

IMPORTANT:
Go to www.extron.com for the complete user guide, installation instructions, and specifications before connecting the product to the power source.

The Extron IN1808 Series are eight-input seamless scaling presentation switches that support signal resolutions up to 4K @ 60 Hz at 4:4:4. They feature DisplayPort, HDMI, and DTP2 inputs, 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 IN1808 IPCP SA and IN1808 IPCP MA 70 models each have a built-in Extron IPCP Pro 355M IP Link Pro Control Processor, and an integrated 100 watt class D power amplifier. The IN1808 Series delivers high image quality, fast and reliable switching, Extron ProDSP audio processing, seamless video transition effects, logo keying, and HDMI loop out. The scalers can be controlled and configured over Ethernet, RS-232, or USB.

This guide provides instructions for an experienced user to set up and configure the IN1808 (base model), IN1808 IPCP SA, and IN1808 IPCP MA 70 scalers. It covers how to perform basic operations using the front panel controls and selected Simple Instruction Set (SIS™) commands.

NOTES:

- For full installation, configuration, menus, connector wiring, and operation details, see the *IN1806 and IN1808 Series User Guide* at www.extron.com. For installation, configuration, and operation details of the embedded IPCP Pro 355M, see the *IPCP Pro Series User Guide*.
- The IN1808 Series products can also be configured via the Extron Product Configuration Software (PCS), available at www.extron.com. For information on using PCS, see the *IN1806 and IN1808 Series Help File*.

Installation

IN1808 Series Rear Panel Connectors

Figure 1 shows the rear panel of the IN1808 IPCP SA rear panel. The IN1808 IPCP MA 70 rear panel is the same except that the embedded amplifier is mono while the SA model amplifier is stereo. The IN1808 base model rear panel does not have an embedded IPCP Pro 355M module (see figure 1, **P**) or amplifier module (**N**).

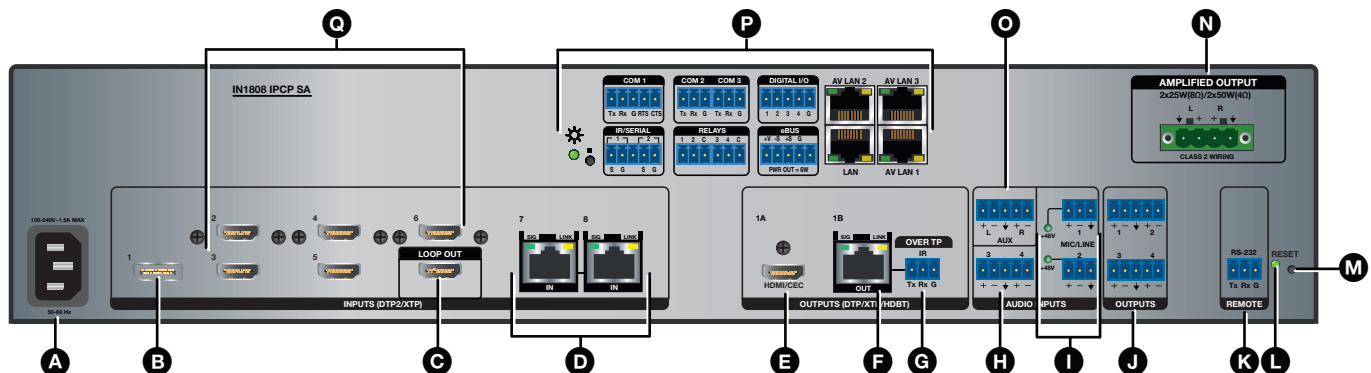
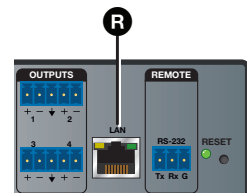


Figure 1. Rear Panel Connectors, IN1808 IPCP SA

A AC power connector	H Analog line audio inputs 3 and 4	N Amplified audio output (IPCP models only)
B DisplayPort input connector (input 1)	I Analog mic/line audio inputs 1 and 2 and adjacent phantom power LEDs	O Aux mono or stereo analog line audio input connector
C HDMI (with CEC) loop out connector	J Analog line audio outputs 1 through 4	P IPCP Pro 355M Control Processor (IPCP models only)
D DTP2/XTP input connectors (inputs 7 and 8)	K Remote RS-232 port	Q HDMI inputs 2 through 6
E HDMI (with CEC) output connector (1A)	L Reset LED	R LAN connector (IN1808 base model only, see the note and illustration below)
F DTP2/XTP/HDBaseT (with CEC) output connector (1B)	M Reset button	
G Over TP IR pass-through connector		

NOTE: The IN1808 base model has a LAN connector to the left of the Remote RS-232 connector (see **R** in the illustration at right) instead of the AV LAN ports on the IPCP Pro 355M control processor.



IN1808 • Setup Guide (Continued)

Mounting and Cabling

Step 1 — Mount the device

- a. Turn off or disconnect all equipment power sources.
- b. Mount the IN1808 to a rack using the pre-installed side mounting brackets, or remove the brackets and use an optional 19-inch rack under-desk mounting kit (see the mounting instructions provided with the kit, available at www.extron.com). The IN1808 base model has a 1U high, full rack wide enclosure. The IN1808 IPCP models have 2U, full rack enclosures.

Step 2 — Connect inputs

Make the following input connections as needed:

- Connect a DP source to the Input 1 DisplayPort connector (see [figure 1](#), **B**, on the previous page).
- Connect HDMI or DVI (with an appropriate adapter) sources to HDMI input connectors 2 through 6 (**C**).
- Connect DTP transmitters to the DTP2/XTP RJ-45 input connectors 7 and 8 (**D**). These connectors allow for remote powering of DTP transmitters. You can configure the TP inputs for XTP mode via SIS commands, the on-screen display (OSD), or PCS (see the *IN1808 Series Help File*). For cable wiring and recommendations, see [Twisted Pair Recommendations for DTP, XTP, and HDBaseT Communication](#) on the next page.
- Connect analog audio sources to:
 - The 5-pole captive screw line audio input connectors 3 and 4 (**H**) and the Aux connector (**O**) for balanced or unbalanced stereo audio. The Aux Line input is shared and can be associated with one or more video inputs.
 - Connect balanced or unbalanced mic or line level inputs to 3-pole Mic/Line captive screw connectors 1 and 2 (**I**). These inputs support optional +48 VDC phantom power, which is indicated by the LEDs at the left of the connectors.

Step 3 — Connect outputs

Make the following output connections as needed:

- Connect an HDMI, or DVI with an appropriate adapter, display to HDMI/CEC output connector 1A (**E**).
- Connect a DTP/XTP matrix switcher/HDBaseT compatible receiver to output connector 1B (**F**). For cable wiring and recommendations, see [Twisted Pair Recommendations for DTP, XTP, and HDBaseT Communication](#).
- To pass infrared data, connect a control device to the 3-pole IR Over DTP captive screw connector (see [IR Over TP Wiring](#) on the next page). Alternatively, insert RS-232 communication to a DTP/HDBaseT endpoint via Ethernet (see the *IN1808 Series User Guide* for more information).
- Connect balanced or unbalanced analog audio output devices to one or both 5-pole captive screw output connector pairs 1 and 2 or 3 and 4 (**J**). See [Audio Wiring](#) on the next page for more information.
- For IPCP models, connect speakers to the amplifier module via the 5 mm 4-pole stereo (IN1808 IPCP SA) or 2-pole mono (IN1808 IPCP MA 70) Amplified Output connector (**N**).

Step 4 — Connect control devices

- To control the base model through Ethernet, connect a LAN or WAN to the LAN connector (**R**). To wire the RJ-45 connector to the cable, see [Twisted Pair Recommendations for DTP, XTP, and HDBaseT Communication](#).
For the IPCP models, connect a LAN or WAN to any of the AV LAN connectors on the IPCP Pro control processor (**P**). The default IP address of the scaler is 192.168.254.254. The default subnet mask is 255.255.255.0. The default gateway address is 0.0.0.0.
- For serial RS-232 control, connect a host device to the 3-pole captive screw connector (**K**). The default baud rate is 9600.
- For control through USB, connect a host device to the front panel USB mini-B port (see [figure 2](#), **H** on page 4).

Step 5 — Set up the IPCP Pro 355M control processor (IPCP models only)

The Extron IPCP Pro 355M control processor (see [figure 1](#), **P**) provides monitoring and control of a variety of external devices, such as projectors and lights. See the *IPCP Pro Series Setup Guide*, available at www.extron.com, for installation details.

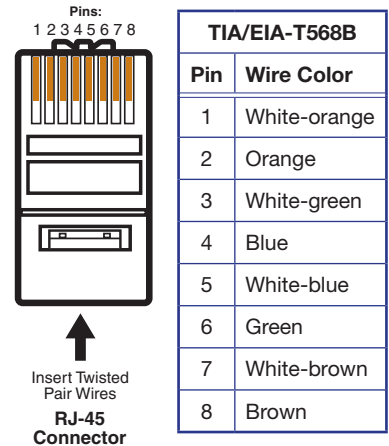
Step 6 — Connect power

Connect a 100 to 240 VAC, 50-60 Hz power source to the AC power connector (**A**).

Twisted Pair Recommendations for DTP, XTP, and HDBaseT Communication

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

- Use Extron XTP/DTP 24 SF/UTP cable for the best performance. 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 (shown at right).
- 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.



ATTENTION:

- Do not connect these connectors to a telecommunications or computer data network.
- Ne connectez pas ces ports à des données informatiques ou à un réseau de télécommunications ou de données informatiques.
- 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 DTP à distance est destinée à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation DTP à distance ne peut être routée en extérieur.

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.

Audio Wiring

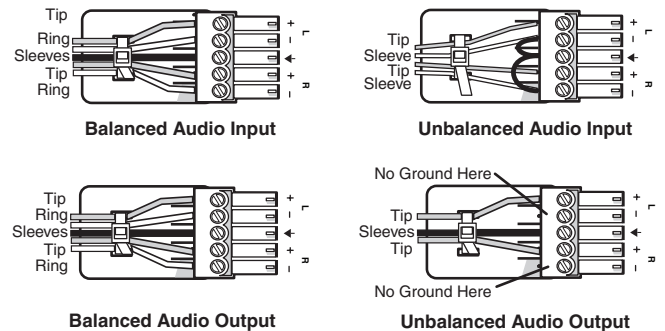
Wire the audio input and output connectors as shown at right. Use the supplied tie wrap to strap the audio cable to the extended tail of the connector. This does not apply to the amplified audio output connector on the SA and MA models.

ATTENTION:

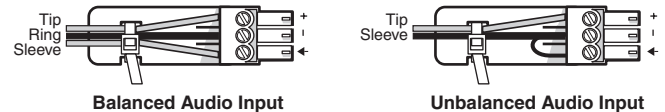
- For unbalanced outputs, do not connect wires to the “-” poles (see the illustration at right).
- Pour les sorties asymétriques, ne connectez pas de câbles aux pôles « - » (voir l'illustration de droite).

NOTE: The length of exposed wires is critical. The ideal length is 3/16 inch (5 mm).

Audio Inputs and Outputs 1 – 4 and Aux



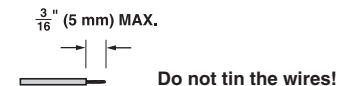
Mic/Line Inputs 1 and 2



IR Over TP Wiring

To transmit and receive IR signals, connect a control device to the three-pole Over TP IR connector (G, Tx, and Rx).

NOTE: RS-232 data can be inserted via Ethernet only (see the IN1806 and IN1808 Series User Guide for details).



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Front Panel Overview

Figure 2 shows the front panel of the IN1808 IPCP SA and IPCP MA 70. The IN1808 base model is 1U high and has no IPCP Pro LEDs (H).

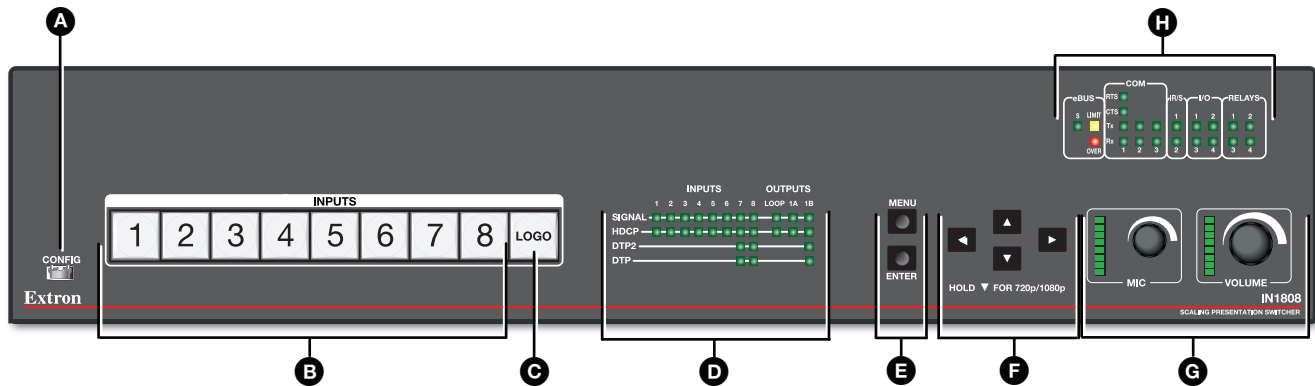


Figure 2. Front Panel Features, IN1808 IPCP SA and IN1808 IPCP MA 70

A Config port	D Signal and Status LEDs	G Mic and Volume knobs and LEDs
B Input selection buttons (1 through 8)	E Menu and Enter buttons	H IPCP Pro LEDs (IPCP models only)
C Logo button	F Navigation buttons	

- 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 8)** — 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 slot. Press and hold the button to select logo slot 1 through 8 using the input selection buttons (slots 9-16 are available via SIS commands only). See the *IN1806 and IN1808 Series User Guide* at www.extron.com for more information about logos.
- 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 1% (-99 dB) to 99% (-1 dB). The bottom LED blinks when the volume is muted. The top LED blinks when the volume is at 100% (12 dB).
- H IPCP Pro LED indicators** — IPCP models only (see the *IPCP Pro Series Setup Guide* for details).

Firmware Updates

Download firmware updates from the Extron website and upload them via the internal web pages or PCS.

IN1808 Series Configuration

To configure IN1808 Series, use the front panel controls, the on-screen display (OSD) menu, internal web pages, PCS, or SIS commands.

On-screen Display (OSD) Menu System

To configure IN1808 Series using the OSD menu, connect a display to either HDMI output 1A or to a DTP/XTP matrix switcher/HDBaseT compatible device. The OSD menu consists of eight submenus accessed using the front panel **Menu** or **Enter** button (see the example at right).

Extron Product Configuration Software

To configure IN1808 scalers using PCS, install the software (available on the Extron website, www.extron.com) to a PC connected to the scaler via Ethernet or front panel USB Config port. After the installation, start the program. For full instructions, press <F1> on the keyboard or click the ? button in the software and select **Help File**.

Internal Web Pages

To configure the IN1808 Series using the factory-installed web pages in a web browser (see the example at right), connect the AV LAN connector (IPCP models) or LAN connector (base model) on the IN1808 to a LAN or WAN. The default IP address is 192.168.254.254.

Extron	IN1808 IPCP SA	
DEVICE INFO	IN2: Input Mode	HDMI
QUICK SETUP	IN2: EDID	Auto
PICTURE CONTROLS	Output Rate	1080p @ 60 Hz
INPUT	Audio Mute	Off
OUTPUT	Test Pattern	Off
AUDIO	DHCP Mode	Off
ADVANCED	IP Address	192 . 168 . 254 . 254
COMMUNICATIONS		
Input 2 1080p @ 60.00Hz		Scaled Output 1080p @ 60.00Hz

Basic SIS Command Table

To configure IN1808 Series with specific SIS commands via an RS-232, USB, or Ethernet connection, use the Extron DataViewer utility or a control system to send and receive SIS commands. The table below lists a selection of SIS commands. For a full list of SIS commands and variables, see the *IN1806 and IN1808 Series User Guide* at www.extron.com.

Command	ASCII Command	Response	Additional Description
Input Selection			
Select audio and video input	[X1]*1!	In[X1]*1•All←	Select audio and video from input [X1] to the output.
Select video input only	[X1]*1%	In[X1]•1Vid←	Select the video only from input [X1] to the output.
Select audio input only	[X1]*1\$	In[X1]•1Aud←	Select the audio only from input [X1] to the output.
Auto-Image			
Execute Auto-Image™	1*ØA	Img*Ø←	Execute an Auto-Image (follows aspect setting).
Execute Auto-Image and fill	1*1A	Img*1←	Execute an Auto-Image and fill the output raster.
Execute Auto-Image and follow	1*2A	Img*2←	Execute an Auto-Image and follow the input aspect ratio.
Auto-Switch Mode			
Set Auto-Switch mode	[Esc][X30]AUSW←	Ausw[X30]←	Select Auto-Switch mode [X30].
View Auto-Switch mode	[Esc]AUSW←	[X30]←	View the current Auto-Switch mode.
Set Auto-Switch priority	[Esc]P[X31]¹... [X31]ºAUSW←	Ausw P[X31]¹... [X31]º←	Set priority [X31] for input selection. Lists inputs in order of priority, from highest to lowest.
View Auto-Switch priority	[Esc]P AUSW←	[X31]¹... [X31]º←	View Auto-Switch priority. Lists inputs in order of priority, from highest to lowest.
View memory priority	[Esc]O AUSW←	[X31]¹... [X31]º←	View Auto-Switch memory priority, from highest to lowest.
Output Scaler Rate			
Set output rate	[Esc]1*[X21]RATE←	Rate1*[X21]←	Select output resolution and refresh rate [X21].
View output rate	[Esc]1RATE←	[X21]←	View the output rate.

KEY:

[X1] = Input selection
[X21] = Output resolution and rate
[X30] = Auto-Switch mode

1 through 8
See the EDID Emulation and Output Rate table in the *IN1806 and IN1808 Series User Guide*.
Ø = disabled (default), 1 = user defined priority, 2 = input memory priority (most recently detected input)

[X31] = Input numbers for Auto-Switch priority 1 through 8

Command	ASCII Command	Response	Additional Description
Video Mute			
Mute output video	<code>[X2]*1B</code>	<code>Vmt[X42]*1</code> ←	Mute the video on output <code>[X2]</code> .
Mute video on all outputs	<code>1B</code>	<code>Vmt1</code> ←	Mute the video on all outputs.
Mute video and sync	<code>2B</code>	<code>Vmt2</code> ←	Mute the video and sync on all outputs.
Unmute video and sync	<code>ØB</code>	<code>VmtØ</code> ←	Unmute the video on all outputs.
View output mute status	<code>B</code>	<code>Vmt[X42], [X42], [X42]</code> ←	View mute status <code>[X42]</code> for outputs 1A (1), 1B (2), and loop (3).

Audio Configuration			
Set audio input format	<code>[Esc] I [X1]*[X58]AFMT</code> ←	<code>Afmt I [X1]*[X58]</code> ←	Set the audio format of input <code>[X1]</code> to <code>[X58]</code> .
View audio input format	<code>[Esc] I [X1]AFMT</code> ←	<code>[X58]</code> ←	View the audio format of input <code>[X1]</code> .

Front Panel Lockout (Executive Modes)			
Enable lock mode 1	<code>1X</code>	<code>Exe1</code> ←	Lock all front panel controls.
Enable lock mode 2	<code>2X</code>	<code>Exe2</code> ←	Lock the front panel except for input selection, logo configuration, and volume adjustment.
Enable lock mode 3	<code>3X</code>	<code>Exe3</code> ←	Lock the front panel except for input selection and logos.
Enable lock mode 4	<code>4X</code>	<code>Exe4</code> ←	Lock the front panel except for volume adjustment.
Disable executive modes	<code>ØX</code>	<code>ExeØ</code> ←	Allow all front panel adjustments and selections.

IP Settings			
Set scaler IP address	<code>[Esc] [X87]CI</code> ←	<code>Ipi [X87]</code> ←	Specifies a new scaler IP address.
Set scaler DHCP mode	<code>[Esc] [X9]DH</code> ←	<code>Idh [X9]</code> ←	Enables or disables DHCP (Ø = default).
Set subnet mask	<code>[Esc] [X88]CS</code> ←	<code>Ips [X88]</code> ←	Specifies a new subnet mask.
Set gateway IP address	<code>[Esc] [X89]CG</code> ←	<code>Ipg [X89]</code> ←	Specifies a new gateway IP address.
Reboot network	<code>[Esc] 2B00T</code> ←	<code>Boot2</code> ←	Restarts the network connection after IP or DHCP changes.

NOTE: IP settings do not take effect until the `[Esc]2B00T` ← command is executed.

Twisted Pair Protocol			
Set input TP type	<code>[Esc] I [X1]*[X67]HDBT</code> ←	<code>Hdbt I [X1]*[X67]</code> ←	Set the DTP/XTP type for input <code>[X1]</code> to <code>[X67]</code> .
View input TP type	<code>[Esc] I [X1]HDBT</code> ←	<code>[X67]</code> ←	View the current DTP/XTP type for input <code>[X1]</code> .
Set output TP type	<code>[Esc] O 2*[X67]HDBT</code> ←	<code>Hdbt O 2*[X67]</code> ←	Set the TP type for input <code>[X1]</code> to <code>[X67]</code> .
View output TP type	<code>[Esc] O 2 HDBT</code> ←	<code>[X67]</code> ←	View the DTP/XTP/HDBT setting <code>[X67]</code> on output 1B.

DTP Remote Power Parameters			
Set input remote power	<code>[Esc] I [X1]*[X66]RPWR</code> ←	<code>Rpwr I [X1]*[X66]</code> ←	Set remote power on input <code>[X1]</code> to <code>[X66]</code> .
View input remote power	<code>[Esc] I [X1]RPWR</code> ←	<code>[X66]</code> ←	View remote power setting on input <code>[X1]</code> .
Set output 1B remote power	<code>[Esc] O 2*[X66]RPWR</code> ←	<code>Rpwr O 2*[X66]</code> ←	Set remote power on output 1B to <code>[X66]</code> .
View output 1B remote power	<code>[Esc] O [X2]RPWR</code> ←	<code>[X66]</code> ←	View remote power setting on output .

KEY:

<code>[X1]</code> = Input selection	Inputs 1 through 8. For the Twisted Pair Protocol commands, <code>[X1]</code> = Inputs 7 and 8 only.
<code>[X2]</code> = Output selection	1 = Output 1A (HDMI/DVI), 2 = Output 1B / 2 DTP/XTP/HDBT, 3 = Loop Output – HDMI/DVI
<code>[X10]</code> = Enable or disable	Ø = off or disabled, 1 = on or enabled
<code>[X66]</code> = DTP remote power	Ø = Off (No remote power, default), 1 = DTP 12 VDC, 2 = DTP 48 VDC
<code>[X42]</code> = Video mute status	Ø = unmuted, 1 = muted
<code>[X58]</code> = Audio input type	Ø = None (input muted), 1 = Analog aux line (5-pole captive screw), 2 = LPCM-2Ch digital, 3 = Multi-Ch digital, 4 = LPCM-2Ch digital audio aux line (default), 5 = Multi-Ch digital auto aux line.
<code>[X67]</code> = TP format	Ø = DTP format (default), 1 = XTP, 2 = HDBaseT format (supported on output only)
<code>[X87]</code> = IP address	<i>nnn.nnn.nnn.nnn</i> , 192.168.254.254 = default
<code>[X88]</code> = Subnet mask	<i>nnn.nnn.nnn.nnn</i> , 255.255.255.Ø = default
<code>[X89]</code> = Gateway address	<i>nnn.nnn.nnn.nnn</i> , Ø.Ø.Ø.Ø = default

For 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.