USER MANUAL

U-Class Z-wave IoT Gateway

ZWG81000B



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1. Description

Congratulations and thank you for using Mainbo U-Class Z-wave IoT Gateway device.

U-Class Z-wave IoT gateway takes central place in IoT automation system. Combined with U-Class client (Android/iOS/HTML) applications and U-Class cloud services. It provides a turnkey platform that covers lighting, security, safety, energy management and other aspects of the fast-growing IoT automation markets.

By supporting the most popular wireless communication protocols today, U-Class Z-wave IoT gateway communicates with connected devices and enables users to monitor and control their equipment through Z-wave plus technologies.

Below you will find useful operating guidelines.

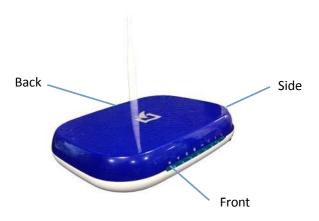
WARNING!

The 5V port of this unit is to be connected only to the devices whose power feeding meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1.



2. Product Overview

2.1. Full



2.2. Front view



Item	Name	Description
1	POWER	Power supply status indicator
2	DOWNLOAD	Download status indicator
3	₩ ADD/DEL	Inclusion and exclusion indicator
4	Z-Wave	Z-Wave communication indicator
5	WAN	Wide area network indicator
6	⁸ LAN	Local area network indicator



2.3. Side view



Item	Name	Description
7	ADD/DEL key	Push-bottom for inclusion or exclusion Z-wave devices

2.4. Back view



Item	Name	Description
8	DC/5V	Power plug
9	RST	Reset to default IP and password
10	HOST	USB host
11	SLAVE	USB slave
12	LAN	Ethernet RJ-45 socket
13	ANT	Z-wave RF communication antenna



3. Specifications

Table. 3-1

Item	Specification
СРИ	ARM9 (400 MHz@1.0V +/- 10%) with ZM5202
DRAM	128M
Flash	256M
Power Voltage	5DCV
Power Current	0.5A
Consumption	<2.5w
Frequency	908.42MHz
RF Range	≤30 meters (in-door), 100 meters (out-door)
Nodes	232
Protocols	TCP/IP、UPNP、DDNS、HTTP、DNS、Z-Wave
Temperature	10-45℃
Humidity	10%-70%RH
Power Supply	External DC power adapter (5VDC@2A)
Weight	200g
Dimension	224mm*170mm*42.5mm

4. Indications

Indication	Status
POWER, Blue ON	Device power on
RJ-45 Socket, Amber ON	LAN connected with 100M
RJ-45 Socket, Green ON	LAN connected
RJ-45 Socket, Green Blink	Data transferring
DOWNLOAD, Blue ON	Gateway is upgrading
ADD/DEL, Green Blink	Z-wave exclusion mode
ADD/DEL, Blue Blink	Z-wave inclusion mode
ADD/DEL, Green and Blue cross Blink	Z-wave routing table re-build
ADD/DEL, Blue ON then OFF	IP reset (press and hold RST key for 3 seconds)
ADD/DEL, Green ON then OFF	Password reset (press and hold RST key for 10 seconds)
Indicators ON sequential	Gateway is booting
Z-wave, Blink	Z-wave is communicating



WAN, Blue ON	WAN connected
WAN, Blue Blink	Confirming internet connection
WAN, OFF	No internet connection
LAN, Blue ON	LAN connected
LAN, Blue Blink	Data transferring
LAN, OFF	No intranet connection

5. Installation

Before using Mainbo U-Class Z-wave IoT Gateway, please read the following information to avoid any potential dangers:

- Read the instructions carefully and follow the precautions in this manual. All mains connections must be carried out by a trained and qualified person
- Only use the original mains adaptor supplied with the device
- Disconnect the device from mains (mains chargers) before cleaning. Clean device with a damp cloth, do not use detergents
- Do not use device in gas-filled environments
- Do not place the device near heat sources
- Do not expose the device to direct sunlight
- Do not place cables and/or power supplies under heavy objects. Also, avoid routes near sharp or abrasive objects and walkways
- Keep out of reach of children
- Do not carry out any maintenance on the device, instead contact your supplier
- Make sure that ventilation slots and the cooling unit are not covered
- As the device generates heat, this can lead to discoloration on the surface of furniture.
 Make sure there is at least 10cm of clearance around the device
- The device must not be located in the space with a high level of humidity e.g. kitchen, bathrooms, etc.
- Under no circumstances should you open the device or the mains adaptor. This must only be carried out by a qualified engineer
- Do not touch any contacts on the device with your fingers or metal objects. This could cause a short circuit
- Do not handle the device when your hands are wet due to risk of electricshock



6. Instructions

6.1. POWER ON/OFF

➢ Power ON

Purpose: Power ON gateway, boot up system. Steps: Step-1: Plug-in power adapter and Ethernet cable.

➢ Power OFF

Purpose: Power OFF gateway, shut down system.

6.2. Web Console

Purpose: Gateway Configuration Steps:

Step-1: Open a IE or Chrome browser on a PC which connected to the same LAN network with gateway.

Step-2: Type-in the IP address, ex:"192.168.0.100".

(Default IP: 192.168.0.100)



Step-4: Type-in the password. (Default Password: 888888)

Step-5: Click"Login"



状态显示	网关基本信息	
	网关 ID: U0000054	
网关管理	生产序号: UF1408000	154
设备管理	当前版本: v1.07.53[1.	07.52]
高级管理	Web版本: 0.4.0	
问数后庄		
日志管理		
退出		

6.3. System Status

6.3.1. Gateway Information

Purpose: Check information about gateway, including gateway ID and firmware version. Steps:

Step-1: Click System Status/Gateway Information on the left of Web Console

状态显示	网关基本信息
网关基本信息	网关 ID: U0000054
网络信息	生产序号: UF140800054
网关管理	当前版本: v1.07.53[1.07.52]
	Web版本: 0.4.0
设备管理	
高级管理	
日志管理	
退出	

6.3.2. Network Information

Purpose: Check information about network, including IP, submask and gateway IP. Steps:



Step-1: Click System Status/Network Information on the left of Web Console



6.4. Gateway Management

6.4.1. Network Configuration

Purpose: Gateway network and name configurations

Steps:

Step-1: Click Gateway Management/Network Configuration on the left of Web Console



Step-2: Modify settings according to the LAN environment.

Step-3: Click "Apply"
Step-4: Click "Reboot"





(New parameters will be taken after gateway reboot)

6.4.2. Server Configuration

Purpose: Server Configuration

Step:

Step-1: Click Gateway Management/Server Configuration on the left of Web Console



Step-2: Type-in IP address or domain name of Server

Step-3: Click"Submit" Step-4: Click "Reboot"

(New parameters will be taken after gateway reboot)



6.4.3. Time Configuration

Purpose: System date and time calibration and configuration

Step:

Step-1: Click Gateway Management/Time Configuration on the left of Web Console



Step-2: Click "Grab time" at right, it will show current time settings.



If time setting in-correct, user can modify it manually (Step-2A). User also can reset server to obtain updated time (Step-2B).

Step-2A: Modify time and then click "submit"

Notice:

User must input the text in order to the format as shown.

Step-2B: see 6.4.2 Server Configuration



6.4.4. Modify Password

* Strongly recommend to change password once system active.

Purpose: Change the password for administrator

Steps:

Step-1: Click Gateway Management/Password on the left of Web Console



Step-2: Key-in original password and new password, then click "Submit" (New password effected immediately, no need to reboot gateway)

6.4.5. Upgrade

Purpose: On-line upgrade firmware

Steps:

 ${\it Step-1:} \ \ {\it Click} \ \, {\it Gateway} \ \, {\it Management/Upgrade} \ \, {\it on the left of Web Console} \\$





Step-2: Click "Upgrade" or "Downgrade"



Step-3: Choose the version



Step-4: Click "OK", then wait for updating



6.4.6. Reboot

Purpose: Reboot gateway Steps:

Step-1: Click Gateway Management/Reboot on the left of Web Console





Step-2: Click "Reboot"



Step-3: Click "OK" in the dialog





Notice:

* Web console cannot be accessed during rebooting.

6.5. Device Management



6.5.1. Inclusion

Purpose: New Z-wave device inclusion

Method 1
Steps:

Step-1: Login Web Console on PC browser

Step-2: Click **Device Management** on the left of Web Console

Step-3: Click "Inclusion"



(ADD/DEL indicates blue and blink slowly until inclusion success or time-out)

Step-4: Trigger the new device which want to add-in

(Please refer to the manual of device to know how to trigger the inclusion. ADD/DEL indicator will off once receive the message from device)



Method 2

Steps:

Step-1: Press the "+/-" key twice (each once about 1 second)

(ADD/DEL indicates blue and blink slowly until inclusion success or time-out)

Step-2: Trigger the new device which want to add-in

(Please refer to the manual of device to know how to trigger the inclusion. ADD/DEL indicator will off once receive the message from device)

Notice:

- * Please perform "Exclusion" before "Inclusion" to erase old settings inside the device.
- * Device must near by the Gateway when doing "Inclusion" (less than 3 meters)

6.5.2. Exclusion

Purpose: Remove the existing Z-wave device in the gateway

Method 1

Steps:

Step-1: Login Web Console on PC browser

Step-2: Click **Device Management** on the left of Web Console

Step-3: Click "Exclusion"



(ADD/DEL indicates green and blink slowly until exclusion success or time-out)

Step-4: Trigger the new device which want to remove

(Please refer to the manual of device to know how to trigger the inclusion. ADD/DEL indicator will off once receive the message from device)

Method 2

Steps:

Step-1: Press and hold "+/-" key for 5 seconds, wait for indicator starts blink

(ADD/DEL indicates green and blink slowly until exclusion success or time-out)

Step-2: Trigger the new device which want to remove

(Please refer to the manual of device to know how to trigger the inclusion. ADD/DEL indicator will off once receive the message from device)

Notice:



* Device must near by the Gateway when doing "Inclusion" (less than 3 meters)

6.5.3. Remove malfunction device

Purpose: Remove malfunction Z-wave device Steps:

Step-1: Login Web Console on PC browser

Step-2: Click **Device Management** on the left of Web Console

Step-3: Choose the device which want to remove, then click "Remove"



(ADD/DEL indicates green and blink slowly until exclusion success or time-out)

6.5.4. Replace malfunction device

Purpose: Replace malfunction Z-wave device with new one

Steps:

Step-1: Login Web Console on PC browser

Step-2: Click **Device Management** on the left of Web Console

Step-3: Choose the device which want to replace, then click "Replace"



(ADD/DEL indicates blue and blink slowly until exclusion success or time-out)

Step-4: Trigger the new device which want to remove



(Please refer to the manual of device to know how to trigger the inclusion. ADD/DEL indicator will off once receive the message from device)

Notice:

- * Please perform "Exclusion" before "Inclusion" to erase old settings inside the device.
- * Device must near by the Gateway when doing "Inclusion" (less than 3 meters)

6.5.5. Association and configuration

Purpose: Associate devices

Steps:

Step-1: Login Web Console on PC browser

Step-2: Click **Device Management** on the left of Web Console

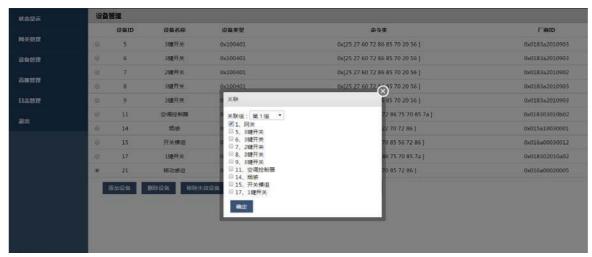
Step-3: Choose the device, it will show "Association", "Configuration" and "Activation"



Notice:

* Not every device supports Association, Configuration and Activation.

Step-4A: Click "Association" then choose multiple devices which want to associated. Then click "OK"



Step-4B: Click "Configuration" then key-in the parameters. Then click "OK"

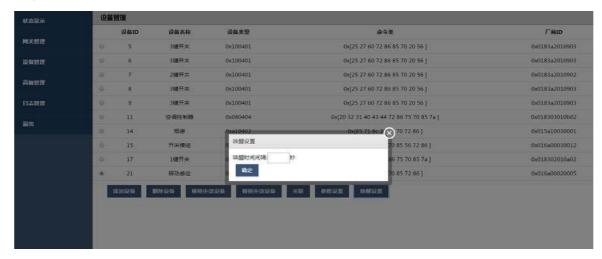




Notice:

- * Different device contains different vendor and product parameters. Please refer to the manual of device for details.
- * The number and value of parameter are both Hexadecimal
- * Perform Step-4B repeatedly if there are multiple parameters for the device.

Step-4C: Click "Activation"



6.6. Advance

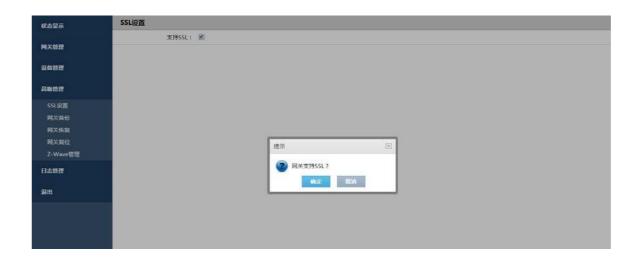
6.6.1. SSL

Purpose: Enable/Disable Secure Sockets Layer function

Steps:

Step-1: Click **Advance/SSL** on the left of Web Console Step-2: Click "Support SSL" checkbox, then click "OK"





6.6.2. Backup

Purpose: Gateway data backup Steps:

Step-1: Click **Advance/Backup** on the left of Web Console



Step-2: Click "Backup"







Step-3: Once backup success, click "Save as" to store the file into your PC.

6.6.3. Restore

Purpose: Restore gateway data Steps:

Step-1: Click **Advance/Restore** on the left of Web Console



Step-2: Choose the file name of "backup.tar" in the dialog.

Step-3: Click "Restore" and "OK"





Notice:

* Gateway will reboot automatically once data restore successful.

6.6.4. Default

Purpose: Reset gateway to factory default settings

Steps:

Step-1: Click **Advance/Default** on the left of Web Console



Step-2: Type-in password then click "OK"

(Gateway will reboot automatically about 60 seconds)



6.6.5. Z-Wave

> Re-build Route

Purpose: Re-generate the routing table between devices

> Auto-Polling

Purpose: Time interval of auto-polling for general devices

➤ Meters Auto-Polling

Purpose: Time interval of auto-polling for meter devices

➤ Duty-Hour Polling

Purpose: Time interval of auto-polling for switch devices duty-hour

Steps:

Step-1: Click Advance/Z-wave on the left of Web Console



Step-2A: Click the "OK" side by the "Re-build"



(ADD/DEL indicates green and blue cross blink till procedure done.)

Notice:

- * This task period base on the number of device in the Z-wave network. DO NOT re-login or shut down gateway during processing.
- * All Z-wave devices should be working well during processing



Step-2B: Key-in the value between 0 to 28800 into "Auto-Polling"



Notice:

Step-2C: Key-in the value between 0 to 28800 into "Meter Auto-Polling"



Step-2D: Key-in the value between 0 to 28800 into "Duty-Hour Polling"





^{*} Frequently polling would cost system performance, please DO NOT set the value under 300.

6.7. System Log

For maintenance only.



6.8. Reset gateway IP

Purpose: Reset gateway IP to default setting Steps: Step-1: Press and hold Reset key for 3 seconds

Notice:

* Default IP: 192.168.0.100 Submask: 255.255.255.0 Gateway IP: 192.168.0.1

* Please confirm settings of network after reset gateway IP

6.9. Reset Password

Purpose: Reset gateway password to default setting

Steps:

Step-1: Press and hold Reset key for 10 seconds



Notice:

* Default password: 888888

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.

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.

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

