# **Rugged Box and Panel PCs**

Flexible, fanless and maintenance-free solutions for transportation and industrial markets









Box and panel PCs from MEN are based on a flexible, modular concept in terms of processor performance, interfaces and PSU types as well as display type and size.

The design is always accomplished without fans, using conductive cooling to spread the dissipated heat to the outside of the housing. Standard versions comply with the EN 50155, class Tx railway standard and are prepared for e1 certification.

Based on an innovative concept our box PCs offer the highest flexibility by separating the external interfaces from the main PCB. This way the interfaces can be configured individually and can quickly be tailored to almost any application in transportation and industrial markets and to the required standard.

MEN panel PCs are currently deployed, e.g., as infotainment or digital signage platforms, as ticketing machines or other human-machine interfaces (HMI) in industrial automation, in driver desk applications or to supervise the passenger area of the vehicle or the platform.

Rugged box PCs are used in industrial applications e.g. for machine control, surveillance or robotics and in all kinds of mobile machines to assist or replace the driver, e.g. in agricultural, mining or construction machines. Other application examples include SCADA systems for traffic and fleet management, automotive data loggers for driver assistance, connectivity, diagnosis and electromobility or board computers for passenger information systems and video surveillance in buses, trains and light-rail vehicles.





# **Rugged Box & Panel PCs**

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## **Box PCs**

### **BC50I – Box PC for Industrial Applications**

- AMD Embedded G-Series Dual-Core APU
- 2 Gigabit Ethernet, 2 USB 2.0, 2 DisplayPorts
- WLAN, UMTS, GPS, GSM, HSDPA, EDGE, LTE via 1 PCI Express<sup>®</sup> Mini Card slot
- 2 slots for IBIS, GPS, RS232, RS485, RS422
- -40°C to +70°C operating temperature

The BC50I has been designed for industrial applications, e.g. for machine control, surveillance or commercial vehicles or robotics.

The two DisplayPort<sup>®</sup> interfaces and all other I/O are available at the unit's front panel on standard connectors like USB, 9-pin D-Sub (serial I/O optional), RJ45 (Gigabit Ethernet) and DisplayPort<sup>®</sup>. The system offers one PCI Express<sup>®</sup> Mini Card slot with a SIM card slot. The BC50I comes with its own integrated 24 VDC nom. (16 to 36 V) power supply.





### BC50M – Box PC for In-Vehicle Applications

- AMD Embedded G-Series Dual-Core APU with 2 GB DDR3 SDRAM
- Two DisplayPort channels with a resolution of up to 2560 x 1600
- -40°C to +70 (+85)°C operating temperature
- Up to IP65 rating optional
- EN 50155 compliant
- e1 certification ready

The BC50M has been designed for mobile applications, e.g. in trains, commercial vehicles, mobile machines or airplanes.

The DisplayPort<sup>®</sup> interfaces and all other I/O are available at the unit's front panel on standard connectors like USB, 9-pin D-Sub (serial I/O and HD audio, both optional), 8-pin M12 (Gigabit Ethernet) and DisplayPort<sup>®</sup>. The system offers two PCI Express<sup>®</sup> Mini Card slots with two SIM card slots. As an option the first PCI Express<sup>®</sup> Mini Card can also switch between the two SIM cards.

# BL50W – Box PC for Wireless Applications (available by end of September 2013)

- AMD Embedded G-Series Dual-Core APU with 2 GB DDR3 SDRAM
- 2 DisplayPorts, up to 2560 x 1600 each
- 4 PCI Express<sup>®</sup> Mini Card slots for WLAN, UMTS, GPS, GSM, HSDPA, EDGE, LTE, 9 antenna cut-outs and 8 SIM card slots
- GPS interface
- -40 to +85°C operating temperature

The BL50W has been designed for wireless applications, e.g. in trains, commercial vehicles, mobile machines or airplanes.

It supports up to two DisplayPort<sup>®</sup> interfaces with full HD resolution. In addition, a multitude of other I/O is available at the front panel, including two Gigabit Ethernet, two USB 2.0, variable slots for legacy serial I/O (e.g. RS232) or CAN bus, general purpose inputs and relay outputs. The BL50W comes with its own integrated 30 W 24 VDC nom. (9 to 36 V) power supply, is compliant with EN 50155 and prepared for e1 certification.



# **Box PCs**



### 19" Insertion Frame for Box PCs

- For insertion of box PCs into standard 19" cabinets
- Including two special heat sinks
- For box PCs with mobile, wireless, storage, fieldbus or graphics functions

The 19" insertion frame is an accessory for MEN's box PCs such as the BC50M or the BC50I. Using the frame, the box PCs can be inserted into a 19" cabinet. Having a width of 483 mm, a height of 43.6 mm and a depth of 237 mm, the frame fits standard 19" dimensions.

Read more about box PCs: www.men.de/000576

# Panel PCs

# DC13 – Rugged 8.4" Panel PC with Front Keys

- 8.4" 4:3 TFT LCD panel, 800 x 600 pixels resolution
- Intel<sup>®</sup> Atom<sup>™</sup> E600 series
- 1 USB 2.0 Type A, 1 Fast Ethernet on M12
- Power supply via PoE Class 0 (48 VDC nom)
- -30 to +85°C operating temperature

The DC13 is a rugged, fanless and maintenance-free human-machine interface (HMI) especially designed for interactive railway applications with a power consumption of less than 13 W. It complies with the EN 50155 class Tx railway standard, fulfills IP65 and comes with 20 backlit front keys with tactile feedback. For wireless functions a PCI Express<sup>®</sup> Mini Card slot with an external antenna can be made available. Other screen sizes (7" to 15") or other aspect ratios as well as other types of the Intel<sup>®</sup> Atom<sup>™</sup> processor or a larger memory can be realized easily.





### DC2 – Rugged 10.4" Touch Panel PC

- 10.4" 4:3 TFT LCD, 1024 x 768 pixels resolution
- 2 Fast Ethernet, 2 USB
- -40 to +85°C operating temperature
- Prepared for e1 (automotive), IP65 (front), IP20 (rear)
- Windows<sup>®</sup> XP Embedded image (120-day trial version)

The DC2 with its capacitive touch panel is controlled by the Intel<sup>®</sup> Atom<sup>™</sup> XL Z520PT running at 1.33 GHz, comes with 1 GB of DDR2 SDRAM and a built-in 2 GB microSD<sup>™</sup> card. The two Ethernet interfaces have switch functionality to provide Ethernet connection to subsequent intelligent displays. The unit's control electronics are directly attached to the back of the display, hence bigger screen sizes or other aspect ratios can be realized easily. A PCI Express<sup>®</sup> Mini Card slot can be used to incorporate wireless functions.

### DC1 – Rugged 15" Panel PC

- 15" 4:3 TFT LCD panel, 1024 x 768 pixels resolution
- Wide-range PSU 24 VDC nom. (14.4 to 33.6 V)
- -40 to +85°C operating temperature
- EN 50155 compliant
- Windows<sup>®</sup> XP Embedded image (120-day trial version)

The DC1 is a rugged, fanless and maintenance-free panel PC for harsh, mobile and mission-critical applications. Its robust stainless enclosure is protected against violent impacts and designed for, e.g., info-tainment purposes in trains, public buses or airplanes. The DC1 is controlled by the Intel<sup>®</sup> Atom<sup>™</sup> Z530 running at 1.6 GHz. It comes with 1 GB of DDR2 SDRAM and 4 GB of USB-driven Flash disk. The standard interfaces comprise two Fast Ethernet and two USB ports as well as four binary inputs (with a fifth used for key input functionality).

Read more about panel PCs: www.men.de/000577





## **Panel PC Electronics**



### SC27 – Compact Intel<sup>®</sup> Atom<sup>™</sup> SBC for Intelligent Displays

- For LCD TFT panels sized from 7" up to 15"
- LVDS up to 1280 x 768
- Intel<sup>®</sup> Atom<sup>™</sup> E600 series, up to 1.6 GHz
- Up to 2 GB DDR2 SDRAM, mSATA and microSD<sup>™</sup> slot
- 1 Fast Ethernet, 2 USB 2.0, 1 GNSS interface
- PCle<sup>®</sup> Mini Card and microSIM card slot
- -40°C to +85°C operating temperature
- EN 50155 compliant, prepared for e1 certification

### SC24 – AMD G-Series SBC for Multi-Display Control

- For LCD TFT panels sized from 12" to 60"
- AMD T48N, 1.4 GHz
- 2x2 DisplayPorts (2x 2560x1600 and 2x 1920x1200 or 4x 1920x1200)
- Up to 4 GB DDR3 RAM
- SD card (2 GB pre-installed) and mSATA slots
- -40°C to +85°C operating temperature (screened)
- EN 50155 compliant, prepared for e1 certification
- To be used together with graphics and I/O interface board (e.g. AE51)

### SC21 – Intel<sup>®</sup> Atom<sup>™</sup> SBC for Intelligent Displays

- For LCD TFT panels sized from 10.4" up to 21"
- LVDS up to 1366 x 768
- Intel<sup>®</sup> Atom<sup>™</sup> Z520PT, 1.33 GHz
- 1 GB RAM, microSD<sup>™</sup> card slot
- PCI Express<sup>®</sup> Mini Card and SIM card slot
- 2 Fast Ethernet, 2 USB 2.0
- -40°C to +85°C operating temperature (screened)
- EN 50155 compliant (with special PSU), prepared for e1 certification

### AE51 – Graphics and I/O Interface Board for Display Computers

- 2 DisplayPorts
- 2 Gb Ethernet on M12 connectors
- 1 USB 2.0
- 2 PCI Express<sup>®</sup> Mini Card and SIM card slots
- 2 SA-Adapter<sup>™</sup> slots for 2 UARTs (alternative: 1 IBIS or GPS and 1 CAN bus)
- HD audio (optional)
- -40°C to +85°C operating temperature (screened)
- EN 50155 compliant, prepared for e1 certification

#### AE63 – Display Control Board

- DisplayPort<sup>®</sup> to LVDS adapter
- Temperature monitoring
- Backlight control
- Touch interface
- Key interface
- 12 to 24 V power supply
- -40°C to +85°C operating temperature (screened)

Read more about panel PC electronics: www.men.de/000578



Learn more about box and panel PCs! www.men.de/000579

### www.men.de