Applicable standard

FCC KDB447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.
FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.
FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

RF Exposure Evaluation

According to KDB447498D01 General RF Exposure Guidance v06 4.3.1. Standalone SAR test exclusion considerations Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	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/f²)	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/f²)	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 Formula

Friis 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

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 Result of RF Exposure Evaluation

WIFI Antenna1 Gain: 0dBi,

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

The Max Conducted Peak Output Power data refer to report Report No.: ZKT-230111L0371

WIFI:

worst mode and channel-802.11b-2412MHz						
Test channel	Antenna Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)	Maximum tune-up Power (mW)	Calculated value (mW/cm2)	Limit (mW/cm2)
2412MHz	15.85	16 ±1	17	50.119	0.01	1.0

Remark:

1)Pd = (Pout*G)/(4* Pi * R^2)=(50.119*1.0)/(4*3.1415*20*20)= 0.01, G=10$^{gain/10}$ =1

NOTE:1.the EUT is more than 20cm away from the human body.