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Maximum Permissible Exposure Calculations

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Calculations prepared for:

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Model Number: RH304022/100

FCC Identification: NA

Fundamental Operating Frequency:

869-894 MHz

Maximum Rated Output Power:

20 Watts

Measured Output Power:

20 Watts

MPE Limit in accordance with 1.1310(b): Limits for general population/uncontrolled exposure

$$\text{MPE Limit for 869-894 MHz} = 0.6 \text{ mW/cm}^2 \text{ } (6 \text{ W/m}^2)$$

300-1500 --- --- f/1500 30

Power Output (Watts)	Power Density Limit (mW/cm ²)	Minimum Distance (Meters)
20	0.6	0.5

$$\text{Power Density (W/m}^2\text{)} = \frac{30 \times P_t \times G}{d^2 \times Z_0}$$

P_t = Power Delivered to the Antenna
 d = Distance in meters

G = Antenna Gain
 Z_0 = Impedance of Free Space

The typical antennas to be used with the EUT are structure mount antennas which under normal operation has an antenna height of at least 5 meters. As can be seen from the MPE result, this device passes the limit specified in 1.1310 at a distance of 0.5 meter.

Calculation:

$$d = \sqrt{\frac{30 \times 20 \times 1}{6 \times 377}}$$

= 0.5meter.