RF Exposure Requirements

1.1 General Information

Client Information

Applicant	:	Foshan Carro Electrical Co.,Ltd
Address of applicant	:	16th No.78 ShunXiang Road Xinjiao Daliang ShunDe, FoShan City, GuangDong Province, P.R China
Manufacturer.....	:	The same as above
Address of manufacturer.....	:	The same as above

General Description of E.U.T

FCC ID.....	:	2AXNF-DC
Product Name	:	Driver Board
Model No.	:	YDC, LDC
Model Description	:	Two models are identical except for model name. Therefore the full tests were performed on model LDC.
Rated Voltage.....	:	DC 24V
Battery Capacity	:	---
Power Adapter	:	---

Technical Characteristics of EUT

WiFi

Support Standards	:	802.11b, 802.11g, 802.11n
Frequency Range	:	2412-2462MHz for 802.11b/g/n(HT20) 2422-2452MHz for 802.11n(HT40)
RF Output Power	:	12.32dBm (Conducted)
Modulation	:	802.11b: DSSS(DBPSK/DQPSK/CCK) 802.11g/n: OFDM (BPSK/QPSK/16QAM/64QAM)
Data Rate	:	11 for 802.11b/g/n(HT20); for 802.11n(HT40)
Quantity of Channels		5MHz
Channel Separation		PCB Printed Antenna
Type of Antenna		0.73dBi

BLE

Bluetooth Version	:	V5.0 (BLE mode)
Frequency Range	:	2402-2480MHz
RF Output Power	:	6.65dBm (Conducted)
Modulation	:	GFSK
Data Rate	:	1Mbps
Quantity of Channels	:	40
Channel Separation	:	2MHz
Type of Antenna	:	PCB Antenna
Antenna Gain	:	0.73dBi

2 Applicable Standard

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 (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

3 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), R=20cm.

4 MPE Calculation Result

Test Mode	Min. Frequency (MHz)	Antenna Gain (dBi)	Numeric gain	Conducted Power (dBm)	Maximum Tune-up output power		PD (mW/cm2)	Limit (mW/cm2)
					(dBm)	(mW)		
WiFi	2412	0.73	1.18	12.32	13.00	19.95	0.00470	1.0
BLE	2402	0.73	1.18	6.65	7.00	5.01	0.00118	1.0

Result: Pass

======End of Report======