

SECTION II OPERATING INSTRUCTIONS

2-1 GENERAL

When the 350A/B is working into matching impedances, the amount of attenuation in the circuit is the sum of the control knob settings. Where there is mismatch in the system, see paragraph 2-2 for recommended procedures. Typical setups are shown in Figure 2-1. In Figure 2-1A, the Set is working into matching impedances, the input signal is at +37 db, and the attenuator is set for 24 db. Figures 2-1C, D, and E indicate setups where there is mismatch.

With power applied to the INPUT terminals, the 350A/B will dissipate 5 watts. For the 350A, 5 watts is 50 volts across a 500-ohm line; for the 350B, 5 watts is 55 volts across a 600-ohm line.

CAUTION

The 350A/B can be damaged by applying power to the OUTPUT terminals or by applying more than 5 watts to the INPUT terminals.

When making connections to the 350A/B, use shielded leads, with the shield connected to the ground terminal. If leads are not properly shielded, the setting of the 350A/B controls may not be the true amount of the attenuation, particularly at high frequencies or at high values of attenuation.

To find the amplitude the voltage has at the output of the 350A/B, see Table 2-1. When sources and Set impedances are matched, the output voltage is the input voltage multiplied by the voltage attenuation ratio which corresponds to the number of db the 350A/B is set for. See Figure 2-1B; here the input is 50 volts and the attenuator is set for 24 db.

2-2 IMPEDANCE CONSIDERATIONS

A. Resistance values for impedance-matching networks, together with the insertion loss for each such network, are given in Tables 2-2 and 2-3.

To determine the total attenuation in the measurement system, the loss due to the matching network must be added to the attenuation inserted by the 350A/B. The use of matching networks is indicated in Figures 2-1C and 2-1D.

B. If the impedance of the source is lower than that of the 350A/B input, the mismatch can be compensated for by inserting a resistor in the line to the source. The value of the resistor should be equal to the difference between the attenuator input impedance and the source output impedance.

C. Mismatch between the source impedance and attenuator input impedance will not affect the attenuator output impedance provided not less than 20 db is inserted by the 350A/B.

D. If the input impedance of the equipment under test is high (approximately 20K or over), impedance match can be obtained by shunting the OUTPUT terminals by an impedance-matching resistor (500 ohms for the 350A, 600 ohms for the 350B). Such an arrangement is indicated for a 350A in Figure 2-1E.

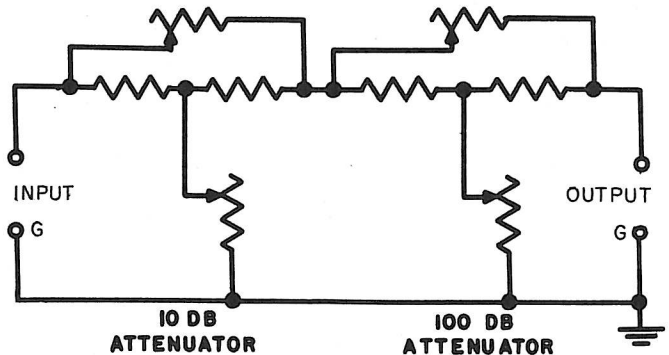


Figure 2-2. Simplified Schematic
Model 350A/B Attenuator Set