

MPE Calculation / RF Exposure

Product: C-V2X OBU

Applicant: IT TELECOM Co., Ltd.

Model: MSD-A3

Address: #517, The Ovalley, 555-9, Hogye-dong, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea

FCC ID: ZO9-MSD-A3

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from the device to the body of the user. According to §2.1091, §2.1093 and §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Classification The antenna of this product is at least 20 cm away from the body of the user.

[MPE Limits]

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) LIMITS FOR OCCUPATIONAL/CONTROLLED EXPOSURE				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE				
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

f = frequency in MHz.

* = Plane-wave equivalent power density

$$S = \text{EIRP} / 4 \pi R^2$$

Where S = Power density
 EIRP = Effective Isotropically Radiated Power
 R = distance to the centre of radiation of the antenna

Values S = 1.0 mW/cm² for General population uncontrolled exposure (FCC Part 1.1310 Radiofrequency radiation exposure limits)

Max. Output Power = 96.30 dBuV/m @ 3 meter
 R = 20 cm

Calculation EIRP = 96.3 – 95.2 = 1.1 dBm
 = 1.288 mW
 S = 1.288 / (4 * π * (20)²)
 S = 0.000 256 mW/cm²

Conclusion This confirms compliance to the required radio frequency radiation exposure limit of 1.0 mW/cm² at 20 cm operation.