

HR Series

■ The HR824 studio monitors are high-resolution, two-way, bi-amplified, active monitors employing a 6th-order Butterworth system with a built-in rear-firing mass-loaded passive radiator. They feature a 1-inch aluminum-alloy high-frequency transducer, a high-precision 8.75-inch die-cast magnesium frame low-frequency transducer, and a 6-inch x 12-inch elliptical flat piston passive radiator in the back. The system is composed of a single, compact cabinet with built-in control and amplifier electronics.

■ The high-frequency driver is mounted on a massive, acoustically non-resonant die-cast zinc exponential waveguide, which results in wide, controlled dispersion for high-frequency sounds. The unique passive radiator design provides smooth response down to 39 Hz.

■ The FR Series™ amplifiers found in the HR824 cabinet are an example of application-specific amplifier design that can be exercised when designing active speaker systems. The low-frequency amplifier is rated at 150 watts rms continuous output, and the high-frequency amplifier is rated at 100 watts rms continuous.

■ The input panel on the back accepts a line-level input with balanced 1/4" TRS, XLR, and unbalanced RCA connectors. The connectors face downward so the monitor can be placed flush against a wall. There is an input sensitivity control to trim the gain from input to output and adjust for various input levels. An acoustic space switch adjusts the bass response to compensate for corner (quarter space) or wall (half space) placement. A low-frequency switch selects a high-pass cutoff frequency of 37 Hz, 47 Hz, and 80 Hz, and a high-frequency switch provides either 2 dB of boost or cut above 10 kHz. The power mode switch can be used to turn the monitor on and off, a function that is duplicated with the front panel switch, or to put the monitor into auto mode, where the amplifiers revert to standby when no signal is present for several minutes. The instant a signal appears at the input, the amplifiers seamlessly come back to life and produce sound.

■ The cabinet is constructed using 3/4-inch (19 mm) thick MDF with a 1-inch (25 mm) thick MDF front panel. An internal H-brace provides additional cabinet stiffness, and open cell adiabatic "foam fill" acoustic damping material absorbs internal reflections.

RELATED PRODUCTS

HR624 Active 2-Way Studio Monitor, HR626 Active 2-Way Studio Monitor, HRS120 Active Subwoofer, HRS150 Active Subwoofer

Active 2-Way Studio Monitor



Features

- Flat frequency response (± 1.5 dB, 39 Hz to 20 kHz)
- 1" ferro-fluid cooled aluminum alloy dome tweeter
- 8.75" mineral-filled polypropylene cone woofer
- Proprietary, acoustically non-resonant high-frequency exponential waveguide
- 6" x 12" elliptical passive radiator for enhanced bass performance
- 100 watt HF and 150 watt LF FR Series power amplifiers
- Servo-loop architecture for improved low-frequency overload detection
- Independent high and low frequency overload detection
- High-strength cabinet constructed with 3/4" MDF composite and 1" front board with radiused edges
- Internal H-brace for extra rigidity
- High-density adiabatic foam absorbs internal reflections
- Full magnetic shielding
- Balanced XLR and 1/4" TRS, and unbalanced RCA input connectors, downward facing
- Modified Linkwitz-Riley 24 dB/octave crossover
- Recessed adjustable sensitivity control
- Acoustic Space switch for selecting whole space, half space, or quarter space placement
- Low-Frequency switch for bandwidth limiting the low-frequency response
- High-Frequency switch boosts or cuts high frequencies
- Power Mode switch includes AUTO mode
- Front panel power switch with indicating LED
- Front panel overload indicating LED

Applications

- Near-field studio monitors
- Home Theater surround sound

HR824

Active 2-Way Studio Monitor

HR824 Technical Specifications

Acoustic Performance

Free Field Frequency Response:	39 Hz–20 kHz, ± 1.5 dB
Lower Cutoff Frequency:	-3 dB @ 37 Hz
Upper Cutoff Frequency:	-3 dB @ 22 Hz
Sound Pressure Level @ 1 meter, 7.5 dBu into Balanced Input:	100 dB SPL @ 1m
Max SPL Peak Per Pair:	120 dB SPL @ 1m

Transducers

Low Frequency:	8.75" (222 mm) with die-cast magnesium frame, mineral-filled polypropylene cone
High Frequency:	1" (25 mm) viscous edge-damped aluminum alloy dome with ferrofluid cooled voice coil
Passive Radiator:	6" x 12" (152 mm x 305 mm) mass-loaded elliptical flat piston composed of aluminum composite with variable thickness filleted edge rubber surround

Amplifier

Low Frequency Power:	150 watts, 4 Ω load 350 watts peak
High Frequency Power:	100 watts, 6 Ω load 210 watts peak
Slew Rate:	>35V/ μ s
Distortion (THD, SMPTE IMD, DIM 100):	<0.035%
Signal-to-Noise Ratio:	>102 dB referenced to 100 watts into rated load
Type:	FR Series Class AB

Electronic Crossover

Crossover Type:	Modified Linkwitz-Riley, 24 dB/octave
Crossover Frequency:	2000 Hz
Sensitivity:	0 dBu nominal
Input Impedance:	20 k Ω , balanced bridging
Compressor:	Independent high and low frequency overload detection

Equalization

Acoustic Space EQ:	Flat, -2 dB, -4 dB @ 100Hz, shelving
Low Frequency EQ:	-3 dB @ 37 Hz 2nd-order Transitional high-pass filter -3 dB @ 47 Hz 4th-order Chebyshev high-pass filter -3 dB @ 80 Hz 4th-order Butterworth high-pass filter
High Frequency EQ:	± 2 dB @ 10 kHz, shelving

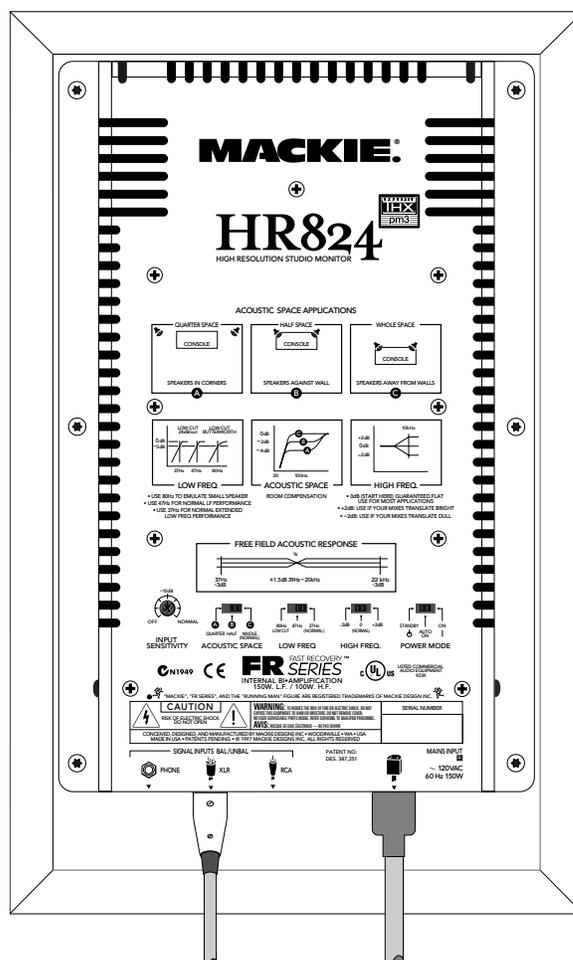
Line Input Power

US:	120 VAC, 60 Hz
Europe:	230 VAC, 50 Hz
AC Connector:	2-pin IEC 250 VAC, 16 A male
Power Consumption:	135 watts with music, loud mix 18 watts quiescent (idle) 8 watts in standby mode

Physical

Enclosure:	3/4" (19 mm) thick MDF with 1" (25 mm) MDF front panel, internal H-brace
Damping:	Adiabatic foam
Waveguide:	Cast zinc
Dimensions (HxWxD):	15.75" x 10.00" x 12.20" (400 mm x 254 mm x 310 mm)
Weight:	33.6 lbs (15.2 kg)

HR824 Rear Panel



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