User Guide

TouchLink Accessories

WAP 100AC

Wireless Access Point

(2.4GHz b/g/n, 5GHz ac/a/n Indoor AP)

Extron Electronics
INTERFACING, SWITCHING AND CONTROL

68-2984-01 Rev. A
09 16

Safety Instructions

Safety Instructions • English

WARNING: This symbol, D, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, I, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide, part number 68-290-01, on the Extron website, **www.extron.com**.

Sicherheitsanweisungen • Deutsch

WARNUNG: Dieses Symbol D auf dem Produkt soll den Benutzer darauf aufmerksam machen, dass im Inneren des Gehäuses dieses Produktes gefährliche Spannungen herrschen, die nicht isoliert sind und die einen elektrischen Schlag verursachen können.

VORSICHT: Dieses Symbol I auf dem Produkt soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Weitere Informationen über die Sicherheitsrichtlinien, Produkthandhabung, EMI/EMF-Kompatibilität, Zugänglichkeit und verwandte Themen finden Sie in den Extron-Richtlinien für Sicherheit und Handhabung (Artikelnummer 68-290-01) auf der Extron-Website, **www.extron.com**.

Instrucciones de seguridad • Español

ADVERTENCIA: Este símbolo, D, cuando se utiliza en el producto, avisa al usuario de la presencia de voltaje peligroso sin aislar dentro del producto, lo que puede representar un riesgo de descarga eléctrica.

ATENCIÓN: Este símbolo, I, cuando se utiliza en el producto, avisa al usuario de la presencia de importantes instrucciones de uso y mantenimiento recogidas en la documentación proporcionada con el equipo.

Para obtener información sobre directrices de seguridad, cumplimiento de normativas, compatibilidad electromagnética, accesibilidad y temas relacionados, consulte la Guía de cumplimiento de normativas y seguridad de Extron, referencia 68-290-01, en el sitio Web de Extron, **www.extron.com**.

Instructions de sécurité • Français

AVERTISSEMENT : Ce pictogramme, D, lorsqu'il est utilisé sur le produit, signale à l'utilisateur la présence à l'intérieur du boîtier du produit d'une tension électrique dangereuse susceptible de provoquer un choc électrique.

ATTENTION : Ce pictogramme, I, lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec le matériel.

Pour en savoir plus sur les règles de sécurité, la conformité à la réglementation, la compatibilité EMI/EMF, l'accessibilité, et autres sujets connexes, lisez les informations de sécurité et de conformité Extron, réf. 68-290-01, sur le site Extron, **www.extron.com**.

Istruzioni di sicurezza • Italiano

AVVERTENZA: Il simbolo, D, se usato sul prodotto, serve ad avvertire l'utente della presenza di tensione non isolata pericolosa all'interno del contenitore del prodotto che può costituire un rischio di scosse elettriche.

ATTENTZIONE: Il simbolo, I, se usato sul prodotto, serve ad avvertire l'utente della presenza di importanti istruzioni di funzionamento e manutenzione nella documentazione fornita con l'apparecchio.

Per informazioni su parametri di sicurezza, conformità alle normative, compatibilità EMI/EMF, accessibilità e argomenti simili, fare riferimento alla Guida alla conformità normativa e di sicurezza di Extron, cod. articolo 68-290-01, sul sito web di Extron, **www.extron.com**.

Instrukcje bezpieczeństwa • Polska

OSTRZEŻENIE: Ten symbol, D, gdy używany na produkt, ma na celu poinformować użytkownika o obecności izolowanego i niebezpiecznego napięcia wewnątrz obudowy produktu, który może stanowić zagrożenie porażenia prądem elektrycznym.

UWAGI: Ten symbol, I, gdy używany na produkt, jest przeznaczony do ostrzegania użytkownika ważne operacyjne oraz instrukcje konserwacji (obsługi) w literaturze, wyposażone w sprzęt.

Informacji na temat wytycznych w sprawie bezpieczeństwa, regulacji wzajemnej zgodności, zgodność EMI/EMF, dostępności i Tematy pokrewne, zobacz Extron bezpieczeństwa i regulacyjnego zgodności przewodnik, część numer 68-290-01, na stronie internetowej Extron, **www.extron.com**.

Инструкция по технике безопасности • Русский

ПРЕДУПРЕЖДЕНИЕ: Данный символ, D, если указан на продукте, предупреждает пользователя о наличии неизолированного опасного напряжения внутри корпуса продукта, которое может привести к поражению электрическим током.

ВНИМАНИЕ: Данный символ, I, если указан на продукте, предупреждает пользователя о наличии важных инструкций по эксплуатации и обслуживанию в руководстве, прилагаемом к данному оборудованию.

Для получения информации о правилах техники безопасности, соблюдении нормативных требований, электромагнитной совместимости (ЭМП/ЭДС), возможности доступа и других вопросах см. руководство по безопасности и соблюдению нормативных требований Extron на сайте Extron: **www.extron.com**, номер по каталогу - 68-290-01.

安全说明 • 简体中文

警告： D 产品上的这个标志意在警告用户该产品机壳内有暴露的危险 电压，有触电危险。

注 意 ： I 产 品 上 的 这个标 志 意在 提 示用 户设备 随 附 的用 户手册 中有重要的操作和维护(维修）说明。

关于我们产品的安全指南、遵循的规范、EMI/EMF 的兼容性、无障碍使用的特性等相关内容，敬请访问 Extron 网站 **www.extron.com**，参见 Extron 安全规范指南，产品编号 68-290-01。

安全記事 • 繁體中文

警告: D 若產品上使用此符號，是為了提醒使用者，產品機殼內存在著可能會導致觸電之風險的未絕緣危險電壓。

注意 I 若產品上使用此符號，是為了提醒使用者，設備隨附的用戶手冊中有重要的操作和維護（維修）說明。

有關安全性指導方針、法規遵守、EMI/EMF 相容性、存取範圍和相關主題的詳細資訊，請瀏覽 Extron 網站：**www.extron.com**，然後參閱《Extron 安全性與法規遵守手冊》，準則編號 68-290-01。

安全上のご注意 • 日本語

警告: この記 号 D が製品上に表示されている場合は、筐体内に絶縁されていない高電圧が流れ、感電の危険があることを示しています。

注意: この記号 I が製品上に表示されている場合は、本機の取扱説明書に記載されて いる重要な操作と保守(整備)の指示についてユーザーの注意を喚起するものです。

安全上のご注意、法令遵守、EMI/EMF 適合性、その他の関連項目については、エクストロンのウェブサイト **www.extron.com** より『Extron Safety and Regulatory Compliance Guide』(P/N 68-290-01) をご覧ください。

안전 지침 • 한국어

경고: 이 기호 D, 가 제품에 사용될 경우, 제품의 인클로저 내에 있는 접지되지 않은 위험한 전류로 인해 사용자가 감전될 위험이 있음을 경고합니다.

주의: 이 기호 I, 가 제품에 사용될 경우, 장비와 함께 제공된 책자에 나와 있는 주요 운영 및 유지보수(정비) 지침을 경고합니다.

안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트 (**www.extron.com**)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

FCC Class B Notice

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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 25cm between the radiator & your body.

Industry Canada statement:

This device complies with RSS-247 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 CNR-247 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: The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

AVERTISSEMENT : 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;

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.

FOR MOBILE DEVICE USAGE

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 22 cm between the radiator and 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 22 cm de distance entre la source de rayonnement et votre corps.

NOTE: For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the **Extron Safety and Regulatory Compliance Guide** on the Extron website.

Battery Notice

This product contains a battery. Do not open the unit to replace the battery. If the battery needs replacing, return the entire unit to Extron (for the correct address, see the **Extron Warranty** section on the last page of this guide).

CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

ATTENTION : Risque d'explosion. Ne pas remplacer la pile par le mauvais type de pile. Débarrassez-vous des piles utilisées selon le mode d'emploi.

Conventions Used in this Guide

Notifications

In this user guide, the following are used:

WARNING: Potential risk of severe injury or death.

AVERTISSEMENT : Risque potentiel de blessure grave ou de mort.

CAUTION: Risk of minor personal injury.

ATTENTION : Risque de blessure mineure.

ATTENTION:

- Risk of property damage.
- Risque de dommages matériels.

NOTE: A note draws attention to important information.

Software Commands

Commands are written in the fonts shown here:

```
^AR Merge Scene,,Op1 scene 1,1 ^B 51 ^W^C
[01]R000400300004000080000600[02]35[17][03]
E X!*X1&*X2)*X2#*X2! CE}
```

NOTE: For commands and examples of computer or device responses mentioned in this guide, the character "0" is used for the number zero and "O" represents the capital letter "o".

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 208.132.180.48: bytes=32 times=2ms TTL=32
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx —t
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

Click the **OK** button.

Specifications Availability

Product specifications are available on the Extron website, **www.extron.com**.

Extron Glossary of Terms

A glossary of terms is available at **www.extron.com/technology/glossary.aspx**.

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Introduction

This guide describes the function, installation, and operation of the Extron WAP 100AC Wireless Access Point.

Unless otherwise stated, the terms “Wireless Access Point” or “WAP” refer to the WAP 100AC. The WAP 100AC provides wireless accessibility for the Extron TLP Pro 1022W.

This section provides an overview of these products:

- **About the WAP 100AC**
- **Features**
- **Application Diagram**
- **Requirements**

About the WAP 100AC

The WAP 100AC is a high-powered, long-range, dual-band concurrent wireless access point. It is compliant with IEEE 802.11ac/a/b/g/n standards up to 300 Mbps at 2.4 GHz and up to 867 Mbps at 5 GHz.

It is designed to operate in numerous environments, including multiple-floor offices and other larger enterprise settings, where the high power and long range make it a cost-effective alternative to ordainary access points.

Features

Features are from EnGenius User Guide. May need to update when Marketing set up a product page on the Extron Proof site.

- Up to 26 dBm transmit power, enabling long range connectivity
- Supports IEEE802.11ac/a/b/g/n wireless standards with up to 300Mbps(2.4GHz) and 867Mbps(5GHz)
- Four internal 5dBi Omni-Directional MIMO antennas
- Can be used with included power adapter or via PoE with PoE 802.3at - capable Switches or Injectors
- Dual Band/Two Stream
- Band Steering shifts dual band clients to 5 GHz for better throughput performance
- Secured Guest Network

Application Diagram

Figure 1 shows a typical application for the WAP 100AC.

Needs an Application Diagram from Marketing

Figure 1. **WAP 100AC Application Diagram**

Installation Overview

This section contains an overview of the installation process. Follow the links for a more detailed explanation of each step.

1. Before starting, determine where to mount the WAP 100AC for optimal performance, consider factors that can affect signal strength (see Before you Start in the Mounting section on page 13).
2. Obtain the following network information from your network administrator:
   - Dynamic Host Configuration Protocol (DHCP) status (on or off). If DHCP is off, you will also require:
     - IP address
     - Subnet mask
     - Gateway
   - User name — by default this is admin.
   - Passwords — by default this is extron.
   - MAC address — make a note of the touchpanel MAC address, which can be found from the WAP 100AC internal Web page.
3. Mount and cable the units:
   - Mount the units (see **Mounting** on page 13).

     NOTE: Prepare the mounting site but do not install the WAP 100AC until power and network connections have been made.

     ATTENTION:
     - Do not power on the WAP 100AC until you have read the Attention notice on **page 6** (power injector) or on **page 7** (12 VDC power supply).
     - Ne branchez pas le WAP 100AC avant d'avoir lu les mises en garde **page 6** (injecteur PoE) ou **page 7** (source d'alimentation 12 VCC).

   - Connect the network cable to the WAP 100AC. If you are using Power over Ethernet (PoE), see LAN/PoE input on page 5.
   - Extron recommends using Power over Ethernet (PoE). If you are not using Power over Ethernet, see **12V Power Input** on page 7).
4. Configure the WAP 100AC for Network Communication:
   - Connect the PC that you are using for setup to the same Ethernet subnetwork as the WAP 100AC.
   - Use the WAP 100AC internal Web pages to configure the unit (see page 9).

Panel Features

This section describes:

- WAP 100AC Top Panel Features
- WAP 100AC Bottom Panel Features

WAP 100AC Top Panel Features

Figure 2 shows the top panel features of the WAP 100AC.

Figure2

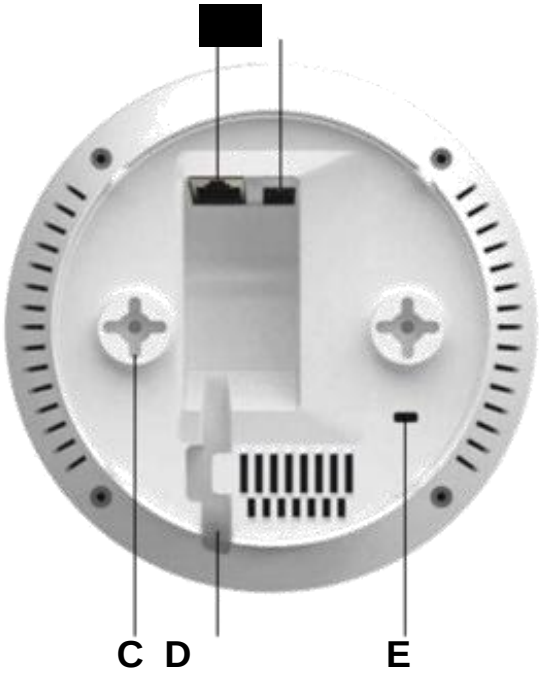

Figure 2. **WAP 100AC Top Panel**

A **LAN/PoE input**
B **12 VDC Power input**
C **Mounting holes** (2)
D **Cable guide**
E **Kensington security lock**

LAN/PoE input

A LAN/PoE input (see page 4)— accepts an input from a LAN or a power injector.

NOTE: The WAP 100AC can use a 12 VDC, minimum 1.0 A power supply or a PoE+ (802.3at compliant) power injector. Extron recommends using PoE.

ATTENTION:

- Do not connect either power supply before reading the Attention notifications on **page 6** or **page 7**.
- Ne branchez pas de sources d'alimentation externes avant d'avoir lu les mises en garde dans la section « Power Supply » sur **page 6** ou **page 7**.

- If you are using a **12V Power Input** (see page 11) , connect the WAP 100AC directly to a network.
- To use a PoE power injector, connect the touchpanel as described below. Extron recommends using a PoE+ (802.3at compliant) power injector.
- Limit the use to no more than two pass-through points, which may include patch points, punch down connectors, couplers and power injectors. If these pass-through points are required, use shielded couplers and punch-down connectors

NOTES: When using shielded twisted pair cable in bundles or conduits, consider the following:

- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 meters, where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the used of tie wraps or hook-and-loop fasteners.
- Keep twisted pair cables separate from AC power cables.

To use a PoE power injector — connect an Ethernet cable to the power supply and a switch or router. This cable carries network information from the switch or router to the power supply input. A second cable carries the network information and power from the power supply to the touchpanel. Connect the IEC power cord to a convenient 100 VAC to 240 VAC, 50-60 Hz power source.

ATTENTION:
• The WAP 100AC is intended for connection to a Power over Ethernet circuit for intra-building use only and are considered to be part of a Network Environment 0 per IEC TR62101. • Le WAP 100AC est conçu pour une connexion à un circuit PoE pour une utilisation intérieure seulement et est considéré comme faisant partie d'un environnement réseau 0 par IEC TR62101.
• Always use a power supply provided by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product. • Utilisez toujours une source d'alimentation fournie ou recommandée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que le produit final.
• These products are intended for use with a UL Listed power source marked "Class 2" or "LPS" and rated 12 VDC, minimum 1.0 A. or PoE+ (802.3at compliant) power injector. • Ces produits sont destiné à une utilisation avec une source d'alimentation listée UL avec l'appellation « Classe 2 » ou « LPS » et normée 12 Vcc, 1,0 A minimum ou **French Translation**.
• Extron power supplies are certified to UL/CSA 60950-1 and are classified as LPS (Limited Power Source). Use of a non-LPS or unlisted power supply will void all regulatory compliance certification. • Les sources d'alimentation Extron sont qualifiées UL/CSA 60950-1 et sont classées LPS (Limited Power Source). L'utilisation d'une source d'alimentation non-listée ou non-listée LPS annulera toute certification de conformité réglementaire.
• Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The power supply is to be located within the same vicinity as the Extron AV processing equipment in an ordinary location, Pollution Degree 2, secured to the equipment rack within the dedicated closet, podium, or desk. • Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales. La source d'alimentation doit être située à proximité de l'équipement de traitement audiovisuel dans un endroit ordinaire, avec un degré 2 de pollution, fixé à un équipement de rack à l'intérieur d'un placard, d'une estrade, ou d'un bureau.
• Power over Ethernet (PoE) is intended for indoor use only. It is to be connected only to networks or circuits that are not routed to the outside plant or building. • L'alimentation via Ethernet (PoE) est destinée à une utilisation en intérieur uniquement. Elle doit être connectée seulement à des réseaux ou des circuits qui ne sont pas routés au réseau ou au bâtiment extérieur.
• The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16. • Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16.
• The power supply shall not be permanently fixed to the building structure or similar structure. • La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.

12 VDC power input

B **12 VDC power input** (see page 4) — power supplies must be purchased separately. Extron recommends using a PoE power injector. If you wish to use a power supply, connect a 12 VDC, minimum 1.0 A power supply with a DC plug to the power input. See **www.extron.com** for suitable models.

NOTES:

- The WAP 100AC ships without a power supply. Either a 12 VDC, minimum 1.0 A power supply or a PoE+ (802.3at compliant) power injector must be purchased separately.
- Do not use both the 12 VDC power supply and power injector at the same time.

page 7

ATTENTION:

- Always use a power supply provided by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
- Utilisez toujours une source d'alimentation fournie ou recommandée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que le produit final.

- These products are intended for use with a UL Listed power source marked "Class 2" or "LPS" and rated 12 VDC, minimum 1.0 A. or PoE+ (802.3at compliant) power injector.
- Ces produits sont destiné à une utilisation avec une source d'alimentation listée UL avec l'appellation « Classe 2 » ou « LPS » et normée 12 Vcc, 1,0 A minimum ou **French Translation**.

- Extron power supplies are certified to UL/CSA 60950-1 and are classified as LPS (Limited Power Source). Use of a non-LPS or unlisted power supply will void all regulatory compliance certification.
- Les sources d'alimentation Extron sont qualifiées UL/CSA 60950-1 et sont classées LPS (Limited Power Source). L'utilisation d'une source d'alimentation non-listée ou non-listée LPS annulera toute certification de conformité réglementaire.

- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The power supply is to be located within the same vicinity as the Extron AV processing equipment in an ordinary location, Pollution Degree 2, secured to the equipment rack within the dedicated closet, podium, or desk.
- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales. La source d'alimentation doit être située à proximité de l'équipement de traitement audiovisuel dans un endroit ordinaire, avec un degré 2 de ption Ext4 fixé à un équipement de rack à l'intérieur d'un placard, d'une estrade, ou d'un bureau.

- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16.
- Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16.

- The power supply shall not be permanently fixed to the building structure or similar structure.
- La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.

ATTENTION:
• The length of the exposed wires in the stripping process is critical. The ideal length is 3/16 inches (5 mm). If they are any longer, the exposed wires may touch, causing a short circuit between them. If they are any shorter, the wires can be easily pulled out even if tightly fastened by the captive screws. • La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder. La longueur idéale est de 5 mm (3/16 inches). S'ils sont un peu plus longs, les câbles exposés pourraient se toucher et provoquer un court circuit. S'ils sont un peu plus courts, ils pourraient sortir, même s'ils sont attachés par les vis captives.
• Do not tin the wire leads before installing into the connector. Tinned wires are not as secure in the connector and could be pulled out. • Ne pas étamer les conducteurs avant de les insérer dans le connecteur. Les câbles étamés ne sont pas aussi bien fixés dans le connecteur et pourraient être retirés.

Mounting holes

Cable guide

Kensington security lock

C **Mounting holes** (2) (see page 4) — Used to mount the unit to a wall or ceiling (see Mounting on page).

Cable guide — Ensures cables for power and network connections do not get damaged.

D

E **Kensington security lock** — For added security, attach a Kensington Security Lock (not provided) to the metal-reinforced slot on the top of the unit.

Follow the instructions that are provided by the manufacturer to install the lock.

WAP 100AC Bottom Panel Features

These features provide diagnostic tools that can be used for troubleshooting. The LEDs can be activated or inactivated within the WAP 100AC web pages.

This needs a new Photo from Marketing so that it says "Extron."

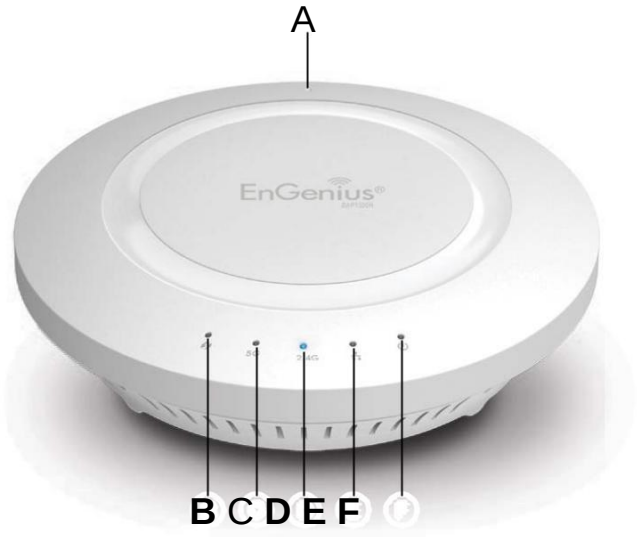

Figure 3. **WAP 100AC Bottom Panel**

On page 9 of the EnGenius user guide, it says this. However, on page 58, the software has a "Reset" button that reboots the device. I'm assuming that these are different functions. On page 51, the software has another "Reset" button that seems to have the same function as the physical reset button.

A **Reset button** — resets all user settings and reverts back to the factory default state. To carry out this reset, press the reset button for over 10 seconds.

WPS LED — indicates Wi-Fi Protected Setup is enabled.

B

C **WLAN 5G LED** — indicates that the 5 GHz frequency is in use (IEEE standard 802.11a, b, g, n,ac).

D **WLAN 2.4G LED** — indicates that the 2.4 GHz frequency is in use (IEEE standard 802.11a, b, g, n,ac).

E **Ethernet Port LED** — indicates that the unit is connected to a network.

F **Power LED** — indicates that the unit is receiving power.

Internal Web Pages

The WAP 100AC hosts internal Web pages that are used to configure the unit. This section describes how to access the internal Web pages and a description of each page.

- **Accessing the Internal Web Pages**
- **Overview**
  - Device Status
  - Connections
- **Network**
  - **Basic**
  - **Wireless**
  - **WPS**
- **Management**
- **Advanced**
  - **Time Zone**
  - **WiFi Scheduler**
  - **Tools**
- **System Manager**
  - **Account**
  - **Firmware**

Accessing the Internal Web Pages

EnGenius guide lists IE/Firefox/Safari. What about Edge and Chrome?

To access the internal Web Pages:

1. Ensure the WAP 100AC is powered on and connected to a network.
2. Open a web browser on a PC connected to the same subnetwork as the WAP 100AC.
3. Enter the IP address of the WAP 100AC in the address bar. By default this is 192.168.1.10.
4. The Login dialog opens:

Figure 4. **Login Dialog**

By default the user name is admin and the user password is extron.

5. Click **Login**.

The Device Status page opens.

Overview

Device Status

The Device Status page is read-only and shows general information about the WAP 100AC. To view this information, click **Device Status** in the Overview section of the left side bar.

The information on this page is organized under Device Information (figure 5, **2**) and LAN Information (figure 6, **1**).

Device Information

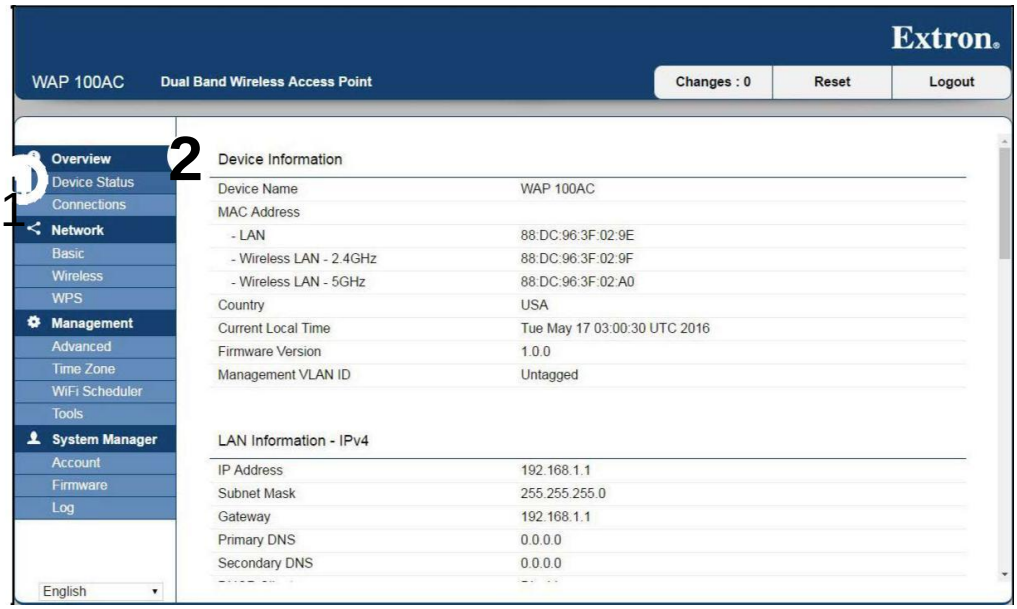

Figure 5. **Device Status Page showing Device Information**

- Device Name
- MAC Address — the WAP 100AC has separate MAC addresses for connecting to a LAN, WLAN (2.4 GHz), and WLAN (5 GHz).
- Country — to configure the country or region, see Wireless Settings on page .
- Current Local Time — to configure date and time, see Date and Time Settings on page .
- Firmware Version — to update firmware, see Firmware Upgrade on page .
- Management VLAN ID — if your network includes VLANs, you can assign a Management VLAN ID (see Management VLAN Settings on page).

LAN Information

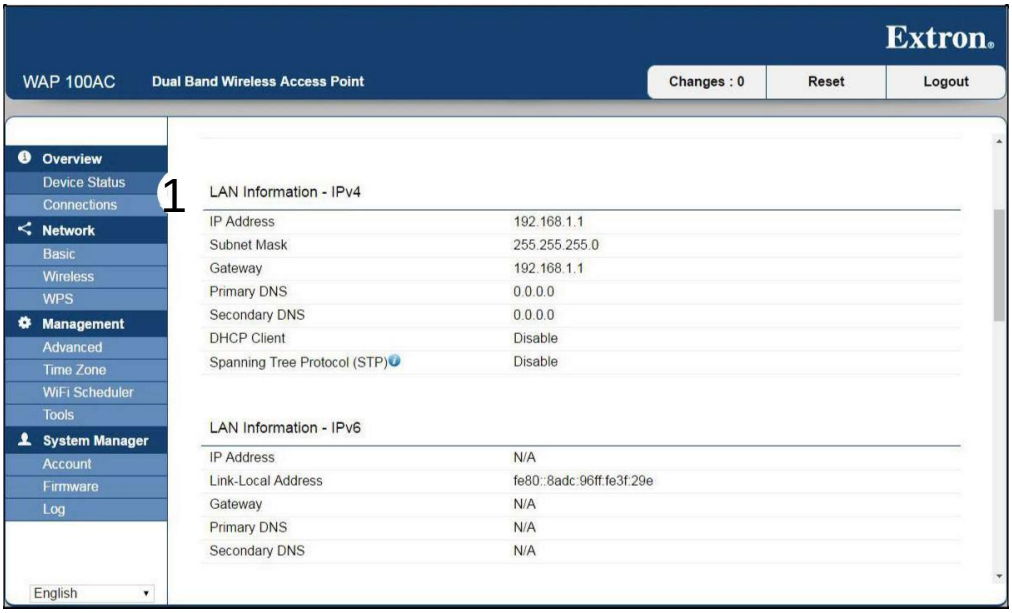

Figure 6. **Device Status Page showing LAN Information**

- Network settings (IP Address, Subnet Mask, Gateway, Primary DNS, Secondary DNS, and DHCP Client). To configure these settings, see IP Network Settings on page .
- Spanning Tree Protocol (STP) status — see Spanning Tree Protocol (STP) Settings on page 13.

Connections

The WAP 100AC automatically keeps records (logs) of events in internal memory. To view these logs, click **Connections** in the Overview section of the left side bar (**1**).

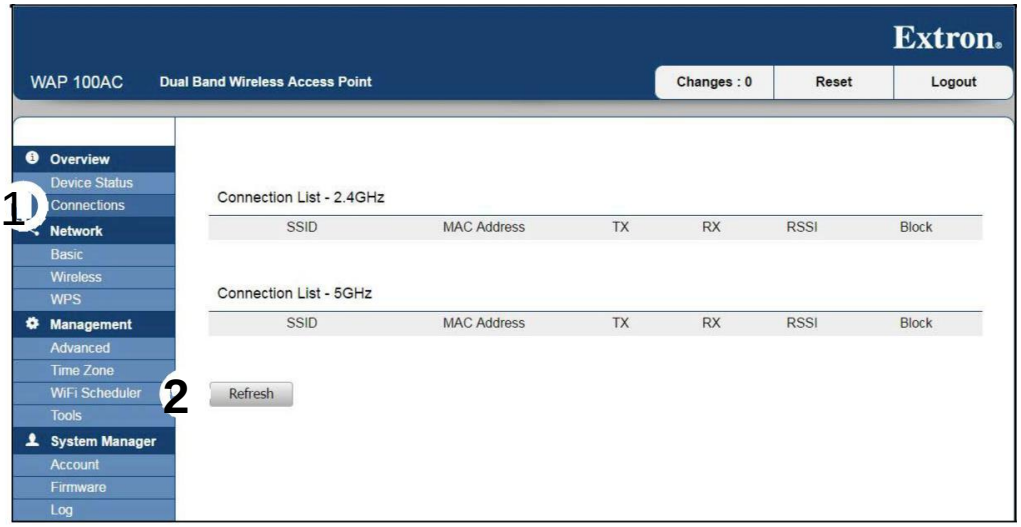

Figure 7. **Connections Page**

Click **Refresh** (**2**) to update the Connections Lists.

NOTES:

- If there is not enough memory to store all events, more recent events over-write the oldest events.
- The log is cleared whenever the WAP 100AC is powered down or rebooted.

Network

The Network section has three pages:

- **Basic**
- **Wireless**
- **WPS**

Basic

Configure the WAP 100AC IP settings from the Basic page. To access this page, click **Basic** (**1**) in the Network section of the left side bar. This page allows you to configure:

- IP Settings (figure 9, **2**)
- Spanning Tree Protocol (STP) Settings (figure 10, **1**)

IP Settings

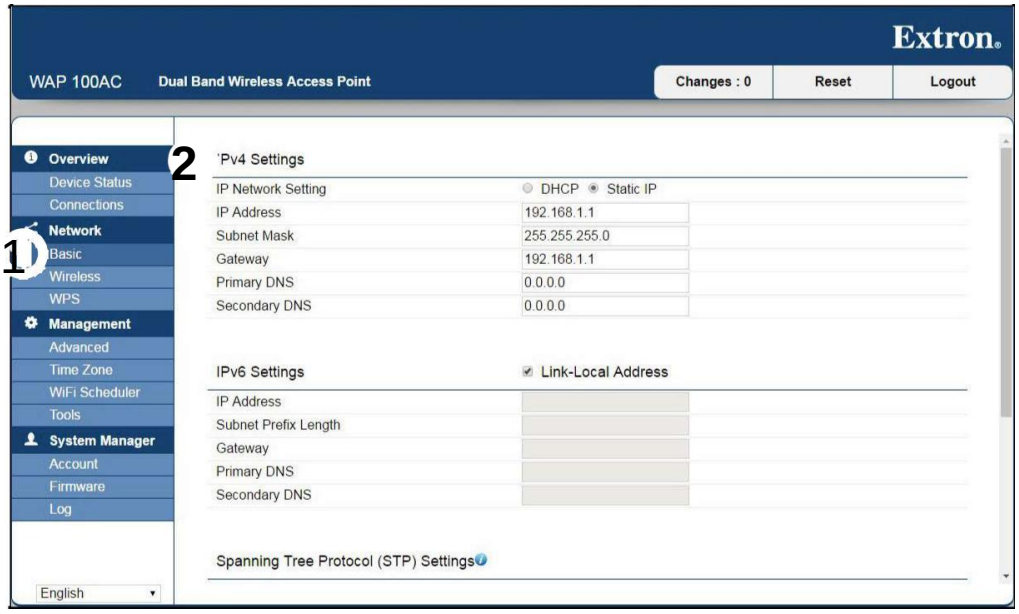

Figure 8. **Network: Basic (IP Settings)**

Before configuring these settings, obtain the relevant information from your network administrator.

1. Choose **DHCP** or **Static IP**.
2. If you choose **DHCP**, all the addresses are obtained automatically when the WAP 100AC connects to a DHCP server.

   If you choose **Static IP**, you must enter values for **IP Address**, **Subnet Mask**, **Gateway**, **Primary DNS**, and **Secondary DNS**.
3. Click **Save** (figure 10, **2**) to confirm the changes.

Does the unit need to be in WDS Bridge mode for this?

Spanning Tree Protocol (STP) Settings

Enabling the Spanning Tree protocol, prevents network loops. This panel allows you to configure the Spanning Tree settings.

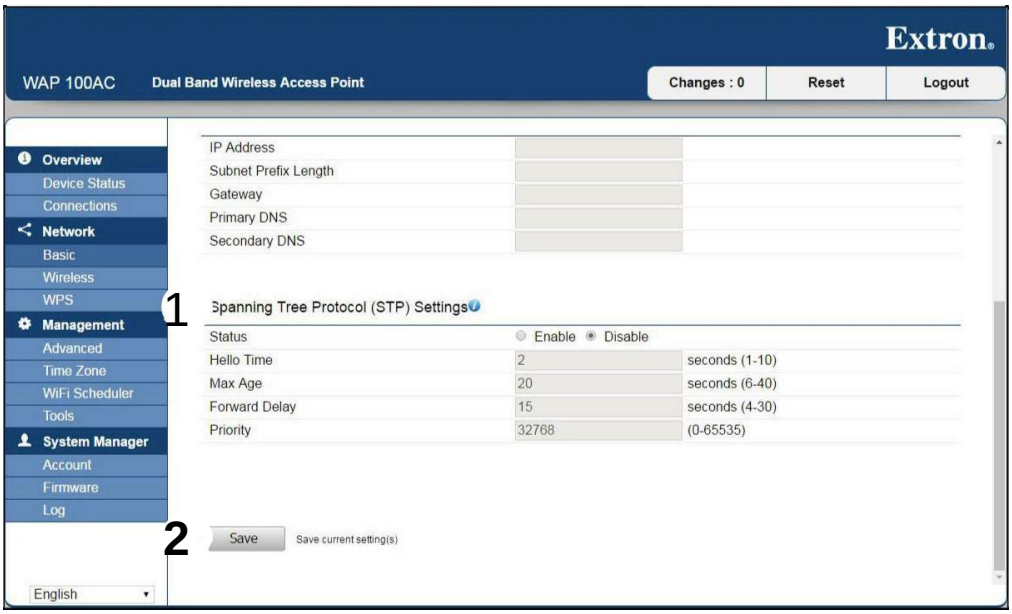

Figure 9. **Network: Basic (Spanning Tree Settings)**

1. Select a radio button to **Enable** or **Disable** the Spanning Tree function.
2. If you enabled the Spanning Tree function, configure the other settings:
   - Hello Time — Select a value between **0** and **10** seconds. This value determines how often the device sends handshake packets to communicate information about the topology throughout the entire Bridged LAN.
   - Max Age — Select a value between **6** and **40** seconds. If another bridge in the spanning tree does not send a Hello packet in this time, that device is assumed to be inactive.
   - Forward Delay — Select a value between **4** and **30** seconds. This value determines the time spent in each of the Listening and Learning states before entering the Forwarding state. The delay ensures that when a new bridge is added to a busy network, it analyzes data traffic before participating.
   - Priority — Specify a Priority Number between **0** and **65535**. The lower the number, the higher the priority.
3. Click **Save** (figure 10, **2**) to confirm changes.

Can two devices on the same network have the same priority number? (I suspect not.)

Wireless

To access the Wireless page, click **Wireless** in the Network section of the left side bar (**1**). There are 6 panels to the Wireless page:

- **Wireless Settings**
- **2.4GHz and 5GHz Settings**
- **SSID Profile**
- **Guest Network**
- **Fast Handover**
- **Management VLAN Settings**

Wireless Settings

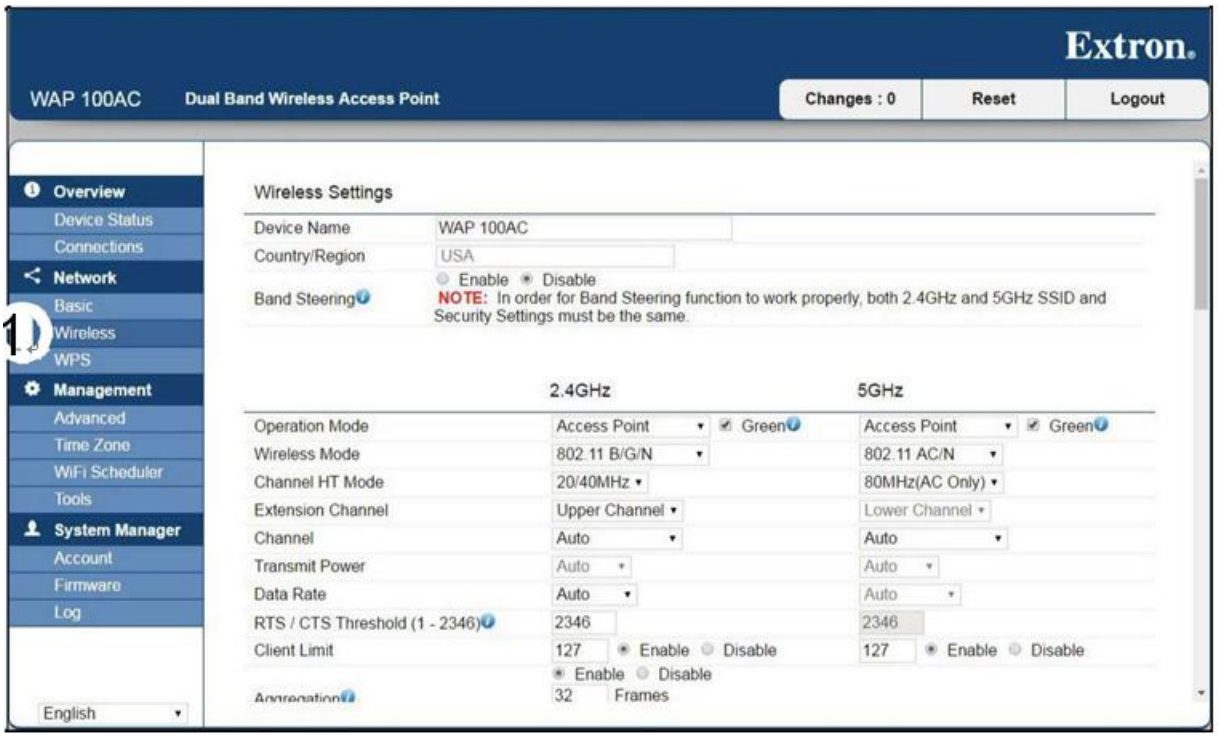

Figure 10. **Network: Wireless (Settings)**

- **Device Name** — Enter a name for the device. This is the name used by SNMP Management (see page). It is not the SSID and it is not broadcast to other devices.
- **Country/Region** — Select a country or region to conform to local regulations.
- **Band Steering** — With Band Steering enabled, 802.11n clients use the 5 GHz band (which 802.11b/g clients cannot use). 802.11b/g clients use the 2.4 GHz band.

NOTE: For the Band Steering function to work correctly, both the 2.4 GHz and 5 GHz SSID and security settings must be the same.

Click **Save** at the bottom of the page (see **figure 14**, **1**) to confirm the changes.

2.4GHz and 5GHz Settings

Configure the 2.4 GHz (Figure 11, **1**) and 5 GHz (**2**) band settings separately.

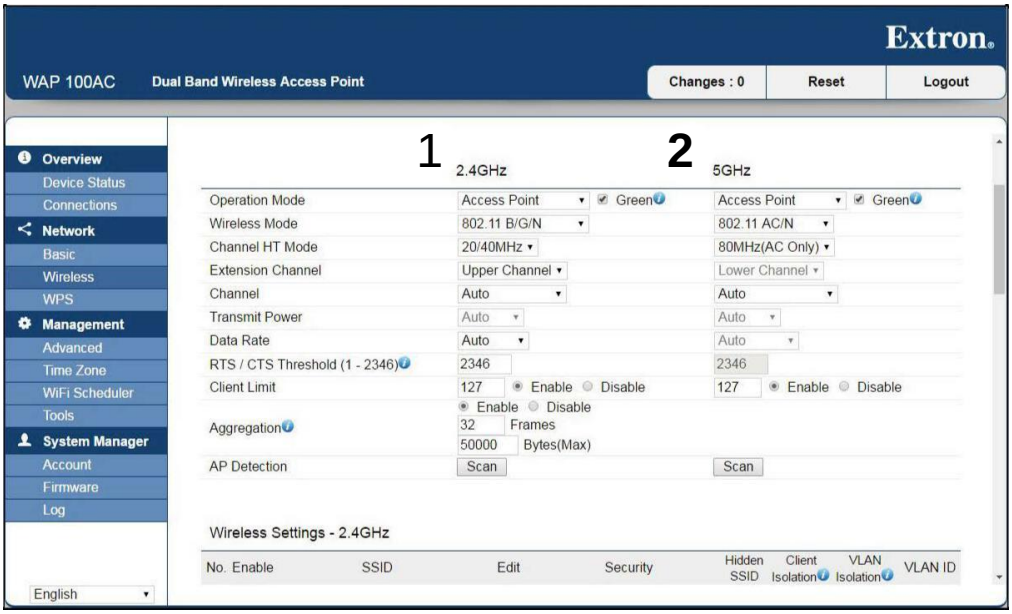

Figure 11. **Network: Wireless (2.4GHz and 5 GHz Settings)**

- **Operation Mode** — Use the drop-down menu to select from the three operating modes:
  - **Access Point** — The WAP 100AC acts as a central connection for wireless clients.
  - **WDS AP** (Wireless Distribution System Access Point) — The WAP 100AC connects to both wireless clients and other wireless access points.
  - **WDS Bridge** — The WAP 100AC connects only with other wireless access points. In this mode, the device does not act as an access point.

  For more information, see Building a Wireless Network on page .
- **Wireless Mode** — Use these drop-down menus to decide which wireless mode will be used by each band. The 2.4 GHz band supports 802.11b/g/n mixed mode. The 5 GHz band supports 802.11ac/a/n mixed mode.
- **Channel HT Mode** — Specify which modes are supported by each band. By default, this is **20/40/80 MHz**. The larger the channel, the better the transmission quality and speed.
- **Extension Channel** — Select either **Upper** or **Lower**. This selection may affect the Auto Channel function
- **Channel** — Select the channel and frequency that is conforms to the regulations for your country.

  Select **Auto** to enable the Auto-Channel feature.

  The 5.15 - 5.35 GHz range is restricted to indoor use in Hong Kong.
- **Transmit Power** — Set the power output of the wireless signal (see Wireless Advanced on page ?).
- **Data Rate** — Set the data rate from the drop-down menu. The lower the data rate, the lower the throughput, although transmission distance is also lowered (see Wireless Advanced on page ?).
- **RTS/CTS Threshold** — Select the threshold package size for RTS/CTS (Request to Send/ Clear to Send). The smaller the number, the more frequently RTS/CTS packets are sent, which uses more bandwidth (see Wireless Advanced on page ?).
- **Client Limit** — Enter the total number of clients for the access point.

- **Aggregation** — Enable Aggregation to merges smaller data packets into one larger packet. This reduces the number of packets but increases packet size. Select **Enable** or **Disable**. If Aggregation is enabled, enter the number of frames and the maximum packet size (see Wireless Advanced on page ?).
- **AP Detection** — Click **Scan** to detect nearby access points. This enables the device to select the best channel to use.

Click **Save** at the bottom of the page (see **figure 14**, **1**) to confirm the changes.

SSID Profile

These panels allow you to edit the SSID profile. Click **Edit** next to the SSID that you wish to change.

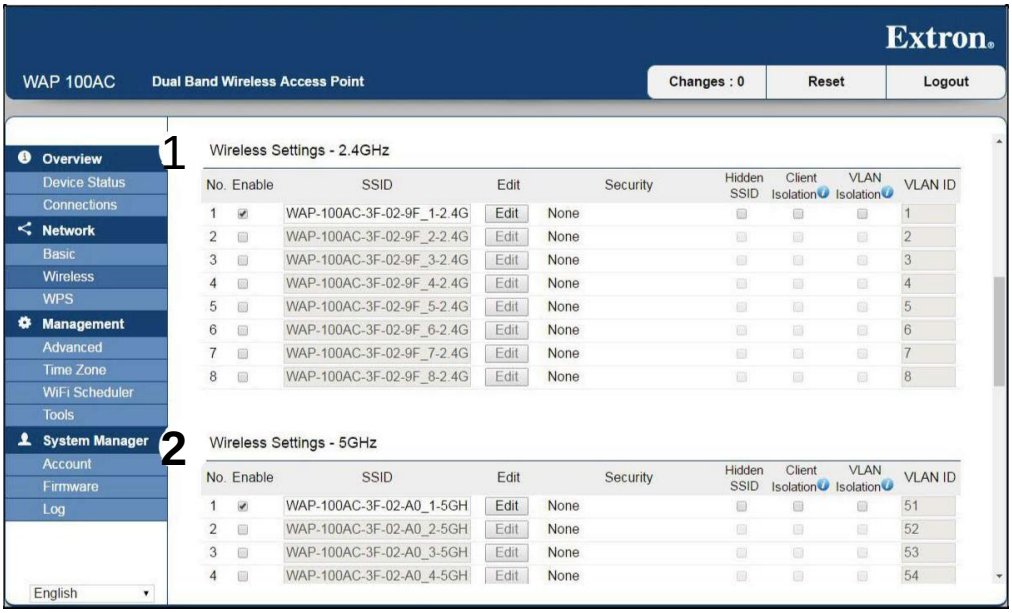

Figure 12. **2.4 GHz and 5 GHz SSID Profile**

- **SSID** — This column specifies the Service Set Identifier (SSID) for the current profile. Click **Edit** to change the Wireless Security settings (see page ??).
- **Security** — See Wireless Security on page ??.
- **Hidden SSID** — Check this box to hid the SSID from clients. If it is checked, the SSID does not appear on the site survey.
- **Client Isolation** — Check this box to prevent communication between client devices. Leaving the box unchecked allows communication between client devices.
- **VLAN Isolation** — Check this box to enable the VLAN Isolation feature. Leaving the box unchecked disables the feature.

  NOTE: For more information about the Isolation modes, click the appropriate information icon.

- **VLAN ID** — See Management VLAN Settings on page .

Click **Save** at the bottom of the page (see **figure 14**, **1**) to confirm the changes.

Guest Network

A guest network allows visitors to use the internet without compromising your office or company wireless security. You can add a guest network to each wireless network in the 2.4 GHz and 5 GHz frequencies.

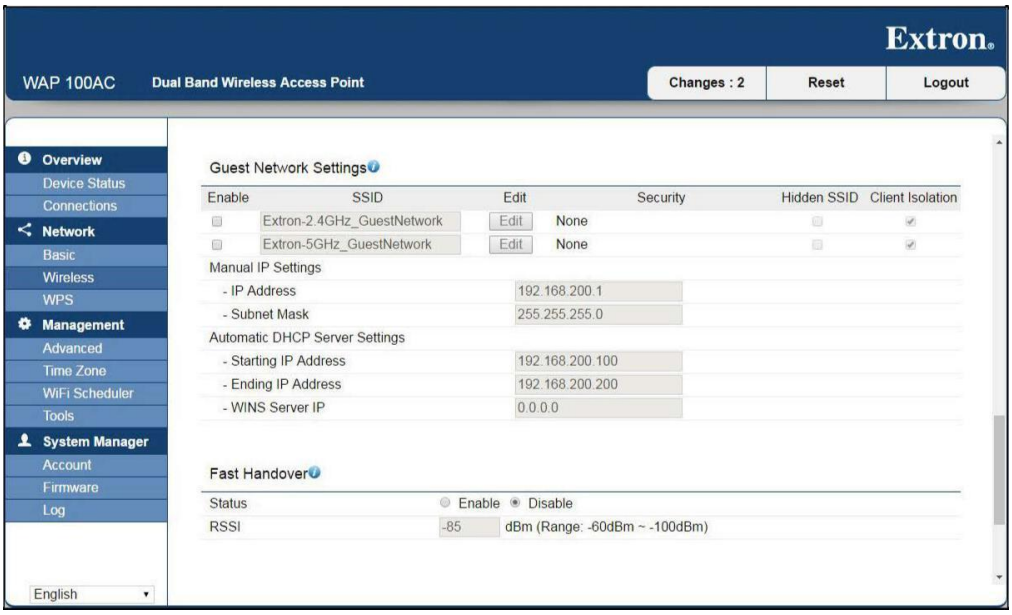

Figure 13. **Guest Network Settings**

- **SSID** — This column specifies the Service Set Identifier (SSID) for the current profile.
- **Security** — See Wireless Security on page ??.
- **Hidden SSID** — Check this box to hid the SSID from clients. If it is checked, the SSID does not appear on the site survey.
- **Client Isolation** — Check this box to prevent communication between client devices. Leaving the box unchecked allows communication between client devices.
- **IP Address** — The IP address of the WAP 100AC.
- **Subnet Mask** — The IP subnet mask of the WAP 100AC.
- **Starting IP Address** — The first IP address in the range of IP addresses made available by the DHCP server.
- **Ending IP Address** — The last IP address in the range of IP addresses made available by the DHCP server.
- **WINS Server IP** — The IP address on the Windows Internet Name Server (WINS).

Click **Save** at the bottom of the page (see **figure 14**, **1**) to confirm the changes.

Fast Handover

The Fast Handover feature ensures that each client is served by at lease one access point at all times. Access points continuously monitor the connectivity quality of any client within their range and share this information efficiently with other access points in the vicinity of the client to ensure the best service for that client.

figure 14

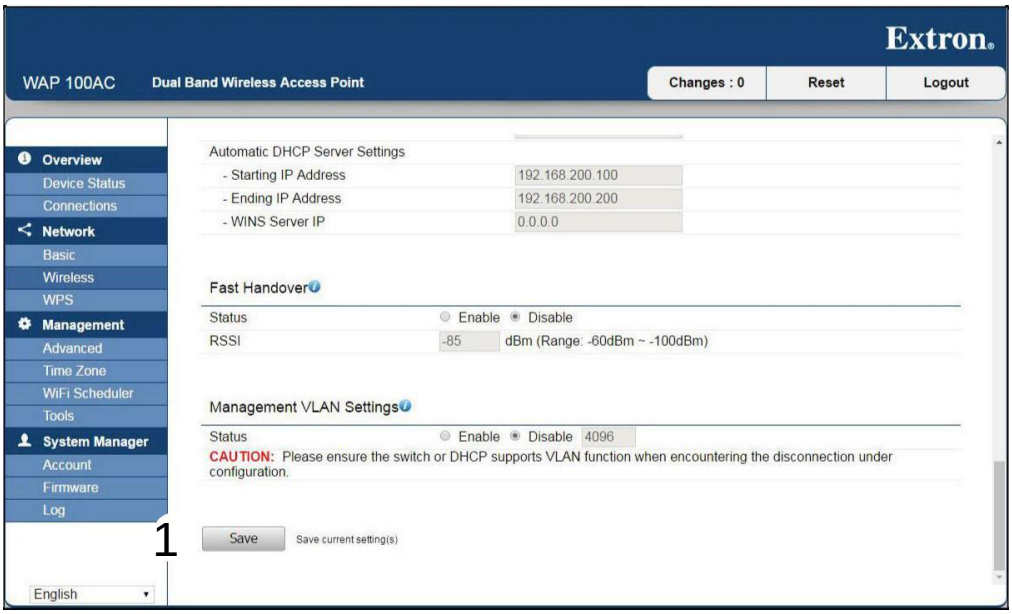

Figure 14. **Fast Handover and Management VLAN Settings**

I'm not sure what the RSSI section actually means. Is this setting a limit and, if the signal drops below that limit, the handover takes place?

Also, RSSI is a negative number. Is a larger negative number a stronger signal or a lower negative number (higher number in absolute terms) a stronger signal?

- **Status** — Use the Fast Handover **Status** radio buttons to enable or disable the Fast Handover feature.
- **RSSI** — Enter the Received Signal Strength Index (RSSI) to determine the handover procedure that the current wireless link will terminate. RSSI is an indication of the power level received by the antenna: the higher the RSSI number, the stronger the signal.

Click **Save** (**1**) to confirm the changes.

Management VLAN Settings

A Virtual LAN (VLAN) is a group of computers on a network that have been configured to behave as if they were on a separate LAN. Computers on a VLAN do not have to be physically located next to one another.

This panel allows you to assign a VLAN tag to the packets.

Before enabling the Management VLAN settings, you must isolate and enter a VLAN ID in the **SSID Profile** section of Wireless page.

1. Check the Isolation box for the SSID you wish to select (figure 15, **1**).

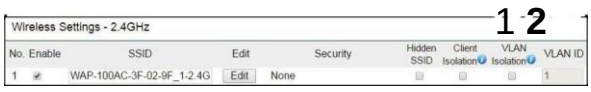

Figure 15. **Isolating a VLAN and Entering a VLAN ID**

2. Enter a VLAN ID (**2**).
3. Select the Management VLAN Settings Status **Enable** radio button.
4. Specify a VLAN ID for packets passing through the access point with a tag.
5. Click **Save** (figure 14, **1**) to confirm the changes.

NOTE: If you reconfigure the Management VLAN ID, you may lose your connection to the WAP 100AC. Verify that the DHCP server supports the reconfigured VLAN ID and reconnect to the WAP 100AC using the new IP address.

WPS

The Wi-Fi Protected Setup (WPS) feature complies with the Wi-Fi Alliance WPS standard and makes it easier and quicker to add client devices to an established, security-enabled Wi-Fi network.

WPS reduces the number of steps required to configure a network and supports two methods that are familiar to most consumers for configuring a network and enabling security.

NOTE: The WPS feature can only be applied when the unit is in Access Point and WDS AP mode.

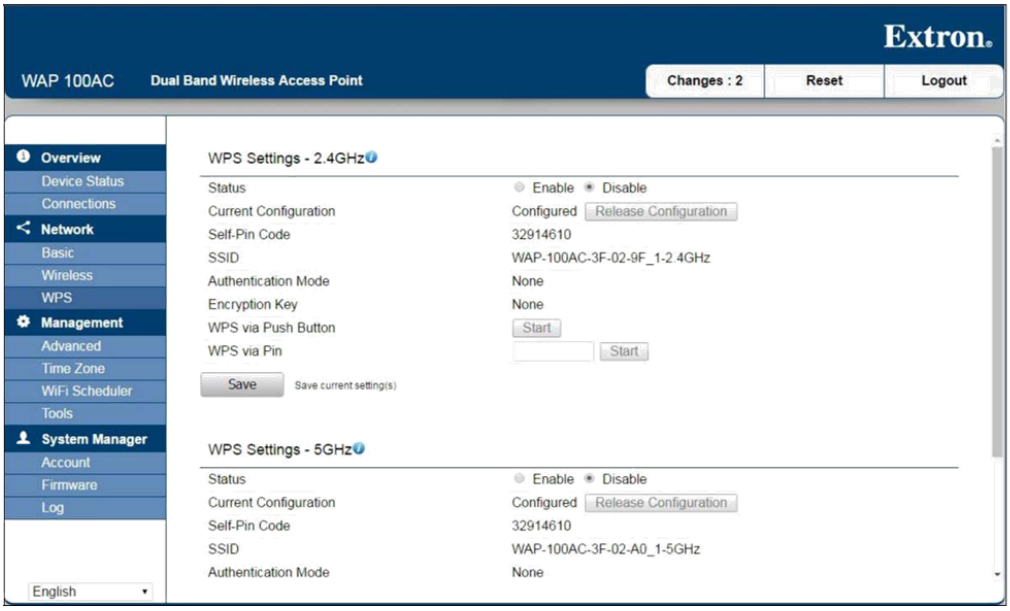

Figure 16. **Network: WPS Page**

Configure the 2.4 GHz, 5 GHz, or both settings.

- **Status** — Select **Enable** to use the WPS feature.
- **Current Configuration** — This field shows whether the WPS function is **Configured** or **Unconfigured**.

  When it is configured, WPS has been used to authorize a connection between the device and wireless clients.
- **Self-Pin Code** — This is the PIN code for this WAP 100AC unit.
- **SSID** — This is the SSID (wireless network name) used to connect via WPS.
- **Authentication Mode** — This shows the encryption method used by the WPS process.
- **Encryption Key** — This key is randomly generated during the WPS process. It is required if wireless clients that do not support WPS try to connect to the wireless network.
- **WPS via Push Button** — Click this Start button to initialize the WPS feature by using the Push Button method.
- **WPS via Pin** — Enter the PIN code of the wireless device and press this Start button to initialize the WPS feature by using the PIN method.

Click **Save** to confirm the changes.

Management

Advanced

To access the Advanced Management page, click **Advanced** in the Management section of the left side bar (**1**). This page allows you to assign contact details, location, community name, and trap settings for Simple Network Management Protocol (SNMP).

SNMP is a networking management protocol that is used to monitor network-attached devices. SNMP allows messages (protocol data units) to be sent to various parts of the network. Upon receiving the messages, SNMP-compatible devices return data stored in their Management Information Bases.

SNMP Settings clearly only take up about half of the page. What else is there?

Should it be "Authentication Protocol"?

Save button not shown.

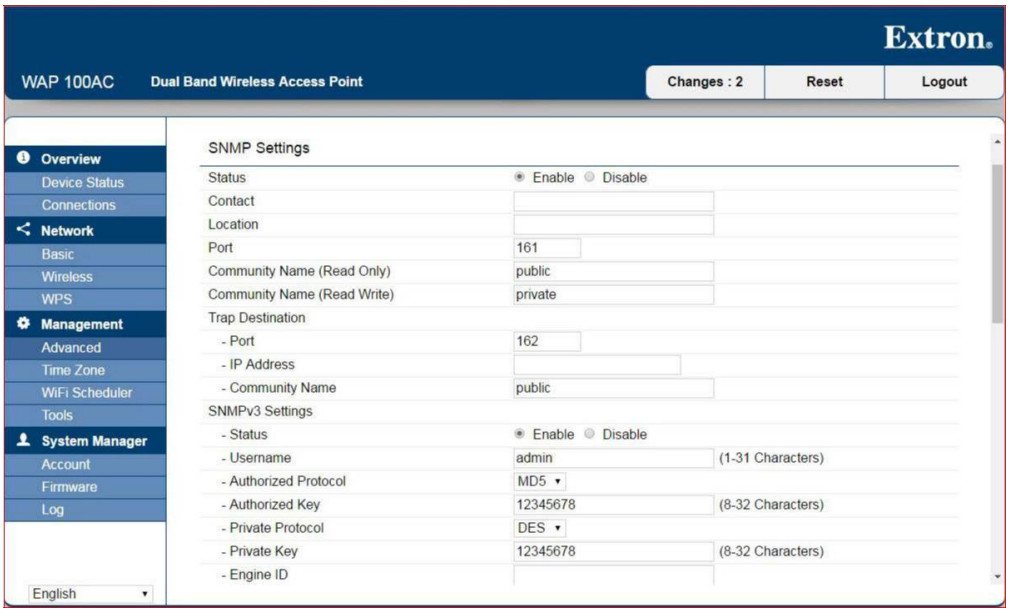

Figure 17. **Management: Advanced Page — SNMP Settings**

- **Status** — Select a radio button to **Enable** or **Disable** the SNMP feature.
- **Contact** — Specify the contact details of the device.
- **Location** — Specify the location of the device.
- **Port** — Displays the port number used for SNMP communications.
- **Community Name** (read only) — Specify the password for the SNMP community for read-only access.
- **Community Name** (read/write) — Specify the password for the SNMP community for read/write access.
- **Trap Destination Address** — Specify the port and IP address of the computer that receives the SNMP traps.
- **Trap Destination Community Name** — Specify the password for the SNMP trap community.
- **SNMP v3 Status** — Enables or Disables the SNMP v3 feature.
- **Username** —Specify the Username for the SNMP v3 feature.
- **Authorized Protocol** — Select the Authentication Protocol type: either MDS or SHA.
- **Authorized Key** — Specify the Authentication Key for authentication.
- **Private Protocol** — Select the Privacy Protocol type: DES.
- **Private Key** — Specify the privacy key.
- **Engine ID** — Specify the Engine ID for SNMP v3.
- **Save** — Click **Save** to confirm the changes.

Time Zone

To access the Date and Time Settings page, click **Time Zone** in the Management section of the left side bar (**1**). This page allows you to set the internal clock of the WAP 100AC.

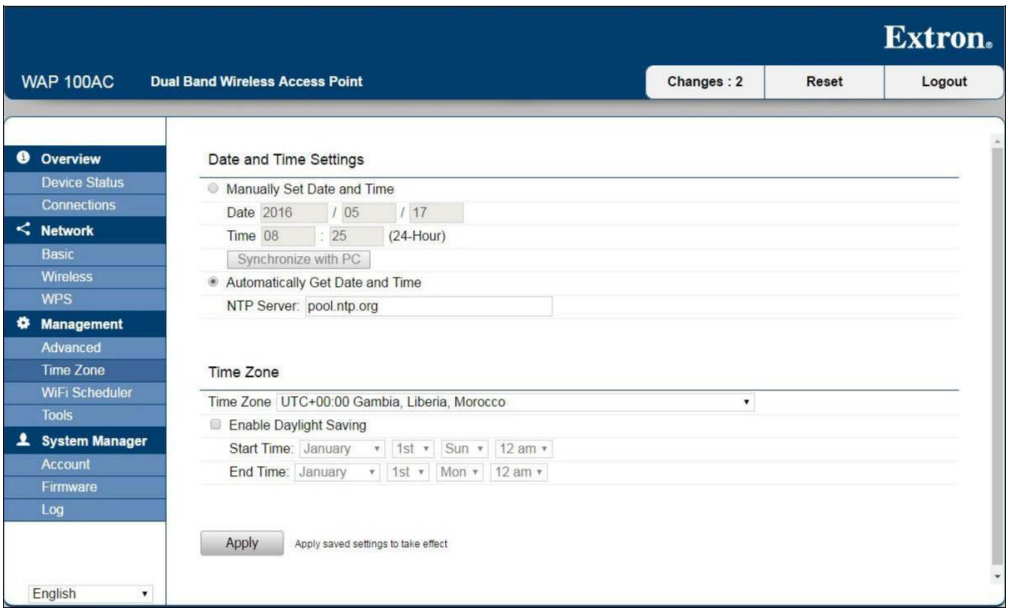

Figure 18. **Management: Time Zone Page**

1. Select either the **Manually Set Date and Time** or **Automatically Get Date and Time** radio button.
   - If you chose to set the date and time manually, enter the date (YYYY/MM/DD) and time (using a 24-hour clock).
   - Alternatively, click **Synchronize with PC** to synchronize the WAP 100AC date and time with your PC.
   - If you chose to set the date and time automatically, enter the IP address of an NTP server or use the default NTP server.
2. Choose your Time Zone from the drop-down menu.
3. Check the checkbox if you wish to enable Daylight Savings.
4. Enter the Start and End times for Daylight Savings in your location.
5. Click **Apply** to confirm the changes.

WiFi Scheduler

What is being scheduled? Reboot seems to happen on a day, but not at a specific time?
What are the text boxes below the list of days?
What is WiFi scheduler?
When the WiFi is available?

To access the WiFi Scheduler page, click **WiFi Scheduler** in the Management section of the left side bar (**1**). This page allows you to schedule system reboots and s.

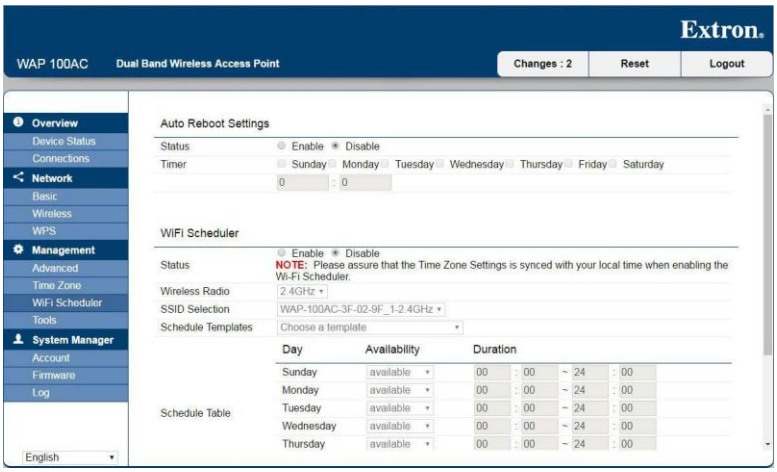

Figure 19. **Management: Wi-Fi Scheduler Page**

The

Tools

To access the tools page, click **Tools** in the Management section of the left side bar (**1**). This page allows you to

Tools Page image

Figure 20. **Management: Tools Page**

The

System Manager

Account

To access the Account page, click **Account** in the System Manager section of the left side bar (**1**). This page allows you to reset the account password.

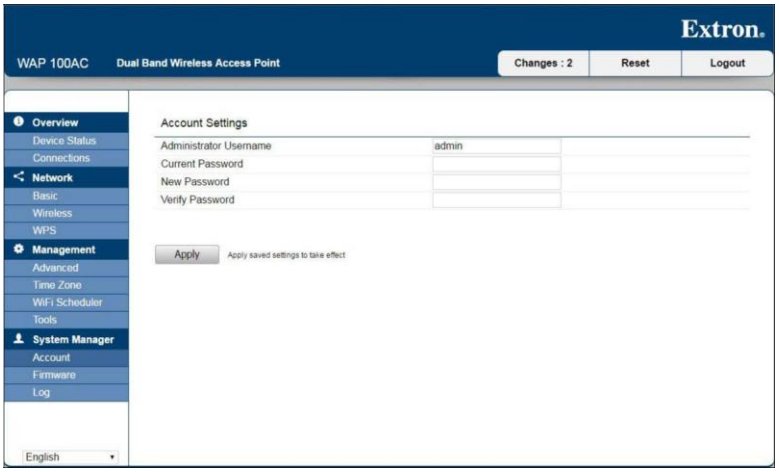

Figure 21. **System Manager: Account Page**

Can you add new accounts? or is admin the only account? Can you rename the admin account?
If you can add new accounts, are there different categories (e.g. admin and user)?

1. If you wish, enter a new Administrator Username.
2. Enter the Current Password (by default, this is extron).
3. Enter the New Password.
4. Enter the new password a second time to Verify Password.
5. Click **Apply**.

NOTES:

- The password can have 0 through 12 alphanumeric characters and is case sensitive.
- Extron strongly recommends that you change the password for greater security.

No special characters?

Firmware

Before you can upload firmware to the WAP 100AC, read the firmware release notes to determine whether the new version of the firmware corrects an existing bug or provides a new feature that you need.

If you decide to update the firmware, you must first download the appropriate file from the Extron website (**www.extron.com**) to a PC on the same subnetwork as the WAP 100AC. You can then upload the firmware to the WAP 100AC using the internal Web pages.

Downloading firmware to a PC

1. On your PC, go to **www.extron.com** and click **Download** in the menu bar along the top of the page (see figure 19, **1**).

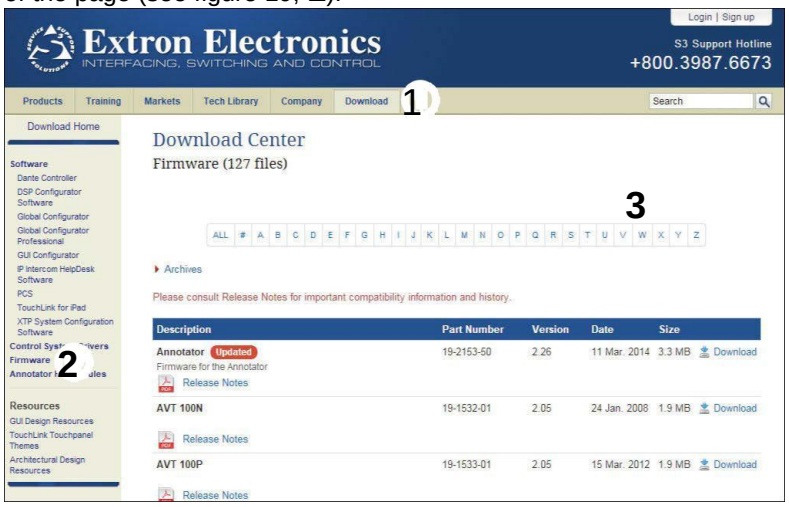

Figure 22. **Firmware Download Center**

2. Click **Firmware** in the menu bar in the left side bar (**2**).
3. Click the letter **W** from the alphabet menu (**3**).
4. Scroll down the page until you find the firmware for the WAP 100AC.

> NOTE: The product is listed on this page only when there has been an update to the original firmware.

5. Click **Release Notes** for more information about the firmware to decide whether the firmware upgrade corrects and existing bug or provides a new feature that you want to use.
6. If you decide to upgrade, click **Download**.
7. Follow the onscreen instructions to download the program. The Firmware InstallShield Wizard guides you through the steps of downloading the executable file (.exe), unpackaging and installing the firmware on your PC.
8. Make a note of where the firmware is saved.

Uploading Firmware to the WAP 100AC

Use the WAP 100AC internal Web pages to upload the firmware. To access the Firmware page, click **Firmware** in the System Manager section of the left side bar (**1**). This page allows you to upload a more recent version of the firmware to the WAP 100AC.

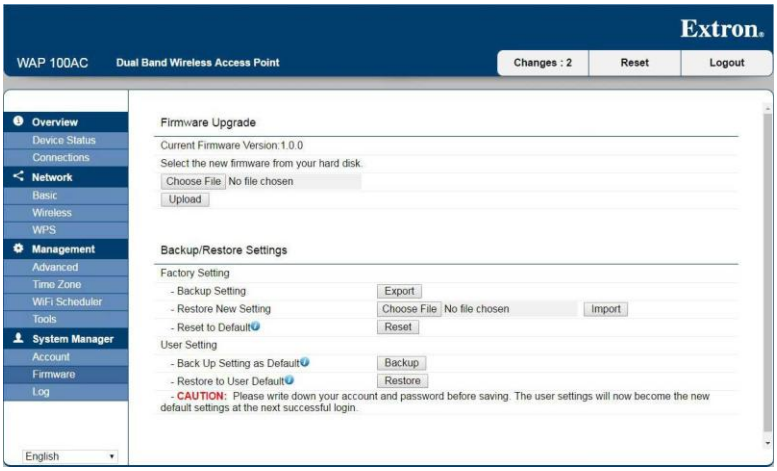

Figure 23. **System Manager: Firmware Page**

1. Click **Choose File** and navigate to the folder where you saved the firmware (see step 8, in the previous section).
2. Select the firmware file. The name of the firmware file appears in the Firmware Upgrade field.
3. Click **Upload**.

NOTE: The WAP 100AC is unavailable while the firmware is being updated. When the update is complete, the unit must reboot and any connections to or through the device are lost.

Backup and Restore Settings

This page also allows you to make your current configuration the default setting for the device, export the configuration file so that it is saved on a PC, or import a previously save configuration file and make that the default setting for the device.

What information is saved in these files?

Log

To access the Log page, click **Log** in the System Manager section of the left side bar (**1**). This page allows you to .

Building a Wireless Network

The WAP 100AC can operate in one of three modes:

- **Access Point Mode**
- **WDS AP Mode**
- **WDS Bridge Mode**

Access Point Mode

Figure 24. **Access Point Mode**

In Access Point mode, the WAP 100AC acts as a central connection for stations that support IEEE 802.11ac/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 WAP 100AC.

The WAP 100AC supports up to eight SSIDs per band (16 total) at the same time for secure access.

WDS AP Mode

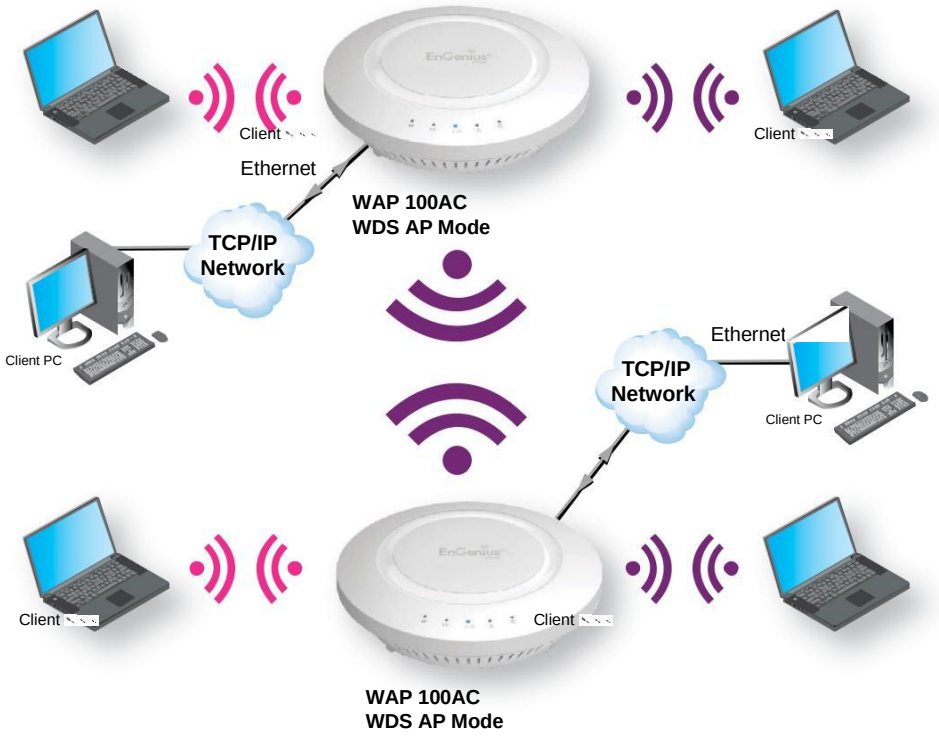

Figure 25. **WDS AP Mode**

In WDS AP (Wireless Distribution System Access Point) mode, allows wireless connections between two WAP 100AC units. This allows the wireless area to be enlarged beyond the area that can be served by a single WAP 100 AC unit.

WDS supports up to four AP MAC addresses.

This is taken from EAP 1200H guide:

Do the WAP 100AC units only communicate in the 5 GHz wave band? Since it is faster, this might make sense but is there any reason why they couldn't communicate in the 2.4 GHz band?

What about wired connections? This is only shown in WDS AP and WDS Bridge mode diagrams. Why aren't they in the AP mode? It seems very unlikely that PCs must always be wired and laptops are always wireless or that PCs cannot communicate with the WAP 100AC in the AP mode.

WDS Bridge Mode

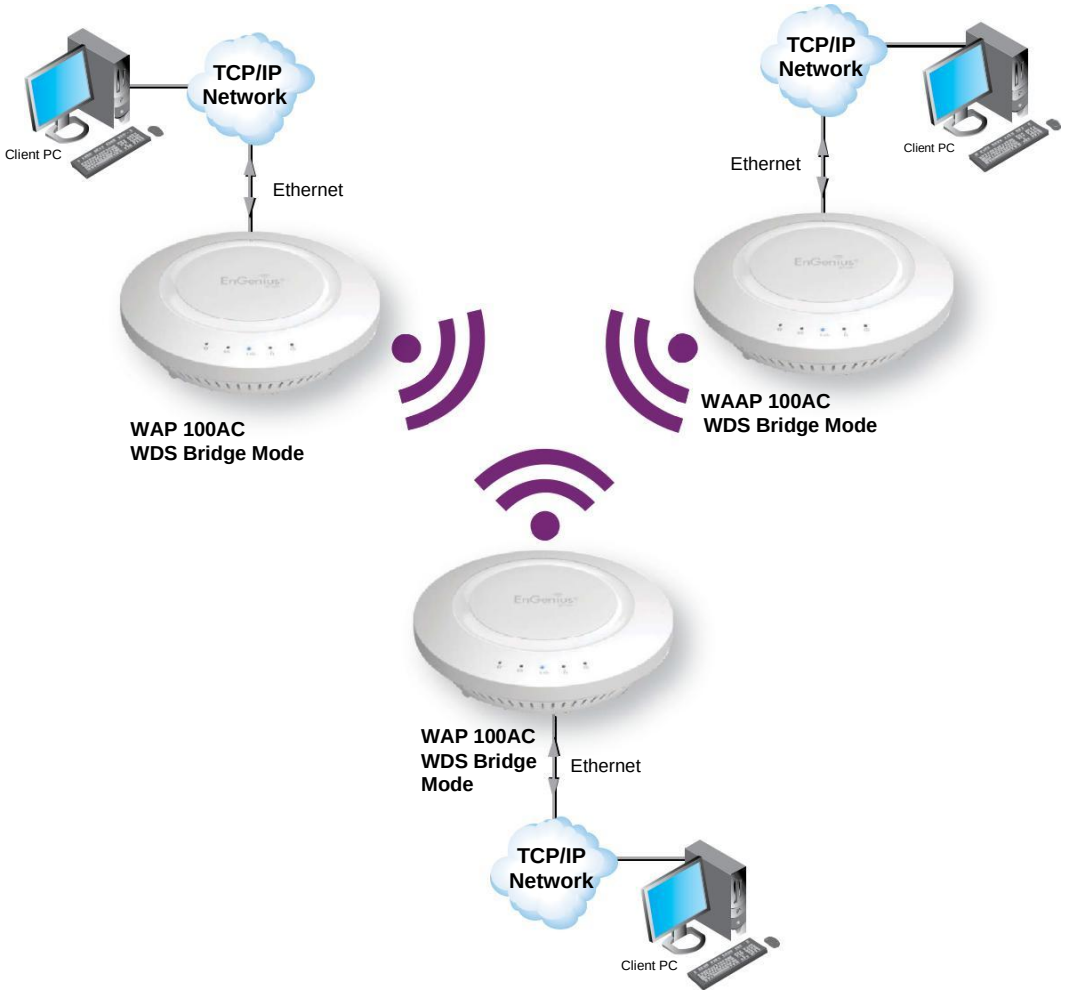

Figure 26. **WDS Bridge Mode**

In WDS Bridge mode, the WAP 100AC wirelessly connects different LANs that are a small distance apart and want to communicate with each other. WDS Bridge mode can establish up to four WDS links, creating a star-topology network.

Can WDS Bridge units communicate with WDS AP units?

NOTES:

- WDS Bridge mode does not act as an access point because access points linked by WDS use the same frequency channel.
- More access points connected together may lower throughput.
- Multiple WAP 100AC units in this mode can generate endless network loops. Extron recommends that you prevent this by using the **Spanning Tree Protocol (STP) Settings** (see page 13).

Security Settings

The WAP 100AP has seven security modes:

- **WEP**
- **WPA-PSK**
- **WPA2-PSK**
- **WPA-PSK Mixed**
- **WPA-Enterprise**
- **WPA2-Enterprise**
- **WPA Mixed Enterprise**

Extron strongly recommends using the WPA2-PSK mode.

To configure the security settings:

1. Open the WAP 100AP Web pages and log in.Log In.
2. Click **Wireless** in the Network section of the left side bar (see **Wireless Settings** on page 14).
3. Scroll down to the **SSID Profile** panels.
4. Click **Edit** next to the SSID.
5. Select the security mode from the drop-down menu.

   The corresponding security configuration page opens.

WEP

Wired Equivalent Privacy (WEP) is configured as follows:

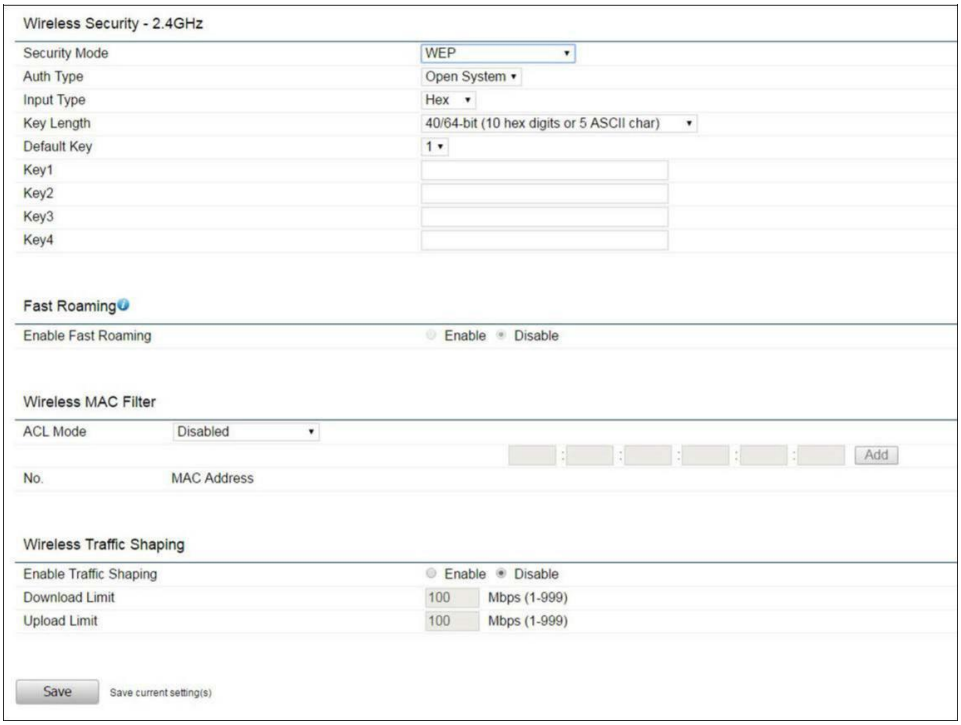

Figure 27. **WEP Configuration**

152-bit seems an odd number. Is this correct?

- **Auth Type** — Select **Open System** or **Shared Key**.
- **Input Type** — ASCII: Regular Text (recommended).
- **HEX** — Hexadecimal numbers (for advanced users).
- **Key Length** — Select **64-bit**, **128-bit**, or **152-bit** password length. Ensure that wireless clients use the same setting.
- **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. A key value for the Default Key is required.
- **Encryption Key** — Enter the key value (or values) you wish to use. By default the text box is left empty.

Click **Save** to confirm the changes.

The following panels are common to all of the security pages. For more information go to:

- **Fast Roaming** (see page 32)
- **Wireless MAC Filter** (see page 32)
- **Wireless Traffic Shaping** (see page 33)

WPA-PSK

Wi-Fi Protected Access Pre-Shared Key (WPA-PSK) is configured as follows:

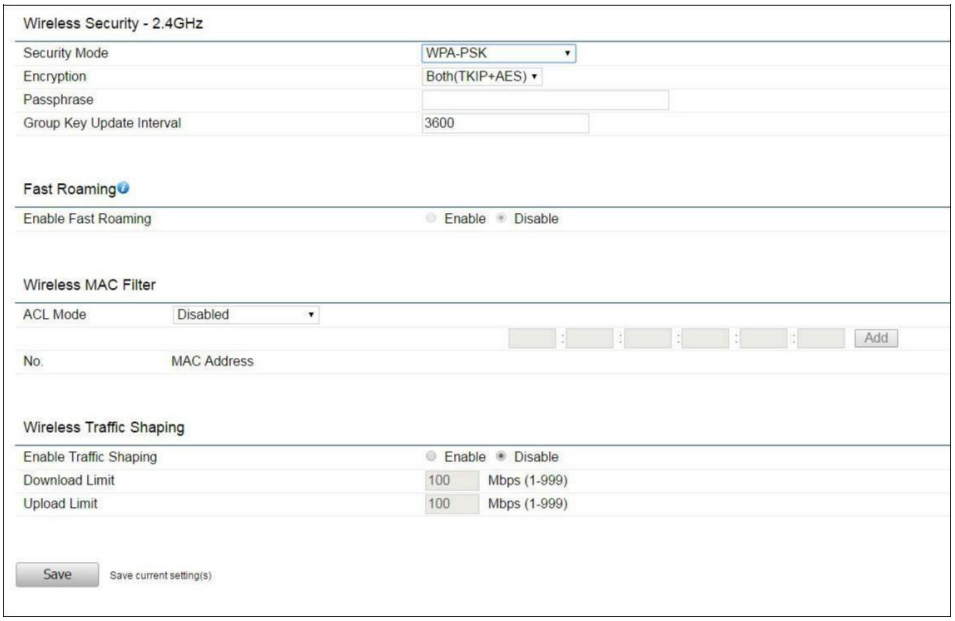

Figure 28. **WPA-PSK Configuration**

- **Encryption** — Select the WPA encryption type. Ensure the the wireless clients use the same settings.
- **Passphrase** — Wireless clients must use the same key to connect with the device.
  - If using ASCII format, the key must be from 8-63 characters in length.
  - If using HEX format, the key must be 64 HEX characters in length.
- **Group Key Update Interval** — Specify how often (in seconds) the Group Key is updated. Click **Save** to confirm the changes.

The following panels are common to all of the security pages. For more information go to:

- **Fast Roaming** (see page 32)
- **Wireless MAC Filter** (see page 32)
- **Wireless Traffic Shaping** (see page 33)

WPA2-PSK

Wi-Fi Protected Access 2 Pre-Shared Key (WPA2-PSK) is configured as follows:

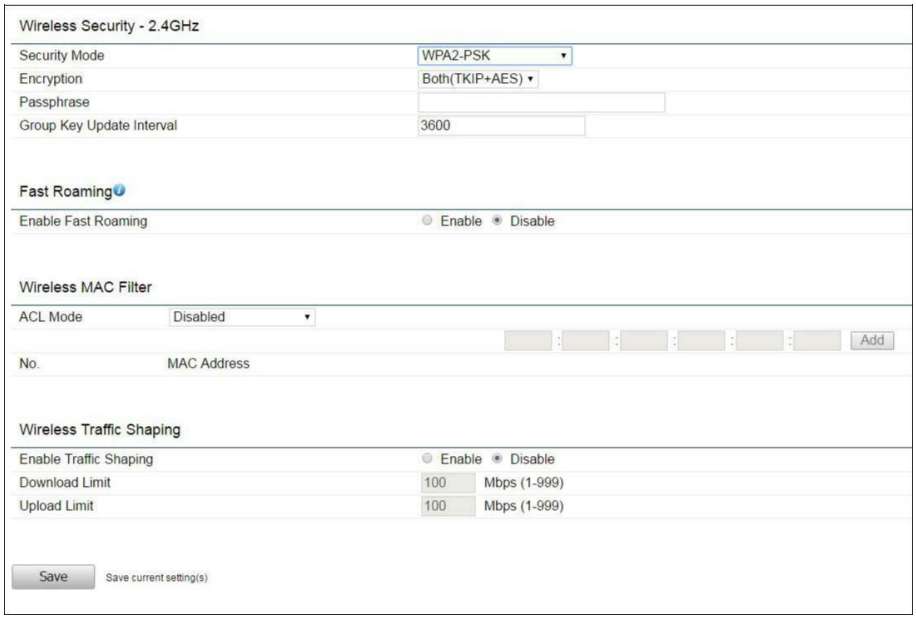

Figure 29. **WPA2-PSK Configuration**

- **Encryption** — Select the WPA encryption type. Ensure the the wireless clients use the same settings.
- **Passphrase** — Wireless clients must use the same key to connect with the device.
  - If using ASCII format, the key must be from 8-63 characters in length.
  - If using HEX format, the key must be 64 HEX characters in length.
- **Group Key Update Interval** — Specify how often (in seconds) the Group Key is updated. Click **Save** to confirm the changes.

The following panels are common to all of the security pages. For more information go to:

- **Fast Roaming** (see page 32)
- **Wireless MAC Filter** (see page 32)
- **Wireless Traffic Shaping** (see page 33)

WPA-PSK Mixed

Wi-Fi Protected Access Pre-Shared Key Mixed (WPA-PSK Mixed) is configured as follows:

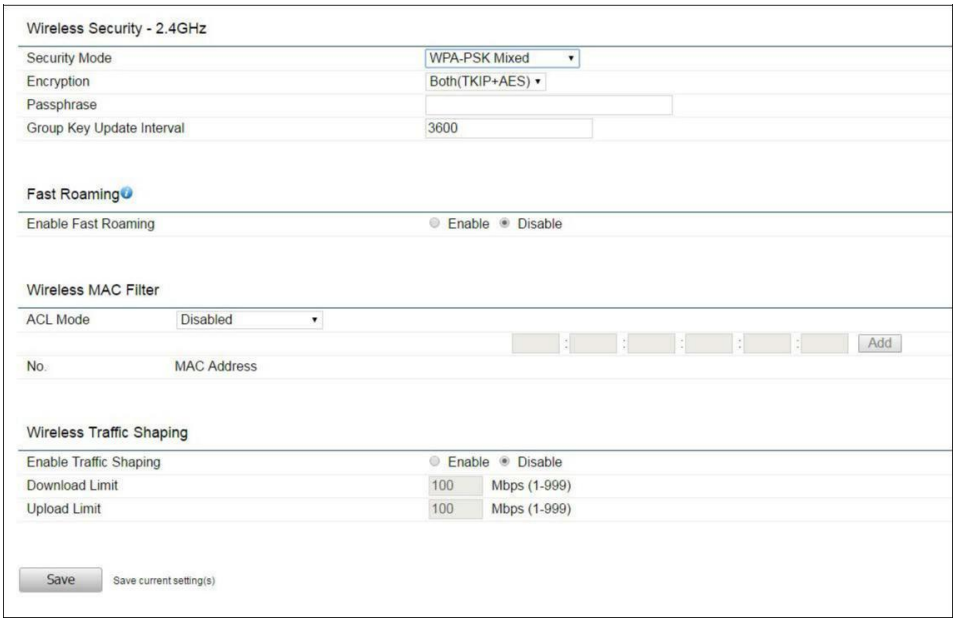

Figure 30. **WPA-PSK Mixed Configuration**

- **Encryption** — Select the WPA encryption type. Ensure the the wireless clients use the same settings.
- **Passphrase** — Wireless clients must use the same key to connect with the device.
  - If using ASCII format, the key must be from 8-63 characters in length.
  - If using HEX format, the key must be 64 HEX characters in length.
- **Group Key Update Interval** — Specify how often (in seconds) the Group Key is updated. Click **Save** to confirm the changes.

The following panels are common to all of the security pages. For more information go to:

- **Fast Roaming** (see page 32)
- **Wireless MAC Filter** (see page 32)
- **Wireless Traffic Shaping** (see page 33)

WPA-Enterprise

Wi-Fi Protected Access Enterprise (WPA Enterprise) is configured as follows:

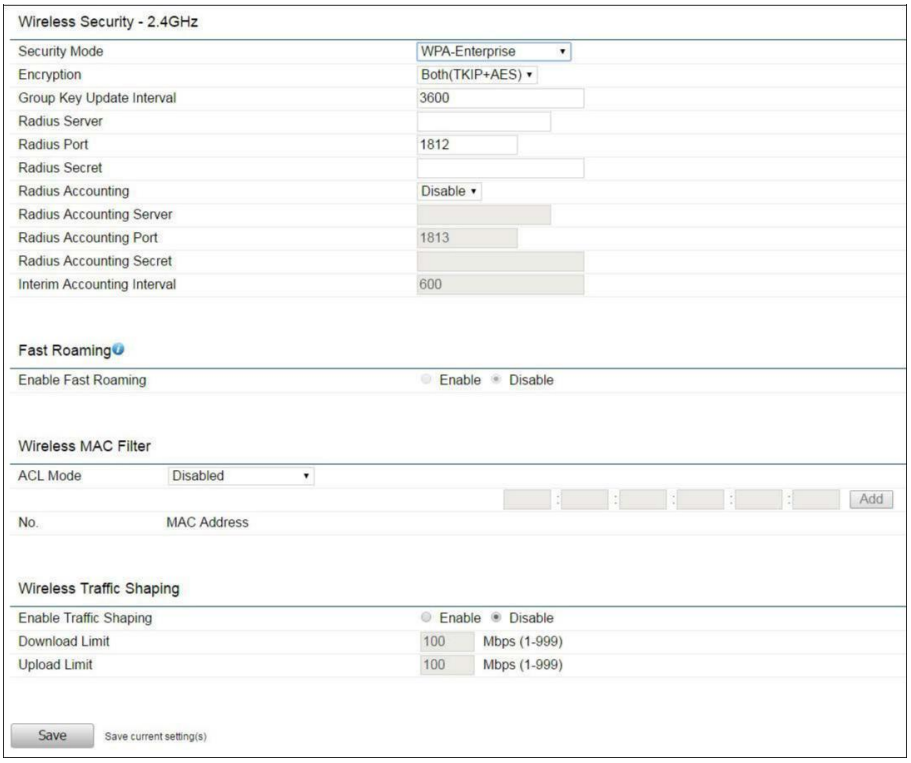

Figure 31. **WPA Enterprise Configuration**

- **Encryption** — Select the WPA encryption type. Ensure the the wireless clients use the same settings.
- **Group Key Update Interval** — Specify how often (in seconds) the Group Key is updated.
- **Radius Server** — Enter the IP address of the Radius server.
- **Radius Port** — Enter the port number used for connections to the Radius server.
- **Radius Secret** — Enter the secret required for connections to the Radius server.
- **Radius Accounting** — Select Enable or Disable for the accounting feature.
- **Radius Accounting Server** — Enter the IP address of the Radius accounting server.
- **Radius Accounting Port** — Enter the port number used for connections to the Radius accounting server.
- **Radius Accounting Secret** — Enter the secret required for connections to the Radius accounting server.
- **Interim Accounting Interval** — Specify how often (in seconds) the accounting data sends.

NOTE: 802.11n does not allow WEP/WPA-PSK TKIP/WPA2-PSK TKIP security mode. The connection mode will automatically change from 802.11n to 802.11g.

Click **Save** to confirm the changes.

The following panels are common to all of the security pages. For more information go to:

- **Fast Roaming** (see page 32)
- **Wireless MAC Filter** (see page 32)
- **Wireless Traffic Shaping** (see page 33)

WPA2-Enterprise

Wi-Fi Protected Access2 Enterprise (WPA2 Enterprise) is configured as follows:

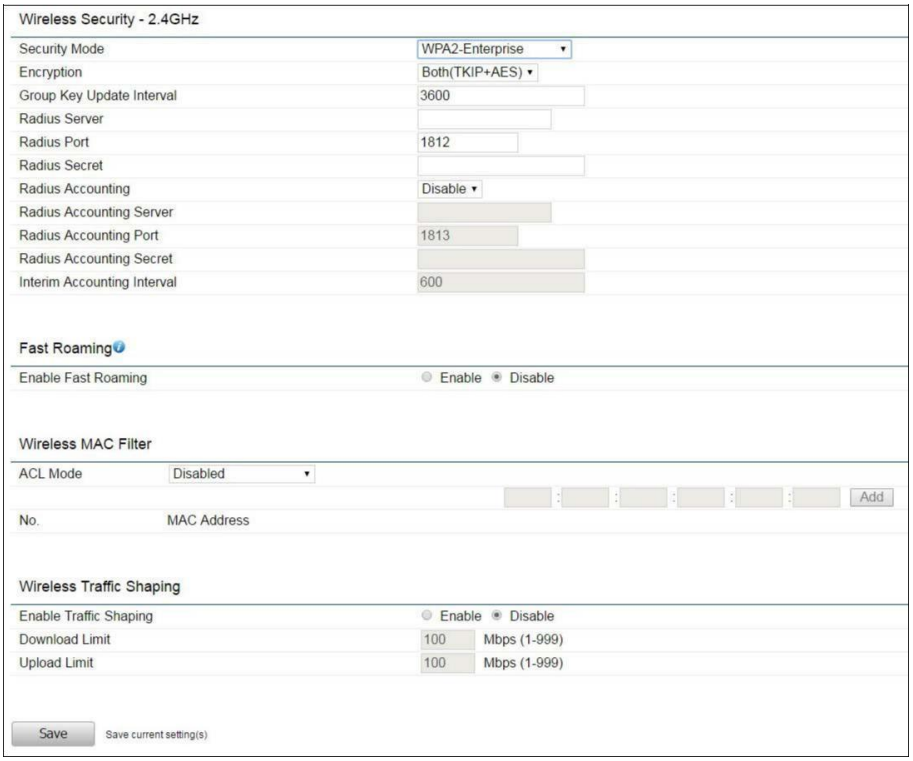

Figure 32. **WPA2 Enterprise Configuration**

- **Encryption** — Select the WPA encryption type. Ensure the the wireless clients use the same settings.
- **Group Key Update Interval** — Specify how often (in seconds) the Group Key is updated.
- **Radius Server** — Enter the IP address of the Radius server.
- **Radius Port** — Enter the port number used for connections to the Radius server.
- **Radius Secret** — Enter the secret required for connections to the Radius server.
- **Radius Accounting** — Select Enable or Disable for the accounting feature.
- **Radius Accounting Server** — Enter the IP address of the Radius accounting server.
- **Radius Accounting Port** — Enter the port number used for connections to the Radius accounting server.
- **Radius Accounting Secret** — Enter the secret required for connections to the Radius accounting server.
- **Interim Accounting Interval** — Specify how often (in seconds) the accounting data sends.

NOTE: 802.11n does not allow WEP/WPA-PSK TKIP/WPA2-PSK TKIP security mode. The connection mode will automatically change from 802.11n to 802.11g.

Click **Save** to confirm the changes.

The following panels are common to all of the security pages. For more information go to:

- **Fast Roaming** (see page 32)
- **Wireless MAC Filter** (see page 32)
- **Wireless Traffic Shaping** (see page 33)

WPA Mixed Enterprise

Wi-Fi Protected Access Mixed Enterprise (WPA Mixed Enterprise) is configured as follows:

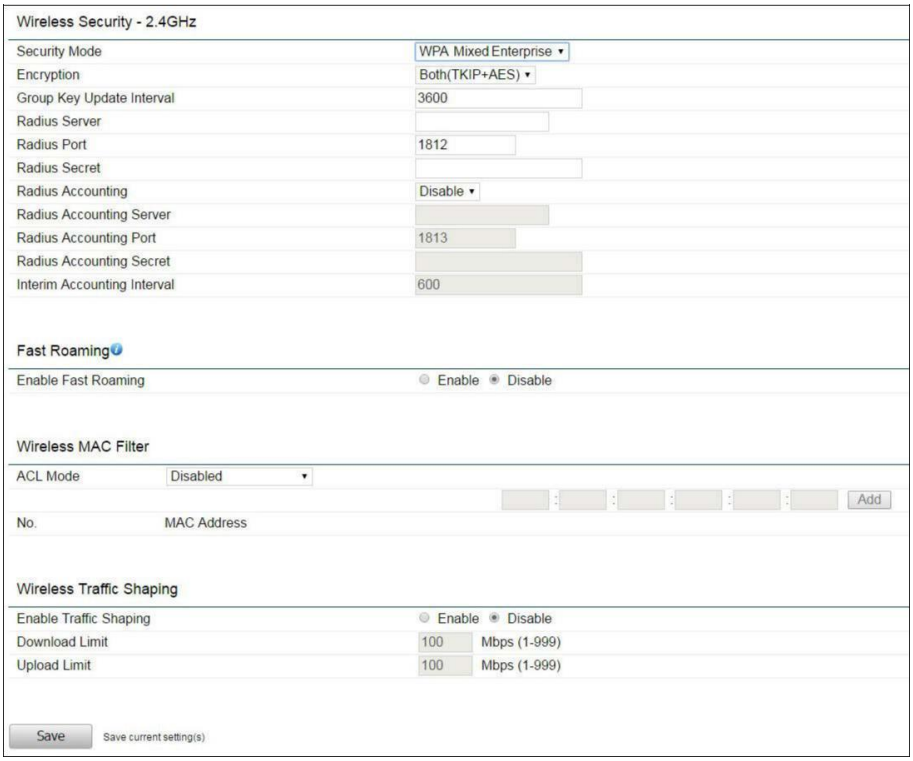

Figure 33. **WPA Mixed Enterprise Configuration**

- **Encryption** — Select the WPA encryption type. Ensure the the wireless clients use the same settings.
- **Group Key Update Interval** — Specify how often (in seconds) the Group Key is updated.
- **Radius Server** — Enter the IP address of the Radius server.
- **Radius Port** — Enter the port number used for connections to the Radius server.
- **Radius Secret** — Enter the secret required for connections to the Radius server.
- **Radius Accounting** — Select Enable or Disable for the accounting feature.
- **Radius Accounting Server** — Enter the IP address of the Radius accounting server.
- **Radius Accounting Port** — Enter the port number used for connections to the Radius accounting server.
- **Radius Accounting Secret** — Enter the secret required for connections to the Radius accounting server.
- **Interim Accounting Interval** — Specify how often (in seconds) the accounting data sends.

NOTE: 802.11n does not allow WEP/WPA-PSK TKIP/WPA2-PSK TKIP security mode. The connection mode will automatically change from 802.11n to 802.11g.

Click **Save** to confirm the changes.

The following panels are common to all of the security pages. For more information go to:

- **Fast Roaming** (see page 32)
- **Wireless MAC Filter** (see page 32)
- **Wireless Traffic Shaping** (see page 33)

The following panels are common to all of the security pages:

- **Fast Roaming**
- **Wireless MAC Filter**
- **Wireless Traffic Shaping**

Fast Roaming

This function ensures that, when mobile client devices roam from access point to access point, they are quickly able to reestablish association with applications.

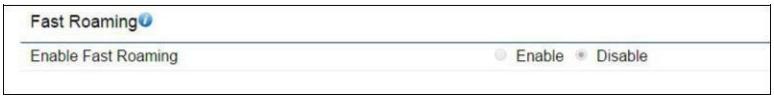

Figure 34. **Fast Roaming**

To enable Fast Roaming, follow these instructions:

1. Enter the SSID settings.
2. Initialize the security mode to WPA-Mixed, WPA2 Enterprise, WPA2-PSK, or WPA-Mixed Enterprise.
3. Configure connections to the Radius Server.
4. Set the same encryption on the other access point.
5. Enable Fast Roaming.

Once Fast Roaming is enabled, can prevent delays in conversation, when moving between access points while running voice services.

Wireless MAC Filter

The Wireless MAC Filter is used to allow or deny network access to wireless clients based on their MAC addresses. By default, the filter is set to Disabled.

When the filter is enabled, you can manually add a MAC address to restrict access to the WAP 100AC.

Does Allow MAC in the list only allow those devices (and exclude any devices not on the list)? Otherwise, what is the point of this option?

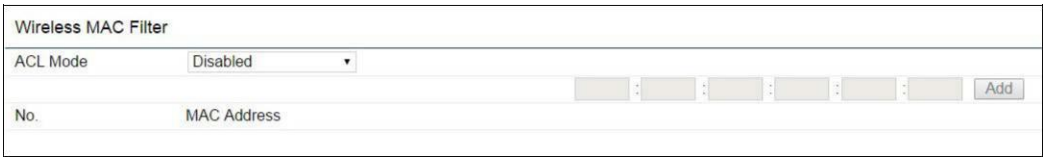

Figure 35. **Wireless MAC Filter**

ACL Mode — The Access Control List (ACL) Mode determines whether network access is allowed or denied to clients whose MAC addresses are listed in the MAC Address table. Options are **Disabled**, **Deny MAC in the list**, **Allow MAC in the list**.

MAC Address — Enter the MAC address of the wireless client

I'm assuming "Add" changes to "Delete" once the MAC address is added. But can't tell from images.

ACL Mode — Click **Add** to add that MAC address to the table. Once the address is added, the button next to that address changes to Delete.

Delete — Click **Delete** to remove the MAC address listed in that row.

Save — Click **Save** at the bottom of the page (see **figure 35**) to confirm the changes.

Wireless Traffic Shaping

figure 35

Traffic Shaping regulates the flow of packets leaving an interface to deliver improved quality of service.

Figure 36. **Wireless Traffic Shaping**

Enable Traffic Shaping — Select the appropriate radio button to **Enable** or **Disable** this function.

Download Limit — Specify the wireless transmission speed for downloading. **Upload Limit** — Specify the wireless transmission speed for uploading. **Save** — Click **Save** to confirm the changes.

Mounting

The WAP 100AC can be wall-mounted or ceiling-mounted. This section discusses

- **Before You Start**
- **Mounting the WAP 100AC**

Before You Start

Before starting, consider these issues to determine a suitable position to mount the WAP 100AC for optimal performance:

- Mount the WAP 100AC on a wall or ceiling.
- Walls, ceilings, doors, windows, mirrors, and other similar objects weaken the wireless signals. To find the best location, you must take into account the number, thickness, and location of walls and ceilings and keep them to a minimum.
- Brick or metal decrease the strength of wireless signals to a greater extent that dry wall. Objects such as filing cabinets also weaken the signal strength.
- Interference from electrical devices that generate RF noise (for example, microwaves or cordless phones) also weaken the signal.

Mounting the WAP 100AC

ATTENTION:

- All structural steps and electrical installation must be performed by qualified personnel in accordance with local and national building codes and electrical codes.
- Toute étape structurelle et installation électrique, doit être effectuée par un personnel qualifié, conformément aux codes du bâtiment, aux codes incendie et sécurité, et aux codes électriques, locaux et nationaux.

Mounting to a Solid Ceiling or Wall

To mount the WAP 100AC to a solid ceiling or wall, Extron provides mounting bracket (figure 17, **2**) and a wall mounting hardware kit that includes:

- Two wall plugs (**1**)
- Two P3.5x32 screws (**3**)
- Two P2.6x12 screws (**4**)

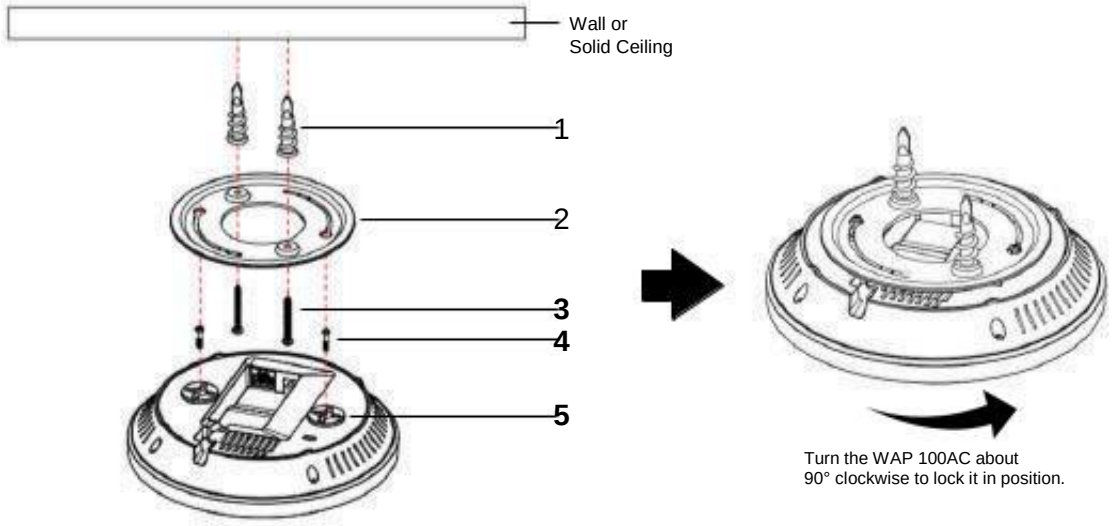

Figure 37. **Mounting the WAP 100AC to a Solid Ceiling or Wall**

What sized drill? How far apart are the holes?

To mount the unit, follow these instructions:

1. Drill two holes 3 inches (7.62 cm) apart.
2. Screw in the wall plugs.
3. Attach the mounting bracket, using the P3.5x32 screws.
4. Insert the P2.6x12 screws into the mounting holes on the top of the WAP 100AC (**5**). Leave enough of the screws exposed to insert them into the mounting bracket.

   If you need extra space between the WAP 100AC and the mounting bracket, use the spacers and long screws from the T-rail mounting kit (see Mounting to a Dropped Ceiling on the following page).
5. Connect the cables. The WAP 100AC can use a 12 VDC desktop power supply or a PoE injector. Extron recommends using PoE.

   ATTENTION:
   - Do not connect either power supply before reading the Attention notifications on **page 6** or **page 7**.
   - Ne branchez pas de sources d'alimentation externes avant d'avoir lu les mises en garde dans la section « Power Supply » sur **page 6** ou **page 7**.
   - Disconnect power from either power supply before making any connections.
   - Débranchez de sources d'alimentation externes avant d'effectuer n'importe quelles connexions.

   - If you are using PoE, connect the LAN cable only (figure 2, **A**).
   - If you are using a 12 VDC desktop power supply, connect the power supply cable (figure 2, **B**).
6. Insert the heads of the P2.6*12 screws (see step 4) into the holes in the mounting bracket.
7. Turn the WAP 100AC about 90° clockwise to lock it into place.

8. Power on the PoE injector or 12 VDC power supply.
   - The power LED lights (orange).
   - The WLAN LEDs light (blue for 2.4G and green for 5G)
   - The LAN connection LED lights (blue)

You are now ready to configure the WAP 100AC (see Internal Web Pages on page 9).

Mounting to a Dropped Ceiling

To mount the WAP 100AC to a dropped ceiling, Extron provides a mounting hardware kit that includes:

- Two 9/16 inch (1.43 cm) T-rail connectors (figure 18, **1**)
- Two 15/16 inch (2.38 cm) T-rail connectors (**2**)
- Two spacers (**3**)
- Two P2.6*10 screws (**4**)
- Two P2.6*25 screws (**5**)

Figure 38. **Preparing the WAP 100AC to Mount in a Dropped Ceiling**

To mount the unit, follow these instructions:

1. Decide whether you need the 9/16 inch or 15/16 inch T-rail connectors and whether you need to use the spacers to accommodate ceiling tiles.

   If you do not need the spacer, use the shorter (P2.6*10) screws. If you require the spacers, use the longer (P2.6*25) screws.

2. Connect the cables. The WAP 100AC can use a 12 VDC desktop power supply or a PoE injector. Extron recommends using PoE.

ATTENTION:
• Do not connect either power supply before reading the Attention notifications on **page 6** or **page 7**. • Ne branchez pas de sources d'alimentation externes avant d'avoir lu les mises en garde dans la section « Power Supply » sur **page 6** ou **page 7**.
• Disconnect power from either power supply before making any connections. • Débranchez de sources d'alimentation externes avant d'effectuer n'importe quelles connexions.

   - If you are using PoE, connect the LAN cable only (figure 2, **A**, on page 4).
   - If you are using a 12 VDC desktop power supply, connect the power supply cable (figure 2, **B**).

Figure 39. **Attaching the WAP 100AC to T-Rail**

3. Align the T-rail connectors with the T-rail and press the unit until the connectors snap into place.
4. Power on the PoE injector or 12 VDC power supply.
   - The power LED lights (orange).
   - The WLAN LEDs light (blue for 2.4G and green for 5G)
   - The LAN connection LED lights (blue)

You are now ready to configure the WAP 100AC (see Internal Web Pages on page 9).

Kensington Security Lock

For added security, once the installation is complete, attach a Kensington Security Lock (not provided) to the metal-reinforced slot on the top of the unit (see figure 2, **E**). Follow the instructions that are provided by the manufacturer to install the lock.

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe and Africa:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:
Extron Electronics Asia Pte. Ltd.
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F13, PO Box 293666
Dubai, United Arab Emirates

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876 **Europe:** 31.33.453.4040
Asia: 65.6383.4400 **Japan:** 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.