

Portable GSM-R Train Radio Device

## MTRS 1 GTM+



The MTRS 1 GTM+ is a portable terminal unit for the purpose of train radio, shunting radio and data applications which operates in the GSM-R network. It fulfils the European requirements for use in rail vehicles.

The GTM (GSM-R Terminal for Migration) was developed for the purpose of the migration phase originally intended for temporary fixed use. The connection of an external MMIS is possible.

The MTRS 1 GTM+ consists of the digital transmission and receiving device, the controls, the interface modules and the power supply. The CON/IFOT module controls the radio module, regulates the priority of the calls, controls the operating devices, the additional data applications and the interface modules. The MTRS 1 GTM+ realises full train radio functionality by integration of an operating device MMIS, handset and loudspeaker.

The terminal unit operates in the 900 MHz GSM frequency range in the following frequencies:

- » Transmitting frequency range: 873 to 915 MHz
- » Receiving frequency range: 918 to 960 MHz

The train radio device, combines the technology and maintainability of the reliable train radio system MESA 23 and a space-saving IP42 variant.

### MESA 23

The universal system architecture contains uniform and standardised interfaces and sub-assemblies conceived as 19" plug-in printed circuit boards. Thereby an easy and fast exchange of the sub-assemblies and the possibility of using the sub-assemblies in all equipment variants and types is guaranteed.

The consistent replacement assemblies ensures cost-optimised spares inventory to permit fast and efficient repair and minimized training needed by the maintenance personnel.

## TECHNICAL DATA

### DIMENSIONS / WEIGHT

Construction	enclosed housing
Width	316 mm
Height	276 mm
Depth	345 mm
Weight	15 kg

### POWER SUPPLY

Input voltage	nominal 24 to 110 VDC
Tolerances	according to DIN EN 50155 and DIN EN 60077
Interruption	according to DIN EN 50155, Class S1 (no interruption)
Maximal input power	nominal 165 W (calculated)
Maximal power consumption	10 A (at 24 VDC nominal voltage)

### ENVIRONMENTAL CONDITIONS

Protection class	IP 42 according to DIN EN 60529 (except handset and loudspeaker)
Vibration and shocks	in compliance with DIN EN 50155
EMC	in compliance with DIN EN 50121-3-2 and DIN EN 50155

### NOTES

Mounting	Mounting frame for installation in the driver's cabin is available. Not scope of the delivery, information on request.
System identification	MESA23-06: including central unit (MTRS 1 GTM+) with operating unit(s) MMIS, handset(s), loudspeaker(s) and cables

## TECHNICAL DATA

### CLIMATIC CONDITIONS

Operating temperature range	-25 °C to +55 °C according to DIN EN 50125-1
Storage temperature range	-40 °C to +70 °C (in original package)
Maximal gradient	± 1 °C/min of ambient temperature
Maximal humidity	75 % in annual average
Relative humidity	95 % on max. 30 days per year
Altitude and pressure fluctuation	-100 m to 1800 m above sea level

### INTERFACES

ext. operating device MMIS	26-pin HD-D-Sub
Antenna connection	TNC female
Charging unit	9-pin D-Sub (for optional GSM-R mobile phones)
Digital input and output	15-pin HD-D-Sub
RS422	15-pin HD-D-Sub
Service, diagnostics	9-pin D-Sub
Miscellaneous	power supply, protective earth conductor

