



# GSM-R modems



**TRM-5T**  
**TRM-5T ext**

**GSM-R new defined to cope with  
challenging radio interferer**

**Optional: Extended GSM-R**

**GSM-R technology for railways**

# TRM-5T / TRM-5T ext

The modems allow greater flexibility for immediate use and provide excellent receiver characteristics.



## Technical data

Dimensions	74 x 65 x 33 mm [LxWxH]
Weight	130 g
Supply voltage	8 – 30 Vdc
Current consumption	
Standby	2 mA
Idle mode	40 mA
Speech mode	85 mA [average]
GPRS (cl. 10)	150 mA [average]
Peak:	4 A
Temperature range	
Normal operation	-20°C to +55°C

## Interfaces

RS232 serial interface	9-pin D-Sub
Power supply	6-pin Western plug
Audio	4-pin Western plug
Antenna connector	Type FME 50Ω male
Display	Status LEDs
Card reader	Mini-SIM

## ASCI features

VGCS	[Voice Group Call Service]
VBS	[Voice Broadcast Service]
UUS1	[User-to-User Signaling 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]

## Applications

The modems TRM-5T and TRM-5T ext can be applied easily and ad hoc for GSM-R and EGSM-R data and voice solutions within PC, notebook or other computing environment.

## System / Standards

Frequency bands	
GSM-R/EGSM900/GSM1800	[TRM-5T]
EGSM-R/EGSM900/GSM1800	[TRM-5T ext]
RF output power	
Class 4 [2 W] for GSM-R/EGSM-R/EGSM900	
Class 1 [1 W] for GSM1800	
Professional Mobile Standard	ETSI TS 102 933 V 2.1.1
ER-GSM Frequencies	[TRM-5T ext only]
ETSI TS 102 932 V 1.1.1	
GSM Phase 2 and 2+	
Mobile station class B	
Audio	
Voice triple-rate codec for HR, FR and EFR	
AMR for non ASCII applications supported	
Hands-free, noise reduction and echo cancellation	

AT commands via serial interface

SIM application toolkit

## Data services

GPRS class 10 with up to 85.6 kbps [DL] and 42.8 kbps [UL]
PBCCH supported
Coding scheme CS 1-4
CSD data transmission with up to 14.4 kbps [Transparent and non transparent mode]
Fax group 3, class 2
TCP/IP stack access via AT commands
Protocols: TCP, UDP, HTTP, FTP, SMTP and POP3
SMS via GSM, GSM-R and GPRS [MO, MT, CB, text and PDU mode]

## Part no.

TRM-5T	1321
TRM-5T ext	1322