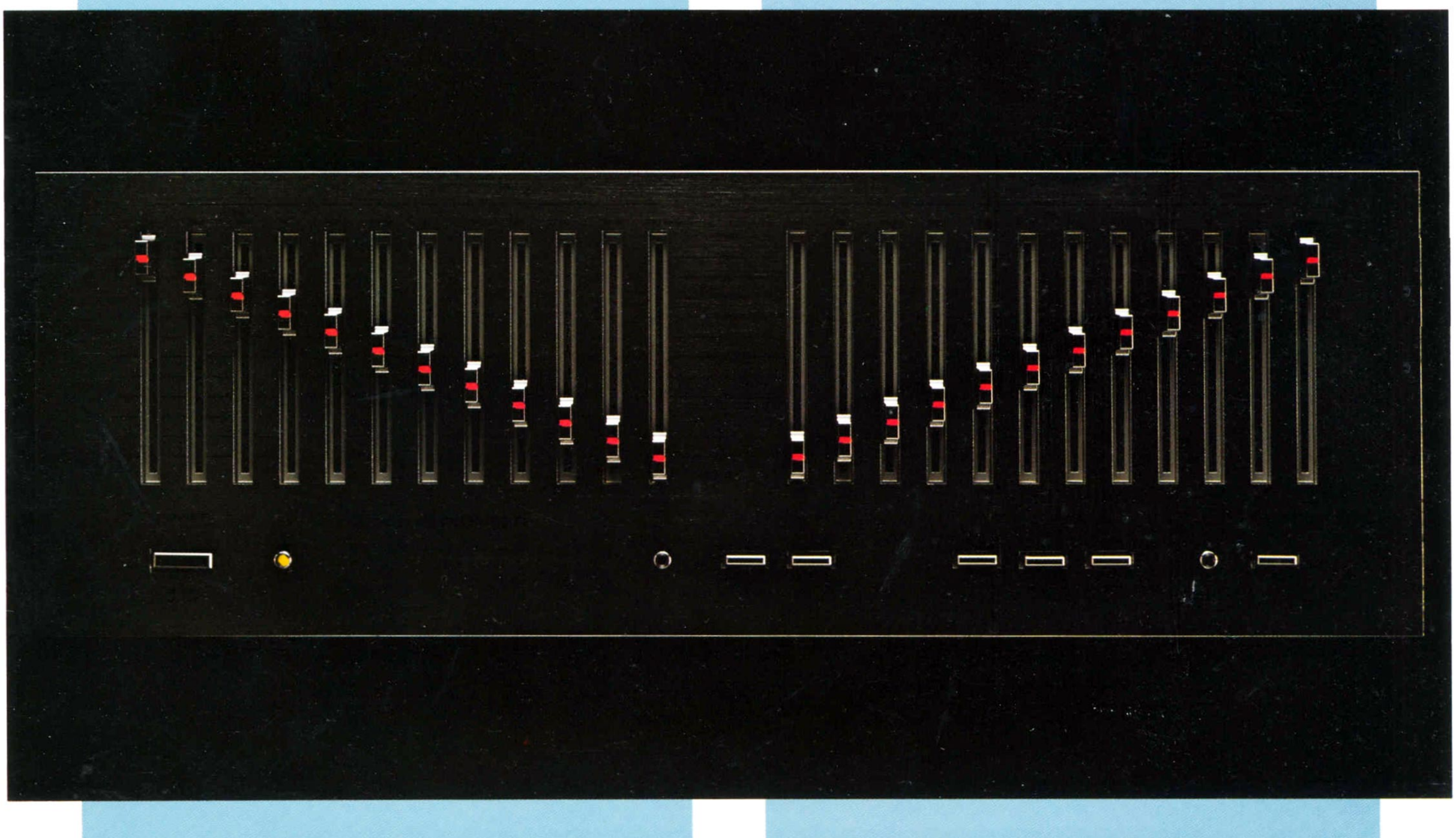
PIONEER SG-9800

STEREO GRAPHIC EQUALIZER — 12 BAND CONTROL (±10dB) IN EACH CHANNEL

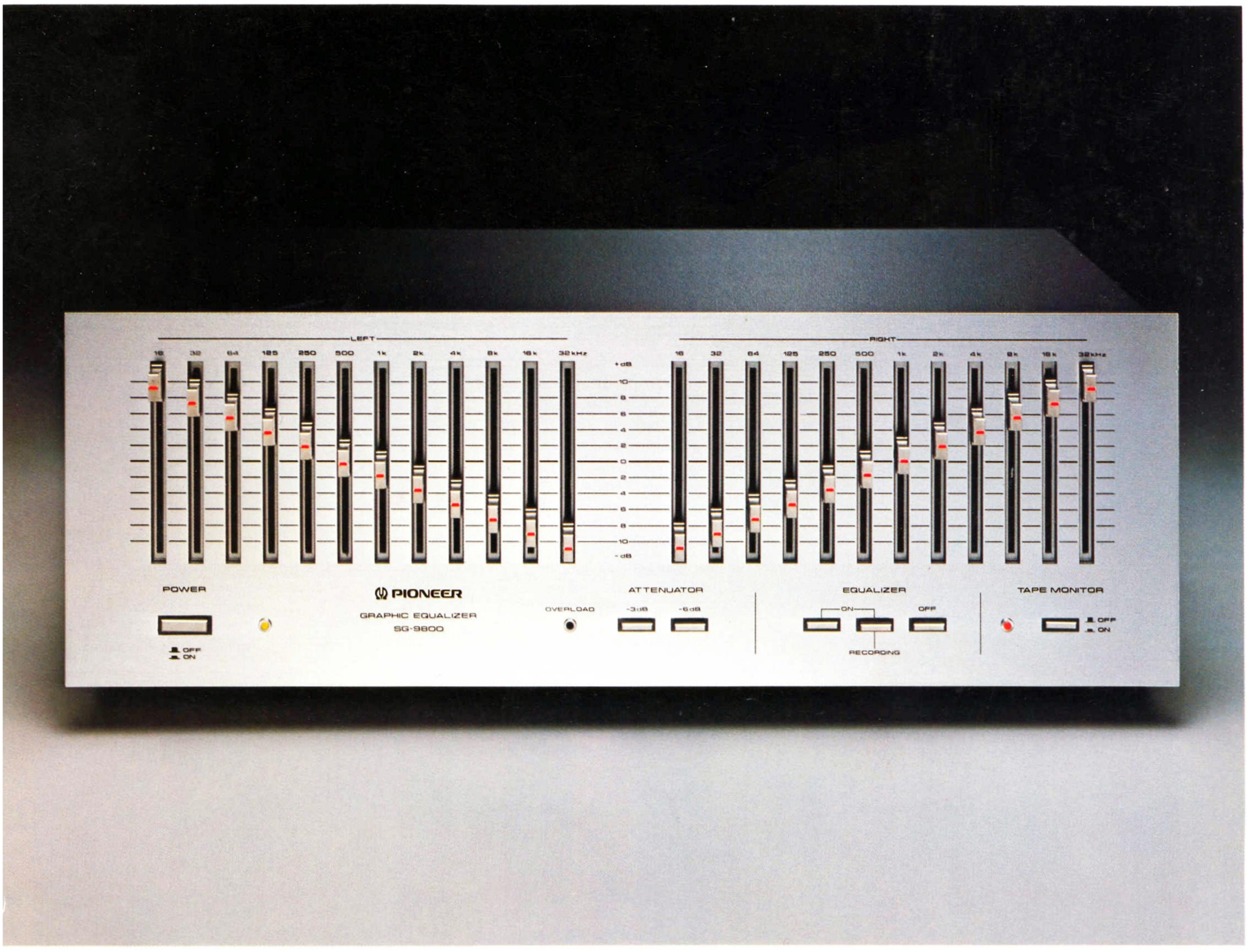


PIONEER®

PIONEER SG-9800

Stereo Graphic Equalization for Sound-Field Accuracy

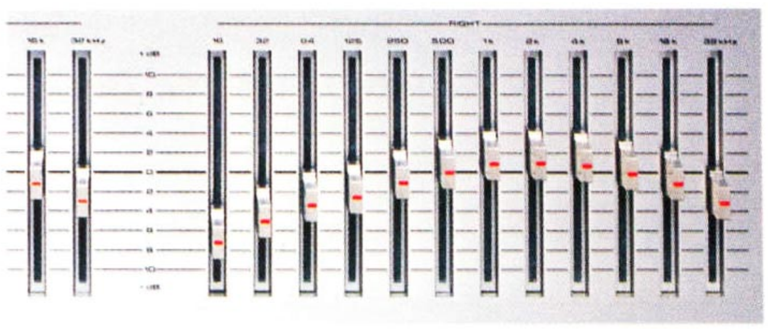
- ■Bright LEDs in each control (12 x 2) for curve confirmation at a glance.
- ■Input attenuators and overload LED for excessive inputs.
- ■Precision bandpass elements for high S/N, low THD.
- ■16Hz—32kHz range (±10dB control) in each channel, more.

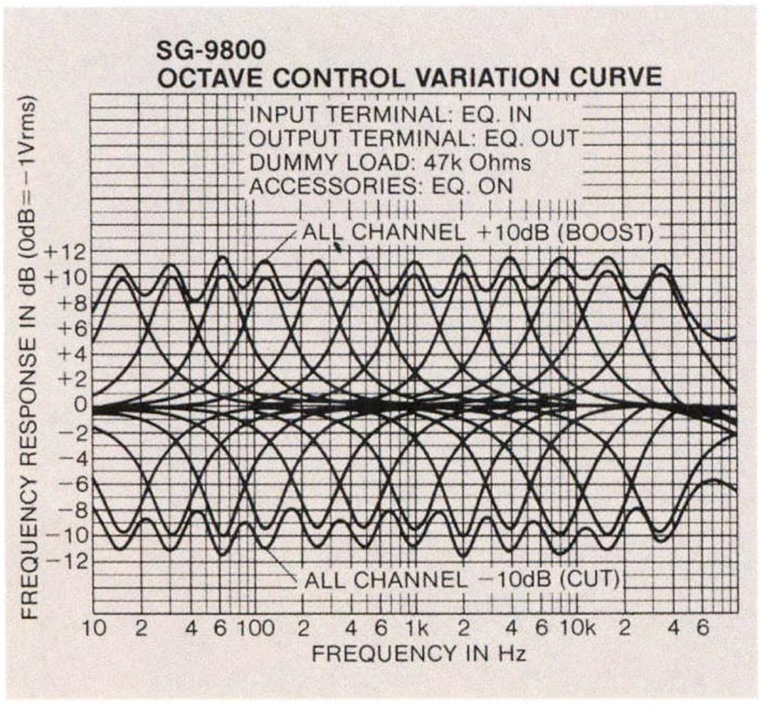


Short of setting up a full-scale professional studio in your listening room, complete with a control console to permit octave-by-octave equalization, your only sure way to achieve a flat frequency response for listening (and recording) is to add a reliable graphic equalizer to your present sound system. Ordinary "tone controls" on amps and receivers can't handle the job. Nor can so-called "sound effect amplifiers" which offer only four or five "tone zone" controls. But what do you look (and listen) for when it comes to buying a graphic equalizer you can depend on?

Wide Control Range—In Stereo

Pioneer's new SG-9800 has twelve separate controls *in each channel* to handle delicate tonal adjustments at the touch of a finger. Each control permits you to increase (or decrease) response in precise steps of 2dB for a 10dB total above (or below) that control's "O" click. And by basing our design on your *musical* needs in hi-fi, we have set those center frequencies as follows: 16Hz, 32Hz, 64Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz and 32kHz. The lowest (16Hz) and highest (32kHz) are particularly useful in handling wide-range outputs from DC-type preamps and in preparing signals fed to such amplifiers as Pioneer's latest Magni-Wide *Non-Switching* models, where the ultralow and superhigh frequencies have as much or more influence on musical quality as do the frequencies in the so-called midrange.





Quick Visual Confirmation of Equalized Curve

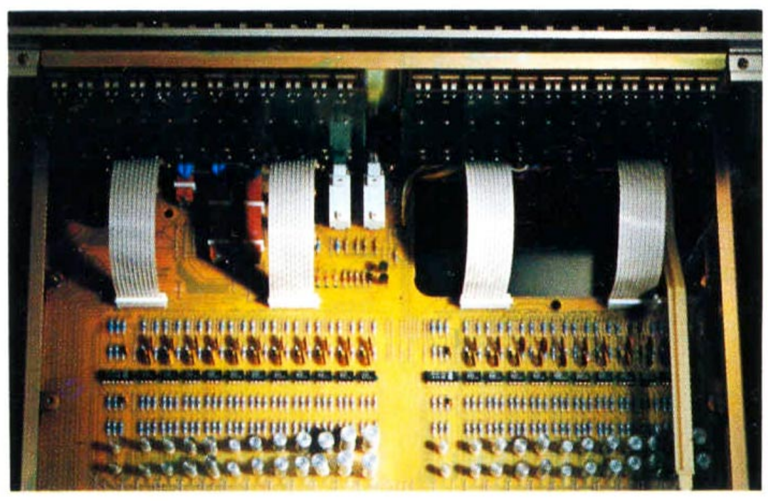
Also important is the fact we've added individual LED (Light-Emitting Diode) indicators to all 24 controls on the Pioneer SG-9800. These glow in an eye-pleasing red color (whenever the unit is ON for listening or recording) to let you know at a glance what "shape" your sound is in. After all, the word "graphic" in "graphic equalizer" simply means that you can *see* the equalization curve you have selected. These LEDs make the seeing so much easier.

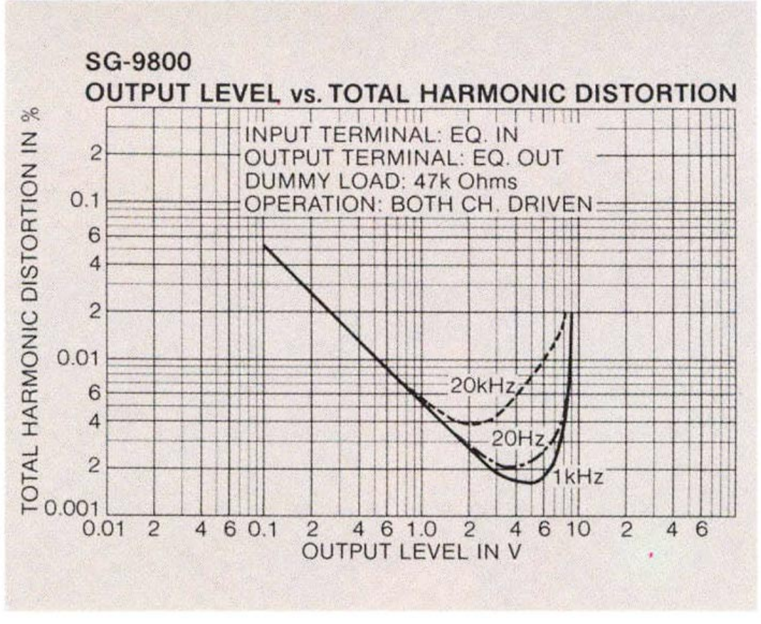
Super-Accurate Equalization

Naturally, we've made the equalization much more accurate, too. Each bandpass section of the SG-9800 has precision components to determine the accurate value of its center frequency *(fo),* its "Q" (resonance) and its gain. Those components include low-error metal-coated resistors with as little as ±1% resistance error tolerance, and low-error polypropylene capacitors with never more than ±2% capacitance error tolerance.

ICs, Filters & Computer-Designed PCB

Going still further to keep noise and distortion from spoiling your music, we've employed highly linear ICs in the summing amp, buffer amp and elsewhere. A newly developed bandpass filter and one of those low-distortion ICs is used to prevent the generation of noise and distortion as the signal passes through; the IC in the filter for the 32kHz element is of particular interest since it has a very high slew rate. Then, to avoid crosstalk, noise, distortion and other problems caused by wiring, we use no wires: the connections in the signal path are achieved on one monolithic PCB (printed circuit board) designed specifically for the SG-9800 by computer.



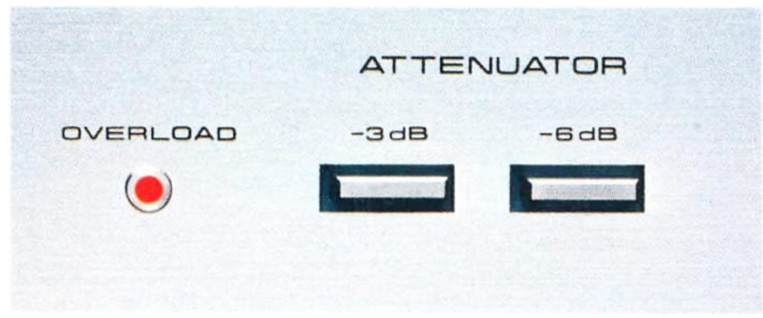


The Payoff—Where It Counts

This elaborate construction accounts for the extraordinary specs achieved in the SG-9800: THD is *never* more than 0.02% (and even less at normal operating range), insertion loss is 0dB with the controls flat, overall frequency response is a super-wide 5Hz—100kHz +0dB, −3dB, and the signal-to-noise ratio (a point you must consider very very carefully in graphic equalizers) is an impressively high 92dB (short-circuited A Network, 1V output).

Some Unusual Features

If you were to spend what studio professionals have to invest in equipment you could probably find an equalizer that could give you what we've described so far. But the Pioneer SG-9800 has still more. For instance, when the controls are set to their "O" clicks, backup elements are shorted to ground to ensure a *completely* flat response relative to the input. Then, we've included *two* input attenuator switches on the front panel for still more accurate level control; when inputs are too high for comfort, switch on the −3dB (or −6dB) attenuator. If a really excessive input (over 8V rms) is accidentally introduced, the Overload Indicator LED (red) lights. Also included (though not indicated on the panel) is a Muting Circuit with a relay to eliminate pop noise (and potential amp/speaker damage) caused by power on-off switching. And the power-on indicator is also an LED (orange).



Connection and Use

Pioneer designers kept things simple for your convenience (and eliminated complicated connection facilities that might have degraded performance) by giving the SG-9800 only one set of LINE in/out terminals and another set of TAPE in/out terminals. The diagram shows how easy it is to connect and use this high-quality graphic equalizer from the people who manufacture and sell more audio equipment than any other hi-fi specialist—PIONEER.

SG-9800 SPECIFICATIONS

EQUALIZER SECTION

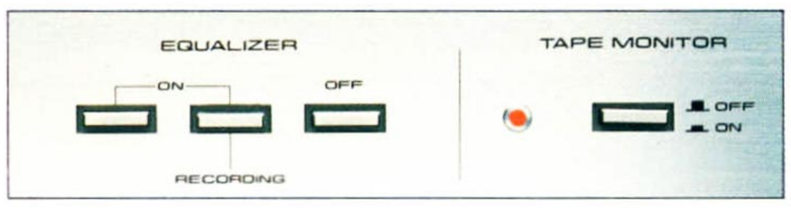
Equalizer Range	±10dB
Individual Channel Adjust):	16Hz, 32Hz, 64Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz, 32kHz
Total Harmonic Distortion	
20Hz to 20kHz, All Control Flat, output 1V:	0.006%
10Hz to 30kHz, All Control Flat, output 1V:	0.02%
1kHz, All Control Max., output 3V:	0.01%
1kHz, All Control Flat, output 2V:	0.005%
1kHz, All Control Min., output 1V:	0.02%
Insertion Loss:	0dB (Control Flat)
Maximum Output Voltage (1kHz, T.H.D.: 0.02%, R_L 47k ohms):	7.5V
Frequency Response:	5Hz to 100kHz +0dB, −3dB
Signal-to-Noise Ratio (Short-circuited A network, 1V output):	92dB
Input Impedance:	50k ohms
Output Impedance:	No more than 600 ohms

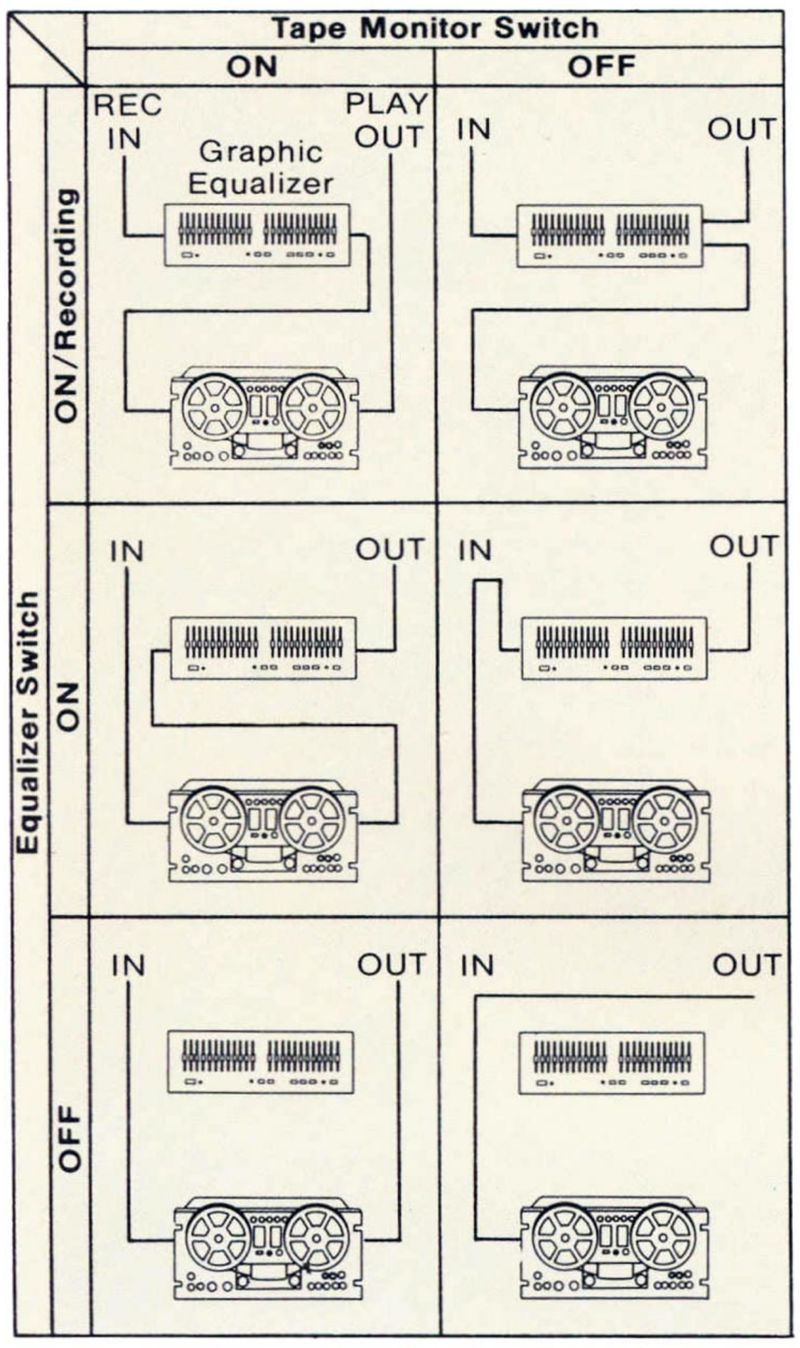
SEMICONDUCTORS

ICs:	27
FETs:	2
Transistors:	14
Diodes:	19

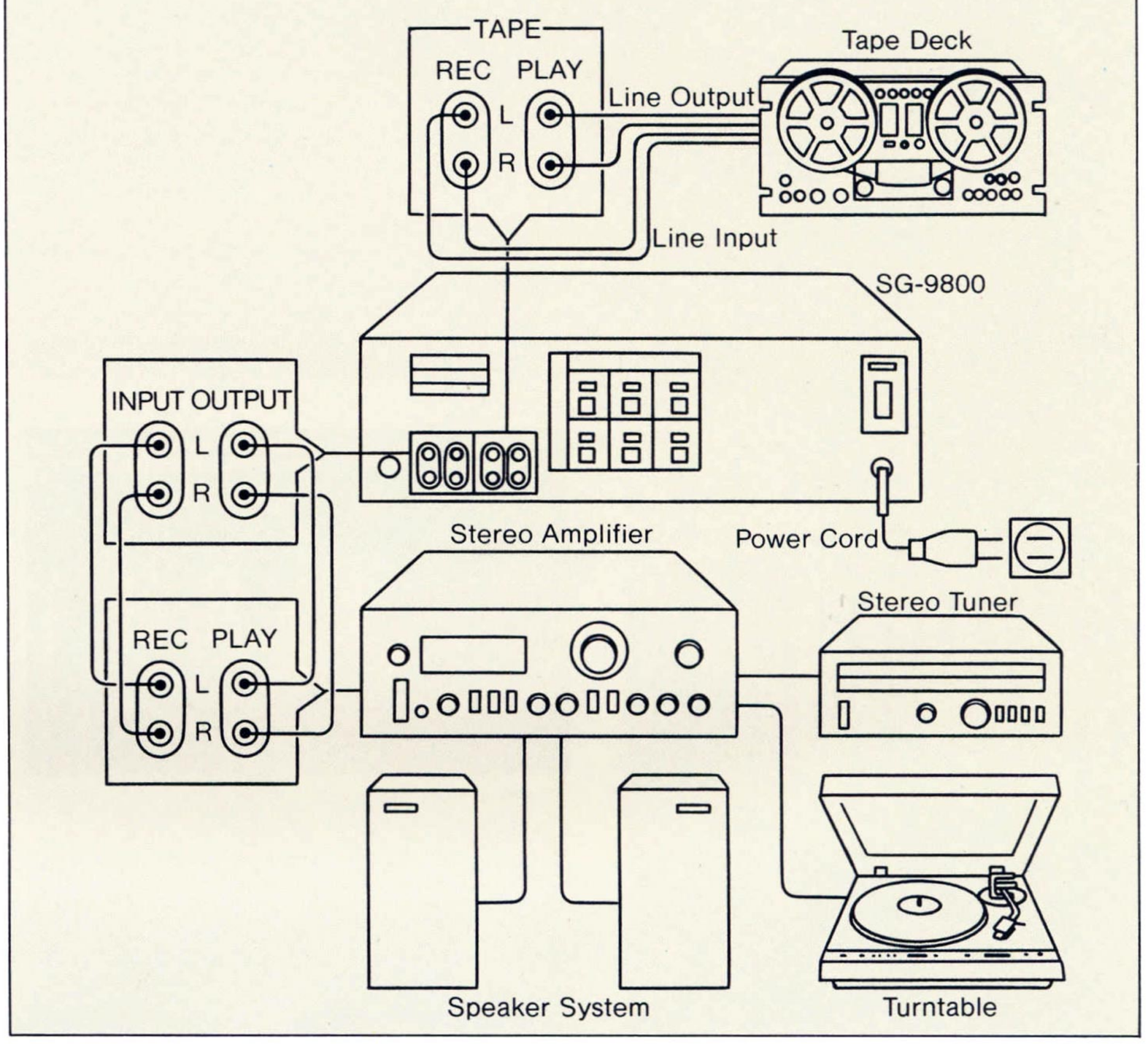
MISCELLANEOUS

Power Requirements:	For U.S.A. and Canada: 120V 60Hz only, For other countries: 110/120/220/240V (switchable) 50-60Hz, or 220/240V (switchable) 50-60Hz
Power Consumption:	25 watts
Dimensions:	Without package: 16-1/2(W) x 5-7/8(H) x 14(D) inches 420(W) x 150(H) x 355(D) mm
Weight:	Without package: 15 lb. 8 oz./7.1kg





SG-9800 CONNECTION DIAGRAM



NOTE: Specifications and design subject to possible modification without notice.

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16,000H-F-10-80 Printed in Japan