DTP HDMI 4K 230

HDMI Twisted Pair Extender



User Guide

HDMI & DVI Extenders

68-2244-01, Rev. C
02 24

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**.

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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.

ATTENTZIONE: 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.

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

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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。

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안전 지침 • 한국어

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

주의: 이 기호 ⚠ 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.

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FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference. This interference must be corrected at the expense of the user.

ATTENTION:

- The Twisted Pair Extension technology works with unshielded twisted pair (UTP) or shielded twisted pair (STP) cables; but to ensure FCC Class A and CE compliance, STP cables and STP Connectors are required.
- La technologie extension paires torsadées fonctionne avec les câbles paires torsadées blindées (UTP) ou non blindées (STP). Afin de s'assurer de la compatibilité entre FCC Classe A et CE, les câbles STP et les connecteurs STP sont nécessaires.

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.

Remarque : Pour plus d'informations sur les directives de sécurité, les conformités de régulation, la compatibilité EMI/EMF, l'accessibilité, et les sujets en lien, consultez le « **Informations de sécurité et de conformité Extron** » sur le site internet d'Extron.

Conforme aux section 1040.10 et 1040.11 du titre 21 du Code des règlements fédéraux des États-Unis.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

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.

Specifications Availability

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

Extron Glossary of Terms

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

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Introduction

- About this Guide
- About the DTP HDMI 4K 230 Transmitter and Receiver
- Features

About This Guide

This guide describes the Extron DTP HDMI 4K 230 Long Distance High Definition Multimedia Interface (HDMI) Twisted Pair Extender, which consists of a DTP HDMI 4K 230 Tx transmitter and a DTP HDMI 4K 230 Rx receiver. This guide describes how to install, operate, and configure the transmitter and receiver.

About the DTP HDMI 4K 230 Tx/Rx Transmitter and Receiver

The Extron DTP HDMI 4K 230 Tx/Rx transmitter and receiver pair (see figure 1) extends the usable distance of HDMI digital video, optional analog audio, and bidirectional RS-232 and infrared (IR) control signals over one Extron XTP DTP 24 shielded twisted pair (STP) cable (recommended) or Category (CAT) 5e, CAT 6, or CAT 6a STP or unshielded twisted pair (UTP) cable. The DTP HDMI 4K 230 can also extend DVI video, which may include embedded audio, with the appropriate adapters. The video, audio, and control signals can be transmitted up to 230 feet (70 m).

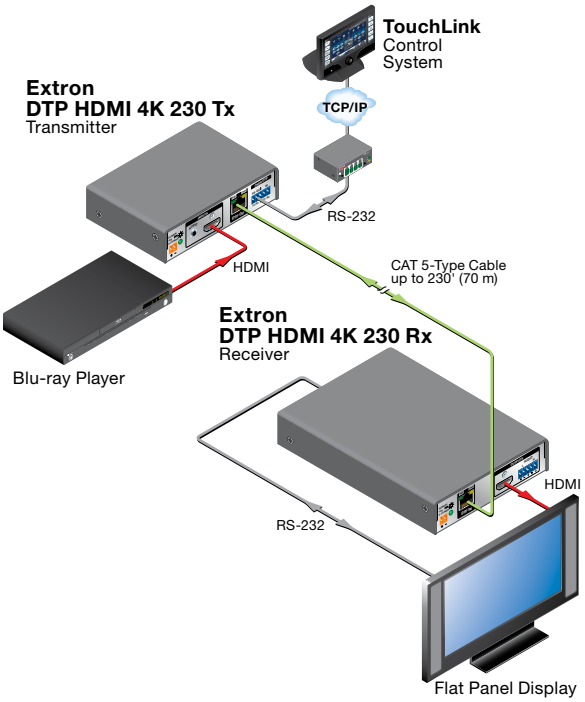


Figure 1. Typical Transmitter and Receiver Application

The DTP HDMI 4K 230 Tx/Rx units are housed in quarter rack width metal enclosures. They can be set on a tabletop or mounted in a rack, under or through furniture. The receiver can also be mounted on a projector bracket.

The transmitter is shipped with a single external desktop 12 VDC power supply that accepts 100 to 240 VAC, 50-60 Hz input. A single power supply connected to either the transmitter or the receiver can power both units through the TP cable that carries HDMI video.

TP Cable Advantages

Twisted pair cable is much smaller, lighter, more flexible, and less expensive than coaxial or HDMI cable. These transmitter and receiver twisted pair (TP) products make cable runs simpler and less cumbersome. Termination of the cable with RJ-45 connectors is simple, quick, and economical.

NOTE: Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the transmitter and receiver. The DTP HDMI 4K 230 Tx/Rx does not work properly with these cables.

Control Communications

The RS-232 and IR communications are a passive pass-through only. The transmitter and receiver do not generate or respond to the RS-232 and IR communication signals.

Features

- **Receives HDMI plus control and analog audio up to 230 feet (70 meters) over a shielded CATx cable** — The DTP HDMI 4K 230 Rx provides high reliability and maximum performance on an economical and easily installed cable infrastructure.
- **Input**: One DTP 230 twisted pair input on RJ-45
- **Outputs**: One HDMI, stereo audio on captive screw
- **Supports computer and video resolutions up to 4K** — Supports 4K/60 4:2:0 and 4K/30 4:4:4, maintaining superior image quality at the highest resolutions.
- Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through.
- **HDCP 2.3 compliant** — Ensures display of content-protected 4K video media and maintains interoperability with earlier versions of HDCP.
- **Remote power capability** — For simplified installation, the receiver can be remotely powered by a DTP-enabled product over the twisted pair connection.
- Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.
- **Compatible with CATx shielded twisted pair cable** — Shielded twisted pair cabling with solid center conductor sizes of 24 AWG or better is recommended for optimal performance.
- **Accepts additional analog stereo audio signals** — The DTP HDMI 4K 230 Rx accepts stereo analog audio from a DTP-enabled product. Embedded digital audio is not de-embedded from the digital video signal.
- **Bidirectional RS-232 and IR for AV device control** — Bidirectional RS-232 control and IR signals can be transmitted alongside the video signal, allowing remote AV devices to be controlled without the need for additional cabling.
- **Supports multiple embedded audio formats** — The DTP HDMI 4K 230 Rx is compatible with a broad range of multi-channel audio signals, providing reliable operation with HDMI sources.
- **Supports EDID and HDCP transmission** — DDC channels are actively buffered, allowing continuous communication between source and display.
- **Compatible with all DTP 230 Series transmitters and DTP-enabled products** — Enables mixing and matching with desktop and wallplate transmitters, as well as other DTP-enabled products to meet application requirements.
- **LED indicator for signal presence and power** — Provides visual indication of system status for real-time feedback and monitoring of key performance parameters.
- **RJ-45 signal and link LED indicators for DTP port** — Provides a means for validating signal flow and operation, allowing quick identification of connectivity issues.
- **UL 2043 plenum rated** — The DTP HDMI 4K 230 Rx meets UL 2043 for smoke and heat release installation within a plenum airspace above a drop ceiling - power supply excluded. Above-the-ceiling placement conceals the receiver to prevent theft, and is convenient for installing equipment when space inside the room is limited.

- **JITC Certified** — Successfully completed interoperability and information assurance testing for use in government applications and other mission-critical environments.
- **1-inch (2.5 cm) high, quarter rack width metal enclosure** — With a low profile enclosure, the device can be installed discreetly wherever needed.
- **Includes LockIt cable lacing brackets** — Securely fastens HDMI or USB C® cables to a device, eliminating risk of disconnection.
- **Optional, external Extron Everlast power supply available, part #70-1174-01** — Provides worldwide power compatibility with high demonstrated reliability and low power consumption.
- Extron Everlast Power Supply is covered by a 7-year parts and labor warranty.

Installation and Operation

This section describes the installation and the operation of the DTP HDMI 4K 230 Tx/Rx Extender, including:

- **Mounting the Units**
- **Connections**
- **Operation**

Mounting the Units

Mounting instructions can be found in **Mounting the Transmitter or Receiver** on page 11. Compatible optional hardware is listed on the Extron website (**www.extron.com**).

ATTENTION:

- Installation and service must be performed by authorized personnel only.
- L'installation et l'entretien doivent être effectués uniquement par un technicien qualifié.

- Avoid ground potential differences between the transmitter and receiver installation sites, which can lead to **equipment damage** or a missing or unstable picture. If a potential difference cannot be avoided, remove the ground connection between the units and locally power both units (see **Disconnecting the Ground** on page 13). In this configuration, the DTP HDMI 4K 230 **cannot** extend analog audio and each unit requires a local power supply.
- Évitez les différences de potentiel de mise à la terre entre les sites d'installation d'émetteur et de récepteur de commutation, qui pourraient **endommager l'équipement** ou rendre l'image invisible ou irrégulière. Si une différence de potentiel ne peut être évitée, enlevez la connexion de mise à la terre entre les unités et alimentez les deux unités localement (voir Déconnecter la mise à la terre page 19). Dans cette configuration, le DTP HDMI 4K 230 ne peut transmettre l'audio analogique et le récepteur associé nécessite sa propre source d'alimentation dédiée.

Connections

Transmitter Connections

DTP HDMI 4K 230 Tx Rear Panel

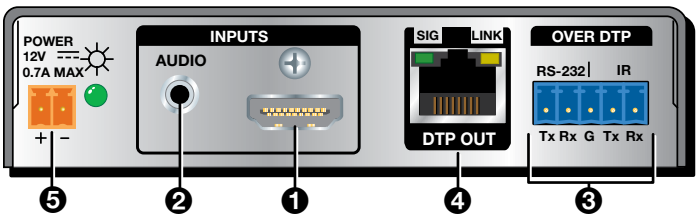
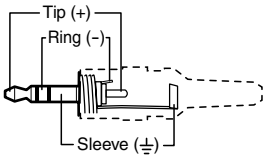


Figure 2. DTP HDMI 4K 230 Tx Connectors

❶ **HDMI input connector** — Connect an HDMI cable between this port and the HDMI output port (or DVI port, with an appropriate adapter) of the digital video source.

❷ **Audio input connector** — If desired, plug an analog audio input into the transmitter via this stereo mini jack connector.

NOTE: The analog audio input on this connector is in addition to the digital audio that may be embedded in the HDMI input. See the figure at right to identify the connector tip, ring, and sleeve when you are making connections for the transmitter from existing audio cables. A mono audio connector consists of the tip and sleeve. A stereo audio connector consists of the tip, ring, and sleeve.



3.5 mm Stereo Plug Connector
(balanced)

❸ **RS-232 and IR connector** — Connect a serial RS-232 signal, a modulated IR signal, or both to this 3.5 mm, 5-pole captive screw connector for bidirectional RS-232 and IR communication (see **RS-232 and IR connector wiring** on page 9 to wire the connector).

❹ **DTP Output RJ-45 connector** — Connect one end of a TP cable to this RJ-45 female connector on the transmitter. Ensure the opposite end of this cable is connected to the receiver DTP Input RJ-45 connector (see ❻ on page 6).

ATTENTION: Do not connect this device to a telecommunications or computer data network.

ATTENTION : Ne connectez pas cet appareil à un réseau de télécommunications ou de données informatiques.

NOTE: See **TP cable termination and recommendations** on page 7 to properly wire the RJ-45 connectors and for detailed **NOTES**.

Signal LED — Indicates the unit is receiving a TMDS clock signal on the HDMI input.

Link LED — Indicates a valid link is established between the units on the DTP input and output cable.

❺ **Power input connector** — Plug the included external 12 VDC power supply into either this 2-pole connector or the power input connector on the receiver (see ❿ on page 7). See **Power supply wiring** on page 8 to wire the connector.

NOTES:

- One power supply is included with the transmitter and **normally** can power both units.
- If you have removed the ground jumpers (see **Disconnecting the Ground** on page 13) because of ground potential differences, one DTP HDMI 4K 230 unit **cannot** remotely power the other unit. Each unit **requires** a local power supply.

Receiver Connections

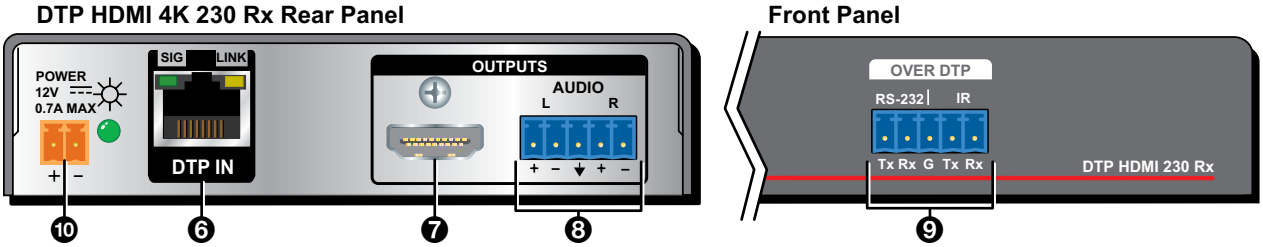


Figure 3. DTP HDMI 4K 230 Rx Connectors

❻ **DTP Input RJ-45 connector** — Connect one end of the TP cable from the transmitter output connector to this RJ-45 female connector. Ensure the opposite end of this cable is connected to the transmitter DTP Output RJ-45 connector (see **item ❹** on page 5).

> **ATTENTION:** Do not connect this device to a telecommunications or computer data network.
>
> **ATTENTION :** Ne connectez pas cet appareil à un réseau de télécommunications ou de données informatiques.

> **NOTE:** See **TP cable termination and recommendations** on page 7 to properly wire the RJ-45 connectors and for detailed **NOTES**.

Signal LED — Indicates the unit is receiving a valid signal on the DTP In connector.

Link LED — Indicates a valid link is established between the units on the DTP input and output cable.

❼ **HDMI output connector** — Connect a display with an HDMI input port (or DVI input port, with an appropriate adapter) to display the transmitted direct digital image.

❽ **Audio output connector** — This 5-pole, 3.5 mm captive screw connector outputs the transmitted, unamplified, line level analog audio. Connect an audio device, such as an audio amplifier or powered speakers.

See figure 4 to properly wire a captive screw output connector. Use the supplied tie-wrap to strap the audio cable to the extended tail of the connector.

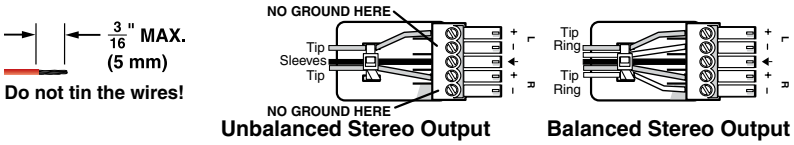


Figure 4. Captive Screw Connector Wiring for Stereo Audio Output

> **ATTENTION:**
>
> - For unbalanced audio, connect the sleeves to the ground contact.
> - Pour l'audio asymétrique, connectez les manchons au contact au sol. Ne PAS connecter les manchons aux contacts négatifs (–).
>
> - **Do NOT** connect the sleeves to the negative (-) contacts.
> - **Ne PAS** connecter les manchons aux contacts négatifs (–).

NOTES:

- If you have removed the ground jumpers (see **Disconnecting the Ground** on page 13) because of ground potential differences, the DTP HDMI 4K 230 **cannot** extend analog audio. **No** analog audio is output.
- The length of exposed wires is critical. The ideal length is 3/16 inch (5 mm).
- If the stripped section of wire is longer than 3/16 inch, the exposed wires may touch, causing a short circuit.
- If the stripped section of wire is shorter than 3/16 inch, wires can be easily pulled out even if tightly fastened by the captive screws.
- Do not tin the power supply leads before installing them in the connector. Tinned wires are not as secure in the connector and could be pulled out.

❾ **RS-232 and IR connector** — Connect a serial RS-232 signal, a modulated IR signal, or both to this 3.5 mm, 5-pole captive screw connector for bidirectional RS-232 and IR communication (see **RS-232 and IR connector wiring** on page 9 to wire the connector).

❿ **Power input connector** — Plug the included external 12 VDC power supply into either this 2-pole connector **or** the power input connector on the transmitter (see ❺ on page 5) (see **Power supply wiring** on page 8 to wire the connector).

NOTES:

- One power supply is included with the transmitter and **normally** can power both units.
- If you have removed the ground jumpers (see **Disconnecting the Ground** on page 13) because of ground potential differences, one DTP HDMI 4K 230 unit **cannot** remotely power the other unit. Each unit **requires** a local power supply.

Connector and Cable Details

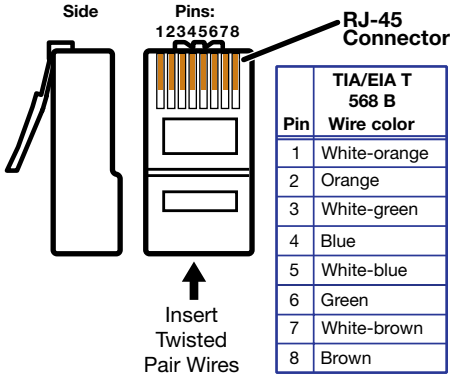
TP cable termination and recommendations

Figure 5 details the **TIA/EIA T 568B** wiring standard. Use this standard to terminate TP cables with RJ-45 connectors.

NOTE: Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the transmitter and receiver. The DTP HDMI 4K 230 Tx/Rx does not work properly with these cables.

Supported cables —

The DTP HDMI 4K 230 is compatible with CAT 5e, 6, 6a, and 7 shielded twisted pair (F/UTP, SF/UTP, and S/FTP) and unshielded twisted pair (U/UTP) cable.



Pin	TIA/EIA T 568 B Wire color
1	White-orange
2	Orange
3	White-green
4	Blue
5	White-blue
6	Green
7	White-brown
8	Brown

Figure 5. TP Cable Termination

Cable recommendations —

Extron recommends using the following practices to achieve full transmission distances up to 230 feet (70 m) and reduce transmission errors.

- Use the following Extron XTP DTP 24 SF/UTP cables and DTP 24 connectors for the best performance:

XTP DTP 24/1000	Non-Plenum 1000 feet (305 m) spool	22-236-03
XTP DTP 24P/1000	Plenum 1000 feet (305 m) spool	22-235-03
XTP DTP 24 Plug	Package of 10	101-005-02

- If not using XTP DTP 24 cable, at a minimum, Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA T 568 B standard.
- Use 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 CAT 6 or 6a shielded couplers and punch down connectors.

NOTE: When using CAT5e and CAT6 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 use of tie wraps or Velcro®.
- Separate twisted pair cables from AC power cables.

Power supply wiring

NOTES:

- One power supply is included with the transmitter and **normally** can power both units.
- If you have removed the ground jumpers (see **Disconnecting the Ground** on page 13) because of ground potential differences, one DTP HDMI 4K 230 unit **cannot** remotely power the other unit. Each unit **requires** a local power supply.

Figure 6 shows how to wire the connector. Use the supplied tie-wrap to strap the power cord to the extended tail of the connector.

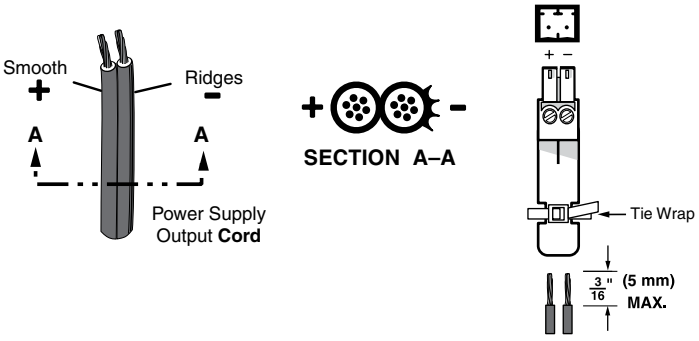


Figure 6. Power Connector Wiring

CAUTION: Electric shock hazard —

- The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.
- Les deux cordons d'alimentation doivent être maintenus à l'écart tant que la source d'alimentation est branchée. Coupez l'alimentation avant d'effectuer les raccordements.
- The length and preparation of exposed wires is important (see the second and third audio connector **NOTES** on page 7 for details).
- La longueur et la préparation des câbles exposés sont deux éléments importants (voir les **NOTES** concernant les deuxième et troisième connecteurs audio page 7 pour plus de détails).

ATTENTION:

- This product is intended to be supplied by a Listed Power Unit marked "Class 2" or "LPS," rated 12 VDC, 1.0 A minimum. Always use a power supply supplied 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.
- Ce produit est destiné à être alimentés uniquement par une source d'alimentation certifiée de classe 2 ou LPS, avec une tension nominale 12 Vcc, 1 A maximum. Utilisez toujours une source d'alimentation fournie ou spécifiée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute certification de conformité réglementaire et peut endommager la source d'alimentation ainsi que le produit final.

- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities.
- Sauf mention contraire, les adaptateurs CA/CC ne conviennent pas à une utilisation dans les espaces d'aération ou dans les cavités murales.

- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 75 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to a building structure or similar structure.
- L'installation doit toujours être conforme aux dispositions applicables du Code américain de l'électricité (National Electrical Code) ANSI/NFPA 70, article 75, et du Code canadien de l'électricité, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à la structure de bâtiment ou à d'autres structures similaires.

- Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord (see figure 6) identify the power cord negative lead.
- La polarité de la source d'alimentation est primordiale. Une polarité incorrecte pourrait endommager la source d'alimentation et l'unité. Les stries sur le côté du cordon permettent de repérer le pôle négatif du cordon d'alimentation.

To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.

RS-232 and IR connector wiring

Figure 7 shows how to wire the RS-232 connector.

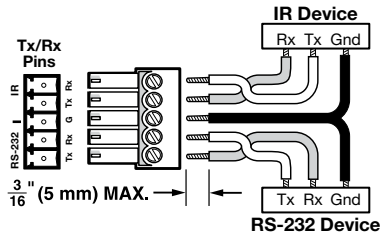


Figure 7. RS-232 Connector Wiring

NOTES:

- The IR Tx and Rx line pair and the RS-232 Tx and Rx line pair must each cross once between this connector and the source or destination.
- The length and preparation of exposed wires is important (see the second and third audio connector **NOTES** on page 7 for details).

Operation

Figure 8 shows the location of the power indicators on the front and rear panels of the transmitter and receiver.

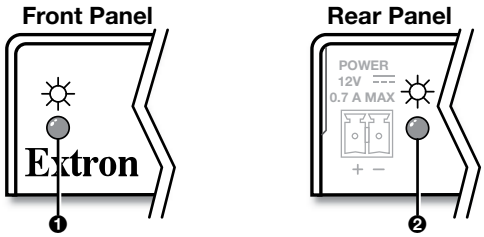


Figure 8. Power Indicators

❶ Power (and signal) LED (front panel) —

Amber — The unit is receiving power, either locally or remotely (on the DTP cable).

Green — The unit is receiving an active HDMI input, either on the HDMI input if a transmitter, or transmitted on the DTP cable if a receiver.

❷ Power LED (rear panel) —

Amber — The unit is receiving power remotely (on the DTP cable).

Green — The unit is receiving power locally.

After the transmitter, the receiver, and their connected devices are powered up, the system is fully operational. If any problems are encountered, ensure all cables are routed and connected properly.

NOTE: Ensure that the video source and display selected for the DDC are properly connected to the transmitter and receiver pair, and that the transmitter, the receiver, and the display have power applied **before** power is applied to the video source. If the other devices are not turned on before the video source, the image may not appear.

Reference Information

This section provides procedures for mounting the DTP HDMI 4K 230 Tx/Rx transmitter and receiver and disconnecting the ground between them.

- **Mounting the Transmitter or Receiver**
- **Disconnecting the Ground**

Mounting the Transmitter or Receiver

ATTENTION:

- Installation and service must be performed by authorized personnel only.
- L'installation et l'entretien doivent être effectués uniquement par un technicien qualifié.
- Avoid ground potential differences between the transmitter and receiver installation sites, which can lead to **equipment damage** or a missing or unstable picture. If a potential difference cannot be avoided, remove the ground connection between the units and locally power both units (see **Disconnecting the Ground** on page 13).
- Évitez les différences de potentiel de mise à la terre entre les sites d'installation d'émetteur et de récepteur de commutation, qui pourraient endommager l'équipement ou rendre l'image invisible ou irrégulière. Si une différence de potentiel ne peut être évitée, enlevez la connexion de mise à la terre entre les unités et alimentez les deux unités localement (voir Déconnecter la mise à la terre).

The 1-inch high, quarter rack width DTP HDMI 4K 230 transmitter or receiver can be placed on a table, mounted in a rack, or mounted under a desk or table. The receiver can also be mounted on a projector bracket.

Tabletop Use

Affix the included rubber feet to the bottom of the unit and place it in any convenient location.

Mounting kits

Mount the unit using any optional compatible mounting kit listed on the Extron website (**www.extron.com**), in accordance with the directions included with the kit. For rack mounting, see **UL Guidelines for Rack Mounting** on page 12.

UL Guidelines for Rack Mounting

The following Underwriters Laboratories (UL) guidelines pertain to the installation of the DTP HDMI 4K 230 enclosure into a rack:

CAUTION: Risk of minor personal injury:

- **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. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by Extron.
- **Reduced air flow** — Install the equipment in the rack so that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — Mount the equipment in the rack so that uneven mechanical loading does not create a hazardous condition.
- **Circuit overloading** — When connecting the equipment to the supply circuit, consider the connection of the equipment to the supply circuit and the effect that 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 attentionexhaus to supply connections other than direct connections to the branch circuit (such as the use of power strips).

Consignes UL pour le montage en rack

Les consignes UL (« Underwriters Laboratories ») suivantes concernent l'installation en rack d'un boîtier DTP HDMI 4K 230 :

ATTENTION : Risque de blessure mineure :

- **Température ambiante élevée** — En cas d'installation de l'équipement dans un rack fermé ou composé de plusieurs unités, la température du rack peut être supérieure à la température ambiante. Par conséquent, il est préférable d'installer l'équipement dans un environnement qui respecte la température ambiante maximale (Tma) spécifiée par Extron.
- **Réduction du flux d'air** — Si l'équipement est installé dans un rack, veillez à ce que le flux d'air nécessaire pour un fonctionnement sécurisé de l'équipement soit respecté.
- **Charge mécanique** — Installez l'équipement en rack de manière à éviter toute situation dangereuse causée par le déséquilibre de la charge mécanique.
- **Surcharge électrique** — Lorsque vous connectez l'équipement au circuit d'alimentation, observez la connexion de l'équipement et étudiez les effets possibles d'une surcharge du circuit sur les protections contre les surintensités et les conducteurs d'alimentation. Consultez à cet égard les indications de la plaque d'identification de l'équipement.
- **Mise à la terre** — Assurez-vous que l'équipement est correctement mis à la terre. Accordez une attention particulière aux connexions électriques autres que les connexions directes au circuit de dérivation (ex. : les multiprises).

Disconnecting the Ground

If you cannot resolve a ground potential difference between the transmitter and receiver installation sites (as suggested by a missing or unstable picture), remove the ground connection between the units as follows:

NOTE: Once you have removed the ground jumpers, the DTP HDMI 4K 230 **cannot** extend analog audio and one unit **cannot** remotely power the other. **No** analog audio is output and each unit **requires** a local power supply.

1. Disconnect any cables and remove the transmitter and receiver from any rack or other installation option.
2. Remove and retain the screws securing the covers to the transmitter and receiver. Slide the covers forward slightly and lift them off both units (see figure 9).
   - **Transmitter** — Six screws, two on each side and two on top
   - **Receiver** — Eight screws, three on each side and two on top

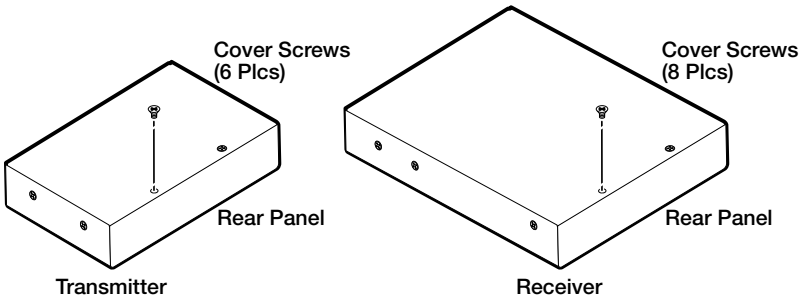


Figure 9. Opening the Transmitter and Receiver

3. Locate, **lift off**, and discard jumpers JMP2 and JMP3 from both units (see figure 10).

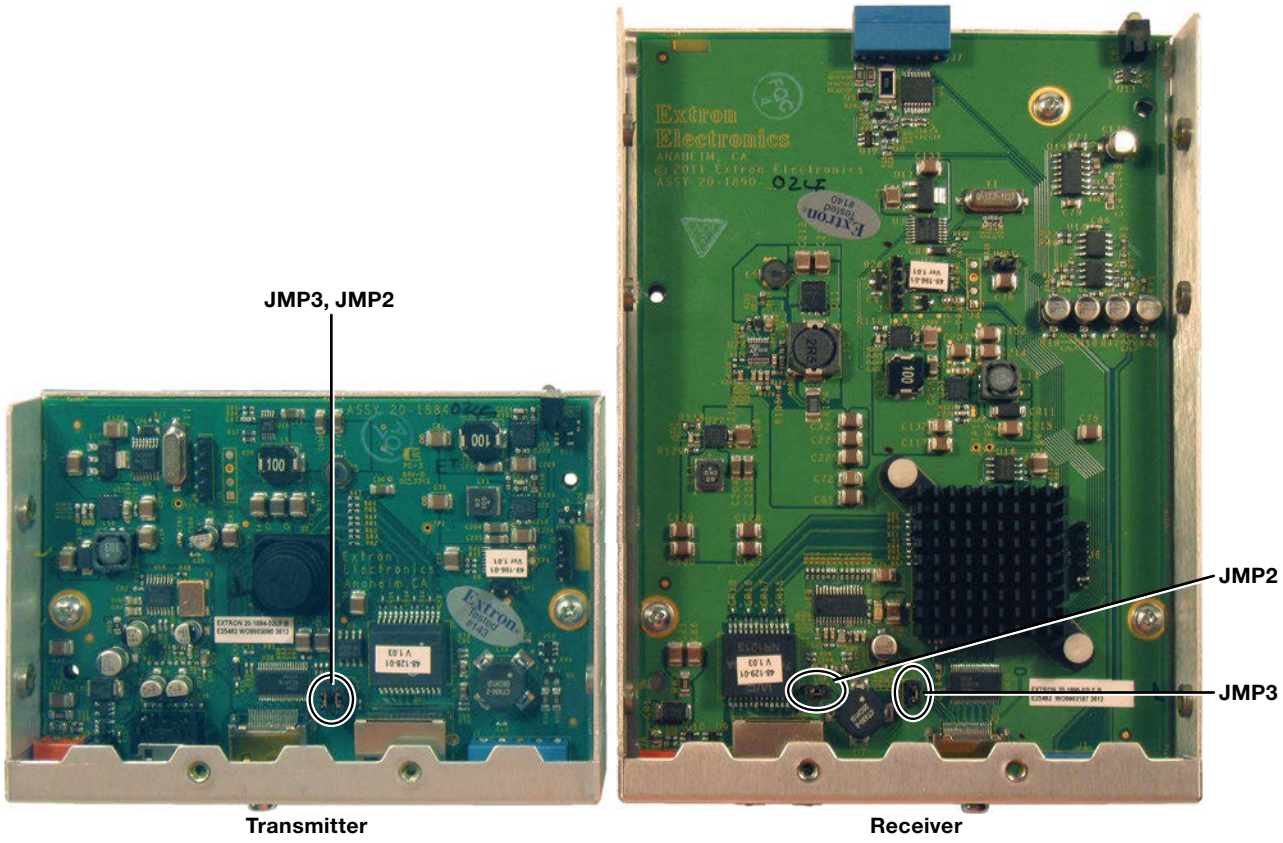


Figure 10. Jumper Locations

4. Reinstall the covers on both units, securing them in place with the screws removed in step 2.

5. Reinstall both units in their racks or other installation option (see **Mounting the Transmitter and Receiver** on page 11).
6. **If you are using shielded cable**, disconnect the cable shield from the connector at either end of the cable.
7. Obtain a second 12 V power supply (one supply is provided with the transmitter and normally powers both units), and locally power both units (see **Power supply wiring** on page 8).

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

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

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 and 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 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.