NRF24L01+ 2.4GHZ RADIO TINYSHIELD

ASD2163-R

This radio TinyShield is based around the very popular Nordic NRF24L01+ radio transceiver. The TinyShield is set to operate at 2.4GHz, can transmit at up to 2Mbps, and is very easy to use. This transceiver allows for long range communication between radios and is designed for an open field range of up to 100 meters, which makes this great for outdoor sensors or RC control of drones and vehicles.

An U.FL antenna connection is included on the board, along with a 2.4GHz whip antenna. The TinyShield incorporates a voltage regulator to ensure proper and safe operation over the entire TinyDuino operating voltage range up to 5V.

TECHNICAL DETAILS

*To see what other TinyShields this will work with or conflict with, check out the **TinyShield Compatibility Matrix***

nRF24 Transceiver Specs
- Frequency: 2.4GHz

- Sensitivity: –82 dBm at 2Mbps, -95 dBm at 250kbps

- Data Rate: 250kbps, 1Mbps, 2 Mbps

- Ultra low power operation

TinyDuino Power Requirements
- Voltage: 3.0V - 5.5V
- Receive current: 13.5mA

- Transmit current (0 dBm): 11.3mA

- Transmit current (-18 dBm): 7.0mA

- Standby current: 22uA

Pins Used

SPI Interface used:

- **2 - SPI_IRQ:** This signal is the interrupt output from the radio transceiver and into the TinyDuino.
- **7 - SPI_CS:** This signal is the SPI chip select for the radio transceiver.
- **9 - CE:** This is the chip enable signal
- **11 - MOSI:** This signal is the serial SPI data out of the TinyDuino and into the radio transceiver.
- **12 - MISO:** This signal is the serial SPI data out of the radio transceiver and into the TinyDuino.
- **13 - SCLK:** This signal is the serial SPI clock out of the TinyDuino and into the radio transceiver.

Dimensions
- Board: 20mm x 20mm (.787 inches x .787 inches)
- Board: Max Height (from lower bottom TinyShield Connector to upper top TinyShield Connector): 5.11mm (0.201 inches)
- Antenna Length: 150mm (5.9 inches)
- Board Weight: 1.03 grams (.04 ounces)
- Antenna Weight: 0.47 grams (0.02 ounces)

NOTES

- For best range, the antenna should not be close to metal or coiled up. Lower data rates and smaller packets will increase range!
- You can use different antennas with this board! They must be 2.4Ghz with a U.FL connector on them.

DOWNLOADS

- **nRF24L01+ Product Page**
- **Datasheet**
- **Schematic**
- **Eagle Files**
- **Sample Arduino code**