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Maximum Permissible Exposure Evaluation

FCC ID: 2A6JVGT001

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)

EUT Specification

Product Name:	WIFI Repeater
Trade Mark:	/
Model/Type reference:	GT001
Listed Model(s):	/
Frequency band (Operating)	WLAN: 2.412GHz ~ 2.462GHz
Device category	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others ____
Exposure classification	☐ Occupational/Controlled exposure (S=5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain (Max)	1dBi
Antenna 1 + 2 Directional gain (Max)	4.01dBi
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation

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

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

Where

P_d = Power density in mW/cm^2

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 $1mW/cm^2$. 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.

Measurement Result

Only show the value of the worst antenna.

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
802.11b ANT 1	2437	1	16.90	17 ± 1	18	0.016	1.000
802.11b ANT 2	2437	1	16.40	17 ± 1	18	0.016	1.000
802.11g ANT 1	2462	1	13.24	16 ± 1	17	0.013	1.000
802.11g ANT 2	2462	1	15.80	16 ± 1	17	0.013	1.000
802.11n(HT20) ANT 1	2412	1	12.20	15 ± 1	16	0.010	1.000
802.11n(HT20) ANT 2	2412	1	15.16	15 ± 1	16	0.010	1.000
802.11n(HT40) ANT 1	2422	1	10.45	12 ± 1	13	0.005	1.000
802.11n(HT40) ANT 2	2422	1	12.53	12 ± 1	13	0.005	1.000

802.11n ANT1 and ANT2 can transmit simultaneously:

Band	ANT1 Power density at 20cm (mW/cm^2)	ANT2 Power density at 20cm (mW/cm^2)	Total Power density at 20cm	Power density Limits
802.11n(HT20)	0.010	0.010	0.020	1.000
802.11n(HT40)	0.005	0.005	0.010	1.000

Note:

For a more detailed features description, Please refer to the RF Test Report.

So the transmitter complies with the RF exposure requirements and the SAR is not required.

*****THE END*****

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