

The Extron IN1806 is a six input seamless scaling presentation switcher that supports signal resolutions up to 4K @ 60 Hz at 4:4:4. It features DisplayPort and HDMI inputs, an HDMI output, and a mirrored Extron DTP2 output for extending video, audio, and control signals up to 330 feet (100 meters) over a shielded CATx cable. The IN1806 delivers high image quality, fast and reliable switching, Extron ProDSP audio processing, seamless video transition effects, logo keying, and HDMI loop-out. The scaler 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 IN1806 scaler. It covers how to perform basic setup 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.
- The IN1806 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

Rear Panel Features

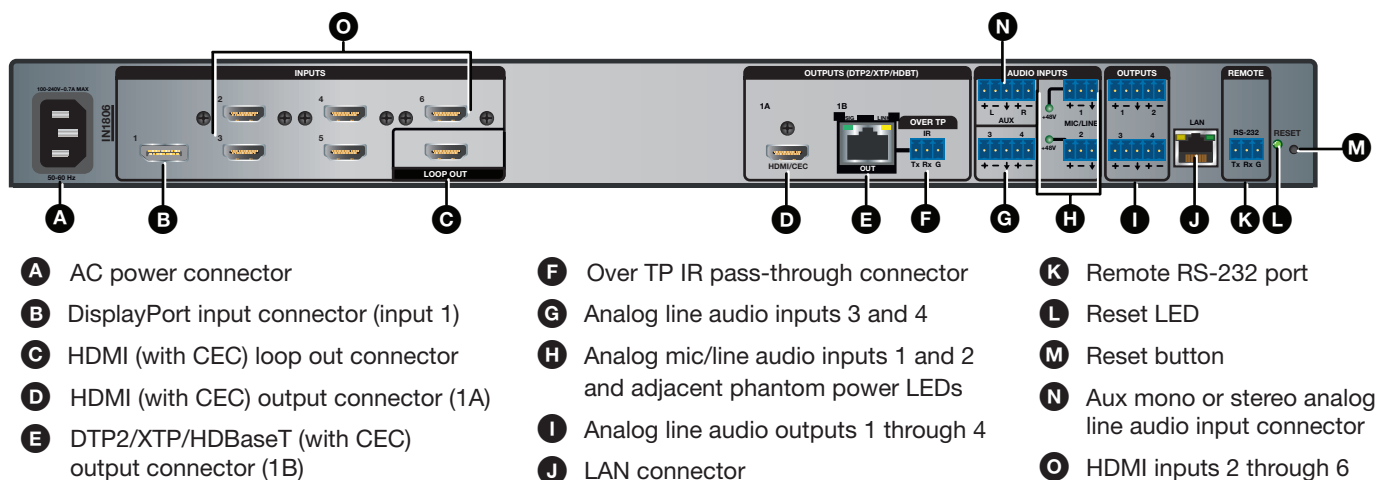


Figure 1. Rear Panel Connectors — IN1806

Mounting and Cabling

Step 1 — Mount the device

- Turn off or disconnect all equipment power sources.
- Mount the IN1806 to a rack using the pre-installed side mounting brackets, or remove the brackets and use an optional 19-inch kit for under-desk mounting (see the instructions provided with the mounting kit, available at www.extron.com).

Step 2 — Connect inputs

- Make the following video input connections as needed:
 - Connect a DP source to the Input 1 DisplayPort connector (see figure 1, **B**).
 - Connect digital HDMI or DVI (with an appropriate adapter) sources to HDMI input connectors 2 through 6 (**O**).
- Connect analog audio sources to:
 - The 5-pole captive screw line audio input connectors 3 and 4 (**G**) and the Aux connector (**N**) for balanced or unbalanced stereo audio. The Aux Line input (**N**) 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 (**H**). These inputs support optional +48 VDC phantom power, which is indicated by the LEDs at the left of the connectors.

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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 (see figure 1, **D**, on the previous page). Connect a display to the HDMI Loop Out connector (**C**).
- Connect a DTP/XTP matrix switcher/HDBaseT compatible receiver to output connector 1B (**E**). For cable wiring and recommendations, see “Twisted Pair Recommendations for DTP, XTP, and HDBaseT Communication.”
- 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 (**I**) (see **Audio Wiring** on the next page for more information).

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 *IN1806 and IN1808 Series User Guide* for more information).

Step 4 — Connect control devices

- To control the IN1806 through Ethernet, connect a LAN or WAN to the RJ-45 LAN connector (**J**). To wire the RJ-45 connector to the cable, see “Twisted Pair Recommendations for DTP, XTP, and HDBaseT Communication.” 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.
- 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, A**, on the next page).

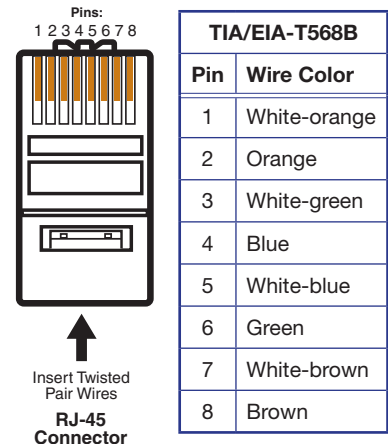
Step 5 — Connect power

Connect a 100 to 240 VAC, 50-60 Hz power source to the AC power connector (see **figure 1, A**, on the previous page).

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 computer or telecommunications network.
- Ne connectez pas ces ports 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 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.

Firmware Updates

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

Audio Wiring

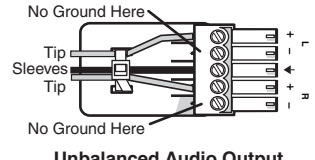
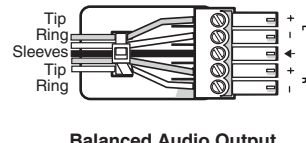
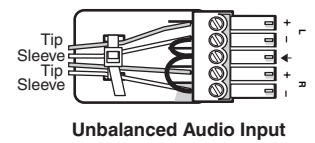
Wire the audio input and output connectors as shown at right. Use the supplied tie wrap to strap the audio cable to the extended tail of the connector.

ATTENTION:

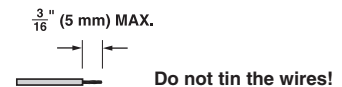
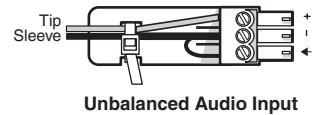
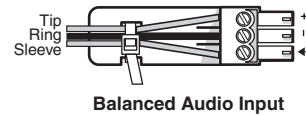
- For unbalanced outputs, do not connect wires to the “-” poles (see the illustration at right).
- Pour les sorties asymétriques, ne connectez pas de câbles aux pôles « - » (voir l’illustration de droite).

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).

Front Panel Overview

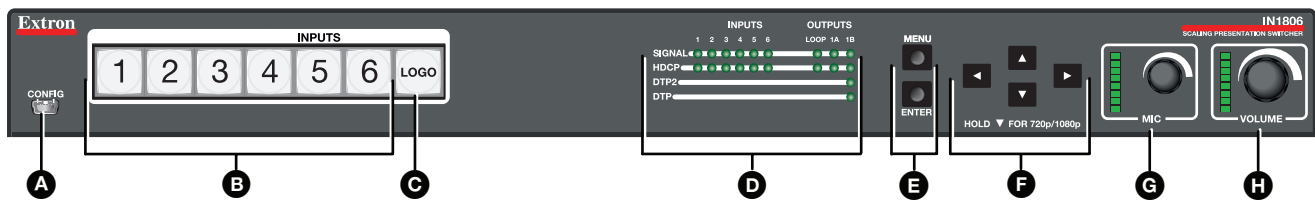


Figure 2. Front Panel Features – IN1806

- A** Config port
 - B** Input selection buttons
 - C** Logo button
 - D** Signal and Status LEDs
 - E** Menu and Enter buttons
 - F** Navigation buttons
 - G** Mic knob and LEDs
 - H** Volume knob and LEDs
- **Front panel configuration port** — Connect a host device to the USB mini-B port for device configuration, control, file transfers, and firmware upgrades.
 - **Input selection buttons (1-6)** — 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.
 - **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 6 using the input selection buttons (slots 7-16 are available via SIS commands only). See the IN1806 and IN1808 Series User Guide at www.extron.com for more information about logos.
 - **Signal and Status LEDs**
 - **Input signal LEDs** — These six 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 six 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 Output LEDs** — These LEDs light green if DTP or DTP2 power has been enabled on DTP output 1B.
 - **Menu and Enter buttons** — Press these buttons to access and navigate the on-screen display (OSD) menu system.
 - **Navigation buttons** — Press these buttons to navigate through the on-screen display menu system or change settings.
 - **Mic knob and LED indicators** — Rotate the knob to adjust the microphone level. The eight LED indicators 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% (0 dB).
 - **Volume knob and LED indicators** — Rotate the knob to adjust the program or output volume level.

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IN1806 Configuration

To configure the IN1806, use the front panel controls, the on-screen display (OSD) menu, internal web pages, PCS, or SIS.

On-screen Display (OSD) Menu System

To configure IN1806 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 nine submenus accessed using the front panel **Menu** or **Enter** button (see the example at right).

Extron Product Configuration Software

To configure IN1806 scaler using PCS, install the software (available on the Extron website, www.extron.com) to a PC connected to the IN1806 via Ethernet or the 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 IN1806 using the factory-installed web pages in a web browser (see the example at right), connect the LAN connector on the IN1806 to a LAN or WAN. The default IP address is 192.168.254.254.

Extron	IN1806	
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 the IN1806 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]•Vid←	Select the video only input [X1].
Select audio input only	[X1]*1\$	In[X1]•Aud←	Select the audio only input [X1].
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 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] ⁶ AUSW←	Ausw P[X31] ¹ ... [X31] ⁶ ←	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] ⁶ ←	View Auto-Switch priority. Lists inputs in order of priority, from highest to lowest.
View memory priority	[Esc]O AUSW←	[X31] ¹ ... [X31] ⁶ ←	View Auto-Switch memory priority, from highest to lowest
KEY:			
[X1]	= Input selection	1 through 6	
[X30]	= Auto-Switch mode	Ø = disabled (default), 1 = user defined priority, 2 = input memory priority (most recently detected input)	
[X31]	= Input numbers for Auto-Switch priority	1 through 6	

Command	ASCII Command	Response	Additional Description
Output Scaler Rate			
Set output rate	<code>[Esc] 1 * [X21] RATE ←</code>	Rate 1 * [X21] ←	Select output resolution and refresh rate [X21].
View output rate	<code>[Esc] 1 RATE ←</code>	[X21] ←	View the output rate.
Video Mute			
Mute global video	1B	Vmt 1 ←	Mute the video on all outputs.
Mute global video and sync	2B	Vmt 2 ←	Mute the video and sync on all outputs.
Unmute global video and sync	ØB	Vmt Ø ←	Unmute the video on all outputs.
View output mute status	B	Vmt [X42] ₁ • [X42] ₂ • [X42] ₃ ←	View mute status [X42] for outputs 1A (1), 1B (2), and loop (3).

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

Front Panel Lockout (Executive Mode)			
Enable lock mode 1	1X	Exe 1 ←	Lock all front panel controls.
Enable lock mode 2	2X	Exe 2 ←	Lock the front panel except for input selection, logo configuration, and volume adjustment.
Enable lock mode 3	3X	Exe 3 ←	Lock the front panel except for input selection and logos.
Enable lock mode 4	4X	Exe 4 ←	Lock the front panel except for volume adjustment.
Disable executive mode	ØX	Exe Ø ←	Allow all front panel adjustments and selections.

KEY:

[X2] = Output number	1 = 1A, 2 = 1B, 3 = loop
[X21] = Output resolution and rate	See the EDID Emulation and Output Rate table in the <i>IN1806 and IN1808 Series User Guide</i> .
[X42] = Video mute status	Ø = unmuted, 1 = muted
[X58] = 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 auto audio aux line (default), 5 = Multi-Ch digital auto aux line.

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

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

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

KEY:

[X1] = Input selection	Inputs 1 through 6
[X10] = Enable or disable	Ø = off or disabled, 1 = on or enabled)
[X66] = DTP remote power	Ø = Off (No remote power, default), 1 = DTP 12 VDC, 2 = DTP2 48 VDC
[X87] = IP address	nnn . nnn . nnn . nnn), 192 . 168 . 254 . 254 = default
[X88] = Subnet mask	nnn . nnn . nnn . nnn), 255 . 255 . 255 . Ø = default
[X89] = Gateway address	nnn . nnn . nnn . nnn), 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.

