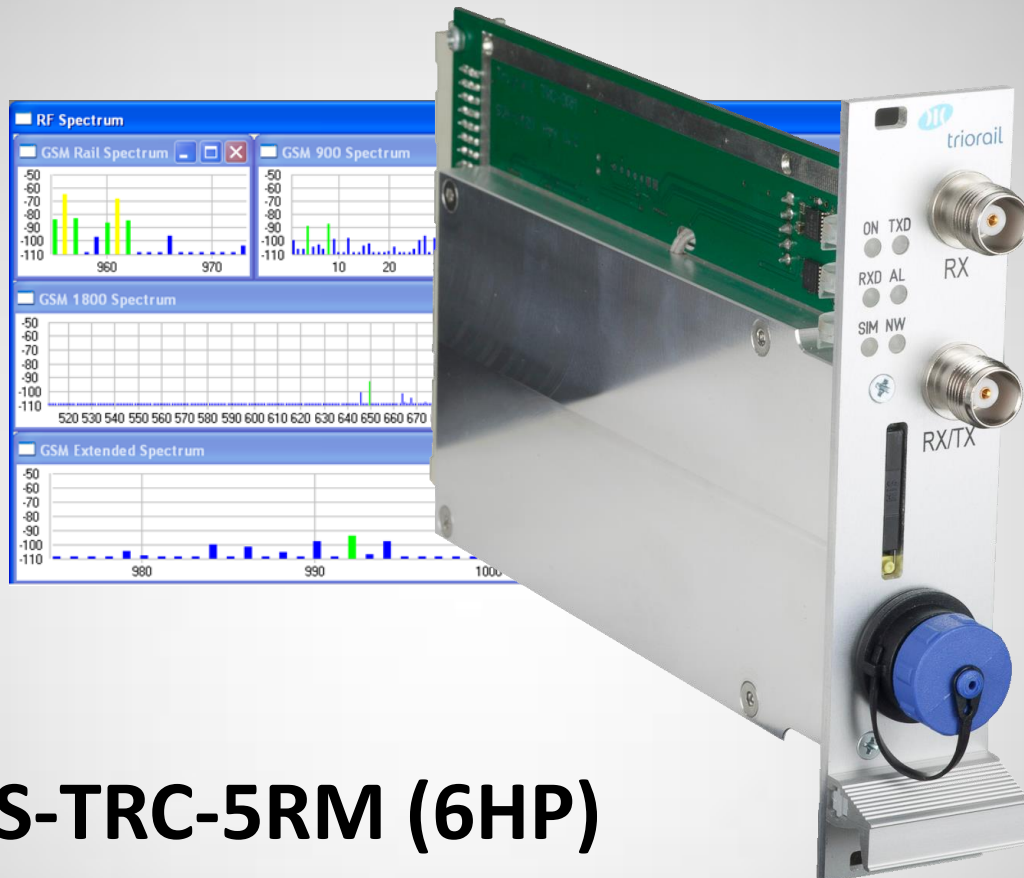


GSM-R test module 8W



TTS-TRC-5RM (6HP)

8 Watt GSM-R test device for network measurements and monitoring with best in class receiver performance

Extended GSM-R

GSM-R technology for railways

TTS-TRC-5RM (6HP)

This rack-mounted 8W module is the right network probe for GSM-R in-depth testing and monitoring. The test system provides first hand interferer detection. The new extended frequency band of EGSM-R is supported.



Technical data

Dimensions	128.5 mm [Height, fits 3U]
	170.5 mm [Depth]
	30.1 mm [Width, fits 6HP]
Weight	500 g
Supply voltage	12 Vdc
Current consumption	@20°C @70°C
Idle mode	74 mA 315 mA
Speech mode	380 mA 630 mA
GPRS (cl. 10)	660 mA 930 mA
Standby current	62 mA
In-rush current	@70°C 4 A
Temperature range	-20°C to +85°C

Interfaces

96-pin DIN 41612 backplane connector	
USB mini B connector	[service, test and maintenance only]
Antenna connector A	TNC 50Ω [RX/TX]
Antenna connector B	TNC 50Ω [RX]
Display	6 status LEDs
Card reader	Mini-SIM

ASCII / EIRENE

VGCS, VBS, UUS1, eMLPP
FN, PFN, REC

ETCS L2

QoS / subset of values defined in the ERTMS/GSM-R QoS test specification [QoS working group, v1.2.i, 06-07-2006]

Transfer delay of user data frames

Round trip delay evaluation [optional loopback terminal required]

Data transmission interference and data throughput

Timestamp	Channel	Dir	BCCH	Layer 3	Message Type	Layer 2	Header
38064	SDCCH	Down				SAPI: 0 C: UI-Frame,	
38073	SACCH	Down				SAPI: 0 C: UI-Frame,	
38073	SACCH	Down		RR	SYSTEM_INFORMATION_TYPE_6		
37985	SACCH	Up				SAPI: 0 C: UI-Frame,	
38089	SACCH	Up		RR	MEASUREMENT_REPORT		
38177	SACCH	Down				SAPI: 0 C: UI-Frame,	
38089	SACCH	Up				SAPI: 0 C: UI-Frame,	
38193	SACCH	Up		RR	MEASUREMENT_REPORT		
38276	SDCCH	Down				SAPI: 0 C: UI-Frame,	
38281	SACCH	Down				SAPI: 0 C: UI-Frame,	
38281	SACCH	Down		RR	SYSTEM_INFORMATION_TYPE_5		
38193	SACCH	Up				SAPI: 0 C: UI-Frame,	
38297	SACCH	Up		RR	MEASUREMENT_REPORT		

System / Standards

Frequency bands	EGSM-R/GSM-R/EGSM900/GSM1800
RF output power	Class 2 [8 W] for EGSM-R/GSM-R/EGSM900 Class 1 [1 W] for GSM1800
Professional Mobile Standard	ETSI TS 102 933 V 1.2.1
ER-GSM Frequencies	ETSI TS 102 932 V 1.1.1
GSM Phase 2 and 2+,	Mobile station class B
Audio	Triple-rate codec for HR, FR and EFR AMR for non ASCII apps supported
AT commands	via serial or USB interface

Data services

GPRS class 10	
PBCCH supported;	Coding scheme CS 1-4
CSD with up to 14.4 kbps	[Transparent and non transparent mode]
Fax group 3, class 2	
PPP stack for GPRS data transfer	
Authentication: PAP, CHAP	
Protocols: TCP, UDP, HTTP, FTP, SMTP, POP3	
SMS via GSM-R and GPRS	[MO, MT, CB, text and PDU mode]

Test system

Layer 1	Serving/neighbor cell BCCH, ARFCN, cell ID, RX LEVEL, timing advance, power Level
Radio Resources	ARFCN, channel type, speech codec, time slot, network and base station color code
Messaging	GSM Layer 2/3, GPRS RLC/MAC, GMM/SM
GPRS	RLC/MAC, LLC, GMM, SM/SNDP, TBF, RLC mode, CS, NCO
Mobility Management	Cell ID, LA, MCC/MNC, TMSI, ciphering
QoS	GSM: FER, handover, call setup GPRS: Data rates of LLC and RLC/MAC
Forcing	BCCH, handover, channel, band, power class, GPRS, time slot, TCH, ASCII
Scanning	Single ARFCN, set of frequencies, band, system information

TrioTrace 2 PC application

TrioTrace2 SW to visualize 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

Part no.

TTS-TRC-5RM (6HP) 4146