Maximum Permissible Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e)

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, **S** as per the respective limits in Table 1 below, at a distance, d, of 5 cm (Mobile condition) from the EUT.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f^2	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Therefore, for:

MPE for 2400.00 MHz – 2483.50 MHz:

Limit: 1.0 mW/cm^2
Peak Power (dBm) = 3.5 dBm
Peak Power (Watts) = 0.023 W
Gain of Transmit Antenna = +2.8 dB$_i$ = 1.91 numeric

d = Distance = 20 cm = 0.2 m

$$S = (PG/ 4\pi d^2) = EIRP/4A = 0.023 (1.91)/4*\pi*0.2*0.2$$
$$= 0.0440/0.5027 = 0.0875 \text{ W/m}^2$$
$$= (0.0875 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2)$$
$$= 0.00875 \text{ mW/cm}^2$$

which is << less than S = 1.0 mW/cm^2

All calculations performed by:
Test Engineer: ___George Yang___   Date: January 29, 2021

Signature:_____