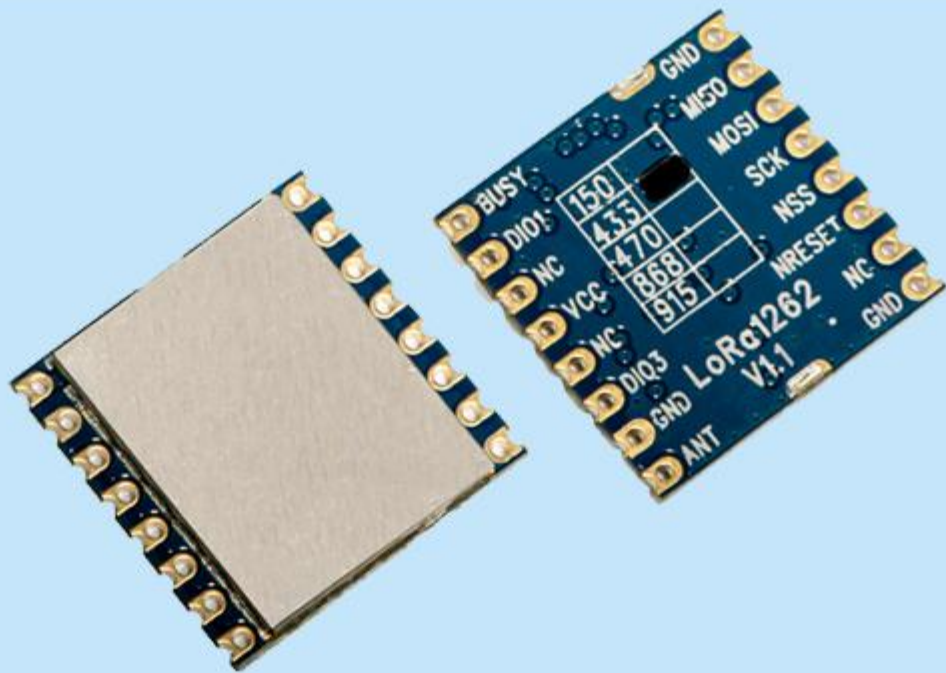


**22dBm | ultra-low power consumption
LoRa transceiver module with TCXO crystal**

Product Specification



Catalogue

1. Overview.....	- 3 -
2. Features.....	- 3 -
3. Applications.....	- 3 -
4. Typical application circuit.....	- 3 -
5. Performance parameters (@Vcc=3.3v ANT connected to 50 ohm load).....	- 4 -
6. Module performance index.....	- 5 -
7. Pin definition.....	- 6 -
8. Pin comparison table.....	- 7 -
9. Communication antenna.....	- 7 -
10. Mechanical Dimensions(Unit: mm).....	- 8 -
11. Order information.....	- 8 -
12. FAQ:.....	- 9 -
Appendix 1: SMD Reflow Chart.....	- 10 -

Note: Revision History

Revision	Date	Comment
V1.0	2018-10-31	First release

5. Performance parameters (@Vcc=3.3v ANT connected to 50 ohm load)

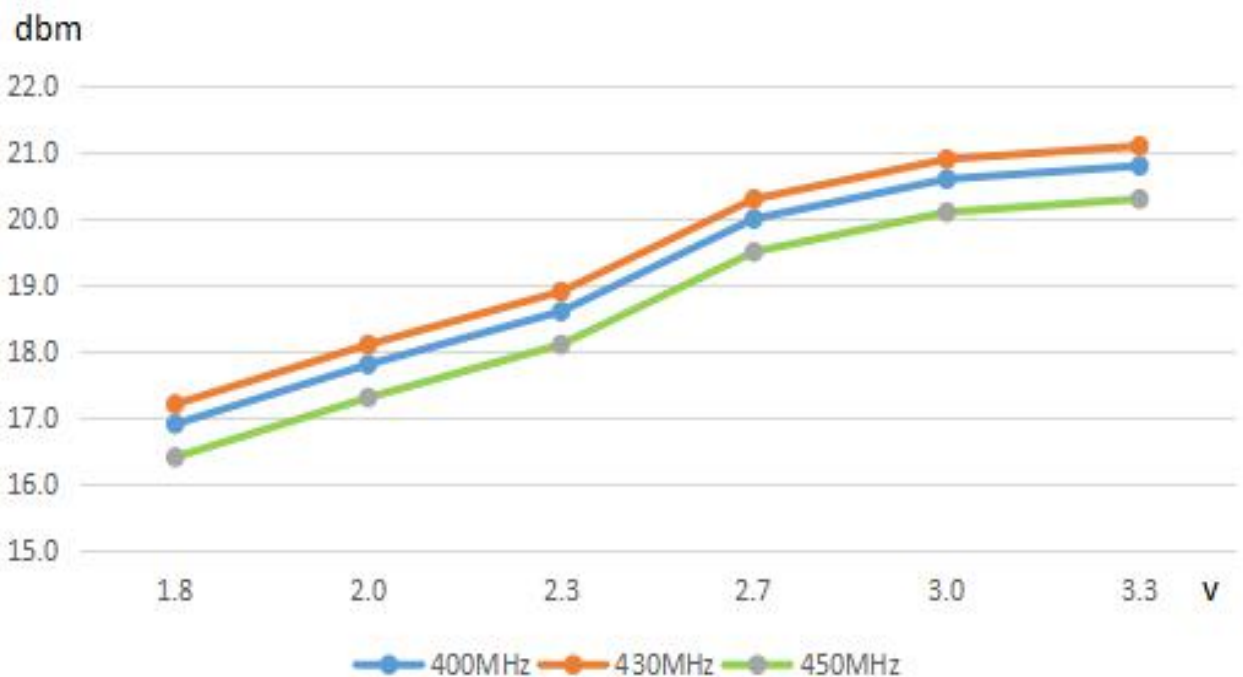
Note: Our default shipment is TCXO crystal version, please contact the related sales engineer if you want to use 10ppm industrial crystal.

(Receive current: <5 mA @passive crystal oscillator)

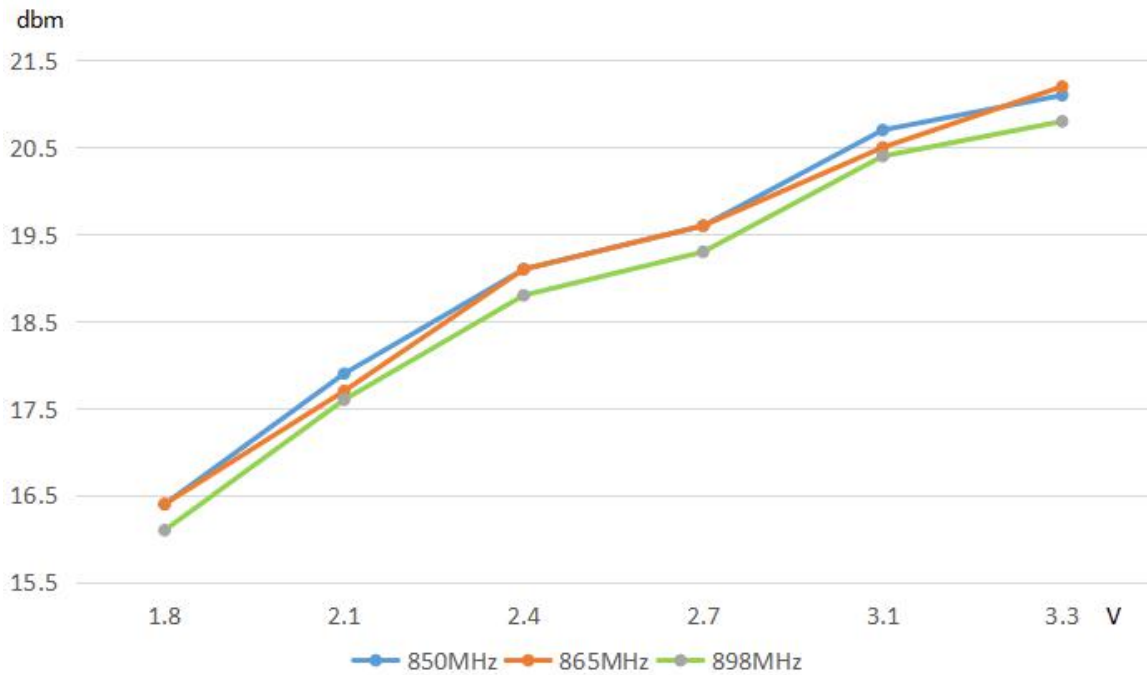
Parameter	Min	Typ.	Max.	Unit	Condition
Operation condition					
Operating voltage range	1.8	3.3	3.7	V	
range of working temperature	-40		85	°C	
Current consumption					
RX current		< 6.5		mA	@TCXO
		4.6		mA	10ppm crystal
TX current		< 110		mA	@433 MHz
		< 130		mA	@868MHz
Sleep current		0.9		uA	OFF mode (SLEEP mode with cold start) All blocks off
		1.3		uA	SLEEP mode (SLEEP mode with warm start) Configuration retained
		1.9		uA	SLEEP mode (SLEEP mode with warm start) Configuration retained + RC64k
		0.56		mA	STDBY_RC mode RC13M, XOSC OFF
		2.35		mA	STDBY_XOSC mode XOSC ON
RF parameter					
Frequency range	400	433	450	MHZ	@433MHZ
	470	490	510	MHZ	@470MHZ
	800	868	900	MHZ	@868MHZ
	900	915	950	MHZ	@915MHZ
Transmit power range	-15	22		dBm	
Receiving sensitivity		-133		dBm	@Lora BW=125KHz_SF = 10_CR=4/5

6. Module performance index

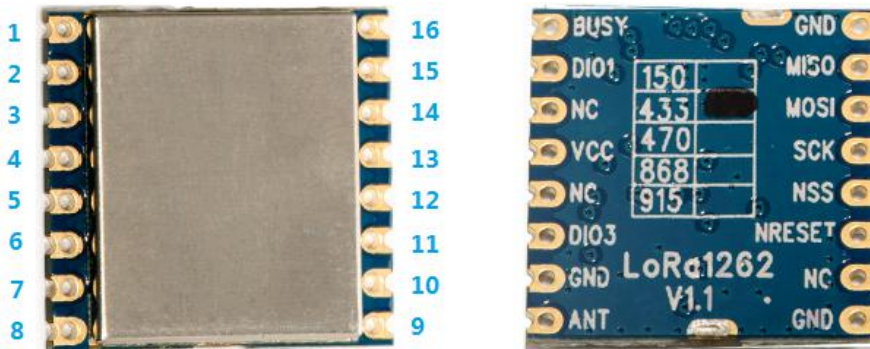
Frequency band	Power level	Current (mA)	Power (dBm)	Register value
433MHZ	9	98	21.2	22
	8	80	17.8	19
	7	64	14.2	16
	6	54	11.5	13
	5	44	8.7	10
	4	37	6.0	7
	3	32	3.0	4
	2	26	0	1
	1	22	-2.5	-2
	0	20	-5	-5



Frequency band	Power level	Current (mA)	Power (dBm)	Register value
868MHZ	9	123.5	21.2	22
	8	110.5	18.03	19
	7	102.2	14.67	16
	6	88.7	11.79	13
	5	74.2	9.15	10
	4	62.9	6.6	7
	3	53.6	3.5	4
	2	44.2	0.53	1
	1	36.8	-2.15	-2
	0	31.7	-4.8	-5



7. Pin definition



Pin		Description
1	GND	Power ground
2	MISO	SPI data output
3	MOSI	SPI data input
4	SCK	SPI clock input
5	NSS	SPI chip select input
6	NRESET	Reset trigger input
7、12、14	NC	Empty foot
8	GND	Power ground
9	ANT	50 ohm coaxial antenna
10	GND	Power ground
11	DIO3	Digital I/O, customizable
13	VCC	Power input (default 3.3V)
15	DIO1	Digital I/O, customizable
16	BUSY	Used for status indication, depending on the chip data.

8. Pin comparison table

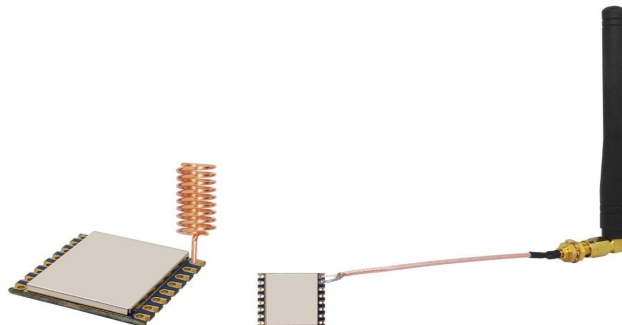
The LoRa1262 module are pin compatible with LoRa1278/1276-C1. Below is the difference between this 2 modules:

Module	LoRa1278/1276-C1	LoRa1262
1	GND	GND
2	MISO	MISO
3	MOSI	MOSI
4	SCK	SCK
5	NSS	NSS
6	NRESET	NRESET
7	DI05	NC
8	GND	GND
9	ANT	ANT
10	GND	GND
11	DI03	NC
12	DI04	NC
13	VCC	VCC
14	DI00	NC
15	DI01	DI01
16	DI02	BUSY

9. Communication antenna

1)Antenna

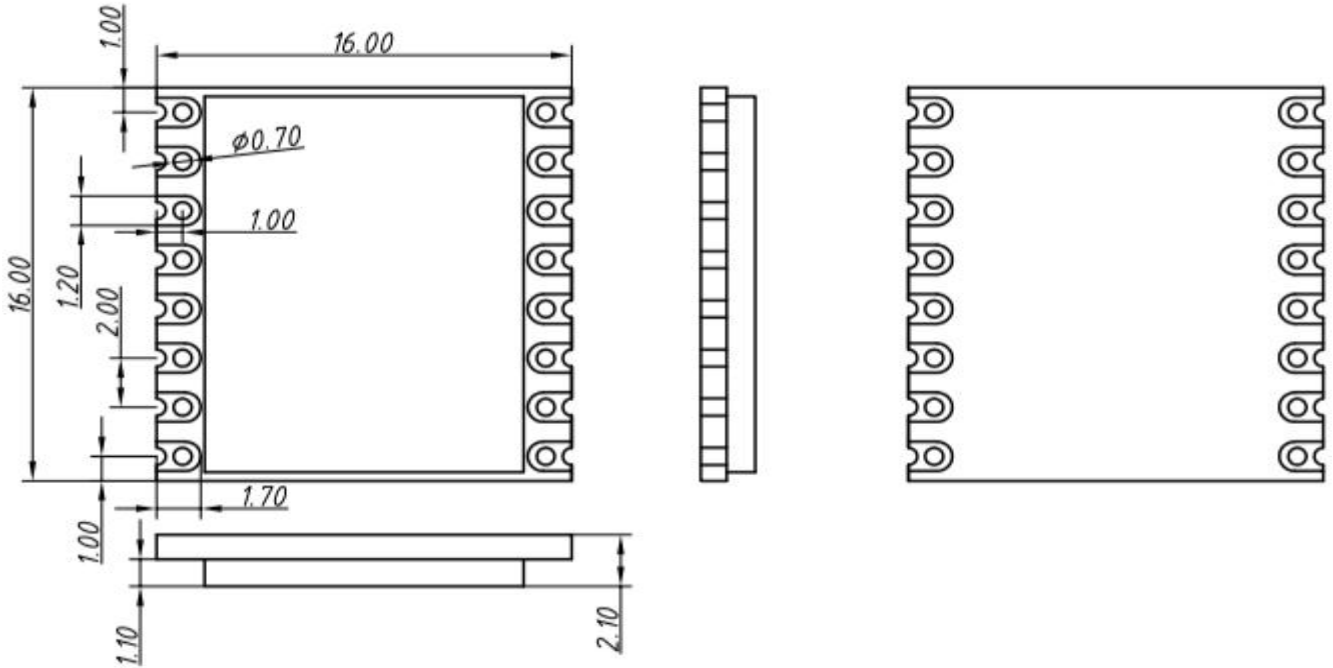
The antenna is an important part of the communication system. Its performance directly affects the parameters of the communication system. The antenna impedance required by the module is 50 ohms. The universal antenna has a spring antenna, and can also be used to connect the straight head/elbow/folding rod shape, small suction cup, etc. through SMA. Users can purchase the antenna according to their own application environment. In order to make the module work in the best working condition, it is recommended to use this. The antenna provided by the company



★ The following principles should be followed during antenna use to ensure the best communication distance of the module:

- Try not to be close to the ground surface of the antenna, and it is best to stay away from obstacles;
- If the suction cup antenna is purchased, the lead wire should be straightened as much as possible, and the suction cup base should be attached to the metal object.

10. Mechanical Dimensions(Unit: mm)



11. Order information

LoRa1262-433



Product name

Frequency

For example: If the customer needs 868MHz Frequency, the order no. shall be LoRa1262-868.

At present, LoRa1262 products have the following models:

Order model	product type
LoRa1262-433	Sx1262 chip, module working center frequency band is 433MHZ
LoRa1262-490	Sx1262 chip, module working center frequency band is 490MHZ
LoRa1262-868	Sx1262 chip, module working center frequency band is 868MHZ
LoRa1262-915	Sx1262 chip, module working center frequency band is 915MHZ

12. FAQ:

a) Why module can not communicate properly?

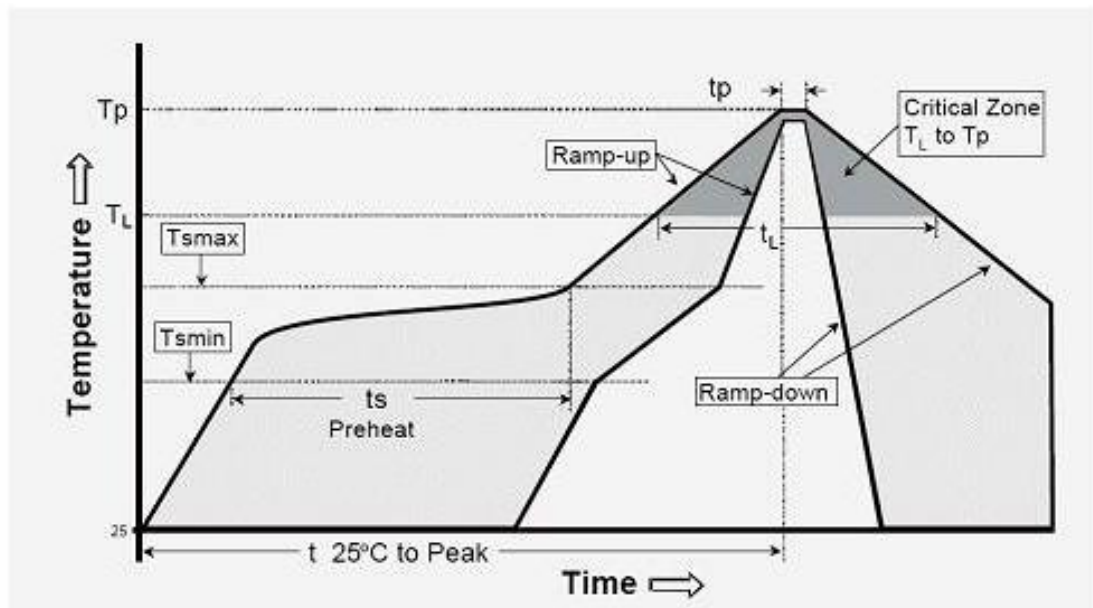
- 1) The power supply is connected incorrectly and the module is not working properly;
- 2) Check whether the frequency band of each module and other RF parameters are consistent;
- 3) Is the module damaged?

b) Why transmission distance is not far as it should be?

- 1) Power supply ripple is too large;
- 2) The antenna types do not match, or not properly installed;
- 3) The surrounding environment is harsh, strong interference sources;
- 4) Surrounding co-channel interference;

Appendix 1: SMD Reflow Chart 附录 1: 炉温曲线图

We recommend you should obey the IPC related standards in setting the reflow profile:



IPC/JEDEC J-STD-020B the condition for lead-free reflow soldering	big size components (thickness $\geq 2.5\text{mm}$)
The ramp-up rate (T _l to T _p)	3°C/s (max.)
preheat temperature	
- Temperature minimum (T _{smin})	150°C
- Temperature maximum (T _{smax})	200°C
- preheat time (t _s)	60~180s
Average ramp-up rate(T _{smax} to T _p)	3°C/s (Max.)
- Liquidous temperature(T _L)	217°C
- Time at liquidous(t _L)	60~150 second
peak temperature(T _p)	245+/-5°C