

## Product Description

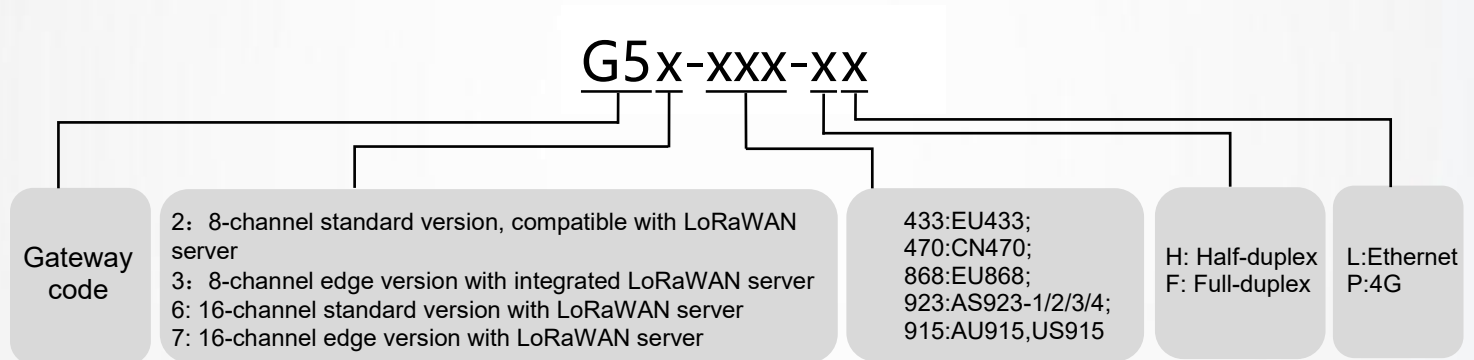
The outdoor gateway is a next-generation LoRaWAN gateway device designed for outdoor use, offering low cost, high reliability, and ease of operation. The gateway includes multiple models that support both half-duplex and full-duplex communication, with 8/16 receiving channels and 1/2 transmitting channels. The gateway supports 4G, 100M Ethernet, and RS485 data transmission, as well as remote configuration, upgrades, and management. It also features an embedded web interface for easy local configuration.

The device is equipped with 1/2 SX1302 baseband processing chips, enabling parallel reception of LoRaWAN terminal data over 8/16 channels and data transmission to LoRaWAN terminals via 1/2 channels. Available in half-duplex and full-duplex versions, the gateway supports embedded NS and AS server software, eliminating the need to set up a LoRaWAN server and allowing direct output of user data.



Note: The image shows model G57-470-FP. The number of antennas may vary for different models.

## Product selection



## Product Features

- Supports seamless connection to ChirpStack, TTN, TTS, Tencent IoT, and other LoRaWAN servers via GWMP and MQTT
- Supports LoRaWAN global frequency plans, allowing user-defined frequencies
- Supports LoRaWAN 1.0.2/1.0.3/1.0.4 standard protocols
- Supports LoRaWAN Class A/C
- Supports both LoRa half/full duplex, with 8/16 receiving channels and 1/2 transmitting channel
- Maximum transmit power up to 27dBm, receiver sensitivity reaching -140dBm @SF12 BW125kHz
- Supports Ethernet and 4G data transmission, with data continuity during network disconnection
- Integrates an embedded LoRaWAN server, facilitating passive and active output of application data via 4G, Ethernet, and RS485
- Allows local web interface configuration, as well as local and remote upgrades and configurations
- Supports terminal data packet viewing and statistics, as well as network connectivity testing
- Provides 4G data traffic statistics and signal viewing capabilities
- Achieves a LoRa wireless communication distance of 12km (line of sight) or 5km (urban environment)
- Incorporates watchdog design to ensure system stability

## Hardware Specifications

- CPU: MT7688  
RAM:128MB DDR2  
FLASH:64M NandFlash  
Clock Frequency : 580MHz
- LoRa Concentrator: 8 receiving channels, 1 independent transmitting channel, maximum transmit power up to 27dBm, minimum receiver sensitivity down to -140dBm
- 4G: Quectel EC20/EC25G supports CAT4 network, with built-in GPS timing and positioning function (customizable).
- WiFi: Supports AP, STA, and AP+STA modes, compliant with 802.11 b/g/n/v standards (customizable).



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## Software Support

### LoRa

- Supports Class A/C
- LoRa Message Forwarding
- Frequency Band Region Settings
- Transmit Power Settings
- Data Display, Data Statistics
- Server Address and Port Configuration
- Built-in NS and AS

### Network

- Ethernet Network
- 4G Network
- WiFi Network (customizable)
- Supports UDP transmission protocol
- Supports MQTT transmission protocol (optional with CA)
- Supports 4G traffic statistics, signal strength display

### Device Management

- Web-based configuration management interface
- Supports local and remote upgrades
- Supports local and remote configuration

## LoRa Parameters

Parameters	Description
Output Power	27dBm
Input Power	<10 dBm
Bandwidth	7.8~500kHz
Spreading Factor	SF7~SF12
Receive Sensitivity	-140dBm@SF12 BW125kHz
Harmonics	<-40dBm @ 1GHz
Frequency Range	EU433 , CN470 , CN779 , EU868 , AS923 , AU915 , KR920 LoRaWAN Global Frequency Plan
Channel	Half-Duplex Mode, 8/16 LoRa receiving channels, 1/2 LoRa transmitting channel

## 4G Parameters

Parameters	Description	
BAND	LTE FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28
	LTE TDD	B38/B39/B40/B41
	UMTS	B1/B2/B4/B5/B6/B8/B19
	GSM	B2/B3/B5/B8
Rate	LTE FDD	Uplink: 50Mbps,Downlink: 150Mbps
	LTE TDD	Uplink: 30Mbps,Downlink: 130Mbps
	HSUPA	Uplink: 5.76Mbps
	WCDMA	Uplink: 384kbps,Downlink: 384kbps
	EDGE	Uplink: 236.8kbps,Downlink: 296kbps
	GPRS	Uplink: 85.6kbps,Downlink: 107kbps
	DC-HSDPA	Downlink: 42Mbps
Output Power	Max.33dBm	
Receive Sensitivity	Min.-110.5dBm	

## Electrical Parameters

Category	Description
Power Supply	DC12V 20W
Current	Max . 2A
Power Consumption	G52/G53: Average Power Consumption < 5W, Max. 10W; G56/G57: Average Power Consumption < 6W, Max. 20W

## Physical Characteristics

Features	Description
Dimensions	216mm * 216mm * 70mm (Main Body)
Weight	Approximately 4kg
Temperature	-20 to 70°C (Operating), -40 to 85°C (Storage)
Humidity	0% to 95% (Non-condensing)
Waterproof Rating	IP67
Installation Method	Pole Mount, Wall Mount

## Interface

Features	Description
Power Interface	Ethernet Cable (PoE)
Ethernet Interface	RJ45
Ethernet Interface: RJ45 LoRa Antenna Interface	N Male Connector
4G Interface	N Male Connector
SIM Card	Mid-sized
RS485	Embedded LoRaWAN server supports RS485 Modbus-RTU protocol, default baud rate 9600, data bits 8, stop bits 1, parity None; gateway address 0x01. All parameters can be modified in the Web interface.

## Modification History

Version	Modification Time	Modification Description
V1.0.0	20220916	Initial draft
V1.0.1	20230607	Modified some typographical errors
V1.2.0	20230801	Changed naming conventions
V1.2.1	20240823	Template Modification
V1.2.2	20260317	Adding product selection.