coaxial Jack for PWS

Power Supply

- External, universal, automatic, 100-250 V; 50/60 Hz; 5 Vdc, 20 W (UL, CSA, GS, CE)

Supplied with

- 1 x Desktop Power supply
- 1 x VGA M/M Cable (1.8 m - 6ft)
- 1 x Remote Control Software (RCS) (PC Only)*
- 1 x User Manual*

Dimensions

- 1U, 19" compatible
- D 10.4" x W 8.7" x H 1.69"
- D 265 mm x W 221 mm x H 43 mm

Weight

- 1.2 kg/2.6 lbs

Warranty

- 3-year warranty on parts and labor back to factory

Specifications subject to change without prior notice



* All RCS, User Manuals and Quick Start Guides are also available on www.analogway.com

Universal Video Converter

AJA FS1
Specifications

Section 274100 - 2.10 NN.7.a Comply

Specification	Value	Notes
SDI Input		
Standard	SMPTE 259M, 292M	
Connector	75 ohm BNC	
Return loss: 5Mhz to 1.5GHz	>18db	
Equalization (Belden 1694 cable): 270MHz	350m	
1.5GHz	140m	
SDI Output		
Standard	SMPTE 259M, 292M	
Connector	75 ohm BNC	
Return loss: 5Mhz to 1.5GHz	>18db	
Return loss: 1.5GHz to 3GHz	>18db	
Timing jitter: 270MHz	<0.1 UI	Genlock = freerun, Color Bars
1.5GHz	<0.5 UI	"
Alignment jitter: 270MHz	<0.1 UI	"
1.5GHz	<0.13 UI	"
Component Input		
Format	SMPTE, Betacam	
Connector	75 ohm BNC	
Return loss	>40 dB, 300 kHz to 6 MHz	
Quantization	12 bits	
Frequency response SD	Y: ±0.2 dB to 5 MHz	
	Pb/Pr: ±0.2 dB to 2 MHz	
Frequency response HD	Y: ±0.5 dB to 25 Mhz, -2.0 dB @ 30 Mhz	
	Pb/Pr: ±0.2 dB to 12.5 Mhz, -1.0 dB @ 15 Mhz	

Revised 6/4/2010

AJA FS1 Specifications



Specification	Value	Notes
SNR	>65 dB	Flat field, gray
Component Output		
Format	SMPTE, Betacam, RGB	
Connector	75 ohm BNC	
Return loss	>40 dB 300 kHz to 6 MHz	
Quantization	12 bits	
Frequency response SD	Y: ± 0.2 dB to 5 MHz	
	Pb/Pr: ± 0.5 dB to 2.5 MHz	
Frequency response HD	Y: ± 0.25 dB to 25 Mhz, -3 dB @ 30 Mhz	
	Pb/Pr ± 0.25 to 12.5 Mhz, -3 dB @ 15 Mhz	
SNR	>65 dB	Flat field, gray
Composite/S Video Input		
Standard	NTSC, PAL	
Connector	75 ohm BNC, S Connector	
Return loss	>40 dB 300 kHz to 6 MHz	
Quantization	12 bits	
Frequency response	± 0.5 dB, to 5 MHz, Luminance	
SNR	65 dB	
Composite/S Video Output		
Standard	NTSC, PAL	
Connector	75 ohm BNC, S Connector	
Return loss	>40 dB 300 kHz to 6 MHz	
Quantization	12 bits	
Frequency response	± 0.1 dB to 6 MHz, Luminance	
DC offset	$< 0.0 \pm 50$ mV	
Differential gain	$< 0.5\%$	
Differential phase	$< 0.5^\circ$	
Transient response	$< 0.9\%$ K Factor	
SNR	>65 dB	

AJA FS1 Specifications



Specification	Value	Notes
Propagation Delay		
Video	1 frame nominal	
Audio	adjustable + 16 / -256ms with respect to video output	
Genlock Input		
Connector	75 ohm BNC	
Return loss	> 40 db, 300khz to 6 Mhz	
Signal type	NTSC/PAL analog composite, 300 mV Sync, ±300 mV Tri-level sync	
AES Input		
Standard	AES3, SMPTE276M	
Connector	75 ohm BNC	
Sensitivity	<200 mV	
Return loss	> 30 dB, 300khz to 6 Mhz	
Input audio rate	32 kHz to 96 kHz	Sample rate conversion
AES Output		
Standard	AES3, SMPTE276M	
Connector	75 ohm BNC	
Return loss	> 30 dB, 300khz to 6Mhz	
Jitter	< 0.7 ns	
Rise/fall time	2 ns (10% to 90%)	
Analog Audio Input		
Connector	Tascam 25 pin D	
Input impedance	30k ohms	
Input analog level	+12, +15, +18, +24db Full Scale Digital	
Frequency response	<±0.3 dB 20 Hz to 20 kHz	
THD	> -82 dB @ 1khz, -94 dB @ 20Khz	
SNR	> -94 dB @ +23 dBm	

AJA FS1 Specifications

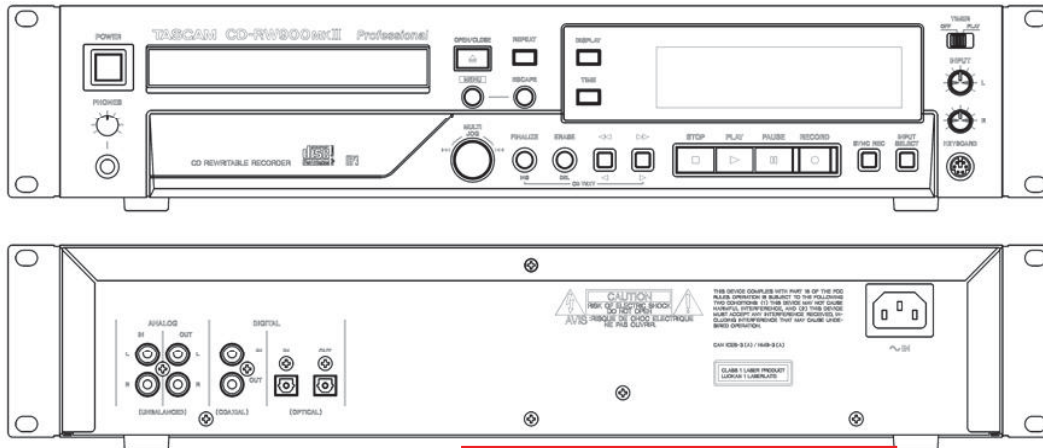


Specification	Value	Notes
Analog Audio Output		
Connector	Tascam 25 pin D	
Output analog level	+12, +15, +18, +24db Full Scale Digital	
Frequency response	± 1 dB 20hz to 13khz, -3dB @ 20 Khz	
THD	>-85 dB	
SNR	>- 94 dB @ +23 dBm	
Weight and Dimension Measurements		
Height	1RU, 1.75 in. (4.5 cm)	
Width	19 in. (48.3 cm)	
Depth (including BNCs)	12.5 in. (31.75 cm)	

Product Spec Sheet

CD Recorder / Player

CD-RW900MK II



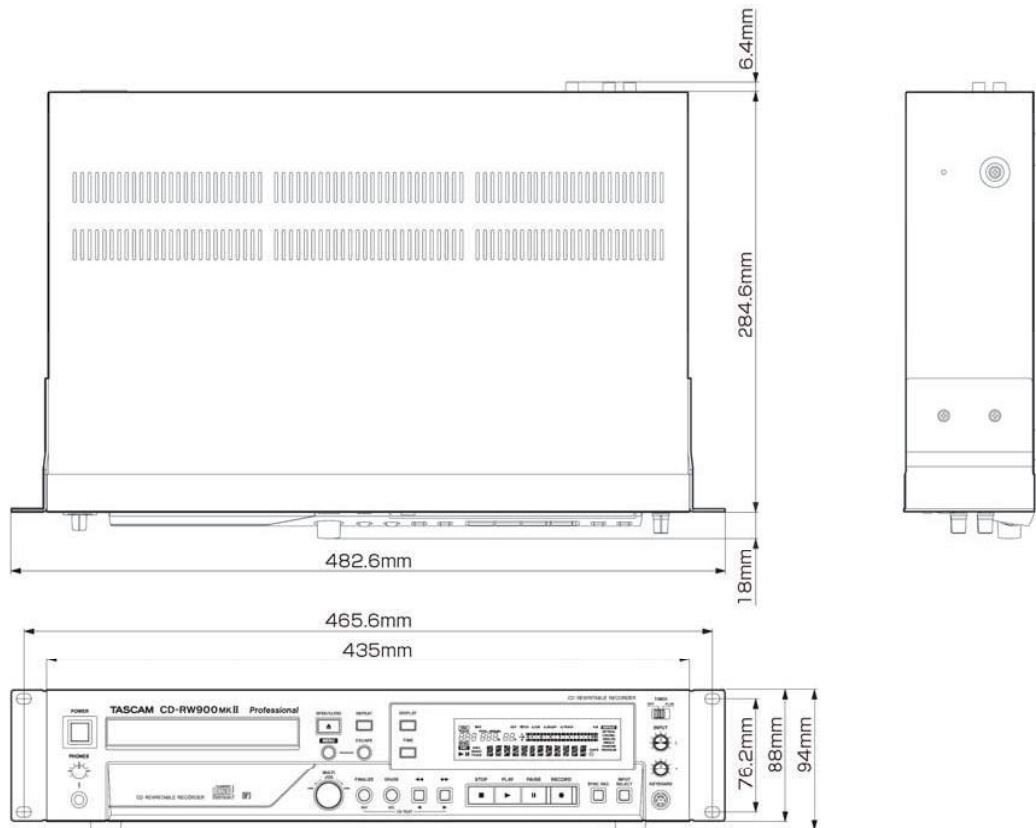
Section 274100 - 2.10 G.9.a Comply
(Replacement)

■ Specifications

Supported disc types	CD, CD-R, CD-R-DA, CD-RW and CD-RW-DA (High speed CD-RW is supported)
Playback disc formats	CD-DA, CD-ROM ISO9660 LEVEL1/2Joliet format, multisession discs and CD text
Playback file formats	CD-DA: 44.1kHz, 16-bit stereo MP3: 44.1kHz, 64-320kbps, VBR
Recording file formats	CD-DA: 44.1kHz, 16-bit stereo
Frequency response	20 Hz - 20 KHz ±0.8 dB (playback) ±1.0 dB (recording)
S/N	95 dB (playback) 90 dB (recording)
Dynamic range	95 dB (playback) 90 dB (recording)
Distortion	0.006 % (playback) 0.008 % (recording)
Channel separation	90 dB (playback) 80 dB (recording)
Wow and flutter	< 0.001 % (unmeasurable)
Analog inputs	Unbalanced RCA pin Level -10 dBV ±2 dB (Full Scale -16 dB) Minimum input level -19 dBV (adjustable level at Full Scale -16 dB) Input impedance 22 KΩ ±10% (unbalanced)
Analog outputs	Unbalanced RCA pin Level -10 dBV ±2 dB (Full Scale -16 dB) Maximum output level +6 dBV ±2 dB Output impedance 200 Ω ±10% (unbalanced)
Phones output	Stereo (6.3 φ) 20 mW 32 Ω

Digital input	Coaxial RCA pin jack (IEC-60958 Consumer use) Optical TOSLINK (IEC-60958 Consumer use)
Digital output	Supported input sampling frequencies: 32-48 kHz Coaxial RCA pin jack (IEC-60958 Consumer use) Optical TOSLINK (IEC-60958 Consumer use)
Keyboard	Mini DIN 6 pin
Power	U.S.A./Canada 120 VAC, 60Hz U.K./Europe 230 VAC, 50Hz Australia 240 VAC, 50Hz
Power consumption	16 W (U.S.A./Canada) 18 W (U.K./Europe/Australia)
Dimensions (d x w x h)	309 x 482.6 x 94 (mm)/ 12.2 x 19.0 x 3.7 (in)
Weight	4.3 kg (9.5 lb)

■ Dimensional drawing



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 ※Specifications and appearance are subject to change without notice.
 ※All information included in this document is as of May, 2014.

SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET G

Technical Data Sheet Plenum Communication Cables



2833 West Chestnut Street
Washington, PA 15301
Toll Free: (800) 245-4964
Fax: (724) 222-6420
www.westpenn-wpw.com



PART NUMBER:	25291B
DESCRIPTION:	22/2 Stranded bare copper conductors, shielded with an overall jacket.
NEC RATING:	CMP, NEC Article 800
APPROVALS:	(UL) C(UL) Listed or c(ETL)us Listed
APPLICATION:	Indoor within ducts, plenums, and other spaces used for environmental air for (Intercom Systems, Security Systems, Sound, Audio, Background Music)

Construction Parameters:

Conductor	22 AWG Bare Copper
Stranding	7x30
Insulation Material	Flex Plenum PVC
Insulation Thickness	0.070" Nom.
Number of Conductors	2
Shield	100% Aluminum Polyester Foil
Drain	Stranded Tinned Copper
Jacket Material	Flex Plenum PVC
Jacket Thickness	0.015" Nom.
Overall Cable Diameter	0.124" Nom.
Approximate Cable Weight	12 Lbs/1M' Nom.
Flame Rating	NFPA 262 Flame Test

Electrical & Environmental Properties:

Temperature Rating	-10°C To +60°C
Operating Voltage	300 V RMS
Max.Capacitance Between Conductors @ 1 KHz	55 pf/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	99 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	17 Ohms/1M' Nom.
Insulation Colors	Black, Red
Jacket Color	Gray, Violet, Blue, Black, White
RoHS Compliant	Yes

Mechanical Properties:

Max. Recommended Pull Tension	33 lbs
Min. Bend Radius (Install)	1.3"



Specification Issue Date: 7/06

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Speaker Cable (70 Volt)

Section 274100 - 2.16 Comply

Technical Data Sheet Plenum Communication Cables

WEST PENN WIRE



2833 West Chestnut Street
Washington, PA 15301
Toll Free: (800) 245-4964
Fax: (724) 222-6420
www.westpenn-wpw.com

PART NUMBER:

25225B

DESCRIPTION:

16/2 Stranded bare copper conductors, unshielded with an overall jacket.

NEC RATING:

CMP, NEC Article 800

APPROVALS:

(UL) C(UL) Listed or c(ETL)us Listed

APPLICATION:

Indoor within ducts, plenums and other spaces used for environmental air for:
(Intercom, Security, Sound, Audio, Background music)

Construction Parameters:

Conductor	16 AWG Bare Copper
Stranding	19x29
Insulation Material	Flex Plenum PVC
Insulation Thickness	0.008" Nom.
Number of Conductors	2
Shield	None
Drain	None
Jacket Material	Flex Plenum PVC
Jacket Thickness	0.015" Nom.
Overall Cable Diameter	0.176" Nom.
Approximate Cable Weight	25 Lbs/1M' Nom.
Flame Rating	NFPA 262 Flame Test

Electrical & Environmental Properties:

Temperature Rating	-10°C To +60°C
Operating Voltage	300 V RMS
Max.Capacitance Between Conductors @ 1 KHz	33 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	4.2 Ohms/1M' Nom.
Insulation Colors	Black, Red
Jacket Color	Gray, Black, Green
RoHS Compliant	Yes

Mechanical Properties:

Max. Recommended Pull Tension	54 lbs
Min. Bend Radius (Install)	1.8"



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**Technical Data Sheet
Communication Cables**



2833 West Chestnut Street
Washington, PA 15301
Toll Free: (800) 245-4964
Fax: (724) 222-6420
www.westpenn-wpw.com

PART NUMBER:	25227B
DESCRIPTION:	12/2 Stranded bare copper conductors, unshielded with an overall jacket.
NEC RATING:	CL2P, NEC Article 725
APPROVALS:	(UL) or (ETL)us Listed
APPLICATION:	Indoor within ducts, plenums, and other spaces used for environmental air for (Intercom Systems, Security Systems, Sound, Audio, Background Music)

Construction Parameters:

Conductor	12 AWG Bare Copper
Stranding	19x25
Insulation Material	Flex Plenum PVC
Insulation Thickness	0.010" Nom.
Number of Conductors	2
Shield	None
Drain	None
Jacket Material	Flex Plenum PVC
Jacket Thickness	0.015" Nom.
Overall Cable Diameter	0.256" Nom.
Approximate Cable Weight	54 Lbs/1M' Nom.
Flame Rating	NFPA 262 Flame Test

Electrical & Environmental Properties:

Temperature Rating	-10°C To +60°C
Operating Voltage	150 V RMS
Max.Capacitance Between Conductors @ 1 KHz	36 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	1.7 Ohms/1M' Nom.
Insulation Colors	Black, Red
Jacket Color	Gray
RoHS Compliant	Yes

Mechanical Properties:

Max. Recommended Pull Tension	146 lbs
Min. Bend Radius (Install)	2.5"

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CATV Cable- RG6

Section 274100 - 2.16 Comply

Technical Data Sheet RG6/U Type CATV Coaxial Cable Plenum

WEST PENN WIRE



2833 West Chestnut Street
Washington, PA 15301
Toll Free: (800) 245-4964
Fax: (724) 222-6420
www.westpenn-wpw.com

PART NUMBER:	25Q841
DESCRIPTION:	RG6/U – 1 Conductor 18 AWG Solid, Quad-Shield and an overall Plenum PVC Jacket.
NEC RATING:	CATVP/ CMP
APPROVALS:	(UL) C(UL) Listed or c(ETL)us Listed
APPLICATION:	Indoor for Plenum:– CATV/MATV

Construction Parameters:

Conductor	18 AWG Bare Copper
Stranding	Solid
Insulation Material	Foam FEP
Insulation Thickness	.170" Nom.
Number of Conductors	1 Center Conductor
Shield	Quad-Shield- 100%Al foil + 65% Al. Braid + 100% Al. Foil + 55% Al. Braid
Jacket Material	Flexible Plenum PVC
Overall Cable Diameter	0.273" Nom.
Approximate Cable Weight	36 Lbs/1M' Nom.
Flame Rating	NFPA 262

Electrical & Environmental Properties:

		<u>Mhz</u>	<u>db/100ft</u>
Temperature Rating	-20deg C to 60deg C	5	.5
Max.Capacitance Between Conductors @ 1 KHz	16.2 pf/ft Nom.	55	1.6
Velocity of Propagation	82% Nom.	100	2.0
Impedance	75 ohms Nom.	270	2.9
DC Resistance per Conductor @ 20deg C	6.5 Ohms/1M' Nom.	400	4.5
Jacket Color	Ivory	550	4.9
RoHS Compliant	Yes	750	6.6
		1000	8.0
		2000	12.3
Max. Recommended Pull Tension	125 lbs.	2250	13.36
Min. Bend Radius (Install)	2.7"	3000	15.42

Mechanical Properties:

Connectors and Accessories

F Crimp: CN-56ALM
F Compression: CN-DB6PL2

Specification Issue Date: 7/06

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CATV Cable- RG11

Section 274100 - 2.16 Comply

Technical Data Sheet RG11/U Type CATV Coaxial Cable Plenum Quad-Shield



WEST PENN WIRE

2833 West Chestnut Street
Washington, PA 15301
Toll Free: (800) 245-4964
Fax: (724) 222-6420
www.westpenn-wpw.com

PART NUMBER:	25Q821
DESCRIPTION:	RG11/U – 1 Conductor 14 AWG Solid, Quad-Shield and an overall Plenum Jacket.
NEC RATING:	CATVP/ CMP
APPROVALS:	(UL) C(UL) Listed or c(ETL)us Listed
APPLICATION:	Indoor Plenum for:– CATV/MATV

Construction Parameters:

Conductor	14 AWG Bare Copper
Stranding	Solid
Insulation Material	Foam FEP
Insulation Thickness	.280" Nom.
Number of Conductors	1 Center Conductor
Shield	100% Al Foil + 60% Al. Braid + 100% Al. Foil 40% Al. Braid
Jacket Material	Copolymer
Overall Cable Diameter	0.385" Nom.
Approximate Cable Weight	55 Lbs/1M' Nom.
Flame Rating	NFPA 262

Electrical & Environmental Properties:

		<u>Mhz</u>	<u>db/100ft</u>
Temperature Rating	-20deg C to 60deg C	5	.25
Max.Capacitance Between Conductors @ 1 KHz	16.2 pf/ft Nom.	55	1.00
Velocity of Propagation	82% Nom.	100	1.50
Impedance	75 ohms Nom.	270	2.0
DC Resistance per Conductor @ 20deg C	2.6 Ohms/1M' Nom.	400	2.98
Jacket Color	Natural	550	3.5
RoHS Compliant	Yes	750	4.9

Mechanical Properties:

Max. Recommended Pull Tension	260 lbs.	1000	5.5
Min. Bend Radius (Install)	3.8"	2000	7.5
		2250	7.95
		3000	9.19

Connectors and Accessories

F Crimp:	CN-F11TFE
F Compression:	CN-FS11V

Specification Issue Date: 7/06

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CATV/MATV

"F" Type Connectors

F Terminator (75 Ohm)
Section 274100 - 2.16 Comply

"F" Crimp Type Connectors	
Catalog No.	Description
CN-F56ALM	RG6/U
CN-F56ALX	RG6/U Quad Shield
CN-F59TFE/WP	RG59/U West Penn Plenum
CN-F56TFE	RG6/U Plenum
CN-F56AQ	RG6/U Zinc plated with rubber O-Ring
CN-F59T	75 Ohm "F" Terminator
CN-F11ALX	RG11/U
CN-F11TFE	RG11/U Plenum



CN-F59ALM



CN-F59T



CN-F11ALX

RG6 Connector
Section 274100 - 2.16 Comply



CN-F59MCV



CN-CSF-6

CATV/MATV

"F" Type Compression Connectors

RG11 Connector
Section 274100 - 2.16 Comply

"F" Type Compression Connectors	
Catalog No.	Description
CN-F59MCV	Universal - RG59/U PVC, Plenum, Quad, Quad Plenum
CN-F6MCV	Universal - RG6/U PVC, Plenum, Quad, Quad Plenum
CN-CSF-6	RG6/U PVC
CN-FS6PL2	RG6/U Plenum
CN-FS11V	RG11/U
CN-FS11PL	RG11 Plenum, Quad, Quad Plenum
"F" Type Compression Connectors- Window Style	
CN-FCP-825	MiniMax 25Awg.
CN-FCP-59	RG59/U
CN-DB6PL2 *	Double Bubble 25Q841 & 256300

Small Profile
Compression
Design

800-245-4964 • www.westpenn-wpw.com

CATV/MATV

Assorted Adaptors

"F" Type Barrel and Adaptors	
Catalog No.	Description
CN-F81	F Barrel Splice
CN-F81NW	F Barrel Splice with Nut and Washer
CN-F71	F Male to Male Adapter
CN-ADP100	"F" Female to "F" Push on
CN-ADP101	"F" Right Angle Push on
CN-ADP102	"F" Right Angle (F to M)
CN-ADP103	RCA M to "F" Female
CN-ADP106	RCA F to "F" Male



CN-F81



CN-ADP106



CN-F81NW



CN-ADP103



CN-F71



CN-ADP100



CN-ADP102

Product Specifications

Section 274100 - 2.16 Comply

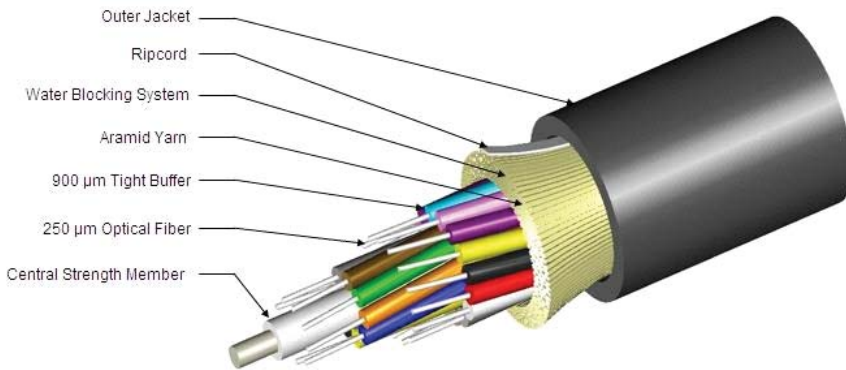
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P-002-OD-5L-FSUBK

Indoor/Outdoor Plenum Distribution Cable, 2 fiber single-unit



Representative Image



General Specifications

Cable Type	Distribution
Construction Type	Non-armored

Construction Materials

Fiber Type Solution	LazrSPEED® 300, 50 µm multimode fiber (OM3)
Total Fiber Count	2
Fiber Type	LazrSPEED® 300, 50 µm multimode fiber (OM3)
Fiber Type, quantity	2
Jacket Color	Black
Jacket UV Resistance	UV stabilized

Dimensions

Cable Weight	10.8 lb/kft 16.0 kg/km
Diameter Over Jacket	4.20 mm 0.17 in

Physical Specifications

Minimum Bend Radius, loaded	6.4 cm 2.5 in
Minimum Bend Radius, unloaded	4.2 cm 1.7 in
Tensile Load, long term, maximum	67 lbf 300 N
Tensile Load, short term, maximum	225 lbf 1001 N
Vertical Rise, maximum	500.0 m 1640.4 ft

760037341 | P-002-OD-5L-FSUBK

Flame Test Specifications

Flame Test Listing	NEC OFNP (ETL) and c(ETL)
Flame Test Method	NFPA 262

Environmental Specifications

Environmental Space	Plenum
Installation Temperature	-30 °C to +70 °C (-22 °F to +158 °F)
Operating Temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Storage Temperature	-40 °C to +75 °C (-40 °F to +167 °F)

Mechanical Test Specifications

Compression	126 lb/in 22 N/mm
Compression Test Method	FOTP-41 IEC 60794-1 E3
Flex	100 cycles
Flex Test Method	FOTP-104 IEC 60794-1 E6
Impact	4.34 ft lb 5.88 N-m
Impact Test Method	FOTP-25 IEC 60794-1 E4
Strain	See long and short term tensile loads
Strain Test Method	FOTP-33 IEC 60794-1 E1
Twist	10 cycles
Twist Test Method	FOTP-85 IEC 60794-1 E7
Water Penetration	24 h
Water Penetration Test Method	FOTP-82 IEC 60794-1 F5

Environmental Test Specifications

Cable Freeze Test Method	IEC 60794-1 F15
Heat Age	-40 °C to +85 °C (-40 °F to +185 °F)
Heat Age Test Method	IEC 60794-1 F9
Low High Bend	-40 °C to +70 °C (-40 °F to +158 °F)
Low High Bend Test Method	FOTP-37 IEC 60794-1 E11
Temperature Cycle	-40 °C to +70 °C (-40 °F to +158 °F)
Temperature Cycle Test Method	FOTP-3 IEC 60794-1 F1

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system



Included Products

CS-5L-TB (Product Component—not orderable) — LazrSPEED® 300 OM3 Bend-Insensitive Multimode Fiber

* **Footnotes**

Operating Temperature Specification applicable to non-terminated bulk fiber cable

Technical Data Sheet

Miniature Dual Channel Audio Cable

WEST PENN WIRE

2833 West Chestnut Street
 Washington, PA 15301
 Toll Free: (800) 245-4964
 Fax: (724) 222-6420
 www.westpenn-wpw.com

PART NUMBER:	210454
DESCRIPTION:	2 Pair 22Awg. Stranded tinned copper conductors, shielded with an dual overall jacket.
NEC RATING:	CM, NEC Article 800
APPROVALS:	(UL) Listed
APPLICATION:	Indoor for: Intercom System, Broadcast, Recording, Sound, Audio.

Construction Parameters:

Conductor	22 AWG Tinned Copper
Stranding	7x30
Insulation Material	Polypropylene
Insulation Thickness	0.008" Nom.
Number of Conductors	4 (2 Pair Siamese Construction)
Shield	100% Aluminum Polyester Foil
Drain	Stranded Tinned Copper
Jacket Material	PVC
Jacket Thickness	0.020" Nom.
Overall Cable Diameter	.135" x .280"Nom.
Approximate Cable Weight	30 Lbs/1M' Nom.
Flame Rating	UL 1685

Electrical & Environmental Properties:

Temperature Rating	-20deg C to 60deg C
Operating Voltage	300 V RMS
Max.Capacitance Between Conductors @ 1 KHz	34 pf/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	67 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	17 Ohms/1M' Nom.
Insulation Colors	1. Black, 2. Red
Jacket Color	Black
RoHS Compliant	Yes

Mechanical Properties:

Max. Recommended Pull Tension	51 lbs.
Min. Bend Radius (Install)	1.3"

Specification Issue Date: 7/06

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**Technical Data Sheet
Plenum Data Grade RS-485 Cables**



2833 West Chestnut Street
Washington, PA 15301
Toll Free: (800) 245-4964
Fax: (724) 222-6420
www.westpenn-wpw.com

PART NUMBER:	D254851
DESCRIPTION:	24/2 Stranded tinned copper conductors, shielded with an overall jacket.
NEC RATING:	CMP, NEC Article 800
APPROVALS:	(UL) Listed
APPLICATION:	Indoor Plenum data cable for: Computer Application, Low-Capacitance Data.

Construction Parameters:

Conductor	24 AWG Tinned Copper
Stranding	7x32
Insulation Material	Foamed Teflon
Number of Conductors	2 (1 Pair)
Shield	100% Aluminum Polyester Foil
Drain	Stranded Tinned Copper
Jacket Material	Plenum PVC
Overall Cable Diameter	0.202" Nom.
Approximate Cable Weight	30 Lbs/1M' Nom.
Flame Rating	NFPA-262

Electrical & Environmental Properties:

Temperature Rating	-20deg C to 60deg C
Operating Voltage	300 V RMS
Max.Capacitance Between Conductors @ 1 KHz	12.8 pf/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	23 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	24 Ohms/1M' Nom.
Velocity of Propagation	72% Nom.
Impedance	120Ω Nom
Insulation Colors	1. Blue- White/Blue
Jacket Color	Gray
RoHS Compliant	

Mechanical Properties:

Max. Recommended Pull Tension	47 lbs.
Min. Bend Radius (Install)	2."

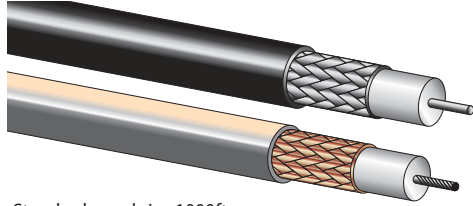
Specification Issue Date: 3/08

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IR Radiator and Antenna Cable

BULK CABLES: 50 Ohm Coaxial







**RF Transmission 50 Ohm Coaxial
RG58/U - RG58A/U - RG8/U - RG8x/U Type**

Applications:

- RF Transmission
- Broadcast Transmission
- Wireless Communication

Standard spool size 1000ft.

Section 274100 - 2.16 Comply

Catalog No.	NEC Type	Conductor Type & Nom. D.C.R	Insulation Type & Thickness Inches	Shielding & % Coverage	Jacket Type	Nom. O.D. Inches	Nom. Capacitance	Nom. VP	Nom. Imp. Ω	Jacket Color
 812 RG58A/U Type	CM	20 (19x32) Tinned Copper 8.8 Ω/M'	Gas Injected PE† .116	100% Bi-foil AL. +95% Tinned Cu Braid	PVC	.195	25 pf/ft	78%	50Ω	Black
						See connector listings				
 813 RG-58/U Type	CM	20 (Solid) Tinned Copper 10.1 Ω/M'	Gas Injected PE† .116	Tinned Copper Braid 95%	PVC	.195	26 pf/ft	78%	50Ω	Black
						See connector listings				
25812 RG-58/U Type Plenum	CMP	20 (19x32) Tinned Copper 8.8 Ω/M'	Foam FEP .102	100% Bi-foil AL. +95% Tinned Cu Braid	Flex Plenum	.158	25 pf/ft	82%	50Ω	Ivory
						See connector listings				
810 RG-213/U Type	CM	12 (7x20) Bare Copper 1.9 Ω/M'	Gas Injected PE† .280	Bare Copper Braid 95%	PVC	.405	26 pf/ft	80%	50Ω	Black
						See connector listings				
25810 RG-213/U Type Plenum	CMP	12 (7x20) Bare Copper 1.9 Ω/M'	Foam FEP .280	Bare Copper Braid 95%	Copolymer	.352	25 pf/ft	80%	50Ω	Natural
						See connector listings				
 98G8 RG-8/U Type	CM	10AWG Solid Bare Copper .9 Ω/M'	Gas Injected PE† .286	100% Bonded Bi-foil AL. + 90% Tinned Cu Braid	PVC	.405	24.5 pf/ft	84%	50Ω	Black
						See connector listings				
 2598G8 RG-8/U Type Plenum	CMP	10AWG Solid Bare Copper .9 Ω/M'	Foam FEP .280	100% Bonded Bi-foil AL. + 90% Tinned Cu Braid	Copolymer	.360	25 pf/ft	80%	50Ω	Black
						See connector listings				
807X RG-8X/U Type Flexible	CM	16 (19x29) Bare Copper 4.3 Ω/M'	Gas Injected PE† .155	100% Bonded Bi-foil AL. + 90% Tinned Cu Braid	PVC	.242	25 pf/ft	82%	50Ω	Black
						See connector listings				

Order Number Builder			
Catalog Number	Color	Put Up Length	Order Number
25810	NT	1000	25810NT1000



• Catalog Number with this symbol indicates special manufacturing runs. Minimum Quantities apply.

- 500ft LENGTHS MAY BE AVAILABLE UPON REQUEST. MINIMUM QUANTITIES APPLY.
- CUSTOM COLORED JACKETS MAY BE AVAILABLE. MINIMUM QUANTITIES APPLY.



CABLE ACCESSORIES: 50 Ohm Connectors



Electrical Specifications: Attenuation (db/100ft)

CAT. NO.	1 MHz	10 MHz	50 MHz	100 MHz	200 MHz	400 MHz	900 MHz	1 GHz	4 GHz
812	.5	1.3	3.2	4.6	6.8	10.1	16.7	18.2	
813	.6	1.5	3.5	4.8	6.9	10.2	16.8	18.3	
25812	.5	1.3	3.2	4.6	6.8	10.1	16.7	18.2	
810	.2	.6	1.3	2.0	2.8	4.0	6.8	7.3	
25810	.2	.6	1.3	2.0	2.8	4.0	6.7	7.2	
98G8	.1	.5	1.0	1.4	1.8	2.6	4.1	4.4	
2598G8	.1	.4	1.0	1.6	2.3	3.4	6.0	6.9	
807X	.3	.9	2.1	3.1	4.5	6.6	10.7		

RF Connectors

RG58 BNC Connector
Section 274100 - 2.16 Comply

Straight Plug Male Connectors					
Catalog No.	50Ω BNC	50Ω TNC	50Ω "N" Type	UHF Type	Mini UHF Type
812	CN-BM53-13	CN-TM53-1	CN-NM53-812	CN-PL259-1	CN-MUHF-1
25812	CN-BM53-25	CN-TM53-25812	CN-NM53-25812		
813	CN-BM53-13	CN-TM53-1	CN-NM53-812	CN-PL259-1	CN-MUHF-1
810	CN-BM53-8	CN25810KTNC	CN-NM53/110	CN-UM52-810	
25810	CN25810KBNC	CN25810KTNC	CN-NM53-25810	CN-UM52-25810	
98G8	Call WPW				
2598G8	Call WPW				
807X	CN-BM53-8X	CN-TM53-807	CN-NM53-8X	CN-UM52-807	CN-MUHF-807



Adapters



TNC Adapters	
Catalog No.	Description
CN-ADPTTJJ	TNC Jack to TNC Jack
CN-ADPTTTP	TNC Plug to TNC Plug
CN-ADPTTJT	TNC Jack Tee Adapter
CN-ADPBTF	BNC Female to TNC Female
CN-ADPBTFM	BNC Male to TNC Male
CN-ADPBTFM	BNC Female to TNC Male
CN-ADPBMTF	BNC Male to TNC Female
CN-ADPNTFF	N Female to TNC Female
CN-ADPNTMM	N Male to TNC Male
CN-ADPNTFM	N Female to TNC Male
CN-ADPNMTF	N Male to TNC Female

"N" Type Adapters	
Catalog No.	Description
CN-ADPNNJJ	N Jack to N Jack
CN-ADPNNPP	N Plug to N Plug
CN-ADPNNJT	N Jack Tee Adapter
CN-ADPBNFF	BNC Female to "N" Female
CN-ADPBNMM	BNC Male to "N" Male
CN-ADPBNFM	BNC Female to "N" Male
CN-ADP807	BNC M to "N" F

UHF Adapters	
Catalog No.	Description
CN-ADP205	UHF RA Male to Female
CN-ADP207	Inline UHF (F to F)
CN-ADP805	UHF Male to "N" Female
CN-ADP512	BNC M to UHF F
CN-ADP500	BNC F to UHF M
CN-ADP504	BNC F to UHF F



SERIAL DATA ACCESSORIES

SERIAL DATA CONNECTORS DB9

DB9 D Sub Connector
Section 274100 - 2.16 Comply

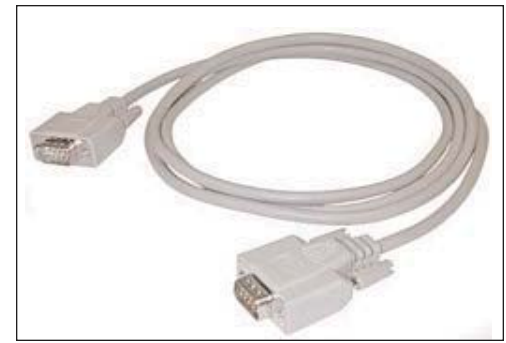
DB9 Terminal Block Connectors	
Catalog No.	Description
CN-MX9F	PREMIUM DB9 (F) Terminal Block RS-232
CN-MX9M	PREMIUM DB9 (M) Terminal Block- RS-232
CN-MX915H	Hood for PREMIUM Terminal Blocks



CN-MX9M
With Hood
CN-MX915H

SERIAL DATA CONNECTORS DB9 Assemblies

DB9 Assemblies - Non-Plenum	
Catalog No.	Description
CND2404DB9-xx	DB9 M to DB9 M -xx: 6,10,15,25 ft
CND2404FF9-xx	DB9 F to DB9 F -xx: 6,10,15,25 ft
CND2404MF9-xx	DB9 M to DB9 F -xx: 6,10,15,25 ft



DB9 Assemblies - Plenum	
Catalog No.	Description
CND252404DB9xx	DB9 M to DB9 M -xx: 6,10,15,25 ft
CND252404FF9xx	DB9 F to DB9 F -xx: 6,10,15,25 ft
CND252404MF9-xx	DB9 M to DB9 F -xx: 6,10,15,25 ft

Other lengths are available upon Request



CABLE ACCESSORIES: Line-Mic Level Connectors **WEST PENN WIRE**

Audio Connectors

Line Level Audio Connectors- Cable Mount
XLR - 3.5mm - RCA Phono - 1/4"

3 PIN XLR Style Connectors- Cable Mount	
Catalog No.	Description
CN-NC3MXB	3 Position XLR Male Black-Gold Contact
CN-NC3MXBAG	3 Position XLR Male Black-Nickel Contact
CN-NC3MX	3 Position XLR Male Nickel-Nickel Contact
CN-NC3FXB	3 Position XLR Female Black-Gold Contact
CN-NC3FXBAG	3 Position XLR Female Black-Nickel Contact
CN-NC3FX	3 Position XLR Female Nickel-Nickel Contact
44-A3F	3 Position XLR Jack
44-A3M	3 Position XLR Plug



CN-NC3FX

Neutrik Branded



44-A3M

Switchcraft Branded

4 PIN XLR Style Connectors- Cable Mount	
Catalog No.	Description
CN-NC4MXB	4 Position XLR Male Black-Gold Contact
CN-NC4MXBAG	4 Position XLR Male Black-Nickel Contact
CN-NC4MX	4 Position XLR Male Nickel-Nickel Contact
CN-NC4FXB	4 Position XLR Female Black-Gold Contact
CN-NC4FXBAG	4 Position XLR Female Black-Nickel Contact
CN-NC4FX	4 Position XLR Female Nickel-Nickel Contact

5 PIN XLR Style Connectors- Cable Mount	
Catalog No.	Description
CN-NC5MXB	5 Position XLR Male Black-Gold Contact
CN-NC5MXBAG	5 Position XLR Male Black-Nickel Contact
CN-NC5MX	5 Position XLR Male Nickel-Nickel Contact
CN-NC5FXB	5 Position XLR Female Black-Gold Contact
CN-NC5FXBAG	5 Position XLR Female Black-Nickel Contact
CN-NC5FX	5 Position XLR Female Nickel-Nickel Contact

3.5mm Stereo Mini Audio Connectors	
Catalog No.	Description
19-1202	Stereo Mini Plug
CN-SM3.5F	3.5 Stereo Mini Jack
CN-NYS231B	3.5mm Mini Plug- Black/Nickel
CN-NYS231	3.5mm Mini Plug Nickel/Nickel
CN-MX35M	3.5mm Mini Plug- Terminal Block
19-1201	3.5 mm Mini Mono Plug



CN-NYS231

RCA Audio Connector
Section 274100 - 2.16 Comply

RCA Audio Connectors	
Catalog No.	Description
19-1207	RCA Plug- Red
19-1268	RCA Plug- Black
CN-NYS373-xx	RCA Phono - xx-BK,BL,RD,YE,GN
25-7290	RCA RG59/U Male Plug



CN-NYS373-GN

1/4" Audio Connectors	
Catalog No.	Description
CN-NP3CBAG	1/4" Black-Silver Contact TRS
CN-NP3C	1/4" Silver- Silver Contact TRS
CN-NP2CBAG	1/4" Black-Silver Contact TS
CN-NP2C	1/4" Silver- Silver Contact TS
CN-NP3XB	Thin 1/4" Black-Gold Contact TRS
CN-NP3XBAG	Thin 1/4" Black-Silver Contact TRS
CN-NP3X	Thin 1/4" Silver- Silver Contact TRS
CN-NP2XB	Thin 1/4" Black-Gold Contact TS
CN-NP2XBAG	Thin 1/4" Black-Silver Contact TS
CN-NP2X	Thin 1/4" Silver- Silver Contact TS



CN-NP2XB



CN-NP3X



C13-C14 Power Cable



Power Cord Kit (5 ea), C13 to C14, 0.6m

AP9890



Description: Wide selection of Rack PDU power cords for a variety of IT equipment.



Power Cord
Section 274100 - 2.16 Comply

Product Overview

Technical Specifications

Documentation

Ratings & Reviews

Output

Cord Length	2ft (0.61meters)
Output Connections	(5) IEC 320 C13 (Battery Backup)

Input

Input Connections	IEC-320 C14
Cord Length	2ft (0.61meters)
Number of Power Cords	5

Physical

Net Weight	0.95lbs. (0.43kg)
Shipping weight	1.2lbs. (0.55kg)
Shipping Height	3.0inches (76mm , 7.6cm)
Shipping Width	8.0inches (203mm , 20.3cm)
Shipping Depth	4.0inches (102mm , 10.2cm)
Color	Black

Conformance

Approvals	VDE
Standard warranty	2 years repair or replace

Sustainable Offer Status

RoHS	Compliant
PEP	Available in Documentation tab
EOL	Available in Documentation tab

SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET H

AV Poke Thru Device - Plates

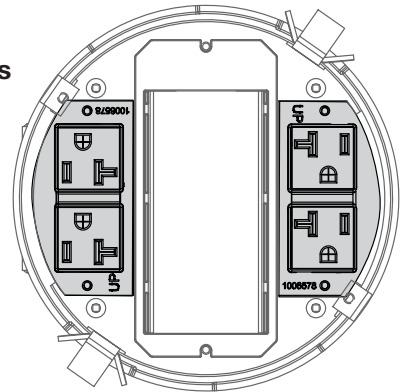
Evolution 6AT Series Side Mount Device Plates Ordering Information

Catalog No./Item	Description/Specifications
68REC	20AMP Duplex Receptacles – Two (2) proprietary 20AMP duplex power receptacles with mounting plates. Designed to fit in either of the two side compartments in both the 6ATC and the 8ATC Series Poke-Thru Devices. Receptacle can be wired as a standard or isolated ground device.
68B	Device Mounting Plate – Blank plate. Used to blank off either of the side compartments when no devices or cabling are to be used.
68MAAP	Device Mounting Plate – Device plate that will accept up to two (2) Extron® Electronics MAAP device plates. For use in either of the two side compartments only. Not for use in the center compartment. Extron Devices supplied by others.
68REC-25	20Amp Duplex Receptacles – Two (2) proprietary 20AMP duplex power receptacles with mounting plates and 25' leads. Designed to fit in either of the two side compartments in both the 6ATC and the 8ATC Series Poke-Thru Devices. Receptacle can be wired as a standard or isolated ground device.

Catalog No./Item	Description/Specifications
682A	Device Mounting Plate – Device plate that will accept up to two (2) ports of communication devices. For use in either of the two side compartments only. Not for use in the center compartment. Communication devices supplied by others.

6AT Side Mount Device Plates Mounting Locations

Device Plates in this section can be installed in the shaded locations indicated in this illustration.



Section 274100 - 2.3.N.1.d Comply
 Section 274100 - 2.4.P.1.d Comply
 Section 274100 - 2.5.P.1.d Comply
 Section 274100 - 2.6.P.1.d Comply
 Section 274100 - 2.9.H.1.d Comply

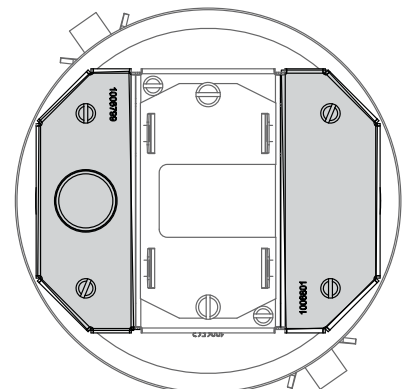
Evolution 6AT Series Bottom Feed Side Mount Device Plates Ordering Information

Catalog No./Item	Description/Specifications
5PTHA	Bottom Housing Assembly – Half-gang pass through housing assembly. Designed to allow pass through of communication cables when no conduit is required. For use on side compartments only.
5BLH	Bottom Housing Assembly – Half-gang blank housing assembly. Designed to blank off compartment when no cable pass through is required. For use on side compartments only. Includes tunnels for 6" [152mm] and 8" [203mm] poke-thru devices.
152CHA	Bottom Housing Assembly – One and a half-gang 2" trade size conduit housing assembly. Recommended for use with furniture feed devices (6ATCFF). Covers the center compartment and one of the side compartments.

Catalog No./Item	Description/Specifications
575CHA	Bottom Housing Assembly – Half-gang 3/4" trade size conduit housing assembly. Includes junction box attached to 3/4" trade size conduit for electrical power connections. For use on side compartments only.

6AT Bottom Feed Side Mount Device Plate Mounting Locations

Device Plates in this section can be installed in the shaded locations indicated in this illustration.

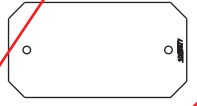
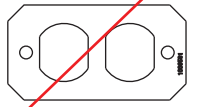
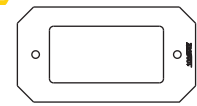
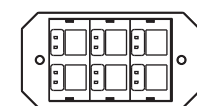
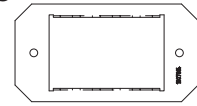
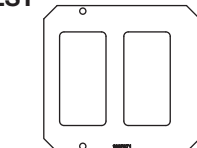
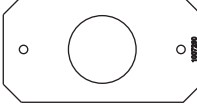
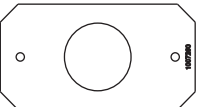


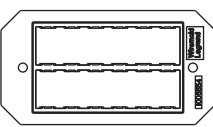

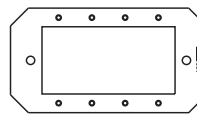
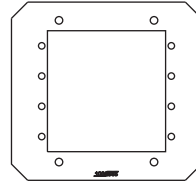
Section 274100 - 2.3.N.1.c Comply
 Section 274100 - 2.4.P.1.c Comply
 Section 274100 - 2.5.P.1.c Comply
 Section 274100 - 2.6.P.1.c Comply
 Section 274100 - 2.9.H.1.c Comply

8AT Series Center Mount Device Plate
 Description/Specifications

Section 274100 - 2.3.N.1.b Comply
 Section 274100 - 2.4.P.1.b Comply
 Section 274100 - 2.5.P.1.b Comply
 Section 274100 - 2.6.P.1.b Comply
 Section 274100 - 2.9.H.1.b Comply

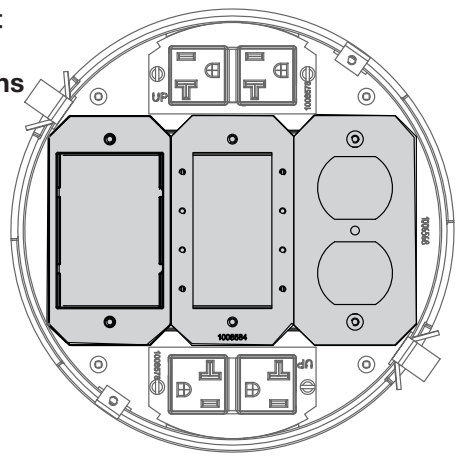
Ordering Information
 Description/Specifications

8B		Device Mounting Plate – Single-gang device plate used to blank off any one (1) of the three (3) gangs in the center compartment, when no devices are used.
8DP		Device Mounting Plate – Single-gang device plate that accepts standard 20A duplex receptacle or a duplex Turnlok receptacle. Fits in any one (1) of the three (3) gangs in the center compartment. Devices supplied by others.
8DEC		Device Mounting Plate – Single-gang device plate that will accept Decorator style devices such as 20A receptacles, GGCI, 106 adapters or A/V devices. Fits in any one (1) of the three (3) gangs in the center compartment. Devices supplied by others.
8ACT6A		Device Mounting Plate – Single-gang device plate that will accept up to six (6) ports of communication devices. Fits in any one (1) of the three (3) gangs in the center compartment. Devices supplied by others.
8MOS		Mosaic Device Plate – Device plate accepts three (3) standard Mosaic devices [45mm x 22.5mm]. Devices supplied by others.
8CREST		Crestron Double Gang Plate – Device plate accepts Crestron double-gang decorator style devices.
8S1		Device Plate – Receptacle opening 1 3/8" [35mm]. For 8" poke-thru units only.
8S2		Device Plate – Receptacle opening 1 9/16" [40mm]. For 8" poke-thru units only.

8TRAC		Device Mounting Plate – Single-gang device plate that will accept up to six (6) Ortronics TracJack devices. Fits in any one (1) of the three (3) gangs in the center compartment. Devices supplied by others.
8SER		Device Mounting Plate – Single-gang device plate that will accept up to three (3) Ortronics Series II dual modular inserts. Fits in any one (1) of the three (3) gangs in the center compartment. Devices supplied by others.
8MAAP		Device Mounting Plate – Single-gang device plate that will accept up to four (4) Extron® Electronics MAAP style plates. Fits in any one (1) of the three (3) gangs in the center compartment. Devices supplied by others.
8AAP		Device Mounting Plate – Two-gang device plate that will accept up to four (4) Extron® Electronics AAP style plates. 8AAP takes up 2 of the 3 gangs in the center compartment. Devices supplied by others.

8AT Center Mount Device Plate Mounting Locations

Mounting plates on this page can be installed in the shaded location indicated in this illustration.



Evolution™ Series 8CTC Cover Assembly – Easy cable egress with the use of the unique slide egress doors.

Evolution™ Series Poke-thru Devices are UL Fire Classified for up to two-hours to maintain the fire rating of the floor.



MAAP - Mini Architectural Adapter Plates

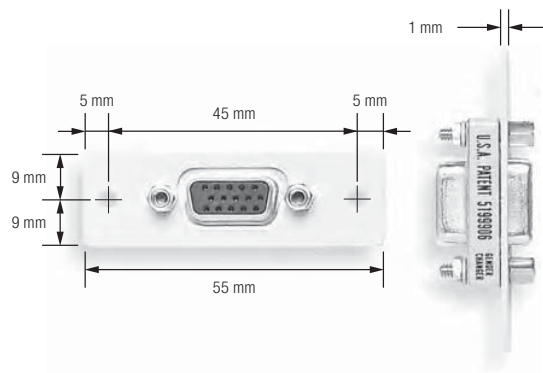
AV, Data, Power, and Control Connectivity for Wall Mount, Furniture Mount, and Floor Mount Applications



DESCRIPTION

Extron **Mini Architectural Adapter Plates** are optional mounting plates designed to work with our installation interfaces, installation distribution amplifiers, wallplates, floor plates, rack plates, and other products that feature MAAP openings. Over 100 different MAAPs are available featuring popular video, audio, phone, data, computer, and control connectors. There are also MAAPs available with silkscreen labels of the most common pass-through connections and blank MAAPs to fill empty slots.

Custom engraving is available for an additional charge. See <http://www.extron.com/engraving> or contact your Extron Customer Support Representative.



Video MAAPs

One HDMI Female to One HDMI Female on 10" Pigtail

Type: Quick Connect
Size: Single Space



COLOR	PART #
Black	70-617-12
White	70-617-13
RAL9010 White	70-617-15

One HDMI Female to Female Barrel

Type: Barrel
Size: Single Space



COLOR	PART #
Black	70-617-02

One DisplayPort Female to One DisplayPort Female on 10" Pigtail

Type: Quick Connect
Size: Single Space



COLOR	PART #
Black	70-676-12
White	70-676-13
RAL9010 White	70-676-15

Video MAAPs

One DVI-I Female to One DVI-I Female on 10" Pigtail, One 3.5 mm Stereo Mini Jack to Solder Tabs

Type: Quick Connect & Installation
Size: Triple Space



COLOR	PART #
Black	70-717-02
White	70-717-03
RAL9010 White	70-717-05

One BNC Female to Female Barrel

Type: Barrel/Adapter
Size: Single Space
Optional Silkscreen: "VIDEO"



Shown with engraving

COLOR	PART #
Black	70-286-11
Black with Silkscreen	70-286-12
White	70-286-21
White with Silkscreen	70-286-22
RAL9010 White	70-286-51
RAL9010 White with Silkscreen	70-286-52

Two BNC Female to Female Barrels

Type: Barrel/Adapter
Size: Single Space



COLOR	PART #
Black	70-286-13
White	70-286-23

Audio MAAPs

One XLR 3-pin Male to Solder Cups - Neutrik

Type: Installation
Size: Double Space

COLOR	PART #
Black	70-448-12
White	70-448-22
RAL9010 White	70-448-52



Audio MAAPs

Two RCA Female to Female Barrels - Red / White

Type: Barrel/Adapter
Size: Single Space

COLOR	PART #
Black	70-289-12
White	70-289-22
RAL9010 White	70-289-52



One Mini XLR 3-pin Male to Solder Cups - Switchcraft

Type: Installation
Size: Single Space

COLOR	PART #
Black	70-297-11
RAL9010 White	70-297-51



Two RCA Female to Captive Screw Terminal - Red / White

Type: Quick Connect
Size: Single Space

COLOR	PART #
Black	70-292-14
White	70-292-24
RAL9010 White	70-292-54



One Mini XLR 3-pin Male to Captive Screw - Switchcraft

Type: Quick Connect
Size: Single Space

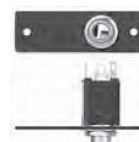
COLOR	PART #
Black	70-297-12
White	70-297-22
RAL9010 White	70-297-52



One 1/4" Female Stereo Phone to Solder Tabs

Type: Installation
Size: Single Space

COLOR	PART #
Black	70-295-11
White	70-295-21



Section 274100 - 2.3.N.1.f Comply
Section 274100 - 2.4.P.1.f Comply

Two Mini XLR 3-pin Male to Solder Cups - Switchcraft

Type: Installation
Size: Single Space

COLOR	PART #
Black	70-297-13



One 1/4" Female Stereo Phone to Captive Screw Terminal

Type: Quick Connect
Size: Single Space

COLOR	PART #
Black	70-295-12



Two RCA Female to Solder Cups - Red / White

Type: Installation
Size: Single Space
Optional Silkscreen: "LEFT", "RIGHT"

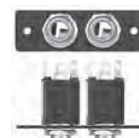
COLOR	PART #
Black	70-292-11
White	70-292-21
Black with Silkscreen	70-292-12
White with Silkscreen	70-292-22



Two 1/4" Female Stereo Phone to Solder Tabs

Type: Installation
Size: Single Space

COLOR	PART #
Black	70-295-13
White	70-295-23



Data/Phone MAAPs

One RJ-11 Female to Female Barrel - Phone

Type: Barrel/Adapter
Size: Single Space

COLOR	PART #
Black	70-313-12
White	70-313-22
RAL9010 White	70-313-52

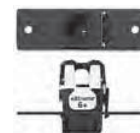


Data/Phone MAAPs

One RJ-45 Female to Punch Down for CAT 6 - Leviton

Type: Installation
Size: Single Space

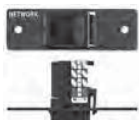
COLOR	PART #
Black	70-314-17
White	70-314-27
RAL9010 White	70-314-57



One RJ-45 Female to Punch Down - CAT 5

Type: Installation
Size: Single Space
Optional Silkscreen: "NETWORK"

COLOR	PART #
Black	70-314-11
Black with Silkscreen	70-314-12
White	70-314-21
White with Silkscreen	70-314-22
RAL9010 White	70-314-51
RAL9010 White with Silkscreen	70-314-52



Shown with silkscreen

One RJ-45 Female to Punch Down for CAT 6 - Leviton

Type: Installation
Size: Double Space

COLOR	PART #
Black	70-314-18
White	70-314-28
RAL9010 White	70-314-58



Section 274100 - 2.3.N.1.e Comply
Section 274100 - 2.4.P.1.e Comply

One RJ-45 Female to Punch Down - CAT 6

Type: Installation
Size: Double Space

COLOR	PART #
Black	70-314-15
White	70-314-25
RAL9010 White	70-314-55



One RJ-45 Female to Punch Down - CAT 5e Neutrik EtherCon

Type: Installation
Size: Double Space

COLOR	PART #
Black	70-314-19
White	70-314-29



One RJ-45 Female to Female Barrel - CAT 5e

Type: Barrel/Adapter
Size: Single Space
Optional Silkscreen: "NETWORK"

COLOR	PART #
Black	70-314-13
Black with Silkscreen	70-314-14
White	70-314-23
White with Silkscreen	70-314-24
RAL9010 White	70-314-53



Shown with silkscreen

One RJ-45 Female to Female Barrel - CAT 5e

Type: Barrel/Adapter
Size: Double Space

COLOR	PART #
Black	70-314-16
White	70-314-26



Cable Pass-Through and Blank Plates

Blank Plate - Single

Size: Single Space

COLOR	PART #
Black	70-315-11
White	70-315-21
RAL9010 White	70-315-51



Blank Plate - Double

Size: Double Space

COLOR	PART #
Black	70-315-12
White	70-315-22
RAL9010 White	70-315-52



Blank Plate - Triple

Size: Triple Space

COLOR	PART #
Black	70-315-13
White	70-315-23
RAL9010 White	70-315-53



Blank Plate - Quad

Size: Quad Space

COLOR	PART #
Black	70-315-14
White	70-315-24



One Grommet - 1" ID

Type: Captive Cable

Size: Quad Space

COLOR	PART #
Black	70-316-11
White	70-316-21



Cable Pass-Through and Blank Plates

Captive Cable Kit with One Large Cable Hole

Type: Captive Cable

Size: Double Space

COLOR	PART #
Black	70-317-11
White	70-317-21

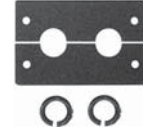


Captive Cable Kit with Two Small Cable Holes

Type: Captive Cable

Size: Double Space

COLOR	PART #
Black	70-317-12



Captive Cable Kit with One Large Cable Hole and Two Small Cable Holes

Type: Captive Cable

Size: Triple Space

COLOR	PART #
Black	70-317-13



Single Space Cable Pass-Through

Type: Pass-Through

Size: Single Space

COLOR	PART #
Black	70-637-02
White	70-637-03
RAL9010 White	70-637-05





Quam

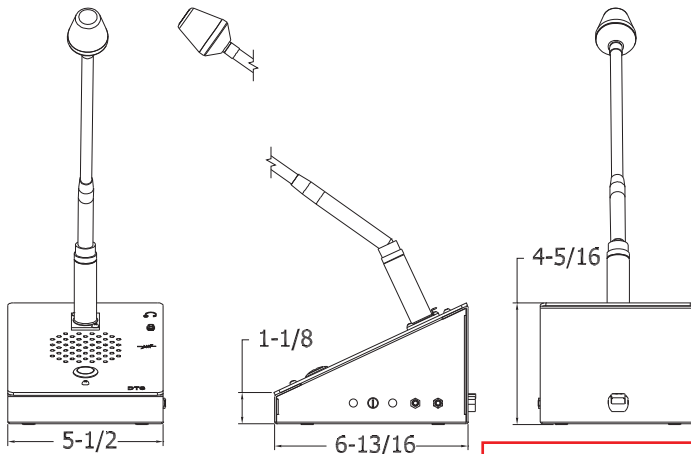
DTS1

Desktop Intercom Station,
With replaceable Gooseneck Mic

DTS2

Desktop Intercom Station,
Less Microphone

VANDAL RESISTANT INTERCOM ASSEMBLY



Section 274100 - 2.14 A.6.a Comply



GENERAL DESCRIPTION

The DTS1 and DTS2 are a vandal-resistant, desktop intercom microphone / loudspeaker assembly with push-to-talk (PTT) button switch. Loudspeaker baffle is 12 gage, stainless steel with three (3) interwoven steel security screens mounted between the faceplate and the loudspeaker; enclosure is 16 gage CRS with 'pin-in-torx' hardware. Console finish: black baked epoxy hybrid finish.

DTS1: As above with replaceable 18" metal dynamic gooseneck microphone
DTS3: As above, less microphone

SYSTEM COMPONENT

Loudspeaker	30C25Z80T
-------------	-----------

RECOMMENDED ADDITIONAL QUAM COMPONENTS

Vandal-Resistant Intercom Assemblies

INTENDED USE

Indoor environment, simplex two-way communication using PTT microphone and internal, 'never full off' volume controlled, moisture-resistant loudspeaker.

Loudspeaker internally configured for either 8Ω or 25V systems. Two 3.5mm input/output jacks allows use of low impedance computer style headset (not supplied), bypassing loudspeaker function. Pre-drilled holes in base for bolt-down applications.

Program Material: Voice and signal tones

QUAM-NICHOLS COMPANY

234 East Marquette Road, Chicago IL 60637
Phone: (800) NEED NOW Fax: (888) NEED NOW
(800) 633-3669 (888) 633-3669
E-Mail: NeedNow@QNC.com www.QuamSpeakers.com

AUDIO SPECIFICATIONS

DTS1 Microphone Type	Unidirectional Dynamic	
Sensitivity	-76 dBV/Pa ± 4 dB ¹	¹ 0 dB=1V/Pa, 1 kHz
Impedance	500-Ohms Nominal	
Frequency Response	130 Hz - 12 kHz, ± 3 dB	
Speaker Size	3" O.D.	
Average Sensitivity	87 dB, 1W/1M	
Frequency response	150 Hz-10 kHz	

ELECTRICAL SPECIFICATIONS

Volume Control	-15 dB maximum attenuation
Headset Jack	Two (2) 3.5 mm, mono input/output , disconnects 'never full off' speaker output when activated
Electrical Connections	Internal barrier strip

Recommended construction sequences, installation instructions and A&E Specifications are available in various formats in the QUAM Architects' and Engineers' Resources section on the web at: www.QuamSpeakers.com





Quam

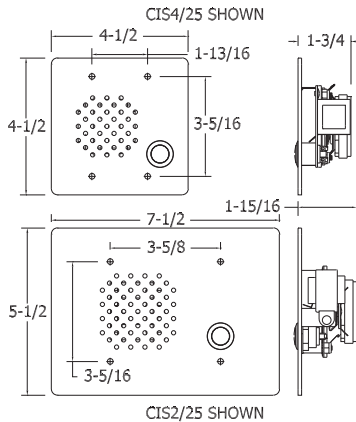
CIS4 Series

2-Gang, Vandal Resistant Call-In Station
Stainless Steel Faceplate

CIS2 Series

3-Gang, Vandal Resistant Call-In Station
Stainless Steel Faceplate

VANDAL RESISTANT INTERCOM ASSEMBLY



Section 274100 - 2.14 B.7.a Comply



CIS4 SHOWN

GENERAL DESCRIPTION

The CIS4 Series is a 2-gang wide format with 2-1/2" O.D. weather-resistant, phenolic impregnated cone speaker.

The CIS2 Series is a 3-gang wide format with 3" O.D. weather-resistant phenolic impregnated cone speaker.

Both are vandal-resistant call-in stations with integral speaker/ microphone and momentary, normally open, push-to-call button; there are various transformer and impedance options. Faceplate is 12 gage, brushed stainless steel with three (3) interwoven, steel security screens mounted between the faceplate and the loudspeaker; tamper-resistant, #6-32 'pin-in-torx' hardware is included. An optional, red mushroom button can be substituted at extra cost at the time of order.

SYSTEM COMPONENTS¹

CIS4/8	2-gang with 8-Ohm speaker
CIS4/25	2-gang with 1W-25V, 3-tap* transformer *1W, 0.5W, 0.25W
CIS4/45	2-gang with 45-Ohm speaker
CIS2/8	3-gang with 8-Ohm speaker
CIS2/25	3-gang with 1W-25V, 3-tap* transformer *1W, 0.5W, 0.25W
CIS2/45	3-gang with 45-Ohm speaker

Recommended QUAM VANDAL RESISTANT Enclosures

CIS2 Series only:

- SE3GVP Surface Mount Enclosure
- SE10GVP Hooded Enclosure

CIS4 Series only:

- SE6GVP Surface Mount Enclosure
- SE7GVP Hooded Surface Mount Enclosure
- SE8GVP Angled Surface Mount Enclosure

¹ Other transformer options available, please contact Factory

QUAM-NICHOLS COMPANY

234 East Marquette Road, Chicago IL 60637
 Phone: (800) NEED NOW Fax: (888) NEED NOW
 (800) 633-3669 (888) 633-3669
 E-Mail: NeedNow@QNC.com www.QuamSpeakers.com

AUDIO SPECIFICATIONS

Average Sensitivity	87 dB-SPL 1W/1M
Loudspeaker Power Rating	1W RMS EIA 426A Standard
Frequency Response	CIS4- (2-gang) 200 Hz - 8 kHz CIS2- (3-gang) 150 Hz - 10 kHz EIA 426A Standard
Nominal Coverage Angle	90° included angle -6 dB/ 2 kHz, half space
Audio Connection	Transformer: Pre-cut 7" color coded leads 8-Ohm/ 45-Ohm: 0.205" spade lug

INTENDED USE

Indoor or protected outdoor environment.
 Program material: Signal tones and voice

Recommended construction sequences, installation instructions and A&E Specifications are available in various formats in the QUAM Architects' and Engineers' Resources section on the web at: www.QuamSpeakers.com





Quam

Section 274100 - 2.14 B.6 Comply

VANDAL RESISTANT

SE6GVP

ENCLOSURE

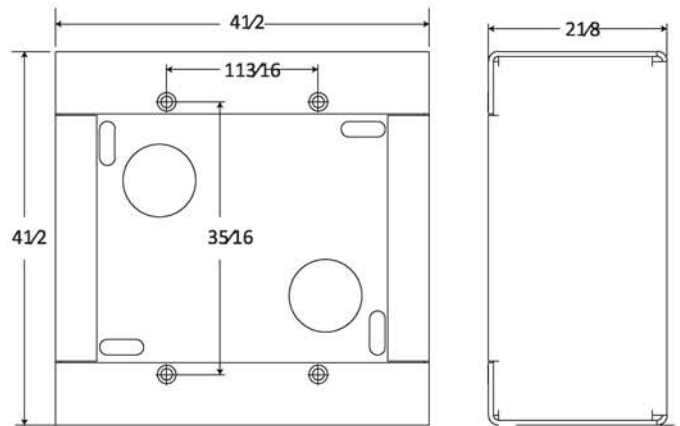
Surface Mount, for CIS4 and CIS8 Assemblies (2-gang)

GENERAL DESCRIPTION

The **SE6GVP** is a steel, vandal resistant, surface mount enclosure for 2-gang call-in or listen-only stations. There are four (4) 6-32 threaded inserts on a standard 2-gang center and the conduit entrances are 1/2." Gray powder coat finish. For use in an indoor or outdoor environment.

RECOMMENDED QUAM COMPONENTS

- Call-In Stations | **CIS4 Series**
- Listen-Only Stations | CIS8 Series



<p>Recommended construction sequences, installation instructions, and A&E Specifications are available in various formats in the QUAM Architects' and Engineers' Resources section on the web at: www.QuamSpeakers.com</p>				<p>QUAM-NICHOLS COMPANY, INC. 234 East Marquette Rd. Chicago, IL. 60637 Tel: 1-800-NEED-NOW (800-633-3669) Fax: 1-888-NEED-NOW (888-633-3669) e-mail: NeedNow@QNC.com www.QuamSpeakers.com</p>
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RDL[®]
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

STICK-ON[®] SERIES

Model ST-IC1

Intercom Amplifier

- Intercom Electronics
- Intercom with Push-to-Talk
- Mic or Speaker Input
- 8 Ω or 45 Ω Speakers
- Bidirectional Communication Option

Section 274100 - 2.14 C.6.a Comply



The ST-IC1 is part of the group of versatile STICK-ON products from Radio Design Labs. STICK-ONs feature the advanced circuitry for which RDL products are known, combined with unequalled versatility in mounting possibilities. The durable adhesives provided with the ST-IC1 permit permanent or removable mounting. Numerous available mounting accessories, brackets and rack-mount chassis are optionally available to facilitate any system design. STICK-ONs are designed, built and rated for continuous duty in professional A/V systems.

APPLICATION: The ST-IC1 is the ideal choice where an intercom system is to be installed, or where an amplifier is needed to bring a mic level up to a 1 W speaker level, with optional muting capability.

The ST-IC1 has one input, one output, and two muting control terminals.

The input accepts a dynamic mic, a condenser mic (a phantom supply input terminal is provided to power condenser mics), an 8 Ω speaker or a 45 Ω speaker. The gain range of the module is sufficient to accommodate this wide variety of source levels.

The output is ground-referenced, and drives more than 1 watt RMS into an 8 Ω load. The output circuit can be connected to any load impedance of 4 Ω or greater.

When no connections are made to either **MUTE** terminal, the module output is active. If the **MUTE -** terminal is pulled to ground (using a switch, an open-collector transistor, or the slave terminal of another RDL module), the ST-IC1 output will mute. Pulling the **MUTE +** terminal high (+15 Vdc) has the same effect. In a bi-directional intercom, the **MUTE -** terminal of the master module is connected to the **MUTE +** terminal of a secondary module, thereby muting the secondary module. When the master module's **MUTE -** terminal is pulled to ground, the master modules mutes and the secondary module becomes active. There is an internal 15 ms time delay between the two operations which is fast enough to have no audible effect on voice communication, but prevents any feedback effects during switching.

Wherever an intercom is needed, the ST-IC1 is the ideal choice. Use the ST-IC1 individually, or combine it with other RDL products as part of a complete audio/video system.

STICK-ON[®] SERIES

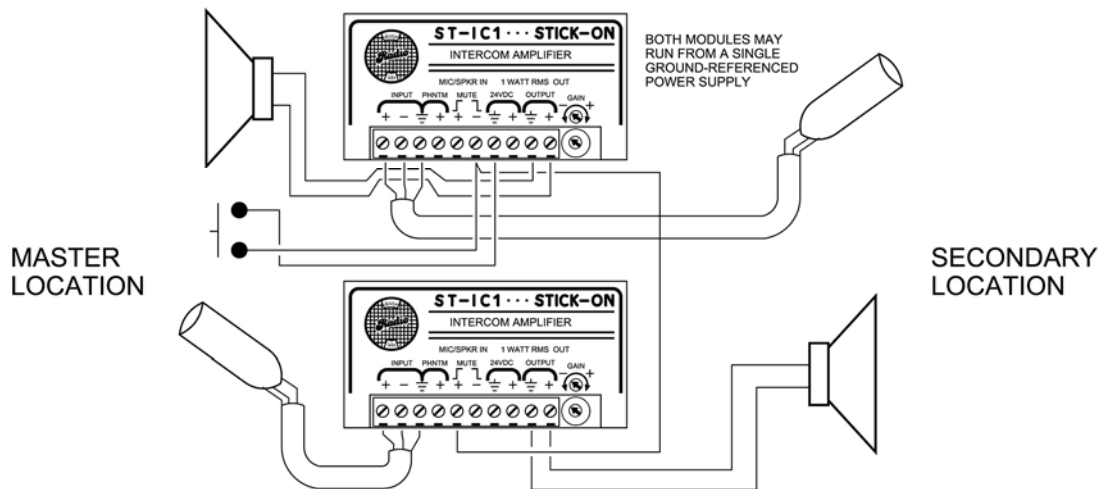
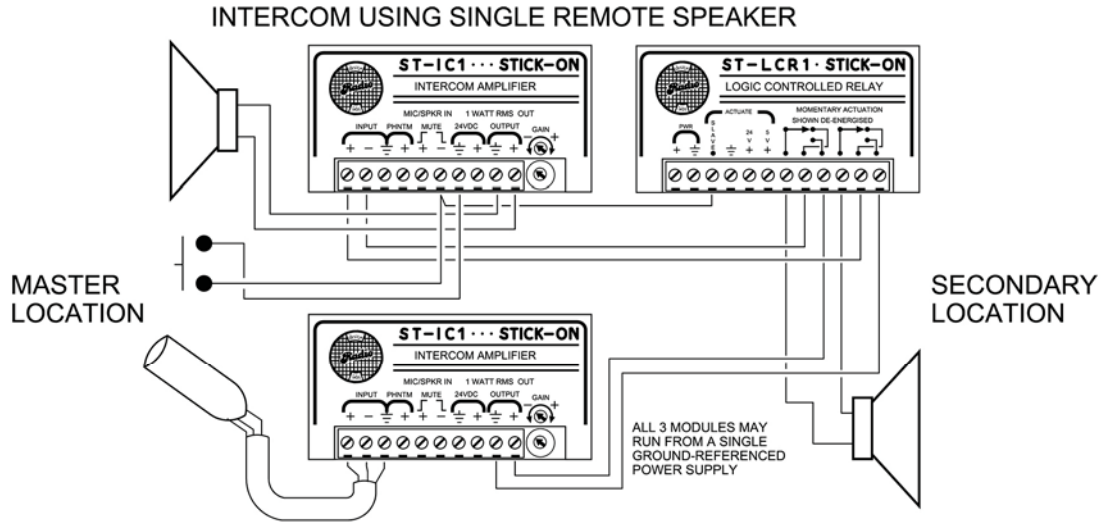
Model ST-IC1

Intercom Amplifier

Installation/Operation



EN55103-1 E1-E5; EN55103-2 E1-E4
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.



TYPICAL PERFORMANCE

Input:	> 600 Ω balanced
Frequency Response:	300 Hz to 4 kHz (\pm 2 dB, filtered for voice-band intelligibility)
Gain Range:	OFF to 70 dB (adjustable)
Input level required to produce 1 W RMS:	-60 dBu (8 Ω source); -55 dBu (600 Ω source)
THD+N:	< 1% @ 1 kHz, referred to 1 W @ 50 dB gain
Residual Noise (unmuted output below 1 W):	< 75 dB @ 60 dB gain setting
Operating Output Power:	1 W RMS
Maximum Output Power (before clipping):	1.5 W RMS
Mute Inputs (2):	Trigger on high to low transition, 2 mA, 15 V pullup; Trigger on low to high transition, 0.1 mA
Mute Attenuation:	> 115 dB @ 1 kHz
Muting Switching Type:	Solid State - no relay contacts used
Mute Release Delay:	15 ms
Ambient Operating Environment:	0° C to 40° C
Power Requirement:	GROUND-REFERENCED, 24 Vdc @ 175 mA

Radio Design Labs Technical Support Centers
U.S.A. (800) 933-1780, (928) 778-3554; Fax: (928) 778-3506
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POWER SUPPLIES

Section 274100 - 2.14 C.6.b Comply

Model PS-24AX

24 Vdc Switching Power Supply, Interchangeable AC Plug, 500 mA, dc Plug



TYPICAL PERFORMANCE

- Input: 100 to 240 VAC.
- Output: 24 Vdc, 500 mA (UL, CSA).
- Dimensions: 1.80 in. (4.6 cm) x 2.76 in. (7 cm) x 1.37 in. (3.8 cm), nominal.
- Efficiency: ENERGY STAR Level IV.

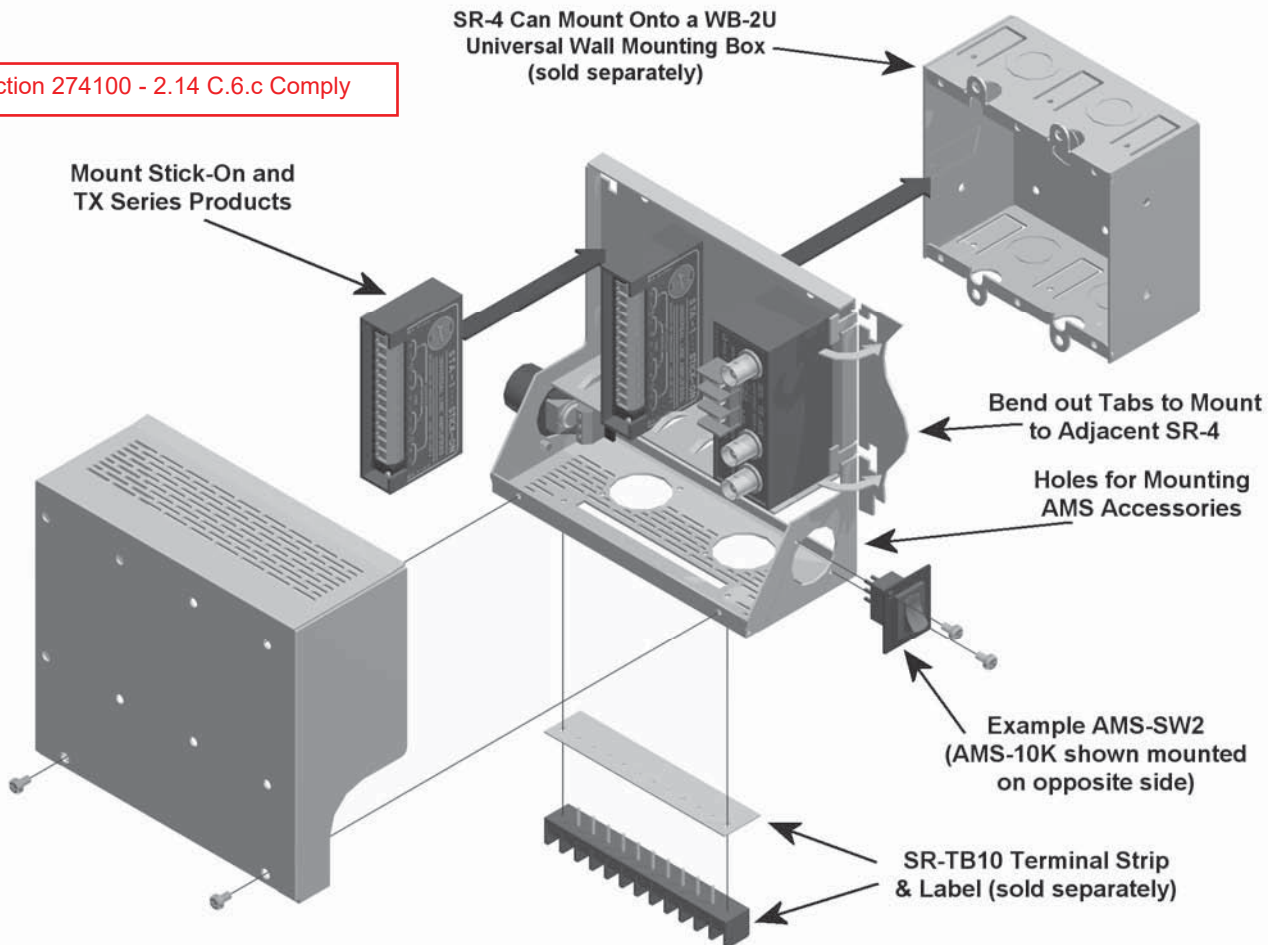
Radio Design Labs Technical Support Centers
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ACCESSORIES

Model SR-4

Stick-On® Mounting Rack

Section 274100 - 2.14 C.6.c Comply



Installation/Operation



EN55103-1 E1-E5; EN55103-2 E1-E4
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.

Mounting holes in the SR-4 permit attachment in a variety of locations, including cabinets, backboards, walls and plenums. The SR-4 holds up to 7 STICK-ONS. If power amplifier modules requiring convection cooling are mounted, a maximum of 4 should be installed, leaving an empty space between modules. 7 STICK-ONS may be mounted if they are not heat generating modules. TX™ modules will also fit in the SR-4.

TYPICAL PERFORMANCE

SR-4 Dimensions:

Height:	5.38 in.	13.67 cm
Depth:	2.58 in.	6.55 cm
Width:	5.75 in.	14.61 cm

Material:

18-gauge Steel

Finish:

RDL Black



RDL[®]
Radio Design Labs

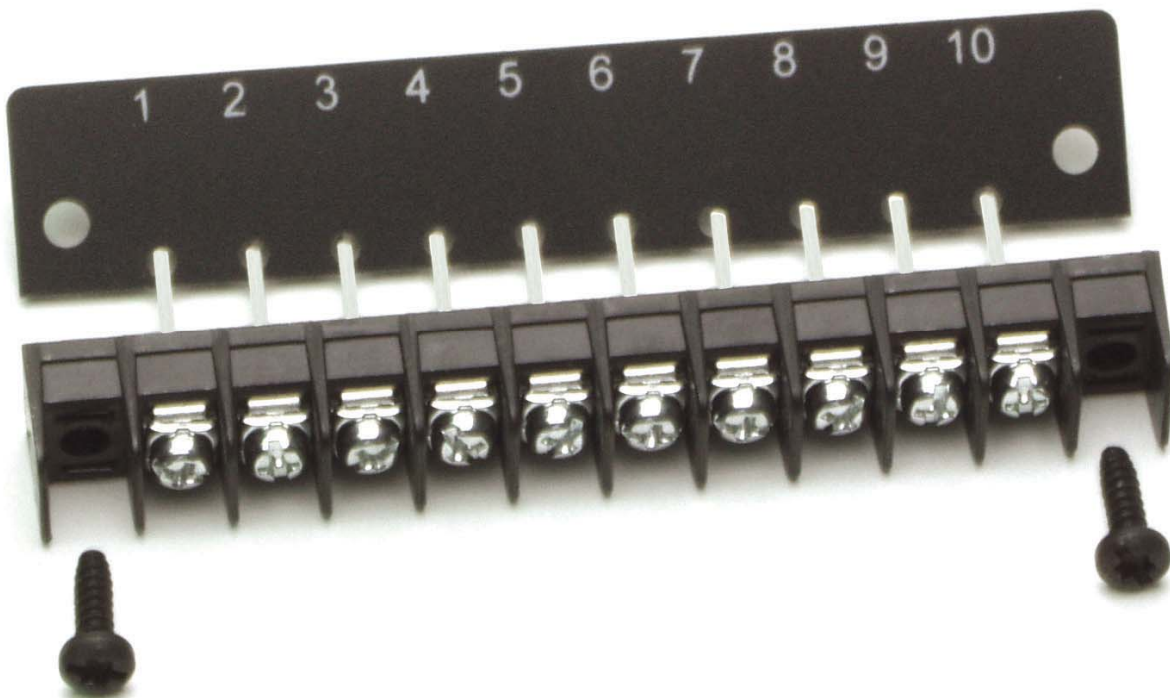
SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

ACCESSORIES

Section 274100 - 2.14 C.6.c Comply

Model SR-TB10

Terminal Block Assembly for SR-4



The SR-TB10 terminal block kit includes a 10 position terminal block, polycarbonate label strip numbered 1 through 10 and mounting screws for use with the SR-4. This kit allows installers to build a customized product with screw connections using RDL modules.)

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RDL • 659 N. 6th St. • Prescott, AZ., USA 86301 • (928) 443-9391 • FAX (928) 443-9392 • www.rdlnet.com

Section 274100 - 2.14 C.5 Comply

ACCESSORIES

Model WB-1U / WB-2U

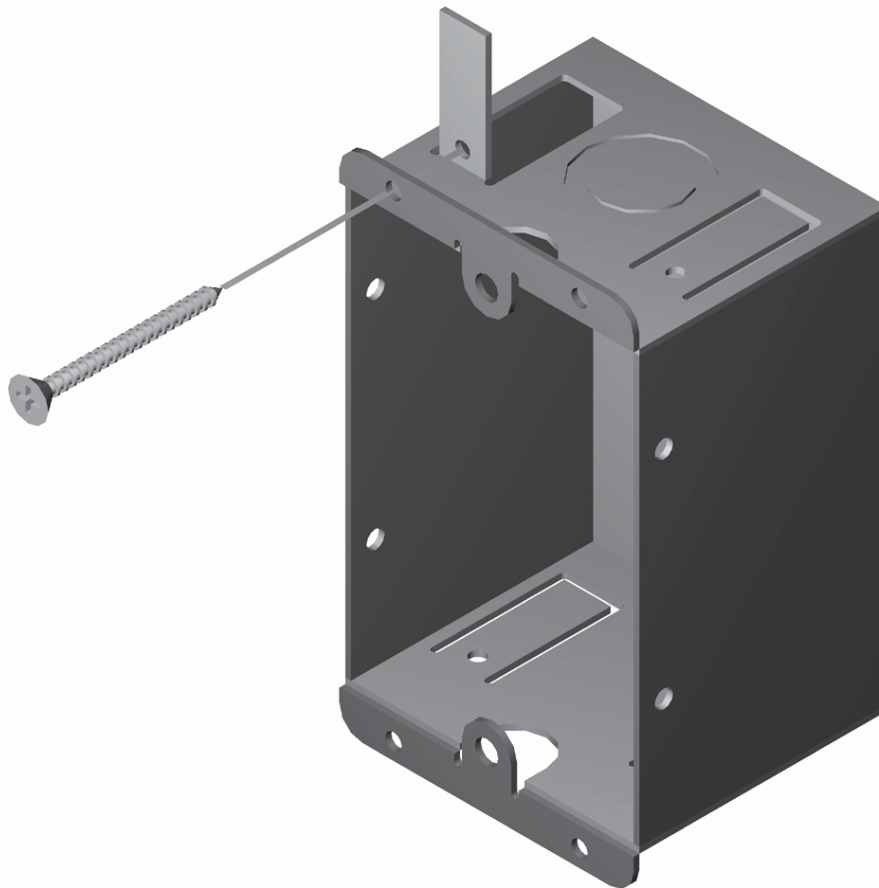
Universal Wall Mounting Box

Installation/Operation



EN55103-1 E1-E5; EN55103-2 E1-E4

Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.



Installation in New Construction:

Install box to studs or other wall support structure. Attach conduits, if used. The small knockouts fit metric conduits; the larger knockouts fit US conduits.

Installation in Existing Wall:

Cut out an opening the size of the box. Remove knockouts in box as required. Slide box into place. Bend tabs up from inside of box. Secure in place using screws provided.

Dimensions:

Height:	4.13 In.	10.5 cm
Depth:	2.00 In.	4.0 cm
Width:	2.38 In.	6.0 cm (WB-1U)
Width:	4.13 In.	10.5 cm (WB-2U)

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AVSC-HDMI-VGA
AVSC-VGA-HDMI-R2
AVSC-VIDEO-HDMI

AVSC-HDMI-VIDEO
AVSC-VGA-VIDEO

Product Data Sheet

Video/Audio Scalers



AVSC-HDMI-VGA



AVSC-VGA-HDMI-R2



AVSC-VIDEO-HDMI



AVSC-HDMI-VIDEO



AVSC-VGA-VIDEO

Available Scalers

- The HDMI to VGA Scaler (AVSC-HDMI-VGA) converts digital HDMI to analog PC video (VGA) with either digital audio (S/PDIF) or analog stereo audio. With this module, VGA based receivers such as LCD monitors or plasma TVs can connect to HDMI sources such as DVD players or PS3. It enables you to keep using your non-HDMI/DVI display to access HDMI or DVI sources for high-definition digital video and audio.
- The VGA to HDMI Scaler (AVSC-VGA-HDMI-R2) converts analog PC video (VGA) with either digital audio (S/PDIF) or analog stereo audio to digital HDMI. With this module, VGA based devices such as PC with S/PDIF or analog stereo audio can readily connect to your HDMI TV. Presentations, demonstrations, or digital signage becomes easier and more cost effective.
- The Component/Composite to HDMI Scaler (AVSC-VIDEO-HDMI) converts a component or CVBS signal to HDMI compliant format. It also supports S/PDIF audio through RCA into HDMI output. With this extra feature, users can combine asynchronous video and audio sources into an HDMI compliant A/V signal.
- The HDMI to Video Scaler and Converter (AVSC-HDMI-VIDEO) converts HDMI to analog Component video (YPbPr)/CVBS with either digital audio (S/PDIF) or analog stereo audio.
- The VGA to Video Scaler (AVSC-VGA-VIDEO) converts PC video (VGA) to analog Component video (YPbPr)/CVBS. With this module, VGA devices can display video on legacy Component or composite monitors.

Video/Audio Scalers Data Sheet

Comparison Chart: Scalers

Feature	AVSC-HDMI-VGA	AVSC-VGA-HDMI-R2	AVSC-VIDEO-HDMI
Input video supported	HDMI	VGA	Component/Composite
Output video supported	VGA Component with adapter (adapter not included)	HDMI	HDMI
Input audio supported	Embedded HDMI	Digital (S/PDIF) Analog stereo	Digital (S/PDIF) Analog stereo
Output audio supported	Digital (S/PDIF) Analog stereo	Embedded HDMI	Embedded HDMI
Auto-detect resolution	Yes	Yes	Yes
Locking HDMI connector	Yes	Yes	Yes
Locking power or optional USB power	Yes	Yes	Yes
IR remote control	Yes	Yes	Yes
Remote control via Mini-USB	Yes	Yes	Yes
OSD control interface	Yes	Yes	Yes
Maximum pixel rate: 165 MHz	Yes	Yes	Yes
Deinterlacer supported	Yes	Yes	Yes
Supports noise reduction and video enhancement features	Yes	Yes	Yes
Over/under scanning adjustable	Yes	Yes	Yes
Video H/V mirror supported	Yes	Yes	Yes
Active video area adjustment supported	Yes	Yes	Yes
USB firmware upgradable for expanding compatibility	Yes	Yes	Yes
Wallmount housing design for easy installation	Yes	Yes	Yes

Comparison Chart: Scalers

Feature	AVSC-HDMI-VIDEO	AVSC-VGA-VIDEO
Input video supported	HDMI	VGA
Output video supported	Component/composite	Component/composite (PAL and NTSC)
Input audio supported	Embedded HDMI	None
Output audio supported	Digital (S/PDIF) Analog stereo	None
Auto-detect resolution	Yes	Yes
Locking HDMI connector	Yes	Yes
Locking power or optional USB power	Yes	Yes
IR remote control	Yes	Yes
Remote control via Mini-USB	Yes	Yes
OSD control interface	Yes	Yes
Maximum pixel rate: 165 MHz	Yes	Yes
Deinterlacer supported	Yes	Yes
Supports noise reduction and video enhancement features	Yes	Yes
Over/under scanning adjustable	Yes	Yes
Video H/V mirror supported	Yes	Yes
Active video area adjustment supported	Yes	Yes
USB firmware upgradable for expanding compatibility	Yes	Yes
Wallmount housing design for easy installation	Yes	Yes

Video/Audio Scalers Data Sheet

HDMI to VGA Scaler (AVSC-HDMI-VGA) Specifications

Approvals	CE, FCC
Audio Support	Stereo PCM (48 kHz only), Digital SPDIF
Enclosure	Metal wall mounting case with screws
ESD Protection	Human body model: ±19 kV (air-gap discharge) and ±12 kV (contact discharge); Core chipset: ±2 kV
Firmware Update	via USB Port
Frequency Bandwidth	Output video: 165 MHz; Input video: 165 MHz
Connectors	Input: (1) HDMI; Output: (1) VGA, or Component with adapter (adapter not included) (1) S/PDIF, (1) Stereo; Control and Power: (1) USB Mini B;
Indicators	(1) Red LED for Power; (1) Green LED for Video Signal
Environment	Temperature Tolerance: Operating: 32 to 104° F (0 to 40° C); Storage: -4 to +140° F (-20 to +60° C) Relative Humidity: 20–90%, noncondensing
Power	Power supply: 5 VDC, 2 A; Consumption 5 Watts (max.)
Dimensions	1.1"H x 4.3"W x 3.3"D (2.8 x 11 x 8.3 cm)
Weight	10.2 oz. (290 g)

Supported Resolutions

Input	Output
640 x 480	1280 x 720p @ 60 Hz
800 x 600	1920 x 1080p @ 60 Hz
1024 x 768	640 x 480p @ 60 Hz
1280 x 720	640 x 480p @ 75 Hz
1280 x 800	800 x 600p @ 60 Hz
1280 x 1024	800 x 600p @ 75 Hz
1600 x 1200	1024 x 768p @ 60 Hz
1680 x 1050	1024 x 768p @ 75 Hz
1920 x 1080	1280 x 1024 @ 60 Hz
1920 x 1200	1280 x 1024 @ 75 Hz
480i/480p	1360 x 768p @ 60 Hz
576i/576p	1366 x 768p @ 60 Hz
720p @ 60/50 Hz	1400 x 1050p @ 60 Hz
1080i @ 60/50 Hz	1600 x 1200p @ 60 Hz
1080p @ 60/50 Hz	1440 x 900p @ 60 Hz
	1440 x 900p @ 75 Hz
	1680 x 1050p @ 60 Hz
	1680 x 1050p RB
	1920 x 1080p RB
	1920 x 1200p RB
	Autodetect

HDMI to VGA Scaler (AVSC-HDMI-VGA) Dimensional Diagram



VGA to HDMI Scaler (AVSC-VGA-HDMI-R2) Specifications

Approvals	CE, FCC
Audio Support	Stereo PCM (48 kHz only), Digital SPDIF
Enclosure	Metal wall mounting case with screws
ESD Protection	Human body model: ±19 kV (air-gap discharge) and ±12 kV (contact discharge); Core chipset: ±2 kV
Firmware Update	via USB Port
Frequency Bandwidth	Input: 165 MHz; Output: 165 MHz
Connectors	Input: (1) VGA, (1) S/PDIF, (1) Stereo; Output: (1) HDMI; Control and Power: (1) USB Mini B
Indicators	(1) Red LED for Power; (1) Green LED for Video Signal
Environment	Temperature Tolerance: Operating: 32 to 104° F (0 to 40° C); Storage: -4 to +140° F (-20 to +60° C) Relative Humidity: 20–90%, noncondensing
Power	Power supply: 5 VDC, 2 A; Consumption 5 Watts (max.)
Dimensions	1.1"H x 3.6"W x 3.3"D (2.8 x 9.2 x 8.3 cm)
Weight	9.1 oz. (260 g)

Input	Output
640 x 480	720 x 480i @ 60 Hz
800 x 600	720 x 576i @ 50 Hz
1024 x 768	720 x 480p @ 60 Hz
1280 x 720	720 x 576p @ 50 Hz
1280 x 800	1280 x 720p @ 60 Hz
1280 x 1024	1280 x 720p @ 59 Hz
1600 x 1200	1280 x 720p @ 50 Hz
1680 x 1050	1280 x 720p @ 30 Hz
1920 x 1080	1280 x 720p @ 25 Hz
1920 x 1200	1920 x 1080i @ 60 Hz
720p @ 60/50 Hz	1920 x 1080i @ 59 Hz
1080p @ 60/50 Hz	1920 x 1080i @ 50 Hz
	1920 x 1080p @ 60 Hz
	1920 x 1080p @ 59 Hz
	1920 x 1080p @ 50 Hz
	1920 x 1080p @ 30 Hz
	1920 x 1080p @ 25 Hz
	1920 x 1080p @ 24 Hz
	640 x 480p @ 60 Hz
	640 x 480p @ 75 Hz
	800 x 600p @ 60 Hz
	800 x 600p @ 75 Hz
	1024 x 768p @ 60 Hz
	1024 x 768p @ 75 Hz
	1280 x 1024p @ 60 Hz
	1280 x 1024p @ 75 Hz
	1360 x 768p @ 60 Hz
	1366 x 768p @ 60 Hz
	1400 x 1050p @ 60 Hz
	1600 x 1200p @ 60 Hz
	1440 x 900p @ 60 Hz
	1440 x 900p @ 75 Hz
	1680 x 1050p @ 60 Hz
	1680 x 1050p RB
	1920 x 1080p RB
	1920 x 1200p RB

VGA to HDMI Scaler (AVSC-VGA-HDMI-R2) Dimensional Diagram



Video/Audio Scalers Data Sheet

Component/Composite to HDMI Scaler (AVSC-VIDEO-HDMI) Specifications

Approvals	CE, FCC
Audio Support	Stereo analog (48 KHz Fs sample rate)
Enclosure	Metal wall mounting case with screws
ESD Protection	Human body model: ±19 kV (air-gap discharge) and ±12 kV (contact discharge); Core chipset: ±2 kV
Firmware Update	via USB Port
Frequency Bandwidth	Input: 74.25 MHz; Output: 165 MHz
Indicators	(1) Red LED for Power; (1) Green LED for Video Signal
Connectors	Input: Component/Composite: (3) RCA female, (2) audio (L/R); Output: (1) HDMI; Control and Power: (1) USB Mini B
Environment	Temperature Tolerance: Operating: 32 to 104° F (0 to 40° C); Storage: -4 to +140° F (-20 to +60° C) Relative Humidity: 20–90%, noncondensing
Power	Power supply: 5 VDC, 2 A; Consumption 5 Watts (max.)
Dimensions	1.1"H x 3.6"W x 3.3"D (2.8 x 9.2 x 8.3 cm)
Weight	9.5 oz. (270 g)

Supported Resolutions

Input	Output
480i/576i	720 x 480i @ 60 Hz
480p/576p	720 x 576i @ 50 Hz
720p	720 x 480p @ 60 Hz
1080i	720 x 576p @ 50 Hz
1080p	1280 x 720p @ 60 Hz
	1280 x 720p @ 59 Hz
	1280 x 720p @ 50 Hz
	1280 x 720p @ 30 Hz
	1280 x 720p @ 25 Hz
	1920 x 1080i @ 60 Hz
	1920 x 1080i @ 59 Hz
	1920 x 1080i @ 50 Hz
	1920 x 1080p @ 50 Hz
	1920 x 1080p @ 30 Hz
	1920 x 1080p @ 25 Hz
	1920 x 1080p @ 24 Hz
	640 x 480p @ 60 Hz
	640 x 480p @ 75 Hz
	800 x 600p @ 60 Hz
	800 x 600p @ 75 Hz
	1024 x 768p @ 60 Hz
	1024 x 768p @ 75 Hz
	1280 x 1024p @ 60 Hz
	1280 x 1024p @ 75 Hz
	1360 x 768p @ 60 Hz
	1366 x 768p @ 60 Hz
	1400 x 1050p @ 60 Hz
	1600 x 1200p @ 60 Hz
	1440 x 900p @ 60 Hz
	1440 x 900p @ 75 Hz
	1680 x 1050p @ 60 Hz
	1680 x 1050p RB
	1920 x 1080p RB
	1920 x 1200p RB

Component/Composite to HDMI Scaler (AVSC-VIDEO-HDMI) Dimensional Diagram



HDMI to Video Scaler and Converter (AVSC-HDMI-VIDEO) Specifications

1. Specifications

Approvals	CE, FCC
Audio Support	Stereo PCM (48 kHz only)
Maximum Resolution	1080p, 1920 x 1200
Maximum Color	4:2:2
Enclosure	Metal wall mounting case with screws
ESD Protection	Human body model: ±19 kV (air-gap discharge) and ±12 kV (contact discharge); Core chipset: ±2 kV
Firmware Update	via USB Port
Frequency Bandwidth	Output video: 165 MHz; Input video: 74.25 MHz
IR Sensor	Receives IR commands from the IR remote
User Controls	(1) DIP switch for firmware update; (3) Push buttons (Down, Up, Menu/Enter)
Connectors	Input: (1) HDMI Type A (19-pin female), Output: (2) 3.5-mm stereo (L, R), (3) RCA (YPbPr), (1) RCA (CVBS), (1) RCA (S/PDIF); Firmware update and control: (1) Mini USB; Power: (1) interlocking power jack
Indicators	(1) Red LED for Power; (1) Green LED for Video Signal
Environment	Temperature Tolerance: Operating: 32 to 104° F (0 to 40° C); Storage: -4 to +140° F (-20 to +60° C) Relative Humidity: 20–90%, noncondensing
Power	Power supply: 5 VDC, 2 A; Consumption: 5 Watts (max.)
Dimensions	1.1"H x 6.9"W x 5"D (2.8 x 17.5 x 12.7 cm)
Weight	9.5 oz. (270 g)

Supported Resolutions

Description	Settings
Output Resolution	HD(720p)60
	HD(720p)59
	HD(720p)50
	HD(720p)30
	HD(720p)25
	HD(1080i)60
	HD(1080i)59
	HD(1080i)50
	HD(1080p)60
	HD(1080p)59
	HD(1080p)50
	HD(1080p)30
	HD(1080p)25
	HD(1080p)24
Bypass	
	SD(480i)60
	SD(576i)50
	SD(480p)60
	SD(576p)50



Video/Audio Scalers Data Sheet

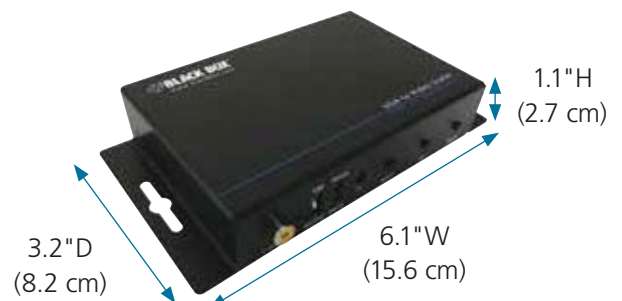
VGA to Video Scaler (AVSC-VGA-VIDEO) Specifications

1. Specifications

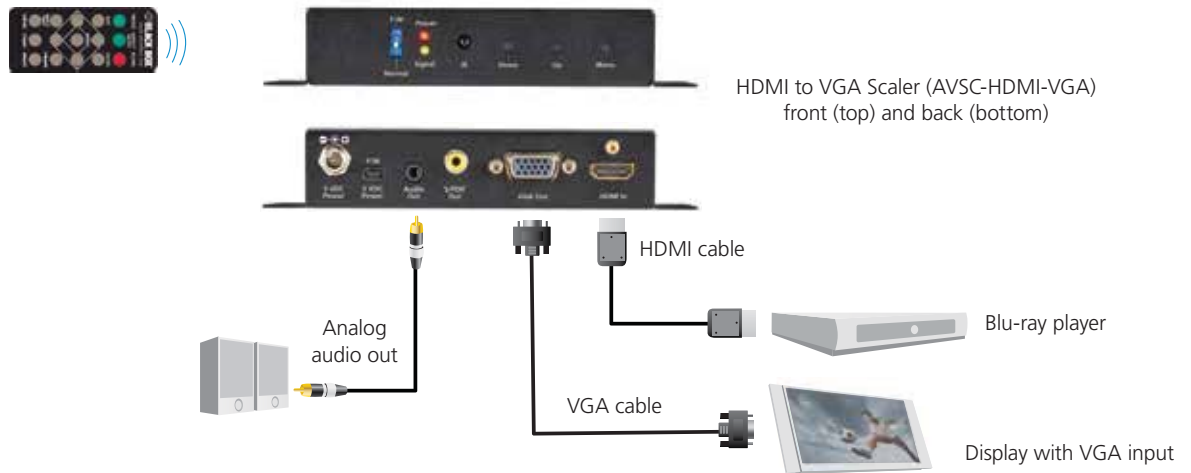
Approvals	CE, FCC
Audio Support	Stereo PCM (48 kHz only)
Maximum Resolution	1080p, 1920 x 1200
Maximum Color	4:2:2
Enclosure	Metal wall mounting case with screws
ESD Protection	Human body model: ±19 kV (air-gap discharge) and ±8 kV (contact discharge); Core chipset: ±2 kV
Firmware Update	via USB Port
Frequency Bandwidth	Input video: 165 MHz; Output video: 74.25 MHz
IR Sensor	Receives IR commands from the IR remote
User Controls	(1) DIP switch for firmware update; (3) Push buttons (Down, Up, Menu/Enter)
Connectors	Input: (1) HD15 VGA (15-pin female), Output: (3) RCA (YPbPr), (1) RCA (CVBS); Firmware update and control: (1) Mini USB; Power: (1) interlocking power jack
Indicators	(1) Red LED for Power; (1) Green LED for Video Signal
Environment	Temperature Tolerance: Operating: 32 to 104° F (0 to 40° C); Storage: -4 to +140° F (-20 to +60° C) Relative Humidity: 20–90%, noncondensing
Power	Power supply: 5 VDC, 2 A; Consumption: 5 Watts (max.)
Dimensions	1.1"H x 6.1"W x 3.2"D (2.7 x 15.6 x 8.2 cm)
Weight	1.4 lb. (0.64 kg)

Supported Resolutions

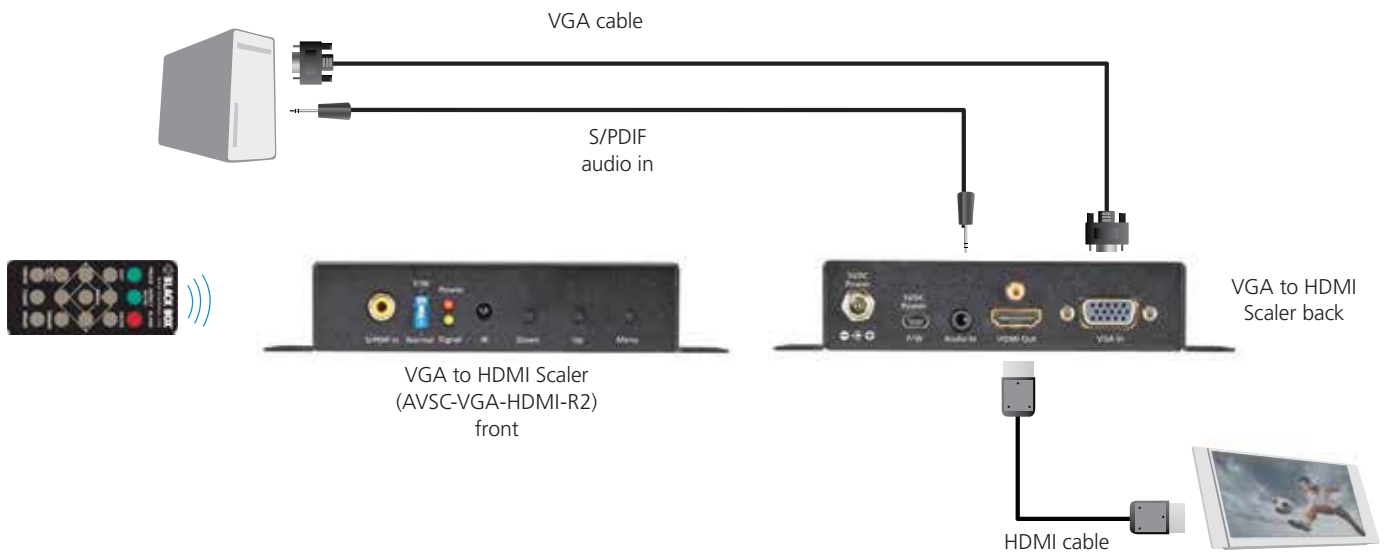
Description	Settings
Output Resolution	HD(720p)60
	HD(720p)59
	HD(720p)50
	HD(720p)30
	HD(720p)25
	HD(1080i)60
	HD(1080i)59
	HD(1080i)50
	HD(1080p)60
	HD(1080p)59
	HD(1080p)50
	HD(1080p)30
	HD(1080p)25
	HD(1080p)24
Bypass	SD(480i)60
	SD(576i)50
	SD(480p)60
	SD(576p)50



A typical application of the HDMI to VGA Scaler (AVSC-HDMI-VGA) is shown below.

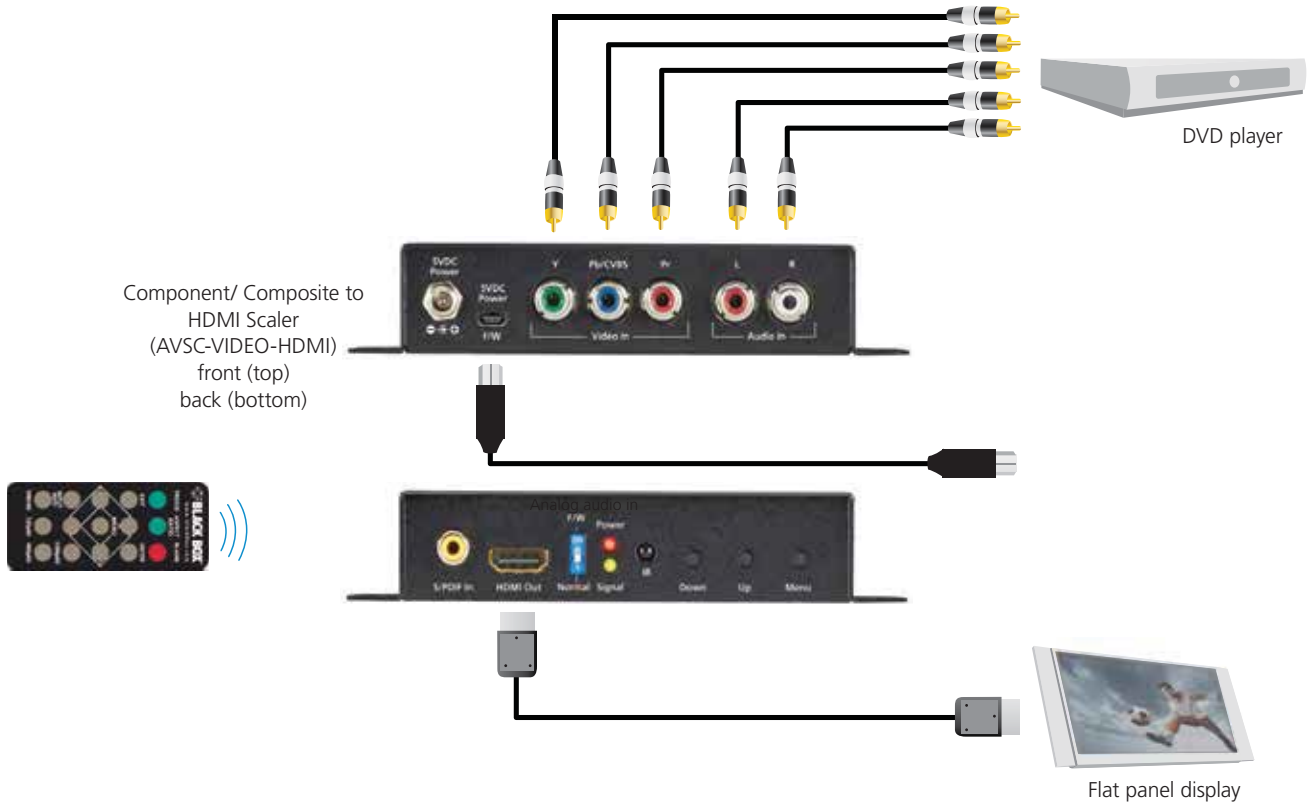


A typical application of the VGA to HDMI Scaler (AVSC-VGA-HDMI-R2) is shown below.

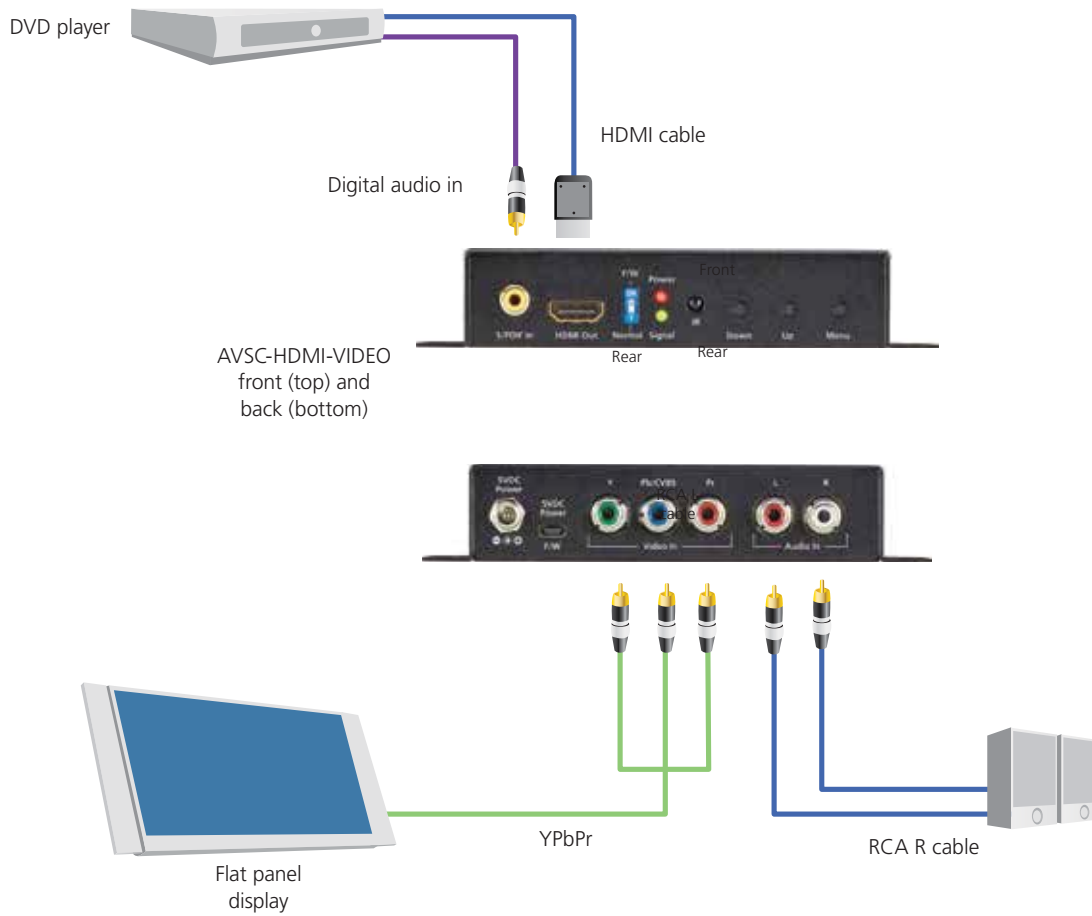


Video/Audio Scalers Data Sheet

A typical application of the Component/Composite to HDMI Scaler (AVSC-VIDEO-HDMI) is shown below.

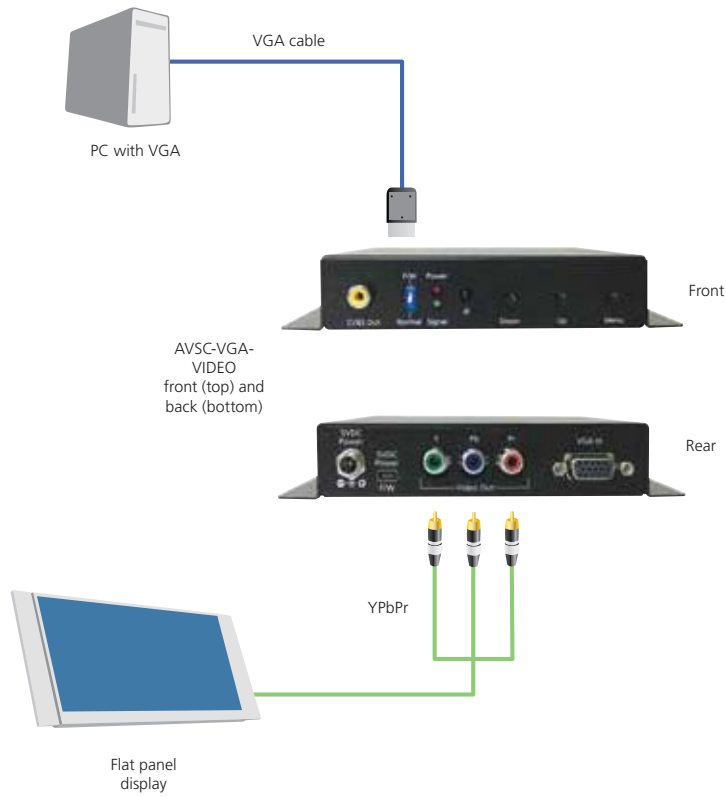


A typical application of the HDMI to Video Scaler and Converter (AVSC-HDMI-VIDEO) is shown below.

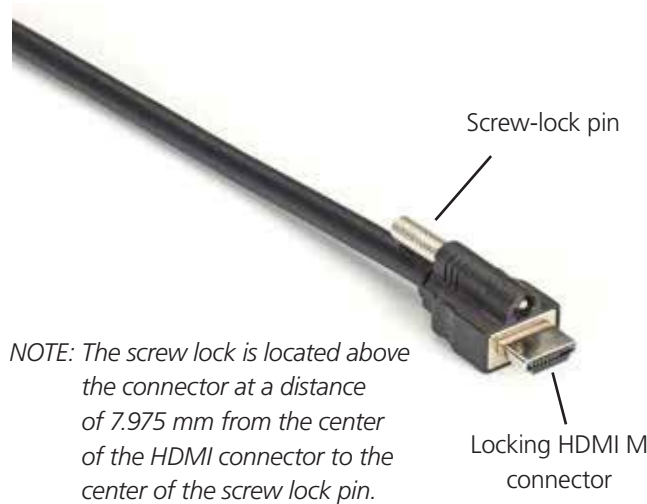


Video/Audio Scalers Data Sheet

A typical application of the VGA to Video Scaler (AVSC-VGA-VIDEO) is shown below.



You might also need Locking HDMI Cables (described below).



Locking Cables Specifications

Approvals	RoHS2; High-Speed HDMI
Cable	Construction: Magnalium braid; O.D. = 5.2 mm
Color	Black
Data Transfer Rate	VCL-HDMIDVI-00xM: 165 MHz, 4.95 Gbps; VCL-HDMIS-00xM: 340 MHz; 10.2 Gbps; VCL-HDMIL-00xM: 340 MHz, 10.2 Gbps; VAL-HDMIDVI: 165 MHz, 4.95 Gbps
HDMI Standard	High-Speed
Resolution	Maximum supported: 1080p @ 60 Hz, digital displays (may vary by monitor); Supports 3D and Deep Color, and 1080p
Connectors	VCL-HDMIDVI-00xM: Input: HDMI M (Nickel-plated, screw lock), Output: DVI-D single-link M (gold contact); VCL-HDMIS-00xM: Input: HDMI M (Nickel-plated), screw lock, Output: HDMI M (Nickel-plated); VCL-HDMIL-00xM: Input: HDMI M (Nickel-plated, screw lock), Output: HDMI M (Nickel-plated, screw lock); VAL-HDMIDVI: Input: HDMI M (Nickel-plated, screw lock), Output: DVI-D single-link M (gold contact)
Distance from Center	7.975-mm distance from the center of the HDMI connector to the center of the screw lock pin
Length	VCL-HDMIDVI-001M, VCL-HDMIS-001M, VCL-HDMIL-001M: 1 m (3.2 ft.); VCL-HDMIDVI-002M, VCL-HDMIS-002M, VCL-HDMIL-002M: 2 m (6.5 ft.); VCL-HDMIDVI-003M, VCL-HDMIS-003M, VCL-HDMIL-003M: 3 m (9.8 ft.); VCL-HDMIDVI-005M, VCL-HDMIS-005M, VCL-HDMIL-005M: 5 m (16.4 ft.); VAL-HDMIDVI: 15 cm (6")
Wire Gauge	28 AWG

Video/Audio Scalers Data Sheet

Ordering Information for Locking Cables

Comparison Chart: Locking HDMI Cables

Product Code	Cable Length	Connectors
VCL-HDMIDVI-001M	1 m (3.2 ft.)	(1) Locking HDMI M, (1) DVI M
VCL-HDMIDVI-002M	2 m (6.5 ft.)	(1) Locking HDMI M, (1) DVI M
VCL-HDMIDVI-003M	3 m (9.8 ft.)	(1) Locking HDMI M, (1) DVI M
VCL-HDMIDVI-005M	5 m (16.4 ft.)	(1) Locking HDMI M, (1) DVI M
VCL-HDMIS-001M	1 m (3.2 ft.)	(1) Locking HDMI M, (1) Standard HDMI M
VCL-HDMIS-002M	2 m (6.5 ft.)	(1) Locking HDMI M, (1) Standard HDMI M
VCL-HDMIS-003M	3 m (9.8 ft.)	(1) Locking HDMI M, (1) Standard HDMI M
VCL-HDMIS-004M	5 m (16.4 ft.)	(1) Locking HDMI M, (1) Standard HDMI M
VCL-HDMIL-001M	1 m (3.2 ft.)	(2) Locking HDMI M
VCL-HDMIL-002M	2 m (6.5 ft.)	(2) Locking HDMI M
VCL-HDMIL-003M	3 m (9.8 ft.)	(2) Locking HDMI M
VCL-HDMIL-005M	5 m (16.4 ft.)	(2) Locking HDMI M
Adapter Cable		
Product Code	Cable Length	Connectors
VAL-HDMIDVI	15 cm (6")	(1) HDMI M, (1) DVI female

Ordering Information for the Video/Audio Scalers

Item	Code
HDMI to VGA Scaler	AVSC-HDMI-VGA
VGA to HDMI Scaler	AVSC-VGA-HDMI-R2
Component/Composite to HDMI Scaler	AVSC-VIDEO-HDMI
HDMI to Video Scaler and Converter	AVSC-HDMI-VIDEO
VGA to Video Scaler	AVSC-VGA-VIDEO

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About Black Box:

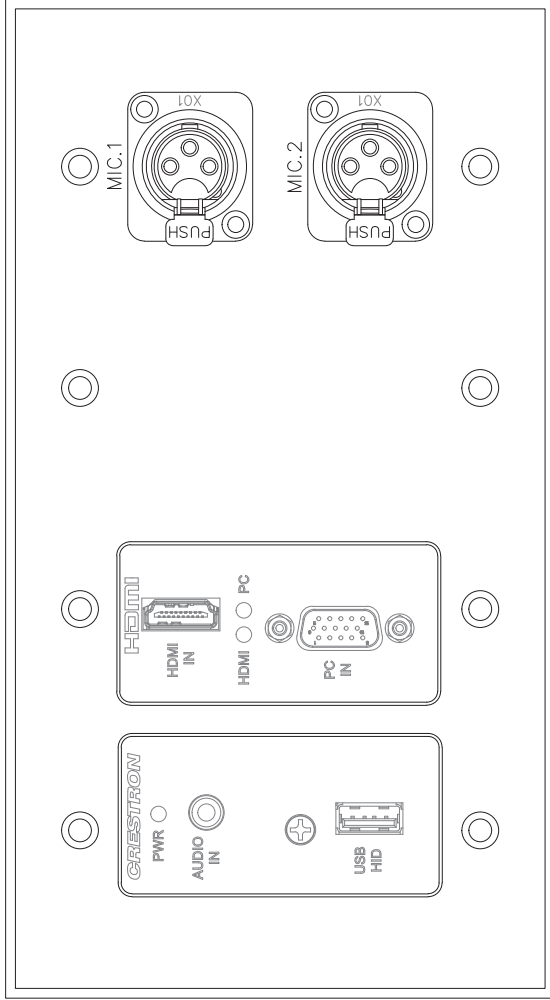
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SECTION 27 41 00 – AUDIO VISUAL SYSTEMS

PRODUCT DATA SUBMITTAL

DATASHEETS - SET I



- AL Series
- Durable 1/8" Aluminum
- 4 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(1x) Punching and rear milling for Crestron DM transmitter (Device not included)
 (2x) NC3FD-L-1 Neutrik XLR F 3 pin with nickel shell

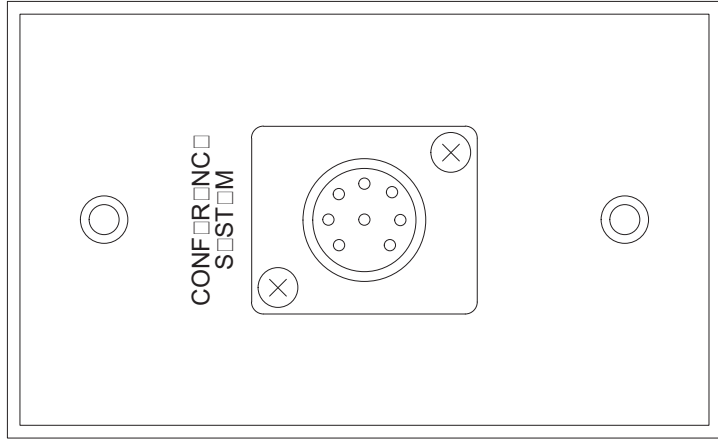
Shop Drawings Code:

WP-AV

FBS-AV

Quantity - 4

DESIGN APPROVAL Please sign below and return		<div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
BSI Minimum to have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as listed at www.rcicustom.com .			
RCI Part Number:	FOT001-160726B-1	Drawn By:	M BCK
Units:	Inches	Revision:	A
Project:	51940	Date:	2016/10/31
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- 1 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(1x) Punching for Brahler Mic Connector

Shop Drawings Code:

DB9

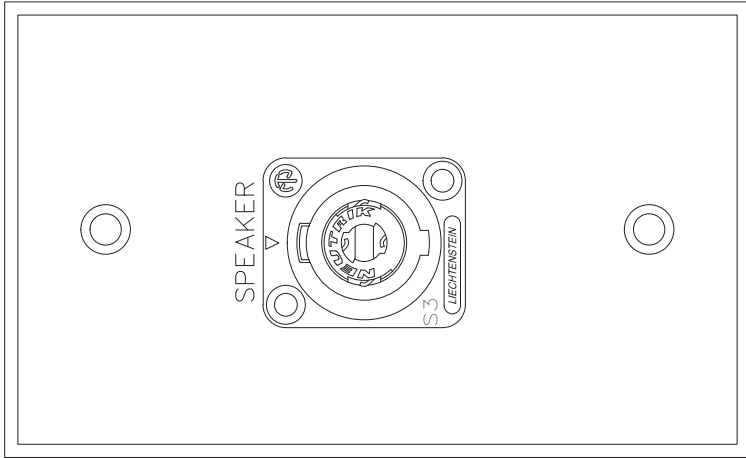
Quantity - 8

DESIGN APPROVAL Please sign below and return		<div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
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Company: RCI Custom Products	RCI Part Number: FOT001-160726B-2	Revision: A	Sheet: 1 of 1
Project: 51940	Units: Inches		



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- 1 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

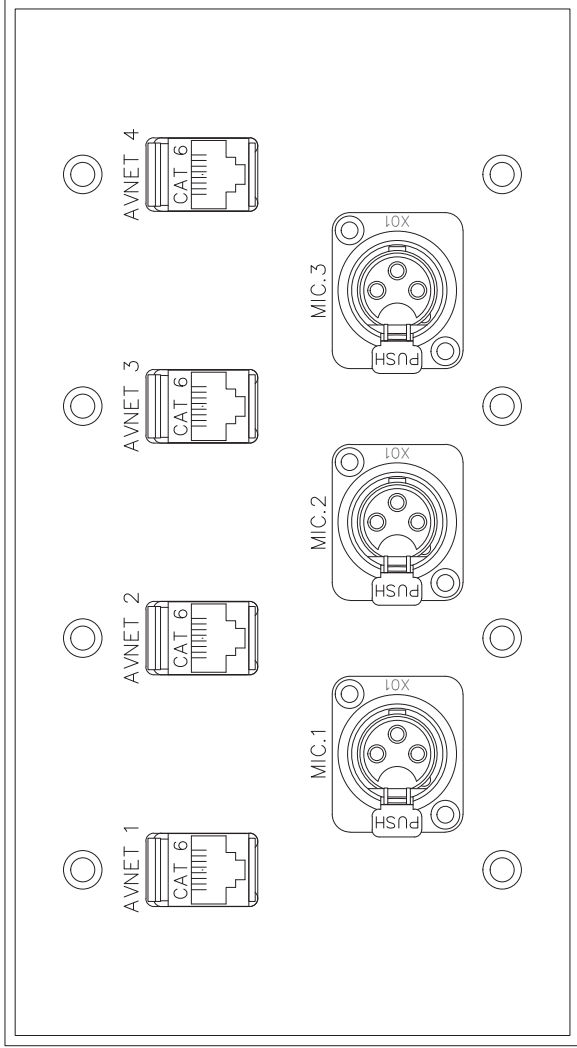
(1x) Assembly of NL4MP
Neutrik 4 Pole Speakon

Shop Drawings Code:

SPX

Quantity - 4

<p>DESIGN APPROVAL Please sign below and return</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	<p>B. Signatures have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as listed at www.rcicustom.com.</p>	<p>Date: 2016/10/31</p>	<p>Sheet: 1 of 1</p>
<p>RCI Part Number: FOT001-160726B-3</p>	<p>Drawn By: M BCKOR</p>	<p>Revision: A</p>	
<p>Units: Inches</p>	<p>Project: 51940</p>	<p>RCI Custom Products</p>	
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- AL Series
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- 4 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

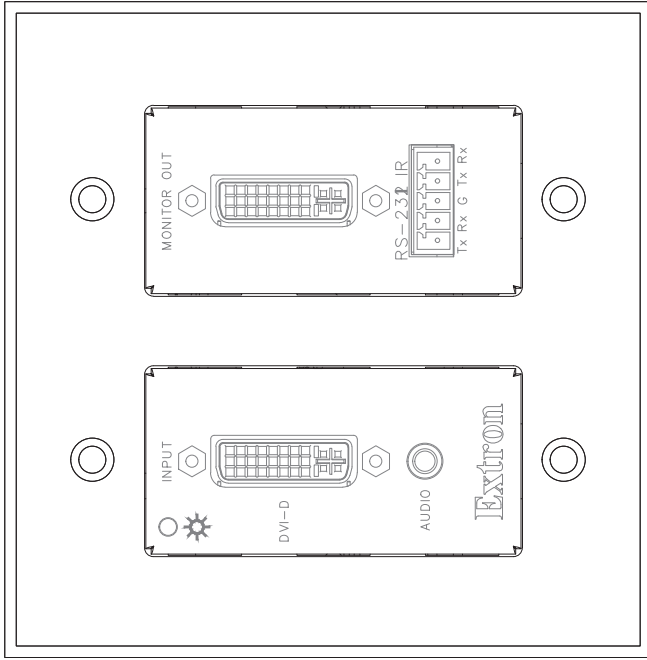
(3x) NC3FD-L-1 Neutrik XLR F 3
pin with nickel shell
(4x) 1375188-1 TE Connectivity
Cat 6, punchdown, shielded

Shop Drawings Code:

PO

Quantity - 4

DESIGN APPROVAL Please sign below and return		<div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<p>B. Signatures have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as posted at www.rcicustom.com.</p>		<p>RCI Part Number: FOT001-160726B-4</p>	<p>Date: 2016/10/31</p>
<p>Compan: RCI Custom Products</p>	<p>Project: 51940</p>	<p>Drawn By: M BCK</p>	<p>Revision: A</p>
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- AL Series
- Durable 1/8" Aluminum
- 2 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

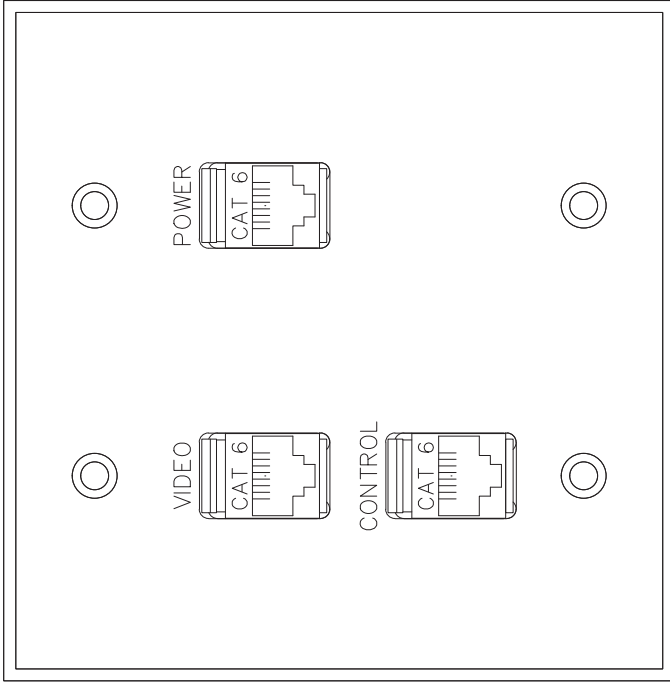
(1x) Punching and rear milling
for Extron DVI Transmitter
(device not included)

Shop Drawings Code:

FCBW-AV

Quantity - 4

<p>DESIGN APPROVAL Please sign below and return</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	<p>RCI Part Number: FOT001-160726B-5</p> <p>Drawn By: M BCKOR</p> <p>Date: 2016/10/31</p>	<p>Sheet: 1 of 1</p> <p>Revision: A</p>
<p>Comments: RCI Custom Products</p> <p>Project: 51940</p>	<p>RCI CUSTOM PROPRIETARY STATEMENT The information contained herein is proprietary to Cervant, Inc. d/b/a RCI Custom Products. It is to be used by the recipient solely for the purpose of the contractual performance for which it is finished and shall not be disclosed in whole or in part to any other party without the express written consent of Cervant, Inc. d/b/a RCI Custom Products</p>	
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- AL Series
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- 2 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(3x) Assembly of 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded

Shop Drawings Code:

CPZ

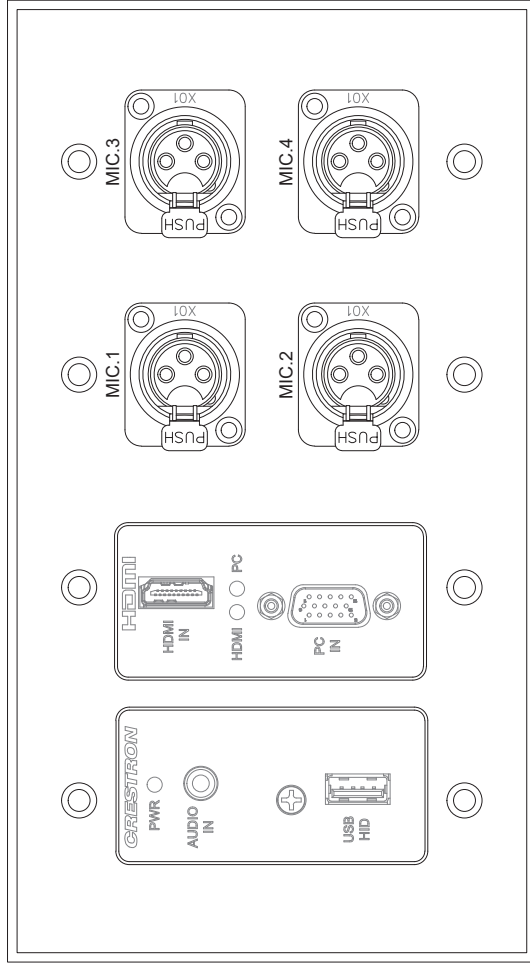
Quantity - 7

DESIGN APPROVAL Please sign below and return		<div style="border: 1px solid black; width: 100%; height: 40px;"></div>		
BSI Inc. have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as listed at www.rcicustom.com .		RCI Part Number: FOT001-160726B-6	Drawn By: M BCKOR	Date: 2016/10/31
Company: RCI Custom Products	Project: 51940	Units: Inches	Revision: A	Sheet: 1 of 1



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- AL Series
- Durable 1/8" Aluminum
- 4 Gang
- Powder Coat White Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(1x) Punching and rear milling for Crestron DM transmitter (Device not included)
 (4x) NC3FD-L-1 Neutrik XLRF 3 pin with nickel shell

Shop Drawings Code:

FB-AV

FBM-AV

Quantity - 36

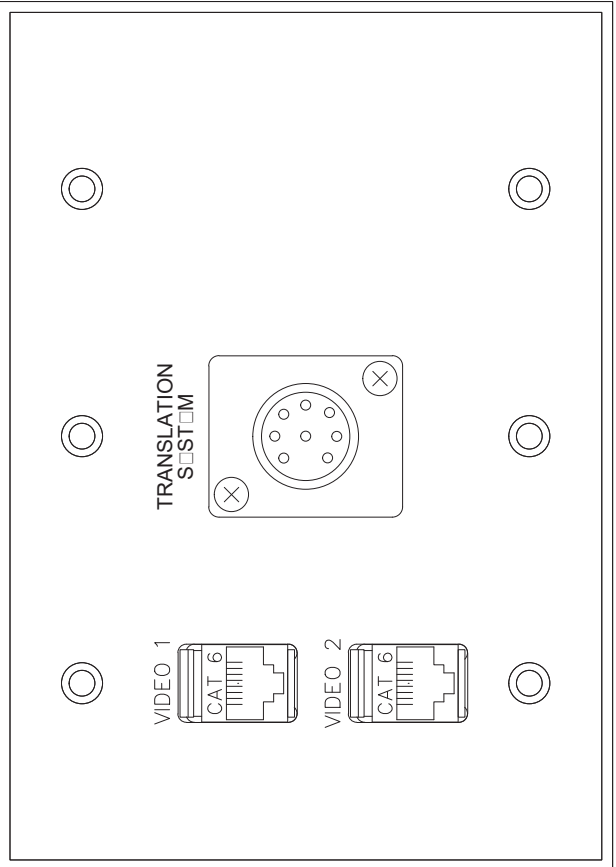
DESIGN APPROVAL Please sign below and return

[Signature Line]

By signing below, I have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as posted at www.rci-custom.com.

<p>RCI Part Number: FOT001-160726B-7</p>	<p>Compan: RCI Custom Products</p>	<p>801 North East Street Suite 2A Frederic, MD 21701 Tel: 800-546-4724 Fax: 800-546-6175 www.rci-custom.com</p>
<p>Date: 2016/10/31</p>	<p>Project: 51940</p>	<p>RCI CUSTOM PROPRIETARY STATEMENT The information contained herein is proprietary to Cervant, Inc. and RCI Custom Products. It is to be used by the recipient solely for the purpose of the contractual performance for which it is furnished and shall not be disclosed in whole or in part to any other party without the express written consent of Cervant, Inc. and RCI Custom Products.</p>
<p>Units: Inches</p>	<p>Revision: A</p>	<p>Sheet: 1 of 1</p>





- AL Series
- Durable 1/8" Aluminum
- 3 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(2x) Assembly of 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded
 (1x) Punching for Brahler Mic Connector

Shop Drawings Code:

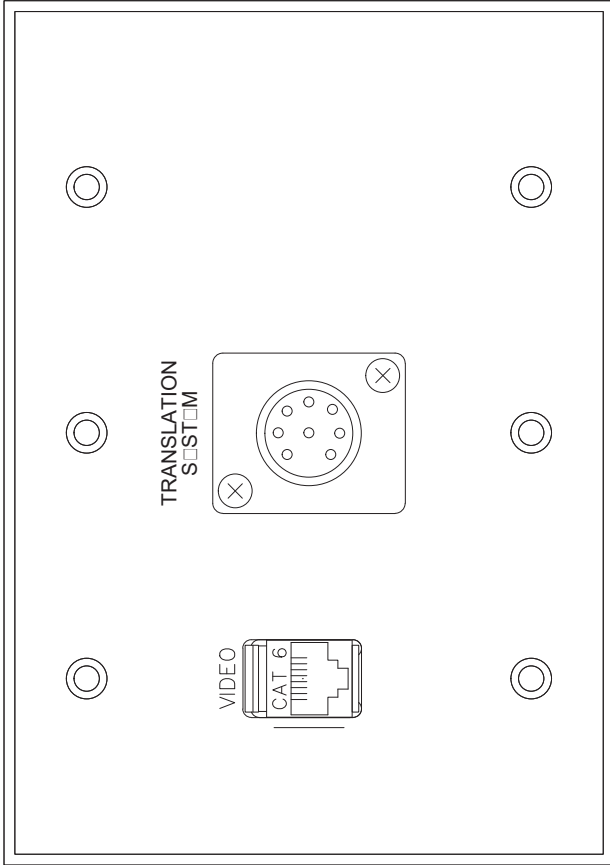
TSB

Quantity - 3

DESIGN APPROVAL Please sign below and return	
<div style="border: 1px solid black; width: 100%; height: 40px;"></div>	
<p>B. Signatures have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as listed at www.rcicustom.com.</p>	
<p>RCI Part Number: FOT001-160726B-8</p>	<p>Drawn By: M BCK</p>
<p>Units: Inches</p>	<p>Revision: A</p>
<p>Project: 51940</p>	<p>Date: 2016/10/31</p>
<p>RCI CUSTOM PROPRIETARY STATEMENT The information contained herein is proprietary to Cervant, Inc. d/b/a RCI Custom Products. It is to be used by the recipient solely for the purpose of the contractual performance for which it is furnished and shall not be disclosed in whole or in part to any other party without the express written consent of Cervant, Inc. d/b/a RCI Custom Products.</p>	<p>Sheet: 1 of 1</p>



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- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(1x) Assembly of 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded
 (1x) Punching for Brahler Mic Connector

Shop Drawings Code:

TSM

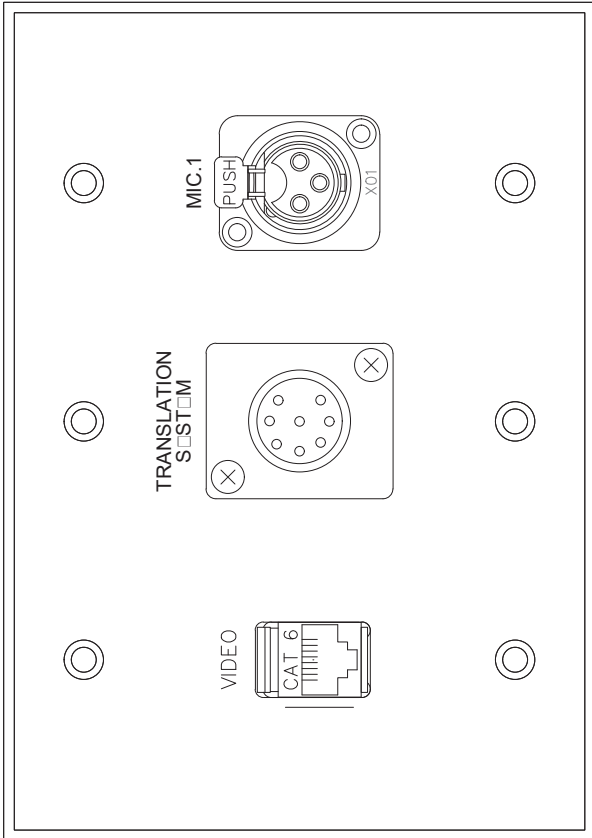
Quantity - 2

<p>DESIGN APPROVAL Please sign below and return</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>		<p>B Signatures have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as listed at www.rcicustom.com.</p>	
<p>Compan RCI Custom Products</p>	<p>RCI Part Number: FOT001-160726B-9</p>	<p>Drawn By: M BCKOR</p>	<p>Date: 2016/10/31</p>
<p>Project: 51940</p>	<p>Units: Inches</p>	<p>Revision: A</p>	<p>Sheet: 1 of 1</p>



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- 3 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(1x) Assembly of 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded
 (1x) NC3FD-L-1 Neutrik XLR F 3 pin with nickel shell
 (1x) Punching for Brahler Mic Connector

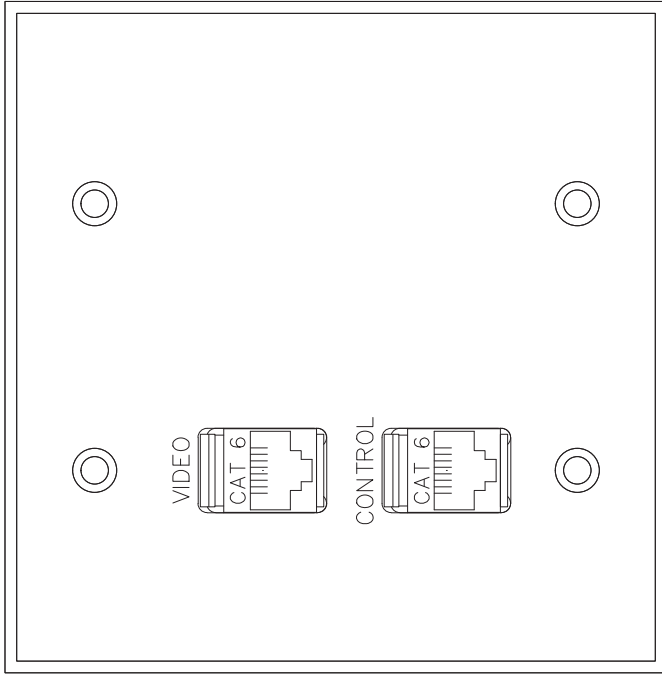
Shop Drawings Code:

TSM

Quantity - 2

<p>DESIGN APPROVAL Please sign below and return</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	<p>RCI Part Number: FOT001-160726B-10</p> <p>Drawn By: M BCKOR</p> <p>Date: 2016/10/31</p>	<p>Revision: A</p> <p>Sheet: 1 of 1</p>
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- AL Series
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- 2 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(2x) Assembly of 1375188-1 TE Connectivity RJ-45 Cat 6, punchdown, shielded

Shop Drawings Code:

CP

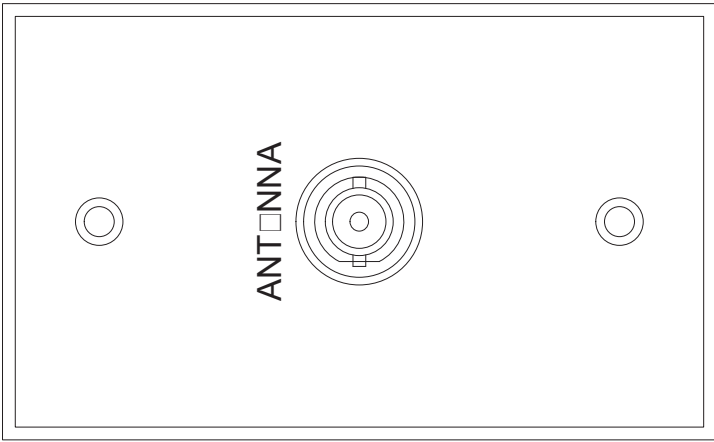
Quantity - 19

<p>DESIGN APPROVAL Please sign below and return</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>		<p>By signing below, I have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as posted at www.rcicustom.com.</p>	
<p>Company: RCI Custom Products Product: 51940</p>	<p>RCI Part Number: FOT001-160726B-11</p>	<p>Drawn By: M BCKOR</p>	<p>Date: 2016/10/31</p>
<p>Units: Inches</p>		<p>Revision: A</p>	
<p>Sheet: 1 of 1</p>			



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- 1 Gang
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- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(1x) Assembly of CH-335R544
 RCI BNC bulkhead (50 Ohm)

Shop Drawings Code:

RF

Quantity - 2

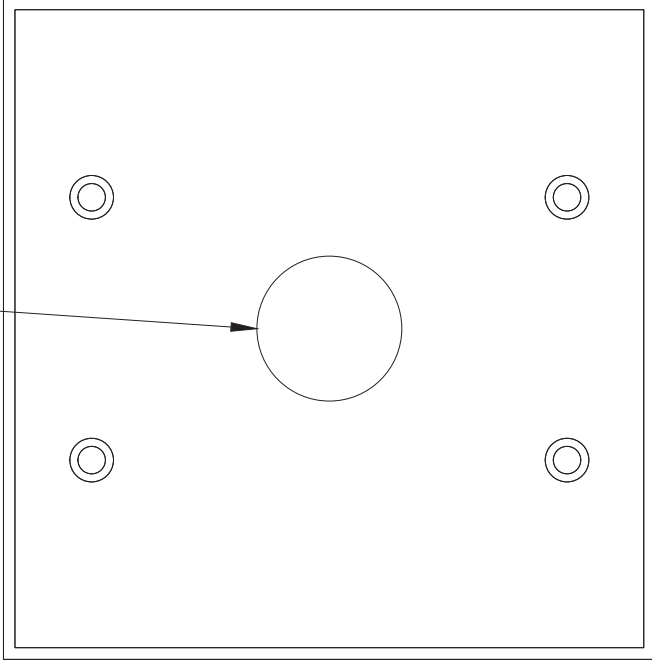
<p>DESIGN APPROVAL Please sign below and return</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>		<p>B/S/Min/Do have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as listed at www.rcicustom.com.</p>	
<p>Compan RCI Custom Products</p>	<p>RCI Part Number: FOT001-160726B-12</p>	<p>Drawn By: M BCKOR</p>	<p>Date: 2016/10/31</p>
<p>Product: 51940</p>	<p>Units: Inches</p>	<p>Revision: A</p>	<p>Sheet: 1 of 1</p>



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1" ROMM T HOL



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- Durable 1/8" Aluminum
- 2 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(1x) Assembly of 2043V HH
Smith rubber grommet (1.00"
dia.)

Shop Drawings Code:

IR-AV

FP

Quantity - 31

DESIGN APPROVAL Please sign below and return

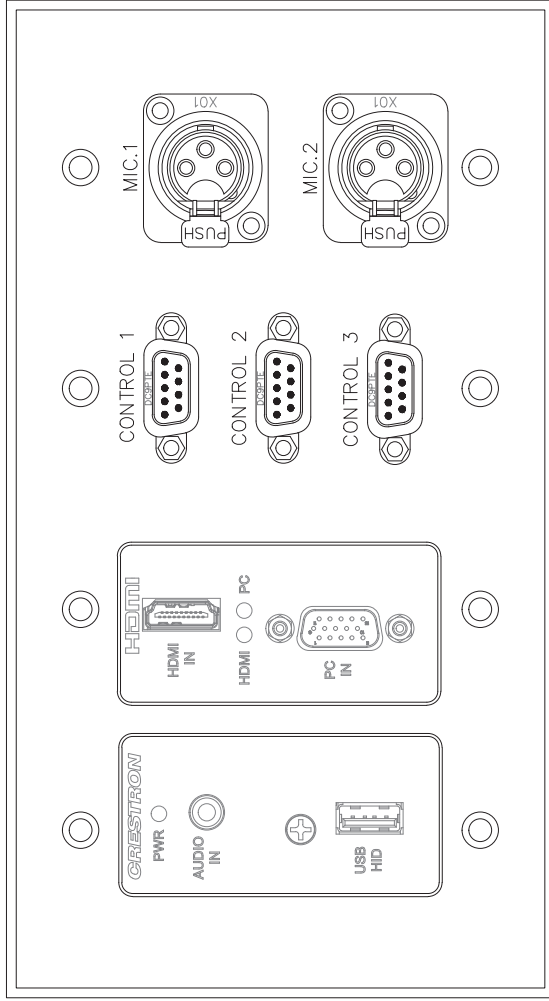
Both signs must have approved the Panel and Parts as shown and Agree to RCI Terms and Conditions as posted at www.rcicustom.com.

<p>Compan RCI Custom Products</p>	<p>RCI Part Number: FOT001-160726B-13</p>	<p>Drawn By: M BCKOR</p>	<p>Date: 2016/10/31</p>
<p>Project: 51940</p>	<p>Units: Inches</p>	<p>Revision: A</p>	<p>Sheet: 1 of 1</p>



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- AL Series
- Durable 1/8" Aluminum
- 4 Gang
- Anodized Clear Finish
- Engraved Text Ink Fill Black
- Font Style Helvetica
- Font Size 1/8"

(3x) Assembly of DE9P Mouser 9 pin (male) D Sub with solder pins (Amp 205817-1 hardware incl.)

(2x) NC3FD-L-1 Neutrik XLR F 3 pin with nickel shell
 (1x) Punching and rear milling for Crestron DM Transmitter (device not included)

Shop Drawings Code:

FBL-AV

Quantity - 2

DESIGN APPROVAL Please sign below and return	
<div style="border: 1px solid black; width: 100%; height: 40px;"></div>	
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RCI Part Number: FOT001-160726B-14	Drawn By: M BCKOR
Date: 2016/10/31	Sheet: 1 of 1
Units: Inches	Revision: A
Project: 51940	Comman: RCI Custom Products
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SAMPLES
AV System Faceplates

SPECIFICATION SECTION:

274100

SECTION ARTICLE:

N/A

NOTED SPECIFICATION DEVIATIONS:

NONE

NOTES TO THE REVIEWER:

Samples to be reviewed in conjunction with Submittal 274100-014.

CADDELL PROJECT #: 2015







01.12.2017



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CUSTOM**
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Customer Name:
FOTECH FIBER OPTIK TEKNOLOJIK

Order #: 51940

Part #: FOT001-160726BJ-5

1 of 1

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CUSTOM**
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800-546-4724

Customer Name:
FOTECH FIBER OPTIK TEKNOLOJIK

Order #: 51940

Part #: FOT001-160726BJ-13

1 of 1

01.12.2017



