



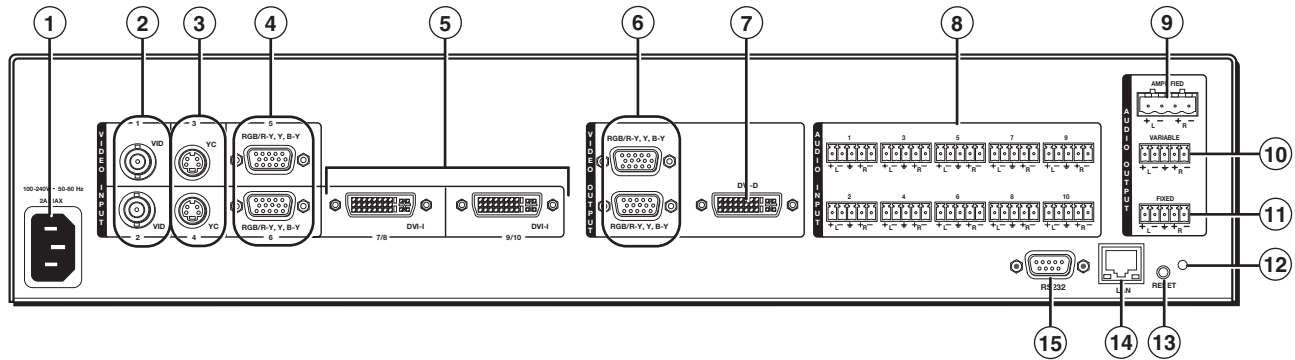
IMPORTANT:
Refer to www.extron.com for the complete user guide and installation instructions.

DVS 510 Series • Setup Guide

The Extron DVS 510 Series scalers are 10-input, multi-format presentation switching scalers that accept and scale DVI, RGB, YUV/HDTV, YUVi, S-video, and composite video signals to a common high-resolution output rate. Two models are available: the standard DVS 510, which has fixed and variable line level audio outputs, and the DVS 510 SA, which adds an integrated stereo amplifier. Control options include front panel buttons and knobs, Ethernet, RS-232 or RS-422, web pages, and infrared (IR). This guide provides instructions for an experienced installer to install and connect the DVS 510 scalers.

NOTE: For full installation, configuration, and operation details, see the *DVS 510 Series User Guide*, available at www.extron.com.

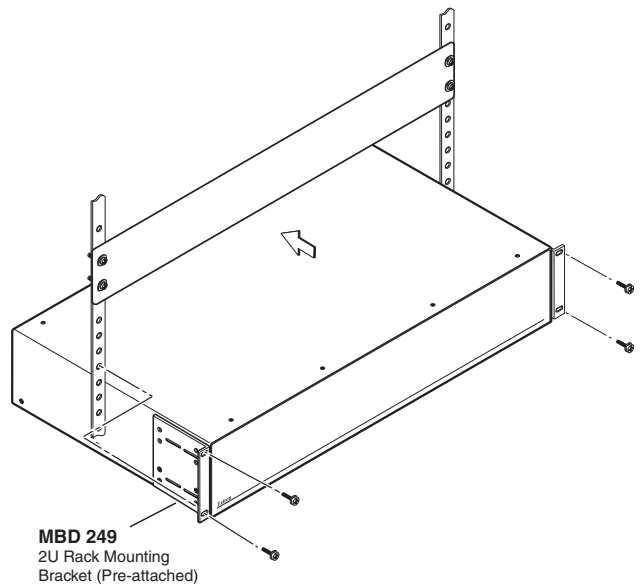
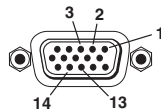
Rear Panel Features and Connections



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| ① AC power connector | ⑧ Audio input connectors |
| ② Video inputs 1 and 2: Composite video | ⑨ Amplified audio output connector (DVS 510 SA only) |
| ③ Video inputs 3 and 4: S-video | ⑩ Variable audio output connector |
| ④ Video inputs 5 and 6: RGB or YUV component | ⑪ Fixed audio output connector |
| ⑤ Video inputs 7/8 and 9/10: RGB or YUV (7 and 9) and DVI (8 and 10) | ⑫ Reset LED |
| ⑥ Buffered RGB/YUV output connectors | ⑬ Reset button |
| ⑦ DVI-I output connector (digital output only) | ⑭ LAN connector |
| | ⑮ RS-232/RS-422 connector |

Installation Steps

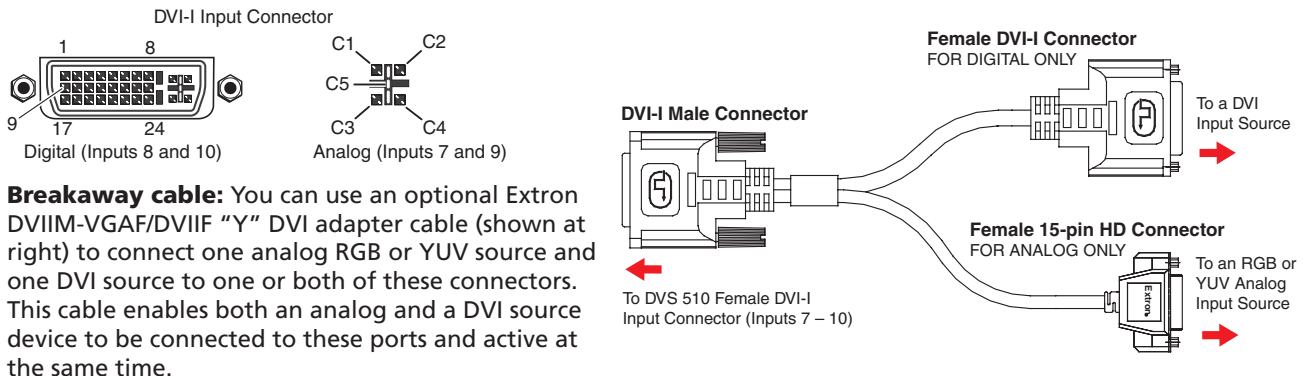
- Disconnect power** from all equipment.
- (Optional) **Mount the unit.** Rack mount the scaler using the attached brackets (see the illustration at right). For tabletop placement, remove the brackets from the right and left sides and attach the provided rubber feet.
- Connect video inputs.** Connect video input devices to the appropriate connectors in the rear panel Video Input section (② through ⑤ in the diagram above).
 - Video inputs 5 and 6: RGB or YUV component** — Connect one or two RGBHV, RGBS, RGsB, RGBcvS, YUVi, or YUVp/HDTV video sources to these female 15-pin HD connectors (shown below). These connectors feature EDID emulation.



NOTE: (Optional) To obtain one or two more RGB/YUV inputs, you can connect an Extron DVIIM-VGAF/DVIIF DVI and Analog Breakaway (Y) cable to either or both DVI-I input connectors. Each Y cable provides an additional RGB VGA connector and DVI-I connector (see "Breakaway cable" on the next page).

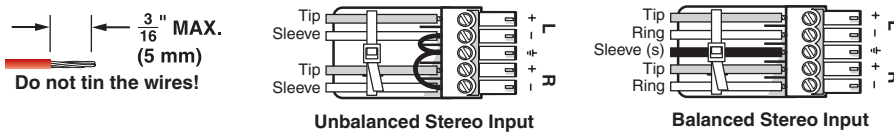
DVS 510 Series • Setup Guide (Continued)

- **Video inputs 7/8 and 9/10** — Connect two DVI video sources, two RGB/YUV sources, or one DVI and one RGB source to these DVI-I connectors. The analog portions of these connectors are identified as inputs 7 and 9, while the DVI portions are inputs 8 and 10. These connectors feature EDID emulation.

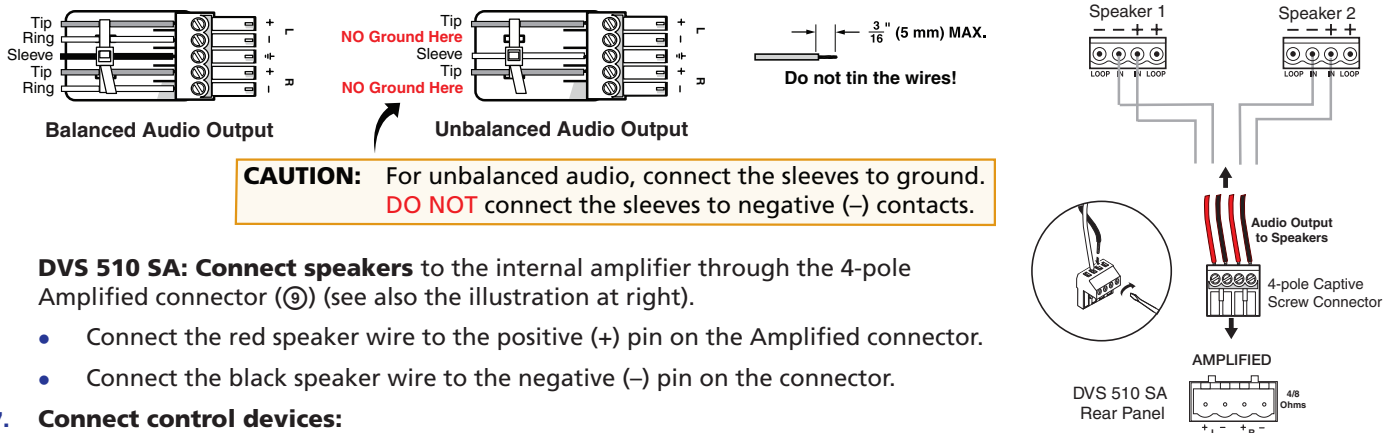


Breakaway cable: You can use an optional Extron DVIIM-VGAF/DVIIF "Y" DVI adapter cable (shown at right) to connect one analog RGB or YUV source and one DVI source to one or both of these connectors. This cable enables both an analog and a DVI source device to be connected to these ports and active at the same time.

4. **Connect audio input devices** to the Audio Input captive screw connectors (③) on the rear panel diagram on the previous page), as shown below.



5. **Connect video output devices** to the Video Output connectors (⑥ and ⑦ in the diagram).
6. **Connect audio output devices** to the 5-pole Variable (⑩) and Fixed (⑪) Audio Output captive screw connectors.



DVS 510 SA: Connect speakers to the internal amplifier through the 4-pole Amplified connector (⑨) (see also the illustration at right).

- Connect the red speaker wire to the positive (+) pin on the Amplified connector.
- Connect the black speaker wire to the negative (-) pin on the connector.

7. **Connect control devices:**

- **LAN Ethernet port** — Connect the DVS 510 to an Ethernet LAN or WAN via this RJ-45 connector (⑭) to control the scaler from a remote location using an Internet browser on a computer.
- **RS232 port** — For serial RS-232 or RS-422 control, connect a host computer or control system to the DVS via this 9-pin D-sub connector (⑮).
- The front panel has an additional serial port (RS-232 only) (see "Front Panel Features" on the next page).

The default protocol for both ports is 9600 baud, 1 stop bit, no parity, 8 data bits, and no flow control.

8. **Connect power** to the DVS 510 by plugging a standard IEC power cord (provided) from a 100 to 240 VAC, 50-60 Hz power source into the power receptacle (①).

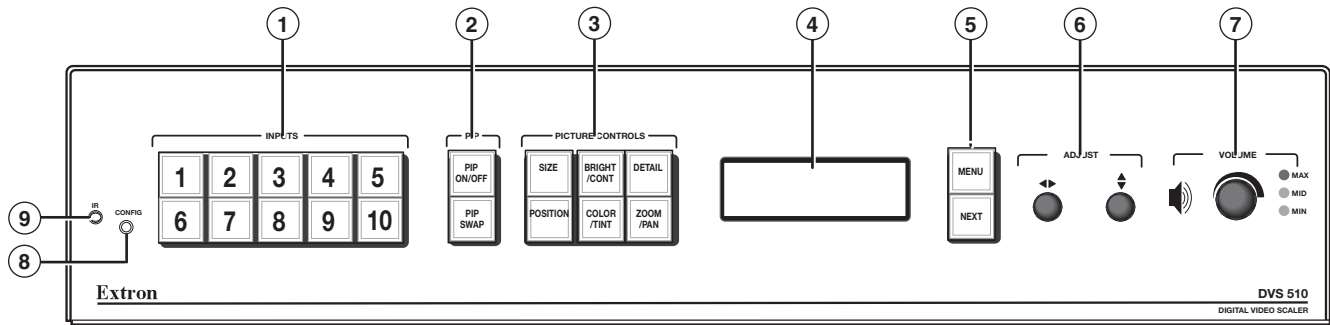
Locking the Front Panel (Executive Mode)

To prevent accidental changes to settings, you can lock the DVS 510 front panel controls by placing the scaler in lock (executive) mode 1 or 2. While the DVS is in lock mode, RS-232 or RS-422 and IR remote control remain available.

- **Lock mode 1** locks all front panel functions. This mode can be enabled or disabled only by SIS commands.
- **Lock mode 2** locks all front panel functions except input selection, PIP, volume control, and Auto-Image™. To enable lock mode 2, press and hold the Position and Size buttons simultaneously until Executive Mode 2 Enabled appears in the LCD window (approximately 2 seconds).

To exit lock mode 2, press and hold the Position and Size buttons again until Executive Mode Disabled appears in the LCD window (approximately 2 seconds).

Front Panel Features



- ① **Input Buttons** — Press one of these buttons to select an input and switch it to the current output. The inputs support the following signal types: **inputs 1 and 2** — composite video; **inputs 3 and 4** — S-video; **inputs 5, 6, 7, and 9** — RGB (RGBHV, RGBS, RGBcV, or RGsB), YUVp/HDTV, and YUVi; and **inputs 8 and 10** — DVI.

NOTES:

- On the rear panel, inputs 7 and 8 share one of the DVI-I input connectors; inputs 9 and 10 share the other.
- Pressing and holding the Input button for 3 seconds initiates an Auto-Image on that input.

- ② **PIP (picture-in-picture) control buttons** — Display a secondary image from a second source on the screen in front of the main image, in a previously selected size and position. The default size of the PIP window is one-fourth of the screen and it is positioned in the lower-right corner of the display.
- **PIP On/Off button** — Turns PIP mode on and off (toggles between showing and hiding the picture-in-picture on the display). Lights green when the DVS 510 is in PIP mode.
 - **PIP Swap button** — Toggles the primary (main or background) and secondary (PIP) pictures between the main image and the PIP window.

NOTE: When the DVS is in PIP mode, one input must be **low**-resolution (inputs 1 through 4, and 5, 6, 7, and 9 when they are configured as component video YUVi or RGBcV) and one must be high-resolution (inputs 5, 6, 7, and 9 when configured as RGB or YUVp/HDTV, and inputs 8 and 10).

- ③ **Picture control buttons** — Adjust window and image size, position, brightness, contrast, color, tint, detail, zoom (magnify or reduce), and pan. When one of these buttons is pressed, it lights amber.
- ④ **LCD screen** — Displays messages, menu information, and menu or control button selections.
- ⑤ **Menu navigation buttons** — Press Menu to access the DVS 510 menu system and to step through the menus. From each menu, press Next to step through the submenus.
- ⑥ **Adjust knobs** — Rotate these horizontal (◀▶) and vertical (⬆⬇) knobs to scroll through submenu and picture control options and make adjustments.
- ⑦ **Volume knob and indicator LEDs** — Rotate this knob to adjust the volume on the current input. The three LEDs light incrementally, bottom to top, to indicate the current volume level:
- **Min** (green) indicates volume is above **1%**. At 0% volume, this LED blinks.
 - **Mid** (green) indicates volume above **49%**.
 - **Max** (red) indicates volume above **79%**. At 100% volume, this LED blinks.

NOTES:

- The volume level is also shown on the LCD screen as a bar graph.
- When an incremental Volume LED lights, the LEDs below it remain lit. For example, when the Max LED lights, the Mid and Min LEDs are also lit.

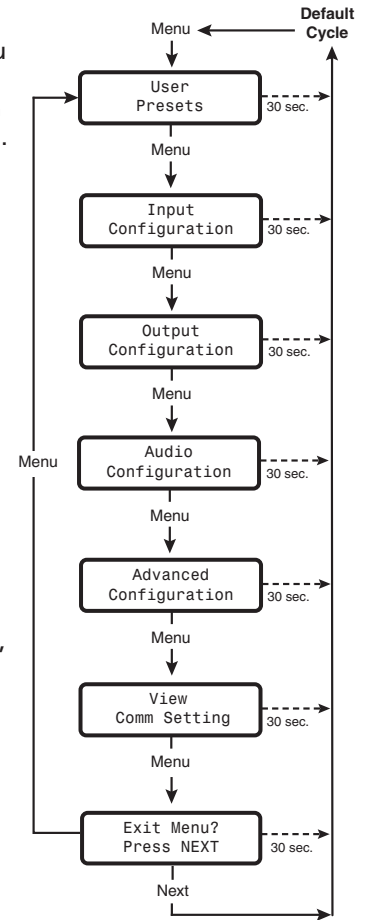
- ⑧ **Config port** — This RS-232 port on a 2.5 mm TRS connector is an RS-232 only alternative to the rear panel RS-232/RS-422 port. Default protocol for this port is 9600 baud, 8 data bits, 1 stop bit, no parity, and no flow control.
- ⑨ **IR sensor** — Receives infrared (IR) signals from the IR 904 remote control.

NOTE: By default, the IR sensor is disabled.

Configuring the DVS 510 Using the Front Panel

Menu selections are displayed on the front panel LCD screen. To use any menu, press the Menu button repeatedly until the desired menu is displayed. Press the Next button repeatedly until the desired submenu is displayed. Rotate the appropriate Adjust knob to select an item from a submenu. To exit a submenu and return to the main menu, press the Menu button at any time.

1. From the Output Configuration submenus, use the Adjust knobs to select the output resolution and refresh rate, the output signal type, and the sync polarity to match the requirements of the display device.
2. From the Advanced Configuration menu, Test Pattern submenu, select the Alternating Pixels (Alt Pixels) test pattern. Adjust the active pixels, total pixels (clock), and pixel phase settings for your display for optimal picture quality.
3. From the Advanced Configuration menu, set the test pattern to Crop, and adjust the position settings of the display until all four sides of the crop pattern are visible. Disable the Crop test pattern.
4. Use the Input Configuration submenus to make any desired adjustments to the applied input signals, including turning film mode detection on or off and setting the horizontal and vertical start, pixel phase, total pixels, active pixels, and active lines.
5. Press and hold each input button for 3 seconds to perform Auto-Image on the input. Auto-Image sizes the input to fit the current window size.
6. Use the Picture Control buttons to adjust the size, position, brightness, contrast, color, tint, detail, zoom, and pan for each input as needed.
7. Use the Audio Configuration submenus to configure the audio as desired.
8. Use the User Presets menu to save the set of adjustments for manual recall later.



Simple Instruction Set (SIS) Commands

When setting up the DVS 510, you can issue SIS commands from your computer via RS-232, RS-422, or a LAN connection as an alternative to the front panel controls. See the *DVS 510 Series User Guide* for a complete list of available SIS commands.

Command	ASCII command (Host to Scaler)	Response (Scaler to Host)	Additional Description
Select an audio and video input	[X1]!	In [X1] • All ←	Select video and audio from input source [X1].
Audio breakaway (select input)	[X1] \$	In [X1] • Aud ←	Select only audio from input [X1].
Video breakaway (select input)	[X1] &	In [X1] • RGB ←	Select only video from input [X1].
Execute an Auto-Image	A	Img ←	Perform Auto-Image on the current input.
Mute video to black	1B	Vmt1 ←	Mute the video and display a black screen.
Unmute video and sync	ØB	VmtØ ←	Disable all mutes.
Freeze input	1F	Frz1 ←	Freeze the selected input.
Unfreeze input	ØF	FrzØ ←	Unfreeze selected input.
PIP on	[Esc] [X1] PIP ←	Pip [X1] ←	Turn on PIP and display input [X1].
PIP off	[Esc] ØPIP ←	PipØ ←	Turn off PIP.
PIP Swap	%	Tke ←	Switch the displayed content between main and PIP windows.
Mute audio	1Z	Amt1 ←	Mute audio for the current input.
Unmute audio	ØZ	AmtØ ←	Unmute the current audio input.

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