



Quick Installation Guide

ECH502

Wireless Hotspot Gateway

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FCC CAUTION

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.

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

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

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

This device is restricted to **indoor** use when operated in the 5.15 to 5.25 GHz frequency range.

- ※ FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **28cm** between the radiator & your body.

CE CAUTION

Hereby, Edgecore Networks Corporation declares that the radio equipment type ECH502 is in compliance with Directive 2014/53/EU.

Frequency Range and Transmit Power

Frequency range (MHz)	Max. transmit power (dBm)
2412-2472	20 dBm
5150-5350	23 dBm
5500-5700	30 dBm

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK

This device is restricted to indoor use.

Input Power

Power from PoE: IEEE802.3af

Operation Temperature

0°C (32°F) to 50°C (122°F)

Model - ECH502

The device has been tested and passed the requirements of the following standards, and hence fulfills the EMC and safety requirements of RED within the CE marking requirement.

- Radio: EN 300 328 V2.1.1, EN 301 893 V2.1.1
- EMC: EN 301 489-1 V2.1.1, EN 301 489-17 V3.1.1
- EMC: EN 55032:2015 + AC:2016 Class B, EN 55024:2010 + A1:2015 including the followings:
EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,
EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11

Safety: EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013

Caution

- This declaration is only valid for configurations (combinations of software, firmware, and hardware) provided and supported by 4ipnet Inc. The use of software or firmware not provided and supported by 4ipnet Inc. may result in the equipment no longer being compliant with the regulatory requirements.
- Requirements in
AT/BE/BG/CZ/DK/EE/FR/DE/IS/IE/IT/EL/ES/CY/LV/LI/LT/LU/HU/MT/NL/NO/PL/PT/RO/SI/SK/TR/FI/SE
/CH/UK/HR. 5150MHz ~ 5350MHz is for indoor use only.
- In order to ensure compliance with the exposure recommendations to electromagnetic fields, the device should be used at a minimum distance of 28cm from the body.

Taiwan NCC Statement

根據 NCC 低功率電波輻射性電機管理辦法 規定：

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

在 5.25 ~ 5.35 赫茲頻帶內操作之無線資訊傳輸設備，限於室內使用。

For UNII 產品 (5GHz WLAN/WIFI)

[警語內容]

使用此產品時應避免影響附近雷達系統之操作。

MPE [警語]

「電磁波曝露量 MPE 標準值 $1\text{mW}/\text{cm}^2$ ，本產品使用時建議應距離人體 28cm」

減少電磁波影響，請妥適使用。

Preface

This Quick Installation Guide provides instructions on how to install the ECH502 and to get the network up and running with basic configurations.

Package Contents

1. ECH502 x 1
2. Quick Installation Guide x 1
3. Mounting Kit x 1
4. Power Adapter (12V) x 1

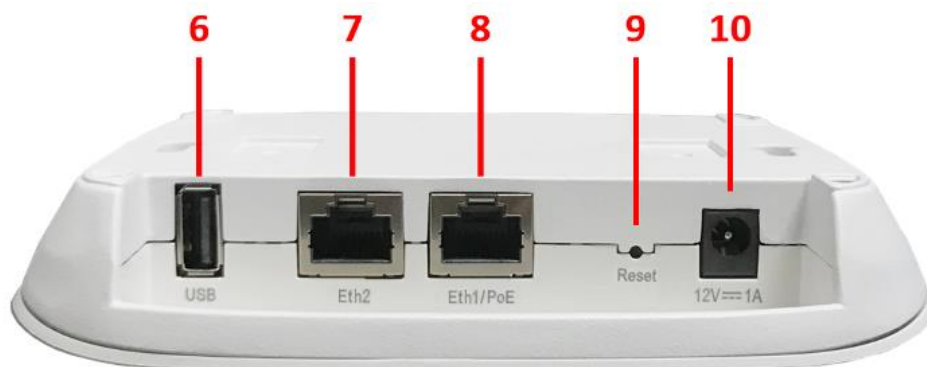


It is recommended to keep the original packing material for possible future shipment when repair or maintenance is required. Any returned product should be packed in its original packaging to prevent damage during delivery.



Hardware Overview



ECH502 Front View



ECH502 Side View

No.	Item Name	Description
1	 LED	Power / Status LED Indicator: (a) Steady green light indicates a proper connection to a power source and normal operation. (b) The LED Indicator will start blinking when the Reset button is pressed: (b1) if pressed and hold for less than 5 seconds - the LED will blink slowly, indicating that the ECH502 is restarting. (b2) if pressed and hold for more than 5 seconds - the LED will blink slowly for the first 5 seconds and then blink quickly, indicating the ECH502 is resetting to factory default settings and restarting.
2	2G-WiFi LED	2.4 GHz Wi-Fi LED Indicator: blinking indicates that the ECH502 is sending or receiving traffic on 2.4 GHz band.
3	5G-WiFi LED	5 GHz Wi-Fi LED Indicator: blinking indicates that the ECH502 is sending or receiving traffic on 5 GHz band.
4	Eth1/PoE LED	Eth1/PoE port status LED Indicator: turned on when traffic is passing through Eth1/PoE port.
5	Eth2 LED	Eth2 port status LED Indicator: turned on when traffic is passing through Eth2 port.
6	USB Port	USB interface reserved for future use.
7	Eth2 Port	RJ-45 port for Ethernet connection with downlink devices.
8	Eth1/PoE Port	RJ-45 port for uplink Ethernet connection and for PoE in. It is the default port that can pass all VLAN traffic to an uplink device (e.g. VLAN switch).
9	Reset Button	Press and release the button quickly (for less than 5 seconds) to restart the ECH502; press and hold it for more than 5 seconds to reset the ECH502 to factory default settings.
10	12V  1 A	The power socket to attach the power adapter.

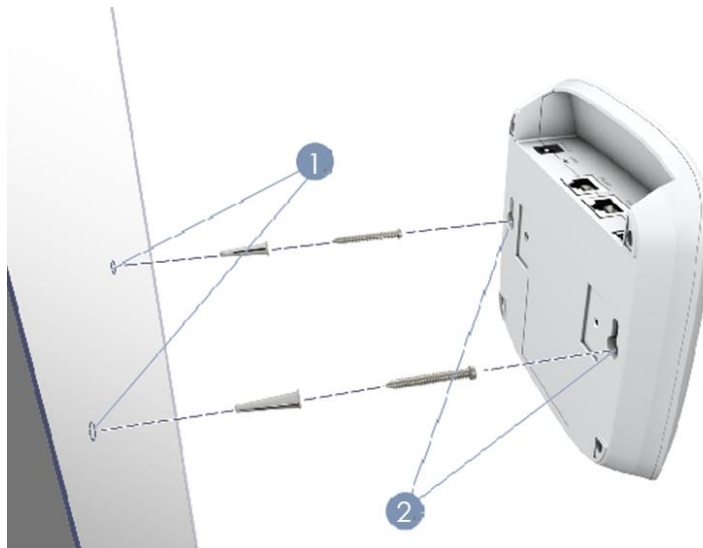
Hardware Installation

Please follow the steps below to install the hardware of the ECH502:

1. Mount the ECH502.

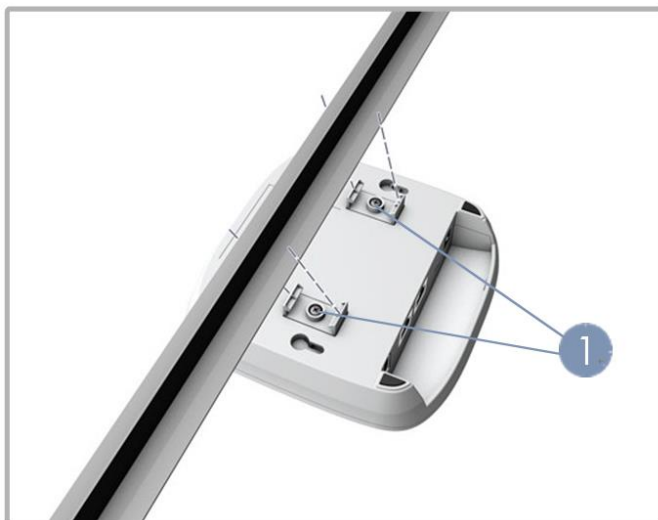
(a) Mounting on a Wall

1. Set two screws in the wall 128 mm (5.0 in.) apart.
2. Slide ECH502's wall mounting slots down onto the screws so that the unit is secure.



(b) Mounting on a Ceiling T-Bar

1. Use the included screws to attach two ceiling-mount T-bar clips to the back of the ECH502.
2. Push the ECH502 onto the ceiling T-bar until it clicks securely in place.



2. Connect the ECH502 to the wired network.

Connect the Eth1/PoE port of the ECH502 to a switch in the existing wired LAN network with an Ethernet cable.

3. Power on the ECH502.

There are two ways to supply power over to the ECH502.

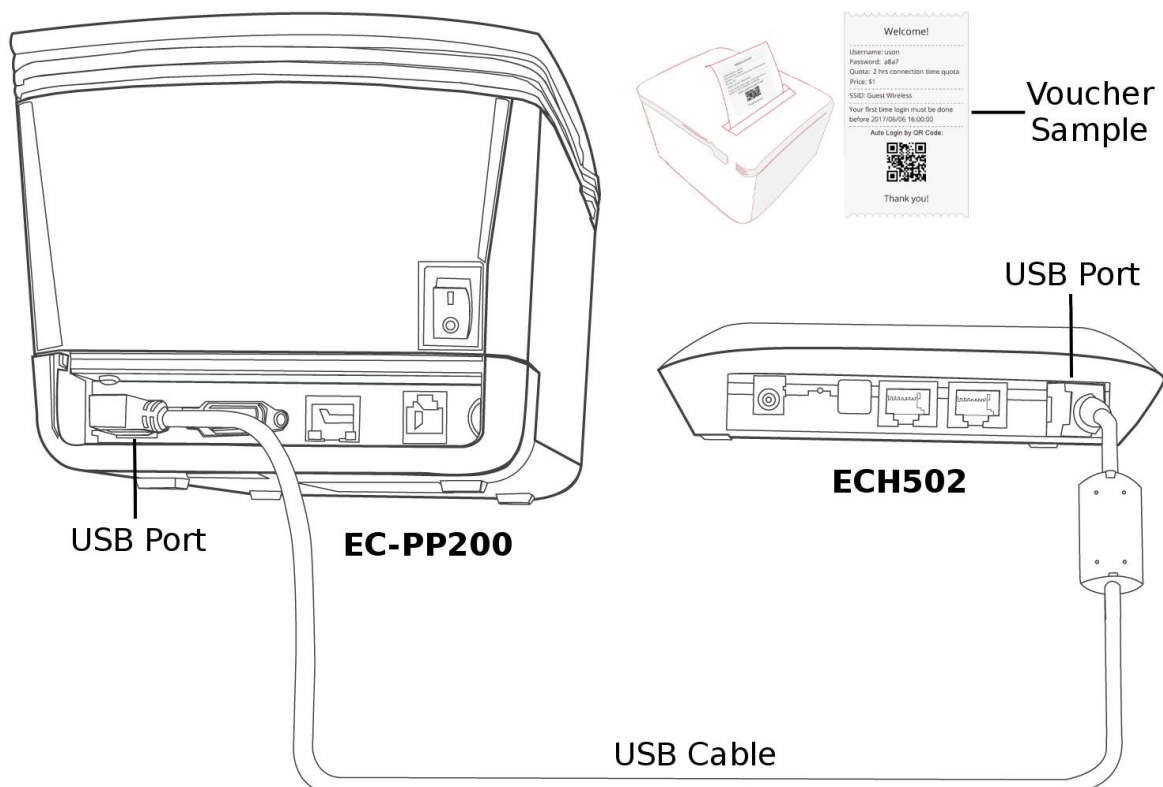
- Connect an IEEE 802.3af-compliant PSE device (e.g. a PoE switch) to the Eth1/PoE port of the ECH502 with an Ethernet cable.
- Connect the 12V/1A power adapter to the DC power jack.



- Using a different power adapter may damage this system.
- To verify the wired connection between the ECH502 and you switch / router, please also check the LED indicator of the respective network devices.

4. Connect the ECH502 to the EC-PP200 (voucher printer).

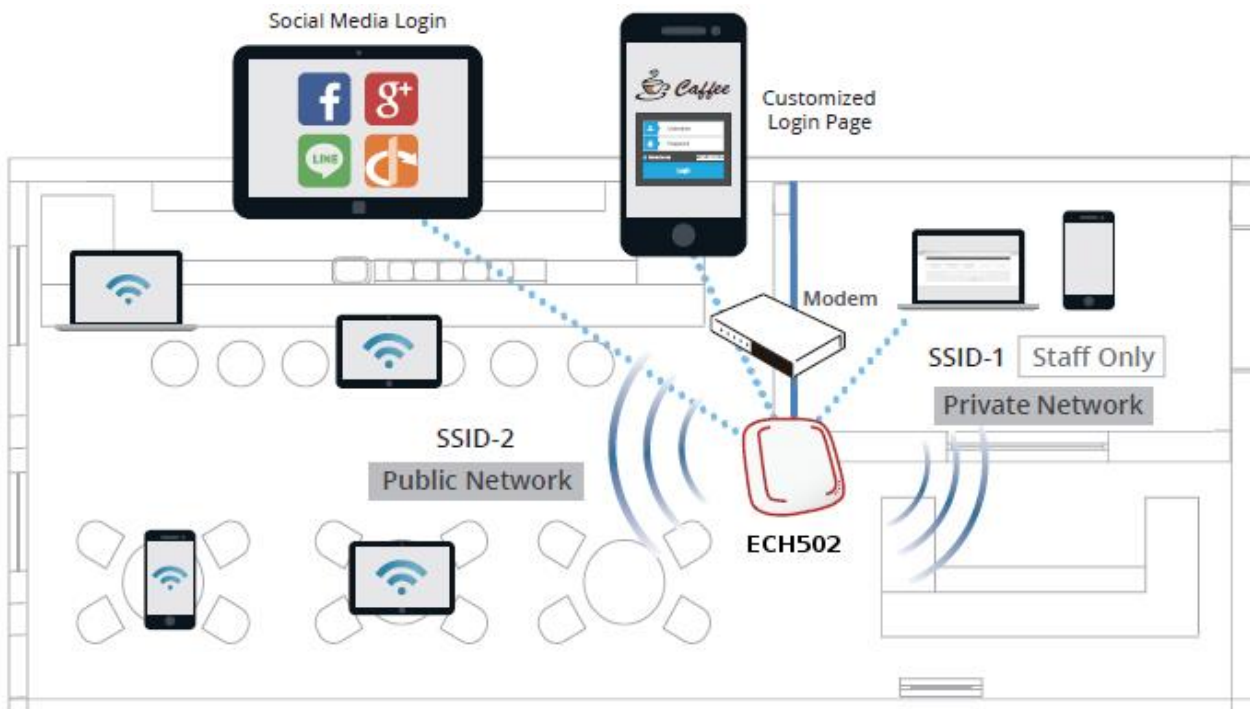
If an operator needs to create an On-Demand guest account and print out the account, the EC-PP200 voucher printer should be physically connected to the ECH502; connect the EC-PP200 to the ECH502 via the USB cable, as shown in the diagram below.



Getting Started

< System Overview >

Edgecore ECH502 is an all-in-one Wireless Hotspot Gateway that enables easy operations of Wi-Fi hotspot venues. It features concurrent dual-band 802.11ac Wave 2 technology, with two 2x2:2 MU-MIMO radios that can each transmit data to multiple clients simultaneously. The following network diagram is a deployment example where the ECH502 is able to provide free or charged Internet access at this site.



< Web Management Interface >

The ECH502 has a web-based interface for configuration and management. Follow the steps below to access the Web Management Interface (WMI) for the first time.

1. Connect your administrative PC directly to the Eth2 port of the ECH502 via an Ethernet cable. The PC should be assigned an IP Address in the same subnet as the ECH502's (192.168.1.0/255.255.0.0).

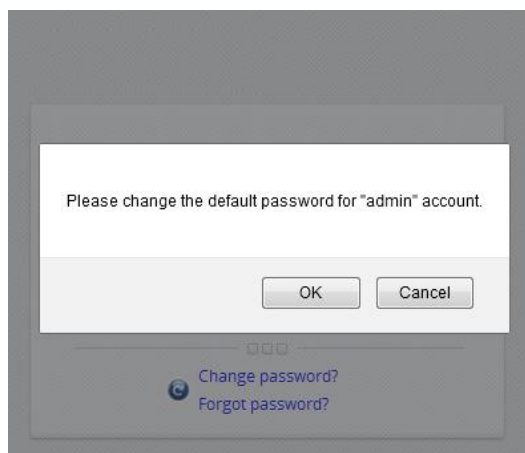
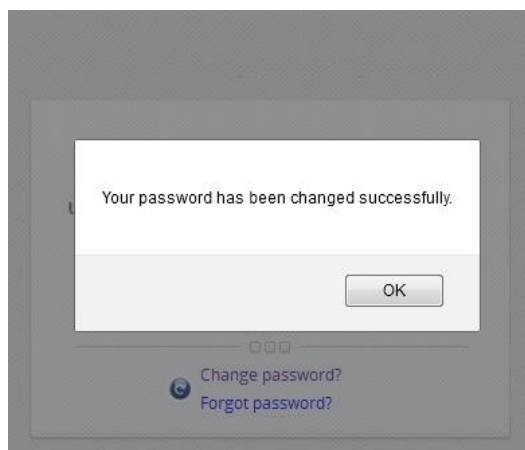


- Launch a web browser and enter the IP Address of Default Service Zone (192.168.1.254) in the address field.



Log in using default Username (**admin**) and Password (**admin**) on the Administrator Login Page:

- After a successful login, the system prompts for the administrator to change password for security reasons. The new password needs to be at least 6 characters long and include at least one alphabet and one number.

4. Welcome to System Main Menu page will appear after a successful login with the new password.



Welcome to System Main Menu

This Administrative Web Interface allows you to set various networking parameters, to customize network services, to manage user accounts and to monitor user status.

Functions are separated into the following main categories:
[System](#), [Users](#), [Network](#), [Utilities](#), and [Status](#).

The 'Document' icon on the top right is a [Quick Start Guide](#) that provides a quick step-by-step guide on setting up your system.



In some cases, you may need to access the WMI of the ECH502 from its WAN side (i.e. using the WAN IP address of the ECH502). By default, this is not allowed for security reasons; in this situation, go to Management IP Address List (SYSTEM > General > Management IP Address List) and check 'Active' on the first entry (0.0.0.0/0.0.0.0), as shown in the screenshot below.

No.	Active	IP Address/Segment
1	<input checked="" type="checkbox"/>	0.0.0.0/0.0.0.0
2	<input type="checkbox"/>	
3	<input type="checkbox"/>	

Basic Configurations

< Quick Start >

Follow the steps described in **Quick Start Guide** (the button on the top right corner) to set up the ECH502 with basic configurations for the first time:



Welcome to System Main Menu

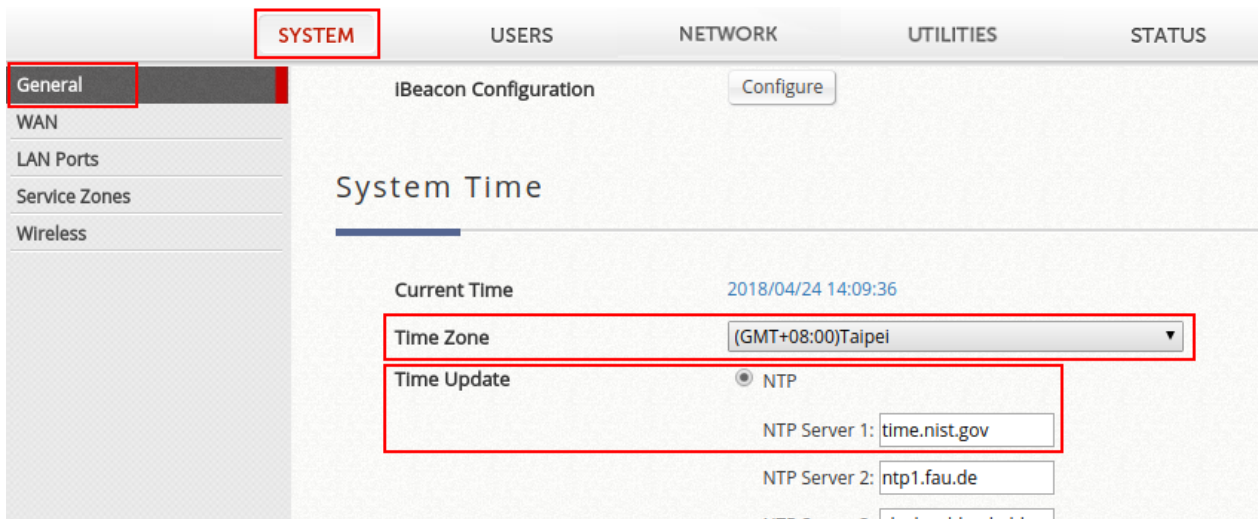
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The '[Document](#)' icon on the top right is a [Quick Start Guide](#) that provides a quick step-by-step guide on setting up your system.

Step 1: Configure System Time (Main Menu > System > General > System Time)

- Select a time zone and a valid NTP server to set up the system time.
- Click **Apply** to continue.



Step 2: Enable WAN Interface (Main Menu > System > WAN)

- Select a proper type of uplink connection for WAN interface: **Static**, **Dynamic**, **PPPoE**, or **USB Dongle** (connection via 4G USB Modem). In this example, the WAN interface is set to use static IP settings.
- Click **Apply** to save the settings.

General

WAN

LAN Ports

Service Zones

Wireless

SYSTEM USERS NETWORK UTILITIES STATUS

Main > System > WAN

WAN Configuration

Interface Type

☒ Static (Use the following IP settings)

IP Address: *

Subnet Mask: *

Default Gateway: *

Preferred DNS Server: *

Alternate DNS Server:

☐ Dynamic (IP settings assigned automatically)

☐ PPPoE

☐ USB Dongle

Step 3: Enable Service Zone "SZ1" and an SSID in 5 GHz (Main Menu > System > Service Zones >> SZ1)

- Select "Enabled" status for this Service Zone.
- Check "RF Card B (5G)" to enable the SSID in the 5 GHz band.
- Click **Apply** to save the settings.

	SYSTEM	USERS	NETWORK	UTILITIES	STATUS
General	Main > System > Service Zone				
WAN	Service Zone Settings				
LAN Ports					
Service Zones					
Wireless					

Status	Service Zone Name	IP Address	Band	SSID	Security Type	VLAN Tag	Default Auth. Option	Network Alias	DHCP Pool
<input checked="" type="radio"/>	Default	192.168.1.254	N/A	N/A	N/A	N/A	Disabled	N/A	192.168.1.1 ~ 192.168.1.100
<input checked="" type="radio"/>	SZ1	172.21.0.254	Disabled	SSID 1	Open	101	Disabled	N/A	172.21.0.1 ~ 172.21.0.100
<input type="radio"/>	SZ2	172.22.0.254	Disabled	SSID 2	Open	102	Server 1	N/A	172.22.0.1 ~ 172.22.0.100
<input type="radio"/>	SZ3	172.23.0.254	Disabled	SSID 3	Open	103	Server 1	N/A	172.23.0.1 ~ 172.23.0.100
<input type="radio"/>	SZ4	172.24.0.254	Disabled	SSID 4	Open	104	Server 1	N/A	172.24.0.1 ~ 172.24.0.100
<input type="radio"/>	SZ5	172.25.0.254	Disabled	SSID 5	Open	105	Server 1	N/A	172.25.0.1 ~ 172.25.0.100

Basic Settings

Service Zone Status ☒ Enabled ☐ Disabled

Service Zone Name

Network Interface 101 * (Range: 1 ~ 4094)

Tag-based Isolation ☒ Inter-VLAN Isolation ☐ Clients Isolation ☐ None

Note: When set to "None", the port on a switch connecting to the gateway's LAN port may be shut down if 'Loop Protection' is enabled on the switch and there are 2 VLANs belonging to this Service Zone.

Operation Mode ☒ NAT ☐ Router

IP Address * Subnet Mask *

Network Alias List

This list defines other IP Addresses (range) that are routable in this Service Zone.

DHCP ☒ Enabled ☐ Disabled

Wireless Settings

Operating Interface ☐ RF Card A (2.4G) ☒ RF Card B (5G)

Service Zone SSID *

VAP Configuration

Step 4: Enable Authentication for "SZ1" (Main Menu > System > Service Zones >> SZ1)

- "Enable" authentication for this Service Zone.
- Click **Apply** to save the settings.

Authentication Settings

Authentication

☒ Enable
 ☐ Disable
 ☐ Suspend

When Authentication is set to Suspended, users would see a suspend message from General Settings.

Access Permission and Authorization

Configure

Portal URL

☒ Specific
 ☐ Original
 ☐ None

*

(e.g. http://www.example.com)

MAC Authentication

☐ Enabled
 ☒ Disabled

RADIUS Authentication using MAC address

PPP Authentication

☐ Enabled
 ☒ Disabled

WISPr Settings

Configure

Authentication Options

Auth. Option	Auth. Database	Postfix	Default	Enabled
Server 1	LOCAL	local	<input checked="" type="radio"/>	<input checked="" type="checkbox"/>
Server 2	RADIUS	radius	<input type="radio"/>	<input checked="" type="checkbox"/>
Server 3	RADIUS	radius-secondary	<input type="radio"/>	<input checked="" type="checkbox"/>
On-Demand	ONDEMAND	ondemand	<input type="radio"/>	<input checked="" type="checkbox"/>
Guest	FREE	N/A	<input type="radio"/>	<input type="checkbox"/>

Step 5: Add A Local User Account (Main Menu > Users > Authentication Servers > Server 1 >> LOCAL)

- Click **Configure** to enter "Local User List".
- Click **Add** and enter *Username* (e.g. "testuser") and *Password* (e.g. "testuser") to create a new local account.

Local User List

No	Status	Username	Password	MAC	Group	Activation	Expiration	Remark
(Total:0/2000) First Prev Next Last Go to Page <input type="text"/> (Page:1/1) Row per Page: <input type="text"/>								



Username	Password	MAC Address	Group	Account Span	Remark
testuser	*****		Group 1	<input type="checkbox"/> Enable/Disable Time Limit	
			Group 1	<input type="checkbox"/> Enable/Disable Time Limit	
			Group 1	<input type="checkbox"/> Enable/Disable Time Limit	



No	Status	Username	Password	MAC	Group	Activation	Expiration	Remark
1	Valid	testuser	testuser		Group 1			

(Total:1/2000) [First](#) [Prev](#) [Next](#) [Last](#) Go to Page (Page:1/1) Row per Page:

Step 6: Restart for all the settings to take effect (Main Menu > Utilities > Restart)

- Enter the reason (e.g. "Basic Configurations" in the screenshot), which will be present in the System Log.
- Click **Apply** to restart the system.

The screenshot shows the 'Restart' configuration page. The breadcrumb trail is 'Main > Utilities > Restart'. The left sidebar contains links to 'Administrator Accounts', 'Backup & Restore', 'Certificates', 'Network Utilities', 'Restart' (highlighted), and 'System Upgrade'. The main area has a title 'Restart' and a subtitle 'Restart the system In Regular Mode'. Below this is a text input field labeled 'Reason for Restart' with the value 'Basic Configurations'. At the bottom right are 'Apply' and 'Cancel' buttons.

- The system restart process is completed when the following **Administrator Login Page** appears.

The screenshot shows the 'Administrator Login Page'. It has a 'LOGIN' header. Below it are 'Username' and 'Password' input fields. A 'Log In' button is to the right of the password field. Below the input fields are links for 'Change password?' and 'Forgot password?'. At the bottom right is a language dropdown menu set to 'English'.

< Verify Setup with User Login >

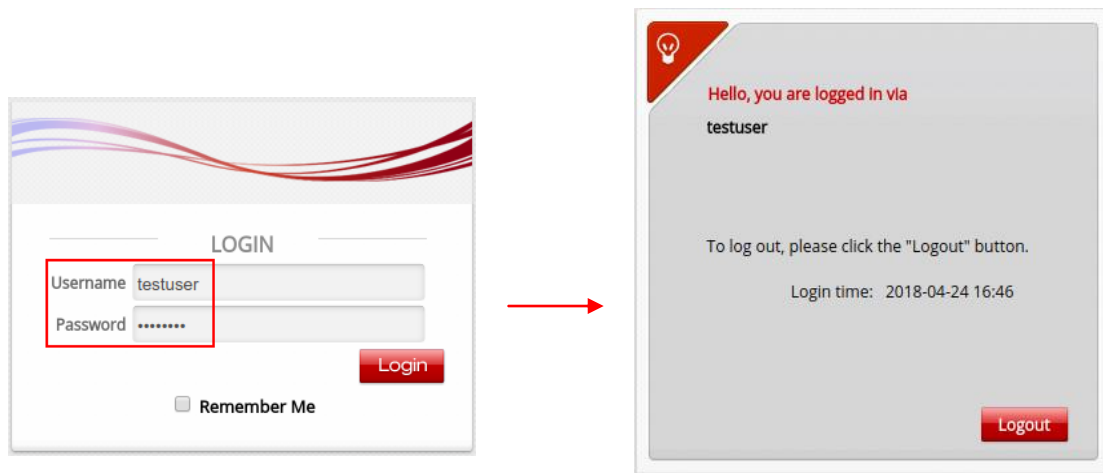
Follow the steps below to verify the basic configurations completed in the **Quick Start** section:

Step 1: Associate a laptop PC or a smartphone to "SSID 1" wirelessly. The device will obtain an IP address automatically within the SZ1 of the ECH502.

Step 2: Launch a web browser and enter any HTTP website URL. The default **User Login Page** will appear.

Step 3: Enter the *Username* and *Password* of a local user account previously created (e.g. Username: *testuser* and Password: *testuser*); then Click **Login**.

Step 4: The Login Success Page appears after the user is successfully authenticated by the system.



Well Done! The ECH502 is now up and running with the basic configurations.

►► Note:

1. The ECH502 supports multiple authentication server options including built-in local user database and external authentication servers.
2. The complete username format is **userid@postfix**, where the "postfix" string stands for the back-end authentication server. Therefore, match-up between username and back-end authentication server is based on the "postfix" string in the complete username.
3. Normally, users have to enter the complete username (e.g. **testuser@local**) during login. However, the postfix can be omitted when the postfix matches the default authentication server option. For example, LOCAL database is enabled as the default authentication option; therefore, in this case, you can simply enter **testuser** as the username to log in.