

HFX 100 Series

HFX 100 Tx and HFX 100 Rx HDMI Signal Extenders



Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

68-2260-01 Rev. A
04 13

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.

Instructions de sécurité • Français

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

ATTENTION: Ce pictogramme, ⚠, 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.fr.

Sicherheitsanweisungen • Deutsch

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

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

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

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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.es.

Chinese Simplified (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.cn, 参见 Extron 安全规范指南, 产品编号 68-290-01。

Chinese Traditional (繁體中文)

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

注意: ⚠ 若產品上使用此符號, 是為了提醒使用者。

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.cn, 然後參閱《Extron 安全性與法規遵守手冊》, 準則編號 68-290-01。

Japanese

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

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

安全上のご注意、法令遵守、EMI/EMF適合性、その他の関連項目については、エクストロンのウェブサイトwww.extron.jpより

「Extron Safety and Regulatory Compliance Guide」(P/N 68-290-01) をご覧ください。

Korean

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.co.kr)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

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; the user must correct the interference at his own expense.

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.

FDA/IEC 60825-1 Requirements

CLASS 1 LASER PRODUCT

Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 5, dated June 24, 2007.

The product is intended to be used with the fiber optic cables fully installed.

This product meets the applicable requirements of IEC 60825-1, Edition 1 (2007).

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

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Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

WARNING: A warning indicates a situation that has the potential to result in death or severe injury.

CAUTION: A caution indicates a situation that may result in minor injury.

ATTENTION: Attention indicates a situation that may damage or destroy the product or associated equipment.

NOTE: A note draws attention to important information.

Specifications Availability

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

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Introduction

This guide describes the function, installation and operation of the HFX 100 Tx transmitter and HFX 100 Rx receiver. Unless otherwise stated, the terms “HFX 100,” “HDMI extender,” and “extender” refer to both units. The term “transmitter” refers to the HFX 100 Tx and the term “receiver” refers to the HFX 100 Rx.

This Introduction provides the following information:

- [About the HFX 100Tx and HFX 100Rx](#)
- [Features](#)
- [Application Diagram](#)

About the HFX 100 Tx and HFX 100 Rx

The Extron HFX 100 DVI extender comprises of a transmitter (Tx) and receiver (Rx) pair, which use one multimode fiber optic cable to transmit a signal up to 984 feet (300 m). The transmitter accepts a single HDMI input and converts it to a proprietary signal that is sent over the fiber optic cable to the receiver. The receiver converts the signal back to a HDMI output.

The extender supports DDC and HDCP pass-through.

Features

DVI Signal Extender — converts the HDMI signal to a proprietary format that can be carried up to 984 feet (300 m) without loss of signal integrity.

Power Supply — Both the transmitter and receiver are powered by a 12 VDC power supply (provided).

Compatible with other Extron fiber optic products — The HFX 100 is compatible with Extron fiber DMS I/O boards.

Display Data Channel (DDC) pass-through — ensures that the resolution and refresh rate of the video input signal matches the capabilities of the display device.

High-bandwidth Digital Content Protection (HDCP) pass-through — ensures that HDCP-compliant outputs are able to display HDCP-encrypted content.

Application Diagram

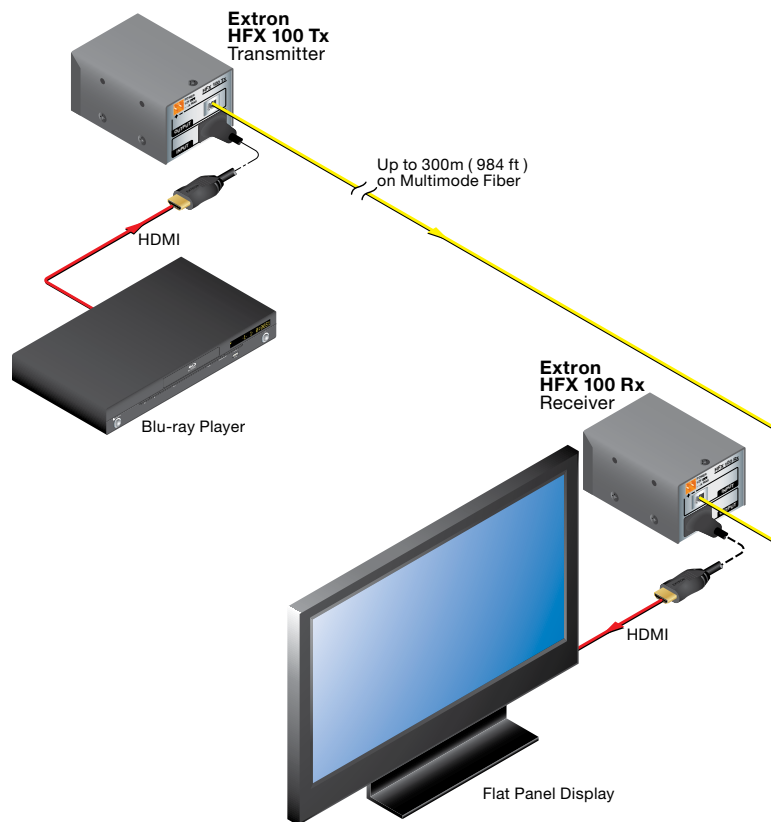
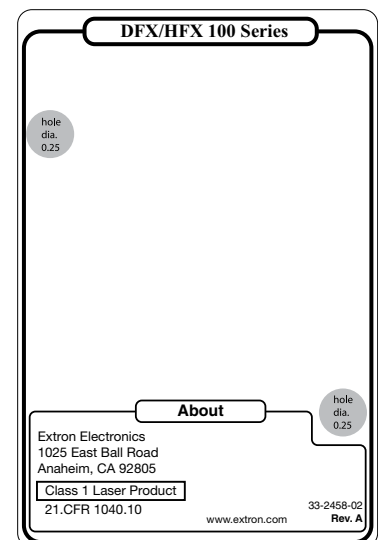


Figure 1. Typical HFX 100 Application

Product Label

This label is affixed to the bottom of the unit.



Panels and Cables

This section discusses the features and cabling of:

- **Front Panel**
- **HFX 100 Tx Rear Panel**
- **HFX 100 Rx Rear Panel**

Front Panel

Both the Transmitter and Receiver have identical front panels:

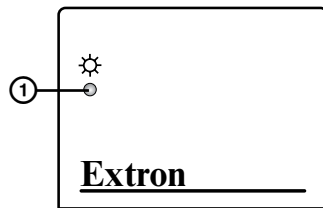


Figure 2. HFX 100 Tx and HFX 100 Rx Front Panel

- ① **Front Panel LED** — lights amber if the unit (transmitter or receiver) is receiving power from the 12 VDC power supply. The Transmitter LED lights green if the unit is receiving a TMDS clock signal. The Receiver LED lights green if the unit is receiving an optical signal.

NOTE: During initialization, the LED may need a few seconds to stabilize to the correct state.

HFX 100 Tx Rear Panel

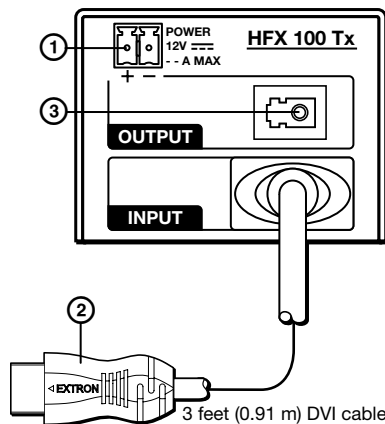


Figure 3. HFX 100 Tx Rear Panel

- ① **12 VDC power input** — Connect the provided 12 VDC power supply to the front panel captive screw connectors. When power is provided to the unit but there is no DVI input, the front panel lights amber.

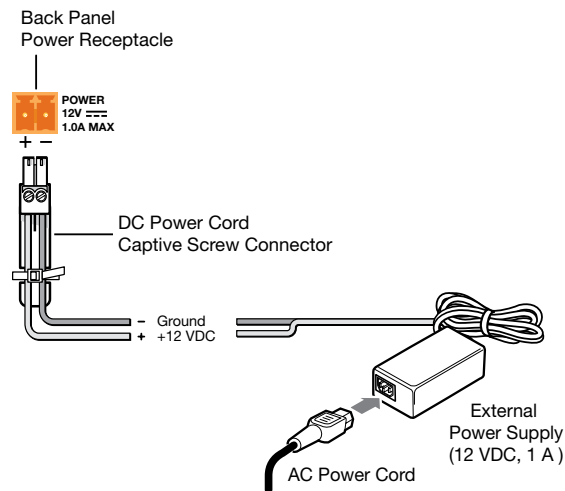


Figure 4. 12 VDC Power Connection to HFX 100

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.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The power supply is to be located within the same vicinity as the Extron AV processing equipment in an ordinary location, Pollution Degree 2, secured to the equipment rack within the dedicated closet, podium, or desk.
- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 75 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to building structure or similar structure.

NOTES:

- The length of the exposed wires in the stripping process is critical. The ideal length is 3/16 inch (5 mm). If it is any longer, the exposed wires may touch, causing a short circuit between them. If it is any shorter, the wires can be easily pulled out even if tightly fastened by the captive screws.
- Do not tin the wires. Tinned wire does not hold its shape and can become loose over time.

- ② **HDMI input connector** — Connect a HDMI input to this male connector.

NOTE: With appropriate DVI-D to HDMI cables or adapters, the unit will accept DVI-D input.

When the transmitter is receiving HDMI input signal, the front panel LED lights green.

- ③ **Optical output connector** — Connect one end of one multimode fiber optic cable (not provided) into this LC connector. The other end connects into the LC input connector on the HFX 100 Rx. The cable can be up to 984 feet (300 m) in length.

CAUTION:

- **Possible Damage to Eyesight.** The HFX 100 Tx outputs continuous laser (Class 1 rated), which may be harmful and dangerous to the eyes; use with caution. Do not look into the rear panel fiber optic cable connector or into the fiber optic cable itself. Plug the attached dust cap into the optical transceiver when the fiber optic cable is unplugged.
- **Possible radiation exposure.** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

HFX 100 Rx Rear Panel

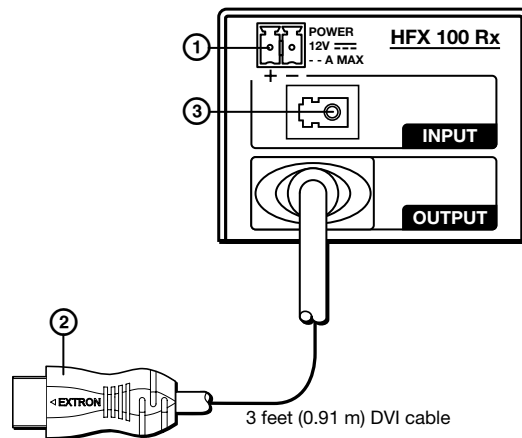


Figure 5. HFX 100 Rx Rear Panel

- ① **12 VDC power input** — Connect the provided 12 VDC power supply to the front panel captive screw connectors. When power is provided to the unit but there is no HDMI input, the front panel lights amber.

See [Figure 4](#), the [attention points](#), and the [notes](#) on page 4 before connecting the power supply.

- ② **HDMI output connector** — Connect a HDMI display device to this male connector.

NOTE: With appropriate HDMI to DVI-D cables or adapters, the unit will output an HDMI signal.

- ③ **Optical input connector** — Connect one end of the multimode fiber optic cable (not provided) into this LC connector. The other end connects into the LC output connector on the HFX 100 Tx.

CAUTION:

- **Possible Damage to Eyesight.** The HFX 100 Tx outputs continuous laser (Class 1 rated), which may be harmful and dangerous to the eyes; use with caution. Do not look into the rear panel fiber optic cable connector or into the fiber optic cable itself. Plug the attached dust cap into the optical transceiver when the fiber optic cable is unplugged.
- **Possible radiation exposure.** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

When the HFX 100 Rx is receiving optical input, the front panel LED lights green.

Installation

To install the HFX 100 extender, follow these instructions:

1. **Mount the HFX 100 Tx and HFX 100 Rx** in suitable locations (see page 9).
2. **Connect the provided power supply to the HFX 100 Tx** (see page 4). The front panel LED lights amber.
3. **Connect the provided power supply to the HFX 100 Rx** (see page 5). The front panel LED lights amber.
4. **Connect the transmitter and receiver** using a multimode fiber optic cable (see page 5).
5. **Connect the HDMI display device to the HFX 100 Rx** (see page 5). Do not power on the display at this time.
6. **Connect the HDMI source device to the HFX 100 Tx** (see page 4). Do not power on the source at this time.
7. Power on the display device.
8. Power on the source device.

NOTE: The display device must be powered on before the source device to allow correct DDC communication between the display and the source while the source device is booting up.

When the HFX 100 Tx is receiving HDMI input, the front panel lights green.

When the HFX 100 Rx is receiving an optical input, the front panel lights green.

Reference Information

This section provides information about:

- **Included Parts**
- **Optional Accessories**
- **Mounting**

Included Parts

Because the HFX 100 Tx and HFX 100 Rx are compatible with other Extron products, they are sold as individual units.

Description	Part Number
HFX 100 Tx <i>or</i> HFX 100 Rx	60-1254-12 60-1254-13
12 VDC, 1A power supply	
2-pole, 3.5 mm captive screw connector	
4 rubber feet (not attached)	
<i>HFX 100 Setup Guide</i>	

Mounting

Desktop Placement

Attach the four provided rubber feet to the bottom of the HFX 100 transmitter or receiver and place it in any convenient location.

Rack Mounting

UL Guidelines for Rack Mounting

The following Underwriters Laboratories (UL) guidelines are relevant to the safe installation of these products in a rack:

Elevated operating ambient temperature — If the units are installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (T_{ma}: +122 °F, +50 °C) specified by Extron.

Reduced air flow — Install the equipment in the rack so that the equipment gets adequate air flow for safe operation.

Mechanical loading — Mount the equipment in the rack so that uneven mechanical loading does not create a hazardous condition.

Circuit overloading — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Consider the equipment nameplate ratings when addressing this concern.

Reliable earthing (grounding) — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (such as the use of power strips).

Rack Mounting Procedure

To mount the unit on a rack shelf, follow the instructions provided with the shelf accessories.

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

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Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

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686 Ronghua Road
Songjiang District
Shanghai 201611
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Extron Electronics Asia Pte. Ltd.
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:

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Dubai Airport Free Zone
F12, 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
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.

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