

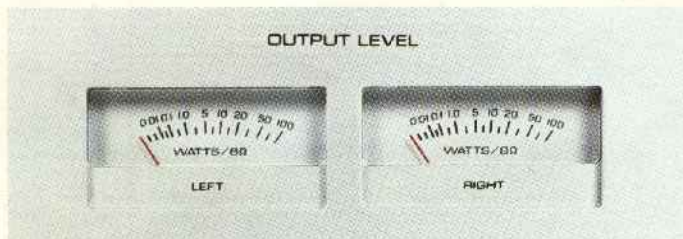
YAMAHA CA610

High power low distortion integrated stereo amplifier.
Wide-range power output level meters. 75 dB signal-to-noise ratio.
Tape monitoring and dubbing independent of source.
40 watts RMS minimum power per channel,
both channels driven into 8 ohms, with no more
than 0.05% total harmonic distortion from 20 to 20,000 Hz.





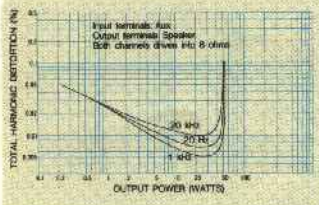
A DRAMATIC BREAKTHROUGH IN



Pure Power Boosts Listening Pleasure

In the trend towards higher output powers, the CA-610 is unique. The minimum 40 Watts per channel is generous. With most home listening done between 1 and 10 Watts it can even be overwhelming! But the tremendous sense of scale, of unstrained ease in reproduction, and vast reserves of power, is more than you would expect from 40 Watts (and certainly more than you would get from most competitive amplifiers in the same class).

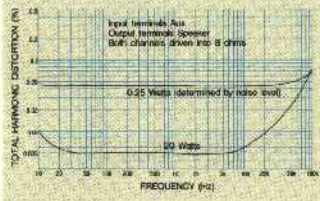
TOTAL HARMONIC DISTORTION vs OUTPUT POWER



Capable of recapturing for you the thrill of an orchestral *tutti* or a live rock concert,

the sound is never choked in noise or smeared with distortion at low levels.

TOTAL HARMONIC DISTORTION vs FREQUENCY

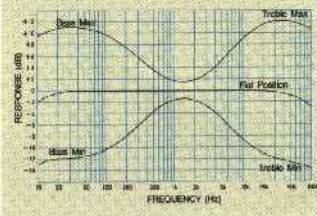


From a mere 250 mW up to the full rated output of 40 Watts, and for all frequencies from 20 Hz to 20 kHz, the CA-610 gives no more than 0.05% total harmonic distortion. At 20 Watts output that drops to 0.01% (0.005% at 1 kHz)! And signal-to-noise ratio is 75 dB for a 2.5 mV phono input. It all adds up to a new experience in impressive, powerful reproduction. The meters cover outputs from 0.01 W to 100 W in one unswitched range, a valuable feature that lets you know how much power your speakers are handling.

Ultra Low Distortion Tone Control Circuitry

The CA-610 tone controls offer the ideal combination of characteristics: simple to operate, they add virtually no distortion to the final sound. You can boost or cut treble and bass to suit your mood, your choice of music, or the acoustics of your room and speakers. And you can do it all without sacrificing quality for the convenience.

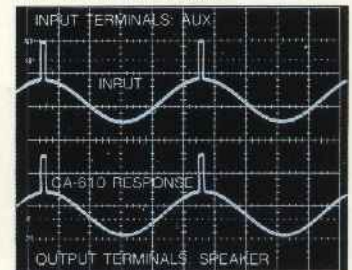
TONE CONTROL CHARACTERISTICS



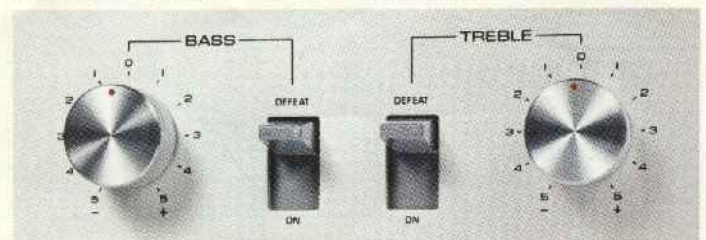
The special Yamaha negative feedback (NFB) circuitry, and perfect crystal device technology (PCT) used in the semiconductors, give smooth and precise control, with

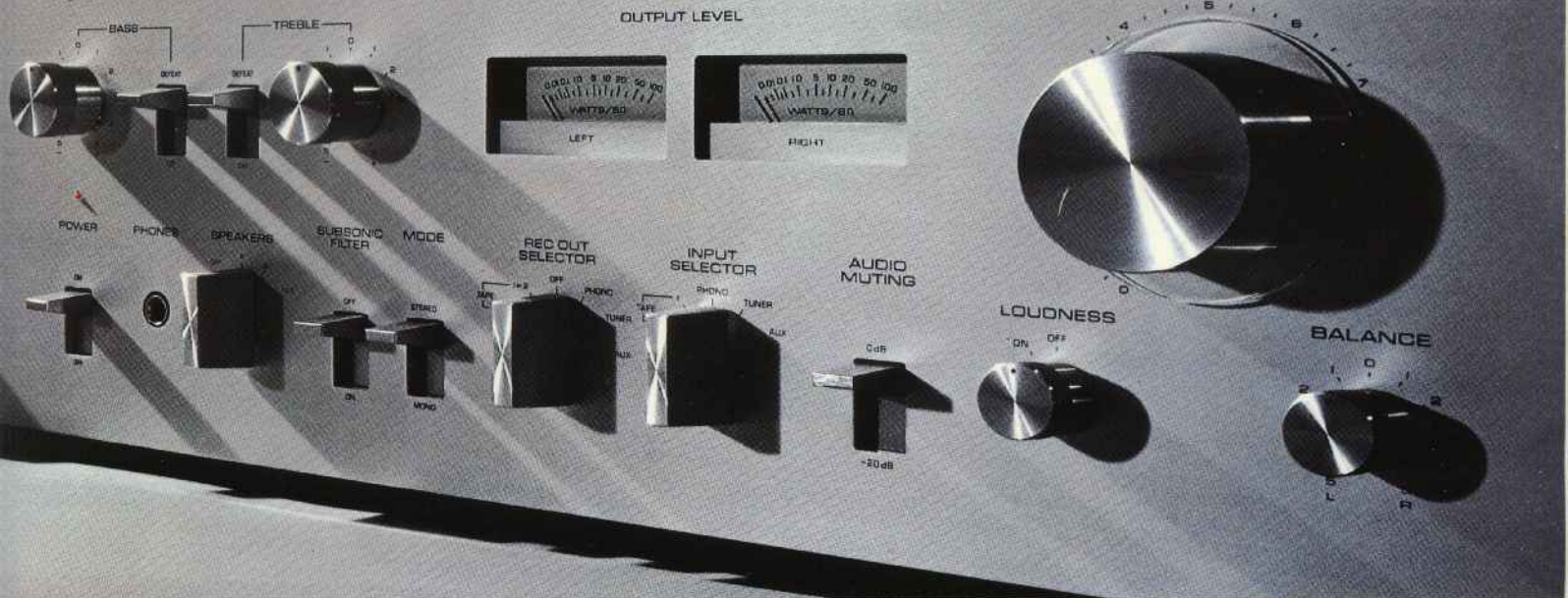
perfectly flat '0' (zero) position. And so that you can compare the effects of your tone control settings, there are separate 'defeat' switches for bass and treble, instantly bypassing the boost and cut circuits. The special Yamaha design ensures that distortion is held to a minimum, typically contributing only 0.008% from 20 Hz to 20 kHz, with 90 dB S/N ratio and 0.4 mV residual noise for the Aux terminals!

TONE CONTROL AMP + POWER AMP PULSE RESPONSE



Music waveforms are incredibly complex, and the pulse plus sine wave response of the CA-610 shows how faithful reproduction of such signals is.

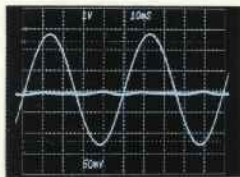




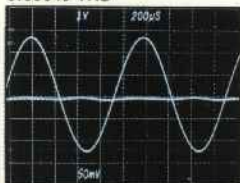
LOW-DISTORTION POWER!

TONE CONTROL + POWER AMP DISTORTION WAVEFORM

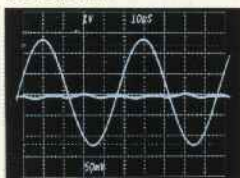
20 Hz/40+40 W/8 ohms 0.0075% THD



1 kHz/40+40 W/8 ohms 0.006% THD



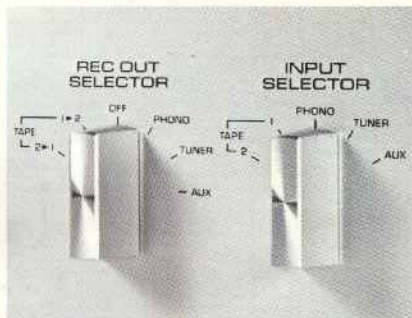
20 kHz/40+40 W/8 ohms 0.016% THD



A Clearly Audible Advance in Quality

The CA-610 is more than the sum of its parts. More than a combination of superb equalizer amplifier for record reproduction, sophisticated tone controls, and a powerful main amplifier. It's truly integrated. And not only is power high: the distortion hits new lows at all listening

levels from the quietest to the very loudest. The photographs show just how pure the sine waveforms are, and how free the distortion waveform is from switching and notch effects. Your ears will rapidly confirm the difference this makes to listening pleasure.



A Fantastic Range of Operating Modes

The CA-610 combines full tape monitoring and dubbing facilities with a new ability. Now, not only can you copy direct from one tape deck to another in any direction, and monitor recordings while they are being made (if you have a three-head tape deck). You can also listen to any program source while you are recording. This lets you save

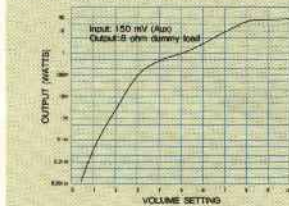
time by dubbing at double speed, while relaxing to the sound of your favorite record. Or you can record an FM program for later audition while listening to a pre-recorded tape.

More Than an Amplifier — A Complete Control Center

If you hear the CA-610 you can hardly fail to want it. If you select it, you are sure to want the matching tuner: the CT-610. Together, they stand right at the top of their class, and form the nucleus of a first quality home stereo system. The CA-610 has a precision volume control, perfectly in balance within ± 1 dB from 0 to -70 dB, with an attenuation curve that makes it easy to set the exact level you want. Then there is the -20 dB muting switch for an

instant cut in volume. And the useful Rec Out Off position, cutting out the effect of tape decks when not recording. A host of useful features.

VOLUME CONTROL SETTING VS ATTENUATION



Provision for Two Sets of Speakers

Comprehensive Protective Circuits

Loudness Switch for Low Level Listening

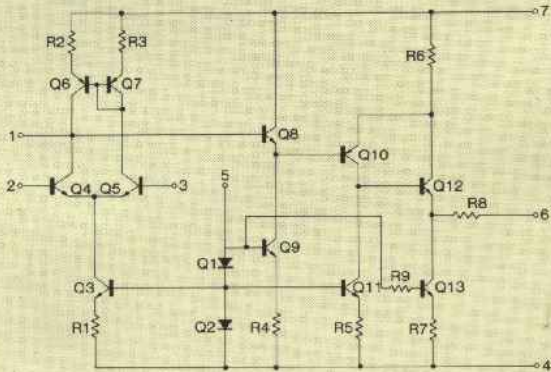
Subsonic (Rumble) Filter

Stereo/Mono Mode Switch



PRODUCT OF AUDIO KNOW-HOW AND TECHNICAL EXCELLENCE

EQUALIZER AMP CIRCUIT

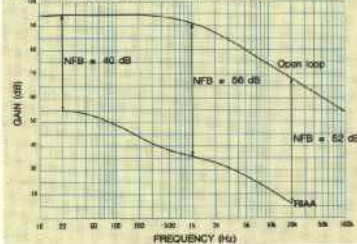


Advanced Equalizer Design

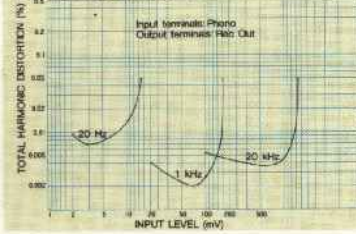
With its four-stage direct-coupled configuration, the equalizer resembles power amplifier design more than it does conventional circuitry. All four stages (differential current-mirror first stage plus emitter/collector/emitter-follower) operate under constant current bias, and give excellent open loop performance. The result is

high stability and ultra-low distortion with moderate NFB for superb dynamic characteristics.

EQUALIZER OPEN LOOP AND RIAA CHARACTERISTICS



EQUALIZER PHONO DYNAMIC MARGIN

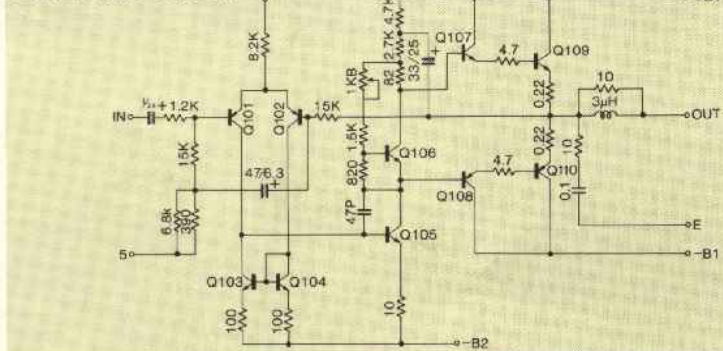


Sophisticated Amplifier Design

The combination of differential current-mirror first stage, and common emitter plus

Darlington-connected fully symmetrical complementary output-capacitorless (OCL) output stage, with careful choice of high performance, low input capacity transistors in closely matched pairs, gives power amplifier performance virtually indistinguishable from Class A operation. Low frequency response is improved by separate power supplies for differential amp, pre-drive, and power stages, via two 6,800 μ F smoothing capacitors.

POWER AMP CIRCUIT



SPECIFICATIONS

| | | | |
|---|--|--|---|
| Continuous Min. RMS Power (both channels driven, at rated distortion, 20-20,000 Hz) | 50+50 Watts (4 ohms) 40+40 Watts (8 ohms) | Tuner, Aux Tape PB (1, 2) Phono Dynamic Margin (1 kHz, 0.1% THD) | 150 mV/50 k Ω 150 mV/1 k Ω |
| Total Harmonic Distortion (THD) | 0.05% or less (rated output) | Output Level/Impedance | Tape Rec Out (1, 2) 150 mV/1 k Ω |
| Intermodulation Distortion | 0.05% or less (rated output) | Tone Controls | Bass ± 12 dB boost/cut at 50 Hz Treble ± 10 dB boost/cut at 10 kHz |
| Power Bandwidth (IHF, both channels driven) | 10-50,000 Hz | Loudness Control (volume -30 dB) | 50 Hz: +9 dB; 10 kHz: +5 dB |
| Damping Factor (8 ohms, 1 kHz) | Better than 50 | Subsonic Filter | -3 dB at 25 Hz (12 dB/oct.) |
| Output Terminals | A, B, or A+B (front panel switch) | Audio Muting | -20 dB |
| Speaker Impedance | 4 to 16 ohms (A or B) 8 to 16 ohms (A+B) | Semiconductors: | 4 ICs, 29 Transistors, 13 Diodes plus 3 Zener Diodes |
| Frequency Response (Aux to Sp. Out) | 20-20,000 Hz: +0.2, -0.3 dB | Power Source | AC/117 V, 60 Hz (Canada) 110/130/220/240 V switchable, 50/60 Hz (other areas) |
| RIAA Deviation | 20-20,000 Hz, ± 0.3 dB | Power Consumption | 105 Watts |
| Signal-to-Noise Ratio (IHF-A Network) | Aux to Sp. Out: 90 dB Phono to Sp. Out: 75 dB | Dimensions (W x H x D) | 435 x 150 x 298 mm 17 1/8" x 6" x 11 3/4" |
| Residual Noise (Pre+Main Amp, 8 ohms) | 0.4 mV | Weight | 8 kg (17.6 lbs.) |
| Input Sensitivity/Impedance Phono | 2.5 mV/50 k Ω | | |

Specifications subject to change without notice.

For details please contact:

SINCE 1887



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