MG100

GPRS/EDGE/UMTS Router

- SCADA protocols on COM
- Hybrid networks
- Acknowledged UDP
- Modular– 5 interface slots
- Network management SW
- Vibration and shock hardened
- MR400 HW & SW compatible

General

Some applications are not really mission-critical and it would not be economical to build a private radio data network. In such cases, data transfer over GPRS/EDGE/UMTS may be the right option, however an industry application requires industry-grade equipment. The RACOM MG100i router brings such industry-level robustness and reliability into the environment of public networks.

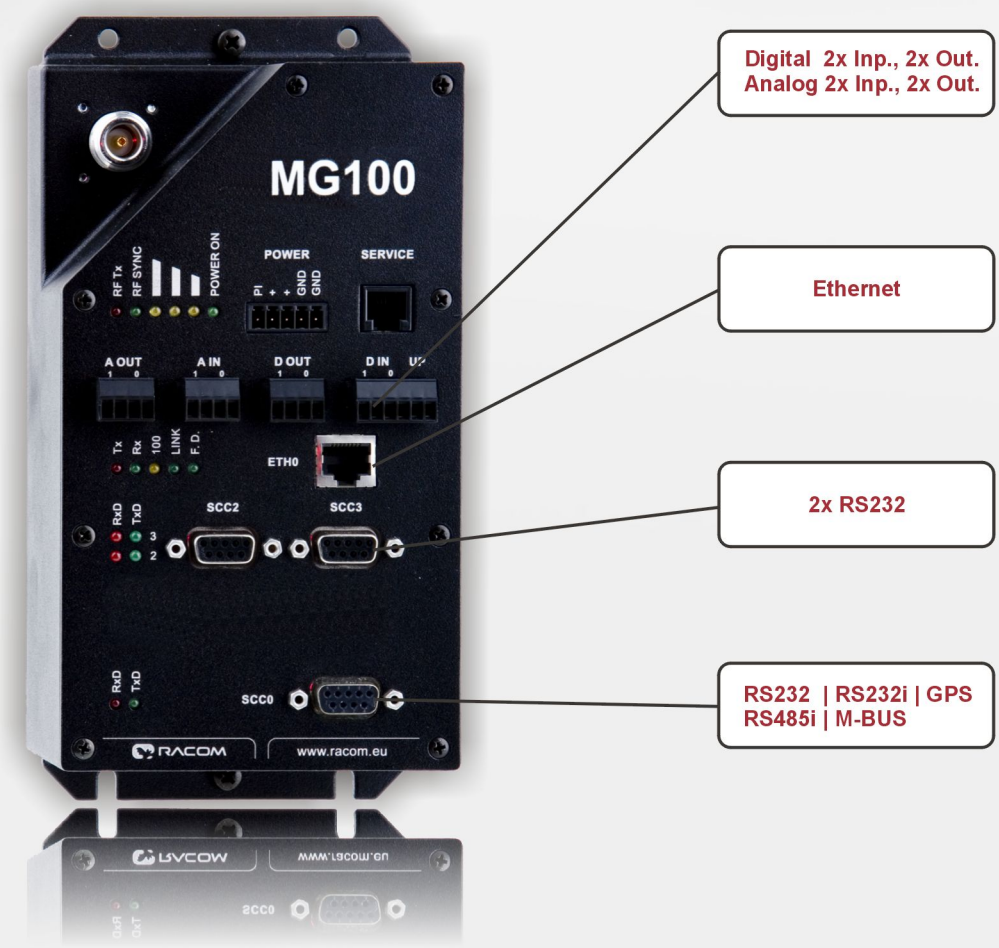
MG100i is available in 2 main versions: GPRS and GPRS/EDGE/UMTS. It is a member of the MORSE product family, hence it is fully compatible with MR400 radio modems on user interfaces and it can be managed using the same software tools, the RANEC network management software including. Thanks to this full compatibility, MORSE hybrid networks, where data transfer over Radio channel and GPRS/EDGE/UMTS is combined, can easily be built using MG100i routers and MR400 radio modems.

Applications

- SCADA & Telemetry
- Water
- Oil & Gas
- Electricity
- Smart grid POS & ATM
- Lottery
- Weather
- Transportation

RACOM
www.racom.eu

MG100



User protocols on COM interface

- More than 70 protocols - Modbus, IEC101, DNP3, Comli, DF1, Profibus, Modbus TCP, IEC104…
- Cache mode - speeds up polling protocols
- SCADA serial protocol addresses are mapped to MG100 addresses
- Implementation is 100% compatible with MR400 Hybrid networks

Hybrid networks

- HW and SW compatible with MR400 radio modems
- The same tools for configuration and maintenance
- Combination of GSM (MG100) and Radio channel (MR400) within one user application
- A single application / user protocol can operate over any combination of GSM (MG100i) and Private radio (MR400) networks.

Modular

- 5 slots for modules:
  - Ethernet, GPS, M-BUS
  - 2x RS232, 1x RS232, 1x RS232i, 1x RS422/485i
  - I/O - 2×DI, 2×DO, 2×AI, 2×AO

Ultimate OS

- Dedicated to MORSE system
- No Linux
- No Windows

GPRS/EDGE/UMTS Router

Security

- Proprietary protocol: UDP/IP used over GPRS/EDGE/UMTS, however each packet is acknowledged
- CRC32 data integrity control
- Proprietary data compression
- Blowfish 160 encryption
- Netlock - enables/disables remote access to a unit independently for three levels of users

Reliability

- Every single unit tested in a climatic chamber as well as in real traffic
- Military or industrial components are used
- Industrial die-cast aluminum case
- -30 +55 °C certified
- Vibration and shock resistant

Fast configuration and diagnostics

- Setr - special management application (Windows/Linux)
- The most robust and fast remote configuration and diagnostic - only the necessary data is transferred
- Monitoring of User interfaces, either locally or remotely
- On line as well as historical statistics for all interfaces
- Control and diagnostics detail

RANEC - MORSE Network Management

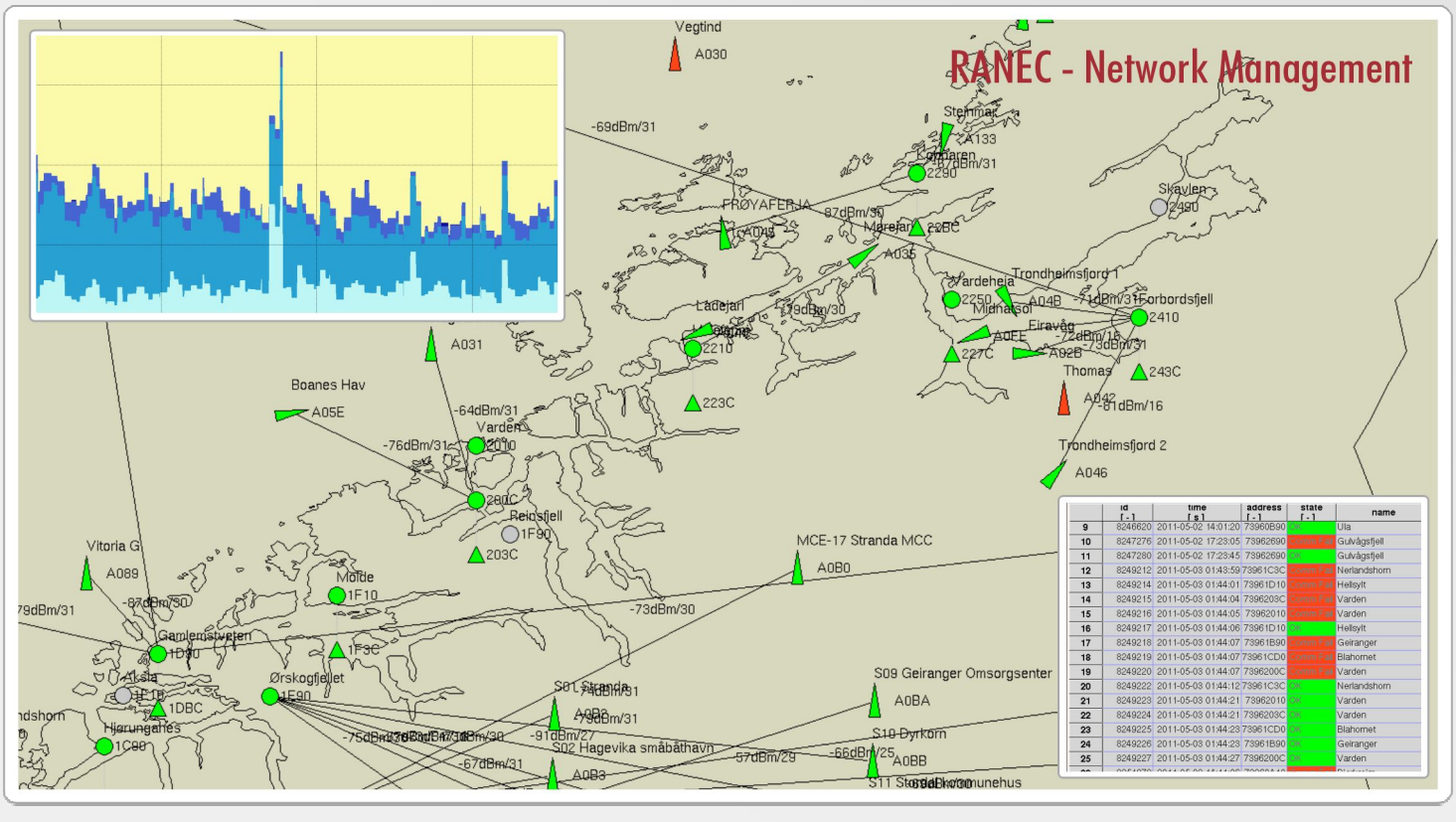
- Client - Server architecture, unlimited number of clients
- Server maintains database of statistic data from all/selected units
- Intelligent data collection algorithm avoids conflicts with user traffic
- Unlimited number of clients (Windows/Linux)
- Graphical display of statistical data over an arbitrary period
- Network topology displayed on a map background
- Network planning tools - signal coverage calculation using digital elevation model
- Convenient access to MORSE utility programs

Other Highlights

- DIN rail, flat or 19” rack mounting
- CE approval
- Vibration - EN 61 373

Energy savings

- Sleep mode - 2.5 mA, controlled via a digital input



Technical parameters

Radio parameters

Cellular Technology / Frequencies	
MG100x0 (obsolete, not in production)	GPRS 900/1800 MHz
MG100x1	GPRS GPRS 850/900/1800/1900 MHz
MG100x2 (obsolete, not in production)	GPRS/EDGE 850/900/1800/1900 MHz UMTS 2100 MHz (Europe)
MG100x3	GPRS/EDGE/UMTS/HSDPA GPRS/EDGE 850/900/1800/1900 MHz UMTS/HSDPA 850/1900/2100 MHz
MG100x4	GPRS/EDGE/UMTS/HSDPA/HSUPA (not under mass production) GPRS/EDGE 850/900/1800/1900 MHz
	UMTS/HSDPA/HSUPA 850/1900/2100 MHz

Electrical

Primary power	13.8 VDC (10.8 - 15.6 V)
Rx	200 mA (Eth +40 mA, I/O +50 mA, GPS +15 mA) /13.8 VDC
Tx GPRS	260 mA (Eth +40 mA, I/O +50 mA, GPS +15 mA) /13.8 VDC
Tx UMTS	290 mA (Eth +40 mA, I/O +50 mA, GPS +15 mA) /13.8 VDC
Sleep mode	2.5 mA

Interfaces

4 slots	Ethernet, 2x RS232, 1x RS232, 1x RS232i, 1x RS422/485i, GPS, M-BUS, I/O - 2×DI, 2×DO, 2×AI, 2×AO

Enviromental

Temperature	-30 to +65 °C
Humidity	5 to 95% non-condensing

Mechanical

Casing	Rugged die-cast aluminium
Dimensions	208 W × 108 D × 63 H mm (8.19 x 4.25 x 2.48 in)
Weight	1.2 kg (2.65 lbs)

SW

User protocols on COM	More than 70 protocols - Modbus, IEC101, DNP3,Comli, DF1, Profibus
User protocols on Ethernet	Modbus TCP, IEC104…

Diagnostic and Management

Radio link testing	
Statistic	Rx/Tx packets on User interfaces, PPP interface
Network management	RANEC software

Approvals

Radio parameters	CE, FCC
Use in automotive environments	ECE Regulation 010.00
Vibrations	EN 61 373