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Maximum Permissible Exposure Evaluation

FCC ID: 2A9UC-F1

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:	HD Wi-Fi Wireless Video Doorbell
Trade Mark:	/
Model/Type reference:	F1
Listed Model(s):	/
Frequency band (Operating)	WLAN: 2.412GHz ~ 2.462GHz BT:2402MHz~2480MHz
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)	1.8dBi
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



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 = 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/cm². 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.

For 2.4G WIFI:

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)
WLAN 802.11b	2462	1.8	16.77	17 ± 1	18	0.19	1.000
WLAN 802.11g	2462	1.8	17.75	17 ± 1	18	0.19	1.000
WLAN 802.11n(HT20)	2452	1.8	17.78	17 ± 1	18	0.19	1.000

For BLE

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)
BLE	2402	1.8	3.352	3 ± 1	4	0.001	1.000
	2440	1.8	3.553	3 ± 1	4	0.001	1.000
	2480	1.8	3.564	3 ± 1	4	0.001	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*****