

HDP 101 4K • User Guide

The Extron HDP 101 4K is a compact, active HDMI to DisplayPort converter for signals up to 4K/30 @ 4:4:4. It converts HDMI signals for connection to DisplayPort displays or peripherals. Incoming HDMI signals are equalized up to 15 feet (4 meters) at the input to compensate for signal loss. The HDP 101 4K features EDID Minder®, which maintains continuous EDID communication with connected devices and ensures that the HDMI source powers up properly and maintains correct video output. Audio information is passed between source and display.

The HDP 101 4K supports digital video resolutions of up to 4K/30 @ 4:4:4 (or 10.2 Gbps) and is DisplayPort 1.1, HDMI 1.4, and HDCP 1.4 compliant.



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.

NOTES:

- This unit was tested with shielded I/O cables on the peripheral devices. Shielded cables must be used to ensure compliance with FCC emissions limits.
- 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.

Specifications

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

Features

- **Provides connectivity between HDMI sources and DisplayPort displays and peripherals.**
- **Supports computer and video resolutions up to 4K/30 @ 4:4:4 with data rates up to 10.2 Gbps.**
- **Supported HDMI specification features include data rates up to 10.2 Gbps, 3D, Lip Sync, and HD lossless audio formats.**
- **Equalizes incoming HDMI signals up to 15 feet (4 meters) to compensate for signal loss due to low quality cables or marginal sources.**
- **EDID Minder automatically manages EDID communication between connected devices** — EDID Minder ensures that 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 HDP 101 4K offers the option of capturing and then storing EDID information from the display device.
- **Complies with HDMI and VESA Interoperability Guidelines.**
- **HDCP 1.4 compliant** — The HDP 101 4K ensures display of content-protected media and interoperability with earlier versions of HDCP-compliant devices.
- **LED indicators for signal presence and power** — Provide visual indication of system status for real-time feedback and monitoring of key performance parameters.
- **Front panel USB configuration port** — Provides convenient access for setup, configuration, and firmware updates.
- **Easy setup and commissioning with Extron PCS – Product Configuration Software** — Conveniently configure multiple products using a single software application.
- **Compact 1 inch (2.5 cm) high, 2.2 inch (5.6 cm) wide enclosure for discreet placement and mounting in space-constrained environments** — Includes fabric hook and loop tape for easy installation in any application.

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- Supports LPCM audio.
- Includes LockIt® HDMI cable lacing brackets.
- External Extron Everlast™ power supply included — Provides worldwide power compatibility with high-demonstrated reliability and low power consumption.
- Extron Everlast Power Supply is covered by a 7-year parts and labor warranty

Application Diagram

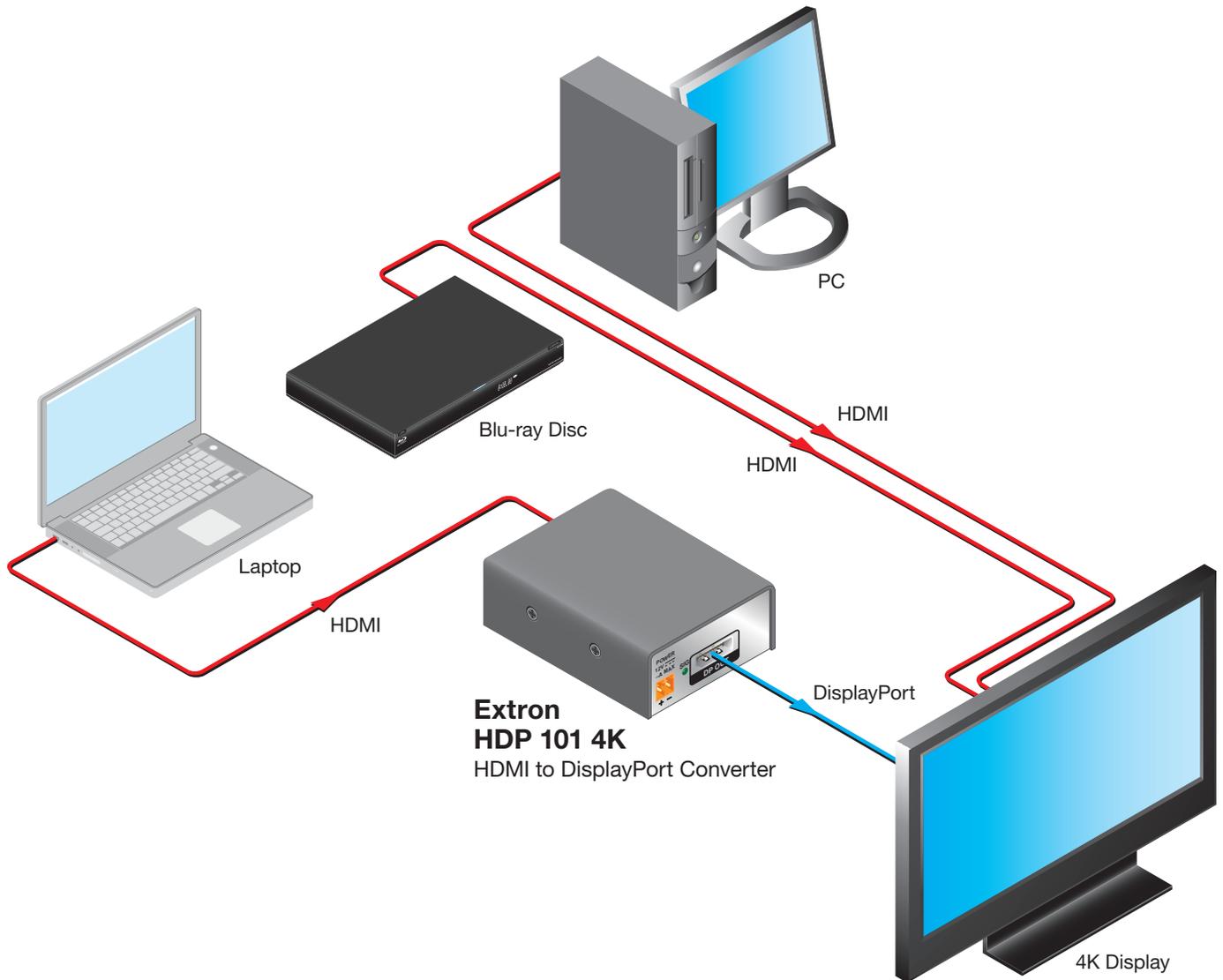


Figure 1. HDP 101 4K Application

Mounting

Use the included hook-and-loop tape to attach the HDP 101 4K to the application surface.

Cabling

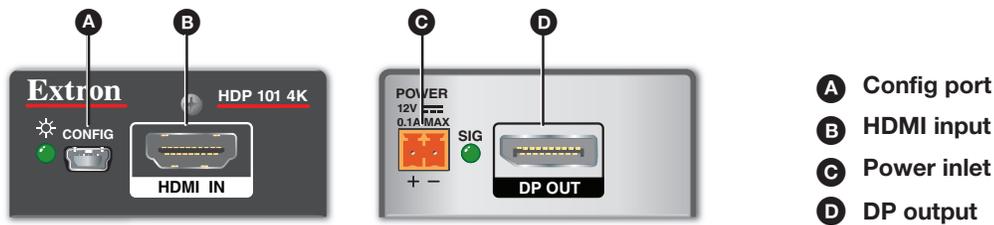


Figure 2. HDP 101 4K Panels

- A Config port** — Connect a host computer to this mini-B USB port to configure the HDP 101 4K.
- B HDMI input** — Connect an HDMI source device to the HDMI input.

NOTE: Extron recommends using HDMI Pro Series cables for 300 Mhz pixel clock (4K/UHD) signals.

- C Power inlet** — Wire the external 12 VDC power supply as shown below, and connect it to the two-pole captive screw Power connector.

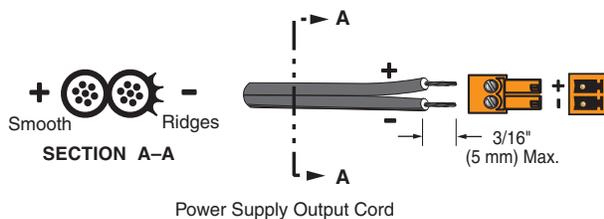


Figure 3. Wiring the Power Connector

ATTENTION:

- The length of the exposed wires in the stripping process is critical. 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 primordiale 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.
- Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
- 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 ainsi que l'unité.
- If not provided with a power supply, this product is intended to be supplied by a UL Listed power source marked "Class 2" or "LPS" rated 12 VDC, 0.1 A minimum.
- Si le produit n'est pas fourni avec une source d'alimentation, il doit être alimenté par une source d'alimentation certifiée UL de classe 2 ou LPS avec une tension nominale de 12 Vcc, 0.1 A minimum.
- 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.
- Sauf mention contraire, les adaptateurs CA/CC ne conviennent pas à une utilisation dans les espaces d'aération ou dans les cavités murales. La source d'alimentation doit être placée à proximité de l'équipement Extron dans un emplacement ordinaire soumis à un degré de pollution de catégorie II, solidement fixé au rack d'équipement d'une baie technique, d'un pupitre, ou d'un bureau.
- 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 la structure de bâtiment ou à d'autres structures similaires.

- D DP output** — Connect a DisplayPort device to the DP output.

LED Indicators

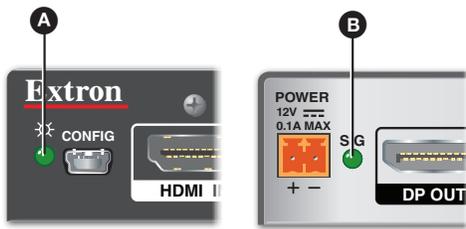


Figure 4. HDP 101 4K LED Indicators

- A Power and signal LED (front)** — Lights amber to indicate power, and lights green to indicate HDMI signal presence.
- B Output signal LED (rear)** — Lights green to indicate signal presence on the DisplayPort output.

Firmware Upgrades

The HDP 101 4K firmware can be upgraded via Product Configuration Software (PCS) or the Extron Firmware Loader program (available at www.extron.com).

SIS Commands

The HDP 101 4K can be configured with specific SIS commands via a USB connection. Use the Extron DataViewer utility or a control system to send SIS commands and receive responses. SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the HDP 101 4K recognizes a valid command, it executes the command and sends a response to the host device. All responses from the receiver to the host end the character string with a carriage return and a line feed (CR/LF = \leftarrow). A string is one or more characters.

When the HDP 101 4K is first switched on, it sends the message:

© Copyright 2018, Extron Electronics HDP 101 4K, Vx.xx, 60-1739-01

- Vx.xx is the firmware version number.
- 60-1739-01 is the product part number.

Error Responses

When the HDP 101 4K receives a valid SIS command, it executes the command and sends a response to the host device. If the HDP 101 4K is unable to execute the command because the command is invalid or contains invalid parameters, it returns the following error responses to the host:

- E10 – Invalid command
- E13 – Invalid parameter

Using the Command and Response Table

The [Command and Response Table for SIS Commands](#) starting on page 6 lists the following:

- Valid ASCII command codes
- The device response to the host
- A description of the command function, or the results of executing the command

The ASCII to hexadecimal conversion table below is for use with the command and response table:

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

Command and Response Table for SIS Commands

- ↵ = Carriage return and line feed (LF)
- ← = Carriage return with no line feed
- | = Pipe (can be used interchangeably with the ← character).
- = Space
- Esc** = Escape key
- W = Can be used interchangeably with the **Esc** character.
- x1** = Status
 - ∅ = Off/low/undetected
 - 1 = On/high/detected
- x4** = EDID: 1 to 3 (see table)

x4	Slot	Default EDID	Details
1	Input 1 (Store) Slot	HDMI 1080p @ 60 Hz LPCM-2Ch	Default
2	Output		
3	User Loaded Slot		Manually populated via PCS

- x5** = Verbose mode:
 - ∅ = Clear/none
 - 1 = Verbose mode (default)
 - 2 = Tagged responses for queries
 - 3 = Verbose mode and tagged responses for queries
- x6** = HDP 101 4K part number 6∅-1739-∅1
- x7** = Text string of up to 24 alphanumeric characters and hyphen (-). No spaces allowed, and no distinction between upper and lowercase. First character must be a letter and the last must not be a hyphen. Default is "HDP - 1∅1 - 4K".

NOTE: Upper- and lowercase characters can be used interchangeably in the command field unless otherwise specified.

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Command and Response Table for SIS Commands

Command	ASCII Command (Host to Device)	Response (Device to Host)	Additional Description
Signal Status			
Input and output signal status	[Esc]LS ← Verbose mode 2/3	[X1]•[X1] ← Sig [X1]•[X1] ←	Input•output (unsolicited)
EDID Assignment			
Assign EDID slot to input	[Esc]A[X4]EDID ←	EdidA [X4] ←	[X4] : 1 = default
View EDID assignment	[Esc]AEDID ← Verbose mode 2/3	[X4] ← EdidA [X4] ←	
Verbose Mode			
Set verbose mode	[Esc][X5]CV ←	Vrb [X5] ←	[X5] : 1 = default
View verbose mode	[Esc]CV ← Verbose mode 2/3	[X5] ← Vrb [X5] ←	
Unit Name			
Set the unit name	[Esc][X7]CN ←	Ipn• [X7] ←	Up to 24 alphanumeric characters including "-"
Set unit name to factory default	[Esc]•CN ←	Ipn•HDP - 1Ø1 - 4K←	
View unit name	[Esc]CN ← Verbose mode 2/3	[X7] ← Ipn• [X7] ←	
Information and Other Queries			
Query part number	N Verbose mode 2/3	[X6] ← Pno• [X6] ←	
Query Firmware version	Q	<i>n . nn</i>	
Query Firmware version with build	*Q	<i>n . nn . nnnn</i>	
Query model name	1i Verbose mode 2/3	HDP•1Ø1•4K← InfØ1•HDP•1Ø1•4K←	
Query model description	2i Verbose mode 2/3	HDMI•TØDP•4K•3Ø← InfØ2•HDMI•TØDP•4K•3Ø←	
Reset to factory default settings	[Esc]ZXXX ←	Zpx←	

KEY:

- [X1]** = Status — Ø = Off/low/undetected, 1 = On/high/detected
- [X4]** = EDID: 1 to 3 (see [table](#) on previous page)
- [X5]** = Verbose mode — Ø = Clear/none, 1 = Verbose mode (default), 2 = Tagged responses for queries, 3 = Verbose mode and tagged responses for queries
- [X6]** = HDP 101 4K part number 6Ø - 1739 - Ø1
- [X7]** = Text string of up to 24 alphanumeric characters and hyphen (-). No spaces allowed, and no distinction between upper and lowercase. First character must be a letter and the last must not be a hyphen. Default is "HDP - 1Ø1 - 4K".

Product Configuration Software

The HDP 101 4K uses PCS to configure and reset the unit, as well as upload firmware.

Download Software from the Extron Website

Visit www.extron.com to download the latest version of PCS.

NOTE: Also download the latest versions of software and firmware for the HDP 101 4K. To update firmware, use PCS or download and install Firmware Loader.

1. Mouse over the **Download** tab at the top of the **Extron website** (see figure 5 , ①).

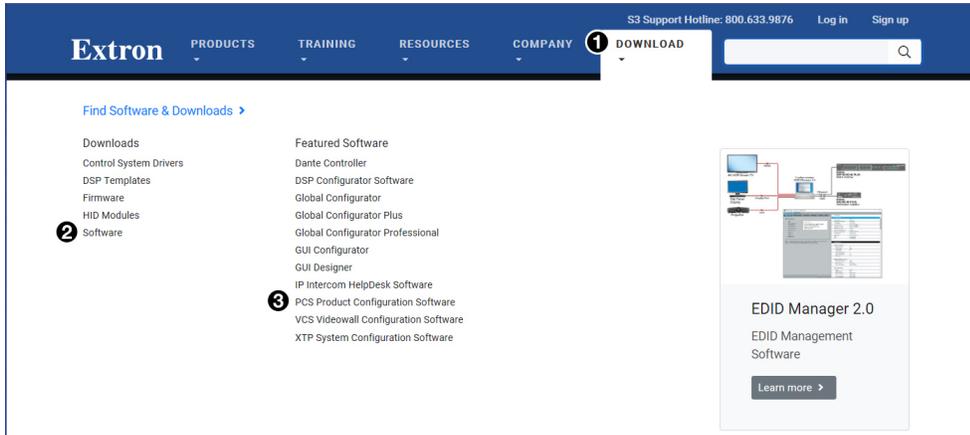


Figure 5. Software and Firmware Links on Download Page

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

For software, either click the **Software** link (②) in the first column or, if the software is listed, click directly on that link (for example, see the PCS link in figure 5, ③).

3. If there is no direct link, click on **Software** or **Firmware** and scroll down to the alphabetic navigation bar (see figure 6).



Figure 6. Alphabetic Navigation Bar

4. Click the appropriate letter to locate the software or firmware (for example, click **H** for the HDP 101 4K).
5. Click **Download** and follow the on-screen instructions.

Using PCS

1. Connect the control PC, with PCS installed, to the HDP 101 4K. The Windows-based PCS communicates with the device via the Front Panel Configuration port (see figure 2, A page 3) with a standard USB mini-B connector.
2. Open PCS on the control PC from the PCS icon loaded on the desktop (optional, see image on the right) or from the Start menu:



Start>Programs>Extron Electronics>Extron Product Configuration Software>Extron Product Configuration Software

The Product Configuration Software opens to the Device Discovery screen:

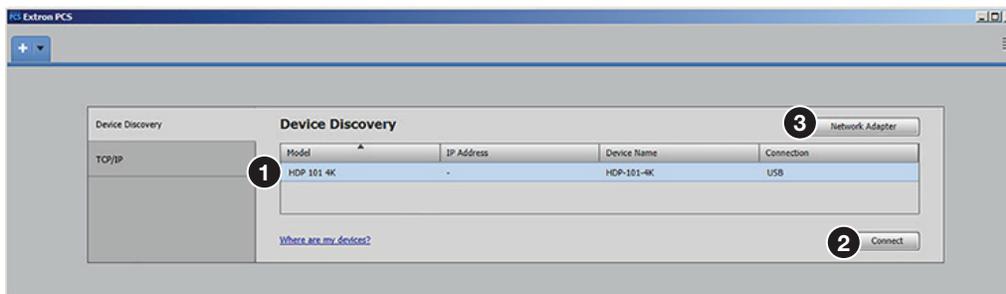


Figure 7. PCS Device Discovery Screen

3. Select the HDP 101 4K device by clicking on it to highlight it in the list (see [figure 7](#), **1** on the previous page).

NOTE: If the device does not appear in the list and one or more network adapters are being used, click on the **Network Adapter** button (**3**) to select the appropriate adapter.

4. Click **Connect** (**2**).

The Product Configuration Software opens to the device main menu.

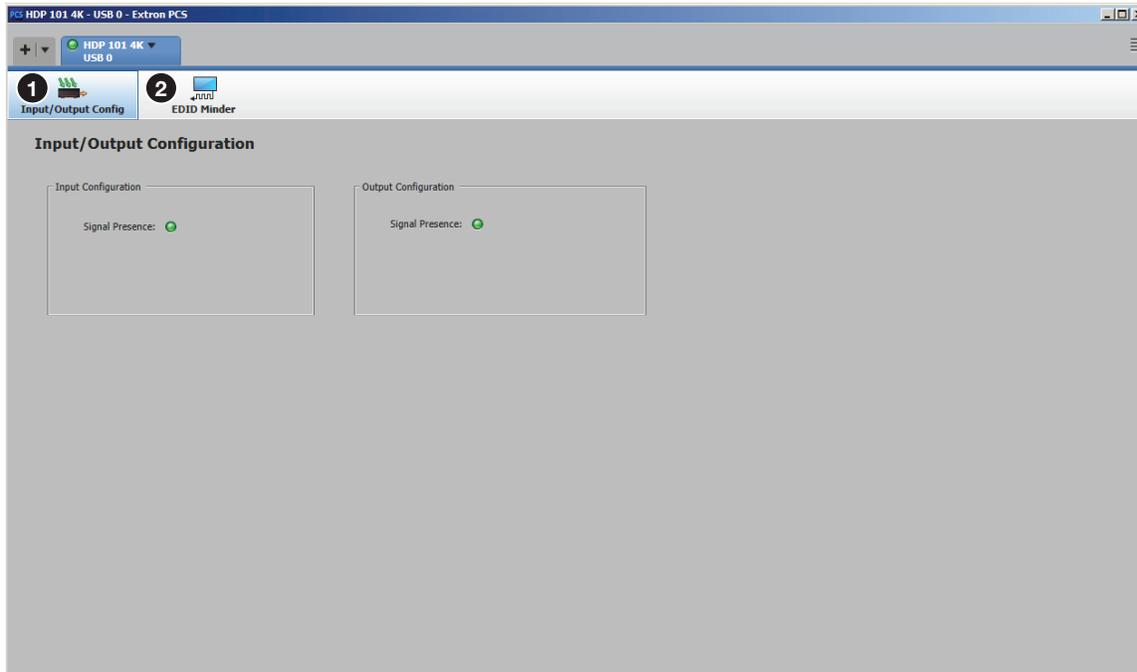


Figure 8. HDP 101 4K PCS Main Menu

The configuration pages have a global navigation bar (see [figure 8](#)) from which each of the individual configuration pages can be accessed.

These pages are:

- 1** Input/Output Configuration
- 2** EDID Minder

5. Select either of these pages to begin configuring the HDP 101 4K.

Input/Output Configuration

This page allows users to view the status of the input and the output.

Input Configuration

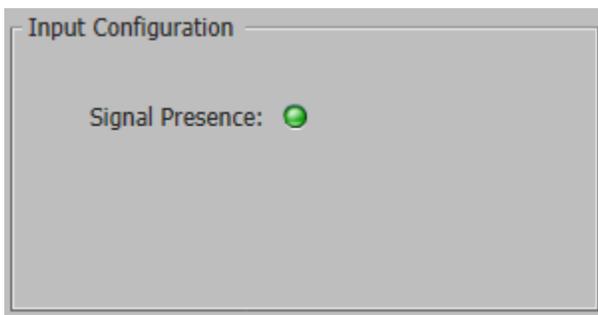


Figure 9. Input Configuration Panel

The Input Configuration panel (see [figure 9](#)) allows the user to view the presence of the input signal.

- **Signal Presence** — Connection status icon shows green when an active HDMI signal is present.

Output Configuration

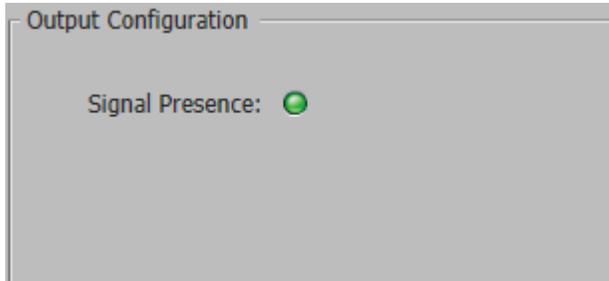


Figure 10. Output Configuration Panel

- **Signal Presence** — Signal status icon shows green when an active DisplayPort signal is present (see figure 10).

EDID Minder

EDID Minder manages the resolution and refresh rate between the HDP 101 4K HDMI input and the DisplayPort output source. Click the **EDID Minder** icon (see figure 11, ①) on the global navigation bar to open the EDID Minder page. EDID can be set to match output rate, a custom user-defined EDID, or a factory setting.

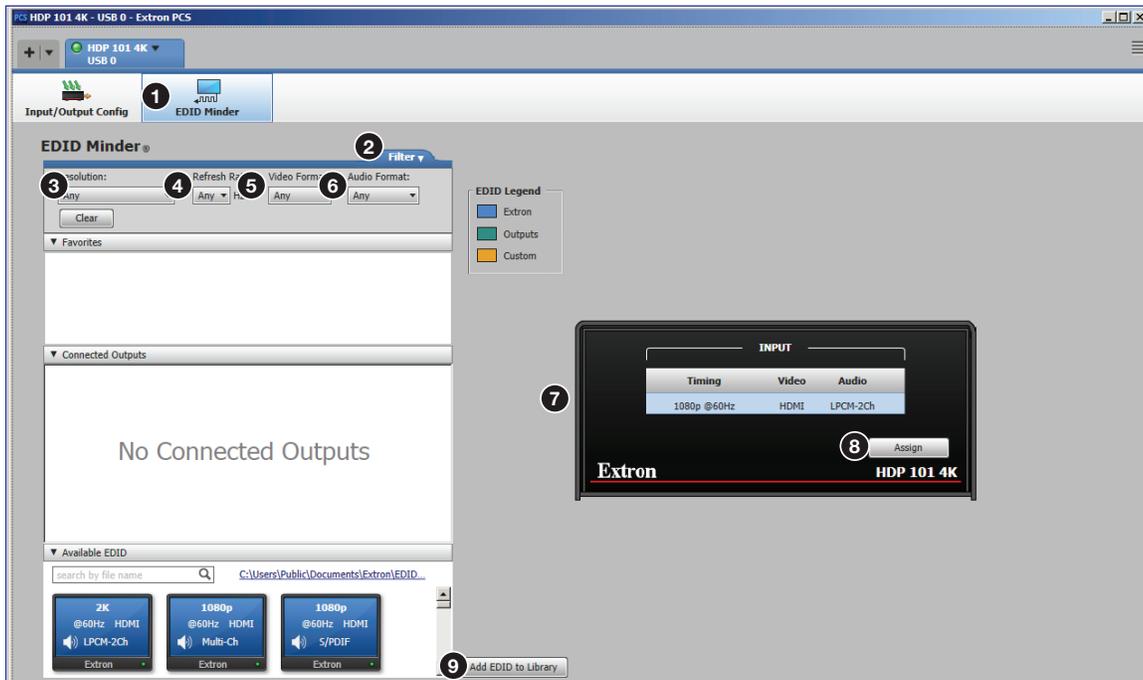


Figure 11. EDID Minder Page

Filtering Available EDID

Use the Filter tab (②) to limit the number of available EDID displayed in the Favorites, Connected Output, and Available EDID panels.

1. From the Resolution drop-down menu (③), select a specific resolution or **Any**.
2. From the Refresh Rate drop-down menu (④), select a specific refresh rate or **Any**.
3. From the Video Format drop-down menu (⑤), select **HDMI** or **Any**.
4. From the Audio Format drop-down menu (⑥), select **LPCM 2-Ch**, **None** or **Any**.

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Assigning EDID

To assign EDID to the input:

1. From the Input box on the right (see [figure 11](#), **7**) on the previous page), select the input.
2. From the Favorites, Available EDID, or Connected Output panel on the left, select the desired EDID.
3. Then either:
 - Click the **Assign** button (**8**) to assign EDID to the input.
 - OR
 - Drag and drop the EDID image from the Favorites, Available EDID, or Connected Output panels to the Input box.

Adding EDID to the EDID Library

1. Click the **Add EDID to Library** button (see [figure 11](#), **9**). The Browse Add EDID to the Library window opens (see [figure 12](#)).

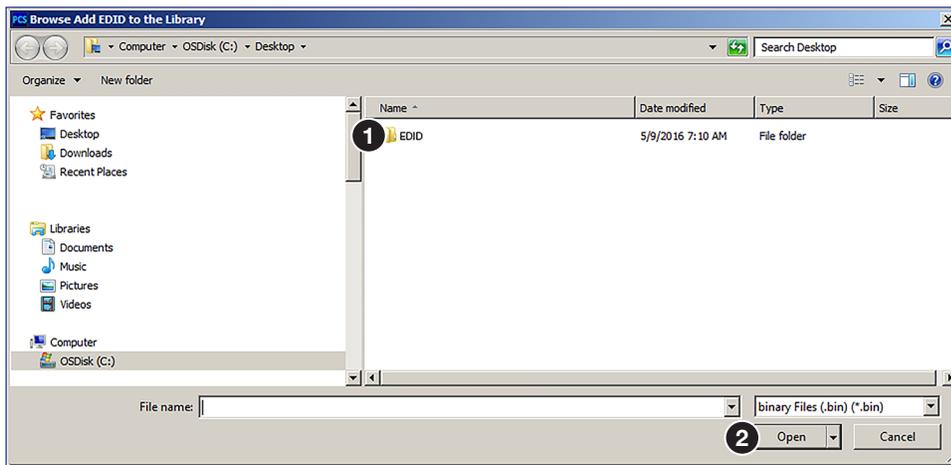


Figure 12. Browse Add EDID to the Library Window

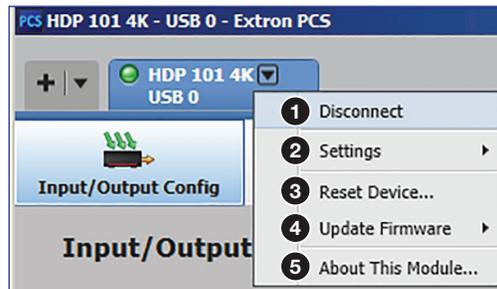
2. Navigate to the desired EDID file location and select it (see [figure 12](#), **1**).

NOTE: Valid EDID files have a .bin file extension.

3. Click the **Open** button (**2**). The EDID is added to the Available EDID panel.

Device Menu

- 1** Disconnect the device from PCS
- 2** View the hardware Settings
- 3** Reset Device to factory default
- 4** Update Firmware
- 5** View information About This Module



Extron PCS Help File

For assistance, the *Extron PCS Help* contains complete information about using the program to configure the HDP 101 4K.

To access Extron PCS Help, click the button in the top right corner of the PCS program screen (see the image on the right, **1**) and click on **Extron PCS Help** (**2**).

