

FOX3 T 101 and FOX3 R 101

Fiber Optic HDMI Transmitter and Receiver



Safety Instructions

Safety Instructions • English

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

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

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

تعليمات السلامة • العربية

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Sicherheitsanweisungen • Deutsch

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

Instrucciones de seguridad • Español

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

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

Instructions de sécurité • Français

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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

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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, zgodności 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.

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

安全说明 • 简体中文

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

注意: 产品上的这个标志意在提示用户, 设备随附的用户手册中有重要的操作和维护(维修)说明。

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

安全記事 • 繁體中文

警告: 若產品上使用此符號, 是為了提醒使用者, 產品機殼內存在未隔離的危險電壓, 可能會導致觸電之風險。

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。

安全上のご注意 • 日本語

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

안전 지침 • 한국어

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

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

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FCC Class 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.

Battery Notice

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

CAUTION: Risk of explosion. Do not replace the battery with an incorrect type. Dispose of used batteries according to the instructions.

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

Class 1 Laser Product

Any service to this product must be carried out by Extron 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 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.

Software Commands

Commands are written in the fonts shown here:

```
^ARMerge Scene,,0p1 scene 1,1^B 51 ^W^C.0  
[01]R000400300004000080000600[02]35[17][03]  
[Esc][X1]*[X17]*[X20]*[X23]*[X21]CE←
```

NOTE: For commands and examples of computer or device responses used in this guide, the character “0” is 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 *italics* 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 FOX3 T 101 and FOX3 R 101 output continuous invisible light (Class 1 rated), which may be harmful to the eyes; use with caution.

AVERTISSEMENT : Le FOX3 T 101 et FOX3 R 101 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

This guide contains information about the Extron FOX3 T 101 and FOX3 R 101 fiber optic extenders.

Product Description

The FOX3 T 101 transmitter and FOX3 R 101 receiver are ultra-high performance fiber optic extenders for long haul transmission of the following over one fiber optic cable:

- **Uncompressed** HDCP-compliant 4096x2160 or 3840x2160 (UHD) @ 30 Hz HDMI video over one fiber optic cable (see [figure 1](#) on page 2).

Or

Visually lossless HDCP-compliant 4096x2160 or 3840x2160 (UHD) @ 60 Hz HDMI video over one fiber optic cable

- 2-CH LPCM audio

The transmitter and receiver extend HDMI signals up to:

- 20 km (12.4 miles) for the singlemode cables
- 500 m (1640 feet) with 50 µm OM4 4700 MHz bandwidth laser optimized multimode cables

See [Fiber Cable Transmission Modes](#) on page 3.

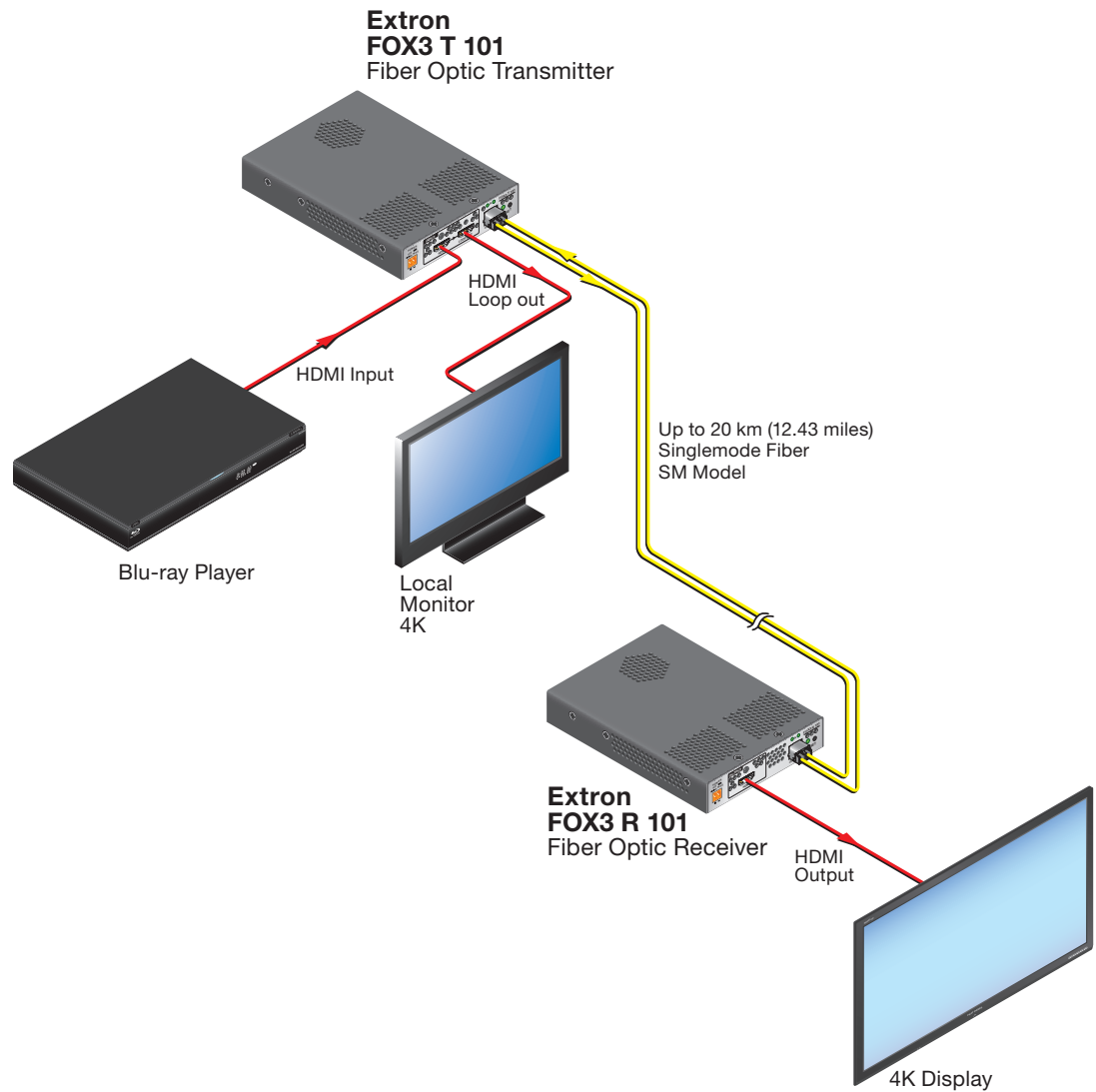


Figure 1. Typical FOX3 101 Transmitter and Receiver Application

Transmitter

The FOX3 T 101 transmitter accepts HDMI video, at a resolution of up to 4K (4096x2160 @ 60 Hz). The video input can also include embedded audio. The transmitter also loops the HDMI input through for a local monitor.

The transmitter converts the HDMI video into a proprietary data stream and outputs it as optical signals via fiber optic small form factor pluggable (SFP) modules on an LC connector to a compatible Extron FOX3 fiber optic receiver. The transmitter has a built-in color bars test pattern to assist in setting up the display equipment.

Receiver

The FOX3 R 101 receiver accepts an optical signal on one LC connector from a compatible fiber optic FOX3 transmitter. The receiver is compatible with all Extron FOX3 transmitters.

The receiver outputs HDMI video and digital audio (embedded in the HDMI output). The video output of the receiver is a lossless HDMI image up to 4K (4096x2160 @ 60 Hz), including 1080p @ 60 Hz with Deep Color.

Both Units

The transmitter and receiver can be configured and controlled via the front panel USB port using Simple Instruction Set (SIS) control and Product Configuration Software (PCS). Both units have video, fiber light status, and lost-light alarm indicators.

System Compatibility

The FOX3 T 101 transmitter and FOX3 R 101 receiver are compatible with all FOX3 endpoints, FOX3 matrix frames, and the PowerCage 411.

NOTE: The FOX3 products are **not** compatible with legacy FOX, FOXBOX, FOX II, PowerCage 401 FOX, or PowerCage 1600 FOX products.

Fiber Cable Transmission Modes

The transmitter and receiver are further categorized by the type of fiber optic cable, multimode or singlemode, which define the effective range of transmission:

Multimode — Long distance, up to 500 m (1640 feet) (depending on the fiber cable)

Singlemode — Very long distance, up to 20 km (12.4 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

Transmitter

- **Extends HDMI video and embedded audio signals over fiber optic cabling.**
- **Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling over one fiber.**
- **Supported HDMI 2.0 specification features include data rates up to 18 Gbps, Deep Color up to 10-bit, and two-channel LPCM audio.**
- **HDCP 2.3 compliant**
- **Buffered HDMI input loop-through** — Provides an output signal to drive a local monitor, eliminating the need for a separate distribution amplifier.
- **User-selectable HDCP authorization** — Allows the transmitter to appear HDCP compliant or non-HDCP compliant to the connected source.
- **Key Minder continuously verifies HDCP compliance for quick, reliable switching** — Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments.
- **EDID Minder automatically manages EDID communication between connected devices** — EDID Minder ensures that all sources power up properly and reliably output content for display.
- **HDCP Visual Confirmation** — When HDCP encrypted content is transmitted to a non-HDCP compliant display, a full-screen green signal is sent to the display for immediate visual confirmation that protected content cannot be viewed on that display.
- **Front panel USB C configuration port** — Enables easy system configuration without having to access the rear panel.
- **Real-time status LED indicators for troubleshooting and monitoring** — Front and rear panel LEDs verify signal presence, HDCP authentication, fiber link status, and power.
- **Easy setup and commissioning with Extron PCS - Product Configuration Software** — Conveniently configures multiple products using a single software application.
- **Internal color bars test pattern for calibration and setup** — Simplifies setup and installation by providing a video signal when a source is unavailable.
- **Compatible with Extron FOX3 Series matrix switchers** — Creates HDCP-compliant signal distribution systems.
- **Industry standard LC connectors provide reliable physical connectivity and precise fiber core alignment.**
- **Available as an 850 nm multimode model for moderate-range transmissions up to 500 m (1640 feet) and a 1310 nm singlemode model for extreme distances up to 20 km (12.4 miles).**
- **1-inch (2.5 cm) high, quarter-rack width mountable metal enclosure.**
- **External Extron Everlast power supply** — Provides worldwide power compatibility, with high demonstrated reliability and low power consumption for reduced operating cost.
- **Extron Everlast Power Supply is covered by a 7 year parts and labor warranty.**

Receiver

- **Receives HDMI video and embedded audio signals over fiber optic cabling.**
- **Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling over one fiber.**
- **Supported HDMI 2.0 specification features include data rates up to 18 Gbps, Deep Color up to 10-bit, and two-channel LPCM audio.**
- **HDCP 2.3 compliant**
- **User-selectable HDCP authorization** — Allows the transmitter to appear HDCP compliant or non HDCP compliant to the connected source.
- **Key Minder continuously verifies HDCP compliance for quick, reliable switching** — Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments.
- **HDCP Visual Confirmation** — When HDCP encrypted content is transmitted to a non-HDCP compliant display, a full-screen green signal is sent to the display for immediate visual confirmation that protected content cannot be viewed on that display.
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- **Extron Everlast Power Supply is covered by a 7 year parts and labor warranty.**

Installation and Operation

This section details the installation of the FOX3 T 101 transmitter and FOX3 R 101 receiver, including:

- [Installation Overview](#)
- [Rear Panel Features](#)
- [Front Panel Features](#)
- [Connector and Cable Details](#)
- [Operation](#)

Installation Overview

Follow these steps to install and set up an Extron FOX3 T 101 transmitter and FOX3 R 101 receiver for operation:

- Turn off all of the equipment. Ensure that the video source and the output display are all turned off and disconnected from the power source.
- Mount the transmitter and receiver (see [Equipment Mounting](#) on page 35).
- Connect the cables and configure the units (see [Rear Panel Features](#)).
- Plug in the power supplies, then turn on the display and the input.

Rear Panel Features

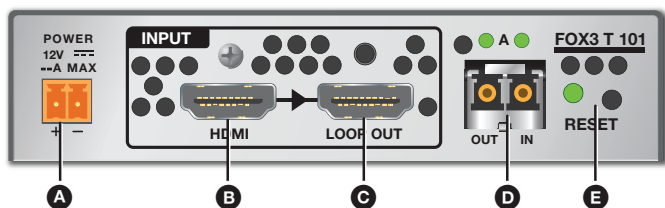


Figure 2. FOX3 T 101 Rear Panel

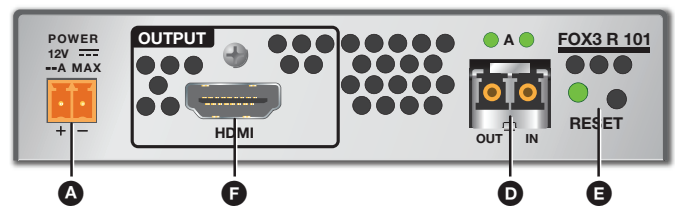


Figure 3. FOX3 R 101 Rear Panels

- | | | |
|----------------------|------------------------------|-----------------------|
| A Power inlet | C HDMI Loop Out | E Reset button |
| B HDMI input | D SFP module and LEDs | F HDMI Output |

- A Power inlet** — Connect the provided 12 VDC power supply to the rear panel captive screw power inlet (see [Power Connector](#) on page 8 before connecting power).
- B HDMI input (transmitter)** — Connect a digital video input to this HDMI port. The transmitter also accepts embedded digital audio on this port (see [HDMI Connectors](#) on page 9 to use the included Extron Lock-It Lacing Bracket).
- C HDMI Loop Out (transmitter)** — If desired, connect a local monitor to this HDMI port (see [HDMI Connectors](#) to use the included Extron Lock-It Lacing Bracket).

D SFP module and LEDs — (see [figure 2](#) and [figure 3](#) on page 6)

⚠ WARNING: The units output 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 produit 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 the proper fiber cables for the transmitter and receiver are used. Typically, singlemode fiber has a yellow jacket and multimode cable has an orange or aqua jacket.
- See figure 4 for fiber cable connections. Connect the transmitter to a receiver in one of two ways:
 - One way (transmitter to receiver) only, perform step 1.
 - Two way (transmitter to receiver and return), perform steps 1 and 2.

- 1 Port A Out (required)** — For all one-way video and digital audio from the transmitter to the receiver, connect a fiber optic cable to the transmitter Out LC port.

Connect the opposite end of this fiber optic cable to the receiver Port A In LC port or to any other compatible Extron FOX3 device.

- 2 Port A In (optional)** — For one-way return from the receiver to the transmitter, connect a fiber optic cable to the In LC port.

Connect the opposite end of this fiber optic cable to the Port A Out LC port on a receiver or to any other compatible Extron FOX3 device.

SFP Link LEDs —

- Transmit Optical OUT LED lights solid green when powered and lights off when there is no power on the endpoint.
- Receive Optical IN LED lights solid green when light is present and lights off when there is no power or light present.

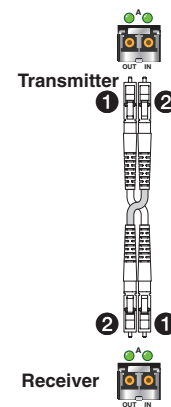


Figure 4. Connection

- E Reset button** — Initiates two levels of resets. Use a pointed stylus, ballpoint pen, or small screwdriver to access the recessed button (see [Reset](#) on page 11 for detailed reset information).

- F HDMI Output (receiver)** — Connect an HDMI display to this port (see [HDMI Connectors](#) on page 9 to use the included Extron Lock-It Lacing Bracket).

Connector and Cable Details

Power Connector

CAUTION: The DC output cables must be kept separate from each other while the power supply is plugged in. Remove power before wiring

ATTENTION : Les câbles de sortie CC doivent être séparés les uns des autres tant que la source d'alimentation est branchée. Coupez l'alimentation avant d'effectuer les raccordements.

ATTENTION:

- Do not connect any external power supplies until you have read the Attention notifications starting below.
- Veuillez lire les encadrés « Attention » à partir ci-dessous avant de brancher une source d'alimentation externe.

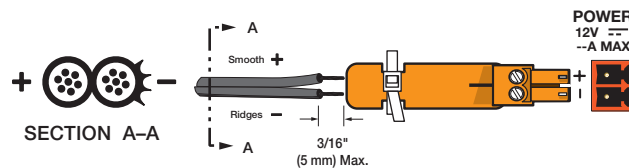


Figure 5. Power Connector Wiring

1. Cut the DC output cord to the length needed.
2. Strip the jacket to expose 3/16 inch (5 mm) of the conductor wire (see figure 5).
3. Ensure the connections have the correct polarity as shown in the figure above. The wire with ridges is the ground wire.
4. Slide the exposed ends of the wire into the captive screw connector and secure by tightening the screws.
5. Use the supplied tie wrap to strap the power cord to the extended tail of the connector.

ATTENTION:

- The length of the exposed wires in the stripping process is important. The ideal length is 3/16 inches (5 mm). Any longer and the exposed wires may touch, causing a short circuit between them. Any shorter and the wires can be easily pulled out even if tightly fastened by the captive screws.
- La longueur des câbles exposés est importante lorsque l'on entreprend de les dénuder. La longueur idéale est de 5 mm (3/16 inches). S'ils sont trop longs, les câbles exposés pourraient se toucher et provoquer un court-circuit. S'ils sont trop courts, ils peuvent être tirés facilement, même s'ils sont correctement serrés par les borniers à vis.
- Do not tin the wire leads before installing into the connector. Tinned wires are not as secure in the connector and could be pulled out. They may also break after being bent several times.
- Ne pas étamer les conducteurs avant de les insérer dans le connecteur. Les câbles étamés ne sont pas aussi bien fixés dans le connecteur et pourraient être tirés. Ils peuvent aussi se casser après avoir été pliés plusieurs fois.

ATTENTION:

- Always use a power supply provided by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
 - Utilisez toujours une source d'alimentation fournie ou recommandée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute certification de conformité réglementaire, et peut endommager la source d'alimentation et l'unité.
-
- If not provided with a power supply, this product is intended for use with a UL Listed power source marked "Class 2" or "LPS" rated 12 VDC, 2.0 A minimum.
 - Si le produit n'est pas fourni avec une source d'alimentation, il doit être utilisé avec une source d'alimentation certifiée UL de classe 2 ou LPS avec une tension nominale de 12 Vcc, 2.0 A minimum.
-
- 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 725 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to building structure or similar structure.
 - Cette installation doit toujours être conforme aux dispositions applicables du Code américain de l'électricité (National Electrical Code) ANSI/NFPA 70, article 725, et du Code canadien de l'électricité, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.
-
- 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 identify the power cord negative lead (see page 8).
 - 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 (voir [figure 5](#)).
-
- To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.
 - Pour vérifier la polarité avant la connexion, brancher l'alimentation hors charge et mesurer sa sortie avec un voltmètre.

HDMI Connectors

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

- Limit or avoid the use of adapters.
- Use only cables specifically intended for HDMI or DVI signals.

To securely fasten an HDMI cable to a device:

1. Plug the HDMI cable into the panel connection (see figure 6, **1**).

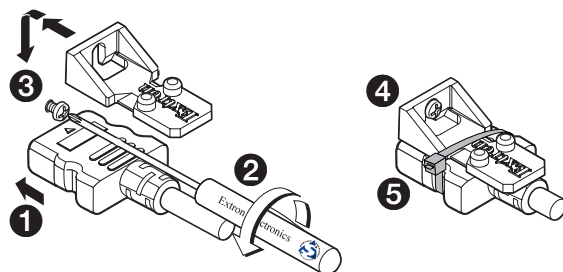


Figure 6. Installing the LockIt Lacing Bracket

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.
3. Place the LockIt lacing bracket on the screw and against the HDMI connector, then tighten the screw to secure the bracket (**3**).

ATTENTION:

- Do not overtighten the HDMI connector mounting screw. The shield to which it fastens 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.

4. Loosely place the included tie wrap around the HDMI connector and the LockIt lacing bracket (**4**).
5. 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**).

Front Panel Features

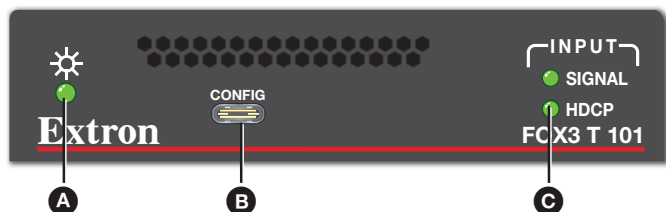


Figure 7. FOX3 T 101

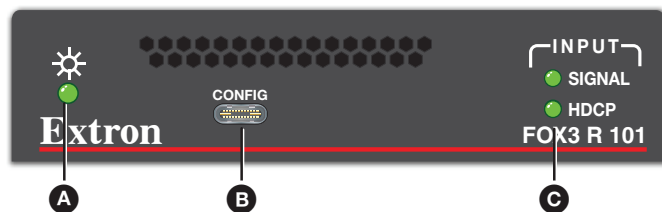


Figure 8. FOX3 R 101

- A Power LED** — The unit is receiving power and is operational.
- B Configuration port** — This USB-C port is used to configure the unit and to update firmware.

NOTE: The IP address is 203.0.113.22. It cannot be changed.

- C Input LEDs** —
 - **Signal LED** — Lights when the unit detects an input video signal.
 - **HDCP LED** — Lights when the input signal is HDCP encrypted.

Operation

After the transmitter, receiver, and the 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 are properly connected to the FOX3 pair, and power is applied to the FOX3 pair and the display **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.

Configuration and operation of the transmitter and receiver is accomplished via **SIS Configuration and Control** starting on page 14, the **Configuration Software** starting on page 21, and the **Internal Web Page** starting on page 29.

If the internal temperature of the transmitter or receiver exceeds the safety margins, the units initiate a thermal shut down. To avoid this overheat condition, be sure that the fan and vents are clear.

NOTE: If this condition occurs, the unit enters thermal protection and shuts down. When this happens, the power LED flashes. The power must be removed and reconnected to restore it to operation.

Reset

The rear panel **Reset** button initiates two levels of resets from the rear panel reset button. Use a pointed stylus, ballpoint pen, or small screwdriver to access the recessed button.

See **figure 9** on page 11 and the **Reset Modes** table for a summary of the resets.

ATTENTION:

- Review the reset modes carefully. Some reset modes delete all user loaded content and revert the device to default configuration.
- Analysez minutieusement les différents modes de réinitialisation. Certains modes de réinitialisation suppriment l'intégralité du contenu chargé de l'utilisateur et remettent l'appareil au mode de configuration par défaut.

Perform resets of the unit as follows (see figure 9):

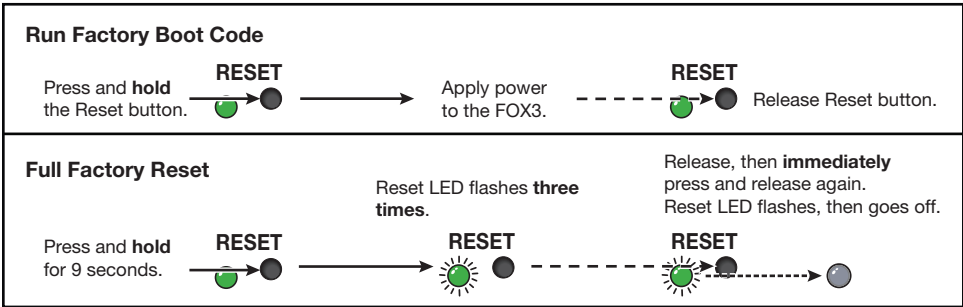


Figure 9. Resets

Reset Modes			
Mode	Activation	Result	Purpose and Notes
Run Factory Boot Code	Hold in the recessed rear panel Reset button while applying power to the unit.	The device reverts to the factory default firmware for a single power cycle.	Revert to the factory default firmware for a single power cycle if incompatibility issues arise with user-loaded firmware. All user files and settings are maintained.
	NOTE: Do not operate with the default firmware loaded by this reset. Use it only to load the most current firmware to the device.		
Full Factory Reset*	Hold in the Reset button until the Power LED blinks three times (once at 3 seconds, again at 6 seconds, again at 9 seconds). Then, release and press the Reset button again within 1 second*.	Performs a complete reset to factory defaults (except the firmware). • Clears port configurations. • Resets all IP options. • Clears all user settings. • Clears all passwords. • Clears all files from the unit. • The Reset LED on the rear panel of the unit flashes four times in succession.	Start over with default configuration and uploading, and also to replace events. Equivalent to SIS command ZQQQ (see Resets on page 19).
NOTES: • *For Full Factory Reset, nothing happens if the momentary press does not occur within 1 second. • The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of a complete system reset, the passwords convert to the default, which is extron (see Passwords Panel on page 32 to change a password).			

Configuration

NOTE: Transmitters and receivers can be configured via PCS (see [Configuration Software](#) (see page 21) and SIS commands (see [SIS Configuration and Control](#) on page 14). Product help files are available in PCS when a device is connected or an offline device is selected.

EDID

The FOX3 T 101 uses EDID Minder, which ensures that a source device connected to the transmitter input continuously sees the EDID of a sink device, even if the sink is not physically connected. By default, the EDID is set to 1080p @ 60 Hz with 2-channel audio. There is one slot to upload custom EDID to the device.

Use PCS to upload EDID to the device (see the *FOX3 T 101 and FOX3 R 101 Help File*).

HDCP

Input

The HDMI input negotiates and authenticates HDCP with the source device if the source requires HDCP encryption. The authentication process is repeated whenever the stored EDID is changed or updated, which is indicated by pulling HPD low.

HDCP support can be disabled for the input using SIS commands (see [HDCP authorized device](#) on page 20) or PCS (see the *FOX3 T 101 and FOX3 R 101 Help File*).

Outputs

The output is pre-authenticated and encrypted, in accordance with the configured HDCP output mode using PCS (see the *FOX3 T 101 and FOX3 R 101 Help File*).

If an output requires encryption, but the connected sink device cannot be authenticated, that output displays a green screen.

HDCP output modes

- **Follow Input** (default) — Output authentication and encryption follows input status. Authentication times out after ~10 seconds.
- **Always Encrypt Output** — The output is always authenticated and encrypted. Authentication times out after ~10 seconds.
- **Follow Input (with continuous trials)** — Output authentication and encryption follows input status with no authentication timeout.
- **Always Encrypt Output (with continuous trials)** — The output is always authenticated and encrypted with no authentication timeout.
- **Disable Authentication** — The output is never authenticated or encrypted. When an HDCP encrypted input signal is detected, the display always shows a green screen.

Audio Mute

Mute audio on the Loop Out and HDMI output individually via PCS (see the *FOX3 T 101 and FOX3 R 101 Help File*) or SIS commands (see [Audio mute](#) on page 18).

Audio Output Volume

Adjust the overall output volume level for the embedded LPCM-2CH audio on the HDMI output via PCS (see the *FOX3 T 101 and FOX3 R 101 Help File*) or SIS command (see [Audio output volume](#) on page 20).

The audio level is adjusted from 100% to 0% in 1 dB steps.

SIS Configuration and Control

This section describes the remote control operation of the FOX3 T 101 transmitter and FOX3 R 101 receiver, including:

- **Host Control Ports**
- **Simple Instruction Set Control**
- **Command and Response Table for SIS Commands**

The FOX3 transmitter and receiver can be configured using SIS commands, PCS, or the embedded web page. The FOX3 devices can be controlled using SIS commands or PCS. Configure and control the FOX3 devices remotely via a host computer or other device (such as a control system) by connecting to the front panel USB port of the FOX3 device.

NOTE: SIS commands and Product Configuration Software functions are transmitter and receiver specific or may have different responses depending on the unit connected. Connect to the appropriate device for the command to work properly or to get the expected response.

Host Control Ports

The front panel USB-C Configuration port (see [figure 7](#) and [figure 8, B](#) on page 10) can be connected to a host computer for configuration using SIS commands via an SSH client and IP address **203.0.113.22** on port **22023**.

Establishing a Connection

Establish a network connection to a FOX3 device as follows:

1. Download the SSH software.
2. Open the SSH software.
3. Enter the IP address of the FOX3 device in the **Host Name or IP address** field.

NOTE: The IP address is **203.0.113.22**. It cannot be changed.

4. Enter **22023** in the **Port** field.
5. The FOX3 device is password protected, so the appropriate name, **admin** or **user**, and password must be entered.
 - If the login and password are correct, the device responds with a copyright message including the copyright year, the name of the product, firmware version, part number, and the current date and time.
 - If the login and password are incorrect, the **Login** prompt returns. Enter the **admin** or **user** name and password again.

NOTES:

- The FOX3 device is shipped password-protected. The factory configured passwords for all accounts on this device have been set to the device serial number.
- In the event of a complete system reset, the password converts to the default, which is **extron**. New passwords must be configured to secure the device.
- On password-protected connections, there are two levels of protection: administrator and user. Administrators have full access to all capabilities and editing functions. Users can view all settings with the exception of passwords.

Using verbose mode

SSH connections to a FOX3 device can be used to monitor changes that occur on the device, such as SIS commands from other SSH sockets or a serial port. For an SSH session to receive change notices from the device, the SSH session must be in verbose mode 1 or mode 3 (see the SIS command **Verbose mode** on page 19).

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 FOX3 101 device executes the command and sends a response to the host device. All responses from the FOX3 101 device 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.

Device-Initiated Power-Up Message

When the device completes start-up, it issues the following message to the host:

© Copyright 20yy, Extron Electronics FOX3 T (R) 101 MM (SM), Vx.xx, 60-nnnn-nn

- 20yy is the year of the copyright.
- Vx.xx is the firmware version number.
- 60-nnnn-nn is the part number.

Error Responses

When the FOX3 101 device receives a valid SIS command, it executes the command and sends a response to the host device. If the FOX3 101 device is unable to execute the command because the command is invalid or it contains invalid parameters, the FOX3 101 device returns an error response to the host. The error response codes are:

- | | |
|---|--|
| • E10 — Invalid command | • E22 — Busy |
| • E11 — Invalid preset number | • E24 — Privilege violation |
| • E13 — Invalid parameter | • E25 — Device not present |
| • E14 — Invalid for this configuration | • E26 — Maximum number of connections exceeded |
| • E17 — Invalid command for signal type | |
| • E18 — System or command timed out | • E28 — Bad file name or file not found |
| • E21 — Invalid room number | |

Timeout

Pauses of 10 seconds or longer between command ASCII characters result in a timeout. The command operation is aborted with no other indication.

Using the Command and Response Table

The command and response table begins below. Symbols are used throughout the table to represent variables in the command and response fields. Command and response 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										

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

Common symbol definitions

↵	=	Carriage return/line feed
•	=	space
↵ or	=	Carriage return (no line feed)
Esc or W	=	Escape key
X1	=	Video mute
	0	= Unmute (default)
	1	= Mute video only
	2	= Mute video and sync

NOTE: The FOX3 T 101 only has two video mute options, 0 = Unmute (**default**) and 1 = Mute video only. The FOX3 R 101 has all three options.

X3	=	Audio mute status	0	=	Unmute (default),	1	=	Mute
X4	=	Input video signal status	0	=	Not detected,	1	=	Detected
X5	=	Display input audio status	0	=	Not detected,	1	=	Detected
X6	=	Input HDCP status	0	=	No source detected			
			1	=	Source with HDCP detected (default)			
			2	=	Source with no HDCP present			
X7	=	Output HDCP status	0	=	No active sink detected			
			1	=	Sink detected, output encrypted			
			2	=	Sink detected, output not encrypted			
X9	=	Device type			TX or RX			
X17	=	Verbose mode	0	=	Clear/none (default)			
			1	=	Verbose mode			
			2	=	Tagged response for queries			
			3	=	Verbose mode and tagged responses for queries			
X18	=	Active fiber link	1	=	SFP A			
X19	=	Input HDCP authorization	0	=	HDCP authorized off	1	=	HDCP authorized on (default)
X20	=	Resolution and refresh rate	nnnn ^{Horizontal} xnnnn ^{Vertical} @xxHz					
			(example: 3840x2160@59.9Hz)					
			(0000x0000@000Hz = no input detected)					
X21	=	Detected audio input format	1	=	Digital			
X22	=	Detected video input color	0	=	Not detected			
			1	=	YUV	2	=	RGB space format
X23	=	Detected pixel clock	4-digit response with 0 padding (example: 297 = 0297MHZ)					
			(0000 = No pixel clock detected)					
X24	=	Audio output volume	Volume adjustment range 0% to 100%					
			(approximately 1% per step 0% to 100%, default 100%)					
X28	=	Fiber link detection	0	=	Not Detected	1	=	Detected
X29	=	Fiber optic mode	SM or MM					
X30	=	Enable or disable Echo	0	=	Disabled	1	=	Enabled
X34	=	Enable Telnet port 23	0	=	Off (default)	23	=	Telnet port 23 enabled
X35	=	Port number	Response is 5 digits with leading zeros, for example 00000 or 00023					

Command and Response Table for SIS Commands

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Transmitter and Receiver			
Video mute			
NOTE: The FOX3 T 101 only has two video mute options, 0 = Unmute (default) and 1 = Mute video only. The FOX3 R 101 has all three options.			
Mute output video only	1B	Vmt1↵	
Mute output video and sync	2B	Vmt2↵	
Unmute video and sync	0B	Vmt0↵	Default
View mute status	B Verbose mode 2/3	X1↵ VmtX1↵	
KEY: X1 = Video mute 0 = Unmute (default) 1 = Mute video only 2 = Mute video and sync			
Audio mute			
Enable audio mute	X2*1Z	AmtX2*1↵	
Example	1*1Z	Amt1*1↵	Digital audio (embedded on HDMI output) is muted.
Disable audio mute	X2*0Z	AmtX2*0↵	
Example	1*0Z	Amt1*0↵	
View mute status	Z	X3↵	
KEY: X2 = Audio output 1 = Digital out (Tx Loop Out or Rx HDMI Out) X3 = Audio mute status 0 = Unmute (default) 1 = Mute			
Information requests			
View firmware version	Q/q Verbose mode 2/3	x.xx↵ Ver 01*x.xx↵	
View full firmware version	*Q/q Verbose mode 2/3	x.xx.xxxx↵ Bld x.xx.xxxx↵	
View part number	N/n Verbose mode 2/3	60-xxxx-xx↵ Pno 60-xxxx-xx↵	
View Extron serial number	19I/i Verbose mode 2/3	Serial number↵ Inf19*Serial number↵	
View updated FPGA version	35Q/q Verbose mode 2/3	x.xx↵ Ver 35*x.xx↵	
View input video status	4S/s Verbose mode 2/3	X4↵ Sts04*X4↵	
View input audio status	5S/s Verbose mode 2/3	X5↵ Sts05*X5↵	
View input HDCP status	[Esc]IHDCP↵ Verbose mode 2/3	X6↵ HdcpI X6↵	
View output HDCP status	[Esc]OHDCP↵ Verbose mode 2/3	X7↵ HdcpO X7↵	
KEY: X4 = Input video signal status 0 = Not detected 1 = Detected X5 = Input audio status 0 = Not detected 1 = Detected X6 = Input HDCP status 0 = No source detected 1 = Source with HDCP detected (default) 2 = Source with no HDCP present X7 = Output HDCP status 0 = No active sink detected 1 = Sink detected, output encrypted 2 = Sink detected, output not encrypted			

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Transmitter and Receiver (continued)			
Information requests (continued)			
Information request	I Verbose mode 2/3	SFPALnk[X28]•SFPBLnk0•SigI[X4]•HdcpI[X6]•HdcpO0•AudI0•[X9]•[X29]↵ Inf00*SFPALnk[X28]•SFPBLnk0•SigI[X4]•HdcpI[X6]•HdcpO0•AudI0•[X9]•[X29]↵	
	Response description: Fiber link A•Fiber link B•Signal input•Input HDCP•Output HDCP•Input audio•Transmitter•Fiber mode↵		
	Example	SFPALnk1•SFPBLnk0•SigI1•HdcpI2•HdcpO0•AudI0•TX•MM↵	Signals are detected on the two fiber links, a signal is detected on the input, the input and output are HDCP devices, the digital audio input is selected, the device is a transmitter, and the fiber mode is singlemode.
KEY: [X4] = Input video signal status 0 = Not detected 1 = Detected [X6] = Display input HDCP status 0 = No source detected 2 = Source with HDCP detected (default) 3 = Source with no HDCP present [X7] = Output HDCP status 0 = No active sink detected 1 = Sink detected, output encrypted 2 = Sink detected, output not encrypted [X9] = Device type TX or RX [X28] = Fiber link detection 0 = Not detected 1 = Detected [X29] = Fiber optic mode SM or MM			
Telnet port			
Set Telnet port map	[Esc] Z[X34]PMAP↵	PmapZ[X35]↵	Set Telnet port map to [X34].
View Telnet port map	[Esc] ZPMAP↵	[X35]↵	
KEY: [X34] = Enable Telnet port 23 0 = Off (default) 23 = Telnet port 23 enabled. [X35] = Port number Response is 5 digits with leading zeros, for example 00000 or 00023.			
Echo for SIS over SSH (port 22023)			
Enable Echo	[Esc] 1ECHO↵	Echo1↵	Returns command entered with response.
Disable Echo	[Esc] 0ECHO↵	Echo0↵	Returns response only.
View Echo status	[Esc] ECHO↵	[X30]↵	
KEY: [X30] = Enable or disable Echo 0 = Off 1 = On (default)			
Verbose mode			
Set verbose mode	[Esc] [X17]CV↵	Vrb[X17]↵	
View verbose mode	[Esc] CV↵	[X17]↵	
NOTE: Verbose mode will revert back to default in the event of a power cycle, disconnect from dataviewer, or disconnect from the Ethernet.			
KEY: [X17] = Verbose mode 0 = Clear/none (default) 1 = Verbose mode 2 = Tagged response for queries 3 = Verbose mode and tagged responses for queries			
Resets			
Absolute system reset	[Esc] ZQQQ↵	Zpq↵	Master reset, resets IP address and subnet mask to default.
Reset unit settings	[Esc] ZXXX↵	Zpx↵	Resets unit to factory default.
Reset audio gain and attenuation	[Esc] ZA↵	Zpa↵	Reset audio gain and attenuation to default levels.

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Global unsolicited response			
Input change		Reconfig↵	Any change of the input frequency, during module install, or a power cycle.
Fiber link		Sts02*[X18]*[X28]↵	Any change in fiber link status.
Input video signal presence		SigI[X4]↵	Any change in input signal status.
Input HDCP		HdcpI[X6]↵	Any change in input HDCP status.
Output HDCP		HdcpO[X7]↵	Any change in output HDCP status.
KEY: [X4] = Input video signal status 0 = Not detected 1 = Detected [X6] = Input HDCP status 0 = No source detected 2 = Source with HDCP detected 3 = Source with no HDCP present [X7] = Output HDCP status 0 = No active sink detected 1 = Sink detected, output encrypted 2 = Sink detected, output not encrypted [X18] = Active fiber link 1 = SFP A [X28] = Fiber Link detection (SPF A IN LED) 0 = Not detected 1 = Detected			
NOTE: SFP A OUT LED is always active.			
Transmitter Only			
HDCP authorized device			
Set HDCP authorized device on	[Esc]E1HDCP↵	HdcpE1↵	
Set HDCP authorized device off	[Esc]E0HDCP↵	HdcpE0↵	
View HDCP authorized device	[Esc]EHDCP↵ Verbose mode 2/3	[X19]↵ HdcpE[X19]↵	Default: HDCP authorized on.
KEY: [X19] = Input HDCP Authorization 0 = HDCP authorized off 1 = HDCP authorized on (default)			
Input signal detection information			
View detected input signal information	35I/i Verbose mode 2/3	Res[X20]•AudI[X21]•VcsI[X22]•Pixcl[X23]↵ Inf35*Res[X20]•AudI[X21]•VcsI[X22]•Pixcl[X23]↵	
KEY: [X19] = Input HDCP Authorization 0 = HDCP authorized off 1 = HDCP authorized on (default) [X20] = Resolution and refresh rate nnnnHorizontalxnnnnVertical@xxHz (0000x0000@000Hz = no input detected) [X21] = Detected input audio format 1 = Digital [X22] = Detected video input color space 0 = Not detected 1 = YUV 2 = RGB [X23] = Pixel clock (in MHz) 4-digit response with 0 padding (example: 294 = 0294MHZ) (0000 = Not detected)			
Receiver Only			
Audio output volume			
Set volume	[X24]V	Vol[X24]↵	
Increment	+V	Vol[X24]↵	
Decrement	-V	Vol[X24]↵	
View volume status	V Verbose mode 2/3	[X24]↵ Vol[X24]↵	
KEY: [X24] = Audio output volume Volume adjustment range 0% to 100% (approximately 1% per step 0% to 100%, default 100%)			

Configuration Software

The FOX3 T 101 transmitter and FOX3 R 101 receiver can be easily configured using Extron Product Configuration Software (PCS). This section describes the software installation and communication (see the *FOX3 T 101 and FOX3 R 101 Help File* for detailed control information). The topics covered in this section are:

- [Software/Firmware Installation](#)
- [Connecting to PCS](#)
- [Software Overview](#)

Software/Firmware Installation

Visit www.extron.com to download and install the PCS software.

NOTES:

- Also download the latest versions of software and firmware for your product.
- An Extron Insider account is required to download and use PCS. Contact an Extron support representative, to obtain an Insider Account.

1. Mouse over the **Download** link at the top of the page (see figure 9, ①).

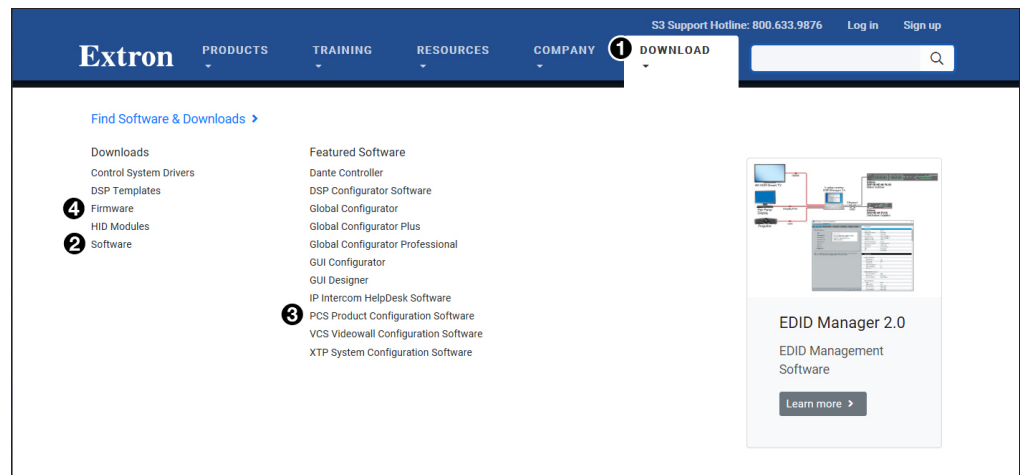


Figure 10. Software Links on Download Screen

2. Click the appropriate link on the drop-down list.

For software, either click the **Software** link (②) or, if the software is listed, click directly on that link (see the **PCS Product Configuration Software** link ③) and skip to **step 5** on page 22.

For firmware, click the **Firmware** link (④).

3. If there is no direct link to your software, click the **Software** link (②).

4. Scroll down to the alphabetic navigation bar (see figure 10).



Figure 11. Alphabetic Navigation Bar

5. Click the appropriate letter to locate the software or firmware.
6. Click **Download** and follow the on-screen instructions (see figure 11, ❶ for PCS).

Version	Release Date	New in the Current Release	Size	
4.3.0	Jul. 9, 2018	- Added support for HC 403 - Added language support for Spanish, Simplified Chinese, Japanese, German, and French - Ability to restore configuration to multiple devices across all IN1608 products	162.5 MB	❶ Download Login required

Figure 12. PCS Software Download

For Firmware:

Figure 13. Firmware Page with Alphabetic Navigation Bar

- a. Click the letter **F** from the alphabetic navigation bar (see figure 12, ❶).
 - b. Scroll down the page to find the firmware for the FOX3 T 101 and FOX3 R 101.
 - c. (Optional) Click **Release Notes** (❷) for more information about the firmware update.
 - d. Click **Download** (❸). The product download screen opens.
 - e. Enter the required user information and click **Download**. An executable (.exe) file is downloaded to the PC. Run this program to place the firmware on the PC for future use. Make a note of the folder where the firmware file was saved.
7. Install the software.
 - a. Navigate to the folder where the software file was downloaded.
 - b. Double-click the executable file and follow the on-screen directions to install the software.

For Firmware:

- To install via PCS, see **Update Firmware** in the **Device Menu** on page 28.
- To install via the internal web pages, see the **Firmware Panel** on page 33.

NOTE: Edit the time, select **Sync to PC**, so the date is updated on the unit **before** installing the firmware (see **Hardware Settings** on page 28).

Connecting to PCS

The Extron Product Configuration Software window opens with the **Device Discovery** panel open. Connect to the device using the **Device Discovery** panel or the **TCP/IP** panel.

Device Discovery Panel

The **Device Discovery** panel displays accessible Extron devices connected directly to the PC or to a LAN or WAN. Devices are identified and sorted by model, IP address, device name, or connection method.

1. Open the Product Configuration Software program from the desktop shortcut.
The Extron PCS window opens to the **Device Discovery** panel (see figure 13).

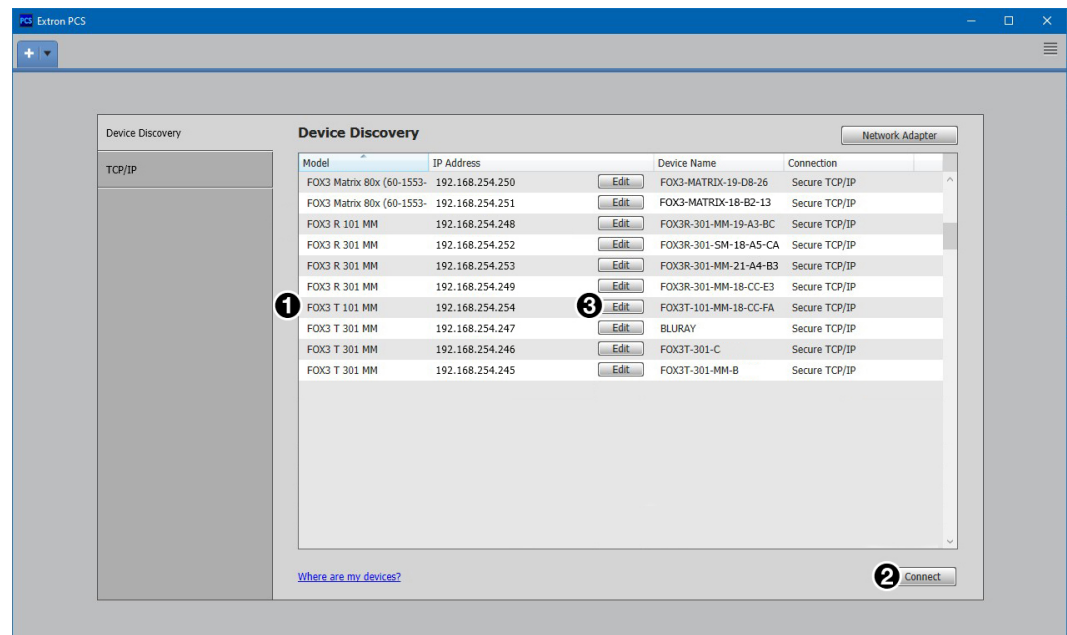


Figure 14. Device Discovery Panel

2. Select the FOX3 device by clicking on it to highlight it in the list (1).
3. Click **Connect** (2).

To edit the IP address:

1. Click on the **Edit** button (3). The **Communication Settings** box pens.
2. Click in the field to edit the address (see figure 14) .
3. Click **Apply** to complete and close.

Alternatively, click **Apply and Connect** to complete and connect to the device.

Click **Cancel** to close the box without changes.

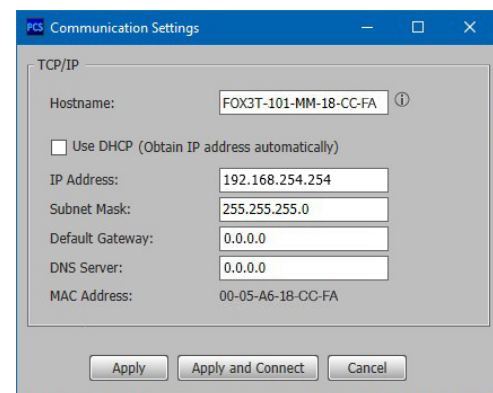


Figure 15. Communication Settings Box

TCP/IP Panel

The TCP/IP panel connects PCS to a specific device through Ethernet.

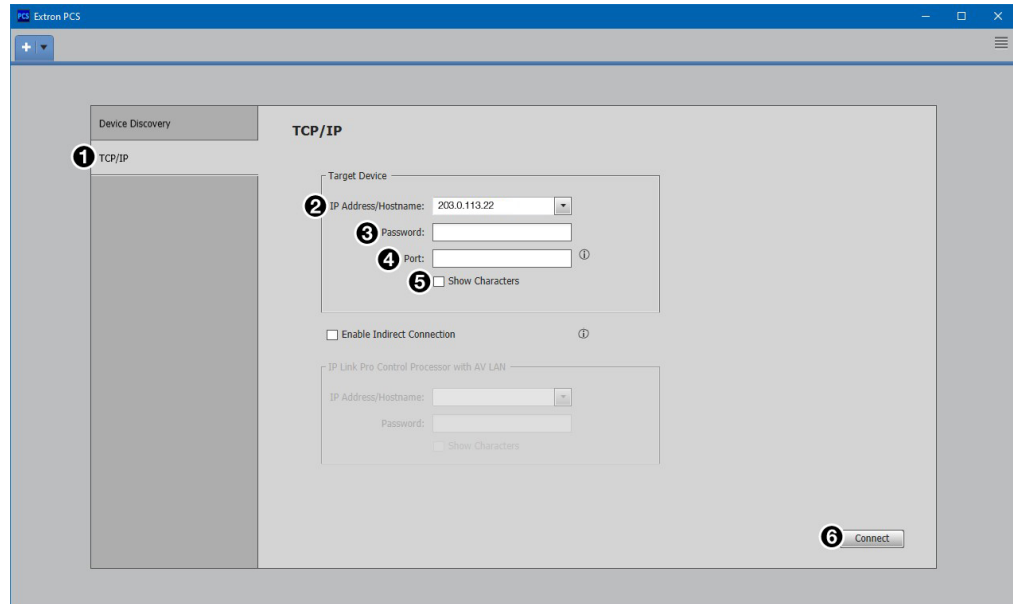


Figure 16. Comm Port Selection Windows

1. Click the **TCP/IP** tab (see figure 15, ①).
2. In the **IP Address/Hostname** field (②), enter the IP address of the desired device.

NOTE: The IP address is **203.0.113.22**. It cannot be changed.

3. In the **Password** field (③), enter the device password.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of a complete system reset, the passwords convert to the default, which is **extron** (see **Passwords Panel** on page 32 to change a password).

4. Leave the **Port** field (④) empty. The port device searches for a port to connect.

NOTE: Select the **Show Characters** checkbox (⑤) to display the password characters.

5. Click the **Connect** button (⑥). A new device tab opens.

Offline Device Preview

Opening a new device tab for an offline device displays the interface and configuration options for the device without connecting to it. However, settings cannot be changed.

To open a scaler device tab:

1. From the Configuration File drop-down list, select **New Configuration File** (see figure 16).

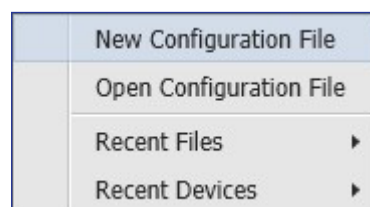


Figure 17. Configuration File Drop-Down List

The New Configuration File dialog box opens (see figure 17).

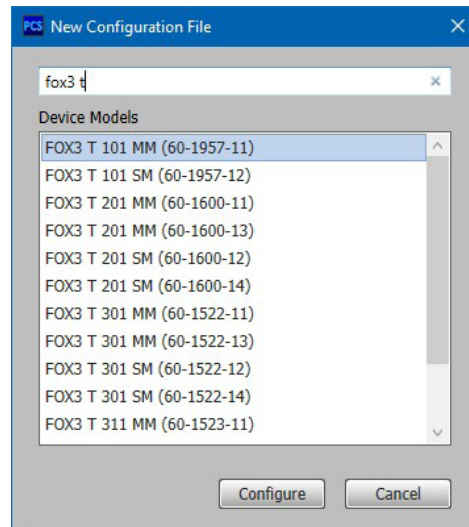


Figure 18. New Configuration File Dialog Box

2. Select the desired device model from the **Device Models** list.
3. Click the **Configure** button. A new offline device configuration tab opens.

Software Overview

NOTE: For details about specific software features, see the *FOX3 T 101 and FOX3 R 101 Help File*.

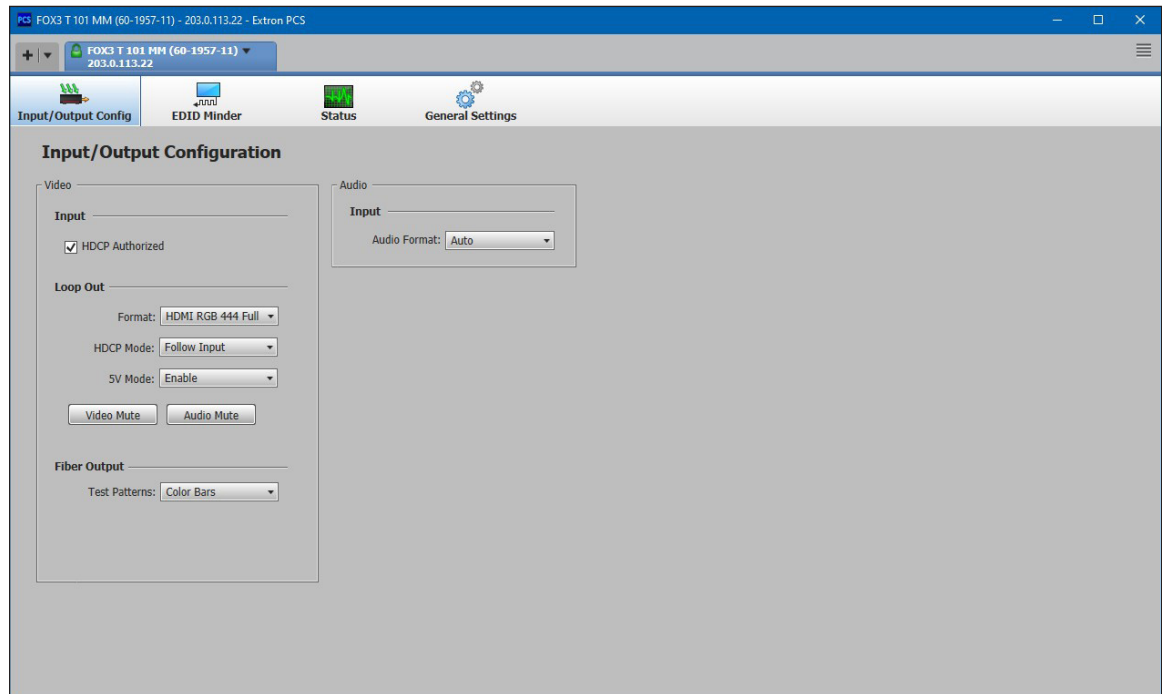


Figure 19. FOX3 T 101 Main Window

Each PCS screen has a **Device** drop-down list, accessed via the tab (see figure 18, ❶), for device configuration options. The **Software** menu, accessed via the icon on the right (❷), contains software configuration and information options.

Software Menu

The **Software** menu (see figure 19) contains options pertaining to PCS settings.

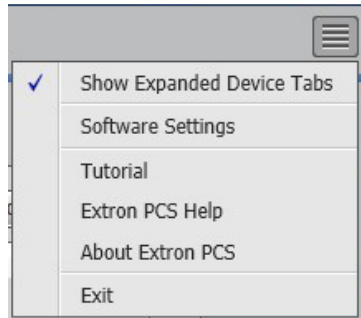


Figure 20. PCS Software Menu

Show Expanded Device Tabs

Selecting **Show Expanded Device Tabs** from the **Software** menu displays the device IP address or connection method in the **Device** tab.



Figure 21. Expanded Device Tab

Software Settings

This option resets all disabled confirmation dialogs to the default settings.

1. From the **Software** menu, select **Software Settings**. The **Software Settings** dialog box opens.

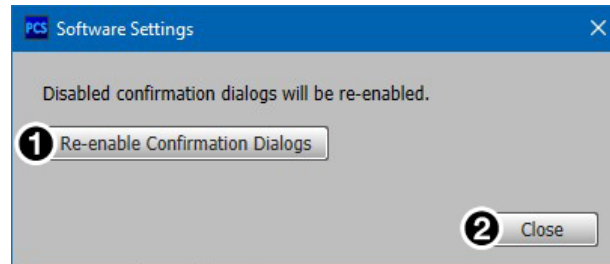


Figure 22. Software Settings Dialog Box

2. Click the **Re-enable Confirmation Dialogs** button (see figure 21, ❶). The dialog box closes and the reset is complete.

Alternatively, click the **Close** button (❷) to close the dialog box without re-enabling the confirmation dialogs.

Tutorial

Display a general overview of where to find features in the PCS framework.

1. From the **Software** menu, select **Tutorial**. The **Tutorial** dialog box opens.
2. Click the **I Get It!** button to close the dialog box.

Extron PCS Help

Open the PCS help file for general PCS operations.

From the **Software** menu, select **Extron PCS Help**.

Application Licensing

Log into PCS with your Extron Insider account or check licensing details.

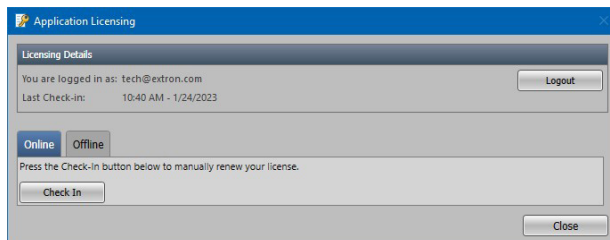


Figure 23. Application Licensing Dialog Box

About Extron PCS

Display information about the current PCS version.

1. From the **Software** menu, select **About Extron PCS**. The About - Extron PCS dialog box opens.



Figure 24. About - Extron PCS Dialog Box

2. Click the **Details** button (see figure 23, ①) for more information.
3. To display details about third-party software packages and associated licensing, click **Licenses** (②).
4. Click the **OK** button (③) to close the dialog box.

Exit

Disconnect connected devices and close the application.

1. From the **Software** menu, select **Exit**. If device tabs are open, the Exit dialog box opens (see figure 24).

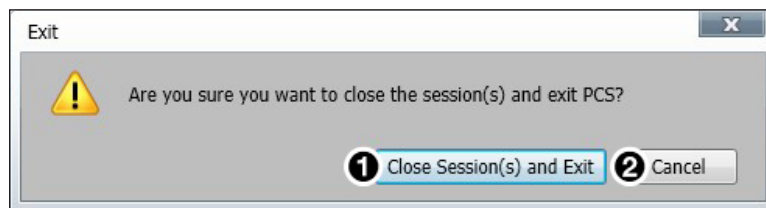


Figure 25. Exit Dialog Box

2. Click the **Close Session(s) and Exit** button (①) to disconnect the software from connected devices, close all offline device tabs, and close the software.
Alternatively, click the **Cancel** button (②) to leave the software open.

Device Menu

The **Device** menu contains options pertaining to device connection, configuration, and information. For details about all these options, see the *FOX3 T 101 and FOX3 R 101 Help File*.

- **Disconnect** — Disconnect the device from the PCS program and close the **Device** tab.
- **Settings** — Open a submenu with the following options:
 - **Hardware Settings** — Display the **Hardware Settings** dialog box with device information and side tabs to change the device name, internal clock, and password of the connected device.

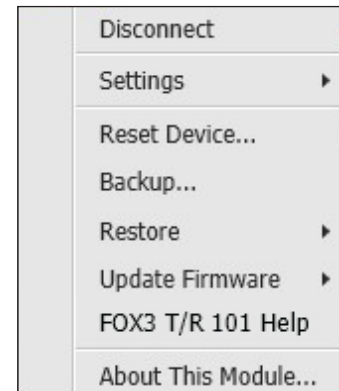


Figure 26. Device Menu

NOTE: Edit the time, select **Sync to PC**, so the date is updated on the unit **before** installing the firmware.

It also contains an **Edit Communication Settings** button, which provides an alternative method of accessing the **Communication Settings** dialog box.

- **Communication Settings** — Open the **Communication Settings** dialog box to change IP settings of the connected device.
- **Reset Device** — Open the **Reset Device** dialog box, with selectable modes for resetting the connected device, as well as the **Unit Information** (also displayed in the **Hardware Settings** dialog box).

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of a complete system reset, the passwords convert to the default, which is **extron** (see **Passwords Panel** on page 32 to change a password).

- **Backup** — Export all audio, video, and communication settings of the connected device to the PC. This exported configuration can be saved as a backup file (with a .extz extension), or used to replicate settings from one device to other devices of the same model. When restoring a configuration, select specific device settings.
- **Restore this Device** — Upload a saved configuration for a FOX3 device to the connected device.
- **Update Firmware** — Open a submenu to upload firmware from the host device to the connected device or to multiple devices. Upload firmware from the host device to the connected device

NOTE: If necessary, download new firmware from the Extron website (see **Software/Firmware Installation** on page 21).

- **FOX3 T 101/FOX3 R 101 Help** — Open the *FOX3 T 101 and FOX3 R 101 Help File* in a separate window.
- **About This Module** — Open the **About This Module** dialog box, with the module part number and firmware version of the connected device.

Internal Web Page

The FOX3 T 101 transmitter and FOX3 R 101 receiver feature an internal web server, displayed as a web page. This page allows you to monitor and adjust certain settings of the FOX3 101 devices via a IP over USB connection. Use a web browser to view the pages on a PC connected to the device USB port.

This section gives an overview of the internal web page, which is always available and cannot be erased or overwritten. Topics in this section include:

- [Accessing the Internal Web Page](#)
- [Web Page Panels](#)

Accessing the Internal Web Page

Access the FOX3 device internal web page as follows:

1. Connect the FOX3 device to a PC using the front panel USB port (see [figure 7](#) and [figure 8](#) on page 10).
2. Open a web browser on the PC connected to the device.
3. Enter the FOX3 transmitter IP address in the browser **Address** field.

NOTE: The USB IP address is **203.0.113.22**. This IP address cannot be changed.

4. Press the <Enter> key on the keyboard. The web page password page opens.

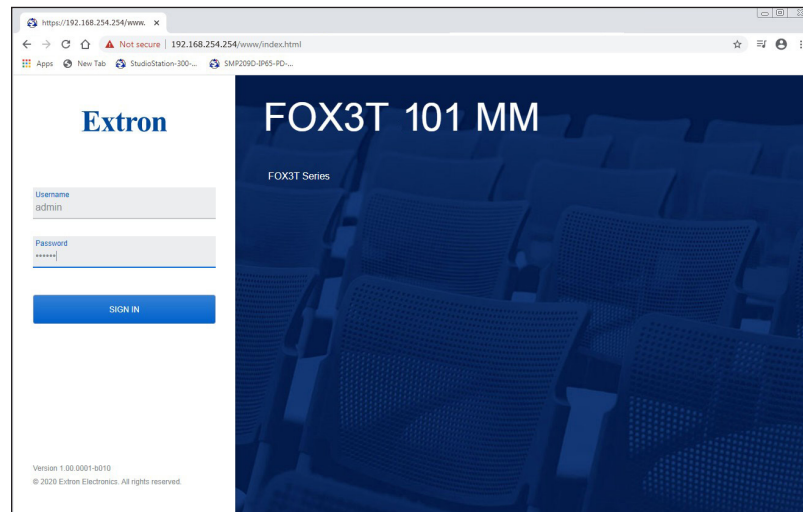


Figure 27. Network Password Prompt

5. The FOX3 is password protected. Enter a user name (**user** or **admin**) in the **Username** field and the password in the **Password** field when prompted (see figure 26).

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of a complete system reset, the passwords convert to the default, which is **extron**.

6. Click the **Sign in** button, if the unit is password protected.

Web Page Panels

The FOX3 101 internal web page (see figure 27) provides an overall, read-only view of the status of the FOX3 device, with some editable fields for the following categories:

- 1

Details Panel
- 2

Status Panel
- 3

Date and Time Panel
- 4

Network Panel
- 5

Passwords Panel
- 6

Firmware Panel

The panels in the accordion section that can be edited have an **EDIT** link. Click the link to access the panel. To access each panel in the accordion, click the name or the arrow for each panel.

To view general information about the FOX3 T 101, click the **ABOUT** link (7 **About the FOX3 T 101**).

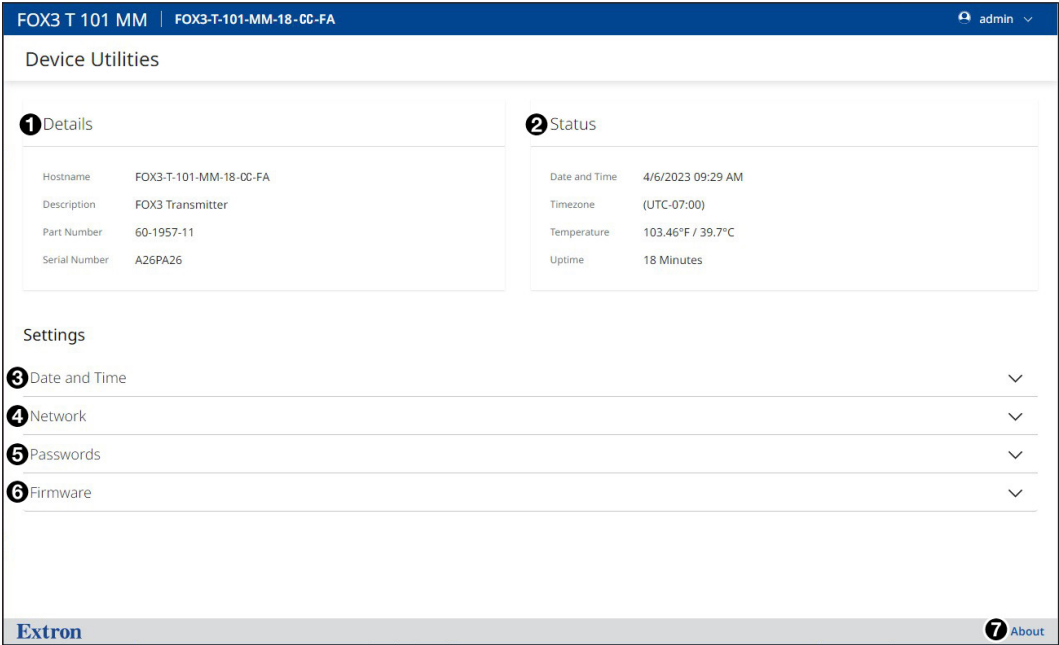


Figure 28. FOX3 T 101 Internal Web Page

The internal web page does not automatically update. To see an updated page, click the **Refresh** button on the web browser.

Details Panel

The **Details** panel (see figure 27, 1) displays the device name, a brief product description, the part number, and the serial number. The name can be changed in the **Network Panel** on page 32.

Status Panel

The **Status** panel (2) displays the current date, time, time zone, internal temperature in degrees Fahrenheit and Celsius, and the amount of time the device has been running (Uptime). This information can be edited in the **Date and Time Panel** (see page 31).

Date and Time Panel

The **Date and Time** panel (see [figure 27](#), ③ on page 30) displays the mode used to set the date and time, current date, and time. There are three options to set the date and time: manual mode, sync to NTP (Network Time Protocol) servers, and sync to the connected PC.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of a complete system reset, the passwords convert to the default, which is **extron**.

To set the date and time in Manual mode:

1. Click **EDIT** in the **Date and Time** panel. The editable fields are displayed (see [figure 28](#)).
2. Select the **Manual** radio button.
3. Edit the **Date/Time** as desired by typing in the date and time or using the calendar and clock icons.
4. Edit the **Timezone** as desired, using the drop-down list.
5. When finished editing, click **SAVE** to confirm changes or **CANCEL** to close the window without making changes.
6. Alternatively, click **SYNC TO PC** to set the date and time according to your PC.

To set the date and time in sync to NTP servers mode:

1. Click **EDIT** in the **Date and Time** panel. The editable fields are displayed (see [figure 29](#)).
2. Select the **Sync to NTP Servers** radio button.
3. Click in an **NTP Server** field and enter the IP address or host name of a desired NTP Server.
4. When finished editing, click **SAVE** to confirm changes or **CANCEL** to close the window without making changes.
5. Alternatively, click **SYNC TO PC** to set the date and time according to your PC.

To sync the date and time with your PC:

Click **SYNC TO PC** to set the date and time according to your PC.

The screenshot shows the 'Set Duration' window with the 'Manual' radio button selected. Below the radio buttons, there is a 'Date | Time' field displaying '04/06/23 09:29 AM' with calendar and clock icons to its right. Below that is a 'Time Zone' dropdown menu showing '(UTC-07:00)'. At the bottom, there are three buttons: 'SAVE', 'SYNC TO PC', and 'CANCEL'.

Figure 29. Manual Mode

The screenshot shows the 'Set Duration' window with the 'Sync to NTP Servers' radio button selected. Below the radio buttons is a 'Time Zone' dropdown menu showing '(UTC-08:00)'. Below that are three text input fields labeled 'NTP Server #1', 'NTP Server #2', and 'NTP Server #3'. At the bottom, there is a 'Current Date & Time' field displaying 'Jan 26, 2023, 9:35:47 AM'. At the very bottom, there are three buttons: 'SAVE', 'SYNC TO PC', and 'CANCEL'.

Figure 30. Sync to NTP Servers

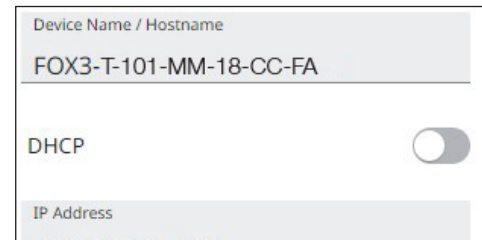
Network Panel

The **Network** panel (see [figure 27](#), [4](#) on page 30) displays the device name, which can be changed.

NOTE: The USB IP address is 203.0.113.22. This IP address cannot be changed. **DO NOT** select DHCP or enter new network information.

To change the name:

1. Click **EDIT** in the **Network** panel. The editable fields are displayed (see [figure 30](#)).
2. Click in the **Device Name/Hostname** field and enter the desired device name.
3. When finished editing, click **SAVE** to confirm changes or **CANCEL** to close the window without making changes.



The screenshot shows a web interface for the Network Panel. It has three main sections: 'Device Name / Hostname' with the value 'FOX3-T-101-MM-18-CC-FA', 'DHCP' with a toggle switch that is currently turned off, and 'IP Address' which is currently blank.

Figure 31. Network Panel

Passwords Panel

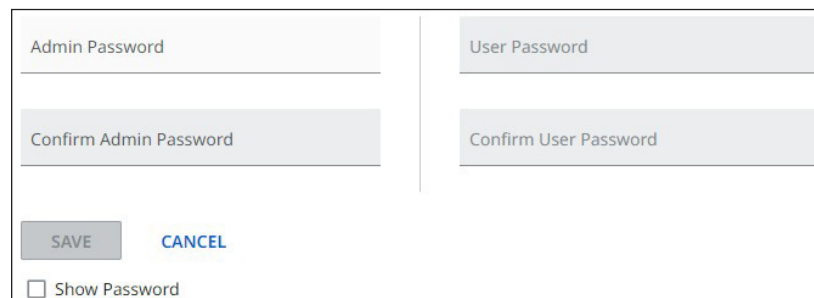
The **Passwords** panel (see [figure 27](#), [5](#)) displays whether **Admin** and **User** passwords have been set and provides an option to set administrator or user passwords. It does not display the actual passwords.

NOTE: The following rules apply to passwords:

- Length is 1-128 characters.
- All human-readable characters are permitted except |.
- The password cannot be a single space.
- Passwords are case-sensitive.
- The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of a complete system reset, the passwords convert to the default, which is **extron**.

To assign administrator and user passwords:

1. In the **Passwords** panel, click **EDIT**. The editable fields are displayed (see [figure 31](#)).



The screenshot shows a web interface for setting passwords. It is divided into two columns. The left column has 'Admin Password' and 'Confirm Admin Password' fields. The right column has 'User Password' and 'Confirm User Password' fields. At the bottom, there are 'SAVE' and 'CANCEL' buttons, and a checkbox labeled 'Show Password'.

Figure 32. Admin and User Passwords Panel

2. Click in the **Admin Password** field and enter the new administrator password.
3. Click in the **Confirm Admin Password** field and enter the password from the **Admin Password** field.
4. To assign a user password, repeat steps 2 and 3 in the **User Password** panel.
5. When finished, click **SAVE** to set the passwords. To close the window without saving a password, click **CANCEL**.

NOTE: Passwords can be changed but they cannot be removed entirely. The FOX3 must have passwords at all times. These fields cannot be blank.

Firmware Panel

The **Firmware** panel (see [figure 27](#), [6](#) on page 30) displays the current firmware version and the date it was last updated. Update the firmware on the FOX3 101 from this panel (see [Software/Firmware Installation](#) on page 21 to download the firmware).

To update firmware:

1. In the **Firmware** panel, click the **SELECT FILE** button (see [figure 32](#)).
2. In the **Open** dialog box, browse to locate the new firmware file on your computer (by default the file is stored at `C:\Program Files (x86)\Extron\Firmware\FOX3 T 101` after being downloaded from the Extron [website](#)).

NOTE: Firmware files for FOX3 101 devices have an `.eff` extension. Do not attempt to load any other file types.

3. Double-click the firmware file name. The **Open** window closes, and the selected firmware file name appears in the **Update Firmware** panel on the web page.
4. Click **INSTALL** to begin. To cancel the update, click the **X** button in the **Update Firmware** panel.

During the updating process, a window appears in the middle of the screen, displaying messages of the progress of the update: **Initializing**, **Installing the Firmware**, and **Rebooting Device**.

When the update is completed, the message window closes and the message **Firmware Upload Complete** appears near the top of the screen. The new firmware filename appears beside **Version** in the **Firmware** panel.

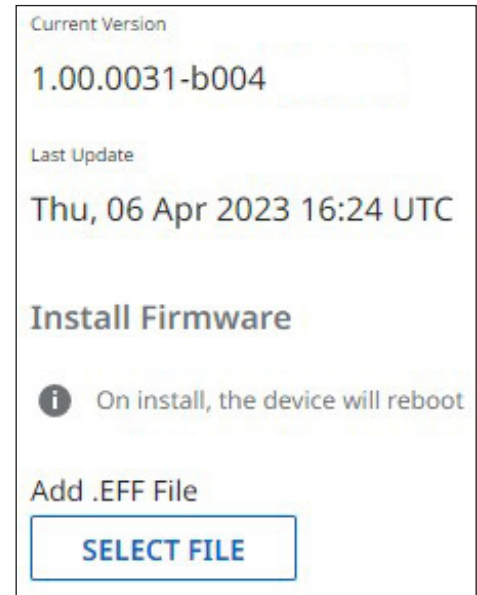


Figure 33. Firmware Panel

About the FOX3 T 101

Click the **ABOUT** link (see [figure 27](#), ⑦ on page 30) to open the **About** dialog box to view general information about the FOX3, such as the firmware version, copyright, part number, licenses, patents and web page version. Click the **View the End User License Agreement** link to view the user license.

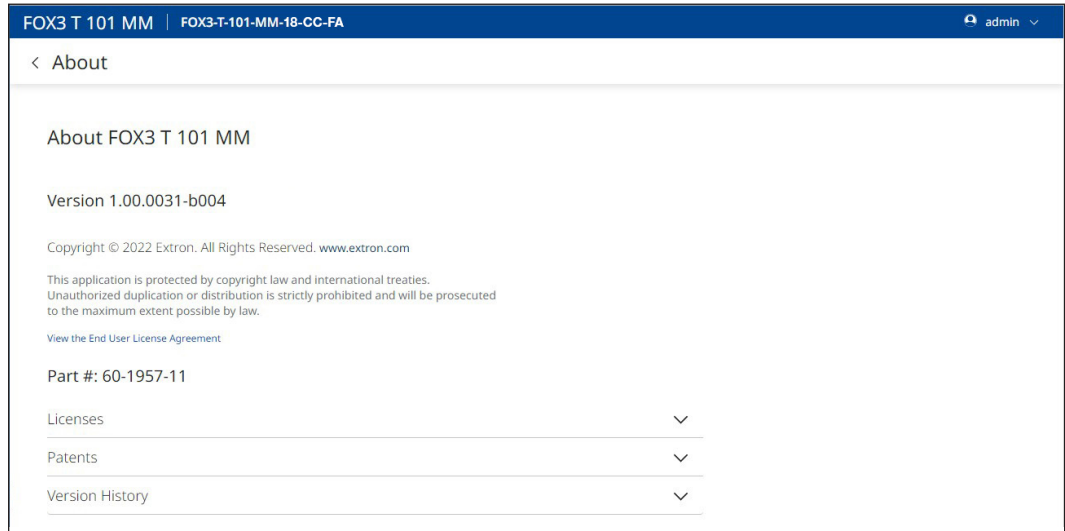


Figure 34. About the FOX3 Panel

Equipment Mounting

This section provides procedures for mounting the FOX3 T 101 transmitter and FOX3 R 101 receiver.

Mounting the Transmitter and Receiver

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 1-inch high, quarter-rack width transmitter and receiver can be placed on a table, mounted in a rack, or mounted under a desk or table. The transmitter and 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](#), in accordance with the directions included with the kit. For rack mounting, see [UL Rack-Mounting Guidelines](#) on page 36.

UL Rack-Mounting Guidelines

The following Underwriters Laboratories (UL) requirements pertain to the installation of the FOX3 101 into a rack.

CAUTION:

- **Elevated operating ambient temperature** — 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 maximum ambient temperature (TMA = +104°F, +40°C) 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 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 FOX3 101 :

ATTENTION :

- **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 = +104°F, +40°C) 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).

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.