

MPE Calculation : Vehicular Radar

RF function or Mode	Frequency range (MHz)			Max. tune-up average Power (dBm) ^{Note1}	ANT Gain (dBi)	Caculated EIRP from the max tune-up (dBm)	Measured average EIRP (dBm) ^{Note2}	Maximum EIRP (mW) ^{Note3}	Maximum power density (mW/cm ²)	Requirment (mW/cm ²)
FMCW	80000.0	~	81000.0	-12.00	12.00	0.00	-1.32	1.000	0.0002	1.000
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Note1: Please refer to the tune-up procedure.

Note2: Please refer to the RF test report.

Note3: Caculated EIRP from the max tune-up or measured average EIRP whichever is higher

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 1 / (4 \times 20^2 \times \pi) \\
 &= 0.0002 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenn

▪ Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)			Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm ²)	Averageing time (minutes)
0.3	~	1.34	614	1.63	*100	30
1.34	~	30	824/f	2.19 / f	*180 / f ²	30
30	~	300	27.5	0.073	0.2	30
300	~	1,500			f / 1500	30
1,500	~	100,000			1.0	30

Conclusion : The exposure condition of this device is compliant with FCC