**3/15/2014 NRF24L01-2-4GHz-Antenna-Wireless-Transceiver-Module**

[**Tutorial**](http://www.diyembedded.com/tutorials/nrf24l01_0/nrf24l01_tutorial_0.pdf)

[**Home Networking Article**](http://maniacbug.wordpress.com/2012/03/30/rf24network/)

1. Project Reference Number / Title:

20140315 NRF24L01-2-4GHz-Antenna-Wireless-Transceiver-Module

Mar 15, 2014

nRF24L01 Demo!

Arduino library: <http://playground.arduino.cc/InterfacingWithHardware/Nrf24L01#.UyUSI9vOdDQ>

Actually there are several different libraries for this device, the one above is what the Arduino.cc website uses in it’s examples.

This one seems to support more of the features of the nRF24L01

<https://github.com/stanleyseow/RF24>

this one also supports the Raspberry PI, and a few of his examples have the rPI and Arduinos “talking” to each other

One other library I found is: <http://www.airspayce.com/mikem/arduino/NRF24/>

Airspayce also has the library for the “cheap” RF transmitters and receivers, good side, lots of information about wireless protocols and types.

Cheapest I’ve found these amazing tranceivers:

<http://www.ebay.com/itm/1pc-New-NRF24L01-2-4GHz-Antenna-Wireless-Transceiver-Module-/221326963838?pt=LH_DefaultDomain_0&hash=item33881d747e>

There are a number of forums and people talking about how they feel these will replace Zigbees which were the leader in Arduino and wireless technology. Mostly because of the cost of a Zigbee and the costs of these. There are at least 2 different models, the ones I have don’t have a + at the end, I’m not sure what the difference between them is. There are also a couple of different configurations for the boards themself, <https://www.sparkfun.com/products/691> (19.95 + shipping) even at that price they are cheaper then Zigbee.

I’ve read some mixed reviews on power - opted to go with 3.3v in mine, but 5v seems ok

General Specs on these:

3.3v (I would stick with 3.3v just to be save) It’s also possable my boards have a regulator on them

100m range at 250kbps

250kbps to 2Mbit data rate (This puts the safely in the DSL range, although low end DSL <http://testmy.net/tools/connection_chart.php>) making it “high speed”

Auto Acknowledge (The RF24 library says this can be turned off if needed)

Auto Re-Transmit (believe this can be turned off as well)

Multiceiver capable (Arduino’s library doesn’t support this from a few of the forums I’ve read, I think the other 2 libraries do) (Up to 6 Data Pipes)

32 Byte separate TX and RX FIFOs

5v tolerant input pins

Software selectable channels from 2.4Ghz to 2.525Ghz (125 Selectable channels)

SPI interface

11.3mA TX at 0 dBm output power

13.5mA RX at 2Mbps air data rate

900nA in power down

more information about the chip itself can be found here:

<https://www.sparkfun.com/datasheets/Components/SMD/nRF24L01Pluss_Preliminary_Product_Specification_v1_0.pdf>

Lot of support on Nordic Semiconductor website (the makers of this fine chip)

I was trying to get full duplexing to work, but it was difficult to type on two keyboards at once

From looking at the code, it appears that (not in multiceiver mode) you setup a TX channel, and a RX channel, so I think they should be full duplex.

I am going to be demoing the NRF24 library, and running the “Chat” program, which was a little tricky to setup at first, it seems it needs a Line Feed or CR in order to send data.

Should be interesting, I’ll also have the other libraries loaded on the laptop, and we can look at some of the example code.

Mar 17 2017 - More NRF24L01 information:

<https://arduino-info.wikispaces.com/Nrf24L01-Poor+Man%27s+2.4+GHz+Scanner>

<http://www.electrodragon.com/w/index.php?title=NRF24L01&redirect=no>

TTL Serial Adaptor

<http://www.mpja.com/24GHz-Wireless-Serial-Port-Development-Module-STC15L204/productinfo/31941+MP/>

I have one of these but there are no documents for it, and so far I haven’t been able to figure out how to make it work.