

Fiber Optic Extenders

FOX II T HD 4K


Fiber Optic Transmitter for HDMI




Extron Electronics
INTERFACING, SWITCHING AND CONTROL

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.


Sicherheitsanweisungen • Deutsch


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
Instrucciones de seguridad • Español


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ATENCIÓN: Este símbolo, , 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.

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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 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, , 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


OSTRZEŻENIE: Ten symbol, , 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, , 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, , если указан на продукте, предупреждает пользователя о наличии неизолированного опасного напряжения внутри корпуса продукта, которое может привести к поражению электрическим током.

ВНИМАНИЕ: Данный символ, , 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

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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。

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注意: ⚠ 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。

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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.

Class 1 Laser Product

Any service to this product must be carried out by Extron Electronics and its qualified service personnel.

CAUTION: Using controls, making adjustments, or performing procedures in a manner other than what is specified herein may result in hazardous radiation exposure.

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.

Produit laser de classe 1

Si ce produit a besoin d'un quelconque entretien, celui-ci doit être fait par Extron Electronics et son personnel qualifié.

ATTENTION : L'utilisation de commandes, la réalisation de réglages, ou l'exécution de procédures de manière contraire aux dispositions établies dans le présent document, présente un risque d'exposition dangereuse aux radiations.

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.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

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.

Software Commands

Commands are written in the fonts shown here:

```
^ARMerge Scene,,Op1 scene 1,1 ^B 51 ^W^C  
[ 01 ] R 0004 00300 00400 00800 00600 [ 02 ] 35 [ 17 ] [ 03 ]  
[Esc][X1]*[X16]*[X24]*[X21]*[X25]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” is 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 <http://www.extron.com/technology/glossary.aspx>.

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Introduction

WARNING: The FOX II T HD 4K outputs continuous invisible light (Class 1 rated), which may be harmful to the eyes; use with caution.

AVERTISSEMENT : Le FOX II T HD 4K émet une lumière invisible en continu (conforme à la classe 1) qui peut être dangereux pour les yeux, à utiliser avec précaution.

- Do not look into the rear panel fiber optic cable connectors or into the fiber optic cables themselves.
- Ne regardez pas dans les connecteurs de câble fibre optique sur le panneau arrière ou dans les câbles fibre optique eux-mêmes.
- Plug the attached dust cap into the optical transceiver when the fiber optic cable is unplugged.
- Branchez la protection contre la poussière dans l'ensemble émetteur/récepteur lorsque le câble fibre optique est débranché.

- [About this Guide](#)
- [About the FOX II T HD 4K Transmitter](#)
- [Features](#)

About this Guide

This guide contains information about the ultra-high performance Extron FOX II T HD 4K transmitter, a fiber optic extender (see [figure 1](#) on the next page).

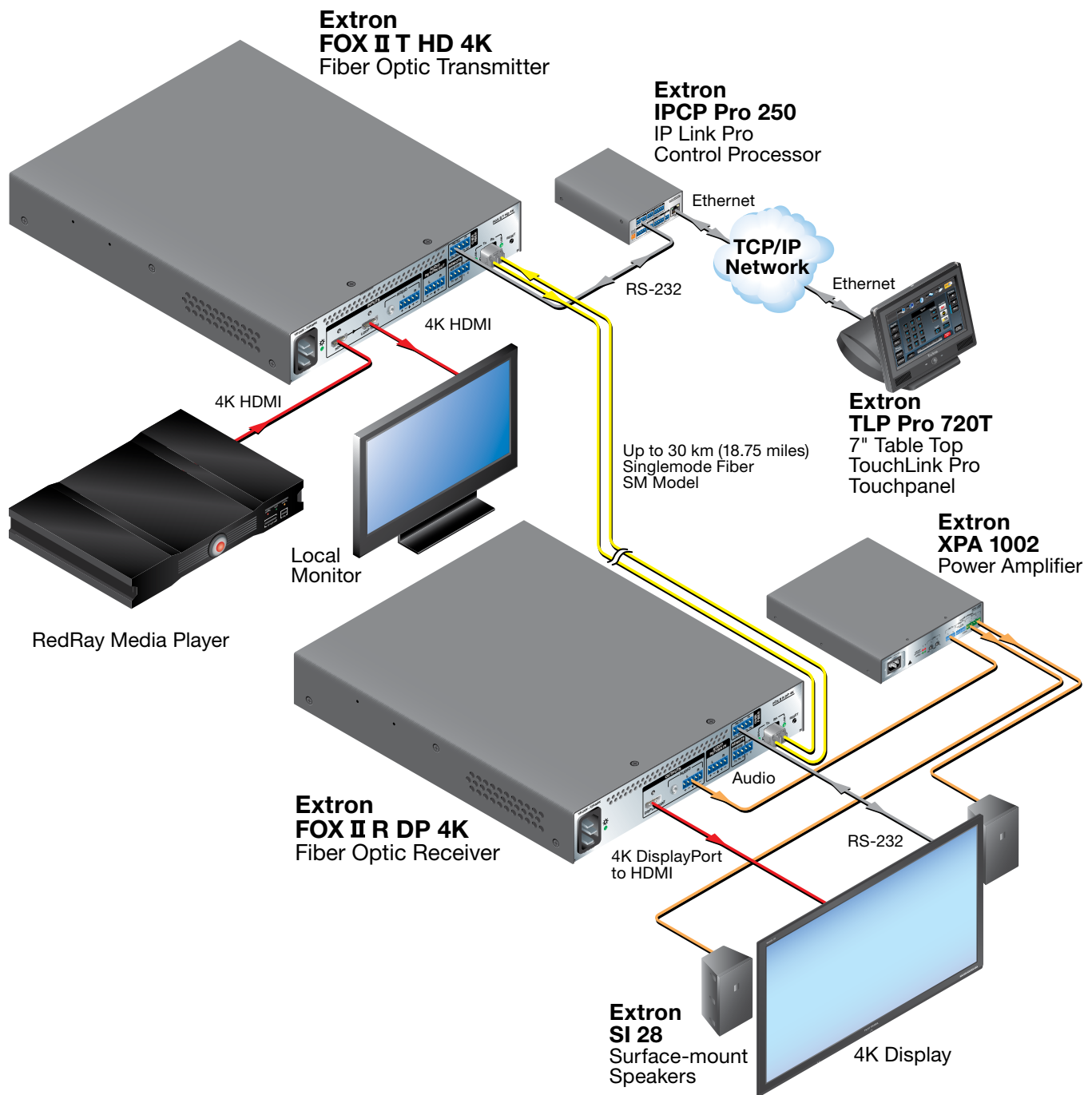


Figure 1. Typical FOX II T HD 4K Transmitter Application, with FOX II R DP 4K

About the FOX II T HD 4K Transmitter

The FOX II T HD 4K Transmitter is an ultra-high performance fiber optic Extender for long haul transmission of HDCP-compliant HDMI video, audio, and RS-232 and IR control signals over fiber optic cabling. The transmitter is compatible with the Extron FOX II R DP 4K and all other Extron FOX II receivers. The transmitter and compatible receiver can extend HDMI signals up to 30 km (18.75 miles) for the singlemode model (see [Fiber Cable Transmission Modes](#) on the next page).

The FOX II T HD 4K transmitter accepts HDMI video, at a resolution of up to 4K (4096x2160 at 30 Hz). The video input can also include embedded audio. The transmitter also loops the HDMI input through for a local monitor.

The transmitter can accept an analog audio input on either a 3.5 mm mini jack or a 5-pole captive screw connector. The transmitter automatically detects whether embedded audio is present on the HDMI input. If none is detected, the transmitter selects the analog audio for the unit to embed in the digital video stream and transmit to the receiver. An SIS command selects either audio.

The transmitter accepts a one-way (transmitter-to-receiver) RS-232 and IR communication signal input (for applications such as projector control). The transmitter can receive an optional return (receiver-to-transmitter) stream of serial RS-232 and IR communications from a controlled device, such as projector responses.

The transmitter converts the HDMI video, the selected audio, and the RS-232 serial communication into a proprietary data stream and outputs it as an optical signal via fiber optic small form factor pluggable (SFP) modules on a single LC connector to a compatible, Extron FOX II fiber optic receiver. It also can receive an audio return channel.

The transmitter has a built-in color bars test pattern to assist in setting up the display.

The transmitter has many controls, including audio adjustments, that are available under RS-232 and USB port SIS control. The unit also has video, audio, fiber light status, and lost-light alarm indicators.

The FOX II T HD 4K transmitter is compatible with all Extron FOX II receivers **only**.

Fiber Cable Transmission Modes

The transmitter is further categorized by the type of fiber optic cable, multimode or singlemode, which defines the effective range of transmission:

Multimode — FOX II T HD 4K MM, long distance, up to 2 km (6,560 feet) (depending on the fiber cable)

Singlemode — FOX II T HD 4K SM, very long distance, up to 30 km (18.75 miles)

NOTE: The multimode and singlemode units are physically and functionally identical, with the exception of the effective range of transmission. In this guide, any reference applies to either transmission mode unless otherwise specified.

Features

- **Ultra high performance** — Offers lossless HDMI video transmission, up to 4K (4096x2160 at 30 Hz).
- **Video input** — The transmitter accepts an input from an HDMI source.
- **Loop-through** — The transmitter has a digital video loop-through on an HDMI connector that allows connection of a local monitor.
- **HDCP Compliant**
- **Key Minder** — Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.
- **EDID Minder** — Automatically manages EDID communication between connected devices to ensure that all sources properly power up and reliably display content.

- **Compatibility with FOX Matrix Switchers**
- **Audio embedding** — Converts analog stereo audio signals to digital HDMI audio when the analog input is selected.
- **Two analog audio inputs** — The transmitter accepts an unbalanced stereo or mono audio input on a 3.5 mm mini jack and a balanced or unbalanced stereo or mono audio on a 5-pole captive screw connector.
- **Automatic audio detection and switching** — The transmitter can automatically detect digital audio embedded in the HDMI input and select it for transmission. If the transmitter does not detect embedded audio, it switches to the analog audio input. Or, you can manually select either audio input with an SIS command.
- **Analog audio input gain and attenuation** — The level of the analog audio input can be adjusted within a range of -18 dB (attenuation) to +24 dB (gain) via the RS-232 serial port or USB port.
- **Audio Return Channel** — The transmitter and a compatible receiver support analog audio return from the receiver to the transmitter, such as for return of a microphone input back to the transmitter.
- **Bidirectional RS-232 and IR signals over fiber optic cabling for AV device control**
- **LED indicators for signal presence, HDCP, and power** — Provides a visual indication of system status for real-time feedback and monitoring of key performance parameters.
- **Loss-of-light alarms** — The transmitter has a discrete output that indicates if the link from the receiver has suffered a loss of the light signal.
- **Alarm notification for fiber link loss** — The transmitter can be set up to trigger an external control system for immediate notification when a fiber link has been lost. This requires a second fiber link.
- **Product Configuration Software** — For remote control from a PC, the Extron Product Configuration Software, which runs under Microsoft® Windows®, provides a graphical interface and drag-and-drop/point-and-click operation.
- **Simple Instruction Set** — The transmitter uses the SIS for easy remote control operation.
- **Upgradable firmware** — The firmware that can be upgraded in the field via the USB Configuration port without taking the unit out of service. Firmware upgrades are available for download on the Extron website and they can be installed using the Product Configuration Software.
- **Rack mounting** — The FOX II unit is rack mountable in any conventional 19-inch wide rack, using an Extron 9.5-inch deep rack shelf.
- **Power** — The 100 VAC to 240 VAC, 50-60 Hz internal power supply provides worldwide power compatibility and low power consumption.

Installation and Operation

This section details the installation of the FOX II T HD 4K transmitter, including:

- [Installation Overview](#)
- [Connections](#)
- [Indications and Operation](#)

Installation Overview

Follow these steps to install and set up an Extron FOX II T HD 4K transmitter for operation:

- ☐ Turn off all of the equipment. Ensure that the video sources and the output display are all turned off and disconnected from the power source.
- ☐ Mount the transmitter (see [Mounting the Unit](#) on page 32).
- ☐ Connect the cables and configure the units (see “Connections”).
- ☐ Plug in the power supplies, then turn on the display and the input.

Connections

Rear Panel

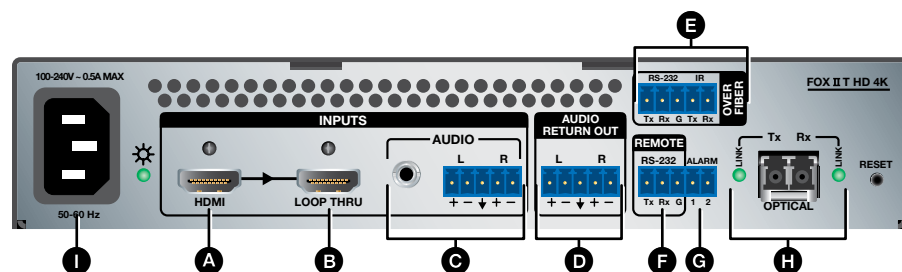


Figure 2. FOX II T HD 4K Transmitter Rear Panel Connectors

- | | |
|--|---|
| A HDMI input port (see page 6) | F Remote RS-232 port (see page 6) |
| B Loop-Thru port (see page 6) | G Alarm port (see page 6) |
| C Analog Audio input ports (see page 6) | H Optical port and LEDs (see page 7) |
| D Audio Return Out port (see page 6) | I Power connector (see page 7) |
| E Over Fiber port (see page 6) | |

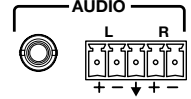
- A HDMI input port** (see figure 2 on the previous page) — Connect a digital video input to this HDMI connector. The transmitter also accepts embedded digital audio on this connector.



- B Loop-through port** — If desired, connect a local monitor to this HDMI connector.



- C Analog audio input ports** — These connectors accept the analog, unamplified, line level audio input that can be transmitted to the receiver (see **Audio connections** on page 9 to wire these connectors).

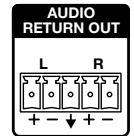


TRS connector — Plug an unbalanced audio input into this stereo TRS connector.

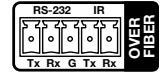
Captive screw input connector — Connect a balanced or unbalanced audio input to this 3.5 mm, 5-pole captive screw connector.

NOTE: If both the TRS and captive screw audio connector are connected, the TRS takes priority.

- D Audio Return Out port** — Connect an audio device, such as an amplifier or powered speakers to this 5-pole, 3.5 mm captive screw connector. This connector outputs returned, unamplified, line level audio from the receiver (see **Audio connections** on page 9 to wire this connector).



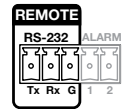
- E Over Fiber RS-232 and IR port** — Connect a serial RS-232 signal, a modulated or unmodulated IR signal, or both to this 3.5 mm, 5-pole captive screw connector for bidirectional RS-232 and IR communication. See **RS-232 and IR connections** on page 9 to wire the connector.



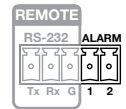
NOTES:

- If you connect only one fiber optic cable (see **item H**, on the next page), you will not receive RS-232 or IR reports from the controlled device. To receive responses from the controlled device, you must install two fiber optic cables.
- The FOX II T HD 4K can pass RS-232 commands and responses at rates up to 115200 baud.
- RS-232 and IR can be active simultaneously.

- F Remote RS-232 port** — For serial control of the transmitter, connect a host device, such as a computer or touch panel control, via the three leftmost poles (Tx, Rx, and G) of this 5-pole captive screw connector (see **RS-232 and IR connections** on page 9 to wire this connector). See **Remote Control** on page 14 for SIS commands.



- G Alarm port** — For remote monitoring of the status of the Rx fiber optic link (the optional fiber cable), connect an external control system or a locally-constructed or furnished monitoring device to the transmitter via the two rightmost poles (1 and 2) of this 5-pole captive screw connector. When the transmitter does not detect a light link on fiber cable Rx (optional), pin 1 and pin 2 of this port are shorted together (see **Alarm connection** on page 11 to wire this connector).



H Fiber optic ports and LEDs (see figure 2 on page 5)—

WARNING: The FOX II T HD 4K outputs continuous invisible light (Class 1 rated), which may be harmful to the eyes; use with caution. Plug the attached dust cap into the optical transceiver when the fiber optic cable is unplugged.

AVERTISSEMENT : Le FOX II T HD 4K émet une lumière invisible en continu (conforme à la classe 1) qui peut être dangereux pour les yeux, à utiliser avec précaution Branchez la protection contre la poussière dans l'ensemble émetteur/récepteur lorsque le câble fibre optique est débranché.

NOTES:

- Ensure that you use the proper fiber cable for your transmitter. Typically, singlemode fiber has a yellow jacket and multimode cable has an orange or aqua jacket.
- Only one fiber optic cable, transmitter-Tx-to-receiver-Rx, is required for video, audio, and RS-232 and IR signal transmission. **But**, if you connect only one fiber optic cable:
 - The digital video signal output by the receiver **is not** HDCP-compliant.
 - You **will not** receive RS-232 reports or return audio from the controlled device.
 - To receive responses from the controlled device and for HDCP compliance, you must install both fiber optic cables.

- 1 Tx (required)** — For all one-way video, audio, and serial communications from the transmitter to the receiver, connect a fiber optic cable to the Tx LC connector.

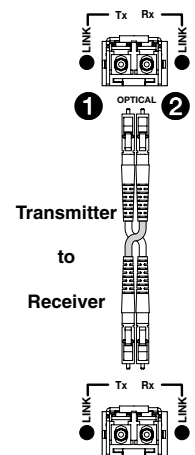
Connect the opposite end of this fiber optic cable to the Rx LC connector on a FOX II R DP 4K receiver or to any other compatible Extron FOX II device.

- 2 Rx (optional)** — For one-way return audio and serial communications from the receiver to the transmitter, connect a fiber optic cable to the Rx LC connector.

Connect the opposite end of this fiber optic cable to the Tx LC connector on a FOX II R DP 4K receiver or to any other compatible Extron FOX II device.

Tx Link and Rx Link LEDs — When lit, the link is active (light is sensed).

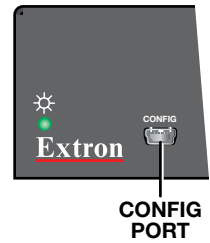
- 1 Power input** — Plug a standard IEC power cord into this connector to connect the transmitter to a 100 VAC to 240 VAC, 50-60 Hz power source. The lit LED indicates power is applied.



Front Panel Configuration Port

Configuration port — Connect a controlling device, such as a PC, to this mini USB B port for control of all functions of the transmitter (see **Remote Control** on page 14 for SIS commands and software control).

This mini USB B port serves a similar communications function as the rear panel Remote RS-232 port (see **item F** on page 6), but it is easier to access than the rear port after the transmitter has been installed and cabled.



NOTE: A front panel Configuration port connection and a rear panel Remote RS-232 port connection can both be active at the same time. If commands are sent simultaneously to both, the command that reaches the processor first is handled first.

Connection Considerations

HDMI connections

HDMI signals run at a very high frequency and are prone to errors caused by bad connections or excessive cable length. To avoid the loss of an image or jitter, follow these guidelines:

- Do not exceed 6.5 feet (2 meters) on the input or buffered loop-through of the FOX II T HD 4K transmitter.
- Use only the cable specifically designed and intended for high speed digital signals that is supplied by Extron. Use of non-HDMI cables or modified cables can result in a missing video output.

LockIt Lacing Bracket

Use the LockIt Lacing Brackets, supplied with the transmitter, to securely fasten HDMI cables to the device as follows:

1. Plug the HDMI cable into the panel connection (see figure 3, **1**).

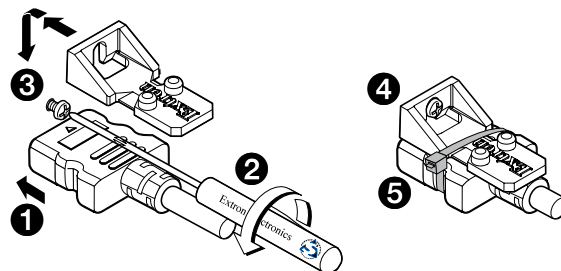


Figure 3. Installing the LockIt Lacing Bracket

2. Loosen the HDMI connection mounting screw from the panel enough to allow the LockIt Lacing Bracket to be placed over it (**2**). The screw does not have to be removed.

- Place the LockIt Lacing Bracket on the screw and against the HDMI connector, then tighten the screw to secure the bracket (see [figure 3](#), [③](#)).

ATTENTION:

- Do not overtighten the HDMI connector mounting screw. The shield it fastens to is very thin and can easily be stripped.
- Ne serrez pas trop la vis de montage du connecteur HDMI. Le blindage auquel elle est attachée est très fin et peut facilement être dénudé.

- Loosely place the included tie wrap around the HDMI connector and the LockIt Lacing Bracket as shown ([④](#)).
- While holding the connector securely against the lacing bracket, use pliers or similar tools to tighten the tie wrap, then remove any excess length ([⑤](#)).

RS-232 and IR connections

Figure 4 shows how to wire the RS-232 and IR connectors.

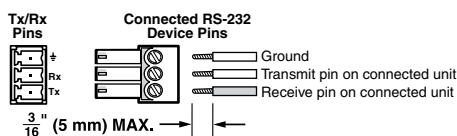


Figure 4. RS-232 and IR Connector Wiring

NOTES:

- The length of exposed wires is important. **The ideal length is 3/16 inch (5 mm).**
- Longer bare wires can short together.
- Shorter wires are not as secure in the connectors and could be pulled out.
- 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.

Audio connections

NOTE: The level of the analog audio inputs can be set via an [SIS command](#) (see page 18) or using the Product Configuration Software [Analog Input Gain control](#) (see page 26).

The following table shows the audio format that is sent over the fiber connection, along with the HDMI video, when the audio input format is set to **Auto** (the default setting, see the Input audio selection [SIS commands](#) on page 18 to switch the active audio source).

Embedded HDMI Audio	Analog Audio	Transmitted Audio
Present	Not present	Embedded audio
Present	Present	Embedded audio
Not present	Present	Analog audio
Not present	Not present	No audio

3.5 mm TRS input and output connections

See figure 5 to identify the 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.

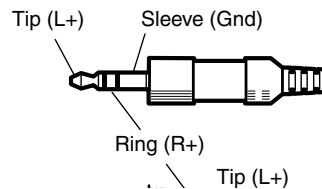


Figure 5. Stereo Plug Audio Connector

Captive screw input connections

See figure 6 to properly wire the captive screw input connector.

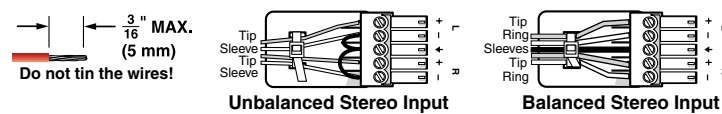


Figure 6. Captive Screw Connector Wiring for Stereo Audio Inputs

NOTE: The length of exposed wires is important (see the RS-232 and IR connector **NOTES** on page 9 for more information).

Captive screw output connection

See figure 7 to properly wire the captive screw output connector. The connector is included with transmitter, but you must supply the audio cable. Use the supplied tie-wrap to strap the audio cable to the extended tail of the connector.

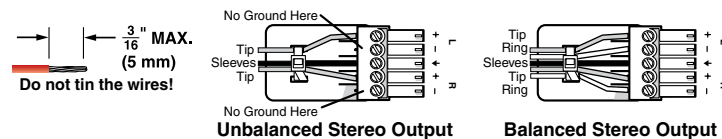


Figure 7. Captive Screw Connector Wiring for Stereo Audio Output

ATTENTION:

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

NOTE: The length of exposed wires is important (see the RS-232 and IR connector **NOTES** on page 9 for more information).

Alarm connection

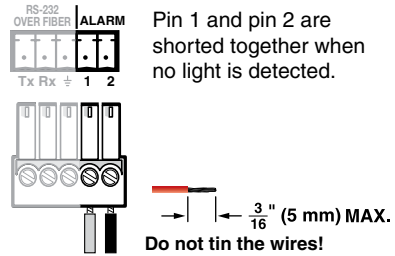


Figure 8. Alarm Connector

NOTE: The length of exposed wires is important (see the RS-232 and IR connector **NOTES** on page 9 for more information).

Indications and Operation

Front Panel Features

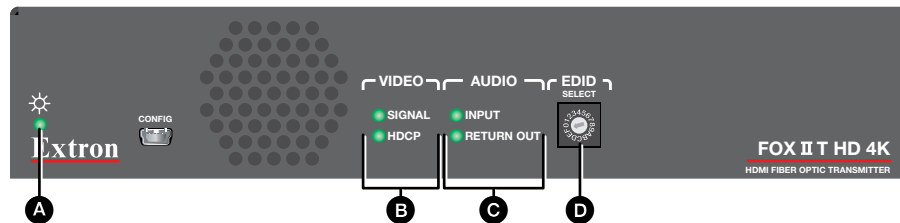


Figure 9. FOX II T HD 4K Front Panel Features

- A** **(power) indicator** — Indicates that power is applied to the unit.
- B** **Video LEDs** —
 - Signal LED** — Lights when the transmitter detects an active signal on its video input.
 - HDCP LED** — Lights when the input signal is HDCP encrypted.
- C** **Audio LEDs** —
 - Input LED** — Lights when an analog audio or PCM digital audio signal remains above -35 dBV. The LED goes dark if the audio signal level drops below the threshold for 10 seconds or longer.
 - Return Out LED** — Lights when analog audio is present on the Audio Return Output connector.

- D EDID Select rotary switch** (see figure 9 on the previous page) — Set this switch to one of the positions below to select the source of the DDC or a specific resolution.



Position 0 — A user-recorded EDID that has been previously:

- Captured from the display connected to the receiver output.
- Captured from the display connected to transmitter HDMI Loop-through connector (see **item B** on page 6).
- Manually imported via an **SIS command** (see page 17) or Product Configuration Software **action** (see page 24) to the transmitter.

Position 1 — The EDID is selected via the rear panel Remote RS-232 port or the front panel Configuration port, using an SIS command or the Product Configuration Software. This is the factory default position.

Position 2 — The EDID is received from the display connected to the receiver.

NOTE: EDID from the display connected to the receiver requires connection of both fiber cables.

Position 3 — The EDID is received from the display connected to the HDMI Loop-through connector (see **item B**).

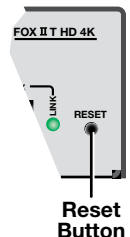
Position 4 – E — Specify a resolution. The table below identifies the switch positions and the associated resolutions. All resolutions are at 60 Hz with the exception of 4096x2160 (E), which is 30 Hz.

Pos.	Source or resolution	Pos.	Resolution	Pos.	Resolution
0	User recorded EDID	6	1366x768	C	2048x2160
1	Selected via RS-232	7	1440x900	D	2560x1600
2	Display on Rx output	8	1680x1050	E*	4096x2160
3	Display on Tx loop-through	9	1920x1080 (1080p)	F	N/A
4	1280x720 (720p)	A	1920x1200		
5	1280x800	B	2048x1080		

* 30 Hz

Rear Panel Features

Reset button — Press and release or press and hold this button to initiate two levels of transmitter reset (see **Performing resets** on the next page).



Operation

After the transmitter, the compatible receiver, and their connected devices are powered up, the system is fully operational. If any problems are encountered, verify that the cables are routed and connected properly, and that all display devices have identical resolutions and refresh rates. If your problems persist, call the Extron S3 Sales & Technical Support Hotline. See the contact numbers at www.extron.com for the Extron office nearest you.

To take advantage of the various adjustments and test patterns available in the FOX II T HD 4K, you need to connect a computer or other USB-capable device to the front panel Configuration port or a RS-232 capable device to the rear panel Remote RS-232 port. Operate the connected device using either SIS commands or the Product Configuration Software (see **Remote Control**, beginning on the next page).

Performing resets

The rear panel recessed **Reset** button on both units allows you to revert to the factory loaded firmware for one power cycle (a “mode 1” reset, for comparison with Extron IP Link products). All user files and settings, such as audio adjustments and video settings are maintained. A mode 1, firmware, reset is helpful if a firmware upload was interrupted, resulting in a non-operational unit.

A second reset mode resets all settings to their factory defaults except for the current firmware level (a mode 5 reset). This reset is the same as performed when you issue the **Esc** **Z** **X** **X** **←** SIS command (see page 19).

Mode 1 reset

Reset to the factory-installed firmware for one power cycle as follows:

1. Power off the transmitter.
2. Use a Tweezer or other small item to press and **hold** the recessed **Reset** button while you apply power to the unit.
3. When the power up process is complete (the front and rear panel Power LEDs are lit), release the **Reset** button.

The transmitter returns to the original, factory-installed firmware until the next time power is removed and restored.

Mode 5 reset

Reset all settings, except firmware, to the factory defaults as follows.

1. With power applied, use a Tweezer or other small item to press and **hold** the **Reset** button for approximately 9 seconds, until the front or rear panel Power LED blinks three times.
2. Release the **Reset** button and then immediately (within 1 second) press and release the button again.

The front and rear panel Power LEDs blink four times during the reset.

Remote Control

This section describes the remote control operation of the FOX II T HD 4K transmitter, including:

- **Simple Instruction Set Control**
- **Product Configuration Software**

The transmitter has a front panel Configuration port, a USB mini-B connector (see **Front Panel Configuration Port** on page 8) and a rear panel Remote RS-232 port, a 3-pole captive screw connector (see **item 6** on page 6 and **RS-232 and IR connections** on page 9). Either of these ports can be connected to a host device such as a computer running the HyperTerminal or DataViewer utility, or a control system to make remote control of the transmitter possible.

The protocol for the serial port is as follows:

- 9600 baud
- no parity
- 8 data bits
- 1 stop bit
- no flow control

Simple Instruction Set Control

Host-to-Unit Instructions

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command character sequence. When a command is valid, the unit executes the command and sends a response to the host device. All responses from the unit to the host end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string. A string is one or more characters.

Unit-Initiated Messages

When a local event, such as an equipment power-up, occurs, the unit responds by sending a message to the host. The unit-initiated messages are listed below:

(c) Copyright 20nn, Extron Electronics FOX II T HD 4K•YY, Vx.xx, 60-nnnn-xx

The transmitter issues the copyright message (above) when it first powers on. Vx.xx is the firmware version number; 60-nnnn-xx is the part number of the transmitter. YY is either SM (singlemode) or MM (multimode).

2Lnkn•SigIn•Resx•HdcpIy•AudIn•AudOn•EdidMdra•TX

The unit sends the status message whenever a change in the fiber link and video connection occurs.

- *n* is the connection status, where 0 = signal not detected and 1 = signal detected.
- *x* is the detected resolution (such as 1920x1080@60Hz).
- *y* is the HDCP source status, where 0 = no source, 1 = HDCP source, 2 = non-HDCP source.
- *a* is the rotary switch position, 00 through 15 (F hex).

DDC

EdidMdrnn

The unit sends the EDID Minder change message whenever a change in the position of the front panel DDC hex switch occurs. nn is the switch position 0 through 15 (F hex).

Hp1g0

The unit sends the Hot plug message whenever the HDMI connector is either plugged in or unplugged.

Error Responses

When the unit receives a valid SIS command, it executes the command and sends a response to the host device. If the unit is unable to execute the command because the command is invalid or it contains invalid parameters, the unit returns an error response to the host. The error response codes are:

- E10 - Invalid command
- E13 - Invalid parameter
- E14 - Invalid command for this configuration
- E17 - Invalid command for signal type
- E22 - Busy

Using the Command and Response Table

The command and response table begins on the [next page](#). Uppercase and lower case letters are acceptable in the command field except where indicated for the audio level (gain and attenuation) commands. Symbols throughout the table represent variables in the command and response fields. Examples are shown throughout the table. The ASCII to HEX conversion table below is for use with the command and response table.

ASCII to Hex Conversion Table																Esc	1B	CR	0D	LF	0A
Space →	20	!	21	"	22	#	23	\$	24	%	25	&	26	'	27						
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F						
0	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37						
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F						
@	40	A	41	B	42	C	43	D	44	E	45	F	46	G	47						
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F						
P	50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57						
X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F						
`	60	a	61	b	62	c	63	d	64	e	65	f	66	g	67						
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F						
p	70	q	71	r	72	s	73	t	74	u	75	v	76	w	77						
x	78	y	79	z	7A	{	7B	|	7C	}	7D	~	7E	DEL	7F						

Symbol Definitions

↵ = CR/LF (carriage return/line feed)

← = Carriage return (no line feed)

| = Pipe (can be used interchangeably with the ← character)

• = Space (hard) character

[Esc] = Escape key (hex 1B) (**W** can be used interchangeably with the [Esc] character)

[X1] = EDID resolution and rate See the [table](#) on the next page.

[X2] = Save EDID source 1 = transmitter loop-through 2 = receiver output

[X3] = Resolution and rate in plain language

[X4] = Video and sync mute status 0 = mute off 1 = video mute 2 = video and sync mute

[X5] = On and off status 0 = off (disabled) 1 = on (enabled)

[X6] = Video bit depth 0 = auto mode (**default**) 1 = 8-bit

[X7] = HDCP Mode 0 = auto (**default**) 1 = on

[X8] = Digital output format 0 = auto (**default**) 1 = DVI 2 = HDMI

[X9] = Audio gain adjustment range 00 to 24

[X10] = Audio level adjustment range -18 to +24 (in 1 dB steps)

[X11] = Audio attenuation adjustment range 00 to 18

[X12] = Audio input format 0 = auto (**default**) 1 = digital (embedded HDMI) audio 2 = analog audio

[X13] = Audio mute 0 = mute all 1 = mute HDMI 2 = mute analog

[X14] = Audio output 1 = digital 2 = analog

[X15] = Color bars test pattern 0 = Off (**default**) 1 = 720p at 60 Hz 2 = 1080p at 60 Hz

[X16] = Transmitter name Up to 24 characters, alphanumeric or minus sign only. The first character must be a letter. The last character cannot be a minus sign

[X17] = Link and input status 0 = link or input not detected 1 = link or input detected

[X18] = Input HDCP signal 0 = no source detected 2 = source detected no HDCP present

1 = source detected with HDCP

[X19] = Internal temperature *nnnF•nnC*

[X20] = Resolution *nnnn^{Horizontal}xnnnn^{Vertical}@xxHz*

[X21] = EDID switch position 00 (0 hex) through 15 (F hex) (see [item 9](#) and the table on page 12)

[X22] = Firmware version *v.vv*

[X23] = HDCP Output Status 0 = no sink 1 = HDCP sink 2 = non-HDCP sink

[X24] = Optical module manufacturer Up to 16 alphanumeric characters

[X25] = Tx or Rx power *xx.x dBm*

[X26] = Operating temp of module *nnn.n*

Command and Response Table for SIS Commands

Command	SIS Command (host to unit)	Response (unit to host)	Additional description
EDID Minder Resolution			
NOTE: <ul style="list-style-type: none"> The front panel HEX switch must be in position 1 for the [Esc]AEDID commands to be effective. In any other position, the transmitter returns the E14 error code. An active monitor must be connected to the transmitter Loop-Through connector ([x2] = 1) or receiver output port ([x2] = 2) for the [Esc]SEDID command to be effective. If no input is connected the transmitter returns the E13 error code. 			
Set the EDID resolution <i>Example:</i>	[Esc]A[x1]EDID ← [Esc]A19EDID ←	EdidA[x1] ← EdidA19 ←	Set the EDID resolution to [x1] . Set the EDID resolution to 1280x768 at 60 Hz with embedded 2-channel audio.
View the EDID resolution	[Esc]AEDID ←	[x1] ←	
Save an EDID	[Esc]S[x2]EDID ←	EdidS[x2] ←	Save the EDID from the [x2] connection to memory.
View native EDID resolution <i>Example:</i>	[Esc]NEDID ← [Esc]NEDID ←	[x3] ← 720p•@60Hz ←	Show EDID resolution in plain language.
Video and sync mutes (HDMI Loop-through)			
Mute output, video only	1B	Vmt1 ←	Mute the video output, display black video.
Mute output, video and sync	2B	Vmt2 ←	Mute the video and sync outputs.
Unmute output	0B	Vmt0 ←	Output video.
Show video mute status	B	[x4] ←	Video mute status is [x4] .
HDCP notification (HDMI Loop-through)			
Enable HDCP notification	[Esc]N1HDCP ←	HdcpN1 ←	Enable green screen (default).
Disable HDCP notification	[Esc]N0HDCP ←	HdcpN0 ←	Disable green screen.
View HDCP notification	[Esc]NHDCP ←	[x5] ←	

KEY: **[x1]** = EDID resolution

See the table below.

[x1]	Value	[x1]	Value	[x1]	Value	[x1]	Value	[x1]	Value
DVI – PC values									
01	800x600 @ 60 Hz	05	1280x800 @ 60 Hz	09	1400x1050 @ 60 Hz	13	1680x1050 @ 60 Hz		
02	1024x768 @ 60 Hz	06	1280x1024 @ 60 Hz	10	1440x900 @ 60 Hz	14	1920x1080 @ 60 Hz		
03	1280x720 @ 60 Hz	07	1360x768 @ 60 Hz	11	1600x900 @ 60 Hz	15	1920x1200 @ 60 Hz		
04	1280x768 @ 60 Hz	08	1366x768 @ 60 Hz	12	1600x1200 @ 60 Hz	16	2048x1080 @ 60 Hz		
HDMI – PC values with 2-channel audio									
17	800x60 @ 60 Hz	21	1280x1024 @ 60 Hz	25	1440x900 @ 60 Hz	29	1920x1200 @ 60 Hz	33	2560x1080 @ 60 Hz
18	1024x768 @ 60 Hz	22	1360x768 @ 60 Hz	26	1600x900 @ 60 Hz	30	1920x2160 @ 60 Hz	34	2560x1440 @ 60 Hz
19	1280x768 @ 60 Hz	23	1366x768 @ 60 Hz	27	1600x1200 @ 60 Hz	31	2048x1080 @ 60 Hz	35	2560x1600 @ 60 Hz
20	1280x800 @ 60 Hz	24	1400x1050 @ 60 Hz	28	1680x1050 @ 60 Hz	32	2048x2160 @ 60 Hz		
HDTV – PC values with 2-channel audio									
36	480p @ 60 Hz	39	720p @ 60 Hz	42	1080p @ 50/25 Hz	45	1080p @ 60 Hz		
37	576p @ 50 Hz	40	1080i @ 50 Hz	43	1080p @ 50 Hz	46	4K/UHD @ 30 Hz		
38	720p @ 50 Hz	41	1080i @ 60 Hz	44	1080p @ 60/24 Hz				
HDTV – PC values with multi-channel audio									
47	720p @ 50 Hz	49	1080i @ 50 Hz	51	1080p @ 50/25 Hz	53	1080p @ 60/24 Hz	55	4K/UHD @ 30 Hz
48	720p @ 60 Hz	50	1080i @ 60 Hz	52	1080p @ 50 Hz	54	1080p @ 60 Hz		
Connected display or a customer-saved value									
[x1]	Source								
56	Display connected to the receiver output connector					58	User memory		
57	Display connected to the transmitter loop-through connector								

[x2] = Save EDID source

1 = transmitter loop-through

2 = receiver output

[x3] = Resolution and rate in plain language

[x4] = Video and sync mute status

0 = off

1 = video mute on

2 = video and sync mute on

[x5] = On or off status

0 = off

1 = on

Command and Response Table for SIS Commands (continued)

Command	SIS Command (host to unit)	Response (unit to host)	Additional description
Video bit depth (HDMI loop-through)			
Set video bit depth to auto	[Esc]V0BITD←	BitdV0←	Follow the input bit depth.
Set video bit depth to 8-bit	[Esc]V1BITD←	BitdV1←	Force 8-bit depth.
View video bit depth	[Esc]VBITD←	[X6]←	
Input reports as an HDCP authorized device			
HDCP authorized device on	[Esc]E1HDCP←	HdcpE1←	Set the transmitter as an HDCP-authorized device (default) .
HDCP authorized device off	[Esc]E0HDCP←	HdcpE0←	Set the transmitter as not an HDCP-authorized device.
View HDCP authorized device status	[Esc]EHDCP←	[X5]←	Show HDCP authorized device status.
HDCP mode			
Set HDCP mode to auto	[Esc]S0HDCP←	HdcpS0←	Follows input (default) .
Set HDCP mode to on	[Esc]S1HDCP←	HdcpS1←	
View HDCP mode	[Esc]SHDCP←	[X7]←	
Digital output format (HDMI loop-through)			
Set the format to auto	[Esc]0VTPO←	Vtpo0←	Follows input (default) .
Set the format to DVI	[Esc]1VTPO←	Vtpo1←	
Set the format to HDMI	[Esc]2VTPO←	Vtpo2←	
View format	[Esc]VTPO←	[X8]←	
Analog audio input gain and attenuation			
NOTE: The set gain (G) and set attenuation (g) commands are case sensitive. The increment level, decrement level, and show level are not case sensitive.			
Set input audio gain to a +dB value	[X9]G	Aud [X10]←	Set the input level to [X10] dB (gain).
<i>Example:</i>	2G	Aud2←	Set the input level to +2 dB (gain).
Set input audio attenuation to a -dB value	[X11]g	Aud [X10]←	Set the input level to [X10] dB (attenuation).
Increment input level	+G	Aud [X10]←	Increase the audio level by 1 dB.
<i>Example:</i>	+G	Aud3←	Increment the input level from +2 dB to +3 dB.
Decrement input level	-G	Aud [X10]←	Decrease the audio level by 1 dB.
Show input level	G	[X10]←	
Audio input format			
NOTE: This command selects the audio input that is transmitted to the receiver.			
Select auto	[Esc]I0AFMT←	AfmtI0←	Transmit the digital audio embedded in the HDMI input, if detected, otherwise transmit the analog audio.
Select digital audio	[Esc]I1AFMT←	AfmtI1←	Transmit the digital audio embedded in the HDMI input.
Select analog audio	[Esc]I2AFMT←	AfmtI2←	Transmit the analog audio input.
Show audio selection	[Esc]IAFMT←	[X12]←	Show the selected format.
KEY: <div> <div> [X5] = On and off status [X6] = Video bit depth [X7] = HDCP Mode [X8] = Digital output format [X9] = Audio gain adjustment range [X10] = Audio level adjustment range [X11] = Audio attenuation adjustment range [X12] = Audio input format </div> <div> 0 = off (disabled) 0 = auto mode (default) 0 = auto (default) 0 = auto (default) 00 to 24 - 18 to +24 (in 1 dB steps) 00 to 18 0 = auto (default) 1 = digital (embedded HDMI) audio </div> <div> 1 = on (enabled) 1 = 8-bit 1 = on 1 = DVI 2 = HDMI 2 = analog audio </div> </div>			

Command and Response Table for SIS Commands (continued)

Command	SIS Command (host to unit)	Response (unit to host)	Additional description
Audio mute (HDMI Loop-through and Return Out)			
Mute the audio	[X13]*1Z	Amt [X13]*1 ←	Silence the HDMI Loop-through audio, Return Out audio, or both.
Example:	1*1Z	Amt1*1←	Silence the HDMI Loop-through audio.
Unmute the audio	[X13]*0Z	Amt [X13]*0 ←	The transmitter outputs HDMI Loop-through audio, Return Out audio, or both.
Show audio mute status	[X14]Z	[X5] ←	Mute status of [X14] audio is [X5] .
Color bars test pattern			
NOTE: The transmitter generates the color bars test pattern and sends it to the receiver. You must have the transmitter-Tx-to-receiver-Rx fiber cable connected for the receiver to output the selected test pattern. The test pattern turns off if power is removed.			
Output color bars test pattern	[Esc][X15]Test ←	Test [X15] ←	[X15] = 1 or 2: Set the transmitter to output color bars.
Turn test pattern off	[Esc]0Test ←	Test 0 ←	Set the transmitter to output the input video (no test pattern).
Show test pattern status	[Esc]Test ←	[X15] ←	
Name			
Assign a name to the device	[Esc][X16]CN ←	Ipn• [X16] ←	Name the transmitter [X16] .
Reset device name to default	[Esc]•CN ←	Ipn•FOX-II-T-HD-4K←	
View the device name	[Esc]CN ←	[X16] ←	
Status requests			
View Rx link (Rx-to-Tx) status	2S	[X17] ←	
View input video status	4S	[X17] ←	
View audio input status	5S	[X17] ←	
View HDCP status	6S	[X18] ←	
View temperature	20S	[X19]F•[X19]C ←	Show in degrees Fahrenheit and Celsius.
Information requests			
Information request	I	2Lnk [X17]•SigI[X17]•Res[X20]•HdcpI[X18]•AudI[X14]•AudO[X17]•EdidMdr[X21]•TX ←	The unit responds with the status (light detected) of the optical Rx link and the digital input (signal detected), the resolution, the HDCP status, the input audio selected, the signal status of the audio output, the EDID rotary switch position, and the device type (TX).
Show firmware version	Q	[X22] ←	
Example:	Q	1.23←	The factory-installed firmware version is 1.23 (sample value only).
Request HDCP Output Status	[Esc]0HDCP ←	Hdcp0 [X23] ←	Show HDCP detected on the transmitter loop-through output.
Request part number	N	60- <i>nnnn</i> - <i>nn</i> ←	See the Extron website for part numbers.
Request SFP status	40S	[X24]•[X25]^{Tx}•[X25]^{Rx}•[X26] ←	
Resets			
Reset audio	[Esc]ZA ←	Zpa←	Reset audio setting to default levels (0 dB gain).
System reset	[Esc]ZXXX ←	Zpx←	Reset all settings to factory defaults.

KEY:	[X13] = Audio mute	0 = mute all (output HDMI and analog)	2 = mute analog only
	[X14] = Audio output	1 = mute HDMI only	
	[X15] = Color bars test pattern	1 = digital	2 = analog
	[X16] = Transmitter name	0 = Off (default)	1 = 720p at 60 Hz 2 = 1080p at 60 Hz
	[X17] = Link status	Up to 24 alphanumeric characters and hyphen (-)	
	[X18] = Input HDCP signal	0 = light or input signal not detected	1 = light or signal detected
		0 = no source detected	
		1 = source detected with HDCP	2 = source detected no HDCP present
	[X19] = Temperature	<i>nnn</i>	
	[X20] = Resolution	<i>nnnn</i> ^{Horizontal} <i>xnnnn</i> ^{Vertical} @ <i>xx</i> Hz	
	[X21] = EDID switch position	00 (0 hex) through 15 (F hex) (see item 9 and the table on page 12)	
	[X22] = Firmware version	<i>v.vv</i>	
	[X23] = HDCP Output Status	0 = no sink	1 = HDCP sink 2 = non-HDCP sink
	[X24] = Optical module manufacturer	Up to 16 alphanumeric characters	
	[X25] = Tx or Rx power	<i>xx.x</i> dBm	
	[X26] = Operating temp of module	<i>nnn.n</i>	

Product Configuration Software

The Extron Product Configuration Software, which communicates with the connected transmitter via the front panel Configuration port (see [Front Panel Configuration Port](#) on page 8), provides an easy way to operate and configure the unit.

The program is compatible with Windows 7, 64-bit, or later. Updates to this program can be downloaded from the Extron website.

Installing the Software

The Product Configuration Software, version 3.5.6 or newer, and Firmware Loader are available on the Extron website. Download and install both programs as follows:

NOTES:

- This procedure uses Internet Explorer. Depending on the browser you use, some steps or indications may be different.
- Steps 1 through 7 are also used to download firmware update packages.

1. Visit the website www.extron.com and click the **Download** tab (see figure 10, ①).

Products Training Markets Tech Library Comp: 1 Download

Download Home

Download Center

Software (67 files)

ALL	#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

2 Software

- Dante Controller
- DSP Configurator Software
- Global Configurator
- Global Configurator Professional
- GUI Configurator
- IP Intercom HelpDesk Software
- PCS
- TouohLink for iPad
- XTP System Configuration Software
- Control System Drivers

2 Firmware

- OR -

PCS Updated 79-562-01 3.5.6 Dec 14, 2016 121.3 MB **3 Download**

Product Configuration Software for a variety of standalone products.

Release Notes

Figure 10. Downloading a Software or Firmware Package

- Click the **Software** or **Firmware** link as appropriate to the operation you are performing (2).

TIPS:

- Many popular software packages have direct links on the **Download** page that you can click instead. Figure 10 shows the **PCS** link.
- Jump to the nearest page of downloads by clicking the desired filtering letter.

3. Click **Download** for the desired software or firmware to download (3).

The Log in dialog box appears (see **figure 11** on the next page).

Please log in for File Downloading

In order to download the file, you must log in with your Extron Web Site account. If you do not have an account, [click here](#) and an Extron representative will contact you about creating one.

E-Mail
JSmith@folklore.net

1 Password
.....

☒ Keep me logged in

2 Log in
(Make sure cookies are turned on to skip login next time)

Are you an Extron Insider yet?
Becoming an Extron Insider is easy. If you are an Extron customer and do not have an Extron Login, simply click on the button below, or contact your Extron Customer Support Representative.
Sign up

Figure 11. Log in Center Dialog Box

4. Enter the **E-Mail address** and **Password** associated with your Extron website account (see figure 11, ❶).

TIPS:

- Contact the Extron S3 Sales & Technical Support Hotline to obtain website credentials.
- Click **Keep me logged in** to eliminate steps 4 and 5 in future downloads.

5. Click **Log in** to copy the software or firmware to the computer (❷).
6. If your browser asks you to confirm that you want to continue (see figure 12), click **Run** or make a similar confirmation (❶).

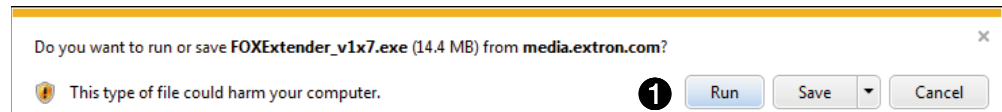


Figure 12. Download Warning and Confirmation

NOTE: Figure 12 may appear different or may not appear at all, depending on your Web browser choice and its security settings.

7. **For a firmware download**, exit this procedure and return to **Updating the Firmware** on page 28.
8. Follow the on-screen instructions. The installation creates a C:\Program Files\Extron\Extron PCS directory, and it places the following four icons into a group folder named "Extron Electronics\Extron Product Configuration Software:"

NOTE: C:\Program Files(x86)\ ... for 64-bit operating systems.

- **Check for Extron PCS Updates**
- **Extron PCS Help**
- **Extron Product Configuration Software**
- **Uninstall Extron Product Configuration Software**

Starting the Program

Start the Extron Product Configuration Software as follows:

1. Click **Start > Programs > Extron Electronics > Extron Product Configuration Software > Extron Product Configuration Software**.

The Product Configuration Software opens to the **Device Discovery** window (see figure 13).

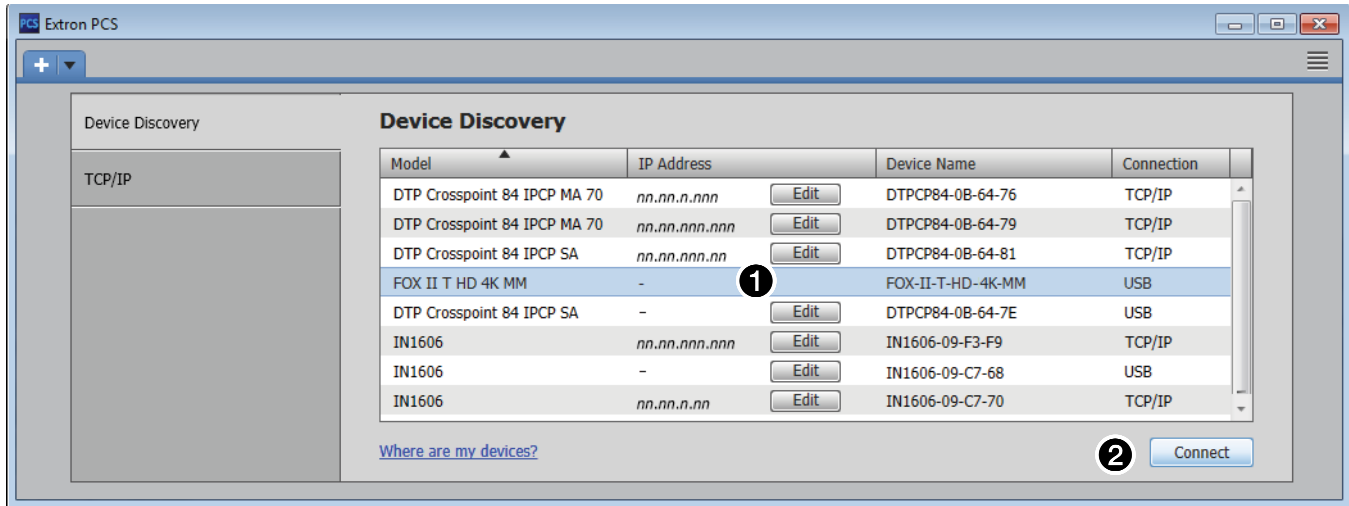


Figure 13. Device Discovery Screen

2. Select (click) your FOX II T HD 4K and the USB port (see figure 13, ①).
3. Click **Connect** (②). The Product Configuration Software opens to the **Status** window (see figure 14 on the next page).

Using the Software

Once you have connected to a device, the **Status** window (see figure 14) is the default start-up window for the Product Configuration Software. The window provides indications of the connection status.

Status window

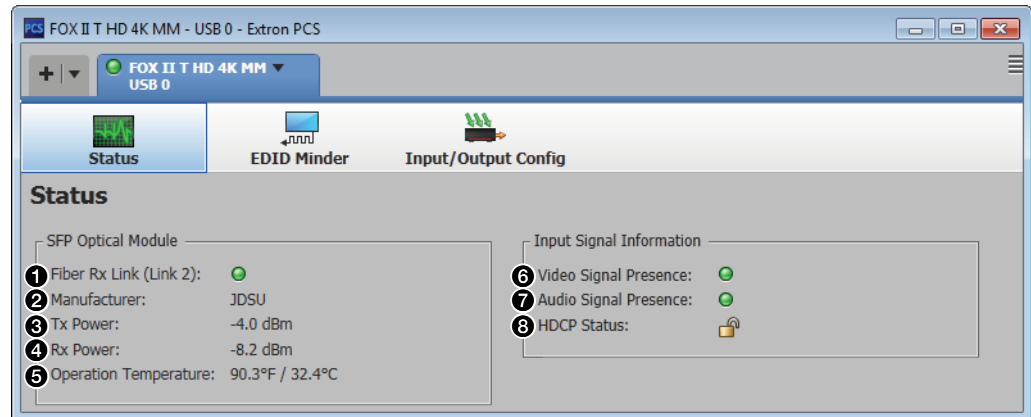


Figure 14. Status Window

- 1 Fiber Rx Link (Link 2) indicator** — Indicates green (●) when the transmitter detects light on the fiber optic cable connected to the Rx port.
- 2 Manufacturer fields** — Indicates the manufacturer of the SFP module.
- 3 Tx Power fields** — Indicates the power on the Tx optical module of the unit in dBm.
- 4 Rx Power fields** — Indicates the power on the Rx optical module of the unit in dBm.
- 5 Operating Temperature** — Indicates the temperature in degrees Fahrenheit and degrees Celsius.
- 6 Video Signal Presence indicators** — Indicates green (●) when the transmitter detects a sync signal on its HDMI video input.
- 7 Audio Signal Presence indicators** — Indicates green (●) when the analog audio or PCM digital audio signal remains above -35 dBV. Indicates gray (●) if the audio signal level drops below the threshold for 10 seconds or longer.
- 8 HDCP Signal indicator** — Shows a lock icon (🔒) when the digital video signal has copyright encryption applied and shows an unlocked icon (🔓) when the signal is not copyright protected.

EDID Minder window

The **EDID Minder** window (see figure 15) provides controls for you to tailor the EDID that is provided to the transmitter. Select this window from either the **Status** or **Input/Output Configuration** window by clicking **EDID Minder** on the menu bar.

NOTE: The front panel EDID Select rotary switch must be in the 1 position for most of the EDID Minder window to be available for operation. When the switch is in other positions, only the Input field (⑥) and the following is displayed:



The EDID Rotary Switch is not set to 1. In order to assign EDID through the software, change the EDID Rotary Switch position to 1. The Rotary Switch can be found on the device.



Figure 15. EDID Minder Screen

Click an EDID box in the **Available EDID** (①), **Connected Outputs** (②), or **Favorites** (③) panes to select (highlight in yellow) the EDID identified by that box.

If desired, drag and drop an EDID box into the **Favorites** pane.

If desired, reduce the number of EDID boxes displayed by selecting a filter in one of four categories (panes) (④): **Resolution**, **Refresh Rate**, **Video Format**, and **Audio Format**.

The **Common Timings** tab (⑤) allows you to create a list view of the connected output EDIDs that you use.

The **Input** pane (⑥) displays the resolution, rate, video type, and embedded audio format of the HDMI input.

Input/Output Configuration window

The **Input/Output Configuration** window allows you to set the input and output option features of the transmitter (see figure 16). Select this window from either the **Status** or **EDID Minder** window by clicking **Input/Output Config** on the menu bar.

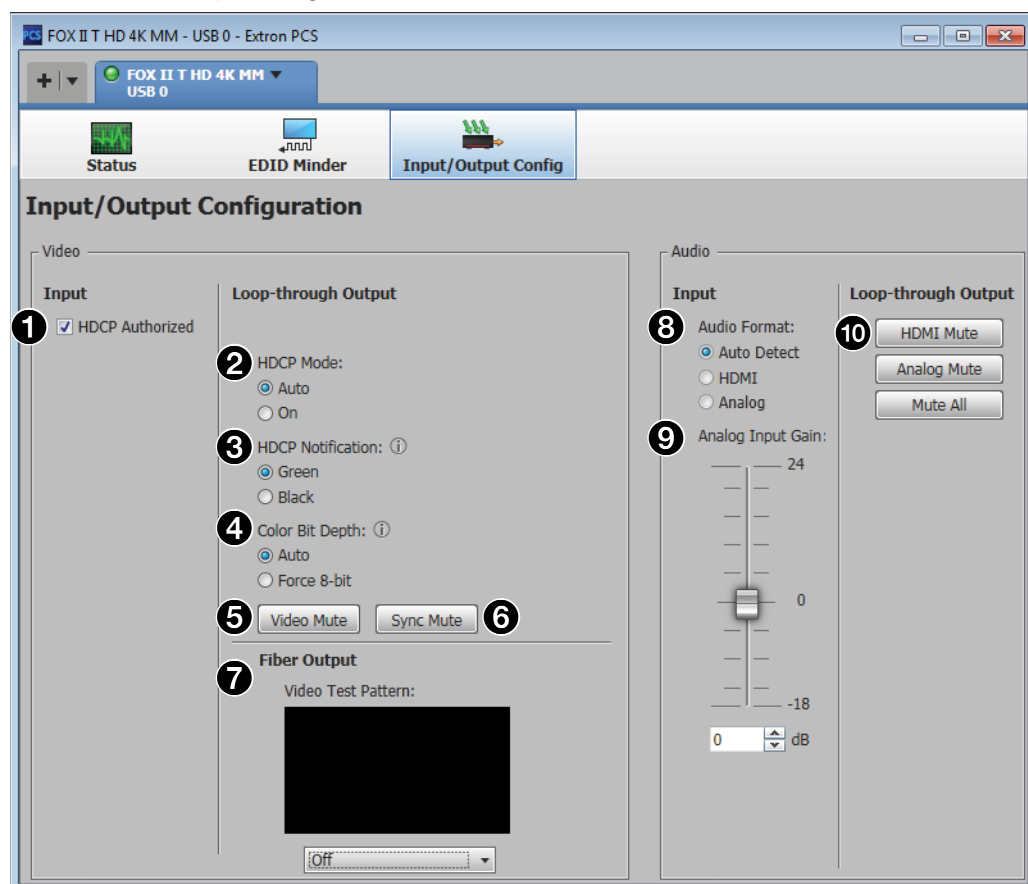


Figure 16. Input/Output Configuration Window

- 1 HDCP Authorized checkbox** — Select for the transmitter to act as an ☒ **HDCP Authorized**. Clear if you do not desire the transmitter to act as an HDCP-authorized device. An HDCP authorized device allows an HDMI source to output HDCP-encrypted video.

A non-authorized setting is useful for video sources that always encrypt their output if the transmitter is HDCP capable. If the display connected to the receiver is not HDCP compliant, this automatic encryption would result in no display.

- 2 HDCP Mode radio buttons** — Select the **Auto** radio button for the transmitter to follow the input video HDCP encryption status on the Loop-through connector. Select **On** to always encrypt the loop-thru output video regardless if the input video is encrypted or not.
- 3 HDCP Notification radio buttons** — Select either the **Green** or **Black** radio button to select how the transmitter displays HDCP notification on a monitor connected to its Loop-through output port.

The HDCP notification function in the transmitter enables a connected display to show a green or black screen if the transmitted video is HDCP encrypted, and the display is not HDCP capable.

- ④ **Color Bit Depth radio buttons** (see figure 16 on the previous page) — Select the **Auto** radio button for the transmitter to automatically follow the input bit depth. Select **Force 8-bit** to constrain the bit depth.

Color Bit Depth:
☒ Auto
☐ Force 8-bit

- ⑤ **Video Mute button** — Click this button to toggle the video mute on and off for the transmitter Loop-through output port. Video mute sends black video while maintaining sync timings from the input video signal. Embedded audio continues to be output.

Video Mute

- ⑥ **Sync Mute button** — Click this button to toggle the video mute on and off for the transmitter Loop-through output port. Sync mute disables the sync output, allowing the display to go blank and, eventually (depending on the timeout parameters set in the connected display) go into standby or sleep mode. Embedded audio is also muted.

Sync Mute

NOTE: Video Mute cancels Sync Mute and Sync Mute cancels Video Mute.

- ⑦ **Video Test Pattern drop-down list** — Click the **Video Test Pattern** drop-down list to select among 720p and 1080p color bars for the transmitter to send to the receiver on the fiber cable. Or select **Off** to transmit the digital video that is input on the HDMI input port.

Video Test Pattern:



- ⑧ **Audio Format radio buttons** —

Auto Detect radio button — Transmit the embedded digital audio if detected, otherwise transmit analog audio.

Audio Format:
☒ Auto Detect
☐ DisplayPort
☐ Analog

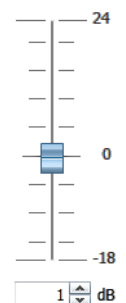
720p @60Hz Color Bars
Off
720p @60Hz Color Bars
1080p @60Hz Color Bars

HDMI radio button — Transmit the embedded digital audio.

Analog radio button — Transmit the analog audio.

- ⑨ **Analog Input Gain slide control** — Click and slide the **Analog Input Gain slide control** to vary the input audio gain or attenuation value on the analog input only, from -18 dB to +10 dB in 1 dB increments.

Analog Input Gain:



NOTE: As an alternative, you can also either:

- Click the up arrow (▲) and down arrow (▼) buttons to step the level up and down.
- Click and highlight the value displayed in the **dB** field (1 dB) and type in the desired numeric level.

- ⑩ **Loop-through Output Mute buttons** — Click the **Mute** buttons to toggle the following mute functions on and off:

HDMI Mute — Mute the signal on the Loop-through HDMI Output port.


Analog Mute — Mute the signals on both Loop-through analog audio output ports.

Mute All — Mute the signals on the Loop-through HDMI Output port and both analog audio output ports.

Loop-through Output

HDMI Mute
Analog Mute
Mute All

Device Menu

The device menu is accessed by clicking the  icon on the device tab above the menu bar.

- **Disconnect** — Disconnects the Product Configuration Software from the unit while leaving the program active.
- **Settings** — Opens the **Unit Information** dialog box (see figure 17), which provides general information about the transmitter.

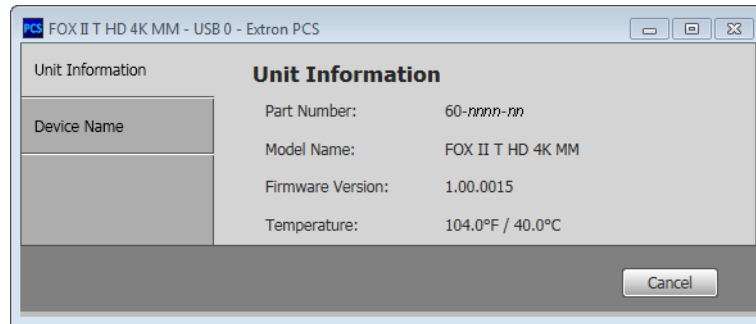
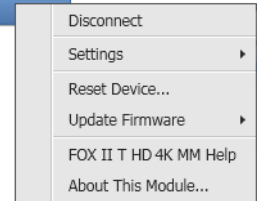


Figure 17. Unit Information Dialog Box

The Model Name can be changed to a custom value or reset to the default value by clicking the **Device Name** tab, opening the **Device Name** dialog box (see figure 18). The **Apply** button becomes selectable when you have entered a name in the **Enter a device name:** field.

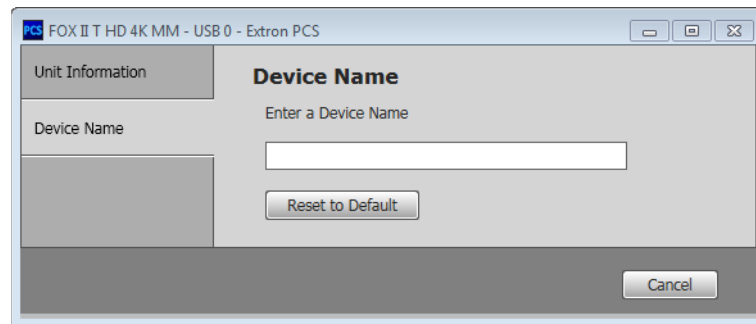


Figure 18. Device Name Dialog Box

- **Reset Device ...** — Opens a dialog box (see figure 19) that allows you to reset the transmitter. Reset returns all settings to their default values.

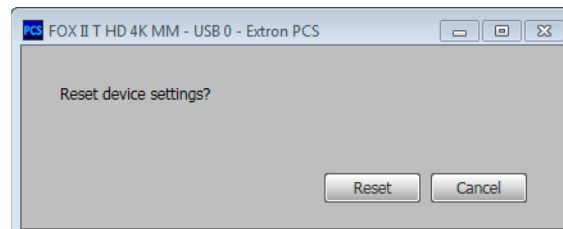


Figure 19. Reset Device Dialog Box

- **Update Firmware ...** — Disconnects the Product Configuration Software from the unit and calls the Firmware Loader utility in the background (see [Updating the Firmware](#), on the next page).
- **About This Module ...** — Provides the version number of the software.

Updating the Firmware

The Product Configuration Software can call the Firmware Loader utility, which provides a way to replace the transmitter firmware without taking the unit out of service.

NOTE: Upgrading the firmware does not overwrite the current configuration.

Update the unit firmware as follows:

1. Perform steps 1 through 7 of **Installing the Software**, on page 20, to download the firmware upgrade from the Extron website.
2. Click **Run** in the **File Download and Security Warning** dialog boxes (see **figure 20, ①** on the next page). The PC downloads the firmware update from the Extron website and starts the Extron Installation Program to extract the firmware file.
3. Click **Finish** (②). The program extracts the firmware files and places them in a folder identified in the InstallShield Wizard.

ATTENTION:

- The firmware file must have an .s19 extension. Other file types can cause the transmitter to stop functioning.
- Le firmware doit avoir une extension .S19. D'autres types de fichiers peuvent nuire au fonctionnement de l'émetteur.

NOTES:

- **Note the folder to which the firmware file is saved.** When downloaded from the Extron website, the firmware is placed in a subfolder of:
 - **64-bit OS:** C:\Program Files (x86)\Extron\Firmware.
 - **32-bit OS:** C:\Program Files\Extron\Firmware.
- The original factory-installed firmware is permanently available on the unit. If the attempted firmware upload fails, the unit reverts to the factory-installed firmware.

4. Click **Finish** (③) to exit the program.
5. Connect the computer to the front panel Configuration port (see **Configuration port** on page 8) of the unit to be updated.

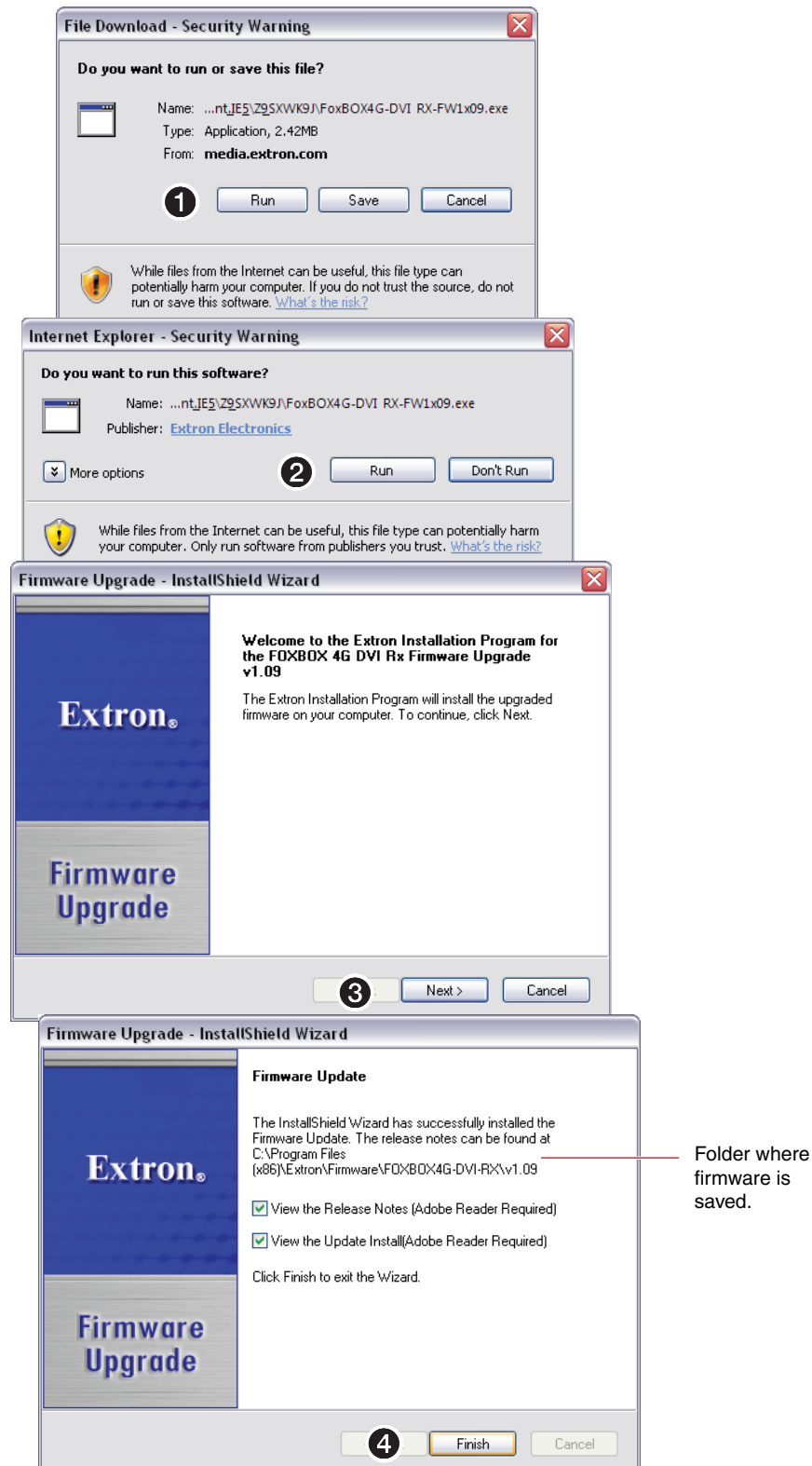



Figure 20. Downloading Firmware Upgrade Files

6. Start the Product Configuration Software and connect to the unit (see [Starting the Program](#) on page 22).
7. On the device tab, click  > **Update firmware**. The software asks you to confirm that you want to disconnect it from the unit (see figure 21).
8. Click **Continue** (❶). The Product Configuration Software disconnects itself from the unit and calls the Firmware Loader utility in the background. The **Update Firmware** dialog box appears.

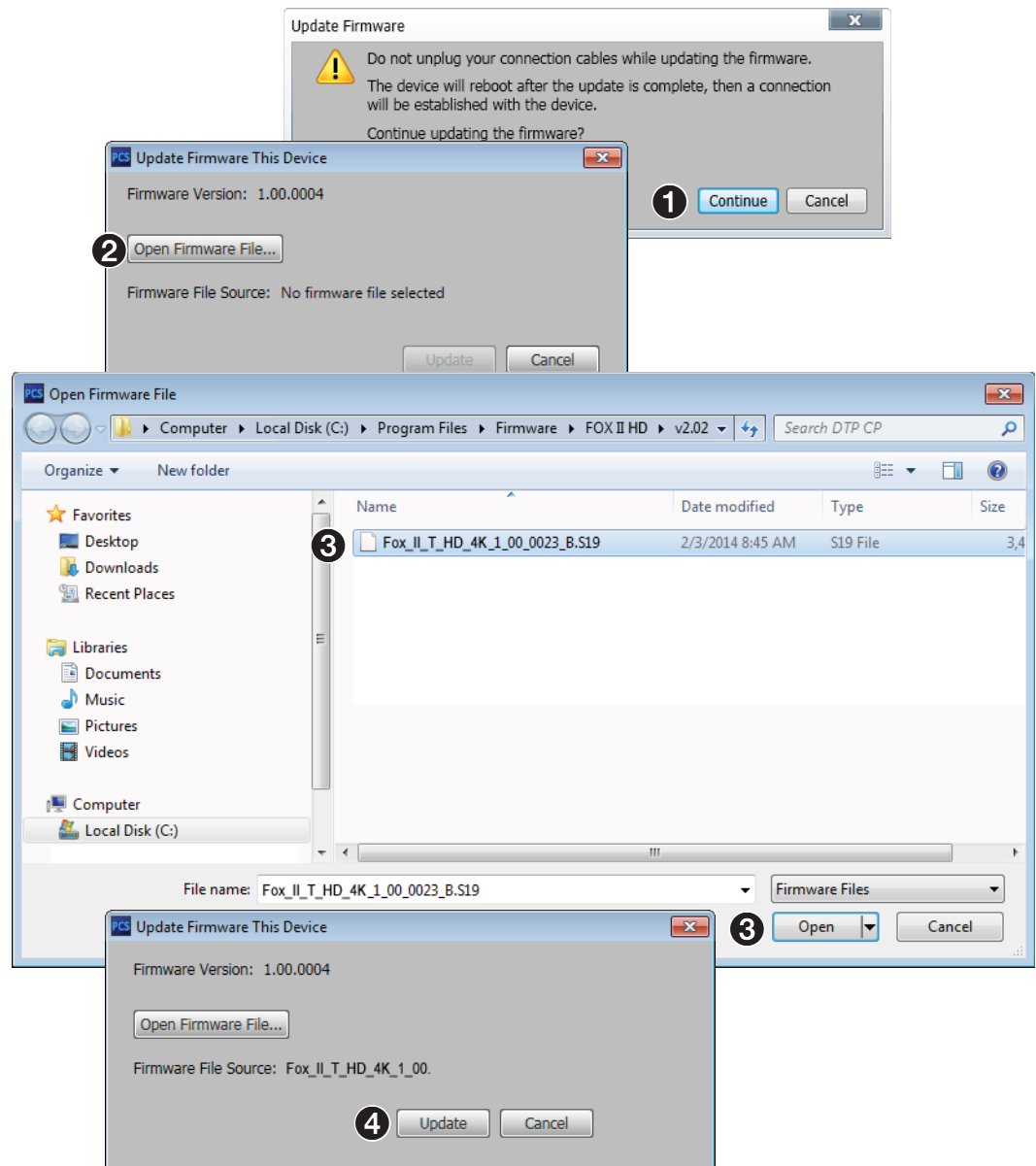


Figure 21. Updating Firmware

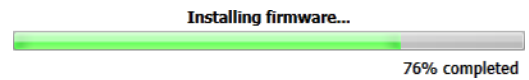
9. Click **Open Firmware File** (❷). The **Open** dialog box opens.
10. Navigate to the folder where you saved the firmware upgrade file. Select the file and click **Open** (❹). The **Update Firmware This Device** dialog box returns to the top.

11. Click **Update** (see [figure 21](#), ④ on the previous page).

The software advises you that you are about to reprogram the unit firmware.

12. Click **OK** to continue.

The Firmware Loader utility tests the connection, installs the update, and then verifies the firmware.



At the conclusion of the process, the utility reports **Update Complete** and prompts you to reconnect to the device (see figure 20).

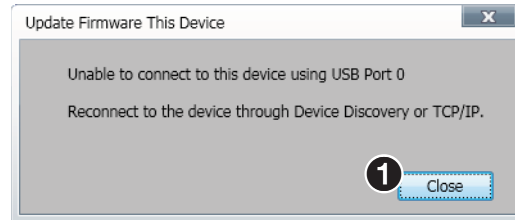
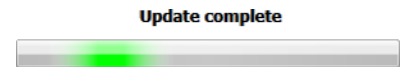


Figure 22. Reconnect Message

13. Click **Close** (①). The Product Configuration Software window returns to the front, showing the **Device Discovery** window (see [figure 13](#) on page 22).
14. Reconnect the program as described in [Starting the Program](#) on page 22.

Unit Mounting

Mounting the Unit

ATTENTION:

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

The 1U high, half-rack width unit can be placed on a tabletop or mounted on a rack shelf, or under or through a desk or other furniture.

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 compatible rack or furniture mounting kit, listed on the Extron website (www.extron.com), in accordance with the directions included with the kit. For rack shelf mounting, also see “UL Rack-Mounting Guidelines,” below.

Rack-Mounting UL Guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the installation of the FOX II T HD 4K into a rack.

- **Elevated operating ambient** — If 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 +122 °F (+50 °C) maximum ambient temperature (T_{ma}) specified by Extron.
- **Reduced air flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable earthing (grounding)** — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (such as the use of power strips).

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 Asia Pte Ltd
135 Joo Seng Road, #04-01
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Singapore 368363
Singapore

Middle East:

Extron Middle East
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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
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.

Extron Headquarters	Extron Europe	Extron Asia	Extron Japan	Extron China	Extron Middle East	Extron Korea	Extron India
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