RFM6505

433/470/868/915MHz SOC Transceiver Module

Product Description

The RFM6505 module is an SOC RF transceiver module that integrates an STM8L152 series low-power MCU and an ultra-low-power RF transceiver with ultra-low power consumption, high sensitivity, long-distance communication, and high cost performance. It integrates rich peripherals, provides multiple general-purpose IO, 32.768 kHz external crystal oscillator, channel listening, high-precision RSSI, and channel input 12-bit high-speed ADC and so on.

Ordering Information

Model No.	Working Frequency
RFM6505-433S2	433.92MHz
RFM6505-470S2	470MHz
RFM6505-868S2	868MHz
RFM6505-915S2	915MHz

Product Features

- Super anti-interference ability, suitable for use in complex interference environment
- Receiving Sensitivity: -137dBm SF=12 BW=125KHz
- Working Frequency: 433.92MHz 、 470MHZ 、 868MHz、915MHz
- Power Supply Voltage Input Range: 2.4V-3.7V
- Transmitting Current: 105mA 22dBm 433.92MHz
- Receiving Current: 10mA 433.92MHz

Application Range

- Smart Meter Reading
- Building Automation
- Remote Control Application
- Security System
- Smart Parking
- Smart City
- Environmental Monitoring
- Environmental Monitoring

Product Pin

Pic 1. RFM6505 Module Front View

Table 1. RFM6505 Module Pin Definition

Pin No.	Pin Name	Definition
1	SPI1_NSS	SPI-CS
2	I2C1_SDA	I2C-SDA
3	I2C1_SCL	I2C-SCL
4	ADC_IN0	ADC sampling input pin, also used for general IO
5	SETA	Module working mode control pin
6	SETB	Module working mode control pin
7	AUX	Module status indication IO
8	GND	Ground
9	RF_ANT	Antenna interface
10	GND	Ground
11	VDD	Power supply
12	SWIM	Burn IO
13	NRST	Reset pin
14	UART0_RX	UART-RX
15	UART0_TX	UART-TX
16	SPI1_MISO	SPI-MISO
17	SPI1_M0SI	SPI-M0SI
18	SPI1_SCK	SPI-SCK

Remarks:

I2C1_SDA and I2C1_SCL need to add two pull-up resistors externally for I2C or ordinary IO port. Otherwise, the high level cannot be pulled high

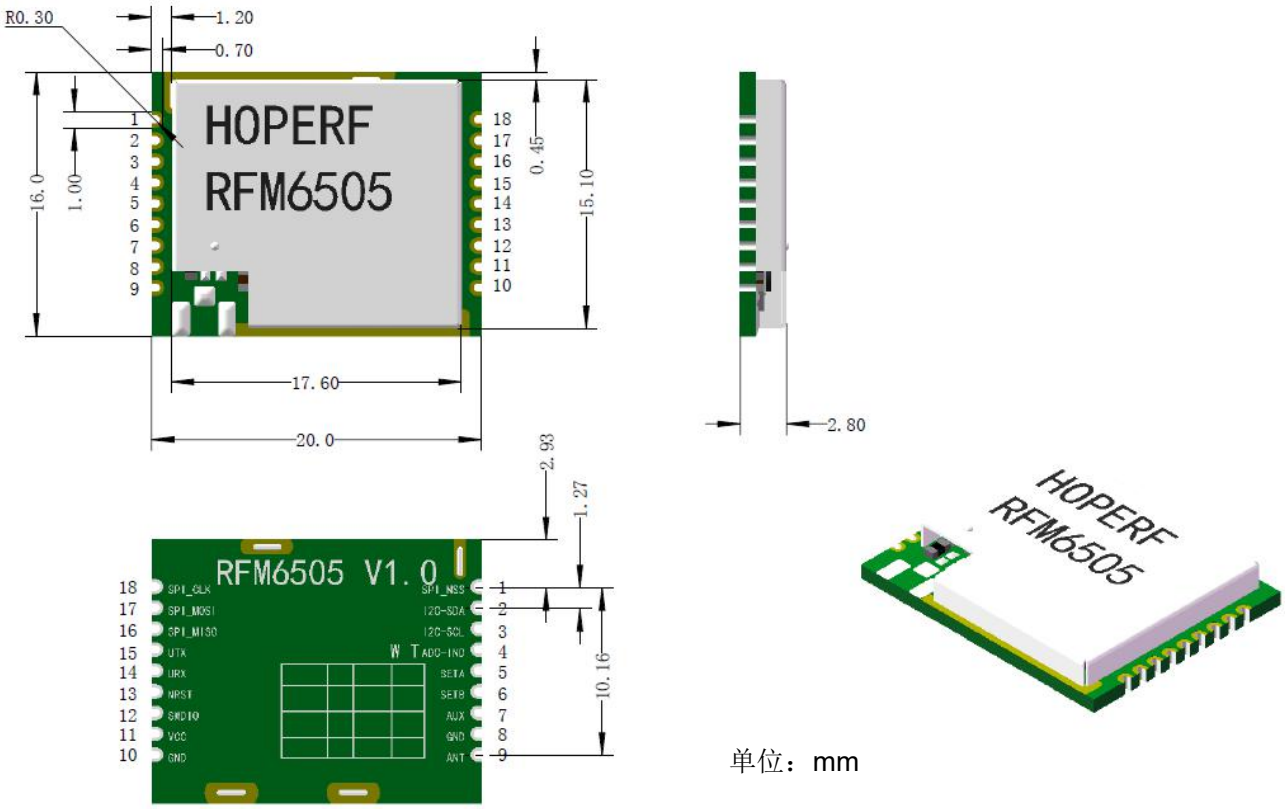
Electrical parameters

Test conditions: power supply 3.3V, temperature 25℃.

Table 2. List of electrical parameters

parameter	symbol	status	Min	Typical value	Max	Unit
working frequency	Fc	RFM6505-433S2		433.92		MHz
		RFM6505-470S2		470.30		MHz
		RFM6505-868S2		868		MHz
		RFM6505-915S2		915		MHz
Receiving sensitivity	S	LORA:SF=12 BW=125KHz		-137		dBm
		LORA:SF=12 BW=125KHz		-137		dBm
		LORA:SF=12 BW=125KHz		-137		dBm
Working Current	V_{DD}		1.8	3.3	3.7	V
Receiving Current	I_{RX}	433.92MHZ		10	11	mA
		470.30MHZ		10	11	mA
		868MHZ		10	11	mA
		915MHZ		10	11	mA
Transmitting Current	I_{TX}	433.92MHZ +22dbm		105	120	mA
		470.30MHZ +22dbm		108	120	mA
		868MHZ +22dbm		150	165	mA
		915MHZ +22dbm		130	150	mA
Sleep Current	I_{SLEEP}	RF and RTC are not configured		1.35	2.0	uA
Working temperature	T_{OP}		-40		+85	℃

Module Size



Pic2. Module Size

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