



MWC03

Bluetooth®
LTE Location Badge

Datasheet

Bluetooth® BDS/GPS

4G



PRODUCT OVERVIEW

MWC03 is the first indoor and outdoor fusion location badge developed by Minew. It uses GNSS and Bluetooth fusion positioning and real-time data uploading via cellular network, aiming to solve the problems of untimely personnel positioning and inconvenient equipment installation in all kinds of enterprises. By seamlessly switching between the two positioning modes, this product provides accurate location information in vast outdoor and complex indoor spaces, helping companies optimize resource allocation and ensure employee's safety.



PRODUCT FEATURES

* Dual-mode positioning

MWC03 integrates GNSS and Bluetooth positioning technologies, using GNSS positioning outdoors and Bluetooth positioning indoors for seamless all-round coverage.

* Bluetooth Filtering Algorithm

The device has a unique Bluetooth filtering algorithm, which supports a variety of filtering conditions to save the closest beacons to the device to achieve indoor positioning. Depending on the specific use of the device, it can be check-in, room-level positioning, indoor track view and other applications.

* Cellular Data Transmission

MWC03 supports 4G LTE Cat.1 network connection, which is compatible with FDD-LTE and TDD-LTE bands to real-time data upload. Therefore, the device can ensure the timeliness and reliability of data and solve the problem of cumbersome gateway deployment in traditional Bluetooth solutions.

* Integrated RFID

MWC03 supports RFID access control, dividing the work area and protecting the privacy and security of the enterprise organization.

* Batch Management

The equipment with the platform can realise the issuance of instructions for batch configuration and management of equipment, which is more convenient for users to accurately deploy resources. At the same time, the equipment supports batch recharging management. The recharging cabinet can lock the equipment and man-machine matching, which is convenient for users to maintain and manage the equipment. ^[1]

* Protection design

With IP65 protection, the MWC03 can effectively prevent dust and water from entering the interior of the product.

* Multi-functional keys

Multi-functional key feedback can achieve personalized key requirements, such as: time and attendance clocking, SOS alarm, etc.

Note: [1] For charging cabinet, please contact our sales team.

APPLICATION SCENARIOS



Emergency Alarm System

In industries such as hotels and hospitals, where conflicts between staff and guests are more likely to occur, managers can use the MWC03 as an emergency response terminal to protect employee safety. Employees can press the button on the MWC03 to initiate an emergency alarm, which will immediately locate the employee and upload the information to the emergency system, reporting the exact indoor or outdoor location to designated emergency response personnel.



Attendance Check-in

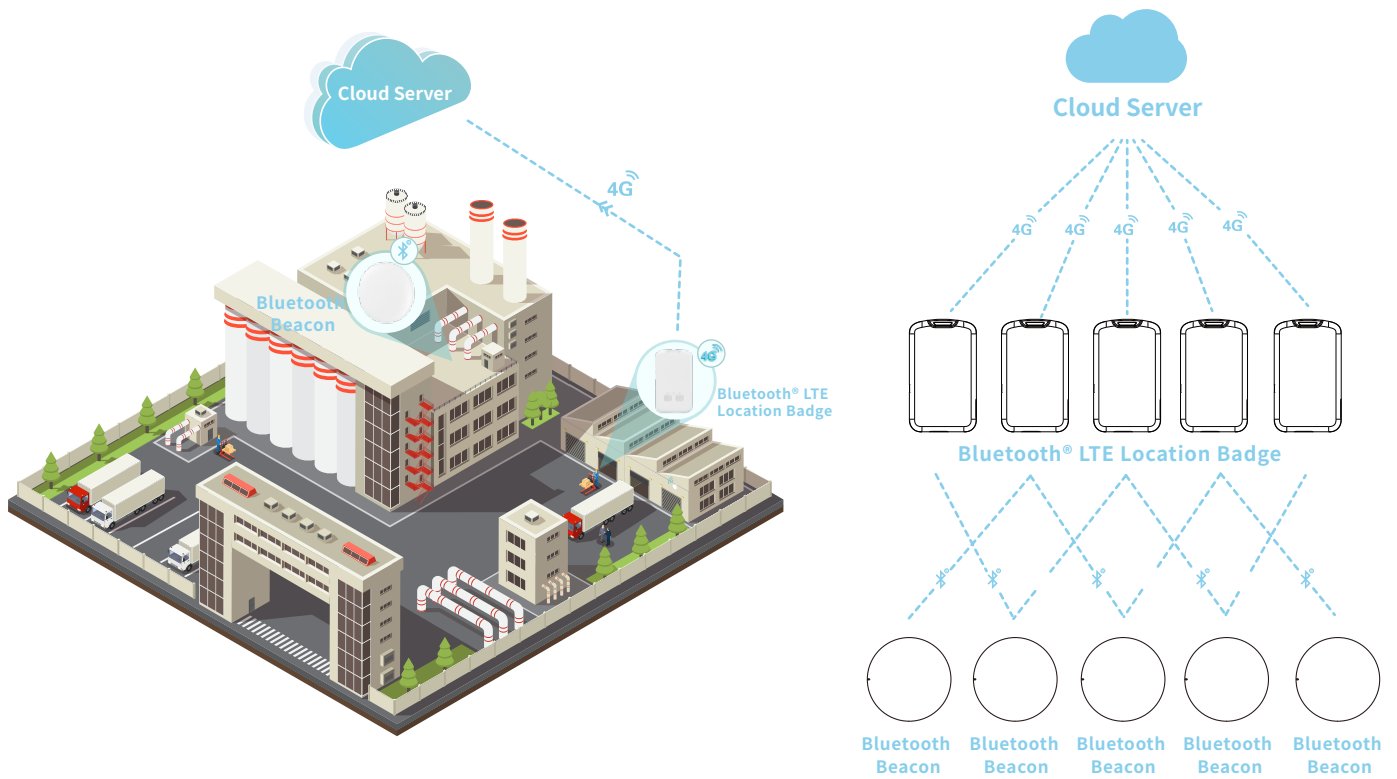
This product provides multiple check-in methods: senseless check-in, key check-in, and RFID check-in. After employees wear the product, the system can automatically record their arrival and departure time at the workplace, avoiding the lack of human punch cards. At the same time, the product integrates sensitive RFID and key immediate positioning functions, which can be used as access control management and alternate check-in methods to ensure the privacy and security of the work area.



Fun Tours

In tourist attractions and large exhibition venues, this product can be used for visitor check-ins and guided tours. Multiple check-in points can be set up within the attraction, and when visitors wear this product, it can automatically record the time they arrive at each site. This allows operators to analyze dwell times and tour paths to optimize venue management strategies. Additionally, through Bluetooth technology, this product can interact with the venue's guide devices to provide visitors with real-time location guidance and site introductions.

WORKING PRINCIPLE



Bluetooth Beacon :

Beacons are reasonably pasted to walls or columns. Beacons broadcast Bluetooth information in real time.

Bluetooth® LTE Location Badge :

The badge collects Bluetooth broadcasts from beacons and uploads the complete broadcast packet of the beacons via cellular network according to the upload interval. The broadcast packet includes the 3 beacons with the strongest RSSI values as a group. The number of beacons uploaded depends on the upload interval and the Bluetooth scanning period.

Intelligent Management Platform - Tagcloud 3.0 :

The intelligent management platform displays the data uploaded by the badges and allows configuration and command issuance to the badges through the platform, enabling batch management of the devices.

CORE FUNCTION

Power-Saving Mode

The device can be configured to activate based on motion triggers or specific work periods. When the trigger conditions are not met, the device automatically enters power-saving mode, extending the single-use duration of the device and conserving data usage.

Smart Location Switching

In working mode, the device intelligently recognizes the surrounding environment and automatically switches between GNSS and Bluetooth positioning. This ensures optimal location accuracy in different environments, achieving seamless coverage.

Indoor Positioning

The device uses Bluetooth technology with Bluetooth beacons to achieve indoor positioning. The device automatically selects the beacon broadcast data with the four strongest RSSI values within a configured period. Users can calculate the device's location based on this broadcast data.

*This feature can be disabled.

Outdoor Positioning

The device performs periodic positioning using GNSS. Users can adjust the positioning frequency according to actual needs.

*This feature can be disabled.

Custom Button

The device supports three button actions: single-click, double-click, and long-press. After any button action, the device immediately performs location tracking and uploads the location information along with the button action type, allowing users to customize button events easily.

Power Management

When the device has low battery, the red light will flash. If the battery is critically low, the device will automatically shut down. When charging after shutdown, the device will automatically power on without manual operation. During charging, the device remains in power-saving mode.

*The device supports batch charging.

Data Storage

The device supports storing up to 47,000 data entries. When there is stored data, the device will automatically upload the latest data in chronological order, from the earliest to the latest.

Bluetooth Data Filtering

The device supports multiple filtering criteria such as RSSI, UUID, Major, Minor, and MAC address. These filtering criteria can be combined to ensure that the Bluetooth beacon data recorded by the device is accurate and effective.

PRODUCT SPECIFICATIONS

BASIC SPECIFICATIONS	
Model	MWC03
Material	ABS + PC
Color	White Button colors are customizable
Size (L * W *H)	107.49 * 64 * 9 mm
Weight	64.3g (without accessories)
Resistant level	IP65
Battery	1250mAh rechargeable battery
Charging time	3h
Battery life	About 5 days (8-hour working mode, 16-hour power-saving mode) About 17 days (Power-saving mode)
Sensor	Accelerometer
Button	Power button, function button, reset button
Buzzer	Supported
NFC	Supported, about 1.5 cm
LED	Blue, Power-on / Restart Yellow, Cellular; White, GNSS positioning; Green, Charging state; Red, Low battery feedback / Key feedback
Internet Connection	4G LTE Cat.1
Flash	8MB
SIM Card	Nano SIM
Work Temperature	-20~60℃
Charging temperature	0~45℃
Firmware Upgrade	MinewLink APP Tagcloud 3.0
Configuration	MinewLink APP Tagcloud 3.0
Data Security	SSL/TLS

BLUETOOTH SPECIFICATIONS

Bluetooth Version	Bluetooth® LE 5.0
Bluetooth Band	2.4 GHz, 40channels (2400~2483.5MHz)
Bluetooth Modulation	GFSK
Bluetooth Bandwidths	1Mbps
Receive Sensitivity	-78 dBm @1Mbps, 30.8 %PER
Scan Distance	85m (Open area)
Scan Period	Configurable

GNSS SPECIFICATIONS

Navigation System	GPS/ BDS/ GLONASS/ Galileo
Positioning Accuracy	<8.9m (open area)
Sensitivity	Capture: -146dBm Reacquisition: -160dBm Tracking: -160dBm
Channel	Capture: 64
Standalone TTFF	Cold start 28s Warm start 27s Hot start 3.7s

CELLULAR SPECIFICATIONS

Cellular Connection	4G LTE Cat.1
Cellular Max Data Rate (Mbps)	LTE-FDD 10 (DL) / 5 (UL)
Cellular Networks Bands	EU Version: LTE-FDD B1/3/5/7/8/20/28 US Version: LTE-FDD B2/ 4/ 5/ 12/ 13/ 66
SIM Card	Nano SIM

SOFTWARE SUPPORT

MinewLink APP	APP primarily used for device network configuration, restoring factory settings, and other operations.
Tagcloud 3.0	Used to view device information, visualize certain data, and perform batch configuration of devices.

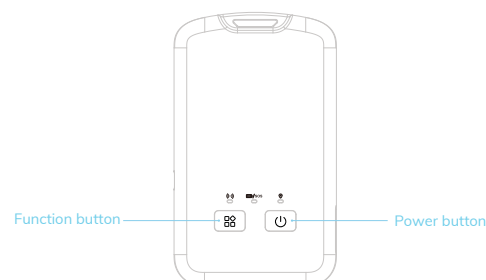
INSTRUCTION

Boot

After holding the  button for 3 s, the badge will power on and the blue light will be on for 3 s.

Shutdown

Supports remote shutdown only via the App or the Tagcloud 3.0. Upon shutdown, the blue light will flash five times.



Function Button Trigger

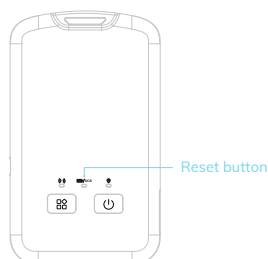
Single Click : The red light flashes twice, the buzzer sounds for 0.5 seconds. The device immediately performs a location tracking, and uploads the location information and button trigger flag.

Double Click : The red light flashes three times, the buzzer sounds for 0.5 seconds. The device immediately performs a location tracking, and uploads the location information and button trigger flag.

Long Press (3s) : The red light stays on for 3 seconds, the buzzer sounds for 0.5 seconds. The device immediately performs a location tracking, and uploads the location information and button trigger flag.

Reset

Use the tool to press the reset button and the device will reboot.



Cellular pilot light: Yellow LED

If the cellular LTE network is abnormal, the yellow light will keep flashing quickly.
If the server cannot be connected, the yellow light will keep flashing slowly.

Power pilot light: Blue LED

When the badge powers on, the blue light will be on for 3 s.
Upon shutdown, the blue light will flash five times.

Charging pilot light: Green LED

When being charged, the green light remains on. When the charging is completed, the green light turns off.

Feedback pilot light: Red LED

When the battery is lower than 20%, the red light flashes once every 8 s.
Pressing the function button once, the red light flashes twice.
Pressing the function button twice, the red light flashes 3 times.
Pressing the function button for 3s, the red light flashes 3 times.

GNSS pilot light: White LED

If the GNSS position fails, the white light will keep flashing slowly.

PRECAUTIONS

- * The product's default front side does not include employee information. If needed, please contact our sales team for UV printing or custom stickers.
- * Restoring factory settings will erase previous configuration information. Please proceed with caution.
- * If there is no network, the device will not upload any data.
- * After changing the carrier, you need to configure the device's APN through the app. Otherwise, it may not connect to the network.
- * The device needs to remain in power-saving mode while charging.
- * GNSS positioning accuracy can be affected by weather, environment, and geographical conditions.
- * NFC sensing distance varies depending on the surrounding environment, reader model, etc.
- * The product does not support use underwater.
- * Avoid battery leakage, overheating, fire, or explosion. Do not use or store the product in extreme environments such as fire, high temperature, high pressure, humidity, strong static electricity, strong magnetic fields, or underwater.
- * Slight heating of the product during charging is normal. Do not place the charging product on items that do not dissipate heat easily (such as bedding or clothing) or near flammable materials to avoid fire hazards.
- * Do not charge it for a prolonged period.
- * It is recommended that store the product in a normal environment ($25\pm5^{\circ}\text{C}$, $65\pm20\%\text{RH}$) while charge and discharge the product per 3 months during storage when not in use.
- * Avoid being exposed to direct sunlight for an extended period to mitigate shell aging.
- * Minew will not be responsible for any damage resulting from disassembling manually.



CHARGING SAFETY GUIDELINES

- * This product does not include a power adapter.
- * Use a certified adapter with output DC 5V / 1A or 5V/2A.
- * Using a higher voltage may damage the device; lower voltage may cause unstable charging or failure to operate.
- * Ensure the adapter meets local standards (e.g., CE/RoHS, UL/FCC, etc.).
- * Use reputable brands only, uncertified adapters may cause safety issues or void warranty.
- * Avoid charging in high heat or humidity.
- * Unplug after charging to protect battery life.
- * Keep the charging port clean and dry.

CERTIFICATIONS



* Note: CE, FCC, SRRC and CCC certification numbers can be provided upon request. If other certifications are needed, please contact our sales team.

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 designed 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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

The : Bluetooth LTE Location Badge/MWC03 has been tested for body-worn Specific Absorption Rate (SAR) compliance. The FCC has established detailed SAR requirements and has established that these requirements. RF Exposure Information The radio module has been evaluated under FCC Bulletin C95.1 and IEC/IEEE 62209-1528 and found to be compliant to RF Exposure from radio frequency devices. This model meets the applicable government requirements for exposure to radio frequency waves. The highest reported SAR level for usage near the body (5mm) is 0.833W/kg.

PACKAGING INFORMATION

Details	Boutique Packaging	Inner Carton	External Box
Pictures			
Quantities	1pcs	6 pcs	36 pcs (Boutique Packaging) 48 pcs (Inner Carton)
Size	14.5* 12 * 3.5 cm	30.6 * 11 * 9.5 cm	32 * 23.5 *40 cm
Gross weight (with accessories)	158g	609g	6.15kg (Boutique Packaging) 5.31kg (Inner Carton)

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:

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