

# GSM-R Cellular Router GPRS

RR75i v2 Series

# ADVANTECH



## PRODUCT FEATURES

- Designed for Railway applications
- GSM-R & Standard GSM support
- \*optional WiFi
- Modular design to fit application requirements
- Dual SIM cards for redundant backhaul
- Up to 42.8 Kbps upload / 85.6 Kbps download
- LINUX platform & advanced networking functions
- Advanced security features

**GSM-R/GPRS RR75i v2** router is used to wirelessly connect various equipment and devices via Ethernet interface 10/100 to the Internet or intranet. With a high security level and wide coverage of GSM-R technology provided by railway or mobile operators, it is mostly used in railway applications, for remote maintenance and data transfer from various devices (controllers, RTUs, meters...). Other benefits and advantages includes high modularity and option to connect various devices via Ethernet 10/100, RS232, RS485, RS422, M-Bus or I/O.

### Key features

As a standard, this industrial RR75i v2 wireless router is equipped with one Ethernet 10/100, one USB Host port, one binary input/output (I/O) port and one SIM card. To save and backup communication data, a version with 2 SIM cards is available. The wide range of interface options of this wireless router further expands an optional Port1 and Port2 - selected by the customer. For example, Ethernet port 10/100, serial interface ports RS232/RS485/RS422/M-Bus or (I/O - CNT). Port2 may be equipped with serial interfaces RS232/RS485/RS422/M-Bus or (I/O - CNT). The wireless router is supplied in metal casing. WiFi models are available.

Configuration is done via web interface protected by password.

The RR75i v2 router supports creation of VPN tunnels using technologies IPsec, OpenVPN and L2TP to ensure safe communication. Web interface provides detail statistics about the wireless router activities, signal strength, detailed log, etc. Router supports functions: DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS and many other functions.

Other diagnostic functions to ensure continuous communication include automatic inspection of PPP connection offering an automatic restart feature - in case of connection losses, or hardware watchdog which monitors the status of the router. With the help of a special start up script window, you may insert Linux scripts for various actions. For some applications the option to create several different configurations for one wireless GPRS router, the profiles (maximum of 4), and the option to switch between them (for example via SMS, binary input status, etc.) is essential. Cellular wireless routers may automatically upgrade configuration and firmware from server. This allows mass reconfiguration of many routers in one time.

## ORDERING INFORMATION

*Note: Check with your local distributor for availability and options.*

### BB - RR 2 F52XX2X

Accessories	
0	No Accessories (DIN holder included)
1 (set)	Accessories with EU power supply
2 (set)	Accessories with UK power supply
3 (set)	Accessories with Australia power supply
4 (set)	Accessories with US power supply
Enclosure	
2	Metal enclosure
PORT2 (Full version only)	
0	No expansion port
1	ETH
2	RS232
3	RS485
4	RS422
5	M-BUS
6	CNT (4× BI, 2×, 1×B0) - I/O port
7	WiFi
8	WMBUS (Wireless M-BUS)
PORT1	
0	No expansion port
1	ETH
2	RS232
3	RS485
4	RS422
5	M-BUS
6	CNT (4× BI, 2×, 1×B0) - I/O port
9	Switch
Router version	
F	Full

*Please note: Isn't possible to have in the router all combinations of the ports.  
Please check your chosen variant with your a local distributor.*

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## SPECIFICATIONS

### FIXED INTERFACES - FULL VERSION

1× Ethernet	10/100 Mbps, independent or bridged
2× SIM	SIM Card
1× I/O	Binary input/output
1× USB	USB 2.0 Host, Type A

### OPTIONAL INTERFACES

1× Optional port (PORT 1)	Ethernet (10/100Mbps), RS232, RS422/485, M-BUS I/O Input/Output, Ethernet Switch (with PORT 2)
1× Optional port (PORT 2)	RS232, RS422/485, M-BUS, WMBUS, WiFi Ethernet Switch (with PORT 1)

### ANTENNA CONNECTORS

1x SMA – 50 Ohm
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### POWER

Source	9 - 36 VDC
Consumption	Idle - 2 W Transmission - 5.5 W

### MECHANICAL

Dimension Metallic version	42 x 87 x 113mm
Protection - Freely	IP30
Weight	280 g

### ENVIRONMENTAL

Operating Temperature	-30 to +60°C
Storage Temperature	-40° to +85°C
Humidity	Operating - 0 to 95% relative humidity non condensing Storage - 0 to 95% relative humidity non condensing

### WIFI \*optional ("F" router versions)

Antenna connector	R-SMA – 50 Ohms
Supported WiFi band	2.4 GHz
Standards	802.11b, 802.11g, 802.11n
2.4 GHz supported channels	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
RX Sensitivity	11b, 11 Mbps: typ. -85 dBm 11g, 54 Mbps: typ. -70 dBm (HT20) 11n, MSC7: typ. -66 dBm (HT40) 11n, MSC7: typ. -62 dBm
TX Output Power	11b, 11 Mbps: min. 18, typ. 19, max. 20 dBm 11g, 54 Mbps: min. 14.5, typ. 16, max. 17.5 dBm 802.11n (HT20): min. 13.5, typ. 15, max. 16.5 dBm 802.11n (HT40): min. 13.5, typ. 15, max. 16.5 dBm
Type of device	Access point, station

### PARAMETERS - EDGE module

Frequency bands	Quad-band: GSM-R /EGSM900 /GSM1800 /GSM1900 (GSM Phase 2/2+)
Transmit power	Class 4 (2 W) for GSM-R/EGSM900 Class 1 (1 W) for GSM1800 /GSM1900

### 32B ARM MICROPROCESSOR

Memory	512 Mb DDR SDRAM 128 Mb FLASH 1 Mb MRAM
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### I/O PORT (CNT)

Binary input	Reed contact with trigger level 1.3 up to 1.4 V
Binary output	100 mA/ max. 30 V

### SOFTWARE FEATURES

Linux based, possibility to program your own application
NTP client, NTP Server – time synchronization
SMS communication – AT commands on RS232, Ethernet and I/O
M-RAM memory inside – router statistic's saving into memory

### NETWORKING

DHCP – automatic IP addressing in LAN network
NAT/PAT – IP address and ports translation between inside/outside network
VRRP – virtual backup router function
DynDNS client – access to the router with a dynamic IP address
Dial-in – the ability to communicate over dial CSD call
PPPoE Bridge – PPP frames encapsulation inside ETH frames

### VPN TUNNELING

IPsec, OpenVPN, L2TP – secure encrypted tunnels
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### CONFIGURATION AND DIAGNOSTIC

HTTP server – configuration via web server
Telnet – configuration and access to the file system
SNMP – router diagnostics, communication with I/O and M-Bus
GPRS state signalization by LED
On-line info on GSM signal status (level, cell, neighbors)
SMS info – power on, GPRS connection or disconnection
SMS control – on/off GPRS connection, switch SIM, I/O etc.
Transferred data counting, one more APN as backup
Remote router group configuration change, switching among configuration profiles
SSH – encrypted configuration and access to the file system

### STANDARDS/REGULATION

Complies with standards	EN 301 511, v9.0.2,
	EN 301 489-1 v1.8.1,
	EN 301 489-7 v1.3.1,
	EN 60950-1:06 ed.2 + A11:09 + A1:10

# GSM-R Cellular Router GPRS

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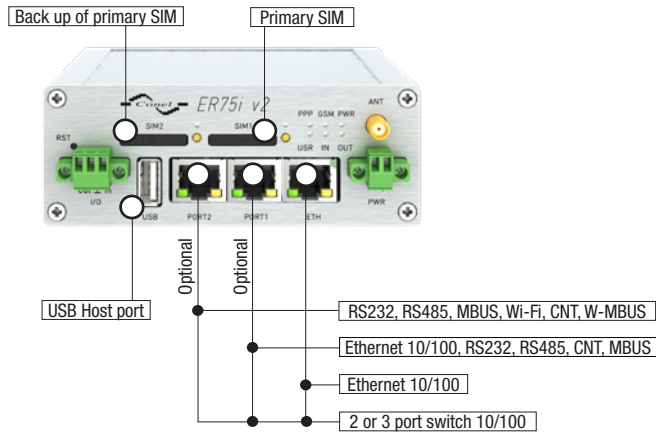


## ACCESSORIES

ORDER CODE	DESCRIPTION	Variant of router without accessories	Accessories included in set	Accessories sold separately
BB-SBD40	Metal DIN holder for Metal versions of routers v2	✓	✓	✓
BB-TG.09.0113	Antenna GSM/UMTS stick 2dB - Penta-band, SMA-M connector			✓
BB-AO-AGSM-MG3S	Antenna GSM 900/1800 magnetic 3dB, 3m cable, SMA-M connector		✓	✓
BB-AO-AGSM-MG9S	Antenna GSM/UMTS magnetic 9dB - Quad-band, 3,5m cable, SMA-M connector			✓
BB-AW-A24G-M5SRP	Antenna WiFi stick 5dB, SMA-RP connector		✓	✓
BB-KD-ETH	Ethernet cross cable 1,5m		✓	✓
BB-CON-WR3	3-pin terminal block for IO		✓	✓
BB-CON-WR2	2-pin Terminal block for Power Supply	✓		✓
BB-RPS-v2-WR2-EU	Power supply with WR connector (2 pins) - 12V/1AX, EU plug		✓	✓
BB-RPS-v2-WR2-US	Power supply with WR connector (2 pins) - 12V/1AX, US plug		✓	✓
BB-RPS-v2-WR2-UK	Power supply with WR connector (2 pins) - 12V/1AX, UK plug		✓	✓
BB-RPS-v2-WR2-AUS	Power supply with WR connector (2 pins) - 12V/1AX, AUS plug		✓	✓
Quick Start Guide		✓	✓	✓

### RR75i V2

2x SIM card holder, 2x optional port (PORT1,2)



## R-SEENET™

Router Management Software consisting of two parts:

**R-SeeNet Server** application can be programmed to automatically send SNMP queries (Simple Network Management Protocol) to each router defined in the network. The application retrieves status information from the routers and records it in the SQL database.

**R-SeeNet PHP** is a web-based application that accesses the SQL database and provides the network administrator detailed information on individual routers and network health.

## SMARTWORX HUB™

**SmartWorx HUB** takes management of your devices to new levels of flexibility and efficiency. Giving you a complete view of your installed device population, SmartWorx Hub delivers invaluable configuration, diagnostic and management facilities directly to your desktop, wherever you are.

Manage a single device or your entire device population at the same time. Whether you need to modify configuration parameters, download or upgrade installed firmware and applications or view detailed information regarding network statistics, you can do it all from any location.