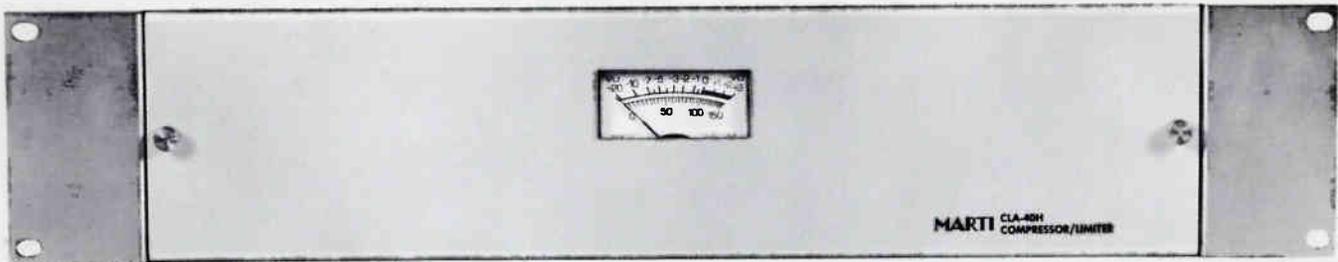


CLA-40/A Compressor Limiter Amplifier



Horizontal Type Mounting

FEATURES:

- ★ Symmetrical or Asymmetrical Peak Limiting — Switchable
- ★ Pre-emphasized or Flat Audio Response — AM or FM — Switchable
- ★ Compress/Limit, Compress Only, Compress/Limit Off — Switchable
- ★ Adjustable Negative and Positive Peaks
- ★ Well Shielded and Filtered for Strong RF Fields
- ★ Plug-In, Modular Construction
- ★ Illuminated, Taut-Band Meter reads Gain Reduction or Output Level in VU
- ★ 40 DB Dynamic Range with less than 1% Distortion
- ★ Automatic Gain Control Built In
- ★ Solid-State
- ★ Selectable Release

The CLA-40/A Compressor/Limiter, is perhaps the most versatile audio processing device to be found on the market today. Combining the functions of Limiting, Compression, Expansion and Automatic Gain Control, the CLA-40/A fills a variety of requirements, formally accomplished by several different devices. The mystery of audio processing has now been eliminated as this new amplifier does them all.

Compatible with either AM or FM broadcast application, it can be used in either mode of operation, simply by switch selection. For stereo application, two CLA-40/A Amplifiers are strapped together and checked out as a stereo device. The amplifier may be operated in either the symmetrical or asymmetrical limiting mode and when operating asymmetrically, it is not at all unusual to expect a 6 db. rise in average modulation. In the event of positive FCC action requiring that Positive Peak Modulation be limited to 100%, the unit

need only be switched to **Symmetrical limiting** to conform to FCC requirements.

Any type of program format is adequate handled by the CLA-40/A from "Middle of the Road" to "Hard Rock," with maximum Dynamic Range and minimum Distortion. With switch selectable release times of as high as 5 seconds, the unit also finds application as an Automatic Gain Control Amplifier and is ideal for use between the output of a Production Console and the input to the Record Amplifier of Cartridge Tape Systems.

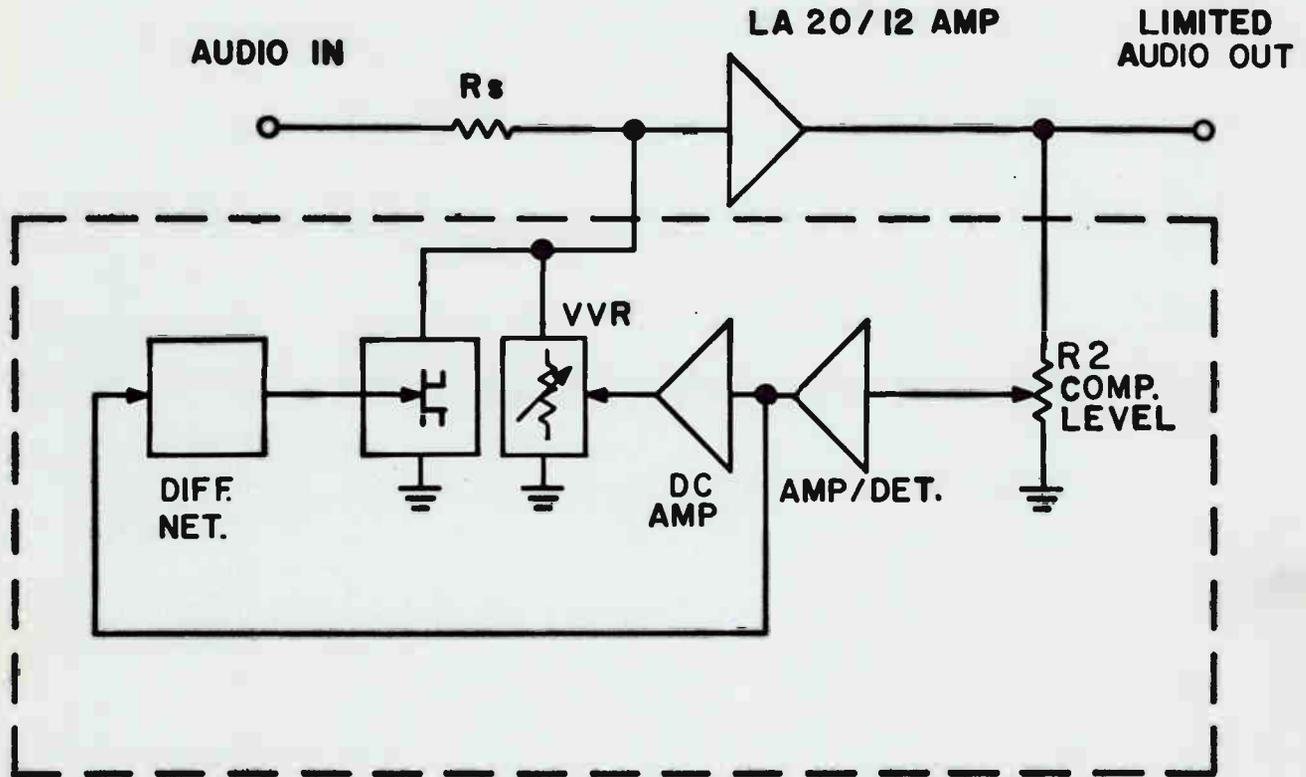
Fully accessible controls, permit its use as a Compressor, Compressor/Limiter or as a "Straight Through" amplifier for Proof of Performance measurements, and at last, the CLA-40/A is supplied with a meter that means something, reading in Gain Reduction, + 4 VU and + 10 VU.

Manufactured by a Broadcaster for the Broadcaster.

THEORY OF OPERATION OF THE MARTI CA-40/A SOLID STATE COMPRESSOR/LIMITER MODULE

The Marti CA-40/A compressor/limiter unit operates on the variable audio attenuator principle. A full wave audio detector provides a voltage proportional to audio peak level which controls a voltage variable resistor (VVR) average level attenuator. This VVR device has a very large dynamic operating range, adds no audio distortion but has a comparatively slow attack time. For instantaneous control of short rise time audio wave-

forms, the control voltage is differentiated and applied to the gate of a field effect transistor. This device is connected in parallel with the VVR, and serves as an extremely fast attenuator, operating only on short rise time waveforms, thus complimenting the slower VVR device. The result is a compressor with a 40 db dynamic range and a limiter with microseconds attack time.



SPECIFICATIONS

Application	AM or FM (Characteristics selectable). Strap two together for stereo. Combines both compression and limiting functions. Three control systems used. Symmetrical peak limiting for FM, selectable asymmetrical or symmetrical peak limiting for AM. Peak limiting level adjustable.
Input and Output Impedances	600 ohms balanced or unbalanced.
Input Level	-15 to +20 DBM.
Maximum Output Level	+20 DBM RMS.
Frequency Response	50 Hz. to 15 kHz flat within 0.5 DB in AM or FM mode.
Maximum gain	40 DB.
Noise Level	-66 DB Ref. +10 DBM output (FM Mode).
Distortion	Less than 1% THD at all compression levels.
Compression Ratio	Better than 10:1.
Automatic Gain Control Range	40 DB dynamic.
Release Time	Adjustable 800 milliseconds., 2 sec., 5 sec. approx.
Attack Time	Less than 1 microsecond in compress-limit mode.
Metering	Gain reduction, output level +4 VU, +10 VU.
AM-FM Operation	Both. Standard 75 microsecond pre-emphasis/de-emphasis used in FM operation.
Shielding and RF Filtering	For use in high RF fields.
Operating Temperature	-20° C to +50° C.
Physical Dimensions	3 1/2" x 19" rack panel or 1/6th of 7" x 19" rack housing.
Power Requirements	120/240 volts 50-60 Hz., 10 watts.
Weight	6 lbs.