



NetCloud Services for IoT



# COR IBR600C Series Spec Sheet



Cradlepoint COR IBR600C Series IoT routers are sold as part of an all-inclusive IoT networking package.

**NetCloud IoT Essentials Packages include:**

- Compact endpoints, purpose-built for IoT and M2M applications
- A NetCloud Service Plan tailored for IoT networking and set for a specific term
- 24x7 support and limited lifetime warranty

## What to Buy

Description	Part Numbers
<b>North America (U.S., Canada)</b>	
— NetCloud IoT Essentials with IBR600C-150M-D	TAx-600C150M-NNN TBy-600C150M-NNN
— NetCloud IoT Essentials with IBR650C-150M-D	TAx-650C150M-N0N TBy-650C150M-N0N
<b>Europe (EU)</b>	
— NetCloud IoT Essentials with IBR600C-150M-B-EU	TAx-600C150M-EWM TBy-600C150M-EWM
<b>Asia-Pacific (Australia, New Zealand)</b>	
— NetCloud IoT Essentials with IBR600C-150M-C-AP	TAx-600C150M-PWM TBy-600C150M-PWM
<b>All Regions</b>	
— NetCloud IoT Advanced Plan	TAx-NCADV TBy-NCADV

*x = 1, 3, or 5 years*

*y = 3 or 5 years*

**NetCloud IoT Essentials** packages and plans contain all the features and capabilities required for a broad range of IoT applications. Essentials Packages include 24x7 support (phone support: 24 hour weekdays with emergency response on weekends, web: 24x7, chat: 24x5) and a limited lifetime warranty.

For additional capabilities, a **NetCloud IoT Advanced Plan** can be added to the NetCloud IoT Essentials Package at any time.

See additional details of what is included in the Essential and Advanced NetCloud software: [cradlepoint.com/iot-networks](https://cradlepoint.com/iot-networks)

For more details on the COR IBR600C IoT router, included with the NetCloud IoT Packages, refer to the following information.

## What's in the Box

- Ruggedized IBR600C series router with an embedded, enterprise-class LTE modem; includes integrated mounting plate
- Two (2) External LTE antennas (SMA)
- Two (2) WiFi antennas (RP-SMA) for IBR600C only
- 12V / 2A power supply w/ locking connector
- Two (2) Extra SIM door screws
- Safety, Regulatory, and Warranty guide

## Key Features

### WAN

- Dual-modem capable with optional COR Extensibility Dock
- 150M-B: 150/50 Mbps DL/UL FDD LTE w/HSPA+ fallback for EU
- 150M-C: 150/50 Mbps DL/UL FDD LTE w/HSPA+ fallback for APAC
- 150M-D: 150/50 Mbps DL/UL FDD LTE w/HSPA+ fallback for North America (USA/Canada)
- WiFi-as-WAN<sup>1</sup>, with WPA2 Enterprise Authentication for WiFi-as-WAN
- 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
- DMZ
- Multicast/Multicast Proxy
- QoS (DSCP and Priority Queuing)
- MAC Address Filtering

## WiFi<sup>1</sup>

- 802.11 b/g/n
- Up to 64 connected devices
- Multiple SSIDs
- WPA2 Enterprise (WiFi)
- Hotspot/Captive Portal
- SSID-based Priority
- Client Mode for faster data offload

## Management

- Cradlepoint NetCloud Manager
- Web UI, API, CLI
- Data Usage Alerts (router and per client)
- Advanced Troubleshooting (support)
- Device Alerts
- SNMP
- SMS control
- Serial Redirector
- Auto APN Recovery
- Syslog

## VPN & Routing

- IPsec Tunnel – up to five concurrent sessions
- L2TP
- GRE Tunnel
- OSPF/BGP/RIP
- 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
- IPv6
- VTI Tunnel support
- OpenVPN support
- CP Secure VPN compatible

## Security

- RADIUS and TACACS+ support\*
- 802.1x authentication for Ethernet
- Zscaler integration
- 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
- 802.1p/q for LAN QoS segmentation and treatment of VoIP on LAN
- Private Network support (wired and 4G WAN)
- Cloud-based management

## IoT Connector

- NetCloud Edge Connector for Microsoft® Azure IoT Central

*1 – WiFi-related functions are only supported on IBR600C-XXX models (no WiFi on IBR650C-XXX models)*

## Specifications

The following features are delivered through the hardware.

### WAN:

- Dual-modem capable with optional COR Extensibility Dock
- Embedded 150M-B, 150M-C, or 150M-D modem
- Two LAN/WAN switchable Ethernet ports (one 10/100/1000 and one 10/100) – one default WAN
- WiFi-as-WAN, Metro WiFi; 2×2 MIMO “N” 2.4 GHz; 802.11 b/g/n (IBR600C only)

### LAN:

- 2×2 MIMO “N” 2.4 GHz WiFi; 802.11 b/g/n (IBR600C only)
- Two LAN/WAN switchable Ethernet ports (one 10/100/1000 and one 10/100) – 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)
- Two WiFi antenna connectors (R-SMA; IBR600C only)
- One GPS connector (SMA) (150M-B, 150M-C, 150M-D only. LPE GPS is muxed on LTE)
- 15-pin dock port for COR Extensibility Dock or 9-wire GPIO cable

**Temperature:** -20 °C to 60 °C (-4 °F to 140 °F) operating

### 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

**WIFI POWER (FCC):**

2.4 GHz band: 28.1 dBm conducted

**WIFI POWER (Europe/Rest of World):**

- 2.4 GHz band: 15 dBm conducted
- 2.4 GHz band: 20 dBm EIRP

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

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

**CERTIFICATIONS:**

- Regulatory: FCC, IC, CE, RCM (Australia/New Zealand), ICASA (South Africa)
- WiFi Alliance (IBR600C only) – 802.11 b/g/n certified
- Safety: UL/CUL, CB Scheme, EN60950-1
- Shock/Vibration/Humidity: compliant with MIL STD 810G and SAEJ1455
- Materials: WEEE, RoHS, RoHS-2, California Prop 65
- Telecom: PTCRB/CTIA

## Accessories

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

**EXTENSIBILITY:**

- COR Extensibility Dock (Part # 170700-000) with compatible MC400 modular modem
  - MC400-1200M-B (Part # MA-MC400-1200M-B)
  - MC400-1200M (Part # MA-MC400-1200M)
  - MC400-600M-C-AT (Part # MC400-C-AT)
  - MC400LP6 (Part # MC400LP6)
  - MC400LP4 (Part # MC400LP4)
- 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)

**Power Supplies/Adapters**

- North America: COR IBR6x0C power supply (Part # 170716-000)
  - WARNING: This product (part # 170716-000) can expose you to chemicals including Carbon Black Extracts, which are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).
- Barrel to 4-pin power adapter (Part # 170665-000)

**ANTENNAS:**

See the [Cradlepoint Certified Antennas for Fixed Sites](#) for more information about antennas. Also see the [Antenna Ordering and Installation Guide](#), also available in the Resources section of antenna and router product pages.

## Enterprise-Class Modem Specifications

### COR IBR600C-150M

COR IBR6X0-150M models include an embedded LTE Category 4 LTE modem. The 150M modems support worldwide SIM-based, auto carrier selection. Simply insert the SIM and wait for the router to automatically detect and establish a connection.

#### **COR IBR600C-150M-D-NA; COR IBR650C-150M-D-NA (North America):**

- Technology: LTE Cat 4 (3GPP Rel 11), DC-HSPA+
- Downlink Rates: LTE 150 Mbps, HSPA+ 42.2 Mbps\*
- Uplink Rates: LTE 50 Mbps, HSPA+ 5.76 Mbps\*
- Frequency Bands:
  - LTE: Band 2 (1900 MHz), Band 4 – AWS (1700/2100 MHz), Band 5 (850 MHz), Band 12 (700 MHz), Band 13 (700 MHz), Band 14 (700 MHz), Band 66 – AWS 3 (1700/2100 MHz), Band 71 (600 MHz)
  - WCDMA/HSPA+/UMTS: Band 2, Band 4, Band 5
- Power: LTE 23 dBm  $\pm$  1; HSPA+ 23 dBm  $\pm$  1; (typical conducted)
- Antennas: SMA and RP-SMA male plugs, maximum torque not to exceed 4 in-lbs
- GPS/GNSS: Passive, dedicated SMA port (multi-constellation - GPS, GLONASS)
- Industry Standards & Certs: FCC, IC, PTCRB, WiFi Alliance (IBR600C only), AT&T, FirstNet Ready™, Verizon, Verizon NEMO/DMNR for Primary Wireless Access
- SIM: Two 2FF slots

#### **COR IBR600C-150M-B-EU (Europe):**

- Frequency Bands:
  - LTE FDD: B1/ B3/ B5/ B7/ B8/ B20
  - LTE TDD: B38/ B40 /B41
  - DC-HSPA+/UMTS: B1/ B5/ B8
  - GSM/EDGE: B3/ B8
- Technology: LTE, DC-HSPA+
- Downlink Rates: LTE 150 Mbps, HSPA+ 42 Mbps\*
- Uplink Rates: LTE 50 Mbps, HSPA+ 5.76 Mbps\*
- Power: LTE 23 dBm  $\pm$  2; HSPA+ 23 dBm  $\pm$  1; (typical conducted)
- Antennas: SMA and RP-SMA male plugs, maximum torque not to exceed 4 in-lbs
- GPS: Passive standalone (dedicated SMA port)
- Industry Standards & Certs: CE, WiFi Alliance
- SIM: Two 2FF slots



**COR IBR600C-150M-C-AU (Australia):**

- Frequency Bands:
  - LTE FDD: B1/ B3/ B5/ B7/ B28
- DC-HSPA+/UMTS: B1/ B5
- Technology: LTE, DC-HSPA+
- Downlink Rates: LTE 150 Mbps, HSPA+ 42 Mbps\*
- Uplink Rates: LTE 50 Mbps, HSPA+ 5.76 Mbps\*
- Power: LTE 23 dBm ± 2; HSPA+ 23 dBm ± 1; (typical conducted)
- Antennas: SMA and RP-SMA male plugs, maximum torque not to exceed 4 in-lbs
- GPS: Passive standalone (dedicated SMA port)
- Industry Standards & Certs: RCM, WiFi Alliance
- SIM: Two 2FF slots

**COR IBR600C-LPE\***

*\*LPE versions no longer available*

COR IBR600C-LPE/IBR650C-LPE models include an embedded 4G LTE/HSPA+/EVDO modem – specific model names include a specific modem (e.g., the COR IBR650C-LPE-VZ includes a Verizon LTE modem) but is software configurable for Sprint, AT&T, T-Mobile or Canada.

**COR IBR600C-LPE-AT/GN/SP/VZ; COR IBR650C-LPE-AT/GN/SP/VZ (North America):**

- 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)
- Technology: LTE, HSPA+, EVDO Rev A
- Downlink Rates: LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps\*
- Uplink Rates: LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps\*
- Power: LTE 23 dBm ± 1; HSPA+ 23 dBm ± 1; EVDO 24 dBm ± 1 (typical conducted)
- Antennas: SMA and RP-SMA male plugs, maximum torque not to exceed 4 in-lbs
- GPS: Passive, muxed on aux port
- Industry Standards & Certs: FCC, WiFi Alliance (IBR600C only), AT&T, Sprint, Verizon, Verizon NEMO/DMNR for Primary Wireless Access
- SIM: Two 2FF slots

*\*Theoretical Speeds*

## Support & Warranty

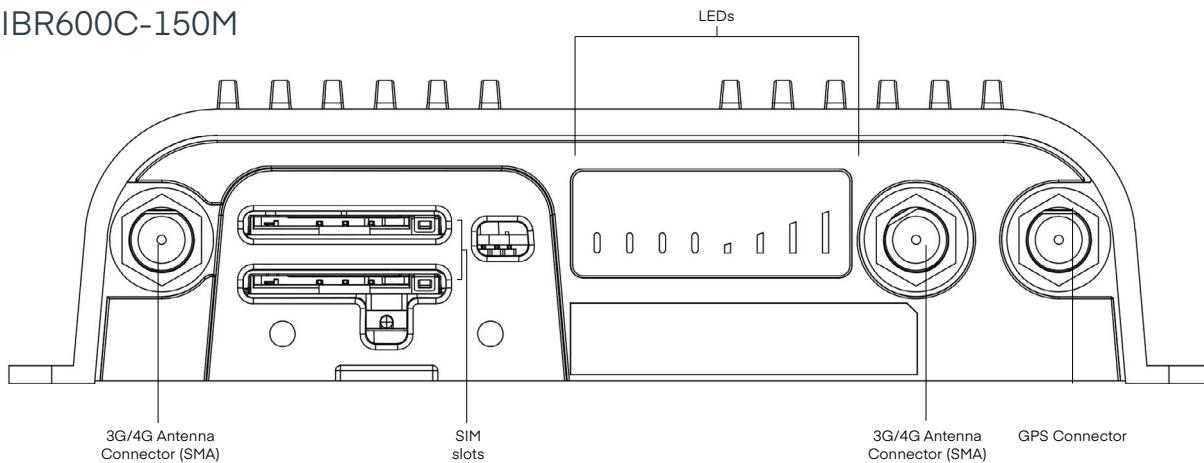
The COR IBR600C series are only sold as a components of NetCloud Packages.

- NetCloud Packages include support for the full subscription term.
- All Cradlepoint hardware products are covered by a limited lifetime warranty for as long as they have a subscription license to an active NetCloud Service Plan.

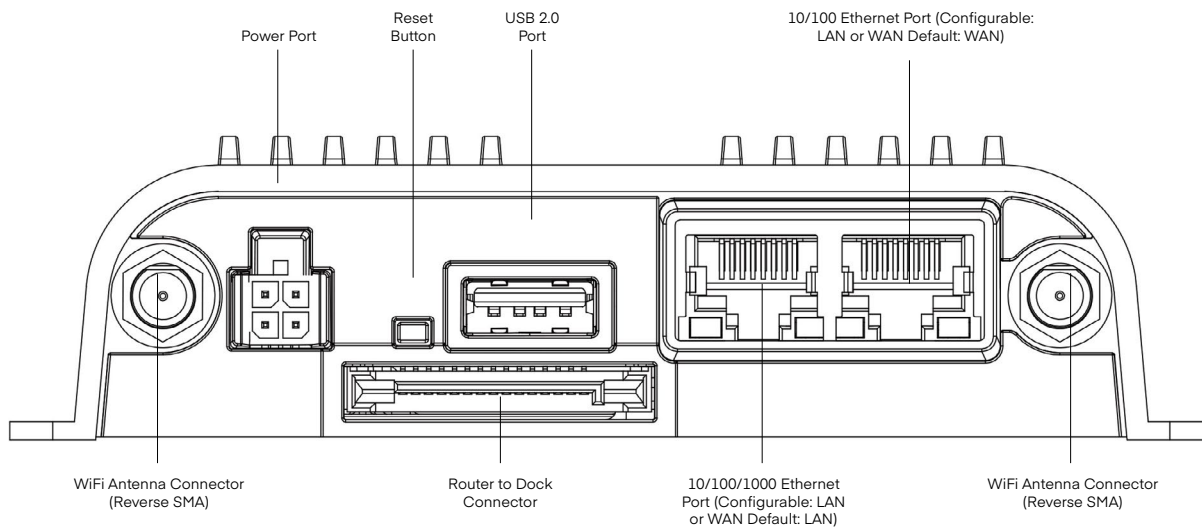
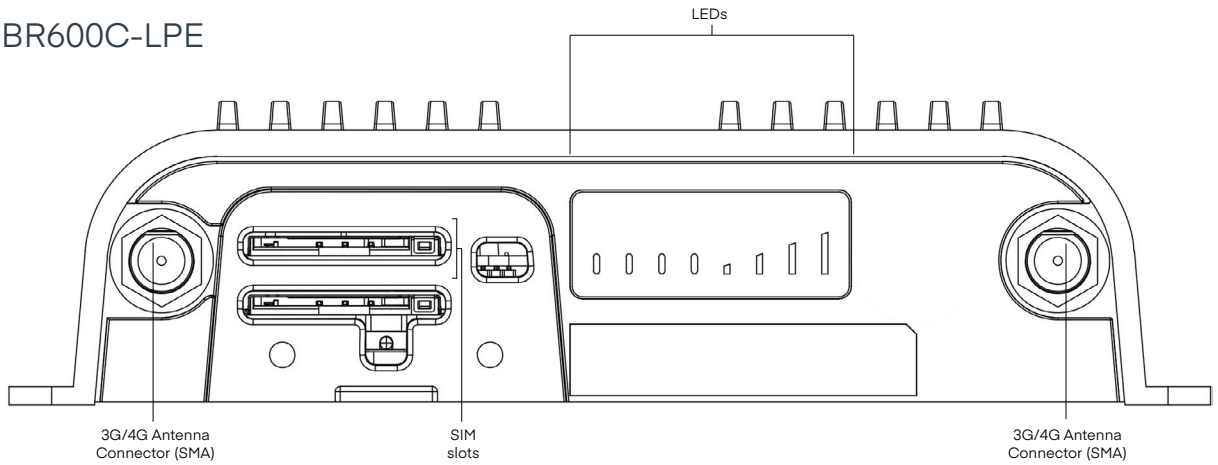
*FirstNet and FirstNet Ready are registered trademarks and service marks of the First Responder Network Authority, an independent authority within the U.S. Department of Commerce.*

## Hardware

IBR600C-150M



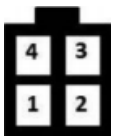
# IBR600C-LPE



## Power/GPIO Connector





This connector has four pin slots: power, ground, input, and output.

Connector pinout – view into router (rear view of cable connector):



Pin	Definition	Details	Wire Color
1	Ground	-	Black
2	Power	9-33 V DC	Red
3	Input	3.4 V input high threshold (33 V tolerant)	Orange
4	Output	capable of sinking 250 mA	Blue

## LEDs

Indicator	Behavior
	<p><b>Power:</b> Use only an approved 12 V DC power source.</p> <ul style="list-style-type: none"> <li>• Blue = Powered ON</li> <li>• No Light = Not receiving power. Check the power source connection</li> </ul>
	<p><b>WiFi Broadcast:</b> Indicates WiFi activity (IBR600C-LPE only).</p> <ul style="list-style-type: none"> <li>• Green = WiFi is on and operating normally</li> <li>• Amber = Attention (open the administration pages and check the router status)</li> </ul>
	<p><b>Embedded or USB Modem:</b> Indicates information about the embedded modem or attached USB 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> </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 modem LEDs blink red in unison for 10 seconds during an NCOS upgrade error.</li> </ul>