460 Presentation Audio Mixer

A/V presentation systems require flexible routing and mixing of various audio sources plus easy control of source selection and output levels. The lack of affordable mixers with the required functions frequently turns audio signal management into a problem. Presentation mixers need to provide separate speech and program equalization, dynamics processing, routings, and levels. They also need to interface easily with the popular remote control systems on the market.

The 460 Presentation Audio Mixer offers all of these features. Use the 460 to process speech separately from program audio, combine multiple audio sources, control everything remotely, and configure it through simple front-panel step-through menus.

The 460 is a true audio mixer, not just a router/switcher. Inputs may be mixed to all outputs, with individual level control. All levels may be remotely controlled, eliminating the need for external VCA cards. Choose AGC,

limiting, or compression for output dynamics processing, and each output provides high and low shelving EQ plus one parametric filter. HPF, LPF, and downward expansion may be selected for each mono input.

Remote control links for RS232, RS485, contact closures and rotary pots ensure that remote control is possible for installations of any complexity or budget level. These features give the 460 the versatility typically found only in much more expensive mixers.

APPLICATIONS

- Boardrooms
- Training Facilities
- Classrooms
- Conference & Meeting Rooms

FEATURES

Complete Mixing & Routing Options	All inputs are fully assignable for maximum versatility and audio control. Two mono mic/line and 4 stereo line inputs mix to 2 stereo outputs. The mono inputs may be linked and used as another stereo input pair. The stereo outputs may be configured independently as mono outputs. Two stereo inputs provide unbalanced RCA connections for easy connections from semipro or consumer (–10 dBV) level devices. All other inputs and outputs are balanced.
Easy Setup	Streamlined step-through menus on the front panel LCD configure mixing, routing, level, dynamics settings and 8 nonvolatile presets. No laptop PC required.
Input Controls	**Routing**—Each stereo input channel (3 to 6) can route signal into either or both of the stereo output buses. When channels 1 and 2 are operating independently, they route their signal into both sides of the stereo bus identically (i.e., mono). When operating as a stereo pair they function like channels 3 to 6. **Filtering & Downward Expansion** (mono inputs only)—Channels 1 and 2 have 6 dB/octave low pass and high pass filters available at 125 Hz and 8 kHz respectively, plus selectable downward expansion with threshold adjustment.

|	
Input Controls *continued*	**Gain**—All inputs have independent level settings (stereo level controls for the stereo inputs).
Output Controls	**Dynamics Processing**—Choose AGC, compression, or limiting, and set the active threshold. AGC helps maintain a consistent output level. The compressor features a moderately fast attack, slower release, and a moderate compression level. The limiter is peak sensing, with fast attack and release times. **EQ**—Each stereo output section has 6 dB/octave shelving filters with a boost/cut range of +/–12 dB. Each section also has a sweepable parametric equalizer with a +/–12 dB boost/cut range, 16k to 20k frequency range, and a bandwidth adjustable between 0.05 and 3 octaves. **Gain**—Each stereo output has stereo level controls. **Mono/Stereo Selection**—Each stereo output may be set to provide two mono sums of the signals assigned to it.
Remote Control Options	Rear panel RS232 and RS485 ports allow Panja™ or Crestron controllers to select presets and change levels and routing. Additional contact closure inputs allow remote selection of presets. Inputs for rotary pot level controls are also provided.
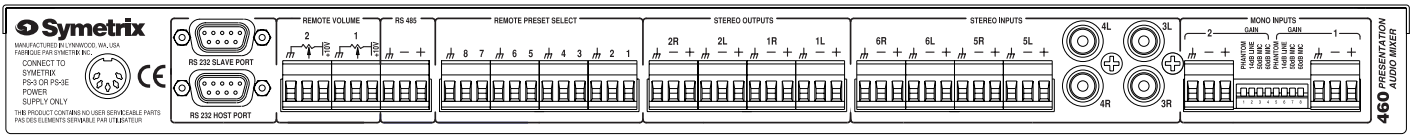
SPECIFICATIONS

Performance Data

A/D and D/A Conversion Resolution	24 bit
Internal Sampling Frequency	48 kHz
Remote Control Baud Rates	9600, 19200, 38400, 57600, 115200

Input Channels 1 and 2

Type	Balanced, with additional gain for microphone
Frequency Response	+/–0.25 dB, 20 Hz to 20 kHz at line level
THD+N	<0.005% at –1 dBFS
Available Preamp Gain Settings	0 dB, +4 dB line level
	14 dB, –10 dB line level
	50 dB, mic level
	60 dB, mic level
Dynamic Range	104 dBFS, A-weighted at line level gains
	>85 dBFS at +60 dB gain
Maximum Input Level	+22 dBu, 0 dB preamp gain
	+8 dBu, 14 dB preamp gain
	–28 dBu, 50 dB preamp gain
	–38 dBu, 60 dB preamp gain
Preamp CMRR	>40 dB at 60 Hz
Phantom Power	12 V
High Pass Filter	125 Hz, 6 dB/octave
Low Pass Filter	6 kHz, 6 dB/octave
Gate Threshold	0 dBFS to –99 dBFS

Input Channels 3 and 4

Type	Stereo, unbalanced, nominal –10 dBV level
Dynamic Range	100 dBFS, A-weighted
Frequency Response	+/– 0.25 dB, 20 Hz to 20 kHz
THD	<0.005% at +8 dBV, 1 kHz

Input Channels 5 and 6

Type	Stereo, balanced, nominal +4 dBu,
	internally switchable to –10 dBV
Dynamic Range	104 dBFS, A-weighted, 1 kHz
Frequency Response	+/–0.25 dB, 20 Hz to 20 kHz
THD	<0.005% at +20 dBu, 1 kHz
Maximum Input Level	+22 dBu balanced
Common Mode Rejection Ratio	>40 dB at 60 Hz

Output Channels 1 and 2

Type	Stereo, balanced, ground reference
	300 ohm source impedance
Dynamic Range	105 dB, A-weighted, 1 kHz
THD	<0.005% at +4 dBu, 1 kHz
Shelving Low Pass Filter	+/– 12 dB, 125 Hz, 6 dB/octave
Shelving High Pass Filter	+/– 12 dB, 8 kHz, 6 dB/octave
Parametric Filter	+/– 12 dB, 16.2 Hz to 19.7 kHz
	bandwidth 0.05 to 3 octaves
Maximum Output	+22 dBu, internally switchable to –10 dBV

Connections

Power In	7-pin DIN
Mic/Line Input	Euroblock
Stereo Line Inputs	RCA and Euroblock
Stereo Line Output	Euroblock
Serial Data Ports	RS485: Euroblock
	RS232 host and slave: DB-9
Remote Preset Recall and Output Volume Control	Euroblock

Physical

Size	1 rack unit: 1.72 in. (H) x 19 in. (W) x 5 in. (D)
	4.37 cm (H) x 48.26 cm (W) x 12.7 cm (D)
Shipping Weight	7.64 lb (3.47 kg)

Electrical

Power Requirements	20 W maximum, Symetrix PS-3 or PS-3E only
PS-3	115 V, 60 Hz AC nominal
PS-3E	230 V, 50 Hz to 60 Hz AC nominal

ACCESSORIES

RC-3 Remote Control controls one volume channel.

SIGNAL FLOW DIAGRAM