



DESCRIPTION

Purpose built - The DG-DRM28-R PIS display architecture, functionality, enclosure, connectors and structure is designed for high availability and 24/7 operating railway applications.

Resistant – DG-DRM28 –R is designed to withstand the mechanical, electrical and environmental stress encountered in extreme rolling stock installations.

Wide temperature range - A wide operating temperature range ensures reliable continuous operation from -25~ +55°C. The system is completely fanless, and features an internal temperature monitoring and thermal protection system.

Thermal design – The isolated power supply is conduction cooled, increasing operational reliability over the wide operating temperature range. The DRM28-R display bases on a dual core 1GHz i.MX6 processor with Duragon's embedded LINUX display and content management software.

Compliance - The DRM28-R display is compliant with

- EN50155, EN50121 (railway installations)
- IP52 according to IEC 60529

Connectivity - Comprehensive set of connectivity interfaces

- Isolated MVB Interface – EMD and ESD+ (Duagon)
- 802.11 b/g/n WiFi with integrated antenna
- 10/100/1000MBit Ethernet, Isolated serial RS-485
- 3G/LTE modem with integrated antenna and SIM Slot (option)

Functionality – The DRM28-R Dynamic Route Map and PIS Display does not require a host PID server, it works with minimal system overhead due to its completely autonomous operation in the management of the display and route map, rich media content and advertising. It is designed to connect to onboard TCMS systems for display control information. This system is ideal for train modernization and upgrade programs.

GENERAL FEATURES

- Ultra Wide 28" 16:3 aspect ratio display
- LED backlight with full SW control
- Resolution 1920 x 357
- Brightness 1000nits, contrast 3000:1
- Internal 802.11 WiFi and GBit LAN
- MVB and Serial RS-485 for TCMS interface
- Low power dual core i.MX6 processor
- Advanced display management SW
- Full qualifications for railway use
- 1500V Isolated Railway class power supply with 110VDC Input

DG-DRM28-R is a fully integrated stand-alone Dynamic Route Map System for railway applications which require high service availability and easy integration with other onboard systems. The DRM28-R features an internal dual core LINUX i.MX6 display management processor with turn-key firmware to manage static, changing image or live video content on the display. Dynamically updated Route Map information can be combined with station, status and advertising content.

TCMS or ETBN integration can use Ethernet, RS-485 or an optional MVB (ESD+ and EMD) interfaces. The **DRM28-R** based dynamic route map system does not require an onboard PID controller. Furthermore it can operate within one coach in master-slaves configuration over RS-485 simplifying in-coach wiring and reducing required Ethernet ports. Local storage can be used to store media content which can be updated from the main depot PIS server over WiFi. The **DRM28-R** can include a 3G/LTE modem for system service and management access.

Hardware description

Integration and functionality are optimally balanced in the **DG-DRM28** dynamic route map display. A sunlight readable high contrast LCD display supports full HD resolution. The internal 1GHz dual core i.MX6 system processor manages all the display's functionality including safe power on-off, temperature monitoring, backlight control and event logging as well as interfacing with other onboard systems. The optional internal 3G/LTE modem can be used for remote monitoring and control operations. A proven 1500Vdc isolated railway class power supply can accept nominal 110VDC.

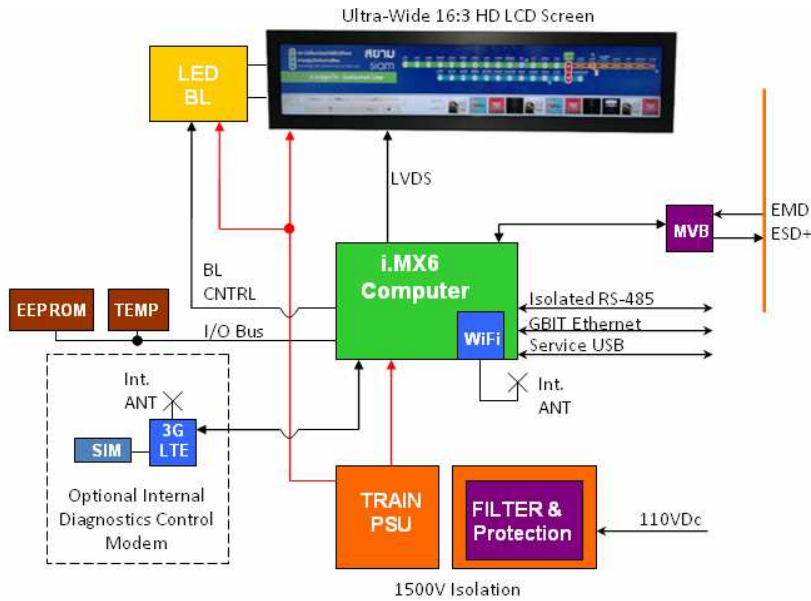
Future Proof

Our design approach reduces lifecycle costs and migration challenges. The technology of the DG-DRM28-R is based on commercial standards, Industrial-Grade components and a design leveraging 20+ years of paradigm experience in railway systems design.

DG-DRM28-R

28" Ultra-Wide Dynamic Route Map System

Simplified Block Diagram



Technical Specifications	
Power Supply	110VDC nominal 66-160VDC , EN50155 1500VDC Isolation Conduction cooling, Railway-Class input protection and filtering
Power Consumption	Max. 35W with full brightness
Environmental	-25°C to +55°C operating -25°C to +70°C storage
Ingress Protection	IP52
Certification	EN50155, EN50121
Interfaces	MVB (EMD and ESD+) (Option) Isolated RS-485 10/100/1000Mbit Ethernet, 802.11b/g/n WiFi with integrated antenna GPRS/3G/LTE modem w. integrated antenna and internal SIM card slot (Option)
Display	28", 1920 x 357 pixel resolution, active viewing area 698.4 (H) x 129.86(V) 1000nit brightness, 3000:1 contrast LED backlight with full SW control, temperature dependent brightness control (>50°C) Over temperature shutdown
System	Low power dual core 1GHz i.MX6 control processor LINUX OS with advanced display operation and content management firmware Event logging and reporting Protection for safe operation, power-on and – off, intelligent backlight control Support for Customization of System Software
Connectors	External connectors: <ul style="list-style-type: none">- 10/100/1000Mbit Ethernet (X-coded M12)- MVB (2x D9) , Isolated RS-485 (A-coded M12)- Power Input (A-Coded M12)- USB under service panel (for authorized service only)
Mechanical	733.78(W) x 165.34(H) x 65.8(D), Weight 4.5 kg, Black powder coated aluminum/sheet metal enclosure