

# MPS 409 Setup Guide

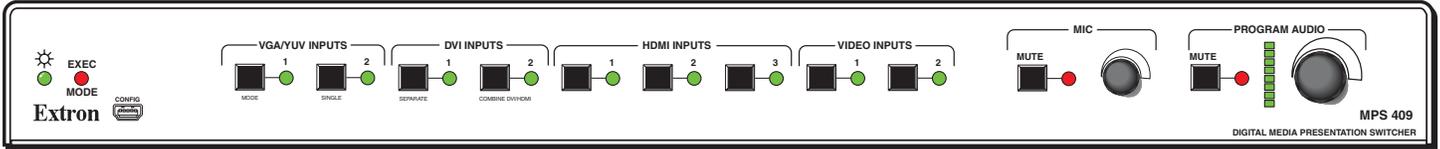
This guide provides basic instructions for an experienced technician to install, set up, and operate the Extron® Media Presentation Switcher, MPS 409. Where possible in the following pages, line drawings are used to clarify steps discussed in the text. Installation and service must be performed by authorized personnel only.

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

## Installation

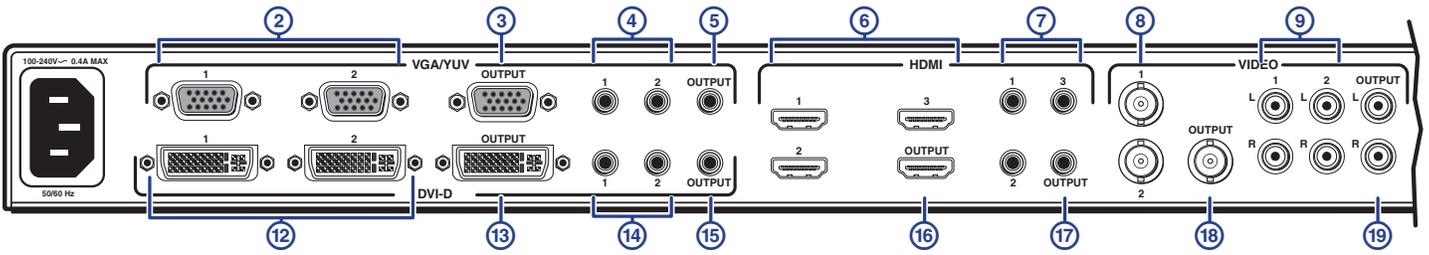
### Step 1 — Disconnect Power

Remove power from the switcher and all other devices that will be connected.



### Step 2 — Mount the Switcher

The MPS 409 is housed in a full rack width, 8.5 inch deep, 1U high metal enclosure. Select a mounting location, then choose an appropriate mounting option and mount the switcher.



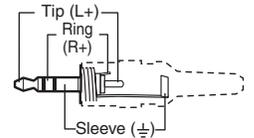
### Step 3 — Cable the Switcher

Make certain the MPS 409, all sources, and displays are powered off. Run all audio, video, communication and power cables for operation.

- Attach up to two VGA/YUV (2), two DVI (10), three HDMI (6), and two composite video (8) input devices to the switcher.
- Connect the VGA/YUV output (3), DVI output (13), HDMI output (16), and video (18) output from the switcher to the appropriate display inputs.
- For stereo input, connect up to nine audio sources to each of the unbalanced stereo audio input groups; VGA/YUV (4), DVI (14), HDMI (7), and Video (9). See the 3.5 mm plug connector diagram on the right for wiring.
- For unbalanced stereo output, connect an output device to each of the output groups; VGA/YUV (5), DVI (15), HDMI (17), and Video (19). See the 3.5 mm plug connector diagram on the right for wiring.
- Connect an audio amplifier to the Program Audio Output connectors. See the connector diagram on the right for proper wiring.
- (Optional)** Connect a microphone to the rear Mic/Line connector (see the figure at right). Refer to the microphone user guide for proper wiring and phantom power requirements.

Set switch 2 of the DIP switch bank down (off) for a microphone. If phantom power (+48V) is required, set switch 1 up (on).

- (Optional)** If the switcher is connected to a computer or host controller for remote control, connect the host RS-232 cable to the 3-pin captive screw connector on the rear of the switcher (see the figure at right).

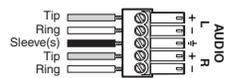


**3.5 mm Stereo Plug Connector**  
(unbalanced)

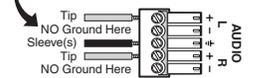


#### CAUTION

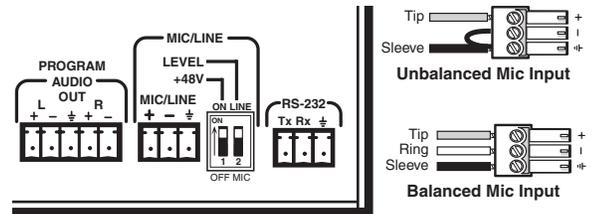
For unbalanced audio, connect the sleeve(s) to the ground contact. **DO NOT** connect the sleeve(s) to the negative (-) contacts.



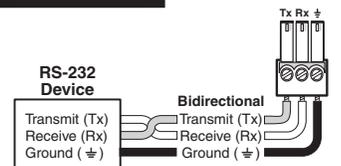
**Balanced Output**



**Unbalanced Output**



Do not tin the wires!



# MPS 409 Setup Guide (Continued)

## Setup and Operation — Video Switching

The MPS 409 switcher can be connected to as many as nine input devices simultaneously and operate in one of four switching modes: single (the default), separate, single combined, or separate combined. To view the current mode, press and hold the Mode button (VGA/YUV input #1). The associated mode LEDs (single, separate, single+combined, or separate+combined) will light.

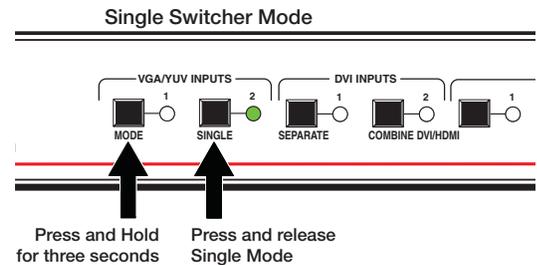
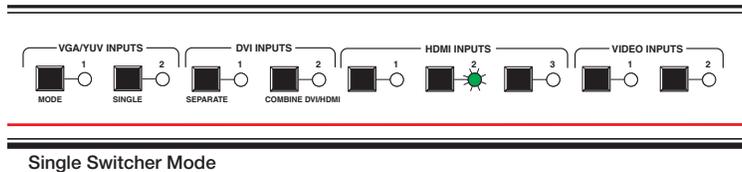
### Single Switcher Mode

Single switcher mode emulates one switcher with 9 inputs (9x1). Only one input can be selected at a time, indicated by a single lit LED on the front panel input selections. The selected video input will output on the associated group output only while the audio is output on the group output and Program Audio Output.

#### To enable single switcher mode:

Press and hold the Mode button (VGA/YUV Input #1) for three seconds, then press and release the Single button (VGA/YUV Input #2). The associated LED indicates if single switcher mode is on (when lit) or off. When the Mode button is released, the LED resumes input indication.

In the example below, HDMI input #2 is selected. Only the HDMI output is active. HDMI audio, indicated by the flashing LED, is routed to both the group output and Program Audio Output.



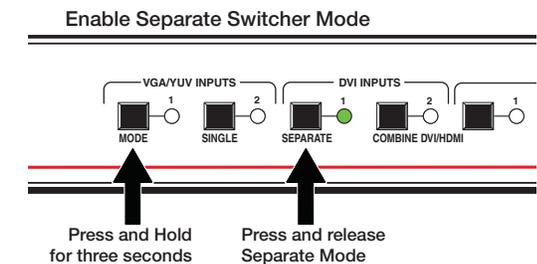
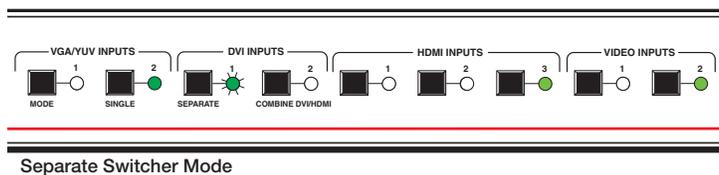
### Separate Switcher Mode

Separate switcher mode allows the four groups of inputs (DVI, HDMI, VGA, and composite video) to be used individually. Each group has an independent output creating four independent switchers. Up to four inputs can be selected at one time, one in each group, indicated by four lit LEDs. The audio and video of the selected input group outputs only on the associated group output. Audio from the last input selection also goes to the Program Audio Output. Of the four selected inputs, the audio input routed to the Program Audio Output is indicated by the blinking input LED.

#### To enable separate switcher mode:

Press and hold the Mode button (VGA/YUV Input #1) for three seconds, then press and release the Separate (DVI input #1) button. The associated LED indicates if separate switcher mode is on (when lit) or off. When the Mode button is released, the LED resumes input indication.

In the example below, VGA/YUV input #2, DVI input #1, HDMI input #3 and Video input #2 are selected. All four group outputs are active with their respective AV input signals on them. The audio of DVI input #1 is also routed to the Program Audio Output, indicated by the flashing LED.



### Combined HDMI/DVI Mode

Combined mode allows the MPS 409 to function as a 5x1 HDMI/DVI switcher. This is accomplished by switching a selected DVI or HDMI input to the HDMI video output, deactivating the video output.

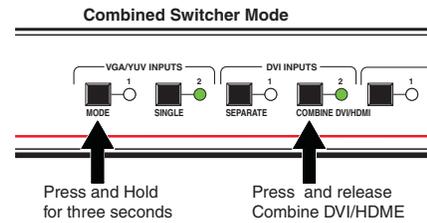
In single-combine mode, the front panel input selection LEDs operate the same as when in single switcher mode (a single lit LED indicates the current input selection).

## MPS 409 Setup Guide (Continued)

In separate-combine mode, only one input selection is allowed from the HDMI/DVI groups along with a single input selection from the VGA/YUV group and another from the Video group. So there will only be three front panel input LEDs lit in combined mode rather than four when in separate switcher mode.

### To enable combined switcher mode:

Press and hold the Mode button (VGA/YUV Input #1) for three seconds, then press and release the Combine DVI/HDMI button (DVI input #2). The Combine DVI/HDMI button LED indicates if combined switcher mode is on (when lit) or off. The Single and Separate button LEDs indicates whether it is in single switcher mode or separate switcher mode. When the Mode button is released, the LED resumes input indication.

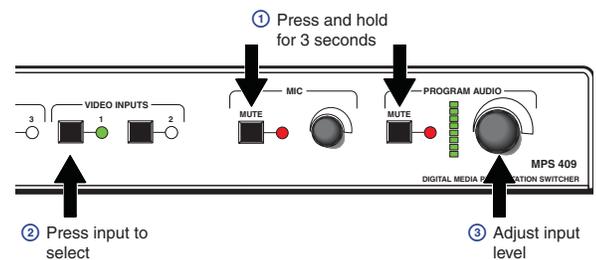


## Setup and Operation — Optimizing the Audio

For optimal audio quality, the audio input levels can be adjusted individually. In addition, the microphone and program output levels can be adjusted separately using the front panel controls. Program output and microphone levels are independent from each other. Muting program audio does not mute the microphone input.

### Setting the Input Audio Level

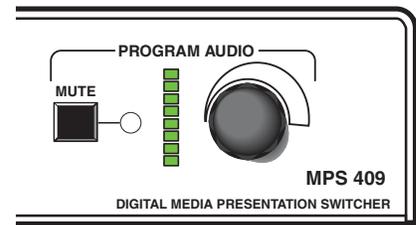
1. Simultaneously press and hold the Program Audio Mute and MIC Mute buttons until the two mute LEDs flash three times, then release both buttons.
2. Press a Video Input button for the audio to be adjusted (video input #1 is shown). If an input button is not pressed, the switcher times out and exits audio level adjustment mode.
3. In audio adjustment mode, when an input button is pressed, the front panel input LEDs indicate the current gain/attenuation setting. Factory default is 0 dB (all LEDs off). Rotate the Program Audio volume knob clockwise to increase and counterclockwise to decrease the audio level. The front panel LEDs display the level setting as the knob is adjusted (see **Audio Gain/Attenuation Adjustments** in the *MPS 409 User Guide*).
4. Once the desired level is achieved, to adjust another input, select it within three seconds. If audio adjustments are complete, to exit the gain/attenuation mode:
  - a. Do not press any front panel buttons for at least three seconds, or
  - b. Press the Program Audio Mute and MIC Mute buttons.



At any time during the adjustments, if the front panel buttons are not pressed or the program knob is not rotated within three seconds, the switcher times out and the gain/attenuation mode is exited.

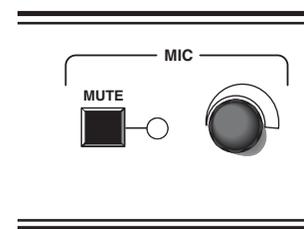
### Setting the Program Output Audio Level

1. Turn on all equipment and select an input with an audio signal present.
2. Turn on program audio by pressing the Program Audio Mute button (the LED goes **out**).
3. Using the Program Audio volume control (right), adjust the volume of the audio amplifier connected to the Program Audio Out connector to achieve the desired sound level.



### Setting the Microphone Level

1. Turn on all equipment and select an input with an audio signal present.
2. If the program audio output level has not been adjusted, do so before setting the microphone level.
3. If phantom power is required for the microphone, be certain it is on.
4. Turn on the microphone by pressing the MIC Mute button (the LED goes **out**).
5. Talk into the microphone in a normal voice and adjust the Mic volume knob (right) to the desired sound level.



# MPS 409 Setup Guide (Continued)

## Setting the Microphone Talk-Over Threshold

Microphone threshold (the volume where vocal audio is detected) and the program audio level during talkover are adjustable via SIS commands. See **Audio Adjustments** in the *MPS 409 User Guide* for additional SIS commands.

1. Speak into the microphone in a normal voice. The main program audio level should drop moderately. If not, adjust the microphone threshold level.
2. Stop speaking into the microphone. Main program audio should recover to its previous level after approximately four seconds. If not, adjust the microphone threshold level.
3. If the program audio during talkover is too loud, or too soft, adjust the program audio level.

Mic talk-over threshold			
Display talk-over threshold	<b>X8</b> * 2 #	Thr <b>X8</b> ←	Shows the mic threshold number. <b>X8</b> = 0 through 15, default = 8.
Decrement threshold	- * 2#	Thr <b>X8</b> ←	Decrements mic threshold one step.
Increment threshold	+ * 2#	Thr <b>X8</b> ←	Increments mic threshold one step.
View mic talk threshold	2 #	<b>X8</b> ←	

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