EVEREST
NETWORKS

INSTALLATION GUIDE

AP300

Wireless Access Point

Model Number: AP23I300
Release Number: 2.5.0

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The AP300 Wireless Access Point installation must be performed by certified technicians only and in compliance with all local/state/federal safety requirements. All warnings and information in this manual should be read and understood before proceeding with installation. Any noncompliance by the installer or end user voids the warranty of the product.

General Safety

You can be killed or injured if performing antenna installation near electrical power lines. Carefully read and follow all instructions in this guide. Ensure that there are no high voltage or electrical fields nearby.

Working Aloft Warning

When working on tower or roof, individuals must wear safety belts. Tools must be tied to the individual using them. Workers below must wear safety helmets.

Lightning Activity Warning

Make sure not to connect or disconnect cables during periods of lightning activity. A surge protective device should be installed to prevent potential damage from very high surges, for instance, the peak surges caused by lightning.

Explosive Device Proximity Warning

Do not operate network devices close to explosive merchandise or in explosive environments, for example, in the vicinity of a gas station.

Antenna Placement Warning

Do not install any antenna near overhead power lines or other electric light, or where the antenna can come into contact with such circuits.

Grounding Warning

Protect your AP300 Wireless Access Point by installation of grounding lines. The ground connection must be complete before connecting power to the AP300 Wireless Access Point enclosure. The requirement of grounding is to make sure the resistance is less than 5 ohms between the ground termination point to grounding tier.

Power Installation Warning

The installation of the power switch must be performed by a certified technician. The power switch is not supplied with the AP300 Wireless Access Point. The power cord must be assembled by a certified technician, and the final assembly must comply with related requirements.

Solar Irradiation and High Temperature Protection

Pay attention to the level of sunlight, which can increase the working temperature of the AP300 Wireless Access Point to higher than specifications allow.

OVERVIEW

This document provides information and procedures required to install and configure the AP300 Wireless Access Point (model number AP23I300) into a WLAN installation and is intended for certified system installers, system administrators, and network operators.

The WLAN system is designed for high density deployments. It comprises of the following main components:

- AP300 Wireless Access Point (AP)
- Access Controller (AC)
- BaseCamp™ Wireless Management System

Dependencies

The installation and configuration of AP300 Wireless Access Point depends on the following components:

- Access Controller
- BaseCamp™ Wireless Management System
- DHCP Server

AP 1002 Oi Package Contents

The AP300 package consists of the following items:

- One AP300 Wireless Access Point
- Ceiling Mount Adapter
- Nylon Hollow Wall Anchors and Screws

The installation technician is responsible for procuring additional wall/ceiling anchors, mounting screws, and safety systems, as required by the local/state/federal authorities governing the installation of the AP300 Wireless Access Point.

Additional Item

The following items are to be purchased separately:

- Access Controller

The BaseCamp™ Wireless Management System is bundled along with the Access Controller.

Item Identification

The following figures show top and bottom view of the AP300 Wireless Access Point.

Figure 1: AP300 Wireless Access Point - Top View

Figure 2: AP300 Wireless Access Point - Bottom View

Related Documentation

Access Point Installation Guides

- AP1004NRe Installation Guide..... DOC-000003
- AP1004WRe Installation Guide..... DOC-000004
- AP1002We Installation Guide DOC-000005
- AP1002Oi Installation Guide..... DOC-000006
- AP1004WRi Installation Guide..... DOC-000023
- AP1004UNe Installation Guide DOC-000024
- AP1004WRe-U Installation Guide..... DOC-000025
- AP300 Installation Guide..... DOC-000026

Controllers Installation Guides

- Access Controller Configuration Guide DOC-000019

BaseCamp™ Wireless LAN Management

- BaseCamp™ System User Guide..... DOC-000008
- BaseCamp™ Quick Start Guide DOC-000017

INSTALLING AP300

This section provides information and procedures required to install the AP300 Wireless Access Point using various methods.

The AP300 Wireless Access Point installation must be performed by certified technicians only and in compliance with all local/state/federal safety requirements and building codes.
Proper grounding and surge protectors may be required in outdoor installations.

The network coverage depends on the location and position of the AP300 Wireless Access Point.

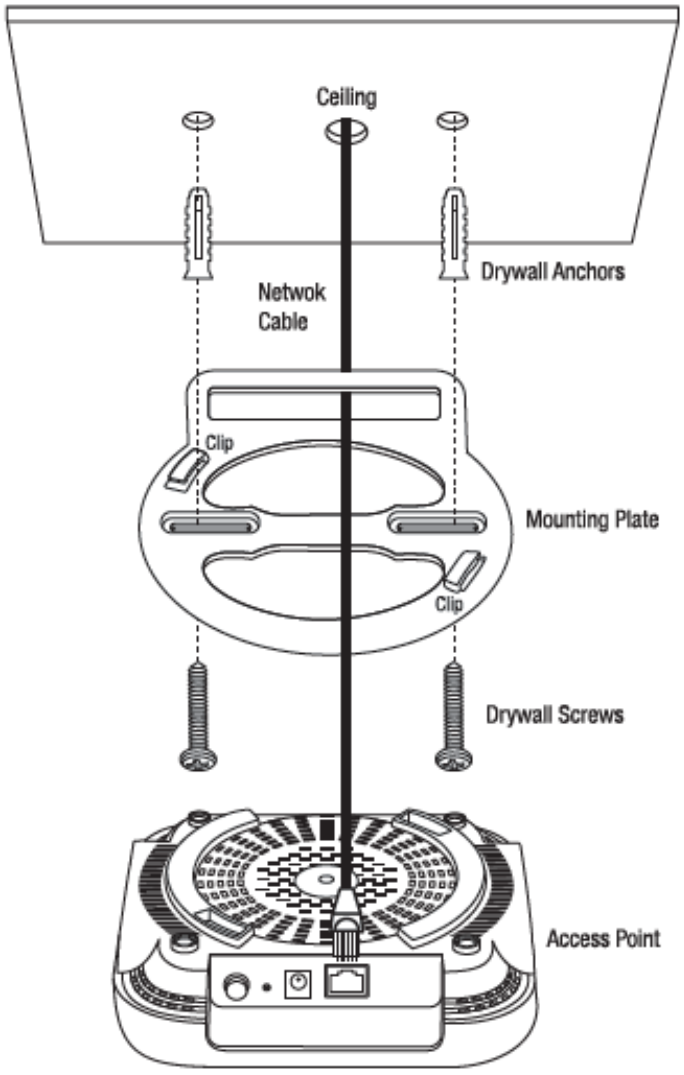
AP300 Installation Using Mounting Bracket

Figure 3 on the next page shows how to mount the AP300 access point to a wall or ceiling, First, if applicable, position the mounting plate in the desired location on the wall or ceiling so the network cable aligns with one of the larger opening in the mounting plat.

Install the mounting plate with clips facing away from the wall or celling.

If mounting the AP300 on a wall, please insure that the orientation of the bracket is correct so the Text on the AP300 is readable.

Figure 3: AP300 Mounting



Secure the mounting plate using the included drywall anchors and screws and connect the network cable to the network LAN1 port of the access point.

Figure 4: Locking the AP300 to Mounting

Align the access point mounting holes with the mounting plate clips and rotate the access point clockwise to lock into place.

Finally, install the cable guard by shield it onto the mounting plate until it locks into the plate.

CONFIGURING AP300

This section provides an overview of the basic procedures required to configure the AP300 Wireless Access Point. Please refer to the BaseCamp[tm] User's Guides for more details on configurating access points and setting up more advanced deployment scenarios.

Logging into BaseCamp

Perform this procedure to log into BaseCamp.

Enter the BaseCamp URL, https://<AC IP address> in to the address window on your browser. When the Everest BaseCamp[tm] welcome screen is displayed, use the following credentials to log in:

Email: admin@admin.com
Password: admin

Configuring AP300

Perform this procedure to configure the AP300 Wireless Access Point.

Configure the PoE+ port of the L2/L3 switch as access ports with untagged PVID.

Only one Ethernet port is required for AP300 installation and operation.

For more information on configuring the AP300 Wireless Access Points that are connected to the POE+ source that supports a discovery protocol, see Configuring AP300 to Work with Discovery Protocol.

Connect the AP300 Access Point to a POE+ source.

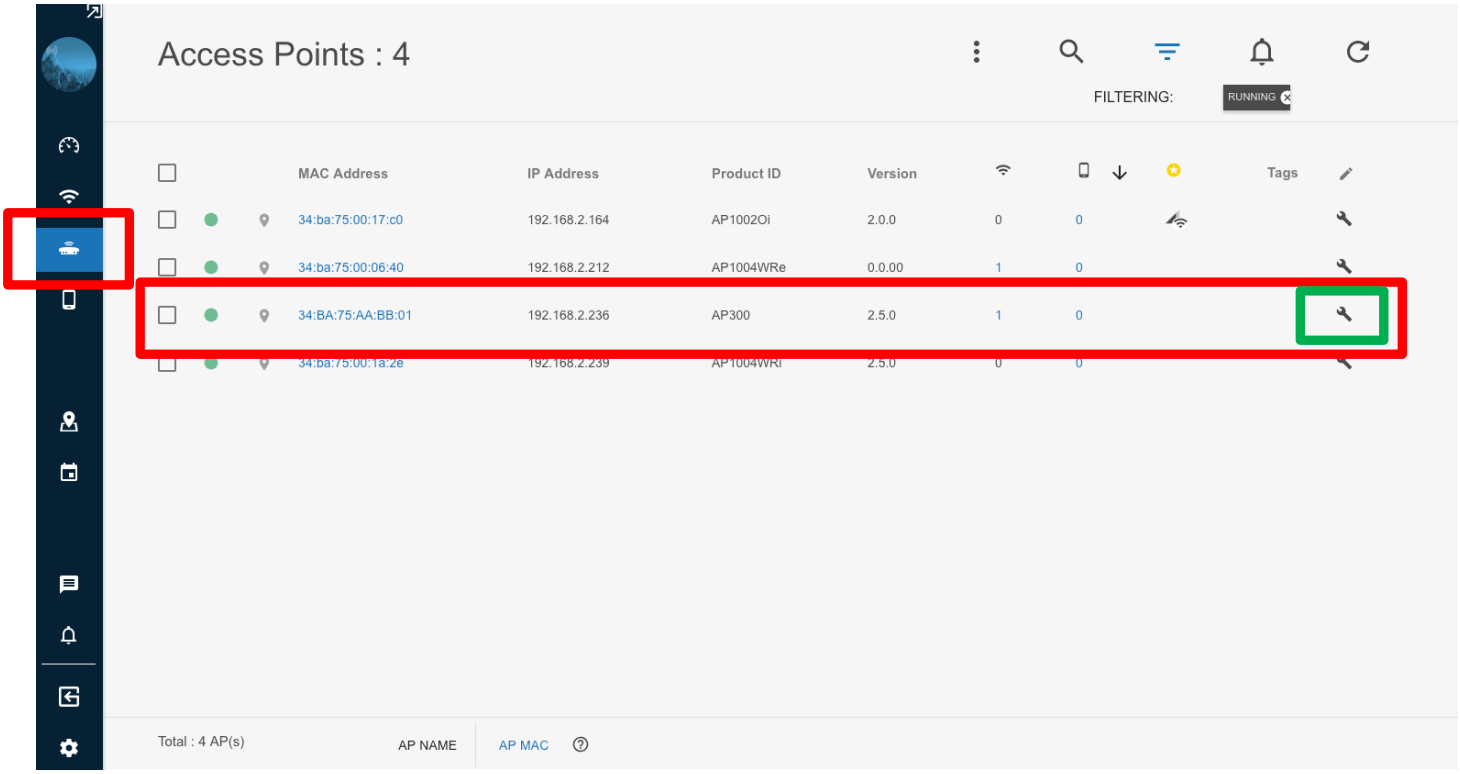
Within about 90 seconds after the access point receives power, the AP300 Access Point will requests an IP address from the DHCP server

Verify if the AP300 was assigned an IP address, by doing one of the following:

Review the DHCP logs on the DHCP server
Log into BaseCamp to review the status in the Access Points screen

When an AP is discovered, it will receive its own IP address and the IP Address of the Access Controller. Once a secure connection has been established, the AP300 will be displayed in the 'Access Point' screen in the BaseCamp[tm] Web Page. Figure 6 on the next page shows an example of the information available on this screen.

Figure 5 - Everest BaseCamp[tm] Access Point Screen



Configuring the Country Code

When a new AP300 access point is discovered by the Access Controller, the Country Code stored in to the access point non-volatile memory will be the matched against the locked Country Code of the controller before the access point is allowed to join the network and configured to transmit.

> The US & Canada are among the countries that restrict the end user's ability to modify the country code.

When a generic Country Code is detected, which is the initial value programmed when the AP300 is manufactured, the Access Controller will register the AP300 by pushing the locked country code from the Access Controller to the access point, where it is stored in non-volatile memory.

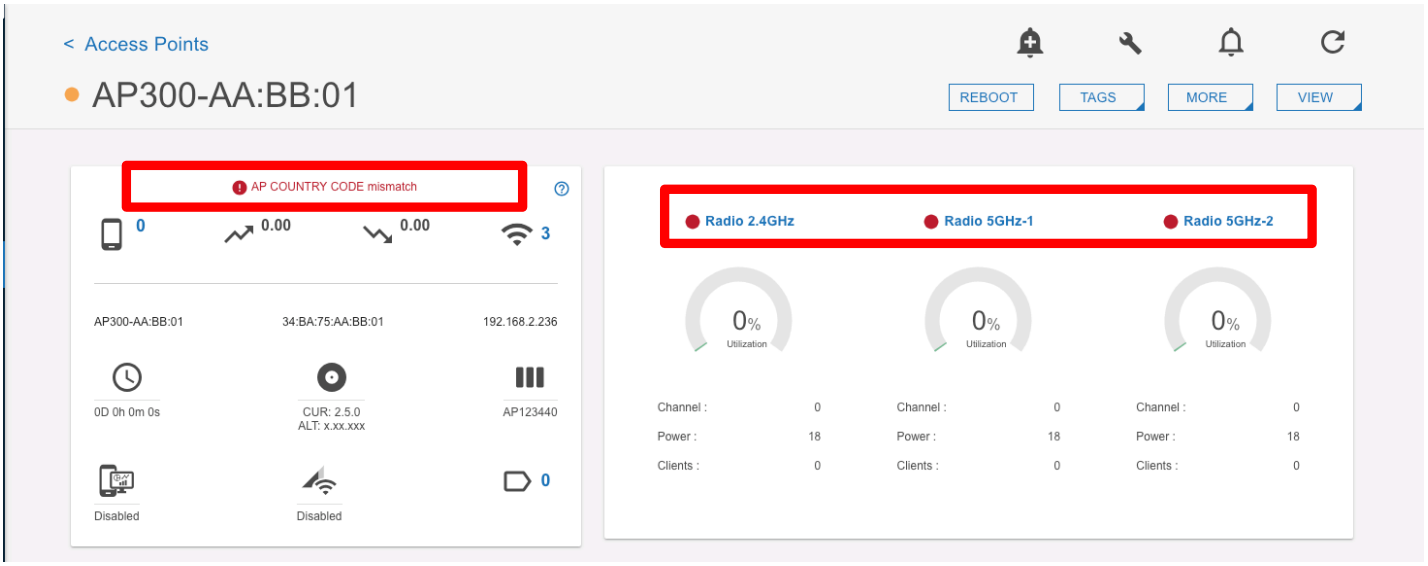
In every other case, when a mis-match is detected, the Access Controller will prevent the AP300 from joining the network. In this state the Access Point is considered 'quarantined' and will not be configured or allowed to transmit.

The following steps are performed by the Access Controller during the discover stage.

- Step 1: If the country code registered in the non-volatile memory of the AP300 and the country code locked into the Access Controller software match, the AP300 is allowed to join the network.

- Step 2: If an AP300 is detected with a generic country code, the Access Controller registers the AP300 by overwriting the generic country code with the locked country code from the BaseCamp configuration. After updating the country code, the AP300 is automatically rebooted allowing it to join the network.

- Step 3: If the AP300 is set with a different country code, the AP300 is quarantined and is not allowed to join the network as a functioning access point. The AP Screen will continue to display the amber “Discovery” status for this access point and it will be assigned an IP Address by the DHCP Server. The AP will be visible in the Access Point list and status screen. However, any radio configurations will not be pushed to the access point and it will be restricted from transmitting



The transmitters on the radio modules in the AP300 are disabled when the country code is in the generic state, or when a mismatch is detected between the registered country code on the AP300 and the locked country code in the Access Controller

Configurating the Operational Mode

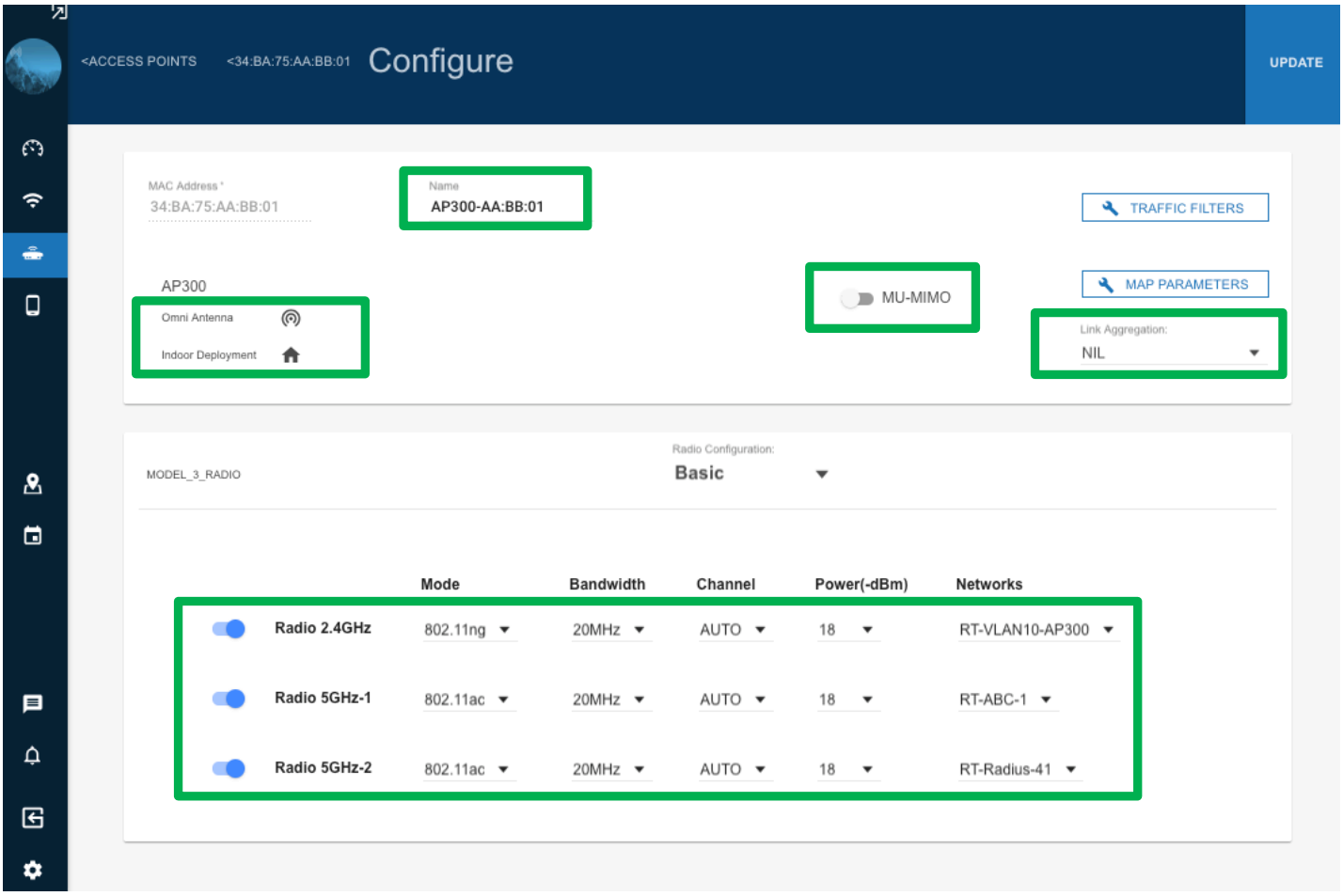
To configure the Access Point, select the wrench icon.

The Configuration screen (See Figure 6) is divided into an upper section, which allows the user to set the global operating parameters, and a lower section, which allows the user to configure the radios.

The upper section settings are:

- Name – allows the user to enter a name.
- Installation Area (Indoor/Outdoor) - The AP300 only supports the "Indoor" operating mode.
- MU-MIMO – Default is Off
- Link Aggression – Default is NIL (Off)

Figure 6 - BaseCamptm Access Point Configuration Screen



The lower section provides the controls for each radio.:

- Enable/Disable – Default is Enabled
- Mode – The 802.11 operating mode. The default is 2.4G – “802.11ng” & 5G – “802.11ac”
- Bandwidth – Sets the channel bandwidth. The default is 20 MHz.
- Channel – Allows selection of Available Channels. The default is “AUTO”
- Power – Sets the channel power level. The default is 18 dBm.
- Networks – Allows the user to select one or more SSIDs the radio will support.

Configuring AP300 to Work with Discovery Protocol

In some cases, a POE+ Ethernet switch requires a Discovery Protocol such as LLDP and CDP to request additional power above the 15.4 W PoE PSE limit. In such cases, the POE+ PSE source must be configured to override the Discovery Protocol and force the PoE+ PSE source to provide at least 25 W of PoE+ power.

This section provides the Regulatory Declarations for the AP300 Wireless Access Point, Model Number: AP23I300.

HW Versions:

Main Board:.....# 234T5403A1*1GS2 REV.S2
Daughter Board: .....# 234AC302M**7ES1 REV.S1
Antenna Board: .....# 2172AD0475Z0702
FCCID:.....2AGMRAP23I300

Federal Communication Commission (FCC) 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

Important Note:

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.

Important Note:

Country Code selection feature are disabled for products marketed to the US/Canada.

Important Note:

For 2.4 GHz 802.11bgn products available in the US/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

FCC Radiation Exposure Statement:

Important Note:

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 25 cm between the radiator & your body.

European Union (EU) Interference Statement:

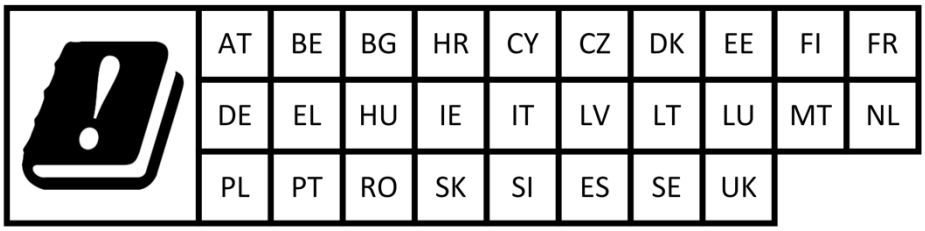
This device complies with the essential requirements of the Radio Equipment Directive (RED) – 2014/53/EU

Manufacturer:
Everest Networks, Inc.
205 Ravendale Drive
Mountain View, CA 94043

European Union (EU) Interference Statement:

CE This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to EN55032:2015 +AC:2016 and EN 55024:2010 +A1:2015.

EU RED Article 10 Statement



This Device is restricted to indoor use

For RE-Directive 2014/53/UE
All operational modes:
2.4GHz: 802.11b, 802.11g, 802.11n (HT20), 802.11n (VHT20), 802.11n (HT40), 802.11n (VHT40)
5GHz: 802.11a, 802.11n (HT20), 802.11n (HT40),
802.11ac (VHT20), 802.11ac (VHT40), 802.11ac (VHT80)

The Frequency and maximum transmitted power in the EU are listed below:
2412-2472MHz: 18.79 dBm
5150-5250MHz: 22.13 dBm
5250-5350MHz: 21.87 dBm
5475-5725MHz: 28.74 dBm

EU Radiation Exposure Statement:

Important Note:

This equipment complies with EN 50385:2017 for radiation exposure limits set forth in the Council Recommendation 1995/519/EC of 12 July 1999 on the limitations of exposure of the general public to electromagnetic fields (0Hz to 300 GHz) for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 25 cm between the radiator & your body.

In the European Union, this symbol indicates that this product must not be disposed of with household waste. It is your responsibility to hand it over to a designated collection point for the recycling of waste electrical and electronic equipment. For more information, please consult your local waste collection center or point of purchase of this product.

TECHNICIAL SPECIFICATIONS

Mechanical Specifications

Table 1: Mechanical Specifications

Height	Width	Depth	Weight
215 mm (8.3 inch)	215 mm (8.3 inch)	48 MM (1.4 inch)	692 g (1.53 lbs.)

LEDs

Table 2: Mechanical Specifications

Power	2.4GHz Wireless	5GHz Wireless	5GHz Wireless	LAN1	LAN2
AP Power	Radio 1	Radio 2	Radio 3 ON	Ethernet Port1 Link/Activity	Ethernet Port2 Link/Activity
Green = On	Green = ON	Green = ON	Green = ON	Green = Link	Green = Link

Operational Requirements

Table 3: Operational Requirements

Condition	Input Power Requirement	Max Power Consumption
PoE+ Power Requirements	42.5/57 Vdc, 600 mA	18.96W Watts Max (1.08 BTU/Minute)
DC Power Requirements	12 Vdc, 2000 mA*	24 Watts Max (1.36 BTU/Minute)
* 12 Vdc power source has additional requirements around shielding and a ferrite on the power line input.		

Environmental Requirements

Table 4: Environmental Requirements

Condition	Requirement
Operating Temperature	0 °C to 40 °C (-32 °F to 104°F)
Storage temperature	-10 °C to 70 °C (-14 °F to 158 °F)
Humidity (non-condensing)	10% to 90% (operating and non-operating)

Reliability

Table 5: Reliability Specifications

Condition	Descriptions
Mean Time Between Failures (MTBF)	601,352 hours
Mean Time to Repair (MTTR)	30 minutes

Performance

Table 6: Performance Specifications

Condition	Descriptions
Security	64/128-bits WEP Encryption, WPA, WPA2, WPA-PSK, WPA2-PSK, MAC address filtering
Frequency Range	Radio 1: 2400-2472 MHz..... FCC/IC Channels 1~11 Radio 1: 2400-2472 MHz.....ETSI Channels 1~13 Radio 2: 5180-5320 MHz..... FCC Channels 36~48 Radio 2: 5180-5320 MHz.....ETSI Channels 36~64 Radio 3: 5500-5825 MHz.....FCC Channels 149~165 Radio 3: 5500-5825 MHz.....ETSI Channels 100~140
Transmission Rates	802.11ac: ..... 867 mbps 802.11n:..... 400 mbps 802.11a/g..... 54 mbps 802.11b..... 11 mbps
Modulation Schemes	DBPSK/DQPSK/CCK for DSSS technique BPSK/QPSK/16-QAM/64-QAM/256-QAM for OFDM technique
Receiver Sensitivity	11ac VHT80 MCS9: ..... -56 dBm @ 10% PER 11ac VHT40 MCS9: ..... -59 dBm @ 10% PER 11ac VHT20 MCS8: ..... -64 dBm @ 10% PER 11g/ac VHT40 MCS9:..... -61 dBm @ 10% PER 11g/n HT40 MCS7/15:.....-65 dBm @ 10% PER 11g/n HT20 MCS7/15:.....-67 dBm @ 10% PER 11a 54Mbps:.....-70 dBm @ 10% PER 11g 54Mbps:.....-72 dBm @ 10% PER 11b 11Mbps:.....-85 dBm @ 8% PER

Transmit Power

Table 7: Transmit Power

Radio	Modulation	ETSI (e.i.r.p)	FCC (conducted)
2.4 GHz Radio 1 Transmit Power	802.11b	17.82 dBm	22.56 dBm
	802.11g	18.71 dBm	27.38 dBm
	802.11n (HT20)/802.11ac (VHT20)	18.69 dBm	27.56 dBm
	802.11n (HT40)/802.11ac (VHT40)	18.79 dBm	19.95 dBm
5 GHz Radio 2 Transmit Power Channels 33-64	802.11a	21.52 dBm	26.38 dBm
	802.11n (HT20)/802.11ac (VHT20)	21.60 dBm	26.39 dBm
	802.11n (HT40)/802.11ac (VHT40)	21.69 dBm	26.64 dBm
	802.11ac (VHT80)	22.13 dBm	16.34 dBm
5 GHz Radio 3 Transmit Power Channels 100~165	802.11a	28.40 dBm	28.28 dBm
	802.11n (HT20)/802.11ac (VHT20)	28.74 dBm	28.47 dBm
	802.11n (HT40)/802.11ac (VHT40)	28.70 dBm	27.27 dBm
	802.11ac (VHT80)	27.86 dBm	25.65 dBm
	Note: Channels 33-64 Indoor Use Only in the European Union Note: Channels 149~165 are only available in the US Note: Channels 120~128 are not disabled in the European Union		

Standards

IEEE 802.11b/g/n Wireless LAN 2.4GHz
IEEE 802.11a/n/ac Wireless LAN 5GHz
IEEE 802.3/IEEE 802.3z Gigabit Ethernet
ANSI/IEEE 802.3 Auto negotiation
IEEE 802.3at PoE

Statement of Conditions

In the interest of improving internal design, operation function, and/or reliability, Everest Networks reserves the right to make changes to products described in this document without notice. Everest Networks does not assume any liability that may occur due to the use or application of the product(s) described herein.

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