

RAK7249-13-142

Outdoor Lora gateway with LTE, GPS and Wifi



The Enterprise Grade DIY outdoor Gateway is an ideal product for IoT commercial deployment. It contains the Main Board, Operator-grade waterproof enclosure, backup battery and mounting accessories. The hardware main board completely integrates the WIFI, 4G, GPS and PoE main supply with an integrated back-up battery. The firmware implements a fully featured LoRaWAN™ compliant network base station. The Gateway has a range of over 15Km-line-of-sight and over 2km in dense urban environments. The DIY Gateway brings more flexibility for the developer to create an enterprise grade solution: our most important difference is our flexible development support structure, allowing for faster development and time to market. We offer both a ready to go firmware image for openWRT based platforms and an open SDK for integration into hardware to support the needs of each customer.

Product Features

- Enterprise grade network gateway with your own configuration.
- LoRaWAN™ Stack Inside and integrated the Web UI for management
- Complete Hardware specification including LoRa concentrator, Cellular, GPS and WIFI.
- Supports Power of Ethernet (PoE) IEEE 802.3af/at-Compliant Class 4, 48V.
- Battery Backup sustains operation for 5 hours under typical conditions.
- IP67 waterproof enclosure with cable gland.



Main Board

- CPU:RAK634 Module(MT7628 inside)
RAM:128MB DDR2
Flash:16MB
WIFI: 2x2 MIMO 802.11b/g/n
- LoRa concentrator
Standard version with 8 channel Gateway and also support Max.16 channel Gateway.
Tx Power is up to 27dBm and Rx sensitivity is down to -142dBm.
- 4G Cellular: Quectel EG95 for CAT4 cellular network
- L70 GPS Module
- Power-over-Ethernet (PoE): 100M base-T Ethernet with IEEE802.3af/at standard PoE.

Accessories

- Mounting Kit
- PoE Injector
- Antennas(WiFi Antenna, GPS Antenna, LoRa Antenna, LTE Antenna)

Enclosure

- IP67 waterproof white color.
- Interface: 5 x N-Type connectors for Antenna,1 PoE port and 1 reserve port.
- Weight (with cable): approximately 70.54oz (2kg).
- Dimensions: 220mm x 220mm x 104mm.
- Wall thickness: 2mm.
- Support up to 70~100 mm diameter pole mount

Backup Battery

- 12V lithium battery, capacity is 5000mAH for more than 5 hours lifetime under typical operation.
- Battery powered real time clock.
- Battery Within 140 x 70 x 30mm.
- DC 5.5 x 2.1 circular joint with two interfaces, one male and one female.

Supported Software

For LoRa

- Supports class A,B&C
- Supports LoRaWAN protocol
- Country code setup
- TX power setup
- Data logger
- Statistic
- Location setup
- Server address & port setup

For Network

- WiFi AP mode
- LTE APN setup
- Uplink backup
- Supports 802.1q
- DHCP Server/Client
- Router module NAT
- Firewall

For Management

- WEB Management
- Supports SSH2
- Firmware update
- NTP

DIY Configuration

Part Number	8 Channel SX1301	16 channel SX1301	Cat4 Cellular	GPS	WIFI	Battery Backup
RAK7249-0x-14x	√		√	√	√	
RAK7249-1x-14x		√	√	√	√	
RAK7249-2x-14x	√		√	√	√	√
RAK7249-3x-14x		√	√	√	√	√
RAK7249-0x	√			√	√	
RAK7249-1x		√		√	√	
RAK7249-2x	√			√	√	√
RAK7249-3x		√		√	√	√

Key Features

Computing	<ul style="list-style-type: none"> • MT7628, DDR2RAM 128MB
WiFi Feature	<ul style="list-style-type: none"> • Frequency: 2.400 - 2.4835GHz • (802.11b/g/n) • RX Sensitivity: -95dBm (Min) • TX Power: 20dBm (Max)
LoRa Feature	<ul style="list-style-type: none"> • SX1301 Mini PCIe card • 8 Channels (Optional: 16 channels) • TX Power: 27dBm (Max) • RX Sensitivity: -142dBm (Min)
Cellular	<ul style="list-style-type: none"> • EG95: LTE CAT 4 • Variant for Europe, LTE FDD: B1/B3/B7/B8/B20/B28A; WCDMA: B1/B8; GSM: 900/1800MHz • Variant for North America LTE FDD: B2/B4/B5/B12/B13; WCDMA: B2/B4/B5
Power Supply	<ul style="list-style-type: none"> • POE (IEEE 802.3af), 42~57VDC
Power Consumption	<ul style="list-style-type: none"> • 12W (typical)
ETH	<ul style="list-style-type: none"> • RJ45 (10/100M)
Antenna	<ul style="list-style-type: none"> • 5 N-Type connectors
Ingress Protection	<ul style="list-style-type: none"> • IP67
Enclosure Material	<ul style="list-style-type: none"> • Aluminum
Weight	<ul style="list-style-type: none"> • Approximately 111.11oz (3.15kg with mounting kit)
Dimension	<ul style="list-style-type: none"> • 220mm x 220mm x 104mm
Operating Temp.	<ul style="list-style-type: none"> • -30 to 65 °C
Installation Method	<ul style="list-style-type: none"> • Pole or Wall mounting

RF Specifications

Wireless Standard	<ul style="list-style-type: none"> • IEEE 802.11b/g/n
Wi-Fi Operating Frequency	<ul style="list-style-type: none"> • ISM band: 2.412~2.472(GHz)
Wi-Fi Operation Channels	<ul style="list-style-type: none"> • 2.4GHz: 1-13
Wi-Fi Transmit Power (The maximum power may be different depending on local regulations)	<ul style="list-style-type: none"> • 802.11b 19dBm@ 1Mbps • 802.11g 18dBm@ 6Mbps 16dBm@ 54Mbps • 802.11n(2.4G) 18dBm@MCS0 (HT20) 16dBm@MCS7 (HT20) 17dBm@MCS0 (HT40) 15dBm@MCS7 (HT40)
Wi-Fi Receiver Sensitivity (Typical)	<ul style="list-style-type: none"> • 802.11b -95dBm@ 1Mbps • 802.11g -90dBm @6 Mbps -75dBm@54Mbps • 802.11n(2.4G) -89dBm@MCS0 (HT20) -72dBm @MCS7(HT20) -86dBm @MCS0(HT40) -68dBm @MCS7(HT40)
LoRa Operating Frequency	<ul style="list-style-type: none"> • EU433 / CN470 / EU868 / US915 / AU915 / AS923 / AS920 / KR920 / IN865
LoRa TX Power	<ul style="list-style-type: none"> • 27 dBm (Max)
LoRa RX Sensitivity	<ul style="list-style-type: none"> • -142 dBm (Min)

Order Information

Part Number	Description
RAK7249-03-142	8 channel DIY Gateway with Cat 4 Cellular + GPS for EU868 region
RAK7249-04-141	8 channel DIY Gateway with Cat 4 Cellular + GPS for US915 region
RAK7249-13-142	Advanced version, 16 channel DIY Gateway with Cat 4 Cellular + GPS for EU868 region
RAK7249-14-141	Advanced version, 16 channel DIY Gateway with Cat 4 Cellular + GPS for US915 region