

Radio Frequency Human Exposure Evaluation:

The highest RF output power of the EUT was measured below 33.08dBm at 869.2 MHz. According to §1.1310 of the FCC rules, the power density limit for General Population/Uncontrolled Exposure at 869.2 MHz is 0.58 mW/cm². The maximum permissible exposure (MPE) is calculated to show the required separation distance that must be maintained during installation to maintain compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$Pd = P * G / (4 * \pi * R^2)$$

Where:

Pd = Power Density

P = Output Power at the Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

To solve for the minimum mounting distance required:

$$R = \text{Sqrt} ((P * G) / (4 * \pi * Pd))$$

For the EUT, the calculation is as follows:

Pd = 4.04 mW/cm²

P = Output Power = 2032.35 mW

G = Worst Case Gain = 10 dBi

$$R = \text{Sqrt} ((2032.35 * 10) / (4 * \pi * 0.58))$$

R = 52.81 cm (Based on continuous transmission)