

L MULTIPLEX TERMINALS COMMON EQUIPMENT AUXILIARY 315.92-KHZ PILOT SUPPLY DESCRIPTION

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bandpass filter, a front-panel output test jack, a pilot distribution terminal board, and a terminal board for -24 volt input power connections.

1. GENERAL

- 1.01 An auxiliary 315.92-kHz pilot supply (Fig. 1) provides pilot signals for up to ten circuits. This pilot supply is primarily used for connecting a 315.92-kHz pilot signal to a user's equipment, which is connected to a transmitting L multiplex terminal.
- 1.02 A 315.92-kHz pilot supply is required because the transmitting equipment at the user's location does not provide a pilot signal. The pilot serves for gain regulation at the receiving L multiplex terminal.

2. EQUIPMENT DESCRIPTION

- 2.01 The auxiliary 315.92-kHz pilot supply includes three adjustable-gain amplifiers, a 315.92-kHz

- 2.02 Each of the ten output taps is terminated during manufacture in a 135-ohm resistor. A resistor is removed when a tap is to be used to supply a pilot signal.

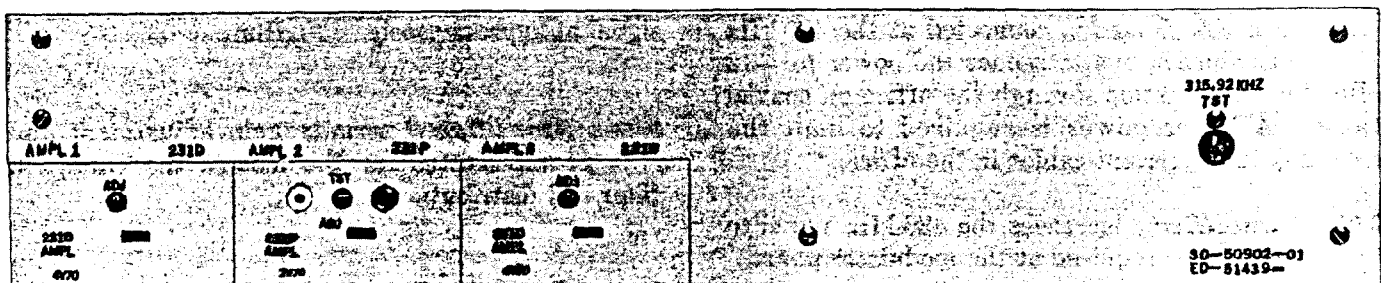
3. CIRCUIT DESCRIPTION

A. General

- 3.01 The auxiliary 315.92-kHz pilot supply circuit, with connection to a type B wire line entrance link, is shown in Fig. 2 as a typical application.
- 3.02 A 315.92-kHz signal is produced by modulating a 420-kHz group 1 carrier signal with a 104.08-kHz group pilot signal. The 315.92-kHz signal is amplified, filtered, and applied to a 10-tap distribution bus.

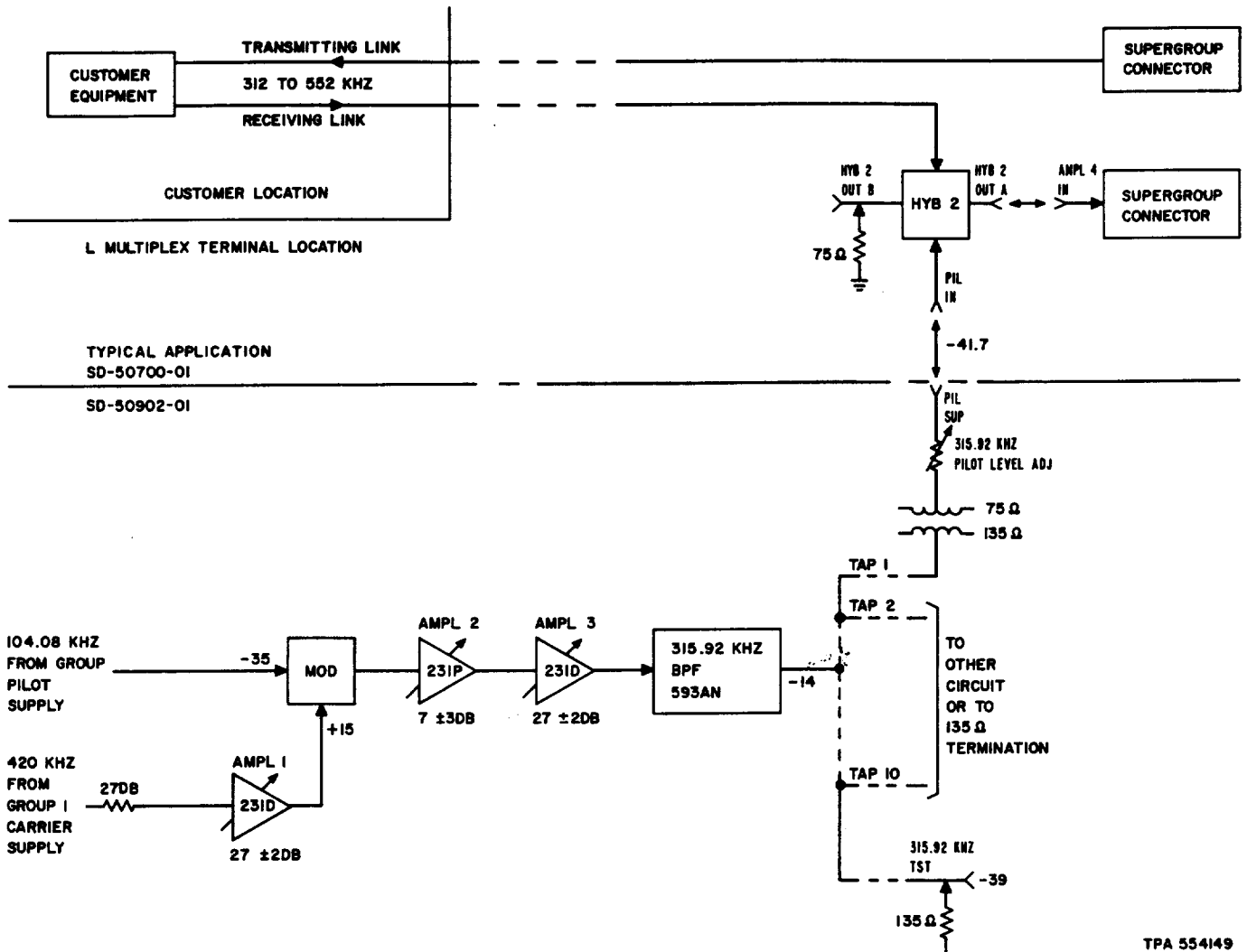
B. Input

- 3.03 The *modulator* has two input signals: a group pilot (104.08 kHz) signal at -35 dBm



TPA 554148

Fig. 1—Auxiliary 315.92-kHz Pilot Supply



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Fig. 2—Auxiliary 315.92-kHz Pilot Supply Circuit—Block Diagram

and a group 1 carrier (420 kHz) signal at +15 dBm.

3.04 The *27-dB pad* is connected at the 420-kHz distribution bus to reduce the power to -12 dBm for transmission through the office on coaxial cable. A lower power is required to limit the crosstalk into adjacent cables in the office.

3.05 *Amplifier 1* increases the 420-kHz signal to the power required at the modulator input.

3.06 The *modulator* output includes the desired lower-sideband signal at 315.92-kHz and other modulation products.

3.07 *Amplifier 2* permits gain adjustment and compensates for most of the loss in the modulator. Amplifier 2 output contains the 315.92-kHz signal at approximately -38 dBm.

3.08 *Amplifier 3* permits gain adjustment and compensates for the loss in the bandpass filter and distribution bus.

3.09 *Bandpass filter 593AN* offers approximately 3-dB loss at 315.92 kHz and at least 60-dB loss to other signals present at the output of amplifier 3.

C. Distribution Bus

3.10 The *distribution bus* provides ten output taps and a test tap. The 315.92-kHz output power is -39 dBm at each tap. Each output tap is terminated in 135 ohms or connects, via an adjustable pad, to the PIL SUP jack. Both the pad and the jack are external to the pilot supply.

D. Battery Voltage

3.11 The auxiliary 315.92-kHz pilot supply operates from filtered -24 volt office battery which powers the three amplifiers.