

HaLow-R

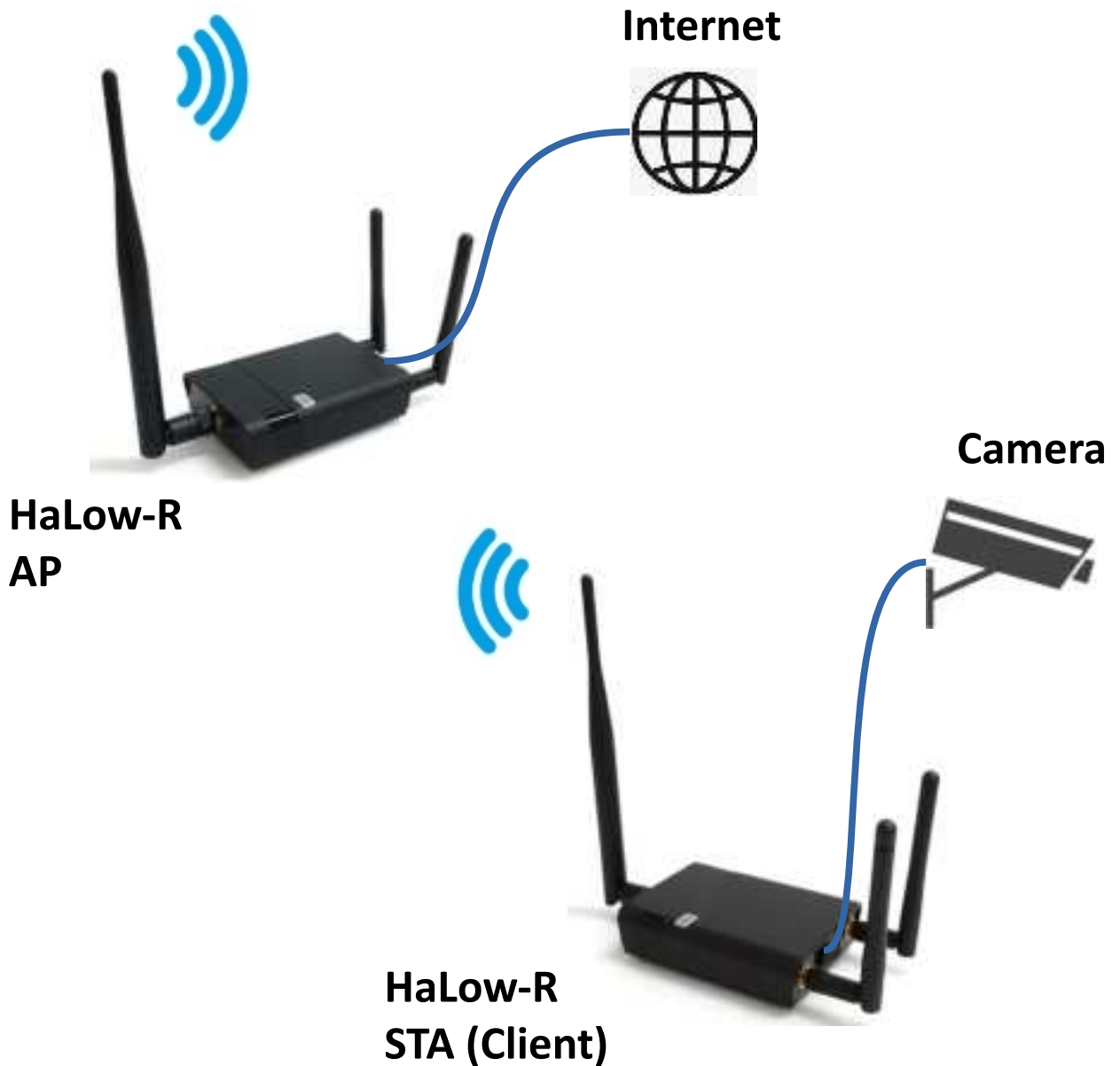
User Quick Guide

Product Overview



LED Indicator / Interface	Descriptions
1 Power Indicator (Red)	On – Power on Off – No power
2 Wi-Fi HaLow Indicator (Amber)	On – Wi-Fi HaLow is running properly Blinking – Wi-Fi HaLow is sending or receiving data
3 Wi-Fi 2.4G Indicator (Amber)	On – Wi-Fi 2.4G is running properly Blinking – Wi-Fi 2.4G is sending or receiving data
4 Ethernet Indicator (Green)	On – Ethernet port is connect Blinking – Ethernet is sending or receiving data
5 System Indicator (Blue) Reset Button	Blinking – System is running properly Reset Default - Press “Reset” button for 10 seconds
6 HaLow Antenna Connector	ANT port is used to connect Wi-Fi HaLow ANT (SMA)
7 Wi-Fi Antenna Connector	ANT port is used to connect Wi-Fi 2.4G ANT (RP-SMA)
8 Ethernet Port	RJ-45 connector for Fast Ethernet (LAN Port)
9 Power Port	Rated DC 12V/1A

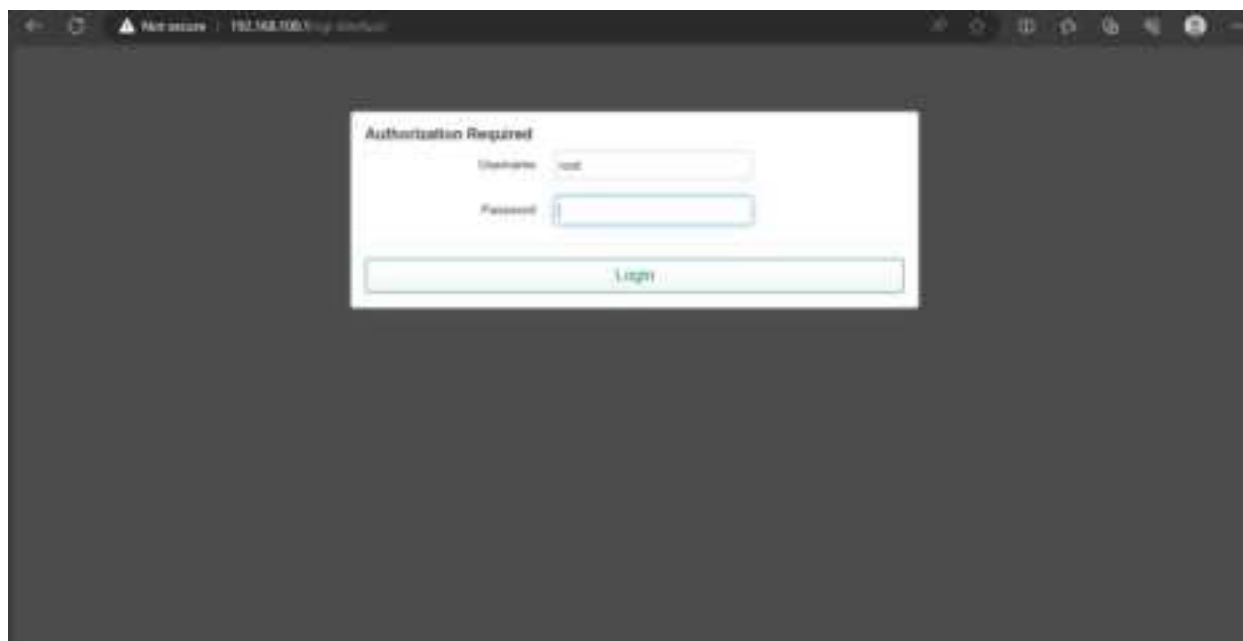
Application Scenario



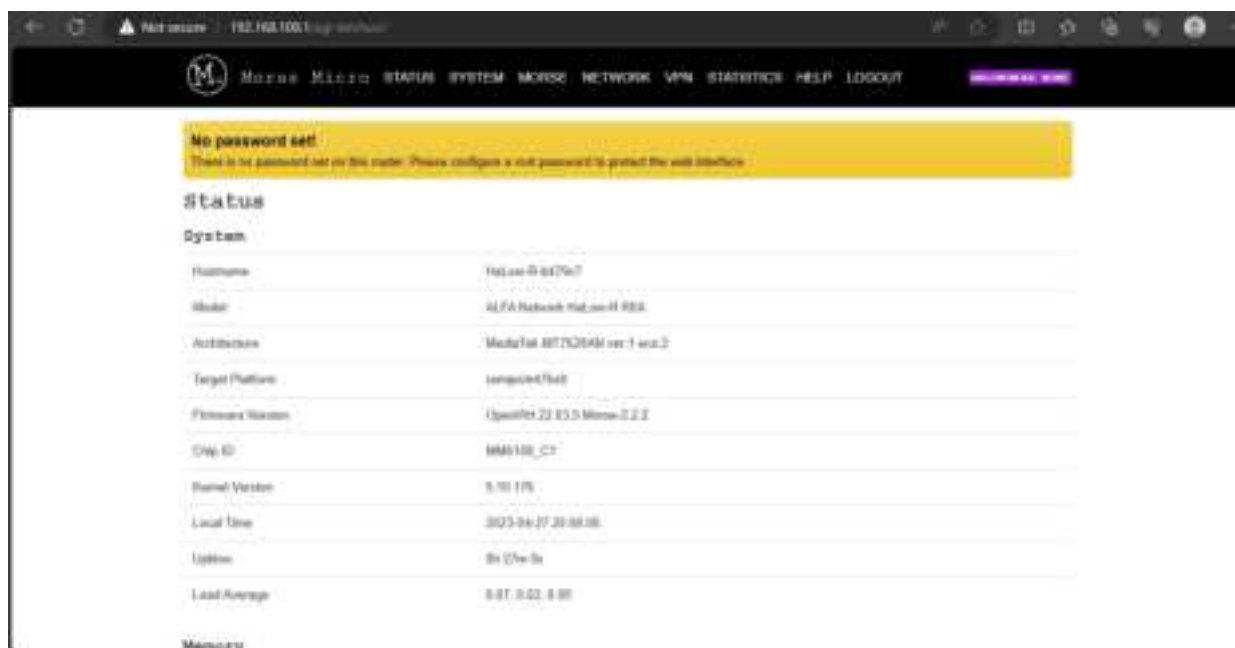
- (1). Attach Antenna to the HaLow-R and rotate the antenna until it is tight.
- (2). Connect the HaLow-R and Computer's LAN port for settings.
- (3). After setting is completed, please connect the Internet to the HaLow-R AP side.

Open Setup Page and Login

Open a browser then type 192.168.100.1 into the address bar to access the setup page, default username is “root” and no need password.

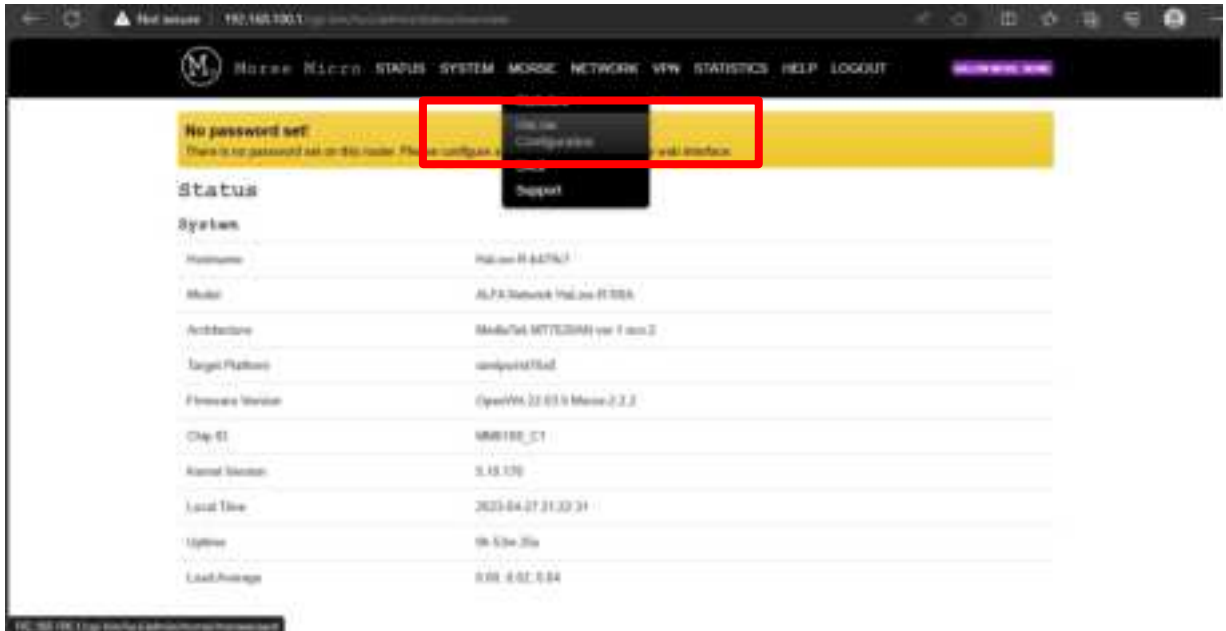


After logging in, the “STATUS” page will be shown.



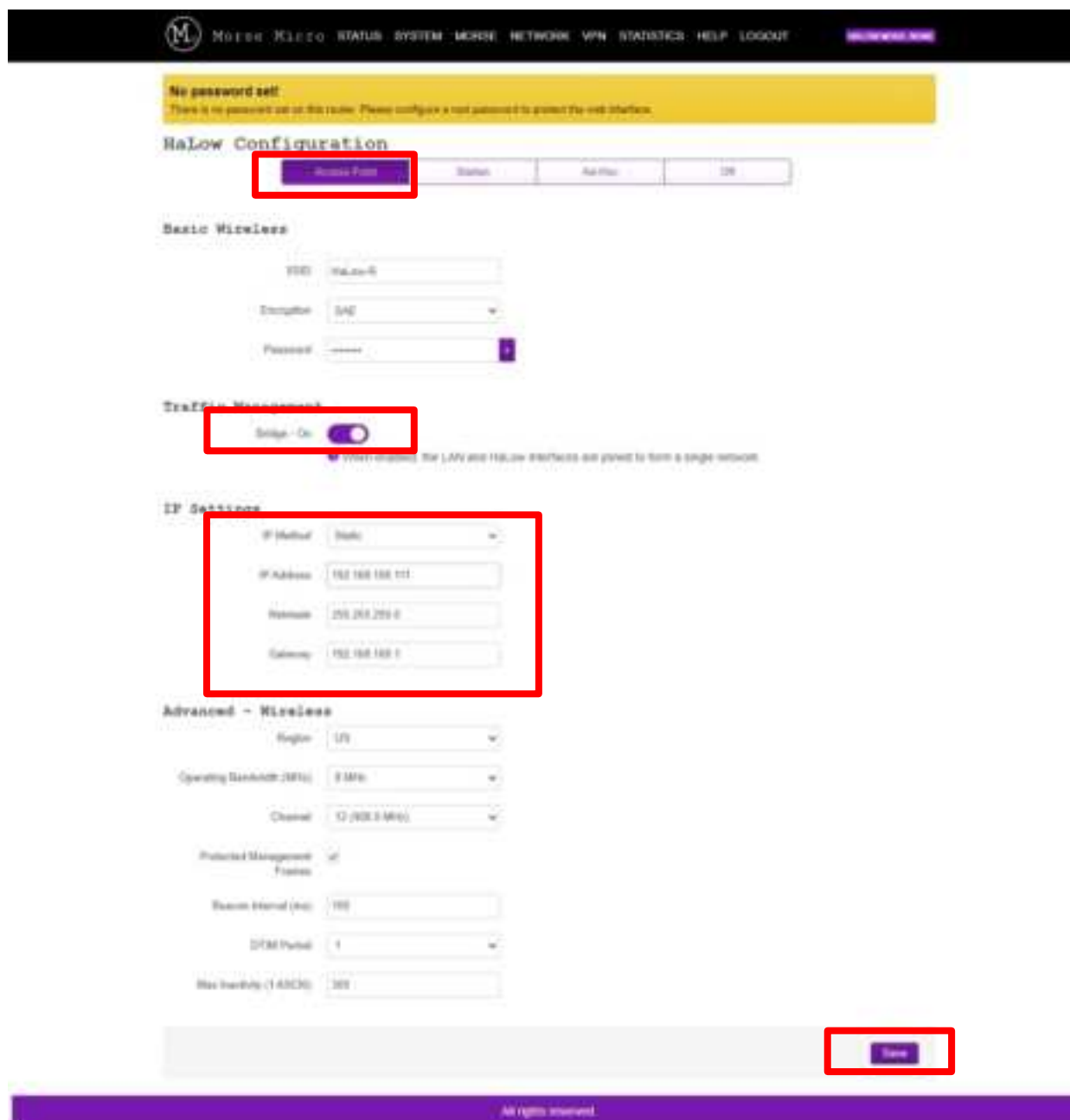
How to Setup AP Mode

Please go to the “MORSE → HaLow Configuration” page.



How to Setup AP Mode

- 1).Click "Access Point" page
- 2).Enable "Bridge" mode
- 3).IP Settings → "Static", and fill the IP Address, Netmask, Gateway information.
- 4).After the setting is completed, please click the "Save" button.



The screenshot shows the ALFA Network web interface with the following configuration steps highlighted by red boxes:

- Access Point Tab:** The "Access Point" tab is selected in the top navigation bar.
- Bridge Mode:** Under the "Traffic Management" section, the "Bridge" toggle switch is turned on.
- IP Settings:** The "IP Settings" section is expanded, showing the following values:
 - IP Method: Static
 - IP Address: 192.168.100.101
 - Netmask: 255.255.255.0
 - Gateway: 192.168.100.1
- Save Button:** The "Save" button is located at the bottom right of the configuration page.

Additional visible settings include:

- Basic Wireless:** Mode: Bridge, SSID: 192.168.100.101
- Advanced - Wireless:** Region: US, Operating Bandwidth: 20MHz, Channel: 12 (40.8 MHz), Protected Management Frames: off, Beacon Interval: 100, DTIM Period: 1, Max Fragment: 300

How to Setup AP Mode

Please change the IP Address of the computer to the same network segment as HaLow-R.

Network & internet > Advanced network settings



Ethernet

Unrecognized network (Intel(R) Ethernet Connection (16) I219-V)

Disable

Media state: Enabled
Bytes sent: 473,103
Bytes received: 1,274,941
Link speed: 100 (Mbps)
Duration: 00:10:48

Remove this adapter

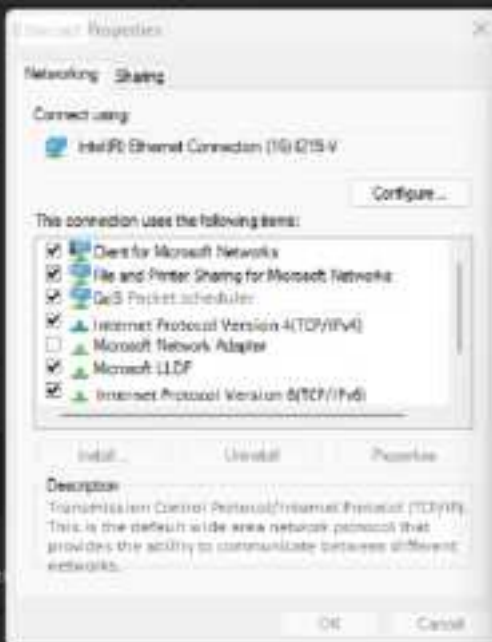
View additional properties

More adapter options

More settings

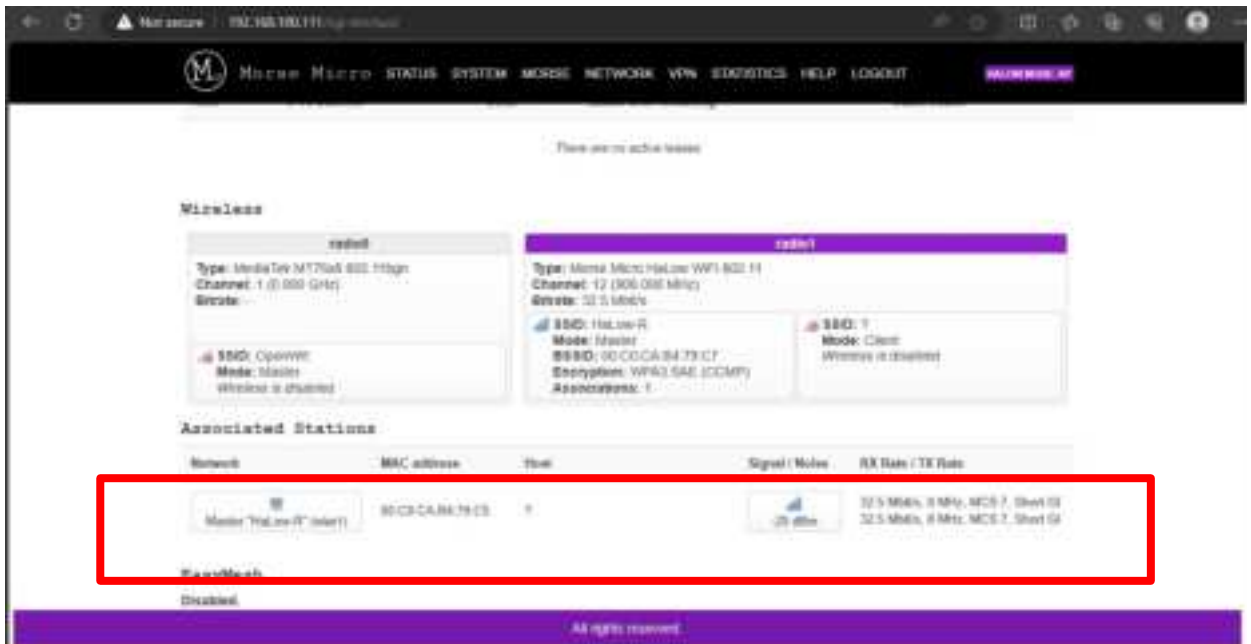
Advanced sharing settings
Change network discovery and sharing settings

Data usage



How to Setup AP Mode

When the Client connects to the AP, it will be shown on the “STATUS” page.



The screenshot shows the Alfa Micro web interface. The top navigation bar includes links for STATUS, SYSTEM, MODE, NETWORK, VPN, STATISTICS, HELP, and LOGOUT. The main content area is titled "STATUS" and shows "There are no active leases".

Under the "Wireless" section, there are two radio configuration boxes:

- radio0:** Type: MediaTek MT7605 802.11bgn, Channel: 1 (5.880 GHz), Mode: Master, Wireless is disabled.
- radio1:** Type: Alfa Micro Wireless WiFi 802.11, Channel: 12 (5.880 MHz), Mode: Client, Wireless is disabled.

Below the wireless settings is the "Associated Stations" table:

Network	MAC address	Type	Signal / Noise	RX Rate / TX Rate
Master (radio1) (client)	90:CB:CA:8A:79:CB	1	25 dBm	12.5 Mbps, 8 Mbps, MCS 7, Short GI / 12.5 Mbps, 8 Mbps, MCS 7, Short GI

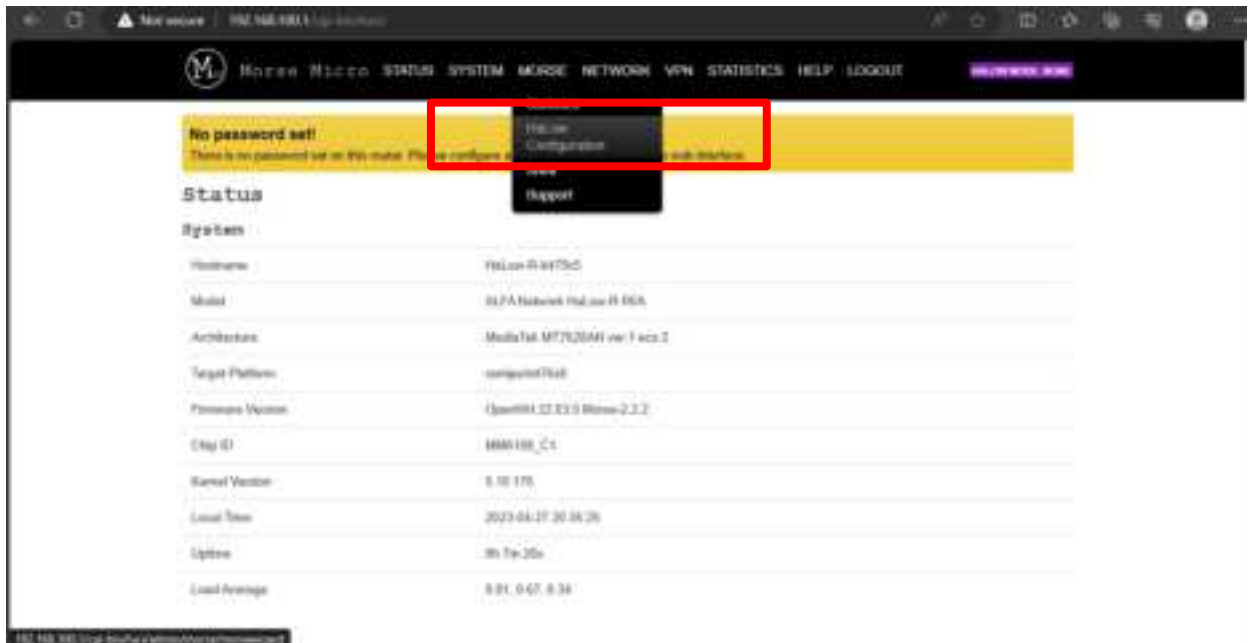
A red box highlights the first row of the "Associated Stations" table.



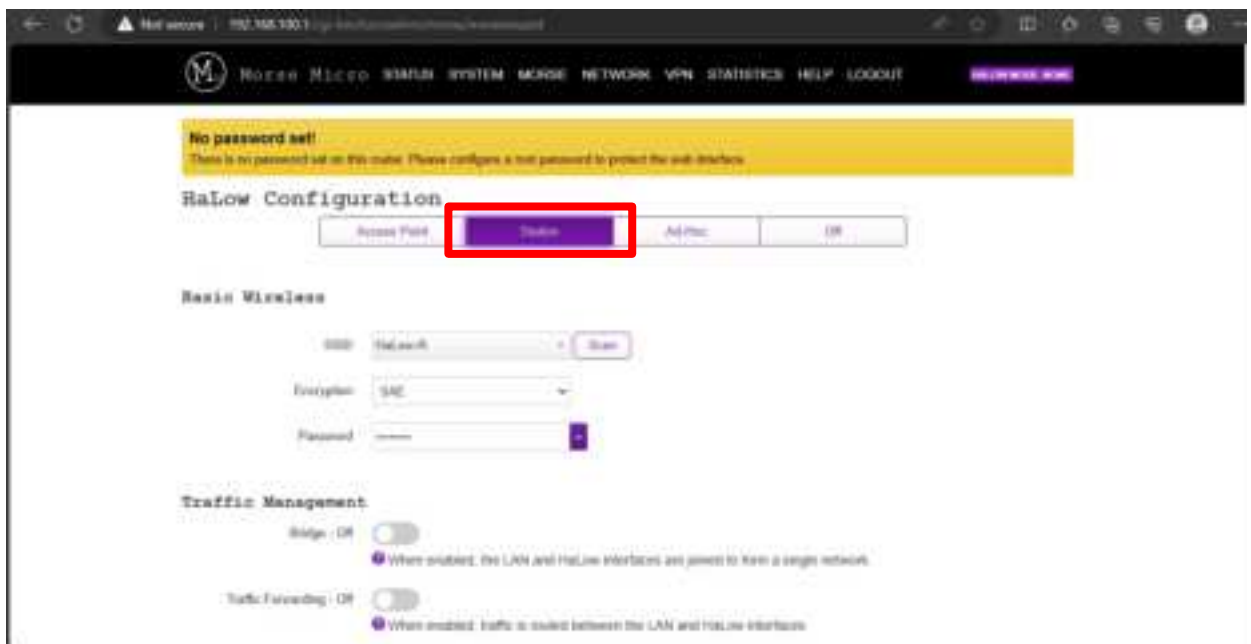
Note: When you reload the web page, please note whether you have changed the device IP!

How to Setup Client Mode

Please go to the “MORSE → HaLow Configuration” page.

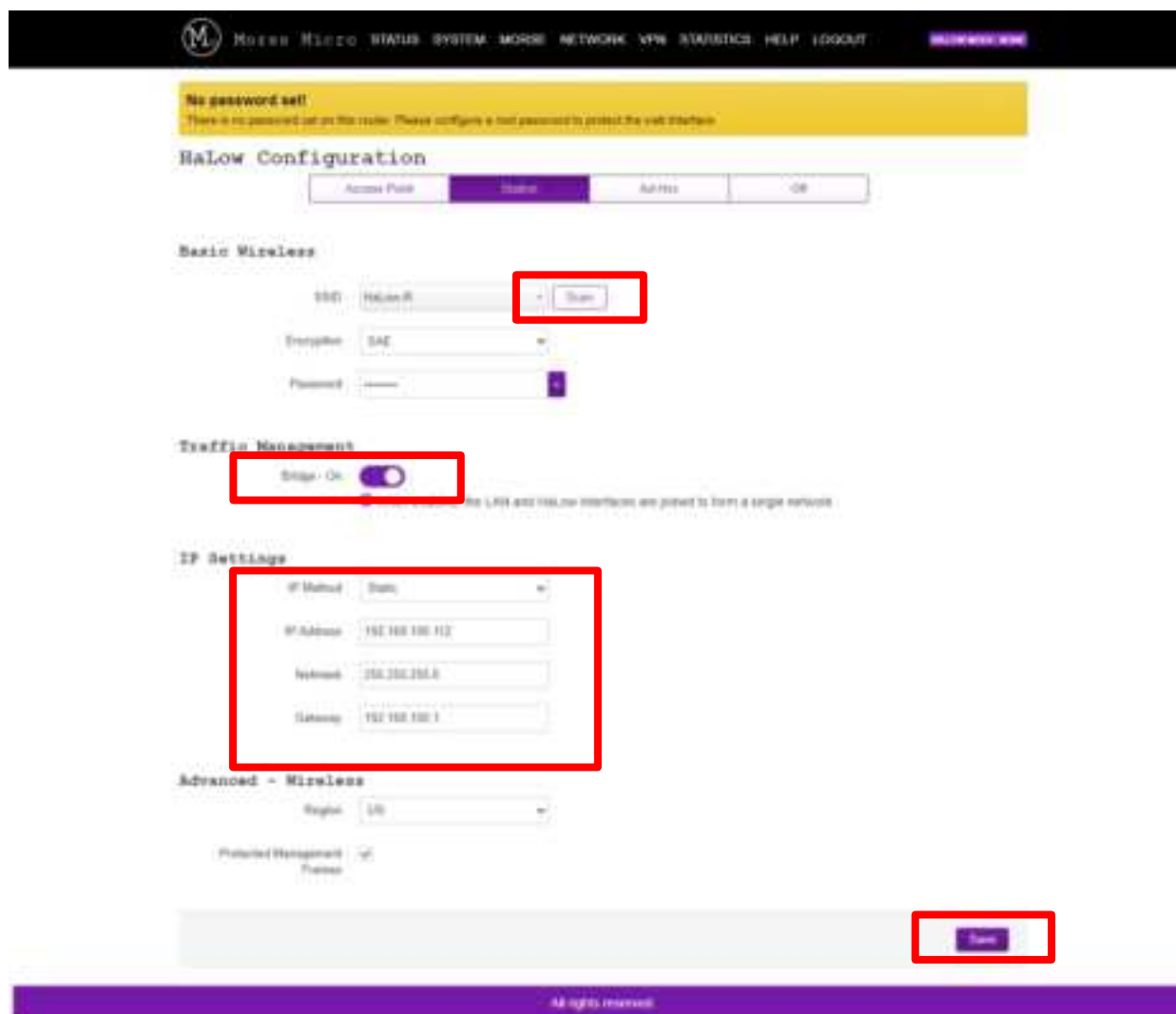


Click “Station” page



How to Setup Client Mode

- 1).Click "Scan" button for AP scan, and fill the password if need.
- 2).Enable "Bridge" mode
- 3).IP Settings → "Static", and fill the IP Address, Netmask, Gateway information.
- 4).After the setting is completed, please click the "Save" button.



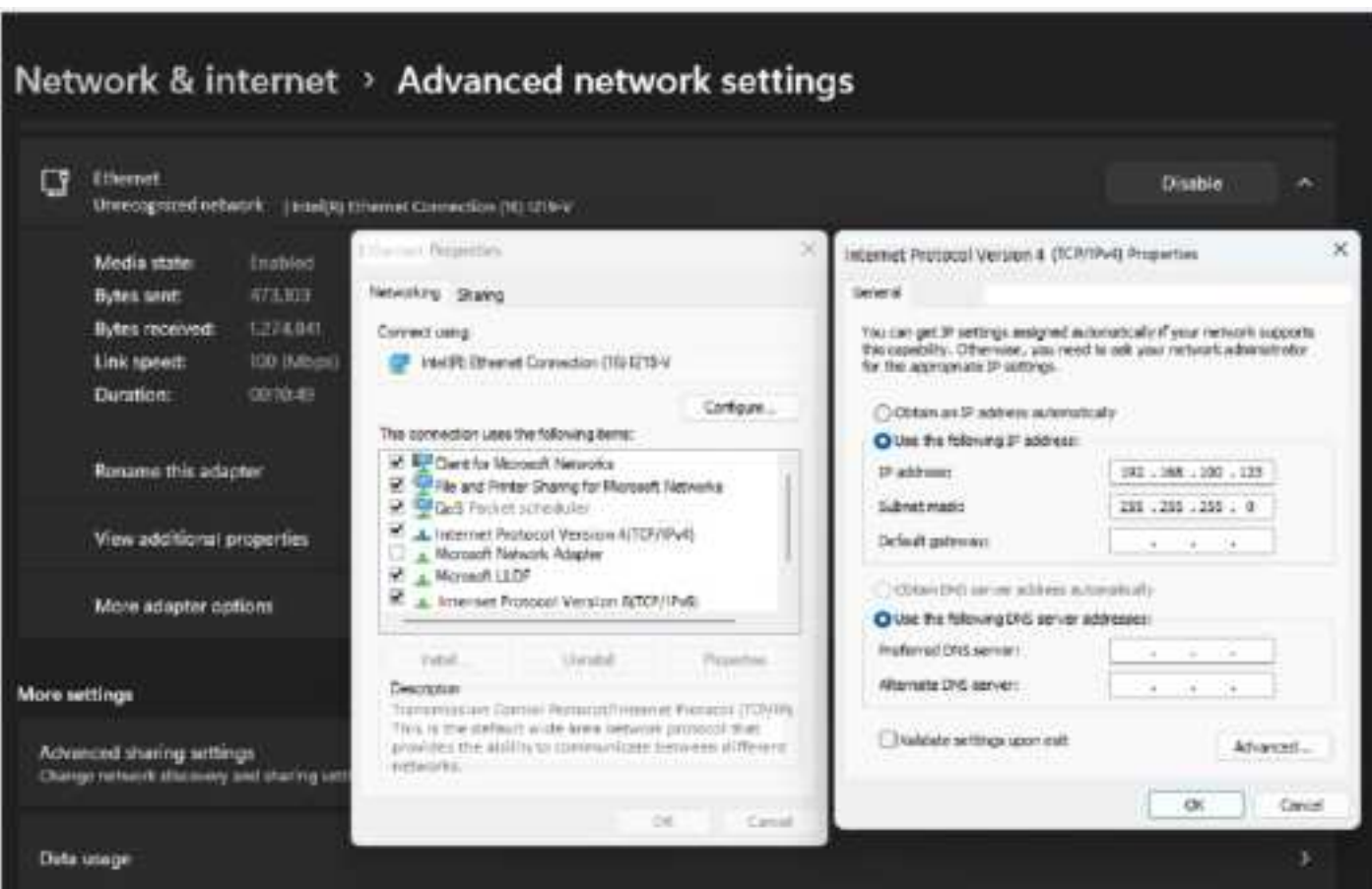
The screenshot shows the Alfa Network web interface for configuring a HaLow device. The top navigation bar includes links for Home, Status, System, Morse, Network, VPN, Statistics, Help, and Logout. A yellow warning banner at the top states "No password set!" and advises configuring a password. The main configuration area is titled "HaLow Configuration" and contains several sections:

- Basic Wireless:** Includes a "Scan" button (highlighted with a red box) for scanning for access points. Other fields include Encryption (SAE) and Password.
- Traffic Management:** Includes a "Bridge" toggle switch (highlighted with a red box) to enable bridge mode.
- IP Settings:** Includes fields for IP Method (Static), IP Address (192.168.1.12), Netmask (255.255.255.0), and Gateway (192.168.1.1), all of which are highlighted with a red box.
- Advanced - Wireless:** Includes a Region dropdown (US) and a Protected Management checkbox (checked).

A "Save" button (highlighted with a red box) is located at the bottom right of the configuration area. The footer of the page states "All rights reserved."

How to Setup Client Mode

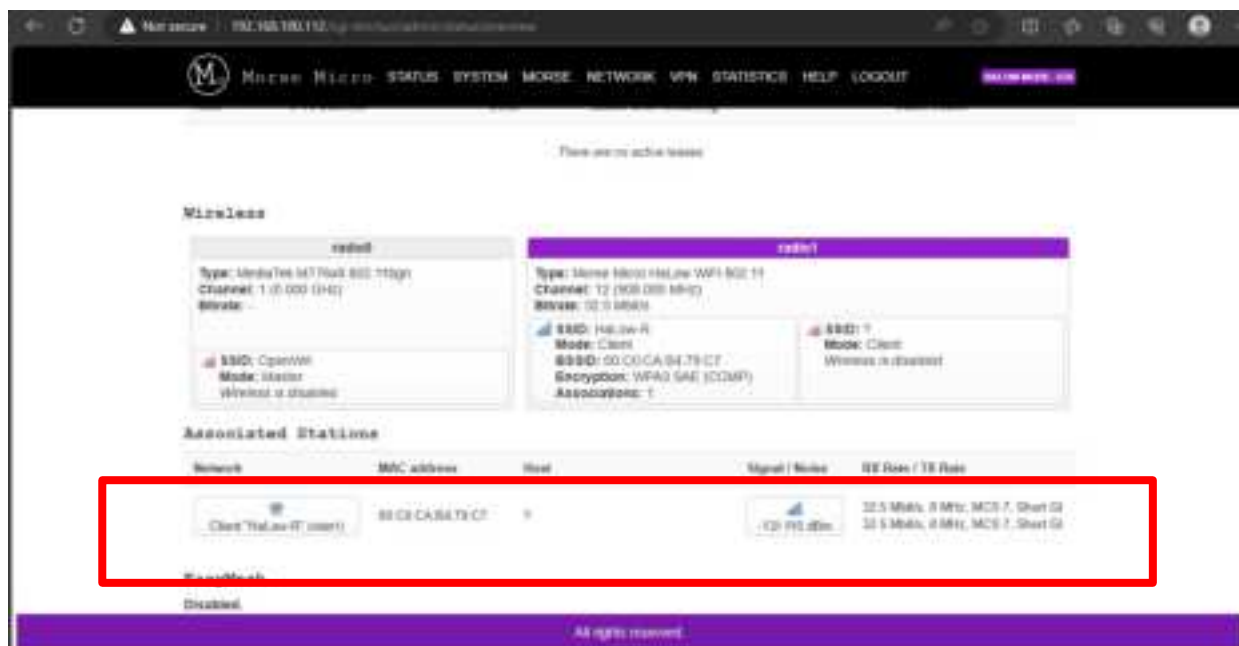
Please change the IP Address of the computer to the same network segment as HaLow-R.



The screenshot displays the Windows 'Network & internet > Advanced network settings' page. On the left, the 'Ethernet' section shows an 'Unrecognized network' with details: Media state: Enabled, Bytes sent: 473,803, Bytes received: 1,274,841, Link speed: 100 (Mbps), and Duration: 00:10:49. Below this are buttons for 'Resume this adapter', 'View additional properties', and 'More adapter options'. The 'More settings' section includes 'Advanced sharing settings' and 'Data usage'. Two configuration windows are open. The 'Ethernet Properties' window shows the connection uses 'Intel(R) Ethernet Connection (10) I219-V'. The 'List of components that this connection uses' includes: Client for Microsoft Networks, File and Printer Sharing for Microsoft Networks, QoS Packet Scheduler, Internet Protocol Version 4 (TCP/IPv4), Microsoft Network Adapter, Microsoft LLDP, and Internet Protocol Version 6 (TCP/IPv6). The 'Internet Protocol Version 4 (TCP/IPv4) Properties' window is set to 'Use the following IP address' with IP address: 192.168.1.123, Subnet mask: 255.255.255.0, and Default gateway: It is also set to 'Use the following DNS server addresses' with Preferred DNS server: and Alternate DNS server: The 'Validate settings upon exit' checkbox is unchecked.

How to Setup Client Mode

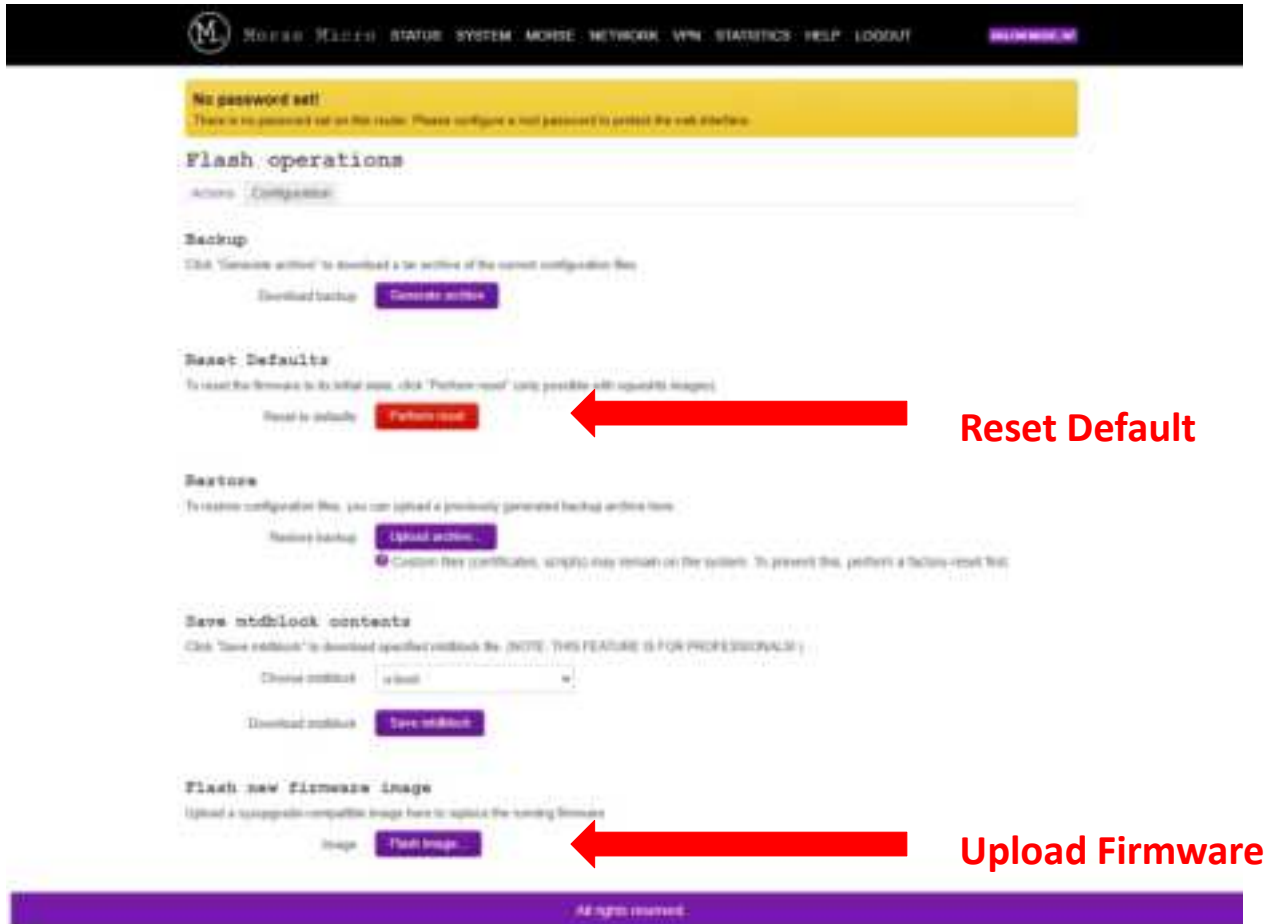
When the Client connects to the AP, it will be shown on the “STATUS” page.



Note: When you reload the web page, please note whether you have changed the device IP!

How to Reset Default and Upload Firmware

Please go to the “SYSTEM” page.



The screenshot shows the 'SYSTEM' page of the ALFA NETWORK interface. At the top, a navigation bar includes links for Home, Main, Status, System, Morse, Network, VPN, Statistics, Help, and Logout. A yellow warning banner at the top states: 'No password set! There is no password set on this router. Please configure a real password to protect the web interface.' The main content area is titled 'Flash operations' and contains several sections:

- Backup:** Includes a 'Download backup' button and a 'Generate backup' button.
- Reset Defaults:** Includes a 'Reset to factory' button. A red arrow points to this button with the text 'Reset Default'.
- Restore:** Includes an 'Upload backup...' button. A note below states: 'Custom key (certification, scripts) may remain on the system. To prevent this, perform a factory-reset first.'
- Save ntdhlock contents:** Includes a 'Download ntdhlock' button and a 'Save ntdhlock' button.
- Flash new firmware image:** Includes a 'Flash image...' button. A red arrow points to this button with the text 'Upload Firmware'.

At the bottom of the page, a purple status bar displays 'All rights reserved.'

HaLow-R Specifications

WiFi 4 (IEEE 802.11n)

Chipset	MediaTek MT7628AN
Flash	SPI Flash 32 MB
RAM	DDR2 SDRAM 128 MB
WiFi standard	IEEE 802.11n (2.4 GHz)
Channel bandwidth	20/40 MHz
Max. data rate (Phy rate)	300 Mbps
Antenna connector	2x RP-SMA connectors
Antenna	2x 2.71 dBi dipole antenna

WiFi HaLow (IEEE 802.11ah)

Chipset	Morse Micro MM6108IQ
WiFi standard	IEEE 802.11ah
Channel bandwidth	1/2/4/8 MHz
Max. data rate (Phy rate)	Up to 32.5 Mbps @ Bandwidth 8 MHz
Antenna connector	1x SMA connector
Antenna	1x 2 dBi dipole antenna

General

Ethernet	1x Fast Ethernet with ESD protection
Button	1x push-button (reset)
LED	1x Power 1x WiFi HaLow 1x WiFi 2.4G 1x Ethernet 1x Reset / System
DC power jack	Power rated: DC 12V / 1A
Dimensions	93 x 60 mm
Operation Temperature	-10°C~55°C

CE statement

Simplified EU Declaration of Conformity

Hereby, ALFA NETWORK INC. declares that this Wireless Device HaLow-R product is in compliance with essential requirements and other relevant provisions of Directive 2014/53/EU. A copy of the Declaration of conformity can be found at www.alfa.com.tw

Safety Notices

1. Operation temperature: -10°C~55°C.
 2. This product is allowed to be used in all EU member states.
 3. When using the device, keep the antenna at least 20 cm away from the human body.
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- Refer to the rating label on the bottom of your product and ensure your power adapter complies with this rating.
 - DO NOT place on uneven or unstable work surfaces. Seek servicing if the casing has been damaged.
 - DO NOT place or drop objects on top and do not shove any foreign objects into the product.
 - DO NOT expose to or use near liquids, rain, or moisture.
 - DO NOT use the product during electrical storms.
 - DO NOT cover the vents on the product to prevent the system from getting overheated.
 - DO NOT use damaged power cords, accessories, or other peripherals.
 - If the product/power adapter is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
 - To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

Installation:

1. this device will not be sold to the general public, it will be sold to dealers only.
2. this device requires controlled installation location by professional installers.
3. the device requires professional configuration for use.
4. Professional installation does not permit use of any other antenna with the transmitter.
- 5 .It will not be removed after professional installation.

Dipole Antenna:

Wi-Fi HaLow Gain:2dBi
2.4G wifi Gain:2.71dBi

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

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.

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.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.