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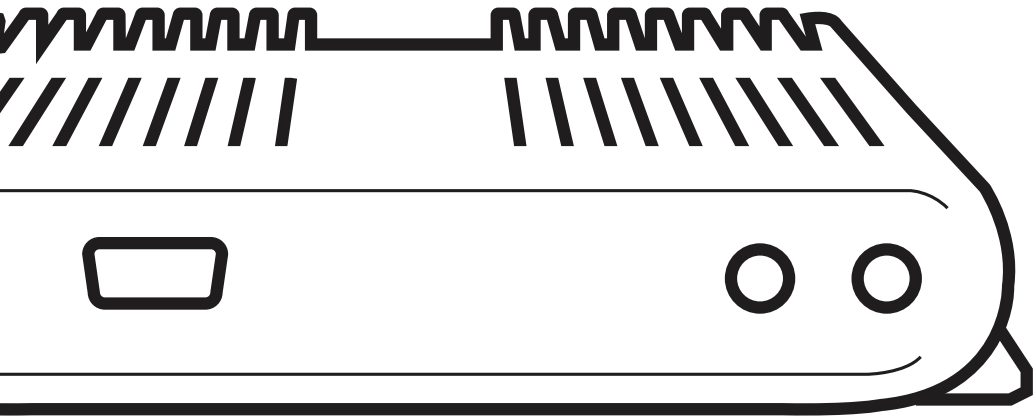
Global Leader in 4G LTE Network Solutions

COR Series Router

IBR1100 / IBR1150

Spec Sheet



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INTRODUCTION

WHAT'S IN THE BOX

- Ruggedized router with integrated business-class 3G/4G modem; includes integrated mounting plate
- Two meter locking power and GPIO cable (direct wire)
- Quick Start Guide with warranty information

NOTE: Due to the diverse needs of customers, the COR IBR1100/IBR1150 package does not include a power adapter or antennas. See the Accessories section below for several power and antenna options.

KEY FEATURES

WAN

- Dual-modem capable with optional IBR1100/IBR1150 Dual-Modem Dock
- LP6: LTE Advanced LTE/HSPA+ (SIM-based Auto-Carrier Selection for all North American and European carriers)
- LPE: 4G LTE/HSPA+/EVDO (multi-carrier)
- LP3: 4G LTE/HSPA+ (Europe, EMEA, and Australia/New Zealand)
- WiFi as WAN[1], with WPA2 Enterprise Authentication for WiFi-as-WAN[3]
- Failover/Failback
- Load Balancing
- Advanced Modem Failure Check
- WAN Port Speed Control
- WAN/LAN Affinity
- IP Passthrough
- Standby

LAN

- VLAN 802.1Q
- DHCP Server, Client, Relay
- DNS and DNS Proxy
- DynDNS
- UPnP
- DMZ
- Multicast/Multicast Proxy
- QoS (DSCP and Priority Queuing)
- MAC Address Filtering

WIFI[1]

- Dual-Band Dual-Concurrent
- 802.11 a/b/g/n/ac
- Up to 128 connected devices (64 per radio – 2.4 GHz and 5 GHz)
- Multiple SSIDs: 2 per radio (4 total)
- WPA2 Enterprise (WiFi)
- Hotspot/Captive Portal
- SSID-based Priority
- Client Mode (5 GHz only) for faster data offload

MANAGEMENT

- Cradlepoint NetCloud Manager[2]
- Web UI, API, CLI
- Active GPS support on all models
- Data Usage Alerts (router and per client)
- Advanced Troubleshooting (support)
- Device Alerts
- SNMP
- SMS control
- Serial Redirector
- Auto APN Recovery

VPN AND ROUTING

- IPsec Tunnel – up to five concurrent sessions
- L2TP[3]
- GRE Tunnel
- OSPF/BGP/RIP[3]
- Route Filters (Access Control Lists, Prefix Filters, Route Maps, Communities for BGP)
- Per-Interface Routing
- Routing Rules
- Policy-based Routing
- NAT-less Routing
- Virtual Server/Port Forwarding
- NEMO/DMNR[3]
- IPv6
- VRRP[3]
- STP[3]
- NHRP[3]
- VTI Tunnel support[3]
- OpenVPN support[3]
- CP Secure VPN compatible
- Serial PAD Mode

SECURITY

- RADIUS and TACACS+ support*
- 802.1x authentication for Ethernet
- Zscaler integration[3]
- Certificate support
- ALGs
- MAC Address Filtering
- Advanced Security Mode (local user management only)
- Per-Client Web Filtering
- IP Filtering
- Content Filtering (basic)
- Website Filtering
- Zone-Based Object Firewall with host address (IP or FQDN), port, and mac address

*-Native support for authentication. Authorization and accounting support through hotspot/captive portal services.

CLOUD OPTIMIZED IP COMMUNICATIONS

- Automated WAN Failover/Failback support
- WAN Affinity and QoS allow prioritization of VoIP services

- Advanced VPN connectivity options to HQ
- SIP ALG and NAT to allow VoIP and UC communications to traverse firewall
- MAC Address Filtering
- 802.1p/q for LAN QoS segmentation and treatment of VoIP on LAN
- Private Network support (wired and 4G WAN)
- Cloud-based management[2]

1 – WiFi-related functions are only supported on IBR1100 models
2 – **NetCloud Manager** requires a subscription
3 – Requires an **Extended Enterprise License** or **NetCloud Manager PRIME**

SPECIFICATIONS

WAN:
- Dual-modem capable with optional IBR1100/IBR1150 Dual-Modem Dock
- Integrated LP6 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover) or LPE 4G LTE modem (with HSPA+/EVDO/3G and 2G failover) or LP3 4G LTE modem (with HSPA+ and 2G failover)
- Three LAN/WAN switchable 10/100 Ethernet ports – one default WAN (cable/DSL/T1/satellite/Metro Ethernet)
- WiFi as WAN, Metro WiFi; 2x2 MIMO "N" 2.4 GHz or 5 GHz; 802.11 a/b/g/n/ac (IBR1100 only)

LAN:
- Dual-band dual-concurrent WiFi; 802.11 a/b/g/n/ac (IBR1100 only)
- Three LAN/WAN switchable 10/100 Ethernet ports – two default LAN
- Serial console support for out-of-band management of a connected device

PORTS:
- Power
- 2-wire GPIO
- Add three more GPIO ports with optional Serial-to-GPIO cable (see Accessories section below)
- USB 2.0
- Three Ethernet LAN/WAN
- Two cellular antenna connectors (SMA)
- One active GPS antenna connector (SMA)
- Two WiFi antenna connectors (R-SMA)
- Serial DE-9 (commonly called "DB-9") connector – RS-232 (out-of-band management of an external device requires a null modem adapter/cable)

TEMPERATURE:
- All models: -30 °C to 70 °C (-22 °F to 158 °F) ambient air operating
- All models: -40 °C to 85 °C (-40 °F to 185 °F) storage
- Includes temperature sensor with options for alerts and automatic shutoff

HUMIDITY (non-condensing):
- 5% to 95% operating
- 5% to 95% storage

POWER:
- DC input steady state voltage range: 9–36 VDC (requires inline fuse for vehicle installations)
  - For 9–24 VDC installations, use a 3 A fuse
  - For > 24 VDC installations, use a 2.5 A fuse
- Reverse polarity and transient voltage protection per ISO 7637-2
- Ignition sensing (automatic ON and time-delay OFF)
- Power consumption:
  - Idle: typical = 400 mA @ 12 VDC (4.8 W); worst case = 800 mA @ 12 VDC (9.6 W)

- Tx/Rx: typical = 650 mA @ 12 VDC (7.8 W); worst case = 1300 mA @ 12 VDC (15.6 W)
- 12VDC 2A adapter recommended

WIFI POWER:
- 2.4 GHz band: 17 dBm conducted
- 5 GHz band: 15 dBm conducted

SIZE: 5.3 × 4.4 × 1.4 in (134 × 112 × 35 mm)

WEIGHT: 16.1 oz (457 g)

CERTIFICATIONS:
- FCC, CE, IC
- WiFi Alliance (IBR1100 only) – 802.11a/b/g/n certified, 802.11ac supported
- Safety: UL/CUL, CB Scheme, EN60950-1
- Hazardous Locations: Class I, Div. 2
- Shock/Vibration/Humidity: compliant with MIL STD 810G and SAEJ1455
- Ingress Protection: compliant with IP64 (includes protection from dust and splashing water)
- Materials: WEEE, RoHS, RoHS-2, California Prop 65
- Vehicle: E-Mark, compliant with ISO 7637-2
- Telecom: PTCRB/CTIA, GCF-CC

GPS
- GPS Protocols: TAIP and NMEA 0183 V3.0
- Satellite channels: Maximum 30 channels (16 GPS, 14 GLONASS), simultaneous tracking
- Concurrent standalone GPS, GLONASS, BeiDou and Galileo (LP6 models only)
- 1 Hz refresh rate
- Accuracy:
  - < 2 m: 50%
  - < 5 m: 90%
  - Horizontal: < 2 m (50%); < 5 m (90%)
  - Altitude: < 4 m (50%); < 8 m (90%)
  - Velocity: < 0.2 m/s
- Acquisition (measured with signal strength = -135 dBm):
  - Hot start: 1 second
  - Warm start: 29 seconds
  - Cold start: 32 seconds
- Sensitivity
  - Tracking: –160 dBm (tracking sensitivity is the lowest GNSS signal level for which the device can still detect an in-view satellite 50% of the time when in sequential tracking mode)
  - Acquisition (standalone): –145 dBm (acquisition sensitivity is the lowest GNSS signal level for which the device can still detect an in-view satellite 50% of the time)
- Operational limits: altitude < 6000 m or velocity < 100 m/s (either limit may be exceeded, but not both)

ACCESSORIES

Because of the diversity of customer needs, the COR IBR1100/IBR1150 does NOT include a power adapter or antennas in the box (it does include a direct wire power/GPIO cable for vehicle installation). Cradlepoint offers several accessory options for dual-modem capability, power and antennas:

DUAL-MODEM DOCK

IBR1100/IBR1150 Dual-Modem Dock (Part # 170675-000), FirstNet/Band 14 ready integrated 4G LTE modem:
- MC400L2 (FirstNet/Band 14 LTE modem)

- MC400LP6 (North America, Europe)
- MC400LP4 (AT&T, Verizon, T-Mobile and Canada)
- MC400LPE-VZ (Verizon)
- MC400LPE-AT (AT&T)
- MC400LPE-SP (Sprint)
- MC400LPE-GN (generic – for use on T-Mobile in the U.S. and Rogers, Bell, & TELUS in Canada)
- MC400LP3-EU (Europe)

POWER

Wall options

- COR IBR1100/IBR1150 extended temperature (-30 °C to 70 °C) 12VDC 2A locking power adapter – requires separate line cord (Part # 170648-001)
  - Line cord for North America (Part # 170623-001)
  - Line cord for EU (Part # 170623-002)
  - Line cord for UK (Part # 170623-003)
- COR 12VDC 2A locking power adapter with 0 °C to 40 °C temperature range – includes US, EU, and UK plugs (Part # 170584-002)

NOTE: *Cradlepoint primarily recommends the extended temperature adapter because it covers the COR IBR1100/IBR1150 full temperature range of -30 °C to 70 °C. Cost-sensitive customers that intend to use the IBR1100/IBR1150 in temperature-controlled office environments can order the 170584-002 adapter, but it limits the operating temperature range to 0 °C to 40 °C.*

Vehicle options

- Vehicle locking power adapter for COR (Part # 170635-000)
- Two meter locking power and GPIO cable (direct wire) for replacement – included by default (Part # 170585-000)

Adapters

- Barrel to 4-pin power adapter (Part # 170665-000)
- Serial-to-GPIO cable (Part # 170676-000)

ANTENNAS – 3G/4G Modem, WiFi, & GPS

- 700 MHz – 2700 MHz Wide Band Directional Antenna (Yagi/Log- Periodic) Part #: 170588-000
- 12" Mag-Mount Antenna with SMA Male Connector Part #: 170605-000
- 4" Mini Mag-Mount Antenna with SMA Male Connector Part #: 170606-000
- 2.4/5 GHz Dual-band Dual-concurrent WiFi Antenna Part #: 170628-000 (WiFi models only)
- Universal 3G/4G/LTE Modem Antenna Part #: 170649-000
- GPS Screw-Mount Antenna Part #: 170651-000
- GPS Mag-Mount Antenna Part #: 170652-000
- Multi-Band Omni-Directional Antenna Part #: 170668-000
- Indoor/Outdoor Panel Patch Part #: 170669-000

Vehicle Antennas

- 3-in-1 GPS & Modem Screw-Mount Part #: 170653-000
- 3-in-1 Adhesive-Mount Antenna Part #: 170653-001
- 5-in-1 GPS, Modem & WiFi Screw-mount Part #: 170654-000
- Low Profile 5-in-1 MIMO LTE, MIMO WiFi (2.4/5Ghz), & GPS Screw Mount Antenna with 5M Cables Part #: 170654-001

See the Cradlepoint antenna accessories page for more information about antennas. Also see the Antenna Ordering and Installation Guide, available as a PDF in the Resources section of antenna and router product pages.

BUSINESS-GRADE MODEM SPECIFICATIONS

COR IBR1100/IBR1150 LP6 models include an integrated LTE Advanced Category 6 4G LTE modem. The LP6 modems support SIM-Based Auto-Carrier selection so there is only one model for all of North America. Simply insert the SIM and wait for the router to automatically detect the SIM and establish a connection.

The LTE bands certified for each carrier are listed below.

COR IBR1100LP6-NA, COR IBR1150LP6-NA, COR IBR1100LP6-EU

- **Technology:** LTE Advanced, DC-HSPA+
- **Downlink Rates:** LTE 300 Mbps, DC-HSPA+ 42.2 Mbps
- **Uplink Rates:** LTE 50 Mbps, DC-HSPA+ 5.76 Mbps
- **Frequency Bands:**
  - **LTE** Bands 1-5, 7, 8, 12, 13, 17, 20, 25, 26, 29, 30, 41
    - **Verizon:** 2, 4, 5, 13 (XLTE support w/carrier aggregation)
    - **AT&T:** 2, 4, 5, 12/17, 29, 30
    - **Sprint:** 25, 26, 41 (LTE Plus Support)
    - **T-Mobile:** 2, 4, 12 (T-Mobile Wideband LTE Support)
- **Carrier Aggregation:**
  - 1+ 8
  - 2+ 2/5/12 (17 w/MFBI)/13/29
  - 3+ 7/20
  - 4+ 4/5/12 (17 w/MFBI)/13/29
  - 5+ 2/4/30
  - 7+ 3/7/20
  - 8+ 1
  - 12 (17 w/MFBI) + 2/4/30
  - 13+ 2/4
  - 20+ 3/7
  - 30+ 5/12 (17 w/MFBI)
  - 41+ 41
- **Fallback:** WCDMA/DC-HSPA+ (42/5.76 Mbps): Bands 1, 2, 3, 4, 5, 8
- **Power:** LTE 23 dBm ± 1, DC-HSPA+ 23 dBm ± 1
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm²)
- **GPS:** active GPS support
- **SMS:** SMS support
- **Industry Standards & Certs:** CE, FCC, GCF-CC, IC, PTCRB, AT&T, Sprint, Verizon

COR IBR1100/IBR1150 LPE models include an integrated 4G LTE modem – specific model names include a specific modem (e.g., the COR IBR1100LPE-VZ includes a Verizon LTE modem).

Please note that LPE models are flexible and support bands for multiple cellular providers; however, only the frequency bands in bold below are supported by the listed provider.

COR IBR1100LPE-VZ, COR IBR1150LPE-VZ – 4G LTE/HSPA+/EVDO for Verizon

- **Technology:** LTE, HSPA+, EVDO Rev A
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE** Band 2 (1900 MHz), **Band 4 – AWS (1700/2100 MHz)**, Band 5 (850 MHz), **Band 13 (700 MHz)**, Band 17 (700 MHz), Band 25 (1900 MHz)
  - HSPA+/UMTS (850/900/1900/2100 MHz, AWS)
  - GSM/GPRS/EDGE (850/900/1800/1900 MHz)
  - **CDMA EVDO Rev A/1xRTT (800/1900 MHz)**
- **Power:** LTE 23 dBm ± 1, HSPA+ 23 dBm ± 1, EVDO 24 dBm +0.5/–1 (typical conducted)

- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm²)
- **GPS:** active GPS support
- **Industry Standards & Certs:** FCC, Verizon

COR IBR1100LPE-AT, COR IBR1150LPE-AT – 4G LTE/HSPA+/EVDO for AT&T
- **Technology:** LTE, HSPA+, EVDO Rev A
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE Band 2 (1900 MHz), Band 4 – AWS (1700/2100 MHz), Band 5 (850 MHz)**, Band 13 (700 MHz), **Band 17 (700 MHz)**, Band 25 (1900 MHz)
  - **HSPA+/UMTS (850/900/1900/2100 MHz, AWS)**
  - **GSM/GPRS/EDGE (850/900/1800/1900 MHz)**
  - CDMA EVDO Rev A/1xRTT (800/1900 MHz)
- **Power:** LTE 23 dBm ± 1, HSPA+ 23 dBm ± 1, EVDO 24 dBm +0.5/–1 (typical conducted)
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm²)
- **GPS:** active GPS support
- **Industry Standards & Certs:** PTCRB, FCC, IC, AT&T

COR IBR1100LPE-SP, COR IBR1150LPE-SP – 4G LTE/HSPA+/EVDO for Sprint
- **Technology:** LTE, HSPA+, EVDO Rev A
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE** Band 2 (1900 MHz), Band 4 – AWS (1700/2100 MHz), Band 5 (850 MHz), Band 13 (700 MHz), Band 17 (700 MHz), **Band 25 (1900 MHz)**
  - HSPA+/UMTS (850/900/1900/2100 MHz, AWS)
  - GSM/GPRS/EDGE (850/900/1800/1900 MHz)
  - **CDMA EVDO Rev A/1xRTT (800/1900 MHz)**
- **Power:** LTE 23 dBm ± 1, HSPA+ 23 dBm ± 1, EVDO 24 dBm +0.5/–1 (typical conducted)
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm²)
- **GPS:** active GPS support
- **Industry Standards & Certs:** FCC, Sprint

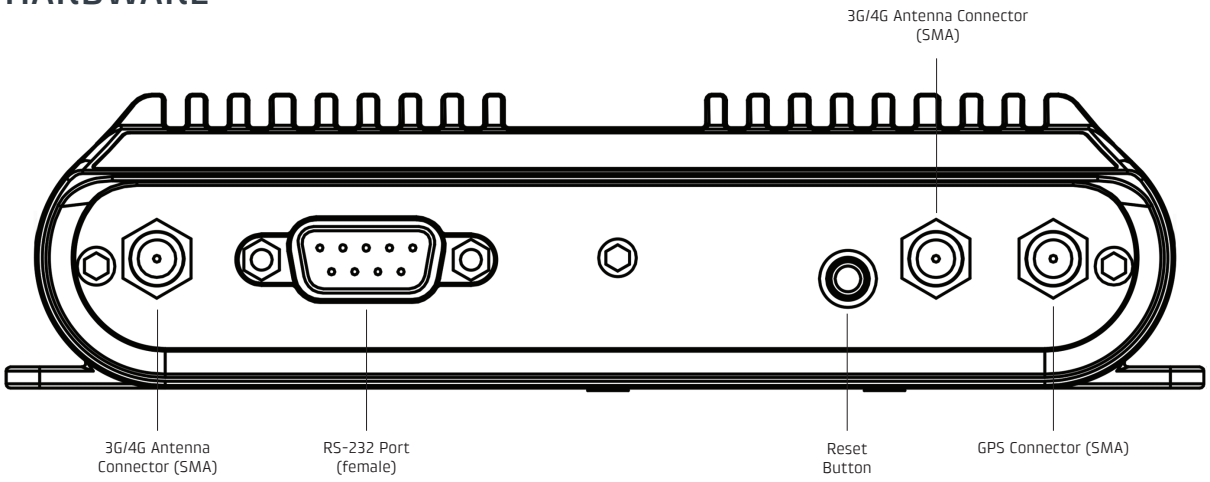
COR IBR1100LP3-EU, COR IBR1150LP3-EU – 4G LTE/HSPA+ for Europe
- **Technology:** LTE, HSPA+
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE Band 1 (2100 MHz), Band 3 (1800 MHz), Band 7 (2600 MHz), Band 8 (900 MHz), Band 20 (800 MHz)**
  - **HSPA+/UMTS (800/850/900/1900/2100 MHz)**
  - **GSM/GPRS/EDGE Quad-Band (850/900/1800/1900 MHz)**
- **Power:** LTE Band 1/3/8/20 – 23 dBm ± 1; LTE Band 7 – 22 dBm ± 1, HSPA+ 23 dBm ± 1 (typical conducted)
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm²)
- **GPS:** active GPS support
- **Industry Standards & Certs:** CE, GCF-CC

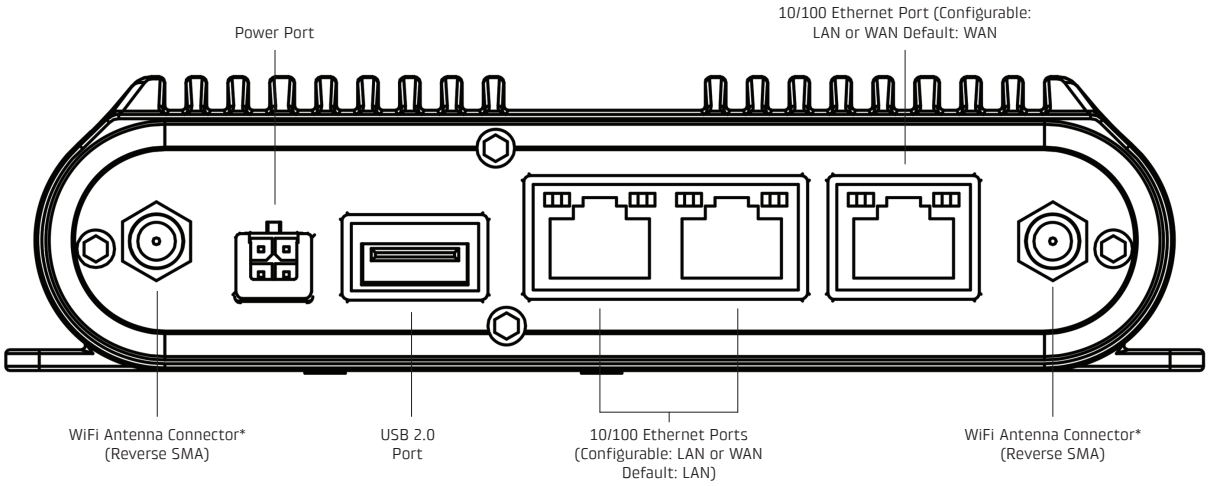
COR IBR1100LPE-GN, COR IBR1150LPE-GN – 4G LTE/HSPA+/EVDO (generic – for use on T-Mobile and U.S. Cellular in the U.S. and Rogers, Bell, & TELUS in Canada)
- **Technology:** LTE, HSPA+, EVDO Rev A
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE Band 2 (1900 MHz), Band 4 (AWS), Band 5 (850 MHz), Band 13 (700 MHz), Band 17 (700 MHz), Band 25 (1900 MHz)**

- **HSPA+/UMTS (850/900/1900/2100 MHz, AWS)**
- **GSM/GPRS/EDGE (850/900/1800/1900 MHz)**
- CDMA EVDO Rev A/1xRTT (800/1900 MHz)

- **Power:** LTE 23 dBm ± 1, HSPA+ 23 dBm ± 1, EVDO 24 dBm +0.5/–1 (typical conducted)
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm²)
- **GPS:** active GPS support
- **Industry Standards & Certs:** PTCRB, FCC, IC

HARDWARE





* - only on IBR1100

LEDS

POWER The Cradlepoint IBR1100/IBR1150 must be powered using an approved 9-36 VDC power source.

- Blue = Powered ON.
- No Light = Not receiving power. Check the power switch and the power source connection.
- Flashing Amber = Attention. Open the administration pages and check the router status.

2.4GHz
5GHz

WiFi BROADCAST These two LEDs indicate activity on the WiFi broadcast for both the 2.4 GHz and 5 GHz bands.

- 2.4GHz (green) = 2.4 GHz WiFi is on and operating normally.
- 5GHz (blue) = 5 GHz WiFi is on and operating normally.

EXTERNAL USB MODEM Indicates the status of external USB modem.
Both internal and external USB modems have the following LED indicators:

- Green = Modem has established an active connection.
- Blinking Green = Modem is connecting.
- Amber = Modem is not active.
- Blinking Amber = Data connection error. No modem connection possible.
- Blinking Red = Modem is in the process of resetting.

INTEGRATED MODEM Indicates information about the integrated modem.

- Green = Connected to integrated modem.

SIGNAL STRENGTH Blue LED bars indicate the active modem's signal strength.

- 4 Solid Bars = Strongest signal.
- 1 Blinking Bar = Weakest signal. (A blinking bar indicates half of a bar.)

ADDITIONAL LED INDICATIONS

- Several different LEDs flash when the factory reset button is detected.
- Two of the modem LEDs blink red in unison for 10 seconds when there is an error during NCOS upgrade.

SUPPORT AND WARRANTY

CradleCare Support available in the US and Canada with technical support, software upgrades, and advanced hardware exchange – 1-, 3-, and 5-year options.

Three-year limited hardware warranty available world-wide on IBR1100/IBR1150 series products when purchased from an approved Cradlepoint Partner or Distributor – extend warranty to 5 years.