Wi-Fi HaLow MESH Gateway

PN: ARFHL-AP

WI-FI® CERTIFIED

FC Federal Communications Commission

AsiaRF

Wi-Fi HaLow Gateway

MESH Network Support

Dual-band Integration
ARFHL-AP

HaLow
Wi-Fi
LAN
PWR

HaLow + 2.4 GHz

IEEE 802.11ah and IEEE 802.11b/g/n
Dual-band Integration

User Manual V.1

http://www.asiarf.com/

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*✻ The settings for sections **4.3** and **4.4** are identical to those in Bridge Mode.*

05 Firmware Upgrade

06 FAQ & Troubleshooting

01

Getting to Know Your HaLow MESH Gateway - ARFHL-AP

1.1 Package Contents

Checklist for HaLow Gateway Setup:

☐ **A.** Wi-Fi HaLow MESH Gateway x 1   ☐ **C.** 12V / 1A Power Adaptor x 1
☐ **B.** Wi-Fi HaLow Antenna x 1

Please keep the original packaging.

A.

C.

B.
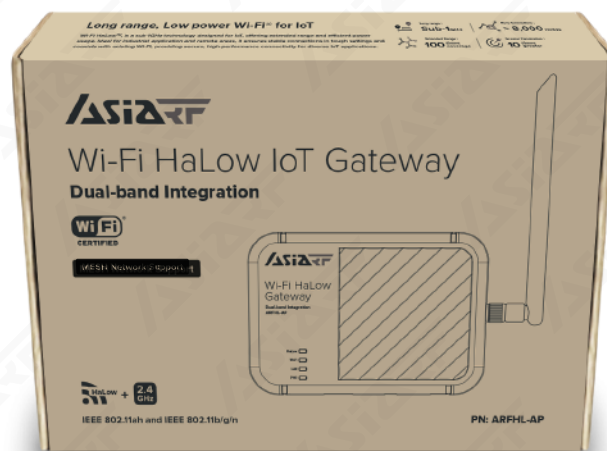
Notes:

- *Please keep the original packaging in case you need to return the product due to issues; it will make the return and exchange process smoother.*

- *The MAC address information is printed on the label on the back of the gateway.*

- *If any of the accessories listed above are damaged or missing, please contact AsiaRF technical support as soon as possible. You can refer to the AsiaRF technical support hotline: +886 2 2940-7880 *18 or contact to our sales team: sales@asiarf.com*

1.2 Your HaLow Gateway

ARFHL-AP is a Wi-Fi HaLow CERTIFIED, small-sized 11.8(L) x 8.66(W) x 3.5(H)cm, Dual-Band Wi-Fi 2.4GHz and Wi-Fi HaLow MESH gateway, ideal for warehouses, factories, retail stores, and other large campus environments.

Wi-Fi CERTIFIED — Wi-Fi HaLow CERTIFIED Gatewat

HaLow + 2.4 GHz — Dual-band Integration

FC CE IC — Multi-national Regulation Certified

Distance > 1km
Wi-Fi HaLow 850~950MHz
Distance ≈ 100m
Wi-Fi 2.4GHz

Modes:
Router, Bridge

1. RESET
2. WAN/LAN
3. USB
4. POWER

1.3 LED Indicators

NAME	STATUS	INDICATION
HaLow (Blue)	ON / Off / Flashing	Connected / Data Transfer
Wi-Fi (Orange)	ON / Off / Flashing	Band is enabled / Band is disabled
LAN/Eth (Green)	ON / Off / Flashing	Connected / Not connected / Data Transfer
PWR (Blue)	ON / Off	Power is on / Power is off

1.4 Long range, Low power Wi-Fi® for IoT

Wi-Fi HaLow, is a sub-1GHz technology designed for IoT, offering extended range and efficient power usage. Ideal for industrial application and remote areas, it ensures stable connections in tough settings and coexists with existing Wi-Fi, providing secure, high-performance connectivity for diverse IoT applications.

Long range :
Sub-1GHz

More Connections :
> 8,000 nodes

Extended Range :
100 times coverage

Greater Penetration :
10 times greater

1.5 AsiaRF® Wi-Fi HaLow Technology

AsiaRF Wi-Fi HaLow operates on sub-1GHz frequency bands, specifically ranging from 850 to 950 MHz, which enhances material penetration and extends connectivity range. It offers flexible bandwidth choices of 1, 2, 4, and 8 MHz, adapting to various deployment needs.

The technology supports more than 200 client links per access point, significantly increasing connection capacity. With single-stream modulation and coding scheme (MCS) data rates ranging from 150 Kbps to 22 Mbps at 8MHz, it ensures efficient data transmission over extended distances. Additionally, Wi-Fi HaLow boasts a typical range that is ten times longer than that of traditional 802.11n systems operating on a 20MHz, making it particularly effective for IoT environments that require robust, long-range connectivity.

Function	AsiaRF Wi-Fi HaLow (IEEE 802.11ah)
Operating Frequency Bands	Sub-1 GHz (850 – 950 MHz)
Bandwidth choices	1, 2, 4, 8 MHz
Max Addressable CLIs per AP	≥200
Single Stream MCS data rate range	150 Kbps – 22 Mbps@8MHz
Typical range	10x longer range than 802.11n 20MHz

02

Wi-Fi HaLow MESH Setup (Option)

2.1 Connect to Your Wi-Fi HaLow Gateway as a Mesh Network
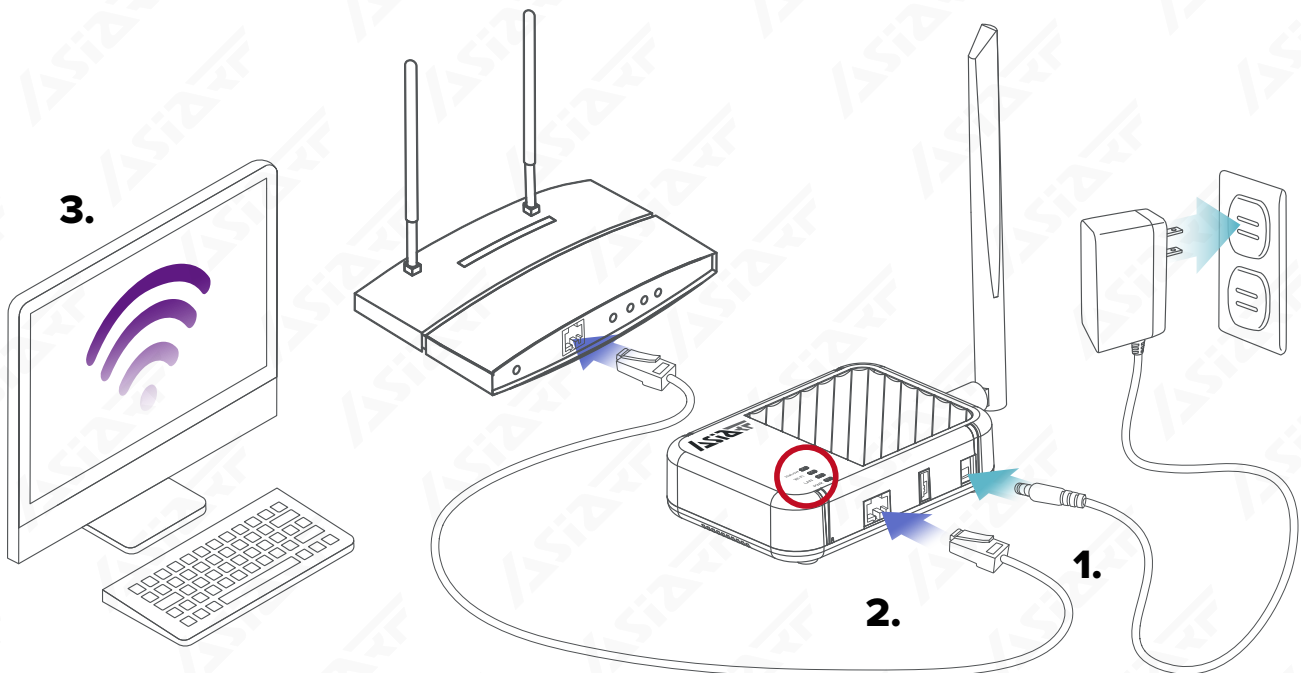
1. **Powering On and Connecting to Network:**

   • Begin by plugging the DC adapter into the ARFHL-AP to turn it on.

   • Next, connect an Ethernet cable between the router and the ARFHL-AP.

2. **Understanding the LED Indicators:**

   a. PWR LED : Once you've connected the DC plug, the PWR (Power) LED will light up continuously, indicating that the device is powered on.

   b. LAN LED : Shortly after, the LAN LED will briefly illuminate and then turn off. This is normal behavior.

   c. HaLow LED : Following the LAN LED, the HaLow LED will start blinking. On the device's first startup, this blinking lasts about 200 seconds, signaling that the device is initializing. For subsequent startups, the blinking duration reduces to around 30 seconds.

   d. Wi-Fi LED : Once the HaLow LED stops blinking, the Wi-Fi LED stays on, meaning the system has fully booted and is ready for use.

3. **Connecting and Configuring:**

   With the system ready, connect a PC or mobile device to the router and ARFHL-AP using Wi-Fi. This connection allows you to configure the gateway and start using the network services provided by the ARFHL-AP.

2.2 HaLow Mesh Network Architecture

The HaLow Mesh Network Architecture leverages the unique capabilities of Wi-Fi HaLow technology, which is designed for long-range, low-power wireless communication. This architecture typically consists of various types of nodes, such as Mesh Points (MP), Mesh Access Points (MAP), and Mesh Portals (MPP), each serving distinct roles:

Mesh Point (MP) :
Acts as the backbone of the mesh network, ensuring seamless device communication. In Wi-Fi HaLow environments, it extends coverage using its low-power, long-range capabilities.

Mesh Access Point (MAP) :
Act as hybrid nodes that connect devices directly to the mesh network and also interface with traditional Wi-Fi networks, enhancing network flexibility and access.

Mesh Portal (MPP) :
Serve as the basic nodes that relay data between devices, helping to extend the network coverage over a wide area.
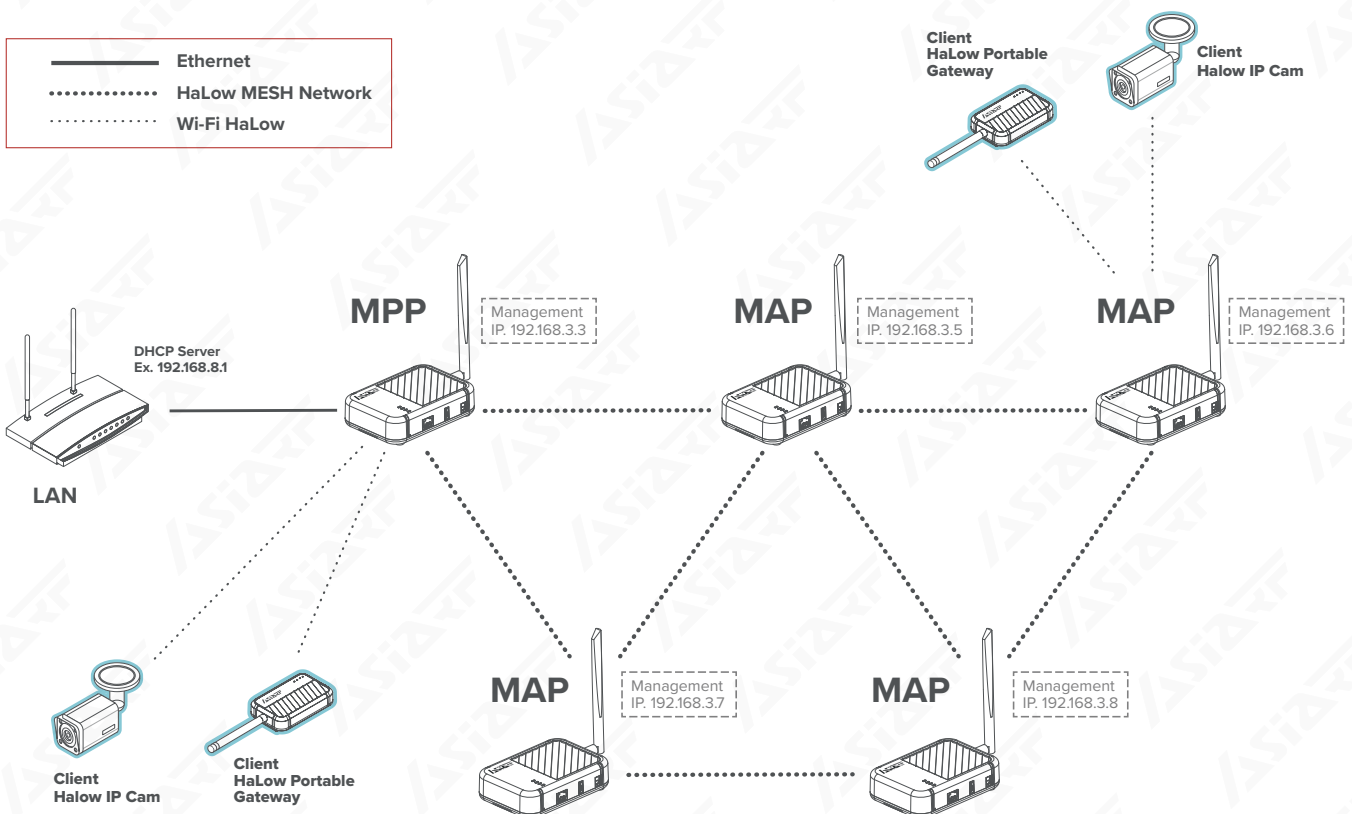

This mesh architecture supports efficient data transmission across extensive areas, is scalable, and enhances connectivity in environments where traditional Wi-Fi systems might be less effective.

2.3 HaLow Mesh Network Setting

**Use PC or mobile phone connect to the Wi-Fi.
(SSID: AsiaRF_Halow-xxxx, Password: 12345678).**
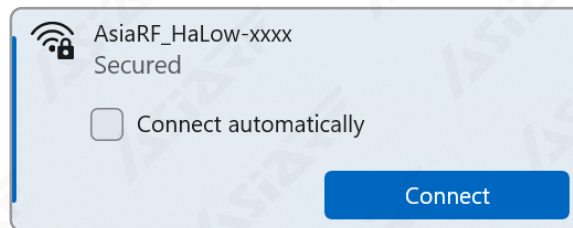
Open your browser and enter "192.168.3.3", the default factory IP address, into the address bar. Click on "Login" (there is no password by default). If you encounter issues accessing the settings webpage, refer to FAQ & Troubleshooting 5.2 for assistance.
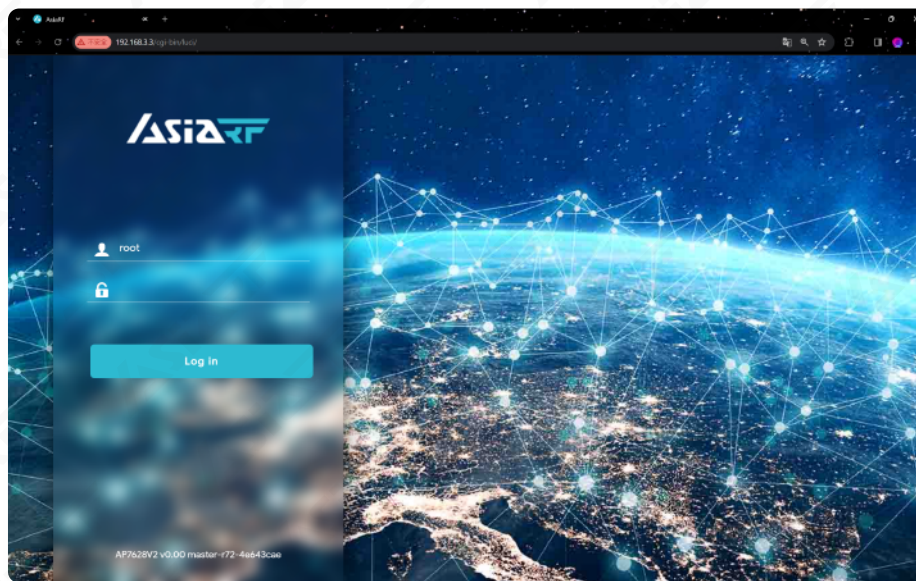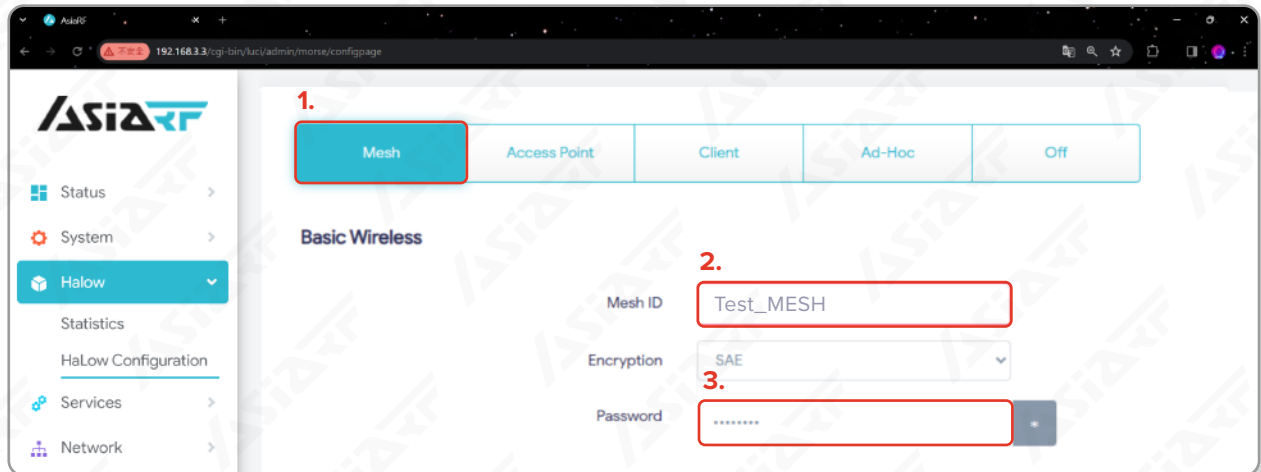

Click on 'HaLow Configuration' in the 'HaLow' tab, then set your 'Region' and click 'Save'.
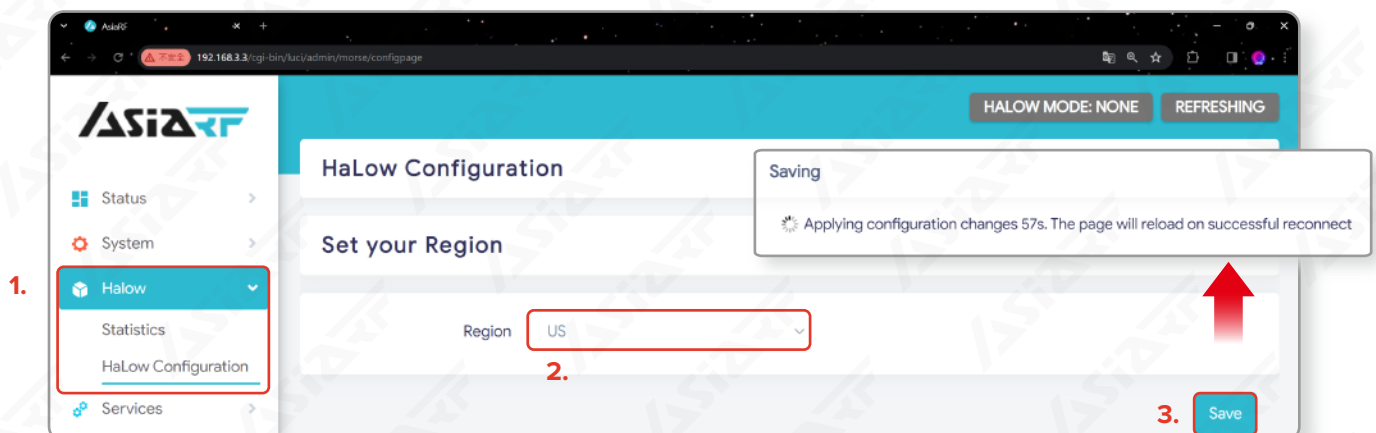
Press the 'MESH' button, and then enter your 'MESH ID' and 'Password'. For example: Set the network SSID to "Test_MESH" and configure the password, which by default is "12345678".

Remember, our default IP address is "192.168.3.3," with the default Wi-Fi 2.4 GHz SSID being "AsiaRF_HaLow-xxxx" and the password "12345678."

If you want to configure your device as an MPP (Mesh Portal), please turn the NAT option "ON".
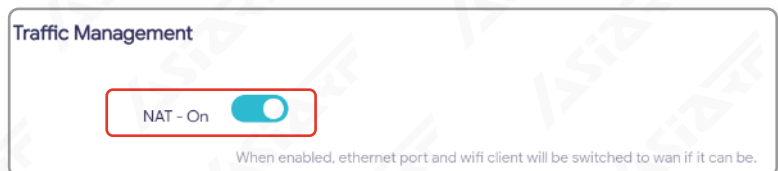
IP Settings Considerations:

- *Within the same Mesh network, different HaLow Mesh Devices must be assigned unique IP addresses.*

- *In a Mesh network where only one HaLow Mesh Device has internet access and other devices also require internet functionality, set the Gateway to the IP address of the HaLow Mesh Device with internet capability.*

For Exsample:

When the gateway assumes the role of an **MPP.** Factory default is set to 3.3, but you can choose a different setting. Simply set the Gateway of other roles, such as MP and MAP, to this IP address.

IP Settings

IP Method	DHCP Server
IP Address	192.168.**3.3**
Netmask	255.255.255.0
Gateway	192.168.**3.3**

▶ Do I need to set a gateway?

When the gateway assumes the role of an **MP**...

IP Settings

IP Method	DHCP Server
IP Address	192.168.3.4
Netmask	255.255.255.0
Gateway	192.168.**3.3**

▶ Do I need to set a gateway?

When the gateway assumes the role of an **MAP**...

IP Settings

IP Method	DHCP Server
IP Address	192.168.3.5
Netmask	255.255.255.0
Gateway	192.168.**3.3**

▶ Do I need to set a gateway?

Ensure that the bandwidth channel settings are consistent.

When setting up devices in the HaLow MESH Network, it's crucial to ensure consistency across key parameters. Make sure that the Mesh ID and password entered in the "Basic Wireless" section match, and that the settings for "Region," "Operating Bandwidth (MHz)," and "Channel" in the Advanced Wireless section are aligned for a successful connection.

Once you've finalized your settings, remember to click "Save" to store the configuration.

03

Wi-Fi HaLow Bridge Mode Setup

3.1 Connect to your Wi-Fi HaLow Gateway as AP

1. **Powering On and Connecting to Network:**

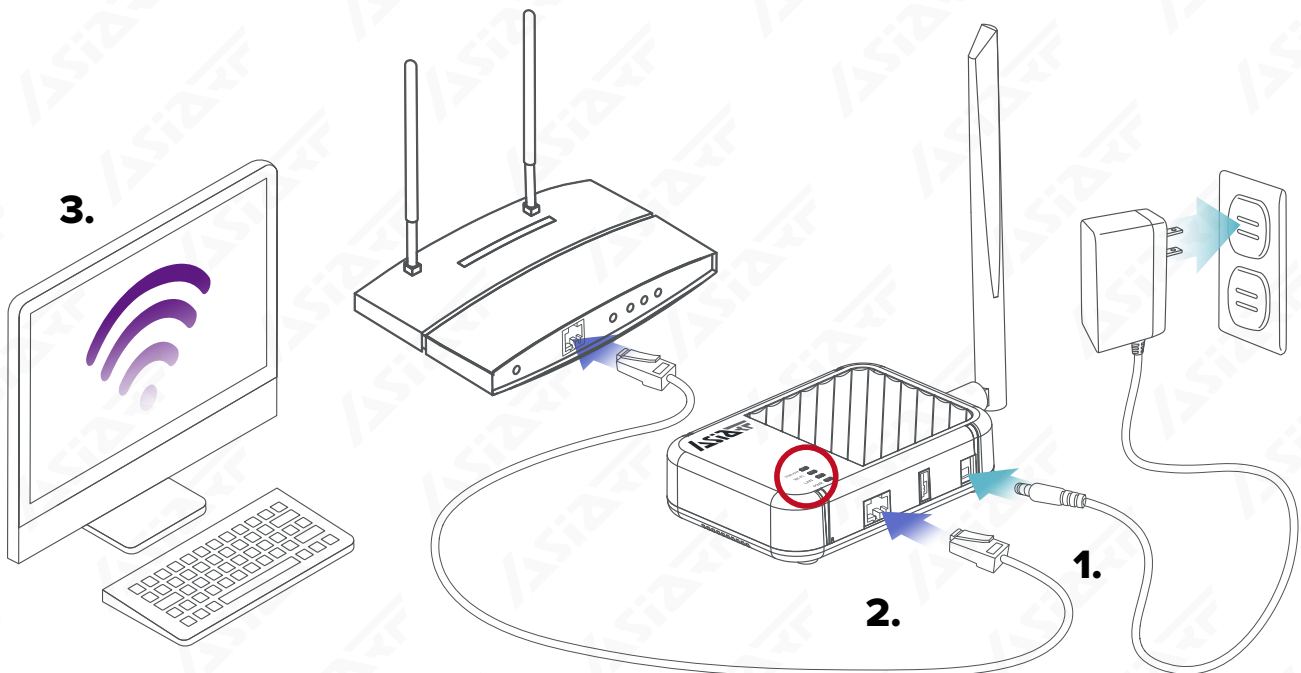   • Begin by plugging the DC adapter into the ARFHL-AP to turn it on.

   • Next, connect an Ethernet cable between the router and the ARFHL-AP.

2. **Understanding the LED Indicators:**

   a. PWR LED : Once you've connected the DC plug, the PWR (Power) LED will light up continuously, indicating that the device is powered on.

   b. LAN LED : Shortly after, the LAN LED will briefly illuminate and then turn off. This is normal behavior.

   c. HaLow LED : Following the LAN LED, the HaLow LED will start blinking. On the device's first startup, this blinking lasts about 200 seconds, signaling that the device is initializing. For subsequent startups, the blinking duration reduces to around 30 seconds.

   d. Wi-Fi LED : Once the HaLow LED stops blinking, the Wi-Fi LED stays on, meaning the system has fully booted and is ready for use.
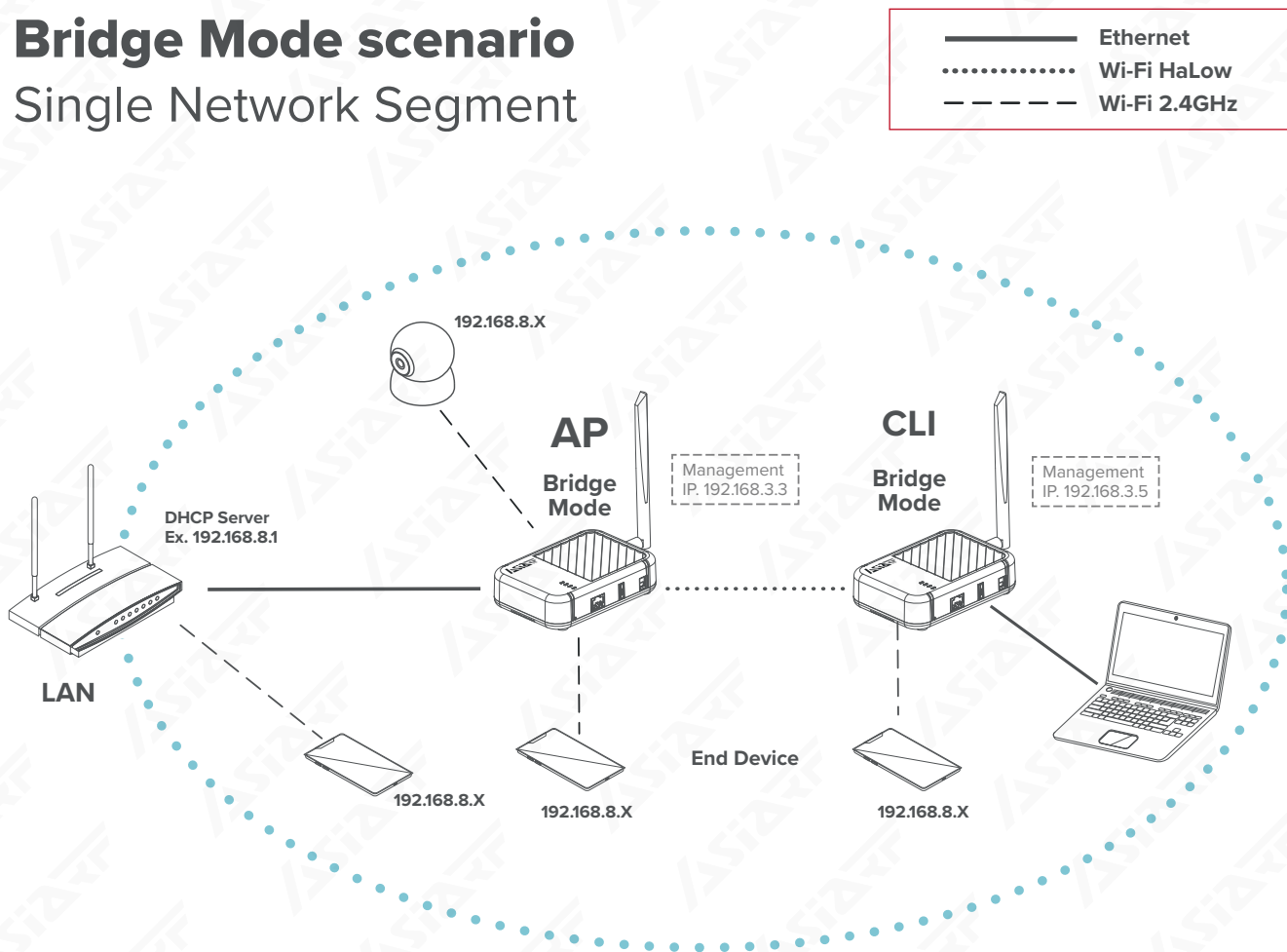
3. **Connecting and Configuring:**

   With the system ready, connect a PC or mobile device to the router and ARFHL-AP using Wi-Fi. This connection allows you to configure the gateway and start using the network services provided by the ARFHL-AP.

Bridge Mode scenario
Single Network Segment

——————	Ethernet
··············	Wi-Fi HaLow
– – – – –	Wi-Fi 2.4GHz

192.168.8.X

AP
Bridge
Mode

Management
IP. 192.168.3.3

CLI
Bridge
Mode

Management
IP. 192.168.3.5

DHCP Server
Ex. 192.168.8.1

LAN

End Device

192.168.8.X

192.168.8.X

192.168.8.X

In Bridge Mode scenario, the use of HaLow is transparent to the rest of the devices on the network. The HaLow connection serves as a means to provide a virtual Ethernet link between two points where running a physical cable may not be feasible.
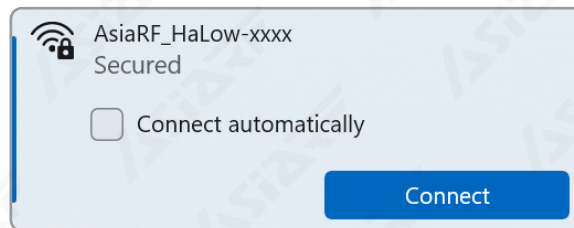
The advantage of this approach is that it offers a convenient way to expand your network coverage or connect networks in two separate buildings without isolating them into smaller sub-networks, especially when employing bridge mode.

Notes:

- *In the bridge mode of a HaLow Gateways, DHCP services are not available for IP address allocation. This necessitates manual configuration of IP addresses for devices to ensure they are on the same network segment for access. For detailed configuration methods, please see section 2.3 Managing Bridge Mode HaLow Gateways.*
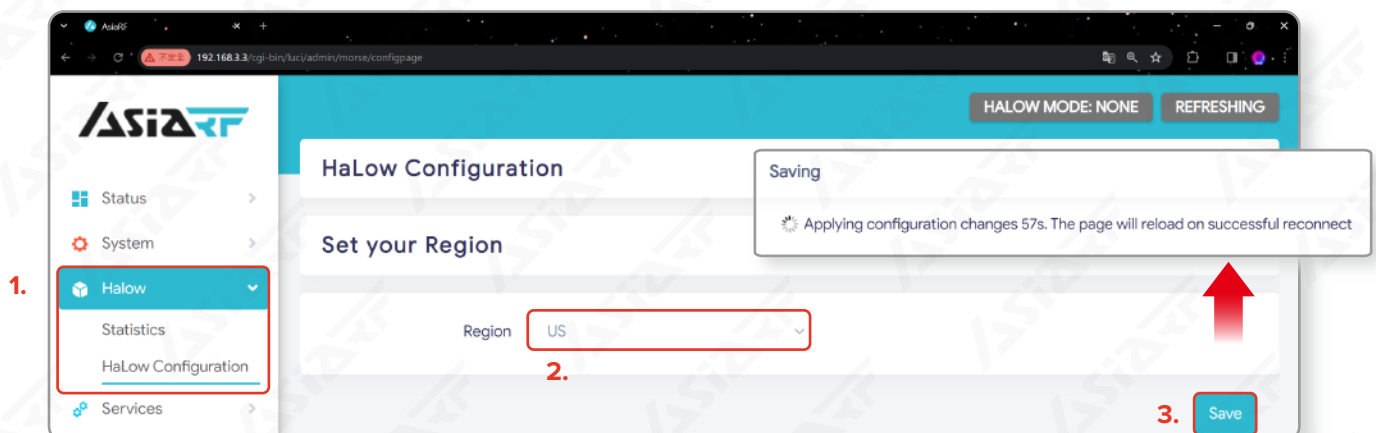
3.2 Bridge Mode Access Point (AP) Setting

Use PC or mobile phone connect to the Wi-Fi.
(SSID: AsiaRF_Halow-xxxx, Password: 12345678).

Open your browser and enter "192.168.3.3", the default factory IP address, into the address bar. Click on "Login" (there is no password by default). If you encounter issues accessing the settings webpage, refer to FAQ & Troubleshooting 5.2 for assistance.
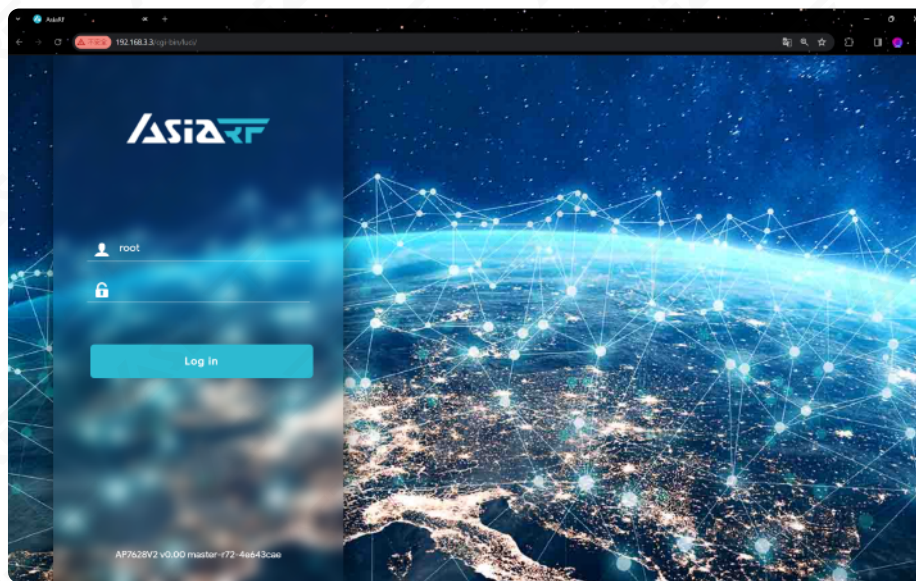
Click on 'HaLow Configuration' in the 'HaLow' tab, then set your 'Region' and click 'Save'.

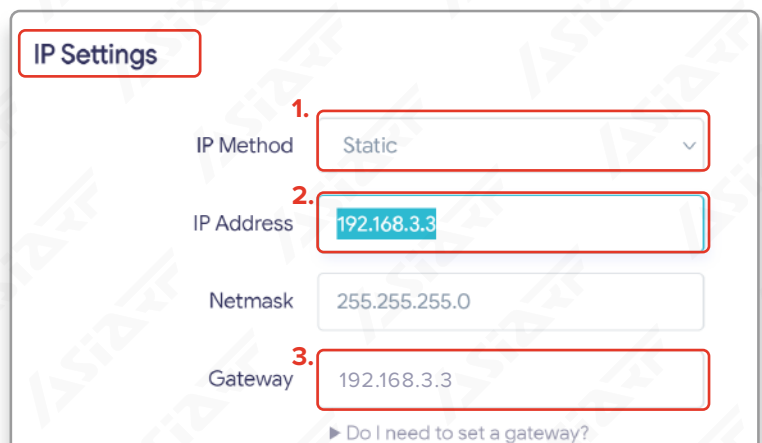Press the 'Access Point' button, and then enter your 'Wi-Fi HaLow SSID' and 'Password'.

Remember, our default IP address is "192.168.3.3," with the default Wi-Fi 2.4 GHz SSID being "AsiaRF_HaLow-xxxx" and the password "12345678."

Disable NAT in the
"Traffic Management" section.

Set your own Static IP address in the 'IP Setting' section and fill in the 'Gateway' with your AP's IP address.

In the "Advanced - Wireless" settings, the region you initially selected will be displayed. If you wish to change the region, you can do so here. Remember to click "Save" after making any adjustments.

Advanced - Wireless

|	
Region	US ⌄
Operating Bandwidth (MHz)	8 MHz ⌄
Channel	Auto ⌄
Protected Management Frames	☑
Beacon Interval (ms)	100
DTIM Period	1 ⌄
Max Inactivity (1-65536)	300

Save

3.3 Managing Bridge Mode HaLow Gateways

In the bridge mode of a HaLow Gateways, under Static are not available for IP address allocation. This necessitates manual configuration of IP addresses for devices to ensure they are on the same network segment for access.

Here's a straightforward example: if the management IP of an Access Point (AP) is the default 192.168.3.3, any device you wish to connect must have its IP address configured within the 192.168.3.x subnet. This enables access to the AP's configuration settings, and the principle similarly applies to devices on the Client (CLI) side.

The illustration shows a wireless AP (IP: 192.168.3.3) successfully connected to PC-1 (IP: 192.168.3.x) within the same subnet, and failing to connect to PC-2 (IP: 192.168.5.x) from a different subnet.

PC-1
192.168.3.xx

AP

192.168.3.3

PC-2
192.168.5.xx
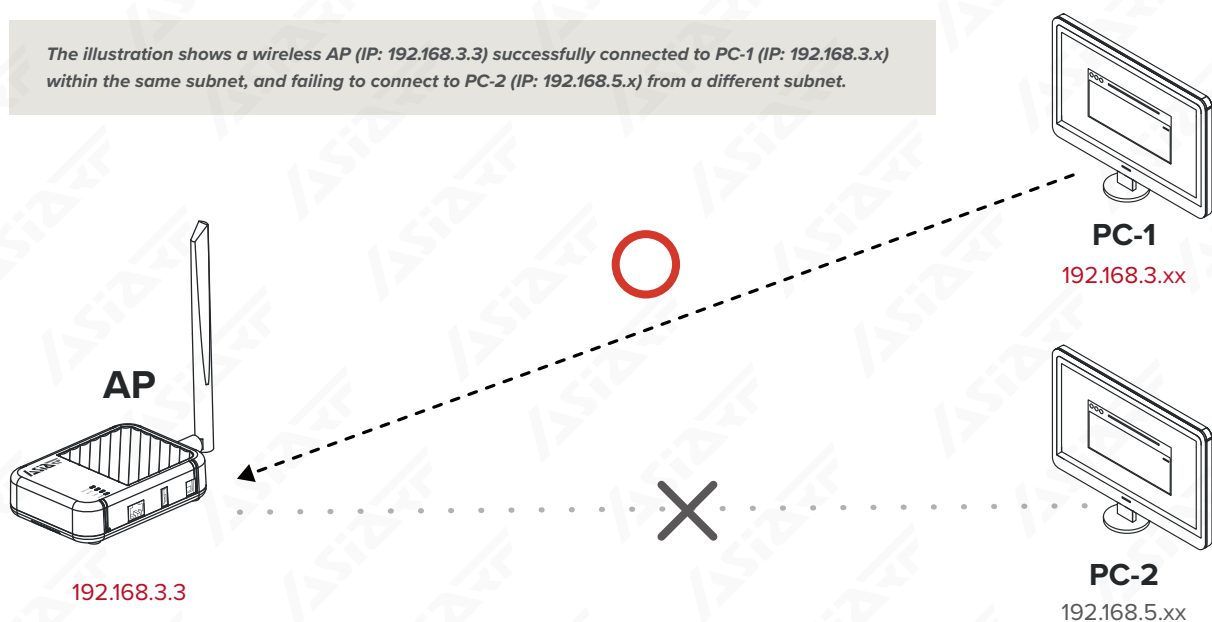
Setting a Static IP on a Windows PC for HaLow Gateway Access:

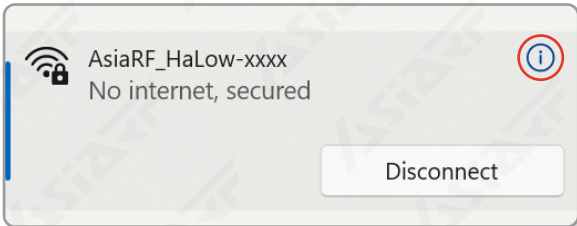To connect and configure your device in a Windows environment, follow these steps:

1. **Connect to the Wi-Fi Network:** Look for the SSID named "AsiaRF_Halow-xxxx" and use the password "12345678" to connect.

2. **Set a Static IP Address:** Once connected, you'll need to manually set your PC's IP address to be within the 192.168.3.x range, matching the network segment of the HaLow Gateway's bridge mode configuration.

This process ensures that your devices can communicate with the HaLow Gateway in bridge mode, facilitating seamless management and configuration. *Please follow the instructions on the next page step by step.*
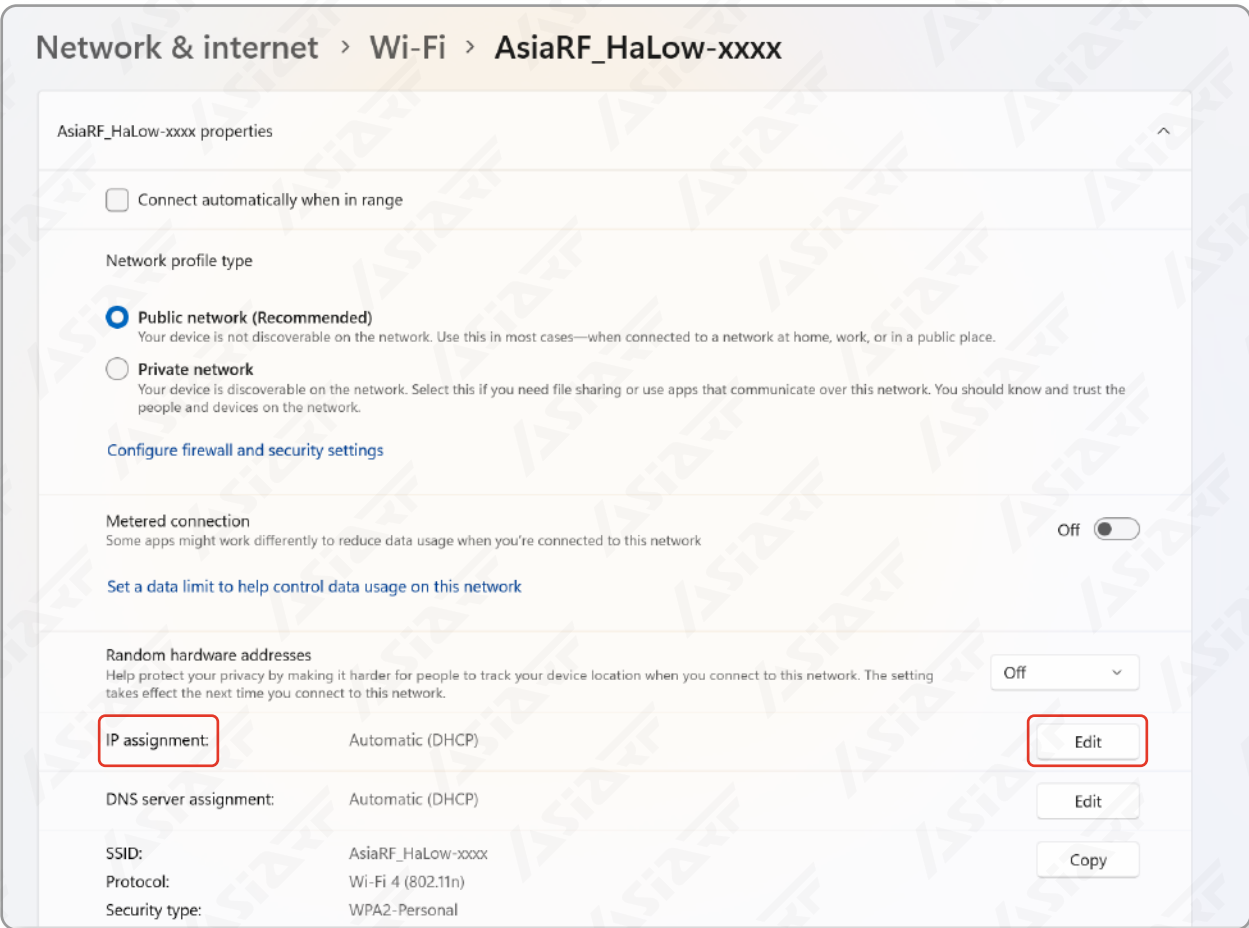
Use PC or mobile phone connect to the Wi-Fi.
(SSID: AsiaRF_Halow-xxxx, Password: 12345678).

AsiaRF_HaLow-xxxx
Secured
☐ Connect automatically

Connect
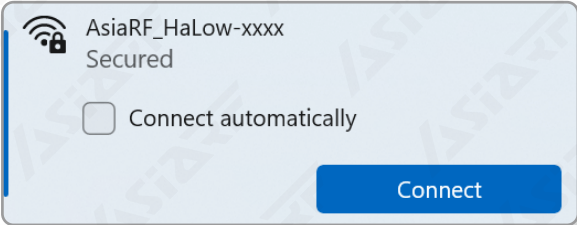
Click the 'Properties' button to access the
settings screen.

AsiaRF_HaLow-xxxx
No internet, secured

ⓘ

Disconnect

Click "Edit" button in "IP assignment" to set static IP.

Network & internet › Wi-Fi › AsiaRF_HaLow-xxxx

AsiaRF_HaLow-xxxx properties   ^

☐ Connect automatically when in range

Network profile type

◉ Public network (Recommended)
Your device is not discoverable on the network. Use this in most cases—when connected to a network at home, work, or in a public place.

◯ Private network
Your device is discoverable on the network. Select this if you need file sharing or use apps that communicate over this network. You should know and trust the people and devices on the network.

Configure firewall and security settings

Metered connection   Off ⬤
Some apps might work differently to reduce data usage when you're connected to this network

Set a data limit to help control data usage on this network

Random hardware addresses
Help protect your privacy by making it harder for people to track your device location when you connect to this network. The setting   Off ˅
takes effect the next time you connect to this network.

IP assignment: Automatic (DHCP)   Edit

DNS server assignment: Automatic (DHCP)   Edit

SSID: AsiaRF_HaLow-xxxx
Protocol: Wi-Fi 4 (802.11n)   Copy
Security type: WPA2-Personal

Choose "Manual".

Turn on the IPv4 radio button.

Enter an IP address that belongs to the same network segment (192.168.3.x), input '255.255.255.0' as the Subnet mask, and finally, click 'Save' to apply the settings.

By adhering to the steps provided, you should be able to effectively manage the Bridge Mode HaLow Gateway. For accessing the settings webpage, simply input the IP address of the target gateway into your browser.

Should you encounter the issues of 'The AP SSID does not appear in the scan list , please refer to "Troubleshooting Case 2" for solutions.

3.4 Bridge Mode Client (CLI) Setting

Wi-Fi HaLow Client Bridge Mode Setup

a. Connect the DC adaptor to the ARFHL-AP to power it on, which will illuminate the 'PWR' LED.

b. Plug the Ethernet cable into both the PC and the ARFHL-AP. This will enable the "LAN" LED on the ARFHL-AP, signifying a successful connection.

c. After waiting approximately 2 minutes, the Wi-Fi and HaLow LEDs on the ARFHL-AP will activate, signaling that the system is ready for use.

d. As an alternative, you may opt to connect to your ARFHL-AP via Wi-Fi directly, bypassing the need for an Ethernet cable.
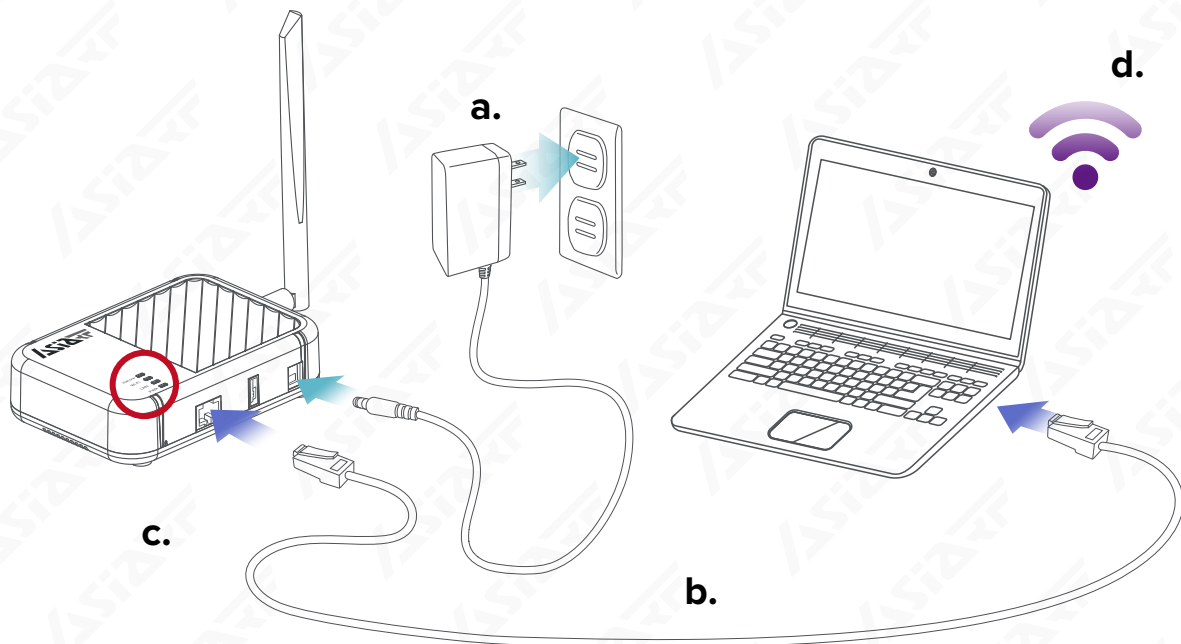
Use PC or mobile phone and connect to the Wi-Fi or connect by ethernet cable.
(Wi-Fi SSID: AsiaRF_Halow-xxxx, Password: 12345678)
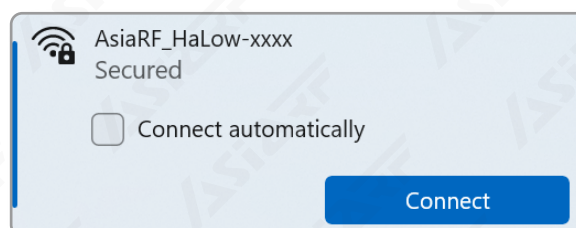
Open the browser and type "192.168.3.3". Click "Login" (No password in default).

Click on 'HaLow Configuration' in the 'HaLow' tab, then set your 'Region' and click 'Save'.
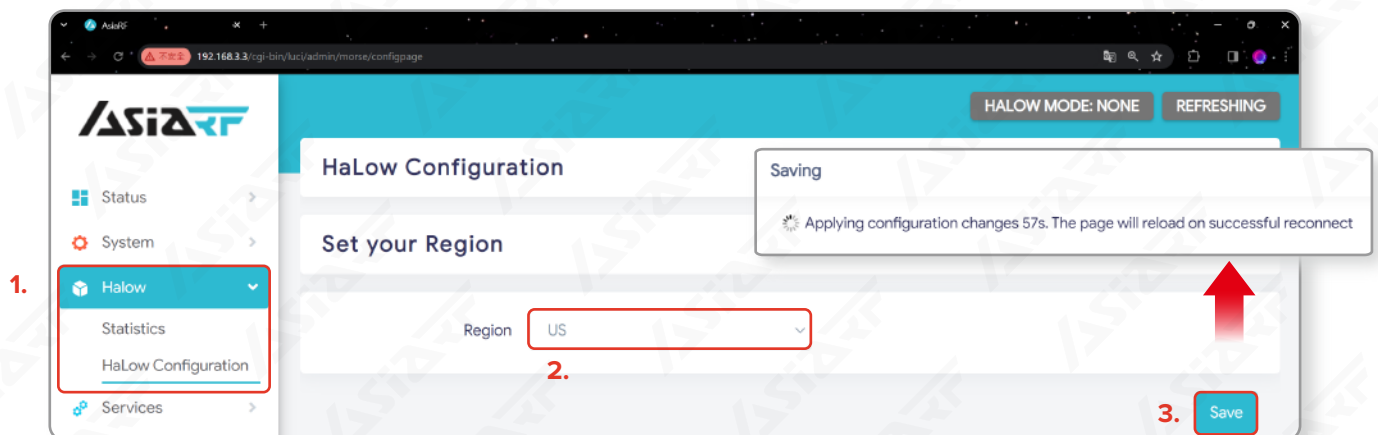
Click the "Client" mode and press 'Scan' botton.
It will automatically select a Wi-Fi HaLow AP nearby, or you can manually choose one from the list.
Remember to enter the password, for example, SSID: MM_AsiaRF_New.
If your SSID does not appear in the list of scanned APs, please refer to Troubleshooting Case 3.
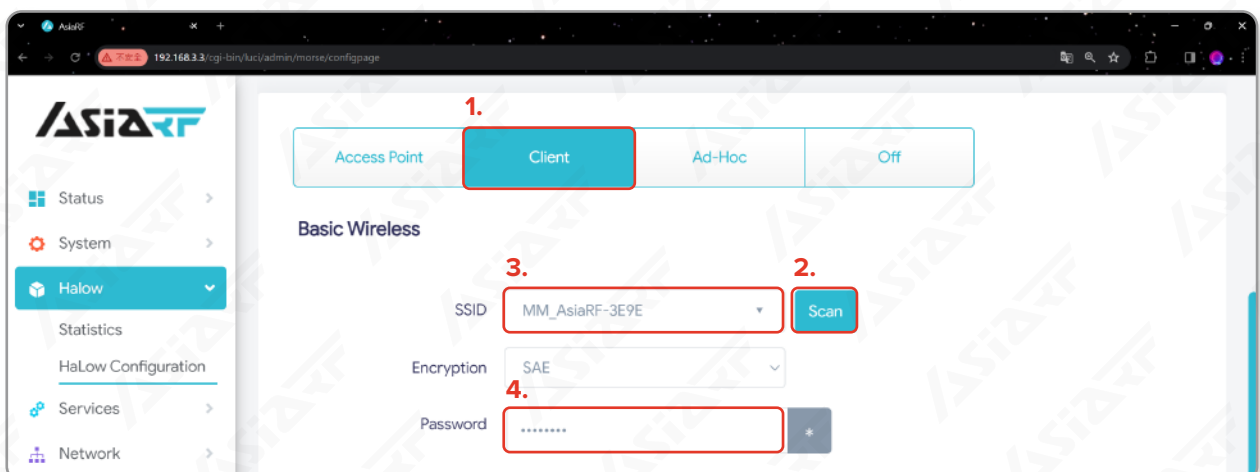
To activate bridge mode, choose a static IP setting and adjust your IP address accordingly. For optimal management in conjunction with the Access Point (AP), it is recommended to select an IP from the 192.168.3.x range.

Ensure not to use an IP address that is identical to those of other HaLow devices.

IP Settings

IP Method	Static
1.	
IP Address	192.168.3.5
Netmask	255.255.255.0
2.	
Gateway	192.168.3.3 *Put in your AP gateway IP address.*

▶ Do I need to set a gateway?

▼ Do I need to set a gateway?
Traffic will be forwarded to the gateway when there is no available route.
When configured as a DHCP Server, the address is sent to DHCP clients.
If this interface is not the connection to external subnets, you don't need to set a gateway. Leave it blank.

Select your region according to the AP settings. Click "Save" button to save the configuration.
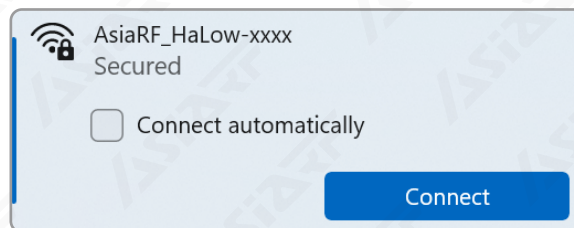
Advanced - Wireless

1.
Region   US

Protected Management   ☑ *Always Active PMF*
Frames

2.
Save

3.5 2.4GHz Wi-Fi Managing

**Use PC or mobile phone and connect to the Wi-Fi 2.4 GHz.
(SSID: AsiaRF_Halow-xxxx, Password: 12345678)**

Open your browser and enter "192.168.3.3", the default factory IP address, into the address bar. Click on "Login" (there is no password by default). If you encounter issues accessing the settings webpage, refer to FAQ & Troubleshooting 5.2 for assistance.
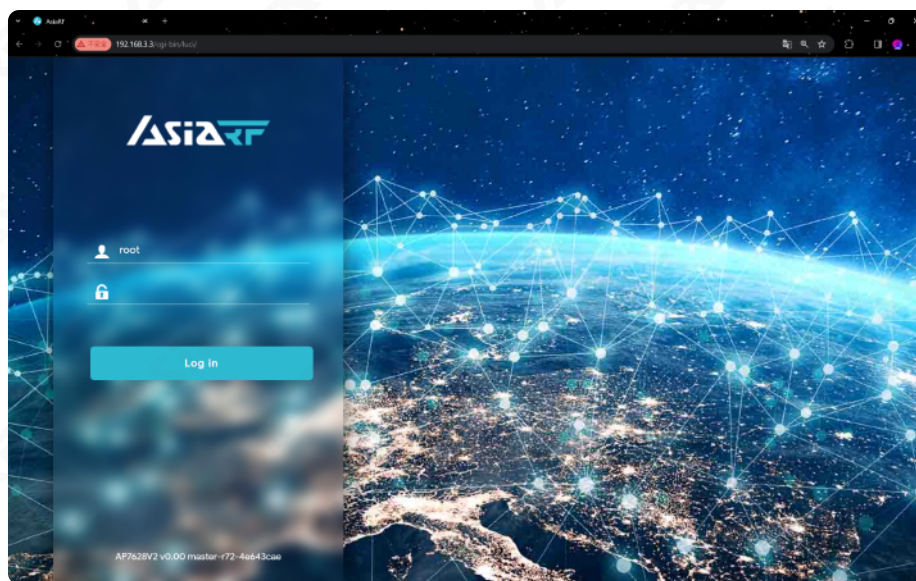
Click the "Wireless" in the "Network" tab. Find your 2.4GHz Wi-Fi and click the "Edit" button.

Change the ESSID in the 'General Setup' section of the Interface Configuration to your new name.

Click "Wireless Security" and choose one of the encryption types. Ex. "WPA-PSK/WPA2-PSK Mixed Mode (medium security)" Input your Wi-Fi password in "Key" field and don't forget it.
Click the "Save" button to save your configuration.
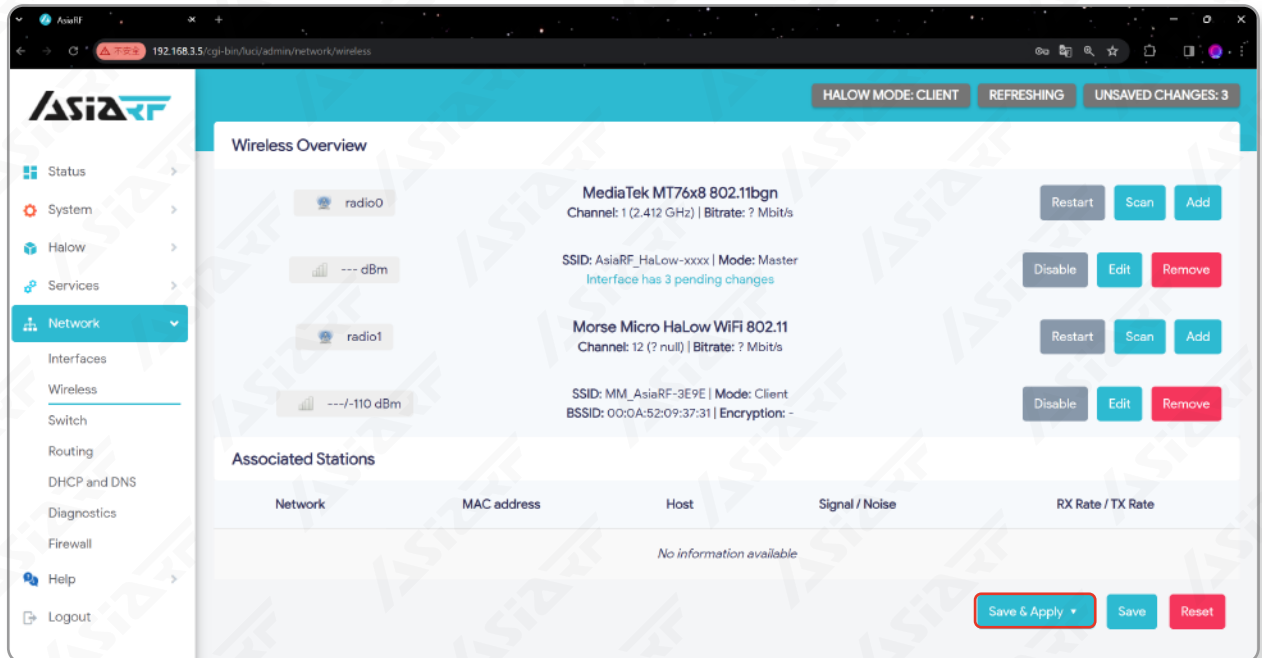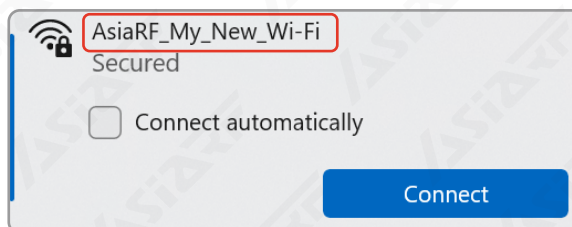
Click the "Save & Apply" button to save the configuration.

The above settings will reset your Wi-Fi interface.

3.6 Switching the Bridge Mode to Router Mode

1. Perform a factory reset by pressing and holding the reset button for more than 5 seconds, until you see the "HaLow", "Wi-Fi", and "PWR" LEDs flash briefly, then release the button.

2. Wait for approximately 3 minutes. The "Wi-Fi" and "PWR" LED will blink intermittently, indicating that the system is rebooting. This process will continue until the system has fully restarted.

3. To configure the device in Router Mode, please refer to Chapter 3, which provides a detailed step-by-step setup procedure.

3.6.1

3.6.2

Wi-Fi HaLow Router Mode Setup

4.1 Connect to your Wi-Fi HaLow Gateway as AP
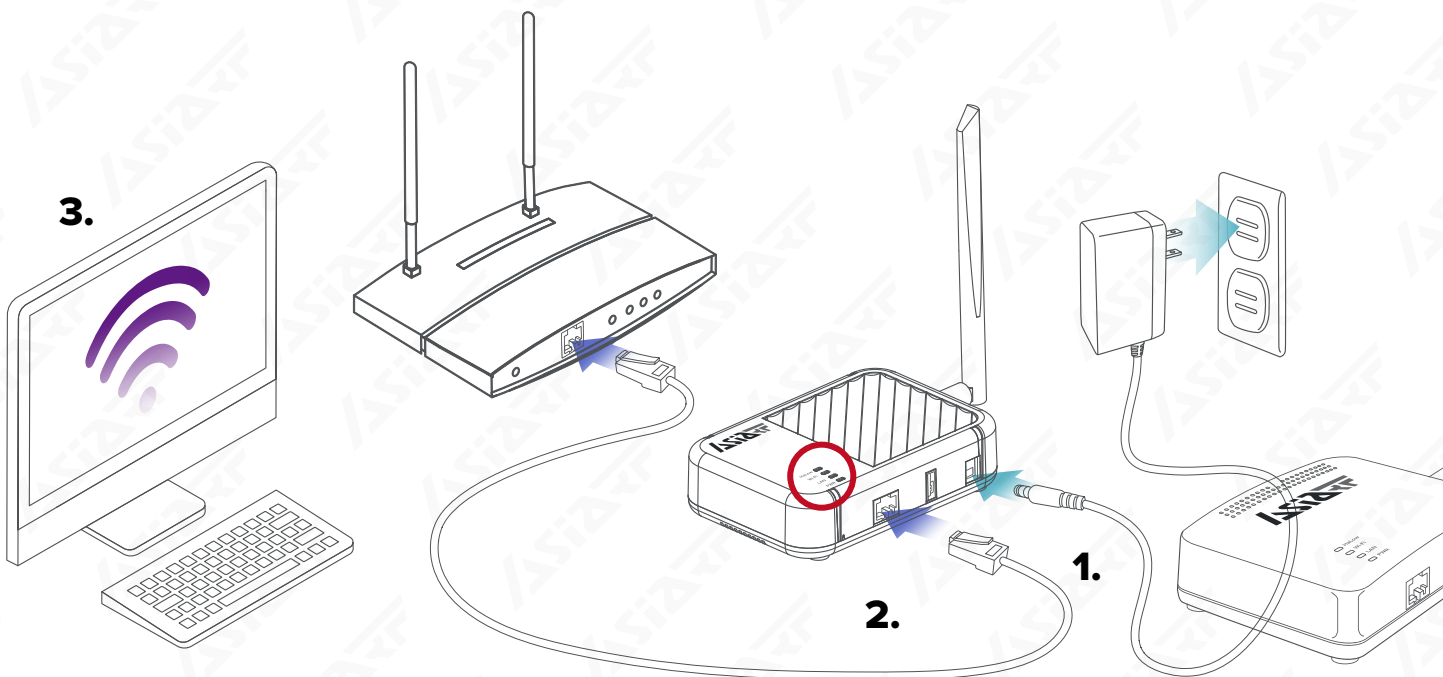
1. **Powering On and Connecting to Network:**

   • Begin by plugging the DC adaptor into the ARFHL-AP to turn it on.

   • Next, connect an Ethernet cable between the router and the ARFHL-AP.

2. **Understanding the LED Indicators:**

   a. PWR LED : Once you've connected the DC plug, the PWR (Power) LED will light up continuously, indicating that the device is powered on.

   b. LAN LED : Shortly after, the LAN LED will briefly illuminate and then turn off. This is normal behavior.

   c. HaLow LED : Following the LAN LED, the HaLow LED will start blinking. On the device's first startup, this blinking lasts about 200 seconds, signaling that the device is initializing. For subsequent startups, the blinking duration reduces to around 30 seconds.

   d. Wi-Fi LED : Once the HaLow LED stops blinking, the Wi-Fi LED stays on, meaning the system has fully booted and is ready for use.
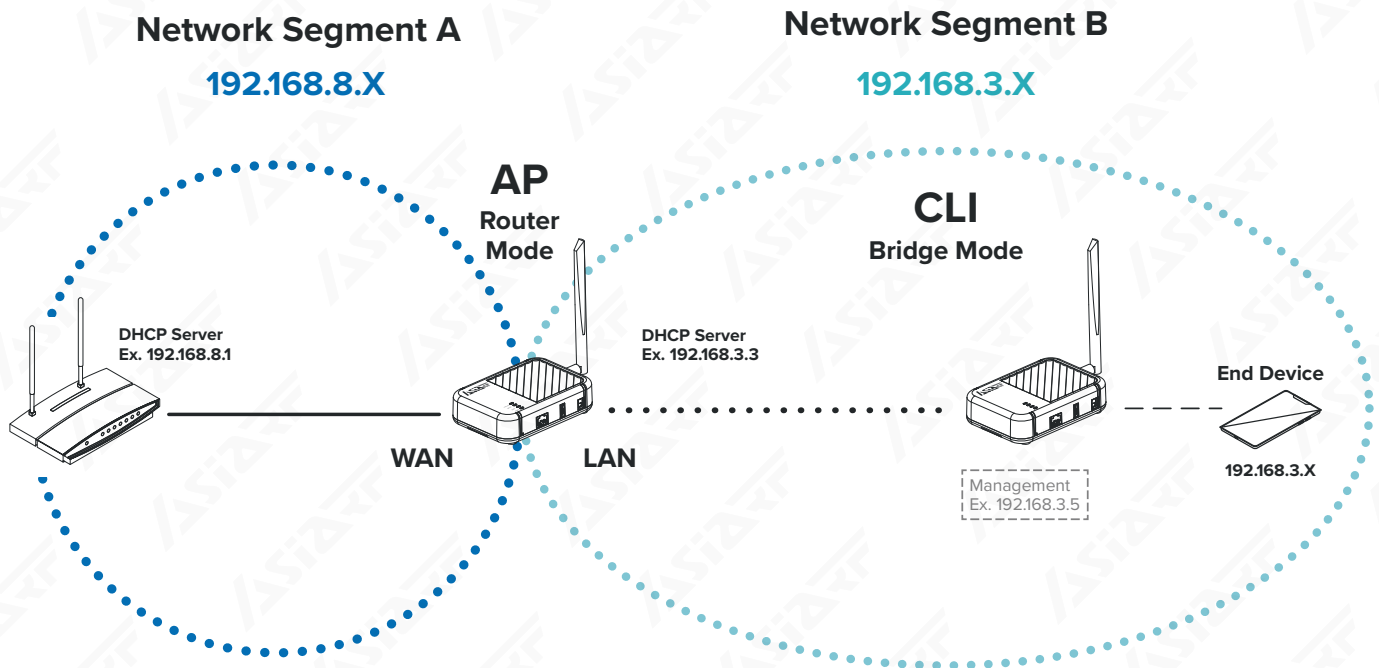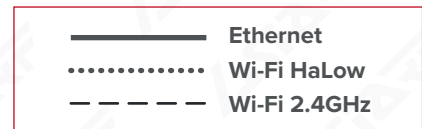
3. **Connecting and Configuring:**

   With the system ready, connect a PC or mobile device to the router and ARFHL-AP using Wi-Fi. This connection allows you to configure the gateway and start using the network services provided by the ARFHL-AP.

Router Mode scenario
Multiple Network Segments

—————— Ethernet
·············· Wi-Fi HaLow
— — — — Wi-Fi 2.4GHz

Network Segment A
192.168.8.X

Network Segment B
192.168.3.X

AP
Router Mode

CLI
Bridge Mode

DHCP Server
Ex. 192.168.8.1

DHCP Server
Ex. 192.168.3.3

End Device

WAN   **LAN**

Management
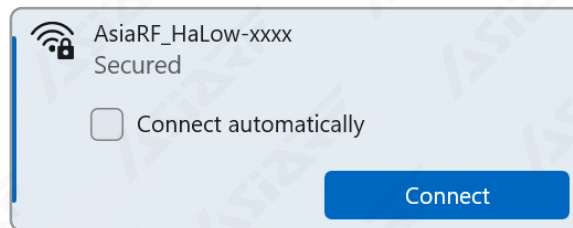Ex. 192.168.3.5

192.168.3.X

In Router Mode, the router is used to connect different IP network segments together, with each segment having its own range of IP addresses and subnet mask. The router forwards packets allowing devices from different network segments to communicate with each other, while also providing network layer isolation and security controls (such as firewall rules).

The advantage of this method lies in its ability to organize the network into multiple manageable segments, enhancing network security and traffic management. It allows for the creation of dedicated network areas within a broader network infrastructure, such as areas designated for visitor access or IoT devices. Employing router mode with HaLow technology ensures that, even in environments where physical cable wiring is impractical, the network can maintain segmented control and integrated communication.

4.2 Router Mode Access Point (AP) Setting

Use PC or mobile phone connect to the Wi-Fi.
(SSID: AsiaRF_Halow-xxxx, Password: 12345678).

Open your browser and enter "192.168.3.3", the default factory IP address, into the address bar. Click on "Login" (there is no password by default). If you encounter issues accessing the settings webpage, refer to Troubleshooting Case 2 for assistance.
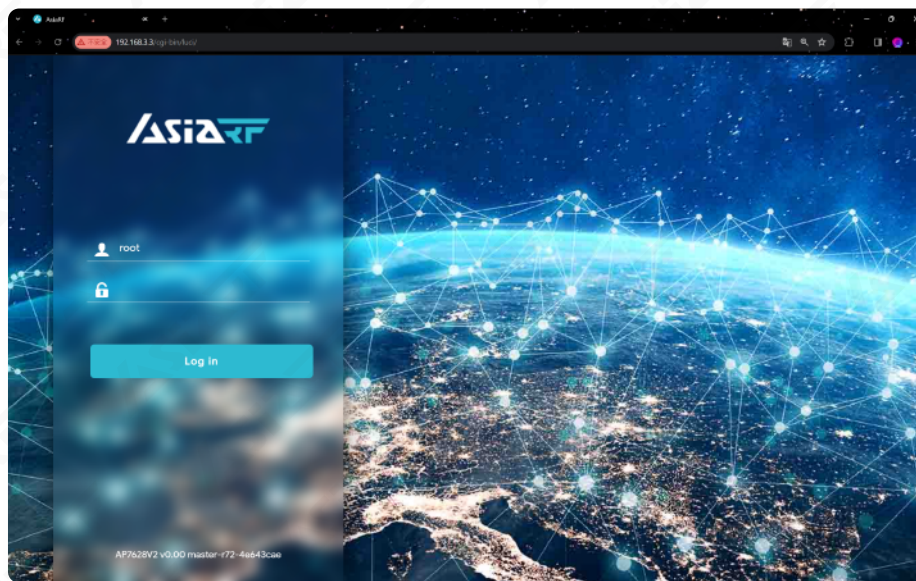
Click on 'HaLow Configuration' in the 'HaLow' tab, then set your 'Region' and click 'Save'.

Press the 'Access Point' button, and then enter your 'Wi-Fi HaLow SSID' and 'Password'.

Remember, our default IP address is "192.168.3.3," with the default Wi-Fi 2.4 GHz SSID being "AsiaRF_HaLow-xxxx" and the password "12345678."

Enable NAT in the "Traffic Management" section.

Set your own DHCP Server' IP address in the 'IP Setting' section and fill in the 'Gateway' with your AP's IP address.
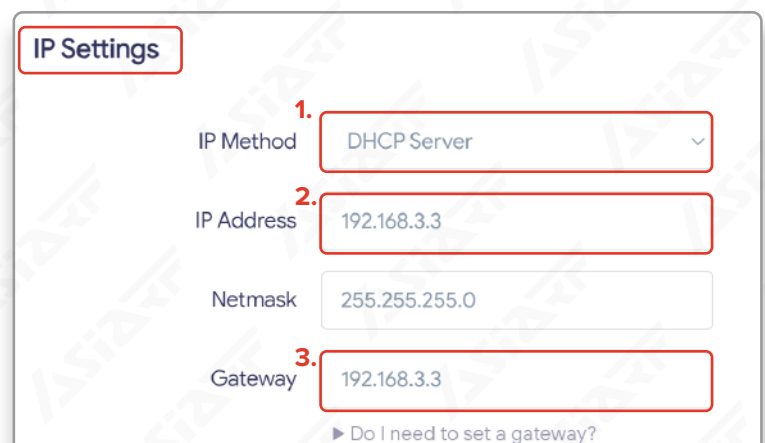
In the 'Advanced - Wireless' settings, the region you initially selected will be displayed. If you wish to change the region, you can do so here. Remember to click "Save" after making any adjustments.

4.3 Router Mode Client (CLI) Setting

The HaLow Gateway Client configuration is identical in both Router Mode and Bridge Mode. For setup instructions, **please see Section 2.4, "Bridge Mode Client (CLI) Setting."**

4.4 2.4GHz Wi-Fi Managing

The HaLow Gateway 2.4GHz Wi-Fi configuration is identical in both Router Mode and Bridge Mode. For setup instructions, **please see Section 2.5, "2.4GHz Wi-Fi Managing."**

4.5 Switching the Router Mode to Bridge Mode

1. Perform a factory reset by pressing and holding the reset button for more than 5 seconds, until you see the **"HaLow", "Wi-Fi", and "PWR" LEDs** flash briefly, then release the button.

2. Wait for approximately 3 minutes. The **"Wi-Fi" and "PWR" LED** will blink intermittently, indicating that the system is rebooting. This process will continue until the system has fully restarted.

3. To configure the device in Bridge Mode, please refer to **Chapter 2**, which provides a detailed step-by-step setup procedure.

3.5.1

3.5.2

05

Firmware Upgrade

5.1 First, confirm your current firmware version.

This section provides guidance on how to determine your current firmware version. Please follow the instructions provided below.

Should you encounter any issues with our product, please provide us with your firmware version to ensure the most effective after-sales service.

Connect to the Wi-Fi 2.4 GHz network using a PC or mobile phone. Look for the SSID "AsiaRF_Halow-xxxx" and use the password "12345678" for access.
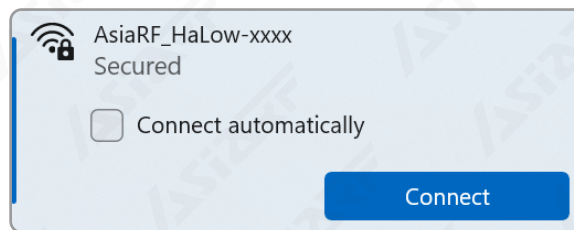
Open a web browser and enter the default IP address "192.168.3.3". Then click "Login" (no password is required by default). If you encounter any issues accessing the settings webpage, refer to Troubleshooting Case 2 for assistance.
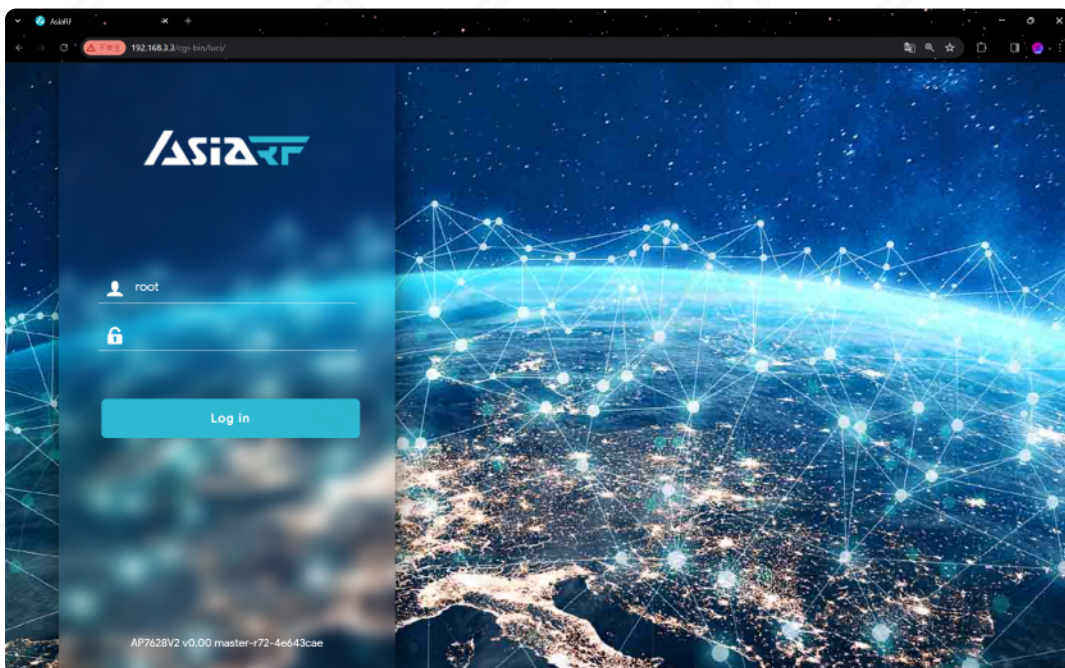
Click "Overview" in the "Status" tab.

Then, you can determine your firmware version. For example, it could be listed as "AsiaRF AP7688 WHM 22.03.5 SDK222-master-55-d274ef3b." Please refer to the screenshot below for further clarification.

5.2 Upgrade your Firmware version

To ensure you have the best experience with our product, follow the instructions in this chapter to upgrade your device whenever new firmware becomes available.

Connect to the Wi-Fi 2.4 GHz network using a PC or mobile phone. Look for the SSID "AsiaRF_Ha-low-xxxx" and use the password "12345678" for access.
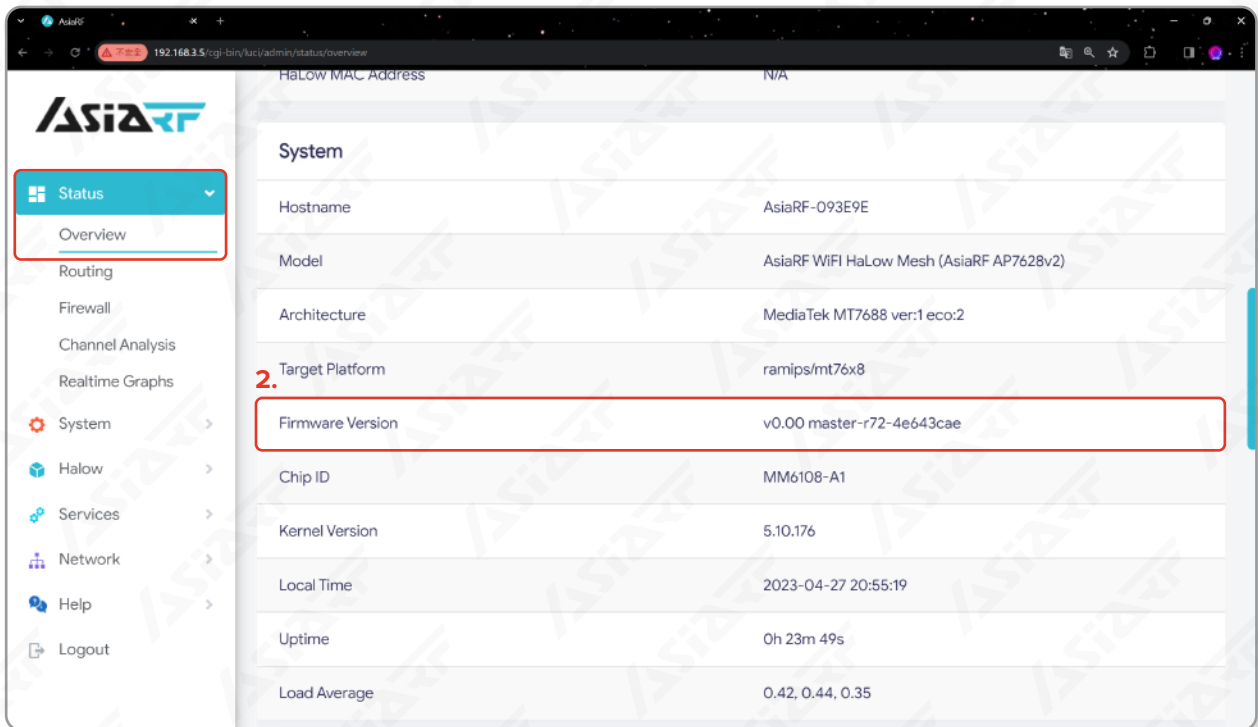

Open a web browser and enter the default IP address "192.168.3.3". Then click "Login" (no password is required by default). If you encounter any issues accessing the settings webpage, refer to Troubleshooting Case 2 for assistance.
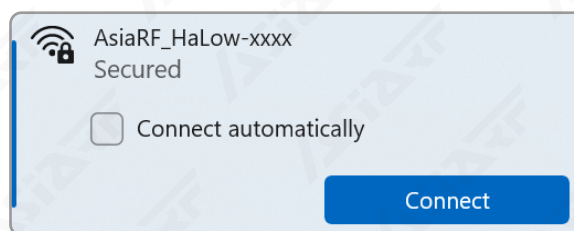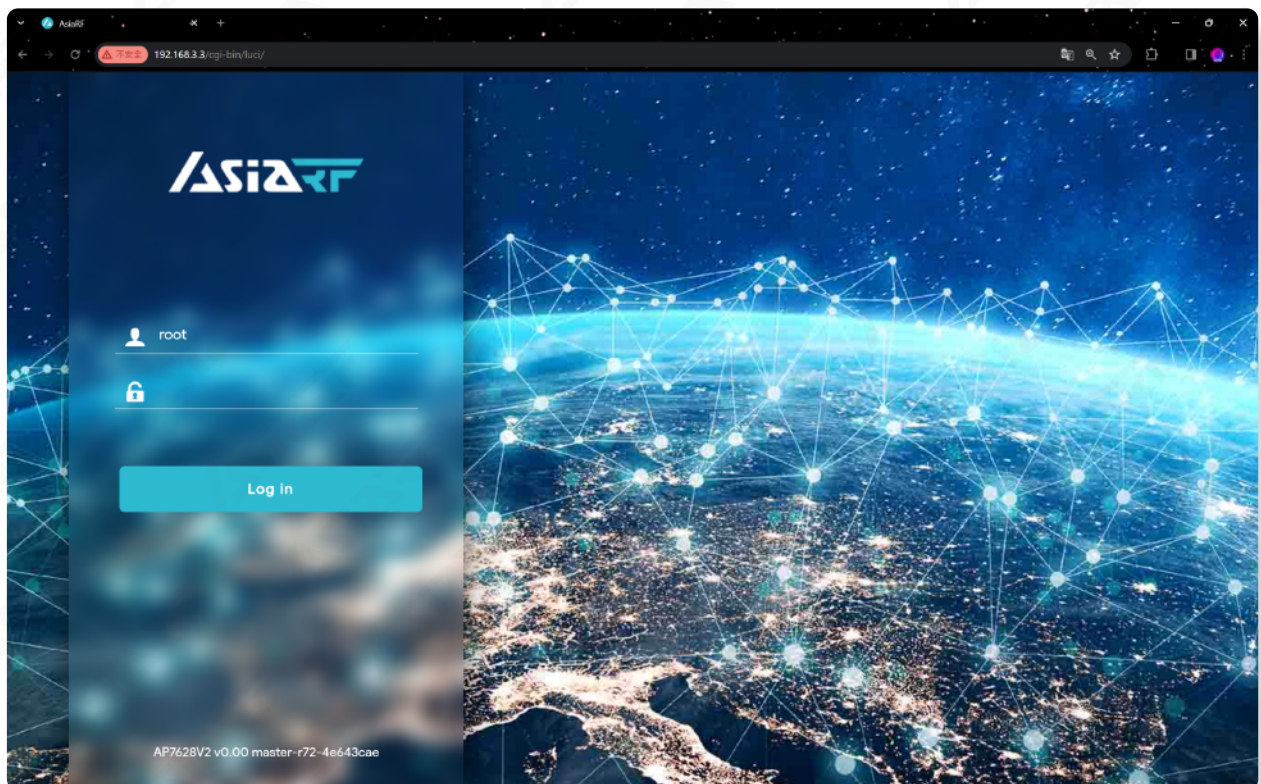
Click 'Flash Firmware' in the "System" tab, then Click 'Flash image'.
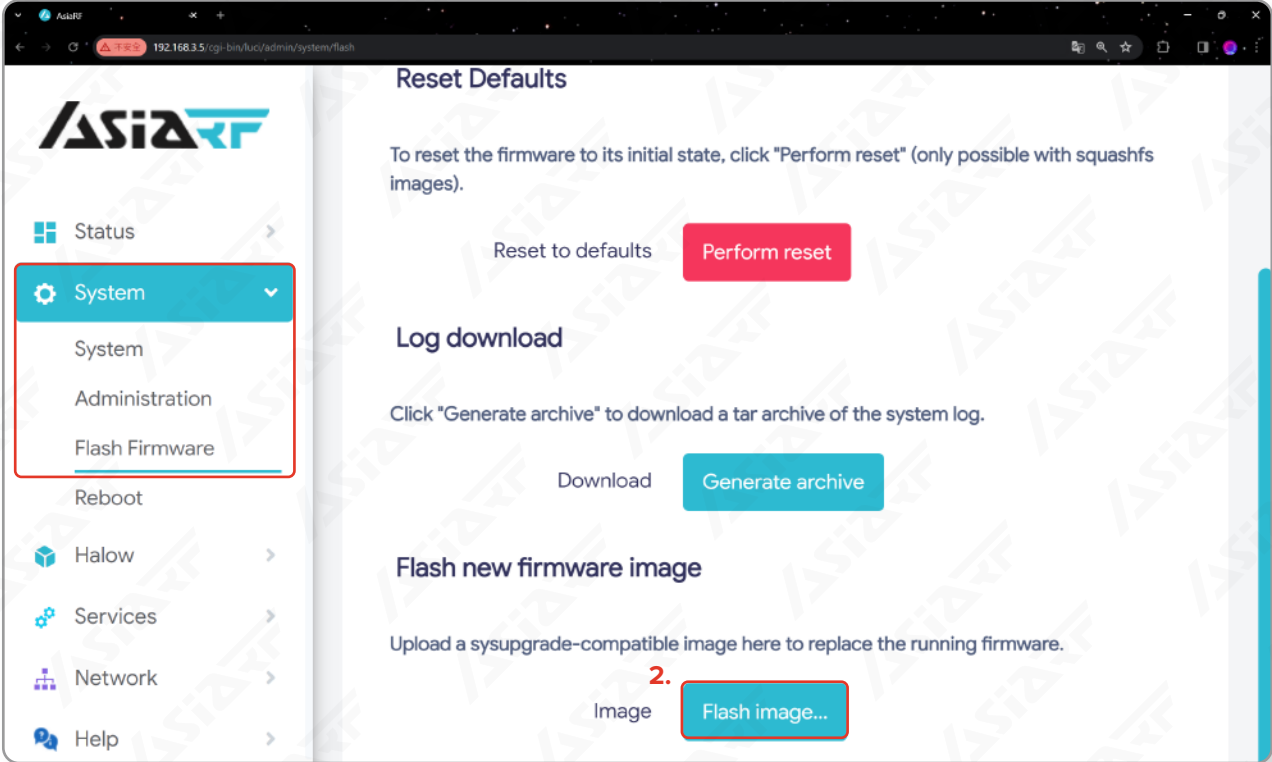
Click on 'Browse' to select the firmware you need. Choose the desired version and then click 'Open' to proceed.

After selecting the firmware, it will be displayed on your screen. Click 'Upload' to proceed, and the system will automatically verify if the version is compatible.

Uploading file...

- Name: AsiaRF-AP7628-V2-xxxx-xxxx-xxxxxxxxxxx.bin
- Size: 12.94 MiB

Browse...   Cancel   Upload

Uploading file...

41.90%

Once your firmware upload is successful, you'll see a screen like the one in the image. The default setting will have the option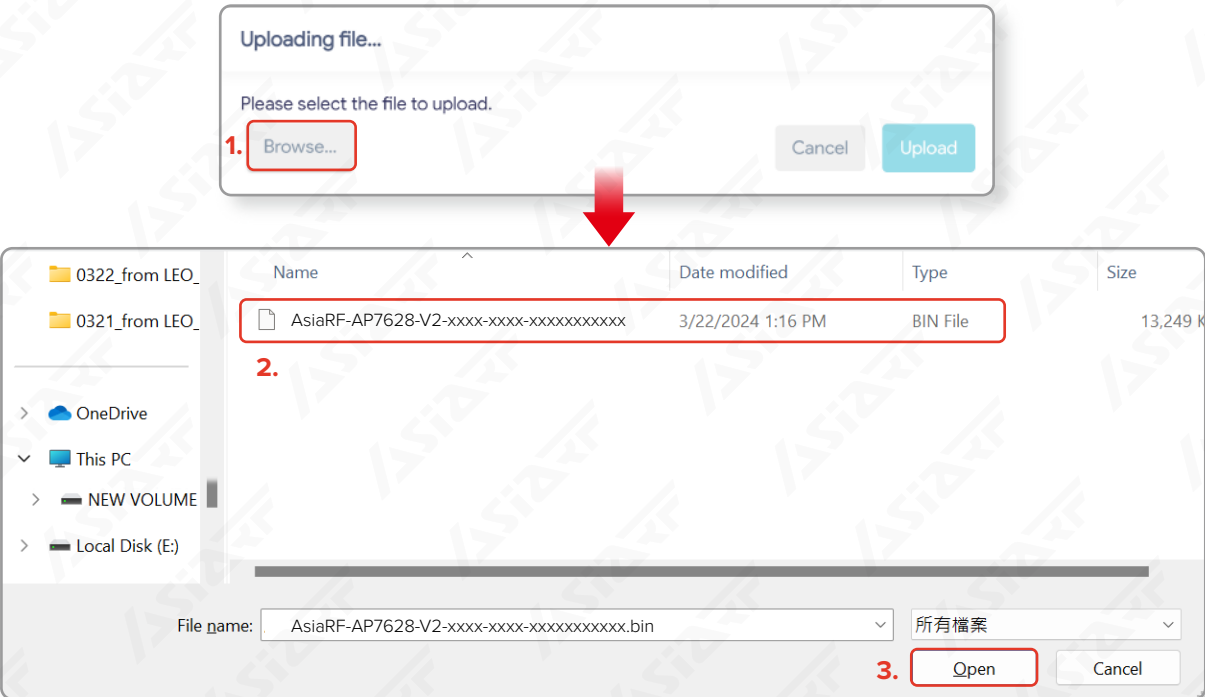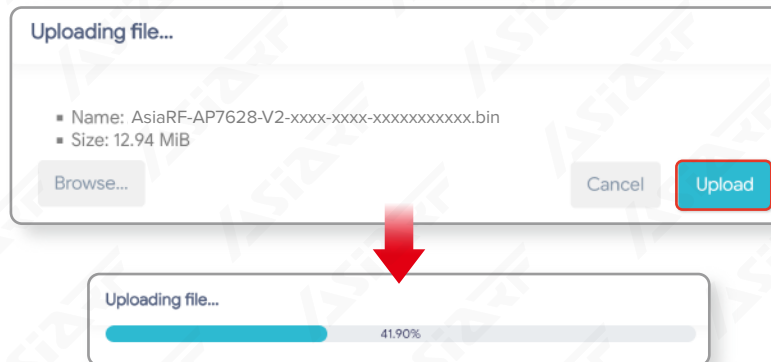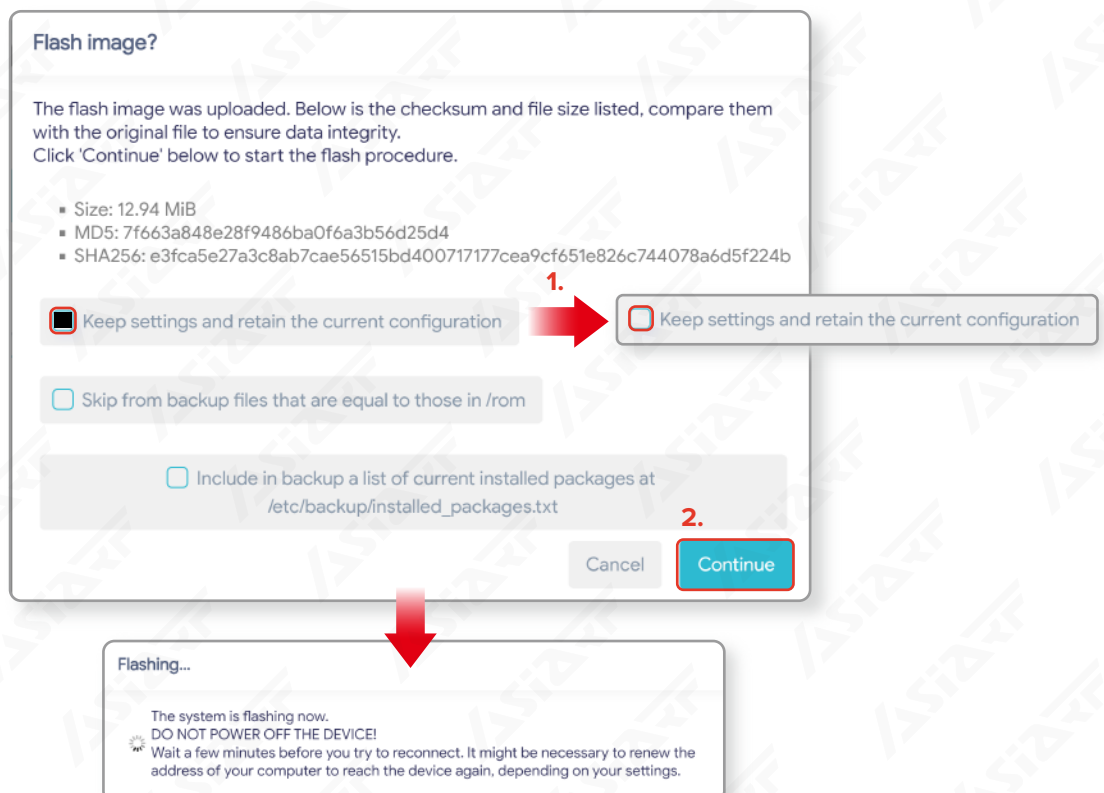 "Keep settings and retain the current configuration" already selected. Make sure to deselect this option by removing the checkmark. After that, click on "Continue" to start the upgrade.

Flash image?

The flash image was uploaded. Below is the checksum and file size listed, compare them with the original file to ensure data integrity.
Click 'Continue' below to start the flash procedure.

- Size: 12.94 MiB
- MD5: 7f663a848e28f9486ba0f6a3b56d25d4
- SHA256: e3fca5e27a3c8ab7cae56515bd400717177cea9cf651e826c744078a6d5f224b

1.

☑ Keep settings and retain the current configuration   →   ☐ Keep settings and retain the current configuration

☐ Skip from backup files that are equal to those in /rom

☐ Include in backup a list of current installed packages at
/etc/backup/installed_packages.txt

2.

Cancel   Continue

Flashing...

The system is flashing now.
DO NOT POWER OFF THE DEVICE!
Wait a few minutes before you try to reconnect. It might be necessary to renew the address of your computer to reach the device again, depending on your settings.

Once the flashing process on the screen completes, the device will automatically restart. Please refer to section 2.2 for guidance on the indicator lights during boot-up. The reboot process usually takes about four minutes.

Remember, the default IP address is "192.168.3.3." The default Wi-Fi 2.4 GHz SSID is "AsiaRF_HaLow-xxxx," with the password "12345678."

06

FAQ & Troubleshooting

6.1 Issue: System Reboot and Reset (Return to factory default)

Before proceeding, prepare a pin to press the RST (Reset) button:

- **System Reboot:**
  A quick press and release will reboot the device, which then restarts automatically.

- **System Reset:**
  A 5-second press will trigger a factory reset, restoring the default settings. Be aware that all previous settings will be erased; you will need to reconfigure your device.

For details on the LED indicators, refer to Section 2.2.

6.2 Issue: Unable to access the settings webpage

When your Wi-Fi HaLow Gateway is set to operate in Bridge Mode, either as an AP or a Client, and you are unable to access the settings webpage from your PC or mobile device, please follow these steps:

1. To successfully access the settings page, ensure that the IP address of your PC or mobile device is on the same network segment as the Wi-Fi HaLow Gateway you wish to control.

    > *Remember, our default IP address is "192.168.3.3," with the default Wi-Fi 2.4 GHz SSID being "AsiaRF_HaLow-xxxx" and the password "12345678."*

2. If access remains blocked, try resetting the device.

3. If the issue persists, please contact the **AsiaRF technical support hotline at +886 2 2940-7880, extension 18**, or contact our sales team via email at *sales@asiarf.com.*

6.3 Issue: The AP SSID does not appear in the scan list

When you're configuring your device in Client mode and the AP SSID does not appear in the scan list, you might want to try the following:

1. Attempt to **press the 'scan' button multiple times** to refresh the list.

2. **It's possible that the Client Gateway and the AP Gateway are set to different regions.** Please verify and adjust both to the same region, then press 'Scan' again. This should make the AP SSID appear in your configuration screen.

3. If the issue still isn't resolved, **consider resetting your device.**

4. If the issue persists, please contact the **AsiaRF technical support hotline at +886 2 2940-7880, extension 18**, or contact our sales team via email at *sales@asiarf.com.*