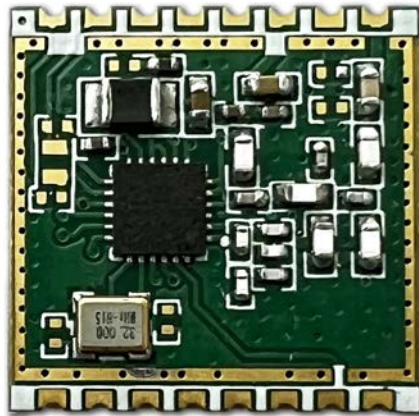


RFM310H/RFM310

Wireless Transceiver Module



Overview

The RFM310H/RFM310 module is a low-power, high-performance, OOK, (G)FSK, 4(G)FSK RF transceiver module for wireless applications. It supports a variety of data packet formats and encoding and decoding methods, which can flexibly meet various application requirements. Rich GPIO and interrupt configuration, Duty-Cycle operation mode, channel monitoring, high-precision RSSI, low-voltage detection, power-on reset, low-frequency clock output, fast frequency hopping, squelch output and other functions, making the application more flexible.

Features

- Super strong anti-interference ability, suitable for use in complex interference environments
- Receiving Sensitivity: -114dBm, DR=10Kbps, DEV=5KHz @433.92MHz
- Working Frequency: 433.92/868/915MHz
- Working Voltage: 1.8V-3.6V
- Output Power: +20dBm @RFM310H, +13dBm @RFM310
- Transmitting Current: 82mA @20dBm @433.92MHz, 28mA @13dBm @433.92MHz
- Receiving Current: 10mA (DCDC Enable) @433.92MHz
- Quick and stable automatic frequency control (AFC)
- Quick and accurate valid signal detection (PJD, RSSI)
- Automatic ACK and re-sending
- 4-wire SPI interface
- Supporting both direct and packet modes

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 node
- Tag reader and writer

Pin Arrangement

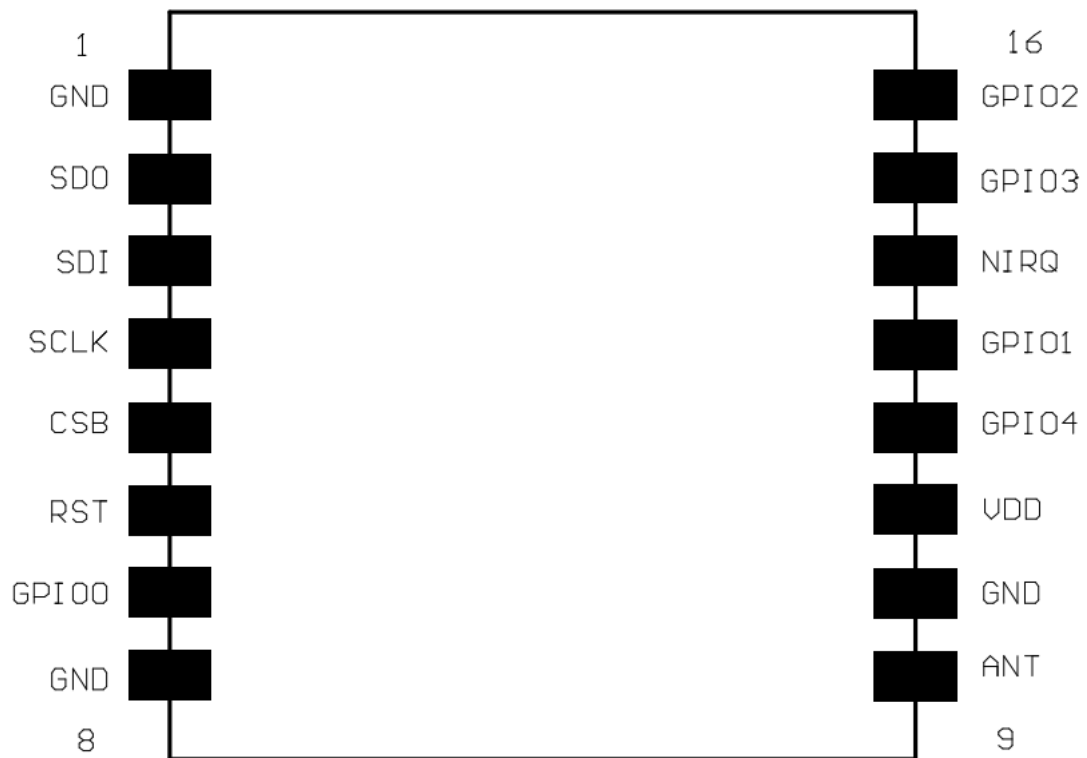


Figure 1. RFM310H/RFM310 Module Pin Arrangement (Top View)

Pin Description

Table 1. RFM310H/RFM310 Module Pin Description

Pin #	Pin Name	Description
1	GND	GND
2	SDO	SPI data output
3	SDI	SPI data input
4	SCLK	SPI clock
5	CSB	Chip select bar
6	GPIO5/RST	IO, Configurable
7	GPIO0	IO, Configurable
8	GND	GND
9	ANT	Antenna port
10	GND	GND
11,	VDD	Power supply
12	GPIO4	IO, Configurable
13	GPIO1	IO, Configurable
14	NIRQ	IO, Configurable
15	GPIO3	IO, Configurable
16	GPIO2	IO, Configurable

Electrical Specifications

Test conditions: working voltage 3.3V, working temperature 25°C.

Table 2. RFM310H/RFM310 Module Electrical Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Working Frequency	F _C	RFM310H/RFM310-433S2		433.92		MHz
		RFM310H/RFM310-868S2		868		
		RFM310H/RFM310-915S2		915		
Receiving Sensitivity	S	FSK: DR=10Kbps, DEV=5KHz, @433.92MHz		-114		dBm
		FSK: DR=10Kbps, DEV=5KHz, @868MHz		-109		
		FSK: DR=10Kbps, DEV=5KHz, @915MHz		-109		
Working Voltage	V _{DD}		1.8	3.3	3.6	V
Receiving Current	I _{Rx}	433.92MHz DCDC Enable		10		mA
		868MHz DCDC Enable		10.4		
		915MHz DCDC Enable		10.4		
Transmitting Current	I _{Tx}	433.92MHz DCDC Enable @20dBm		82		mA
		868MHz DCDC Enable @20dBm		92		
		915MHz DCDC Enable @20Bbm		93		
Transmitting Current	I _{Tx}	433.92MHz DCDC Enable @13dBm		28		mA
		868MHz DCDC Enable @13dBm		32		
		915MHz DCDC Enable @13dBm		33		
Sleep Current	I _{Sleep}	Duty Cycle=OFF		0.6		uA
Working Temperature	T _{OP}		-40		+85	°C

Note: The module operating frequency needs to be modified through RFPDKF software configuration. The default value of Xtal Cap Load is 2. When the 433.92MHz/868MHz/915MHz frequency is used, this value needs to be modified to 31.

Dimensions

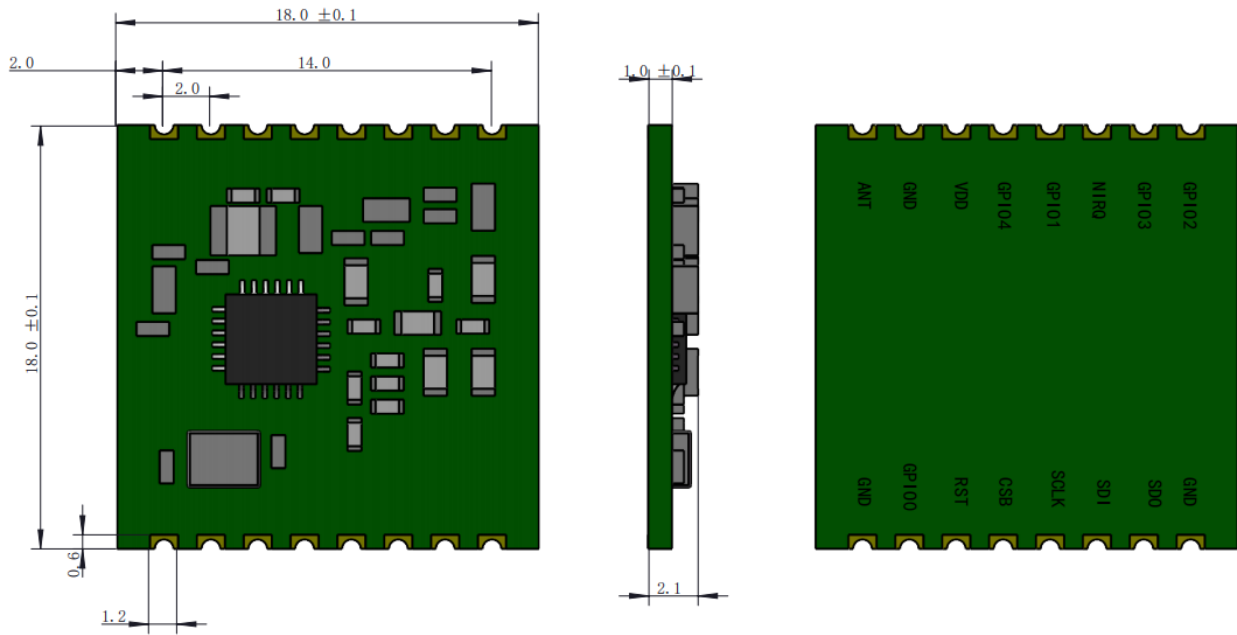
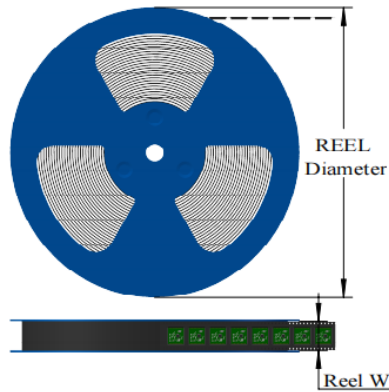


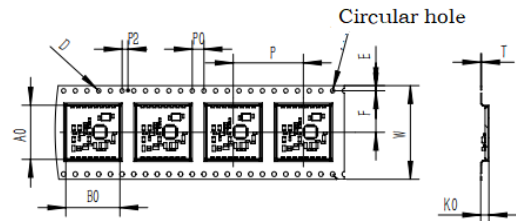
Figure 2. RFM310H/RFM310 Module Dimensions (Unit: mm)

Tape & Reel Specification:940pcs per reel

TAPE AND REEL INFORMATION

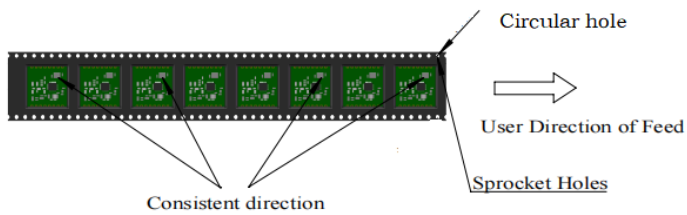


TAPE DIMENSIONS



QUADRANT ASSIGNMENTS FOR ORIENTATION IN TAPE

Device	SPQ	Reel diameter (mm)	Reel width (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P (mm)	W (mm)	D0 (mm)	F (mm)	T (mm)	E (mm)	P0 (mm)	P2 (mm)	Pin1 Quad
RFM310H	900	330	33.1	18.5	18.5	2.8	24	32	1.5	14.2	0.3	1.75	4	2	



Ordering Information

Part Number	Working Frequency
RFM310H/RFM310-433S2 (R)	433.92MHz
RFM310H/RFM310-868S2 (R)	868MHz
RFM310H/RFM310-915S2 (R)	915MHz