SANSUI AU7700

INTEGRATED STEREO AMPLIFIER WITH PROFESSIONAL TONE EQUALIZERS

Sansui's prototype of the AU-7700 created a lot of excietment in our audio engineering division. Here was an integrated stereo amplifier of moderately large power output, very low distortion, sophisticated tone controls and source-handling capabilities and much more. And it was based on a brand-new concept using a chassis-less design and greatly reduced connecting wiring to improve electronic performance and stability.

When it came time to actually manufacture the AU-7700, Sansui applied the same standards of excellence we do to all our products: the actual production model had to live up entirely to the prototype, not only in instrument-measured specifications but in the subjective, human sense that can only be measured under extremely critical listening conditions.

This means that every AU-7700 on your dealer's shelf is fully capable of providing the same sparkling tonal quality and outstanding performance as the original. And the AU-7700 you buy and use in your own high fidelity system will prove it.

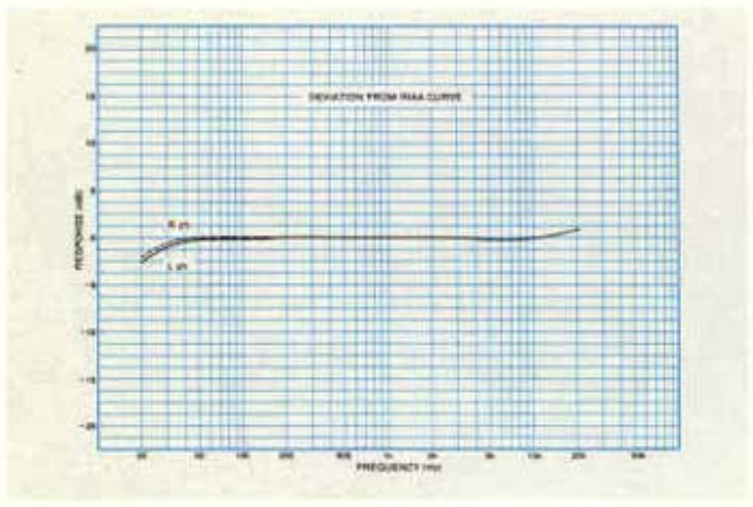
Sansui

The Ultimate Amp–dual power supply for all stages and a differential amp for each.

PREAMPLIFIER SECTION

Phono Equalizer With 300mV RMS Overload Capacity

The 4-transistor phono equalizer features a differential amplifier in its initial stage to ensure clear, transparent sound. Sound clarity is also enhanced by the use of a direct-coupled amplifier system. A high overload capacity of 300mV RMS (1kHz) is attained by careful selection of precision parts. The deviation from the standard RIAA equalization curve is kept within 0.5dB over the range from 30Hz to 15kHz.



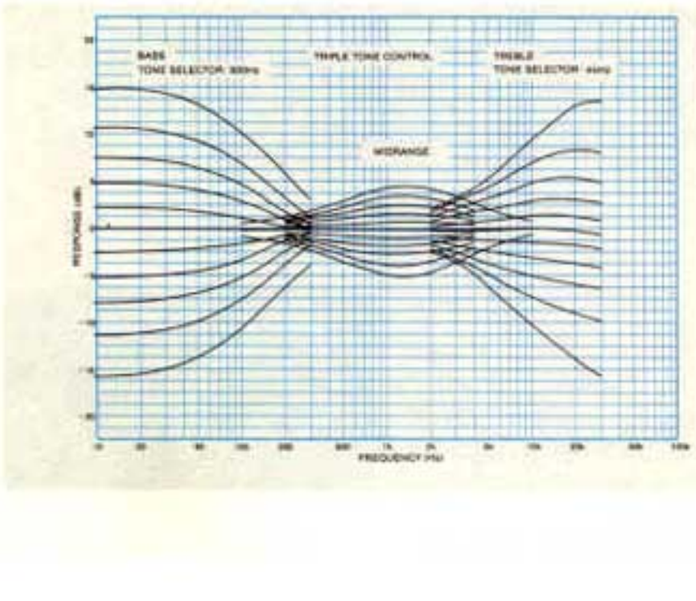
7-Position Tape Play/Dubbing Switch

You can connect two tape decks to the AU-7700. Then, with a flick of a finger, you can play either deck and also dub one onto the other while monitoring either (i.e., the deck in record mode or the deck in playback mode).

Versatile Tone Control System

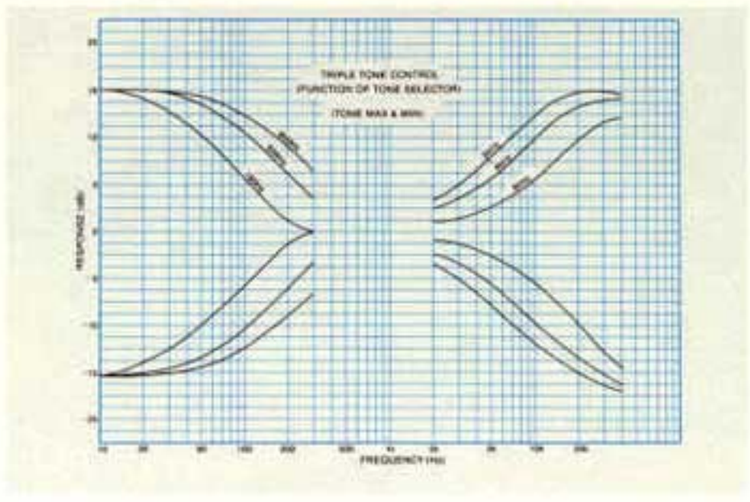
The AU-7700 gives you the Sansui-exclusive inductor-less Midrange tone control, in addition to the usual Bass and Treble tone controls, which adds important presence to all midrange frequencies to which our ears are most sensitive.

The Midrange control adjusts in 1dB nominal steps to a total of +5dB and −5dB. The circuit is constructed around six transistors, with a differential amplifier circuit employed in its initial stage. The AU-7700 actually "tailors" the color of reproduced sound, and in a highly professional way, for its low-noise type transistors and the detent-type printed variable resistors are as precise and critical as those employed in any superior professional studio mixer/equalizer console. Each tone control is provided with click-stop positions for accuracy and convenience.



Turnover Frequency Selectors for Bass and Treble

The tone selector switches select the frequency over or below that which the tone control affects: 150Hz, 300Hz or 600Hz for Bass, and 2kHz, 4kHz or 8kHz for treble. (The midrange turnover frequency is fixed at 1kHz.) The system thus permits subtle adjustments (as many as 10,571 different tonal combinations) and completely flat response that conventional Bass/Treble tone controls simply can't offer.



2-Step Low/High Filters

Used in the low and high filter circuits of the AU-7700 are expensive NF active-type filters with amplifiers of their own. The cut-off characteristic of each filter is selectable: 12dB/oct. at 60Hz or 12dB/oct. at 20Hz for Bass; 6dB/oct. at 7kHz or 12dB/oct. at 12kHz for Treble. The 20Hz filter is to eliminate such low-frequency noise such as caused by warped records; the 60Hz filter cuts motor rumble, etc. If tape hiss is present, use the 7kHz filter, and for noises such as record scratches or electric-appliance hum, use the 12kHz filter which has a sharper cut-off slope. Choosing the most suitable filters lets you enjoy noise-free music all the time.

Tone & Filter Defeat Switch

To obtain a completely flat and uncolored response, set this switch to DEFEAT. The tone control and filter circuits are completely bypassed and the phono equalizer is directly connected to the power amplifier. It will turn the AU-7700 into a "straight wire with gain." When set to FILTER ONLY, the high and low filters will be activated, but not the tone controls.

2-Step Loudness Switch

Use this to compensate for both lows and highs, or, if you prefer according to your room acoustics, only the lows.

2-Step Audio Muting Level

This switch selects either −15dB or −30dB muting. Use it to fine-adjust the volume during the low-level listening, or to temporarily reduce the sound volume.

POWER AMPLIFIER AND PROTECTION CIRCUITS

Dual Power Supply

We begin by introducing one of the less obvious but highly meaningful des sophistications of the AU-7700—its independent plus/minus dual power supply. In some integrated amplifiers, the equalizer amplifier is adversely affected by the high-current power amplifier to the extent that tonal quality suffers or, worse, oscillation results. A solidly-constructed power supply assures clear definition and clean sonority of reproduced signals, which is what you can expect from the AU-7700. The supply consists of a jumbo power transformer and two large 10,000μF capacitors. Indeed, even the preamplifier is regulated by a stabilized plus/minus dual power supply via a separate winding on the transformer, zener diodes and transistors.

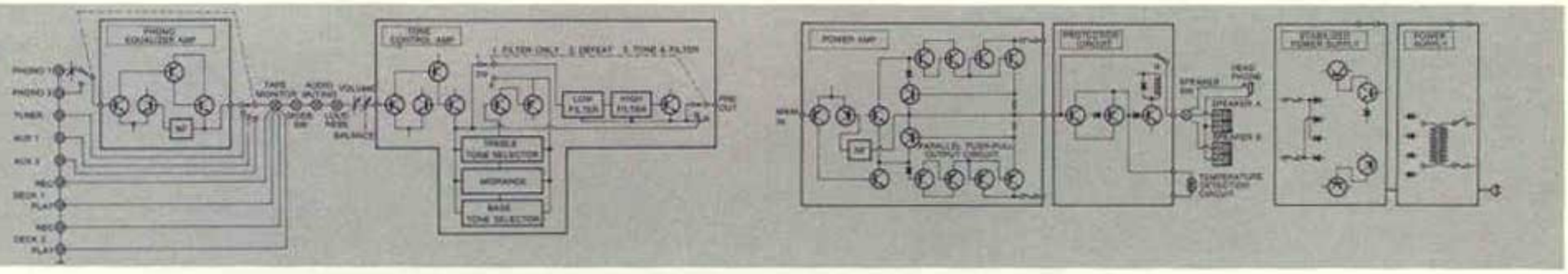
Differential Amps for Each Stage

Another often-overlooked aspect of h electronics is the assurance that negative feedback, when applied to reduce noise and distortion, does not become unstable. The AU-7700 utilizes a direct-coupled differential amplifier in the initial stage of the phono, tone control and power amplifier circuits so that negative feedback remains stable over the entire audio range. Noise is lessened, distortion almost eliminated entirely, and superior transient characteristics are assured. The plus/minus dual power supply provides a high voltage to each circuit, enabling a wide dynamic range to be achieved together with reduced distortion. And then, since the input and output ends have no electrical DC potential anywhere in the amplification stage, transient response is excellent and you hear virtually no click noises or scratching, even when controls are operated at maximum.

Direct-Coupled Parallel Push-Pull Circuit

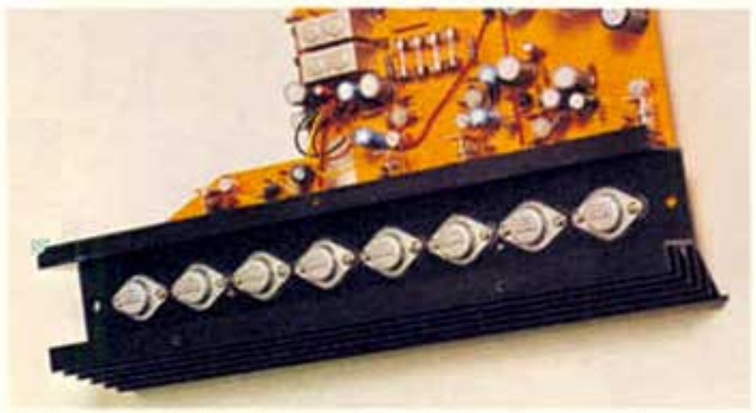
The AU-7700's power amp is a masterpiece of advanced solid-state electronics

AU-7700 BLOCK DIAGRAM



—a differential amplifier and a 3-stage Darlington system designed in a parallel push-pull OCL pure complementary output circuit arrangement.

This keeps phase shift to a minimum and assures an extremely flat response from super-lows to super-highs since it allows the application of negative feedback over the entire audio range. The 3-stage Darlington design reduces load on



drive amp, helping to minimize total harmonic and intermodulation distortion while extending power bandwidth. Also to improve linearity and performance at high-power output, four matching transistors are used in each channel for the push-pull circuit. Since the amount of current flowing in each transistor is reduced to half the transistors operate within the range of their best performance with linear signal amplification. Thanks to this circuit design and the highly-efficient, exposed-to-the-air jumbo heat sinks, the AU-7700 provides ample power at reduced distortion.

Quadruple Protection

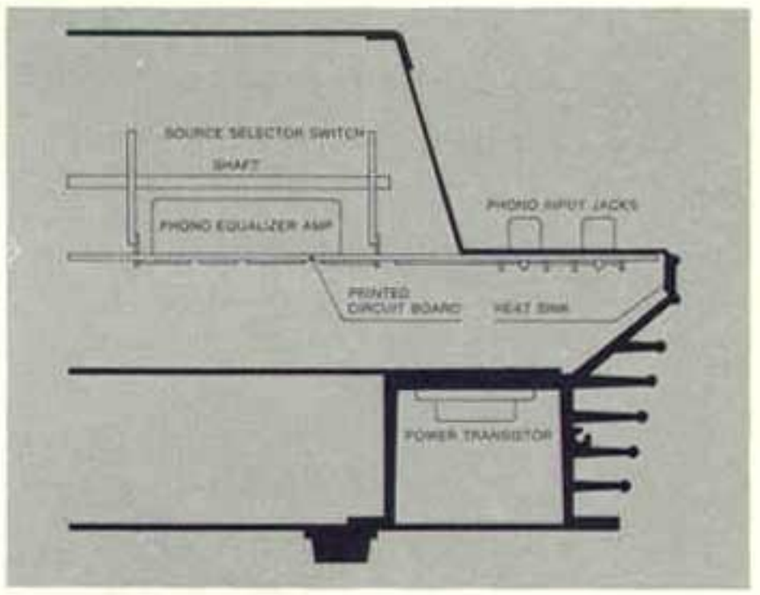
Speakers and power transistors are fully protected in four ways: (1) quick-acting fuses form an overload detection circuit, (2) a DC voltage detection circuit separates speakers from amplifier the moment a DC voltage exceeding 2V appears, (3) a transistorized ASO detection circuit limits output current the instant power transistors are forced to work beyond their Area of Safety Operation (ASO) at a load of less than 4 ohms, and (4) a self-restoring temperature detection circuit equipped with a thermistor separates output if amplifier temperature rises in the event of overload or continuous operation in unusual and/or improper conditions.

Separable Pre/Power Amps

A rear-panel switch separates the pre and power amplifier sections of the AU-7700 to allow you to connect other equipment. This arrangement also allows you to use the preamplifier section to feed tone-altered and/or filtered signals to tape deck or additional power amp.

OTHER FEATURES

- PANEL-UP JACK-PLATE extends horizontally from rear panel to facilitate simple connections of components and speakers.



- MODE SWITCH: Normal, Reverse and Mono.
- TWO PHONO INPUT CIRCUIT, one with inpedance of 50kΩ, the other switchable between 30kΩ, 50kΩ and 100kΩ.
- SPEAKERS SELECTOR SWITCH
- JUMBO GROUND PEG: Connects ground cable from a turntable, etc. to eliminate hum noises.
- THREE CONVENIENT AC OUTLETS
- DIN SOCKET: Accepts DIN connector from your tape deck.
- ALUMINUM-SCULPTURED control knobs and levers, including oversized volume and stereo balancer with convenient center-click stop.
- MADE-TO-MEASURE dimensions and appearance to match distinctive TU-7700 FM/AM tuner by Sansui.

SPECIFICATIONS

AUDIO SECTION

POWER OUTPUT

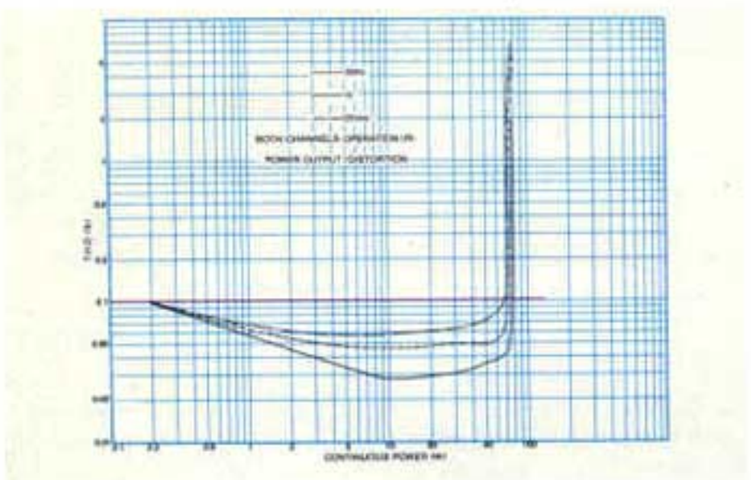
54 watts per channel, min. RMS, both channels driven into 8 ohms from 20Hz to 20kHz, with no more than 0.1% total harmonic distortion

55 watts per channel, min. RMS, both channels driven into 8 ohms at 1kHz, at rated total harmonic distortion

IHF music power — total 140 watts into 8Ω; total 250 watts into 4Ω

TOTAL HARMONIC DISTORTION

OVERALL (AUX to speaker terminals)
less than 0.1% at rated min. RMS power output

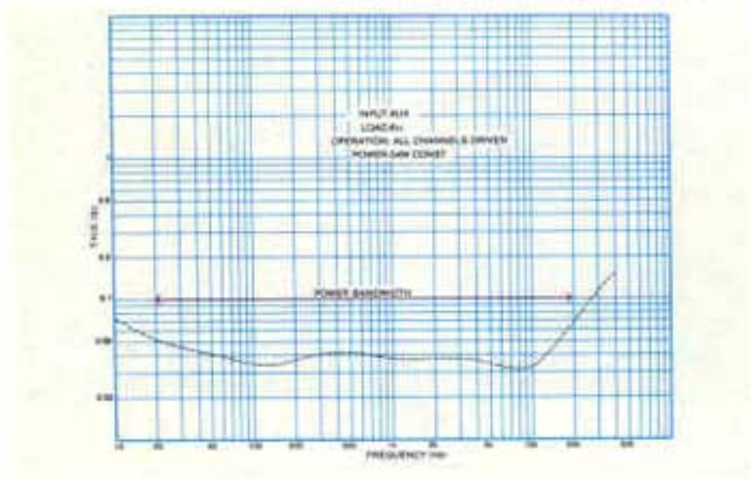


INTERMODULATION DISTORTION

(70Hz:7,000Hz=4:1 SMPTE method)
OVERALL (AUX to speaker terminals)
less than 0.15% at rated min. RMS power output

POWER BANDWIDTH

20 to 20,000Hz at rated min. RMS power output and total harmonic distortion



LOAD IMPEDANCE 8Ω

FREQUENCY RESPONSE (at 1 watt)

OVERALL (AUX to power output)
10 to 50,000Hz
+0.5dB, −1.0dB
POWER AMPLIFIER ONLY
5 to 50,000Hz
+0dB, −1.0dB

RIAA CURVE DEVIATION (PHONO)

+0.5dB, −0.5dB
(30 to 15,000Hz)

DAMPING FACTOR

approximately 30 at 8Ω load

CHANNEL SEPARATION

(at rated output 1,000Hz)

PHONO	better than 50dB
TUNER	better than 55dB
AUX	better than 55dB
POWER AMPLIFIER	better than 60dB
TAPE MONITOR	better than 55dB

IHF HUM and NOISE

PHONO	better than 75dB
TUNER	better than 85dB
AUX	better than 85dB
POWER AMPLIFIER ONLY	better than 100dB
TAPE MONITOR	better than 85dB

INPUT SENSITIVITY and IMPEDANCE

(at rated output 1,000Hz)

PHONO−1	2.5mV (30kΩ, 50kΩ, 100kΩ)
PHONO−2	2.5mV (50kΩ)
Max. input capability	300mV RMS (THD: less than 0.2%)
TUNER	100mV (50kΩ)
AUX	100mV (50kΩ)
TAPE MONITOR (pin)	100mV (50kΩ)
TAPE MONITOR (DIN)	100mV (50kΩ)
POWER AMPLIFIER INPUT	800mV (50kΩ)

OUTPUT LEVEL

TAPE REC (pin)	100mV
TAPE REC (DIN)	30mV
PREAMPLIFIER	0.8V
Maximum	5V (THD: less than 0.5%)

TONE CONTROLS

BASS	+13dB, −13dB at 50Hz (±5 steps)
MIDRANGE	+5dB, −5dB at 1,000Hz (±5 steps)
TREBLE	+13dB, −13dB at 15,000Hz (±5 steps)

TONE SELECTOR

BASS	600Hz, 300Hz, 150Hz
TREBLE	2,000Hz, 4,000Hz, 8,000Hz

LOUDNESS

HIGH & LOW BOOST
+10dB at 50Hz, +8dB at 10,000Hz (volume control −30dB),
LOW BOOST
+10dB at 50Hz (volume control −30dB)

FILTERS

LOW	−3dB at 20Hz (12dB/oct) −3dB at 60Hz (12dB/oct)
HIGH	−3dB at 7,000Hz (6dB/oct) −3dB at 12,000Hz (12dB/oct)

GENERAL

SEMICONDUCTORS

57 Transistors; 22 Diodes; 3 Zener Diodes; 1 LED;

POWER REQUIREMENTS

POWER VOLTAGE 100, 117, 220, 240V, 50/60Hz
POWER CONSUMPTION
Maximum consumption
350 watts
Rated consumption
120 watts

DIMENSIONS

434mm (17⅛") W
130mm (5⅛") H
315mm (12⁷⁄₁₆")D

WEIGHT

12.3kg (27.1lbs) net
14.0kg (30.9lbs) packed

Design and specifications subject to change without notice for improvements.

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