

Core Electronics User Guide

**JY-MCU Bluetooth to UART Wireless Serial Port
Module for Arduino**
SKU: 010-JYMCUBLUETOOTH



Table of Contents

1.	Introduction.....	3
2.	Technical Specification.....	3
3.	Application Circuit.....	3
4.	Getting Started	4
	Getting Started With Arduino® Uno Board	4
	Getting Started with Firewing® Board	5
	Pairing your Bluetooth module with your computer/Laptop	5
	Testing of sample code.	5
5.	Example Code.....	6
	Code Example for Arduino	6
	Code Example for Firewing	7
6.	Reader's Feedback	8
7.	Disclaimer.....	8
8.	Use of Trademarks.....	8

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

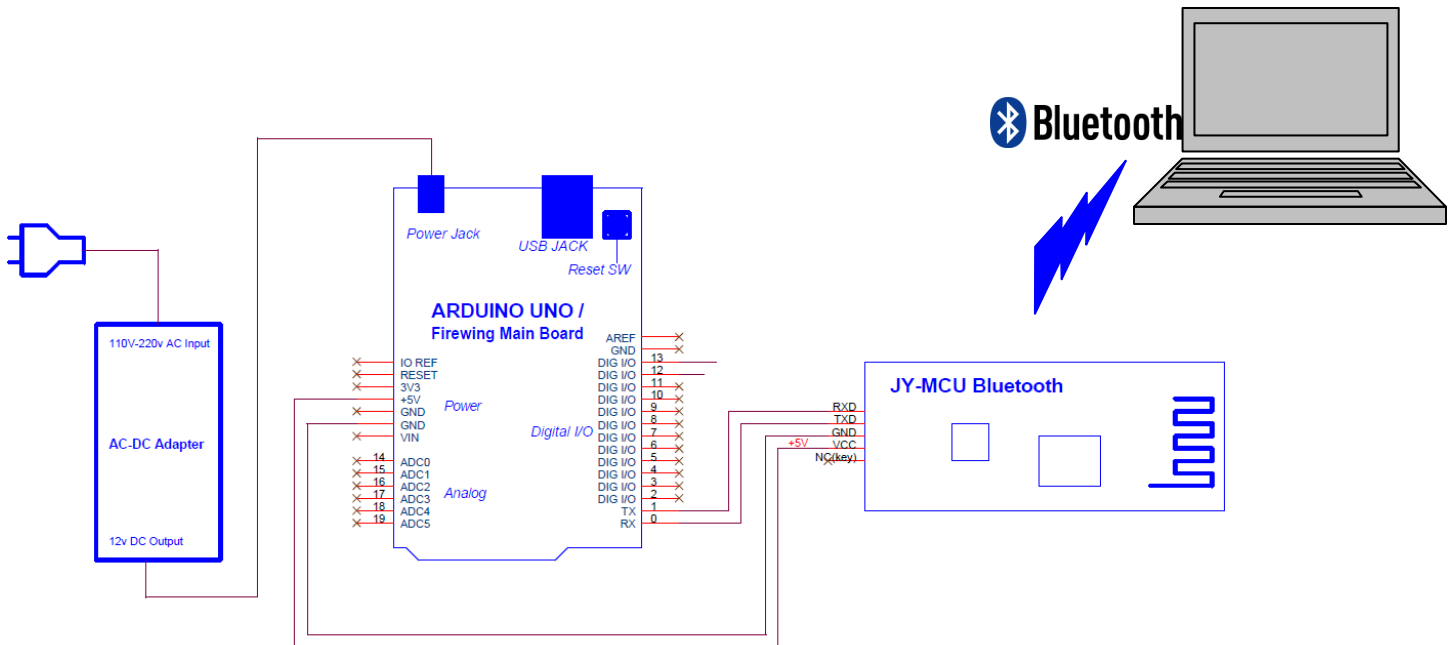
JY-MCU Bluetooth Module Pinouts	
Pin No.	Signal Description
1	Key (No pin)
2	VCC +3.6v to +6v DC
3	GND- Ground Connection
4	TXD -Tx from module
5	RXD- Rx for the module

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

Although care has been taken to ensure the accuracy, completeness and reliability of the information provided, Core Electronics assumes no responsibility therefore. The user of the information agrees that the information is subject to change without notice. Core Electronics assumes no responsibility for the consequences of use of such information, nor for any infringement of third party intellectual property rights which may result from its use. IN NO EVENT SHALL CORE ELECTRONICS BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR INCIDENTAL DAMAGE RESULTING FROM, ARISING OUT OF OR IN CONNECTION WITH THE USE OF THE INFORMATION.

Copyright © Core Electronics
Core Electronics: www.core-electronics.com.au
Email contact: sales@core-electronics.com.au

8. Use of Trademarks

This Product User Guide is an independent publication and is not affiliated with, nor has it been authorized, sponsored, or otherwise approved by the owners of the below trademarks. The use of products associated to the below trademarks has been for demonstration purposes to assist with the promotion of sale.

“Arduino” is a registered trademark of MAGY Now Limited (the Arduino team)

“Firewing” is a registered trademark of Mecanique