

**JMX-L5/L5E RESTORATION TRUNK CIRCUITS
MAINTENANCE PROCEDURES
COMMON EQUIPMENT
ANALOG MULTIPLEX TERMINAL EQUIPMENT**

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Chart 4—JMX Idle Transmitting Modulator Input Restoration Trunk Circuit—J68938AD	12	1.01 This section describes methods and procedures for performing tests and adjustments on the trunks used between the Restoration Patch Bay (RPB) J68876F and the JMX-L5/L5E equipment.	
Chart 5—JMX Idle Transmitting Modulator Output Restoration Trunk Circuit—J68938AE	15	1.02 This section is reissued to include the addition of maintenance procedures required for restoration trunk circuits used with the L5E Carrier System. Since this is a general revision, arrows are not used to indicate changes. Equipment test lists are not affected.	
Chart 6—JMX Idle Receiving Demodulator Input Restoration Trunk Circuit—J68938AF	19	1.03 The electronic equipment involved in the trunks is located in the Restoration Trunk Bay (RTB) J68938A or J68938C and the Zero-Loss Trunk Bay (ZLTB) J68938B or J68919D, where	
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NOTICE

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

SECTION 356-036-500

applicable. See Fig. 1 for office cabling and bay arrangements.

1.04 The converters in both the RTB and ZLTB have no alarm circuits. If loss of power is suspected, check the ON/OFF position of the circuit breakers, check for blown fuses, and, if necessary, measure the output of the converters. Both bays use J87334A dc-to-dc converters.

2. APPARATUS

2.01 Transmission Test Equipment: Refer to Section 356-010-500 and select, from available equipment, sending and receiving units having the following capabilities:

Sending Test Equipment (STE) capable of delivering, into 75-ohm circuits, signals between

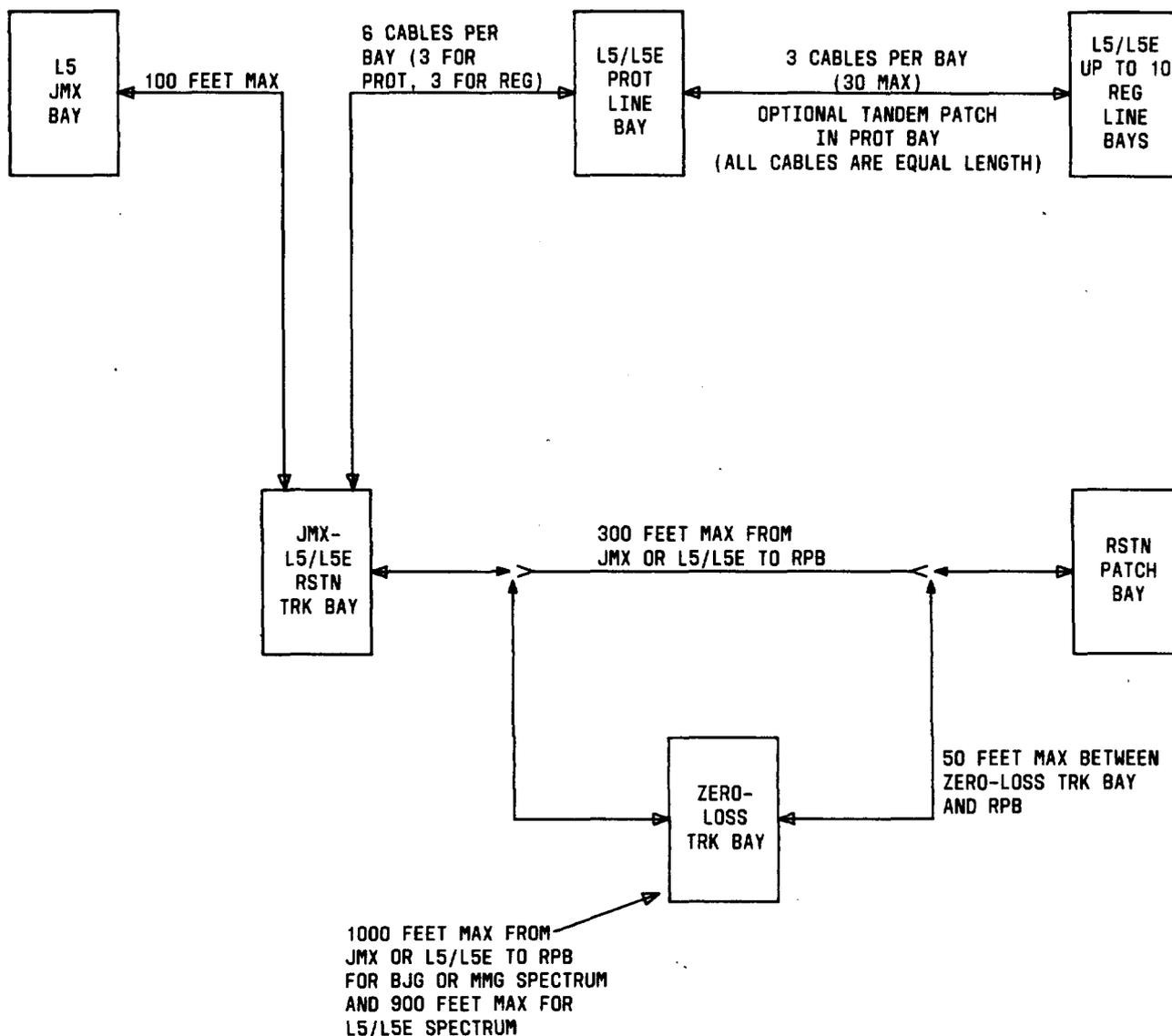


Fig. 1—Office Cabling Arrangements for JMX-L5/L5E Restoration Trunks

500 kHz and 70 MHz at powers between -23 and -50 dBm.

Receiving Test Equipment (RTE) capable of detecting, from 75-ohm circuits, signals between 500 kHz and 70 MHz at powers between -23 and -100 dBm.

Digital Voltmeter (DVM) Hickok Model 3300A-029 or equivalent.

Card Extender Cable C840957005.

3. CHARTS

CHART 1

TEST AND ADJUST J87334A DC-TO-DC CONVERTERS

STEP	PROCEDURE
1	Check that associated circuit breaker is on.
2	Check that proper fuses are installed.
3	Condition DVM to measure 25 Vdc.
4	At converter under test, connect DVM test cords to IN+ and IN-.
5	If DVM indicates between 23.5 and 26.0 Vdc (between 21.6 and 23.9 Vdc for office with 11-cell battery plant), go to Step 7; if otherwise, go to Step 6.
6	Correct input voltage problem before continuing. No adjustments should be made on converter while input voltage is out of limits.
7	At the converter under test, connect the DVM test cords to OUT+ and OUT- jacks.
8	If the DVM indicates between 24.55 and 24.95 Vdc, go to Step 10; if otherwise, go to Step 9.
9	Adjust ADJ VOLTS potentiometer for indication of 24.70 to 24.80 volts. (If unable to obtain, replace converter with factory adjusted unit and go to Step 4.)
10	At the converter under test, connect DVM test cords to REG IN+ and OUT- jacks.
11	Make note of meter indication. (Round off to nearest tenth of a volt.)
12	At the converter under test, connect DVM test cords to +BIAS and -BIAS jacks. (Observe test lead polarity.)
13	Condition DVM to measure approximately 1.0 volt.
14	See Table A. Note bias voltage corresponding to regulator input voltage noted in Step 11.
15	If bias voltage is within limits shown in Table A, go to Step 17; if otherwise, go to Step 18.

CHART 1 (Contd)

STEP

PROCEDURE

TABLE A

REG INPUT VOLTS	BIAS VOLTAGE			REG INPUT VOLTS	BIAS VOLTAGE		
	LIMIT		CTR VOLTS		LIMIT		CTR VOLTS
	FROM	TO			FROM	TO	
25.7	+ .520	+ .800	+ .660	27.9	- .20	+ .190	- .005
25.8	+ .490	+ .770	+ .630	28.0	- .230	+ .160	- .035
25.9	+ .460	+ .740	+ .600	28.1	- .260	+ .140	- .060
26.0	+ .430	+ .720	+ .575	28.2	- .300	+ .110	- .095
26.1	+ .390	+ .690	+ .540	28.3	- .330	+ .080	- .125
26.2	+ .360	+ .660	+ .510	28.4	- .360	+ .050	- .155
26.3	+ .330	+ .640	+ .485	28.5	- .400	+ .030	- .185
26.4	+ .290	+ .610	+ .450	28.6	- .430	-	- .215
26.5	+ .260	+ .580	+ .420	28.7	- .460	- .030	- .245
26.6	+ .230	+ .550	+ .390	28.8	- .500	- .060	- .280
26.7	+ .200	+ .520	+ .360	28.9	- .530	- .080	- .305
26.8	+ .160	+ .500	+ .330	29.0	- .560	- .110	- .335
26.9	+ .130	+ .470	+ .300	29.1	- .590	- .140	- .365
27.0	+ .100	+ .440	+ .270	29.2	- .620	- .160	- .390
27.1	+ .060	+ .410	+ .235	29.3	- .660	- .190	- .425
27.2	+ .030	+ .380	+ .205	29.4	- .700	- .220	- .460
27.3	-	+ .360	+ .180	29.5	- .730	- .250	- .490
27.4	- .030	+ .330	+ .150	29.6	- .760	- .270	- .515
27.5	- .060	+ .300	+ .120	29.7	- .800	- .300	- .550
27.6	- .10	+ .270	+ .085	29.8	- .830	- .330	- .580
27.7	- .130	+ .250	+ .060	29.9	- .860	- .360	- .610
27.8	- .170	+ .220	+ .025	30.0	- .890	- .390	- .640

 CHART 1 (Contd)

STEP	PROCEDURE
16	Adjust BIAS ADJ potentiometer for center volts listed in Table A. If unable to bring bias voltage within limits, replace converter with factory adjusted unit and go to Step 4. After adjusting bias voltage, repeat Step 7.
17	Remove DVM from converter.

CHART 2

 LEVEL MEASUREMENT
 TRANSMITTING BJG RESTORATION TRUNK CIRCUIT
 J68938AB

This circuit provides amplification and flat level adjustment, as well as the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 700 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L4 or MMX-2C signal (0.564 to 17.548 MHz at -29.0 dBm).

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 20.1 MHz at -44.2 dBm.
3	Prepare the RTE to measure 20.1 MHz at -29.0 dBm.
4	By using office records, locate the transmitting modulator panel of interest at the JMX and remove the cable from the RSTN OUT jack. Connect the STE to the cable [Fig. 2, patch (1)].
5	Connect the RTE to the BASIC JG OUT jack at the RPB [Fig. 2, patch (2)].
6	Measure the level of 20.1 MHz. Cord loss must be taken into account. Requirement: -29.0 ±0.3 dBm.
7	If the requirement is met, go to Step 37; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 30.
9	Move the RTE to the OUT jack at the RTB [Fig. 2, patch (3)].

CHART 2 (Contd)

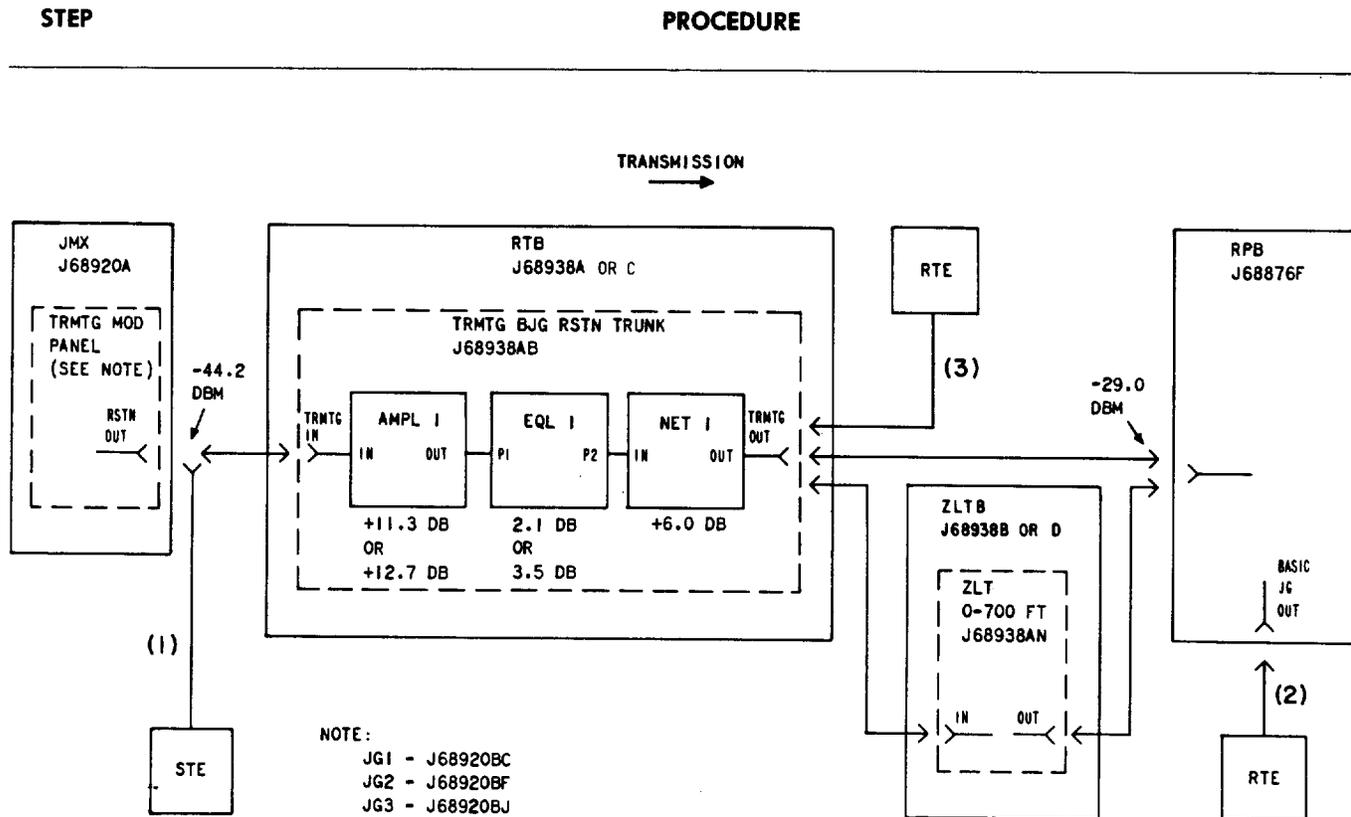


Fig. 2—Transmitting BJB Restoration Trunk Circuit

- 10 From office records, determine cable length between the JMX bay and RTB.
- 11 At the RTB (J68938A or J68938C), on TRMTG BJ RSTN TRUNK unit (J68938AB) associated with this trunk, set TRMTG GAIN ADJ potentiometer to the center of its range. (Controls are located on the bottom of the unit. Use cable extender C840957005.)
- 12 Adjust SLOPE ADJ on the same unit to obtain the level (Table B) for the cable length determined in Step 10.
- 13 Change the STE to send 3.3 MHz at -44.2 dBm.
- 14 At the RTE, measure 3.3 MHz, adjust the GAIN ADJ potentiometer (located in the TRMTG BJ RSTN TRUNK unit) to obtain the level shown in Table B for 3.3 MHz for the length of cable determined in Step 10.
- 15 Change the STE to send 20.1 MHz at -44.2 dBm.

CHART 2 (Contd)

STEP

PROCEDURE

TABLE B

CABLE LENGTH BETWEEN L5 OR JMX BAYS AND RSTN TRK BAY IN FEET		SIGNAL POWER IN DBM	
AT LEAST	BUT LESS THAN	3.3 MHZ	20.1 MHZ
15	25	-27.9	-25.7
25	35	-27.9	-25.8
35	45	-27.9	-26.0
45	55	-27.9	-26.1
55	65	-27.9	-26.2
65	75	-27.9	-26.3
75	85	-27.9	-26.4
85	95	-27.9	-26.5
95	100	-27.9	-26.7

- 16 Change the RTE to measure 20.1 MHz, adjust the SLOPE ADJ potentiometer (located in the TRMTG BJK RSTN TRUNK unit) to obtain the level shown in Table B for 20.1 MHz for the cable length determined in Step 10.
- 17 Repeat Steps 13 through 16 until the requirement (± 0.1 dB) can be met at both frequencies with no further adjustment.
- 18 If the requirement in Step 17 is met, move the RTE back to the RPB [Fig. 2, patch (2)], restore the coax to the OUT jack at the RTB, and go to Step 19; if otherwise, troubleshoot the trunk between the RTE and the STE and go back to Step 11.
- 19 With the STE level at -44.2 dBm and the RTE level at -29.0 dBm, measure 20.1 MHz.
- Requirement:** -29.0 \pm 0.3 dBm.
- 20 If the requirement in Step 19 is met, go to Step 37; if otherwise, go to Step 21.
- 21 At the ZLTB, locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
- 22 Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
- 23 Set the STE to send 3.3 MHz at -44.2 dBm.
- 24 Set the RTE to measure 3.3 MHz at -29.0 dBm.

CHART 2 (Contd)

STEP	PROCEDURE
25	On the associated ZLT, adjust the GAIN ADJ potentiometer to obtain a reading of -29.0 dBm.
26	Change the STE to send 20.1 MHz at -44.2 dBm.
27	Change the RTE to measure 20.1 MHz at -29.0 dBm.
28	On the ZLT, adjust SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm at the RPB.
29	If the requirement in Step 28 is met, go to Step 37; if otherwise, troubleshoot the ZLT and go back to Step 23.
30	At the RTB (J68938A or J68938C), on TRMTG BJK RSTN TRUNK unit (J68938AB) associated with this trunk, set TRMTG GAIN ADJ potentiometer (located on bottom of unit) to the center of its range. Use C840957005 cable extender.
31	Adjust SLOPE ADJ on the same unit for -29.0 dBm.
32	Change the STE to send 3.3 MHz at -44.2 dBm.
33	At the RTE, measure 3.3 MHz and adjust GAIN ADJ for -29.0 dBm.
34	Change STE to send 20.1 MHz at -44.2 dBm.
35	Change RTE to measure 20.1 MHz and adjust SLOPE ADJ for -29.0 dBm.
36	Repeat Steps 32 through 35 until the requirement (± 0.1 dB) can be met without further adjustment.
37	Remove the STE from the cable at the JMX and restore the cable to the RSTN OUT jack in the transmitting modulator panel.
38	Remove the RTE from the BASIC JG OUT jack at the RPB.
39	Leave trunk ready for service.

CHART 3
LEVEL MEASUREMENT
RECEIVING BJK RESTORATION TRUNK CIRCUIT
J68938AB

This circuit provides amplification and flat level adjustment, as well as the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 700 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L4 or MMX-2C signal (0.564 to 17.548 MHz at -29.0 dBm).

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 20.1 MHz at -29.0 dBm.
3	Prepare the RTE for a 75-ohm terminated measurement of 20.1 MHz at -29.0 dBm.
4	Connect the STE to the BASIC JG IN jack at the RPB (J68876F) [Fig. 3, patch (1)].
5	Remove cable from the RSTN COMPL jack located on the back of the PATCH & TEST PANEL at the RCVG JMX. See local office records to determine proper jumbogroup. Connect RTE to the cable [Fig. 3, patch (2)].
6	Measure the level of 20.1 MHz. Cord loss must be taken into account. Requirement: -29.0 ±0.3 dBm.
7	If the requirement is met, go to Step 34; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 24.
9	Remove cable from the IN jack at the RCVG BJK RSTN TRUNK unit (J68938AB) in the RTB and connect cable to the RTE [Fig. 3, patch (3)].
10	At the ZLTB, locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
11	Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
12	Change the STE to send 3.3 MHz at -29.0 dBm.
13	Set the RTE to measure 3.3 MHz at -29.0 dBm.
14	On the associated ZLT, adjust GAIN ADJ to obtain a reading of -29.0 dBm.
15	Change the STE to send 20.1 MHz at -29.0 dBm.

CHART 3 (Contd)

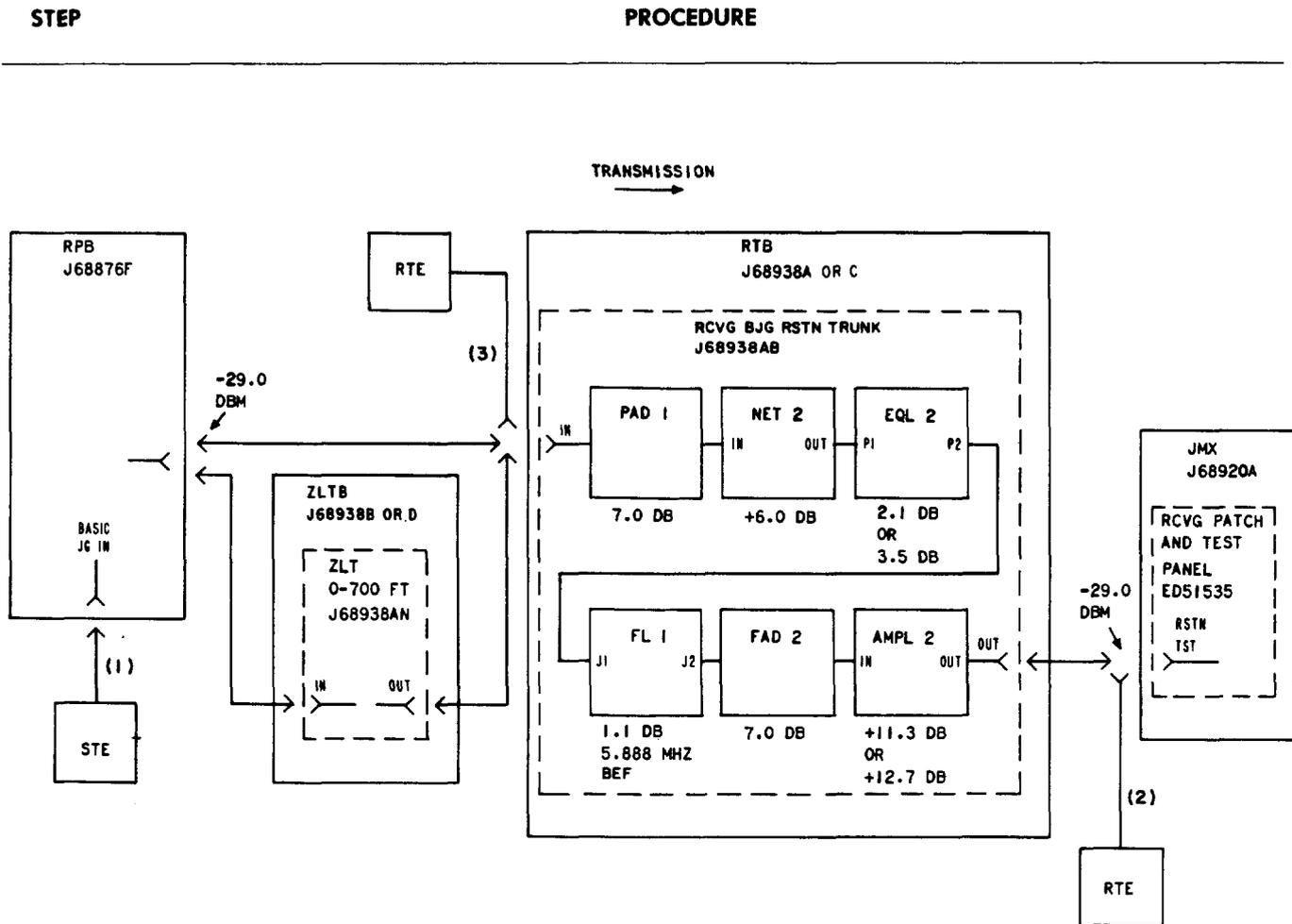


Fig. 3—Receiving BJB Restoration Trunk Circuit

- 16 Set the RTE to measure 20.1 MHz at -29.0 dBm.
- 17 On the associated ZLT, adjust the SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm.
- 18 Repeat Steps 12 through 17 until the requirement (-29 dBm to ± 0.1 dB) can be met at both frequencies without further adjustment.
- 19 If the requirement in Step 18 is met, go to Step 20; if otherwise, troubleshoot the ZLT and go back to Step 10.
- 20 Remove connection to RTE and reconnect ZLT cable to IN jack on RCVG BJB RSTN TRUNK unit (J68938AB).

CHART 3 (Contd)

STEP	PROCEDURE
21	Remove cable from the RSTN COMPL jack located in back of the RCVG PATCH & TEST PANEL at the RCVG JMX. See local office records to determine proper jumbogroup. Connect RTE to cable [Fig. 3, patch (2)].
22	Set STE to send 20.1 MHz at -29.0 dBm.
23	Set RTE to measure 20.1 MHz at -29.0 dBm.
24	At the RTB (J68938A or J68938C), locate the RCVG BJB RSTN TRUNK unit (J68938AB) associated with this trunk and set GAIN ADJ potentiometer to the center of its range. Early models have the controls on the bottom of the unit. Use cable extender C840957005 to slide the unit forward.
25	Adjust SLOPE ADJ on same unit for -29.0 dBm.
26	Change STE to send 3.3 MHz at -29.0 dBm.
27	Set the RTE to measure 3.3 MHz at -29.0 dBm.
28	On the associated RCVG BJB RSTN TRUNK unit, set GAIN ADJ for -29.0 dBm.
29	Change the STE to send 20.1 MHz at -29.0 dBm.
30	Change the RTE to measure 20.1 MHz at -29.0 dBm.
31	Adjust the SLOPE ADJ potentiometer for -29.0 dBm.
32	Repeat Steps 26 through 31 until the requirement is met at both frequencies with no further adjustment.
33	If the requirement in Step 32 is met, go to Step 34; if otherwise, troubleshoot the RTB and go to Step 2.
34	Change the STE to send 5.888 MHz at -29.0 dBm.
35	Set the RTE to measure 5.888 MHz at -94.0 dBm.
36	Measure 5.888 MHz. Requirement: -94.0 dBm or lower.
37	If the requirement in Step 36 is met, go to Step 38; if otherwise, replace the BEF (FL1) (located in the RCVG side of the BJB RSTN TRK unit) and go to Step 22.
38	Remove the STE from the BASIC JG IN jack in the RPB [Fig. 3, patch (1)].

CHART 3 (Contd)

STEP	PROCEDURE
39	At the RCVG JMX, remove cable from the RTE and restore to the RSTN COMPL jack on back of the PATCH & TEST panel [Fig. 3, patch (2)].
40	Leave trunk ready for service.

CHART 4

**LEVEL MEASUREMENT
JMX IDLE TRANSMITTING MODULATOR INPUT
RESTORATION TRUNK CIRCUIT
J68938AD**

This circuit provides flat level adjustment, amplification, and the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 700 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L4 or MMX-2C signal (0.564 to 17.548 MHz at -29.0 dBm).

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 20.1 MHz at -29.0 dBm.
3	Prepare the RTE for a 75-ohm terminated measurement of 20.1 MHz at -43.9 dBm.
4	Connect the STE to the JMX IDLE MOD IN jack at the RPB (J68876F) [Fig. 4, patch (1)].
5	Remove cable from the RSTN IN jack located on the back of the MOD panel at the TRMTG JMX. See local office records to determine proper jumbogroup. Connect RTE to the cable.
6	Measure the level of 20.1 MHz. Cord loss must be taken into account. Requirement: -43.9 ±0.3 dBm.
7	If the requirement is met, go to Step 34; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 24.

CHART 4 (Contd)

STEP	PROCEDURE
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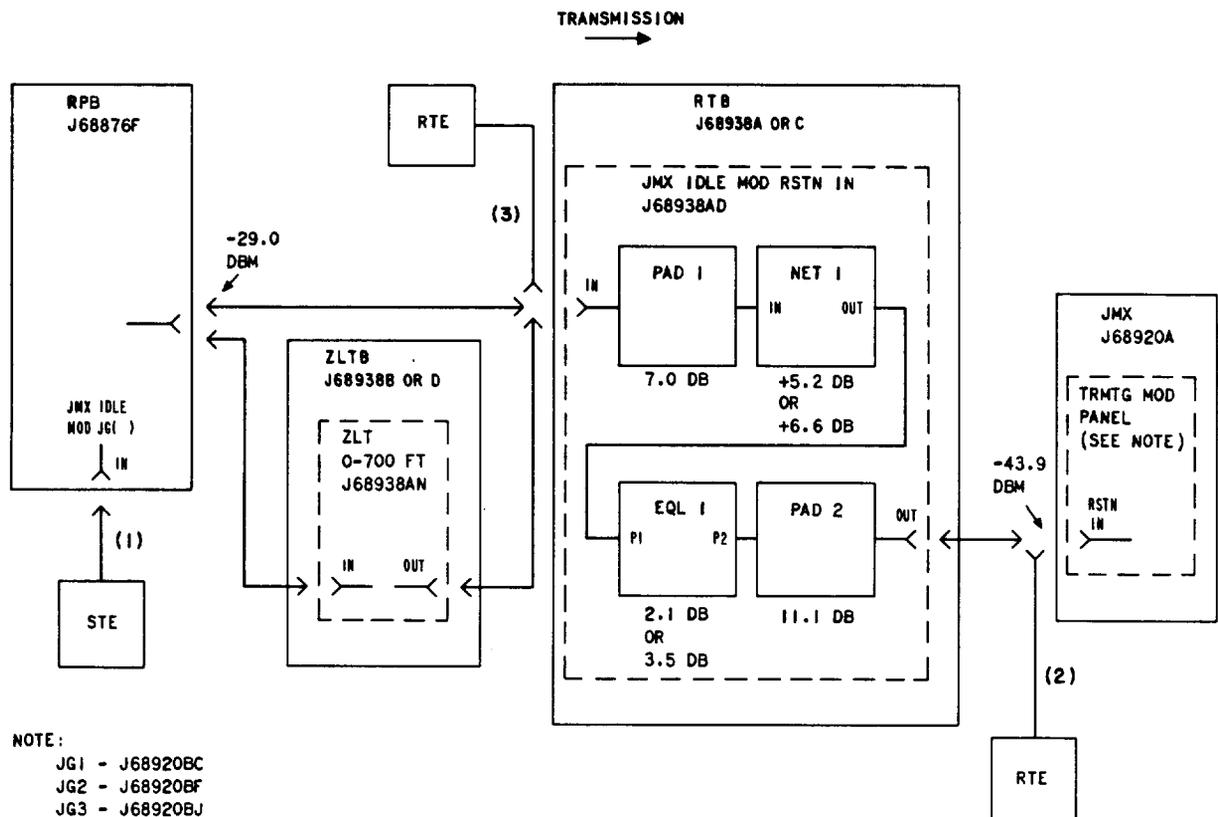


Fig. 4—JMX Idle Transmitting Modulator Input Restoration Trunk Circuit

- 9 Remove cable from the IN jack at the JMX IDLE MOD RSTN IN unit in the RTB and connect cable to the RTE [Fig. 4, patch (3)].
- 10 At the ZLTB, locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
- 11 Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
- 12 Change the STE to send 3.3 MHz at -29.0 dBm.
- 13 Set the RTE to measure 3.3 MHz at -29.0 dBm.
- 14 On the associated ZLT, adjust GAIN ADJ to obtain a reading of -29.0 dBm.

CHART 4 (Contd)

STEP	PROCEDURE
15	Change the STE to send 20.1 MHz at -29.0 dBm.
16	Set the RTE to measure 20.1 MHz at -29.0 dBm.
17	On the associated ZLT, adjust the SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm.
18	Repeat Steps 12 through 17 until the requirement (-29 dBm \pm 0.1 dB) can be met at both frequencies without further adjustment.
19	If the requirement in Step 18 is met, go to Step 20; if otherwise, troubleshoot the ZLT and go back to Step 10.
20	Remove connection to RTE and reconnect the ZLT cable to IN jack on JMX IDLE MOD RSTN IN unit (J68938AD).
21	Remove cable from the RSTN IN jack located in back of the MOD panel at the TRMTG JMX. See local office records to determine proper jumbogroup. Connect RTE to cable [Fig. 4, patch (2)].
22	Set STE to send 20.1 MHz at -29.0 dBm.
23	Set RTE to measure 20.1 MHz at -29.0 dBm.
24	At the RTB (J68938A or J68938C), locate the JMX IDLE MOD RSTN IN unit (J68938AD) associated with this trunk and set GAIN ADJ potentiometer to the center of its range. Early models have the controls on the bottom of the unit. Use cable extender C840957005 to slide the unit forward.
25	Adjust SLOPE ADJ on same unit for -43.9 dBm.
26	Change STE to send 3.3 MHz at -29.0 dBm.
27	Set the RTE to measure 3.3 MHz at -43.9 dBm.
28	At the JMX IDLE MOD RSTN IN unit, set GAIN ADJ for -43.9 dBm.
29	Change the STE to send 20.1 MHz at -29.0 dBm.
30	Change the RTE to measure 20.1 MHz at -43.9 dBm.
31	Adjust the SLOPE ADJ potentiometer for -43.9 dBm.
32	Repeat Steps 26 through 31 until the requirement is met at both frequencies with no further adjustment.

CHART 4 (Contd)

STEP	PROCEDURE
33	If the requirement in Step 32 is met, go to Step 34; if otherwise, troubleshoot the RTB and go to Step 2.
34	Remove the STE from the JMX IDLE MOD IN jack in the RPB [Fig. 4, patch (1)].
35	At the TRMTG JMX, remove cable from the RTE and restore to the RSTN IN jack on back of the MOD panel [Fig. 4, patch (2)].
36	Leave trunk ready for service.

CHART 5

**LEVEL MEASUREMENT
JMX IDLE TRANSMITTING MODULATOR
OUTPUT RESTORATION TRUNK CIRCUIT
J68938AE**

This circuit provides flat level adjustment, amplification, and the square root of frequency adjustment of 0 to 300 feet of 728A cable. The cable length may be extended up to 900 feet by the use of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 spectrum (3.124 to 60.556 MHz at -29.0 dBm).

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -30.1 dBm.
3	Prepare the RTE to measure 51.5 MHz at -29.0 dBm.
4	By using office records, locate the transmitting line interface panel of interest at the JMX and remove the cable from the RSTN OUT jack. Connect the STE to the cable [Fig. 5, patch (1)].
5	Connect the RTE to the JMX IDLE MOD OUT jack at the RPB [Fig. 5, patch (2)].
6	Measure the level of 51.5 MHz. Cord loss must be taken into account.

Requirement: -29.0 ±0.3 dBm.

CHART 5 (Contd)

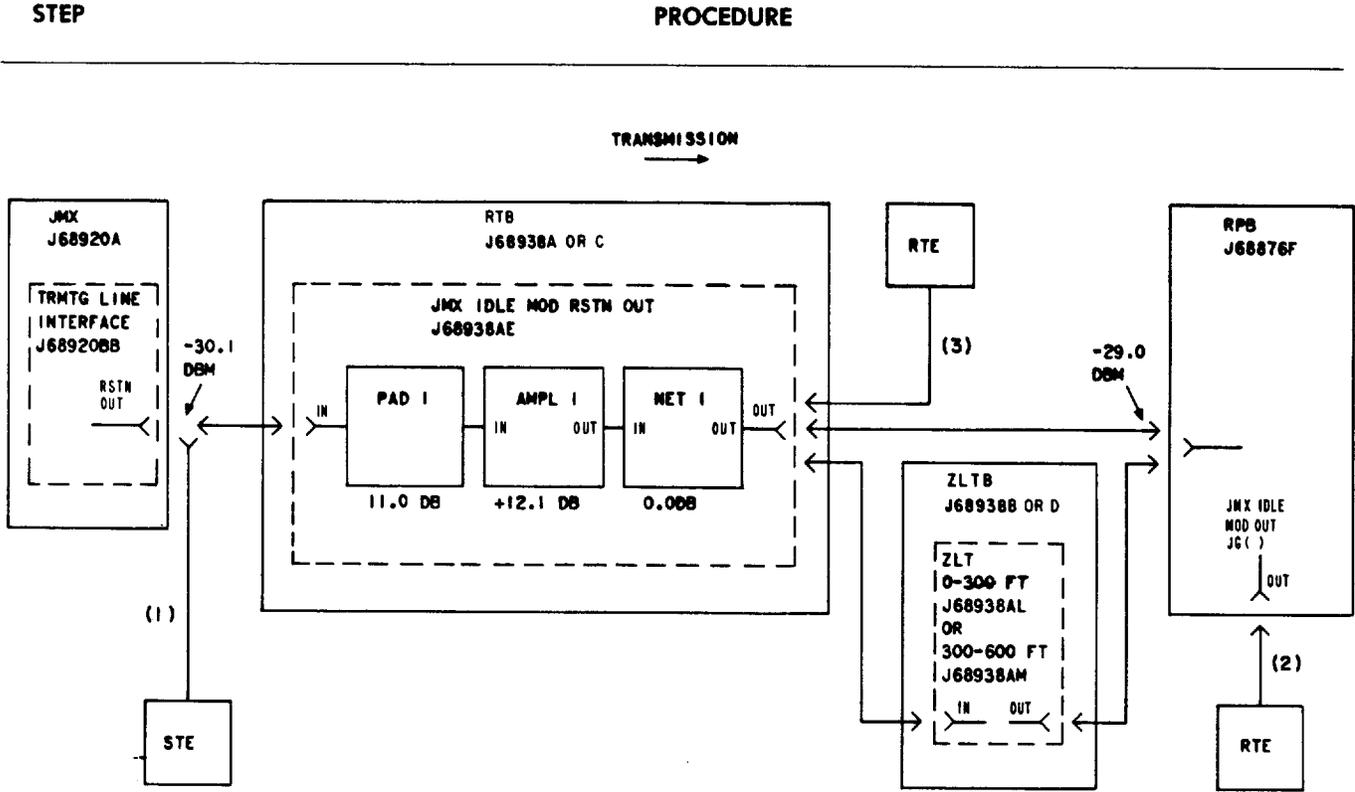


Fig. 5—JMX Idle Transmitting Modulator Output Restoration Trunk Circuit

- 7 If the requirement is met, go to Step 37; if otherwise, go to Step 8.
- 8 If the ZLT is used, go to Step 9; if not, go to Step 30.
- 9 Move the RTE to the OUT jack at the RTB [Fig. 5, patch (3)].
- 10 From office records, determine cable length between the JMX bay and RTB.
- 11 At the RTB (J68938A or C) on JMX IDLE MOD RSTN OUT unit (J68938AE) associated with this trunk, set GAIN ADJ potentiometer to the center of its range.
- 12 Adjust SLOPE ADJ on the same unit to obtain the level (Table C) for the cable length determined in Step 10.
- 13 Change the STE to send 3.3 MHz at -30.1 dBm.
- 14 At the RTE, measure 3.3 MHz, adjust the GAIN ADJ potentiometer (located in the JMX IDLE MOD RSTN OUT unit) to obtain the level shown in Table C for 3.3 MHz for the length of cable determined in Step 10.

CHART 5 (Contd)

STEP	PROCEDURE
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TABLE C

CABLE LENGTH BETWEEN L5 OR JMX BAYS AND RSTN TRK BAY IN FEET		SIGNAL POWER IN DBM	
AT LEAST	BUT LESS THAN	3.3 MHZ	51.5 MHZ
15	25	-28.0	-23.5
25	35	-28.0	-23.7
35	45	-28.0	-23.9
45	55	-28.0	-24.1
55	65	-28.0	-24.3
65	75	-28.0	-24.5
75	85	-28.0	-24.7
85	95	-28.0	-24.9
95	105	-28.0	-25.1
105	115	-28.0	-25.3
115	125	-28.0	-25.5
125	135	-28.0	-25.7
135	145	-28.0	-25.9
145	150	-28.0	-26.1

- 15 Change the STE to send 51.5 MHz at -30.1 dBm.
- 16 Change the RTE to measure 51.5 MHz, adjust the SLOPE ADJ potentiometer (located in the JMX IDLE MOD RSTN OUT unit) to obtain the level shown in Table C for 51.5 MHz for the cable length determined in Step 10.
- 17 Repeat Steps 13 through 16 until the requirement (± 0.1 dB) can be met at both frequencies with no further adjustment.
- 18 If the requirement in Step 17 is met, move the RTE back to the RPB [Fig. 5, patch (2)], restore the coax to the OUT jack at the RTB, and go to Step 19; if otherwise, troubleshoot the trunk between the RTE and the STE and go back to Step 11.
- 19 With the STE level at -30.1 dBm and the RTE level at -29.0 dBm, measure 51.5 MHz.
- Requirement:** -29.0 ± 0.3 dBm.
- 20 If the requirement in Step 19 is met, go to Step 37; if otherwise, go to Step 21.

CHART 5 (Contd)

STEP	PROCEDURE
21	On the associated ZLTB, locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
22	Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
23	Set the STE to send 3.3 MHz at -30.1 dBm.
24	Set the RTE to measure 3.3 MHz at -29.0 dBm.
25	On the associated ZLT, adjust the GAIN ADJ potentiometer to obtain a reading of -29.0 dBm.
26	Change the STE to send 51.5 MHz at -30.1 dBm.
27	Change the RTE to measure 51.5 MHz at -29.0 dBm.
28	On the associated ZLT, adjust SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm at the RPB.
29	If the requirement in Step 28 is met, go to Step 37; if otherwise, troubleshoot the ZLT and go back to Step 23.
30	At the RTB (J68938A or J68938C), on JMX IDLE MOD RSTN OUT unit (J68938AE) associated with this trunk, set GAIN ADJ potentiometer to the center of its range.
31	Adjust SLOPE ADJ on the same unit for -29.0 dBm.
32	Change the STE to send 3.3 MHz at -30.1 dBm.
33	At the RTE, measure 3.3 MHz and adjust GAIN ADJ for -29.0 dBm.
34	Change STE to send 51.5 MHz at -30.1 dBm.
35	Change RTE to measure 51.5 MHz and adjust SLOPE ADJ for -29.0 dBm.
36	Repeat Steps 32 through 35 until the requirement (± 0.1 dB) can be met without further adjustment.
37	Remove the STE from the cable at the JMX and restore the cable to the RSTN OUT jack in the transmitting line interface panel.
38	Remove the RTE from the JMX IDLE MOD OUT jack at the RPB.
39	Leave trunk ready for service.

CHART 6

LEVEL MEASUREMENT
JMX IDLE RECEIVING DEMODULATOR INPUT
RESTORATION TRUNK CIRCUIT
J68938AF

This circuit provides flat level adjustment and the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 600 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 line spectrum (3.124 to 60.556 MHz at -29.0 dBm).

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -29.0 dBm.
3	Prepare the RTE for a 75-ohm terminated measurement of 51.5 MHz at -29.6 dBm.
4	Connect the STE to the JMX IDLE DEM IN jack at the RPB (J68876F) [Fig. 6, patch (1)].

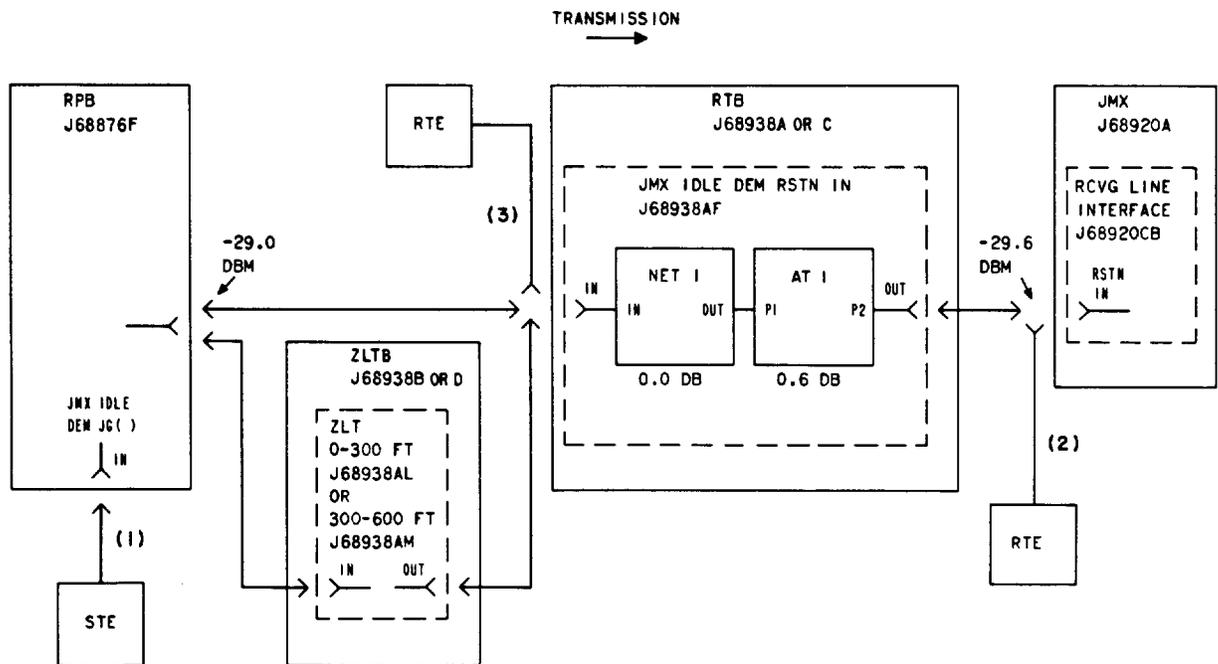


Fig. 6—JMX Idle Receiving Demodulator Input Restoration Trunk Circuit

CHART 6 (Contd)

STEP	PROCEDURE
5	Remove cable from the RSTN IN jack located on the back of the RCVG LINE INTERFACE panel at the RCVG JMX. See local office records to determine proper jumbogroup. Connect RTE to the cable.
6	Measure the level of 51.5 MHz. Cord loss must be taken into account. Requirement: -29.6 ± 0.3 dBm.
7	If the requirement is met, go to Step 34; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 24.
9	Remove cable from the IN jack at the JMX IDLE DEM RSTN IN unit (J68938AF) in the RTB and connect cable to the RTE [Fig. 6, patch (3)].
10	At the ZLTB, locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
11	Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
12	Change the STE to send 3.3 MHz at -29.0 dBm.
13	Set the RTE to measure 3.3 MHz at -29.0 dBm.
14	On the associated ZLT, adjust GAIN ADJ to obtain a reading of -29.0 dBm.
15	Change the STE to send 51.5 MHz at -29.0 dBm.
16	Set the RTE to measure 51.5 MHz at -29.0 dBm.
17	On the associated ZLT, adjust the SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm.
18	Repeat Steps 12 through 17 until the requirement (-29 dBm ± 0.1 dB) can be met at both frequencies without further adjustment.
19	If the requirement in Step 18 is met, go to Step 20; if otherwise, troubleshoot the ZLT and go back to Step 10.
20	Remove connection to RTE and reconnect the ZLT cable to IN jack on JMX IDLE DEM RSTN IN unit (J68938AF).
21	Remove cable from the RSTN IN jack located in back of the RCVG LINE INTERFACE panel at the RCVG JMX. See local office records to determine proper jumbogroup. Connect RTE to cable [Fig. 6, patch (2)].

CHART 6 (Contd)

STEP	PROCEDURE
22	Set STE to send 51.5 MHz at -29.0 dBm.
23	Set RTE to measure 51.5 MHz at -29.6 dBm.
24	At the RTB (J68938A or C), locate the JMX IDLE DEM RSTN IN unit (J68938AF) associated with this trunk and set GAIN ADJ potentiometer to the center of its range.
25	Adjust SLOPE ADJ on same unit for -29.6 dBm.
26	Change STE to send 3.3 MHz at -29.0 dBm.
27	Set the RTE to measure 3.3 MHz at -29.6 dBm.
28	At the JMX IDLE DEM RSTN IN unit, set GAIN ADJ for -29.6 dBm.
29	Change the STE to send 51.5 MHz at -29.0 dBm.
30	Change the RTE to measure 51.5 MHz at -29.6 dBm.
31	Adjust the SLOPE ADJ potentiometer for -29.6 dBm.
32	Repeat Steps 26 through 31 until the requirement is met at both frequencies with no further adjustment.
33	If the requirement in Step 32 is met, go to Step 34; if otherwise, troubleshoot the RTB and go to Step 2.
34	Remove the STE from the JMX IDLE DEM IN jack in the RPB [Fig. 6, patch (1)].
35	At the RCVG JMX, remove cable from the RTE and restore to the RSTN IN jack on back of the RCVG LINE INTERFACE panel [Fig. 6, patch (2)].
36	Leave trunk ready for service.

CHART 7

LEVEL MEASUREMENT
JMX IDLE RECEIVING DEMODULATOR OUTPUT
RESTORATION TRUNK CIRCUIT
J68938AG

This circuit provides amplification and flat level adjustment as well as the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional

CHART 7 (Contd)

0 to 700 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L4 or MMX-2C signal (0.564 to 17.548 MHz at -29.0 dBm).

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 20.1 MHz at -26.1 dBm.
3	Prepare the RTE to measure 20.1 MHz at -29.0 dBm.
4	By using office records, locate the receiving demodulator panel of interest at the JMX and remove the cable from the RSTN OUT jack. Connect the STE to the cable [Fig. 7, patch (1)].
5	Connect the RTE to the JMX IDLE DEM OUT jack at the RPB [Fig. 7, patch (2)].
6	Measure the level of 20.1 MHz. Cord loss must be taken into account.

Requirement: -29.0 ± 0.3 dBm.

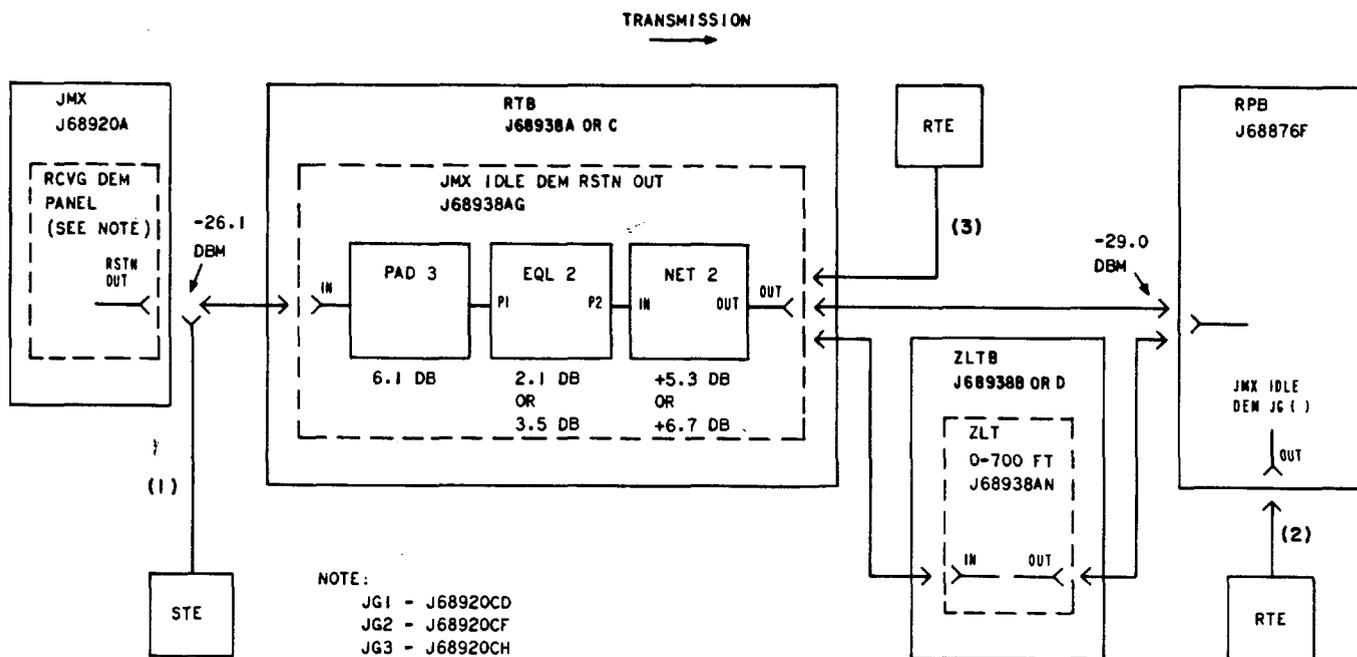


Fig. 7—JMX Idle Receiving Demodulator Output Restoration Trunk Circuit

CHART 7 (Contd)

STEP	PROCEDURE
7	If the requirement is met, go to Step 37; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 30.
9	Move the RTE to the OUT jack at the RTB [Fig. 7, patch (3)].
10	From office records, determine cable length between the JMX bay and RTB.
11	At the RTB (J68938A or C), on JMX IDLE DEM RSTN OUT unit (J68938AG) associated with this trunk, set GAIN ADJ potentiometer to the center of its range. Early models have adjustments on the bottom. Use cable extender C840957005 to pull forward.
12	Adjust SLOPE ADJ on the same unit to obtain the level (Table D) for the cable length determined in Step 10.

TABLE D

CABLE LENGTH BETWEEN LS OR JMX BAYS AND RSTN TRK BAY IN FEET		SIGNAL POWER IN DBM	
AT LEAST	BUT LESS THAN	3.3 MHZ	51.5 MHZ
15	25	-27.9	-25.7
25	35	-27.9	-25.8
35	45	-27.9	-26.0
45	55	-27.9	-26.1
55	65	-27.9	-26.2
65	75	-27.9	-26.3
75	85	-27.9	-26.4
85	95	-27.9	-26.5
95	100	-27.9	-26.7

- 13 Change the STE to send 3.3 MHz at -26.1 dBm.
- 14 At the RTE, measure 3.3 MHz, adjust the GAIN ADJ potentiometer (located in the JMX IDLE DEM RSTN OUT unit) to obtain the level shown in Table D for 3.3 MHz for the length of cable determined in Step 10.
- 15 Change the STE to send 20.1 MHz at -26.1 dBm.
- 16 Change the RTE to measure 20.1 MHz, adjust the SLOPE ADJ potentiometer (located in the JMX IDLE DEM RSTN OUT unit) to obtain the level shown in Table D for 20.1 MHz for the cable length determined in Step 10.

CHART 7 (Contd)

STEP	PROCEDURE
17	Repeat Steps 13 through 16 until the requirement (± 0.1 dB) can be met at both frequencies with no further adjustment.
18	If the requirement in Step 17 is met, move the RTE back to the RPB [Fig. 7, patch (2)], restore the coax to the OUT jack at the RTB, and go to Step 19; if otherwise, troubleshoot the trunk between the RTE and the STE and go back to Step 11.
19	With the STE level at -26.1 dBm and the RTE level at -29.0 dBm, measure 20.1 MHz. Requirement: -29.0 \pm 0.3 dBm.
20	If the requirement in Step 19 is met, go to Step 37; if otherwise, go to Step 21.
21	At the ZLTB, locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
22	Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
23	Set the STE to send 3.3 MHz at -26.1 dBm.
24	Set the RTE to measure 3.3 MHz at -29.0 dBm.
25	On the associated ZLT, adjust the GAIN ADJ potentiometer to obtain a reading of -29.0 dBm.
26	Change the STE to send 20.1 MHz at -26.1 dBm.
27	Change the RTE to measure 20.1 MHz at -29.0 dBm.
28	On the associated ZLT, adjust SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm at the RPB.
29	If the requirement in Step 28 is met, go to Step 37; if otherwise, troubleshoot the ZLT and go back to Step 23.
30	At the RTB (J68938A or C), on JMX IDLE DEM RSTN OUT unit (J68938AG) associated with this trunk, set GAIN ADJ potentiometer to the center of its range.
31	Adjust SLOPE ADJ on the same unit for -29.0 dBm.
32	Change the STE to send 3.3 MHz at -26.1 dBm.
33	At the RTE, measure 3.3 MHz and adjust GAIN ADJ for -29.0 dBm.
34	Change STE to send 20.1 MHz at -26.1 dBm.

CHART 7 (Contd)

STEP	PROCEDURE
35	Change RTE to measure 20.1 MHz and adjust SLOPE ADJ for -29.0 dBm.
36	Repeat Steps 32 through 35 until the requirement (± 0.1 dB) can be met without further adjustment.
37	Remove the STE from the cable at the JMX and restore the cable to the RSTN OUT jack in the receiving demodulator panel.
38	Remove the RTE from the JMX IDLE DEM OUT jack at the RPB.
39	Leave trunk ready for service.

CHART 8

**LEVEL MEASUREMENT
L5/L5E PROTECTION LINE TRANSMITTING COMBINING IN
RESTORATION TRUNK CIRCUIT
J68938AH**

This circuit provides flat level adjustment and the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 600 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 line spectrum (3.124 to 60.556 MHz) on L5E spectrum (3.252 to 64.844 MHz) with JG1/MMG1 at -30.4 dBm, JG2/MMG2 at -29.0 dBm, and JG3/MMG3 at -27.7 dBm.

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -29.0 dBm.
3	Prepare the RTE for a 75-ohm terminated measurement of 51.5 MHz at -30.5 dBm for L5 (-31.5 dBm for L5E).
4	Connect the STE to the TRMTG PROT LINE IN jack at the RPB (J68876F) [Fig. 8, patch (1)].
5	Remove cable from the RSTN IN jack located on the back of the TRMTG LINE CONN PANEL at the PROT LINE bay. Connect RTE to the cable [Fig. 8, patch (2)].

CHART 8 (Contd)

STEP

PROCEDURE

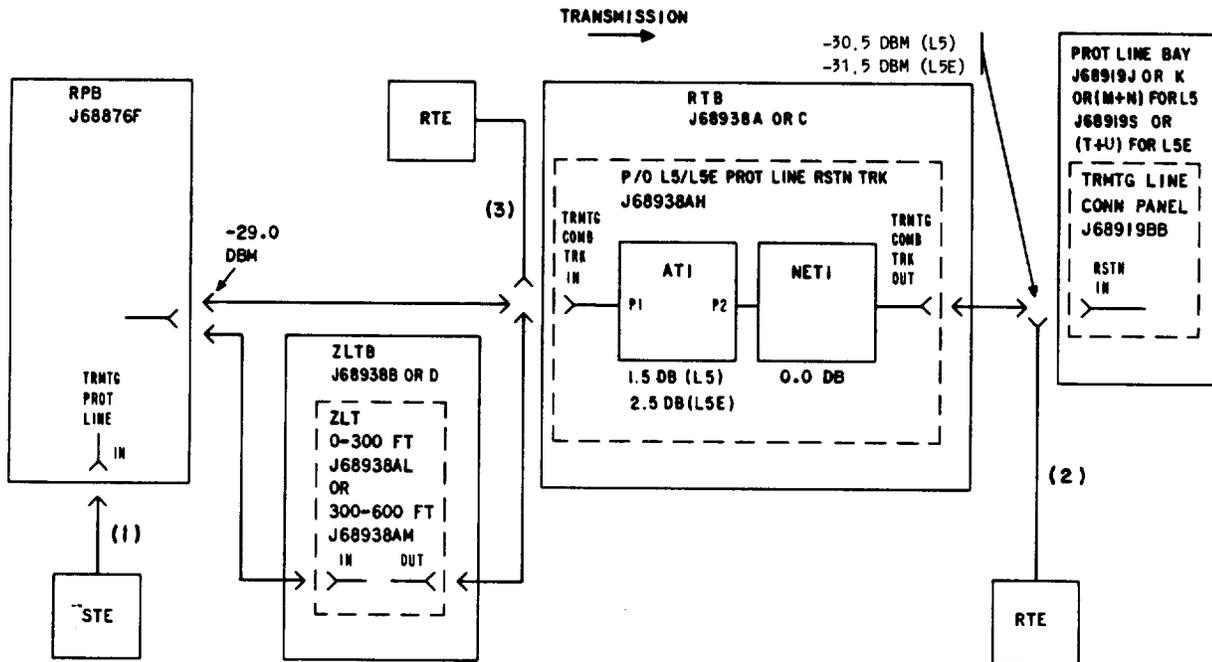


Fig. 8—L5/L5E Protection Line Transmitting Combining In Restoration Trunk Circuit

- 6 Measure the level of 51.5 MHz. Cord loss must be taken into account.
Requirement: -30.5 ± 0.3 dBm for L5 (-31.5 ± 0.3 dBm for L5E).
- 7 If the requirement is met, go to Step 34; if otherwise, go to Step 8.
- 8 If the ZLT is used, go to Step 9; if not, go to Step 24.
- 9 Remove cable from the TRMTG COMB TRK IN jack at the L5/L5E PROT LINE RSTN TRK unit (J68938AH) in the RTB and connect cable to the RTE [Fig. 8, patch (3)].
- 10 At the ZLTB locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
- 11 Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
- 12 Change the STE to send 3.3 MHz at -29.0 dBm.

CHART 8 (Contd)

STEP	PROCEDURE
13	Set the RTE to measure 3.3 MHz at -29.0 dBm.
14	On the associated ZLT, adjust GAIN ADJ to obtain a reading of -29.0 dBm.
15	Change the STE to send 51.5 MHz at -29.0 dBm.
16	Set the RTE to measure 51.5 MHz at -29.0 dBm.
17	On the associated ZLT, adjust the SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm.
18	Repeat Steps 12 through 17 until the requirement (-29 dBm \pm 0.1 dB) can be met at both frequencies without further adjustment.
19	If the requirement in Step 18 is met, go to Step 20; if otherwise, troubleshoot the ZLT and go back to Step 10.
20	Remove connection to RTE and reconnect ZLT cable to TRMTG COMB TRK IN jack on L5/L5E PROT LINE RSTN TRK unit (J68938AH).
21	Remove cable from the RSTN IN jack located in back of the TRMTG LINE CONN PANEL at the PROT LINE bay. Connect RTE to cable [Fig. 8, patch (2)].
22	Set STE to send 51.5 MHz at -29.0 dBm.
23	Set RTE to measure 51.5 MHz at -30.5 dBm for L5 (-31.5 dBm for L5E).
24	At the RTB (J68938A), locate the L5/L5E PROT LINE RSTN TRK unit (J68938AH) associated with this trunk and set GAIN ADJ potentiometer to the center of its range.
25	Adjust SLOPE ADJ on same unit for -30.5 dBm for L5 (-31.5 dBm for L5E).
26	Change STE to send 3.3 MHz at -29.0 dBm.
27	Set the RTE to measure 3.3 MHz at -30.5 dBm for L5 (-31.5 dBm for L5E).
28	At the L5/L5E PROT LINE RSTN TRK unit, set GAIN ADJ for -30.5 dBm.
29	Change the STE to send 51.5 MHz at -29.0 dBm.
30	Change the RTE to measure 51.5 MHz at -30.5 dBm for L5 (-31.5 dBm for L5E).
31	Adjust the SLOPE ADJ potentiometer for -30.5 dBm for L5 (-31.5 dBm for L5E).
32	Repeat Steps 26 through 31 until the requirement is met at both frequencies with no further adjustment.

CHART 8 (Contd)

STEP	PROCEDURE
33	If the requirement in Step 32 is met, go to Step 34; if otherwise, troubleshoot the RTB and go to Step 2.
34	Remove the STE from the TRMTG PROT LINE IN jack in the RPB [Fig. 8, patch (1)].
35	At the PROT LINE bay, remove cable from the RTE and restore to the RSTN IN jack on back of the TRMTG LINE CONN panel [Fig. 8, patch (2)].
36	Leave trunk ready for service.

CHART 9

**LEVEL MEASUREMENT
L5/L5E PROTECTION LINE RECEIVING TERMINAL SWITCH OUT
RESTORATION TRUNK CIRCUIT
J68938AH**

This circuit provides amplification and flat level adjustment as well as the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 600 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 spectrum (3.124 to 60.556 MHz), on L5E spectrum (3.252 to 64.844 MHz) with JG1/MMG1 at -30.4 dBm, JG2/MMG2 at -29.0 dBm, and JG3/MMG3 at -27.7 dBm.

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
3	Prepare the RTE to measure 51.5 MHz at -29.0 dBm.
4	By using office records, locate the RCVG LINE CONN panel of interest at the protection line bay and remove the cable from the RSTN SIG SW OUT jack. Connect the STE to the cable [Fig. 9, patch (1)].
5	Connect the RTE to the RCVG PROT LINE SW OUT jack at the RPB [Fig. 9, patch (2)].
6	Measure the level of 51.5 MHz. Cord loss must be taken into account.

Requirement: -29.0 ±0.3 dBm.

CHART 9 (Contd)

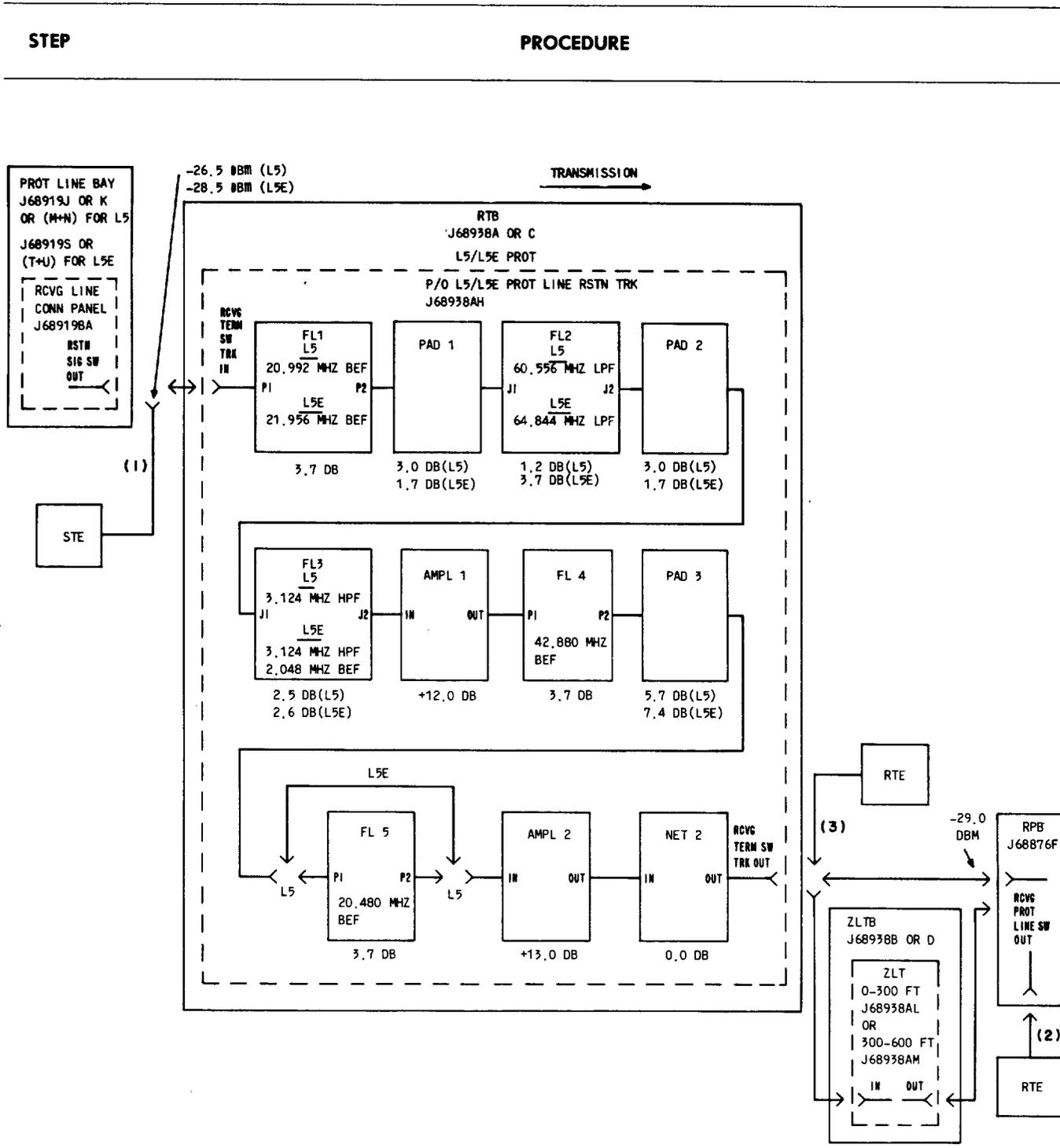


Fig. 9—L5/L5E Protection Line Receiving Terminal Switch Out Restoration Trunk Circuit

CHART 9 (Contd)

STEP	PROCEDURE
7	If the requirement is met, go to Step 57; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 30.
9	Move the RTE to the RCVG TERM SW TRK OUT jack at the RTB [Fig. 9, patch (3)].
10	From office records, determine cable length between the protection line bay and RTB.
11	At the RTB (J68938A or C), on L5/L5E PROT LINE RSTN TRK unit (J68938AH) associated with this trunk, set GAIN ADJ potentiometer to the center of its range.
12	Adjust SLOPE ADJ on the same unit to obtain the level (Table E) for the cable length determined in Step 10.

TABLE E

CABLE LENGTH BETWEEN L5/L5E BAYS AND RSTN TRK BAY IN FEET		SIGNAL POWER IN DBM	
AT LEAST	BUT LESS THAN	3.3 MHZ	51.5 MHZ
15	25	-28.0	-23.5
25	35	-28.0	-23.7
35	45	-28.0	-23.9
45	55	-28.0	-24.1
55	65	-28.0	-24.3
65	75	-28.0	-24.5
75	85	-28.0	-24.7
85	95	-28.0	-24.9
95	105	-28.0	-25.1
105	115	-28.0	-25.3
115	125	-28.0	-25.5
125	135	-28.0	-25.7
135	145	-28.0	-25.9
145	150	-28.0	-26.1

- 13 Change the STE to send 3.3 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
- 14 At the RTE, measure 3.3 MHz, adjust the GAIN ADJ potentiometer (RCVG TERM SW TRK OUT, located in the L5/L5E PROT LINE RSTN TRK unit) to obtain the level shown in Table E for 3.3 MHz for the length of cable determined in Step 10.
- 15 Change the STE to send 51.5 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).

CHART 9 (Contd)

STEP	PROCEDURE
16	Change the RTE to measure 51.5 MHz, adjust the SLOPE ADJ potentiometer (RCVG TERM SW TRK OUT, located in the L5/L5E PROT LINE RSTN TRK unit) to obtain the level shown in Table E for 51.5 MHz for the cable length determined in Step 10.
17	Repeat Steps 13 through 16 until the requirement (± 0.1 dB) can be met at both frequencies with no further adjustment.
18	If the requirement in Step 17 is met, move the RTE back to the RPB [Fig. 9, patch (2)], restore the coax to the RCVG TERM SW TRK OUT jack at the RTB, and go to Step 19; if otherwise, troubleshoot the trunk between the RTE and the STE and go back to Step 11.
19	With the STE level at -26.5 dBm for L5 (-28.5 dBm for L5E) and the RTE level at -29.0 dBm, measure 51.5 MHz. Requirement: -29.0 ± 0.3 dBm.
20	If the requirement in Step 19 is met, go to Step 37; if otherwise, go to Step 21.
21	At the ZLTB locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
22	Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
23	Set the STE to send 3.3 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
24	Set the RTE to measure 3.3 MHz at -29.0 dBm.
25	On the associated ZLT, adjust the GAIN ADJ potentiometer to obtain a reading of -29.0 dBm.
26	Change the STE to send 51.5 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
27	Change the RTE to measure 51.5 MHz at -29.0 dBm.
28	On the associated ZLT, adjust SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm at the RPB.
29	If the requirement in Step 28 is met, go to Step 37; if otherwise, troubleshoot the ZLT and go back to Step 23.
30	At the RTB (J68938A or J68938C), on L5/L5E PROT LINE RSTN TRK unit (J68938AH) associated with this trunk, set GAIN ADJ potentiometer (designated RCVG TERM SW TRK OUT) to the center of its range.
31	Adjust SLOPE ADJ on the same unit for -29.0 dBm.

CHART 9 (Contd)

STEP	PROCEDURE
32	Change the STE to send 3.3 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
33	At the RTE measure 3.3 MHz and adjust GAIN ADJ for -29.0 dBm.
34	Change STE to send 51.5 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
35	Change RTE to measure 51.5 MHz and adjust SLOPE ADJ for -29.0 dBm.
36	Repeat Steps 32 through 35 until the requirement (± 0.1 dB) can be met without further adjustment.
37	Set the STE to send 2.976 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
38	Set the RTE to measure 2.976 MHz at -79.0 dBm.
39	Measure 2.976 MHz. Requirement: -79.0 dBm or lower.
40	If the requirement in Step 39 is met, go to Step 41; if otherwise, replace HPF (FL3) and go to Step 2.
41	Set the STE to send 20.480 MHz at -26.5 dBm for L5 (2.048 MHz at -28.5 dBm for L5E).
42	Set the RTE to measure 20.480 MHz for L5 (2.048 MHz for L5E) at -79.0 dBm.
43	Measure 20.480 MHz for L5 (2.048 MHz for L5E). Requirement: -79.0 dBm or lower.
44	If the requirement in Step 43 is met, go to Step 45; if otherwise, replace BEF (FL5) and go to Step 2.
45	Set the STE to send 20.992 MHz at -26.5 dBm for L5 (21.956 MHz at -28.5 dBm for L5E).
46	Set the RTE to measure 20.992 MHz for L5 (21.956 MHz for L5E) at -79.0 dBm.
47	Measure 20.992 MHz for L5 (21.956 MHz for L5E). Requirement: -79.0 dBm or lower.
48	If the requirement in Step 47 is met, go to Step 49; if otherwise, replace BEF (FL1) and go to Step 2.
49	Set the STE to send 42.880 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).

CHART 9 (Contd)

STEP	PROCEDURE
50	Set the RTE to measure 42.880 MHz at -109.0 dBm.
51	Measure 42.880 MHz. Requirement: -109.0 dBm or lower.
52	If the requirement in Step 51 is met, go to Step 53; if otherwise, replace BEF (FL4) and go to Step 2.
53	Set the STE to send 66.048 MHz at -26.5 dBm for L5 (-28.5 dBm for L5E).
54	Set the RTE to measure 66.048 MHz at -79.0 dBm.
55	Measure 66.048 MHz. Requirement: -79.0 dBm or lower.
56	If the requirement in Step 55 is met, go to Step 57; if otherwise, replace LPF (FL2) and go to Step 2.
57	Remove cable from the STE and restore in the RSTN SIG SW OUT jack in back of the RCVG LINE CONN panel in the protection line bay [Fig. 9, patch (1)].
58	Remove the RTE from the RCVG PROT LINE SW OUT jack at the RPB.
59	Leave trunk ready for service.

CHART 10

**LEVEL MEASUREMENT
L5/L5E PROTECTION LINE RECEIVING SPLITTING CIRCUIT OUT
RESTORATION TRUNK CIRCUIT
J68938AH**

This circuit provides amplification and flat level adjustment as well as the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 600 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 spectrum (3.124 to 60.556 MHz) on L5E spectrum (3.252 to 64.844 MHz) with JG1/MMG1 at -30.4 dBm, JG2/MMG2 at -29.0 dBm, and JG3/MMG3 at -27.7 dBm.

CHART 10 (Contd)

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
3	Prepare the RTE to measure 51.5 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
4	By using office records, locate the RCVG LINE CONN panel of interest at the protection line bay and remove the cable from the RSTN SIG HYB OUT jack. Connect the STE to the cable [Fig. 10, patch (1)].
5	Connect the RTE to the RCVG LINE HYB OUT jack at the RPB [Fig. 10, patch (2)].
6	Measure the level of 51.5 MHz. Cord loss must be taken into account. Requirement: -29.0 ±0.3 dBm.
7	If the requirement is met, go to Step 57; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 30.
9	Move the RTE to the RCVG SPLTG TRK OUT jack at the RTB [Fig. 10, patch (3)].
10	From office records, determine cable length between the protection line bay and RTB.
11	At the RTB (J68938A or J68938C), on L5/L5E PROT LINE RSTN TRK unit (J68938AH) associated with this trunk, set GAIN ADJ potentiometer (designated RCVG SPLTG TRK OUT) to the center of its range.
12	Adjust SLOPE ADJ on the same unit to obtain the level (Table F) for the cable length determined in Step 10.
13	Change the STE to send 3.3 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
14	At the RTE, measure 3.3 MHz, adjust the GAIN ADJ potentiometer (located in the L5/L5E PROT LINE RSTN TRK unit) to obtain the level shown in Table F for 3.3 MHz for the length of cable determined in Step 10.
15	Change the STE to send 51.5 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
16	Change the RTE to measure 51.5 MHz, adjust the SLOPE ADJ potentiometer (located in the L5/L5E PROT LINE RSTN TRK unit) to obtain the level shown in Table F for 51.5 MHz for the cable length determined in Step 10.
17	Repeat Steps 13 through 16 until the requirement (±0.1 dB) can be met at both frequencies with no further adjustment.

CHART 10 (Contd)

STEP

PROCEDURE

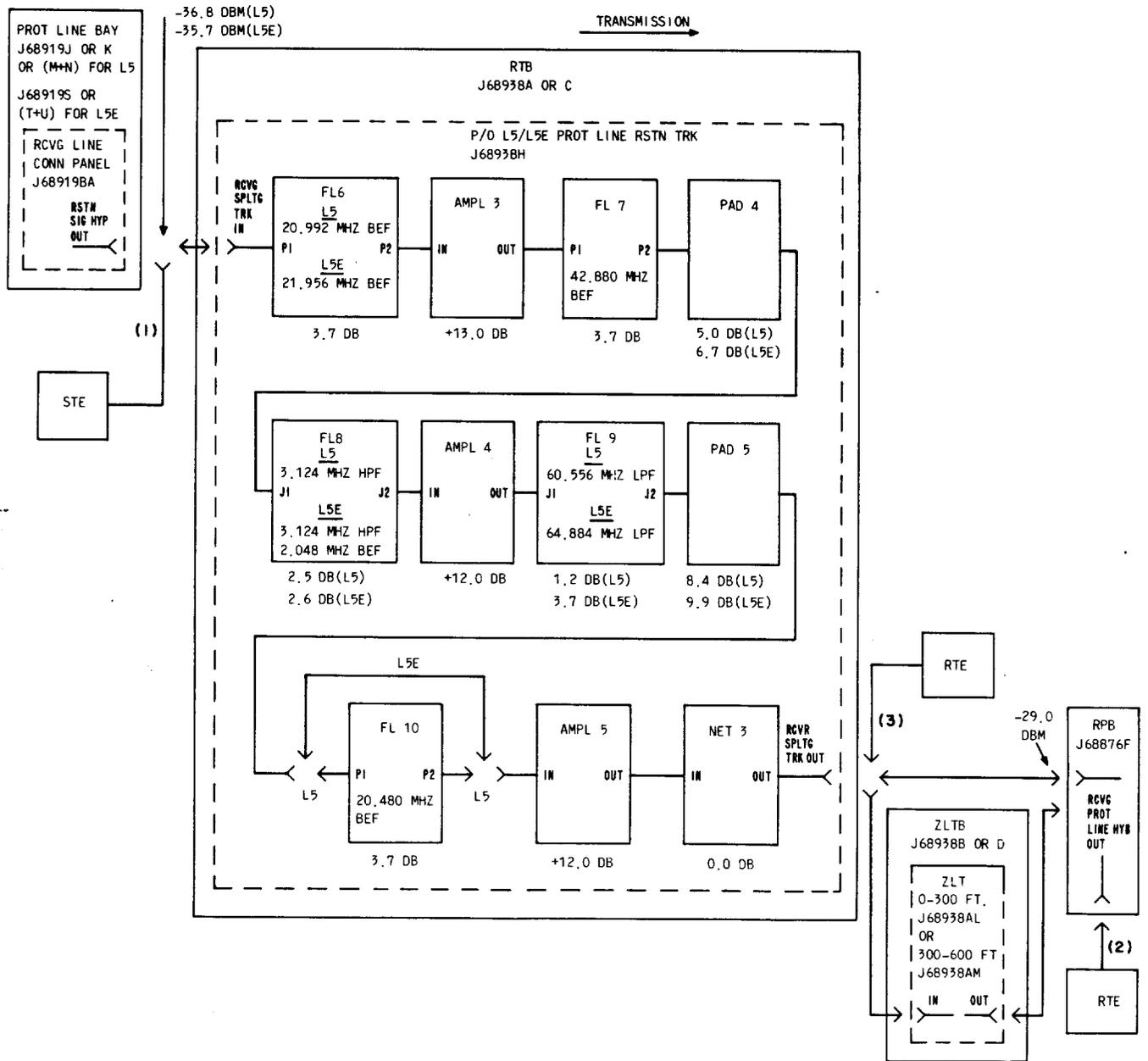


Fig. 10—L5/L5E Protection Line Receiving Splitting Circuit Out Restoration Trunk Circuit

CHART 10 (Contd)

STEP	PROCEDURE
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TABLE F

CABLE LENGTH BETWEEN L5/L5E BAYS AND RSTN TRK BAY IN FEET		SIGNAL POWER IN DBM	
AT LEAST	BUT LESS THAN	3.3 MHZ	51.5 MHZ
15	25	-28.0	-23.5
25	35	-28.0	-23.7
35	45	-28.0	-23.9
45	55	-28.0	-24.1
55	65	-28.0	-24.3
65	75	-28.0	-24.5
75	85	-28.0	-24.7
85	95	-28.0	-24.9
95	105	-28.0	-25.1
105	115	-28.0	-25.3
115	125	-28.0	-25.5
125	135	-28.0	-25.7
135	145	-28.0	-25.9
145	150	-28.0	-26.1

- 18 If the requirement in Step 17 is met, move the RTE back to the RPB [Fig. 10, patch (2)], restore the coax to the RCVG SPLTG TRK OUT jack at the RTB, and go to Step 19; if otherwise, troubleshoot the trunk between the RTE and the STE and go back to Step 11.
- 19 With the STE level at -36.8 dBm for L5 (-35.7 dBm for L5E) and the RTE level at -29.0 dBm, measure 51.5 MHz.
- Requirement:** -29.0 ±0.3 dBm.
- 20 If the requirement in Step 19 is met, go to Step 37; if otherwise, go to Step 21.
- 21 At the ZLTB locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
- 22 Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
- 23 Set the STE to send 3.3 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
- 24 Set the RTE to measure 3.3 MHz at -29.0 dBm.

CHART 10 (Contd)

STEP	PROCEDURE
25	On the associated ZLT, adjust the GAIN ADJ potentiometer to obtain a reading of -29.0 dBm.
26	Change the STE to send 51.5 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
27	Change the RTE to measure 51.5 MHz at -29.0 dBm.
28	On the associated ZLT, adjust SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm at the RPB.
29	If the requirement in Step 28 is met, go to Step 37; if otherwise, troubleshoot the ZLT and go back to Step 23.
30	At the RTB (J68938A or J68938C), on L5/L5E PROT LINE RSTN TRK unit (J68938AH) associated with this trunk, set GAIN ADJ potentiometer (designated RCVG SPLTG TRK OUT) to the center of its range.
31	Adjust SLOPE ADJ on the same unit for -29.0 dBm.
32	Change the STE to send 3.3 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
33	At the RTE measure 3.3 MHz and adjust GAIN ADJ for -29.0 dBm.
34	Change STE to send 51.5 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
35	Change RTE to measure 51.5 MHz and adjust SLOPE ADJ for -29.0 dBm.
36	Repeat Steps 32 through 35 until the requirement (± 0.1 dB) can be met without further adjustment.
37	Set the STE to send 2.976 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
38	Set the RTE to measure 2.976 MHz at -79.0 dBm.
39	Measure 2.976 MHz. Requirement: -79.0 dBm or lower.
40	If the requirement in Step 39 is met, go to Step 41; if otherwise, replace HPF (FL8) and go to Step 2.
41	Set the STE to send 20.480 MHz at -36.8 dBm for L5 (2.048 MHz at -35.7 dBm for L5E).
42	Set the RTE to measure 20.480 MHz for L5 (2.048 MHz for L5E) at -79.0 dBm.
43	Measure 20.480 MHz for L5 (2.048 for L5E).

CHART 10 (Contd)

STEP	PROCEDURE
	Requirement: -79.0 dBm or lower.
44	If the requirement in Step 43 is met, go to Step 45; if otherwise, replace BEF (FL10) and go to Step 2.
45	Set the STE to send 20.992 MHz at -36.8 dBm for L5 (21.956 MHz at -35.7 dBm for L5E).
46	Set the RTE to measure 20.992 MHz for L5 (21.956 MHz for L5E) at -79.0 dBm.
47	Measure 20.992 MHz for L5 (21.956 for L5E).
	Requirement: -79.0 dBm or lower.
48	If the requirement in Step 47 is met, go to Step 49; if otherwise, replace BEF (FL6) and go to Step 2.
49	Set the STE to send 42.880 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
50	Set the RTE to measure 42.880 MHz at -109 dBm.
51	Measure 42.880 MHz.
	Requirement: -109 dBm or lower.
52	If the requirement in Step 51 is met, go to Step 53; if otherwise, replace BEF (FL7) and go to Step 2.
53	Set the STE to send 66.048 MHz at -36.8 dBm for L5 (-35.7 dBm for L5E).
54	Set the RTE to measure 66.048 MHz at -79.0 dBm.
55	Measure 66.048 MHz.
	Requirement: -79.0 dBm or lower.
56	If the requirement in Step 55 is met, go to Step 57; if otherwise, replace LPF (FL9) and go to Step 2.
57	Remove cable from the STE and restore in the RSTN SIG HYB OUT jack in back of the RCVG LINE CONN panel in the protection line bay [Fig. 10, patch (1)].
58	Remove the RTE from the RCVG PROT LINE HYB OUT jack at the RPB [Fig. 10, patch (2)].
59	Leave trunk ready for service.

CHART 11
LEVEL MEASUREMENT
L5/L5E REGULAR LINE TRANSMITTING SWITCH OUT
RESTORATION TRUNK CIRCUIT
J68938AJ

This circuit provides amplification and flat level adjustment as well as the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 500 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 spectrum (3.124 to 60.556 MHz) or L5E spectrum (3.252 to 64.844 MHz) with JG1/MMG1 at -30.4 dBm, JG2/MMG2 at -29.0 dBm, and JG3/MMG3 at -27.7 dBm.

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
3	Prepare the RTE to measure 51.5 MHz at -29.0 dBm.
4	By using office records, locate the TRTMG LINE CONN panel of interest at the regular line bay and remove the cable from the RSTN TRK OUT jack. Connect the STE to the cable [Fig. 11, patch (1)].
5	Connect the RTE to the TRMTG REG LINE CONN OUT () jack at the RPB [Fig. 11, patch (2)].
6	Measure the level of 51.5 MHz. Cord loss must be taken into account. Requirement: -29.0 ±0.3 dBm.
7	If the requirement is met, go to Step 57; if otherwise, go to Step 8.
8	If the ZLT is used, go to Step 9; if not, go to Step 30.
9	Move the RTE to the TRMTG SW TRK OUT jack at the RTB [Fig. 11, patch (3)].
10	From office records, determine cable length between the regular line bay and RTB.
11	At the RTB (J68938A or J68938C), on L5/L5E REG LINE RSTN TRK unit (J68938AJ) associated with this trunk, set GAIN ADJ potentiometer (designated TRMTG SW OUT) to the center of its range.
12	Adjust SLOPE ADJ on the same unit to obtain the level (Table G) for the cable length determined in Step 10.
13	Change the STE to send 3.3 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).

CHART 11 (Contd)

STEP

PROCEDURE

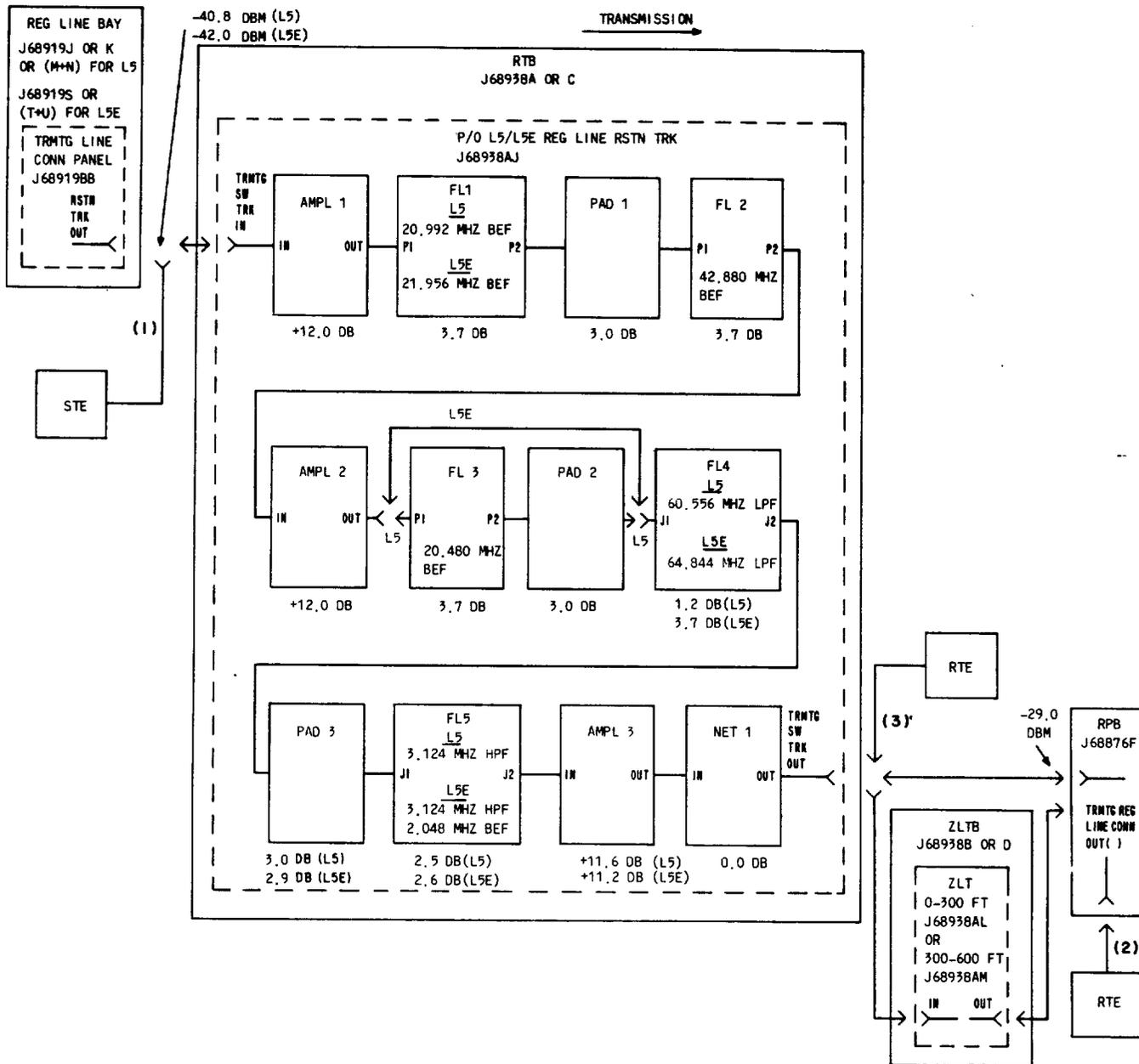


Fig. 11—L5/L5E Regular Line Transmittng Switch Out Restoration Trunk Circuit

CHART 11 (Contd)

STEP

PROCEDURE

TABLE G

CABLE LENGTH BETWEEN L5/L5E BAYS AND RSTN TRK BAY IN FEET		SIGNAL POWER IN DBM	
AT LEAST	BUT LESS THAN	3.3 MHZ	51.5 MHZ
15	25	-28.0	-23.5
25	35	-28.0	-23.7
35	45	-28.0	-23.9
45	55	-28.0	-24.1
55	65	-28.0	-24.3
65	75	-28.0	-24.5
75	85	-28.0	-24.7
85	95	-28.0	-24.9
95	105	-28.0	-25.1
105	115	-28.0	-25.3
115	125	-28.0	-25.5
125	135	-28.0	-25.7
135	145	-28.0	-25.9
145	150	-28.0	-26.1

- 14 At the RTE, measure 3.3 MHz, adjust the GAIN ADJ potentiometer (located in the L5/L5E REG LINE RSTN TRK unit) to obtain the level shown in Table G for 3.3 MHz for the length of cable determined in Step 10.
- 15 Change the STE to send 51.5 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
- 16 Change the RTE to measure 51.5 MHz, adjust the SLOPE ADJ potentiometer (located in the L5/L5E REG LINE RSTN TRK unit) to obtain the level shown in Table G for 51.5 MHz for the cable length determined in Step 10.
- 17 Repeat Steps 13 through 16 until the requirement (± 0.1 dB) can be met at both frequencies with no further adjustment.
- 18 If the requirement in Step 17 is met, move the RTE back to the RPB [Fig. 11, patch (2)], restore the coax to the TRMTG SW TRK OUT jack at the RTB, and go to Step 19; if otherwise, troubleshoot the trunk between the RTE and the STE and go back to Step 11.
- 19 With the STE level at -40.8 dBm and the RTE level at -29.0 dBm, measure 51.5 MHz.

Requirement: -29.0 ± 0.3 dBm.

CHART 11 (Contd)

STEP	PROCEDURE
20	If the requirement in Step 19 is met, go to Step 37; if otherwise, go to Step 21.
21	At the ZLTB locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
22	Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
23	Set the STE to send 3.3 MHz to -40.8 dBm for L5 (-42.0 dBm for L5E).
24	Set the RTE to measure 3.3 MHz at -29.0 dBm.
25	On the associated ZLT, adjust the GAIN ADJ potentiometer to obtain a reading of -29.0 dBm.
26	Change the STE to send 51.5 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
27	Change the RTE to measure 51.5 MHz at -29.0 dBm.
28	On the associated ZLT, adjust SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm at the RPB.
29	If the requirement in Step 28 is met, go to Step 37; if otherwise, troubleshoot the ZLT and go back to Step 23.
30	At the RTB (J68938A or J68938C), on L5/L5E REG LINE RSTN TRK unit (J68938AJ) associated with this trunk, set GAIN ADJ potentiometer (designated TRMTG SW OUT) to the center of its range.
31	Adjust SLOPE ADJ on the same unit for -29.0 dBm.
32	Change the STE to send 3.3 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
33	At the RTE measure 3.3 MHz and adjust GAIN ADJ for -29.0 dBm.
34	Change STE to send 51.5 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
35	Change RTE to measure 51.5 MHz and adjust SLOPE ADJ for -29.0 dBm.
36	Repeat Steps 32 through 35 until the requirement (± 0.1 dBm) can be met without further adjustment.
37	Set the STE to send 2.976 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
38	Set the RTE to measure 2.976 MHz at -29.0 dBm.
39	Measure 2.976 MHz.

CHART 11 (Contd)

STEP	PROCEDURE
	Requirement: -79.0 dBm or lower.
40	If the requirement in Step 39 is met, go to Step 41; if otherwise, replace the HPF (FL5) and go to Step 2.
41	Set the RTE to send 20.480 MHz at -40.8 dBm for L5 (2.048 MHz at -42.0 dBm for L5E).
42	Set the RTE to measure 20.480 MHz for L5 (2.048 MHz for L5E) at -79.0 dBm.
43	Measure 20.480 MHz for L5 (2.048 MHz for L5E).
	Requirement: -79.0 dBm or lower.
44	If the requirement in Step 43 is met, go to Step 45; if otherwise, replace the BEF (FL3) and go to Step 2.
45	Set the STE to send 20.992 MHz at -40.8 dBm for L5 (21.956 MHz at -42.0 dBm for L5E).
46	Set the RTE to measure 20.992 MHz for L5 (21.956 MHz for L5E) at -79.0 dBm.
47	Measure 20.992 MHz for L5 (21.956 MHz for L5E).
	Requirement: -79.0 dBm or lower.
48	If the requirement in Step 47 is met, go to Step 49; if otherwise, replace the BEF (FL1) and go to Step 2.
49	Set the STE to send 42.880 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
50	Set the RTE to measure 42.880 MHz at -109 dBm.
51	Measure 42.880 MHz.
	Requirement: -109 dBm or lower.
52	If the requirement in Step 51 is met, go to Step 53; if otherwise, replace the BEF (FL2) and go to Step 2.
53	Set the STE to send 66.048 MHz at -40.8 dBm for L5 (-42.0 dBm for L5E).
54	Set the RTE to measure 66.048 MHz at -79.0 dBm.
55	Measure 66.048 MHz.
	Requirement: -79.0 dBm or lower.

CHART 11 (Contd)

STEP	PROCEDURE
56	If the requirement in Step 55 is met, go to Step 57; if otherwise, replace the LPF (FL4) and go to Step 2.
57	Remove cable from the STE and restore in the RSTN TRK OUT jack in back of the TRMTG LINE CONN panel in the regular line bay [Fig. 11, patch (1)].
58	Remove the RTE from the TRMTG REG LINE CONN OUT jack at the RPB [Fig. 11, patch (2)].
59	Leave trunk ready for service.

CHART 12

**LEVEL MEASUREMENT
L5/L5E REGULAR LINE RECEIVING RESTORATION
IN TRUNK CIRCUIT
J68938AJ**

This circuit provides amplification and flat level adjustment and the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 600 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 line spectrum (3.124 to 60.556 MHz) or L5E spectrum (3.252 to 64.844 MHz) with JG1/MMG1 at -30.4 dBm, JG2/MMG2 at -29.0 dBm, and JG3/MMG3 at -27.7 dBm.

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -29.0 dBm.
3	Prepare the RTE for a 75-ohm terminated measurement of 51.5 MHz at -26.3 dBm (-28.4 dBm for L5E).
4	Connect the STE to the RCVG REG LINE CONN () jack at the RPB (J68876F) [Fig. 12, patch (1)].
5	Remove cable from the RSTN SIG IN jack located on the back of the RCVG LINE CONN panel at the regular line bay. Connect RTE to the cable [Fig. 12, patch (2)].
6	Measure the level of 51.5 MHz. Cord loss must be taken into account.

CHART 12 (Contd)

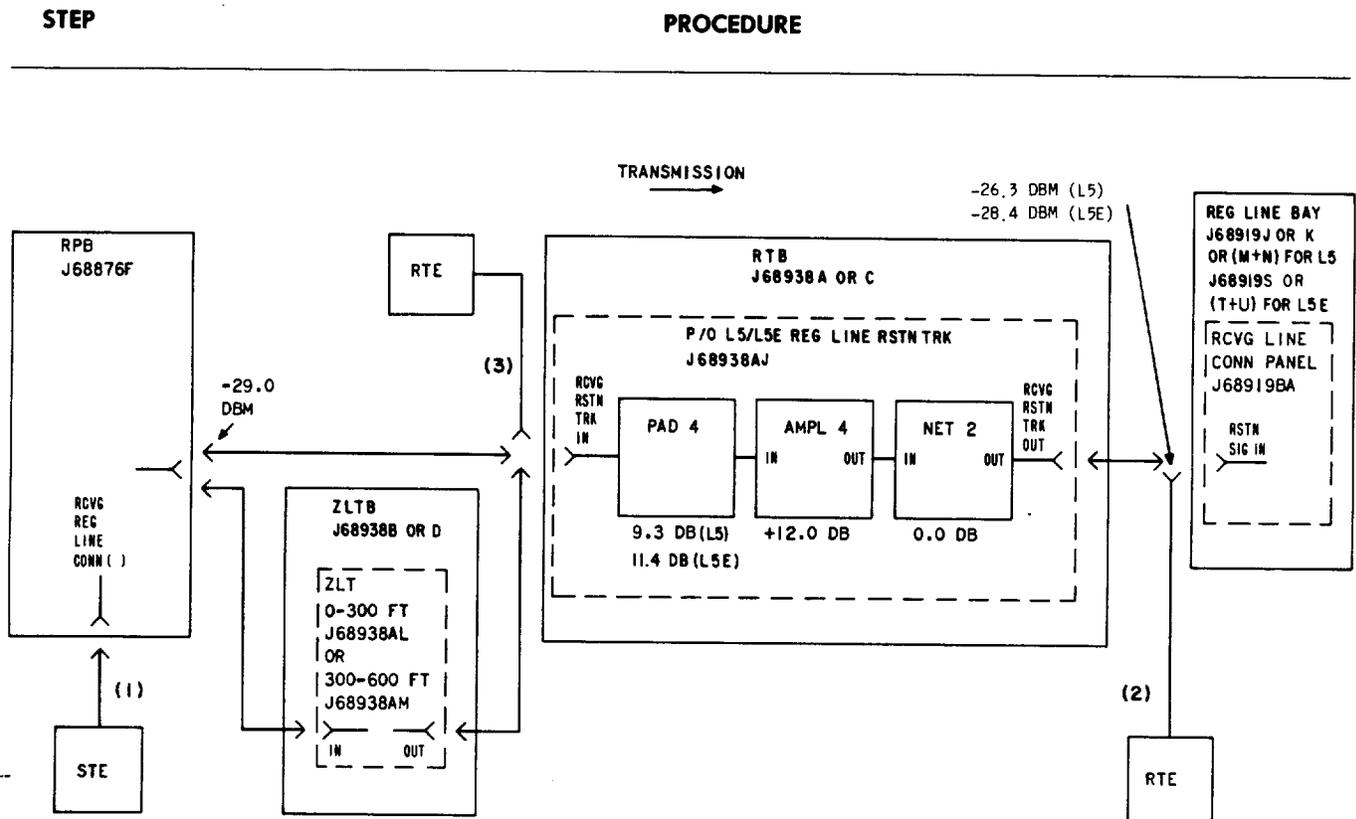


Fig. 12—L5/L5E Regular Line Receiving Restoration In Trunk Circuit

Requirement: -26.3 ± 0.3 dBm for L5 and -28.4 ± 0.3 dBm for L5E.

- 7 If the requirement is met, go to Step 34; if otherwise, go to Step 8.
- 8 If the ZLT is used, go to Step 9; if not, go to Step 24.
- 9 Remove cable from the RCVG RSTN TRK IN jack at the L5/L5E REG LINE RSTN TRK unit (J68938AJ) in the RTB and connect cable to the RTE [Fig. 12, patch (3)].
- 10 At the ZLTB locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
- 11 Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
- 12 Change the STE to read 3.3 MHz at -29.0 dBm.
- 13 Set the RTE to measure 3.3 MHz at -29.0 dBm.

CHART 12 (Contd)

STEP	PROCEDURE
14	On the associated ZLT, adjust GAIN ADJ to obtain a reading of -29.0 dBm.
15	Change the STE to send 51.5 MHz at -29.0 dBm.
16	Set the RTE to measure 51.5 MHz at -29.0 dBm.
17	On the associated ZLT, adjust the SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm.
18	Repeat Steps 12 through 17 until the requirement (-29 dBm \pm 0.1 dB) can be met at both frequencies without further adjustment.
19	If the requirement in Step 18 is met, go to Step 20; if otherwise, troubleshoot the ZLT and go back to Step 10.
20	Remove connection to RTE and reconnect ZLT cable to RCVG RSTN TRK IN jack on L5/L5E REG LINE RSTN TRK unit (J68938AJ).
21	Remove cable from the RSTN SIG IN jack located in back of the RCVG LINE CONN panel at the regular line bay. Connect RTE to cable [Fig. 12, patch (2)].
22	Set STE to send 51.5 MHz at -29.0 dBm.
23	Set RTE to measure 51.5 MHz at -26.3 dBm for L5 (-28.4 dBm for L5E).
24	At the RTB (J68938A or J68938C), locate the L5/L5E REG LINE RSTN TRK unit (J68938AJ) associated with this trunk and set GAIN ADJ potentiometer to the center of its range.
25	Adjust SLOPE ADJ on same unit for -26.3 dBm for L5 (-28.4 dBm for L5E).
26	Change STE to send 3.3 MHz at -29.0 dBm.
27	Set the RTE to measure 3.3 MHz at -26.3 dBm for L5 (-28.4 dBm for L5E).
28	At the L5/L5E REG LINE RSTN TRK unit, set GAIN ADJ for -26.3 dBm for L5 (-28.4 dBm for L5E).
29	Change the STE to send 51.5 MHz at -29.0 dBm.
30	Change the RTE to measure 51.5 MHz at -26.3 dBm for L5 (-28.4 dBm for L5E).
31	Adjust the SLOPE ADJ potentiometer for -26.3 dBm for L5 (-28.4 dBm for L5E).
32	Repeat Steps 26 through 31 until the requirement is met at both frequencies with no further adjustment.

CHART 12 (Contd)

STEP	PROCEDURE
33	If the requirement in Step 32 is met, go to Step 34; if otherwise, troubleshoot the RTB and go to Step 2.
34	Remove the STE from the RCVG REG LINE CONN IN jack in the RPB [Fig. 12, patch (1)].
35	At the REG LINE bay, remove cable from the RTE and restore to the RSTN SIG IN jack on back of the RCVG LINE CONN panel [Fig. 12, patch (2)].
36	Leave trunk ready for service.

CHART 13

**LEVEL MEASUREMENT
L5/L5E REGULAR LINE RECEIVING TEST LINE
OUT TRUNK CIRCUIT
J68938AJ**

This circuit provides flat level adjustment and the square root of frequency adjustment for 0 to 300 feet of 728A cable. The length of this circuit may be expanded an additional 0 to 600 feet by the addition of a zero-loss trunk (ZLT). At the RPB, the signal is equivalent to the L5 line spectrum (3.214 to 60.556 MHz) or L5E spectrum (3.252 to 64.844 MHz) with JG1/MMG1 at -30.4 dBm, JG2/MMG2 at -29.0 dBm, and JG3/MMG3 at -27.7 dBm.

STEP	PROCEDURE
1	Check that the trunk to be tested is out of service.
2	Prepare the STE to send 51.5 MHz at -26.5 dBm for L5 (-28.6 dBm for L5E).
3	Prepare the RTE to measure 51.5 MHz at -29.0 dBm.
4	By using office records, locate the RCVG LINE CONN panel of interest in the regular line bay and remove the cable from the TST LINE OUT jack. Connect the STE to the cable [Fig. 13, patch (1)].
5	Connect the RTE to the RCVG REG LINE TST () jack at the RPB [Fig. 13, patch (2)].
6	Measure the level of 51.5 MHz. Cord loss must be taken into account.

CHART 13 (Contd)

STEP	PROCEDURE
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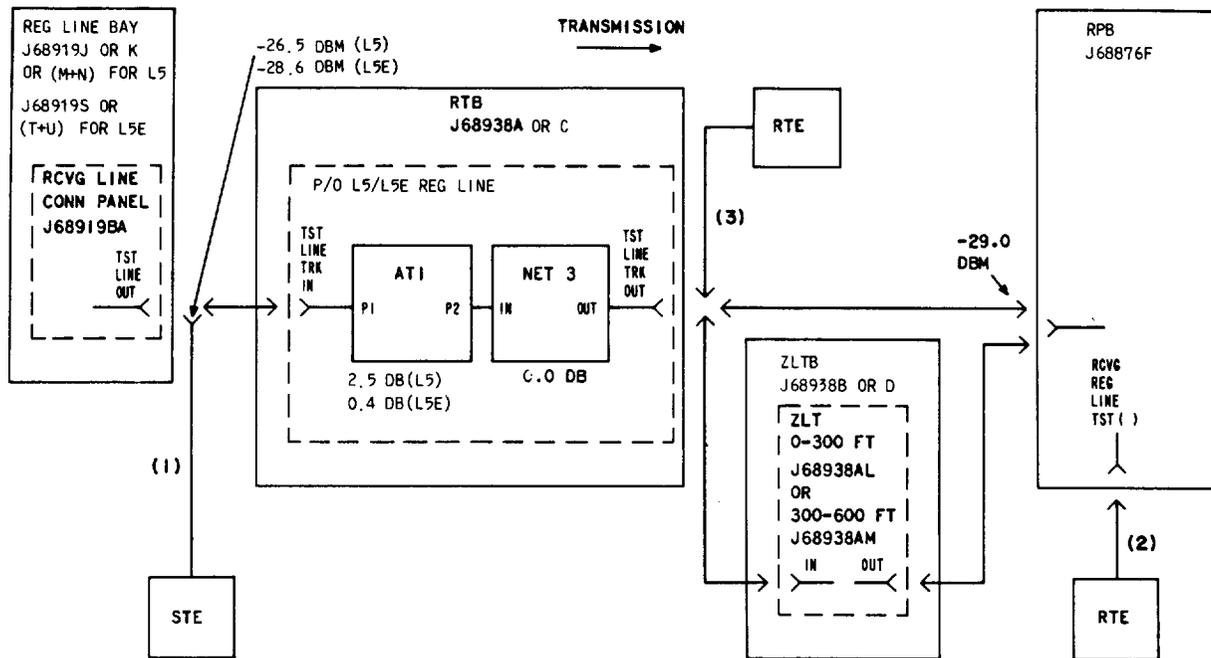


Fig. 13—L5/L5E Regular Line Receiving Test Line Out Trunk Circuit

Requirement: -29.0 ± 0.3 dBm.

- 7 If the requirement is met, go to Step 37; if otherwise, go to Step 8.
- 8 If the ZLT is used, go to Step 9; if not, go to Step 30.
- 9 Move the RTE to the TST LINE TRK OUT jack at the RTB [Fig. 13, patch (3)].
- 10 From office records, determine cable length between the line bay and RTB.
- 11 At the RTB (J68938A or J68938C) on L5/L5E REG LINE RSTN TRK unit (J68938AJ) associated with this trunk, set GAIN ADJ potentiometer to the center of its range.
- 12 Adjust SLOPE ADJ on the same unit to obtain the level (Table H) for the cable length determined in Step 10.
- 13 Change the STE to send 3.3 MHz at -26.5 dBm for L5 (-28.6 dBm for L5E).

CHART 13 (Contd)

STEP

PROCEDURE

TABLE H

CABLE LENGTH BETWEEN L5/L5E BAYS AND RSTN TRK BAY IN FEET		SIGNAL POWER IN DBM	
AT LEAST	BUT LESS THAN	3.3 MHZ	51.5 MHZ
15	25	-28.0	-23.5
25	35	-28.0	-23.7
35	45	-28.0	-23.9
45	55	-28.0	-24.1
55	65	-28.0	-24.3
65	75	-28.0	-24.5
75	85	-28.0	-24.7
85	95	-28.0	-24.9
95	105	-28.0	-25.1
105	115	-28.0	-25.3
115	125	-28.0	-25.5
125	135	-28.0	-25.7
135	145	-28.0	-25.9
145	150	-28.0	-26.1

- 14 At the RTE, measure 3.3 MHz, adjust the GAIN ADJ potentiometer (located in the L5/L5E REG LINE RSTN TRK unit) to obtain the level shown in Table H for 3.3 MHz for the length of cable determined in Step 10.
- 15 Change the STE to send 51.5 MHz at -26.5 dBm for L5 (-28.6 dBm for L5E).
- 16 Change the RTE to measure 51.5 MHz, adjust the SLOPE ADJ potentiometer (located in the L5/L5E REG LINE RSTN TRK unit) to obtain the level shown in Table H for 51.5 MHz for the cable length determined in Step 10.
- 17 Repeat Steps 13 through 16 until the requirement (± 0.1 dB) can be met at both frequencies with no further adjustment.
- 18 If the requirement in Step 17 is met, move the RTE back to the RPB [Fig. 13, patch (2)], restore the coax to the TST LINE TRK OUT jack at the RTB, and go to Step 19; if otherwise, troubleshoot the trunk between the RTE and the STE and go back to Step 11.
- 19 With the STE level at -26.5 dBm for L5 (-28.6 dBm for L5E) and the RTE level at -29.0 dBm, measure 51.5 MHz.

CHART 13 (Contd)

STEP	PROCEDURE
	Requirement: -29.0 ± 0.3 dBm.
20	If the requirement in Step 19 is met, go to Step 37; if otherwise, go to Step 21.
21	At the ZLTB locate the ZLT associated with this trunk and adjust the GAIN ADJ to the center of its range.
22	Adjust the SLOPE ADJ on the same unit for -29.0 dBm.
23	Set the STE to send 3.3 MHz at -26.5 dBm for L5 (-28.6 dBm for L5E).
24	Set the RTE to measure 3.3 MHz at -29.0 dBm.
25	On the associated ZLT, adjust the GAIN ADJ potentiometer to obtain a reading of -29.0 dBm.
26	Change the STE to send 51.5 MHz at -26.5 dBm for L5 (-28.6 dBm for L5E).
27	Change the RTE to measure 51.5 MHz at -29.0 dBm.
28	On the ZLT, adjust SLOPE ADJ potentiometer to obtain a reading of -29.0 dBm at the RPB.
29	If the requirement in Step 28 is met, go to Step 37; if otherwise, troubleshoot the ZLT and go back to Step 23.
30	At the RTB (J68938A or J68938C), on L5/L5E REG LINE RSTN TRK unit (J68938AJ) associated with this trunk, set GAIN ADJ potentiometer to the center of its range.
31	Adjust SLOPE ADJ on the same unit for -29.0 dBm.
32	Change the STE to send 3.3 MHz at -26.5 dBm for L5 (-28.6 dBm for L5E).
33	At the RTE measure 3.3 MHz and adjust GAIN ADJ for -29.0 dBm.
34	Change STE to send 51.5 MHz at -26.5 dBm for L5 (-28.6 dBm for L5E).
35	Change RTE to measure 51.5 MHz and adjust SLOPE ADJ for -29.0 dBm.
36	Repeat Steps 32 through 35 until the requirement (± 0.1 dB) can be met without further adjustment.
37	Remove the STE from the cable at the JMX and restore the cable to the TST LINE OUT jack in the RCVG LINE CONN panel.
38	Remove the RTE from the RCVG REG LINE TST() jack at the RPB.

CHART 13 (Contd)

STEP	PROCEDURE
39	Leave trunk ready for service.

4. REFERENCES

*Schematic Drawings**Bell System Practices*

356-036-100	JMX-L5/L5E Restoration Trunks, Description	SD-50519-01	Message Service Restoration, Application
371-100-100	J68876A-F Restoration Patch Bays, Description	SD-51100-01	L5/L5E Carrier, Application
371-100-500	J68876A-F Restoration Patch Bays, Maintenance Considerations	SD-51100-02	L5E Carrier, Application
		SD-51140-01	Restoration Trunk Circuits, Application
		SD-51230-01	JMX, Application
		SD-51250-01	MMGT-C Application