

# Cellular Routers 3G UMTS/HSPA+

UR5i v2 Series

B+B SMARTWORX

Powered by

ADVANTECH



## 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 5.7 Mbps upload to 14.4 Mbps 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.**

### BB - UR2X61XXXX

#### 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

|   |                   |
|---|-------------------|
| 1 | Plastic 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 (4x BI, 2x, 1xBO) - 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 (4x BI, 2x, 1xBO) - I/O port |
| 9 | Switch                           |

#### Router version

|   |       |
|---|-------|
| B | Basic |
| F | Full  |

3G UMTS/HSPA routers, UR5i v2 series, are used to wirelessly connect various equipment and devices via Ethernet 10/100 to the Internet or intranet. High data transfer speed of up to 14.4 Mbit/s (download) and upload speed up to 5.76 Mbit/s, make it an ideal wireless solution for traffic and security camera systems, individual computers, LAN networks, automatic teller machines (ATM) and other self-service terminals, etc.

### Key features

This exceptionally fast 3G UR5i 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 x SIM cards is available. A wide range of user-defined interface options further expands optional Port1 and Port2. (EX: Ethernet port 10/100, serial interface ports RS232/RS485/RS422/M-Bus/WiFi or (I/O - CNT). Port2 may be equipped with serial interfaces RS232/RS485/RS422/M-Bus or (I/O - CNT). Routers are available in either plastic or metal casings. FULL version of the router is equipped with GPS.

Configuration is done via protected password web interface. The 3G UMTS/HSPA+ router supports VPN tunnel creation using IPsec, OpenVPN and L2TP to ensure safe communication. Web interface provides statistics about router activities, signal strength, detailed log, etc. Cellular router supports functions: DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS and many other functions.

Other diagnostic functions ensuring continuous communication include automatic inspection of PPP connection offering an automatic restart feature in case of connection losses, and hardware watchdog which monitors the status of the router. With the help of a start up script window you may insert Linux scripts for various actions and, for some applications the option to create several different configurations for one 3G wireless router, profiles (maximum of 4), and the option to switch between them (for example via SMS, binary input status, etc.). Cellular wireless routers can automatically upgrade configuration and firmware from server. This allows mass reconfiguration of multiple routers at one time.

## SELECTED APPLICATIONS

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

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

# Cellular Routers 3G UMTS/HSPA+

## UR5i v2 Series



### SPECIFICATIONS

#### FIXED INTERFACES - BASIC VERSION

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

#### OPTIONAL INTERFACES

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

#### ANTENNA CONNECTORS

|                 |
|-----------------|
| 2x SMA – 50 Ohm |
|-----------------|

#### 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× PORT 1   | Ethernet (10/100Mbps), RS232, RS422/485, M-BUS I/O Input/Output, Ethernet Switch (with PORT 2) |
| 1× PORT 2   | RS232, RS422/485, M-BUS, WMBUS, WiFi Ethernet Switch (with PORT 1)                             |
| 1× Optional | 2nd SIM card holder ("F" router versions)  |

#### ANTENNA CONNECTORS

|                 |
|-----------------|
| 3× SMA – 50 Ohm |
|-----------------|

#### POWER

|             |   |
|-------------|---|
| Source      | 9 - 36 VDC  |
| Consumption | Idle - 2.6 W<br>GPRS - to 3.5 W (GPRS transmission)<br>UMTS - to 5.5 W (LTE transmission) |

#### MECHANICAL

|                            |                 |
|----------------------------|-----------------|
| Dimension Plastic Version  | 51 x 87 x 116mm |
| Dimension Metallic Version | 42 x 87 x 113mm |
| Protection                 | IP30            |
| Weight Plastic Version     | 150g            |
| Weight Metallic Version    | 280g            |

#### ENVIRONMENTAL

|                       |  |
|-----------------------|--|
| Operating Temperature | -40 to +75°C   |
| Storage Temperature   | -40° to +85°C  |
| Humidity              | Operating - 0 to 95% relative humidity non condensing<br>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<br>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<br>11g, 54 Mbps: min. 14.5, typ. 16, max. 17.5 dBm<br>802.11n (HT20): min. 13.5, typ. 15, max. 16.5 dBm<br>802.11n (HT40): min. 13.5, typ. 15, max. 16.5 dBm |
| Type of device             | Access point, station  |

#### GPS SPECIFICATIONS \*GPS is not available when the router is equipped with the LTE module 450 MHz

|                  |   |
|------------------|---|
| Antenna          | 50 Ohms – active  |
| Protocols        | NMEA 0183 v3.0  |
| Frequency        | 1575.42MHz  |
| Sensitivity      | Tracking: -161dBm<br>Acquisition (Assisted): -158dBm<br>Acquisition (Standalone): -145dBm<br>Hot start: 1 s<br>Warm start: 29 s<br>Cold start: 32 s |
| Acquisition time | Horizontal: < 2m (50 %); < 5m (90 %)<br>Altitude: < 4m (50 %); < 8m (90 %)  |
| Accuracy         | Velocity: < 0.2 m/s   |

#### CPU & MEMORY

|              |  |
|--------------|--|
| CPU          | 32b ARM microprocessor, 0.25 DMIPS per MHz |
| Flash memory | 16 MB DDR SDRAM                            |
| RAM          | 64 MB                                      |
| M-RAM        | 128 kB                                     |

#### 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                               |

#### PARAMETERS - HSPA+ module

|                  |   |
|------------------|---|
| HSPA+            | Bit rate 14,4 Mbps (DL) / 5,76 Mbps (UL)<br>3GPP rel. 6/7 standard<br>Data compress 3GPP  |
| UMTS             | Bit rate 384 kbps (DL) / 384 kbps (UL)<br>3GPP rel. 4 standard  |
| GPRS/EDGE        | EDGE bit rate 237 kbps (DL) / 237 kbps (UL)<br>GPRS bit rate 85,6 kbps (DL) / 85,6 kbps (UL)<br>Multislot class 12, CS 1 to 4,<br>3GPP rel. 99/4 standard |
| Support channels | GSM/GPRS/EDGE: Quad band, 850/900/1800/1900 MHz<br>UMTS/HSDPA/HSUPA/HSPA+: Five band,<br>800/850/900/1900/2100 MHz  |

#### STANDARDS/REGULATION

|  |   |
|--|---|
| Telecom and Emission                       | ETSI EN 301 511 V12.5.1, ETSI EN 300 440 V2.1.1, ETSI EN 301 908-1 V11.1.1, ETSI EN 301 908-2 V11.1.1, ETSI EN 300 328 V2.1.1, ETSI EN 300 220-2 V3.1.1 |
| EMC  | ETSI EN 301 489-1 V2.1.1, ETSI EN 301 489-3 V2.1.1, Draft ETSI EN 301 489-52 V1.1.0, ETSI EN 301 489-17 V3.1.1  |
| Safety                                     | EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 + AC:2011, EN 62311:2008  |
| E-Mark – EMC for devices in transportation | E-Mark homologation number: 10R – 04 7054   |

# Cellular Routers 3G UMTS/HSPA+

UR5i v2 Series



## 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
- DMZ - via iptables

## VPN TUNNELING

- IPsec, OpenVPN, L2TP – secure encrypted tunnels

## 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

### BASIC VERSION

1× SIM card holder, 1× optional port (PORT1)

### FULL VERSION

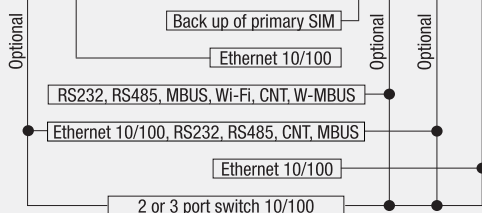
2× SIM card holder, 2× optional port (PORT1,2)



PLASTIC VERSION



METALLIC VERSION



# Cellular Routers

## 3G UMTS/HSPA+

### UR5i v2 Series



#### ACCESSORIES

| ORDER CODE        | DESCRIPTION   | INCLUDED IN PACKAGE | INCLUDED IN SET PACKAGE | SOLD SEPARATELY |
|-------------------|---|---------------------|-------------------------|-----------------|
| BB-SBD40          | Metal DIN holder for Metal versions of routers v2                               | ✓                   | ✓                       | ✓               |
| BB-CPD2-G         | Plastic DIN holder for Plastic versions of routers v2                           | ✓                   | ✓                       | ✓               |
| BB-TG.09.0113     | Antenna GSM/UMTS stick 2dB - Penta-band, SMA-M connector                        |                     | ✓                       | ✓               |
| BB-AO-AUMTS-M3S   | Antenna GSM/UMTS magnetic 3dB - Quad-band, 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-AP-AGNSS-SMA   | Antenna GPS/GLONASS, active (3V), magnetic, 33 - 34dB, 3m cable + SMA connector |                     |                         | ✓               |
| BB-KD-ETH         | Ethernet cross cable 1.5m   |                     | ✓                       | ✓               |
| BB-CON-WR3        | 3-pin terminal block for I/O  | ✓                   | ✓                       | ✓               |
| BB-CON-WR2        | 2-pin Terminal block for Power Supply   | ✓                   |                         | ✓               |
| BB-RPS-v2-WR2-EU  | Power supply with WR connector (2 pins) - 12V/1A - EU plug                      |                     | ✓                       | ✓               |
| BB-RPS-v2-WR2-US  | Power supply with WR connector (2 pins) - 12V/1A - US plug                      |                     | ✓                       | ✓               |
| BB-RPS-v2-WR2-UK  | Power supply with WR connector (2 pins) - 12V/1A - UK plug                      |                     | ✓                       | ✓               |
| BB-RPS-v2-WR2-AUS | Power supply with WR connector (2 pins) - 12V/1A - AUS plug                     |                     | ✓                       | ✓               |
| Quick Start Guide |   | ✓                   | ✓                       |                 |

## 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.