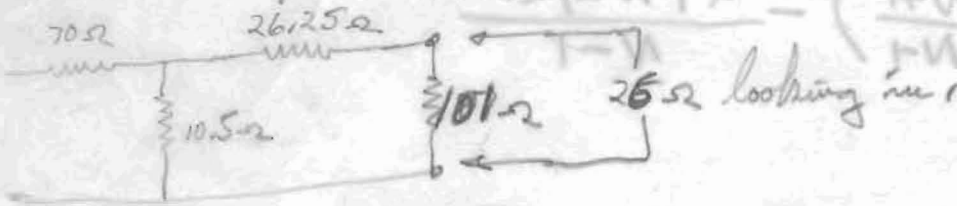


55,5V/5 (25/9/56)

26 Ω output for signal generator



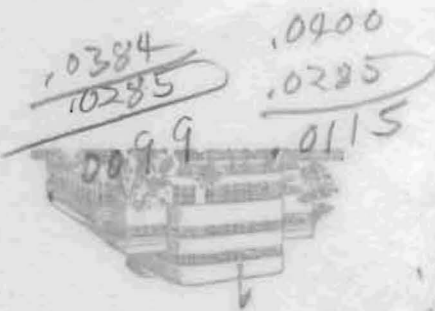
$$\frac{1}{10.5} + \frac{1}{70+80} = \frac{1}{.0952 + .00666} = \frac{1}{.1019} = 9.82$$

$$9.82 + 26.25 = 35.07$$

$$\frac{1}{26} - \frac{1}{35.07} = \frac{1}{.0384 - .0285} = \frac{1}{.0099} = 101 \Omega$$

$$\text{Output} = \frac{101}{101 + 26.3} = \frac{101}{127} = .79 \text{ or } 79\%$$

Loss =



$$\frac{1}{26} + \frac{1}{42} = \frac{1}{.0381} = 26.25 \Omega$$

0952
0067
1019

$$R_1 = \bar{z}_1 \left(\frac{N+1}{N-1} \right) - \frac{\sqrt{Nz_1 z_2}}{N-1}$$

$$26.25 = \bar{z}_1 \left(\frac{N+1}{N-1} \right) - \frac{\sqrt{Nz_1 z_2}}{N-1}$$



$$\frac{1}{10.125} = \frac{1}{10.125} + \frac{1}{10.125}$$

$$\frac{1}{10.125} = \frac{1}{10.125} + \frac{1}{10.125}$$

$$\frac{1}{10.125} = \frac{1}{10.125} + \frac{1}{10.125}$$

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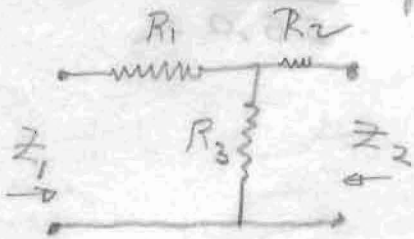


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10 Sept 1956

Attenuator for Output of Signal Generator

Federal Handbook page 66. - 1949 edition.



$N = \text{power ratio}; \text{DB} = 10 \log_{10} N$

$$R_3 = \frac{2\sqrt{N Z_1 Z_2}}{N-1}$$

$$R_1 = Z_1 \left(\frac{N+1}{N-1} \right) - R_3$$

Let $N=10, Z_1=50, Z_2=25$

$$R_2 = Z_2 \left(\frac{N+1}{N-1} \right) - R_3 = 5.7 \Omega$$

$$R_3 = \frac{2\sqrt{10 \cdot 50 \cdot 25}}{10-1} = \frac{2\sqrt{1.25 \cdot 10^4}}{9} = 24.8 \Omega$$

$$R_1 = 50 \left(\frac{10+1}{10-1} \right) - 24.8 = 50 \frac{11}{9} - 24.8 = 61.1 - 24.8 = 36.3 \Omega$$

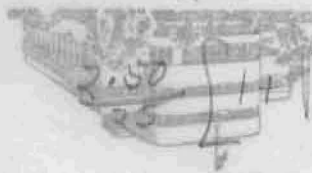
$$R_1 = \sqrt{50(50-25)} = 35.4 \Omega$$

$$R_3 = 25 \sqrt{\frac{50}{50-25}} = 25\sqrt{2} = 35.4 \Omega$$

tan $\theta = \sqrt{\frac{50-25}{50}} = \sqrt{\frac{1}{2}} = .707, \theta = .88$

$.88 = \frac{2.3}{2} \log_{10} N = \frac{1.76}{2.3} = .765, 5.83 = N, 7.65 \text{ DB}$

$\frac{2.3}{2} = 1.15 = .87, 1.421$



$$\left[1 + \frac{25}{50} \right] - 1 = 4 \left[1 + .707 \right] - 1 = 5.82 = N$$

Match Point Resistance Ratio

$$\frac{1.3500}{2} \cdot \frac{112.2}{2} = \frac{720}{2} = 360$$

$$\frac{36.5}{26.8} = 5.7$$

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(Handwritten mathematical notes and diagrams, including circuit diagrams and algebraic equations, are present in this section. The text is mirrored from the reverse side of the page.)

