

# MK-815WM Manual

(OEM INTEGRATOR MANUAL)

Customer support

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MTTKorea Co., Ltd.

# Index

1. Product Summary.....	3
2. Application.....	3
3. Character.....	3
4. Using a Web Browser Module Setting.....	4
➤ Log-in.....	4
➤ User name & password change Setting.....	4
➤ Wireless Mode Setting .....	5
➤ Wireless Channel Setting.....	5
➤ AP Access Setting .....	6
➤ System rebooting .....	6
➤ Firmware Update.....	7
➤ Access point Status.....	7
5. Wireless Character.....	8
6. Interface.....	9
7. Electrical Character.....	9
8. Operating Conditions.....	9
9. References.....	12~15

## 1. Product Summary

The explosive growth of the Internet Today, anytime, anywhere information and services available through the Internet that can do the basic needs of life has become

By the application of networking technology, a more convenient and portable devices can be used without restriction in place has made.

In this device, a wireless LAN, UART communication, SPI provides communication with wireless sensors and medical equipment, industrial sensors and control devices, consumer electronics, etc. with a simple connection to a device that can be widely used By providing a convenient portable wireless devices with existing wired peripheral contact with have been utilized can be replaced by wireless

## 2. Application

- ✧ Wired or Wireless way to the connect high speed broadband Internet
- ✧ Wireless sensor medical equipment, industrial sensors and control devices, consumer electronics, or peripheral devices can be shared
- ➔ Low power consumption can be battery-operated portable devices and peripherals operate as a simple connection, Built-in firewalls and other security features use of the data can be used safely

## 3. Character

- ✧ IEEE 802.11 b/g/n Wi-Fi device
- ✧ WEP-64/WEP-128/WPA/WPA2/WAPI/Enterprise Advanced security setting are available
- ✧ Hardware interface: UART, SPI, USB 2.0, LAN x1, WAN x1 ports apply
- ✧ Chip antenna and external antenna can be connected with the selection
- ✧ Conveniently managed using a Web browser or can be remotely managed

✧ Ad Hoc / Infrastructure Mode apply.

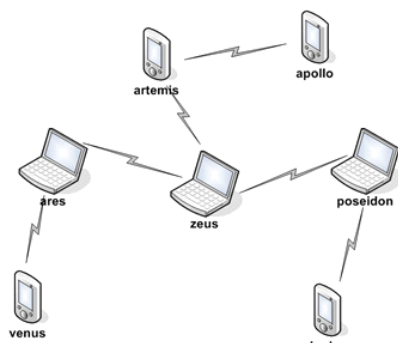
➔ By changing the firmware is optionally available

Ad Hoc mode

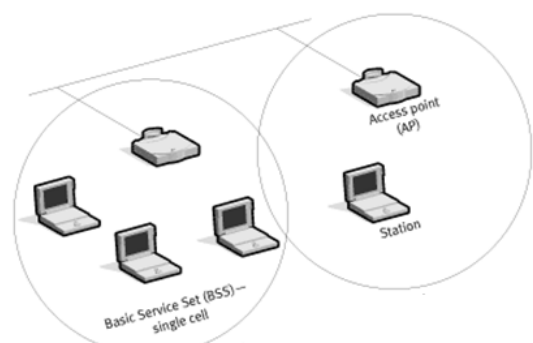
: Without AP communication among Client in a manner that is primarily used for sensor Network.

Infrastructure mode

: Client control of the AP in a manner that the communication operators to use.  
(Operators to determine the AP and control the customer.)



Ad Hoc Mode



Infrastructure Mode

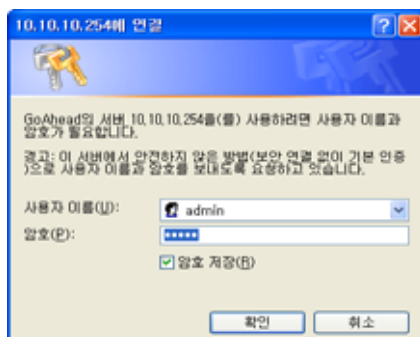
#### 4. Using a Web Browser Module Setting.

Log-in

URL in the Web address field IP address <http://10.10.10.254> (default IP address .)enter.

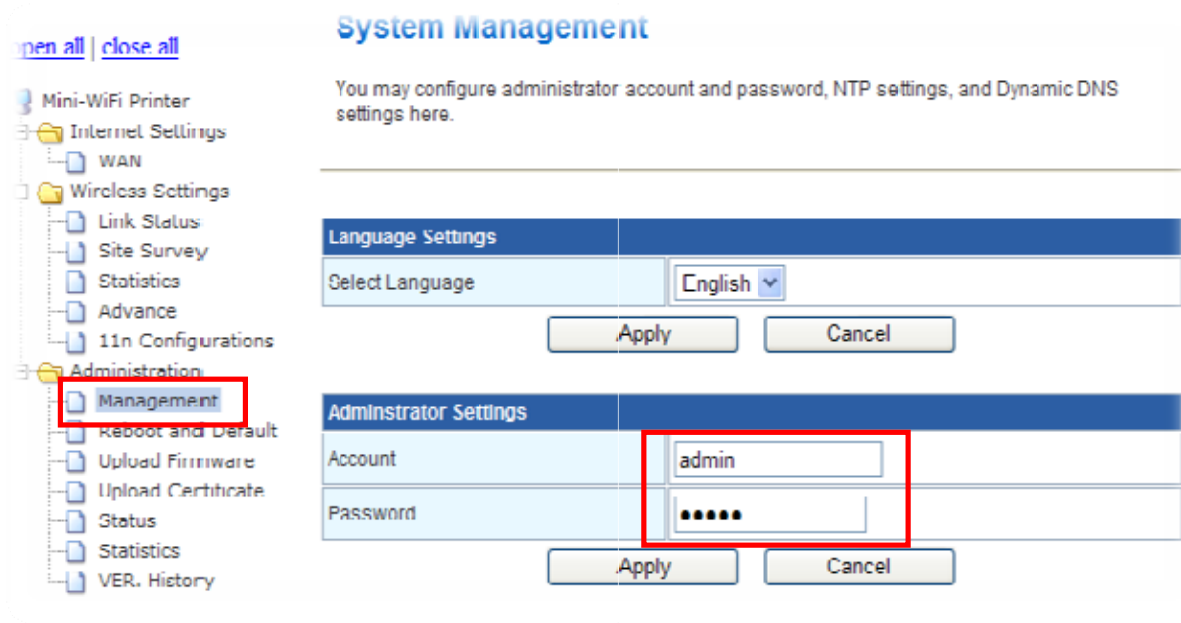


The following dialog box that appears, enter the user name and password and are logged in the main setting window, The default value for user name and password 'admin'



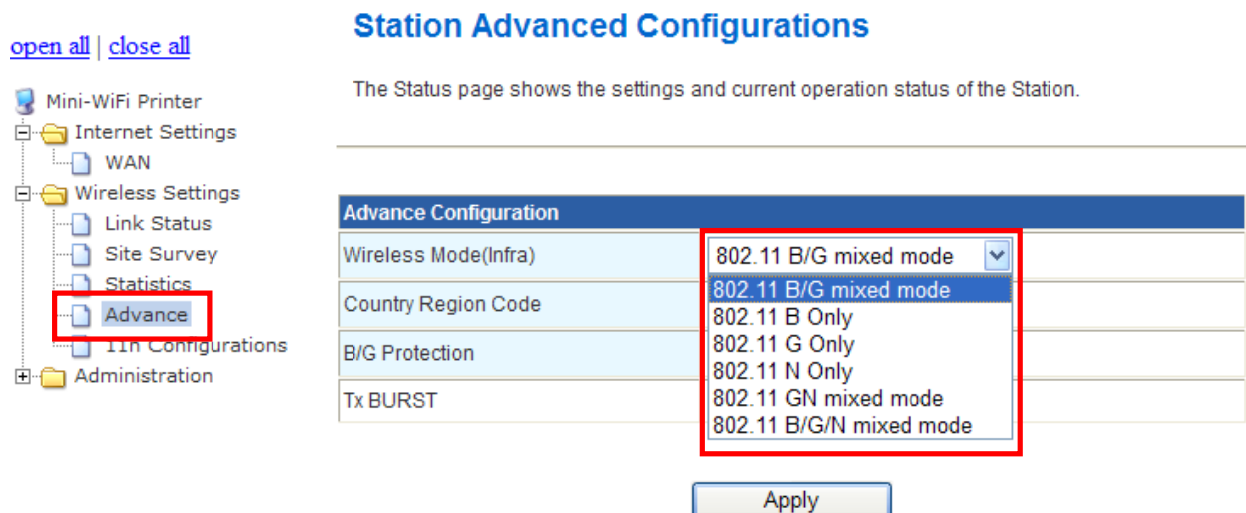
user name & Password change Setting

Administration Management of Web pages connected from the left menu on the initial user name and password can be changed



Wireless Mode Setting

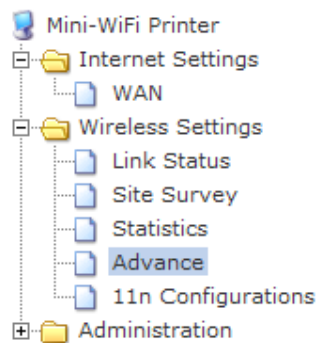
Advance of Wireless Setting Wireless Mode from the menu can be set up



## Wireless Channel Setting

Wireless Settings Advance from the menu you can select a channel

[open all](#) | [close all](#)



## Station Advanced Configurations

The Status page shows the settings and current operation status of the Station.

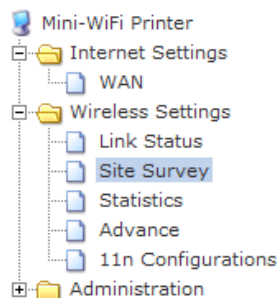
Advance Configuration	
Wireless Mode(Infra)	802.11 B/G mixed mode
Country Region Code	11 B/G
B/G Protection	Auto
Tx BURST	<input checked="" type="checkbox"/>

5:CH1-14  
 0:CH1-11  
 1:CH1-13  
 2:CH10-11  
 3:CH10-13  
 4:CH14  
 5:CH1-14  
 6:CH3-9  
 7:CH5-13

## Wireless Access Setting

Wireless Setting of Site Survey from around the AP can be connected

[open all](#) | [close all](#)



## Station Site Survey

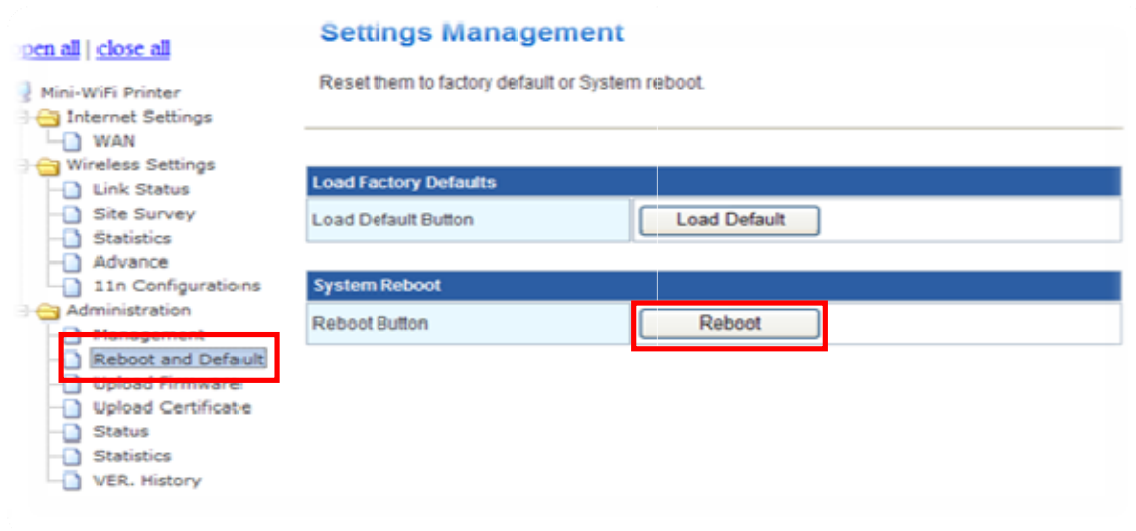
Site survey page shows information of APs nearby. You may choose one of these APs connecting or adding it to profile.

Site Survey							
	SSID	BSSID	RSSI	Channel	Encryption	Authentication	Network Type
<input type="radio"/>	radius-ap	00-3A-99-C9-6F-F0	20%	11	TKIP; AES	WPA; WPA2	Infrastructure
<input checked="" type="radio"/>	wevo	08-10-75-EE-FF-CC	96%	13	TKIP; AES	WPA-PSK; WPA2-PSK	Infrastructure
<input type="radio"/>	U+Net268B	00-40-5A-DC-26-89	0%	3	AES	WPA2-PSK	Infrastructure
<input type="radio"/>	U+zone	00-40-5A-DC-26-8A	0%	3	AES	WPA2	Infrastructure
<input type="radio"/>		00-40-5A-DC-26-88	0%	3	TKIP	WPA-PSK	Infrastructure

Disconnected
Rescan
Connect

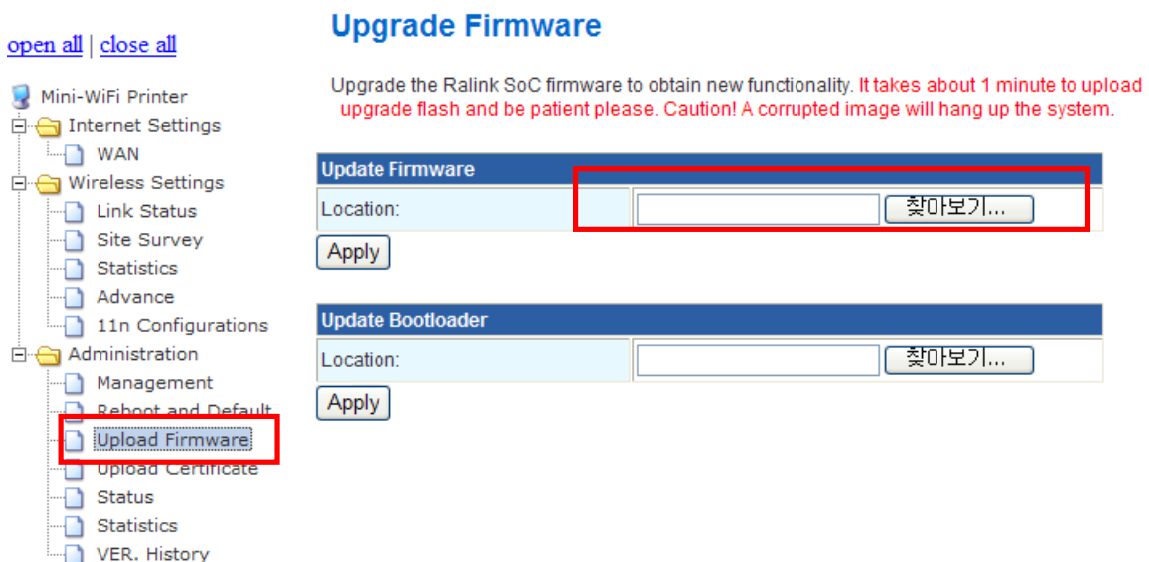
## System Rebooting

Administration of Reboot and Default from System reboot is possible



## Firmware Upgrade.

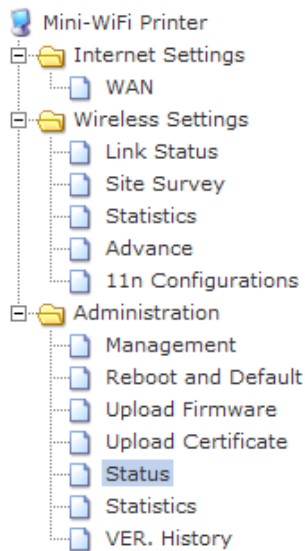
Administration Upload Firmware of revision firmware can updated.



Check the status of AP.

Administration of Status feature is connected to the Web can check the overall status.

[open all](#) | [close all](#)



## Access Point Status

Let's take a look at the status of Ralink SoC Platform.

System Info	
SDK Version	1.0.2.1 (Mar 10 2012)
System Up Time	9 mins, 57 secs
System Platform	RT3352 embedded switch
Operation Mode	Ethernet Converter Mode
Internet Configurations	
Connected Type	STATIC
WAN IP Address	192.168.0.254
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Primary Domain Name Server	168.126.63.1
Secondary Domain Name Server	164.124.101.2
MAC Address	00:1A:0B:0A:00:1C
Local Network	
Local IP Address	10.10.10.254
Local Netmask	255.255.255.0
MAC Address	00:1A:0B:0A:00:04



## 5. Wireless Character

Parameter	Specifications	Remarks
Frequency Range	USA / Canada : 2.400 ~ 2.483GHz Europe : 2.400 ~ 2.383GHz Japan : 2.400 ~ 2.497GHz Korea / China : 2.400~2.483GHz	IEEE802.11b/g/n
Communication Form	Half Duplex	
Operating Channel	USA / Canada : 11ch (1~11ch) Major Europe Countries : 13ch (1~13ch) France : 4ch (10 ~ 13ch) Japan : 14ch for 802.11b (1~14ch), 13ch for 802.11g (1~13ch) Korea / China : 13ch (1~13ch)	CH1~CH13 for Korea
Antenna	1T1R 4dBi, Chip ANT 0dBi	
Output Power	17dBm@11Mbps(typ.)	802.11b
	14dBm@54Mbps(typ.)	802.11g
	14dBm@300Mbps/114.4Mbps(typ)	802.11n
Transmission rate(over the air)	1,2,5.5,11Mbps	802.11b
	6,9,12,18,36,48,54Mbps	802.11g
	14.4, 28.9, 43.3,57.8, 86.7, 115.6, 130, 144,4Mbps	802.11n(20MHz)
	30, 60, 90, 120, 180, 240, 270, 300Mbps	802.11n(40MHz)
Receive sensitivity	-89dBm@11Mbps	802.11b
	-76dBm@54Mbps	802.11g
	-66dBm@300Mbps	802.11n(20MHz)
	-70dBm@144.4Mbps	802.11n(40MHz)
RF In / Output Impedance	50 /50	Transmit / Receive
Modulation Type	11g : OFDM (64QAM, 16QAM, QPSK, BPSK) 11b : DSS (CCK, DQPSK, DBPSK)	

## 6. Interface

Parameter	Specifications
Interface	UART, USB, LAN, 1.27mm Pitch Header Pin, B to B Connector(2.0mm pitch) U.FL connector (Antenna connector)
Serial	Baud Rate : 1200 ~ 115,200bps Stop Bits : 1,2 Parity : None, Odd, Even Flow Control : XON/XOFF (Software), CTS/RTS (Hardware), none UART 1 only supports XON/OFF

## 7. Electrical Character

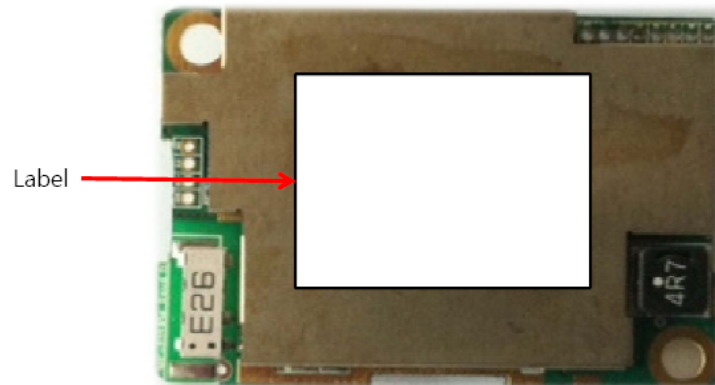
Parameter	Specifications	Remarks
Supply Voltage	3.3V	
VCC to VCC Decouple	-0.3 to +0.3V	
Input, Output or I/O voltage	GND -0.3V to VCC +0.3V	
Power Consumption	300mA(typ.)@	Current when normal mode

## 8. Operating Conditions

Parameter	Specifications	Remarks
Operating	Temperature : -10°C ~ +55°C	No condensing
	Humidity : 5%~95%	
Storage	Temperature s: -50°C ~ +85°C	
	Humidity : 5%~95%	

## Label Information

### 1.Label Location



### 2.Label Drawing



**Federal Communication Commission Interference Statement**

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 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..

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

**FCC Compliance information**

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.

**For product available in the USA market, only channel 1~11 can be operated. Selection of other channels is not possible.**

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

This device is going to be operated in 2412~2472GHz frequency range, it is restricted in indoor environment only.

**FCC Radiation Exposure Statement:**

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**IMPORTANT NOTE:**

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

**USERS MANUAL OF THE END PRODUCT:**

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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,

**Label and manual requirements for the End Product**

For an end product using the MK-815WM there must be a label containing, at least, the following information. FCC ID certification number for model : MK-815WM

This device contains FCC ID : N34MK-815WM

The label must be affixed on an exterior surface of the end product such that it will be visible upon inspection in compliance with the modular approval guidelines developed by the FCC

Where the MK-815WM will be installed in final products larger than 8cm × 10cm following statements has to be placed ONTO the device .

"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."

**Assure compliance**

The use of the modular transmitter is only approved to be used inside SEWOO Tech equipment. We assure the compliance of the end product when it is assembled inside SEWOO Tech equipment.

**Caution**

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

**Antenna**

This device shall only be used with the tested antenna that is integral CHIP antenna.

**RF exposure compliance**

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**Warranty & Service**

## ▸ Warranty and Repair service

- MTTKOREA CO., LTD.. warrants to the original consumer or other end user that this product, MK-815WM, is free from defects in materials and workmanship for a period of 1 year from the date of purchase.

Note Warranty/non-warranty repair fees do not include any shipping charges.

## ▸ The damages(defaults) prescribed below are NOT to be covered by warranty.

- User's misuse of part/component.
- Product's inspection requirement.
- Adding certain functions or extension of system.
- Fault by User's misuse against the product's manual.

**CONTACT INFORMATION**

Manufacturer Address : 3F, 272-15, Dodang-dong, Wonmi-gu, Bucheon-si, Gyeonggi-do, Korea(#420-808)

To locate in-country MTTKorea Co., Ltd. distributors of the MK-815WM, please refer to the MTTKorea Co., Ltd. Website [www.mttkorea.co.kr](http://www.mttkorea.co.kr) /

These distributor(s) represent local contacts for this product.

**CORPORATE HEADQUARTERS:**

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