



MOKO SMART

MKGW1-BW Pro - Tech Specs V1.1



MKGW1-BW Pro

Bluetooth Gateway

MKGW1-BW Pro is a multi-wireless IoT Gateway with Bluetooth Low Energy (BLE) and Wi-Fi. It can capture multiple BLE devices information and send the data to your Cloud Server.



Bluetooth 5.0 Features

Experience the advanced performance of Bluetooth 5.0 features – 1M/2M PHY and Coded PHY (long range).



Collecting BLE Beacons

Real-time scanning the advertisement packets of BLE Beacon and upload the packets to your Server.



Network Connection

Connect the Internet via Wi-Fi or Ethernet and access the Server via MQTT, HTTP, TCP or UDP protocols.



Cloud Management

Monitoring and configuring the gateway remotely by Cloud management commands from MQTT Server.

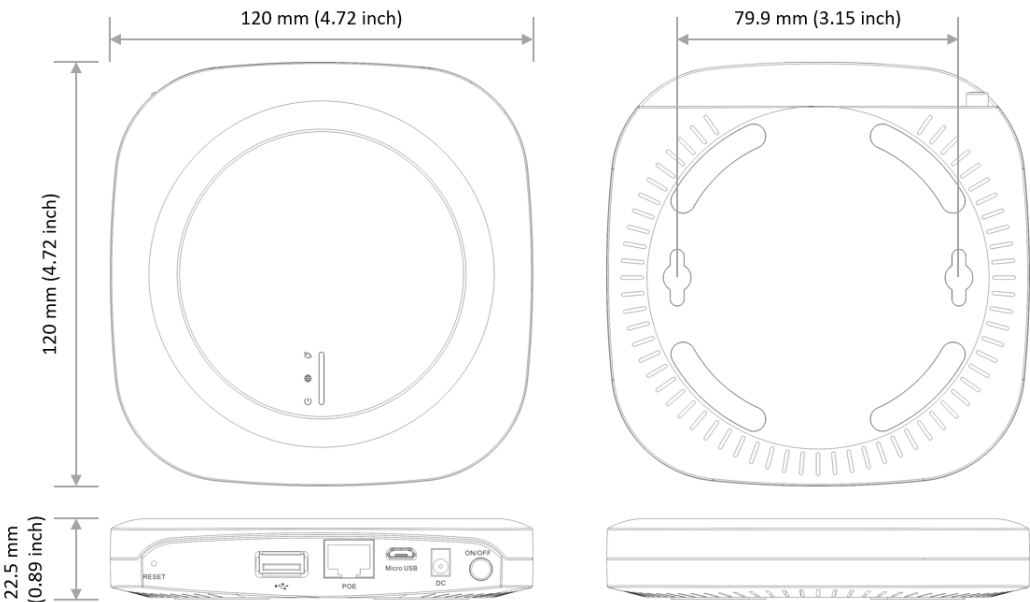


Use-friendly Web GUI

A simple and user-friendly Web GUI helps you configure the gateway easily and quickly.

Mechanics / Design

Dimensions (L x W x H)	4.72 x 4.72 x 0.89 inches (120 x 120 x 22.5 mm)
Weight	136g
Material	ABS-FR
Color	White
Installation	Horizontal, hanging on wall or ceiling
Protection rating	IP20, UL94 V0
Button	1 power button and 1 reset button
LED	3 x intelligent RGB LED
Power supply port	DC port (4.2 x 1.3 mm)/Micro USB port/PoE port
USB 2.0 host port	Connect a USB flash drive
ETH port (PoE port)	1 port 10M/100M fast Ethernet PHY



Power

Micro USB	5V/1A
DC port	9 – 15V/1A
PoE	IEEE 802.3af
Current consumption (work mode)	Max: 350mA (5V micro USB power supply)

Environmental Ranges

Operating temperature	-20°C to +45°C
Storage temperature	-40°C to +70°C
Humidity	Maximum 95% non-condensing RH

Bluetooth Performance

Bluetooth module	MOKO MK07B Nordic nRF52833 BLE module
CPU	64MHz Arm® Cortex™-M4F
Memory	128kB RAM and 512kB Flash
Bluetooth version	Bluetooth 5.0 low energy (support 1M/2M/Coded LE PHY)
Bluetooth roles	Observer role for scanning Central role for connecting
Frequency band	2.402 – 2.480Ghz (use 0 - 39 channels)
Rx sensitivity	-103 dBm Bluetooth LE 125 kbps -98 dBm Bluetooth LE 500 kbps -96 dBm Bluetooth LE 1 Mbps -92 dBm Bluetooth LE 2 Mbps
Bluetooth antenna	4.2dBi gain and 59% efficiency FPC antenna
Scanning range	Up to 150m in open area at 1M PHY
Scanning capability	Max: 319 BLE advertisement packets per second

Bluetooth Smarts - Scan

Bluetooth scan PHY	Legacy BLE 4.2 1M PHY Bluetooth 5 1M PHY Bluetooth 5 2M PHY Bluetooth 5 Coded PHY (long range)
Scan duty cycle	100% by default, can be configured
Active scanning	By default - request scan response packets Can be disabled (passive scanning)
Filter Beacon packets	By RSSI By MAC address By BLE name By raw advertisement packets Filter out duplicate packet
Filter logic	Regular expression
Parse Beacon protocols	Apple iBeacon Google Eddystone – UID Google Eddystone – URL Google Eddystone – TLM MOKO Beacon – MkiBeacon MOKO Beacon – MkiBeacon&ACC MOKO Beacon – BeaconX Pro-ACC MOKO Beacon – BeaconX Pro-T&H
Beacon data format	JSON array format Hexadecimal format

Bluetooth Smarts - Connect

Bluetooth connection PHY	Automatic (1M/2M/Coded PHY)
Connect BLE peripheral	Gateway connects to a BLE peripheral and sets up a communication process between the BLE peripheral and the Server. The BLE peripheral must use MOKO standard Bluetooth module. Only MQTT supports data transfer between the BLE peripheral and Server (Bluetooth Communication topic).
Multiple BLE connection	Up to 8 BLE peripherals can be connected at the same time by the gateway

Wi-Fi Performance

Wi-Fi module	MediaTek 7688AN/7628NN
Memory	DDR2 128MB/32MB SPI Flash
Frequency band	2.400 – 2.484GHz (only use 1 – 11 channels)
Wireless standard	IEEE 802.11 b/g/n
Channel bandwidth	20/40MHz
Data rate	1T1R with 150 Mbps PHY
Tx power	20dBm@802.11b 11M 17dBm@802.11g 54M 17dBm@802.11n MCS7(HT20&HT40)
Rx sensitivity	-89.5dBm@802.11b 11M -76dBm@802.11g 54M -74.5dBm@802.11n MCS7(HT20&HT40)
Wi-Fi antenna	5dBi gain and 68% efficiency FPC antenna
Wi-Fi range	Up to 180m in open area
Security	64/128bit WEP, AES, TKIP, WPA, WPA2, WPA-PSK, WPA2-PSK

Network

Internet connection	WLAN to Internet Ethernet to Internet Network failover
Server access protocols	MQTT (SSL/TLS, socks5 proxy) HTTP (SSL/TLS) TCP UDP

Device Management

Web GUI	A Web user interface for configuring the gateway. User can access the Web GUI via Wi-Fi (AP mode) or Ethernet (WAN IP).
Cloud management	Monitoring and configuring the gateway remotely by Cloud management commands. Only MQTT supports (Remote Management topic).
Offline storage	Store the Bluetooth Beacon packets on an external USB flash drive when the network is unavailable
System logs	Record the important operations and events when the gateway works
System monitor	Gateway running time CPU temperature CPU usage Memory usage Network/Server connection status
Time	ISO 8601 (JSON format) Unix time (Hex format) Sync system time with NTP Server(s)
Restart	Schedule the gateway to restart automatically at a certain time
LED	Schedule the gateway to turn off the LEDs for a period of time
Download file from HFS	MQTT SSL certificate files Wi-Fi upgrade file Backup file
Copy file from USB flash drive	MQTT SSL certificate files Wi-Fi upgrade file Backup file Offline Beacon files
Backup and restore	Back up the gateway and restore it by loading a backup file. Load backup file from local computer, USB flash drive or HFS.
Upgrade	Wi-Fi firmware and Bluetooth firmware are developed separately. Wi-Fi firmware supports OTA (WLAN, HFS) or copy file from USB flash drive. Bluetooth firmware supports OTA (by nRF Connect APP)

Packaging

Contents	1 x MKGW1-BW Pro gateway 1 x 1 meter micro USB power cable 1 x PET positioning sticker 2 x KA 3.5 x 25mm screws 2 x Plastic wall plug
Dimensions (L x W x H)	192 x 160 x 47mm
Weight	282g

Certifications

Regulatory	USA (FCC) – FCC ID: 2AO94-MKGW1 Europe (CE, REACH, RoHS)
Customization	All worldwide certifications can be customized

Warranty

Manufacturer's warranty	1 year manufacturer's warranty
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Ordering MKGW1-BW Pro Bluetooth Gateway

Part Number	Description	Notes
212CNAD00350	MKGW1-BW Pro Bluetooth gateway	Two models will be shipped randomly. MKGW1-BW Pro(L) - using MT7688AN Wi-Fi module MKGW1-BW Pro(H) - using MT7628AN Wi-Fi module No usage difference between the two models.

MOKO TECHNOLOGY LTD.

An original manufacturer for IoT smart devices

Address: 4F, Building 2, Guanghui Technology Park, MinQing Rd, Longhua, Shenzhen, Guangdong, China

E-mail: Support_BLE@mokotechnology.com

For more information

Visit www.mokosmart.com for the complete product specification.



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