



cradlepoint R920 Series Ruggedized Router Endpoints Instruction Manual

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R920 Series Ruggedized Router Endpoints



Product Information

The Cradlepoint R920-C7A, Cradlepoint R920-C7B, and Cradlepoint RX20-MC are wireless routers that provide internet connectivity through cellular networks. These devices comply with Part 15 of the FCC Rules and meet FCC radiation exposure limits for an uncontrolled environment. The devices require professional installation and must operate with antennas having a maximum gain of 5 dBi. The devices are designed for indoor use only and can only operate on channels 1-11 in the USA/Canada market.

Product Usage Instructions

Before using the device, read all safety information and operating instructions to avoid injury. The devices require professional installation. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The devices must operate with antennas having a maximum gain of 5 dBi and an impedance of 50 ohms. The required antenna types, part numbers, frequencies, and gains are specified in the table provided in the user manual. Antennas having a higher or lower gain are strictly prohibited.

The devices are designed for indoor use only and can only operate on channels 1-11 in the USA/Canada market. The operation of the 5 GHz WIFI radios is also restricted to indoor use only.

To comply with FCC regulations limiting both maximum RF output power and human exposure to RF radiation, the device and its antenna(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.

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

The devices comply 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.

For more information on safety, handling, disposal, regulatory, trademark, copyright, and software licensing information, refer to the Safety, Regulatory, and Warranty Guide provided with the device.

SAFETY, REGULATORY, AND WARRANTY GUIDE

CRADLEPOINT R920-C7A MODEL: S5A235A
CRADLEPOINT R920-C7B MODEL: S5A236A
CRADLEPOINT RX20-MC MODEL: S0A235A

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 and any attached antennas 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.

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

Type	Part Number	Antenna Type	Frequency	Gain
Bluetooth®	170847-000	Dipole	2400-2483.5 MHz	2.16 dBi
WiFi	170836-000	Dipole	2400-2483.5 MHz 5150-5850 MHz	2.47 dBi 2.47 dBi
WiFi	Varies	Monopole	2402-2483.5 MHz 5150-5250 MHz 5250-5350 MHz 5470-5725 MHz 5725-5850 MHz	0.0 – 5.50 dBi 0.0 – 5.81 dBi 0.0 – 5.77 dBi 0.0 – 5.71 dBi 0.0 – 5.99 dBi

INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA STATEMENT

THIS DEVICE REQUIRES PROFESSIONAL INSTALLATION

This device complies withISED'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 and its antennas should be installed and operated with minimum distance of 0.2m 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-S5A235A, 2417C-EM74B) 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 dipole and 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.

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

EU Importer: Cradlepoint B.V. Verlengde Poolsweg 16, 4818 CL Breda The Netherlands



Hereby, Cradlepoint Inc. declares that this equipment is in compliance with the Radio Equipment Directive 2014/53/EU (S5A326A), EMC Directive 2014/30/EU (S0A325A), and RoHS2 Directive 2011/65/EU with Amendment 2015/863/EU, Radio Equipment Regulations 2017.

The full text of the EU,UK declaration of conformity is available at the following internet address:
Cradlepoint.com/product-certifications

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.

RESTRICTIONS ON USE



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(NI)

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,UK

The Cradlepoint R920 series

R920-C7B

- 2412-2472MHz: 19.86 dBm
- 2402-2480MHz (LE): 9.98 dBm
- 5180-5320MHz: 22.89 dBm
- 5500-5700MHz: 27.76 dBm
- LTE Band 1 (1920-1980 MHz) 21.15 dBm
- LTE Band 3 (1710-1785 MHz) 21.56 dBm
- LTE Band 7 (2500-2570 MHz) 20.81 dBm
- LTE Band 8 (880-915 MHz) 23.09 dBm
- LTE Band 20 (832-862 MHz) 23.24 dBm
- LTE Band 28 (703-748 MHz) 23.31 dBm
- LTE Band 38 (2580-2620 MHz) 20.83 dBm
- LTE Band 40 (2300-2400 MHz) 20.97 dBm
- LTE Band 42 (3400-3600 MHz) 20.97 dBm
- LTE Band 43 (3600-3800 MHz) 19.99 dBm
- WCDMA Band 1 (1920-1980 MHz) 21.49 dBm
- WCDMA Band 5 (869-894 MHz) 21.86 dBm
- WCDMA Band 8 (880-915 MHz) 22.84 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 20 cm between the radiating devices (antennas) and human bodies.

INFORMATION FOR UK

UK Responsible Person: James Bristow, Senior Vice President, EMEA, Cradlepoint UK Ltd. Cedar House, Apex Court, Camphill Road, West Byfleet, Surrey, KT14 6SQ United Kingdom

UK Importer: Cradlepoint UK Ltd. Cedar House, Apex Court, Camphill Road, West Byfleet, Surrey, KT14 6SQ United Kingdom

RESTRICTIONS OR REQUIREMENTS IN THE UK

This device is restricted to indoor use only when operating in the 5150-5350 MHz frequency range.

SAFETY AND HAZARDS

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

This device must be powered from a power source which has been certified by the appropriate agencies, or by an approved UL Listed ITE AC power adapter with electrical ratings: 12Vdc, min 2A with a recommended ambient temperature greater than 60 degrees C. For further information, or to purchase a suitable power adapter, please contact Cradlepoint.

For safe vehicle installations, the device must be professionally installed inside the passenger compartment. The 12V Power and GPIO accessory cable must be connected to a fused 3A circuit in the vehicle. For North America, a UL Listed fuse is to be used.

The unit and all interconnected equipment must be installed indoors within the same building, or vehicle.

CAUTION: HOT SURFACE. DO NOT TOUCH

This equipment is designed to operate in ambient temperatures from -30 to 70 °C (-22 to 158 °F) when DC powered, or up to 60 °C (140 °F) when powered by an AC adapter. When operating in elevated ambient temperatures, the surface of the equipment may exceed 70 °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..

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

This product contains software distributed under one or more of the following open source licenses: GNU General Public License Version 2, BSD License, Net-SNMP License, and PSF License Agreement for Python 3.3. For more information on this software, including licensing terms and your rights to access source code, contact Cradlepoint at Cradlepoint.com/opensource.

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.**

LIMITATION OF CRADLEPOINT LIABILITY

The information contained in this Safety, Regulatory, and Warranty Guide is subject to change without notice and

does not represent any commitment on the part of Cradlepoint or its affiliates. CRADLEPOINT AND ITS AFFILIATES HEREBY SPECIFICALLY DISCLAIM LIABILITY FOR ANY AND ALL: (A) DIRECT, INDIRECT, SPECIAL, GENERAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES, INCLUDING WITHOUT LIMITATION FOR LOSS OF PROFITS OR REVENUE OR OF ANTICIPATED PROFITS OR REVENUE ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, EVEN IF CRADLEPOINT AND/OR ITS AFFILIATES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND EVEN IF SUCH DAMAGES ARE FORESEEABLE; OR (B) CLAIMS BY ANY THIRD PARTY. NOTWITHSTANDING THE FOREGOING, IN NO EVENT SHALL THE AGGREGATE LIABILITY OF CRADLEPOINT AND/OR ITS AFFILIATES ARISING UNDER OR IN CONNECTION WITH THE PRODUCT, 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 LIMITATIONS OF LIABILITY SET FORTH HEREIN SHALL

REMAIN IN FULL FORCE AND EFFECT REGARDLESS OF WHETHER THE REMEDIES HEREUNDER ARE DETERMINED TO HAVE FAILED OF THEIR ESSENTIAL PURPOSE.

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 R920 or RX20 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>

Documents / Resources

	<p>cradlepoint R920 Series Ruggedized Router Endpoints [pdf] Instruction Manual S5A235A, S5A236A, S0A235A, R920 Series Ruggedized Router Endpoints, R920 Series, Ruggedized Router Endpoints, Router Endpoints</p>
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References

-  [Cradlepoint | Wireless WAN & Private Cellular Solutions](#)
-  [Customer Connect](#)
-  [Certifications | Cradlepoint](#)

