

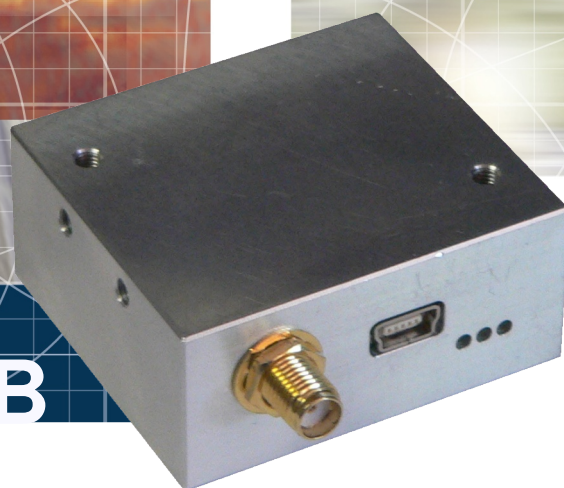


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# TRM-3aT USB



Approved Technology for the  
GSM-Rail System

Datasheet

# TRM-3aT USB

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

## Technical Data

• Dimensions	45 x 40 x 20 mm (L x W x H) (not including the antenna connector)
• Weight	70 g
• Power supply	via USB
• Power consumption	Idle mode 30 mA Speech mode 200 mA (average), 450mA (peak) GPRS (class 8) 200mA (average), 450mA (peak) GPRS (class 10) 320 mA (average), 700mA (peak) Inrush current 900mA Normal operation -20°C to +55°C Restr. operation -25°C to +70°C Storage -40°C to +70°C
• Temperature range	

## 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

## Interfaces

- USB Interface (USB Mini B connector)
- AT commands via USB CDC ACM interface
- Digital audio via USB
- Voltage supply via USB
- Antenna connector (SMA)
- Indication LED
- Miniature SIM card holder

## Specifications for Voice

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

## 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 / EGSM 900  
Class 1 (1 W) for GSM 1800 / GSM 1900
- Control with AT commands via virtual COM-Port  
(USB CDC ACM interface)
- SIM Application Toolkit

## Target Applications

The TRM-3aT USB 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.

## SMS via GSM and GPRS

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

## ASCII Features

- VGCS (Voice Group Call Service)
- VBS (Voice Broadcast Service)
- UUS1 (User-to-User Signalling type 1)
- eMLPP (Enhanced Multi-Level Precedence and Preemption)

## EIRENE Features

- FN supported (Functional Number)
- PFN supported (Presentation Functional Number)
- REC (Railway Emergency Call)