

Prediction of MPE Limit
47 CFR § 2.1091/ § 2.1093

$$S_{20} = \frac{P_A G_N}{4\pi R_{20}^2}$$

$$S_C = \frac{P_A G_N}{4\pi R_C^2}$$

$$R_C = \sqrt{\frac{P_A G_N}{4\pi S_L}}$$

$$S_L = \frac{180}{f^2} \text{ (mW/cm}^2\text{)}$$

S_{20} = Power Density of the Device at 20cm

S_L = Power Density Limit

S_C = Power Density of the Device at the Compliance Distance R_C

R_{20} = 20cm

R_C = Minimum Distance to the Radiating Element to Meet Compliance

P_T = Power Input to Antenna

P_A = Adjust Power

G_N = Numeric Gain of the Antenna

f = Transmit Frequency

Transmit Duty Cycle = 50%

Use Group = General Population

Transmit Duty Cycle:	50.00	(%)
Tx Frequency (f):	27.40	(MHz)
RF Power at Antenna Input Port (P_T):	4000.00	(mW)
Antenna Gain:	3.00	(dBi)
Numeric Antenna Gain (G_N):	2.00	(numeric)
Cable or Other Loss:	0.00	(dB)
Duty Cycle/Loss Adjusted Power (P_A):	2000.00	(mW)

$$S_L = 0.240 \text{ (mW/cm}^2\text{)}$$

$$S_{20} \text{ at 20cm} = 0.794 \text{ (mW/cm}^2\text{)}$$

$$R_C = 36.4 \text{ (cm)}$$

$$S_C = 0.24 \text{ (mW/cm}^2\text{)}$$

User's Manual must indicate a minimum separation distance of: **37cm**

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