

TEST REPORT

of

FCC CFR 47 part 1, 1.1307(b), 1.1310

FCC ID: TQ8-AM1A0B0AN

Equipment Under Test : DIGITAL CAR AUDIO SYSTEM
Model Name : AM1A0B0AN
Variant Models : AM113A7GG, AM113A7GE, AM113A7GN, AM110B0GL,
AM115A7GG, AM1A0B0KN, AM113A7GL, AM1A3A7AN,
AM1A3A7KN
Applicant : Hyundai MOBIS Co., Ltd.
Manufacturer : Hyundai MOBIS Co., Ltd.
Date of Test(s) : 2015.06.09 ~ 2015.06.12
Date of Issue : 2015.06.17

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

Tested By:

Date:

2015.06.17


Jungmin Yang

Approved By:

Date:

2015.06.17


Hyunchae You

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INDEX

<u>Table of Contents</u>	Page
1. General Information -----	3
2. RF Exposure Evaluation -----	5

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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	AM1A0B0AN
Variant Models	AM113A7GG, AM113A7GE, AM113A7GN, AM110B0GL, AM115A7GG, AM1A0B0KN, AM113A7GL, AM1A3A7AN, AM1A3A7KN
Power Supply	DC 14.4 V
Frequency Range	2 402 MHz ~ 2 480 MHz (BT)
Modulation Technique	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels	79 channels (BT)
Antenna Type	Internal type
Antenna Gain	3.50 dBi

1.4. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL008870	2015.06.17	Initial

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1.5. Information of variant models

YD (A Type)		BT	CDP	VR	SR	Country
Basic model	AM1A0B0AN	O	O	O	O	North America band
Variant models	AM1A0B0KN	O	O	O	O	North America band, different SR band from basic model
	AM1A3A7AN	O	O	O	O	North America band, different SR band from basic model
	AM1A3A7KN	O	O	O	O	North America band, different SR band from basic model
	AM113A7GG	O	O	X	X	General band
	AM113A7GE	O	O	X	X	Europe band
	AM113A7GN	O	O	X	X	North America band
	AM110B0GL	O	O	X	X	Colombia band
	AM115A7GG	O	O	X	X	General band
	AM113A7GL	O	O	X	X	Colombia band

Note;

VR: Voice Recoradation

BT: BlueTooth

CDP: CD Player

SR: Satellite Radio

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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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