

User Manual

TX91503 – 915 MHz PowerSpot® Transmitter



PRODUCT DESCRIPTION

The Powercast TX91503 PowerSpot transmitter is specially designed to provide both power and data to end devices containing Powercast's power harvesting technology. The TX91503 contains a receiver that can hear when a harvesting device is in range, allowing the TX91503 to stop power transmission when no harvesting devices are around. The TX91503 can also be controlled by an app that can set periods of use. The TX91503 is housed in a durable plastic case with several mounting options. Operational power is provided to the DC power connector. The TX91503 includes a status LED to provide feedback on functional state. The TX91503 has a factory set, fixed power output of 3W EIRP.

FEATURES

- FCC and IC approved
- Flexible wall mounting options
- Fully integrated system
- Transmits power and data
- Factory configurable for custom applications
- Wide temperature range

PRODUCT CONTENTS

The following items are included:

Qty	Description
1	915 MHz transmitter
1	Power supply
1	Quick Start instruction card



POWERING APPLICATIONS

- Wireless battery charging
 - Headphones
 - Headsets
 - Game Controllers
 - Keyboards and Mice
 - Fitness Trackers
 - Smart Watches
 - Wearables
 - Smart Cards
- Battery-free wireless sensors
 - Industrial Monitoring
 - Smart Grid
 - Structural Health Monitoring
 - Defense
 - Building automation
 - Agriculture
 - Oil & Gas
 - Location-aware services

ORDERING OPTIONS

United States Part Number	TX91503
Canada Part Number	TX91503-CA

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. Mount the TX91503 at the back of a desk or counter to create a PowerSpot® recharging zone. For wall mounted applications, use the keyholes on the back of the unit to hang the TX91503 for recharging devices like closet hung wearables.
2. Plug the DC connector of the power supply into the connector on the TX91503. Plug the power supply into a 120V outlet.
3. The TX91503 will remain off until one of the following occurs¹:
 - a. An authorized device enters the PowerSpot recharging zone.
 - b. The button on the unit is pressed to recharge a device with a completely discharged battery. The unit will activate for 30 minutes from a button press and then will turn off if an authorized device is not present.
4. When the TX91503 is active and transmitting radio frequency (RF) energy, data is automatically included in the transmission and can be received and used to authorize the device.

The status LED indicates the following operating conditions:

LED	Status	Description
Off	Off	5VDC is not applied
Solid Green	Active	Transmitting normally
Solid Red	Idle	TX91503 is powered but not actively transmitting
Red with short Green Blinks	Active / Idle	An authorized device is requesting charge but is not in range of the TX91503
Red and Green Rapid Blinking	Fault	TX91503 is in a fault condition such as overheating

Note: When setting the time or schedule on the TX91503 via the mobile application, immediately after sending the command from the mobile phone the TX91503 will blink the LED to acknowledge that the time or schedule was received and set successfully.

FIRMWARE UPDATES

If a firmware upgrade is available for the TX91503:

1. Unplug the power
2. Press and hold the button down
3. With the button still pressed, plug the unit back in. Once powered on, the LED will shine green steadily
4. Within 2 minutes, utilize the recommended mobile phone application to connect to the TX91503 and upload the firmware upgrade. Once the upgrade is complete, unplug the power and plug it back in.

Note: If the TX91503 is not connected to the mobile phone application within 2 minutes, the TX91503 will automatically return to normal operation.

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Note: The TX91503 will not transmit the RF energy that is used for power and data as described above during a firmware upgrade.

To determine the current firmware version of the TX91503:

1. Press and hold the button on the TX91503 for at least 5 seconds
2. Continue holding the button and utilize the recommended mobile phone application to determine the firmware version.

The TX91503 will stop communicating the firmware version and return to normal operation when the button is released.

Note: The TX91503 will not transmit the RF energy that is used for power and data as described above while communicating the firmware version.

¹The app can override these conditions and keep the transmitter in an OFF state.

SPECIFICATIONS

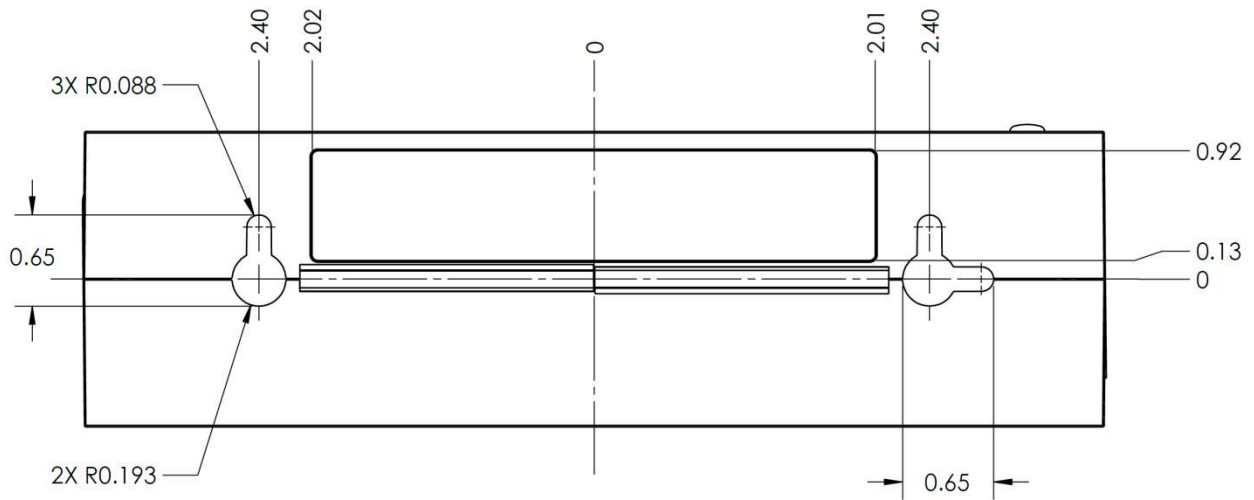
Item	Description
Frequency	915 MHz Center Frequency
Data	Amplitude Shift Keying (ASK)
Power output	3 watts EIRP
Beam pattern	70° width, 130° height Horizontal Polarization (tabletop mounting)
Approvals	United States - FCC ID: YESTX91503 Canada - IC ID: 8985A-TX91503
Data Communications	An 8-bit, factory-set, TX91503 identification (ID) number is broadcast with the wireless power. The ID number can be found on the TX91503 label.
Operating Temperature	-20°C to 40°C
Environment	Indoor use only
Mounting	Mount at the back of a desktop or countertop to create a PowerSpot recharging area 2 keyholes (See mechanical drawing for dimensions) for wall mounting
Power	5VDC/1A through included Power Supply
Color	Black/Blue
Dimensions	7.3" × 2.1" × 1.4" (185.4 x 53.3 x 35.6 mm)
Firmware Upgrade Communication	Bluetooth Low Energy (BLE)

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MECHANICAL (REAR VIEW)



*Dimensions in inches

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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.

Cet équipement est conforme aux limites d'exposition aux rayonnements RF d'IC établies pour un environnement non contrôlé dans les conditions suivantes:

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.

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LIMITED WARRANTY.

Seller warrants that the Products, when delivered by Seller or Seller's authorized distributor and for twelve (12) months with the exception of development kits which are (90) days, following the delivery date (the "Warranty Period"), will be free from defects in material and workmanship and will substantially conform to Seller's publicly available specifications for such Products in effect at the time of delivery. In all cases, Seller has sole responsibility and discretion for determining the cause and nature of a Product defect, and Seller's determination with regard thereto shall be final. Buyer's exclusive remedy and Seller's sole liability for a breach of warranty reported to Seller during the Warranty Period shall be, at Seller's option, to replace or repair the affected Product, or to refund to Buyer the price of the affected Product. This limited warranty excludes: (i) engineering samples (which are provided "AS-IS" without warranty); (ii) circuit board assembly (iii) development products (such as but not limited to boards and cables); (iv) design defects or errors known as "errata"; (v) electronic components procured through unauthorized third parties; and (vi) electronic components that have been subject to misuse, mishandling, accident, alteration, neglect, unauthorized repair or installation. Furthermore, this limited warranty shall not apply to the use of covered products in an application or environment that is not within Powercast specifications or in the event of any act, error, neglect or default of Customer. The availability of replacement products is subject to product discontinuance policies at Powercast. Customer may not return products without first obtaining a customer return material authorization (RMA) number from Powercast. Seller does not warrant that Products will be free from design defects or errors. This warranty does not extend to any implementation by Buyer in an application or environment that is not contained within Seller's specifications, and does not extend for use of the Products as the principal mechanism in life-support applications or other applications that invoke potential risks of death, bodily injury or severe property or environmental damage ("Critical Applications"). THE WARRANTIES SET FORTH HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. POWERCAST DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT, AND ANY WARRANTY THAT MAY ARISE FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. IF POWERCAST CANNOT LAWFULLY DISCLAIM IMPLIED WARRANTIES UNDER THIS LIMITED PRODUCT WARRANTY, ALL SUCH IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE WARRANTY PERIOD (AS DEFINED ABOVE). YOUR SOLE REMEDY WITH RESPECT TO ANY BREACH OF THE LIMITED PRODUCT WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE DEVICE AS SPECIFIED IN THE LIMITED PRODUCT WARRANTY. POWERCAST IS NOT RESPONSIBLE FOR DIRECT, SPECIAL,

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