



Safety Instructions


Safety Instructions • English


WARNING: This symbol, , 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, , 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.


تعليمات السلامة • العربية


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Sicherheitsanweisungen • Deutsch


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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


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Instructions de sécurité • Français


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ATTENTION : Ce pictogramme, , 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 l'équipement.

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, , 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.

ATTENZIONE: Il simbolo, , 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


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UWAGI: Ten symbol, , gdy używany na produkcie, jest przeznaczony do ostrzeżenia 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

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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.

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注意 ⚠ 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

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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

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安全上のご注意、法規遵守、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

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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.

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FCC Class B Notice

NOTE: 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 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 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. There is no guarantee that interference will not occur. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more 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.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.

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.

Regulatory Notice

 **WARNING:** Potential risk of severe injury or death.

AVERTISSEMENT : Risque potentiel de blessure grave ou de mort.

- The circuit breaker used for this connection should be rated no lower than 20 amps and no greater than 30 amps.
- El disyuntor utilizado para esta conexión no debe tener una capacidad nominal de entre 20 y 30 amperios.
- This product is intended for indoor use and dry environment only. The device must not be exposed to dripping or ingress of water and that other objects filled with liquids, such as glasses, should be placed on the apparatus.
- Este producto está diseñado para uso en interiores y ambientes secos únicamente. El dispositivo no debe exponerse a goteos ni a la entrada de agua y deben colocarse sobre el aparato otros objetos llenos de líquido, como vasos.
- XPA Ultra series are Class I products and must be connected to the MAINS outlet ELECTRICAL with a protective ground connection.
- La serie XPA Ultra son productos de Clase I y deben conectarse a la toma de corriente ELÉCTRICA con una conexión a tierra de protección.
- Where a mains plug or appliance connector is used as the disconnecting device, the disconnecting device must remain easily operative.
- Cuando se utilice un enchufe de red o un conector de aparato como dispositivo de desconexión, el dispositivo de desconexión debe permanecer operativo fácilmente.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

DANGER:

- Will result in serious injury or death.
- Entraîne des blessures graves ou la mort.

 **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.

TIP: A tip provides a suggestion to make working with the application easier.

Specifications Availability

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

Extron Glossary of Terms

A glossary of terms is available at <http://www.extron.com/technology/glossary.aspx>.



Contents

Introduction 1

About this Guide.....	1
About the XPA U 3502.....	1
Features	2

Installation 4

Mounting the XPA U 3502 Amplifier	4
Tabletop Use	4
UL Rack Mounting Guidelines.....	4
Rack Mounting	5
Rack Shelf Mounting.....	6
Rack Mounting Ventilation Recommendations	7
Flexible Conduit Adapter Kit Installation	8
UL Requirements.....	9
Installing the Flexible Conduit Adapter Kit	9

Operation..... 12

Front Panel Features.....	12
Rear Panel Features	13
Remote Volume Control Port	15
Remote Standby Port	16
Troubleshooting	17
Amplifier Fails to Exit Standby Mode Promptly.....	17
Amplifier Enters Standby Mode Too Early.....	18
Limiter/Protect LED Warning Indicators.....	18
Over Temp Indicator LED	18

Introduction

This section gives an overview of the Extron XPA U 3502 two-channel audio power amplifier. Topics include:

- [About this Guide](#)
- [About the XPA U 3502](#)
- [Features](#)

About this Guide

This guide describes the XPA U 3502 two-channel audio power amplifier and discusses how to install, configure, and operate it.

In this guide, the terms “unit”, “amplifier”, and “power amplifier” refer to the XPA U 3502.

About the XPA U 3502

The Extron XPA U 3502 is an ENERGY STAR-qualified two-channel audio power amplifier that can drive 8 ohm or 4 ohm loads. The XPA U 3502's outputs can deliver two 350 watt channels into low-impedance systems.

The convection-cooled, plenum-rated enclosure of the XPA U 3502 doesn't require empty rack spaces for ventilation and include rack mount hardware. It features a highly efficient, advanced Class D amplifier design with defeatable auto standby, fast wake up from standby, and patented Extron CDRS (Class D Ripple Suppression) technology. Remote volume and mute control is possible via Extron VCM, VC, select MediaLink controllers, and Extron Control products with the digital Remote Volume Control Ports.

Features

- **350 Watts per channel into 8 ohms or 4 ohms**
- **ENERGY STAR® qualified amplifier** — The XPA U 3502 is an ENERGY STAR-qualified and energy efficient amplifier conserving energy and reducing costs.
- **Extron Patented CDRS (Class D Ripple Suppression) Technology** — CDRS is an Extron patented technology providing a smooth and clean audio waveform, and improving signal fidelity over Class D amplifier designs. CDRS eliminates the high frequency switching ripple characteristics of Class D amplifiers, a source of RF emissions which can interfere with sensitive AV equipment like wireless microphones.
- **Convection cooled and fanless operation - can be stacked without extra rack space for ventilation** — The XPA U 3502 does not have internal fans or vents for cooling, ensuring quiet reliable operation. The unit generates substantially less heat than conventional power amplifiers, making the XPA U 3502 ideal for rack-mount applications where space is limited.
See [Rack Mounting Ventilation Recommendations](#) on page 7.
- **Defeatable auto-standby with fast wake up** — The amplifier meets ENERGY STAR qualification requirements with an auto-standby feature that automatically places the unit into standby after 25 minutes of inactivity, thereby dramatically reducing power consumption. The XPA U 3502 quickly returns to full power in less than 100 ms upon signal detection, with minimal inrush current. Auto-standby can be disabled if required.
- **UL 2043 Plenum-rated when used with the optional Flexible Conduit Adapter Kit/AV equipment** — The XPA U 3502 amplifier meets UL 2043 when installed with the Flexible Conduit Adapter Kit, part # 70-228-02. The amplifier must meet this requirement for heat and smoke release for installation within a plenum airspace. Above-the-ceiling placement conceals the amplifier to prevent theft, and it is convenient for installing when space inside the room is limited.
- **1U, half-rack enclosure** — mounts in a standard rack enclosure with the included hardware.
- **Remote volume and mute control per channel** — With Extron VCM, VC, and select MediaLink controllers.
- **Professional grade signal-to-noise and THD+N performance** — The XPA U 3502 delivers professional grade performance, featuring 100 dB signal-to-noise ratio and THD+N of less than 0.1%.
- **Ultra low inrush current at power up - no need for power sequencing** — Allows multiple XPA Ultra amplifiers to be powered on simultaneously without overloading power circuits. This eliminates the need for power sequencing.
- **Power factor correction - removes harmonic content on AC line** — The XPA U 3502 features power factor correction technology that smooths out the high peak currents of the amplifier's current draw, minimizing the presence of high-frequency harmonics on the AC power line, preventing audible artifacts from being transmitted to other audio equipment in the system.
- **Rear panel recessed, detented level controls** — Provides attenuation of input signal for adjusting audio system gain staging. These controls are located on the rear panel to prevent tampering with the level adjustments. Laser-etched markings provide enhanced visibility of settings for ease of configuration.
- **Remote standby port** — Enables the XPA U 3502 to be remotely powered down when not in use, reducing operating cost.
- **Automatic clip limiter** — Detects actual onset of clipping. Gain is automatically reduced without audible artifacts to prevent clipping distortion.

- **Multiple protection circuits** — Activate during output shorts, thermal overload, or DC faults to prevent damage to the amplifier and speakers.
- **5 mm screw-lock captive screw speaker connectors** — Enable simple, secure connections with 22 to 12 AWG speaker cables.
- **Front and rear-mounted signal and protection indication LEDs** — Provide convenient indication of input signal presence and protection circuit activation from both sides of an equipment rack.
- **Front panel over-temperature LED** — Provides visual indication that the amplifier's temperature has exceeded the optimal value, well in advance of the onset of thermal protection circuitry.
- **Internal Extron Everlast™ power supply** — Provides worldwide power compatibility, with high-demonstrated reliability and low power consumption for reduced operating cost.
- **Extron Everlast Power Supply is covered by a 7-year parts and labor warranty.**

Installation

This section describes the installation and setup of the XPA U 3502 power amplifier.

Topics include:

- [Mounting the XPA U 3502 Amplifier](#)
- [Flexible Conduit Adapter Kit Installation](#)

Mounting the XPA U 3502 Amplifier

The XPA U 3502 can be mounted in a rack using rack ears, mounted on a rack shelf, set on a table, or mounted in the plenum space above a ceiling-mounted projector. Also, two amplifiers can be connected using the bridging plate to create a full rack-width unit.

Tabletop Use

Four self-adhesive rubber feet are included. Attach one foot at each corner on the bottom side of the amplifier and place the unit in a desired location.

UL Rack Mounting Guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the equipment in a rack.

- **Elevated operating ambient temperature** — If the equipment is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (TMA = +32° F to +122° F (0° C to +50° C)/ 10% to 90%, noncondensing) specified by Extron.
- **Reduced air flow** — Install the equipment in a rack so the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — When mounting the equipment in the rack, ensure uneven mechanical loading does not cause a hazardous condition.
- **Circuit overloading** — When connecting the equipment to the supply circuit, consider the effect circuit overloading might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings when addressing this concern.
- **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Rack Mounting

The XPA U 3502 can be mounted into a rack using one of the following methods.

Rack Ear Mounting

The XPA U 3502 ships with a set of rack ears, so that the half rack-width amplifier can be installed in a full rack-width space.

Mount the amplifier with the rack ears by doing the following:

1. Remove the rubber feet from the bottom of the amplifier, if previously installed.
2. Attach the included rack ears to the sides of the amplifier with the four provided #6 machine screws (❶).

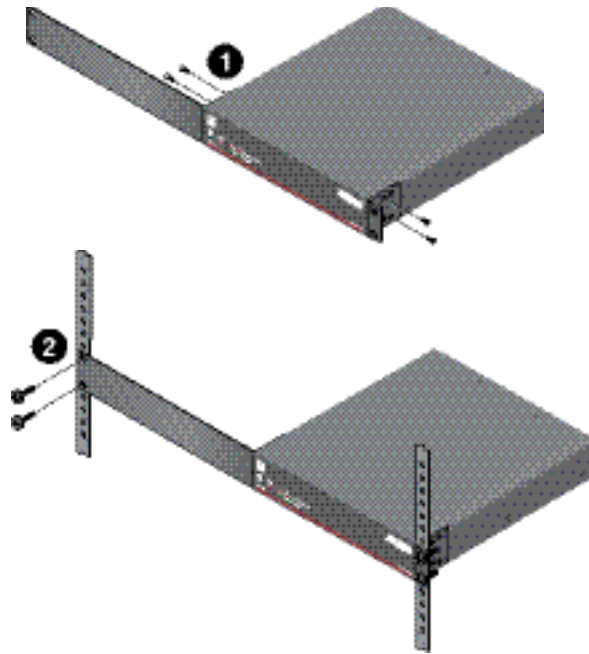


Figure 1. Installing XPA U 3502 Rack Ears

3. Insert the amplifier into the rack and align the holes in the rack ear with the holes on the rack.
4. Secure the amplifier to the rack using four provided 10-32 x 3/4" screws (❷).

Side-by-Side Rack Mounting

The XPA U 3502 ships with a bridge plate connector to allow two amplifiers to be connected together and form a full rack-width unit.

Mount two XPA Ultra Series amplifiers by doing the following:

1. If the rubber feet are installed on the bottom of the amplifier, remove them.
2. Position two amplifiers upside down and next to each other.
3. Use the bridge plate connector and the four provided #4 machine screws to connect the two amplifiers together (see [figure 2, ❶](#), on the next page).
4. Attach the two short rack ears to the amplifiers with four provided #6 machine screws (see [❷](#)).

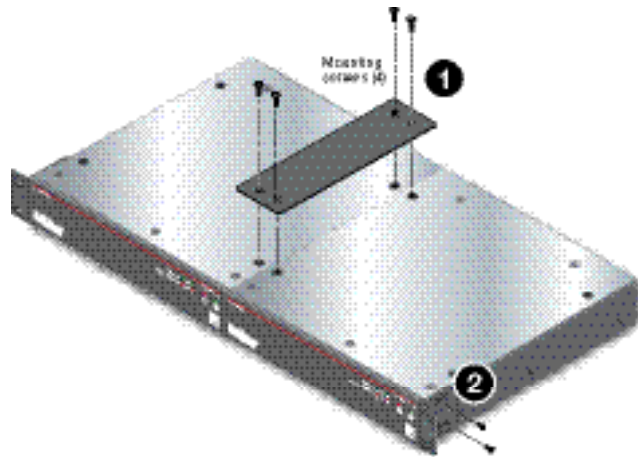


Figure 2. Installing XPA U 3502 Bridge Plate

5. Insert the amplifiers into the rack and align the holes in the rack ears with the holes in the rack.
6. Secure the amplifiers to the rack using four provided 10-32 3/4" screws (see figure 3, ③)

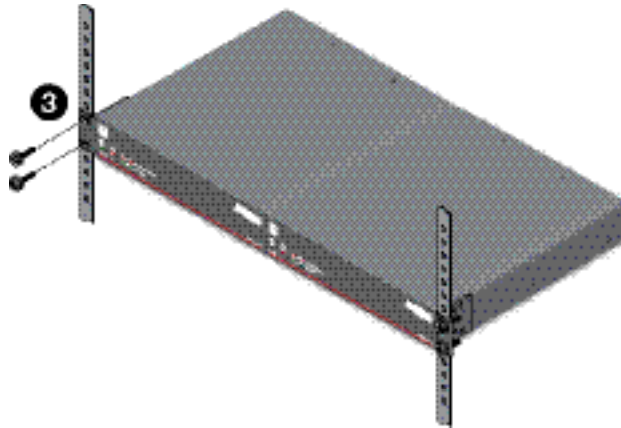


Figure 3. Secure Connected XPA U 3502 Amplifiers to Rack

Rack Shelf Mounting

The XPA U 3502 can be mounted in a shelf using the optional RSU 129 1U Universal Rack Shelf Kit.

Mount the amplifier with the shelf as follows:

1. If the rubber feet are installed on the bottom of the amplifier, remove them.
2. Place the amplifier on one half of the rack shelf.
3. Align the front of the amplifier with the front of the shelf, and align the threaded holes on the bottom of the amplifier with the holes in the rack shelf.
4. Attach the amplifier to the rack shelf with the two provided 4-40 x 3/16" machine screws. Fasten them into diagonally opposite corners by inserting the screws from the underside of the shelf.

ATTENTION:

- Using screws longer than 3/16" will damage the unit and void the warranty.
- L'utilisation de vis plus longues que 3/16" endommagera l'unité et annulera la garantie.

5. Either attach the false front panel, which is provided with the rack shelf, to the unoccupied side of the rack, or install a second half rack-width device to that side. Repeat steps 1 through 4 if a second device is being installed.
6. Attach the rack to the shelf by using the four 10-32 x 3/4" screws provided with the shelf. Insert the screws through #10 beveled washers, then through the holes in the rack (see figure 4).

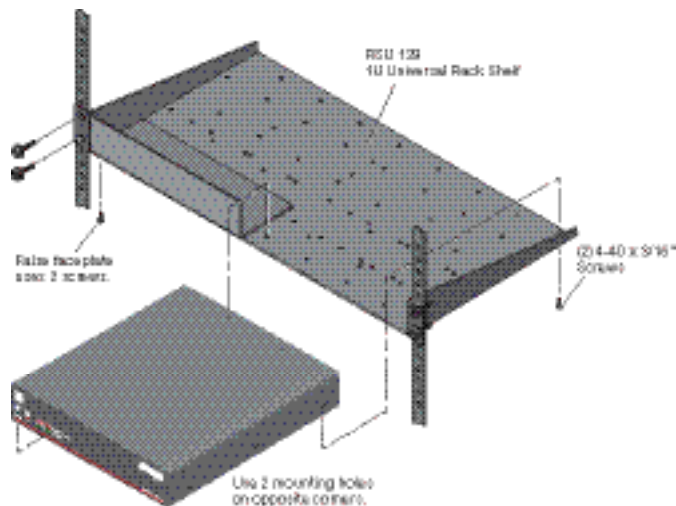


Figure 4. Mounting the Amplifier onto a Rack Shelf

Rack Mounting Ventilation Recommendations

Excessive heat decreases the optimal lifetime of the power amplifier. An Over Temp indicator LED on the front panel of the amplifier lights red whenever the recommended operating temperature has been exceeded.

The XPA U 3502 amplifier needs to be arranged in a rack environment, so that the environment around the amplifier does not reach or go beyond +122 °F (+50 °C). No more than four amplifiers should be stacked vertically without an open space in between, as seen in figure 5.

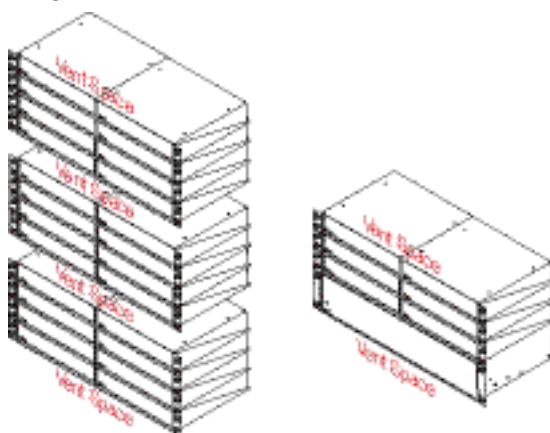


Figure 5. Vent Space Example

The XPA U 3502 amplifier can be arranged above or below another non-XPA Ultra device. The environment around the amplifier should still not reach or go beyond +122 °F (+50 °C).

Flexible Conduit Adapter Kit Installation



WARNING : **AVERTISSEMENT :**

- The circuit breaker used for this connection should be rated no lower than 20 amps and no greater than 30 amps.
- Le disjoncteur utilisé pour cette connexion devrait avoir une cote comprise entre 20 et 30 amps.
- This unit must be installed in accordance with the National Electrical Code and with all local codes.
- Cet appareil doit être installé conformément au National Electrical Code et à tous les codes locaux.
- An **ALL-POLE MAINS SWITCH** with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building, The installation shall be carried out in accordance with all applicable installation rules.
- Un interrupteur omnipolaire avec une séparation contact d'au moins 3 mm dans chaque pôle, devra être incorporée dans l'installation électrique du bâtiment. L'installation doit être réalisée conformément à toutes les règles d'installation applicables.
- Installation and service must be performed by a qualified electrician only.
- L'installation et l'entretien doivent être effectués uniquement par un électricien qualifié.
- Make sure the source device and the XPA are turned off and disconnected from the power source before you begin.
- Vérifiez que l'appareil source et le périphérique source sont éteints et déconnectés de la source d'alimentation avant de commencer.
- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- Afin de réduire les risques d'incendie ou de choc électrique, protégez cet appareil de la pluie ou de l'humidité.
- The product is a Class I product, which must be connected only to a mains socket outlet with a protective earthing (grounding) connection.
- Ce produit est un produit de Classe I, qui doit être connecté seulement à une prise femelle secteur équipée d'une connexion de mise à la terre.
- The mains plug/appliance coupler is used as the disconnect device and shall remain readily operable.
- La fiche secteur / le coupleur d'appareil est utilisé comme dispositif de déconnexion et doit rester facilement utilisable.

ATTENTION:

- A UL-Listed electrical distribution box is recommended for the termination of the conduit opposite the PS 124 power supply or the XPA amplifier. See **UL Requirements** below.
- Un boîtier de distribution électrique certifié UL est recommandé pour la terminaison du conduit à l'opposé de l'alimentation PS 124 ou de l'amplificateur XPA. Voir "**UL Requirements**" on page 9.

The optional Flexible Conduit Adapter Kit includes the following parts:

- One conduit adapter plate (pre-attached), for PS 124 and XPA Series amplifiers
- One conduit adapter plate for XPA Ultra Series and NetPA Ultra Series amplifiers (not attached)
- One 6 foot long electrical conduit
- Three 7.5 foot, 18-gauge power wires with spade connectors
- Three auxiliary crimp-style spade connectors designed for 14- to 16-gauge wires
- One UL-rated zip tie wrap

The kit provides a way to replace the IEC power cord with a conduit, where required by local codes.

NOTE: If needed, Extron recommends using a UL-rated crimp tool to terminate the spade connectors. One recommended choice is the Molex crimp tool.


UL Requirements

The Underwriters Laboratories (UL) requirements listed below pertain to the installation of the flexible conduit onto an XPA U 3502.

- This unit must not be used beyond its rated voltage range.
- This unit must be wired to a UL-Listed distribution box.

NOTE: The UL-approved electrical distribution box is not included with either the XPA Ultra or the Flexible Conduit Adapter Kit. The installer is responsible for obtaining and installing the box.

Installing the Flexible Conduit Adapter Kit

 **WARNING:** Electrostatic discharge (ESD) can damage IC chips even though you cannot feel it. You must be electrically grounded before touching anything inside the XPA. A grounding wrist strap is recommended.

AVERTISSEMENT : Les décharges électrostatiques peuvent endommager les puces de circuit même si vous ne pouvez pas les sentir. Vous devez être électriquement relié à la terre avant de toucher un élément à l'intérieur du XPA. Un bracelet de mise à la terre est recommandé.

Install the flexible conduit to the XPA U 3502 Amplifier as follows:

1. Unplug the IEC power cord from the amplifier.
2. Remove the 10 screws from the top, sides, and bottom of the amplifier then slide and lift the cover off.

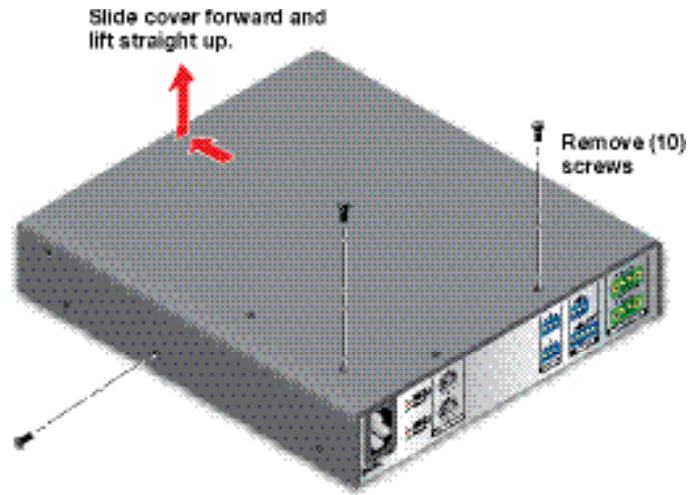


Figure 6. Removing the Cover

3. Remove the two screws holding the blue hot line and the brown neutral wires from the terminal block on the PCB. Put the screws to the side to be used later (see figure 7).
4. Remove the ground wire nut from the grounding stud located on the bottom of the enclosure as shown in figure 7, below. Place the nut with the other screws to be used later.
5. Remove the wires attached to the IEC connector from the body of the amplifier, and slide the IEC connector and wire up and out of the amplifier's enclosure (see figure 7).

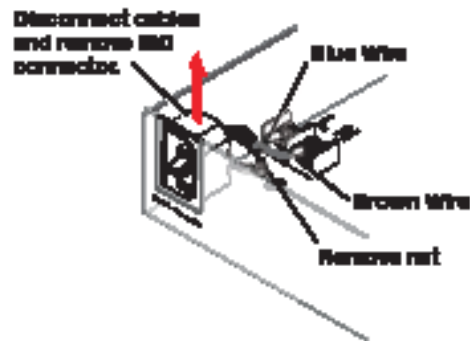


Figure 7. Removing the IEC Connector

6. Remove the washer at the end of the conduit (see Washer-B in figure 8), and remove the conduit adapter plate that ships attached to the conduit.

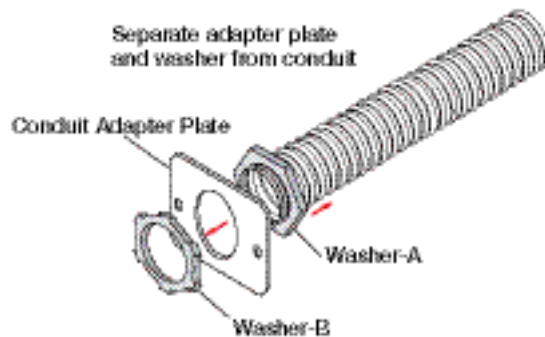


Figure 8. Removing the Existing Adapter Plate

7. Place the adapter plate that ships with the conduit kit on the conduit itself with the flat side of the plate facing the hexagonal nut, and secure the new plate to the conduit with the washer that was removed in step 6 (see figure 9).

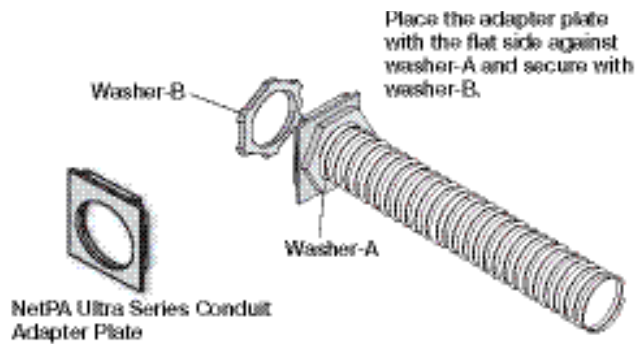


Figure 9. Secure XPA Ultra Series Adapter Plate to Conduit

8. Thread the blue, brown, and green 18-gauge power wires that are included with the flexible conduit adapter kit through the length of the electrical conduit.
9. Install the conduit with the new conduit plate attached into the opening from where the IEC connector removed in [step 5](#).
10. Connect the blue hot (line) and the brown neutral wires to the terminal block on the PCB using the two screws removed back in [step 3](#). Use the included zip tie wrap to secure the two wires together close to the terminals.

⚠ WARNING: Ensure that you observe correct wire polarity. The following illustration shows the location of the hot (line) and neutral terminals.

AVERTISSEMENT : Respecter la polarité correcte des câble. L'illustration suivante indique l'emplacement des bornes de ligne et de neutre.

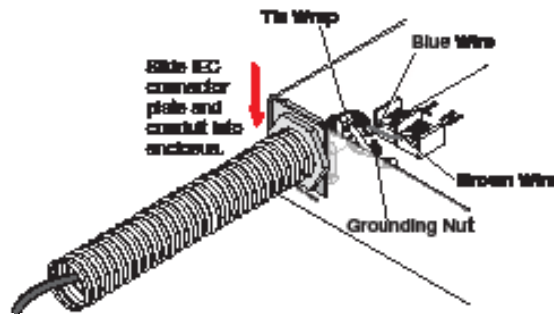


Figure 10. Install the Conduit Assembly

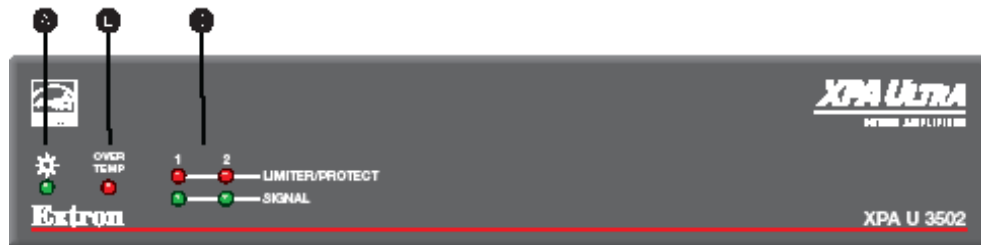
11. Connect the ground wire, as shown in figure 10, above, to the grounding stud located on the bottom of the enclosure using the nut removed in [step 4](#).
12. Replace the cover of the XPA U 3502 amplifier by reattaching the ten screws removed in [step 2](#).

Operation

This section describes the installation and setup of the XPA U 3502 power amplifier. Topics include:

- [Front Panel Features](#)
- [Rear Panel Features](#)
- [Troubleshooting](#)

Front Panel Features



- A** Power/Standby Indicator **B** Over Temp Indicator **C** Channel Status LEDs

Figure 11. XPA U 3502 Front Panel

- A Power/Standby LED** — A single LED that lights green when the unit is on and active, and lights amber when:
- The unit is in standby mode, which turns off all outputs from the amplifier although the amplifier still receives power.
 - The unit will not come out of standby when DC voltage is detected. The amplifier only comes out of standby mode by either resetting the device or powering it down.

NOTE: Power indicator LED may stay lit amber for a short time after removing the AC Power Supply. This is normal.

- B Over Temp Indicator** — A single LED that lights red when the amplifier has exceeded the maximum recommended operating temperature. The amplifier recovers once the unit has cooled down to below the maximum recommended operating temperature. Power limiting may occur, but it depends on the unit's temperature.
- C Channel Status LEDs** — Two rows of LEDs that represent the amplifier's channels.
- **Limitier/Protect LED** — The LEDs lights red when the channel is in protection mode, which is triggered by any of the limiter protection circuits such as:
 - When the clip limiter is activated due to excessive clipping.
 - When the output short circuits.
 - **Signal LED** — The LEDs light green when the input signal is detected.

NOTE: The LEDs are also located on the rear panel.

Rear Panel Features



- A** Removable IEC Power Receptacle
- B** Channel Status LEDs
- C** Attenuators
- D** Line Input Connectors
- E** Remote Connectors
- F** Speaker Output Connectors

Figure 12. XPA U 3502 Rear Panel

- A Removable IEC Power Receptacle** — Connect the supplied IEC power cord here for power input (100 VAC to 240 VAC, 50-60 Hz) to the internal power supply. The connector can be replaced by a Flexible Conduit Adapter Kit (see [Flexible Conduit Adapter Kit Installation](#) on page 8).
- B Channel Status LEDs** — The XPA U 3502 has two double-stacked LEDs. The top red LEDs indicate limiter/protect status, and the bottom green LEDs indicate signal status. These LEDs share the same function as the front panel LEDs.
- C Attenuators** — Use an Extron tweaker to adjust the gain structure for a corresponding channel. Each channel has its own potentiometer, ranging from ∞ (full attenuation) to 0 dB (no attenuation)

To adjust the attenuation level on the amplifier, perform the following:

When volume is controlled at the source:

1. If connecting to a source device with volume control (variable output), ensure the volume on the source device is set to its lowest point, then adjust the attenuation of the amplifier fully counterclockwise.
2. Set the source device volume to the maximum level. No sound should come out.
3. Raise the attenuation on the XPA U 3502 amplifier until sound distortion occurs, then lower the attenuation level slowly until distortion disappears. This setting ensures no clipping occurs, whatever the source device volume setting is.

NOTE: When setting volume control through a source device, make sure the device's volume is set to variable out. Consult the device's user manual for detailed instructions on its calibration.

When volume is controlled at the amplifier:

1. If volume will be controlled at the amplifier using a remote volume control (see section E for details), ensure the volume on the source device is set to its lowest point, then adjust the attenuation of the amplifier fully counterclockwise.
2. Set the source device's volume to its maximum level.
3. Set the remote volume control to its maximum level. No sound should come out.
4. Raise the attenuation on the XPA U 3502 amplifier until sound distortion occurs, then lower the attenuation level slowly until distortion disappears. This setting ensures no clipping occurs, whatever the source device volume setting is.

ATTENTIONS:

- The default position of all potentiometers when shipped is turned fully counter-clockwise (fully attenuated).
- La position par défaut de tous les potentiomètres lors de leur expédition est orientée vers le sens antihoraire (atténuation complète).
- Do not use a screwdriver to adjust the potentiometers. The potentiometers should only be adjusted as needed using the included tweaker (small screwdriver).
- Ne pas utiliser de tournevis pour ajuster les potentiomètres. Les potentiomètres doivent uniquement être ajustés selon les besoins avec le petit tournevis fourni.
- While potentiometer tuning knobs may look like screws, they do not function in the same manner. Use a light touch when adjusting to avoid applying excessive torque to the potentiometers.
- Bien que les boutons de réglage du potentiomètre ressemblent à des vis, ils n'ont pas la même fonction. Exercez une pression légère lors du réglage afin d'éviter un serrage excessif des potentiomètres.
- Applying excessive torque can mechanically damage the potentiometer, rendering it inoperable and voiding the product warranty.
- Un serrage excessif peut endommager le potentiomètre, le rendant inutilisable et annulant la garantie du produit.

NOTE: When volume will be controlled at the amplifier using a remote volume control, make sure the source device's audio output is set to fixed out (local volume control is disabled). Consult the device's user manual for detailed instructions on its calibration.

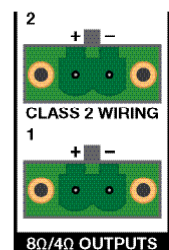
- D Line Input Connectors**— (see [figure 12 on page 13](#)) Wire the amplifier input connectors based on the output. See below for details on how to wire the input connectors.



NOTE: In bridged mono output mode, Channel 2 is not used in the connector.

- E Remote Connectors** — (see [figure 12 on page 13](#)) The lower port uses a 3-pin captive screw plug for volume control of Channel 1 on the V, C, and G pins, and a 2-pin captive screw for standby on the STANDBY and G pins. Connect a 3-pole, 3.5 mm captive screw connector to the upper port for remote volume control of Channel 2.

- F Speaker Output Connectors** — (see [figure 12 on page 13](#)) Connect up to two 2-pole, 5 mm captive screw connectors for up to two channels of speaker outputs. Each port has a screw flange to secure the plug to the connector. Observe the correct polarities for each channel as shown to the right.



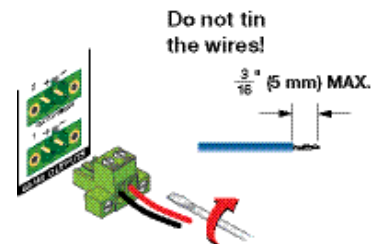
⚠ WARNING:
AVERTISSEMENT :

- Do not tie channel output pins to each other or to ground. Doing so will short out the outputs, damage the amplifier, or both.
- Ne pas lier les sorties 1 et 2 des canaux entre elles ou à la terre. Les sorties pourraient être court-circuitées et/ou l'amplificateur pourrait être endommagé.
- To avoid risk of damage to the amplifier or the speakers, always connect low impedance speaker loads ($8\Omega/4\Omega$) to the appropriately marked output connectors on the amplifier.
- Pour éviter tout risque de détérioration de l'amplificateur ou des enceintes, connectez toujours les charges de l'enceinte faible impédance ($8\Omega/4\Omega$) aux connecteurs de sortie correctement identifiés sur l'amplificateur.

NOTE: You must use Class 2 wiring for this output to comply with UL requirements.

To wire the audio output, do the following steps:

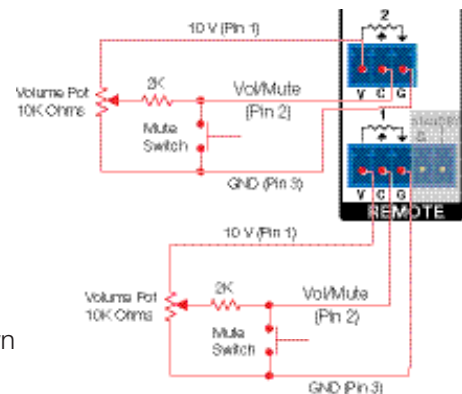
1. Strip and insert the speaker wires into the connector, making sure to observe correct polarity, and tighten the captive screws.
2. Insert the wired connector into the amplifier output, and secure the plug by tightening the screws on either side, as shown to the right.



Remote Volume Control Port

The XPA U 3502 provides remote volume ports for Channels 1 and 2; each port independently controls the volume for their respective channels. The upper port controls Channel 2 and the first three pins of the lower port controls Channel 1. Both ports use a 3-pin captive screw plug for volume control on the V, C, and G pins; the lower port also includes a 2-pin captive screw connector for standby on the STANDBY and G pins (see **Remote Standby Port** on page 16 for more information).

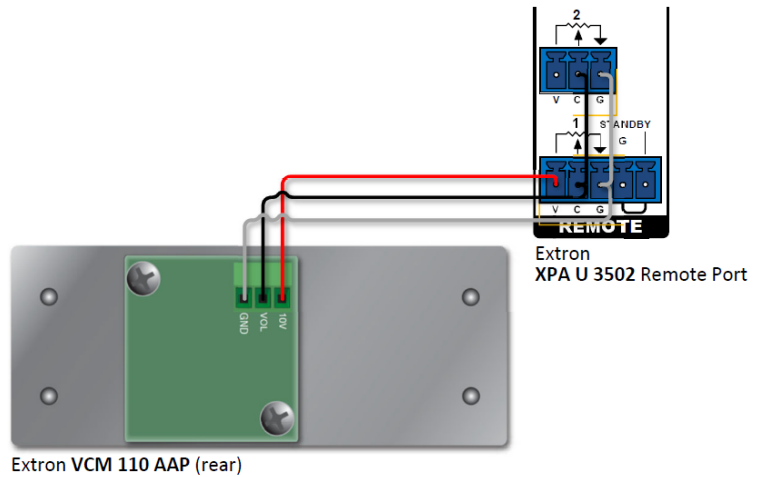
Pins V, C, and G (1, 2, and 3) control volume by varying the DC voltage from 0 V (full attenuation) to 10 V (maximum volume), with full muting in effect when pin C is connected to ground (pin G), as shown in the image to the right.



Options for remote volume control include the Extron VCM 110 AAP, VCM 200 series, MLC 64 RS VC D, and Extron Control products with the digital Remote Volume Control Port, such as the MLC 100 Plus and IPCP Pro 255 volume controllers. For information on these devices, including part numbers, go to www.extron.com. Third-party 10k potentiometer volume controllers can also be used for remote volume and mute control.

Wiring Channels 1 & 2 Volume Control Ports to a Single Device (Optional)

In some applications, it may be desirable to control the volume of both channels from a single control device; for example, when using Channels 1 and 2 as a stereo pair (discrete left and right audio). The XPA U 3502 accommodates this by offering the option to wire Channel 1 and Channel 2's remote volume control ports together. To connect the ports, wire Channel 1's C and G pins to the corresponding pins on Channel 2, as seen in the image to the right.



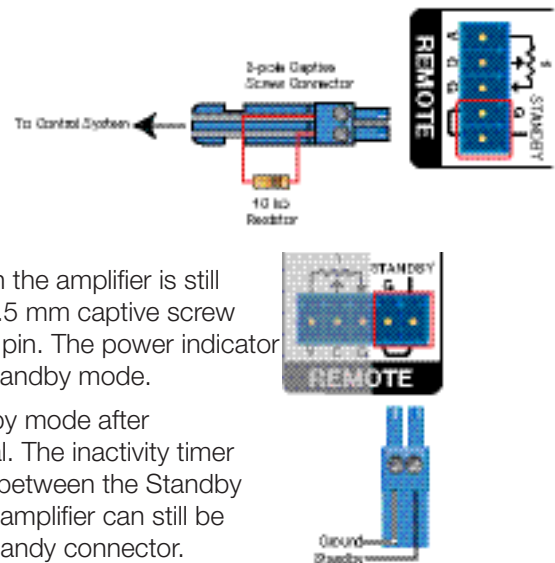
Remote Standby Port

The 2-pole 3.5 mm captive screw port is used to remotely place the amplifier into standby.

Connecting the Standby pin to the Ground pin places the amplifier in standby mode. Standby mode turns off all output, although the amplifier is still receiving power. Use the included 2-pole 3.5 mm captive screw connector to remotely ground the Standby pin. The power indicator LED lights amber when the amplifier is in standby mode.

The amplifier will automatically enter standby mode after 25-minutes of inactivity from a loss of signal. The inactivity timer can be disabled by wiring a 10 kΩ resistor between the Standby and Ground pins, as seen to the right. The amplifier can still be forced into standby mode via the remote standby connector.

The following table summarizes the amplifier's behavior in various scenarios:



Remote Port Action	Inactivity Timer Defeated	Time Since Last Detected Signal	
		<25 min	>25 min
No action (open)	N	Amp remains active	Amp enters standby
Open to close	N	Amp enters standby	Amp remains in standby
Close to open	N	Amp becomes active; timer restarts	Amp becomes active; timer restarts
No action (open)	Y	Amp remains active	—
Open to close	Y	Amp enters standby	—
Close to open	Y	Amp becomes active	—

Troubleshooting

The front and rear panels have LED warning indicators, as described below.

Amplifier Fails to Exit Standby Mode Promptly

The input channel signal LED lights green when an input signal is detected.

Power LED Color	Signal LED State	Problem Description	Problem Solution
Amber	Not lit	No output signal	No input detected, verify the input signal. If input signal is present, raise input level until signal LED lights.
Green or Amber	Lit intermittently	Unit does not promptly exit standby mode when input signal is present	The output signal level of the source may be too low to cross the signal detection threshold of the amplifier (see amplifier specs for details). Increase the signal level of the source until the signal LED lights consistently, or defeat the standby timer.
Amber	Lit	No output signal	Amplifier has been placed in standby mode and the output has been turned off. Check remote port. DC Fault may have been detected (see next bullet).
Amber	Lit	DC Fault is detected. Unit does not exit standby.	Disconnect power then disconnect the remote port. Then, reconnect power to the unit to determine if the unit immediately goes into standby upon power up. In such a case, service the unit.

Amplifier Enters Standby Mode Too Early

The input channel signal LED lights green per indicated input channel when an input signal is detected.

Power LED Color	Signal LED State	Problem Description	Problem Solution
Green or Amber	Lit intermittently	Enters standby mode early	The output signal level of the source may be too low to cross the signal detection threshold of the amplifier (see amplifier specs for details). Increase the signal level of the source until the signal LED lights consistently, or defeat the standby timer.

Limiter/Protect LED Warning Indicators

The output channel Limiter/Protect LED lights red per indicated output channel as shown in the following diagnostic information.

LED State	Problem Description	Problem Solution
Blinks	Audio clipping is occurring at the rate of one blink per clip.	Reduce the power output to avoid overdriving the amplifier and causing clipping.
Lights steadily	The amplifier may be overheating.	Determine the reason for the overheated state and allow the amplifier to cool. The LED will not be lit after the amplifier recovers from the overheated state.
	Output channel leads are shorted.	Check speakers and speaker wiring for shorts.

Over Temp Indicator LED

This indicator does not represent a hard failure of the unit. It is a warning the amplifier has exceeded the recommended operating temperature for optimal product lifetime.

LED State	Problem Description	Problem Solution
Lights steadily	Amplifier has exceeded the recommended operating temperature. The LED turns off after the amplifier cools down.	<p>Verify the placement of the amplifier allows for suitable ventilation and airflow.</p> <p>Avoid placing equipment on top or below the amplifier.</p> <p>Verify the operating temperature is within the specified range.</p>

Extron Warranty

Extron 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 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
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Asia:

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

Japan:

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

Europe:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Middle East:

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

Africa:

Extron South Africa
South Tower
160 Jan Smuts Avenue
Rosebank 2196, South Africa

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

Asia: 65.6383.4400

Europe: 31.33.453.4040 or 800.3987.6673

Japan: 81.3.3511.7655

Africa: 27.11.447.6162

Middle East: 971.4.299.1800

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 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 be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron 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.