HMA-7500MKII

HITACHI

Power MOS FET Stereo Power Amplifier with Hitachi's Super-Linear Circuit. Ultra-Low 0.005% Distortion (full power), DC Amp Configuration, Monorail Changeover Capability (BTL), Independent Left and Right Channel Power Supplies, Large, Easy-View Power Meters

75 Watts Min. RMS Power Per Channel (Both Channels Driven) at 8 Ohms from 20 Hz to 20 kHz with no more than 0.005% Total Harmonic Distortion

Power MOS FET

Super Linear Circuit

Dual Servo

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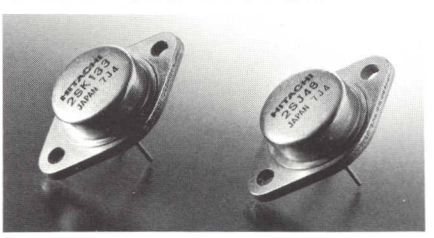
HMA-7500MKII

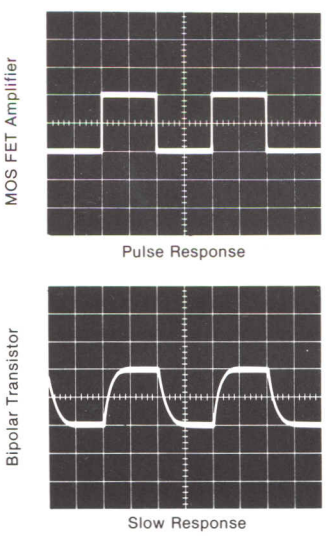
The HMA-7500MKII is at the very top of Hitachi's vast line of audio equipment, providing music reproduction performance to satisfy even the most demanding audiophile. The most advanced technology and extreme attention to detail have made it possible to produce a near-perfect stereo power amplifier. The output stage is equipped with power MOS FETs, a feature found only on the very best amplifiers. The power MOS FETs considerably simplify circuit design, and eliminate the switching distortion produced by conventional bipolar transistors. This alone produces nearly unmatched sound quality, but Hitachi's technical staff went a step further and added their recently developed Super-Linear Circuit and their Dual Servo, reducing distortion to the vanishing point and maintaining DC stability. In other ways, too, they were very thorough with the HMA-7500MKII's design: it has the capability of operating as a monorail (single-channel) amp, massive, independent left and right channel power supplies, and large, easy-view power meters. Experience the ultimate amp—the HMA-7500MKII.

Hitachi Power MOS FET Amplification

With Hitachi's introduction of the power MOS FET, amplifier technology has taken a big jump forward. Power MOS FETs



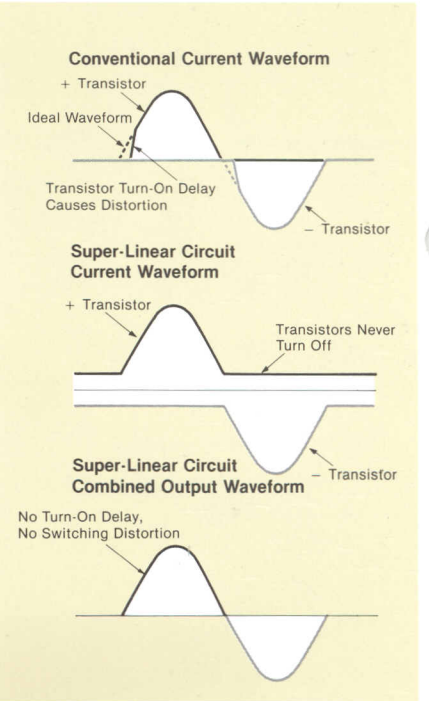
Comparison of Switching Speeds



eliminate the need for complicated bias circuitry, with its accompanying distortion. Power gain is higher too—a big 85 dB at 100 kHz, for uniform performance way up beyond the limits of human hearing. Conventional bipolar transistors have relatively long switch-on times, and therefore produce considerable amounts of switching distortion. Power MOS FETs, on the other hand, switch incredibly fast, thus eliminating switching distortion. Listen to the HMA-7500MKII, and discover for yourself the advantages of switching to Power MOS FET amplification.

Hitachi's Super-Linear Circuit

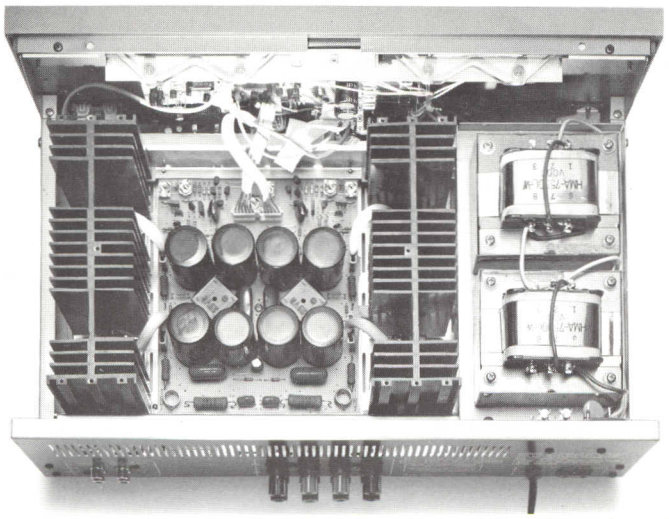
Once Hitachi engineers eliminated switching distortion, they discovered another form of distortion that was previously too small to be of concern. This occurs only at very high frequencies and resembles switching distortion somewhat. The cause was found to be that the effective source capacitance of the transistors changes near the zero-crossing point of the signal waveform, causing a minute crossover glitch at high frequencies. Hitachi's Super-Linear Circuit is a new approach that biases the transistors so that they never turn off—they merely idle on alternate half cycles. The transistors therefore operate with a constant source capacitance, eliminating this form of distortion completely. Hitachi power



MOS FETs in combination with the Super-Linear Circuit provide truly professional music reproduction quality.

Dual Servo

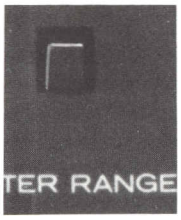
Another important Hitachi innovation is the Dual Servo circuit, which compares the output waveform of the final amplifier stage with its input and immediately corrects the slightest discrepancy by sending a servo signal back to the input of the stage. This acts in addition to the



usual negative feedback loop, and provides a dramatic reduction in harmonic distortion to 0.005% at full power. An additional benefit of this servo design is that its perfect DC stability allowed Hitach engineers to remove all the coupling capacitors from the HMA-750MKII's signal paths and from the negative feedback loop. Because in some rare cases other components in your audio system may leak DC, an additional set of input terminals is provided which incorporates blocking capacitors to prevent this DC leakage from entering the amplifier.

Monorail Amp Operation (BTL Switchable)

For the ultimate in music reproduction, you can use two HMA-7500MKII amplifiers in your system, one for each channel. A changeover switch is provided which connects the two channels of the amp together in a balanced transformerless (BTL) configuration, providing 150 watt single-channel operation.



In this mode the power meters are automatically switched to indicate the total power correctly.

Separate Left/ Right Channel Power Supplies

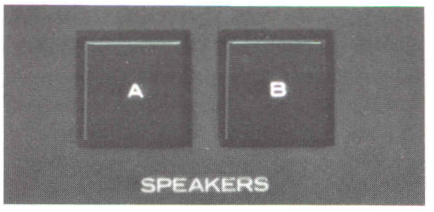
One big obstacle to accurate reproduction of stereophonic sound is transient crosstalk. Hitachi solves it once and for all by using independent power supplies for each channel. These separate power supplies feature independent left and right power transformers and large capacitors with high filtering capacity. Working together they maintain uniform power to all amplifier stages and ensure superb channel separation. Mutual interference between amp sections is eliminated, effectively overcoming the transient crosstalk problem. All that reaches your ears is clear, clean stereo reproduction.

Wide-Range Peak Power Meters

A pair of large, easy-to-read peak power meters are provided to give you an accurate indication of power output and channel balance. Excellent transient-following characteristics mean that even the briefest peaks will not escape your attention. The scales are calibrated logarithmically to provide readings over a wide range of power without range switching, and are marked in watts and in decibels. A convenient switch selects 4-ohm or 8-ohm operation, for accurate power indication with any speaker system or combination of systems.

Speaker Select Relays

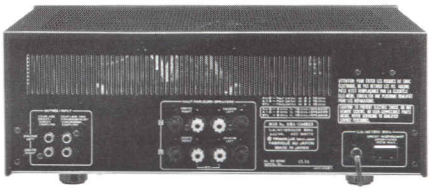
Because of the relatively large currents that pass from the output stage to the speaker terminals, routing the wires over to the speaker select switches and back to the terminals could cause a slight amount of distortion. To get around this problem, the HMA-7500MKII uses power relays to switch the speakers, placed directly adjacent to the speaker terminals and controlled remotely by the speaker select

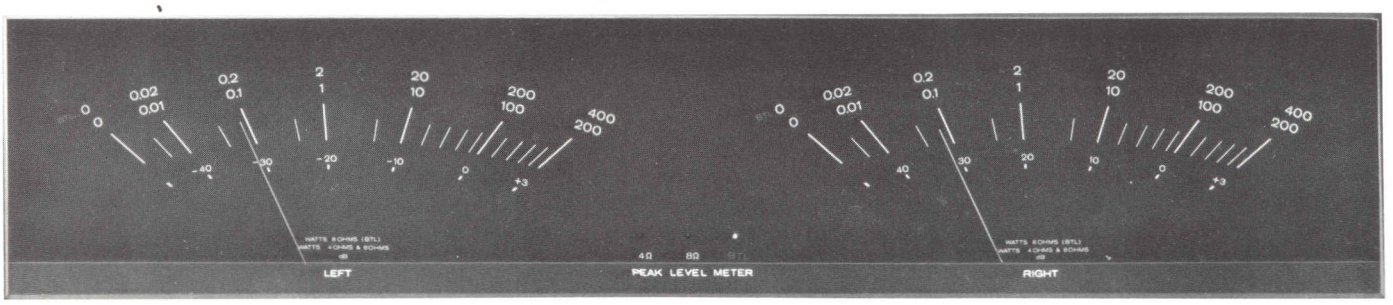


switches. This kind of attention to detail is what produces a superior power amplifier.

Speaker Protection Circuit

As this is a DC amp, some means must be provided to protect the speakers from potentially damaging DC voltages which could be caused by leakage from the preamp or other sources. This is accomplished by use of a special DC detecting relay which cuts off all signal to the speakers the moment such a voltage is detected. The protective circuit also functions as a muting circuit to eliminate the power surge and harsh "pop" noise that occur at power switch-on.





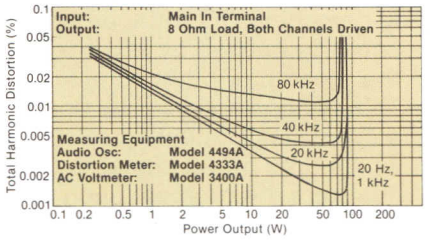
HMA-7500MKII

Specifications:

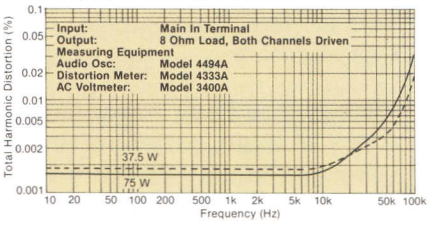
MIN. RMS POWER PER CHANNEL (BOTH CHANNELS DRIVEN) AT 8 OHMS FROM 20 HZ TO 20 KHZ WITH NO MORE THAN 0.005% TOTAL HARMONIC DISTORTION: 75 WATTS

Rated Output Power (both channels driven)	
(1 kHz, 8 ohms, 0.005% THD):	80 Watts
(1 kHz, 4 ohms, 0.005% THD):	80 Watts
BTL Power	
(Single Channel, 8 ohms):	150 Watts
Power Bandwidth	
(1/2 rated output, 8 ohms, 0.05% THD):	5 Hz—100 kHz
Frequency Response:	0.5 Hz—100 kHz +0, −1 dB
Total Harmonic Distortion	
At rated output:	0.005%
Intermodulation Distortion (60 Hz & 7 kHz, 4:1)	
At rated output:	0.008%
At 1/2 rated output:	0.005%
Input Sensitivity/Impedance	1 V/47 k-ohms
Signal-to-Noise Ratio (IHF, short-circuited, A network, rated power):	118 dB
Damping Factor (1 kHz, 8 ohms):	60
GENERAL	
Dimensions: (W x H x D):	435 x 165 x 320 mm (17-1/8" x 6-1/2" x 12-9/16")
Weight:	14.0 kg (30 lbs. 13 oz.)

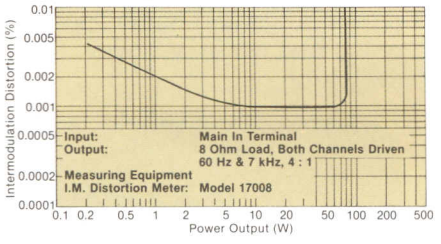
Power Output vs. Total Harmonic Distortion



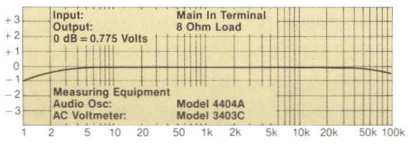
Frequency vs. Total Harmonic Distortion



Power Output vs. Intermodulation Distortion



Frequency Response



HCA-7500 MKII
HMA-7500 MKII

Specifications subject to change without notice

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