

**IMPORTANT:**  
Refer to [www.extron.com](http://www.extron.com) for the complete user guide, installation instructions, and specifications before connecting the product to the power source.

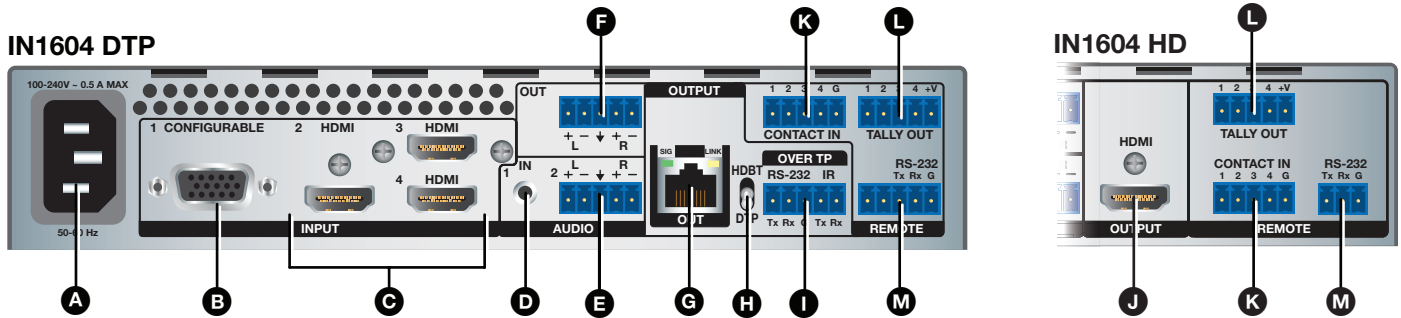
# IN1604 Series • Setup Guide

The Extron IN1604 DTP and IN1604 HD Scaling Presentation Switchers are four input, HDCP-compliant video scalers that accept a wide variety of audio and video formats. This guide allows an experienced user to set up and configure an IN1604 Series scaler. It covers how to perform basic operations using the front panel controls and selected Simple Instruction Set (SIS™) commands.

**NOTE:** For full installation, configuration, menus, connector wiring, and operation details, see the *IN1604 Series User Guide*, at [www.extron.com](http://www.extron.com).

## Installation

### Rear Panel Features



Power and Input Connections	Output Connections	Control Connections
<ul style="list-style-type: none"> <li><b>A</b> AC power connector</li> <li><b>B</b> Configurable analog 15-pin HD (VGA) connector (input 1)</li> <li><b>C</b> HDMI input connectors (inputs 2-4)</li> <li><b>D</b> Unbalanced analog audio input connector (input 1)</li> <li><b>E</b> Balanced or unbalanced analog audio input connector (input 2)</li> </ul>	<ul style="list-style-type: none"> <li><b>F</b> Balanced or unbalanced analog audio output connector</li> <li><b>G</b> TP output connector (IN1604 DTP only)</li> <li><b>H</b> TP output switch (IN1604 DTP only)</li> <li><b>I</b> RS-232 and IR Over TP connector (IN1604 DTP only)</li> <li><b>J</b> HDMI output connector (IN1604 HD only)</li> </ul>	<ul style="list-style-type: none"> <li><b>K</b> Contact closure connector</li> <li><b>L</b> Tally connector</li> <li><b>M</b> Remote RS-232 connector</li> </ul>

**Figure 1. Rear Panel Features (IN1604 DTP Shown Left and Unique IN1604 HD Features Shown Right)**

## Mounting and Cabling

### Step 1 — Mount the device.

- a. Turn off or disconnect all equipment power sources.
- b. Mount the IN1604 Series scaler on top of a flat surface using the provided rubber feet, under a table using an optional mounting kit for under-the-desk mounting, or to a rack shelf using an optional rack shelf-mounting kit.

### Step 2 — Connect inputs.

- a. Connect an analog video source (RGB, YUV, S-video, or composite) to the 15-pin HD (VGA) connector (see figure 1, **B**).
- b. Connect digital HDMI or DVI (with an appropriate adapter) sources to the HDMI connectors (**C**).
- c. Connect an unbalanced analog audio source to the 3.5 mm, female TRS (tip-ring-sleeve) audio connector (**D**). See [Audio Wiring](#) on page 3 for more details.
- d. Connect a balanced or unbalanced audio source to the 5-pole captive screw connector (**E**). See [Audio Wiring](#) on page 3 for more details.

# IN1604 Series • Setup Guide (Continued)

## Step 3 — Connect outputs.

- a. Connect a balanced or unbalanced audio output device to the 5-pole captive screw connector (F).
- b. For the IN1604 DTP, set the HDBT/DTP switch (H) depending on the type of device to be connected to the TP output connector.  
**HDBT position** — Select this position if the receiving device is an HDBaseT-compatible device. The output is HDMI with embedded audio plus RS-232 and IR.  
**DTP position** — Select this position if the receiving device is an Extron DTP device. The TP output is compatible with a DTP receiving device and consists of HDMI with embedded audio, analog audio, RS-232 and IR, and remote power.

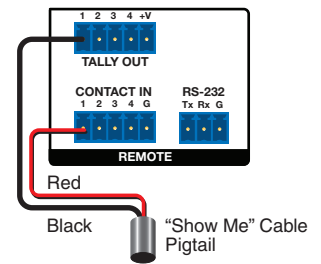
**ATTENTION:** Position this switch BEFORE connecting the appropriate device to the TP connector. Failure to comply can damage the endpoint.

**ATTENTION :** Positionnez le sélecteur AVANT de connecter l'appareil approprié au connecteur TP. Ne pas respecter cette procédure pourrait endommager le point de connexion.

- c. For the IN1604 DTP, connect a DTP receiver or HDBaseT-compatible device to the female RJ-45 connector (G). For cable wiring and recommendations, see **Twisted Pair Recommendations** below.
- d. To pass serial or infrared data to a DTP receiver from an IN1604 DTP, connect a control device to the RS-232 and IR Over TP captive screw connector (I). For wiring details, see **RS-232 and IR Over DTP Wiring (IN1604 DTP Only)** on page 3.
- e. For the IN1604 HD, connect a digital display to the HDMI output connector (J).

## Step 4 — Connect control devices.

- a. Connect contact closure devices or Extron “Show Me” cables (see the red pigtail on the “Show Me” cable in the diagram to the right) to the Contact In 5-pole captive screw connector (see figure 1, K).
- b. Connect tally devices or Extron “Show Me” cables (see the black pigtail on the “Show Me” cable in the diagram to the right) to the Tally Out 5-pole captive screw connector (see figure 1, L).
- c. For serial RS-232 control, connect a host device to the RS-232 5-pole captive screw connector on the IN1604 DTP or the 3-pole captive screw connector on the IN1604 HD (see figure 1, M).
- d. For control or configuration through USB, connect a host device to the front panel USB mini-B port (see figure 2, B).



## Step 5 — Connect power.

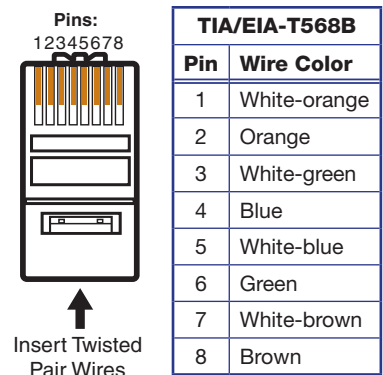
Connect a 100-230 VAC, 50/60 Hz power source to the AC power connector (see figure 1, A).

## Wiring Details

### Twisted Pair Recommendations

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 (see 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 destiné 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.

## RS-232 and IR Over TP Wiring (IN1604 DTP Only)

To pass bidirectional serial command signals between the IN1604 DTP and a connected DTP or HDBaseT sink device, connect a control device to the three leftmost poles (Tx, Rx, and G) of the 5-pole captive screw connector. To transmit and receive IR signals, connect a control device to the three rightmost poles (G, Tx, and Rx).

**NOTE:** RS-232 and IR data can be transmitted or received simultaneously.

## Audio Wiring

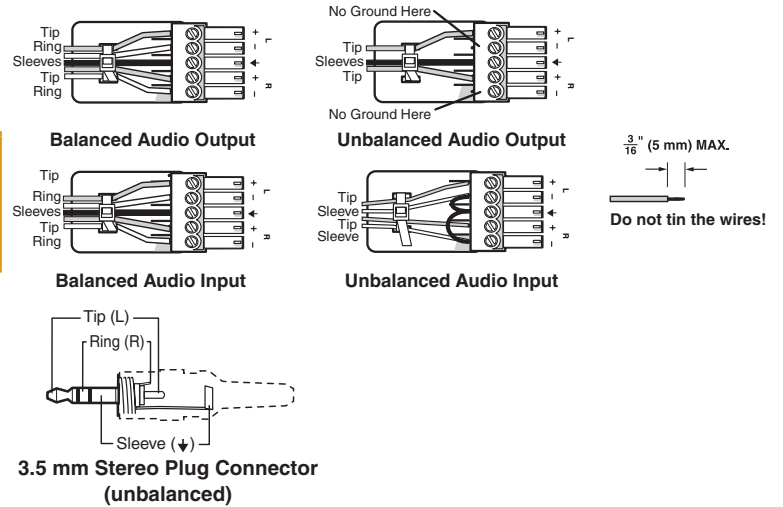
Wire the 3.5 mm, 5-pole captive screw audio input and output connectors as shown to the right. Use the supplied tie wrap to strap the audio cable to the extended tail of the connector.

**ATTENTION:** For unbalanced outputs, do not connect wires to the “-” poles.

**ATTENTION :** Pour les sorties asymétriques, ne connectez pas de câbles aux pôles « - ».

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

Wire the TRS audio input connector as shown in the 3.5 mm Stereo Plug Connector diagram to the right.



## Front Panel Overview

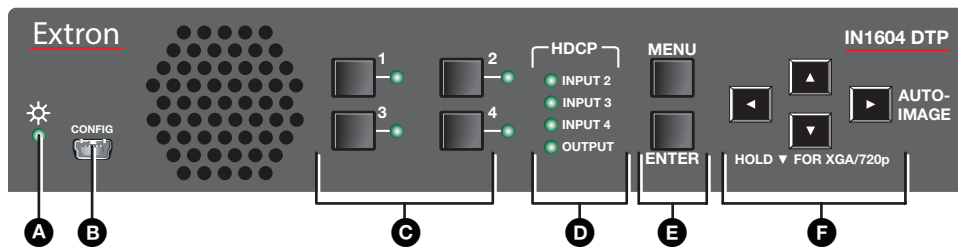


Figure 2. Front Panel Features (IN1604 DTP Shown)

- A Power LED indicator** — Lights green when the scaler is receiving power and a signal on the selected input. Lights amber when the scaler is receiving only power.
- B Configuration port** — Connect a host device to the USB mini-B port for device configuration, control, and firmware upgrades.
- C Input selection buttons** — Press one of these buttons to select an input.
- D HDCP status LED indicators** — Light when the HDMI inputs or output are HDCP encrypted.
- 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 selected settings.

## Configuring IN1604 Series Scalers

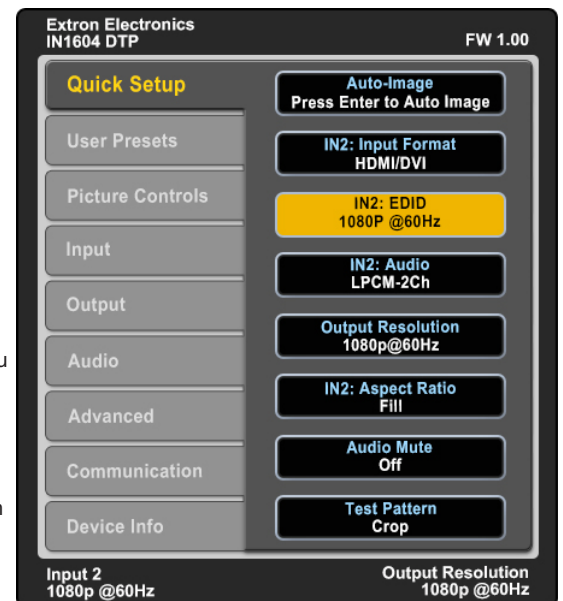
The IN1604 Series can be configured through front panel controls and the on-screen display (OSD) menu, the Extron Product Configuration Software (PCS), or SIS commands.

### On-screen Display (OSD) Menu System

To configure the IN1604 Series using the OSD menu, connect a DTP receiver or HDBaseT-compatible device with a connected display to the TP output connector on the IN1604 DTP or a display to the HDMI output connector on the IN1604 HD. The OSD menu consists of nine submenus (see the example to the right) that can be accessed using the front panel Menu or Enter button.

### Extron Product Configuration Software

To configure the IN1604 Series using the PCS, install the software (available on the Extron website, [www.extron.com](http://www.extron.com)) to a PC connected to the scaler via 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**.



## SIS Commands

The IN1604 Series can be configured with specific SIS commands via an RS-232 or USB 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 *IN1604 Series User Guide* at [www.extron.com](http://www.extron.com).

Command	ASCII Command (Host to Device)	Response (Device to Host)	Additional Description
Select audio and video input	[X1]!	In[X1]•A11←	Selects audio and video input [X1].
View current input	!	[X1]←	View the current input.
Set input 1 format	1*[X2]\	Typ1*[X2]←	Set input 1 to format [X2].
Execute Auto-Image™	A	Img0←	Executes an Auto-Image on the current input.
Execute Auto-Image and fill	1*A	Img1←	Executes an Auto-Image and fills the output.
Execute Auto-Image and follow	2*A	Img2←	Executes an Auto-Image and maintains the aspect ratio of the current input.
Mute video to black	1B	Vmt1←	Mutes the video and displays a black output.
Mute video and sync	2B	Vmt2←	Mutes the video and sync output.
Unmute video and sync	0B	Vmt0←	Unmutes the video.
View video mute status on all outputs	B	[X29]←	View the video mute setting.
Set global audio mute	[X9]Z	Amt[X9]←	Enable or disable audio mute on all outputs.
Set discrete audio mute	[X48]*[X9]Z	Amt[X48]*[X9]←	Enable or disable audio mute on output [X48].
View output audio mute status	Z	[X9]•[X9]←	View the audio mute status for the analog and digital outputs.
Set volume level	[X36]V	Vol[X36]←	Set the volume to [X36].
Increment the volume level	+V	Vol[X36]←	Increase the output volume by 1 dB.
Decrement the volume level	-V	Vol[X36]←	Decrease the output volume by 1 dB.
View the volume level	V	[X36]←	View the current volume level.
Enable executive mode 1	1X	Exe1←	Locks the entire front panel.
Enable executive mode 2	2X	Exe2←	Locks the front panel except for input selection.
Disable executive modes	0X	Exe0←	Allows all front panel adjustments and selections.
Disable auto switch mode	[Esc]0AUSW←	Ausw0←	Manual input switching only.
Auto switch high to low	[Esc]1AUSW←	Ausw1←	Automatically switches to the highest numbered active input.
Auto switch low to high	[Esc]2AUSW←	Ausw2←	Automatically switches to the lowest numbered active input.

### NOTES:

- [X1] = Input selection (1 - 4)
- [X2] = Input video format (1 = RGB; 2 = YUV; 3 = S-video 4 = composite; 5 = HDMI/DVI)
- [X9] = Enable or disable (0 = off or disabled; 1 = on or enabled)
- [X29] = Video mute on all outputs (0 = unmute; 1 = mute to black; 2 = Mute all output sync and video)
- [X36] = Audio volume (-100 to 0 in 1 dB steps where -100 = 100 dB and 0 = 0 dB; -10 = default)
- [X48] = Audio output mute (1 = Analog audio; 2 = embedded HDMI audio)

## Firmware Upgrades

The firmware of the scaler can be upgraded via PCS or the Extron Firmware Loader program (available at [www.extron.com](http://www.extron.com)).

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