433MHz Receiver Shield

www.freetronics.com/433mhz-receiver

Getting Started: 433MHz Receiver Shield

The **433MHz Receiver Shield** is an Arduino-compatible expansion board ("shield") that gives your Arduino the ability to receive and decode radio signals transmitted on the unlicensed 433MHz band using ASK (Amplitude Shift Keying) or OOK (On-Off Keying) modulation. ASK signals at 433MHz are very commonly used by consumer electronics devices including weather stations, power consumption meters, security systems, and home automation controllers.

This shield implements exactly the same circuit as the "Weather Station Receiver" project documented in the book *Practical Arduino*, so it will work perfectly with the example software in that project. You can learn more about that project at:

www.practicalarduino.com/projects/weather-station-receiver

To use the 433MHz Receiver Shield to implement the Weather Station Receiver project and receive data from a La Crosse weather station, follow these steps.

1. Go to **www.github.com/practicalarduino/WeatherStationReceiver**. Click the button called "Download Source" near the top right of the page, and save the source package on your computer.
2. Extract the source package and rename the resulting directory to "WeatherStationReceiver". Move that directory inside the sketchbook directory used by your Arduino IDE.
3. Open the Arduino IDE, and select **File > Sketchbook > WeatherStationReceiver**.
4. Fit the 433MHz Receiver Shield to your Arduino.
5. Connect the antenna.
6. Connect your Arduino to your computer using a USB cable.
7. Select the appropriate Board and Serial Port using the **Tools** menu.
8. Click the **Upload** button. The program will be compiled and uploaded to your Arduino, which will then reboot automatically and begin running the program.
9. Click the **Serial Monitor** button, then select "38400" as the baud rate.
10. Power up your La Crosse weather station, and watch the serial monitor for data received by the 433MHz Receiver Shield.

Full details of the project including a full explanation of the operation of both the hardware and the software can be found in the book *Practical Arduino*.

Other projects using this same shield can be found referenced at **www.freetronics.com/433mhz-receiver**.

Online Resources

There's a wealth of information, sketches and libraries out on the internet for all things Arduino related. If there's a useful function, IC or shield there is likely to be some example code or a library to support it. And it's being added to almost daily as people like yourself create new solutions and share their projects and code to suit. The official Arduino website includes a wealth of information including tutorials, a language reference, projects, and examples.

Official Arduino site	**www.arduino.cc**
Arduino discussion forum	**www.arduino.cc/cgi-bin/yabb2/YaBB.pl**
Freetronics resources page	**www.freetronics.com/resources**
Freeduino knowledgebase	**www.freeduino.org**
IRC channel	**Network: irc.freenode.net. Channel: #arduino**

A Google search for "arduino projects", "arduino code" or "arduino examples" is recommended too.

Arduino Books

Getting Started With Arduino by Massimo Banzi (O'Reilly)

A gentle introduction to using your Arduino for the first time: how to connect it up, load programs onto it, and do some basic experiments to give you a feel for how it works. Great introduction for the first-time Arduino user. 128 pages.

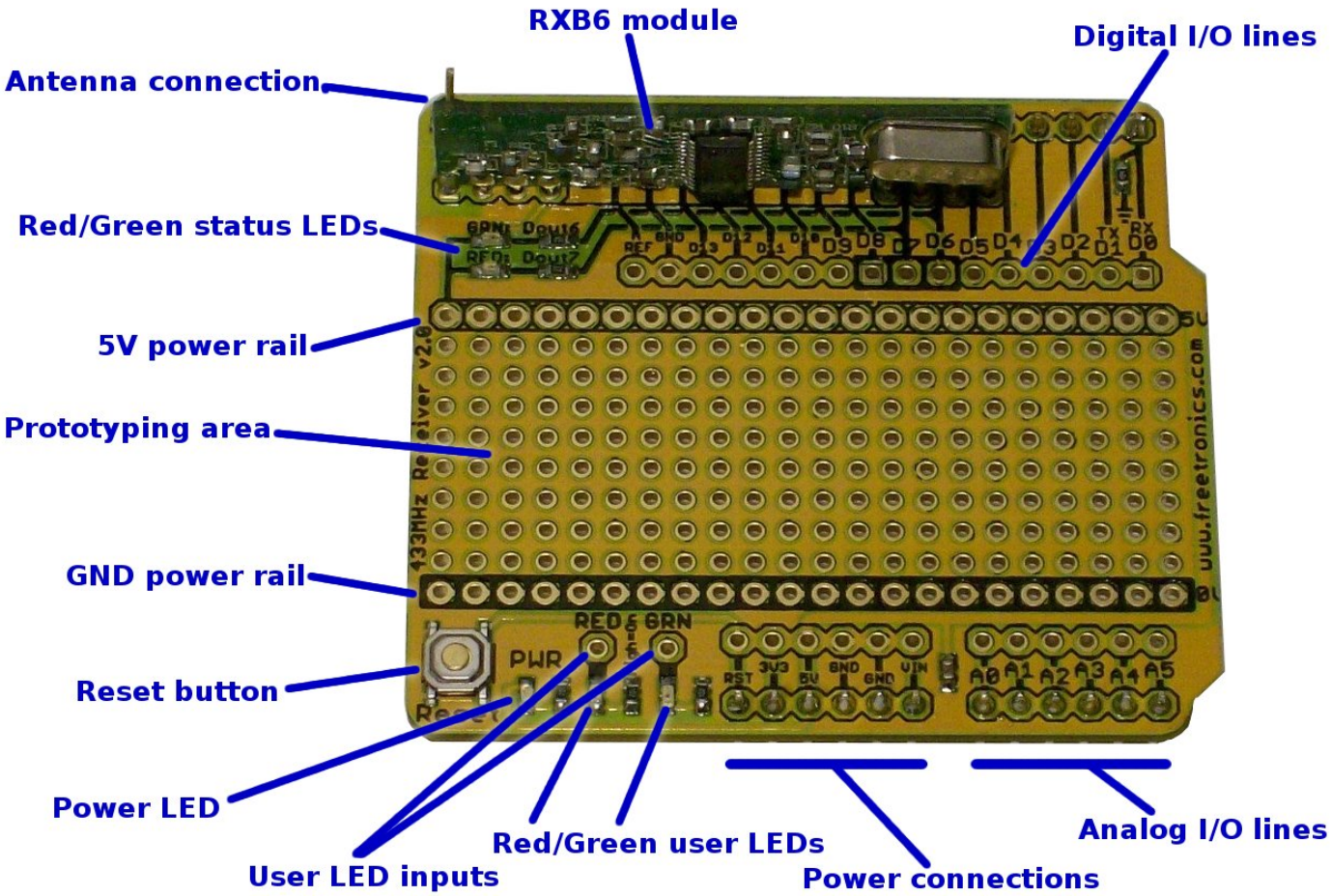
www.oreilly.com/pub/pr/2115

Practical Arduino by Jonathan Oxer and Hugh Blemings (Apress)

Taking you far beyond the basics, this book blends theory and practice by using example projects to illustrate some of the more advanced things you can do with Arduino and how to apply those same concepts to your own designs. After working through this book you'll be very confident designing and building your own Arduino creations. 445 pages.

www.practicalarduino.com

433MHz Receiver Shield Features



The 433MHz Receiver Shield uses Arduino digital I/O pins 6, 7, and 8. All other pins are available for use with additional circuitry you may wish to fit to the prototyping area of the shield.

Radio Receiver	
Tuned frequency	433.92MHz
Operating Voltage	5V
Sensitivity	-110dBm
Data output connection	Arduino digital I/O pin 8
Red status LED connection	Arduino digital I/O pin 7
Green status LED connection	Arduino digital I/O pin 6
Other Features	
Arduino reset	Connected to push button switch
Red / Green user LEDs	Active HIGH with pre-fitted current-limiting resistors
Power supply decoupling	2 x 100nF capacitors across supply rails
Prototyping area	Plated through-hole pads plus GND and 5V supply rails

About Freetronics

Freetronics is an Australian company created by Jonathan Oxer and Marc Alexander to provide cheap and easy access to hardware, parts, and products related to Arduino projects and the *Practical Arduino* book. Learn more at **www.freetronics.com**. Follow us on Twitter at **twitter.com/freetronics**.