

# TEST REPORT

**Report number: DRTTEC1803-0027(1)****Issue Date: Apr 10, 2018**

Applicant	:	POINT MOBILE CO.,LTD B-9F Kabul Great Valley, 32, Digital-ro 9-gil, Geumcheon-gu, Seoul, Korea, 08512
Equipment under test	:	MOBILE COMPUTER
Model Name	:	PM550
Date of Test	:	2018-02-12 ~ 2018-02-28
Test Place	:	DT&C Co., Ltd. 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935
Test Results	:	PASS (Refer to attachment)

The results in this reports are applicable only to the samples tested.

This report shall not be re-produced except in full without the written approval of DT&C Co., Ltd.

**Test Engineer;**

HyunYong Seol

**Approval Person;**

GeunKi Son

## **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
1	Voltage fluctuation	Conducted	PASS
3	Frequency Tolerance	Conducted	PASS
4	Occupied Bandwidth	Conducted	PASS
4	Spread 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 (1)	Conducted	N/A
9	Carrier Sensing Function (2)	Conducted	N/A
10	Absolute Gain of Transmission Antenna	Conducted	N/A
11	Angle Width of Principal Radiation from Transmission Antenna	Conducted	N/A
12	Interference Prevention Function	Conducted	PASS
13	Hopping frequency dwell time	Conducted	PASS

#### 1) Test set up

Table-Top

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

None

## **2. Test Information**

1. Applicant

POINT MOBILE CO.,LTD

B-9F Kabul Great Valley, 32, Digital-ro 9-gil,  
Geumcheon-gu, Seoul, Korea, 08512

2. Equipment under test

MOBILE COMPUTER

3. Model number

PM550

4. Serial number

Identical prototype

5. Size

(W) 79.05 × (D) 175.0 × (H) 204.6 mm

6. Terminal limitation

-20°C to 50°C

7. RF Specification Frequency range

2402-2480MHz

8. Number of RF Channels

40 Channels

9. Modulation method

Method of GFSK

(Frequency equal to the transmission rate of the modulation signal: 1MHz)

10. Data rate

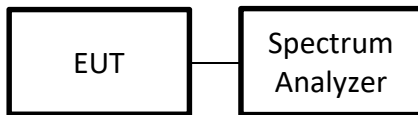
1Mbps(GFSK)

10. Variation of the family model(s)

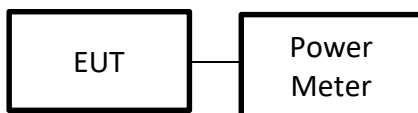
XG200

### **3. Configuration of equipment**

1. Frequency tolerance, RF output power tolerance, Spread bandwidth,  
Unwanted(Spurious) emission strength, Secondary emitted radio wave strength



2. RF output power tolerance



## 4. Test Result

Environment of Test Room	Test Date	2018-02-12 ~ 2018-02-28
	Temperature	25 ~ 26 °C
	Humidity	48 ~ 51 %

Peak Antenna Gain	3.207	dBi
Declaration Output Power	1	mW
Declaration Output Power	0.0000	dBm
<b>E.I.R.P.</b>	<b>3.2070</b>	<b>dBm</b>
Input Power Voltage	3.63	VDC

Tested Circuit Insertion Loss		0	dB
Frequency equal to the Transmission rate		-	MHz
Transmission Time	ON TIME (1sec or less)	0.390	ms
	OFF TIME (0.1sec or more)	0.624	ms
	Ratio	38%	%
Packet Type (Mode)		Not Applicable	mode
Transmit Speed		Not Applicable	MHz

Test Category ;	2.4GHz Band Wideband Low-Power Data Communication System Bluetooth_GFSK(BLE)
The reason why the tests are performed only at rated voltage :	When the input voltage to receiver RF circuit varies below $\pm 1\%$ as the input voltage from the external power supply to the receiver varies $\pm 10\%$ (excluding power supply).

### 1) DC 3.7V(Normal Voltage)

Measurement Frequency	MHz	2402	2440	2480	Result	Limit	Note
Channel Number	Ch.	0	19	39	---	---	
Reading Frequency	MHz	2401.957550	2439.957325	2479.957325	---	---	
Frequency Tolerance	ppm	-17.67277	-17.48975	-17.20766	PASS	$\pm 50 \times 10^{-6}$ (50ppm)	
Occupied Bandwidth	MHz	1.2835	1.2821	1.2832	PASS	26MHz or below	
Spread Bandwidth	MHz	-	-	-	N/A	500kHz or more	
RF Output Power	mW	0.706274	0.774414	0.671388	PASS	10mW	
RF Output Power Tolerance	%	-29.372579	-22.558573	-32.861235	PASS	+20 to -80%	
Tx Spurious Emission Strength	30 to 2387MHz	uW	0.018772	0.019289	0.020730	PASS	2.5uW or below
		MHz	2170.2	2304.5	2351.6	----	
	2387 to 2400MHz	uW	0.539511	0.011215	0.013059	PASS	25uW or below
		MHz	2399.974	2388.508	2399.298	----	
	2483.5 to 2496.5MHz	uW	0.012198	0.012668	0.026182	PASS	25uW or below
		MHz	2492.873	2494.992	2483.877	----	
	2496.5 to 12500MHz	uW	0.046089	0.042364	0.042482	PASS	2.5uW or below
		MHz	6618	12040	12010	----	
Rx Spurious Emission Strength	30 to 1000MHz	nW	0.004631	0.005266	0.004940	PASS	4nW or below
		MHz	905.95	922.78	221.86	----	
	1000 to 5000MHz	nW	0.098787	0.091854	0.100809	PASS	20nW or below
		MHz	4736	4788	4884	----	
	5000 to 12500MHz	nW	0.138835	0.157797	0.157580	PASS	20nW or below
		MHz	11990.0	7190.0	11922.5	----	
Interference Prevention Function	----	Good	Good	Good	PASS		

## 5. List of Measuring Instruments

[illegible]

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


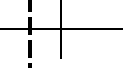

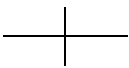
c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)~ Telecom Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc~.

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)

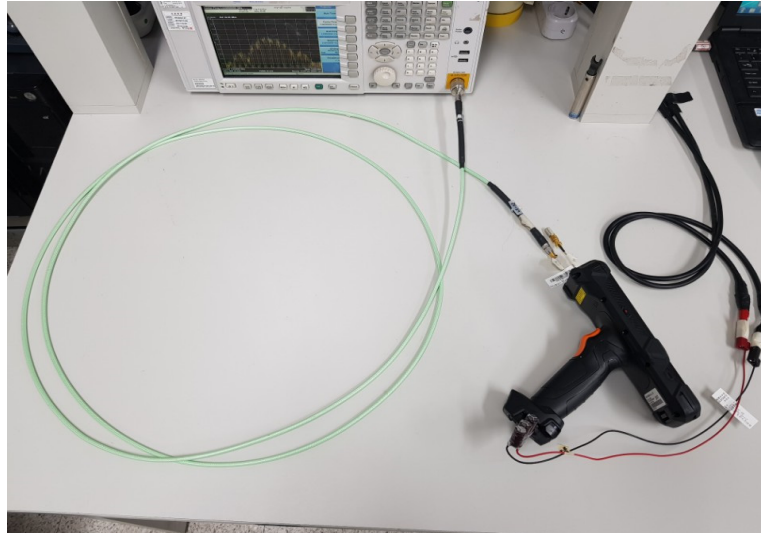
## 6. Uncertainty

Parameter	Uncertainty
Total RF power conducted	0.70dB
Spurious emissions conducted	1.00dB
Temperature	0.4℃
Humidity	2%

判定	測定データにおける不確かさの判断とその範囲	
適合	例 A  <p>測定結果と不確かさは与えられた限度値内に入っています。 これを『適合』と呼びます。</p>	
	例 B  <p>完全には、限度値内でも限度値外でもありません。 この場合の適合性については、確実な結論を出すことは出来ません。</p>	
不適合	例 C  <p>完全には、限度値内でも限度値外でもありません。 この場合の適合性については、確実な結論を出すことは出来ません。</p>	
	例 D  <p>測定結果も不確かさも与えられた限度値内に入っていません。 これは『不適合』と呼びます。</p>	

## **7. Configuration Photographs**

**Conducted Measurement Photo(1)**



**Conducted Measurement Photo(2)**





## 8. Trece Data

### 8.1 Frequency Tolerance

Ch.0: 2402MHz



Ch.19: 2440MHz



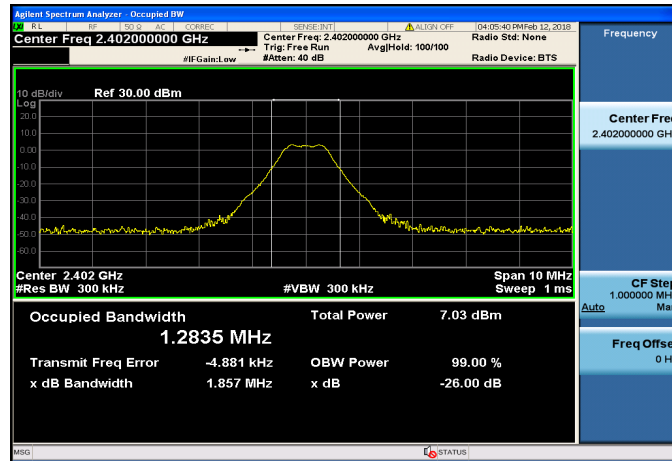
Ch.39: 2480MHz



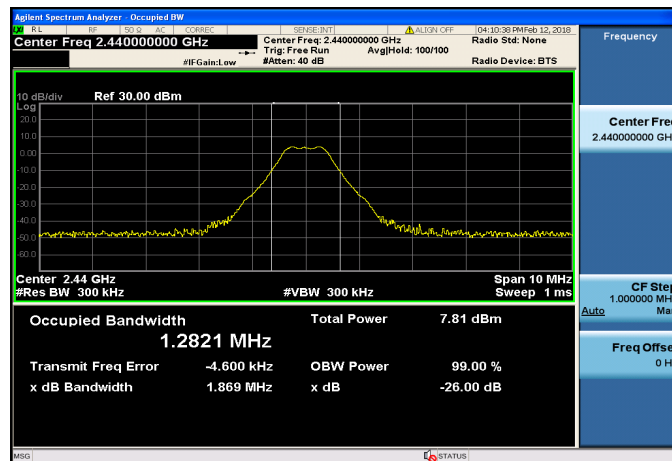
## 8.2 Occupied and Spread Bandwidth

Ch.0: 2402MHz

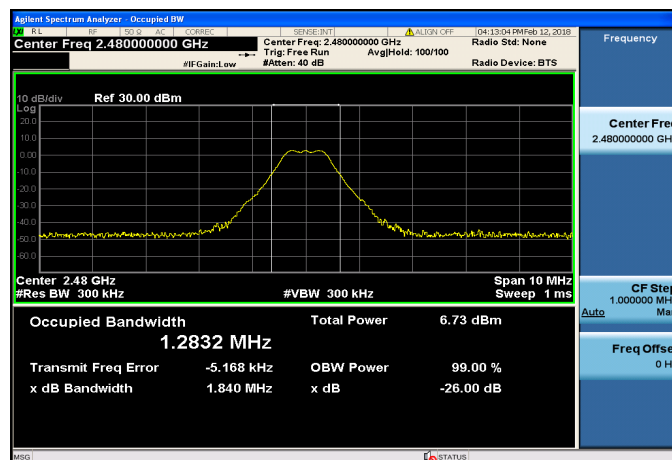
Occupied Bandwidth



Ch.19: 2440MHz

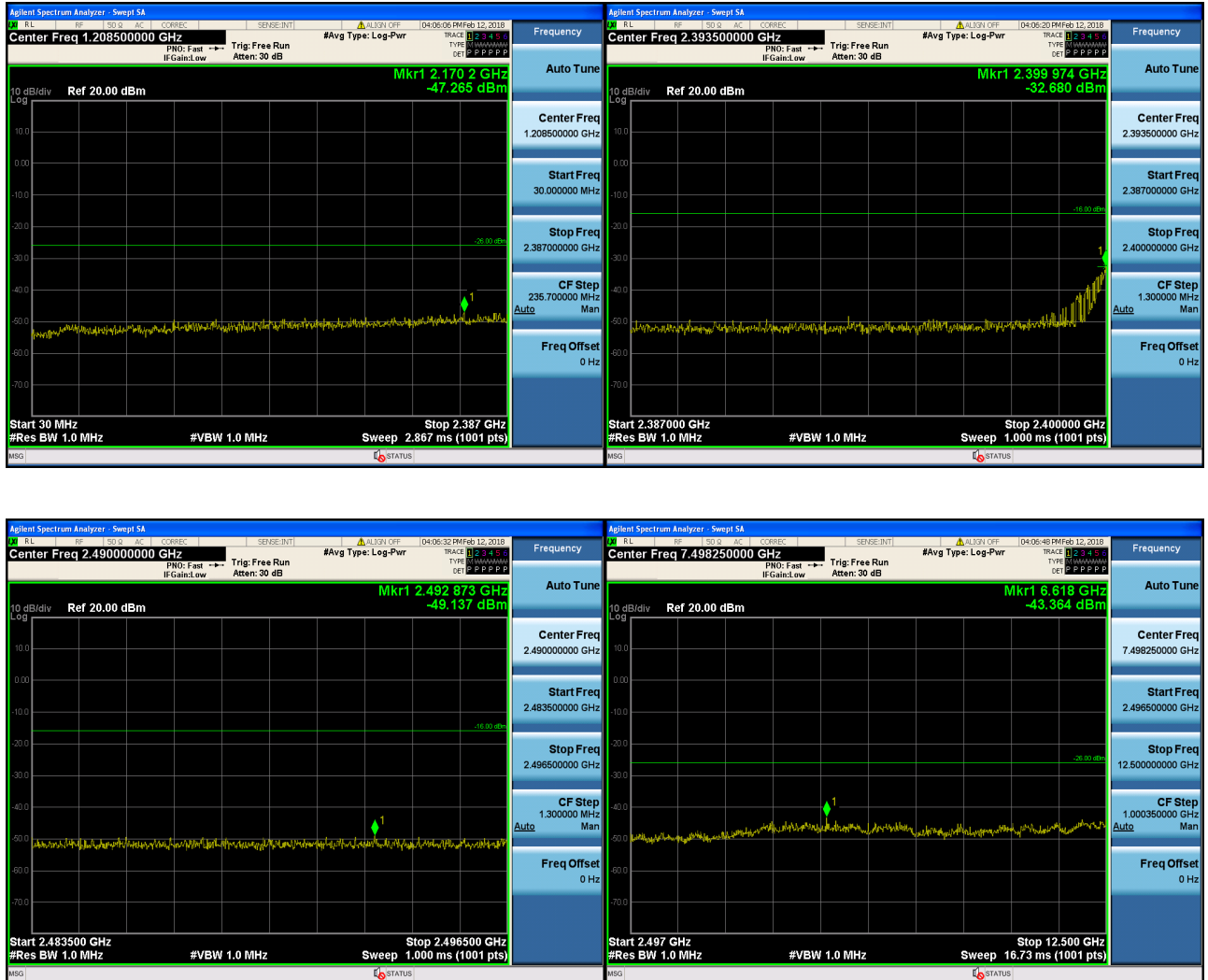


Ch.39: 2480MHz



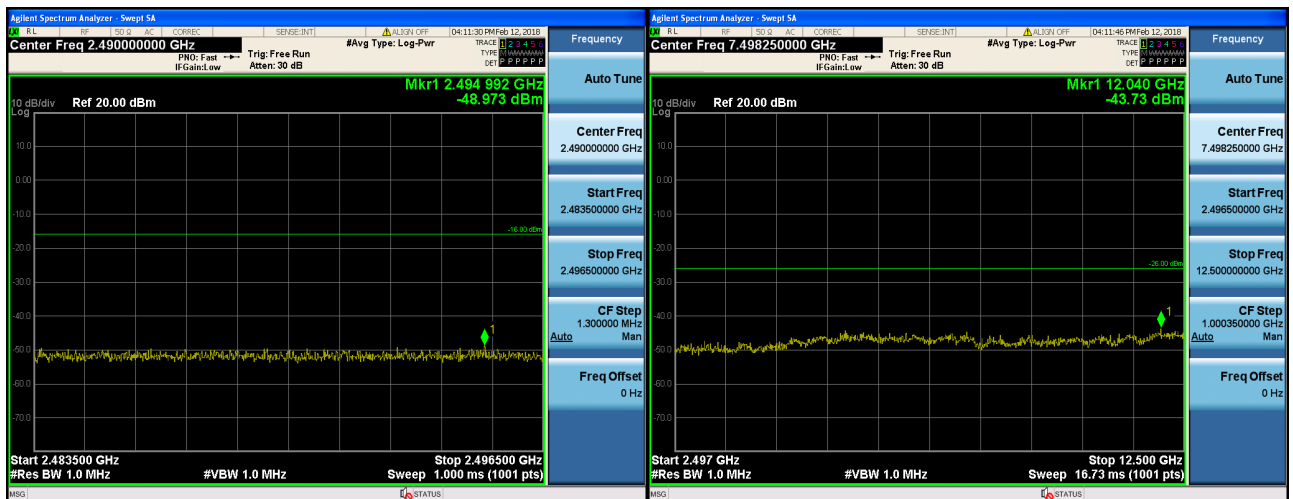
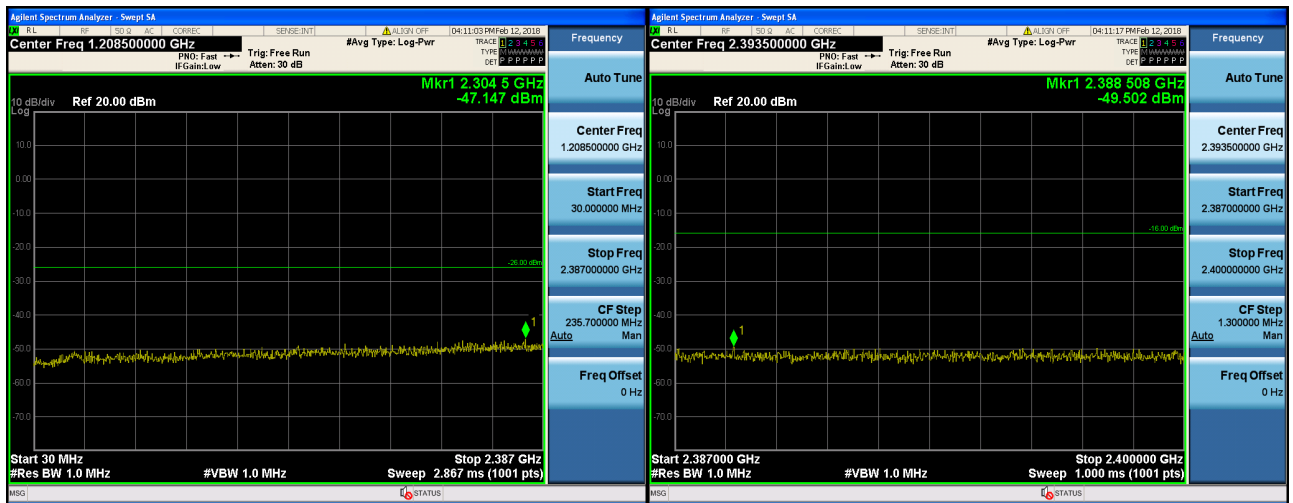
### 8.3 Tx Spurious Emission Strength

Ch.0: 2402MHz



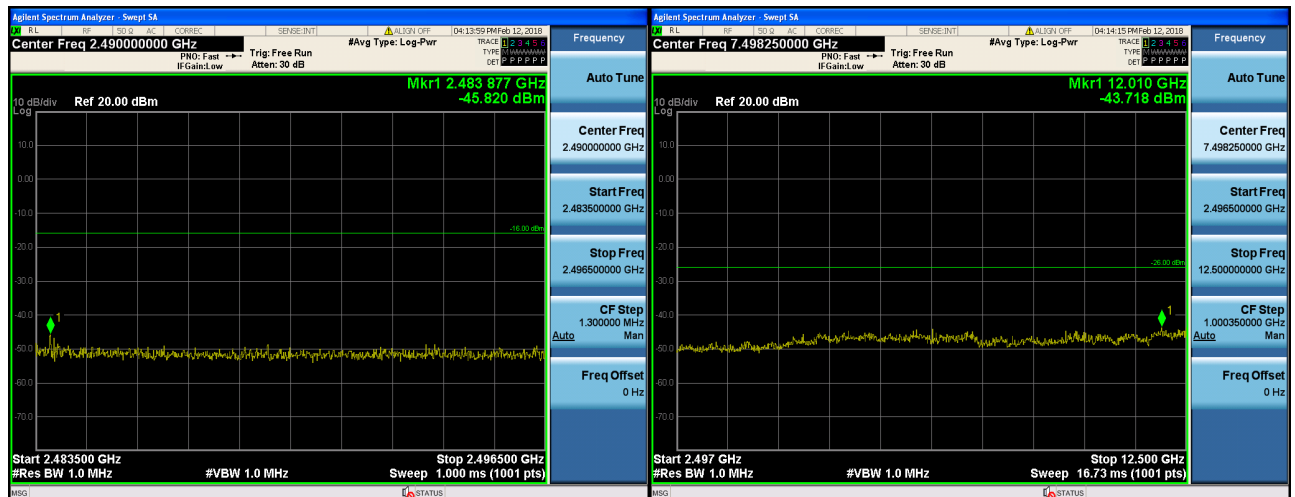
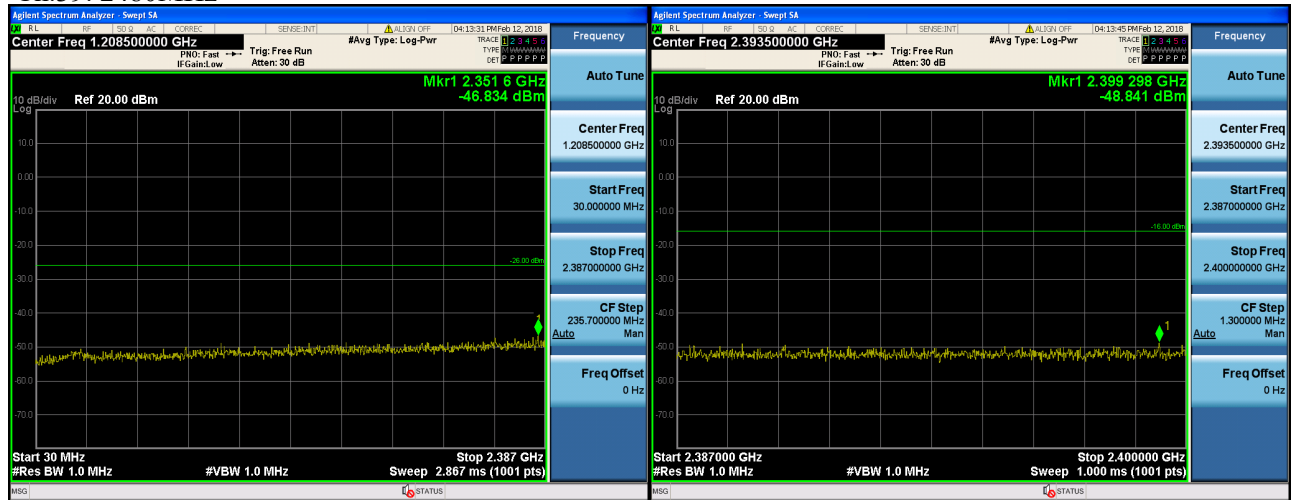
### 5.3 Tx Spurious Emission Strength(2)

#### Ch.19: 2440MHz



### 5.3 Tx Spurious Emission Strength(3)

Ch.39: 2480MHz

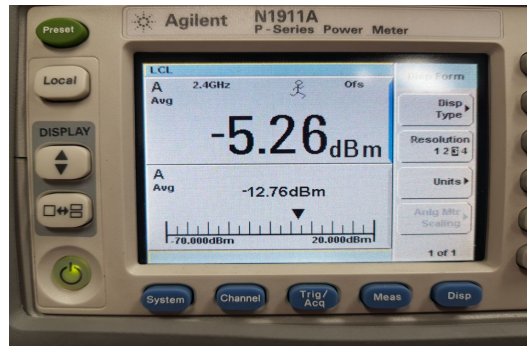


### 8.4 RF Output Power

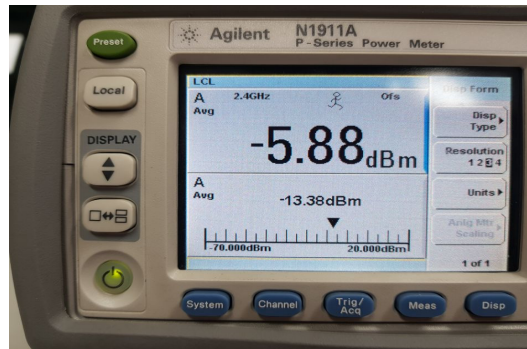
Ch.0: 2402MHz



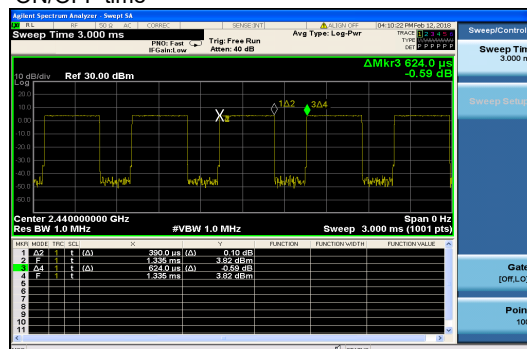
Ch.19: 2440MHz



Ch.39: 2480MHz



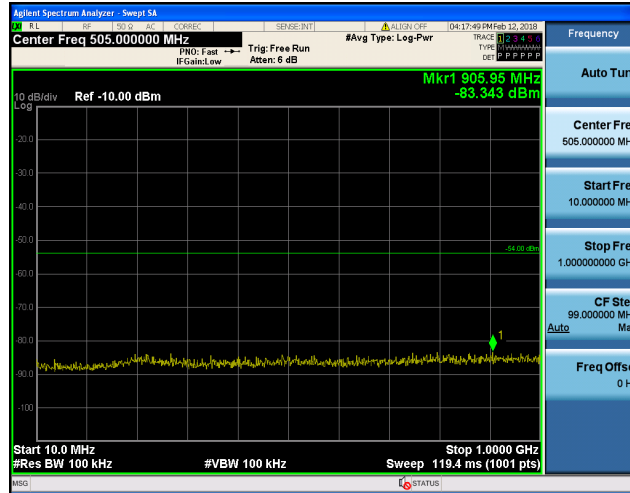
ON/OFF time



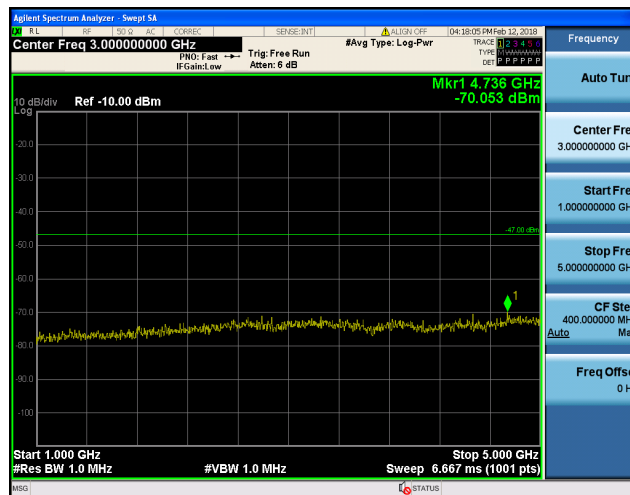
## 8.5 Rx Spurious Emission Strength

Ch.0: 2402MHz

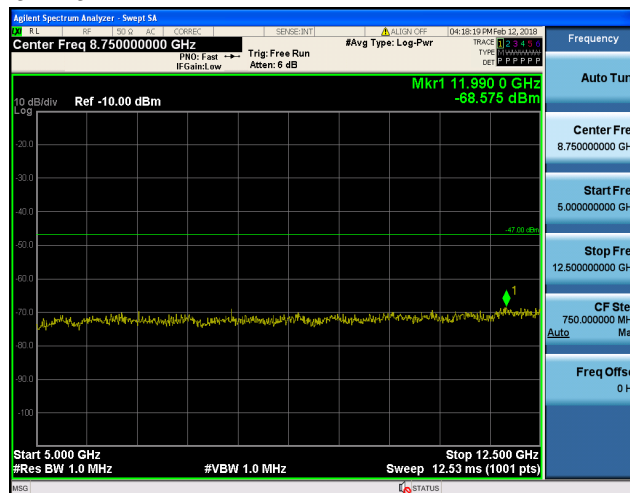
30MHz-1GHz



1-5GHz



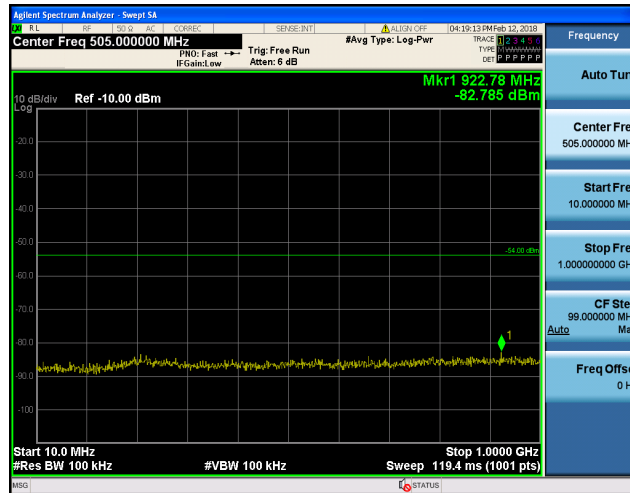
5-12.5GHz



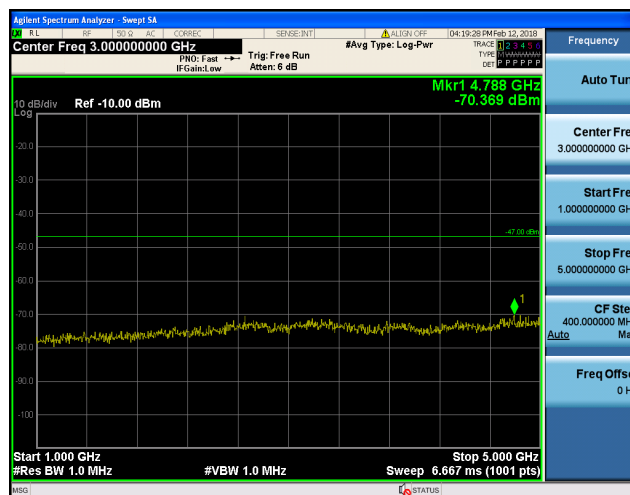
## 5.5 Rx Spurious Emission Strength(2)

Ch.19: 2440MHz

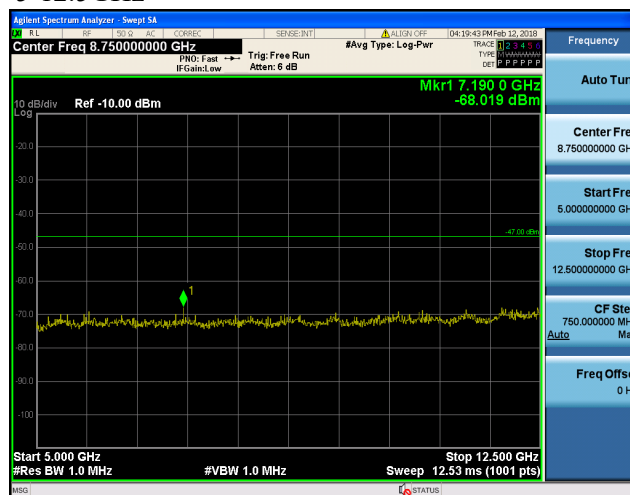
30MHz-1GHz



1-5GHz



5-12.5GHz

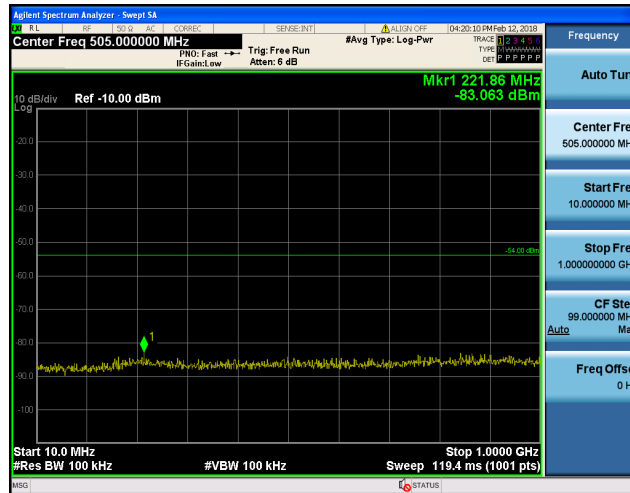




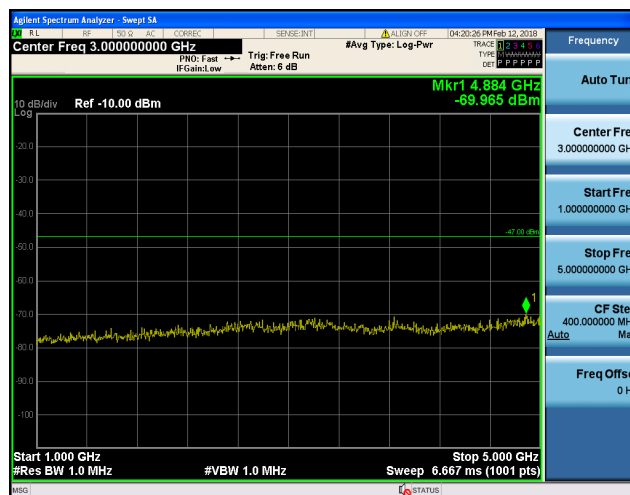
### 5.5 Rx Spurious Emission Strength(3)

Ch.39: 2480MHz

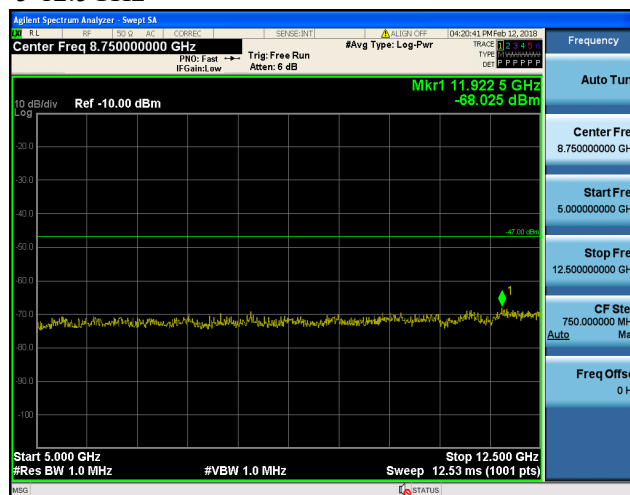
30MHz-1GHz



1-5GHz



5-12.5GHz



## **9. Laboratory description**

### 1. Location

Name: DT&C Co., Ltd.

Address: 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935s

Fax: +81-031-321-2855

### 2. Accreditation and Registration

#### 1) VLAC

Accreditation No.: N/A

#### 2) NVLAP

LAB CODE: N/A

#### 3) BSMI

Laboratory Code: N/A

#### 4) Industry Canada

Site number	Facility	Expiration date
5740A-4	DT&C Co., Ltd.	2020-10-16
-	-	-
-	-	-

#### 5) VCCI Council

Registration number	Expiration date
-	-

#### 6) KOLAS

Registration number	Expiration date
KT393	2021-01-13