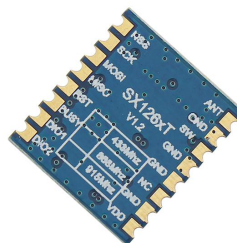

DRF1262T

22dBm LoRa Long Range RF Front-end Module

V1.00

Features:

- Frequency Range: 868/915MHz
- Modulation: FSK/GFSK/MSK/LoRa
- SPI Data Interface
- Sensitivity: -147dBm
- Max.Output Power: +22dBm
- Data Rate: <300 kbps
- 127dB dynamic Range RSSI
- Excellent blocking immunity
- Preamble detection
- Automatic RF sense and CAD monitor
- Built-in bit synchronizer for clock recovery
- Packet engine up to 256 bytes with CRC
- Working Temperature: -40°C ~+85°C
- Build-in temperature sensor
- Standby current: $\leq 1\mu\text{A}$
- Supply voltage: 1.8~3.3V



Applications

- Remote Control
- Smart metering
- Home Automation
- Personal data logger
- Wireless sensor network
- Remote keyless entry
- Wireless PC peripherals

DESCRIPTION

DRF1262T is a type of 868/915MHz RF front-end transceiver module based on SX1262 from Semtech Corporation. It keeps the advantages of RFIC SX1262 but simplifies the circuit design. The high sensitivity (-147dBm) in LoRa modulation and Max. 22dBm power output make the module suitable for low range and low data rate applications.

DRF1262T module consists of RFIC SX1262, TCXO and antenna matching circuit. The antenna

port is well matched to standard 50 Ohm impedance. Users don't need to spend time in RF circuit design and just choose suitable antennas for different applications. DRF1262T operates at 1.8~3.3V with extra low standby current which makes it suitable for battery powered-up applications. DRF1262T adopts ± 1 ppm high accuracy TCXO which makes it possible to use narrower bandwidth to achieve the high sensitivity up to -147dBm. DORJI also provides DRF1268T for 433MHz TCXO version of sx1268 module. Users can use the testing kit DAD06 to test the basic function on ST Nucleo-L053R8 or Arduino UNO board.

PIN FUNCTIONS

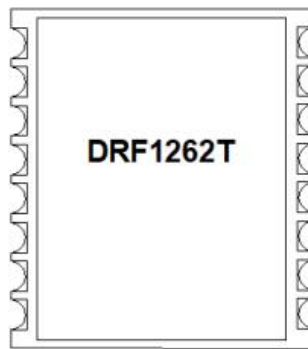


Figure 1: DRF1262T Pin Layout

| PIN | Name | Function | Description |
|-----|--------|--------------|--|
| 1 | ANT | ANT | 50 Ohm Impedance port |
| 2 | GND | Ground | Ground (0V) |
| 3 | SW | Input | One control pin of RF switch |
| 4 | GND | Ground | Ground (0V) |
| 5 | GND | Ground | Ground (0V) |
| 6 | GND/NC | TCXO pin | Can be Ground (0V) or NC |
| 7 | GND | Ground | Ground (0V) |
| 8 | VDD | Power | Normal 3.3V |
| 9 | DIO2 | Output | It is connected to one control pin of RF switch internally |
| 10 | DIO1 | Input/Output | Multipurpose digital IO |
| 11 | BUSY | Input/Output | Busy indicator |
| 12 | RST | Input/Output | Reset signal, active low |
| 13 | MISO | Output | SPI slave output |
| 14 | MOSI | Input | SPI slave input |
| 15 | SCK | Input | SPI clock |
| 16 | NSS | Input | SPI Slave Select |

Table 1: DRF1262T Pin Functions

ELECTRICAL SPECIFICATIONS

| Symbol | Parameter (condition) | Min. | Typ. | Max. | Units |
|--------|------------------------------|------|------|------|-------|
| VCC | Supply Voltage | 1.8 | | 3.3 | V |
| Temp | Operating temperature range | -40 | 25 | 85 | °C |
| Freq | Frequency range @ 868MHz | 862 | 868 | 878 | MHz |
| | Frequency range @ 915MHz | 900 | 915 | 928 | MHz |
| IDD_R | Current in receive mode | | 5.8 | | mA |
| IDD_T | Current in transmit mode | | 132 | | mA |
| IDD_S | Current in sleep mode. | | | 1 | uA |
| Pout | Max. output power @868Mhz | | 20.8 | | dBm |
| | Max. output power @915Mhz | | 20.5 | | dBm |
| Sen | Receiver sensitivity @868MHz | | | -147 | dBm |
| | Receiver sensitivity @915MHz | | | -147 | dBm |
| ZANT | Antenna Impedance | | 50 | | Ohm |

Table 2: DRF1262T Electrical Specifications

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Min. | Max. | Units |
|-----------------|---------------------|------|---------|-------|
| VCC | Supply Voltage | -0.3 | 3.6 | V |
| VI | Input voltage | -0.3 | VCC+0.3 | V |
| VO | Output voltage | -0.3 | VCC+0.3 | V |
| T _{ST} | Storage temperature | -40 | 125 | °C |

Table 3: DRF1262T Maximum Ratings

MODULE SCHEMATIC

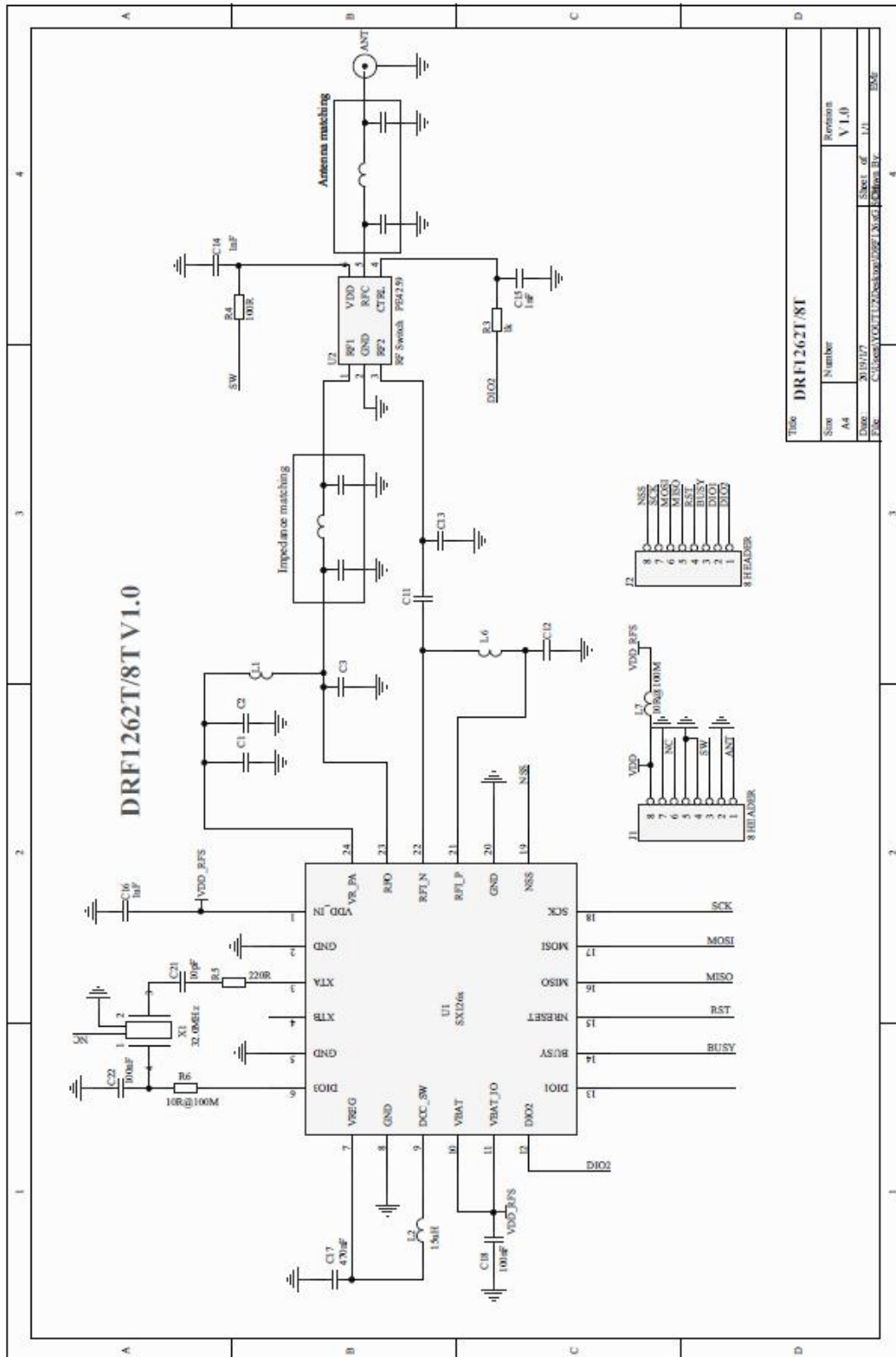


Figure 2: DRF1262T Schematic

MECHANICAL DATA

Unit: mm

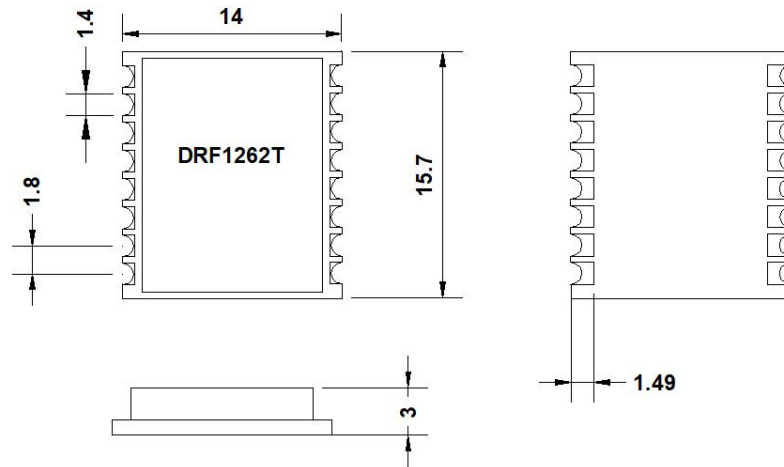


Figure 3: Mechanical Dimension

REFERENCE DOCUMENTS

1. [SX1262 Datasheet](#)
2. [LoRa Calculator](#)
3. [LoRa Low Energy Design Guide](#)
4. [LoRa Modem Designer's Guide](#)
5. [SX1262 Development Kit User Guide](#)

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