



EDID 111H 4K PLUS

HDMI EDID Emulator



User Guide

HDMI

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

⚠ تحذير: هذا الرمز، , عند استخدامه على المنتج، مخصص لتنبيه المستخدم فيما يتعلق بوجود جهد كهربائي غير معزول على الغلاف الخارجي للمنتج وهو ما قد ينطوي على مخاطر حدوث صدمة كهربائية.

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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.com.

Instrucciones de seguridad • Español

⚠ 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.

⚠ 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

⚠ 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 l'équipement.

Pour en savoir plus sur les règles de sécurité, la conformité à la réglementation, la compatibilité EMI/EMF, l'accessibilité, et autres sujets connexes, lisez les informations de sécurité et de conformité Extron, réf. 68-290-01, sur le site Extron, www.extron.com.

Istruzioni di sicurezza • Italiano

⚠ AVVERTENZA: Il simbolo, , se usato sul prodotto, serve ad avvertire l'utente della presenza di tensione non isolata pericolosa all'interno del contenitore del prodotto che può costituire un rischio di scosse elettriche.

⚠ ATTENZIONE: Il simbolo, , se usato sul prodotto, serve ad avvertire l'utente della presenza di importanti istruzioni di funzionamento e manutenzione nella documentazione fornita con l'apparecchio.

Per informazioni su parametri di sicurezza, conformità alle normative, compatibilità EMI/EMF, accessibilità e argomenti simili, fare riferimento alla Guida alla conformità normativa e di sicurezza di Extron, cod. articolo 68-290-01, sul sito web di Extron, www.extron.com.

Instrukcje bezpieczeństwa • Polska

⚠ OSTRZEŻENIE: Ten symbol, , gdy używany na produkt, ma na celu poinformować użytkownika o obecności izolowanego i niebezpiecznego napięcia wewnątrz obudowy produktu, który może stanowić zagrożenie porażenia prądem elektrycznym.

⚠ UWAGI: Ten symbol, , gdy używany na produkt, jest przeznaczony do ostrzegania użytkownika ważne operacyjne oraz instrukcje konserwacji (obsługi) w literaturze, wyposażone w sprzęt.

Informacji na temat wytycznych w sprawie bezpieczeństwa, regulacji wzajemnej zgodności, zgodność EMI/EMF, dostępności i Tematy pokrewne, zobacz Extron bezpieczeństwa i regulacyjnego zgodności przewodnik, część numer 68-290-01, na stronie internetowej Extron, www.extron.com.

Инструкция по технике безопасности • Русский

⚠ ПРЕДУПРЕЖДЕНИЕ: Данный символ, , если указан на продукте, предупреждает пользователя о наличии неизолированного опасного напряжения внутри корпуса продукта, которое может привести к поражению электрическим током.

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

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

安全说明 • 简体中文

⚠ 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。

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有關安全性指導方針、法規遵守、EMI/EMF 相容性、存取範圍和相關主題的詳細資訊，請瀏覽 Extron 網站: www.extron.com，然後參閱《Extron 安全性與法規遵守手冊》，準則編號 68-290-01。

安全上のご注意・日本語

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.

주의: 이 기호 가 제품에 사용될 경우, 장비와 함께 제공된 책자에 나와 있는 주요 운영 및 유지보수(정비) 지침을 경고합니다.

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

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FCC Class A Notice

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

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.

VCCI-A Notice

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると、電波妨害を引き起こすことがあります。その場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

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:

`^AR Merge Scene,,0p1 scene 1,1 ^B 51 ^W^C.0`

`[01] R 0004 00300 00400 00800 00600 [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 slanted form as shown here:

ping xxx.xxx.xxx.xxx -t

SOH R *Data* STX *Command* ETB ETX

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

Click the **OK** button.

Specifications Availability

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

Extron Glossary of Terms

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

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Introduction

This section describes this user guide and the EDID 111H 4K PLUS, including:

- [About this Guide](#)
- [About the EDID 111H 4K PLUS](#)
- [EDID 111H 4K PLUS Features](#)
- [Application Diagram](#)

About this Guide

This guide contains information about the Extron EDID 111H 4K PLUS with instructions on how to install, configure, and operate the unit.

About the EDID 111H 4K PLUS

The Extron EDID 111H 4K PLUS is a single input, single output HDCP EDID emulator supporting video rates up to 4K@60 Hz 4:4:4. It supports EDID Minder, HDCP 2.3, and PCS configuration. For information on these features, see the following pages on the Extron website:

- [Understanding EDID - Extended Display Identification Data](#)
- [Introduction to HDCP 2.3](#)
- [Product Configuration Software \(PCS\) Page](#)

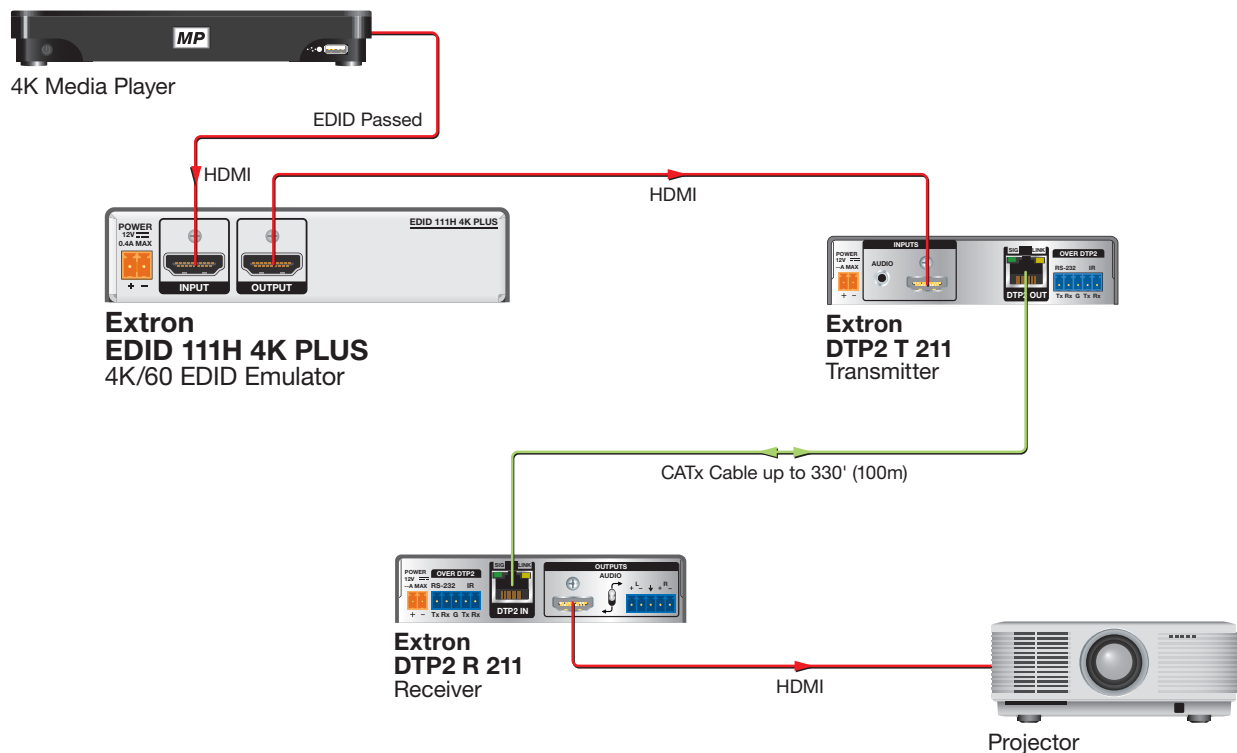
The EDID 111H 4K PLUS is housed in a compact one inch tall, quarter rack wide, six inch deep enclosure for discreet installation (see [Mounting the EDID 111H 4K PLUS](#) on page 16). An energy-efficient external universal power supply is included.

EDID 111H 4K PLUS Features

- **EDID Minder** — Automatically manages EDID communication between connected devices. EDID Minder ensures all sources power up properly, and reliably output content for display.
- **Selectable resolutions and refresh rates** — Pre-stored EDID is communicated to the source based on a user-selected resolution and refresh rate.
- **EDID capture mode** — When connected to a display, the EDID 111H 4K PLUS offers the option of capturing and then storing EDID information from the display device.
- **Supported HDMI 2.0b specification** — Features include data rates up to 18 Gbps, Deep Color up to 12-bit, 3D, and CEC pass through.
- **Supports multiple embedded audio formats** — The EDID 111H 4K PLUS is compatible with a broad range of multi channel audio signals, providing reliable operation with HDMI sources.
- **Supports computer and video resolutions up to 4K** — Resolutions up to 4096x2160 @ 60Hz, 8-bit, 4:4:4 chroma sampling.
- **HDCP compliant** — Ensures display of content protected media and interoperability with other HDCP-compliant devices.
- **HDCP authentication and signal presence confirmation** — Provides real-time HDCP verification status via front panel LEDs and USB, providing feedback to a system operator or helpdesk support staff.
- **User-selectable HDCP authorization** — Indicates if the display is HDCP compliant or non-HDCP compliant to the connected source, if the source automatically encrypts all content when connected to an HDCP-compliant device.
- **Easy setup and commissioning with Extron PCS – Product Configuration Software** – Allows user to configure multiple products using a single software application.

- **HDMI to DVI Interface Format Correction** — Automatically reformats HDMI source signals for output to a connected DVI display.
- **Automatic HDMI input cable equalization** — Actively conditions incoming HDMI signals to compensate for signal loss when using long cables, low quality cables, or source devices with poor signal output.
- **Front panel USB configuration port**
- **Provides 12 VDC, 1 A, 12 watts power on the output for external peripheral devices.**
- **Includes LockIt HDMI cable lacing brackets.**
- **Energy-efficient external universal power supply included** — Provides worldwide compatibility, low power consumption, and reduced operating costs.

Application Diagram



Installation and Configuration

This section describes the installation and configuration of the EDID 111H 4K PLUS, including:

- [Installation Overview](#)
- [Front Panel Features](#)
- [Rear Panel Features and Cabling](#)
- [Securing the HDMI Connector LockIt Lacing Bracket](#)
- [EDID Configuration](#)

Installation Overview

To install the EDID 111H 4K PLUS:

1. Mount the EDID 111H 4K PLUS (see [Mounting the EDID 111H 4K PLUS](#) on page 16).

Do not connect power to the source, the display, or the EDID 111H 4K PLUS at this time.

NOTE: Configure the EDID 111H 4K PLUS prior to installation if access is restricted after mounting or installing the device.

2. Configure the EDID 111H 4K PLUS (see [EDID Configuration](#) on page 6).
3. Connect an HDMI cable from the source to the input connector (see [figure 2, B](#) on page 4).
4. Connect an HDMI cable from the output connector ([C](#)) to the video display or distribution system input.
5. Connect power and turn on the video display or distribution system.
6. Apply power to the EDID 111H 4K PLUS ([A](#)).
7. Turn on the video source. The video source reads the EDID information from the EDID 111H 4K PLUS.

Front Panel Features

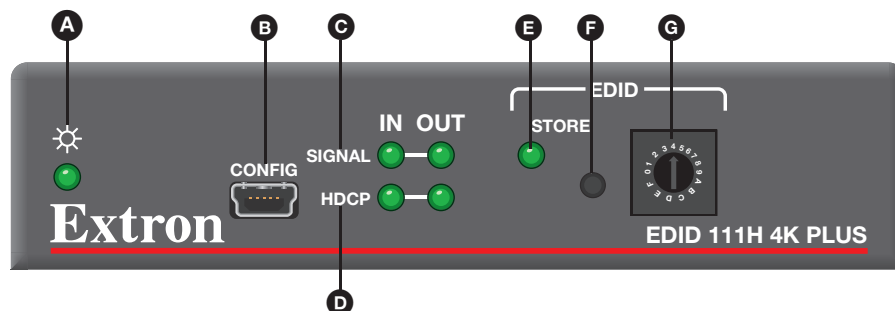


Figure 1. EDID 111H 4K PLUS Front Panel

- A Power LED** – Lights when an external power supply is connected and powered.
- B Config port** – Connect a host computer using a mini USB type-B connector for configuration using SIS commands or PCS, and for firmware updates (see [Connecting to the USB Port](#) on page 16).
- C Signal LEDs** – Lights when an HDMI signal is detected on the input and output.
- D HDCP LEDs** – The IN LED lights when the source device requires HDCP encryption and the signal has been authenticated. The OUT LED lights when HDCP is authenticated between the HDMI output and the connected sink device.

NOTE: This only occurs when the source device requires HDCP and is authenticated. If the source does not require HDCP or if the sink device is not HDCP compliant, the LED does not light.

- E EDID Store LED** – Lights steadily when power is connected. It blinks when the unit is reading and storing EDID from a connected output device, returning to steady lighting when recording is complete.
- F EDID Store button** – Press this recessed button to start reading and storing an EDID. The EDID files are stored to user slots selected using the rotary switch (**G**). Up to four EDID files can be stored.
- G EDID selection rotary switch** – One 16-position rotary switch provides a choice of 12 pre-programmed EDID files and 4 user stored files (see [EDID Configuration](#) on page 6), and one EDID read from a connected display.

Rear Panel Features and Cabling

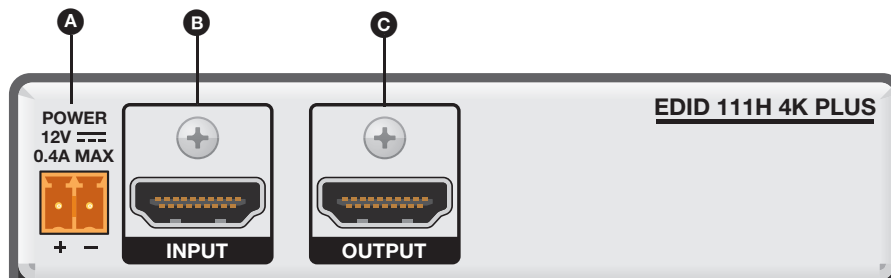


Figure 2. EDID 111H 4K PLUS Rear Panel

- A Power Connector** — Connect the included 12 VDC power supply to this two-pole, 3.5 mm captive screw connector.

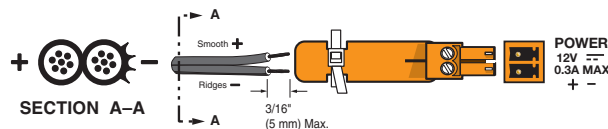


Figure 3. 12 VDC Power Connection to EDID 111H 4K PLUS

- B HDMI input** — Connect an HDMI source to this female HDMI connector.
HDCP 2.3 — When required, the HDMI input negotiates and authenticates HDCP 2.3 with a source device. The authentication process is repeated when a stored EDID is changed (see [Securing the HDMI Connector LockIt Lacing Bracket](#) on page 5).
- C HDMI output** — Connect a display or other output device to this female HDMI connector. The HDMI output provides 12VDC (up to 1 A with over-current protection) on pin 16 (see [Securing the HDMI Connector LockIt Lacing Bracket](#)).

HDCP — If a connected output device requires HDCP encryption, the output negotiates and authenticates HDCP directly.

Video Format Correction — When the current input signal is HDMI and the connected output is DVI, the signal is converted to DVI format. This is based on the capability of the connected output device as listed in its EDID.

The EDID information is read from the connected output device and written to memory whenever the output device is connected to this port and powered on.

NOTE: The EDID information is also read and stored whenever power is recycled to the connected output device or when the output device is replaced.

Securing the HDMI Connector LockIt Lacing Bracket

Follow these instructions to secure the input connectors to the switcher with the LockIt HDMI lacing bracket provided:

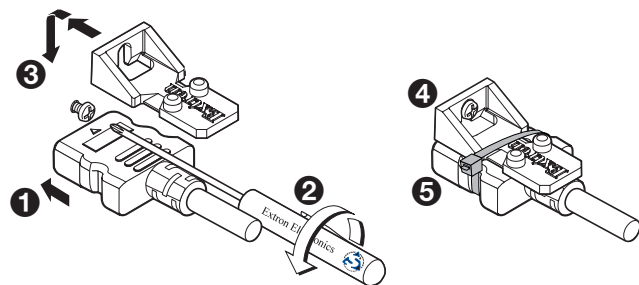


Figure 4. LockIt Lacing Bracket Diagram

1. Plug the HDMI cable into the rear panel connection (see figure 4, ①).
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 ③, then tighten the screw to secure the bracket.

ATTENTION:

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

4. Loosely place the included tie wrap around the HDMI connector and the LockIt lacing bracket as shown ④.
5. While holding the connector securely against the lacing bracket, tighten the tie wrap, then remove any excess length ⑤.

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 conformité réglementaire et peut endommager la source d'alimentation ainsi que le produit final.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities.
- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales.
- 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.
- La source d'alimentation doit être située à proximité de l'équipement de traitement audiovisuel dans un endroit ordinaire, avec un degré 2 de pollution, fixé à un équipement de rack à l'intérieur d'un placard, d'une estrade, ou d'un bureau.
- 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.
- Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 75, et au Canadian Electrical Code, partie 1, section 16.

ATTENTION:

- The power supply shall not be permanently fixed to building structure or similar structure.
- La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.
- If not provided with a power supply, this product is intended to be supplied by a power source marked "Class 2" or "LPS" and rated at 12 VDC and a minimum of 0.3 A.
- Si ce produit ne dispose pas de sa propre source d'alimentation électrique, il doit être alimenté par une source d'alimentation de classe 2 ou LPS et paramétré à 12 V et 0.3 A minimum.

EDID Configuration

EDID Minder ensures that a connected source has access to the EDID of a display even if the display is not connected. Depending on the EDID mode selected, the EDID of a connected display or custom EDID can be stored in one of four user slots, or the user can manually select an EDID from the table of Extron factory EDID (see figure 5).

TIP: If access to the EDID 111H 4K PLUS is restricted after mounting and connection, configure it prior to the installation.

Assign Extron Factory EDID

Rotary switch positions 0 through B are Extron factory EDID. Select a switch position corresponding to the desired resolution (see figure 5).

Additionally, four user memory slots (C through F) are available to save the EDID of connected displays (see "Store an EDID in a User Store Slot") and to import EDID files from an external source using PCS (see [Using the Software](#) on page 10). EDID saved to these slots are retained after a power cycle. Upon a factory reset, these EDID slots revert to the default (1080p @ 60 Hz, 2-Ch audio). EDID can only be stored using the rotary switch.

Store an EDID in a User Store Slot

To store EDID from a connected display or other sink device:

1. Turn the rotary switch (see figure 5 on the next page) to the desired user slot location (C through F).
2. Connect the display device to the output connector of the EDID 111H 4K PLUS (see [figure 2](#), [C](#) on page 4).
3. Connect a power source and apply power to the EDID 111H 4K PLUS (see [figure 2](#)). The power LED lights steady when power is available.
4. Power on the display device.
5. Press the **STORE** button once to store the display EDID to the memory slot selected in step 1. The LED blinks. When the LED returns to solid, the EDID is stored (see figure 5).

NOTE: EDID stored in user slots C through F are saved until new EDID is stored to those slots or the device is reset.

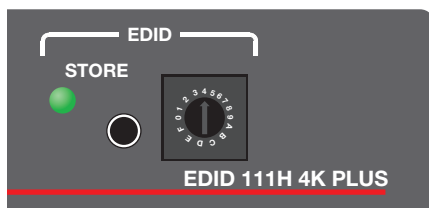


Figure 5. Store LED, Button and Rotary Switch

X6	Rotary Switch Position	Native Resolution	Refresh	Rate Type	Video Format	Audio Format
1	0	1280 x 800	60 Hz	IT	HDMI 1.3	2-Ch
2	1	1600 x 900	60 Hz	IT	HDMI 1.3	2-Ch
3	2	1920 x 1200	60 Hz	IT	HDMI 1.3	2-Ch
4	3	2560 x 1440	60 Hz	IT	HDMI 1.4	2-Ch
5	4	2560 x 1600	60 Hz	IT	HDMI 1.4	2-Ch
6	5	720p	50 Hz	CE	HDMI 1.3	2-Ch
7	6	720p	60 Hz	CE	HDMI 1.3	2-Ch
8	7	1080p	50 Hz	CE	HDMI 1.3	2-Ch
9	8	1080p	60 Hz	CE	HDMI 1.3	2-Ch
10	9	4K / UHD	30 Hz	CE	HDMI 1.4	2-Ch
11	A	4K / UHD 4:2:0	60 Hz	CE	HDMI 1.4	2-Ch
12	B	4K / UHD 4:4:4	60 Hz	CE	HDMI 2.0	2-Ch
13	C	User Store Slot 1				
14	D	User Store Slot 2				
15	E	User Store Slot 3				
16	F	User Store Slot 4				

Table 1. Rotary Switch Position EDID Selection

LED	Rotary Switch	Store Button	Description
Off	0-B	Non-functional	EDID storing is not possible on the selected rotary position.
Green (flashing)	C-F	Button has been pressed and released	The Store button has been pressed and the EDID is currently being stored to the selected user store slot.
Green (solid)	C-F	N/A	EDID storing is possible on the selected rotary position, or the storing process is complete (if following the flashing state).

Table 2. EDID Store LED Indications

NOTE: PCS can be used to import or export EDID from user store slots.

Configuration Software

The EDID 111H 4K PLUS can be configured using the Extron Product Configuration Software (PCS) or SIS commands. This section covers information on using PCS.

Topics in this section include:

- [Downloading PCS from the Extron Website](#)
- [Starting the Software](#)
- [Using the Software](#)

PCS offers the same functions as those on the device front panel, with additional features available only in the software. PCS is compatible with Microsoft® Windows® operating systems.

Downloading PCS from the Extron Website

Visit www.extron.com to find the latest version of software and firmware for your product. If necessary, before updating firmware, download and install Firmware Loader.

Follow these steps to download and install PCS:

1. Click the **DOWNLOAD** tab (see figure 6, **1**).

The Download page opens.

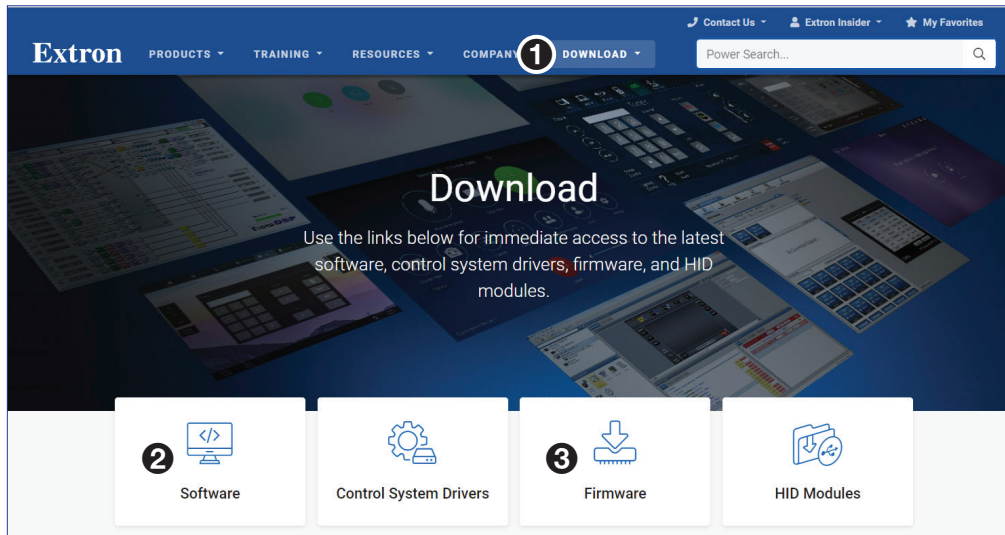


Figure 6. Software and Firmware Links on the Download Tab

2. Click the **Software** button (**2**).
3. Click the letter “P” in the alphabetic navigation bar to locate PCS.



Figure 7. Alphabetic Navigation Bar

- Click the **Download** button (❶) on the PCS listing and submit any required information to start the download.

Description	Part Number	Version	Date	Size	❶
PCS Updated Product Configuration Software for a variety of standalone products. Learn More Release Notes	79-562-01	3.4	Jan. 14, 2016	97.3 MB	Download

Figure 8. PCS Download

NOTE: Click the **Release Notes** button to see issues that have been addressed in the latest software update.

- Open the executable (.exe) file from the save location and follow the instructions to install the software.

Starting the Software

Open the **Extron Product Configuration** software program from the **Start** menu or desktop shortcut. PCS opens to the **Device Discovery** page (see figure 9).

NOTE: PCS versions prior to 2.0 do not have the **Device Discovery** feature. Download the latest version of PCS.

Device Discovery Panel

When the PC running PCS is connected to Extron devices via USB and is also connected to a LAN or WAN, the **Device Discovery** panel lists all PCS compatible devices. Devices can be identified and sorted by Model, IP address, Device Name, or Connection method.

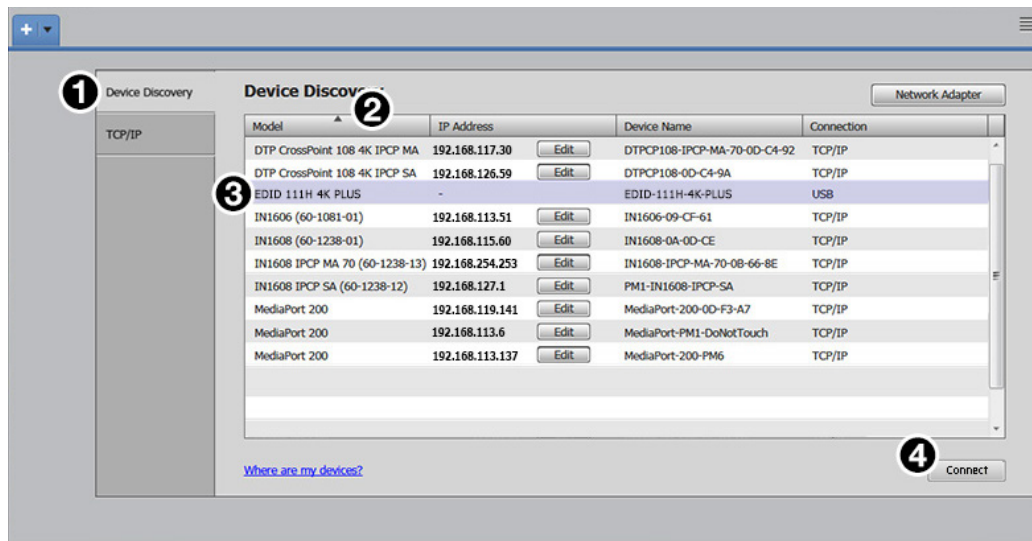


Figure 9. Device Discovery Panel

To sort the list of available devices:

- Click the **Device Discovery** tab (see figure 9, ❶).
- Click the desired column heading (❷) to sort the desired category (**Model**, **IP Address**, **Device Name** and **Connection**) in ascending or descending order.

To connect to the EDID 111H 4K PLUS:

- Click the **Device Discovery** tab (❶).
- Select the **EDID 111H 4K PLUS** row (❸) and click **Connect** (❹). The device page opens (see figure 10).

Using the Software

See the *PCS Software Help* file for information on using PCS, and the *EDID 111H 4K PLUS Help* file for details on configuring and operating this device.

To open the PCS Help file:

1. Click the hidden menu icon () to access a drop-down list (see figure 10, **1**).
2. Click **Extron PCS Help** to open the help file (**2**).

To open the EDID 111H 4K Help file:

3. Click the **Device** tab (**3**).
4. Click **EDID 111H 4K PLUS Help** (**4**). This help file covers PCS configuration for this specific device.

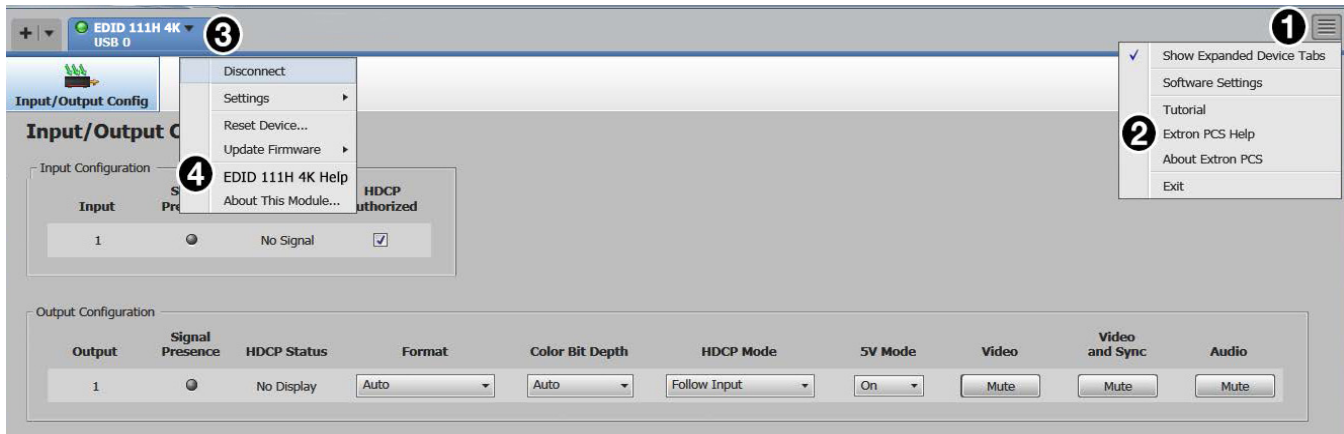


Figure 10. PCS and Device-Specific Help Files

Offline Device Preview

The EDID 111H 4K PLUS configuration options can be viewed without connecting to a device, but settings cannot be changed or saved in this mode.

To open a device tab:

1. In the **Start-up** tab drop-down list, select **New Configuration File** (see figure 11).

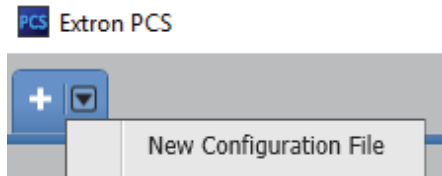


Figure 11. Configuration Drop-down List

The **New Configuration File** dialog box opens (see figure 12).

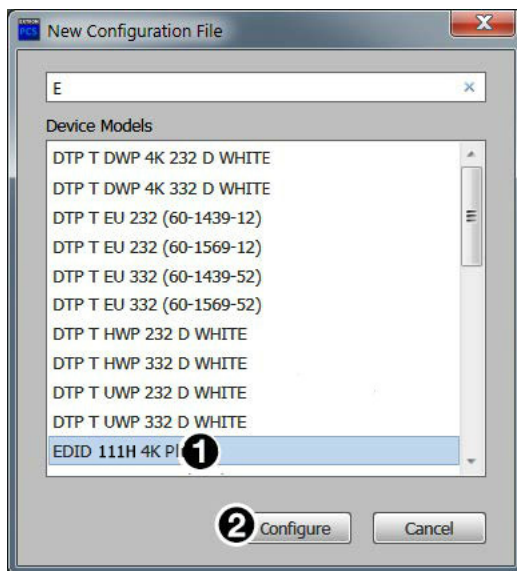


Figure 12. New Configuration File (EDID 111H 4K PLUS Selected)

2. Select EDID 111H 4K PLUS from the **Device Models** list (figure 12, ①).
3. Click **Configure** (②). A new offline device configuration tab opens.

Remote Communication and Control

This section describes remote operation of the EDID 111H 4K PLUS. Topics include:

- [Using Simple Instruction Set \(SIS\) Commands](#)
- [Using the Command and Response Table](#)
- [Command and Response Table for SIS Commands](#)

Using Simple Instruction Set (SIS) Commands

The EDID 111H 4K PLUS is remotely set up and controlled using Extron SIS commands issued from a host computer or other device, such as a control system. SIS commands are issued from the connected computer to the front panel **Config** port (see [Connecting to the USB Port](#) on page 16) to connect to this port).

Host-to-device Communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. You can enter these commands from your computer using a communication software program such as Extron DataViewer. When the device determines that a command is valid, it executes the command and sends a response to the host device.

Most responses from the EDID 111H 4K PLUS to the host computer 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 Messages

When a local event such as a change in input signal or HDCP status, or a change in the EDID assignment (changing the front panel rotary switch) takes place, the device responds by sending a message to the host, indicating the change. No response is required from the host.

Error Responses

If the device is unable to execute a command it receives because the command is invalid or contains invalid parameters, the device returns an error response to the host. The following error response codes can be sent:

- E10** – Invalid command
- E13** – Invalid value (out of range)
- E14** – Not valid for this configuration
- E17** – Invalid command for signal type

Using the Command and Response Table

The command and response table is shown on the following pages. Symbols are used throughout the table to represent variables in the command and response fields. Symbol definitions and an ASCII-to-hexadecimal (HEX) conversion table are shown below. Command and response examples are shown throughout the command and response table.

NOTE: Upper and lower case text can be used interchangeably unless otherwise stated.

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						

Figure 13. ASCII to Hex Conversion Table

Unsolicited Responses	
Sig[x3] * [x3]•Hdcp[x12]•HdcpO[x13] ←	Broadcast when signal or HDCP status changes on any input or output
EdidA[x6] ←	Broadcast when the front panel rotary switch changes position

Common Symbol Definitions	
←	= CR/LF carriage return with line feed (hex 0D 0A)
← or	= Carriage return or pipe symbol (no line feed, hex 0D)
←	= Carriage return with no line feed (no line feed, hex 0D) (for URL-encoded commands, use the pipe character, , instead)
[Esc]	= Escape key, or hex 1B (use W instead of [Esc] for web browsers, or at any time)
	= Pipe (vertical bar) character (URL equivalent to carriage return)
•	= Space
*	= Asterisk character (which is a command character, <u>not</u> a variable)

Command and Response Table for SIS Commands

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.”

Command	ASCII Command (Host to Device)	Response (Device to Host)	Additional Description
Signal Status (corresponds to the front panel LED indicators)			
Input/Output Signal Status	[Esc] 0LS ←	[X3] * [X3] ← Sig [X3] * [X3] ←	Input status * Output status Verbose Mode 2/3
Input HDCP Status	[Esc] I HDCP ←	[X12] ← HdcpI [X12] ←	Verbose Mode 2/3
Output HDCP Status	[Esc] O HDCP ←	[X13] ← HdcpO [X13] ←	Verbose Mode 2/3
Video			
Video Mute	[X2] B	Vmt [X2] ←	
View Video Mute Status	B	[X2] ← Vmt [X2] ←	Verbose Mode 2/3
Input HDCP Authorization	[Esc] E [X3] HDCP ←	HdcpE [X3] ←	[X3] = 1 (enable), default Verbose Mode 2/3
HDCP Authorization Status	[Esc] E HDCP ←	[X3] ← HdcpE [X3] ←	Verbose Mode 2/3
Output HDCP Mode	[Esc] S [X4] HDCP ←	HdcpS [X4] ←	
Output HDCP Mode Status	[Esc] S HDCP ←	[X4] ← HdcpS [X4] ←	Verbose Mode 2/3
Output TMDS Format	[Esc] [X5] VTPO ←	Vtpo [X5] ←	
Output TMDS Format Status	[Esc] VTPO ←	[X5] ← Vtpo [X5] ←	Verbose Mode 2/3
Output Color Bit Depth	[Esc] V [X9] BITD ←	BitdV [X9] ←	
Output Color Bit Depth Status	[Esc] V BITD ←	[X9] ← BitdV [X9] ←	Verbose Mode 2/3
Set Output 5V Mode	[Esc] M [X14] HPLG ←	HplgM [X14] ←	
Output 5V Mode status	[Esc] M HPLG ←	[X14] ← HplgM [X14] ←	Verbose Mode 2/3
Audio			
Disable TMDS Audio Output	[Esc] 00AFMT ←	Afmt00 ←	
Enabled TMDS Audio Output	[Esc] 01AFMT ←	Afmt01 ←	Default
TMDS Audio Output Status	[Esc] 0AFMT ←	[X3] ← Afmt0 [X3] ←	Verbose Mode 2/3
KEY: [X2] = Video mute: 0 = Off (default) 1 = On, video only 2 = Video and sync [X3] = Status 0 = Off, disabled, or undetected 1 = On, enabled, or detected [X4] = Output HDCP mode: 1 = (Default) Encrypt as required by input. Continuous trials for HDMI sinks, attempt for 10s on DVI sinks (then fail) 2 = Always encrypt. Continuous trials for HDMI sinks, attempt for 10s on DVI sinks (then fail). [X5] = Output TMDS format: 1 = Auto (default), HDMI RGB Full if HDMI sink, force DVI format if DVI sink. 2 = DVI RGB 444 Full 3 = HDMI RGB 444 Full 5 = HDMI YUV 444 Limited 6 = HDMI YUV 422 Limited [X9] = Color bit depth: 0 = auto (default) 1 = force 8-bit [X12] = Input HDCP status: 0 = No video detected 1 = Video detected without HDCP (not encrypted) 2 = Video detected with HDCP (encrypted) [X13] = Output HDCP status: 0 = No active sink detected 1 = Non-HDCP sink detected 2 = HDCP sink detected not encrypted [X14] = Output 5V mode: 1 = Auto (5V enabled when source with 5V present, else off) 2 = 5V always enabled (default)			

[illegible]

Reference Information

- [Mounting the EDID 111H 4K PLUS](#)
- [Connecting to the USB Port](#)
- [DataViewer](#)
- [Updating the Firmware](#)

Mounting the EDID 111H 4K PLUS

The one inch high, quarter-rack width, six inch deep enclosure can be mounted on a rack shelf, under a desk or table-top, or set on a table.

Desktop Placement

Attach the four provided rubber feet to the bottom of the EDID 111H 4K PLUS, 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:

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 temperature. Therefore, install the IPL EXP 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 a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — Mount the equipment in the rack so that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit overloading** — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used 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 use of power strips).

Rack Mounting Procedure

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

Connecting to the USB Port

A female mini type-B USB Config port located on the front panel (see [Front Panel Features](#) on page 3) is used to connect to a host computer for configuration using SIS commands with Extron DataViewer, for updating firmware with the Extron Firmware Loader utility and for using PCS.

DataViewer and Firmware Loader are available at www.extron.com. The programs are also necessary to install the USB driver to the connected computer.

To connect the EDID 111H 4K PLUS to a host computer:

NOTES:

- If an Extron USB device has never been connected to the host computer, prior to connecting the Config (USB) port for the first time, you must install and activate the USB driver. The simplest way to do this is to install either Dataviewer (see [DataViewer](#) on page 18) or the Firmware Loader utility (see [Updating the Firmware](#) on page 19).
- The wizard opens only on the first occasion you connect the EDID 111H 4K PLUS to that USB port. The wizard reopens if you connect the EDID 111H 4K PLUS to a different USB port or if you connect a different piece of equipment, requiring a different driver, to the same USB port.

Connect a USB A to mini B cable between the **Config** port on the front panel of the EDID 111H 4K PLUS and a USB port of the PC (see figure 14).

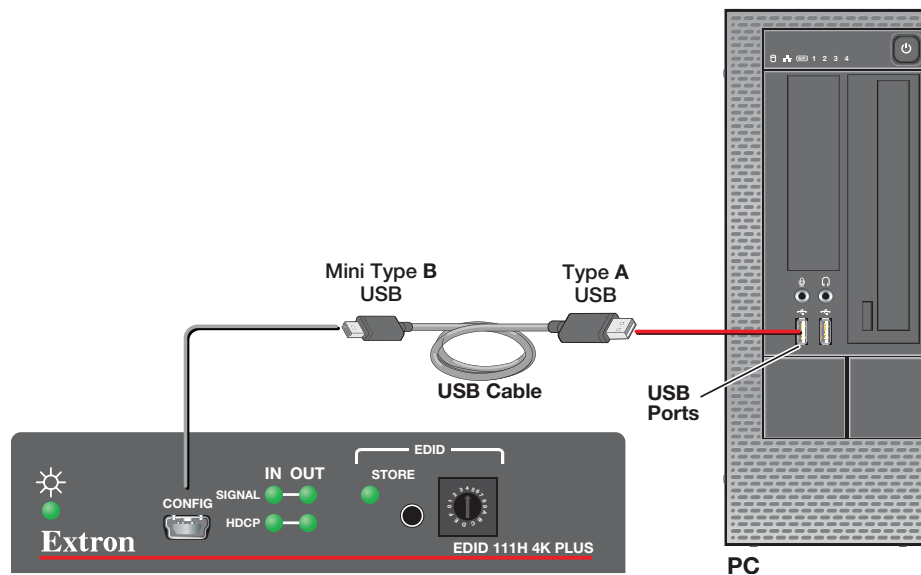


Figure 14. Connecting a PC to the Front Panel USB Port

DataViewer

DataViewer is an enhanced terminal emulation program that facilitates analysis of RS-232, USB, and TCP/IP communication with Extron devices. The software allows users to send commands to a device and view the responses in ASCII or hexadecimal format. Command and response logs can be saved in text or HTML format.

DataViewer is available at www.extron.com. Enter **DataViewer** in the search engine to locate the program.

Download the installation file and load the program on the PC connected to the EDID 111H 4K PLUS.

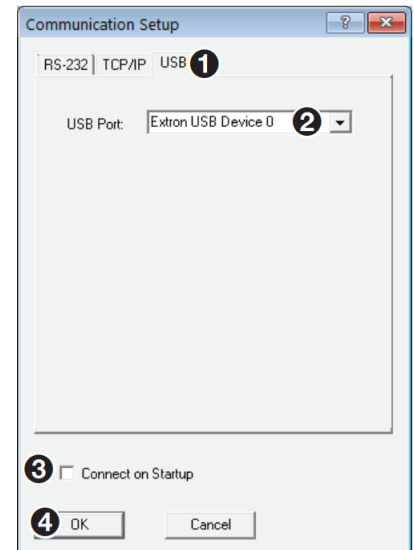
NOTES:

- Only the USB tab is available for the EDID 111H 4K PLUS.
- If an Extron USB device has never been connected to the host computer, after installing DataViewer, you must then install and activate the USB driver [Connecting to the USB Port](#) on page 16.

To run DataViewer:

1. Double-click the DataViewer desktop icon. The **Communications Setup** dialog box opens (see the image at right).
2. Select the **USB** tab (❶).
3. From the **USB Port** drop-down list, select **Extron USB Device 0** (❷).
4. Select the startup option. To automatically connect to the EDID 111H 4K PLUS, click **Connect on Startup** (❸).
5. Click **OK** (❹) to start using the program.

See the DataViewer help file for more information on the program.



Updating the Firmware

Firmware updates are released periodically on the Extron website. You can find the version currently loaded on your device using SIS commands (see [Using the Command and Response Table](#) on page 13). Follow these instructions to update firmware.

TIP: Read the Release Notes provided on the website with the latest firmware to determine whether you need the latest version.

Download and Install Firmware Loader

Use the Extron Firmware Loader utility to update the firmware on Extron products. If you do not already have Firmware Loader installed on your computer, download it as follows:

1. Go to the Extron website at www.extron.com.
2. In the **Search** field, enter **Firmware Loader** and press <Enter> (see figure 15, ①).

The **Firmware Loader** page opens.

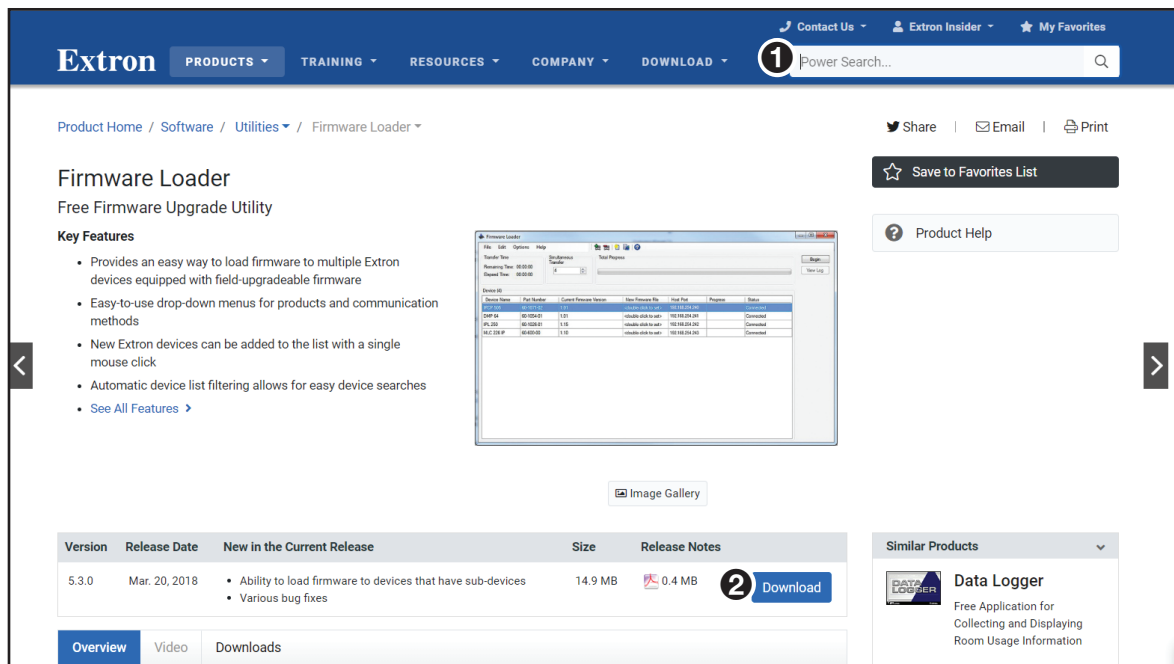


Figure 15. Firmware Loader Download Link

3. Click **Download** (②).
4. Follow the instructions on the remainder of the download screens to save the executable **Firmware Loader installer** file to your computer. Note the folder to which the file was saved.
5. Locate the downloaded executable installer file in your file browser and double-click it.
6. Follow the instructions on the **Installation Wizard** dialog boxes to install Firmware Loader. Unless otherwise specified, the installer program places the Firmware Loader File, **FWLoader.exe**, at **C:\Program Files(x86)\Extron\FWLoader**.

Downloading EDID 111H 4K PLUS Firmware

To obtain the latest version of firmware for your device:

1. Go to the Extron website at www.extron.com.
2. Click the **DOWNLOAD** tab (see [figure 6](#), ❶ on page 8).
3. On the **Download** page, click the **Firmware** (❷) link.

On the **Download Center** page, the firmware files are arranged in alphabetical order.

4. Click “E” in the alphabetical list.
5. Locate the EDID 111H 4K PLUS firmware file listing and click **Download**.

NOTE: Click **Release Notes** to see the issues addressed in the latest update.

6. Save the executable firmware file to your computer. Note the folder to which the file was saved.
7. Locate the downloaded executable file in your file browser and double-click it.
8. Follow the instructions on the Installation Wizard to install the new firmware. A Release Notes file and a set of instructions for updating the firmware are also loaded.

Installing Firmware with Firmware Loader

1. Connect the EDID 111H 4K PLUS front panel USB Configuration port to your computer.
2. Open Firmware Loader and establish a connection between the computer and the device. The **Add Device...** dialog box opens (see [figure 16](#)).

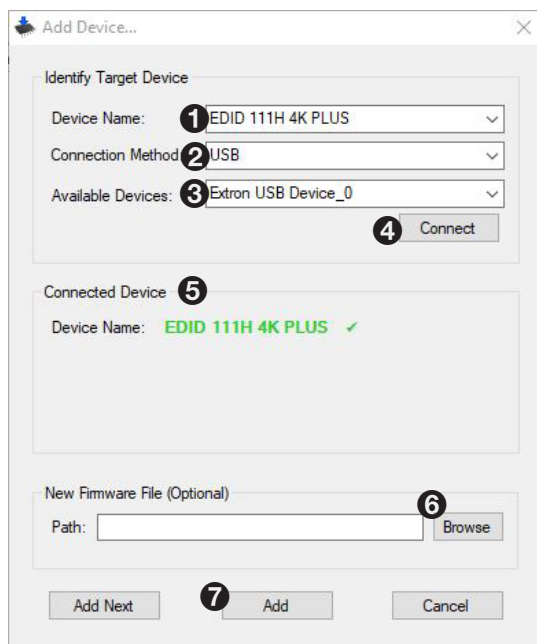


Figure 16. Add Device Dialog Box

3. From the **Device Name** drop-down list (figure 16, ❶), select **EDID 111H 4K PLUS**.
4. From the **Connection Method:** drop-down list (❷), select **USB**.
5. From the **Available Devices:** drop-down list (❸), select **Extron USB Device_0**.

NOTES: Only the Extron USB Device_0 option is available on the Available Devices menu. Make sure that it is selected.

6. Click **Connect** (❹). The **Connected Device** panel (❺) displays the device name.

- Click **Browse** (6), then locate and open the previously downloaded firmware update file.

ATTENTION:

- Valid firmware files must have the file extension EFF. A file with any other extension is not a firmware upgrade for this device and could cause the device to stop functioning.
- Les fichiers firmware valides doivent contenir l'extension fichier EFF. Un fichier avec n'importe quelle autre extension n'est pas une mise à jour de firmware pour cet appareil et l'appareil pourrait arrêter de fonctionner.

- Click **Add** (7). The device and firmware are listed in the Firmware Loader main window.
- Click **Begin** (see figure 17, 1).

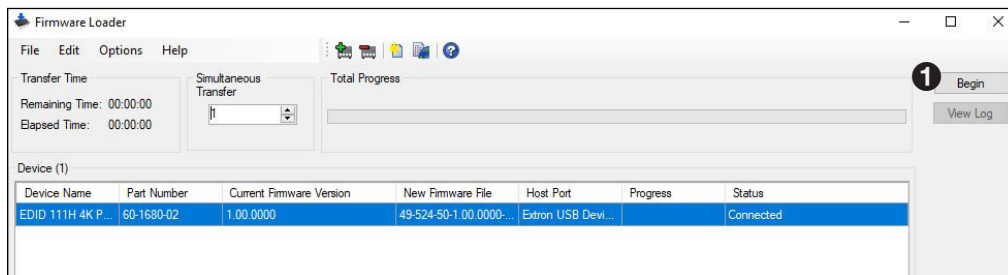


Figure 17. Firmware Loader Main Window

- Close Firmware Loader when the Remaining Time field shows 00.00.00, the Progress column shows 100%, and the Status field shows Completed.

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.