

MPE REPORT

FCC ID: 2AT9B-AV1338

Date of issue: Dec. 12, 2020

Report number:	MTi20101905-3E2
Sample description:	Car multimedia player
Model(s):	CAR910X, XD1CPA9, J1CA9, DCPA91, DCPA901, CAR910, XD2CPA9, J2CA9, DCPA92, DCPA902, CAR920, J1CA9X, DCPA91X, DCPA901X, AVM2209S, DCPA902X, CAR920X
Applicant:	MAXMADE AUTO ELECTRONICS CO., LTD.
Address:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen, China
Date of test:	Nov. 11, 2020 to Dec. 12, 2020

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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TEST RESULT CERTIFICATION	
Applicant's name:	MAXMADE AUTO ELECTRONICS CO., LTD.
Address:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen, China
Manufacture's name:	MAXMADE AUTO ELECTRONICS CO., LTD.
Address:	Building 2, GIEC Industrial Park, Puzai Road, Pingdi, Longgang District, Shenzhen, China
Product name:	Car multimedia player
Trademark:	Dual, Jensen, Axxera
Model and/or type reference:	CAR910X
Serial model:	XD1CPA9, J1CA9, DCPA91, DCPA901, CAR910, XD2CPA9, J2CA9, DCPA92, DCPA902, CAR920, J1CA9X, DCPA91X, DCPA901X, AVM2209S, DCPA902X, CAR920X
RF exposure procedures:	KDB 447498 D01 v06

This device described above has been tested by Shenzhen Microtest Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Tested by:

Demi Mu

Dec. 12, 2020

Reviewed by:

Leo Su

Dec. 12, 2020

Approved by:

Tom Xue

Dec. 12, 2020



RF EXPOSURE EVALUATION

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)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

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 = 3.1415926

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.

Measurement Result

BR+EDR:

Operation Frequency: 2402-2480MHz

Antenna Type: FPC Antenna

Antenna gain: 2.97dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(2.97/10)}=1.98$

BR+EDR:

Channel Freq. (MHz)	modulation n	conducte d power	Tune- up powe r (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm 2)
				(dBm)	(mW)	(dBi)	Nume ric		
2402	GFSK	3.195	4±1	5	3.162	2.97	1.98	0.0012	1
2441		3.965	4±1	5	3.162	2.97	1.98	0.0012	1
2480		4.482	4±1	5	3.162	2.97	1.98	0.0012	1
2402	π/4- DQPSK	3.977	4±1	5	3.162	2.97	1.98	0.0012	1
2441		4.734	4±1	5	3.162	2.97	1.98	0.0012	1
2480		4.133	4±1	5	3.162	2.97	1.98	0.0012	1
2402	8DPSK	3.859	4±1	5	3.162	2.97	1.98	0.0012	1
2441		4.738	4±1	5	3.162	2.97	1.98	0.0012	1
2480		4.996	4±1	5	3.162	2.97	1.98	0.0012	1

Conclusion:

For the max result: $0.0012 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----