

FCC MPE REPORT

FCC Certification

Applicant Name:
HYUNDAI MOBIS CO., LTD.

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

Date of Issue:

March 30, 2018

Test Site/Location:

HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

Report No.: HCT-RF-1803-FC039

FCC ID: TQ8-AT242B1AN

APPLICANT: HYUNDAI MOBIS CO., LTD.

Model: AT242B1AN

Additional model: AT243B1AU

EUT Type: Car Audio System

Frequency Range: 2402 MHz - 2480 MHz (Bluetooth)

The measurements shown in this report were made in accordance with the procedures specified in §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S. C.853(a)



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Manager of Telecommunication testing center

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-1803-FC039	March 30, 2018	- First Approval Report

RF Exposure Statement

1. LIMITS

According to §1.1310 and §2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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 - 1500.....			f/1500	30
1500 - 100.000.....			1.0	30

F = frequency in MHz

* = Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

S = Power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

3. RESULTS

3-1. BLUETOOTH MODE

Max Peak output Power at antenna input terminal	5.868	dBm
Max Peak output Power at antenna input terminal	3.862	mW
Prediction distance	20.000	cm
Prediction frequency	2445.000	MHz
Antenna Gain(typical)	-0.05	dBi
Antenna Gain(numeric)	0.989	-
Power density at prediction frequency(S)	0.000760	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

3-2. CDMA BC0 MODE

Max Peak output Power at antenna input terminal	26.000	dBm
Max Peak output Power at antenna input terminal	398.107	mW
Prediction distance	20.000	cm
Prediction frequency	824.000	MHz
Antenna Gain(typical)	0.890	dBi
Antenna Gain(numeric)	1.227	-
Power density at prediction frequency(S)	0.0972	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5493	mW/cm ²

3-3. CDMA BC1 MODE

Max Peak output Power at antenna input terminal	26.000	dBm
Max Peak output Power at antenna input terminal	398.107	mW
Prediction distance	20.000	cm
Prediction frequency	1910.000	MHz
Antenna Gain(typical)	3.200	dBi
Antenna Gain(numeric)	2.089	-
Power density at prediction frequency(S)	0.165474	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

3-4. LTE B13 MODE

Max Peak output Power at antenna input terminal	25.000	dBm
Max Peak output Power at antenna input terminal	316.228	mW
Prediction distance	20.000	cm
Prediction frequency	777.000	MHz
Antenna Gain(typical)	0.420	dBi
Antenna Gain(numeric)	1.102	-
Power density at prediction frequency(S)	0.0693	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5180	mW/cm ²

3-5. LTE B4 MODE

Max Peak output Power at antenna input terminal	25.000	dBm
Max Peak output Power at antenna input terminal	316.228	mW
Prediction distance	20.000	cm
Prediction frequency	1755.000	MHz
Antenna Gain(typical)	2.410	dBi
Antenna Gain(numeric)	1.742	-
Power density at prediction frequency(S)	0.109580	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

Simultaneous transmission operations

CDMABC0 + LTE B13 + BLUETOOTH

Radiated Power	29.247	dBm
Radiated Power	840.807	mW
Prediction distance	20.000	cm
Power density at prediction frequency(S)	0.167273	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5180	mW/cm ²

CDMABC1 + LTE B13 + BLUETOOTH

Radiated Power	30.733	dBm
Radiated Power	1183.919	mW
Prediction distance	20.000	cm
Power density at prediction frequency(S)	0.235533	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5180	mW/cm ²

CDMABC0 + LTE B4 + BLUETOOTH

Radiated Power	30.184	dBm
Radiated Power	1043.278	mW
Prediction distance	20.000	cm
Power density at prediction frequency(S)	0.207554	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5493	mW/cm ²

CDMABC1 + LTE B4 + BLUETOOTH

Radiated Power	31.419	dBm
Radiated Power	1386.389	mW
Prediction distance	20.000	cm
Power density at prediction frequency(S)	0.275813	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²