ANALOG MULTIPLEX TERMINAL EQUIPMENT

LMX-1

GROUP CARRIER DISTRIBUTION CIRCUIT

EQUALIZATION OF FILTER OUTPUTS

Each group carrier distribution circuit consists of two identical group carrier filters, an adjustable pad (Fig. 1), two variable-gain amplifiers, and either a resistive or capacitive distribution bus.

This section is reissued to clarify the procedure for strapping the adjustable pad. Due to the general revision, arrows normally used to indicate changes have been omitted. ***Equipment Test Lists are not affected.***

The ***working*** output from the A or B 4-kHz harmonic generator is connected, via the carrier generator transfer panel, to the input of a carrier filter. The ***standby*** output is terminated at the carrier generator transfer panel. Automatic or manual switching connects either the A or B harmonic generator output to the F1 or F2 filter, respectively. The selected group carrier frequency is connected, via a resistive hybrid, to two variable-gain amplifiers. The outputs of both amplifiers are connected to either a resistive or capacitive distribution bus for supplying group carrier signals to group modulators or demodulators, pilot supply, and alarm circuit.

The distribution bus is fed simultaneously by amplifiers A and B. Inserting a plug into the OUT jack of one amplifier reduces the bus power approximately 2 dB.

APPARATUS:

The tests in this section require suitable transmission test equipment. Refer to Section 356-010-500 and select, from available equipment, receiving units having the following capabilities:

Receiving test equipment capable of detecting, from 135-ohm circuits, signals between 420 kHz and 612 kHz at a power of +21 dBm

3P20B Cord.

Attenuator as required, such as KS-1394 or Siemens 3D 112b.

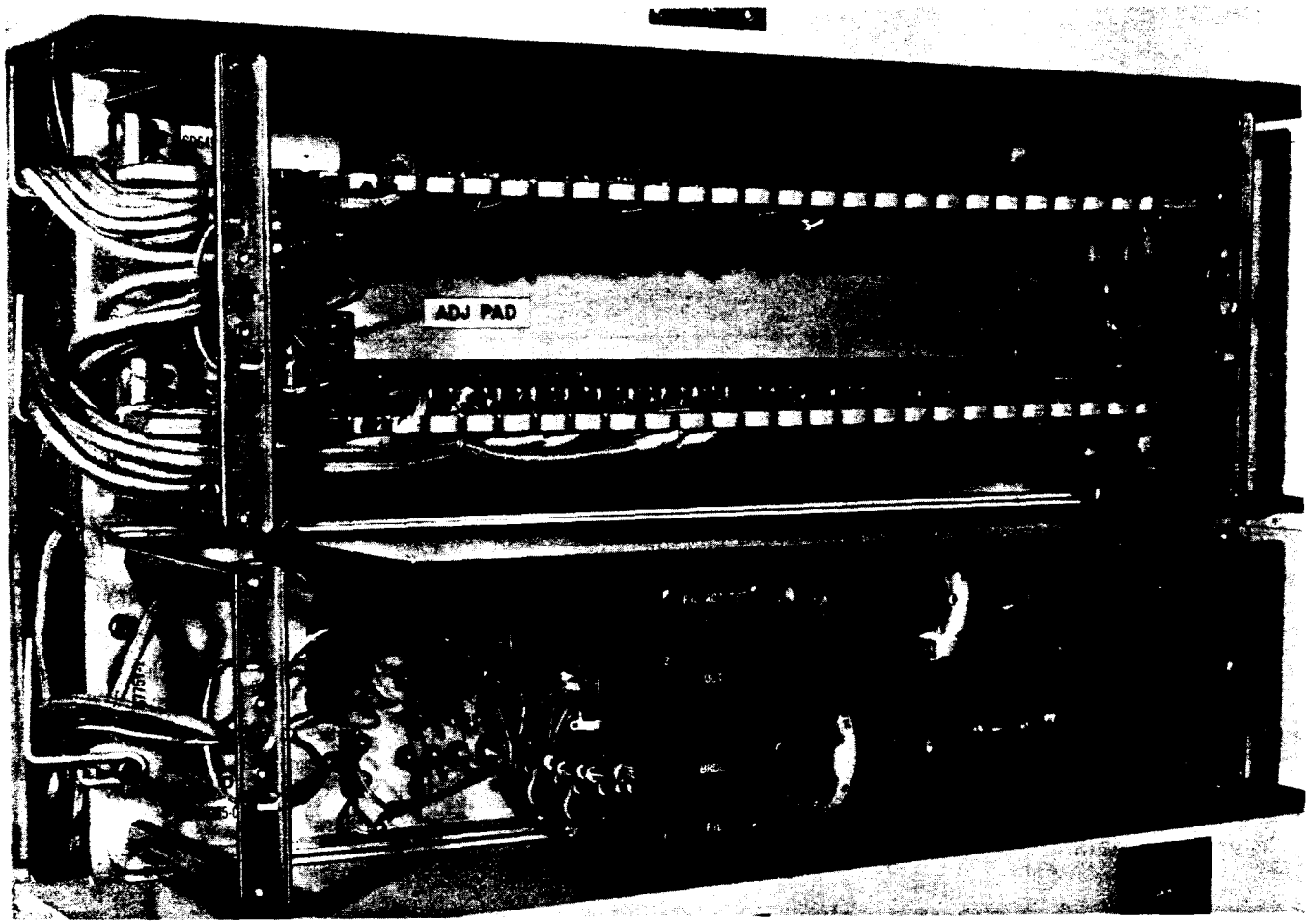


Fig. 1—Group Carrier Distribution Bus and Associated Distribution Amplifiers

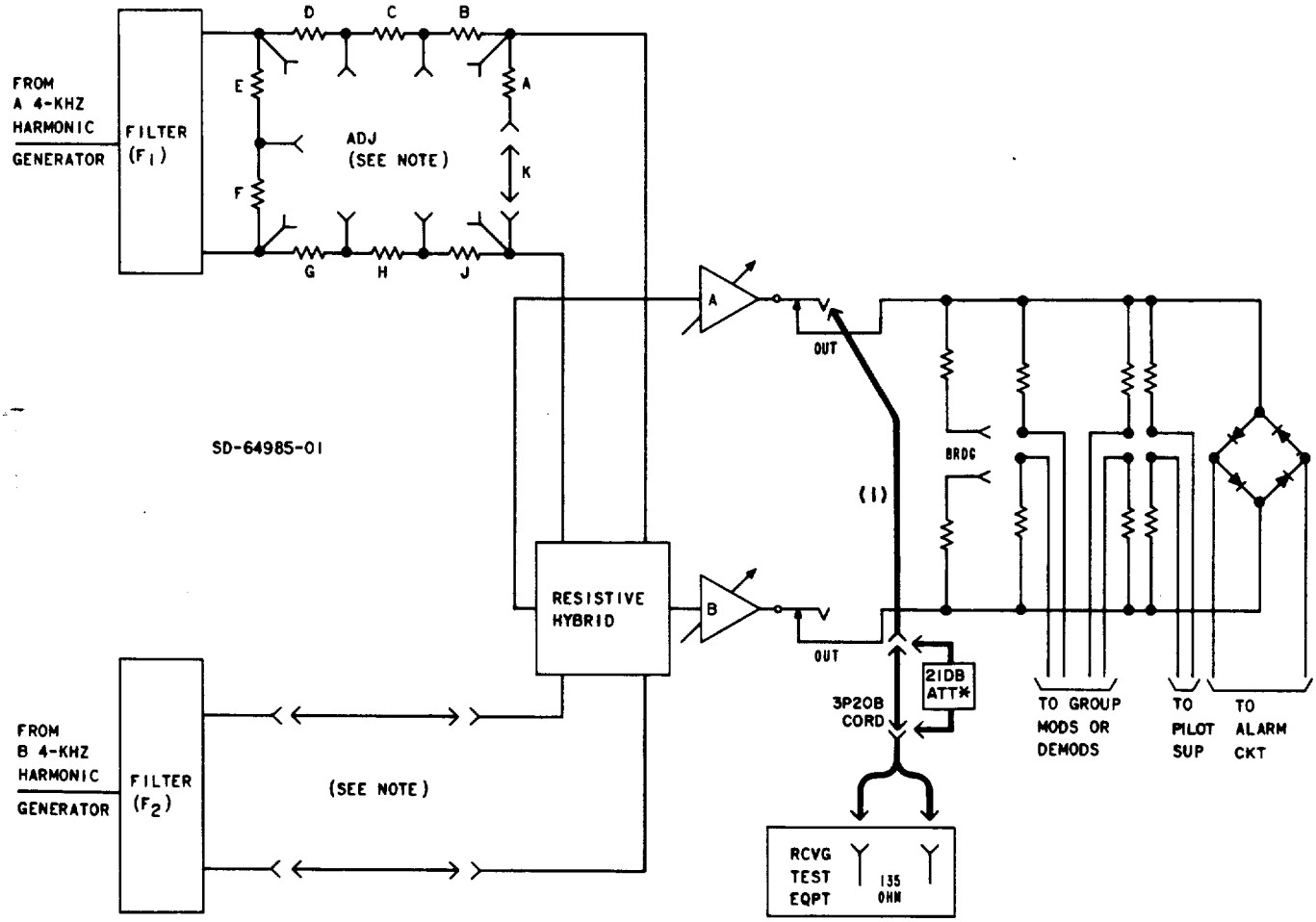
STEP	PROCEDURE
	At carrier generator transfer panel,
1	Depress the TEST pushbutton to determine which 4-kHz harmonic generator is presently ***working.***
	Note: Panel lamp A or B lights to indicate the working generator.
	At group carrier amplifier panel (Fig. 1),
2	Prepare the receiving test equipment for a 135-ohm measurement of the group carrier frequency for the distribution circuit under test.
	Note: Group carrier frequencies are 420, 468, 516, 564, and 612 kHz for groups 1 through 5, respectively.

STEP	PROCEDURE

3 Connect the receiving test equipment to the OUT jack of group carrier amplifier A, as shown by patch (1) in Fig. 2.

Note: Nominal group carrier signal power at the OUT jack is +21 dBm.

4 Measure and record the group carrier signal power at the OUT jack for amplifier A and record which 4-kHz harmonic generator is the ***working*** generator.



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.

* AN EXTERNAL 21-DB ATTENUATOR IS NECESSARY WHEN NOT PROVIDED IN THE RTE BEING USED.

Fig. 2—Group Carrier Distribution Circuit

STEP	PROCEDURE

At carrier generator transfer panel,

Caution: Transfer of the carrier supply will cause hits on data and telegraph services; therefore, the number of transfers should be limited to minimize service interruptions.

5 Transfer service to the 4-kHz harmonic generator presently on ***standby*** by operating the transfer switch to A or B, as required.

At group carrier amplifier panel,

6 Measure and record the group carrier signal power at the OUT jack for amplifier A and record which 4-kHz harmonic generator is the ***working*** generator at this time.

Requirement: This power should not differ from that measured in Step 4 by more than ±0.5 dB.

7 Proceed to Step 19 if the requirement is met. Otherwise, proceed to Step 8.

At group carrier distribution panel (Fig. 1),

8 Observe the ADJ pad to determine:

(a) Which filter output is connected to the pad, and

(b) The loss value for which the pad is presently strapped.

Note: The loss values for various pad strappings are listed in Note 111 on SD-64985.

9 Determine the new pad loss required by comparing the power values recorded in Steps 4 and 6.

At carrier generator transfer panel,

10 Transfer service, if required, to the 4-kHz harmonic generator feeding the filter ***without*** the pad connected at the filter output.

11 Proceed to Step 14 if the pad must be connected at the output of the ***other*** filter to provide the new loss required. Otherwise, proceed to Step 12.

12 Change the strapping on the pad per SD-64985 to provide the new loss required.

13 Proceed to Step 17.

At group carrier distribution panel,

14 Disconnect the pad and connect the filter output directly to the resistive hybrid per SD-64985.

STEP	PROCEDURE
	At carrier generator transfer panel,
15	Transfer service to the 4-kHz harmonic generator presently on ***standby*** by operating the transfer switch to A or B, as required.
	At group carrier distribution panel,
16	Connect the pad in the output of the other filter and strap to provide the new loss required.
17	Repeat Steps 1 through 16, as required.
18	Replace the front cover on the group carrier distribution panel.
19	Remove all test equipment.
	At carrier generator transfer panel,
20	Restore the transfer switch to the NORM position.