

TEST REPORT

FCC MPE Test for MAR320A

APPLICANT
HYUNDAI MOBIS CO., LTD.

REPORT NO.
HCT-RF-2011-FI028

DATE OF ISSUE
November 27, 2020

Tested by
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MAR320A

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Additional Model

-

Applicant

HYUNDAI MOBIS CO., LTD.

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**Eut Type
Model Name**

UNIT ASSY-FR RADAR

MAR320A

FCC ID

TQ8-MAR320A

Frequency range

76 GHz ~ 77 GHz

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	November 27, 2020	Initial Release

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

* The report shall not be reproduced except in full(only partly) without approval of the laboratory.

RF Exposure Statement

1. Limit

According to § 1.1310, § 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 to 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. 77G Radar_Short

EIRP[Radiated Average Power]	23.54	dBm
EIRP[Radiated Average Power]	225.94	mW
Prediction distance	20.00	cm
Prediction frequency	76000~77000	MHz
Power density at prediction frequency(S)	0.0450	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-2.1091

EIRP	23.54 (dBm)
ERP	21.39 (dBm)
ERP	0.138 (W)
ERP Limit	3.00 (W)
MARGIN	13.38 (dB)

3-1. 77G Radar_ Long

EIRP[Radiated Average Power]	26.99	dBm
EIRP[Radiated Average Power]	500.03	mW
Prediction distance	20.00	cm
Prediction frequency	76000~77000	MHz
Power density at prediction frequency(S)	0.0995	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-2.1091

EIRP	26.99 (dBm)
ERP	24.84 (dBm)
ERP	0.305 (W)
ERP Limit	3.00 (W)
MARGIN	9.93 (dB)