

HaLow-R

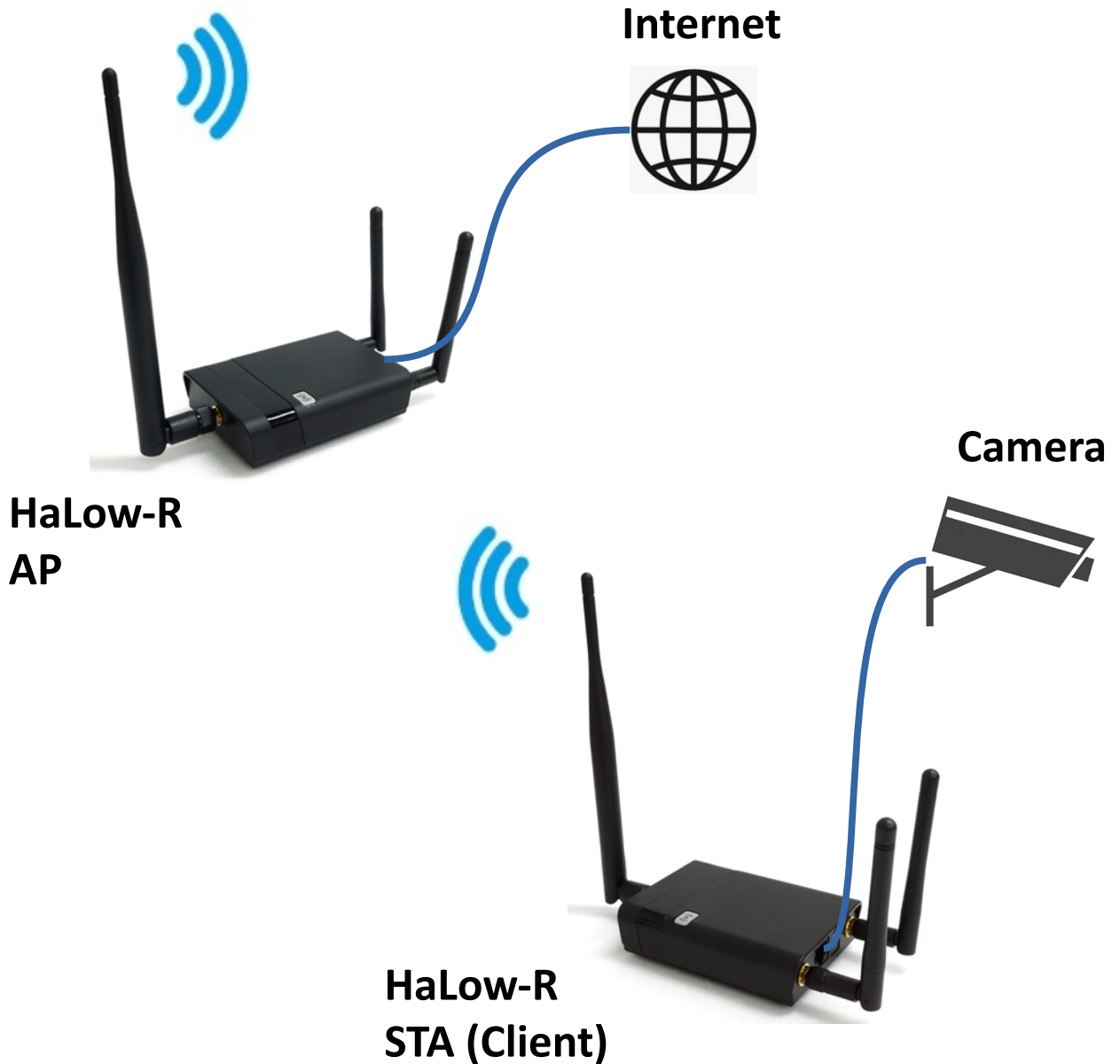
User Quick Guide

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.

Authorization Required

Username: root

Password:

Login

ALT Login Credentials
user: admin
pass: admin

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

No password set!
There is no password set on this router. Please configure a root password to protect the web interface.

Status

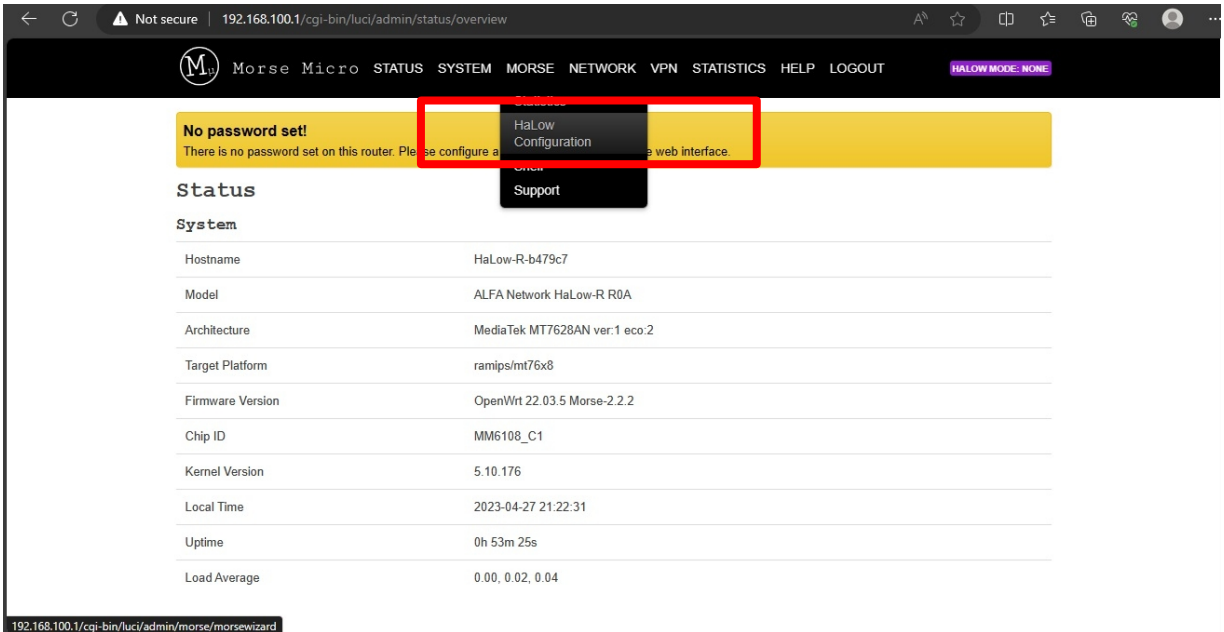
System

Hostname	HaLow-R-b479c7
Model	ALFA Network HaLow-R R0A
Architecture	MediaTek MT7628AN ver:1 eco:2
Target Platform	ramips/mt76x8
Firmware Version	OpenWrt 22.03.5 Morse-2.2.2
Chip ID	MM6108_C1
Kernel Version	5.10.176
Local Time	2023-04-27 20:56:06
Uptime	0h 27m 0s
Load Average	0.07, 0.02, 0.00

Memory

How to Setup AP Mode

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



No password set!
There is no password set on this router. Please configure a password for the web interface.

Status

System

Hostname	HaLow-R-b479c7
Model	ALFA Network HaLow-R R0A
Architecture	MediaTek MT7628AN ver:1 eco:2
Target Platform	ramips/mt76x8
Firmware Version	OpenWrt 22.03.5 Morse-2.2.2
Chip ID	MM6108_C1
Kernel Version	5.10.176
Local Time	2023-04-27 21:22:31
Uptime	0h 53m 25s
Load Average	0.00, 0.02, 0.04

192.168.100.1/cgi-bin/luci/admin/morse/morsewizard

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.


Morse Micro
STATUS
SYSTEM
MORSE
NETWORK
VPN
STATISTICS
HELP
LOGOUT
HALOW MODE: NONE

No password set!
There is no password set on this router. Please configure a root password to protect the web interface.

HaLow Configuration

Access Point
Station
Ad-Hoc
Off

Basic Wireless

SSID: HaLow-R
Encryption: SAE
Password:

Traffic Management

Bridge - On

When enabled, the LAN and HaLow interfaces are joined to form a single network.

IP Settings

IP Method: Static
IP Address: 192.168.100.111
Netmask: 255.255.255.0
Gateway: 192.168.100.1

Advanced - Wireless

Region: US
Operating Bandwidth (MHz): 8 MHz
Channel: 12 (908.0 MHz)
Protected Management Frames: ☒
Beacon Interval (ms): 100
DTIM Period: 1
Max Inactivity (1-65536): 300

Save

All rights reserved.

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

乙太網路
無法辨識的網路 | Intel(R) Ethernet Connection (16) I219-V

Media state: Enabled
Bytes sent: 473,103
Bytes received: 1,274,841
Link speed: 100 (Mbps)
Duration: 00:10:49

Rename this adapter
View additional properties
More adapter options

More settings
Advanced sharing settings
Change network discovery and sharing settings
Data usage

乙太網路 Properties

Networking Sharing

Connect using:
Intel(R) Ethernet Connection (16) I219-V

This connection uses the following items:

- ☒ Client for Microsoft Networks
- ☒ File and Printer Sharing for Microsoft Networks
- ☒ QoS 封包排程器
- ☒ 網際網路通訊協定第 4 版 (TCP/IP v4)
- ☐ Microsoft Network Adapter 多工器通訊協定
- ☒ Microsoft LLDP 通訊協定驅動程式
- ☒ 網際網路通訊協定第 6 版 (TCP/IP v6)

Install... Uninstall Properties

Description
傳輸控制通訊協定/網際網路通訊協定 (TCP/IP)。這是預設的區域網路通訊協定，提供不同網路之間的通訊能力。

OK Cancel

網際網路通訊協定第 4 版 (TCP/IP v4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 192 . 168 . 100 . 123
Subnet mask: 255 . 255 . 255 . 0
Default gateway: . . .

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

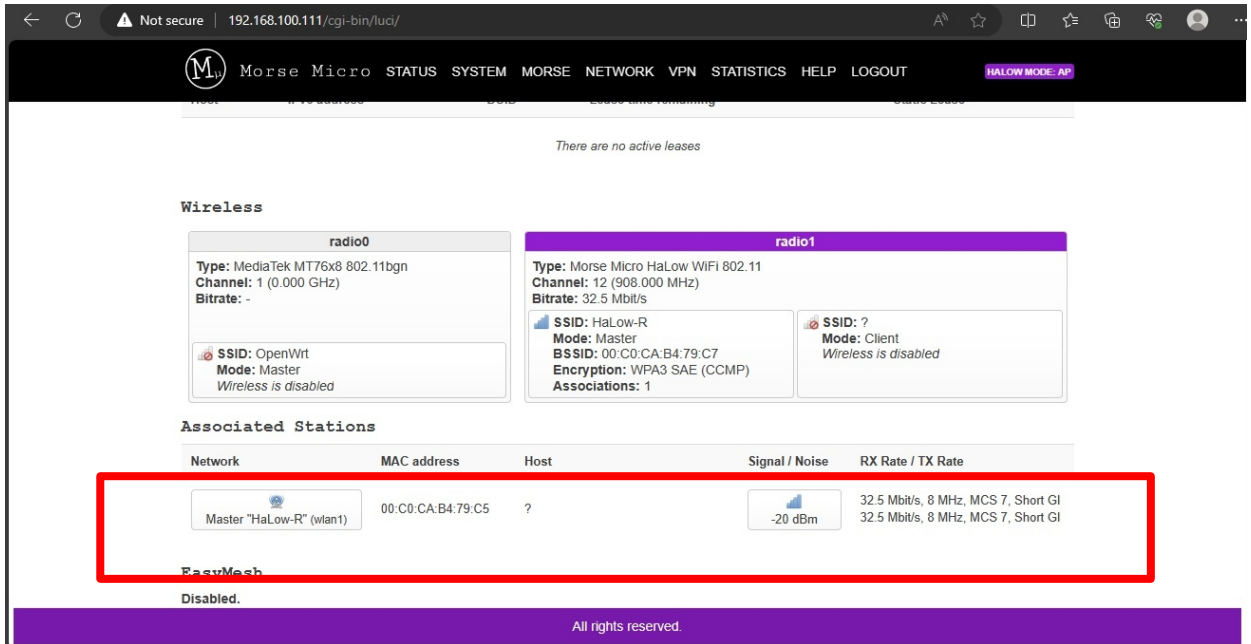
Preferred DNS server: . . .
Alternate DNS server: . . .

☐ Validate settings upon exit

Advanced... OK Cancel

How to Setup AP Mode

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



The screenshot shows the Morse Micro web interface. The top navigation bar includes links for STATUS, SYSTEM, MORSE, NETWORK, VPN, STATISTICS, HELP, and LOGOUT. A purple button labeled 'HALLOW MODE: AP' is visible. The main content area shows the 'STATUS' page with the message 'There are no active leases'.

Wireless

radio0

- Type: MediaTek MT76x8 802.11bgn
- Channel: 1 (0.000 GHz)
- Bitrate: -
- SSID: OpenWrt
- Mode: Master
- Wireless is disabled

radio1

- Type: Morse Micro HaLow WiFi 802.11
- Channel: 12 (908.000 MHz)
- Bitrate: 32.5 Mbit/s
- SSID: HaLow-R
- Mode: Master
- BSSID: 00:C0:CA:B4:79:C7
- Encryption: WPA3 SAE (CCMP)
- Associations: 1
- SSID: ?
- Mode: Client
- Wireless is disabled

Associated Stations

Network	MAC address	Host	Signal / Noise	RX Rate / TX Rate
Master "HaLow-R" (wlan1)	00:C0:CA:B4:79:C5	?	-20 dBm	32.5 Mbit/s, 8 MHz, MCS 7, Short GI 32.5 Mbit/s, 8 MHz, MCS 7, Short GI

EasyMesh

Disabled.

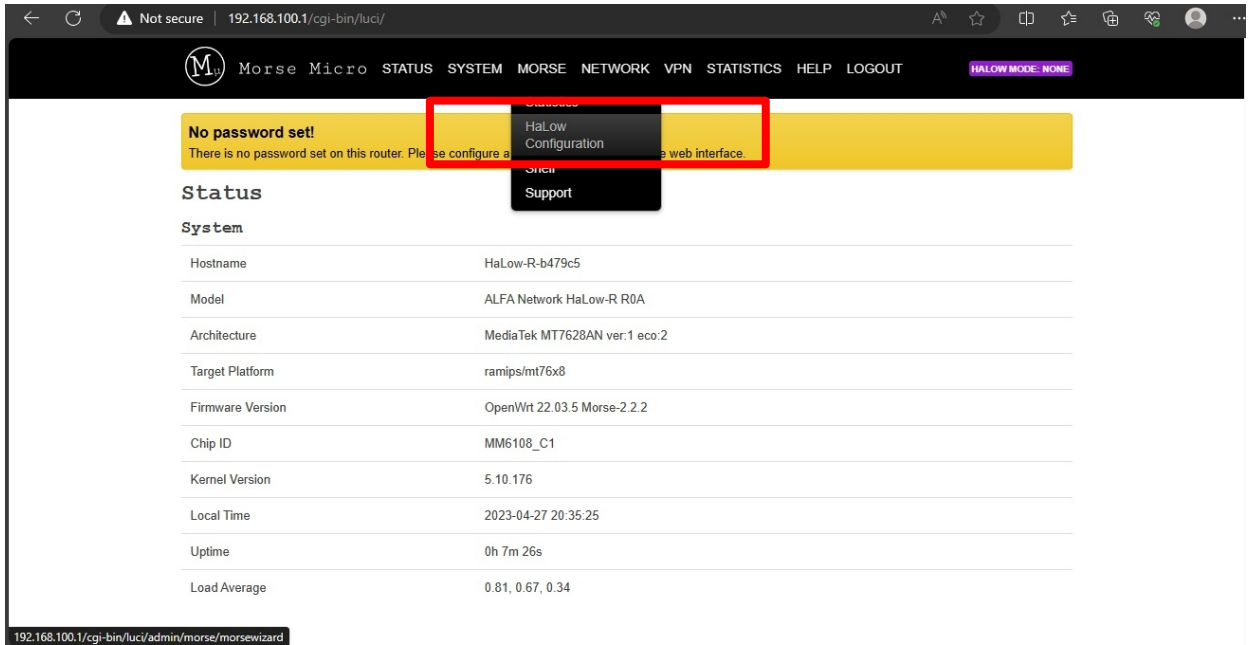
All rights reserved.



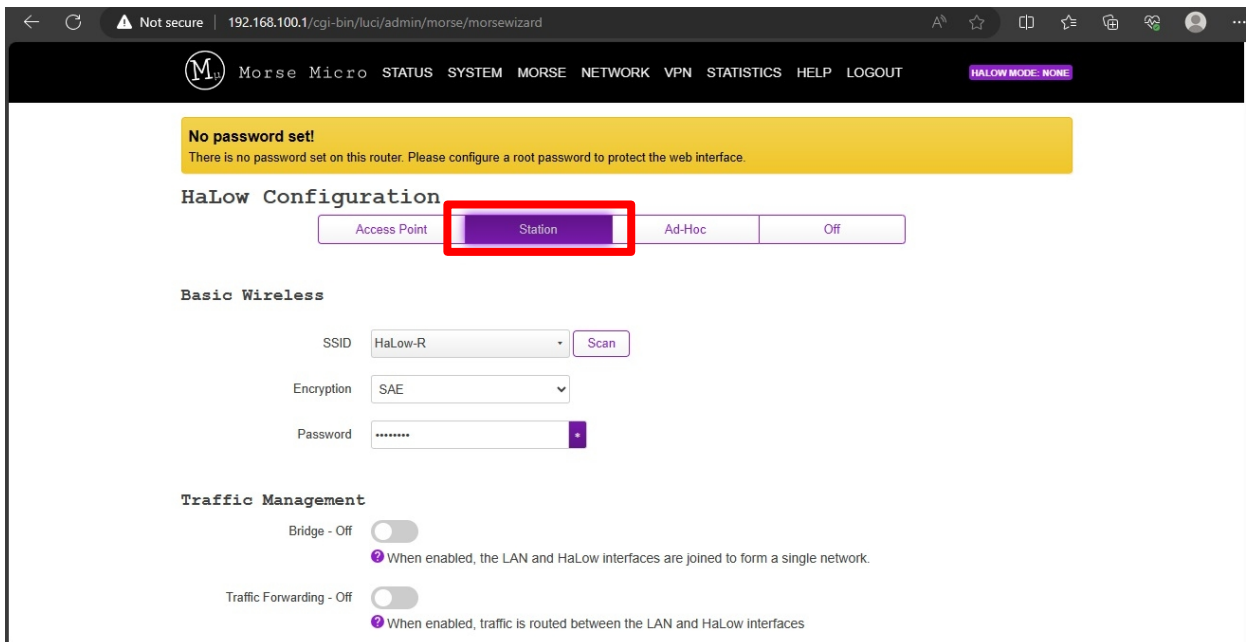
Note: When you reload the web page, please note whether you have changed the device IP!

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.

 Morse Micro STATUS SYSTEM MORSE NETWORK VPN STATISTICS HELP LOGOUT HALOW MODE: NONE

No password set!
There is no password set on this router. Please configure a root password to protect the web interface.

HaLow Configuration

Access Point Station Ad-Hoc Off

Basic Wireless

SSID HaLow-R Scan

Encryption SAE

Password

Traffic Management

Bridge - On ☒

When enabled, the LAN and HaLow interfaces are joined to form a single network.

IP Settings

IP Method Static

IP Address 192.168.100.112

Netmask 255.255.255.0

Gateway 192.168.100.1

Advanced - Wireless

Region US

Protected Management Frames ☒

Save

All rights reserved.

How to Setup Client Mode

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

Network & internet > Advanced network settings

乙太網路
網路 26 | Intel(R) Ethernet Connection (16) I219-V

Media state: Enabled
Bytes sent: 604,790
Bytes received: 1,431,524
Link speed: 100 (Mbps)
Duration: 00:03:02

Rename this adapter
View additional properties
More adapter options

More settings

Advanced sharing settings
Change network discovery and sharing settings

Data usage

乙太網路 Properties

Networking Sharing

Connect using:
Intel(R) Ethernet Connection (16) I219-V

This connection uses the following items:

- ☒ Client for Microsoft Networks
- ☒ File and Printer Sharing for Microsoft Networks
- ☒ QoS 封包排程器
- ☒ 網際網路通訊協定第 4 版 (TCP/IPv4)
- ☐ Microsoft Network Adapter 多工器通訊協定
- ☒ Microsoft LLDP 通訊協定驅動程式
- ☒ 網際網路通訊協定第 6 版 (TCP/IPv6)

Install... Uninstall Properties

Description
傳輸控制通訊協定/網際網路通訊協定 (TCP/IP)。這是預設的廣域網路通訊協定，提供不同網路之間的通訊能力。

OK Cancel

網際網路通訊協定第 4 版 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically
☒ Use the following IP address:

IP address: 192 . 168 . 100 . 124
Subnet mask: 255 . 255 . 255 . 0
Default gateway: . . .

☐ Obtain DNS server address automatically
☒ Use the following DNS server addresses:

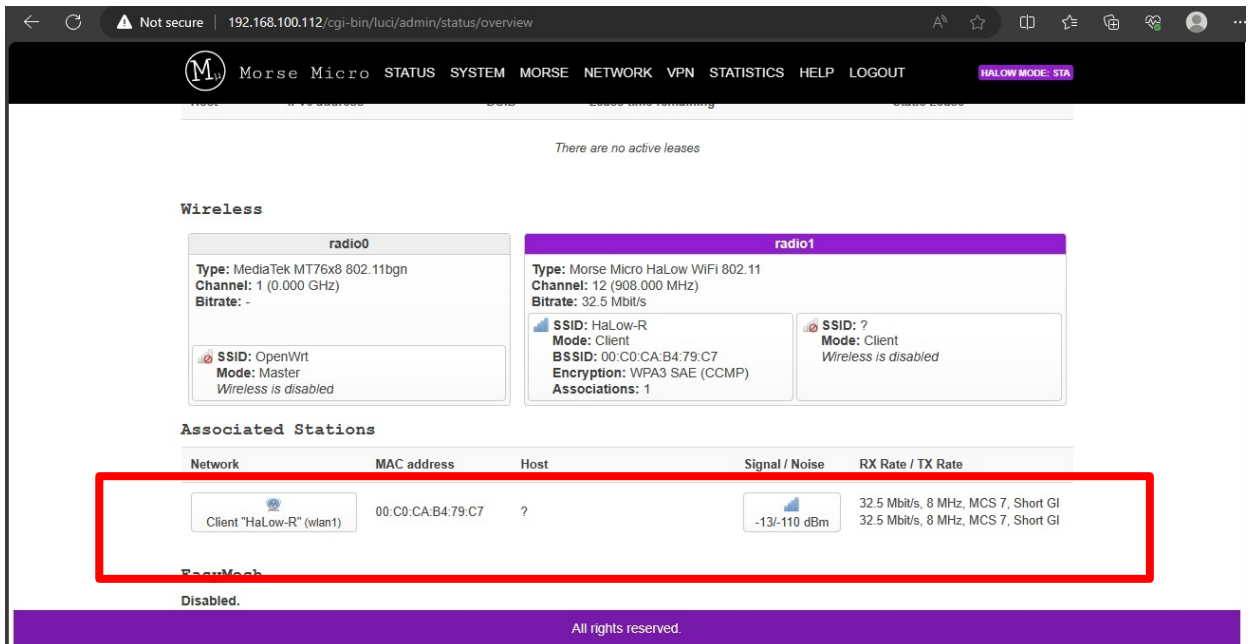
Preferred DNS server: . . .
Alternate DNS server: . . .

☐ Validate settings upon exit

Advanced...
OK Cancel

How to Setup Client Mode

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



The screenshot shows the Morse Micro web interface. The top navigation bar includes links for STATUS, SYSTEM, MORSE, NETWORK, VPN, STATISTICS, HELP, and LOGOUT. The main content area is titled "There are no active leases". Below this, the "Wireless" section shows details for two radio interfaces: radio0 and radio1. radio0 is a MediaTek MT76x8 802.11bgn interface, and radio1 is a Morse Micro HaLow WiFi 802.11 interface. The "Associated Stations" table is highlighted with a red box, showing a client named "HaLow-R" (wlan1) with MAC address 00:C0:CA:B4:79:C7 and signal strength -13/-110 dBm.

Network	MAC address	Host	Signal / Noise	RX Rate / TX Rate
Client "HaLow-R" (wlan1)	00:C0:CA:B4:79:C7	?	-13/-110 dBm	32.5 Mbit/s, 8 MHz, MCS 7, Short GI 32.5 Mbit/s, 8 MHz, MCS 7, Short GI



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.


Morse Micro
STATUS
SYSTEM
MORSE
NETWORK
VPN
STATISTICS
HELP
LOGOUT
HALLOW MODE: AP

No password set!
There is no password set on this router. Please configure a root password to protect the web interface.

Flash operations

Actions
Configuration

Backup

Click "Generate archive" to download a tar archive of the current configuration files.

Download backup
Generate archive

Reset Defaults

To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).

Reset to defaults
Perform reset

Restore

To restore configuration files, you can upload a previously generated backup archive here.

Restore backup
Upload archive...

Custom files (certificates, scripts) may remain on the system. To prevent this, perform a factory-reset first.

Save mtddblock contents

Click "Save mtddblock" to download specified mtddblock file. (NOTE: THIS FEATURE IS FOR PROFESSIONALS!)

Choose mtddblock
u-boot

Download mtddblock
Save mtddblock

Flash new firmware image

Upload a sysupgrade-compatible image here to replace the running firmware.

Image
Flash image...

All rights reserved.

Reset Default

Upload Firmware

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 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.
 4. RF: FSK 863MHz~870MHz, output power: XX dBm.
 5. The full text of the EU declaration of conformity is available at the following internet address: www.alfa.com.tw
- 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.