

Harmony GTU Open Box Wireless LAN Setting Manual

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Safety Information

Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

 DANGER
DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION
CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE
NOTICE is used to address practices not related to physical injury.

Please Note

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A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Book

Document Scope

This manual describes how to configure the wireless LAN when using the Harmony GTU Open Box (hereafter referred to as “Open Box”) with the Harmony GTU Display Module wireless LAN model (hereafter referred to as “wireless LAN model”).

Validity Note

This documentation is valid for Open Box and the wireless LAN model.

The technical characteristics of the devices described in the present document also appear online. To access the information online, go to the Schneider Electric home page www.se.com/ww/en/download/.

The characteristics that are described in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.

Registered Trademarks

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Product names used in this manual may be the registered trademarks owned by the respective proprietors.

Related Documents

You can download the manual related to Open Box and the wireless LAN model, such as the hardware and software manuals, from our website at www.se.com.

Overview

Introduction

Introduction

When using Open Box and the wireless LAN model, start up the WLAN Configuration screen from your Internet browser to define various settings for the wireless LAN connection.

You can use the wireless LAN model with either Access Point or Client mode.

Also, the **Smart Wireless Setup** is available where you can easily define wireless LAN settings.

Wireless LAN Interface Specifications

Standards	IEEE802.11b/IEEE802.11g/IEEE802.11n
Frequency bandwidth	2.4 GHz
Channel bandwidth	20 MHz
Channel	Access Point mode*1: 1...11 ch Client mode*2: <ul style="list-style-type: none"> • North America US: 1...11 ch • Japan JP: 1...13 ch • Europe EU: 1...13 ch • Korea KR: 1...13 ch • China CN: 1...13 ch • Taiwan TW: 1...11 ch
Transmission speed	IEEE802.11b: max 11 Mbps IEEE802.11g: max 54 Mbps IEEE802.11n: max 72.2 Mbps
Transmission Distance*3	Distance varies depending on application software and surrounding environment
Action mode	Client mode/Access Point mode
Communication mode	Infrastructure
Network authentication	Open, WPA-Personal, WPA2-Personal
Data encryption	WEP (128 bit) (Open)*4 AUTO/TKIP (WPA-Personal) AES (WPA2-Personal)
Maximum client connections	10*5

*1 In Access Point mode, IEEE802.11d is not supported.

*2 If the surrounding access points do not support IEEE802.11d, channels are limited from 1 to 11 ch.

*3 You can connect only from the front of the display. The connection angle and distance depend on your operating environment, applications in use, and target communication devices. Conduct an operation test, including directivity, in the operating environment before use.

*4 In Access Point mode, WEP is not supported.

*5 Request for the eleventh connection will be denied. The maximum number of connections you can have with reasonable communication performance depends

on the operating environment, applications in use, and target communication devices. Conduct an operation test, including the number of connections, in the operating environment before use.

NOTE: Stealth feature is not supported.

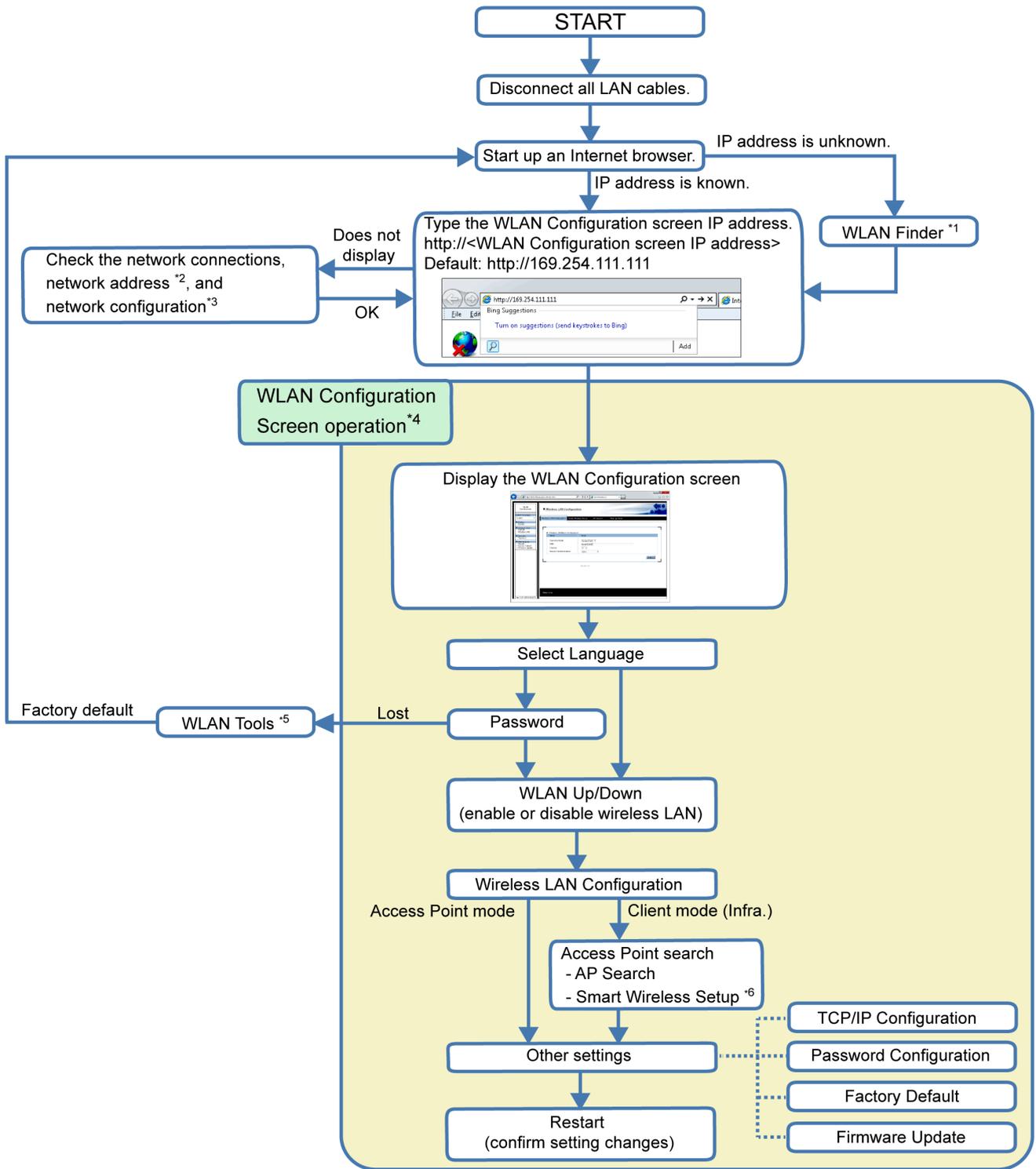
⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Do not use wireless communication to control machinery.
- Wireless communication system design must take into account the possibility of communication interference.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Workflow



*1 If the IP address is unknown, you can use the WLAN Finder to search for the IP address. You can conduct a search when the Open Box wireless LAN network adapter and the wireless LAN model are on the same network. WLAN Finder is in the following location or Start menu. After either detaching all LAN cables or disabling LAN, run using an account with Administrator rights.

Windows® 10 IoT Enterprise model:

C:\Program Files\Schneider Electric\Utilities\WLAN

Windows® Embedded Standard 7 model:

C:\Utility\exe\WLAN

*2 Refer to Starting WLAN Configuration Screen, page 13.

*3 If the WLAN Configuration screen does not display, even though there may not be any other issues, you should consider using the WLAN Tools to reset the wireless LAN settings to the factory default. WLAN Tool is in the following location or Start menu. Run using an account with Administrator rights.

Windows® 10 IoT Enterprise model:

C:\Program Files\Schneider Electric\Utilities\WLAN

Windows® Embedded Standard 7 model:

C:\Utility\exe\WLAN

*4 For information on each wireless LAN setting screen, refer to Wireless LAN Settings, page 12.

*5 If you lose your password, you need to reset the wireless LAN settings to the factory default settings by using the WLAN Tools.

*6 When using this setting to connect over the wireless LAN with equipment from other manufacturers, use only WPS (Wi-Fi Protected Setup) supported equipment. Please note that this does not mean that all WPS-enabled products can be connected.

Network Authentication and Data Encryption

Selection of either manual setup or **Smart Wireless Setup** restricts the combination of network authentication and data encryption methods available.

Access Point Mode

Network authentication	Data encryption	Manual setup	Smart Wireless Setup
OPEN	None	✓	✓
	WEP	–	–
WPA-Personal	AUTO	✓	–
	TKIP	✓	–
	AES	–	–
WPA2-Personal	AUTO	–	–
	TKIP	–	–
	AES	✓	✓

Client Mode

Network authentication	Data encryption	Manual setup	Smart Wireless Setup
OPEN	None	✓	✓

Network authentication	Data encryption	Manual setup	Smart Wireless Setup
	WEP	✓	–
WPA-Personal	AUTO	✓	✓
	TKIP	✓	✓ ^{*1}
	AES	–	✓ ^{*1}
WPA2-Personal	AUTO	–	✓ ^{*2}
	TKIP	–	✓ ^{*2}
	AES	✓	✓

*1 Wireless LAN Setting screen shows WPA-Personal/AUTO.

*2 Wireless LAN Setting screen shows WPA2-Personal/AES.

Wireless LAN Settings

IP Address

IP Address for Equipment

Overview

Before setting up a wireless LAN connection for the Open Box and wireless LAN model, understand the IP address states for the equipment below.

Access Point Mode

Open Box (number 1 in the figure below), wireless LAN module (2), and other wireless LAN clients (4) have distinct IP addresses. When using the wireless LAN model with Access Point mode, the wireless LAN module (2) and the WLAN Configuration screen (3) have the same IP address.

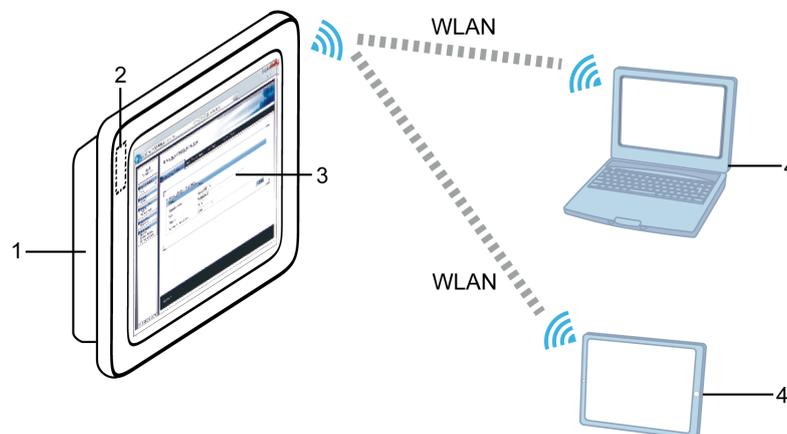
To set up the IP address of the Open Box (1), use the Windows® **Control Panel** on the Open Box.

To set up the same IP address for both the wireless LAN module (2) and WLAN Configuration screen (3), refer to *TCP/IP Configuration*, page 18.

To set up IP addresses of other wireless LAN clients (4), use their corresponding configuration tools.

By defining the information of the wireless LAN module (2: Access Point) in the configuration tool of wireless LAN clients (4), you can set up a wireless LAN connection between the Open Box (1) and other wireless LAN clients (4).

NOTE: The network address of the Open Box (1), wireless LAN module (2), and other wireless LAN clients (4) must be the same.



- 1 Open Box
- 2 Wireless LAN module (built into the wireless LAN model)
- 3 WLAN Configuration screen
- 4 Other wireless LAN clients

Client Mode

Open Box (number 1 in the figure below), WLAN Configuration screen (3), an external access point (4) and other wireless LAN clients (5) have distinct IP addresses. When using the wireless LAN model in Client mode, the Open Box (1) and wireless LAN module (2) have the same IP address.

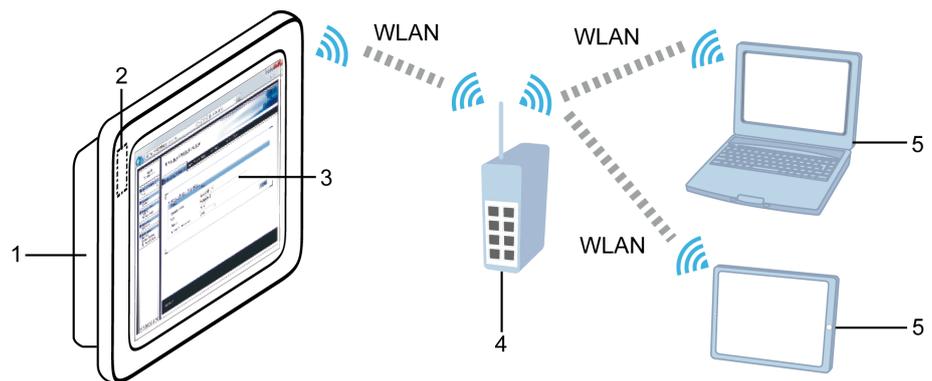
To set up the same IP address for both the Open Box (1) and wireless LAN module (2), use the Windows® **Control Panel** on the Open Box.

To set up the IP address of the WLAN Configuration screen (3), refer to *TCP/IP Configuration*, page 18.

To set up IP addresses of an external access point (4) and other wireless LAN clients (5), use their corresponding configuration tools.

By defining the information of an external access point (4: Access Point) in *Wireless LAN Configuration*, page 20 in the WLAN Configuration screen (3) and other wireless LAN clients (5), you can set up a wireless LAN connection between the Open Box (1) and other wireless LAN clients (5).

NOTE: The network address of the Open Box (1), WLAN Configuration screen (3), an external access point (4), and other wireless LAN clients (5) must be the same.



- 1 Open Box
- 2 Wireless LAN module (built into the wireless LAN model)
- 3 WLAN Configuration screen
- 4 External access point
- 5 Other wireless LAN clients

Starting WLAN Configuration Screen

Startup Method

1. Connect the Open Box and the wireless LAN model.
2. Disconnect all LAN cables.
3. Turn ON the wireless LAN model to display the Windows® desktop.
4. Windows® 10 IoT Enterprise model:

Click **Start > Settings > Network and Internet > Status > Change adapter options**.

Windows® Embedded 7 Standard model:

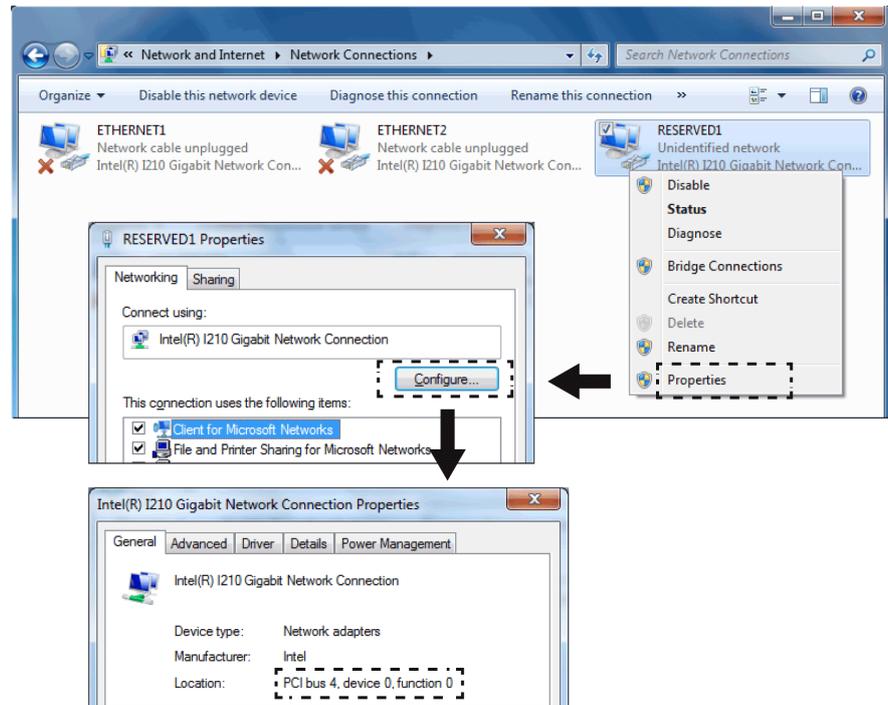
Click **Start > Control Panel > Network and Internet > Network and Sharing Center > Change adapter settings**.

5. For HMIG5U

On the Open Box, check that the status of the **Local Area Connection** property of “**LAN9500A USB 2.0 to Ethernet 10/100 Adapter**” (the wireless LAN network adapter) is connected.

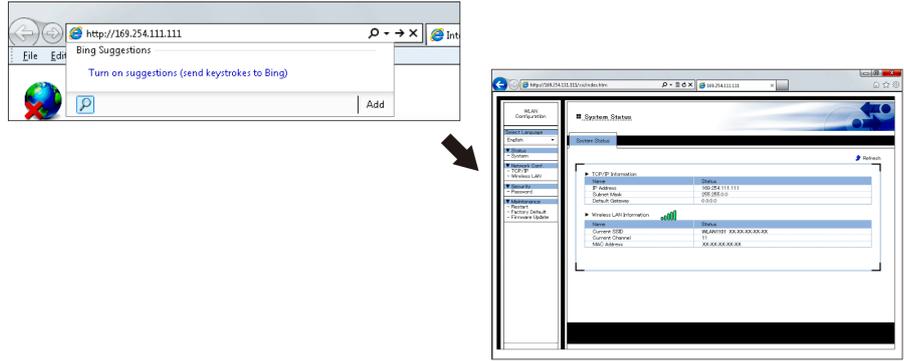
For HMIG5U2/HMIG5U2●

Check all the displayed **Local Area Connection** properties. Click **Properties > Networking > Configure**, and the connection showing “**PCI bus 4. device 0. function 0**” in the **General** tab's **Location** field is the Open Box Wireless LAN network adapter. Check that its **Local Area Connection** status is connected.



6. Start up an Internet browser.

- In the address bar, type **http://<WLAN Configuration screen IP address>** (default IP address is 169.254.111.111) to display the WLAN Configuration screen.



NOTE: If the WLAN Configuration screen IP address has already been edited using **TCP/IP Configuration**, page 18, enter the edited IP address. To display the WLAN Configuration screen with the new IP address, the WLAN Configuration screen and Local Area Connection network addresses must be the same.

Example: **Emphasized** part is the same

	WLAN Configuration screen	Local Area Connection
IP Address	192.168.1.1	192.168.1.2
Subnet Mask	255.255.0.0	255.255.0.0

Additionally, if the edited IP address is unknown, you can use the WLAN Finder to search for a WLAN Configuration screen IP address. WLAN Finder is in the following location or Start menu. After either detaching all LAN cables or disabling LAN, run using an account with Administrator rights.

Windows® 10 IoT Enterprise model:

C:\Program Files\Schneider Electric\Utilities\WLAN

Windows® Embedded Standard 7 model:

C:\Utility\exe\WLAN

Setting Menu

Introduction

The setting menu displays on the left side of the WLAN Configuration screen. Select the menu to define the required settings.

NOTE: To enable any changes to the settings, you need to restart the Wireless LAN. After you complete changes in the WLAN Configuration screens, from the menu area click **Restart**.

NOTICE

EQUIPMENT DAMAGE

Do not turn off this product:

- While updating settings.
- While this product is restarting after the firmware settings have been updated.
- While resetting this product to the factory default settings.

Failure to follow these instructions can result in equipment damage.

Select Language

Defines the display language. You can select either English or Japanese. The default display language is English.

The screenshot shows a web browser window with the URL `http://169.254.111.111/ssi/index.htm`. The browser title is `169.254.111.111`. The page content is as follows:

WLAN Configuration

Select Language

English

▼ Status

 - System

▼ Network Conf.

 - TCP/IP

 - Wireless LAN

▼ Security

 - Password

▼ Maintenance

 - Restart

 - Factory Default

 - Firmware Update

System Status

System Status Refresh

▶ TCP/IP Information

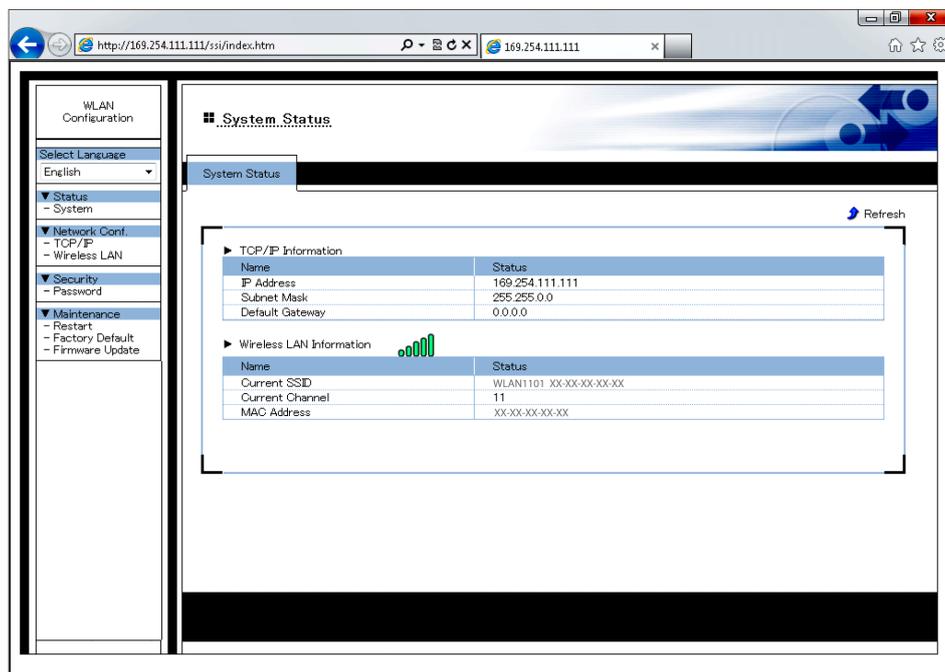
Name	Status
IP Address	169.254.111.111
Subnet Mask	255.255.0.0
Default Gateway	0.0.0.0

▶ Wireless LAN Information Signal strength icon

Name	Status
Current SSID	WLAN1101 XX-XX-XX-XX-XX
Current Channel	11
MAC Address	XX-XX-XX-XX-XX

System Status

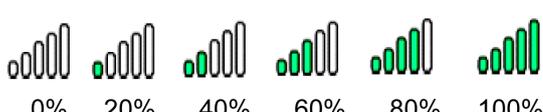
Displays the wireless LAN status.



TCP/IP Information

Item	Description
IP Address	Displays the allocated IP address.
Subnet Mask	Displays the subnet mask in use.
Default Gateway	Displays the default gateway in use.

Wireless LAN Information

Item	Description
Radio signal strength	Displays the strength of the wireless radio signal, from 0% to 100%. 
Current SSID	Displays the SSID and BSSID in use. When not connected to the network, nothing is displayed.
Current Channel	Displays the channel in use.
MAC Address	Displays only in Access Point mode.

Login

If a password is set up, you need to login to display the WLAN Configuration screen. From the menu select **Login**, then enter the password in the **Login** screen.

NOTE:

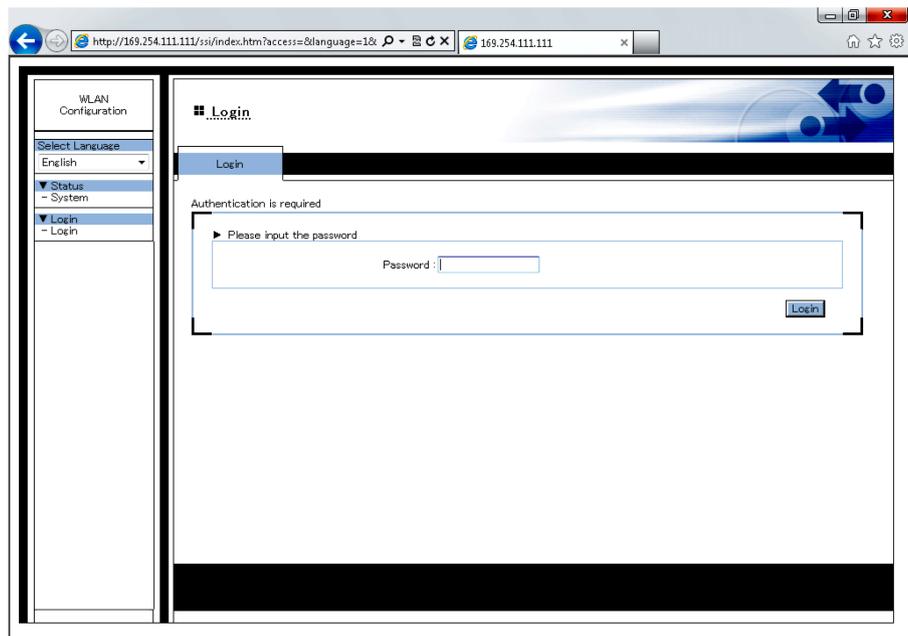
- For information on password settings, see Password Configuration, page 24.
- Remember your password. If you lose your password, you need to reset the wireless LAN settings to the factory default settings by using the WLAN Tools. WLAN Tools are in the following location or Start menu. Run using an account with Administrator rights.

Windows® 10 IoT Enterprise model:

C:\Program Files\Schneider Electric\Utilities\WLAN

Windows® Embedded Standard 7 model:

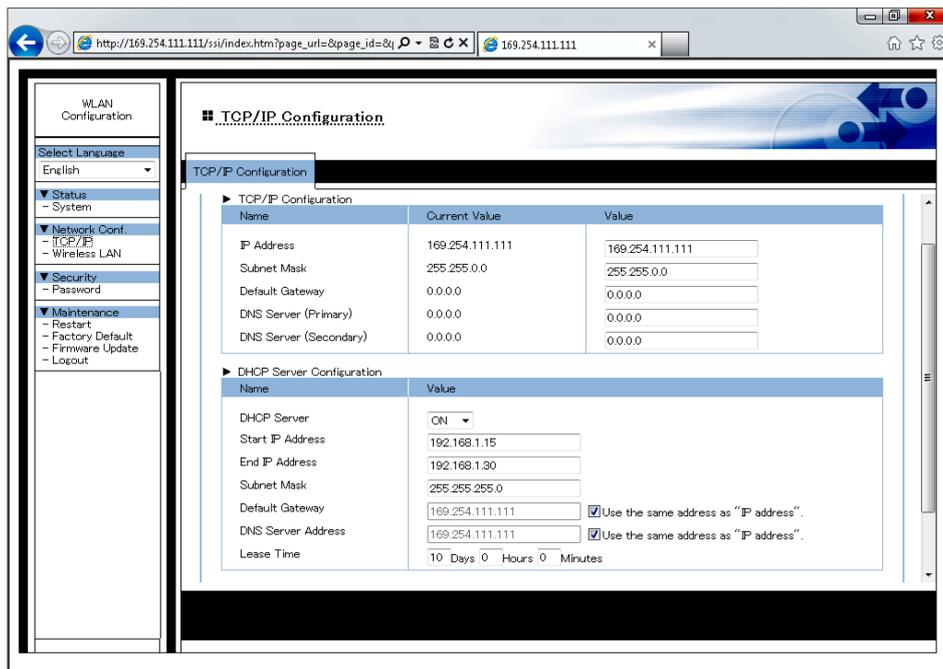
C:\Utility\exe\WLAN



TCP/IP Configuration

Defines the TCP/IP settings. After making your changes, touch the **Submit** button.

NOTE: After making any changes, restart the wireless LAN by selecting **Restart**, page 25.



TCP/IP Configuration

Item	Description
IP Address	Defines the IP address.
Subnet Mask	Defines the subnet mask. Enter 0.0.0.0 to automatically use the subnet mask associated with the IP address.
Default Gateway	Defines the default gateway. Enter 0.0.0.0 (default) to disable the gateway.
DNS Server (Primary)	Defines the DNS primary server.
DNS Server (Secondary)	Defines the DNS secondary server.

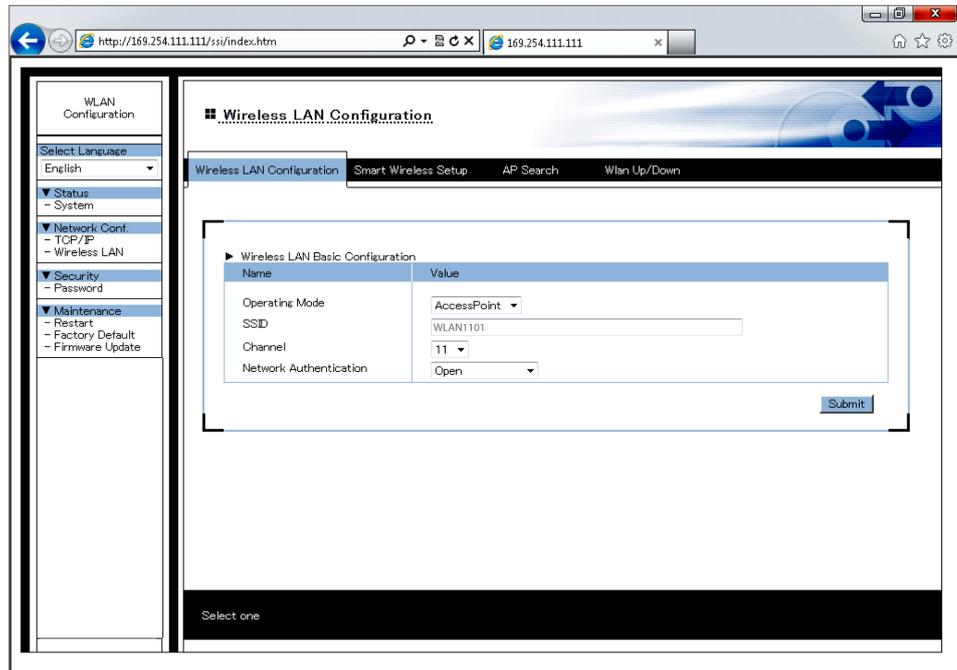
DHCP Server Configuration

Item	Description
DHCP Server	Enables or disables the DHCP server.
Start IP Address	Defines the start of IP addresses to allocate.
End IP Address	Defines the end of IP addresses to allocate.
Subnet Mask	Sets up the subnet mask for allocated IP addresses. Enter 0.0.0.0 (default) to automatically use the subnet mask associated with the allocated start IP addresses.
Default Gateway	Defines the default gateway. Enter 0.0.0.0 (default) to disable the gateway.
Use the same address as "IP address" (Automatically sets the default gateway)	Select the check box to define the default gateway with the same address as the IP Address property.
DNS Server Address	Defines the DNS server address. Enter 0.0.0.0 (default) to disable the DNS server.
Use the same address as "IP address" (Automatically sets the DNS server)	Select the check box to define the DNS server with the same address as the IP Address property.
Lease Time	Defines the lease period. The factory default setting is 10 days, 0 hours and 0 minutes. If you enter 0 days, 0 hours, and 0 minutes, it is recognized as the default 10 days.

Wireless LAN Configuration

Defines settings required for a wireless LAN connection. After making your changes, touch the **Submit** button.

NOTE: After making any changes, restart the wireless LAN by selecting **Restart**, page 25.



Wireless LAN Basic Configuration

Item	Description
Operating Mode	Defines the connection method to the wireless LAN. You can select either [Access Point] for Access Point mode, or [Infra.] for Network Authentication and Data Encryption, page 10.
SSID	Defines the SSID for the wireless LAN.
Channel	Defines the channel used by the wireless LAN. Set up the same communication channel for equipment to communicate with one another. Available only in Access Point mode.
Network Authentication	Defines the authentication method when connecting to a wireless LAN access point.

WEP Configuration

The following is available when **Operation Mode** is [Infra.], and **Network Authentication** is [Open].

Item	Description
WEP	Turns WEP encryption ON or OFF.

The following are available when **WEP** is ON.

Item	Description
Key Index	Defines the key index for WEP encryption.
WEP Key 1	Defines the encryption key for WEP encryption.
WEP Key 2	
WEP Key 3	
WEP Key 4	

WPA/WPA2

The following are available when **Network Authentication** is either [WPA-Personal] or [WPA2-Personal].

Item	Description
Encryption Mode	Select [AUTO], [TKIP], or [AES]. NOTE: When [WPA-Personal] is selected, the default value is [TKIP]. When [WPA2-Personal] is selected, the default value is [AES].
Pre-Shared Key	Defines the key when using TKIP or AES.

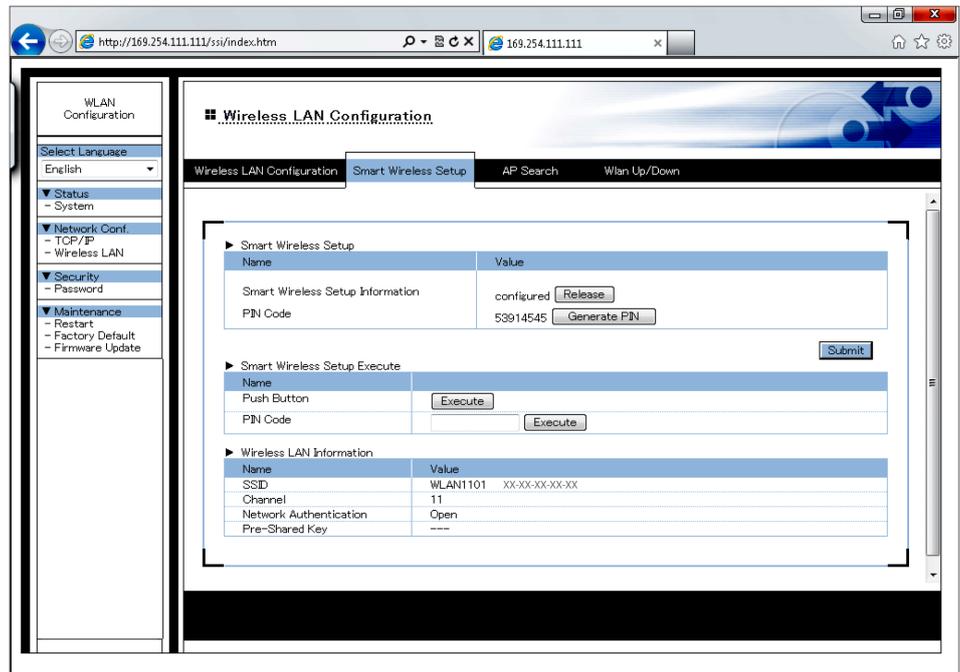
Smart Wireless Setup

A simpler method to set up the wireless LAN. When running **Smart Wireless Setup**, touch the **Submit** button.

NOTE:

- When using this setting to connect over the wireless LAN with equipment from other manufacturers, use only WPS (Wi-Fi Protected Setup) supported equipment.
- After making any changes, restart the wireless LAN by selecting **Restart**, page 25.

Access Point Mode



Smart Wireless Setup

Item	Description
Smart Wireless Setup Information	Displays the status of the smart wireless setup. Touch the Release button to reset to un-configured.
PIN Code	Displays the PIN code of the wireless LAN model. You can generate a new PIN code with the Generate PIN button.

Smart Wireless Setup Execute

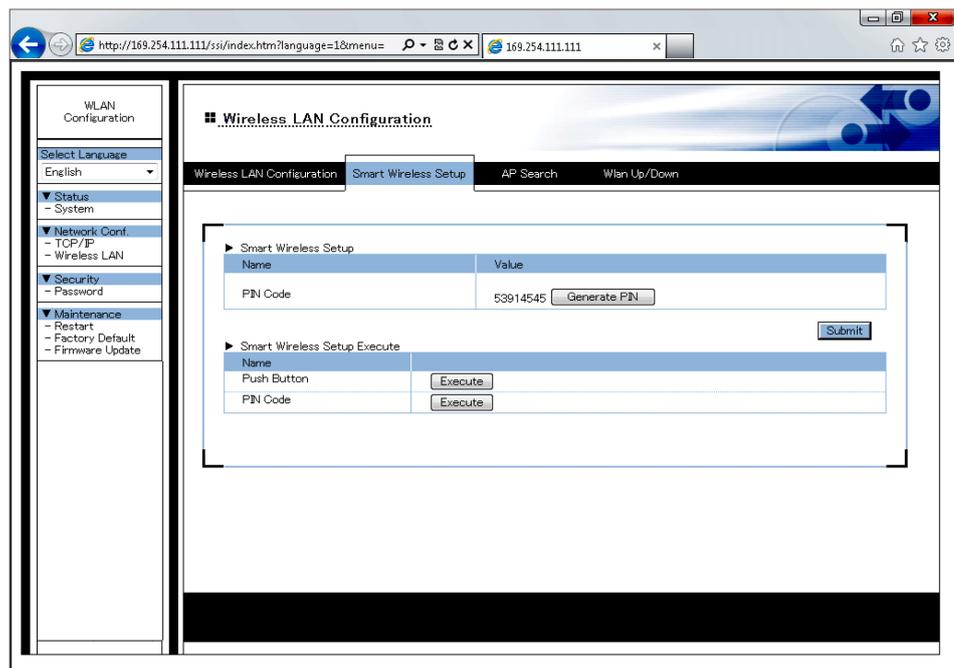
Item	Description
Push Button	Touch the Execute button to set up the wireless LAN using the Push Button method.
PIN Code	Enter the client PIN code and touch the Execute button to set up the wireless LAN using the PIN Code method.

NOTE:

- The timeout time for this setting is about 120 seconds.
- When using the **Push Button** method to set up the wireless LAN and the push button method is run simultaneously on two or more other equipment, an error will occur.

Wireless LAN Information

Item	Description
SSID	Displays the current SSID.
Channel	Displays the current communication channel.
Network Authentication	Displays the current authentication and encryption method.
Pre-Shared Key	Displays the current pre-shared key.

Client Mode**Smart Wireless Setup**

Item	Description
PIN Code	Displays the PIN code of the wireless LAN model.

Smart Wireless Setup Execute

Item	Description
Push Button	Touch the Execute button to set up the wireless LAN using the Push Button method.
PIN Code	Enter the client PIN code and touch the Execute button to set up the wireless LAN using the PIN Code method.

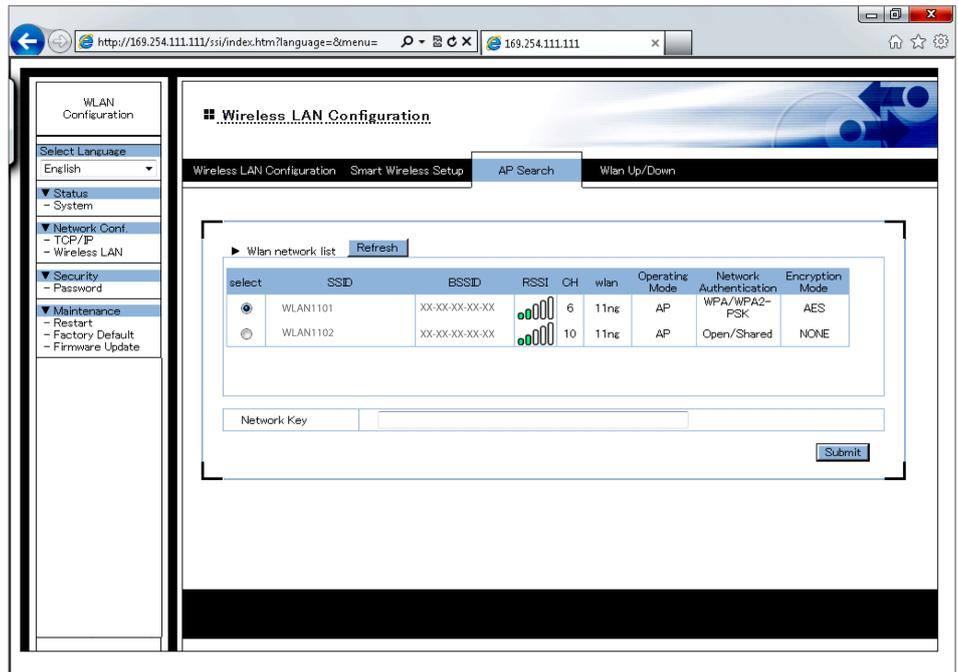
NOTE:

- The timeout time for this setting is about 120 seconds.
- When using the **Push Button** method to set up the wireless LAN and the push button method is run simultaneously on two or more other equipment, an error will occur.

AP Search

When in Client mode, use this function to find surrounding access points. Select the access point, enter the network key if necessary, then touch the **Submit** button.

NOTE: After making any changes, restart the wireless LAN by selecting **Restart**, page 25.



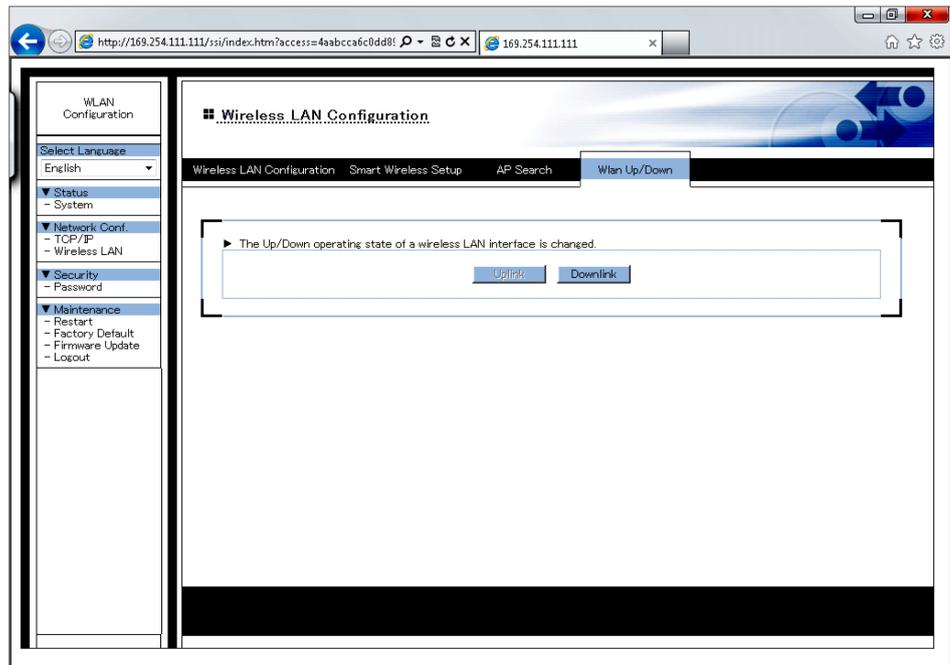
Item	Description
Refresh	Runs a search for access points.
Network Key	Enter the access point encryption key.

NOTE: The wireless LAN model does not support equipment with Shared-key authentication. Additionally, for access points identified in a search, the wireless LAN model cannot differentiate between Open authentication and Shared-key authentication. Therefore, Open authentication will be used for the access point even though it displays [Open/Shared].

WLAN Up/Down (enable or disable wireless LAN)

Enables (Uplink) or disables (Downlink) the wireless LAN network connection.

NOTE: Restart is not required to enable setting changes.



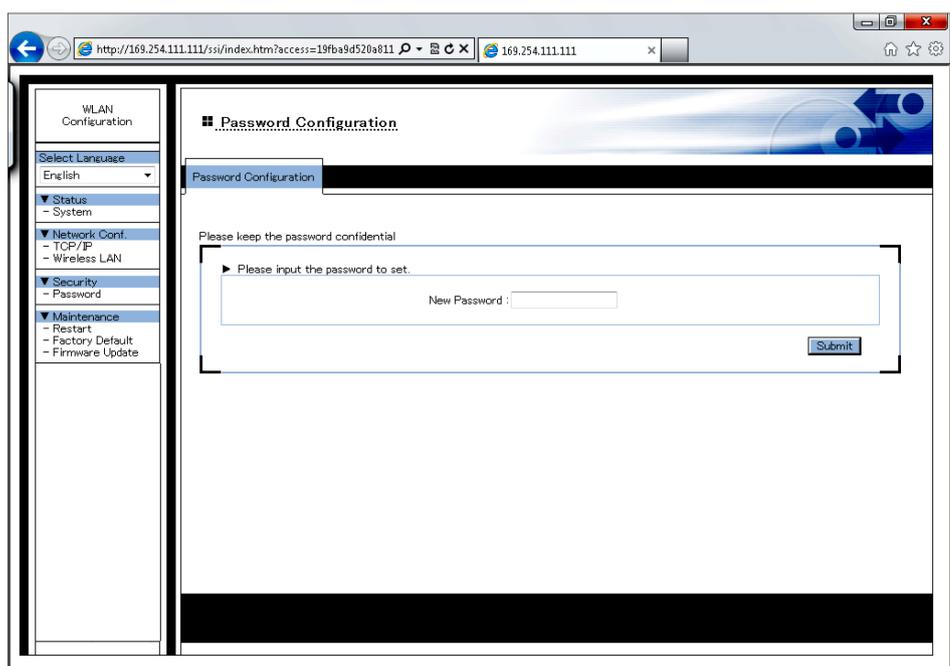
Item	Description
Uplink	Enables the wireless LAN network connection.
Downlink	Disables the wireless LAN network connection.

NOTE: A grayed out button indicates that item is selected.

Password Configuration

Set up the login password to enter the WLAN Configuration screen. After entering the password, touch the **Submit** button.

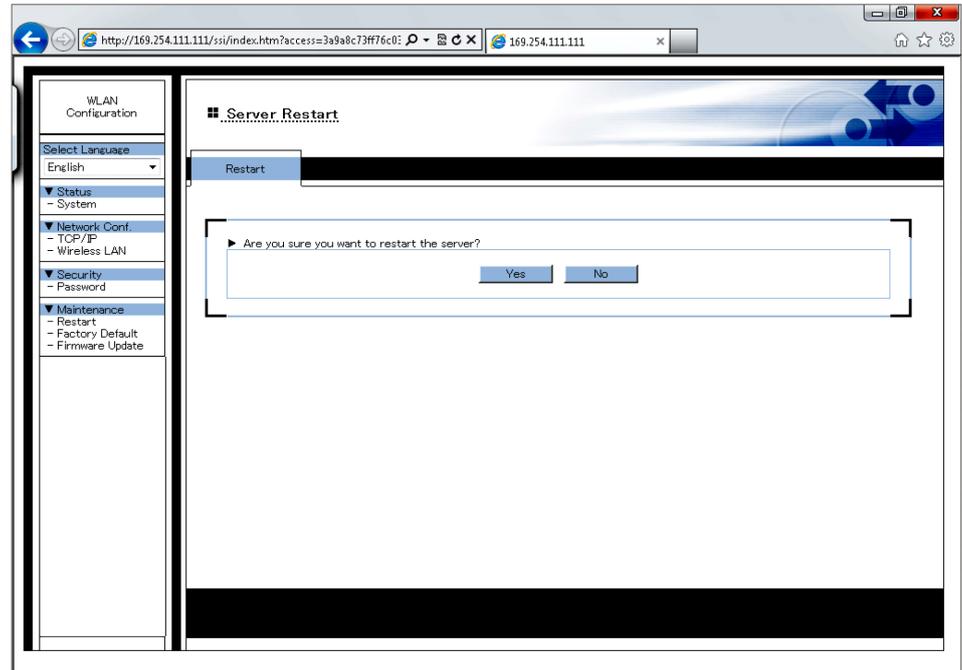
NOTE: After making any changes, restart the wireless LAN by selecting **Restart**, page 25.



Item	Description
New Password	Sets up the password.

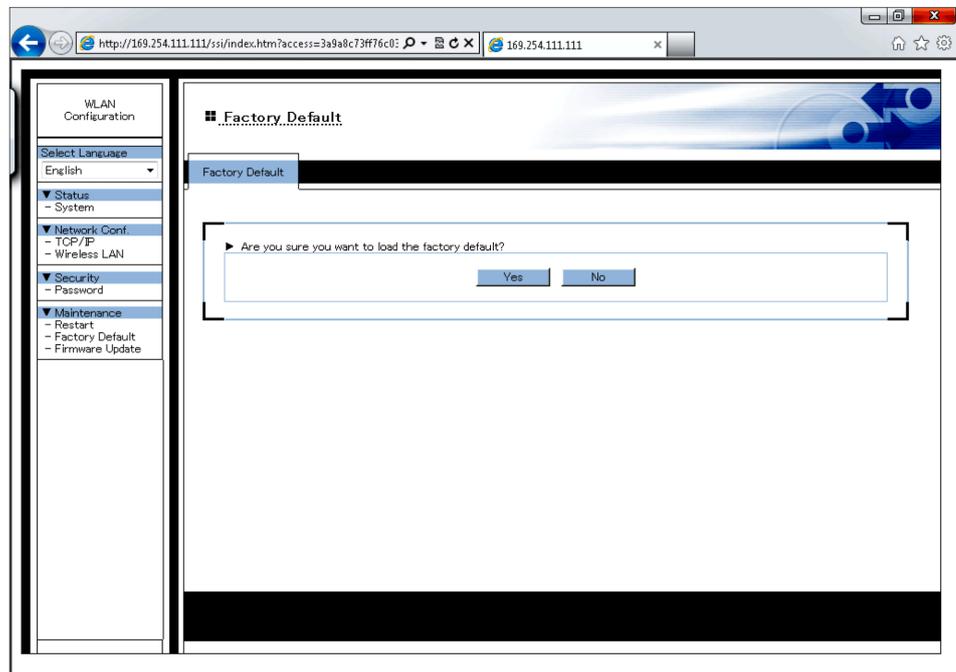
Restart

Restarts the wireless LAN. Touch the **Yes** button to restart and confirm setting changes.



Factory Default

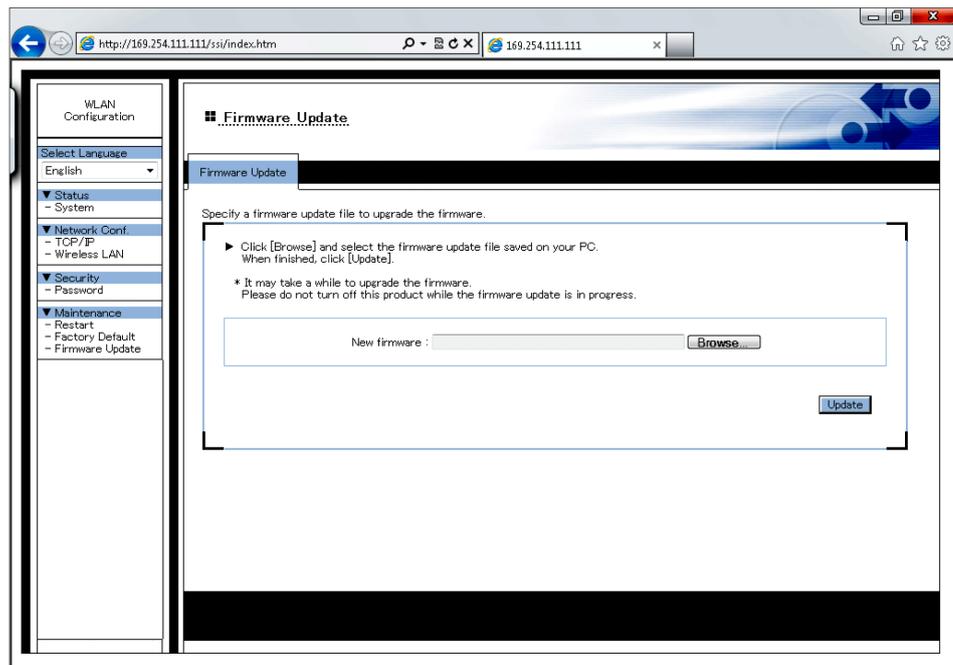
Returns all settings to the factory default. Touch the **Yes** button and the restart browser message will display. Touch the **Yes** button to restart the wireless LAN.



Firmware Update

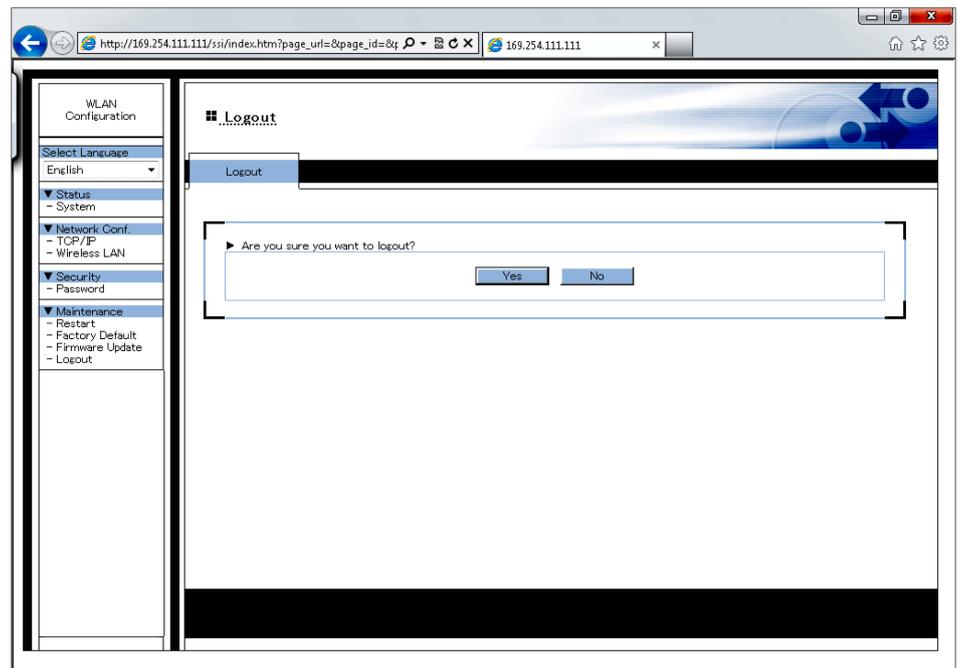
Updates the firmware with the latest files on the website. Define the storage location for the downloaded firmware and touch the **Update** button.

www.se.com



Logout

Displays only when a password is set up. Logging out returns you to the **System Status** screen.



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