

## **Cradlepoint COR IBR1100/IBR150 Specifications**



Figure 1: COR IBR1100

### **Highly Available, Cloud-Managed Networking for Extreme Conditions**

The Cradlepoint COR IBR1100 Series is a compact, ruggedized 3G/4G/LTE networking solution designed for mission critical connectivity in the most challenging environments.

Ideal for in-vehicle networks including police cars, ambulances, and mass transit, this cloud-managed solution provides organizations the ability to scale deployments quickly and manage their vehicle networks easily in real-time.

With an extensive list of safety and hardening certifications, the COR IBR1100 is engineered to protect against extreme temperatures, humidity, shocks, vibrations, dust, water splash, reverse polarity and transient voltage.

### **Key Features**

- Cloud-managed for zero-touch deployment and intelligent management
- Internal 3G/4G modem with secured SIM card access and dual SIM slots
- LTE support for all major U.S. carriers and Europe/international operators (failover to HSPA+ or EVDO)
- Software-defined radio supports multiple carriers (Gobi)
- WiFi (IBR1100) and non-WiFi versions (IBR150) available: IBR1100 includes dual-band dual-concurrent 2.4/5 GHz 802.11 a/b/g/n/ac WiFi; 2 x 2 MIMO with two external dual-band antenna connectors
- Ignition sensing

- Ruggedized: protects against vibration, shock, dust, splash, & humidity
- Built-in transient and reverse polarity voltage protection; 9–36 DC voltage input range
- Integrated temperature sensor
- Three 10/100 Ethernet ports (LAN/WAN configurable)
- Antenna connectors for external cellular modem (two) and active GPS (one)
- RS-232 serial port



Figure 2: COR IBR1100 Front



Figure 3: COR IBR1100 Back

## Features

### WAN

- 4G LTE/HSPA+/EVDO (multi-carrier)
- WiFi as WAN<sup>1</sup>, with WPA2 Enterprise Authentication for WiFi-as-WAN<sup>3</sup>
- Failover/Failback
- Load Balancing
- Advanced Modem Failure Check
- WAN Port Speed Control
- WAN/LAN Affinity
- IP Passthrough

### 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<sup>1</sup>**

- 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

#### **Management**

- Cradlepoint Enterprise Cloud Manager<sup>2</sup>
- 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 5 concurrent sessions
- L2TP<sup>3</sup>
- GRE Tunnel
- OSPF/BGP/RIP<sup>3</sup>
- Per-Interface Routing
- Routing Rules
- NAT-less Routing
- Virtual Server/Port Forwarding
- NEMO/DMNR<sup>3</sup>

- IPv6
- VRRP<sup>3</sup>
- STP<sup>3</sup>
- NHRP<sup>3</sup>
- VTI Tunnel support
- OpenVPN support
- CP Secure VPN compatible

### **Security**

- RADIUS and TACACS+
- 802.1x authentication for Ethernet
- Zscaler integration<sup>3</sup>
- Certificate support
- ALGs
- MAC Address Filtering
- Advanced Security Mode (local user management only)
- Per-Client Web Filtering
- IP Filtering
- Content Filtering (basic)
- Website Filtering

### **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<sup>2</sup>

1 – WiFi-related functions are only supported on IBR1100 models

2 – [Enterprise Cloud Manager](#) requires a subscription

3 – Requires an [Extended Enterprise License](#)

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## **Specifications**

### **WAN**

- Integrated 4G LTE modem (with 3G 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
- USB 2.0
- 3 Ethernet LAN/WAN
- 2 cellular antenna connectors (SMA)
- 1 active GPS antenna connector (SMA)
- 2 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**

- –30° C to 70° C (–22 °F to +158 °F) operating
- –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=400mA@12VDC (4.8W); worst case=800mA@12VDC (9.6W)
- Tx/Rx: typical=650mA@12VDC (7.8W); worst case=1300mA@12VDC (15.6W)
- 12VDC 2A adapter recommended

**SIZE** – 5.3 in x 4.4 in x 1.4 in (134 mm x 112 mm x 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 (pending)
- 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: 12 channel, continuous tracking
- 1 Hz refresh rate
- Accuracy:
  - < 2m: 50%
  - < 5m: 90%
- Acquisition:
  - Hot start: 1 second
  - Warm start: 29 seconds
  - Cold start: 32 seconds
- Sensitivity
  - Tracking: -161 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)

## 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.*

## Feature Details

- **WAN Security** – NAT, SPI, ALG, inbound filtering of IP addresses, port blocking, service filtering (FTP, SMTP, HTTP, RPL, SNMP, DNS, ICMP, NNTP, POP3, SSH), protocol filtering, WAN ping (allow/ignore)
- **Redundancy and Load Balancing** – Failover/failback with 4G, 3G, Ethernet with rule selection, advanced load balancing options (round robin, spillover, data usage, rate), WAN failure detection, VRRP
- **Intelligent Routing** – UPnP, DMZ, virtual server/port forwarding, routing rules, NAT-less routing, wired or wireless WAN-to-LAN IP passthrough, route management, per-interface routing, content filtering, IP filtering, website filtering, per-client Web filtering, local DHCP server, DHCP client, DHCP relay, DNS, DNS proxy, Split DNS; ALGs: PPTP, SIP, TFTP, FTP, IRC; MAC address filtering, Dynamic DNS, LAN/WAN affinity, VLAN 802.1Q (coming Q4), STP, enterprise routing protocols: BGP/OSPF/RIP, multicast proxy support, IP setting overrides, IPv6 support
- **Management** – Enterprise Cloud Manager: cloud-enabled management and application platform (subscription-based); web-based GUI (local management), optional RADIUS or TACACS+ username/password; remote WAN web-based management w/ access control (HTTP, HTTPS); SNMP v1, v2c, & v3; CLI over SSH, SSH to serial, SSH to telnet; API; one-button firmware upgrade; modem configuration, update, and management; modem data usage w/ alerts, per-client data usage; custom AT scripting to modems
- **Performance & Health Monitoring** – Advanced QoS with traffic shaping, with DSCP/DiffServe QoS, Modem Health Management (MHM) improves connectivity of modem, SSID-based priority, WAN port speed control, several levels of basic and advanced logging for troubleshooting
- **VPN** (IPsec) – Tunnel, NAT-T, and transport modes; connect to Cradlepoint, Cisco/Linksys, CheckPoint, Watchguard, Juniper, SonicWall, Adtran and others; certificate support; Hash (MD5, SHA128, SHA256, SHA384, SHA512), Cipher (AES, 3DES, DES); support for 5 concurrent connections, GRE tunneling, L2TP support, multiple networks supported in a single tunnel, site-to-site dynamic VPN with NHRRP; VTI Tunnel support; OpenVPN support
- **GPS** – Active GPS antenna port; GUI mapping; multiple server reporting (coming Q4) with LAN and WAN options; TAIP and NMEA; custom intervals based on time and/or velocity; GPS over Serial support; Configurable GPS Lock LED

## **Support and Warranty**

- CradleCare Support Agreement available with technical support, software upgrades, and advanced hardware exchange – 1-, 3-, and 5-year options
- One-year limited hardware warranty available in the US and Canada; two-year limited hardware warranty for integrated EU products when purchased from an authorized EU distributor – extend warranty to 2, 3, or 5 years

## **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 both power and antennas:

### **Power**

#### **Wall options**

- COR IBR1100/IBR1150 extended temperature (-30 °C to 70 °C) 12VDC 2A locking power adapter – requires separate line cord (Part # 170648-000)
  - 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)



### **Antennas - 3G/4G Modem, WiFi, & GPS**

- Universal 3G/4G multi-band cellular modem antenna – 2dBi/3dBi (Part # 170649-000)
- 2.4 GHz and 5 GHz dual-band dual-concurrent WiFi antenna (Part # 170628-000)
- 5-in-1 – 3G/4G modem, GPS-GLONASS, and WiFi – screw-mount antenna with 3m cables (Part # 170654-000)
- 3-in-1 – 3G/4G modem and GPS-GLONASS – screw-mount antenna with 3m cables (Part # 170653-000)
- GPS-GLONASS screw-mount antenna with 3m cable (Part # 170651-000)
- GPS-GLONASS magnetic-mount antenna with 3m cable (Part # 170652-000)
- Directional Patch antennas for external (outside) mounting (Part # 170587-000)
- Directional Yagi (Log-Periodic) antennas for external (outside) mounting (Part # 170588-000)
- Omni-directional antennas for external (outside) mounting (Part # 170586-000)
- 12” Mag-mount antenna (Part # 170605-000)
- 4” Mini mag-mount antenna (Part # 170606-000)

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.

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### **Business-Grade Modem Specifications**

COR IBR1100/IBR1150 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-cm)
- **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-cm)
- **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-cm)
- **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-cm)
- **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 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-cm)
- **GPS:** active GPS support
- **Industry Standards & Certs:** PTCRB, FCC, IC