

1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 Client Information

Client Information	
Applicant:	Shenzhen Chuanghongyu Technology Co., Ltd
Address of applicant:	301 Jinjin Building, No. 242 Jihua Road, Jihua Street, Longgang District, Shenzhen,Guangdong,China
Manufacturer:	Shenzhen Chuanghongyu Technology Co., Ltd
Address of manufacturer:	301 Jinjin Building, No. 242 Jihua Road, Jihua Street, Longgang District, Shenzhen,Guangdong,China

General Description of EUT	
Name of EUT	Dash camera,Car Dvr
Model Number	V22
Listed Models	/
Power Supply	DC5V, 2A from Car charging
Frequency Range	2412MHz~2462MHz for 802.11b/802.11g/802.11n(HT20) 2422MHz~2452MHz for 802.11n(HT40)
Channel number:	11 for 802.11b/802.11g/802.11n(HT20) 7 for 802.11n(HT40)
Modulation Type	DSSS for 802.11b OFDM for 802.11g/802.11n(HT20)/802.11n(HT40)
Channel separation:	5MHz
Antenna Type	Pcb antenna
Antenna Gain	-1.0dBi
Sample ID:	CTA240709105-1
FCC ID:	2BHLL-V22

1.2 Standard Applicable

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S
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				(minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density

1.3 MPE Calculation Method

$$S = (30 \cdot P \cdot G) / (377 \cdot R^2)$$

S = power density (in appropriate units, e.g., mw/cm²)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

1.4 MPE Calculation Result

Maximum peak output power: 18.48(dBm)

Tune-Up Max output power: 19(dBm), 79.4328(mW)

Prediction distance: >20(cm)

Prediction frequency: 2462 (MHz)

Antenna gain: -1 (dBi)

Directional gain: 0.8 (numeric)

The worst case is power density at prediction frequency at 20cm: 0.00997(mw/cm²)

MPE limit for general population exposure at prediction frequency: 1 (mw/cm²)

$$0.00997(\text{mw/cm}^2) < 1 (\text{mw/cm}^2)$$

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