Shenzhen EBO Technology Co., Ltd.

1-4F, Huafeng Science Park, Xin'an Sixth Road, 82th District, Bao'an,
Shenzhen, China.
Telephone: +86-755-29451282,
Fax: +86-755-22639141

FCC REPORT

Applicant:	Archos SA
Address of Applicant:	12 rue Ampere, 91430 Igny, France
Equipment Under Test (EUT)	
Product Name:	9.7inch Tablet
Model No.:	AC97BPL
Trade Mark:	Qilive
FCC ID:	SOVAC97BPL
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249:2012
Date of sample receipt:	2013-07-09
Date of Test:	2013-07-12 to 2013-07-26
Date of report issued:	2013-07-27
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Kevin Yu
Laboratory Manager

2 Version

Version No.	Date	Description
00	*July 27, 2013*	*Original*

Prepared By:  ***Date:*** *July 27, 2013*

Project Engineer

Check By:  ***Date:*** *July 27, 2013*

Reviewer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Pass: The EUT complies with the essential requirements in the standard.

N/A: not applicable.

5 General Information

5.1 Client Information

Applicant:	Archos SA
Address of Applicant:	12 rue Ampere, 91430 Igny, France
Manufacturer/Factory:	Archos SA
Address of Manufacturer/Factory:	12 rue Ampere, 91430 Igny, France

5.2 General Description of EUT

Product Name:	9.7inch Tablet
Model No.:	AC97BPL
Operation Frequency:	2402- 2480 MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK, Pi/4QPSK, 8DPSK
Antenna Type:	Integral
Antenna gain:	2dBi (declare by Applicant)
Power supply:	Adapter: Model No.: HNO090250X Input: 100-240VAC, 50/60Hz, 0.6A MAX Output: 9VDC, 2.5A Or 7.4V Li-ion Battery

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2441MHz
The Highest channel	2480MHz

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode with GFSK modulation.
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	96.65	95.23	94.16

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the "worst case" and "worst setup":

X axis (see the test setup photo)

5.4 Description of Support Units

None.

5.5 Test Facility

QuieTek Technology (Suzhou) Co., Ltd.

FCC Registered Test Site Number: 800392

5.6 Test Location

All tests were performed at:

No. 99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone, Suzhou, China

5.7 Other Information Requested by the Customer

None.

6 Test Instruments list

Instrument	Manufacturer	Model No.	Cali. Due Date
EMI Test Receiver	R&S	ESCI	2014.01.07
Two-Line V-Network	R&S	ENV216	2014.04.18
Two-Line V-Network	R&S	ENV216	2013.09.18
V-Network	R&S	ESH3-Z6	2013.09.17
V-Network	R&S	ESH3-Z6	2013.09.17
Impedance Stabilization Network	Teseq GmbH	ISN T800	2014.02.24
Impedance Stabilization Network	Teseq GmbH	ISN T8-Cat6	2014.02.24
Current Probe	R&S	EZ-17	2014.04.18
50ohm Termination	SHX	TF2	2013.09.17
50ohm Termination	SHX	TF2	2013.09.17
50ohm Termination	SHX	TF2	2013.09.17
50ohm Coaxial Switch	Anritsu	MP59B	2014.03.02
Coaxial Cable	Suhner	RG 223	2014.03.02

Radiated disturbance Below 1G

Instrument	Manufacturer	Model No.	Cali. Due Date
EMI Test Receiver	R&S	ESCI	2014.04.18
Bilog Antenna	Teseq GmbH	CBL6112D	2013.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	2014.03.02

Radiated disturbance Above 1G

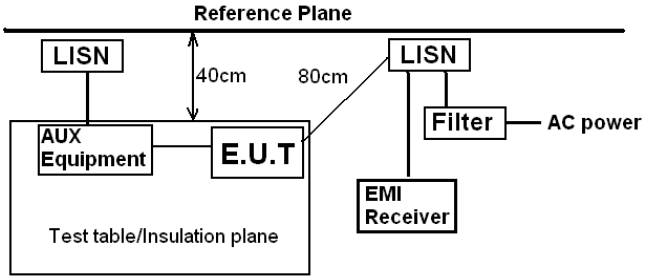
Instrument	Manufacturer	Model No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9010A	2014.04.18
Preamplifier	Miteq	NSP1800-25	2014.05.04
DRG Horn	ETS-Lindgren	3117	2014.01.21
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	2014.03.02

7 Test results and Measurement Data

7.1 Antenna requirement:

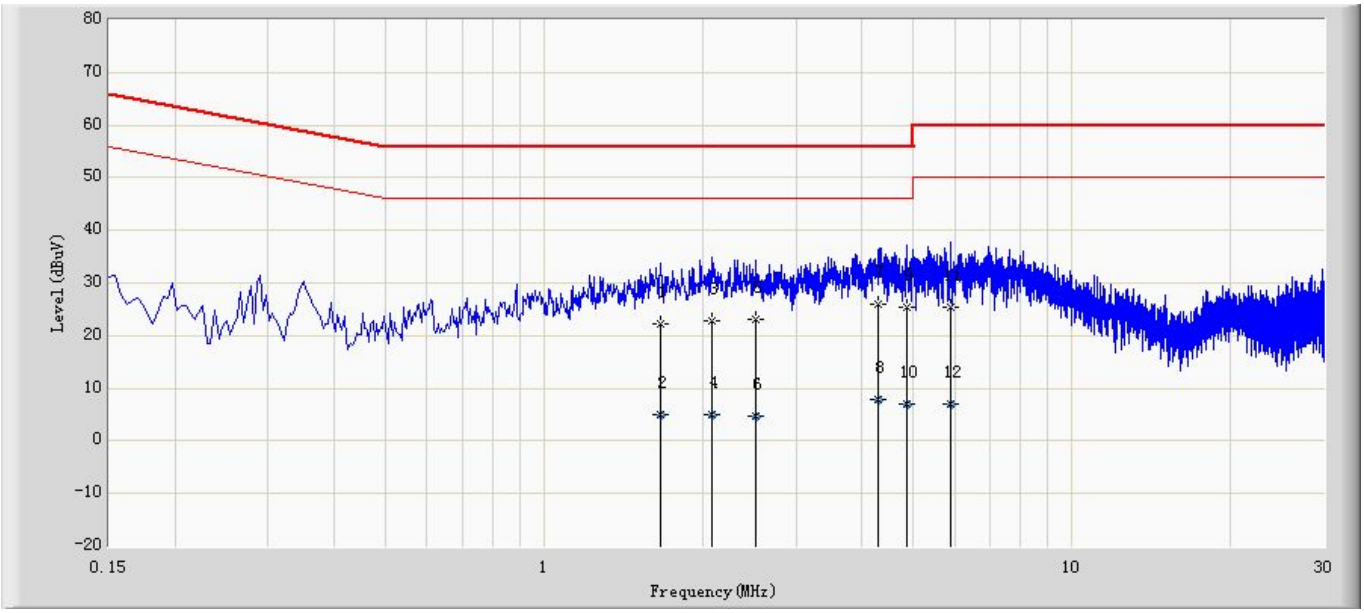
Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
E.U.T Antenna:	
The antenna is Integral Antenna, the best case gain of the antenna is 2dBi.	

7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.4:2003
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

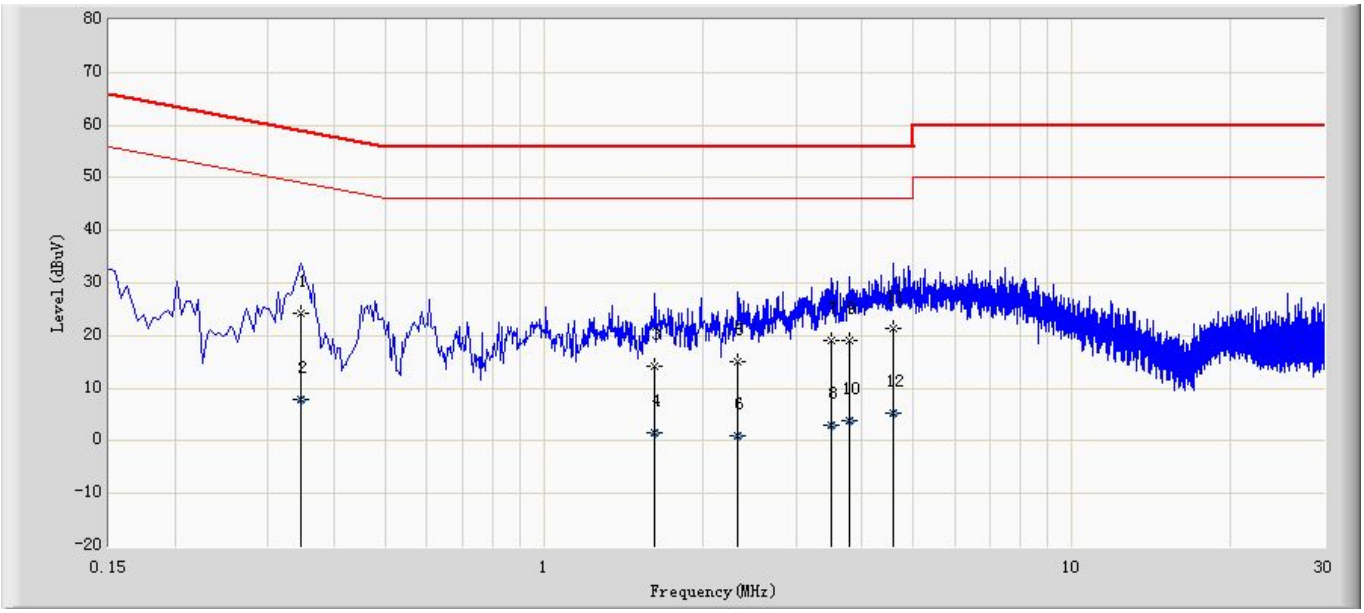
Measurement data:

Line:



No	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	1.666	22.161	12.367	-33.839	56.00	9.794	QP
2	1.666	5.105	-4.689	-40.895	46.00	9.794	AV
3	2.074	22.858	13.068	-33.142	56.00	9.790	QP
4	2.074	5.077	-4.713	-40.923	46.00	9.790	AV
5	2.514	23.141	13.339	-32.859	56.00	9.802	QP
6	2.514	4.780	-5.022	-41.220	46.00	9.802	AV
7	4.306	26.104	16.256	-29.896	56.00	9.848	QP
8	4.306	7.837	-2.011	-38.163	46.00	9.848	AV
9	4.866	25.445	15.585	-30.555	56.00	9.860	QP
10	4.866	7.147	-2.713	-38.853	46.00	9.860	AV
11	5.878	25.377	15.484	-34.623	60.00	9.893	QP
12	5.878	6.894	-2.999	-43.106	50.00	9.893	AV

Neutral:



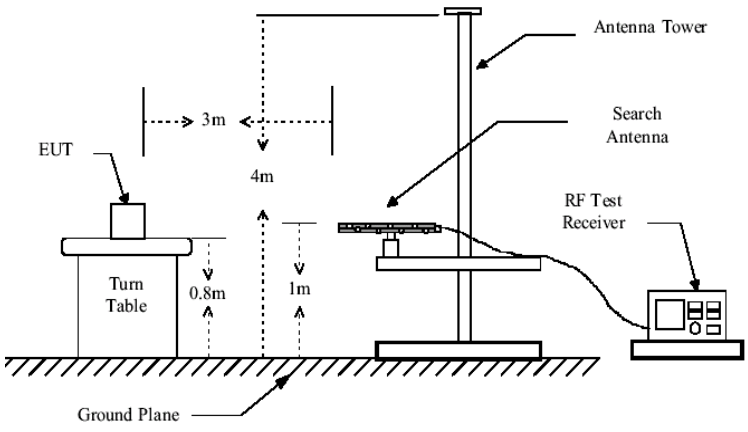
No	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	0.346	24.228	14.256	-34.830	59.058	9.973	QP
2	0.346	7.932	-2.040	-41.126	49.058	9.973	AV
3	1.618	14.289	4.307	-41.711	56.000	9.982	QP
4	1.618	1.456	-8.526	-44.544	46.000	9.982	AV
5	2.326	15.085	5.116	-40.915	56.000	9.969	QP
6	2.326	1.099	-8.870	-44.901	46.000	9.969	AV
7	3.506	19.024	8.998	-36.976	56.000	10.026	QP
8	3.506	3.103	-6.923	-42.897	46.000	10.026	AV
9	3.798	19.193	9.148	-36.807	56.000	10.044	QP
10	3.798	3.838	-6.206	-42.162	46.000	10.044	AV
11	4.598	21.312	11.234	-34.688	56.000	10.078	QP
12	4.598	5.211	-4.867	-40.789	46.000	10.078	AV

Notes:

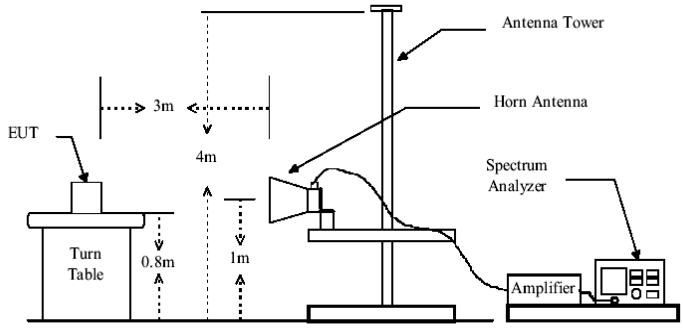
1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level = Reading Level + Factor

7.3 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">2400MHz-2483.5MHz</td><td>94.00</td><td>Average Value</td></tr>
<tr><td>114.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(band edge)</td><td>Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz
 

Above 1GHz</td></tr>
</table>

	
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Antenna Polarization
2402.00	95.03	67.31	-18.97	114.00	27.73	Horizontal
2402.00	94.21	66.48	-19.79	114.00	27.73	Vertical
2441.00	95.76	67.88	-18.24	114.00	27.88	Horizontal
2441.00	91.56	63.68	-22.44	114.00	27.88	Vertical
2480.00	96.64	68.60	-17.36	114.00	28.04	Horizontal
2480.00	93.83	65.79	-20.17	114.00	28.04	Vertical

Average value:

Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Antenna Polarization
2402.00	82.02	54.29	-11.98	94.00	27.73	Horizontal
2402.00	81.61	53.88	-12.39	94.00	27.73	Vertical
2441.00	81.42	53.54	-12.58	94.00	27.88	Horizontal
2441.00	77.74	49.86	-16.26	94.00	27.88	Vertical
2480.00	82.61	54.57	-11.39	94.00	28.04	Horizontal
2480.00	78.86	50.82	-15.14	94.00	28.04	Vertical

According to the follow transmitter output power (P_t) formula:

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

P_t =transmitter output power in watts

g_t =numeric gain of the transmitting antenna (unitless)

E=electric field strength in V/m

d= measurement distance in meters (m).

According to the above test data, Emax=96.64dBuV/m=0.068V/m, d=3m, g_t=1.58

$P_t =(E \times d)^2/(30 \times g_t)= (0.068 \times 3)^2/(30 \times 1.58)=0.0008752W=0.8752mW$

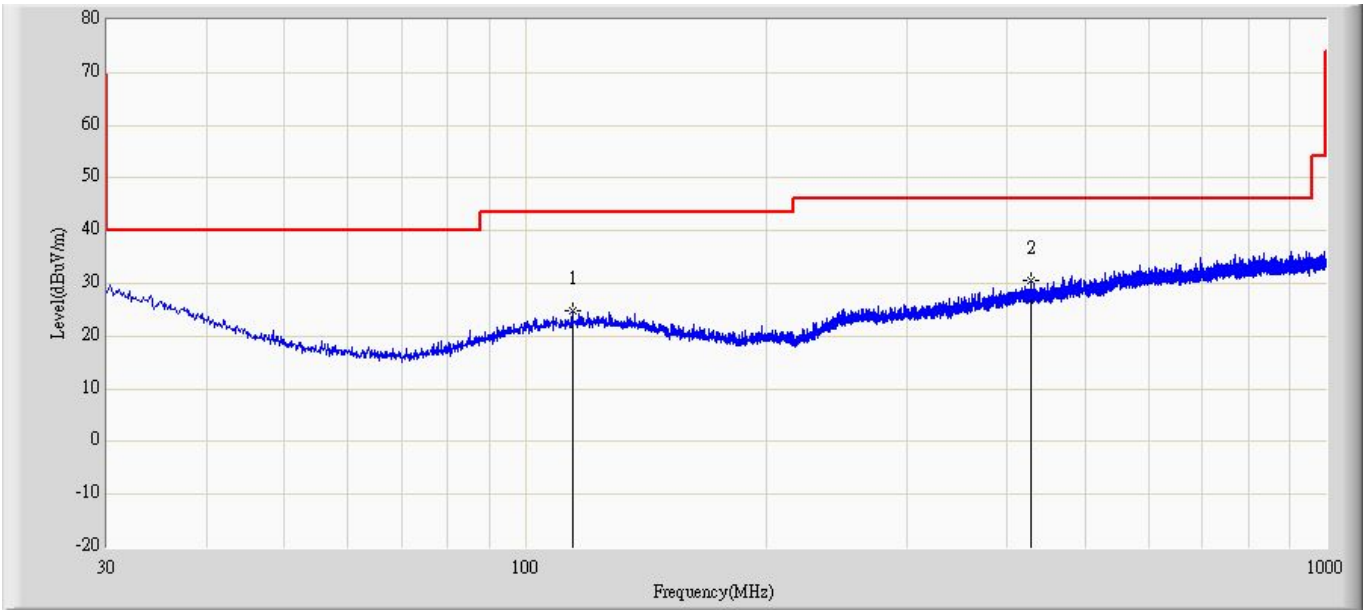
7.3.2 Spurious emissions

Measurement Data:

Below 1GHz

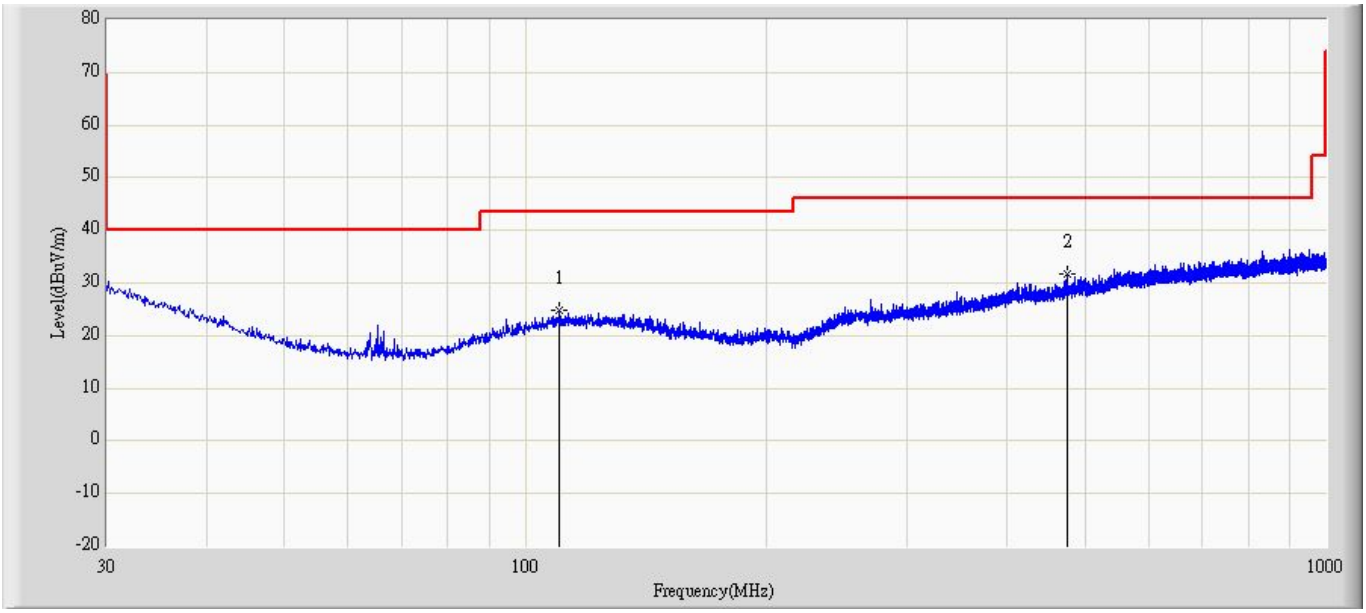
The lowest/middle/highest channels were tested. The worst case is middle channel mode. Only the worst case's data was showing in the report.

Horizontal:



No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	114.39	24.72	6.10	-18.78	43.50	18.62	QP
2	428.06	30.52	6.16	-15.48	46.00	24.36	QP

Vertical



No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	110.39	24.78	6.18	-18.72	43.50	18.60	QP
2	474.38	31.74	6.60	-14.26	46.00	25.14	QP

Above 1GHz:

802.11b mode								
CH. No.	Antenna Pol.	Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector
00	H	4804.00	48.30	-2.60	45.70	54(Note2)	-8.30	PK
	V	4804.00	47.00	-2.60	44.40	54(Note2)	-9.60	PK
	H	7206.00	39.80	2.60	42.40	54(Note2)	-11.60	PK
	V	7206.00	39.70	2.60	42.30	54(Note2)	-11.70	PK
	H	9608.00	40.50	4.80	45.30	54(Note2)	-8.70	PK
	V	9608.00	40.80	4.80	45.60	54(Note2)	-8.40	PK
39	H	4882.00	45.80	-2.30	43.50	54(Note2)	-10.50	PK
	V	4882.00	44.60	-2.30	42.30	54(Note2)	-11.70	PK
	H	7323.00	40.40	2.70	43.10	54(Note2)	-10.90	PK
	V	7323.00	40.50	2.70	43.20	54(Note2)	-10.80	PK
	H	9764.00	40.90	4.70	45.60	54(Note2)	-8.40	PK
	V	9764.00	40.70	4.70	45.40	54(Note2)	-8.60	PK
78	H	4960.00	40.80	-2.00	38.80	54(Note2)	-15.20	PK
	V	4960.00	41.80	-2.00	39.80	54(Note2)	-14.20	PK
	H	7440.00	40.70	2.70	43.40	54(Note2)	-10.60	PK
	V	7440.00	40.60	2.70	43.30	54(Note2)	-10.70	PK
	H	9920.00	40.90	5.00	45.90	54(Note2)	-8.10	PK
	V	9920.00	41.10	5.00	46.10	54(Note2)	-7.90	PK

Note 1: The test trace is same as the ambient noise (the test frequency range:18GHz~25GHz), therefore no data appear in the report.

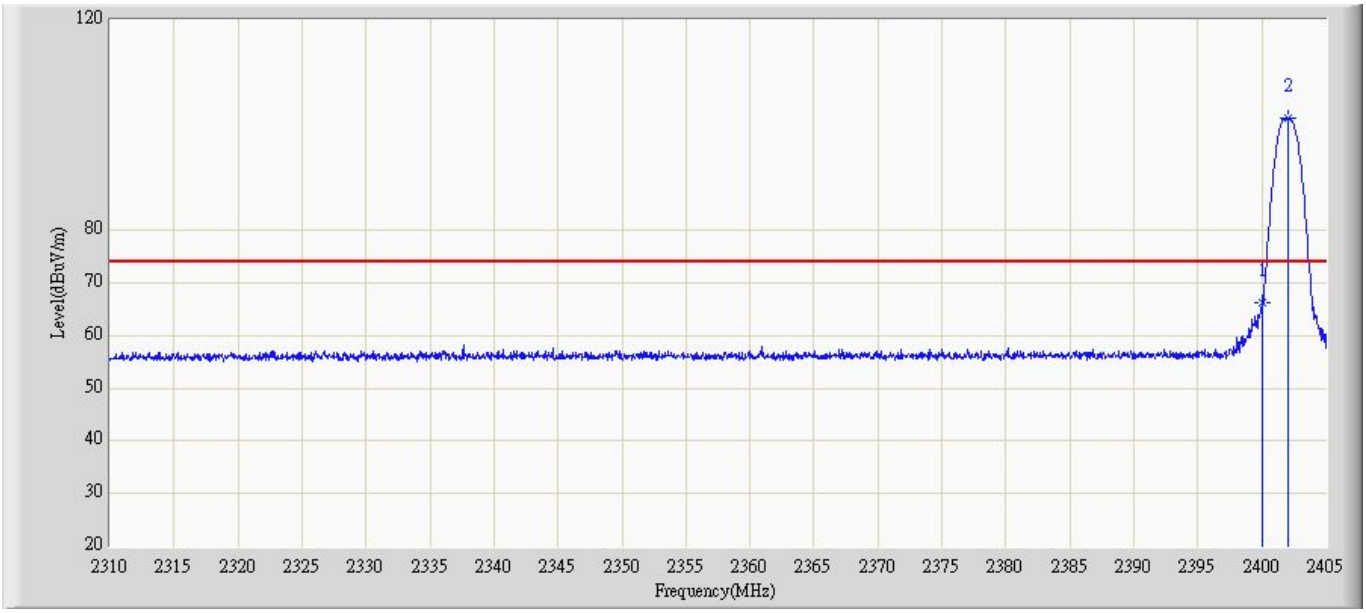
2: This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

3: Measure Level = Reading Level + Factor.

7.3.3 Bandedge emissions

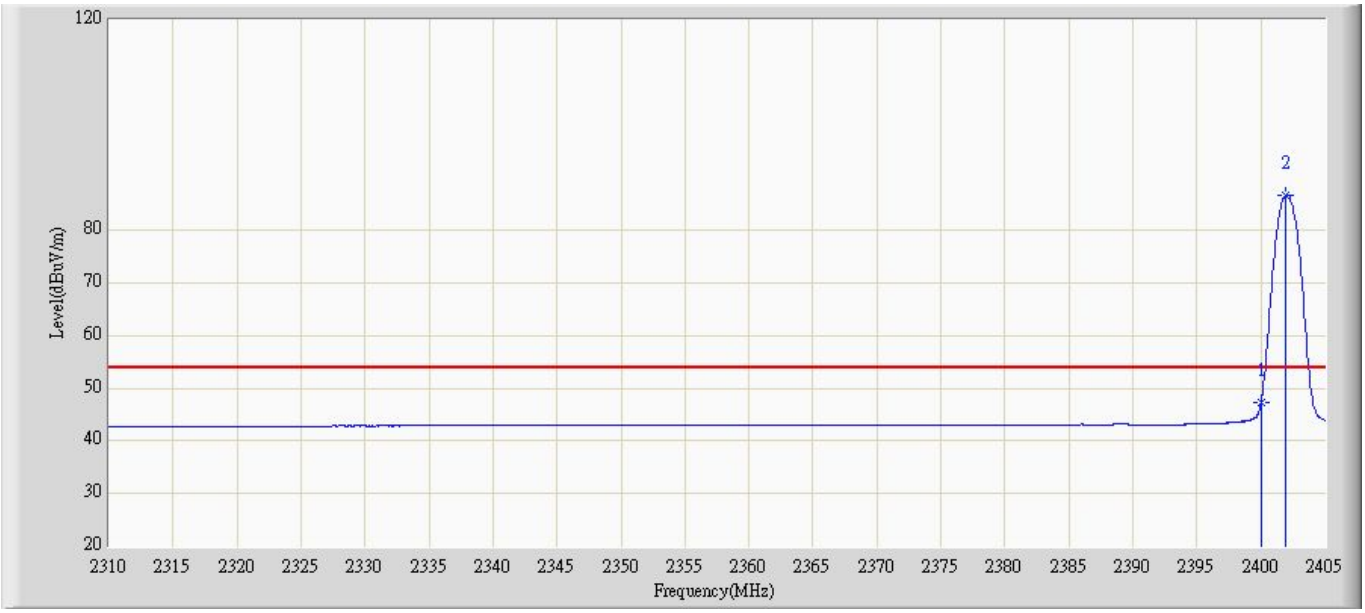
All of the restriction bands were tested, and only the data of worst case was exhibited.

Frequency:	2402MHz	ANT. Polarization:	Horizontal



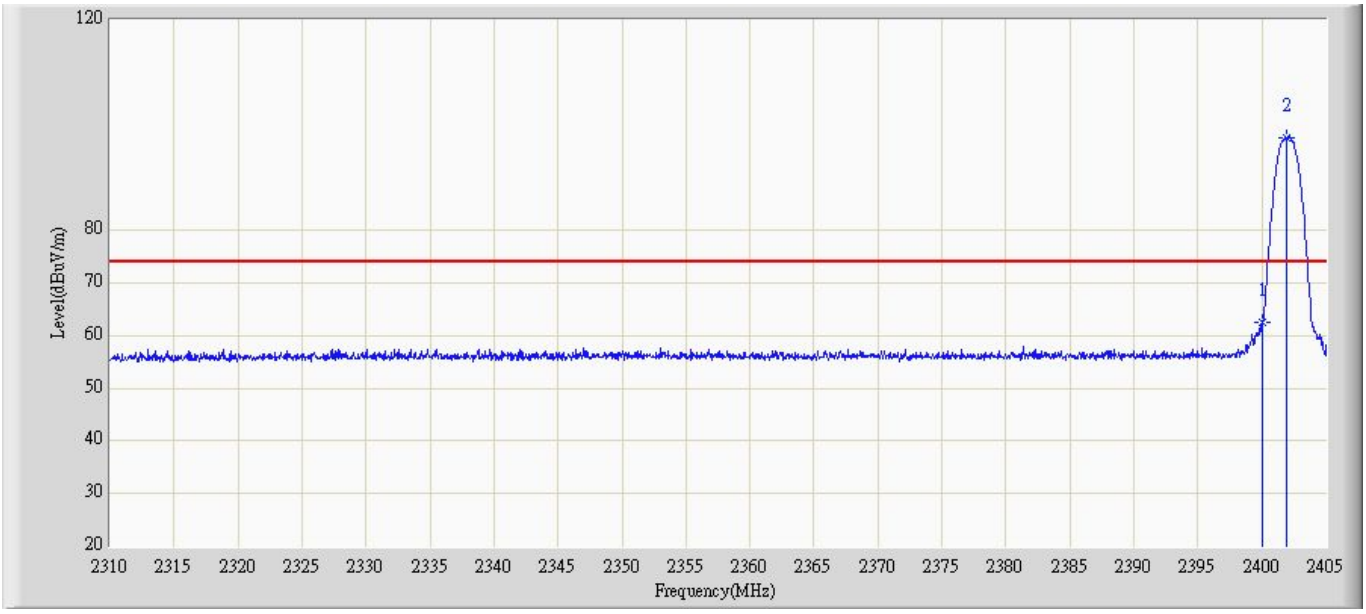
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2400.00	66.22	38.53	-7.78	74.00	27.69	PK
2	2401.89	95.03	67.31	N/A	N/A	27.73	PK

Frequency:	2402MHz	ANT. Polarization:	Horizontal



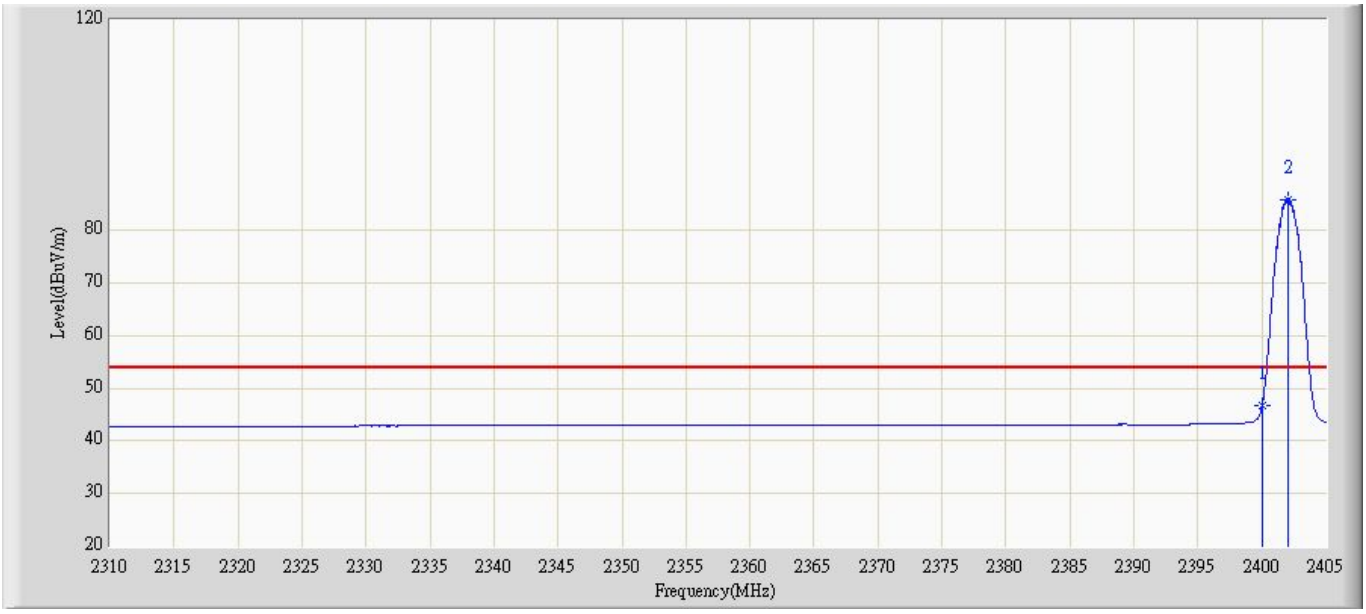
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2400.00	47.30	19.60	-6.71	54.00	27.69	AV
2	2401.89	82.02	54.29	N/A	N/A	27.73	AV

Frequency:	2402MHz	ANT. Polarization:	Vertical



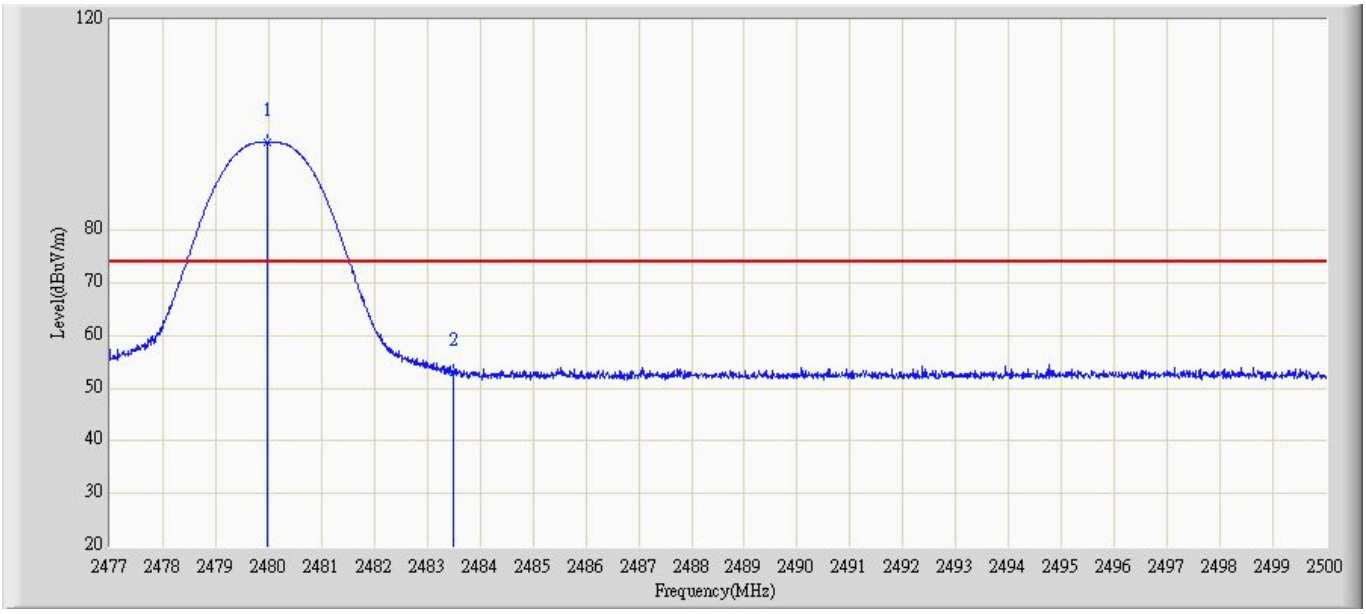
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2400.00	62.44	34.74	-11.56	74.00	27.69	PK
2	2401.89	94.21	66.48	N/A	N/A	27.73	PK

Frequency:	2402MHz	ANT. Polarization:	Vertical



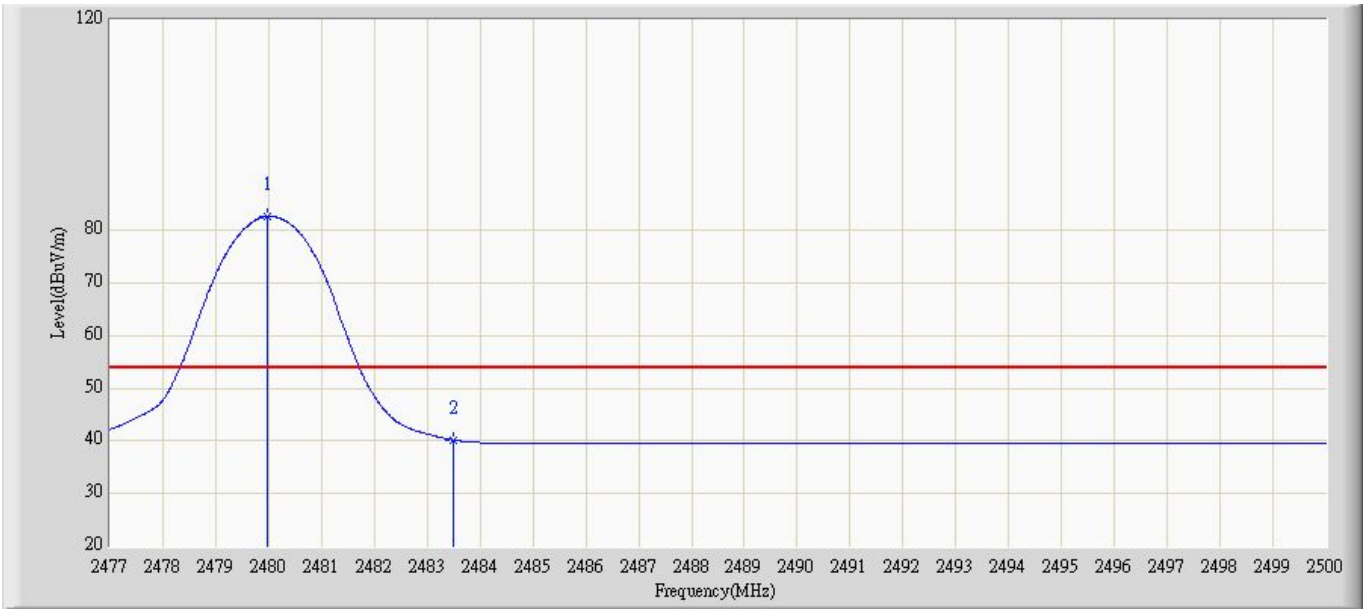
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2400.00	46.58	18.89	-7.42	54.00	27.69	AV
2	2401.89	81.61	53.88	N/A	N/A	27.73	AV

Frequency:	2480MHz	ANT. Polarization:	Horizontal



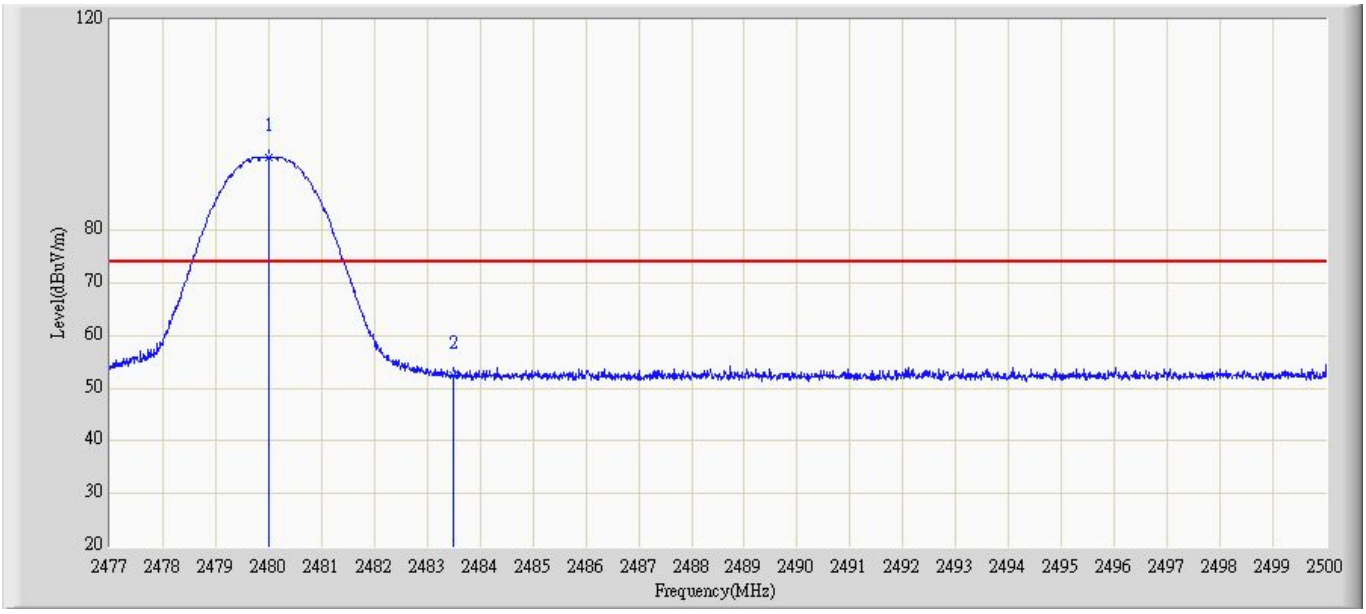
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2479.98	96.65	68.60	N/A	N/A	28.04	PK
2	2483.50	53.17	25.11	-20.83	74.00	28.06	PK

Frequency:	2480MHz	ANT. Polarization:	Horizontal



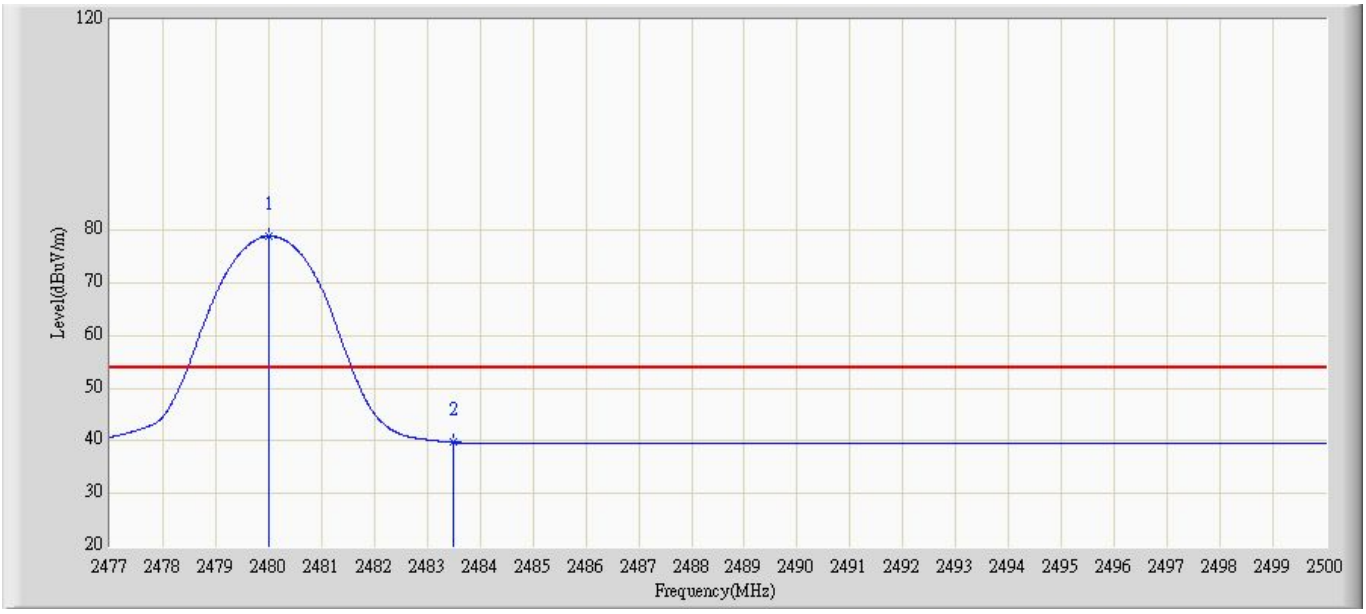
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2479.97	82.61	54.57	N/A	N/A	28.04	AV
2	2483.50	40.18	12.12	-13.82	54.00	28.06	AV

Frequency:	2480MHz	ANT. Polarization:	Vertical



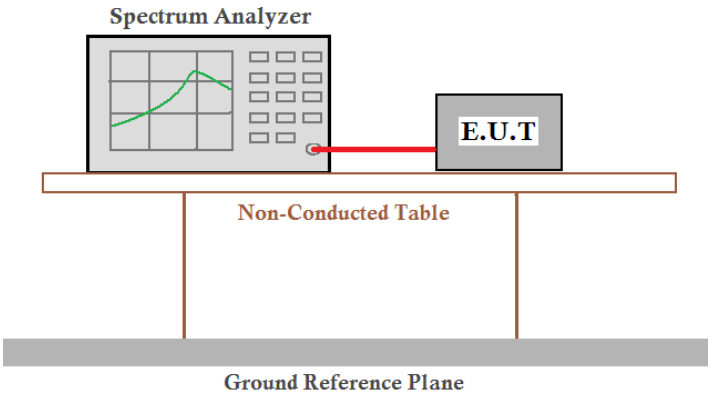
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2480.01	93.83	65.79	N/A	N/A	28.04	PK
2	2483.50	52.42	24.36	-21.58	74.00	28.06	PK

Frequency:	2480MHz	ANT. Polarization:	Vertical



No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2480.01	78.86	50.82	N/A	N/A	28.04	AV
2	2483.50	39.72	11.66	-14.28	54.00	28.06	AV

7.4 20dB Occupy Bandwidth

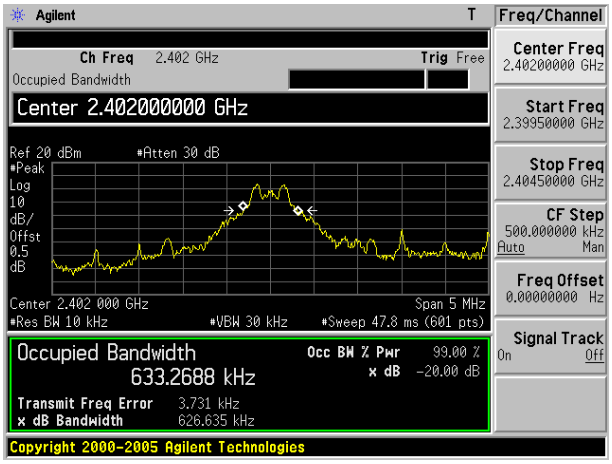
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.4:2003
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

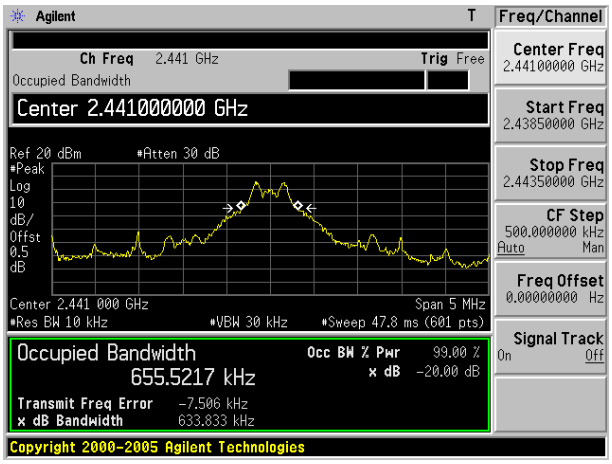
Worst case GFSK modulation

Test channel	20dB bandwidth(kHz)	Result
Lowest	626.64	Pass
Middle	633.83	Pass
Highest	631.17	Pass

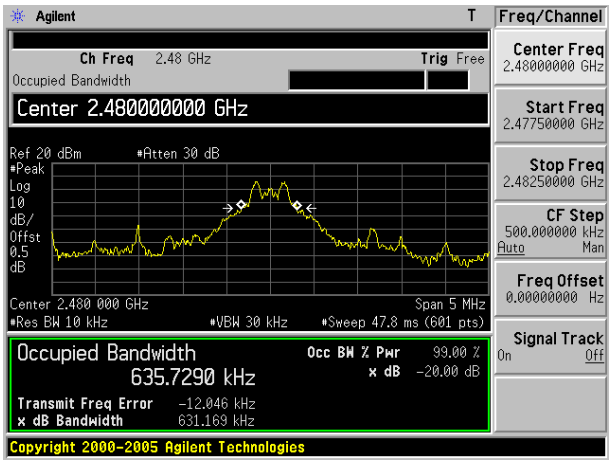
Test plot as follows:



Lowest channel



Middle channel



Highest channel