

LORA Transceiver Module HM-6601 Datasheet



1. Overview

The HM-6601 module includes a general LoRa wireless communication SoC, integrated with a RF transceiver and a 32-bit RISC MCU. The MCU uses ARM Cortex M4, with 48 MHz operation frequency. The RF Transceiver has continuous frequency coverage from 150 MHz to 960 MHz.

The HM-6601 Module provides ultra-long range and ultra-low power communication for LoRa application. HM-6601 can achieve a high sensitivity to -138 dBm and the maximum transmit power is up to +22 dBm. This makes the module suitable to be used in long range LoRa and have high efficiency.

2. Features

- Working Voltage: 1.7V - 3.7V
- Working Frequency: 433.92 MHz (for China), 470 MHz (for China), 868 MHz (for Europe), 915 MHz (for USA/Canada)
- Receiving Sensitivity: -138 dBm @SF=12, BW=125KHz
- Tx Current: 108mA @+22dbm(3.3V), 433.92 MHz (for China)
- Rx Current: 10mA @433.92 MHz (for China)

3. Applications

- Smart meters
- Supply chain and logistics
- Building automation
- Agricultural sensors
- Smart cities
- Retail store sensors
- Asset tracking
- Street lights
- Parking sensors
- Environmental sensors
- Healthcare
- Safety and security sensors
- Remote control applications

4. Pin Diagram

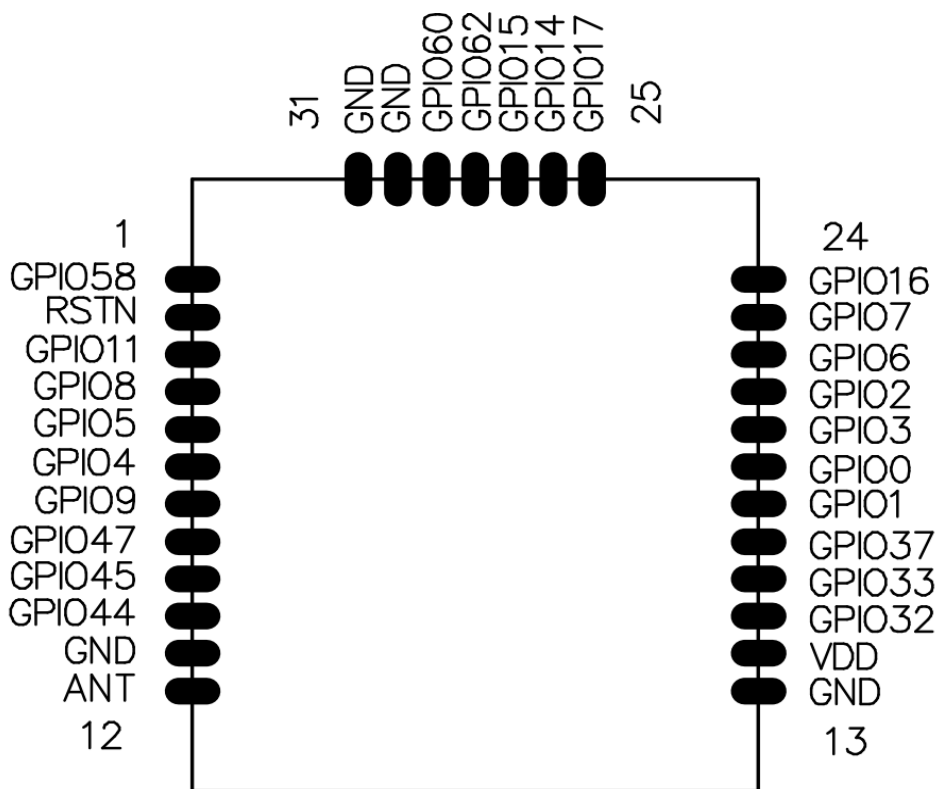


Figure 1. Pin Diagram Top View

Table 1. HM-6601 Module Pin Description

Pin	Name	Description
1	GPIO58	MCU GPIO
2	RSTN	Reset signal, active low
3	GPIO11	MCU GPIO
4	GPIO08	MCU GPIO
5	GPIO05	MCU GPIO
6	GPIO04	MCU GPIO
7	GPIO09	MCU GPIO
8	GPIO47	MCU GPIO
9	GPIO45	MCU GPIO
10	GPIO44	MCU GPIO
11, 13, 30, 31	GND	Ground
12	ANT	Antenna port
14	VCC	Input voltage
15	GPIO32	MCU GPIO
16	GPIO33	MCU GPIO
17	GPIO37	MCU GPIO
18	GPIO1	MCU GPIO
19	GPIO0	MCU GPIO
20	GPIO3	MCU GPIO
21	GPIO2	MCU GPIO
22	GPIO6	SWD DATA
23	GPIO7	SWD CLK
24	GPIO16	MCU GPIO
25	GPIO17	MCU GPIO (UART_TXD)
26	GPIO14	MCU GPIO
27	GPIO15	MCU GPIO
28	GPIO62	MCU GPIO (UART_RXD)
29	GPIO60	MCU GPIO

5. Electrical Characteristics

Testing Conditions: 3.3V @ 25°C

Table 2. Electrical Characteristics

Parameters	Symbol	Conditions	Min.	Typ.	Max.	Unit
Frequency	F _c	HM-6601-433S2 (for China)		433.92		MHz
		HM-6601-470S2 (for China)		470		MHz
		HM-6601-868S2 (for Europe)		868		MHz
		HM-6601-915S2 (for USA/Canada)		915		MHz
Receiving Sensitivity	S	LORA Mode SF=12, BW=125KHz		-138		dBm
Working Voltage	V _{DD}		1.7	3.3	3.7	V
Rx Current	I _{RX}	433.92 MHz		10	11	mA
		470 MHz		10	11	mA
		868 MHz		10	11	mA
		915 MHz		10	11	mA
Tx Current	I _{TX}	433.92 MHz @+22dbm		108	120	mA
		470 MHz @+22dbm		108	120	mA
		868 MHz @+22dbm		120	135	mA
		915 MHz @+22dbm		120	135	mA
Sleep Current	I _{sleep}	Without RF and RTC		1.3		uA
Operating Temperature	T _{OP}		-40		+85	°C

6. Dimension (Unit: mm)

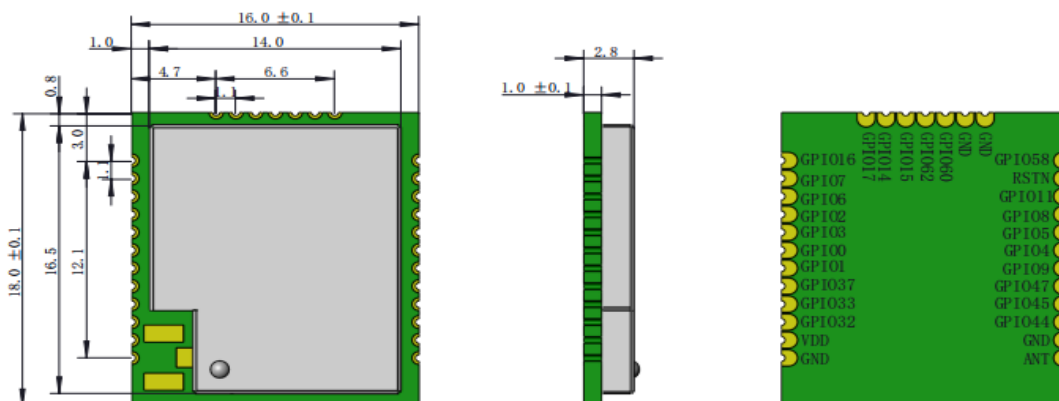


Figure 2. Module Dimension

7. Ordering Information

Model	Frequency
HM-6601-433S2 (for China)	433.92MHz
HM-6601-470S2 (for China)	470MHz
HM-6601-868S2 (for Europe)	868MHz
HM-6601-915S2 (for USA/Canada)	915MHz

8. Contact Information

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