
L4 CARRIER
OVERALL SYSTEM
INITIAL INSTALLATION
BASIC REPEATER SELECTION

Indiscriminate assignment of basic repeaters (Fig. 1) to a regulating section of L4 line can result in a total gain (G_p) for the overall section that is above or below nominal limits. This section provides instructions for selecting basic repeaters to ensure that the total gain in a regulating section is within limits and that the gain deviation in each regulating section is approximately the same.

This section is reissued to specify a total G_p requirement for a regulating section rather than an *average repeater G_p* . Arrows are used to indicate changes. *Equipment Test Lists are not affected.*

The instructions in this section are based on, but not limited to, a typical situation of equipping six lines at five basic repeater stations. *Always use the G_p value stamped on each repeater unit rather than a locally measured value. Therefore, the acceptance test should be performed as prescribed in Section 359-205-505 to verify proper operation.*

APPARATUS:

None

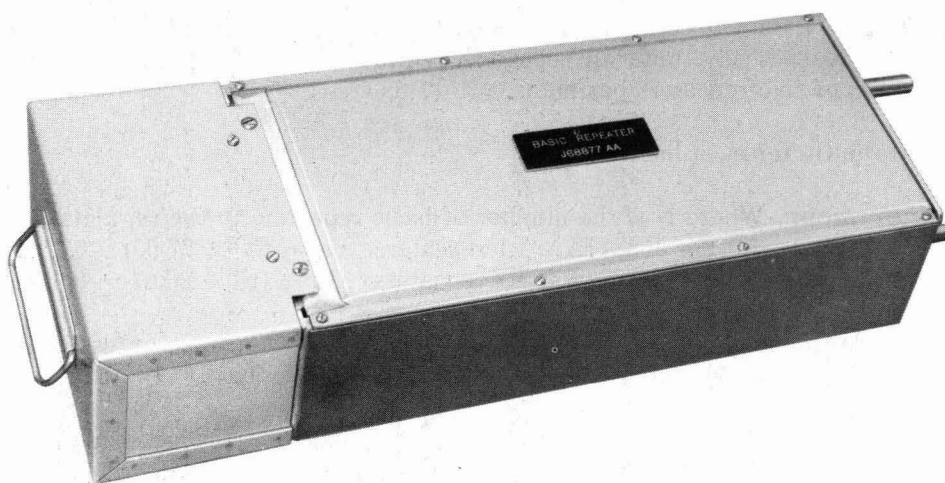


Fig. 1—L4 Basic Repeater

STEP	PROCEDURE
1	Determine the number of basic repeater stations and the number of L4 lines to be equipped within the particular regulating section.
	Note: ♦ Basic repeaters are normally shipped in boxes containing two repeaters.
2	Unpack six repeaters; retain the packing details, moistureproof bags, and corrugated cartons for repacking the repeaters.
3	Designate these boxes STATION 1.♦
4	Number the repeaters in order of their G_p , the value of which is marked on each repeater at the time of manufacture.
5	Using a work sheet similar to the one shown in Fig. 2, enter the lowest G_p in the line 1 (L401) column, the next lowest G_p in the line 2 (L402) column, and so forth until the highest G_p is entered in the line 6 (L406) column.
6	Return the six repeaters to the boxes designated STATION 1.
7	♦ Repeat Steps 2 and 4 using a second set of six repeaters.
8	Designate these boxes STATION 2.♦
9	Using the worksheet mentioned in Step 5, enter the lowest G_p (of the second group of six repeaters) in the line 2 (L402) column, the next lowest G_p in the line 3 (L403) column, and so forth until the highest G_p is entered in the line 1 (L401) column.
10	Return the six repeaters to the boxes designated STATION 2.
11	Repeat the above procedures, entering the lowest G_p (of each group of six repeaters) in the line 3, 4, and 5 columns, respectively, and the highest G_p in the line 2, 3, and 4 columns, respectively, until all repeaters required for the regulating section are sorted (a maximum of five repeaters per line).
12	♦ Total the G_p for each line.
	Requirement: Where N is the number of basic repeaters in the regulating section:
	(a) For J68877AA, L1 repeaters: $G_p = (N \times 27.00) \pm 0.65$ dB
	(b) For J68877AA, L2 repeaters: $G_p = (N \times 26.67) \pm 0.65$ dB
13	If the requirement of Step 12 is not met, rearrange the repeater assignments or replace the repeaters until the total G_p for each line is within limits.
	Note: To facilitate rearrangement on any line, examine the other regulating sections in that line and distribute repeaters so that the gain deviation is approximately the same for each regulating section. This minimizes the amount of correction each regulating repeater must supply in achieving the normal section gain.♦
14	When the requirement of Step 12 is met, record each repeater serial number and G_p by line number on a station inventory form similar to the one shown in Fig. 3.

STEP	PROCEDURE
15	Position and secure the styrofoam packing details on the back and front of each repeater unit, insert the unit with details into the moistureproof bag with packet of C dessicant, and seal the bag.
16	Pack each bagged unit in the corrugated carton (single-unit carton) with the protective details, seal the carton, and mark the outside with the repeater serial number, station, and line assignment.
17	The larger boxes, designated by station number in preceding steps, are to be used for overpacking the smaller cartons assigned to that specific station.
18	The line building-out (LBO) network assigned to each individual repeater (determined from the L4 Design and Spacing Layout Drawing) shall be tagged (below LBO handle) using a tag similar to the one shown in Fig. 4 (stick-on type).
Note: Form ST-1 (Fig. 4) is available in quantities of 50 or 1000 labels from: Chambers, Inc. 2171 Hawkins Street Charlotte, N.C. 28203	
19	Repack the LBO networks and locate with the boxes marked for the specific station.
Note: The LBO package should be marked to indicate station assignment.	
20	Repeat Steps 14 through 19 for all repeaters until the full complement of repeaters is properly marked and packed.

REGULATING SECTION _____ TO _____						
STATION	GAIN AT PILOT FREQUENCY (G _p)					
	LINE 1 (L401)	LINE 2 (L402)	LINE 3 (L403)	LINE 4 (L404)	LINE 5 (L405)	LINE 6 (L406)
1	Lowest					Highest
2	Highest	Lowest				
3		Highest	Lowest			
4			Highest	Lowest		
5				Highest	Lowest	
Total G _p						

Fig. 2—Typical Worksheet for Computing Average G_p for a Regulating Section of L4 Line

L4 CABLE ROUTE

SECTION _____

BASIC STATION NO _____ AREA _____

L4 LINE	REPEATER SERIAL NUMBER	TYPE LBO	APPARATUS CASE	
			COAXIAL	SLOT
L401			1-4	1
L403			1-4	3
L405			5-8	1
L407			5-8	3
L409			9-12	1
L411			9-12	3
L413			13-16	1
L415			13-16	3
L417			17-20	1
L419			17-20	3
L402			1-4	2
L404			1-4	4
L406			5-8	2
L408			5-8	4
L410			9-12	2
L412			9-12	4
L414			13-16	2
L416			13-16	4
L418			17-20	2
L420			17-20	4

MONITORING OSCILLATOR

APPARATUS CASE	TYPE	LEVELS		QUANTITY	
		ODD A and C	EVEN B and D	51A PADS	LINE DESIGNATION
1-4					
5-8					
9-12					
13-16					
17-20					

Fig. 3—Typical Station Inventory Form

FORM ST-1		
TYPE		SERIAL NO.
IN SERVICE		LOCATION
OUT OF SERVICE		COAXIAL
G_p	dB	D.E. TYPE
LBO #1		LBO #2
STRAP	PORTS 1 & 3	2 & 4
REASON OUT		

Fig. 4— Equipment Identification Tag (Stick-on Type)