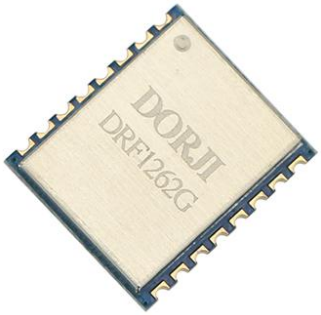
DRF1262G
22dBm LoRa Long Range RF Front-end Module V1.00

Features:



- Frequency Range: 868/915MHz
- Modulation: FSK/GFSK/MSK/LoRa
- SPI Data Interface
- Sensitivity: -137dBm
- 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: -30°C ~+80°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

DRF1262G is a type of low cost 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 (-137dBm) in LoRa modulation and 22dBm high power output make the module suitable for low range and low data rate applications.

DRF1262G module consists of RFIC SX1262, thin SMD crystal 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 choose suitable antennas for different applications. DRF1262G operates at 1.8~3.6V with extra low standby current which makes it suitable for battery powered-up applications. Because DRF1262G is purely hardware module and it adopts ±10ppm crystal which the resolution of it places a important role in calculating spreading factor, bandwidth, etc. Users need to read the datasheet of SX1262 carefully in order to use the module in the best performance.

PIN FUNCTIONS

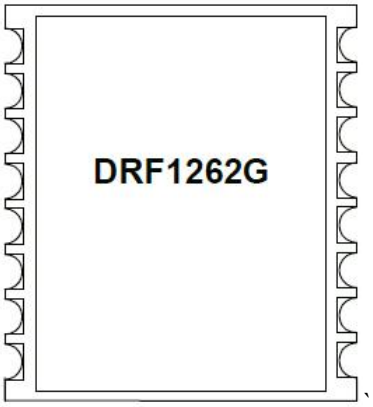


Figure 1: DRF1262G Pin Layout

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	Ground	Ground (0V)
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	Intput	SPI clock
16	NSS	Input	SPI Slave Select

Table 1: DRF1262G Pin Functions

ELECTRICAL SPECIFICATIONS

Symbol	Parameter (condition)	Min.	Typ.	Max.	Units
VCC	Supply Voltage	1.8		3.6	V
Temp	Operating temperature range	-30	25	80	°C
Freq	Frequency range @ 868MHz	862	868	878	MHz
	Frequency range @ 915MHz	900	915	928	MHz
I_{DD_R}	Current in receive mode		4.6		mA
I_{DD_T}	Current in transmit mode		130		mA
I_{DD_S}	Current in sleep mode.			1	uA
Pout	Max. output power @868Mhz		21	22	dBm
	Max. output power @915Mhz		21	22	dBm
Sen	Receiver sensitivity @868MHz			-137	dBm
	Receiver sensitivity @915MHz			-137	dBm
Z_{ANT}	Antenna Impedance		50		Ohm

Table 2: DRF1262G Electrical Specifications

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Min.	Max.	Units
VCC	Supply Voltage	-0.3	3.7	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: DRF1262G Maximum Ratings

MODULE SCHEMATIC

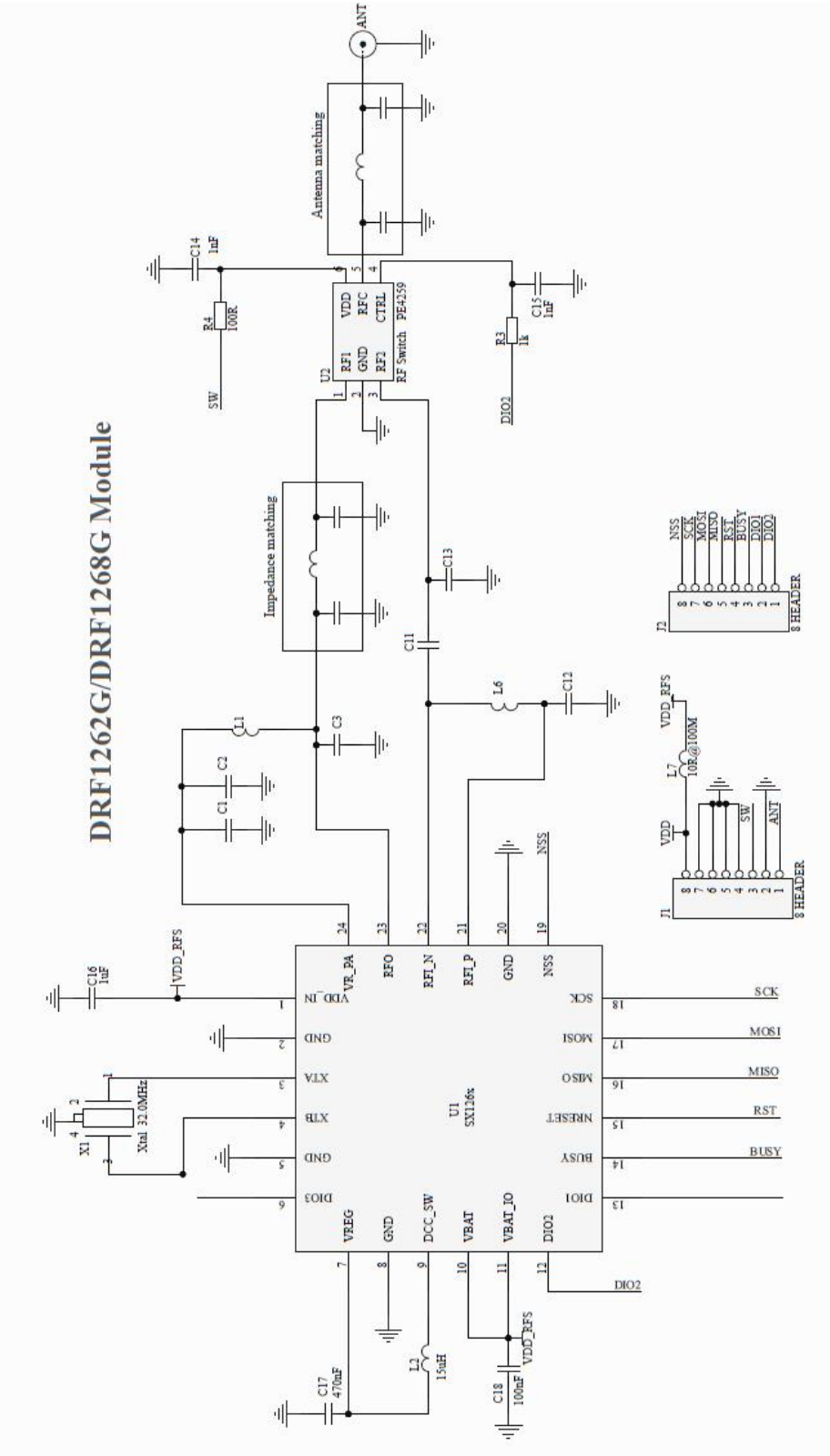


Figure 2: DRF1262G Schematic

MECHANICAL DATA

Unit: mm

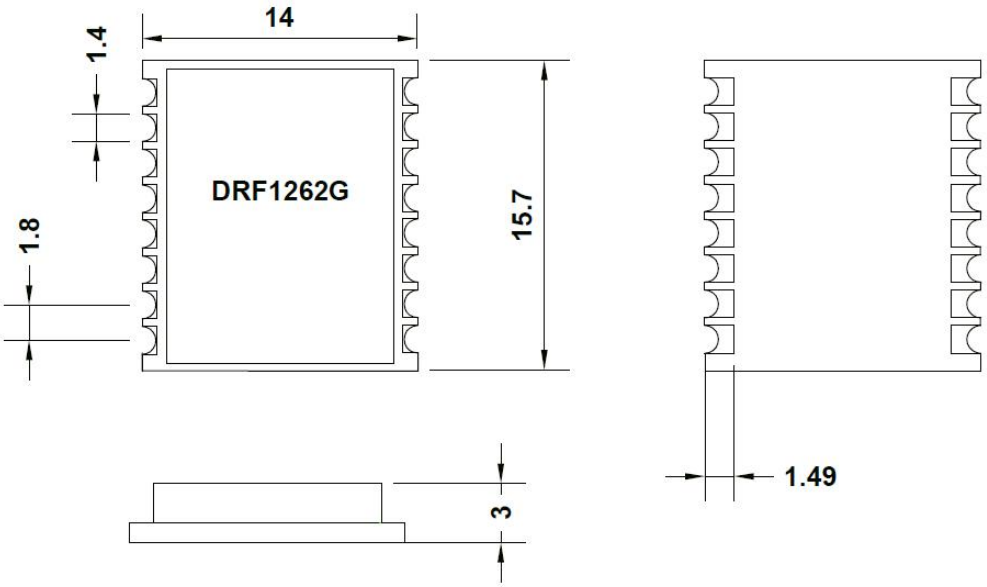


Figure 3: Mechanical Dimension

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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