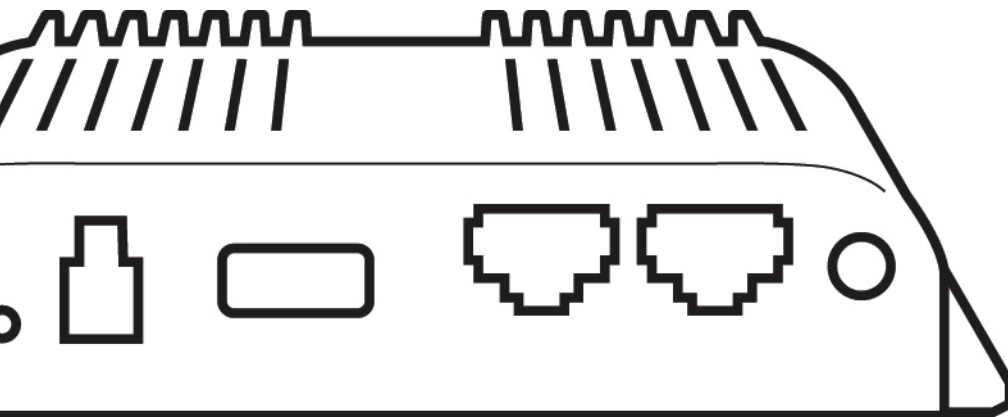




# COR Series Router

**IBR900 / IBR950**

Spec Sheet



[cradlepoint.com](http://cradlepoint.com)

# INTRODUCTION

## WHAT'S IN THE BOX

- Ruggedized router with integrated business-class 3G/4G modem; includes integrated mounting plate
- Quick Start Guide with warranty information
- External 3G/4G mobile broadband modem antennas (2) (SMA), finger tighten only
- External WiFi antennas (2) (reverse SMA\*), < 5 dBi gain, finger tighten only
- 12 V / 2 A power supply w/ locking connector; DC GPIO/power cable available
- Extra SIM door screws (2)

**NOTE:** -NPS SKU\*\* comes with no antennas or power supply, and includes a 2-meter locking power and GPIO cable (direct wire).

\*-IBR900 only

\*\* -NPS SKU available in North America only

## KEY FEATURES

### WAN

- Dual-modem capable with optional COR Extensibility Dock
- LP6: LTE Advanced LTE/HSPA+ (SIM-based, Auto-carrier Selection for all North American, European, and Asia Pacific carriers; includes support for 700 MHz Band 28 in Asia Pacific)
- LP5: Cat 6 LTE Advanced for operators in Asia Pacific and Saudi Arabia (SIM-based Auto-carrier selection)
- LPE: 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
- 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<sup>1</sup>

- Dual-Band, dual-concurrent
- 802.11 a/b/g/n/ac wave 2
  - MU-MIMO and 256 QAM support

- 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 for faster data offload

## MANAGEMENT

- Cradlepoint NetCloud 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
- Syslog

## VPN AND ROUTING

- IPsec Tunnel – up to ten concurrent sessions
- L2TP<sup>3</sup>
- GRE Tunnel
- OSPF/BGP/RIP<sup>3</sup>
- 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<sup>3</sup>
- IPv6
- VRRP<sup>3</sup>
- STP<sup>3</sup>
- NHRP<sup>3</sup>
- VTI Tunnel support<sup>3</sup>
- OpenVPN support<sup>3</sup>
- CP Secure VPN compatible
- Serial PAD Mode

## SECURITY

- RADIUS and TACACS+ support\*
- 802.1x authentication for Ethernet\*\*
- Zscaler integration<sup>3</sup>
- Certificate support
- ALGs
- MAC Address Filtering
- Advanced Security Mode (local user management only)

- FIPS 140-2 Inside<sup>4</sup>
- 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.

\*\*-802.1x Authentication for Ethernet not available for FIPS SKUs.

## 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 IBR900 models

2 – **NetCloud Manager** requires a subscription

3 – Requires an **Extended Enterprise License** or **NetCloud Manager PRIME**

4 – FIPS 140-2 Inside SKUs are designated with an “F” prefix

## SPECIFICATIONS

### WAN:

- Dual-modem capable with optional COR Extensibility Dock
- Integrated LP6 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover) or LP5 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover)
- Two LAN/WAN switchable 10/100/1000 Gigabit 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 wave 2 (IBR900 only)

### LAN:

- Dual-band, dual-concurrent WiFi; 802.11 a/b/g/n/ac wave 2 (IBR900 only)
- Two LAN/WAN switchable 10/100/1000 Gigabit Ethernet ports – one default LAN
- Serial console support for Out-of-Band Management of a connected device

### PORTS:

- Power
- 2-wire GPIO
- Add more GPIO ports with optional 9-wire GPIO cable or COR Extensibility Dock (see Accessories section below)
- USB 2.0
- Two Ethernet LAN/WAN
- Two cellular antenna connectors (SMA)
- One active GPS antenna connector (SMA)
- Two WiFi antenna connectors (R-SMA)
- 15-pin dock port for COR Extensibility Dock or 9-wire GPIO cable

**TEMPERATURE:**

- -30 °C to 70 °C (-22 °F to 158 °F) operating with optional\* 9-wire power and GPIO cable (Part #170680-000)
- -30 °C to 70 °C (-22 °F to 158 °F) operating with optional extended temperature AC power supply (Part #170648-000; see [this page](#) for line cord details)
- -20 °C to 60 °C (-4 °F to 140 °F) operating with included† standard AC power supply
- -40 °C to 85 °C (-40 °F to 185 °F) storage

\* - included with “-NPS” version

† - not included with “-NPS” version

**HUMIDITY (non-condensing):**

- 5% to 95% operating
- 5% to 95% storage

**POWER:**

- DC input steady state voltage range: 9–33 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: 4 W
  - WiFi Tx/Rx: 9 W
  - LTE Tx/Tx: 6.25 W
  - 12 VDC / 2 A adapter recommended

**WIFI POWER:**

- 2.4 GHz: 18 dBm conducted
- 5 GHz VHT20: 17.5 dBm conducted
- 5 GHz VHT40: 17 dBm conducted
- 5 GHz VHT80: 16.5 dBm conducted

**SIZE:** 4.6 × 4.5 × 1.2 in (118 × 113.5 × 29.3 mm)

**WEIGHT:** 14 oz (400 g)

**CERTIFICATIONS:**

- FCC, CE, IC
- AS, NZS, SGP (IMDA)
- WiFi Alliance (IBR900 only) – 802.11a/b/g/n/ac wave 2 certified
- Safety: UL/CUL, CB Scheme, EN60950-1
- Shock/Vibration/Humidity: compliant with MIL STD 810G and SAEJ1455
- Ingress Protection: compliant with IP54 (includes protection from dust and splashing water)
- Materials: WEEE, RoHS, RoHS-2, California Prop 65
- Telecom: PTCRB/CTIA, GCF-CC
- Regulatory Models: S5A643A, S5A644A, S5A648A, S5A701A, S5A706A
- FIPS 140-2 Inside

**GPS**

- GPS Protocols: TAIP and NMEA 0183 V3.0
- Satellite channels: Maximum 40 channels, simultaneous tracking
- Concurrent standalone GPS, GLONASS, BeiDou and Galileo
- 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

Cradlepoint offers several accessory options for extensibility, power and antennas:

### EXTENSIBILITY

- COR Extensibility Dock (Part # 170700-000)
- 9-wire power & GPIO cable (Part #170680-000)

### POWER

#### Vehicle options

- Vehicle locking power adapter for COR (Part # 170635-000)
- Two meter locking power and GPIO cable (direct wire) (Part # 170585-000) – *included by default on IBR900LP6-NA-NPS only*

#### Power Supplies/Adapters

- North America COR IBR900/IBR950 power supply (Part # 170716-000)
- International power supply -- includes adapters for US, EU, UK, AU (Part # 170717-000)
- Barrel to 4-pin power adapter (Part # 170665-000)
- Extended temperature AC power supply (Part #170648-001; see [this page](#) for line cord details)

### 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
- Universal LTE/4G/3G / 2dBi/3dBi antenna with SMA connector for all AER, ARC, COR, and MC400 products (Part # 170704-001)

#### 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 (2.4/5 GHz), & 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 IBR900/IBR950 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 IBR900LP6-NA, COR IBR950LP6-NA, COR IBR900LP6-EU**

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

**COR IBR900/IBR950LP5 models** include an integrated LTE Advanced Category 6 4G LTE modem, and support Asia Pacific and Saudi Arabia. The LP5 modems support SIM-based, Auto-carrier selection. Simply insert the SIM and wait for the router to automatically detect the SIM and establish a connection.

### **COR IBR900LP5-AP, COR IBR950LP5-AP**

- **Technology:** FDD/TDD (Category 6) 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, 3, 5, 7, 8, 11, 18, 19, 21, 28, 38, 39, 40, 41
  - TD-SCDMA 39
- **Carrier Aggregation:**
  - 1+ (8, 18, 19, 21)
  - 3+ (5, 7, 19, 28)
  - 7+ (5, 7, 28)
  - 19+ 21
  - 38+ 38
  - 39+ 39
  - 40+ 40
  - 41+ 41
- **Fallback:** WCDMA/DC-HSPA+ (42/5.76 Mbps): Bands 1, 5, 6, 8, 9, 19
- **Power:** LTE: 23 dBm  $\pm$  1; DC-HSPA+: 23 dBm  $\pm$  1
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- **GPS:** active GPS support
- **SMS:** SMS support
- **Industry Standards & Certs:** CE, GCF-CC, RC Australia, others pending

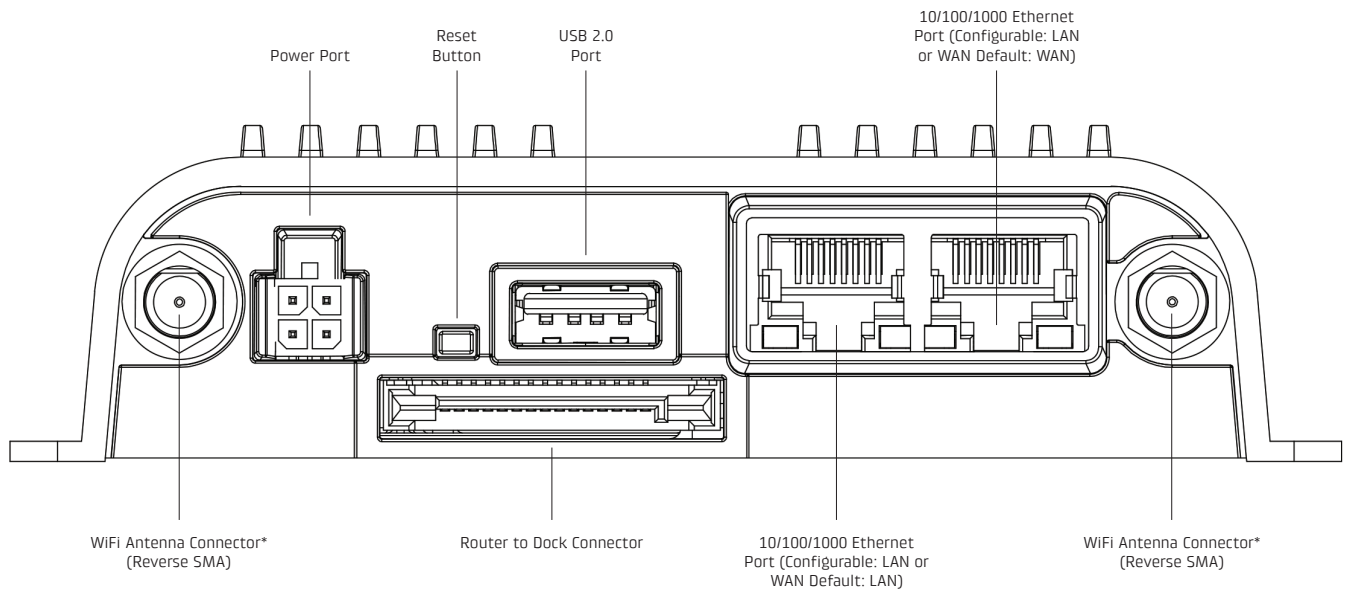
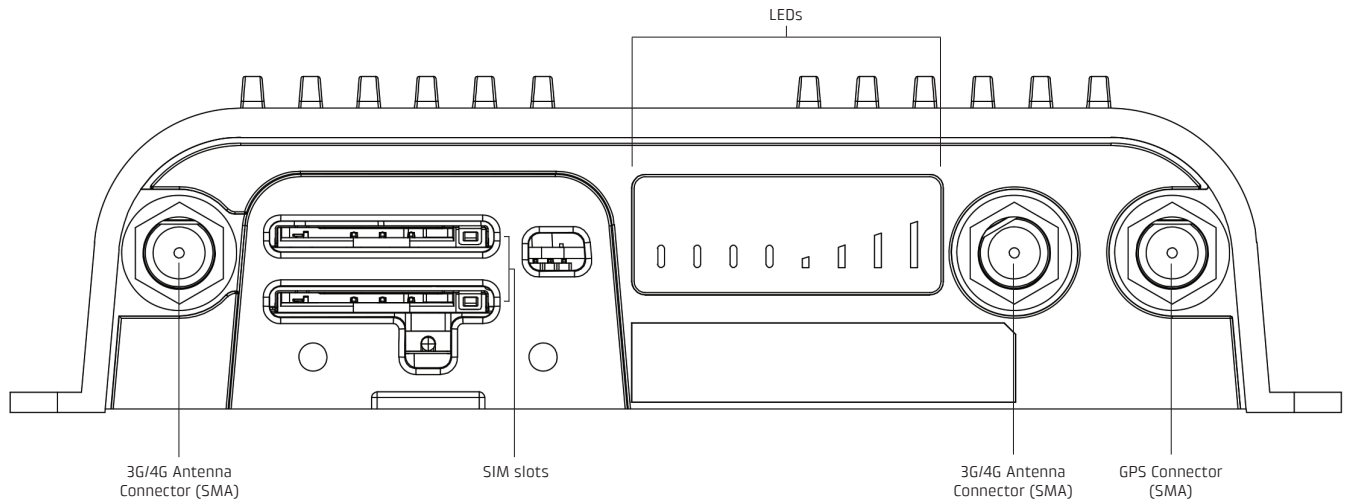
**COR IBR900-LPE/IBR950-LPE models** include an integrated 4G LTE/HSPA+/EVDO modem – specific model names include a specific modem (e.g., the COR IBR950-LPE-VZ includes a Verizon LTE modem).

#### **COR IBR900-LPE, COR IBR950-LPE (North America)**

- **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  $\pm$  1; HSPA+ 23 dBm  $\pm$  1; EVDO 24 dBm  $\pm$  1 (typical conducted)
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- **GPS:** Active GPS support
- **Industry Standards & Certs:** FCC, WiFi Alliance (IBR900 only), AT&T, Sprint, Verizon, Verizon NEMO/DMNR for Primary Wireless Access
- **SIM:** two 2FF slots








# HARDWARE



\* - only on IBR900

## LEDS

INDICATOR	BEHAVIOR
	<p><b>POWER</b> The Cradlepoint IBR900/IBR950 must be powered using an approved 9–33 V DC power source.</p> <ul style="list-style-type: none"> <li>• Green = Powered ON.</li> <li>• No Light = Not receiving power. Check the power switch and the power source connection.</li> </ul>
	<p><b>WiFi BROADCAST</b> Indicates WiFi activity (IBR900 only).</p> <ul style="list-style-type: none"> <li>• Green = On and operating normally.</li> <li>• Yellow = Attention.</li> </ul>
	<p><b>GPS</b> Indicates the status of GPS connection.</p> <ul style="list-style-type: none"> <li>• Blue = GPS locked.</li> <li>• Blinking Blue = Obtaining lock.</li> <li>• No Light = Off/no lock.</li> </ul>
	<p><b>INTEGRATED MODEM</b> Indicates information about the integrated modem.</p> <ul style="list-style-type: none"> <li>• Green = Modem has established an active connection.</li> <li>• Blinking Green = Modem is connecting.</li> <li>• Amber = Modem is not active.</li> <li>• Blinking Amber = Data connection error. No modem connection possible.</li> <li>• Blinking Red = Modem is in the process of resetting.</li> <li>• No Light = Modem not connected.</li> </ul>
	<p><b>SIGNAL STRENGTH</b> Blue LED bars indicate the active modem's signal strength.</p> <ul style="list-style-type: none"> <li>• 4 Solid Bars = Strongest signal.</li> <li>• 1 Blinking Bar = Weakest signal. (A blinking bar indicates half of a bar.)</li> </ul>
<b>Other</b>	<p><b>ADDITIONAL LED INDICATIONS</b></p> <ul style="list-style-type: none"> <li>• Several different LEDs blink when the factory reset button is detected.</li> <li>• Two of the modem LEDs blink red in unison for 10 seconds when there is an error during NCOS upgrade.</li> <li>• Dock Ethernet LEDs: only right LED will light up and/or blink with data.</li> <li>• When an external USB modem is plugged in, only the Signal Strength LEDs will light up.</li> </ul>

## 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 worldwide on IBR900/IBR950 series products when purchased from an approved Cradlepoint Partner or Distributor – extend warranty to five years.