

L MULTIPLEX TERMINALS
LMX-1
CARRIER AND PILOT SUPPLY
GROUP CARRIER DISTRIBUTING CIRCUIT
BUS OUTPUT POWER

PURPOSE OF TEST

To measure and, if necessary, to adjust the output power of the resistive or the capacitive group distribution bus.

REASON FOR ISSUE

This section supersedes and updates information contained in Sections 356-058-504 and 356-059-504 which have been cancelled. *Equipment Test Lists are affected.*

SYNOPSIS (Fig. 1)

Each group carrier distributing circuit consists of two identical carrier filters, an ADJ equalization pad, two variable gain amplifiers, and a common distribution bus.

Outputs from the A and B 4-kHz harmonic generators are connected through the carrier generator transfer panel to the input filters of the distributing circuit. The filter having the highest output power is connected through an ADJ pad in order to equalize the two output signals. In the event of failure, automatic switching selects either the A or B harmonic generator input to the F1 or F2 filter, respectively. The selected group carrier frequency is divided equally through a resistive hybrid and connected to two variable-gain amplifiers.

The outputs of both amplifiers are paralleled and connected to either a common 16-tap resistive distribution bus in older installations or to a common 32- or 40-tap capacitive distribution bus for connection to group modulators or demodulators, pilot supply, and alarm circuit.

APPARATUS

Receiving Test Equipment, per Section 356-010-500, having the following input characteristics:

Frequency: 420 to 612 kHz

Power: +16.0 dBm (using suitable attenuation)

Impedance: 135 ohms

2W24A Cords

Suitable **16 dB Attenuator**, as required (Ex. KS-1394 or Siemens 3D 112b)

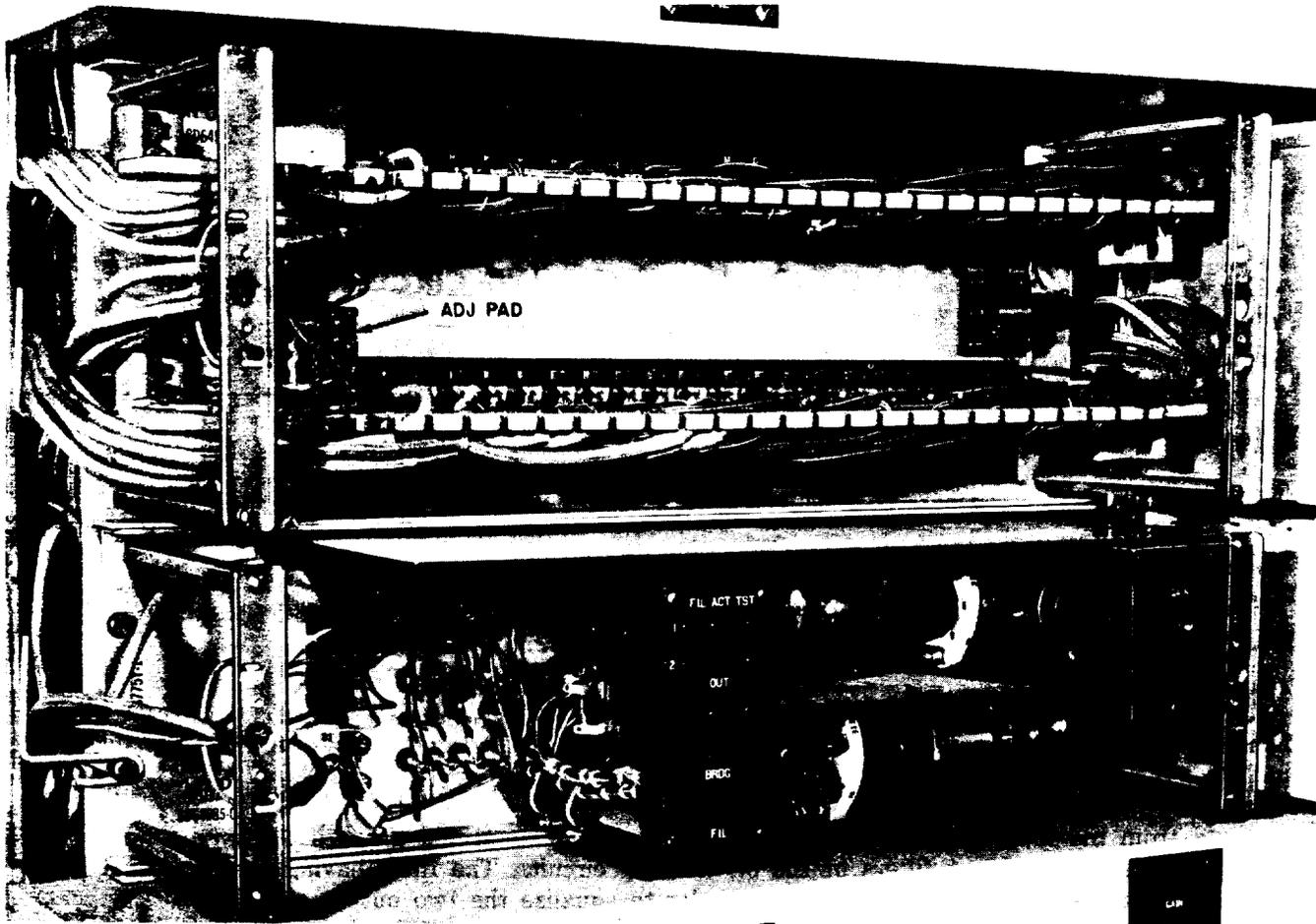
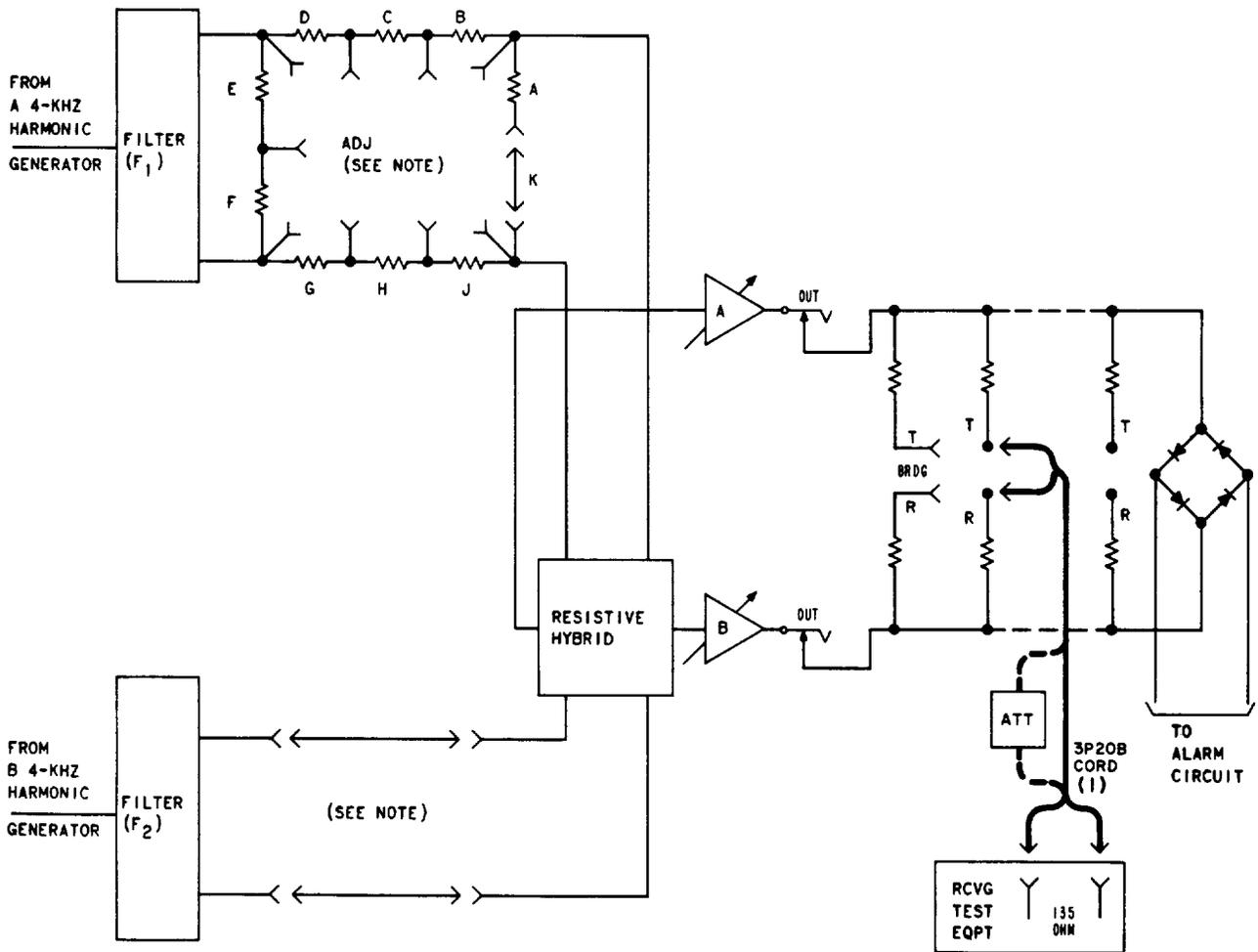


Fig. 1—Group Carrier Distribution Bus and Associated Distribution Amplifier

STEP	PROCEDURE
1	Prepare the receiving test equipment (RTE) for a 135-ohm measurement of the group carrier frequency to be measured (Table A) at +15.0 to +16.0 dBm.
2	At the distribution bus, connect the RTE to an unused service tap [patch (1), Fig. 2 or patch 1, Fig. 3].
3	Read the RTE meter.
	Requirement: See Table A.
4	<p>If the requirement of Step 3 is met, proceed to Step 5. If it is not met, perform the following steps in the order listed, as necessary, to meet the requirement.</p> <p>(a) Perform tests of the group distribution amplifier in Section 356-154-502.</p> <p>(b) Refer to SD-64985-01 and strap the unused bus taps.</p>

TABLE A
GROUP CARRIER DISTRIBUTION

GROUP	FREQ (KHZ)	OUTPUT POWER (DBM)	
		RESISTIVE BUS	CAPACITIVE BUS
1	420	+14.5 to +16.5	+14.2 to +18.2
2	468	+15.25 to +15.75	+14.2 to +18.2
3	516	+15.25 to +15.75	+14.2 to +18.2
4	564	+14.5 to +16.5	+14.2 to +18.2
5	612	+14.5 to +16.5	+14.2 to +18.2



NOTE:
THE ADJ NETWORK WILL BE PLACED IN THE FILTER CIRCUIT HAVING THE HIGHER OUTPUT IN ACCORDANCE WITH "V" WIRING OPTION. WHEN NOT REQUIRED, THE ADJ NETWORK WILL BE BYPASSED IN ACCORDANCE WITH "U" WIRING OPTION. REFER TO SD-64985-01 FOR DETAILS.

Fig. 2—Group Carrier Distribution Bus (Resistive)—Measurement of Output Power

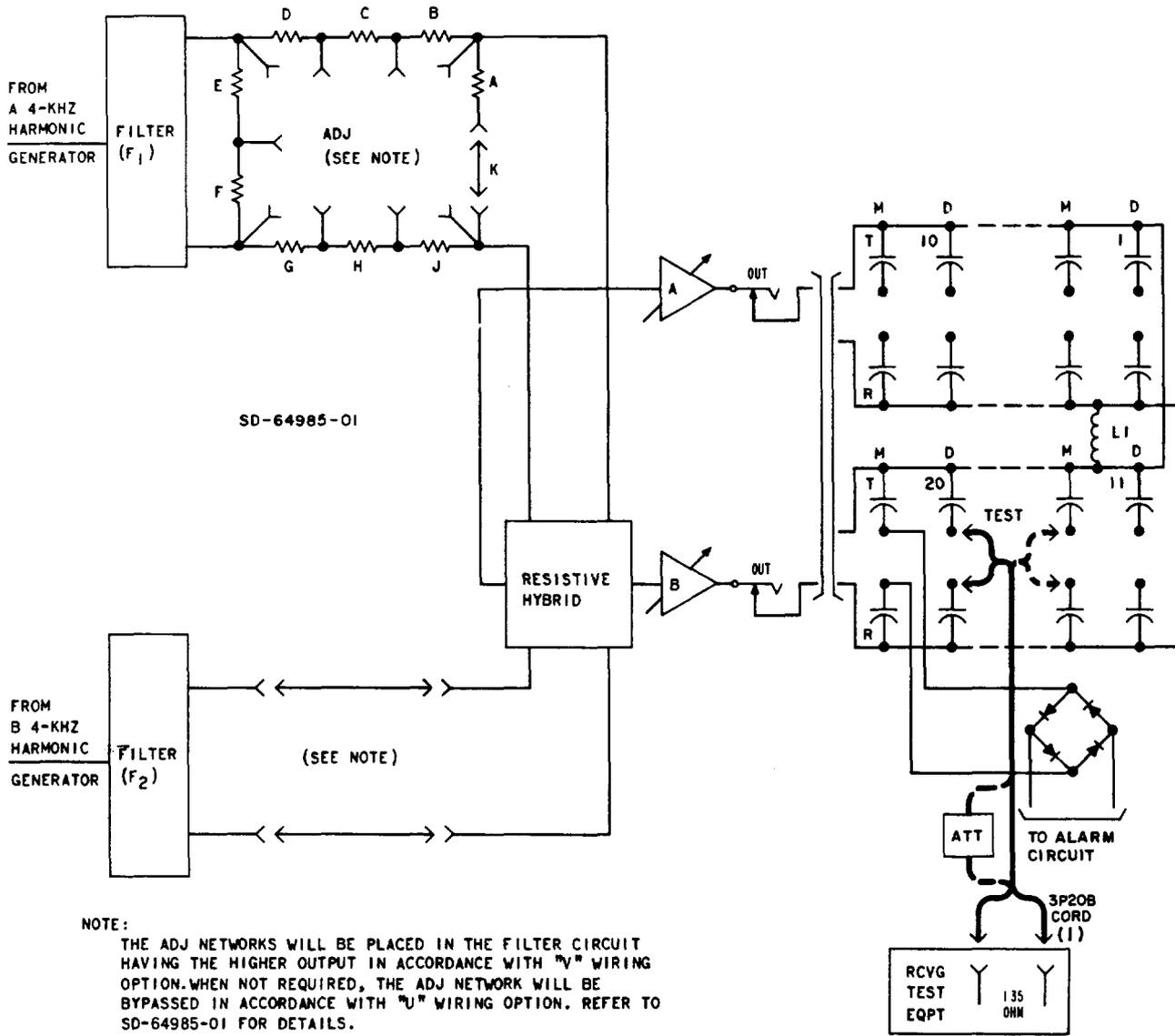


Fig. 3—Group Carrier Distribution Bus (Capacitive)—Measurement of Output Power

STEP	PROCEDURE
5	At the carrier generator transfer panel, determine the working 4-kHz harmonic generator by depressing the TEST key. The working generator is indicated by a lighted A or B panel lamp.
6	Manually transfer service to the standby 4-kHz harmonic generator per Section 356-150-300. Caution: <i>Transfer of the carrier supply will cause hits on data and telegraph service; therefore, the number of transfers should be limited to minimize service interruptions.</i>
7	Read the RTE meter. Requirement: This reading should not differ from the reading obtained in Step 3 by more than: ± 0.5 dB for Groups 1, 4 and 5 ± 0.25 dB for Groups 2 and 3.
8	If the requirement of Step 7 is met, proceed to Step 9. If it is not met, perform equalization tests of the filter outputs in Section 356-154-501.
9	Remove patch (1), Fig. 2 or Fig. 3.
10	At the carrier generator transfer panel, restore the transfer switch to NORM.