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 15.247:2012
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	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
Channel Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

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

5 General Information

5.1 Client Information

Applicant:	Archos SA
Address of Applicant:	12 rue Ampere, 91430 Igny, France
Manufacturer:	Archos SA
Address of Manufacturer:	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:	40
Channel separation:	2MHz
Modulation technology:	GFSK
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	11	2422MHz	21	2442MHz	31	2462MHz
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz

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	2442MHz
The Highest channel	2480MHz

5.3 Test mode

Transmitting mode	Keep the EUT in transmitting mode.
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.	

5.4 Test Facility

QuieTek Technology (Suzhou) Co., Ltd.

FCC Registered Test Site Number: 800392

5.5 Test Location

All tests were performed at:

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

5.6 Other Information Requested by the Customer

None.

5.7 Description of Support Units

None.

5.8 Test Instruments list

Instrument	Manufacturer	Type No.	Cali. Due Date
Power Meter	Anritsu	ML2495A	2013/11/10
Power Sensor	Anritsu	MA2411B	2013/11/10
DC Power Supply	IDRC	CD-035-020PR	2013/09/17
Spectrum Analyzer	Agilent	E4446A	2014/04/18
Spectrum Analyzer	Agilent	N9020A	2014/04/18
Vector Signal Generator	Agilent	E4438C	2014/04/18
10dB Coaxial Coupler	Agilent	87300C	2014/04/18
PSG Analog S.G.	Agilent	E8257D	2014/04/18
Preamplifier	Agilent	8449B	2014/04/10
Bilog Antenna	Schaffner	CBL6112B	2013/10/15
Half Wave Tuned Dipole Antenna	COM-POWER	AD-100	2013/11/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	2013/11/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	2014/06/08
Filter Banks	QuieTek	QTK-FB	2014/05/04

6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

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.

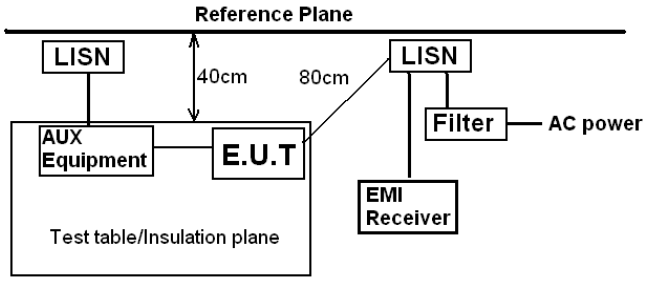
15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

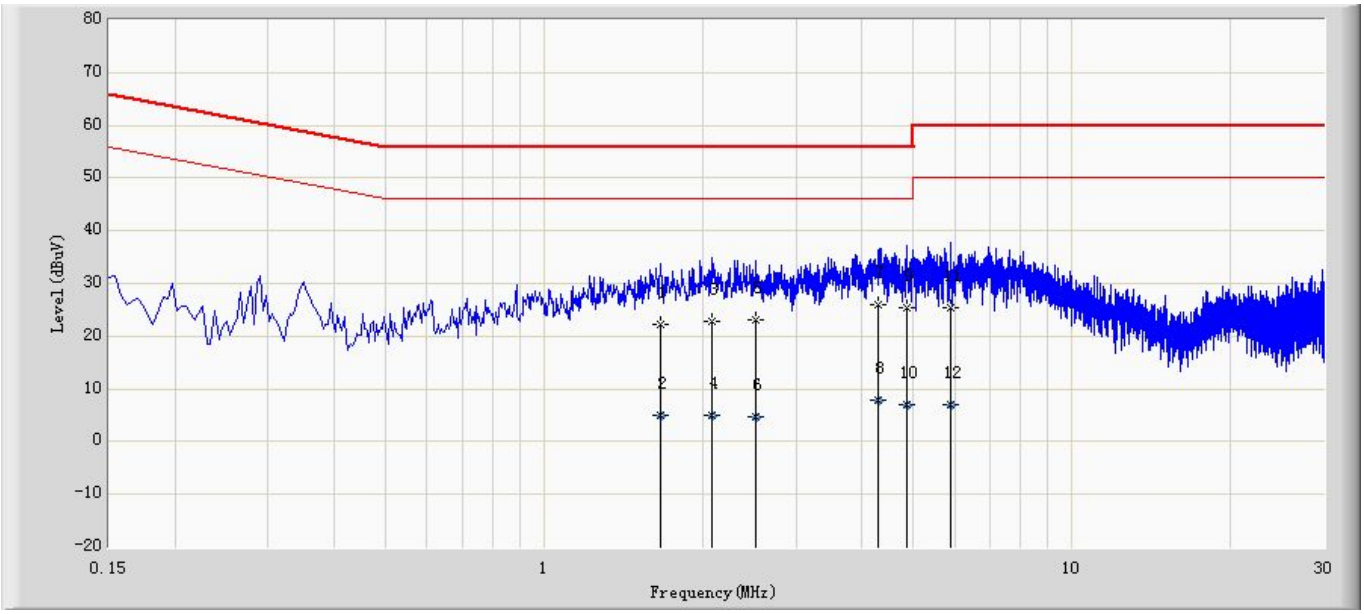
The antenna is Integral antenna, the best case gain of the antenna is 2dBi

6.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.4:2003
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	
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 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

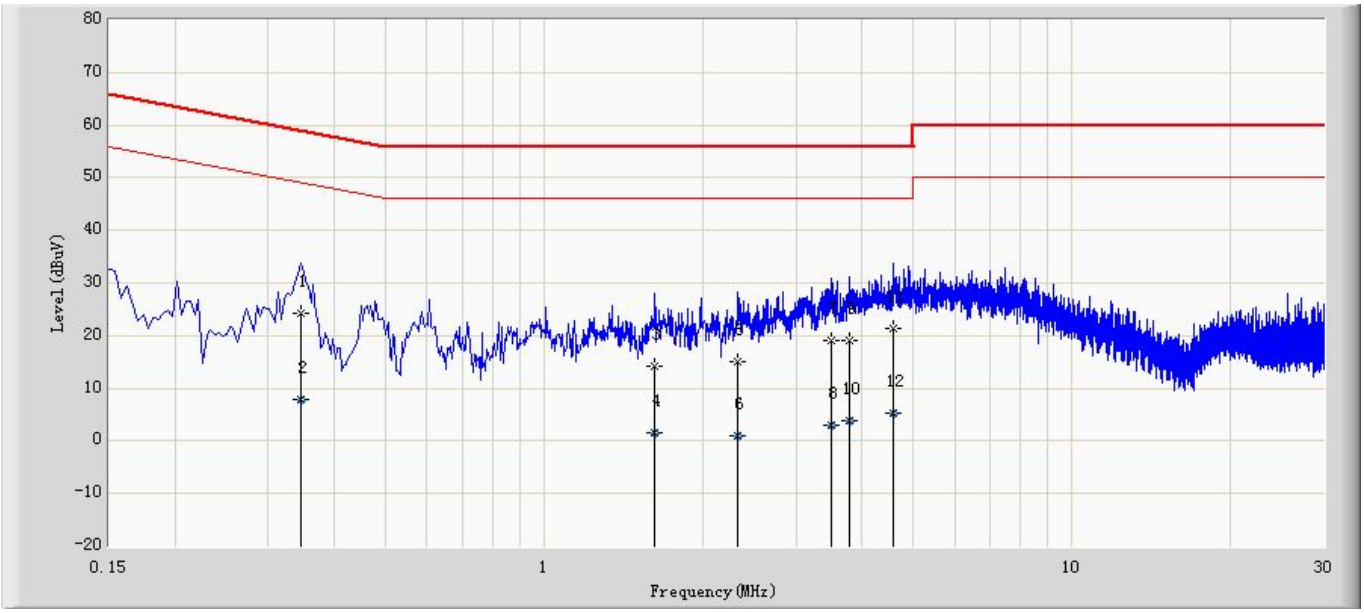
Measurement data:

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:



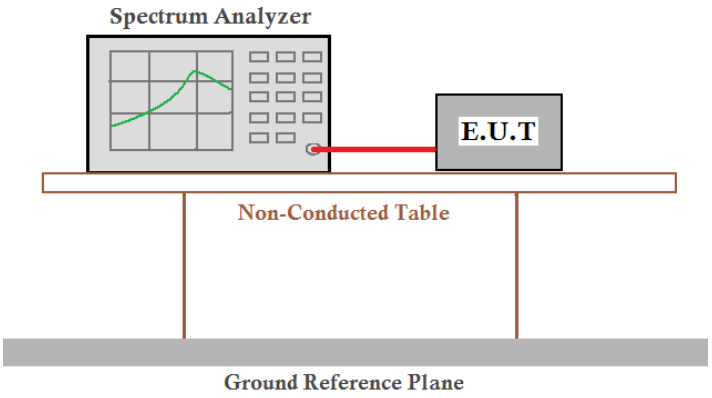
No	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	0.346	24.228	14.256	-34.830	59.058	9.973	QP
2	0.346	7.932	-2.040	-41.126	49.058	9.973	AV
3	1.618	14.289	4.307	-41.711	56.000	9.982	QP
4	1.618	1.456	-8.526	-44.544	46.000	9.982	AV
5	2.326	15.085	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

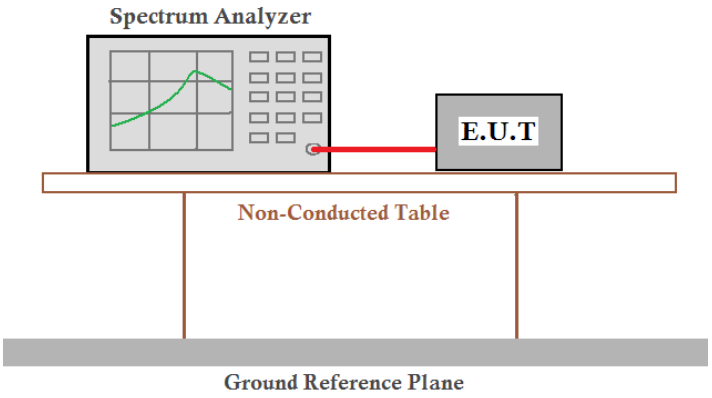
6.3 Fundamental emission output power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03
Limit:	30dBm
Test setup:	
Test Procedure:	The peak output power is measured using a broadband peak RF power meter.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data:

Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Result
2402	6.32	30.00	PASS
2442	7.01	30.00	PASS
2480	7.21	30.00	PASS

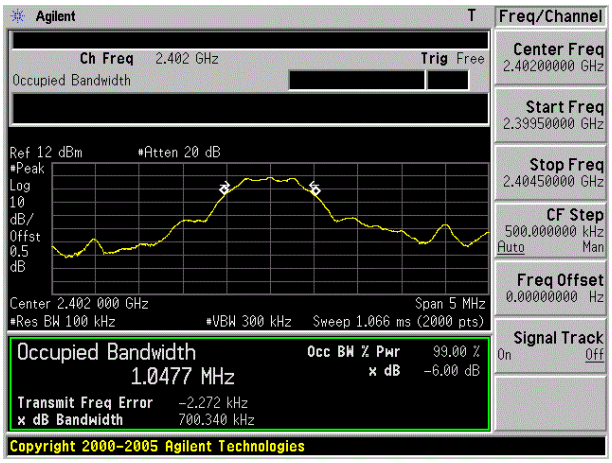
6.4 DTS Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

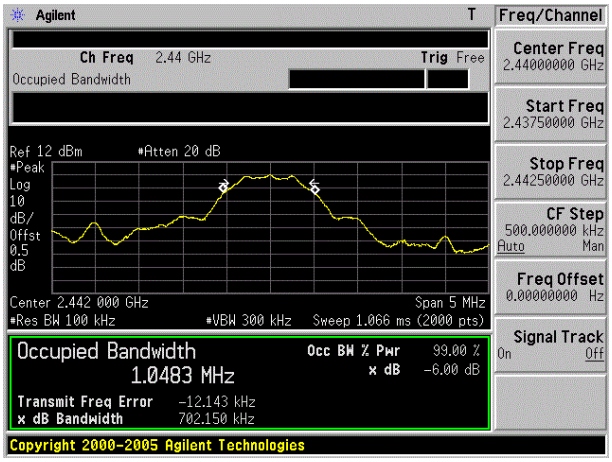
Measurement Data:

Frequency (MHz)	DTS Bandwidth (kHz)	Limit(kHz)	Result
2402	700.34	>500	PASS
2442	702.15		PASS
2480	698.68		PASS

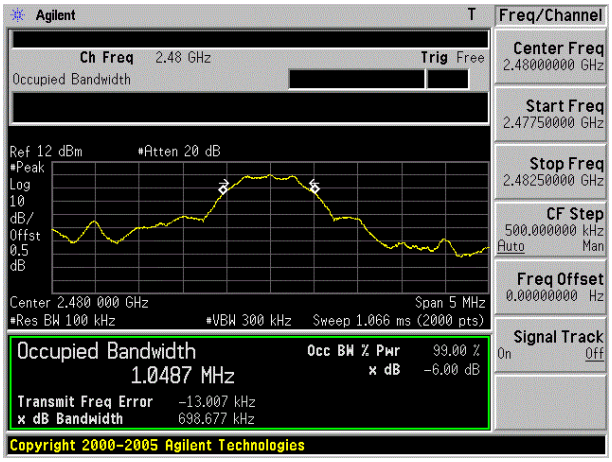
Test plot as followed:



Channel 01 (2402MHz)

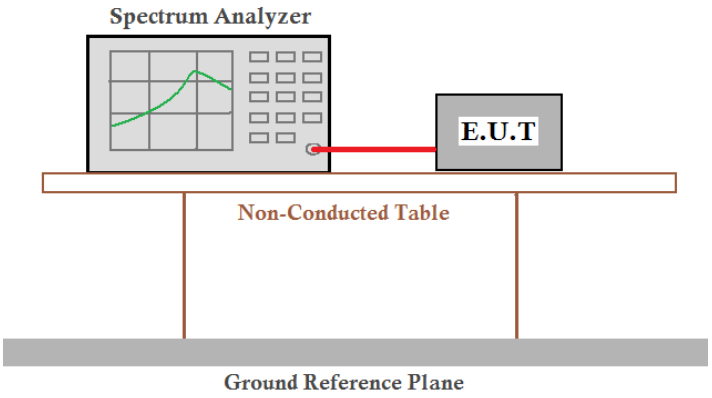


Channel 21 (2442MHz)



Channel 40 (2480MHz)

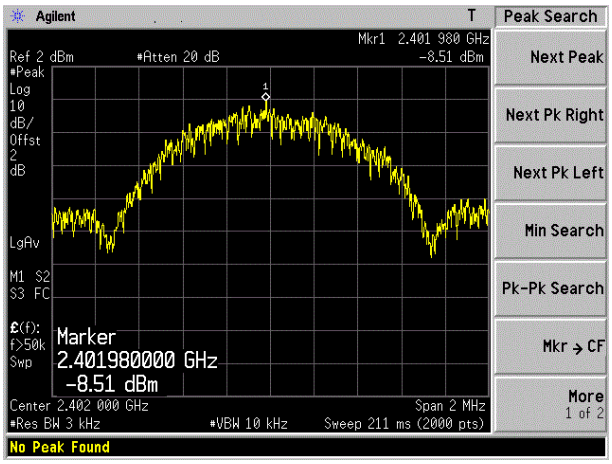
6.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03
Limit:	8dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

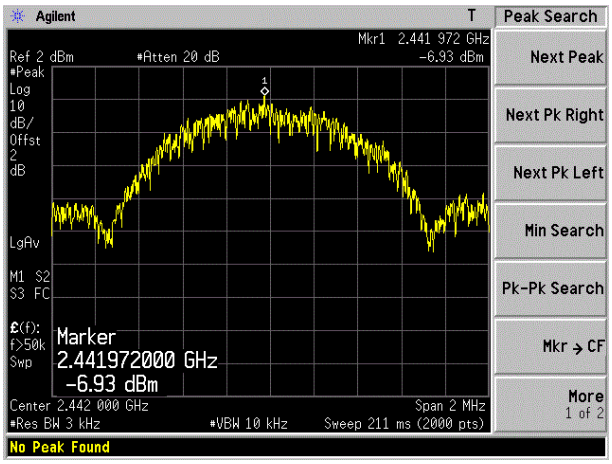
Measurement Data:

Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm/3kHz)	Result
2402	-8.51	8.00	PASS
2442	-6.93		PASS
2480	-6.90		PASS

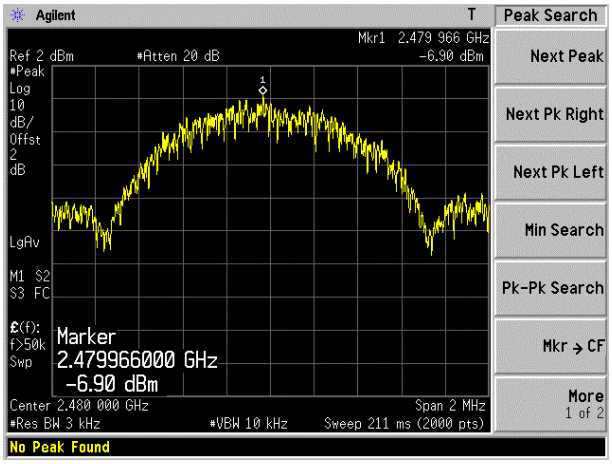
Test plot as followed:



Channel 01 (2402MHz)

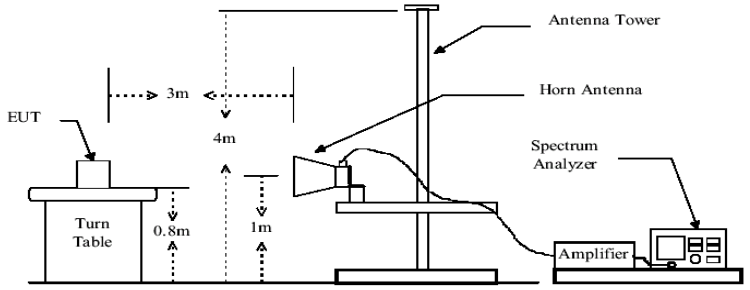


Channel 21 (2442MHz)



Channel 40 (2480MHz)

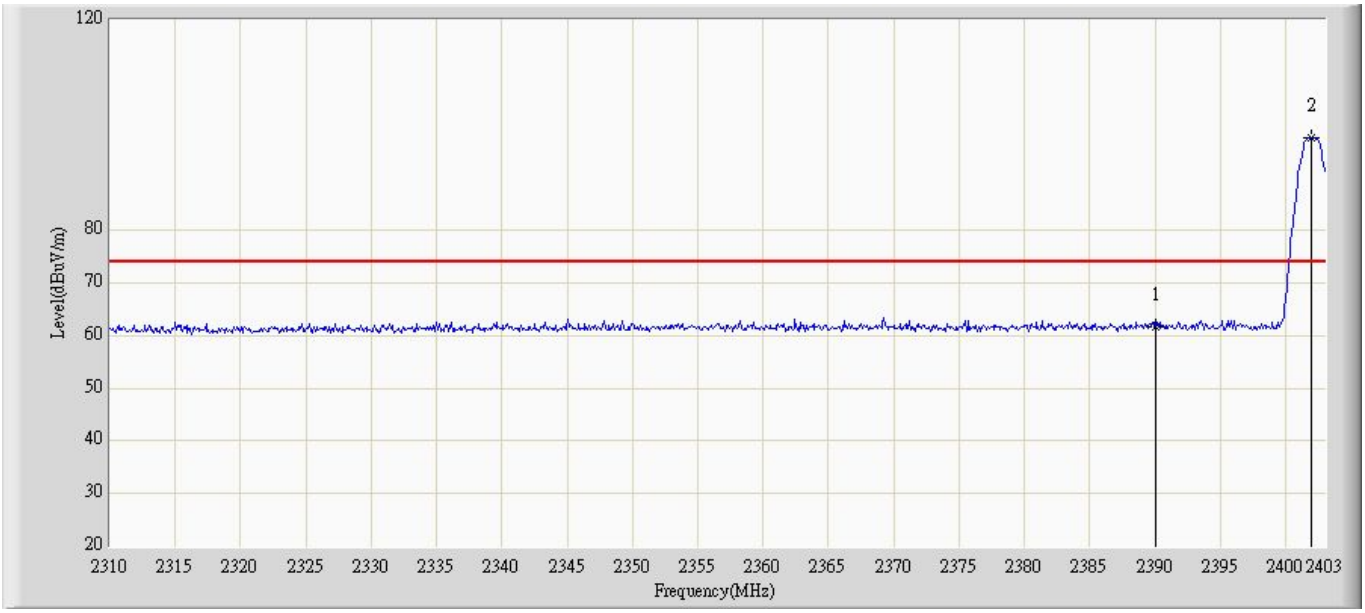
6.6 Band edges

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4: 2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 25GHz, only worse case is reported</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</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:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</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>Test setup:</td><td> 
</td></tr>
<tr><td>Test Procedure:</td><td>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.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.8 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Remark:
Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis which it is worse case.

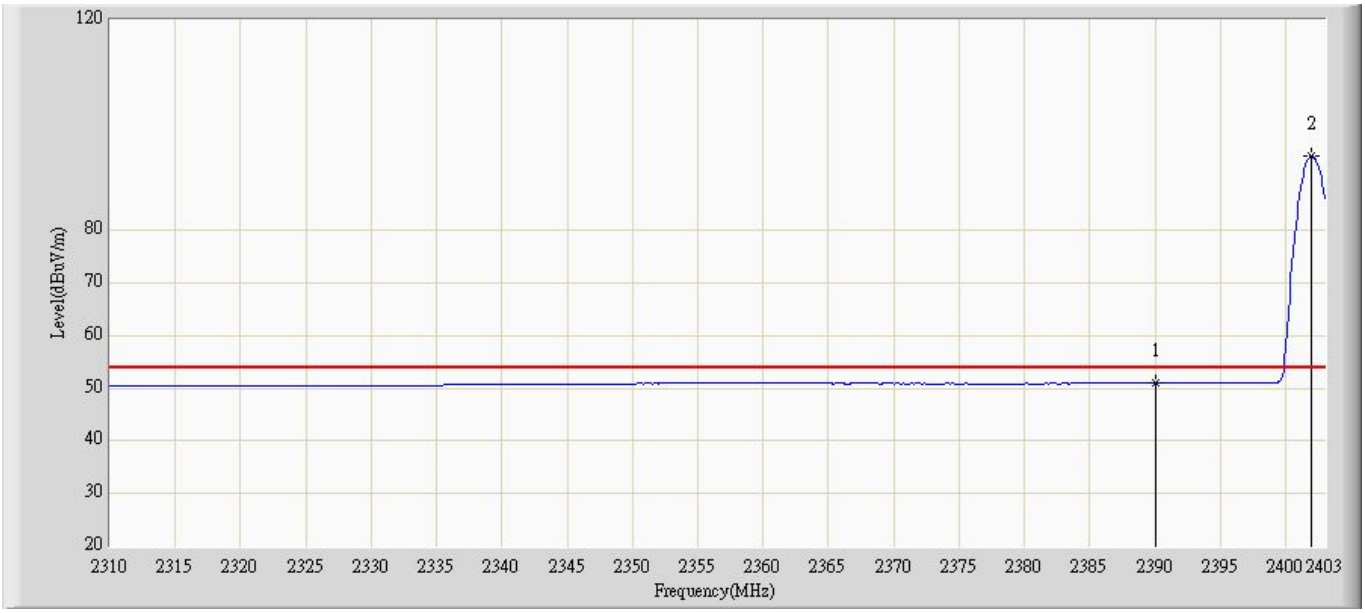
Measurement data:

Frequency:	2402MHz	ANT. Polarization:	Horizontal



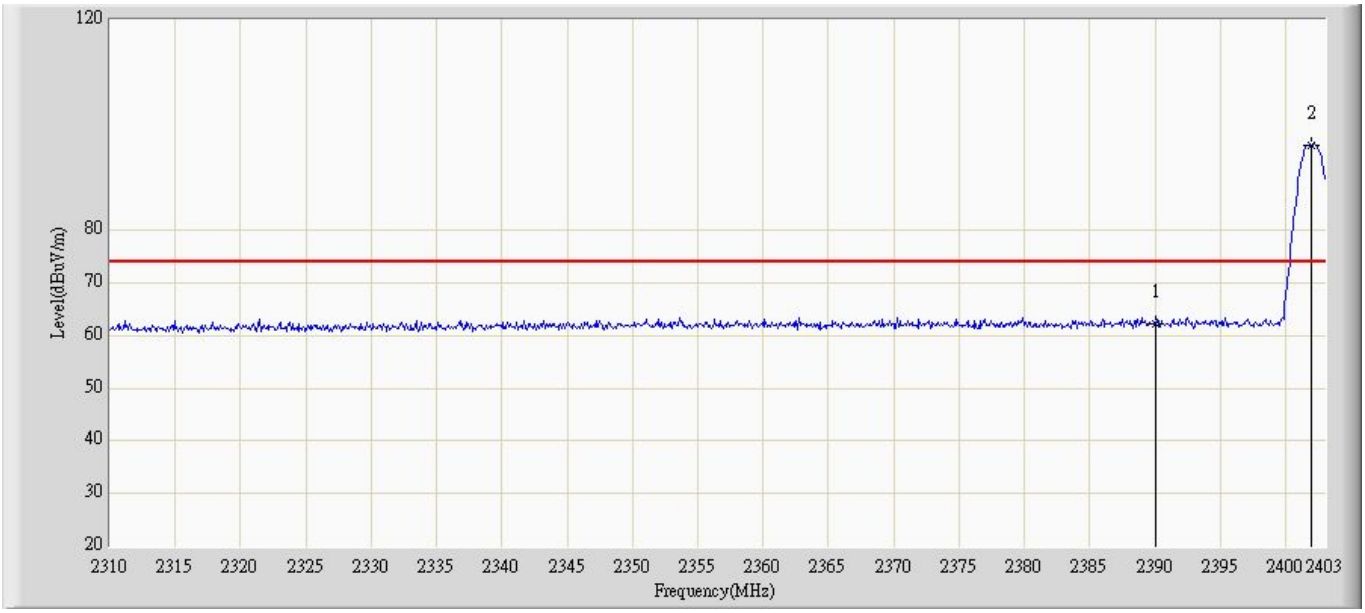
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2390.00	61.73	25.23	-12.27	74.00	36.50	PK
2	2401.98	97.50	60.95	N/A	N/A	36.56	PK

Frequency:	2402MHz	ANT. Polarization:	Horizontal



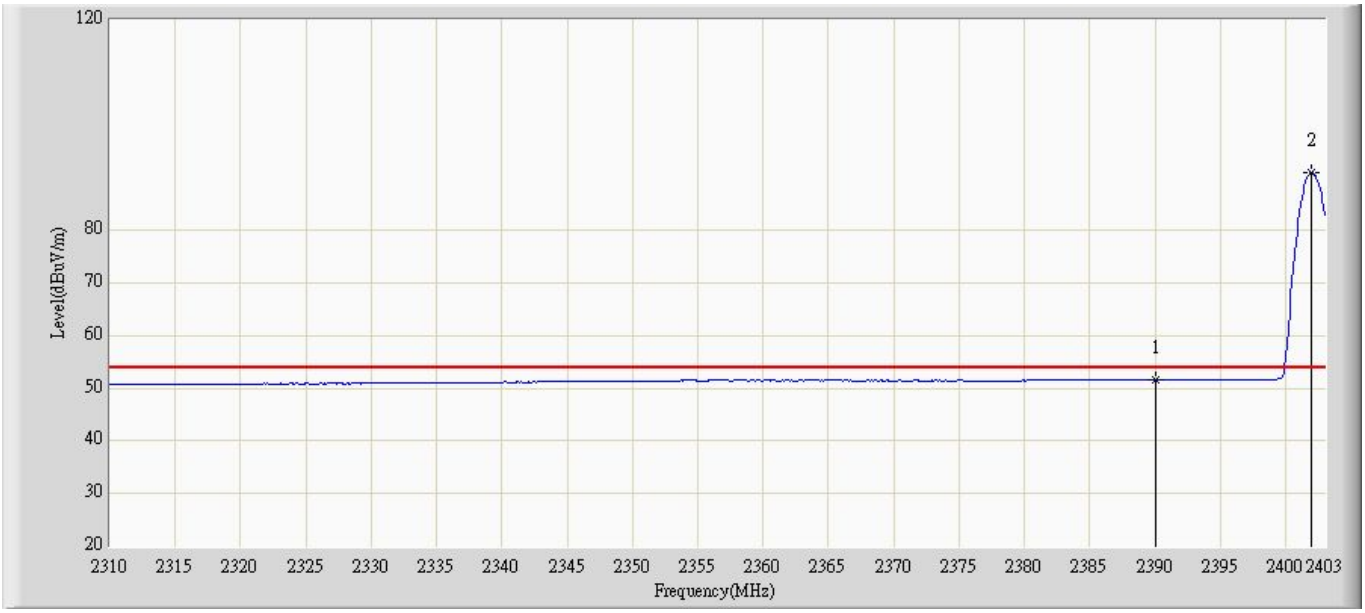
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2390.00	51.07	14.57	-2.93	54.00	36.50	AV
2	2401.98	94.12	57.57	N/A	N/A	36.56	AV

Frequency:	2402MHz	ANT. Polarization:	Vertical



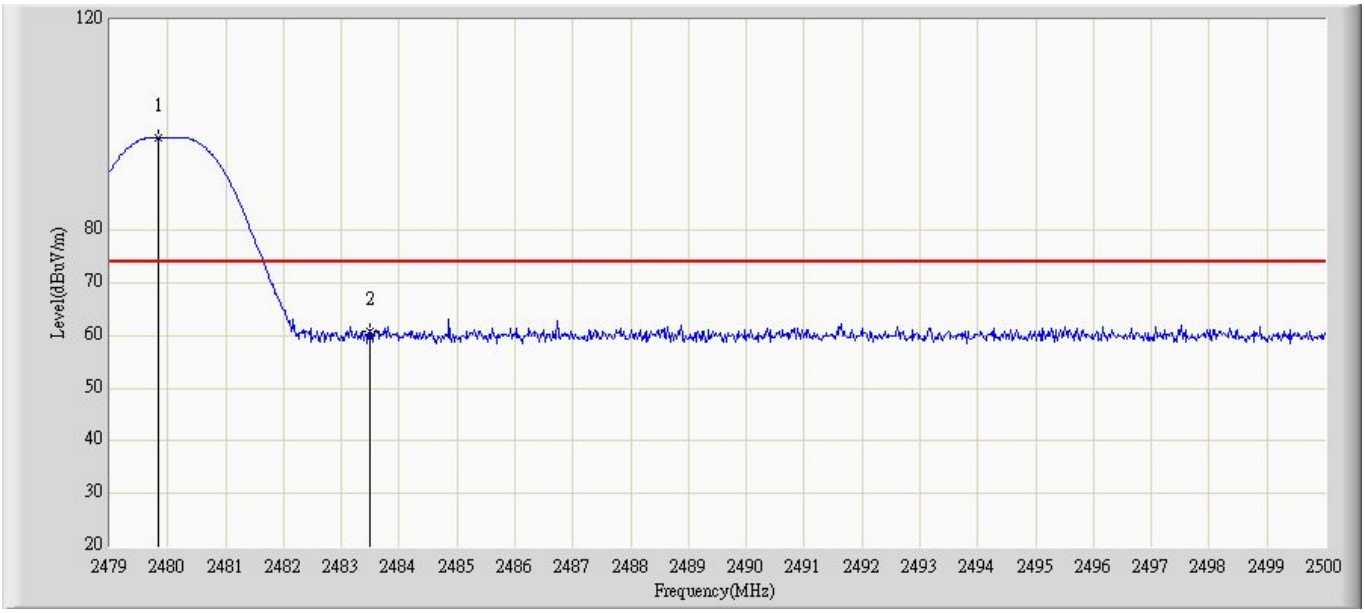
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2390.00	62.12	24.96	-11.88	74.00	37.16	PK
2	2401.98	96.22	58.95	N/A	N/A	37.26	PK

Frequency:	2402MHz	ANT. Polarization:	Vertical



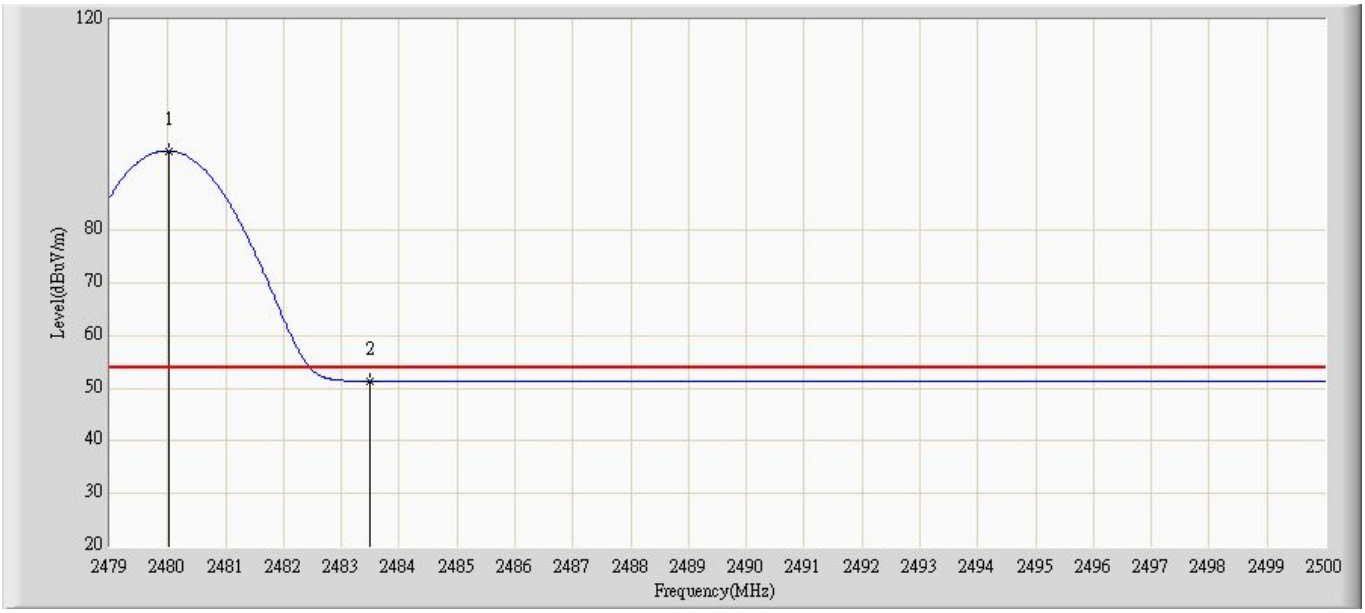
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2390.00	51.68	14.52	-2.32	54.00	37.16	AV
2	2401.98	90.90	53.64	N/A	N/A	37.26	AV

Frequency:	2480MHz	ANT. Polarization:	Horizontal



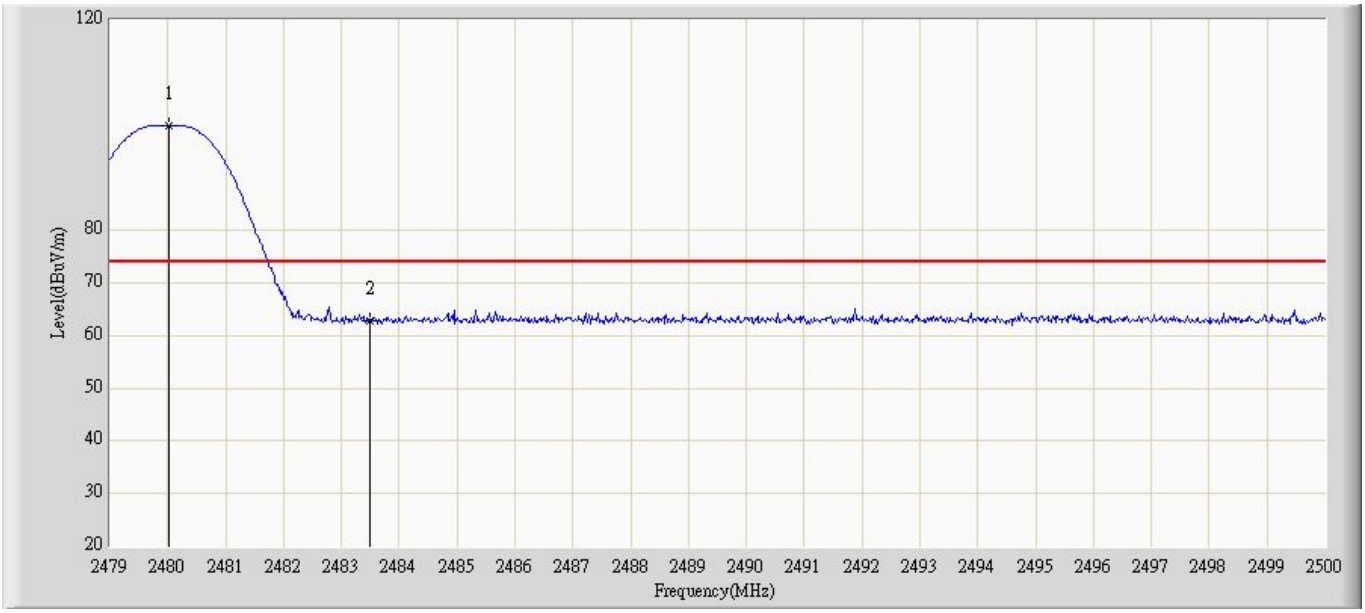
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2479.84	97.69	60.77	N/A	N/A	36.92	PK
2	2483.50	60.79	23.85	-13.21	74.00	36.94	PK

Frequency:	2480MHz	ANT. Polarization:	Horizontal



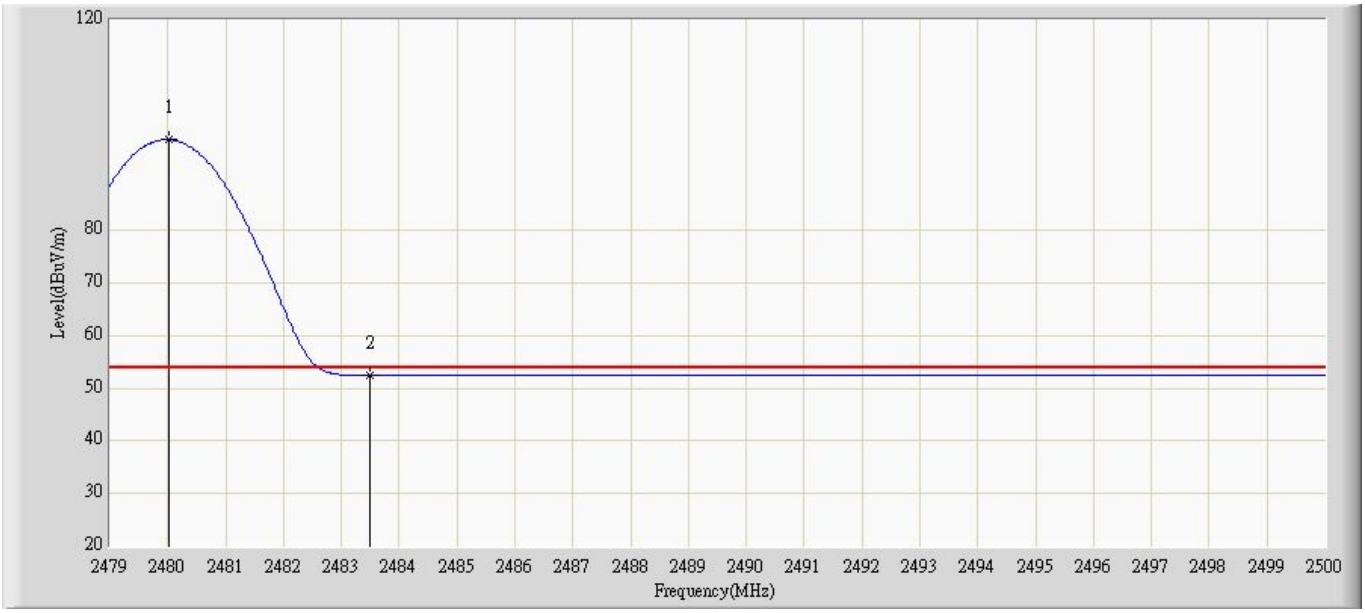
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2480.01	95.11	58.20	N/A	N/A	36.92	AV
2	2483.50	51.39	14.45	-2.61	54.00	36.94	AV

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	99.75	61.82	N/A	N/A	37.94	PK
2	2483.50	62.91	24.94	-11.09	74.00	37.97	PK

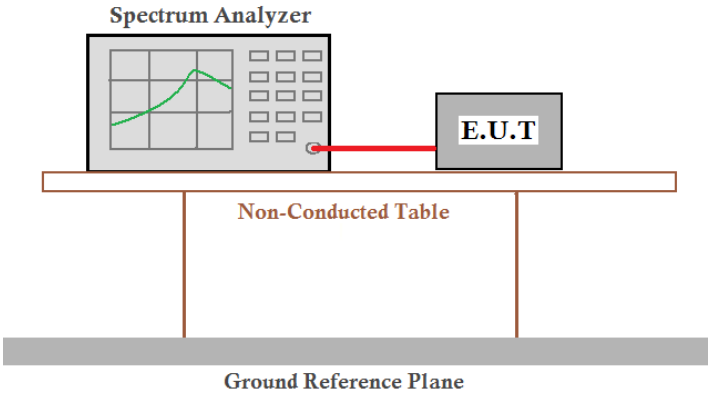
Frequency:	2480MHz	ANT. Polarization:	Vertical



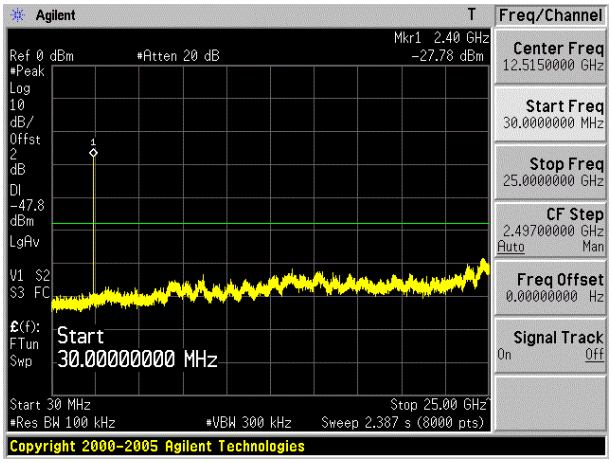
No.	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	2480.01	97.25	59.31	N/A	N/A	37.94	AV
2	2483.50	52.44	14.47	-1.56	54.00	37.97	AV

6.7 Spurious Emission

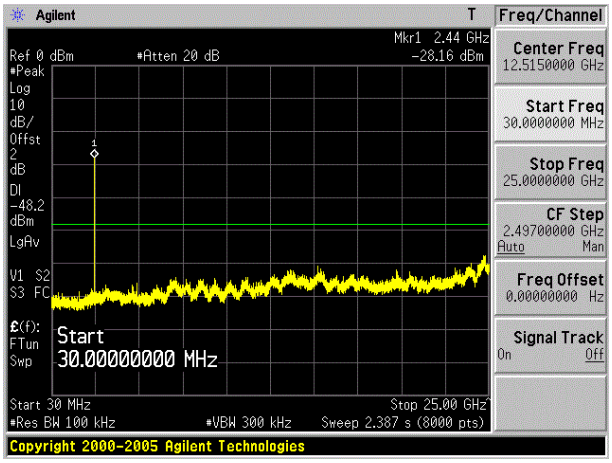
6.7.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03
Limit:	In any 100 kHz bandwidth outside the frequency band 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.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

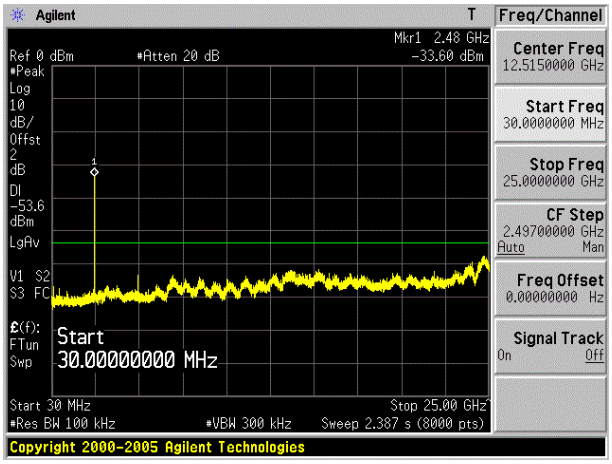
Test plot as follows:



Channel 01 (2402MHz)



Channel 21 (2442MHz)



Channel 40 (2480MHz)

6.7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.4: 2003
Test Frequency Range:	30MHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

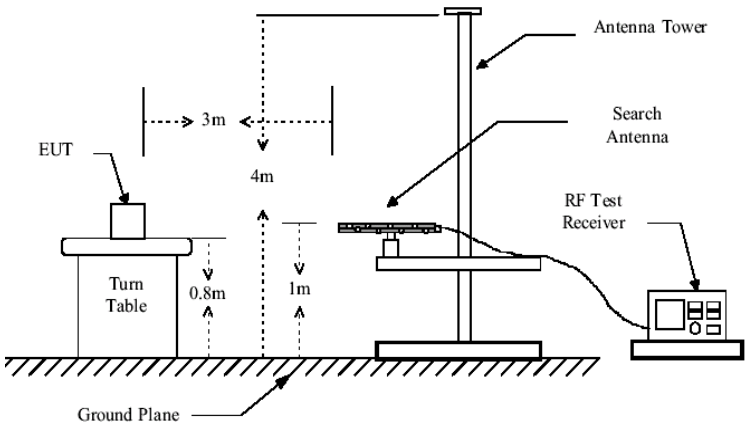
Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit:

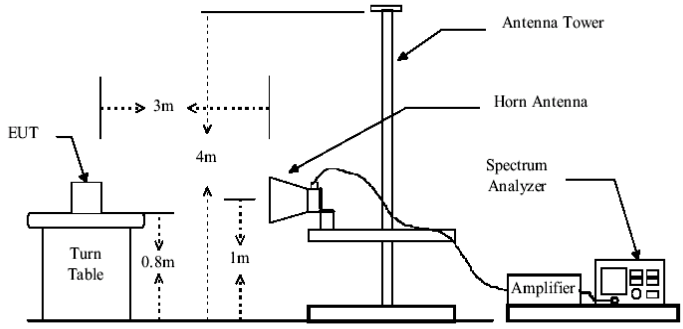
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test setup:

Below 1GHz



Above 1GHz

	
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 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:

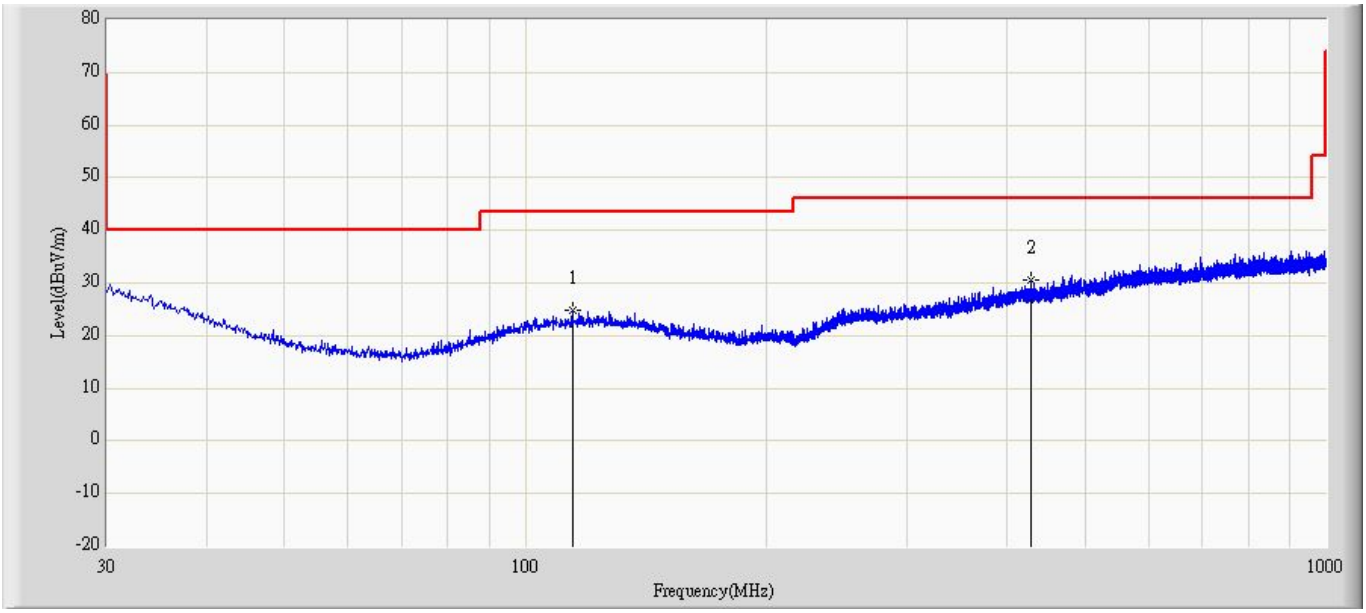
Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis which it is worse case.

Measurement Data:

Below 1GHz

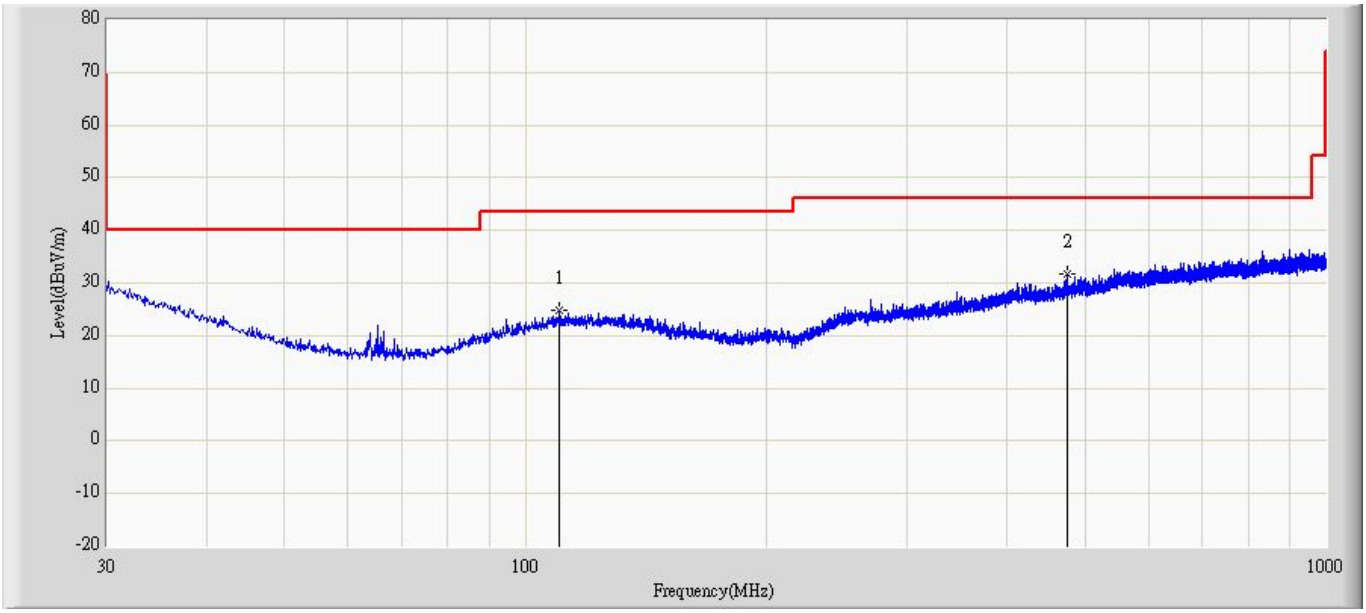
The lowest/middle/highest channels were tested. The worst case is middle channel mode. Only the worst case's data was showing in the report.

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
01	H	4808.00	59.30	-7.10	52.20	54(Note2)	-1.80	PK
	H	7205.00	48.60	-1.80	46.80	54(Note2)	-7.20	PK
	H	9608.00	38.30	4.30	42.60	54(Note2)	-11.40	PK
	V	4808.00	62.40	-7.20	55.20	74.00	-18.80	PK
	V	4808.20	54.60	-7.20	47.40	54.00	-6.60	AV
	V	7206.00	44.00	-1.90	42.10	54(Note2)	-11.90	PK
	V	9608.00	37.60	4.40	42.00	54(Note2)	-12.00	PK
21	H	4876.00	56.90	-7.00	49.90	54(Note2)	-4.10	PK
	H	7324.00	51.30	-1.60	49.70	54(Note2)	-4.30	PK
	H	9760.00	39.40	4.50	43.90	54(Note2)	-10.10	PK
	V	4876.00	60.70	-7.00	53.70	54(Note2)	-0.30	PK
	V	7315.50	48.20	-1.60	46.60	54(Note2)	-7.40	PK
	V	9760.00	37.90	4.60	42.50	54(Note2)	-11.50	PK
40	H	4960.00	47.30	-7.10	40.20	54(Note2)	-13.80	PK
	H	7443.00	47.80	-1.20	46.60	54(Note2)	-7.40	PK
	H	9920.00	39.40	5.20	44.60	54(Note2)	-9.40	PK
	V	4961.00	50.30	-6.90	43.40	54(Note2)	-10.60	PK
	V	7443.00	45.50	-1.20	44.30	54(Note2)	-9.70	PK
	V	9920.00	38.20	5.20	43.40	54(Note2)	-10.60	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.