

Appendix A: FCC Part 1.1307, 1.1310, 2.1091, 2.1093; IC RSS-102: RF Exposure

MPE Co-location Calculations

The maximum permissible RF exposure for an uncontrolled environment is specified in FCC 1.1310 table 1B.

From OET 65, $S = \text{EIRP} / 4\pi R^2$

where:

S = Power density (mW/cm²)

EIRP = Equivalent Isotropic Radiated Power

R = 20 cm separation distance

Power Density for Zwave

The MPE limit for the above device operating at 908.4 MHz for uncontrolled environments is 0.6 mW/cm²

EUT fundamental field strength at 908.4 MHz = 91.5 dBuV/m at 3 meters (from DXT test report)

$S = 0.00014 \text{ mW/cm}^2 = \text{at } 20 \text{ cm separation}$

Power Density for Image Sensor

Conducted power for the low band is 0.011 W

Maximum antenna gain for this frequency range of operation is 0.99 dBi / 1.3 numeric (Alarm.com antenna specification for this specific host)

$S = 0.0028 \text{ mW/cm}^2 = \text{at } 20 \text{ cm separation}$

Co-location - Summary of MPE: Zwave + Image Sensor

Frequency (MHz)	MPE Result (mW/cm ²)	Limit (mW/cm ²)
908.4	0.00014	0.6
912 - 924	0.0028	0.6

MPE (1)	MPE (2)	MPE Power Density Aggregate MPE(1) + MPE(2) < 0.6 (mW/cm ²)	Power Density Limit (mW/cm ²)
908.4 MHz	912 - 924 MHz		
0.00014	0.0028	0.003	0.6

Thus, the EUT meets the uncontrolled exposure limit at 20 cm when all transmitters are transmitting simultaneously.

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Per section 2.5.1 Table 1, this device is exempt from SAR as the output power is less than the Exemption Limits at a separation distance of less than or equal to 5 mm.