

INDUSTRIAL PRODUCT DATASHEET

WM1302 Raspberry Pi Hat

WM1302 Pi HAT adds SX1302-based LoRaWAN gateway capability to Raspberry Pi, with integrated GPS and LoRaWAN authentication for compact gateway development.

SKU

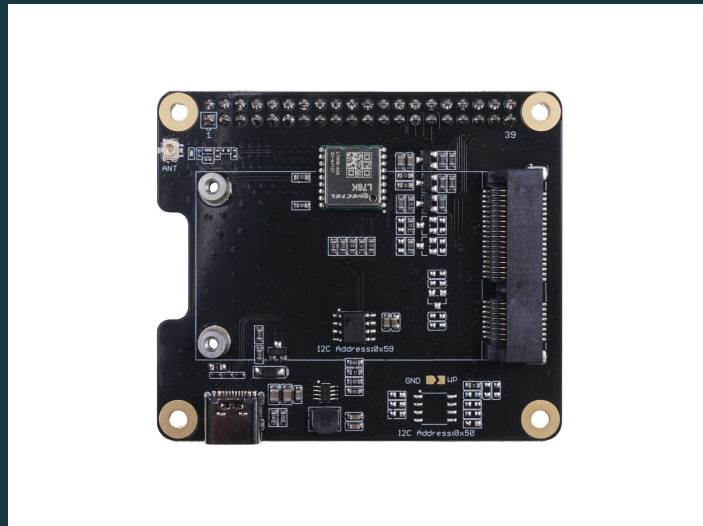
113100022

UPDATED

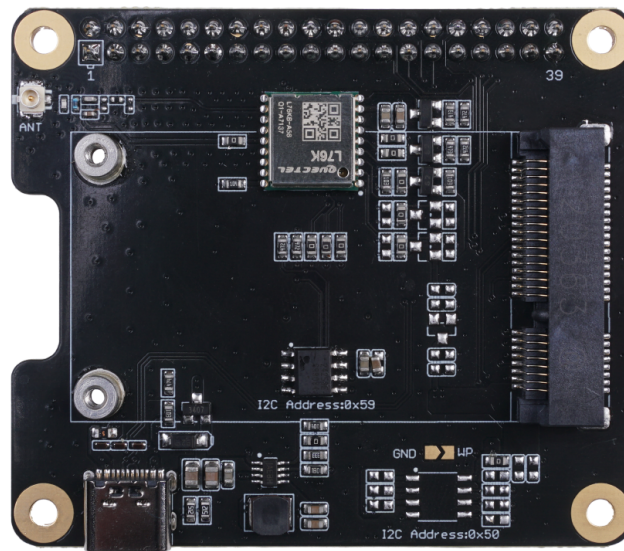
2026-08-07 08:38:58

PRICE

\$19.90(Excl. VAT)



Overview



WM1302 Pi HAT is an add-on expansion board for attaching the WM1302 LoRaWAN Gateway module (SPI) based on SX1302 to Raspberry Pi versions up to 4B, integrating a LoRaWAN authentication chip and GPS module. Together with the WM1302 module and Raspberry Pi, it enables compact LoRaWAN gateways supporting smart agriculture, smart cities, and other IoT scenarios with higher sensitivity and lower power consumption than previous chips.

Key Features

Note

Please click [here](#) to contact us if you need any further information on Seeed IIoT products and services. We are excited to see you can scale up and expand your business with our products and services.

- Standard Pi Hat form factor with 40 pins female pin header
- Raspberry Pi versions up to 4B compatible
- GPS Module embedded
- LoRaWAN authentication chip embedded

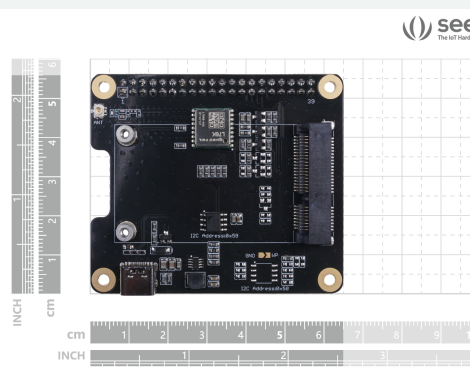
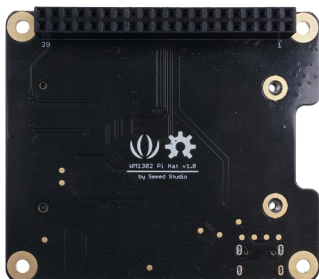
WM1302 Pi HAT is an add-on expansion board designed specifically for attaching the WM1302 LoRaWAN Gateway module(SPI) based on SX1302 to Raspberry Pi versions up to Raspberry Pi 4B. It also integrates the LoRaWAN authentication chip and GPS module.

WM1302 module is a new generation of LoRaWAN gateway module with mini-PCIe form-factor. Based on the Semtech® SX1302 baseband LoRaWAN® chip, WM1302 unlocks the greater potential capacity of long-range wireless transmission for gateway products. It features higher sensitivity, less power consumption, and lower operating temperature than the previous SX1301 and SX1308 LoRa® chip.

WM1302 Pi HAT supports the WM1302 module's mini-PCIe form-factor and can automatically configure the standard 52-pin golden fingers to the Raspberry Pi GPIO connector with a 40-pin compatible header. This simplifies the development process for users to integrate with Raspberry Pi. WM1302 Pi HAT works as an extension board and helps add the functionality of SX1302 on the Raspberry Pi, to support LoRaWAN and LoRa protocols for long-range wireless transmission. The GPS module integrated also enhances the accuracy of timing and location of the WM1302 module.

WM1302 Pi HAT, together with the WM1302 Gateway Module and Raspberry Pi, can help construct your very completed and compacted LoRaWAN wireless communication gateways supporting smart agriculture, smart cities, and other IoT scenarios.

Product Gallery



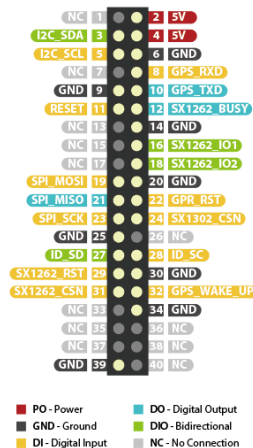
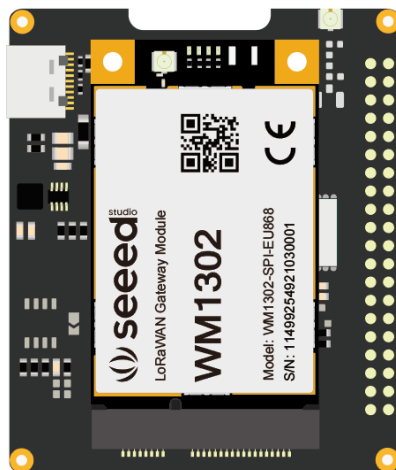
Specification

Dimensions	56*65mm
Weight	0.501
Operating Voltage	5V

Power Interface	40 Pin Header or USB
Raspberry Pi 40-Pin Headers	Support Raspberry Pi 5 Support Raspberry Pi 4 B Support Raspberry Pi 3 A+/B/B+ Support Raspberry Pi 2 B Support Raspberry Pi A+/B+ Support Raspberry Pi Zero/Zero W
PCIe Header	52 Pin Mini-PCIe Header
GNSS	Support GPS L1, GLONASS L1, BeiDou B1
Battery	Exclude

Hardware Overview

WM1302 Pi Hat Pinout



No.	Raspberry Pi GPIO	WM1302 Pi Hat Pin Name	IO Type	function
1	3V3 power	NC		
2	5V power	5V	Power	
3	GPIO 2(SDA)	I2C_SDA	DIO	I2C Data for Temperature Sensor & Authentication chip
4	5V power	5V	Power	
5	GPIO 3(SCL)	I2C_SCL	DI	I2C Clock for Temperature Sensor & Authentication chip
6	Ground	GND	Ground	
7	GPIO 4(GCLK0)	NC		
8	GPIO 14(TXD)	GPS_RXD	DI	GPS UART RXD
9	Ground	GND	Ground	
10	GPIO 15(RXD)	GPS_TXD	DO	GPS UART TXD
11	GPIO 17	RESET	DI	Reset Pin Active high, when SPI version Active Low, when USB version
12	GPIO 18(PCM_CLK)	SX1262_BUSY	DO	SX1262 BUSY Pin
13	GPIO 27	NC		
14	Ground	GND	Ground	
15	GPIO 22	NC		
16	GPIO 23	SX1262_IO1	DIO	SX1262 DIO1 Pin
17	3V3 power	NC		
18	GPIO 24	SX1262_IO2	DIO	SX1262 DIO2 Pin
19	GPIO 10(MOSI)	SPI_MOSI	DI	SPI MOSI
20	Ground	GND	Ground	
21	GPIO 9(MISO)	SPI_MISO	DO	SPI MISO
22	GPIO 25	GPS_RST	DI	Active high at least 10ms to reset GPS module
23	GPIO 11(SCLK)	SPI_SCK	DI	SPI Clock
24	GPIO 8(CE0)	SX1302_CSN	DI	SX1302 Chip select
25	Ground	GND	Ground	
26	GPIO 7(CE1)	NC		
27	GPIO 0(ID_SD)	ID_SD	DIO	I2C Data for EEPROM
28	GPIO 1(ID_SC)	ID_SC	DI	I2C Clock for EEPROM
29	GPIO 5	SX1262_RST	DI	SX1262 Reset Pin
30	Ground	GND	Ground	
31	GPIO 6	SX1262_CSN	DI	SX1262 Chip select
32	GPIO 12(PWM0)	GPS_WAKE_UP	DI	Active high for GPS module enter Standby mode
33	GPIO 13(PWM1)	NC		
34	Ground	GND	Ground	
35	GPIO 19 (PCM_FS)	NC		
36	GPIO 16	NC		
37	GPIO 26	NC		
38	GPIO 20(PCM_DIN)	NC		
39	Ground	GND	Ground	
40	GPIO 21(PCM_DOUT)	NC		

Applications

- LoRaWAN Gateway device/hotspot development
- Long-distance wireless communication application development
- Any learning and experimentation based on Raspberry Pi
- LoRa and LoRaWAN application learn and research

Part List

Part List:	
WM1302 Pi Hat *1	GPS Antenna *1
M2.5*6mm Screw *8	
M2.5*11.0mm Stud *4	
M2.0*H6.0mm Screw *2	

Compliance & Logistics



HSCODE	8517709000
USHSCODE	8536700000
UPC	
EUHSCODE	8517180000
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/WM1302-Pi-Hat-p-4897.html>
- [WM1302 Pi Hat v1.0.sch](#)
- [WM1302 Pi Hat v1.0.pdf](#)
- [WM1302 Pi Hat v1.0.brd](#)

Seeed Technology Co.,Ltd.

9F, Building G3, International E City,
Zhongshanyuan Road, Nanshan, Shenzhen, China

Tel: +86 0755-80695676

Web: www.seeed.cc

Shop: www.seeedstudio.com