

Core Electronics User Guide

JY-MCU Bluetooth to UART Wireless Serial Port Module for Arduino

SKU: 010-JYMCUBLUETOOTH



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1. Introduction

This is a Bluetooth Wireless module that provides a simple interface for connecting to Arduino®, Firewing and other microcontroller applications.

The module provides a method to connect wirelessly with a PC or Bluetooth phone to transmit/receive embedded data such as GPS data, ADC voltage reading and other parameters.



2. Technical Specification

- JY-MCU Bluetooth Wireless Serial Port Module with free extension cable designed for easy use with Arduino® boards and Firewing® boards
- Supply voltage can be between 3.6 to 6V DC. IOs are 5V tolerant.
- Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps
- Bluetooth SPP (Serial Port Protocol)
- Easy to connect this module with any standard Bluetooth device, just search and key "1234" passcode.
- Baud rate: 38400 bps.
- Module requires no setup.
- Dimensions: 1.73 in x 0.63 in x 0.28 in (4.4 cm x 1.6 cm x 0.7 cm)

3. Application Circuit

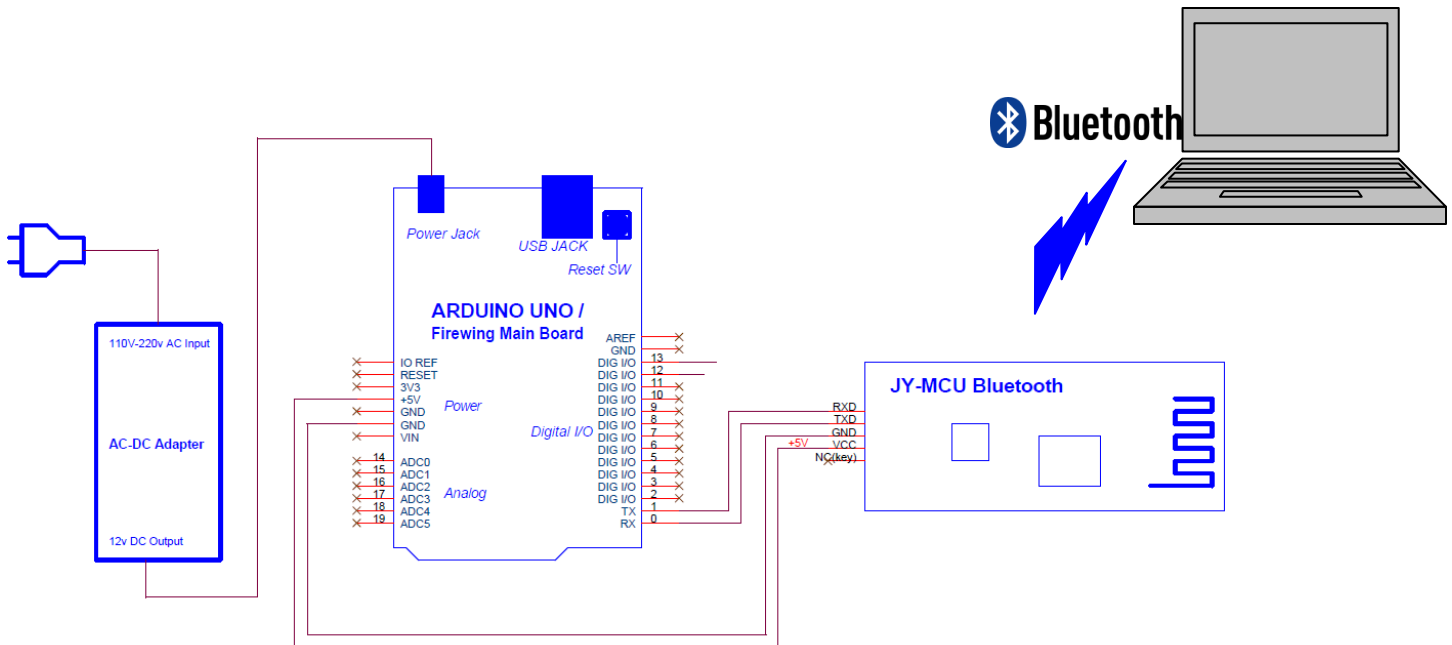
JY-MCU Bluetooth Module Pinouts	
Pin No.	Signal Description
1	Key (No pin)
2	VCC +3.6v to +6v DC
3	GND- Ground Connection
4	TXD -Tx from module
5	RXD- Rx for the module

Pinouts of the module are given in the above table.

Only 4 connections have to be made to the Arduino® or Firewing® boards.

The application circuit is shown below in Figure 3.1. This application drives a onboard LED connected to pin8, which starts blinking on the command given by the paired Bluetooth Laptop-pc or Phone.

If PC without Bluetooth wireless, an USB Bluetooth module can be used with PC.



This application is given above for use with Arduino® Uno Board. The same circuit can be used for Firewing® board also since both the boards have the same pin out.

Before connecting it to your Arduino® / Firewing® board

Since programming port and JY-MCU-Bluetooth module share the same TX and RX pin on the Arduino®/Firewing® hardware, compile and load the program first and afterwards connect the Bluetooth Module.

4. Getting Started

Getting Started With Arduino® Uno Board

This section explains how to connect your Arduino® board to the computer and upload your first sketch. Link is provided for detailed procedure of the Arduino® website as below.

- [1 Get an Arduino® board and USB cable](#)
- [2 Download the Arduino® environment](#)
- [3 Connect the Board as shown in the Application circuit](#)
- [4 Install the drivers](#)
- [5 Launch the Arduino® application](#)
- [6 Open the code example](#) (which is shown below)
- [7 Select your board](#)
- [8 Select your serial port](#)
- [9 Upload the program](#)

Getting Started with Firewing® Board

Firewing® is a modular hardware and software development system based around a powerful Microchip 16 bit microcontroller. With 128KB of ROM (program storage) and 8KB of working RAM, you will be able to realise many great projects using the free Firewing® compiler.

- Learning the Firewing® language is very easy, just [download the free compiler](#) and take a look at [some sample code](#) given in the sample code section of this manual
- The language reference guide can be found [here](#) and don't forget to take a look at some of the [built in libraries](#).
- If you have a Firewing® [main board](#) then here is some information on installing the [USB drivers](#). You will need to do this in order to program and communicate with your main board.

Pairing your Bluetooth module with your Computer/Laptop

- Turn on you laptop Bluetooth Wireless or plug the Bluetooth USB module into your desktop PC.
- Task bar will show the connected status of the blue tooth device.
- Add Device by right click on the Bluetooth task bar icon.
- You will find a device named “LInvor”. Choose this and complete the installation until your board blue tooth module is paired with computer Bluetooth.
- Use the pass code or pin is 1234 for this connection if prompted.

Testing of sample code.

- After successful pairing of the Bluetooth devices, find the Laptop or PC com port number to which the device is connected.
- Double Click on Bluetooth Taskbar and then right click on “LInvor” device.
- Select the properties and goto hardware tab. The com port number is mentioned here. Note-down the com port number. For Example it may show COMM9.
- Goto the Arduino program, click on "Tools" and then choose the serial port number which was noted down earlier.
- Click on the upper right hand corner to open the "Serial Monitor" and select the baudrate as 38400.
- Enter 'B' in the text box and press Send Button.
- This will switch on the LED on-board.
- Enter any other character, will switch off the LED.

5. Example Code

Code Example for Arduino®

```
/*
JY-MCU Bluetooth Wireless Serial Port module for Arduino®

ON and OFF Control of a LED thru Bluetooth .
The code example will switch ON or OFF on board LED by sending command 'B'
or any other character thru the Bluetooth paired PC or Laptop.
```

The pins used are designed are for JY-MCU Bluetooth Wireless Serial Port module with Arduino® Uno Board available from:

<https://core-electronics.com.au/store/index.php/wireless/bluetooth/jy-mcu-arduino-bluetooth-wireless-serial-port-module.html>

```
This example code is in the public domain.
*/
// Declaration of constants and variable to used by program

char recd_dat; // variable for receiving data from bluetooth serial port
int on_brd_led = 8; // On-board LED pin detail

void setup()
{
  // initialize the serial communications:
  // serial communication is used to receive the data from
  // Bluetooth module
  Serial.begin(9600);

  // Onboard LED pin as output
  pinMode(on_brd_led, OUTPUT);

  // The initial state of led is defined here.
  // HIGH on PIN will switch on the LED
  // LOW on PIN will switch off the LED
  digitalWrite(on_brd_led, LOW);
}

void loop()
{
  if( Serial.available() ) // if serial data is available to read
  {
    recd_dat = Serial.read(); //read data & store it in 'recd_dat'
  }
  if(recd_dat == 'B' ) // if 'B' was received
  {
```

```

    digitalWrite(on_brd_led, HIGH); // turn ON LED
}
else
{
    digitalWrite(on_brd_led, LOW); // otherwise switch OFF
}
delay(150); // Just wait 150ms for next reading
}

```

Code Example for Firewing®

This code will operate the onboard LED ON for sending 'B' from bluetooth PC/Laptop. Sending any other character will switch off the LED:

'program entry point...'

Sub Main()

'Initialize Variables for receiving blue tooth data ...'

Dim recd_dat As byte

Dim on_board_led As 8

'Initialize LED state as OFF ...'

Low(on_board_led)

'Initialize UART port and start buffering ...'

UART.SetBaudrate(UART.Baudrate.Is38400) ' set baudrate
RX.Start()

'loop for ever ...'

While True

If RX.DataAvailable() Then ' if data is available

recd_dat = RX.ReadByte() ' read the data into recd dat

End If

'Switch ON LED ...'

If DataIn = "B" Then

High(on_board_led) ' switch on led if data is B.

Else

Low(on_board_led) ' switch off led for any other received data

End If

DelayMS(150)

End While

End Sub

6. Reader's Feedback

Have a suggestion or discovered an error? Let us know and we will fix it! Please contact us via manuals@core-electronics.com.au and mention the product SKU and your feedback in the message.

7. Disclaimer

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“Firewing” is a registered trademark of Mecanique