Spectron® Technologies

Data Sheet
RF Transceiver Module
RMRF4463
V1.1

Description:

RMRF4463 Module is based on the Silicon Labs si4463 chip, this is a highly integrated subG band RF transceiver chip. Extremely good receive sensitivity (-120 dBm), 20 dBm RF output power to ensure that high anti-interference and long range. Strictly use lead-free craft production and testing, in line with RoHS and Reach standard. Module can support 315/433/868/915 four typical frequencies, has small size, low power consumption, long transmission distance, strong anti-interference ability and other characteristics, They can both get long distance and anti-interference and power consumption which can be widely used in the Internet of things all kinds of wireless communication field.

Applications:

- Smart Home
- Smart Parking
- Smart agriculture and cold chain logistics
- New Photovoltaic and smart energy storage
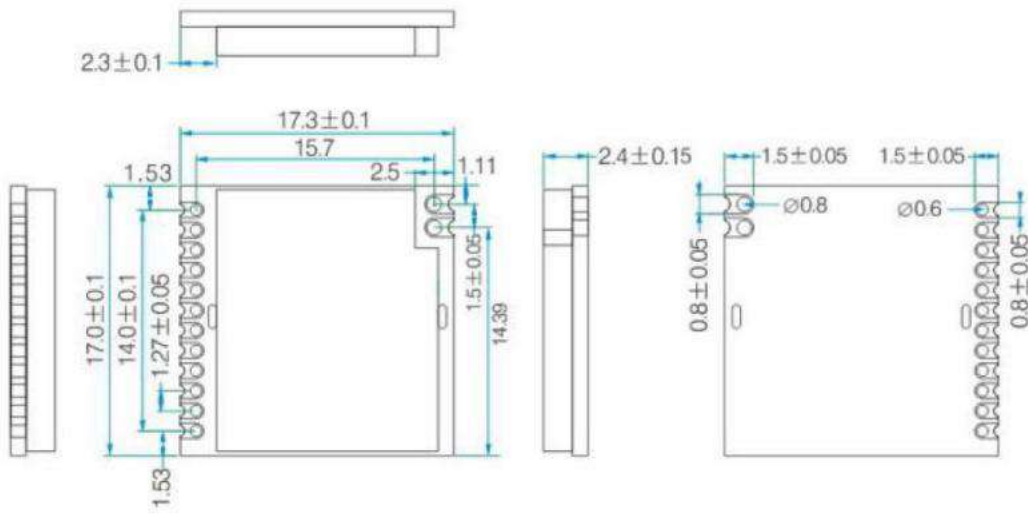- Wireless Industrial control
- Smart Metering
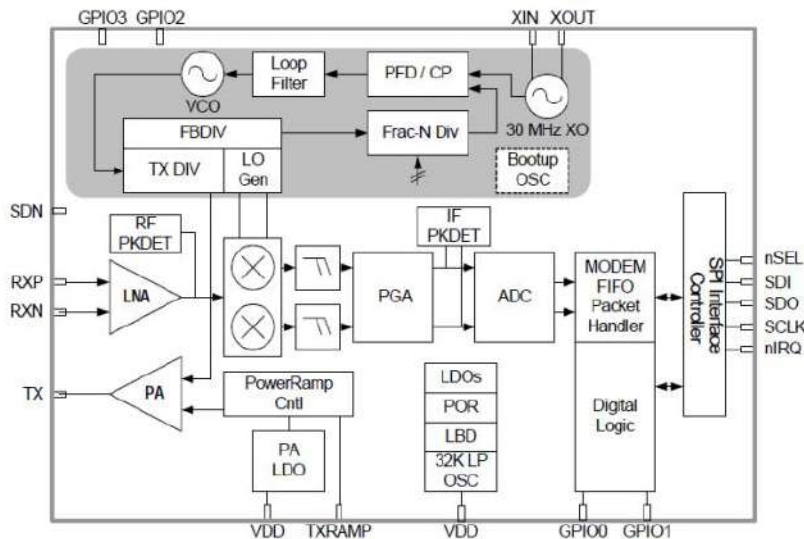
Internal architecture drawing
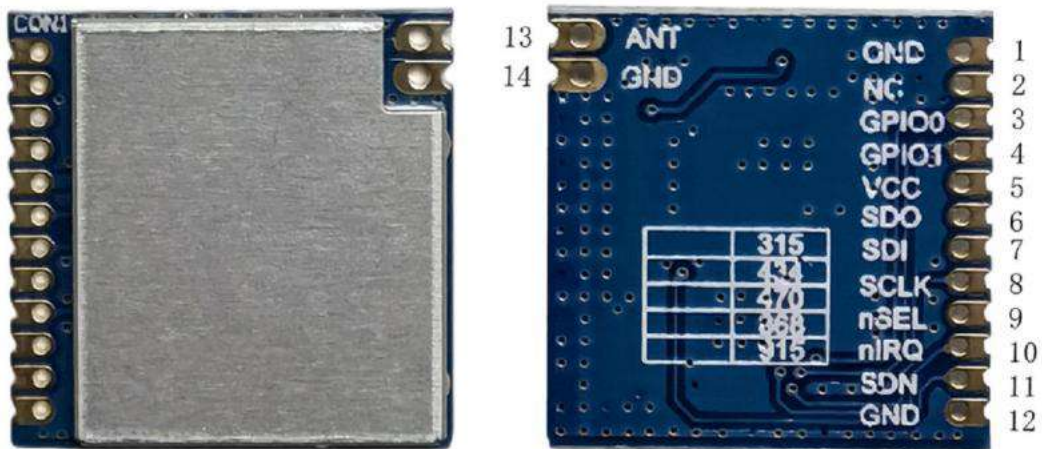
Electrical Specifications

Parameter	performance		note
Power Supply	1.8～3.6V		Standard:3.3V
Work Temp	-40℃～85℃		Standard:25℃
Storage Temp	-40℃～125℃ .< 90%RH		
RF frequency	142～1050MHz		Suggest :433MHz. Configurable.
Power Consumption	TX state	85mA	Max TX power
	RX state	13mA	High sensitivity mode
	Sleep state	0.1uA	
TX Power	20dBm		Max. Configurable.
Modulation	ASK/(G)FSK/4(G)FSK/MSK		
Sensitivity	-126dBm		GFSK/data rate=0.5Kbps
Date Rate	0.1kbps-1Mbps		Configurable.
Connect Port	Stamp hole		
Communication	SPI		
Package Size	17.3*17*2.3(±0.1)mm		
Antenna Type	Compatible with half hole welding plate/hole welding plate antenna (welding)		Impedance 50Ω

Package & Dimensions[1]

Note 1: All dimensions are in millimeters.

Product Picture

Pin Definition

S/N	Name	Function
1	GND	Connect to power ground
2	NC	No connection
3	GPIO0	Connect to Si4463 chip GPIO0 Pin
4	GPIO1	Connect to Si4463 chip GPIO1 Pin
5	VCC	Connect to 3.3V Power Supply
6	SDO	0–VDD V Digital Output.Provides a serial readback function of the internal control registers.
7	SDI	Serial Data Input.0–VDD V digital input. This pin provides the serial data stream for the 4-line serial data bus.
8	SCLK	Serial Clock Input.0–VDD V digital input. This pin provides the serial data clock function for the 4-line serial data bus. Data is clocked into the Si4463/61 on positive edge transitions.
9	nSEL	Serial Interface Select Input.0–VDD V digital input. This pin provides the Select/Enable function for the4-line serial data bus.
10	nIRQ	General Microcontroller Interrupt Status Output. When the Si4463/61 exhibits any one of the interrupt events, the nIRQ pin will be set low = 0. The Microcontroller can then determine the state of the interrupt by reading the interrupt status. No external resistor pull-up is required, but it may be desirable if multiple interrupt lines are connected.
11	SDN	Shutdown Input Pin. 0–VDD V digital input. SDN should be = 0 in all modes except Shutdown mode. When SDN = 1, the chip will be completely shut down, and the contents of the registers will be lost.。
12	GND	Connect to power ground
13	GND	Connect to power ground
14	ANT	Connect to 50ohm antenna

Notice：Si4463 chip GPIO2/GPIO3 Pin connected to Antenna switch already in module.

GPIO3 control Receive，GPIO2 control transmit.

Design Guide
1、Application Circuit
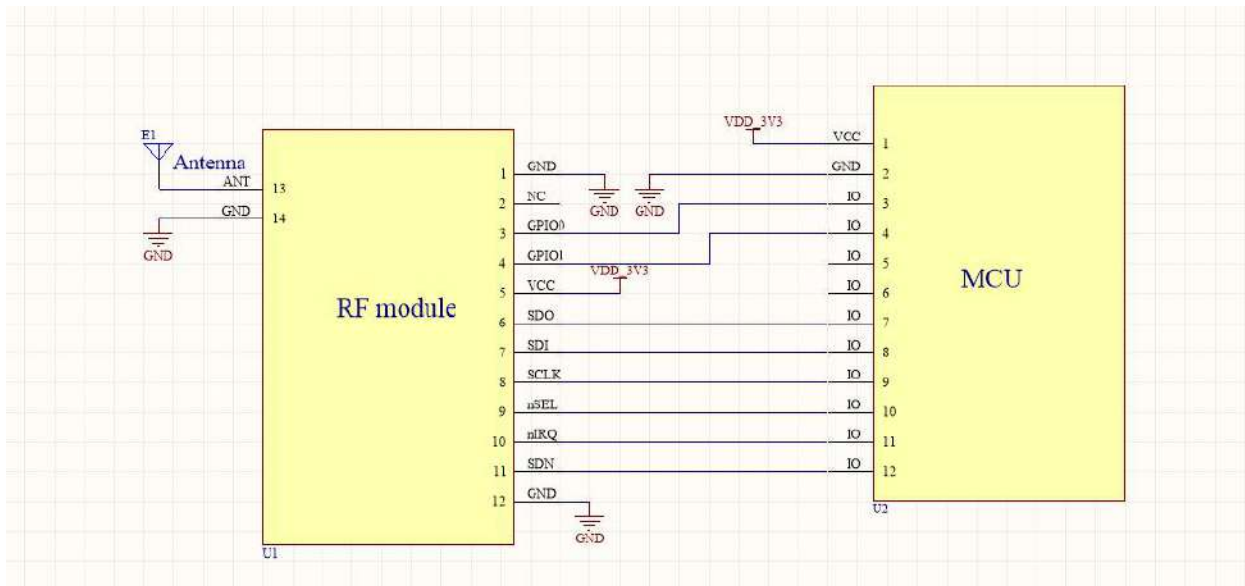
2、Operation Instruction

•It is recommended to use linear regulated power supply (LDO) on the module power supply, power supply ripple coefficient is as small as possible. The module must be reliable grounding, and please pay attention to the correct power connection , such as the reverse connection may result in permanent damage to the module;

•The module antenna nearby can not around other metallic object, otherwise it will seriously affect the communication distance.

Recommended SMT Solder Profile
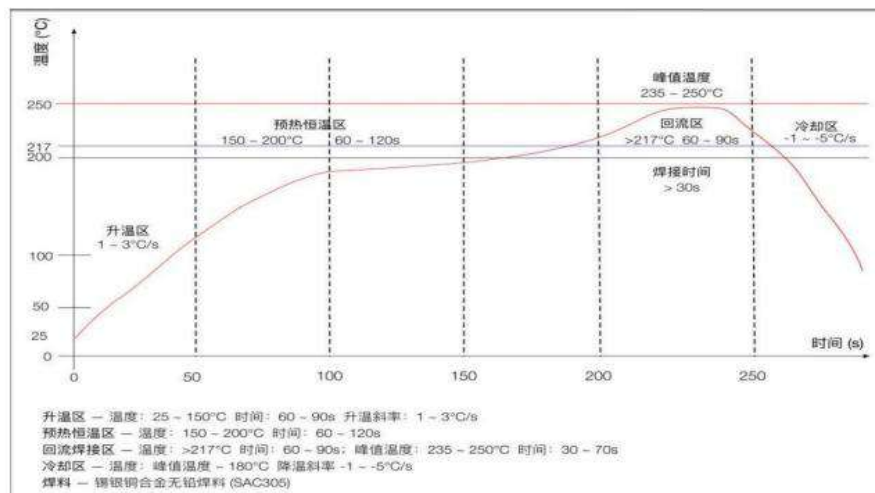
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