RF Exposure Evaluation

FCC Limits

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

f = frequency in MHz

Friis 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

Pd id the limit of MPE, If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

Test Result of RF Exposure Evaluation

The maximum ERP/EIRP and antenna gain declared by manufacturer.

Contains FCC ID:RI7LE910CxNF, TFB-1004

LTE mode

Band	Frequency (MHz)	Output power to antenna (dBm) (per tune-up)	Antenna gain(dBi)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
TDD 71	663.0	25	1.5	0.089	0.442	PASS
FDD 12	699.0	25	1.5	0.089	0.466	PASS
FDD 13	777.0	25	1.5	0.089	0.518	PASS
FDD 14	788.0	25	1.5	0.089	0.525	PASS
WCDMA BAND V	826.4	25	1.5	0.089	0.551	PASS
FDD 5	824.0	25	1.5	0.089	0.549	PASS
FDD 4	1710.0	25	3.5	0.141	1.0	PASS
FDD 66	1710.0	25	3.5	0.141	1.0	PASS
WCDMA BAND IV	1710.0	25	3.5	0.141	1.0	PASS
WCDMA BAND II	1850.0	25	3.5	0.141	1.0	PASS
FDD 2	1850.0	25	3.5	0.141	1.0	PASS

WIFI mode

Frequency (MHz)	Output power to antenna (dBm) (per tune-up)	Antenna gain(dBi)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
2412~2462	20	2dBi	0.032	1.0	PASS
5180~5700	20	2dBi	0.032	1.0	PASS
5745~5825	20	2dBi	0.032	1.0	PASS

BT mode

Frequency (MHz)	Output power to antenna (dBm) (per tune-up)	Antenna gain(dBi)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
2402~2480	10	2dBi	0.003	1.0	PASS

BLE mode

Frequency (MHz)	Output power to antenna (dBm) (per tune-up)	Antenna gain(dBi)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
2402~2480	7	2dBi	0.002	1.0	PASS

The max power density is less than SAR exempt limit, so SAR evaluation is not required.