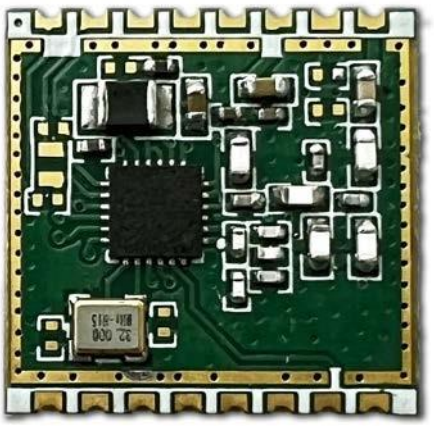
RFM310HW Wireless Transceiver Module



Overview

The RFM310HW 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 operati on 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: 433.050 to 434.79MHz
- Working Voltage: 1.8V-3.6V
- Output Power: +10dBm @RFM310H, +3dBm @RFM310
- Transmitting Current: 28mA @10dBm @433.92MHz, 18mA @3dBm @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

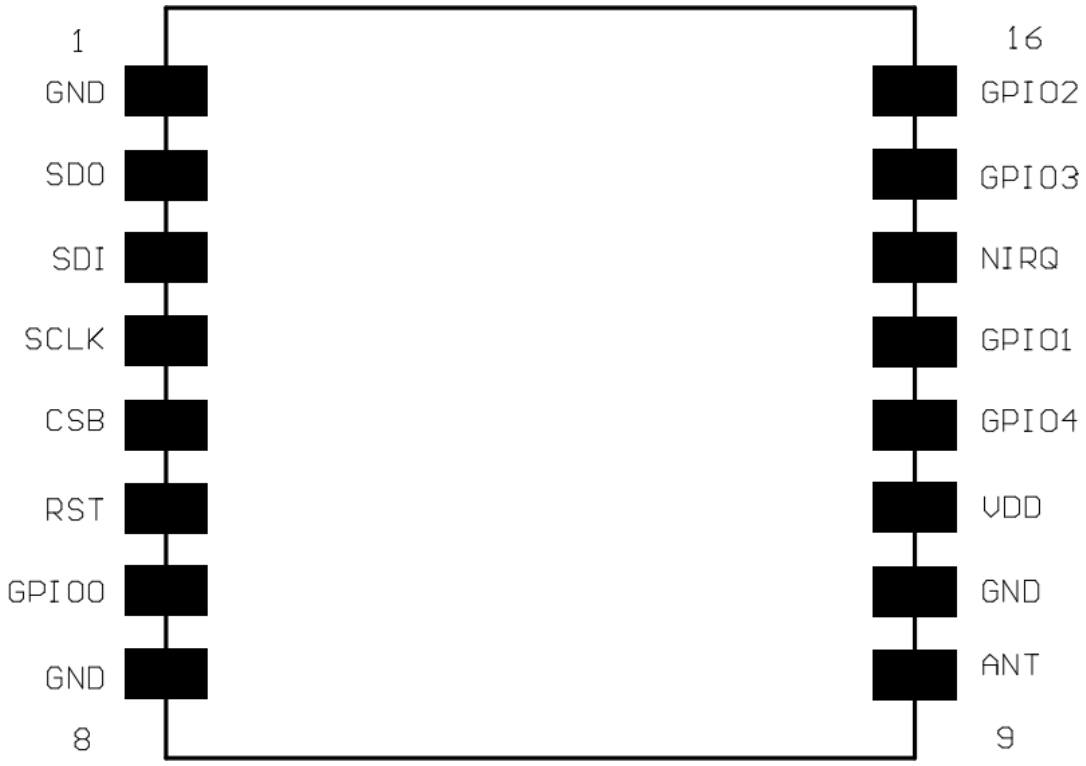


Figure 1. RFM310HW Module Pin Arrangement (Top View)

Pin Description

Table 1. RFM310HW 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℃.

Table 2. RFM310H Module Electrical Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Working Frequency	Fc	RFM310HW-433S2	433.050	433.92	434.79	MHz
Receiving Sensitivity	S	FSK: DR=10Kbps, DEV=5KHz, @433.92MHz		-114		dBm
Working Voltage	V_{DD}		1.8	3.3	3.6	V
Receiving Current	I_{Rx}	433.92MHz DCDC Enable		10		mA
Transmitting Current	I_{Tx}	433.92MHz DCDC Enable @10dBm		28		mA
Transmitting Current	I_{Tx}	433.92MHz DCDC Enable @3dBm		18		mA
Sleep Current	I_{Sleep}	Duty Cycle=OFF		0.6		uA
Working Temperature	T_{OP}		-40		+85	℃

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 frequency is used, this value needs to be modified to 31.

Dimensions

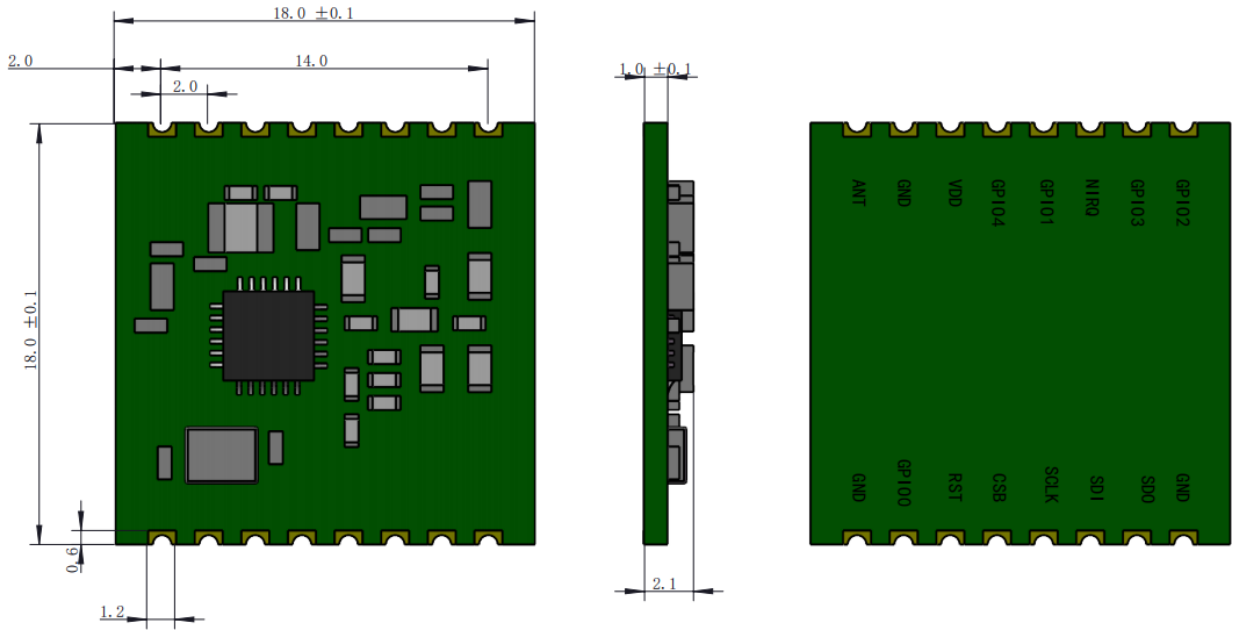


Figure 2. RFM310HW Module Dimensions (Unit: mm)

Ordering Information

Part Number	Working Frequency
RFM310HW-433S2	433.050 to 434.79MHz