

ampli-vision
low band line amplifier
model 105

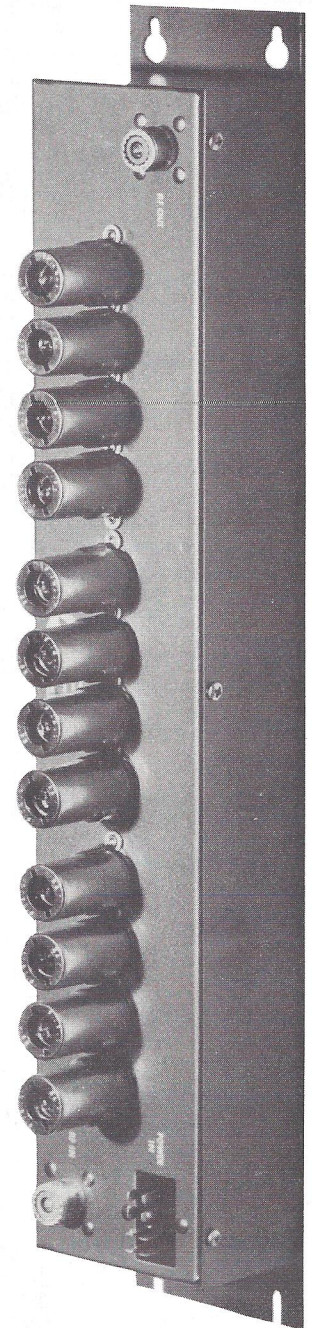


features:

- * 37 db gain.
- * Covers all low band VHF channels plus FM with only one amplifier.
- * Usable bandwidth 30-115 mcs.
- * Reliable, continuous operation, even in the event of tube failure.
- * Amplifiers may be left unattended for long periods in pole box repeater stations.
- * No alignment necessary.
- * Outputs up to 1.5 volts RMS across 75 ohms without amplitude distortion.
- * Extremely low intermodulation distortion. Maximum output with 2 channels, 1.4 volts peak sync; with 3 channels, .5 volts.
- * Gain may be varied for level adjustments.
- * A complete line of TV transmission and distribution system equipment is available to go with this amplifier.

uses:

- * Transmission and distribution amplifiers in community TV systems.
- * A booster for an individual TV set.
- * An amplifier to feed a multiple installation in a motel, hotel, trailer camp or TV store.



specifications:

VOLTAGE GAIN
37 db \pm 1 db.

BANDWIDTH:
54 — 88 mcs.

USABLE BANDWIDTH:
30 — 115 mcs.

FLATNESS:
 \pm .75 db, 54 — 88 mcs.

INPUT IMPEDANCE:
75 ohms.

OUTPUT IMPEDANCE:
75 ohms.

MAXIMUM LEVELS: (Measured at peak sync pulses, using actual TV signals)

	INPUT	DB
One channel	22,000 microvolts	27
Two channels	21,000 microvolts	26
Three channels	7,400 microvolts	17.4

	OUTPUT	DB
One channel	1,540,000 microvolts	64
Two channels	1,470,000 microvolts	63
Three channels	500,000 microvolts	54.4

TUBE COMPLEMENT:
Twelve 6AK5's.

POWER REQUIREMENTS:

Plate Voltage:
+135 volts.

Regulated Screen Voltage:
+105 volts.

Filament Voltage:
6.3 volts a-c.

Grid Bias Voltage:
—1.2 volts.

(These requirements are ideally met by the Ampli-Vision Model 10 Power Supply. A variable bias adjustment on this supply makes it possible to alter the gain +1 or —2 db in order to set levels.)

POWER CONSUMPTION:

30 watts as supplied by the model 10 power supply. The model 10 draws 60 watts to furnish this power.

FINISH:

Strato-blue baked metallic enamel.

DIMENSIONS:

3¼" wide x 4" high x 19" long.

WEIGHT:

5 pounds.

MOUNTING:

Standard 19 inch rack or Ampli-Vision weatherproof pole box.

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low band line amplifier

description:

The Ampli-Vision Model 105 Low Band Line Amplifier is a broad-band RF amplifier designed for use in TV transmission and distribution systems carrying low VHF band signals. Since the output impedance of these amplifiers is 75 ohms, they may be connected directly to 75-ohm coaxial cable without the need for matching transformers. The high 37 db gain of these amplifiers makes it unnecessary to use more than one at an amplifier station.

An outstanding feature of these amplifiers is their low intermodulation distortion. Figures for the maximum signal levels obtainable are given in the specifications.

These figures have been obtained using three actual TV signals taken from the air on Channels 2, 4 and 5 in Los Angeles.

They are not quoted from tests made with sine-wave AM modulated signal generators. Such tests can be misleading because they do not take into account the effects of the FM audio sidebands and widely spread video sidebands in real TV signals.

principle of operation:

The AMPLI-VISION Low Band Line Amplifier is designed according to the distributed amplifier principle and consists of three distributed amplifier stages in cascade. In the distributed amplifier, all grids are equally spaced along a grid delay line, and all plates are equally spaced along a plate delay line. The delay times of both lines are equal.

A signal entering the input terminal is amplified in the first tube. The amplified signal at the plate of this tube starts down the plate delay line toward the plate of the next tube at the same instant that the original signal starts down the grid delay line toward the grid of the next tube. Since the plate and grid lines delay the signal equal amounts, the grid and plate signals reach the next tube at the same instant. Here the grid signal is amplified again and added to the plate signal.

The distributed amplifier has several advantages. Failure of a tube due to loss of emission does not render the amplifier inoperative; it merely cuts down the gain about 2 db. A 50 per cent drop in the Gm of one tube will cause a fall in gain of only about 1 db, whereas a similar drop in Gm in a simple cascaded amplifier will cause a 6 db drop in gain. The distributed amplifier has an extremely wide bandwidth and a flat frequency characteristic. There are no adjustments to be made on it. The circuit is exceptionally simple and rugged so that service work is reduced to routine tube replacement.

Simple modification pushes the lower frequency limit of these amplifiers down to 1 kc. For interested users, this modification will be made at the factory.



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