



DESCRIPTION

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

Resistant – DG-DRM28 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 -20 ~ +55°C. The system is completely fanless, and features an intelligent internal temperature monitoring and thermal protection system.

Thermal design – The conduction cooling of the system increases operational reliability and guarantees the wide operating temperature range. The DG-DRM28 display integrates a single core 1GHz i.MX6 processor with Dragontech's embedded Linux display and content management software.

Compliance - The DRM28 display is compliant with:

- EN50155, EN50121 (vehicle and bus installations)
- EN61373 (Shock and vibration)
- IP54 (front face) according to IEC 60529 – IP40 for rear enclosure and connectors

Connectivity - Comprehensive set of connectivity options

- MVB Interface – EMD and ESD (Duagon)
- 802.11 b/g/n WiFi
- 10/100/1000MBit Ethernet, Isolated RS-485, CAN
- 3G Modem

Functionality – The Dynamic Route Map and PIS display does not require a host coach computer. It can work with minimal system overhead due to its completely autonomous operation in the management of display and route map, rich media content and advertising. It is designed to connect to onboard TCMS systems to receive information for display control. Wiring is simplified and installation in modernization and upgrade programs is made easy.

GENERAL FEATURES

- Ultra Wide 28" 16:3 aspect ratio display
- LED backlight with SW control
- Resolution 1920 x 357
- Brightness 1000nits, contrast 3000:1
- Internal 802.11 Access Point and GBIT LAN
- MVB and Serial RS-485 for TCMS interface
- Low power i.MX6 processor
- Advanced Display management SW
- Full qualifications for railway use
- 1500V Isolated Railway class power supply with 110VDC or vehicle battery 24VDC Input

DG-DRM28 is a rugged purpose-built uncompromising fully integrated stand-alone Dynamic Route Map System for various transportation applications which require high service availability and easy integration with other onboard systems. The DG-DRM28 features an internal i.MX6 system management processor with turn-key firmware to autonomously manage static, changing image or video content on the display. Dynamically updated Route Map information can be combined with station, status and advertising content. Integrators can develop application specific SW using provided tools and API.

System integration is simplified with a rich set of interfaces including MVB, Isolated Serial RS-485, CAN and GBIT Ethernet. The internal 802.11n WiFi or the optional 3G modem can be used for updating content. Interfaces can be engineered to directly interface with TCMS containing information which the system uses to control the content and operation of the DRMS. No host computer, complex wiring, nor video signal splitters are needed thus simplifying installation and maintenance and improving solution robustness.

Hardware description

Integration and functionality are optimally balanced in the **DG-DRM28** dynamic route map display. A high brightness and contrast LCD display supports Full HD resolution, the internal i.MX6 control processor manages all the display functionality including safe power on-off, temperature monitoring and thermal throttling of the system as well as event logging and interfacing to other onboard systems. A proven isolated railway class power supply can accept 110VDC or optionally 24VDC power feeder input. Since no external DVI or HDMI cables or video splitters are needed, wiring and maintenance is simplified and reliability increased.

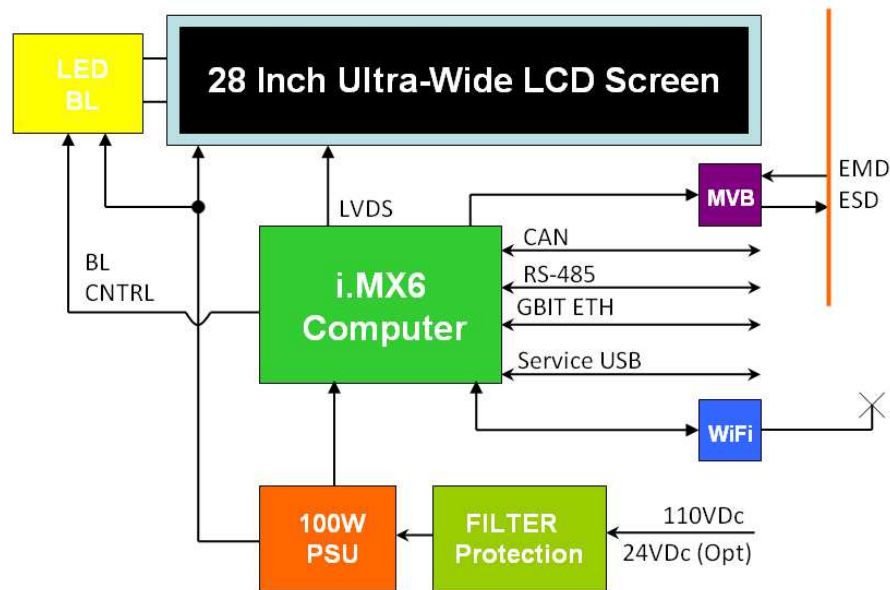
Future Proof

Our design approach reduces lifecycle costs and migration challenges. The technology of the **DG-DRM28** is based on commercial standards using Industrial-Grade components and design principles leveraging 10+ years or paradigm experience in railway systems design. As system requirements may change, the open source Linux firmware can be updated to support future needs.

DG-DRM28

28" Ultra-Wide Screen Dynamic Route Map System

Block Diagram:



Technical Specifications	
Power Supply	110VDC nominal 66-160VDC, 1500VDC Isolation 9-32VDC non isolated power supply Conduction cooling, Railway-Class input protection and filtering
Power Consumption	Max. 35W with full brightness
Environmental	-20°C to +55°C operating (+70°C for 15 minutes with reduced brightness) -20°C to +70°C storage
Ingress Protection	IP54 front face, IP40 rear side
Electrical Safety	IEC60950
Interfaces	MVB (EMD and ESD) Isolated RS-485, CAN 2.0 10/100/1000Mbit Ethernet, 802.11b/g/n WiFi 3G modem (option)
Display	1920 x 357 pixel resolution 1000nit brightness, 3000:1 contrast LED backlight with full SW control, temperature dependent brightness control (>50°C) Over temperature shutdown
System	Low power 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 Support for Customization of System Software
Connectors	External connectors: <ul style="list-style-type: none">- 10/100/1000Mbit Ethernet M12- MVB (DB-9) RS-485 and CAN Optional, M12- Power Input M12- USB under service panel
Mechanical	733.78(W) x 165.34(H) x 65.8(D), Weight 3,5 kg Black powder coated aluminum enclosure