The limits for Maximum Permissible Exposure (MPE) at different frequencies are set forth in C.F.R. 47 section 1.1307(b) and 1.13.10. The limit for General Population / Uncontrolled Exposures for our frequency of 2.4GHz is set to be 1 mW/cm². The limit is compared to our device by measuring the Output Power for our frequency and calculating the Power Density according to the following formula:

Power Density = (Power Out*Antenna Gain) / $(4^*\pi^*r^2)$

The product under test is the Rad-DX which is produced by VPI Engineering for D-tect Systems.

The Rad-DX uses two of the same antennas for the 802.11bg and 802.15.4 transmitters. The gain of the antenna is 2.5dBi.

These measurements and calculations for the Rad-DX 802.11bg transmitter are listed in the table below:

Channel	Frequency MHz	802.11b Measured Output Power (mW)	Power Density at r=20cm (mW/cm²)	802.11g Measured Output Power (mW)	Power Density at r=20cm (mW/cm²)
1	2412	34.91	0.017362769	53.58	0.026648443
2	2417			160.32	0.07973644
6	2437	28	0.013926025	154.53	0.076856737
10	2457			126.18	0.062756637
11	2462	27.04	0.013448561	44.16	0.021963331

These measurements and calculations for the Rad-DX 802.15.4 transmitter are listed in the table below:

Channel	Frequency MHz	802.15.4 Measured Output Power (mW)	Power Density at r=20cm (mW/cm²)
11	2405	46.34	0.023047571
18	2440	44.06	0.021913595
25	2475	38.19	0.018994103