

F E A T U R E S

MX 2000a



1000 watts per channel at 2 ohms

725 watts per channel at 4 ohms

High efficiency, 2-step output circuit for improved thermal performance and lower AC current consumption

Dual mono configuration— independent power supply on each channel, for greater reliability

Quiet 2-speed fan

Independent DC, sub audio speaker protection & thermal overload protection on each channel

Open Input Architecture™ –Level 1

Recessed calibrated front gain controls for easy access & protection from damage

Patented Output Averaging™ short-circuit protection

Comprehensive LED status arrays

1/4" RTS and barrier balanced input connectors

Mono-bridging/parallel switch

"Touch proof" binding post output connectors

THX approved for cinema applications

3 year warranty PLUS optional 3 year extended service contract

The **MX 2000a** is a high power, low profile professional power amplifier with advanced features and a flexible input. It delivers tremendous power in only two rack spaces, providing high level performance under the most demanding conditions.

A stepped linear output circuit combines high power with high efficiency to provide greater average and dynamic audio performance, while reducing normal system cooling and AC require-

ments by greater than 40%. An automatic two-speed fan matches cooling capacity with thermal requirements.

The rear panel uses Level 1 of QSC's exclusive Open Input Architecture™ which allows the use of optional input connectors, input transformers, cinema crossovers, power limiters, precision attenuators, and other signal processing cards as they become available.

LOAD	FTC CONTINUOUS AVERAGE	EIA WATTS
	<i>20Hz-20kHz, 0.1% THD</i>	<i>1kHz, 1% THD</i>
Stereo (W/Ch)		
8Ω	450 watts	475 watts
4Ω	650 watts	725 watts
2Ω		1000 watts*
Mono-Bridged		
16Ω	900 watts	950 watts
8Ω	1300 watts	1450 watts
4Ω		2000 watts*

*typical



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MXa Series

OUTPUT POWER (per channel)

8 ohms, 20 Hz to 20 kHz, 0.1%	THD, 450 watts
8 ohms, 1kHz, 1%	THD, 475 watts
4 ohms, 20 Hz to 20 kHz, 0.1%	THD, 650 watts
4 ohms, 1 kHz, 1%	THD, 725 watts
2 ohms, 1 kHz, 1%	THD, 1000 watts*

OUTPUT POWER (bridged mono)

8 ohms, 20 Hz to 20 kHz, 0.1%	THD, 1300 watts
4 ohms, 1 kHz, 1%	THD 2000 watts*

**typical*

DISTORTION:

SMPT-E-IM, less than 0.05%

FREQUENCY RESPONSE:

20 Hz to 20 kHz, ± 0.15 dB
8 Hz to 100 kHz, $+0/-3$ dB

DAMPING FACTOR:

Greater than 200

DYNAMIC HEADROOM: 3 dB at 4 ohms

NOISE: 100 dB below rated output (20 Hz to 20 kHz)

SENSITIVITY: 1.07 Vrms for rated power (8 ohms)

VOLTAGE GAIN: 56 (35 dB)

INPUT IMPEDANCE: 10K unbalanced, 20K balanced

CONTROLS:

Front: AC Switch, Ch 1 and Ch 2 Gain Knobs
Back: Parallel/Stereo/Bridge Switch

INDICATORS:

PWR-ON:	Green LED
SIGNAL PRESENT:	Yellow LED
CLIP:	Red LED
PROT:	Red LED

CONNECTORS: (each channel)

Input: Barrier strip and 1/4" RTS
Speakers: "Touch proof" binding posts

COOLING: Two-speed fan, rear-to-front air flow.

AMPLIFIER PROTECTION:

Full short circuit[†], open circuit, ultrasonic, and RF protection. Stable into reactive or mismatched loads.

LOAD PROTECTION:

On/off muting. DC-fault load grounding relay with internal fault fuses.

OUTPUT CIRCUIT TYPE:

Complementary linear outputs, 2 step high efficiency circuit.

POWER REQUIREMENTS: 100,120, 240 Vac, 50-60 Hz

POWER CONSUMPTION:

Normal Operation: 4 ohms per channel: less than 12 amps, 120 Vac (1440 VA) maximum (full power, 2 ohms per channel): 37 amps, 120 Vac (4450 VA)

DIMENSIONS:

19.0" (48.3 cm) rack mounting
5.25" (13.3 cm) tall (3 spaces)
17.9" (45.5 cm) deep (rear support ears)

WEIGHT: 54 lbs (24.4 kg) net, 62 lbs (28.0 kg) shipping

[†]Output Averaging™ short circuit protection (US Patent 4,321,554)
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The amplifier shall contain all solid-state circuitry, using complementary silicon output devices. The amplifier shall exceed the efficiency of an ordinary class-B linear output circuit. Overall electrical efficiency, with four or eight-ohm loads, shall exceed 35% at 1/3 power and 29% at 1/8 power. The amplifier shall operate from 50-60 Hz AC power, with internal taps for selecting voltages 100,120, or 220-240 Vac. The amplifier shall operate from a normal household AC outlet, drawing less than 1440 VA when driven with random program material at 1/8 rated power into four ohm loads. The amplifier shall be supplied with a single molded AC cord having an appropriate AC plug for the intended operating voltage.

The amplifier shall employ forced-air cooling with a two speed fan for minimum acoustic noise. Air flow shall be from rear to front to avoid temperature rise inside the rack. Rack mounting shall be possible without clearance necessary between amplifiers for ventilation. The amplifier shall be capable of continuous operation at 1/8 power, into four-ohm loads, for ambient temperatures up to 104° F (40° C).



The amplifier shall contain two independent channels, with separate AC transformers, power supplies, and protection systems. All protection systems shall be self resetting upon removal of fault, and the remaining channel shall continue to operate. Each channel shall have independent protective circuitry against open circuit, short circuit, or mismatched loads. Each channel shall monitor temperature of its heat sink and power transformer, and shall trigger fan speed boost, and if necessary, signal muting to prevent excessive temperature rise. Each channel shall have on-off muting, acting for three seconds after turn-on, and within 1/4 second after turn-off or loss of AC power. Each channel shall have DC fault protection for the load, consisting of a load-grounding relay with fault fusing to interrupt power. Fault fuses shall be adequately large to prevent nuisance blowing at any output power the amplifier is capable of delivering.

Each channel shall have the following controls and displays: A front panel Gain control, a green LED power-on indicator; one yellow LED signal indicator, triggering at -30 dB; a red LED showing true amplifier clipping; and a red LED which indicates muting when illuminated.

The output connectors for each channel shall include a "touch proof" binding post.

The input connectors shall be mounted on a removable panel to permit upgrades. The standard input panel shall provide barrier strip and 1/4" connections for each channel. Inputs shall be electronically balanced, with a minimum impedance of 10 kilohms per side, and a common mode rejection of at least 50 dB from 20 Hz to 20 kHz. The standard input panel shall contain switches for mono-bridging and parallel inputs, and solder patterns for input isolation transformers, gain reduction resistors, and first-order high and low pass filters.

The input panel shall have enough space behind it to contain a circuit board measuring up to 5.9" wide by 4.1" deep. The multi-pin connector to the amplifier circuitry shall supply positive and negative DC supply currents, and for each channel, balanced input signals, output signal, and clip/protect signal.

Each channel shall be capable of meeting the following performance criteria with both channels driven: Sine-wave output power of 450 watts into eight ohms, and 650 watts into four ohms, 20Hz to 20kHz, with less than 0.1% THD. Frequency response at 3dB below rated power shall be 20Hz to 20kHz within 0.15 dB. The voltage gain shall be 56, equivalent to 35dB, and the input sensitivity shall be 1.07 Vrms. The signal to noise ratio over the range of 20 Hz to 20 kHz shall exceed 100 dB unweighted. IHF damping factor shall exceed 200.

The amplifier chassis shall occupy two rack spaces, with provision for securing the rear corners. Depth from mounting surface to tips of rear supports shall be 17.9" (45.5 cm).

Weight shall not exceed 54 lbs. (24.4 kg.). The amplifier shall be the QSC Audio Products Model MX 2000a.



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