RIVAIOT LGW-SH

High-Performance、Full-Duplex、8-Channel LoRaWAN Industrial Gateway

High- Performance

Full-Duplex

RX*8

8-Channel

SX1302

Built-in NS

Multiple Internet Access Modes

Abundant Interfaces

Temperature Range -40℃-85℃

LGW-SH is an indoor IoT gateway based on LoRa® low-power wide-area network technology. The device integrates the Semtech high-performance 8-channel transceiver SX1302 chip, supports full-duplex mode and access of thousands of end-nodes, and delivers LoRa® network coverage for diverse industrial scenarios. LGW-SH transmits data to cloud servers via Wi-Fi or wired Ethernet.

Compatible with multiple mainstream LoRaWAN® network servers (Tencent Cloud, ChirpStack, The Things Stack, etc.), LGW-SH also supports connections with its built-in Network Server (NS), the Reach IoT Open Platform and third-party IoT platforms. It enables rapid deployment of custom IoT applications and implementation of tailored intelligent services.

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Application Solutions

Product Highlights

- It adopts Espressif's ESP32-S3, featuring powerful data-processing capability and stable operation.
- Adopts Semtech high-performance 8-channel SX1302 chip, supporting full-duplex / half-duplex transmission.
- Supports Ethernet and Wi-Fi network access with multi-link backup to ensure stable data transmission.
- Supports integration with external LoRaWAN® Network Servers (Tencent Cloud, ChirpStack, The Things Stack, etc.) via packet forwarders such as Semtech, ChirpStack and Basics-Station, enabling flexible deployment of custom IoT applications.
- Built-in Network Server (NS) is equipped, with MQTT / HTTP / HTTPS APIs provided for fast application deployment.
- Supports BACnet / Modbus protocols for quick integration with building intelligent management systems.
- Supports noise-floor scanning and provides reliable channel deployment recommendations.

Supports LBT (Listen-Before-Talk).

- Supports connection to Reach RIV LoRaWAN Manage Platform, enabling remote device status monitoring for efficient management.
- Enables fast integration with Reach RIV LoRaWAN Manage Platform for automatic device network configuration, pre-configuration and batch management.
- Compact form factor, supports a wide range of industrial scenarios.

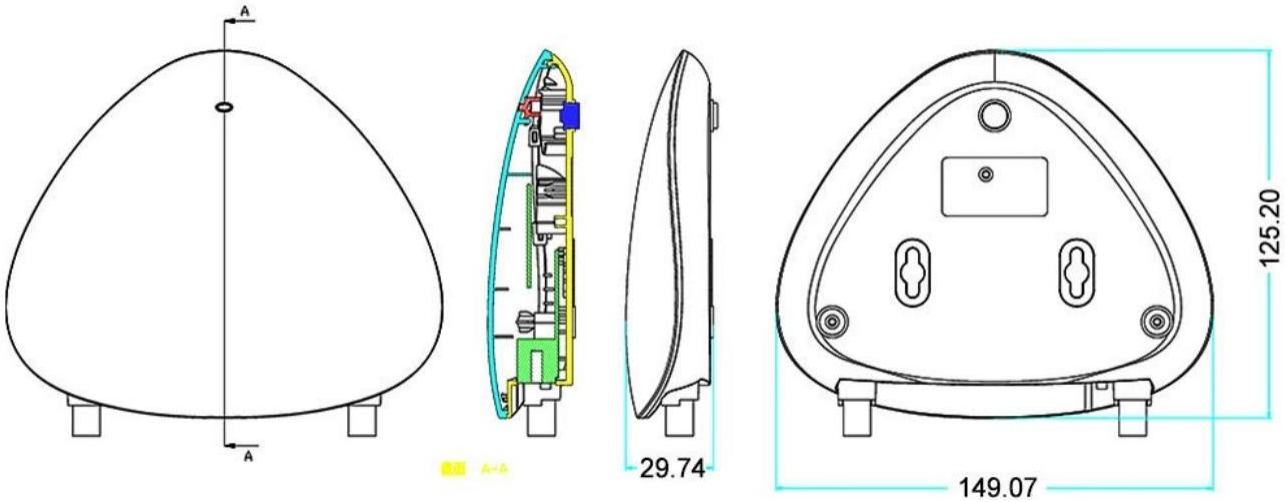
Product Specifications »

Hardware System	
MCU	ESP32-S3
Storage	128 Mbit (16M × 8) storage capacity
LoRaWAN®	
Antenna	2 built-in antenna interfaces with 50Ω characteristic impedance.
Channel	8
Band	US915: 902~928 MHz (Multi-band options available： EU433/IN865/EU868/CN470/AU915/AS923-1&2&3&4)
Receiver Sensitivity	433 band: -140dBm 470 band: -140dBm 868 band: -143dBm 915 band: -143dBm 923 band: -143dBm
Transmit Power	Maximum Transmit Power: 30dBm
Protocol	V1.0.4 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
Ethernet Port	
Rate	1x10/100 Mbps
Transmission Mode	Full-Duplex / Half-Duplex
Wi-Fi Port	
Antenna	Built-in on-board antenna, 50Ω characteristic impedance
Frequency	2.4G (802.11b/g/n)
Operation Mode	STA mode, AP Mode
Security Encryption	Supports 64/128/152-bit WEP encryption, as well as advanced encryption and security mechanisms such as WPA/WPA2, WPA-PSK/WPA2-PSK.

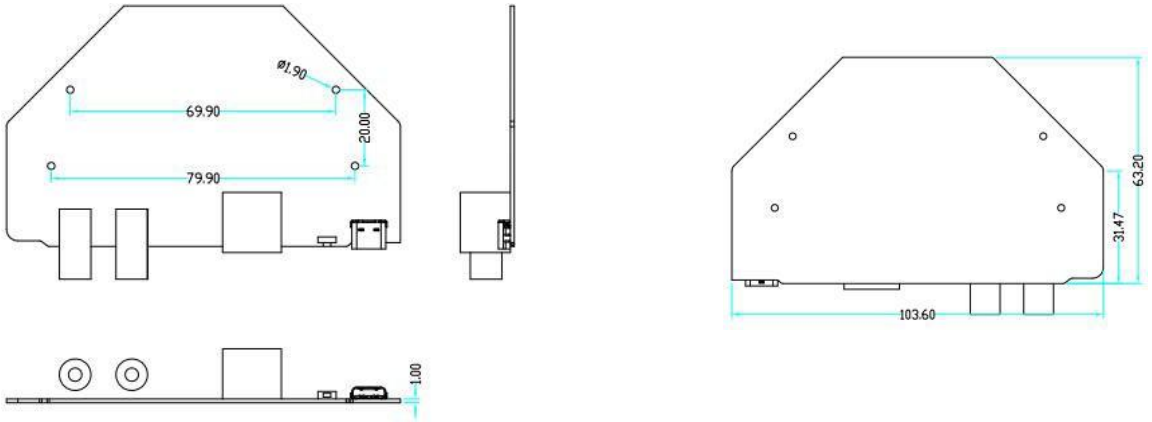
Other Interfaces	
Reset Button	1 x
Debug Interfaces	1× (TYPE-C)
LED	1× (RGB LED)
Built-in	WDT
Software Functions	
Network Protocols	TCP/UDP/PPP/HTTP/NTP/PING/HTTPS/SMTP/SMTPS/SSL PAP (Password Authentication Protocol) / CHAP (Challenge Handshake Authentication Protocol)
Device Management	Web page, Reach RIV LoRaWAN Manage platform
Power Supply and Power Consumption	
Power supply mode	DC 12V
Power consumption	3.4W (average)，5W (peak)
Physical Properties	
Housing Material	Imported APS+PC material
Installation Method	Indoor placement, no installation required
Environmental Requirements	
Operating temperature	-40℃~85℃
Storage temperature	-50℃~100℃
Electromagnetic Isolation Protection	Contact discharge ±4KV，Air discharge ±8KV
Relative humidity	10%~90%RH No condensation

Product Dimensions (mm) »

Housing



Internal



FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiated Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. The antenna used for this transmitter must not transmit simultaneously with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

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