GPRS/EDGE ER75i 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 GPRS/EDGE technology provided by mobile phone operators, it is mostly used in industrial applications, for remote maintenance and service of machines, or for data transfer from solar or wind power plants. Other benefits and advantages include 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 ER75i 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 either in a plastic or metal casing, based on the requirements of the customer. WiFi models are available (“F” version of router).

Configuration is done via web interface protected by password. The GPRS/EDGE router supports creation of VPN tunnels using chnologies 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/EDGE 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.

Selected Applications
Transportation and security
IT and communication
Self-service terminals
Energy and power industry
Metrology, alarm and warning systems

Product Features
- Designed for M2M applications
- WiFi, M-BUS and Modbus TCP / Modbus RTU
- Modular design to fit application requirements
- Single or dual SIM cards for redundant backhaul
- Up to 85.6 KBps upload / 236.8 KBps download
- LINUX platform & advanced networking functions
- Advanced security features

Ordering Information
Note: Check with your local distributor for availability and options. Contact Advantech B+B SmartWorx distributors.

Europe, Middle East, Africa, Asia, South America, Latin America.

BB - ER2X51XXXX

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No Accessories (DIN holder included)</td>
</tr>
<tr>
<td>1 (set)</td>
<td>Accessories with EU power supply</td>
</tr>
<tr>
<td>2 (set)</td>
<td>Accessories with UK power supply</td>
</tr>
<tr>
<td>3 (set)</td>
<td>Accessories with Australia power supply</td>
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<tr>
<td>4 (set)</td>
<td>Accessories with US power supply</td>
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<table>
<thead>
<tr>
<th>Enclosure</th>
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<tr>
<td>1</td>
<td>Plastic enclosure</td>
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<tr>
<td>2</td>
<td>Metal enclosure</td>
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<table>
<thead>
<tr>
<th>PORT2</th>
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<tr>
<td>1</td>
<td>ETH</td>
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<tr>
<td>2</td>
<td>RS232</td>
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<td>3</td>
<td>RS485</td>
</tr>
<tr>
<td>4</td>
<td>RS422</td>
</tr>
<tr>
<td>5</td>
<td>M-BUS</td>
</tr>
<tr>
<td>6</td>
<td>CNT (4× Bl, 2×, 1×BO) - I/O port</td>
</tr>
<tr>
<td>7</td>
<td>WiFi</td>
</tr>
<tr>
<td>8</td>
<td>WMBUS (Wireless M-BUS)</td>
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<table>
<thead>
<tr>
<th>PORT1</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
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<td>ETH</td>
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<tr>
<td>2</td>
<td>RS232</td>
</tr>
<tr>
<td>3</td>
<td>RS485</td>
</tr>
<tr>
<td>4</td>
<td>RS422</td>
</tr>
<tr>
<td>5</td>
<td>M-BUS</td>
</tr>
<tr>
<td>6</td>
<td>CNT (4× Bl, 2×, 1×BO) - I/O port</td>
</tr>
<tr>
<td>9</td>
<td>Switch</td>
</tr>
</tbody>
</table>

Router version
B Basic
F Full

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

www.advantech-bb.com / Enabling an Intelligent Planet
### Specifications

#### Fixed Interfaces - Basic Version
- 1× Ethernet 10/100 Mbits, independent or bridged
- 1× SIM Card
- 1× I/O Binary input/output
- 1× 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)

#### Antenna Connectors
- 1x SMA – 50 Ohm

#### Fixed Interfaces - Full Version
- 1× Ethernet 10/100 Mbits, independent or bridged
- 2× SIM Card
- 1× I/O Binary input/output
- 1× 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

### Power
- **Source**: 9 - 36 VDC
- **Consumption**
  - Idle: 2 W
  - Transmission: 5 W

### Mechanical
- **Dimension Plastic version**: 51 x 87 x 116mm
- **Dimension Metallic version**: 42 x 87 x 113mm
- **Protection**: IP30
- **Weight Plastic version**: 150 g
- **Weight Metallic version**: 280 g

### Environmental
- **Operating Temperature**: -40 to +75°C
- **Storage Temperature**: -40°C 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. -76 dBm
  - (HT20) 11n: MCSI: typ. -69 dBm
  - (HT40) 11n: MCSI: 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

### SW 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**
- **PPOe Bridge – PPP frames encapsulation inside ETH frames**

### 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**
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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
- **Telecom and Emission**
  - ETSI EN 301 511 V12.5.1 (2017-03), ETSI EN 300 328 V2.1.1 (2016-11), ETSI EN 300 220-2 V3.1.1 (2017-02)
- **EMC**
- **Safety**

### Operating Environment
- **Dimension Metallic version**: 42 x 87 x 113mm
- **Protection**: IP30
- **Weight Plastic version**: 150 g
- **Weight Metallic version**: 280 g
- **Temperature**: Operating - 0 to 95% relative humidity non-condensing
- **Operating Temperature**: -40 to +75°C
- **Storage Temperature**: -40°C to +85°C
- **Humidity**: Operating - 0 to 95% relative humidity non-condensing
- **Storage - 0 to 95% relative humidity non-condensing**
- **Materials**: FR-4 epoxy resin, sintered aluminium extrusion, glass filled polycarbonate, polyamide 6.6, polyamide 6, polyamide 12, PC/PBT, PPS, PC/ABS, PP, ABS, LDPE, HDPE, PEI, PETG
- **Weight**: Metallic version 280 g
- **Protection**: IP30

### 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**
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### VPN Tunneling
- **IPsec, OpenVPN, L2TP – secure encrypted tunnels**

### Configuration and Diagnostic
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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.

---

**ACCESSORIES**

<table>
<thead>
<tr>
<th>ORDER CODE</th>
<th>DESCRIPTION</th>
<th>Variant of router without accessories</th>
<th>Accessories included in set</th>
<th>Accessories sold separately</th>
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<tbody>
<tr>
<td>BB-SBD40</td>
<td>Metal DIN holder for Metal versions of routers v2</td>
<td>✓</td>
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<tr>
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<td>BB-TG.09.0113</td>
<td>Antenna GSM/UMTS stick 2dBi - Penta-band, SMA-M connector</td>
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<tr>
<td>BB-A0-AGSM-MG3S</td>
<td>Antenna GSM 900/1800 magnetic 3dBi, 3m cable, SMA-M connector</td>
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<td>BB-KD-ETH</td>
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<td>BB-CON-WR3</td>
<td>3-pin terminal block for I0</td>
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<tr>
<td>BB-CON-WR2</td>
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<tr>
<td>BB-RPS-v2-2W2-AUS</td>
<td>Power supply with WR connector (2 pins) - 12V/1AX, AUS plug</td>
<td>✓</td>
<td>✓</td>
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</tr>
</tbody>
</table>

Quick Start Guide

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**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.

---

**R-SEE NET™**

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.

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