

Endurance Robotics Wireless 10 Relay Controller

www.endurance-robotics.com



The Wireless 10 Relay Controller can be used to control AC and DC devices from a PC. The Wireless 10 Relay Controller features a robust 900MHz wireless connection to allow for the switching of up to 10 devices per receiver station. The receiver station allows for the connection from 1-10 relays which can be purchased separately as needed. Detachable relays also give the user the freedom to place the relays in any position needed unlike other controllers where all relays are placed in one central location. Each receiver can be setup for one of 16 channels giving the ability to operate 16 receivers on the same network, giving a total of 160 relays for control.

Warning: The receiver station as well as Relay Attachments must be properly mounted before operation. Do not touch or short relay connections at any time. Disconnect all power before making adjustments.

Package Content

Each component can be purchased separately or in full kit form. Please see the following items for a breakdown of included items.

Full Package:

- 1x Wireless 10 Relay Controller receiver station with antenna
- 1x 5V 3.7A AC power supply
- 1x Transmitter Station
- 1x 3' Black USB Cable
- 10x Mechanical Relay Attachments

Transmitter Station:

- 1x Transmitter Station
- 1x 3' Black USB cable

Receiver Station

- 1x Receiver Station
- 1x Antenna
- 1x 5V 3.7A AC power supply

Mechanical Relay Attachment:

- 1x Mechanical Relay Attachment

Required Items:

- 20 AWG wire (minimum) for relay connections

Setup

Each Mechanical Relay Attachment and the Wireless 10 Relay Controller board must be properly mounted using stand-offs or another method to prevent shorts or contact while in operation. Mount at least ¼" away from the surface. Do not short any part of the terminal contacts or screws at any time.

Connecting Relays

The Wireless 10 Relay Controller has 10 available terminals for connecting relays. Each terminal has a marking for the relay number ground and positive connections. These are labeled RX- and RX+ where X is the number of the relay. See Figure 1.

If you are connecting your own relays to the controller use this as a guide for connections. If you are using the Mechanical Relay Attachments match the +/- labels on the relay board to the controller.



Figure 1. Relay Connection Terminal

Channel Selection

Each Wireless 10 Relay Controller has 16 available channels to choose from. The channel set on the receiver should match the channel set on the control software. Up to 10, 16 Wireless 10 Relay Controllers can be used at the same time. See Figure 2.

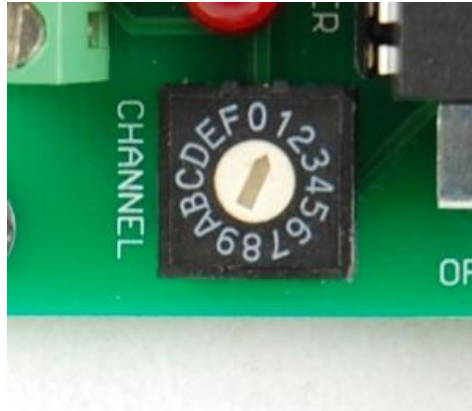


Figure 2. Channel Selection Dial

Power

The Wireless 10 Relay Controller requires a +5V power source for operation. A +5V 3.7A AC adapter is included with the full kit and will provide enough current to run 10 Mechanical Relay Attachments. The Wireless 10 Relay Controller may also be powered from a 5V battery if necessary. Use a 2mm center positive barrel plug connector and supply at least 200mA of current per Mechanical Relay or consult the data sheet for the relay used for current ratings.

The main power switch for the relay controller is marked ON/OFF. To enable the relay controller set the switch to the ON position.

Reset

The reset button is located near the middle of the board. This button will reset the controller to its starting state.

Transmitter Station Setup

Plug the transmitter station into an available USB port. Windows will prompt for a driver to install. Drivers can be found at www.endurance-robotics.com/media/base_driver.zip Unzip the file to a temporary location and point the driver wizard to this location. Once the drivers are installed a virtual serial port will be created on your PC. This serial port must be identified prior to using the Wireless 10 Relay Controller software. To find out the port number go to the Windows device manager by right clicking on My Computer and choosing properties. Select Device Manager. Expand the ports section. The device "CP21x USB to UART Bridge Controller" will be present. Use this port with the sample software.

Software

Sample software requires no installation. Choose the correct serial port and channel identified earlier. If a relay button is pressed and orange LED on the transmitter will flash. Verify the receiver is receiving commands by making sure the red status LED on the board is flashing. If one or both LEDs are not flashing please see the prior sections for instructions on how to find the correct COM port and channel.

If using a Mechanical Relay Attachment the relay will "click" and the indicator LED will go either on or off depending on its current state when toggled. Solid state relays can be used with the controller.

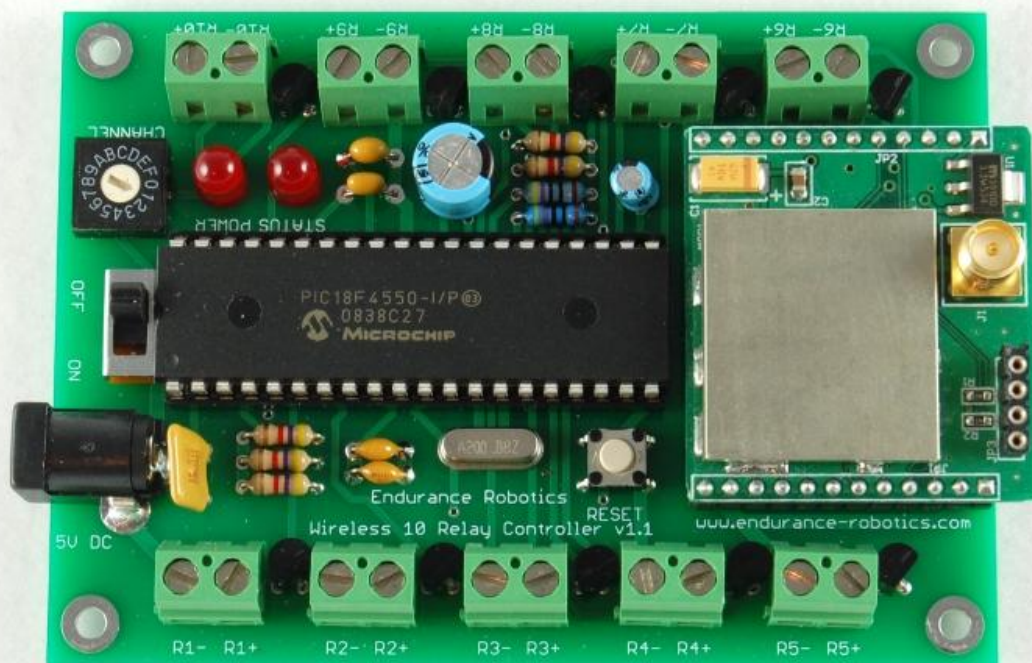


Figure 3. Wireless 10 Relay Controller