

# TEST REPORT

**Report number** : KR21-SRT0042  
**Issue date** : 2021-10-26

**Applicant** : AZLA Inc  
3F, 332, Hyoryeong-ro, Seocho-gu, Seoul,  
Republic of Korea  
TEL : +82 2-565-1954

**Equipment under test (EUT)** : RF Gaming Earphone

**Model name** : AZPG-RF2000

**Date of test** : 2021-10-13 ~ 2021-10-15

**Test place** : KCTL Inc.  
65 Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-  
do, Korea


**Test results** : PASS

The results in this report are applicable only to the equipment tested.


This report shall not be re-produced except in full without the written approval of **KCTL Inc.**

KCTL Inc. is in compliance with KS Q ISO 17025.

**Tested by;**

  
Jung won, Seo

**Approved by;**

  
Hyeon su, Jang

## 1. Summary of Test

### 1. Purpose of test

Ordinance on Technical Standards Conformity Certification of Specified Radio Equipment  
2.4GHz Band wide band low power data communication System

### 2. Standards

Certification Ordinance Article 2 Clause 1 Item19

#### 1) Test Methods

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

#### 2) Deviation from standards

None

### 3. List of applied test to the EUT

Article 88 Appendix 43	Classification of EUT	Condition	Result
3	Frequency Tolerance	Conducted	PASS
4	Occupied Bandwidth	Conducted	PASS
5	Unwanted (Spurious) Emission Strength	Conducted	PASS
6	RF Output Power Tolerance	Conducted	PASS
7	Secondary Emitted Radio Wave Strength	Conducted	PASS
8	Carrier Sensing Function	Conducted	N/A
12	Interference Prevention Function	Conducted	PASS

#### 1) Test set up

Table-Top

#### 2) Modification to the EUT by laboratory

None

## 1. Test Information

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1. Applicant

AZLA Inc

3F, 332, Hyoryeong-ro, Seocho-gu, Seoul, Republic of Korea

2. Equipment under test

RF Gaming Earphone

3. Model number

AZPG-RF2000

4. Serial number

NA

5. Size

(W) 192 mm x (D) 166 mm x (H) 27.5 mm

6. Terminal limitation

-20°C to 50°C

7. RF Specification Frequency range

2404-2460MHz

8. Number of RF Channels

15 Channels

9. Modulation method

shaped-8FSK

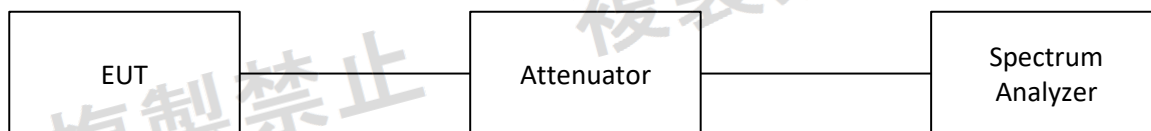
11. Variation of the family model(s)

AZPG-RF2000W, AZPG-RF2000B, AZPG-RF2000R

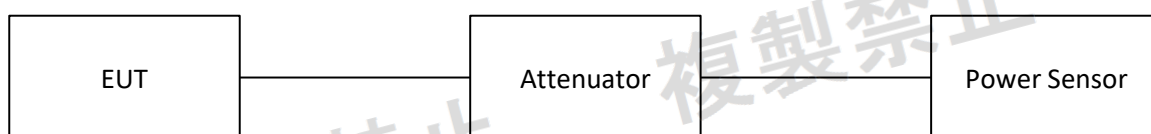
## 2. Configuration of equipment

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1. Frequency tolerance, Occupied Bandwidth, Interference Prevention Function  
Unwanted(Spurious) emission strength, Secondary emitted radio wave strength



2. RF output power tolerance



### 3. Test results (Rated voltage)

S/N : N/A

Environment of test room	Date of test	2021-10-13	2021-10-14	2021-10-15
	Temperature	24 °C	24 °C	24 °C
	Humidity	53 %	51 %	52 %

Peak Antenna Gain	3.73	dBi
Declaration Output Power	2.00	mW
Declaration Output Power	3.01	dBm
<b>E.I.R.P.</b>	<b>6.74</b>	<b>dBm</b>
Input Power Voltage	3.70	VDC

Tested Circuit Insertion Loss	0	dB
Frequency equal to the Transmission rate	-	MHz
Transmission Time	ON TIME (1sec or less)	1.00 ms
	OFF TIME (0.1sec or more)	0.00 ms
	Ratio	1.00
Packet Type (Mode)	Not Applicable	mode
Transmit Speed	Not Applicable	MHz

Using TDF and offset function in Spectrum Analyzer.  
Measurement of plots are included Loss value.

(Att : 10dB + Cable loss + EUT cable: 0.5dB offset )

Test category :	2.4GHz Band Low-Power Data Communication System (shaped-8FSK/1-15ch)
The reason why the tests are performed only at rated voltage :	The fluctuation of input voltage to the circuit of the radio part of the equipment to be tested is identified as being less than $\pm 1$ % when input voltage from an external supply into the equipment fluctuates $\pm 10$ %.

Measurement Frequency		MHz	2404	2432	2460	Result	Limit	Note
Channel Number		Ch.	1	8	15	---	---	
Frequency Measurements		MHz	2404.048	2432.048	2460.049	---	---	
Frequency Tolerance		ppm	19.831	19.874	19.863	PASS	±50×10 <sup>-6</sup> (50ppm)	
Occupied Bandwidth		MHz	3.876	3.876	3.828	PASS	26MHz or below	
RF Output Power		mW	1.758	1.770	1.377	PASS	10mW/MHz or below	
RF Output Power Tolerance		%	-12.104	-11.495	-31.140		+20 to -80%	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.032	0.026	0.022	PASS	2.5uW/MHz or below	
		MHz	2355.200	2383.500	885.900	----		
	2387 to 2400MHz	uW/MHz	0.377	0.014	0.015	PASS	25uW/MHz or below	
		MHz	2399.994	2396.188	2396.942	----		
	2483.5 to 2496.5MHz	uW/MHz	0.014	0.014	0.015	PASS	25uW/MHz or below	
		MHz	2490.883	2488.779	2486.364	----		
	2496.5 to 12750MHz	uW/MHz	0.020	0.023	0.023	PASS	2.5uW/MHz or below	
		MHz	11741.500	11966.500	7787.500	----		
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.026	0.026	0.030	PASS	4nW or below	
		MHz	889.050	889.050	888.080	----		
	1000 to 10000MHz	nW	0.183	0.216	0.705	PASS	20nW or below	
		MHz	7603.900	7873.600	2407.100	----		
	10000 to 12750MHz	nW	0.256	0.242	0.227	PASS	20nW or below	
		MHz	12550.800	12542.600	12490.400	----		
Interference Prevention Function			Good			PASS		
Transmitting antenna absolute gain			-			----	*1	
Angular width of the main radiation of the transmitting antenna			-			----	*1	

\*1 Measurement only if the E.I.R.P. exceeds 12.14dBm/MHz



## 4. Measurement equipment list

USE	Equipment	Company	Model No.	Serial No.	Calibrated by	Cal. Method	Cal. Due	Cal. Date
X	Spectrum Analyzer	R&S	FSW50	101013	HCT	ハ(c)	2022-07-09	2021-07-09
X	DC Power Supply	AGILENT	E3632A	MY51220373	HCT	ハ(c)	2022-07-27	2021-07-27
X	Attenuator	API Inmet	40AH2W-10	15	HCT	ハ(c)	2022-05-11	2021-05-11
X	Power Sensor	R&S	NRP-Z81	1137.9009.02-106223-bb	HCT	ハ(c)	2022-05-11	2021-05-11
X	Signal Generator	R&S	SMB100A	176206	HCT	ハ(c)	2022-01-20	2021-01-20
X	Attenuator	R&S	DNF Dämpfungsglied 10 dB in N=50 Ohm	31212	HCT	ハ(c)	2022-05-11	2021-05-11

Note1: "X" は使用した測定機器です。  
"X" used equipment.

Note2: 較正期限は、較正を行った日の翌月から起算して1年以内です。  
The validity of measurement equipment is one year from the first day of the following month of the calibration date.

Note3: 較正  
方法 ...  
Cal.Method

イ) : 国立研究開発法人情報通信研究機構（NICT）（以下「機構」という。）又は第百二条の十八第一項の指定較正機関（TELEC, インターテックジャパン、キーサイト）が行う較正

a) : Calibration conducted by the National Institute of Information and Communications Technology ~ NICT ~ or a designated calibration agency under Article 102-18 paragraph (1) ~ TELECOM Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc. ~.

ロ) : 計量法（平成四年法律第五十一号）第百三十五条又は第百四十四条の規定に基づく校正（JCSS校正）

b) : Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992) ~ Japan Calibration Service System ~

ハ) : 外国において行う較正であつて、機構又は第百二条の十八第一項の指定較正機関（TELEC, インターテックジャパン、キーサイト）が行う較正に相当するもの

c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1) ~ TELECOM Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc. ~.

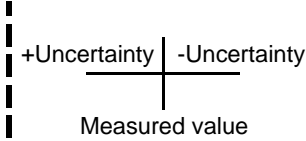

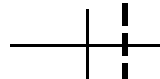

ニ) : イからハまでのいずれかに掲げる較正等を受けたものを用いて行う較正等

d) : Calibration conducted by using other equipment that listed above from a) to c)

## 5. Uncertainty

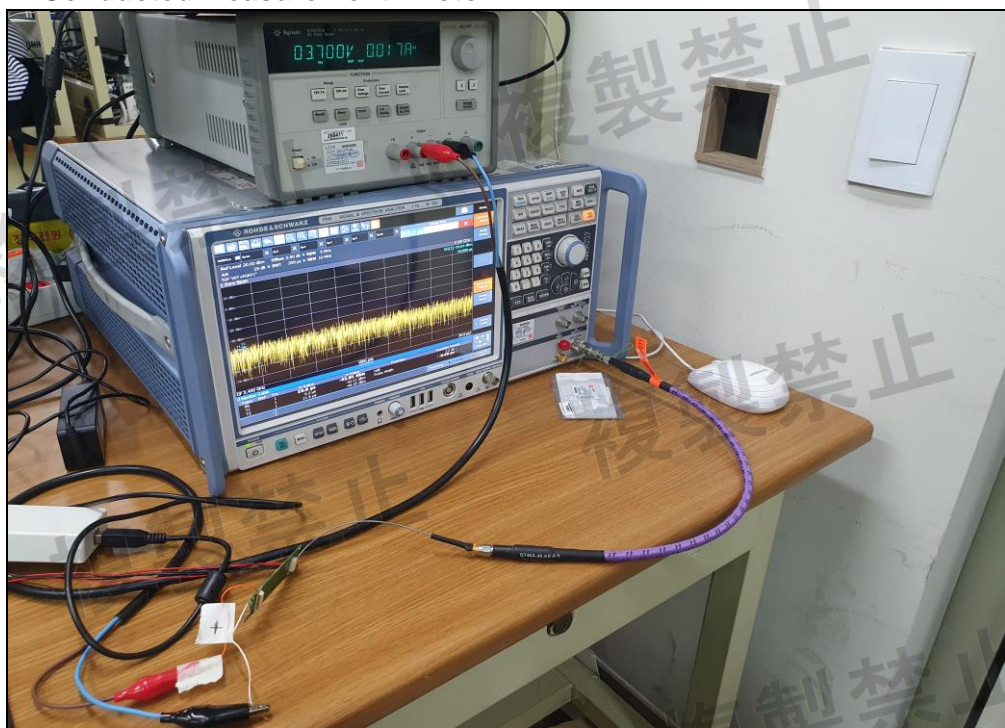
About uncertainty of measured value

Parameter	Uncertainty
Total RF power conducted	$\pm 0.9$ dB
Spurious emissions conducted	$\pm 1.6$ dB
Temperature	$\pm 1.0$ °C
Humidity	$\pm 4.8$ %

Judge	Measured value and standard limit value	
PASS	<b>Case1</b>  Even if it takes uncertainty into consideration, a standard limit value is fulfilled.	
	<b>Case2</b>  Although measured value is in a standard limit value, a limit value won't be fulfilled if uncertainty is taken into consideration.	
FAIL	<b>Case3</b>  Although measured value exceeds a standard limit value, a limit value will be fulfilled if uncertainty is taken into consideration.	
	<b>Case4</b>  Even if it takes uncertainty into consideration, a standard limit value isn't fulfilled.	

## 6. Photographs

Conducted Measurement Photo





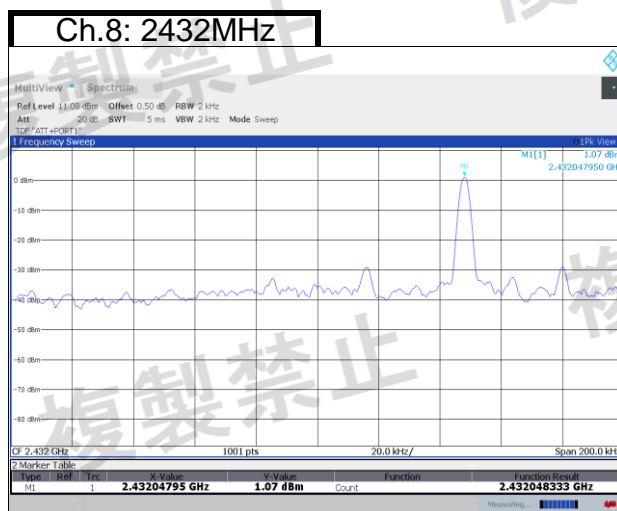
## 7. Test chart

### 7.1 Frequency tolerance (Rated voltage)

Ch.1: 2404MHz



Ch.8: 2432MHz



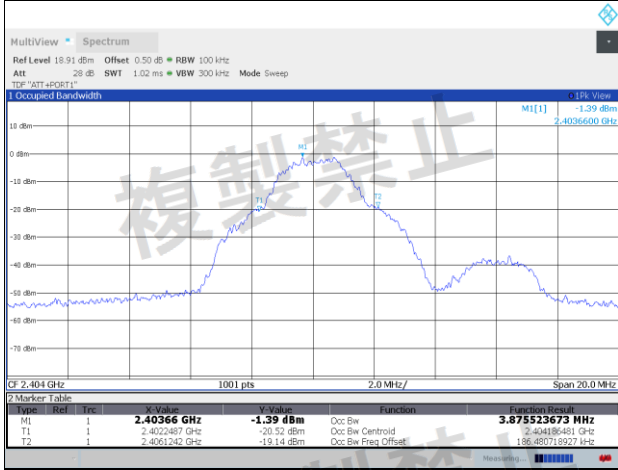
Ch.15: 2460MHz



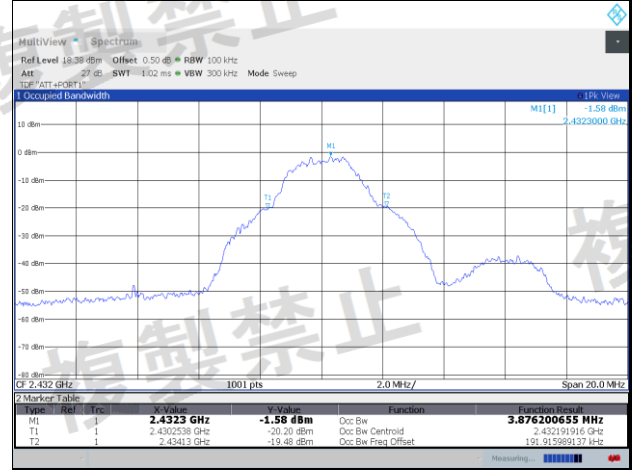
## 7. Test chart

### 7.2 Occupied bandwidth / Spread bandwidth (Rated voltage)

Ch.1: 2404MHz



Ch.8: 2432MHz



Ch.15: 2460MHz

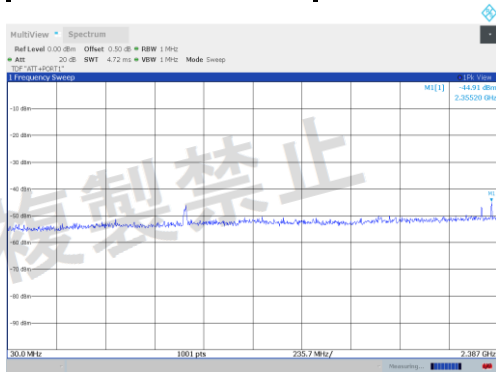


## 7. Test chart

### 7.3 Unwanted(Spurious) emission strength (Rated voltage)

Ch.1: 2404MHz

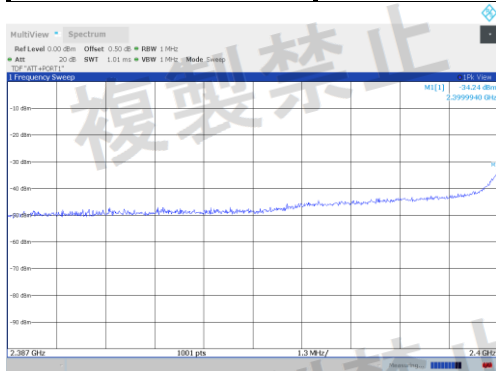
30-2387MHz



30-2387MHz(Detail)



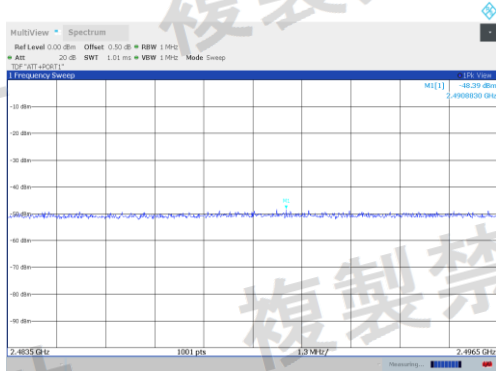
2387-2400MHz



2387-2400MHz(Detail)



2483.5-2496.5MHz



2483.5-2496.5MHz(Detail)

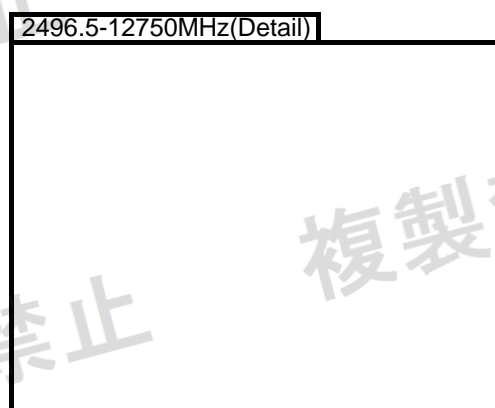
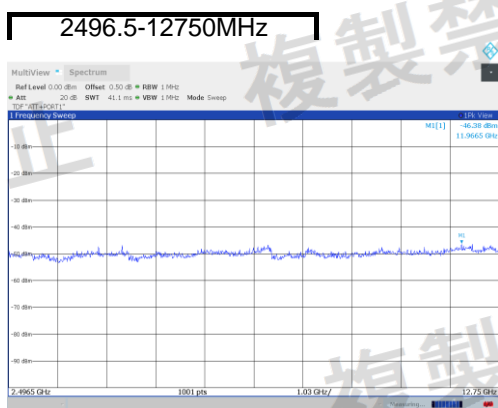
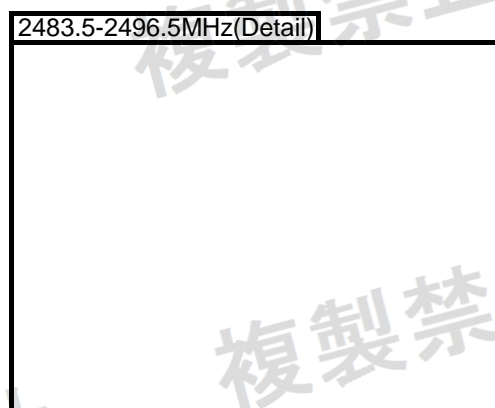
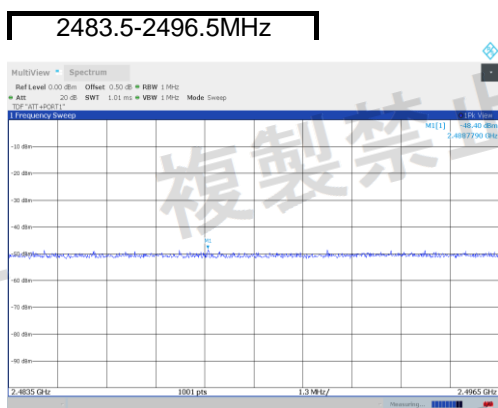
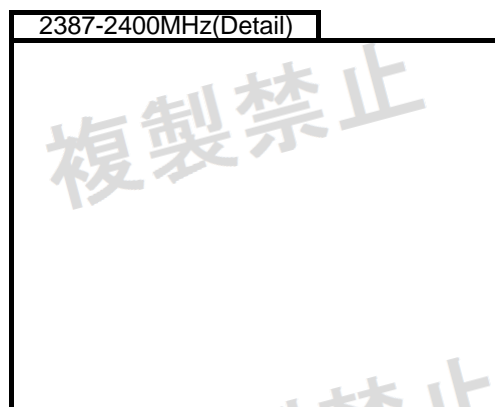
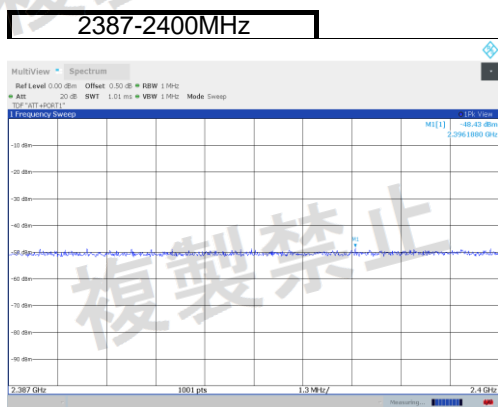
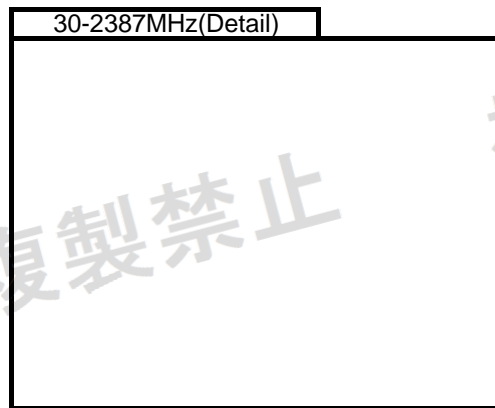
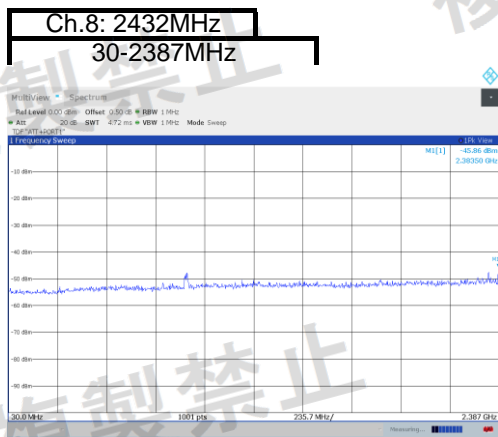


2496.5-12750MHz

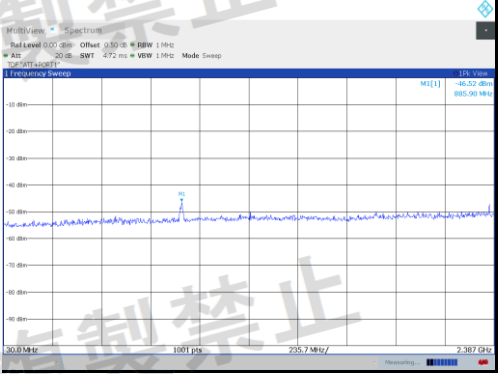


2496.5-12750MHz(Detail)





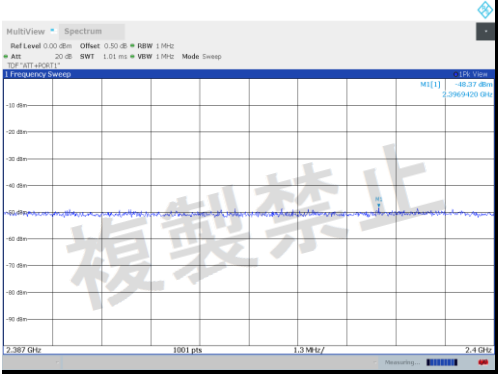
Ch.15: 2460MHz  
30-2387MHz



30-2387MHz(Detail)



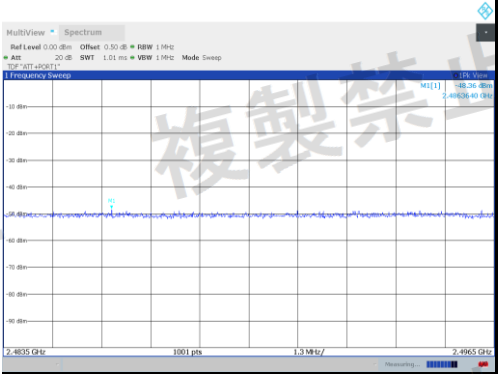
2387-2400MHz



2387-2400MHz(Detail)



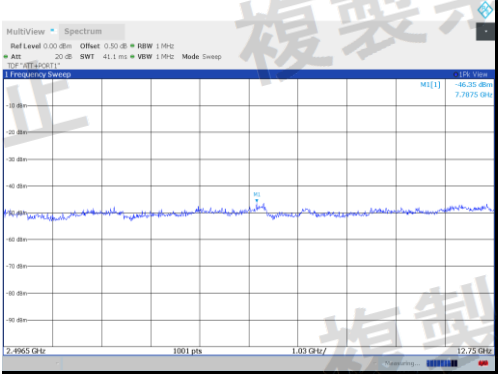
2483.5-2496.5MHz



2483.5-2496.5MHz(Detail)



2496.5-12750MHz

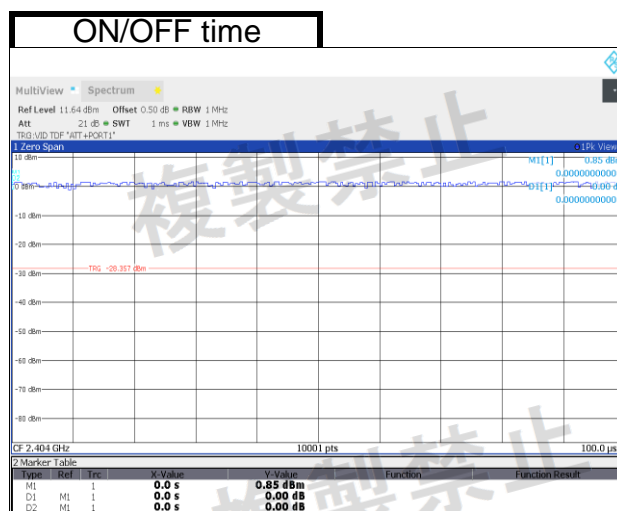
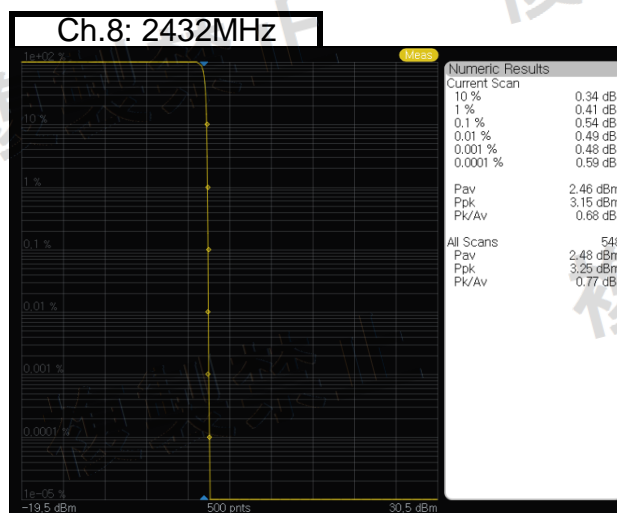


2496.5-12750MHz(Detail)



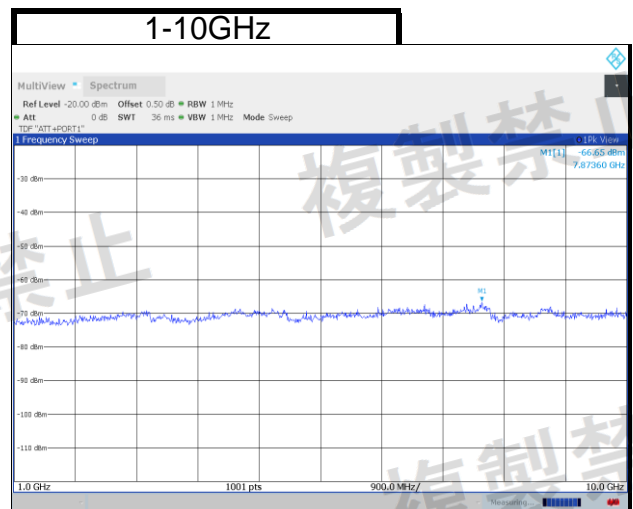
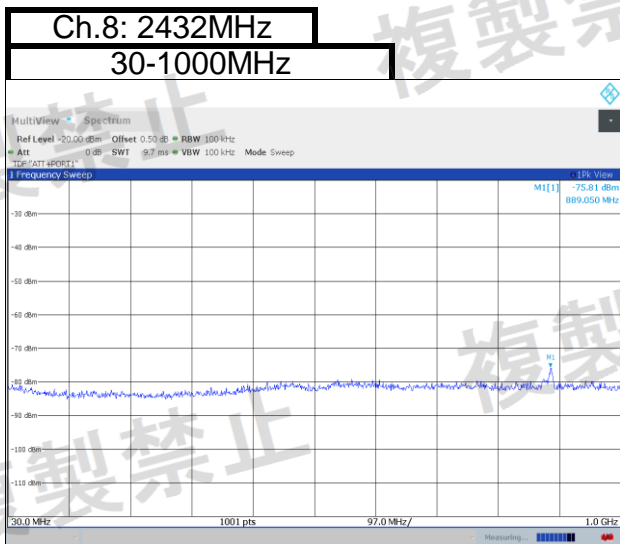
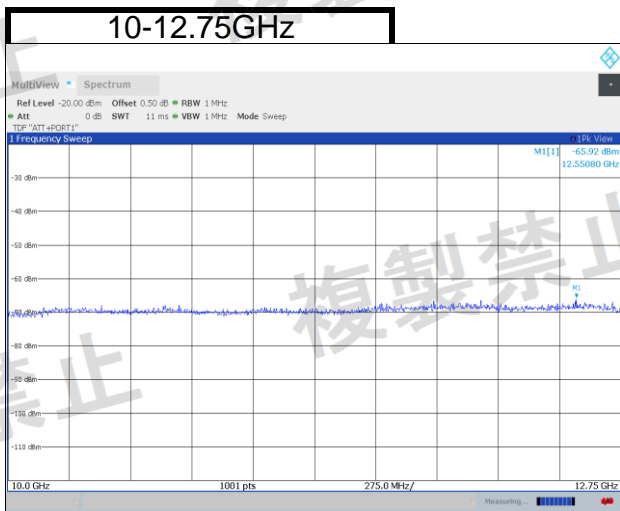
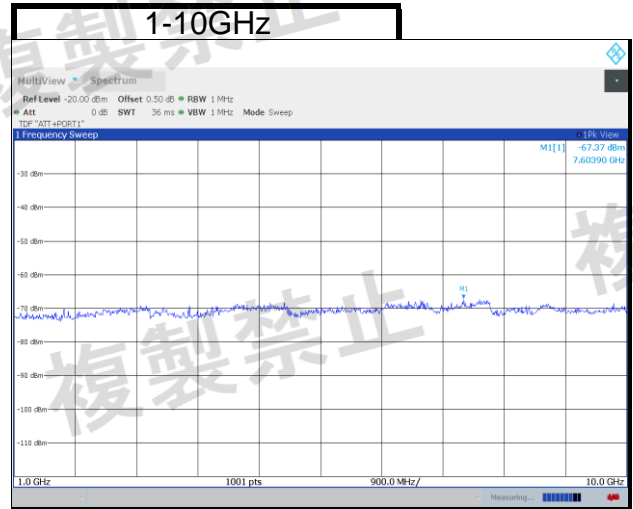
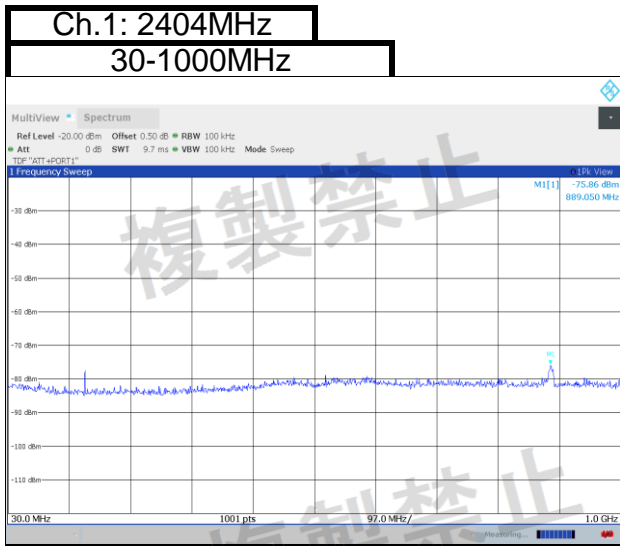


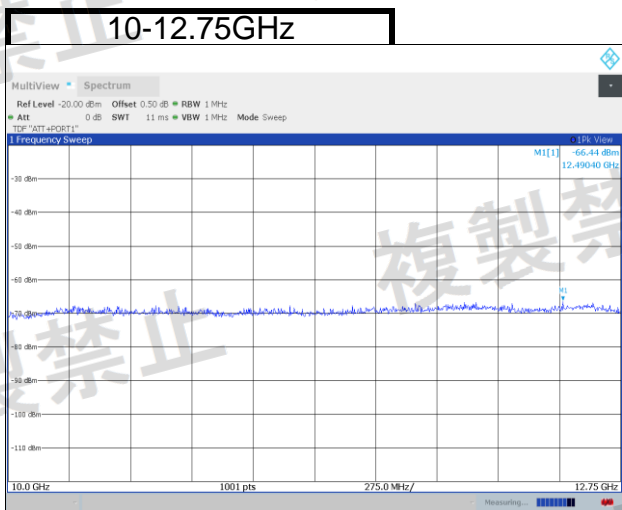
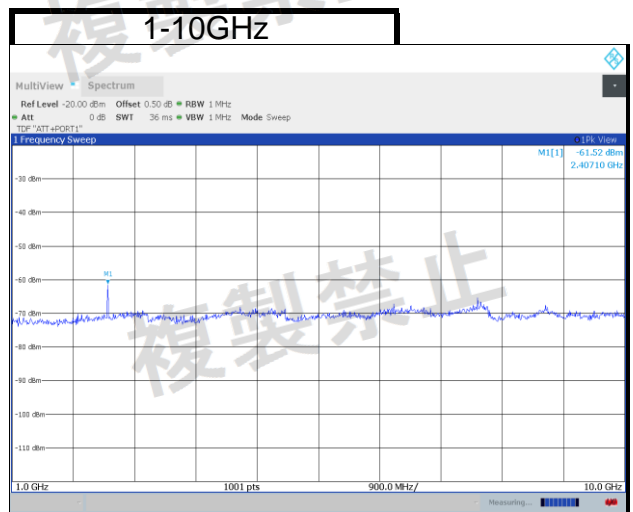
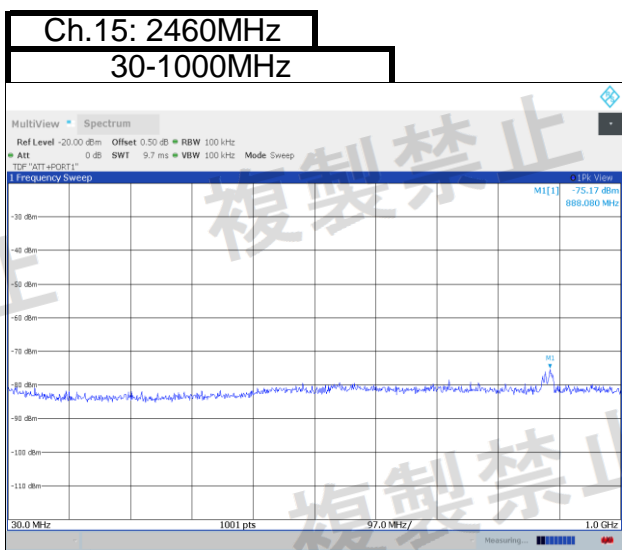
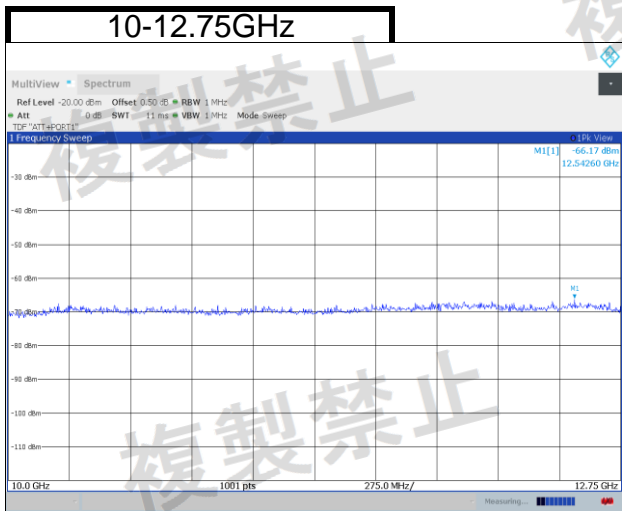
#### 7.4 RF output power tolerance (Rated voltage)



## 7. Test chart

### 7.5 Secondary emitted radio wave strength (Rated voltage)





## 8. Laboratory description

### 1. Location

Name: KCTL Inc.

65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea

Telephone Number: +82 31 285 0894

Facsimile Number: +82 505 299 8311

### 2. Accreditation and Registration

#### 1) FCC

Site Designation No.: KR0040

Site Registration No.: 687132

#### 2) VCCI

Registration No.: R-20080, G-20078, C-20059, T-20056

#### 3) Industry Canada

Registration No.: 8035A

Test Site	OATS 3m	OATS 10m	OATS 30m	Chamber 3m	Chamber 10m	Expiry Date
8035A	No	No	No	Yes	Yes	2022-02-25

#### 4) KOLAS

Registration number	Expiration date
KT231	2024-09-13