

9444B



Anniversary Series Power Amplifiers

General Product Description

The **9444B** delivers 200 watts of continuous average power per channel into 8Ω or 300 watts into 4Ω over the full audio frequency range. In the bridge mode, the amplifier can deliver more than 600 watts at less than 0.01% THD.

Sixteen metal output transistors are utilized for a total device power dissipation of 4,000 watts. A dual speed fan is incorporated as an added reliability measure for the most thermally stressing situations. The massive 3/16 inch heatsink was specially engineered to minimize thermal gradients; as a result, the amplifier runs cooler enabling it to operate under more adverse environmental conditions without failure.

Each channel is independently protected against over-temperature, excessive output voltage, excessive phase shift, radio frequency interference, and shorted output terminals. The load is protected from startup/shutdown transients, subsonic signals, low ac line voltage, and DC faults.

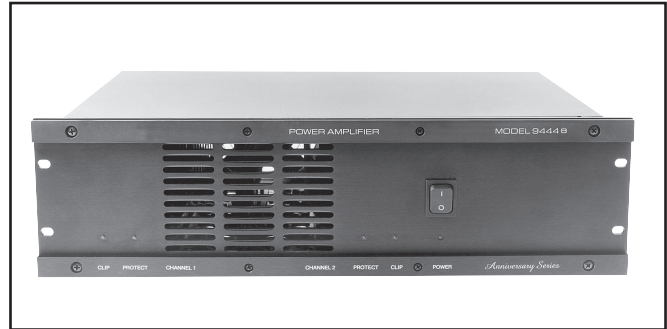
The **9444B** has electronically balanced inputs and powered octal accessory sockets for plug-in transformers and electronic modules. The level controls and the bridge switch are mounted on the rear panel to reduce the risk of “accidental” changes. Two 70 volt output balancing transformers, models **15300** (300 watt) and **15600** (600 watt), are available as accessories.

Architects’ and Engineers’ Specifications

The dual channel power amplifier shall be of solid state design employing true complementary symmetry output circuitry with grounded collectors and capable of operating from either a 120 Vac or 240 Vac line at either 50 or 60 Hz. The amplifier shall contain sensing circuitry to provide protection against over-temperature, shorted output terminals, and radio frequency interference. The load shall be similarly protected against subsonic signals, startup/shutdown transients, and DC faults.

On the rear panel shall be a two position mode switch for selecting between the dual channel mode or the bridged single channel mode, and individual rotary input level controls. Input connections for each channel shall include a powered octal accessory socket for use with optional plug-in accessory modules, a 3-pin female XLR connector, and a barrier strip connector. Output terminals shall be beta barrier strip connector.

Front panel indicators shall include an illuminated power on/off indicator, individually illuminated clipping (“CLIP”) indicators, and individually illuminated protection circuit activation (“PROTECT”)



indicators. The only front panel control shall be the power on/off switch.

The power amplifier shall meet the following performance criteria. **Maximum input voltage:** 7.75 V rms; Input sensitivity for rated output power into a 4 ohm load: 0.784 V rms; **Rated output power:** not less than 300 watts per channel into 4 ohms from 20 Hz to 20 kHz at less than 0.1% THD; not less than 200 watts per channel into 8 ohms from 20 Hz to 20 kHz at less than 0.1% THD; not less than 400 watts into 16 ohm bridged load from 20 Hz to 20 kHz at less than 0.1% THD; and not less than 600 watts into 8 ohm bridged load from 20 Hz to 20 kHz at less than 0.1% THD. Voltage gain in dual mode shall be 33 dB or greater. **Hum and noise:** at least 100 dB (A-wtd) below rated output power. **Frequency response:** 20 Hz to 20 kHz, +0/-1 dB or better at any power up to rated output power. **Damping factor:** greater than 200 at any frequency up to 1 kHz in dual mode with 8 ohm loads. **Intermodulation distortion (SMPTE 4:1):** less than 0.05%. **Transient intermodulation distortion (DIM 100):** less than 0.05%. **Crosstalk:** less than 75 dB below rated output power. **Operating temperature range:** up to 60°C (140°F) ambient. **Dimensions:** not larger than 5.25 inches in height by 19 inches in width and not deeper than 13 inches behind the mounting surface. The net weight shall not exceed 34 pounds.

Finish color shall be black. The chassis shall be rack mountable without the addition of any accessory mounting brackets. The chassis shall be fabricated of 16 GA steel with a 3/16 inch thick 5052 aluminum alloy front panel.

The dual channel power amplifier shall be the Electro-Voice® Model 9444B.

Output Devices:

Total number: 16 devices
P_{dmax} rating: 250 watts
V_{ceo}: 250 volts DC
I_c: 16 amps DC
T_{jmax}: 200°C

Controls and Switches:

Front: Power switch.
Rear Panel: Two input level controls, Mode switch

Front Panel Indicators:

Power LED, two Clip LED (x2), Protect LED (x2)

Connections:

Input: 6 terminal barrier strip
..... Female XLR (x2)
..... Octal accessory socket (x2), powered
with +/-15 volts DC at 25 ma.
Output: 4 terminal barrier strip
Power: 8 ft, 3-wire, 16 GA power cord
with NEMA 5-15 plug

Fuse Type:

Littlefuse Type 3AB 10A/250V Slo-Blo® 326-series ceramic cartridge body, or equivalent (for 120 Vac use)

Power Requirements: 120 V ac, 50/60 Hz, 1000 watts.
(Configurable to 220/240 Vac. 100 V ac, 50/60 Hz model is also available)

AC Voltage Operating Range:

Operates from line voltages as low as 90 volts (at reduced output power assuming 120 V as nominal line voltage)

Operating Temperature Range: Up to 60°C (140°F) ambient.

Power Consumption and Heat Produced:

(Both channels operating in dual mode with 1 kHz sinewave input signal at stated output power into 4ohm loads)
Idle: 72 watts/0.245 kBTU/hour
1/8th max midband power: 720 watts/2.100 kBTU/hour
1/3rd max midband power: 1,068 watts/2.702 kBTU/hour
Rated output power: 1,464 watts/2.938 kBTU/hour
Max midband power: 1,680 watts/2.873 kBTU/hour

Dimensions (Rear of rack ears to max depth):

Height: 5.25 inches (13.3 cm)
Width: 19 inches (48.3 cm)
Depth: (Behind mounting surface.) 13 inches (33 cm)

Net Weight: 34 lbs (15.5 kg)

Shipping Weight: 42 lbs (19.1 kg)

Color: Black

Enclosure:

Rack mount chassis, 16 GA steel, 3/16 inch 5052 aluminum alloy front panel.

Design and Performance Approvals:

Meets the requirements of UL Standard 813 and CSA C22.2 Standard #1.

Electro-Voice® continually strives to improve products and performance. Therefore, the specifications are subject to change without notice.

Slo-Blo® is a registered trademark of Littlefuse, Inc.

SPECIFICATIONS:**Conditions:**

1. 0 dBu = 0.775 volts rms.
2. Dual mode ratings are for each channel.
3. Both channels operating at rated output power unless noted.
4. 120 Vac line input voltage maintained for all tests unless noted.

Total Harmonic Distortion: <0.1% (Typically <0.01%)
(Any mode, 30 kHz measurement bandwidth)

Intermodulation Distortion (SMPTE 4:1): <0.1% (Any mode)

Continuous Rated Output Power:

(20 Hz - 20 kHz at less than 0.1% THD)

Dual mode, 4 ohms: 300 watts per channel
 Bridge mode, 8 ohms: 600 watts
 Dual mode, 8 ohms: 200 watts per channel
 Bridge mode, 16 ohms: 400 watts

Continuous Rated Output Power to Subwoofer:

(20 Hz - 1 kHz @ < 0.1% THD)

Dual mode, 4 ohms: 375 watts per channel
 Bridge mode, 8 ohms: 750 watts
 Dual mode, 8 ohms: 225 watts per channel
 Bridge mode, 16 ohms: 450 watts

Maximum Midband Output Power:

(Ref. 1 kHz, 1% THD, @120 volts ac line voltage)

Dual mode, 4 ohms: >400 watts per channel
 Bridge mode, 8 ohms: >800 watts
 Dual mode, 8 ohms: >250 watts per channel
 Bridge mode, 16 ohms: >500 watts

(Ref. 1 kHz, 1% THD, @ 108 volts ac (10% sag))

Dual mode, 4 ohms: >325 watts per channel
 Bridge mode, 8 ohms: >650 watts
 Dual mode, 8 ohms: >200 watts per channel
 Bridge mode, 16 ohms: >400 watts

(Ref. 1 kHz, 1% THD, @ 100 volts ac (17% sag))

Dual mode, 4 ohms: >230 watts/ch
 Bridge mode, 8 ohms: >460 watts
 Dual mode, 8 ohms: >175 watts/ch
 Bridge mode, 16 ohms: >350 watts

Headroom (Before clip): ≥1 dB
(Ref. 1 kHz, 1% THD, any mode)

Frequency Response: 10 Hz - 90 kHz
(Ref. 1 kHz, 1 watt output, +0/-3 dB)

Power Bandwidth: 20 Hz - 20 kHz
(Ref. 1 kHz, +0/-1 dB, where 0 dB = rated output power in any mode)

Voltage Gain: (Ref. 1 kHz)

Dual mode, 4 or 8 ohms: 33 dB
 Bridge mode, 8 or 16 ohms: 39 dB

Input Sensitivity for Rated Output Power:

(Ref. 1 kHz, ±0.15 dB)

Dual mode, 4 ohms: +0.1 dBu (0.78 V rms)
 Bridge mode, 8 ohms: +0.1 dBu (0.78 V rms)
 Dual mode, 8 ohms: +1.2 dBu (0.89 V rms)
 Bridge mode, 16 ohms: +1.2 dBu (0.89 V rms)

Maximum Input Level:(Ref. 1 kHz) +20 dBu (7.75 V rms)

Input Impedance: (Ref. 1 kHz)

Balanced: 15,000 ohms
 Unbalanced: 15,000 ohms

Polarity:

Positive-going signal applied to pin 2 of XLR or (+) of barrier strip will produce a positive-going signal at (+) output terminal.

Phase Response: (Any mode)

20 Hz: <+25°
 20 kHz: >-15°

THD: <0.1% (Typically <0.01%)
(Any mode, 30 kHz measurement bandwidth)

IMD (SMPTE 4:1): <0.05% (Typically <0.01%)
(Any mode)

TIM (DIM 100): <0.05%.
(Any mode)

Rise Time: <6 µsec.
(Any mode, 10% to 90%)

Slew Rate:

Dual mode, 4 or 8 ohms: >30 V/µsec
 Bridge mode, 8 or 16 ohms: >60 V/µsec

Damping Factor: (Dual mode, 8 ohms)

20 Hz - 1 kHz: >200
 20 kHz: >75

Crosstalk: < 75 dB
(Ref. 1 kHz, 0 dB = rated output power into 8 ohms, single channel operating)

Noise:

>100 dB below rated output power. (A-weighting filter, 8 ohms dual mode, 50/60 Hz ac line frequency)

Amplifier Protection: Shorted output terminals
 Over-temperature,
 Radio Frequency interference

Load Protection:

Startup/shutdown transients, DC faults, Subsonic signals

Cooling:

Heatsink: Thermally equalized 3/16 inch aluminum black anodized heatsink
 Fan: Thermostatically controlled dual speed fan. Approximately 50 CFM at low speed and 100 CFM at high speed. Ball bearing fan has minimum life rating of 50,000 hours at 25°C ambient temperature.

Output Topology: True complementary symmetry with grounded collectors. (Better heat transfer because no mica insulators are used.)

Output Type:

Dual mode: Each channel Unbalanced
 Bridge mode: Balanced

9441A Typical Performance Curves

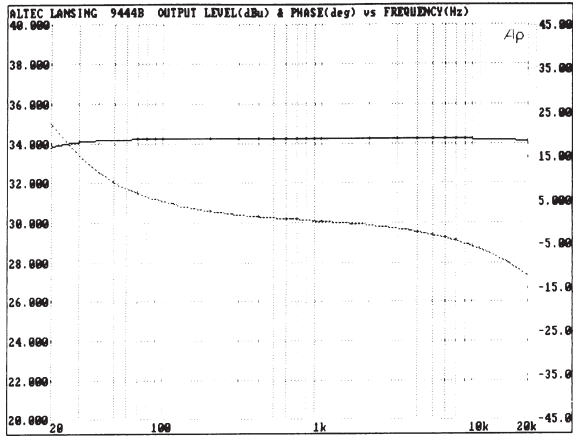


Figure 1. LEVEL (dBu) & Phase (deg) vs Frequency (Hz)

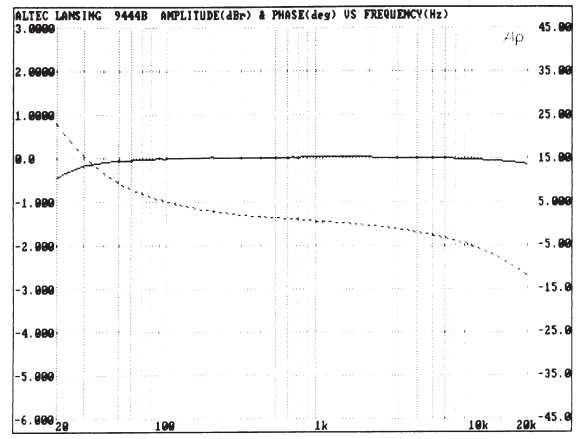


Figure 2. LEVEL (dBr) & Phase (deg) vs Frequency (Hz)

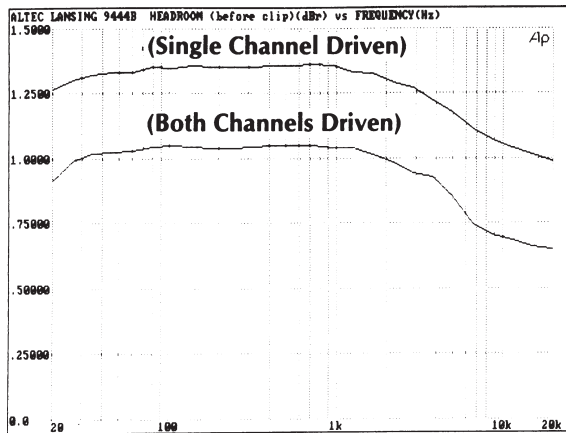


Figure 3. Headroom LEVEL (dBr) vs Frequency (Hz)

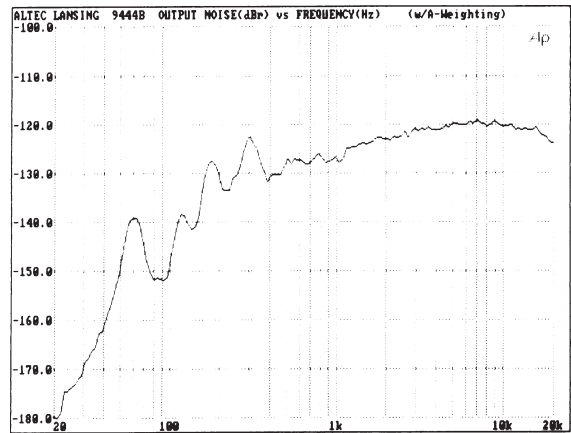


Figure 4. A-weighted Noise (dBr) vs Frequency (Hz)

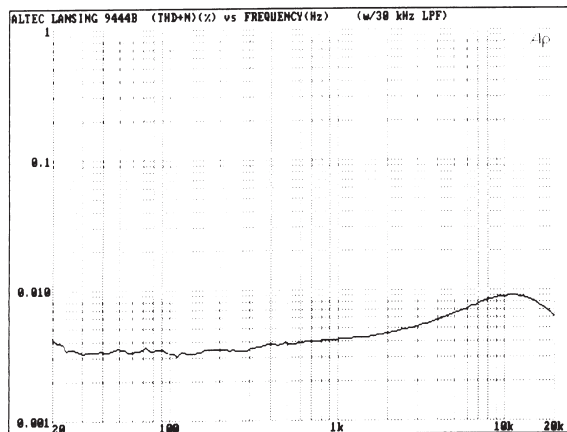


Figure 5. (THD+N) vs Frequency (Hz)

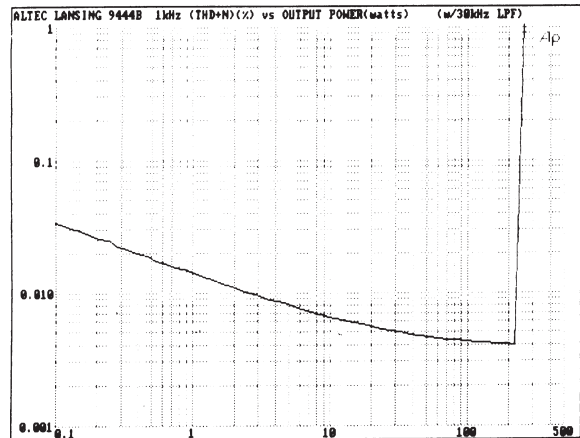


Figure 6. 1 kHz (THD+N) (%) vs Output Power (W)

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