

Voltage, Power, and Decibel Nomograms

Chart 1 is used for voltage-power-resistance calculations, its voltage and resistance scales bear two sets of graduations, labeled E1 and R1 and E2 and R2 respectively. Scales bearing the same suffix number are used together. **Chart 2** converts power levels directly to decibels gain or loss.

For example, suppose an amplifier is under test. A 10-volt signal applied to the 500-ohm input produces an output measured at 5 volts across 8 ohms.

- First, determine input power from **Chart 1**. The line connecting 10 volts (E2 scale) and 500 ohms (R2 scale) passes through 0.2 watt. Output power is next. This time, the E1 and R1 scales of Chart 1 are used, yielding an answer of 3.1 watts.
- Now we turn to **Chart 2**. Connecting the 3.1-watt output (P1 scale) and the 0.2-watt input (P2 scale) gives a total amplifier gain of just under 12 decibels.

