# FCC §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Report No.: RKSA200107001-00A

## **Applicable Standard**

According to §2.1091and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure										
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)						
0.3-1.34	614	1.63	*(100)	30						
1.34-30	824/f	2.19/f	*(180/f²)	30						
30–300	27.5	0.073	0.2	30						
300–1500	/	/	f/1500	30						
1500-100,000	/	/	1.0	30						

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

According to §1.1310 and §2.1091 RF exposure is calculated.

### **Calculated Formulary:**

Predication of MPE limit at a given distance

 $S = PG/4\pi R^2 = power density (in appropriate units, e.g. mW/cm^2);$ 

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

#### **Calculated Data:**

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Output Power		Evaluation Distance	Power Density	MPE Limit
		(dBi)	(numeric)	(dBm)	(mW)	(cm)	$(mW/cm^2)$	(mW/cm <sup>2</sup> )
20MHz	4950-4980	2.0	1.58	22.50	117.83	20	0.0559	1.0

#### Note:

The tune-up output power was declared by the manufacturer.

**Conclusion:** The EUT meets exemption requirement - RF exposure evaluation greater than 20cm distance specified in § 2.1091. If the device built into a host as a portable usage, the additional RF exposure evaluation may be required as specified by § 2.1093.

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