

The Extron IN1804 Series Scaling Presentation Switchers are four input, HDCP-compliant AV scalers that accept a wide variety of audio and video formats and provide HDMI and DTP2/XTP/HDBaseT video outputs. This guide provides instructions for an experienced user to set up and configure IN1804, IN1804 DI, IN1804 DO, and IN1804 DI-DO scalers. It covers how to perform basic operations using the front panel controls and selected Simple Instruction Set (SIS™) commands.

NOTE: For full installation, configuration, and operation details, see the *IN1804 Series User Guide* at www.extron.com. For information on configuration using the Extron Product Configuration Software (PCS), see the *IN1804 Series Help* file within the software.

Installation

Rear Panel Features

The IN1804 series models have different rear panel inputs and outputs as described below. Figure 1 shows the IN1804 DI-DO model as an example, because it contains all input and output connector types available on the IN1804 series.

- **IN1804 standard** — **Inputs:** Three HDMI and one DisplayPort. **Outputs:** Two HDMI.
- **IN1804 DI** — **Inputs:** Two HDMI, one DisplayPort, and one RJ-45 twisted pair (with IR pass-through). **Outputs:** Two HDMI.
- **IN1804 DO** — **Inputs:** Three HDMI and one DisplayPort. **Outputs:** One HDMI and one RJ-45 twisted pair (with IR pass-through).
- **IN1804 DI-DO** — **Inputs:** Two HDMI, one DisplayPort, and one RJ-45 twisted pair (with IR pass-through). **Outputs:** Two HDMI and one RJ-45 twisted pair (with IR pass-through).

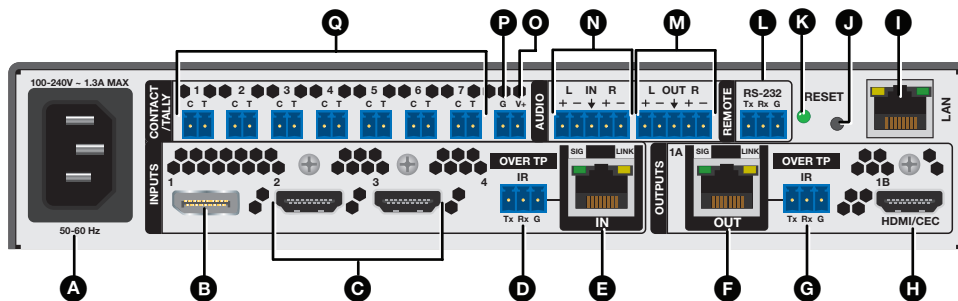


Figure 1. Rear Panel Connectors, IN1804 DI-DO

- Ⓐ AC power connector
- Ⓑ DisplayPort input connector
- Ⓒ HDMI input connectors
- Ⓓ Over TP IR pass-through connector for input
- Ⓔ TP RJ-45 input connector
- Ⓕ TP RJ-45 output connector
- Ⓖ Over TP IR pass-through connector for output
- Ⓗ HDMI output connector
- Ⓘ LAN connector
- Ⓝ Reset button
- Ⓚ Reset LED
- Ⓛ Remote RS-232 connector
- Ⓜ Analog audio output
- Ⓝ Analog audio input
- Ⓞ +V port (for tally voltage output)
- Ⓟ Ground pin (for contact ports)
- Ⓠ Contact/tally connectors

Mounting and Cabling

Step 1 — Mount the device

- Turn off or disconnect all equipment power.
- Place the scaler on top of a flat surface using the provided rubber feet, mount it under a table using an optional kit for under desk mounting, or attach it to a rack shelf using an optional rack shelf-mounting kit (kits are available at www.extron.com).

Step 2 — Connect inputs

Connect one or more of the following input sources as appropriate:

- Connect a DP source to the input 1 DisplayPort connector (see figure 1, Ⓑ).
- Connect HDMI or DVI (with an appropriate adapter) video sources to HDMI input 2, input 3, and input 4 (available on IN1804 standard and DO models only) connectors (Ⓒ). Securing the HDMI cables with provided LockIt brackets is recommended (see the *IN1804 Series User Guide* for instructions).
- Connect a balanced or unbalanced audio source to the 5-pole captive screw AUDIO IN connector (Ⓝ). See [Audio Wiring](#) on page 3 for more information.

IN1804 • Setup Guide (Continued)

- **IN1804 DI and DI-DO only:** Connect a DTP2 transmitter or XTP matrix switcher to the twisted pair IN connector (E). For cable wiring, see “Twisted Pair Recommendations for the IN and OUT TP Connectors,” below.

IN1804 DI and DI-DO only: To transmit or receive infrared data to and from a source connected to the DTP2 transmitter or XTP matrix switcher, connect a control device (such as an Extron IPCP Pro Control Processor) to the 3-pole IR Over TP captive screw port (D).

Step 3 – Connect outputs

- Connect an HDMI output device (or DVI, with an appropriate adapter) to the rear panel HDMI output (H). For the IN1804 standard and DI models, two HDMI or DVI output devices can be connected. Secure the HDMI cables with the provided LockIt brackets (see the *IN1804 Series User Guide* for instructions).
- IN1804 DO and DI-DO only:** Connect a DTP2, XTP matrix, or HDBaseT-compatible device to the twisted pair OUT connector (F). For cable wiring and recommendations, see “Twisted Pair Recommendations.”
IN1804 DO and DI-DO only: To transmit or receive infrared data to and from a sink connected to the DTP2 receiver, XTP matrix switcher, or HDBaseT receiver, connect a control device (such as an Extron IPCP Pro Control Processor) to the 3-pole IR Over TP captive screw port (G).
- Connect a balanced or unbalanced audio output device to the 5-pole captive screw AUDIO OUT connector (M). See **Audio Wiring** on the next page for more information.

Step 4 – Connect control devices

- To control the IN1804 device through Ethernet, connect a LAN to the RJ-45 LAN connector (I). 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 bidirectional RS-232 control, connect a host to the 3-pole captive screw connector (L). The 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 – (Optional) Connect contact closure and tally indicator devices

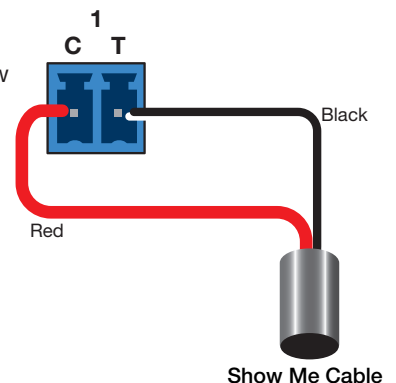
The CONTACT/TALLY panel contains seven 2-pole captive screw connectors, each with two pins labeled C and T (see **figure 1, Q**). Wire contact closure and tally devices to the connectors of each desired port as follows:

- **Ports 1 through 4 (for input switching)** – Each CONTACT/TALLY connector is labeled with the number of the video input associated with it. Wire a push button or other contact closure switch to pin C (Contact) and to the shared pin G (Ground, P). If using a tally indicator, connect the shared +V pin (5 VDC, required for tally devices without a power supply, O) to the T (Tally) pin. If using an SM Series Show Me® cable, see “Using an SM Series Show Me Cable,” below.
- **Ports 5 through 7 (configurable via PCS)** – Wire a push button or other contact closure switch to pin C (Contact) and to the shared pin G (Ground, P). If using a tally indicator, connect the shared +V pin (5 VDC, required for tally devices without a power supply, O) to the T (Tally) pin.

Using an SM Series Show Me cable:

The Contact and Tally connectors can also be used with Extron Show Me cables. The diagram at right shows how to wire a Show Me cable to a contact input port (ports 1-4). For each Show Me cable:

- Connect the **red** pigtail to the **C** pin corresponding to the input being used.
- Connect the **black** pigtail to the **T** pin of the same port.



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 the IN and OUT TP Connectors

Extron recommends using the following practices to achieve full transmission distances and reduce transmission errors when connecting to a remote DTP2 endpoint, XTP matrix switcher, or HDBaseT receiver:

- 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 (see the *IN1804 Series User Guide* for more information).
- 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 ports to a computer or telecommunications network.
- Ne connectez pas ces ports à des données informatiques ou à un réseau de télécommunications.
- DTP/DTP2 remote power is intended for indoor use only. No part of the network that uses DTP/DTP2 remote power should be routed outdoors.
- L'alimentation DTP/DTP2 à distance est destinée à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation DTP/DTP2 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.

RS-232 and IR Over TP Wiring

To transmit and receive IR signals between DTP2 endpoints, to an XTP matrix switcher, or to an HDBaseT receiver, connect a control device to the Over TP IR 3-pole captive screw connector.

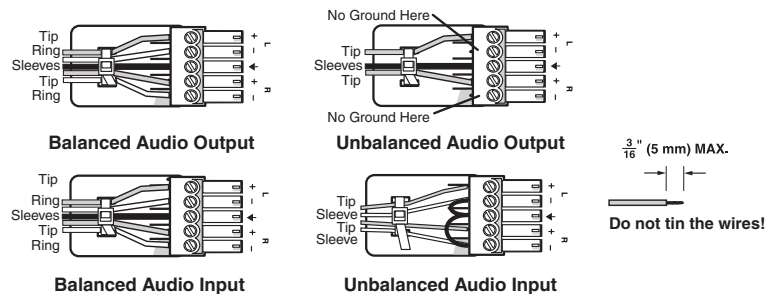
NOTE: RS-232 data can be inserted via Ethernet (see the *IN1804 Series User Guide* or the *IN1804 PCS Help File* for details).

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.

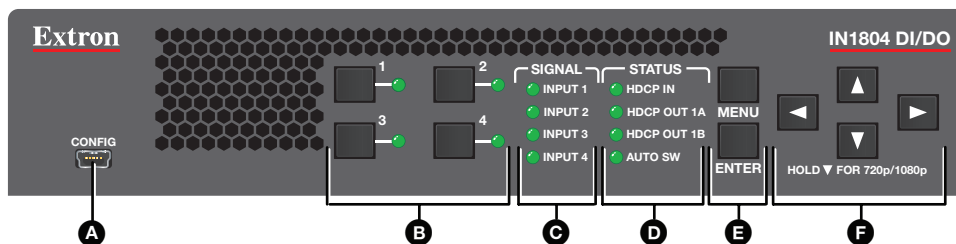
ATTENTION:

- For unbalanced outputs, do not connect wires to the “-” poles.
- Pour les sorties asymétriques, ne connectez pas de câbles aux pôles « - ».



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

Front Panel Features



- A** CONFIG port
- B** Input buttons and LEDs
- C** Signal LEDs
- D** Status LEDs
- E** MENU and ENTER buttons
- F** Navigation buttons

Figure 2. Front Panel Features — All Models

- A** **USB configuration port** — Connect a host device to this USB mini-B port for device configuration, control, file transfer, and firmware upgrades.
- B** **Input selection buttons and LEDs (1-4)** — Press one of these buttons to select an input. Each button has a green LED that lights when the input is selected.
- C** **Signal (input) LEDs** — For each input, these green LEDs light when an active video signal is detected.
- D** **Status LEDs** — These green LEDs light to indicate the state of their corresponding settings:
 - **HDCP IN** — Lights if the current input video signal is encrypted.
 - **HDCP OUT 1A and 1B** — Light if the current output video signal is encrypted.
 - **AUTO SW** — Lights if the unit is in an auto-switch mode.

- E MENU and ENTER buttons** — Press these buttons to access and navigate the on-screen display menu system.
- F Navigation buttons** — Press these arrow buttons to navigate through the on-screen menu system or change settings.

Configuring the IN1804 Series

On-screen Display (OSD) Menu System

To configure IN1804 scalers using the OSD menu, connect a display device and press the **MENU** button to open the OSD menu. The OSD menu consists of eight submenus accessed using the front panel **MENU** or **ENTER** button.

Extron Product Configuration Software

To configure IN1804 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**.

Basic SIS Commands

To configure IN1804 scalers 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 *IN1804 Series User Guide* at www.extron.com.

Extron	IN1804	
DEVICE INFO	IN 4: Input Type	HDMI
QUICK SETUP	IN4: EDID	3840x2160 @ 30
PICTURE CONTROLS	Output Rate	1080p @ 60
INPUT	Audio Mute	Off
OUTPUT	Test Pattern	Off
AUDIO	DHCP Mode	Off
ADVANCED	IP Address	192 . 168 . 254 . .254
COMMUNICATIONS		
Input Resolution 3840x2160 @ 30.00Hz		Output Resolution 1080p @ 60.00Hz

Command	ASCII Command	Response	Additional Description
Select video input	[X1]!	In[X1]•A11←	Select video and audio from input [X1].
View current input	!	[X1]←	View currently selected source [X1].
Mute video (global)	1B	Vmt1←	Mute the video on all outputs.
Mute video and sync (global)	2B	Vmt2←	Mute the video and sync on all outputs.
Unmute video and sync (global)	0B	Vmt0←	Unmute the video and sync on all outputs.
NOTE: By default, video is unmuted after a power cycle.			
Enable global output audio mute	1Z	Amt1←	Mute the audio on all outputs.
Disable global audio mute	0Z	Amt0←	Unmute the audio on all outputs.
Enable front panel lock mode 1	1X	Exe1←	Lock the entire front panel.
Enable front panel lock mode 2	2X	Exe2←	Lock the front panel except input switching, Auto-Image, and output resolution reset (via down arrow button only).
Enable front panel lock mode 3	3X	Exe3←	Lock the front panel except input switching.
Disable front panel lock mode	0X	Exe0←	Allow all front panel adjustments and selections.
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 user Auto-Switch priority	[Esc]P[X31]¹... [X31]²AUSW←	Ausw P[X31]¹... [X31]²←	Set priority [X31] for auto-input switching. Lists inputs in order of priority, from highest to lowest.
View user Auto-Switch priority	[Esc]P AUSW←	[X31]¹... [X31]²←	View user Auto-Switch priority. Lists inputs in order of priority, from highest to lowest.
KEY:			
[X1] = Input selection (1-4)			
[X30] = Auto-Switch mode: 0 = disabled (default), 1 = user defined priority, 2 = input memory priority (most recently detected input)			
[X31] = Input numbers for Auto-Switch priority: 1 = input 1, 2 = input 2, 3 = input 3, 4 = input 4			

Firmware Updates

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