

RF EXPOSURE EVALUATION

EUT Specification

EUT	Dash camera
Test No.:	HDE-1002
FCC ID	2BNBZ-HDE-1002
Antenna gain (Max)	2.4GWIFI: ANT: 0.23dBi
Operation Frequency	2.4GWIFI: 2412-2462MHz
Input Rating	DC 3.7V from battery or DC 5V Car charger

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)

KDB Test Methodology: KDB 447498 D01v06

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

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

π =3.1416

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

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.

11.2 Measurement Result

Mode	Modulation	Max measured power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)	Antenna Gain (Numeric)	Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
2.4GWIFI	802.11b	16.81	17±1	18	1.05	0.013242	1
	802.11g	16.47	16±1	17	1.05	0.010518	1
	802.11n20	16.60	17±1	18	1.05	0.013242	1
	802.11n40	14.36	14±1	15	1.05	0.006637	1

Signature:

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