

RF Exposure Evaluation Report

Product : Car multimedia player
Trade mark : Dual, Jensen, AXXERA
Model/Type reference : See to Clause 6.2
Serial Number : N/A
Report Number : EED32L00204802
FCC ID : 2AT9B-AV1188
Date of Issue : Sep. 09, 2019
Test Standards : IEEE C95.1 2005
KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091
Test result : PASS

Prepared for:

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Building 2, GIEC Industrial Park, Puzai Road, Pingdi,
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2 Version

Version No.	Date	Description
00	Sep. 09, 2019	Original

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4 General Information

4.1 Client Information

Applicant:	MAXMADE AUTO ELECTRONICS Co., LTD
Address of Applicant:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen. China
Manufacturer:	MAXMADE AUTO ELECTRONICS Co., LTD
Address of Manufacturer:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen. China
Factory:	Dual Electronics Corporation
Address of Factory:	Namsung America . Inc.250 International Parkway Suite 230 Heathrow. FL 32746

4.2 General Description of EUT

Product Name:	Car multimedia player
Model No.(EUT):	XDCPA11BT, DMCPA11BT, DMCPA210, XDCPA210, CAR10, CAR1000 , CAR101XL, AVM2210H
Test Model No:	XDCPA11BT
Trade Mark:	Dual, Jensen, AXXERA
EUT Supports Radios application	BT V2.1 + EDR Single mode

4.3 Product Specification subjective to this standard

Frequency Range:	2402MHz~2480MHz			
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK			
Number of Channels:	79			
Test Power Grade:	Default			
Test Software of EUT:	HC_Data_Test			
Antenna Type:	PCB antenna			
Antenna Specification	Bluetooth	Ant.Gain	3.45 dBi	Numeric Gain:2.213
Maximum tune up power	Bluetooth		4 dBm	2.511 mW
Power Supply:	DC 12V/15A 180W			
Sample Received Date:	Jul. 30, 2019			
Sample tested Date:	Jul. 30, 2019 to Sep. 04, 2019			

Operation Frequency each of channel					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1CH	2403 MHz	14CH	2429 MHz	27CH	2455 MHz
2CH	2405 MHz	15CH	2431 MHz	28CH	2457 MHz
3CH	2407 MHz	16CH	2433 MHz	29CH	2459 MHz
4CH	2409 MHz	17CH	2435 MHz	30CH	2461 MHz
5CH	2411 MHz	18CH	2437 MHz	31CH	2463 MHz
6CH	2413 MHz	19CH	2439 MHz	32CH	2465 MHz
7CH	2415 MHz	20CH	2441 MHz	33CH	2467 MHz
8CH	2417 MHz	21CH	2443 MHz	34CH	2469 MHz
9CH	2419 MHz	22CH	2445 MHz	35CH	2471 MHz
10CH	2421 MHz	23CH	2447 MHz	36CH	2473 MHz
11CH	2423 MHz	24CH	2449 MHz	37CH	2475 MHz
12CH	2425 MHz	25CH	2451 MHz	38CH	2477 MHz
13CH	2427 MHz	26CH	2453 MHz	39CH	2479 MHz

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

Bluetooth:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
0	2402	2.511	2.213	20	0.0011	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00204801 for EUT external and internal photos.

*** End of Report ***

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