



BEETLE /M-II

Project Version

Technical Information

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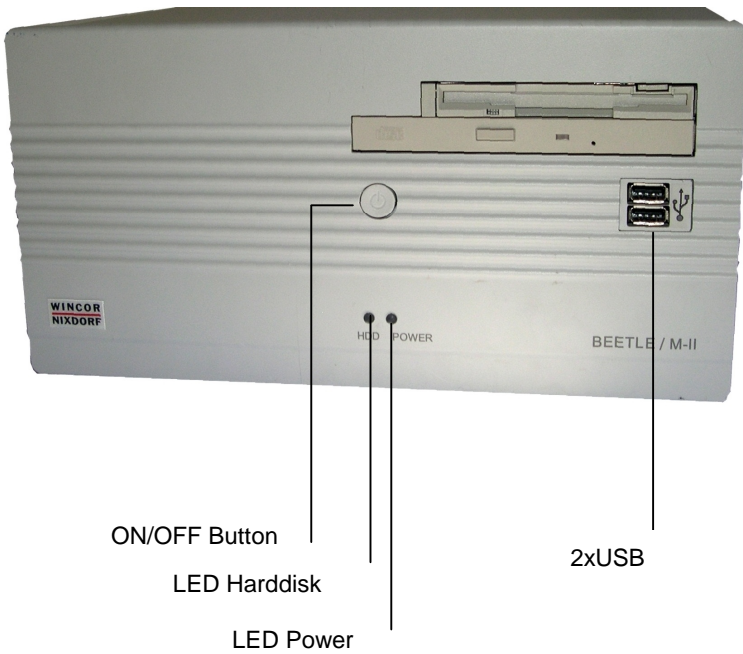
Introduction

The BEETLE /M-II, a compact and expandable new POS system, offers well proven PC technology on the base of Intel Pentium4 processors with Intel 845 GV-Chipset.

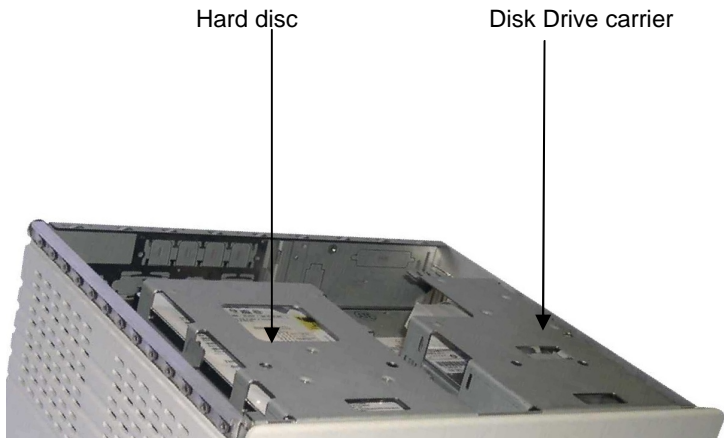
For the connection of peripheral devices there are a multitude of standard and retail specific powered and non-powered interfaces for scanners, printers, Touchscreen, customer displays etc. via USB and RS232 interfaces.

The BEETLE /M-II is an ideal system platform for high-capacity Windows32 and Linux-based applications with graphical user interface. Thus, the high processor performance allows - besides the "normal" POS functions - multi media features up to video and audio solutions.

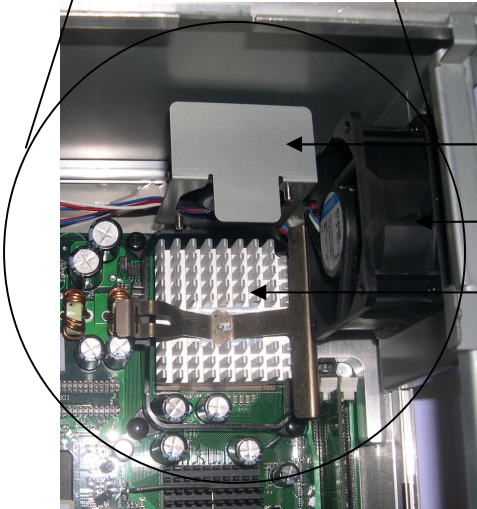
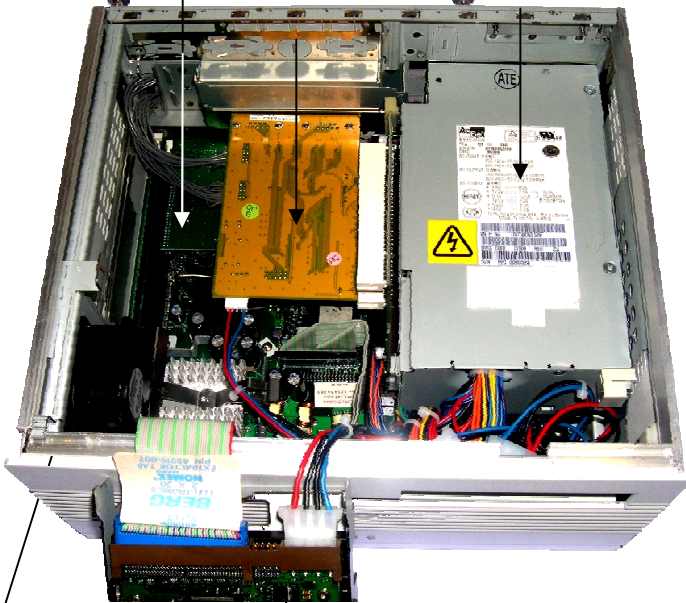
Exterior View



Interior View



TFT PanelLink adapter PCI-COM card Power supply unit

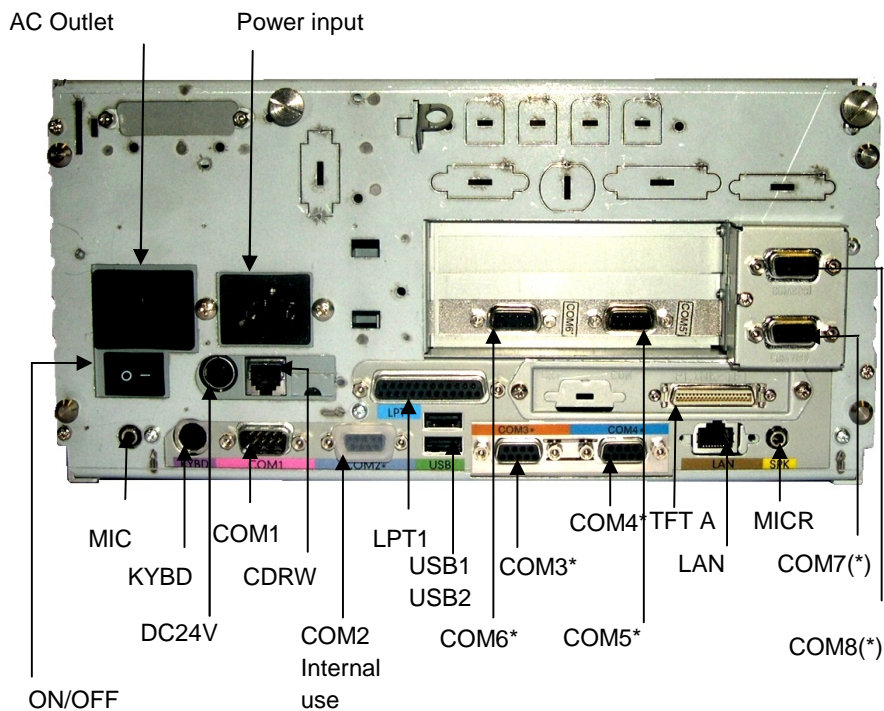


CPU-fan

Housing-fan

Heat sink

Backside



Dimensions

Width:	288 mm
Height:	150 mm
Depth:	286 mm (without cable cover)
	348 mm (with optional cable cover)

Setting up the Device

Set up the BEETLE /M-II POS system so that it is not subject to any extreme environmental conditions. Protect the device from shocks, dust, moisture, heat and strong magnetic fields. Always be sure that the side ventilation slots of the BEETLE /M-II are not blocked, thus ensuring that the device always has sufficient ventilation. Mind the **minimum clearances** indicated below! If you plan to install the unit into a confined space, also always be sure to maintain the specified minimum clearance and ensure constant air flow for effective ventilation. The immediate **ambient temperature** for the system must not exceed **40° C/104° F**. These requirements can be best met, if you do not install the unit into a completely confined furniture.



The maximum depth of installation can be equal to the entire depth of the unit including the optionally available cable cover, i.e. 348 mm.

Vertical Installation

The following minimum clearances must also be provided in vertical mounting into a confined furniture in free convection to ensure sufficient ventilation:

- upwards: 80 mm
- downwards: 80 mm

A vertically installed device therefore has to be placed on a rig (spacer made of non-combustible material) that guarantees sufficient ventilation and a minimum clearance of 80 mm to the bottom of the furniture.

A surface made of nonflammable material (e.g. concrete or metal) must be located underneath the vertically mounted BEETLE.

Technical Specifications

Footprint	
Width	288 mm
Depth (w/o cable cover)	286 mm
Height	150 mm
Weight	approx. 7 kg (depending on the installation)
Current consumption (max.)	100 – 120 V / 5A Max. 200 – 240 V / 3A Max.
Line voltage frequency	50 / 60 Hz
Noise generation	< 47 dB (A)
Ratings of AC-outlet	100 – 120 V / 2A Max. 200 – 240 V / 1A Max.

Total 12V current for all external loads is 5A max, including displays.

Total 5V current for all external loads is 5A max.

Operating temperature	
EN 60721-3-3, class 3k3 Environmental test IEC 68 / EN60068	
Air temperature:	+5° C to +40° C
Humidity:	5% r.h. (1 g/m ³) – 85% r.h. (25 g/m ³)
Temperature fluctuation:	0.5 K/min (max. 7.5K/30 min)
Atmospheric pressure	70 kPa – 106 kPa
(70 kPa corresponds to installation approx. 3000m above sea level) Installation environments with long exposure to the sun should be avoided.	

Storage requirements	
EN 60721-3-1, class 1k2 Environmental test IEC 68 / EN60068	
Air temperature:	+5° C to +40° C
Humidity:	5% r.h. (1g/m ³) – 85% r.h. (25 g/m ³) 0.5 K/min
Temperature fluctuation:	0.5 K/min (max. 7.5K/30min)
Transport requirements	
EN 60721-3-2, class 2k2 Environmental test IEC 68 / EN60068	
Air temperature:	-25° C to +60° C
Humidity:	15% r.h. (1 g/m ³) – 98% r.h. (32 g/m ³)
Temperature fluctuation:	--25° C / +25° C

Manufacturer Certification



This device fulfills the requirements of EU Regulations 89/336/EEC "Electromagnetic Compatibility Directive" and 73/23/EEC "Low Voltage Directive".

The device carries the CE logo on its rear side, or the logo is located on the packaging.

Tested Safety



This POS system has been provided with the symbol for "Tested Safety".

BEETLE /M-II: CPU Characteristics

Supported System	BEETLE /M-II
Architecture	PC-AT compatible and POS - specific functional units
Technology	TTL,CMOS,LVT; SMD + 5V, +3.3V, AGTL+ Technology
Operating Modes	Normal mode, Power save mode
Power management	ACPI 1.0, APM 1.2
Operating systems	WIN XP, WIN XP Embedded, LINUX
Microprocessor:	INTEL Pentium ^R 4-M (mobile, 478 Pin uFCPGA package, 0.13 u technology) <i>or</i> INTEL Mobile Celeron ^R (478 Pin uFCPGA package, 0.13 u technology) Frequencies from 1.7GHz to 2.4GHz (Processor dependent) 8 KB L1 data cache, 12 KB L1 program cache, up to 512KB L2 cache (Processor dependent)
Chipset:	INTEL Chipset 845GV (contains 2 ICs): Graphic and Memory Controller Hub (GMCH) with following functions: Memory Controller supports DDR SDRAM with 266MHz system memory Bus, Video memory is part of main memory, supports 2D and 3D and video streams Plug and Display functionality Video memory for resoution max. 8 MB, Video memory with INTEL Extreme Graphics Driver max. 64MB (Dynamic Video memory technology)

Max. resolution CRT:2048 x 1536 x 32 @ 60Hz

Max. resolution TFT screen:1600 x 1200 x 32 @ 60Hz

I/O Controller Hub 4 (ICH4) with following functions:
LAN 10/100 Controller., IDE-Controller with. UDMA,
USB Controller. UHCI and EHCI, AC97 Link for Audio and telephony CODEC, Interrupt-Controller., DMA-Controller., LPC-Interface, RTC, SMBus-Host Interface

Super I/O:
Functions:

NS87366 with following functions

Floppy Controller, Parallel port, 2 serial ports, Keyboard interface, PS/2-Mouse interface, HW- Monitor

Sound-Controller:

CS4299 Audio Codec Controller with following AC'97 functions:
20 Bit Stereo DAC and 18 Bit Stereo ADC
Analog Line-Level Input (CD)
Mono Mic input (MIC)
Stereo Line-Level output

Sound connection:

Mono Mikrophone input, Stereo speaker Output (2 x 1,25 W @ 8 Ohm)

Main memory:

128 MB up to 2GB, 2 DIMM sockets (184 pin), 2.5 V
DDR SDRAM Technology, unbuffered nonECC, DDR266 - Standard DIMM
Height up to 35 mm

Riser-Card Interface:

PCI-Bus (32 bit Interface, 33MHz)

BIOS:

Firmware Hub 82802 (FWH):
512MB Flash Memory, Phoenix BIOS, PnP, PCI Rev.1.0A, DMI –support

Battery:

3 V Lithium for RTC and SIO
Typ: CR1/3 N , 160 mAh

System Bus Frequency	400MHz
RAM Bus Frequency:	266 MHz
PCI Bus Frequency:	33 MHz
Wake On features:	Wake On LAN (with connector for Standard LAN adapter), Wake On MODEM, Wake On Time, Wake On USB
Keyboard connection:	PC-AT compatible
PS/2-Mouse connection:	via Y-cable together with keyboard, optional internal connection
Serial interface	COM1, COM2* COM3*, COM4* adapter optional and alternatively for (USB2plus, USB3plus, USB4plus)- Adapter
Parallel Interface:	IEEE1284 compatible (ECP, EPP, PS/2-compatible)
Loudspeaker:	AT-compatible, volume control defined by BIOS Setup, 3 steps: high, medium, low volume
Floppy Disk connection:	Standard interface CMOS, NEC 765 compatible, foil connector
Hard Disk Connection:	Local Bus IDE Interface, Primary/Secondary for 4 drives, PIO Mode 0 - Mode 4, ULTRA DMA Mode 0 – Mode 2 primary: 2mm secondary: 2mm Connection
USB Connection:	USB1.1, USB 2.0 USB1, 2: Standard 2 port Connection, Series A ; USB3,USB4,USB5 and USB6: Several adapters and possibilities for connecting at rear and front (tbd)
Cash Drawer Connection:	Up to two cash drawers can be connected.

	Connection via internal RJ12 connector inside power supply (only for one cash drawer)
Gameport	2 x 8 pin 2.54 mm connector
PCI Plug-in card Interface:	32 bit Interface, 33 MHz
Status display connection:	Support for LEDs: Power On and HD activity
Current consumption: (E1 with Pentium 4-M/2GHz and 512MB Ram)	+3,3 V ~ 3,5 A + 5 V ~ 0,7 A + 12 V ~ dependent on processor
Max. Current for keyboard	+5V: 500 mA
Max. Current per port (for COM2*,3*,4*)	+12V: 600 mA
Max. Current in total (for COM2*,3*,4*)	+12V: 900 mA
Max. Current per port (for COM2*,3*,4*)	+ 5V: 300 mA
Max. Current in total (for COM2*,3*,4*)	+ 5V: 500 mA
Max. Current per port Standard USB1,USB2	+ 5V: 500 mA
Max. Current in total Standard USB1,USB2	+ 5V: 1,0 A
Max. Current per port Powered USB	+ 5V: 500 mA +12V: 1,5 A +24V: 3,0 A
Max. Current in total Powered USB	+ 5V: 1,5 A +12V: 2,0 A +24V: 3,0 A
Fuses (Polyswitches): +5V:	COM2*, COM3*, COM4*,

+12V: USB1, USB2, Keyboard, Mouse
 Powered USB (Fuse on adapter)
 COM2*
 COM3*, COM4* (Fuse on adapter)
 Powered USB (Fuse on adapter)

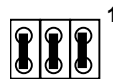
+24V: Powered USB (Fuse on adapter)

Board Dimensions: approx. 255mm x220mm

Jumper Setting

PT 3	PT 2	PT 1	VIDEO-Mode	DISPLAY-Size	Display Typ / Clock Freq.
closed	closed	closed	SVGA	TFT 12"	BA 72A (30 MHz)
closed	closed	open	XGA	TFT 15"	BA 73A (65 MHz)
closed	open	open	SVGA	TFT 12"	BA 72A-1 (38 MHz)
open	closed	closed	VGA	TFT 10"	640 x 480

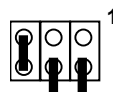
12" Monitor BA72A PT:



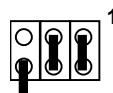
15" Monitor BA73A PT:



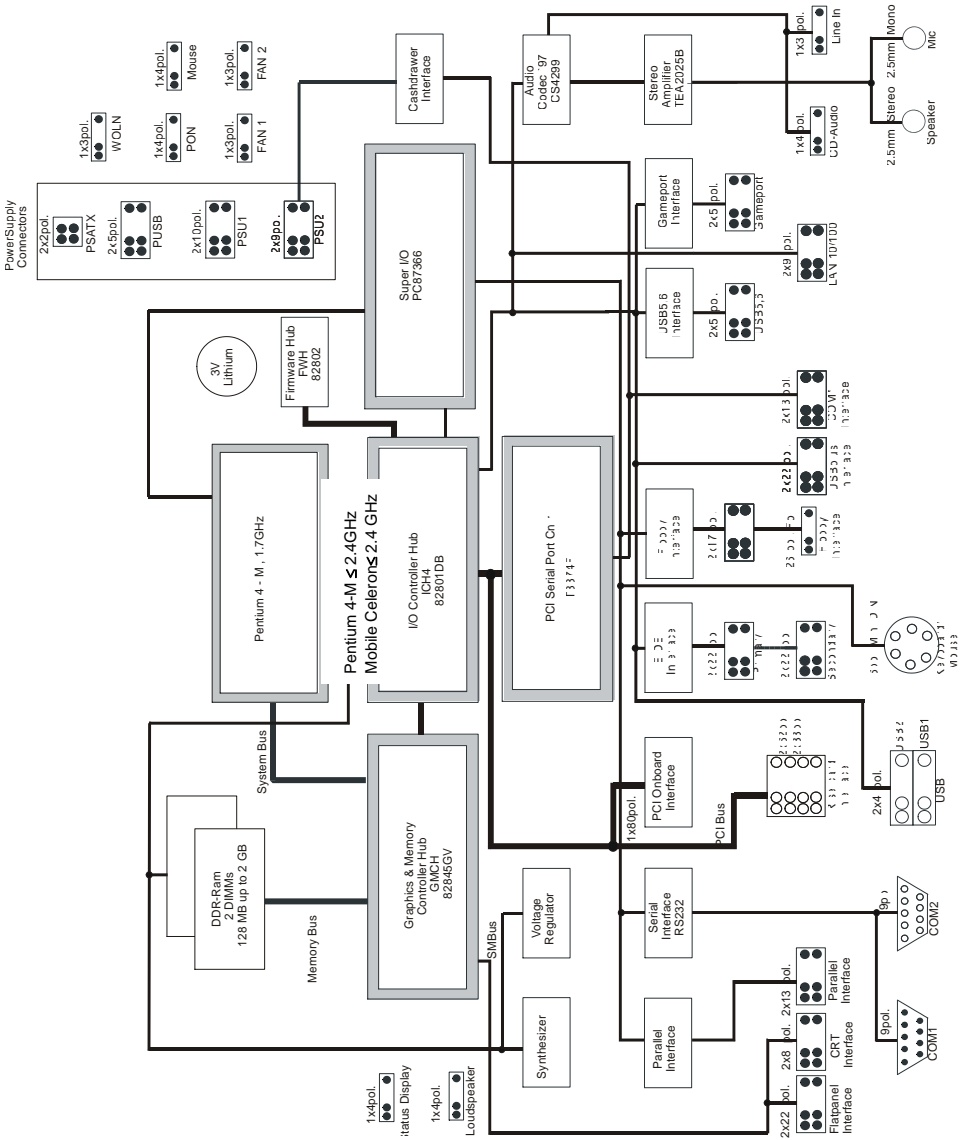
12" Monitor BA72A-1 PT:



10" Monitor 640 x 480 PT:



Using a PnP TFT Monitor the jumper have no function.



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