

OHMS LAW {DC OR RMS}

$$\text{CURRENT IN AMPS} = \frac{\text{VOLTAGE IN VOLTS}}{\text{RESISTANCE IN OHMS}} = \frac{\text{POWER IN WATTS}}{\text{VOLTAGE IN VOLTS}}$$

$$\text{VOLTAGE IN VOLTS} = \text{CURRENT IN AMPS} \times \text{RESISTANCE IN OHMS}$$

$$\text{VOLTAGE IN VOLTS} = \frac{\text{POWER IN WATTS}}{\text{CURRENT IN AMPS}}$$

$$\text{VOLTAGE IN VOLTS} = \sqrt{\text{POWER IN WATTS} \times \text{RESISTANCE IN OHMS}}$$

$$\text{POWER IN WATTS} = [\text{CURRENT IN AMPS}]^2 \times \text{RESISTANCE IN OHMS}$$

$$\text{POWER IN WATTS} = \text{VOLTAGE IN VOLTS} \times \text{CURRENT IN AMPS}$$

$$\text{POWER IN WATTS} = \frac{[\text{VOLTAGE IN VOLTS}]^2}{\text{RESISTANCE IN OHMS}}$$

$$\text{RESISTANCE IN OHMS} = \frac{\text{VOLTAGE IN VOLTS}}{\text{CURRENT IN AMPS}}$$

$$\text{RESISTANCE IN OHMS} = \frac{\text{POWER IN WATTS}}{[\text{CURRENT IN AMPS}]^2}$$

DECIBELS: DB

$$\text{dB} = 10 \log_{10} \left[ \frac{\text{POWER IN WATTS \#1}}{\text{POWER IN WATTS \#2}} \right]$$

$$\text{dB} = 10 \log_{10} [\text{POWER IN RATIO}]$$

$$\text{dB} = 20 \log_{10} \left[ \frac{\text{VOLTS OR AMPS \#1}}{\text{VOLTS OR AMPS \#2}} \right]$$

$$\text{dB} = 20 \log_{10} [\text{VOLTAGE OR CURRENT RATIO}]$$

$$\text{POWER RATIO} = 10^{[\text{dB}/20]}$$

IF IMPEDANCES ARE NOT EQUAL:

$$\text{dB} = 20 \log_{10} \left[ \frac{\text{VOLT1} \sqrt{Z2}}{\text{VOLT2} \sqrt{Z1}} \right]$$