Cellular Routers LTE
LR77 V2 Libratum

PRODUCT FEATURES

- 2-port Ethernet switch
- 2 independent LAN
- Models with Wi-Fi option: AP or client mode
- Dual-SIM fail over
- Antenna Rx Diversity
- Operating temperature up to +75°C
- Metal or plastic casing

Balanced LR77v2 Libratum a LTE non-modular wireless router features high speed data rates 100 Mbps, two Ethernet 10/100 ports and dual-SIM failover capability for mission critical applications. This router is particularly suited to the demands of the "Transaction Management" industry such as point-of-sale terminals, remote ATMs and vending terminals as well as a huge variety of intelligent remote monitoring and control applications in the Transport, Energy and Security sectors.

Key Features
This exceptionally fast LTE LR77v2 Libratum wireless router is equipped with two Ethernet 10/100 ports and two SIM cards for backup communication in mobile operator networks and provide failover to each other. WiFi models are available.

Configuration is done via a web interface protected by password. The 4G LTE router supports creation of VPN tunnels using IPsec, OpenVPN and L2TP to assure safe communication.
Web interface provides detail statistics about router activity, 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 for 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 start up script window you may insert Linux scripts for various actions.

For some applications the key option is to create several different configurations for one LTE wireless router, the so-called profiles (maximum of 4), and the option to switch among them (for example via SMS) 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
Meteorology, alarm and warning systems

ORDERING INFORMATION

Note: For more configuration information, contact Advantech B+B SmartWorx or your local distributor. A specification configurator is available online.

MODEL NUMBER	ETH 10/100	SIM	WIFI	PLASTIC CASE	METAL CASE
BB-LR77 v2 Libratum	2	2		X	
BB-LR77 v2 Libratum WiFi	2	2	1	X	
BB-LR77 v2 Libratum SL	2	2			X
BB-LR77 v2 Libratum WiFi SL	2	2	1		X

Europe, Middle East, Africa, Asia, South America, Latin America.
Check with your local distributor for availability and options.

ACCESSORIES

BB-SBD40	Metal DIN holder for Metal versions of routers v2
BB-CPD2-B	Plastic DIN holder
BB-GA.110.101111	Magnet mount antenna LTE 698MHz to 960MHz, 1575.42MHz, 1710MHz to 2700MHz, 3500MHz, 1M RG174 Cable, SMA(M) Connector Typical 40% Efficiency and 3dBi Peak Gain
BB-AO-ALTE-FSMAK	Antenna LTE 690 MHz to 960 MHz, 1710MHz to 2170MHz, 2500 MHz to 2700MHz, gain 3 - 5 dB, SMA connector, without magnetic mount base
BB-TG.30.8113	Antenna LTE 698MHz to 960MHz, 1575.42MHz 1710MHz to 2700MHz Typical 70%+ Efficiency and 3dBi+ Peak Gain Dipole Swivel Terminal Antenna Hinged 90° termination with SMA(M) Connector
BB-AO-ABASE-C16	Magnetic mount base for BB-AO-ALTE-5SP, 3m cable, SMA connector
BB-AW-A24G-M5SRP	Antenna WiFi stick 5dB, SMA-RP connector
BB-KD-ETH	Ethernet cross cable 1,5m
BB-CON-WR2	2-pin Terminal block for Power Supply
BB-RPS-v2-WR2-X	Power supply with WR connector (2 pins) - 12V/1A X = EU - EU plug X = US - US plug X = UK - UK plug X = US - AUS plug
BB-KN-WR2-3	Power supply cable 2-wire, 3m

SPECIFICATIONS

INTERFACES

Ethernet 2x	10/100 Mbits, independent or bridged
SIM	2 mini SIMs (2FF)

ANTENNA

2x SMA connector, 50 Ohm	

32B ARM MICROPROCESSOR

Memory	512 Mb DDR SDRAM 128 Mb FLASH 1 Mb MRAM

POWER

Source	9 - 36 VDC
Consumption	2.3W reception 3.5W (GPRS transmission) 5.5W (LTE transmission)

MECHANICAL

Dimensions	Plastic box - 51 x 87 x 116 mm (DIN 35 mm) Metal box - 42 x 87 x 113 mm (DIN 35 mm)
Protection	IP30
Weight	LR77 v2 Libratum – 150 g LR77 v2 Libratum SL – 280 g

ENVIRONMENTAL

Operating Temperature	-40° to +75°C
Storage Temperature	-40° to +85°C
Humidity	0 to 95%, non-condensing

WIFI *optional

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

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.

PARAMETERS - LTE MODULE

LTE	Bit rate 100 Mbps (download) / 50 Mbps (upload) 3GPP rel. 8 standard Supported bandwidths: 5 MHz, 10 MHz, 20 MHz Supported frequencies: 800 / 900 / 1800 / 2100 / 2600 MHz
HSPA+	Bit rate 42 Mbps (DL) / 5,76 Mbps (UL) 3GPP rel. 7 standard UE CAT. 1 to 6, 8, 10, 12, 14 3GPP data compression Supported frequencies: 900 / 1800 / 2100 MHz
UMTS	PS bit rate 384 kbps (DL) / 384 kbps (UL) CS bit rate 64 kbps (DL) / 64 kbps (UL) W-CDMA FDD standard Supported frequencies: 900 / 1800 / 2100 MHz
GPRS/EDGE	Bit rate 237 kbps (DL) / 59,2 kbps (UL) GPRS multislot class 10, CS 1 to 4 EDGE multislot class 12, CS 1 to 4, MCS 1 to 9 Supported frequencies: 900 / 1800 MHz
GPRS/EDGE - Supported Power Classes	EGSM 900: Class 4 (33 dBm) GSM 1800/1900: Class 1 (30 dBm) EDGE 900: Class E2 (27 dBm) EDGE 1800/1900: Class E2 (26 dBm)

STANDARDS/REGULATIONS

	ISO9001, CE, PCT, RoHS
Telecom/Emission	ETSI EN 301 511 v9.0.2, ETSI EN 301 908-1 v5.2.1, ETSI EN 301 908-2 v5.2.1, ETSI EN 301 908-13 v5.2.1
EMC	ETSI EN 301 489-1 v1.9.2
Safety:	EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013, EN 62311:2008
E8 - EMC for Devices for Transportation	E8 homologation number: 10R – 04 7950

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

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