

DC17

Rugged 12.1" Panel PC with Touch Screen Railway Display Computer

- » 12.1" display with LED backlight
- » 1024 x 768 pixels resolution
- » AMD Embedded G-Series
- » Wireless communication 2G, 3G, 4G, WLAN, GNSS
- » MVB interface
- » All external interfaces on M12 connectors
- » -40°C to +70°C operating temperature
- » Fanless and maintenance-free design
- » Compliant to IP65 (front) and EN 50155 (railway)
- » Windows and Linux support



Robust Panel PC for Interactive Rail Applications

The DC17 panel PC is a rugged, fanless and maintenance-free human-machine interface (HMI) for railway applications. It features a 12.1" display and a projected capacitive touch screen.

Its small, ultra-flat mechanical design and configuration options save space in the driver cabin and allow the panel to be tailored for all types of applications in different train models. In addition, its full software compatibility with the [10.4" DC15 panel PC](#) both increases flexibility and lowers costs, e.g., if an upgrade to a larger panel is necessary.

High-Quality, High-Resolution Display

The DC17 houses a robust impact-resistant XGA TFT LCD display with LED backlight, and features high illumination intensity. This ensures good readability, even when exposed to sunlight. It also features a buzzer for alarm purposes, as well as LEDs and a light sensor at the front. Due to its high resolution and optimized usability, it is a perfect choice for applications like CCTV.

Powerful & Energy-Efficient Computing

Built around a T40E AMD Dual Core processor with 1.0 GHz, the DC17 is equipped with 2 GB RAM and a 16 GB mSATA disk. Standard interfaces include two Fast Ethernet, one USB, one CAN, one audio, one GPIO, and one serial - all available on M12 connectors at the back of

the panel PC.

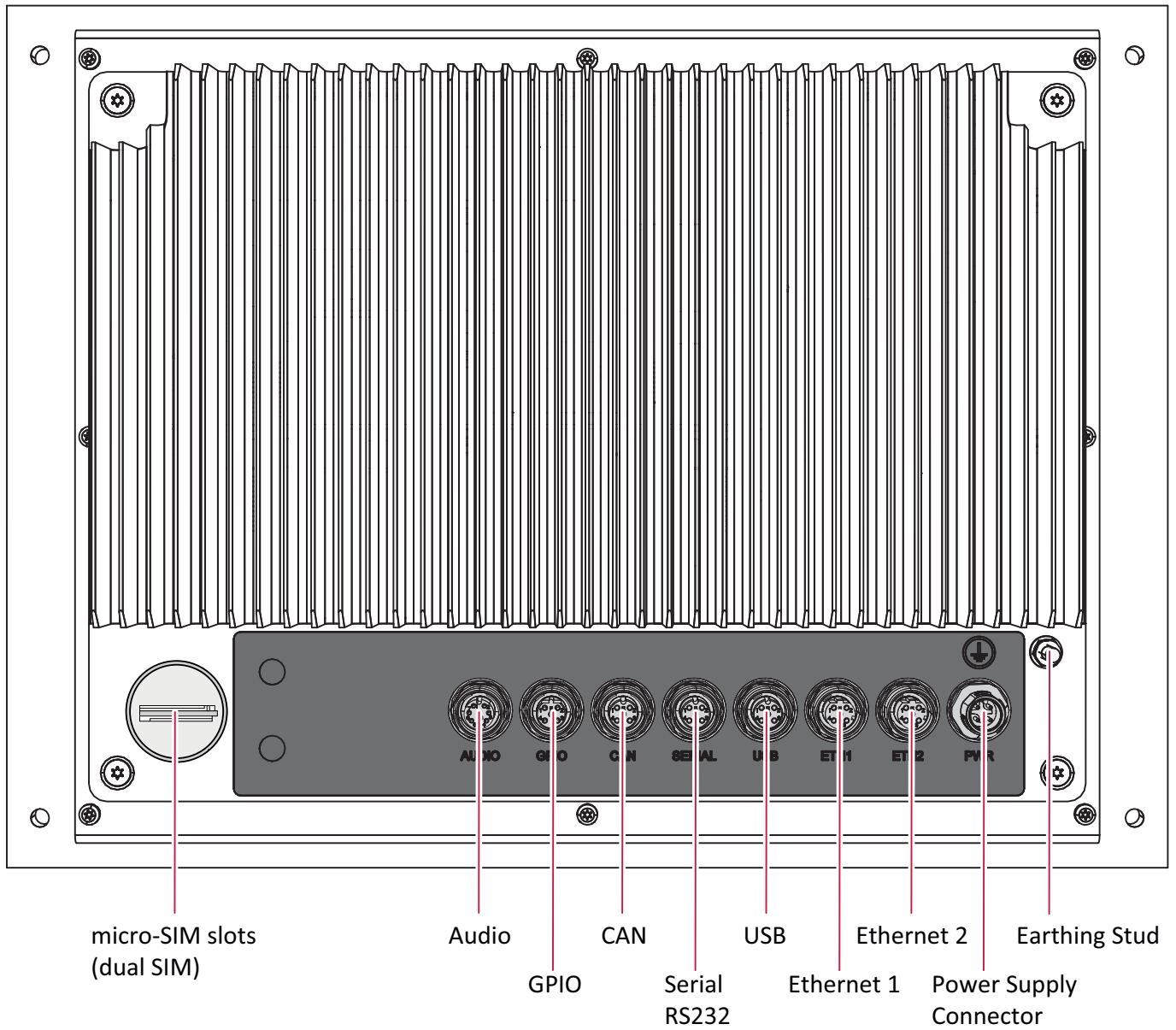
An M.2 slot and PCI Express Mini Card interface can control wireless communication functions like 2G, 3G, 4G and GPS. Two micro-SIM card slots with dual-SIM functionality are accessible at the back of the panel.

Flexible Rail Network Connection Options

The DC17 can provide Multifunction Vehicle Bus (MVB) master or slave support where necessary, by adding an MVB PCI Express Mini Card from Duagon. This makes the display scalable for different applications.

Extremely Rugged, Perfectly Rail-Ready

The DC17 comes with an extremely rugged housing with an IP65 compliant front. It supports a railway-compliant power supply of 24 or 110 VDC, its internal PSU complying with EN 50155 class S2. Also in compliance with the standard, the DC17 operates in a class TX -40°C to +70°C environment (+85°C for 10 minutes), achieved through fanless conduction-cooling technology. All electronic components are soldered to withstand shock and vibration, backed up by its solid M12 connectors, and are protected by conformal coating. The panel PC meets all important requirements for railway equipment for fast, competitive time-to-market even in mission-critical environments. At the same time its long availability and life-time of seven years reduces overall system costs.



CPU

- AMD G-Series T40E Dual-Core
 - 1.0 GHz processor core frequency

Display

- Screen size: 12.1"
- Resolution: 1024 x 768 pixels
- Luminance: 350 cd/m²
- Colors: 16.2 M
- Viewing angle: Horizontal/vertical: min. +/- 80°
- Anti-glare safety glass
- Ambient light measurement
- Software controlled display brightness

Touch Panel

- Touch: Projected Capacitive Touch (PCT) screen
- Two finger multi-touch
- Front panel status LEDs
- Light Sensor
 - Measures ambient light and adapts display brightness

Memory

- 2 GB DDR3 RAM
- 16 GB mSATA (aMLC)

Rear Interfaces

- Ethernet
 - Two 100 Mbit/s Fast Ethernet
 - M12 4-pin, D-coded connectors
- USB
 - One USB 2.0 interface
 - M12 5-pin, A-coded connector
- Serial Interface
 - One RS232 interface
 - Software-configurable as RS422/RS485
 - M12 5-pin, A-coded connector
- CAN
 - One CAN interface
 - M12 5-pin, A-coded connector
- GPIO
 - One GPIO interface
 - M12 5-pin, B-coded connector
- Antenna connections (optional)
 - One RP-SMA interface for 2G, 3G or 4G
 - One SMA interface for GPS
 - Available via PCI Express Mini Card, or M.2 card (not included)
- Multifunctional Vehicle Bus (MVB) (Optional)
 - Optional MVB EMD or ESD+ according to IEC 61375
 - Process Data (PD), Message Data (MD) and Bus Administrator (BA)
 - Available via Duagon PCI Express Mini Card (not included)
- Audio
 - One audio interface
 - Adjustable volume level
 - Single ended stereo line in
 - Differential stereo line out
 - M12 8-pin, A-coded connector

Power Supply

- One power input interface
 - M12 4-pin, A-coded connector
 - Power supply input voltage ranges of 14.4 to 33.6 VDC or 66 to 154 VDC
 - Nominal input voltages 24 VDC or 110 VDC versions available
 - Holdup time: 10 ms according to Class S2
- Reverse polarity protection
- Power consumption: approx. 30 W

Additional Features

- Watchdog
- Operating hour counter
- Power cycle counter
- CPU and display temperature measurement
- Buzzer for signaling alarm
- Externally accessible µSIM sockets

Mechanical Specifications

- Dimensions
 - Device: 350 mm x 260 mm x 90 mm
 - Cut-out: 305 mm x 243 mm
- Weight: 6000 g max.
- Ingress Protection
 - Front: IP65
 - Back and sides: IP20
- Color: RAL7021; RAL9003 (Font)

Environmental Specifications

- Temperature range (operation):
 - -30°C to +70°C for the display panel
 - -40°C to +70°C, with up to +85°C for 10 minutes according to class TX (EN 50155) for the computer
 - Display is turned off at extreme temperatures
 - Convection cooling
 - Fanless operation
- Temperature range (storage): -40°C to +85°C
- Humidity: EN 60068-2-30, EN 50155
- Altitude: -300 m to +3000 m
- Shock: EN 61373, EN 50155
- Vibration: EN 61373, EN 50155
- Conformal coating of internal components on request

Reliability

- MTBF
 - 48 032 h @ 40°C according to IEC/TR 62380 (RDF 2000) (model 09DC17-00)
 - 48 195 h @ 40°C according to IEC/TR 62380 (RDF 2000) (model 09DC17-01)

Safety

- Electrical Safety
 - EN 50153
 - EN 50155
- Fire Protection
 - EN 45545-2

EMC

- EN 50121-3-2

Software Support

- Linux
- Windows
 - Windows 7 Embedded

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Up-to-date information, documentation and ordering information:

www.men.de/products/dc17/

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