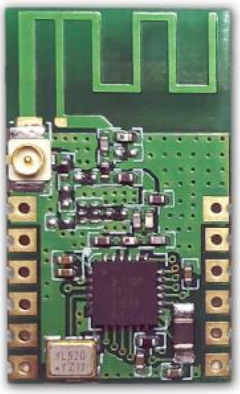
2.4GHz LoRa Wireless RF Transceiver Module

General Description

The RFM99W is a high cost-effective RF transceiver module with ultra-low power consumption, high sensitivity and long range communication.

The module working on frequency of 2400~2500MHz, and to provide LoRa, FLRC and FSK these three modulation. The LoRa, FLRC modulation mode can greatly increase communication range, and also can be compatible with Bluetooth protocol.



RFM99W

Features

- Super strong capacity of resisting disturbance, which suitable for complex interference environment scenarios.
- RXSensitivity：-132dBm 1 Kbps 2.4GHz
- Working Frequency：2400MHZ-2500MHz
- Working Voltage：1.8V-3.7V
- TX Current: 30mA　+12.5dbm 2.4GHz
- RX Current: 8.5mA 2.4GHz
- Sleeping Current：≤1uA

Ordering Information

Module No.	Working Frequency
RFM99W	2.4GHz

Applications

- Smart Watches
- Smart Home and BuildingAutomation
- UAV
- Remote ControlToys
- IoTIndustry
- Industrial Sensors

Pin Diagram

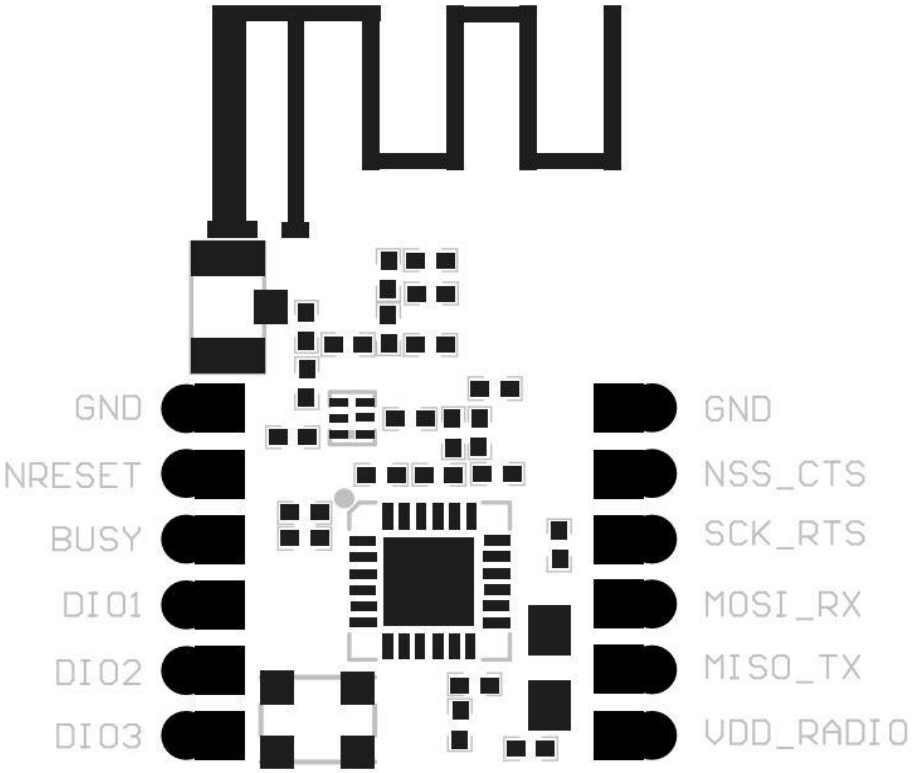


Figure 1. RFM99W Pin Diagram (Top View)

Table 1. RFM99W Pin Description

Pin No.	Pin Name	Description
1	GND	Ground
2	NRESET	Reset signal, active low
3	BUSY	Busy indicator
4	DIO1	Digital I/O 1, software configured
5	DIO2	Digital I/O 2, software configured
6	DIO3	Digital I/O 3, software configured
7	NSS-CTS	SPI Slave Select
8	SCK-RTS	SPI clock
9	MOSI-RX	SP slave input-RX
10	MISO-TX	SP slave output-TX
11	VDD-RADIO	voltage

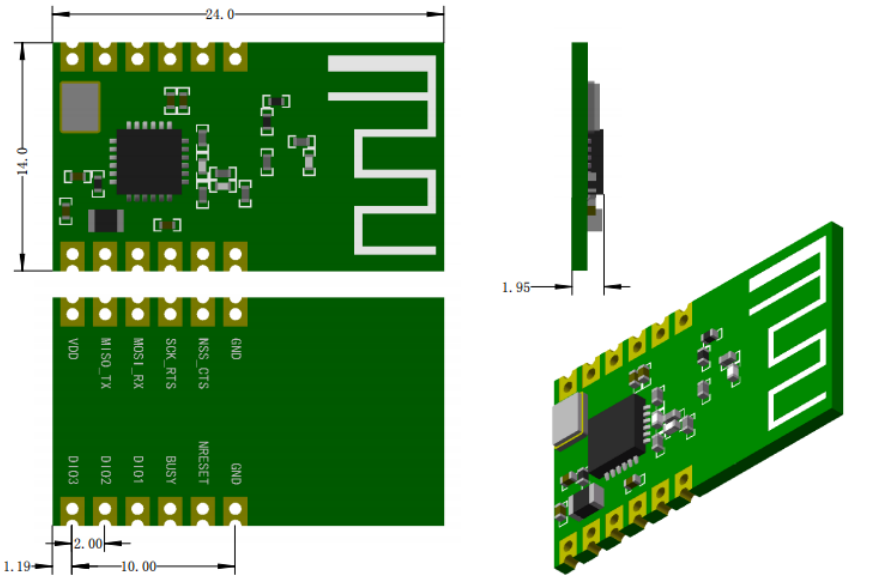
● Electrical Characteristics

Testing Conditions: Power Supply Voltage3.3V, Temperature25℃

Table 2. Listing of Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
WorkingFrequency	Fc	RFM99W	2400	2400	2500	MHz
Modulation	MOD		LORA,FLRC,FSK			
RX Sensitivity	S	2400MHz 1 Kbps		-132		dBm
Data Rate	DR	FSK	0.125		2	Mbps
		FLRC	0.26		1.3	Mbps
		LORA	0.595		253.9	Kbps
Working Voltage	V_{DD}		1.8	3.3	3.7	V
RX Current	I_{OP}	2400MHZ		8.2	10	mA
TX Current		2400MHZ +12.5dbm		30	40	mA
Sleep Current	I_{Sleep}			0.2	1	uA
Image Rejection	IMR			30		dB
Working Temperature	T_{OP}		-40		+85	℃

Outline Dimension Diagram



Unit: mm

Figure 2. Outline Dimension Diagram

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