



Chengdu Alinkwise Future Technology Co., Ltd.

9xx Series Outdoor LoRaWAN Gateway Specification

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Product Description

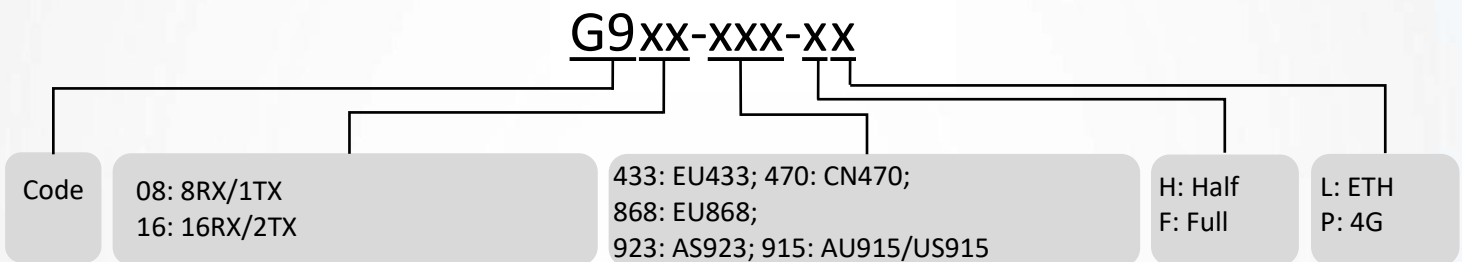
The G9xx Outdoor LoRaWAN Gateway is based on the Semtech SX1302 platform. It supports half-/full-duplex operation, 8/16 uplink RX channels and 1/2 downlink TX channels, with Ethernet/4G backhaul and optional Wi-Fi.

It connects to ChirpStack, TTN/TTS, Tencent Lianlian and other LoRaWAN platforms. Built-in NS/AS, web UI and JS parsing support remote management, data forwarding, linkage control and scheduled acquisition. IP67 protection suits parks, warehouses, energy sites and environmental monitoring.



Product Model

Note: The picture shows G57-470-FP. Antenna quantity and position may vary by model.



Product Features

- Supports GWMP and MQTT for connection to ChirpStack, TTN/TTS, Tencent Lianlian and other LoRaWAN servers
- Built-in LoRaWAN NS/AS with JS editor for custom payload parsing, data forwarding, linkage control and scheduled acquisition
- Supports MQTT, HTTP, TCP and WebSocket integration with user servers
- Supports LoRaWAN global frequency plans and custom frequencies/bands
- Supports LoRaWAN 1.0.2/1.0.3/1.0.4 standard protocols and Class A/C modes
- Supports LoRa half-/full-duplex, 8/16 receiving channels and 1/2 downlink channels
- Transmit power up to 27 dBm; receiver sensitivity down to -140 dBm @ SF12, BW125 kHz
- Supports Ethernet and 4G backhaul, with store-and-forward after network interruption
- Supports local web configuration, as well as local/remote upgrade and configuration
- Supports terminal packet viewing, statistics and network connection testing
- Supports 4G traffic statistics and signal-strength display
- LoRa range: about 12 km line-of-sight and about 5 km in open urban areas (actual range depends on site conditions)

Hardware Specifications

- Core Parameters:
 - CPU: MT7688
 - RAM: 128 MB DDR2
 - Flash: 64 MB NAND Flash
 - Clock: 580 MHz
- LoRa Concentrator: 8/16 RX channels, 1/2 independent downlink channels, max. TX power 27 dBm, RX sensitivity down to -140 dBm @ SF12, BW125 kHz
- 4G: Quectel EC200 (Cat 1, China multi-carrier), optional EC20/EG25 (Cat 4, China/global versions), 4G backhaul; optional GPS timing/positioning (subject to the installed module)
- Wi-Fi (custom): AP+STA mode, IEEE 802.11 b/g/n, 2.4 GHz



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Software Support

LoRa

- LoRaWAN Class A/C
- LoRaWAN packet forwarding
- Frequency/region settings
- TX power setting
- Data view and statistics
- Server address and port setting
- Built-in NS/AS

Network

- Ethernet
- 4G
- Wi-Fi (custom)
- UDP protocol
- MQTT (optional CA), HTTP, TCP, WS
- 4G traffic and signal display

Device Management

- Web configuration UI
- Local/remote upgrade
- Local/remote configuration

LoRa Parameters

Parameter	Description
Output Power	≥ 27 dBm
Max. Input Power	< 10 dBm (maximum input)
Bandwidth	7.8-500 kHz (LoRa); LoRaWAN commonly uses 125/250/500 kHz
Spreading Factor	SF7-SF12
RX Sensitivity	-140 dBm @ SF12, BW125 kHz
Harmonics	< -40 dBm @ 1 GHz
Frequency Range	EU433, CN470, EU868, AS923, AU915, US915, KR920 CN779 can be customized for legacy projects; supports LoRaWAN global frequency plans
Channels	Half-/full-duplex, 8/16 LoRa RX channels, 1/2 LoRa TX channels

Wi-Fi Parameters (Custom)

Parameter	Description
Operating Mode	STA+AP
Operating Frequency	2.4 GHz
Wireless Security	WEP, WPA-PSK/WPA2-PSK, WPA/WPA2 security
Data Rate	150 Mbps
Wi-Fi Antenna	Fiberglass antenna (custom)

4G Parameters

Parameter	Description (subject to installed module)
Band	Supports mainstream LTE FDD/TDD bands in China; overseas versions can be customized
	EC20/EG25 may support selected 3G/2G modes; refer to module specifications
	SIM card and operator bands must match the module version
Data Rate	Uplink: Cat 1 ≤ 5 Mbps; Cat 4 ≤ 50 Mbps
	Downlink: Cat 1 ≤ 10 Mbps; Cat 4 ≤ 150 Mbps

Electrical Parameters

Category	Description
Power Supply	PoE: compatible with IEEE 802.3af/at; adapter output DC 12 V/2 A
Current	Max. 2 A
Power Consumption	G908 average <=5 W, max. 15 W; G916 average <=6 W, max. 20 W

Physical Characteristics

Feature	Description
Dimensions	216 x 216 x 70 mm (main unit)
Weight	Approx. 4 kg (excluding accessories)
Temperature	Operating temperature: -40 to 80 °C
Humidity	Operating humidity: 5%-95% RH (non-condensing)
Ingress Protection	IP67
Installation	Pole mounting, wall mounting

Interfaces

Feature	Description
Power Interface	Network cable (PoE), M16 waterproof aviation connector
Ethernet Port	RJ45
LoRa Antenna Interface	N-type male
4G Antenna Interface	N-type male
SIM Card	Standard SIM card (2FF)

Packing List

No.	Item	Qty.	Description	
1	Gateway	1	Gateway unit	
2	PoE Power Adapter	1	Certified PoE power adapter	
3	LoRa Antenna	1/2/4	Fiberglass antenna G908: 1 for half-duplex, 2 for full-duplex G916: 2 for half-duplex, 4 for full-duplex	
4	4G Antenna	1	Fiberglass antenna (not included for non-4G models)	
5	Wall-mount kit	1	For mounting the gateway on a flat wall	Choose one kit
6	Pole-mount kit	1	For mounting the gateway on a pole or cylindrical object	
7	Grounding Cable	1	For enclosure grounding	
8	Lightning Arrester	Opt.	Configured according to antenna quantity	
9	M16 Connector + 2 m Cable	1	Included with RS485 models only	

Revision History

Ver.	Date	Description
V1.0.0	20250715	Initial release
V1.0.1	20251225	Updated product naming
V2.0.0	20260630	Document upgraded; product description and parameters revised