

# Data Sheet

# IBR900 Series



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.

## Notable Features

- 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.

## High Performance Mobile Connectivity

For organizations that depend on field forces and mobile networks, the Cradlepoint IBR900 mobile 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.

## Performance

Stateful Firewall  
Throughput

**940 Mbps**

NetCloud Perimeter  
Throughput

**20 Mbps**

IPSec VPN  
Throughput

**20 Mbps**

Concurrent  
VPN Tunnels

**10**

Concurrent  
Sessions (TCP)

**16,000**

Typical  
Client Count

**10<sup>+</sup>**

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.

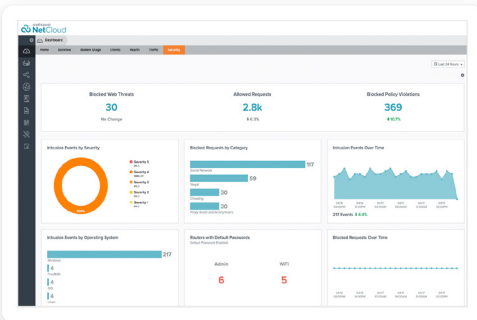
<sup>1</sup>When Cradlepoint Secure Threat Management or Applications Analytics are enabled in NetCloud Manager, the client count is reduced to 5.

## 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.

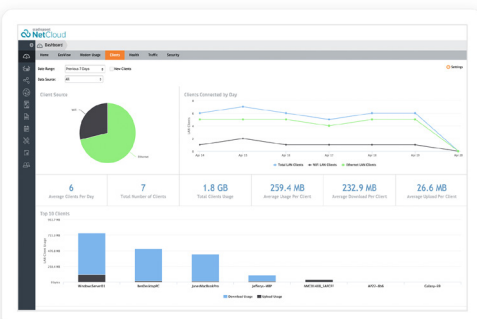


## Security Services

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.

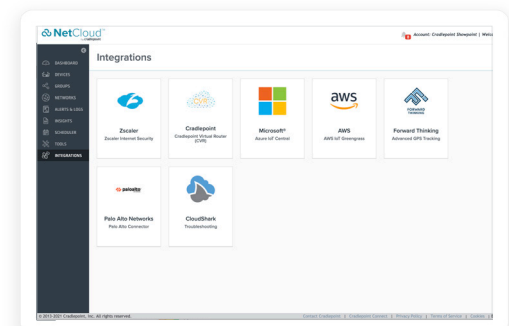
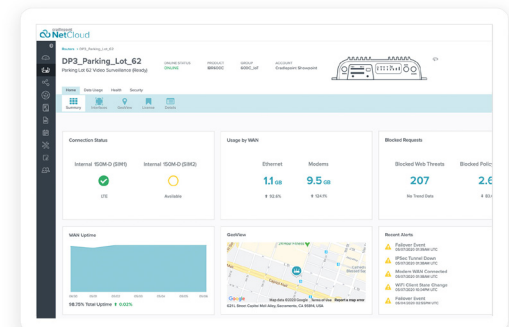
## Connection Manager

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	
<b>Modem:</b>	One of the following: <ul style="list-style-type: none"> <li>— Embedded 1200M-B modem               <ul style="list-style-type: none"> <li>— 2 x SMA cellular antenna connectors</li> </ul> </li> <li>— Embedded 600M modem               <ul style="list-style-type: none"> <li>— 2 x SMA cellular antenna connectors</li> </ul> </li> </ul> Optional dual modem (requires the the COR Extensibility Dock): <ul style="list-style-type: none"> <li>— Modular MC400 Modem</li> </ul>
<b>Ethernet:</b>	2 x GbE (LAN/WAN switchable)
<b>Wi-Fi:</b>	Dual-radio, dual-band, concurrent operation (2.4 GHz and 5 GHz) <ul style="list-style-type: none"> <li>— 2x2 MU-MIMO 802.11ac Wave 2 (Wi-Fi 5) and 256 QAM support</li> <li>— 574 Mbps (2.4 GHz) and 1,200 Mbps (5 GHz)</li> <li>— 2 RP-SMA Wi-Fi antenna connectors</li> <li>— WPA/WPA2 Personal, WPA2 Enterprise, Open</li> <li>— 802.11k, 802.11v</li> </ul>
<b>Expansion:</b>	1 x USB 2.0 Type A (output: 5V, 500mA, 2.5W) 1 x Extensibility Port <ul style="list-style-type: none"> <li>— Extensibility Dock</li> <li>— 9-Wire Power and GPIO Cable</li> <li>— Serial Port Adapter</li> </ul>
<b>GNSS/GPS:</b>	1 x SMA GNSS antenna connector
ENVIRONMENTAL	
<b>Temperature:</b>	Operating: -30 °C to 70 °C (-22 °F to 158 °F) Storage: -40 °C to 85 °C (-40 °F to 185 °F)
<b>Humidity:</b>	Operating: 5% to 95% Storage: 5% to 95%
<b>Ingress Protection:</b>	IP54 compliant (includes protection from dust and splashing water)
PHYSICAL	
<b>Size:</b>	118 x 114 x 30 mm (4.6 x 4.5 x 1.2 in)
<b>Weight:</b>	400 g (14 oz)
CERTIFICATIONS	
<b>Safety:</b>	UL/cUL, CB Scheme, EN 60950-1, EN 62368-1, e-Mark
<b>Materials:</b>	WEEE, RoHS, RoHS-2, California Prop 65
<b>Shock/ Vibration/ Humidity:</b>	MIL STD 810G and SAE J1455
<b>Hazardous Locations:</b>	Class 1 Div 2 (IBR900-600M NA only)
POWER	
<b>Required:</b>	One of the following: <ul style="list-style-type: none"> <li>— 9-33 VDC steady state input (vehicle installations with 9-24 VDC requires 3A inline fuse, &gt;24 VDC requires 2.5A fuse)</li> <li>— External DC power supply, 100-240 VAC input, 12 VDC 2A output (included)</li> <li>— External DC power supply, 100-240 VAC input, 12 VDC 3A or 5.5A output (optional)</li> </ul>
<b>Features:</b>	Reverse polarity and transient voltage protection (ISO 7637-2)  Ignition sensing (automatic ON & time-delay OFF)
<b>Consumption:</b>	<ul style="list-style-type: none"> <li>— Idle: 4W</li> <li>— LTE Tx/Tx: 6.25W</li> <li>— Wi-Fi Tx/Rx: 9W</li> </ul>
WI-FI POWER:	
<b>FCC:</b>	2.4 GHz: 18 dBm conducted 5150–5250 MHz: 32.94 dBm conducted 5250–5350 MHz: 29.90 dBm conducted 5470–5725 MHz: 30.00 dBm conducted 5725–5850 MHz: 32.81 dBm conducted
<b>IC:</b>	2.4 GHz: 33.14 dBm conducted 5150–5250 MHz: 25.74 dBm conducted 5250–5350 MHz: 25.84 dBm conducted 5470–5725 MHz: 29.82 dBm conducted 5725–5850 MHz: 32.81 dBm conducted
<b>Europe:</b>	2.4 GHz: 19.93 dBm conducted 5150–5250 MHz: 22.76 dBm conducted 5250–5350 MHz: 22.92 dBm conducted 5500–5700 MHz: 29.08 dBm conducted
<b>Australia/ New Zealand:</b>	2.4 GHz: 19.93 dBm conducted 5150–5250 MHz: 22.98 dBm conducted 5250–5350 MHz: 22.98 dBm conducted 5500–5700 MHz: 29.82 dBm conducted 5475–5825 MHz: 32.81 dBm conducted
LEDs	
Refer to the <a href="#">IBR900 Series Ruggedized Router Quick Start Guide</a>	

## Enterprise-Class Modem Specifications

SPECIFICATION	1200M-B
<b>Technology:</b>	Cat 18 LTE Advanced Pro (3GPP Rel. 12) <ul style="list-style-type: none"> <li>— Dual SIM slots, mini 2FF form factor</li> <li>— SIM-based carrier auto-selection</li> </ul>
<b>Fallback:</b>	WCDMA/UMTS/HSPA+
<b>Carrier Aggregation:</b>	Up to 5CA downlink, 2CA uplink Refer to <a href="#">modem carrier aggregations article</a>
<b>Peak Downlink Rates:</b>	LTE: 1 Gbps WCDMA: 42.2 Mbps
<b>Peak Uplink Rates:</b>	LTE 150 Mbps WCDMA: 5.76 Mbps
<b>MIMO:</b>	2x2 MIMO
<b>QAM:</b>	Up to 256
<b>LTE Bands:</b>	<div>LTE FDD</div> <ul style="list-style-type: none"> <li>— B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B38, B39, B40, B41, B42, B43, B46, B48, B66, B71</li> </ul> <div>LTE TDD</div> <ul style="list-style-type: none"> <li>— B38, B39, B40, B41, B42, B43, B46, B48</li> </ul>
<b>WCDMA Bands:</b>	B1, B2, B4, B5(B19), B8
<b>Power:</b>	LTE 23 dBm ± 1, DC-HSPA+ 23 dBm ± 1 (typical conducted)
<b>Antennas:</b>	SMA female connectors, external 600 MHz - 6 GHz cellular paddle antennas (qty. 2 included)
<b>GNSS/GPS:</b>	Active GNSS <ul style="list-style-type: none"> <li>— GPS, GLONASS, BeiDou, Galileo</li> <li>— DC voltage bias supplied (typical 3.1v)</li> </ul>
<b>SMS:</b>	Yes
<b>Regulatory:</b>	FCC (U.S.), IC (Canada), CE (EU), RCM (AU/NZ)
<b>Network Operator Standards:</b>	PTCRB (U.S.), GCF (Worldwide)
<b>Network Operator Certifications:</b>	AT&T, Verizon†
<b>Public Safety Network Certifications:</b>	Verizon Frontline, FirstNet Ready™
<b>Private Cellular Network:</b>	Yes, includes FCC Part 96 (CBRS Band 48)

† 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.

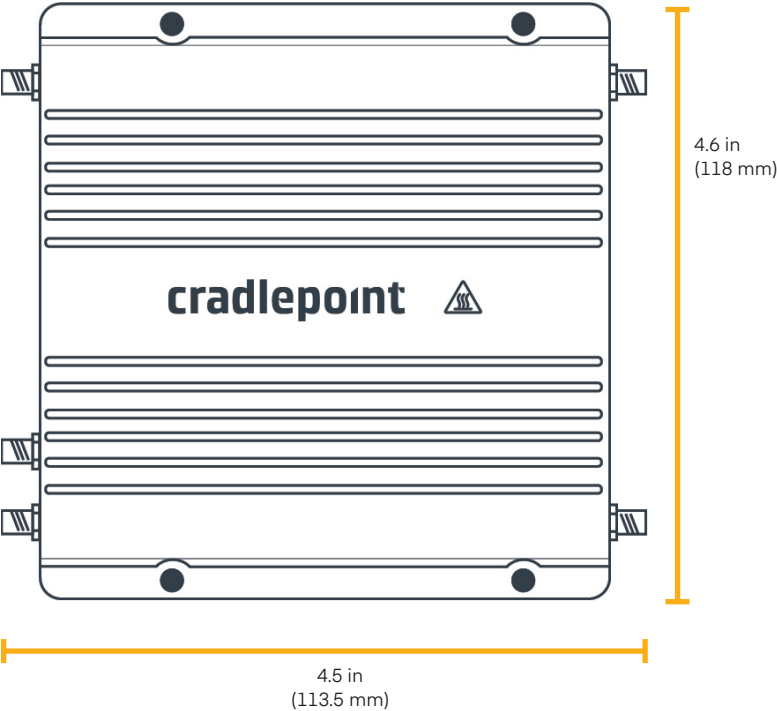
## Enterprise-Class Modem Specifications

SPECIFICATION	600M
<b>Technology:</b>	Cat 11 LTE Advanced (3GPP Rel. 11) <ul style="list-style-type: none"> <li>— Dual SIM slots, mini 2FF form factor</li> <li>— SIM-based auto-carrier selection</li> </ul>
<b>Fallback:</b>	WCDMA/UMTS/HSPA+
<b>Carrier Aggregation:</b>	Up to 3CA downlink, 2CA uplink Refer to <a href="#">modem carrier aggregations article</a>
<b>Peak Downlink Rates:</b>	LTE: 600 Mbps WCDMA: 42.2 Mbps
<b>Peak Uplink Rates:</b>	LTE: 75 Mbps WCDMA: 5.76 Mbps
<b>MIMO:</b>	2x2 MIMO
<b>QAM:</b>	Up to 256
<b>LTE Bands:</b>	<div> <div>LTE FDD</div> <div> <ul style="list-style-type: none"> <li>— B1, B2, B3, B4, B5, B7, B8, B12, B13, B17, B20, B25, B26, B28, B29, B30, B66</li> </ul> </div> </div> <div> <div>LTE TDD</div> <div> <ul style="list-style-type: none"> <li>— B38, B40, B41</li> </ul> </div> </div>
<b>WCDMA Bands:</b>	B1, B2, B4, B5, B8
<b>Power:</b>	LTE 23 dBm ± 1; HSPA+ 23 dBm ± 1 (typical conducted)
<b>Antennas:</b>	SMA female connectors, external 600 MHz - 6 GHz cellular paddle antennas (qty. 2 included)
<b>GNSS/GPS:</b>	Active GNSS <ul style="list-style-type: none"> <li>— GPS, GLONASS, BeiDou, Galileo</li> <li>— DC voltage bias supplied (typical 3.1v)</li> </ul>
<b>SMS:</b>	Yes
<b>Regulatory:</b>	FCC (U.S.), IC (Canada), CE (EU), RCM (AU/NZ)
<b>Network Operator Standards:</b>	PTCRB (U.S.), GCF (Worldwide)
<b>Network Operator Certifications:</b>	AT&T, Verizon†
<b>Public Safety Network Certifications:</b>	Verizon Frontline
<b>Private Cellular Network:</b>	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.

# Hardware


## Physical Measurements




**Correct SIM: Mini SIM — 2FF**



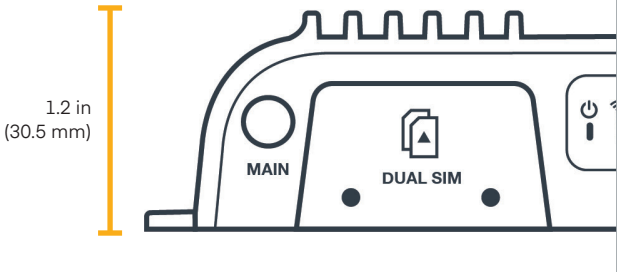
Nano SIM  
(12.3mm x 8.8mm)  
4FF



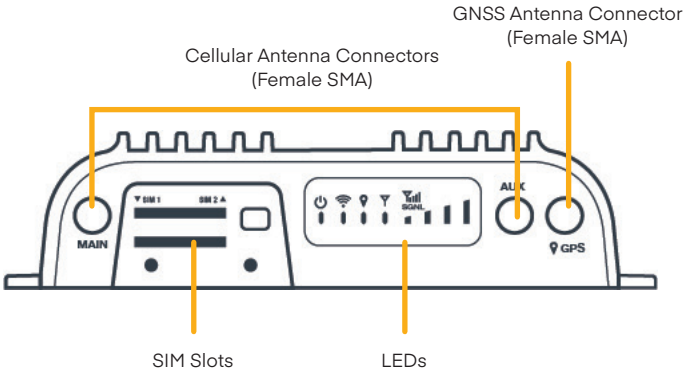
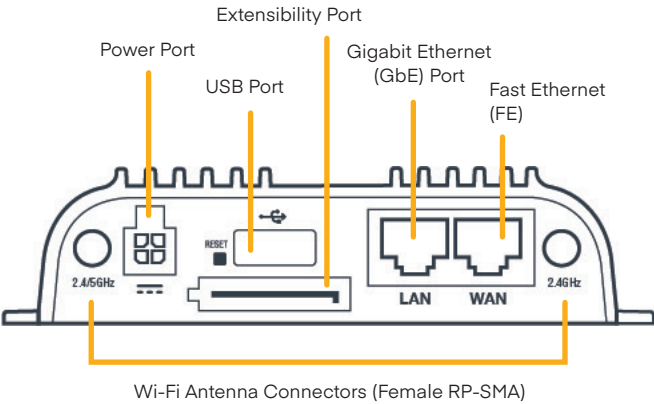
Micro SIM  
(15mm x 12mm)  
3FF



Mini SIM  
(25mm x 15mm)  
2FF



## Sides



## 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](https://cradlepoint.com/netcloud-service)

For more details on the IBR900 series of routers, included with the NetCloud Enterprise Branch Packages, see below.

## NetCloud Package & Plans

REGION	PACKAGE	DESCRIPTION	PART NUMBER
<b>North America:</b> U.S. & Canada	<b>Mobile</b>	NetCloud Mobile Essentials Plan with IBR900-1200M-B	MAx-0900120B-NNA
		NetCloud Mobile Essentials Plan with IBR900-600M	MAx-0900600M-NNA
		NetCloud Mobile Essentials Plan with IBR900-600M	MA0x-0900600M-MX
		NetCloud Mobile Essentials Plan with IBR900NM	MAx-0900NM-0NA
		NetCloud Mobile Essentials and Advanced Plans with IBR900-1200M-B	MAAx-0900120B-NA
		NetCloud Mobile Essentials and Advanced Plans with IBR900-600M	MAAx-0900600M-NA
		NetCloud Mobile Essentials and Advanced Plans with IBR900-600M	MAAx-0900600M-MX
	<b>Ruggedized IoT</b>	NetCloud Ruggedized IoT Essentials Plan with IBR900-600M	TC0y-0900600M-NN
		NetCloud Ruggedized IoT Essentials Plan with IBR900-600M	TC0y-0900600M-MX
		NetCloud Ruggedized IoT Essentials Plan with IBR900-1200M-B	TC0y-0900120B-NN
		NetCloud Ruggedized IoT Essentials and Advanced Plans with IBR900-600M	TCAy-0900600M-NN
		NetCloud Ruggedized IoT Essentials and Advanced Plans with IBR900-600M	TCAy-0900600M-MX
		NetCloud Ruggedized IoT Essentials and Advanced Plans with IBR900-1200M-B	TCAy-0900120B-NN
<b>Worldwide:</b> European Union (EU) & United Kingdom (UK)	<b>Mobile</b>	NetCloud Mobile Essentials Plan with IBR900-600M-EU	MAx-0900600M-EWA
		NetCloud Mobile Essentials Plan with IBR900-EU	MAx-0900NM-0WA
		NetCloud Mobile Essentials and Advanced Plans with IBR900-600M-EU	MAAx-0900600M-EA
	<b>Ruggedized IoT</b>	NetCloud Ruggedized IoT Essentials Plan with IBR900-600M	TC0y-0900600M-EM
		NetCloud Ruggedized IoT Essentials and Advanced Plans with IBR900-600M	TCAy-0900600M-EM

## NetCloud Package and Plans

<b>Asia Pacific:</b> Singapore, Australia (AP), & New Zealand (NZ)	<b>Mobile</b>	NetCloud Mobile Essentials Plan with IBR900-600M-AP	MAx-0900600M-PWA
		NetCloud Mobile Essentials Plan with IBR900-AP	MAx-0900NM-0WA
		NetCloud Mobile Essentials and Advanced Plans with IBR900-600M-AP	MAAx-0900600M-PA
	<b>Ruggedized IoT</b>	NetCloud Ruggedized IoT Essentials Plan with IBR900-600M-AP	TC0y-0900600M-PM
		NetCloud Ruggedized IoT Essentials and Advanced Plans with IBR900-600M-AP	TCAy-0900600M-PM
<b>All Regions</b>	<b>Mobile</b>	Renewal NetCloud Mobile Essentials Plan	MAx-NCESS-R
		NetCloud Mobile Advanced Plan (requires corresponding Essentials Plan)	MAx-NCADV
		Renewal NetCloud Mobile Advanced Plan (requires corresponding Essentials Plan)	MAx-NCADV-R
		Renewal NetCloud Mobile Essentials and Advanced Plans	MAAx-NCEA-R
	<b>Ruggedized IoT</b>	Renewal NetCloud Ruggedized IoT Essentials Plan	TC0x-NCESS-R
		NetCloud Ruggedized IoT Advanced Plan (requires corresponding Essentials Plan)	TC0x-NCADV
		Renewal NetCloud Ruggedized IoT Advanced Plan	TC0x-NCADV-R
		Renewal NetCloud Ruggedized IoT Essentials and Advanced Plans	TCAx-NCEA-R

*x = 1, 3, or 5 years*

*y = 3 or 5 years*

## 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.

**Find the most up-to-date information  
at [cradlepoint.com/ibr900](https://cradlepoint.com/ibr900)**



## Accessories

INCLUDED	PART NUMBER
NetCloud Mobile Packages Only:	
— GPIO Cable, Small 2x2 Black 3 meters 22AWG	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
One of the following:	
— Power Supply, 12V Small 2x2 1.5 meters (North America Type A)	170716-000
— Power Supply, 12V Small 2x2 1.5 meters (Mexico Type A)	170716-001
— Power Supply, 12V Small 2x2 1.5 meters (NA-UK-EU-AU Types A-G-C-I)	170717-000
OPTIONAL	PART NUMBER
Power Supply, 12V Small 2x2 1.5 meters (North America Type A)	170717-000
Power Supply, 12V Small 2x2 1.5 meters (Mexico Type A)	170716-001
Power Supply, 12V Small 2x2 1.5 meters (NA-UK-EU-AU Types A-G-C-I)	170717-000
Power Supply, 12V, Small 2x2 (C7 line cord not included), -30 °C to 70 °C	170869-000
Power Supply C7 Line Cord Options:	
— Line Cord, U.S. (C7), 1.8 meters, North America	170623-001
— Line Cord, U.S. (C7), 1.8 meters, European Union	170623-002
— Line Cord, U.S. (C7), 1.8 meters, United Kingdom	170623-003
— Line Cord, U.S. (C7), 1.8 meters, Australia	170623-004
Power Supply, vehicle, 12V, 2x2, 2 meters	170635-000
Small 2x2 Power to Barrel Adapter, 152 mm	170665-000
GPIO Cable, SATA with Lock Black 1.7 meters	170680-000
GPIO Cable, Small 2x2 Black 3 meters 22AWG	170585-001
NetCloud Mobile Packages (bench testing only):	
— Cellular Antenna, Charcoal, 600 MHz - 6G Hz, 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 305mm	170656-002
Second MC400 Modular Modem (for use with the COR Extensibility Dock)†:	MA-MC400-1200M-B MC400LP6 MC400LP5

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