

TEST REPORT

of

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

FCC ID: TQ8-ACB10H8GG

Equipment Under Test : DIGITAL CAR AUDIO SYSTEM

Model Name : ACB10H8GG

Variant Model Name : ACB00H8GG, ACB00H8GN, ACB10H8GN,
ACB00H8GE, ACB10H8GE, ACB01H8GG,
ACB11H8GG, ACB00H9GL, ACB10H9GL,
ACB00H9GG, ACB10H9GG, ACB00H9GN,
ACB10H9GN, ACB00H9GE, ACB10H9GE

Applicant : Hyundai MOBIS Co., Ltd.

Manufacturer : Hyundai MOBIS Co., Ltd.

Date of Test(s) : 2016.06.05 ~ 2016.06.10

Date of Issue : 2016.06.15

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

Tested By:

Date:

2016.06.15


Jungmin Yang

Approved By:

Date:

2016.06.15


Hyunchae You

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SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

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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, 15807

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>.

Phone No. : +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, 06141, Korea

Contact Person : Hyeon, Sae-Rome

Phone No. : +82 31 260 2716

1.3. Description of EUT

Kind of Product	DIGITAL CAR AUDIO SYSTEM
Model Name	ACB10H8GG
Variant Model Name	ACB00H8GG, ACB00H8GN, ACB10H8GN, ACB00H8GE, ACB10H8GE, ACB01H8GG, ACB11H8GG, ACB00H9GL, ACB10H9GL, ACB00H9GG, ACB10H9GG, ACB00H9GN, ACB10H9GN, ACB00H9GE, ACB10H9GE
Power Supply	DC 14.4 V
Frequency Range	2 402 MHz ~ 2 480 MHz (Bluetooth)
Modulation Technique	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels	79 channels (Bluetooth)
Antenna Type	Chip antenna
Antenna Gain	-0.10 dBi

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1.4. Information of Variant model

Model name		H/W				S/W	
		DAB	Bluetooth	USB	GPS	RDS	FM/AM BAND
Basic model	ACB10H8GG	X	O	O	X	X	General BAND
Variant model	ACB00H8GG	X	X	O	X	X	General BAND
	ACB00H8GN	X	O	O	X	X	North America BAND
	ACB10H8GN	X	O	O	X	X	North America BAND
	ACB00H8GE	X	X	O	X	X	Europe BAND
	ACB10H8GE	X	O	O	X	X	Europe BAND
	ACB01H8GG	X	X	O	X	O	General BAND
	ACB11H8GG	X	O	O	X	O	General BAND
	ACB00H9GL	X	X	O	X	X	Colombia BAND
	ACB10H9GL	X	O	O	X	X	Colombia BAND
	ACB00H9GG	X	X	O	X	X	General BAND
	ACB10H9GG	X	O	O	X	X	General BAND
	ACB00H9GN	X	X	O	X	X	North America BAND
	ACB10H9GN	X	O	O	X	X	North America BAND
	ACB00H9GE	X	X	O	X	X	Europe BAND
	ACB10H9GE	X	O	O	X	X	Europe BAND

1.5. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL009989	2016.06.15	Initial

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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/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

BT

- Maximum tune up tolerance

Frequency (MHz)	Maximum 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	-0.10	0.000 488	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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