

RF EXPOSURE EVALUATION

FCC ID: **2A07J-HI1503**

According to FCC 1.1310: 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)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: $P_d = \frac{P_{out} * G}{4 * \pi * R^2}$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in Mw

G = gain of antenna in linear scale

π =3.1416

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

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

Operating Mode	Max. Measured Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain	Power density at 20cm (mW/ cm ²)	Power density Limits (mW/cm ²)
WCDMA850	23.79	23.0±1	24	-0.21	0.0475	0.550
WCDMA1700	23.48	23.0±1	24	1.55	0.0715	1.000
WCDMA1900	23.06	23.0±1	24	0.55	0.0567	1.000
LTE Band 2	22.98	22.0±1	23	0.55	0.0452	1.000
LTE Band 4	22.78	22.0±1	23	1.55	0.0567	1.000
LTE Band 12	22.97	22.0±1	23	1.51	0.0562	0.471

Operating Mode	Channel Frequency (MHz)	Measured Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Power density at 20cm (mW/ cm ²)	Power density Limits (mW/cm ²)
BLE	2402	8.117	8.117±1	9.117	1	0.0020	1
	2440	8.808	8.808±1	9.908	1	0.0025	1
	2480	7.823	7.823±1	8.823	1	0.0019	1

input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Remark: Under multiple launch conditions:

$$Pd \text{ (LTE+BT) } = 0.0567 + 0.0025 = 0.0592 < 1 \text{ (mW/cm}^2\text{)}$$

$$Pd \text{ (WCDMA+BT) } = 0.0025 + 0.0715 = 0.074 < 1 \text{ (mW/cm}^2\text{)}$$

Measurement Result

Conclusion: No SAR is required.