

Maximum Permissible Exposure Evaluation

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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 -8.99dBm = 0.126mW

The Numeric power gain of the antenna (G) is 1.95dB = 1.57

$$S = (0.126 * 1.57) / (4 * 20^2 * \pi)$$

$$S = 0.000039 \text{ (mW/cm}^2\text{)}$$

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.