

SERIES THREE AMPLIFIERS FROM QSC

# MODEL 3500

The QSC Series Three Model 3500 is designed for very high power audio applications where reference quality audio reproduction must be combined with rugged low profile design. Engineered specifically for recording studios, touring systems and engineered sound, this amp is well suited for any high quality professional audio application. Because of the very high output power, this amplifier is an excellent choice for driving large full range systems or bass enclosures in multi-way systems.

The amplifier is passively cooled and uses a high efficiency output circuit to reduce operating temperatures. The dual mono configuration and front removable channel module design are important features for those interested in very high reliability and minimum down time. A com-

prehensive interface panel is provided to assure proper connection to any professional system.

#### Features:

- Low Profile Chassis
- 300 watts per channel at 8 ohms
- 450 watts per channel at 4 ohms
- Dual Mono Configuration
- Front Removable Channel Modules
- Three Year Warranty
- Precision 31 Step Detented Gain Controls
- Passive Cooling with High Efficiency Output Circuit
- Comprehensive Interface Panel
- Passive and Active Accessory Input Modules
- Automatic Back-up in Bridged Mono Mode





## SPECIFICATIONS

### MODEL 3500

#### OUTPUT POWER (per channel)

Continuous Average Output Power both channels driven		Bridged-mono operation	
8 ohms, 20-20kHz	0.1% THD 300	16 ohms, 20-20kHz	0.1% THD 600
1kHz	1% THD 350	1kHz	1% THD 700
4 ohms, 20-20kHz	0.1% THD 450	8 ohms, 20-20kHz	0.1% THD 900
1kHz	1% THD 560	1kHz	1% THD 1120
2 ohms, 1kHz	1% THD 700	4 ohms, 1kHz	1% THD 1400

<b>DISTORTION</b>	THD - 20-20kHz from 250 milliwatts to rated power shall be less than 0.1%, 0.015% typical. SMPTE-IMD less than 0.020% 250 milliwatts to rated power.
<b>FREQUENCY RESPONSE</b>	20-20kHz $\pm 0.1$ dB 8-300kHz $+0/-3$ dB
<b>DAMPING FACTOR</b>	Greater than 200
<b>DYNAMIC HEADROOM</b>	3.0dB @ 4 ohms
<b>NOISE</b>	-100dB 20-20kHz
<b>SENSITIVITY</b>	1V RMS for rated power (8 ohms)
<b>INPUT IMPEDANCE</b>	20k balanced or unbalanced
<b>CONTROLS</b>	Front - Flush detented gain control - Recessed AC switch and AC circuit breaker for each channel. Rear - Mono-bridging and accessory module switches.
<b>INDICATORS</b> (per channel)	Bi-color LED indicating DC power - OK/Protect mode - LED Clip Indicator - -30dB and -6dB signal level indicators - Flashing overtemp indicators.
<b>CONNECTORS</b> (per channel)	XLR, $\frac{1}{4}$ " (ring, tip, sleeve) and 3 terminal barrier strip inputs wired in parallel - 2-terminal barrier strip and 5-way binding post outputs wired in parallel - Octal input sockets provided for input transformers or active accessories - Ground lift terminal block.
<b>COOLING</b>	Passive - combined with high efficiency output stage for reduced operating temperatures - Unique circuit configuration allows direct metal mounting of output devices for reduced thermal stress from short-term peaks.
<b>AMPLIFIER PROTECTION</b>	Indefinite short circuit, open circuit, over-temp, ultrasonic and rf protection - Stable into reactive and mismatched loads - Inputs protected from overload - All protection completely independent on each channel. *Output Averaging™ Short Circuit Protection (U.S. Pat. 4,321,554)
<b>LOAD PROTECTION</b>	Individual channel Load Grounding™ output relays provide DC Fault, 3 second delayed turn on (transient protection), and excessive low frequency protection - Instant turn-off, pop suppression and power interrupt protection is also provided.
<b>OUTPUT CIRCUIT TYPE</b>	Full complementary two-level high efficiency
<b>OUTPUT DEVICES (Total)</b>	24
<b>POWER SUPPLY</b>	Two completely separate power supplies including AC switches and AC circuit breakers, only AC cord is common.
<b>POWER REQUIREMENTS</b>	120V, 60Hz 12A.
<b>DIMENSIONS</b>	Faceplate 19" x 3.5" Depth (behind mtg. with rear support) 17.9" Depth (chassis) 15.9"
<b>WEIGHT</b>	Shipping (lbs.) 55 Net (lbs.) 50

Specifications subject to change without notice.

## ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The power amplifier shall contain all solid-state circuitry, using complementary silicon semiconductors. It shall be capable of operating from 120V, 60Hz AC mains.

The amplifier shall contain two fully independent channels, with separate AC switches, circuit breakers, power transformers, and protective systems. Each channel shall have independent protective circuitry against open-circuit, short-circuit or mismatched loads; independent thermal warning and shutdown circuits, and independent load protection circuits for turn on/off transients including momentary AC dropouts and DC faults within or preceding the amplifier. All protective circuits shall be self-resetting. The remaining channel shall continue to operate, in stereo or bridged-mono mode, after failure of either channel.

Each channel of the amplifier shall be capable of meeting the following performance criteria, with both channels driven simultaneously:

Output power into 8 ohms 300 watts, from 20-20kHz, with less than 0.1% distortion.  
Output power into 4 ohms 450 watts, from 20-20kHz, with less than 0.1% distortion.  
Output power into 2 ohms 700 watts, at 1kHz, with less than 1% distortion.  
Frequency response shall be 20-20kHz with less than 0.1dB deviation.  
The voltage gain shall be 34dB at full Gain.

The power gain shall be 65dB at full Gain.

The input sensitivity for rated 8-ohm power shall be 1V RMS.

Balanced bridging input circuitry shall be standard, and the amplifier shall meet all performance criteria in the balanced or unbalanced mode.

Input impedance shall be 20k ohms balanced or unbalanced.  
Noise level shall be at least 100dB below rated power, at full Gain.

IHF damping factor shall exceed 200.

The amplifier shall be passively cooled, with no fans or moving parts.

Each channel shall have the following controls functions, and connectors:

31-step Gain control, with 1dB steps over the highest 14dB of adjustment range, with accuracy within 1dB;

Green/Red LED for power/protect indication;

Yellow LED signal presence indicators for outputs 6dB and 30dB below rated power;

Red LED indicator for any output clipping greater than 0.1%;

Flashing red LED indicator for heat sink temperatures within 10°C of thermal shutdown.

Balanced/Unbalanced input jacks of the  $\frac{1}{4}$  inch ring-tip-sleeve, female XLR, and barrier strip screw terminal type;

Speaker connections of the five-way binding post and barrier strip screw terminal type;

An octal socket with DC power for passive and active plug-in input accessory modules.

8-way microswitches for octal socket bypass, mono-bridged mode, cross-connection of channels and XLR input polarity.

Each channel shall be front-removable with the amplifier mounted in a rack and without disconnecting the input/output cables. All active components, except AC power transformer, AC switch, circuit breaker, and input/output connectors, shall be mounted on the removable channel module. Module connectors shall be flexible to withstand shocks and vibration.

The amplifier chassis shall have a permanently attached AC cord, and a ground-lift jumper which permits the separation of circuit and chassis grounds if required.

The chassis shall have front and rear 19" rack supports, and shall occupy two rack spaces (3.5")  
Chassis depth, including rear supports, shall be 17.9 inches.

Weight shall be 50 lbs.

The power amplifier shall be the QSC Audio Products Model 3500



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