
12-KHZ AMPLIFIER OUTPUT TEST
GROUP HARMONIC GENERATOR J68857E
LMX-2 GROUP CARRIER SUPPLY
ANALOG MULTIPLEX TERMINAL EQUIPMENT

The purpose of the tests in this section is to measure the output power of the 12-kHz amplifiers in group harmonic generator J68857E.

This section is reissued to add references to intermediate frequency supply J68857AE, to correct errors, and to expand the test procedure. Due to the general revision, arrows are not used to indicate changes. **Equipment Test Lists are not affected.**

Group Harmonic Generator Unit

Group harmonic generator J68857E is the lower half of primary group carrier supply J68857F (Fig. 1). The harmonic generator unit contains two identical plug-in amplifiers which amplify the 12-kHz input signals from an intermediate frequency supply. The output of each amplifier is connected to an automatic transfer circuit which selects the working supply. There is no provision for manual transfer. Panel lamps on the group harmonic generator unit indicate the condition of each 12-kHz amplifier. The output of one amplifier is connected, via the transfer circuit, to the 12-kHz harmonic generator which produces the five group carrier frequencies. In addition, the group harmonic generator unit contains the group alarm circuits and the monitored spare 230A and 232A amplifiers.

Intermediate Frequency Supply

The 12-kHz input signals for the group harmonic generator unit are supplied by intermediate frequency supply J68857D, J68857N (Fig. 2), or J68857AE (Fig. 3). Intermediate frequency supply J68857D (MD) was furnished in early L600A terminals. This supply is the same as J68857N, except the 80-kHz circuit is not included.

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 75-ohm circuits, a 12-kHz signal at a power of approximately -2.0 dBm

P2BJ Cord for 75-ohm measurements in Parts B and C.

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

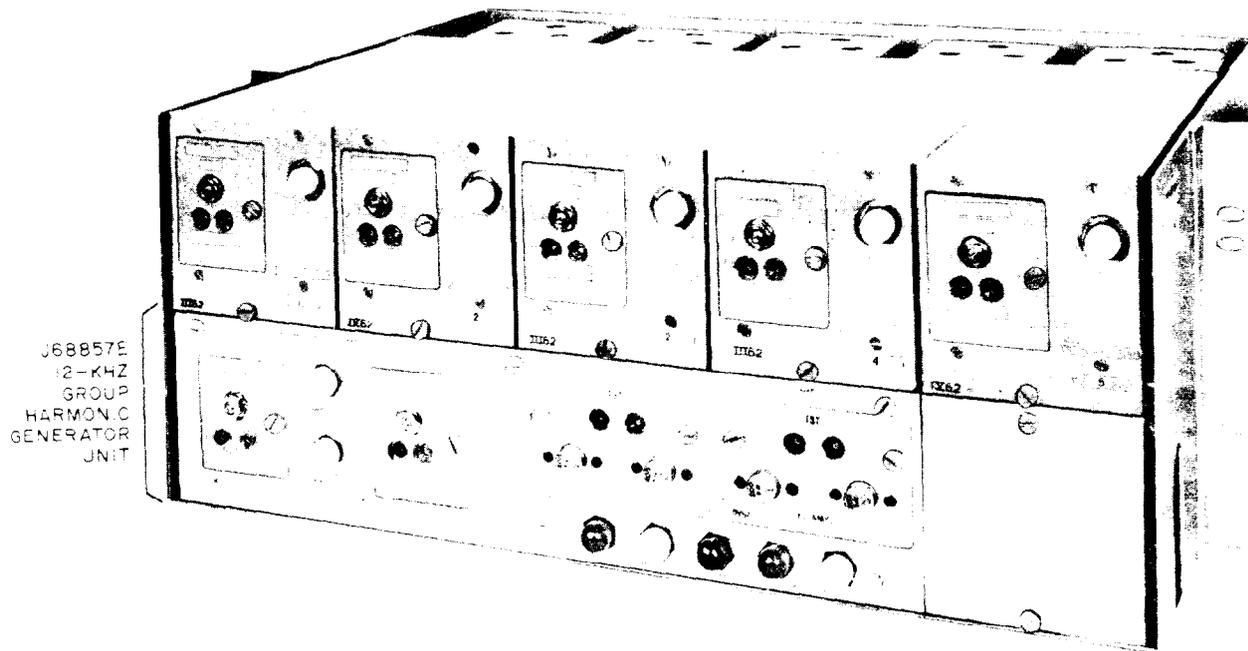


Fig. 1—Primary Group Carrier Supply J68857F

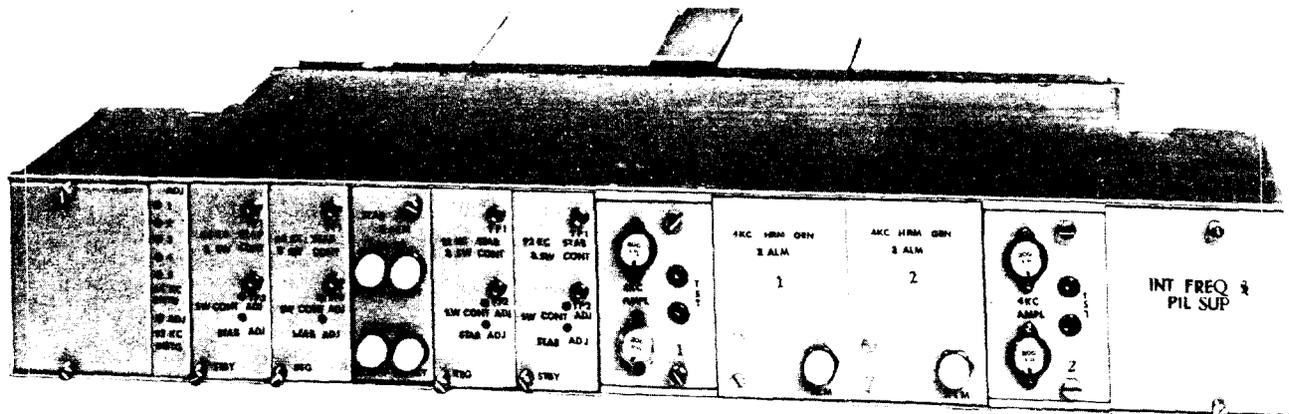


Fig. 2—Intermediate Frequency Supply J68857N

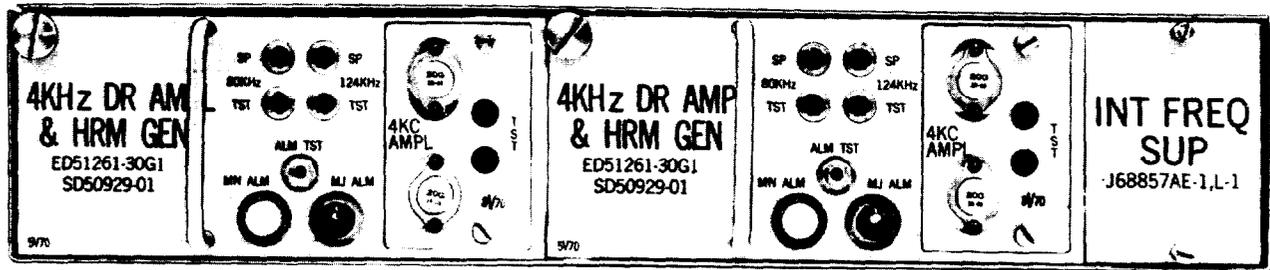


Fig. 3—Intermediate Frequency Supply J68857AE

STEP

PROCEDURE

A. Check Indicators

- 1 Locate the group harmonic generator unit to be tested.

On group harmonic generator unit,

- 2 Check that one of the green STBY lamps is lighted at the lower right.
- 3 Check that both amber AMPL FAIL lamps, the red CARR lamp, and the other green STBY lamp are extinguished.
Note: The red CARR lamp lights if both 12-kHz input signals are lost.
- 4 Check that the 230A AMPL FAIL and 232A AMPL FAIL lamps are extinguished.
- 5 Proceed to Part B for a group harmonic generator unit with 12-kHz input signals supplied by intermediate frequency supply J68857D or J68857N. Proceed to Part C for a group harmonic generator unit with 12-kHz input signals supplied by intermediate frequency supply J68857AE.

B. Check 12-kHz Power at Carrier Supply Test Panel

- 6 Locate the carrier supply test panel associated with the group harmonic generator unit under test.

At carrier supply test panel,

- 7 Prepare the receiving test equipment for a 75-ohm terminated measurement of 12 kHz at a power of approximately -2 dBm.
- 8 Prepare for a 12-kHz power measurement for amplifier 1 as outlined in Table A.

Note: Figure 4 shows the carrier supply test panel connections for the 12-kHz amplifier outputs.

STEP

PROCEDURE

TABLE A
MEASUREMENT OF 12-KHZ OUTPUT POWER

12-KHZ AMPLIFIER	CARRIER SUPPLY TEST PANEL							
	L600A (OLD)		L600A (NEW)		L1860A (OLD)		L1860A (NEW)	
	CARR TST SWITCH POSITION	TEST JACK	CARR TST SWITCH POSITION	TEST JACK	CARR TST SWITCH POSITION	TEST JACK	PRI & SEC GROUP TEST PANEL	TEST JACK
AMPL 1	Group HG AMPL 1	CARR TST	Group HG	CARR TST 1	Group HG	CARR TST 1	12 kHz AMPL	1
AMPL 2	Group HG AMPL 2	CARR TST	Group HG	CARR TST 2	Group HG	CARR TST 2	12 kHz AMPL	2

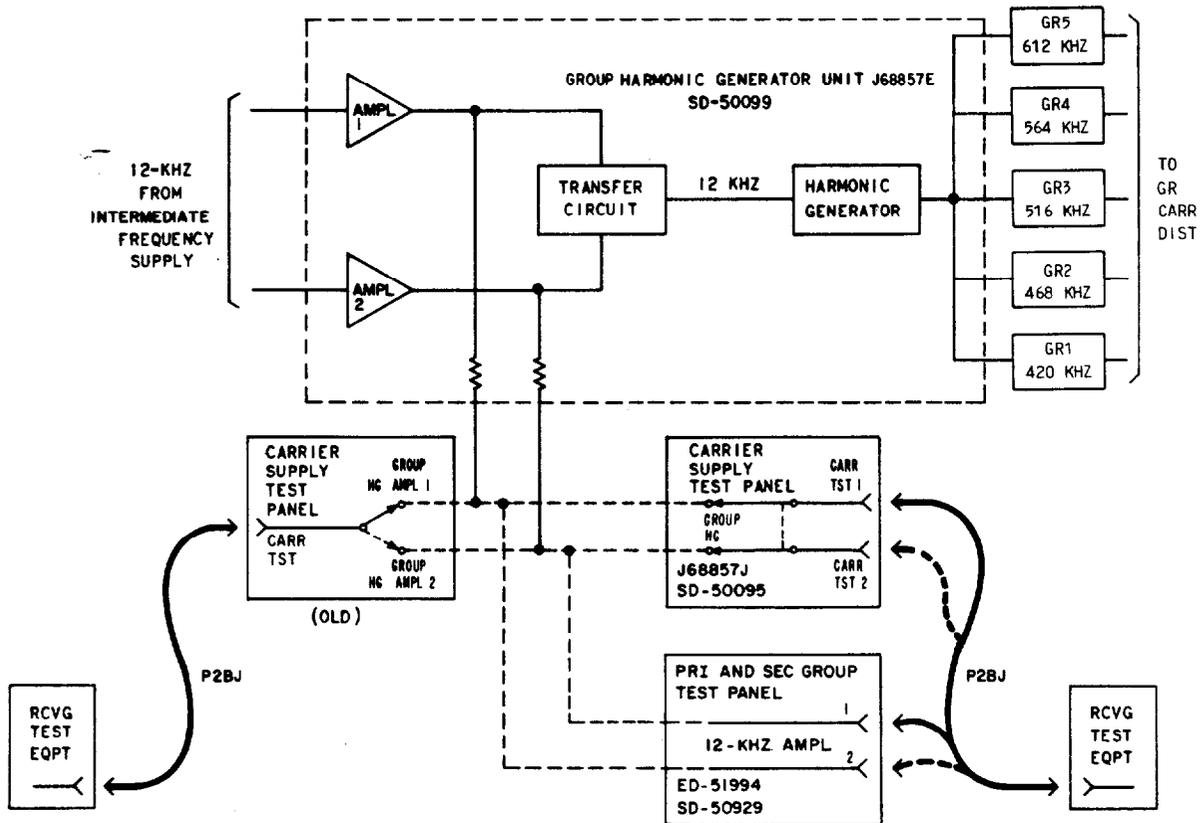


Fig. 4—12-kHz Amplifier Output Power Test

STEP	PROCEDURE
9	Measure the power at the test jack on the carrier supply test panel. Requirement: -2.0 dBm or greater (-1.0 dBm is greater).
10	Proceed to Step 16 if the requirement is met. Otherwise, proceed to Step 11.
11	Obtain a spare 12-kHz amplifier ED-50142. Caution: <i>Simultaneous removal of both 12-kHz amplifiers will cause service interruption.</i>
12	Replace the 12-kHz amplifier under test in the group harmonic generator unit. Note: The left amplifier is amplifier 1.
13	Repeat Step 9.
14	Check the 12-kHz input signals from the intermediate frequency supply per Section 356-260-501 if the requirement of Step 9 cannot be met.
15	Repeat Steps 8 through 13, as required, for amplifier 1.
16	Prepare for a 12-kHz power measurement for amplifier 2 as outlined in Table A.
17	Repeat Steps 9 through 14, as required, for 12-kHz amplifier 2.
18	Set the CARR TST switch to the OFF position.
19	Remove all test connections.
20	Repeat Steps 1 through 4 to check the indicators on the group harmonic generator unit.
C. Check 12-kHz Power At Intermediate Frequency Supply J68857AE	
21	Locate intermediate frequency supply J68857AE supplying 12-kHz signals to the group harmonic generator unit under test.
22	Prepare the receiving test equipment for a 75-ohm terminated measurement of 12 kHz at a power of approximately -1 dBm.
23	Prepare for a 12-kHz power measurement for amplifier 1. Note: Figure 4 shows the test jack connections for the 12-kHz amplifier outputs. Primary and secondary group test panel ED-51994 is part of a List 2 intermediate frequency supply J68857AE.
24	Measure the power at 12 kHz AMPL 1 jack on the primary and secondary group test panel.

STEP

PROCEDURE

Requirement: -1.0 dBm or greater (0 dBm is greater).

25 Proceed to Step 31 if the requirement is met. Otherwise, proceed to Step 26.

26 Obtain a spare 12-kHz amplifier ED-50142.

At group harmonic generator unit,

Caution: Simultaneous removal of both 12-kHz amplifiers will cause service interruption.

27 Replace the 12-kHz amplifier under test in the group harmonic generator unit.

Note: The left amplifier is amplifier 1.

At intermediate frequency supply,

28 Repeat Steps 24 and 25.

29 Check the 12-kHz input signals from the intermediate frequency supply per Section 356-260-502 if the requirement of Step 24 cannot be met.

30 Repeat Steps 22 through 28, as required, for amplifier 1.

31 Measure the power at 12 kHz AMPL 2 jack on the primary and secondary group test panel.

Requirement: -1.0 dBm or greater (0 dBm is greater).

32 Proceed to Step 36 if the requirement is met. Otherwise, proceed to Step 33.

33 Obtain a spare 12-kHz amplifier ED-50142.

At group harmonic generator unit,

Caution: Simultaneous removal of both 12-kHz amplifiers will cause service interruption.

34 Replace the 12-kHz amplifier under test in the group harmonic generator unit.

Note: The right amplifier is amplifier 2.

At intermediate frequency supply,

35 Repeat Steps 31 and 32.

36 Remove all test connections.

STEP	PROCEDURE
37	Repeat Steps 1 through 4 to check the indicators on the group harmonic generator unit.
