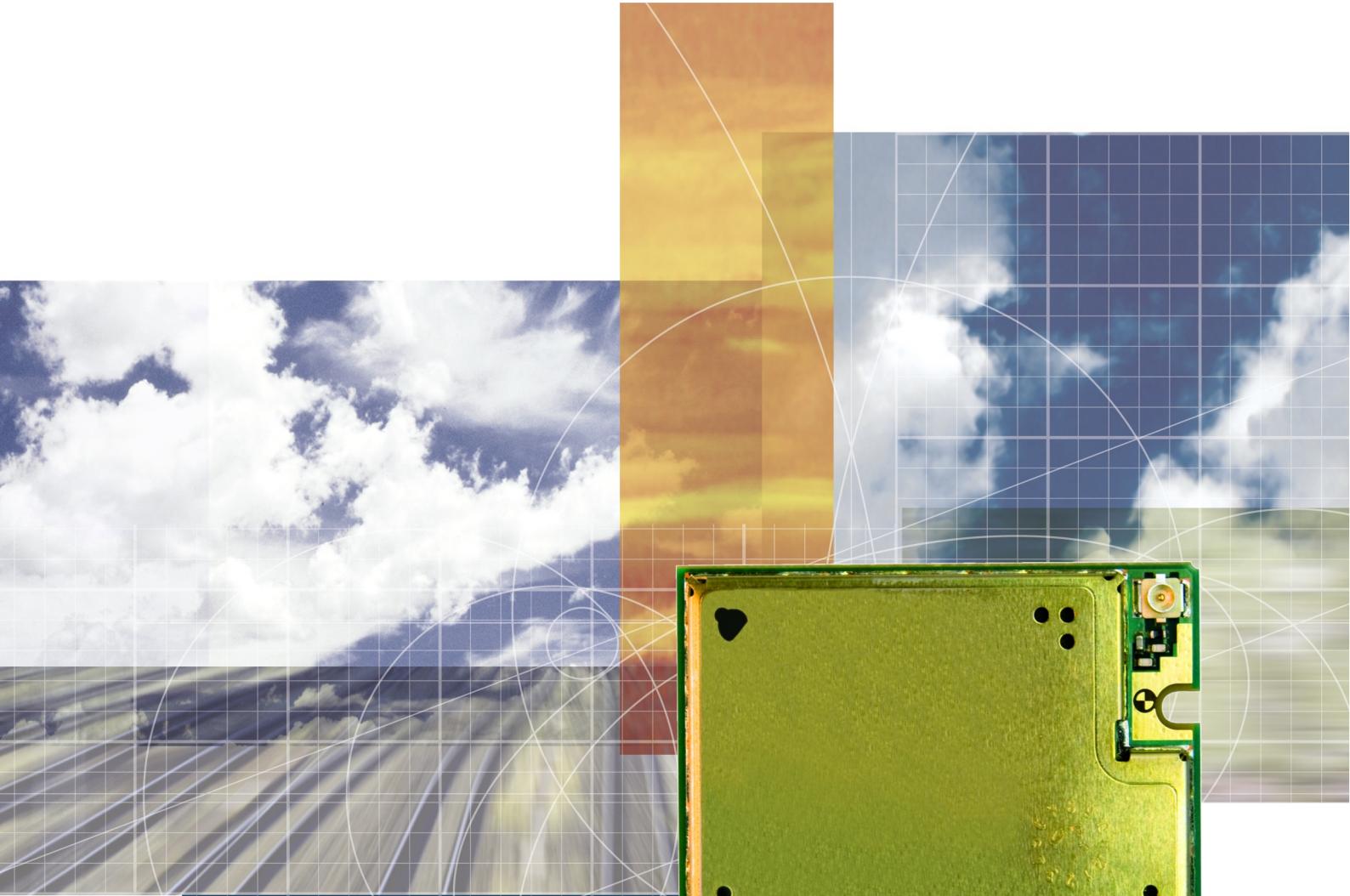


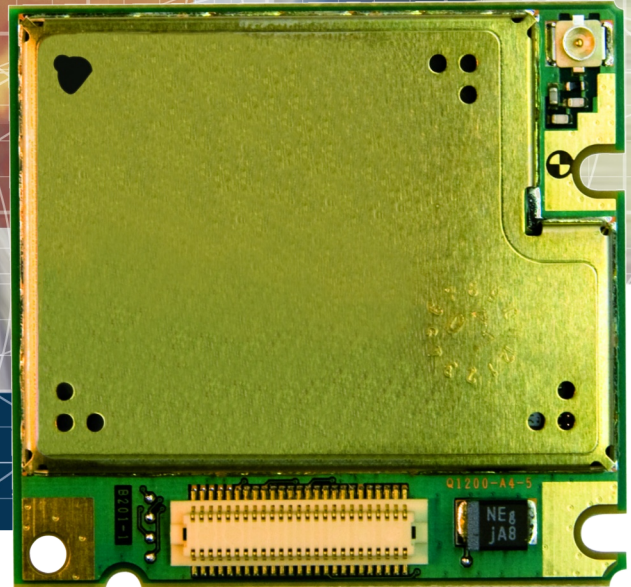


special products for special customers

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TRM-3



Approved Technology for the
GSM-Rail System

Datasheet

TRM-3

The TRM-3 is a reliable and high performance module for GSM-R networks. Due to long standing product experience and innovative technologies this professional device is the high-end module for GSM-R.

Technical Data

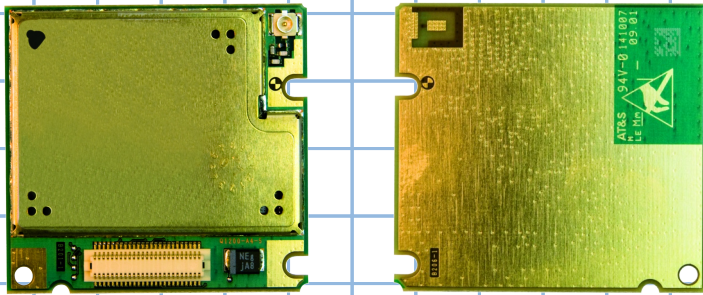
• Dimensions	35 x 32.5 x 2.95 mm (L x W x H)
• Weight	5.5 g
• Supply voltage	3.3 - 4.8 volt
• Power consumption	Power down 50 μ A Sleep mode 3.0 mA (DRX=5) Idle mode 15 mA Speech mode 260 mA (average), GPRS (class 10) 450 mA (average) Peak 3 A
• Temperature range	Normal operation: -20°C to +70°C Restricted operation: -40°C to +70°C Storage: -40°C to +85°C

System / Standards

- Quad-band GSM-R / EGSM 900 / GSM 1800 / GSM 1900
- GSM Phase 2 / Phase 2+
- GPRS multi-slot class 10
- Mobile station class B
- Output power
 - Class 4 (2 W) for GSM-R / EGSM 900
 - Class 1 (1 W) for GSM 1800 / GSM 1900
- AT commands via serial interface
- SIM Application Toolkit

Data Services

- GPRS class 10
- PBCCH support
- Coding scheme CS 1-4
- CSD data transmission
 - Up to 14.4 kbps
 - Non transparent mode
- Fax group 3, class 2
- TCP/IP stack access via AT command
- Internet protocols: TCP, UDP, HTTP, FTP, SMTP, POP3



Specifications for Voice

- Triple-rate codec for HR, FR, EFR
- Adaptive multi-rate (AMR)
- Hands-free operation supported
- Noise reduction and echo cancellation supported

SMS via GSM and GPRS

- Point-to-point MO and MT
- SMS cell broadcast
- Text and PDU mode

Interfaces

- Interface to external SIM
- Board to board connector
- Digital and analog audio interfaces
- Two serial interfaces
- Power supply 3.3 - 4.8 V
- Antenna connector and antenna solder pad

Target Applications

TRM-3 can be applied for data and voice embedded solutions within GSM-Rail environment.