

- GSM/GPRS/EDGE and UMTS/HSDPA packet transmission
- Integral modem with 6-band UMTS (800/850/900/1700/1900/2100) and quad-band GPRS/EDGE (850/900/1800/1800)
- 2 binary inputs, 1 SSR NO output
- Ethernet port 10Base-T/100Base-TX
- 2 serial port to communicate with external devices (expanders): RS-232 with RTS/CTS handshaking, RS-485
- Built-in isolated power supply unit
- Programmable logic controller (PLC)
- Data logger with 0,1 sec resolution (microSD card support)
- Protocol converter (supports Modbus RTU, Modbus TCP, UDP)
- Built-in Master and Slave functionality
- Smart routing of packets
- SNMP ver. 1 protocol support (included traps and polling functionality)
- Diagnostic LEDs (module status, GSM transmission activity, GSM signal level, 2G/3G activity, serial and Ethernet communication activity)
- “Watchdog” circuitry – automatic reset in case of abnormal state

MT-251 module has been designed for wireless integration over 2G/3G network of various remote devices (e.g. measuring units, PLC controllers, I/O stations, operator panels) equipped with serial port RS-232, RS-485 or Ethernet port. With compact, robust design, attractive technical features and easy to use configuration tools the MT-251 gateway is an optimal solution for demanding wireless telemetry, control, diagnostic, surveillance and alarm systems. Module is equipped with 3G modem and optionally can be produced with MIM (Machine Identification Module) soldered to PCB replacing or backing-up standard SIM card. It can be powered from DC voltage source (18 – 55 VDC) and additionally it equipped with intelligent charger designed to manage of external SLA backup battery.

MT-251 can be used as wireless, “transparent” serial and Ethernet port, but it can also play a role of local Master querying periodically an external device for user defined recourses. In such case MT-251 creates in memory a mirror of the external recourses and detects alarms, state changes and fulfilled logic conditions incorporating raw and calculated values. Data are transmitted via 2G/3G network according to user defined rules. Data may be logged with precise timestamp in non volatile Flash memory according to configured schedule or on event.

Resources:

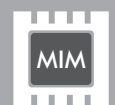
- 2 binary inputs, 1 SSR NO output
- Ethernet port 10Base-T/100Base-TX
- RS-232 serial port with RTS/CTS handshaking



- Built-in event processor for data rules transmission and SMS messages sending
- Remote configuration, programming, diagnostics and firmware upgrade via 2G/3G network
- Option of soldered MIM card replaced SIM
- Battery buffered power supply (SLA battery support)
- Power supply 18 – 55 VDC
- Real Time Clock (RTC)
- Industrial design, DIN rail mounting, spring terminal blocks
- RS-485 serial port
- USB port for local configuration and programming
- Interface for backup 12V SLA battery – charging support
- Internal flags and registers for user application program
- Firmware Flash memory with remote update capability
- Data logger supporting microSD card
- Option of soldered MIM card replaced SIM
- RTC with external synchronization functions

Functionality

- Transmission mode: 2G/3G packet transmission, SMS, Ethernet
- Access to remote recourses using standard protocols MODBUS RTU and MODBUS TCP
- Intelligent packet routing and Multimaster support in MODBUS mode
- Transmission of data from external devices connected to serial and Ethernet port
- External resources mapping (mirroring) for event detection and triggering
- MT2MT buffer for direct data sharing between other MT telemetry modules
- Multibroadcast for transparent mode
- SNMP ver. 1 protocol support (included traps and polling functionality). Module operates as a SNMP agent – device which can be polled by server and can send unsolicited information (traps) to server. External resources mapping (mirroring) for event detection and triggering
- Data logger recording on microSD card with 0,1 sec resolution



0-1DI
/0-1DO



DIN RAIL

RS-232

RS-485

3G



- Programmable control logic using I/Os, timers, counters, flags and register for triggering events (data transmission/recording, SMS transmission, e-mail transmission, setting output and internal register, etc.)
- Configurable SMS messages triggered by alarms and scheduled
- Dynamic Fields in SMS text, support for symbolic names and macros
- Event based transmission (unsolicited messaging) triggered by change of binary input/output state, internal flag state, by true condition.
- Remote configuration and programming via 2G/3G network
- Configurable access security – list of authorized IPs and telephone numbers, optional password
- DIN rail mounting
- 18-55 VDC Power supply
- Built-in management of external SLA backup battery
- Built-in advanced auto-diagnostics
- Spring terminal blocks
- User friendly configuration tools and communication driver (OPC and RDB support)

General

| | |
|------------------------|---------------------------|
| Dimensions (L x W x H) | 105 x 86 x 58 mm |
| Weight | 200 g |
| Fixing | DIN Rail 35 mm |
| Operating temperature | -20° to +60 °C |
| Protection class | IP40 |
| Humidity | up to 95 % non condensing |

GSM/GPRS Modem

| | |
|---|--|
| Modem type | uBlox LISA-U201 |
| GSM/GPRS/EDGE | 850/900/1800/1900 |
| UMTS/HSPA | 800/850/900/1900/2100 |
| Peak transmitting power (GSM 850/EGSM 900) | 33 dBm (2W) – class 4 station |
| Peak transmitting power (DCS 1800/PCS 1900 MHz) | 30 dBm (1W) – class 1 station |
| Peak transmitting power (WCDMA/HSDPA/HSUPA) | 24 dBm –class 3 station |
| GPRS class | 10 |
| Modulation | 0,3 GMSK |
| Channel spacing | 200 kHz |
| 2G frequency range: | |
| GSM 850 | Transmitter: 824 MHz - 849 MHz Receiver: 869 MHz - 894 MHz |
| EGSM 900 | Transmitter: 880 MHz - 915 MHz Receiver: 925 MHz - 960 MHz |
| DCS1800 | Transmitter: 1710 MHz - 1785 MHz Receiver: 1805 MHz - 1880 MHz |
| PCS 1900 | Transmitter: 1850 MHz - 1910 MHz Receiver: 1930 MHz - 1990 MHz |
| 3G frequency range | 2100 MHz, 1900 MHz, 1700 MHz, 850 MHz, 800 MHz, 900 MHz |
| 3G data rate | HSUPA category 6, up to 5,76Mb/s UL HSDPA category 8, up to 7,2Mb/s DL LISA-U200 WCDMA PS data up to 384 kb/s DL/UL |
| Antenna | 50 Ω |

Power Supply

| | | | |
|---|-----------|-------------|----------|
| Direct Current DC | 18 – 55 V | | |
| Input current for 24VDC | Idle 0,09 | Active 0,25 | Max 1,00 |
| External battery nominal voltage | 6 V | | |
| External battery nominal capacity | 12 Ah | | |
| Maximum external battery charging current | 100 mA | | |

Binary Inputs I1, I2

Operating in binary input mode:

| | |
|----------------------------------|--------------|
| Maximum input voltage | 55 V |
| Input resistance | 11,2 kΩ typ. |
| Input voltage for high state (1) | > 9 V min. |
| Input voltage for low state (0) | < 3 V max. |

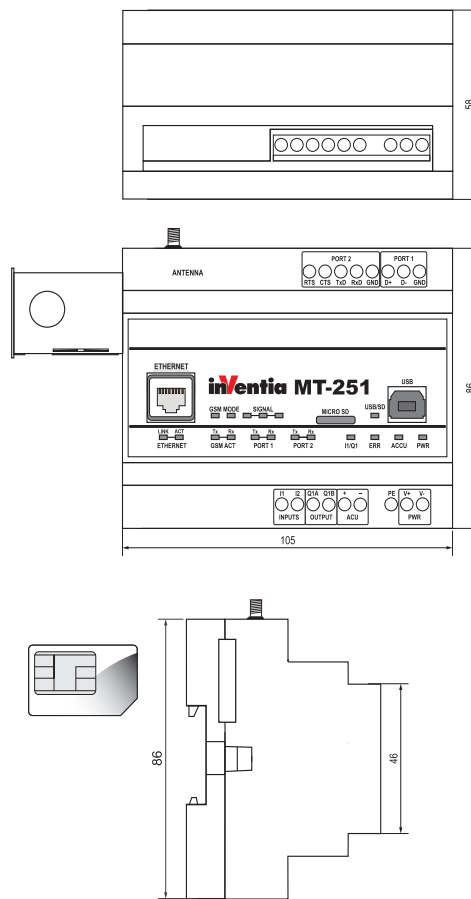
Binary output Q1:

| | |
|-------------------------------------|-------------|
| Recommended mean current for output | 100 mA |
| Maximum current for output | 1 A max. |
| Output resistance in ON state | 500 mΩ max. |

Ethernet Port

| | |
|--------------------|----------------------|
| Standard | 10Base-T, 100Base-TX |
| Connector type | RJ45, M12 as option |
| Number of M12 pins | 4 pin |
| M12 Coding | „D” |

Drawings and dimensions (all dimensions in millimeters)



Supplementary information:



INVENTIA Sp. z o.o.
 Poleczki 23, 02-822 Warsaw, POLAND
 tel.: +48 22 545-32-00, 545-32-01
 fax: +48 22 643-14-21
 inventia@inventia.pl, www.inventia.pl



INVENTIA complies with ISO 9001:2015 certified Quality Management System!
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