Extron

DVS 605 Series

HDCP-Compliant Scalers
(with Seamless Switching)

User Guide
Scalers and Signal Processors

68-2110-01, Rev. J
03 25

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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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 estan 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

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.

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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.

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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.

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

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

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。

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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。

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주의: 이 기호가 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.

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.

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。

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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:

```
^AR Merge Scene,,Op1 scene 1,1 ^B 51 ^W^C
[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 mentioned in this guide, the character "0" is used for the number zero and "O" is the capital letter "o."

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 208.132.180.48: bytes=32 times=2ms TTL=32
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx –t
SOH R Data STX Command ETB ETX
```

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

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

Click the **OK** button.

Specifications Availability

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

Extron Glossary of Terms

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

Contents

Introduction

This guide contains information about the Extron DVS 605 scalers with instructions for experienced installers on how to install, configure, and operate the equipment.

In this guide the terms “DVS,” “digital video scaler,” and “scaler” are used interchangeably and refer to any DVS 605 model.

This section describes this guide and features of the DVS 605 , including:

DVS 605 Series Description

The DVS 605 series of digital video scalers is comprised of:

- DVS 605 , standard model
- DVS 605 A, with audio switching
- DVS 605 D, with 3G/HD-SDI output
- DVS 605 AD, with 3G/HD-SDI output and audio switching

All models are full rack width, and are available with optional 3G/HD-SDI outputs (DVS 605 D and DVS 605 AD) and balanced or unbalanced audio (DVS 605 A and DVS 605 AD).

All models are high performance video scalers that include three HDMI inputs, two universal analog video inputs, and simultaneous HDMI and analog high resolution outputs. The DVS 605 models accept a wide variety of video formats, including HDMI with HDCP, HDTV, RGB, and standard definition video. They feature advanced Extron video signal processing with 1080i de-interlacing, Deep Color processing, and true seamless switching for professional-quality presentations. The DVS 605 models offer flexible control options including Ethernet, RS-232, USB, hardwired IR, and contact closure.

The five inputs of all DVS 605 models accommodate a variety of sources. Analog inputs can automatically detect and process RGB computer-video, HDTV, component video, S-video, and composite video. The DVS 605 provides the capability to integrate digital and analog video devices, with HDCP compliance to enable integration of Blu-Ray Disc players and cable or satellite HD receivers. Auto-switching between inputs streamlines system operation as well as integration with presentation switchers or matrix switchers.

Output scan rates are available from VGA (640x480) to 1920x1200 resolution, as well as HDTV at 720p, 1080i, 1080p/60 Hz, and 2K/60 Hz.

NOTE: See the **Resolution and refresh rates** on page 16 for a full list.

The DVS 605 models feature EDID Minder and Key Minder. EDID Minder automatically manages Extended Display Identification Data (EDID) communications between the display device and all the HDMI and VGA computer-video input sources.

For HDMI signals with protected content, Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments.

DVS 605 models with audio switching feature HDMI audio embedding and de-embedding. Any input audio signal can be embedded onto the HDMI output. DVS 605 audio models can also extract embedded HDMI audio to analog and digital S/PDIF outputs. The DVS 605 AD, with audio switching plus 3G-SDI/HD-SDI output, can embed up to eight channels of audio onto the SDI output.

Licensed Third-Party Software Used in the DVS 605

The DVS 605 uses various licensed third-party software during operation. To view details about third-party packages and associated licensing, click the **`License Information`** button on the **`Unit Information`** page of the default web pages (see the **Unit Information Page** on page 109). The DVS 605 **`License Information`** dialog box opens.

To view a copy of a listed package license, in the dialog box, click the link in the `License` column for the relevant package. This opens a copy of the package license in a separate window.

Click **`Close`** to close the dialog box.

The table below lists the licensed third-party software used by the DVS 605 .

NOTE: Licensed third-party software used by the DVS 605 is subject to change without notice.

Licensed Third-party Software Used in the DVS 605			
Package	**License**	**Package**	**License**
avahi	GNU LGPL v2.1	libpng	libpng license
bstrib	BSD	lighttpd	BSD
busybox	GNU GPL v2	Linux	GNU GPL v2
bzip2	BSD	lua	MIT
cjson	MIT	lua-cjson	MIT
expat	BSD	luafilesystem	MIT
ExtJS4	Sencha Commercial License	luasocket	MIT
fcgi	fcgi	luastruct	MIT
freetype	Free Type License	mtd	GNU GPL v2
gnupg-1.4.7	GNU LGPL v2.1	ncurses	MIT
gpgme	GNU LGPL	openssh	BSD
ifplugd	GNU GPL	openssl	OpenSSL
jpeg	libjpeg	PAM	BSD
libassuan	GNU LGPL	pcre	BSD
libcgicc 3.2.3	GNU LGPL v2.1	psmisc	GNU GPL v2
libcurl	ICS	qt	GNU LGPL v2.1
libdaemon	GNU GPL v2.1	socat	GNU GPL v2
libdnet	BSD	spawn-fcgi	BSD
libgpg	GNU GPL v2.1	sqlite	public domain
libcap	BSD	xinetd	custom
net-snmp	BSD		

Key Features

Video Inputs

- **Three HDMI and two universal analog video inputs** — The two universal 15-pin HD inputs automatically detect incoming RGB, HD component video, YUVi, S-video, or composite video signals. The DVS 605 allows for seamless switching between HDMI and analog video sources.
- **Auto input format detection** — For the universal analog video inputs, the DVS 605 detects the incoming signal format, automatically reconfiguring the scaler to provide the appropriate decoding and signal processing.

- **Auto-switching between inputs** — The DVS 605 can automatically switch between input sources. The unit can be set up to automatically switch to an active input, by giving priority to the highest active input (5 to 1), or to the lowest active input (1 to 5). This allows for simple, automated control of the DVS 605 when a control system is not in use.

  The Auto Switch feature detects “active” video inputs by the presence of valid horizontal and vertical sync inputs, and not by the presence of an input cable, or +5 VDC from a source that is currently not outputting active video. Using simultaneous video input detection on all inputs, the DVS 605 switches to the active input depending on the configured order of precedence (high to low vs. low to high).

  With auto-switching, the DVS 605 can accommodate additional inputs when connected to the outputs of a larger presentation switcher, or can be used for unmanaged switching, or as an upstream matrix switcher.

  NOTE: When Auto Switch mode is active, Picture-in-Picture (PIP) mode cannot be enabled. Similarly, if PIP mode is currently active, Auto Switch mode cannot be enabled.

- **True seamless switching** — Seamless cut and dissolve transition effects are available for inputs 1 through 4. Input 5 features glitch-free switching with a fade through to black.

  NOTE: True seamless switching is not available with PIP mode enabled (see **Picture-in-Picture (PIP) Mode** on page 26 for further details).

Video Outputs

- **3G/HD-SDI output** — Active only if the current resolution is set to 720p, 1080i, 1080p, or 2K at 23.98, at 24, or at 25 Hz. All video outputs (HDMI, VGA, SDI) share a common output resolution and display the same content.
- **Simultaneous scaled outputs for HDMI, HD-SDI, and analog RGB or HD component video** — HDMI and high resolution analog RGB or component video outputs are available for driving two displays.
- **Selectable output rates** — Available output rates include computer video (640x480) up to 1920x1200, HDTV rates up to 1080p@60 Hz, and 2048x1080 (2K@60 Hz).
- **Picture-in-picture (PIP)** — For inputs 1 through 4, the DVS 605 provides unrestricted two-window display of standard definition and high resolution digital and analog video sources. Multiple PIP presets are available, including side-by-side windows. The main and PIP windows can be dynamically sized, positioned, and magnified. In audio models, audio switching can be set to follow either the main or PIP window.

  NOTE: True seamless switching is not available with PIP mode enabled (see **Picture-in-Picture (PIP) Mode** for further details).

Audio

- **Audio switching** — The DVS 605 A and DVS 605 AD feature audio switching for five analog stereo balanced or unbalanced inputs.
- **Output volume control** — DVS 605 audio models provide master volume control for analog audio only. Fixed and variable line level outputs are available, and each output can be balanced or unbalanced. Stereo input signals can be output as dual mono. The DVS 605 audio models also include a S/PDIF digital audio output.
- **Audio input gain and attenuation** — Gain or attenuation can be adjusted for each analog audio input to eliminate noticeable differences when switching between sources.

  NOTE: Digital audio is not be affected by adjustments made to the gain or attenuation.

- **Audio breakaway** — Provides the capability to break an analog audio signal away from its corresponding video signal and route to the audio outputs, allowing the analog audio channels to be operated as a separate switcher.
- **Audio switching transitions** — A transition technique can be applied during switches that lowers the audio of the switched-out source while simultaneously bringing up the audio of the activated source. The duration of the audio crossfade matches the duration of the video switching transition.

- **Integrated audio delay** — The DVS automatically delays all analog and digital audio inputs to compensate for internal video processing delay. Occasionally additional audio delay is required to account for other signal processors, scalers, or display devices in a system. For these situations, the DVS 605 offers an additional 0-255 ms static global audio delay that can be set via SIS command or internal web pages to eliminate audio "lip sync" issues.
- **HDMI audio embedding and de-embedding** — For DVS 605 models with audio, analog input audio signals can be embedded onto the HDMI output signal.
  The DVS 605 can also extract PCM embedded HDMI audio signals. Encoded bitstream audio for Dolby® Digital or DTS® Digital Surround a can be passed to the HDMI and S/PDIF outputs.

General

- **HDMI compliance** — Features include data rates up to 6.75 Gbps, Deep Color, and HD lossless audio formats.
- **HDCP authentication and signal presence confirmation** — The DVS 605 provides real-time verification via RS-232, USB, or Ethernet, of HDCP status for each digital video input and output. This allows signal and HDCP verification through USB,
  RS-232, or Ethernet, providing feedback to system operators or support staff.
- **HDCP visual confirmation** — This provides a green signal when encrypted content is sent to a non-compliant display, providing immediate visual confirmation that protected content cannot be viewed on the display.
- **Key Minder** — This feature continuously verifies HDCP compliance for quick, reliable switching. It authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching while enabling simultaneous distribution of a single source signal to one or more displays.
- **Advanced scaling engine** — The DVS 605 features a high performance 30-bit scaling engine with the ability to scale high resolution computer-video and HDTV as well as standard definition video up or down in resolution.
- **EDID Minder** — This feature automatically manages EDID communication between connected devices, ensuring all sources power up properly and reliably output content for display.
- **AFL - Accu-RATE Frame Lock** — A patented technology exclusive to Extron that eliminates image tearing caused by frame rate conversion.
- **Image freeze control** — A live image can be frozen using control via USB, RS-232 serial, Ethernet, or IR control.
- **Auto-Image setup** — When activated, the unit automatically detects the resolution of the incoming video signal and sets the total pixels, active pixels, and active lines, as well as the horizontal and vertical starting points.
- **Auto Input Memory** — When activated, the DVS 605 automatically stores size, position, and picture settings based on the incoming signal. When the same signal is detected again, these image settings are automatically recalled from memory.
- **On-screen display** — The DVS 605 features an on-screen display that displays status information of the currently selected input.
- **On-screen input labels** — An on-screen text label may be assigned to each input. The label can be up to 16 characters and input via RS-232 or Ethernet.
- **Power screen saver mode and standby modes** — The DVS 605 can be set to automatically mute video and sync output to the display device when no active input signal is detected. This allows the projector or flat-panel display to automatically enter into standby mode to save energy and enhance lamp or panel life.
- **Picture controls** — These include brightness, contrast, color, tint, and detail, as well as horizontal and vertical positioning, and sizing. Sixteen user memory presets are available for each input to store all image settings.
- **Automatic 3:2 and 2:2 pulldown detection** — The DVS 605 offers advanced film mode processing techniques that help maximize image detail and sharpness for NTSC, PAL, and HDTV 1080i sources that originated from film.
- **Motion adaptive 1080i and SD de-interlacing** — The DVS 605 provides high performance de-interlacing for 1080i and standard definition signals from sources including cable or satellite set-top boxes, delivering optimized image quality through advanced motion compensation.

- **Aspect ratio control** — The aspect ratio of the video output can be controlled by selecting a Fill mode, which provides a full screen output, or a Follow mode, which preserves the original aspect ratio of the input signal.
- **Quad standard video decoding** — The DVS 605 uses a digital, 3D adaptive comb filter to decode NTSC 3.58, NTSC 4.43, PAL, and SECAM signals for integration into systems worldwide.
- **Internal test patterns for calibration and setup** — The DVS 605 offers 14 test patterns: crop pattern, crosshatch, 16 bar grayscale, color bars, alternating pixels, ramp, white field, 4 x 4 crosshatch, and four aspect ratio patterns – 1.33, 1.78, 1.85, and 2.35.
- **Optional 3G/HD-SDI output with genlock** — This output complies with SMPTE 292M and 424M, and ITU digital video standards. Genlock allows synchronization to an external reference signal for integration into broadcast and production applications.
- **Front panel security lockout** — This feature locks out all front panel functions except for input selection. All functions, however, are available through USB, RS-232, or Ethernet control.
- **Hardwired IR connection** — The DVS 605 features a rear panel hardwired IR port for connection to Extron MediaLink Controllers, IP Link Control Processors, or IR receivers for additional control flexibility.
- **Ethernet monitoring and control** — The DVS 605 can be controlled and proactively monitored over a LAN, WAN, or the Internet. An intuitive web interface is included for setup and control.
- **RS-232 control port** — Using serial commands, the DVS 605 can be controlled and configured, or integrated into a control system. Extron products use the Simple Instruction Set (SIS) command protocol, a set of basic ASCII code commands that allow for quick and easy programming.
- **Front panel USB configuration port** — Enables easy configuration without having to access the rear panel.
- **Contact closure ports** — These can be used for external control of source switching.
- **Rack-mountable** — The DVS 605 has a 1U, full rack width metal enclosure.
- **LockIt HDMI cable lacing brackets** — These brackets are included and are used to secure HDMI cables to the device.
- **Internal universal power supply** — The 100-240 VAC, 50-60 Hz, international power supply provides worldwide power compatibility.

Controlling the DVS 605

All DVS 605 Series units can be controlled using one or more of the following methods:

- The front panel controls.
- A computer, a touch screen panel, or any other device that can send and receive serial communications through the USB, RS-232, or Ethernet port. Extron SIS is a set of simple keystroke commands that can be used with any such devices.
- The Product Configuration Software (PCS) program, via computer connected through the front panel USB or Ethernet port.
- Embedded web pages provide a web browser-style interface for controlling the scaler from a computer over a LAN network.
- Hardwired IR.
- Ethernet control via IP Link, enabling the scaler to be controlled and actively monitored over a LAN, WAN, or the Internet.

Rear Panel Connections

This section describes how to connect cables to a DVS 605 scaler.

Rear Panel Cabling

The illustration below shows all the possible rear panel features of the audio (DVS 605 A and DVS 605 AD) and the non-audio (DVS 605 and DVS 605 D) models.

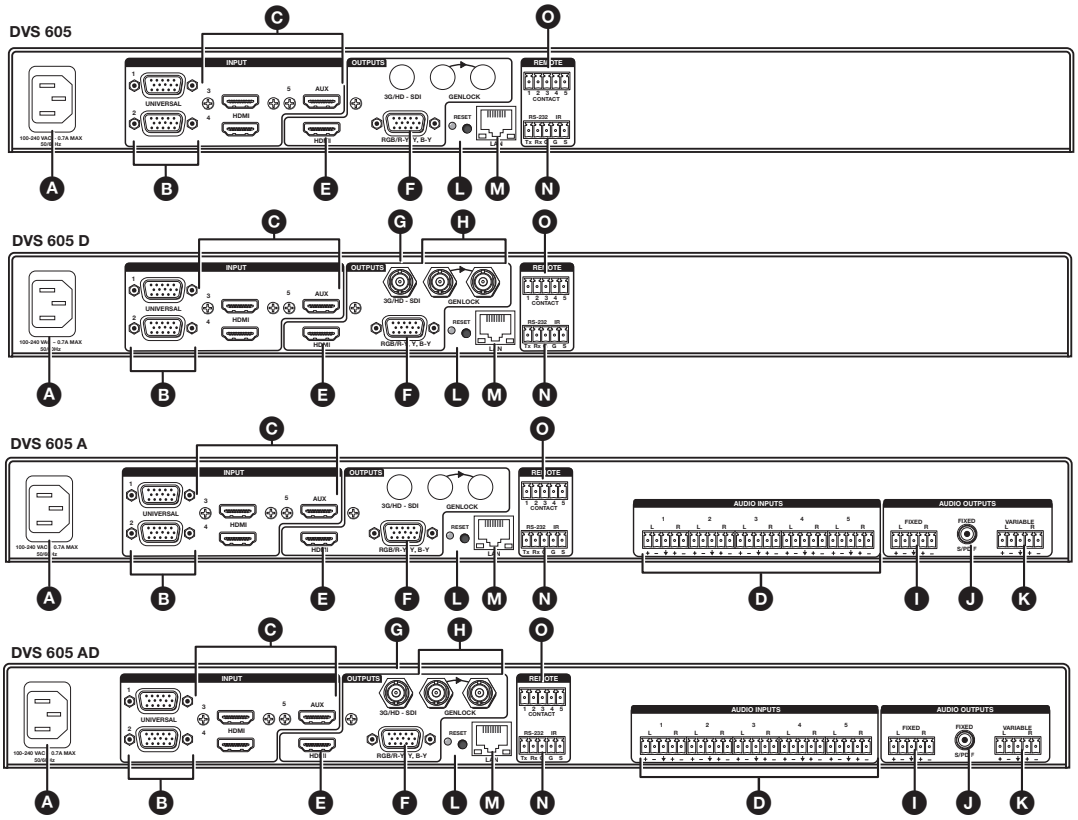


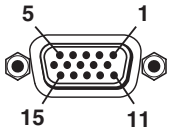
Figure 1. DVS 605 Rear Panel Features — All Models

Power and Video Input Connections	Output and Control Connections	
A Power input	**E** HDMI output	**K** Audio output (variable)
B Inputs 1 and 2	**F** RGB/R-Y, Y, B-Y component output	**L** Reset button and LED
C Inputs 3 to 5	**G** 3G/HD-SDI output	**M** LAN connector
D Audio inputs 1 to 5	**H** Genlock connectors	**N** RS-232 and IR connector
	I Audio output (fixed)	**O** Contact closure
	J RCA audio output	

A **Power input** — Connect the standard IEC power cord from a 100 to 240 VAC, 50-60 Hz power source into this connector. The front panel control and input selection buttons light in sequence during power-up.

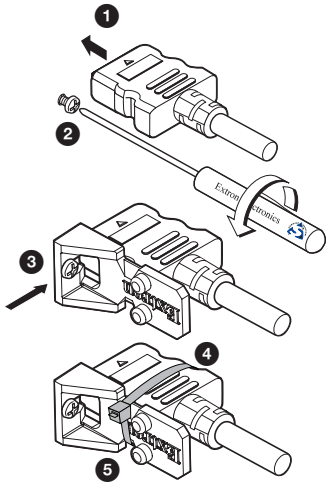
B **Inputs 1 and 2** (see **figure 1** on the previous page) — Connect suitable inputs to these two universal analog input ports (15-pin HD [VGA] connectors) for auto-detection of RGB, HD component video, YUVi, S-video, or composite video signals.

These universal analog input ports can be configured to accept RGB (RGBHV, RGBs), component video (bi- or tri-level), S-video, or composite video signals. The default setting is for auto detect. The table below shows the pinouts for each format type on the 15-pin HD (VGA) connector. The 15-pin HD supports EDID emulation.

Pinout Table for 15-pin HD Connector					
Pin	**RGBHV**	**RGBs**	**Component**	**S-video**	**Composite**
1	Red	Red	R-Y		
2	Green	Green	Y	Luma	Video
3	Blue	Blue	B-Y	Chroma	
4	No Connection	No Connection			
5	No Connection	No Connection			
6	Red Return	Red Return	R-Y Return		
7	Green Return	Green Return	Y Return	L Return	Video Return
8	Blue Return	Blue Return	B-Y Return	C Return	
9					
10	Ground	Ground			
11	No Connection	No Connection			
12	EDID/DDC	EDID/DDC			
13	H Sync	C Sync			
14	V Sync				
15	EDID/DDC	EDID/DDC			

C **Inputs 3 to 5** — Connect HDMI sources to these three HDMI connectors. Audio from the HDMI inputs can be de-embeded from the HDMI source. This allows the user to select audio either from the HDMI inputs or the analog audio captive screw inputs. Once an audio source is selected, the unselected source is disabled. The default selection is 2-channel digital audio from the HDMI inputs.

Connect up to three digital HDMI and DVD-D inputs to the HDMI connectors. Connect DVI-D sources using an appropriate adapter cable. Secure the connectors to the DVS using the LockIt bracket as follows:

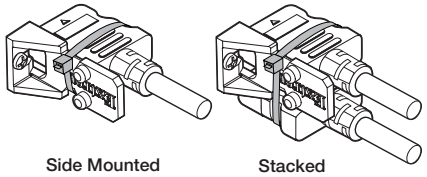


1. Plug the HDMI cables into the panel connections.
2. Loosen the side HDMI connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it.
3. Place the LockIt lacing bracket onto the screw and slide it up against the HDMI connector. Tighten the screw to secure the bracket.
4. Loosely place the included tie wrap around the HDMI connector and LockIt lacing bracket.
5. While holding the connector securely against the lacing bracket, tighten the tie wrap, then remove any excess length.

ATTENTION:

- Do not overtighten the 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. Le blindage auquel elle est attachée est très fin et peut facilement être dénudé.

The LockIt bracket can also be used in a stacked formation, as shown on the right



Side Mounted Stacked

D **Audio inputs 1-5** (audio models only) (see **figure 1** on page 6) — Connect audio sources to these 5-pole captive screw connectors. Wire the connector for line level, balanced or unbalanced, analog stereo as shown below.

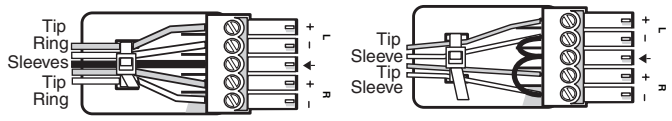


Figure 2. Audio Input Connector Wiring

NOTE: Control signal ground pins are labeled G. Audio ground pins are as ⏚. The wiring and function are the same, whichever way your product is labeled.

E **HDMI output** — Connect an HDMI display device to this HDMI connector.

NOTE: All video outputs (HDMI, VGA, SDI) share a common output resolution and display the same content.

F **RGB or HD component (R-Y, Y, B-Y) video output** — Connect an RGB video display or HD component video display to this 15-pin HD connector.

NOTE: Simultaneous identical scaled outputs for HDMI and analog RGB or HD component video are available.

G **3G-SDI/HD-SDI output** (optional) — Connect an SDI (serial digital interface) display to this female BNC connector for SDI output. This complies with SMPTE 292M and 424M and ITU video digital standards.

NOTE: 3G/HD-SDI output is only active if the current resolution is set to 720p, 1080i, 1080p, or 2K at 23.98, 24, or 25 Hz.

H **Genlock connectors** (and loop through, SDI models only) — Connect an external reference signal for synchronization of the SDI output. The loop through can be used to synchronize additional devices.

I **Audio output (fixed)** (audio models only) — Connect audio output devices to this 5-pole, captive screw connector for line level, balanced or unbalanced, analog stereo.
Wire the connectors as shown below.

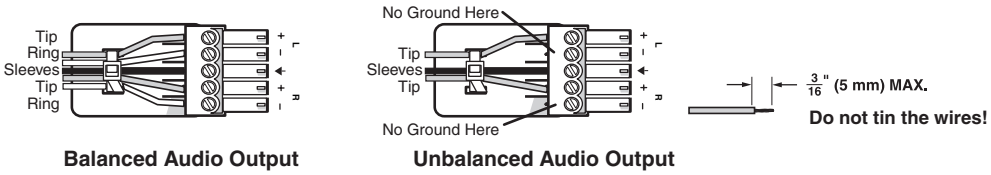


Figure 3. Audio Output Connector Wiring

J **RCA audio output** (S/PDIF, fixed, audio models only) — Plug in an S/PDIF audio output device into this female RCA connector. This connector outputs digital S/PDIF audio formats (2-channel LPCM, Dolby Digital, or DTS).

K **Audio output (variable)** (audio models only) — Connect audio output devices to this 5-pole, captive screw connector for line level, balanced or unbalanced, analog stereo. Wire the connectors as shown below.

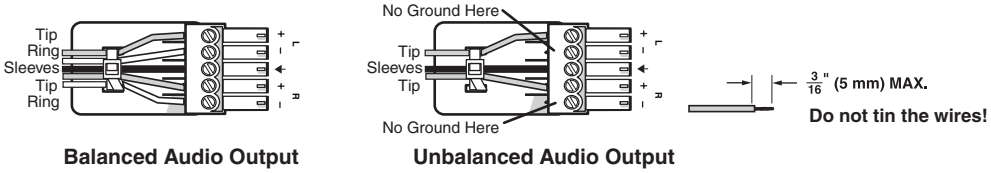
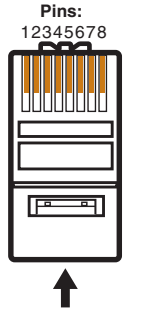


Figure 4. Audio Output Connector Wiring

L **Reset button and LED** (see **figure 1** on page 6)— Using an Extron Tweeker, pointed stylus, or ballpoint pen, press this recessed button for manual resets. The unit has three modes of reset (see **Resetting the Unit** on page 30 for additional information). The green LED blinks to show the reset mode indications and that power is on.

M **LAN connector** — Plug an RJ-45 jack into this socket to connect the unit to a computer network. Use a patch cable to connect to a switch, hub, or router.
Wire the connector as shown below.

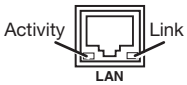


Pin	T568A Wire color	T568B Wire color
1	White-green	White-orange
2	Green	Orange
3	White-orange	White-green
4	Blue	Blue
5	White-blue	White-blue
6	Orange	Green
7	White-brown	White-brown
8	Brown	Brown

Figure 5. RJ-45 LAN Connector Wiring

LAN Activity LED — A blinking yellow LED indicates LAN activity.

Link LED — The green LED lights to indicate a good LAN connection.



N **RS-232 and IR port** (see **figure 1** on page 6) — For serial RS-232 control, connect a host computer or control system to the 5-pole captive screw connector. This port is also a hard wired IR control for use with an external IR controller.

The default RS-232 protocol is 9600 baud, 1 stop bit, no parity, 8 data bits, no flow control.

By default the IR port is disabled. When enabled, the IR port accepts 38 kHz to 1 MHz, modulated signals at TTL level (0-5 V).

O **Remote contact closure port** — For remote input selection of any of the five inputs, connect a suitable contact closure control device to this 5-pole captive screw connector. The contact closure port and the RS-232 port share a common ground.

Operation

This section of the manual discusses the operation of a DVS 605 device. Topics covered include:

- **Front Panel Overview**
- **Powering Up**
- **DVS 605 Menu System — Configuration and Adjustments**
- **Front Panel Lockout (Executive Modes)**
- **Window vs. Image Size and Position — An Overview**
- **Picture-in-Picture (PIP) Mode**
- **Other DVS 605 Operating Features**

Front Panel Overview

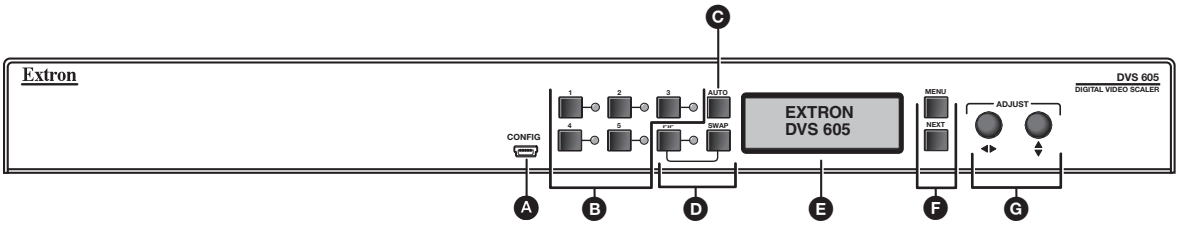


Figure 6. DVS 605 Front Panel Features

Ⓐ **Mini USB configuration port** — Connect a control system or computer to this front panel USB Mini-B port for device configuration, control, and firmware upgrades.

Ⓑ **Input selection buttons and LEDs (1-5)** —

Input LEDs — The LED of the selected input lights when the button is pressed. A blinking LED indicates an audio breakaway input (audio models only).

Inputs 1 and 2 (universal input) buttons — Inputs 1 and 2 select Auto detect, RGB scaled (RGBHV, RGBS, RGsB), Auto-YUV, RGBcvS, S-video, and composite video inputs.

Inputs 3, 4, and 5 (HDMI/DVI) buttons — Inputs 3, 4, and 5 (HDMI/DVI) inputs.

Ⓒ **Auto-Image button** — Use this to start an Auto-Image function, which automatically sizes and centers an input signal.

Ⓓ **PIP (Picture-In-Picture) button and Swap image button** — The **PIP** button enables or disables the PIP mode. The **Swap** button allows the user to swap the two current inputs displayed in the main and PIP windows.

Ⓔ **LCD display** — Displays configuration menus and status information (see **DVS 605 Menu System — Configuration and Adjustments** on the next page for details).

Ⓕ **Menu navigation buttons (Menu and Next)** —
Menu — Use this button to enter and move through the main menu system.
Next — Use this button to step through the submenus of the scaler menu system (see **DVS 605 Menu System — Configuration and Adjustments** for details).

Ⓖ **Adjustment knobs** (horizontal ◄► and vertical ▲▼) — Using the menu system, rotate either of these two knobs to scroll through the menu and to make any adjustments.

Powering Up

When applying power to the DVS 605 , the unit undergoes a start-up self-testing sequence (see image below) and then the LCD displays the default display cycle.

Default Display Cycle

When in use but not in any menu mode, the LCD screen defaults to cycling through the input and output configuration currently installed. The displayed content may vary, depending on the input video signal type (see figure 8 for a typical default display cycle).

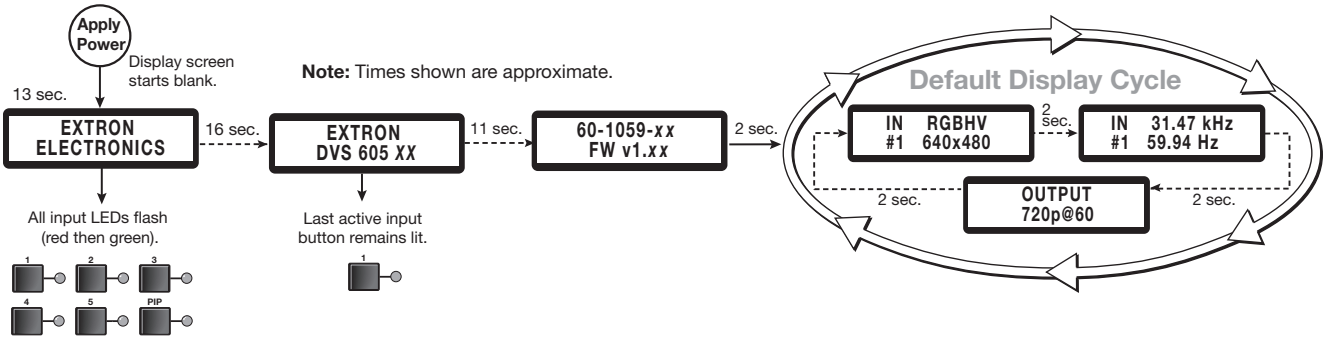


Figure 7. Typical Default Display Cycle

The default display cycle shows the scaler output rate and refresh rates for the currently selected input.

DVS 605 Menu System — Configuration and Adjustments

Scaler configuration and adjustments can be performed by using the embedded web pages (see **Using the Default Web Pages** starting on page 88), the Extron Simple Instruction Set (SIS) of commands (see **SIS Communication and Control** starting on page 31), **Product Configuration Software** starting on page 58, or the front panel controls and the menus displayed on the LCD screen. These menus are used primarily when the scaler is first set up. Details of each of the menus are on the following pages after the main flow chart.

Menu Navigation Using Front Panel Controls

Menu button — Press the **Menu** button to activate menus and scroll through the eight main menus.

Next button — Press the **Next** button to move between the submenus of a selected main menu item.

Adjust (◄►, ▲▼) knobs — In configuration mode, rotate the horizontal **Adjust** (◄►) knob and vertical **Adjust** (▲▼) knob to scroll through submenu options and to make adjustment selections (see the flowcharts in this section for explanations of knob adjustments).

Menu Overview

After start-up, when no adjustments are actively being made, the “default cycle” appears on the LCD. The screens cycle between the number and video format of the active input and the current output resolution.

Pressing the **Menu** button once brings up the first of eight main (top level) menus, as shown in figure 8. Each successive press of the **Menu** button goes to the next main menu.

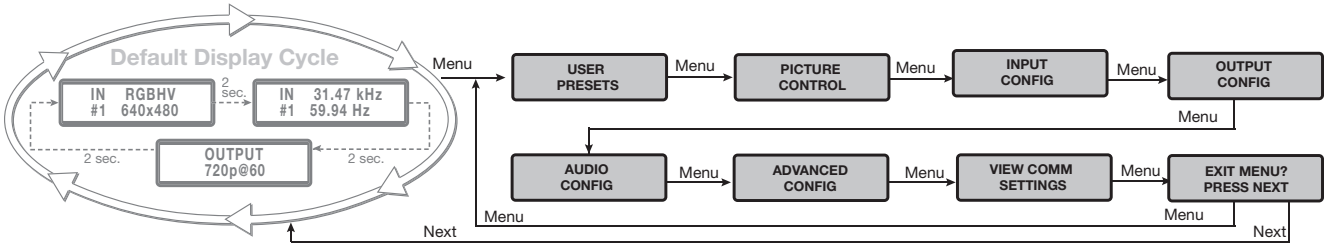


Figure 8. Top Level Menus

A fourth default cycle menu appears only when genlock is enabled (see **Genlock/AFL modes** on page 18 for details).

> N**OTE:** From any menu or submenu, after 20 seconds of inactivity the DVS saves all adjustment settings and times out to the default cycle.

The flowchart in **figure 9** on page 13 provides an overview of the complete menu system, with configuration submenus and the items for each setting. In the flow charts, the use of *x*, (for example, `in` *x* or `In`*x*) indicates an input number.

Use the **Menu** button to scroll between top level menus and press **Next** to enter the submenus.

> **NOTE:** If no signal is present on the currently selected input, `NO SIGNAL` appears in place of the input type. For example, `INPUT 4 NO SIGNAL`.

Details of each of the menus are on subsequent pages after the main flow chart.

To return to the default cycle from within any menu, press the **Menu** button repeatedly until the **Exit** menu appears, then press the **Next** button. Alternatively, allow the DVS 605 to time-out (after 20 seconds).

Submenus are accessed from a main menu by pressing the **Next** button. When within a submenu, press the **Menu** button to go out of the submenu and back to the active main menu.

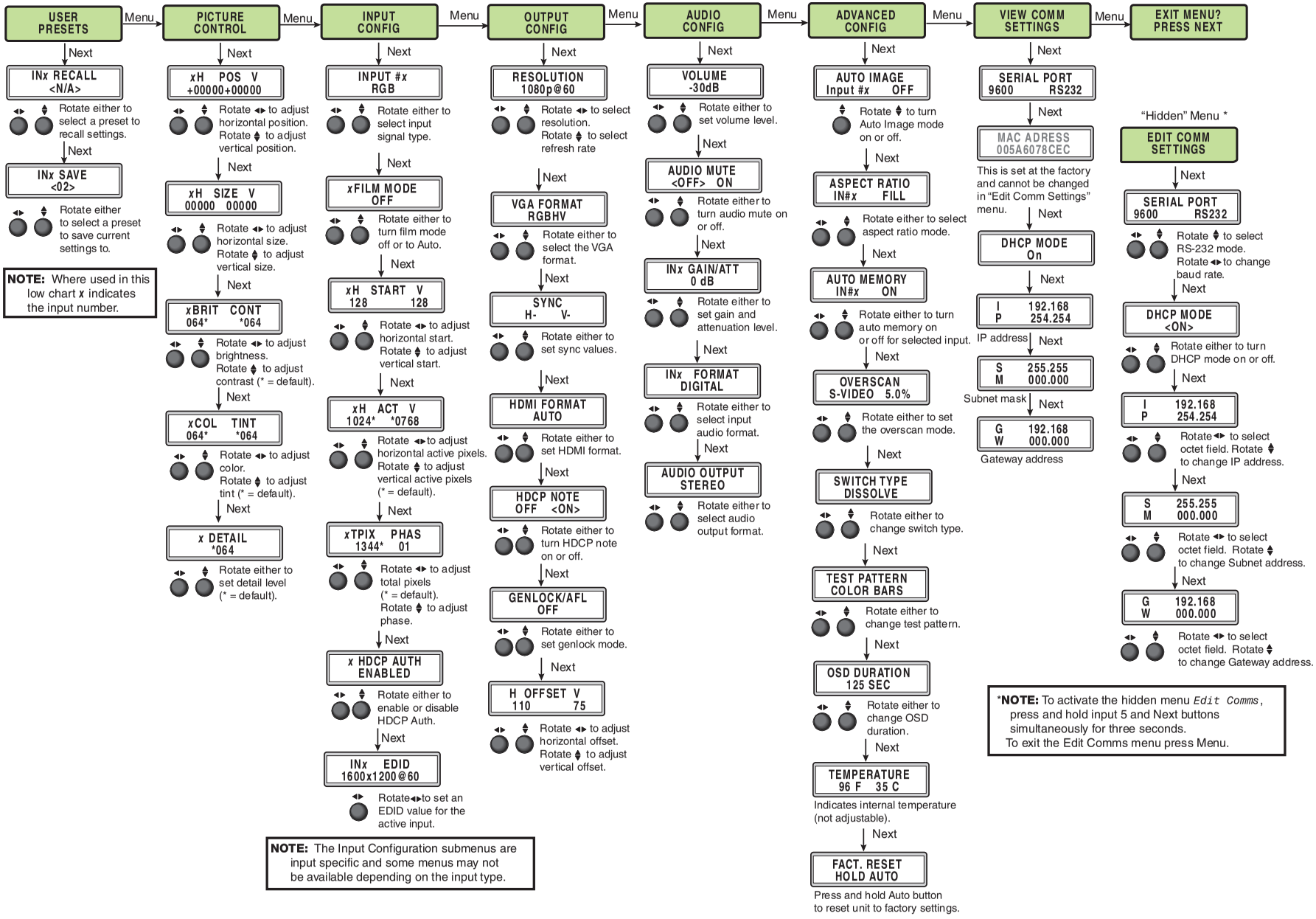


Figure 9. Main Menu

User Presets

This menu allows the user to save or recall up to 16 presets for the selected input, shown as `INx` on the LCD screen.

To use this menu, press **`Next`** to get the relevant submenu, **`Recall`** or **`Save`**.

When within the submenu, use the **`Adjust`** knobs to select the preset to save or recall.

Press **`Menu`** to exit the submenu.

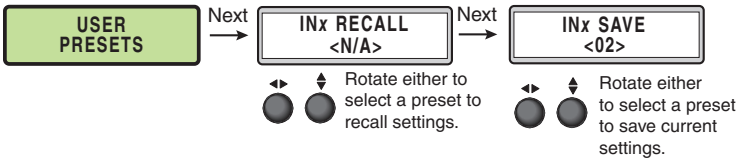


Figure 10. User Preset Menu

Picture Control

This menu allows the user to adjust various picture control settings such as horizontal and vertical window positioning, horizontal and vertical window size, brightness and contrast, color and tint, and detail settings for the selected input. The selected input is shown as *x* on the LCD screen.

To use this menu press **`Next`** to get the relevant submenu.

When within the submenu, use the **`Adjust`** knobs to select and then adjust the values as desired.

Press **`Menu`** to exit the submenu.

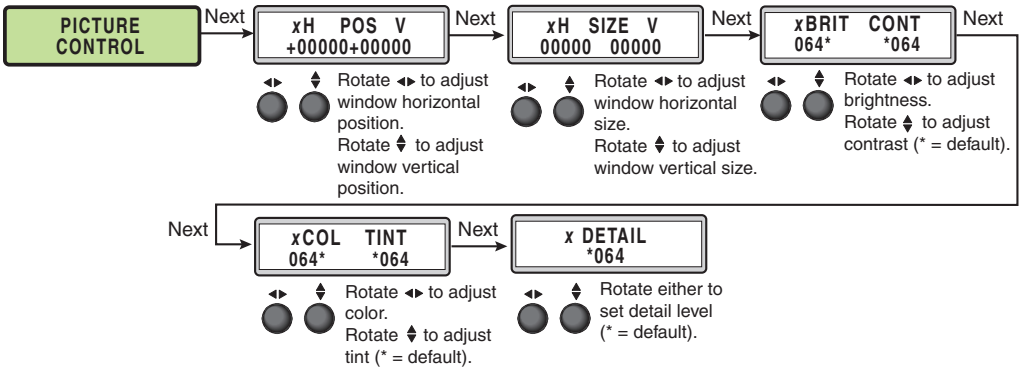


Figure 11. Picture Control Menu

Input Configuration

This menu allows the user to adjust various input configuration settings such as video signal type, film mode, horizontal and vertical start position, horizontal and vertical active pixels, total pixel number, phase, HDCP Authorization, and EDID settings for the selected input. The selected input is shown as *x* on the LCD screen images.

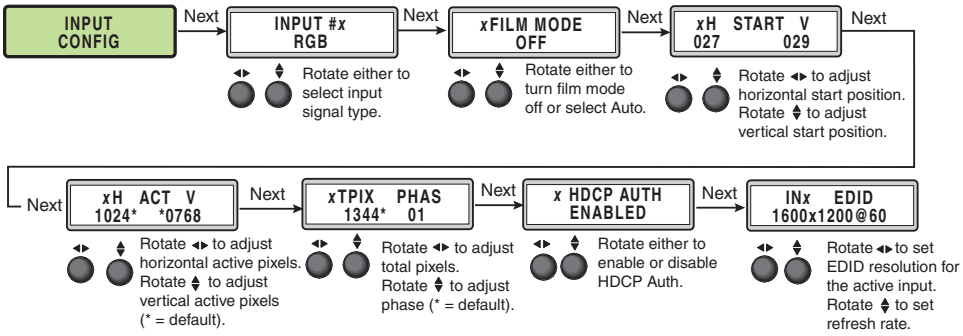


Figure 12. Input Configuration Menu

NOTE: Only inputs 1 and 2 offer selectable video types.

Input video types

Rotate either the horizontal **Adjust** (◄►) or vertical **Adjust** (▲▼) knob while in any of the Input submenus to select the appropriate video format.

Inputs 1 and 2

Inputs 1 and 2 are universal analog inputs for RGB scaled, Auto YUV, RGBcvS, S-video and composite video.

When each is set to YUV Auto, the scaler detects if YUVi or YUVp/HDTV is applied and sets that input accordingly.

They can also be set to autodetect the incoming input signal type. This is the default setting.

Inputs 3 through 5

Inputs 3 through 5 are digital inputs for HDMI or DVI input signals.

Output Configuration

The output configuration menu allows selection of output resolution and refresh rates, analog output types (RGBHV, RGBS, RGsB and Y, B-Y, R-Y), sync polarity, HDMI format, HDCP notification display, genlock setting, and offset values.

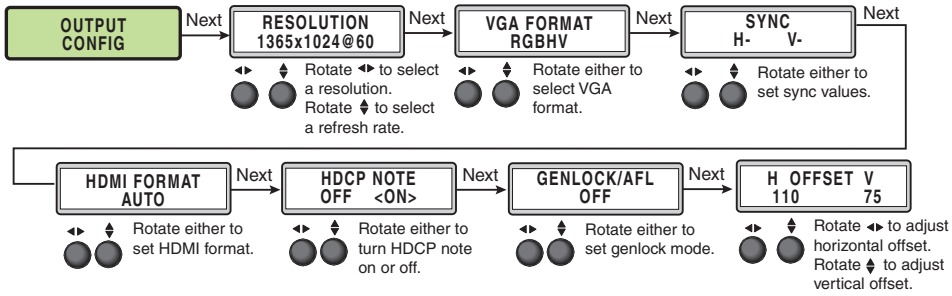


Figure 13. Output Configuration Menu

Resolution and refresh rates

Rotate the horizontal (◄►) knob to select a resolution, and the vertical (▲▼) knob for refresh rates. The default resolution and rate is 720p/60 Hz.

There are also five custom, user-defined or captured rates available (C1 - C5). When no rate is captured or uploaded to any of the five custom memory slots, they default to 720p/60 Hz.

Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz	75 Hz
Custom 1 through 5	For captured or uploaded EDID tables								
640 x 480						X		X	X
800 x 600						X		X	X
852 x 480						X		X	X
1024 x 768						X		X	X
1024 x 852						X		X	X
1024 x 1024						X		X	X
1280 x 768						X		X	X
1280 x 800						X		X	X
1280 x 1024						X		X	X
1360 x 765						X		X	X
1360 x 768						X		X	X
1365 x 768						X		X	X
1366 x 768						X		X	X
1365 x 1024						X		X	X
1440 x 900						X		X	X
1400 x1050						X		X	
1600 x 900						X		X	
1680 x 1050						X		X	
1600 x 1200						X		X	
1920x1200						X		X	
480p							X	X	
576p						X			
720p			X	X	X	X	X	**X**	
1080i						X	X	X	
1080p	X	X	X	X	X	X	X	X	
2K	X	X	X	X	X	X	X	X	

When a new custom rate has been captured or uploaded, the on-screen display (OSD) dynamically updates with the new rate for that custom slot. For example if a custom 480p EDID is uploaded to slot C1, the LCD would read `C1: 720x480`. These five custom slots are shared between custom output resolutions (based on preferred timings 1 block) and custom EDID tables, which can be assigned to any DVS input.

Analog output format

Using either of the **`Adjust`** knobs (◄► ▲▼), select the output video format required by the display: RGBHV (default), RGBS, RGsB, YUV bi-level, and YUV tri-level.

Sync polarity

Some display devices may require a particular combination of horizontal (H) and vertical(V) sync signal polarities. Select the appropriate combination of positive or negative H and V sync by rotating the horizontal **`Adjust`** (◄►) or the vertical **`Adjust`** (▲▼) knob.

NOTE: If the output format was specified as RGsB or YUV, or RGBS, this submenu is not displayed because this menu is applicable only for RGBHV.

HDMI format

Using either of the **`Adjust`** knobs (◄► ▲▼), select the HDMI format as follows:

- Auto — (based on sink EDID), default
- DVI RGB 444
- HDMI RGB 444 FULL (0-255, audio, InfoFrames)
- HDMI YUV 444 FULL (0-255, audio, InfoFrames)
- HDMI YUV 444 LIMT (16-235, audio, InfoFrames)
- HDMI YUV 422 FULL (0-255, audio, InfoFrames)
- HDMI YUV 422 LIMT (16-235, audio, InfoFrames)

HDCP Notification

The HDCP Notification provides a means of determining if HDCP content restrictions are preventing a video signal from passing. The DVS 605 has the ability to notify the user that they are currently trying to view HDCP protected content through a non-HDCP compliant output port (15-pin HD or 3G/HD-SDI) or a non-HDCP compliant HDMI or DVI display. The options presented to the user during this scenario are the ability to show a green screen with a moving "**OSD bug**" (see page 29) reading `HDCP CONTENT`, or to disable this message, and instead output muted (black) video on non-HDCP compliant displays.

The HDCP Notification setting can be adjusted via the front panel menu by using either of the **`Adjust`** knobs (◄► ▲▼), to turn HDCP Notification on or off.

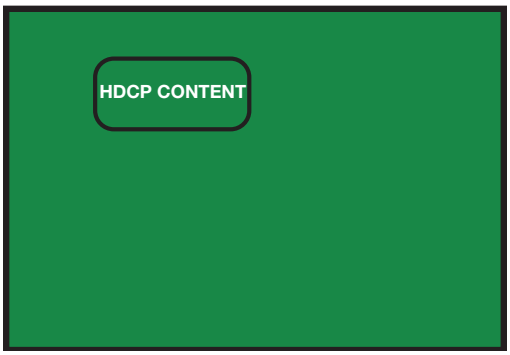


Figure 14. Green HDCP Notification Screen

It can also be adjusted via the internal web pages, PCS, or SIS commands.

HDCP status: inputs and outputs

Through a series of SIS commands (see **SIS Communication and Control** starting on page 31) or using PCS (see **Product Configuration Software** starting on page 58) the DVS 605 has the ability to report HDCP status of the HDMI input signals as well as connected HDMI sink devices. When the unit is queried, it reports feedback on the specified input (source) or output (sink) as follows:

- There is no sink or source attached.
- The connected sink supports HDCP, or the connected source is currently providing a HDCP encrypted signal.
- The connected sink does not support HDCP, or the connected source is currently providing an unencrypted signal.

HDCP status of the current input can be viewed on the OSD bug. If the input is encrypted the OSD bug displays an HDCP padlock symbol. The HDCP status of the currently selected input, and the capabilities of the connected HDMI sink device, can also be viewed on the **`AV Controls`** pane within the internal web pages of the unit.

HDCP Authorized

The HDCP Authorized function allows the DVS 605 HDMI inputs to be able to report as an HDCP authorized sink or a non-HDCP authorized sink device to a source. This is especially useful for sources that encrypt their output even if the source material does not require HDCP encryption, which would then prevent content from being displayed on non-HDCP compliant displays.

For example, if the user wanted to show a non-HDCP protected presentation from a PC using the HDMI output of the PC, there is a chance that the PC encrypts the HDMI, because it can see that the DVS 605 HDMI input supports HDCP authorization. If the user were going to use only the HDMI output of the DVS 605 to a display (sink) that supported HDCP, there would be no issue. However, if the user wanted to use the DVS 605 analog 15-pin HD output to an analog sink, the green HDCP notification screen would be displayed, due to the source unnecessarily enabling encryption on its HDMI output.

By disabling HDCP authorization on one of the DVS 605 HDMI inputs, the PC with non-HDCP protected content determines that the signal path does not support HDCP, and therefore does not encrypt its output. With HDCP authorization disabled on the DVS 605 input, the user is be able to view their non-HDCP protected content from any video output of the DVS 605 . With HDCP authorized disabled on an input, if HDCP protected content is selected on the source, the source either simply mutes its video output to black, or displays a warning message to the user.

Genlock/AFL modes

The DVS 605 has the ability to lock the output vertical refresh rate to the selected input signal vertical refresh rate (AFL), or to an applied SDI Genlock signal (SDI models only).

The three available modes for genlock are:

- **Off** — A free running pixel clock is generated internally by the DVS 605 .
- **Input AFL** — This mode locks the output vertical refresh rate to the vertical refresh rate of the currently selected input using Extron Accu-Rate Frame Lock technology to ensure no frames of the input are repeated or dropped due to frame rate conversion. This mode results in glitches or interruptions in output sync when a new DVS 605 input is selected, or when a new signal has been routed to the DVS 605 selected input, as the DVS 605 locks to the vertical refresh rate of the new input. If no input signal is detected, or if locking to the input signal would result in a >165 MHz pixel clock, a free running pixel clock is generated by the DVS 605 .
- **SDI Genlock (SDI models only)** — This locks the output vertical refresh rate to the applied analog genlock input on the SDI models. In the SDI Genlock mode, the output resolution and refresh rate of the DVS 605 must be set to **exactly** match the applied analog genlock signal to ensure a true genlock to the applied SDI Genlock signal.

  If the applied SDI Genlock signal does not exactly match the resolution and refresh rate of the DVS 605 output resolution, the DVS 605 locks its output vertical refresh to that of the applied SDI reference (frame lock), which may result in more jitter.

If no SDI Genlock signal is detected, or if the detected SDI Genlock signal would result in a >165 MHz pixel clock, the DVS 605 generates a free running pixel clock.

If either Genlock/AFL mode has been enabled, a conditional `Genlock/AFL Locked` `Genlock/AFL Not Locked` LCD menu is added to the DVS 605 default menu cycle to indicate the current Genlock/AFL status. The Genlock/AFL status can also be queried via SIS command (see **Genlock/AFL Offset** on page 51) or PCS (see **Genlock/Accu-RATE frame lock (AFL)** on page 72).

If the applied Genlock reference signal differs in resolution or refresh rate from the DVS scaled output resolution, then proper Genlock cannot be guaranteed.

When using the SDI genlock, the output rate of the DVS 605 **must** be set to match the applied SDI genlock reference signal, for example 1080i at 59.94 Hz.

NOTE: When the DVS 605 is set for input signal lock, a glitch in output sync may be experienced when switching between inputs as the scaler locks to the input reference.

If either genlock mode is enabled, but no genlock or reference input signal is being applied to the scaler, the DVS 605 defaults to an internally generated vertical refresh rate that matches the current output resolution setting.

Genlock/AFL can be enabled via the front panel menu system by using either of the **`Adjust`** knobs (◄► ▲▼), to turn Genlock/AFL off, set to Input AFL signal, or set to SDI Genlock (where applicable).

When Genlock/AFL is enabled, a fourth default cycle menu appears.

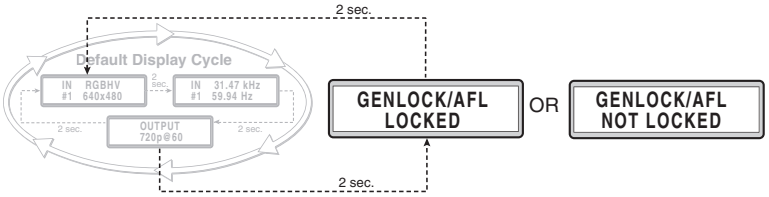


Figure 15. Fourth Default Display Item — Genlock/AFL Menu

This menu is only visible when genlock is enabled.

Genlock/AFL offset description

When used in a genlocked system, the DVS 605 can be adjusted ± one frame of video on a per pixel basis, for perfect genlock alignment with the remainder of the system. This offset adjustment can help compensate for long cable runs, or delays generated by upstream equipment. The adjustment can be made using SIS commands (see **SIS Communication and Control** on page 31), or found in the **`Output Config`** menu, and is available only on DVS 605 D or DVS 605 AD models with SDI Genlock enabled and locked to a reference signal.

NOTE: Adjustment of the genlock offset may result in a brief loss of genlock as the DVS 605 applies the desired pixel and line offset with regard to the applied genlock reference.

Audio Configuration (All Models)

`Audio Configuration` allows the user to set analog audio volume level (-100 dB to 0 dB range), turn audio mute on or off, adjust input gain and attenuation levels (-53 dB to +24 dB range) for the current analog input. It also allows selection of an input audio format (none, analog, 2-channel digital, full digital, 2-channel auto, or full auto), and the audio output type (stereo or dual mono), which can be adjusted for each input.

NOTES:

- Volume level and input gain and attenuation adjustments are available only on audio models, analog audio (DVS 605 A and DVS 605 AD). Gain and attenuation adjustments do not affect the digital audio.
- For analog inputs 1 and 2, the choice of input audio format is analog or none.
- For non-audio models format, selection for inputs 3 through 5 is limited to none, 2-channel digital, or full digital.
- For inputs 3, 4, and 5, when in auto mode, digital audio is used when present. If no digital audio is present it defaults to analog audio.

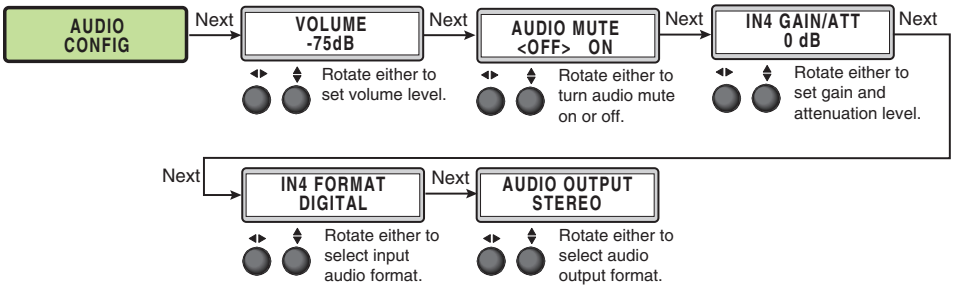


Figure 16. Audio Configuration Menu

Use the **`Next`** button to scroll to the applicable submenu, and use both **`Adjust`** knobs (◂▸ ▲▼) to change the settings as needed.

Input Audio Format	Description
None	All audio for the input is muted: 128 byte EDID (VGA/DVI) is presented to the source.
Analog	5-pole captive screw connector is used for audio input: 128 byte EDID (VGA/DVI) is presented to the source.
NOTE: DVS 605 analog audio outputs are active only if analog or PCM audio is detected on HDMI inputs 3, 4, and 5.	
2-channel digital	256 byte EDID (HDMI) is presented to the source requesting 2CH PCM audio.
Full digital	256 byte EDID (HDMI) is presented to the source allowing for all digital audio formats.
2-channel auto	256 byte EDID (HDMI) is presented to the source requesting 2CH PCM audio. If digital audio is not present this automatically defaults to the 5-pole captive screw analog audio input.
Full auto	256 byte EDID (HDMI) is presented to the source allowing for all digital audio formats. If digital audio is not present this automatically defaults to the 5-pole captive screw analog audio input.

Figure 17. Audio Input Format Descriptions

Audio delay setting

The DVS automatically delays all analog and digital audio inputs to compensate for internal video processing delay. Occasionally additional audio delay is required to account for other signal processors, scalers, or display devices in a system. For these situations, the DVS 605 offers an additional 0-255 millisecond static global audio delay which can be set via SIS command (see **Audio delay (available on all models)** on page 46), PCS (see **Output Configuration** on page 83), or internal web pages (see **Audio Settings Page** on page 103) to eliminate audio “lip sync” issues.

Advanced Configuration

The following flowchart provides an overview of the **`Advanced Configuration`** submenu The options are Auto-Image (on or off), aspect ratio (fill or follow), auto memory (on or off), overscan (none, 2.5%, and 5.0%), switch type (dissolve or cut), **Test Pattern** on page 23, OSD duration, temperature (device reading only) and factory reset.

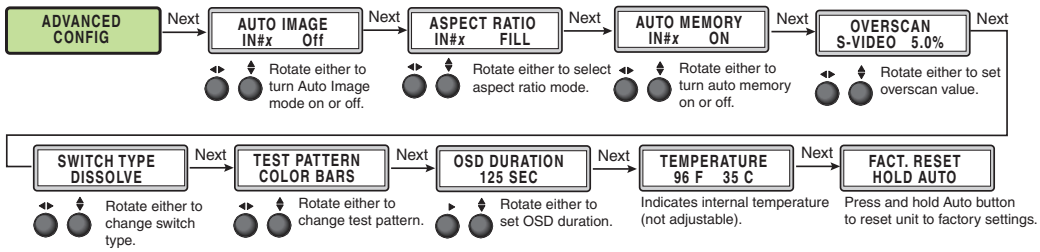


Figure 18. Advanced Configuration Menu

Auto-Image

Use either **`Adjust`** knob (◄► ▲▼) to turn Auto-Image on or off (default).

When enabled and a new input frequency is detected, the DVS first applies an existing Auto Memory for the signal (if Auto Memory is enabled), or, if no entry exists, performs an automatic Auto-Image on the new signal. This automatically attempts to size and position the image to fill the screen, with respect to the current aspect ratio setting.

With Auto-Image disabled, the DVS 605 applies default values to a new input if Auto Memory is enabled but no Auto Memory exists.

Threshold settings

By default, the Auto-Image function considers any analog video with a >25% brightness to be active video. Some video sources, such as dark PC backgrounds, or dark borders around a presentation, may require a lower “Auto-Image threshold,” to ensure incoming video is properly sized and centered by the Auto-Image function. Other scenarios, such as upstream analog twisted pair extension products, may require a greater Auto-Image Threshold setting in order to allow the DVS 605 to ignore extraneous sync pulses that may have been embedded in the RGB signals.

A global analog video Auto-Image threshold value can be set via an SIS command or using internal web pages.

The range is 0% (black / ~0.0 VDC) to 100% (white / ~0.7 VDC), with a default value of 25%.

NOTE: The Auto-Image threshold setting affects only *analog* input signals, and has no effect on digital inputs, which are sized and centered automatically.

Aspect Ratio

Use either **Adjust** knob (◄► ▲▼) to set the aspect ratio to **Fill** or **Follow**.

The aspect ratio setting is per input, and allows the user to select a new aspect ratio for each input signal filling the entire output raster (using Fill, the default setting). For each input rate to be displayed with its native aspect ratio, use Follow (4:3, 5:4, 15:9, 16:9, 16:10). This setting has the correct letter box or pillar box settings visible under the Image Size and Image Position Picture Controls.

When the DVS 605 is in the Fill mode, if an aspect ratio adjustment for a single input rate is desired, the correct size and center can be set up using **Image Size** and **Image Position** under **Picture Controls**, using one of the aspect ratio test patterns for a template. If Auto Memory is enabled, then these settings are saved and recalled the next time the signal is detected.

The DVS 605 clears the previous size and position settings whenever the aspect ratio setting for an input is adjusted.

NOTE: Unique SIS commands can set the device to Auto-Image and Fill or Auto-Image and Follow, regardless of the current aspect ratio (see **Auto-Image** on page 41).

Auto Memory

Use either **Adjust** knob (◄► ▲▼) to turn **Auto Memory** on (default) or off.

The DVS 605 stores 32 auto memories per input, with input configuration and picture control data for each input. The default settings enable these memories to automatically recall input and picture controls for signals that have been previously applied. When auto memories are disabled, the DVS treats every newly applied input as a new source. Default for Auto Memory is On.

How Auto Memory and Auto-Image Interact

Auto Memory	Auto-Image	Information
On	On	"New" signals and rates that have not been previously detected by the DVS are initially set up using default parameters, then Auto-Image is automatically applied and values stored. The next time that signal is detected, the values stored in the auto memory location are applied.
On (Default)	Off (Default)	"New" signals and rates that have not been previously detected by the DVS are set up using default parameters. If manual input or picture settings are made to the input, an Auto Memory location is created and recalled each successive time the input is detected.
Off	On	Each change in input sync, input switch, or power cycle triggers an automatic Auto-Image. When Auto Memory is disabled, each change in sync is treated as a new signal and an automatic Auto-Image is triggered. Any manual changes made to the image and picture controls are lost each time a new rate is detected.
Off	Off	Each change in input sync causes default values to be applied to the rate. Any manual changes made to the image and picture controls are lost when a new rate is applied.

Figure 19. Auto Memory and Auto-Image Details

Overscan

Use the horizontal **Adjust** knob (◄►) to select input video type (RGB, YUV, RGBcvS, S-video, composite, or HDMI), and the vertical **Adjust** knob (▲▼) to select the overscan mode (none, 2.5% or 5.0%).

Overscan is specific to each input signal type. This zooms and crops SMPTE inputs to mask edge effects and ancillary data that are common in broadcast signals. Issuing an Auto-Image with overscan enabled runs an Auto Phase routine (YUV and RGB only) and centers and sizes the input according to table values.

NOTE: Overscan is valid only on SMPTE input rates (NTSC, PAL, 480p, 576p, 720p, 1080i, or 1080p).

Switch Type

This enables a video switch transition (cut or dissolve) when switching between inputs.

Use either of the **Adjust** knobs (◄► ▲▼) to select the switch type as desired.

NOTE: Input switches between input 4 and input 5 use a fade through black transition.

Test Pattern

The built-in test patterns are useful for calibrating a display to the DVS 605 output. Choose a test pattern such as crop, alternating pixels, and color bars to adjust the image.

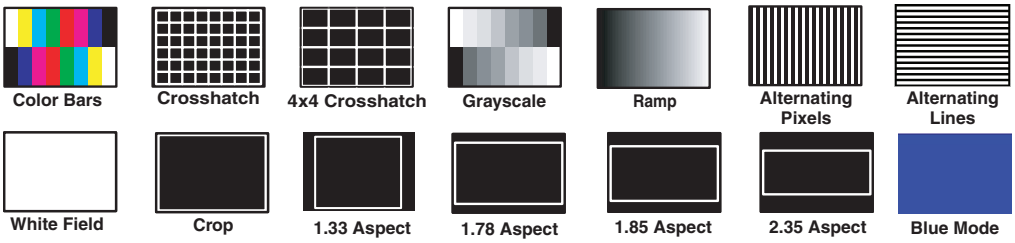


Figure 20. Test Pattern Choices

- **Alternating Pixels** — Used to calibrate input sampling of the display devices to the device output. Use this pattern to adjust the clocking and phasing at the display until no more vertical bands are visible.
- **Grayscale and Ramp** — Used to calibrate brightness and contrast settings.
- **Crop** — Used to center the output on the display device: adjust H and V to center the display until all four crop lines are visible.
- **Color Bars** — Used to calibrate color settings on the display and to confirm proper system wiring.
- **Blue Mode** — Assists the user in setting up the color and tint levels.

Use either the horizontal **Adjust** (◄►) or vertical **Adjust** (▲▼) knob to select a test pattern. The default state is Off.

OSD duration

The DVS 605 displays a small OSD bug in the upper left corner of the screen when switching between inputs. It contains information regarding the detected input rate and format, the HDCP status of the selected input, and an indication of Main vs. PIP inputs. The duration the OSD bug is on-screen can be set from 1 to 500 seconds via the front panel menu. It can also be set to **No OSD** or **Always On**. The duration can also be set via the internal web pages (see **OSD Input Information** on page 108), SIS commands (see **On-Screen Menu time-out** on page 52), or PCS (see **General Settings Page** on page 84).

Temperature

This is a read-only menu that gives the internal temperature (degrees Celsius and Fahrenheit) of the connected device. No adjustments can be made.

Factory Reset

This menu allows the user to reset the device to the factory default settings.

Press and hold the **Auto** button until the LCD display reads RESETTING, then release the **Auto** button. The device is reset.

View Comm Settings

The current RS-232 and IP settings are read-only with this menu. To make any setting adjustments, the hidden `Edit Comm Settings` menu must be accessed (see below).

Press **`Next`** to go through each sublevel to view the following: serial port (baud rate and communication type), MAC address (cannot be changed), DHCP status (on or off), IP address, subnet mask, and gateway address.

NOTE: To enter the hidden `Edit Comm Settings` menu, press and hold in the input 5 and **`Next`** buttons simultaneously. The `Edit Comm Settings` menu appears.

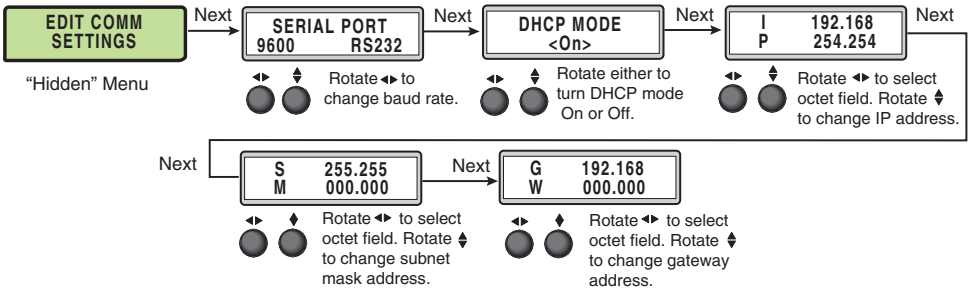


Figure 21. Edit Comm Settings Menu

Exit Menu

From this submenu, press the **`Menu`** button to return to the **`User Presets`** menu cycle, or press the **`Next`** button to exit the menu and return to the default cycle.

Front Panel Lockout (Executive Modes)

To prevent accidental changes to settings, press the **`Menu`** and **`Next`** buttons simultaneously for 2 seconds to enable front panel lockout mode (executive mode 2).

The menu system returns to the default menu within 10 seconds.

Executive mode 2 locks all front panel functions except input switching, PIP enable and PIP swap, and Auto-Image. **`Menu`** and **`Next`** buttons and the **`Adjust`** knobs are disabled.

When executive mode 2 is active, all functions and adjustments can still be made through USB, RS-232, or Ethernet control (see **SIS Communication and Control** starting on page 31, for details on remote control).

To disable executive mode 2, press the **`Menu`** and **`Next`** buttons simultaneously for 2 seconds (see the flowchart in figure 23).

Executive mode 1 locks all front panel functions completely. This mode can be enabled or disabled by SIS commands (see **Front panel security lockout (Executive Mode)** on page 50), PCS (see **General Settings Page** on page 84), or internal web pages (see **Executive Mode** on page 112).

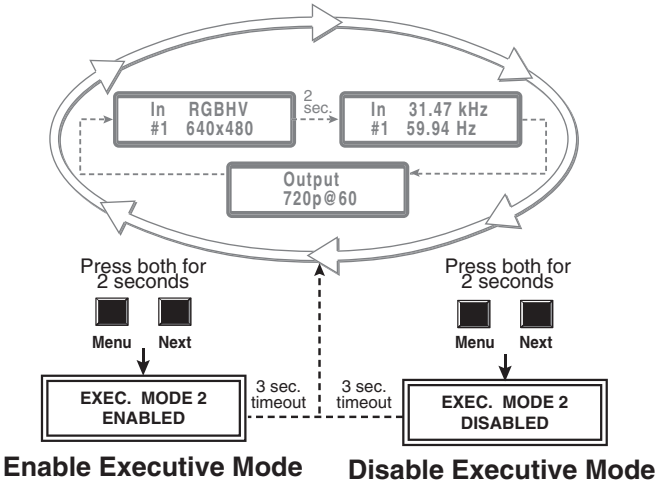


Figure 22. Front Panel Lockout

Window vs. Image Size and Position — An Overview

The DVS 605 provides users the ability to adjust a window size and position and the image (the content) size and position independently with regards to the output raster. This independent control is available for both the Main and PIP windows, allowing the user comprehensive flexibility in output configurations.

The top example in figure 23 demonstrates how a single sliver of an input (such as a stock ticker or RSS Feed) can be displayed. The remainder of the input is masked, by setting the image size greater than the window size.

The second example in figure 23 demonstrates the flexibility of PIP mode. The Main window on the left has the image size set to four times the window size, which effectively zooms into the top right corner of the input, while masking the remainder of the input. The PIP window on the right demonstrates the automatic aspect ratio compensation of the `Follow` mode, where the image size and center are automatically adjusted to allow for the input to be shown at its native aspect ratio.

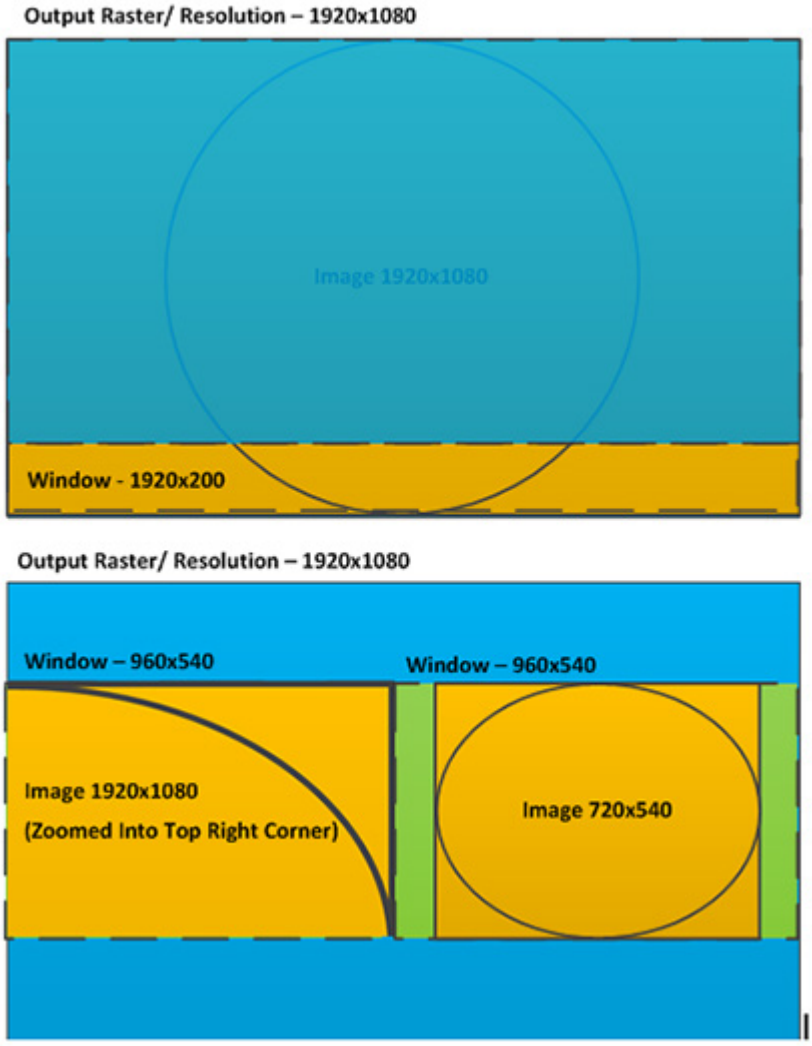


Figure 23. Examples of Window vs Image Size Position

NOTE: In PIP mode, the Fill and Follow calculations take place at each input switch, power cycle, or whenever a new input signal is routed to the current input. The Fill and Follow calculations adjust the image size and position in order to maintain the native aspect ratio of the input, with regard to the current window size.

Picture-in-Picture (PIP) Mode

The DVS 605 can display two images on the screen simultaneously.

The PIP window can be activated using front panel **PIP** button, by discrete SIS commands (see **Picture in Picture** on page 39), by PIP presets, by PCS (see **Size and Position Page** on page 80), or the embedded web pages (see **PIP Settings Page** on page 100).

NOTE: When PIP mode is enabled true seamless switching (dissolve) is not possible. A clean cut through black is used during Main or PIP input switches. Some PIP or Main input switch combinations require the DVS 605 output to briefly cut to black to allow the new inputs to be set up. This is normal operation of the scaler.

Front Panel Activation

When the PIP window is enabled:

- The front panel PIP LED lights red.
- The PIP input LED lights red.
- The input LED for the main window lights green.

NOTES:

- Inputs 1 through 4 can be used in any combination for PIP mode.
- Input 5 is not selectable for PIP operation.
- Attempting to activate PIP mode while input 5 is selected results in the input 5 LED blinking, alternating between red and green, for 1 second, The LCD reads `IN5 PIP NOT AVAILABLE`.
- Attempting to select input 5 for the PIP input while PIP mode is active results in the input 5 LED blinking red for 1 second. The LCD reads `IN5 PIP NOT AVAILABLE`.
- When in PIP mode, audio breakaway is not supported. Audio follows either the main window or the PIP window, and is selectable via SIS command.

To start picture-in-picture mode:

1. Select an input for the main window input signal. The LED lights green.
2. Press the **PIP** button. The PIP LED, and the LED for input 1 or input 2 light red.
3. Select another input as the PIP input, as desired. The corresponding input LED lights red.

While the PIP mode is active, all front panel input selection, input configuration, and picture control adjustments affect the PIP window only.

When PIP is activated from the front panel, or via SIS command (not using PIP presets), the DVS automatically sets up the last PIP layout with sizing and centering for the main window, main image, PIP window, and PIP image. On a new unit, or after a reset, the DVS defaults to the layout saved in PIP Preset #1.

The inputs in the windows can be swapped using the front panel **Swap** button, SIS command (see **Swap main or PIP windows** on page 39), PCS (see **AV Controls Panel** on page 69), or embedded web pages (see **PIP Settings Page** on page 100).

To swap between PIP and main inputs:

Press the **Swap** button. The input for the main window now becomes the new PIP input and the LED changes from green to red. The previous PIP input becomes the new main window input and the LED changes from red to green.

When PIP mode is not active, the **Swap** button swaps the current main input with the previously selected main input.

PIP Presets

A PIP preset contains settings for the size and position of the PIP window and which main and PIP inputs that were active when the preset was saved. PIP presets are used to quickly recall a group of settings that relate to the main and PIP windows and content settings. Sixteen global PIP presets are available for the DVS 605 .

A set of 10 factory default layouts exist and can be overwritten by saving new presets.
PIP presets can only be restored to factory defaults but not deleted.

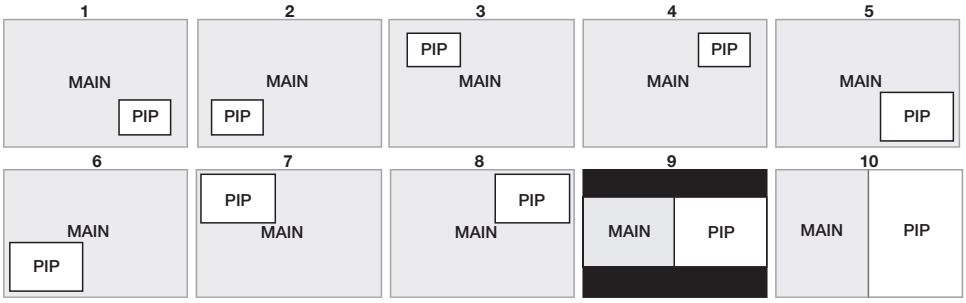


Figure 24. Default Main and PIP Window Layouts

A PIP preset can be created and saved using SIS commands (see **PIP presets** on page 48), or the embedded web pages (see **PIP presets** on page 102 for details).

PIP presets save the main and PIP inputs that were active when the preset was saved, and can be recalled with or without inputs.

Presets				
Setting	**Input Presets**	**User Presets**	**PIP Presets**	**Auto Memory**
Horizontal/Vertical Start	Yes			Yes
Active Pixels	Yes			Yes
Active Lines	Yes			Yes
Total Pixels	Yes			Yes
Phase	Yes			Yes
Brightness and Contrast	Yes	Yes		Yes
Color and Tint	Yes	Yes		Yes
Detail	Yes	Yes		Yes
Input Type	Yes			
Audio Gain and Attenuation	Yes			
Main Window Size and Position	Yes	Yes		
PIP Window Size and Position			Yes	
Preset Name	Yes	Yes	Yes	
Main Input			Yes	
PIP input			Yes	
Film Mode	Yes			
Presets Available	128 global	16 per input channel	16 per input channel	16 global
Recall Location	Any input that can support the input type saved in the preset	Automatically recalled based on incoming signal	Current input	Any input except input 5

Other DVS 605 Operating Features

Screen Save

Screen Save mode allows the user to configure what is displayed on the video output, and for what duration, when the selected DVS 605 input loses an active video signal. By default, the DVS 605 continues to output muted (black) video and sync indefinitely. Alternatively, users have the ability to display a blue screen with a moving text bug that indicates that there is no active signal on the selected DVS 605 input.

A screen save duration can also be configured, which allows the user to set a duration that the black or blue output video is displayed, before output sync is disabled. By disabling the output video sync, connected display devices can enter a low power, (standby) state to save lamp or panel life. The default duration is for output sync to never time out, but it can be configured to disable sync 0-500 seconds after detecting no active video input. Screen Save mode is configured via SIS command (see **Screen saver mode (action that takes place when no signal is detected on the selected input)** on page 45), PCS (see **General Settings Page** on page 84), or by the internal web pages (see **Screen Saver** on page 107).

Power Save

The Power Save mode allows the user to put the DVS 605 into a low power state. Use the SIS commands (see **Power save mode** on page 45), or the internal web pages (see **Power Mode** on page 113) to enable or disable this mode. The low power state effectively cuts the power consumption approximately in half. While in this mode, no audio or video input processing takes place, and all audio and video outputs are disabled. Also, all front panel LEDs and the LCD screen backlight are disabled, and the LCD screen reads `STANDBY MODE`. The user can exit Power Save mode via front panel button press, SIS command, or internal web pages. The Power Save state is entered instantly after the command is received, but 5-10 seconds are required to resume from Power Save.

Custom EDID/Custom Output Resolution

The user has the ability to capture EDID or import or export EDID files to make custom EDID available for emulation on inputs or for the generation of custom output resolutions. The user can import a 128 or 256 byte EDID `.bin` file from a PC, or can capture the EDID from the attached sink (display) device. This EDID can then be saved and stored in one of five custom EDID slots, which are then available for custom EDID emulation or custom output rate generation (custom rate based on the EDID preferred timings 1). These functions are available via SIS (see **Input EDID (VGA and HDMI)** on page 40), PCS (see **EDID Minder Page** on page 74), or internal web pages (see **Assigning EDIDs** on page 96).

NOTE: Custom EDIDs do not have the audio blocks edited by the audio format setting.

Typically, the audio capabilities presented in an EDID for an HDMI input are automatically determined by the current audio format setting for that input. For example, when `None` or `Analog` audio is set, the CEA extension block is omitted from the HDMI input EDID, to ensure a source device provides audio on its analog outputs. In the 2CH Digital and 2CH Auto modes, a CEA EDID extension is emulated that contains support for only 2CH LPCM digital audio formats. In the Full Digital and Full Auto modes, a CEA EDID extension is emulated that allows for all possible digital audio formats.

However, if a custom uploaded or captured EDID is used for EDID emulation, the current audio input setting of the HDMI input has no effect on the described audio capabilities contained within the custom EDID file. The DVS 605 simply presents the custom EDID file without any modifications. The audio format setting determines which audio source is used for the HDMI input (none, analog audio, or embedded digital audio).

Audio Format	Audio Source	Analog Input	Digital Inputs	EDID
None	Muted	Yes	Yes	No CEA
Analog	5-Pole Captive	Yes	Yes	No CEA
LPCM-2Ch	Embedded Digital	No	Yes	LPCM-2Ch CEA
Multi-Ch	Embedded Digital	No	Yes	Multi-Ch CEA
LPCM-2Ch Auto	Embedded Digital (when present), else 5-Pole Captive	Yes	Yes	LPCM-2Ch CEA
Multi-Ch Auto	Embedded Digital (when present), else 5-Pole Captive	Yes	Yes	Multi-Ch CEA

NOTE: If one of the custom EDID slots is in use, the audio format setting has no effect on the emulated EDID table.

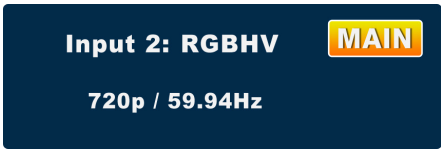
It is important that care is taken when assigning custom EDID files, as the user can potentially assign an analog (VGA) EDID to a digital (HDMI) input, or vice versa. If an EDID file listing support for the incorrect video format is assigned, the attached source may not output any video, or unexpected behavior may result.

The OSD Bug

When switching between inputs, the DVS 605 displays a small OSD bug in the upper left corner. This bug contains information regarding the detected input rate and format, the HDCP status of the selected input, and an indication of Main vs. PIP inputs. The OSD bug is disabled by setting the OSD duration to 0.0 seconds via the front panel, the internal web pages, or SIS commands.

The items displayed are:

- Main vs. PIP
- Detected input rate
- HDCP Lock



Hardwired IR Port

The DVS 605 includes a hardwired IR input, to be used with a hardwired IR output from an Extron MLC, IPL, or similar controller. This port allows for simple, unidirectional control of the DVS 605 from a host controller that has no available RS-232 ports, but does have available hardwired IR outputs.

Using the DVS 605 IR driver, available from the Extron **website**, basic controls include:

- Input Switching
- Auto-Image, Auto-Image + Fill, Auto-Image + Follow
- Audio Mute, Video Mute, A/V Mute
- Volume
- PIP On/Off, PIP Swap
- User Presets Recall 1, 2, and 3 (for the selected input)
- PIP Preset Recall 1 – 6 (with or without input)
- Show Informational On Screen Display (OSD)

NOTE: There is no available IR remote control for the DVS 605 .

Resetting the Unit

There are three unit reset modes. These are available by pressing the recessed **Reset** button on the rear panel with a pointed stylus, pen, or similar item to access it. The following table gives a summary of the reset modes.

ATTENTION:

- Review the reset modes carefully. Using the wrong reset mode may result in unintended loss of flash memory programming, port reassignment, or processor reboot.
- Étudier de près les différents modes de réinitialisation. Appliquer le mauvais mode de réinitialisation peut causer une perte inattendue de la programmation de la mémoire flash, une reconfiguration des ports ou une réinitialisation du processeur.

NOTE: The reset modes listed close all open IP and Telnet connections and sockets. Each mode is a separate function, and not a continuation from mode to mode.

DVS 605 Reset Mode Summary

Mode	Activation	Result	Purpose and Notes
Use Factory Firmware	Hold in the recessed **Reset** button for 30 seconds while applying power to the scaler. **NOTE:** After this reset, update the device with the latest firmware version. **DO NOT** operate with the firmware version that results from this mode reset. This temporarily resets the device to factory default until power is recycled. To use factory default firmware, upload that version again.	The device reverts to the factory default firmware. • Firmware reverts to the factory default for a **single power cycle**. • All user files and settings (drivers, audio and video adjustments, IP settings, and so on) are maintained. **NOTE:** If you do not want to update the firmware or perform this reset by mistake, cycle power to the device to return to the firmware version running prior to the reset.	Use to revert to the factory default version if incompatibility issues arise with user-loaded firmware.
Reset Network Settings	Hold down the **Reset** button until the Reset LED blinks twice (approximately 6 seconds). Then, press **Reset** momentarily (<1 second).	IP settings revert to factory defaults. • Port mapping reverts to factory default. • DHCP turns off. • IP address is set to default address (192.168.254.254). • Reset LED blinks four times in quick succession during reset.	Use to reset all IP settings back to factory defaults.
Full Factory Reset	Hold down the **Reset** button until the Power LED blinks 3 times (approximately 9 seconds). Then, press **Reset** momentarily (< 1 second).	The device reverts to the factory defaults except for firmware. • Reset network settings results are performed. • All user modifiable configurations reset to default values including IP settings and real-time adjustments. • All user loaded files are deleted. • The Reset LED blinks 4 times in quick succession during the reset.	Use to restart with default configuration. **NOTE:** This reset, equivalent to the Esc ZQQQ← SIS command, also removes the initial serial number passwords and sets them to no password.

SIS Communication and Control

The DVS 605 can be configured and controlled via a host computer or other device (such as a control system) attached to the rear panel RS-232 connector, the LAN port, or the front panel USB port. Control is made using the Extron Simple Instruction Set (SIS) of commands, or the DVS Web pages.

Commands can be entered using a Telnet application such as the Extron DataViewer, available at **www.extron.com** (see the *DataViewer Help File* for use).

This section describes SIS communication and control. Topics that are covered include:

- **Host to Scaler Communications**
- **Commands and Responses**
- **SIS Command and Response Table**

The scaler uses a protocol of 9600 baud, 1 stop bit, no parity, and no flow control on the rear panel RS-232 captive screw connector.

Host to Scaler Communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the DVS 605 determines that a command is valid, it executes the command and sends a response to the host device.

All responses from the scaler to the host end with a carriage return and a line feed (CR/LF = ↵), indicating the end of the response character string (one or more characters).

Scaler-initiated Messages

When a local event such as a front panel selection or adjustment takes place, the DVS 605 scaler responds by sending a message to the host. No response is required from the host. Example scaler-initiated messages are listed here.

```
↵© Copyright 2015, Extron Electronics, DVS 605, Vx.xx, 60-1059-01↵
Tues, 17 February 2015 11:27:33 ↵
```

The DVS 605 sends the copyright message when it first powers on. V*x.xx* is the firmware version number.

`In` X1 `All` ↵ (where X1 is the input number during an input switch).

`Reconfig` ↵ The DVS 605 sends this response when an input is switched or when a new signal is detected.

Copyright Information

```
↵© Copyright 2015, Extron Electronics, DVS 605, Vx.xx, 60-1059-01↵
Tues, 17 February 2015 11:27:33 ↵
```

The copyright message is displayed upon connecting to the DVS product via TCP/IP, RS-232, or Telnet. V*x.xx* is the firmware version number. The current date and time are displayed.

Password Information

The ↵ `Password:` prompt requires a password (administrator level or user level) followed by a carriage return. The prompt is repeated if the correct password is not entered.

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 no password (see **Password Page** on page 114 to change the password).

If the correct password is entered, the unit responds with ↵ `Login Administrator` ↵ or ↵ `Login User` ↵, depending on password entered. If passwords are the same for both administrator and user, the unit defaults to administrator privileges.

Error Responses

When the DVS 605 receives a valid command, it executes the command and sends a response to the host device. If the unit is unable to execute the command because the command contains invalid parameters, it returns an error response to the host.

Error numbers

`E01` — Invalid input number

`E06` — Invalid switch attempt in this mode

`E10` — Invalid command

`E11` — Invalid preset number

`E12` — Invalid port number

`E13` — Invalid parameter

`E14` — Not valid for this configuration

`E17` — Invalid command for signal type

`E22` — Busy

`E24` — Privilege violation

`E25` — Device not present

`E26` — Maximum number of connections exceeded

`E28` — Bad filename/file not found

Error response references

[14] = Commands that give an `E14` (invalid command for this configuration) error if sent to a product whose current configuration does not support the command

[24] = Commands giving an `E24` (privilege violation) error if not logged in at administrator level

[28] = Commands that may give an `E28` (file not found) error

Commands and Responses

Using the Command and Response Tables

The **SIS Command and Response Table** starting on page 39 for SIS commands the DVS 605 recognizes as valid. The tables show the responses that are returned to the host with a description of the command function or command execution results. Also included are examples of commands in ASCII (Telnet) and URL encoded (web).

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

ASCII to HEX Conversion Table																			
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				

Esc	1B

CR	0D

LF	0A

Figure 25. ASCII to Hexadecimal Character Conversion Table

Symbol Definitions

• = Space

↵ = Carriage return with line feed

| or ← = Carriage return with no line feed

Esc or W = Escape

[14, 24, 28] = Superscripts indicate the error message displayed if the command is entered incorrectly or with invalid parameters (see **Error response references** on the previous page).

SIS command definitions

X1 = Input selection, 1-5, (0 = current input — 0 is valid only for Input Config settings:
0 = main when PIP is disabled, 0 = PIP when PIP is enabled)

X2 = Output selection:
0 = All outputs (default)
1 = Analog (VGA, YUVp, HDTV)
2 = HDMI
3 = 3G/HD-SDI

X3 = Input video format:
0 = No signal detected (valid only for detected input format query, such as X1*\ or "I")
1 = RGB
2 = YUV auto
3 = RGBcvS
4 = S-video
5 = Composite video
6 = DVI or HDMI (available only for inputs 3, 4, and 5)
7 = Auto detect (default for inputs 1 and 2)

X4 = Horizontal or vertical start — 0 to 255 (default midpoint = 128)

X5 = Pixel phase — 0 to 63 (default = 31)

X6 = Total pixels — ±512 of the default value

X7 = Active pixels — ±512 of the default value

X8 = Active lines — ±512 of the default value

X9 = Enable or disable:
0 = Off or disable
1 = On or enable

X10 = Input standard:
0 = No signal detected
1 = NTSC 3.85
2 = PAL
3 = NTSC 4.43
4 = SECAM
- = N/A (occurs when input is an active RBG, YUV auto [but not NTSC/PAL], or HDMI signal.)

X11 = Internal temperature (in degrees Celsius)

X12 = Unit name is a text string of up to 24 characters drawn from the alphabet (A-Z), digits (0-9), and the minus sign or hyphen (-). The first character must be an alpha character. The last character must not be a minus. No blank or space characters permitted, and no distinction is made between upper- and lowercase.

X13 = Horizontal and vertical frequencies (format is 3 digit with a single decimal and leading zeros, for example, 075.3)

X14 = Text label/preset name: up to 16 characters

> **NOTE:** User and input presets saved without a name are saved with the default names "User Preset *xx*" (for example, user preset 12) or "Input preset *xxx*" (for example, Input preset 122).

X15 = Picture adjustment — 0 to 127 (default = 64)

X16 = Horizontal and vertical position, ±11000, with leading "+" or "-", such as -02040

X17 = Horizontal and vertical size, 10 to 11000

X18 = Image or window number:
1 = Main window
2 = PIP window

X19 = Scaler resolution and EDID emulation:
0 = Automatic: match current output resolution (default for EDID emulation) LCD reads Match Output
1 = Output 1 (analog VGA connector, available for Save and Export EDID commands only)
2 = Output 2 (HDMI connector, available for Save and Export EDID commands only)
3 = Custom EDID/output rate 1
4 = Custom EDID/output rate 2
5 = Custom EDID/output rate 3
6 = Custom EDID/output rate 4
7 = Custom EDID/output rate 5
10-92: See table below

SIS X19 variables for EDID resolution and refresh rate combination (where X19 = 10 through 92)									
Resolution	**23.98 Hz**	**24 Hz**	**25 Hz**	**29.97 Hz**	**30 Hz**	**50 Hz**	**59.94 Hz**	**60 Hz**	**75 Hz**
640x480						10		11	12
800x600						13		14	15
852x480						16		17	18
1024x768						19		20	21
1024x852						22		23	24
1024x1024						25		26	27
1280x768						28		29	30
1280x800						31		32	33
1280x1024						34		35	36
1360x765						37		38	39
1360x768						40		41	42
1365x768						43		44	45
1366x768						46		47	48
1365x1024						49		50	51
1440x900						52		53	54
1400x1050						55		56	
1600x900						57		58	
1680x1050						59		60	
1600x1200						61		62	
1920x1200						63		64	
480p							65	66	
576p						67			
720p			68	69	70	71	72	73*	
1080i						74	75	76	
1080p	77	78	79	80	81	82	83	84	
2048x1080 2K	85	86	87	88	89	90	91	92	

* Default output resolution

Figure 26. SIS Command EDID Table

X20 = Test patterns:

0 = Off (default)	4 = Crosshatch	9 = White field	13 = 2.35 aspect ratio
1 = Crop	5 = 4x4 crosshatch	10 = 1.33 aspect ratio	14 = Blue mode
2 = Alternating pixels	6 = Color bars	11 = 1.78 aspect ratio	
3 = Alternating lines	7 = Grayscale	11 = 1.78 aspect ratio	
4 = Crosshatch	8 = Ramp	12 = 1.85 aspect ratio	

X21 = Analog output polarity:

0 = H-/V- (default)	2 = H+/V-
1 = H-/V+	3 = H+/V+

X22 = Analog output sync format:

0 = RGBHV (default)	3 = Y, R-Y, B-Y bi-level
1 = RGBS	4 = Y, R-Y, B-Y tri-level
2 = RGsB	

X23 = User presets or PIP presets — 1 to 16

X24 = Input presets — 1 to 128

X25 = On-screen menu time-out or screen saver sync timeout, (default = 3 seconds) or output sync time-out (default = 501 - never)
0 = OSD is never displayed or output sync is instantly disabled with no active input 1 to 500 in 1 second increments
501 = OSD never times out, output sync is never disabled

X26 = Executive mode status:
0 = Off/disable, (default)
1 = Exec mode 1 — Complete front panel lockout
2 = Exec mode 2 — Partial front panel lockout (only input selection, Auto-Image, and PIP/Swap are still available)

X27 = PIP window input selection, 0 to 4 (0 = off). (Input 5 is not available for PIP mode.)

X28 = Overscan (applied to SMPTE [NTSC, PAL, 480p, 576p, 720p, 1080i, 1080p] input rates):
0 = 0.0% (default for RGB/HDMI),
1 = 2.5% (default for YUV, RGBcvS, S-video, composite)

X29 = Aspect ratio:
1 = Fill: each input rate automatically fills the entire output raster (default)
2 = Follow: each input rate is displayed with its native aspect ratio

X30 = Screen saver mode:
1 = Black screen (default)
2 = Blue screen with OSD text

X31 = Video mute:
0 = off/disable
1 = on/enable (mute to black)
2 = mute output sync and video

X32 = Auto-Image threshold value: 0 (black) though 100 (white), default = 25

X33 = HDCP status (valid only on HDMI/DVI outputs):
0 = No sink or source detected
1 = Sink or source detected with HDCP
2 = Sink or source detected but no HDCP is present

X34 = HDCP mode:
0 = follow the input (default)
1 = always encrypt HDMI outputs
2 = follow input with continuous DVI trials
3 = always encrypt HDMI outputs with continuous DVI trials

X35 = Video switching duration, from 2 (0.2 sec) to 50 (5.0 sec). Default value is 3 or 0.3 sec

X36 = HDMI output format:

0 = Auto (based on sink EDID), default	4 = HDMI 444 YUV “LIMITED”
1 = DVI	5 = HDMI 422 YUV “FULL”
2 = HDMI 444 RGB	6 = HDMI 422 YUV “LIMITED”
3 = HDMI 444 YUV “FULL”	

X37 = Auto switch mode:
0 = Disable (default)
1 = Gives priority to the highest input
2 = Gives priority to the lowest input

X38 = Audio volume range: -100 dB to 0 dB, in 1.0 dB steps, default = -30 dB (with leading "-");
where 0 = 0 dB (max volume output)

X39 = Audio output format:
1 = Dual mono
2 = Stereo (default)

X40 = Audio gain and Attenuation: -53 through +24 dB, (with leading "+" or "–")

X41 = Audio source:
0 = Follow Main window (default)
1 = Follow PIP window
2 = Toggle source

X42 = Audio input type:
0 = None, input is muted (EDID has no CEA extension)
1 = Analog, 5-pole captive screw (EDID has no CEA extension)
2 = 2Ch digital, embedded in HDMI input, (2Ch PCM audio requested from source via EDID)
3 = Full digital (via EDID to allow any digital audio format from source)
4 = 2Ch digital, Auto (2Ch PCM audio requested from source via EDID), scaler uses embedded digital audio when present, or defaults to the analog 5-pole captive screw
5 = Full digital auto (Full audio is requested from source via EDID). Scaler uses embedded digital audio when present, or defaults to input analog 5-pole captive screw.

NOTES:

- Inputs 1 and 2 can only be set to X42 = 0 (all models) or 1 (audio model only). Attempting to set these inputs to any other format gives an E14 error message.
- Non-audio models of the DVS 605 allow X42 = 0 on inputs 1 and 2, and X42 = 0, 2, or 3 on inputs 3, 4, and 5.

X43 = Static audio delay, 0 through 255 milliseconds (default is 0)

NOTE: The static audio delay is in addition to the automatic audio delay that is applied by the DVS 605 to compensate for internal video processing.

X44 = Video signal status
0 = Video / TMDS signal not detected
1 = Video / TMDS signal detected

X45 = Power save modes
0 = Full power mode (default)
1 = Low power state

X46 = Screen saver status
0 = Active input detected, timer not running
1 = No active input, timer is running, output sync still active
2 = No active input, timer has expired, output sync disabled

X47 = Input signal or SDI genlock
0 = Disabled, (default)
1 = Input signal genlock enabled, locks output vertical rate to selected input vertical rate
2 = SDI genlock enabled, locks output vertical rate to applied genlock input ("D" models only)

X48 = Input signal and genlock status
0 = Input signal or SDI genlock disabled
1 = Input signal or SDI genlock enabled, but cannot lock to applied input signal/SDI genlock input. DVS defaults to set output rate/refresh
2 = Input signal or SDI genlock enabled, output locked to applied input signal/SDI genlock input

X49 = Input HDCP HDMI authorization status:
0 = Block HDCP encryption
1 = Allow HDCP encryption (default for inputs 3, 4, and 5)

X50 = Horizontal genlock offset: range is ± the correct output resolution total pixels value -1
(for example, -2199 to +2199 for 1080p

X51 = Vertical genlock offset: range is ± the correct output resolution total lines value -1 (for example, -1124 to +1124 for 1080p)

X52 = Freeze status:
0 = All unfrozen
1= All frozen
2 = Main frozen
3 = PIP frozen

SIS IP command definitions

X100 = Default name: combination of model name and last 3 hex pairs of MAC address (for example *DVS-605-Series-07-8C-EC)*.

X104 = On and off status:
0 = off or disable
1 = on or enable

X106 = Unit name is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign/hyphen (-). No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be an alpha character. The last character must not be a minus sign or hyphen.

X107 = Local date and time format:
Set format is MM/DD/YY-HH:MM:SS; for example, *06/21/02-10:54:00*
Read format is day, date month year (HH:MM:SS), for example, *Thu, 20 Feb 2003 (18:19:33)*

X108 = IP address (*xxx.xxx.xxx.xxx*). Leading zeros in each of 4 fields are optional in setting values, and are suppressed in returned values.

NOTE: DHCP is disabled by default. Default IP is 192.168.254.254.

X109 = Hardware (MAC) address (*00-05-A6-xx-xx-xx*).

X110 = Subnet mask (*xxx.xxx.xxx.xxx*). Leading zeros are optional in setting values in each of four fields, and are suppressed in returned values. Default subnet mask = 255.255.0.0

X111 = Verbose Response mode, (default = 0 for Telnet connections, 1 for RS-232 and USB host control).
0 = Clear or none
1 = Verbose mode
2 = Tagged responses for queries
3 = Verbose mode and tagged responses for queries

NOTE: If tagged responses is enabled, all read commands return the constant string plus the data. For example command: Esc CN ← response: Ipn • X106↵

X121 = Password (Maximum length of 128 alphanumeric characters, spaces, and symbols. Cannot start with a space.)

NOTES:
- A user password cannot be assigned if no administrator password exists, the E14 error code is returned. If the administrator password is cleared, the user password is also removed.
- Password characters are replaced with asterisks (*) for security purposes, when querying for a password.
- 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 no password.

X125 = Connections security level:
11 = User
12 = Administrator

X127 = The number of seconds before timeout on the IP connection: min. = 1, max. = 65000, (default = 30 = 300 seconds). If no data is received during the timeout period, the Ethernet connection is closed. Each step = 10 seconds. Applicable only when connected via Ethernet. When the scaler is connected via RS-232, only the global timeout commands apply (returns E13). Response is returned with leading zeros.

X131 = Firmware Query ('Q' commands)

*Q = Firmware and build number [<*x.xx.xxxx*>]

0Q = Verbose version information (*2Q - 3Q - 4Q*) sum of responses from 2Q-3Q-4Q

1Q = Firmware version (*<currently running code> x.xxx*)

2Q = Final stage bootloader (Uboot) version (*x.xxx*)

3Q = Factory base code version (*<factory base code x.xxx>*<kernel version .xxx) – description – date loaded>*)

4Q = Updated firmware version (*<updated code version x.xxx*<kernel version x.xxx - description – date loaded>*)

NOTE: For 3Q and 4Q, an asterisk '*' after version number indicates which version is currently running. Question marks ?.?? indicates that only the factory firmware version is loaded. A caret (^) indicates the firmware version that should be running, but a Use Factory Firmware reset was executed and the default factory firmware version is loaded. An exclamation point (!) indicates corrupted firmware. Example: 1.03*(1.42-DVS 605 -Thur, 21 Apr 2012 22:30:57 GMT).

The **SIS Command and Response Table** start on the next page.

SIS Command and Response Table

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Input selection			
Video and audio	X1!	In X1•All ↵	Select video and audio from input X1.
Video	X1&	In X1•RGB ↵	Select video from input source X1.
Audio	X1$	In X1•Aud ↵	Select audio from input source X1.
View video input	&	X1 ↵	View current video input X1.
View audio input	$	X1 ↵	View current audio input X1.
View current input	!	X1 ↵	View selected input X1 (video only).

NOTES: See **Video only and audio only switching (breakaway) rules** on page 91 for details

- Audio breakaway ($) is not allowed TO an input configured for any digital audio format.
- Video breakaway (&) is not allowed FROM an input configured for any digital audio format.
- Attempting either of these invalid modes gives an E17 error.
- Audio breakaway is always allowed back TO the current video input.
- When in PIP mode, audio breakaway is not supported. Audio follows either the main window or the PIP window, and is selectable via SIS command.

KEY: X1 = Input number: 1 through 5

Picture in Picture			

NOTE:

- HDMI input 5 cannot be used for PIP.
- True seamless switching is not available with PIP mode enabled (see **Picture-in-Picture (PIP) Mode** on page 26 for further details).

PIP on or off			
PIP on	Esc X27 PIP ←	Pip X27 ↵	Turn on PIP and display input X27. X27 is a 2 digit response.
PIP off	Esc 0 PIP ←	Pip00 ↵	Turn PIP off.
View PIP selection	Esc PIP ←	X27 ↵	View PIP selection (X27 is a 2 digit response, for example, 01).

KEY: X27 = PIP window input selection: 0 to 4 (0 = off)

Swap main or PIP windows			
Swap	%	Tke ↵	Swap between main and PIP window.
Input video format			
Set video format	X1*X3\	Typ X1*X3 ↵	Set input X1 to format X3.
View set format	X1\	X3 ↵	View set video format of input X1.
View detected format	X1*\	X3 ↵	View actual video format auto-detected on input X1.
	Verbose mode 2/3	Typ X1*X3 ↵	

KEY: X1 = Input number: 1 through 5
X3 = Input video format: 0 = No signal detected, 1 = RGB, 2 = YUV auto, 3 = RGBcvS, 4 = S-video, 5 = Composite, 6 = DVI/HDMI (only available for inputs 3, 4, and 5), 7 = Auto detect (default for inputs 1 and 2)

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Input name			
Write input name	Esc X1 , X14 NI ←	Nmi X1 , X14 ↵	Set the name X14 for input X1.
Read input name	Esc X1 NI ←	X14 ↵	View input X1 name X14.

NOTE: To clear an input name, a single space character should be entered for X14. This resets the input name to the default value.

KEY: X1 = Input selection: 1 to 5
X14 = Text label or preset name, up to 16 characters

Input signal status (unsolicited)			
Enable	Esc S1NTFY ←	NtfyS1 ↵	Enable unsolicited response.
Disable	Esc S0NTFY ←	NtfyS0 ↵	Disable unsolicited response (Default).
Query response	Esc SNTFY ←	X9 ↵	X9 = 1 - enabled, 0 - disabled.

NOTE: The switcher indicates via unsolicited SIS that signal status has changed on one of the inputs [In00•0*0*0*0*0↵].

KEY: X9 = Enable/disable: 0 = off/disable, 1 = on/enable

Input EDID (VGA and HDMI)			
Assign EDID to input	Esc A X1 * X19 EDID ←	EdidA X1 * X19 ↵	Assign EDID resolution and refresh rate X19 for input X1.
View assigned EDID data	Esc A X1 EDID ←	X19 ↵	View assigned EDID resolution and refresh rate X19 for input X1.
Capture an output EDID to custom slot	Esc S X2 * X19 EDID ←	EdidS X2 * X19 ↵	Capture output X2 EDID to X19 (Valid for X19 = 3, 4, 5, 6, 7 only and X2 = 1 or 2 only.)
Export EDID file	Esc E X19 ,<*filename*> EDID ←	EdidE X19 ↵	Exports EDID table X19 to <*filename*>.
Import EDID file	Esc I X19 ,<*filename*> EDID ←	EdidI X19 ↵	Imports EDID X19 from <*filename*>. Valid for X19 = 3, 4, 5, 6, and 7.

NOTES:
- EDID import / export commands use the device's user file system to hold the imported or exported EDID file. PCS can be used to move EDID files between a PC and the device's user file system.
- <filename> can optionally be a full path name on the device user file system.
- Imported and exported EDID files must be have a .bin extension, carrying 128 or 256 bytes of binary data.
- Exporting a default EDID table (X19 value of 10 or greater) results in a HDMI LPCM-2Ch table being exported.

KEY: X1 = Input selection: 1 to 5
X2 = Output selection: 1 = Analog (VGA, YUVp, HDTV), 2 = HDMI.
X19 = Scaler resolution EDID emulation, 0 = Automatic: match current output resolution (default), 1 = Output 1 analog VGA connector, 2 = Output 2 HDMI connector, 3 = Custom EDID output rate 1, 4 = Custom EDID output rate 2, 5 = Custom EDID output rate 3, 6 = Custom EDID/output rate 4, 7 = Custom EDID/output rate 5. For variables 10-92, see the EDID table on **page 33.**

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Auto-Image			
Enable	X1*1A	Img X1 *1↵	Activate Auto-Image for input X1.
Disable	X1*0A	Img X1 *0↵	Turn Auto-Image off for input X1.
View status	X1A	X9↵	View Auto-Image setting.
Execute	0*A	Img0↵	Execute an Auto-Image to the selected input (follows current aspect setting).
Execute and Fill	1*A	Img1↵	Execute an Auto-Image and fill entire output.
Execute and Follow	2*A	Img2↵	Execute an Auto-Image and follow the aspect ratio of the input.
KEY: X1 = Input selection: 1 to 5 X9 = Enable/disable: 0 = on/enable, 1 = off/disable (default)			
Auto-Image threshold value (minimum luminosity value which the scaler defines as active video for Auto-Image)			
Set value	Esc X32 ALVL←	Alvl X32 ↵	Set global Auto-Image luminosity value X32.
View	Esc ALVL←	X32↵	View global Auto-Image luminosity value X32.
KEY: X32 = Auto-Image threshold value: 0 (black) though 100 (white), default = 25			
Horizontal start			
Specify a value	Esc X1 *X4 HSRT←	Hsrt X1 *X4 ↵	Set horizontal location of first active pixel for input X1.
Increment value	Esc X1 +HSRT←	Hsrt X1 *X4 ↵	Increment horizontal start position.
Decrement value	Esc X1 -HSRT←	Hsrt X1 *X4 ↵	Decrement horizontal start position.
View	Esc X1 HSRT←	X4↵	Show horizontal location of first active pixel for input X1.
Vertical start			
Specify a value	Esc X1 *X4 VSRT←	Vsrt X1 *X4 ↵	Set vertical location of first active pixel for input X1.
Increment value	Esc X1 +VSRT←	Vsrt X1 *X4 ↵	Increase vertical start value.
Decrement value	Esc X1 -VSRT←	Vsrt X1 *X4 ↵	Decrease vertical start value.
View	Esc X1 VSRT←	X4↵	Show vertical location of first active pixel for input X1.
KEY: X1 = Input selection: 1 to 5 X4 = Horizontal or vertical start: 0 to 255 (default midpoint = 128)			
Pixel phase (available only for RGB and YUV auto input signals)			
Specify a value	Esc X1 *X5 PHAS←	Phas X1 *X5 ↵	Adjust the pixel phase to specified value X5 for input X1.
Increment value	Esc X1 +PHAS←	Phas X1 *X5 ↵	Increase the pixel phase.
Decrement value	Esc X1 -PHAS←	Phas X1 *X5 ↵	Decrease the pixel phase.
View	Esc X1 PHAS←	X5↵	Show the pixel phase for input X1.
KEY: X1 = Input selection: 1 to 5 X5 = Pixel phase: 0 to 63 (default = 31)			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Total pixels (available only for RGB and YUV auto input signals)			
Specify a value	Esc X1 *X6 TPIX ←	Tpix X1 *X6 ↵	Adjust the total pixels to specified value X6 for input X1.
Increment value	Esc X1 +TPIX ←	Tpix X1 *X6 ↵	Increase the total pixels.
Decrement value	Esc X1 -TPIX ←	Tpix X1 *X6 ↵	Decrease the total pixels.
View	Esc X1 TPIX ←	X6 ↵	Show the total pixels for input X1.
KEY: X1 = Input selection: 1 to 5 X6 = Total pixels: ±512 of the default value			
Active pixels			
Specify a value	Esc X1 *X7 APIX ←	Apix X1 *X7 ↵	Adjust the active pixels to a specified value X7 for input X1.
Increment value	Esc X1 +APIX ←	Apix X1 *X7 ↵	Increase the active pixels.
Decrement value	Esc X1 -APIX ←	Apix X1 *X7 ↵	Decrease the active pixels.
View	Esc X1 APIX ←	X7 ↵	Show the active pixels for input X1.
KEY: X1 = Input selection: 1 to 5 X7 = Active pixels: ±512 of the default value			
Active lines			
Specify a value	Esc X1 *X8 ALIN ←	Alin X1 *X8 ↵	Adjust the active lines to a specified value X8 for input X1.
Increment value	Esc X1 +ALIN ←	Alin X1 *X8 ↵	Increase the active lines.
Decrement value	Esc X1 -ALIN ←	Alin X1 *X8 ↵	Decrease the active lines.
View	Esc X1 ALIN ←	X8 ↵	Show the active lines for input X1.
KEY: X1 = Input selection: 1 to 5 X8 = Active lines: ±512 of the default value			
3:2, 2:2, and 24:1 Film mode autodetect			
Enable autodetect	Esc X1 *1FILM ←	Film X1 *1 ↵	Enable film mode autodetection.
Disable autodetect	Esc X1 *0FILM ←	Film X1 *0 ↵	Disable film mode autodetection.
View setting	Esc X1 FILM ←	X9 ↵	View applied film mode detection setting. Enabled is the default setting.
KEY: X1 = Input selection: 1 to 5 X9 = Enable/disable: 0 = off/disable, 1 = Auto/enable			
Picture Adjustments			
Video mute			
Mute all outputs to black	1B	Vmt1 ↵	Mutes video and displays black video on all outputs.
Mute all sync and video	2B	Vmt2 ↵	Mutes sync and video on all outputs.
Unmute all outputs	0B	Vmt0 ↵	Unmutes all outputs.
View	B	X31 ↵	View the mute status X31.
KEY: X31 = Video mute: 0 = off/disable, 1 = on/enable (mute to black), 2 = mute output sync and video			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Color			
Set a specific value	Esc X1 * X15 COLR ←	Colr X1 * X15 ↵	Set color level to X15 for input X1.
Increment value	Esc X1 + COLR ←	Colr X1 * X15 ↵	Increment color level.
Decrement value	Esc X1 - COLR ←	Colr X1 * X15 ↵	Decrement color level.
View	Esc X1 COLR ←	X15 ↵	View current setting for input X1.
Tint			
Set a specific value	Esc X1 * X15 TINT ←	Tint X1 * X15 ↵	Set tint level to X15 for input X1
Increment value	Esc X1 + TINT ←	Tint X1 * X15 ↵	Increment tint level.
Decrement value	Esc X1 - TINT ←	Tint X1 * X15 ↵	Decrement tint level.
View	Esc X1 TINT ←	X15 ↵	View current setting for input X1.
Contrast			
Set a specific value	Esc X1 * X15 CONT ←	Cont X1 * X15 ↵	Set contrast level to X15 for input X1.
Increment value	Esc X1 + CONT ←	Cont X1 * X15 ↵	Increment contrast level.
Decrement value	Esc X1 - CONT ←	Cont X1 * X15 ↵	Decrement contrast level.
View	Esc X1 CONT ←	X15 ↵	View current setting for input X1.
Brightness			
Set a specific value	Esc X1 * X15 BRIT ←	Brit X1 * X15 ↵	Set brightness level to X15 for input X1.
Increment value	Esc X1 + BRIT ←	Brit X1 * X15 ↵	Increment brightness level.
Decrement value	Esc X1 - BRIT ←	Brit X1 * X15 ↵	Decrement brightness level.
View	Esc X1 BRIT ←	X15 ↵	View current setting for input X1.
Detail filter			
Set detail level	Esc X1 * X15 HDET ←	Hdet X1 * X15 ↵	Specify the detail level to X15 for input X1.
Increment value	Esc X1 + HDET ←	Hdet X1 * X15 ↵	Increase the detail level.
Decrement value	Esc X1 - HDET ←	Hdet X1 * X15 ↵	Decrease the detail level.
View detail value	Esc X1 HDET ←	X15 ↵	Show the detail setting for input X1.

KEY: X1 = Input selection: 1 to 5
X15 = Picture adjustment: 0 to 127 (default = 64)

Horizontal position (window)			
Specific value	Esc 1 * X18 * X16 HCTR ←	Hctr1 * X18 * X16 ↵	Set horizontal position to X16 for window X18.
Increment value	Esc 1 * X18 + HCTR ←	Hctr1 * X18 * X16 ↵	Shift window right.
Decrement value	Esc 1 * X18 - HCTR ←	Hctr1 * X18 * X16 ↵	Shift window left.
View	Esc 1 * X18 HCTR ←	X16 ↵	View the horizontal position value X16 for window X18.
Vertical position (window)			
Specific value	Esc 1 * X18 * X16 VCTR ←	Vctr1 * X18 * X16 ↵	Set vertical position to X16 for window X18.
Increment value	Esc 1 * X18 + VCTR ←	Vctr1 * X18 * X16 ↵	Shift window down.
Decrement value	Esc 1 * X18 - VCTR ←	Vctr1 * X18 * X16 ↵	Shift window up.
View	Esc 1 * X18 VCTR ←	X16 ↵	View the vertical position value X16 for window X18.

KEY: X16 = Horizontal and vertical position: ±11000, with leading "+" or "-", for example -02040
X18 = Image/window number: 1 = main window, 2 = PIP window

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Horizontal size (window)			
Specific value	Esc 1*X18*X17HSIZ←	Hsiz1*X18*X17↵	Set horizontal sizing to X17 for window X18.
Increase size	Esc 1*X18+HSIZ←	Hsiz1*X18*X17↵	Widen the window.
Decrease size	Esc 1*X18-HSIZ←	Hsiz1*X18*X17↵	Make the window narrower.
View	Esc 1*X18HSIZ←	X17↵	View horizontal sizing value X17 for window X18.
Vertical size (window)			
Specific value	Esc 1*X18*X17VSIZ←	Vsiz1*X18*X17↵	Set vertical sizing to X17 for window X18.
Increase size	Esc 1*X18+VSIZ←	Vsiz1*X18*X17↵	Make the window taller.
Decrease size	Esc 1*X18-VSIZ←	Vsiz1*X18*X17↵	Make the window shorter.
View	Esc 1*X18VSIZ←	X17↵	View vertical sizing value X17 for window X18.
KEY: X17 = Horizontal and vertical size: 10 to 11000 X18 = Image/window number: 1 = main window, 2 = PIP window			
Horizontal position (image)			
Specific value	Esc 2*X18*X16HCTR←	Hctr2*X18*X16↵	Set horizontal position to X16 for image X18.
Increment value	Esc 2*X18+HCTR←	Hctr2*X18*X16↵	Shift image right.
Decrement value	Esc 2*X18-HCTR←	Hctr2*X18*X16↵	Shift image left.
View	Esc 2*X18HCTR←	X16↵	View the horizontal position value X16 for image X18.
Vertical position (image)			
Specific value	Esc 2*X18*X16VCTR←	Vctr2*X18*X16↵	Set vertical position to X16 for image X18.
Increment value	Esc 2*X18+VCTR←	Vctr2*X18*X16↵	Shift image down.
Decrement value	Esc 2*X18-VCTR←	Vctr2*X18*X16↵	Shift image up.
View	Esc 2*X18VCTR←	X16↵	View the vertical position value X16 for image X18.
KEY: X16 = Horizontal and vertical position: ±11000, with leading "+" or "-", for example -02040 X18 = Image/window number: 1 = main window, 2 = PIP window			
Horizontal size (image)			
Specific value	Esc 2*X18*X17HSIZ←	Hsiz2*X18*X17↵	Set horizontal sizing to X17 for image X18.
Increase width	Esc 2*X18+HSIZ←	Hsiz2*X18*X17↵	Widen the image.
Decrease width	Esc 2*X18-HSIZ←	Hsiz2*X18*X17↵	Make the image narrower.
View	Esc 2*X18HSIZ←	X17↵	View image horizontal sizing value X17.
Vertical size (image)			
Specific value	Esc 2*X18*X17VSIZ←	Vsiz2*X18*X17↵	Set vertical sizing to X17 for image X18.
Increase height	Esc 2*X18+VSIZ←	Vsiz2*X18*X17↵	Make the image taller.
Decrease height	Esc 2*X18-VSIZ←	Vsiz2*X18*X17↵	Make the image shorter.
View	Esc 2*X18VSIZ←	X17↵	View image vertical sizing value X17.
KEY: X17 = Horizontal and vertical size: 10 to 11000 X18 = Image/window number: 1 = main window, 2 = PIP window			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Output Configuration			
Output scaler rate			
Set output rate	Esc X19 RATE ←	Rate X19 ↵	Select output resolution and refresh rate.
View output rate	Esc RATE ←	X19 ↵	Show selected output rate.
KEY: X19 = Scaler resolution/EDID emulation: (see the EDID table, **figure 27** on page 34 for full details).			
Output polarity (valid when VGA format is set to RGBHV)			
Set polarity	Esc X21 OPOL ←	Opol X21 ↵	Set polarity for VGA RGBHV ouput.
View polarity setting	Esc OPOL ←	X21 ↵	Show current output polarity.
KEY: X21 = Output polarity: 0 = H-/V- (default), 1 = H-/V+, 2 = H+/V-, 3 = H+/V+			
VGA output sync format			
Set format	Esc X22 OSYN ←	Osyn X22 ↵	Set output sync format of the VGA output.
View sync setting	Esc OSYN ←	X22 ↵	Show current output sync format.
KEY: X22 = Output sync format: 0 = RGBHV (default), 1 = RGBS, 2 = RGsB, 3 = Y, R-Y, B-Y bi-level, 4 = Y, R-Y, B-Y tri-level			
HDMI output format			
Set format	Esc X36 VTPO ←	Vtpo X36 ↵	Set HDMI output color space and format X36.
View setting	Esc VTPO ←	X36 ↵	Show current HDMI format.
KEY: X36 = HDMI output format: 0 = Auto (based on sink EDID), default; 1 = DVI, 2 = HDMI 444 RGB, 3 = HDMI 444 YUV "FULL", 4 = HDMI 444 YUV "LIMITED", 5 = HDMI 422 YUV "FULL", 6 = HDMI 422 YUV "LIMITED".			
Power save mode			
Power save off	Esc 0PSAV ←	Psav0 ↵	DVS runs in full power mode (default).
Power save on	Esc 1PSAV ←	Psav1 ↵	DVS enters low power mode. Esc 0PSAV ← command or a unit power cycle exits PSAV mode.
View setting	Esc PSAV ←	X45 ↵	View power save status.
KEY: X45 = Power save mode: 0 = full power mode (default), 1 = low power state			
Screen saver mode (action that takes place when no signal is detected on the selected input)			
Set mode	Esc M X30 SSAV ←	SsavM X30 ↵	Set the screen saver mode to X30 (default: 1 = black).
View mode	Esc MSSAV ←	X30 ↵	View the current screen saver mode.
Set sync timeout duration	Esc T X25 SSAV ←	SsavT X25 ↵	Set sync timeout duration to X25 seconds (default: 501 = never).
View sync timeout duration	Esc TSSAV ←	X25 ↵	View sync timeout duration X25.
View screen saver status	Esc SSSAV ←	X46 ↵	View the screen saver status X46.
KEY: X25 = On-screen menu time-out: (default = 3 seconds), output sync time-out (default = 501 - never) 0 = OSD never displayed/output sync is instantly disabled with no active input, 1 to 500, in 1 second increments, 501 = OSD never times out/output sync never times out X30 = Screen saver mode: 1 = Black screen (default), 2 = Blue screen with OSD text X46 = Screen saver status: 0 = Active input detected, timer not running, 1 = No active input, timer is running, output sync still active, 2 = No active input, timer has expired, output sync disabled			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Audio Configuration			
Audio mute (global settings)			
Mute on	1Z	Amt1↵	Mute selected input.
Mute off	0Z	Amt0↵	Un-mute selected input.
View status	Z	X9↵	View mute status.
KEY: X9 = Enable/disable: 0 = mute off, 1 = mute on			
Analog audio gain and attenuation (audio models only: per analog input)			
Set gain/attenuation	X40G	AudX40↵	Set gain/attenuation on current input to X40 dB.
Increment	+G	AudX40↵	Increment audio level (up).
Decrement	-G	AudX40↵	Decrement audio level (down).
View	G	X40↵	View current audio level.
KEY: X40 = -53 through +24 dB, (with leading + or –)			
Volume control (audio models only)			
Set specific volume	X38V	VolX38↵	Set volume to X38.
Increment	+V	VolX38↵	Increase volume.
Decrement	-V	VolX38↵	Decrease volume.
View	V	X38↵	View current volume setting.
KEY: X38 = Audio volume range: 000-100 dB (default = -30 dB), in 1.0 dB step, with max = 0 dB and min = -100 dB. attenuation, plus hardware mute			
Audio delay (available on all models)			
Set static delay	EscSX43ADLY←	AdlySX43↵	Set static audio delay to X43 ms (range = 0-255 ms).
View setting	EscSADLY←	X43↵	View audio delay (X43) in milliseconds.
KEY: X43 = Static audio delay: 0 through 255 milliseconds (default= 0)			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Audio input format			
NOTES: • Selects between analog (5-pole captive screw) or digital (embedded in HDMI input) audio sources. • Inputs 1 and 2 X42 can only be set to 0 or 1; attempts to set these inputs to a digital format yields an E14 response. • Digital auto modes (4 or 5) detect and use embedded audio when present, or analog audio if digital audio is not detected			
Set to None	Esc I X1 *0AFMT ←	AfmtI X1 *0 ↵	Mutes all audio for input X1.
Set to Analog	Esc I X1 *1AFMT ←	AfmtI X1 *1 ↵	Select analog audio for input X1 (default for inputs 1 and 2).
Set to 2Ch digital	Esc I X1 *2AFMT ←	AfmtI X1 *2 ↵	Select 2Ch digital audio for input X1 (default for inputs 3, 4, and 5).
Set to Full digital	Esc I X1 *3AFMT ←	AfmtI X1 *3 ↵	Select Full digital audio for input X1.
Set to 2Ch digital auto	Esc I X1 *4AFMT ←	AfmtI X1 *4 ↵	Select auto detect audio for input X1 (valid for inputs 3, 4, and 5 only — EDID set to 2Ch).
Set to Full digital auto	Esc I X1 *5AFMT ←	AfmtI X1 *5 ↵	Select auto detect audio for input X1 (valid for inputs 3, 4, and 5 only — EDID set to Full).
View audio type	Esc I X1 AFMT ←	X42 ↵	View audio input type X42 for input X1.
KEY: X1 = Input selection: 1 to 5 X42 = Audio input type: 0 = none, 1 = analog, 2 = 2Ch digital, 3 = Full digital, 4 = 2Ch digital auto, 5 = Full digital auto (see X42 on page 36).			
Audio output format			
Set format	Esc O X39 AFMT ←	AfmtO X39 ↵	Set the fixed and variable audio output format.
View format	Esc O AFMT ←	X39 ↵	View audio output format.
KEY: X39 = Audio output format: 1 = dual mono, 2 = stereo (default)			
Audio follow			
Set	Esc X41 AFLW ←	Aflw X41 ↵	Select audio source (main versus PIP).
View	Esc AFLW ←	X41 ↵	View audio source (main versus PIP).
KEY: X41 = Audio source: 0 = Follow Main window (default), 1 = Follow PIP window, 2 = Toggle source			
Presets			
User presets			
Recall preset	1* X23 .	1Rpr X23 ↵	Recall user preset X23 for selected input.
Save preset	1* X23 ,	1Spr X23 ↵	Save user preset X23 for selected input.
Delete/clear preset	Esc X1* X23 PRST ←	PrstX1* X23 ↵	Clears user preset X23, and sets user preset X23 name to [unassigned].
User preset name			
Write name	Esc 1* X23 , X14 PNAM ←	Pnam1* X23 , X14 ↵	Set the user preset X23 name to X14.
Read name	Esc 1* X23 PNAM ←	X14 ↵	Read the name for user preset X23.
NOTE: To restore a default user preset name, enter a single space character for X14, unassigned presets = [*unassigned*]. Valid only for previously saved presets.			
KEY: X14 = Text label: up to 16 characters X23 = User presets or PIP presets: 1 to 16			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Input presets			
Recall preset	2*X24.	2RprX24↵	Recall input preset X24 for selected input.
Save preset	2*X24,	2SprX24↵	Save input preset X24 for selected input.
Delete/clear preset	EscX2*X24PRST←	PrstX2*X24↵	Clears input preset X24, and sets input preset X24 name to unassigned.
Input preset name			
Write name	Esc2*X24,X14PNAM←	Pnam2*X24,X14↵	Set the input preset X24 to X14.
Read name	Esc2*X24PNAM←	X14↵	Read the name for input preset X24.

NOTE: To restore a default input preset name, enter a single space character for X14, unassigned presets = [*unassigned*].

KEY: X14 = Text label: up to 16 characters
X24 = Input presets: 1 to 128

PIP presets			
Recall preset without input	3*X23.	3RprX23↵	Recall PIP preset X23 without inputs.
Recall preset with input	4*X23.	4RprX23↵	Recall PIP preset X23 with inputs.
Save preset	4*X23,	4SprX23↵	Save PIP layout and inputs to X23.
Delete/clear preset	EscX4*X23PRST←	PrstX4*X23↵	Resets the PIP preset X23, and PIP preset X23 name back to default factory settings.
PIP preset name			
Write name	Esc3*X23,X14PNAM←	Pnam3*X23,X14↵	Set the PIP preset X23 to X14.
Read name	Esc3*X23PNAM←	X14↵	Read the name for PIP preset X23.

NOTE: To restore a default PIP preset name, enter a single space character for X14: default = "PIP preset *XX*" where *XX* is the current preset number (for example, 05).

KEY: X14 = Text label: up to 16 characters
X23 = User presets or PIP presets: 1 to 16

User Presets		Input Presets				PIP Presets	
Color	H/V Window Position	Input Type	Color	H Start	H/V Window Position	Main H/V Window Position	PIP H/V Window Position
Tint	H/V Window Size	Preset Name	Tint	V Start	H/V Window Size	Main H/V Window Size	PIP H/V Window Size
Contrast	H/V Image Position	Audio Gain/ Attenuation	Contrast	H Active	H/V Image Position	Main H/V Image Position	PIP H/V Image Position
Brightness	H/V Image Size		Brightness	V Active	H/V Image Size	Main H/V Image Size	PIP H/V Image Size
Detail			Detail	Phase		Main Input Number	
Preset Name			Film Mode	Total Pixels		PIP Input Number	

Figure 27. Preset Options

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Advanced Configuration			
Test pattern			
Set test pattern	Esc X20 TEST←	Test X20↵	Set the test pattern to X20.
View test pattern	Esc TEST←	X20↵	View the current test pattern X20.

KEY: X20 = Test patterns:
0 = off (default)
1 = crop
2 = alternating pixels
3 = alternating lines
4 = crosshatch
5 = 4x4 crosshatch
6 = color bars
7 = grayscale
8 = ramp
9 = white field
10 = 1.33 aspect ratio
11 = 1.78 aspect ratio
12 = 1.85 aspect ratio
13 = 2.35 aspect ratio
14 = blue mode

Freeze			
Freeze all windows	1F	Frz1↵	Freeze Main and PIP input windows.
Freeze only MAIN window	2F	Frz2↵	Freezes Main input window.
Freeze only PIP window	3F	Frz3↵	Freeze PIP input window.
Disable	0F	Frz0↵	Unfreeze all windows.
View	F	X52↵	Show the freeze status X52.

KEY: X52 = Freeze status: 1= all frozen, 2 = Main frozen, 3 = PIP frozen, 0 = all unfrozen (default)

Auto memories (per input)			
Enable	Esc X1 *1AMEM←	Amem X1 *1↵	Set auto memory on. Previous settings for incoming signal are auto recalled.
Disable	Esc X1 *0AMEM←	Amem X1 *0↵	Set auto memory off. Manual recall of input presets needed to configure input.
View setting	Esc X1 AMEM←	X9↵	View current auto memory for X1.

KEY: X1 = Input selection: 1 to 5
X9 = Enable or disable: 0 = off or disable, 1 = on or enable (default)

Input aspect ratio (per input)			
Enable Fill mode	Esc X1 *1ASPR←	Aspr X1 *1↵	Sets input X1 to always fill the entire raster (default).
Enable Follow mode	Esc X1 *2ASPR←	Aspr X1 *2↵	Sets input X1 to preserve its native aspect.
View aspect setting	Esc X1 ASPR←	X29↵	View aspect ratio setting for input X1.

KEY: X1 = Input selection: 1 to 5
X29 = Aspect ratio: 1 = Fill: each input rate automatically fills the entire output raster (default)
2 = Follow: each input rate is displayed with its native aspect ratio

Auto switch mode			
Disable	Esc 0AUSW←	Ausw0↵	Manual switching only (default).
Priority to highest active	Esc 1AUSW←	Ausw1↵	Gives priority to the highest numbered active input.
Priority to lowest active	Esc 2AUSW←	Ausw2↵	Gives priority to the lowest numbered active input.
View setting	Esc AUSW←	X37↵	View the current auto switch mode.

KEY: X37 = Auto switch mode: 0 = disable (default), 1 = priority to highest numbered input, 2 = priority to lowest numbered input

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Video effect			
Cut	Esc0SWEF←	Swef0↵	Sets the switch to cut.
Dissolve	Esc1SWEF←	Swef1↵	Sets the switch to dissolve.
View setting	EscSWEF←	0↵ (or 1↵)	View setting (0 = cut, 1 = dissolve [default]).
Effect duration			
Set dissolve duration	EscX35EDUR←	EdurX35↵	Sets the effect duration to tenths of seconds (range 2 = 0.2 to 50 = 5.0 seconds. Default is 3 = 0.3 seconds).
View duration	EscEDUR←	X35↵	View effect duration.
Front panel security lockout (Executive Mode)			
Enable Executive mode 1	1X	Exe1↵	Lock entire front panel.
Enable Executive mode 2	2X	Exe2↵	Limited front panel adjustments (input selection, PIP/Swap, and Auto-Image) can be made.
Disable Executive mode	0X	Exe0↵	Unlock front panel controls. All front panel adjustments can be made.
View Executive mode status	X	0↵ (or) 1↵ (or) 2↵	View the current status: 0 = unlocked [default], 1 = on, complete, 2 = on, limited adjustments.
Overscan mode (applies only to SMPTE [NTSC, PAL, 480p, 576p, 720p, 1080i, 1080p] input rates)			
Set value	EscX3*X28OSCN←	OscnX3*X28↵	Set input format X3 to overscan mode X28.
View status	EscX3OSCN←	X28↵	Show overscan mode X28 for input format X3.
HDCP notification (green screen and message)			
Enable notification	EscN1HDCP←	HdcpN1↵	Enable the HDCP notification (default).
Disable notification	EscN0HDCP←	HdcpN0↵	Disable the HDCP notification. Instead mute output.
Query notification	EscNHDCP←	X9↵	Query the HDCP notification.
HDCP status (valid for HDMI inputs and HDMI output only)			
Query input	EscIX1HDCP←	X33↵	Query the HDCP status of input X1.
	Verbose mode 2/3	HdcpIX1*X33↵	
Query output	Esc02HDCP←	X33↵	Query the HDCP status of the HDMI output.
	Verbose mode 2/3	Hdcp02*X33↵	

KEY: X35 = Effect duration: from 2 to 50, in 0.1 second steps (where 2 = 0.2 seconds, 50 = 5.0 seconds), default = 3 (0.3 seconds)

KEY: X3 = Input video format: 1 = RGB, 2 = YUV auto, 3 = RGBcvS, 4 = S-video, 5 = composite, 6 = DVI/HDMI (only available for inputs 3, 4, and 5),
X28 = Overscan (applied to SMPTE [NTSC/PAL - 480p to 1080p] input rates), 0 = 0.0% (default for RGB/HDMI), 1 = 2.5% (default for YUV, RGBcvS, S-video composite).

KEY: X9 = Enable or disable: 0 = off or disable, 1 = on or enable

KEY: X1 = Input selection: 1 to 5
X33 = HDCP status (valid only on HDMI/DVI inputs and outputs): 0 = no sink or source detected, 1 = sink or source detected with HDCP, 2 = sink or source detected but no HDCP is present

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
HDCP input authorization (valid for HDMI inputs only)			
HDCP Authorized device on	Esc E X1 *1HDCP ←	HdcpE X1 *1 ↵	Turn HDCP Authorized device on for input X1 (default).
HDCP Authorized device off	Esc E X1 *0HDCP ←	HdcpE X1 *0 ↵	Turn HDCP Authorized device off for input X1.
HDCP Authorized device status	Esc E X1 HDCP ←	X49 ↵	Query HDCP Authorized device status for input X1.
KEY: X1 = Input selection, 1 to 5 X49 = HDMI Input HDCP authorization status: 0 = block HDCP encryption, 1 = allow HDCP encryption (default for inputs 3, 4, and 5)			
HDCP mode (valid for HDMI output only) (see page 108 for details)			
Set HDCP mode	Esc S X34 HDCP ←	HdcpS X34 ↵	Set the HDCP mode to X34.
View HDCP mode setting	Esc SHDCP ←	X34 ↵	View the HDCP mode setting.
KEY: X34 = HDCP mode: 0 = follow input (default), 1 = always encrypt HDMI outputs, 2 = follow input with continuous DVI trials, 3 = always encrypt HDMI outputs with continuous DVI trials			
Genlock			
Disable genlock	Esc 0GLOK ←	Glok0 ↵	Disable global input lock/genlock (default).
Enable input signal genlock	Esc 1GLOK ←	Glok1 ↵	Lock the output refresh rate to the selected input refresh rate.
Enable SDI genlock	Esc 2GLOK ←	Glok2 ↵	Lock the output refresh rate applied genlock signal (D models only).
View genlock setting	Esc GLOK ←	X47 ↵	View the current genlock setting (see X47 on page 36).
View genlock status	Esc 41STAT ← Verbose mode 2/3	X48 ↵ 41Stat•X48 ↵	View the current genlock status (see X48 on page 36 for full details).
KEY: X47 = Input signal or SDI genlock: 0 = disabled (default), 1 = input signal enabled, 2 = SDI genlock enabled. X48 = Input signal or genlock Status: 0 = genlock disabled, 1 = genlock enabled, not locked, 2 = genlock enabled, locked.			
Genlock/AFL Offset			
NOTE: Genlock offset commands return an error unless: a) a DVS 605 D or AD is present, b) SDI genlock is currently enabled, and, c) Genlock is currently locked to an applied genlock reference. Genlock offsets apply only to current output resolution, and reset to 0,0 when the output resolution is adjusted.			
Set horizontal offset	Esc H X50 GLOF ←	GlofH X50 ↵	Set the horizontal genlock offset to X50 pixels, (where X50 = horizontal pixel offset, range is ± the current output resolution total pixel value -1. Default = 0.
View horizontal offset	Esc HGLOF ←	X50 ↵	View the horizontal genlock offset X50,
Set vertical offset	Esc V X51 GLOF ←	GlofV X51 ↵	Set the vertical genlock offset to X51 pixels, where X51 = genlock line delay, range is ±the current output resolution total line value -1. Default = 0.
View vertical offset	Esc VGLOF ←	X51 ↵	View the vertical genlock offset X51,
KEY: X50 = Horizontal genlock offset: range is ± the correct output resolution total pixel value (for example, -2199 to +2199 for 1080p). X51 = Vertical genlock offset: range is ± the correct output resolution total line value (for example, -1124 to +1124 for 1080p).			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Video signal presence			
View signal presence	0LS	X44*X44*X44*X44*X44↵	Signal status for input 1*2*3*4*5. X44: 0 = no input, 1 = input detected.
KEY: X44 = Video signal status: 0 = video or TMDS signal not detected, 1 = video or TMDS signal detected			
Hardwired IR port			
Enable IR port (allows IR)	65*0#	IRDisable0↵	Enable the hard wired port and allows IR control input.
Disable IR port (blocks IR)	65*1#	IRDisable1↵	Disable the hard wired port (default).
View IR setting	65#	X9↵	View the current IR Disable setting.
KEY: X9 = Enable or disable: 0 = off or disable, 1 = on or enable			
On-Screen Menu time-out			
NOTE: Setting the time-out to 501 disables the OSD time-out (never times out). Setting the time-out to 0 disables the OSD.			
Set menu time-out	Esc X25 MDUR←	Mdur X25↵	Set the OSD to X25 seconds.
View time-out	Esc MDUR←	X25↵	View time-out settings.
KEY: X25 = On-screen menu time-out: (default = 3 seconds) output sync time-out (default = 501 - never) 0 = OSD never displayed or output sync is instantly disabled with no active input, 1 to 500 in 1 second increments, 501 = OSD never times out or output sync never times out			
Reset commands			
Erase user Web pages and files [24] [28]	Esc<*filename*>EF←	Del•<*filename*>↵	Erase named file.
Erase current directory and files [24] [28]	Esc/EF←	Ddl↵	Erase current directory and its files.
Erase current directory and subdirectories [24] [28]	Esc//EF←	Ddl↵	Erase current directory and its subdirectories.
Erase flash memory [24]	EscZFFF←	Zpf↵	Erase the flash memory.
Reset all device settings to factory default settings [24]	EscZXXX←	Zpx↵	Retain Ethernet settings
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 no password (see **Password Page** on page 114 to change the password).			
Absolute system reset [24]	EscZQQQ←	Zpq↵	Reset networking to DHCP = Off, IP = 192.168.254.254 (default address)
Absolute system reset (retains IP) [24]	EscZY←	Zpy↵	
NOTE: This reset EscZY is similar to ZQQQ but excludes IP address, subnet mask, gateway addresses, unit name, DHCP setting, and port mapping (Telnet or web or direct access) in order to maintain communications with device. Recommended after a firmware update.			

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Information request			
General information	I/i	Vid[X1]•Aud[X1]•Vtyp[X3]•Std[X10]•Blk[X31]•Hrt[X13]•Vrt[X13]•Pip[X1]↵	

NOTES:
- Aud [X1] response is a "-" on the non audio model. "Vtyp" returns the detected input type ([X1]*\).
- Blk [X31] response is "0" unless video is muted, then the response is "1".

KEY: [X1] = Input selection: 1 to 5
[X3] = Input video format: 0 = No signal detected (only valid for detected input format query, such as [X1]*\), 1 = RGB, 2 = YUV Auto, 3 = RGBcvS, 4 = S-video, 5 = Composite, 6 = DVI/HDMI (Only available for inputs 3-5)
[X10] = Input standard: 0 = No signal detected (current input), 1 = NTSC 3.85, 2 = PAL, 3 = NTSC 4.43, 4 = SECAM - = N/A (occurs when input is an active RBG, YUV Auto [but not NTSC/PAL], or HDMI signal)
[X13] = Horizontal and vertical frequencies (format is 3 digit with single decimal and leading zeros, for example, 075.3)
[X31] = Video mute: 0 = off or disable, 1 = on or enable (mute to black)

Query firmware version	Q/q	*x.xx*↵	View firmware version.
Query full firmware version	*Q/*q	*x.xx.xxxx*↵	View full firmware version details.
Query part number	N/n	*zz-zzzz-zz*↵	View part number.
View internal temperature	[Esc]20STAT←	Stat20•[X11]↵	Temperature in degrees Celsius.

KEY: [X11] = Internal temperature (in degrees Celsius)

Backup/restore configuration

NOTE: {config type} = 0 = IP config (ip.cfg), 2 = unit specific parameters (box.cfg), The files are stored on directory /nortxe-backup created on the unit by the "save" commands.

Save device configuration	[Esc]1**{config type}*XF←	Cfg1**{config type}*↵	Save unit configuration to file system.
Restore device configuration	[Esc]0**{config type}*XF←	Cfg1**{config type}*↵	Restore unit configuration from file system.

Product naming

NOTE: The 24 superscript shown below indicates that the user receives an E24 error on the device if the user is not logged in as Administrator when trying to alter names.

Set unit name [24]	[Esc][X12]CN←	Ipn•[X12]↵	Set unit name to [X12].
Set unit name to factory default [24]	[Esc]•CN←	Ipn•[X100]↵	Set unit name to default [X100].
View unit name	[Esc]CN←	[X12]↵	View unit name.

KEY: [X12] = Unit Name is a text string of up to 24 characters drawn from the alphabet (A-Z), digits (0-9), and the minus sign/hyphen (-). The first character must be an alpha character. The last character must not be a minus. No blank or space characters are permitted, and no distinction is made between upper and lowercase
[X100] = Default name: combination of model name and last three pairs of MAC address (for example *DVS-605-Series-07-8C-EC*)

SIS Command and Response Table for IP Control Port

Command	ASCII (Telnet) (host to scaler)	URL Encoded (Web) (host to scaler)	Response (scaler to host)	Additional Description
Ethernet data port				
Set current connection port timeout	Esc 0* X127 TC ←	W 0%2A X127 TC |	Pti0* X127 ↵	
View current connection port timeout	Esc 0TC ←	W 0TC |	X127 ↵	
Set global IP port timeout	Esc 1* X127 TC ←	W 1%2A X127 TC |	Pti1* X127 ↵	
View global IP port timeout	Esc 1TC ←	W 1TC |	X127 ↵	
KEY: X127 = Time in tens of milliseconds before timeout on the IP connection: (min. = 1, max. = 65000, default = 30 = 300 seconds)				
Firmware version requests				
NOTE: An asterisk (*) after the version number indicates the version currently running. Caret (^) indicates bad checksum/invalid load. Question marks (?) indicate version not loaded.				
Query firmware version	Q or 1Q	Q or 1Q	X131 ↵	Show the scaler firmware version number (X131) to two decimal places. Gives the number of the currently running version of the user-updatable firmware.
Query verbose version information	0Q	0Q	All responses from 2Q-3Q-4Q ↵	Show bootstrap, factory-installed, and updated firmware versions (see 2Q, 3Q, and 4Q, below).
Example:	1Q	1Q	1.01	
Query bootstrap version	2Q	2Q	X131 ↵	The bootstrap firmware is not user- replaceable but you may need this information for troubleshooting.
Example:	2Q	2Q	0.06	
Query factory firmware version	3Q	3Q	X131 (plus Web ver.-desc-date/time) ↵	Factory-installed firmware is not user replaceable. This firmware is the version the scaler reverts to after a Use Factory Firmware reset.
Example:	3Q	3Q	1.00(1.37-DVS 605 Series -Fri, 13 Feb 2015 03:28:10 GMT)	In this example, the factory firmware version is 1.00, (the kernel version 1.37), for the DVS 605, dated 13 February, 2015.
Query updated firmware version	4Q	4Q	X131 ↵	Use this command to find out which version of firmware has been uploaded into the scaler post-factory.
Example:	4Q	4Q	1.01 * (1.46-DVS 605 Series - Fri, 13 Feb 2015 17:03:46 GMT)	In this example, firmware version is 1.01, kernel version 1.46, for DVS 605, dated 13 Feb, 2012.
KEY: X131 = Version number (listed to 2 decimal places)				

Command	ASCII (Telnet) (host to scaler)	URL Encoded (Web) (host to scaler)	Response (scaler to host)	Additional Description
Information requests				
Request scaler part number	N	N	60-1059-XX↵	Show scaler part number.
Request model name	1i	1i	DVS 605 X↵	Show scaler model name.
Request model description	2i	2i	Extron Electronics Digital Video Scaler↵	Show type of unit.
Request system memory usage	3i	3i	# Bytes used out of #Kbytes ↵	Show amount of memory used and total available memory for system operations.
Request user memory usage	4i	4i	# Bytes used out of #Kbytes↵	Show amount of user memory used and total available user memory.
IP setup commands				
Set time/date[24]	Esc X107CT←	W X107 CT|	Ipt•X107↵	Set format.
Read time/date	Esc CT←	WCT|	X107↵	Read format.
KEY: X107 = Local date and time format Set format (MM/DD/YY-HH:MM:SS); for example, 03/13/15-10:54:00. Read format (day of week, date month year (HH:MM:SS), for example, Fri, 13 Feb 2015 18:19:33				
Set DHCP on[24]	Esc1DH←	W1DH|	Idh1↵	
Set DHCP off [24]	Esc0DH←	W0DH|	Idh0↵	Default is disabled.
View DHCP mode	EscDH←	WDH|	IdhX104↵	
KEY: X104 = On/off 0 = off/disable, 1 = on/enable				
Set IP address[24]	Esc X108CI←	WX108CI|	Ipi• X108↵	Default is 192.168.254.254.
Read IP address[24]	EscCI←	WCI|	X108↵	
Set gateway IP address[24]	Esc X108CG←	W X108CG|	Ipg•X108↵	
Read gateway IP address	EscCG←	WCG|	X108↵	
NOTE: Changes made to any Ethernet settings do not take effect until the reboot networking command (2BOOT) is issued.				
KEY: X108 = IP address (*xxx.xxx.xxx.xxx*); leading zeros in each of four fields are optional in setting values, and are suppressed in returned values.				
Read hardware address (MAC)	EscCH←	WCH|	X109↵	
KEY: X109 = Hardware media access control (MAC) address (*xx-xx-xx-xx-xx*).				
Set subnet mask[24]	Esc X110CS←	WX110CS|	Ips•X110↵	
Read subnet mask	EscCS←	WCS|	X110↵	
KEY: X110 = Subnet mask (*xxx.xxx.xxx.xxx*). Leading zeros are optional in setting values in each of four fields, and are suppressed in returned values.				

Command	ASCII (Telnet) (host to scaler)	URL Encoded (Web) (host to scaler)	Response (scaler to host)	Additional Description
Reboot network	Esc 2BOOT ←		Boot2 ↵	Restarts network after IP address or DHCP changes.

Passwords

NOTES:

- A user password cannot be assigned if an administrator password does not exist. If the administrator password is cleared (removed), the user password is also removed.
- 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 no password (see **Password Page** on page 114 to change the password).

Set administrator password [24]	Esc X121 CA ←	W X121 CA |	Ipa• X121 ↵	
View administrator password [24]	Esc CA ←	WCA |	**** ↵ or ↵	View the user password. If there is a valid password, the response is ****↵. If there is no password, the response is ↵.
Reset (clear) administrator password [24]	Esc • CA ←	W%20CA |	Ipa•↵	Clear/remove all passwords (administrator and user)
Set user password[14] [24]	Esc X121 CU ←	W X121 CU |	Ipu• X121 ↵	
View user password[24]	Esc CU ←	WCU |	**** ↵ or ↵	View the user password. If there is a valid password, the response is ****↵. If there is no password, the response is ↵.
Clear user password[24]	Esc • CU ←	W%20CU |	IpU•↵	This clears the user password only.

KEY: X121 = Password (Maximum length of 128 alphanumeric characters, spaces, and symbols. Cannot start with a space.)

Verbose mode

Set verbose mode[24]	Esc X111 CV ←	W X111 CV |	Vrb X111 ↵	Set verbose mode.

NOTE: The scaler can send out unsolicited information (such as notice of a volume or input change or a change in some other setting). That is called verbose (wordy) relationship between the scaler and a connected device. For a direct RS-232/422 connection, the scaler is set for Verbose mode by default. When the DVS 605 is connected via Ethernet, Verbose mode is disabled by default in order to reduce the amount of communication traffic on the network. If you want to use the Verbose mode with a scaler connected via Ethernet, this mode must be set to On each time you reconnect to the scaler.

Read verbose mode	Esc CV ←	WCV |	X111 ↵
Read connection security level	Esc CK ←	WCK |	X125 ↵

KEY: X111 = Verbose/response mode (Default = 0 for Telnet connections, 1 for RS-232 or USB host control). 0 = clear/none, 1 = verbose mode, 2 = tagged responses for queries, 3 = verbose mode and tagged responses for queries. If tagged responses are enabled, all read commands return the constant string + the data, like setting the value for example command: Esc CN ← response: Ipn• x12↵).
X125 = Connection security level 11 = user, 12 = administrator

Command	ASCII (Telnet) (host to scaler)	URL Encoded (Web) (host to scaler)	Response (scaler to host)	Additional Description
Re-map port designations				
Set Telnet port map [24]	Esc{port #}MT←	W{port #}MT |	Pmt{port #}↵	
Reset Telnet port map [24]	Esc23MT←	W23MT |	Pmt00023↵	Set Telnet to the default port (23)
Disable Telnet port map [24]	Esc0MT←	W0MT |	Pmt00000↵	
Read Telnet port map	EscMT←	WMT |	{port #}↵	
Set web port map [24]	Esc{port #}MH←	W{port #}MH |	Pmh{port #}↵	
Reset web port map [24]	Esc80MH←	W80MH |	Pmh00080↵	
Disable web port map [24]	Esc0MH←	W0MH |	Pmh00000↵	
Read web port map [24]	EscMH←	WMH |	{port #}↵	Set web port to default value of 80
Directory commands				
Change/create directory	Esc*{path}/{directory}*/CJ←	W *{path}/{directory}*/CJ|	Dir•*{path}/{directory}/*↵	
NOTE: A directory does not actually exist until a file has been copied into the path.				
Move back to root directory	Esc / CJ←	W%2FCJ|	Dir•/↵	
Move up one directory	Esc ..CJ←	W%2E%2ECJ|	Dir•*{path}/{directory}/*↵	
View current directory	Esc CJ←	WCJ|	*{path}/{directory}/*↵	
File erase commands				
Erase user-supplied file[24, 28]	Esc *{filename}* EF←	W *{filename}* EF|	Del • *{filename}*↵	
Erase current directory and its files[24, 28]	Esc/EF←	W%2FEF|	Ddl↵	
Erase current directory and subdirectories[24, 28]	Esc//EF←	W%2F%2FEF|	Ddl↵	

Product Configuration Software

The Extron Product Configuration Software (PCS version 3 or later) offers another way to configure the DVS 605 via USB or TCP/IP connection in addition to the SIS commands.

This section describes the software installation and communication. For in operation configuration information see the *DVS 605 Product Configuration Software* help file.

Topics in this section include:

- **Installing the Software**
- **Starting the Software**
- **Using the Software**
- **Configuration Pages**

The graphical interface includes the same functions as those on the device front panel with additional features that are available only through the software.

The configuration software is compatible with Microsoft® Windows® operating systems. The software program is available on the Extron **website**.

Installing the Software

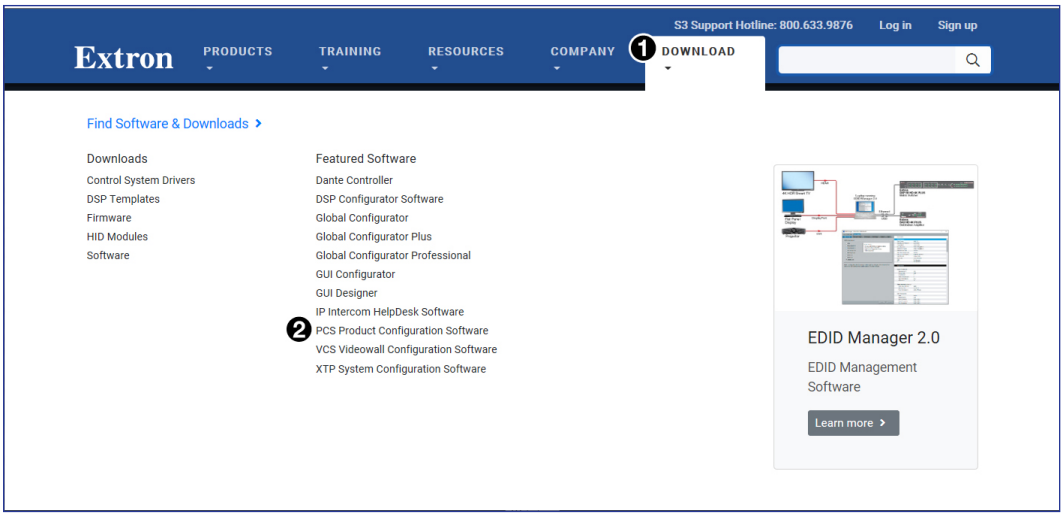


Figure 28. PCS Download from the Extron Website

NOTE: PCS versions prior to version 3.0 do not have the configuration pages for the DVS 605 device. Ensure you download PCS version 3.0 or later.

1. On the Extron website, mouse over the **Download** tab (see figure 28, ❶).
2. From the drop-down menu, click the **PCS Product Configuration Software** link (❷).
3. On the PCS page, click the **Download** button (see figure 29, ❶).

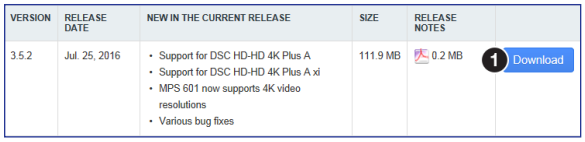


Figure 29. PCS Download

4. Enter any required information to start the download. Note where the file is saved.
5. Open the executable (.exe) file from the save location.
6. Follow the instructions that appear on the screen. By default, the installation creates a directory in the `Program Files` or `Program Files (x86)` folder.

Starting the Software

Open the Product Configuration Software program from the **`Start`** menu or click the desktop **`Product Configuration Software`** icon.

The `Product Configuration Software` window opens at the `Device Discovery` panel.

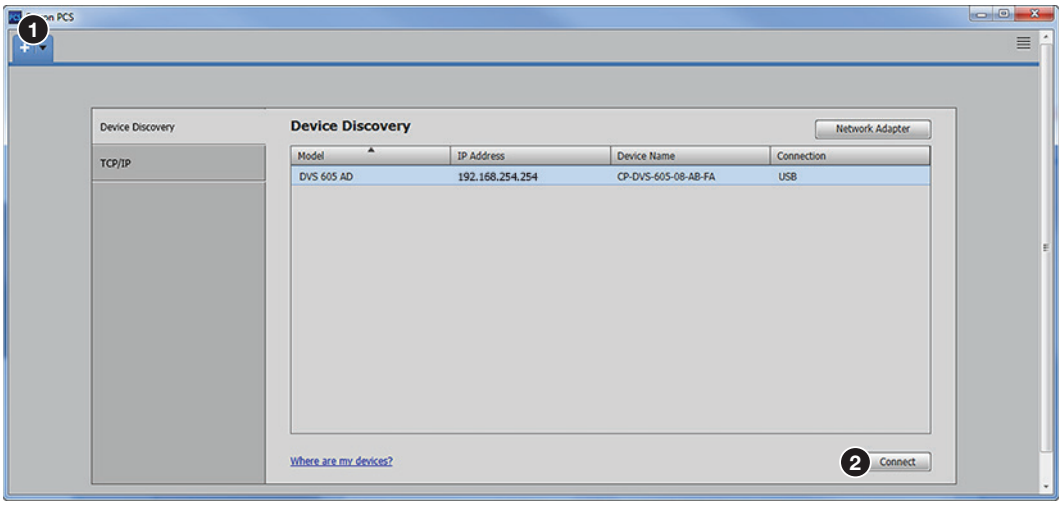


Figure 30. Start-up Window (Device Discovery)

If the `Device Discovery` panel is not showing, click the **`plus`** sign (at the top left of the browser, see figure 30, ❶) to open it.

Device Discovery Panel

The `Device Discovery` panel displays accessible Extron devices connected directly to the PC using the software through a LAN or WAN, or via a USB connection. Devices can be identified and sorted by model, IP address, device name, or connection method.

To sort the list of available devices, click the desired column heading to sort the category in ascending or descending order.

To connect to a device, select the desired device and click the **`Connect`** button (❷). A new device configuration tab opens. Alternatively, double-click the desired device name to connect and open to the configuration page.

To edit communication settings from the Device Discovery panel:

1. In the `Device Discovery` panel, click the **`Edit`** button of the desired device. The `Communication Settings` dialog box opens.
2. Enter the relevant details for each field or select the **`DHCP`** checkbox (see figure 31, ❶. See **Ethernet Settings** on page 111 for configuration details).
3. Finalize the settings in one of the following ways:
   - Click the **`Apply`** button (❷) to accept the changes and return to the `Device Discovery` panel.
   - Click the **`Apply and Connect`** button (❸) to accept the changes and connect to the selected device. A new device configuration tab opens.
   - Click the **`Cancel`** button (❹) to cancel any pending changes and return to the `Device Discovery` panel.

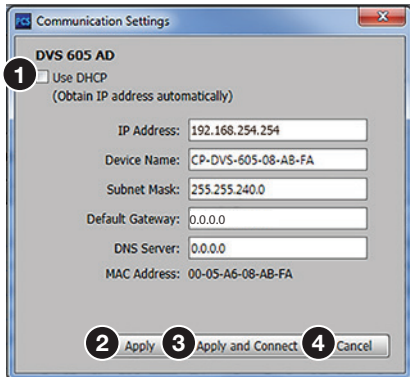


Figure 31. Communications Settings Dialog Box

TCP/IP Panel

The TCP/IP panel contains a means of connecting to a specific (IP address known) device through Ethernet.

Figure 32. TCP/IP Panel

1. Click the **TCP/IP** tab.
2. In the **IP Address** field (see figure 32, ❶), enter the IP address of the desired device.
3. Enter the device password in the **Password** field (❷).

> **NOTES:**
> - The factory configured passwords for all accounts on this device have been set to the device serial number.
> - If the device is reset back to default settings, there will be no password. New passwords need to be configured to secure the device (see **Password Page** on page 114).
> - Check the **Show Characters** checkbox to have the password characters visible when entering them.

4. In the **Telnet Port** field (❸), enter the Telnet port of the desired device.
5. Click the **Connect** button (❹). A new device tab opens.

Offline Device Preview

It is possible for the DVS 605 pages to be viewed without connecting directly to a device, but the page settings cannot be changed or saved.

To open as an offline device:

1. Click the drop-down menu and select **New Configuration File**.

   The New Configuration File dialog box opens.
2. Select the DVS 605 device model from the **Device Models** list (see figure 34, ❶).
3. Click the **Configure** button (❷). A new offline device configuration tab opens.

> **NOTE:** Until a connection to an online device is made, all the pages are grayed out and configuration options are not available.

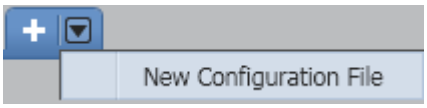


Figure 33. Drop-down Menu

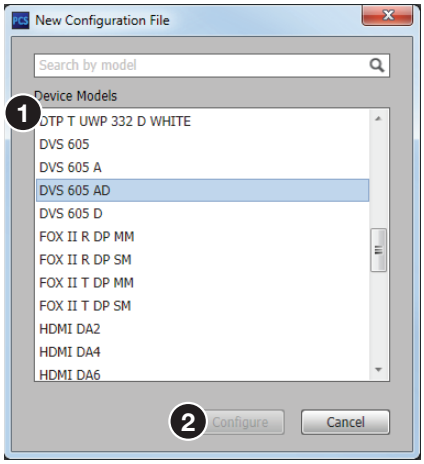


Figure 34. New Configuration File Dialog Box

Using the Software

NOTE: For detailed software navigation, open the *DVS 605 Product Configuration Software Help* file from the `Device Menu` (see **figure 36** on the next page).

When connected to an online device, a connection status icon (circle) shows green on the device name tab (see figure 35, ❶).

The configuration page has a global navigation bar (ribbon) (❷) from which each of the individual configuration pages (**`Input/Output Config`**, **`EDID Minder`**, **`Image Settings`**, **`Size and Position`**, **`Audio Configuration`**, and **`General Settings`**) can be accessed.

On the left side of the tab is the `AV Controls` pane (❸) which can be used to switch main and PIP inputs, set Audio follow to PIP input, view active input and output status, start an Auto-Image instance, freeze the displayed image, and mute or unmute video and audio signals.

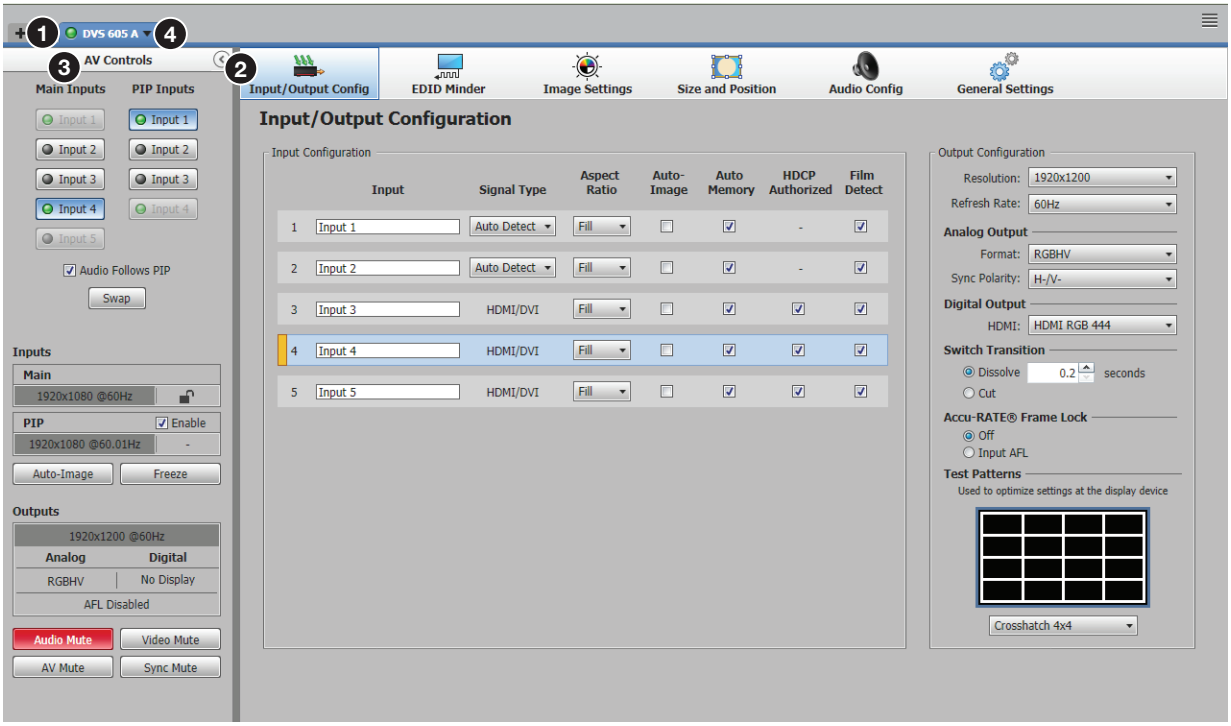


Figure 35. Device Configuration Pages

There is also a drop-down `Device Menu` on the **`Device`** tab (❹) for device-specific configuration options.

Device Menu

The `Device` drop-down menu contains options for disconnecting, changing hardware and communication settings, resetting the device, backing up and restoring device configurations, updating firmware, and viewing software module information.

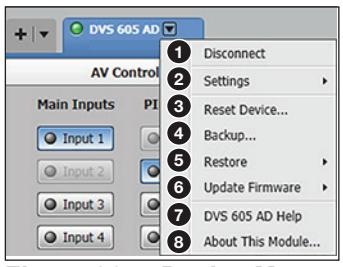


Figure 36. Device Menu

Disconnect

This option disconnects the PCS program from the connected device and closes the device tab. From the `Device` drop-down menu, select **`Disconnect`** (see figure 36, ❶).

Settings

This has two options: `Hardware Settings` and `Communication Settings` (❷).

Hardware Settings dialog box

This option allows users to view unit information, change the device name, set the internal clock, select a keyboard layout, and change the password of the connected device.

NOTE: The 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 no password (see **Password Page** on page 114 to change the password).

From the `Device` drop-down menu, select **`Settings > Hardware Settings...`**. The `Hardware Settings` dialog box opens (see figure 37).

For configuration details, see the *DVS 605 Product Configuration Software Help* file.

To change hardware settings:

1. Select the applicable tab (**`Device Name`** ❷, **`Date and Time`** ❸, or **`Password`** ❹).
2. Complete the fields as desired.

   NOTE: For date and time settings, the device can be synced to the PC settings by clicking the **`Sync to PC`** button.

3. Click the **`Apply`** button to accept pending changes. Clicking the **`Cancel`** button cancels any pending changes and closes the dialog box.

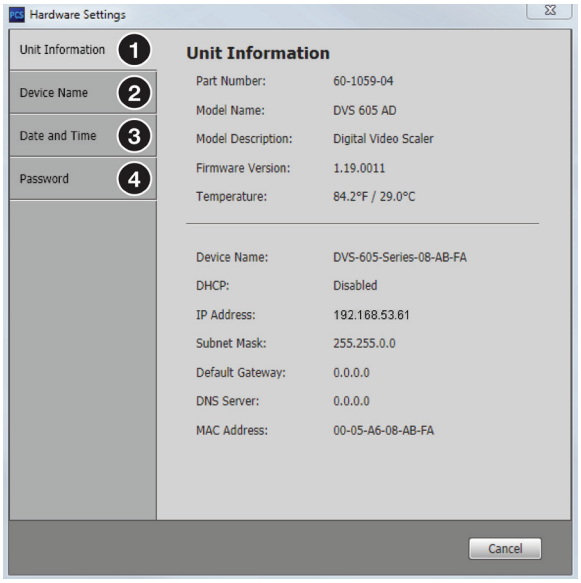


Figure 37. Hardware Settings Dialog Box

Communication Settings dialog box

This option allows users to change communication settings of the connected device.

From the `Device` drop-down menu, select **`Settings > Communication Settings...`**. The `Communication Settings` dialog box opens.

To change communication settings:

1. To change the RS-232 baud rate, click and select an applicable baud rate from the RS-232 drop-down list (see figure 38, ❶).
2. To obtain an IP address automatically check the **`Use DHCP`** checkbox (❷).

   Alternatively, to manually assign an IP address, unselect **`Use DHCP`** checkbox and the complete all the fields as desired.

3. Click the **`Apply`** button (❸) to accept pending changes and close the dialog box.

Clicking the **`Cancel`** button (❹) cancels any pending changes and closes the dialog box.

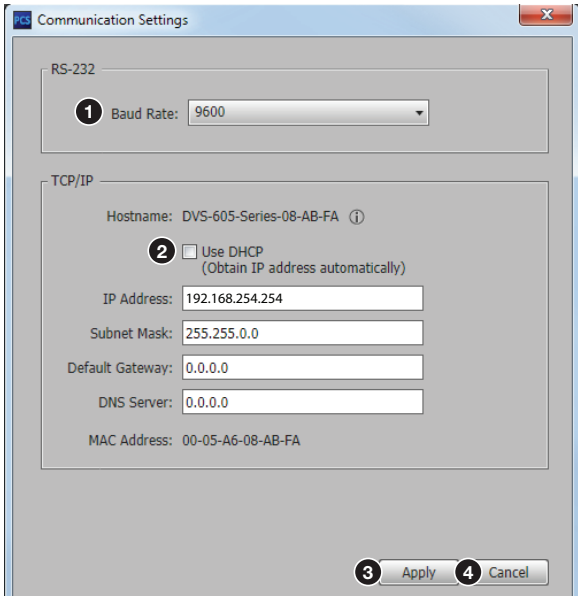


Figure 38. Communication Settings Dialog Box

Reset Device

This option contains selectable reset modes for resetting the connected device. From the `Device` drop-down menu, select **`Reset Device...`**(see **figure 36**, ❸ on page 61).

The `Reset Device` dialog box opens.

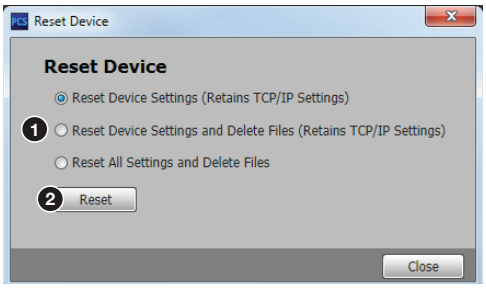


Figure 39. Reset Device Dialog Box

To reset the device select the applicable radio button (see figure 39, ❶) and click the **`Reset`** button (❷).

Clicking the **`Close`** button closes the dialog box without resetting the device (see **Resetting the Unit** on page 30, for device reset details).

NOTE: If the device is reset back to default settings, there will be no passwords. New passwords need to be configured to secure the device.

Backup

This option allows the user to backup all audio, video, and communication settings from a DVS 605 device to a PC. This saved configuration can later be restored to a single connected device, or used to replicate the settings from one DVS 605 to other DVS 605 devices, if the device models are the same.

To backup a configuration:

1. Connect to the DVS 605 via the PCS Program.
2. Select **`Backup..`**. (see **figure 36** on page 61, ❹) from the `Device` drop-down menu. A `Backup` window opens.

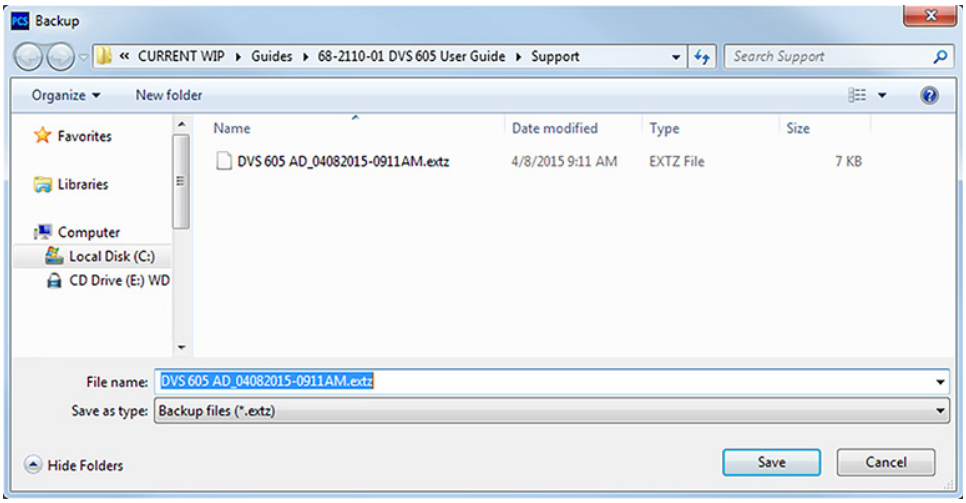


Figure 40. Backup Window to Save File to a Desired Location

3. In the `Backup` window, browse to a location on the connected PC in which to save the configuration. Alternatively, allow the device to save the file to the default folder.
4. Rename the file as desired, click **`Save`**, and allow the process to complete. The file is saved with a `.extz` extension. The default name includes the model, current date, and time as the file name.
   The window closes after saving and a confirmation pop-up is shown briefly to indicate the save has been successful.

Restore

The saved configuration can be restored to a single device or to multiple devices, if the models are the same as that used for the backup.

To restore a configuration to a single device:

1. Connect to the DVS 605 via LAN to a PC where the backup configuration file resides.
2. Select **Restore...** (see figure 36 on page 61, ❺) and then **Restore This Device** from the Device drop-down menu. A Restore This Device dialog box opens.

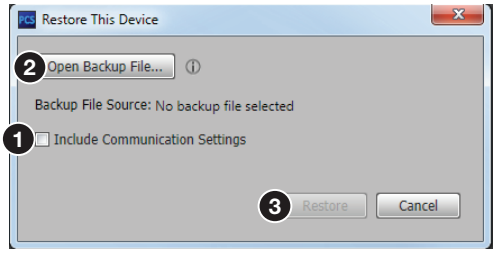


Figure 41. Restore This Device Dialog Box

3. If applicable click the **Include Commnuication Settings** checkbox (see figure 41, ❶) to include the previously saved communication settings (IP address, subnet mask, default gateway, and DNS server) in the file restoration process.

NOTE: If communication setting are not included, only the device audio and video settings are restored.

4. Click the **Open Backup File** button (❷) on the Restore This Device dialog box. An Open Backup File window opens.

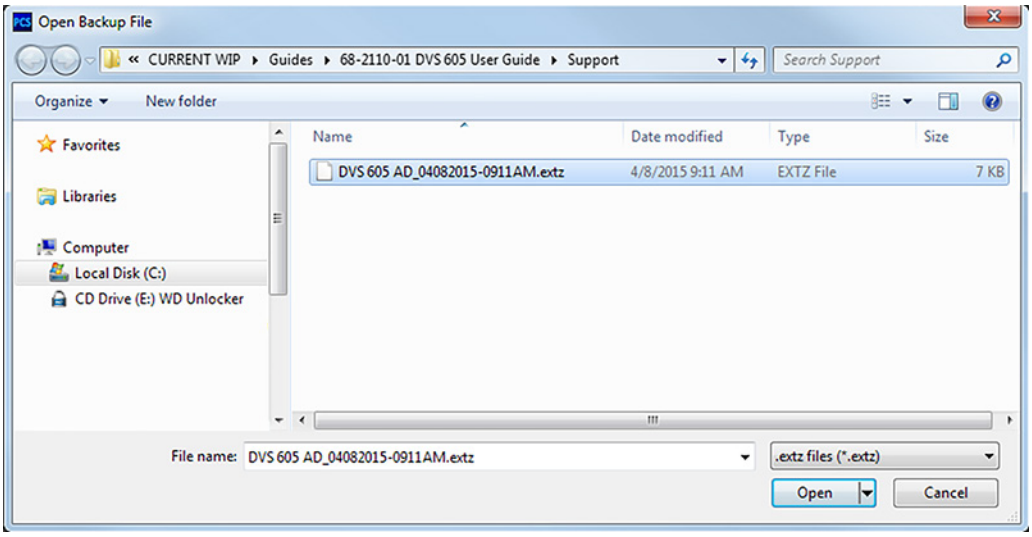


Figure 42. Open Backup File Window

5. In the Open Backup File window, browse to where the saved backup configuration is stored.
6. Select the applicable configuration file (with a .extz extension) and click **Open**.
7. On the Restore This Device dialog box, click **Restore** (see figure 41, ❸) to upload the file to the connected DVS 605 .
8. The window closes after restoring, and a confirmation pop-up is shown briefly to indicate the process is complete.

To restore a configuration to multiple devices:

1. Connect to the DVS 605 device via LAN. Ensure the receiving devices are also connected via LAN to the same network.
2. Select **Restore...** and then **Restore To Multiple Devices** from the Device drop-down menu. A Restore To Multiple Devices dialog box opens. In this box devices can be added to the list to have configurations restored.

   To add devices to the restore target list:

   a. In the **TCP/IP** panel (see figure 43, ❶), enter the IP address, password, and Telnet details in the appropriate fields for a desired target device.

   > **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 no password.

   b. Click **Add** (❷). The list is populated with the device details

   c. Repeat the above steps for each desired target device.

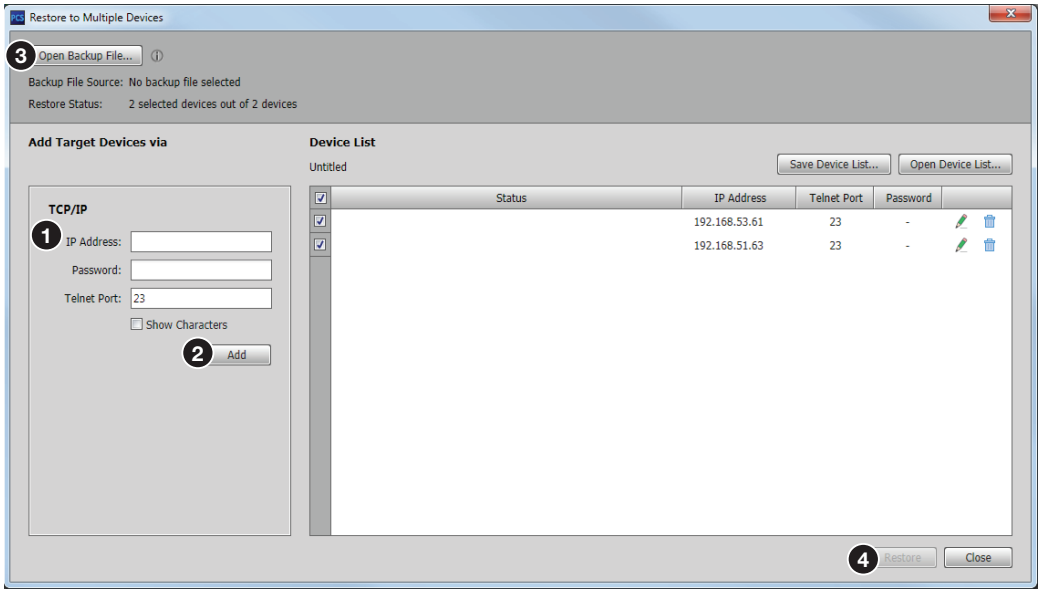


Figure 43. Restore to Multiple Devices Dialog Box

Once the list is completed, targets can be selected for deployment. As default, all targets are preselected for deployment and have a check mark to the left of the device details list.

> **NOTE:** PCS verifies the correct DVS 605 model, IP address, Telnet port, and device administrator password for each device in the list upon restoring the configuration. PCS does not push the configuration to the device if one of the above criteria is not valid and this is reflected in the **Status** column. The user may need to click the **Edit** logo to correct the settings if needed. In addition if a device is not connected, not powered or turned off, a Device not found status is returned.

3. Click the **Open Backup File button** (❸) on the Restore To Multiple Devices dialog box. An Open Backup File window opens.
4. In the Open Backup File window, browse to the saved backup configuration.
5. Select the applicable configuration file (with a .extz extension) and click **Open**.
6. In the Restore to Multiple Devices dialog box, click **Restore** (❹) to upload the file to the listed DVS 605 devices.

   The window closes after restoring, and a confirmation pop-up is shown briefly to indicate the process is complete.
7. When restoring is completed, click the **Close** button. If the list has not been saved, you are prompted to save the list.

For editing settings, deleting, saving, and opening list of target devices, see the *DVS 605 Product Configuration Software Help* file within the PCS software.

Update Firmware

This option uploads firmware from the host device (PC) to the connected DVS 605 device or to multiple DVS 605 devices.

NOTE: If necessary, download new firmware from the Extron website to the PC first.

To update firmware to a single device:

1. Connect to the DVS 605 device via LAN to the PC where the firmware file resides.
2. Select **Update Firmware** (see **figure 36** on page 61, ❻) and then **Update Firmware this Device...** from the Device drop-down menu. A dialog box opens to ask permission to disconnect from the device.
3. Click the **Continue** button to disconnect from the device and continue with the firmware update process.

   The Update Firmware to This Device dialog box opens.

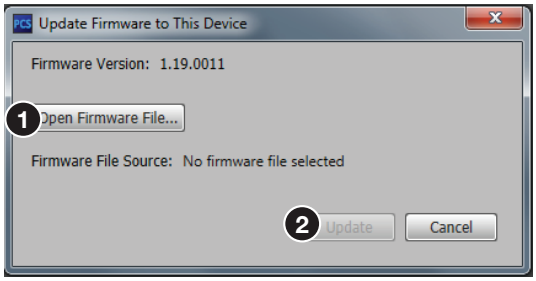


Figure 44. Update Firmware to This Device Dialog Box

4. Click the **Open Firmware File** button (see figure 44, ❶).
5. Navigate to the desired firmware file and select the device-specific firmware file. Valid firmware files have an .eff or .esf file extension.
6. Click the **Open** button. This returns you to the Update Firmware dialog box.
7. In the Update Firmware dialog box, click **Update** (❷). The progress bar shows the progress of the firmware upload to the device.

To update firmware to multiple devices:

1. Connect the host PC to all the target DVS 605 devices on the same network via LAN.
2. Select **Update Firmware** and then **Update Firmware To Multiple Devices...** from the device drop-down menu. An Update Firmware To Multiple Devices window opens (see **figure 45** on the next page). In this window the target devices can be added.

To add devices to the list:

a. Enter the **IP address**, **Password**, **Telnet** port details in each field for a desired target device (see figure 45, ❶).

> **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 no password.

b. Click **Add** (❷). The list is populated with the device details.

c. Repeat the above steps for each desired target device.

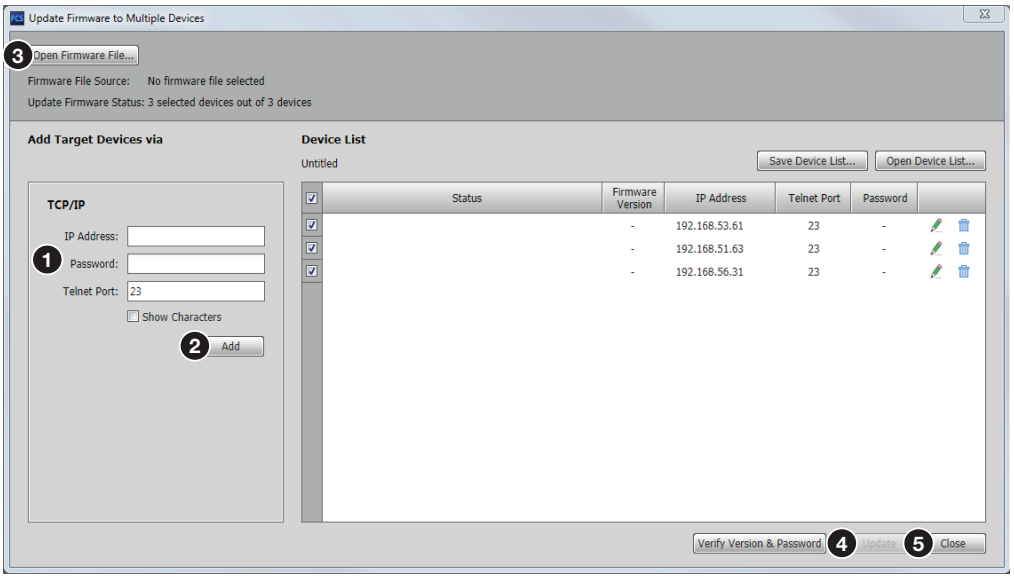


Figure 45. Update Firmware to Multiple Devices Window

Once the list is completed, individual targets can be selected or deselected for updating. As default, all targets are preselected for deployment and have a check mark to the left of the device details list.

> **NOTE:** When updating the firmware, PCS verifies the correct DVS 605 model, Telnet port, IP address, and administrator password for each device in the list. PCS does not update firmware on a device if one of the above criteria is not valid, as reflected in the Status column. If needed, click the **Edit logo** to correct the settings. A Device not found status is returned if a device is not connected, not powered or turned off.

3. Click the **Open Firmware File** button (see figure 45, ❸) on the Update Firmware To Multiple Devices window (upper left). The Update Firmware dialog box opens.
4. Click the **Browse** button.
5. Navigate to the desired firmware file and select the device-specific firmware file. Valid firmware files have an .eff or .esf file extension.
6. Click the **Open** button. This returns you to the Update Firmware dialog box.
7. In the Update Firmware dialog box, click **Update** (❹). The progress bar shows the progress of the firmware upload to the devices. The dialog box closes after updating, and a confirmation pop-up is shown briefly to indicate the process is complete.
8. When updating is completed click the **Close** button (❺). If the list has not been saved, you are prompted to save the list.

For editing settings, deleting, saving, and opening list of target devices, see the *DVS 605 Product Configuration Software Help* file within the PCS software.

Help

This option contains a link to the device-specific help file.

From the `Device` drop-down menu, select device-specific **`Help`** (see **figure 36** on page 61, ❼). The help file opens in a separate window.

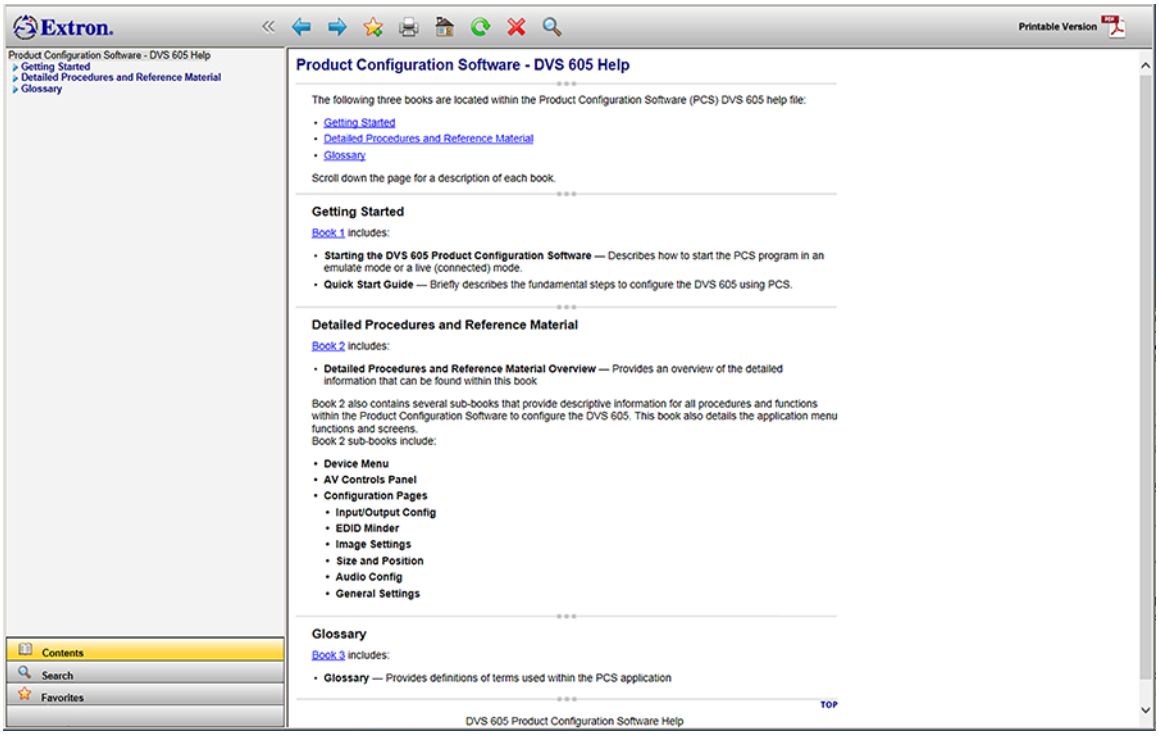


Figure 46. Extron DVS 605 Help Window

About This Module

This option contains the device module part number and current version and build number.

From the `Device` drop-down menu, select **`About This Module...`** (see **figure 36**, ❽). The `About This Module` dialog box opens.

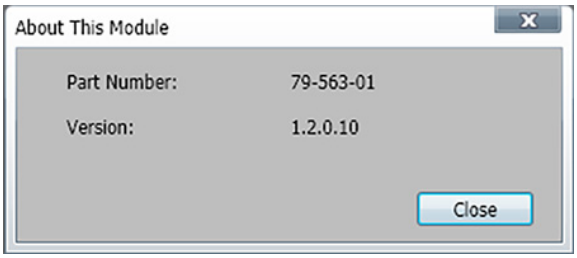


Figure 47. About This Module Dialog Box

Click the **`Close`** button to close the dialog box.

NOTE: Your version number may be different from that shown above.

AV Controls Panel

The `AV Controls` panel can be used to switch inputs, set breakaway audio, enable or disable PIP, view active input and output status, start an Auto-Image instance, freeze the displayed image, and mute or unmute video and audio signals.

Included in the panel is a summary of the current active input and output status, including signal format and HDCP status, as well as AFL status.

NOTE: This panel can be hidden or revealed on any page by clicking on the arrow button on the top right of the panel.

NOTE: An open lock icon indicates that an input or output is not HDCP-encrypted. A closed lock with a check mark icon indicates an input or output is HDCP-encrypted.

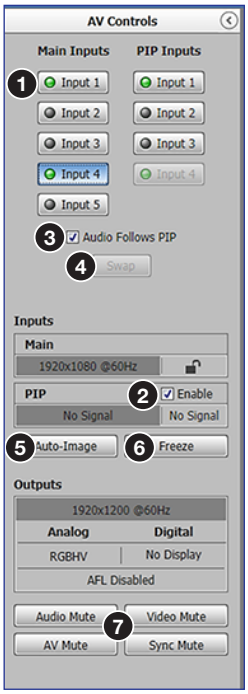


Figure 48. AV Controls Panel

AV Inputs buttons

Click an **`AV Input`** button (1-5) (see figure 48, ❶) to select that input. As the new input is selected, the summary within the panel changes to reflect the new input and output status.

NOTE: The signal status indicators on the AV input buttons (❶) display green when a signal is present on the corresponding input or gray when there is no signal present.

- Select the **`Breakaway Audio`** checkbox to allow audio from another input source to be active. This option is not available when PIP is enabled.
- Select the **`PIP Enable`** checkbox (❷) to enable the Picture-In-Picture feature for the selected active input.
- Select the **`Audio Follows PIP`** checkbox (❸) to allow the audio to follow the PIP output.
- Select the **`Swap`** button (❹) to swap the output from the Main Input source to the PIP input.

NOTE: **`Audio Follows PIP checkbox`** and the **`Swap`** buttons are only available when the **`PIP Enable`** checkbox is selected (PIP enabled).

Auto-Image button

Clicking the **`Auto-Image`** button (❺) starts a one-time Auto-Image on the currently selected input.

Freeze button

Clicking the **`Freeze`** button (❻) freezes the current displayed video frame for the currently selected input. When the button is blue the image is frozen. Click the button again to unfreeze the image.

Audio, Video, and Sync Mute buttons

- Click the **`Audio Mute`** button (❼) to globally mute only the audio. The button turns red.
- Click the **`Video Mute`** button (❼) to mute only the video signal. The button turns red.
- Click the **`AV Mute`** button (❼) to mute both video and audio simultaneously. The button turns red, along with the **`Video Mute`** and **`Audio Mute`** buttons.
- Click the **`Sync Mute`** button (❼) to mute video and sync. The button turns red along with the **`Video Mute`** button.

To unmute any signal, click the appropriate button. The button reverts to the default color, indicating the signal has been unmuted.

Configuration Pages

The configuration pages contain options for input and output configuration, EDID management, image settings, image size and position, audio configuration, and general device settings. Each page is accessible via the global navigation bar.

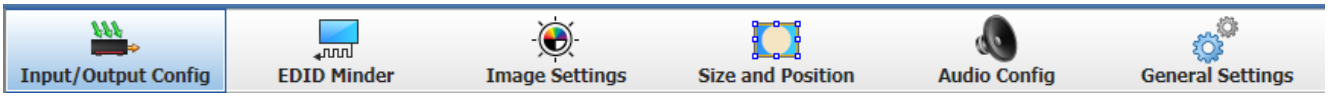


Figure 49. Global Navigation Bar

Input and Output Configuration Page

Click the **Input/Output Config** icon to open this page. It contains panels for input configuration and output configuration.

Input Configuration panel

The Input Configuration panel consists of user configurable settings for each input. These include input naming, Signal Type, Aspect Ratio, automatic Auto-Image, Auto Memory, HDCP Authorized status, and Film Detect.

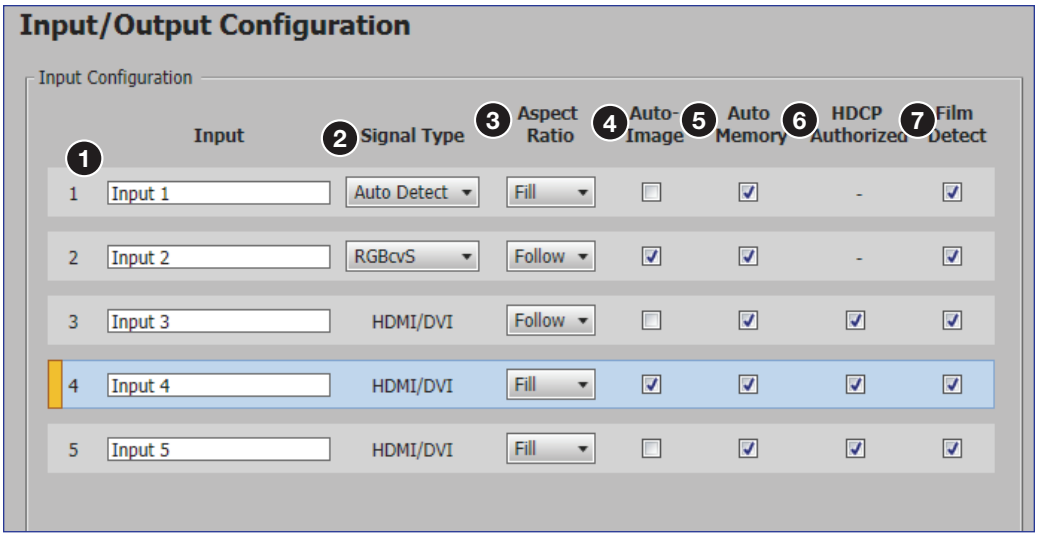


Figure 50. Input Configuration panel

Input naming

To name an input, click in the relevant input name field (see figure 50, ❶) and enter an applicable name (up to 16 characters).

Signal type

From the Signal Type drop-down menu (❷), select the signal type for inputs 1 and 2 from **Auto Detect** (default), **RGB**, **YUV-Auto**, **RGBcvS**, **S-Video**, and **Composite**.

For inputs 3 to 5, **HDMI/DVI** is the only available signal type.

Aspect ratio

From the Aspect Ratio drop-down menu (❸) select **Fill** or **Follow**.

- **Fill** — Scales the input signal to fill the entire video output.
- **Follow** — Follows the signal aspect ratio, with respect to the current output resolution setting. Black letter box or pillar box bars may be applied for aspect ratio compensation.

Auto-Image

Select the **`Auto-Image`** checkbox (see **figure 50**, ❹ on the previous page) for any input to enable an automatic Auto-Image on that input. When enabled, Auto-Image is applied whenever there is a change in the input sync. Auto-Image attempts to size and center the input signal based on the aspect ratio setting.

By default, the Auto-Image threshold is 25% brightness. Analog video signals greater than the threshold are considered active video. To change the threshold value, use SIS commands (see the **Auto-Image threshold value (minimum luminosity value which the scaler defines as active video for Auto-Image)** on page 41 for details).

Auto Memory

Select the **`Auto Memory`** checkbox (❺) of the desired input to enable the Auto Memory. Auto Memory recalls input and image settings for signals that have previously been applied. When Auto Memory is disabled, the scaler treats every newly applied input as a new source.

HDCP Authorized

Select the **`HDCP Authorized`** checkbox (❻) to enable or disable the HDCP Authorized feature for inputs 3 to 5. This feature determines if a digital input reports as an HDCP authorized sink to a source.

NOTE: This option is not available for analog inputs 1 and 2.

For source devices that require encryption, enable HDCP Authorized. If HDCP Authorized is disabled for sources that require encryption (for example, a Blu-ray player), the output is muted or a warning message is displayed.

Some source devices may encrypt their output even if the source material does not require HDCP encryption, preventing content from being displayed on a non-HDCP compliant display. Disable HDCP Authorized to allow the output of the scaler to remain unencrypted.

Film Detect

Select the **`Film Detect`** checkbox (❼) of the desired input to enable automatic 3:2, 2:2, and 24:1 film pulldown detection for NTSC, PAL, SECAM, and 1080i input signals.

Output Configuration panel

The `Output Configuration` panel contains controls for output resolution and rate, analog output format and sync polarity setting, digital output format, switch transitions, Accu-RATE frame lock settings, and available test pattern selection.

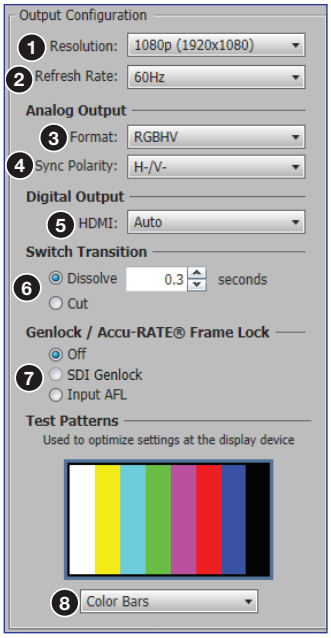


Figure 51. Output Configuration

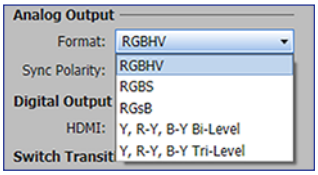
Resolution

From the **`Resolution`** drop-down menu (see figure 51, ❶), select the applicable output resolution.

Refresh rate

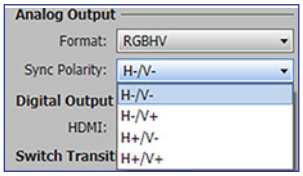
From the **`Refresh Rate`** drop-down menu (❷), select the applicable output refresh rate.

Analog output format



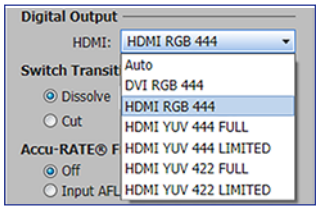
From the **`Format`** drop-down menu (❸) select the applicable analog signal format (see the image at right for format selection).

Sync polarity



From the **`Sync Polarity`** drop-down menu (❹) select the applicable sync polarity (see the image at right for format selection).

Digital output format



From the **`HDMI`** drop-down menu (❺) select the applicable digital signal format (see the image at right for format selection).

Switch transitions

From the `Switch Transitions` panel (❻), select one of the following radio buttons:

- **`Dissolve`** — Image dissolves over a selectable time frame (`0.2` to `5` seconds) before switching to the newly selected video. Set the time as desired.
- **`Cut`** — Switches video directly to the newly selected input.

Genlock/Accu-RATE frame lock (AFL)

From the `Genlock/Accu-RATE Frame Lock` panel (❼), select one of the following radio buttons:

- **`Off`** — Frame lock is disabled.
- **`SDI Genlock`** — Frame lock enabled and set to SDI input.
- **`Input AFL`** — Frame lock is enabled.

NOTE: AFL is a patented technology exclusive to Extron that locks the output frame rate to a designated input to eliminate stuttering caused by frame rate conversion.

Test patterns

To aid display device setup and optimization, select a test pattern from the drop-down menu under the preview window (see **figure 51**, ❽ on the previous page).

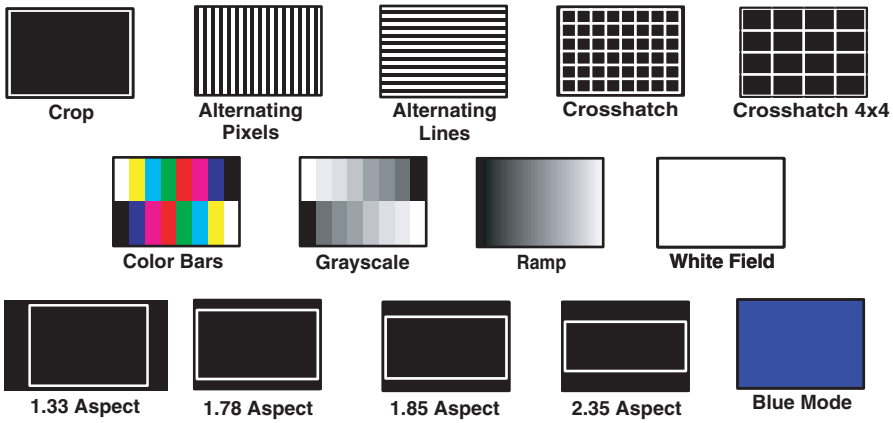


Figure 52. Available Test Patterns

NOTE: No input signal is needed when using a test pattern for display device setup.

EDID Minder Page

EDID Minder is an EDID management process that manages the EDID information between the scaler and one or more input sources. Click the **EDID Minder** icon (see figure 53, ❶) on the global navigation bar to open the EDID Minder page.

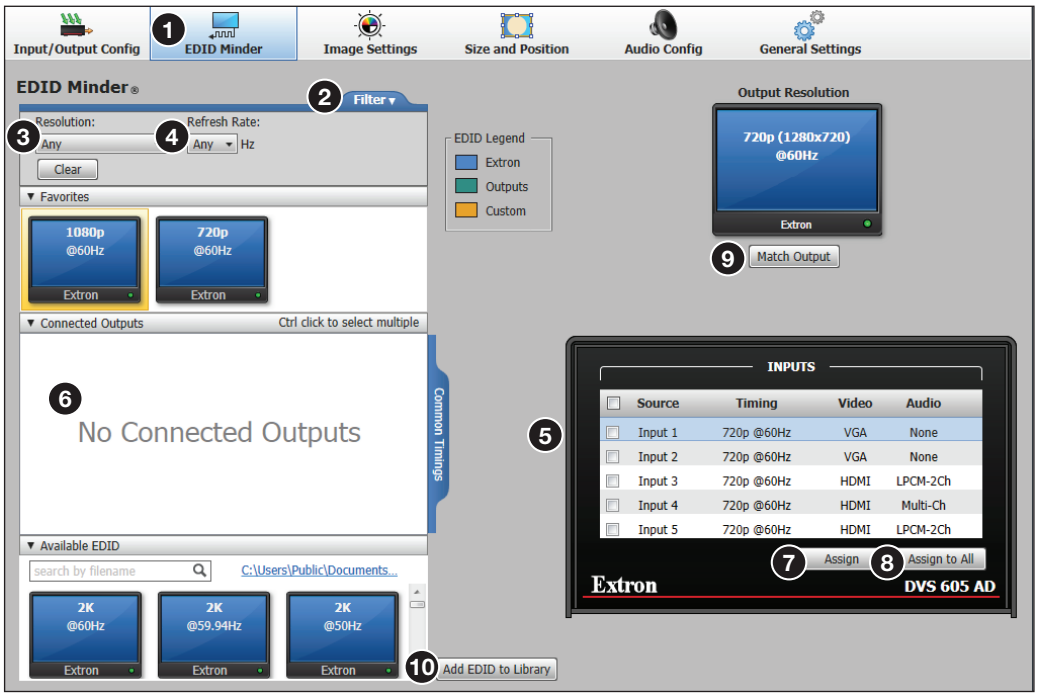


Figure 53. EDID Minder Page

The EDID properties currently assigned to each input are displayed in the table of inputs. The audio input format listed in an EDID is determined by the audio input format selected on the Input Configuration page.

Up to three EDID can be stored on the device as custom EDID files. Audio settings from custom EDID files take priority over current settings on the input.

NOTE: If an analog custom EDID file is assigned to a digital input or a digital custom EDID file assigned to an analog input, the display may not appear correctly.

Filtering available EDID

Use the **Filter** tab (❷)to limit the number of available EDID displayed in the Available EDID and Connected Outputs panes.

1. From the **Resolution** drop-down menu (❸) select a specific resolution or **Any**.
2. From the **Refresh Rate** drop-down menu (❹) select a specific refresh rate or **Any**.

Assigning EDID

To assign EDID to selected inputs:

1. From the inputs group box (table of inputs ❺) on the right, select the checkboxes for the desired inputs.
2. From the Favorites, Available EDID, or Connected Outputs pane (❻) on the left, select the desired EDID.
3. From the inputs group box, click the **Assign** button (❼) to assign EDID to the selected inputs.

To assign EDID to all inputs:

1. From the `Favorites`, `Connected Outputs`, or `Available EDID` pane (see **figure 53**, ❻ on the previous page), select an EDID.
2. From the inputs group box, click the **`Assign to All`** button (❽).

> **NOTE:** Unchecked inputs are ignored when assigning an EDID to all inputs.

To match the selected inputs to the current output resolution:

Matching the output resolution is the default value for all inputs.

1. From the inputs group box (table of inputs ❺) on the right, select the checkboxes for the desired inputs.
2. In the `Output Resolution` panel, click the **`Match Output`** button (❾).

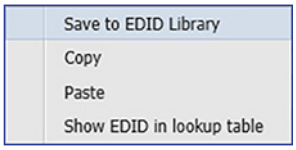
Adding EDID to the EDID Library

1. Click the **`Add EDID to Library`** button (❿). The `Browse Add EDID to Library` window opens.
2. Navigate to the desired EDID file location and select it.

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

3. Click the **`Open`** button. The EDID is added to the `Available EDID` pane.

Saving EDID to the EDID Library



1. From the `Inputs` group box (table of inputs ❺) on the right, right-click on an EDID.
2. Select **`Save to EDID Library`**.
3. Click the **`OK`** button to save the file.

> **NOTE:** Saving a factory EDID exports an HDMI, LPCM-2Ch EDID to the PC. The file is saved as a .bin file.

Image Settings Page

From this page, signal sampling and picture control settings can be adjusted, user and input presets can be saved and recalled, and overscan settings can be applied. In addition an Auto-Image, an Auto-Image and Fill, or an Auto-Image and Follow can be triggered. Click the **`Image Settings`** icon (see figure 54, ❶) on the global navigation bar to open the `Image Settings` page.

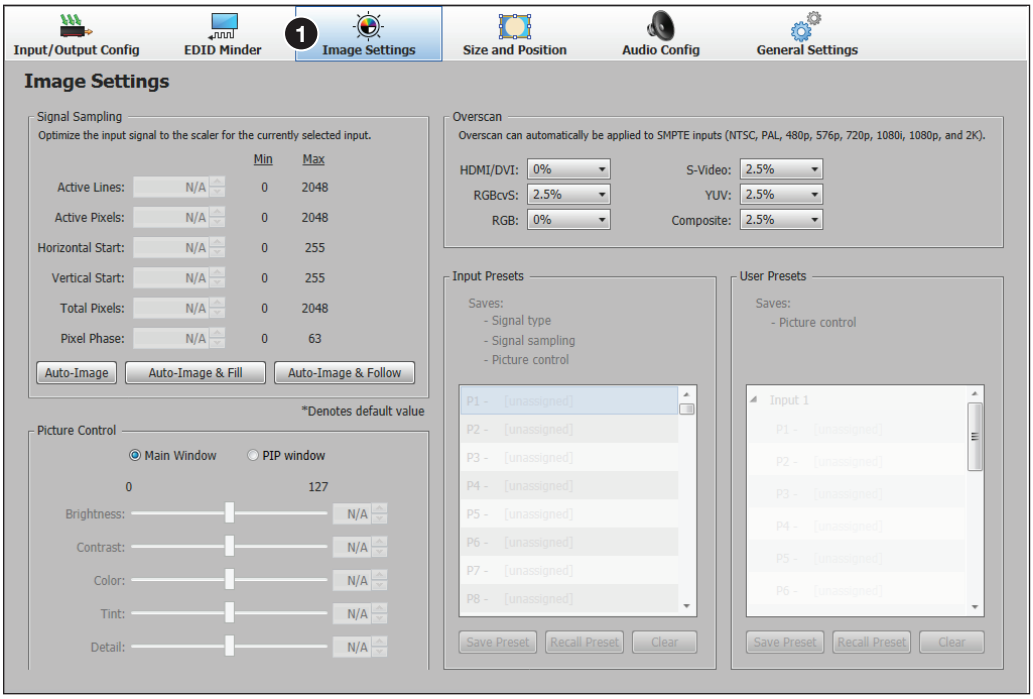


Figure 54. Image Settings Page

Signal Sampling panel

Signal sampling optimizes the input signal to the scaler for the currently selected input.

To manually adjust signal sampling settings, enter a value within the `Min` and `Max` values displayed to the right of each adjustable setting, or click the **`Up`** or **`Down`** arrows (see figure 55, ❶). An asterisk beside a chosen value for a signal sampling setting indicates that it is a default value for the applied video signal.

To automatically adjust these settings, perform one of the following:

- Click the **`Auto-Image`** button (see figure 55, ❷) to perform a one-time Auto-Image.
- Click the **`Auto-Image & Fill`** button (❸) to perform a one-time Auto-Image and fill the entire video output (ignores aspect ratio setting).
- Click the **`Auto-Image & Follow`** button (❹) to perform a one-time Auto-Image and to maintain the aspect ratio of the input signal (ignores aspect ratio setting).

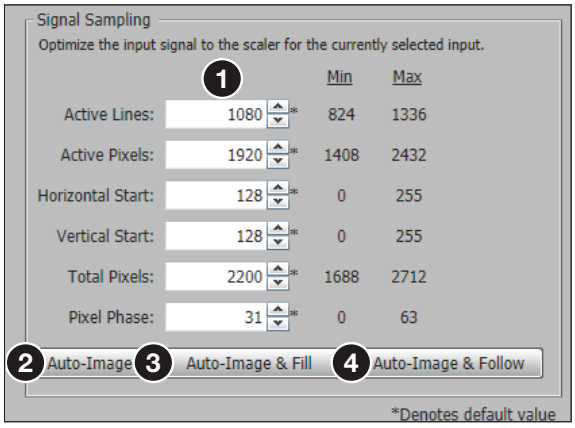


Figure 55. Signal Sampling Panel

Picture Controls panel

The `Picture Controls` panel shows adjustable image settings for the selected input displayed in the `Main` window or the `PIP` window.

Select the **`Main Window`** or **`PIP Window`** radio button as applicable.

To adjust the picture settings, click and drag the associated slider for any image setting (brightness, contrast, color, tint, or detail) to the desired value.

Alternatively, enter a value within the field associated with the image setting, or click the **`Up`** and **`Down`** arrows to change the value in the field.

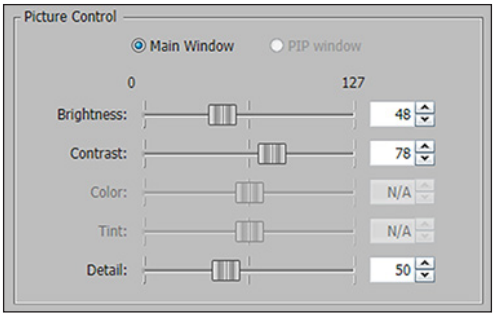


Figure 56. Picture Controls Panel

Overscan panel

Overscan mode zooms and crops SMPTE inputs to mask edge effects and ancillary data common in broadcast signals. Issuing an Auto-Image with overscan enabled, runs an Auto Phase routine (YUV and RGB only) and centers and sizes the input according to table values.

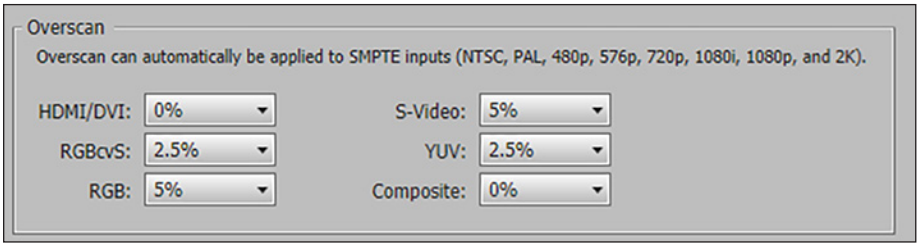


Figure 57. Overscan Section

For each input signal type, select a value from the corresponding drop-down menu.

NOTE: Setting a value of Ø% disables overscan for the corresponding input format.

Presets panel

Presets save output settings to be recalled through RS-232 or Ethernet (see the table below for a comparison of saved settings for input and user presets).

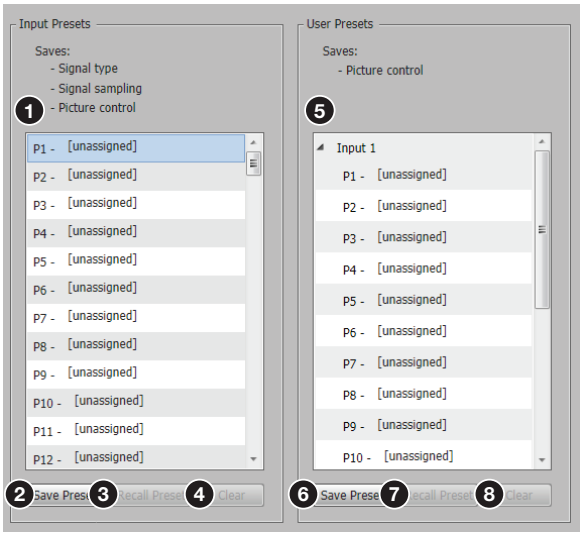


Figure 58. Input and User Presets Panel

Settings Included Within Presets		
Setting	**User Preset**	**Input Preset**
Horizontal and Vertical Start		X
Active Lines		X
Pixel Phase		X
Active Pixels		X
Total Pixels		X
Input Type		X
Film Detect		X
Brightness and Contrast	X	X
Color and Tint	X	X
Detail	X	X
Image Size and Position	X	X
Preset Name	X	X

NOTE: User presets can be saved on one input resolution and recalled on a different one. Input presets can only be recalled on the same input resolution that was present when the preset was saved.

Input presets

There are 128 presets that are global to all inputs. The presets contain all of the settings for an input when used with an upstream matrix switcher. Input presets save signal type, signal sampling, and picture control settings.

To save an input preset:

1. From the `Input Presets` list (see figure 58, ❶), select the desired preset.
2. Click the **`Save Preset`** button (❷). If the selected preset already has stored information on it, the `Presets` dialog box opens. Click the **`Overwrite`** button to erase the previous data and save the new settings. Click the **`Cancel`** button to return to the `Image Settings` page.

To rename a preset:

1. In the `Input Preset` name column (❶), double-click an **`Input Preset name`**.
2. Change the name as desired.
3. Press the **<Enter>** key to save the new name.

To recall an input preset:

1. From the `Input Presets` list (❶), select the desired preset.
2. Click the **`Recall Preset`** button (❸). The `Presets` dialog box opens.
3. Click the **`Recall`** button to recall the preset. Click the **`Cancel`** button to return to the `Image Settings` page.

To clear a preset:

1. From the `Input Presets` list (❶), select the desired preset.
2. Click the **`Clear`** button (❹). The `Presets` dialog box opens.
3. Click the **`Clear`** button to erase saved data. Click the **`Cancel`** button to return to the `Image Settings` page.

User Presets

There are 16 user presets per input to save picture control settings only.

To save a user preset:

1. From the User Presets list (see **figure 58**, ❺ on page 77), select the desired preset.
2. Click the **Save Preset** button (❻). If the selected preset already has stored information on it, the Presets dialog box opens. Click the **Overwrite** button to erase the previous data and save the new settings. Click the **Cancel** button to return to the Image Settings page.

To rename a preset:

1. In the User Preset name column (❺), double-click a **User Preset Name**.
2. Change the name as desired.
3. Press the **<Enter>** key to save the new name.

To recall a user preset:

1. From the User Presets list (❺), select the desired preset.
2. Click the **Recall Preset** button (❼). The Presets dialog box opens.
3. Click the **Recall** button to recall the preset. Click the **Cancel** button to return to the Image Settings page.

To clear a preset:

1. From the User Presets list (❺), select the desired preset.
2. Click the **Clear** button (❽). The Presets dialog box opens.
3. Click the **Clear** button to erase saved data. Click the **Cancel** button to return to the Image Settings page.

Size and Position Page

The `Size and Position` page provides three methods of adjusting window or image output size and position: graphically, numerically, or automatically with Auto-Image. This can be done for the main window, main image, PIP window, and PIP image. In addition, PIP window and images can be adjusted for size and position, and then saved as a PIP presets for later recall.

Click the **`Size and Position`** icon (see figure 59, ❶) on the global navigation bar to open the `Size and Position` page.

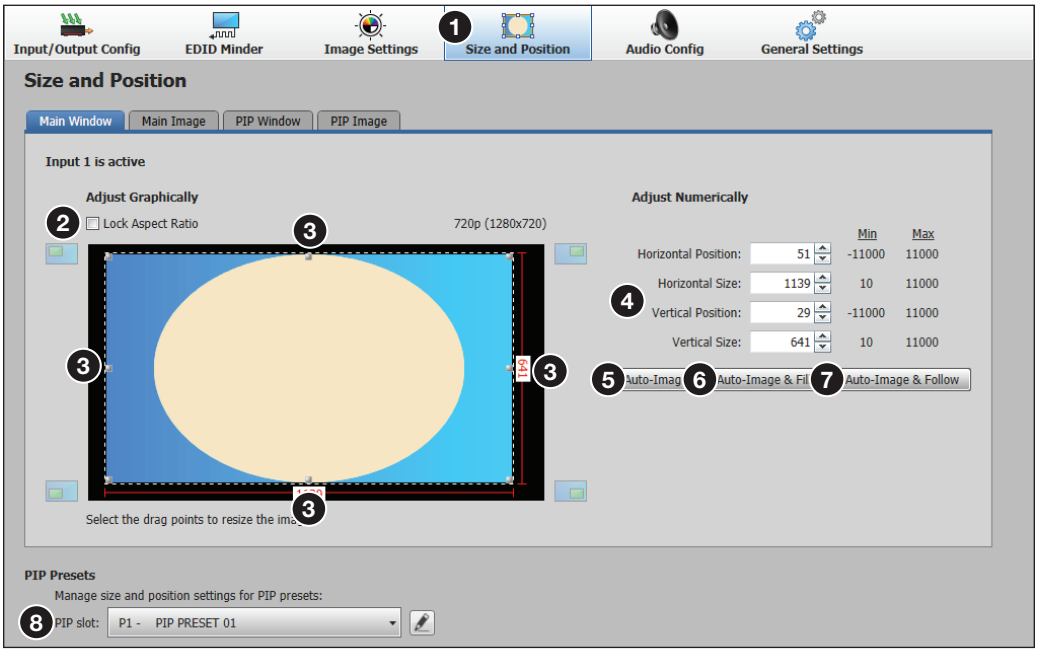


Figure 59. Size and Position Page

To adjust the size and position graphically:

If desired, click the **`Lock Aspect Ratio`** checkbox (❷) to constrain proportions.

1. Click and drag the drag points (❸) of the sample image to resize the image within the designated space (defined by the black rectangular area).
2. Click anywhere inside the sample image (see the blue rectangle with a circle inside in figure 59) and drag it anywhere within the designated space to reposition the image.

To adjust the size and position numerically:

1. Enter a value or click the **`Up`** or **`Down`** arrow in the **`Horizontal Size`** and **`Vertical Size`** fields (❹).
2. Enter a value or click the **`Up`** or **`Down`** arrow in the **`Horizontal Position`** and **`Vertical Position`** fields (❹).

To adjust the size and position automatically:

To automatically adjust these settings, perform one of the following:

- Click the **`Auto-Image`** button (❺) to perform a one-time Auto-Image.
- Click the **`Auto-Image & Fill`** button (❻) to perform a one-time Auto-Image and fill the entire video output (ignores aspect ratio settings).
- Click the **`Auto-Image & Follow`** button (❼) to perform a one-time Auto-Image and to maintain the aspect ratio of the input signal (ignores aspect ratio settings).

For the PIP window (see figure 60, ❶), adjustments can be made automatically to preset positions within the main window, or can be adjusted manually.

To adjust the PIP window position automatically, click the small image representing the desired position (❷, top left, top right, bottom left, and bottom right). The PIP image shifts to the selected position.

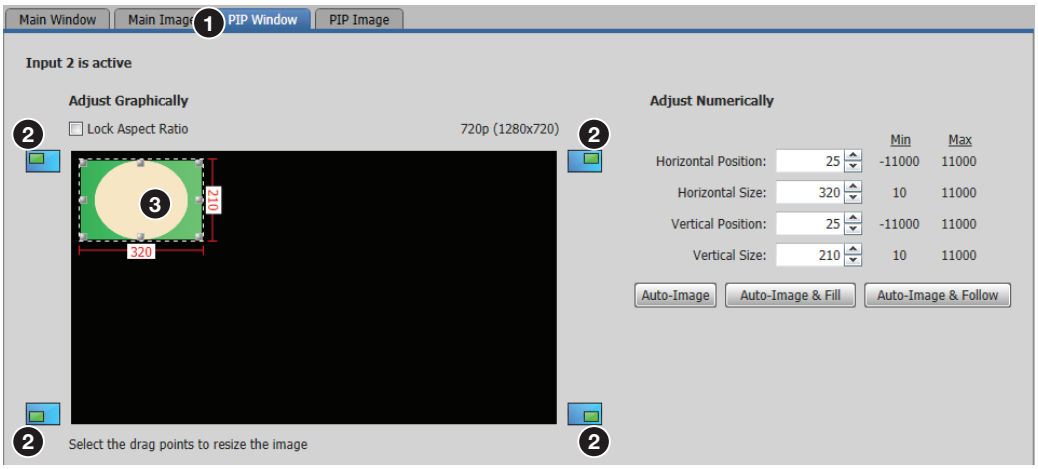


Figure 60. PIP Window Position

To adjust the PIP window position manually, click and drag the image (❸) to a desired position. When satisfied with the position, release the image.

To adjust the size and position graphically, numerically, or automatically, follow the steps as given above for the main window (see **figure 59**, ❹, ❺, ❻, ❼ on the previous page).

Any PIP settings can be saved as a PIP preset (❽) to be recalled later. To do this:

1. Click the **`PIP slot`** drop-down menu (see figure 61, ❶) and select the desired slot.
2. Click **`Save PIP`** (❸). The preset is saved for later recall.

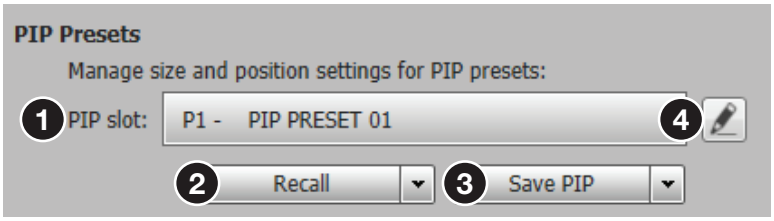


Figure 61. Saving or Recalling a PIP Preset

The PIP preset can be renamed as appropriate by clicking on the **`Edit`** button (❹), and entering the desired name.

Each preset name can be reset to the default setting. To do this, click the **`Save PIP`** drop-down menu (❸) and select the **`Restore to Defaults`** setting.

Each preset can be recalled with or without inputs (default recall). To recall with inputs click the **`Recall`** drop-down menu (❷) and choose **`Recall with Inputs`**.

Audio Configuration Page

From the Audio Configuration page, audio inputs and outputs can be configured.

Click the **Audio Config** icon (see figure 62, ❶) on the global navigation bar to open the Audio Configuration page.

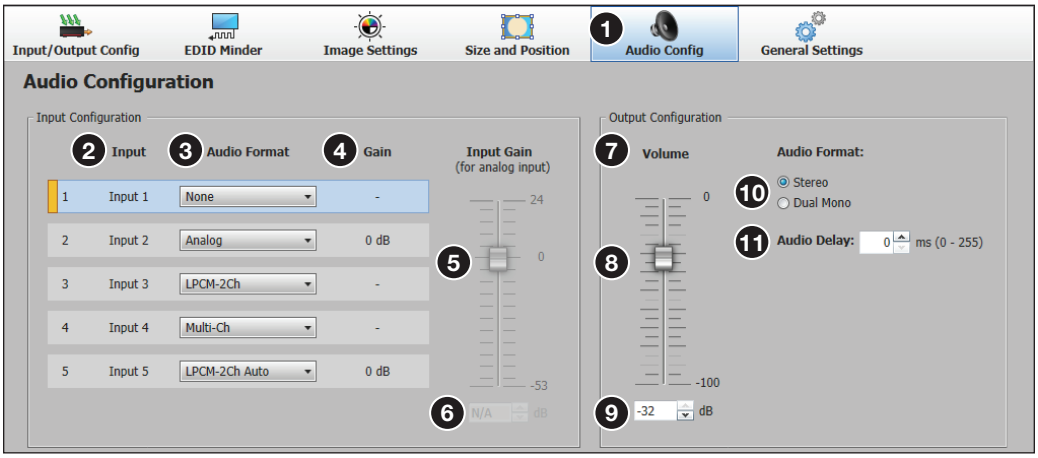


Figure 62. Audio Configuration Page

For inputs 1 and 2, available formats include:

- **None** — Audio is not sent to the output. This option sets “No Audio” EDID.
- **Analog** — Analog audio is sent to the output. This option sets “No Audio” EDID.

For inputs 3 to 5, available formats include:

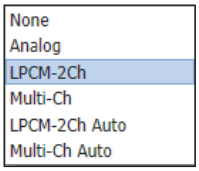
- **None** — Audio is not sent to the output. This option sets “No Audio” EDID.
- **Analog** — Analog audio from the corresponding analog input is sent to the output. This option sets “No Audio” EDID.
- **LPCM-2Ch** — The digital input is configured to receive 2-channel LPCM audio. This option sets 2Ch audio EDID.
- **Multi-Ch** — The digital input is configured to receive multi-channel audio. If multi-channel audio is not available, 2-channel LPCM audio is passed to the digital outputs. This option sets Multi-Ch audio EDID.
- **LPCM-2Ch Auto** — The digital input is configured to receive 2-channel LPCM audio. If 2-channel LPCM audio is not detected, the input switches to the corresponding analog input to send to the output. This option sets 2Ch audio EDID.
- **Multi-Ch Auto** — The digital input is configured to receive multi-channel audio, but passes 2-channel LPCM if multi-channel audio is not available. If neither multi-channel audio nor 2-channel LPCM audio is detected, the input switches to the corresponding analog input to send to the output. This option sets Multi-Ch audio EDID.

Input Configuration

To set audio format:

From the Input Configuration panel, select the audio input format from the drop-down menus (❸), then set the input gain to optimal settings.

- For inputs 1 and 2, only the options **None** or **Analog** are available.
- For inputs 3-5, six options are available (see the list at right).



Input gain

The **Input Gain** fader (see **figure 62**, ❺ on the previous page) can be applied to analog inputs. It has a gain range of -53 dB to +24 dB. Adjustments are applied in 0.1 dB increments. The default setting is 0.0 dB. The current Gain level (❹) for each input is displayed to the right of the corresponding **Audio Format** drop-down menu.

NOTE:

- Analog input gain adjustment applies only to analog signals. The **Input Gain** fader is available for analog gain only when the audio format is set to **Analog**, **LPCM-2Ch Auto**, or **Multi-Ch Auto**.
- Adjustments made to the input gain do not affect digital audio.

To adjust the fader level:

1. In the AV Controls panel select the desired **Input** (❷).
2. If the audio input format for inputs 1 and 2 is set to **Analog**, or for inputs 3-5, is set to **LPCM-2Ch Auto** or **Multi-Ch Auto**, adjust the level using any of the following methods:
   - Click and drag the fader handle to the desired level (❺).
   - Press the <**Up Arrow**> or <**Down Arrow**> key to respectively increase or decrease the level in 1 dB increments.
   - Press the <**Page Up**> or <**Page Down**> key to respectively increase or decrease the level in 5 dB increments.
   - Click in the level text field below the fader (❻) and enter a new value. Then, press the <**Enter**> or <**Tab**> key to apply the change.

Output Configuration

In this panel (❼) the analog audio output volume (range -110 dB to 0dB) can be set, audio format (stereo or dual mono) can be selected. An audio delay (from 0-255 milliseconds) can also be set.

To adjust the analog audio volume use any of the following methods:

- Click and drag the fader handle (❽) to the desired level.
- Press the <**Up Arrow**> or <**Down Arrow**> key to respectively increase or decrease the level in 1 dB increments.
- Press the <**Page Up**> or <**Page Down**> key to respectively increase or decrease the level in 5 dB increments.
- Click in the level text field below the fader (❾) and enter a new value. Then, press the <**Enter**> or <**Tab**> key to apply the change.

To select the audio format click the **Stereo** or **Dual Mono** radio button (❿) as desired.

To set the audio delay use any of the following methods:

- Press the <**Up Arrow**> or <**Down Arrow**> key to respectively increase or decrease the level in 1 ms increments.
- Click in the level text field below the fader (⓫) and enter a new value. Then, press the <**Enter**> or <**Tab**> key to apply the change.

General Settings Page

The `General Settings` page allows the user to set a screen saver, select HDCP notification and HDCP Mode options, set the front panel lockout mode (Exec Mode), enable on-screen input information, and enable or disable auto input selection and IR control. In addition, it gives access to the `Hardware Settings` page.

Click the **`General Settings`** icon (see figure 63, ❶) on the global navigation bar to open the `General Settings` page.

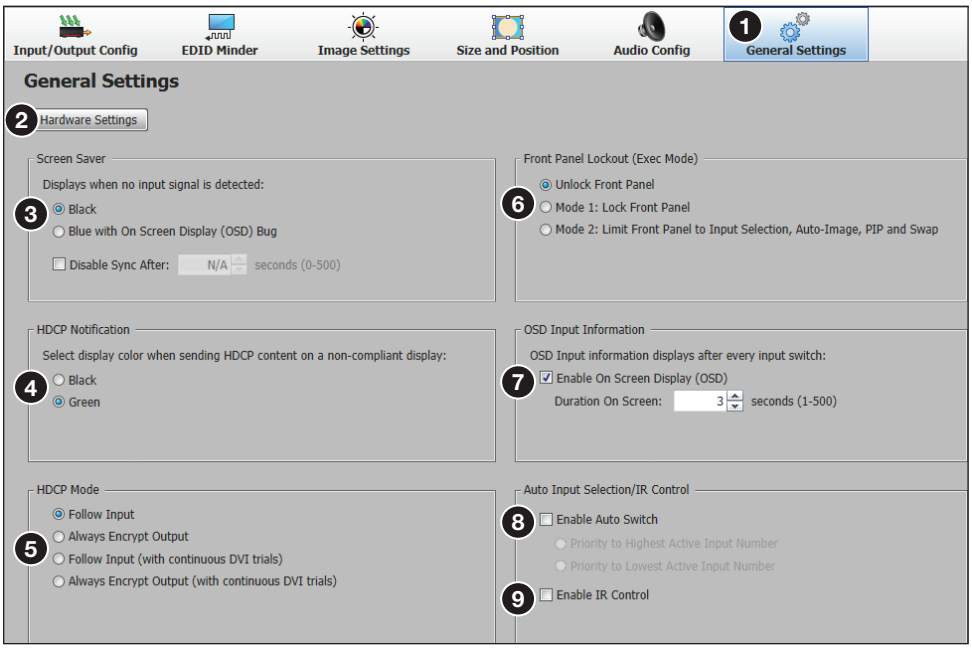


Figure 63. General Settings Page

To open the Hardware Setting page, click the **`Hardware Settings`** button (❷). The `Hardware Settings` page opens (see the *DVS 605 Product Configuration Software Help* file for details).

To set the screen saver, click the desired radio button (❸, **`Black`** or **`Blue with On Screen Display (OSD) Bug`**). To disable sync after a specified time, select the **`Disable Sync After`** checkbox, and set the duration in seconds (0-500). To do this either enter a new value in the field or click the **`Up`** or **`Down`** arrows to increase or decrease the time duration. Then, press the **<`Enter`>** or **<`Tab`>** key to apply the changes.

To set HDCP Notification screen saver, click the desired radio button (❹, **`Black`** or **`Green`**).

To set HDCP mode, click the desired radio button (❺), from:

- **`Follow Input`** — Encrypts the output only when required by the selected input source.
- **`Always Encrypt Output`** — Always encrypts the output, regardless of the HDCP status of the selected input source.
- **`Follow Input (with continuous DVI trials)`** — Encrypts the output only when required by the selected input source. Use this setting when DVI sink devices initially pass HDCP encrypted content, but intermittently display a green HDCP notification screen after a power cycle or resuming from sleep mode.
- **`Always Encrypt Output (with continuous DVI trials)`** — Always encrypts the output regardless of the HDCP status of the selected input source. Use this setting when DVI sink devices initially pass HDCP encrypted content, but intermittently display a green HDCP notification screen after a power cycle or resuming from sleep mode.

To set the front panel lockout mode, click the applicable `Front Panel Lockout (Exec Mode)` radio button (see figure 63, ❻ on the previous page) as desired.

- **`Unlock Front Panel`**
- **`Mode 1: Lock Front Panel`**
- **`Mode 2: Limit Front Panel to Input Selection, Auto-Image, PIP and Swap`**

To enable on screen display (OSD) selection, check the **`Enable On Screen Display (OSD)`** checkbox (❼) and then set the duration for the display to remain on screen (1-500 seconds) . To disable OSD selection, uncheck the **`Enable On Screen Display (OSD)`** checkbox.

To enable auto input selection, check the **`Auto Switch`** checkbox (❽) and then click the applicable radio button to set the priority to the highest active input number or the lowest active imput number. To disable auto input selection, uncheck the **`Auto Switch`** checkbox.

To enable or disable IR control, check or uncheck the **`IR Control`** checkbox (❾).

Software Menu

The `Software` menu (see figure 64, ❶, accessible at the top right corner of the PCS window) contains options to display device connection methods in the device tabs, re-enable confirmation dialogs, and view software information.

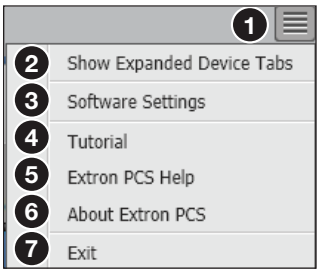


Figure 64. Software Menu

Show Expanded Device Tabs

This option displays the device IP address or connection method on the **`Device`** tab.

From the `Software` menu, select **`Show Expanded Device Tabs`** (❷).

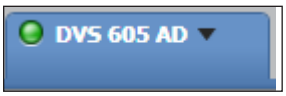


Figure 65. Expanded Device Tab

Software Settings

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

1. From the `Software` menu, select **`Software Settings`** (❸). The `Software Settings` dialog box opens.

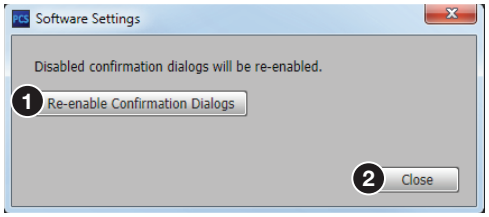


Figure 66. Software Settings Dialog Box

2. Click the **`Re-enable Confirmation Dialogs`** button (see figure 66, ❶). The dialog box closes and the reset is complete. Click the **`Close`** button (❷) to close the dialog box without re-enabling the confirmation dialogs.

Tutorial

This option displays a general overview of where to find features in the PCS framework.

1. From the `Software` menu, select **`Tutorial`** (see **figure 64**, ❹ on the pervious page). The `Tutorial` dialog box opens.
2. Click the **`I Get It!`** button (see figure 67, ❶) to close the dialog box.

Figure 67. Tutorial Dialog Box

Extron PCS Help

This options opens the PCS Help file for general PCS operations (see **Help** on page 68 for product-specific help files).

From the `Software` menu, select **`Extron PCS Help`** (see **figure 64**, ❺). The `Product Configuration Software Help` file opens in a new window.

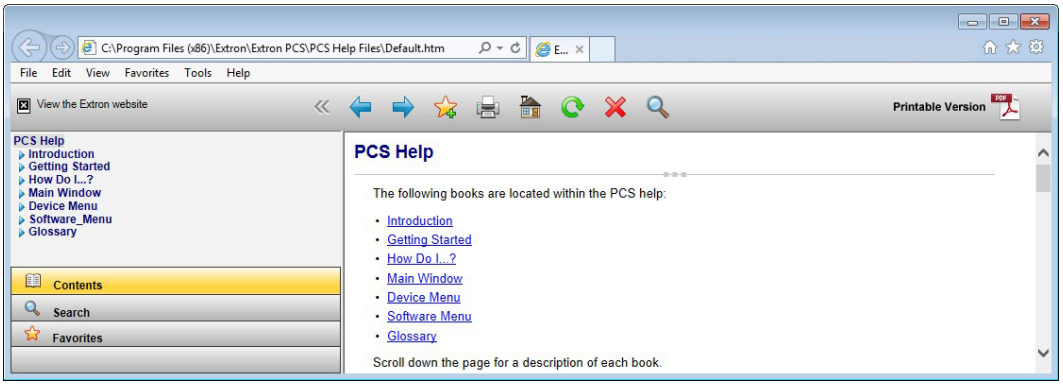


Figure 68. Production Configuration Software Help File Window

About Extron PCS

This option contains information about the current PCS version.

1. From the `Software` menu, select **`About Extron PCS`** (see **figure 64**, ❻ on page 85). The `About - Extron PCS` dialog box opens.

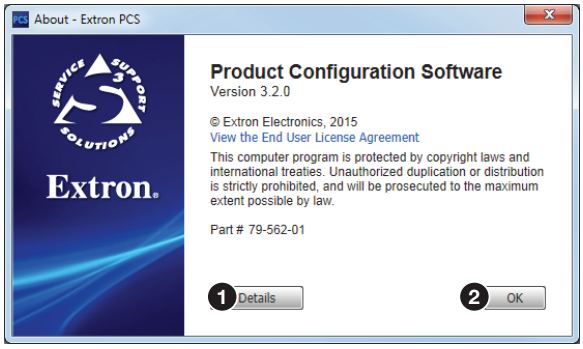


Figure 69. About - Extron PCS Dialog Box

2. Click the **`Details`** button (see figure 69, ❶) for more information about the software and embedded modules.
3. Click the **`OK`** button (❷) to close the dialog box.

Exit

This option closes disconnects PCS from connected devices and closes the application.

1. From the `Software` menu, select **`Exit`** (see **figure 64**, ❼ on page 85). If device tabs are open, the `Exit` dialog box opens.

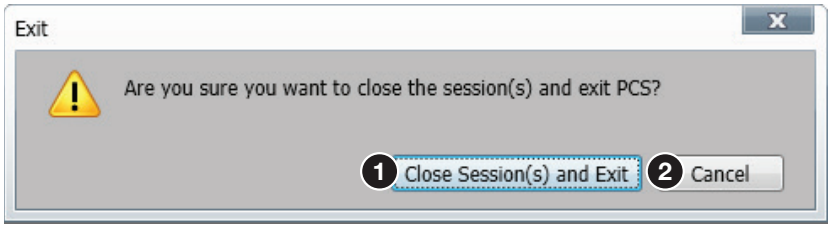


Figure 70. Exit Dialog Box

2. If necessary, click the **`Close Session(s) and Exit`** button (see figure 70, ❶) to disconnect the software from connected devices, close all offline device tabs, and close the software. Click the **`Cancel`** button (❷) to leave the software open.

Using the Default Web Pages

The DVS 605 features an internal web server, displayed as a set of default web pages. These pages allow you to configure and operate the DVS 605 unit via a LAN or WAN connection through the RJ-45 port, using a web browser such as the Microsoft Internet Explorer® 8 or later, Mozilla® Firefox® 6 or later, Google Chrome™ 9 or later, Apple® Safari® 4 or later.

NOTE: If you are using Internet Explorer, compatibility mode must be turned off (see **Turning Off Compatibility Mode** for details).

This section gives an overview of the default web pages, which are always available and cannot be erased or overwritten.

Topics that are covered include:

- **Accessing the Default Web Pages**
- **Navigating the Default Web Pages**

Accessing the Default Web Pages

Access the DVS 605 through the embedded web pages as follows:

1. Double-click the web browser icon on the PC desktop to launch the web browser.
2. Click in the browser **Address** field.
3. Enter the unit IP address in the browser **Address** field.

   NOTE: If the local system administrators have not changed the value, the factory-specified default is DHCP set to OFF, IP address = 192.168.254.254.

4. Press the keyboard <**Enter**> key. The DVS 605 is shipped password-protected and the Enter Network Password page opens.

   NOTES:

   - The default Username is **Admin** or **User**. The factory configured passwords for all accounts on this device have been set to the device serial number.
   - If the device is reset back to default settings, there will be no passwords. New passwords need to be configured to secure the device (see **Password Page** on page 114).

5. Click in the **Password** field and type in the appropriate administrator or user password if prompted.
6. Click **OK**.

Turning Off Compatibility Mode

The DVS 605 default web pages do not support compatibility mode in Microsoft Internet Explorer.

To check compatibility view settings:

From the Tools menu of the browser, select **Compatibility View settings**. The Compatibility View Settings dialog box opens.

Be sure that the **Display intranet sites in Compatibility View** checkbox is cleared, and that the IP address of the DVS 605 is not in the list of web sites that have been added to Compatibility View.

Navigating the Default Web Pages

The DVS 605 default web pages has two main pages (tabs): Configuration (see figure 71, ❶) and Hardware (❷). Below the tabs for each page is a global navigation bar with icons (❸) for ease of navigation through the various options. The two tabs have specific groups of options.

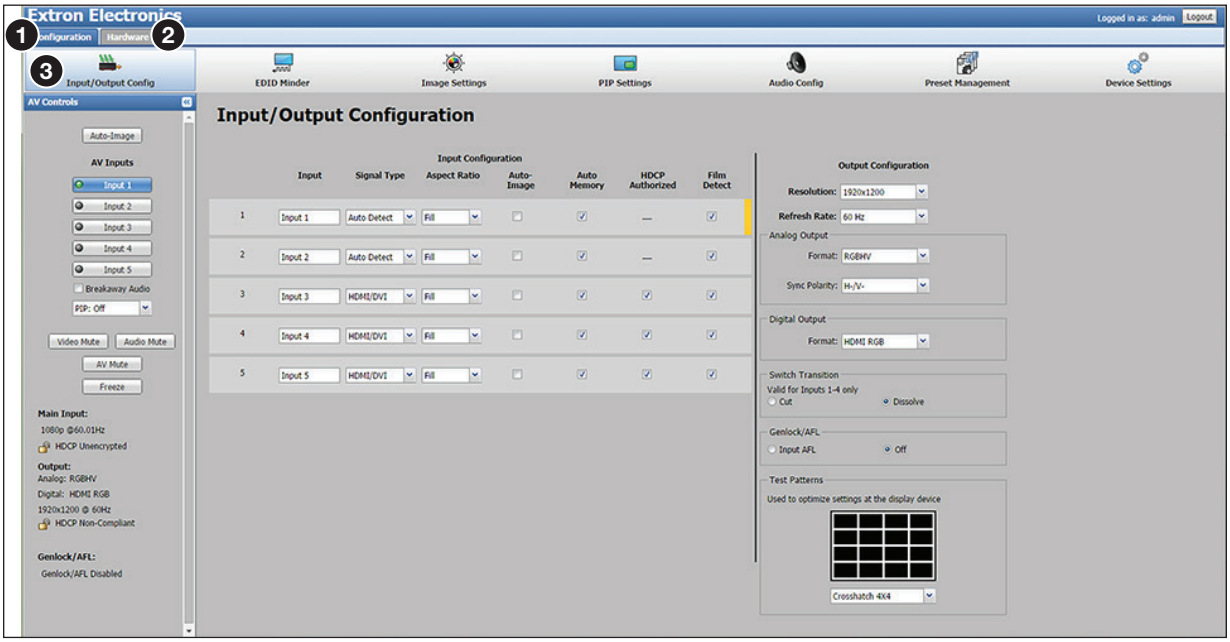


Figure 71. Default Web Pages Open on the Configuration Page

Configuration Pages

NOTE: From Hardware pages, click the **Configuration** tab  .

The Configuration pages options are:

- Input/Output Config
- EDID Minder
- Image Settings
- PIP Settings
- Audio Config
- Preset Management
- Device Settings

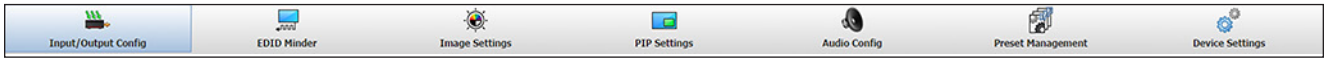
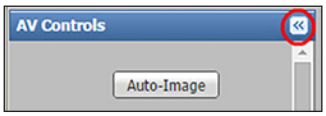


Figure 72. Global Navigation Bar for the Configuration Page

The browser screen is set out as two sections. These are AV Controls on the left, and the options page on the right (see figure 71).

AV Controls Panel

NOTE: This panel section can be hidden or revealed by clicking on the section handle (see image at right).



The `AV Controls` panel is used to control AV settings such as input selection (see figure 73, ❷) and for performing a one-time **`Auto-Image`** (❶) on an input. Video and audio mute can be turned on or off, and image freeze (❸) can be invoked.

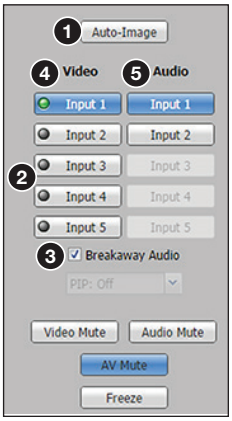
Figure 73. AV Controls Panel

At the bottom of the panel is a summary of the current active input and output status, which includes signal format, resolution and refresh rate, HDCP status, and Genlock/AFL status (❹).

Auto-Image button

Click this button (see image on the right, ❶) to start a one time Auto-Image on the currently selected input.

AV input buttons (inputs 1-5)



Click these buttons (❷) to select an input as desired. As a new one is selected, the summary text within the panel changes to reflect the new input and output status.

Breakaway Audio checkbox (audio models only)

Select this checkbox (❸) to enable audio breakaway. The input buttons separate into two columns: `Video` (❹) and `Audio` (❺).

From the `Video` column, click the input button associated with the video to be used.

From the `Audio` column, click the input button associated with the audio to be used.

NOTE: When in PIP mode, audio breakaway is not supported. Audio follows either the main window or the PIP window (as set on the **Device Settings Page** on page 106).

Video only and audio only switching (breakaway) rules

When the current audio input is configured for digital audio:

- Digital audio is not available from any input other than the currently selected video input.
- Audio-only switching can be made to inputs that are configured for analog audio.
- Video-only switching is not possible.
- Video-only switching can only be made after an audio-only switch to an input configured for analog audio, and then can be made to any input.

When the current audio input is configured for analog audio:

- Audio-only switching is available to any input that has audio configured as analog.
- Audio-only switching is not possible to any input that has audio configured as digital.
- Video-only switching is possible, regardless of the audio configuration of the new input.
- When switching video-only from an input that has audio configured as analog, to an input where the audio is configured as digital, the digital audio on the new input can now be selected.

Clear the **Breakaway Audio** checkbox to disable the audio breakaway.

Video and audio mute buttons

Click **Video Mute** (❶) to mute only the video. The button turns blue.

Click **Audio Mute** (❷) to mute only the audio. The button turns red.

Click **AV Mute** (❸) to mute both video and audio simultaneously. The button turns red and the **Video** and **Audio** mute buttons are also activated.

To unmute any signal, click the appropriate button. The button reverts to the default color, indicating the signal has been unmuted.

Freeze button

Click **Freeze** (❹) to freeze the current video image. The button is blue when image is frozen. Click it again to unfreeze the image. The buttons reverts to the default color.

Input/Output Configuration Page

Click this button 

to open to this page. This page has Input Configuration and Output Configuration panels.

Input Configuration panel

The `Input Configuration` panel consists of user configurable fields for each of the five inputs. These include: input naming, signal type, aspect ratio, Auto-Image, Auto Memory, HDCP Authorized status, and film detection. There is also a visual indicator on the right side of the panel for the currently active video and audio inputs.

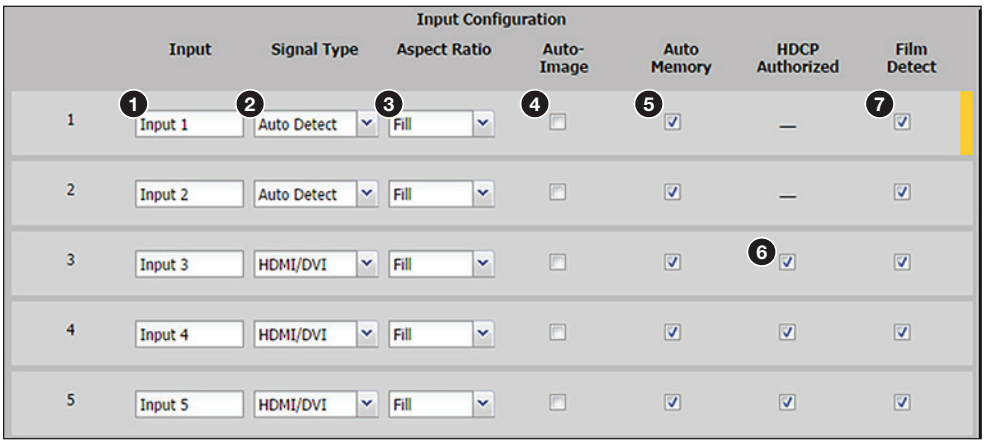


Figure 74. Input Configuration Panel

Input (renaming)

To rename an input, click inside the field (see figure 74, ❶) and type in the desired name to identify the input. Input names have a 16-character limit. By default, the name associated with an input channel is Input <number>.

NOTE: Entering a single space character resets the name of the input to the default.

Signal type

The user can select the signal type for inputs 1 and 2 from **`Auto Detect`**, **`RGB Scaled`**, **`Auto YUV`**, **`RGBcvS`**, **`S-Video`**, and **`Composite`**. For inputs 3, 4, and 5, **`HDMI/DVI`** is the only available signal type.

From the `Signal Type` drop-down menu (❷), select the video format associated with the input.

For inputs 1 and 2, available signal types include:

- **`Auto-Detect`** — With this setting selected, whenever the device detects an input format change, it automatically sets the input signal type.
- **`RGB Scaled`**
- **`Auto YUV`** — With this setting selected, the device detects if YUVi or YUVp/HDTV is applied and sets the input accordingly.
- **`RGBcvS`**
- **`S-Video`**
- **`Composite`**

Aspect ratio

Select **`Fill`** or **`Follow`** from the drop-down menu (❸) to set the aspect ratio.

- **`Fill`** — The input signal is scaled to fill the entire video output.
- **`Follow`** — Follows the signal aspect ratio, with respect to the current output resolution setting. A black letter box or pillar box bars may be applied for aspect ratio compensation.

Auto-Image

Select the checkbox (see **figure 74**, ❹, on page 92) to apply `Auto-Image` to the input, if desired. When selected, then Auto-Image is applied whenever there is a change in the input sync.

Auto Memory

Select the checkbox (❺) to enable the `Auto Memory`, if desired. Auto Memory recalls input and image settings for signals that have previously been applied (see the table in **Auto Memory** on page 22 for the Auto Memory and Auto-Image relationship).

When Auto Memory is disabled, the DVS 605 treats every newly applied input as a new source.

HDCP Authorized

Select the **`HDCP Authorized`** checkbox (inputs 3-5) (❻) in order to have the input report as an HDCP Authorized device. If the box is not checked the source is blocked from encrypting its output. This may result in some content not being passed to the output.

NOTE: The **`HDCP Authorized`** option is not available for analog inputs 1 and 2.

Film Detect

Select these checkboxes (❼) to enable 3:2, 2:2, and 24:1 film pulldown detection for NTSC/PAL/1080i input signals.

Output Configuration panel

The right panel consists of user configurable fields for video outputs. These include: output resolution, refresh rate, signal format and sync polarity for the analog output, and signal format for the digital output. The switch transition mode between inputs can be set, and a test pattern selection is available for use in calibrating a connected display.
The Genlock/AFL settings can also be set on all models.

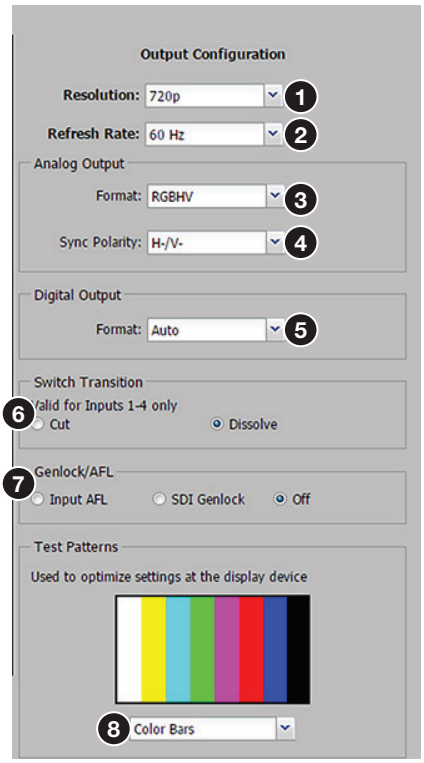


Figure 75. Output Configuration Panel

Resolution

Click the arrow and from the drop-down menu box (see figure 75, ❶) select the applicable output resolution (see **Resolution and refresh rates** on page 16 for a full list). The selectable resolutions include five user customizable ones: C1-C5.

Default is 720p/60 Hz.

Refresh rate

Click the arrow and from the drop-down menu box (❷) select the applicable refresh rate.

Analog signal format

Click the arrow and from the drop-down menu box (❸) select an applicable signal format. Selectable formats are: RGBHV (default), RGBS, RGBcvS, (Y, R-Y,B-Y bi-level), and (Y, R-Y,B-Y tri-level).

Analog sync polarity

Click the arrow and from the drop-down menu box (❹) select the applicable sync polarity.
Choices are: H-/V- (default), H+/V-, H+/V+, H-/V+.

NOTE: The sync polarity option is only available when the output format is RGBHV.

Digital output signal format

Click the arrow and from the drop-down menu box (❺) select an applicable signal format. Selectable formats are:

- **`Auto`** (based on sink/display EDID)
- **`DVI`**
- **`HDMI RGB`**
- **`HDMI YUV 444 Full`**
- **`HDMI YUV 444 Limited`**
- **`HDMI YUV 422 Full`**
- **`HDMI YUV 422 Limited`**

Switch transition

Select either cut or dissolve (❻), as applicable, to set the transition effect when switching inputs.

Genlock/AFL

Where applicable, SDI genlock or input signal genlock can be applied, or genlock can be turned off (see **Genlock/AFL modes** on page 18 for details). Select as desired (see **figure 75**, ❼ on page 92).

NOTE: The SDI genlock option is available only on DVS 605 D and DVS 605 AD models.

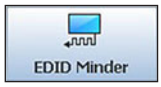
Test pattern

To aid display device setup and optimization, select a test pattern (❽) from the drop-down menu (see **Test Pattern** on page 23).

NOTE: No input signal is needed when using a test pattern for display device setup.

EDID Minder Page

Extron EDID Minder is an EDID management process that automatically manages the EDID information between a digital display device and one or more input sources.

Click this button 

to open the EDID Minder page.

From this page an EDID data set can be assigned to any input with an Auto-Detect, an RGB, or an HDMI/DVI input type. The currently assigned EDID properties can be viewed and EDID files can be loaded to and from the DVS 605.

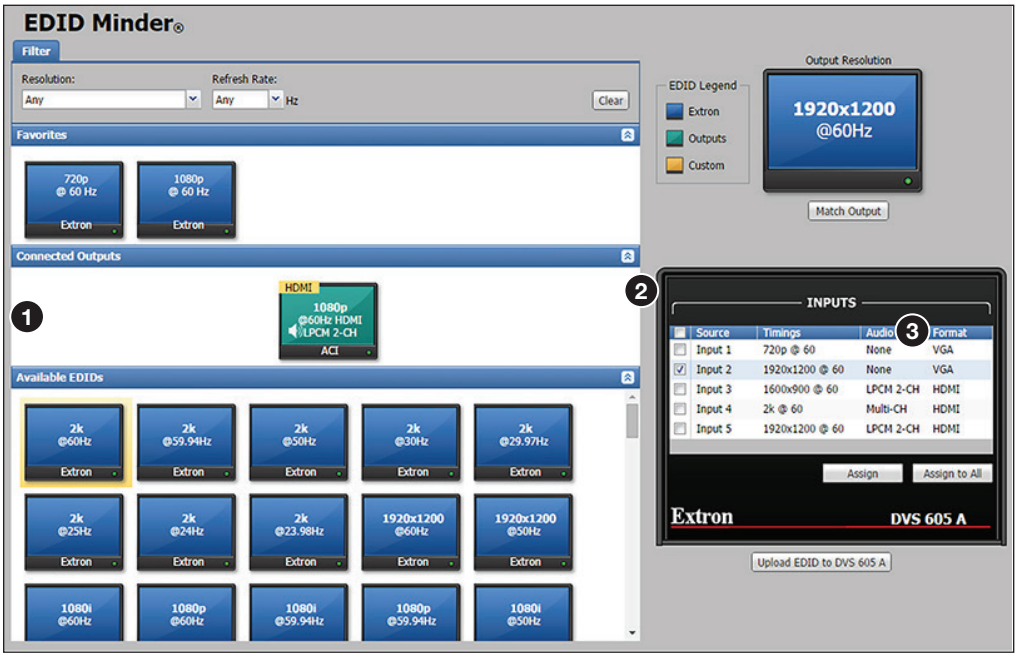


Figure 76. EDID Minder Page

The EDID Minder screen displays a table of EDID settings and connected output devices, grouped as favorites, connected outputs, and available EDIDs (see figure 76, ❶). These are visually shown as colored output display icons: factory default EDIDs are blue, connected output devices are green, and custom loaded or saved EDIDs are yellow.

The EDID properties currently assigned to each input are displayed in the table of inputs (❷) . Audio and video formats for each input are also displayed (❸). The audio input format listed in an input's EDID is determined by the audio input format on the Audio Configuration page. Video input format is configured on the Input/Output Configuration page.

Assigning EDIDs

To assign EDID to selected inputs:

1. From the `Inputs` screen (table of inputs) on the right, select the desired input or inputs (see figure 77, ❶).
2. From the `Favorites`, `Connected Outputs`, or `Available EDIDs` panels, select an available EDID (❷ represented by a blue, green, or yellow output display icon).
3. Click the **`Assign`** button (❸) to assign EDID to the selected input or inputs.

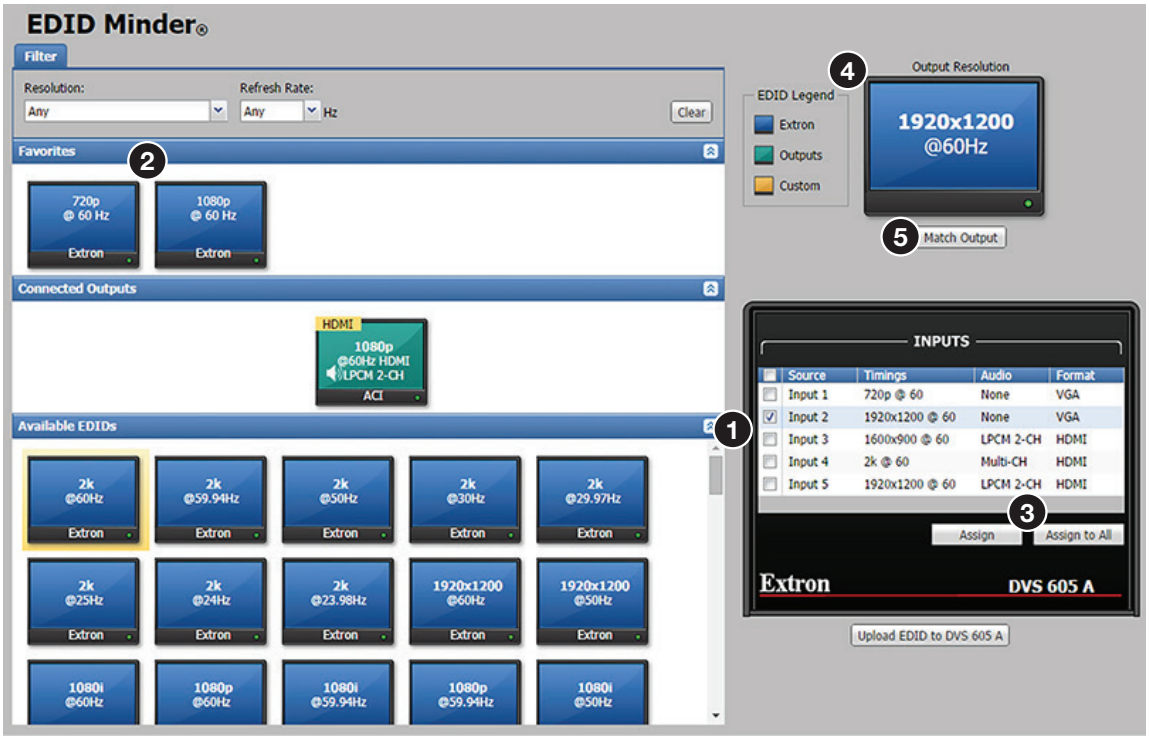
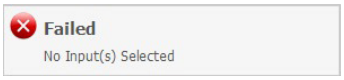


Figure 77. Assigning EDIDs

NOTE: If you do not assign any inputs but still click **`Assign`**, an error message is displayed.



To assign EDID to all inputs:

1. From the `Favorites`, `Connected Outputs`, or `Available EDIDs` panels, select an available EDID (❷ represented by a blue, green, or yellow output display icon).
2. Click the **`Assign to All`** button (❸).

NOTE: If you select **`Assign to All`**, all input boxes, checked or unchecked, are ignored and the EDID is assigned to all inputs.

To match the selected inputs to the current output resolution:

1. From the `Inputs` table on the right, select the desired input or inputs (❶).
2. In the `Output Resolution` panel (❹ upper right of screen), click **`Match Output`**(❺).

EDID can be filtered or saved (see the PCS **EDID Minder Page** on page 74 for details).

Image Settings Page

From this page signal sampling and picture control settings can be set, user and input presets can be saved and recalled, and overscan settings can be applied.

Click this button 

to open the `Image Settings` page.

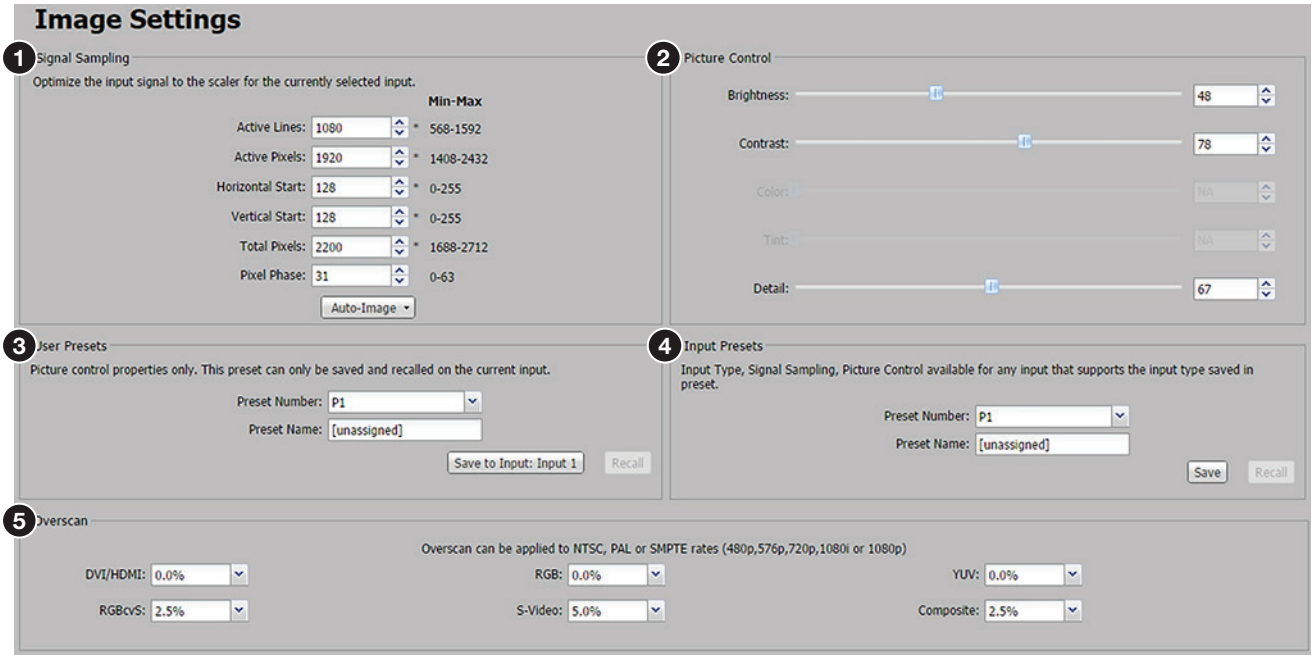


Figure 78. Image Settings Page

Signal Sampling

In this panel (see figure 78, ❶), settings for the currently selected input signal can be adjusted. Adjustable fields are: the number of active lines, active pixels, total pixels, horizontal and vertical start settings, and the pixel phase. In addition, an Auto-Image (with Fill or Follow modes) can be executed on the input.

In the `Signal Sampling` section, adjust an input signal setting by entering a value or clicking the **up** and **down** arrows in the field associated with the setting. An asterisk beside a chosen value for a signal sampling setting indicates that it is a default value for the applied input signal.

An Auto-Image can also be executed on the current input. Auto-Image automatically sizes and centers the selected input. If an unknown input is connected to the device, the processor measures and estimates the resolution of the incoming video.

To perform an Auto-Image:

1. Click the **`Auto-Image`** button. A drop-down menu opens (see **Auto-Image** on page 93 for steps to set automatic activation).
2. Select **`Auto-Image`**: with fill (to fill the entire video output) or **`Auto-Image`**: with follow (to maintain the aspect ratio of the input).

Picture Control

This panel shows the `Image Settings` for the selected input (see **figure 78**, ❷, on the previous page). These include brightness, contrast, color, tint, and detail, which can be adjusted and applied to that input.

To adjust the picture settings click and drag the associated slider for any image setting (brightness, contrast, color, tint, or detail) to the desired value.

Alternatively, you can enter a value within the field associated with the image setting, or click the **up** and **down** arrows and change the value in the field.

User Presets

In this panel of the `Image Settings` page, the user can save or recall up to 16 user presets per input channel for the currently active input. The user presets contain only picture control properties (❸).

Settings Included Within Presets				
Setting	**User Preset**	**Input Preset**	**PIP Preset**	**Auto Memory**
H/V Start		Yes		Yes
Active Pixels		Yes		Yes
Active Lines		Yes		Yes
Total Pixels		Yes		Yes
Phase		Yes		Yes
Brightness and Contrast	Yes	Yes		Yes
Color and Tint	Yes	Yes		Yes
Detail	Yes	Yes		Yes
Input Type		Yes		
Audio Input Gain and Attenuation		Yes		
Main Image/Window Size and Position	Yes	Yes	Yes	Yes
PIP Image/Window Size and Position			Yes	
Preset Name	Yes	Yes	Yes	
Main Input			Yes*	
PIP Input			Yes*	
Film Mode		Yes		
Presets Available	16 per input channel	128 global	16 global	32 per input channel
Recall location	Current input	Any input supporting the input type saved in the preset	Any input except input 5	Automatically recalled based on signal
* PIP presets can be recalled with or without the main and PIP inputs that were active when the preset was saved.				

NOTE: "H/V Start" indicates the horizontal and vertical start.

Figure 79. Presets Settings

Input Presets

A total of 128 global input presets are available for the DVS 605. An input preset is a user-defined set of input and picture control settings that can be saved for each source within a system so that they can be recalled whenever the source is applied. Input presets are unique to the signal that was applied when the preset was initially saved. This type of preset saves specific settings for size, position, contrast, brightness, color and tint (if applicable), detail, and input configuration (see **figure 78** on page 97, ❹).

NOTE: An input preset can be recalled on any input supporting the input type that was active when the preset was saved. However, input presets only apply to the input resolution that was present when the preset was saved.

To create and save an input preset:

1. Adjust the signal sampling, picture control, and size settings (see **Size and position** on page 101 .
2. From the **Preset Number** drop-down menu select a preset number.
3. In the **Preset Name** field, enter a name for the preset (see **Preset Management Page** on page 105 for information about renaming input presets).
4. Click **Save**. If an input preset already exists in this location, a confirmation dialog box opens. In the dialog box, click **Yes** to overwrite the previous input preset.

   The settings are saved to the selected preset location to be recalled at a later time (see **Preset Management Page** for the procedure to delete an input preset).

To recall an input preset:

1. From the **Preset Number** drop-down menu, select the preset to recall.
2. Click **Recall**. A confirmation dialog box opens.

NOTE: If an unassigned preset is selected, the **Recall** button is disabled.

3. In the dialog box, click **Yes**.

NOTE: Recalling a preset overwrites any adjustments to the settings of the current input. An input preset can also be recalled through the Preset Management page.

Overscan

This mode zooms and crops SMPTE inputs to mask edge effects and ancillary data common in broadcast signals. Issuing an Auto-Image with overscan enabled, runs an Auto Phase routine (YUV and RGB only) and centers and sizes the input according to table values.

NOTE: Overscan is applied only to SMPTE input rates (NTSC, PAL, 480p, 576p, 720p, 1080i, or 1080p).

To set the overscan, select a percentage (0.0%, 2.5%, or 5.0%) from the drop-down menu that is associated with the desired input signal type (❺).

PIP Settings Page

In PIP mode, the DVS 605 can display two images on the screen simultaneously. From this page, the PIP settings can be adjusted. This includes input selection, swapping between the main and PIP inputs, adjustment of the picture control settings, main and PIP window position and sizing, and the saving and recalling of PIP presets.

NOTES: When the DVS 605 is in PIP mode:

- Audio breakaway is not supported. Audio follows either the main window or the PIP window (set on the `Device Settings` page).
- True seamless switching is not available (see **Picture-in-Picture (PIP) Mode** on page 26

Click this button 

to open the `PIP Settings` page.

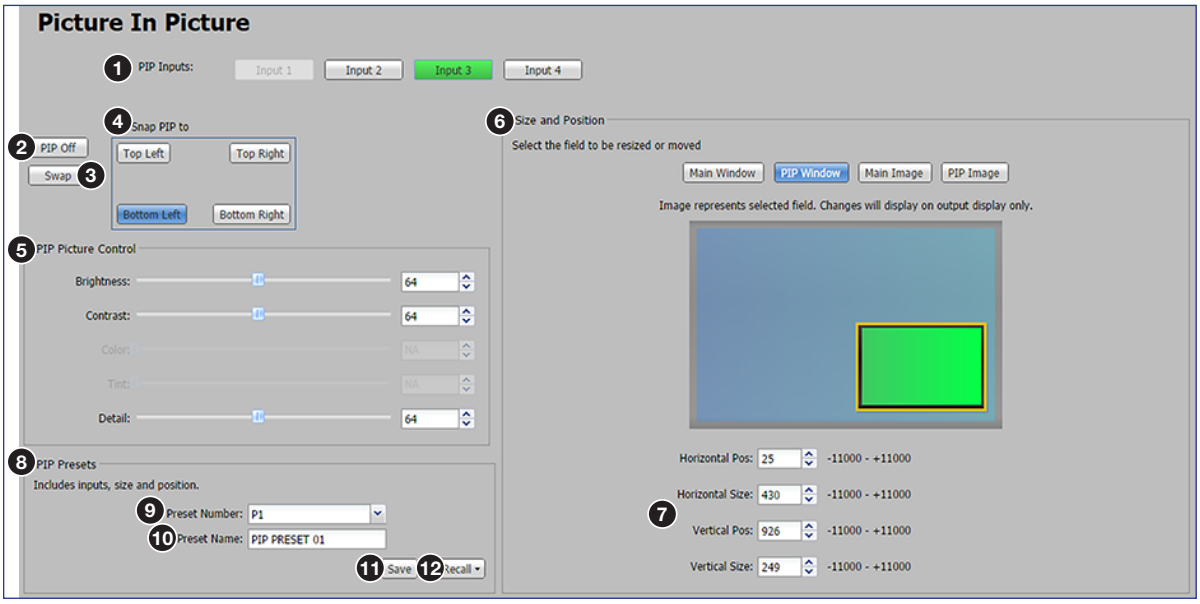


Figure 80. PIP Settings Page

PIP input selection

Inputs 1 through 4 can be selected as a PIP input. Click the button of an available input (see figure 80, ❶). The content of this input displays in the PIP window.

NOTES:

- The currently selected AV input is disabled in the list of available PIP inputs as the main input and PIP input cannot be the same.
- Input 5 cannot be selected as an input for PIP mode.
- The **`PIP Off`** and **`Swap`** buttons are disabled if PIP mode is not enabled.

To turn off the PIP feature, click the **`PIP Off`** button (❷).

To swap the active main window with the current PIP input, click the **`Swap`** button (❸).

Snap PIP to *<location>*

To snap (align) the PIP window to a specific corner of the main window, click **`Top Left`**, **`Top Right`**, **`Bottom Left`**, or **`Bottom Right`** within the `Snap PIP` panel (❹) to display grid. This places the PIP window in the specified corner of the main window. When using the `Snap To` feature, the PIP window is always 25 pixels away from the edges of the output raster.

PIP picture controls

These PIP input settings include brightness, contrast, color, tint, and detail.

NOTES:

- Picture controls are not applied if there is no input signal. Any changes made while there is no input signal are lost when a signal is detected.
- After PIP is disabled, the configured PIP picture settings still apply to the specified input.

To adjust PIP picture settings (brightness, contrast, color, tint, or detail), click and drag the associated slider to the desired value (see **figure 80**, ❺ on the previous page).

Alternatively, you can enter a value in the field associated with the picture setting, or click the **up** and **down** arrows.

Size and position

In this panel (❻), the size and position of the PIP windows and content, and the main windows and content can be adjusted. The settings can be saved in a PIP preset.

NOTE: Size and position settings of the PIP window, PIP content, main window, and main content are disabled if you are configuring the DVS 605 offline.

The position and size of the content or window can be adjusted using the values in the **Horizontal Position**, **Horizontal Size**, **Vertical Position**, and **Vertical Size** fields (❼).

To adjust the position and size numerically:

1. In the Size and Position panel, click the button for the window (**Main Window** or **PIP Window**) or content (**Main Content** or **PIP Content**) that is to be adjusted.
2. Adjust the size by entering a value or clicking the **up** and **down** arrows in the **Horizontal Size** and **Vertical Size** fields.
3. Adjust the position by entering a value or clicking the **up** and **down** arrows in the **Horizontal Pos** and **Vertical Pos** fields.

   NOTE: In steps 2 or 3, if a value above or below the accepted range is entered, a red border is displayed and a pop-up window indicates the accepted minimum or maximum value.

PIP presets

Sixteen global PIP presets are available for the DVS 605 (see **figure 80** on page 100). A PIP preset contains settings for the size and position of PIP. It also contains the main and PIP inputs that were active when the preset was saved. By default, the first ten PIP presets have settings already associated with them, but they can be overwritten (see figure 81).

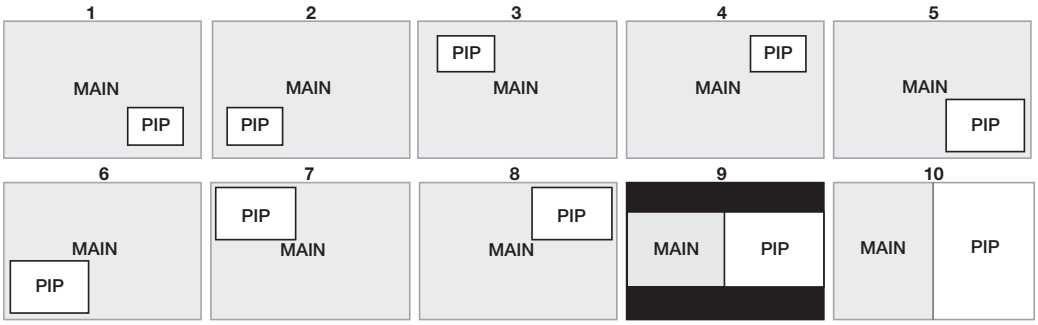


Figure 81. PIP Preset Default Window Locations

To create and save a PIP preset:

1. Click the button of an available input (1 through 4) to use as the PIP input (1).
2. Adjust the picture, size, and position settings as desired for the main and PIP windows (7).
3. From the **Preset Number** drop-down menu (9) in the PIP Presets panel, select a number.
4. In the **Preset Name** field (10), enter a name for the PIP preset.

   NOTE: PIP preset names have a 16-character limit.
5. Click **Save** (11).
6. Click **Yes** to overwrite the previous PIP preset.

The settings are saved to the PIP preset location to be recalled later.

To recall a PIP preset:

1. From the **Preset Number** drop-down menu (9) select the preset to recall.
2. Click **Recall** (12) to open a drop-down menu from which to select one of the following:
   - **Recall: Input, Size & Position** (recalls main and PIP inputs as well as size and position settings of main and PIP windows)
   - **Recall: Size & Position Only** (recalls only size and position settings of main and PIP windows)

   A confirmation dialog box opens.
3. In the dialog box, click **Yes**.

   NOTE: Recalling a preset overwrites any adjustments to the current PIP settings.

Audio Settings Page

Using this page, each of the audio inputs can be configured, including setting the input format and the gain (for analog inputs). Also analog audio output format can be set and adjusted.

NOTES:

- Audio inputs 1 and 2 are disabled for DVS 605 and DVS 605 D models. They do not support analog audio.
- Input gain cannot be adjusted for digital audio.

Click this button 

to open the `Audio Configuration` page.

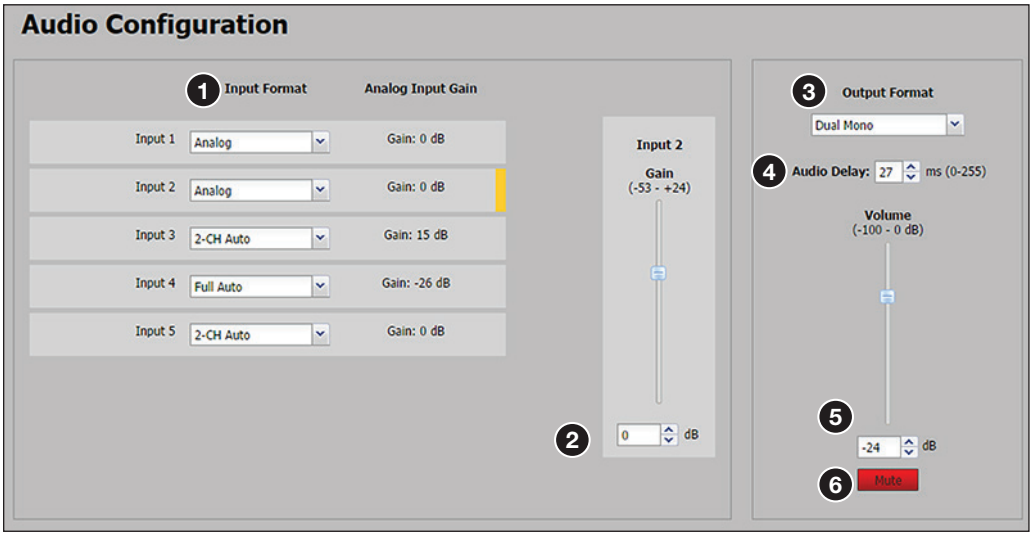


Figure 82. Audio Configuration Page

To configure audio inputs:

1. From the desired **`Input Format`** drop-down menu (see figure 82, ❶), select the format associated with the input.

   For inputs 1 and 2, available formats include:

   - **`None`**
   - **`Analog`** (audio models only)

   For inputs 3, 4, and 5, available formats include:

   - **`None`**
   - **`Analog`** (audio models only)
   - **`2-CH Digital`**
   - **`Full Digital`**
   - **`2-CH - Auto`** (audio models only)
   - **`Full - Auto`** (audio models only)

   NOTE: Auto modes use digital audio when it is present. When digital audio is not present the unit defaults to analog audio.

2. Click and drag the handle of the **`Gain`** fader, click the **`up`** and **`down`** arrows in the field below the fader, or enter a value in the field (❷).

   NOTES:

   - You can only adjust the gain and attenuation for an input that is in analog or Auto format. Gain only affects analog inputs.
   - Adjustments made to the gain and attenuation do not affect the digital audio.

To configure audio output format:

1. From the **Output Format** drop-down menu (see **figure 82**, ❸ on page 103), select the format of the audio output. Available formats include:
   - **Dual Mono**
   - **Stereo**
2. Set the audio delay by clicking the **up** and **down** arrows or entering a value into the **Audio Delay** field (❹). Audio delay can be set from 0 ms to 255 ms.

   NOTE: The DVS 605 automatically delays audio signals to compensate for internal video processing.
3. Click and drag the handle of the **Volume** fader, or click the **up** and **down** arrows, or enter a value in the field to adjust the analog audio output volume (❺).

   NOTE: The output volume of digital audio is not affected by changes made using the **Volume** fader.

To mute the output audio, click the **Mute** button below the volume fader (❻). The **Mute** button turns red.

Preset Management Page

This `Preset Management` page gives access to assigned input presets (see figure 83, ❶), user presets (❷), and PIP presets (❸). Each preset can be renamed, recalled, or cleared. A brief description of the settings contained within each preset type is given at the top of each list.

Click this button 

to open the `Preset Management` page.

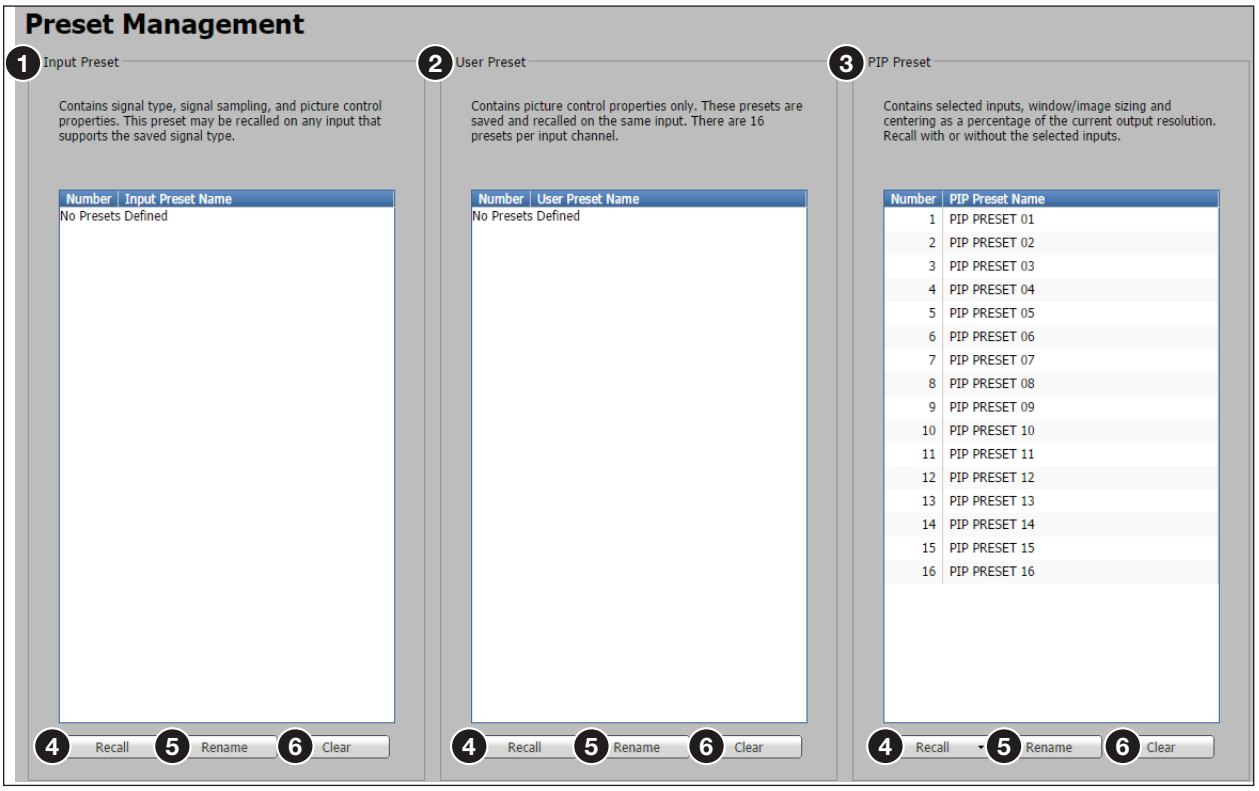


Figure 83. Preset Management Page

NOTE: The column order for the listed presets can be changed. For example, the preset name can be displayed to the left of the preset number.

To change column order, click a column title and drag and drop it to the left or right of the other column as desired.

To recall a preset:

1. Select the input preset (❶), user preset (❷), or PIP preset (❸) that is to be recalled.
2. Click the **`Recall`** button (❹) located in the same section of the screen.

   When clicking **`Recall`** in the `PIP Preset` panel, a drop-down menu opens. Select one of the following:

   - **`Recall: Inputs, Size & Position`**
   - **`Recall: Size & Position Only`**
3. In the dialog box, click **`Yes`**.

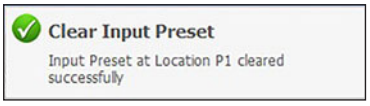
To rename a preset:

1. Select the input preset (❶), user preset (❷), or PIP preset (❸) that is to be renamed.
2. Click **`Rename`** (❺). The cursor moves into the **`Name`** field.
3. In the **`Name`** field, enter a unique name for the selected preset.
4. Press <**`Enter`**> on the keyboard. The preset name is saved.

To clear a preset:

1. Select the input preset (see **figure 83**, ❶ on page 105), user preset (❷), or PIP preset (❸) that is to be cleared.
2. Click the **Clear** button (❻) located in the same panel. A confirmation dialog box opens.
3. Click **OK**. If the preset is an input preset or a user preset, the preset is removed entirely from the list. If the preset is a PIP preset, it is restored to factory default.

   A dialog box opens confirming input clearance.



NOTE: A PIP preset cannot be cleared (deleted). It is restored to factory defaults.

Device Settings Page

This page (see figure 84) allows you to configure the device settings associated with audio follow (❶), IR control (❷), screen saver (❸), Auto Switch (❹), HDCP notification (❺), video and sync mute (❻), OSD input range (❼), and HDCP mode(❽).

Click this button 

to open the Device Settings page.

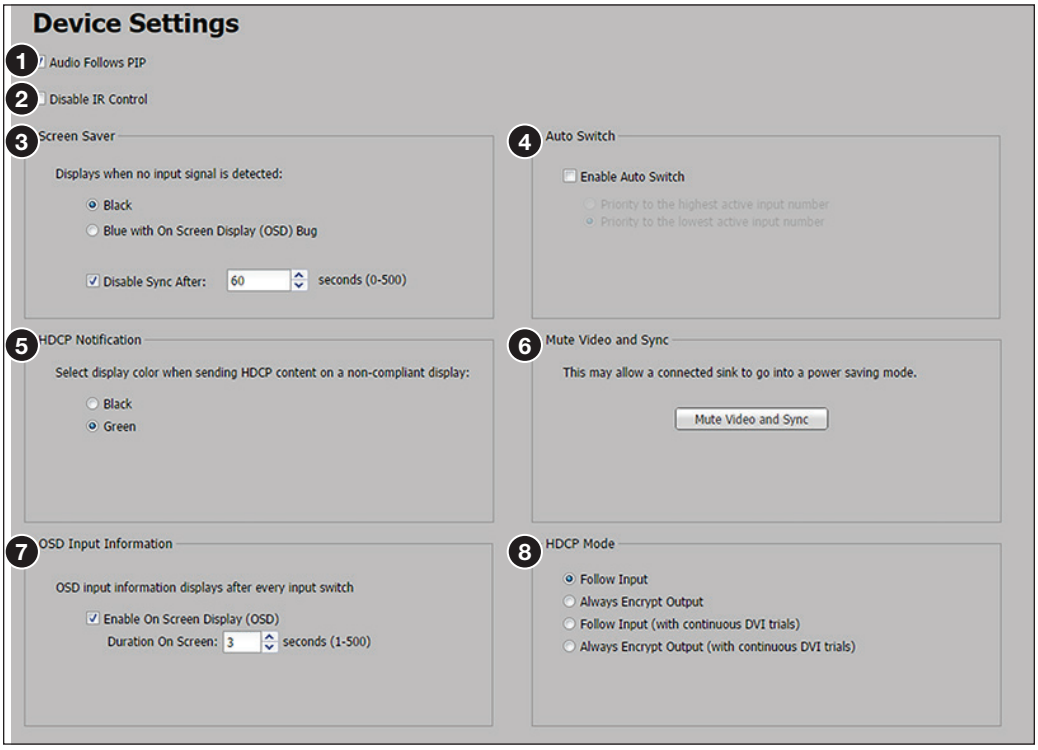


Figure 84. Device Settings Page

To set audio to follow the PIP input, select the **Audio Follows PIP** checkbox (see figure 84, ❶).

To set audio to follow the main input, clear the **Audio Follows PIP** checkbox .

To disable IR control, select the **Disable IR Control** checkbox (❷).

To re-enable IR control, clear the **Disable IR Control** checkbox.

Screen Saver

When no active video is detected on the selected input, the screen saver mode is activated. The output sync can be disabled after a user-set duration, which allows display devices to go into a low power, standby state.

To set the screen saver options:

1. Click the **Black** (default) or the **Blue with On Screen Display (OSD) Bug** radio buttons to enable the desired screen saver background color (see **figure 84**, ❸ on page 106).
   - **Black** — Mutes the video output to black for a set duration before disabling the output sync.
   - **Blue with On Screen Display (OSD) Bug** — Displays a blue background with a moving OSD bug that indicates `DVS 605: Input x No Signal` for a set duration before disabling the output sync.
2. Adjust the duration of the screen saver to either of the following:
   - No screen saver (never disable output sync), by clicking the **Never** radio button
   - To a user-defined duration (0-500 seconds), by clicking the radio button for the duration field and then click the **up** and **down** arrows. Alternatively enter a value in this field.

   NOTE: Setting this value to zero disables the output sync immediately when no active input is detected.

Auto Switch

When enabled, the auto-input switching priority can be set to either start with the highest active input or the lowest active input (see **Video Inputs** on page 2).

To enable auto-input switching:

1. Select the **Enable Auto Switch** checkbox (❹).
2. Select the desired priority option radio button from one of the following:
   - Priority to highest active input number
   - Priority to lowest active input number.

To disable the auto-input switching option clear the **Enable Auto Switch** checkbox.

HDCP Notification

HDCP notification indicates if HDCP content restrictions are preventing a video signal from passing to the output (❺).

When the **Black** option is selected, the output mutes to black if the connected display device is not HDCP compliant and an HDCP encrypted input has been selected.

When the **Green** option is selected, a green screen with `HDCP CONTENT` text is displayed on the output if the connected display device is not HDCP compliant and an HDCP encrypted input has been selected.

To select the display color, select the **Black** radio button or **Green** radio button.

Mute Video and Sync

When enabled, this option allows a connected display (sink) to go into power saving (standby) state when no signal is present (❻).

To enable this option, click the **Mute Video and Sync** button. The button turns blue to indicate the option is active.

To disable this option, click the **Mute Video and Sync** button. The button reverts to gray, indicating that the option is inactive.

OSD Input Information

The on-screen message is displayed for a user-defined duration (1-501 seconds) after an input switch.

NOTE: Setting this value to zero disables the on-screen display message.

To set the On Screen Display to display messages:

1. Select the **Enable On Screen Display** checkbox (see **figure 84**, ❼ on page 106).
2. To adjust the duration that messages are displayed on screen, click the **up** and **down** arrows or enter a value in the **Duration on Screen** field.

To disable the On Screen Display message, clear the **Enable On Screen Display** checkbox or set the duration to zero.

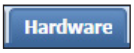
HDCP Mode

When enabled, the HDCP Mode can be set to either follow the current input with or without DVI trials, or always encrypt the output, with or without DVI trials.

To set the HDCP Mode, click the desired radio button (❽):

- **Follow Input** — Encrypts the output only when required by the selected input source.
- **Always Encrypt Output** — Always encrypts the output, regardless of the HDCP status of the selected input source.
- **Follow Input (with continuous DVI trials)** — Encrypts the output only when required by the selected input source. Use this setting when DVI sink devices initially pass HDCP encrypted content, but intermittently display a green HDCP notification screen after a power cycle or resuming from sleep mode.
- **Always Encrypt Output (with continuous DVI trials)** — Always encrypts the output regardless of the HDCP status of the selected input source. Use this setting when DVI sink devices initially pass HDCP encrypted content, but intermittently display a green HDCP notification screen after a power cycle or resuming from sleep mode.

Hardware Pages

Click the **Hardware** tab 

to open these pages.

The Hardware page options are:

- **Unit Information**
- **Device Name**
- **Connection**
- **Firmware Loader**
- **Exec/Power Mode**
- **Date and Time**
- **Password**
- **Reset Device**

Figure 85. Global Navigation Bar for the Hardware Pages

Unit Information Page

This page gives a non-configurable view of information about the connected unit. These include part number, model name and description, firmware version and build number, and the current internal temperature (in degrees Fahrenheit or Celsius) of the connected device. In addition, the page gives access to third party licensing information.

Click this button 

to open the page.

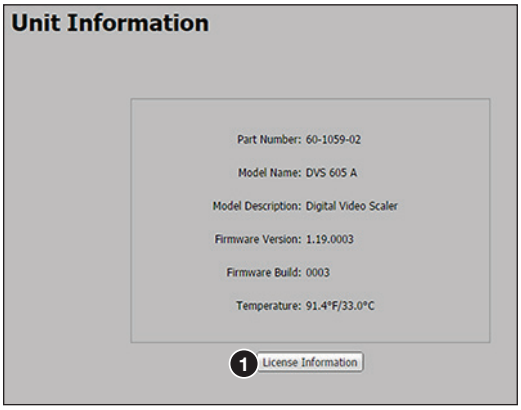


Figure 86. Unit Information Page

To view details about third-party packages and associated licensing, click the **License Information** button (see figure 86, ❶). The DVS 605 License Information dialog box (shown at right) opens (see **Licensed Third-Party Software Used in the DVS 605** on page 2 for a list of the software used).

To view a copy of a listed package license, click the link in the License column for the relevant package. This opens a copy of the package license.

Click **Close** to close the License Information dialog box (see image on right, ❶).

Device Name Page

This page allows the user to assign or change the connected device name.

Click this button 

to open the page.

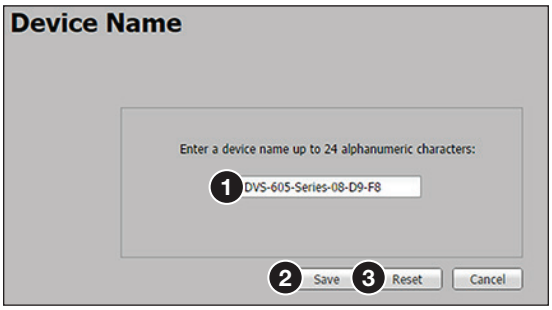


Figure 87. Device Name Page

To assign or change the name:

1. Enter a name for the device in the name field (see figure 87, ❶). This may be up to 24 alphanumeric characters in length with no spaces between characters. If an invalid name is entered, a red symbol appears to the right of the name field.
2. Click **Save** (❷). A Saved confirmation box briefly appears.

To reset the name of the device, click **Reset** (❸) in the dialog box. A name must be entered. The name field cannot be left blank.

Connection Settings Page

This page allows the user to adjust device settings for RS-232 (see figure 88, ❶) and Ethernet (❷) connections.

Click this button 

to open the page.

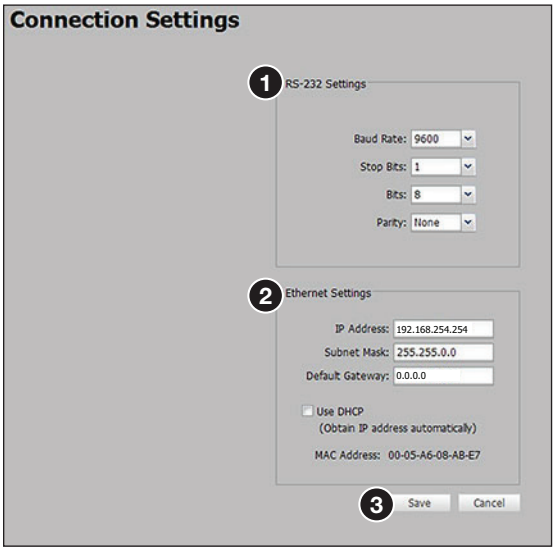


Figure 88. Connection Settings Page

RS-232 Settings

To configure the RS-232 settings (see **figure 88**, ❶ on page 110)**:**

1. From the **Baud Rate** drop-down menu, select the appropriate baud rate.
2. From the **Stop Bits** drop-down menu, select the number of bits used to indicate a byte.
3. From the **Bits** drop-down menu, select the number of data bits to transmit.
4. From the **Parity** drop-down menu, select the parity checking type.
5. Click **Save**.

Ethernet Settings

NOTE: The default setting is **DHCP set to OFF, IP address = 192.168.254.254.**

To configure the Ethernet settings for use with DHCP (❷)**:**

1. In the Ethernet Settings section, select the **Use DHCP** checkbox.
2. Click **Save** (❸). An IP address is automatically assigned to the device. Contact your IT administrator for more information.

To configure the Ethernet settings with a static IP address (❷)**:**

1. In the **IP Address** field, enter an IP address for the device.
2. In the **Subnet Mask** field, enter the subnet mask for the device.
3. In the **Default Gateway** field, enter the default gateway to be used.
4. Click **Save** (❸).

Firmware Loader Page

This page allows the user to update the device firmware.

Click this button 

to open the page.

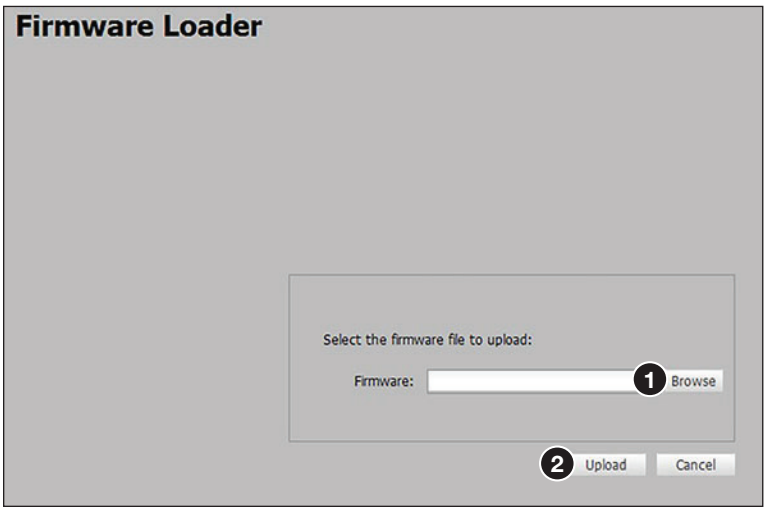


Figure 89. Firmware Loader Page

To update the device firmware:

1. Click **Browse** (see figure 89, ❶ on page 111). The Choose File to Upload window opens.
2. Browse to and select the firmware file to upload to the device. Valid firmware files have an EFF or ESF extension.

   NOTE: Current firmware updates can be downloaded onto your PC from the Firmware Download Center page of the Extron website.

3. Click **Open**. This closes the window and returns you to the Firmware Loader screen.
4. Click **Upload** (❷). An indicator displays the status and completion of the upload. The device reboots after upload is complete.

Executive/Power Mode Page

This page allows the user to set the executive mode (see figure 90, ❶) and power mode (❷) for the device.

Click this button 

to open the page.

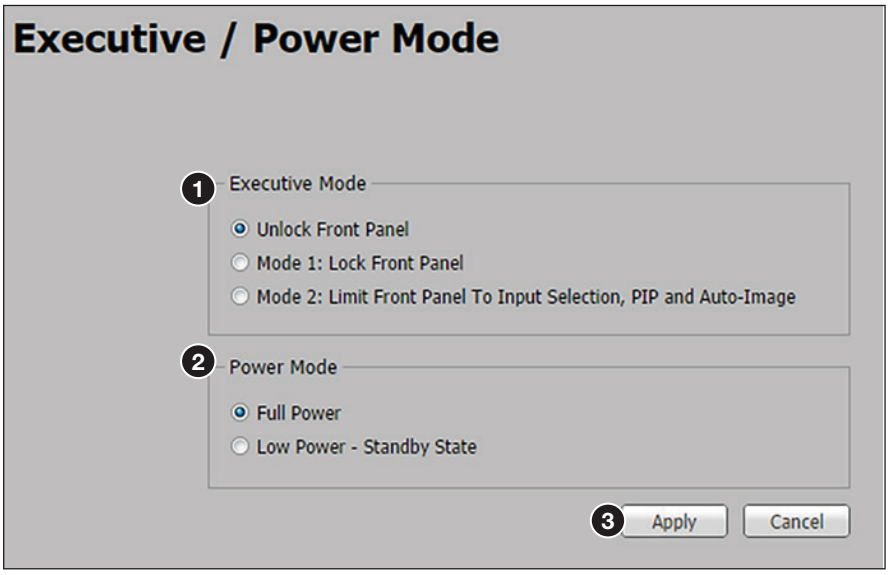


Figure 90. Executive/Power Mode Page

Executive Mode

Executive mode locks the front panel functions of the DVS 605. There are three executive mode options available (❶):

- **Unlock Front Panel** (default)
- **Mode 1: Lock Front Panel**
- **Mode 2: Limit Front Panel to Input Selection, PIP, and Auto-Image**

To set executive mode:

1. Click the radio button for the desired lockout option.
2. Click **Apply** (❸).

Power Mode

The low power-standby state disables all video input processing and all video outputs to save energy when the DVS 605 is not in use.

To set the power mode (see **figure 90**, ❷ on page 112)**:**

1. Click the radio button for the desired power mode (**`Full Power`** or **`Low Power - Standby State`**).
2. Click **`Apply`** (❸).

Date and Time Page

This page allows the user to set the date and time for the device.

Click this button 

to open the page.

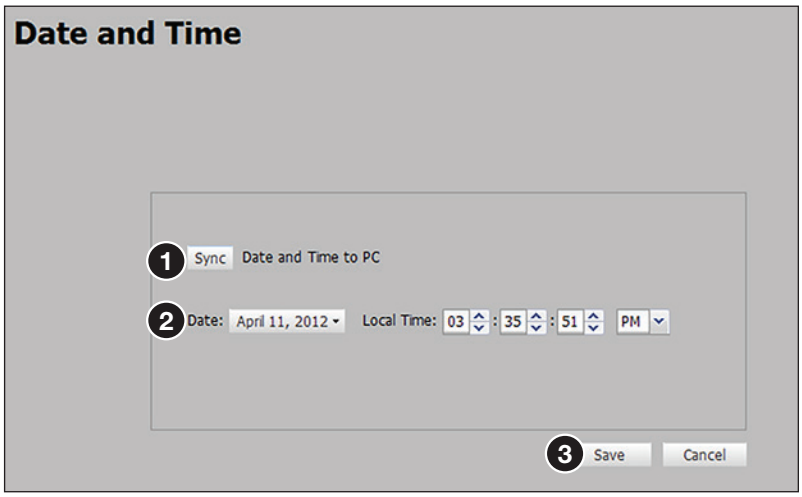


Figure 91. Date and Time Page

To set the date and time, either click the **`Sync`** button (see figure 91, ❶) to sync the device date and time to that of the connected PC or manually adjust the date and time using the **`Date`** drop-down calendar and the **`Time`** fields (❷). Click **`Save`** (❸) when done.

Password Page

This page allows the user to change an administrator and user password on the device.

Click this button 

to open the page.

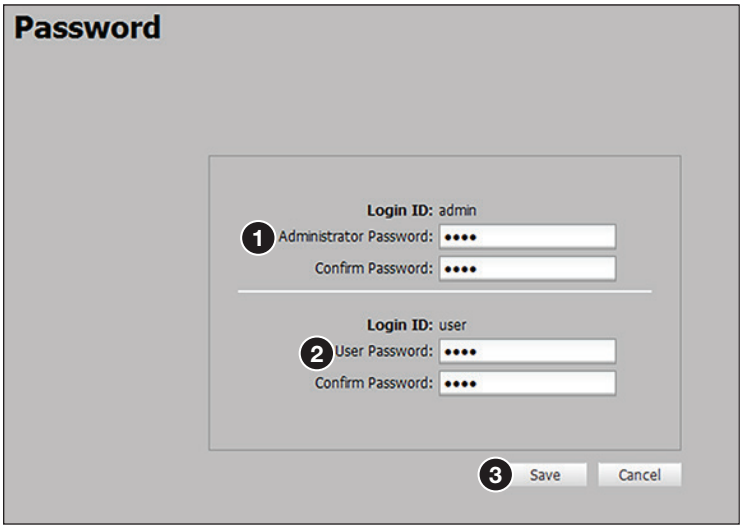


Figure 92. Password Page

Administrators and users can view any setting on the device. Administrators have the ability to make adjustments to any setting. Users can only make changes to the following:

- Input Selection
- PIP Preset Recall
- Auto-Image
- PIP On/Off
- Freeze
- User Preset Recall
- Auto + Fill
- Auto + Follow
- PIP Swap
- Video Mute
- Input Preset Recall
- Aspect Ratio
- Volume
- Audio Mute

NOTE: The DVS 605 is shipped password-protected. A user name entry is required for connection. Enter **admin** for administrator-level access or **user** for user-level access. These user names must be entered in lowercase characters. After entering the appropriate user name, enter the device serial number in the **Password** field.

If the device is reset back to default settings, there will be no passwords. New passwords need to be configured to secure the device.

To create or change an administrator password (see figure 92, ❶):

1. In the **Administrator Password** field, enter the desired administrator password.
2. In the **Confirm Password** field, re-enter the administrator password.
3. Click **Save** (❸).

To create the user password:

NOTE: A user password cannot be set until an administrator password has been entered.

1. In the **User Password** field, enter the desired user password (❷).
2. In the **Confirm Password** field, re-enter the user password.
3. Click **Save** (❸).

NOTE: When passwords are set, a notification to close and restart the browser appears.

Reset Device Page

This page allows the user to reset the device. Click this button 

to open the page.

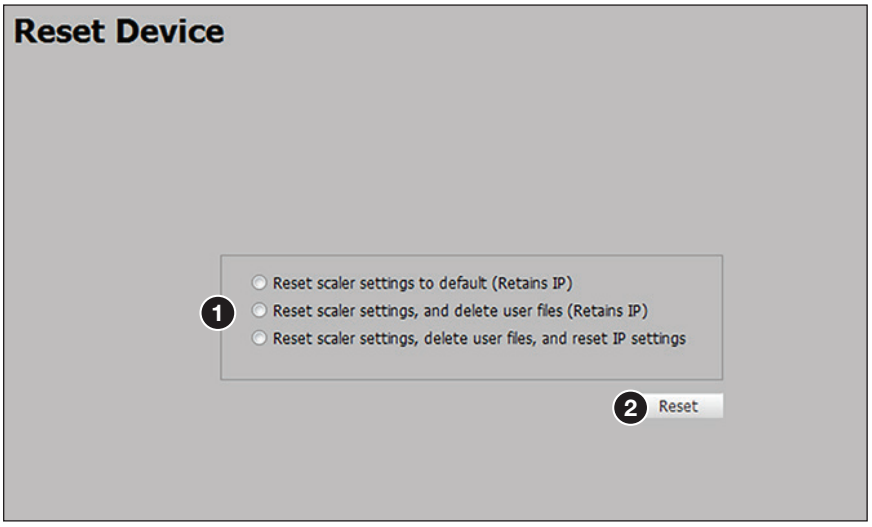


Figure 93. Reset Device Page

There are three reset options available (see figure 93, ❶):

- **`Reset scaler settings to default (Retains IP)`**
- **`Reset scaler settings, and delete user files (Retains IP)`**
- **`Reset scaler settings, delete user files, and reset IP settings`**

Depending on the selected reset option, different settings are cleared.

NOTE: A reset option must be selected in order to reset the device.

Reset scaler settings to default (Retains IP) — Resets the settings associated with input settings, the output image, EDID, PIP, and audio. This includes presets and auto memories, except Ethernet settings.

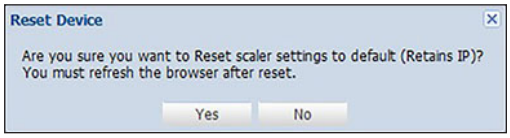
NOTE: Ethernet settings include the IP address, subnet mask, gateway IP address, device name, DHCP setting, and port-mapping.

Reset scaler settings, and delete user files (Retains IP) — Resets all settings on the device to factory defaults (deletes user files), except the Ethernet settings.

Reset scaler settings, delete user files, and reset IP settings — Resets all settings on the device to factory defaults (deletes user files) including the Ethernet settings.
Ethernet settings default to DHCP set to Off, IP address = 192.168.254.254.

To reset the device:

1. Click the desired radio button of the three reset options (❶).
2. Click **`Reset`** (❷). A confirmation dialog box opens.
3. In the dialog box, click **`Yes`** to continue with the reset, or **`No`** to abort the reset.



NOTE: If the device is reset back to default settings, there will be no password. A new password will need to be configured to secure the device (see **Password Page** on page 114).

Mounting

This section describes:

- **Tabletop Placement**
- **Rack Mounting**
- **Furniture Mounting**
- **Best Practices for Cleaning Your Extron Products**

If the DVS 605 is to be rack mounted, it is important to mount it before cabling it. Four rubber feet are included with the unit. Install the feet only if the unit is to be mounted on a tabletop (see Tabletop Placement below).

Tabletop Placement

For tabletop placement, install the adhesive rubber feet or pads (provided) onto the four corners of the bottom of the device.

Rack Mounting

UL Guidelines for Rack Mounted Devices

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the device 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 device in an environment compatible with the maximum ambient temperature (Tma = +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).

Consignes UL Pour le Montage en Rack

Les consignes UL (« Underwriters Laboratories ») suivantes concernent l'installation en rack d'un boîtier DVS :

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: +122°F, +50°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).

Rack Mounting the DVS 605

To rack mount the DVS 605, turn off or disconnect all equipment power sources and rack mount the DVS 605 unit using the pre-installed brackets (see figure 94).

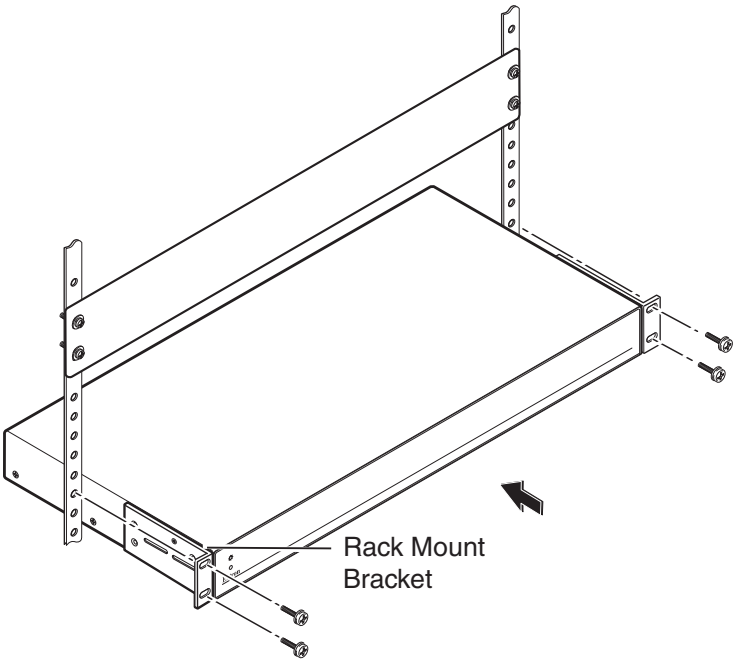


Figure 94. Rack Mounting the DVS 605

Furniture Mounting

For under-desk mounting, use an optional MBU 149 mounting kit (see figure 95, left) or a UTM 100 mounting kit (see figure 95, right).

To mount the device, follow the instructions supplied with the relevant mounting kit.

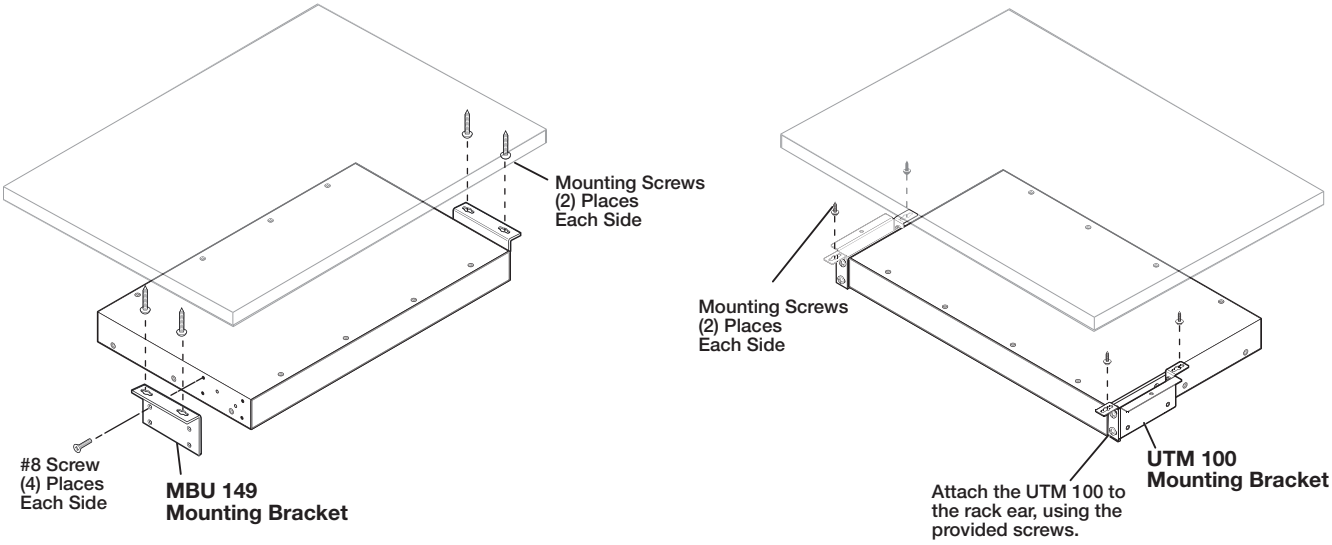


Figure 95. Furniture Mounting the DVS 605

Best Practices for Cleaning Your Extron Products

There may be times when it becomes necessary to clean your Extron product. Plastic surfaces and cosmetic finishes can be damaged by long term exposure to chemicals. Therefore, Extron recommends the following guidelines when cleaning our products.

All Extron products can be safely cleaned with:

1. 70% concentration or higher Isopropyl Alcohol
2. Disinfectant cleaners that:
   - Are non-ammonium based (for example, contains no ammonium chloride)
   - Contain 2% or less sodium hypochlorite (for example, 2% bleach, 98% water)

It is important to follow these general guidelines when cleaning:

1. If possible, unplug the device.
2. Spray the cleaner on a lint-free cloth until the cloth is damp.
3. Do not spray the cleaner directly onto the product.
4. Gently clean the product surface using the cloth.

Your health and safety are our top priority. Keeping devices clean, especially those in high-traffic environments and high-use applications, is a crucial step in minimizing the spread of infections. Please contact us if you have any questions about the guidelines or if you have a question about cleaning the product.

Extron Warranty

Extron warrants its powered products against defects in materials and workmanship for a period of three years from the date of invoice. In the event of malfunction during the warranty period, Extron will repair or replace a product to whatever extent it shall deem necessary to restore the product to proper operating condition.

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 non-Extron authorized modification to the product. 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.

Powered Warranty Exception

Everlast™ Power Supplies — Extron warrants Everlast power supplies against any defects in materials and workmanship for a period of seven years from the date of invoice. In the event of a malfunction during the warranty period, Extron will repair or replace the power supply to its original operating condition. Extron engineers will examine the returned product and determine whether the Everlast Power Supply Warranty or Powered Product Warranty applies.

Speakers — Extron warrants Flat Field®, SoundField®, SpeedMount®, Column Array, and System INTEGRATOR® speakers against any defects in materials and workmanship for a period of five years from the date of invoice.

Touchscreens — Extron warrants touchscreen display and overlay components against any defects in materials and workmanship for a period of one year from the date of invoice.

Annotator 300 — Extron warrants the Annotator 300 against any defects in materials and workmanship for a period of five years from the date of invoice.

Non-Powered Warranty Exception

Cable Cubby, Hideaway Surface Access Enclosures and Retractors — Extron warrants Cable Cubby cable access enclosures, HSA Hideaway Surface Access enclosures, and Retractor cable retraction modules for a period of three years from the date of invoice.

Active Cables and Active Adapters — Extron warrants active cables and active adapter cables for a period of three years from the date of invoice.

Cable Termination Tools and Dies — Extron warrants cable termination tools for a period of three years from the date of invoice, excluding the die.

Return Information

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.

NOTE: To assure the highest level of service, a return authorization number must be obtained from Extron before products are returned for service. Products must be shipped to Extron, prepaid along with proof of purchase **only** after obtaining a Return Authorization (RA) number from the Extron Customer Support department.

Please contact Extron to receive an RA (Return Authorization) number:

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		