



For more Hi-Fi manuals and set-up information  
please visit [www.hifiengine.com](http://www.hifiengine.com)



**PIONEER**

# SX-1250



## The Big-Power AM/FM Receiver with User-Oriented Features and Design.

When you go to buy a new receiver, ask yourself these questions: (1) Does its FM tuner section guarantee high performance of spurious rejection as well as high sensitivity? (2) Does it include the very latest electronics circuit technology, to assure a constant stable and high quality sound reproduction from small to large power output? (3) Are you going to be proud to own it for a long, long time? Pioneer's new and elegantly-designed SX-1250 AM/FM receiver provides a resounding "yes" to each of these questions — and then some. No other Pioneer receiver provides such incomparable FM performance and sensitivity and then combines it with mammoth

continuous power output of 160 watts\* per channel, min. RMS at 8 ohms, from 20 Hertz to 20,000 Hertz, with no more than 0.1% total harmonic distortion. Probably no other receiver in the SX-1250's price range can compare with this unit's technological artistry, its fundamentally sound circuit design, its distinguished good looks. In the honored line of big power Pioneer receivers, the SX-1250 is a masterpiece of stereo efficiency and total performance. You'll really want to listen carefully to this one.

\*Walnut veneered top and side panels are used in the construction of this cabinet.

\*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Output Claims for Amplifiers. (Applicable to the U.S.A. only)

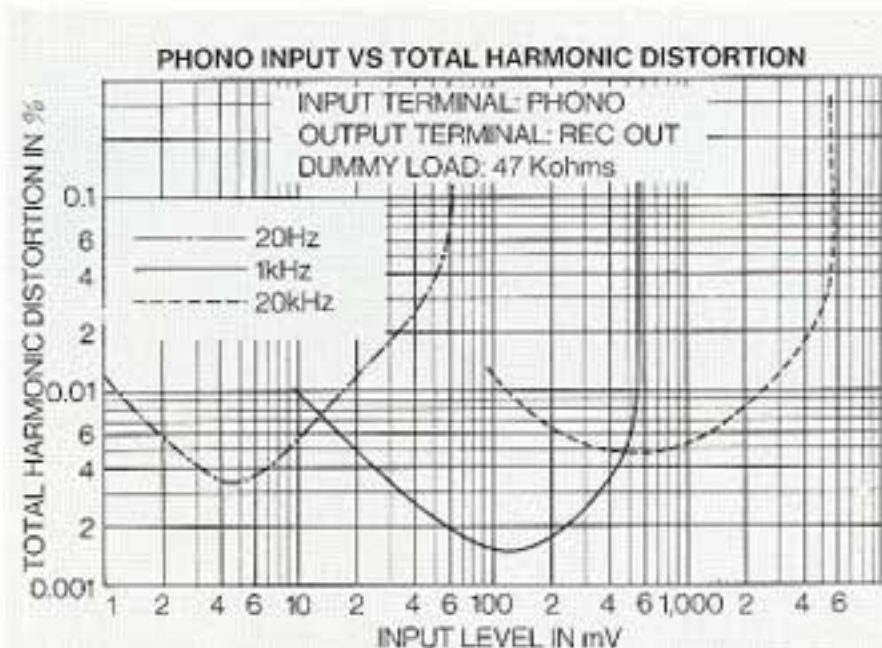


# SX-1250

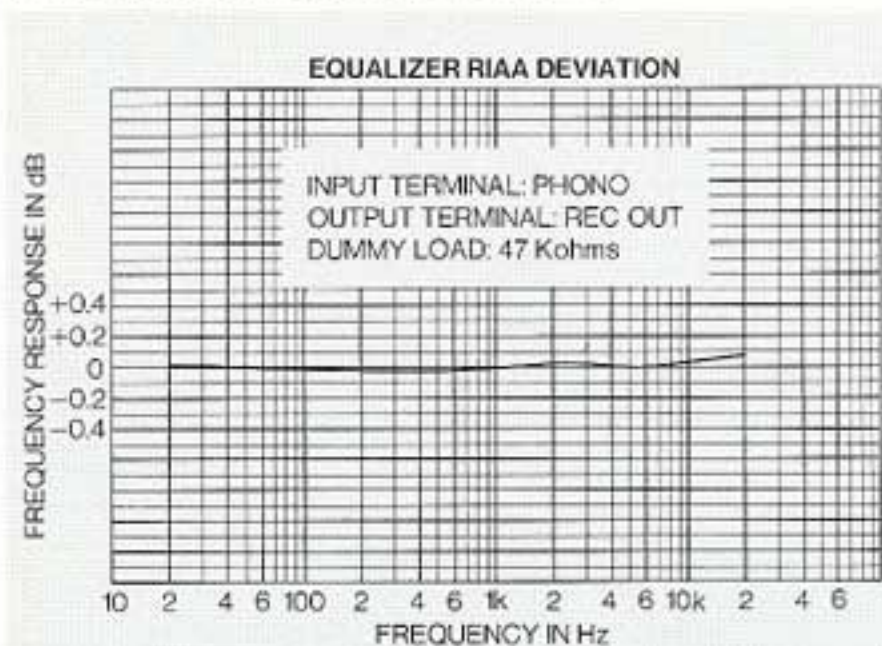
**LOW DISTORTION EQUALIZER, WITH  $\pm 0.2\text{dB}$  DEVIATION AND 500mV OF PHONO OVERLOAD LEVEL (1kHz, THD 0.1%)**



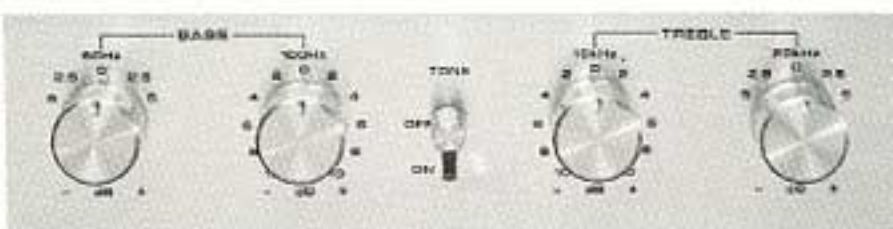
The equalizer circuit of the SX-1250 is equipped with a three-stage direct-coupled SEPP design, using a plus-minus split power supply and first-stage differential amplifier that contributes to extremely low distortion. A metal-coated polyester film capacitor with excellent electrical properties is employed in the input coupling capacitor. By supplying an extra-high  $\pm 49\text{V}$  DC to the equalizer circuit, the phono overload level is extended to 500mV (1kHz, THD 0.1%), with input sensitivity held at 2.5mV. This ensures a sufficient dynamic margin of 46dB.



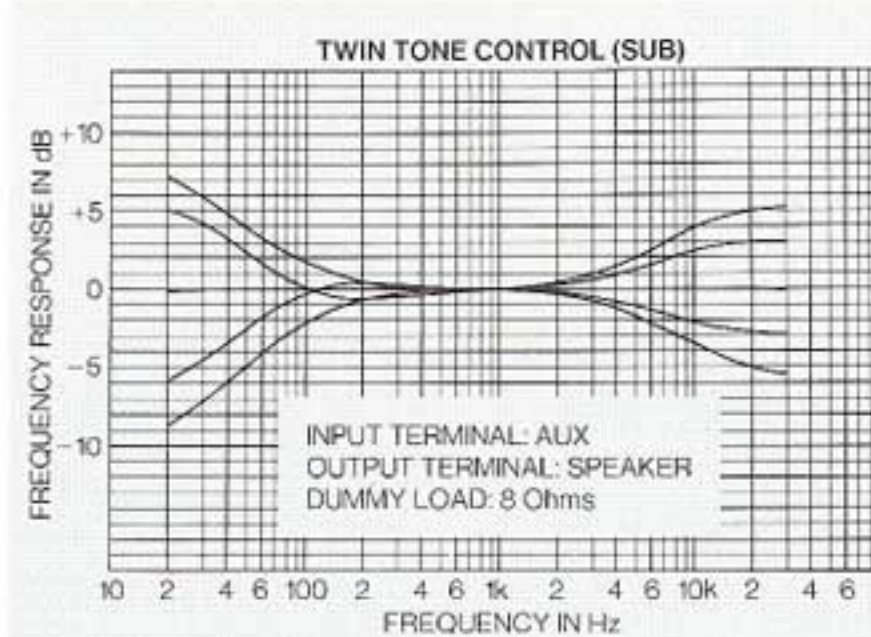
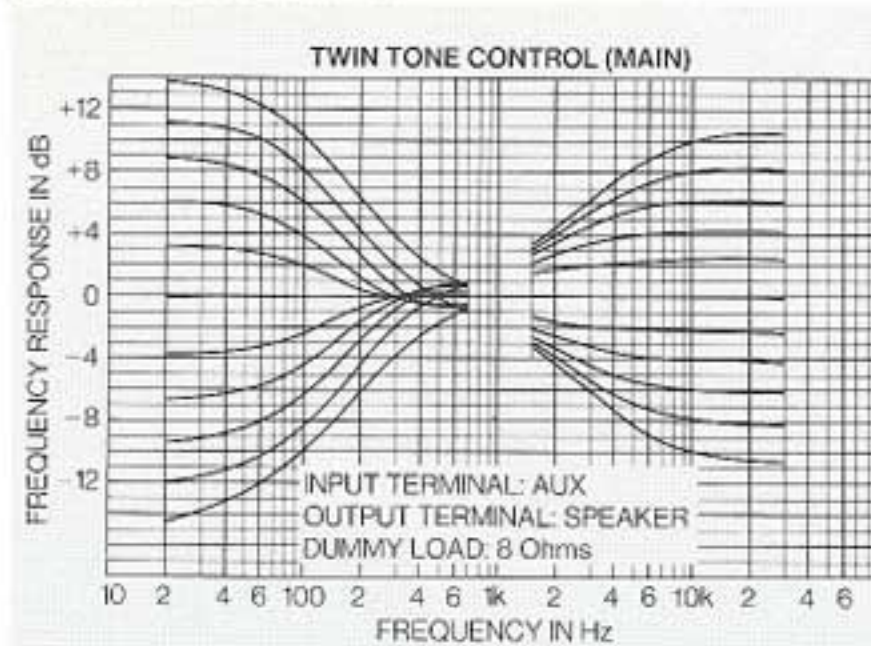
Moreover, the class-A operation output stage with SEPP assures minimum distortion, small output impedance and a very wide dynamic range. Outstanding high fidelity record reproduction is enhanced by the use of select RIAA elements such as precision metal film resistors and micro-tolerance styrol capacitors, the latter having error within  $\pm 1\%$ . This means that RIAA equalization is precise within the limits of  $\pm 0.2\text{dB}$ , with a perfectly flat frequency response.



**UNIQUE TWIN TONE CONTROL FOR PRECISION TONAL ADJUSTMENTS**



A high performance plus-minus split power supply system is employed in the tone control circuit of the SX-1250. Additionally, class-A operation SEPP circuit is provided as the input buffer amplifier to reduce output impedance. These features lead to low resistance volume control that minimizes noise in the next stage and helps to prevent deterioration of tonal quality in the high frequency ranges by input capacitance in the following stage. There is also a flat amplifier, employing a FET (1-stage FET, composed of two transistors), included in the rear stage of the volume control to prevent noise from being increased by the level change of the volume control. The SX-1250 benefits greatly from Pioneer's unique twin tone control system (Main and Sub). Both main controls (BASS and TREBLE) have 11 steps of 2dB each, covering the ranges from 10dB to  $-10\text{dB}$  (BASS at 100Hz, TREBLE at 10kHz), and the sub controls (BASS and TREBLE) which also have five steps of 2.5dB each, covering the ranges from 5dB to  $-5\text{dB}$  (BASS at 50Hz, TREBLE at 20kHz). Because switch type controls are used in the twin control system, this system functions as a conventional tone control when only main controls are used, and thus complements tonal quality in the super-high and super-low frequency ranges. Moreover, the combined use of the main and sub controls offers an unusually versatile choice for subtle and precise tonal adjustments and the tone ON/OFF switch can be used to flatten tone control as well as to check the effectiveness of the twin tone control.



**USER-ORIENTED ATTENUATOR TYPE VOLUME CONTROL**

The main volume control is a 32-step-type attenuator control that is calibrated in decibels for direct-readout of the decibel amount. The gang error in both left and right channels is precise within the limits of 0.5dB, covering the range of 0dB to  $-70\text{dB}$ . Additionally, a lever type muting attenu-

ator with two positions is provided for instantaneous volume attenuation of 0dB and  $-20\text{dB}$ .



**SHARP LOWCUT AND HIGHCUT FILTERS**

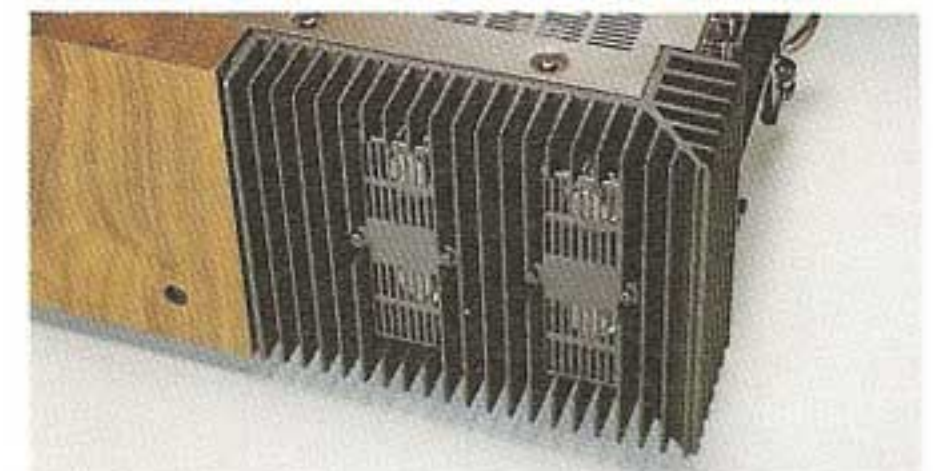
Both high and low filters feature sharp cut-off characteristics of 12dB/oct., eliminating unnecessary frequency range deviations without impairing tonal quality.

**TAPE DUPLICATION SWITCH**

Tape-to-tape duplication from Deck 1 to Deck 2, or from Deck 2 to Deck 1, is possible with a touch of the tape duplication switch located on the receiver's front panel, while the listener simultaneously enjoys another program source.



**BIG OUTPUT POWER AMPLIFIER SECTION WITH OUTSTANDING CIRCUIT TECHNOLOGY**



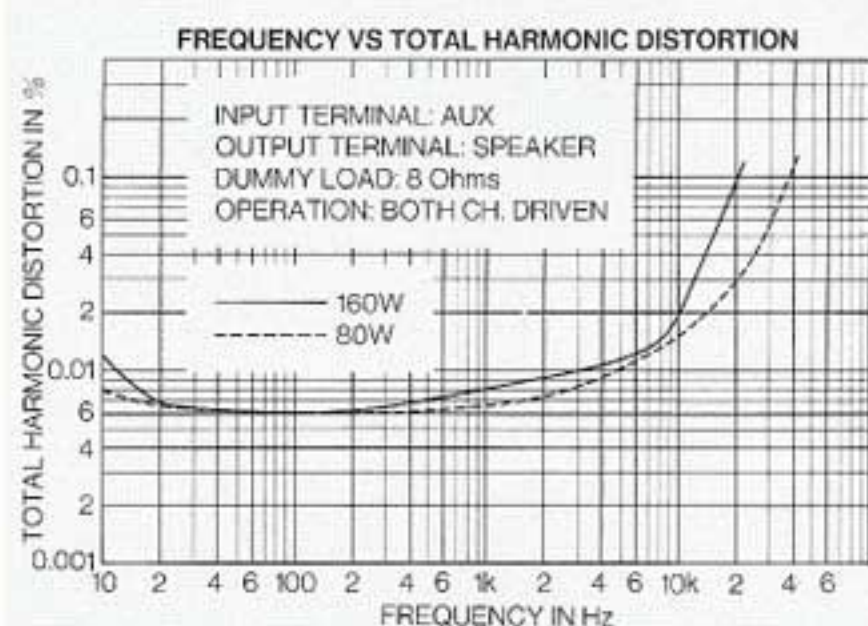
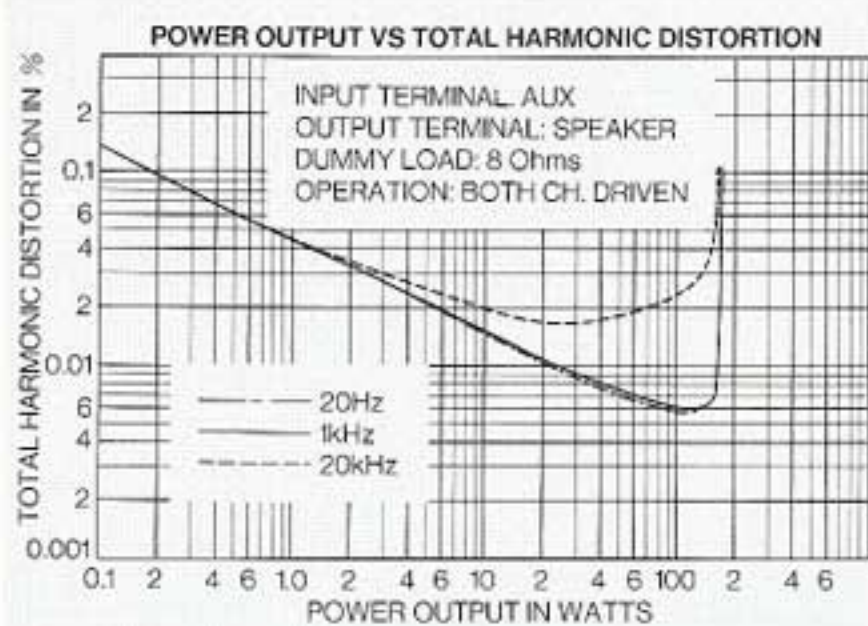
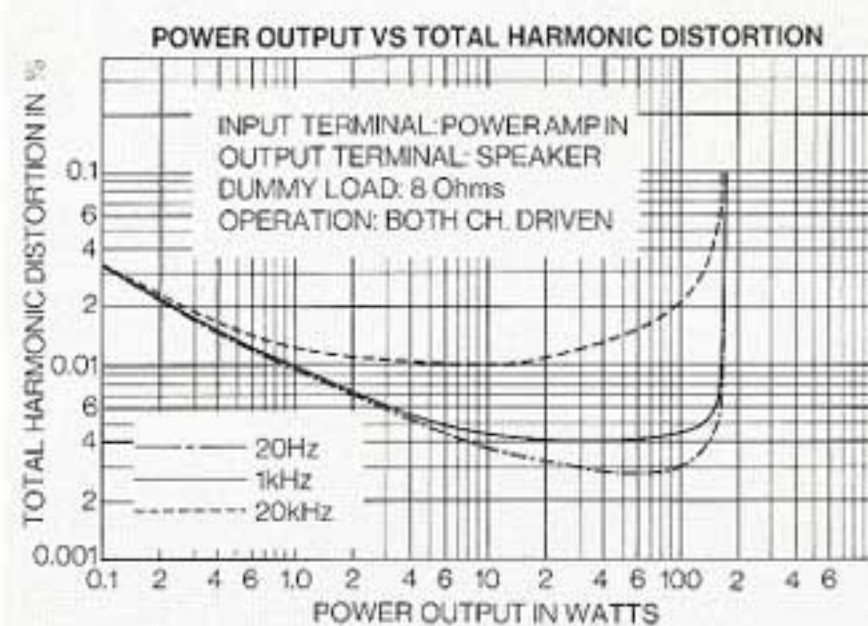
The SX-1250 delivers an enormous **continuous power output of 160watts\* per channel min.RMS at 8ohms from 20Hertz to 20,000 Hertz, with no more than 0.1% total harmonic distortion.** With the addition of its highly advanced electronics circuit technology, the unit is able to constantly assure a stable and quality level of sound reproduction from small power output to large. The two-stage differential amplifier, which employs a Class-A operation push-pull circuit and current mirror circuit in the predriver stage, sufficiently maintains DC stability while contributing to such excellent performance as high gain and low distortion.



\*Measured pursuant to the Federal Trade Commission's



Then there is a three-stage Darlington direct-coupled OCL circuit employed in the drive stage and output stage, along with a parallel push-pull circuit composition in the output stage, which together guarantee that the enormous power output of the SX-1250 will be delivered with very low distortion.



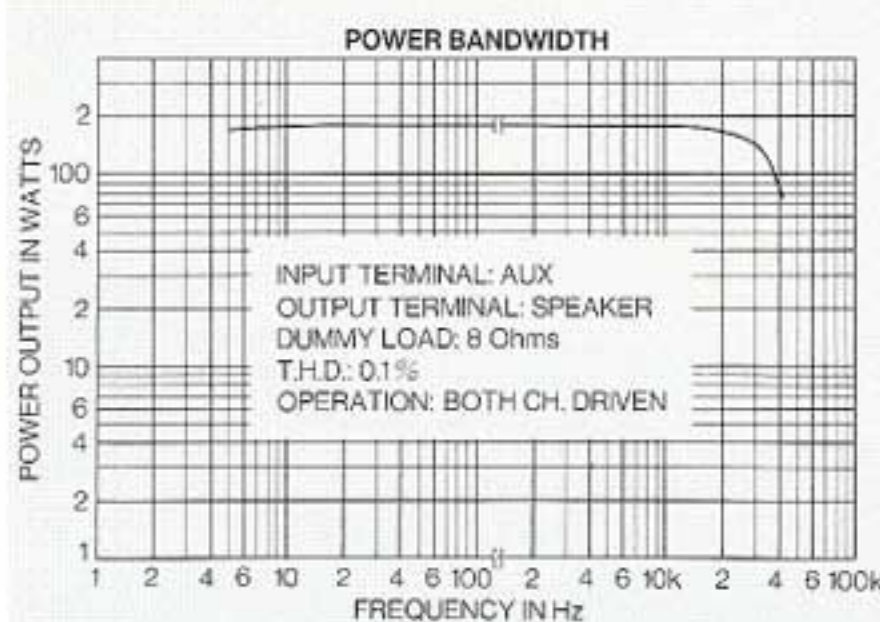
#### PROTECTION CIRCUIT

The electronically-controlled protection circuit in the SX-1250 is equipped with a power relay to prevent the destruction of transistors and speakers from power-related accidents. Since the power transformer of this unit has a small resistance and since the electrolytic capacitors have a large capacitance, as much as 200 amperes of rush current is generated when the receiver's power is switched on. The use of the power relay provided in the primary circuit reduces the amount of rush current to as little as one quarter of its total capacity so as not to adversely affect any other system components.

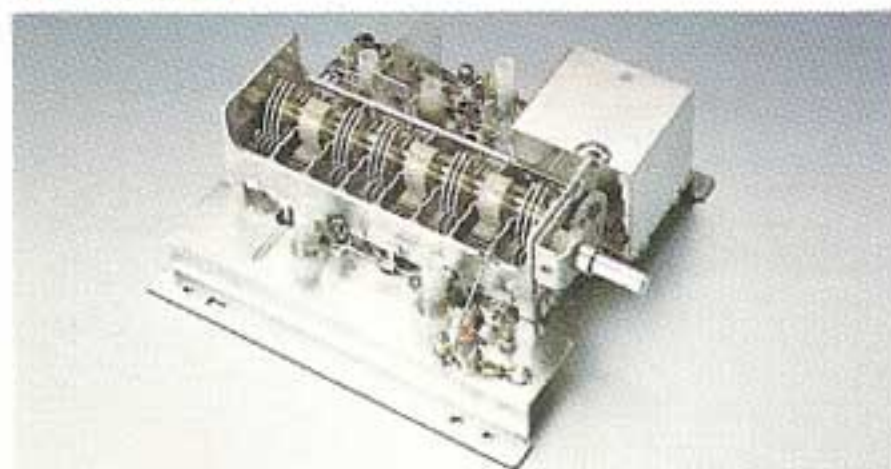
#### HUGE POWER SUPPLY SECTION WITH TOROIDAL-CORE POWER TRANSFORMER AND LARGE ELECTROLYTIC CAPACITORS



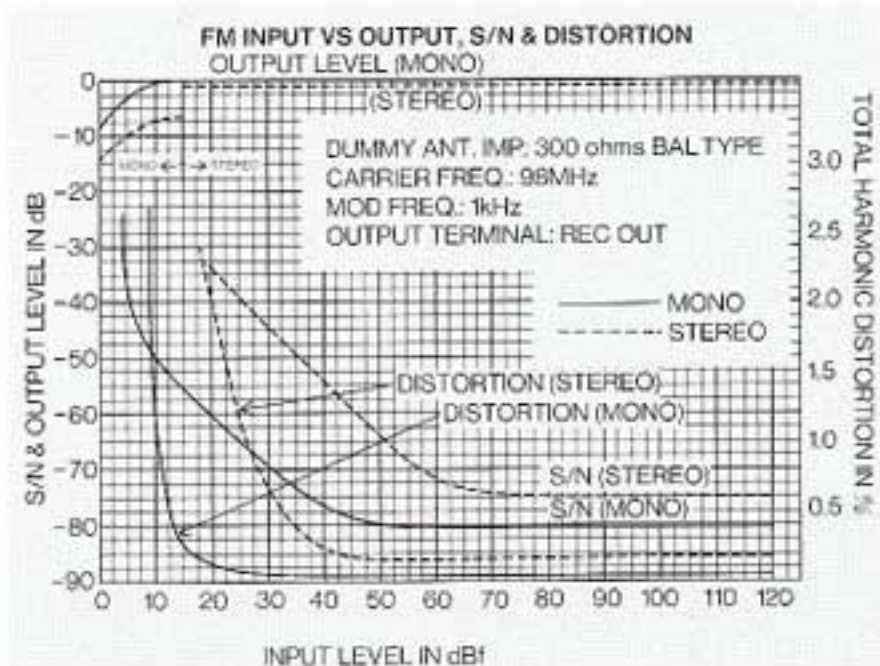
The SX-1250's huge power output is maintained by the use of a large Toroidal-core transformer and four large 22,000 $\mu$ F electrolytic capacitors that are employed in the power supply section. The design of the transformer winding and electrolytic capacitors, which can be used independently for left and right channels, contributes to improvements in voltage regulation and the extension of high fidelity sound reproduction down to the low frequency range.



#### HIGHLY-SENSITIVE FM FRONT END WITH 3 DUAL GATE MOS FET AND 5-GANG VARIABLE CAPACITOR



The test of a quality tuner is its ability to receive desired signals accurately even in a strong or weak electric field area, or even when operating in a field of intense jamming signals. For instance, when two strong adjacent waves appear in an electric field there arise harmonic components in the non-linear section of the tuner, and the interference generated between these components will usually produce what is called a "ghost" station. Thus, if a desired station exists near the "ghost," the reception of the desired signals is adversely affected. The sensitive front end of the SX-1250's tuner is designed to avoid irregular reception.



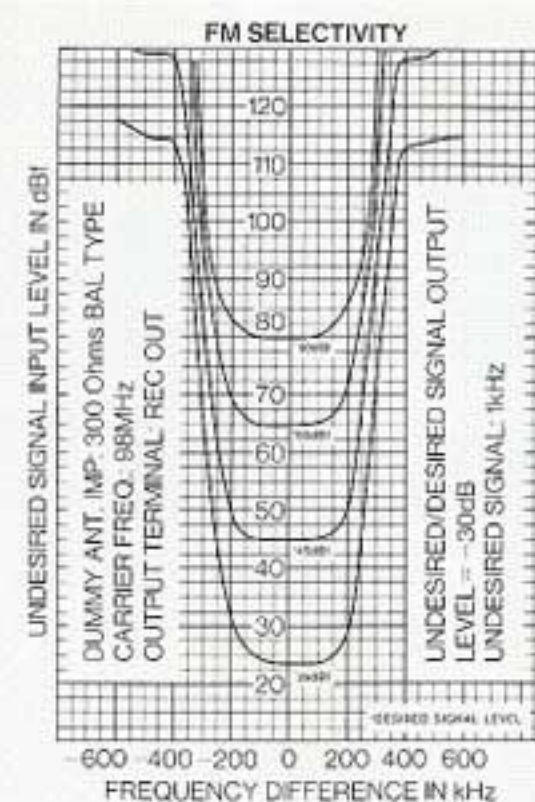
The 5-gang variable capacitor and three dual gate MOS FETs (RF amp x 2, Mixer x 1) employed in the front end have excellent sensitivity and intermodulation characteristics that guarantee high performance of spurious rejection as well as sensitivity. Additionally, a buffer circuit is provided in the local oscillator to stabilize oscillation, and then local oscillation signals are passed on to the mixer through a gate different than the one used for antenna input signals with the result being that no adverse effect is generated by excessive input signals on the local oscillation

circuit. Overall, the SX-1250's FM front end assures extremely stable performance, since there is never interference between the antenna input signals and the local oscillation signals.

#### FM IF SECTION WITH HIGH SELECTIVITY AND ADVANCED DETECTING CIRCUITS



Exceptionally stable performance is assured by the FM IF section, thanks to the use of four phase linear ceramic filters (2-elements x 4), two ICs for the differential amplifier, and an advanced LSI (Large Scale Integrated) circuit which is the equivalent of more than 200 conventional elements. There is additional quality performance built-in to the IF detecting circuit—a ratio detecting circuit using an IC for the differential amplifier prior to the detecting stage which is distinguished by a superb S/N ratio as well as by extremely low distortion.



#### ANTI-BIRDIE FILTER TO PREVENT BEAT INTERFERENCE BY ADJACENT STATIONS

Beat interference from adjacent stations away from 200 kHz is prevented in the SX-1250 because an anti-birdie filter is employed before feeding the output of the detector into the MPX section to eliminate unnecessary high frequency components. The result of this filter is a major contribution to clean tonal quality and the suppression of various adverse effects often caused by the elimination of interference to the MPX stage.

#### PLL MPX CIRCUIT WITH STABLE STEREO SEPARATION CHARACTERISTICS

Since composite signals are divided into left and right channel signals, the complicated MPX circuit, which is so vital for tonal quality, is subject to fluctuations in temperature, moisture and other factors. In the SX-1250, an advanced PLL circuit, which is an improved version over the conventional IC type, greatly contributes to stabilization of the MPX section. A PLL is a loop circuit that complements the drift of switching signals, so that the MPX switching signals produced in the tuner are always in the same phase with the pilot signals transmitted from the broadcast station. This means that not only is the MPX section of the SX-1250 far more advanced than other models, but that you are assured of supreme stereo separation at all times. The MPX section includes a new high gain PLL MPX IC, along with a sharply sensitive three-element lowpass filter offering excellent carrier leak characteristics of 74dB and a flat

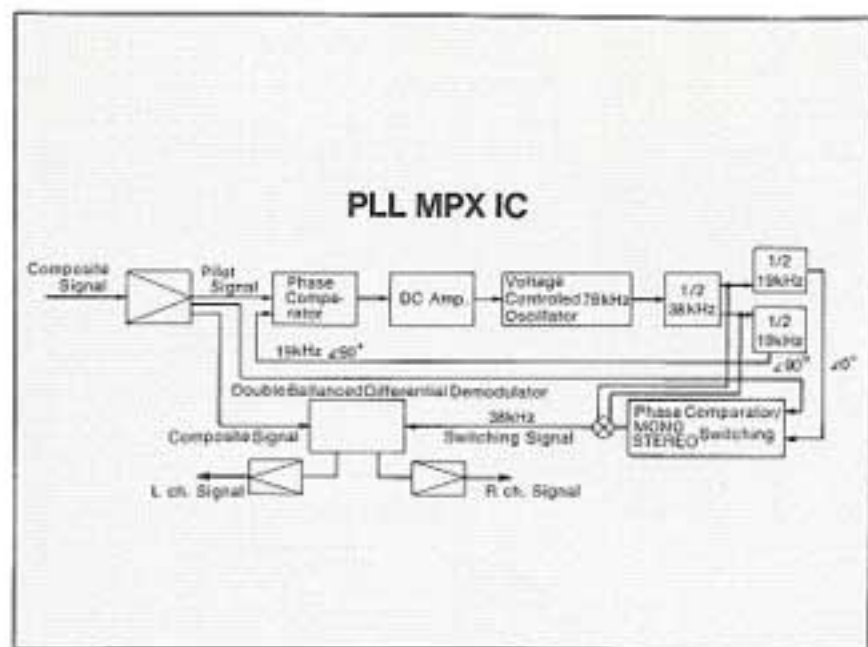


**FM STEREO SEPARATION & DISTORTION**

DUMMY ANT. IMP: 300 Ohms BAL TYPE  
 CARRIER FREQ: 98MHz  
 ANT. INPUT LEVEL: 65dBf  
 OUTPUT TERMINAL: REC OUT

The graph plots Separation in dB (left Y-axis, 10 to 60) and Total Harmonic Distortion in % (right Y-axis, 0.5 to 2.5) against Modulation Frequency in Hz (X-axis, 10 to 6 on a log scale). Two curves are shown: L → R/L Channel (solid line) and R → L/R Channel (dashed line). The separation curves peak at approximately 58 dB around 1 kHz. The distortion curves remain low (below 0.5%) until about 10 kHz, where they rise sharply to about 1.5% at 15 kHz.

Modulation Frequency (Hz)	Separation (dB) - L → R/L Channel	Separation (dB) - R → L/R Channel	Distortion (%) - L → R/L Channel	Distortion (%) - R → L/R Channel
100	38	38	0.2	0.2
1k	58	58	0.2	0.2
10k	45	45	0.2	0.2
15k	38	38	1.5	1.5



An FM muting circuit with a reed relay is provided to eliminate annoying interstation noise as well as annoying popping noises at times of tuning and detuning.

Obstacles like tall buildings, mountains or other structures in the path of the FM wave cause interference between the direct wave and its reflected waves, a distortion phenomenon called "multipath". It is possible to minimize the multipath distortion by changing the direction of an antenna. Especially, the multipath switch provided in the SX-1250 can adjust the optimum antenna direction easily and precisely. Just set the antenna direction by choosing the minimum sound output from the speakers.

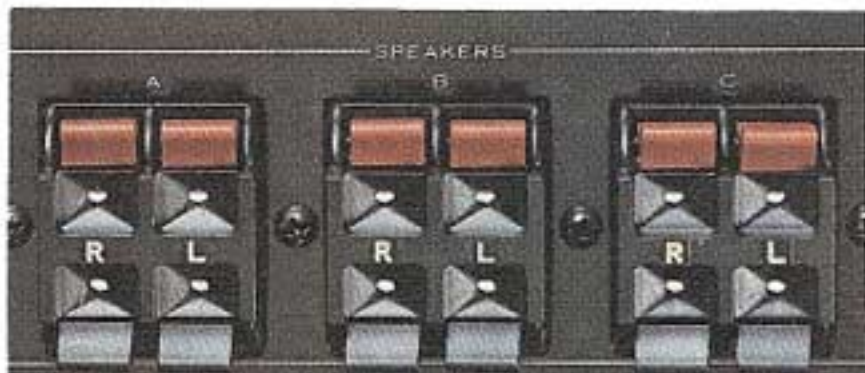
The AM circuit of the SX-1250 uses a new and very special IC with outstanding AGC characteristics that keep the input of incoming signals constant regardless of the strength of the input. This circuit assures exceptionally clean tonal quality with minimum distortion for all AM reception, even in a strong electrical field area.

The SX-1250 employs an extra-large flywheel coupled to a precision-built rotation mechanism to ensure smooth, fine FM tuning and dial operation along a 9-27/32-inch (250mm) dialscale that is calibrated in 200kHz each.

The SX-1250, one of Pioneer's most distinguished receivers, is a beautiful unit designed in the tradition of fine stereo making. The contrast between the aluminum-finished front panel and the

## OTHER FEATURES

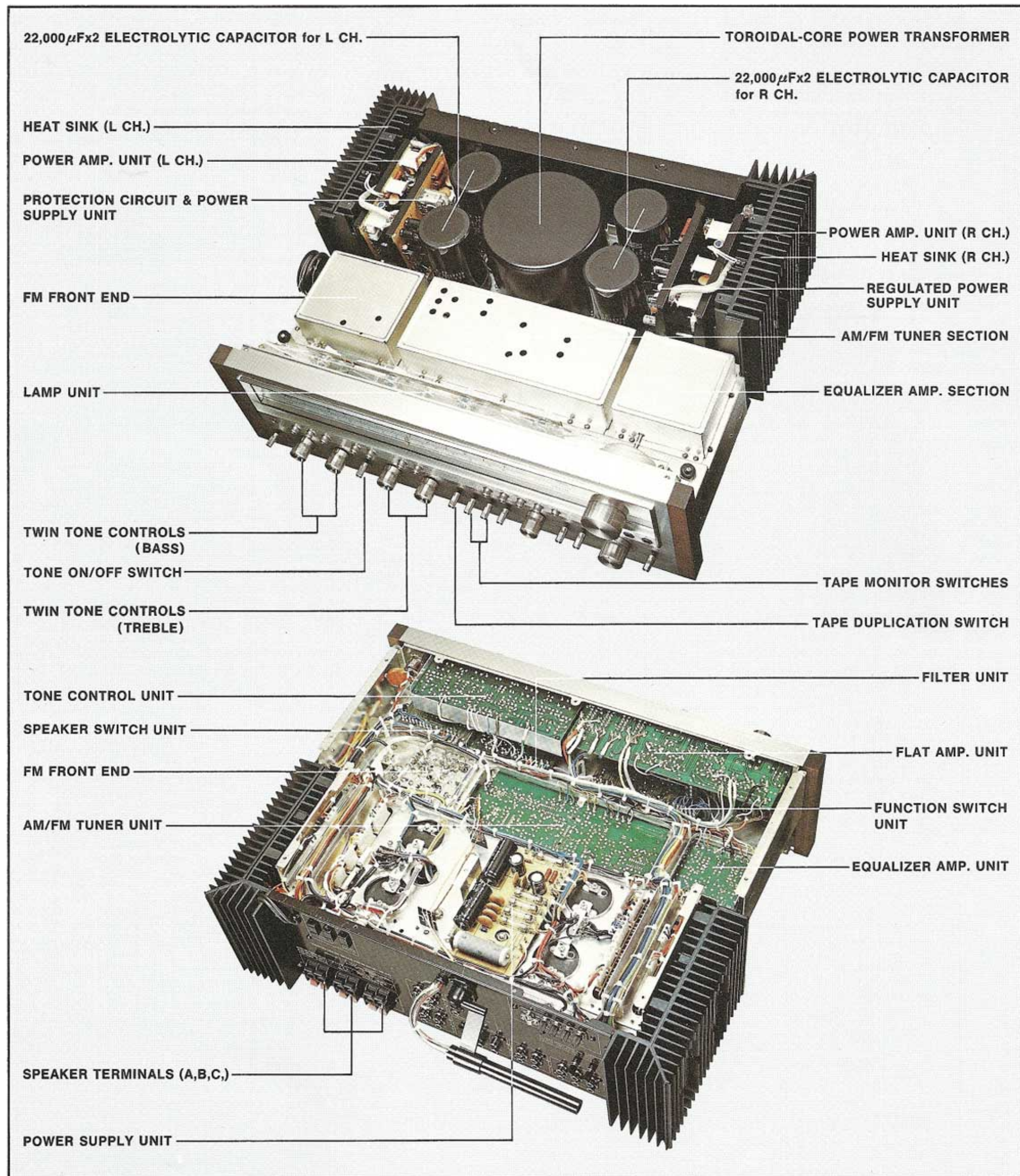
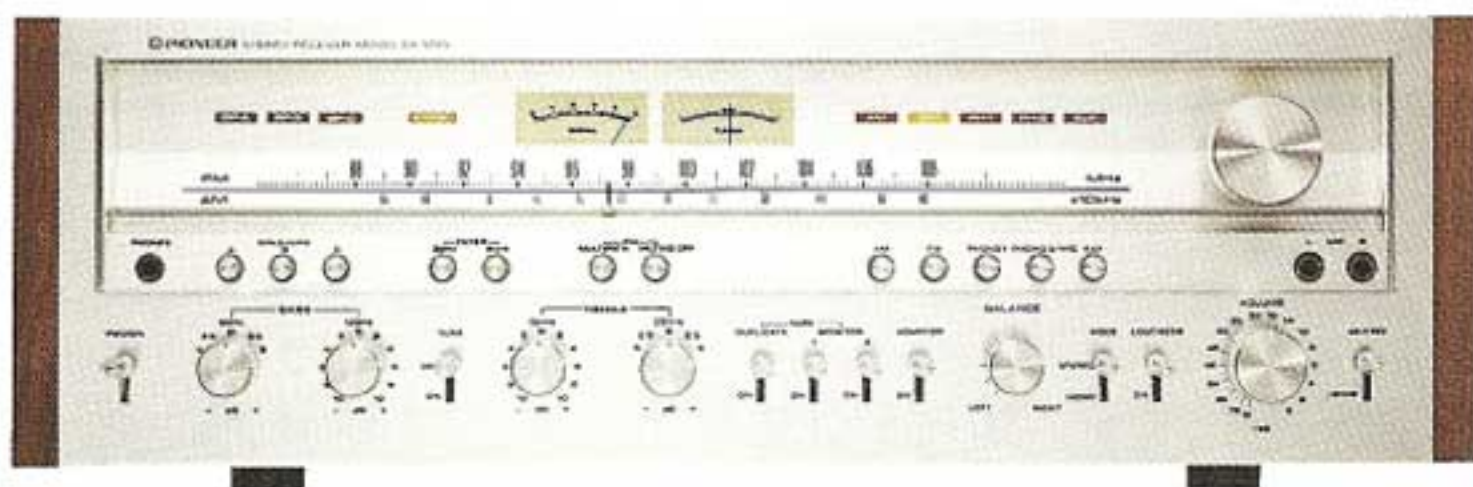
- (1) Ample input terminals for component versatility, such as PHONO x 2, AUX x 1, Adaptor x 1, Tape Monitor x 2.
- (2) Independent MIC terminals for L and R channels.
- (3) Loudness contour to complement both low and high frequency ranges at times when sound reproduction is at low volume level.
- (4) A, B and C speaker terminals can be operated individually, or in A+B, B+C and C+A combinations driven simultaneously at the touch of conveniently located push buttons.



- 5) Separable Pre Out/Poweramp IN, Pre Out and Poweramp In are separable for versatile use in combination with other amplifiers.

The diagram illustrates the internal architecture of a stereo receiver. It starts with multiple input sources: FM ANT (Front End), AM ANT (AM Tuner 3-Gang V.C.), ADAPTOR IN/OUT (150mV), PLAY/REC (150mV), DIN Connector (150mV), AUX (150mV), PHONO 1/2 (2.5mV), and MIC (6.5mV). These inputs feed into various processing stages, including Ceramic Filters, ICs (Integrated Circuits), a Ratio Detector, MPX PLL IC, and a Low Pass Filter. The AM section includes an AM IC and a 3-Gang V.C. The signal path continues through a Signal Meter and Tuning Meter, leading to a Function Selector. The main signal path then goes through a Duplicate stage, Mode, Balance, Buffer Amp., Muting, Volume, Tone Amp., Filter, High Cut, Protection, and finally to the Speaker and PHONES. The output is split into three channels: SPEAKER A, SPEAKER B, and SPEAKER C. A Twin Tone Control section is also shown, featuring a 30Hz/12dB/oct. and 8kHz/12dB/oct. filter, and a 50Hz/±5dB, 100Hz/±10dB, 10kHz/±10dB, and 20kHz/±5dB response curve.







**SX-1250 SPECIFICATIONS**  
**POWER AMPLIFIER SECTION**

**Continuous Power Output is 160 watts\* per channel, min. RMS at 8 ohms or 200 watts\* per channel at 4 ohms from 20 Hertz to 20,000 Hertz with no more than 0.1% total harmonic distortion.**

Total Harmonic Distortion: (20 Hertz to 20,000 Hertz, from AUX)	No more than 0.1% (continuous rated power output) No more than 0.05% (80 watts per channel power output, 8 ohms) No more than 0.07% (1 watt per channel power output, 8 ohms)
Intermodulation Distortion: (50 Hertz: 7,000 Hertz=4: 1, from AUX)	No more than 0.1% (continuous rated power output) No more than 0.05% (80 watts per channel power output, 8 ohms) No more than 0.07% (1 watt per channel power output, 8 ohms)
Frequency Response:	5 Hertz to 100,000 Hertz +0dB, -1dB
Input Sensitivity/Impedance:	1V/50 Kohms (POWERAMP. IN)
Output Speaker:	A, B, C, A+B, B+C, A+C
Headphone:	Low impedance
Damping Factor:	30 (20 Hertz to 20,000*Hertz, 8 ohms)
Hum & Noise:	100dB (IHF, short-circuited A network)

**PREAMPLIFIER SECTION**

Input Sensitivity/Impedance	
PHONO 1:	2.5mV/50 Kohms
PHONO 2:	2.5mV/50 Kohms
MIC:	6.5mV/50 Kohms
AUX:	150mV/50 Kohms
TAPE PLAY 1:	150mV/50 Kohms
TAPE PLAY 2:	150mV/50 Kohms
TAPE PLAY 2 (DIN connector):	150mV/50 Kohms
ADAPTOR IN:	150mV/50 Kohms
PHONO Overload Level (T.H.D. 0.1%)	
PHONO 1:	500mV (1 kHz)
PHONO 2:	500mV (1 kHz)
Output Level/Impedance:	
TAPE REC 1:	150mV
TAPE REC 2:	150mV
TAPE REC 2 (DIN connector):	30mV/80 Kohms
ADAPTOR OUT:	150mV
PRE OUT:	1V/1 Kohm
Total Harmonic Distortion:	No more than 0.02% (20Hz to 20,000Hz, 1V output)
Frequency Response	
PHONO (RIAA Equalization):	30Hz to 15,000Hz $\pm 0.2$ dB
AUX, TAPE PLAY:	10Hz to 50,000Hz +0dB, -1dB
Tone Control	
BASS:	$\pm 10$ dB (100Hz) main control $\pm 5$ dB (50Hz) sub control
TREBLE:	$\pm 10$ dB (10kHz) main control

Filter:	$\pm 5$ dB (20kHz) sub control
LOW:	30Hz (12dB/oct.)
HIGH:	8 kHz (12dB/oct.)
Loudness Contour:	+6dB (100Hz), +3dB (10 kHz)
(volume control set at -40dB position)	
Hum & Noise (IHF, short circuited A network, rated power)	
PHONO:	75dB
AUX, TAPE PLAY:	90dB
Muting:	-20dB

**FM TUNER SECTION**

Usable Sensitivity:	Mono: 8.7dBf (1.5 $\mu$ V), Stereo: 14.5dBf (2.9 $\mu$ V)
50dB Quieting Sensitivity:	Mono: 11.5dBf (2.1 $\mu$ V), Stereo: 36.0dBf (35 $\mu$ V)
Signal-to-Noise Ratio (at 65dBf):	Mono: 80dB, Stereo: 74dB
Distortion (at 65dBf)	
100Hz:	0.1% (mono), 0.25% (stereo)
1 kHz:	0.1% (mono), 0.2% (stereo)
6 kHz:	0.3% (mono), 0.3% (stereo)
Frequency Response:	30Hz to 15,000Hz +0.3dB, -1.0dB
Capture Ratio:	1.0dB
Alternate Channel Selectivity:	83dB
Spurious Response Ratio:	110dB
Image Response Ratio:	110dB
IF Response Ratio:	120dB
AM Suppression Ratio:	60dB
Muting Threshold:	13dBf (2.5 $\mu$ V)
Stereo Separation:	50dB (1kHz), 35dB (30Hz to 15kHz)
Subcarrier Product Ratio:	74dB
SCA Rejection Ratio:	74dB
Antenna Input:	300 ohms balanced, 75 ohms unbalanced

**AM TUNER SECTION**

Sensitivity:	300 $\mu$ V/m (IHF, ferrite antenna), 15 $\mu$ V (IHF, ext. antenna)
Selectivity:	40dB
Signal-to-Noise Ratio:	55dB
Image Response Ratio:	65dB
IF Response Ratio:	85dB
Antenna:	Built-in ferrite loopstick antenna

**SEMICONDUCTORS**

FETs:	5
ICs:	6
Transistors:	86
Diodes:	59

**MISCELLANEOUS**

Power Requirements:	For U.S.A. and Canada: 120V 60Hz only, For other countries: 220/240V (switchable) 50-60Hz or 110/120/ 220/240V (switchable) 50-60Hz
Power Consumption:	650 watts (UL, CSA), 1,200 watts(Max.)
Dimensions:	Without package: 21-7/8(W) x 7-3/8(H) x 18-3/4(D) inches 556(W) x 186.5(H) x 464.5(D) mm Without package: 64 lb. 4 oz./29.2kg
Weight:	

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

\*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers. (Applicable to the U.S.A. only)



**PIONEER ELECTRONIC CORPORATION** / 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153, Japan  
**U.S. PIONEER ELECTRONICS CORPORATION** / 75 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.  
**PIONEER ELECTRONIC (EUROPE) N.V.** / Luithagen-Haven 9, 2030 Antwerp, Belgium  
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** / 178-184 Boundary Road, Braeside, Victoria 3195, Australia