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Data Sheet
IBR200 Series Router

Cradlepoint's NetCloud Service for IoT with the IBR200 Series Router is a purpose-built, IoT networking solution with industry-leading features. With its compact size, external cellular and Wi-Fi antennas, and the capability to operate in a wide temperature range, the Cradlepoint IBR200 is ideal for use in IoT applications including plant and machinery controls, surveillance cameras, digital signs, kiosks, and ATMs.
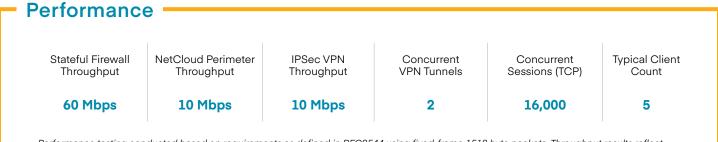
Notable Benefits

— Deploy a competitively priced value-driven IoT networking solution with industry-leading features

— Define policies through centralized cloud-based management for easy deployment at scale

— Connect with an LTE Category 1 modem that provides performance and affordability for moderate data rate applications

— Support Wi-Fi for easy deployment and connectivity of things

— Expand with custom solutions using GPIOs, NetCloud SDK and API, and NetCloud Edge Connector for Microsoft Azure IoT Central

— Secure with zone-based firewall or NetCloud Perimeter and advanced security for PCI-compliant networking

— Provide a semi-ruggedized solution with wide temperature range for broad deployment options

Ideal for Cellular IoT Connectivity

The IBR200 provides connectivity options including Cat 1 LTE modem, Ethernet, Wi-Fi, GPIO ports, and passive GPS. It provides a semi-ruggedized enterprise class networking platform that can be confidently deployed in diverse implementations such as smart cities, manufacturing, and other IoT scenarios requiring robust connectivity. The IBR200 accommodates a wide range of environments while delivering enterprise-class standards of reliability, scalability, comprehensive management, and security.

Robust Cloud Managed IoT Solution

For organizations requiring robust connectivity for IoT networks — with installed routers numbering from hundreds to many thousands — Cradlepoint's NetCloud Service for IoT with the IBR200 router provides a comprehensive cloud managed network solution. When coupled with advanced IoT features, it provides troubleshooting and diagnostics with in-band and out-of-band management, extensive analytics and insights, and extensibility and integrations such as Microsoft Azure IoT Central. Cradlepoint's NetCloud-managed IoT endpoints can be rapidly deployed and easily scaled to accommodate the diverse requirements of organizations.

Performance

Stateful Firewall Throughput	NetCloud Perimeter Throughput	IPSec VPN Throughput	Concurrent VPN Tunnels	Concurrent Sessions (TCP)	Typical Client Count
60 Mbps	10 Mbps	10 Mbps	2	16,000	5

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.
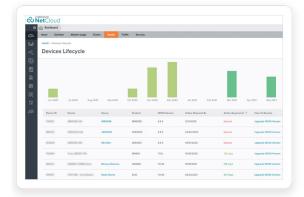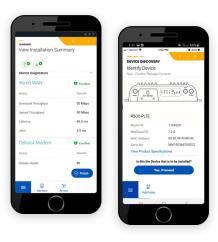
Key Software Capabilities

NetCloud Service provides powerful centralized management for every Cradlepoint cellular-enabled router, including the IBR200. NetCloud allows customers to build and manage wireless WANs with complete lifecycle management, zero-touch deployment, robust security, and traffic management for optimal application performance and reliability. The cloud capabilities include group policy definition, reports, troubleshooting, and visual analytics dashboards. With a continuous subscription to NetCloud, Cradlepoint routers maintain their limited lifetime warranty, access to online training, live and online support, and software and firmware updates.

Advanced Software Lifecycle Management

NetCloud improves the typical software lifecycle management process. New features are continuously delivered to the NetCloud Service and available for the router without interrupting network performance. Software versions are tracked for every endpoint, with the latest version just a click away. Straightforward subscription and license management is provided to keep the network running without interruption.
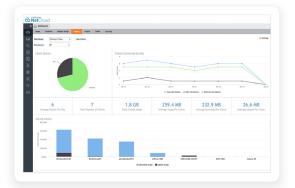
Cradlepoint Verify™ Mobile Application

Cradlepoint Verify is a mobile application that simplifies and customizes steps to install the Cradlepoint IBR200 Router. Upon a verified installation, users receive a detailed report that includes installation pictures, speed test results, and modem health metrics.

Connection Manager

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

Cloud Services

NetCloud Manager delivers zero-touch deployment with the ability to define and deliver policy across entire groups of endpoints. Users can gain insights and analytics required for rapid troubleshooting and diagnostic workflows. Location services provides last known map location and geofence alerting for loss prevention and physical security.

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Hardware Specifications

The following features are delivered through the hardware.

INTERFACES

Modem:	Embedded 10M modem
	— 2 x SMA Cellular Antenna Connectors
Ethernet:	1 x FE RJ45
Expansion/ Console:	Power with 2 x GPIO (one input, one output)
	1 x USB 2.0 Type A (output: 5V, 500mA, 2.5W)
Wi-Fi:	Single radio, single band (2.4 GHz)
	— 1x1 802.11b/g/n Wi-Fi 4
	— 72 Mbps (2.4 GHz)
	— External 1x1 antenna
	— Two (2) Wi-Fi SSIDs
	— WPA/WPA2 Persona, WPA2 Enterprise, Open
GNSS/GPS:	— North America: Passive GNSS
	— Europe, Asia-Pacific: N/A

ENVIRONMENTAL

Temperature:	Operating: -20 °C to 60 °C (-4 °F to 140 °F)
Humidity:	— Operating: 5% to 95%
	— Storage: 5% to 95%
Ingress Protection:	N/A

POWER

Power Required:	One of the following:
	— 12 VDC conditioned steady state input
	— External DC power supply, 100-240 VAC input. 12 VDC 1A output (included)
Consumption:	— Idle: 2.7W (1.8W with Wi-Fi off)
	— Typical: 3.6 W (2.8W with Wi-Fi off)
	— Heavy usage: 5.8 W

PHYSICAL

Size:	3.0 × 3.7 × 1.0 in (76.5 × 94.5 × 24.5 mm)
Weight:	6 oz (175 g)

CERTIFICATIONS

Safety:	UL/cUL, CB Scheme, EN 60950-1, EN 62368-1
Materials:	WEEE, RoHS, RoHS-2, California Prop 65

WI-FI POWER

FCC:	— 2402–2483.5 MHz (2.4 GHz band): 25.3 dBm conducted
Rest of World	— 2402–2483.5 MHz (2.4 GHz band): 14.99 dBm conducted

LEDs

Refer to the IBR200 Quick Start Guide.

Enterprise-Class Modem Specifications

SPECIFICATION	10M (Verizon)	10M-B (AT&T, T-Mobile)	10M-C (Sprint)
Technology:	Cat 1 LTE (3GPP Rel.10) — Single SIM slot, 2FF form factor	Cat 1 LTE (3GPP Rel.10) — Single SIM slot, 2FF form factor	Cat 1 LTE (3GPP Rel.10) — Single SIM slot, 2FF form factor
Fallback	N/A	WCDMA/UMTS/HSPA+	N/A
Carrier Aggregation:	N/A	N/A	N/A
Peak Downlink Rates:	LTE: 10 Mbps	LTE: 10 Mbps	LTE: 10 Mbps
Peak Uplink Rates:	LTE: 5 Mbps	LTE: 5 Mbps	LTE: 5 Mbps
MIMO:	N/A	N/A	N/A
QAM:	Up to 16	Up to 16	Up to 16
LTE Bands:	LTE FDD: — B4, B13	LTE FDD: — B2, B4, B5, B12	LTE FDD: — B2, B4, B5, B12, B25, B26
WCDMA Bands:	N/A	B2, B4, B5	N/A
Power:	LTE only: 23 dBm ± 1 (typical conducted)	LTE only: 23 dBm ± 1 (typical conducted) HSPA+: 23 dBm ± 1 (typical conducted)	LTE only; 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)	SMA female connectors, external 600 MHz - 6 GHz cellular paddle antennas (qty 2. included)
GNSS/GPS:	Passive GNSS — Multiplex on AUX antenna port	Passive GNSS — Multiplex on AUX antenna port	N/A
SMS:	Yes	Yes	Yes
Regulatory:	FCC (U.S.), UL (U.S.)	FCC (U.S.), UL (U.S.), IC (Canada)	FCC (U.S.), UL (U.S.)
Network Operator Standards:	PTCRB (U.S., Canada)	PTCRB (U.S., Canada)	PTCRB (U.S., Canada)
Network Operator Certifications:	Verizon[†]	AT&T[†]	Sprint[†]

[†] 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, to operate on their network. 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.
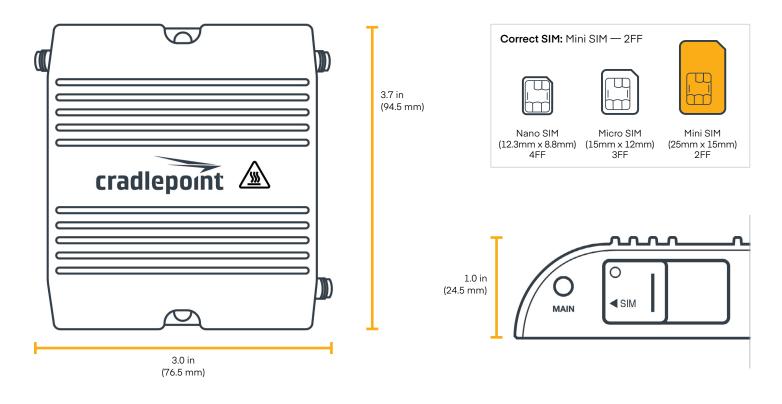
Enterprise-Class Modem Specifications

SPECIFICATION	10M-D (Europe)	10M-E (Asia-Pacific)
Technology:	Cat 1 LTE (3GPP Rel.10) — Single SIM slot, 2FF form factor	Cat 1 LTE (3GPP Rel.10) — Single SIM slot, 2FF form factor
Fallback	WCDMA/UMTS/HSPA+	WCDMA/UMTS/HSPA+
Carrier Aggregation:	N/A	N/A
Peak Downlink Rates:	LTE: 10 Mbps	LTE: 10 Mbps
Peak Uplink Rates:	LTE: 5 Mbps	LTE: 5 Mbps
MIMO:	N/A	N/A
QAM:	Up to 16	Up to 16
LTE Bands:	LTE FDD: — B1, B3, B5, B7, B8, B20	LTE FDD: — B1, B3, B5, B7, B28
WCDMA Bands:	B1, B5, B8	B1, B5
GSM Bands:	B3, B8	N/A
Power:	— LTE: 23 dBm ± 1 (typical conducted) — HSPA+: 23 dBm ± 1 (typical conducted) — GSM 850 MHz: 33dBm±2dB (typical conducted) — GSM 1800 MHz: 30dBm±2dB (typical conducted)	— LTE: 23 dBm ± 1 (typical conducted) — 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:	N/A	N/A
SMS:	Yes	Yes
Regulatory:	CE (EU)	RCM (AU/NZ)
Network Operator Standards:	GCF (Worldwide)	GCF (Worldwide)
Network Operator Certifications*:	See note†	See note†

† 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, to operate on their network. 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.

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Hardware

Physical Measurements

3.7 in
(94.5 mm)

3.0 in
(76.5 mm)

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

1.0 in
(24.5 mm)

MAIN

◄ SIM

Sides

SIM Door

SIM Slot

Reset
Button

MAIN   ◄ SIM   RESET   AUX

Cellular Antenna Connectors (SMA)

Wi-Fi Antenna Connector
(Female SMA)

USB Port

Power Port

LEDs

2.4GHz

LAN

Gigabit Ethernet
(GbE) Port

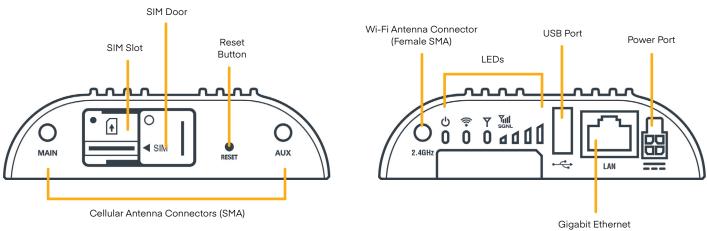cradlepoint

Ordering Guide

NetCloud IoT Gateway Essentials packages and plans contain all the features and capabilities required for a broad range of moile or in-vehicle 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 Gateway Essentials** package at any time.

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

For more details on the IBR200 Series Router, included with the NetCloud IoT Gateway Essentials package, see below.

NetCloud Package & Plans

REGION	DESCRIPTION	PART NUMBER
North America: U.S., Canada, Mexico	NetCloud IoT Gateway Essentials with IBR200-10M for Verizon	TBy-020010M-VNN
	NetCloud IoT Gateway Essentials with IBR200-10M for AT&T and generic	TBy-020010M-ANN
	NetCloud IoT Gateway Essentials with IBR200-10M for Sprint	TBy-020010M-SNN
United States: Federal Government	TAA Compliant NC IoT Gateway Essentials Plan and IBR200 Router with Wi-Fi (10 Mbps modem) for Verizon	TAA-TBy-020010M-VNN
	TAA Compliant NC IoT Gateway Essentials Plan and IBR200 router with Wi-Fi (10 Mbps modem) for AT&T and Generic	TAA-TBy-020010M-ANN
Europe & South Africa:	NetCloud IoT Gateway Essentials with IBR200-10M	TBy-020010M-EWM
Asia-Pacific: Australia, New Zealand, Singapore, and Malasia	NetCloud IoT Gateway Essentials with IBR200-10M	TBy-020010M-PWM
All Regions:	NetCloud IoT Advanced Plan	TBy-NCADV
	NetCloud IoT Essentials Renewal	TBy-NCESS-R
	NetCloud IoT Advanced Plan Renewal	TBy-NCADV-R

y = 3 or 5 years

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Accessories

INCLUDED	PART NUMBER
One of the following power supplies:	
— Power Supply, 12 V, Small 2x2, 1.5 meters (North America Type A)	170716-000
— Power Supply, 12 V, Small 2x2, 1.5 meters (North America-United Kingdom-Europe-Australia Types A-G-C-I)	170717-000
Cellular Antenna, Charcoal, 600 MHz – 6 GHz, SMA, 180 mm (Qty 2)	170801-000
Wi-Fi Antenna, Charcoal, Dual-Band 2.4/5 GHz, RPSMA, 194 mm (Qty 1)	170836-000
OPTIONAL	**PART NUMBER**
GPIO Cable, Small 2x2, Black, 3 meters, 22 AWG	170585-001
Rail Safe GPIO Cable, Small 2x2, Black, 3 meters, 20 AWG	170871-000
Small 2x2 Power to Barrel Adapter, 152 mm	170665-000
DIN Rail Mounting Bracket	170656-002
MAG Mount Kit	170718-000
UNITED STATES FEDERAL GOVERNMENT	**PART NUMBER**
Cellular Antenna, Charcoal, 600 MHz - 6 GHz, SMA, 180 mm	TAA-170801-000
Wi-Fi Antenna, Charcoal, Dual-band 2.4/5 GHz, RPSMA, 194 mm	TAA-170836-000
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
GPIO Cable, Small 2x2, Black, 3 meters, 22 AWG	TAA-170585-001
Small 2x2 Power to Barrel Adapter, 152 mm	TAA-170665-000
DIN Rail Mounting Bracket	TAA-170656-002
MAG Mount Kit	TAA-170718-000

Support & Warranty

The IBR200 Series Router is only sold as a component of NetCloud IoT Gateway Essentials 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/ibr200