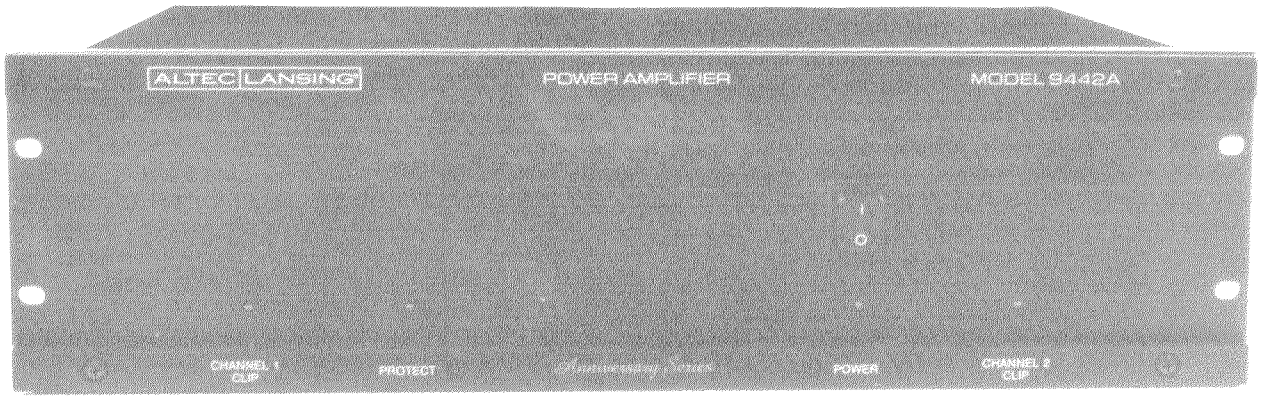
9442A AND 9442A/SA POWER AMPLIFIERS



DESCRIPTION

The ALTEC LANSING Model **9442A** and **9442A/SA** Anniversary Series Power Amplifiers utilize the same proven amplifier design concepts and attributes as their more powerful and highly successful brother, the **9444A.** Except for the addition of precision stepped attenuators, the **9442A/SA** is identical to the 9442A.

Each channel delivers 100 watts of continuous average power into 8 ohms or 150 watts into 4 ohms over the full audio frequency range. In the bridge mode, the amplifiers can deliver more than 300 watts at typically less than 0.05% THD.

Convection cooling is used for quiet operation. The massive heatsinks and associated control systems are optimized together for maximum performance and maximum protection. As a result, the amplifier runs cooler and better than most enabling it to operate under more adverse environmental conditions without failure. In a typical fixed installation, this means that the long term reliability is substantially increased.

The universal power transformer is as large as some used in amplifiers with twice the power rating. When combined with the 20,000 microfarads of capacitance, they can provide all the reserve power necessary in today's installations any where in the world.

Each channel is independently protected against:

- Over-temperature
- Excessive output voltage
- Excessive phase shift
- Radio frequency interference
- Shorted outputs

The load is protected from startup/shutdown transients, subsonic signals, low ac line voltage, and DC faults. When a problem is detected, the output relay automatically disconnects the load from the channel and illuminates the "Protect" LED on the front panel.

The **9442A** and **9442A/SA** have electronically balanced inputs and powered octal accessory sockets for plug-in transformers and electronic modules. The level controls are mounted on the rear panel to reduce the risk of "accidental" changes as well as the bridge switch. Two 70 volt output balancing transformers, models **15523A** (150 watt) and **15524A** (300 watt), and a 300 watt autoformer, model **15567A,** are also available.

The ALTEC LANSING Model **9442A** and **9442A/SA** Anniversary Series Power Amplifiers are the choice in professional installations which demand the highest quality at high power levels for extended periods of time.

SPECIFICATIONS

Conditions:

1. 1.0 dBu = 0.775 v rms.
2. Dual mode ratings are for each channel.
3. Both channels operating at rated output power unless noted.
4. 120 volt ac line voltage maintained throughout testing.

Continuous Rated Output Power:
(20 Hz - 20kHz at less than 0.1% THD, 30 kHz measurement bandwidth)

Dual mode, 4Ω:	150 watts/ch
Bridge mode, 8Ω:	300 watts
Dual mode, 8Ω:	100 watts/ch
Bridge mode, 16Ω:	200 watts

Maximum Midband Output Power:
(Ref. 1 kHz, 1% THD)

Dual mode, 4Ω:	200 watts/ch
Bridge mode, 8Ω:	400 watts
Dual mode, 8Ω:	125 watts/ch
Bridge mode, 16Ω:	250 watts

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

Power Bandwidth: 10 Hz - 50 kHz
(Ref. 1 kHz, +0/−3 dBr where 0 dBr = rated output power in any mode

Voltage Gain:
(Ref. 1 kHz)

Dual mode, 4Ω or 8Ω:	30 dB
Bridge mode, 8Ω or 16Ω:	36 dB

Input Sensitivity for Rated Output Power:
(Ref. 1 kHz)

Dual mode, 4Ω:	0 dBu (0.775 v rms)
Bridge mode, 8Ω:	0 dBu (0.775 v rms)
Dual mode, 8Ω:	+1.2 dBu (0.890 v rms)
Bridge mode, 16Ω:	+1.2 dBu (0.890 v rms)

Maximum Input Level: +20 dBu (7.775 v rms)
(Ref. 1 kHz)

Input Impedance:
(Ref. 1 kHz)

Balanced:	15kΩ
Unbalanced:	15kΩ (Non-inverting input)

Phase Response:
(any mode)

20 Hz:	<+25°
20 kHz:	>−25°

THD: <0.1%
(any mode, 30 kHz measurement bandwidth)

IMD (SMPTE 4:1): <0.1%
(any mode)

TIM (DIM 100): <0.1%
(any mode)

Rise Time: <5 μsec
(10% to 90%, any mode)

Slew Rate:

Dual mode, 4 or 8Ω:	>18 v/μsec
Bridge mode, 8 or 16Ω:	>36 v/μsec

Damping Factor:
(Dual mode, 8Ω)

20 Hz - 1 kHz:	>200
20 kHz:	>80

Crosstalk: >75 dBr
(ef. 1 kHz, 0 dBr = rated output power into 8 ohms, single channel operating)

Noise: >100 dB
(Below rated output power, A-weighting filter, any mode, 50/60 Hz ac line frequency)

Amplifier Protection:
Shorted outputs
Excessive output voltage
Over-temperature
RF interference
Excessive phase shift

Load Protection:
Startup/shutdown transients
DC faults
Subsonic signals
Low ac line voltage

Cooling: Convection

Output Topology: Tru complementary symmetry

Output Type:

Dual mode:	Unbalanced, each channel
Bridge mode:	Balanced

Output Deviced:

Total number:	8 deviced (both channels)
Pdmax rating:	150 watts
Vceo:	200 volts DC
Ic:	15 amps DC
Tjmax:	150°C

Controls and Switches:
Two input level controls (9442A) or
two switched attenuators (9442A/SA), rear
Mode switch, rear
Power switch, front

Switched Attenuator Step Sizes:
(9442A/SA only, from full clockwise position)

Click Position	
1 - 20:	1 dB steps (−20 B attenuation at 20)
20 - 25:	2 dB steps (−30 dB attenuation at 25)
25 - 26:	3 dB steps (−33 dB attenuation at 26)
26 - 27:	4 dB steps (−37 dB attenuation at 27)
27 - 28:	4 dB steps (−41 dB attenuation at 28)
28 - 29:	4 dB steps (−45 dB attenuation at 29)
29 - 30:	5 dB steps (−50 dB attenuation at 30)
30 - 31:	OFF (−∞ at 31)

Front Panel Indicators:
Power LED
Clip LED (x2)
Protect LED

Connections:

Input:	6 terminal barrier strip Female XLR (x2) Octal accessory socket (x2), powered with ±15 volts DC
Output:	4 terminal barrier strip
Power:	3 terminal IEC ac line receptacle

Power Requirements: 100, 120, 200, 220, or 240 vac, 50/60 Hz, 560 watts (at 120 vac)

Power Consumption/Heat Produced:
(Both channels operating in dual mode with 1 kHz input signal at stated output power into 4Ω loads)

1/3 max midband power:	560 watts/1.48 kBTU/hr
Rated output power:	750 watts/1.54 kBTU/hr
Max midband power:	850 watts/1.56 kBTU/hr

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

Dimensions: 5¼" H x 19" W x 11" D (13.3 cm H x 48.3 cm W x 27.9 cm D)

Weight (Net): 32 lbs. (14.5 kg)

Color: Black

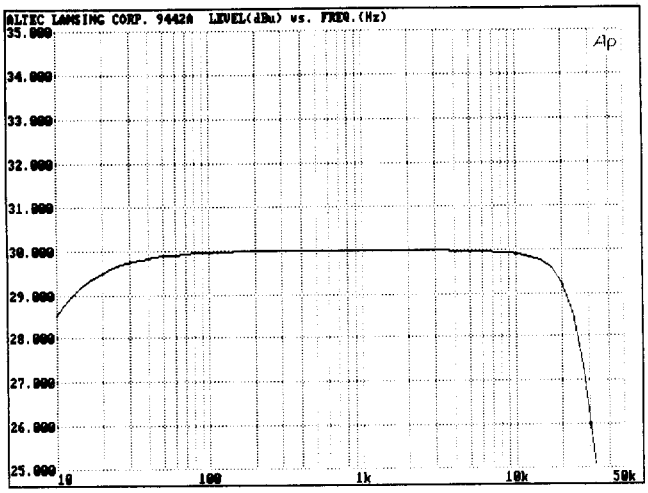
Standard Accessories:
- 4 - "U" jumper plugs for octal sockets (2 per socket installed)
- 1 - Operating Instructions and Service Manual
- 1 - Detachable power cord with 3 prong male plug

Optional Accessories:
- **14712A** Power Limiter
- **15515A** Input Bridging Transformer with Resistive Pad
- **15523A** 150 watt 70 volt Transformer
- **15524A** 300 watt 70 volt Transformer
- **15581A** 24 dB/oct Linkwitz-Riley Crossover
- **15594A-125** Low Pass Filter, 125 Hz
- **15594A-500** Low Pass Filter, 500 Hz
- **15594A-800** Low Pass Filter, 800 Hz
- **15594A-1250** Low Pass Filter, 1250 Hz
- **15595A-125** High Pass Filter, 125 Hz
- **15595A-315** High Pass Filter, 315 Hz
- **15595A-500** High Pass Filter, 500 Hz
- **15595A-800** High Pass Filter, 800 Hz
- **15595A-1250** High Pass Filter, 1250 Hz

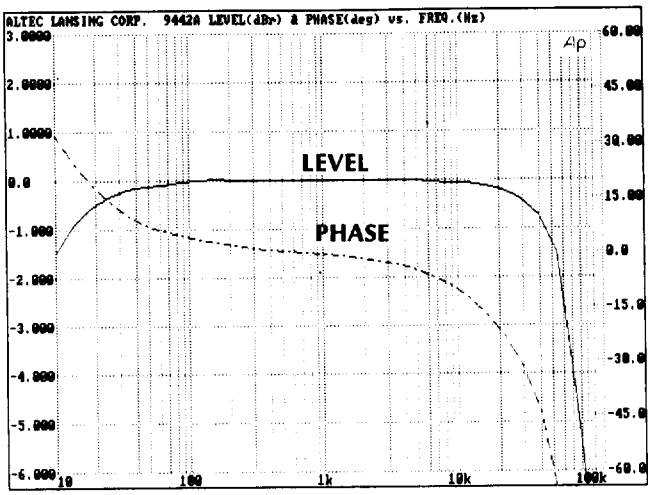
ALTEC LANSING continually strives to improve products and performance. Therefore, specifications are subject to change without notice.

9442A TYPICAL PERFORMANCE CURVES

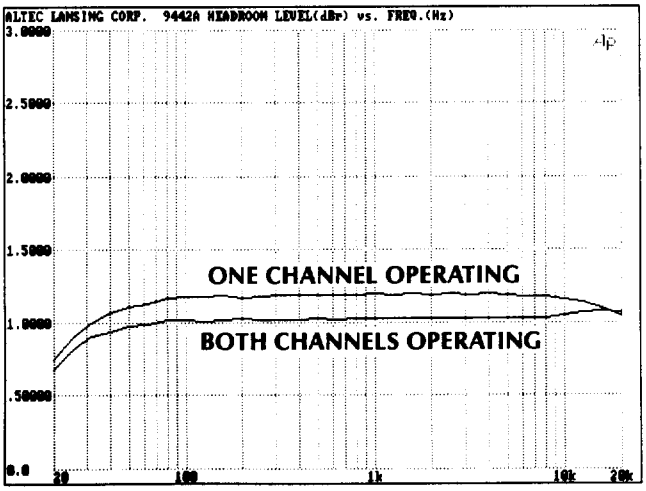
(One channel operating at 100 watts into 8 ohms unless noted)



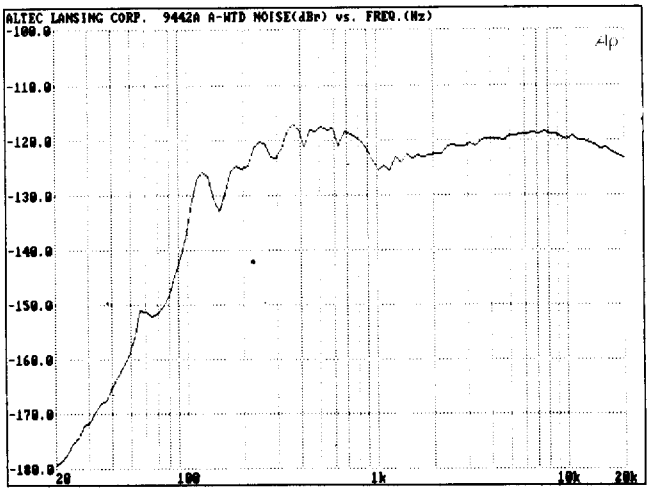
LEVEL(dBu) vs FREQ(Hz)



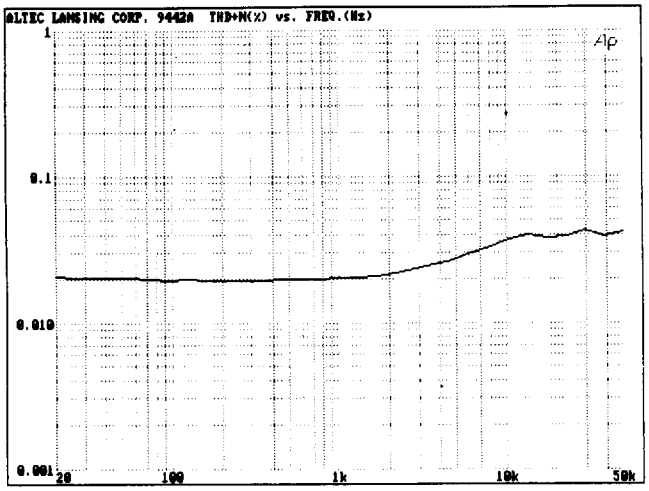
LEVEL(dBr) & PHASE(deg) vs FREQ(Hz)



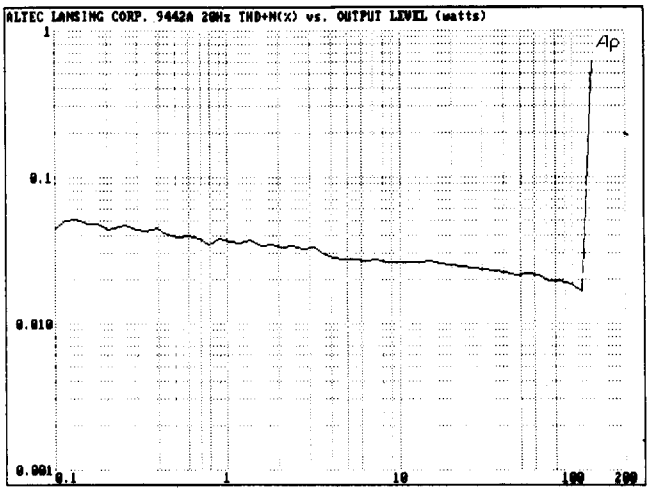
HEADROOM LEVEL(dBr) vs FREQ(Hz)



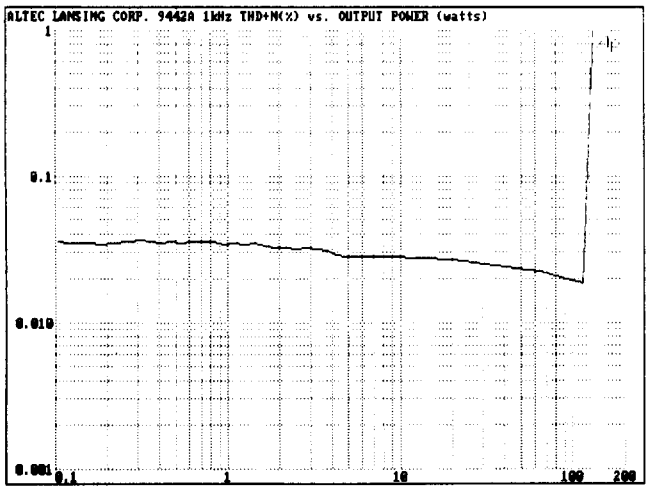
A-weighted NOISE(dBr) vs FREQ(Hz)



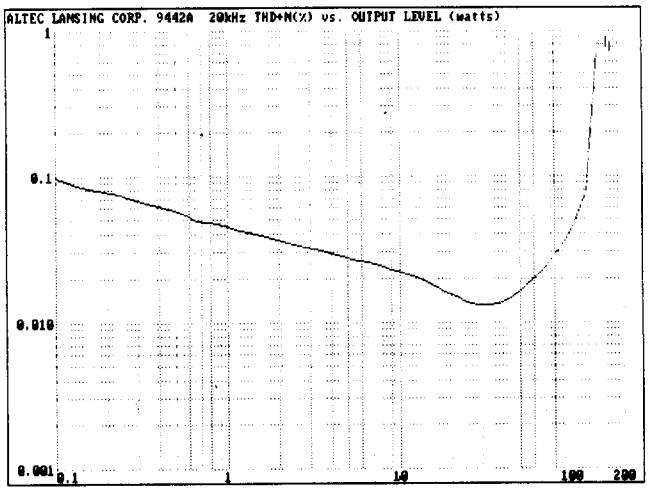
(THD + N)(%) vs FREQ(Hz)



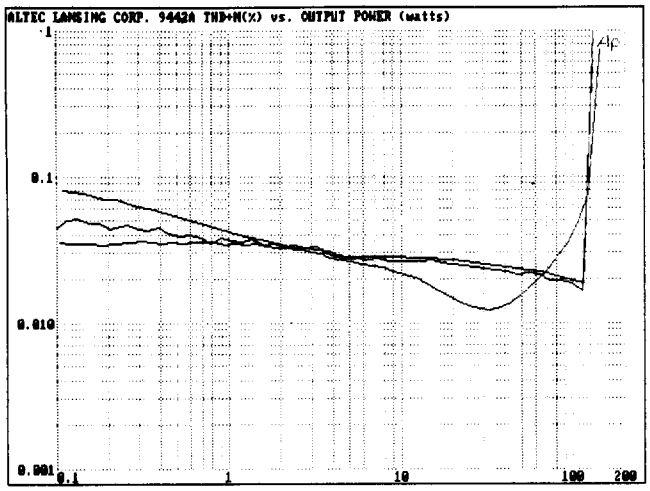
20Hz (THD + N)(%) vs LEVEL(watts)



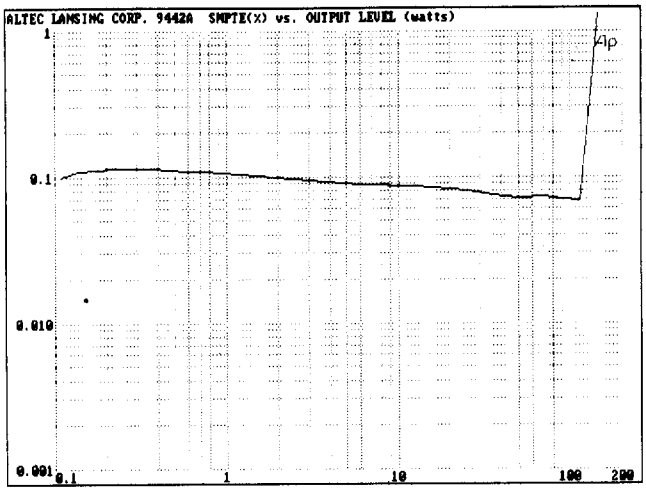
1kHz (THD + N)(%) vs LEVEL(watts)



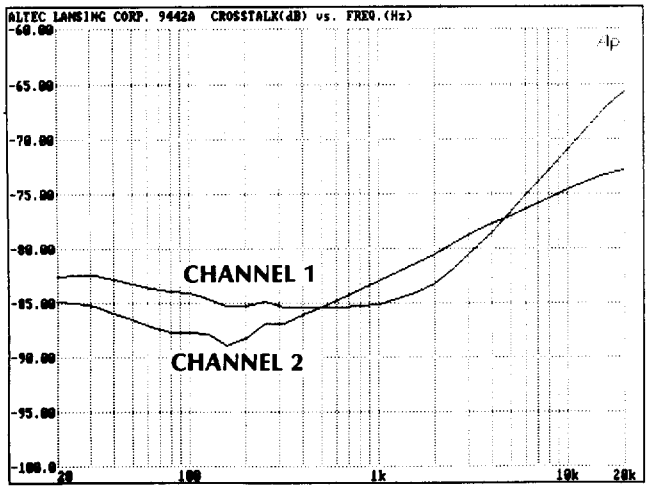
20kHz (THD + N)(%) vs LEVEL(watts)



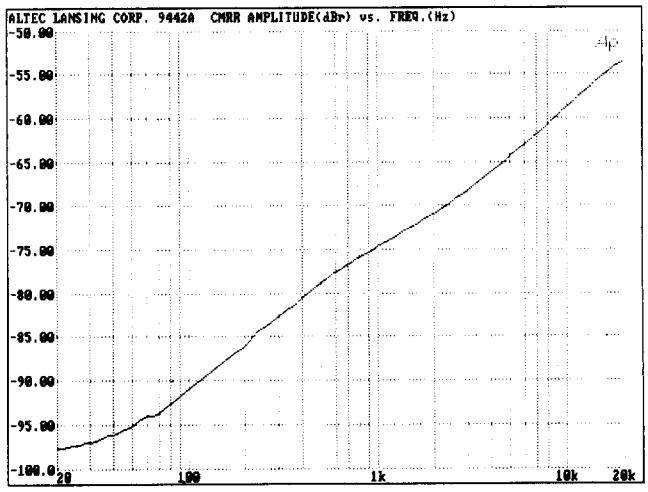
COMPOSITE 20Hz, 1kHz & 20kHz (THD + N)(%) vs LEVEL(watts)



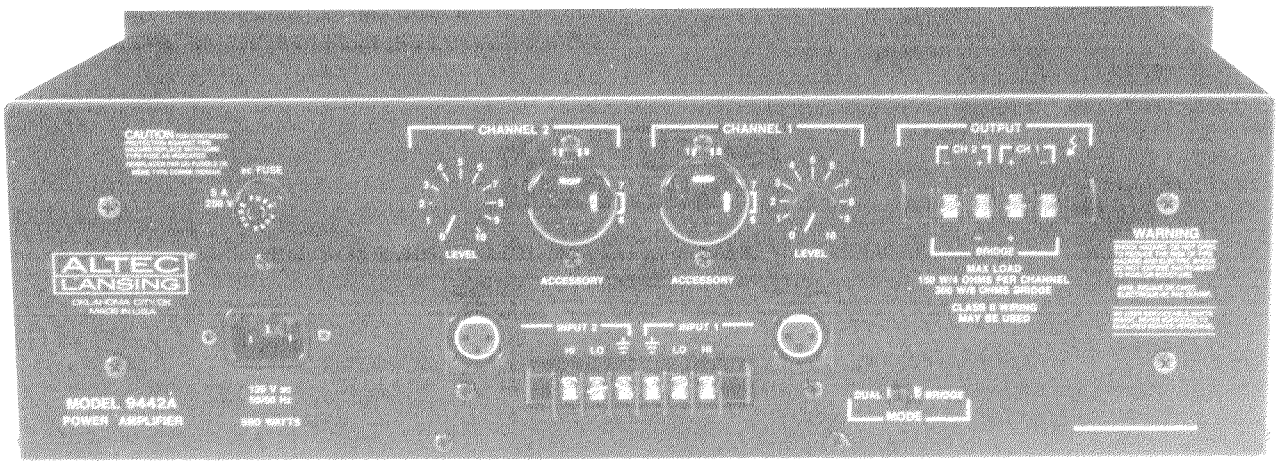
SMPTE DISTORTION(%) vs LEVEL(watts)



CROSSTALK(dBr) vs FREQ(Hz)



Common Mode Rejection Ratio, CMRR, (dBr) vs FREQ(Hz)



ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The power amplifier shall be a dual channel model of solid state design employing true complementary symmetry output circuitry and capable of operating from a 120/240 vac, 50/60 Hz line. The amplifier shall contain sensing circuitry to provide protection against over-temperature, shorted outputs, excessive output voltage, radio frequency interference, and excessive output phase shift. The load shall be similarly protected against subsonic signals, startup/shutdown transients, low ac line voltage, and DC faults.

Rear mounted panel controls shall include a two position mode switch for selecting between the dual monophonic mode or the bridged monophonic mode, and individual input level controls or precision switched attenuators. 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 a barrier strip connector.

Front panel indicators shall include an illuminated power on/off indicator, individually illuminated clipping ("CLIP") indicators, and an illuminated protection circuit activation ("PROTECT") indicator. The front panel control shall be the power on/off switch.

The power amplifier shall meet the following performance criteria. Maximum input voltage: 7.775 v rms. Input sensitivity for rated output power into 4 ohms: 0.775 v rms. Rated output power: 150 watts per channel into 4 ohms from 20 Hz to 20 kHz at less than 0.1% THD; 100 watts per channel into 8 ohms from 20 Hz to 20 kHz at less than 0.1% THD; 200 watts into 16 ohm bridged load from 20 Hz to 20 kHz at less than 0.1% THD; and 300 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 30 dB. Hum and noise: at least 100 dB (A-wtd) below rated output power. Frequency response: 20 Hz to 20 kHz, ±1 dB 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 load. Intermodulation distortion (SMPTE 4:1): less than 0.1%. Transient intermodulation distortion (DIM 100): less than 0.1%. Crosstalk: less than 75 dB below rated output power. Operating temperature range: up to 60°C (140°F) ambient. Dimensions: 5¼" H x 19" W x 11" D. Net weight: 32 pounds. Color: Black. Enclosure: rack mounted chassis; 16 GA steel with 3/16" 6061-T6 aluminum front panel.

The power amplifier shall be the ALTEC LANSING Model **9442A** or the ALTEC LANSING Model **9442A/SA.**

ALTEC LANSING®

P.O. BOX 26105, OKLAHOMA CITY, OKLAHOMA 73126-0105, U.S.A.

PRINTED IN U.S.A. 189 3.5M

AL-2440
42-07-026815