Model 1800-VI Professional Stereo Power Amplifier

General Description

The Bose® Model 1800-VI professional stereo power amplifier is a high performance amplifier designed for use with all Bose Professional Products loudspeaker systems. The unit offers high power in a rugged, lightweight (33 lb) package that is only two rack space units (3.5") high. The amplifier is suitable for portable or permanent installations.

The 1800-VI amplifier is a high powered, two channel amplifier delivering 450 watts per channel into 8Ω, 600 watts per channel into 4Ω, or 1400 watts bridged into 8Ω. The 1800-VI amplifier is designed to accept Active Equalization plug-in circuit cards for all Bose Professional Products loudspeakers, eliminating the need for a separate controller.

The Model 1800-VI amplifier includes the standard EQ module, designed to hold up to two EQ cards. An optional ACM-1 amplifier control module, which also holds up to two EQ cards, is designed to establish network control of the amplifier. This network link makes remote operation of signal level and power on/off functions possible. The module also provides amplifier monitoring capability. Using the graphical user interface of the ACM-1 module software, settings like amplifier output, output load, and temperature can be checked routinely.

The Model 1800-VI amplifier accepts both balanced and unbalanced inputs from TRS, XLR or stripped wire connections. The rear panel allows for an unused parallel input or the actively equalized line level output to be connected to another device.

System Configuration

Model 1800-VI amplifier detailed installation and operating instructions are provided in the *Model 1800-VI and 1600-VI Professional Stereo Power Amplifier Owner's Guide*.

Technical Information

Power Output:
Continuous Average Output Power, both channels driven:

450 watts per channel into 8Ω from 20Hz to 20kHz, with no more than 0.2% THD

600 watts per channel into 4Ω from 20Hz to 20kHz, with no more than 0.2% THD

Bridged-mono operation:

1400 watts into 8Ω from 20Hz to 20kHz, with less than 0.2% THD

Voltage Output:
61.6V line voltage per channel into 8Ω
49.0V line voltage per channel into 4Ω

Dynamic Headroom:
1.0dB nominal

Power Bandwidth:
5Hz to 40kHz (+0dB, -3dB)

Frequency Response:
20Hz to 20kHz (±0.75dB)

Channel Separation:
(without Bose Input Module)
> 70dB @ 1kHz
> 60dB @ 10kHz

(with Bose Input Module, no EQ cards)
> 65dB @ 1kHz
> 55dB @ 10kHz

Input Impedance:
25kΩ unbalanced, each leg to ground
50kΩ balanced

Sensitivity:
High: 0.775V rms for rated power into 4Ω @ 1kHz
32mV rms for 1W into 4Ω @ 1kHz

Low: 1.5V rms for rated power into 4Ω at 1kHz
61mV rms for 1W into 4Ω @1kHz

Gain:
High: 36.0dB (±0.5dB)
Low: 30.3dB (±0.5dB)

Input Overload:
+18dBu

IM Distortion:
< 0.1%

THD:
@ 0.775V Sensitivity: < 0.2%
@ 1.5V Sensitivity: < 0.1%

Signal-to-Noise Ratio:
>100dB, A-weighted, referenced to rated power into 4Ω (High gain)

> 78dBW, A-weighted, referenced to 1W into 4Ω (High gain)

Slew Rate:
10V/µS (Bandwidth limited)

CMRR:
> 80dB @ 1kHz (without Bose Input Module)

Power Consumption:
100W at idle
800W with musical program
1500W at full power into 8Ω (continuous)
2400W at full power into 4Ω (continuous)

Power Requirements:
120VAC/50-60Hz (USA and Canada)
230VAC/50-60Hz (Europe/UK)
240VAC/50-60Hz (Australia)
100VAC/50-60Hz (Japan)

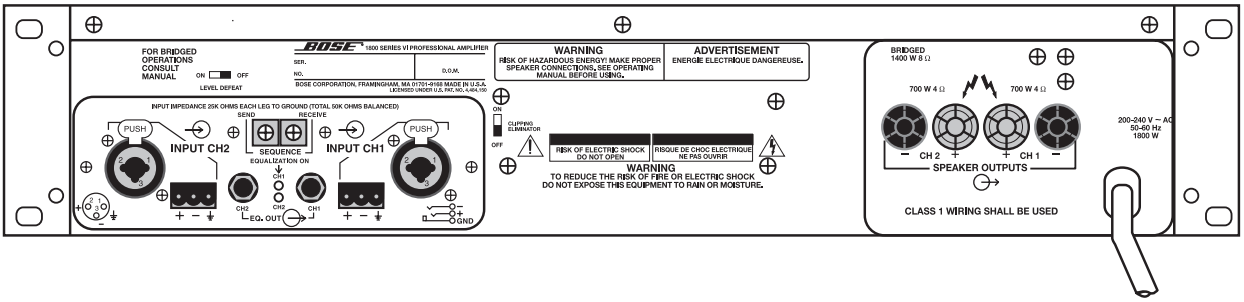
Fusing:
15 Amp slo-blo (120V/60Hz)
8 Amp slo-blo (230V/50Hz)

Display:
7 LED indicators per channel:
1 green READY, 5 yellow SIGNAL,
1 red CLIP/PROTECT

Size (H x W x D):
3.5" (2U) x 19" x 13.25"
89 mm x 483 mm x 337 mm

Net Weight:
33 lb (15 kg)

Shipping Weight:
39 lb (17.7 kg)



Optional Equalizer Card Information

The Model 1800-VI is available with optional Bose® circuit cards providing active equalization for all Bose Professional Products loudspeaker systems.

Each channel has its own discrete circuit card input slot. Therefore, a single amplifier can drive one channel of 402® loudspeakers and another channel of 502® loudspeakers, for example.

Active equalization plug-in circuit cards provide proper equalization for all Bose Professional Products loudspeakers without use of a separate controller. A Line Level EQ out is also provided to connect additional 1800-VI amplifiers without the need for extra EQ circuit cards.

Engineers' and Architects' Specifications

The Model 1800-VI amplifier shall deliver 450 watts of continuous power, both channels driven, into 8Ω with less than 0.2% distortion from 20Hz to 20kHz. The amplifier shall deliver 600 watts of continuous power, both channels driven, into 4Ω with less than 0.2% distortion from 20Hz to 20kHz. In bridged-mono operation, the amplifier shall deliver 1400 watts of continuous power into 8Ω with less than 0.2% distortion.

There shall be two parallel input connectors for each of the two input channels. One of the input connectors shall be capable of connecting to both a ¼" TRS and an XLR connector (only one input connector can be accepted at one time). The second input connector shall consist of a quick connect terminal block connector. The two output multi-way binding posts shall be capable of accepting either spade-lug, bare wire, or banana connections. There shall be two ¼" TRS line level equalized signal outputs, corresponding to the two channels. This signal shall be accessed after the internal equalization card (if installed) and prior to the internal amplification section.

The channel separation for the two channels shall be greater than 65dB @ 1kHz and greater than 55dB @ 10kHz. The dynamic headroom shall be greater than 1.0dB. The power bandwidth, from 5Hz to 40kHz, shall be +0dB, -3dB. The frequency response, from 20Hz to 20kHz, shall be ±0.75dB. The damping factor shall be at least 170.

The input impedance shall be 25kΩ, unbalanced, each leg to ground and 50kΩ balanced. The high sensitivity shall be 0.775 volts rms for rated power into 4Ω @ 1kHz, and 32mV rms for 1 watt into 4Ω @ 1kHz. The low sensitivity shall be 1.5 volts rms for rated power into 4Ω @ 1kHz and 61mV rms for 1 watt into 4Ω @ 1kHz.

The gain shall be 36.0dB, ±0.5dB with the high input sensitivity configuration. The gain shall be 30.3dB, ±0.5dB with the low input sensitivity configuration.

The amplifier shall consume 1500 watts of continuous power into 8Ω and 2400 watts into 4Ω. The unit shall be 3.5" (H) x 19" (W) x 13.25" (D) (89 mm x 483 mm x 337 mm). The net weight shall be 33 lb (15 kg).

For 70V or 100V Operation

When using a single channel of the 1800-VI amplifier to drive a 70-volt or 100-volt line:

Speaker Tap Settings:	32W		25W		16W		8W		4W		2W	
Line:	70V	100V	70V	100V	70V	100V	70V	100V	70V	100V	70V	100V
Derated Power (watts per speaker)	25	12	20	10	12.5	6.25	6.3	3	3.1	1.5	1.6	0.8
Maximum # of speakers on the line	15	30	20	40	30	60	60	120	120	240	235	480

Regulatory Information

The Model 1800-VI amplifier complies with these agency regulations: UL6500 (ETL marking), CSA C22.2 No.1, EN60065:1985, and EU emission and immunity regulations for CE marking.

Warranty Information

The Model 1800-VI amplifier is covered by a 5-year, transferable limited warranty.

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