

RF EXPOSURE EVALUATION

EUT Specification

EUT	Video Doorbell Camera
Model Number	VDB2
FCC ID	2APSE-VDB2
Antenna gain (Max)	3.86dBi
Operation Frequency	WLAN: 2.412GHz ~ 2.462GHz
Input Rating	DC 3.7V, DC 5V, AC 12-24V
Max. output power	802.11b: 15.61dBm 802.11g: 15.37dBm 802.11n(HT20): 15.50dBm 802.11n(HT40): 15.74dBm

Test Requirement:

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

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

$P_i=3.1416$

R= distance between observation point and center of the radiator in cm=20cm

P_d the limit of MPE, $1\text{mW}/\text{cm}^2$. If we know the maximum gain of the antenna total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

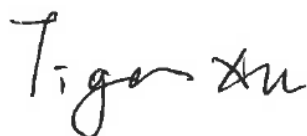
11.2 Measurement Result

Antenna gain: 3.86dBi

WIFI:

802.11b	1	15±1	16	39.811	3.86	2.432	0.019262	1
	6	16±1	17	50.119	3.86	2.432	0.024249	1
	11	15±1	16	39.811	3.86	2.432	0.019262	1
802.11g	1	15±1	16	39.811	3.86	2.432	0.019262	1
	6	14±1	15	31.623	3.86	2.432	0.015300	1
	11	15±1	16	39.811	3.86	2.432	0.019262	1
802.11n (HT20)	1	15±1	16	39.811	3.86	2.432	0.019262	1
	6	15±1	16	39.811	3.86	2.432	0.019262	1
	11	15±1	16	39.811	3.86	2.432	0.019262	1
802.11n (HT40)	3	15±1	16	39.811	3.86	2.432	0.019262	1
	6	16±1	17	50.119	3.86	2.432	0.024249	1
	9	16±1	17	50.119	3.86	2.432	0.024249	1

Signature:



Tiger Xu

Date: 2022-12-13

