

TEST REPORT

of

FCC Part 15 Subpart C §15.247

FCC ID: TQ8-AM110D9GG

Equipment Under Test : DIGITAL CAR AUDIO SYSTEM
Model Name : AM110D9GG
Alternate Model Name : AM100D9GG, AM111D9GG, AM101D9GG,
AM110D9GE, AM100D9GE, AM110D9GN,
AM100D9GN
Applicant : Hyundai MOBIS Co., Ltd.
Manufacturer : Hyundai MOBIS Co., Ltd.
Date of Test(s) : 2015.04.28 ~ 2015.05.07
Date of Issue : 2015.05.07

In the configuration tested, the EUT complied with the standards specified above.

Tested By:



Date:

2015.05.07

Jaeha Chung

Approved By:



Date:

2015.05.07

Hyunchae You

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

-Wireless Div. 2FL, 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 435-837

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Telephone : + 82 31 688 0901

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1.2. Details of applicant

Applicant : Hyundai MOBIS Co., Ltd.

Address : 203, Teheran-ro, Gangnam-gu, Seoul, 135-977, Korea

Contact Person : Choi, Seung-Hoon

Phone No. : + 82 31 260 0098

1.3. Description of EUT

Kind of Product	DIGITAL CAR AUDIO SYSTEM
Model Name	AM110D9GG
Alternate Model Name	AM100D9GG, AM111D9GG, AM101D9GG, AM110D9GE, AM100D9GE, AM110D9GN, AM100D9GN
Power Supply	DC 14.4 V (Vehicle Battery)
Frequency Range	2 402 MHz ~ 2 480 MHz (BT)
Modulation Technique	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels	79 channels (BT)
Operation Temperature	-20 °C ~ 70 °C
Antenna Type	Internal type
Antenna Gain	3.50 dBi

1.4. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL008718	2015.05.07	Initial

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1.5. Information of alternate model

Model name	Information
AM110D9GG	- Basic model.
AM100D9GG	- Same as the basic model, but it has different model name for marketing purpose.
AM111D9GG	
AM101D9GG	
AM110D9GE	
AM100D9GE	
AM110D9GN	
AM100D9GN	

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2. RF Exposure Evaluation

2.1. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time
(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

2.1.1. 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 = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

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2.1.2. Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

2.1.3. Output Power into Antenna & RF Exposure Evaluation Distance

- Maximum tune up tolerance

Operating Frequency Range (MHz)	Maximum Average Output Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
2 402 ~ 2 480	4	3.50	0.001 119	1

Note :

1. The power density Pd (5th column) at a distance of 20 cm calculated from the friis transmission formula is far below the limit of 1 mW/cm².

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