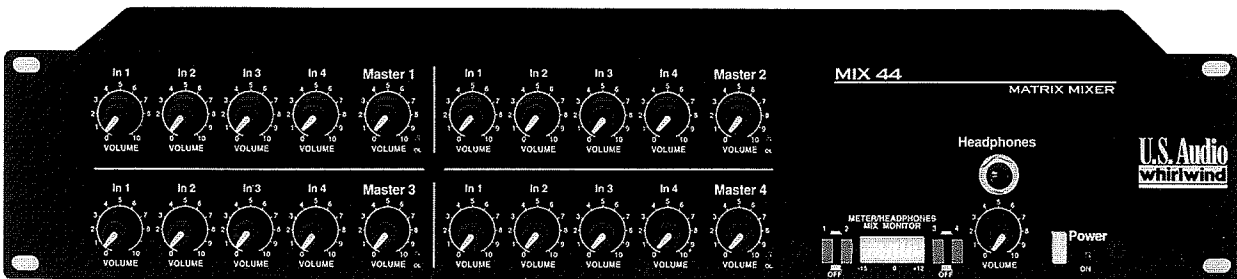


# MIX 44

## MATRIX MIXER



### INTRODUCTION

Thank you for selecting the US Audio Mix 44. The unique combination of features in the Mix 44 offers a creative solution for countless audio mixing and distribution situations. The four input by four output matrix design allows flexible routing of four line level signals to as many as four separate locations at the same time. Applications include live sound monitor mixing, industrial audio signal routing, studio headphone cue mixing and teleconference mix minus generation. Each mixer has four input volume controls and a master volume control with a clip LED. Connections are made through actively balanced professional XLR jacks. The high input impedance of the Mix 44 (1 Meg  $\Omega$ ) allows bridging any balanced audio line without loading. The Mix 44 represents an excellent value, delivering professional recording quality audio wherever discrete mixes are needed. Other features include a headphone monitoring circuit, loop thru jacks and switches to convert the Mix 44 into two four by two matrices.

### UNPACKING

US Audio has made every effort to ensure that your equipment is received in the same perfect condition it was in when it left the factory. Please inspect your product for any signs of damage during shipping and report them to your dealer so that he can present a claim to the shipper. We recommend that you save your packaging material for use in the unlikely event that you need to return your equipment for service.

## **THEORY OF OPERATION**

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The Mix 44 combines four separate mixers into one unit, providing a versatile method of line level audio signal mixing and distribution. The four input by four output matrix design allows flexible routing of four input signals to as many as four separate locations at the same time. A typical use for the Mix 44 is as an outboard four channel matrix with four buss audio consoles, to provide multiple feeds. All inputs and outputs are active, electronically balanced circuits accessed through XLR connectors. The input section and all critical gain sections of the Mix 44 use the same IC chips as top professional mixing boards. The inputs are instrumentation grade differential amplifiers which yield exceptionally high Common Mode Rejection (CMR). The C.M.R. of the Mix 44 is greater than 75dB, 20 to 20KHz. The Mix 44 has a 1 Meg  $\Omega$  input impedance allowing it to tap onto any balanced audio line without loading it.

Each of the 4 inputs is connected through a female XLR and is paralleled to a male XLR thru jack for normal operation. Pin 2 is positive, pin 3 is negative and pin 1 is audio ground for all connections. Next to each male XLR there is an input select switch which determines how matrix 3 and matrix 4 are fed input signal. With the channel input select switch set to the normal, loop thru "in" position, the female and male XLR are parallel wired for in and thru connections. With the channel input select switch in the "out" position, the female XLR becomes the input for matrix 1 and matrix 2 only and the male XLR becomes the input for matrix 3 and matrix 4. This configuration eliminates the thru connection but increases flexibility by completely separating mixers 1 and 2 from mixers 3 and 4. Female to female XLR adaptors can be used to change the sex of the male connectors.

All the gain controls on the Mix 44 (Channel gain and Master) have a range of -60 to +13dBm. Total gain of the unit is 26dB. With both the channel and master volume controls at the same position, unity gain is at the 12 O'Clock knob position. The 60dB of attenuation in the off position allows the Mix 44 to

adequately "turn off" line level signals. Maximum signal level through the Mix 44 at clipping is +28dBm balanced and +22dBm unbalanced. The same figures apply to both the input and the output and individual clip LEDs are provided which illuminate at -3dB below actual clipping. With THD+n typically less than .02% in the entire audio spectrum and a unity gain signal to noise ratio greater than 85dB with 22dB of headroom, the Mix 44 delivers excellent sonic performance. An internal provision has been made for a direct input to the sum buss of each mixer. The Mix 44 can be individually customized to take advantage of this feature if required.

The male output XLR connectors on the Mix 44 are actively balanced with pin 2 being positive, pin 3 being negative and pin 1 being audio ground. For unbalanced operation use pins 1 and 2 leaving pin 3 UNCONNECTED.

The Mix 44 has a monitoring section consisting of channel select switches, an LED VU meter, a headphone volume control, and a 1/4" TRS headphone jack. Selecting any combination of the 4 channel select switches routes those channels' audio signals to the headphone circuit and the LED VU meter, allowing the user to monitor the output of the mixers. The VU LEDs display, in dBm, the exact level that is at the XLR output. The headphone circuit is a mono type which drives both left and right stereo earpieces. The circuit works with any headphones of greater than 20 ohm impedance. The headphone volume control also has a gain range of -60 to +13 dB to accommodate a wide range of audio levels.

The Mix 44 utilizes two dual primary power transformers which can be configured with internal jumpers for 120 VAC 60Hz. or 230 VAC 50Hz. operation. There is an internal fuse on the hot side of the AC cord, and the power switch makes and breaks both the hot and neutral legs of the AC cord. A ground lift switch is provided which can disconnect the audio circuit ground from the AC chassis ground.

