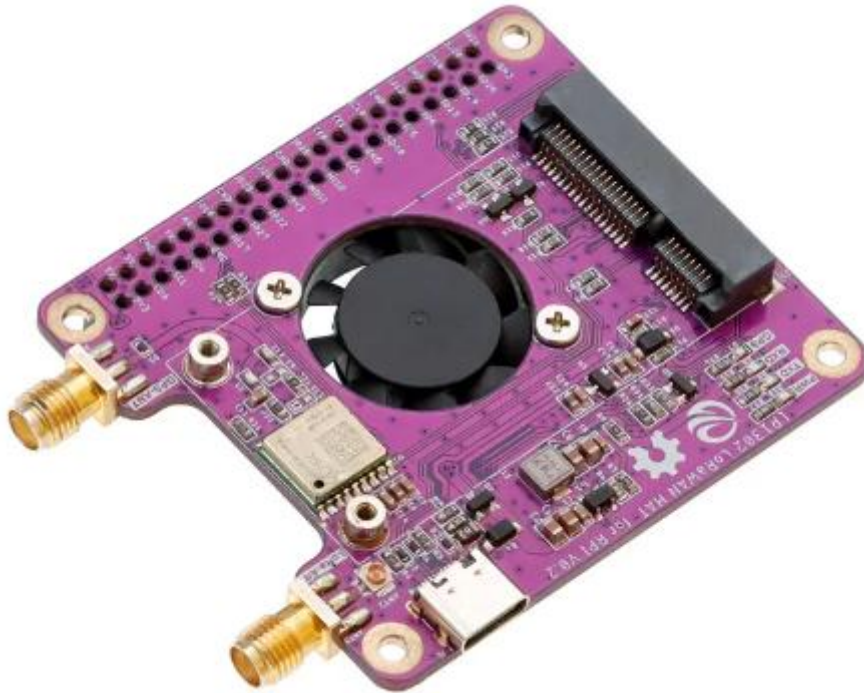


LR1302 868M/915M LoRaWAN Hat for RPI



Introduction

The LR1302 LoRaWAN HAT is a Raspberry Pi expansion board that connects the SX1302-based LR1302 LoRaWAN gateway module to a Raspberry Pi (up to Raspberry Pi 5). It also integrates a GPS module and RTC real-time clock to improve the timing and positioning accuracy of the LR1302 module.

In addition to supporting the mini-PCIe form factor of the LR1302 gateway module, the LR1302 LoRaWAN HAT for RPI automatically configures the standard 52-pin gold finger to the Raspberry Pi GPIO connector with a 40-pin compatible header. This simplifies the development process for users to integrate with Raspberry Pi, making it easier to add LR1302 functionality to Raspberry Pi. In addition, it comes with a cooling fan that can effectively dissipate heat for the Raspberry Pi and improve the performance of the Raspberry Pi.

By using the LR1302 LoRaWAN HAT with the LR1302 Gateway Module and a Raspberry Pi, users can build a complete and compact LoRaWAN wireless communication gateway.

It provides reliable communication solutions for smart agriculture, smart cities and other IoT scenarios.

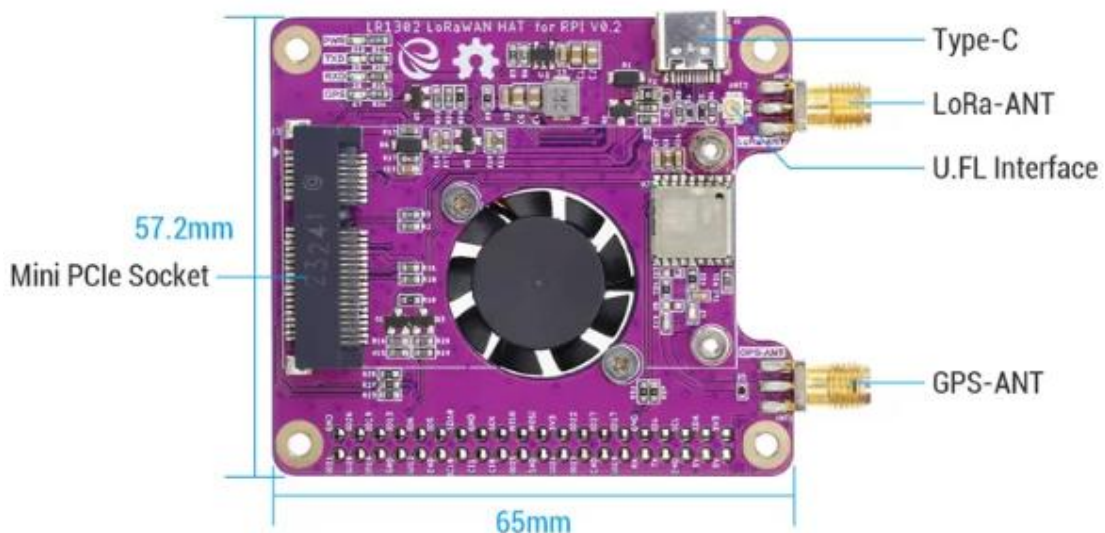
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Parameters

Power Interface	40 Pin Header or USB
Clock	With logical master clock and real-time clock functions
Fan	Built-in(DC 5V)
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+
PCIe Header	52 Pin Mini-PCIe Header
GNSS	Support GPS L1, GLONASS L1, BeiDou B1
Indicator light	PWR: Green TXD: Green RXD: Blue GPS: Green
Battery	CR1220
Operating Voltage	5V
Dimensions	65*57.2mm
Weight	28.8g

Interface and Dimension



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Pin diagram

Raspberry Pi GPIO	LR1302 Pi Hat Pin Name	IO Type	Function
3V3 power	NC		
5V power	5V	Power	
GPIO 2(SDA)	I2C_SDA	DIO	I2C Data for Temperature Sensor 8 authentication chip
5V power	5V	Power	
GPIO 3(SCL)	I2C_SCL	DI	I2C clock for temperature sensor & authentication chip
Ground	GND	Ground	
GPIO 4(GPCLKO)	NC		
GPIO 14(TXD)	GPS_RXD	DI	GPS UART_RXD
Ground	GND	Ground	
GPIO 15(RXD)	GPS_TXD	DO	GPS_UART_TXD
GPIO 17	RESET	DI	Reset Pin Active high, when SPI version Active low, when USB version
GPIO 18(PCMCLK)	SX1262_BUSY	DO	SX1262 BUSY Pin
GPIO 27	NC		
Ground	GND	Ground	
GPIO 22	NC		
GPIO 23	SX1262_IO1	DIO	SX1262 DIO1 Pin
3V3 power	NC		
GPIO 24	SX1262_IO2	DIO	SX1262 DIO2 Pin
GPIO 10(MOSD)	SPI_MOSI	DI	SPI MOSI
Ground	GND	Ground	
GPIO 9(MISO)	SPI_MISO	DO	SPI MISO
GPIO 25	GPS_RST	DI	Active high at least 10ms to reset GPS module
GPIO 11(SCLK)	SPI_SCK	DI	SX1302 chip select
GPIO 8(CE0)	SX1302_CSN	DI	SX1302 Chip select
Ground	GND	Ground	
GPIO 7(CE1)	NC		
GPIO 0(ID_SD)	ID_SD	DIO	I2C data for eeprom
GPIO 1(ID_SC)	ID_SC	DI	I2C clock for eeprom
GPIO 5	SX1262_RST	DI	SX1262 RESET Pin
Ground	GND	Ground	

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GPIO 6	SX1262_CSN	DI	SX1262 chip select
GPIO 12(PWM0)	GPS WAKE UP	DI	Active high for GPS module enter standby mode
GPIO 13(PWM1)	NC		
Ground	GND	Ground	
GPIO 19(PCM FS)	NC		
GPIO 16	NC		
GPIO 26	NC		
GPIO 20(PCM DIN)	NC		
Ground	GND	Ground	
GPIO 21(PCM DOU)	NC		

Safety Instructions

- **Power Off:** Ensure that the power to the Raspberry Pi and related devices is turned off before connecting or disconnecting the expansion board. This will prevent accidental short circuits or electric shocks.
- **Proper Insertion/Removal:** When connecting or disconnecting the expansion board, make sure the connector and slot are aligned, and insert or remove them gently and steadily, avoiding excessive force or bending pins.
- **Keep Dry:** Ensure that the working environment for the expansion board and Raspberry Pi is dry, away from water sources or humid environments, to prevent circuit short circuits or damage.
- **Temperature Control:** Ensure that the Raspberry Pi and expansion board operate within the appropriate working temperature range. Excessive temperatures can cause damage to electronic components or overheating issues, so ensure proper heat dissipation and ventilation.