PRIVATE LINE TELEPHONE SERVICE
VOLUME LIMITER FOR SPECIAL SERVICES
TRANSMISSION TEST REQUIREMENTS

1. GENERAL

1.01 This section is issued to cover the transmission test requirements on the special services volume limiter.

1.02 The volume limiter is employed where the output of subscriber operated equipment is connected to leased channels provided by the Telephone Company, and it is necessary to limit the maximum level which can be impressed on the telephone facilities. In this application the limiter will be located at the point of connection with the customer owned equipment. It may also be used to reduce contrast in talker volumes in some special service applications.

2. CIRCUIT DESCRIPTION

2.01 A simplified schematic of the volume limiter circuit is shown in Fig. 1. The circuit consists of two repeating coils and several resistive elements connected in a hybrid circuit.

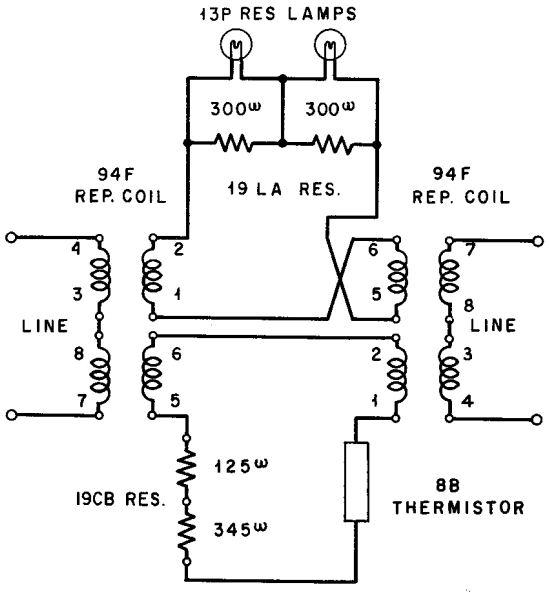

Fig. 1 - Simplified Schematic of Volume Limiter

2.02 The degree of balance in the hybrid circuit is controlled by the total resistance in each of the two branches of the circuit. The resistance of the lamps and thermistor will depend on the ambient temperature and the amount of power being dissipated by the resistive elements. As the input power increases the resistance lamps and thermistor change value at such a rate that the output level is held at a relatively constant value.

3. TEST REQUIREMENTS

3.01 The volume limiter circuit should be tested at 1000 cycles between 600-ohm impedances. Readings should be made only after sending power has been applied for 1 minute. The allowable volume limiter losses in db are as follows:

Ambient Temperature	Sending Power: 0 dbm (1 MW) Max	0 dbm (1 MW) Min	+20 dbm Max	+20 dbm Min
40-60°F	5.6	4.0	16.2	11.0
61-80°F	6.2	4.2	16.3	12.0
81-120°F	7.3	4.6	17.5	12.5

3.02 Where the individual circuit elements are to be tested the following limits apply:

Apparatus	Ambient Temperature	Sending Power: 0 dbm Max	0 dbm Min	+20 dbm Max	+20 dbm Min
94F Repeat. Coil (Wdgs 4-3, 8-7 to 2-1, 6-5)	-	1.3	-	-	-
13P Resistance Lamp (Note 2)	40-120°F	12.7	9.0	5.5	4.0
8-B Thermistor (Notes 1 and 2)	40-60°F	0.5	0.1	17.0	11.0
	61-80°F	0.8	0.2	17.5	11.5
	81-120°F	1.6	0.3	18.5	12.0

Notes:

(1) Readings should not be made less than 1 minute after sending power is applied.

(2) Test as shunt apparatus.

3.03 Additional information concerning the volume limiter may be found as follows:

Circuit details: Drawing SD-69174-01
Installation details: Section 310-440-200