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# TRM-3T

Approved Technology for  
the GSM-Rail System

# TRM-3T

The TRM-3T is a reliable and high performance terminal for GSM-R, the new radio system for railways. Due to long standing product experience and innovative technologies this professional terminal is the high-end modem for GSM-R.

## Technical Data

- Dimensions 74 x 65 x 33 mm (L x W x H)
- Weight 130 g
- Supply voltage range 8...30 V
- Power consumption: Standby 2 mA  
Idle mode 40 mA  
Speech mode 300 mA (average)  
GPRS (class 10) 500 mA (average)  
Peak 4 A
- Temperature Range: Normal operation: -20°C ... +55°C  
Restricted operation: -25°C to +70°C  
Storage: -40°C to +70°C



## Specifications for Voice

- Triple-rate codec for HR, FR, EFR
- Adaptive multi rate (AMR)
- Hands-free operation
- Noise reduction and echo cancellation

## SMS via GSM and GPRS

- Point-to-point MO and MT
- SMS cell broadcast
- Text and PDU mode

## System / Standards

- Quad-band GSM-R / EGSM 900 / GSM 1800 / GSM 1900
- GSM Phase 2 / Phase 2+
- GPRS multi-slot class 10
- Mobile station class B
- Output power: Class 4 (2 W) for GSM-R / EGSM900  
Class 1 (1 W) for GSM1800 / GSM 1900
- Control with AT commands via serial interface
- SIM Application Toolkit

## Data Services

- GPRS Class 10: max. 86 kbps (downlink)
- PBCCH support
- Coding scheme CS 1- 4
- CSD data transmission: up to 14.4 kbps  
USSD  
Non transparent mode  
V.110
- PPP stack for GPRS data transfer
- Fax: Group 3, Class 2
- TCP/IP stack access via AT command  
Protocols: TCP, UDP, HTTP, FTP, SMTP, POP3

## Target Applications

The TRM-3T can be easily and ad hoc applied for GSM-R data and voice terminal or modem solutions within PC, notebook or other process computing environment.

## Interfaces

- RS232 Interface (9-pin D-Sub)
- AT commands via serial interface
- Voltage supply (western with 6 pins modular plugs)
- Antenna connection (FME)
- Hand set connection (4-pin western modular plug)
- Indication LED
- Miniature SIM card holder