

# Product Datasheet

## 4G Gateway



Model: MG6

**Wide Coverage And Seamless Connectivity**

## Product Overview

The MG6 4G Gateway is a multifunctional device that integrates Bluetooth and LoRaWAN protocols, specifically designed for IoT applications in smart parks, industrial monitoring, agricultural monitoring, smart cities, and more. With its modular hardware architecture and intelligent signal scheduling algorithms, the MG6 gateway offers significant advantages in reducing deployment costs, improving operational efficiency, and enhancing device compatibility, helping enterprises achieve smart, low-cost IoT connectivity and management.

## Key Features

### Multi-Protocol Integration

**Bluetooth:** Supports Bluetooth 5.1, offering a communication range of up to 600 meters, widely used in device management, location tracking, and attendance scenarios. It supports Extended Advertising, which allows for more efficient transmission of complex data through larger packet sizes and more flexible broadcasting configurations, making it ideal for multi-device connections and large-scale IoT deployments.

**LoRaWAN:** Supports long-range communication with city coverage up to 1.5 kilometers, and boasts strong building penetration capabilities. It can reliably penetrate multiple walls, providing stable communication in complex indoor environments. This is suitable for wide-area environmental monitoring, smart campuses, and other long-range data collection applications.

**Wi-Fi and 4G:** In addition to Ethernet, the gateway also supports Wi-Fi and 4G LTE modules, providing high bandwidth and low-latency communication to ensure efficient data transmission in complex environments. The Wi-Fi module supports Full Duplex mode, ensuring high-speed, stable bidirectional communication to meet real-time data transmission needs.

The MG6 4G Gateway supports flexible combinations of Bluetooth and LoRaWAN protocols, allowing the selection of the most suitable module according to different scenario requirements, meeting the connection needs of various IoT applications.

### Global Frequency Band Support

**LoRaWAN Multi-band Support:** Includes multiple bands such as CN470, EU868, and US915, ensuring broad compatibility across global IoT networks.

**4G Module:** The Stellar Gateway supports multiple frequency bands to enable seamless global connectivity, making it ideal for cross-border enterprises and large-scale projects such as smart cities and factories.

### Intelligent Signal Scheduling

- **Adaptive Signal Management:** The MG6 Stellar Gateway uses **machine learning** and **adaptive technology** to dynamically allocate protocol resources, ensuring stable, high-quality data transmission.
- **Network Optimization:** Firmware optimizations reduce network congestion and signal interference, ensuring reliable communication even in multi-device environments.

### Data Security Assurance

- **AES-128 Encryption & Certificate Upload:** Provides **end-to-end encryption** for transmitted data, protecting it from unauthorized access.
- **Device and User Authentication:** Supports both **device identity** and **user authentication**, ensuring only authorized devices and users can access the network.
- **WPA3 Encryption:** The MG6 supports the latest **WPA3 encryption** protocol, offering stronger protection against brute-force attacks and ensuring secure Wi-Fi connections.

### Convenient Firmware Updates

**OTA Updates:** The MG6 Gateway supports **Over-The-Air (OTA) updates**, keeping the device up-to-date with the latest communication protocols, network improvements, and IoT standards.

## Flexible Expansion Architecture

**Modular Design:** The modular hardware architecture allows users to choose and customize **Bluetooth**, **LoRaWAN**, **Wi-Fi**, and **4G** modules based on specific needs, offering flexibility and future scalability.

## Smart Deployment

- **Automated Setup:** Designed for **automated deployment and configuration**, the MG6 Stellar Gateway reduces deployment times and increases efficiency, making it ideal for large-scale IoT systems.
- **Versatile Installation:** Comes with mounting accessories like **screws**, **zip ties**, and **3M adhesives**, ensuring adaptability to different installation environments.

## High Performance

**Efficient Connectivity:** The MG6 ensures stable communication even in complex environments, supporting **Bluetooth** scanning at **125Kbps**, **1Mbps**, and **2Mbps**, and extended advertising packet scanning for uninterrupted data transmission.

## Low Power Consumption

**Energy-Efficient Design:** Equipped with **low-power Bluetooth Nordic 52 series** and **LoRaWAN chips**, the MG6 operates at just **2.4W**, making it ideal for long-term, remote deployments. This low power consumption reduces operational costs, ensuring efficient performance over extended periods.

## Industry Application



### Smart factory

- Virtual fence
- Emergency help
- Staff management
- Trajectory tracking
- Raw material control



### Smart Building

- Indoor navigation
- Space optimization
- Visitor management
- Employee attendance
- Fixed assets management



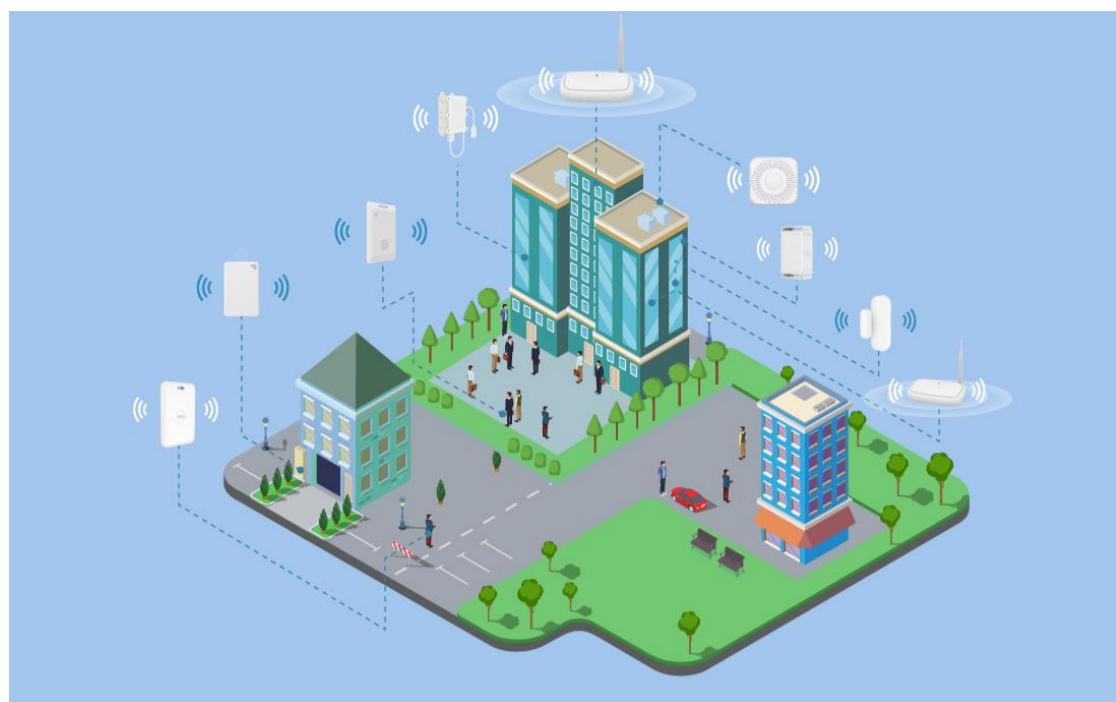
### Smart Resort

- People Counting
- Safety protection
- Anti-theft tracking
- Pedestrian flow management
- Positioning and navigation



### Smart Warehousing

- Stock taking
- Quick search
- Process optimization
- Environment detection
- Inventory management



The MG6 4G Gateway can be deployed within buildings and parks to monitor Bluetooth devices and LoRaWAN nodes in real time, enabling proximity-based personnel timekeeping and long-distance data monitoring. Additionally, personnel can be precisely located using Bluetooth-to-LoRaWAN badges, enhancing the security of buildings and parks.

## Product Specifications

### Basic Specifications

<b>Model</b>	MG6
<b>Version</b>	4G LoRaWAN®
<b>Material</b>	ABS+PC
<b>Color</b>	White
<b>Size (D*H)</b>	130*186*36 mm(No external antenna)
<b>Power Supply</b>	DC 12V/1A POE (IEEE 802.3af )
<b>Network Connection</b>	WiFi/Ethernet/LTE
<b>Working Environment</b>	Indoor
<b>Operating Temperature</b>	-20~45°C
<b>Operating Humidity</b>	5%~95%RH, no condensation
<b>Firmware Update</b>	OTA

### Technical Specifications

Bluetooth Specifications	
<b>Bluetooth Frequency</b>	2.4-2.4835 GHz
<b>Bluetooth Modulation</b>	GFSK
<b>Bluetooth Transmission Rate</b>	125Kbps, 1Mbps, 2Mbps
<b>Receiving Sensitivity</b>	-96dBm @ 1Mbps, 0.1 % BER
<b>Scanning Advertising Packets</b>	About 800 packets/second*
<b>Scan Coverage</b>	125Kbps: 400-600 M 1Mbps: 150-300 M (open area)

\*If you require more data capacity, please contact our sales team.

### WiFi Specifications

<b>Wireless Standard</b>	IEEE 802.11 b/g/n
<b>Operating Frequency</b>	2.4-2.4835 GHz
<b>Transfer Speed</b>	2T2R 300Mbps

<b>Receiving Sensitivity</b>	802.11b:-89.5dbm, 11Mbps PER<8% 802.11g:-76dbm, 54Mbps PER<10% 802.11n:-74.5dbm, MCS7 PER<10%
<b>Modulate Mode</b>	DBPSK, DQPSK, CCK and OFDM( BPSK/QPSK/16-QAM/64-QAM)
<b>Network Protocol</b>	HTTP(SSL/ TLS) / MQTT(SSL / TLS & Proxy) / TCP
<b>Wireless Encryption</b>	WPA-PSK / WPA2-PSK, WPA-EAP/WPA2-EAP and TKIP
<b>Communication Mode</b>	Full Duplex

LoRa Specifications	
<b>Operating Frequency</b>	US915/EU868/CN470
<b>Demodulator Characteristics</b>	8 Channels
<b>Receiver Sensitivity</b>	-141dBm (Min)
<b>Transmission Distance</b>	Approximately 1.5km of urban coverage
<b>Standard LoRaWAN</b>	v1.0.4 Class A, C
<b>Communication Mode</b>	Half Duplex

LTE Cat1 Specifications	
<b>Frequency band</b>	CN(FDD):B1/3/5/8,9 (TDD):B34/38/39/40/41 EU (FDD):B1/3/5/7/8/20/28 NA(FDD):B2/4/5/12/13/66
<b>Receiver Sensitivity</b>	-93.3dbm

## Precautions

- After restoring the factory settings, the previous configuration will be lost, please operate with caution.
- To ensure accuracy while scanning, try to avoid corners, metal, glass shields, or other obstructions when install.
- Do not use the gateway in a humid area or outdoors. If the temperature exceeds the designed limit, the product may be damaged.
- Please avoid exposing the product to direct sunlight for an extended period which could lead to fading.
- To configure the gateway, please contact our sales team for the instruction manual.

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.

### FCC warning:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are signed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

This equipment 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



## Quality Assurance

The factory has already obtained the certification of ISO9001 Quality System. Each product has been strictly tested (tests include transmission power, sensitivity, power consumption, stability, aging, etc.).

**Warranty Period:** 12 months from the date of shipping (Battery and other accessories excluded).

## Declaration

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## Contact Information

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