



RAK7244

Developer LoRaWAN™ Gateway
Raspberry Pi 4 LoRa Gateway with GPS

Package Content



RAK7244
(1x)



LoRa Antenna
(1x)



GPS Antenna
(1x)



Power Adapter
(1x)

Product Description

The RAK7244 Pilot Gateway Pro is a device that consists of Raspberry Pi 4, RAK2245 Pi HAT which includes a GPS module and a Heat Sink for better performance and thermal heat dissipation management. And it's housing is built with an aluminum casing.

For the build-in RAK2245 Pi HAT, it uses the SX1301 chip from Semtech which built-in LoRa concentrator IP core is a powerful digital signal processing engine. It is able to receive up to 8 LoRa packets simultaneously sent with different spreading factors on different channels and available in multiple variants so it can be used for international standard bands. This unique capability allows to implement innovative network architectures advantageous over other short range systems.

The RAK7244 is ideal for prototyping, proof-of-concept demonstration or for the evaluation. It includes a ready to use LoRaWAN Gateway OS that can be connected to a LoRaWAN server. Also it is developer friendly and simple even for no-so-techy users to set up LoRaWAN system. It has to be the best value and function for connectivity to address a variety of applications like Smart Grid, Intelligent Farm and other IoT enterprise applications.

Product Overview

- Computing with Raspberry Pi 4(Linux).
- SX1301 base band processor, emulates 49 x LoRa demodulators 10 programmable parallel demodulation paths, support 8 uplinks channel, 1 downlink channel.
- Support optional RAK2013 cellular module(Quectel BG96 or EG91 or EG95) for NB-IOT / CAT-M / CAT1 LTE / CAT4 LTE.
- Built-in the Ublox MAX-7Q GPS Module.
- Built-in Heat Sink for thermal heat dissipation management.
- Supports 5V/2.5A power supply.
- TX power up to 27dBm, RX sensitivity down to -139dBm@SF12, BW 125KHz.
- LoRa frequency supports global license-free frequency band (EU433, CN470, EU868, US915, AS923, AU915, KR920, IN865).
- Housing with top cover, body, bottom cover with riveted motherboard standoff.
- Includes Pi ready 'ID EEPROM', GPIO setup and device tree can be automatically configured from vendor information.
- Supports fully open source code connected to a LoRaWAN server.





RAK7244

Developer LoRaWAN™ Gateway
Raspberry Pi 4 LoRa Gateway with GPS

Key Features

Computing	<ul style="list-style-type: none"> Raspberry Pi 4(Linux)
LoRa Module	<ul style="list-style-type: none"> RAK2245 Pi HAT LoRa Concentrator Board with heat sink (1 x Semtech SX1301 transceiver concentrator and 2 x Semtech SX125X highly integrated RF front end I/Q transceivers)
GPS Module	<ul style="list-style-type: none"> Ublox MAX-7Q
LoRa Frequency	<ul style="list-style-type: none"> EU433, CN470, EU868, US915 AS923, AU915, KR920, IN865
LoRaWAN Version	<ul style="list-style-type: none"> LoRaWAN V1.0.2
Range	<ul style="list-style-type: none"> Urban: 2~4km, Suburb: 5~10km, Open Area: >15km
Node Numbers	<ul style="list-style-type: none"> 500 nodes/km2
TX Power	<ul style="list-style-type: none"> 27dBm (Max), typical 25 dBm
RX Sensitivity	<ul style="list-style-type: none"> -139dBm(Min)@SF12, BW 125KHz
Power Supply	<ul style="list-style-type: none"> USB Type-C 5V / 3A
Interfaces	<ul style="list-style-type: none"> Front: USB power(Pi4), HDMI0(Pi4), HDMI1(Pi4), Audio(Pi4), Earphone(Cellular), MIC(Cellular), Speaker(Cellular), RESET(Cellular), PWRKWY button(Cellular), USB port(Cellular), SIM Card Slot(Cellular) Left: GPS Antenna, LoRa Antenna, 1 x TF Card Slot, 2 x LED(indication the status of LoRa TX or RX), 2 x LTE Antenna Right: 1xLAN, 2xDual USB Port
Antenna Interface	<ul style="list-style-type: none"> 1* RP-SMA Male connectors for LoRa Antenna 1* SMA Female connectors for GPS Antenna 1* RP-SMA Male connectors for LTE Antenna(MAIN) 1* RP-SMA Male connectors for LTE Antenna(DIV)
Power Consumption	<ul style="list-style-type: none"> Depending on the operating mode peak current up to 3500mA
Working Environment	<ul style="list-style-type: none"> Indoor
Physical Dimension	<ul style="list-style-type: none"> Dimension (L x W x H): 92mm x 68.3mm x 53.5mm
Temperature Range	<ul style="list-style-type: none"> Normal Operation Temperature: -10°C ~ +65°C Extended Temperature: -40°C ~ +85°C Storage Temperature: -40°C ~ +85°C
Relative Humidity	<ul style="list-style-type: none"> 20%~75% non condensing
Housing	<ul style="list-style-type: none"> Top cover, body, bottom cover with riveted motherboard standoff
IP Grade	<ul style="list-style-type: none"> IP30



About RAKwireless:

RAKwireless is the pioneer in providing innovative and diverse cellular and LoRa connectivity solutions for IoT edge devices. It's easy and modular designs can be used in different IoT applications and accelerate time-to-market. For more information, visit RAKwireless website at www.rakwireless.com.

Copyright © 2018 Shenzhen RAKwireless Technology Co. Ltd. All rights reserved. RAKwireless, RAK logo, and WisKey™ logo are registered trademarks of Shenzhen RAKwireless Technology Co. Ltd. All other trademarks are the property of their respective owners. Revision: V1.1