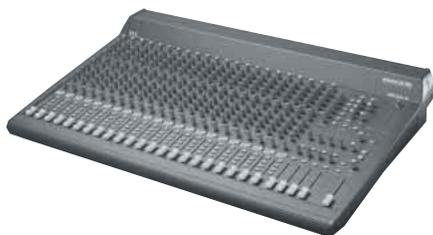


# SR32•4/SR24•4

## LIVE/RECORDING CONSOLES



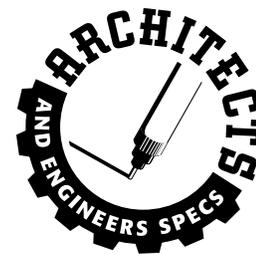
### 1. GENERAL CONFIGURATION.

The audio mixer shall have a free-standing frame fitted with four resilient feet suitable for table-top placement. The frame shall be comprised of 20 (SR32•4: 28) monaural input channels, 2 stereo input channels, 4 submix output channels and 2 main output channels. The monaural input channels shall be capable of accepting either microphone- or line-level signals, and shall be fitted with trim, equalization, balance, and auxiliary send controls; solo, mute and bus assign switches; level-indicating LEDs and insert jacks. The stereo input channels shall be capable of accepting either stereo or monaural line-level signals, and shall be fitted with stereo trim, equalization, balance, and auxiliary send controls; solo, mute and bus assign switches; and level-indicating LEDs. The submix outputs shall each have level, pan, and "air" controls; solo and assign switches; and a bus access insert jack. The main outputs shall share a stereo master output fader and shall be fitted with

insert jacks. Additionally, the mixer shall include a pre-fader/post-fader solo function, a main monaural output with level control derived from the main stereo outputs, 6 monitor/effects send outputs, 4 stereo effects return inputs with switching for alternate routing, control room/headphone monitor switching and control functions, 1 stereo control room monitor output, 2 stereo headphone outputs, 1 set of stereo tape recorder convenience outputs, and 1 set of stereo tape monitor inputs.

**2. POWER SUPPLY.** All necessary operating voltages for the mixer shall be provided by an internal power supply.

**3. INPUT CHANNEL CONNECTIONS.** Each monaural input channel shall have an electronically balanced microphone level input, accommodating a nominal microphone level between  $-60$  dBu and  $+14$  dBu, and appearing on the rear panel as a female XLR-3 type connector. Each monaural input channel shall also have an electronically balanced line level input, accommodating a nominal line level of between  $-10$  dBV and  $+4$  dBu, and appearing on the rear panel as a  $1/4$ " TRS phone jack. Each stereo input channel shall have a



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left and a right electronically balanced line level input, accommodating a nominal line level of between  $-10$  dBV and  $+4$  dBu, and appearing on the rear panel as  $1/4$ " TRS phone jacks. These jacks shall be fitted with internal switching contacts to accommodate monaural configuration. Additionally, each of the monaural input channels 1 through 20 (SR32•4: 1 through 28) shall offer an unbalanced insert connection, appearing on the rear panel as a  $1/4$ " TRS phone jack.

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## 4. INPUT CHANNEL LEVEL AND ASSIGNMENT CONTROLS AND INDICATORS.

Each monaural input channel shall be equipped with a preamplifier gain control, a solo switch, a mute switch, three bus assignment switches, and a stereo pan control. Each stereo input channel shall be equipped with a dual preamplifier gain control, a solo switch, a mute switch, three bus assignment switches and a stereo balance control.

## 5. INPUT CHANNEL EQUALIZATION.

Each monaural input channel shall be equipped with an equalization function. The equalizer shall have three sections: a low-frequency shelving equalizer with the knee set at 80 Hz and a range of ±15 dB; a mid-frequency peaking equalizer with a center frequency sweepable from a range of 100 Hz to 8 kHz, and a range of ±15 dB; and a high-frequency shelving equalizer with the knee set at 12 kHz and a range of ±15 dB. Each stereo input channel shall be equipped with a stereo equalization function. The equalizer shall have four sections: a low-frequency shelving equalizer with the knee set at 80 Hz and a range of ±15 dB; a low-mid-frequency peaking equalizer centered at 800 Hz and a range of ±15 dB; a high-mid-frequency peaking equalizer centered at 3.5 kHz and a range of ±15 dB; and a high-frequency shelving equalizer with the knee set at 12 kHz and a range of ±15 dB.

**6. INPUT CHANNEL AUXILIARY SENDS.** Each mixer input channel shall have 6 monaural auxiliary send controls. Two auxiliary send controls shall be fixed as pre-fader sends; two shall be fixed as post-fader sends; and two shall be switchable between pre-fader and post-fader. All auxiliary sends shall be post-mute switch.

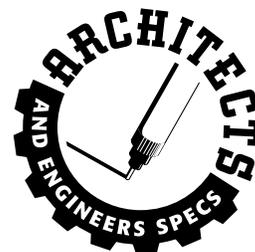
**7. MAIN OUTPUT CONNECTIONS.** The mixer shall have electronically balanced, line-level left and right main outputs, appearing on male XLR-3 type connectors and impedance balanced on 1/4" phone TRS jacks on the rear panel. Additionally, the main buses shall offer left and right unbalanced insert connections, appearing on the rear panel as 1/4" phone TRS jacks. Further, there shall be a main, electronically balanced, monaural output derived from the main stereo output, appearing as a male XLR-3 type connector on the rear panel. There shall be an output level control to adjust the main monaural output level.

**8. OTHER OUTPUT AND MONITORING CONNECTIONS.** The mixer shall have the following impedance balanced line level connections, appearing as 1/4" TRS jacks on the rear panel: submix bus outputs 1-4, also wired in parallel respectively to submix outputs 5-8.; left and right control room monitor outputs, left and right tape monitor inputs. For convenience, the left and right main outputs (unbalanced) and the left and right tape monitor inputs shall also appear as RCA phono jacks on the rear panel. There shall

also be two stereo headphone outputs on the rear panel of the mixer, carrying the control room monitor signals at levels and impedances proper for headphones. Each headphone output connection shall be a stereo 1/4" TRS jack.

**9. OUTPUT AND MONITORING CONTROLS AND SWITCHES.** The mixer shall include 1 linear fader control for gain adjustment of the main L/R outputs, covering a range from infinite attenuation to +10 dB above unity gain. A tape monitor switch shall alternately select either the main L/R outputs or the signal at the tape inputs as the source for the control room and headphones monitoring circuits. There shall be a stereo dual-channel rotary control for gain adjustment of the control room and headphone monitor output. The mixer shall have a stereo dual-channel control for adjustment of the monitoring level of the internal solo signals, and a light to indicate channel solo condition. The solo system shall be capable switching between PFL (pre-fader listen) or AFL (after fader listen-solo in place) operation.

**10. OUTPUT METERING.** The mixer frame shall include two 13-segment LED meters each displaying a signal range from -40 dBu to +10 dBu, each with an additional LED indicating mixer clipping level at +22 dBu. The meters shall monitor the main left and right output channels; alternately, the meters shall monitor the tape return signals when the tape monitor switch is depressed; or, the soloed input channel signals when the solo switch is depressed.



**11. AUXILIARY SEND CONNECTIONS.** The mixer shall include impedance balanced, line level outputs from the six auxiliary send buses, appearing on the rear panel as 1/4" TRS phone jacks.

**12. AUXILIARY RETURN CONNECTIONS.** The mixer shall include 4 stereo auxiliary return inputs. Each auxiliary return shall have a left and a right balanced line level input, accommodating a nominal line level of between -10 dBu and +4 dBu, and shall appear on the rear panel as 1/4" phone TRS phone jacks. The jacks shall be fitted with internal switching contacts to accommodate monaural configuration.

**13. AUXILIARY RETURN CONTROLS AND SWITCHES.** The mixer shall include 4 dual-channel auxiliary return gain controls, each feeding the main stereo buses. Auxiliary returns #1-2 shall have their signals assignable to auxiliary send buses 1 and 2, respectively, through rotary level controls. Auxiliary return #4 shall be assignable to three different pairs of destinations, feeding either the main left and right buses or the submix buses.

**15. PHYSICAL CONFIGURATION.** The mixer shall have a steel chassis frame painted grey-black and designed rest on a horizontal surface. The mixer's dimensions shall be 6" high by 31" wide by 19.2" deep. (SR32•4: 6" high by 41.4" wide by 19.2" deep.)

**16. OVERALL MINIMUM SPECIFICATIONS.** In addition to specifications previously cited, the mixer shall meet or exceed the following performance criteria:

**Total Harmonic Distortion.** (1 kHz @+14 dBu measured 20 Hz-20 kHz.) Line in, one channel: main L/R, .0022%; control room L/R, .003%. Aux return in: main L/R, .0022%; control room L/R, tape in, .003%; control room L/R, .003%.

**Frequency Response.** Typically 20 Hz-60 kHz  $\pm 1$  dB, any input to main output.

**Equalization.** High frequency shelving @ 12 kHz,  $\pm 15$  dB. Midrange frequency: peaking @ 100 Hz-8 kHz (monaural channels), peaking @ 800 Hz and 3.5 kHz (stereo channels).  $\pm 12$  dB. Low frequency shelving @ 80 Hz,  $\pm 15$  dB.

**Equivalent Input Noise.** Microphone input noise, 150 ohm termination, 20 Hz-20 kHz: -129.5 dBm. Common Mode Rejection. Microphone input, maximum gain, 1 kHz, 78.5 dB.

**Noise.** (20 Hz-20 kHz referenced to 0 dBu) Main L/R, main faders off, channel gain controls off, -92 dB; main faders at unity gain, channel gain controls off, -85 dB; main faders at unity gain, channel gain controls at unity gain, -82 dB. Control room, same as main L/R.

**Gain Structure.** Microphone input, minimum gain, +10 dB; maximum gain, +60 dB. Line input,

minimum gain -10 dB (attenuation); maximum gain, +40 dB. Auxiliary return, maximum gain, +20 dB. Auxiliary send, maximum gain, +15 dB. Main L/R outputs, maximum gain, +10 dB. Solo circuit, maximum gain, +16 dB. Talkback 57 dB.

**Maximum input levels.** Microphone input, +13.5 dBu. Line input, +22 dBu. Tape input, +22 dBu. Auxiliary return input, +22 dBu.

**Maximum output levels.** L/R/mono balanced outputs +28 dBu. Main L/R and tape outputs, +22 dBu. Control room outputs, +22 dBu. Sub outputs, +22 dBu. Auxiliary sends, +22 dBu.

**Impedances.** All outputs 120 ohms unbalanced, 240 ohms balanced. Microphone input, approximately 1.8 kohm. Line input, 20 kohm. Tape monitor input, greater than 10 kohm. Auxiliary return input, greater than 10 kohm.

**Crosstalk.** (20 Hz-20 kHz) Line input to adjacent channel, 1 kHz, at 0 dBu, less than -85 dB. Signal at main L/R output, 1 kHz at 0 dBu at line input: channel gain off, -84 dBu; channel muted, -85 dBu; main faders off, -92 dBu. Pan control attenuation, greater than 70 dB.

**17. DESIGNATION.** The audio mixer shall be a Mackie Designs SR24•4 (SR32•4).

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