FCC 47 CFR MPE REPORT

Snap One, LLC

ACI Snap One SUB

Model Number: SUB-8

FCC ID: 2AJAC-BLKSUB8

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Maximum Permissible Exposure

1. Applicable Standards

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 limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

1.1. Limits for Maximum Permissible Exposure (MPE)

(a) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\mid E \mid^2$, $\mid H \mid^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\mid E \mid^2$, $\mid H \mid^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.o	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: Pd (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Calculated Result and Limit

For 2.4G SRD

Ant gain= -4.50dBi

Ant numeric gain= 0.3548

Field strength = 99.15 dBuV/m@3m

$P = \{ [10^{(99.15/20)}/10^6 *3]^2 / (30*0.3548) \}*1000mW = 6.9524mW$

$Pd = (30*6.9524*0.3548) / (377*20^2) = 0.00049 < 1$

End of Test Report