

HCA-7500MKII



Stereo Control Amplifier with Ultra-Low-Noise MC/MM Phono Equalizer, DC Servo Circuitry, Low-Noise Tone Control Amp with Selectable Turnover Frequencies, Cartridge Load Impedance Switch, RIAA Deviation within ± 0.2 dB from 20 to 20,000 Hz



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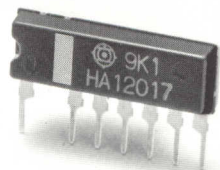
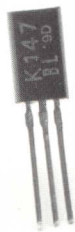
HCA-7500MKII

Total Control Over Every Musical Nuance

The surroundings in which audio systems are required to perform are as diverse as the people who listen to them, and no hi-fi component will sound the same in different locations or systems. That's why Hitachi developed the HCA-7500MKII control amplifier. The HCA-7500MKII is a processing center with which your recorded music can be accurately matched to listening conditions and other system components to provide sound just the way you like it, without adding any audible noise or distortion.

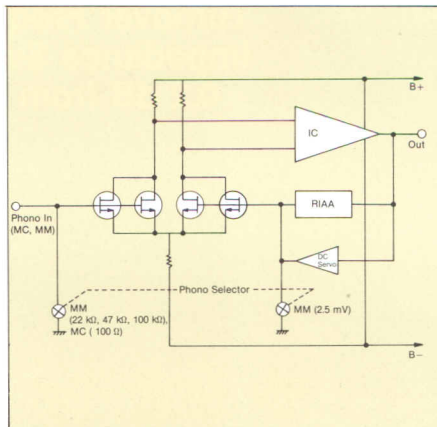
Ultra-Low-Noise MC/MM Phono Equalizer

The phono equalizer section employs a high- g_m FET in an advanced circuit design to provide an excellent signal-to-noise ratio. Moving-coil cartridges may be used directly so that you can take advantage of their high performance without having to buy a separate, expensive head amp. MC switch positions are provided for selecting either 2.5 or 0.1 mV sensitivity. The RIAA equalization network is made up of high-quality, precision components for conformance to the RIAA curve within ± 0.2 dB regardless of temperature, humidity or aging. Your music will sound just the way the recording engineer intended it to.



Equalizer FET and IC

Equalizer Block Diagram

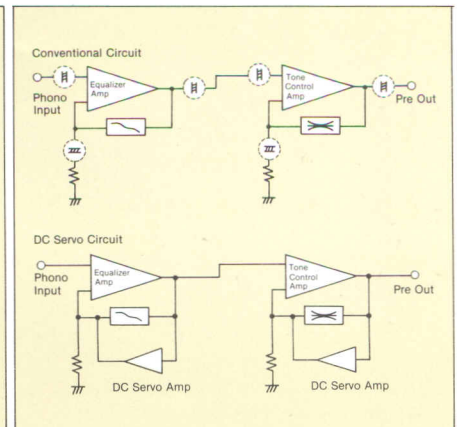


DC Servo Circuitry

The HCA-7500MKII's equalizer amp and tone control use all DC circuitry with all capacitors eliminated from the inputs, outputs and feedback loops. A DC servo circuit provides DC feedback for precise DC stabilization. Because some users of the HCA-7500MKII may have music

sources which leak DC, Hitachi has provided an additional set of input terminals which contain

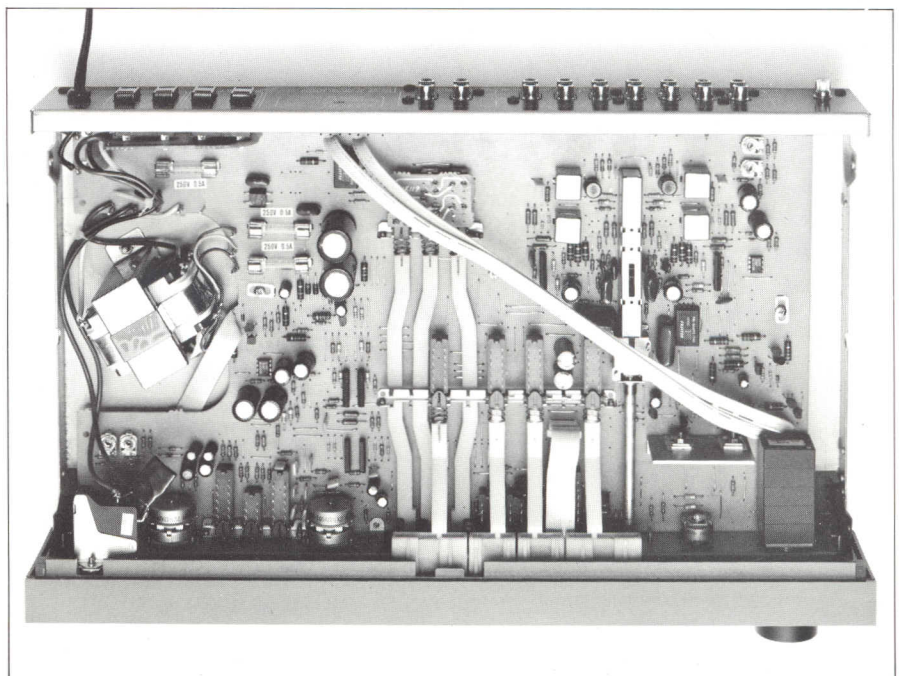
DC Servo Circuit Diagram

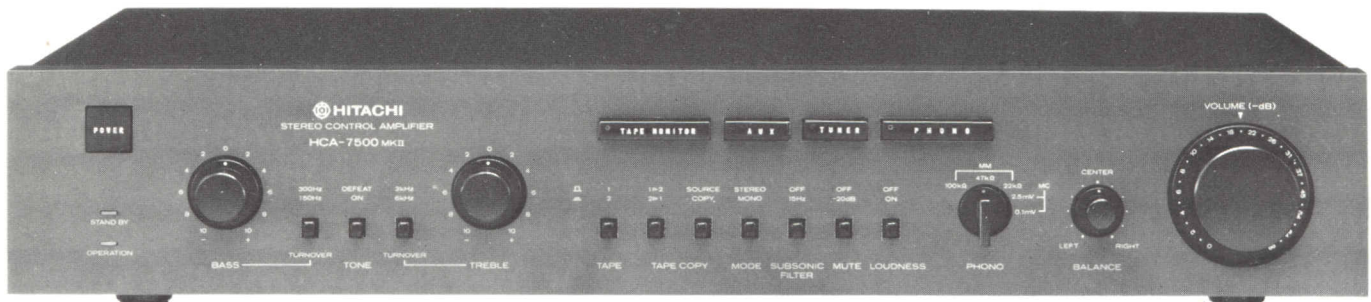


blocking capacitors to prevent DC leakage from entering the power amp.

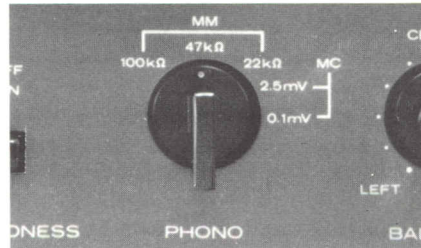
Low-Noise, Low-Distortion Tone Control Circuit

The tone control amp has a direct-coupled configuration with a FET differential input and a high-gain integrated circuit.





Distortion in this circuit is so low (0.005% at 5 volts output, 20—20,000 Hz) that it is almost impossible to measure by conventional methods. Furthermore, at 150 mV input, the signal-to-noise ratio is an outstanding 104 dB (IHF A network). Switchable turnover points for both treble and bass controls provide an extremely wide range of control over tonal balance. The effects of the tone controls in compensating for room and/or speaker response can easily be checked with the Tone Defeat switch,



variable load impedance switch with 22 k Ω , 47 k Ω and 100 k Ω positions. The load impedance of MC cartridges is fixed at 100 Ω . This switch is mounted on the front panel for convenient operation.



which removes both tone controls from the circuit, leaving a perfectly flat response.

Remote Action Switches

Long leads running from the circuit board to the Function, Tape, and Phono Selector switches can cause crosstalk and noise. This problem has been avoided by using analog switches for these functions, mounted directly on the board in close proximity to their associated circuitry. These switches are activated remotely by a DC control voltage from the switches on the front panel.

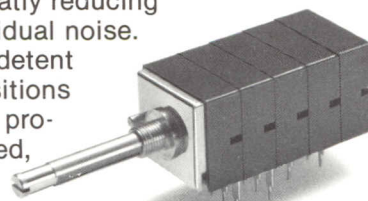
Cartridge Load Impedance Switch

Load impedance can make a big difference in your MM cartridge's performance, especially in the high-frequency region. The HCA-7500MKII is equipped with a

4-Gang Volume Control

Many amplifiers use an ordinary double-gang volume control, which leaves a fair amount of residual noise at low volume settings. This is because the gain is turned down only on the first amp stage of each channel, and all the succeeding stages are run "wide open", amplifying any internally generated noise to an audible level. The HCA-7500MKII solves this problem with a 4-gang volume control which turns the gain down at input and output points in the tone amplifier, greatly reducing residual noise.

31 detent positions are provided,

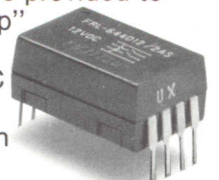


4-Gang Volume Control

making setting and resetting of volume levels quick and easy.

Reed Relay Muting Circuit

To prevent the transient surge at power on from reaching and possibly damaging your power amplifier or speakers, the HCA-7500MKII is equipped with a 5-second delay reed relay muting circuit. Also, because the amplifier stages all use direct-coupled configurations, a 2-second delay is provided to prevent any "pop" when switching between MC and MM positions or between the two MC positions.



Muting Relay

Subsonic Filter

High-level, low-frequency signals originating from turntable rumble or warped records can damage speakers and absorb vital power from the amplifier. The HCA-7500MKII provides a switchable subsonic filter (15 Hz, 6 dB/oct) that lets you eliminate low-frequency interference without altering the overall sound quality of the amplifier.

Tape Monitoring and Dubbing

For extra convenience when recording and editing tapes, the HCA-7500MKII has terminals for connecting two tape decks. Switch settings are provided for monitoring either deck, and also for dubbing from either deck to the other.

Other Features

- * Loudness control
- * -20 dB muting switch
- * Slim-line design





HCA-7500MKII

Specifications:

Frequency Response

Phono (RIAA): 20 Hz—20 kHz ± 0.2 dB
 Tuner, Aux, Tape: 5 Hz—100 kHz
 +0, -1 dB

Total Harmonic Distortion

Phono MM (Rec Out,
 5 V, 20—20,000 Hz): 0.005%
 Tuner, Aux, Tape
 (Pre Out, 5 V,
 20—20,000 Hz): 0.005%

Input Sensitivity/Impedance

Phono MM: 2.5 mV/100, 47, 22 k-ohms
 Phono MC: 2.5 mV, 0.1 mV/100 ohms
 Tuner, Aux, Tape: 150 mV/47 k-ohms

Phono Overload Level

(1 kHz): 260 mV (MM), 10 mV (MC)

Output Level/Impedance

Rec Out (Phono,
 at rated input): 150 mV/600 ohms
 Pre Out: 1 V/600 ohms

Signal-to-Noise Ratio

(IHF, short-circuited, A network, rated power)
 Phono MM: 91 dB (2.5 mV, 1 kHz input)
 Phono MC: 75 dB (0.25 mV, 1 kHz input)
 Tuner, Aux, Tape: 104 dB (150 mV, 1 kHz input)

Tone Controls

Bass boost/cut: ± 8 dB (100 Hz, 50 Hz)
 Treble boost/cut: ± 8 dB (10 kHz, 20 kHz)

Loudness Control

(volume at -30 dB): +8 dB (50 Hz)
 +3 dB (10 kHz)
 15 Hz (6 dB/oct)

Subsonic Filter:

GENERAL

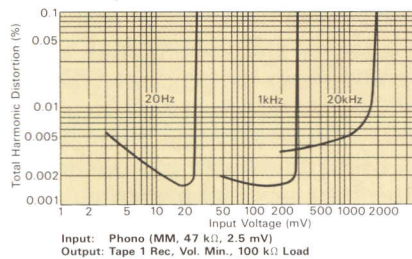
Dimensions

(W x H x D): 435 x 83 x 292
 (17-1/8" x 3-1/4" x 11-1/2")

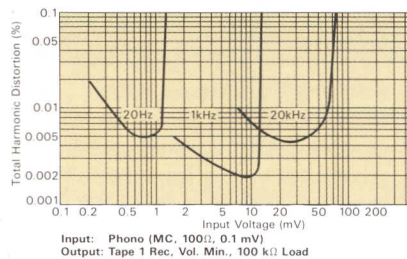
Weight:

4.5 kg (9 lbs. 14 oz.)

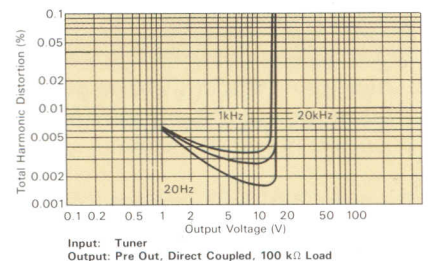
MM Phono Input Level vs. Distortion



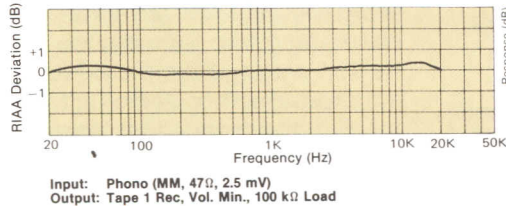
MC Phono Input Level vs. Distortion



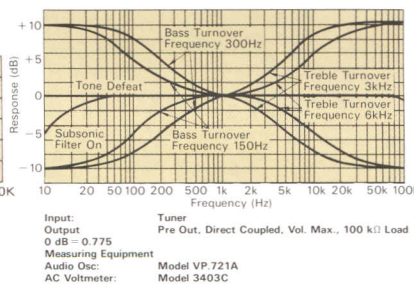
Tuner Input Level vs. Distortion



RIAA Deviation



Tone Control Characteristics



Specifications subject to change without notice.

Hitachi Sales Corp. of Canada Ltd.

3300 Trans-Canada Highway, Pointe Claire, Que. H9R 1B1
 TEL: (514) 697-9150 TELEX: 5822562 HITACHICAN PCLR