![AQS Air Quality Systems logo]

AQSnet-GW10
LoRaWAN® Indoor Gateway
Datasheet

› Overview

AQSnet-GW10 is an indoor wireless gateway based on LoRa® low-power wide area network technology. The product has a built-in Semtech high-performance 8-channel transceiver SX1302 chip, supports full-duplex mode and more than 2,000 nodes access the gateway, and a communication distance of up to 15 kilometers, which meets the LoRa® network coverage of various indoor application scenarios such as smart office, smart campus, and smart cultural and museum.

AQSnet-GW10 can transmit data to the cloud server via 4G network, Wi-Fi or wired Ethernet. AQSnet-GW10 is not only compatible with a variety of mainstream LoRaWAN® network servers (ChirpStack/Semtech/Basics Station, etc.), but also can use the built-in network server (NS) and IoT platform connection to quickly deploy your own IoT applications and realize customized smart services.

› Application Example
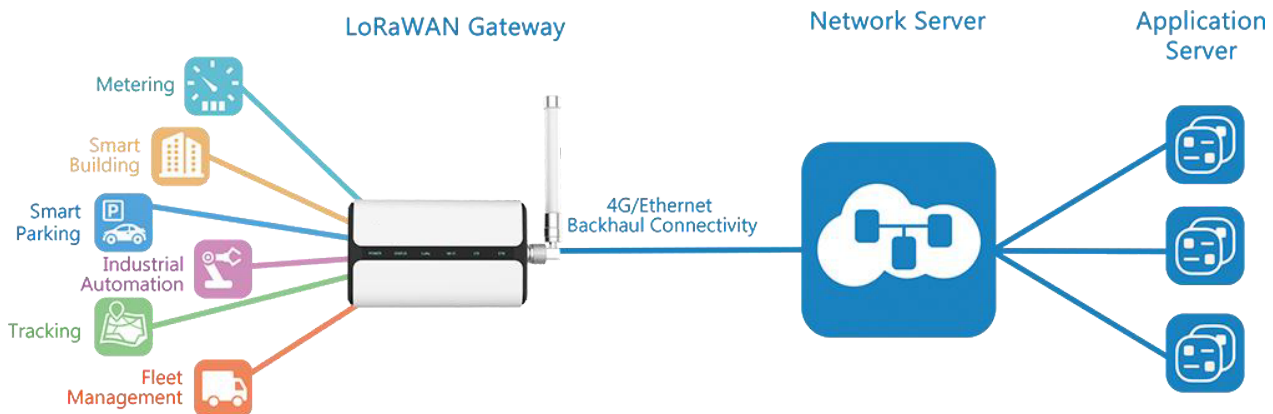
› Features

- ◆ Compatible with AQSnet10, AQSnet80, and AQSnet90 series products
- ◆ Multi backhaul backups with Ethernet, cellular (4G/3G) and Wi-Fi
- ◆ Embedded Python SDK for users secondary development
- ◆ Fast and user-friendly programming by Node-RED development tool
- ◆ Built-in network server and MQTT(s)/HTTP(s) API for easily integration
- ◆ Detect and analyze the noise level and provide intuitive diagram for deployment
- ◆ Support BACnet/IP and Modbus to integrate LoRaWAN® data to BMS/PLC system easily
- ◆ Equip with SX1302 chip, handling a higheramount of traffic with lower consumption
- ◆ IP65 enclosure and industrial design for parts of outdoor environment applications like eaves
- ◆ Enable security communication with multiple VPNs like IPsec/OpenVPN/L2TP/PPTP/DMVPN
- ◆ Compatible with mainstream network servers like The Things Stack, ChirpStack, Actility, Everynet, etc.

- ◆ 8 half/full-duplex channels
- ◆ Desktop, wall or pole mounting
- ◆ Quad-core industrial processor with big memory

Specifications

Hardware System

CPU	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
Memory	512 MB DDR4 RAM
Flash	8 GB eMMC

LoRaWAN®

Antenna	1 × Internal Antennas + 1 × 50 Ω N-Female External Connector
Channel	8
Frequency Band	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
Sensitivity	-140 dBm Sensitivity @ 292 bps
Output Power	27dBm Max
Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C

Ethernet Interface

Physical Layer	10/100/1000 Base-T (IEEE 802.3)
Mode	Full or Half Duplex (Auto-Sensing)

Wi-Fi Interface

Antenna	Internal Antenna
Standards	IEEE 802.11 b/g/n, 2.4GHz
Mode	AP or Client mode
Security	WPA/WPA2 authentication, WEP/TKIP/AES encryption

Cellular Interface (Optional)

Antenna	Internal Antenna
SIM Slot	1 (mini SIM-2FF)

Others

Reset Button	1 × RST
Console Port	1 × Type-C
LED Indicators	1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETH
Built-in	Watchdog, RTC, Timer

Power Supply and Consumption

Power Input	1. 9-24V DC by DC Male Jack Connector	2. 802.3 af PoE
Power Consumption	Typical 2.9 W, Max 4.2 W	

Software

Network Protocols	PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, MQTTS, BACnet/IP, Modbus RTU over TCP, Modbus TCP, etc.
VPN Tunnel	OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN/WireGuard
Firewall	ACL/DMZ/Port Mapping/MAC Binding/URL Filter
Management	Web, CLI, SMS, On-demand dial up, DeviceHub, IoT Cloud, Yeastar Workplace Platform, Development Platform
Reliability	WAN Failover
APP	Python SDK, Node-RED

Physical Characteristics

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Ingress Protection	IP65
Dimensions	180 x 110 x 56.5 mm (7.09 x 4.33 x 2.22 in)
Weight	548g
Material	PC+ABS (UL94 V0)
Installation	Desktop, Wall or Pole Mounting

Environmental

Operating Temperature	-40 °C to +70 °C (-40 °F to +158 °F) Reduced Cellular Performance Above 60 °C
Storage Temperature	-40 °C to +85 °C (-40 °F to +185 °F)
Ethernet Isolation	1.5 kV RMS
Relative Humidity	0 % to 95 % (non-condensing) at 25 °C/77 °F

Approvals

Regulatory	CE, FCC, IC, Telec, JATE, RCM
Environmental	RoHS, REACH

⟩ Dimensions (Unit: mm)
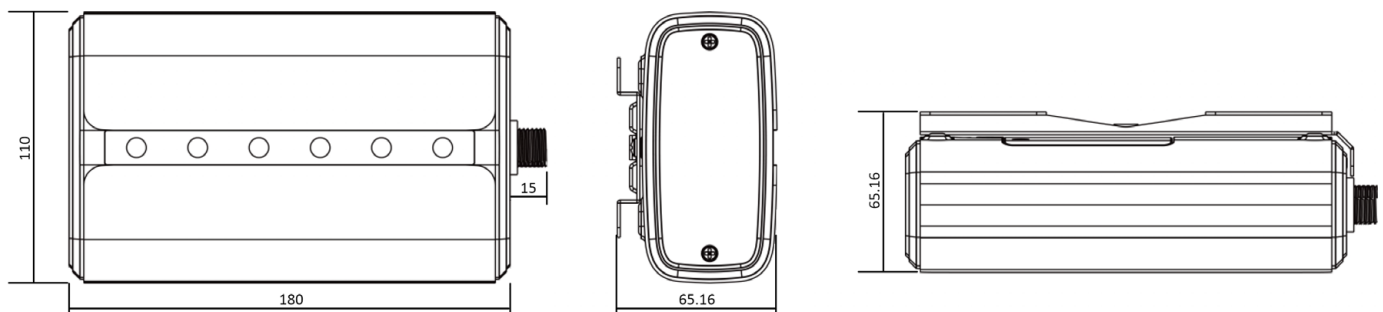
Disclaimer

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⚠️ **Warning**

AQ Sense gateway are designed for use in a variety of environmental conditions. However, due to the principles and characteristics of sensors and to ensure normal use, users must strictly follow this article during storage, assembly and operation of the gateway. Although our products are highly reliable, we recommend checking the gateway's response to the target gas prior to utilization to ensure on-site use. At the end of the products service life, please do not discard any electronics in the domestic waste, instead follow the local governments electronic waste recycling regulations for disposal.

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