EVOIA DRIVE TEST

TCMR-NG

Leading technology for rail telecoms troubleshooting and network quality assessment

Introducing the TCMR-NG

The EVOIA Drive Test TCMR-NG is a measurement drive test unit for railway telecoms networks. The 14-inch box contained inside the trolley, is designed to be installed in test train racks but is light enough and small enough, to also be used as a portable device, when required. The trolley has everything you need to run drive tests. Simply integrate the PC to perform the measurement.

Each unit is packaged with 4 (4G/5G) MNO/PMR/RMR modems or 3 RMR (GSM-R) radio modules and a scanner.

This essential piece of equipment allows railway telecoms operators and other engineers to test and monitor the railway telecoms network, using key industry standard tests.

Data from the voice calls and quality tests, and data calls (circuit and packet switch), are automatically mapped against train location, for geo-positioning, making it easy to pinpoint areas of poor quality and potential interference.

Key Benefits

- Portable trolley for network deployment or maintenance operations
- Automatic operation of drive tests: monitors GSM-R network quality and interference from other GSM, 3G, LTE/4G 5G and TETRA networks
- Simple to install: documentation and support for third party installation and configuration
- Testand measure: railway public and private telecoms networks
- Suitable for operation on test trains
- Can be used as a portable device
- Real-time, continuous monitoring for up to 6 hours, using an internal battery
- Test MCX: ETSI KPIs 1,2, etc.
- Test application: Throughput, latency, Round Trip Time, MOS, etc.
- Simple plug and play on-board installation
- Robust and reliable solution
- Continuous operation in the harshest of environments
- Low product lifecycle costs with a compelling Return on Investment (ROI)
- Helps to identify telecoms and signalling problems in minutes

TCMR–NG

Professionally designed and developed to make the most of the available space and the technical capabilities required.

Test runs can be conducted as single events or as part of a regular schedule.

Key Features	TCMR-NG
Product number	X-TCMRNG0202L03
Dimension	W: 305 mm, L: 500 mm, D: 457 mm
Weight	20 Kg
Power	24 V DC - 300 W (max) External AC/DC
Network testing supported	2G, 2G-Rail, 3G, 4G, 5G, TETRA
Testing for	Radio coverage, interference detection, telecom quality of service including dropped calls, initiation time, and throughput, TETRA – conduct power measurements only, using a scanner
Data collection	Portable trolley or installed on vehicles
Data Transfer	Ethernet
Software operating system	Attended Mode: Software installed on an external PC or laptop
Operational mode	Attended mode
	MNO: Up to 4 EMIB-XG (LTE,5G)
	MCX: Up to 4 EMIB-XG (LTE,5G) and 1 NTP Sync
	Rail: Up to 3 EMIB-R (GSM-R 8W) Up to 4 EMIB-R (GSM-R 2W)
	Scanner Option: Up to 1 Scanner
Positioning	Internal GPS and Odometer input
Post-processing capabilities	After post-processing, data can be exported in .csv format, to be re-used in 3rd party applications

TCMR–NG continued

Key Features	TCMR–NG		
Devices supported	**VENDOR**	**TYPE**	**MODEM**
	Sierra Wireless	Modem-4G	EM7575
	Simcom	Modem-4G-VoLTE	SIM7600
	Quectel	Modem-4G	EM12G
	Telit	Modem-4G	LM960A
	Telit	Modem-5G	FN980
	Funkwerk	Modem-GSMR	MT2
	Funkwerk	Modem-GSMR	MT5/FPL R99
	Tunkwerk	Modem-GSMR	MT5-AD/FPL R04
	Tunkwerk	Modem-GSMR-DCS	MT6
	Triorail	Modem-GSMR	TTS-TRC-5RMe
	Triorail	Modem-GSMR	TTS-TRC-6RM
	Triorail	Modem-GSMR	TTS-TRM-5
	Triorail	Modem-GSMR	TTS-TRM-6
Solution	Certified and customized solutions (software and hardware) available		
Battery	Lithium Battery		
Stand-alone receiver availability	EVOIA Drive Test supports Rohde & Schwarz scanner model: TSME6 with each appropriate License-KEY		

TCMR–NG continued

Catalog Number	Description
x-TCMRNG0202L03	Transportable Case Mobile Rack - R&S TSME6 holder; Li-Ion Batt
x-MTB14EENB01	Mobile Terminal Box 14 in EE Height: 3 U Power: 24 V DC
C-ACC-TMEE0103	Trackmotion-EE -GPS Connector type SMA (included in X-MTB14EENB01)
x-MSP-LSTD1	Main System Processor Standard Laptop for TCMR
C-HWC-A210210G	GPS Antenna
C-ACC-PSU300-N	TCMR - Power Supp. 230 VAC to 24 V DC 300 W-Neutrik Connector
C-ACC-ETH150	Ethernet Cable
C-ACC-TCMR-P1	Power supply cable, from TCMR to MTB EE-R14
C-ACC-TCMR-P2	Y Power supply cable, from TCMR to MTB EE-R14

Optional Accessories

Catalog Number	Description
x-MSP-LRUG1	Main System Processor Rugged Laptop for TCMR
R-ACC-CDT-TTL2B	Cable Data Trigger DB9<->BNC TTL 2mt
R-ACC-CDT-4852B	Cable Data Trigger DB9<->BNC RS485 2mt

Optional Scanner

Catalog Number	Description
x-S-TSME6-CAL	Rohde & Schwarz Scanner TSME6 with Calibration Document
x-URD-SRUG22	URD - Option High Performance for TCMR
R-HWC-A220313	PCTEL - MLPV 800 Antenna for Scanner
R-HWC-A220314	PCTEL - BMLPV800HD Magnetic Mount

Optional Odometer

Catalog Number	Description
R-HWC-ODO-KS01	Kistler Radar Odometer

Optional Antenna

Catalog Number	Description
R-HWC-A220211	A8300 SMA-M - GSM Antenna
R-HWC-A220212	A8300 TNC-M - GSM Antenna

Note:
x=R Rail Configuration
x=M MCX-MNO Configuration

TCMR–NG Configurations

Configuration MNO/PMR/RMR 4G-5G

Catalog Number	Description
M-CEMIBXG1105103	Channel 4G-5G EMIB-XG (up to 4)

Option for configuration MNO/PMR/RMR 4G-5G Modem

Catalog Number	Description
TLLM960A18	Test Modem Telit LM960A18 4G - CAT18 MIMO 4x4
TLFN980	Test Modem Telit FN980 5G
SCSIM7600	Test Modem SIMCOM SIM7600 - 4G VoLTE
SWEM7565	Test Modem Sierra Wireless EM7564 4G - CAT12 MIMO 2x2
QTEM12G	Test Modem Quectel EM12G

Note:
MNO: Mobile Network Operator
PMR: Private Mobile Radio
RMR: Railway Mobile Radio

Configuration MCX

Catalog Number	Description
M-CEMIBXG1105103	Channel 4G-5G EMIB-XG (up to 4)
M-OPT-SY_NTP01	NTP Time Sync

Option for configuration MCX Modem

Catalog Number	Description
M-QTEM12G	Test Modem Quectel EM12G

TCMR–NG Configurations continued

Configuration GSM-R

Catalog Number	Description
R-CEMIBR2200104	GSM-R Channel for 8W Cab Radio (up to 3)
R-CEMIBR1100104	GSM-R Channel for 2W Radio - SMA front connector (up to 4)

Option configuration GSM-R modem

Catalog Number	Description
R-TR-TTSTRM5C	Triorail TTS-TRM5 2W
R-TR-TTSTRM6C	Triorail TTS-TRM6 (*) 2W
R-FK-MT2-SI10T	Funkwerk MT2 8W
R-FK-MT5ET	Funkwerk MT5 8W – REL99
R-FK-MT5EADT	Funkwerk MT5 8W – REL04
R-TRTTSTRC5RME	Triorail TTS-TRC5 RMe – 8W
R-TRTTSTRC6RM	Triorail TTS-TRC6 RM – 8W

viavisolutions.com/railway

Contact Us +39 011 4532181
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