GWR-I
INDUSTRIAL CELLULAR ROUTER SERIES

GPRS/EDGE/HSPA+

GWR-I router series represents a group of industrial graded routers specially designed for expansion of existing industrial networks, remote telemetry and data acquisition in harsh environments. Low transmission delay and very high data rates offered by existing cellular networks completely eliminate the need for very complex installation of wired infrastructure in industrial environments. Easy to install, reliable and high performance router models from GWR-I series introduce a completely new dimension into industrial networking area.

Complete series is based on reliable and high performance hardware platform using highly integrated ARM9 system-on-chip microprocessor. The complete series inherited the basic concept of GWR cellular router series – "reliability comes first". Therefore all router models have dual SIM card support. The form factor of the router is adjusted to industrial environments and DIN rail mounting kit is part of standard equipment for GWR-I series. With a robust all-metal case and top quality components inside, durability of the product is guaranteed.

GWR-I router is equipped with one Ethernet port and two serial ports and provides the option to choose an appropriate model with RS-232C, RS-422 or RS-485 (full or half duplex) ports. Additionally, device can be fully customized on request with hardware and software enhancements for fitting users' specific needs.

Many useful features make GWR-I cellular routers a perfect solution for wide variety of industrial applications:

Dual SIM card support increases the reliability of the router and provides a solution for those applications where failure of one mobile network must not result in system downtime.

The whole set of advanced WAN settings allow a user to specify desired parameters in order to meet the requirements of specific cellular network. GWR routers have proved to be reliable and high performance devices in so many countries around the world.

VPN (GRE, IPsec and OpenVPN) tunnel support provides powerful options for network expansion and secure data transfer over the cellular network.

With Serial-to-IP feature it is possible to connect, control and perform data acquisition from almost any device with serial RS-232C, RS-422 or RS-485 port. In addition to this feature, GWR-I router series implements ModbusRTU-to-ModbusTCP functionality designed to support expansion of Modbus SCADA networks over the cellular networks.

Easy to use web interface, extended CLI (Command Line Interface), detailed log, SMS control feature, partial and full configuration Export/Import and remote management and monitoring software provide wide range of management functionalities. All those features and tools empower a user with full control over GWR-I routers.

TYPICAL APPLICATION

Financial and department store
- Connection of ATM machines to central site
- POS terminals
- Vending machines
- Bank office supervision

Security
- Traffic control
- Video surveillance solutions

Data collection and system supervision
- Extra-high voltage equipment monitoring
- Running water, gas pipeline supervision
- Centralized heating system supervision
- Environment protection data collection
- Flood control data collection
- Alert system supervision
- Weather station data collection
- Power grid
- Oilfield
- Light supervision
- Solar PV power solutions

Technical specifications

Interfaces and connectors

- 1x embedded interface UMTS/HSPA+/EDGE/GPRS (depending on the router model)
- Dual SIM slots
- SMA female connectors (50 Ω) for external antenna (one or two, depending on the router model)
- 1x Ethernet interface 10/100 Base-T (LAN)
- 1 x RS-232 / RS-485 4-wire / RS-485 2-wire; configuration: DCE / Full-Duplex / Half-duplex; DSUB9 female connector
- 1 x RS-232 / RS-485 4-wire; configuration: DCE / Full-Duplex; RJ45 connector
- 1 x digital input; 2 mA min. optocoupler IR diode; FCI 20020110-H041A01LF connector
- 1 x digital output; 60V max. optocoupler open drain MOSFET with 500 mA resettable PTC fuse, FCI 20020110-H041A01LF connector

RF characteristics

RF characteristics depend on the GWR-I router model. Below is a list of available router models from GWR-I series and corresponding RF characteristics:

GWR-I202 model – GPRS
- GPRS Quad-band: 850/900/1800/1900 MHz

GWR-I252 model – GPRS/EDGE
- GSM/GPRS/EDGE Quad band: GSM 850/900/1800/1900 MHz

GWR-I352 model – GPRS/EDGE/UMTS/HSPA+
- UMTS/HSPA+: 900/2100 MHz or 850/1900/2100 MHz (Huawei modules, depending on the model)
- GSM/GPRS/EDGE Quad band: 850/900/1800/1900 MHz

Transfer rates:
- HSPA+ DL: 21.6 or 14.4 Mbps, UL: 5.76 Mbps (depending on the model)
- EDGE DL: 236.8Kbps, UL: 236.8Kbps
- GPRS DL: 85.6Kbps, UL: 42.8Kbps

Important note: All DL/UL speeds are given as speeds defined by standards. Actual speeds may vary and are not guaranteed.

Status LED

- Ethernet activity/network traffic
- Power on
- GSM link activity
- Signal quality
- Reset

Power

- Input: 12-48 VDC
- Input protection: Reverse polarity, transients, overcurrent (internal 1 A time-lag fuse)
- FCI 20020110-H021A01LF connector

Environmental

- Operating temperature: -20°C to +70°C (-4°F to 158°F)
- Storage temperature: -40°C to +85°C (-40°F to 185°F)
- Relative humidity: 5% to 95% (non-condensing)
- IP rating: IP40
- Ethernet isolation: 1.5 kV RMS
- Serial ports protection (ESD): +/- 15 kV (IEC 61000-4-2 Air Gap)

Housing

- Robust steel sheet 0.8 mm, black
- DIN rail mounting kit

Dimensions and weight

- (L x W x H): 104 mm x 50 mm x 135 mm
- Weight: 480 g

Accessories (included)

- Matching power connector: FCI 20020006-H021B01LF
- Matching GPIO connector: FCI 20020006-H041B01LF
- GSM antenna: Frequency: 850/900/1800/1900/2100 MHz, SMA connector

Protocols and Features

Network

- DHCP server; RIP; Port forwarding; DMZ Support
- SNMPv1,2c; DynDNS; NTP
- Firewall (NAT, PAT, IP filtering); Serial-to-IP; ModbusRTU-to-ModbusTCP

VPN

- GRE
- GRE Keepalive
- IPsec pass-through
- IPsec
- Data integrity
  - HMAC-MD5, SHA-1
  - Authentication and key management
- IKE, manual keys
- IKE features
  - Perfect Forward Secrecy
  - Auth-Method PSK
  - Identify IP address
  - DPD for constant connection
  - Automatic NAT-T behind NAT
  - Initiator and responder
- IPSec tunnel failover
- OpenVPN

Management

- Web application (HTTP based)
- Command Line Interface on serial console, telnet and SSH
- GWR connection wizard
- Remote management and monitoring software
- Detailed system log
- Default reset
- Firmware upload
- Partial or full configuration Export/Import

QMS ISO 9001:2015 ISMS ISO/IEC 27001:2014 CE certified

Ordering Information

	GPRS	EDGE	UMTS/HSPA+	RS-232 or RS-485 (1)	RS-232 or RS-485 (2)	Eth port	Digital I/O
GWR -I202-X	●	—	—	●	●	1	1/1
GWR-I252-X	●	●	—	●	●	1	1/1
GWR-I352-X	●	●	●	●	●	1	1/1

-X at the end of model code denotes GSM module. Following manufacturers are available: • C – Cinterion (Gemalto) • H – Huawei

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