

I N S T R U C T I O N S  
f o r  
R C A L I N E E Q U A L I Z E R  
T Y P E 5 6 - E  
(MI-4162)

SOURCE IMPEDANCE

500-600 Ohms

FREQUENCY RESPONSE

Refer to Frequency  
Characteristic (Figure 2)

INSERTION LOSS

7 db Minimum Loss

MOUNTING

(A) Rack-Mounting, on a Standard RCA  
Speech Input Rack.

(B) May also be mounted on an MI-11500  
Wall-Mounting Cabinet.

PHYSICAL SPECIFICATIONS

Width	-	19	Inches
Depth	-	4 3/4	Inches
Height	-	3 1/2	Inches
Weight	-	7	Pounds

D E S C R I P T I O N a n d A P P L I C A T I O N

The RCA Type 56-E Line Equalizer has been designed to equalize the non-linear characteristics of either one or two telephone lines, and it consists of two separate and complete equalizers mounted on a single panel. Each equalizer consists of a capacitor, a reactor, a series of resistors, and a switch for varying the equalization. The capacitor and reactor are housed in a single unit marked XT-1314.

An inspection of the Schematic Diagram, Figure 1, shows that the capacitor is connected across the line to be equalized, and the reactor and resistors are connected in a series across the line to be equalized. Any of the amounts of equalization shown by the Frequency Characteristic, Figure 2, may be obtained by rotating the switch to the proper dial setting, thereby changing the resistance in the parallel circuit.

The equalizer is designed to operate across a 500-600 ohm line.

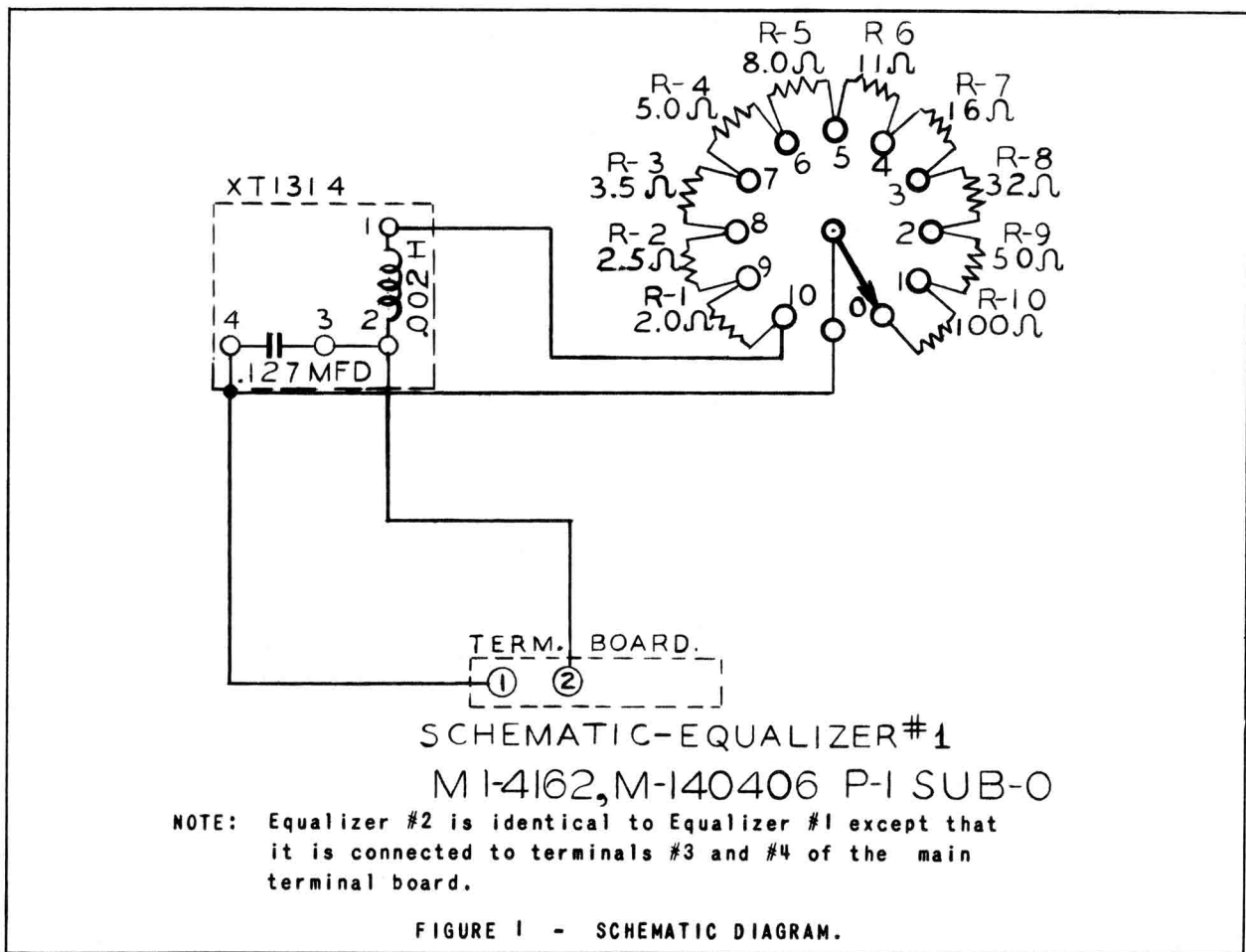
I N S T A L L A T I O N a n d O P E R A T I O N

INSTALLATION

The equalizer should be mounted on the rack by means of two bolts on each side of the panel. An MI-11500 Wall-Mounting Cabinet will mount up to 4 MI-4645 (Type 33-A) or 6 MI-4646 (Type 33-B) Jack Panels, and 1 MI-4162 (Type 56-E) Equalizer. A terminal board with five screw-type terminals is provided for making external connections. Terminals #1 and #2 are for equalizer #1, and terminals #3 and #4 are for equalizer #2. These terminals should be connected across the two 500-600 ohm lines which are to be equalized. Terminal "GND" is a ground terminal and should be connected to a good ground, such as a cold water pipe system, or the common ground of the system in which this unit is functioning. This "GND" terminal is not connected to any part of the equalizer circuit, and appears on the terminal board only to provide a terminal for grounding input and output shielded lines.

*NOTE: vu = db above 1 MW reference level.*

IB-24157



OPERATION

The equipment necessary for operation consists of:

- (a) Beat Frequency Oscillator.
- (b) Volume Indicator, or Thermocouple Voltmeter.

Assume that a "nemo" line is to be equalized at the receiving end, where the oscillator, equalizer, and metering devices are located. Since two lines are usually available on "nemo" circuits, the oscillator should be fed out over the spare line to the "nemo" point. There the signal should be fed through a "nemo" amplifier, the characteristics of which are known, and the output of which is equipped with a volume indicator, and back at a constant level (as shown on this volume indicator) through the line to be equalized.

Send a 400 cycle tone (usually not more than  $\pm 12 \mu u$ ) out over the spare line and adjust the "nemo" amplifier until the proper level is obtained on the volume indicator at the "nemo" point. Record the reading of the volume indicator at the receiving end of the "nemo" line, change the oscillator setting and repeat the procedure for 25; 50; 100; 1,000; 4,000; 8,000; and 10,000 cycles. From the recorded readings and an inspection of the characteristic curves attached, the proper amount of equalization can be decided upon. After the equalizer setting has been made, a complete frequency characteristic check should be made from 30 to 10,000 cycles, the output of the "nemo" amplifier being held at a constant level. If necessary, a further adjustment may then be made.

If two lines are to be equalized, the above procedure should be repeated for line #2, and equalizer #2 should be used in this case.

After installation and placing in operation as described above, no further adjustments are necessary unless the line is changed in some manner.

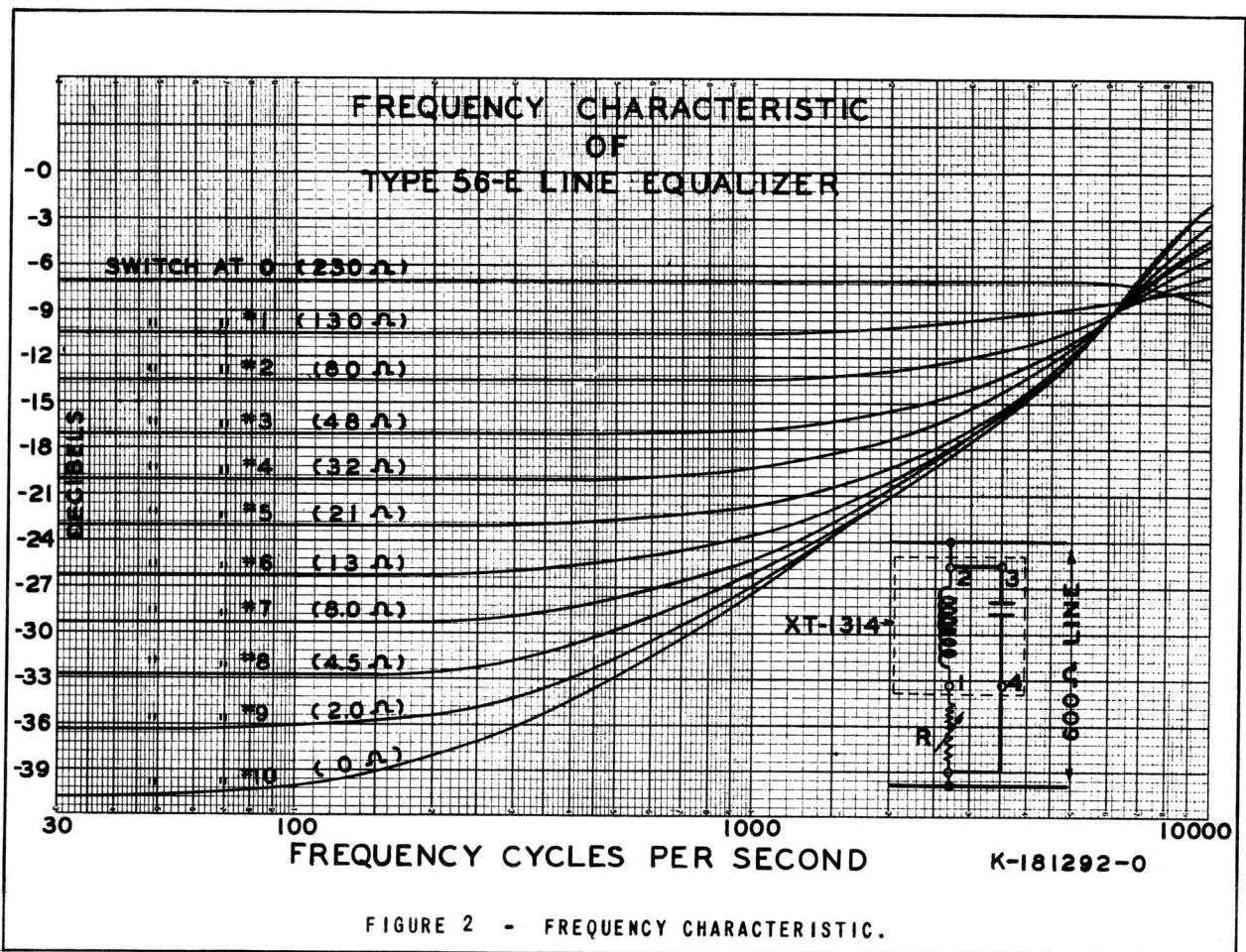


FIGURE 2 - FREQUENCY CHARACTERISTIC.

REPLACEMENT PARTS LIST

The following parts list is included to provide proper identification when ordering replacement parts. When ordering, specify the item by its symbol (wherever possible) as shown on Schematic Diagram (Figure 1), followed by Description and Catalog Number.

Insist on genuine Factory-Tested parts which are readily identified, and may be purchased through Authorized Dealers, or from the Factory.

SYMBOL	DESCRIPTION	CATALOG NUMBER
R-1	Resistor, 2 Ohms	18621
R-2	" 2.5 Ohms	18622
R-3	" 3.5 Ohms	18623
R-4	" 5 Ohms	18624
R-5	" 8 Ohms	18625
R-6	" 11 Ohms	18626
R-7	1 16 Ohms	18627
R-8	" 32 Ohms	18628
R-9	" 50 Ohms	18629
R-10	" 100 Ohms	18630
XT-1314	Filter Pack	16845
---	Knob, for Switches	30075
---	Switch - Only	17646
---	Switch - Complete with Resistors	18925

R C A V I C T O R D I V I S I O N

R C A M A N U F A C T U R I N G C O M P A N Y , I N C .

Camden, N. J. U. S. A.

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