FCC ID: 2AW3Y-DC100-HF-WIFI

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/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**

11.1 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= Numeric gain of the antenna relative to isotropic antenna
Pi=3.1416
R= distance between observation point and center of the radiator in cm(20cm)
Pd the limit of MPE, $1mW/cm^2$. 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.
mW=10^(dBm/10)

11.2 Measurement Result

Operation Frequency: 2402MHz~2480MHz
Power density limited: 1mW/ cm^2
Antenna Type: FPCB Antenna
Antenna gain: 3dBi
Operation Frequency: 6500MHz~8100MHz
Power density limited: 1mW/ cm^2
Antenna Type: PCB Antenna
Antenna gain: 5dBi
R=20cm
mW=10^(dBm/10)

Maximum Single sources
BLE

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density (mW/cm2)
2402	GFSK	-3.522	-3±1	-2	0.631	3.00	2.00	0.0003	1
2440		-2.959	-3±1	-2	0.631	3.00	2.00	0.0003	1
2480		-2.997	-3±1	-2	0.631	3.00	2.00	0.0003	1

2.4G WIFI

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density (mW/cm2)
2412	B	16.56	16±1	17	50.119	3.00	2.00	0.0199	1
2437		14.79	14±1	15	31.623	3.00	2.00	0.0126	1
2462		15.31	15±1	16	39.811	3.00	2.00	0.0158	1
2412	G	16.51	16±1	17	50.119	3.00	2.00	0.0199	1
2437		14.67	14±1	15	31.623	3.00	2.00	0.0126	1
2462		15.46	15±1	16	39.811	3.00	2.00	0.0158	1
2412	N20	16.32	16±1	17	50.119	3.00	2.00	0.0199	1
2437		14.78	14±1	15	31.623	3.00	2.00	0.0126	1
2462		15.3	15±1	16	39.811	3.00	2.00	0.0158	1

UWB

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density (mW/cm2)
7290	Pulse Doppler	-38.698	-39±1	-38	0.00016	5.00	3.16	0.0000001	1

Multiple Evaluation resul= Evaluation result1/ Power density Limits+ Evaluation result2/ Power density Limits

Maximum Multiple sources

	MAX Evaluation result	Multiple Evaluation resul	Power density Limits
	(mW/cm2)	(mW/cm2)	(mW/cm2)
BLE	0.0003	0.0003001	1
UWB	0.0000001		
WIFI	0.199	0.1990001	1
UWB	0.0000001		

Conclusion:
For the max result : 0.01990001≤ 1mW/ cm^2 for Power density, compliance with RF exposure.

Signature:  **Date:** 2021-07-22

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