



Network Router

Spec Sheet



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-WAN¹, 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

WiFi¹

- + 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

- + Loop 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 router with an embedded, enterprise-class LTE modem; includes integrated mounting plate.

Security

- + 80Security
- + 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

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; 2x2 MIMO “N” 2.4 GHz; 802.11 b/g/n (IBR600C only)

LAN:

- + 2x2 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

Loop 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.

+ Barrel to 4-pin power adapter (Part # 170665-000)

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, wait for the router to automatically detect & 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):

**Theoretical Speeds*

- + 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 \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: 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 \pm 1; HSPA+ 23 dBm \pm 1; EVDO 24 dBm \pm 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

Support & Warranty

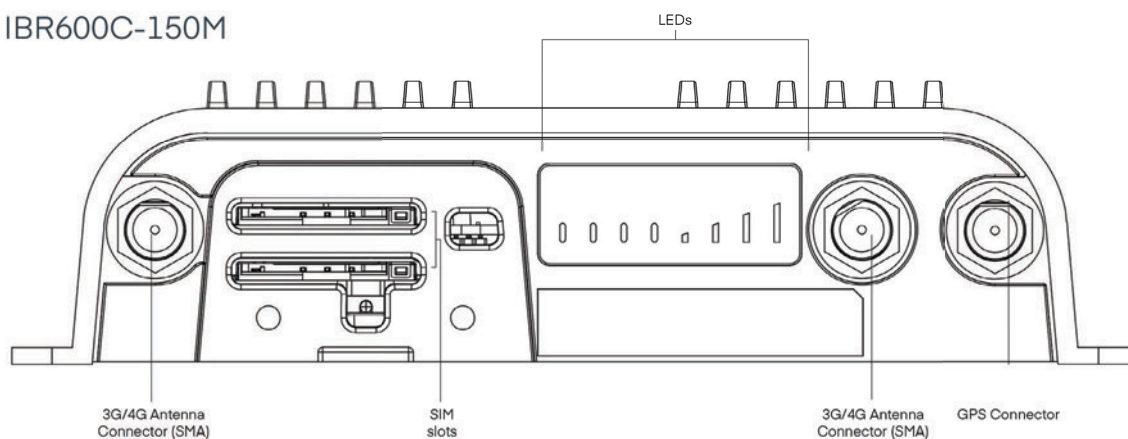
The COR IBR600C series are only sold as a components of NetCloud Packages.

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

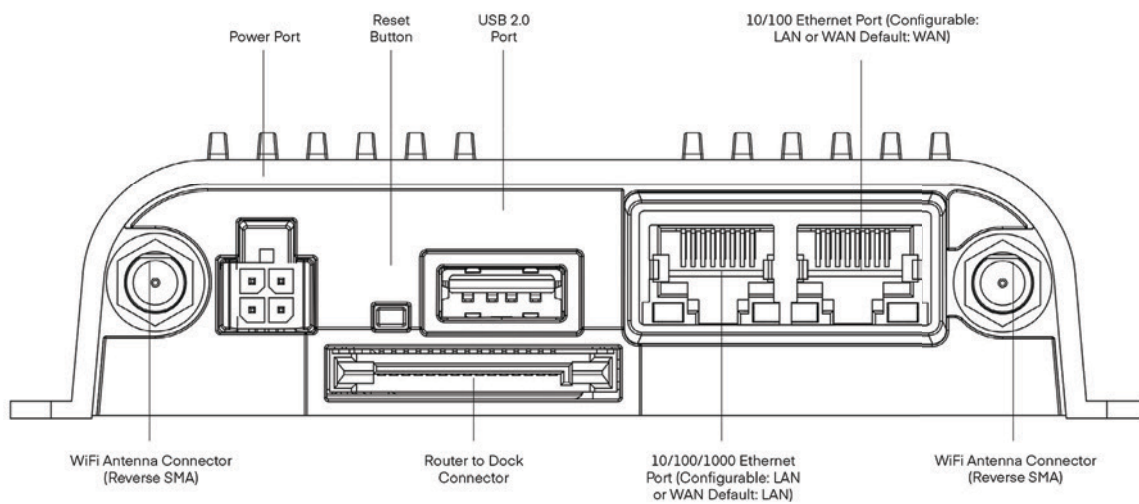
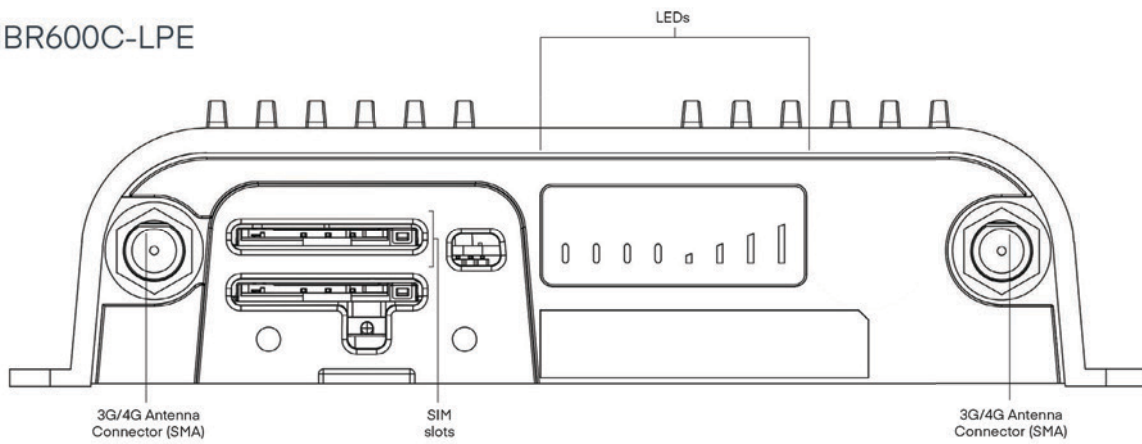
FirstNet and FirstNet Ready are registered trademarks and service marks of the First Responder Network Authority, an independent authority within the U.S. Department of Commerce.

Hardware

IBR600C-150M



IBR600C-LPE



Power/GPIO Connector

This connector has four pin lots: 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



Power: Use only an approved 12 V DC power source.

- Blue = Powered ON
- No Light = Not receiving power. Check the power source connection



WiFi Broadcast: Indicates WiFi activity (IBR600C-LPE only).

- Green = WiFi is on and operating normally
- Amber = Attention (open the administration pages and check the router status)



Embedded or USB Modem: Indicates information about the embedded modem or attached USB modem.

- 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



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

Other

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