



**FCC 47 CFR PART 15 SUBPART C 15.247**

**TEST REPORT**

**FOR**

**Product Name: Traveler 6000Z**

**Model : GM-130013/T**

**Trade Name: Genius**

Issued to

**KYE SYSTEMS CORP.**

No. 492, Sec. 5, Chongxin Rd., Sanchong Dist.,  
New Taipei City 24160, Taiwan, R.O.C.

Issued by

Global Certification Corp.

<b>EMC Test Site</b>	<b>Xizhi office and Lab</b>	<b>No.146, Sec. 2, Xiangzhang Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)</b>
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RADIO FREQUENCY EXPOSURE**

**APPENDIX 2  
PHOTOS OF TEST CONFIGURATION**

**PHOTOS OF EUT**



**1. GENERAL INFORMATION**

**Applicant** : KYE SYSTEMS CORP.  
**Address** : No. 492, Sec. 5, Chongxin Rd., Sanchong Dist.,  
New Taipei City 24160,, Taiwan, R.O.C.  
**Manufacturer** : KYE SYSTEMS CORP.  
**Address** : No. 492, Sec. 5, Chongxin Rd., Sanchong Dist.,  
New Taipei City 24160, Taiwan, R.O.C.  
**EUT** : Traveler 6000Z  
**Model No.** : GM-130013/T  
**Model Differences** : N/A

Is here with confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart C and the measurement procedures were according to ANSI C63.4-2009. The said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

**FCC Part 15 Subpart C**

Receipt Date : Jul. 04, 2013

Issue Date : Jul. 31, 2013

New Taipei City, Taiwan  
(Place)

Jul. 31, 2013  
(Date)

  
K.T. Nien, Assistant Vice President  
(Signature) Designation Number: TW1069



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**1.1 DESCRIPTION OF THE TESTED SAMPLES**

EUT Name : Traveler 6000Z  
Model Number : GM-130013/T  
FCC ID : FSUGMZKX  
Input Voltage : 1.5Vdc  
Power From : Inside Outside  
Adapter Battery AC Power Source DC Power Source  
Support Unit PC  
Operate Frequency : 2409, 2417, 2426, 2435, 2445, 2455, 2465, 2476  
Modulation Technique : O-QPSK/MSK  
Number of Channels : 8  
Channel spacing : 8~11 MHz  
Operating Mode : Duplex  
Bit Rate of Transmission : 2Mbps  
Antenna Type : integral antenna: PCB Antenna (Omnidirection)  
a dedicated antenna  
Antenna gain : 0 dBi  
EUT Received Date : Jul. 04, 2013  
EMC Test Completed Date : Jul. 23, 2013



**1.2 LIST OF MEASUREMENTS AND EXAMINATIONS**

FCC Rule	Description of Test	Result
15.203	Antenna Requirement	Pass
15.207	Conducted Emission	N/A
15.209	Radiated Emission	Pass
15.247(a)(1)	Channel Carrier Frequencies Separation	Pass
15.247(a)(1)	20dB Bandwidth Measurement	Pass
15.247(a)(1)	Dwell Time	Pass
15.247(b)	Number of Hopping Channels	Pass
15.247(b)	Peak Output Power Measurement Data	Pass
15.247(b)	Band Edges Measurement Data	Pass



## **2. TEST METHODOLOGY**

All testing as described bellowed were performed in accordance with ANSI C63.4:2009 and FCC CFR 47 Part 15 Subpart C.

### **2.1 GENERAL TEST PROCEDURES**

#### **Conducted Emissions**

The EUT is placed on a wood table, which is at 0.8 m above ground plane according to clause 15.207 and requirements of ANSI C63.4:2009. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz are using CISPR Quasi-Peak / Average detectors.

#### **Radiated Emissions**

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable was rotated through 360 degrees to determine the position of maximum emission level. The EUT is placed at 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.



**2.2 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS**

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
10.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( )
13.36 - 13.41			

1 Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

2 Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

**2.3 DESCRIPTION OF TEST MODES**

The EUT was tested under following modes:

**Modes:**

1. Continuous transmitting

**Channels:**

1. 2.408GHz (Lowest Channel)
2. 2.434GHz (Middle Channel)
3. 2.476GHz (Highest Channel)





**2.4 DESCRIPTION OF THE SUPPORT EQUIPMENTS**

**Setup Diagram**

See test photographs attached in *appendix 1* for the actual connections between EUT and support equipment.



**Support Equipment**

Peripherals Devices:

OUTSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	NB	CNU8111 FSB	Presario B1200	N/A	COMPAQ	N/A	Unshielded 1.8m
2.	PRINTER	STYLUS PHOTO75 0	BDEK017 629	3872P011	EPSON	Shielded 1.8m	Unshielded 1.8m
3.	USB storage	TS2GJFV 30	156511-6 400	DOC/ D33193	TRANSCEND	Shielded 1m	N/A
EUT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	PCB	10230275 109 REV:2	N/A	N/A	N/A	N/A	N/A
2.	Dongle	N/A	N/A	FSUGHM ZJU	Genius	N/A	N/A

**Note:** All the above equipment /cable were placed in worse case position to maximize emission signals during emission test

**Grounding:** Grounding was in accordance with the manufacturer’s requirement and conditions for the intended use.



### 3. TEST AND MEASUREMENT EQUIPMENT

#### 3.1 CALIBRATION

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer’s recommendations, and is traceable to recognized national standards.

#### 3.2 EQUIPMENT

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and. Other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.

**TABLE 1 LIST OF TEST AND MEASUREMENT EQUIPMENT**

Instrument	Manufacturer	Model No.	Serial No.	Calibration Due Date	Note
EMC Test Receiver	R&S	ESCI	100438	Apr. 29, 2014	
Bilog Antenna	SUNOL	JB1	A052204	Nov. 06, 2013	
Turn table	EMCO	2080	9508-1805	N/A	
Controller	EMCO	2090	9804-1328	N/A	
Amplifier	G.W	GAP-801	EF150001	Jul. 18, 2014	
Amplifier	Schwarzbeck	BBV 9718	9718-008	Aug. 10, 2013	
Spectrum Analyzer	NEX1	Ns-265	5044006	Aug. 07, 2013	
RF Cable	BELDEN	RG-8/U	28M-002	Nov. 02, 2013	
RF Cable	Huber Suhner	SUCOFLEX 104	293864/4	Nov. 13, 2013	
Thermo-Hygro meter	WISEWIND	4-IN-1	050100378	Apr. 08, 2014	
Loop Antenna	TESEO	HLA6120	26349	Sep. 11, 2013	
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-491	Aug. 05, 2013	
Wideband Peak Power Meter	Anritsu	ML2495A	0841006	Oct. 03, 2013	

※ Calibration interval of instruments listed above is one year



## **4. ANTENNA REQUIREMENTS**

### **4.1 STANDARD APPLICABLE**

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247(b), if transmitting antennas of direction gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **4.2 ANTENNA CONSTRUCTION AND DIRECTIONAL GAIN**

Antenna type: PCB Antenna  
Antenna Gain: 0 dBi

## 5. PEAK OUTPUT POWER

### 5.1 TEST SETUP



### 5.2 LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to § 15.247(b)(3) , for systems using digital modulation in the bands of 902 – 928 MHz , 2400 – 2483.5 MHz: 1 Watt.
2. According to § 15.247(b)(4) , the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section , if transmitting antennas of directional gain greater than 6 dBi are used , the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) , (b)(2) , and (b)(3) of this section , as appropriate , by the amount in dB that directional gain of the antenna exceeds 6 dBi.

### 5.3 TEST PROCEDURE

1. Peak power is measured using the wideband power meter.
2. Power is integrated over a bandwidth greater than or equal to the 99% bandwidth.

### 5.4 TEST RESULT: PASS

### 5.5 TEST DATA:

Channel No.	Frequency (MHz)	Measurement Level (dbm)	Required Limit (dbm)	Result
1	2408	-8.66	< 30 dbm	PASS
4	2434	-8.76	< 30 dbm	PASS
8	2476	-8.89	< 30 dbm	PASS



## 6. AVERAGE POWER

### 6.1 TEST SETUP



### 6.2 LIMIT

None; for reporting purposes only.

### 6.3 TEST PROCEDURE

The transmitter output is connected to the Power Meter. The Power Meter is set to the average power detection.

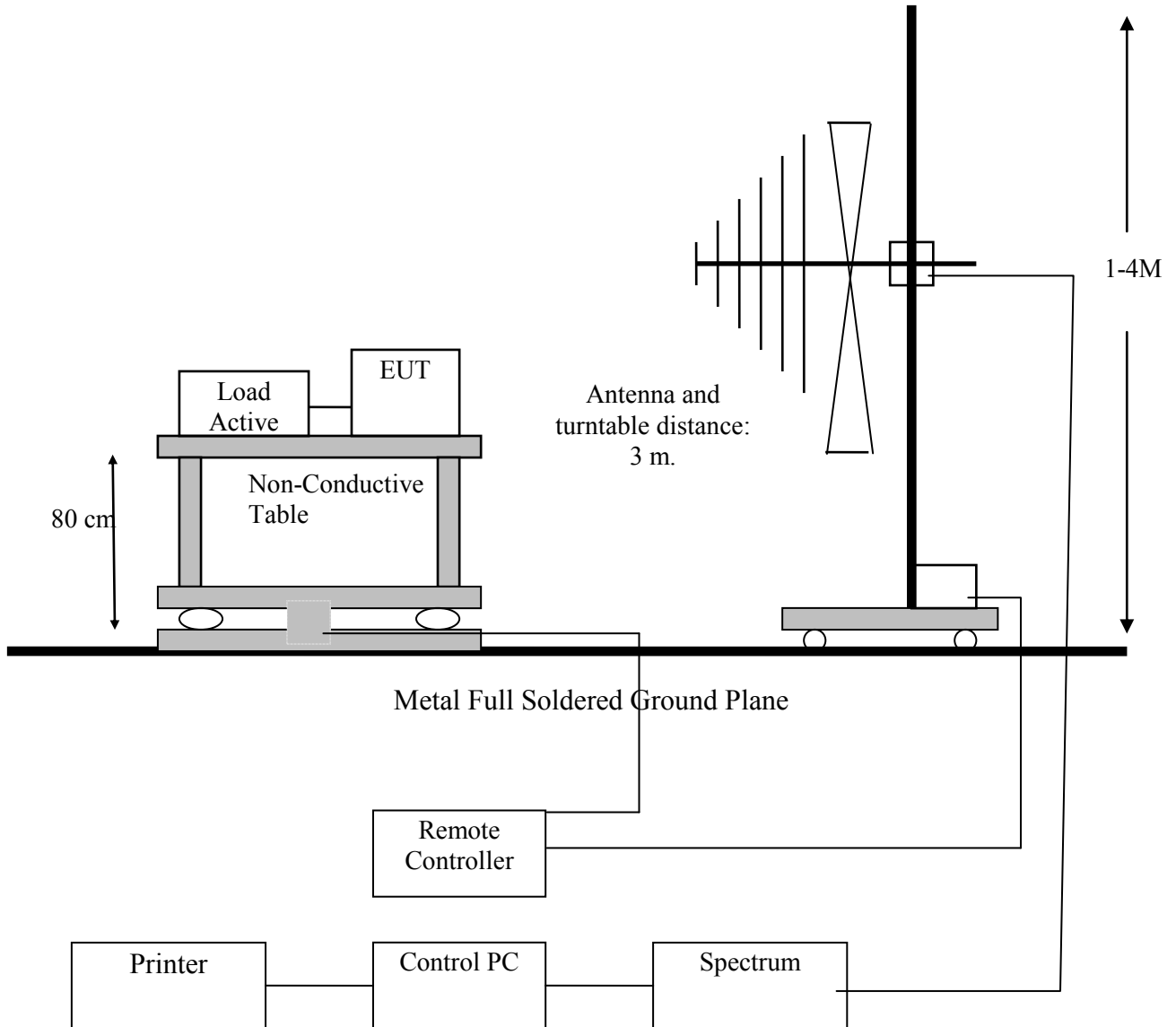
### 6.4 TEST RESULT: PASS

### 6.5 TEST DATA:

Channel No.	Frequency (MHz)	Measurement Level (dbm)	Required Limit (dbm)	Result
1	2408	-9.1	< 30 dbm	PASS
4	2434	-9.23	< 30 dbm	PASS
8	2476	-9.45	< 30 dbm	PASS

## 7. BAND EDGE

### 7.1 TEST SETUP





**7.2 LIMIT**

Restricted Bands:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41			

Operation within the bands:

902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

Frequency (Hz)	Field Strength ( $\mu$ V/m at 3-meter)	Field Strength (dB $\mu$ V/m at 3-meter)
1.705-30	30 (at 30-meter)	69.54
30-88	100	40
88-216	150	43
216-960	200	46
Above 960	500	54

**7.3 RESULT: PASS**



7.4 TEST DATA:

Lowest Channel- Horizontal



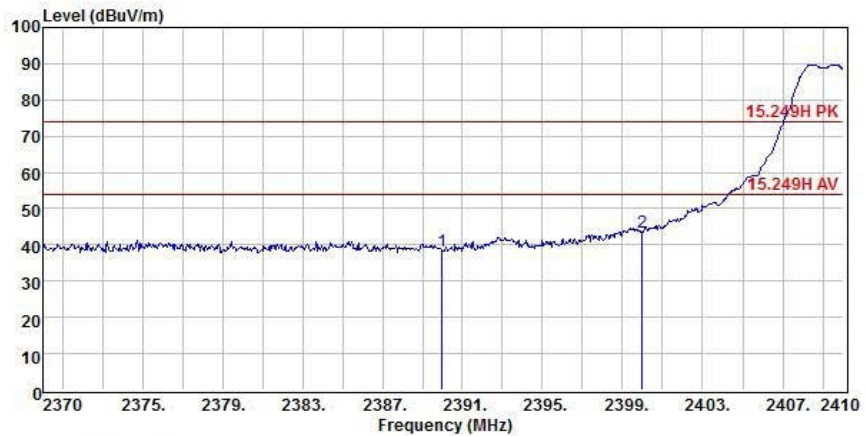
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Kizhi Dist., New Taipei City 221, Taiwan (R.O.C.)
TEL:886-2-26426992 FAX:886-2-26487450
WebSite: http://www.gcc.tw

Data:38

File:C:\Users\GCC\Desktop\e3 DATA\報告\370401-RE(1G~6G).EM6

Time:09:37:14

Date:2013-7-5



Site : GCC\_RE-02
Condition : 15.249H PK HORIZONTAL
RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : 29 °C 55%
TX CHL

Table with columns: Freq, Meter Level, System Factor, Cable Loss, Antenna Factor, Preamp Gain, Real Level, Limit Line, Over Limit, Remark. Contains two rows of data for frequencies 2390.00 and 2400.00 MHz.

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line





Lowest Channel-Vertical



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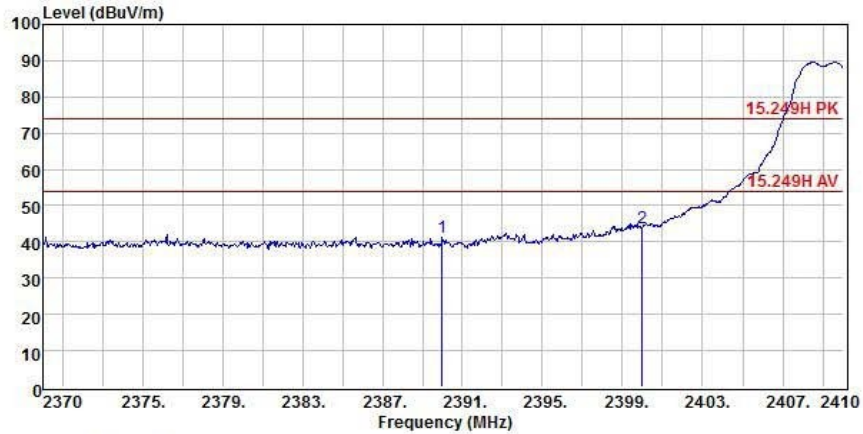
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Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)  
TEL:886-2-26426992 FAX:886-2-26487450  
WebSite: http://www.gcc.tw

Data: 41

File: C:\Users\GCC\Desktop\e3 DATA\報告\370401-RE (1G-6G).EM6

Time: 09:44:59

Date: 2013-7-5



Site : GCC\_RE-02  
 Condition : 15.249H PK VERTICAL  
 : RBW:1000 KHz VBW:1000 KHz  
 EUT : See Page 1 of EMC Report  
 MODEL : See Page 1 for Details  
 Test Mode : 29°C 55%  
 TX CH1

	Meter	System	Cable	Antenna	Preamp	Real	Limit	Over	
Freq	Level	Factor	Loss	Factor	Gain	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1 2390.00	61.59	-20.16	3.90	31.65	55.71	41.43	74.00	-32.57	Peak
2 2400.00	64.17	-20.14	3.91	31.66	55.71	44.03	74.00	-29.97	Peak

System Factor = Cable Loss + Antenna Factor - Preamp Gain  
 Real Level = Meter Level + System Factor  
 Over Limit = Real Level - Limit Line



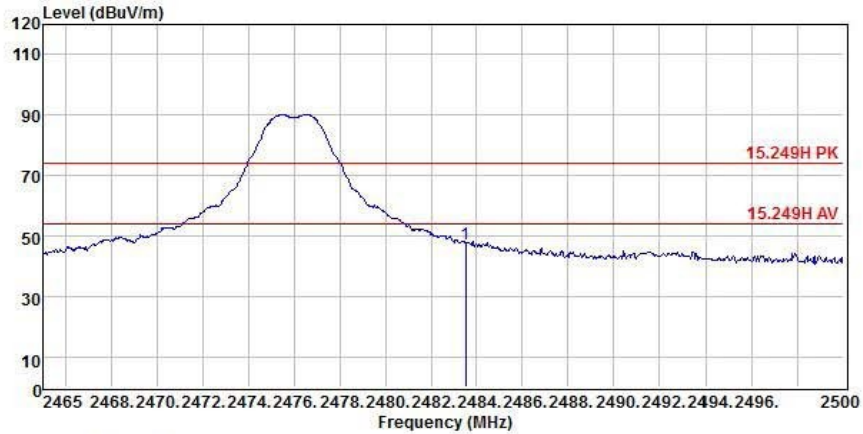
Highest Channel- Horizontal



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WebSite: http://www.gcc.tw

Data: 48 File: C:\Users\GCC\Desktop\e3 DATA\報告\370401-RE (1G-6G) .EM6
Time: 10:37:29 Date: 2013-7-5



Site : GCC\_RE-02
Condition : 15.249H PK HORIZONTAL
RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : 29°C 55% TX CHH

Table with columns: Meter, System Factor, Cable Loss, Antenna Factor, Preamp Gain, Real Level, Limit Line, Over Limit, Remark. Row 1: 1 2483.52 67.28 -19.90 3.99 31.78 55.67 47.38 74.00 -26.62 Peak

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

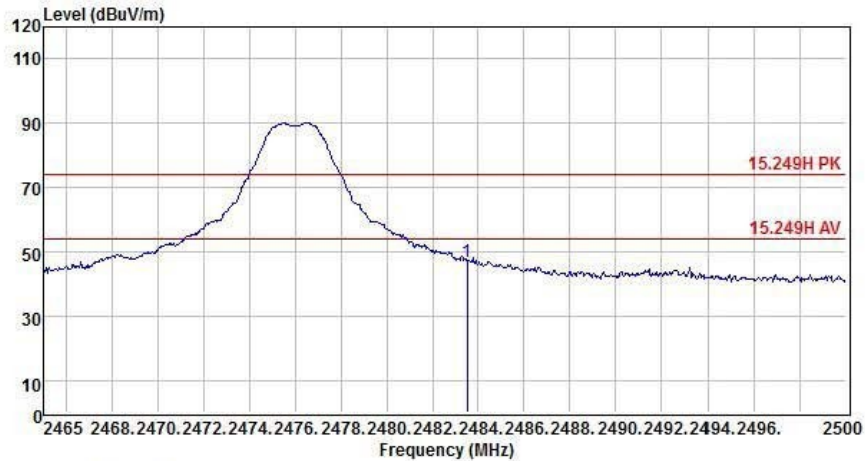


Highest Channel- Vertical



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WebSite: http://www.gcc.tw

Data:51 File:C:\Users\GCC\Desktop\e3 DATA\報告\370401-RE (1G-6G).EM6
Time:10:46:53 Date:2013-7-5



Site : GCC\_RE-02
Condition : 15.249H PK VERTICAL
: RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : 29°C 55%
TX CHH

Table with 10 columns: Meter, System, Cable, Antenna, Preamp, Real, Limit, Over, Remark. Row 1: 1 2483.52 66.58 -19.90 3.99 31.78 55.67 46.68 74.00 -27.32 Peak

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

Note:

- 1. Emission level = Reading level + Correction factor
2. Correction factor = Antenna factor + Cable loss - Preamp factor.
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements above 1000 MHz, Peak detector setting: use a 1 MHz RBW, a 3 MHz VBW.
5. Measurements above 1000 MHz, Average detector setting: 1 MHz RBW with 10 Hz VBW.
6. Peak detector measurement data will represent the worst case results.



## **8. 20DB BANDWIDTH**

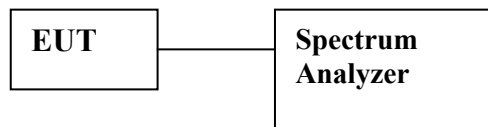
### **8.1 TEST LIMIT**

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 Mw.

### **8.2 TEST LIMIT**

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 30 KHz and VBW to 100KHz.
- c. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

### **8.3 TEST SETUP LAYOUT**



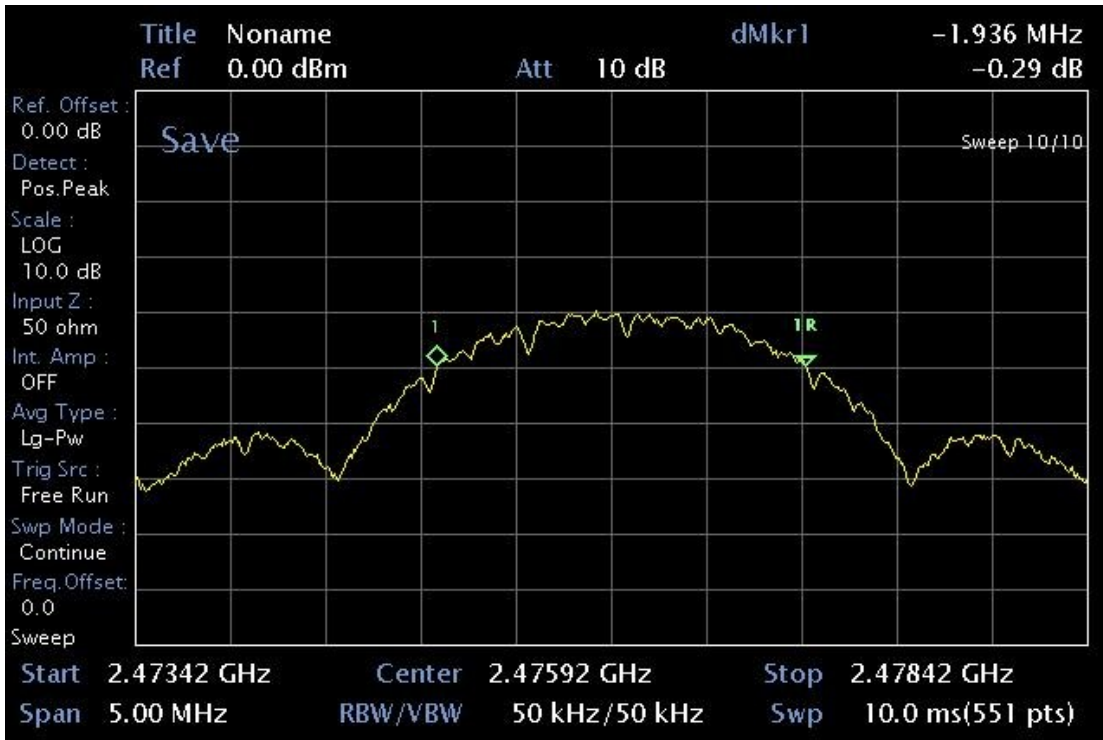
### **8.4 TEST RESULT: PASS**



**8.5 TEST DATA:**

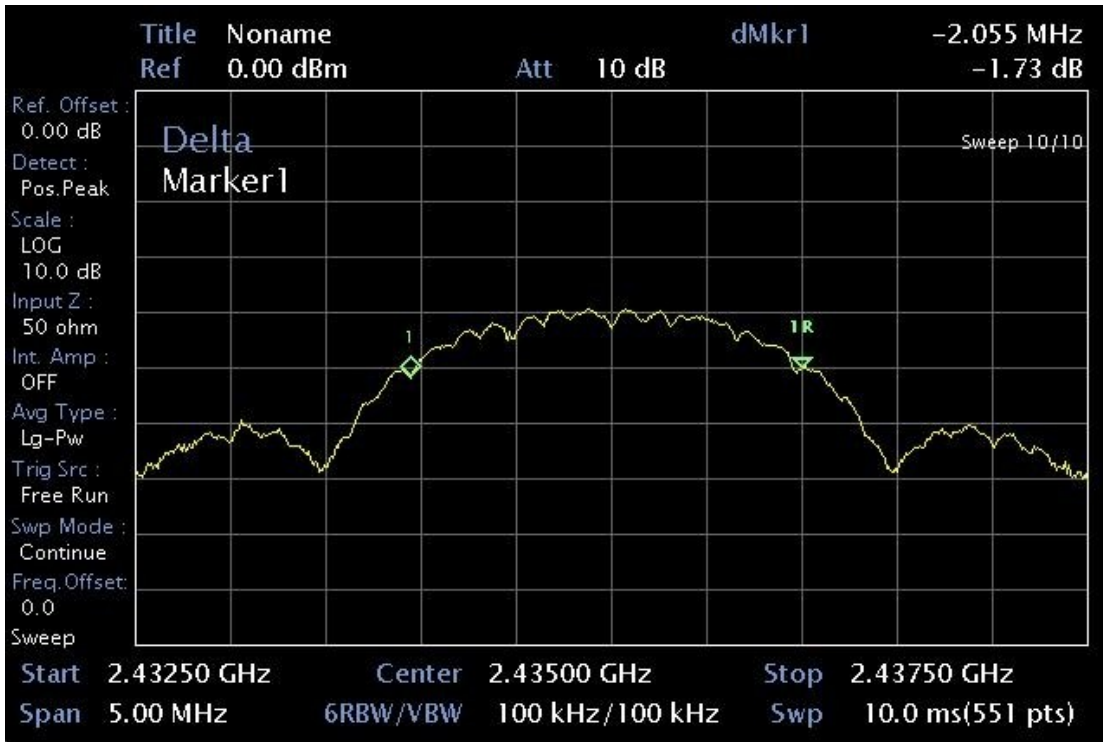
Channel No.	Frequency (MHz)	20dB Bandwidth (MHz)
1	2408	-1.93
4	2434	-2.05
8	2476	-2.1

High Frequency

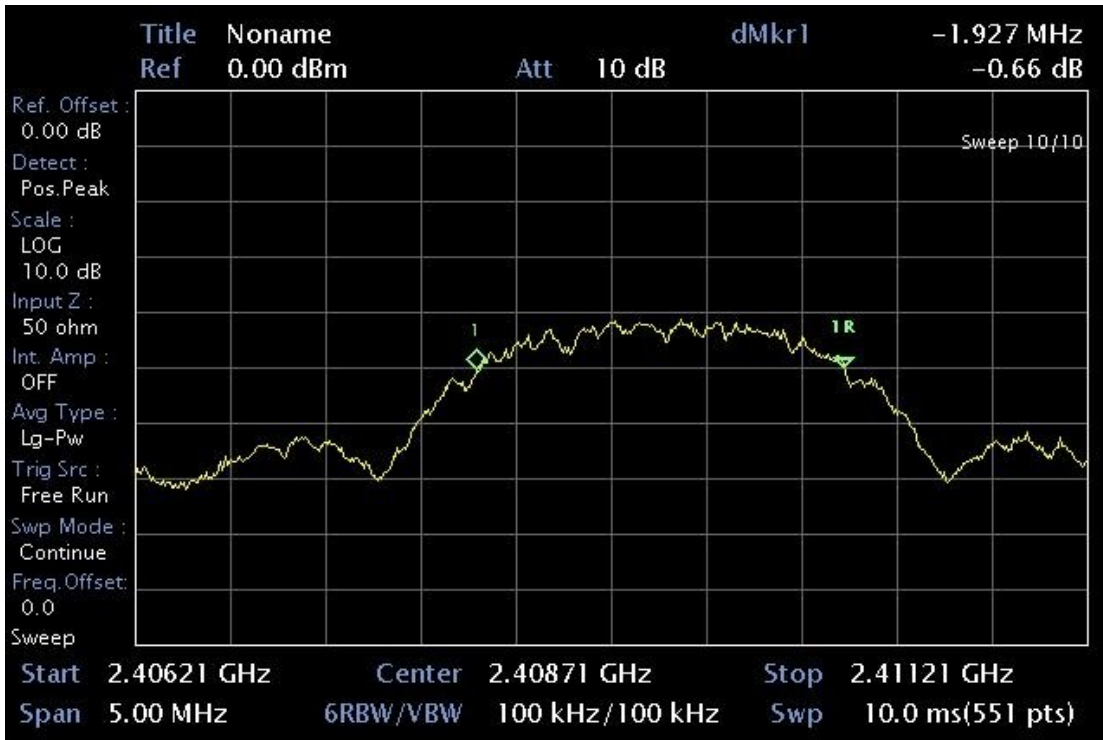




Middle Frequency

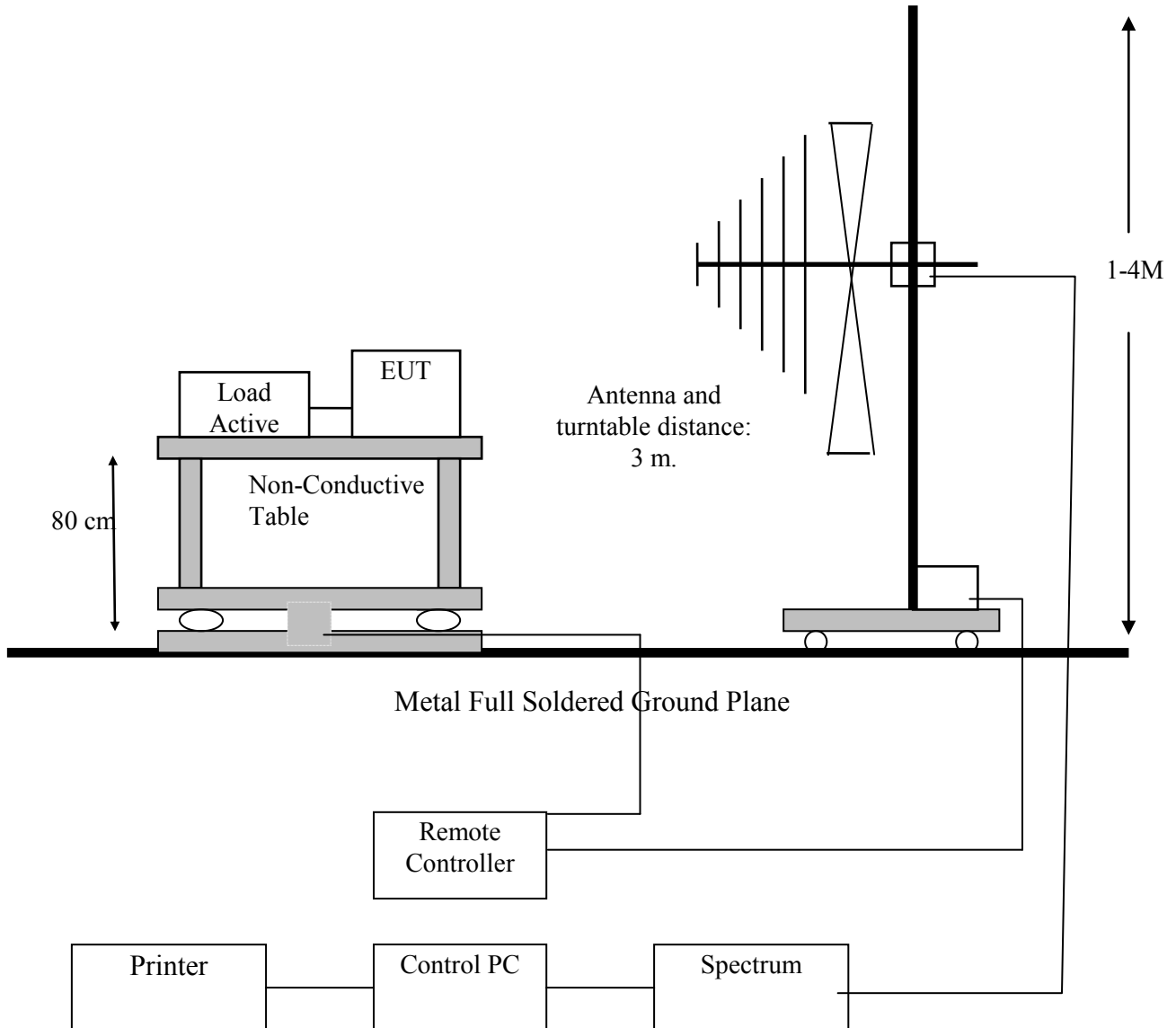


Low Frequency



## 9. RADIATED EMISSION

### 9.1 TEST SETUP







## 9.2 LIMIT

The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209 as below.

Frequency (MHz)	Field Strength (mV/m)	Measurement Distance (m)
1.705-30	30	30
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500*	3

*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

*In the above emission table, the tighter limit applies at the band edges.*

Frequency (Hz)	Field Strength ( $\mu$ V/m at 3-meter)	Field Strength (dB $\mu$ V/m at 3-meter)
1.705-30	30 (at 30-meter)	69.54
30-88	100	40
88-216	150	43
216-960	200	46
Above 960	500	54

## 9.3 TEST PROCEDURE

- 1、 The EUT was placed on a turntable, which was 0.8m above ground plane.
- 2、 The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 3、 EUT was set at 3m away from the receiving antenna, which was varied from 1m to 4m to find out the highest emissions.
- 4、 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5、 And also, each emission was maximized by changing the polarization of receiving antenna, both horizontal and vertical.
- 6、 Repeated above procedures until the measurements for all frequencies are completed.

## 9.4 RESULT: PASS





**9.5 TEST DATA:**

All frequencies not described in this test report and within the range of the general radiated emission limits are not detectable significantly. The table as below is representing worst emissions found.

Lowest Channel (worst emissions found)

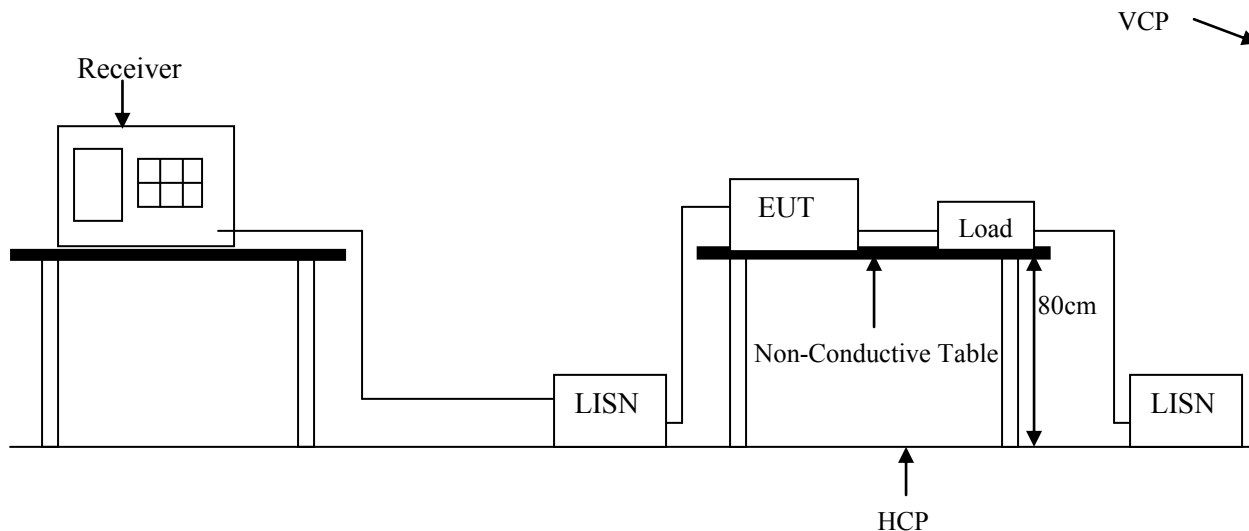
<u>Frequency (MHz)</u>	<u>Ant. Polarization</u>	<u>Reading (dB<math>\mu</math>V)</u>	<u>Correction factor(dB)</u>	<u>Emission (dB<math>\mu</math>V/m)</u>	<u>Limit (dB<math>\mu</math>V/m)</u>
34.85	H	21.72	-7.62	14.1	40
131.85	H	23.95	-10.68	13.27	43
355.94	H	19.32	-8.17	11.15	46
471.35	H	20.96	-5.17	15.79	46
585.81	H	22.17	-3.28	18.89	46
712.88	H	23.88	-1.76	22.12	46
123.12	V	24.62	-10.70	13.92	43
146.40	V	26.11	-11.43	14.68	43
190.05	V	28.19	-12.53	15.66	43
370.47	V	18.06	-7.74	10.32	46
467.47	V	23.07	-5.27	17.8	46
699.30	V	23.85	-1.97	21.88	46

Note:

1. Emission level = Reading level + Correction factor
2. Correction factor: Antenna factor + Cable loss – Preamp factor.
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements from 9 kHz to 150 kHz, Peak detector setting: 100 Hz RBW
5. Measurements from 150 kHz to 30MHz, Peak detector setting: 10 kHz RBW
6. Measurements from 30 MHz to 1000 MHz, Peak detector setting: 100 kHz RBW
7. Measurements from 9 kHz to 150 kHz, CISPR Quasi-Peak detector: 200 Hz RBW
8. Measurements from 150 kHz to 30MHz, CISPR Quasi-Peak detector: 9 kHz RBW
9. Measurements from 30 MHz to 1000 MHz, CISPR Quasi-Peak detector: 120 kHz RBW
10. Peak detector measurement data will represent the worst case results.

## 10. CONDUCTED EMISSIONS

### 10.1 TEST SETUP



### 10.2 LIMIT

Frequency range (MHz)	CLASS A		CLASS B	
	QP dB(uV)	Average dB(uV)	QP dB(uV)	Average dB(uV)
0.15-0.5	79 dBuV	66 dBuV	66 - 56 dBuV	56 - 46 dBuV
0.5-5.0	73 dBuV	60 dBuV	56 dBuV	46 dBuV
5.0-30.0	73 dBuV	60 dBuV	60 dBuV	50 dBuV

Remark: In the above table, the tighter limit applies at the band edges.

### 10.3 TEST PROCEDURE

The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). It provides a 50 ohm / 50  $\mu$ H coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm / 50  $\mu$ H coupling impedance with 50 ohm termination. (Please refer to the block diagram of the test setup and photograph.)

Both sides of AC line are checked for the maximum conducted emission interference. In order to find the maximum emissions, the relating positions of equipment and all of the interference cables must be changed according to EN 55022 regulations: The measurement procedure on conducted emission interference.

The resolution bandwidth of the field strength meter is set at 9 KHz.

### 10.4 TEST SPECIFICATION

According to PART 15.207

### 10.5 RESULT:

**Not applicable, because EUT is powered by battery.**

### 10.6 TEST DATA: N/A

## **11. SPURIOUS EMISSIONS (CHANNEL CARRIER FREQUENCIES SEPARATION)**

### **11.1 CONDUCTED MEASUREMENT**

#### **11.2 TEST SETUP**



#### **11.3 LIMIT**

According to § 15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

#### **11.4 TEST PROCEDURE**

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

Measurements are made over the 13 GHz to 26GHz range for IEEE 802.11b/g.

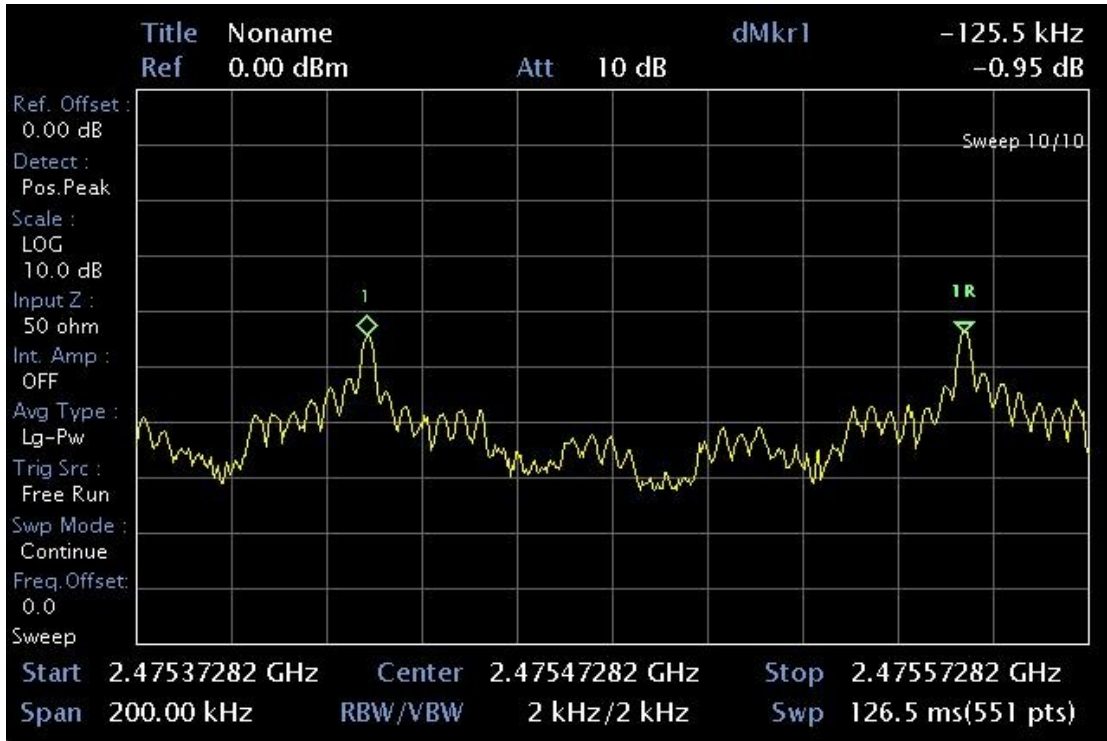
#### **11.5 TEST RESULTS: PASS**



**11.6 TEST DATA:**

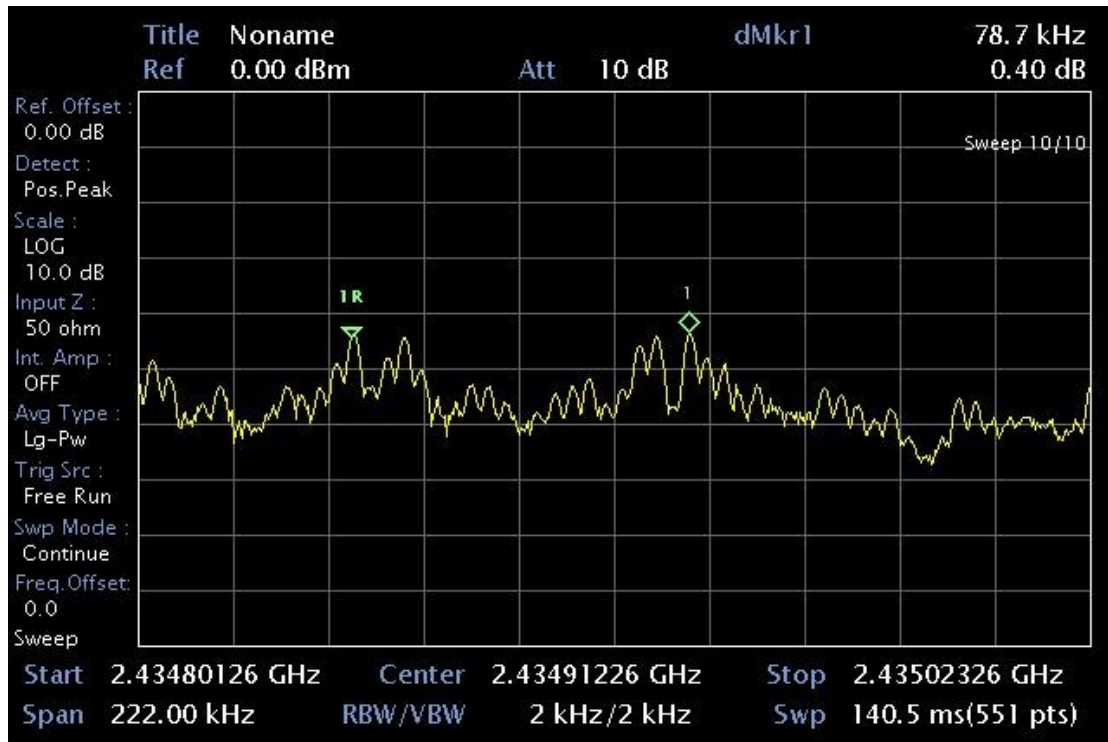
Channel No.	Frequency (MHz)	Channel Separation
1	2408	125.5KHz
4	2434	78.7KHz
8	2476	78.2KHz

High Channel

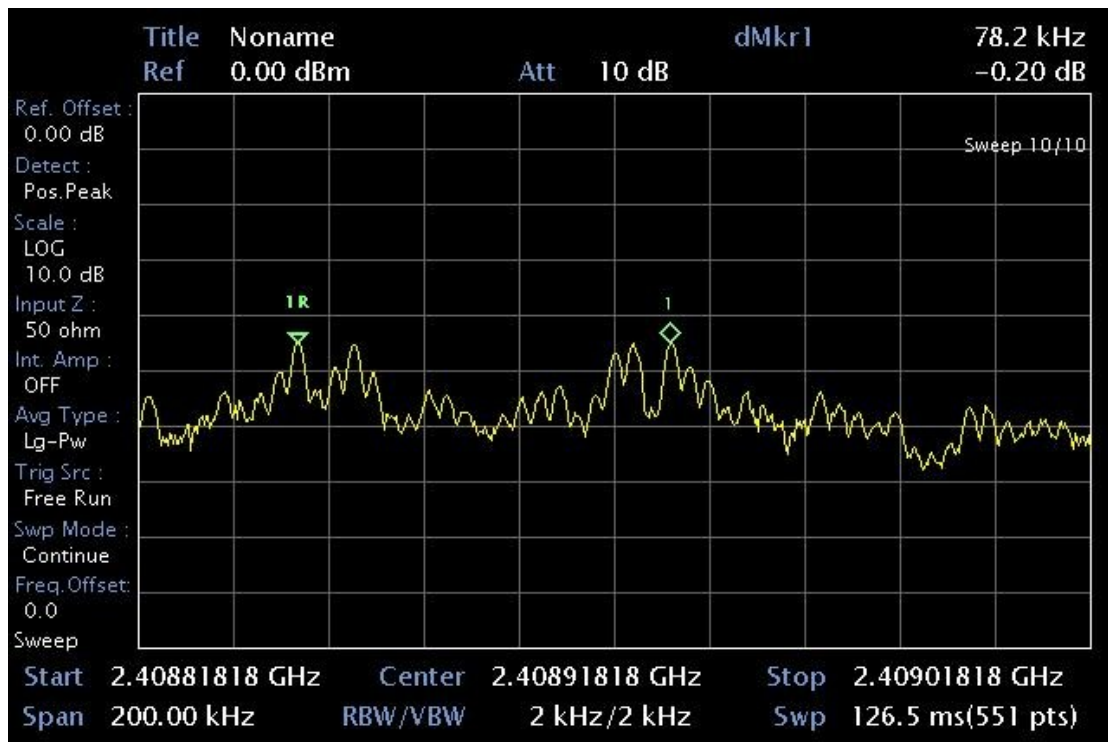




Middle Channel

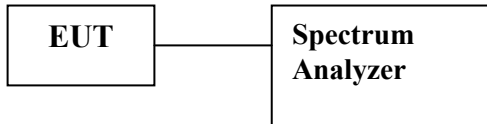


Low Channel



## 12. DWELL TIME ON EACH CHANNEL

### 12.1 TEST SETUP



### 12.2 TEST LIMIT

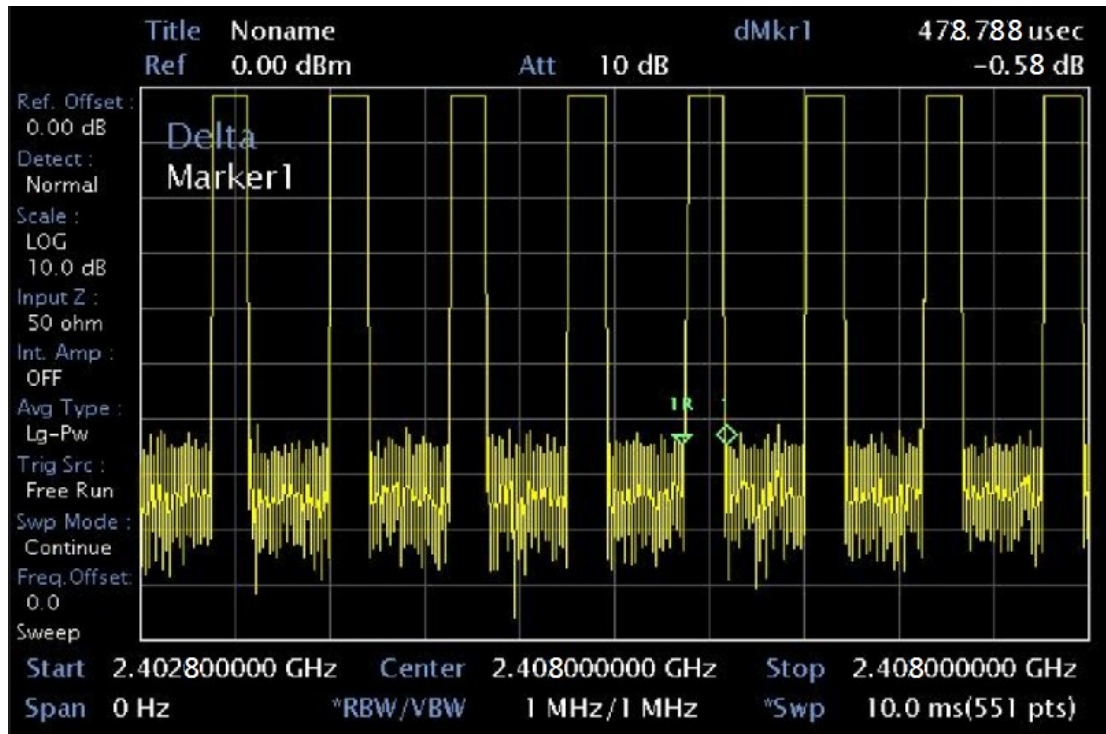
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

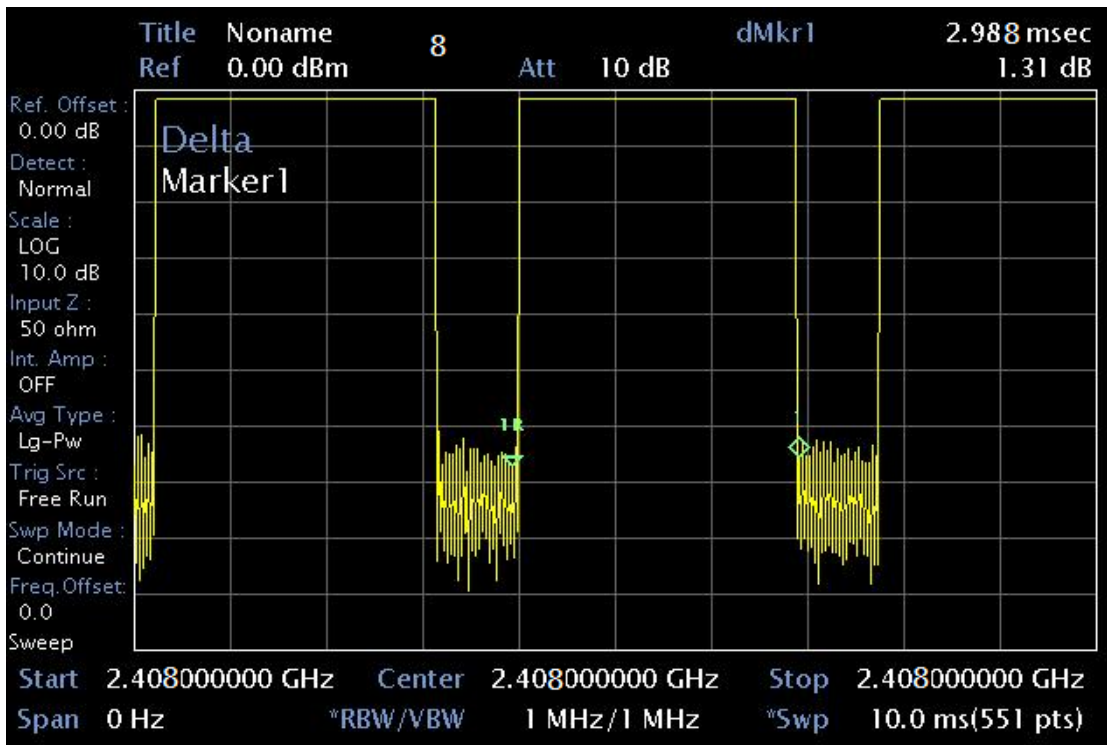
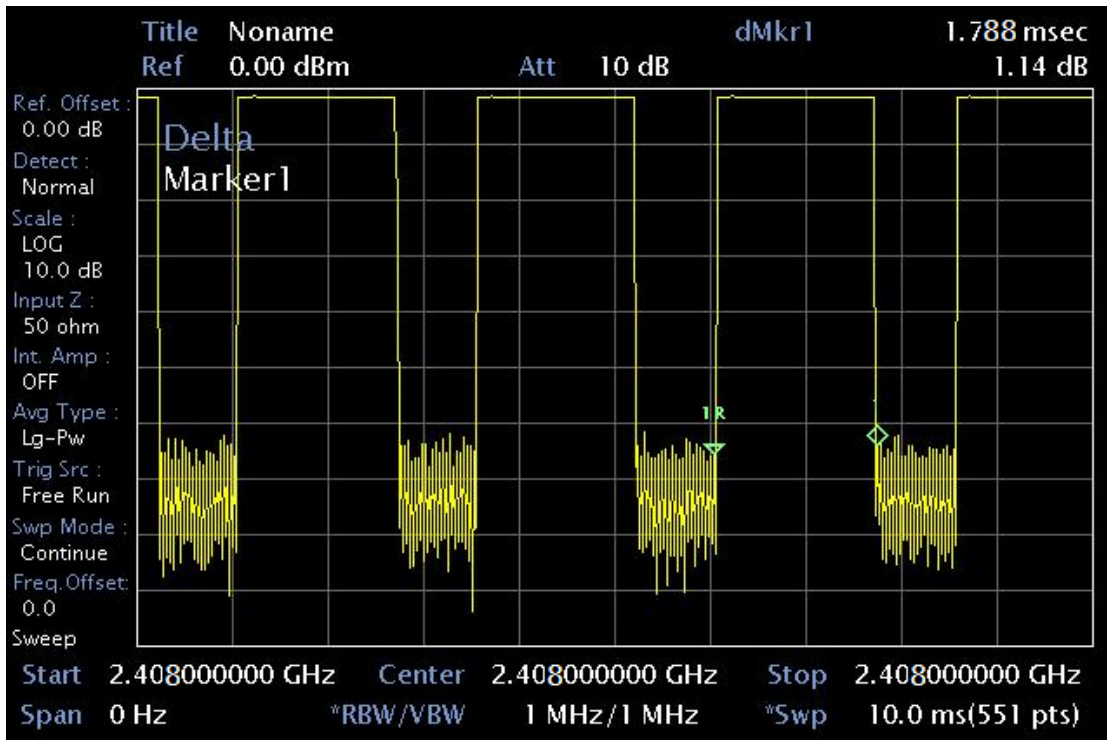
### 12.3 TEST PROCEDURES

- 1) The transmitter output was connected to the spectrum analyzer.
- 2) Adjust the center frequency to measure frequency, then set zero span mode.
- 3) Set RBW of spectrum analyzer to 1000 KHz and VBW to 1000 KHz.
- 4) Measure the time duration of one transmission on the measured frequency.

### 12.4 TEST RESULTS: PASS

### 12.5 TEST DATA:









### 13. NUMBER OF HOPPING CHANNELS

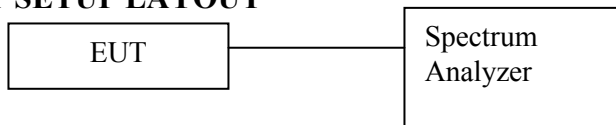
#### 13.1 TEST LIMIT

Frequency hopping systems in the 2400~2483.5MHz band shall use at least 15 channels.

#### 13.2 TEST PROCEDURES

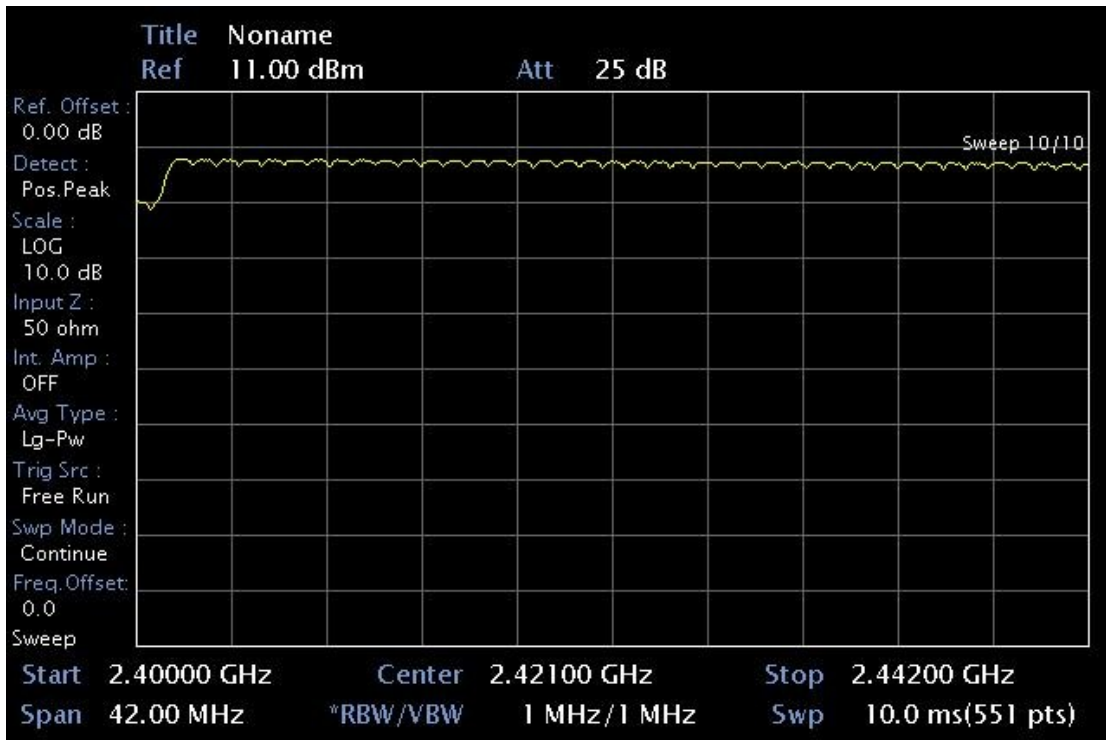
- a. The transmitter output was connected to the spectrum analyzer.
- b. 2. Set RBW of spectrum analyzer to 1000 KHz and VBW to 1000 KHz.
- c. 3. Set the Max Hold function, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been record.

#### 13.3 TEST SETUP LAYOUT

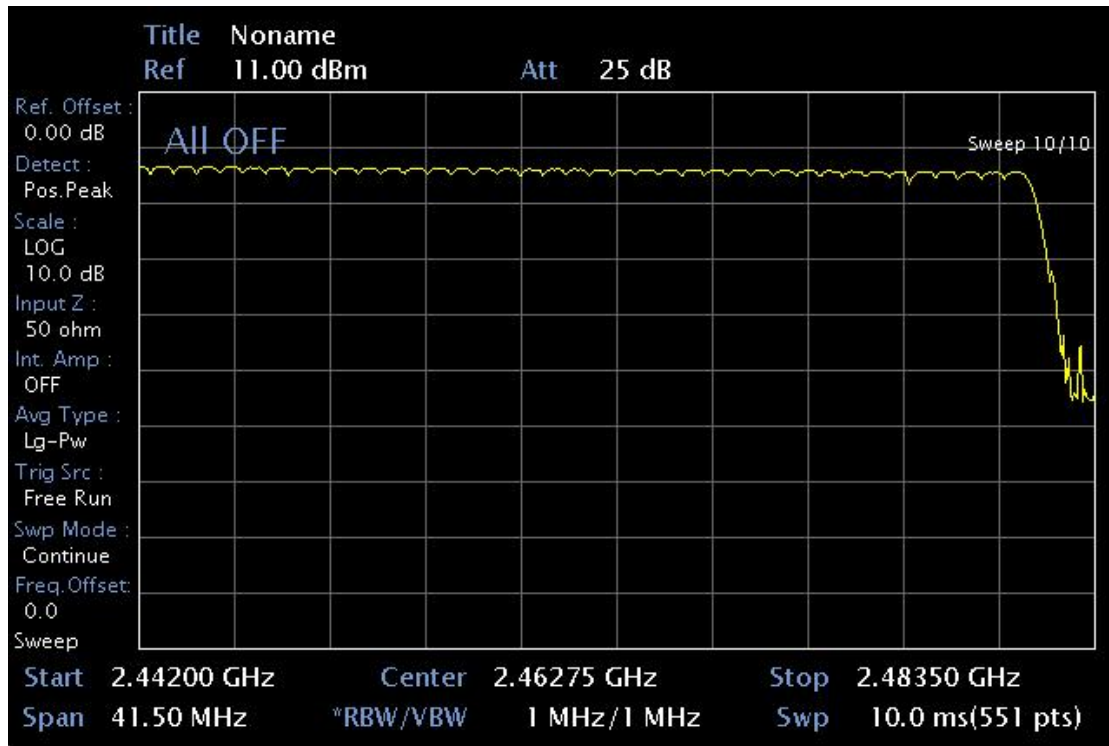


#### 13.4 TEST RESULT AND DATA

Number of hopping channels	1	Channels
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## **Appendix 1**

# **RADIO FREQUENCY EXPOSURE**



## Radio frequency Exposure

### LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

According to RSS-Gen §5.5, before equipment certification is granted, the applicable requirements of RSS-102 shall be met.

### EUT Specification

<b>EUT</b>	Traveler 6000Z
<b>Main Model</b>	GM-130013/T
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.407GHz ~ 2.476GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz
<b>Device category</b>	<input checked="" type="checkbox"/> Portable (<20cm separation) <input type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others _____
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure ( $S = 5mW/cm^2$ ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure ( $S = 1mW/cm^2$ )
<b>Antenna diversity</b>	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Max output power</b>	3.6V
<b>Antenna gain</b>	0 dBi (Omnidirectional )
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A

### TEST RESULTS

No non-compliance noted.

*(SAR evaluation is not required for the PORTABLE device while its maximum output power is lower than the general population low threshold:  $60/f_{(GHz)} = 60/2.441 = 24.58mW$ )*



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## **Appendix 2**

### **PHOTOS OF TEST CONFIGURATION**

01 966 Highest Channel



02 966 Lowest Channel

