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Client: Sensys Gatso Sweden AB
Model: 17-012166 TD1
Standard: FCC Part 15.245
Report #: 2022098

Appendix A: RF Exposure FCC Rules and Regulations Part 1.1307, 1.1310, 2.1091, 2.1093

1   General Information

Environment: General Population/Uncontrolled Exposure
Device category: Disturbance sensor
Modulation Type/Mode: FMCW

2   Antenna Operating Configuration and Test Conditions

FCC 15.245 Antenna	Simulated Antenna Gain (dBi)
Integrated Patch Array	11

Note: Simulated gain presented but not used in calculations below. Instead, worst-case EIRP used for RF Exposure calculations below.

Antenna Type	Highest Peak Measured EIRP Power (dBuV/m)	Highest Peak Measured EIRP Power (dBm)	Highest Peak Measured EIRP Power (mW)
Integrated Patch Array Antenna	119.8	24.6	288.4

3   MPE Calculation

The maximum distance from the antenna at which MPE is met or exceeded d, in centimeters, is calculated from the power density S, in mW/cm^2, transmit power P in mW, and the transmit antenna numeric gain G. The limit for general population/uncontrolled exposure from 1500-100000 MHz is 1 mW/cm^2.

$$S = EIRP\ (mW)/(4*PI*d^2)$$

$$d = SQRT\ ((EIRP\ (mw)/S*4PI)$$

where: S = Power density (mW/cm^2); EIRP = Effective Isotropic Radiated Power (mW); d = distance

Below is the MPE Calculation for the EUT and its integrated patch array antenna using the 1 mW/cm^2 power density limit for general population/uncontrolled exposure, and the worst-case measured peak EIRP of 288.4 mW and solving for distance (d) in (cm) and solving for the worst-case power density at 20 cm worst-case mobile distance is as follows:

Linear	Log
Duty % = 100	0 dB
Worst-case measured peak EIRP = 288.4 mW	**24.6 dBm**
d = 4.8 cm	**S (20cm) = 0.0574045 mW/cm^2**