

Maximum Permissible Exposure Evaluation

Power Density at Specific Separation:

$$S = PG/(4R^2\pi)$$

Where S = Maximum power density (mW/cm²)

P = Power input to the antenna (mW)

G = Numeric power gain of the antenna

R = Distance to the center of the antenna = 20 cm

Measured maximum output power (P) is 10.32dBm = 10.764mW

The Numeric power gain of the antenna (G) is -1.9dB = 0.646

$$S = (10.764 * 0.646) / (4 * 20^2 * \pi)$$

$$S = 0.0014 \text{ (mW/cm}^2\text{)}$$

The maximum permissible exposure (MPE) for the general population is 1 mW/cm². The power density at 20 cm distance to the center of the antenna does not exceed the 1 mW/cm². Therefore, the exposure condition is compliant with FCC rules.