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 WAN¹, with WPA2 Enterprise Authentication for WiFi as WAN³
• 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

WIFI¹
• 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 Enterprise Cloud Manager²
• 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 five concurrent sessions
• L2TP³
• GRE Tunnel
• OSPF/BGP/RIP³
• 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/DMNR³
• IPv6
• VRRP³
• STP³
• NHRP³
• VTI Tunnel support³
• OpenVPN support³
• CP Secure VPN compatible
• Serial PAD Mode

SECURITY
• RADIUS and TACACS+ support*
• 802.1x authentication for Ethernet
• Zscaler integration³
• 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 management²

1 – WiFi-related functions are only supported on IBR900 models
2 – Enterprise Cloud Manager requires a subscription
3 – Requires an Extended Enterprise License or Enterprise Cloud Manager PRIME

SPECIFICATIONS
WAN:
• Dual-modem capable with optional COR Extensibility Dock
• Integrated LP6 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover) or LPS 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; 2×2 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

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 #170648-000; 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, 17, 20, 25, 26, 29, 30, 41
    - Verizon: 2, 4, 5, 13 (LTE 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, 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 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
Spec Sheet / COR IBR900/IBR950

- 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 ± 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, 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 ± 1; HSPA+ 23 dBm ± 1; EVDO 24 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:** FCC, WiFi Alliance (IBR900 only), AT&T, Sprint, Verizon, Verizon NEMO/DMNR for Primary Wireless Access
- **SIM:** two 2FF slots
HARDWARE

3G/4G Antenna Connector (SMA)
SIM slots
3G/4G Antenna Connector (SMA)
GPS Connector (SMA)

Power Port
Reset Button
USB 2.0 Port
10/100/1000 Ethernet Port (Configurable: LAN or WAN Default: WAN)
WiFi Antenna Connector* (Reverse SMA)
Router to Dock Connector
10/100/1000 Ethernet Port (Configurable: LAN or WAN Default: LAN)
WiFi Antenna Connector* (Reverse SMA)

* - only on IBR900
LEDS

**POWER** The Cradlepoint IBR900/IBR950 must be powered using an approved 9–33 VDC power source.
- Green = Powered ON.
- No Light = Not receiving power. Check the power switch and the power source connection.
- Yellow = Attention. Open the administration pages and check the router status.

**WIFI BROADCAST** Indicates WiFi activity.
- Green = On and operating normally.
- Yellow = Attention.

**GPS** Indicates the status of GPS connection.
- Blue = GPS locked.
- Blinking Blue = Obtaining lock.
- No Light = Off/no lock.

**INTEGRATED MODEM** Indicates information about the integrated modem.
- Green = Modem has established active WAN connection.
- Blinking Green = Modem is connecting.
- Yellow = Modem not active.
- Blinking Yellow = Data connection error.
- Blinking Red = In process of resetting.
- No Light = Modem not connected.

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