

User Manual

PCR91501 – Powercast RFID Reader



PRODUCT DESCRIPTION

The Powercast PCR91501 is a UHF RFID Reader. It is designed to communicate and power RFID tag devices. The tag device communicates back to the reader via RF backscattering. The backscatter communication eliminates the need for a separate radio on the tag device and enables the detection and identification of the tag device. The tag device also has the ability to send back pertinent information to the reader, such as sensor data or charge level. This information is accessible via the USB-C port on the reader. The reader operates in the 902-928MHz ISM frequency band and is housed in a durable plastic case. Operational power as well as communication is provided to the reader using the USB Type C connector. The PCR91501 Reader has on board LEDs to display status of the reader and tag devices. The PCR91501 has a factory set, fixed power output of 3W EIRP.

ORDERING OPTIONS

United States Part Number	PCR91501
Canada Part Number	PCR91501-CA

PRODUCT CONTENTS

The following items are included:

Qty	Description
1	PCR91501 Transmitter
1	Cable
1	Quick start instruction card



APPLICATIONS

- Communicate with and power high function RFID tags
 - Active, battery recharging tags
 - Passive, charge-and-fire tags
- Communicate with and charge consumer electronic devices
 - Headphones, earbuds, game controllers, remotes, keyboards and mice, etc.
- Communicate with and power sensor devices
 - Temperature, pressure, humidity, etc.
- Inventory items in a room

Powercast products and technology are covered by one or more patents with other patents pending. All patent and trademark information can be found at <http://www.powercastco.com/IP/>.



SET-UP AND OPERATION

1. Place the Reader in the desired location.
2. Plug in the USB-C cable to the back of the reader.
3. Connect the other end to a 5V USB A device. The Reader's LED will illuminate and the PCR91501 will start polling for end for devices.
4. Data is provided on the USB-A connector.
5. The PCR91501 will automatically turn off if no tag devices are present. It will periodically poll for the presence of tag devices.

The status LED indicates the following operating conditions:

LED	Status	Description
Off	Off	Device is not Powered
Solid Green	Active	Device has power
Solid Blue	Data Received	Tag device is present



CAPTURING DATA FROM THE READER

1. Connect the RFID Reader to a PC or other communication device using the USB-A to USB-C cable.
2. Open USB Serial Port connection, such as Tera Term
3. Use the following settings:
 - a. Speed: 9600
 - b. Data: 8 bit
 - c. Parity: Even
 - d. Stop bits: 1 bit
 - e. Flow control: none
4. The reader will automatically start sending reader and tag data to the PC or communication device.



User Manual

PCR91501 – Powercast RFID Reader



SPECIFICATIONS

Item	Description
Frequency	Frequency Hopping: 906.36MHz to 924MHz; 915 MHz Center Frequency
RF Communication	Tx: Amplitude Shift Keying (ASK) Rx: RF Backscatter
Power output	3 watts EIRP
Beam pattern	Horizontal Polarization (tabletop mounting)
Approvals	United States - FCC ID: YESPCR91501 Canada - IC ID: 8985A-PCR91501
Interface	USB Port Serial Communication
Operating Temperature	-20°C to 40°C
Environment	Indoor use only
Mounting	Mount on a non-metallic flat surface
Power	5VDC/1A through USB-C Port
Color	Grey
Dimensions	7.75" × 2.6" × 1.5"

Note: The PCR91501 is not EPC Gen 2 Compliant



SUPPORT

Technical support for Powercast products can be initiated through the following methods:

Website contact form: <http://www.powercastco.com/contact/>

Telephone: +1 412-455-5800

COMPLIANCE STATEMENTS

Changes or modifications not expressly approved by Powercast could void the user's authority to operate the equipment. Use and maintain device only as specified in this manual.

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

This device complies with Industry Canada licence-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



WARNING!

FCC Radiation Exposure Statement:

This equipment complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment under the following conditions:

1. This equipment should be installed and operated such that a minimum separation distance of 20cm is maintained between the radiator (antenna) & user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IC Radiation Exposure Statement:

This equipment complies with IC's RF radiation exposure limits set forth for an uncontrolled environment under the following conditions:

1. This equipment should be installed and operated such that a minimum separation distance of 30cm is maintained between the radiator (antenna) & user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

1. Cet équipement doit être installé et utilisé de manière à ce qu'une distance de séparation minimale de 30 cm soit maintenue à tout moment entre le radiateur (antenne) et le corps de l'utilisateur / de la personne proche. 2. Cet émetteur ne doit pas être situé à proximité ou fonctionner en conjonction avec toute autre antenne ou émetteur.



IMPORTANT NOTICE

Information furnished by Powercast Corporation (Powercast) is believed to be accurate and reliable. No license, express or implied, to any intellectual property rights is granted by this document. No responsibility is assumed by Powercast for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Powercast assumes no liability for misuse of this product. Specifications are subject to change without notice.

No license is granted by implication or otherwise under any patent or patent rights of Powercast. Trademarks and registered trademarks are the property of their respective owners.

Powercast's standard Terms and Conditions and Limited Product Warranty are available at:

<https://www.powercastco.com/terms-conditions/>

