emplus

User Manual

IMPORTANT

ToinstallthisAccessPoint
Please refer to the
QuickInstallationGuideincluded in the product packaging

Chapter1
ProductOverview

Introduction

Key Features

· Supports IEEE802.11ac/a/b/g/n wireless standards

· Four 2.4 GHz Metal PIFA Antennas

· Four 5 GHz Metal PIFA Antennas

· Support Wave 2 MU-MIMO function

· Support Tx Beamforming to enlarge the transmitting distance.

· IEEE802.11 PoE af Input design with Gigabit port supports.

· Flexible application by the built-in 2nd LAN port.

· More customized items on Band Steering for intelligent Management.

· Secured Guest Network option available

The AP is 802.11 ac wave2/a/b/g/n Access Point with speeds up to 800 Mbps on 2.4GHz and 1,733Mbps on 5GHz band. It can be configured as an Access Point, or WDS (AP, Station). The AP is an affordable solution which is built in high-powered radios and long-range settings to replace the ordinary Access Points that do not have the range and reach to connect toa growing number of wireless users. With Wave2 features, the Access Point could reduce the handling period on client devices and network with more client devices at the same time. Meanwhile, the beamforming will gather energy to a specific direction and increase the transmitting distance.

Physical Interface (WAP373)

Standard	802.11ac/a/b/g/n
Frequency	2.4GHz + 5GHz
Data Rates	800Mbps + 1733Mbps
Antennas	2.4GHz:3.29dBi; 5GHz:5.84dBi
Physical Interface	1 x GE, DC Jack (12V)
Radio Chains/Streams	4 x 4 : 4

Physical & Environment

Power Source	DC Input: 12 VDC/2A PoE: compatible with 802.3af/at 54Vdc/0.6A
Internal High Gain Antenna (Peak Gain)	~3.29dBi 2.4GHz antennas ~5.84dBi 5GHz antennas
Interface	1 x 10/100/1000Mbps Ethernet Port with 802.3af/at PoE 1 x DC power connector 1 x reset button
Dimensions (W x D x H)	200x200x40 mm
Mounting	Ceiling, T-Rail and Wall mount
Environment	Operating temperature: 0°C~50°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.

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Chapter2
Before YouBegin

Computer Settings

Windows XP/Windows 7/Windows 8/Windows 10

InordertousetheAccessPoint,youmustfirstconfigurethe

TCP/IPv4connectionofyourWindowsOScomputersystem.

1a. ClicktheStart buttonandopentheControl Panel

WindowsXP   *Windows7*

1b.Moveyourmousetothelowerrighthotcornerto
displaytheCharmsBarandselecttheControlPanelin Windows 8OS.

Windows 8

1c.InWindows10,clickStarttoselectAllAPPstoenter the folder of Windows
system for selecting Control Panel.

Windows 10

2a.In Windows XP, click Network Connections.

2b.InWindows7/Windows8/Windows10,clickView Network
Status and Tasks in the Network and
Internetsection,thenselectChangeadaptersettings.

3. RightclickonLocalAreaConnectionandselectProperties.
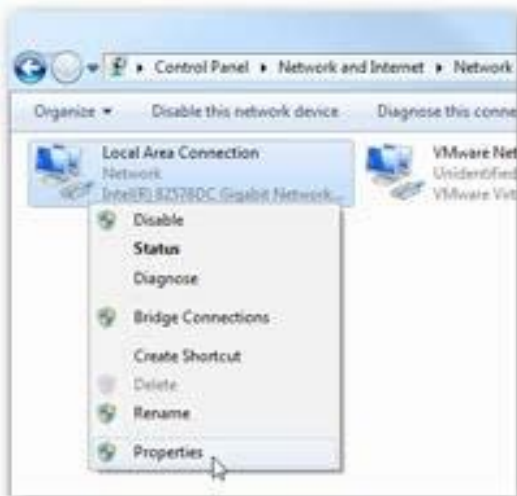
4. Select Internet Protocol Version 4 (TCP/IPv4) andthen
selectProperties.
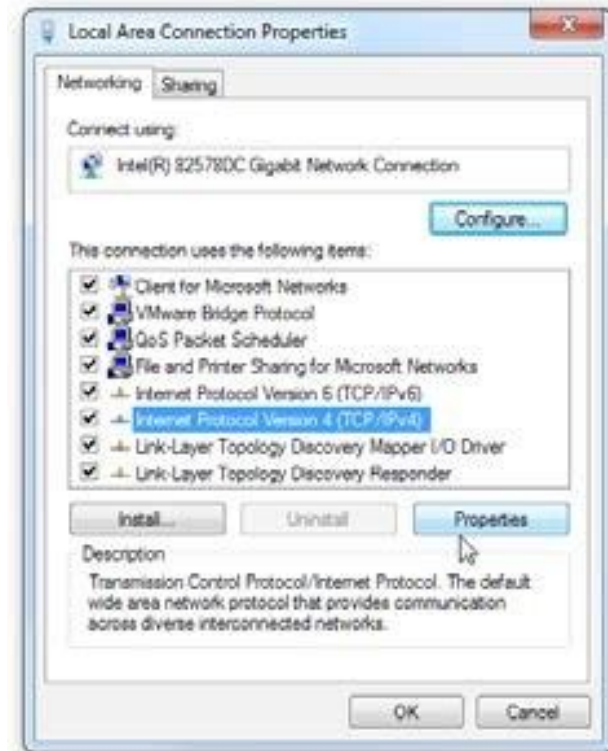
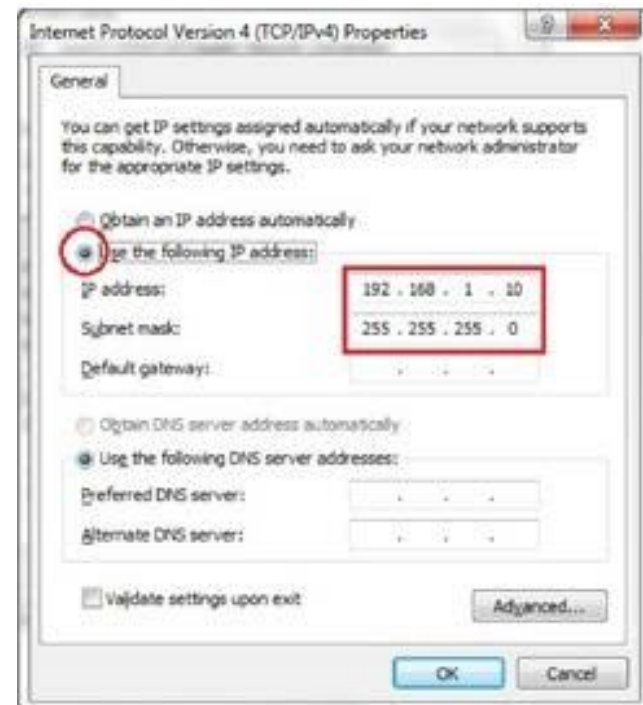5. Select Use the following IP address and enter an IP
addressthatisdifferentfromtheAccessPointandSubnet
mask,thenclickOK.

Note: EnsurethattheIPaddressandSubnetmaskare on the same subnet as the device.

Forexample: WAP373 IPaddress:192.168.1.1

PCIPaddress: 192.168.1.2–192.168.1.255

PC Subnet mask: 255.255.255.0

Apple Mac OSX

1. GotoSystemPreferences(Whichcanbeopenedinthe ApplicationsfolderorselectingitintheAppleMenu).

2. SelectNetworkintheInternet&Networksection.

3. HighlightEthernet.

4. InConfigureIPv4,selectManually.

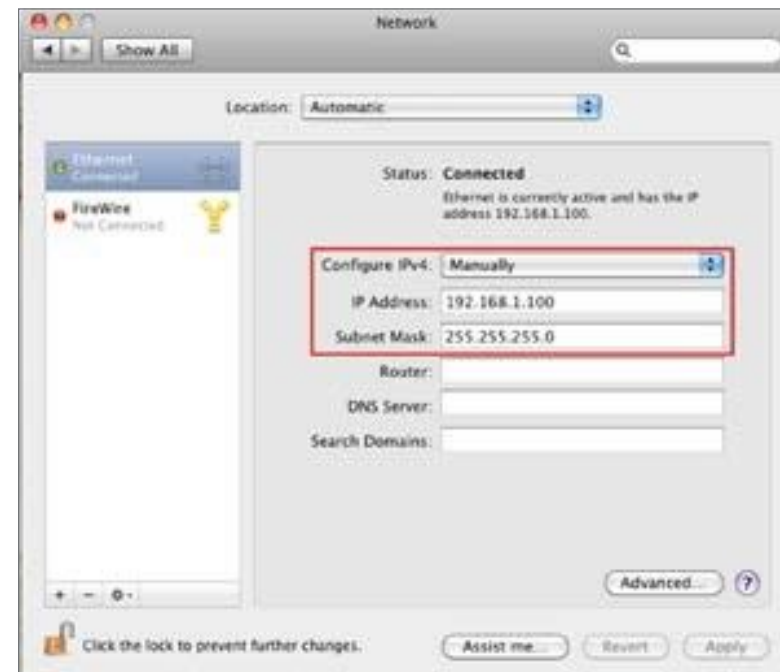5. EnteranIPaddressthatisdifferentfromtheAccess PointandSubnetmaskthenpressOK.

Note: EnsurethattheIPaddressandSubnetmaskare 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. ClickApplywhendone.

Chapter 3 **Configuring Your Access Point**

ConfiguringYourAccessPoint

Thissectionwillshowyouhowtoconfigurethedevice usingtheweb-basedconfigurationinterface.

Default Settings

PleaseuseyourEthernetportorwirelessnetworkadapter toconnecttheAccessPoint.

IP Address	192.168.1.1
Username / Password	none

Web Configuration

1. Openawebbrowser(InternetExplorer/Firefox/Safari/ Chrome)andentertheIPAddresshttp://192.168.1.1
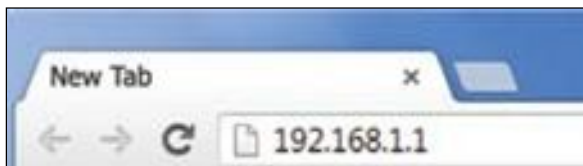
Note:IfyouhavechangedthedefaultLANIPAddressof TheAccessPoint,ensureyouenterthecorrectIPAddress.

2. The default username and password are admin. Once you have entered the correct usernameand password,clicktheLoginbuttontoopentheweb-base configuration page.

* The model name will be varied by different models.

3. Ifsuccessful,youwillbeloggedinandseetheUser Menu of this Access Point.

Chapter4
Building aWireless Network

Beforestartingtoconfigurethis AccessPoint,youmayrealizetheused scenario undervariedoperatingmodes.TheAP hastheabilitytooperateinvariousmodes.Thischapterdescribespurposeofdifferentoperatingmodesandlistsdown theoperatingmodesforAccessPointsorClientPremiseEquipments(CPE).
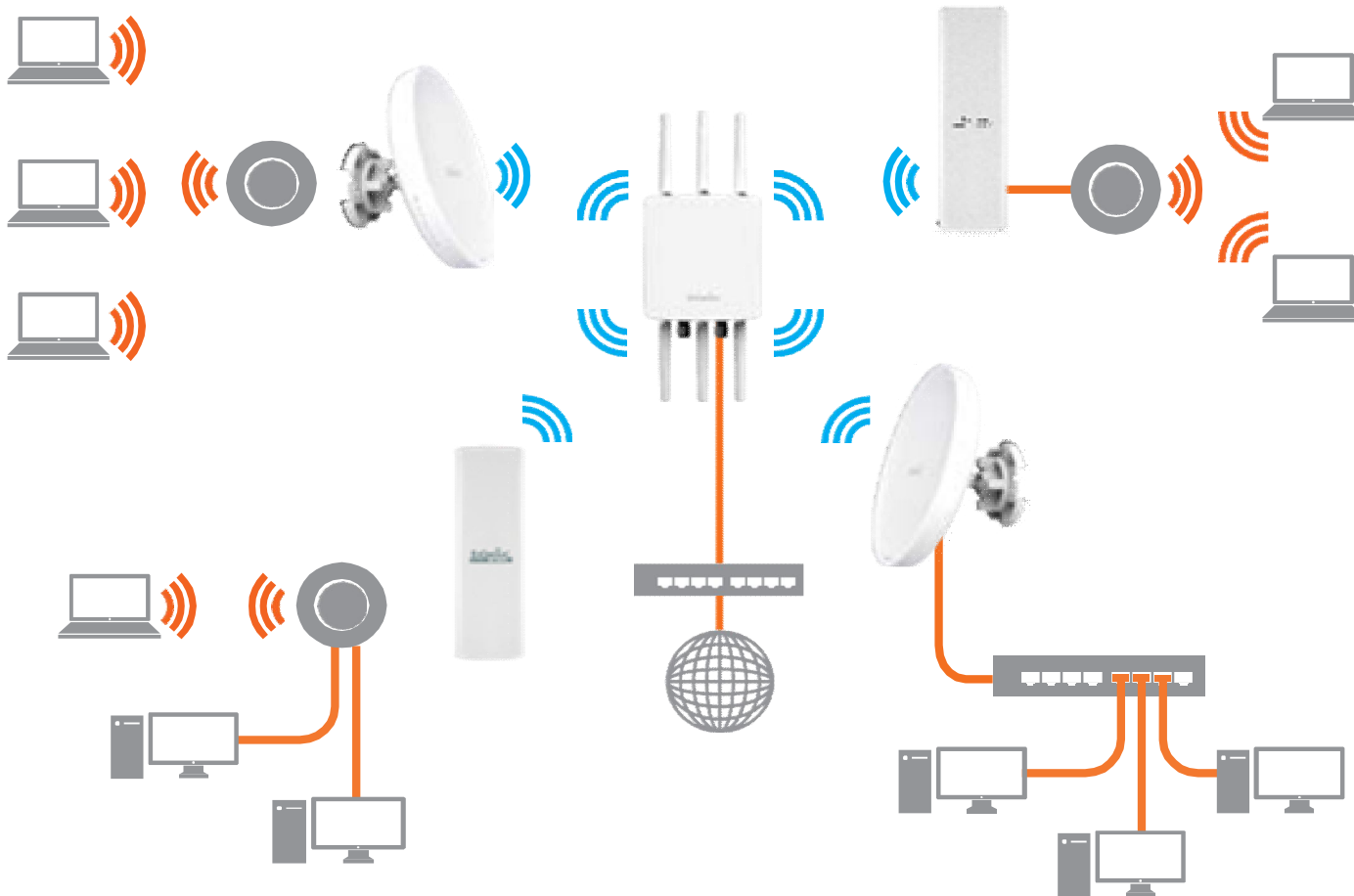
Access Point Mode

InAccessPointMode,APbehaveslikesacentralconnectionforstationsorclientsthatsupportIEEE802.11ac/a/b/g/nnetworks. ThestationsandclientsmustbeconfiguredtousethesameSSID(ServiceSetIdentifier)and security passwordtoassociate withtheAP.TheAPsupportsuptoeightSSIDsperbandatthesametimeforsecureaccess.
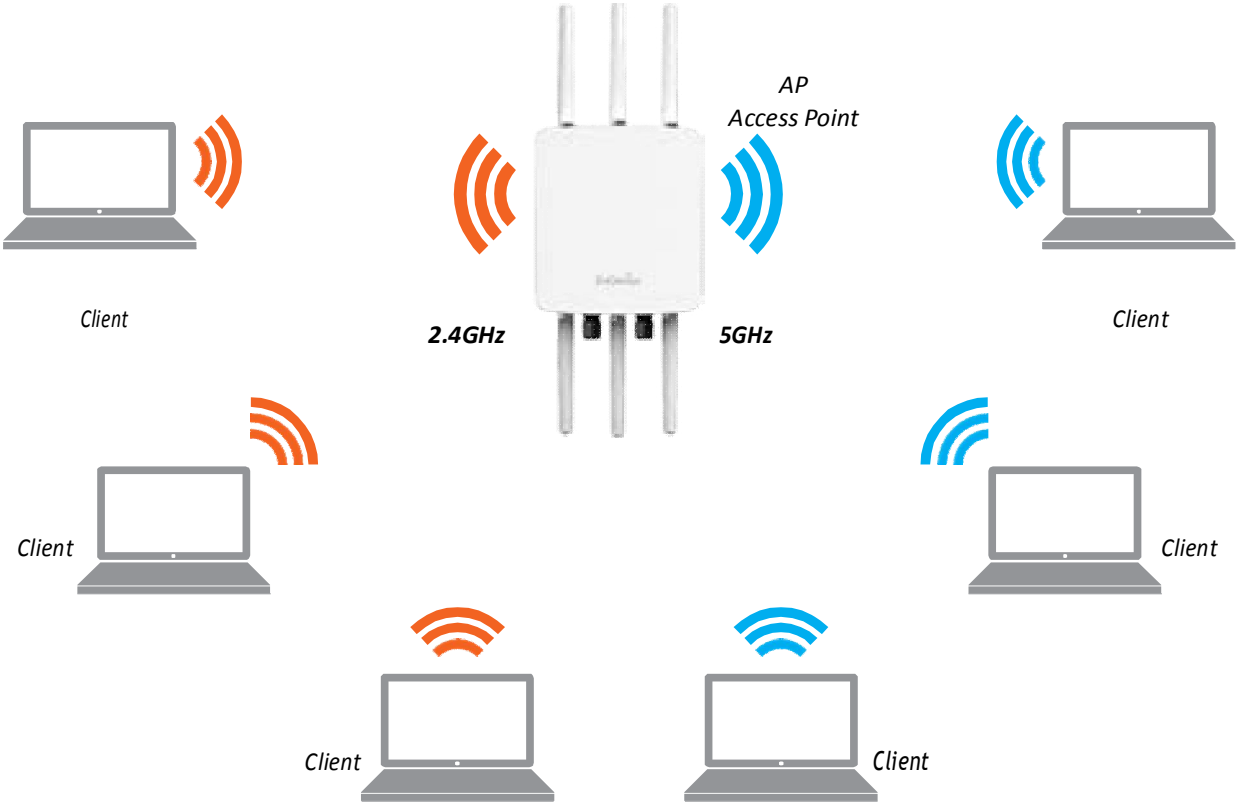
Client Bridge Mode

TheAccessPointessentiallyactsasawirelessadapterthatconnectstoanaccesspointtoallowasystemofwireless accesstothenetworkintheClientBridgemode.Sincethecomputersareonthesamesubnet,theAccessPointcan broadcast or eachallend-devices.

IfyouusetheclientbridgemodeinthisAccessPoint,youcanusetheAPDetectionfeaturetoscanforAccessPoints withinrange.WhenyoufindanAccessPoint,configurethisAccessPointtousethesameSSIDandSecurityPasswordas theAccessPointtoassociatewithit.

The AP can be used as a centralized Access Point with which other Wireless 802.11b/g/n 2.4 or ac/a/n 5GHz Client Bridges can associate; leverageing 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.
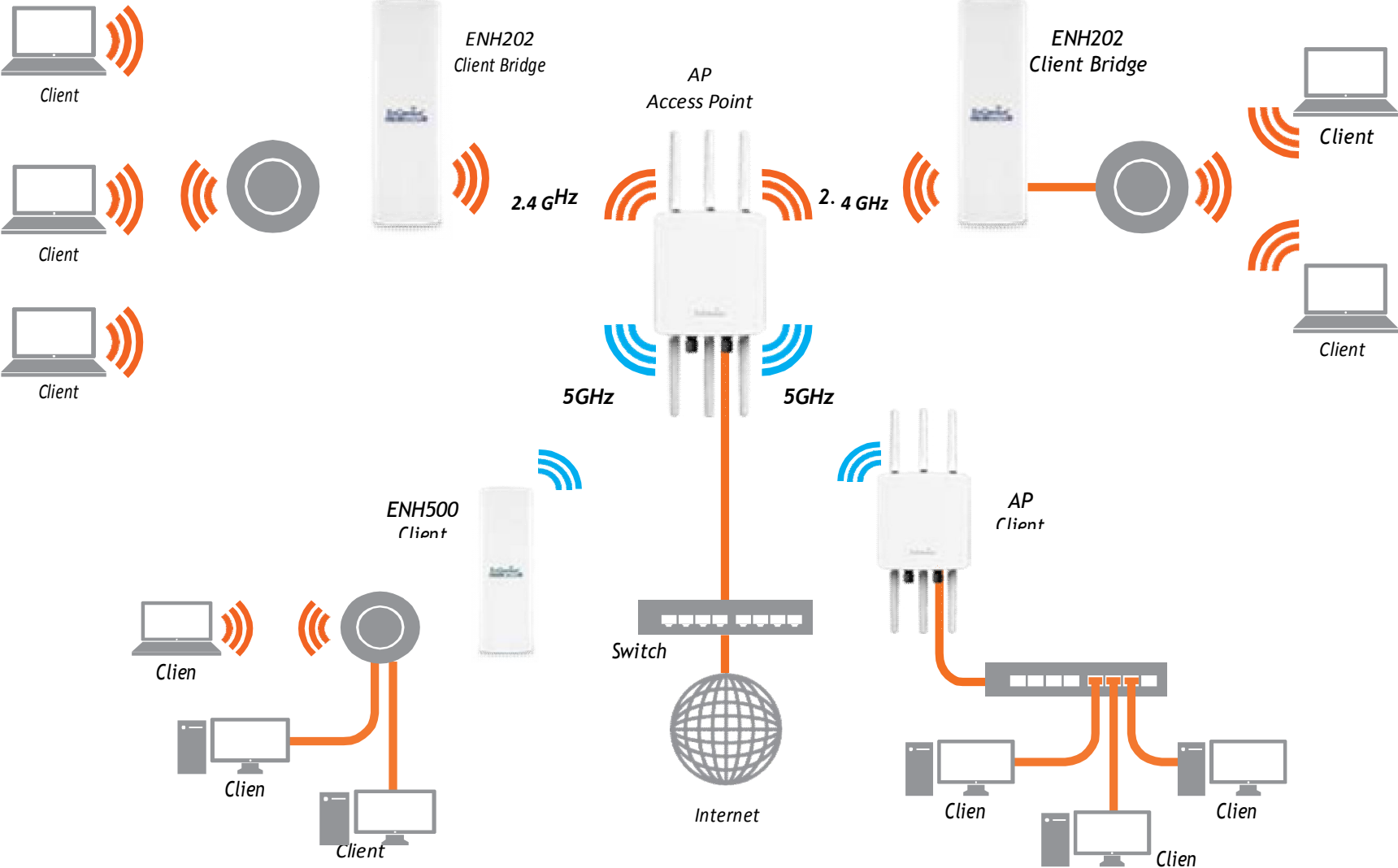
WDS APMode

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.
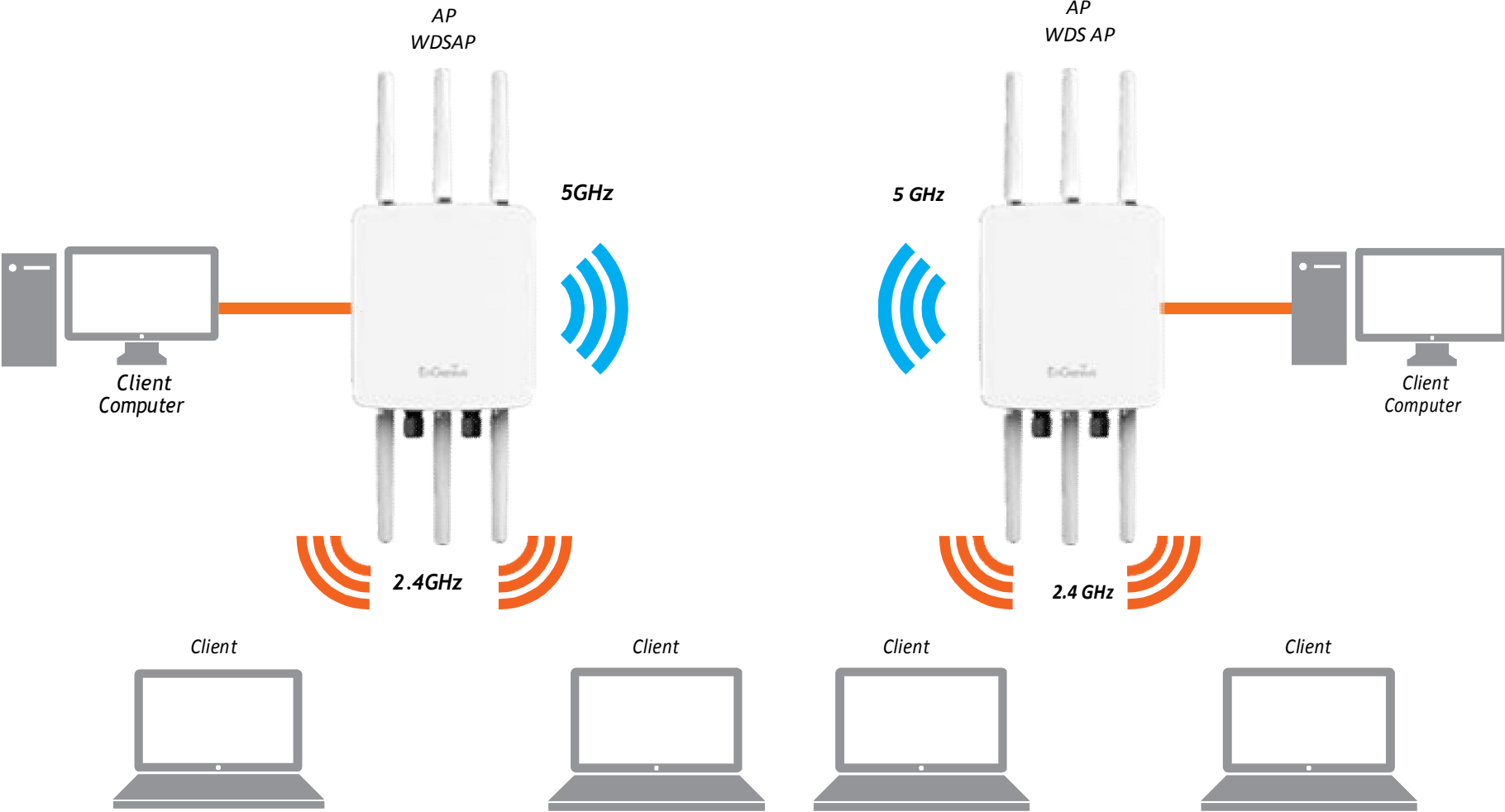
WDS Bridge Mode

InWDSBridgeMode,theAccessPointcanwirelesslyconnectdifferentLANsbyconfiguringtheMACaddressandsecurity settingsofeachAccessPoints.UsethisoperatingmodewhentwowiredLANslocatedasmalldistanceapartwantto communicatewitheachother.ThebestsolutionistousetheAccessPointtowirelesslyconnecttwowiredLANs,as showninthefollowingdiagram.

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

Note:WDSBridgeModedoesnotactasanAccessPoint.AccessPointslinkedbyWDSareusingthesamefrequency channel.MoreAccessPointsconnectedtogethermaylowerthroughput.Thisconfigurationcanbesusceptibleto generateendlessnetworkloopsinyournetwork,soitisrecommendedtoenabletheSpanningTreefunctionto preventthisfromhappening.
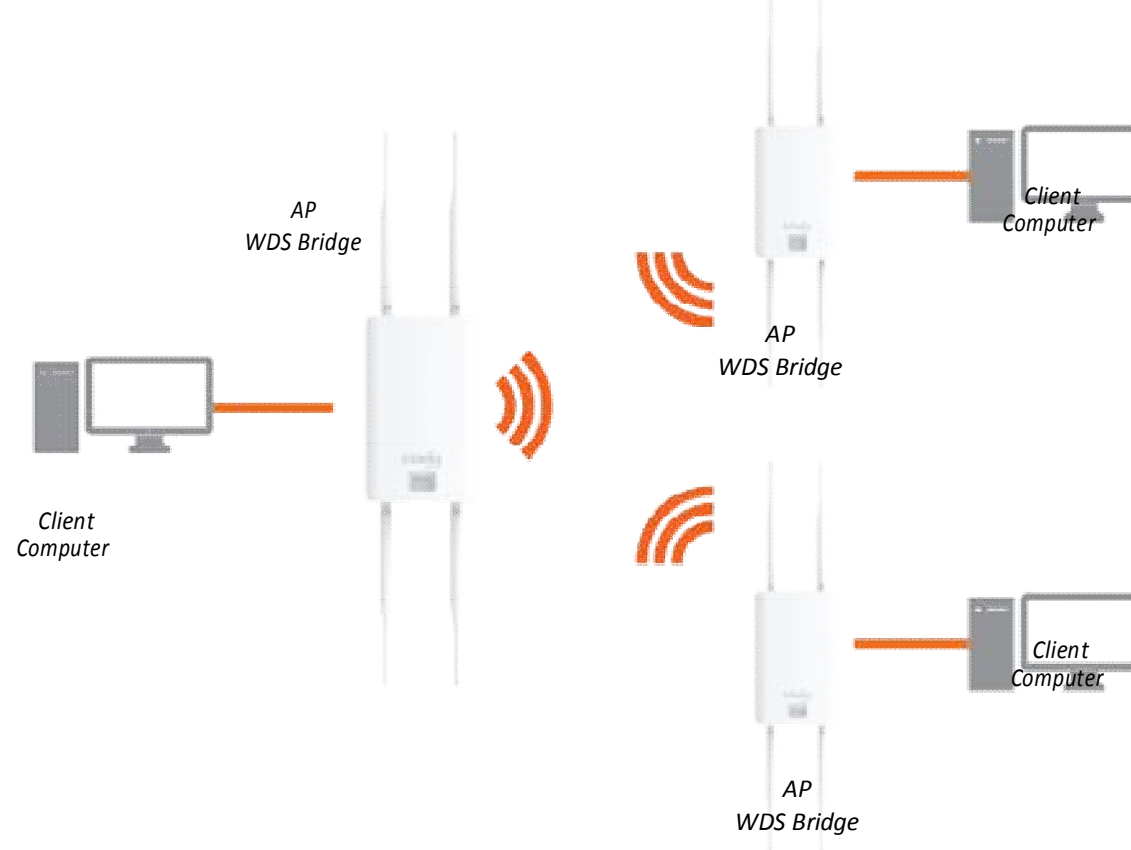
WDS Station Mode

WDSstation(WDSSTA)modeexpandstheWDSbyreceivingawirelesssignal/serviceandsharingitthroughtheEthernet port. With WDS STA mode,

Access
PointWDS
AP
on both 5 GHz or 2.4 GHz

AccessPoint
WDSStation

Access
PointWDS
Station
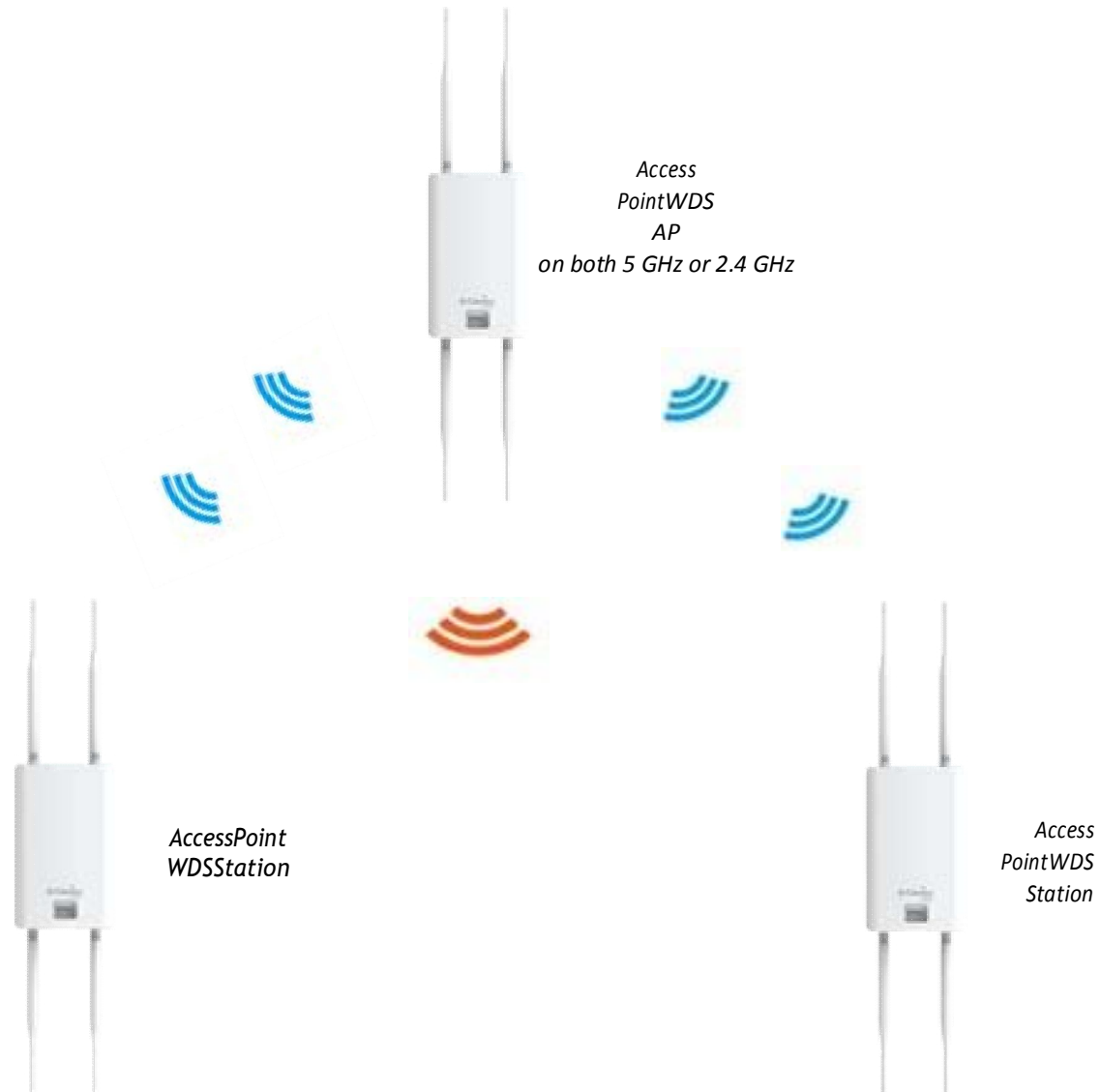
Chapter5
Status

Overview

SaveChanges

Thispageletsyousaveandapplythesettingsshownunder Unsavedchangeslist,orReverttheunsavedchangesand reverttothepревioussettingsthatwereineffect.

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

ClickingtheDeviceStatuslinkundertheOverviewmenu showsthestatusinformationaboutthecurrentoperating mode.

- TheDeviceInformationsectionshowsgeneralsystem informationsuchasDeviceName,MACAddress,Current Time,FirmwareVersion,andManagementVLANID

Note:VLANIDisonlyapplicableinAccessPoint,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 MemorysuchasTotalAvailable,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 LocalArea NetworksettingssuchastheLANIPAddress,Subnet mask,PrimaryDNSAddress,SecondaryDNSAddress, statusofDHCPclient,andstatusofSpanningTreeprotocol (STP).

Network

IPv4 WAN Status	Not connected
IPv6 WAN Status	Not connected
Active Connections	270 / 16384 (1%)

TheWireless LAN Information 2.4 GHz/5 GHz section showswirelessinformationsuchasOperationMode, Frequency,andChannel.SincethisAccessPointsupports multiple-SSIDs,informationabouteachSSID,theESSID, andsecuritysettings,aredisplayed

Note:ProfileSettingsareonlyapplicableinAccessPointand WDS AP modes.

Wireless

Generic 802.11ac Wireless Controller (wifi0)	**SSID:** WAP373-5G1
100%	**Mode:** Master
	Channel: 161 (5.805 GHz)
	Bitrate: 1733.3 Mbit/s
	BSSID: EC:43:F6:F9:18:09
	Encryption: None
Generic 802.11bgn Wireless Controller (wifi1)	**SSID:** WAP373-2.4G
100%	**Mode:** Master
	Channel: 6 (2.437 GHz)
	Bitrate: 378.4 Mbit/s
	BSSID: 00:02:6F:12:34:56
	Encryption: None
Generic 802.11bg Wireless Controller (wifi2)	**SSID:** WAP373-5G2
0%	**Mode:** Master
	Channel: 40 (0.000 GHz)
	Bitrate: ? Mbit/s
	Wireless is disabled or not associated

Connections

2.4 GHz/5 GHz Connection List

ClicktheconnectionlinkundertheOverviewmenudisplays theconnectionlistofclientsassociatedtotheAP's2.4 GHz/5 GHz, along with the MAC addresses andsignal strengthforeachclient.ClickingRefreshupdatesthe clientlist.

    Note:OnlyapplicableinAccessPointandWDSAP modes.

2.4 GHz/5 GHz WDS Link List

ClicktheconnectionlinkundertheOverviewmenu.This pagedisplaysthecurrentstatusoftheWDSlink,including WDSLinkID,MACAddress,LinkStatusandRSSI.
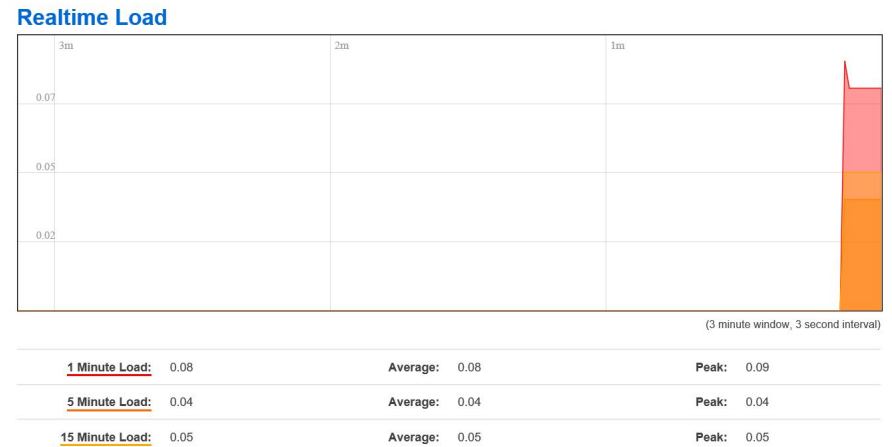
    Note:OnlyapplicableinWDSAPandWDSBridgemodes.

Realtime

Realtime

TheRealtimesectioncontainsthefollowingoptions:

Realtime Load

1 Minute Load:	0.08	Average:	0.08	Peak:	0.09
5 Minute Load:	0.04	Average:	0.04	Peak:	0.04
15 Minute Load:	0.05	Average:	0.05	Peak:	0.05

(3 minute window, 3 second interval)

CPU Loading: 3 minutes CPU loading percentage information,itdisplayscurrentloading,averageloading andpeakloadingstatus.Leftbarisloadingpercentage; buttonistimetracing.Intervalisevery3seconds

Associated Stations

	MAC-Address	Network	Signal	Noise	RX Rate	TX Rate
	00:00:00:00:00:00	Master "WAP373-5G1"	-95 dBm	-95 dBm	0.0 Mbit/s	0.0 Mbit/s
	00:00:00:00:00:00	Master "WAP373-2.4G"	-95 dBm	-95 dBm	0.0 Mbit/s	0.0 Mbit/s

Chapter6
Network

Basic

IPv4/IPv6 Settings

Thispageallowsyoutomodifythedevice'sIPsettings.

IPNetworkSettings:SelectwhetherthedeviceIPaddresswilluseastaticIPaddressspecifiedintheIPaddressfield orbeobtainedautomaticallywhenthedeviceconnectsto a DHCPserver.IP Address: The IP address of this device.

Subnet Mask: TheIP Subnet mask ofthis device.

Gateway:TheDefaultGatewayofthisdevice.Leaveit blankifyouareunsureofthissetting.
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

Interface Configuration

General Setup | Wireless Security | Advanced Settings

ESSID: WAP373-5G1

Mode: Access Point

Network: ☑ lan: 🖧🖧⭐⭐⭐
☐ wan: *(no interfaces attached)*
☐ wan6: *(no interfaces attached)*
☐ create:

ⓘ Choose the network(s) you want to attach to this wireless interface or fill out the *create* field to define a new network.

Hide ESSID: ☐

DeviceName:Enteranameforthedevice.Thenameyou typeappearsinSNMPmanagement.Thisnameisnotthe SSIDandisnotbroadcasttootherdevices.

Band Steering (Avaiable on WAP353): Enable Band Steeringtosend802.11nclientstothe5GHzband,where 802.11b/g clients cannot go, and leave802.11b/gclientsin2.4GHztooperateattheirslowerrates. Before implementing this feature, we suggest youtoassuretheboth2.4GHzand5GHzSSID,as well assecuritysettingsmustbethesame.EnGeniusBandSteeringsup portsfollowingadvancedsettings,

*Force5GHz:WhenbandsteeringisconfiguredtoForce 5GHzmode,theAPwillnotdualbandcapableclient

Devicestonetworktothe2.4GHzbandonlyiftheclient devicesarenotcurrentlyassociatedon2.4GHzradiointhisAP.

*Prefer5GHz:WhenbandsteeringisconfiguredtoPrefer 5GHzmode,theAPwillsteerdualbandcapableclient devicesto5GHzradiowhentheRSSIvalueoftheseclient deviceson5GHzradioismorethansetone.Theallowed RSSIvaluefordefaultsettingis-75dBm.

*BandBalance:WhenbandsteeringisconfiguredtoBandBalanc emode,theAPwillsteerdualbandcapable clientdevicesto5GHzwhentheRSSIvalueoftheseclient deviceson5GHzradioismorethansetone.Toevenly allocateRFresourceontheboth2.4GHzand5GHzradios, usersalsocansettheportionofclientdeviceson5GHz radiotoassuresmoothlyconnection.Thedefaultvalueof the5GHzradiois75%.

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

Device Configuration

General Setup | Advanced Settings

Status
100%
Mode: Master | **SSID:** WAP373-2.4G
BSSID: 00:02:6F:12:34:56 | **Encryption:** None
Channel: 6 (2.437 GHz) | **Tx-Power:** 25 dBm
Signal: -97 dBm | **Noise:** -95 dBm
Bitrate: 378.4 Mbit/s | **Country:** 00

Wireless network is enabled   [Disable]

Operating frequency
Mode: N
Channel: 6 (2437 MHz)
Width: 40 MHz

Transmit Power   25 dBm (316 mW)
dBm

Device Configuration

General Setup | Advanced Settings

Status
100%
SSID: WAP373-5G1 | **Mode:** Master
Wireless is disabled or not associated

Wireless network is disabled   [Enable]

Operating frequency
Mode: Legacy
Channel: 161 (5805 MHz)

Transmit Power   24 dBm (251 mW)
dBm

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, EnGenius devices also support WDS modes for peer to peer or peer to multi-peer connections.

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

ChannelHTMode:Scrowdownthislisttoselectbandwidthforoperati
ngunderafrequencyband.Thedefaultchannelbandwidthis20MHzo
n2.4GHzfrequencyradioand40
MHzon5GHzfrequencyradio.Consideringthedifferent
applications,userscandecidetoimplementachannel
bandwidthtofulfillrealapplications.Thelargerthechannel,
thegreaterthetransmissionqualityandspeed.

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 selectionis"All"toperformautochannelontheexistchannel list.

*None:Click"None"todisablethesettingonthisradio. This radio is disabled.

*Group Configuration: Click specific groups of channels forperformingautochannelfunction.Forexample,users canclickU-NII-1andU-NII-3toperformautochannelon thesebands;themechanismofthisAPwillselectthe relativelyoptimalchanneltoperformwirelessservice.

DataRate:Selectadataratefromthedrop-downlist.The datarateaffectsthroughputofdataintheAP.Selectthe bestbalanceforyouandyournetworkbutnotethatthe lowerthedatarate,thelowerthethroughput,though transmissiondistanceisalsolowered.

RTS/CTSThreshold:Specifiesthethresholdpackagesize forRTC/CTS.AsmallnumbercausesRTS/CTSpacketstobe sentmoreoftenandconsumesmorebandwidth.

ClientLimits:Limitsthetotalnumberofclientsonthisradio. Oncesettingtheceilingofclientnumbers,themaximum

Associated clientdeviceswillberestrictedatthisnumber.

Aggregation:Integratemultipledatapacketsintoone packettodelivertoclientdevices.Thisoptionreducesthe numberofpackets,butalsoincreasespacketsizes.

APDetection:APDetectioncanselectthebestchannelto usebyscanningnearbyareasforAccessPoints.

Distance: Specifies the distance between AccessPoints andclientdevices.Thepropersettingforthisparameter mayassistAccessPointstoavoidtheimproper operationwhentransmittingdataunderafieldapplication.

Save:ClickSavetoconfirmthechangesorCanceltocancel andreturntoprevioussettings.

2.4 GHz/5 GHz SSID Profile

Interface Configuration

General Setup   Wireless Security   Advanced Settings

ESSID   WAP373-5G1

Mode   Access Point

Network   ☑   lan: 🖥️ 🖥️ ⭐ ⭐ ⭐
             ☐   wan: *(no interfaces attached)*
             ☐   wan6: *(no interfaces attached)*
             ☐   create:

             ❓ Choose the network(s) you want to attach to this wireless interface or fill out the *create* field to define a new network.

Hide ESSID   ☐

⬅ Back to Overview   Save & Apply   Save   Reset

Interface Configuration

General Setup   Wireless Security   Advanced Settings

ESSID   WAP373-2.4G

Mode   Access Point

Network   ☑   lan: 🖥️ 🖥️ ⭐ ⭐ ⭐
             ☐   wan: *(no interfaces attached)*
             ☐   wan6: *(no interfaces attached)*
             ☐   create:

             ❓ Choose the network(s) you want to attach to this wireless interface or fill out the *create* field to define a new network.

Hide ESSID   ☐

⬅ Back to Overview   Save & Apply   Save   Reset

(eight (8) per band). If multipleclient deviceswillbeaccessingthenetwork,youcanarrangethe devicesintoSSIDgroups.ClickEdittoconfiguretheprofile andcheckwhetheryouwanttoenableextraSSID.

CurrentProfile:Youcanconfigureuptosixteen(16) different SSIDs

Enable:ClickthischeckboxtoenablethisSSIDinterface.
ThedefaultSSIDsareenableonthebothfirst2.4GHzand 5GHzSSID.

SSID: SpecifiestheSSIDforthecurrentprofile.

HiddenSSID: CheckthisoptiontohidetheSSIDfromclients.
Ifchecked, theSSIDwillnotappearinthesitesurvey.

ClientIsolation:Clicktheappropriateradiobuttontoenable
thisfunctionforallowingorpreventingcommunication between
clientdevices.

VID:SpecifiestheVLANtagforeachprofile.Ifyournetwork includes
VLANs,youcanspecifyaVLANIDforpacketspass
throughtheAccessPointwithatag.

Wireless Security: SeetheWirelessSecuritysection.

VLAN Isolation: Restrict clients communicating with
differentVIDsbyselectingtheradiobutton.

L2Isolation:Enablethisfunctionpreventclientdevices
tocommunicateonthebothWLANandLAN.

Save: Click Save to accept the changes.

Wireless Security

TheWirelessSecuritysectionletsyouconfiguretheAP'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)

HexadecimalNumbers(Foradvancedusers)

KeyLength:Selectthedesiredoptionandensurethat wirelessclientsusethesamesetting.Yourchoicesare64, 128,and152-bitpasswordlengths.

DefaultKey:SelecttheKeyyouwishtobethedefault. TransmitteddataisALWAYSencryptedusingtheDefault Key;theotherKeysarefordecryptiononly.Youmustenter aKeyValuefortheDefaultKey.

EncryptionKeyNumber:EntertheKeyValueorvaluesyou wishtouse.OnlytheKeyselectedasDefaultisrequired. Theothersareoptional.

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

Encryption:YoumayselectAES,TKIPorBoth(TKIP+AES) tobetheencryptiontypeyouwouldlike.Pleaseensure thatyourwirelessclientsusethesamesettings.

Passphrase:WirelessclientsmustusethesameKeyto associatethedevice.IfusingASCIIformat,theKeymust befrom8to63charactersinlength.IfusingHEXformat, theKeymustbe64HEXcharactersinlength.

Group Key Update Interval: Specifies how often, in seconds,theGroupKeychanges.Thedefaultvalueis3600.

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

Encryption:SelecttheWPAencryptiontypeyouwouldlike. Pleaseensurethatyourwirelessclientsusethesamesettings.

RadiusServer:EnthertheIPaddressoftheRadiusserver.

RadiusPort:Entertheportnumberusedforconnections totheRadiusserver.

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:Determineswhethernetworkaccessisgranted ordeniedtoclientswhoseMACaddressesappearinthe 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

Interface Configuration

| General Setup | Wireless Security | Advanced Settings |

ESSID   WAP373-2.4G

Mode   Access Point (WDS)

Network   ☑ lan:
      ☐ wan: (no interfaces attached)
      ☐ wan6: (no interfaces attached)
      ☐ create:

   ⓘ Choose the network(s) you want to attach to this wireless interface or fill out the *create* field to define a new network.

Hide ESSID   ☐

Back to Overview   Save & Apply   Save   Reset

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

Router Password

Changes the administrator password for accessing the device

Password

Confirmation

AdministratorUsername:EnteranewusernameforloggingintotheN ewNameentrybox.

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

ThispageallowsyoutoupgradethefirmwareoftheAP.

Flash new firmware image

Upload a sysupgrade-compatible image here to replace the running firmware. Check "Keep settings" to retain the current configuration (requires an OpenWrt compatible firmware image).

Keep settings: ☑

Image: [   ] 瀏覽... Flash image...

To Perform the FirmwareUpgrade:

1. ClicktheChooseFilebuttonandnavigatetheOSfile systemtothelocationoftheupgradefile.

2. Selecttheupgradefile.Thenameofthefilewillappear intheUpgradeFilefield.

3. ClicktheUploadbuttontocommencethefirmware upgrade.

   Note:Thedeviceisunavailableduringthe Firmware upgradeprocessandmustrestartwhentheupgradeis completed.Anyconnectionstoorthroughthedevice will belost.

Backup/Restore

This page allows you to save the current device configurations. When you save your configurations, you also can reload the saved configurations into the device through the Restore Saved Settings from a file section. If extreme problems occur, or if you have set the AP incorrectly, you can use the Reset button in the Revert to Factory Default Settings section to restore all the configurations of the AP to the original default settings.

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

Restore New Setting: To restore settings that have been previously backed up, click Browse, select the file, and click Restore.

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

Backup / Restore

Click "Generate archive" to download a tar archive of the current configuration files. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).

Download backup: ▶ Generate archive

Reset to defaults: ✖ Perform reset

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

Restore backup: [   ] 瀏覽...   ▶ Upload archive...

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

The AP automatically logs (records) events of possible interest in its internal memory. To view the logged information, click the Log link under the System Manager menu. If there is not enough internal memory to log all events, older events are deleted from the log. When powered down or rebooted, the log will be cleared.

System Log

```
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.019525] siwfreq
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.020598] Set freq vap 0 stop send + c6660000
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.025194] Set freq vap 0 stop send -c6660000
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.056918] Set wait done --c6660000
Thu Dec  6 10:28:21 2018 user.emerg syslog: Interface doesn't accept private ioctl...
Thu Dec  6 10:28:21 2018 user.emerg syslog: stafwd (8BE0): Invalid argument
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.100920]
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.100920]  DES SSID SET=
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.106747] [DEBUG] vap-0(ath0):set SIOC80211NWID, 10 characters
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.112007]
Thu Dec  6 10:28:21 2018 kern.warn kernel: [   43.112007]  DES SSID SET=WAP373-5G1
Thu Dec  6 10:28:21 2018 user.emerg syslog: sh: 0: unknown operand
Thu Dec  6 10:28:21 2018 user.emerg syslog: sh: 0: unknown operand
```

Logout

Logout:ClickLogout inManagementmenutologout.

Authorization Required

Please enter your username and password.

Username	root
Password	

Login   Reset

Reset

Insomecircumstances,itmayberequiredtoforcethedevicetoreboot.ClickonReset toreboottheAP.

Onceyouclickresetbutton,youwillseetheoptionsforreboot or restore this AP.

Rebootthedevice:Clickittoreboottthisdevice.

RestoretoFactoryDefault:Clickittoresettthisdevicetofactory 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:

(i) the device for operation in the band 5150-5250 MHz is only for use to reduce the potential for harmful interference to co-channel mobile satellite systems;

(ii) 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:

(i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) 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.Ceproduitrepond aux specifications techniques applicables a l'innovation, Science et DeveloppementeconomiqueCanada.

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 radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up 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 detailed information the end-user should contact the national spectrum authority in France.

The frequency and the maximum transmitted power in EU are listed below:
2412-2472MHz: 17dBm
5150-5250 & 5725-5850MHz: 18dBm

C€0560①

Česky [Czech]	*[Jméno výrobce]* tímto prohlašuje, že tento *[typ zařízení]* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
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.
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.
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.
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.
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.
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.
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.
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*

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	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.
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.
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.
Magyar [Hungarian]	Alulírott, *[gyártó neve]* nyilatkozom, hogy a *[... típus]*megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
Polski [Polish]	Niniejszym *[nazwa producenta]* oświadcza, że *[nazwa wyrobu]* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
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.
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.
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.
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.