DC15

Rugged 10.4" Panel PC with Front Keys or Touch Screen
UIC 612 Railway Display Computer

- » *10.4" display with LED backlight*
- » *1024 x 768 pixels resolution*
- » *AMD Embedded G-Series*
- » *Wireless communication 2G, 3G, 4G, WLAN, GNSS*
- » *MVB interface (optional)*
- » *All external interfaces on M12 connectors*
- » *-40 °C to +70 °C (+85 °C), fanless*
- » *Maintenance-free design*
- » *Compliant to IP65 (front) and EN 50155 (railway)*
- » *Windows and Linux support*

Robust Panel PC for Interactive Rail Applications
The DC15 panel PC is a rugged, fanless and maintenance-free human-machine interface (HMI) for railway applications. It features a 10.4" display and a projected capacitive touch screen or 32 illuminated front keys. 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 12.1" DC17 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 DC15 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 DC15 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 DC15 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 DC15 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 -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.

Data Sheet

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10.4"

214 mm

310 mm

AUDIO   GPIO   CAN   SERIAL   USB   ETH1   ETH2   PWR
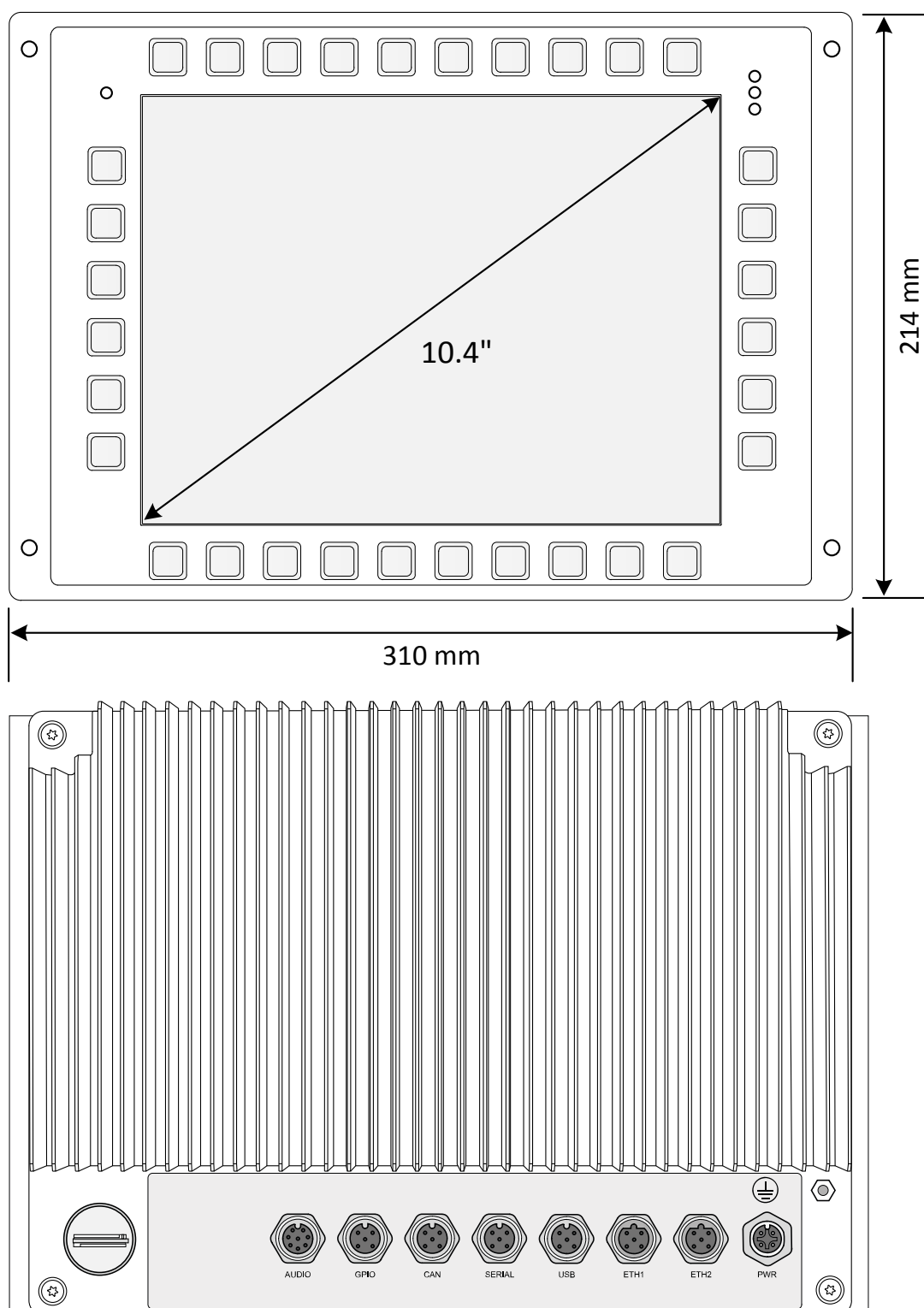
CPU	▪ AMD G-Series T40E dual-core, 1.0 GHz processor core frequency

Display	▪ Screen size: 10.4" ▪ Resolution: 1024 x 768 pixels ▪ Luminance: 350 cd/m² ▪ Colors: 16.2 M ▪ Viewing angle: +/-80° min. horizontal/vertical ▪ Anti-glare safety glass ▪ Ambient light measurement ▪ Software controlled display brightness

Memory	▪ System RAM
	  □ Soldered DDR3
	  □ 2 GB
	▪ mSATA
	  □ 16 GB (aMLC)
	  □ 2 GB, 4 GB or 8 GB (optional)

Wireless Functionality	▪ The following devices can be assembled:
	  □ One PCI Express Mini Card, Full-Mini
	  □ One M.2 card, Type 3042
	  □ Two micro-SIM cards

Front Interfaces	▪ Touch panel (optional)
	  □ Projected Capacitive Touch (PCT)
	  □ Two finger multi-touch
	▪ Status LEDs
	▪ Light sensor
	▪ Front keys (optional)
	  □ 32 keys with tactile feedback
	  □ Complying with UIC612-01 (Display System in Driver Cabs)

In-System Interfaces	▪ mSATA
	  □ One mSATA slot
	▪ PCI Express Mini Card
	  □ One PCI Express Mini Card slot
	  □ PCIe, USB 2.0
	▪ M.2
	  □ One M.2 slot
	  □ USB 2.0

Technical Data

Rear Interfaces

- Ethernet
  - Two 4-pin M12 connectors, D-coded, 100BASE-T
- USB
  - One 5-pin M12 connector, A-coded, USB 2.0
- Antenna connections (optional)
  - Two antenna connector cutouts
  - For wireless interface cards
  - One RP-SMA connector for 2G, 3G or 4G (optional)
  - One SMA connector for GPS (optional)
- SIM card
  - Two micro-SIM card slots, dual SIM
- UART
  - One 5-pin M12 connector, A-coded
  - Software-configurable as RS232/RS422/RS485
- CAN
  - One 5-pin M12 connector, A-coded
- GPIO
  - One 5-pin M12 connector, B-coded
- Multifunctional Vehicle Bus (MVB) (optional)
  - 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 8-pin M12 connector, A-coded
  - Adjustable volume level
  - Single ended stereo line in
  - Differential stereo line out
- Power Supply
  - One 4-pin M12 connector, A-coded

Supervision and Control

- Watchdog
- Operating hour counter
- Power cycle counter
- CPU temperature measurement
- Buzzer for signaling alarm
- Display temperature measurement (display off at extreme temperatures)

Electrical Specification

- Power Supply
  - 24 V or 110 V DC nominal; 14.4 V to 33.6 V DC or 66 V to 154 V DC max. (EN 50155)
  - Power interruption class S2 (10 ms) (EN 50155)
- Reverse polarity protection
- Power consumption
  - 30 W approx.

Mechanical Specifications

- Dimensions
  - Device: (W) 310 mm, (D) 214 mm, (H) 75 mm
  - Cut-out: (W) 280 mm, (H) 205 mm
- Weight: approx. 4500 g

Technical Data

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
	■ Temperature range (storage): -40 to +85°C
	■ Cooling concept
	  □ Fanless operation, natural convection
	■ Humidity: EN 60068-2-30, EN 50155
	■ Altitude: -300 m to +3000 m
	■ Shock: EN 61373, EN 50155
	■ Vibration: EN 61373, EN 50155
	■ Protection rating
	  □ IP65 (Front)
	  □ IP20 (Back and sides)

Reliability	■ MTBF □ 48 242 h @ 40°C according to IEC/TR 62380 (RDF 2000) (model 09DC15-00)

Safety	■ Electrical Safety
	  □ EN 50153
	  □ EN 50155
	■ Fire Protection
	  □ EN 45545-2, hazard level HL3

EMC	■ EN 50121-3-2
BIOS	■ InsydeH2O UEFI Framework
Software Support	■ Linux ■ Windows □ Windows 7 Embedded

Technical Data

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www.men.de/products/dc15/

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