1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 Client Information

Client Information

Applicant:	Shenzhen Qiluoxiang Technology Co., Ltd.
Address of applicant:	Room 1811, Block A, Xintianxia Bairuida Building, Vanke City Community, Bantian Street, Longgang District, Shenzhen
Manufacturer:	Shenzhen Qiluoxiang Technology Co., Ltd.
Address of manufacturer:	Room 1811, Block A, Xintianxia Bairuida Building, Vanke City Community, Bantian Street, Longgang District, Shenzhen

General Description of EUT

Product Name:	wireless carplay adapter
Trade Name:	/
Model No.:	WA01
Adding Model(s):	WA02 WA03 WA04 WA05 WA06 WA07 WA08 WA09 WA10 WA11 WA12 WA13 WA14 WA15 WA16 WA17 WA18 WA19 WA20
Rated Voltage:	DC 5V
Power Adapter Model:	/
Serial number:	283HDK2003
FCC ID:	2A4VAWA01

Technical Characteristics of EUT

Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 802.11b/g/n(HT20)
RF Output Power:	17.46dBm (Conducted)
Type of Modulation:	DBPSK,BPSK,DQPSK,QPSK,16QAM,64QAM
Quantity of Channels:	11 for 802.11b/g/n(HT20)
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	1dBi

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 $\mid E \mid^2$, $\mid H \mid^2$ or S (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 $\mid E \mid^2$, $\mid H \mid^2$ 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

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

S = power density (in appropriate units, e.g., mw/cm^2)

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: <u>17.46 (dBm)</u>

Maximum tune-up peak output power: <u>18 (dBm)</u>

Prediction distance: <u>>20(cm)</u>

Prediction frequency: <u>2437 (MHz)</u>

Antenna gain: <u>1 (dBi)</u>

Directional gain: <u>1.26(numeric)</u>

The worst case is power density at prediction frequency at 20cm: <u>0.01(mw/cm^2)</u>

MPE limit for general population exposure at prediction frequency: <u>1 (mw/cm^2)</u>

$0.01(mw/cm^2) < 1 (mw/cm^2)$

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