

US Tech Test Report:
 FCC ID:
 IC:
 Test Report Number:
 Customer:
 Model:

FCC Part 15/IC RSS Certification
 O7P-4343
 10147A-4343
 18-0268
 Inventek Systems
 ISM4343-X

Maximum Public 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 20 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 MHz – 2483.5 MHz for WiFi:

Limit: 1.0 mW/cm²

Peak Power (dBm) = 23.45 dBm

Peak Power (Watts) = 0.221 W

Gain of Transmit Antenna = 3.2 dB_i = 2.09, numeric(Highest Gain Antenna)

d = Distance = 20 cm = 0.2 m

$$\begin{aligned}
 S &= (PG / 4\pi d^2) = \text{EIRP} / 4A = 0.221(2.09) / 4\pi * 0.2^2 \\
 &= 0.4619 / 0.5030 = 0.9183 \text{ W/m}^2 \\
 &= (0.9183 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\
 &= 0.09183 \text{ mW/cm}^2
 \end{aligned}$$

which is << less than S = 1.0 mW/cm²

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RF Exposure Evaluation – IC

According to RSS-102, 2.5.2 Exemption Limits for Routine Evaluation

At or above 300 MHz and below 6 GHz and the source based time averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} \times f^{0.6834}$ in Watts (adjusted for tune up tolerance where applicable), where f= frequency in MHz

For 2.4 GHz Band:

$$\text{Limit} = 1.31 \times 10^{-2} \times 2440^{0.6834} = 2.7 \text{ Watts}$$

$$\text{Max EIRP for WiFi} = 23.45 \text{ dBm} + 3.2 \text{ dB} = 26.65 \text{ dBm} = 462.4 \text{ mW} \ll 2700 \text{ mW}$$