

DRF1262T

22dBm LoRa Long Range RF Front-end Module

V1.20

Features:

Frequency Range: 868/915MHzModulation: FSK/GFSK/MSK/LoRa

SPI Data InterfaceSensitivity: -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: ≤ 1uA
Supply voltage: 1.8~3.6V

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 ±1ppm 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	NC	NC	No connection
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.	Тур.	Max.	Units
VCC	Supply Voltage		3.3	3.6	V
Temp	Operating temperature range		25	85	°C
F	Frequency range @ 868MHz	862	868	878	MHz
Freq	Frequency range @ 915MHz	902	915	928	MHz
Idd_r	Current in receive mode		5.8		mA
IDD_T	Current in transmit mode		125		mA
Idd_s	Current in sleep mode.			1	uA
Pout	Max. output power @868Mhz		20.6		dBm
Pout	Max. output power @915Mhz		20.2		dBm
Sen	Receiver sensitivity @868MHz			-147	dBm
Sen	Receiver sensitivity @915MHz			-147	dBm
ZANT	Antenna Impedance		50		Ohm
V _{TCXO}	TCXO supply voltage	1.7	1.8	1.9	V

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
Tst	Storage temperature	-40	125	°C

Table 3: DRF1262T Maximum Ratings



MODULE SCHEMATIC

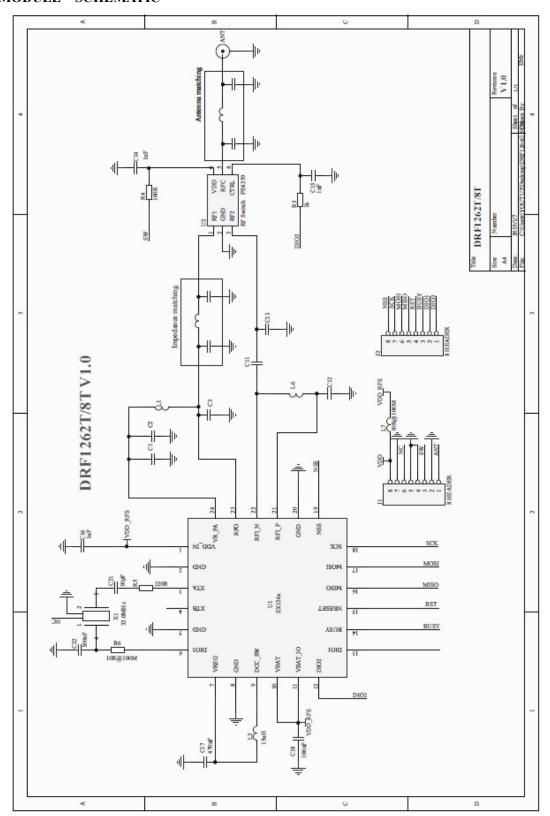


Figure 2: DRF1262T Schematic



MECHANICAL DATA

Unit: mm

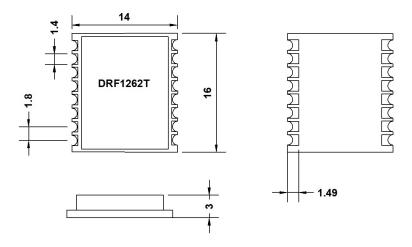


Figure 3: Mechanical Dimension

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



Dorji Applied Technologies

A division of Dorji Industrial Group Co., Ltd

Add.: Xinchenhuayuan 2, Dalangnanlu, Longhua,

Baoan district, Shenzhen, China 518109

Tel: 0086-755-28156122
Fax.: 0086-755-28156133
Email: dorji@dorji.com
Web: http://www.dorji.com

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