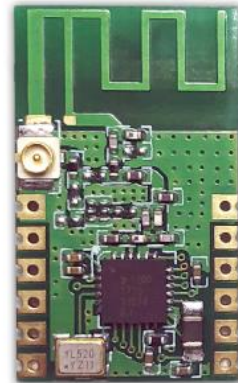


## 2.4GHz LoRa Wireless RF Transceiver Module

### 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

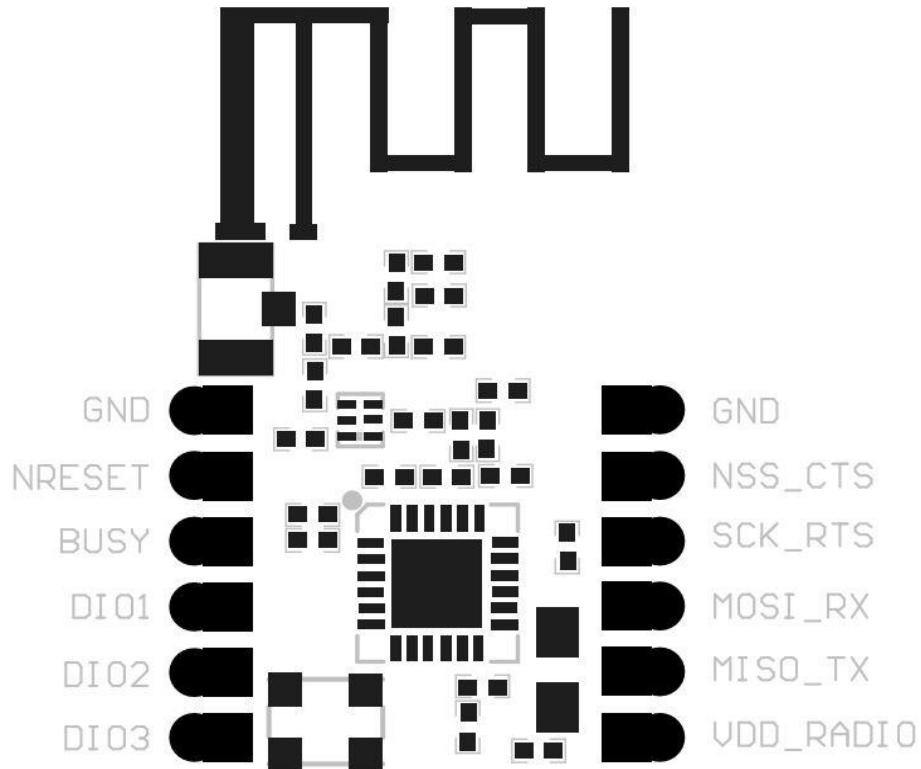


Figure 1. RFM99W Pin Diagram (Top View)

**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 Voltage 3.3V, Temperature 25°C

**Table 2. Listing of Electrical Characteristics**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Working Frequency	F <sub>c</sub>	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 <sub>DD</sub>		1.8	3.3	3.7	V
RX Current	I <sub>OP</sub>	2400MHZ		8.2	10	mA
TX Current		2400MHZ +12.5dbm		30	40	mA
Sleep Current	I <sub>Sleep</sub>			0.2	1	uA
Image Rejection	IMR			30		dB
Working Temperature	T <sub>OP</sub>		-40		+85	°C

● Outline Dimension Diagram

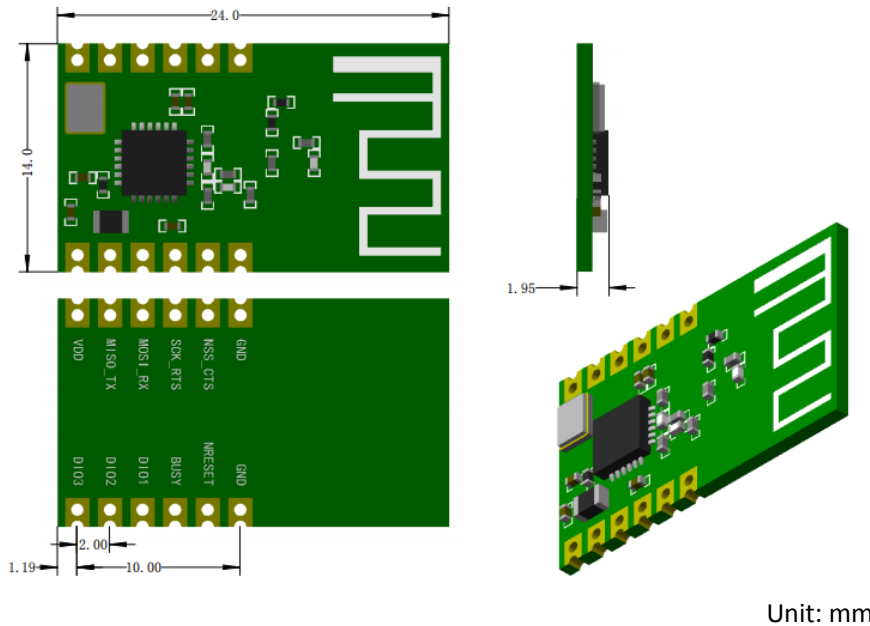


Figure 2. Outline Dimension Diagram

<p><b>HOPEMICROELECTRONICSCO.,LTD</b></p> <p>Add:2/F,Building3,Pingshan Minqi Park, Xili Town, Nanshan District, Shenzhen, GD, China Tel: 86-755-82973805 Fax: 86-755-82973550 Email: <a href="mailto:sales@hoperf.com">sales@hoperf.com</a> Website: <a href="https://www.hoperf.com">https://www.hoperf.com</a></p>	<p>This document may contain preliminary information and is subject to change by Hope Microelectronics without notice. Hope Microelectronics assumes no responsibility or liability for any use of the information contained herein. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Hope Microelectronics or third parties. The products described in this document are not intended for use in implantation or other direct life support applications where malfunction may result in the direct physical harm or injury to persons. NO WARRANTIES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE OFFERED IN THIS DOCUMENT.</p>
---	--