



R1900 Series Router Professional Installation Guide

Introduction

This document provides a brief overview of the R1900 Series router, discusses what's inside the box, and provides basic setup and install instructions for the router.

Disclaimer

Cradlepoint, Inc. ("Cradlepoint") does not warrant that the hardware will work properly in all environments or applications, and makes no warranty or representation, either implied or expressed, with respect to the quality, performance, merchantability, or fitness for a particular purpose of the R1900 Series router even when installed in accordance with this Professional Installation Guide.

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If you find information in this Professional Installation Guide that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

Intended Audience

This article is intended for professional networking hardware installers. It provides basic knowledge and should be used only as a reference guide for installing the R1900 Series router. Due to the unique nature

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of each installation, potential for RF exposure, and enhanced separation requirements, customers must have a professional install their 5G hardware. This document is a reference guide and is intended only to provide best practices.

Installer Responsibility

Cradlepoint hereby disclaims any liability for failure of the installer to install the hardware properly and for any other acts and omissions of the installer. By using this Professional Installation Guide, you agree to indemnify and hold Cradlepoint harmless from and against any and all, liabilities, losses, damages, costs and expenses (including without limitation attorneys' fees and costs) incurred by Cradlepoint arising out of or in connection with any installation work that is done other than in accordance with the instructions in this Professional Installation Guide.

Limitation of Liability

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT WILL CRADLEPOINT BE LIABLE TO YOU OR TO ANYONE CLAIMING THROUGH OR UNDER YOU FOR ANY LOST PROFITS, EQUIPMENT DOWNTIME, OR LOSS OF DATA OR BUSINESS OPPORTUNITY, OR FOR ANY INDIRECT, SPECIAL, EXEMPLARY, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND UNDER ANY THEORY OF LIABILITY, ARISING IN ANY WAY IN CONNECTION WITH YOUR INSTALLATION ACTIVITIES, EVEN IF CRADLEPOINT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. SOME JURISDICTIONS (SUCH AS THE STATE OF NEW JERSEY) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN NO EVENT SHALL THE AGGREGATE LIABILITY OF CRADLEPOINT AND/OR ITS AFFILIATES ARISING UNDER OR IN CONNECTION WITH THE PRODUCT, HOWEVER ARISING, REGARDLESS OF THE NUMBER OF EVENTS, OCCURRENCES, OR CLAIMS GIVING RISE TO LIABILITY, EXCEED THE PRICE PAID BY THE ORIGINAL PURCHASER OF THE PRODUCT. IN NO EVENT SHALL THE AGGREGATE LIABILITY OF CRADLEPOINT AND/OR ITS AFFILIATES ARISING UNDER OR IN CONNECTION WITH THE PRODUCT, HOWEVER ARISING, REGARDLESS OF THE NUMBER OF EVENTS, OCCURRENCES, OR CLAIMS GIVING RISE TO LIABILITY, EXCEED THE PRICE PAID BY THE ORIGINAL PURCHASER OF THE PRODUCT. THE FOREGOING LIMITATIONS WILL APPLY EVEN IF THE ABOVE STATED REMEDY FAILS OF ITS ESSENTIAL PURPOSE.

Professional Installer Network

Email our Professional Installer Network for assistance in locating a professional installer in your service area at installernetwork@cradlepoint.com.



NOTE: The Verify app includes many of the same instructions with an alternate order. This document supports the Verify app instructions. Use the Navigation section below to locate the topics most applicable to troubleshooting your setup issues. For additional setup support, contact a professional installer or Cradlepoint Support.

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R1900 Series Router Models

This document applies to the following R1900 series models:

CRADLEPOINT R1900-5GB

MODEL S5A052A

Before You Begin

Read through the following before you set up your Cradlepoint R1900 series router.

Location Considerations

The R1900 is built for installation in a variety of environments. Cradlepoint recommends having a professional install the R1900 router to ensure proper signal reception and usage. The following are best practices for determining the location for the installation:

- Ensure that the mounting surface is flat and clear of any obstructions or objects that may interfere with the antennas, signal reception, or cables.
- Position the device for optimal cellular and Wi-Fi signal reception.
- Avoid mounting in direct sunlight or in locations where it may be exposed to the weather.
- Ensure plenty of airflow for ventilation.
- Keep the device out of reach. It is required that the endpoint be installed behind a locked/gated enclosure to restrict unauthorized access. The R1900 is designed to work in elevated ambient temperatures which may cause the surface of the device to become too hot to safely touch.
- Mount in locations compliant with the Safety, Regulatory, and Warranty guide, included in the product shipping box.

For mobile installations, refer to the [Vehicle Installation Guide for Mobile Routers](#) for more information.

IMPORTANT: The R1900 Series router requires increased separation distances in relation to other networking hardware. Therefore, Cradlepoint requires that all 5G adapters be installed by a professional. For assistance with installation or in locating a professional installer, contact Cradlepoint [Sales and Support](#).

SIM Card for Wireless Connectivity

A wireless broadband data plan must be added to your Cradlepoint R1900 for wireless broadband connectivity. The SIM must be provisioned by the carrier. Contact your carrier for details about selecting a data plan and about the process for provisioning your SIM. To configure the router for failover and failback functionality, refer to the article, [Effectively Utilizing 2-SIM Modems](#).

Router Communication and Data Usage

The factory default configuration of the router is set to communicate with Cradlepoint and other resources at regular intervals to access the latest NetCloud OS and modem updates, clock synchronization (NTP), and NetCloud Manager. Such communication may result in data usage and



applicable charges regardless of whether the router uses a wired or wireless Internet connect. To avoid such data usage and potential charges, refer to [Router Communication/Data Usage](#) for more information.

Required Tools for Setup

Cradlepoint recommends that a professional install the R1900 in any environment. However, the following tools may be necessary for setup.

- #0 Philips-head screwdriver (for SIM cover screws)
- #2 Philips-head screwdriver (for mounting screws)
- Mounting tools - Depending on the location of installation, additional mounting tools may be necessary. These tools may include, but are not limited to:
 - Screwdrivers
 - Drill and drill bits
 - Additional screws
 - Zip ties

Setup

Refer to the following for general setup instructions.

STEP 1: Check box for contents.

Prior to having the R1900 router installed, open the box and ensure that all items are present. You should have received the following:

- [1] R1900 series router
- [1] 3-meter (2x2) Power and GPIO cable
- [4] M4 screws, nuts, and washers
- [1] Mounting template
- [1] Quick Start Reference sheet
- [1] Safety, Warranty, and Regulatory guide

Accessories

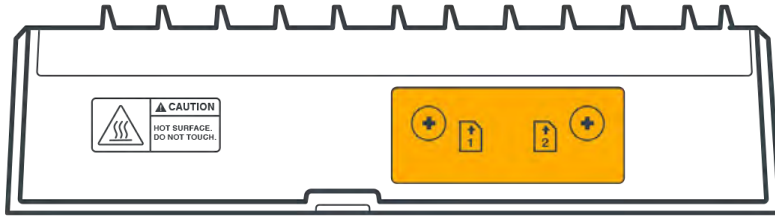
To optimize the R1900 series router for Wireless WAN or with failover configuration, you will need at least one activated 4FF-sized SIM card, with an active cellular data plan.

Additional accessories to enhance your router capabilities include, but are not limited to:

- OBDII cable
- RX30-POE
- Antennas
 - Refer to the [Cradlepoint Antenna](#) webpage for assistance in locating a Cradlepoint Approved vendor.

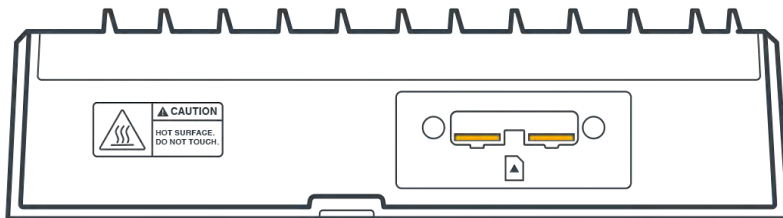
STEP 2: Remove the SIM door.

Unscrew and remove the SIM cover from the router.



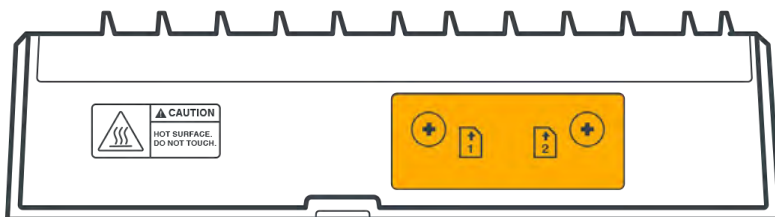
STEP 3: Insert an activated 4FF-sized SIM into the router.

- Insert an activated 4FF SIM card into the SIM1 slot (contacts down, notch in). The SIM card will click into place.
- Optionally, insert an active 4FF SIM into the SIM2 slot with the same orientation.



STEP 4: Reinstall the SIM door.

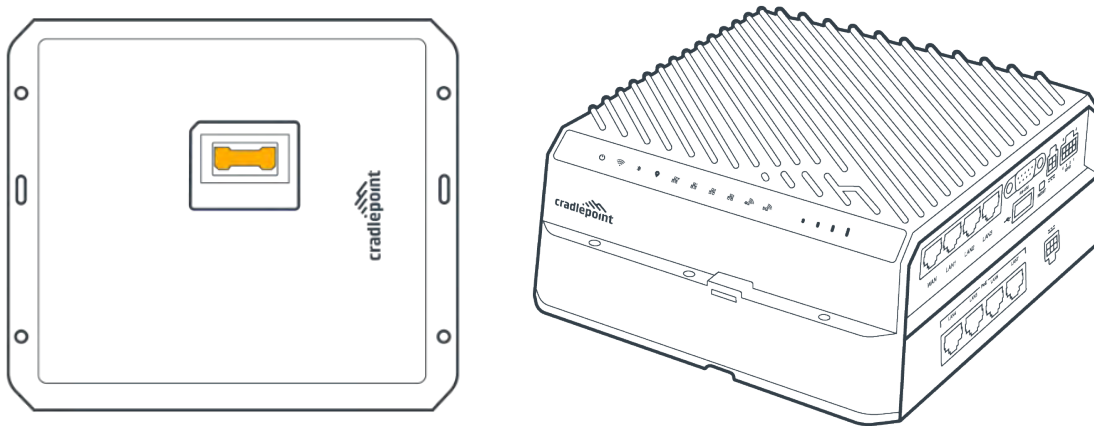
Replace the SIM cover and secure with the SIM door screws.





STEP 5 (OPTIONAL): Connect to an RX30 managed accessory.

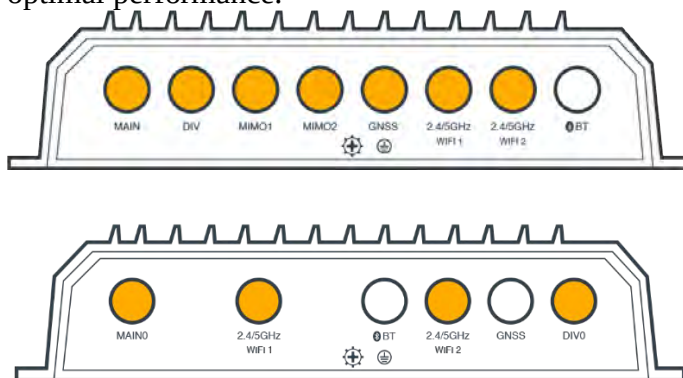
For PoE devices, attach the R1900 to the RX30-POE managed accessory. Refer to the installation instructions detailed in the RX30 Quick Start Guide and then continue to the next step when the RX30 is appropriately attached.



STEP 6: Attach the antennas.

The R1900 series router does not include antennas. Antennas must be purchased separately or through a third-party vendor. Refer to the [Cradlepoint Antenna](#) webpage for more information and options.

NOTE: Only use remote or cabled-out (x-in-1) antennas. Paddle antennas are not recommended for optimal performance.



Refer to the [Vehicle Installation Guide for Mobile Routers](#) for antenna setup best practices.

STEP 7: Mount the router.

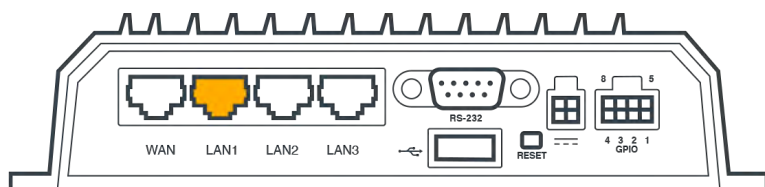
The R1900 series router may be mounted in a number of ways and should be completed by a professional installer. Refer to the following for best practices:

- Mark the desired mounting location on the ceiling, wall, kiosk, or vehicle using a pen or marker.

- Ensure the mounting location is away from RF interfering materials and objects such as reflective surfaces, brick and concrete, microwaves, and so on.
- Pre-drill holes for the mounting screws.
- Use anchors and other screw-securing accessories to ensure the device is securely mounted in place.
- Refer to the Location Considerations section of this document.

STEP 8 (Optional): Connect the Ethernet cable.

- o If you are using a wired, Ethernet WAN connection, connect the Ethernet cable to the WAN port on the back of the R1900. Connect the other end to your WAN source.
- o If you are using a wireless WAN (using cellular connectivity), you will need to power up the router first, access your NetCloud Manager account, and then complete the setup.



STEP 9: Power up the router.

The 4-pin GPIO cable is configured to allow for using a 4-wire/GPIO cable to hardwire power for DC connections, or for using GPIO. Refer to the following for pin configuration:

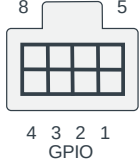


PIN	Wire Color	Definition	Details
1	Black	Ground	Ground to the vehicle chassis
2	Red	Power	VDC battery constant
3	Orange	Input	VDC ignition sensing accessory input
4	Blue	Output	General purpose I/O (GPIO)

- Insert the 4-pin end of the power adapter into the 4-pin port on the router, ensuring appropriate alignment of pins as illustrated above.
- Connect the wires on the other end to the appropriate fuse or power source.
- Allow 1 minute for the router to run through its bootup sequence.



The 8-pin GPIO socket is configured to allow for using an 8-wire/GPIO cable. This connector provides extensibility and the ability to connect a redundant power supply. Refer to the following for pin configuration:



A diagram of an 8-pin GPIO socket. It is a rectangular connector with two rows of four pins. The top row is labeled with pin numbers 8 and 5 from left to right. The bottom row is labeled with pin numbers 4, 3, 2, and 1 from left to right. Below the diagram, the text "GPIO" is centered.

PIN	Wire Color	Definition	Details
1	Black	Ground	Ground to the vehicle chassis
2	Brown	Analog Input	0-5v/0-36v
3	Red	Power	Redundant power supply
4	Black	Ground	Ground to the vehicle chassis
5	White	GPIO3	LVTTL compatible, protected to 36V DC input
6	Blue	GPIO2	LVTTL compatible, protected to 36V DC input
7	Yellow	GPIO1	LVTTL compatible, protected to 36V DC input
8	Orange	Ignition Sense	Provides option to power up when vehicle ignition is on.

STEP 10: Activate the router through NetCloud Manager.

Activate your R1900 series router through NetCloud Manager (NCM). Your router is packaged with NetCloud services and requires that you log into your NetCloud account to activate. Refer to [Getting Started with NetCloud Manager](#) for more information.

Understanding LEDs

Refer to the following table for information about LED indicators.

Status Indicator	Behavior	
POWER	The Cradlepoint R1900 must be powered using an approved 9-36V DC power source.	
		No Light = Not receiving power. Check the power switch and source connection.
		Green = Powered ON.
		Yellow = Attention. Log into NCM and use the Remote Connect menu to access the router's NCOS to manage any alert. - NOTE: Upon initial installation, the light will be yellow until the device is registered in NetCloud Manager (NCM).
SIGNAL STRENGTH	LED bars indicate the modem's signal strength.	
		4 Solid Bars = Strongest signal
		1 Blinking Bar = Weakest signal (A blinking bar indicates half of a bar)
		4 Blinking Bars = SIM door is not installed, modem is off
4G LTE EMBEDDED MODEM	Indicates information about the embedded 4G LTE modem.	
		No Light = Modem not connected. - NOTE: You will not be able to see the icon when the modem is not connected.
		Solid Green = Modem has established an active WAN connection.
		Flashing Green = Modem is connecting.
		Solid Yellow = Modem is not active.
		Flashing Yellow = Data connection error. No modem connection possible.

		• Flashing Red = Modem is in the process of resetting. - o NOTE: Blinking Red with Signal Strength LEDs = SIM door is not installed, modem is off.
5G CONNECTION	Indicates 5G WAN connectivity.	
		• No Light = No 5G connection.
		• Flashing Green = Sub-6 GHz 5G data connection error; no modem connection is possible.
		• Solid Green = Sub-6 5G connected.
Wi-Fi BROADCAST	Indicates activity on the Wi-Fi broadcast for both 2.4 and 5 GHz bands.	
		• No Light = Wi-Fi is not operating.
		• Blue = Wi-Fi is on and operating normally
LAN ACTIVITY	Indicates an active LAN connection. NOTE: Only one LAN connection will be active at a time.	
		• No Light = LAN is not connected or is not currently active.
		• Flashing Green = Active LAN connection.
GPS	Indicates the status of the GPS connection.	
		• No Light = No GPS lock
		• Flashing Blue = GPS obtaining lock
		• Solid Blue = GPS locked

Activate your device through NetCloud Manager (NCM). Your device is packaged with NetCloud services and requires that you log into your NetCloud account to activate your device. Refer to [Getting Started with NetCloud](#) for more information:

Troubleshooting

If the device takes longer than 5 minutes to connect to the Internet, you may need to log into the local UI of the device to make configuration changes or start the troubleshooting process. You must be physically co-located with the device to do this. If there is no Internet connection, refer to the following:

- [No Internet or Connection Issues](#)
- [NCOS: How to Configure WAN Interfaces](#)

Once the device connects to the Internet, ensure that desired functionality is working appropriately through NCM.

Troubleshooting

[Customer Support](#)
[Customer Community](#)

Help and Support

[Cradlepoint Customer Connect Community](#)
[Cradlepoint Support Services](#)

Resources

[R1900 Series Router Data Sheet](#)
[R1900 Series Webpage](#)
[RX30 Quick Start Guide](#)
[RX30 Webpage](#)
[RX30 Data Sheet](#)

Terms of Service

[Terms of Service](#)
[Privacy Policy](#)
[GDPR Privacy Policy](#)



SAFETY, REGULATORY, AND WARRANTY GUIDE

CRADLEPOINT R1900-SGB
CRADLEPOINT RX30-POE

MODEL: S5A052A
MODEL: S0A052A

This important Safety, Regulatory, and Warranty Guide contains safety, handling, disposal, regulatory, trademark, copyright, and software licensing information. Read all safety information below and operating instructions before using the device to avoid injury.

THIS DEVICE REQUIRES PROFESSIONAL INSTALLATION

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

FCC CAUTION

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC STATEMENT

For product available in the USA/Canada market, only channel 1-11 can be operated. Selection of other channels is not possible.

Operation of the 5 GHz WiFi radios is restricted to indoor use only.

This device meets all the other requirements specified in Part 15E, section 15.407 of the FCC Rules

FCC RADIATION EXPOSURE STATEMENT

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This device and its antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

To comply with FCC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum cellular antenna gain must not exceed 5 dBi, except when operation in Band 30 is not disabled. (See "FCC LTE BAND 30 NOTICE FOR INSTALLERS IN USA" section in the online user manual at www.cradlepoint.com)

To comply with FCC regulations limiting both maximum RF output power and human exposure to RF radiation, these devices may only operate with monopole antennas according to the following table. Antennas having a higher or lower gain are strictly prohibited. The required antenna impedance is 50 ohms.

Type	Model	Antenna Type	Frequency	Gain
WiFi	N/A	Monopole	2402-2483.5 MHz	0.0 – 5.50 dBi
			5150-5250 MHz	0.0 – 5.81 dBi
			5250-5350 MHz	0.0 – 5.77 dBi
			5470-5725 MHz	0.0 – 5.71 dBi
			5725-5850 MHz	0.0 – 5.99 dBi

INDUSTRY CANADA STATEMENT

This device complies with ICSED's license-exempt RSS standards. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

For product available in the USA/Canada market, only channel 1-11 can be operated. Selection of other channels is not possible.

Caution :

- (i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit; (detachable antenna only)
- (iii) for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate; (detachable antenna only)

INDUSTRY CANADA RADIATION EXPOSURE STATEMENT

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 21 cm between the radiator and your body.

This device and its antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with IC multi-transmitter product procedures.

This radio transmitter (IC: 6921A-S5A052A, 2417C-EM91) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

This device has been designed to operate with cellular antennas having a maximum gain of 5 dBi. Antennas having a higher gain are strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

These devices have been designed to operate with monopole antennas according to the following table. Antennas having a higher or lower gain are strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Type	Model	Antenna Type	Frequency	Gain	
WiFi	170	Monopole	2402-2483.5 MHz	0.0 – 5.50 dBi	
WiFi	N/A		5150-5250 MHz	0.0 – 5.81 dBi	
			5250-5350 MHz	0.0 – 5.77 dBi	
			5470-5725 MHz	0.0 – 5.71 dBi	
			5725-5850 MHz	0.0 – 5.99 dBi	

DÉCLARATION D'INDUSTRIE CANADA

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible.

Avertissement:

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :

- (i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5 250 à 5 350 MHz et de 5 470 à 5 725 MHz doit être conforme à la limite de la p.i.r.e.;
- (iii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5 725 à 5 850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée, selon le cas;

NOTE IMPORTANTE (POUR L'UTILISATION DE DISPOSITIFS MOBILES): DÉCLARATION D'EXPOSITION AUX RADIATIONS

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 21 cm de distance entre la source de rayonnement et votre corps.

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnement en association avec une autre antenne ou transmetteur.

Le présent émetteur radio (IC: 6921A-S5A052A, 2417C-EM91) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Ce dispositif a été conçu pour fonctionner avec une antenne cellulaire ayant un gain maximal de 5 dBi. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

Ces appareils ont été conçus pour fonctionner avec des antennes monopôles conformément au tableau suivant. Les antennes ayant un gain supérieur ou inférieur sont strictement interdites par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

Type	Model	Antenna Type	Frequency	Gain
WiFi	N/A	Antennes unipolaires	2402-2483.5 MHz	0.0 – 5.50 dBi
			5150-5250 MHz	0.0 – 5.81 dBi
			5250-5350 MHz	0.0 – 5.77 dBi
			5470-5725 MHz	0.0 – 5.71 dBi
			5725-5850 MHz	0.0 – 5.99 dBi

INFORMATION FOR EUROPE, DECLARATION OF COMPLIANCE

Cradlepoint, Inc. 1111 W Jefferson St. Boise, ID 83702 USA

EU Authorized Representative: Jan Willeke, Area Director Central Europe, Cradlepoint EMEA. Beim Riesenstein 21, 22393 Hamburg, Germany



Hereby, Cradlepoint Inc. declares that this equipment is in compliance with the Radio Equipment Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: Cradlepoint.com/product-certifications

RESTRICTIONS ON USE IN THE EU



BE BG CZ DK DE EE IE
EL ES FR HR IT CY LV
LT LU HU MT NL AT PL
PT RO SI SK FI SE UK

5 GHz 802.11 a/n/ac WiFi radios are restricted to indoor use only. The 5GHz WiFi radio in this device must be powered OFF if the device is installed outdoors, or if the device is installed in a vehicle.

RF EXPOSURE STATEMENT

To comply with RF Exposure requirements, this equipment should be installed and operated with minimum distance of 20 cm between the radiating device and your body.

ACCESSORIES IMPACTING COMPLIANCE

To maintain compliance with EMC, Radio, and RF Exposure requirements, use only Cradlepoint accessories intended for use with this product. All Cradlepoint accessories intended for use with this product will maintain EMC, Radio, and RF Exposure compliance when installed according to instructions. Cellular antennas must have a gain <5 dBi. 802.11 antennas must have a gain between 0 - 5.99 dBi.

RECYCLING AND ENVIRONMENTAL INFORMATION

To find information on Cradlepoint's commitment to our environment and how to responsibly recycle or recover Cradlepoint products at the end of their useful life, please visit Cradlepoint.com/international.

FREQUENCIES USED AND MAXIMUM POWER OUTPUT IN THE EU

The Cradlepoint IBR1700 series

R1900-5GB	
2412-2472MHz:	19.99 dBm
2402-2480MHz (LE):	19.63 dBm
5180-5240MHz:	22.89 dBm
5260-5320MHz:	22.91 dBm
5500-5700MHz:	29.52 dBm
LTE Band 1 (1920-1980 MHz)	23.98 dBm
LTE Band 3 (1710-1785 MHz)	24.43 dBm
LTE Band 7 (2500-2570 MHz)	26.38 dBm
LTE Band 8 (880-915 MHz)	24.37 dBm
LTE Band 20 (832-862 MHz)	24.25 dBm
LTE Band 28 (703-748 MHz)	24.65 dBm
LTE Band 34 (2010-2050 MHz)	24.08 dBm
LTE Band 38 (2580-2620 MHz)	26.38 dBm
LTE Band 40 (2300-2400 MHz)	26.88 dBm
LTE Band 42 (3400-3600 MHz)	26.89 dBm
WCDMA Band 1 (1920-1980 MHz)	24.48 dBm
WCDMA Band 3 (1710-1785 MHz)	24.13 dBm
WCDMA Band 8 (880-915 MHz)	24.87 dBm
NR N1(1920-1980 MHz)	23.98 dBm
NR N3(1710-1785 MHz)	23.63 dBm
NR N28(703-748 MHz)	24.65 dBm
NR N41(2496-2690 MHz)	25.58 dBm
NR N77(3300-4200 MHz)	26.59 dBm
NR N78(3300-3800 MHz)	26.59 dBm

RF EXPOSURE STATEMENT FOR AUSTRALIA

To comply with RF Exposure requirements, this equipment should be installed and operated to ensure a minimum distance of 35 cm between the radiating devices (antennas) and human bodies.

SAFETY AND HAZARDS

This equipment is designed to operate in ambient temperatures up to 60 °C (140 °F). When operating in elevated ambient temperatures, the surface of the equipment may exceed 60 °C and become too hot to safely touch. Under this condition, this product must be installed in a secured location that is not accessible to accidental touch, and access to the device must be restricted to service persons or users who possess the proper tool or key to access the device and have been informed about the potential high surface temperatures and instructed on how to safely handle and/or service the device.

Under no circumstances should the device be used in any areas

- (a) where blasting is in progress,
- (b) where explosive atmospheres may be present, or
- (c) that are near (i) medical or life support equipment, or (ii) any equipment which may be susceptible to any form of radio interference.

In such areas, the device MUST BE POWERED OFF AT ALL TIMES (since the device otherwise could transmit signals that might interfere with such equipment).

In addition, under no circumstances should the device be used in any aircraft, regardless of whether the aircraft is on the ground or in flight. In any aircraft, the device MUST BE

POWERED OFF AT ALL TIMES since the device otherwise could transmit signals that might interfere with various onboard systems on such aircraft. Furthermore, under no circumstances should the device be used by the driver or operator of any vehicle. Such use of the device will detract from the driver's or operator's control of that vehicle. In some jurisdictions, use of the device while driving or operating a vehicle constitutes a civil and/or criminal offense.

Due to the nature of wireless communications, transmission and reception of data by the device can never be guaranteed, and it is possible that data communicated or transmitted wirelessly may be delayed, corrupted (i.e., contain errors), or totally lost. The device is not intended for, and Cradlepoint recommends the device not be used in any critical applications where failure to transmit or receive data could result in property damage or loss or personal injury of any kind (including death) to the user or to any other party. Cradlepoint expressly disclaims liability for damages of any kind resulting from:

- (a) delays, errors, or losses of any data transmitted or received using the device; or
- (b) any failure of the device to transmit or receive such data.

For proper and safe vehicle installations, the device must be professionally installed inside the passenger compartment. The Power and GPIO accessory cable must be connected to a fused circuit in the vehicle. This fused circuit requires a 3A fuse. If the supply connection is made directly to the battery, an inline 3A fuse should be installed in the positive lead. For North America, a UL Listed fuse is to be used.

Warning: This product is only to be installed by qualified personnel.

Purchaser agrees to indemnify Cradlepoint against any liability or damages caused to third parties as a result of Purchaser's misuse or misapplication of the Cradlepoint product.

OPEN SOURCE SOFTWARE

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HARDWARE WARRANTY INFORMATION

Cradlepoint, Inc. warrants this hardware product against defects in materials and workmanship to the original purchaser for a period of three (3) years from the date of shipment. This warranty is limited to a repair or replacement of the hardware product, at Cradlepoint's discretion, as purchaser's sole and exclusive remedy. If this hardware product was procured as a component of a NetCloud Solution Package, additional warranty may be available. Please see Cradlepoint's website for details. Cradlepoint does not warrant that the operation of the product will meet your requirements or be error free. **CRADLEPOINT MAKES NO OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED. CRADLEPOINT SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON-INFRINGEMENT.**

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PRIVACY

Cradlepoint may collect general data pertaining to the use of Cradlepoint products via your Internet connection (wired and/or wireless) such as device ID/serial number, network status, IP address, MAC address, operating system, browser type and version number, etc., in order to provide you with better services, enhance user experience, and improve performance.

OTHER BINDING DOCUMENTS; TRADEMARKS; COPYRIGHT

By activating or using your IBR1700 device, you agree to be bound by Cradlepoint's Terms of Use, User License and other applicable Legal Policies.

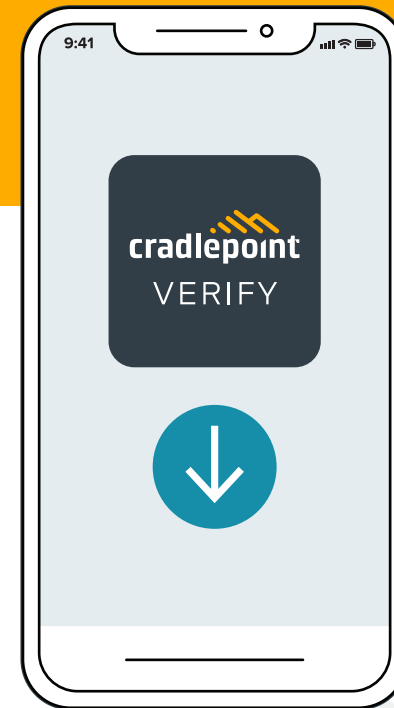
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ROUTER COMMUNICATION/DATA USAGE

The factory default configuration of the router is set to communicate with Cradlepoint and other resources at regular intervals to access the latest firmware and modem updates, clock synchronization (NTP), and NetCloud Manager (ECM) membership. Such communication may result in data usage and applicable charges regardless of whether the router uses a wired or wireless Internet connection. To avoid such data usage and potential charges, consult the following Knowledge Base article: <http://knowledgebase.cradlepoint.com/articles/support/router-communication-data-usage>

Get Started: **Cradlepoint R1900**

- 1** Download **Cradlepoint Verify** from your favorite app store.
- 2** Launch the app and sign in using your NetCloud credentials.
- 3** Follow the **step-by-step instructions** in Cradlepoint Verify to set up your device.
- 4** To configure and manage your devices, visit **NetCloud Manager** at cradlepointecm.com.



Find more detailed instructions at cradlepoint.com/r1900-start.
Access the Community for best practice documentation at customer.cradlepoint.com.

