




# 시험 성적서 TEST REPORT

페이지(page) : ( 1 ) / ( 총(Total) 6 )

성적서 번호 Report No.		ICRT-TR-E190696-0A	
신청자 Client	기관명 Name	YouVR INC	
	주소 Address	R&D Tower-1007, 396, WorldCup buk-ro, Mapo-gu, Seoul, South Korea	
시험대상품목 Sample description		Rotator	
모델명 Type designation		PIVO-R1	
정격 Ratings		DC 3.7 V	
시험기간 Date of test		Apr. 08, 2019 ~ Apr. 10, 2019	
시험방법/항목 Test Method/Item		FCC Part 15 Subpart C §15.247	
시험결과 Test Results		Refer to 3.3 Calculated MPE Safe Distance	
확인 Affirmation	작성자 Tested by	기술책임자 Technical Manager	
	성명 Name Hong-Kyu, Lee (Signature)	성명 Name Jun-Hui, Lee (Signature)	
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112, Hwanggeum3-ro 7beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea



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### Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E190696-0A	24-Apr-2019	Initial Issue	All



# **1. Applicant & Manufacturer & Test Laboratory Information**

## **1.1 Applicant information**

Applicant	YouVR INC
Address	R&D Tower-1007, 396, WorldCup buk-ro, Mapo-gu, Seoul, South Korea
Contact Person	Yealin Maeng
Telephone No.	+82-70-4756-2133
Fax No.	+82-2-6442-8593
E-mail	rnd@3i.ai

## **1.2 Manufacturer Information**

Manufacturer	3i.Inc
Address	101-117, 29, Dongbu-ro, Dong-gu, Daegu, 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	Rotator
Brand Name	-
Model Name	PIVO-R1
Additional Model Name	-
FCC ID	2AS3Q-PIVO-R1
Hardware Version	-
Software Version	-
Power Supply	DC 3.7 V

### 2.2 Additional Information

Equipment Class	Bluetooth LE	DTS-Digital Transmission System
	2.4 GHz Single Transmitter	DXX-Low Power Communication Device Transmitter
Device Type	Stand-alone	
Operating Frequency	Bluetooth LE	2 402 MHz ~ 2 480 MHz
	2.4 GHz Single Transmitter	2 440 MHz
RF Output Power	Bluetooth LE	-3.81 dBm
Max. Field Strength	2.4 GHz Single Transmitter	64.69 dB $\mu$ V/m at 3 m
Number of Channel	Bluetooth LE	40
	2.4 GHz Single Transmitter	1
Modulation Type	GFSK	
Antenna Type	PCB Pattern Antenna	
Antenna Gain	Bluetooth LE	3.03 dBi
	2.4 GHz Single Transmitter	0 dBi
Antenna Operating Mode	Single Antenna Equipment with only one antenna	
List of Each Oscillator or Crystal Frequency	32 MHz	

### 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/cm<sup>2</sup> for the device operating 1 500 MHz ~ 100 000 MHz.

Kind of EUT	Rotator	
Operating Frequency Band	<input type="checkbox"/> WLAN(802.11b/g/n(HT20)): 2 412 MHz ~ 2 462 MHz <input type="checkbox"/> WLAN(802.11n(HT40)): 2 422 MHz ~ 2 452 MHz <input type="checkbox"/> WLAN: 5 180 MHz ~ 5 320 MHz / 5 500 MHz ~ 5 700 MHz <input type="checkbox"/> WLAN: 5 745 MHz ~ 5 825 MHz <input checked="" type="checkbox"/> Bluetooth: 2 402 MHz ~ 2 480 MHz <input checked="" type="checkbox"/> 2.4 GHz Single Transmitter: 2 440 MHz	
Max. Output Power	Bluetooth LE	-3.81 dBm
Max. Field Strength	2.4 GHz Single Transmitter	64.69 dBμV/m at 3 m
Exposure Evaluation Applied	<input type="checkbox"/> MPE <input type="checkbox"/> SAR <input checked="" type="checkbox"/> N/A	

#### 3.2 Result

##### - Bluetooth LE

According to the procedure, KDB 447498 D01, the standalone SAR test exclusion threshold is

$$[(\text{Max. Power of channel, including tune-up tolerance, mW}) / (\text{Min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] < 3$$

$$= (0.47/5) \times \sqrt{2.480} = 0.15$$

Conclusion: The SAR test exclusion threshold is less than 3, so the device meets the RF Exposure Requirement and excluded SAR Test.

Operating Mode	Frequency (MHz)	Target Power W / tolerance	Max tune up power		Separation distance (mm)	RF exposure
		(dBm)	(dBm)	(mW)		
Bluetooth LE	2 480	-3.81 ± 0.5	-3.31	0.47	5	0.15



**- 2.4 GHz Single Transmitter**

According to the follow transmitter output power (P<sub>t</sub>) formula:

$$P_t = (E \times d)^2 / (30 \times g_t)$$

P<sub>t</sub> = transmitter output power in watts

g<sub>t</sub> = numeric gain of the transmitting antenna (unitless)

E = electric field strength in V/m

d = measurement distance in meters (m)

According to the formula described above:

$$E_{max} = 64.69 \text{ dB}\mu\text{V/m} = 0.002 \text{ V/m}, d = 3, g_t = 1$$

$$P_t = (E \times d)^2 / (30 \times g_t) = (0.002 \times 3)^2 / (30 \times 1) = 0.000 \text{ 001 W} = 0.001 \text{ mW}$$

According to the procedure, KDB 447498 D01, the standalone SAR test exclusion threshold is

$$[(\text{Max. Power of channel, including tune-up tolerance, mW}) / (\text{Min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] < 3$$

$$= (0.001/5) \times \sqrt{2.440} = 0.000 \text{ 3}$$

Conclusion: The SAR test exclusion threshold is less than 3, so the device meets the RF Exposure Requirement and excluded SAR Test.

Operating Mode	Frequency (MHz)	Power(mW)	Separation distance (mm)	RF exposure
2.4 GHz Single Transmitter	2 440	0.001	5	0.000 3