



시험 성적서

TEST REPORT

페이지(page) : (1) / (총(Total) 8)

성적서 번호 Report No.		ICRT-TR-E222145-0A	
신청자 Client	기관명 Name	MaxiEcu sp. z o.o. sp. k.	
	주 소 Address	Stanislawy Fleszarowej-Muskat 7, 81-589 Gdynia, POLAND	
시험대상품목 Sample description		IV generation MaxiEcu interface	
모델명 Type designation		4GENBTM	
정 격 Ratings		DC 12 V	
시험장소 Place of test		☒ 고정시험(Inside test) ☐ 현장시험(Field test) 주소지(Address): 112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea	
시험기간 Date of test		13. Jul. 2022 ~ 28. Jul. 2022	
시험방법/항목 Test Method/Item		FCC rule §1.1310	
시험결과 Test Results		Refer to 3. Maximum Permissible Exposure	
확 인 Affirmation	작성자 Tested by	기술책임자 Technical Manager	
	성 명 Name Yeong-Hwan, Hong (서명) (Signature)	성 명 Name Min-Gi, Son (서명) (Signature)	

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The above test report is certified that the above mentioned products have been tested for the sample.

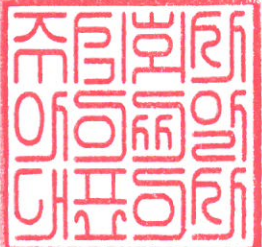
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2022. 08. 22

주식회사 아이씨알 대표이사

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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E222145-0A	2022.08.22	Initial Issue	All



1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	MaxiEcu sp. z o.o. sp. k.
Address	Stanislawy Fleszarowej-Muskat 7, 81-589 Gdynia, POLAND
Contact Person	Marcin Popow
Telephone No.	48-586-760-267
Fax No.	-
E-mail	marcin@maxiecu.com

1.2 Manufacturer Information

Manufacturer	MaxiEcu sp. z o.o. sp. k.
Address	Stanislawy Fleszarowej-Muskat 7, 81-589 Gdynia, POLAND

1.3 Test Laboratory Information

Conducted tests were performed at	
Laboratory	ICR Co., Ltd.
Address	112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Telephone No.	+82-2-6351-9002
Fax No.	+82-2-6351-9007
RRA No.	KR0165
KOLAS No.	KT652



2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	IV generation MaxiEcu interface
Brand Name	-
Model Name	4GENBTM
Additional Model Name	-
FCC ID	2A3CS4GENBTM

2.2 Additional Information

Equipment Class	DSS - Frequency Hopping Spread Spectrum system DTS - Digital Transmission System	
Device Type	Stand-alone	
Operating Frequency	Bluetooth BDR/EDR/LE	2 402 MHz ~ 2 480 MHz
	802.11b/g/n(HT20)	2 412 MHz ~ 2 462 MHz
	802.11n(HT40)	2 422 MHz ~ 2 452 MHz
RF Output Power	Bluetooth BDR	2.33 dBm
	Bluetooth EDR	3.52 dBm
	Bluetooth LE	2.60 dBm
	802.11b	10.97 dBm
	802.11g	9.48 dBm
	802.11n(HT20)	9.97 dBm
	802.11n(HT40)	6.59 dBm
Number of Channel	Bluetooth BDR/EDR	79
	Bluetooth LE	40
	802.11b/g/n(HT20)	11
	802.11n(HT40)	7
Modulation Type	Bluetooth BDR/EDR : FHSS Bluetooth LE, 802.11b: DSSS 802.11g/n(HT20/HT40) : OFDM	
Antenna Type	Chip Antenna	
Antenna Gain	2 dBi	
Antenna Operating Mode	Single Antenna Equipment with only one antenna	



2.3 Mode of operation during the test

- The EUT is continuous transmission mode during the test with set at Low Channel, Middle Channel, and High Channel. To get a maximum radiated emission levels from the EUT, the EUT was moved throughout the XY, YZ, XZ planes.

2.4 Modifications of EUT

- None



3. Maximum Permissible Exposure

3.1 RF Exposure calculation

According to the FCC rule §1.1310 the limit for General Population/Uncontrolled exposure is 1 mW/cm² for the device operating 1 500 MHz ~ 100 000 MHz.

Kind of EUT	IV generation MaxiEcu interface
Operating Frequency Band	■ WLAN(802.11b/g/n(HT20)): 2 412 MHz ~ 2 462 MHz ■ WLAN(802.11n(HT40)): 2 422 MHz ~ 2 452 MHz □ WLAN: 5 180 MHz ~ 5 320 MHz / 5 500 MHz ~ 5 700 MHz □ WLAN: 5 745 MHz ~ 5 825 MHz ■ Bluetooth: 2 402 MHz ~ 2 480 MHz
Max. Output Power	10.97 dBm
Exposure Evaluation Applied	■ MPE □ SAR □ N/A



3.2 Result

According to above equation, the following result was obtained.

Operating Mode	Target Power W / tolerance	Max tune up power		Antenna Gain		Safe Distance (cm)	Power Density (mW/cm ²) @ 20 cm Separation	Limit (mW/cm ²)
		(dBm)	(mW)	Log	Linear			
802.11b	10.97 ± 1.0	11.97	15.74	2	1.58	1.42	0.0050	1.00
802.11g	9.48 ± 1.0	10.48	11.17			1.19	0.0035	
802.11n(HT20)	9.97 ± 1.0	10.97	12.50			1.26	0.0039	
802.11n(HT40)	6.59 ± 1.0	7.59	5.74			0.86	0.0018	
Bluetooth BDR	2.33 ± 1.0	3.33	2.15			0.52	0.0007	
Bluetooth EDR	3.52 ± 1.0	4.52	2.83			0.60	0.0009	
Bluetooth LE	2.6 ± 1.0	3.6	2.29			0.54	0.0007	

According to above table, for Band(802.11b), safe distance,

$$D = 0.282 * \sqrt{(15.74 * 1.58)/1.00} = 1.42 \text{ cm.}$$

For getting power density at 20 cm separation in above table, following formula was used.

$$S = P * G / (4\pi * R^2) = 15.74 * 1.58 / (4 * \pi * 20^2) = 0.0050$$

Where:

S = Power Density,

P = Power input to the external antenna (Output power from the EUT antenna port (dBm) – cable loss (dB)),

G = Gain of Transmit Antenna (linear gain), R = Distance from Transmitting Antenna

- END -