

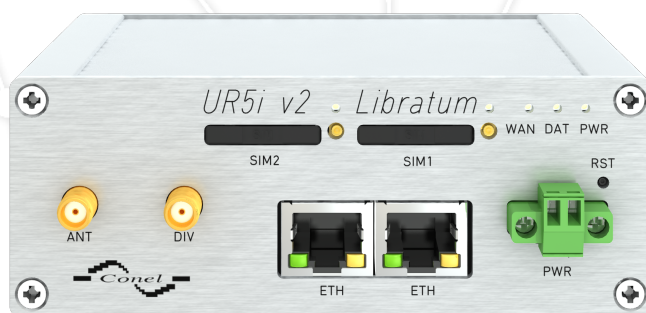
B+B SMARTWORX

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HSPA+ Industrial Router UR5i v2 Libratum

USER'S MANUAL



Used symbols



Danger – Information regarding user safety or potential damage to the router.



Attention – Problems that can arise in specific situations.



Information, notice – Useful tips or information of special interest.

GPL licence

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1. Safety Instruction



Please, observe the following instructions:

- The router must be used in compliance with all applicable international and national laws and in compliance with any special restrictions regulating the utilization of the router in prescribed applications and environments.
- To prevent possible injury and damage to appliances and to ensure compliance with all relevant provisions, use only the original accessories. Unauthorized modifications or the use of unapproved accessories may result in damage to the router and a breach of applicable regulations. Unauthorized modifications or use of unapproved accessories may void the warranty.
- The router can not be opened.
- Turn off the router and disconnect it from power supply before handling of the SIM card.



- **Caution!** The SIM card could be swallowed by small children.
- Input voltage must not exceed 36 V DC max.
- Do not expose the router to extreme ambient conditions. Protect the router against dust, moisture and high temperature.
- The router should not be used in locations where flammable and explosive materials are present, including gas stations, chemical plants, or locations in which explosives are used. We remind the users of the duty to observe the restrictions concerning the utilization of radio devices at such places.
- Switch off the router when traveling by plane. Utilization of the router in a plane may endanger the operation of the plane or interfere with the mobile telephone network, and may be unlawful. Failure to observe these instructions may result in the suspension or cancellation of telephone services for the respective client, or, it may result in legal sanctions; it may also result in both eventualities.
- When using the router in the close proximity of personal medical devices, such as cardiac pacemakers or hearing aids, you must proceed with heightened caution.
- The router may cause interference when in the close proximity of TV sets, radio receivers or personal computers.
- It is recommended that you should create an appropriate copy or backup of all the important settings that are stored in the memory of the device.

2. Product Disposal Instructions

The WEEE (Waste Electrical and Electronic Equipment: 2002/96/EC) directive has been introduced to ensure that electrical/electronic products are recycled using the best available recovery techniques to minimize the impact on the environment. This product contains high quality materials and components which can be recycled. At the end of it's life this product **MUST NOT** be mixed with other commercial waste for disposal. Check the terms and conditions of your supplier for disposal information.

3. Router Description

HSPA+ router UR5i v2 Libratum is used to wirelessly connect various equipments and devices via Ethernet interface 10/100 to the internet or intranet. Thanks to high data transfer speed of up to 14,4 Mbit/s (download) and 5,76 Mbit/s (upload) it is an ideal wireless solution for traffic and security camera systems, individual computers, LAN networks, automatic teller machines (ATM) and other self-service terminals, etc.

As a standard, cellular router UR5i v2 Libratum is equipped with two Ethernet 10/100 and two SIM cards. This wireless router is supplied either in a plastic or metal casing, based on the requirements of the customer.

Configuration is done via web interface protected by password. The UR5i v2 Libratum router supports creation of VPN tunnels using technologies IPsec, OpenVPN and L2TP to ensure safe communication. Web interface provides detail statistics about the 3G router activities, signal strength, detailed log, etc. Cellular router supports functions: DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS and many other function.

Other diagnostic functions ensuring 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 window (start up script window) you may insert Linux scripts for various actions. For some applications the key option to create several different configurations for one HSPA+ wireless router, the so-called profiles (maximum of 4), and the option to switch between them (for example via SMS, binary input status, etc.) is essential. Cellular routers UR5i v2 Libratum may automatically upgrade configuration and firmware from server. This allows mass reconfiguration of many routers in one time.

The router also supports additional software like R-SeeNet for permanent traffic monitoring of routers or communication VPN server Digicluster.



Examples of possible applications

- mobile office
- fleet management
- security system
- telematic
- telemetric
- remote monitoring
- vending and dispatcher machines

4. Contents of Package



Basic delivered set of router includes:

- router,
- power supply,
- crossover UTP cable,
- up to three external antennas,
- clip for the DIN rail,
- paper start guide.



Figure 1: Contents of package



Temperature range for power supply is reduced to 0 °C to +40 °C!

5. Router Design

5.1 Router versions

UR5i v2 Libratum router is supplied in the following versions (see table below). All versions are available in plastic or metal box according to customer requirements.

Router versions	Router Box	SIM1	SIM2	ETH0	ETH1
UR5i v2 Libratum	Plastic	1 x	1 x	1 x	1 x
UR5i v2 Libratum with WiFi	Plastic	1 x	1 x	1 x	1 x
UR5i v2 Libratum SL	Metal	1 x	1 x	1 x	1 x
UR5i v2 Libratum SL with WiFi	Metal	1 x	1 x	1 x	1 x

Table 1: Router versions

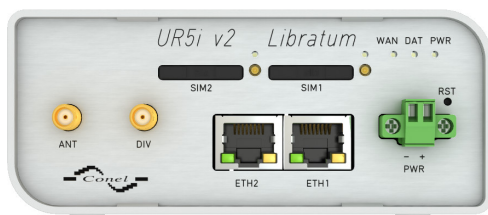


Figure 2: Front panel UR5i v2L

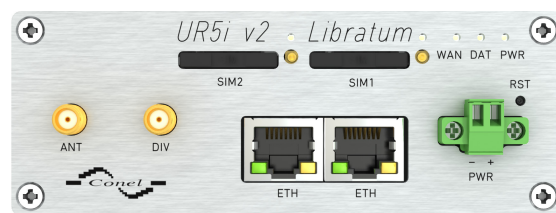


Figure 4: Front panel UR5i v2L SL

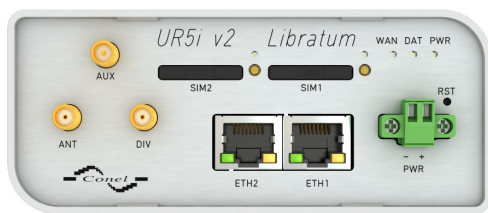


Figure 3: Front panel UR5i v2L with WiFi

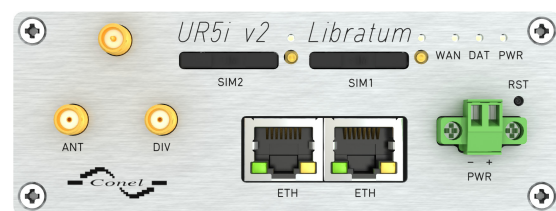


Figure 5: Front panel UR5i v2L SL with WiFi

5.2 Delivery identification

Trade name	Type name	Other
UR5i v2 Libratum	UR-5i-v2L	Version in the plastic box
UR5i v2 Libratum with WiFi	UR-5i-v2L	Version with WiFi in the plastic box
UR5i v2 Libratum SL	UR-5i-v2L	Version in the metal box
UR5i v2 Libratum SL with WiFi	UR-5i-v2L	Version with WiFi in the metal box

Table 2: Delivery identification

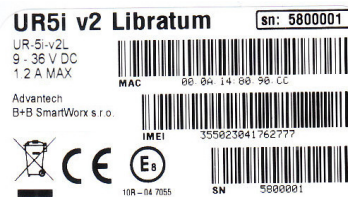


Figure 6: Example of the router label

5.3 Order codes

There are all order codes for this product:

- **UR5i v2 Libratum set**
includes 2x Ethernet and 2x SIM, supplied in plastic box
- **UR5i v2 Libratum SL set**
includes 2x Ethernet and 2x SIM, supplied in metal box
- **UR5i v2 Libratum WIFI set**
includes 2x Ethernet, 2x SIM and 1x WIFI, supplied in plastic box
- **UR5i v2 Libratum WIFI SL set**
includes 2x Ethernet, 2x SIM and 1x WIFI, supplied in metal box

5.4 Basic dimensions of the router box

5.4.1 Plastic box

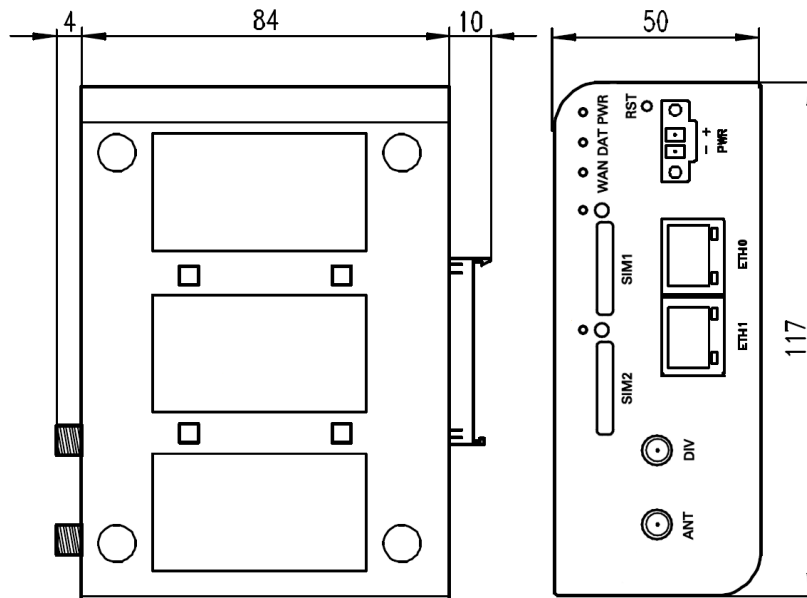


Figure 7: Basic dimensions of plastic box (bottom and front view)

5.4.2 Metal box

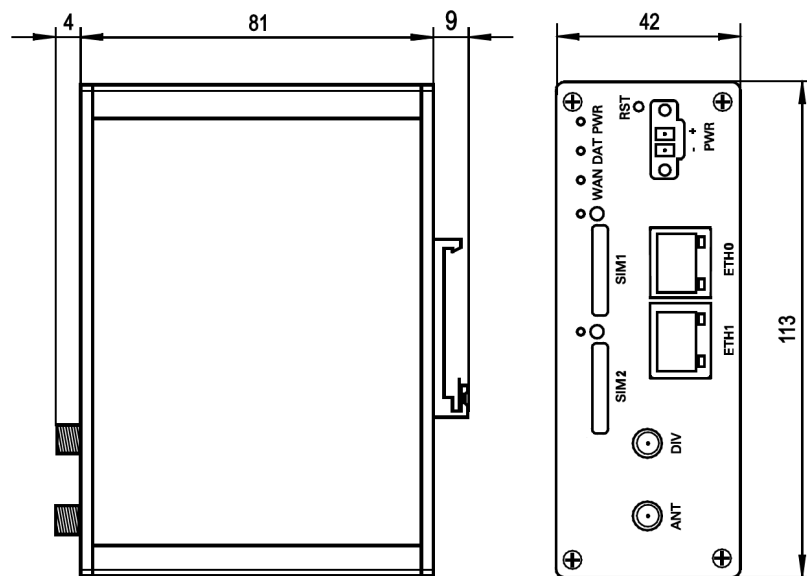


Figure 8: Basic dimensions of metal box (bottom and front view)

5.5 Mounting recommendations

- possibility to be put on a work surface,
- DIN rail EN 60715 with included clip CPD2 (or CKD2 for metal version).

For the most of applications with a built-in router in a switch board it is possible to recognize two kinds of environments:

- no public and industry environment of low voltage with high interference,
- public environment of low voltage without high interference.

For both of these environments it is possible to mount router to a switch board, the following there is no need to have examination immunity or issues in connection with EMC according to EN 60439-1 ed.2:00 + A1:04.



Compliance of EN 60439-1 ed.2:00 + A1:04 specification it is necessary to observe next assembly of the router to the switch – board:

- For whip antennas we recommend to observe a distance of 6 cm from cables and metal surfaces on every side due to the elimination of interference. While using an external antenna except for the switch-board it is necessary to fit a lightning conductor.
- Before mounting a router on sheet-steel we recommend using a "cable" antenna.

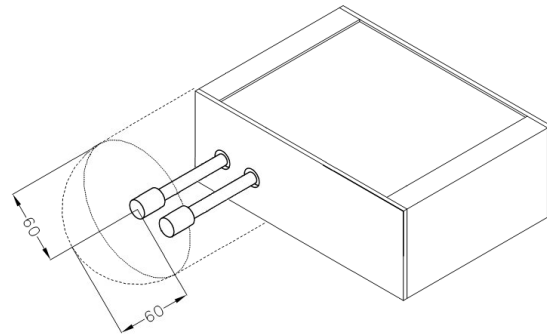
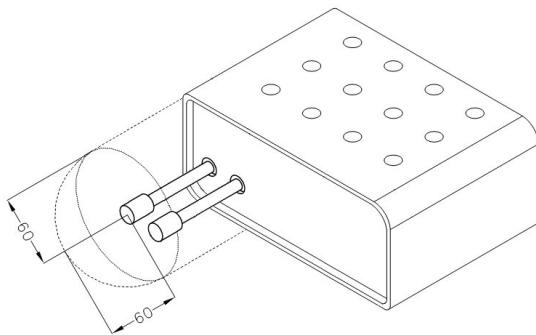


Figure 9: Space around antennas (plastic)

Figure 10: Space around antennas (metal)

- For every cables we recommend to bind the bunch, we recommend for this use:
 - Length of the bunch (combination of power supply and data cables) can be maximum 1.5 m. If the length of data cables exceeds 1.5 m or in the event of, the cable leads towards the switch – board. We recommend installing over – voltage protectors (surge suppressors).
 - With data cables they mustn't carry cables with reticular tension $\sim 230\text{ V}/50\text{ Hz}$.

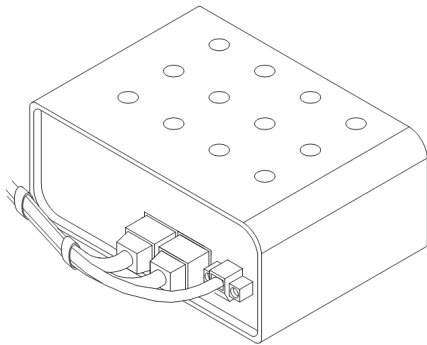


Figure 11: Cable routing (plastic)

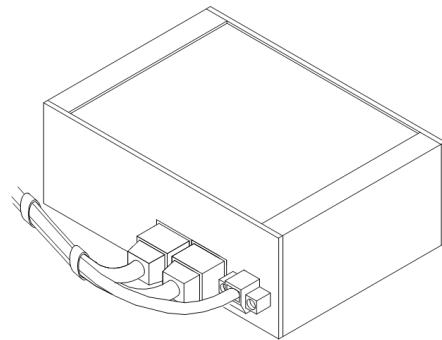


Figure 12: Cable routing (metal)

- Sufficient space must be left in front of individual connectors for handling of cables,

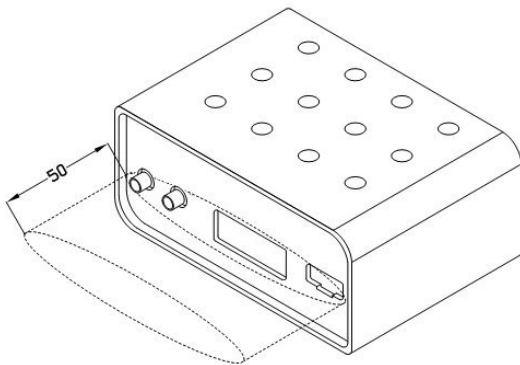


Figure 13: Space in front of connectors (plastic)

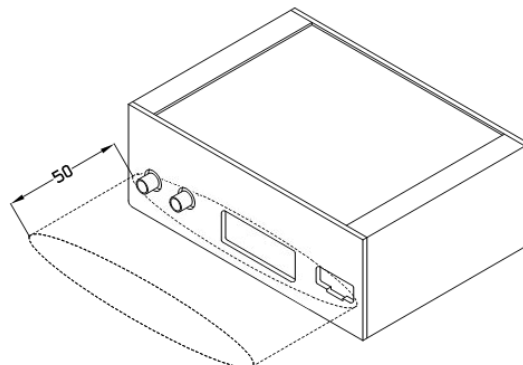


Figure 14: Space in front of connectors (metal)

- For correct function of the router we recommend to use in the switch-board earth-bonding distribution frame for grounding of power supply of router, data cables and antenna.

5.6 Removing from the DIN rail

DIN holder is suitable for DIN rail according to EN 60715 standard only. Default position of CPD2 holder (or CKD2 for metal version), which is used for mounting the router on a DIN rail, is shown in the following figure:

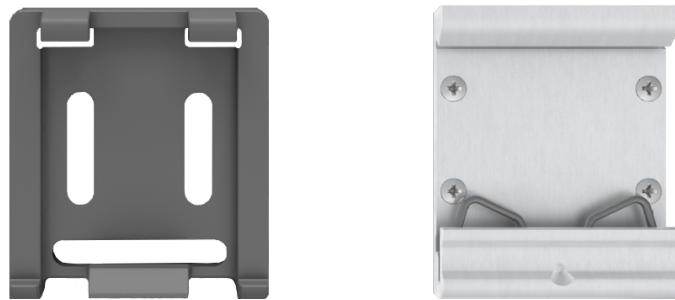


Figure 15: Default position of DIN holder

For removing from the DIN rail it is necessary to lightly push upward the router so that the top part of the CPD2 holder (or CKD2 for metal version) hitched to the DIN rail get out of this rail and then fold out the top part of the router away from the DIN rail.

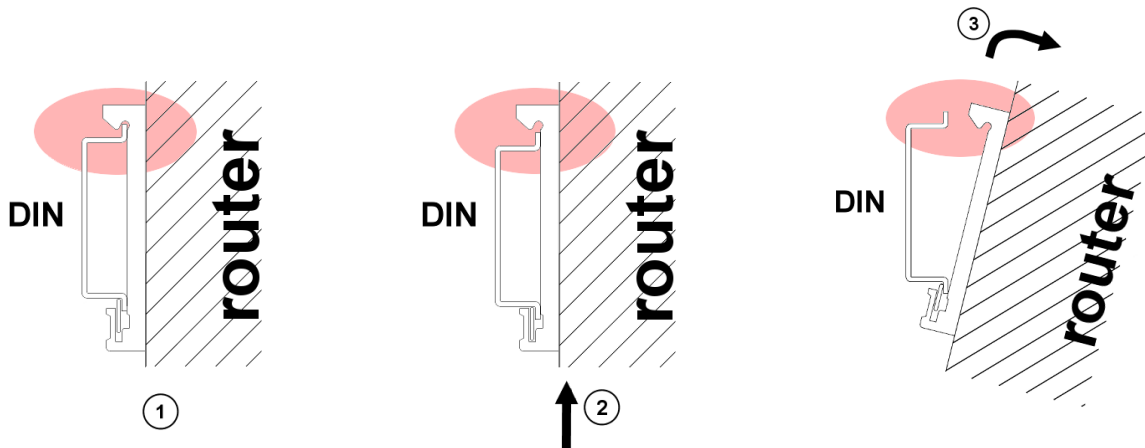


Figure 16: Removing from the DIN rail

5.7 Description of the front panel

On the front panel is the following:

Caption	Connector	Description
PWR	2-pin	Connector for the power supply.
ETH0	RJ45	Connector for connection into the local computer network.
ETH1	RJ45	Connector for connection into the local computer network.
ANT	SMA	Connector for main antenna.
DIV	SMA	Connector for diversity antenna.
WIFI	R-SMA	Connector for WIFI antenna. Available only when the router is equipped with WIFI module.
SIM1	—	Holder for the first SIM card.
SIM2	—	Holder for the second SIM card.

Table 3: Front panel description

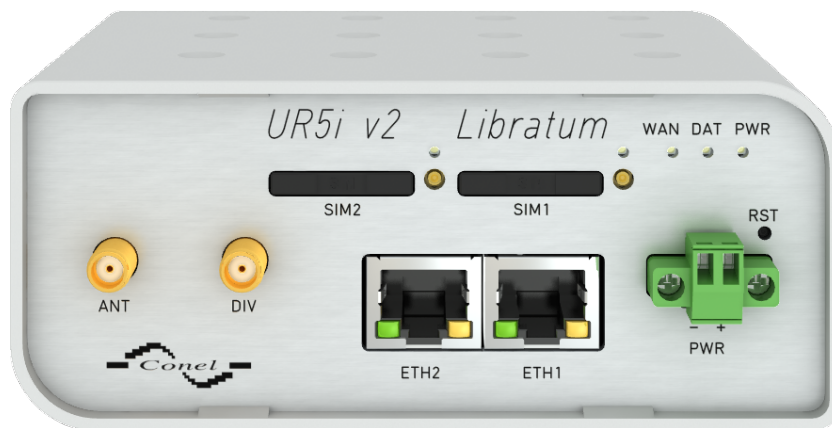


Figure 17: Front panel UR5i v2 Libratum

5.7.1 Status indication

About router status inform three LED indicators on the front panel. ETH0 and ETH1 ports have two additional LEDs that provide information about port status.

Caption	Color	State	Description
PWR	Green	Blinking On Fast blinking	Router is ready Starting of the router Updating firmware
DAT	Red	Blinking	Communication in progress on radio channel
WAN	Yellow	1x flash per sec. 2x flash per sec. 3x flash per sec.	Signal strength is from -50 dBm to -69 dBm Signal strength is from -70 dBm to -89 dBm or difference between neighbours cells is exactly 3 dBm Signal strength is from -90 dBm to -113 dBm or difference between neighbours cells is smaller than 3 dBm
ETH	Green	On Off	Selected 100 Mbit/s Selected 10 Mbit/s
ETH	Yellow	On Blinking Off	The network cable is connected Data transmission The network cable is not connected
SIM1	Yellow	On	The first SIM card is active
SIM2	Yellow	On	The second SIM card is active

Table 4: Status indication



State indication of WAN LED is updated every 10 seconds.

5.7.2 Power connector PWR

Panel socket 2-pin.

Pin number	Signal mark	Description
1	VCC(+)	Positive pole of DC supply voltage (+9 to +36 V DC)
2	GND(-)	Negative pole of DC supply voltage

Table 5: Connection of power connector

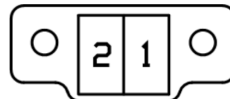


Figure 18: Power connector

Power supply for router is required between +9 V to +36 V DC supply. Protection against reversed polarity without signaling is built into the router.

The power consumption during receiving is 2.3 W. The peak power consumption during data sending is 5.5 W. However, values of consumption can be increased, if some expansion port is equipped. For correct operation it is necessary that the power source is able to supply a peak current of 1.2 A.

Circuit example:

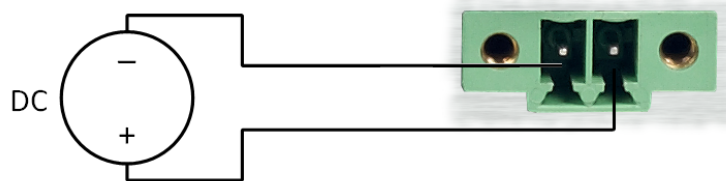


Figure 19: Connection of power supply



The positive pole VCC is marked by a red socket on the power.

5.7.3 Antenna connector ANT, DIV (and WIFI)

Main and diversity antennas are connected to the router using the SMA connector on the front panel. For UR5i v2 Libratum with WiFi module is also available reverse SMA antenna connector, through which the WIFI antenna can be connected.



The router can not operate without connected main antenna marked as *ANT!*

ANT connector is used to connect the main antenna. For connecting the diversity antenna use the second antenna connector DIV. If WiFi module is equipped on customer's request, there is also available WIFI antenna connector for connecting corresponding antenna.



The antenna is connected by screwing this antenna to the SMA connector on the front panel of the router (see figure below).

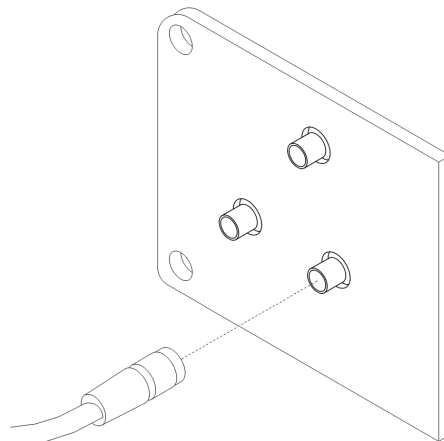


Figure 20: Connecting of the antenna



Diversity antenna improves radio features of the router at low signal strength.

5.7.4 SIM card reader

The SIM card reader for 3 V and 1.8 V SIM cards is placed on the front panel of the router. For getting the router to work is necessary to insert an activated SIM card with an unblocked PIN code. The SIM cards might be of different adjusted APN (Access Point Name).

Changing the SIM card:

- Before handling of the SIM card disconnect the router from power supply!
- Press the small yellow button to eject the reader holder.
- Insert the SIM card into the reader holder and slide it in the reader (see figure below).

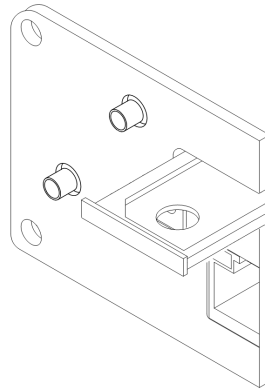


Figure 21: Ejected SIM holder

For correct function of mobile network module **it is necessary to have both SIM card holders inserted in the readers when router is running**, even if they are empty. Ejected holder of any SIM card can cause inability to connect the mobile network.

5.7.5 Ethernet port (ETH0 and ETH1)

Panel socket RJ45.

Pin	Signal mark	Description	Data flow direction
1	TXD+	Transmit Data – positive pole	Input/Output
2	TXD-	Transmit Data – negative pole	Input/Output
3	RXD+	Receive Data – positive pole	Input/Output
4	—	—	
5	—	—	
6	RXD-	Receive Data – negative pole	Input/Output
7	—	—	
8	—	—	

Table 6: Connection of Ethernet connector

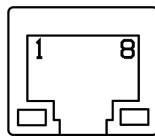


Figure 22: Ethernet connector



ATTENTION! ETH0 and ETH1 ports are not PoE (Power over Ethernet) compatible!

Plug Ethernet cable into the RJ45 connector labeled as ETH0 or ETH1 (see figure below).

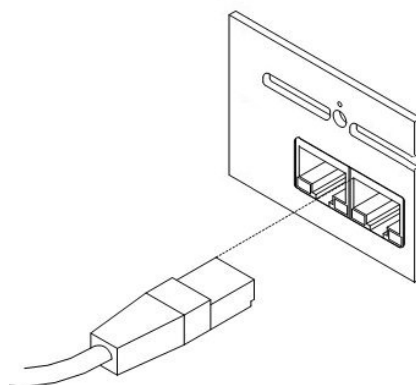


Figure 23: Connection of ethernet cable

5.7.6 Reset

When *PWR* LED starts flashing on the front panel, it is possible to restore the default configuration of the router by pressing the *RST* button on the front panel. After pressing this button the default configuration is restored and then router reboots (green LED will be on).



For pressing the *RST* button could be used a narrow screwdriver.

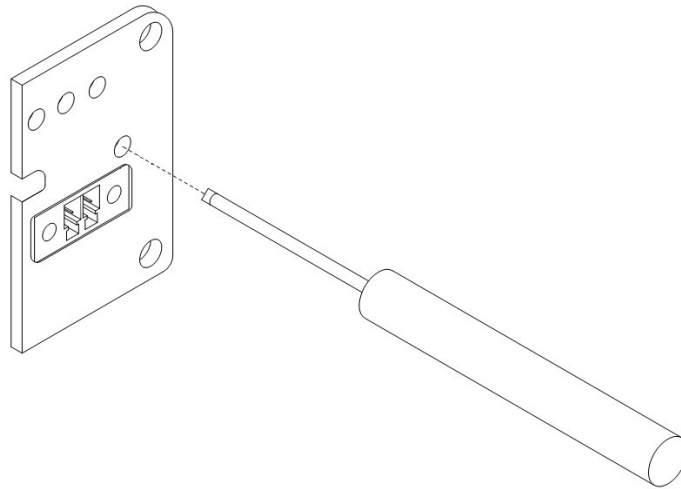


Figure 24: Router reset



We recommend backing up configuration of the router (see *Configuration manual for v2 routers*) because reset of the router sets the configuration to the default state.

It is important to distinguish between reset and reboot the router.

Action	Router behavior	Invoking events
Reboot	Turn off and then turn on router	Disconnect and connect the power, Press the <i>Reboot</i> button in the web configuration
Reset	Restore default configuration and reboot the router	Press <i>RST</i> button

Table 7: Description of reset and restart router

6. First Use

6.1 Connecting the router before first use

Before putting the router into operation it is necessary to connect all components which are required to run your applications. Don't forget to insert SIM card.



The router can not operate without connected antenna, SIM card and power supply. If the antenna is not connected, router can be damaged.

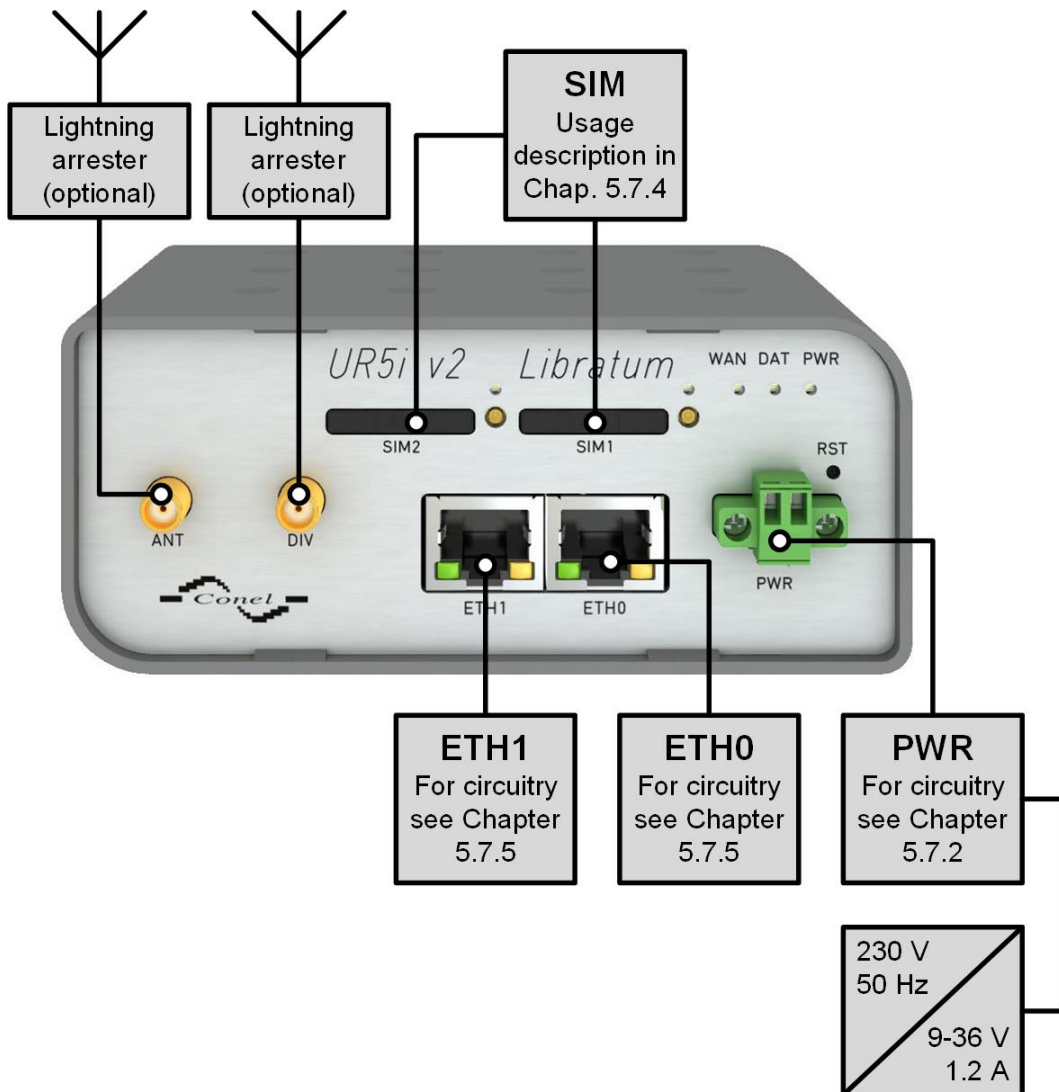


Figure 25: Router connection

6.2 Start

The router is put into operation when the power supply is connected to this router. By default, the router will automatically start to log on to the default APN. DHCP server will start to assign addresses for devices on the Ethernet port ETH0. Router behavior can be changed via the web interface. This is described in detail in the *Configuration manual for v2 routers*.

The power consumption during receiving is 2.3 W. The peak power consumption during data sending is 5.5 W. However, values of consumption can be increased, if some expansion port is equipped. For correct operation it is necessary that the power source is able to supply a peak current of 1.2 A.

6.3 Configuration



Attention! If no SIM card is inserted in the router, it is not possible to operate. Inserted SIM card must have activated data transmission.

6.3.1 Configuration over web browser

For status monitoring, configuration and administration of the router is available a web interface which can be accessed by entering the IP address of the router into the web browser. The default IP address of the router is 192.168.1.1.

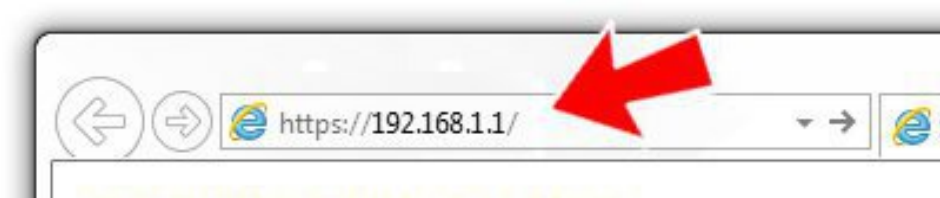


Figure 26: Entering the IP address of the router

Configuration may be performed only by the user "root" with default password "root".

Login	
Username	<input type="text"/>
Password	<input type="password"/>
<input type="button" value="Login"/>	

Figure 27: Entering login information

After successfully entering login information user gains access to the router via his internet browser.

General Status	
Mobile Connection	
SIM Card	: Primary
IP Address	: Unassigned
State	: Offline
» More Information «	
Primary LAN	
IP Address	: 10.40.28.66 / 255.255.252.0
MAC Address	: 7C:66:9D:38:30:F0
Rx Data	: 4.2 MB
Tx Data	: 140.8 KB
Bridged	: Yes
» More Information «	
Secondary LAN	
IP Address	: 10.40.28.66 / 255.255.252.0
MAC Address	: 7C:66:9D:38:30:F0
Rx Data	: 0 B
Tx Data	: 0 B
Bridged	: Yes
» More Information «	
WIFI	
IP Address	: Unassigned
MAC Address	: 78:A5:04:22:2A:67
» More Information «	
Peripheral Ports	
Expansion Port 1	: RS-232
Expansion Port 2	: RS-485
Binary Input 0	: Off
Binary Input 1	: Off
Binary Output	: Off
System Information	
Firmware Version	: 5.3.0 (2015-10-01) BETA #120
Serial Number	: N/A
Profile	: Standard
Supply Voltage	: 12.0 V
Temperature	: 38 °C
Time	: 2008-05-16 00:57:08
Uptime	: 0 days, 0 hours, 39 minutes

Figure 28: Router web interface



A detailed description of the router settings via the Web interface can be found in the document *Configuration manual for v2 routers*.

6.3.2 Configuration over Telnet

For status monitoring, configuration and administration of the router can be also used Telnet. After entering the IP address of the router you will be allowed to configure the router using commands. The default IP address of the router is 192.168.1.1. Configuration may be performed only by the user "root" with default password "root".



A detailed description of the router settings via the Telnet can be found in the document *Configuration manual for v2 routers*.

7. Technical Parameters

7.1 Basic parameters

UR5i v2 Libratum		
Temperature range	Function Storage	-40 °C to +75 °C -40 °C to +85 °C
Humidity	Operating Storage	0 to 95 % relative humidity non condensing 0 to 95 % relative humidity non condensing
Altitude	Operating	2000 m / 70 kPa
Degree of protection		IP30
Supply voltage		9 to 36 V DC
Consumption	Idle GPRS UMTS	2.3 W to 3.5 W (GPRS transmission) to 5.5 W (UMTS/HSDPA transmission)
Dimensions	Plastic box Metal box	51 x 87 x 116 mm (DIN 35 mm) 42 x 87 x 113 mm (DIN 35 mm)
Weight		UR5i v2 Libratum – 150 g UR5i v2 Libratum SL – 280 g
Antenna connector		2x SMA – 50 Ohm 1x R-SMA – 50 Ohm (only for WiFi)
User interface	ETH0 ETH1	Ethernet (10/100 Mbit/s) Ethernet (10/100 Mbit/s)

Table 8: Basic parameters

7.2 Standards and regulations

The router complies with the following standards and regulations.

Standards and regulations	
Telecom and emission	ETSI EN 300 440-2 v1.4.1, ETSI EN 301 511 v9.0.2, ETSI EN 301 908-1 v6.2.1, ETSI EN 301 908-2 v5.4.1
EMC	ETSI EN 301 489-1 v1.9.2, ETSI EN 301 489-3 v1.6.1, ETSI EN 301 489-24 v1.5.1
Safety	EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013, EN 62311:2008
E8 – EMC for devices in transportation	E8 homologation number: 10R – 04 7055

Table 9: Standards and regulations

7.3 Technical parameters of module

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

Table 10: Technical parameters of module

* Depending on the capabilities of the operator.

7.4 Technical Parameters of WiFi

WiFi	
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

Table 11: Technical parameters of WiFi

7.5 Technical parameters of processor

32b ARM microprocessor	
Memory	512 Mb DDR SDRAM 128 Mb FLASH 1 Mb MRAM
Interface	Serial interface RS232 Ethernet interface 10/100 Mbit/s USB 2.0 interface

Table 12: Technical parameters of processor

8. Recommended Literature

- [1] Advantech B+B SmartWorx: **Start guide for v2 routers,**
- [2] Advantech B+B SmartWorx: **Configuration manual for v2 routers,**
- [3] Advantech B+B SmartWorx: **Application note – Programmer guide.**

9. Troubleshooting



If you can not connect to the router from your PC, your network card may be configured the way it is not possible to connect to the router. Take one or more of the following steps to solve the problem:

- Select the communication rate 10 MB/s in the properties of your network card.
- Connect the router to the PC via Switch.
- Connect the router to the PC, start the router first and then start the PC after the router's initialization.

9.1 FAQ

 **I have NAT enabled. My equipment is not connecting to the network.**

- *The device's gateway has to be configured as the router.*

 **The router resets itself and the Ethernet connection fails.**

- *The router will not function without an antenna. Keep the antenna as far as possible from the power supply.*

 **I can't access the Web server over NAT.**

- *The remote HTTP access of the router has to be disabled, the default server address has to be your web server and the gateway of the web server has to be the IP of the router.*

 **Mobile WAN connection fails. (DAT LED off)**

- *Check signal power. If the signal power is weak, you will have to use a better antenna. If the neighboring cells have a similar signal strength, you will need to use a directional antenna. For proper operation, the signal levels have to be in the range from -50 dBm to -90 dBm.*
- *It is necessary to set ping, which will check the connection and, in the case of failed ping, restart connection.*

 **Mobile WAN connection cannot be established. (DAT LED off)**

- *Recheck GPRS settings – APN, name, password and IP address.*
- *Try to enter PIN – verify if the SIM card has the PIN code set.*
- *In a private APN, switch the DNS server send off.*
- *Switch the system log on and observe where the error occurs.*

 **Ethernet connection fails or isn't establishing.**

- *It is possible to turn auto negotiation off and set a rate and duplex manually on the Ethernet interface of the router.*

 **DynDNS doesn't function.**

- *With private APN this is not functional.*
- *If the same IP address is recorded in your canonic name as dynamically assigned address, it means that the operator is using NAT or firewall.*
- *Verify NAT using ping to the static server address.*
- *Verify Firewall accessing remotely to the router's Web interface.*
- *The operator may not provide the address of DNS server and without DNS server's adress it is impossible to connect to the dyndns.org server. There will be these messages in the system log:*
 - *DynDNS daemon started*
 - *Error resolving hostname: no such file or directory*
 - *Connect to DynDNS server failed*

 **L2TP or IPSec isn't establishing.**

- *Check the system log for error messages.*

 **I switched the router to offline mode by SMS message, but the router is in online mode after restart.**

- *SMS messages do not change the router configuration. They remain in effect only until the router is restarted.*

 **FTP doesn't function.**

- *Router doesn't support active FTP mode. It supports passive mode only.*

 **RS232 doesn't function.**

- *Verify that the router supports RS232 communications. Also verify the RS232 communication settings. To do so, open the router's configuration menu via the web browser, select the appropriate expansion port and verify the settings in the configuration menu.*

10. Customers Support

You can find current information about this product on our website:

www.bb-smartcellular.eu



Upkeep-advice:

- The SIM-card must be handled carefully as with a credit card. Don't bend, don't scratch on this and do not expose to static electricity.
- During cleaning of the router do not use aggressive chemicals, solvents and abrasive cleaners!

Advantech B+B SmartWorx s.r.o. hereby declares that the router narrated in this user's guide fits all basic demands of directive 1999/5/EC (R&TTE).

Router fits values of coefficient SAR defined by association ICNIRP and values of "About protection of health before non-ionized radiation".



Declaration of Conformity was issued and it is possible to find it on the Advantech B+B SmartWorx website (www.bb-smartcellular.eu/download) in respective product category or is available on request from producer.