

Data Sheet

IBR900 Series Ruggedized Router

2024 - 08 - 16

The Cradlepoint IBR900 Series Router is a ruggedized, Gigabit-Class LTE networking platform. It is designed for persistent connectivity across a wide range of in-vehicle and mobile applications as well as portable or fixed IoT installations. The IBR900 Series is available with either Mobile or IoT NetCloud Service plans, which provide features optimized for the differing deployments.

High Performance Mobile Connectivity

For organizations that depend on field forces and mobile networks, the Cradlepoint IBR900 Series Router with the NetCloud Mobile service plan provides a ruggedized GPS-enabled, in-vehicle network solution. When coupled with the Advanced Mobile service plan, it provides threat management, web filtering, application visibility, analytics, and advanced GPS functionality including location tracking and cellular coverage maps. The IBR900 accommodates environmentally harsh environments while delivering enterprise-class standards of reliability, scalability, comprehensive management, and security.

Ruggedized IoT Solution

When coupled with the NetCloud Ruggedized IoT service plan, the IBR900 provides a compact, ruggedized, 4G LTE router solution for connecting and protecting IoT devices at scale. It is ideal for IoT deployments including oil and gas monitoring, Smart City infrastructure, and other IoT deployments operating under harsh conditions. With an extensive list of safety and hardening certifications, it can be confidently deployed in the field, in buildings, or in embedded systems to deliver complete visibility, security, and control of connected devices anywhere.

Notable Benefits

- Define policies through centralized cloud-based management for easy deployment at scale.
- Gain fast, reliable connectivity with an embedded Cat 11 or Cat 18 LTE modem.
- Add a second cellular modem for simultaneous dual-carrier LTE connectivity.
- Prioritize access on public safety networks for reliable, secure connectivity.
- Deploy Wave 2 dual-band, dual-concurrent, Gigabit Wi-Fi for the best possible connections.
- Integrate into Automatic Vehicle Location (AVL) systems with Active GPS.
- Provide a ruggedized solution to endure harsh environments.
- Configure GPIO ports for IoT and vehicle integrations.


[Product Page](#)

[NetCloud Service](#)

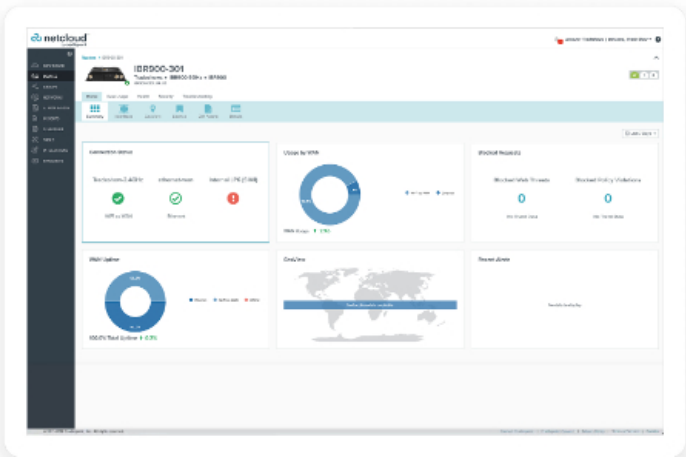
[Quick Start Guide](#)

Key Software Capabilities

Cradlepoint NetCloud Service for the IBR900 provides everything needed to unlock the power of LTE and connect vehicles, users, and IoT to critical applications and services. The available NetCloud IoT or Mobile service plans include the appropriate router software with powerful cloud management features for managing IoT at scale, or mobile-specific features like coverage maps, and application aware analytics. Everything within NetCloud works together, making it easy to deploy, connect, and secure edge applications at scale across the organization.

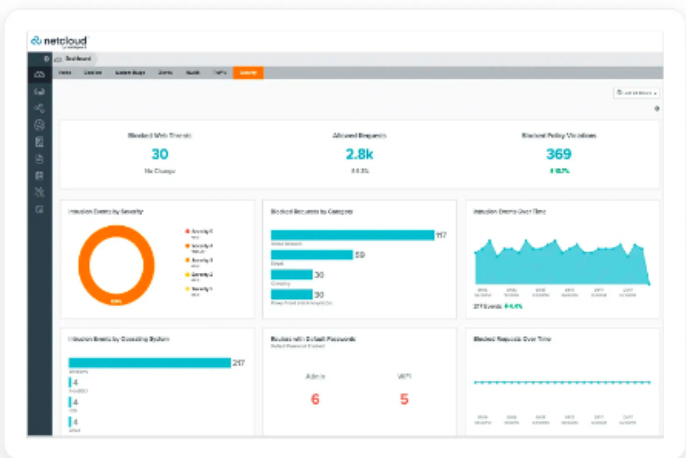
Router Services

Next generation hardware provides local processing power to handle demanding router-delivered services, such as support for VPN tunneling encryption including DMVPN, IPsec, GRE, and other tunneling technologies.



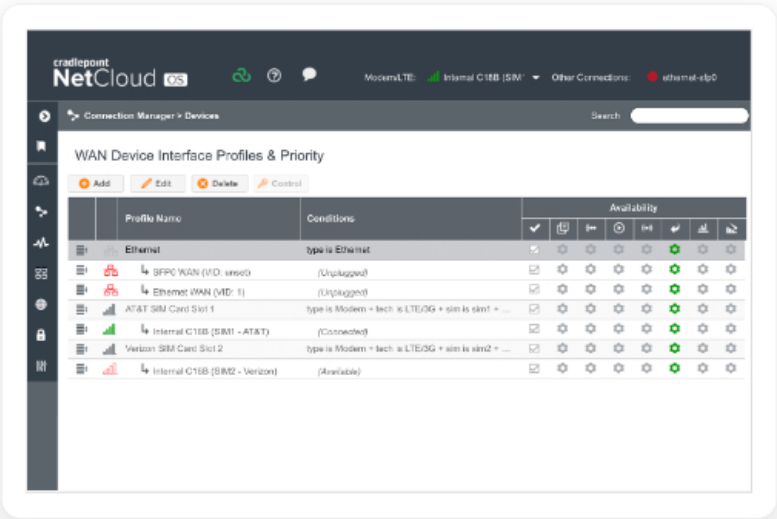
Security Services

NetCloud Service includes security features and options to optimize the IBR900 to meet the evolving security needs of mobile and IoT environments. The service includes stateful zone-based firewall with the ability to add application aware security policies with the Advanced Mobile service plan.



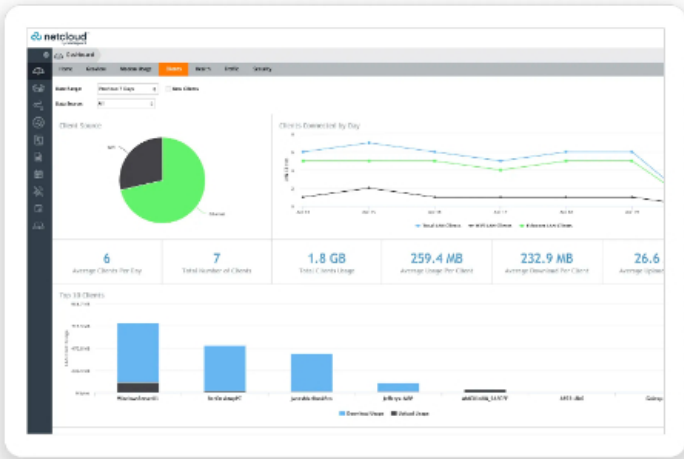
Connection Manager

Connection Manager provides the ability to manage all WAN connections types including wireless, Wi-Fi as WAN, and wired, from a single software-defined policy. Our custom-built modem software ensures users establish Wireless WAN connectivity faster while maintaining the highest level of resiliency.



Cloud Services

NetCloud Manager delivers true zero-touch deployment with the ability to define and deliver policy across entire groups of endpoints. Users can create a cloud-orchestrated hub and spoke VPN network and gain insights and analytics required for rapid troubleshooting and diagnostic workflows. Support operations with real time location services and vehicle information.



Hardware Specifications

The following features are delivered through the hardware.

INTERFACES

Modem:	One of the following: — Embedded 1200M-B modem — 2 x SMA cellular antenna connectors — Embedded 600M modem — 2 x SMA cellular antenna connectors Optional dual modem (requires the the COR Extensibility Dock): — Modular MC400 Modem
Ethernet:	2 x GbE (LAN/WAN switchable)
Wi-Fi:	Dual-radio, dual-band, concurrent operation (2.4 GHz and 5 GHz) — 2x2 MU-MIMO 802.11ac Wave 2 (Wi-Fi 5) and 256 QAM support — Modes: AP, Wireless Client, and Wi-Fi as WAN — 574 Mbps (2.4 GHz) and 1,200 Mbps (5 GHz) — 2 x RP-SMA Wi-Fi antenna connectors — WPA/WPA2/WPA3 Personal, WPA2/WPA3 Enterprise, WEP Auto, Open — 802.11k (AP mode only), 802.11v — Wi-Fi Alliance Certified
Expansion:	1 x USB 2.0 Type A (output: 5V, 500mA, 2.5W) 1 x Extensibility Port — Extensibility Dock — 9-Wire Power and GPIO Cable — Serial Port Adapter
GNSS/GPS:	1 x SMA GNSS antenna connector
GNSS / GPS	
Acquisition: (Time to First Fix)	32 seconds (cold start)
Protocols:	NMEA 0183
Constellations:	600M — GPS — Galileo — GLONASS — BeiDou — GNSS 1200M-B — GPS — Galileo — GLONASS — BeiDou

Accuracy:	Horizontal: < 2 m (50%), < 5 m (95%)
Sensitivity:	600M — Acquisition: -145 dBm — Tracking: - 160 dBm 1200M-B — Tracking: - 159 dBm
Frequencies:	L5
Power:	600M — Voltage Supply: 3.15 V — Max Current: 3.25 V 1200M-B — Voltage Supply: 3.1 V — Max Current: 20 mA
ENVIRONMENTAL	
Temperature:	— Operating: -30 °C to 70 °C (-22 °F to 158 °F) — Storage: -40 °C to 85 °C (-40 °F to 185 °F)
Humidity:	— Operating: 5% to 95% — Storage: 5% to 95%
Ingress Protection:	IP54 (dust protected and splashing water)
POWER	
Required:	One of the following: — 9-33 VDC steady state input (vehicle installations with 9-24 VDC requires 3A inline fuse, >24 VDC requires 2.5A fuse) — External DC power supply, 100-240 VAC input, 12 VDC 2A output (included) — External DC power supply, 100-240 VAC input, 12 VDC 3A or 5.5A output (optional)
Features:	— Reverse polarity and transient voltage protection (ISO 7637-2) — Ignition sensing (automatic ON & time-delay OFF)
Consumption:	— Idle: 4 W — LTE Tx/Tx: 6.25 W — Wi-Fi Tx/Rx: 9 W
PHYSICAL	
Size:	118 x 114 x 30 mm (4.6 x 4.5 x 1.2 in)
Weight:	400 g (14 oz)
RELIABILITY	

Calculated MTBF:

- IBR900-1200M-B: 905,136 hours (Telcordia SR332 at 25 °C)
- IBR900-600M: 1,149,681 hours (Telcordia SR332 at 25 °C)

CERTIFICATIONS

Safety:

- UL/cUL
- CB Scheme
- EN 60950-1
- EN 62368-1

Vehicle: E-Mark

Materials:

- WEEE
- RoHS, RoHS-2
- California Prop 65

Security: FIPS 140-2 Inside (FIPS models only)

Shock/Vibration/Humidity:

- MIL STD 810G
- SAE J1455

Hazardous Locations: Class 1 Div 2 (IBR900-600M NA only)

WI-FI POWER

FCC:

- 2.4 GHz: 28.1 dBm conducted
- 5150–5250 MHz: 22.55 dBm conducted
- 5250–5350 MHz: 23.63 dBm conducted
- 5470–5725 MHz: 23.4 dBm conducted
- 5725–5850 MHz: 25.45 dBm conducted

IC:

- 2.4 GHz: 28.1 dBm conducted
- 5150–5250 MHz: 17.85 dBm conducted
- 5250–5350 MHz: 18.45 dBm conducted
- 5470–5725 MHz: 23.4 dBm conducted
- 5725–5850 MHz: 25.45 dBm conducted

Europe:

- 2.4 GHz: 15.44 dBm conducted
- 5150–5250 MHz: 18.86 dBm conducted
- 5250–5350 MHz: N/A
- 5470–5725 MHz: N/A
- 5725–5850 MHz: N/A

Australia/New Zealand:

- 2.4 GHz: 15.44 dBm conducted
- 5150–5250 MHz: 18.86 dBm conducted
- 5250–5350 MHz: N/A
- 5470–5725 MHz: N/A
- 5725–5850 MHz: 27.3 dBm conducted

PERFORMANCE	
Stateful Firewall Throughput:	940 Mbps
IPsec VPN Throughput:	20 Mbps
Concurrent VPN Tunnels:	10
Concurrent Sessions (TCP):	16,000
Typical Client Count:	10 [†]
Layer 2 / Layer 3 VLANs:	Up to 64
LEDs	
Refer to the IBR900 Series Ruggedized Router Quick Start Guide	

Performance testing conducted based on requirements as defined in RFC2544 using fixed-frame 1518-byte packets. Throughput results reflect uni-directional UDP traffic with less than 1% packet loss as tested with wired connections. Results do not reflect performance of the cellular wireless operator networks.

[†]When Cradlepoint Secure Threat Management or Applications Analytics are enabled in NetCloud Manager, the client count is reduced to 5.

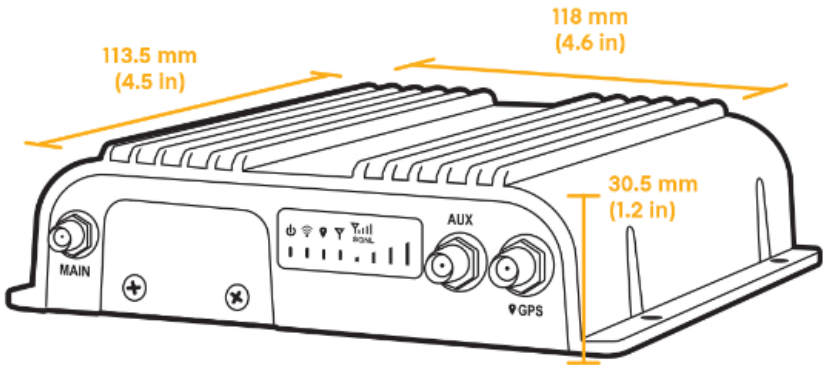
Enterprise-Class Modem Specifications

SPECIFICATION	1200M-B	600M
Technology:	Cat 18 LTE Advanced Pro — Dual SIM slots, mini 2FF form factor — SIM-based carrier auto-selection — 3GPP Release 12	Cat 11 LTE Advanced — Dual SIM slots, mini 2FF form factor — SIM-based auto-carrier selection — 3GPP Release 11
3G:	WCDMA/UMTS/HSPA+	WCDMA/UMTS/HSPA+
Carrier Aggregation:	Up to 5CA downlink, 2CA uplink See Understanding Carrier Aggregation .	Up to 3CA downlink, 2CA uplink See Understanding Carrier Aggregation .
Peak Downlink Rates:	— LTE: 1 Gbps — WCDMA: 42.2 Mbps	— LTE: 600 Mbps — WCDMA: 42.2 Mbps
Peak Uplink Rates:	— LTE 150 Mbps — WCDMA: 5.76 Mbps	— LTE: 75 Mbps — WCDMA: 5.76 Mbps
MIMO:	2x2 MIMO	2x2 MIMO
QAM:	Up to 256	Up to 256
4G/LTE Bands:	LTE FDD — B3 (1800), B4 (1700), B5 (850), B7 (2600), B8 (900), B12 (700), B13 (700), B14 (700), B17 (700), B18 (850), B19 (850), B20 (800), B25 (1900), B26 (850), B28 (700), B29 (700), B39 (1900), B41 (2500), B66 (1700), B71 (600)	LTE FDD — B1 (2100), B2 (1900), B3 (1800), B4 (1700), B5 (850), B7 (2600), B8 (900), B12 (700), B13 (700), B17 (700), B20 (800), B25 (1900), B26 (850), B28 (700), B29 (700), B30 (2300), B66 (1700) LTE TDD — B38 (2600), B40 (2300), B41 (2500)

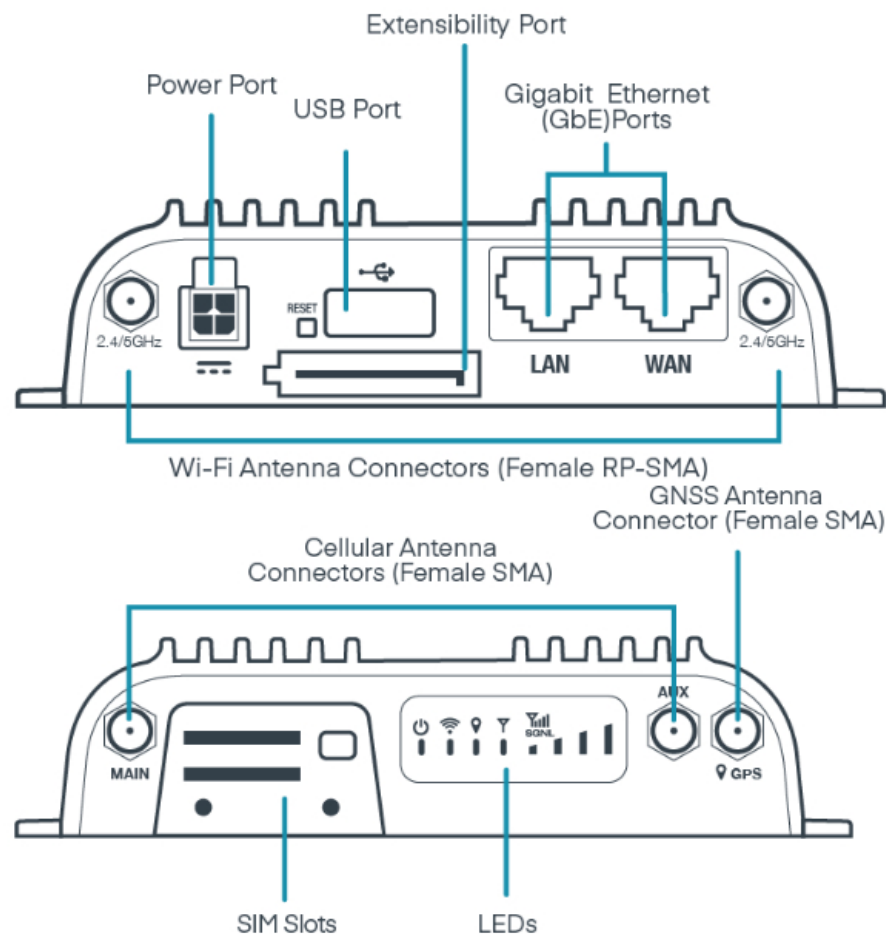
3G Bands:	B1, B2, B4, B5, B8, B19	B1, B2, B4, B5, B8
Power:	LTE 23 dBm ± 1, DC-HSPA+ 23 dBm ± 1 (typical conducted)	LTE 23 dBm ± 1; HSPA+ 23 dBm ± 1 (typical conducted)
Antennas:	SMA female connectors, external 600 MHz - 6 GHz cellular paddle antennas (Qty 2, included)	SMA female connectors, external 600 MHz - 6 GHz cellular paddle antennas (Qty 2, included)
GNSS/GPS:	Active GNSS — GPS, GLONASS, BeiDou, Galileo — DC voltage bias supplied (typical 3.1v)	Active GNSS — GPS, GLONASS, BeiDou, Galileo — DC voltage bias supplied (typical 3.1v)
SMS:	Yes	Yes
Regulatory:	FCC (U.S.), IC (Canada)	FCC (U.S.), IC (Canada), CE (EU), RCM (AU/NZ), ICASA (ZA), iMDA (SG), SIRM QAS (MY), Ifitel NOM (MX), Subtel (CL/CR), CRC (CO)
Network Operator Standards:	PTCRB (U.S.)	PTCRB (U.S.), GCF (Worldwide)
Network Operator Certifications:	AT&T, Verizon†	AT&T, EE, Optus, Sprint, Telstra, Verizon†
Public Safety Network Certifications:	FirstNet Trusted™, Verizon Frontline	ESN, Verizon Frontline, Verizon Response Verified
Private Cellular Network:	N/A	N/A

† Cellular carriers and operators throughout the world may only require telecom industry certifications, like PTCRB or GCF, to operate on their network. Some carriers require additional testing and approval, beyond telecom certifications. A carrier listed in the approvals section means Cradlepoint completed additional testing and acquired technical approval for that given carrier. Any carrier not listed may not require additional testing or approval beyond telecom industry certifications to operate on their network.

Physical Measurements & Features



Features



SIM Card Info



Ordering Guide

NetCloud Mobile and NetCloud Ruggedized IoT Essentials packages and plans contain all the features and capabilities required for a broad range of mobile, in-vehicle, and 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 Mobile Advanced Plan** or **NetCloud Ruggedized IoT Advanced Plan** can be added to the NetCloud Mobile or Ruggedized IoT Essentials Package at any time.

See additional details of what is included in the Essential and Advanced NetCloud software: cradlepoint.com/netcloud-service

NetCloud Packages for the IBR900 Series Router

REGION	MODEM	PACKAGE PLAN	PART NUMBER
--------	-------	--------------	-------------

U.S. & Canada:	Cat 18 with Wi-Fi (1000 Mbps)	Mobile — Essentials	MAx-0900120B-NNA
		Mobile — Essentials + Advanced	MAAx-0900120B-NA
	Cat 11 with Wi-Fi (600 Mbps)	Mobile — Essentials	MAx-0900600M-NNA
		Mobile — Essentials + Advanced	MAAx-0900600M-NA
	No modem	Mobile — Essentials	MAx-0900NM-0NA
Mexico:	Cat 11 with Wi-Fi (600 Mbps)	Mobile — Essentials	MA0x-0900600M-MX
		Mobile — Essentials + Advanced	MAAx-0900600M-MX
U.S. & Canada:	Cat 11 with Wi-Fi (600 Mbps)	Mobile FIPS — Essentials + Advanced	MAx-900F600M-XFA
	Cat 18 with Wi-Fi (1000 Mbps)	Mobile FIPS — Essentials + Advanced	MAx-900F120B-XFA
	Cat 11 with Wi-Fi (600 Mbps)	Ruggedized IoT — Essentials	TC0y-0900600M-NN
		Ruggedized IoT — Essentials + Advanced	TCAy-0900600M-NN
	Cat 18 with Wi-Fi (1000 Mbps)	Ruggedized IoT — Essentials	TC0y-0900120B-NN
		Ruggedized IoT — Essentials + Advanced	TCAy-0900120B-NN
Mexico	Cat 11 with Wi-Fi (600 Mbps)	Ruggedized IoT — Essentials	TC0y-0900600M-MX
		Ruggedized IoT — Essentials + Advanced	TCAy-0900600M-MX
United States: Federal Government	Cat 11 with Wi-Fi (600 Mbps) — No AC power supply or antennas	Mobile TAA Compliant NC — Essentials	TAA-MAy-0900600M-NNA
		Mobile TAA Compliant NC — Essentials + Advanced	TAA-MAAy-0900600M-NA
	Cat 18 with Wi-Fi (1000 Mbps) — No AC power supply or antennas	Mobile TAA Compliant NC — Essentials	TAA-MAy-0900120B-NNA
		Mobile TAA Compliant NC — Essentials + Advanced	TAA-MAAy-0900120B-NA

	Cat 11 with Wi-Fi (600 Mbps) — No AC power supply or antennas	FIPS TAA Compliant NC Mobile — Essentials + Advanced	TAA-MAY-900F600M-XFA
	Cat 18 with Wi-Fi (1000 Mbps) — No AC power supply or antennas	FIPS TAA Compliant NC Mobile — Essentials + Advanced	TAA-MAY-900F120B-XFA
	1200 Mbps — Includes high temp AC power supply & antennas — Verizon & AT&T SIMs inserted	FIPS TAA Compliant NC Mobile — Essentials + Advanced	TAA-MAX5-900F120B-F0
Europe: European Union, Saudi Arabia, South Africa, United Arab Emirates & United Kingdom	Cat 11 with Wi-Fi (600 Mbps)	Mobile — Essentials	MAx-0900600M-EWA
		Mobile — Essentials + Advanced	MAAx-0900600M-EA
	No modem	Mobile — Essentials	MAx-0900NM-0WA
	Cat 11 with Wi-Fi (600 Mbps)	Ruggedized IoT — Essentials	TC0y-0900600M-EM
		Ruggedized IoT — Essentials + Advanced	TCAY-0900600M-EM
Asia Pacific: Australia, Malaysia, New Zealand & Singapore	Cat 11 with Wi-Fi (600 Mbps)	Mobile — Essentials	MAx-0900600M-PWA
		Mobile — Essentials + Advanced	MAAx-0900600M-PA
	No modem	Mobile — Essentials	MAx-0900NM-0WA
	Cat 11 with Wi-Fi (600 Mbps)	Ruggedized IoT — Essentials	TC0y-0900600M-PM
		Ruggedized IoT — Essentials + Advanced	TCAY-0900600M-PM

All Regions:	Mobile — Renewal Essentials	MAx-NCESS-R
	Mobile — Advanced (requires corresponding Essentials)	MAx-NCADV
		MAx-NCADV-R
	Mobile — Renewal Advanced (requires corresponding Essentials)	MAAx-NCEA-R
	Mobile — Renewal Essentials + Advanced	
	FIPS — Mobile Renewal Essentials + Advanced, FIPS Only	MAx-NCESSF-R
	Ruggedized IoT — Renewal Essentials	TC0x-NCESS-R
		TC0x-NCADV
	Ruggedized IoT — Advanced (requires corresponding Essentials)	TC0x-NCADV-R
	Ruggedized IoT — Renewal Advanced	TCAx-NCEA-R
	Ruggedized IoT — Renewal Essentials + Advanced	

x = 1, 3, or 5 years
y = 3 or 5 years

Accessories

INCLUDED	PART NUMBER
NetCloud Mobile Packages only:	
— GPIO Cable, Small 2x2, Black, 3 meters, 22 AWG	170585-001
NetCloud Ruggedized IoT Packages only:	
— Cellular Antenna, Black, 600 MHz - 6 GHz, SMA, 180 mm (Qty 2)	170760-000
— Wi-Fi Antenna, Black, Dual-Band 2.4/5 GHz, RPSMA, 194 mm (Qty 2)	170628-000
NetCloud Ruggedized IoT Packages only, one of the following:	
— Power Supply, 12 V Small 2x2 1.5 meters (North America Type A)	170716-001
— Power Supply, 12 V Small 2x2 1.5 meters (NA-UK-EU-AU Types A-G-C-I)	170717-000
OPTIONAL	PART NUMBER
Power Supply, vehicle, 12 V, 2x2, 2 meters	170635-000
Power Supply, 12 V, Small 2x2 (C7 line cord not include), -30 °C to 70 °C (-22 °F to 158 °F)	170869-000

Power Supply C7 Line Cord Options:	
— Line Cord, 125 V, C7, 1.8 meters, North America	170623-001
— Line Cord, 250 V, C7, 1.8 meters, (Europe Type C)	170623-002
— Line Cord, 250 V, C7, 1.8 meters, (United Kingdom Type G)	170623-003
— Line Cord, 250 V, C7, 1.8 meters, (Australia Type I)	170623-004
Small 2x2 Power to Barrel Adapter, 152 mm	170665-000
GPIO Cable, SATA with Lock, Black, 1.7 m	170680-000
Rail Safe GPIO Cable, Small 2x2, Black, 3 meters, 20AWG	170871-000
NetCloud Mobile Packages (bench testing only):	
— Cellular Antenna, Charcoal, 600 MHz - 6 GHz, SMA, 180 mm (Qty. 2)	170801-000
— Wi-Fi Antenna, Charcoal, Dual-Band 2.4/5 GHz, RP-SMA, 194 mm (Qty. 2)	170836-000
— Optional power supply (see above)	Varies (see above)
Din Rail Mounting Bracket	170656-002
Mag Mount Kit	170718-000
COR Extensibility Dock	170700-000
COR Extensibility Cable, SATA-DB9, Black, 305 mm	170767-000
LTE Advanced Pro (1200 Mbps) modem upgrade for Mobile	MA-MC400-1200M-B
— Includes IBR1700 & COR Extensibility Dock doors, no antennas [†]	
UNITED STATES FEDERAL GOVERNMENT	PART NUMBER
GPIO Cable, Small 2x2 Black, 3 meters, 22 AWG	TAA-170585-001
Line Cord, 125 V (C7), 1.8 meters (North America Type A)	TAA-170623-001
Power Supply, vehicle, 12 V, 2x2, 2 meters	TAA-170635-000
Din Rail Mounting Bracket	TAA-170656-002
Small 2x2 Power to Barrel Adapter, 152 mm	TAA-170665-000
GPIO Cable, SATA with Lock, Black, 1.7 m	TAA-170680-001
COR Extensibility Dock	TAA-170700-000
Power Supply, 12 V, Small 2x2, 1.5 meters (North America Type A)	TAA-170716-000
Power Supply, 12 V, Small 2x2, 1.5 meters (North America-United Kingdom-Europe-Australia Types A-G-C-I)	TAA-170717-000
Mag Mount Kit	TAA-170718-000
COR Extensibility Cable, SATA-DB9, Black, 305 mm	TAA-170767-000
Cellular Antenna, Charcoal, 600 MHz - 6 GHz, SMA, 180 mm	TAA-170801-000
LTE Advanced Pro (1200 Mbps) modem upgrade for Mobile	TAA-MA-MC400-1200M-B
— Includes IBR1700 & COR Extensibility Dock doors, no antennas [†]	

[†]Refer to the [Cradlepoint MC400 Modular Modem](#) webpage for more information about modular modems.

Support & Warranty

The IBR900 Router is only sold as a component of NetCloud Mobile/NetCloud Ruggedized IoT Essentials or Essentials and Advanced 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.

More Information

Find the most up-to-date information at cradlepoint.com/ibr900