



CTK Co., Ltd.
The Prime Leader of Global Regulatory Compliance

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RF EXPOSURE EVALUATION

FCC ID : A3LRFV01U-D1A

Standard Requirement

The following FCC Rule Parts and procedures are applicable :

Part 1.1310 Radiofrequency radiation exposure limits

Table 1 below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

Table 1—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) 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
(B) 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			<u>1.0</u>	30

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

Frequency range : 1930 MHz - 1990 MHz(Band 2), 2110 MHz - 2180 MHz(Band 66)

Limit : 1 mW/cm²



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MPE calculation

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

Where

S : Power density

EIRP : P x G

P : Maximum transmitter power

G : Antenna gain

R : distance to the centre of radiation of the antenna

Band 2 MPE calculation

P : 199.5 W(53 dBm) (4 ports, rated power : 52 dBm(160 W), tolerance: ± 1 dB)

G : 19.7 dBi (rated)

R : 1510 cm

$$S = 10^{((53+19.7) / 10)} / 4\pi / 1510^2$$

$$S = 0.65 \text{ mW/cm}^2$$

Band 66 MPE calculation

P : 302 W(54.8 dBm) (4 ports, rated power : 53.8 dBm(240 W), tolerance: ± 1 dB)

G : 19.7 dBi (rated)

R : 1510 cm

$$S = 10^{((54.8+19.7) / 10)} / 4\pi / 1510^2$$

$$S = 0.98 \text{ mW/cm}^2$$

Conclusion

This confirms compliance to the required Radio frequency radiation exposure limit.