



시험 성적서

TEST REPORT

페이지(page) : (1) / (총(Total) 7)

성적서 번호 Report No.		ICRT-TR-E222376-0A	
신청자 Client	기관명 Name	TAEHA MECHATRONICS Co., Ltd.	
	주 소 Address	421, Bakdal-ro, Manan-gu, Anyang-si, Gyeonggi-do, Republic of Korea	
시험대상품목 Sample description		Monitor	
모델명 Type designation		WL-STAGE VE Monitor	
정 격 Ratings		DC 24 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		14. Sep. 2022 ~ 16. Sep. 2022	
시험방법/항목 Test Method/Item		FCC rule §1.1310	
시험결과 Test Results		Refer to 3. Test Summary	
확 인 Affirmation	작성자 Tested by	기술책임자 Technical Manager	
	성 명 Name	In-Jung, Kim (Signature)	성 명 Name
			Min-Gi, Son (Signature)
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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E222376-0A	2022.09.20	Initial Issue	All



1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	TAEHA MECHATRONICS Co., Ltd.
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Contact Person	Byoungsun Lee
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E-mail	best-electronic@taeha.co.kr

1.2 Manufacturer Information

Manufacturer	TAEHA MECHATRONICS Co., Ltd.
Address	421, Bakdal-ro, Manan-gu, Anyang-si, Gyeonggi-do, Republic of Korea

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	Monitor
Brand Name	-
Model Name	WL-STAGE VE Monitor
Additional Model Name	-
FCC ID	2AP7F-WLSTAGEVEMONI

2.2 Additional Information

Equipment Class	DTS - Digital Transmission System	
Device Type	Stand-alone	
Operating Frequency	802.11n(HT20)	2 412 MHz ~ 2 462 MHz
RF Output Power	802.11n(HT20)	14.25 dBm
Number of Channel	802.11n(HT20)	11
Modulation Type	802.11n(HT20) : OFDM	
Antenna Type	SMD Antenna	
Antenna Gain	3.5 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 table 1B, the limit for the maximum permissible RF exposure for an uncontrolled environment are $f/1500 \text{ mW/cm}^2$ for the frequency range between 300 MHz and 1 500 MHz and 1.0 mW/cm^2 for the frequency range between 1 500 MHz and 100 000 MHz.

The electric field generated for a 1 mW/cm^2 exposure is calculated as follows:

$$E = \sqrt{(30 * P * G)} / d, \text{ and } S = E^2 / Z = E^2 / 377, \text{ because } 1 \text{ mW/cm}^2 = 10 \text{ W/m}^2$$

Where

S = Power density in mW/cm^2 , Z = Impedance of free space, 377Ω

E = Electric field strength in V/m, G = Numeric antenna gain, and d = distance in meter

Combining equations and rearranging the terms to express the distance as a function of the remaining variable

$$d = \sqrt{(30 * P * G) / (377 * 10 S)}$$

Changing to units of mW and cm , using $P (\text{mW}) = P (\text{W}) / 1 000$, $d (\text{cm}) = 0.01 * d (\text{m})$

$$d = 0.282 * \sqrt{(P * G) / S}$$

Where

d = distance in cm , P = Power in mW , G = Numeric antenna gain, and S = Power density in mW/cm^2



3.1 Result

According to above equation, the following result was obtained.

Operating Mode	Target Power W / tolerance	Max tune up power		Antenna Gain		Power Density (mW/cm ²) @ 20 cm Separation	Limit (mW/cm ²)
		(dBm)	(mW)	Log	Linear		
802.11n(HT20)	14.25 ± 1.0	15.25	33.50	3.50	2.24	0.0149	1.00

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

$$S = P * G / (4\pi * R^2) = 33.50 * 2.24 / (4 * \pi * 20^2) = 0.0149$$

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 -