RF Exposure Evaluation

LIMIT

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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 Exposures				
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
300–1500	-	-	f/300	6
1500–100,000	-	-	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
300–1500	-	-	f/1500	30
1500–100,000	-	-	1.0	30

Note: f = frequency in MHz

EVALUATION METHOD

Transmission formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2, $Pout$ = output power to antenna in mW, G = gain of antenna in linear scale;

Pi = 3.1416, R = distance between observation point and center of the radiator in cm

TEST RESULT

☒ **Passed**   ☐ **Not Applicable**

According to RF test report, the results are as follow:

GSM Band	Max. tune-up Power(dBm)	Max. tune-up Power(mW)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
850	34.00	2511.89	0.4072	0.55	PASS
1900	31.50	1412.54	0.2290	1.00	PASS

WCDMA Band	Max. tune-up Power(dBm)	Max. tune-up Power(mW)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
2	24.00	251.19	0.0407	1.00	PASS
4	24.00	251.19	0.0407	1.00	PASS
5	24.00	251.19	0.0407	0.55	PASS

LTE Band	Max. tune-up Power(dBm)	Max. tune-up Power(mW)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
2	23.00	199.53	0.0323	1.00	PASS
4	23.00	199.53	0.0323	1.00	PASS
5	23.00	199.53	0.0323	0.58	PASS
7	23.00	199.53	0.0323	1.00	PASS
12	23.00	199.53	0.0323	0.47	PASS
17	23.00	199.53	0.0323	0.47	PASS

Note:

the below information is declared by the applicant,

1) *The exposure safety distance is 25cm.*

2) *Only use the maximum permissible antenna gain is 0 dBi calculate RF radiation exposure*