

FCC ID : KA2WRM921

RF EXPOSURE EVALUATION

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/cm²)	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

11.1 Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

R = distance between observation point and center of the radiator in 20cm P_d

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

11.2 Measurement Result

Mode	Max Measured power (dBm)	Antenna gain (dBi)	Antenna Gain Numeric	R (cm)	Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
WIFI	17.32	4.4	2.754	20	0.0296	1

Remark: Refer to report ES210517011W for EUT test Max Conducted Output Power value.

Mode	Frequency (MHz)	Max Measured power (dBm)	Antenna gain (dBi)	Antenna Gain Numeric	R (cm)	Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
GSM850	848.8	25.31	4	2.512	20	0.1697	0.5659
PCS1900	1850.2	22.31	4	2.512	20	0.0850	1.0000
WCDMA B2	1907.6	25.5	4	2.512	20	0.1773	1.0000
WCDMA B4	1712.4	25.5	4	2.512	20	0.1773	1.0000
WCDMA B5	846.6	25.5	4	2.512	20	0.1773	0.5644
LTE B2	1855	25	4	2.512	20	0.1580	1.0000
LTE B4	1717.5	25	4	2.512	20	0.1580	1.0000
LTE B5	825.5	25	4	2.512	20	0.1580	0.5503
LTE B7	2505	25	4	2.512	20	0.1580	1.0000
LTE B12	714.5	25	4	2.512	20	0.1580	0.4763
LTE B17	709	25	4	2.512	20	0.1580	0.4727
LTE B38	2595	25	4	2.512	20	0.1580	1.0000
LTE B66	1717.5	25	4	2.512	20	0.1580	1.0000

Remark: Refer to report No. BTL-FCCP-4-2111C171 for Max Tune Up Power.

MAX RF EXPOSURE EVALUATION

WIFI	WCDMA B5	Summation of Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
0.0296	0.1773	0.2069	<0.5644