RF 315/433 MHz Transmitter-receiver Module and Arduino

by **Mohannad Rawashdeh** on October 3, 2013

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Intro: RF 315/433 MHz Transmitter-receiver Module and Arduino

Hi every body , I searched on Instructables about a simple RF Transmitter-receiver module , Which is used in Remote control for cars , or to control simple tasks , like control relay on/off unfortunately I didn't find What I need , So i decided to write a simple artical about this transceiver and How we can connect it with arduino and program it .

Materials:

at first let's take a look for what we need :

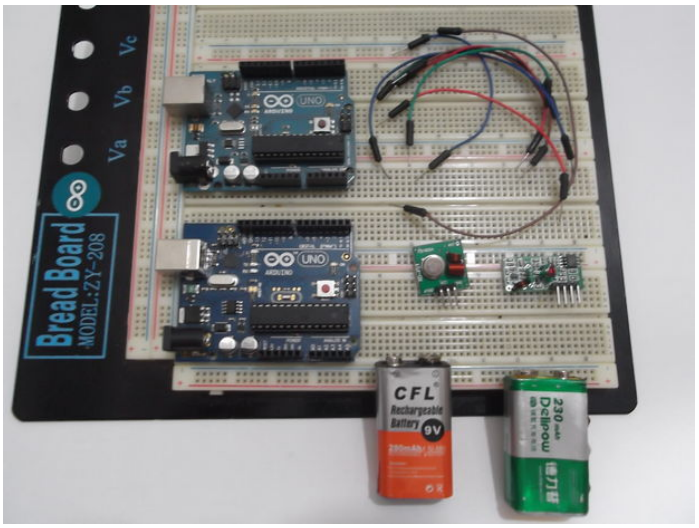
1) 2 Arduino Board "I used Uno"

2) RF 315MHz or 433MHz transmitter-receiver module .

3) jumper wire .

4) BreadBoard .

5)External Power supply (9V Battery *2) "Optional" .



Step 1: Module Specification

This module has a specification for :

Transmitter :

Working voltage: 3V - 12V fo max. power use 12V
Working current: max Less than 40mA max , and min 9mA
Resonance mode: (SAW)
Modulation mode: ASK
Working frequency: Eve 315MHz Or 433MHz
Transmission power: 25mW (315MHz at 12V)
Frequency error: +150kHz (max)
Velocity : less than 10Kbps

So this module will transmit up to 90m in open area .

Receiver :

Working voltage: 5.0VDC +0.5V
Working current:?5.5mA max
Working method: OOK/ASK
Working frequency: 315MHz-433.92MHz
Bandwidth: 2MHz
Sensitivity: excel –100dBm (50?)
Transmitting velocity: <9.6Kbps (at 315MHz and -95dBm)

the use of an optional antenna will increase the effectiveness of your wireless communication. A simple wire will do the trick.

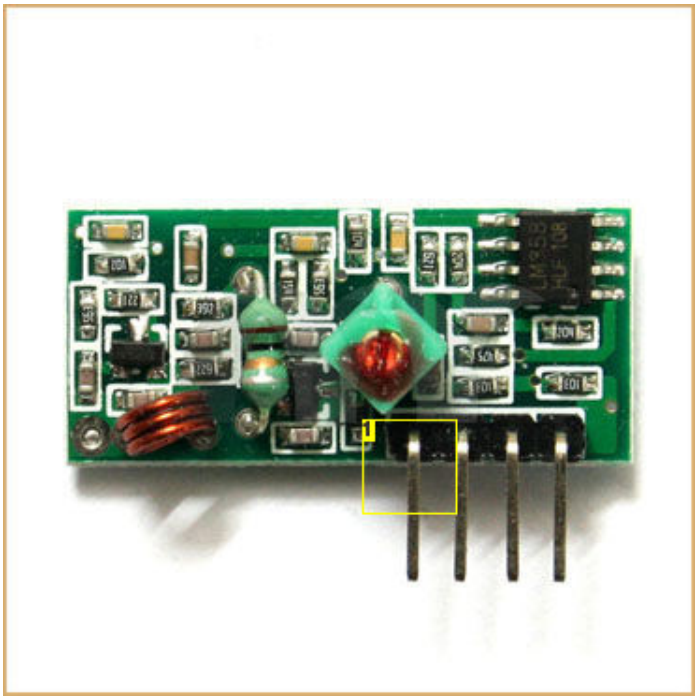


Image Notes
1. RF Receiver

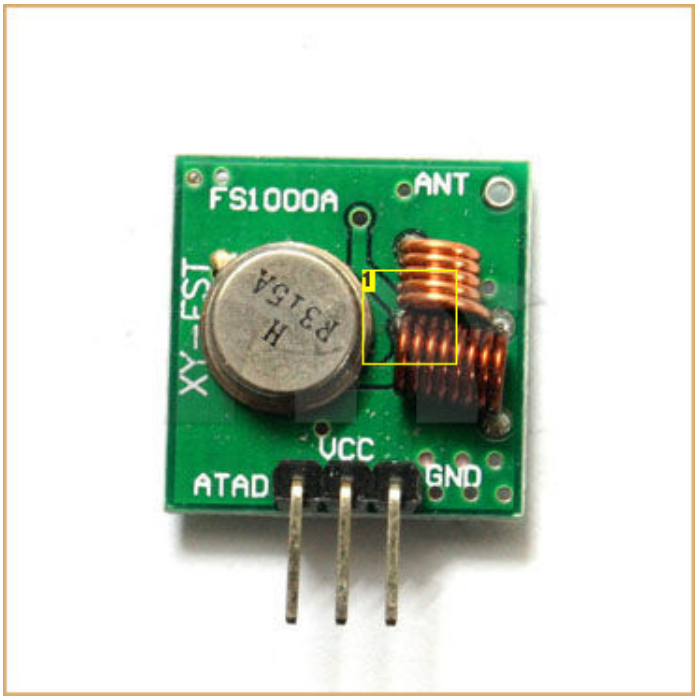


Image Notes
1. RF Transmitter

Step 2: Schematics

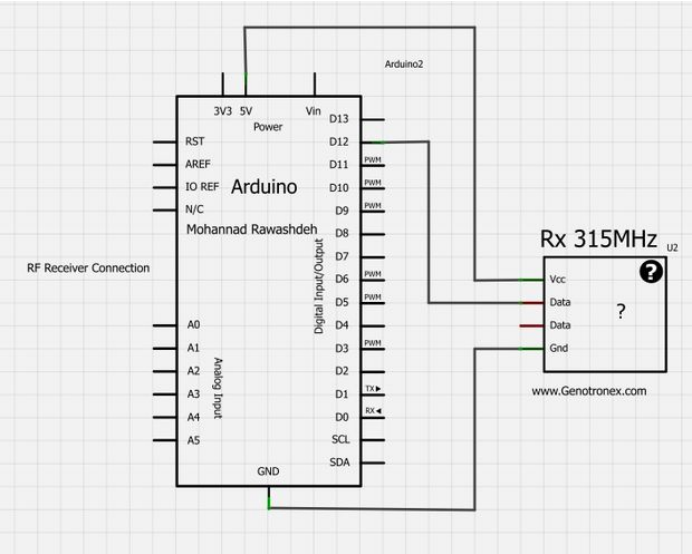
the connection for this module is very easy .

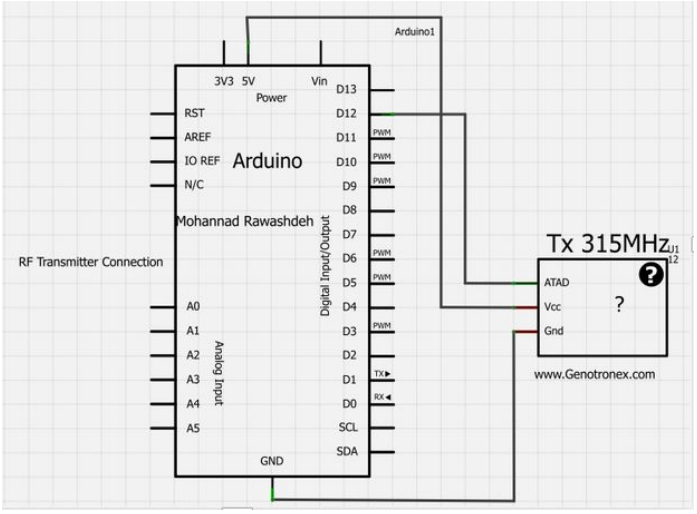
for Transmitter :

Vcc >>>>5V
ATAD>>>D12"You can change it as you like from Software" .
Gnd >>> Gnd

Receiver :

Vcc>>>>5V
Data>>>D12
Gnd>>>Gnd





Step 3: Arduino Virtual Wire Library

Fortunately , There is a popular Library for arduino Called "" VirtualWire"" Created by Mike McCauley

VirtualWire is an Arduino library that provides features to send short messages, without addressing, retransmit or acknowledgment, a bit like UDP over wireless, using ASK (amplitude shift keying). Supports a number of inexpensive radio transmitters and receivers.

This library allow You to send and receive data"byte" and string easily ,

First Download the library from Here .

after extract the folder, and move it to " Libraries " on the arduino Folder

this is a simple code , it will send character '1' and after 2 sec will send character '0' and so on .

this code for transmitter :

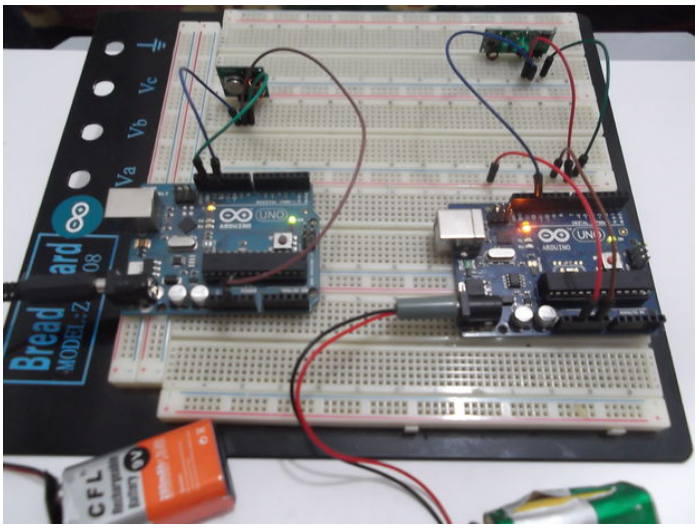
```
//simple Tx on pin D12
//Written By : Mohannad Rawashdeh
// 3:00pm , 13/6/2013
//http://www.genotronex.com/
//.....................................
#include <VirtualWire.h>
char *controller;
void setup() {
pinMode(13,OUTPUT);
vw_set_ptt_inverted(true); //
vw_set_tx_pin(12);
vw_setup(4000);// speed of data transfer Kbps
}

void loop(){
controller="1" ;
vw_send((uint8_t *)controller, strlen(controller));
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13,1);
delay(2000);
controller="0" ;
vw_send((uint8_t *)controller, strlen(controller));
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13,0);
delay(2000);

}
```

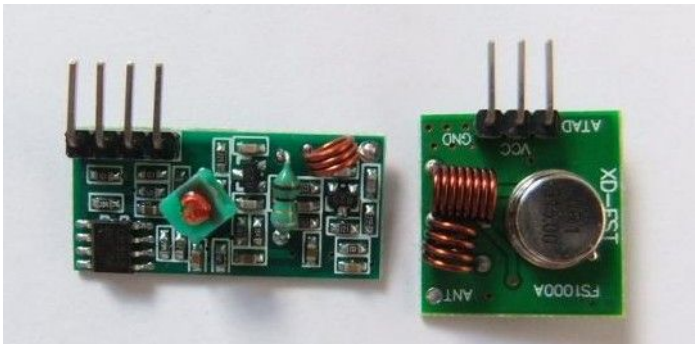
and this is code for receiver :

The D13 LED On the arduino board must be turned ON when received character '1' and Turned Off when received character '0'

```
//simple Tx on pin D12
//Written By : Mohannad Rawashdeh
// 3:00pm , 13/6/2013
//http://www.genotronex.com/
//.....................................
#include <VirtualWire.h>
void setup()
{
```

```
vw_set_ptt_inverted(true); // Required for DR3100
vw_set_rx_pin(12);
vw_setup(4000); // Bits per sec
pinMode(13, OUTPUT);

vw_rx_start(); // Start the receiver PLL running
}
void loop()
{
uint8_t buf[VW_MAX_MESSAGE_LEN];
uint8_t buflen = VW_MAX_MESSAGE_LEN;

if (vw_get_message(buf, &buflen)) // Non-blocking
{
if(buf[0]=='1'){


digitalWrite(13,1);
}
if(buf[0]=='0'){
digitalWrite(13,0);
}

}
}
```





Step 4: One Transmitter, Multi Receiver

You can connect many Receiver and send a Data from One Master Transmitter .

For more secret you may need Encoder-Decoder .

Encoder is a circuit that changes a set of signals into a code .

Decoder is a circuit that changes a code into a set of signals .

if You need an Encoder/Decoder IC , **You can use PT2262 and PT2272**

this is a simple example , for 1 master Transmitter , 2 ReceiverS , and send a command through Serial for a receiver To Turn LED On/Off .

Tx code :

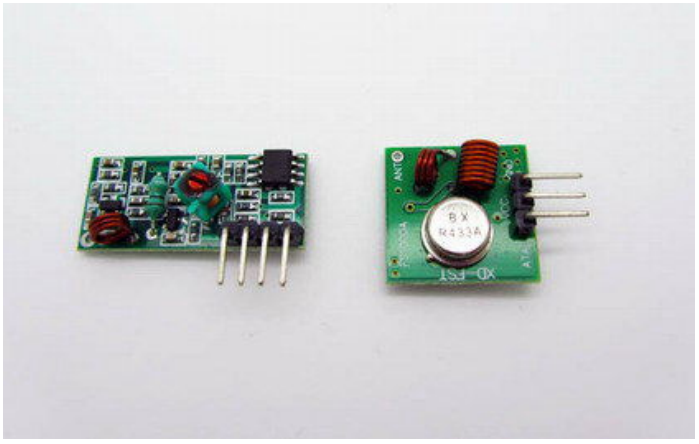
```
//simple Tx on pin D12
//Written By : Mohannad Rawashdeh
// 3:00pm , 13/6/2013
//http://www.genotronex.com/
//.....................................
#include <VirtualWire.h>
char *controller;
void setup() {
pinMode(13,OUTPUT);
vw_set_ptt_inverted(true); //
vw_set_tx_pin(12);
vw_setup(4000);// speed of data transfer Kbps
}

void loop(){
controller="A1" ;
vw_send((uint8_t *)controller, strlen(controller));
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13,1);
delay(1000);
digitalWrite(13,0);
delay(1000);
controller="B1" ;
vw_send((uint8_t *)controller, strlen(controller));
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13,1);
delay(1000);
digitalWrite(13,0);
delay(1000);

}
```

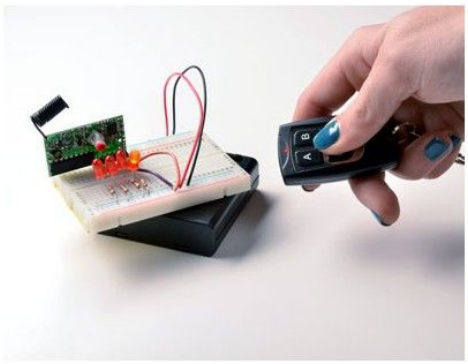
First Rx

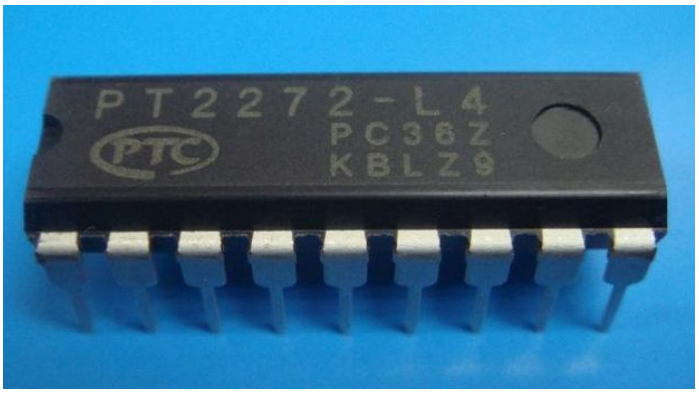
```
//simple Tx on pin D12
//Written By : Mohannad Rawashdeh
// 3:00pm , 13/6/2013
//http://www.genotronex.com/
//.....................................
#include <VirtualWire.h>
void setup()
{
vw_set_ptt_inverted(true); // Required for DR3100
vw_set_rx_pin(12);
vw_setup(4000); // Bits per sec
pinMode(13, OUTPUT);

vw_rx_start(); // Start the receiver PLL running
}
void loop()
{
uint8_t buf[VW_MAX_MESSAGE_LEN];
uint8_t buflen = VW_MAX_MESSAGE_LEN;

if (vw_get_message(buf, &buflen)) // Non-blocking
{
if((buf[0]=='A')&&(buf[1]=='1')){
digitalWrite(13,1);
delay(1000);
}
}
else{
digitalWrite(13,0);
}

}
```

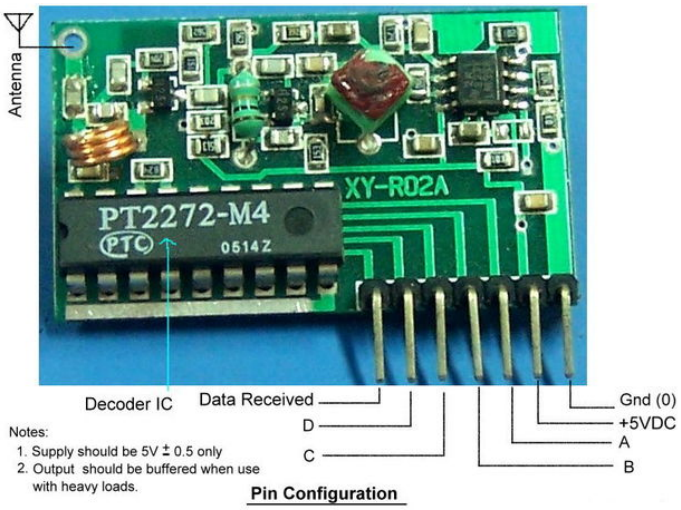
Second Rx

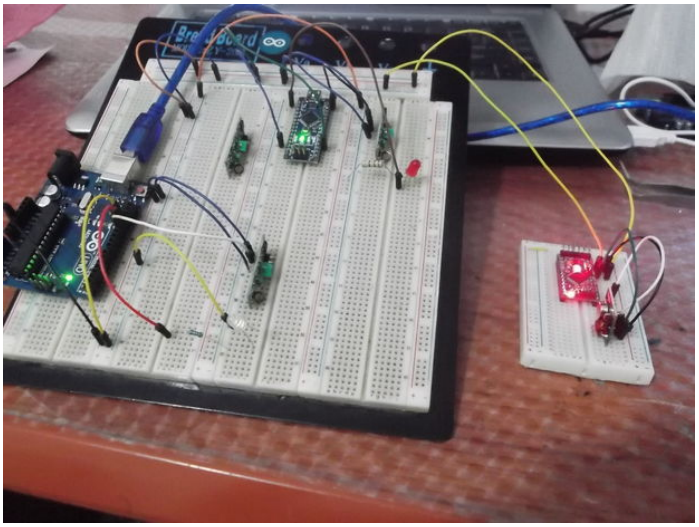
```
//simple Tx on pin D12
//Written By : Mohannad Rawashdeh
// 3:00pm , 13/6/2013
//http://www.genotronex.com/
//.....................................
#include <VirtualWire.h>
void setup()
{
vw_set_ptt_inverted(true); // Required for DR3100
vw_set_rx_pin(12);
vw_setup(4000); // Bits per sec
pinMode(13, OUTPUT);

vw_rx_start(); // Start the receiver PLL running
}
void loop()
{
uint8_t buf[VW_MAX_MESSAGE_LEN];
uint8_t buflen = VW_MAX_MESSAGE_LEN;

if (vw_get_message(buf, &buflen)) // Non-blocking
{
if((buf[0]=='B')&&(buf[1]=='1')){
digitalWrite(13,1);
delay(1000);
}
}
else{
digitalWrite(13,0);
}

}
```

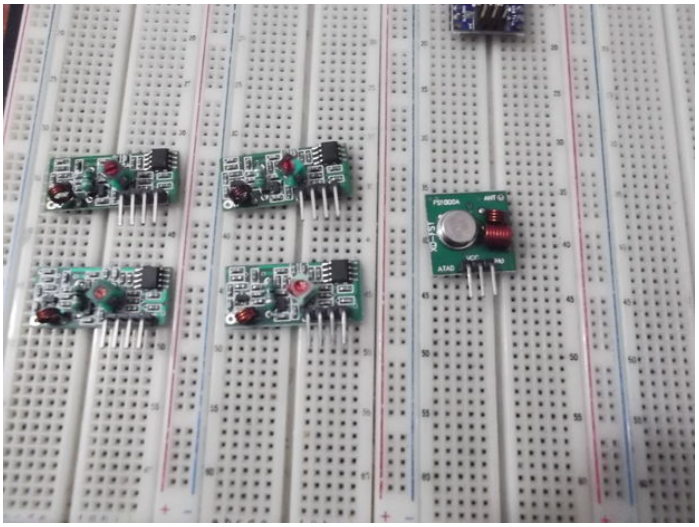












Step 5: Virtual Wire ..... inside

VirtualWire is an Arduino library that provides features to send short messages, without addressing, retransmit or acknowledgment, a bit like UDP over wireless, using ASK (amplitude shift keying). Supports a number of inexpensive radio transmitters and receivers.

Messages are sent with a training preamble, message length and checksum. Messages are sent with 4-to-6 bit encoding for good DC balance, and a CRC checksum for message integrity.

Can we use Serial communication with ? answer is No

ASK receivers require a burst of training pulses to synchronize the transmitter and receiver, and also requires good balance between 0s and 1s in the message stream in order to maintain the DC balance of the message, UARTs do not provide these. They work a bit with ASK wireless, but not as well as this code.

The full function for this library :

To use the VirtualWire library, you must have

#include <VirtualWire.h>

To select the Transmitter Data Pin , void :

vw_set_tx_pin

To select the Receiver Data Pin , void :

vw_set_rx_pin

Setup the speed of transmission , The speed of Tx must be as same as On Rx .

the speed will be a Number of Bit Per Second between 0-9600 , for short distance you can use fast speed , For long distance "Up to 90m" you must use lower transmission speed as much as possible .

vw_setup(uint16_t speed);

Start the receiver PLL running ,You must do this before you can receive any messages,Call

vw_rx_start();

You must do this before you can receive any messages. When a messageis available (good checksum or not), vw_have_message() will return true.

vw_rx_stop();

Block and wait until the transmitter is idle,called :

vw_wait_tx();

Block and wait until a message is available from the receiver, call :

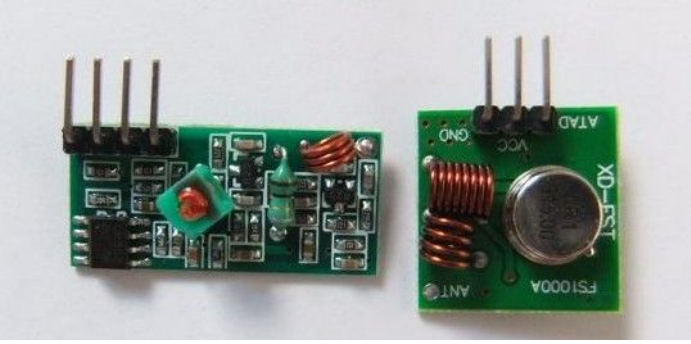
vw_wait_rx();

Send a message with the given length, call :

vw_send(uint8_t* buf, uint8_t len);

Returns true if an unread message is available from the receiver.,call :

vw_have_message();



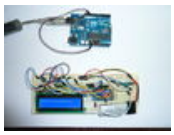
Related Instructables

Modulos RF433 Mhz con Arduino by Daniel ArturoF

Wireless indoor & outdoor thermometer by MisloElectronics

Wireless PIR Sensor Alarm by MisloElectronics

Make your Arduino project wireless in minutes, with the Wireless Inventors Shield (video) by opensourcerf



Wireless communication Arduino RF by Eagle199393

Arduino Wireless SD Shield Tutorial by randofo

Comments

50 comments **Add Comment** **view all 110 comments**

kalium.pt says: Dec 23, 2014. 8:51 AM **REPLY**

Hi! Can I use the transmitter module with a VCC of 12 V and connect the data directly to the arduino D12?

moon_toon101 says: Dec 30, 2014. 11:49 AM **REPLY**

Kalium can you help me in a project? Will pay for you...

spudziuvelis says: Dec 18, 2014. 6:58 AM **REPLY**

Arduino: 1.5.7 (Windows 8), Board: "Arduino Mega or Mega 2560, ATmega2560 (Mega 2560)"

In file included from transmitter.pde:6:0:
C:\Program Files (x86)\Arduino\libraries\VirtualWire/VirtualWire.h:14:20: fatal error: wiring.h: No such file or directory
#include
^
compilation terminated.

This report would have more information with
"Show verbose output during compilation"
enabled in File > Preferences.

i was trying to compile trasmitter example aaaaand this error appeared

kalium.pt says: Dec 23, 2014. 4:36 AM **REPLY**

You must install the VirtualWire library before compile the code, you can download it from the article where it says: "**First Download the library from Here .** ". Afterwards, uncompress it to your arduino library folder which is in this case: "C:\Program Files (x86)\Arduino\libraries\"
After doing this, close all arduino compiler interfaces and you should see a new set of examples. The code is now able to run. Good luck ;)

.

spudziuvelis says: Dec 23, 2014. 5:57 AM **REPLY**

I installed the library but it doesn't matter now cause i fixed it myself by downgrading from 1.5.6. Ide to 1.0.6.ide and it worked

gabrielaugustin84 says: Oct 28, 2014. 3:17 PM **REPLY**

hi there!!!!!

how do i add multiple switch to transmitter and the receiver is connected to a simple numeric display where it will show which switch is switched in order?

robobot3112 says: Dec 11, 2014. 7:57 AM **REPLY**

```
//code for the tx
#include <VirtualWire.h>

//Assigning controller buttons to Digital Pins

int s5 = 8;
int s4 = 9;
int s3 = 10;
int s2 = 11;
int s1 = 12;
int remotePins[]= {8,9,10,11,12};//array to store pin nos

void setup()
{
Serial.begin(9600); // Debugging only
Serial.println("setup");
// Initialise the IO and ISR
vw_setup(2000); // Bits per sec
vw_set_tx_pin(3); //Transmitter Data Pin to Digital Pin 3


for(int i = 0; i<6 ; i++)
{
pinMode(remotePins[i], INPUT);
digitalWrite(remotePins[i],HIGH);
}
/*
This is what the loop above does :-
pinMode(8, INPUT);
pinMode(9, INPUT);
pinMode(10, INPUT);
pinMode(11, INPUT);
pinMode(12, INPUT);

digitalWrite(8, HIGH);
digitalWrite(9, HIGH);
digitalWrite(10, HIGH);
digitalWrite(11, HIGH);
digitalWrite(12, HIGH);*/
pinMode(groundpin, OUTPUT);
pinMode (powerpin,OUTPUT);
digitalWrite(powerpin, HIGH);
digitalWrite ( groundpin , LOW);
}//close setup

void loop()
{
char *msg2;



if (digitalRead(s1)HIGH);
{
char *msg2 = "1";//send 1 to the receiver
digitalWrite(13, true); // Flash a light to show transmitting
vw_send((uint8_t *)msg2, strlen(msg2));//send the byte to the receiver
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13, false);
}

if (digitalRead(s2)HIGH);
```

```
{
char *msg2 = "2";//send 1 to the receiver
digitalWrite(13, true); // Flash a light to show transmitting
vw_send((uint8_t *)msg2, strlen(msg2));//send the byte to the receiver
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13, false);
}

if (digitalRead(s3)HIGH);{
{
char *msg2 = "3";//send 1 to the receiver
digitalWrite(13, true); // Flash a light to show transmitting
vw_send((uint8_t *)msg2, strlen(msg2));//send the byte to the receiver
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13, false);
}

if (digitalRead(s4) HIGH);{
{
char *msg2 = "4";//send 1 to the receiver
digitalWrite(13, true); // Flash a light to show transmitting
vw_send((uint8_t *)msg2, strlen(msg2));//send the byte to the receiver
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13, false);
}

}
}}
}
}
```

gocreeps1433 says: Oct 26, 2014. 5:49 AM **REPLY**

ERROR help!

transmitter.pde: In function 'void setup()':
transmitter:19: error: 'vw_set_ptt_inverted' was not declared in this scope
transmitter:20: error: 'vw_setup' was not declared in this scope
transmitter.pde: In function 'void loop()':
transmitter:28: error: 'vw_send' was not declared in this scope
transmitter:29: error: 'vw_wait_tx' was not declared in this scope

robobot3112 says: Nov 26, 2014. 5:55 AM **REPLY**

library would be in wrong place. I had the same problem, I deleted the library downloaded it once more and it worked.

gocreeps1433 says: Dec 10, 2014. 6:27 PM **REPLY**

Thanks man. It Worked! Sir can i Have your email? i would like to asked some questions regarding programming wireless communicaiton. I hope it's okay, thanks.

robobot3112 says: Dec 11, 2014. 7:46 AM **REPLY**

you could send a private message on instructables itself.

Arnod says: Nov 8, 2014. 3:03 AM **REPLY**

Don't know if it helps. But i replaced <WProgram.h> with <Arduino.h> in virtualWire.cpp

raininmyhead says: Jun 11, 2014. 12:48 PM **REPLY**

it's possible create a 433 mhz jammers? i try but it's very difficoult!

weish says: Dec 3, 2014. 1:30 AM **REPLY**

why would you want to jam 70cm band? it's main use is for radio navigation and position finding, jamming that would be potentially a felony, and could put others in danger. jammers in general are also not legal, since by definition they create harmful interference preventing use of the band by legitimate users.

liptaka says: Nov 30, 2014. 2:37 PM **REPLY**

Very useful stuff, thanks! Is it possible that the transnitter module could communicate to more than 1 pcs receiver?

My use case would be: with 1 arduino I would like to control more (e.g. 4 pcs) relays (4 x 1 channel wireless received relay module, like this:

http://www.ebay.com/itm/NEW-DC12V-1-CH-RF-Wireless-Receiver-Relay-Module-Switch-315-433MHz-Learning-Code-/121412715478?pt=LH_DefaultDomain_0&var=&hash=item1c44c303d6

).

I assume that the arduino will send the data with different coding so only the relevant relay will get it.

Is that possible?

liptaka

Eko988 says: Nov 11, 2014. 12:07 PM **REPLY**

Hi!

What is the working distance of these modules?
I tried this sketch but the Rx is blinking only when the distance of the Tx and Rx is less than 2 centimeters :/

---

robobot3112 says: Nov 26, 2014. 5:52 AM **REPLY**

At the best 50-100m. Maybe you are facing some problem with the antennae.

---

robobot3112 says: Nov 26, 2014. 5:52 AM **REPLY**

At the best 50-100m. Maybe you are facing some problem with the antennae.

---

letrovin says: Nov 19, 2014. 2:13 AM **REPLY**

You need an antenna e.g. a simple wire of specific length, there is a solder point for an antenna on the module. The recommended length is usually (lambda/4=)17cm, but I had better ranges with longer wire (27cm straight wire). With this antenna I got through 2 concrete walls and a distance of 20m. Now I wonder what the best antenna length would be.

R-A says: May 28, 2014. 12:46 AM **REPLY**

Can this be used to transmit data? i.e. let's say I have an Arduino with some sensors in a remote location, say 100m away, and I want to know what the sensor values are from another arduino, can I use this kind of setup?

---

raininmyhead says: Jun 11, 2014. 12:49 PM **REPLY**

yes, good signal 70m

---

letrovin says: Nov 19, 2014. 2:14 AM **REPLY**

Which antenna do you use?

---

robobot3112 says: Nov 26, 2014. 5:50 AM **REPLY**

you could make your own antenna. Take a 30 cm long wire and coil it up.

MarkK3 says: Nov 24, 2014. 2:38 PM **REPLY**

First VirtualWire tutorial that led me to success, thank you my friend!

---

warej says: Nov 21, 2014. 3:06 PM **REPLY**

Hi there! Could someone tell me one simple thing? Mohannad wrote that it should be connected to D12 (SPI) port, but in the code I can see that Rx port number is set by:

vw_set_rx_pin(12);
So can I connect it to a different port?
In general I'd like to have two sensors in two different locations and collect their data in one arduino i.e. have 2 receivers connected to one arduino. Is it possible?
Thanks for any help :)

Franscois says: Nov 19, 2014. 10:38 AM **REPLY**

Hi there,

Hope there is someone on here who might be able to give some advice please. I want to build a tiny temp sender/receiver unit. All it need to do, is to read a temperature from about -5 °C to ± 95 °C, and send that reading via a analog or digital transmitter to a receiver. The distance is not very important and should only be able to send it about 10 meters. The main focus will be on 'tiny' and 'low' power consumption, and with a low voltage use. I'm not up to date with all the latest devices out there and will really appreciate it if someone can tell me which parts I can link up to get the result. Thanks in advance !!!

---

edgar sanchez says: Nov 6, 2014. 8:05 AM **REPLY**

hola buen dia, podian ayudarme,}

tengo arduino uno, el cual tengo que conectarle una pantalla LCD 16x2, al igual que un modulo bluetooth, y enviar la informacion por via bluetooth a 20mtros. el msj que se envia y se visualiza en ambas pantallas es el que entra al arduino, de un enoder´s. que tiene 4 canales de salidas, en forma QAM. los cuales 2 son ascendente y 2 descendente. espeo su ayuda con la programacion. porfavor

javierbrath says: Nov 12, 2014. 8:23 AM **REPLY**

pudes ampliarme la informacion a mi correo jadasupport@ gmail.com

edgar sanchez says: Nov 4, 2014. 9:25 AM **REPLY**

hola, queria saber que programa estan usando para correr el programa del transmisor y receptor. me podian ayudar porfavor

edgar sanchez says: Nov 4, 2014. 9:25 AM **REPLY**

hola, queria saber que programa estan usando para correr el programa del transmisor y receptor. me podian ayudar porfavor

edgar sanchez says: Nov 4, 2014. 9:25 AM **REPLY**

hola, queria saber que programa estan usando para correr el programa del transmisor y receptor. me podian ayudar porfavor

edgar sanchez says: Nov 4, 2014. 9:00 AM **REPLY**

hola, queria saber que programa estan usando para correr el programa del transmisor y receptor. me podian ayudar porfavor

smalik007 says: Oct 25, 2014. 12:54 AM **REPLY**

Bigdee12 says: Oct 23, 2014. 5:33 PM **REPLY**

hi, can anyone help me please. I'm a doing a wireless weather station project. I have two sensors connected to my arduino micro-controller. sensor dht11 connected to A0 and the bmp085 sensor connected to A4 and A5. the codes i have for my sensors i can see the humidity, temperature and pressure via the serial port.

on the Rx side my Rx module is connected on the arduino on pin 12 Tx module connected to pin 11.

But i can not get it to to wirelessly transmit between my 433Mhz Tx and the Rx. Anyone with a code to make this work. when i combile **Mohannad Rawashdeh's Transmitter and receiver codes i get no errors with the combiler, but i can not get anything on my receiver (LCD).** Thank you in advance. i want temperature, humidity and pressure displayed on my LCD.

TaitS1 says: Oct 16, 2014. 12:12 PM **REPLY**

Mohannad, This is a really helpful instructable. It would be even more helpful if it was de-jargonized. Could you please explain the acronyms before you start using them, and any other code-language that would not be immediately transparent to beginners? It would turn a good instructable into a great one.

deji says: Jun 21, 2014. 1:04 PM **REPLY**

Hi , can you help me please, when i compile the program for Transmitter I get "vw_set_ptt_inverted" was not declared in this scope. What I am doing wrong .Thanks

ssswww1234 says: Sep 23, 2014. 7:08 PM **REPLY**

make sure that there is only one virtualwire library in arduino folder.set the baud rate in above pgm to make it run

zcui says: Jun 22, 2014. 2:00 PM **REPLY**

try this downlaod it worked for me and try to import it in zip form http://www.pjrc.com/teensy/td_libs_VirtualWire.html

gianmarco.visentin.9 says: Aug 12, 2014. 1:49 PM **REPLY**

how to replace whit new library?

deji says: Jun 22, 2014. 2:08 PM **REPLY**

It works , thanks is very usefull

TimoP1 says: Sep 22, 2014. 1:13 PM **REPLY**

Thanks for a nice instructible! Hooked up the transmitter and receiver with two Arduinos and got them working.

The VirtualWire library did throw some errors first with the Arduino 1.0.5 software version, but they were easily fixed as follows:

1) in the VirtualWire.cpp file, replace the line **#include <wiring.h>** with **#include <Wire.h>**

2) in the VirtualWire.h file, replace **#include "WProgram.h"** with **#include "Arduino.h"**

For the transmitter and receiver codes, added the line **#include <Wire.h>** before the line **#include <VirtualWire.h>**.

In case anybody is interested, note that it is also possible to transmit data and ascii text with this setup. Below is my code for doing that.

To transfer text, open up the Serial Monitor, type text to the input box and press enter. The text is output to the Serial Monitor on the receiving Arduino.

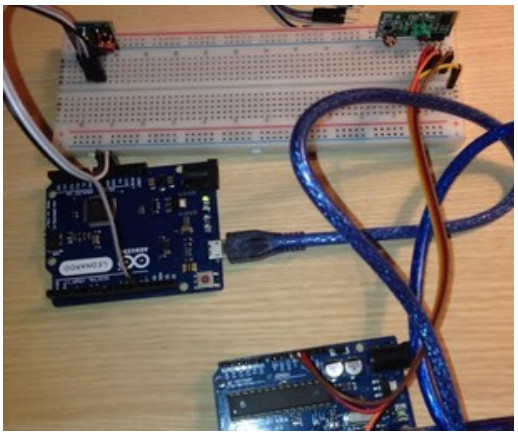
TRANSMITTER CODE:

```
//simple Tx on pin D12
//Written By : Mohannad Rawashdeh
// 3:00pm , 13/6/2013
//http://www.genotronex.com/
//.....................................
// added serial data transmission
// 22.9.2014/Timo.Peltonen [at] iki.fi
#include <Wire.h>
#include <VirtualWire.h>
#include <Serial.h>
char *controller;
void setup() {
pinMode(13,OUTPUT);
vw_set_ptt_inverted(true); //
vw_set_tx_pin(12);
vw_setup(4000);// speed of data transfer bps
Serial.begin(9600); // Serial Monitor used to enter data
Serial.println("Ready to transmit. Write data here.");
}
void loop(){
if (Serial.available() > 0) { // read data from PC Serial Monitor
controller = ""; // delete any old data
controller[0] = (uint8_t)Serial.read(); // read the incoming byte
controller[1] = '\0'; // terminate string with a null character
Serial.print(controller[0]); // output character on Serial Monitor
if(controller[0]==13)
Serial.println(""); // write a newline for enter
digitalWrite(13,1); // turn led on
vw_send((uint8_t *)controller, strlen(controller)); // send string over radio link
vw_wait_tx(); // Wait until the whole message is gone
digitalWrite(13,0); // turn led off
delay(100); // wait a little while before the next character
}
}
```

RECEIVER CODE:

```
//simple Rx on pin D12
```

```
//Written By : Mohannad Rawashdeh
// 3:00pm , 13/6/2013
//http://www.genotronex.com/
//.....................................
// added serial data reception
// 22.9.2014/Timo.Peltonen [at] iki.fi
// NOTE: the receiver needs a better antenna; solder a wire to the receiver ANT connector!
#include <Wire.h>
#include <VirtualWire.h>
#include <Serial.h>
void setup()
{
vw_set_ptt_inverted(true); // Required for DR3100
vw_set_rx_pin(12);
vw_setup(4000); // Bits per sec
pinMode(13, OUTPUT);
Serial.begin(9600); // open Serial Monitor to PC
vw_rx_start(); // Start the receiver PLL running
Serial.println("Receiving...");
}
void loop()
{
uint8_t buf[VW_MAX_MESSAGE_LEN];
uint8_t buflen = VW_MAX_MESSAGE_LEN;
if (vw_get_message(buf, &buflen)) // Non-blocking
{
digitalWrite(13,1); // turn on led
if(buflen == 1) { // if just one character per time
if(buf[0]==13)
Serial.println(""); // newline
else
Serial.print(char(buf[0]));
}
else
for(int n=0;n<buflen;n++) {
if(buf[n]==13)
Serial.println(""); // newline
else
Serial.print(char(buf[n]));
Serial.println(""); // insert newline at end of buffer
}
digitalWrite(13,0); // turn off led
}
}
```



Indergod says: Sep 11, 2014. 6:25 AM **REPLY**

Hi,

In your multi-receiver example, the transmitter is defining the controller code "A1" or "B1" in the sketch before sending it via:

vw_send((uint8_t *)controller, strlen(controller));

is it possible to define the controller code from a client.read instead?

I'm getting error messages as my client.read if of type "char", whereas the above send is looking for it to be of type "char const*" ???

Any help appreciated :-)

zhaymoor says: Sep 2, 2014. 3:51 AM **REPLY**

thank you muhannad but I want to ask you about the "**uint8_t*" ,, what does it mean?**

Hassanul_ says: Sep 9, 2014. 7:08 AM **REPLY**

uint8_t is the same as a byte.

its shorthand for: a type of unsigned integer of length 8 bits

MattB4 says: Sep 10, 2014. 12:52 AM **REPLY**

And the * means "pointer to", so "uint8_t*" is a pointer to an 8 bit value, it is not an 8 bit value itself.

If you had uint8_t* pValue and you tried to print the value of pValue you would get a 32 or 64 bit number, which would be the memory address of the value pValue is pointing to. If you want the value of what pValue is pointing to you have to dereference it by doing *pValue.

Kutluhan says: Sep 2, 2014. 9:28 AM **REPLY**

That is not so helpful for me because i need to wire transmitter to my arduino. But i need to wire receiver to a led circuit (or something other, like a dc motor..) without an arduino can anybody give me a solution. So thank you for anything :)

Aybert59 says: Sep 2, 2014. 5:49 AM **REPLY**

another example using same devices, rc-switch Library and a Gertboard http://ardpilot.wordpress.com

nudijudi says: Aug 26, 2014. 12:08 AM **REPLY**

the library has an error it says that there is no such library as <wiring.h>

please reply with awnser

chidu manu says: Aug 25, 2014. 7:02 AM **REPLY**

Is it possible to use two pair of RF module, for 2 Arduino to communicate with each other..

can some one guide me with the code...

TuesdayLaughter says: Aug 25, 2014. 1:19 AM **REPLY**

is this 433MHz works if our Arduino for Transmitter is ATMEGA2560 and for Reciever is Nano?

we've tried it but it's not working.. just the coding maybe?

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