

$$\text{Eqn } W = 250 * \text{pow}(10, 3) \quad \text{Eqn } T = 300$$

$$\text{Eqn } k = 1.38 * \text{pow}(10, -23)$$

$$\text{Eqn } N0 = k * T \quad \text{Eqn } N = k * T * W$$

$$\text{Eqn } N0_{\text{db}} = 10 * \log_{10}(N0 / \text{pow}(10, -3))$$

$$\text{Eqn } N_{\text{db}} = 10 * \log_{10}(N / \text{pow}(10, -3))$$

Ndb	N0db
-119.851	-173.830

N	N0
1.035E-15	4.140E-21

$$\text{Eqn } \text{SNR_req} = -7.5 \quad \text{Eqn } \text{calcfreq} = \text{find}(\text{freq} == 869\text{MHz})$$

$$\text{Eqn } \text{NF} = \text{nf}(2)[\text{calcfreq}] \quad \text{Eqn } \text{Kp} = \text{dB}(S(2, 1))[\text{calcfreq}]$$

$$\text{Eqn } \text{Sensitivity_dBm} = N_{\text{db}} + \text{SNR_req} + \text{NF} - \text{Kp} + 3$$

Sensitivity_dBm
-126.358