

7. Set-up and Operation

Transmitter

1. Attach the yellow, right angle antenna to the 915 MHz transmitter and set the transmitter on a flat surface with the heat sink grille facing upward.
2. Plug the AC-DC adapter cable into the transmitter and then into a 110V outlet.
3. Press the button on the transmitter to change the frequency/channel. The unit will power on to the 903 MHz channel.
4. For additional safety, do not hold or touch the transmitting antenna when the transmitter is powered.
5. If the TX indicator LED switches from green to red be sure to move yourself or other objects further away from the transmitter to resume transmission.
6. Do not cover the transmitter when in use.
7. Unplug the transmitter when not in use.

Lab Evaluation Boards

1. Attach the right angle antennas to the three lab boards.
2. Verify the output jumpers are set to the LED setting for verification of power.
3. To protect the circuitry, do not place the lab boards within 6 inches of an active transmitter.

Antenna Modules

1. Plug any of the application boards into an antenna module
2. Hold the antenna module so as not to cover or block the antenna.
3. For directional antennas, such as a patch or Yagi, point them toward the transmitter for best performance.
4. To protect the circuitry, do not place the antenna modules within 6 inches of an active transmitter.

Consulting Services

Powercast can provide consulting services to help speed your Powercast-enabled products to market. Our engineers have many years of experience developing, testing, and certifying RF-based products.

Area of expertise include

- Antenna Design
- RF Transmitter Design
- Power Distribution System Design
- FCC Certification

To learn more about Powercast's consulting services please contact us at:
1-800-963-6538
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FCC Compliance Statement

The devices in this kit have been designed to comply with FCC regulations and are approved for lab use by the FCC. See User's Guide for details.

Important Safety Notice

FCC radio-frequency safety guidelines require the device to be operated with the transmitter antenna at least 20 cm (8 inches) from the user's body.

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POWERcast™
wireless power for a wireless world

Quick Start Guide

Lifetime Power™

Evaluation and
Development Kit

Alkaline
Starter Kit

Lithium Ion
Starter Kit

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Powercast's Lifetime Power™ Evaluation and Development Kit enables users to observe and experience the benefits and performance of wireless power using RF, and to create rapid prototypes using RF-based wireless power for existing and new products.

Available Components

The following components are available:

- 3 watt, 915 MHz Transmitter
- 3V Lab Board with rechargeable Alkaline batteries
- 4V Lab Board with rechargeable Lithium Ion battery
- Charge and Fire Lab Board with capacitors
- Antenna Modules with integrated RF harvesters
- Application Boards
- Antennas and Wiring accessories
- User's Guide

Enclosed items depend on the kit version ordered.

The components are explained briefly below. For further detail please see the User's Guide.

1. Transmitter

The 3 watt, 915 MHz transmitter transmits from 903-927 MHz and can be operated laying on a flat surface or mounted upright. Use the right angle antenna for flat surface operation and use the straight antenna for operation in the upright position.

The transmitter operates just by plugging it in. The transmit channel (frequency) can be selected from the button on the front of the transmitter.

The TX LED will be lit green when the transmitter is on and transmitting. For added safety, the transmitter senses for objects in close proximity. When objects are detected near the device, transmission is halted and the TX LED is lit red. Normal transmission will resume when the nearby object is removed.

2. 3V Lab Board

The 3V lab board (black) contains an LED, buzzer, two AAA rechargeable alkaline batteries, and a user test area. It can be operated on a flat surface using the right angle antenna or vertically mounted using the mounting keyhole in the board and a straight antenna. Using the jumper, you can connect to one or more of the output loads. The circuitry converts RF to DC and limits the output voltage to a maximum of 3.3V to protect the rechargeable batteries.

3. 4V Lab Board

The 4V lab board (blue) contains an LED, buzzer, one AA rechargeable Lithium Ion battery, and a user test area. It can be operated on a flat surface using the right angle antenna or vertically mounted using the mounting keyhole in the board and a straight antenna. Using the jumper, you can connect to one or more of the output loads. The circuitry converts RF to DC and limits the output voltage to a maximum of 4.2V to protect the rechargeable battery.

4. Charge and Fire Lab Board

The Charge and Fire lab board (green) contains an LED, buzzer, capacitors, and a user test area. The circuitry outputs 3.3V nominal and can be changed with an external resistor. It can be operated on a flat surface using the right angle antenna or vertically mounted using the mounting keyhole in the board and a straight antenna. Using the jumper, you can connect to one or more of the output loads. When the capacitors are charged to approx. 1.2V the circuit connects the capacitors to the load at the configured output voltage until they discharge to approx 1.05V.

5. Antenna Modules

The antenna modules can be used for experimentation or for rapidly prototyping an application. There are a total of 12 antenna modules, six (6) for 3V applications and six (6) for 4V applications. The power connector on the modules can be used to attach the application boards, the wiring extenders included in the kit, or your own wiring. The included antenna designs include dipole, flexible dipole, short loaded dipole, sleeve dipole, dual harvester patch, and Yagi. Each antenna type has a different form factor and performance characteristic. Holding the antenna modules near the power connector will help to ensure that you are not detuning the antenna and lowering the received power.

6. Application Boards

Application boards are available to demonstrate light, sound, and temperature sensing. The application boards can be attached to any of the antenna modules and lab boards. The connector is keyed for proper pin orientation to ensure the applications boards face away from the antenna.