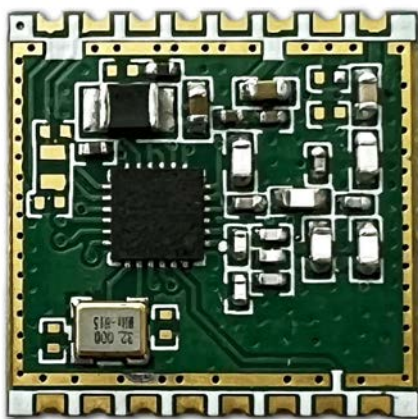


# RFM310H/RFM310

## 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

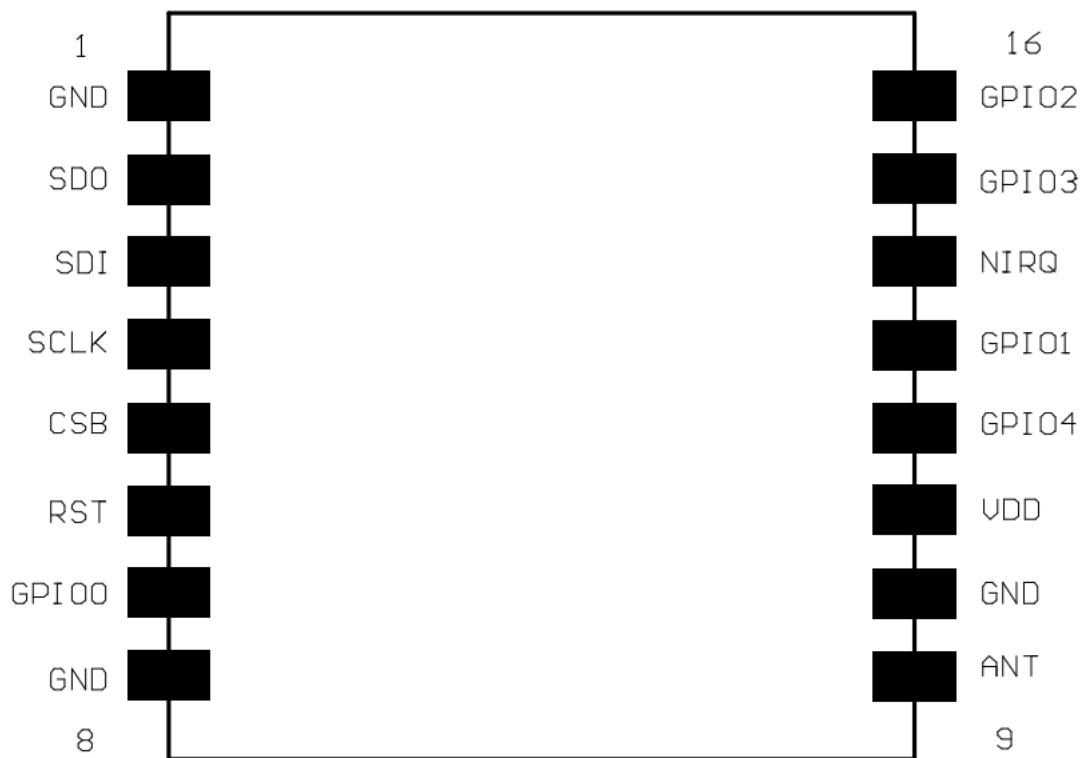


Figure 1. RFM310H/RFM310 Module Pin Arrangement (Top View)

**Pin Description****Table 1. RFM310H/RFM310 Module Pin Description**

<b>Pin #</b>	<b>Pin Name</b>	<b>Description</b>
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

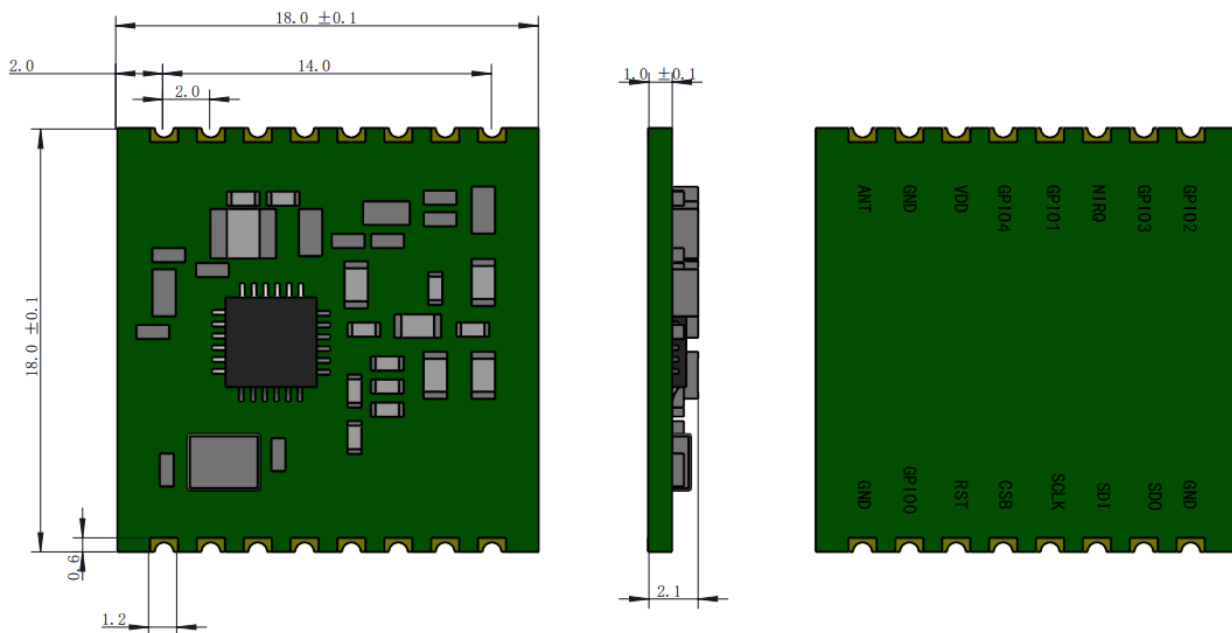
Test conditions: working voltage 3.3V, working temperature 25°C.

**Table 2. RFM310H/RFM310 Module Electrical Specifications**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Working Frequency	F <sub>c</sub>	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 <sub>DD</sub>		1.8	3.3	3.6	V
Receiving Current	I <sub>Rx</sub>	433.92MHz DCDC Enable		10		mA
		868MHz DCDC Enable		10.4		
		915MHz DCDC Enable		10.4		
Transmitting Current	I <sub>Tx</sub>	433.92MHz DCDC Enable @20dBm		82		mA
		868MHz DCDC Enable @20dBm		92		
		915MHz DCDC Enable @20Bbm		93		
Transmitting Current	I <sub>Tx</sub>	433.92MHz DCDC Enable @13dBm		28		mA
		868MHz DCDC Enable @13dBm		32		
		915MHz DCDC Enable @13dBm		33		
Sleep Current	I <sub>Sleep</sub>	Duty Cycle=OFF		0.6		uA
Working Temperature	T <sub>OP</sub>		-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)**

**Ordering Information**

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