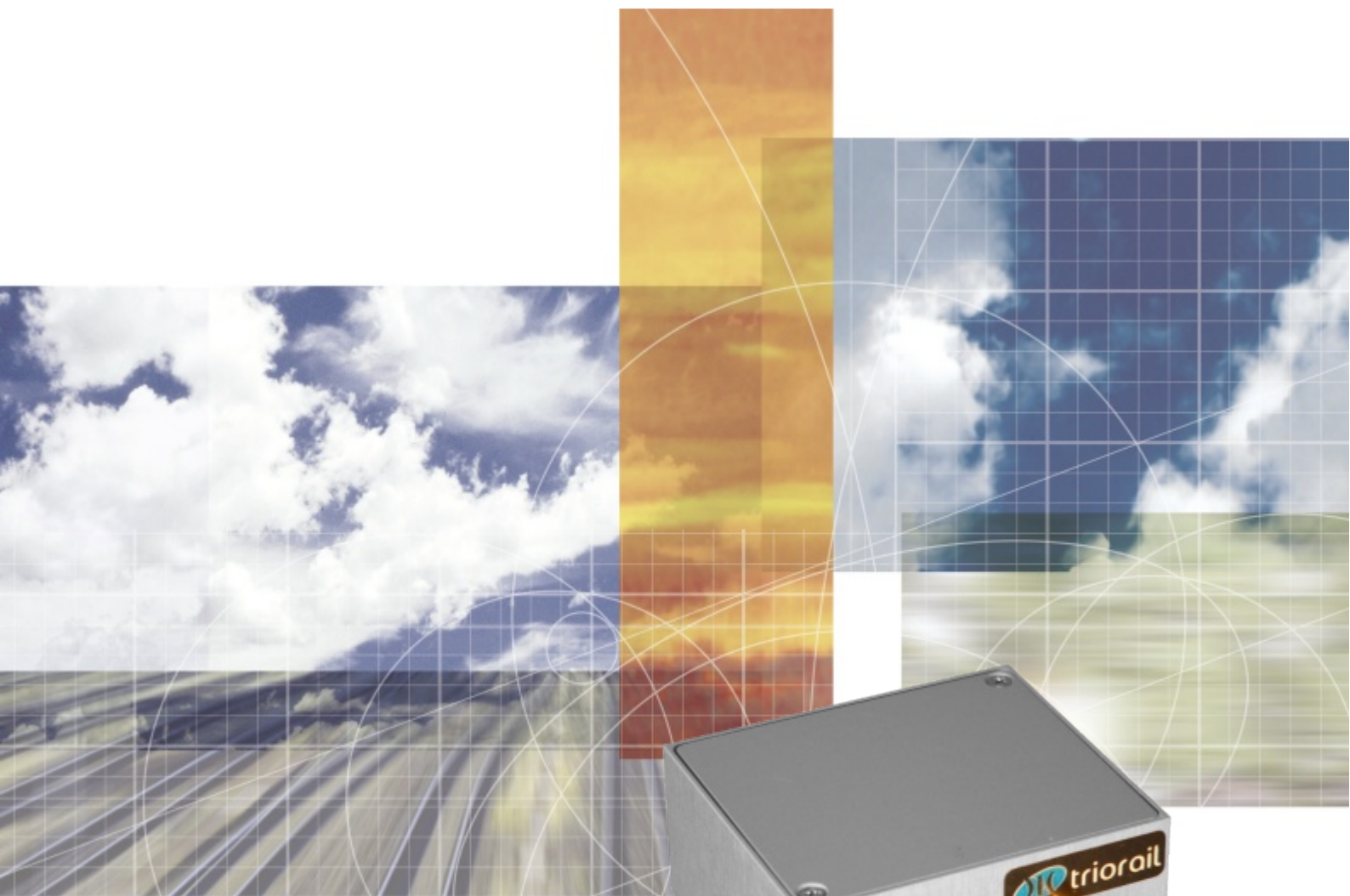special products for special customers

triorail

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 ASCI 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 ASCI 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
• Temperature range	Normal operation	-20°C to +55°C
	Restr. operation	-25°C to +70°C
	Storage	-40°C to +70°C

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.

Data Services

- GPRS class 10 max. 86 kbps (downlink)
- PBCCH support
- Coding scheme CS 1-4
- CSD data transmission
  - Up to 14.4 kbps
  - Non transparent mode
  - Transparent mode
- 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)
- 3 Status LEDs
- Miniature SIM card holder

Specifications for Voice

- Triple-rate for HR, FR, EFR
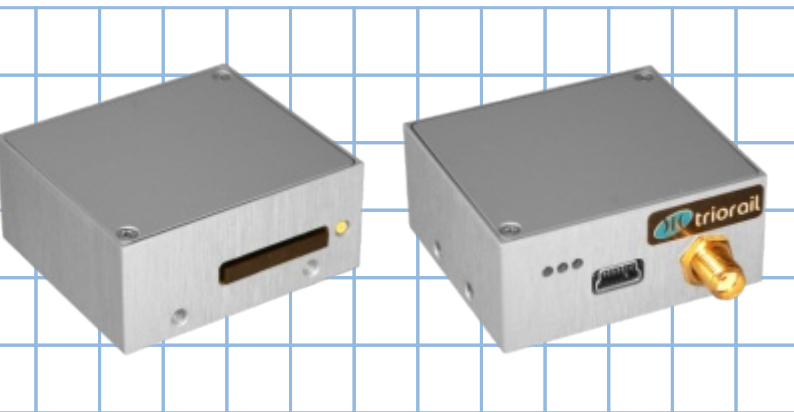- Adaptive multi-rate (AMR)

SMS via GSM and GPRS

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

ASCI 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 supported (Railway Emergency Call)