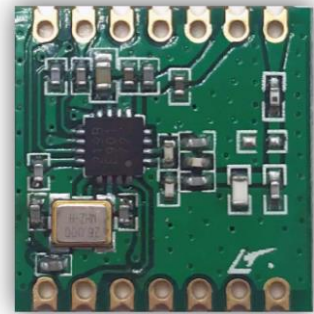


## Sub-1GHz OOK / FSK High Performance RF Receiver Module

### Product Overview

RFM219B is a low power, high performance, OOK, (G) FSK RF receiver module which suitable for all kinds of 127 to 1020 MHz wireless applications. RFM219B is highly integrated, which simplifies the peripheral materials that needed in system design. It supports a variety of packet formats and codec methods, and can flexibly meet the needs of various applications for different packet formats and e codec. Also, the RFM219B module can support 64-byte Rx FIFO, the GPIO and interrupt configuration, Duty-Cycle running mode, RSSI detection, low voltage detection, low consumption timing out out wake-up, manual fast frequency hopping, static noise output and so on, which making the application designs more flexible thus to achieve product differentiation design. RFM219B works from 1.8 V to 3.6V. With -120dBm sensitivity and current consumption of only 8.5 mA, which combined with Duty-Cycle mode, so the receiving power of chips can be further reduced.



RFM219BW

### Ordering Information

Module No.	Working Frequency
RFM219BW- 315S2	315MHz
RFM219BW- 433S2	433.92MHz
RFM219BW- 868S2	868.35MHz
RFM219BW- 915S2	915MHz

### Applications

- Automatic meter reading
- Home security and building automation
- ISM band data communication
- Industrial monitoring and control
- Remote control and security system
- Remote key entry
- Wireless sensor nodes
- Labeling reader

### Features

- Comply with FCC and ETSI safety rules
- Strong anti-interference ability, suitable for complex interference environment scenarios
- Frequency range: 127~1020MHz
- Modulation and demodulation mode: OOK, (G)FSK &(G)MSK
- Data rate: 0.5~300 kbps
- Sensitivity:
  - -120 dBm @ 2.0kbps,  $F_{RF} = 433.92$
  - -111dBm @ 50kbps,  $F_{RF} = 433.92$
- Voltage range: 1.8 ~ 3.6 V
- Receiving current: 8.5 mA @ 433.92 MHz
- Support ultra low power reception mode
- Deep sleep mode: 300 nA, Duty Cycle OFF
- Low power time mode: 800 nA, Duty Cycle ON
- 3-wire SPI interface
- Support for direct and package mode
- Configurable packet processor and 64-Byte FIFO
- Support non return to zero, Manchester, data whitening decoding
- Support forward error correction

## Pin Information

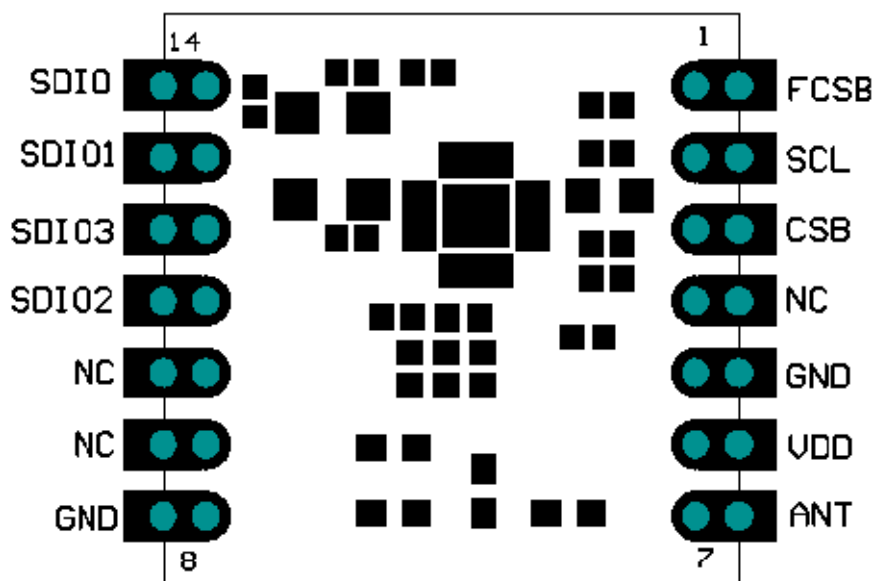


Figure1. RFM219B Pin Assignment (Top View)

Table1. RFM219B Pin Functions

Pin No.	Name	Description
1	FCSB	SPI Selection to access FIFO
2	SCL	SPI clock
3	CSB	SPI Selection to access registers
4	NC	Not connected
5	GND	Ground (electricity)
6	VDD	Positive power supply
7	ANT	Antenna Input
8	GND	Ground (electricity)
9	NC	Not connected
10	NC	Not connected
11	SDIO2	Configurable as: INT1, INT2, DOUT, DCLK, RF_SWT
12	SDIO3	Configurable as: CLKO, DOUT, INT2, DCLK
13	SDIO1	Configurable as: DOUT, INT1, INT2, DCLK, RF_SWT
14	SDIO	SPI Data input & output

## Electrical Parameters

Testing conditions: Power supply 3.0V, Temperature 25 °C

Table2. Recommended Operating Conditions

Parameter	Symbol	Conditions	Minimum	Typical value	Maximum	Unit
Supply Voltage	VDD		1.8	3.3	3.6	V
Operating Temperature	T		-40		85	°C
Power Supply Voltage Slope			1			mV/us

Table3. Absolute Maximum Rating

Parameter	Symbol	Conditions	Minimum	Maximum	Unit
Supply Voltage	VDD	-0.3	-0.3	3.6	V
Interface Voltage	VIN	-0.3	-0.3	3.3	V
Junction Temperature	TJ	-40	-40	125	°C
Storage Temperature	TSTG	-50	-50	150	°C
Soldering Temperature	TSDR	Last for at least 30s		255	°C
ESD Level[2]	HBM	-2	-2	2	kV
Latch Current	@ 85 °C	-100	-100	100	mA

Table4. Receiving Parameters

Parameter	Conditions	Minimum	Typical value	Maximum	Unit
Frequency Band	Different matching networks are needed	760	868、915	1020	MHz
		380	433.92	510	MHz
		190	315	340	MHz
		127		170	MHz
Receiving Sensitivity FSK F <sub>DEV</sub> =10 kHz, DR =2.0 kbps	433MHz	-	-121	-	dBm
	868MHz	-	-119	-	
	915MHz	-	-117	-	

## Dimensions

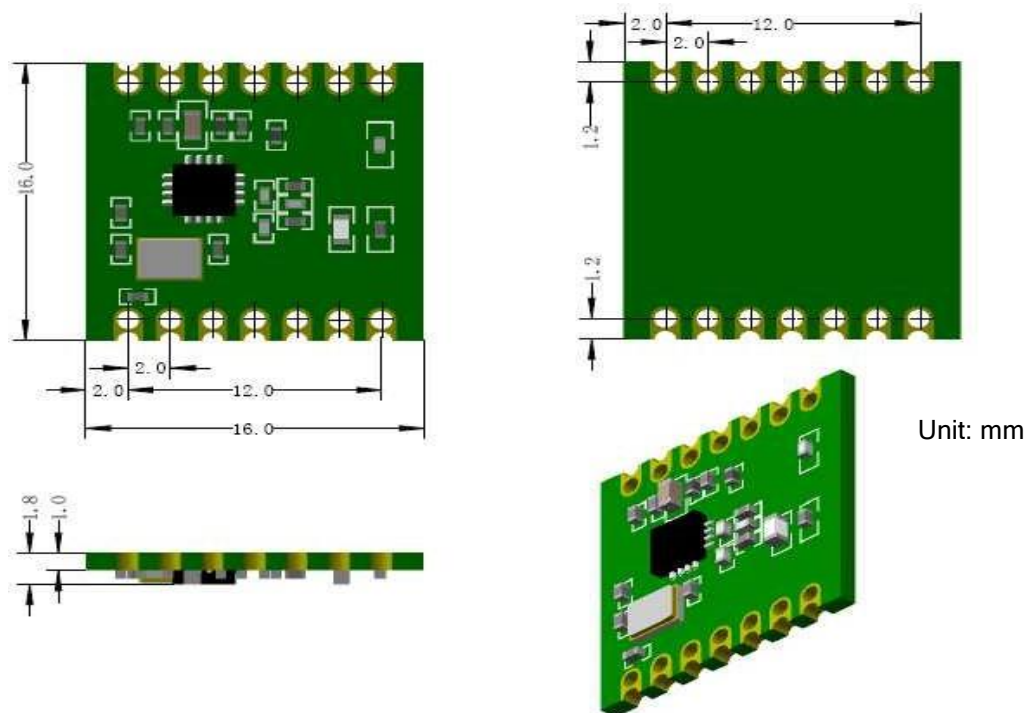


Figure 2.Dimensions

## Contact Information

Shenzhen Hope Microelectronics Co., Ltd.

Address: 30th floor of 8th Building, C Zone, Vanke Cloud City, Xili Sub-district, Nanshan, Shenzhen, GD, P.R. China

Post Code: 518055

Tel: +86-755-82973805

Email: [sales@hoperf.com](mailto:sales@hoperf.com)

Website: [www.hoperf.com](http://www.hoperf.com)