

Thermal Noise Notes

Thermal noise at room temperature can be estimated in decibels as:

$$P = -174 + 10\log(\Delta f)$$

Where P is measured in dBm (0 dBm = 1 mW) and Δf is bandwidth in Hz. For example:

Bandwidth	Power
1 Hz	-174 dBm
10 Hz	-164 dBm
1000 Hz	-144 dBm
5 kHz	-137 dBm
1 MHz	-114 dBm
6 MHz	-106 dBm