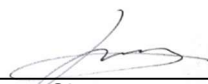


FCC RF EXPOSURE TEST REPORT

Project Number : EA2206C-023
Test Report Number : TR-W2208-012
Type of Equipment : In-vehicle Infotainment System
Model Name : XS90116CA
FCC ID : YE4XSG4V2B
Multiple Model Name : -
Applicant : Glosys Inc.
Address : B2535, 27, Dongtancheomdansaneop 1-ro, Hwaseong-si,
Gyeonggi-do, Republic of Korea
Manufacturer : Glosys Inc.
Address : B2535, 27, Dongtancheomdansaneop 1-ro, Hwaseong-si,
Gyeonggi-do, Republic of Korea
Regulation : FCC CFR 47 Chapter I Subpart A Part 1 Clause 1.1310
Total page of Report : 7 Pages
Date of Receipt : 2022-06-14
Date of Issue : 2022-08-04
Test Result : PASS

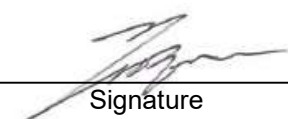
This test report only contains the result of a single test of the sample supplied for the examination.
 It is not a generally valid assessment of the features of the respective products of the mass-production.

Prepared by Song, In-yong / Senior Engineer


 Signature

2022-08-04
 Date

Reviewed by Choi, Yeong-min / Technical Manager


 Signature

2022-08-04
 Date

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Release Control Record

Issue Report No.	Issued Date	Revisions	Effect Section
TR-W2208-012	2022-08-04	Initial Release	All

1. EUT (Equipment Under Test) INFORMATION

1.1 General Description

The Glosys Inc., Model XS90116CA (referred to as the EUT in this report) is an In-vehicle Infotainment System, which has Bluetooth, BR and EDR function. The product specification described herein was obtained from product data sheet or user's manual.

Kind of Class	DSS – Part15 Spread Spectrum Transmitter
Operating Frequency	2 402 MHz ~ 2 480 MHz
Max. RF Output Power	5.36 dBm
Modulation Types	GFSK, $\pi/4$ DQPSK / 8DPSK
Number of Channels	79 channels
Channel Spacing	1 MHz
Generated or used Freq. in EUT	32.768 kHz, 8 MHz, 12 MHz, 14.318118 MHz, 24 MHz, 24.576 MHz, 25 MHz, 27 MHz
Type of Antenna	☐ Integrated Type ☒ Dedicated Type (PCB Pattern antenna)
Antenna Gain	Peak gain: -7.7 dBi
Normal Test Voltage	DC 12 V
Electrical Rating	DC 11 ~ 16 V
Consumption in Sleep mode	<5 mA
Dimensions	218 x 60 x 161 mm
Weight	810 g

1.2 Additional Model

None

2. TEST RESULT

2.1 Measured RF Output Level

Operating Mode	Data Rate	Channel	Frequency (MHz)	Output Power (dBm)
Basic Rate (GFSK)	1 Mbps	Low	2 402	2.05
		Middle	2 441	3.87
		High	2 480	5.36
Enhanced Data Rate ($\pi/4$ DQPSK)	2 Mbps	Low	2 402	0.52
		Middle	2 441	2.78
		High	2 480	4.35
Enhanced Data Rate (8DPSK)	3 Mbps	Low	2 402	0.94
		Middle	2 441	3.18
		High	2 480	4.64

2.2 Separation Distance between the antenna in the EUT and human body

Acc. to the applicant's declaration, the distance is 20 cm.

2.3 MPE Evaluation

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

$$S = \text{EIRP} / (4 \times R^2 \times \pi)$$

Note: S = Power density in mW/cm²

$$= 5.36 / (4 \times 20^2 \times \pi)$$

EIRP = Equivalent Isotropic Radiated Power in mW

$$= 0.0034 \text{ mW/cm}^2$$

R = Distance to the center of the radiation of the antenna

$$\pi \approx 3.141592$$

FCC LIMIT

According to FCC §1.1310;

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

[Table – 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 [minutes]
(A) Limits for Occupational / Control Exposures (Note 1)				
0.3 – 3.0	614	1.63	*(100)	6
3.0 – 30	1 842/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 (Note 2)				
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/1 500	30
<u>1,500 – 100,000</u>			<u>1.0</u>	<u>30</u>

f = frequency in MHz, * = Plane wave equivalent power density

2.3.1 MPE Calculation Result

Mode	Frequency (MHz)	P (dBm)	P (mW)	G (dBi) Log	G (dBi) Linear	Distance (m)	S (mW/cm ²)	Limit (mW/cm ²)
Basic Rate (GFSK)	2 402	2.05	1.60	-7.70	0.17	0.2	0.000 1	1.00
	2 441	3.87	2.44	-7.70	0.17	0.2	0.000 1	1.00
	2 480	5.36	3.44	-7.70	0.17	0.2	0.000 1	1.00
Enhanced Data Rate ($\pi/4$ DQPSK)	2 402	0.52	1.13	-7.70	0.17	0.2	0.000 0	1.00
	2 441	2.78	1.90	-7.70	0.17	0.2	0.000 1	1.00
	2 480	4.35	2.72	-7.70	0.17	0.2	0.000 1	1.00
Enhanced Data Rate (8DPSK)	2 402	0.94	1.24	-7.70	0.17	0.2	0.000 0	1.00
	2 441	3.18	2.08	-7.70	0.17	0.2	0.000 1	1.00
	2 480	4.64	2.91	-7.70	0.17	0.2	0.000 1	1.00