MG3 USB Mini Gateway

Datasheet

Your Portable Partner for Tags

CONTENTS

PRODUCT OVERVIEW

MG3 gateway is a plug-and-play Bluetooth® LE Wi-Fi gateway independently developed by Minew, which is used for the detection and data collection of Bluetooth devices. The collected Bluetooth device signals are encapsulated into JSON packets and transmitted through Wi-Fi. Users can monitor and locate Bluetooth devices on the cloud platform to manage personnel, facilities, assets, and environments remotely. A system with MG3 can lower the cost and improve efficiency while maintaining precision hence being deployed in logistics, healthcare, office, and other scenarios.

KEY FEATURES

- Plug-in and play, quick setup

The MG3 gateway can be set up by our Gateway Configurer App. The LED indicator shows the status of the gateway making the process of setting up as little as one step. Once powered on, the gateway will collect real-time data and upload it to the server while users can manage the console on the back end and analyze the data.

- Small and swift, flexible installation

The gateway is small, light, and easy to take with the size of a flash drive. Compatible with multiple USB power sources, it can be powered by PCs, power banks, and cell phone chargers, making installation with peace of mind. which is less affected by the environment and improves installation efficiency. OTA is supported making it hassle-free on update.

- High throughput and data are filterable

The gateway can steadily collect 100 packets of data per second, capable of collecting and uploading data in real time. Scanand upload intervals can be specified to adapt to different scenarios flexibly. Multiple data filtering modes enable users to not only limit the data flow but also avoid duplications, resulting in acquiring the data exactly you want.

- Strong compatibility and easy integration

It is compatible with a massive amount of Bluetooth devices. Users can connect to cloud or private cloud servers through MQTT/HTTP protocol to achieve independent control of data flow, thereby ensuring data privacy and security.

- Highly secured

Users can choose MQTT with SSL/TLS security protocol to ensure secure data transmission.

MARKET APPLICATIONS

Smart Healthcare   **Smart Buildings**   **Smart Warehouses**   **Smart Retailing**   **Smart Venues**

## APPLICATION CASES

Smart Healthcare

The MG3 gateway can be paired with beacons and sensors to provide a full range of services such as medical supply transportation and patient management. Combined with temperature and humidity sensors, it adds a great tool for pharmaceutical cold chain monitoring systems for vaccine storage and transportation by providing real-time to ensure quality. By working magnetic door sensors and infrared corridor sensors, it assists in the role of monitoring quarantine patients or establishing home security systems. Along with Bluetooth beacons, it can keep track of patient location records and medical equipment while guiding patients to their destinations.

Smart Buildings

By working along with beacons and sensors, the MG3 gateway connects people, objects, and the environment in the same building. Combined with temperature, humidity, and air quality sensors, it can provide real-time reports of the environment, which can be further developed to interact with home appliances to improve indoor comfort and save energy. Together with infrared, vibration, door, and other sensors, it can monitor building safety, space occupancy, and utilization rate in a visualized efficient manner. Working together with personnel positioning beacons, it can provide users with functions such as check-in, check-out, indoor navigation, and visitor management. Its geofencing feature allows setting up an access control list to make use of alarms for unauthorized access. When connected with asset tags, it can enable asset management.

Note: The above cases are shown only as references, users can achieve more applications based on their own algorithm familiarity and software development capabilities.

50mm

24mm 10.5mm
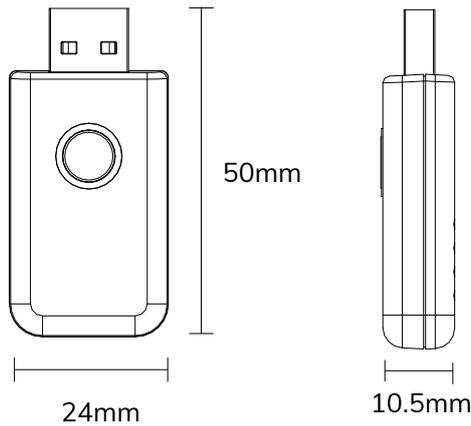
MG3 USB Mini Gateway

BASIC SPECIFICATIONS

|	
Model	MG3
Material	ABS
Color	White
Size（L * W * H）	50 * 24 * 10.5 mm
Weight	9 g
Power Supply	USB powered （DC 5 V/ 1 A）
Network Connection	WiFi
Button	1 reset button
LED	Power status, server status, and OTA upgrading indicator
Working Environment	Indoor
Working Temperature	-20℃ ~ 55℃
Firmware Upgrade	OTA, LAN upgrade

TECHNICAL SPECIFICATIONS

Bluetooth Version	Bluetooth® LE 5.0
Bluetooth Frequency	2.4GHz
Bluetooth Modulation	GFSK
Bluetooth Bandwidth	1 Mbps，2 Mbps
Receiving Sensitivity	-96 dBm @1 Mbps, 30.8% PER -93 dBm @2 Mbps, 30.8% PER
Numbers of Received Broadcast Packets	About 100 packets/ second
Scan Coverage	About 70 meters of covered radius （open area）

WIFI SPECIFICATIONS

WiFi Protocols	IEEE 802.11 b/g/n
WiFi Frequencies	2.4-2.4835GHz
Emitting Power	802.11b, 1 Mbps@20.5dBm 802.11b, 11Mbps@20.5dBm 802.11g 6 Mbps@20.0dBm 802.11g 54Mbps@18.0dBm 802.11n, HT20, MCS0 @19.0dBm 802.11n, HT20, MCS7 @17.5dBm 802.11n, HT40, MCS0 @18.5dBm 802.11n, HT40, MCS7 @17.0dBm
Data Transfer Speed （20 MHz）	11b: 1, 2, 5.5 and 11 Mbps 11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 11n: MCS0-7, 72.2 Mbps (Max)
Data Transfer Speed （40 MHz）	11n: MCS0-7, 15Mbps (Max)
Transfer Speed	1T1R 150 Mbps
Receiving Sensitivity (typical)	802.11b,1Mbps/2Mbps/5.5Mbps/11Mbps 802.11g,6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps 802.11n,HT20,MCS/MCS0/MCS1/MCS2/MCS3/MCS4/MCS5/MCS6 802.11n,HT40,MCS0/MCS1/MCS2/MCS3/MCS4/MCS5/MCS6/MCS7
Modulation Mode	BPSK/ QPSK/ 16QAM/ DBPSK/ DQPSK/ CCK
Network Protocol	MQTT (SSL/ TLS)/ HTTP
Wireless encryption	WEP,WPA_PSK,WPA2_PSK, WPA_WPA2_PSK

WORKING PRINCIPLE
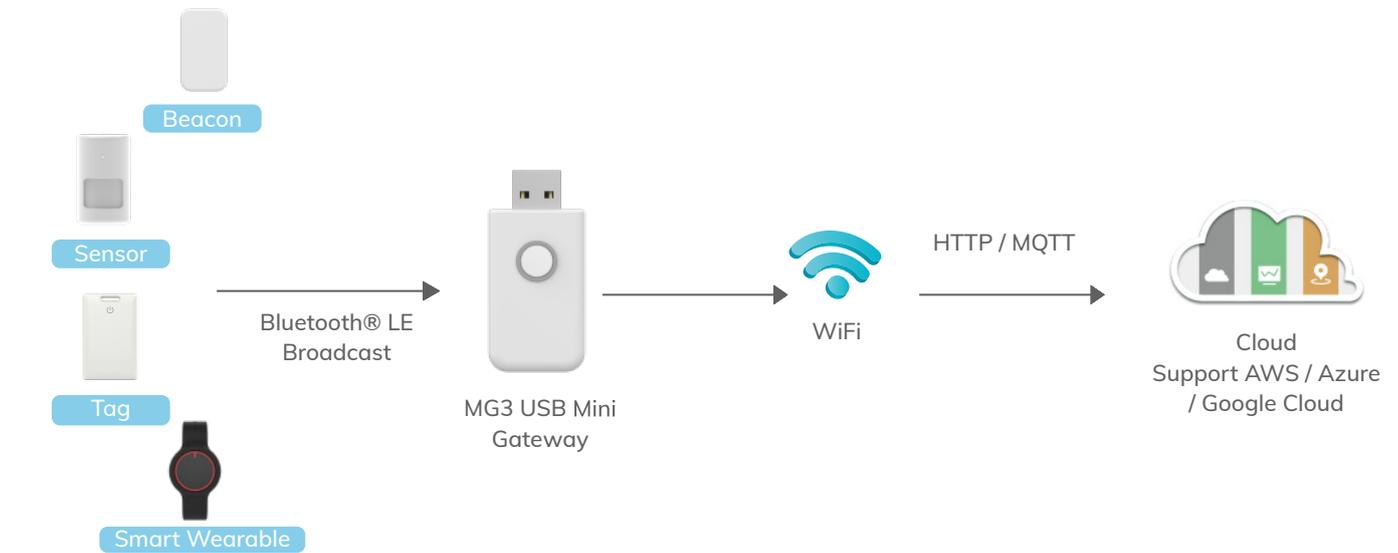
1

Deploy Bluetooth beacons, sensors, and MG3 gateways according to demands.

2

Turn on Bluetooth beacons, sensors, and gateways, and configure the gateway parameters through the App Gateway Configurer.

3

The MG3 gateway scans Bluetooth signals and collects data, and uploads to the corresponding server through different network protocols.

4

After the data is parsed on the server, users can process and analyze to attain functions such as environmental monitoring and asset management.

*Please base on SDKs provided by cloud services vendors to do futher developments and testings if you need more cloud service features as listed.

SOFTWARE SUPPORT

- The MG3 gateway is paired with Minew's TagCloud IoT service by default for data display.
- TagCloud's API interface is available to help users to construct cloud platforms for different industries.
- The gateway firmware SDK is provided to help users quickly implement custom development to meet different needs.

PRECAUTIONS

- After restoring the factory settings, the previous configuration will be lost, please operate with caution.
- If the App prompts that the network configuration has timed out many times, it is recommended to shorten the distance between the gateway, the phone with the App, and the router and try again. It is not recommended for multiple mobile phones to configure the same gateway, which may lead to slower configuration.
- 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.

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

Statement of Rights:

The contents of this manual belong to the Manufacturer of Minew Technologies Co., LTD, Shenzhen, and are protected by Chinese laws and applicable international conventions related to copyright laws. The contents can be revised by the company according to the technological development without prior notice. Anyone, companies, or organizations cannot modify the contents and cite the contents of this manual without Minew's permission, otherwise, Violators will be held accountable according to law.

Disclaimer：

Minew team reserves the right to the final explanation of the document and product differences. The Minew group is not responsible for liability of property or personal injury with the wrong operation if users develop related products without checking the technical specifications of this manual.

SHENZHEN MINEW TECHNOLOGIES CO., LTD.

🌐 www.minew.com

✉ info@minew.com

🛒 www.minewstore.com