

Usage of LoRa Radio Shield 433MHz /868MHz

The LoRa Shield allows the user to send data and reach extremely long ranges at low data-rates. It provides ultra-long range spread spectrum communication and high interference immunity whilst minimising current consumption.



Pins usage on Arduino

- D2 RFM95_INT
- D9 RFM9x_RS
- D10 RFM9x_CS
- D11 RFM9x MOSI
- D12 RFM9x MISO
- D13 RFM9x SCK

Arduino Library

Download the demo code form our website: 433MHz:

http://www.makerfabs.com/fabs/index.php?route=product/product&path=90&product_id=130 868MHz:

http://www.makerfabs.com/fabs/index.php?route=product/product&path=90&product_id=131 Place the **RadioHead** library folder your **arduino sketch folder/libraries**/ folder.

Hardware connection:



www.makerfabs.co

With this test, you need two Aruduino main boards. Just plug it to you Arduino or maduino. And upload the code, it will work ok.



Basic RX & TX example

Let's get a basic demo going, where one Arduino transmits and the other receives.

Transmitter example code



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Once uploaded you should see the following on the serial console



x 💿 COM6 Send ٠ RSSI: -21 Sending to rf95_server Sending Hello World #54 Sending... Waiting for packet to complete... Waiting for reply... Got reply: And hello back to you RSSI: -21 Sending to rf95_server Sending Hello World #55 Sending... Waiting for packet to complete... Waiting for reply... Got reply: And hello back to you RSSI: -21 Ξ Autoscroll No line ending 💌 9600 baud

Now open up another instance of the Arduino IDE - this is so you can see the serial console output from the TX Arduino while you set up the RX Arduino.

Receiver example code



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Upload the code to receiver maduino.

Now open up the Serial console on the receiver, while also checking in on the transmitter's serial console. You should see the receiver is...well, receiving packets



© COM12
Send
Got: Hello World #75
RSSI: -20
Sent a reply
Received:
48 65 6C 6C 6F 20 57 6F 72 6C 64 20 23 37 36 0
20 20 20 0
Got: Hello World #76
RSSI: -20
Sent a reply
Received:
48 65 6C 6C 6F 20 57 6F 72 6C 64 20 23 37 37 0
20 20 20 0
Got: Hello World #77
RSSI: -20
Sent a reply
· · · · · · · · · · · · · · · · · · ·
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© COM6		💿 COM12	x
Send		Ser	ıd
RSSI: -21		Got: Hello World #25	*
Sending to rf95_server		RSSI: -21	
Sending Hello World #26		Sent a reply	
Sending		Received:	
Waiting for packet to complete		48 65 6C 6C 6F 20 57 6F 72 6C 64 20 23 32 36 0	
Waiting for reply		20 20 20 0	
Got reply: And hello back to you		Got: Hello World #26	
RSSI: -21		RSSI: -22	
Sending to rf95_server		Sent a reply	
Sending Hello World #27		Received:	
Sending		48 65 6C 6C 6F 20 57 6F 72 6C 64 20 23 32 37 0	
Waiting for packet to complete		20 20 20 0	
Waiting for reply		Got: Hello World #27	
Got reply: And hello back to you		RSSI: -21	
RSSI: -21		Sent a reply	=
	-		-
♥ Autoscroll No line ending ▼ 9600 baud		✓ Autoscroll No line ending ▼ 9600 baud	•]



00 COM12 💿 сом6 Send Send Got: Hello World #100 RSSI: -21 RSSI: -21 Sending to rf95_server Sent a reply Sending Hello World #101 Received: Sending. 48 65 6C 6C 6F 20 57 6F 72 6C 64 20 23 31 30 31 Waiting for packet to complete.. 0 20 20 0 Waiting for reply. Got: Hello World #101 Got reply: And hello back to you RSSI: -21 RSSI: -20 Sent a reply Sending to rf95_server Received: Sending Hello World #102 48 65 6C 6C 6F 20 57 6F 72 6C 64 20 23 31 30 32 Sending. . Waiting for packet to complete... 0 20 20 0 Got: Hello World #102 Waiting for reply. RSSI: -20 Got reply: And hello back to you RSSI: -21 Sent a reply Ξ 🛛 Autoscroll [No line ending 👻 9600 baud 🛛 Autoscroll No line ending 👻 9600 baud •

You can see that the library example prints out the hex-bytes received **48 65 6C 6C 6F 20 57 6F 72**

6C 64 20 23 35 37 32 0 20 20 0, as well as the ASCII 'string' **Hello World.** Then it will send a reply.

And, on the transmitter side, it is now printing that it got a reply after each transmisssion **And** hello back to you because it got a reply from the receiver

💿 COM6	J
Send	
RSSI: -21	1
Sending to rf95_server	
Sending Hello World #637	
Sending	
Waiting for packet to complete	
Waiting for reply	
Got reply: And hello back to you	
RSSI: -20	
Sending to rf95_server	
Sending Hello World #638	
Sending	
Waiting for packet to complete	
Waiting for reply	
Got reply: And hello back to you	
RSSI: -21	
▼ Autoscroll No line ending ▼ 9600 baud	-