



Frequently Asked Questions

Blueberry 868MHz Transmitter Receiver (Rapid code 75-0603)

Q. What type is the onboard microprocessor?

A. It is an ATMEGA328P, which is functionally identical to that used by Arduino.

Q. Is it supplied with a programme already installed?

A. Yes. it has a demo programme loaded which transmits temperature and humidity readings.

Q. Can I change that programme?

A. Yes. You will need an Atmel ISP programmer (available as Rapid code **73-0231**). If you want to use a FTDI programming cable (**70-4579**) you will first have to load a bootloader programme onto the ATMEGA328P using an ISP programmer as above.

Q. Are there any example programmes available?

A. Yes. You will find a number of programmes written specifically for the Blueberry radio TXRX unit, available at www.rapidonline.com

Q. Can I add a display to this unit?

A. Yes. In fact you can do with this board just about anything you can do with an Arduino. This has a built-in temperature and humidity sensor so is ideal for home automaton projects

Q. How can I see what is being transmitted?

A. You can either connect an FTDI cable and monitor the onboard serial port (57600 baud) to view what is being transmitted, or you can purchase another radio TXRX unit and load the RF12 demo programme onto the second unit and view received data via the FTDI port.

Q. Are there any other GPIO pins available?

A. Yes. There are 4 other pins available. See datasheet for details.

Q. From what voltages can I run this board?

A. You can use any voltage from 4 to 12V DC, either from a power supply or battery.

Q. How long should batteries last on the transmitter?

A. If you change the programme to transmit less frequently, for example every 10 minutes rather than every few seconds, and put the ATMEGA328P and the RF12 unit to sleep after each transmission, a single PP3 battery should last for at least one year.

Q. Can I use standard Arduino sketches on this board?

A. Yes. Just programme it as a UNO board and most sketches will function without modification.

Q. Can I use this radio transmitter board with the Blueberry IoT controller board (**75-0600**)?

A. Yes. There is a logic level converter on the controller board which powers the radio and uses its I2C bus for communication.

Q. Are there suitable I2C cables available?

A. Yes. You need look no further than the plug and play cable available as **75-0605**.

Q. Will the transmitter work on any other frequencies?

A. Yes. It can be programmed to work on 433MHz and 928MHz. On each frequency it is capable of 255 channels with 30 node IDs on each channel.

Q. What other parameters can I set for the radio transmitter?

A. Below are some of the available commands. To use them type the n value into the RF12 demo programme when viewed from the serial monitor, then the command letter, then ENTER.

<nn>i = Set node ID (standard node IDs are 1...30)

<n>b = Set MHz band (4 = 433, 8 = 868, 9 = 915).

The native frequency is 868 so performance may suffer slightly if other frequencies are used.

<nnnn>o = Change frequency within band (default is 1600).

<nnn>g = Set network group. (RFM12 only allows 212; 0 = any).

t = Broadcast max size test packet, request ack.

...,<nn>a = Send data packet to node <nn>, request ack.

...,<nn>s = Send data packet to node <nn>, no ack.

<n>q = Set quiet mode (1 = do not report bad packets).

<n>x = Set reporting format (0 = decimal, 2 = decimal + ASCII, 1 = hex, 3 = hex + ASCII).

To view demo transmissions use "3x" "ENTER" to show ASCII characters.

123z = Total power down. Will need reset to start up again.

Current configuration shown when RF12 demo programme is run on the board:

A i1* g0 @ 868 MHz q1 c1 x2