

TYPE N1 CARRIER TELEPHONE SYSTEM — TERMINAL EQUIPMENT
PRELIMINARY TESTS
CHECK OF LOCAL CABLING, SPAN PADS, ARTIFICIAL LINES,
SLOPE NETWORKS AND NOISE CONTROL UNITS

This section is reissued to add information on new types of equipment and to simplify the test procedures.

Span pads and artificial lines are provided at terminals to build out the cable loss to the nominal values for the system. Span pads are flat loss attenuators available in 2 db steps. Artificial line sections are available in 1-, 2-, and 4-mile values, and furnish slope compensation for short sections of cable. The noise control unit is a 1:1 transformer with an inductor wired between the mid-points of the two windings for transmission of dc if power or sealing current is fed. The unit is used to suppress longitudinally induced noise.

The purpose of this test is to make a resistance check of the local cabling and span pads, artificial lines and noise control units, between the carrier terminal and the cable terminal.

APPARATUS:

- 1 — KS-14510 Volt-Ohm-Milliammeter, or equivalent (20,000 ohms per volt)
- 2 — KS-13895 Plugs, unwired (connector for test connections to J14 and J16 jacks)
- 3 — W1Y Cords, or equivalent (to temporarily strap cable pairs)

STEP	PROCEDURE
	<i>Note:</i> This test must be performed before wiring options for sealing current or no-power-supply have been provided.
1a	When the MDF is used, check that the cable pairs assigned to the carrier system have the heat coils removed and permanent straps soldered in their place.
1b	When 300-type connectors are used, they should be provided with metal dummy heat coils and protective carbons.
1c	When other types of cable terminals are used, they should be provided with protective carbons unless local instructions provide otherwise.
2	Make a visual inspection of the build-out equipment and check that it agrees with that specified on the circuit layout card. Note that the "A" side of each unit is the input and the "B" side is the output.
3	Remove the REP power-feed fuses.
4	Remove the group connectors from J14 and J16 (leave the group connectors in J13 and J15).
5	Place unwired KS-13895 connectors in J14 and J16.

STEP	PROCEDURE
6	Using the VOM as an ohmmeter, check for foreign grounds by connecting the VOM between ground and terminal 19 of J14 and terminal 19 of J16. Requirement: No meter indication.
7	At the cable terminal, short the tip and ring of the transmitting and receiving pairs and connect them together.
8	Measure the dc resistance between terminal 19 of J14 and terminal 19 of J16. Requirement: The resistance shall be the total build-out unit simplex resistance plus up to 6 ohms for office wiring. See Table A and Notes 1 to 3. Note 1: Add the dc simplex resistance for each build-out unit in both the transmitting and receiving pairs. Note 2: When two noise control units are used to bypass power around the build-out units, the resistance of the combination will be that of the two noise control units only. Note 3: When a 240-type amplifier is to be supplied by the power-feed circuit, the resistance in the receiving pair will be that of one noise control unit only (see Fig. 2).

TABLE A			
Simplex Resistance of Build-Out Units			
SPAN PAD db	SIMPLEX RESISTANCE ohms	ARTIFICIAL LINES miles	SIMPLEX RESISTANCE ohms
2	7.8	1	15.4
4	15.4	2	20.5
6	22.3	4	51.5
8	29.1		
10	35.2		
12	40.7		
14	45.3		
16	48.7		
18	52.3		
20	55.6		
22	57.6		
24	59.7		
26	61.2		
28	62.4		
30	63.4		
32	64.2		
34	64.9		
36	65.7		

SLOPE NETWORKS			
SPAN PAD db	SIMPLEX RESISTANCE ohms	ARTIFICIAL LINES miles	SIMPLEX RESISTANCE ohms
16	48.7	-7 Low Group	100
18	52.3	+7 Low Group	3.6
20	55.6	-7 High Group	1.9
22	57.6	+7 High Group	135

MISCELLANEOUS			
SPAN PAD db	SIMPLEX RESISTANCE ohms	ARTIFICIAL LINES miles	SIMPLEX RESISTANCE ohms
28	62.4	Adjustable Deviation Equalizer	1.25
30	63.4	Deviation Equalizer (J98703N)	2.0
32	64.2	Noise Control Unit	0.9

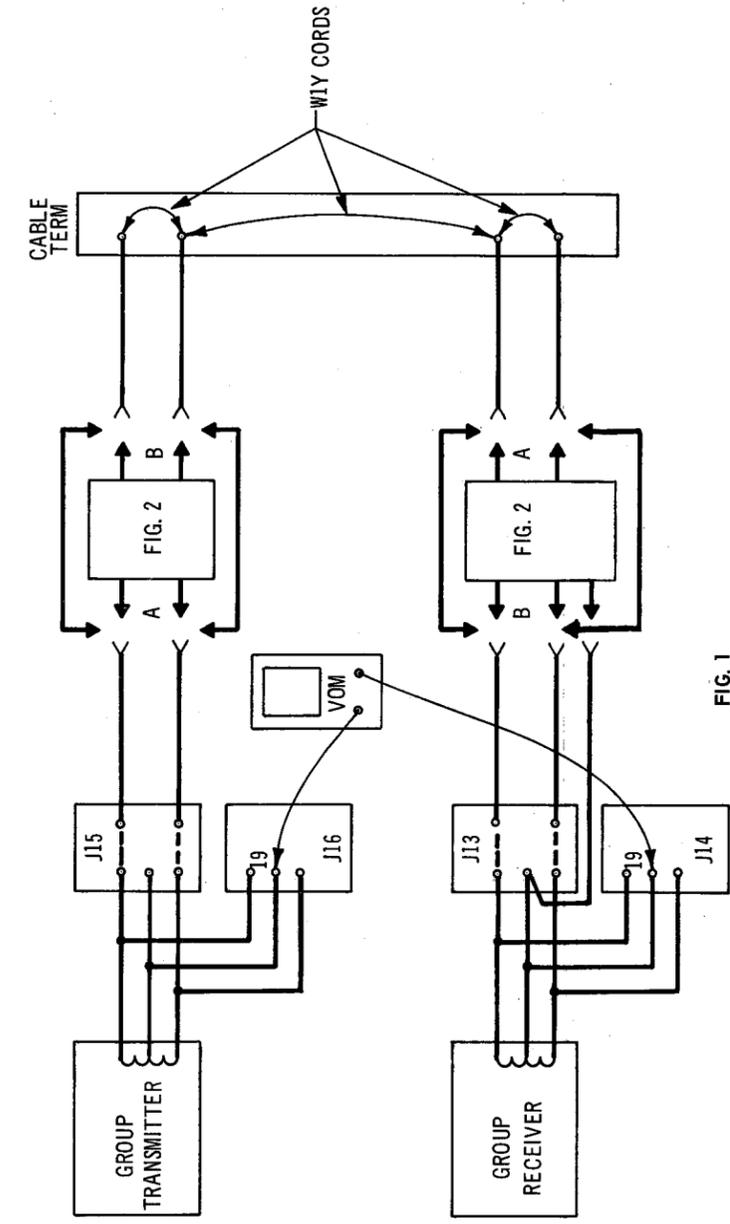


FIG. 1 TEST ARRANGEMENT

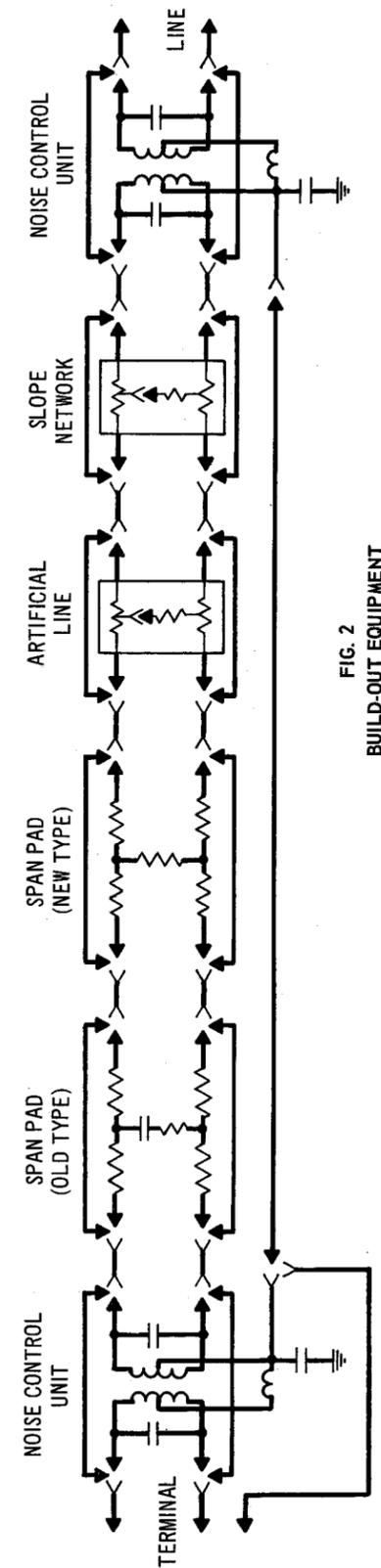


FIG. 2 BUILD-OUT EQUIPMENT

Fig. 1 and 2