



triorail

GSM-R technology for railways

GSM-R / E-GPRS test modem

TTS-TRM-6T



Test modem made for ETCS / EDOR network measurements and monitoring

TTS-TRM-6T

This data only trace modem provides GSM-R, ETCS, EDOR network data communication testing and monitoring.



Technical data

Dimensions

L: 100 mm + 2x10 mm mounting straps
W: 59.9 mm
H: 30.9 mm

Weight

170 g

Supply voltage

9 V_{DC} to 32 V_{DC}

Current consumption (12V_{DC}; 20°C)

Minimum: 2 mA
Maximum: 360 mA
Inrush: 8 A

Temperature range

-25°C to +70°C

Interfaces

RS232 serial interface	9-pin D-Sub
USB interface	Type B
Power supply socket	6-pin RJ12 6P6C
Status indicators	4-LEDs
Card reader	Mini-SIM (1.8/3.0V)
Antenna connector	Type SMA 50 Ω

TrioTrace2 PC application

The inclusive TrioTrace2 PC SW visualizes all measured data in customizable Windows; Detection of GSM-R interferer; Trace log recording; Replay for post analyzing; Export of stored trace files in different formats.

ETCS L2

The device application supports a selected subset of parameters defined in the ERTMS GSM-R QoS test specification.

Part no.

TTS-TRM-6T 4190

System features

Frequency bands

GSM-R / EGSM-R / EGSM900 / GSM1800

RF output power

Class 4/2W	CSD/GPRS	900MHz bands
Class E2/0.5W	E-GPRS	900MHz bands
Class 1/1W	CSD/GPRS	1800MHz bands
Class E2/0.4W	E-GPRS	1800MHz bands

Professional Mobile Standard ETSI TS 102 933 V 2.1.1

ER-GSM Frequencies ETSI TS 102 392 V 1.1.1

EIRENE FRS 8.0.0/SRS 16.0.0 (Data only)

GSM Phase 2 and 2+; Mobile station class B

Control by AT commands via RS232 or USB interface

Data services

E-GPRS class 10

Modulation coding scheme MCS 1 – MCS 9

GPRS class 10

Coding scheme CS 1 – CS 4

CSD (transparent and non transparent mode)

Fax Group 3, class 2

PPP stack for GPRS/E-GPRS data transfer

Authentication PAP, CHAP

SMS MO, MT, CB, text and PDU mode

Test system

Layer 1	Serving/neighbor call BCCH, ARFCN, cell ID, RX level, timing advance, power level
RR	ARFCN, channel type, time slot, network and base station color code
Messaging	GSM Layer 2/3, (E-)GPRS RLC/MAC, GMM/SM
GPRS	RLC/MAC, LCC, GMM, SM/SNDP, TBF RLC mode, CS, NCO
MM	Cell ID, LA, MCC/MNC, TMSI, ciphering
QoS	GSM: FER, handover, call setup (E-)GPRS: LLC and RLC/MAC data rates
Forcing	BCCH, handover, channel, band, power class, GPRS
Scanning	Single ARFCN, set of frequencies, band system information