



GSM-R module 2W



TRM-5
TRM-5 ext^{*)}

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

^{*)} Extended GSM-R

GSM-R technology for railways

TRM-5 / TRM-5 ext

The modules with a quite small foot-print provide excellent receiver characteristics.



Technical data

Dimensions	35 x 32.5 x 3 mm	[LxWxH]
Weight	6 g	
Supply voltage	3.3 V _{DC} to 4.8 V _{DC}	
Current consumption		
Power down	50 µA	
Sleep mode	3 mA [DRX=5]	
Idle mode	17 mA	
Speech mode	260 mA [Average]	
GPRS Class 10	450 mA [Average]	
Peak current	1.6 A	
Temperature range	-40°C to +70°C	

Interfaces

50-pin board-to-board connector	
2 serial interfaces	
1 digital and 2 analog audio	
Power supply	
Antenna connector	Type U.FL 50 Ω
Card reader	Mini-SIM [1.8 V / 3.0 V]

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 modules TRM-5 and TRM-5 ext can be used for voice/data communication and applied to embedded solutions within GSM-R/EGSM-R environment.

System / Standards

Frequency bands	
GSM-R/EGSM900/GSM1800	[TRM-5]
EGSM-R/EGSM900/GSM1800	[TRM-5 ext]
RF output power	
Class 4 [2 W]	{GSM-R/EGSM-R/GSM900}
Class 1 [1 W]	{GSM1800}
Professional Mobile Standard	
ETSI TS 102 933 V 2.1.1	
ER-GSM Frequencies	[TRM-5 ext only]
ETSI TS 102 392 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	
Control by 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 up to 14.4 kbps
[Transparent and non transparent mode]
Fax group 3, class 2
PPP stack for GPRS data transfer
TCP/IP stack access via AT commands
Authentication: PAP, CHAP
Protocols: TCP, UDP, HTTP, FTP, SMTP, POP3
SMS via GSM, GSM-R and GPRS
[MO, MT, CB, text and PDU mode]

Part no.

TRM-5	1301
TRM-5 ext	1302