

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/cm², **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

Type	Maximum Tune-up (dBm) Conducted Average Power
GSM 850	31.84~33.84
DCS1900	28.05~30.05
LTE Band 2	20.85~22.85
LTE Band 4	20.86~22.86
LTE Band 12	21.80~23.80
LTE Band 13	22.31~24.31

Type	Conducted Average Power (dBm)	Maximum Tune-up (dBm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
GSM 850	33.84	33.84	0.50	0.55	Pass
DCS1900	30.05	30.05	0.21	1.00	Pass
LTE Band 2	22.85	22.85	0.04	1.00	Pass
LTE Band 4	22.86	22.86	0.04	1.00	Pass
LTE Band 12	23.80	23.80	0.05	0.47	Pass
LTE Band 13	24.31	24.31	0.06	0.52	Pass

Note:

- 1) The maximum antenna gain is 5.0dBi
- 2) The exposure evaluation safety distance is 35cm.