

IN1806 and IN1808 Series


Scaling Presentation Switchers




Extron

Safety Instructions


Safety Instructions • English


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안전 지침 • 한국어

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ATTENTION:

- The Twisted Pair Extension technology works with unshielded twisted pair (UTP) or shielded twisted pair (STP) cables; **but to ensure FCC Class A and CE compliance, STP cables and STP Connectors are required.**
- La technologie extension paires torsadées fonctionne avec les câbles paires torsadées blindées (UTP) ou non blindées (STP). Afin de s'assurer de la compatibilité entre FCC Classe A et CE, les câbles STP et les connecteurs STP sont nécessaires.

NOTES:

- This unit was tested with shielded I/O cables on the peripheral devices. Shielded cables must be used to ensure compliance with FCC emissions limits.
- For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the [Extron Safety and Regulatory Compliance Guide](#) on the Extron website.

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VCCI-A

70 Volt Model

CAUTION: For MA 70 models, touching uninsulated amplifier terminals or wiring may result in an unpleasant sensation.

ATTENTION : Pour les modèles MA 70, veuillez ne pas toucher le câblage ou les bornes non isolées de l'amplificateur pour éviter toute sensation désagréable.

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.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

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.

TIP: A tip provides a suggestion to make working with the application easier.

Software Commands

Commands are written in the fonts shown here:

```
^AR Merge Scene,,0p1 scene 1,1 ^B 51 ^W ^C.0  
[01] R 0004 00300 00400 00800 00600 [02] 35 [17] [03]  
[Esc][X1]*[X17]*[X20]*[X23]*[X21]CE ←
```

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

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

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

Variables are written in slanted form as shown here:

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

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

From the **File** menu, select **New**.
Click the **OK** button.

Specifications Availability

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

Extron Glossary of Terms

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

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Introduction

This section provides general information about this guide and the Extron IN1806 and IN1808 Series. Topics in this section include:

- [About this Guide](#)
- [Product Description](#)
- [Features](#)
- [Control Methods](#)
- [Application Diagrams](#)
- [Licensed Third-Party Software Used in the Switchers](#)

About this Guide

This guide describes how to install, operate, and configure the IN1806 and IN1808 Series Seamless Presentation Switchers.

In this guide, the **model names** as listed on the next page refer to specific IN1806 and IN1808 Series models. The terms “scaler” and “switcher” are used interchangeably to refer to any of the IN1806 and all IN1808 models.

The following terms refer to groups of IN1806 and IN1808 Series models:

- “IN1808 base model” refers to the basic IN1808 containing no amplifier module.
- “Amplifier models” and “IPCP models” refer to IN1808 IPCP SA, the IN1808 IPCP Q SA, the IN1808 IPCP MA 70, and the IN1808 IPCP Q MA 70 models.

Product Description

The Extron IN1806 and IN1808 Series are seamless presentation switchers that support signal resolutions up to 4K @ 60 Hz at 4:4:4. The IN1806 has six inputs while the IN1808 Series each have eight. All models incorporate Extron-patented Vector 4K seamless scaling technology engineered for the most demanding applications. They feature DisplayPort, HDMI, and DTP2 inputs, an HDMI output, and a mirrored Extron DTP2 output extension to send video, audio, and control signals up to 330 feet (100 meters) over a shielded CATx cable. The IN1806 and IN1808 Series deliver excellent image quality, fast and reliable switching, Extron ProDSP audio processing, seamless video transition effects, logo keying, and HDMI loop-through.

The IN1806 and IN1808 Series also provide automatic switching, audio embedding and de-embedding, seamless transition effects, and logo keying. Designed for professional AV integration, the IN1806 and IN1808 Series can be controlled and configured via Ethernet, RS-232, and USB.

Amplifier models

- The **IN1808 IPCP SA** and the **IN1808 IPCP MA 70** models each have a built-in Extron IPCP Pro 355M Control Processor, and an integrated class D power amplifier.
- The **IN1808 IPCP Q SA** and the **IN1808 IPCP Q MA 70** models each have a built-in Extron IPCP Pro 355M Q xi Control Processor and an integrated class D power amplifier.

- The **IN1808 IPCP SA** and the **IN1808 IPCP Q SA** support stereo audio output from a 2 x 25 watts amplifier.
- The **IN1808 IPCP MA 70** and the **IN1808 IPCP Q MA 70** support mono audio output from a 100 watts amplifier.

Models

The presentation switchers are available in the following models:

Model	Description	Inputs	Outputs
IN1806	1U high	1 DisplayPort 5 HDMI	1 HDMI 1 DTP2/XTP/HDBT 1 HDMI Loop Out
IN1808	1U high	1 DisplayPort 5 HDMI 2 DTP2/XTP	1 HDMI 1 DTP2/XTP/HDBT 1 HDMI Loop Out
IN1808 IPCP SA IN1808 IPCP Q SA	Stereo amplifier model 2U high	1 DisplayPort 5 HDMI 2 DTP2/XTP	1 HDMI 1 DTP2/XTP/HDBT 1 HDMI Loop Out
IN1808 IPCP MA 70 IN1808 IPCP Q MA 70	70 V mono amplifier model 2U high	1 DisplayPort 5 HDMI 2 DTP2/XTP	1 HDMI 1 DTP2/XTP/HDBT 1 HDMI Loop Out

Integrated Digital Twisted Pair Extension

The DTP2/XTP inputs and DTP2/XTP/HDBT outputs are proprietary signals that are created within any of the Extron DTP Extender systems and transmitted over a single shielded twisted pair (STP) cable.

Depending on the range of the transmitting or receiving device, the twisted pair (TP) inputs and outputs can each travel up to 330 feet (100 meters) without a loss of signal integrity. They also support IR (output only) and RS-232 insertion, and dedicated universal asynchronous receiver/transmitters (UARTs).

Shielded twisted pair cabling with solid center conductor sizes of 24 AWG or better is recommended for optimal performance.

NOTE: Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.

- **Input** — The IN1808 Series can receive signals from a remote DTP or DTP2 transmitter (such as the DTP T USW 333) at a conference table, lectern, or wall. It can also be integrated into an XTP CrossPoint matrix switcher system.
- **Output** — The IN1806 and IN1808 Series can transmit to a DTP or DTP2, XTP, or HDBaseT receiver or directly to an HDBaseT enabled display device. It can also be integrated into an XTP CrossPoint matrix switcher system.
- **Power over DTP** — The IN1806 and IN1808 Series can send power to selected DTP or DTP2 endpoints over the same shielded CATx cable, streamlining system design and installation.

DTP transmitters and receivers are available in compact, low-profile enclosures, and in decorator-style wallplate and floorbox versions to suit the installation requirements of a specific application.

RS-232 and IR signal insertion

The DTP2 inputs and output support bidirectional Ethernet to RS-232 insertion. Ethernet insertion allows you to employ Ethernet drivers from either the local controller or an external controller (IPCP models only) connected on the IP network.

In addition, switcher parameters can be controlled via SIS commands inserted over DTP input or output connections.

IR output signals can be inserted from a control system and transmitted over the single shielded CATx cable together with the video and audio, enabling control of a source or display.

Matrix switcher integration

In addition to supporting DTP endpoints, the IN1806 and IN1808 Series can be integrated into an XTP CrossPoint matrix switcher system. This enables facility-wide AV system applications with a centralized AV signal distribution infrastructure, as well as several presentation spaces with local AV switching and processing.

Audio Integration Capabilities and Available Power Amplifiers

The IN1806 and IN1808 Series can also serve as the central component for audio system integration. It includes eight-input audio switching, two mic/line inputs with phantom power, HDMI audio embedding and de-embedding, and Extron ProDSP with mixing, ducking, tone adjustments, and more. Audio configuration features and options can be accessed through the Product Control Software (PCS) and the on-screen display (OSD).

The IN1808 Series are available with a choice of integrated power amplifiers.

IN1808 IPCP SA models deliver stereo power amplification with 50 watts rms per channel into 4 ohms or 25 watts rms per channel into 8 ohms, while IN1808 IPCP MA 70 models provide mono 70 volt amplification with 100 watts rms output.

Features

- **Integrates DisplayPort, HDMI, and audio sources into presentation systems** — The IN1806 and IN1808 Series provide centralized switching for a wide range of AV sources.
- **DTP2, DisplayPort, and HDMI inputs** — The IN1806 and IN1808 Series features one DisplayPort, five HDMI, one HDMI loop-through output selectable for any input. In addition, the IN1808 Series has two DTP2/XTP inputs.
- **DTP2 and HDMI outputs** — The IN1806 and IN1808 Series feature one DTP2 and one mirrored HDMI output.
- **Advanced Extron Vector 4K scaling engine** — The Vector 4K scaling engine is specifically designed for critical-quality 4K imagery, with best-in-class image upscaling and downscaling.
- **Supports signal resolutions up to 4K @ 60 Hz with 4:4:4 color sampling.**
- **Logo image keying and display** — A logo graphic can be positioned and keyed over the live video output. Logo graphics in BMP, GIF, JPG, PNG, or TIFF format may be uploaded to the unit. Full screen images up to 4K resolution can also be displayed to eliminate loss of video between presentations.
- **Selectable seamless switching transitions** — Seamless freeze and cut, freeze and fade, cut through black, and fade through black transition effects are available.

- **Auto-switching between inputs** — Auto-switching allows for intuitive operation in collaboration spaces. Multiple switching priority modes are available, including last-connected input and user-selectable priority.
- **Integrated DTP2 extension supports transmission of 4K/60 video, audio, and control up to 330 feet (100 meters) over a shielded CATx cable.**
- **HDCP 2.2 compliant** — Ensures display of content-protected 4K video media and maintains interoperability with earlier versions of HDCP.
- **Integrated audio digital signal processor with ProDSP 64-bit processing** — The IN1806 and IN1808 Series feature 64 bit floating point audio DSP processing, which maintains very wide dynamic range and audio signal transparency to simplify gain stage management while reducing the possibility of DSP signal clipping.
- **Library of enhanced Extron Certified device drivers** — Device drivers allow Extron products to control various display and source devices, such as projectors, flat-panel displays, and Blu-ray players. Extron has produced fully tested Ethernet, serial, and IR device drivers.
- **Supports DisplayPort Single Stream Transport (SST) data rates up to 21.6 Gbps.**
- **Supported HDMI 2.0 specification features include data rates up to 18 Gbps, Deep Color, and HD lossless audio formats.**
- **Stereo audio embedding and de-embedding** — Analog audio signals can be embedded onto the DTP2 and HDMI outputs, and embedded two-channel PCM audio can be extracted to the analog outputs, or multi-channel bitstream formats can be passed to the DTP2 and HDMI outputs.
- **RS-232 insertion from the Ethernet control port** — Saves system resources and simplifies installation by enabling a control processor to access remote RS-232 devices over Ethernet.
- **Over TP Serial Device control** — Switcher parameters can be controlled via SIS commands inserted over DTP input or output connections.
- **Displays user-supplied images for screen saver, corporate branding, logo insertion, and HDCP notification** — Custom user-loaded images can be displayed as screen savers after a predefined duration of inactivity at the video input, or whenever the input is disconnected between presentations. User-supplied images can also be displayed for HDCP Visual Confirmation, whenever HDCP-encrypted content is transmitted to a non-HDCP compliant display.
- **CEC - Consumer Electronics Control Capability** — Standard, built-in CEC commands can be triggered to control displays or other AV devices connected to the HDMI or DTP2 outputs. The ability to control specific functions, such as power on/off, input selection, or volume level, is dependent on implementation by the device manufacturer.
- **Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.**
- **Compatible with CATx shielded twisted pair cable** — The IN1806 and IN1808 Series supports a maximum transmission distance of 330 feet (100 meters) for all compatible resolutions when used with CATx shielded twisted pair cable.
- **Remote powering of select DTP transmitters and receivers** — The IN1806 and IN1808 Series can provide power to select DTP or DTP2 transmitters and receivers over the twisted pair connections, eliminating the need for separate power supplies at the remote units.
- **Accepts additional analog stereo audio** — The IN1806 and IN1808 Series supports stereo analog audio signals for simultaneous transmission over the same shielded twisted pair cable.

- **RJ-45 signal and link LED indicators for DTP port** — Provides a means for validating signal flow and operation, allowing quick identification of connectivity issues.
- **User-selectable HDCP authorization for DTP2 and HDMI inputs** — Allows inputs 2 through 6 or 2 through 8 to appear HDCP compliant or non-HDCP compliant to the connected source, which is beneficial if the source automatically encrypts all content when connected to an HDCP-compliant device. Protected material is not passed in non-HDCP mode.
- **Key Minder continuously verifies HDCP compliance for quick, reliable switching** — Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.
- **Comprehensive EDID management** — Use PCS software to access EDID Minder for setting video input EDID, capturing EDID from connected displays, or uploading custom EDID files. Proper EDID management ensures that sources and displays are easily integrated into a system resulting in optimized system operation. Freely downloadable EDID Manager 2.0 software is available for advanced EDID editing and creating custom EDID files.
- **EDID Minder automatically manages EDID communication between connected devices** — EDID Minder ensures that the source powers up properly and reliably outputs content for display.
- **SpeedSwitch Technology provides exceptional switching speed for HDCP-encrypted content.**
- **Supports custom EDID and output resolutions** — User-defined output resolutions can be supported by uploading custom EDID files, or capturing EDID from a display or other destination device.
- **HDCP authentication and signal presence confirmation** — Provides real-time verification of HDCP status for each digital video input and output. This allows for simple, quick, and signal and HDCP verification through RS-232, USB, or Ethernet, providing feedback to a system operator or helpdesk support staff.
- **HDCP visual confirmation** — When HDCP-encrypted content is transmitted to a non-HDCP compliant display, a full screen green signal is sent to the display for immediate visual confirmation that protected content cannot be viewed on that display.
- **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.
- **Motion-adaptive deinterlacing for signals up to 1080i** — Advanced deinterlacing for all interlaced signals up to 1080i delivers optimized image quality.
- **Automatic 3:2 and 2:2 pulldown detection** — Advanced film mode processing techniques that help maximize image quality for content sources that originated from film.
- **Auto-Image setup** — When activated, the unit automatically optimizes the image by analyzing and adjusting to the video input signal. This can save time and effort in setting up a newly connected source, particularly in presentation environments where different guest presenter laptops with various output resolutions will be connected.
- **Auto Input Memory** — When activated, the unit 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.
- **Input presets** — Memory presets are available to store and recall optimized image settings.

- **Output muting control** — The video and audio output may be muted independently.
- **Image freeze control** — A live image can be frozen using RS-232, USB, or Ethernet control.
- **On-screen menus** — Intuitive on-screen menus allow for easy system setup using the front panel controls. Key parameters such as input and output video formats are conveniently grouped on the initial **Quick Setup** screen, while additional screens provide full control over the other functions and settings of the unit.
- **Picture controls for brightness, contrast, detail, horizontal and vertical sizing and positioning, and overscan.**
- **Internal video test patterns and pink noise generator for calibration and setup** — The IN1806 and IN1808 Series provides several video test patterns and audio pink noise to facilitate proper system setup and calibration of display devices.
- **HDMI to DVI interface format correction** — Automatically enables or disables embedded audio and InfoFrames, and sets the correct color space for proper connection to HDMI and DVI displays.
- **Automatic color bit depth management** — Automatically adjusts color bit depth based on the display EDID, preventing color compatibility conflicts between source and display.
- **Audio file playback** — Up to 16 pre-recorded messages may be stored and played back over analog and embedded audio outputs.
- **Audio input gain and attenuation** — Gain or attenuation can be adjusted for the audio input to eliminate noticeable differences when switching between sources.
- **Two mic/line inputs with 48 volt phantom power** — Two mic or line level audio sources can be independently mixed with program audio. Selectable 48 volt phantom power allows the use of condenser microphones.
- **Two independent line inputs** — Two line level audio sources, or a single audio source such as a conferencing codec, can be independently mixed with program and mic audio.
- **Mic ducking** — Automatically reduces program audio when a microphone or line level incoming audio signal is detected, replacing the need for a separate audio ducking processor.
- **Studio grade 24 bit/48 kHz analog-to-digital and digital-to-analog converters** — Professional converters fully preserve the integrity of the original audio signal.
- **Low latency DSP processing** — The IN1806 and IN1808 Series features very low, deterministic latency from input to output, regardless of the number of active channels or processes. This keeps audio in sync with video, and prevents distractions to presenters or performers resulting from delayed live audio.
- **Group masters** — The group master volume range can be limited using soft limits to maintain optimal minimum and maximum levels when using external volume control. This prevents operators from over or under-adjusting levels when using Ethernet, USB, or RS-232 control.
- **Soft limits provide optimal group master adjustment range** — The group master volume adjustment range can be limited to maintain optimal minimum and maximum levels when using external volume control. This prevents operators from over or under-adjusting levels. The DSP Configurator Software provides quick adjustment of limits from the **Group Controls** screen.
- **Audio switching transitions** — The audio output level automatically ramps down and then ramps up to match the video during switching transitions.

- **Integrated audio delay** — The audio output is automatically delayed to compensate for latency introduced by the video processing.
- **Supports multiple embedded audio formats** — The IN1806 and IN1808 Series is compatible with a broad range of multi-channel audio signals, providing reliable operation with HDMI sources.
- **Output Standby Mode** — The IN1806 and IN1808 Series 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.
- **Power Save Mode** — The IN1806 and IN1808 Series can be placed in a low power standby state to conserve energy when not in use.
- **Front panel security lockout** — This feature locks out all front panel functions. All functions however, are available through Ethernet, USB, or RS 232 control.
- **Ethernet monitoring and control** — Enables control and proactive monitoring over a LAN or WAN.
- **Built-in web pages** — Enables the use of a standard browser for device monitoring and troubleshooting over an intuitive Web interface.
- **RS 232 control port** — Enables the use of serial commands for integration into a control system. Extron products use the Simple Instruction Set (SIS) command protocol, a set of basic ASCII commands that allow for quick and easy programming.
- **Front panel USB configuration port** — Enables system configuration without the need to access the rear panel.
- **Front panel LED indicators for signal presence, HDCP status, and power** — Provide visual indication of system status for real-time feedback and monitoring of key performance parameters.
- **Easy setup and commissioning with the Extron Product Configuration Software (PCS)** — Configure multiple products using a single software application.
- **Rack-mountable metal enclosure** — The standard IN1806 and IN1808 Series features a 1U, full rack width metal enclosure. Models with a built-in power amplifier and control processor are housed in a 2U, full rack width metal enclosure.
- **Includes LockIt HDMI cable lacing brackets**
- **Internal Extron Everlast power supply** — Provides worldwide power compatibility, with high reliability and low power consumption for reduced operating cost. The Extron Everlast Power Supply is covered by a 7-year parts and labor warranty.

Additional Features of the IN1808 Series IPCP Models

- **Integrated IPCP Pro control processor** — A built-in IPCP Pro 355M control processor (IN1808 SA and MA 70 models) or a built-in 355M Q xi control processor (IN1808 IPCP Q SA and IPCP Q MA 70 models) enables complete AV system control.
- **Energy efficient Class D stereo or mono amplifier: 2 x 50 watts @ 4 ohms, 2 x 25 watts @ 8 ohms, or 1 x 100 watts @ 70 volts** — An Extron exclusive Class D amplifier with Class D Ripple Suppression (CDRS), an Extron patented technology that provides a smooth, clean audio waveform and high signal fidelity. CDRS eliminates the high frequency switching ripple characteristic of Class D amplifiers, a source of RF emissions which can interfere with sensitive AV equipment such as wireless microphones.
- **Support TouchLink Pro touchpanels, NPB Network Button Panels, and eBUS button panels.**

- **Integrated three-port AV LAN switch allows AV devices to be isolated from the corporate network** — Enable local control of AV devices connected to the AV LAN switch while isolating the AV LAN network traffic from outside interference or intrusion.
- **AV LAN ports** — Allow Extron devices on the AV LAN to receive firmware updates and be remotely monitored, managed, and controlled through Extron GlobalViewer Enterprise. AV LAN ports permit only communications from the Ethernet port for remote management and firmware updates to Extron devices.
- **Support secure industry standard communications protocols** — Use industry standard communication protocols, including HTTP (insecure), HTTPS, SSH, SFTP, SMTP, NTP, Discovery Service, DHCP, DNS, ICMP, and IPv4.
- **Two bidirectional RS-232 ports with software handshaking** — Captive screw serial ports can control two RS-232 devices.
- **One bidirectional RS-232 port with hardware and software handshaking** — Captive screw serial port can communicate with one RS-232 serially controlled device.
- **Two IR/Serial ports for one-way control of external devices.**
- **Four Digital I/O ports** — Allows for interfacing with other systems in the room.
- **Four relays for controlling room functions** — Enable control of lighting, screen settings, and other device functions.
- **eBUS port for connecting eBUS button panels and accessories.**
- **Ethernet monitoring and control on each Ethernet port** — Manage, monitor, and control AV devices using a standard Ethernet network.
- **DHCP server for AV LAN** — Automatically distributes IP addresses and network configuration parameters for AV devices connected to the local AV LAN, which streamlines system setup and management.
- **Support Building Management System (BMS) protocols such as BACnet, KNX, and DALI** — These protocols allow for centralized monitoring and control of mechanical and electrical systems that include HVAC, lighting, power, fire, and security.
- **Support LinkLicense** — Extron LinkLicense unlocks features that add convenience, expand system functionality, and enhance the capabilities of Extron products.
- **Support 10/100/1000Base-T.**
- **Support Ethernet-controllable devices** — Allow for control of multiple Ethernet enabled AV devices such as displays, switchers, and sources.
- **Automatic clock synchronization allows touchpanel to display the accurate time and date.**
- **Support control system synchronization** — Synchronization allows users to retain and recover the state of their configured endpoints in case of network or power failure.
- **Multi-level password protection** — Allows security to be set based on user roles.
- **Create controller groups** — Allows multiple IP Link Pro control processors to be grouped together to function as one when configured with Global Configurator Professional.

Control Methods

Control the IN1806 and IN1808 Series scalers using one or more of the following methods:

- The front panel controls and the on-screen display (OSD) menu (see [Using the On-Screen Menu System](#) on page 27).
- A computer, a touch screen panel, or any other device that sends and receives serial communications through the USB, RS-232, or Ethernet port. Use the Extron DataViewer utility on the connected device to enter SIS commands (see [SIS Configuration and Control](#) starting on page 52).
- The Extron Product Configuration Software (PCS) on a computer with a Windows® operating system (see [Configuration Software](#) starting on page 96 and the *IN1806 and IN1808 Series PCS Help File*).

Application Diagrams

The following diagrams show examples of typical applications for the IN1806 and IN1808.

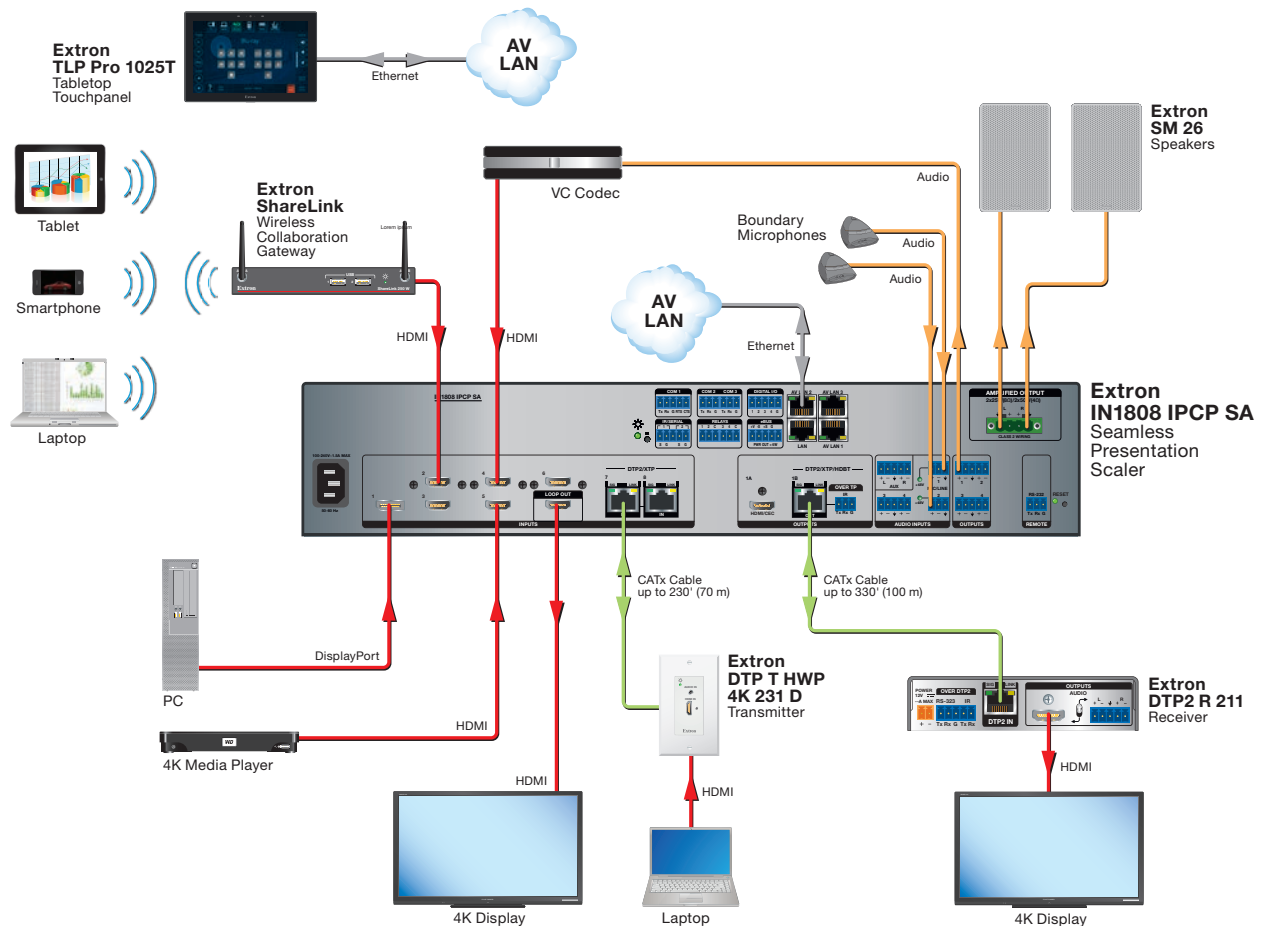


Figure 1. IN1808 IPCP SA Application Example

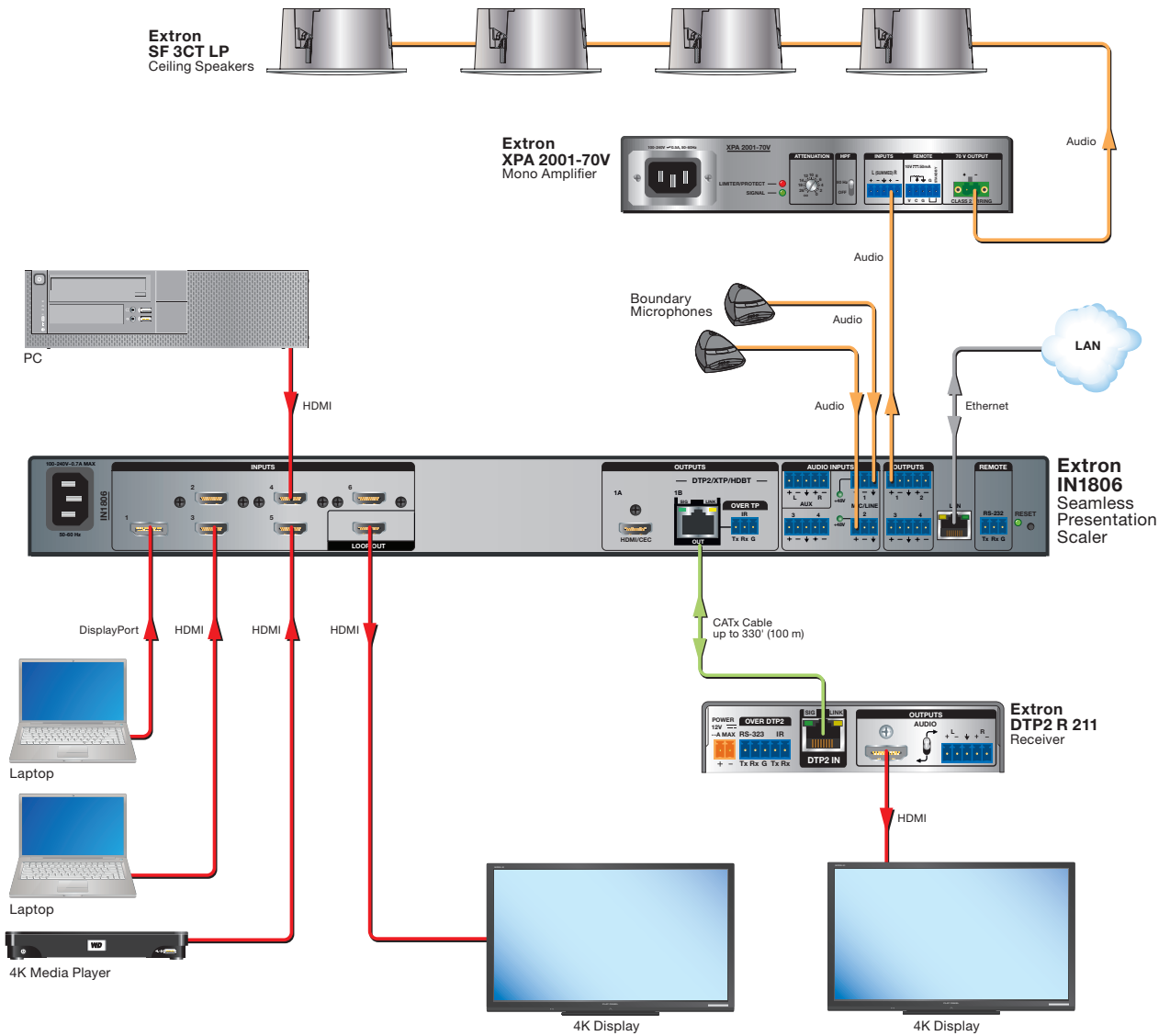


Figure 2. IN1806 Application Example

Licensed Third-Party Software Used in the Switchers

The switchers use various licensed third-party software packages during operation. To view details about third-party packages and associated licensing, see the following:

- **PCS** — To view a copy of a listed package license, select **About PCS** from the PCS menu. Click the **Licenses** button in the **About Extron PCS** dialog box, then click the View PDF link beside the desired license. A copy of the package license opens in a separate page. See the *IN1806 and IN1808 Series PCS Help File* for more information.
- **IPCP Pro 355M/355M Q web page** — For IN1808 Series IPCP models, you can view details about third-party packages and associated licensing used by the IPCP control processor by clicking the **License Information** button on the internal web pages of the IPCP Pro 355M control processor. A License Information window opens. To view a copy of a listed package license, in the License Information window, click the link in the License column for the relevant package. This opens a copy of the package license in a separate window. A list of licenses is also available in the *Pro Series Control Product Network Ports and Licenses Guide* at www.extron.com.

The following table lists the licensed third-party software packages used by the scalers.

NOTE: Licensed third-party software packages used by the scalers are subject to change without notice.

Licensed Third-party Software Used in IN1806 and IN1808 Series Models			
Package	License	Package	License
avahi	GNU LGPL v2.1	lighttpd	BSD
bstrib	BSD	Linux	GNU GPL v2
busybox	GNU GPL v2	lua	MIT
bzip2	BSD	lua-cjson	MIT
cjson	MIT	luafilesystem	MIT
expat	MIT	luasocket	MIT
ExtJS 4	Sencha Commercial License	luastruct	MIT
fcgi	fcgi	mttd	GNU GPL v2
freetype	FreeType License	ncurses	MIT
gnupg-1.4.7	GNU GPL v2	openssh	BSD
gpgme	GNU LGPL	openssl	OpenSSL
ifplugd	GNU GPL	PAM	BSD
jpeg	libjpeg	pcre	BSD
libassuan	GNU LGPL	psmisc	GNU GPL v2
libcgicc 3.2.3	GNU LGPL v2.1	qt	GNU LGPL v2.1
libcurl	ICS	socat	GNU GPL v2
libdaemon	GNU GPL v2.1	spawn-fcgi	BSD
libdnet	BSD	sqlite	public domain
libgpg	GNU LGPL v2.1	xinetd	custom
libpcap	BSD	zlib	zlib
libpng	libpng license		

Installation

This section contains information on how to connect cables to the IN1806 and IN1808 Series models. Topics in this section include:

- [Installation Overview](#)
- [Rear Panel Connections](#)
- [Connection Details](#)

Installation Overview

1. Turn off or disconnect all related equipment. Ensure that video sources and output displays are all turned off and disconnected from the power source.
2. Mount the scaler (see [Mounting](#) on page 115).
3. Connect video and audio input sources (see "Rear Panel Connections," starting below).
4. Connect video and audio output devices (see "Rear Panel Connections").
5. Connect desired control devices (see "Rear Panel Connections").
6. Connect a power source to the scaler (see [AC Power connector](#) on page 14).
7. Configure the scaler using by any of the following methods:
 - Front panel (see [Operation](#) starting on page 24)
 - PCS (see [Configuration Software](#) starting on page 96 to download the software, and see the *IN1806 and IN1808 Series PCS Help File* to configure the system)
 - SIS commands (see [SIS Configuration and Control](#) starting on page 52)

Rear Panel Connections

Figures 3 through 6 show the rear panels of the IN1806 and the three IN1808 Series models (see the [legend](#) on the next page).

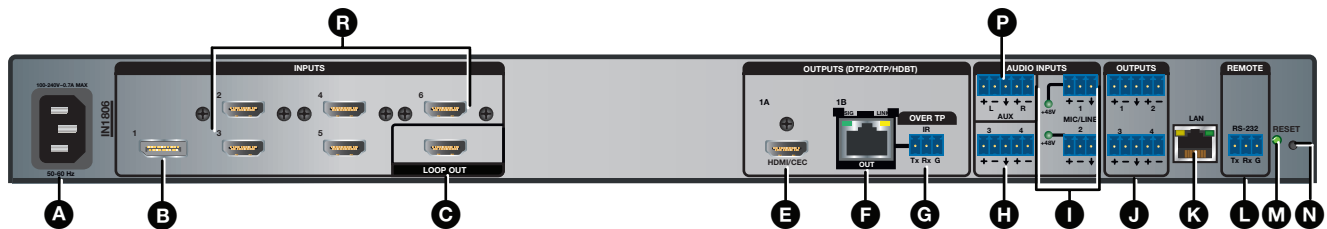


Figure 3. IN1806 Rear Panel

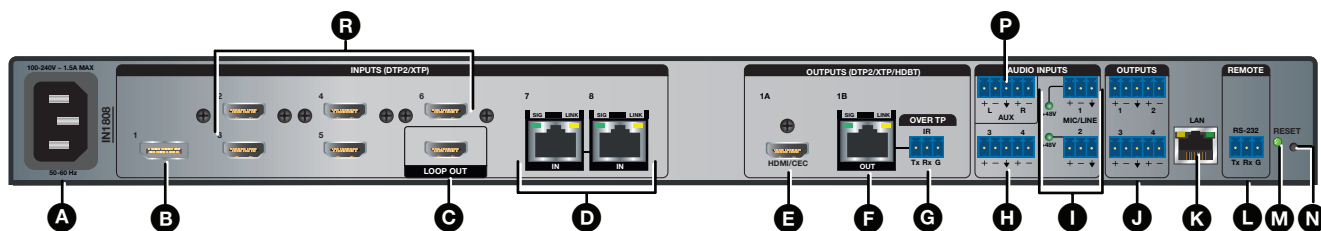


Figure 4. IN1808 Base Model Rear Panel

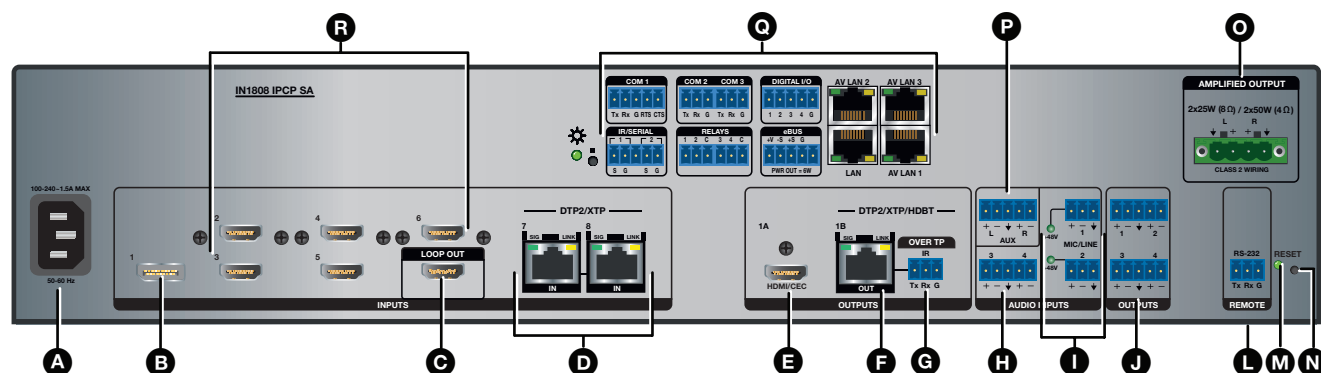


Figure 5. IN1808 IPCP SA Rear Panel

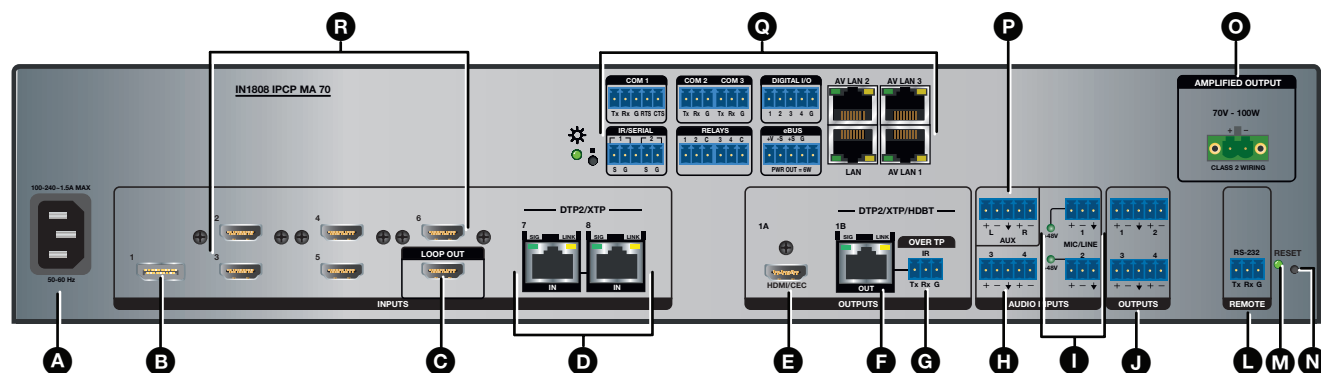


Figure 6. IN1808 IPCP MA 70 Rear Panel

- A** AC power connector
- B** DisplayPort input connector — Input 1
- C** HDMI (with CEC) Loop Out connector
- D** DTP2/XTP input connectors — Inputs 7-8 (IN1808 Series only)
- E** HDMI/CEC output connector — Output 1A
- F** DTP2/XTP/HDBT output connector (with CEC) — Output 1B
- G** Over TP IR pass-through connector
- H** Analog audio line input connectors 3 and 4
- I** Analog audio Mic/Line input connectors 1 and 2
- J** Analog audio line output connectors 1 through 4
- K** LAN connector (IN1806 and IN1808 base model only)
- L** Remote RS-232 connector
- M** Reset LED
- N** Reset button
- O** Amplified audio output connector (IPCP models only)
- P** Aux line audio input connector
- Q** IPCP control processor (IPCP models only)
- R** HDMI input connectors — Inputs 2 - 6

- A AC power connector** — Connect a standard IEC power cord (provided) from a 100 to 240 VAC, 50-60 Hz power source to this connector (see [figure 3](#) on page 12 and [figures 4 through 6](#) on the previous page).
- B DisplayPort input connector (input 1)** — Connect a DisplayPort source to this female DP connector (see [figure 3](#) and [figures 4 through 6](#)).
- C HDMI (with CEC) Loop Out connector** — Connect a monitor to this buffered loop out connector (see [figure 3](#) and [figures 4 through 6](#)). This output can be tied to any input via SIS (see [SIS Configuration and Control](#) starting on page 52) or PCS (see the *IN1806 and IN1808 Series Help File*).
- D DTP2/XTP input connectors (inputs 7 and 8)** — (IN1808 Series only) Connect one or two DTP transmitters to the DTP2/XTP RJ-45 input connectors 7 and 8 (see [figures 4 through 6](#) on the previous page). These connectors also allow for remote powering of DTP transmitters.

You can configure the TP inputs for DTP or XTP mode via SIS commands (see the [Twisted Pair Protocol commands](#) starting on page 80), the on-screen display (see [Input Submenu](#) on page 34), or PCS (see the *IN1806 and IN1808 Series Help File*). For cable wiring and recommendations, see [Twisted Pair Recommendations for DTP and HDBaseT Communication](#) on page 22.

ATTENTION:

- Do not connect these connectors to a computer or telecommunications network.
- Ne connectez pas ces ports à des données informatiques ou à un réseau de télécommunications.
- DTP2 remote power is intended for indoor use only. No part of the network that uses DTP2 remote power should be routed outdoors.
- L'alimentation DTP2 à distance est exclusivement réservée à un usage en intérieur. Un réseau utilisant une alimentation à distance ne peut pas être routé en extérieur.

The connectors for inputs 7 and 8 correspond to the following front panel LEDs:

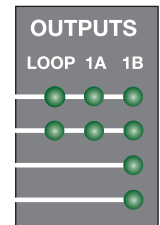
- **Signal (Sig) LED** — Lights when the scaler is receiving an active video signal from a DTP2 transmitter or XTP matrix switcher.
 - **Link LED** — Lights when a valid link is established to a transmitter device.
- E HDMI (with CEC) output connector (output 1A)** — Connect an HDMI or DVI (with an appropriate adapter) output device to this HDMI output connector for HDMI video with embedded audio (see [figure 3](#) and [figures 4 through 6](#)). This connector and the DTP2/XTP/HDBT output connector are mirrored, meaning that they display the same image.

TIP: Use Extron HDMI LockIt Lacing Brackets to secure HDMI cables to the device (see [HDMI Connections](#) on page 21).

Consumer Electronics Control (CEC) — CEC control commands control basic control functions such as power on and off, input switching, volume, and mute. The IN1806 and IN1808 Series can issue CEC commands to a display device through the HDMI and DTP2 ports.

- F DTP2/XTP/HDBT output connector (output 1B)** — This connector and the HDMI output connector (1A) are mirrored, meaning that they display the same image (see [figure 3](#) on page 12 and [figures 4 through 6](#) on page 13).
- Connect a DTP or DTP2 receiver, an XTP matrix switcher, or an HDBaseT-compatible receiver to this RJ-45 twisted pair Out connector. For cable wiring and recommendations, see [Twisted Pair Recommendations for DTP and HDBaseT Communication](#) on page 22.
 - This output also allows for remote powering of DTP and DTP2 receivers, as well as over-DTP analog audio which matches the 5-pole analog audio output of the receiver.
 - To transmit or receive infrared data to and from a sink connected to the DTP/DTP2/HDBaseT receiver or XTP matrix, connect a control device to the 3-pole IR Over TP captive screw port (see [G](#), [Over TP IR pass-through connector](#) on page 15).

The output 1B connector corresponds to the following front panel LEDs (see the illustration at right):



- **Signal LED** — Lights when the scaler is sending a signal.
- **Link LED** — Lights when a valid link is established.

ATTENTION:

- Do not connect this connector to a computer or telecommunications network.
- Ne connectez pas ce port à des données informatiques ou à un réseau de télécommunications.
- DTP remote power is intended for indoor use only. No part of the network that uses DTP remote power should be routed outdoors.
- L'alimentation DTP2 à distance est exclusivement réservée à un usage en intérieur. Un réseau utilisant une alimentation à distance ne peut pas être routé en extérieur.

Signal Support	
DTP Mode	XTP Matrix and HDBaseT Mode
<ul style="list-style-type: none"> • HDCP-compliant digital video • Embedded audio into the TMDS output or analog audio • DTP standard IR pass-through signals on the associated 3-pole captive screw connector • Ethernet insertion of RS-232 control signals (see RS-232 and IR Signal Insertion on page 48) • Remote power to a DTP receiver 	<ul style="list-style-type: none"> • HDCP-compliant digital video • Embedded audio into the TMDS output • IR pass-through signals on the associated 3-pole captive screw connector • Ethernet insertion of RS-232 control signals (see RS-232 and IR Signal Insertion)

- G Over TP IR pass-through connector** — To transmit or receive infrared data to and from a sink connected to a DTP or DTP2 receiver, XTP matrix, or HDBaseT display, connect a control device to the 3-pole Over TP IR captive screw port (see [figure 3](#) on page 12 and [figures 4 through 6](#) on page 13). [Figure 7](#) on the next page shows how to wire the connector.

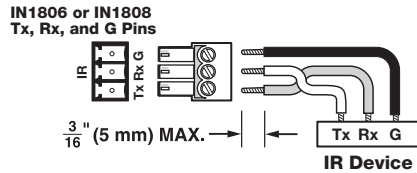


Figure 7. Wiring the Over TP IR Connector

NOTES:

- RS-232 communication can also be sent to the far end of the twisted pair connection, but it must be done through RS-232 insertion via Ethernet. A control signal applied to an IN1806 or IN1808 Series LAN or AV LAN port can be routed to the RS-232 port of any connected twisted pair device (see [figure 30](#) on page 49).
- Switcher parameters can be controlled via SIS commands inserted over DTP input or output connections.

- H Analog audio line input connectors 3 and 4** — Connect line level analog audio sources to audio input connectors 3 and 4 on the 5-pole captive screw connector for balanced or unbalanced stereo audio (see [figure 3](#) and [figures 4 through 6](#)). Connectors are included with the unit, but the audio cable is not (see [figure 10](#) on page 20 for wiring).
- I Analog audio Mic/Line input connectors 1 and 2** — Connect balanced or unbalanced mic or line level inputs to these 3-pole Mic/Line captive screw connectors. These inputs support optional +48 VDC phantom power, which is indicated by the LEDs at the left of the connectors.
- J Analog audio line output connectors 1 through 4** — Connect balanced or unbalanced analog audio output devices to one or both 5-pole captive screw audio output connector pairs 1 and 2 or 3 and 4 (see [Analog Audio Connections](#) on page 19).

ATTENTION:

- For unbalanced audio, connect the sleeves to the ground contact. **Do not** connect them to negative (–) contacts.
- Pour l'audio asymétrique, connectez les manchons au contact au sol. Ne PAS connecter les manchons aux contacts négatifs (–).
- The length of the exposed wires in the stripping process is critical. The ideal length is 3/16 inch (5 mm). If the exposed portion is longer, the wires may touch, causing a short circuit between them. If the exposed wires are shorter, they can be easily pulled out, even if tightly fastened by the captive screws.
- La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder. S'ils sont un peu plus longs, les câbles exposés pourraient se toucher et provoquer un court circuit. S'ils sont un peu plus courts, ils pourraient sortir, même s'ils sont attachés par les vis captives.
- Do not tin the wires. Tinned wire does not hold its shape and can become loose over time.
- Ne pas étamer les câbles. Les câbles étamés ne sont pas aussi bien fixés dans les terminaisons des connecteurs à vis captives et pourraient sortir.

- K LAN connector (IN1806 and IN1808 base model only)** — To control the IN1806 and the IN1808 base model through Ethernet, connect a LAN or WAN to this RJ-45 LAN connector (see [figure 3](#) on page 12 and [figures 4 through 6](#) on page 13). Ethernet control allows you to configure and control the scaler from a remote location via SIS commands, the PCS software, or the embedded web pages.

NOTE: For the IPCP models, connect a LAN or WAN to any of the AV LAN connectors or to the LAN connector on the IPCP Pro control processor (see [Q](#) on the next page).

- L Remote RS-232 connector** — Connect a host device to this 3-pole captive screw connector for RS-232 serial control of the scaler (see [figure 3](#) and [figures 4 through 6](#)). The default baud rate is 9600.

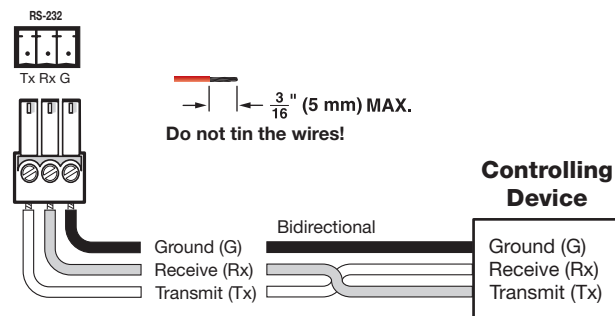
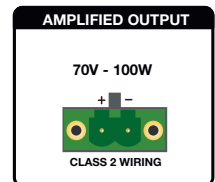
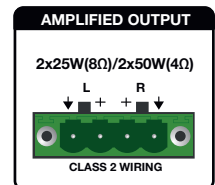


Figure 8. RS-232 Wiring

- M Reset LED** — This green LED remains lit while the IN1806 and IN1808 Series has power (see [figure 3](#) and [figures 4 through 6](#)). While the **Reset** button (see **N**, below) is being pressed and held, this LED blinks every 3 seconds to indicate the level of reset initiated if the button is released at that point (see [Reset Modes](#) on page 47 for more information).
- N Reset button** — This recessed button initiates levels (modes) of reset on the IN1806 and IN1808 Series. To initiate the different reset levels, use a pointed object such as a small Philips screwdriver or a stylus to press and hold the button while the scaler is running or while it is being powered up (see [Reset Modes](#)).
- O Amplified audio output connector** (see [figures 4 through 6](#)) —
- IN1808 IPCP SA** — Connect unpowered speakers, 4-ohm @ 50 watts or 8-ohm @ 25 watts, to the 4-pole Amplified Output connector (shown at right) to play amplified stereo audio.
 - IN1808 IPCP MA 70** — Connect unpowered, high impedance speakers to the 2-pole Amplified Output connector (shown at right) to play amplified mono audio.

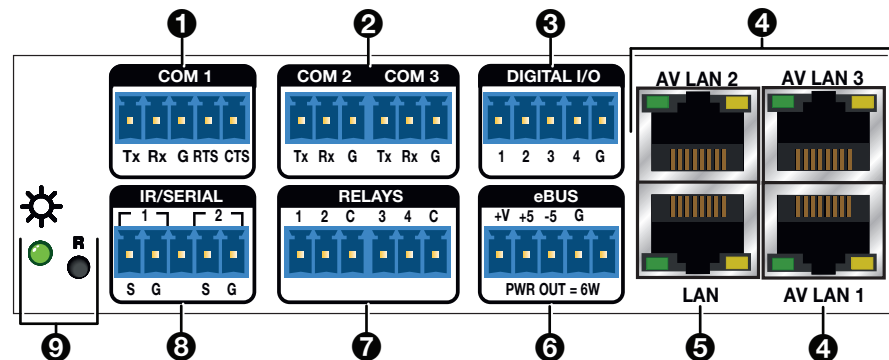


ATTENTION:

- Ensure the rated input voltage of the speakers matches the rated output voltage of the IN1806 or IN1808.
- Assurez-vous que la tension nominale d'entrée des enceintes soit compatible avec la tension nominale de sortie du IN1806 ou IN1808.

- P Aux line audio input connector** — Connect a line level analog audio source to this 5-pole captive screw connector for balanced or unbalanced mono or stereo audio (see [figure 3](#) on page 12 and [figures 4 through 6](#) on page 13). The Aux input is shared and can be associated with one or more video inputs (see [Analog Audio Connections](#) on page 19).
- Q IPCP control processor (IN1808 IPCP SA and IN1808 IPCP MA 70 only)** — The IN1808 IPCP models include a built-in IPCP Pro 355M Control Processor (see [figures 5 and 6](#) on page 13). For these models, the LAN connector is incorporated in the IPCP control processor. For connection and installation details of this control processor, see the *IPCP Pro Series User Guide* at www.extron.com.

The IPCP module contains the following:



- | | | |
|--------------------------------|-----------------------|-------------------------------|
| 1 COM 1 Port | 4 AV LAN ports | 7 Relay ports |
| 2 COM 2 and COM 3 ports | 5 LAN port | 8 IR/Serial ports |
| 3 Digital I/O port | 6 eBUS port | 9 Reset button and LED |

Figure 9. IPCP Control Module (IPCP Models Only)

The IPCP module ports are configurable via Global Configurator (GC) software, available at www.extron.com.

- 1 COM 1 port** — 5-pole captive screw bidirectional RS-232/RS-422/RS-485 port for Tx/Rx/G/RTS/CTS
- 2 COM 2 and COM 3 ports** — Bidirectional 3-pole captive screw RS-232 ports for Tx/Rx/G

Use the COM ports for serial control of a display or other device and to receive status messages from the connected devices.

- 3 Digital I/O ports** — 5-pole captive screw connector, supporting four TTL level digital inputs or outputs, with or without +5 VDC pull-up. Connect switches, sensors, LEDs, relays, or similar items to these ports, which enable monitoring and control of connected devices and trigger functions on the control processor.
- 4 AV LAN ports 1 - 3** — Network switch with its own network interface that keeps the AV subnetwork separate from the corporate network for security purposes and to reduce traffic on the corporate or outside network.

To connect the IPCP to an Ethernet network (for configuration and control of the IPCP module and the devices connected to it), connect an internet cable between any of these RJ-45 sockets and a network switch, hub, router, or PC connected to a local network or the Internet.

AV LAN ports 1 - 3 use a separate network interface card (NIC) from that of the LAN port.

NOTE: A dedicated AV LAN safeguards AV systems from outside intrusion or interference by separating device control and other network traffic from a corporate or campus network. To ensure the control processor LAN and AV LAN connections (ports) are connected to separate networks, the LAN and AV LAN IP address schemes must be on different subnetworks.

- ⑤ **LAN port** — Single Ethernet connector. The IN1806 and the IN1808 base model each have a LAN connector to the left of the Remote RS-232 connector (see ❷ in [figure 3](#) on page 12 or [figure 4](#) on page 13,) instead of the LAN and AV LAN ports on the IPCP models (see [figures 5 and 6](#), ❸, on page 13).
- ⑥ **eBUS port** — 5-pole captive screw connector supporting up to eight eBUS endpoints, with a maximum power output of 9 watts
- ⑦ **Relay ports** — Four relays on two 3-pole captive screw connectors containing individual contacts for each relay and a shared Common (c) connector. Each relay supports 24 VDC of power and up to 1 amp of current.
- ⑧ **IR/Serial ports** — Two unidirectional RS-232 or IR ports (configurable), which share a single 5-pole captive screw connector
- ⑨ **Reset button and LED** — Pressing this recessed button causes various IPCP settings to be reset to the factory defaults. The green power LED blinks depending on the selected reset mode.
- ❶ **HDMI input connectors (Inputs 2 through 6)** — Connect HDMI video sources to these female HDMI connectors.

TIP: Use Extron HDMI LockIt Lacing Brackets to secure HDMI cables to the device (see [figure 10](#) on page 20).

Connection Details

Analog Audio Connections

Wire the audio input and output connectors as shown in [figure 10](#) on the next page. Use the supplied tie wrap to strap the audio cable to the extended tail of the connector.

NOTE: These instructions do not apply to the amplified audio output connector on the IN1808 IPCP SA and MA models.

Audio Inputs and Outputs 1 – 4 and Aux

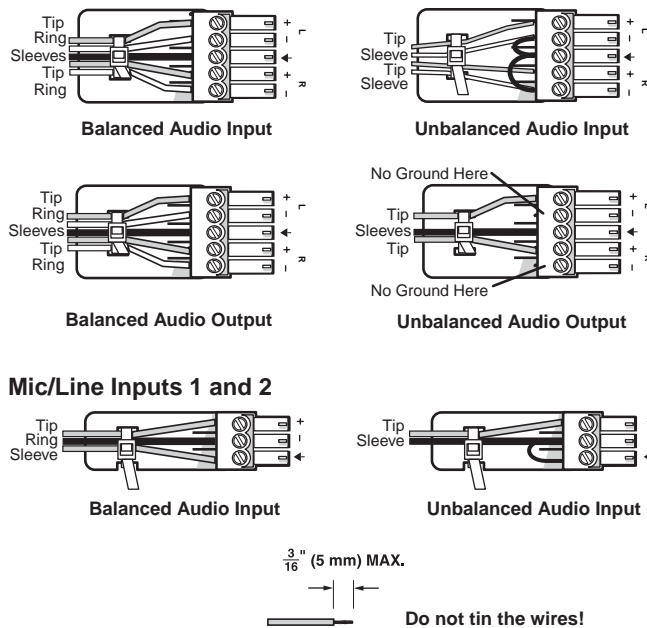


Figure 10. Analog Audio Wiring

ATTENTION:

- The length of the exposed wires in the stripping process is critical. The ideal length is 3/16 inch (5 mm). If the exposed portion is longer, the wires may touch, causing a short circuit between them. If the exposed wires are shorter, they can be easily pulled out, even if tightly fastened by the captive screws.
- La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder. La longueur idéale est de 5 mm (3/16 inches). S'ils sont un peu plus longs, les câbles exposés pourraient se toucher et provoquer un court circuit. S'ils sont un peu plus courts, ils pourraient sortir, même s'ils sont attachés par les vis captives.
- Do not tin the wires. Tinned wires are not as secure in the captive screw terminals <connector> and could pull out.
- Ne pas étamer les câbles. Les câbles étamés ne sont pas aussi bien fixés dans les terminaisons des <connecteurs> à vis captives et pourraient sortir.
- For unbalanced audio, connect the sleeves to the ground contact. **Do not** connect them to negative (–) contacts (see the *Extron Audio Wiring Card*).
- Pour l'audio asymétrique, connectez les manchons au contact au sol. Ne PAS connecter les manchons aux contacts négatifs (–) (voir le *Audio Wiring Card d'Extron*).

HDMI Connections

Use Extron LockIt cable lacing brackets to secure HDMI cables to the unit.

Mounting orientations

The HDMI device must have an HDMI connection mounting screw for this bracket to be used. Depending on the location of the mounting screw in relation to the HDMI connector, the LockIt bracket can be mounted to the screw at the right of the connector (side mounted) or below it (top mounted). Two HDMI cables can also be attached to one side mounted bracket (stack mounted).

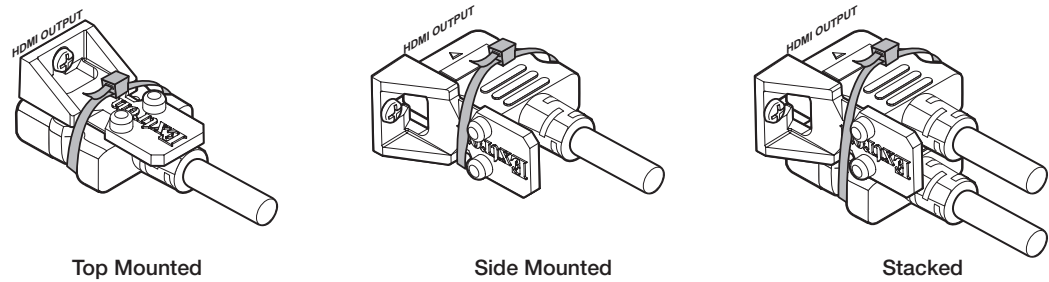
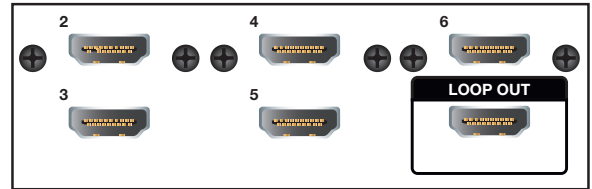


Figure 11. LockIt Bracket Mounting Orientations

The IN1806/IN1808 connectors require the LockIt brackets to be mounted as follows:

- **HDMI inputs 2, 4, and 6** — Side mounted. Can be stacked with the connectors below them.
- **HDMI inputs 3 and 5, HDMI Loop Out** — Stack mounted. Because these connectors have no mounting screws of their own, each must be stack-mounted with the connector above it:
 - HDMI Input 2 with HDMI Input 3
 - HDMI Input 4 with HDMI Input 5
 - HDMI Input 6 with Loop Out
- **HDMI Output 1A** — Top mounting (shown in [figure 12](#), below)



Bracket mounting procedure

To securely fasten an HDMI cable to a device:

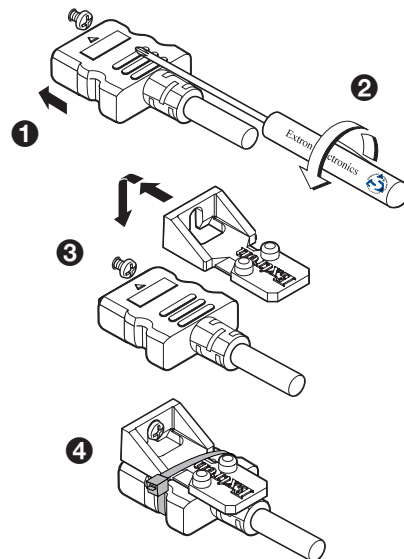


Figure 12. Top Mounting a LockIt Cable Lacing Bracket

1. Plug the HDMI cable into the panel connection (see **figure 12, ①** on the previous page).
2. Loosen the HDMI connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it (**②**). The screw does not have to be removed.
3. Place the LockIt lacing bracket on the screw and against the HDMI connector, then tighten the screw to secure the bracket (**③**).
4. Loosely place the included tie wrap around the HDMI connector and the LockIt lacing bracket as shown. If using a stacked pair of connectors (such as HDMI Inputs 2 and 3), place the tie wrap around both connectors and the bracket (see **figure 11** on the previous page).
5. While holding the connector securely against the lacing bracket, use pliers or a similar tool to tighten the tie wrap, then remove any excess length (see **figure 12, ④**).

ATTENTION:

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

Twisted Pair Recommendations for DTP, XTP, and HDBT Communication

Use the following pin configurations for shielded twisted pair cables used for DTP or HDBaseT communication.

Pin	TIA/EIA T568B Wire Color
1	White-orange
2	Orange
3	White-green
4	Blue
5	White-blue
6	Green
7	White-brown
8	Brown

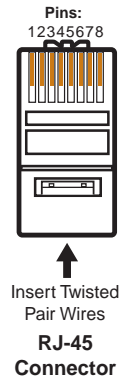


Figure 13. Twisted Pair Cable Configuration

Supported cables

The scalars are compatible with shielded twisted pair (F/UTP, SF/UTP, and S/FTP) cable.

ATTENTION:

- Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the device with DTP transmitters or receivers.
- N'utilisez pas le câble AV Skew-Free UTP version améliorée UTP23SF d'Extron ou le câble STP201 pour relier le appareil avec les émetteurs ou les récepteurs DTP.

Cable recommendations

Extron recommends using the following practices to achieve full transmission distances and reduce transmission errors.

- Use the following Extron XTP DTP 24 SF/UTP cables and connectors for the best performance:
 - **XTP DTP 24/1000** Non-Plenum 1000' (305 m) spool
 - **XTP DTP 24P/1000** Plenum 1000' (305 m) spool
 - **XTP DTP 24 Plug** Package of 10
- If not using XTP DTP 24 cable, at a minimum, Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA-T568B standard.
- Limit the use of more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use shielded couplers and punch down connectors.

NOTE: When using shielded twisted pair cable in bundles or conduits, consider the following:

- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 meters, where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the use of tie wraps or hook-and-loop fasteners.
- Separate twisted pair cables from AC power cables.

Operation

This section contains information on the front panel operation, on-screen display menu system, and reset modes of the scalars. Topics in this section include:

- **Front Panel Overview**
- **Powering Up**
- **Selecting an Input**
- **Selecting a Logo**
- **Using the On-Screen Menu System**
- **Front Panel Lockout (Executive Modes)**
- **Reset Modes**
- **RS-232 and IR Signal Insertion**

Front Panel Overview

The IN1806 and IN1808 Series front panel features differ from each other as follows (see the **legend** on the next page): both IN1808 IPCP models have IPCP Pro 355 Control Processors, while IN1806 and the IN1808 base model do not. The two IPCP models have identical front panels, except for their product names.

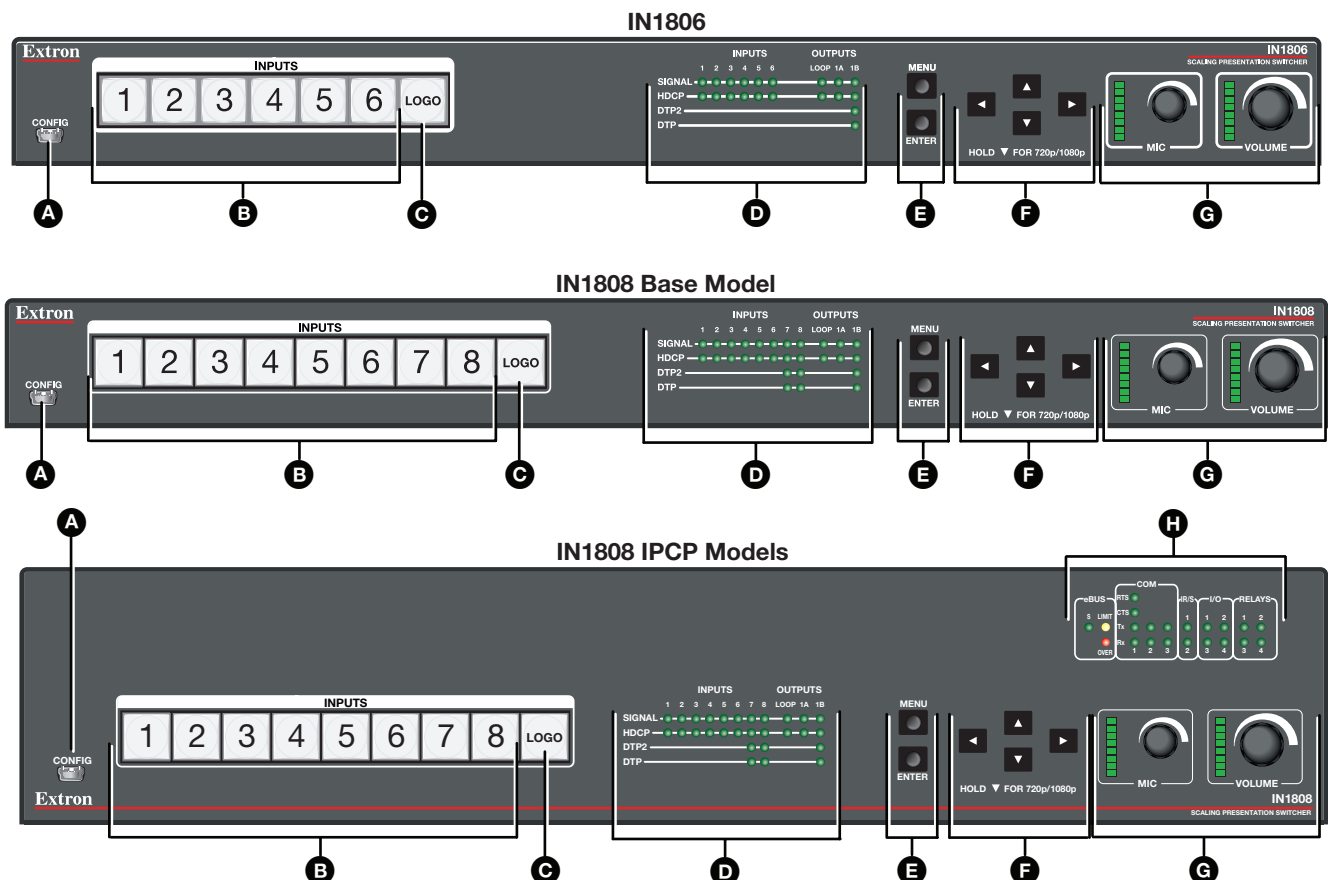


Figure 14. IN1806 and IN1808 Series Front Panels

- A Front panel configuration port** — Connect a host device to the USB mini-B port for device configuration, control, and firmware upgrades.
- B Input selection buttons** — (1 through 6 on IN1806, 1 through 8 on IN1808 Series) Press one of these buttons to select an input. The buttons light amber for audio and video, green for video only, or red for audio only.
- C Logo button** — Press this button to enable or disable the most recently selected logo. Press and hold the button to select the logo in the desired slot, using the input selection buttons:
- **IN1806** — Slots **1** through **6** (slots 7 through 16 are available only via SIS commands and PCS).
 - **IN1808 series** — Slots **1** through **8** (slots 9 through 16 are available only via SIS commands and PCS).
- See [Selecting a Logo](#) on the next page for more information.
- D Status LED indicators**
- **Input signal LEDs** — These eight LEDs light green for their corresponding inputs when active video content is detected on that input.
 - **Output signal LEDs** — Output LEDs 1A, 1B, and Loop light green when active video is being output, and blink amber when output video and sync are disabled.
 - **Input HDCP LEDs** — These eight LEDs light green for each input signal that is HDCP-encrypted.
 - **Output HDCP LEDs** — These three LEDs light green for an output when it is currently HDCP-encrypted.
 - **DTP2 and DTP Input LEDs** — These two LEDs light green if DTP or DTP2 power has been enabled on the corresponding input.
 - **DTP2 and DTP Output LEDs** — These Output LEDs light green if DTP or DTP2 power has been enabled on DTP output 1B.
- E Menu and Enter buttons** — Press these buttons to access and navigate the on-screen display menu system.
- F Navigation buttons** — Press these buttons to navigate through the on-screen display menu system or change settings.
- G Mic and Volume knobs and LED indicators** — Rotate the **Mic** knob to adjust the microphone level. Rotate the **Volume** knob to adjust the program or output volume level (configurable, see the *IN1806 and IN1808 Series PCS Help File* for more information). The eight LED indicators for each knob light according to the level being adjusted. The LEDs light in order from bottom to top to indicate steps from 0% to 100% of the set limits. The LEDs blink when levels are approaching the lower or upper limits.
- H IPCP Pro LED indicators** (IPCP models only) — These LEDs light to indicate status of the IPCP module ports (see the *IPCP Pro Series User Guide*, available at www.extron.com, for details).

Powering Up

To power on the unit, connect the provided IEC power cable between the rear panel power connector and an AC power source. During power-up, the following occurs in the order listed:

1. All backlit buttons (the input buttons and the **Logo** button) blink amber, red, and green for approximately 15 seconds.
2. The backlit buttons light steadily amber and remain lit for approximately 15 seconds.
On IPCP models, the RTS and I/O IPCP LEDs light and remain lit.
3. The backlit buttons blink in sequence once, then turn off and remain unlit for approximately 10 seconds.
4. When the unit is ready for operation:
 - The button for the previously selected input lights steadily. If audio breakaway is not enabled, one input button lights amber. If audio breakaway has been selected, the selected video input button lights green and the audio input button lights red.
 - If input or output signals are present, the appropriate input and output LEDs light.
 - If a logo has been selected, the **Logo** button lights amber.
 - The green Mic and Volume LEDs light to the level previously set.

Selecting an Input

Press any of the input buttons on the front panel to select an input. The button lights amber.

You can also select inputs via SIS commands (see the [Input Selection commands](#) on page 63) or PCS (see the *IN1806 and IN1808 Series PCS Help File*).

NOTE: The input buttons cannot select audio and video separately. To select breakaway audio, you must use PCS or SIS commands.

Selecting a Logo

The front panel **Logo** button enables you to select a logo that has been stored in one of logo memory slots 1 through 6 (IN1806) or 1 through 8 (IN1808) (7 or 9 through 16 can be selected only via SIS commands or PCS) and to enable or disable displaying the selected logo on the screen.

To select a logo to display:

1. Press and hold the front panel **Logo** button until the input buttons representing the slots containing logos light green (approximately 3 seconds). The buttons remain lit for about 15 seconds.
2. Press the lit button for the desired logo. The **Logo** button lights amber and the logo stored in the selected slot is displayed on the screen.

To deselect a logo, press the lit **Logo** button. The button turns off and the logo disappears from the screen.

NOTE: To configure logo key effects (such as RGB keying, alpha keying, and so on), you must use PCS (see the *IN1806 and IN1808 Series Help File*).

Using the On-Screen Menu System

The on-screen (OSD) menus are used primarily for the initial setup of the device. The on-screen menu presents configuration options on a local monitor, and settings can be adjusted with front panel controls.

NOTES:

- The on-screen menu has a default timeout of 60 seconds.
- The screen examples shown in this section show the OSD screens of an IN1808 IPCP SA. The OSD for your product may differ slightly.

Menu Selection Buttons

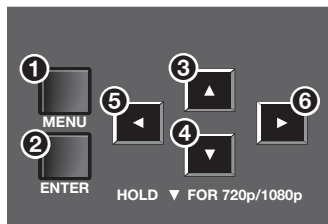


Figure 15. Menu Selection Buttons

- **Menu button** — Press the **Menu** button (see figure 15, ①) to activate or exit the on-screen menu, deselect a submenu, or cancel a pending change.
- **Enter button** — Press the **Enter** button (②) to access the on-screen menu, select submenus, or submenu items, or to accept pending changes.
- **Navigation buttons** — Press these buttons to navigate through the menu system:
 - Press the ▲ (**Up**) (③) or the ▼ (**Down**) (④) arrow button to navigate submenus or submenu items.
 - Press the ► (**Right**) arrow button (⑤) to access currently selected submenus or submenu items.
 - Press the ◀ (**Left**) (⑥) arrow button to exit currently selected submenus or submenu items. You can also use the navigation buttons to adjust settings according to specific setting directions.

Menu Overview

In the on-screen menu, the product name is displayed at the top of the right column. The active input and output resolutions are displayed in the bottom border.

Extron	IN1808 IPCP SA	
DEVICE INFO	IN1: Input Mode	DisplayPort
QUICK SETUP	IN1: EDID	Auto
PICTURE CONTROLS	Output Rate	1080p @ 60 Hz
INPUT	Audio Mute	Off
OUTPUT	Test Pattern	Off
AUDIO	DHCP Mode	On
ADVANCED	IP Address	192 . 168 . 254 . 254
COMMUNICATIONS		
Input 1 1920x1080 @ 59.94Hz		Scaled Output 1080p @ 60 Hz

Figure 16. On-screen Menu Example

The on-screen menu contains eight submenus with various submenu items of adjustable settings or device information (see the [Submenu Items table](#) on page 29).

Submenus	Submenu Items							
Device Info (Read Only)	Unit Name	Firmware	Temp.	Active Input Details	Output 1A Details	Output 1B Details	Loop Input Details	Loop Output Details
Quick Setup	INn: Input Mode	INn: EDID	Output Rate and Resolution	Audio Mute Status	Test Pattern	DHCP Mode	IP Address	
Picture Controls	Auto-Image	Image Position	Image Size	INn: Brightness (Selected Input)	INn: Contrast (Selected Input)	Detail		
Input	INn: Input Mode	INn: Film Detect mode (Selected Input)	Active Video	INn: HDCP Authorized (Selected Input)	INn:EDID	Capture EDID		
Output	Output Rate and Resolution	HDMI 1A Format	TP 1B Format	TP 1B Mode	HDCP Notification	Loop Out	Loop Out Format	
Audio	Audio Mute	INn: Audio Format (Selected Input)						
Advanced	Test Pattern	Screen Saver	Screen Saver Timeout	INn: Aspect Ratio (Selected Input)	INn: Auto Memory (Selected Input)	Auto Switch	Input Switch Effect	Factory Reset
Communications	Serial Port Baud Rate	MAC Address (view-only)	DHCP On or Off	IP Address	Subnet Mask	Gateway		

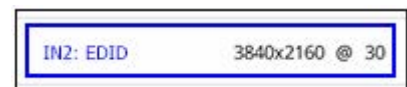
Using the Menu Screens

To open the on-screen menu:

1. Connect a display device to an HDMI output connector (see [Rear Panel Connections](#) starting on page 12).
2. Press the **Menu** or **Enter** button to open the on-screen menu.

To navigate the on-screen menu:

1. Press the ▲ and ▼ buttons to move through the submenus (left) panel. The table above shows the eight submenus and the items they contain.
2. Press **Enter** or ► to select a submenu and display its items in the right panel.
3. Press the ▲ and ▼ buttons to move the blue selection border to the desired submenu item (see the example at right).
4. Press **Enter** to select the item.
5. Press the ◀ button to return to the list of submenus in the left panel.



To adjust the settings of a submenu item:

1. Navigate to an adjustable submenu item and press the **Enter** or ► button to select the item.
2. Press the ◀ and ► buttons to adjust the setting or select a specific adjustable setting within the selected submenu item.
If the selected submenu item has multiple adjustable settings, press the ▲ and ▼ buttons to select a value.
3. Press the **Enter** button to accept the new value and return to the submenu.

NOTE: To cancel a change, press the ◀ button to return to the submenu list (left column) **without** pressing **Enter**. Then, press the ▲ or ▼ button to move to a different submenu.

To exit the on-screen menu system:

From any menu screen, press the **Menu** button to close the on-screen menu and exit the system. Alternatively, wait for the menu display to time out (approximately 60 seconds).

Device Info Screen

Extron	IN1808 IPCP SA
DEVICE INFO	Unit Name: IN1808-IPCP-SA-14-19-1A Firmware: 1.01.0001-b004 Temp: 47.0C / 116.6F
QUICK SETUP	Input 1: 1920x1080 @ 60.00 Hz Format: HDMI RGB 444 Full Signal: 149.500 MHz 1125 Total Lines HDCP: Not Encrypted
PICTURE CONTROLS	Output 1A: 1920x1080 @ 60.00 Hz Format: HDMI RGB 444 Full Display: 1920x1080 @ 60 Hz (EXN) HDCP: Compliant
INPUT	Output 1B: 1920x1080 @ 60.00 Hz Format: HDMI RGB 444 Full Display: 3840x2160 @ 60 Hz (VSC) HDCP: Compliant
OUTPUT	Loop Input 6: 3840x2160 @ 30.00 Hz Format: HDMI -- Signal: 297.0 MHz 2250 Total Lines HDCP: Encrypted
AUDIO	Loop Out: HDMI RGB 444 Full Display: 3840x2160 @ 60 Hz (VSC) HDCP: Compliant
ADVANCED	
COMMUNICATIONS	
Input 1 1920x1080 @ 59.94Hz	Scaled Output 1080p @ 60 Hz

Figure 17. Device Info Screen

The read-only **Device Info** screen is listed first in the submenus (left) panel. This screen contains information about your IN1806 or IN1808, including unit name, firmware version, internal temperature in Celsius and Fahrenheit, and format and signal information for the selected input device, all outputs, and the loop out.

Quick Setup Submenu

Extron	IN1808 IPCP SA	
DEVICE INFO	IN1: Input Mode	DisplayPort
QUICK SETUP	IN1: EDID	Auto
PICTURE CONTROLS	Output Rate	1080p @ 60 Hz
INPUT	Audio Mute	Off
OUTPUT	Test Pattern	Off
AUDIO	DHCP Mode	On
ADVANCED	IP Address	192 . 168 . 254 . 254
COMMUNICATIONS		
Input 1 1920x1080 @ 59.94Hz		Scaled Output 1080p @ 60 Hz

Figure 18. Quick Setup Submenu

The **Quick Setup** submenu is displayed by default when the OSD is first opened, and provides quick access to frequently-used settings. This submenu contains the following items, which also appear on other submenus in the system:

- **INn: Input Mode** — Displays the video format (such as HDMI or DisplayPort) of the connected input.
- **INn: EDID** — Press the ◀ and ▶ buttons to select the resolution or the rate list. Press the ▲ and ▼ buttons to navigate through the selected list. Selecting **Auto** (the default) from the resolutions list matches the current output resolution. There are also 10 custom options, prefaced by **C1** through **C10**.
- **Output Rate** — Press the ▲ and ▼ buttons to select from a list of output resolutions and refresh rates (see **Output Rate** on page 37). There are 10 custom options, prefaced by **C1** through **C10**. The default setting is **1080p @ 60 Hz**.
- **Audio Mute** — Press the ▲ and ▼ buttons to toggle between mute (**On**) and unmute (**Off**) for the audio. The default is **Off**.
- **Test Pattern** — Press the ▲ and ▼ buttons to select a test pattern to display, or to turn test patterns off (see **Test Pattern** on page 41). The available test pattern selections are **Crop**, **Alternating Pixels**, **Crosshatch**, **Color Bars**, **Grayscale**, and **Audio Test** (pink noise). The default setting is **Off**.
- **DHCP Mode** — In DHCP mode, the unit is assigned an IP address when it connects to the network. Press the ▲ and ▼ buttons to toggle between enabling (**On**) and disabling (**Off**) DHCP mode. The default is **Off**.
- **IP Address** — Press the ◀ and ▶ buttons to switch between octets. Press the ▲ and ▼ buttons to change the value of a selected octet. The default address is 192.168.254.254.

Picture Controls Submenu

Extron	IN1808 IPCP SA	
DEVICE INFO	Auto-Image	Press ENTER
QUICK SETUP	Image Position	H: 0000 V: 0000
PICTURE CONTROLS	Image Size	H: *1920 V: *1080
INPUT	IN1: Brightness	*64
OUTPUT	IN1: Contrast	*64
AUDIO	Detail	*64
ADVANCED		
COMMUNICATIONS		
Input 1 1920x1080 @ 59.94Hz		Scaled Output 1080p @ 60 Hz

Figure 19. Picture Controls Submenu

Adjusting the picture controls

When you select a **Picture Controls** submenu item, the OSD menu collapses so that the item is displayed alone on the screen to facilitate adjustment (see figure 20). The separate item field contains blue arrows that indicate which front panel arrow buttons to press to adjust the item.



Figure 20. Example of a Selected Picture Controls Submenu Item

After selecting the item to adjust, do the following:

1. With the separate item field displayed, use the navigation buttons to select and adjust the desired settings as indicated by the blue arrows on the screen. To rapidly increment or decrement the values, press and hold the arrow button.

Example: In figure 20, the blue right and left arrows before the **H** setting indicate that you can press the ◀ and ▶ buttons on the front panel to adjust the horizontal size. To adjust the vertical size, press the ▲ and ▼ buttons, as indicated by the blue up and down arrows after the **V** setting.

2. When finished, press **Enter** to return to the OSD menu.

Available picture controls

The Picture Controls submenu adjusts the following picture settings:

NOTE: When the aspect ratio changes as a result of **Fill** or **Follow** commands being entered, the **Image Position** and **Image Size** values are updated accordingly.

- **Auto-Image** — Press the **Enter** button to execute an Auto-Image on the active input, to restore it to the default size and position. Auto-Image updates horizontal and vertical image position, and horizontal and vertical image size settings.

NOTE: The **Auto-Image** submenu item is the same as the standard Auto-Image Execute SIS command. However, there are other Auto-Image options available through SIS commands (see **Auto-Image** on page 64) or PCS (see the *IN1806 and IN1808 Series PCS Help File*). The options include to execute an Auto-Image and fill the output and to execute an Auto-Image and maintain the input aspect ratio. These commands ignore the current aspect mode setting, perform Auto-Image on the input, and then select **Fill** or **Follow**.

- The following is performed during an Auto-Image when the aspect ratio is set to **Fill**:
 - Horizontal and vertical image positions return to **0000**.
 - Horizontal and vertical image sizes match the current output resolution.
- The following is performed during an Auto-Image when the aspect ratio is set to **Follow**:
 - The horizontal and vertical image position and image size are set to maintain the native aspect of the input rate with regard to the current output resolution.

Set the aspect ratio on the **Advanced** submenu (see **INn: Aspect Ratio** on page 42).

- **Image Position** — Press the ◀ and ▶ buttons to select the horizontal (H) or vertical (V) position of the image. Press the ▲ and ▼ buttons to adjust the value of the selected position. The ranges are:
 - **Horizontal position:** -4096 through +4096 pixels. The default is **0000**.
 - **Vertical position:** -2160 through +2160 lines. The default is **0000**.

Press **Enter** to select the changes and return to the submenu.

- **Image Size** — Press the ◀ and ▶ buttons to select the horizontal (H) or vertical (V) size of the image. Press the ▲ and ▼ buttons to adjust the value of the selected position.
 - **Horizontal size (width):** 10 through 8192 of signal
 - **Vertical size (height):** 10 through 4320 of signal

Press **Enter** to select the changes and return to the submenu.

- **INn: Brightness** — Press the ▲ and ▼ buttons to adjust the black level of the video signal. The range is 0 through 127. The default is 64.

Press **Enter** or ▶ to select the changes and return to the submenu.

- **INn: Contrast** — Press the ▲ and ▼ buttons to adjust the range of white to black levels of the video signal. The range is 0 through 127. The default is 64.

Press **Enter** or ◀ to select the changes and return to the submenu.

- **Detail** — Press the ▲ and ▼ buttons to adjust the image sharpness. The range is 0 through 127. The default is 64).

Press **Enter** or ◀ to select the changes and return to the submenu.

Input Submenu

Extron	IN1808 IPCP SA	
DEVICE INFO	IN1: Input Mode	DisplayPort
QUICK SETUP	IN1: Film Detect	On
PICTURE CONTROLS	Active Video	H: 1920 V: 1080
INPUT	IN1: HDCP Authorized	On
OUTPUT	IN1: EDID	Auto
AUDIO	Capture EDID	Press ENTER
ADVANCED		
COMMUNICATIONS		
Input 1		Scaled Output
1920x1080 @ 59.94Hz		1080p @ 60 Hz

Figure 21. Input Submenu

The Input submenu adjusts the active input.

- **INn: Input Mode** — Displays the signal type of the selected input.
 - **For input 1** it shows **DisplayPort** if a DisplayPort source is connected, **No Signal** if not (view-only).
 - **For inputs 2 through 6** it displays **HDMI** or **DVI** as appropriate if a source is connected, **No Signal** if not (view-only).
 - **For inputs 7 and 8** (IN1808 Series only), use the ▲ and ▼ buttons to select between **DTP** and **XTP**. If no DTP or XTP source is connected, both options also display (**No Signal**).
- **INn: Film Detect** — Film mode detection helps maximize image detail and sharpness for video sources originating from film. Press **Enter** to select the item, then press the ▲ and ▼ buttons to toggle between **On** (default) and **Off**.
If **On** is selected, the IN1806 and IN1808 Series detects and applies reverse pull-down for:
 - 3:2 pull-down for 480i and 1080i @ 59.94 Hz
 - 2:2 and 24:1 pull-down for 576i and 1080i @ 50 Hz
- **Active Video** — This view-only field shows the width in pixels (the H value) and the height in lines (the V value) of the applied input signal.

- **HDCP Authorized** — This feature determines if a digital input reports as an HDCP authorized sink to a source. Select this item to enable or disable HDCP communication by selecting whether the IN1806 or IN1808 Series input reports to the source as an authorized HDCP sink. Press **Enter** to select this item, then press the ▲ or ▼ button to toggle between **On** (default) and **Off**.

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.

NOTE: HDCP Authorized is permanently enabled on DisplayPort Input 1.

- **INn: EDID** — Press the navigation buttons to select an EDID for the active input. Select a discrete EDID from a list of factory-supplied EDID or select **Auto** to use the current output resolution and refresh rate. The **Input EDID Resolutions table** on the next page lists the available EDID selections, including their SIS command variable numbers (see **Input EDID** on page 64 for information on the SIS commands).
- **Capture EDID** — Select this item to capture the EDID of the sink device attached to an output and save it to one of the 10 custom EDID slots. The IN1806 or IN1808 assigns the captured EDID to its selected input. To capture an EDID:

1. Select **Capture EDID**, then press **Enter**. A list of the 10 custom EDID slots is displayed at the top of the OSD screen.

NOTES:

- If no EDID has been captured yet, the names displayed for the slots are the default: 1080p @ 60 Hz.
- If an EDID has been applied to a slot, last three letters of the EDID file name (in parentheses) represent the name of the display manufacturer (for example, EXN is an abbreviation of Extron).

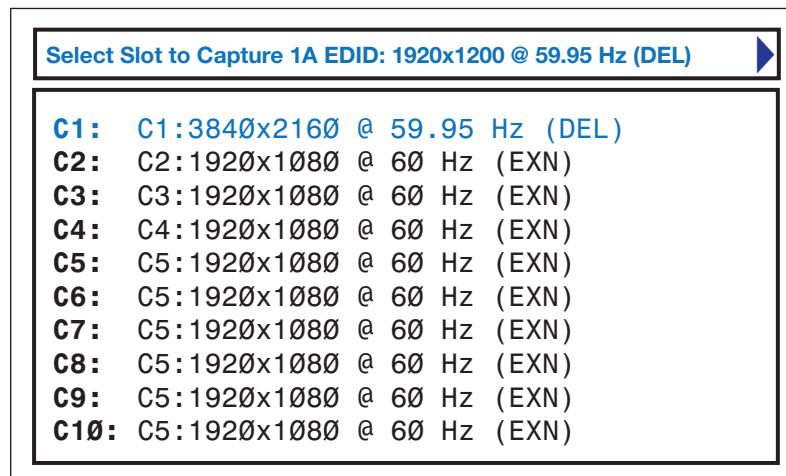


Figure 22. Custom EDID Slots List Example

2. Press the ▲ or ▼ button to move the highlighting to the slot to which you want to save the current display EDID.
3. Press the ◀ or ▶ button to display the output to which the selected EDID will be captured. In figure 22, output 1A (HDMI) was selected and appears in the top panel.

4. Press **Enter**. The display EDID is saved to the selected custom slot and assigned to the connected inputs.

Input EDID Resolutions

Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz
640x480								X
800x600								X
1024x768								X
1280x768								X
1280x800								X
1280x1024								X
1360x768								X
1366x768								X
1440x900								X
1400x1050								X
1600x900								X
1680x1050								X
1600x1200								X
1920x1200								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
2048x1080 (2K)	X	X	X	X	X	X	X	X
2048x1200								X
2048x1536								X
2560x1080								X
2560x1440								X
2560x1600								X
3840x2160	X	X	X	X	X	X**	X**	X**
4096x2160***								
Automatic*	Match current scaler output resolution							
Custom EDID	201-210							

*Default input EDID

**Rates supported only with 4:2:0 color sampling on an input in DTP or XTP mode.
4:4:4 sampling supported from DTP2 transmitters or on DisplayPort or HDMI inputs only.

***4096x2160 rates are available only for output resolution and cannot be selected for input EDID.

Output Submenu

Extron	IN1808 IPCP SA	
DEVICE INFO	Output Rate	1080p @ 60 Hz
QUICK SETUP	HDMI 1A Format	Auto
PICTURE CONTROLS	TP 1B Format	Auto
INPUT	TP 1B Mode	DTP
OUTPUT	HDCP Notification	Green w/ OSD
AUDIO	Loop Out	In6
ADVANCED	Loop Out Format	Auto
COMMUNICATIONS		
Input 1 1920x1080 @ 59.94Hz		Scaled Output 1080p @ 60 Hz

Figure 23. Output Submenu

The **Output** submenu enables you to configure the output resolution, refresh rate, HDMI and TP format, TP mode, HDCP notification, and Loop Out format and connected input.

- **Output Rate** — Select this item to specify the output resolution and refresh rate. The IN1806 and IN1808 Series scalers have a range of resolutions from which to choose (see the [Output Resolutions and Refresh Rates](#) table on the next page for the available settings). The available rates depend on the selected resolution.
 - Press the ▲ or ▼ button to select the output **resolution**.
 - Press the ◀ or ▶ button to select the output **rate**.

Custom rates:

Ten custom user-defined output rate slots are also available to be defined via SIS commands or via the **Capture EDID** item on the **Input** menu.

When a resolution is applied to a user-defined EDID slot, its name is displayed in the **Output Resolution** panel in the format *cn: nnnnxxxx @ nn (XXX)*. An example would be **C1: 1280x780 @ 60 Hz (EXN)** (the last three letters in parentheses represent the name of the manufacturer of the device).

NOTE: The 10 custom, user-defined output rates default to 1080p @ 60 Hz when no custom EDID is captured or uploaded.

Output Resolutions and Refresh Rates

Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz
640x480								X
800x600								X
1024x768								X
1280x768								X
1280x800								X
1280x1024								X
1360x768								X
1366x768								X
1440x900								X
1400x1050								X
1600x900								X
1680x1050								X
1600x1200								X
1920x1200								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*
2048x1080 (2K)	X	X	X	X	X	X	X	X
2048x1200								X
2048x1536								X
2560x1080								X
2560x1440								X
2560x1600								X
3840x2160	X	X	X	X	X	X**	X**	X**
4096x2160	X	X	X	X	X	X***	X***	X***

* Default output resolution

** Rate supported on HDMI output or to DTP2 endpoints only.

*** Rate supported on HDMI output only.

- HDMI 1A Format** — Select **HDMI 1A Format** or **TP 1A Format** from the list of Output submenu items, then press the ▲ or ▼ buttons to select the output format. The format choices include:
 - Auto (based on the EDID of the sink) (default)
 - DVI RGB 444
 - HDMI RGB 444 Full
 - HDMI RGB 444 Ltd
 - HDMI YUV 444 Ltd
 - HDMI YUV 422 Ltd

- **TP 1B Format** — Select **TP 1B Format** from the list of **Output** submenu items, then press the ▲ or ▼ buttons to select the format. The format choices are the same as for HDMI 1A:
 - Auto (based on the EDID of the sink) (default)
 - DVI RGB 444
 - HDMI RGB 444 Full
 - HDMI RGB 444 Ltd
 - HDMI YUV 444 Ltd
 - HDMI YUV 422 Ltd
- **TP 1B Mode** — This item lets you select the twisted pair mode of the DTP2/XTP/HDBT Output 1B. To switch among modes for the TP output port, select this item and press the ▲ or ▼ buttons to select **DTP**, **XTP**, or **HDBT**.
- **HDCP Notification** — This item lets you select what is displayed on the HDMI output when the input signal contains HDCP-protected content and the output is a non-HDCP sink. Press **Enter** to select this item, then press the ▲ or ▼ button to select between:
 - **Green w/OSD** — Displays a green screen with the message **HDCP Content** on the HDMI output display (default).
 - **Black Screen** — Displays a black screen and the output sync is maintained.
 - **User Image** — Displays a user-uploaded image. To upload images, use the PCS software Logo screen (see the *IN1806 and IN1808 Series Help File* for instructions).

Audio Submenu

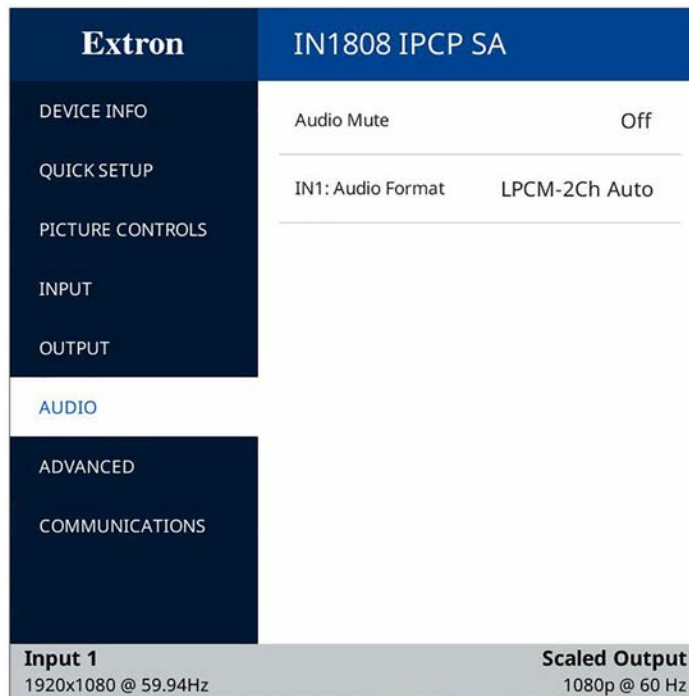


Figure 24. Audio Submenu

The **Audio** submenu allows you to mute the audio and to set the audio input format. To use this submenu, press **Enter** to select this item, then press the ▲ or ▼ button to move between the two selections.

- **Audio Mute** — Select this item to mute and unmute the output audio. You can make the following audio mute selections:
 - **Off** — Audio output is not muted (default).
 - **On** — Mutes both the analog and the embedded digital audio outputs.
- **INn: Audio Format** — Select this item to choose the audio format for the selected input. The first item on the **Audio** menu shows the selected format of the audio.

NOTES:

- For the twisted pair inputs in DTP mode, the analog audio is taken from the analog audio connector on the DTP Tx.
- For the TP inputs in XTP mode, the analog and Auto formats are not available.

Audio Format Selection	Source	Details
None	None	All audio outputs are muted.
Analog Audio	Analog	Utilizes analog Aux input for inputs 1 through 6. Utilizes DTP Tx analog input for inputs 7 and 8 (IN1808 Series only). Sets the selected input to analog.
LPCM-2Ch	Embedded digital.	Sets 2Ch EDID. If LPCM-2Ch audio is present on the input, it is passed to DSP for availability on all analog and digital audio outputs. For 3- or more channel LPCM (such as Dolby or DTS), the signals bypass DSP and are re-embedded in the digital video outputs.
Multi-Ch	Embedded digital.	Sets Multi-Ch EDID. If LPCM-2Ch audio is present on the input, it is passed to DSP for availability on all analog and digital audio outputs. For 3- or more channel LPCM (such as Dolby or DTS), the signals bypass DSP and are re-embedded in the digital video outputs.
LPCM-2Ch Auto* (Default)	Embedded digital when present, otherwise uses the Aux 5-pole captive screw input (inputs 1-6) or the 5-pole captive screw input of the connected DTP Tx (inputs 7-8).	Sets 2Ch EDID. Defaults to analog audio if digital audio is not detected on the digital video input, or if no digital video input signal is present. If digital audio is detected, LPCM-2Ch signals are passed to DSP. If 3- or more channel LPCM is detected the signals bypass DSP and are re-embedded into the digital video outputs.
Multi-Ch Auto*	Embedded digital when present, otherwise uses the Aux 5-pole captive screw input (inputs 1-6) or the 5-pole captive screw input of the connected DTP Tx (inputs 7-8).	Sets Multi-Ch EDID. Defaults to analog audio if digital audio is not detected on the digital video input, or if no digital video input signal is present. If digital audio is detected, LPCM-2Ch signals are passed to DSP. If 3- or more channel LPCM is detected the signals bypass DSP and are re-embedded into the digital video outputs.

*These Auto modes are useful when it is not known whether a source provides embedded digital or analog audio (such as a podium laptop connection).

NOTE: DSP is provided to enable configuration of specific audio features, such as Mic/Line mixing, signal processing (ducking, feedback suppression, dynamics, equalization, and delay), gain adjustment, volume control, and phantom power.

- Use PCS to configure DSP and other audio parameters for the audio inputs and outputs (see the *IN1806 and IN1808 Series PCS Help File* for detailed instructions).
- Use SIS commands to configure non-DSP audio parameters (see the [Audio Configuration commands](#) on page 75).

Advanced Submenu

Extron	IN1808 IPCP SA	
DEVICE INFO	Test Pattern	Off
QUICK SETUP	Screen Saver	Black
PICTURE CONTROLS	Screen Saver Timeout	Never
INPUT	IN1: Aspect Ratio	Fill
OUTPUT	IN1: Auto Memory	On
AUDIO	Auto Switch	Off
ADVANCED	Input Switch Effect	Seamless Fade
COMMUNICATIONS	Factory Reset	Hold ENTER
Input 1 1920x1080 @ 59.94Hz		Scaled Output 1080p @ 60 Hz

Figure 25. Advanced Submenu

The Advanced submenu enables you to configure the global settings for the unit. The following items are available:

- **Test Pattern** — Lets you choose a test pattern to use in setting up a display when outputting different resolutions. The test pattern selections include **Crop**, **Alternating Pixels**, **Crosshatch**, **Color Bars**, **Grayscale**, and **Audio Test** (pink noise). The default is **Off**.

The following test patterns are available:

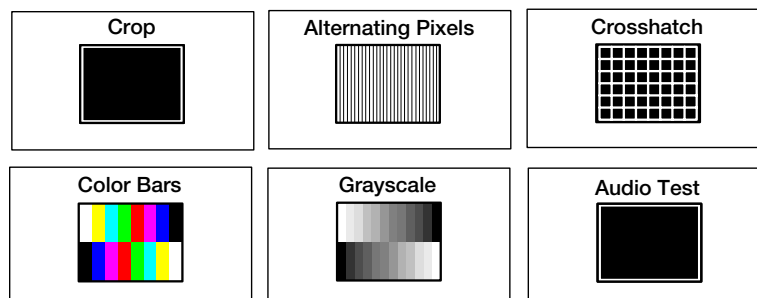


Figure 26. Available Test Patterns

NOTES:

- By default all test patterns include a single pixel wide crop pattern line.
- The Audio Test pattern displays a crop pattern and also outputs pink noise at 48 kHz, 24 bit.
- Test pattern selections persist through a power cycle.

- **Screen Saver** — Configures device behavior when no active input signal is detected. Options include a black (default) or blue screen, or a user provided logo file. Optionally, you can set a timeout to disable the output after a set duration to allow display devices (such as a display screen or projector) to enter a lower power or standby state to increase panel or lamp life.

To configure the screen saver:

1. Select **Screen Saver** from the **Advanced** menu and press **Enter**.
2. Press the **▲** or **▼** button to select the screen saver type. The menu selections are:
 - **Black** (default)
 - **Blue** with the OSD message **IN180n <product name> Input:n No Signal**
 - **User Image** — Displays an image that has been previously uploaded to the unit. The location of this image on the screen can be adjusted using SIS commands (see the **Horizontal Shift (Logo)** and **Vertical Shift (Logo) commands** on page 72) or PCS (see the *IN1806 and IN1808 Series PCS Help File*).
3. Press **Enter** to confirm your selection.

NOTE: The scaler exits screen saver mode when the front panel **Menu** or **Enter** button is pressed, a video test pattern is activated, or an active input is detected. If the unit is in front panel lock mode (see **Front Panel Lockout (Executive Modes)** on page 45), pressing a front panel button exits the time-out but access to any front panel controls or the menu system is disabled.

- **Screen Saver Timeout** — Lets you specify the number of seconds the selected screen saver is displayed before the output sync times out.

To set the sync timeout:

- Select **Screen Saver Timeout** from the **Advanced** menu and press **Enter**.
- Press the **▲** or **▼** button to select the amount of time before output sync times out. You can select a duration of **0** (timeout is immediate) to **500** seconds before the output sync times out. Select **Never** (501 seconds, the default) to set the sync to never time out.
- **INn: Aspect Ratio** — Sets the aspect ratio for the selected input to **Fill** (the default, fills the entire output raster) or **Follow** (follows the native aspect ratio of the input).
 - **Fill mode** — If you want to set an aspect ratio adjustment for a single input rate, you can select the correct image size and position manually from the **Picture Controls** submenu (**Image Size and Position**) (see **Picture Controls Submenu** starting on page 32).
 - **Follow mode** — Each input rate is displayed with its native aspect ratio (4:3, 5:4, 16:9, or 16:10) with the correct letter box or pillar box settings, visible under the **Image Size and Image Position** items on the **Picture Controls** submenu. If you want a single input to fill the screen in follow mode, you can manually set the **Image Position** item on the **Picture Controls** submenu to **0,0** and set the **Image Size** to match the current output rate **X, Y**.

- **INn: Auto Memory** — Enables or disables Auto Memory. When Auto Memory is set to On (default), the IN1806 or IN1808 stores the current input configuration and picture control values.

The scaler stores 32 auto memories per input, with input configuration and picture control data for each video resolution. The default setting enables these memories to automatically recall input and picture controls for previously applied signals. When auto memories are disabled, the scaler treats every applied signal as a new source.

- **Auto Switch** — Press the ▲ or ▼ button to select the auto-input switch mode. Auto Switch options are:
 - **Off** (default) — Auto-input switching is disabled. Switching occurs only via the front panel buttons or SIS commands.
 - **Last Connected** — The IN1806 and IN1808 switches to the most recently connected input and retains a history of the order in which input signals were previously connected to the scaler. If an input is disconnected or the currently selected input is disabled, the scaler reverts to the connected inputs in order. See the example in the following table:

Step	Connected Input	Priority 1	Priority 2	Priority 3	Priority 4
1	Input 1 connected	1			
2	Input 3 connected	3	1		
3	Input 2 connected	2	3	1	
4	Input 4 connected	4	2	3	1
5	Input 4 disconnected	2	3	1	
6	Input 2 disconnected	3	1		

- **User Priority** — You can define a priority using PCS (see the *IN1806 and IN1808 Series Help File*) or SIS commands (see **Auto-input Switch Mode** on page 66) for the connected inputs to be selected. The default input selection order is low-to-high (the input with the lowest number is selected first, and so on).
- **Input** — Enables you to select the transition effect that is shown on the display while the scaler is switching inputs (see the examples in figure 27). Press the ▲ or ▼ button to select from the following available effects:

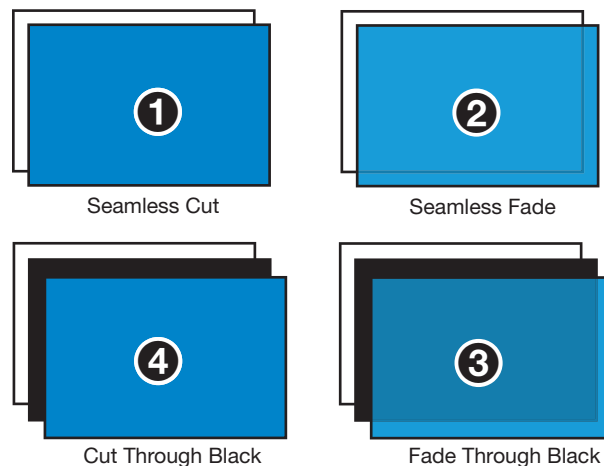


Figure 27. Transition Effects

The switch effects, listed below in order of appearance on the menu, include:

- **Seamless Fade** (default) — Displays a final frozen frame of the previous input while the newly selected input fades in (see [figure 27](#), [2](#) on the previous page).
- **Fade thru Black** — The current input fades to black before the newly selected input fades in ([3](#)).
- **Cut thru Black** — The current input instantly cuts to black, then immediately cuts to the newly selected input with no fading in or out ([4](#)).
- **Seamless Cut** — The last frame of video freezes on the screen, then cuts to the newly selected input ([1](#)).
- **Factory Reset** — Resets the unit to its factory default values (removing any user-specified values) while retaining all network settings. This includes resetting the Telnet port map to its original functionality (see [Disabling Telnet for SSH Communication](#) on page 54).

To reset using the OSD menu, press and hold the **Enter** button until **Factory Reset** is displayed (approximately 5 seconds). The message remains for approximately 1 minute after the reset is complete to allow time for the display device to sync with the IN1806 or IN1808 output.

NOTE: The equivalent SIS command is `[Esc] ZXXX ←`. This command does **not** affect the current password and network settings.

For other reset methods, see [Reset Modes](#) on page 47.

Communication Submenu

Extron	IN1808 IPCP SA
DEVICE INFO	Serial Port Baud Rate 9600
QUICK SETUP	MAC Address 00-05-A6-14-19-1A
PICTURE CONTROLS	DHCP On
INPUT	IP Address 192 . 168 . 254 . 254
OUTPUT	Subnet Mask 255 . 255 . 255 . 0
AUDIO	Gateway 0 . 0 . 0 . 0
ADVANCED	
COMMUNICATIONS	
Input 1 1920x1080 @ 59.94Hz	Scaled Output 1080p @ 60 Hz

Figure 28. Communication Submenu

The **Communication** submenu enables you to view the serial port baud rate and the unit media access control (MAC) address, and to configure the IP address, subnet mask, and gateway address, and DHCP mode.

- **Serial Port Baud Rate** — Displays the baud rate for the Remote RS-232 serial port (view only).

- **MAC Address** — Displays the MAC address of the device (view only).
- **DHCP Mode** — When this mode is enabled (**On**), the unit obtains an IP address and other network settings from the DHCP server. The default is **Off**.

To enable or disable DHCP mode:

1. Select **DHCP Mode** from the **Communications** submenu and press **Enter**.
2. Press the **▲** and **▼** button to select **On** or **Off** and press **Enter** again.

You can also set the DHCP mode via an SIS commands (see **DHCP mode** on page 84), the PCS software, or the internal web page (see **Network Settings Panel** on page 113).

- **IP Address** — Press the **◀** and **▶** buttons to select an octet of the IP address. Press the **▲** and **▼** buttons to adjust the value of the selected octet. The default is 192.168.254.254.
- **Subnet Mask** — Press the **◀** and **▶** buttons to select an octet of the subnet mask address. Press the **▲** and **▼** buttons to adjust the value of the selected octet. The default is 255.255.255.0.
- **Gateway** — Press the **◀** and **▶** buttons to select an octet of the gateway address. Press the **▲** and **▼** buttons to adjust the value of the selected octet. The default is 0.0.0.0.

Front Panel Lockout (Executive Modes)

The IN1806 and IN1808 Series scalers have five modes of front panel security lock that limit the operation of the device from the front panel. When the front panel controls are locked, RS-232, USB, and Ethernet control remain operational.

NOTE: All lock modes persist after a power cycle.

The front panel lock mode can also be selected using SIS commands (see **Front Panel Lock (Executive Mode)** on page 78) and PCS (see the *IN1806 and IN1808 Series PCS Help* file).

The following table shows the functionality that is in place for each mode:

Lock Mode	Input Switching	Logos	Volume Adjustment
0	Unlocked	Unlocked	Unlocked
1	Locked	Locked	Locked
2	Unlocked	Unlocked	Unlocked
3	Unlocked	Unlocked	Locked
4	Locked	Locked	Unlocked

- **Mode 0** — Unlocks front panel functions. This is the default setting.
- **Mode 1** — Locks all front panel functions. Pressing the **Menu** button in this mode causes the message **Executive Mode 1 Enabled** to appear on the display. This mode can be enabled or disabled only via SIS commands and PCS.
- **Mode 2** — Locks all front panel functions except input switching, logos, and volume control. Pressing the **Menu** button in this mode causes the message **Executive Mode 2 Enabled** to appear on the display. To enable lock mode 2, press and hold the **Menu** and **Enter** buttons simultaneously for 2 seconds.
- **Mode 3** — Locks all front panel functions except input switching and logos.
- **Mode 4** — Locks all front panel functions except volume control.

Input Presets

The IN1806 and IN1808 Series scalers have 128 memory slots in which you can save input presets. These presets are global to all inputs that contain the settings for use with a matrix switcher. A matrix switcher with multiple types of video inputs (such as an XTP matrix switcher) can be placed upstream from the IN1806 and IN1808 Series to expand the number of video sources.

Input presets can be saved and recalled only through SIS commands (see the **Presets commands** on page 74) and PCS (see the *IN1806 and IN1808 Series PCS Help File*).

- When you recall an input preset, the unit fills the output raster based on the sizing and positioning that it had at the time the preset was saved. For example, a video source that was configured to be zoomed when it was previously saved as a preset is still zoomed, even if recalled to a smaller output raster.
- Input presets can be saved based on one input rate and recalled to a different rate. This enables presets to be used as aspect ratio or other quick-sizing shortcuts. Because the size and position is saved as a percent of the raster, the preset can be recalled to any scaled output and the saved size and position are scaled proportionally on the output.

Values for the following settings are saved in input presets:

- Preset name
- Film mode detection
- Contrast
- Brightness
- Detail
- Horizontal image position
- Vertical image position
- Horizontal image size (width)
- Vertical image size (height)

Saving a preset when using a matrix switcher

When using the IN1806 or IN1808 with a matrix switcher, do the following to save a preset:

1. Switch each input of the matrix to the IN1806 or IN1808.
2. Configure each input: size, position, detail, brightness, and contrast.
3. Save the settings to a preset for recall by the control system when that matrix input is routed to any IN1806 or IN1808 Series input.

Power Save Modes

The IN1806 and IN1808 Series can be placed into a standby (low power) mode via SIS commands (see the **Power Save commands** on page 70) in order to conserve power. To restore the unit to full power mode, enter the appropriate SIS command, press any front panel button, switch inputs via SIS command, or cycle power to the unit. The following power save modes are supported:

- Mode 0 — Full power mode
- Mode 1 — All non-essential hardware is shut down.
- Mode 2 — All non-essential hardware is shut down, but over-TP functionality and remote power remain enabled.

Reset Modes

The IN1806 and IN1808 Series scalers have three reset modes (numbered 1, 4, and 5). Use a small screwdriver or stylus to press and hold the recessed **Reset** button to advance through the modes. The green Reset LED blinks to indicate each mode that is enabled (see the Reset Mode Summary table, below).



NOTE: This **Reset** button and LED are located in the **lower-right corner** of the rear panel, and are unrelated to the **Reset** button and LED in the IPCP control panel of the IN1808 IPCP models.

You can also perform resets using the OSD (see **Factory Reset** on page 44), SIS commands (see the **Resets commands** starting on page 81), and PCS (see the *IN1806 and IN1808 Series PCS Help File*).

ATTENTION:

- Review the reset modes carefully. Using the wrong reset mode may result in unintended loss of flash memory programming, port reassignment, or unit 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 all sockets. Each mode is a separate function, not a continuation from mode 1 to mode 5.

Reset Mode Summary				
Mode	Activation	Result	Purpose/Notes	
Use Factory Firmware	1	Using an Extron Tweaker or other small screwdriver, press and hold in the recessed Reset button for 30 seconds while applying power to the scaler.	<p>The device reverts to the factory default firmware version.</p> <ul style="list-style-type: none"> 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. 	<p>Use mode 1 to revert to the factory default version if incompatibility issues arise with user-loaded firmware.</p> <p>This reset also causes the Telnet port mapping to return to its original factory setting.</p>
		<p>NOTE: After a mode 1 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, re-upload that version.</p> <p>NOTE: If you do not want to update the firmware or perform a mode 1 reset by mistake, cycle power to the device to return to the firmware version running prior to the reset.</p>		
Reset IP Settings	4	Press and hold down the Reset button until the Reset LED blinks two times (at 6 seconds). Then, press Reset momentarily (less than 1 second).	<p>IP settings revert to factory defaults.</p> <ul style="list-style-type: none"> Port mapping reverts to factory default. DHCP turns off. IP address is set to 192.168.254.254. The Reset LED blinks four times in quick succession during reset. 	Use mode 4 to reset all IP settings back to factory defaults.
Reset to Factory Default	5	Press and hold down the Reset button until the Reset LED blinks three times (approximately 9 seconds). Then, press Reset momentarily (less than 1 second).	<p>The device reverts to the factory defaults except for firmware.</p> <ul style="list-style-type: none"> Mode 4 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. 	<p>Use mode 5 to restart with the default configuration, including the original Telnet port setting. This is equivalent to SIS command ZQQQ.</p> <p>This reset removes the initial serial number password and sets it to no password.</p>

RS-232 and IR Signal Insertion

The twisted pair input and output ports allow you to insert RS-232 and IR control signals onto the same cable that carries video and audio to extend them to the Over TP port on a connected endpoint (see [figure 30](#) on the next page and [figure 32](#) on page 51). The control signals can be inserted two ways:

RS-232 communication can be sent to the far end of the twisted pair connection via a LAN or an AV LAN (IPCP models only) connector. A control signal applied to an IN1806 or IN1808 Series LAN port can be routed to the RS-232 port of any connected twisted pair device (see [Ethernet to RS-232 Insertion](#) on page 49).

When connected to an Ethernet LAN, the scaler can be accessed from a computer running a standard Internet browser. Use a patch or crossover cable to connect the IN1806 or IN1808 Series device to a computer, control device, router, or switch.

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

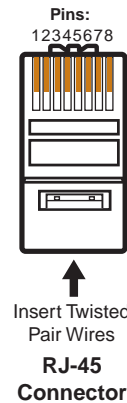


Figure 29. Connecting to the LAN Port

The LAN and AV LAN connectors contain two LEDs (see the illustration at right):

- ❶ **Link LED** — This green LED lights steadily to indicate a LAN connection.
- ❷ **Act LED** — This amber LED blinks to indicate LAN signal activity.

The default IP address of the scaler is 192.168.254.254, the default subnet mask is 255.255.255.0, and the default gateway address is 0.0.0.0.

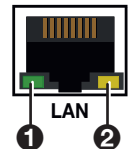
The two methods of signal insertion are:

- **Ethernet to RS-232 insertion** (see “Ethernet to RS-232 Insertion”) — A control signal applied to the IN1806 and IN1808 Series LAN port can be routed to the RS-232 port of any connected twisted pair device. The RS-232 insert inputs and outputs inserted via Ethernet can support up to a 115K baud rate.

Over TP Serial Device Control — A control signal from a remote twisted pair endpoint can be used to directly execute SIS commands on the IN1806 or IN1808 series. This allows a control system to insert RS-232 control at a remote DTP or XTP endpoint to directly control the switcher via SIS commands (see [figure 31](#) on page 50).

- **Captive screw IR insertion** (see [Captive Screw Signal Insertion](#) on page 51) — (IR only) A control signal applied to the IR Over TP captive screw port is tied directly to TP Output 1B.

You must physically connect a cable to the captive screw connector where a control signal is to be inserted.



Ethernet to RS-232 Insertion

Figure 30 is an example of an Ethernet to RS-232 insertion, in which an Extron controller provides control of an HD camera via the IN1806 and IN1808 Series and a DTP HDMI 4K 230 transmitter. Configure this type of insertion as follows:

1. Connect a TP cable from the control system to the scaler LAN port, directly or via a network.
2. If necessary to match the device to be controlled, configure the port RS-232 protocol (baud rate, parity, data bits, and stop bits) (see [RS-232 protocol](#) on the next page).

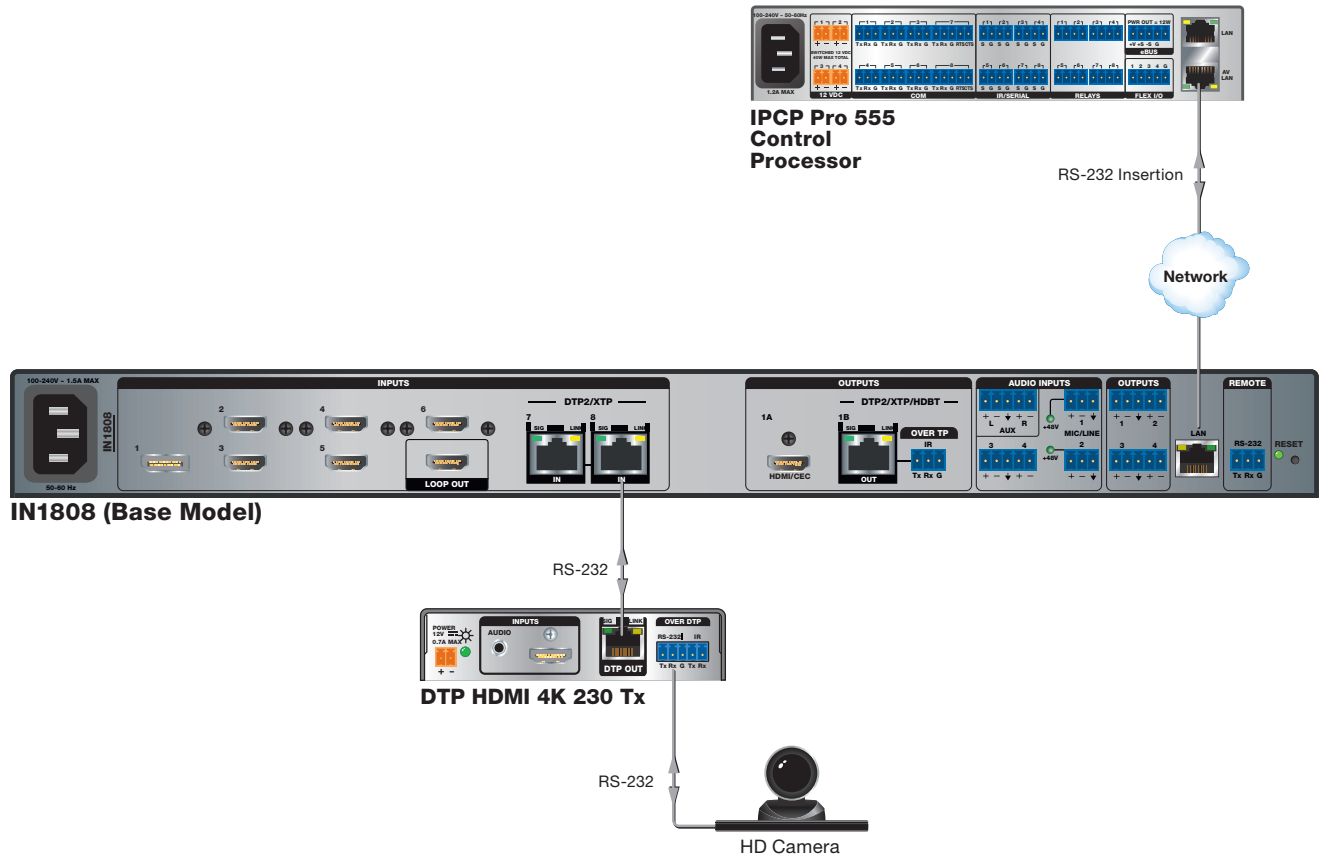


Figure 30. Typical Ethernet to RS-232 Insertion to an Input Endpoint

3. Connect the TP cable to the endpoint as usual.
4. Connect a serial cable from the endpoint to the device to be controlled.

Port number

For Ethernet to RS-232 insertion, the insertion port number must be stated from a specific universal asynchronous receiver-transmitter (UART) start point. This number is entered as the Telnet port number when you establish communication with the insertion port.

For the purposes of this discussion, consider the Ethernet insertion ports as serial (RS-232) ports. The input insertion port number is the UART start point +1. The output insertion port number is the UART start point +3. With the default UART start point of 2000, the input and output insertion ports are:

Input Ports	Insertion Port	Output Port	Insertion Port
7	2001	1B	2003
8	2002		

Changing the starting point

By default the UART start point is 2000. You can change the starting port number by any of the following methods:

- Using the Product Configuration Software (see *IN1806 and IN1808 Series PCS Help* file)
- Using SIS commands (see the **Set UART start point** SIS command on page 82).

RS-232 protocol

You also may need to set the RS-232 protocol of the addressed port to match the connected device. You can do this using any of the following methods:

- Using PCS (see the *IN1806 and IN1808 Series PCS Help* file).
- Using SIS commands (see the **Serial Port Configuration** SIS commands on page 82).

Over TP RS-232 device control

An external IPCP controller connected via Ethernet to a matrix switcher such as an XTP can be connected via twisted pair to input 7, input 8, or output 1B of an IN1808 Series switcher. The IPCP control system can then directly control the IN1808 via SIS over the CATx cable (see the example in figure 31).

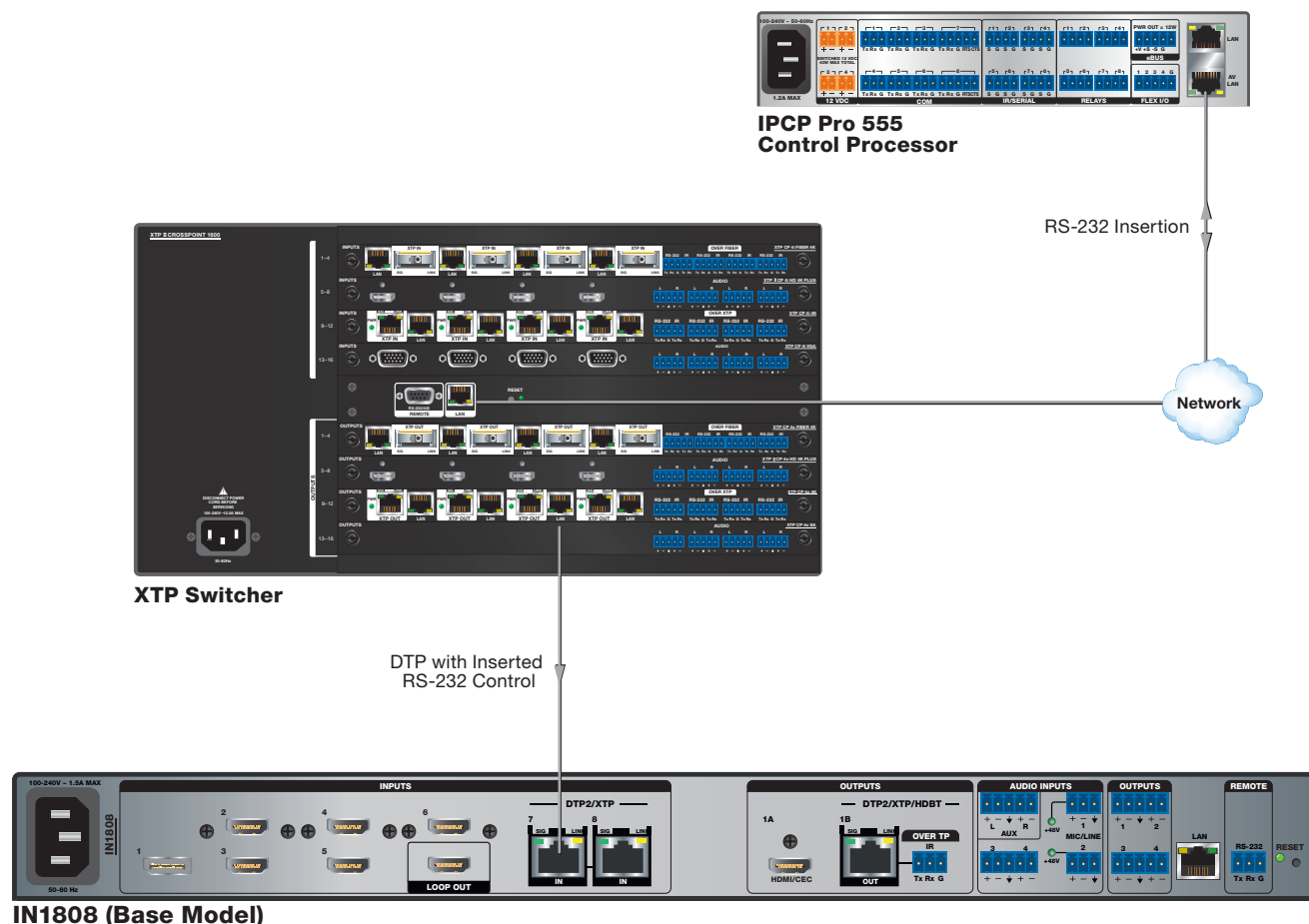


Figure 31. Connection Example for Over TP SIS Control of an IN1808 Series Switcher

Captive Screw IR Signal Insertion

Figure 32 shows an example of a typical captive screw Ethernet insertion, in which an Extron control system provides IR control of a display via the scaler. Configure this type of insertion as follows:

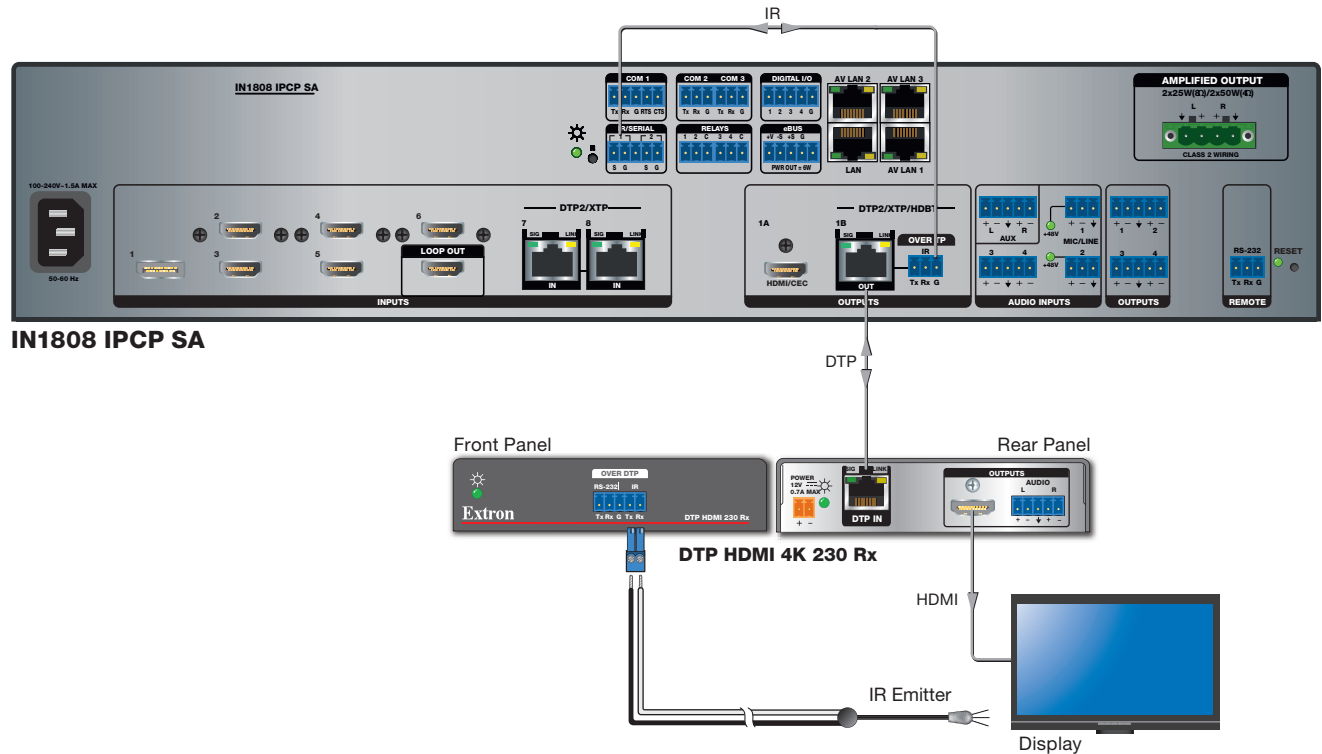


Figure 32. Typical Captive Screw IR Insertion to an Input Endpoint

To insert IR signals via the Over TP captive screw connector:

1. Connect the COM (serial) port of the control system to the Over TP IR captive screw port (output port 1B in this example).
2. Connect the TP cable from the IN1806 and IN1808 Series RJ-45 Out connector to the DTP input of the endpoint.
3. Connect the endpoint to the device to be controlled.
4. Wire an IR emitter to the IR connector of the twisted pair receiver, and place the emitter on the display device.

SIS Configuration and Control

The IN1806 and IN1808 Series scalers can be configured and controlled via Extron Simple Instruction Set (SIS) commands when connected to a host computer or other device (such as a control system). Attach the host device to the rear panel RS-232 connector or LAN connector, or to the front panel USB port. Commands can be entered using a Telnet application such as the Extron DataViewer, available at www.extron.com (see the *DataViewer Help* file for more details). The default protocol for the RS-232 connection is 9600 baud, 8 data bits, 1 stop bit, no parity, and no flow control. This section describes SIS communication and control. Topics in this section include:

- [Host and Scaler Communication](#)
- [SIS Overview](#)
- [Command and Response Tables for SIS Commands](#)

Host and Scaler Communication

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the scaler 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).

Copyright Messages

The copyright message is displayed upon connecting to a scaler via TCP/IP or Telnet or after a power cycle via RS-232, and depends on the scaler model.

```
↵ (c) Copyright YYYY, Extron Electronics, IN180n <model>, Vn.nn,  
60-16nn-0n↵  
Ddd, DD MMM YYYY HH:MM:SS↵ (day, date, and time as in Thu, 17 Mar 2022 11:27:33)
```

- YYYY is the year.
- <model>, if applicable, is IPCP SA, IPCP MA 70, IPCP Q SA, or IPCP Q MA 70
- 60-16nn-0n is the model part number:
 - IN1806 — 60-1663-01
 - IN1808 base model — 60-1615-01
 - IN1808 IPCP SA — 60-1615-02
 - IN1808 IPCP MA 70 — 60-1615-03
 - IN1808 IPCP Q SA — 60-1615-92
 - IN1808 IPCP Q MA 70 — 60-1615-93
- Vn.nn is the firmware version number.

Password Messages

If the IN1806 or IN1808 is protected by a password, the following password message prompts you for the password to access the scaler features.

←Password←

The prompt requires a password, followed by a carriage return. The prompt is repeated if the correct password is not entered.

- **For initial setup:** On the rear panel of the IN1806 or IN1808, a label is attached containing the following:

The factory-configured passwords for all accounts on this device have been set to the device serial number. Passwords are case-sensitive.

This means that, for initial setup, you must enter the serial number of your unit at the password prompt (the serial number can be found on another label on the rear panel). This password allows administrator level access.

If the correct password is entered, access is granted and the command prompt is displayed. If the password is incorrect, the ←Password← prompt reappears.

NOTE: Performing a unit factory reset (entering a **ZQQQ SIS command** or a **mode 5 reset** via the rear panel **Reset** button) sets the serial number password to the default, which is no password.

- **After a password change:** After the initial access, you can keep the serial number password or change it. You can also set administrator and user level passwords (see the **Password commands** on page 86).

When you enter the new password correctly, the unit responds with one of the following, depending on the password entered:

- ←Login Administrator←
- ←Login User←

(If the password is **not** accepted, the **Password** prompt reappears.)

The **Login Administrator** response represents administrator level access, while the **Login User** response represents user level access. If the passwords are the same for both administrator and user, the unit defaults to administrator privileges.

If the unit is **not** password-protected, it is ready to accept SIS commands immediately after it sends the copyright message.

Scaler-initiated Messages

When certain local events occur, such as a change with regard to input signal presence, the scaler responds by sending a message to the host. No response is required from the host. The following messages may be sent:

- **Reconfig**← A change in the current input frequency was detected.
- **HplgO** x2 * x69← A hot plug event was detected on output x2.
For x69: 1 = assertion, 2 = de-assertion
- **HdcpI** x1 * x44← A change was detected in the HDCP status of input x1.
- **HdcpO** x2 * x44← A change was detected in the HDCP status of output x2.
- **IN00**• x51 * ... * x51← This message appears when a sync change (detected or removed) occurs on any input.


x51 is the video signal status for each input. For x51, 0 = no input signal detected, 1 = input signal detected.

Error Responses

When the scaler 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, it returns an error response to the host.

E01 — Invalid input number	E17 — Invalid command for signal type
E10 — Invalid command	E22 — Busy
E11 — Invalid preset number	E24 — Privilege violation
E12 — Invalid port number	E25 — Device not present
E13 — Invalid value	E28 — Bad filename or File not found
E14 — Not valid for this configuration	E33 — Bad file type for logo

Disabling Telnet

If it becomes necessary to disable Telnet communication in order to require the Secure Shell (SSH) secure communication protocol to transmit SIS commands, remap the Telnet port as described below. (The  symbol shown here represents a carriage return with a line feed, in other words, pressing the <Enter> key.)

1. Use an SSH client (such as PuTTY) to connect to the scaler using SSH over port **22023**, or

Use a Telnet client (such as Extron DataViewer or PuTTY) to connect to the scaler over port **23**.

2. Enter the following SIS command to remap the Telnet port to **00000**.

Z0PMAP

This disables Telnet at port 23.

To re-enable Telnet:

Using an SSH client connected to port 22023, enter following command if you want to re-enable Telnet on port 23:

Z23PMAP

See [Ethernet Port Configuration](#) on page 86 for the port remapping SIS commands.

SIS Overview

Using the Command and Response Tables

The [Command and Response Tables for SIS Commands](#) starting on page 63 lists the commands that the scaler recognizes as valid, the responses that are returned to the host, a description of the command function, and examples of commands in ASCII.

ASCII to Hex Conversion Table																Esc	1B	CR	0D	LF	0A
Space	20	!	21	"	22	#	23	\$	24	%	25	&	26	'	27						
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F						
0	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37						
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F						
@	40	A	41	B	42	C	43	D	44	E	45	F	46	G	47						
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F						
P	50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57						
X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F						
`	60	a	61	b	62	c	63	d	64	e	65	f	66	g	67						
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F						
p	70	q	71	r	72	s	73	t	74	u	75	v	76	w	77						
x	78	y	79	z	7A	{	7B	|	7C	}	7D	~	7E	DEL	7F						

Figure 33. ASCII to Hexadecimal Character Conversion Table

Symbol Definitions

NOTES:

- Upper- and lowercase text can be used interchangeably unless otherwise stated.
- If the unit does not support or recognize an entered command, it ignores the command and nothing happens.

•	=	Space	
↵	=	Carriage return with line feed	
←	=	Carriage return with no line feed	
|	=	Pipe (can be used interchangeably with the ← character)	
Esc	=	Escape	
W	=	Can be used interchangeably with the Esc character	
X1	=	Input selection	<p>Response is two digits, padded with a zero.</p> <p>1 = DisplayPort input 1 (all models)</p> <p>2-6 = HDMI or DVI inputs 2 through 6 (all models)</p> <p>7-8 = DTP2/XTP inputs 7 and 8 (IN1808 Series only)</p> <p>9 = Aux audio input</p>
X2	=	Output connector selection	<p>1 = HDMI/DVI output 1A</p> <p>2 = DTP2/XTP/HDBT output 1B</p> <p>3 = HDMI/DVI Loop output</p>
X3	=	Digital video format	<p>0 = No signal</p> <p>1 = DVI</p> <p>2 = HDMI</p> <p>3 = DisplayPort</p>
X4	=	Audio input	<p>1 = DP 1</p> <p>2 = HDMI 2</p> <p>3 = HDMI 3</p> <p>4 = HDMI 4</p> <p>5 = HDMI 5</p> <p>6 = HDMI 6</p> <p>7 = TP 7 (IN1808 Series only)</p> <p>8 = TP 8 (IN1808 Series only)</p> <p>9 = Aux In</p> <p>10 = Mic/Line 1</p> <p>11 = Mic/Line 2</p> <p>12 = Line In 3</p> <p>13 = Line In 4</p> <p>14 = File Playback L</p> <p>15 = File Playback R</p>
X5	=	Audio output connector selection	<p>1 = HDMI 1A</p> <p>2 = TP 1B</p> <p>3 = Over DTP Analog</p> <p>4 = Line Out 1</p> <p>5 = Line Out 2</p> <p>6 = Line Out 3</p> <p>7 = Line Out 4</p>
X6	=	Total lines	Response is four digits, padded with zeros.
X7	=	Total pixels	Response is four digits, padded with zeros.
X8	=	Active lines	Response is four digits, padded with zeros.
X9	=	Active pixels	Response is four digits, padded with zeros.
X10	=	Enable or disable	<p>0 = Off or disabled</p> <p>1 = On or enabled</p>

X12	= Internal temperature	In degrees Celsius. Response is two digits, padded with a zero.
X13	= Horizontal and vertical frequencies	<i>nnn.nn</i> Response is three digits with two decimal places, padded with zeros. (Example: 075.32)
X14	= Text label	Up to 32 characters. Cannot contain , (comma) , * , or | .

NOTES:

- Input presets saved without a name are given the default name **INPUT PRESET *nnn***. The default logo name is **Logo *nn*** (for example, **Logo 05**)
- Saving a file name consisting of a single space repopulates the field with the default name.

X15	= Picture adjustment	0-127 (default = 64) Response is three digits, padded with zeros.
X16	= Horizontal and vertical position (shift)	Range is \pm the horizontal or vertical position of the maximum supported output resolution. <ul style="list-style-type: none"> • Response is five digits, padded with zeros and preceded by + or -. • The logo vertical position allows up to \pm 2400.
X17	= Horizontal and vertical size	Horizontal = 10 to two times the maximum supported output resolution Vertical = 10 to two times the maximum supported output resolution Response is five digits, padded with zeros.
X20	= EDID file	128 or 256 bytes of binary data

x21 = EDID emulation or output rate
(See the Input EDID and Output Resolutions table.)

0 = Automatic (default input EDID, matches the current output resolution)
1 = Output 1A HDMI (available for EDID export only)
2 = Output 1B TP (available for EDID export only)
3 = Loop output (available for EDID export only)
201 – 210 = Custom EDID or output rates 1 – 10.

Input EDID and Output Resolutions								
Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz
Automatic*	0* — Match current scaler output resolution							
640x480								10
800x600								11
1024x768								12
1280x768								13
1280x800								14
1280x1024								15
1360x768								16
1366x768								17
1440x900								18
1400x1050								19
1600x900								20
1680x1050								21
1600x1200								22
1920x1200								23
480p							24	25
576p						26		
720p			29	30	31	32	33	34
1080i						35	36	37
1080p	38	39	40	41	42	43	44	45**
2048x1080 (2K)	46	47	48	49	50	51	52	53
2048x1200								54
2048x1536								55
2560x1080								56
2560x1440								57
2560x1600								58
3840x2160	59	60	61	62	63	64***	65***	66***
4096x2160*****	69	70	71	72	73	74****	75****	76****

*Default input EDID

**Default output resolution

***4:4:4 color sampling at these rates is available only when operating with an HDMI output or a DTP2 endpoint.

****4:4:4 color sampling at these rates is available only with HDMI outputs or to a DTP2 Rx.

*****4096x2160 rates are available only for output resolution and cannot be selected for input EDID.

X22	=	Test patterns	<p>0 = Off (default) 1 = Crop 2 = Alternating pixels 3 = Crosshatch 4 = Color Bars 5 = Grayscale 6 = Audio test — Crop pattern with orbiting text AUDIO TEST and outputting pink noise at LPCM-2Ch, 48 kHz, 24-bit. Response is two digits, padded with a zero. 1 through 128 Response is three digits, padded with zeros.</p>
X26	=	Input presets	<p>1 through 128 Response is three digits, padded with zeros.</p>
X28	=	Output sync or OSD menu timeout	<p>Number of seconds before output sync or the OSD menu times out. 1 through 500 seconds, in 1-second increments 0 = Output sync is instantly disabled with no active video from the selected input (SSAV command only). 60 = Default for the MDUR command. 501 = Output sync never times out (default for SSAV command).</p>
X29	=	Front Panel Lockout (executive) mode status	<p>0 = Off or disabled (front panel controls fully accessible) (default). 1 = Mode 1 — Complete front panel lockout 2 = Mode 2 — Input switching, logos, and audio adjustments only 3 = Mode 3 — Input switching and logos only 4 = Mode 4 — Volume adjustments only</p>
X30	=	Auto-input switch mode	<p>0 = Disabled — Manual switching (default) 1 = User-defined priority mode — The scaler selects the input to which the user assigns priority. If no priority is assigned, the scaler selects the active input with the highest number. 2 = Last connected mode — The scaler selects the most recently applied input, and retains a history of the order in which active inputs are connected to the unit. If an active input is removed, the scaler switches to the most recently prioritized input.</p>
X31	=	Auto-input switching priority	<p>Input number for input switching priority. 1 = Input 1 2 = Input 2 3 = Input 3 4 = Input 4 5 = Input 5 6 = Input 6 7 = Input 7 (IN1808 Series only) 8 = Input 8 (IN1808 Series only)</p>
X32	=	Auto-input switch timeout	<p>Number of seconds without video that elapse before switching to the previous input. 1 through 500 in 1-second increments 3 = default (3 seconds) 0 = Immediately switch to most recent input if the current input is removed.</p>

X34 = Verbose mode

0 = None (default for LAN connection)
1 = Verbose mode (default for RS-232 and USB connection)
2 = Tagged responses to queries
3 = Verbose mode and tagged responses

NOTES:

- In **verbose response** mode, the IN1806 or IN1808 returns unsolicited responses for value and setting changes that may result from a signal change, or a setting adjustment made via another interface.

Example: The IN1806 or IN1808 can send out a notice of a change in some setting without receiving a query via a PC or a control system. That change could have been a result of an internal process or a selection made via the PCS program. This is a verbose (wordy) relationship between the controller and a connected device.

- If **tagged responses** are enabled, all “view” commands return the command string plus the data, the same as in responses for setting a value. For example:

Command: **X1***\

Response: Vtyp**X1*****X3**← or **X3**← (untagged)

X35 = Model name

Model name of the unit:

IN1806
IN1808
IN1808 IPCP SA
IN1808 IPCP MA 70
IN1808 IPCP Q SA
IN1808 IPCP Q MA 70

X36 = Part number

IN1806 — 60-1663-01
IN1808 (base model) — 60-1615-01
IN1808 IPCP SA — 60-1615-02
IN1808 IPCP MA 70 — 60-1615-03
IN1808 IPCP Q SA — 60-1615-92
IN1808 IPCP Q MA 70 — 60-1615-93

X39 = Aspect ratio setting

1 = Fill — Each input rate fills the entire output raster (default).

2 = Follow — Each input rate is displayed with its native aspect ratio.

X40 = Screen saver mode

1 = Black screen (default)
2 = Blue screen with OSD text
3 = User image on black screen

X42 = Video output mute

0 = Unmute
1 = Mute video to black screen
2 = Mute video and sync

X43 = User logo number

1 through 16. Response is three digits padded with zeros.
101 = No signal user logo
201 = HDCP user logo

X44 = HDCP status

0 = No sink or source device detected
1 = Sink or source detected but no HDCP present
2 = Sink or source detected with HDCP

X45 = Output video switch effect

- 0** = Cut through black — The input instantly cuts to black, then cuts to the newly selected input with no fading.
- 1** = Fade through black — The input fades to black before the newly selected input fades in.
- 2*** = Seamless fade (default) — Displays a final frozen frame of the previous input while the newly selected input fades in.
- 3*** = Seamless cut — The last frame of video freezes on the screen, then cuts to the newly selected input.

Between input switches the audio ramps down, then up.

* For Seamless switch effects, if either the input resolution or the scaled output resolution is 3840x2160 @ 50 or 60 Hz or 4096x2160 @50 or 60 Hz, the OSD menu and any logo image briefly mutes during input switching.

X46 = HDCP output mode

- 0** = Off — Disable all HDCP authentication and encryption attempts.
- 1** = Follow input (with a maximum of 10 seconds of authentication trials, default).
- 2** = Encrypt output (with a maximum of 10 seconds of authentication trials).
- 3** = Follow input (with continuous authentication trials).
- 4** = Encrypt output (with continuous authentication trials).

X47 = HDCP notification mode

- 0** = Black screen — Notification disabled (mute output)
- 1** = Green screen with OSD orbiting message (default)
- 2** = User image with black screen background

X48 = HDMI output format

- 0** = Auto (default) — HDMI RGB Full to a CEA sink, or DVI to a non-CEA sink
- 1*** = DVI — RGB 444, 0-255. Valid for output rates up to 165 MHz
- 2** = HDMI RGB Full — RGB 444, 0-255
- 3** = HDMI RGB Limited — RGB 444, 16-235
- 5** = HDMI YUV 444 Limited — YUV 444, 16-235
- 7** = HDMI YUV 422 Limited — YUV 422, 16-235
- * If the scaler is in DVI mode and a rate greater than 165 MHz is selected, the HDMI output defaults to **Auto**.

X50 = Audio input format

Format Selection	Details
0 =	None (input muted) — All audio outputs are muted.
1 =	Analog Aux Line input — 5-pole captive screw connector*
2 =	LPCM-2Ch digital — Embedded in the HDMI input signal. LPCM-2Ch audio is requested from the source via EDID.
3 =	Multi-Ch digital — Allows any digital audio format requested from the source via EDID. Audio delay is applied and the signal is re-embedded into the HDMI output signal.
4 =	LPCM-2Ch Auto Aux Line (default) — LPCM-2Ch audio is requested from the source via EDID. The scaler uses embedded digital audio when it is present, or defaults to the Aux* Line input when digital is not present.
5 =	Multi-Ch Auto Aux Line — Multi-Ch audio is requested from the source via EDID. The scaler uses embedded digital audio when it is present, or defaults to the Aux* Line input when digital is not present.

*On the IN1808 Series, when input 7 or 8 is set to DTP mode, the scaler uses analog audio from the remote DTP transmitter instead of analog audio from the rear panel of the IN1808. Analog and Auto formats are not allowed on inputs 7 and 8 of the IN1808 Series when it is set to XTP mode.

X51	=	Video signal status	<p>0 = Video, TMDS, or DP signal not detected 1 = Video, TMDS, or DP signal detected</p>
X57	=	Remote port number	<p>1 = Remote port (3-pole captive screw) 7 = Universal asynchronous receiver-transmitter (UART) on DTP Input 7 (IN1808 Series only) 8 = Universal asynchronous receiver-transmitter (UART) on DTP Input 8 (IN1808 Series only) 9 = UART on DTP/HDBT Output 1B</p>
X58	=	Baud rate, RS-232 port	<p>300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600 (default), 14400, 19200, 28800, 38400, 57600, or 115200</p>
X59	=	Parity	<p>Odd, Even, None (default), Mark, Space Only the first letter is required.</p>
X60	=	Data bits	<p>7 or 8 (default)</p>
X61	=	Stop bits	<p>1 (default) or 2</p>
X62	=	Power Save mode	<p>0 = Full power mode (default) 1 = Lowest power state — TP remote power and over TP functions are disabled. 2 = Low power state — Over TP and TP remote power are enabled.</p>
X63	=	Screen saver status	<p>0 = Active input detected, timer not running 1 = No active input, timer running, output sync still active 2 = No active input, timer expired, output sync disabled</p>
X64	=	Port timeout	<p>Set time in increments of 10 seconds before the port connection times out. 1 (10 seconds) through 65000 (650,000 seconds) Default = 30 (300 seconds)</p>
X65	=	Start point for UART ports	<p>Start point for UART ports: Rear panel RS-232 = X65 TP IN 7 = X65 + 1 (IN1808 Series only) TP IN 8 = X65 + 2 (IN1808 Series only) TP OUT 1B = X65 + 3 Default = 2000, meaning: IN7 = 2001 IN8 = 2002 TP OUT1B = 2003</p>
X66	=	DTP remote power	<p>0 = No remote power (default) 1 = DTP — 12 VDC 2 = DTP2 — 48 VDC</p>
X67	=	Twisted Pair format	<p>0 = DTP format (default) 1 = XTP format 2 = HDBaseT format (supported on output only)</p>
X69	=	Hot plug change or detection	<p>0 = A sink has been removed (HPD deasserted). 1 = A new sink has been connected (HPD asserted).</p>
X70	=	Key effect variable	<p>0 = Transparency (available only when X72 = 1) 1 = Red of RGB key (available only when X72 = 2) 2 = Green of RGB key (available only when X72 = 2) 3 = Blue of RGB key (available only when X72 = 2) 4 = Level key</p>
X71	=	Key effect setting	<p>0 through 255</p>
X72	=	Key effect	<p>0 = Disabled (default) 1 = Transparency 2 = RGB key 3 = Level key 4 = Alpha key</p>

X80	=	Audio playback file slot number	1 through 16 Highest priority for playback is slot 1, descending to lowest priority slot 16.
X82	=	Playback state	0 = Stop or stopped 1 = Play or playing
X83	=	Repeat	0 = No 1 = Yes
<div style="border: 1px solid black; padding: 5px;"> <p>NOTE: Setting the repeat mode to 0 during continuous playback causes play to stop after the end of the current iteration.</p> </div>			
X84	=	Playback delay	Number of seconds to wait before the audio file repeats (valid only if X83 = 1 [repeat]). 1 through 300 (1-300 seconds delay between audio playbacks) 0 = No delay
X85	=	Configuration type	0 = IP configuration (ip.cfg) 2 = Unit-specific parameters (box.cfg)
X86	=	Number of open connections	0-<maximum number of open connections>
X87	=	IP address	Format <i>nnn.nnn.nnn.nnn</i> Default = 192.168.254.254 Leading zeros in each of the four octets are optional in setting values, and are suppressed in returned values.
X88	=	Gateway IP address	Format <i>nnn.nnn.nnn.nnn</i> Default = 0.0.0.0 Leading zeros in each of the four octets are optional in setting values, and are suppressed in returned values.
X89	=	Subnet mask	Format <i>nnn.nnn.nnn.nnn</i> Default = 255.255.255.0 Leading zeros in each of the four octets are optional in setting values, and are suppressed in returned values.
X90	=	Hardware (MAC) address	00-05-A6-xx-xx-xx
X91	=	Password	<ul style="list-style-type: none"> Length is 1-128 characters. All human-readable characters are allowed except |. The password cannot be a single space. Passwords are case-sensitive. A user password cannot be assigned if no administrator password exists. An E14 error code is returned. If the admin password is cleared, the user password is cleared as well.
X92	=	Default unit name	Combination of the model name and the last three hexadecimal character pairs of the unit MAC address (Example: IN1808-IPCP-SA-15-9E-B0)
X93	=	Subnet mask in CISG commands	Prefix representing subnet mask bits (subnet mask value in CISG commands). Default = /24, which represents the default subnet mask, 255.255.255.0.
X94	=	TP Ethernet insertion or Over TP serial device control	1 = TCP/IP UART insertion 2 = Over TP serial device control
X95	=	Normal or inverted TP IR	0 = Normal (default) 2 = Over TP serial device control

Command and Response Tables for SIS Commands

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Input Configuration			
Input Selection			
Video and audio input	[X1]*1!	In [X1]*1•All ↵	Select video and audio from input [X1] to output 1.
Video input	[X1]*1%	In [X1]*1•Vid ↵	Select video from input [X1] to output 1.
Audio input	[X1]*1\$	In [X1]*1•Aud ↵	Select audio from input [X1] to output 1.
View current input	1!	[X1] ↵	View the AV source for output 1. (Returns an E13 error code when the switcher is in breakaway mode.)
View video input	1%	[X1] ↵	View the video source for output 1.
View audio input	1\$	[X1] ↵	View the audio source for output 1.
Input Video Format			
View detected input format	[X1]*\	[X3] ↵ <i>Verbose modes 2 and 3:</i> Vtyp [X1]*[X3] ↵	View video format [X3] detected on input [X1] .
Video Input Name			
Write input name	[Esc] I[X1]*[X14]VNAME ↵	VnamI [X1]*[X14] ↵	Set name [X14] for video input [X1] .
View input name	[Esc] I[X1]VNAME ↵	[X14] ↵	View name [X14] of video input [X1] .
NOTE: To clear an input name, enter a single space for [X14] . The input name is reset to the default.			
Loop Out Tie			
Set loop out input	[Esc][X1]LOUT ↵	Lout [X1] ↵	Tie the loop output to input [X1] .
View loop out input	[Esc]LOUT ↵	[X1] ↵	View the loop out input. Default = 1
KEY: <div> <div>[X1] = Input selection</div> <div> 1 = DisplayPort input 1 2-6 = HDMI or DVI input 2, 3, 4, 5, or 6 7-8 = DTP2/XTP input 7 or 8 (IN1808 Series only) 9 = Aux audio input (audio input selection only) </div> </div> <div> <div>[X3] = Input digital video format (view only)</div> <div> Ø = No input signal detected 1 = DVI 2 = HDMI 3 = DisplayPort </div> </div> <div> <div>[X14] = Input name (text label)</div> <div> Can contain up to 32 characters, excluding: , (comma) ,*, and |. Default = Video•Input•[X1]. </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Input Configuration (continued)			
Input EDID			
Specify an EDID value	[Esc]A [X1]*[X21] EDID←	EdidA [X1]*[X21] ↵	Assign EDID [X21] to input [X1] .
View assigned EDID	[Esc]A [X1] EDID←	[X21] ↵	View EDID [X21] for input [X1] .
Save the output EDID to a custom slot	[Esc]S [X2]*[X21] EDID←	EdidS [X2]*[X21] ↵	Save the EDID of output [X2] to [X21] .
NOTE: For the Save command, [X21] can be 201 through 210 only.			
View EDID native resolution	[Esc]N [X21] EDID←	nnnnxnnnn•@nn.nnHz↵ Verbose modes 2 and 3: EdidN [X21]* nnnnxnnnn•@nn.nnHz↵ Example: EdidN013*1280x768 @59.87Hz↵	Show the resolution and refresh rate of EDID [X21] .
Export EDID file	[Esc]E [X21], <filename> EDID←	EdidE [X21] ↵	Export EDID [X21] to <filename> .
Import EDID file	[Esc]I [X21], <filename> EDID←	EdidI [X21] ↵	Import EDID [X21] from <filename> .
NOTES: <ul style="list-style-type: none"> For the Import EDID command, [X21] can be 10 through 210. For the Export command, [X21] can be 201 through 210. <Filename> can optionally be a full path name. The EDID file format is 128 or 256 bytes of binary data with a .bin extension. Exporting a default EDID ([X21] value of 10 through 76) results in HDMI with LPCM-2Ch audio EDID being exported. 			
Auto-Image			
Execute	1*0A	Img1*0↵	Execute an Auto-Image for the current input (follows the current aspect ratio).
Execute and fill	1*1A	Img1*1↵	Execute an Auto-Image and fill the output raster.
Execute and follow	1*2A	Img1*2↵	Execute an Auto-Image and maintain the aspect ratio of the current input.
KEY: <div> <div> [X1] = Input selection 1 = DisplayPort input 1 2-6 = HDMI or DVI input 2, 3, 4, 5, or 6 7-8 = DTP2/XTP input 7 or 8 (IN1808 Series only) 9 = Aux audio input </div> <div> [X2] = Output 1 = HDMI/DVI output 1A 2 = DTP2/XTP/HDBT output 1B 3 = HDMI/DVI Loop output </div> <div> [X21] = EDID emulation See the Input EDID and Output Resolutions table on page 57. </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Input Configuration (continued)			
HDCP Authorized			
Enable HDCP support	[Esc][X1]*1HDCP ←	Hdcp [X1]*1 ↵	Enable HDCP encryption support for input [X1] (default).
NOTE: HDCP Authorized is permanently enabled for DisplayPort IN1.			
Disable HDCP support	[Esc][X1]*0HDCP ←	Hdcp [X1]*0 ↵	Disable HDCP encryption support for input [X1] .
View HDCP support status	[Esc][X1]HDCP ←	[X10] ↵	View HDCP encryption support status.
Input Aspect Ratio			
Set for fill	[Esc][X1]*1ASPR ←	Aspr [X1]*1 ↵	Set input [X1] to always fill the entire output raster (default).
Set to follow	[Esc][X1]*2ASPR ←	Aspr [X1]*2 ↵	Set input [X1] to maintain its current native aspect ratio.
View aspect setting	[Esc][X1]ASPR ←	[X39] ↵	View current aspect ratio setting [X39] for input [X1] .
Active Pixels and Lines			
View active pixels	[Esc][X1]APIX ←	[X8] ↵ <i>Verbose modes 2 and 3:</i> Apix [X1]*[X8] ↵	View active pixels [X8] on input [X1] .
View active lines	[Esc][X1]ALIN ←	[X9] ↵ <i>Verbose modes 2 and 3:</i> Alin [X1]*[X9] ↵	View active lines [X9] on input [X1] .
3:2, 2:2, and 24:1 Film Mode Detection			
Auto	[Esc][X1]*1FILM ←	Film [X1]*1 ↵	Enable automatic film mode detection for input [X1] (default).
Off	[Esc][X1]*0FILM ←	Film [X1]*0 ↵	Disable film mode detection for input [X1] .
View film mode setting	[Esc][X1]FILM ←	[X10] ↵	View the film mode setting for input [X1] .
KEY: <div> <div> [X1] = Input selection <div> 1 = DisplayPort input 1 2-6 = HDMI or DVI input 2, 3, 4, 5, or 6 7-8 = DTP2/XTP input 7 or 8 (IN1808 Series only) 9 = Aux audio input </div> </div> <div> [X8] = Active pixels <div>Response is four digits, padded with zeros.</div> </div> <div> [X9] = Active lines <div>Response is four digits, padded with zeros.</div> </div> <div> [X10] = On or Off status <div> 0 = Off or disabled 1 = On or enabled (default) </div> </div> <div> [X39] = Aspect ratio setting <div> 1 = Fill — Each input rate fills the entire output raster (default). 2 = Follow — Each input rate is displayed with its native aspect ratio. </div> </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Input Configuration (continued)			
Auto-input Switch Mode			
Set the auto-input switch mode	[Esc][X30]AUSW←	Ausw[X30]←	Set the auto-input switch mode to [X30].
View auto-input switch mode	[Esc]AUSW←	[X30]←	View current auto-input switch mode [X30].
Set user priority order	[Esc]P[X31]•[X31]•...•[X31]AUSW←	AuswP[X31]•[X31]•...•[X31]←	Set the input priority switching order, highest priority (first) to lowest (last).
NOTE: The Set Priority command returns an E13 error code unless the correct number of [X31] variables are entered.			
View priority order	[Esc]P AUSW←	[X31]•[X31]•...•[X31]←	View the order in which the inputs will be selected (highest to lowest priority).
Set timeout	[Esc]T[X32]AUSW←	AuswT[X32]←	Set the amount of time without video to switch to the previous input.
View timeout	[Esc]TAUSW←	[X32]←	View the auto-input switch timeout duration in seconds.
KEY: <div> <div>[X30] = Auto-input switch mode</div> <div> 0 = Disabled — Manual switching (default) 1 = User-defined priority mode — The scaler selects the input to which the user assigns priority. If no priority is assigned, the scaler selects the active input with the highest number. 2 = Last connected mode — The scaler selects the most recently applied input, and retains a history of the order in which active inputs are connected to the unit. If an active input is removed, the scaler switches to the most recently prioritized input. </div> </div> <div> <div>[X31] = Input number for setting user priority</div> <div> Arrange input numbers in user priority order. 1 = Input 1, 2 = input 2, 3 = input 3, 4 = input 4, 5 = input 5, 6 = input 6. 7 = Input 7, 8 = input 8 (IN1808 Series only) </div> </div> <div> <div>[X32] = Auto-input switch timeout</div> <div> Number of seconds without video that elapse before switching to the input with the next priority. 1 through 500 (in 1-second increments, default = 3 seconds) 0 = Immediately switch to the input with the next priority if the current input is removed. </div> </div>			
Picture Adjustments			
Freeze			
Enable	1*1F	Frz1*1←	Freeze the output on the screen.
Disable	1*0F	Frz1*0←	Unfreeze the output.
View	1F	[X10]←	Show the freeze status of the output.
KEY: <div> <div>[X10] = On or Off status</div> <div> 0 = Off or disabled (default) 1 = On or enabled </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Picture Adjustments (continued)			
Contrast			
Set a specific value	$\text{Esc} \text{X1} * \text{X15} \text{CONT} \leftarrow$	$\text{Cont} \text{X1} * \text{X15} \leftarrow$	Set the range of image light and dark values (contrast level) to X15 for input X1 .
Increment contrast value	$\text{Esc} \text{X1} + \text{CONT} \leftarrow$	$\text{Cont} \text{X1} * \text{X15} \leftarrow$	Increment contrast level X15 for input X1 .
Decrement value	$\text{Esc} \text{X1} - \text{CONT} \leftarrow$	$\text{Cont} \text{X1} * \text{X15} \leftarrow$	Decrement contrast level X15 for input X1 .
View contrast	$\text{Esc} \text{X1} \text{CONT} \leftarrow$	$\text{X15} \leftarrow$	View the current contrast level for input X1 .
Brightness			
Set a specific value	$\text{Esc} \text{X1} * \text{X15} \text{BRIT} \leftarrow$	$\text{Brit} \text{X1} * \text{X15} \leftarrow$	Set the intensity of video light on the screen (brightness level) to X15 for input X1 .
Increment value	$\text{Esc} \text{X1} + \text{BRIT} \leftarrow$	$\text{Brit} \text{X1} * \text{X15} \leftarrow$	Increment brightness level X15 for input X1 .
Decrement value	$\text{Esc} \text{X1} - \text{BRIT} \leftarrow$	$\text{Brit} \text{X1} * \text{X15} \leftarrow$	Decrement brightness level X15 for input X1 .
View	$\text{Esc} \text{X1} \text{BRIT} \leftarrow$	$\text{X15} \leftarrow$	View the current brightness level for input X1 .
Detail Filter			
Set detail level	$\text{Esc} 1 * \text{X15} \text{HDET} \leftarrow$	$\text{Hdet} 1 * \text{X15} \leftarrow$	Specify the detail (sharpness) level to X15 .
Increment value	$\text{Esc} 1 + \text{HDET} \leftarrow$	$\text{Hdet} 1 * \text{X15} \leftarrow$	Increase the detail level by 1.
Decrement	$\text{Esc} 1 - \text{HDET} \leftarrow$	$\text{Hdet} 1 * \text{X15} \leftarrow$	Decrease the detail level by 1.
View	$\text{Esc} 1 \text{HDET} \leftarrow$	$\text{X15} \leftarrow$	View the current detail setting (X15) for the currently selected input.
Horizontal Position (Shift) – Image			
Specific value	$\text{Esc} \text{I1} * \text{X16} \text{HCTR} \leftarrow$	$\text{Hctr} \text{I1} * \text{X16} \leftarrow$	Set the horizontal position of the image in relation to the top left corner of the output raster to X16 .
Increment value	$\text{Esc} \text{I1} + \text{HCTR} \leftarrow$	$\text{Hctr} \text{I1} * \text{X16} \leftarrow$	Shift the image right 1 pixel.
Decrement value	$\text{Esc} \text{I1} - \text{HCTR} \leftarrow$	$\text{Hctr} \text{I1} * \text{X16} \leftarrow$	Shift the image left 1 pixel.
View	$\text{Esc} \text{I1} \text{HCTR} \leftarrow$	$\text{X16} \leftarrow$	View image horizontal centering value X16 .
KEY: <div style="display: flex; justify-content: space-between;"> <div> X1 = Input selection X15 = Picture adjustment X16 = Horizontal and vertical position (shift) </div> <div> 1 = DisplayPort input 1 2-6 = HDMI or DVI input 2, 3, 4, 5, or 6 7-8 = DTP2/XTP input 7 or 8 (IN1808 Series only) 9 = Aux audio input 0-127 (default = 64) The position is \pm the horizontal or vertical position of the highest output resolution. The response is five digits, padded with zeros and preceded by + or -. H position: -4096 to 4096 V position: -2400 to 2400 </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Picture Adjustments (continued)			
Vertical Position (Shift) — Image			
Specific value	[Esc]I1*[X16]VCTR←	VctrI1*[X16]↵	Set the vertical position of the image in relation to the top left corner of the output raster to [X16] .
Increment value	[Esc]I1+VCTR←	VctrI1*[X16]↵	Shift the image down by 1 line.
Decrement value	[Esc]I1-VCTR←	VctrI1*[X16]↵	Shift the image up by 1 line.
View	[Esc]I1VCTR←	[X16]↵	View image vertical centering value [X16] .
Horizontal Size — Image			
Specific value	[Esc]I1*[X17]HSIZ←	HsizI1*[X17]↵	Set the horizontal size (width) of the image to [X17] .
Increase horizontal size	[Esc]I1+HSIZ←	HsizI1*[X17]↵	Widen the image by 1 pixel.
Decrease horizontal size	[Esc]I1-HSIZ←	HsizI1*[X17]↵	Narrow the image by 1 pixel.
View	[Esc]I1HSIZ←	[X17]↵	View image horizontal size [X17] .
Vertical Size — Image			
Specific value	[Esc]I1*[X17]VSIZ←	VsizI1*[X17]↵	Set the vertical size (height) of the image to [X17] .
Increase vertical size	[Esc]I1+VSIZ←	VsizI1*[X17]↵	Make the image taller by 1 line.
Decrease vertical size	[Esc]I1-VSIZ←	VsizI1*[X17]↵	Shorten the image by 1 line.
View	[Esc]I1VSIZ←	[X17]↵	View image vertical size [X17] .
Compound Image Position and Size — Image			
Specific value	[Esc]1,[X16]*[X16]*[X17]*[X17]XIMG←	Ximg1,[X16]*[X16]*[X17]*[X17]↵	Set the horizontal (x) and vertical (y) position ([X16]) and horizontal and vertical size ([X17]) for the image.
View	[Esc]1XIMG←	[X16]*[X16]*[X17]*[X17]↵	View x, y position and x, y size for image.
KEY: <div> <div>[X16] = Horizontal and vertical position (shift)</div> <div>The position is ± the horizontal or vertical position of the highest output resolution. H position: -4096 to 4096 V position: -2400 to 2400</div> <div>[X17] = Horizontal and vertical size</div> <div> <ul style="list-style-type: none"> The response is five digits, padded with zeros and preceded by + or -. The logo vertical position allows up to ± 2400. Horizontal = 10 to two times the maximum supported output resolution. The range is 10 to 8192 pixels. Vertical = 10 to two times the maximum supported output resolution. The range is 10 to 4800. </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Output Configuration			
Output Video Mute			
Unmute output video	[X2]*0B	Vmt[X2]*0↵	Unmute video output [X2].
Mute output video	[X2]*1B	Vmt[X2]*1↵	Mute video output [X2].
Mute video and sync	[X2]*2B	Vmt[X2]*2↵	Mute video and sync on output [X2].
View mute status	[X2]*B	[X42]↵	View video mute status [X42] for output [X2].
Video Mute — All Outputs			
Mute all outputs	1B	Vmt1↵	Mute video on all outputs.
Mute sync and video	2B	Vmt2↵	Mute video and sync on all outputs.
Unmute video and sync	0B	Vmt0↵	Display all outputs.
View global mute	B	[X42]•[X42]•[X42]↵ Verbose modes 2 and 3: Vmt[X42]•[X42]•[X42]↵	View video mute status [X42] of all outputs.
NOTE: Video is unmuted (default) after a power cycle.			
Output Scaler Rate			
Set output rate	[Esc]1*[X21]RATE↵	Rate1*[X21]↵	Select the output resolution and refresh rate ([X21]).
View output rate	[Esc]1RATE↵	[X21]↵	View the selected output rate.
Video Output Name			
Write output name	[Esc]0[X2]*[X14]VNAM↵	Vnam0[X2]*[X14]↵	Set name [X14] for video output [X2].
View output name	[Esc]0[X2]VNAM↵	[X14]↵	View name [X14] of video output [X2].
NOTE: To clear an output name, enter a single space for [X14]. The output name is reset to the default.			
KEY: <div> <div> [X2] = Output </div> <div> [X14] = Output name (text label) </div> <div> [X21] = EDID emulation </div> <div> [X42] = Output video mute </div> <div> 1 = HDMI/DVI output 1A 2 = DTP2/XTP/HDBT output 1B 3 = HDMI/DVI Loop output Can contain up to 32 characters, excluding , (comma) , * , and | . Default = Video•Output•[X2]. See the Input EDID and Output Resolutions table on page 57. 0 = Unmute video 1 = Mute video to black screen 2 = Mute video and sync </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Output Configuration (continued)			
HDMI Output Format			
Set output format	[Esc][X2]*[X48]VTP0←	Vtpo[X2]*[X48]↵	Set the colorspace and format for HDMI output [X2] to [X48].
View format setting	[Esc][X2]VTP0←	[X48]↵	View the current output colorspace and format for output [X2].
View auto output format	[Esc][X2]*VTP0←	[X48]↵	View the output format when [X48] is set to 0 (Auto).
KEY: <div> <div>[X2] = Output</div> <div>[X48] = HDMI output format and colorspace</div> <div> 1 = HDMI/DVI output 1A 2 = DTP2/XTP/HDBT output 1B 3 = HDMI/DVI Loop output 0 = Auto — HDMI RGB Full to a CEA sink, or DVI to a non-CEA sink 1* = DVI — RGB 444, 0-255. Valid for output rates up to 165 MHz 2 = HDMI RGB Full — RGB 444, 0-255 3 = HDMI RGB Limited — RGB 444, 16-235 5 = HDMI YUV 444 Limited — YUV 444, 16-235 7 = HDMI YUV 422 Limited — YUV 422, 16-235 * If the scaler is in DVI mode and a rate greater than 165 MHz is selected, the HDMI output defaults to Auto. </div> </div>			
Power Save			
Set power save mode	[Esc][X62]PSAV←	Psav[X62]↵	Set the power save mode to [X62].
View power save mode	[Esc]PSAV←	[X62]↵	View the current power save mode.
KEY: <div> <div>[X62] = Power save mode</div> <div> 0 = Full power mode (default) 1 = Lowest power state — TP remote power and over TP functions are disabled. 2 = Low power state — Over TP and TP remote power are enabled. </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Output Configuration (continued)			
Screen Saver (Enabled when there is no active video on selected input)			
Set mode	[Esc]M1*[X40]SSAV←	SsavM1*[X40]↵	Set the screen saver mode for the output to [X40] .
View mode	[Esc]M1 SSAV←	[X40]↵	View the screen saver mode [X40] for the output. Default = 1 (black).
Set screen saver duration before output sync timeout	[Esc]T1*[X28]SSAV←	Ssav T1*[X28]↵	Set the screen saver timeout duration to [X28] seconds. Default = 501 (never).
View screen saver duration before output sync timeout	[Esc]T1SSAV←	[X28]↵	View screen saver timeout duration [X28] .
View screen saver status	[Esc]S1SSAV←	[X63]↵ <i>Verbose modes 2 and 3:</i> Ssav S 1*[X63]↵	View screen saver status [X63] .
OSD Menu Duration			
Set OSD duration	[Esc][X28]MDUR←	Mdur[X28]↵	Set the OSD menu duration to [X28] .
View OSD duration	[Esc]MDUR←	[X28]↵	View the OSD menu duration.
KEY: <div> <div>[X28] = Output sync or OSD menu timeout</div> <div> Number of seconds before output sync or the OSD menu times out. 1 through 500 seconds, in 1-second increments 0 = Output sync is instantly disabled with no active video from the selected input (not allowed for MDUR command). 60 = Default for the MDUR command. 501 = Output sync never times out (default for SSAV command). </div> </div> <div> <div>[X40] = Screen saver mode</div> <div> 1 = Black screen (default) 2 = Blue screen with OSD text 3 = User image on black screen </div> </div> <div> <div>[X63] = Screen saver status</div> <div> 0 = Active input detected, timer not running 1 = No active input, timer running, output sync still active 2 = No active input, timer expired, output sync disabled </div> </div>			
Logos			
User-supplied Image			
Select image file	[Esc]A[X43], <filename> LOGO←	LogoA[X43], <filename>↵	Assign logo <filename> to logo slot [X43] .
NOTES: <ul style="list-style-type: none"> The file name must include the extension (.png, .bmp, .jpg, .gif, .tif, and so on). If the logo file is not in the /Graphics directory, include a / before the filename to indicate that it is in the root directory. <i>Example: /Logo123.bmp.</i> 			
View selected logo file	[Esc]A[X43]LOGO←	<filename>↵	View the filename assigned to logo [X43] .
KEY: <div> <div>[X43] = User logo number</div> <div> 1 through 16. The response is three digits padded with leading zeros. 101 = A No Signal user logo is displayed. 201 = A user-assigned HDCP logo is displayed. 0 = Logo is disabled. </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Logos (continued)			
Clear Logo			
Clear logo slot	[Esc]X3*[X43]PRST ←	PrstX3*[X43] ←	Clear logo slot [X43] and change its name to [unassigned].
Logo Name			
Write name	[Esc]L[X43],[X14]UNAM ←	Unam L[X43],[X14] ←	Assign logo name [X14] to logo [X43].
View logo name	[Esc]L[X43]UNAM ←	[X14] ←	View the name assigned to logo [X43].
Logo Availability			
View logo availability	[Esc]Q LOGO ←	<16 characters>* <1 character>* <1 character> ← Verbose modes 2 and 3: Logo Q <16 characters>* <1 character>* <1 character> ← 1 = Saved, 0 = Empty	
NOTE: The first 16 digits denote logo images, the digit immediately following the first * indicates the screen saver logo, and the last digit (following the second *) indicates the HDCP logo.			
Logo On or Off			
Disable logo	[Esc]E1*ØLOGO ←	LogoE1*Ø ←	Disable display of the current logo.
Enable logo	[Esc]E1*[X43]LOGO ←	LogoE1*[X43] ←	Display the logo assigned to slot [X43].
View logo status	[Esc]E 1LOGO ←	[X43] ←	View logo slot [X43] for which the logo is enabled.
Horizontal Shift (Logo)			
Specific value	[Esc]L[X43]*[X16] HCTR ←	HctrL [X43] * [X16] ←	Set the horizontal centering of logo [X43] to [X16].
Increment value	[Esc]L[X43]+HCTR ←	HctrL[X43]*[X16] ←	Shift logo right 1 pixel.
Decrement value	[Esc]L[X43] - HCTR ←	HctrL[X43]*[X16] ←	Shift logo left 1 pixel.
View	[Esc]L[X43]HCTR ←	[X16] ←	View horizontal centering value [X16].
Vertical Shift (Logo)			
Specific value	[Esc]L[X43]*[X16]VCTR ←	VctrL[X43]*[X16] ←	Set the vertical centering of logo [X43] to [X16].
Increment value	[Esc]L[X43]+VCTR ←	VctrL[X43]*[X16] ←	Shift logo down 1 pixel.
Decrement value	[Esc]L[X43] - VCTR ←	VctrL[X43]*[X16] ←	Shift logo up 1 pixel.
View	[Esc]L[X43]VCTR ←	[X16] ←	View vertical centering value [X16].
KEY: <div> <div> [X14] = Logo name (text label) </div> <div> [X16] = Horizontal or vertical position (shift) </div> <div> [X43] = User logo number </div> </div> <div> Up to 32 characters, excluding , (comma) ,*, and |. The default logo name is [unassigned]. The position is ± the horizontal or vertical position of the highest output resolution. <ul style="list-style-type: none"> The response is five digits, padded with zeros and preceded by + or -. The logo vertical position allows up to ± 2400. 1 through 16. The response is three digits padded with leading zeros. 101 = No signal, screen saver user logo or image is displayed. 201 = User HDCP logo displayed </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Logos (continued)			
Logo Key Effect			
Disabled	[Esc] [X43]*0 LKEF ←	Lkef[X43]*0↵	Disable key effect for logo [X43].
Transparency	[Esc] [X43]*1 LKEF ←	Lkef[X43]*1↵	Enable transparency for logo [X43].
RGB Key	[Esc] [X43]*2 LKEF ←	Lkef[X43]*2↵	Enable RGB key for logo [X43].
Level Key	[Esc] [X43]*3 LKEF ←	Lkef[X43]*3↵	Enable Level key for logo [X43].
Alpha Key	[Esc] [X43]*4 LKEF ←	Lkef[X43]*4↵	Enable Alpha key for logo [X43].
View setting	[Esc] [X43]LKEF ←	[X72]↵ <i>Verbose modes 2 and 3:</i> Lkef[X43]*[X72]↵	View the current key effect ([X72]) for logo [X43].
Logo Key Effect Level			
Specific value	[Esc] [X43]*[X70]*[X71]*LKEY ←	Lkey[X43]*[X70]*[X71]↵	Set the level for key effect variable [X70] to [X71] for logo [X43].
View setting	[Esc] [X43]*[X70]LKEY ←	[X71]↵	View level [X71] set for key effect variable [X70] for logo [X43].
KEY: <div> <div> [X16] = Horizontal or vertical position (shift) </div> <div> [X43] = User logo number </div> <div> [X70] = Key effect variable </div> <div> [X71] = Key effect setting </div> <div> [X72] = Key effect </div> </div> <div> <p>The position is ± the horizontal or vertical position of the highest output resolution.</p> <ul style="list-style-type: none"> Response is five digits, padded with zeros and preceded by + or -. The logo vertical position allows up to ± 2400. <p>1 through 16. The response is three digits padded with leading zeros. 101 = No signal, screen saver user logo or image is displayed. 201 = User HDCP logo displayed</p> <p>0 = Transparency (available only when [X72] = 1) 1 = Red of RGB key (available only when [X72] = 2) 2 = Green of RGB key (available only when [X72] = 2) 3 = Blue of RGB key (available only when [X72] = 2) 4 = Level key (available only when [X72] = 3)</p> <p>0 through 255</p> <p>0 = Disable, 1 = Transparency, 2 = RGB key, 3 = Level key, 4 = Alpha key</p> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description												
Presets															
Input Presets															
<table><tr><th colspan="2">Values Saved in Input Presets</th></tr><tr><td>Preset Name</td><td>H Image Position</td></tr><tr><td>Film Mode Detection</td><td>V Image Position</td></tr><tr><td>Contrast</td><td>H Image Size</td></tr><tr><td>Brightness</td><td>V Image Size</td></tr><tr><td>Detail</td><td></td></tr></table>				Values Saved in Input Presets		Preset Name	H Image Position	Film Mode Detection	V Image Position	Contrast	H Image Size	Brightness	V Image Size	Detail	
Values Saved in Input Presets															
Preset Name	H Image Position														
Film Mode Detection	V Image Position														
Contrast	H Image Size														
Brightness	V Image Size														
Detail															
Recall preset	2*[X26].	2Rpr[X26]↵	Recall input preset [X26] for the selected input.												
Save preset	2*[X26],	2Spr[X26]↵	Save input preset [X26] for the selected input.												
Delete preset	[Esc]X 2*[X26]PRST↵	PrstX2*[X26]↵	Clear input preset [X26] and set its name to [unassigned].												
Input Preset Name															
Write preset name	[Esc]2*[X26],[X14]PNAM↵	Pnam2*[X26],[X14]↵	Set the name of input preset [X26] to [X14].												
View preset name	[Esc]2*[X26]PNAM↵	[X14]↵	View the name ([X14]) of input preset [X26].												
<div>NOTE: Unsaved input presets are shown as [unassigned]. To restore a default input preset name (with the format Input•Preset•nnn with leading zeros), enter a single space character for [X14]. These entries are valid only for previously saved presets.</div>															
Auto Memories															
Enable	[Esc][X1]*1AMEM↵	Amem[X1]*1↵	Set Auto Memory to On (default state) for input [X1]. Settings are automatically stored as presets. Previous settings for the incoming signal are recalled.												
Disable	[Esc][X1]*0AMEM↵	Amem[X1]*0↵	Set Auto Memory to Off for input [X1]. Manual recall of input presets is required to configure the input.												
View setting	[Esc][X1]AMEM↵	[X10]↵ Verbose modes 2 and 3: Amem[X1]*[X10]↵	View current Auto Memory status [X10] for input [X1].												
<div>KEY:</div> <div><div>[X1] = Input selection</div><div>[X10] = On or off, enable or disable</div><div>[X14] = Preset name (text label)</div><div>[X26] = Input preset number</div></div> <div><div>1 = DisplayPort input 1</div><div>2-6 = HDMI or DVI input 2, 3, 4, 5, or 6</div><div>7-8 = DTP2/XTP input 7 or 8 (IN1808 Series only)</div><div>9 = Aux audio input</div><div>0 = Off or disabled</div><div>1 = On or enabled</div><div>Up to 32 characters, excluding , (comma) , * , and .</div><div>1 through 16. Response is three digits, padded with zeros.</div></div>															

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description														
Audio Configuration																	
Audio Input Format																	
Set input audio format	[Esc] I [X1] * [X52] AFMT ←	Afmt I [X1] * [X52] ↵	Set the audio format for input [X1] to [X52].														
View audio input format	[Esc] I [X1] AFMT ←	[X52] ↵	View audio input format [X52] for input [X1].														
<div>NOTE: Audio input formats 4 and 5 detect and use embedded digital audio when present. If digital audio is not detected, analog audio is used.</div>																	
<div>KEY:</div> <div><div>[X1] = Input selection</div><div>1 = DisplayPort input 1 2-6 = HDMI or DVI input 2, 3, 4, 5, or 6 7-8 = DTP2/XTP input 7 or 8 (IN1808 Series only) 9 = Aux audio input</div><div>[X52] = Audio input format</div></div> <table><tr><th>Format Selection</th><th>Details</th></tr><tr><td>0 =</td><td>None (input muted) — All audio outputs are muted.</td></tr><tr><td>1 =</td><td>Analog Aux Line input — 5-pole captive screw connector*</td></tr><tr><td>2 =</td><td>LPCM-2Ch digital — Embedded in the HDMI input signal. LPCM-2Ch audio is requested from the source via EDID.</td></tr><tr><td>3 =</td><td>Multi-Ch digital — Allows any digital audio format requested from the source via EDID. Audio delay is applied and the signal is re-embedded into the HDMI output signal.</td></tr><tr><td>4 =</td><td>LPCM-2Ch Auto Aux Line (default) — LPCM-2Ch audio is requested from the source via EDID. The scaler uses embedded digital audio when it is present, or defaults to the Aux* Line input when digital is not present.</td></tr><tr><td>5 =</td><td>Multi-Ch Auto Aux Line — Multi-Ch audio is requested from the source via EDID. The scaler uses embedded digital audio when it is present, or defaults to the Aux* Line input when digital is not present..</td></tr></table> <div>*On the IN1808 Series, when Input 7 or 8 is set to DTP mode, the scaler uses analog audio from the remote DTP transmitter instead of analog audio from the rear panel of the IN1808. Analog and Auto formats are not allowed on inputs 7 and 8 of the IN1808 Series when it is set to XTP mode.</div>				Format Selection	Details	0 =	None (input muted) — All audio outputs are muted.	1 =	Analog Aux Line input — 5-pole captive screw connector*	2 =	LPCM-2Ch digital — Embedded in the HDMI input signal. LPCM-2Ch audio is requested from the source via EDID.	3 =	Multi-Ch digital — Allows any digital audio format requested from the source via EDID. Audio delay is applied and the signal is re-embedded into the HDMI output signal.	4 =	LPCM-2Ch Auto Aux Line (default) — LPCM-2Ch audio is requested from the source via EDID. The scaler uses embedded digital audio when it is present, or defaults to the Aux* Line input when digital is not present.	5 =	Multi-Ch Auto Aux Line — Multi-Ch audio is requested from the source via EDID. The scaler uses embedded digital audio when it is present, or defaults to the Aux* Line input when digital is not present..
Format Selection	Details																
0 =	None (input muted) — All audio outputs are muted.																
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5 =	Multi-Ch Auto Aux Line — Multi-Ch audio is requested from the source via EDID. The scaler uses embedded digital audio when it is present, or defaults to the Aux* Line input when digital is not present..																

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Audio Configuration (continued)			
Audio Input Name			
Write name	<code>[Esc]I[X4]*[X14]ANAM←</code>	<code>AnamI[X4]*[X14]↵</code>	Set the name of audio input [X4] to [X14].
View name	<code>[Esc]I[X4]ANAM←</code>	<code>[X14]↵</code>	View the name of the audio input.
Audio Output Name			
Write name	<code>[Esc]O[X5]*[X14]ANAM←</code>	<code>AnamO[X5]*[X14]↵</code>	Set the name of audio output [X5] to [X14].
View name	<code>[Esc]O[X5]ANAM←</code>	<code>[X14]↵</code>	View the name of the audio output.
KEY: <div> <div>[X4] = Audio input</div> <div>[X5] = Audio output</div> <div>[X14] = Audio input or output name (text label)</div> <div> 1 = DP 1, 2 = HDMI 2, 3 = HDMI 3, 4 = HDMI 4, 5 = HDMI 5, 6 = HDMI 6, 7 = TP 7 (IN1808 Series only), 8 = TP 8 (IN1808 Series only), 9 = Aux In, 10 = Mic/Line 1, 11 = Mic/Line 2, 12 = Line In 3 13 = Line In 4, 14 = File Playback L, 15 = File Playback R 1 = HDMI 1A, 2 = TP 1B, 3 = Over DTP Analog, 4 = Line Out 1, 5 = Line Out 2, 6 = Line Out 3, 7 = Line Out 4 Can contain up to 32 characters, excluding: , (comma) , * , and | . Default = Audio•Input•[X1] or Audio•Output•[X2] </div> </div>			
Configure Playback			
Set file-to-slot association	<code>[Esc]A[X80],<filename>CPLY←</code>	<code>CplyA[X80],<filename>↵</code>	Assign a file to slot [X80]. <filename> can include an optional path.
NOTES: <ul style="list-style-type: none"> <filename> must include the full path name if the file is not in the /Audio directory. The file name must include the extension. <i>Example: song123.mp3.</i> If the file is not in the /Audio directory, a / must be included in front of the name to indicate it is in the root directory. <i>Example: /song123.mp3.</i> 			
Clear file-to-slot-association	<code>[Esc]A[X80],•CPLY←</code>	<code>CplyA[X80],•↵</code>	Remove the audio file from slot [X80].
View file-to-slot association	<code>[Esc]A[X80]CPLY←</code>	<code><filename>↵</code>	View the audio file name in slot [X80].
Set repeat mode	<code>[Esc]M[X80]*[X83]CPLY←</code>	<code>CplyM[X80]*[X83]↵</code>	Set the audio playback repeat mode for slot [X80] to [X83].
View repeat mode	<code>[Esc]M[X80]CPLY←</code>	<code>[X83]↵</code>	View the repeat mode set for slot [X80].
KEY: <div> <div>[X80] = Playback slot number</div> <div>[X83] = Repeat play</div> <div> 1 through 16 Highest priority for playback is slot 1, descending to lowest priority 16. 0 = No repeat, 1 = Repeat </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Audio Configuration (continued)			
Configure Playback (continued)			
Set delay	[Esc]D[X80]*[X84]CPLY←	CplyD[X80]*[X84]←	Set the number of seconds the unit waits before repeating playback of the file in slot [X80].
View delay	[Esc]D[X80]CPLY←	[X84]←	View number of seconds delay ([X84]) set for slot [X80].
Write name	[Esc]N[X80]*[X14]CPLY←	CplyN[X80]*[X14]←	Assign name [X14] to the file in slot [X80].
<div>NOTE: Saving a file name as a single space repopulates the field with the default name (Audio•File•[X14]).</div>			
View name	[Esc]N[X80]CPLY←	[X14]←	View the name assigned to the file in slot [X80].
Transport			
Start and stop playback on a slot	[Esc][X80]*[X82]PLAY←	Play[X80]*[X82]←	Set play/stop state [X82] of slot [X80].
		Play[X80]*0←	Unsolicited message sent when playback of file [X80] is complete.
<div>NOTE: Audio file slots are in order of priority, highest (slot 1) to lowest (slot 16). During playback, if a higher priority slot is requested, it takes precedence. The current slot stops playing and the selected higher priority slot begins. If a lower priority slot is requested during playback of a higher priority one, an E22—Busy error message is returned.</div>			
View slot status	[Esc][X80]PLAY←	[X82]←	View playback status of the audio file in slot [X80].
Global playback status	[Esc]PLAY←	[X80]←	View the slot ([X80]) that is currently playing.
		Verbose modes 2 and 3:	
		Play0*0←	No slot is currently playing.
		Play[X80]*1←	Playback is active on slot [X80].
<div>KEY:</div> <div><div>[X14] = Playback text label</div><div>[X80] = Playback slot number</div><div>[X82] = Playback state</div><div>[X84] = Playback delay</div></div> <div><div>Up to 32 characters, excluding , (comma) ,*, and |.</div><div>The default file name is Audio•File•[X14].</div><div>1 through 16</div><div>Highest priority for playback is slot 1, descending to lowest priority 16.</div><div>0 = Stop or stopped, 1 = Play or playing</div><div>Number of seconds to wait before repeating playback on the current audio file, if repeat has been enabled.</div><div>1 through 300 (1-300 seconds delay between repeats).</div><div>0 = No delay</div></div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Advanced Configuration			
Test Pattern			
Set test pattern	<code>[Esc]1*[X22]TEST←</code>	<code>Test1*[X22]↵</code>	Select a test pattern <code>[X22]</code> .
View test pattern	<code>[Esc]1TEST←</code>	<code>[X22]↵</code>	View the currently selected test pattern.
Output Video Switch Effects			
NOTE: Between input switches the audio ramps down and then up.			
Set output switch effect	<code>[Esc]01*[X45]SWEF←</code>	<code>Swef01*[X45]↵</code>	Set the output switch effect to <code>[X45]</code> .
View output effect setting	<code>[Esc]01SWEF←</code>	<code>[X45]↵</code>	View current output switch effect <code>[X45]</code> .
Video Signal Presence			
View signal presence	<code>[Esc]0LS←</code>	<code>[X61]*...*[X61]↵</code> <i>Verbose modes 2 and 3:</i> <code>IN00•[X61]*...*[X61]↵</code>	View video signal status <code>[X61]</code> for inputs 1 through 6 (IN1806) or 1 through 8 (IN1808 Series).
Front Panel Lock (Executive Mode)			
Enable lock	<code>[X29]X</code>	<code>Exe[X29]↵</code>	Set front panel lock mode <code>[X29]</code> .
Disable lock mode	<code>0X</code>	<code>Exe0↵</code>	Unlock all front panel controls. All front panel adjustments can be made.
View lock mode status	<code>X</code>	<code>[X29]↵</code>	View current lock mode status <code>[X29]</code> .
KEY: <div> <div> <div><code>[X22]</code> = Test patterns</div> <div><code>[X29]</code> = Front panel lock (executive mode)</div> <div><code>[X45]</code> = Output video switch effect</div> <div><code>[X61]</code> = Video signal status</div> </div> <div> <div> <div>0 = Off (default), 1 = Crop, 2 = Alternating pixels, 3 = Crosshatch, 4 = Color Bars, 5 = Grayscale, 6 = Audio test (crop pattern with orbiting text AUDIO TEST and outputting pink noise at LPCM-2Ch, 48 Hz, 24-bit)</div> <div>0 = Off or disabled (front panel controls fully accessible) (default). 1 = Mode 1 — Complete front panel lockout 2 = Mode 2 — Allows Input switching, logos, and volume control only 3 = Mode 3 — Allows Input switching and logos only 4 = Mode 4 — Volume control only</div> <div> <div>0 = Cut through black — The input instantly cuts to black, then cuts to the newly selected input with no fading.</div> <div>1 = Fade through black — The input fades to black before the newly selected input fades in.</div> <div>2* = Seamless fade (default) — Displays a final frozen frame of the previous input while the newly selected input fades in.</div> <div>3* = Seamless cut — The last frame of video freezes on the screen, then cuts to the newly selected input.</div> </div> <div>Between input switches the audio ramps down and then up.</div> <div>* For Seamless switch effects, if either the input resolution or the scaled output resolution is 3840x2160 @ 50 or 60 Hz or 4096x2160 @ 50 or 60 Hz, the OSD menu and any logo image briefly mutes during input switching.</div> <div>0 = Video, TMDS, or DP signal not detected 1 = Video, TMDS, or DP signal detected</div> </div> </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Advanced Configuration (continued)			
HDCP Output Mode			
Set HDCP mode	[Esc]S[X2]*[X46]HDCP ←	HdcpS[X2]*[X46]↵	Set the HDCP output mode [X46] for output [X2].
View HDCP mode	[Esc]S[X2]HDCP ←	[X46]↵	View the HDCP output mode for output [X2].
HDCP Notification			
Set HDCP notification	[Esc]N1*[X47]HDCP ←	HdcpN1*[X47]↵	Set the HDCP notification to [X47].
View HDCP notification	[Esc]N1HDCP ←	[X47]↵	View the HDCP notification selection.
HDCP Status			
Query input	[Esc]I[X1]HDCP ←	[X44]↵ <i>Verbose modes 2 and 3:</i> HdcpI•[X1]*[X44]↵	Request HDCP status [X44] of input [X1].
Query output	[Esc]O[X2]HDCP ←	[X44]↵ <i>Verbose modes 2 and 3:</i> HdcpO•[X2]*[X44]↵	Request HDCP status [X44] of output [X2].
KEY: <div> <div> [X1] = Input 1 = DisplayPort input 1 (all models) 2-6 = HDMI or DVI inputs 2 through 6 (all models) 7-8 = DTP2/XTP inputs 7 and 8 (IN1808 Series only) 9 = Aux audio input </div> <div> [X2] = Output 1 = HDMI/DVI output 1A 2 = DTP2/XTP/HDBT output 1B 3 = HDMI/DVI Loop output </div> <div> [X44] = HDCP status 0 = No sink or source device detected 1 = Sink or source detected but no HDCP present 2 = Sink or source detected with HDCP </div> <div> [X46] = HDCP output mode 0 = Off — Disable all HDCP authentication and encryption attempts. 1 = Follow input (with a maximum of 10 seconds of authentication trials, default) 2 = Encrypt output (with a maximum of 10 seconds of authentication trials) 3 = Follow input (with continuous authentication trials) 4 = Encrypt output (with continuous authentication trials) </div> <div> [X47] = HDCP notification mode 0 = Black screen — Notification disabled (mute output) 1 = Green screen with OSD bug (orbiting message) (default) 2 = User image with black screen background </div> </div> <div> NOTE: A green screen with HDCP Content orbiting text or an HDCP user logo is visible only if a single HDCP non-compliant display is attached, or if both attached displays are non-HDCP compliant. If the IN1806 and IN1808 Series is connected to one compliant and one non-compliant display at the same time, only a green or black screen with no text or logo appears on the non-compliant display. </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Advanced Configuration (continued)			
Twisted Pair Protocol			
Set input TP type (IN1808 Series only)	[Esc] I [X1] * [X67] HDBT ←	Hdbt I [X1] * [X67] ↵	Set the TP protocol for input [X1] to [X67]. ([X1] can be 7 or 8 only.)
View input TP protocol (IN1808 Series only)	[Esc] I [X1] HDBT ←	[X67] ↵	View current TP protocol setting for input [X1].
Set output TP protocol	[Esc] O 2 * [X67] HDBT ←	Hdbt O 2 * [X67] ↵	Set the TP protocol for DTP2/XTP/HDBT Output 1B (2) to [X67].
View output TP protocol	[Esc] O 2 HDBT ←	[X67] ↵	View current TP protocol setting for output 1B.
KEY: <div> [X1] = TP input [X67] = DTP protocol setting </div> <div> 7 = DTP2/XTP input 7, 8 = DTP2/XTP input 8 0 = DTP format (default) 1 = XTP format 2 = HDBaseT format (output only) </div>			
DTP Remote Power Parameters			
ATTENTION: <ul style="list-style-type: none"> Ensure that the correct remote DTP power setting is used. Sending DTP2 power to a DTP (series 1) endpoint can result in hardware damage. Enable DTP2 power only to a compatible DTP2 endpoint. Assurez-vous de bien régler l'alimentation DTP à distance. L'envoi d'une alimentation DTP2 à un point de connexion DTP (ancienne gamme) peut provoquer des dommages matériels. Assurez une alimentation DTP2 uniquement vers un point de connexion DTP2 compatible 			
NOTE: The remote power state for HDBT and XTP modes is forced to Off (0). Attempts to change the power setting while the unit is not in DTP mode result in an E14 (Not valid for current configuration) error message.			
Set input remote power (IN1808 Series only)	[Esc] I [X1] * [X66] RPWR ←	Rpwr I [X1] * [X66] ↵	Set the remote power on input [X1] to [X66]. ([X1] can be 7 or 8 only.)
View input remote power (IN1808 Series only)	[Esc] I [X1] RPWR ←	[X66] ↵	View remote power setting for input [X1].
Set output remote power	[Esc] O 2 * [X66] RPWR ←	Rpwr O 2 * [X66] ↵	Set the remote power for output 1B (2) to [X66].
View output remote power	[Esc] O 2 RPWR ←	[X66] ↵	View remote power setting for output 1B.
TP Ethernet Insertion vs. Over TP Serial Device Control			
Set control method for input	[Esc] I [X1] * [X94] LRPT ↵	Lrpt I [X1] * [X94] ↵	Set the control via TP method for input [X1] to [X94].
View control method for input	[Esc] I [X1] LRPT ↵	[X94]	View the over TP control method for input [X1].
Set control method for output 2	[Esc] O 2 * [X94] LRPT ↵	Lrpt O 2 * [X94] ↵	Set the control via TP method for output 2 to [X94].
View control method for output 2	[Esc] O 2 LRPT ↵	[X94]	View the over TP control method for output 2.
KEY: <div> [X1] = Input selection [X66] = DTP remote power status </div> <div> 7 or 8 = DTP2/XTP input 7 or 8 (IN1808 models only) 0 = No remote power (default) 1 = DTP – 12 VDC 2 = DTP2 – 48 VDC </div> <div> [X94] = TP Ethernet insertion or Over TP serial device control 1 = TCP/IP UART insertion (default) 2 = Over TP serial device control </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Advanced Configuration (continued)			
TP IR Invert Commands			
Invert logic state of output	[Esc] 0 2* [X95] VIR←	Viir0 2* [X95] ↵	Set the logic state of IR extension over DTP.
View logic state of output	[Esc] 0 2 VIR←	[X95] ↵	View the logic state of IR over DTP.
KEY: <div> <div>[X95] = Logic state of IR over DTP</div> <div> 0 = Normal (default) 1 = Inverted (used when the IR remote of an HDBase-T display ceases to function when the display is connected to the IN1806 or IN1808 DTP output) </div> </div>			
Resets			
System reset (soft reset)	[Esc] ZXXX←	Zpx↵	Reset all device settings to factory defaults
Absolute system reset	[Esc] ZQQQ←	Zpq↵	Set all device settings plus DHCP and the IP address to factory defaults. DHCP = Off , IP address = 192.168.254.254 . This command also removes the initial serial number password that is set at the factory and resets it to no password.
Absolute system reset, retain IP settings	[Esc] ZY←	Zpy↵	Same as absolute system reset except that IP address, subnet mask, gateway address, DHCP, and port mapping are not reset.
Erase user-supplied files ^{24 28}	[Esc] <filename>EF←	Del•<filename>↵	
Erase current directory and its files ^{24 28}	[Esc] /EF←	Dd1↵	
Erase current directory and subdirectories ^{24 28}	[Esc] //EF←	Dd1↵	
Erase flash memory ²⁴	[Esc] ZFFF←	Zpf↵	
Backup and Restore Configuration			
Save unit configuration	[Esc] 1* [X85] XF←	Cfg1* [X85] ↵	Back up the current unit configuration as type [X85] to a file in the unit file system.
Restore unit configuration	[Esc] 0* [X85] XF←	Cfg0* [X85] ↵	Restore the saved configuration, type [X85] .
KEY: <div> <div>[X85] = Configuration type</div> <div> 0 = IP configuration (ip.cfg) 2 = Unit-specific parameters (box.cfg) </div> </div> <div> NOTE: Configuration files are stored in the directory /nortxe-backup, created on the unit by the Save command. </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Serial Port Configuration			
Set serial port parameters	[Esc][X57]*[X58],[X59],[X60],[X61]CP ←	Cpn[X57]•Ccp[X58],[X59],[X60],[X61]↵	Set the Remote RS-232 port parameters.
View the serial port parameters	[Esc][X57]CP ←	[X58],[X59],[X60],[X61]↵ <i>Verbose modes 2 and 3:</i> Cpn[X57]•Ccp[X58],[X59],[X60],[X61]↵	View port parameters [X58], [X59], [X60], and [X61] of port [X57].
Set UART start point	[Esc][X65] MD ←	Pmd[X65]↵	Set the port number start point for the over TP Universal asynchronous receiver-transmitter (UART).
View UART start point	[Esc] MD ←	[X65]↵	View the port number start point for the over TP UART.
KEY: <div> <div>[X57] = Remote port number</div> <div> 1 = Remote port (3-pole captive screw) 7 = Universal asynchronous receiver-transmitter (UART) on TP input 7 (IN1808 Series only) 8 = Universal asynchronous receiver-transmitter (UART) on TP input 8 (IN1808 Series only) 9 = UART on TP output 1B </div> </div> <div> <div>[X58] = Baud rate of port</div> <div> 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600 (default), 14400, 19200, 28800, 38400, 57600, 115200 </div> </div> <div> <div>[X59] = Parity</div> <div>Odd, Even, None (default), Mark, Space (only the first letter is required).</div> </div> <div> <div>[X60] = Data bits</div> <div>7 or 8 (default)</div> </div> <div> <div>[X61] = Stop bits</div> <div>1 (default) or 2</div> </div> <div> <div>[X65] = UART port start point</div> <div> Start point for UART ports: Rear panel RS-232 = [X65]. TP IN 7 = [X65] + 1 (IN1808 Series only) TP IN 8 = [X65] + 2 (IN1808 Series only) TP OUT 1B = [X65] + 3 Default = 2000 (meaning IN7 = 2001, IN8 = 2002, OUT1B = 2003) </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Information Requests			
General information	[X1]*I	Vid[X1]•Typ[X3]•Amt[X10]•Vmt[X42]•Hrt[X13]•Vrt[X13]↵ Verbose modes 2 and 3: Inf00•Vid[X1]•Typ[X3]•Amt[X10]•Vmt[X42]•Hrt[X13]•Vrt[X13] ↵	View video input signal type, audio mute status, video mute status, and horizontal and vertical frequencies.
Query model name	1I	[X35]↵ Verbose modes 2 and 3: Inf01*[X35] ↵	View the unit model name ([X35]).
Query unit description	2I	Scaling•Presentation•Switcher↵ Verbose modes 2 and 3: Inf02*Scaling•Presentation•Switcher↵	View the IN1806 or IN1808 Series product description.
Query firmware version	Q	n.nn↵ Verbose modes 2 and 3: Ver01*n.nn↵	View the unit firmware version to the second decimal place.
Query full firmware version	*Q	n.nn.nnnn↵ Verbose modes 2 and 3: Bldn.nn.nnnn ↵	View the unit firmware version with its build number.
Query part number	N	[X36]↵ Verbose modes 2 and 3: Pno[X36]↵	View unit part number [X36] for the model.
KEY: <div> <div> [X1] = Input selection 1 = DisplayPort input 1 (all models) 2-6 = HDMI or DVI inputs 2 through 6 (all models) 7-8 = DTP2/XTP inputs 7 and 8 (IN1808 Series only) 9 = Aux audio input </div> <div> [X3] = Digital video format 0 = No signal, 1 = DVI, 2 = HDMI, 3 = DisplayPort </div> <div> [X10] = On or off, enable or disable 0 = Audio unmuted, 1 = Audio muted </div> <div> [X13] = Horizontal and vertical frequencies nnn.nn. Response is three digits with two decimal places. </div> <div> [X35] = Model name IN1806, IN1808, IN1808 IPCP MA, IN1808 IPCP SA, IN1808 IPCP Q SA, or IN1808 IPCP Q MA 70 </div> <div> [X36] = Part number IN1806 — 60-1663-01 IN1808 (base model) — 60-1615-01 IN1808 IPCP SA — 60-1615-02 IN1808 IPCP MA 70 — 60-1615-03 IN1808 IPCP Q SA — 60-1615-92 IN1808 IPCP Q MA 70 — 60-1615-93 </div> <div> [X42] = Video output mute 0 = Unmuted, 1 = Muted to black screen, 2 = Muted video and sync </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Information Requests (continued)			
View internal temperature	[Esc] 20STAT←	[X12] ↵ Verbose modes 2 and 3: 20Stat• [X12] ↵	View unit internal temperature [X12] in degrees Celsius.
Set verbose mode	[Esc] [X34] CV←	Vrb [X34] ↵	Set the verbose mode to [X34] and enable or disable tagged responses (additional information provided in response to a query).
View verbose mode	[Esc] CV←	[X34] ↵	View the current verbose mode.
KEY: <div> [X12] = Internal temperature [X34] = Verbose mode (see the Verbose mode description on page 59 for more information) </div> <div> In degrees Celsius. Response is two digits, padded with a zero. 0 = None (default for LAN connection) 1 = Verbose mode (default for RS-232 and USB connection) 2 = Tagged responses to queries 3 = Verbose mode and tagged responses </div>			
IP Control Port Commands			
IP Setup			
NOTES: <ul style="list-style-type: none"> Changes made to any TCP/IP settings do not take effect until the reboot network command ([Esc]2B00T←) is issued. The following IP address setup commands that are followed by ²⁴ require Administrator permission to enter. Attempts to issue them without Administrator status result in an E24 (privilege violation) error message. 			
Set DHCP mode ²⁴	[Esc] [X10] DH←	Idh [X10] ↵	Enable or disable DHCP.
View DHCP mode	[Esc] DH←	[X10] ↵	View the DHCP mode setting.
Set IP address ²⁴	[Esc] [X87] CI←	Ipi• [X87] ↵	Set the IP address to [X87] .
Read IP address	[Esc] CI←	[X87] ↵	View the current IP address.
Set subnet mask ²⁴	[Esc] [X89] CS←	Ips• [X89] ↵	Set the subnet mask to [X89] .
View subnet mask	[Esc] CS←	[X89] ↵	View the subnet mask setting.
Set gateway IP address ²⁴	[Esc] [X88] CG←	Ipg• [X88] ↵	Set the gateway IP address to [X88] .
View gateway IP address	[Esc] CG←	[X88] ↵	View the gateway IP address setting.
KEY: <div> [X10] = On or off, enable or disable [X64] = Port timeout [X87] = IP address [X88] = Gateway address [X89] = Subnet mask </div> <div> 0 = DHCP disabled (default), 1 = DHCP enabled Time in increments of 10 seconds before the port connection times out. 1 (10 seconds) through 65000 (650,000 seconds) Default = 30 (300 seconds) Format <i>nnn.nnn.nnn.nnn</i> (192.168.254.254 = default) Leading zeros in each of the four octets are optional in setting values, and are suppressed in returned values. <i>nnn.nnn.nnn.nnn</i> (0.0.0.0 = default) <i>nnn.nnn.nnn.nnn</i> (255.255.255.0 = default) </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
IP Control Port Commands (continued)			
IP Setup (continued)			
Set the port timeout	[Esc] 0* [X64] TC←	Pti0* [X64] ↵	Set the amount of time in increments of 10 seconds before the port connection times out.
View current port timeout	[Esc] 0TC←	[X64] ↵	View the set connection timeout of the current port.
Set the global port timeout	[Esc] 1* [X64] TC←	Pti1* [X64] ↵	Set the amount of time in increments of 10 seconds on all IP connections to this device before the port connection times out.
View global port timeout	[Esc] 1TC←	[X64] ↵	View the set timeout of all IP port connections.
View MAC address	[Esc] CH←	[X90] ↵ <i>Verbose modes 2 and 3:</i> Iph● [X90] ↵	View unit Media Access Code (MAC) address [X90] .
Set LAN IP address, subnet mask, and gateway address ²⁴	[Esc] 1* [X87] / [X93] * [X88] CISG←	Cisg 1* [X87] / [X93] * [X88] ↵	Set the IP address to [X87] for the LAN port (1), the subnet mask prefix to [X93] , and the gateway address to [X88] at the same time.
NOTE: Setting any values with a CISG command changes the DHCP setting to Off and the Cisg response is followed by the Boot2 response when in verbose mode 2 or 3 (see Verbose mode description on page 59).			
View all IP settings	[Esc] 1CISG←	[X87] / [X93] * [X88] ↵	View the IP address, subnet mask (prefix), and gateway address for the unit.
Reboot networking	[Esc] 2B00T←	Boot2↵	Restart the network after IP setting or DHCP changes.
KEY: <div> <div> [X10] = On or off, enable or disable [X64] = Port timeout [X87] = IP address [X88] = Gateway address [X89] = Subnet mask [X90] = Hardware (MAC) address [X93] = Subnet mask in CISG commands </div> <div> 0 = DHCP disabled (default), 1 = DHCP enabled Time in increments of 10 seconds before the port connections time out. 1 (10 seconds) through 65000 (650,000 seconds) Default = 30 (300 seconds) Format <i>nnn.nnn.nnn.nnn</i> (192.168.254.254 = default) Leading zeros in each of the four octets are optional in setting values, and are suppressed in returned values. <i>nnn.nnn.nnn.nnn</i> (0.0.0.0 = default) <i>nnn.nnn.nnn.nnn</i> (255.255.255.0 = default) 00-05-A6-xx-xx-xx Prefix representing subnet mask bits (subnet mask value in CISG commands). Default = /24, which represents the default subnet mask, 255.255.255.0. </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
IP Control Port Commands (continued)			
IP Setup (continued)			
Query the number of open connections	[Esc] CC←	[X86] ↵ Verbose modes 2 and 3: Icc [X86] ↵	View the number of open connections.
Set unit name	[Esc] [X81] CN←	Ipn• [X81] ↵	Assign a name for the unit.
Set unit name to factory default	[Esc] •CN←	Ipn• [X92] ↵	Reset the unit name to its factory default name.
View unit name	[Esc] CN←	[X81] ↵	View current unit name [X81] .
KEY: <div> <div> [X81] = Unit name <p>A text string of up to 64 characters, drawn from the alphabet (A-Z), digits (0-9), and minus sign or hyphen (-).</p> <ul style="list-style-type: none"> The first character must be an alpha character. The last character cannot be a minus sign or hyphen. No distinction is made between uppercase and lowercase letters. No blank or space characters are permitted as part of a name. <p>0 through <maximum number of open connections></p> </div> <div> [X86] = Number of open connections <p>Combination of the model name and the last three hexadecimal character pairs of the unit MAC address.</p> <p>Example: IN1808-IPCP-SA-14-9A-B0.</p> </div> <div> [X92] = Default unit name <p>Combination of the model name and the last three hexadecimal character pairs of the unit MAC address.</p> <p>Example: IN1808-IPCP-SA-14-9A-B0.</p> </div> </div>			
Ethernet Port Configuration			
Set Telnet port map ²⁴	[Esc] Z{port number} PMAP←	Pmap Z{port number}↵	Set the Telnet port number.
NOTE: Telnet port 23 is enabled by default.			
Reset Telnet port map	[Esc] Z 23 PMAP←	Pmap Z 00023↵	Set the Telnet port number to 23 (default).
Disable Telnet port	[Esc] Z 0 PMAP←	Pmap Z 00000↵	Disable the Telnet port.
View Telnet port mapping ²⁴	[Esc] Z PMAP←	{port number}↵	View the current Telnet port.
Passwords			
NOTE: The initial password set at the factory is the serial number of the unit. However, if the unit is reset (via the ZQQQ SIS command or the rear panel Reset button), this password is changed to no password.			
Set administrator password	[Esc] [X91] CA←	Ipa• [X91] ↵	Set the administrator password to [X91] .
View administrator password	[Esc] CA←	****↵ or ↵ In verbose modes 2 and 3: Ipa•****↵ or Ipa↵	View the administrator password.
KEY: <div> <div> [X91] = Password <ul style="list-style-type: none"> The original factory configured passwords for all accounts on this device have been set to the device serial number. If the unit is reset to factory settings, this password is set to no password. Length is 1-128 characters. All human-readable characters are permitted except |. The password cannot be a single space. Passwords are case-sensitive. If the admin password is cleared, the user password is cleared also. </div> </div>			
NOTE: A user password cannot be assigned if no administrative password exists. An E14 error code is returned.			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
IP Control Port Commands (continued)			
Passwords (continued)			
Reset (clear) administrator password	[Esc] •CA←	Ipa•←	Reset or clear the administrator password.
Set user password	[Esc] [X91] CU←	Ipu• [X91] ←	Set the user password.
View user password	[Esc] CU←	****← or ← <i>In verbose modes 2 and 3:</i> Ipu•****← or Ipu←	View the user password. If there is a valid password, the response is ****←. If there is no password, the response is ←.
Reset (clear) user password	[Esc] •CU←	Ipu•←	Reset or clear the user password.
KEY: <div> <div>[X91] = Password</div> <ul style="list-style-type: none"> The original factory configured passwords for all accounts on this device have been set to the device serial number. If the unit is reset to factory settings, this password is set to extron. Length is 1-128 characters. All human-readable characters are permitted except |. The password cannot be a single space. Passwords are case-sensitive. If the admin password is cleared, the user password is cleared also. </div> <div> NOTE: A user password cannot be assigned if no administrative password exists. An E14 error code is returned. </div>			

Audio Group Master SIS Commands

Group master symbol definitions

- = Space
- ↵ = Carriage return with line feed
- ← = Carriage return with no line feed
- | = Pipe (can be used interchangeably with the ← character)
- Esc** = Escape
- W** = Can be used interchangeably with the **Esc** character
- X100** = Object Identification number (OID)

Input Path OIDs:

Line Input Gain Control (2 per channel)	OIDs	Line Input Gain Control (continued)	OID
Line Input 1 - DisplayPort	30000 30001	Line input 6 - HDMI L	30010
Line input 2 - HDMI L	30002	Line input 6 - HDMI R	30011
Line input 2 - HDMI R	30003	Line input 7 - DTP2/XTP L	30012
Line input 3 - HDMI L	30004	Line input 7 - DTP2/XTP R	30013
Line input 3 - HDMI R	30005	Line input 8 - DTP2/XTP L	30014
Line input 4 - HDMI L	30006	Line input 8 - DTP2/XTP R	30015
Line input 4 - HDMI R	30007	Aux line input L	30016
Line input 5 - HDMI L	30008	Aux line input R	30017
Line input 5 - HDMI R	30009		

Mic/Line/File Player Input Gain	OID
Mic/Line Input 1	40000
Mic/Line Input 2	40001
Line Input 3	40002
Line Input 4	40003
File player L	40004
File player R	40005

Output Path OIDs:

Output Attenuation (2 per channel)	OID	Output Attenuation (continued)	OID
HDMI L	60000	Line Output 1	60006
HDMI R	60001	Line Output 2	60007
DTP2/XTP/HDBT L	60002	Line Output 3	60008
DTP2/XTP/HDBT R	60003	Line Output 4	60009
DTP Analog L	60004	Amp L or Mono	60010
DTP Analog R	60005	Amp R	60011

X101 = Group master number

1 through 10

Preconfigured group. Can alternatively be an alias, which is the user-defined group name enclosed in braces ({ }).

X103 = Soft limit high value (in dB)

X104 = Soft limit low value (in dB)

X105 = Group master value

X106 = Increment or decrement value

X107 = Group master mute status

For gain value with a resolution to 0.1, multiply by 10.

The valid range of **X103** must be within the range of **X105** to set an upper limit of gain group master **X101**.

For gain value with a resolution to 0.1, multiply by 10.

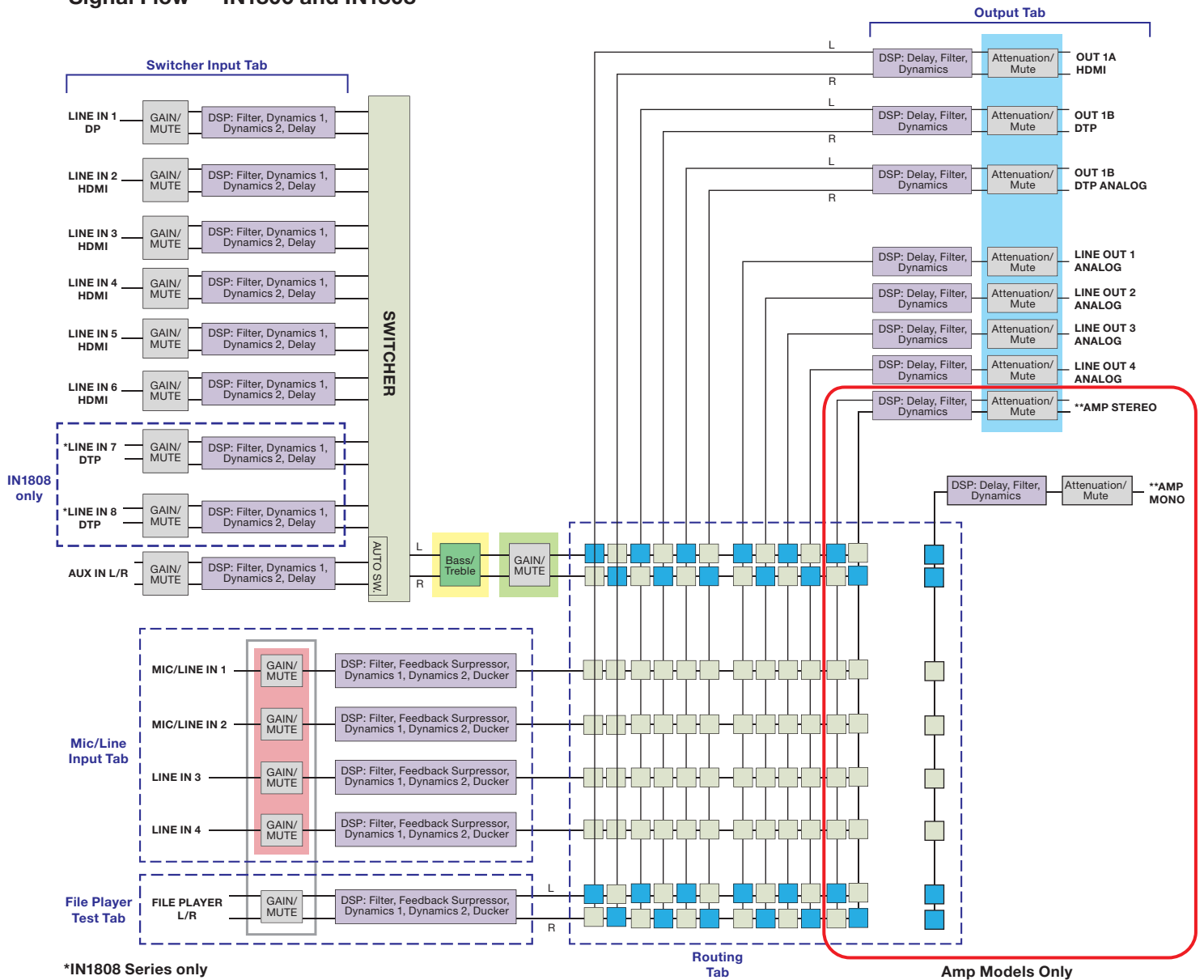
The valid range of **X104** must be within the range of **X105** to set an upper limit of a gain group master **X101**.

For gain value with a resolution to 0.1, multiply by 10. For mute values, use **0** or **1** as the value.

For gain value with a resolution to 0.1, multiply by 10. For mute values, use **0** or **1** as the value.

0 = unmuted, **1** = muted

Signal Flow — IN1806 and IN1808



*IN1808 Series only

**Amp models only

Group Masters Legend

1 Mic Volume 2 Mic Mute 3 Program Volume 4 Program Mute 5 Line Volume 6 Line Mute 7 Bass 8 Treble 9 Output Volume 10 Output Mute

Group Master SIS Command and Response Table

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Audio Group Master			
View Group Master			
View soft limits	<code>[Esc]L[X101]GRPM←</code>	<code>[X103]*[X104]←</code> <i>In verbose modes 2 and 3:</i> <code>GrpmL[X101]*[X103]*[X104]←</code>	View low soft limit <code>[X104]</code> and high soft limit <code>[X103]</code> for group <code>[X101]</code> .
Group Master Value			
Set a group fader value	<code>[Esc]D[X101]*[X105]GRPM←</code>	<code>GrpmD[X101]*[X105]←</code>	Set the level of group fader <code>[X101]</code> to <code>[X105]</code> .
<i>Example:</i>	<code>[Esc]D3*-293GRPM←</code>	<code>GrpmD3*-293←</code>	Set group 3 fader control to -29.3 dB.
View group fader value	<code>[Esc]D[X101]GRPM←</code>	<code>[X105]←</code> <i>In verbose modes 2 and 3:</i> <code>GrpmD[X101]*[X105]←</code>	View group fader value <code>[X105]</code> .
Increment a group fader value	<code>[Esc]D[X101]*[X106]+GRPM←</code>	<code>GrpmD[X101]*[X105]←</code>	Increase the gain value of group <code>[X101]</code> by <code>[X106]</code> to <code>[X105]</code> .
<i>Example:</i>	<code>[Esc]D3*30+GRPM←</code>	<code>GrpmD3*-263←</code>	Raise the group 3 fader by 3 dB from -29.3 dB (set in the previous example) to -26.3 dB.
Decrement a group fader value	<code>[Esc]D[X101]*[X106]-GRPM←</code>	<code>GrpmD[X101]*[X105]←</code>	Decrease the gain value of group <code>[X101]</code> by <code>[X106]</code> to <code>[X105]</code> .
Mute a group	<code>[Esc]D[X101]*1GRPM←</code>	<code>GrpmD[X101]*1←</code>	Mute all blocks in group <code>[X101]</code> .
Unmute a group	<code>[Esc]D[X101]*0GRPM←</code>	<code>GrpmD[X101]*0←</code>	Unmute all blocks in group <code>[X101]</code> .
View group mute status	<code>[Esc]D[X101]GRPM←</code>	<code>[X107]←</code> <i>In verbose modes 2 and 3:</i> <code>GrpmD[X101]*[X107]←</code>	View the group master mute status.
KEY: <div> <div> <div><code>[X100]</code> = Object ID (OID) number</div> <div><code>[X101]</code> = Group master group number</div> <div><code>[X103]</code> = Soft limit high value in dB</div> <div><code>[X104]</code> = Soft limit low value in dB</div> <div><code>[X105]</code> = Group master value</div> <div><code>[X106]</code> = Increment or decrement value</div> <div><code>[X107]</code> = Group master mute status</div> </div> <div> <div>See the Object Identification number (OID) table on page 88).</div> <div>1 through 10.</div> <div>Preconfigured group. Can alternatively be an alias, which is the user-defined group name enclosed in braces { }.</div> <div>The valid range for <code>[X103]</code> must be within the range for the gain block grouped in <code>[X101]</code>.</div> <div>The valid range for <code>[X104]</code> must be within the range for the gain block grouped in <code>[X101]</code>.</div> <div>Value in 0.1 dB steps. For gain value with a resolution to 0.1, multiply by 10. For mute values, use 0 or 1.</div> <div><i>Example:</i> -100.0 dB through +80.0 dB is represented by -1000 through 800. The valid range depends on the type of gain block assigned to the group number (<code>[X101]</code>).</div> <div>Value in 0.1 dB steps. For gain value with a resolution to 0.1, multiply by 10. For mute values, use 0 or 1 as the value.</div> <div>0 = unmuted, 1 = muted</div> </div> </div>			

Audio DSP SIS Commands

DSP SIS command structure

Several digital signal processor (DSP) functions can be configured using SIS commands. Commands entered via PCS are also displayed on the host communication utility screen that is being used for SIS commands (for example, Extron DataViewer).

DSP control commands are a subset of the SIS commands with a specific structure.

- For a Set command, the form of the command string is:

Esc <parameter ID><OID>*<value>AU←

where:

- <OID> (Object ID) is a six-digit integer identifying the processor (see the [Object Identification number \(OID\)](#) table on page 88).
- <Parameter ID> is a letter identifying the parameter.
- <Value> is a number indicating the level being set for the parameter.
- For a **View (Get)** command, the value parameter can be eliminated, so that the command structure for viewing a single parameter is:

Esc <parameter ID><OID>AU ←

- The unit response to these commands begins with **Ds**. The response format is:

Ds<Parameter ID><OID>*<value>↵

DSP command symbol definitions

↵ = Carriage return with line feed

← = Carriage return with no line feed

Esc = Escape

X100 = Object ID (OID) number

See the [Object Identification number \(OID\)](#) table.

X110 = Gain value

Levels use a 10x multiplier system with no decimal places. For example, a level of +10.4 dB would be entered as **104** and a level of -3.2 dB would be entered as **-32**.

X111 = Mute or Phantom power status 0 = Disabled, 1 = Enabled

DSP SIS Command and Response Table

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Gain Level			
Set gain level	<code>[Esc]G[X100]*[X110]AU←</code>	<code>DsG[X100]*[X110]↵</code>	Set gain on OID <code>[X100]</code> to a value of <code>[X110]</code> dB.
<i>Example</i> (Mic/line input 1):	<code>[Esc]G40000*120 AU←</code>	<code>DsG40000*120↵</code>	Set the mic/line input 1 to a level of +12.0 dB.
Set gain level — For DTP inputs 7 and 8 embedded audio	<code>[Esc]H[X100]*[X110]AU←</code>	<code>DsH[X100]*[X110]↵</code>	Set gain on OID <code>[X100]</code> to a value of <code>[X110]</code> dB (for inputs 7 and 8, embedded HDMI LPCM 2-Ch audio).
NOTE: (IN1808 models only) For DTP inputs 7 and 8, gain level for over DTP analog audio is adjusted using the G variable. For embedded HDMI LPCM-2Ch audio adjustment, use the H variable as shown in the example below.			
<i>Example</i> (DTP input 7):	<code>[Esc]H30012*120AU←</code> <code>[Esc]H30013*120AU←</code>	<code>DsH30012*120↵</code> <code>DsH30013*120↵</code>	Adjust embedded HDMI LPCM-2Ch gain on input 7 to +12.0 dB. In this example, 30012 is the setting for the right channel, while 30013 is for the left .
View gain level	<code>[Esc]G[X100]AU←</code>	<code>DsG[X100]*[X110]↵</code>	Gain on OID <code>[X100]</code> is set to a value of <code>[X110]</code> dB.
<i>Example</i> (Mic/line input 1):	<code>[Esc]G40000AU←</code>	<code>DsG40000*550↵</code>	Mic/Line input 1 gain is set to +55.0 dB.
<i>Example</i> (HDMI L output attenuation)	<code>[Esc]G60000AU←</code>	<code>DsG60000*-55↵</code>	HDMI L output attenuation is set to a value of -5.5 dB.
Audio Mute			
Audio mute	<code>[Esc]M[X100]*1AU←</code>	<code>DsM[X100]*1↵</code>	Mute audio at <code>[X100]</code> .
Audio unmute	<code>[Esc]M[X100]*0AU←</code>	<code>DsM[X100]*0↵</code>	Unmute audio at <code>[X100]</code> .
Mute status	<code>[Esc]M[X100]AU←</code>	<code>DsM[X100]*[X111]↵</code>	View audio mute status <code>[X111]</code> .
Phantom Power			
Enable phantom power	<code>[Esc]Z[X100]*1AU←</code>	<code>DsZ[X100]*1↵</code>	Phantom power is available only on Mic/Line Inputs 1 and 2.
Disable phantom power	<code>[Esc]Z[X100]*0AU←</code>	<code>DsZ[X100]*0↵</code>	
Phantom power status	<code>[Esc]Z[X100]AU←</code>	<code>DsZ[X100]*[X111]↵</code>	View Phantom power status <code>[X111]</code> .
KEY: <div> <div> <code>[X100]</code> = Object ID (OID) number <code>[X110]</code> = Gain value <code>[X111]</code> = Mute or Phantom power status </div> <div> See the Object Identification number (OID) table on page 88. Levels use a 10x multiplier system with no decimal places. For example, a level of +10.4 dB would be entered as 104 and a level of -3.2 dB would be entered as -32. 0 = Disabled, 1 = Enabled </div> </div>			

CEC SIS Commands

CEC symbol definitions

- X201** = CEC mode
0 = Disable CEC operations for this port (default)
2 = Enable insertion (unidirectional)
4 = Enable insertion and publish received CEC messages (bidirectional) (recommended)
- X202** = CEC status
0 = CEC mode 0 disabled
2 = CEC mode 2 enabled but no device detected (unidirectional)
3 = CEC mode 2 enabled and device detected (unidirectional)
4 = CEC mode 4 enabled but no device detected (bidirectional)
5 = CEC mode 4 enabled and device detected (bidirectional)
- X203** = Source logical address (our pseudo): 0 through 15
(-1 = Not found or port not enabled)
- X204** = Destination logical address (theirs): 0 through 15 (-1 = not found or port not enabled)

CEC Logical Addresses	
Address	Device
0	TV
1	Recording Device 1
2	Recording Device 2
3	Tuner 1
4	Playback Device 1
5	Audio System
6	Tuner 2
7	Tuner 3
8	Playback Device 2
9	Recording Device 3
10	Tuner 4
11	Playback Device 3
12	Reserved
13	Reserved
14	Free Use
15	Unregistered (as initiator address) Broadcast (as destination address)

- X205** = CEC command: Predefined actions as strings within double quotes. For example: *"PwrOn"*, *"PwrOff"*, or *"ShowMe"*
- X206** = Send result
0 = Failed (NAK [not acknowledged])
1 = Success (ACK [acknowledged]) of entire message
2 = Unable to send
- X207** = CEC physical address: 4 hexadecimal digits (Example: %32%00)
- X208** = CEC device presence:
0-F = Device address
X = Missing
— = CEC port is off
- X209** = CEC data — User selected elements (0 through 15) in the form of a percent sign followed by two hex digits. *Example: %2A%07%FF*
- X210** = CEC address byte — In the form of percent sign followed by two hex digits
Example: %E0 = Extron output (14) to TV (0)

Command and Response Table for CEC SIS Commands

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Enable or Disable CEC Commands			
Enable/disable one output CEC	<code>[Esc]0[X2]*[X201]CCEC←</code>	<code>Ccec0[X2]*[X201]↵</code>	
Enable/disable all outputs CEC	<code>[Esc]0[X201]*CCEC←</code>	<code>Ccec0[X201]↵</code>	
View output CEC status	<code>[Esc]0[X2]CCEC←</code> Verbose mode 2/3.	<code>[X202]*[X203]*[X204]↵</code> <code>Ccec0[X2]*[X202]*[X203]*[X204]↵</code>	
Send CEC Commands			
Default Discovered Target Logical Address			
Send CEC data to Output (downstream sink)	<code>[Esc]0[X2]*[X205]DCEC←</code> or <code>[Esc]0[X2]*[X209]DCEC←</code>	<code>Dcec0[X2]*[X210][X209]*[X206]↵</code>	For Send CEC Commands, <code>[X205]</code> and <code>[X209]</code> can be used interchangeably. However, the response is always a hex representation (<code>[X209]</code>), for example: <code>%2A%07%FF</code> .
Broadcast to All Devices			
Send CEC data to Output (downstream sink)	<code>[Esc]0[X2]*15*[X205]DCEC←</code> or <code>[Esc]0[X2]*15*[X209]DCEC←</code>	<code>Dcec0[X2]*[X210][X209]*[X206]↵</code>	
NOTE: Attempting to send a CEC command to an output that is disabled returns an E14 error.			
KEY: <div> <div> <code>[X2]</code> = Output <code>[X201]</code> = CEC mode <code>[X202]</code> = CEC status <code>[X203]</code> = Source logical address (our pseudo) (see the CEC Logical Addresses table on the previous page) <code>[X204]</code> = Destination logical address (theirs) (see the CEC Logical Addresses table) <code>[X205]</code> = CEC command <code>[X206]</code> = Send result <code>[X209]</code> = CEC data <code>[X210]</code> = CEC address byte </div> <div> 1 = HDMI/DVI output 1A, 2 = DTP2/XTP/HDBT output 1B, 3 = Loop Out 0 = Disable CEC operations for this IO port (default). 2 = Enable insertion (unidirectional). 4 = Enable insertion and publish received CEC messages (bidirectional). 0 = CEC mode 0 disabled 2 = CEC mode 2 enabled but no device detected (unidirectional) 3 = CEC mode 2 enabled and device detected (unidirectional) 4 = CEC mode 4 enabled but no device detected (bidirectional) 5 = CEC mode 4 enabled and device detected (bidirectional) 0 through 15 - 1 = not found or port not enabled 0 through 15 - 1 = not found or port not enabled (see CEC Logical Addresses) Predefined actions as strings within double quotes: "PwrOn", "PwrOff", or "ShowMe" 0 = Failed (NAK) device not detected, 1 = Success (ACK) device detected, 2 = Unable to send User selected elements (0 to 15) in the form of percent sign followed by 2 hex digits Example: <code>%2A%07%FF</code> In the form of a percent sign followed by two hex digits Example: <code>%E0</code> = Extron output (14) to TV (0) </div> </div>			

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
CEC Usage Examples			
NOTE: On the DTP2 output, CEC communication reaches the output of the receiver only when the receiver is standalone DTP or DTP2. If the DTP or DTP2 receiver is not standalone, control of its output is ineffective.			
Unidirectional Mode — No CEC received data messages (including answers to queries) desired			
Set mode	[Esc] 02*2CCEC←	Ccec02*2←	Power on TV on output 2.
Send data	[Esc] 02*"PwrOn"DCEC← or [Esc] 02*%04DCEC←	Dcec02*%E0%04*1←	
Bidirectional Mode — CEC received data messages desired			
Set mode	[Esc] 03*4CCEC←	Ccec03*4←	Switch TV on output 3 to our signal (HDMI 2 on TV).
Send data	[Esc] 03*"ShowMe"DCEC← or [Esc] 03*15*%82%20%00DCEC←	Dcec03*%EF%82%20%00*1←	
Examples of possible unsolicited messages	Ceco3*%0F%32%65%6E%67*1← Ceco3*%0E*1←		TV broadcast command to set the menu language to English ("eng"). TV pings us to confirm we are still there.
NOTE: Asynchronous received data messages from CEC in bidirectional mode (4) format: CecoX2*X210X209*X206←			
Other CEC Commands			
List CEC device presence	[Esc] LQCEC←	*X208 ... X208← <i>In verbose modes 2 and 3:</i> QcecL**X208 ... X208←	*output 1 ... output <i>n</i>
Rediscover device on output	[Esc] 0X2QCEC←	Qcec0X2*1← Qcec0X2*0*X206← ... Qcec0X2*13*X206←	
Report physical address of output port	[Esc] 0X2PCEC←	X207← <i>In verbose modes 2 and 3:</i> Pcec0X2*X207←	For 1000 (usually first HDMI input on TV) <i>Example: %10%00</i>
KEY: X2 = Output X206 = Send result X207 = CEC physical address X208 = CEC device presence X209 = CEC data X210 = CEC address byte 1 = HDMI/DVI output 1A, 2 = DTP2/XTP/HDBT output 1B, 3 = Loop Out 0 = Failed (NAK) device not detected, 1 = Success (ACK) device detected, 2 = Unable to send 4 hexadecimal digits (<i>Example: %10%00</i> for 1000) 0-F = Device address, X = Missing, - = CEC port is off User selected elements (0 to 15) in the form of percent sign followed by 2 hex digits <i>Example: %2A%07%FF</i> In the form of a percent sign followed by two hex digits <i>Example: %E0</i> = Extron output (14) to TV (0)			

Configuration Software

The Extron Product Configuration Software (PCS) offers a means of controlling the IN1806 and IN1808 Series via a USB or TCP/IP connection. The graphical interface includes the same functions as those on the device front panel with additional features that are available only through the software.

This section describes the software installation and communication (see the *IN1806 and IN1808 Series PCS Help file* for detailed control information). Topics in this section include:

- [Software Installation](#)
- [Software Connection](#)
- [Software Overview](#)

The control software is compatible with Microsoft Windows operating systems. The software program is available www.extron.com.

Software Installation

To download PCS from the Extron website, locate it on the Download Center page or go to the PCS product page.

Software Download Center Page

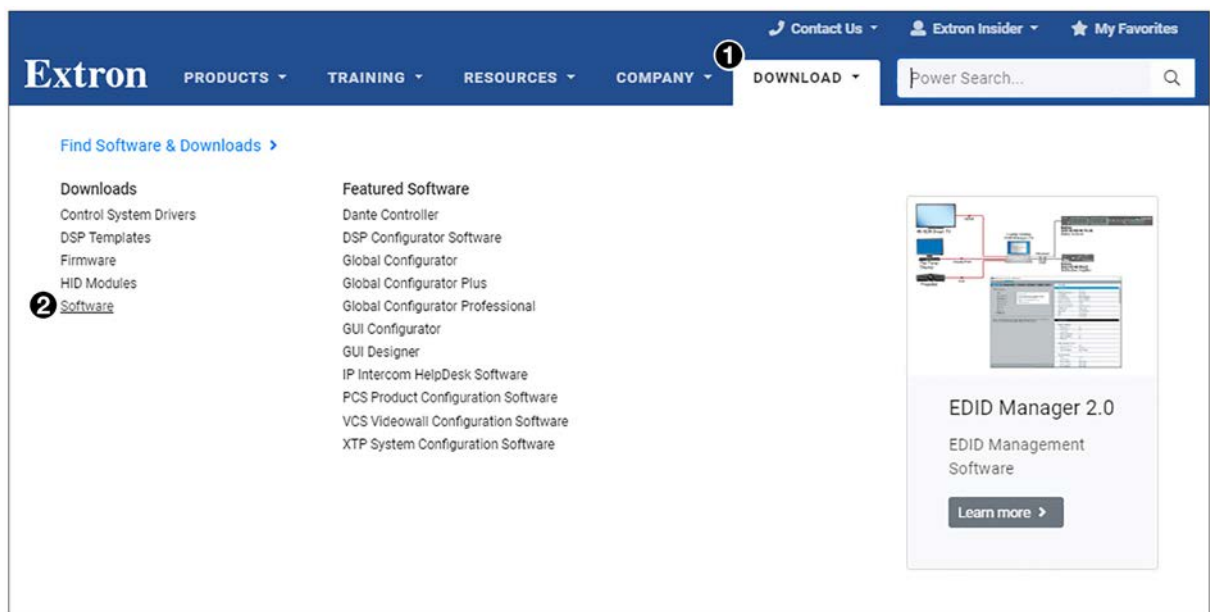


Figure 34. Download Center Page on the Extron Website


1. On the Extron website, select the **Download** tab (see figure 34, **1**).

- Click the **Software** link in the Downloads column (see [figure 34](#), [2](#) on the previous page).


Download Center

Software (84 files)

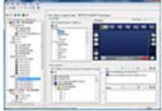
NEW




VCS




Dante Controller



Global Configurator



Global Configurator Plus and Global Configurator Professional



GUI Configurator

1

ALL # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Archives

Please consult Release Notes for important compatibility information and history.

Description	Part Number	Version	Date	Size	
PCS Updated Product Configuration Software for a variety of standalone products. Learn more Release Notes	79-562-01	4.3.1	Aug. 15, 2018	170.4 MB	<div>2</div> Download
PIP 422 & 444 Control Software for PIP 422 & 444. Release Notes	79-522-01	1.0	Jan. 12, 2007	8.9 MB	Download

Figure 35. PCS Download Link

- On the Download Center page, click the **P** link (see [figure 35](#), [1](#)).
- If necessary, scroll to locate PCS from the list of available software programs and click the **Download** link to the right of the name ([2](#)).
- On the login page that appears next, fill in the required information to log in to www.extron.com (if you need an ID number, see your Extron representative).
- Follow the instructions on the subsequent screens to complete the software program installation. By default, the configuration program files are stored on your computer at: C:\Program Files (x86)\Extron\IN1806 and IN1808 Series.

If there is not already an Extron folder in your Program Files (x86) folder, the installation program creates it as well.

Software Connection

Open the PCS program from the **Start** menu or desktop shortcut. The **Extron Product Configuration Software** window opens with the **Device Discovery** panel open. Connect to the scaler using the **Device Discovery** panel or the **TCP/IP** panel.

Device Discovery Panel

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

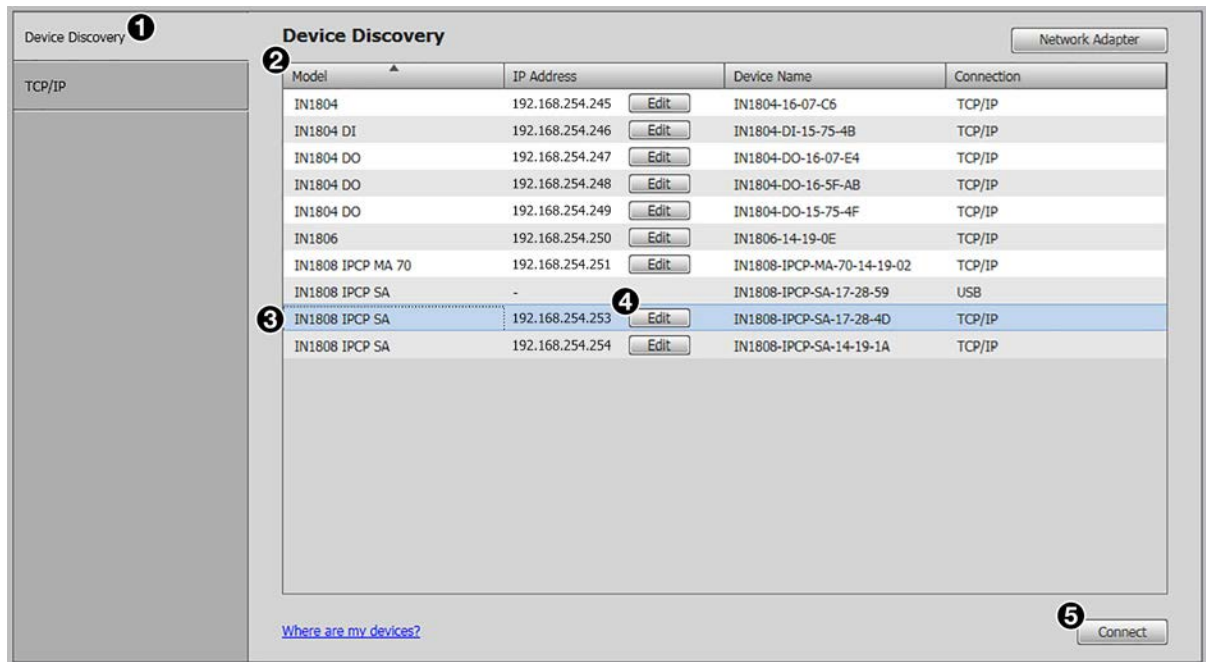


Figure 36. Device Discovery Screen

To sort the list of available devices:

1. Click the **Device Discovery** tab (see figure 36, ❶).
2. Click the desired column heading (❷) to sort it in ascending or descending order.

To connect to a device:

1. Click the **Device Discovery** tab (❶).
2. Select the desired device (❸).
3. Click the **Connect** button (❺). A new device configuration tab opens.

To edit communication settings from the Device Discovery panel:

1. Click the **Device Discovery** tab (❶).
2. Click the **Edit** button of the desired device (❹). The **Communication Settings** dialog box opens.
3. Finalize the settings in one of the following ways:
 - Click the **Apply** button to accept the changes and return to the **Device Discovery** panel.
 - Click the **Apply and Connect** button to accept the changes and connect to the selected device. A new device configuration tab opens.
 - Click the **Cancel** button to cancel any pending changes and return to the **Device Discovery** panel.

TCP/IP Panel

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

Device Discovery

TCP/IP

TCP/IP

Target Device

IP Address/Hostname: 192.168.254.254

Password:

Port: 23

☐ Show Characters

☒ Enable Indirect Connection

IP Link Pro Control Processor with AV LAN

IP Address/Hostname: 192.168.254.1

Password:

☐ Show Characters

Connect

Figure 37. TCP/IP Panel

To connect directly to a connected device with a known IP address:

1. In the **IP Address/Hostname** field of the **Target Device** panel (2), enter the IP address of the desired device.
2. If required, enter the device password in the **Password** field.

NOTES:

- The factory configured passwords for all accounts on this device have been set to the device serial number. Passwords are case sensitive.
- If desired, select the **Show Characters** checkbox (below the **Port** field) to display the password characters.

3. In the **Port** field (4), enter the port number of the desired device (the default is 23).
4. Click the **Connect** button (5). A new device tab opens.

To connect indirectly to a device through a control processor via an AV LAN:

If your IN1806 or IN1808 is connected to an AV LAN, you can connect to it through a control processor such as an Extron IPCP, as follows:

1. In the **IP Address/Hostname** field of the **Target Device** panel (2), enter the IP address of the IN1806 or IN1808 on the AV LAN, as well as the port number and the password (if needed).
2. Select the **Enable Indirect Connection** checkbox (3).
3. In the **IP Address/Hostname** field of the **IP Link Control Processor with AV LAN** panel (4), enter the IP address of the control processor connected to the AV LAN.
4. Enter the password if required.

5. Click **Connect** (see [figure 37](#), ⑤, on the previous page). The TCP/IP window closes and the device configuration window opens.

Offline Device Preview

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

To open a scaler device tab:

1. From the Configuration File drop-down menu, select **New Configuration File**.

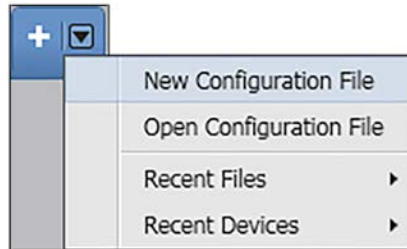


Figure 38. Configuration File Drop-Down Menu

The New Configuration File dialog box opens.

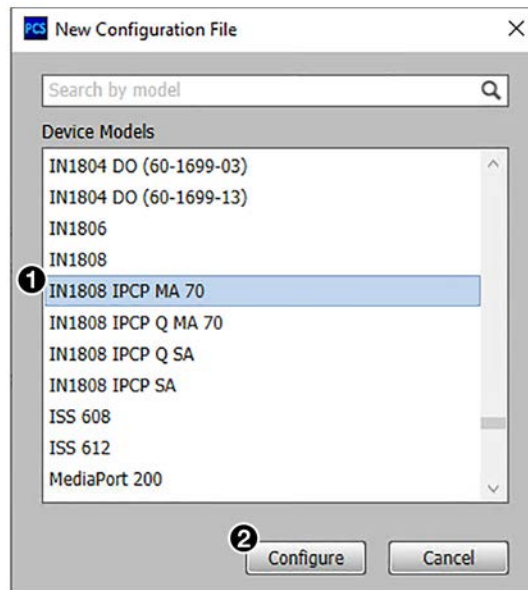


Figure 39. New Configuration File Dialog Box

2. Select the desired device model from the **Device Models** list (see [figure 39](#), ①). In this example, **IN1808** (standard model) was selected.
3. Click the **Configure** button (②). A new offline device configuration tab opens.

Software Overview

NOTE: For details about specific software features, see the *IN1806 and IN1808 Series PCS Help File*.

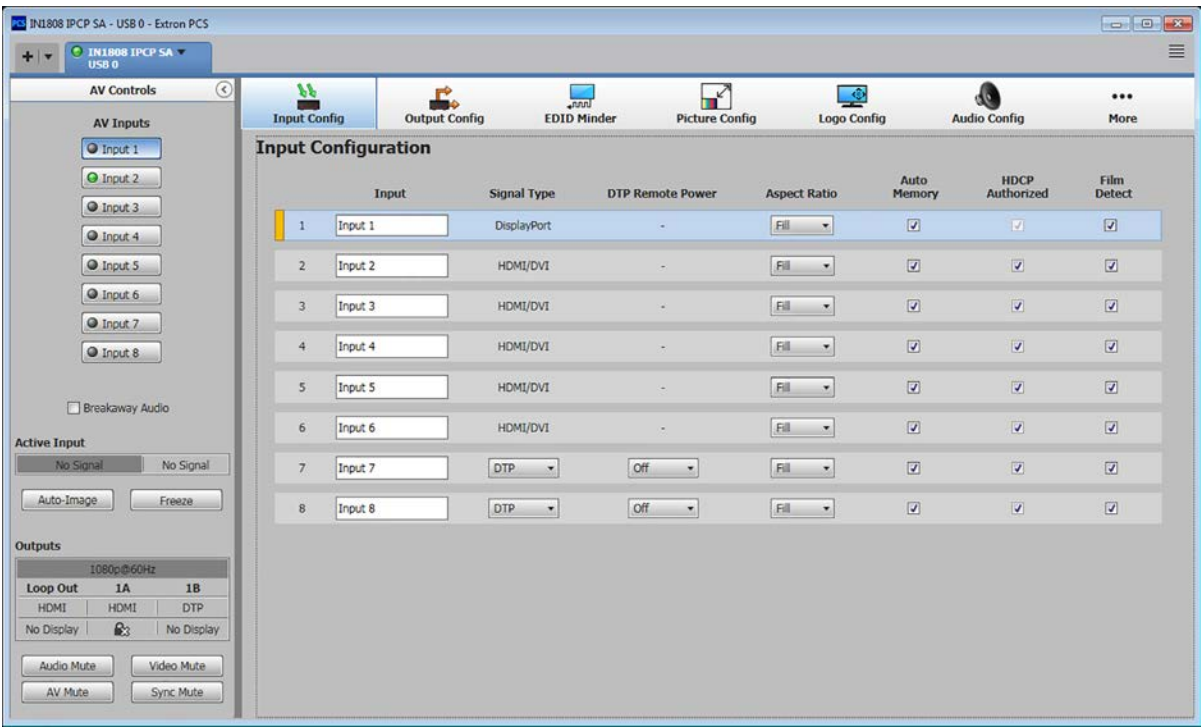


Figure 40. PCS Main Window

Each device screen has a **Device** drop-down list for configuration options. The **Software** menu contains software configuration and information options.

Software Menu

The PCS Software menu (see figure 41) contains options pertaining to PCS settings.

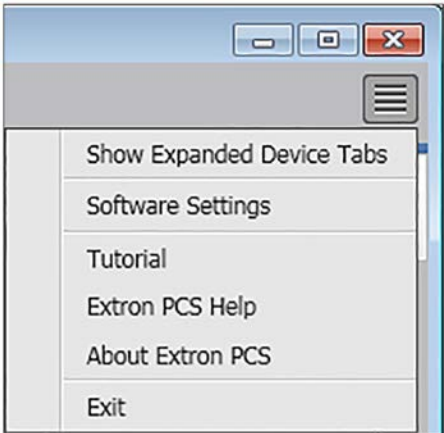


Figure 41. PCS Software Menu

Show Expanded Device Tabs

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

From the **Software** menu, select **Show Expanded Device Tabs**.



Figure 42. Expanded Device Tab (IN1806 and IN1808 Series Connected through USB)

Software Settings

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

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

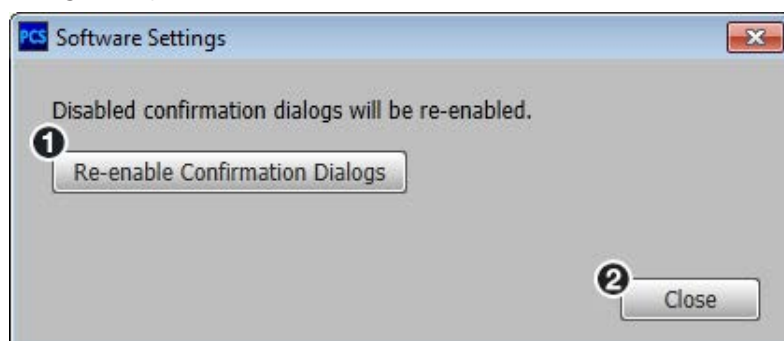


Figure 43. Software Settings Dialog Box

2. Click the **Re-enable Confirmation Dialogs** button (1). The dialog box closes and the reset is complete. Click the **Close** button (2) if you want 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**. The **Tutorial** dialog box opens.
2. Click the **OK** button to close the dialog box.

Extron PCS Help

This option opens the PCS help file for general PCS operations.

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

About Extron PCS

This option contains information about the current PCS version.

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



Figure 44. About - Extron PCS Dialog Box

2. Click the **Details** button (see figure 44, ①) view the software build number and more information.

To display details about third-party software packages and associated licensing, click **Licenses** (②).

3. Click the **OK** button (③) to close the dialog box.

Exit

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

1. From the **Software** menu, select **Exit**. If device tabs are open, the Exit dialog box opens.

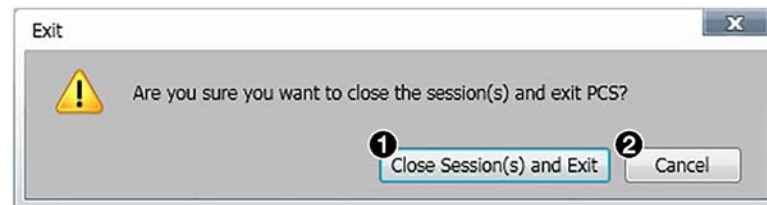


Figure 45. Exit Dialog Box

2. If necessary, click the **Close Session(s) and Exit** button (see figure 45, ①) to disconnect the software from connected devices, close all offline device tabs, and close the software. Click the **Cancel** button (②) to leave the software open.

Device Menu

The **Device** drop-down menu contains options pertaining to device connection, configuration, and information. For details about all these options, see the *IN1806 and IN1808 Series PCS Help File*.

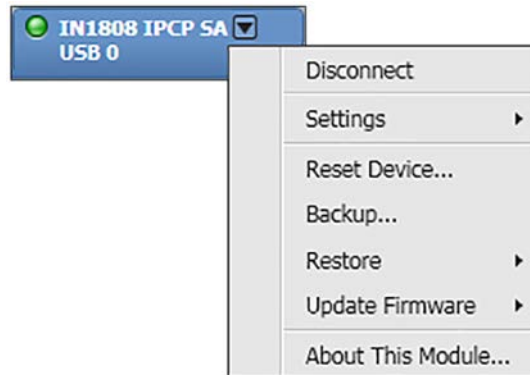


Figure 46. Device Menu

- **Disconnect** — Disconnects the PCS program from the connected device and closes the device tab.

NOTE: If a device is already disconnected, the **Disconnect** option is disabled until the device is connected.

- **Settings** — Opens a submenu containing the following options:
 - **Hardware Settings** — Displays the **Hardware Settings** dialog box containing device information and side tabs that enable you to change the device name, internal clock, and password of the connected device.

It also contains an **Edit Communication Settings** button, which provides an alternative method of accessing the **Communication Settings** dialog box.
 - **Communication Settings** — Opens the **Communication Settings** dialog box on which you can change IP settings of the connected device.
- **Reset Device** — Opens the **Reset Device** dialog box, which contains selectable modes for resetting the connected device. In addition, the **Communication Settings** dialog box contains the unit information that is also displayed in the **Hardware Settings** dialog box.
- **Backup** — Enables you to export all audio, video, and communication settings of the connected device to the PC. This exported configuration can be saved as a backup file (with a .extz extension), or used to replicate settings from one device to other devices of the same model. When restoring a configuration, you can select specific device settings.
- **Restore** — Opens a submenu containing the following restore options:
 - **Restore this Device** — Lets you load a saved configuration for any IN1806 or IN1808 Series model to the connected device.
 - **Restore to Multiple Devices** — Lets you load a saved configuration file for any IN1806 or IN1808 Series model to multiple devices on the network.

NOTE: The connected devices must be connected via LAN.

Saved configurations may include audio, video, and communication settings.

- **Update Firmware** — Opens a submenu from which you can select to upload firmware from the host device to the connected device or to multiple devices.

NOTE: If necessary, download new firmware from the Extron website (see [Downloading Updated Firmware](#) on page 117).

- **Update Firmware to this Device...** — Uploads firmware from the host device to the connected device only.
- **Update Firmware to Multiple Devices...** — Uploads firmware to multiple devices on the network.

NOTE: The connected devices must be connected via LAN.

- **IN1806 and IN1808 Series <model name> Help** — Opens the *IN1806 and IN1808 Series PCS Help* file in a separate window.
- **About This Module** — Opens **About This Module** dialog box, which contains the module part number and firmware version of the connected device.

Internal Web Page

The IN1806 and IN1808 Series scalers feature an internal web server, displayed as a web page. This page allows you to monitor and adjust certain settings of the IN1806 and IN1808 Series via a LAN or WAN connection. Use a web browser to view the pages on a PC connected to the scaler LAN port.

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

- [Accessing the Web Page](#)
- [Web Page Components](#)

Accessing the Web Page

1. Connect the switcher to a LAN or WAN using the rear panel RJ-45 LAN connector (see [figure 3](#) and [figure 4](#), **K**, or [figure 5](#) and [figure 6](#), **Q**, [IN1808 IPCP SA and IN1808 IPCP MA 70 within the IPCP module], on pages 12 and 13).
2. Open a web browser on a connected PC.
3. Enter the IP address of the device in the browser **Address** field.

NOTE: The default IP address is 192.168.254.254.

4. Press the <Enter> key on the keyboard. The **Sign in** window opens (see figure 47).
5. In the **Username** field (see figure 47, **1**), enter **admin**.



Figure 47. Example of a Network Password Dialog Box

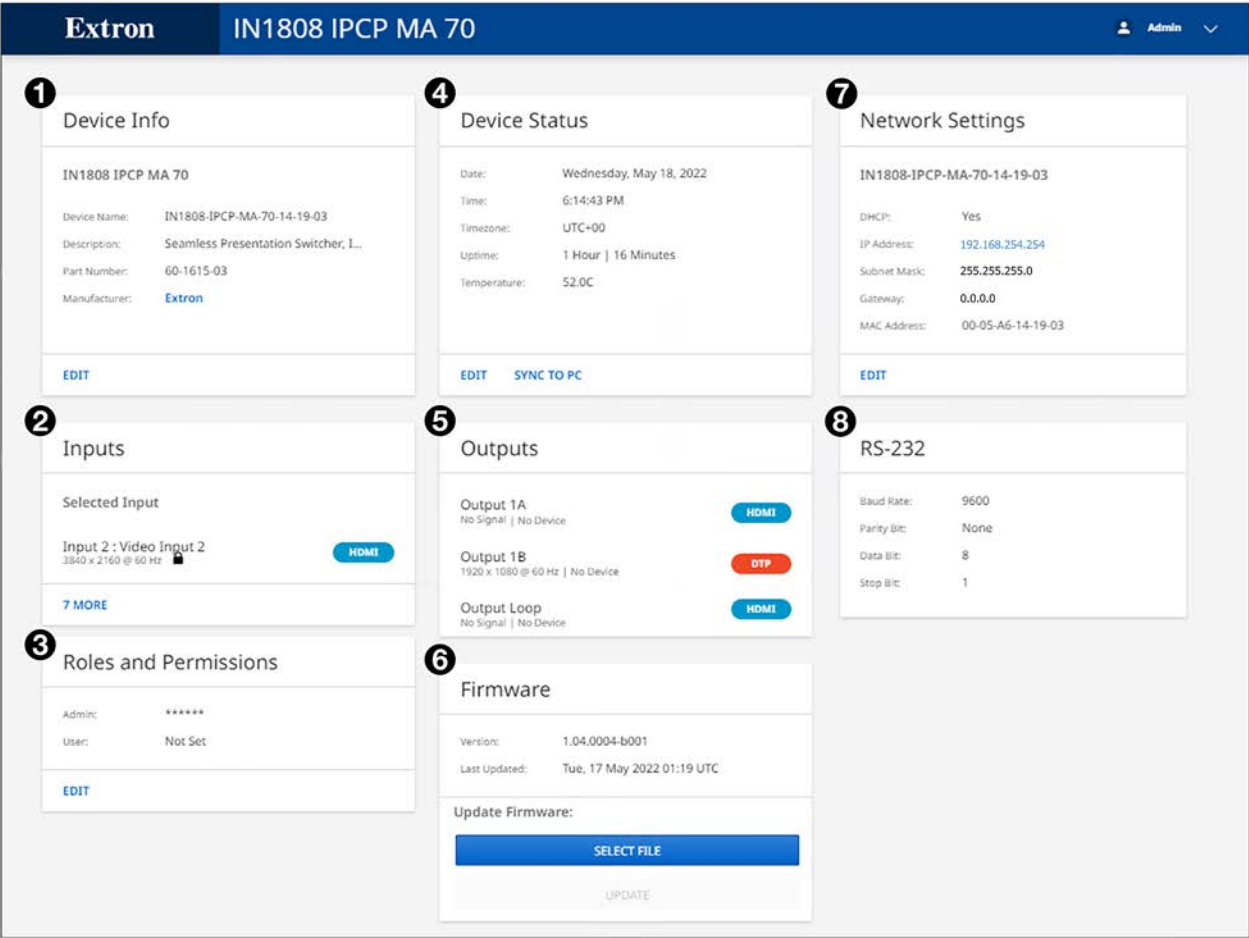
6. Enter the password if one is assigned.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. Passwords are case sensitive. In the event of an absolute system reset, these passwords are reset to no password.

To change the password, see [Setting a password](#) on page 110.

7. Click the **Sign In** button (see figure 47, **2**).

Web Page Components



- 1 Device Info Panel**
- 2 Inputs Panel**
- 3 Roles and Permissions Panel**
- 4 Device Status Panel**
- 5 Outputs Panel**
- 6 Firmware Panel**
- 7 Network Settings Panel**
- 8 RS-232 Panel**

Figure 48. Internal Web Page

NOTE: Figure 48 shows the web page for an IN1808 IPCP SA model. The pages for the IN1806 and the other IN1808 Series models are identical except for the product name in the **Device Info** panel, and the **Inputs** panel (the IN1806 page does not contain DTP inputs).

Device Info Panel

The **Device Info** panel (see [figure 48](#), ❶ on the previous page) displays device name, brief product description, and part number, with the option to edit the device name. The panel also contains an **Extron** link which opens www.extron.com in a new window.

Setting the device name

To edit the device name (TCP/IP hostname), click the **Edit** button in the lower-left corner of the **Device Info** panel. The **Device Info Settings** dialog box opens.



Figure 49. Device Info Settings Dialog Box



To change the name:

1. Click on the default name in the **Device Name** field (see figure 49, ❶). A cursor appears. (The default name is the model name followed by -xx-xx-xx, where xx-xx-xx are the last six characters of the unit MAC address.)
2. Enter a name for the IN1806 or IN1808.
3. Click **Save** to apply the new name and close the dialog box, or click **Cancel** to close the dialog box without renaming the device.

Inputs Panel

The **Inputs** panel (see [figure 48](#), ❷ on page 107) displays the name and signal type of the active input signal as well as its HDCP status.

The following HDCP status indicators may be displayed for a connected input:

Symbol	Definition
 HDCP	The signal is HDCP encrypted.
	The signal is not encrypted.
No Signal	There is no signal detected.

To view the status and type of all inputs, click the link (named **5 More** for IN1806 and **7 More** for the IN1808 Series) in the lower-left corner of the **Inputs** panel to view the **Inputs** dialog box (see [figure 50](#) on the next page for an example).

Figure 50 shows an IN1808 Series **Inputs** dialog box. The IN1806 equivalent screen has six inputs (no DTP2/XTP input 7 and 8).

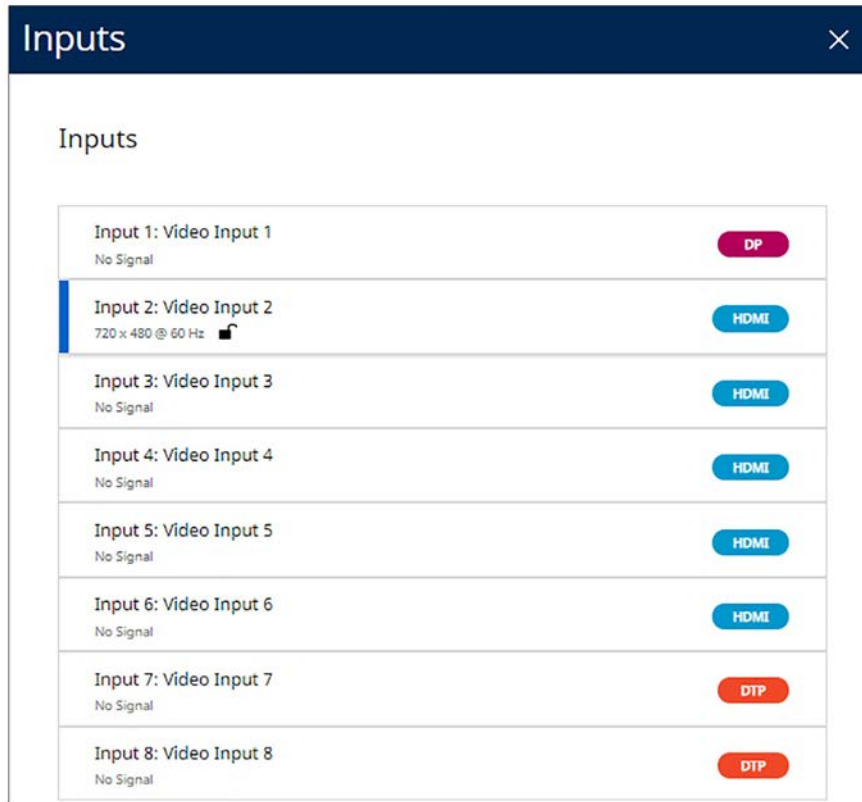


Figure 50. Inputs Dialog Box for an IN1808 Series

When finished viewing the input information, click the **X** in the upper-right corner of the dialog box to close it.

Roles and Permissions Panel

In this panel (see [figure 48](#), ③, on page 107) you can set and remove administrator and user passwords.

NOTE: The following rules apply to passwords:

- Length is 1-128 characters.
- All human-readable characters are permitted except |.
- The password cannot be a single space unless you are removing the password entirely.
- Passwords are case-sensitive.
- A user password cannot be assigned if no administrator password exists.
- If the Admin password is cleared, the user password is cleared as well.

Setting a password

The factory configured passwords for all accounts on this device have been set to the device serial number. This password is administrator level. Passwords are case sensitive.

To assign new administrator and user passwords:

1. In the **Roles and Permissions** panel, click **Edit**. The **Role and Permission Settings** dialog box opens
2. In the **Admin** panel, click the **Change Admin Password** link and enter the new administrator password in the field below (see figure 51, ❶).
3. Click in the **Confirm Admin Password** field (❷) and repeat the password from the **Change Admin Password** field.

The screenshot shows a dialog box titled "Edit Roles and Permissions" with a close button (X) in the top right corner. Inside the dialog, under "Role and Permission Settings", there are two main sections: "ADMIN" and "USER".

- ADMIN Section:** Contains a link "Change Admin Password" (marked with ❶) and a password input field. Below it is a "Confirm Admin Password" field (marked with ❷).
- USER Section:** Contains a "USER" title (marked with ❸), a "Change User Password" field, and a "Confirm User Password" field.

At the bottom of the dialog, there are "SAVE" and "CANCEL" buttons, and a checkbox labeled "Show Passwords".

Figure 51. Passwords Dialog Box with Administrator Password Entered

4. If you want to assign a user password, repeat steps 2 and 3 in the **User** panel (❸).
5. When finished, click **Save** to set the passwords. To close the window without saving a password, click **Cancel** or the **X** in the upper-right corner.

To remove an assigned password:

1. In the **Change Admin Password** or **Change User Password** field, enter a single space.
2. Enter a single space in the appropriate **Confirm Password** field.
3. Click **Save**.

Device Status Panel

The **Device Status** panel (see [figure 48](#), ④, on page 107) displays the current date, time, time zone, the amount of time the device has been running (**Uptime**), and internal temperature in degrees Celsius.

Syncing the IN1806 and IN1808 Series to the PC

To set the IN1806 and IN1808 Series date and time to match that of your computer:

Click **Sync to PC** at the bottom of the **Device Status** panel. When the sync is completed, the message shown in [figure 52](#) appears in the upper-right corner of the screen.

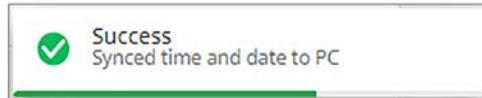


Figure 52. Sync to PC Success Message

Editing the date, time, and time zone

1. Click the **Edit** link in the lower-left corner of the panel. The **Edit Device Status** dialog box opens.

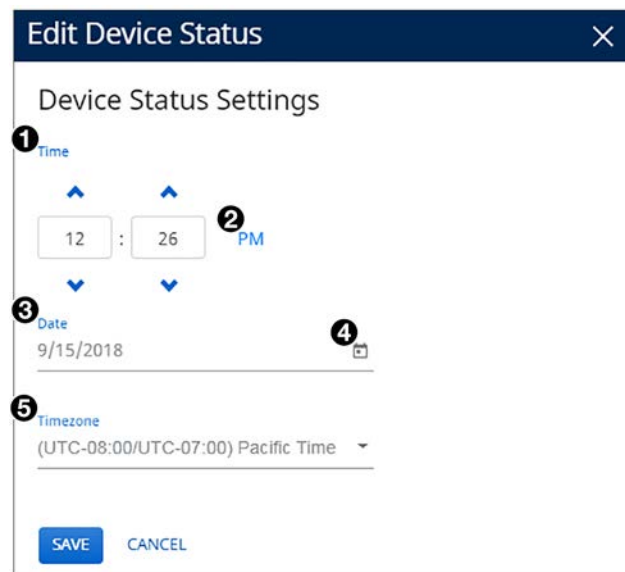




Figure 53. Edit Device Status Panel for Date and Time Setting

2. Set the time, date, and time zone as desired:
 - **Time** — In the **Time** panel (see [figure 53](#), ①), either click in the hour and minute text fields and enter the time, or click the up and down arrows to display the desired values.
 - **AM or PM** — Click the button (②) at the right of the time fields to toggle between **AM** and **PM**.
 - **Date** — In the **Date** field (③), either click in the text field and enter the date, or click the calendar icon (④) and select the desired date in the pop-up calendar (current month only).
 - **Time Zone** — In the **Timezone** panel, select the desired time zone from the drop-down menu (⑤).
3. When finished entering settings, click **Save** to confirm them, or **Cancel** to close the dialog box without implementing the settings.

Outputs Panel

The Outputs panel (see [figure 48, 5](#), on page 105) displays the resolution and refresh rate of the outputs, their signal type (HDMI, DTP, or DVI), and the HDCP status of all connected outputs.

The following status symbols may be displayed for connected outputs:

Symbol	Definition
	The display is HDCP compliant.
	The display is not HDCP compliant.
No Display	No display is connected.

Firmware Panel

The Firmware panel (see [figure 48, 6](#)) displays the current firmware version and the date it was last updated. You can also update the firmware on your IN1806 or IN1808 Series from this panel (firmware files can be downloaded from www.extron.com, see [Downloading Updated Firmware](#) on page 117).

To update firmware:

1. In the Firmware panel, click the **Select File** button.
2. In the Open dialog box, browse to locate the new firmware file on your computer (by default the file is stored at:

C:\Program Files (x86)\Extron\Firmware\IN1806_IN1808\vn_nn
after being downloaded from the Extron web page).

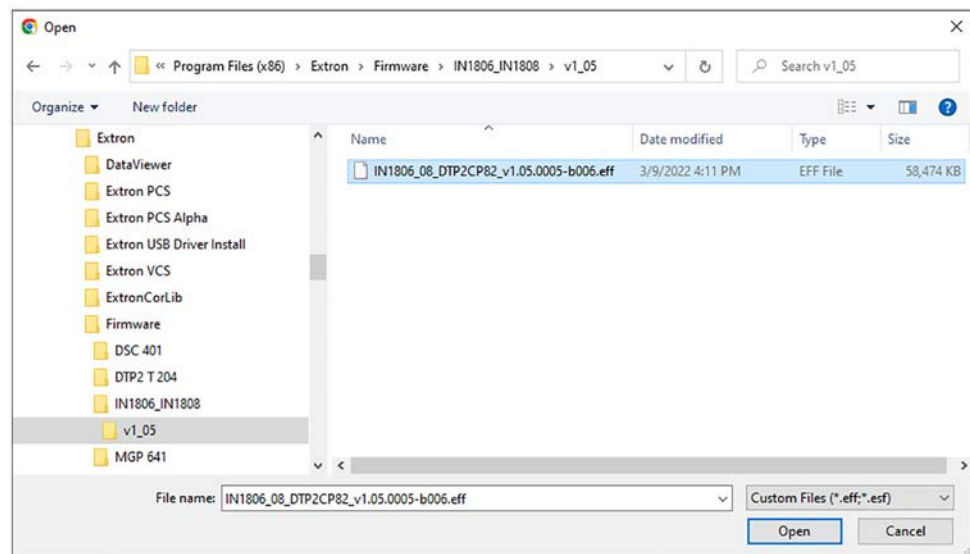


Figure 54. Firmware Open Dialog Box

NOTE: Firmware files for IN1806 and IN1808 Series have a .eff extension. Do not attempt to load any other file types.

3. Double-click the firmware file name. The **Open** window closes, and the selected firmware file name appears in the **Update Firmware** panel on the web page (see figure 55, ❶).

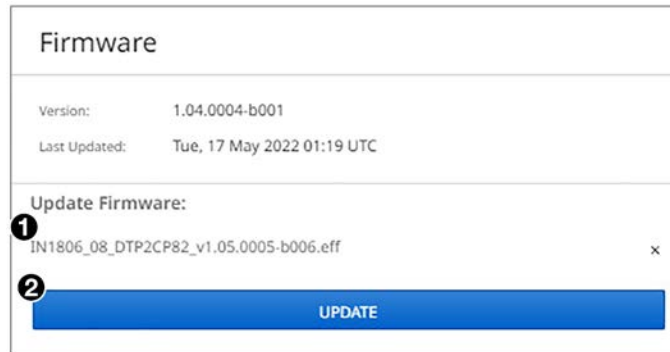


Figure 55. Firmware Update Panel with a Firmware File Selected

4. Click **Update** to begin (❷). If you want to cancel the update, click the **x** at the right of the file name.

During the updating process, a row of boxes appears in the middle of the screen, indicating the current stage of the update: **Uploading File**, **Updating Firmware**, and **Rebooting** (see figure 56).



Figure 56. Firmware Update Message Window

When the update is completed, the web page closes, requiring a login.

When the web page reopens, the new firmware filename appears beside **Version** in the **Firmware** panel of the web page.

Network Settings Panel

In the **Network Settings** panel (see [figure 48](#), ❷ on page 107), you can set the IP address, subnet mask, and gateway address for your IN1806 or IN1808 Series, and turn DHCP on and off. You can also view the MAC address of the unit. To set the IP addresses:

1. Click **Edit** in the lower-left corner of the **Network Settings** panel. The **Edit Network Settings** screen opens.

Figure 57. Edit Network Settings Screen

2. Edit the network settings as desired:
 - **DHCP** — Click the **DHCP** button (see figure 57, ①) to toggle DHCP on and off. When DHCP is enabled (**On**), the unit configures its IP address and other network settings from the DHCP server. The default is **Off**.
 - **IP Address, (②), Subnet mask (③), and Gateway address (④)** — To set any of these addresses, click in the desired field and enter the address.
3. When finished editing, click **Save** to confirm your changes or **Cancel** to close the window without making changes. You can also close the window by clicking the **X** in the upper-right corner of the screen.

NOTE: If DHCP is being enabled, the web page attempts to redirect and connect to the unit via the unit name (TCP/IP hostname). If a static IP address is being set, the web page attempts to connect to the new IP address.

RS-232 Panel

The view-only RS-232 panel (see [figure 48, ⑧](#), on page 107) displays the RS-232 protocol for the IN1806 and IN1808 Series serial port. The defaults are:

- Baud rate — 9600
- Parity Bit — N (none)
- Data bits — 8
- Stop bits — 1

Reference Information

This section provides reference or supplemental information. Topics in this section include:

- [Mounting](#)
- [Downloading Updated Firmware](#)

Mounting

Tabletop Mounting

Attach the provided rubber feet to the bottom four corners of the enclosure.

Rack Mounting

UL guidelines for rack mounted devices

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the scaler in a rack.

CAUTION:

- **Elevated operating ambient temperature** — If the equipment is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (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** — When mounting the equipment in the rack, ensure that uneven mechanical loading does not cause a hazardous condition.
- **Circuit overloading** — When connecting the equipment to the supply circuit, consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings when addressing this concern.
- **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, 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 IN1806 et IN1808 Series :

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 (T_{ma}) 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 procedure

Mount the scalers into racks with the pre-installed rack ears (see [UL guidelines for rack mounted devices](#) starting on page 115). To install the device, line up the screw holes on the rack ears on both side of the device with the screw holes in the rack so they device is level. Use the provided screws to attach the device to the rack.

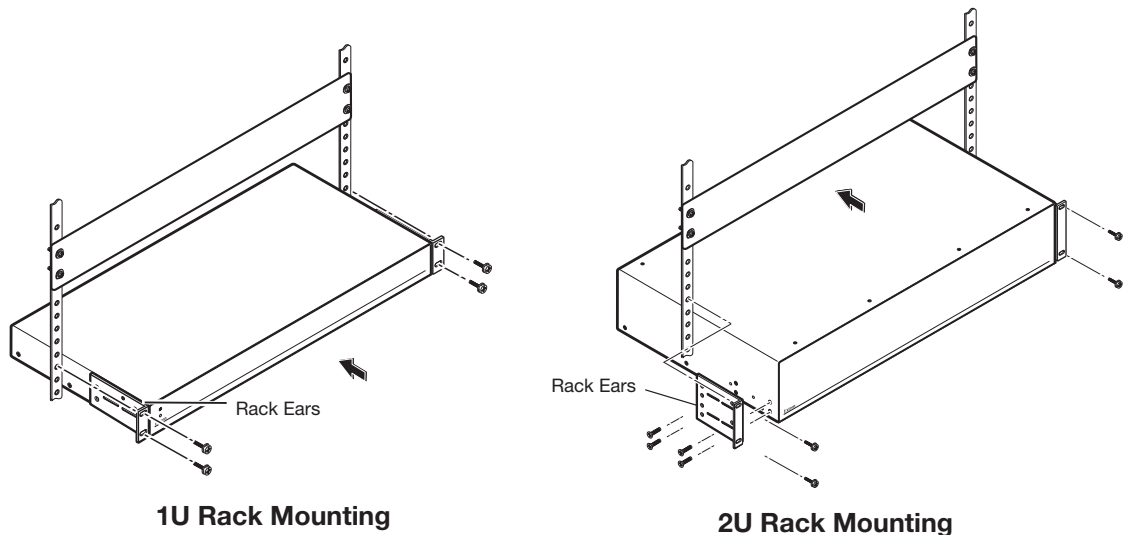


Figure 58. Rack Mounting 1U and 2U Devices

Downloading Updated Firmware

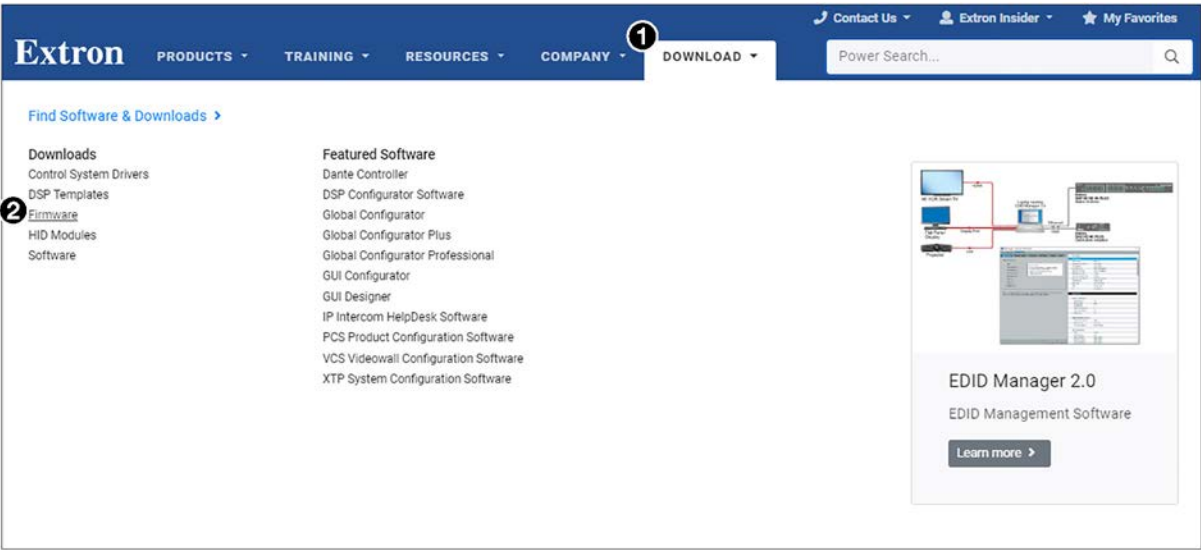


Figure 59. Downloading Firmware from the Extron Website

1. On the www.extron.com, click the **Download** tab (see figure 59, ①).
2. Click the **Firmware** link in the Downloads column (②).

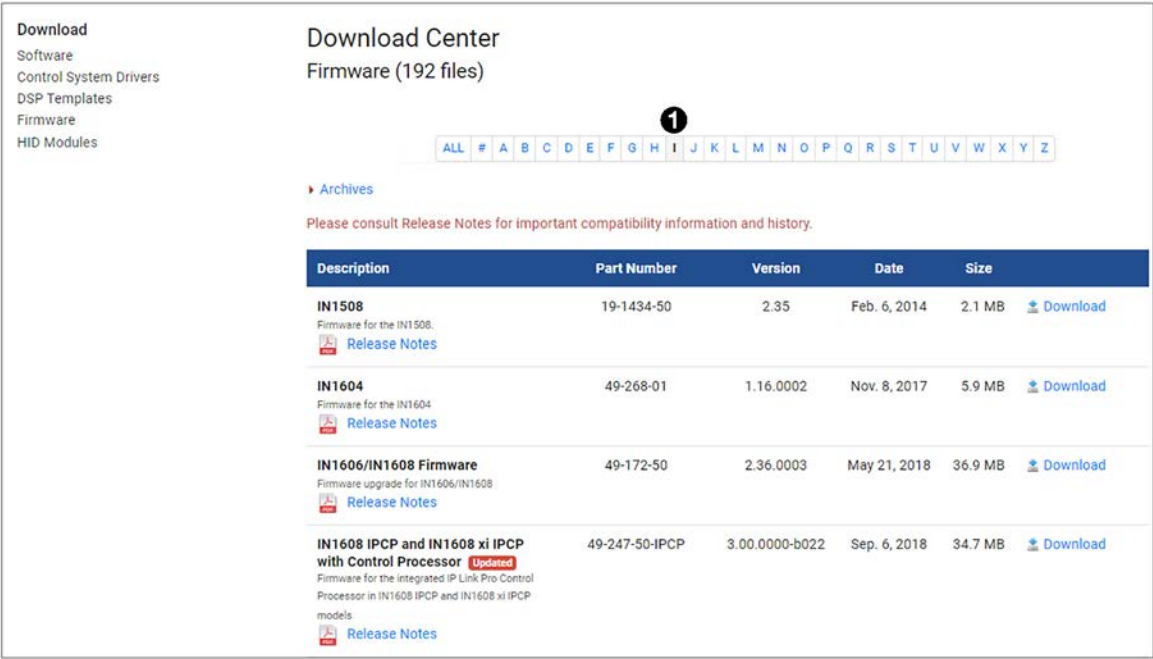


Figure 60. I Link on Firmware Download Center Page

3. On the Download Center screen, click the **I** link (see figure 60, ①).
4. Ensure the available firmware version is a later version than the current one on the device.

NOTE: The firmware release notes provide details about the changes between different firmware versions. The file can be downloaded from the same page as the firmware.

5. Click the **Download** link to the right of the desired device.

6. On the login page that appears next, fill in the required information to log in to www.extron.com (if you need an ID number, see your Extron representative).
7. Follow the instructions on the subsequent screens to complete the software program installation. By default, the configuration program files are stored on your computer at:
C:\Program Files(x86)\Extron\Firmware\IN1806 and IN1808 Series

If there is not already an Extron folder in your Program Files x86 folder, the installation program creates it as well.

Extron Warranty

Extron warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

**USA, Canada, South America,
and Central America:**

Extron
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Asia:

Extron Asia Pte Ltd
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Japan:

Extron Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Middle East:

Extron Middle East
Dubai Airport Free Zone
F13, PO Box 293666
United Arab Emirates, Dubai

Africa:

Extron South Africa
3rd Floor, South Tower
160 Jan Smuts Avenue
Rosebank 2196, South Africa

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876

Asia: 65.6383.4400

Europe: 31.33.453.4040 or 800.3987.6673

Japan: 81.3.3511.7655

Africa: 27.11.447.6162

Middle East: 971.4.299.1800

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron 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 be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron 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.