TEST REPORT

Report number: DRTTEC1803-0020(2)

Issue Date: Apr 18, 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	Absoluto 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	N/A

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 60˚C

7. RF Specification Frequency range

2412-2472MHz

8. Number of RF Channels

13 Channels

9. Modulation method & Data rate

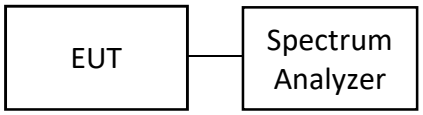
Direct Sequence Spread Spectrum
(1Mbps: DBPSK, 2Mbps: DQPSK, 5.5/11Mbps: CCK)
Freauency equal to the transmission rate of the modulation siginal
1MHz(case of 1/2Mbps) 1,375MHz(case of 5.5/11Mbps)
Orthogonal Frequency Division Multiplexing
(6/9Mbps: OFDM-BPSK, 12/18Mbps: QPSK, 24/36Mbps: 16QAM, 48/54Mbps: 64QAM
The number of sub carrier: 52(A pilot is in sub carrier of these)
HT20: Orthogonal Frequency Division Multiplexing
(Up to 72.2Mbps)

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



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	1.5	mW/MHz
Declaration Output Power	1.7609	dBm/MHz
E.I.R.P.	**4.9679**	**dBm/MHz**
Input Power Voltage	3.63	VDC

Tested Circit Insertion Loss		0	dB
Frequency equal to the Transmission rate		1.375	MHz
Transmission Time	ON TIME	1.272	ms
	OFF TIME	0.198	ms
	Ratio	87%	%
Packet Type (Mode)		Not Applicable	mode
Transmit Speed		Not Applicable	MHz

Test Category； Radio Equipment of Specified Low-Power Radio Station for IEEE802.11n(HT20)

The reason why the tests are performed only at rated voltage:
When the input voltage to receiver RF circuit varies below ± 1% as the input voltage from the external power supply to the receiver varies ± 10% (excluding power supply).

Measurement Frequency		MHz	2412	2442	2472	Result	Limit	Note
Channel Number		Ch.	1	7	13	---	---	
Reading Frequency		MHz	2412.046875	2442.013125	2471.895630	---	---	
Frequency Tolerance		ppm	19.43408	5.37469	-42.22087	**PASS**	$\pm 50 \times 10^{-6}$(50ppm)	
Occupied Bandwidth		MHz	18.057	18.002	18.191	**PASS**	26MHz or below	
Spread Bandwidth		MHz					500kHz or more	
RF Output Power		mW/MHz	1.013515	0.886809	1.098576	**PASS**	10mW/MHz or below	
RF Output Power Tolerance		%	-32.432327	-40.879382	-26.761580	**PASS**	+20 to -80%	
Tx Spurious Emission Strength	30 to 2387MHz	uW/MHz	0.021878	0.012078	0.005508	**PASS**	2.5uW/MHz or below	
		MHz	2384.6	2384.6	2384.6	-----		
	2387 to 2400MHz	uW/MHz	6.243096	0.063125	0.025954	**PASS**	25uW/MHz or below	(Ch1)RBW, VBW: 30kHz
		MHz	2399.792	2390.224	2399.844	-----		+15.23dB
	2483.5 to 2496.5MHz	uW/MHz	0.018134	0.043561	6.357700	**PASS**	25uW/MHz or below	(Ch13)RBW, VBW: 30kHz
		MHz	2484.787	2493.510	2483.591	-----		+15.23dB
	2496.5 to 12500MHz	uW/MHz	0.001352	0.001309	0.001897	**PASS**	2.5uW/MHz or below	
		MHz	2506	2506	2506	-----		
Rx Spurious Emission Strength	10 to 1000MHz	nW	0.004815	0.004277	0.004694	**PASS**	4nW or below	
		MHz	978.22	865.36	806.95	-----		
	1000 to 5000MHz	nW	0.131190	0.084489	0.107300	**PASS**	20nW or below	
		MHz	4992	4904	4776	-----		
	5000 to 12500MHz	nW	0.149555	0.175348	0.171002	**PASS**	20nW or below	
		MHz	11907.5	12282.5	11960.0	-----		
Interference Prevention Function		-----	Good	Good	Good	**PASS**		

5. List of Measuring Instruments

USE	Equipment	Company	Model No.	Serial No.	Calibrated by	Cal. Method	Cal. Due	Cal. Date
X	Multimeter	HP	34401A	3146A13475	MPC	ハ(c)	Dec. 26, 2018	Dec. 26, 2017
X	Spectrum Analyzer	Agilent Technologies	N9020A	MY46471445	MPC	ハ(c)	Dec. 28, 2018	Dec. 28, 2017
X	DC Power Supply	Agilent Technologies	66332A	GB37470174	MPC	ハ(c)	Dec. 27, 2018	Dec. 27, 2017
X	Signal generator	ROHDE&SCHWARZ	SMF100A	102341	MPC	ハ(c)	Dec. 27, 2018	Dec. 27, 2017
X	Thermohygrometer	BODYCOM	BJ5478	1209	MPC	ハ(c)	Jan. 3, 2019	Jan. 3, 2018

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〜.

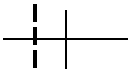
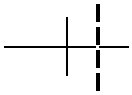
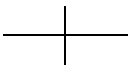
ロ)：計量法 （平成四年法律第五十一号）第百三十五条 又は第百四十四条 の規定に基づく校正（JCSS校正）
b)：Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)〜Japan Calibration Service System〜

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)

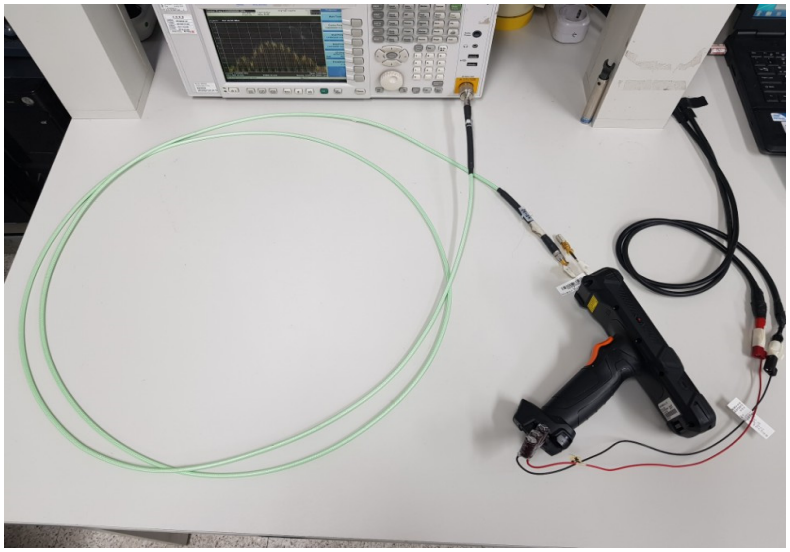
6. Uncertainty

Parameter	Uncertainty
Total RF power conducted	0.98 dB
Spurious emissions conducted	1.00 dB
Temperature	0.4 C
Humidity	2%

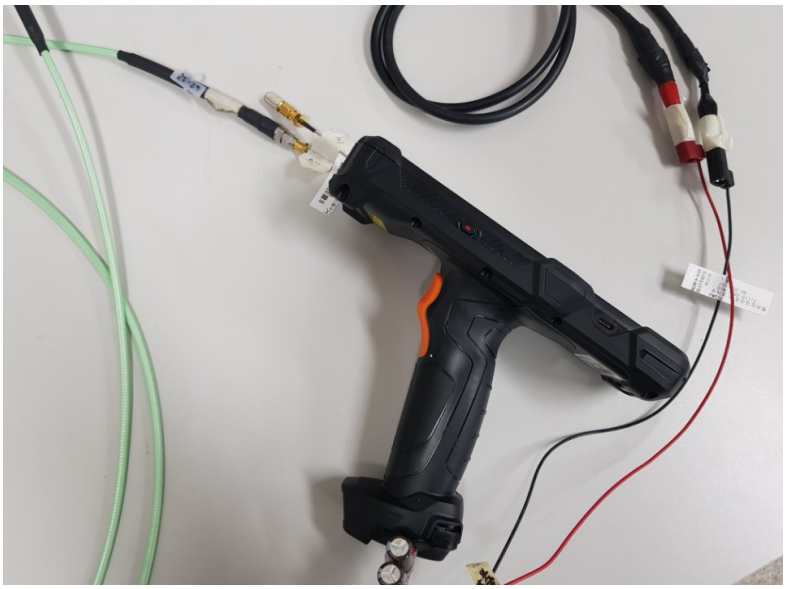
判定	測定データにおける不確かさの判断とその範囲
適合	例 A  測定結果と不確かさは与えられた限度値内に入っています。 これを『適合』と呼びます。
	例 B  完全には、限度値内でも限度値外でもありません。 この場合の適合性については、確実な結論を出すことは出来ません。
不適合	例 C  完全には、限度値内でも限度値外でもありません。 この場合の適合性については、確実な結論を出すことは出来ません。
	例 D  測定結果も不確かさも与えられた限度値内に入っていません。 これは『不適合』と呼びます。

7. Configuration Photographs

Conducted Measurement Photo(1)



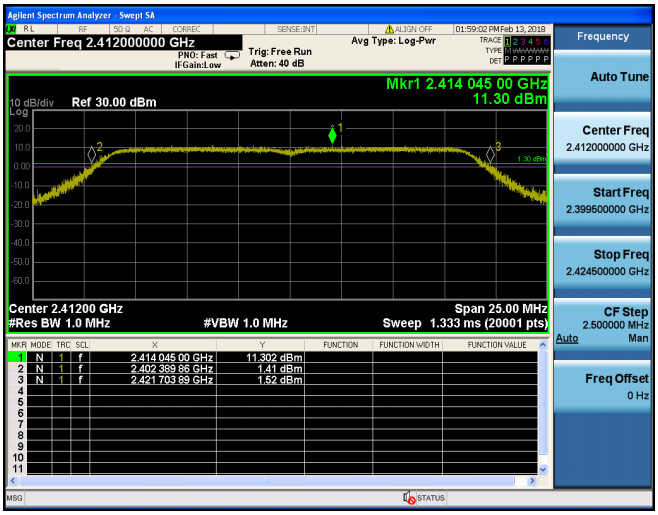
Conducted Measurement Photo(2)



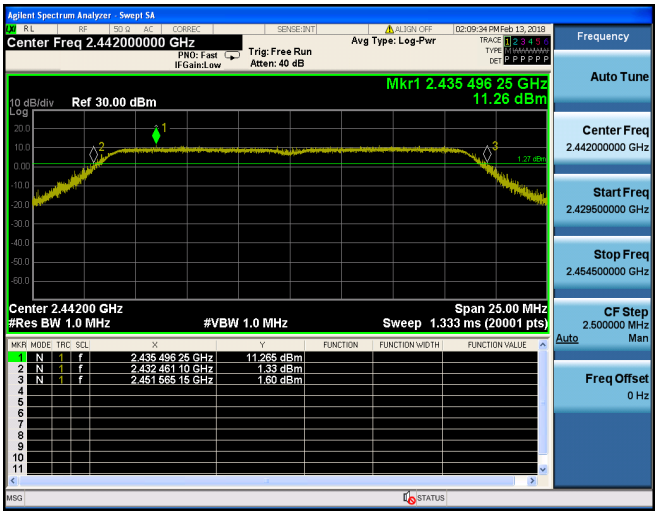
8. Trece Data

8.1 Frequency Tolerance

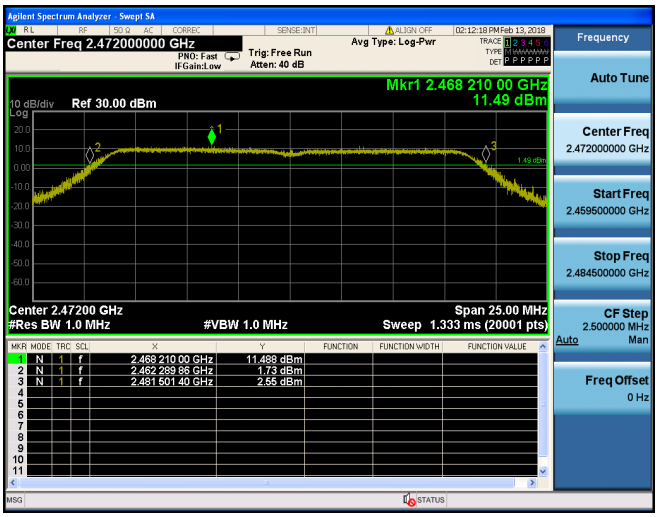
Ch.1: 2412MHz



Ch.7: 2442MHz



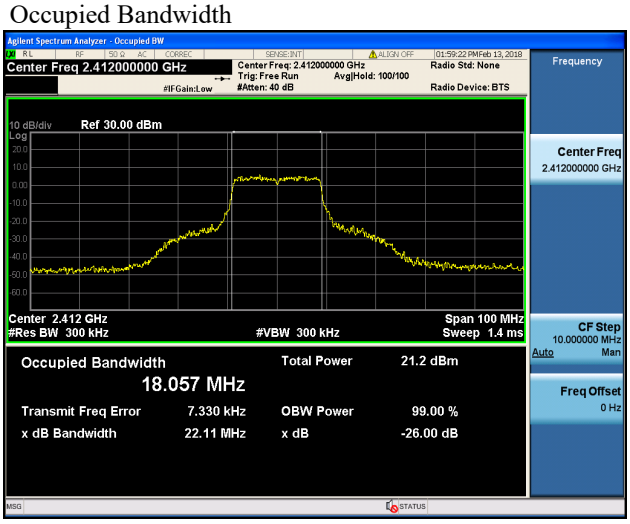
Ch.13: 2472MHz



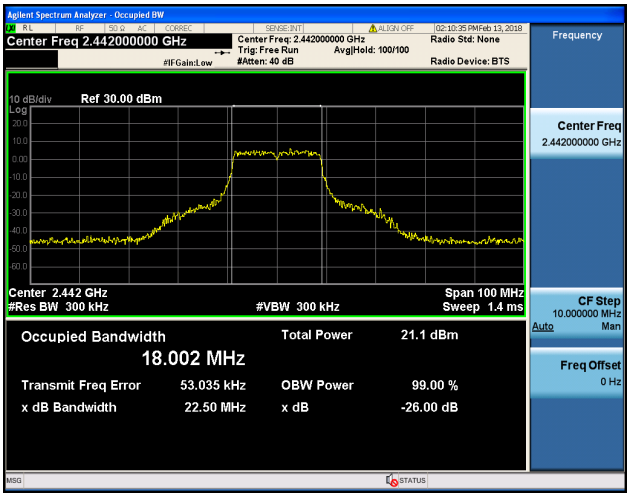
8.2 Occupied and Spread Bandwidth

Ch.1: 2412MHz

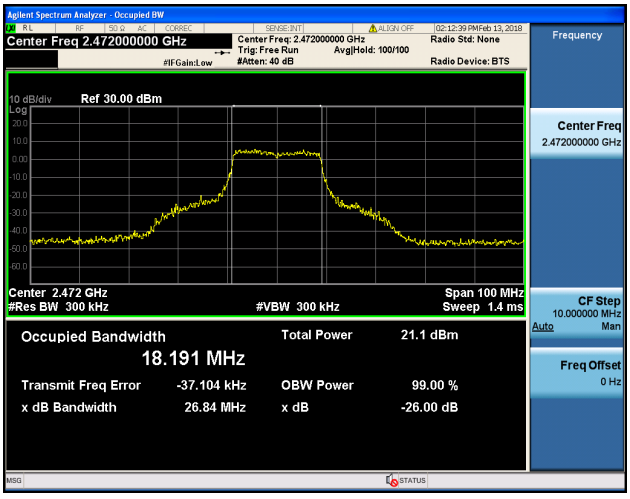
Occupied Bandwidth



Ch.7: 2442MHz



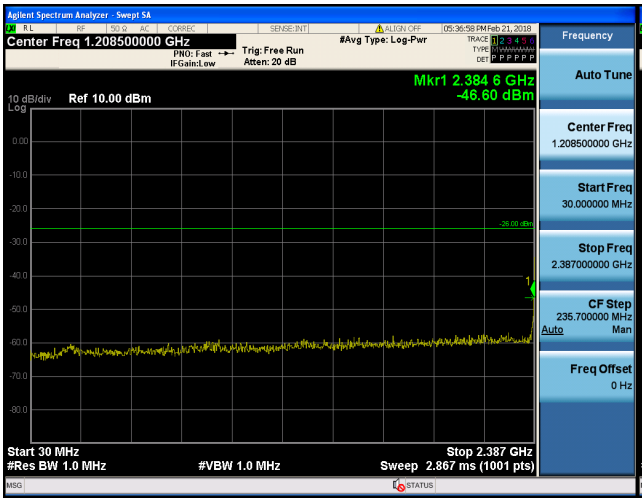
Ch.13: 2472MHz



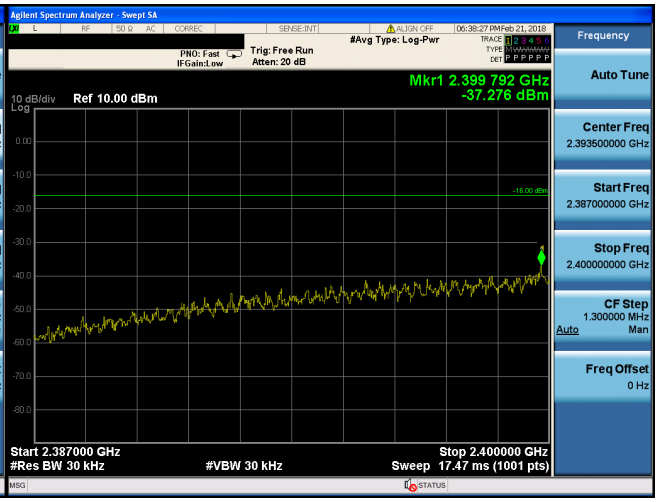
8.3 Tx Spurious Emission Strength

Ch.1: 2412MHz

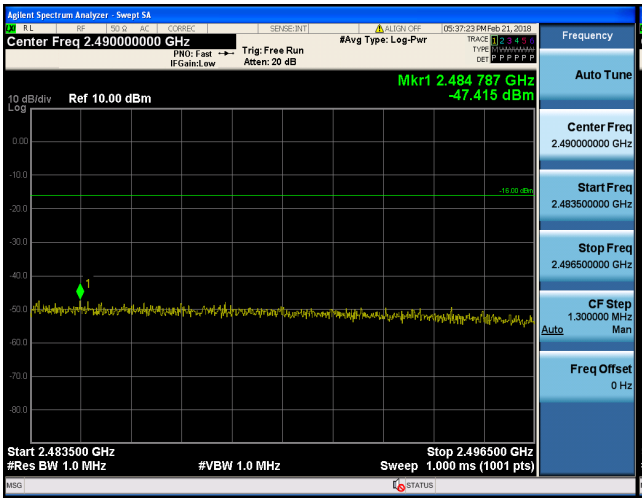
30-2387MHz



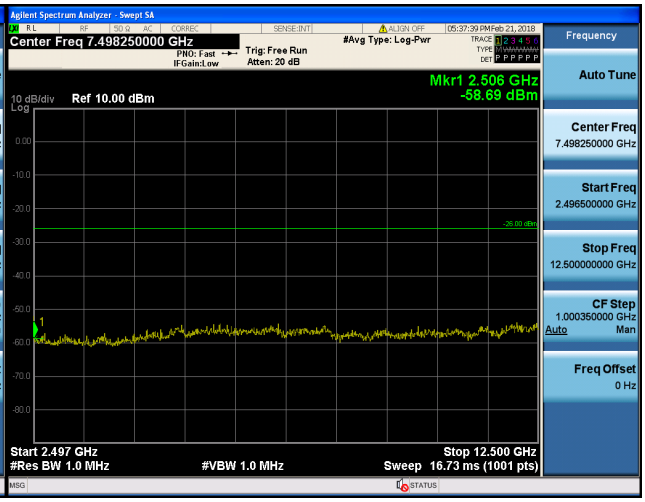
2387-2400MHz



2483.5-2496.5MHz



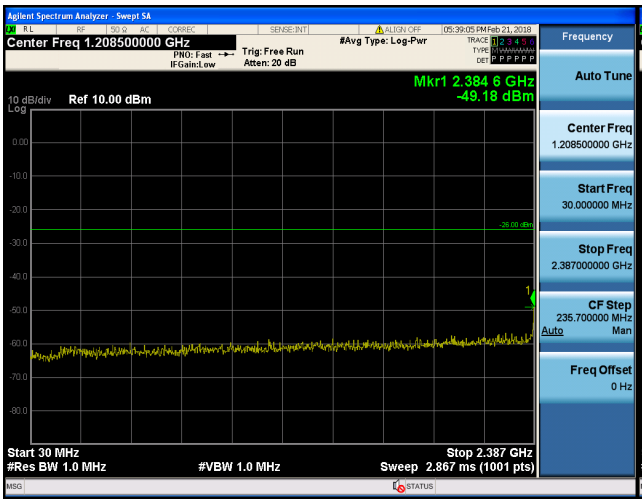
2496.5-12500MHz



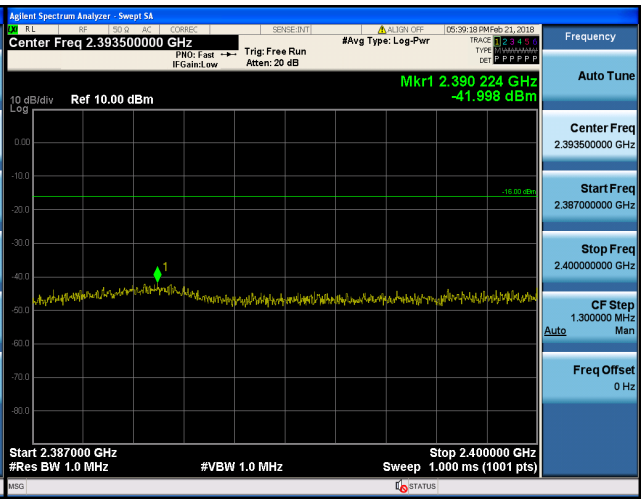
5.3 Tx Spurious Emission Strength(2)

Ch.7: 2442MHz

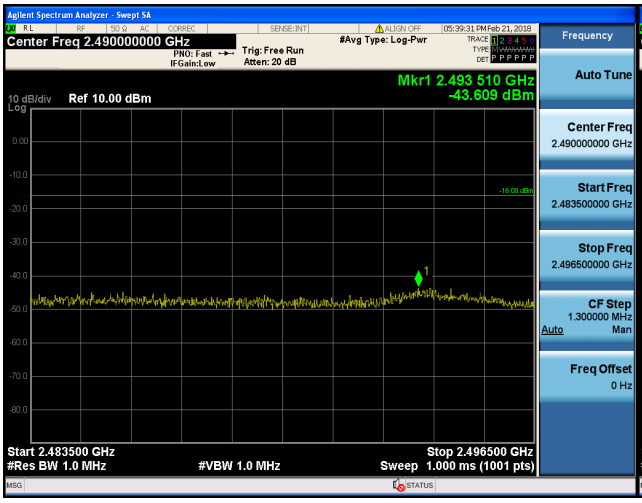
30-2387MHz



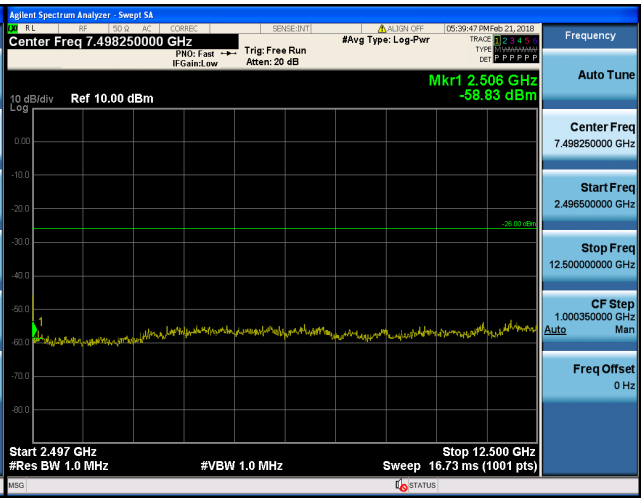
2387-2400MHz



2483.5-2496.5MHz



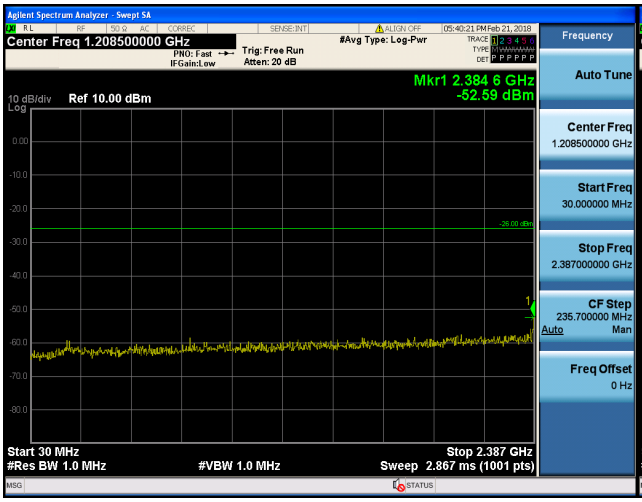
2496.5-12500MHz



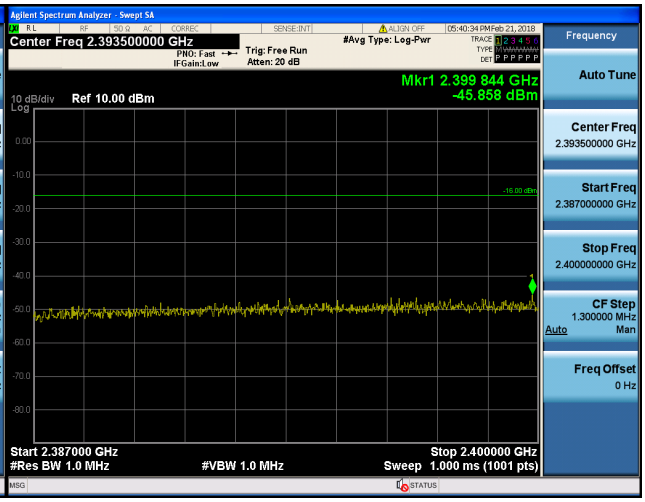
5.3 Tx Spurious Emission Strength(3)

Ch.13: 2472MHz

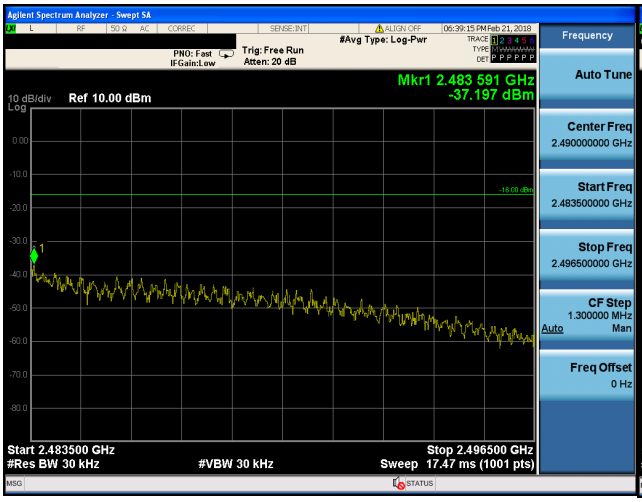
30-2387MHz



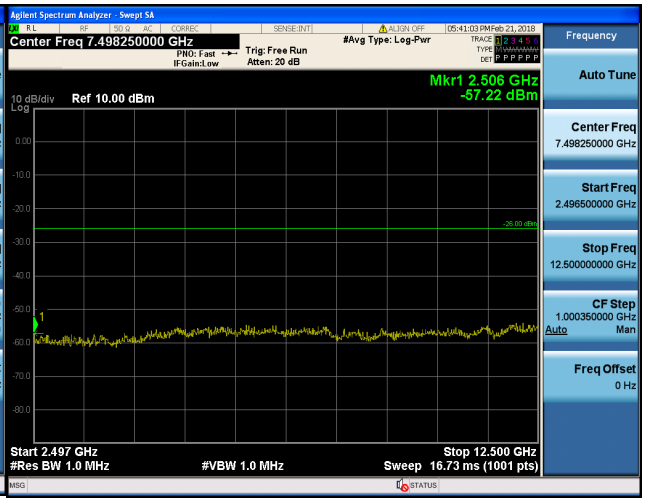
2387-2400MHz



2483.5-2496.5MHz

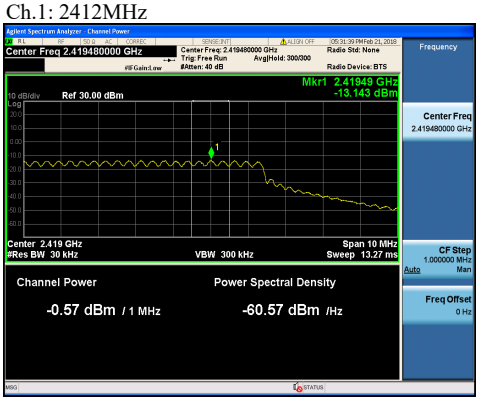


2496.5-12500MHz

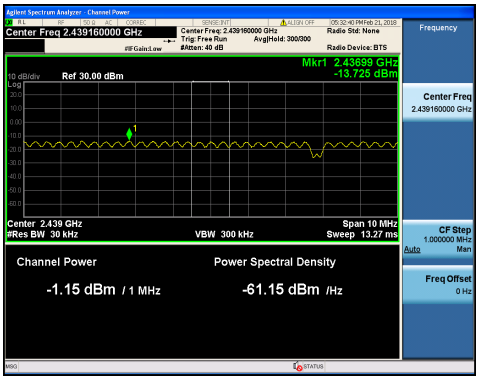


8.4 RF Output Power

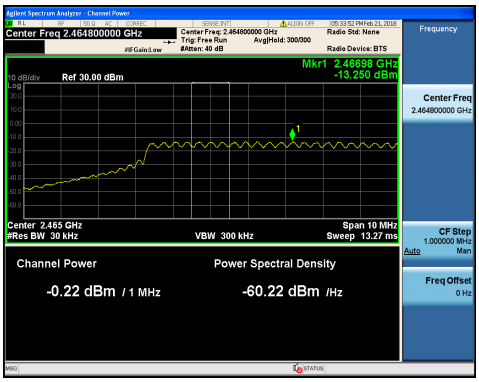
Ch.1: 2412MHz



Ch.7: 2442MHz



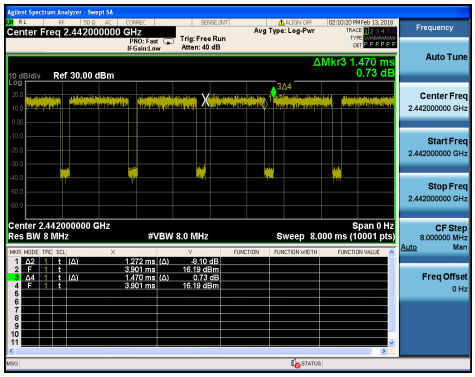
Ch.13: 2472MHz



5.4 空中線電力の偏差

RF output power tolerance

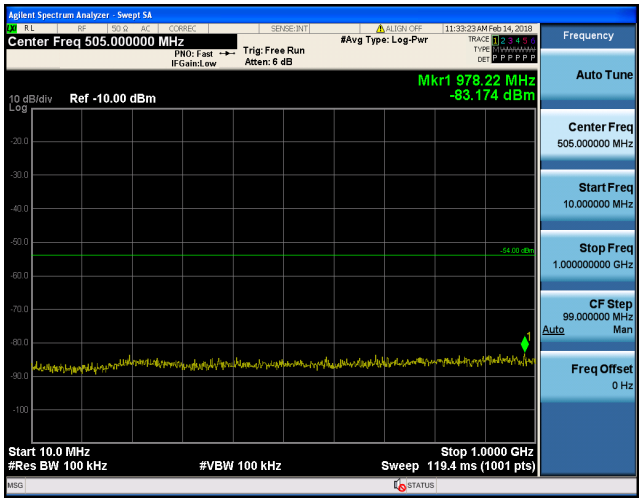
Port A ON/OFF time



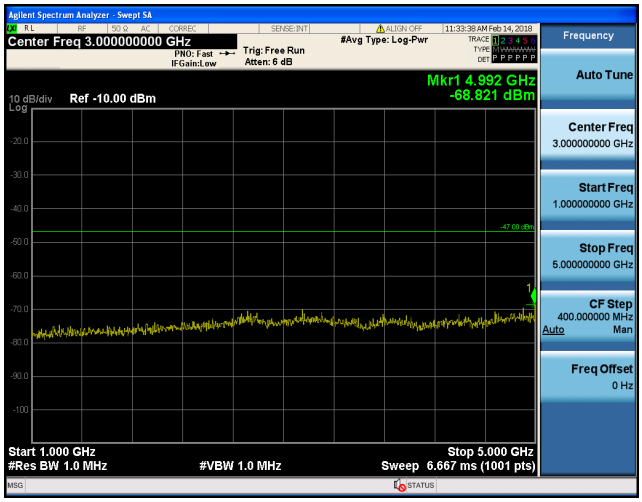
8.5 Rx Spurious Emission Strength

Ch.1: 2412MHz

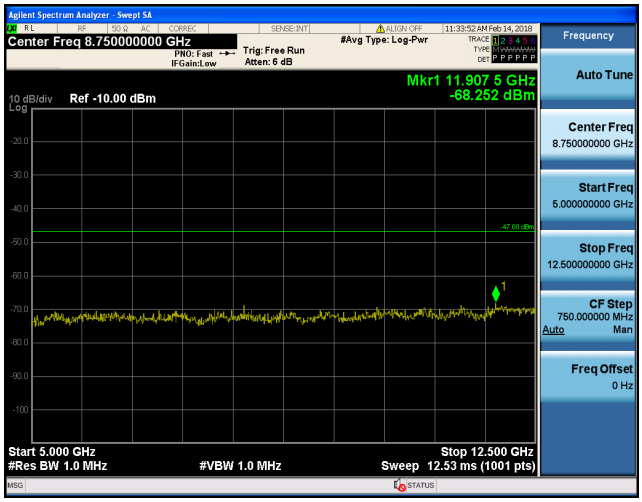
10MHz-1GHz



1-5GHz



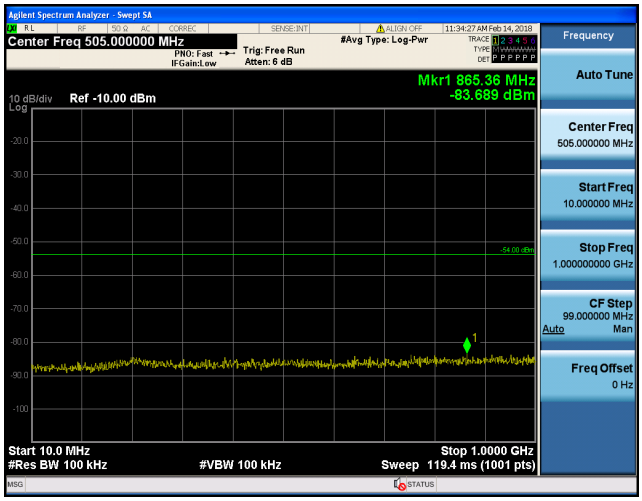
5-12.5GHz



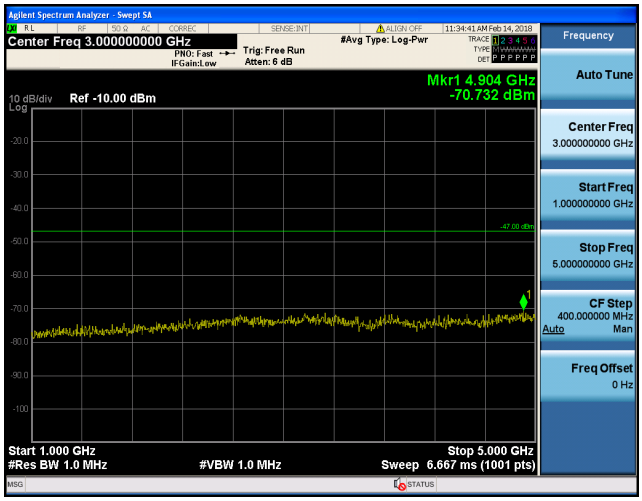
5.5 Rx Spurious Emission Strength(2)

Ch.7: 2442MHz

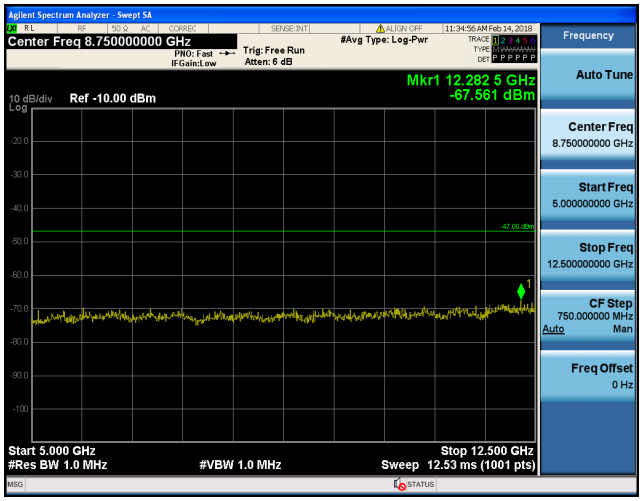
10MHz-1GHz



1-5GHz



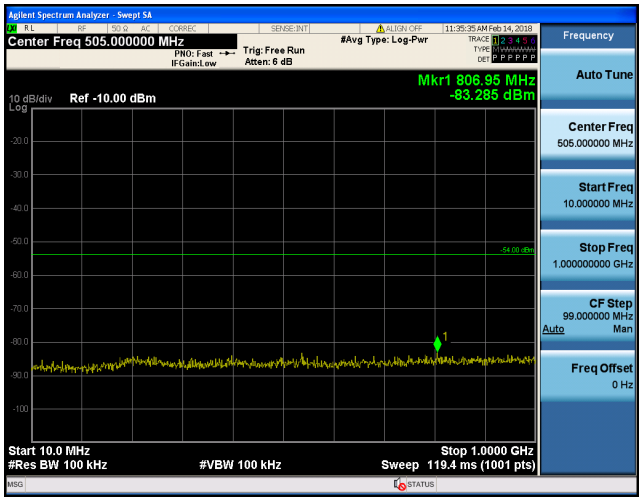
5-12.5GHz



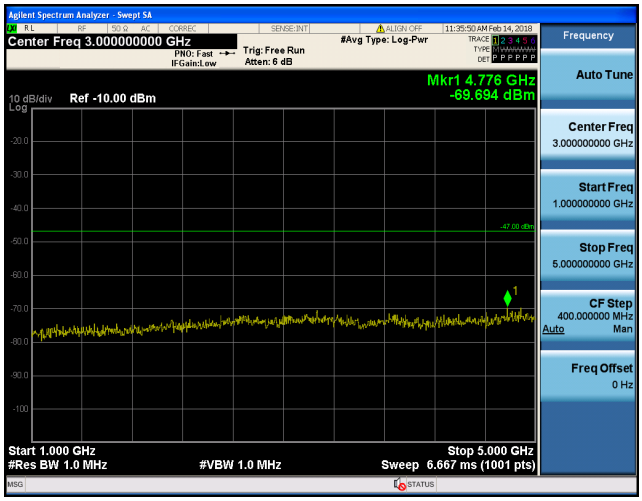
5.5 Rx Spurious Emission Strength(3)

Ch.13: 2472MHz

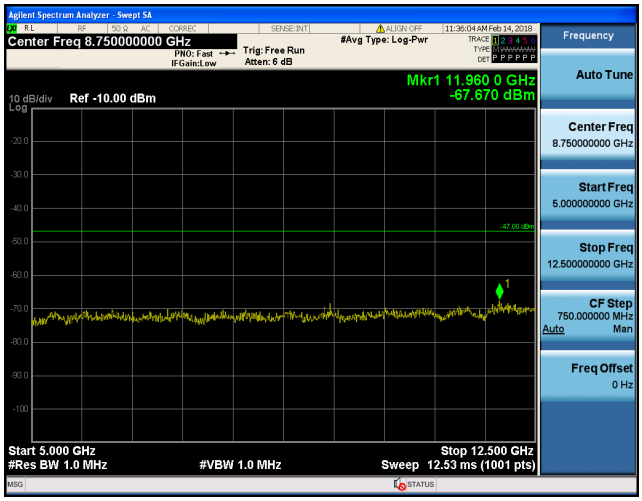
10MHz-1GHz



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