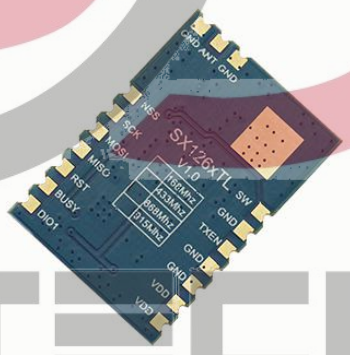
DRF1262TL
30dBm LoRa Long Range RF Front-end Module V1.10

Features:

- Frequency Range: 868/915MHz
- Modulation: FSK/GFSK/MSK/LoRa
- SPI Data Interface
- Sensitivity: -147dBm
- Max.Output Power: +30dBm
- 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
- Supply voltage: 4~5.5V



Applications

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

DESCRIPTION

DRF1262TL 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. 30dBm power output make the module suitable for low range applications.

DRF1262TL module consists of RFIC SX1262, TCXO, PA 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. DRF1262TL operates at 4~5V with extra low standby current which makes it suitable for battery powered-up applications. DRF1262TL adopts ±1ppm high accuracy TCXO which makes it possible to use narrower bandwidth to achieve the high sensitivity up to -147dBm. DORJI also provides 30dBm 433MHz version of sx1268 module DRF1268TL. Users can use the testing kit DAD08 to test the basic function on ST Nucleo-L053R8 or Arduino UNO board.

PIN FUNCTIONS

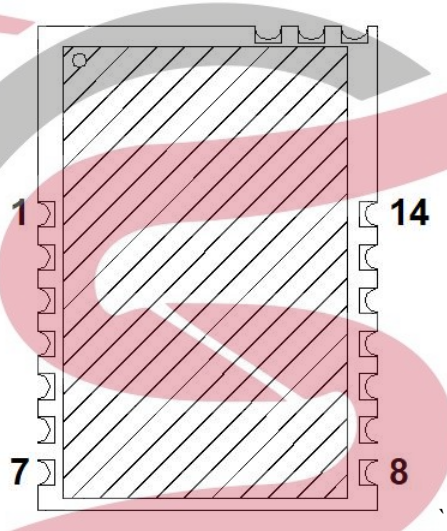


Figure 1: DRF1262TL Pin Layout

PIN	Name	Function	Description
1	SW	Input	One control pin of RF switch
2	GND	Ground	Ground (0V)
3	TXEN	Input	PA enable pin, active low
4	GND	Ground	Ground (0V)
5	GND	Ground	Ground (0V)
6	VDD	Power	4~5.5V
7	VDD	Power	4~5.5V
8	DIO1	Input/Output	Multipurpose digital IO
9	BUSY	Input/Output	Busy indicator
10	RST	Input/Output	Reset signal, active low
11	MISO	Output	SPI slave output
12	MOSI	Input	SPI slave input
13	SCK	Intput	SPI clock
14	NSS	Input	SPI Slave Select

15	GND	Ground	Ground (0V)
16	ANT	ANT	50 Ohm Impedance port
17	GND	Ground	Ground (0V)

Table 1: DRF1262TL Pin Functions

ELECTRICAL SPECIFICATIONS

Symbol	Parameter (condition)	Min.	Typ.	Max.	Units
Vdd	Supply Voltage	4	5	5.5	V
Temp	Operating temperature range	-40	25	85	°C
Freq	Frequency range @ DRF1262TL-086S	860	868	870	MHz
	Frequency range @ DRF1262TL-091S	902	915	928	MHz
I_{DD_R}	Current in receive mode		6		mA
I_{DD_T}	Current in transmit mode @868MHz & Vdd=5V @915MHz & Vdd=5V		700 680		mA
Pout	Max. output power @868Mhz & Vdd=5V @868Mhz & Vdd=4V		29.5 27		dBm
	Max. output power @915Mhz & Vdd=5V		29.5		dBm
Sen	Receiver sensitivity @868MHz			-147	dBm
	Receiver sensitivity @915MHz			-147	dBm
Z_{ANT}	Antenna Impedance		50		Ohm

Table 2: DRF1262TL Electrical Specifications

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Min.	Max.	Units
VCC	Supply Voltage	-0.3	5.5	V
VI	Input voltage	-0.3	3.6	V
VO	Output voltage	-0.3	3.6	V
T_{ST}	Storage temperature	-40	125	°C

Table 3: DRF1262TL Maximum Ratings

MODULE SCHEMATIC

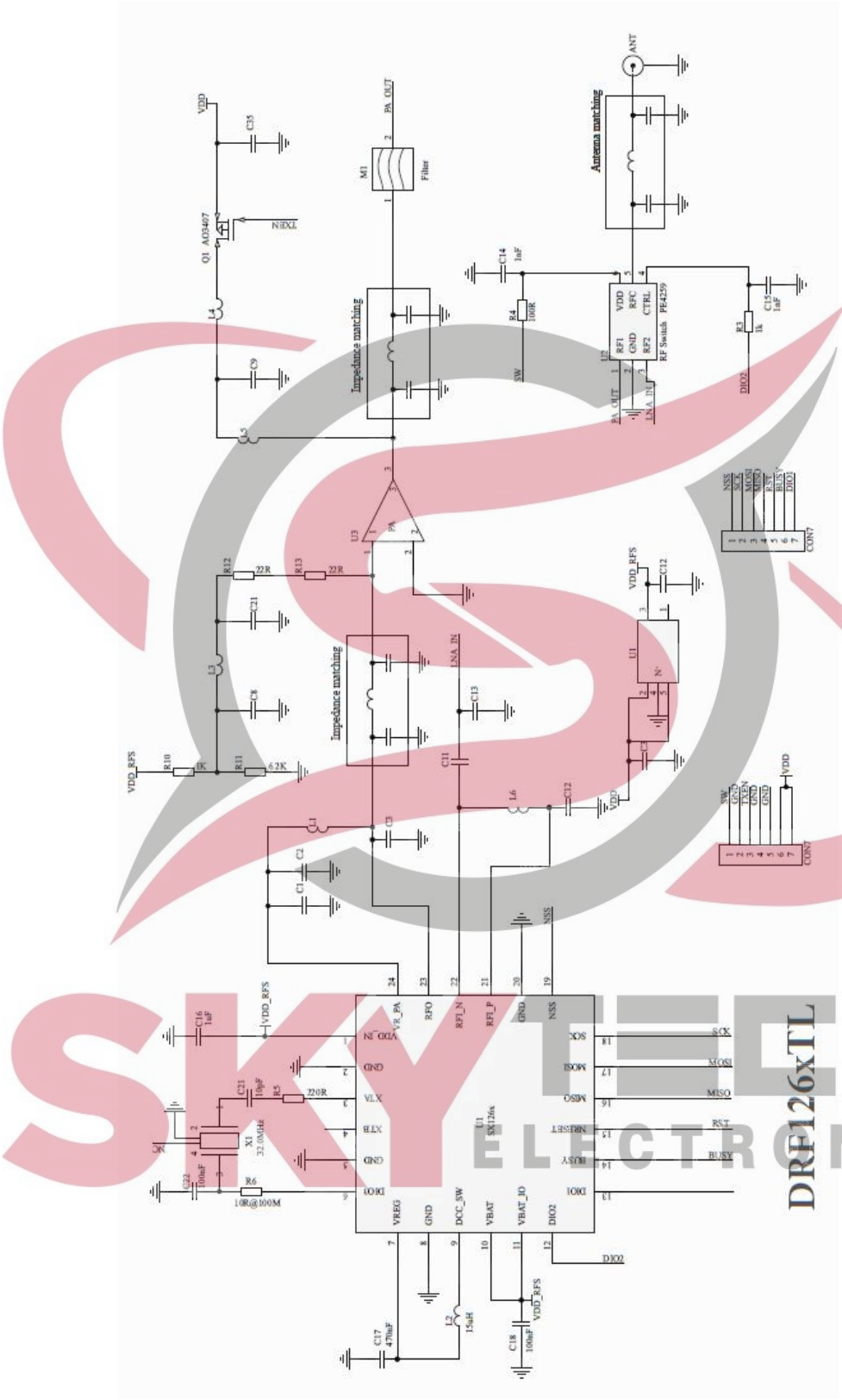


Figure 2: DRF1262TL Schematic

MECHANICAL DATA

Unit: mm

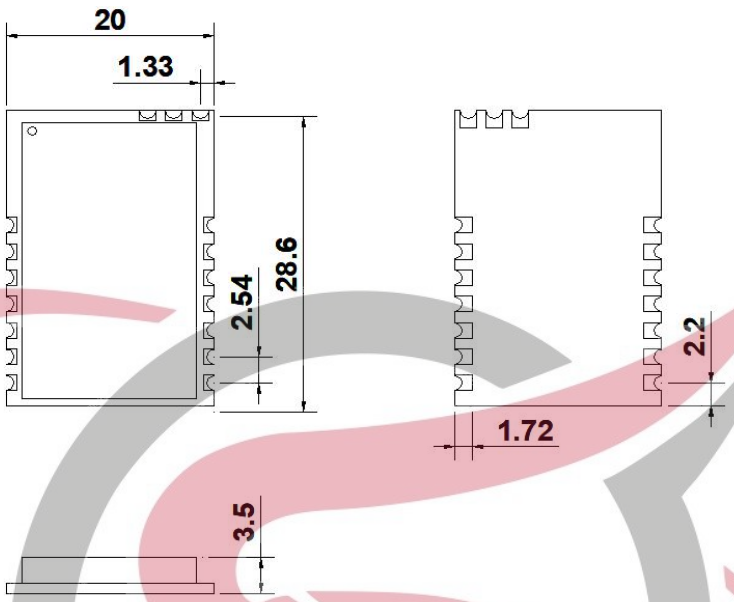


Figure 3: Mechanical Dimension

ORDERING INFORMATION

Part Name	Description
DRF1262TL-086S	868MHz 30dBm sx1262 RF front-end module
DRF1262TL-091S	915MHz 30dBm sx1262 RF front-end module

Table 4: Ordering Information

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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