emplus

User Manual

WAP655-C

Version 1.0

IMPORTANT

ToinstallthisAccessPoint
Please refer to the
QuickInstallationGuideincluded in the product packaging

Chapter1

ProductOverview

Introduction

Key Features

· Built-in Turbo Engine with Quad-Core powerful chipset to process multiple tasks for driving and enhancing performance effectively.

· Support 802.11ac Wave 2.0 technology to enhance bandwidth and connecting speed.

· Dual radio 2x2 802.11 ac/a/b/g/n AP, support up to 867 Mbps in 5GHz frequency band and 400 Mbps in 2.4GHz frequency band (with 2ss/VHT40 clients)

· RF circuity is designed and tuned for improved transmit and receive wireless coverage.

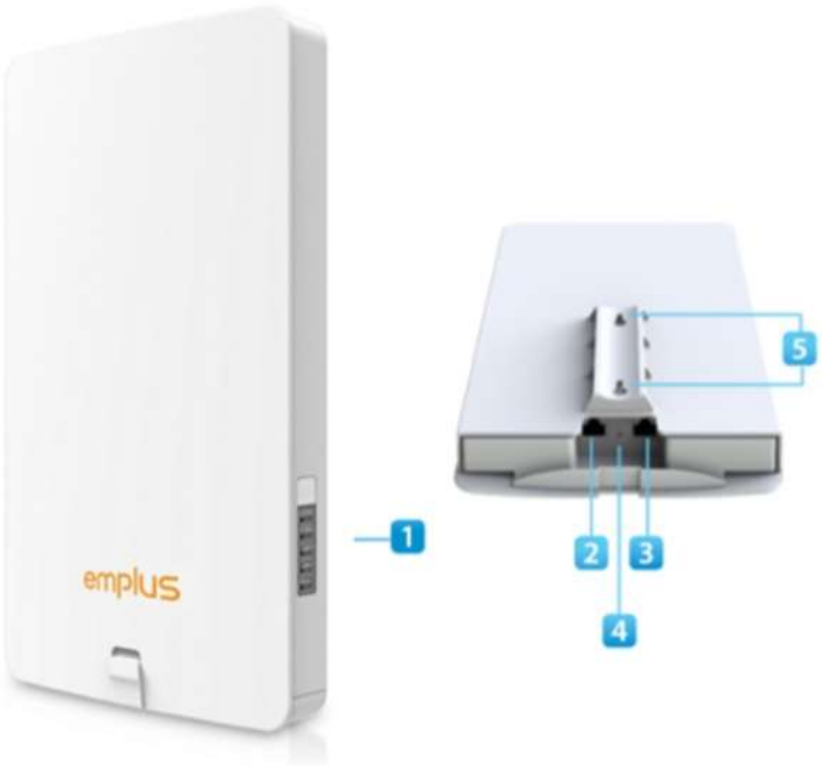
· Compliance with 802.3at or Proprietary 48-54V PoE Input for flexible installation.

· Operation mode options for different requirements.

The 802.11ac high performance Access Point with MU-MIMO technology for high-density use on multiple applications

Emplus Wireless Access Point solution is designed for versatile outdoor applications. To meet various requirements for different networking environment, Emplus provides the most flexible and effective solutions as your expectations.
The state-of-the-art 802.11ac and MU-MIMO technology brings high performance on connecting speed and bandwidth. WAP655-C equips with two powerful RF interfaces which support up to 867 Mbps in 5GHz frequency band and 400 Mbps in 2.4GHz frequency band (with 2ss/VHT40 clients).
Features

Physical Interface (WAP655-C)



1. **LED Indicators:** LED lights for Power, LAN Port 1, LAN Port 2, 2.4 GHz Connection and 5 GHz Connection.
2. **LAN Port 2 :** Ethernet port for RJ-45 cable.
3. **LAN Port 1**(802.3at/48V PoE Input): Ethernet port for RJ-45 cable.
4. **Reset Button:** Reset / Reboot Device
5. **Mounting Holes:** Using the provided screw set or pole mounting ring

Physical & Environment

Power Source	PoE: compatible with 802.3af/at
Internal High Gain Antenna (Peak Gain)	~3.55dBi 2.4GHz antennas ~5.7dBi 5GHz antennas
Interface	1 x 10/100/1000Mbps Ethernet Port with 802.3af/at PoE 1x 10/100/1000Mbps Ethernet Port 1 x reset button
Dimensions (W x D x H)	300x181x34.1 mm
Mounting	Pole and Wall mount
Environment	Operating temperature: -20°C~65°C Operating humidity: 0%~90% typical
Technical Specifications	Storage temperature: -30°C~80°C

Applications

Wireless LAN (WLAN) products are easy to install and highly efficient. The following list describes some of the many applications made possible through the power and flexibility ofWLANs:

- Difficult-to-Wire Environments: There are many situations where wires cannot be installed, deployed easily, or cannot be hidden from view. Older buildings, sites with multiple buildings, and/or areas that make the installation of a Ethernet-based LAN impossible, impractical or expensive are sites where WLAN can be a network solution.
- Temporary Workgroups: Create temporary workgroups/networks in more open areas within a building; auditoriums, amphitheaters classrooms, ballrooms, arenas, exhibition centers, or temporary offices where one wants either a permanent or temporary Wireless LAN established.
- The Ability to Access Real-Time Information: Doctors/Nurses, Point-of-Sale Employees, and/or Warehouse Workers can access real-time information while dealing with patients, serving customers, and/or processing information.
- Frequently Changing Environments: Set up networks in environments that change frequently (i.e.: Show Rooms, Exhibits, etc.).
- Small Office and Home Office (SOHO) Networks: SOHO users require a cost-effective, easy, and quick installation of a small network.
- Training/Educational Facilities: Training sites at corporations or students at universities use wireless connectivity to exchange information between peers and easily access information for learning purposes.

Chapter2

Before YouBegin

Computer Settings

Windows XP/Windows 7/Windows 8/Windows 10

In order to use the Access Point, you must first configure the TCP/IPv4connectionofyourWindowsOScomputersystem.

1a. Click the Start button and open the Control Panel

WindowsXP

Windows7

1b. Move your mouse to the lower right hot corner to display the Charms Bar and select the Control Panel in Windows 8OS.

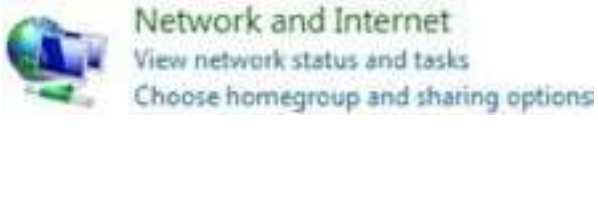
Windows 8

1c. In Windows10, click Start to select All APP stoenter the folder of Windows system for selecting Control Panel.

Windows 10

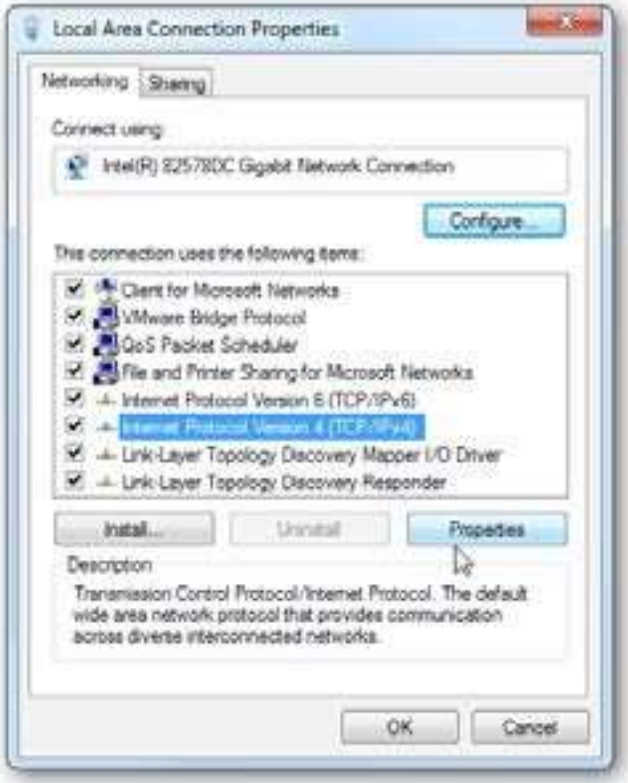
2a. In Windows XP, click Network Connections.

2b.In Windows7/Windows8/Windows10, click View Network Status and Tasks in the Network and Internetsection, then select Change adapter settings.



3. Right click on Local Area Connection and select Properties.

4. Select Internet Protocol Version 4 (TCP/IPv4) and then select Properties.



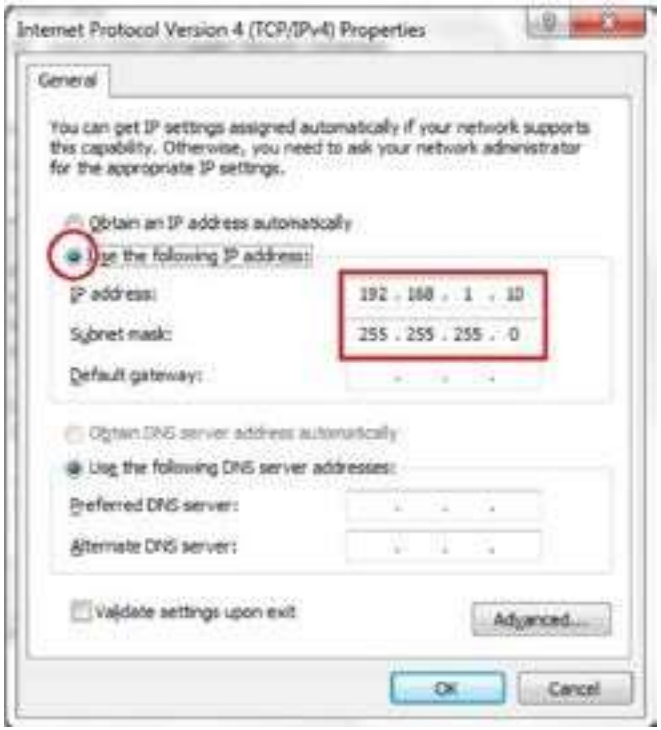
5. Select Use the following IP address and enter an IP address that is different from the Access Point and Subnet mask, then click OK.

Note: EnsurethattheIPaddressandSubnetmaskare on the same subnet as the device.

For example: WAP655-C IP address: 192.168.1.1

PC IP address: 192.168.1.2–192.168.1.255

PC Subnet mask: 255.255.255.0



Apple Mac OSX

1. Go to System Preferences (Which can be opened in the Applications folder or selecting it in the Apple Menu).
2. Select Network in the Internet & Network section.

3. HighlightEthernet.
4. In Configure IPv4, select Manually.
5. Enter an IP address that is different from the Access Point and Subnet mask then press OK.

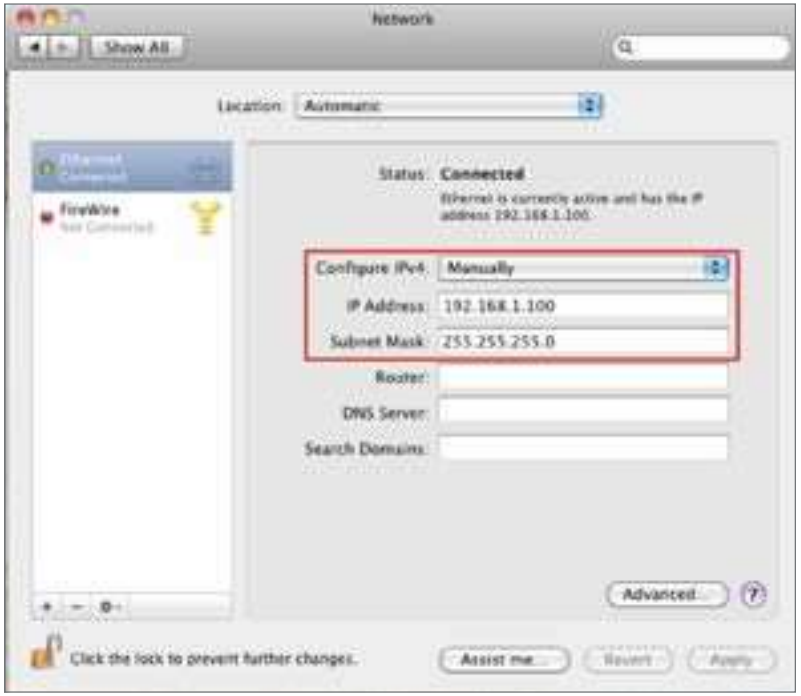
   Note: Ensure that the IP address and Subnet mask are on the same subnet as the device.

   For example: A device IP address: 192.168.1.1 PCIPaddress:

   192.168.1.2–192.168.1.255

   PCSubnetmask:255.255.255.0

6. Click Apply when done.



Chapter 3 **Configuring Your Access Point**

ConfiguringYourAccessPoint

This section will show you how to configure the device using the web-based configuration interface.

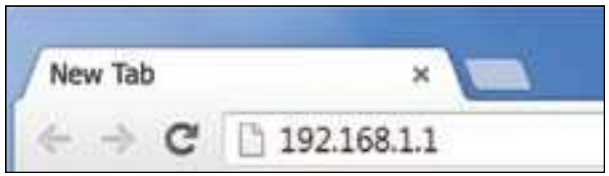
Default Settings

Please use your Ethernet port or wireless network adapter to connect the Access Point.

IP Address	192.168.1.1
Username / Password	none

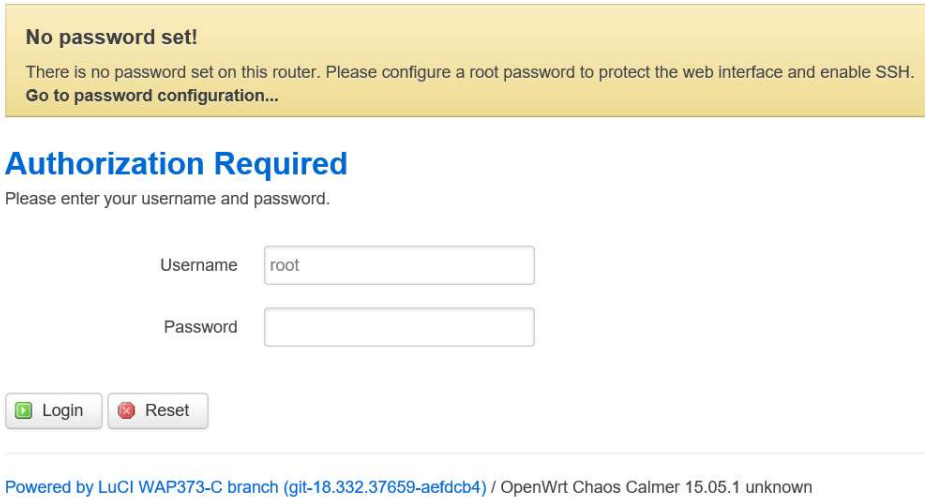
Web Configuration

1. Open a web browser (Internet Explorer/Firefox/Safari/ Chrome) and enter the IP Address http://192.168.1.1



Note: If you have changed the default LAN IP Address of The Access Point, ensure you enter the correct IP Address.

2. The default username and password are admin. Once you have entered the correct user name and password, click the Login button to open the web-base configuration page.



* The model name will be varied by different models.

3. If successful, you will be logged in and see the User Menu of this Access Point.

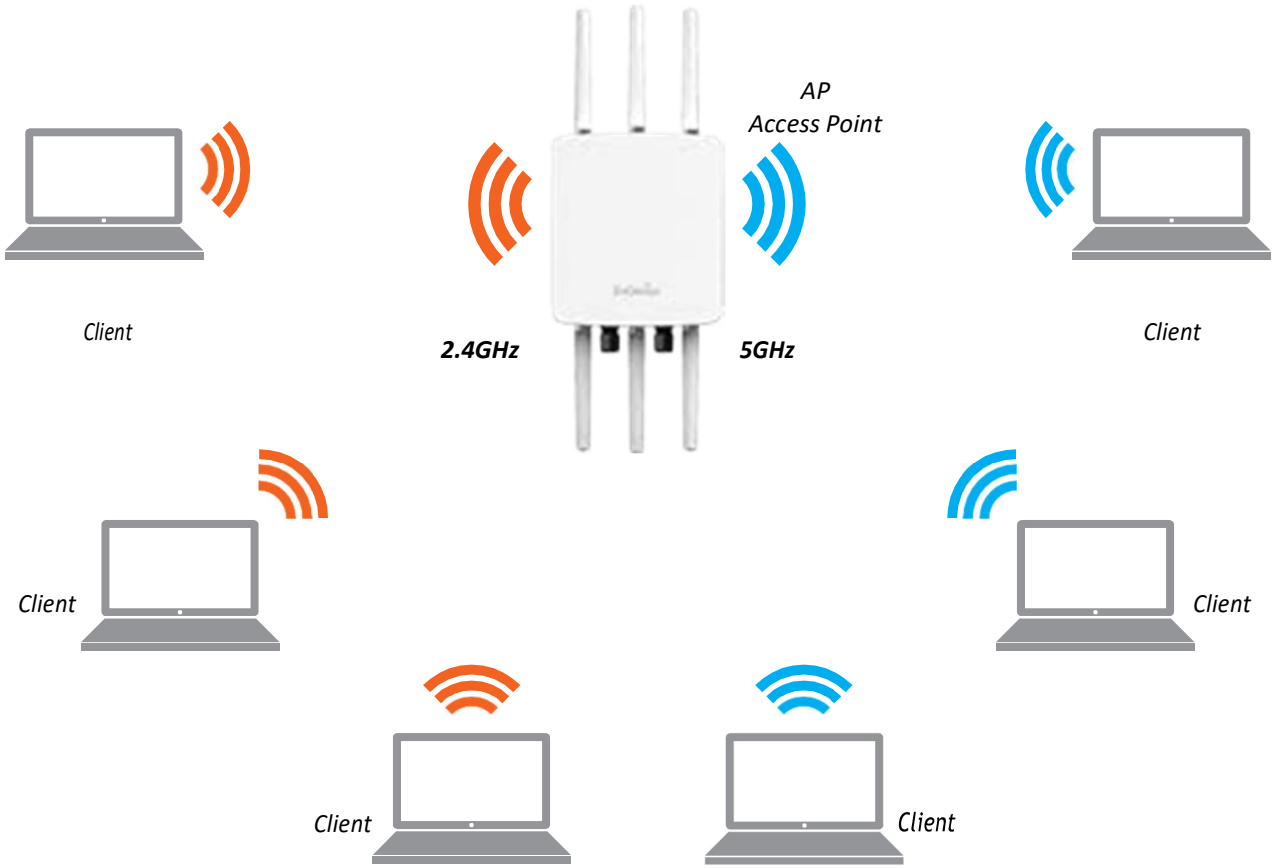
Chapter4

Building aWireless Network

Before starting to configure this Access Point, you may realize the used scen a rounder varied operating modes. The AP has the ability to operate in various modes. This chapter describes purpose of different operating modes and lists down the operating modes for outdoor Access Points or Client Premise Equipments(CPE).

Access Point Mode

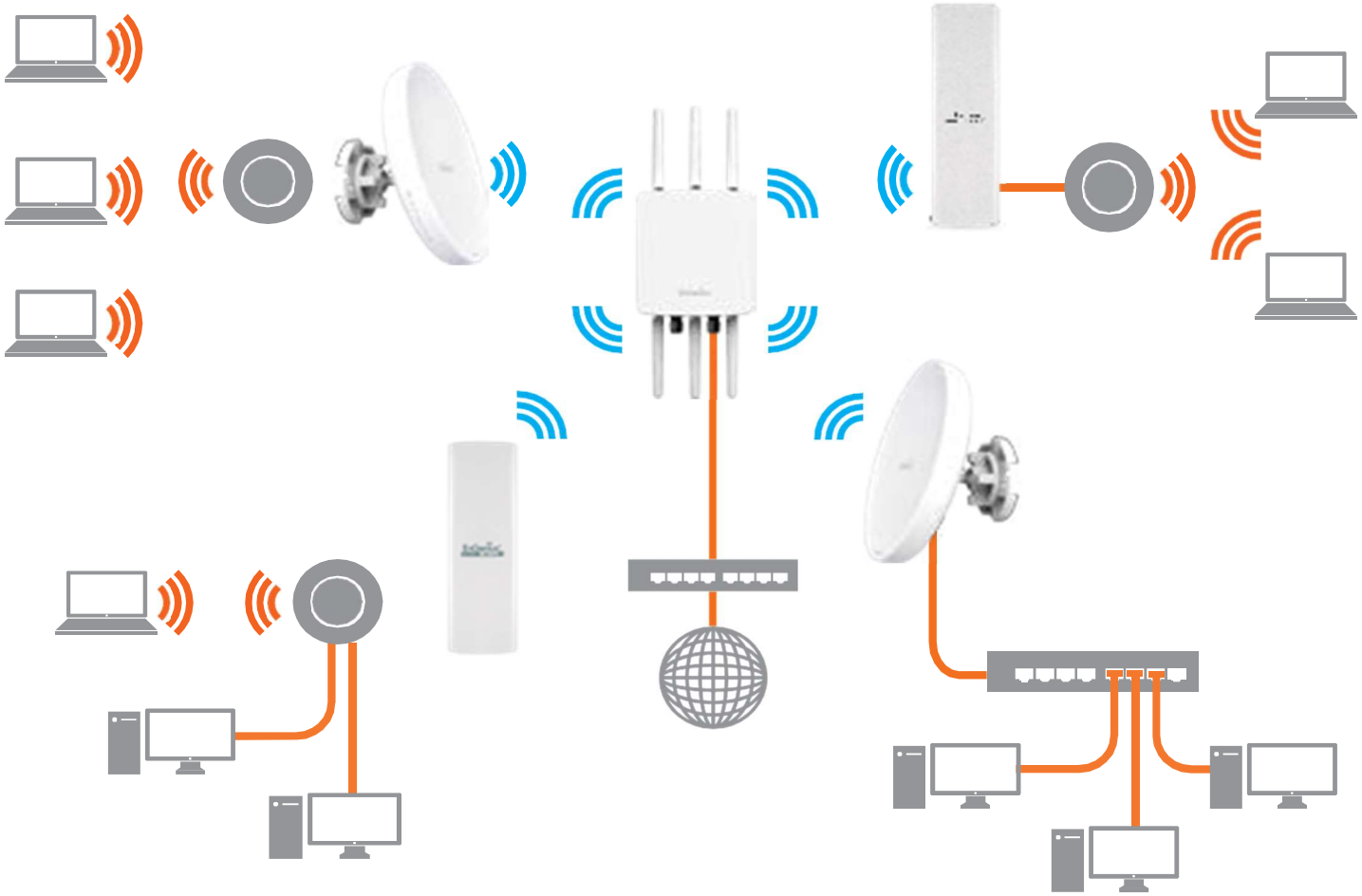
In Access Point Mode, AP be have slikes a central connection for stations or clients that support IEEE802.11ac/a/b/g/n networks. The stations and clients must be configured to use the same SSID(Service Set Identifier) and security password to associate with the AP. The AP supports up to eight SSIDs per band at the same time for secure access.



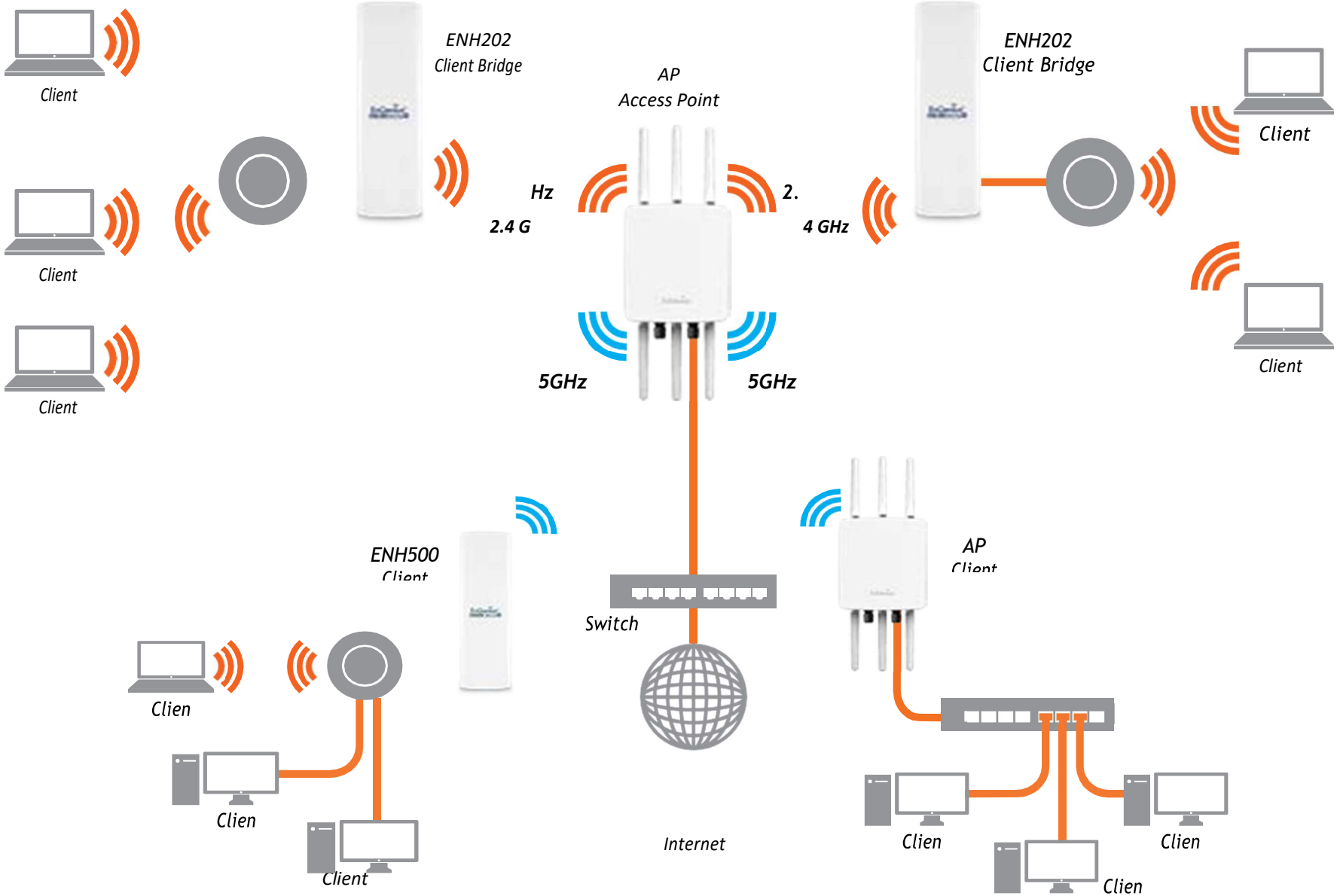
Client Bridge Mode

The Access Point essentially acts as a wireless adapter that connects to an access point to allow a system of wireless access to the network in the Client Bridge mode. Since the computers are on the same subnet, the Access Point can broadcast or each all end-devices.

If you use the client bridge mode in this Access Point, you can use the AP Detection feature to scan for Access Points within range. When you find an Access Point, configure this Access Point to use the same SSID and Security Password as the Access Point to associate with it.

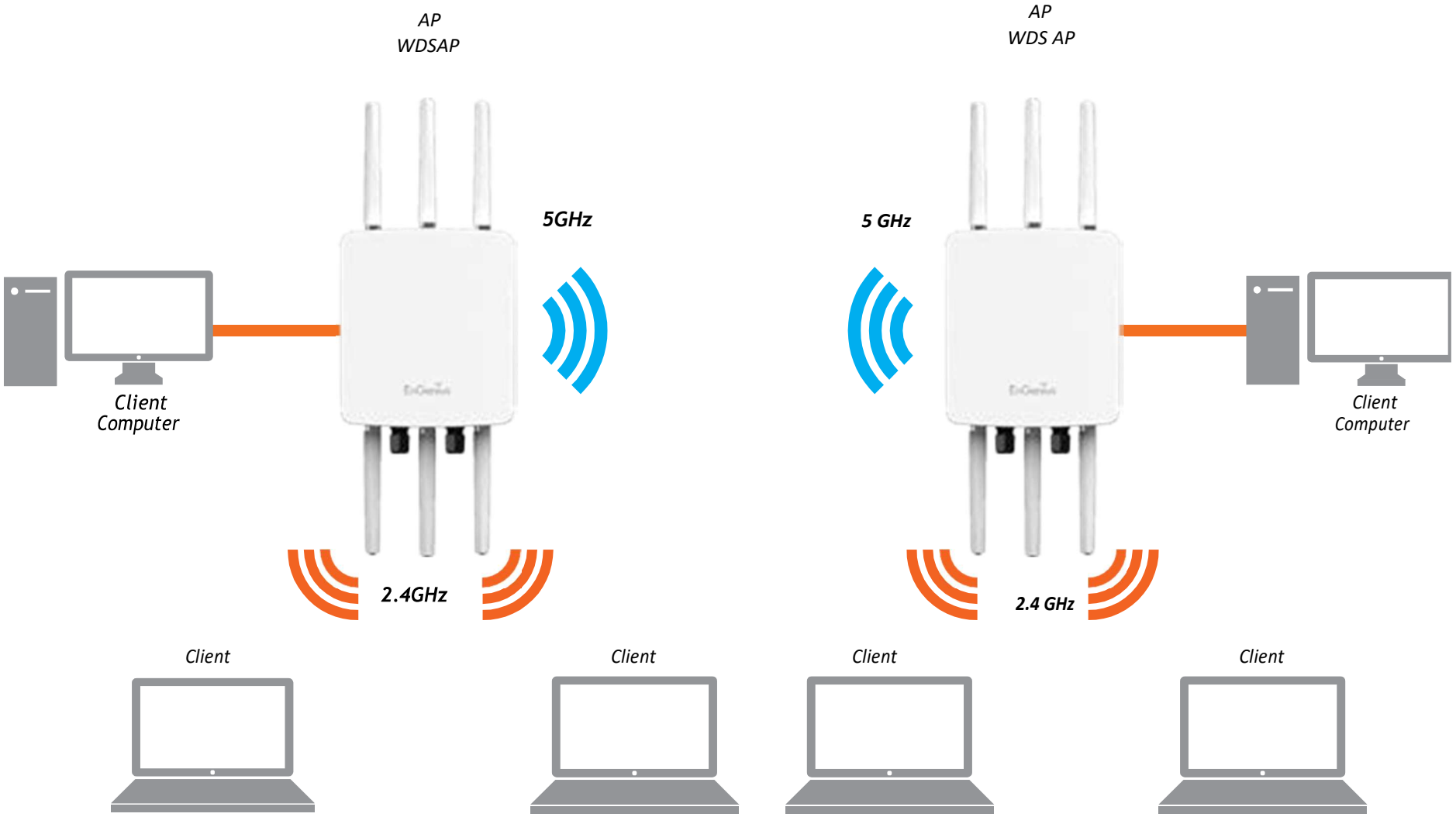


The AP can be used as a centralized Outdoor Access Point with which other Wireless 802.11b/g/n2.4 or ac/a/n 5GHz Outdoor Client Bridge scan associate; leveraging the long-range capability of their internal high-gain directional antennas, resulting in a very cost-effective solution to expand a company network over a multiple building campus.



WDS APMode

The AP also supports WDS AP mode. This operating mode allows wireless stations to connect with Access Point via using WDS technology. In this mode, configure the MAC addresses or SSIDs in both Access Points to enlarge the wireless area by enabling WDS Link settings. WDS AP mode supports up to four(4) AP MAC addresses and four(4) SSIDs at the same time.

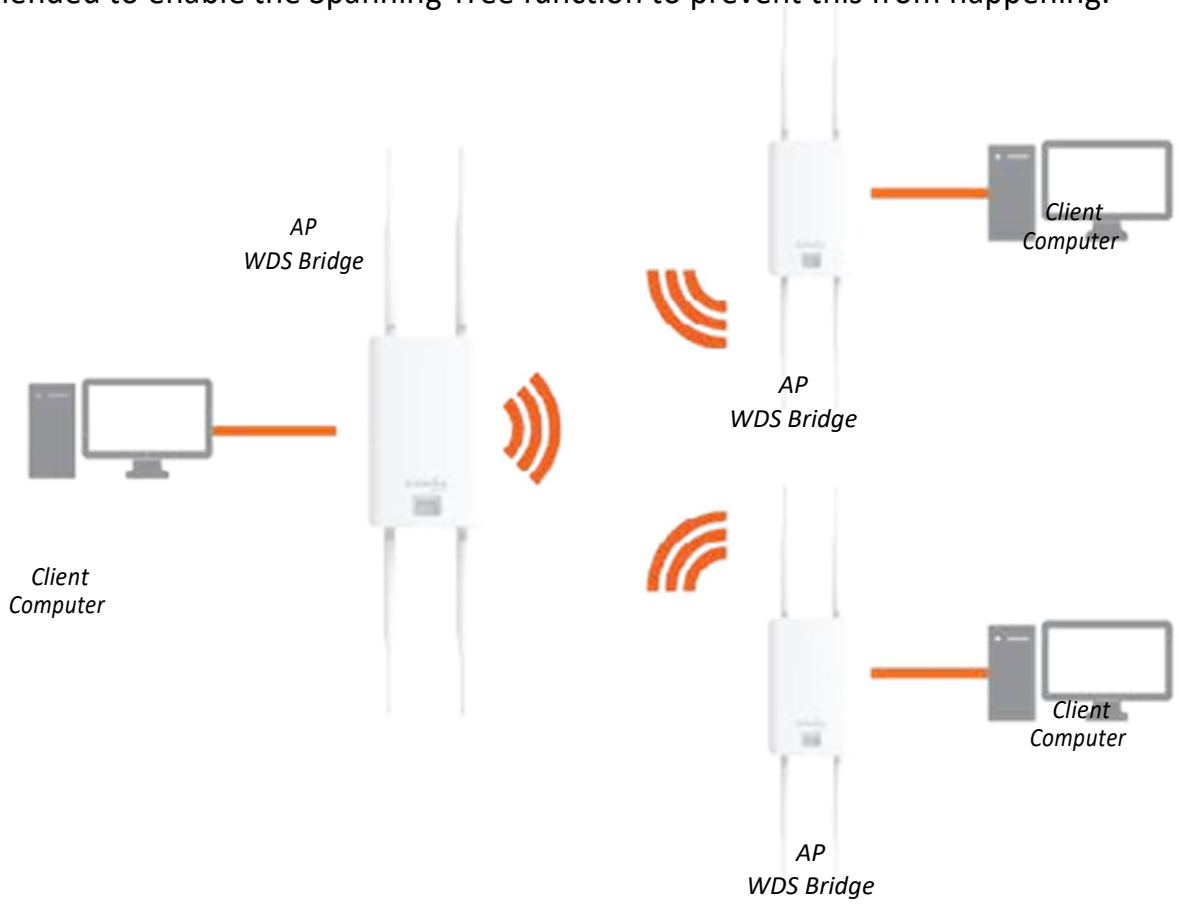


WDS Bridge Mode

In WDS Bridge Mode, the Access Point can wirelessly connect different LANs by configuring the MAC address and security settings of each Access Points. Use this operating mode when two wired LANs located as mall distance apart want to communicate with each other. The best solution is to use the Access Point to wirelessly connect two wired LANs, as shown in the following diagram.

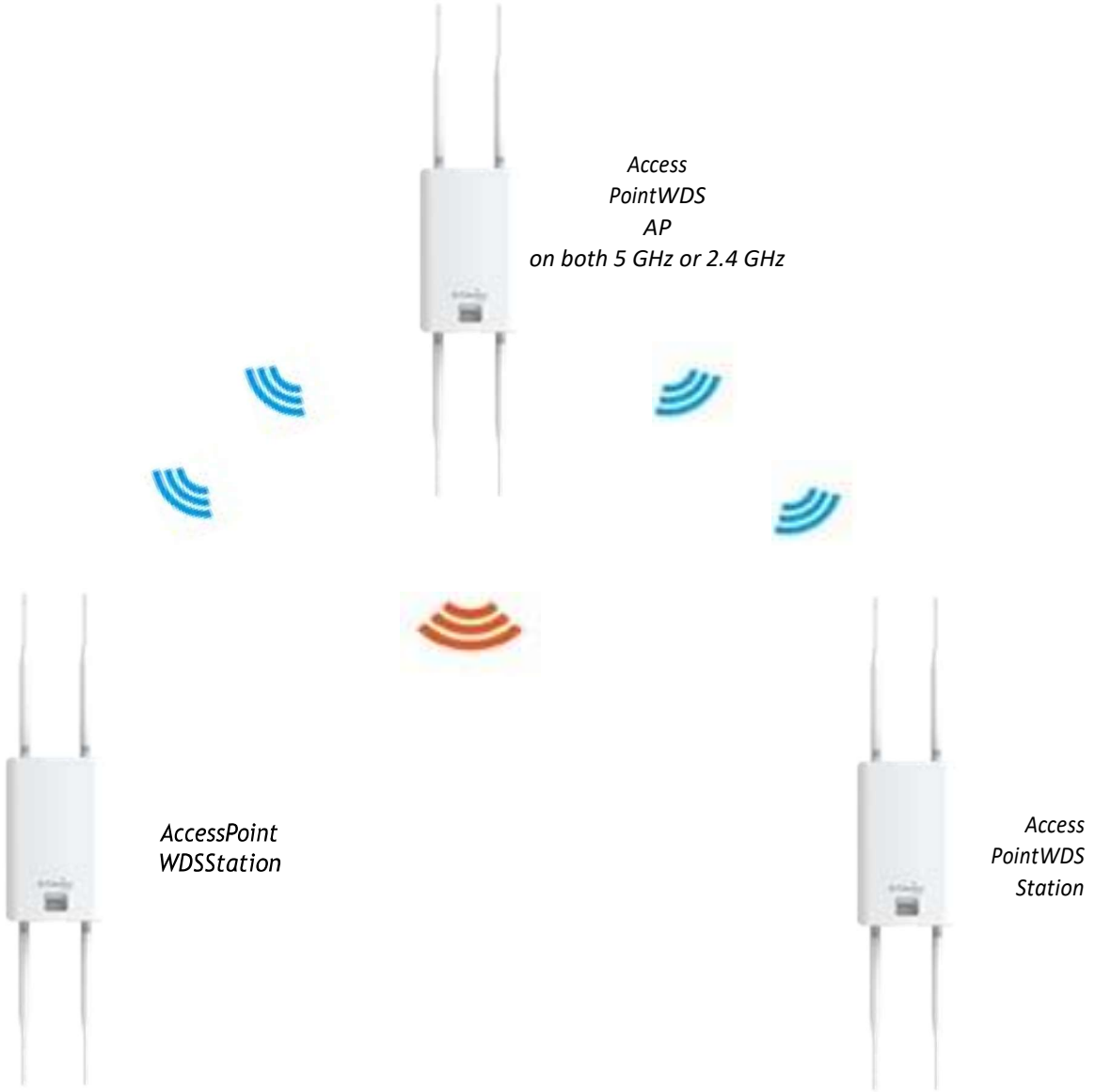
WDS Bridge Mode can establish up to four (4) to eight (8) WDS links, creating a star-like network.

Note: WDS Bridge Mode does not act as an Access Point. Access Point slinked by WDS are using the same frequency channel. More Access Points connected to get her may lower throughput. This configuration can be susceptible to generate endless network loops in your network, so it is recommended to enable the Spanning Tree function to prevent this from happening.



WDS Station Mode

WDS station(WDS STA) mode expands the WDS by receiving a wireless signal/service and sharing it through the Ethernet port. With WDS STA mode,



Chapter5

Status

Overview

SaveChanges

This page lets you save and apply the settings shown under Unsaved changes list, or Revert the unsaved changes and revert to the previous settings that were in effect.

Status

System

Hostname	WAP373
Model	QCA IPQ8064/AP161
Firmware Version	OpenWrt Chaos Calmer 15.05.1 unknown / LuCI WAP373-C branch (git-18.332.37659-aefdcb4)
Kernel Version	3.14.77
Local Time	Thu Dec 6 11:16:57 2018
Uptime	0h 49m 20s
Load Average	0.00, 0.01, 0.05

Device Status

Clicking the Device Status link under the Overview menu shows the status information about the current operating mode.

- The Device Information section shows general system information such as Device Name, MAC Address, Current Time, Firmware Version, and Management VLANID

Note: VLAN ID is only applicable in Access Point, WDS AP or WDS BR mode.

Network

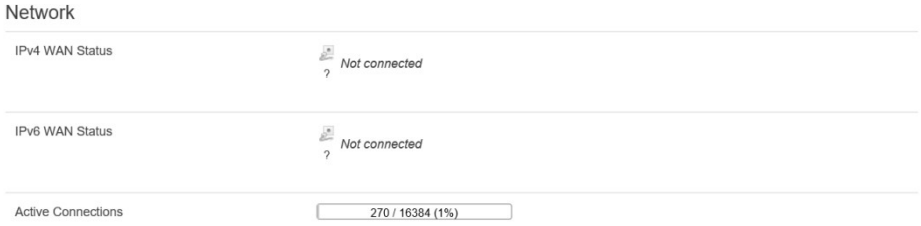
IPv4 WAN Status	Not connected
IPv6 WAN Status	Not connected
Active Connections	269 / 16384 (1%)

- The Memory Information section shows usageof Memory such as Total Available, Free, Cached, Buffered

Memory

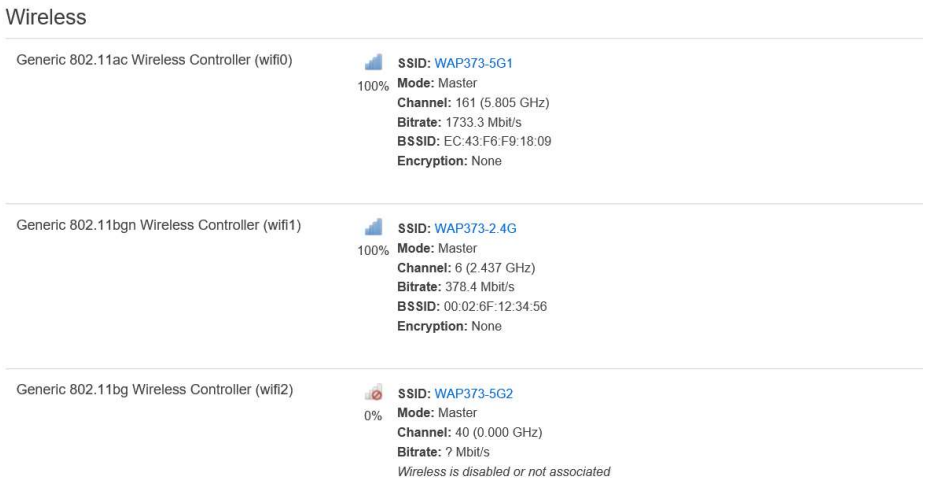
Total Available	58860 kB / 213872 kB (27%)
Free	50128 kB / 213872 kB (23%)
Buffered	8732 kB / 213872 kB (4%)

- The LAN Information section shows the Local Area Network settings such as the LAN IP Address, Subnet mask, Primary DNS Address , Secondary DNS Address, status of DHCP client, and status of Spanning Tree protocol (STP).



The Wireless LAN Information 2.4 GHz/5 GHz section shows wireless information such as Operation Mode, Frequency, and Channel. Since this Access Point supports multiple-SSIDs, information about each SSID, the ESSID, and security settings, are displayed

Note: Profile Settings are only applicable in Access Point and WDS AP modes.



Connections

2.4 GHz/5 GHz Connection List

Click the connection link under the Overview menu displays the connection list of clients associated to the AP's2.4 GHz/5 GHz, along with the MAC addresses and signal strength for each client. Clicking Refresh updates the client list.

Note: Only applicable in Access Point and WDS AP modes.

2.4 GHz/5 GHz WDS Link List

Click the connection link under the Overview menu. This page displays the current status of the WDS link, including WDS Link ID, MAC Address, Link Status and RSSI.

Note:Only applicable in WDS AP and WDS Bridge modes.

Realtime

Realtime

The Realtime section contains the following options:

CPU Loading: 3 minutes CPU loading percentage information, it displays current loading, average loading and peak loading status. Left bar is loading percentage; button is time tracing. Interval is every 3 seconds

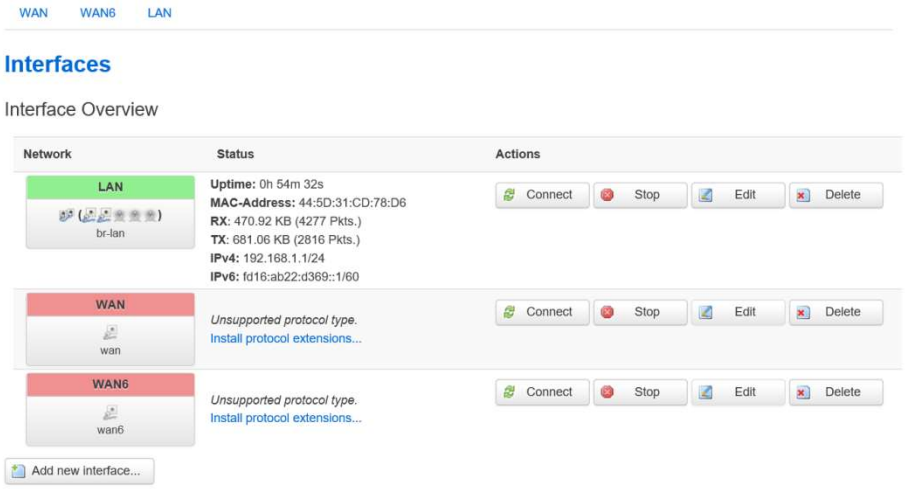
Chapter6

Network

Basic

IPv4/IPv6 Settings

This page allows you to modify the device's IP settings.



IP Network Settings: Select whether the device IP address will use a static IP address specified in the IP address field or be obtained automatically when the device connects to a DHCP server. IP Address: The IP address of this device.

Subnet Mask: TheIP Subnet mask ofthis device.

Gateway: The Default Gateway of this device. Leave it blank if you are unsure of this setting.
Primary/Secondary DNS: The primary/secondary DNS address for this device.

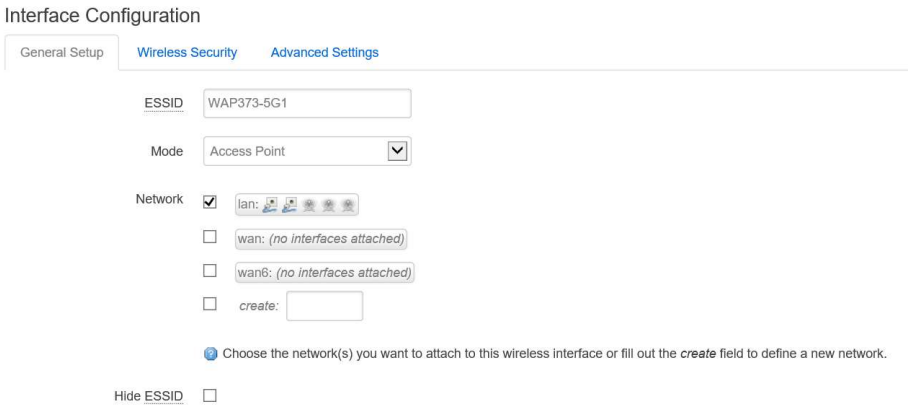
Save: Click Save to confirm the changes.

Chapter7

2.4GHz&5GHz Wireless

Wireless

Wireless Settings



Device Name: Enter a name for the device. The name you type appears in SNMP management. This name is not the SSID and is not broadcast to other devices.

Band Steering (Avaiable on WAP353): Enable Band Steering to send 802.11n clients to the 5GHz band, where 802.11b/g clients cannot go, and leave 802.11b/g clients in 2.4GHz to operate at their slower rates. Before implementing this feature, we suggest you to assure the both 2.4GHz and 5GHz SSID, as well as security settings must be the same. and Steering supports following advanced settings,

*Force 5GHz: When band steering is configured to Force 5GHz mode, the AP will not dual band capable client Devices to network to the 2.4GHz band only if the client devices are not currently associated on 2.4GHz radioin this AP.

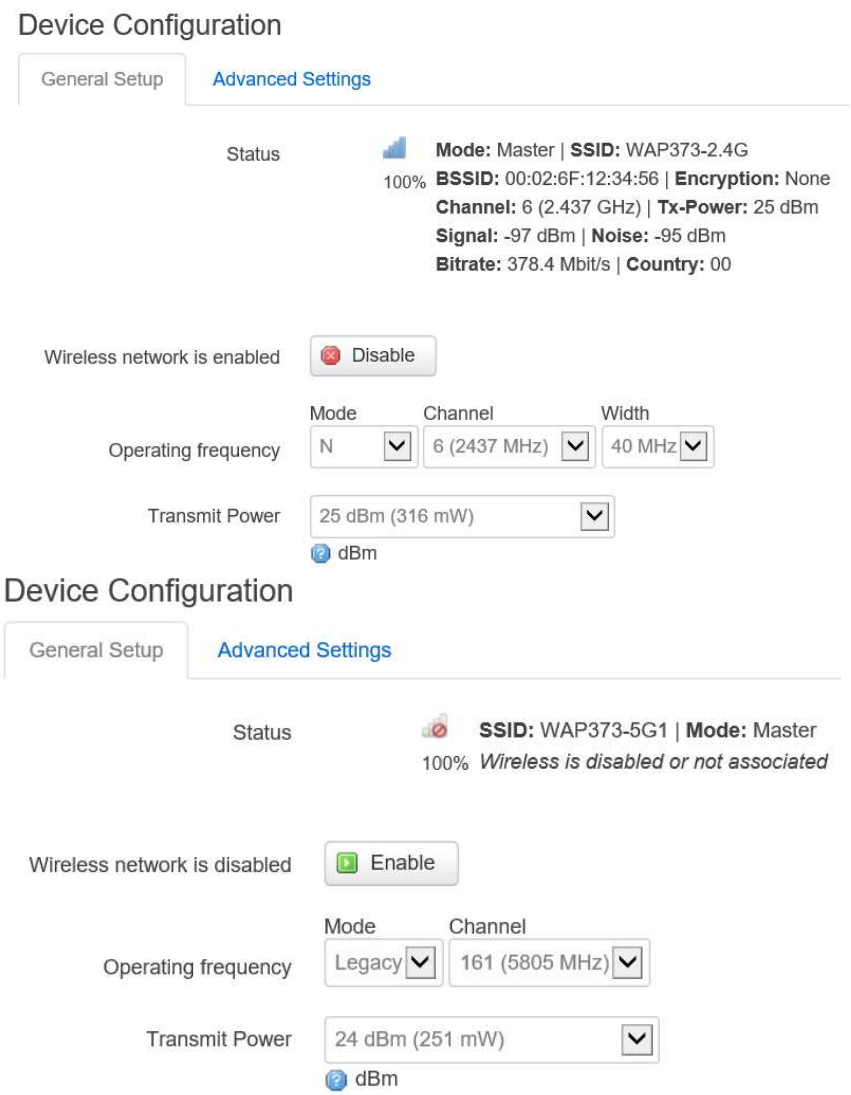
*Prefer 5GHz: When band steering is configured to Prefer 5GHz mode, the AP will steer dual band capable client devices to 5GHz radio when the RSSI value of these client devices on 5GHz radio is more than set one. The allowed RSSI value for default setting is -75dBm.

*Band Balance: When band steering is configured to Band Balance mode, the AP will steer dual band capable client devices to 5GHz when the RSSI value of the seclient devices on 5GHz radio is more than set one. To evenly allocate RF resource on the both 2.4GHz and 5GHz radios, users also can set the portion of client devices on 5GHz radio to assure smoothly connection. The default value of the 5GHz radio is 75%.

Save: Click Save to confirm the changes.

This page displays the current status of the Wireless settings of this AP.

2.4 GHz/5 GHz Wireless Network



Operation Mode: Scrow down this list to select operation modes for implementing on this radio. The default operation mode is Access Point on base stations and Access Points and is Client Bridge on Client Premise Equipements(CPE). Meanwhile, the outdoor devices also support WDS modes for peer to peer or peer to multi-peer connections.

Wireless Mode: Scrow down this list to select wireless broad casting standard on 2.4GHz and 5GHz frequency bands.

Channel HT Mode: Scrow down this list to select bandwidth for operating under a frequency band. The default channel bandwidth is 20MHz on 2.4GHz frequency radio and 40 MHz on 5GHz frequency radio. Considering the different applications ,users can decide to implement a channel bandwidth to fulfill real applications. The larger the channel, the greater the transmission quality and speed.

Transmit Power (Tx Power): Default Tx power is Auto to obey regulartory power of each country.

Channel: Click Configuration button to open a new windows to configure channels for performing wireless service.

*Default configuration: Default setting of channel selection is “All” to perform auto channel on the exist channel list.

*None: Click “None” to disable the setting on this radio. This radio is disabled.

*Group Configuration: Click specific groups of channels for performing auto channel function. For example, users canclickU-NII-1andU-NII-3toperformautochannelon these bands; the mechanism of this AP will select the relatively optimal channel to perform wireless service.

Data Rate: Select a data rate from the drop-down list. The data rate affects throughput of data in the AP. Select the best balance for you and your network but note that the lower the data rate, the lower the throughput, though transmission distance is also lowered.

RTS/CTS Threshold: Specifies the threshold package size for RTC/CTS. A small number causes RTS/CTS packets to be sent more often and consumes more bandwidth.

Client Limits: Limits the total number of clients on this radio. Once setting the ceiling of client numbers, the maximum Associated client devices will be restricted at this number.

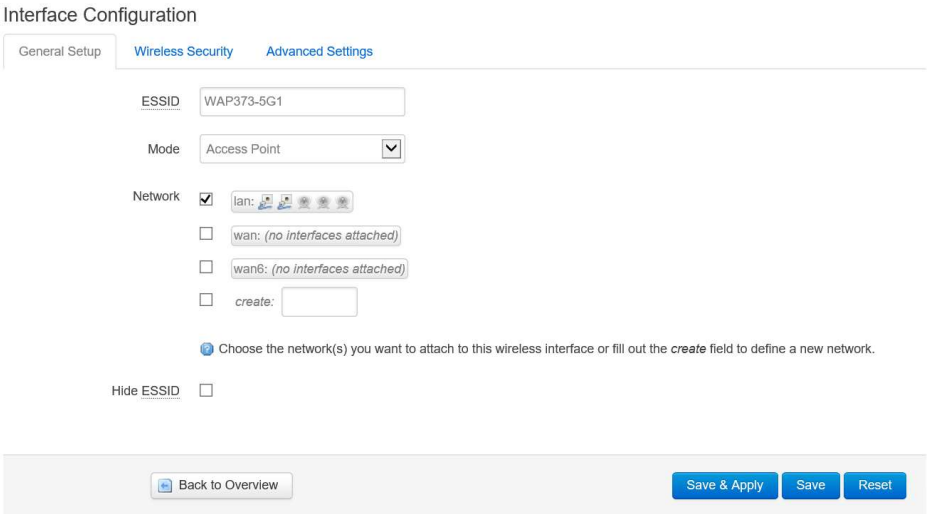
Aggregation: Integrate multiple data packets into one packet to deliver to client devices. This option reduces the number of packets, but also increases packet sizes.

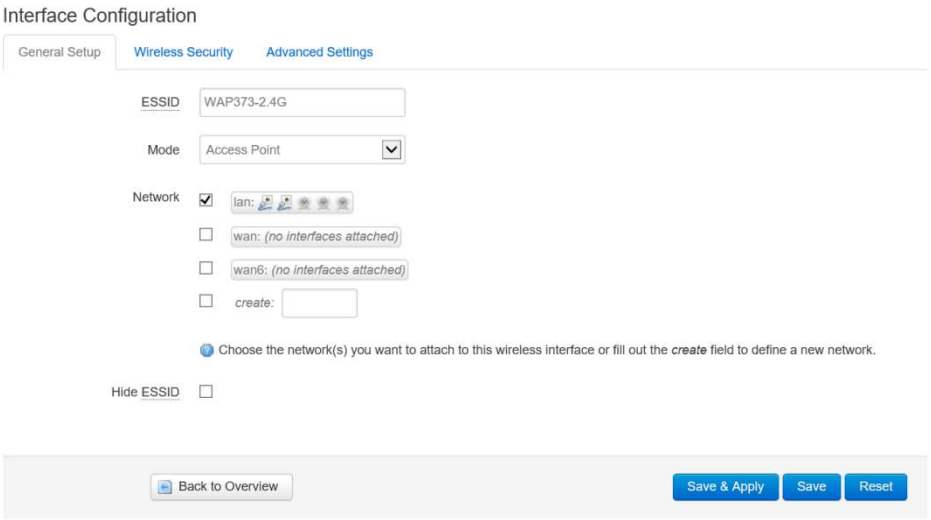
AP Detection: AP Detection can select the best channel to use by scanning nearby areas for Access Points.

Distance: Specifies the distance between Access Points and client devices. The proper setting for this parameter may assist Access Points to avoid the improper operation when transmitting data under afield application.

Save: Click Save to confirm the changes or Cancel to cancel and return to previous settings.

2.4 GHz/5 GHz SSID Profile





Current Profile: You can configure up to sixteen(16) different SSIDs (eight (8) per band). If multiple client devices will be accessing the network, you can arrange the devices into SSID groups. Click Edit to configure the profile and check whether you want to enable extra SSID.

Enable: Click this check box to enable this SSID interface. The default SSIDs are enable on the both first 2.4GHz and 5GHz SSID.

SSID: Specifies the SSID for the current profile.

Hidden SSID: Check this option to hide the SSID from clients. Ifchecked, theSSIDwillnotappearinthesitesurvey.

Client Isolation: Click the appropriate radio button to enable this function for allowing or preventing communication between client devices.

VID: Specifies the VLAN tag for each profile. If your network includes VLANs, you can specify a VLANID for packets pass through the Access Point with a tag.

Wireless Security: See the Wireless Security section.

VLAN Isolation: Restrict clients communicating with different VIDs by selecting the radio button.

L2Isolation: Enable this function prevent client devices to communicate on the both WLAN and LAN.

Save: Click Save to accept the changes.

Wireless Security

The Wireless Security section lets you configure the AP's security modes

Secuirty Mode: Including WEP, WPA-PSK, WPA2-PSK, WPA-PSKMixed,WPA,WPA2,andWPAMixed.Westrongly recommendyoutouseWPA2-PSKmode.

* Setting of WEP mode:

Auth Type: Select Open System or Shared Key.

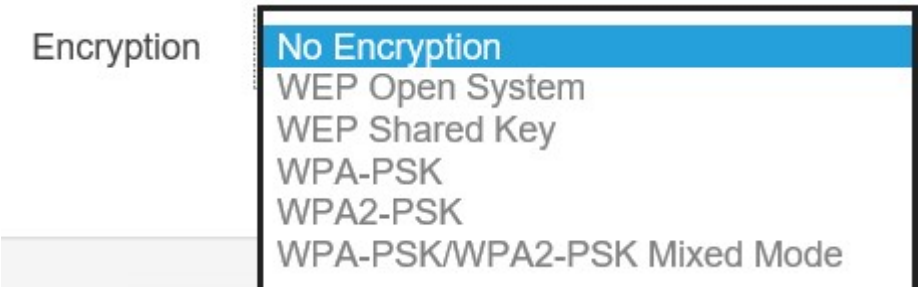
InputType:

ASCII: Regular Text (recommended) Hexadecimal Numbers (For advanced users)

Key Length: Select the desired option and ensure that wireless clients use the same setting. Your choices are 64, 128, and 152-bit password lengths.

Default Key: Select the Key you wish to be the default. Transmitted data is ALWAYS encrypted using the Default Key; the other Keys are for decryption only. You must enter a Key Value for the Default Key.

Encryption Key Number: Enter the Key Value or values you wish to use. Only the Key selected as Default is required. The others are optional.



*SettingofWPA-PSK,WPA2-PSKandWPA-PSKMixed (Pre-SharedKey):

Encryption: You may select AES, TKIP or Both(TKIP+AES) to be the encryption type you would like. Please ensure that your wireless clients use the same settings.

Pass phrase: Wireless clients must use the same Key to associate the device. If using ASCII format, the Key must be from 8 to 63 characters in length. If using HEX format, the Key must be 64HEX characters in length.

Group Key Update Interval: Specifies how often, in seconds, the Group Key changes. The default value is 3600.

* Setting of WPA-Enterprise & WPA2-Enterprise (Pre-Shared Key):

Encryption: Select the WPA encryption type you would like. Please ensure that your wireless clients use the same settings.

Radius Server: Enter the IP address of the Radius server.

Radius Port: Enter the port number used for connections to the Radius server.

RadiusSecret:Enterthesecretrequiredtoconnecttothe Radiusserver.

Radius Accounting: Enable or disable accounting feature.

Radius Accounting Server: Enter the IP address of the Radius accountingserver.

RadiusAccountingPortEntertheportnumberusedfor connectionstotheRadiusaccountingserver.

RadiusAccountingSecret:Enterthesecretrequiredto connect to the Radius accounting server.

InterimAccountingInterval:Specifieshowoften,in seconds, the accounting data sends.

Note: 802.11n does not allow WEP/WPA-PSK TKIP/ WPA2-PSK TKIP security mode. The connectionmode willautomaticallychangefrom802.11nto802.11g.

Wireless MAC Filtering

WirelessMACFilteringisusedtoallowordenynetwork accesstowirelessclients(computers,tabletPCs,NAS, smartphones,etc.)accordingtotheirMACaddresses.You canmanuallyaddaMACaddresstorestrictpermissionto accessthisAP.Thedefaultsettingis:DisableWireless MACFilter.

Note: OnlyapplicableinAccessPointandWDSAP modes.

ACLMode:DetermineswhethernetworkaccessisgrantedordeniedtoclientswhoseMACaddressesappearinthe MACaddresstableonthispage.Yourchoicesare:Disabled, DenyMACinthelist,orAllowMACinthelist.

MACAddress:EntertheMACaddressofthewirelessclient.

Add:ClickAddtoaddtheMACaddresstotheMACaddress table.

Delete: Delete the selected entries.

Save: Click Save to apply the changes.

WDS Link Settings

UsingtheWDS(WirelessDistributionSystem)featurewill allowanetworkadministratororinstallertoconnectto AccessPointswirelessly.Doingsowillextendthewired infrastructuretolocationswherecablingisnotpossibleor inefficient toimplement.

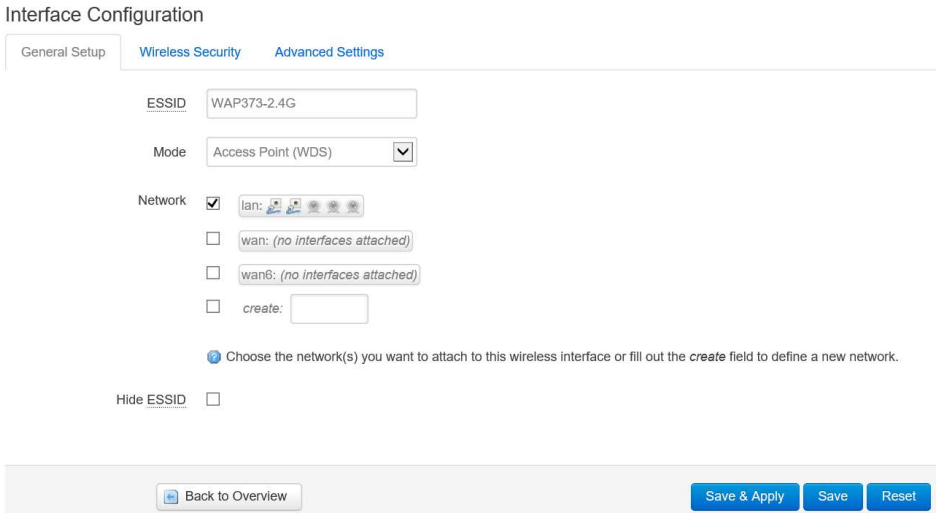
Note:Compatibilitybetweendifferentbrandsand models of Access Points is not guaranteed. It is recommendedthattheWDSnetworkbecreatedusing thesamemodelsformaximumcompatibility.

Alsonote:AllAccessPointsintheWDSnetworkneed tousethesameChannelandSecuritysettings.

TocreateaWDSnetwork,pleaseentertheMACaddresses oftheAccessPointsthatyouwantincludedintheWDS. TherecanbeamaximumoffourAccessPoints.

Note:OnlyapplicableinWDSAPandWDSBridgemodes.

2.4 GHz/5 GHz WDS Link Settings



Security: SelectNone orAES fromthedrop-downlist.

AESPassphrase:EntertheKeyValuesyouwishtouse. OtherAccessPointsmustusethesameKeytoestablisha WDSlink.

MACAddress:EntertheAccessPoint'sMACaddressto where youwant toextend thewireless area.

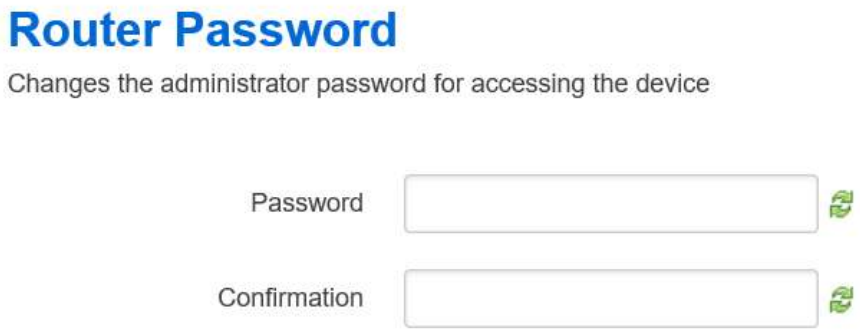
Mode:Selecttodisableorenablefromthedrop-downlist.

Save: Click Save to confirm the changes.

Account

This page allows you to change the AP usernameand password.Bydefault,theusernameis:adminandthe passwordis:admin.Thepasswordcancontainfrom0to 12alphanumericcharactersandiscasesensitive.

Account Settings



AdministratorUsername:Enteranewusernamefor loggingintotheNewNameentrybox.

CurrentPassword:Entertheoldpasswordforloggingin to the Old Password entry box.

NewPassword:Enterthenewpasswordforlogginginto the New Password entry box.

Verify Password: Re-enter the new password in the ConfirmPasswordentryboxforconfirmation.

Apply: Click Apply to apply the changes.

Firmware

Firmware Upgrade

Thispageallowsyoutoupgradethefirmwareofthe AP.

To Perform the FirmwareUpgrade:

1. ClicktheChooseFilebuttonandnavigatetheOSfile systemtothelocationoftheupgradefile.
2. Selecttheupgradefile.Thenameofthefilewillappear intheUpgradeFilefield.
3. ClicktheUploadbuttontocommencethefirmware upgrade.

   Note:ThedeviceisunavailableduringtheFirmware upgradeprocessandmustrestartwhentheupgradeis completed.Anyconnectionstoorthroughthedevice will belost.

Backup/Restore

This page allows you to save the current device configurations.Whenyousaveyourconfigurations, youalsocanreloadthesavedconfigurationsintothe devicethroughtheRestoreSavedSettingsfromafile section.Ifextremeproblemsoccur,orifyouhaveset theAPincorrectly,youcanusetheResetbuttoninthe ReverttoFactoryDefaultSettingssectiontorestore alltheconfigurationsoftheAPtotheoriginaldefault settings.

Backup Setting: Click Export to save the current configured settings.

Restore New Setting: To restore settings that have beenpreviouslybackedup,clickBrowse,selectthe file, and clickRestore.

Restore to Default: Click Reset button to restore the AP to its factory default settings.

User Setting

Thefunctionallowsyoutobackupthecurrentdevice configurationsintotheAPasthedefaultvalue.If extremeproblemsoccur,orifyouhavesettheAP incorrectly,youcanpushtheResetbuttontorevertall theconfigurationsoftheAPtotheuserdefault.

Back Up Setting as Default: Click Backup to backup theusersettingsyouwouldliketothedevice'smemory forthedefaultsettings.

RestoretoUserDefault:ClickRestoretorestoreuser settings to the factory standard settings.

Note1:Aftersettingthecurrentsettingsasthedefault,youshouldclicktheRestore to Defaultonthe webinterfaceforrevertingthesettingsintothefactorydefaultinsteadofpushingtheresetbutton.

Note2:Pleasewritedownyouraccountandpasswordbeforesaving.Theusersettingswillnowbecome the new default settings at the next successful login.

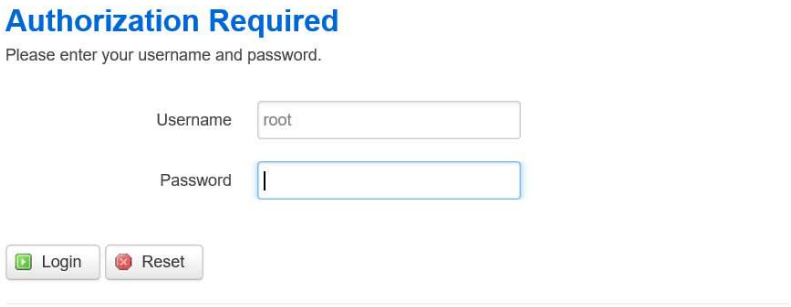
Log

System Log

TheAPautomaticallylogs(records)eventsofpossible interestinitsinternalmemory.Toviewthelogged information,clicktheLoglinkundertheSystemManager menu.Ifthereisnotenoughinternalmemorytologall events,oldereventsaredeletedfromthelog.When powereddownorrebooted,thelogwillbecleared.

Logout

Logout:ClickLogout inManagementmenutologout.



Reset

Insomecircumstances,itmayberequiredtoforcethedevicetoreboot.ClickonReset toreboottheAP.

Onceyouclickresetbutton,youwillseetheoptionsforreboot or restore this AP.

Rebootthedevice:Clickittorebootthisdevice.

RestoretoFactoryDefault:Clickittoresetthisdevicetofactory defaultsetting.

RestoretoUserDefault:Clickittoresetthisdeviceto userdefaultsettings.Forrealizingthesettingmethod,

Appendix A - FCC Interference Statement

Federal Communication Commission Interference Statement

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 of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

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.

IMPORTANT NOTE:

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 a minimum distance of 20 cm between the radiator & your body.

Appendix B - IC Interference Statement

Industry Canada Statement

This device complies with Canada license-exempt RSSs of the Industry Canada 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.
Ce dispositif est conforme à la norme RSS Canada sans licence d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Caution:

(*) high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement:

(*) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 21cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 21cm de distance entre la source de rayonnement et votre corps.

Industry Canada Warning

This product meets the applicable Innovation, Science and Economic Development Canada technical specifications. Ce produit repond aux specifications techniques applicables a l'innovation, Science et Developpement economique Canada.

Appendix C - CE Interference Statement

Europe – EU Declaration of Conformity

- EN60950-1

  Safety of Information Technology Equipment

- EN50385

  Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz - 300 GHz)

- EN 300 328

  Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

- EN 301 893

  Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive

- EN 301 489-1

  Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

- EN 301 489-17

  Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 5GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For pdetailed information the end-user should contact the national spectrum authority in France.

This product will not exceed the frequency and the maximum EIRP transmitted power in EU are listed below:
2412-2472MHz: 20dBm
5470-5725MHz: 24dBm

CE 0560 ⓘ

cs Česky [Czech]	*[Jméno výrobce]* tímto prohlašuje, že tento *[typ zařízení]* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da Dansk [Danish]	Undertegnede *[fabrikantens navn]* erklærer herved, at følgende udstyr *[udstyrets typebetegnelse]* overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de Deutsch [German]	Hiermit erklärt *[Name des Herstellers]*, dass sich das Gerät *[Gerätetyp]* in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab *[tootja nimi = name of manufacturer]* seadme *[seadme tüüp = type of equipment]* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, *[name of manufacturer]*, declares that this *[type of equipment]* is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es Español [Spanish]	Por medio de la presente *[nombre del fabricante]* declara que el *[clase de equipo]* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *[name of manufacturer]* ΔΗΛΩΝΕΙ ΟΤΙ *[type of equipment]* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr Français [French]	Par la présente *[nom du fabricant]* déclare que l'appareil *[type d'appareil]* est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it Italiano [Italian]	Con la presente *[nome del costruttore]* dichiara che questo *[tipo di apparecchio]* è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski [Latvian]	Ar šo *[name of manufacturer / izgatavotāja nosaukums]* deklarē, ka *[type o f equipment / iekārtas tips]* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo *[manufacturer name]* deklaruoja, kad šis *[equipment type]* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart *[naam van de fabrikant]* dat het toestel *[type van toestel]* in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *[isem tal-manifattur]*, jiddikjara li dan *[il-mudel tal-prodott]* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, *[gyártó neve]* nyilatkozom, hogy a *[... típus]*megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *[nazwa producenta]* oświadcza, że *[nazwa wyrobu]* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	*[Nome do fabricante]* declara que este *[tipo de equipamento]* está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	*[Ime proizvajalca]* izjavlja, da je ta *[tip opreme]* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*[Meno výrobcu]* týmto vyhlasuje, že *[typ zariadenia]*spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	*[Valmistaja = manufacturer]* vakuuttaa täten että *[type of equipment = laitteen tyyppimerkintä]* tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar *[företag]* att denna *[utrustningstyp]* står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.