

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

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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, π/4DQPSK, 8DPSK
Number of Channels	79 channels (BT)
Operation Temperature	-20 °C ~ 70 °C
Antenna Type	Internal type
Antenna Gain	3.50 dB i

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	
AM111D9GG	
AM101D9GG	
AM110D9GE	- Same as the basic model, but it has different model name for marketing purpose.
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
<u>1 500 – 100 000</u>	-	-	<u>1.0</u>	<u>30</u>

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/cm^2

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

$\pi = 3.1416$

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

P_d the limit of MPE, 1 mW/cm^2 . 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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