FCC RF Exposure

EUT Description:Video Doorbell
ModelNo.:W5-W
FCC ID: 2BAIM-W5-W
Equipment type: mobile device

Test procedures according to the technical standards: KDB 447498 D01 V06 andFCC 2.1091.

1. 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
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,
$\pi = 3.14$;
R = distance between observation point and center of the radiator in cm
Pd id the limit of MPE, 1 mW/cm2. 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.

2. Test Procedure

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

highest channel individually.

3. Test Result of RF Exposure Evaluation

Modulation	Channel Freq. (MHz)	Conducted power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna gain numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11b	2412	9.91	9.79	3.01	2	0.00389729	1
	2437	7.64	5.80	3.01	2	0.00230891	1
	2462	10.81	12.05	3.01	2	0.00479697	1
802.11g	2412	12.46	17.62	3.01	2	0.00701433	1
	2437	10.53	11.30	3.01	2	0.00449840	1
	2462	9.95	9.89	3.01	2	0.00393710	1
802.11n	2412	11.71	14.83	3.01	2	0.00590366	1
	2437	9.68	9.29	3.01	2	0.00369824	1
	2462	10.90	12.30	3.01	2	0.00489649	1

EIRP=EMeas+20log(dmeas)-104.7
EIRP is the equivalent isotropically radiated power,
EMeas in dBmis the field strength of the emission at the measurement distance, in dB u V/m
dMeas is the measurement distance, in m

Field strength(dBuV/m)	EIRP(dBm)	Max tune-up(mW)	Frequency(MHz)	Min. distance(mm)	Calc. thresholds	limit
58.84	-36.36	0.000233	433.92	5	0.000031	3.0

Wifi+433.92：0.00701433/1.0+0.000031/3.0=0.007024663
Conclusion: the max result : 0.007024663≤ 1.0 compliance with FCC's RF Exposure.