CCIS China Certification & Inspection Services Co., Ltd.

Report No: CCIS12090016102

FCC REPORT

Applicant:	SUNUP MECHA-ELECTRONIC EQUIPMENT CO.,LTD
Address of Applicant:	517 Room F building, Taoyuan Road No.1, Nanshan district, Shenzhen, China
Equipment Under Test (EUT)	
Product Name:	MAG CUBE
Model No.:	CRCW21PA, CRCW21PX(X=A~Z)
FCC ID:	YPWCRCW21PA
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249: 2011
Date of sample receipt:	14 Sep., 2012
Date of Test:	17 Sep.,to 08 Oct 2012
Date of report issued:	10 Oct., 2012
Test Result :	PASS *

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

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*10 Oct., 2012*	*Original*

Prepared By:  ***Date:*** ***10 Oct., 2012***

Project Engineer

Check By:  ***Date:*** ***10 Oct., 2012***

Reviewer

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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 comply with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	SUNUP MECHA-ELECTRONIC EQUIPMENT CO.,LTD
Address of Applicant:	517 Room F building, Taoyuan Road No.1, Nanshan district, Shenzhen, China
Manufacturer:	SUNUP MECHA-ELECTRONIC EQUIPMENT CO.,LTD
Address of Manufacturer:	517 Room F building, Taoyuan Road No.1, Nanshan district, Shenzhen, China
Factory:	SUNUP MECHA-ELECTRONIC EQUIPMENT CO.,LTD
Address of Factory:	517 Room F building, Taoyuan Road No.1, Nanshan district, Shenzhen, China

5.2 General Description of E.U.T.

Product Name:	MAG CUBE
Model No.:	CRCW21PA, CRCW21PX(X=A~Z)
Operation Frequency:	2403MHz to 2480MHz
Channel numbers:	78
Modulation type:	GFSK
Antenna Type:	Integrated PCB antenna
Antenna gain:	0dBi
Power supply:	DC 5V from USB port
Remark:	Only the model No. CRCW21PA was tested , CRCW21PA and CRCW21PX(X=A~Z) were identical inside, since the electrical circuit design, layout, components used and internal wiring were identical for the above items, with only difference being the model name for the marketing requirement, CRCW21PX(X=A~Z), X:delegate different sales territory).

5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation.

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.:** 817957

China Certification & Inspection Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012

- **Industry Canada (IC)**

The 3m Semi-anechoic chamber of China Certification & Inspection Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

5.5 Test Location

All tests were performed at:

China Certification & Inspection Services Co., Ltd.

Address: 1st Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen,China

Tel: 0755-23118282

Fax: 0755-23116366

5.6 Other Information Requested by the Customer

None.

5.7 Description of Support Units

	Manufacturer	Description	Model	Serial Number	
	LENOVO	Notebook	ThinkPad SL510	LR-7Y97D	

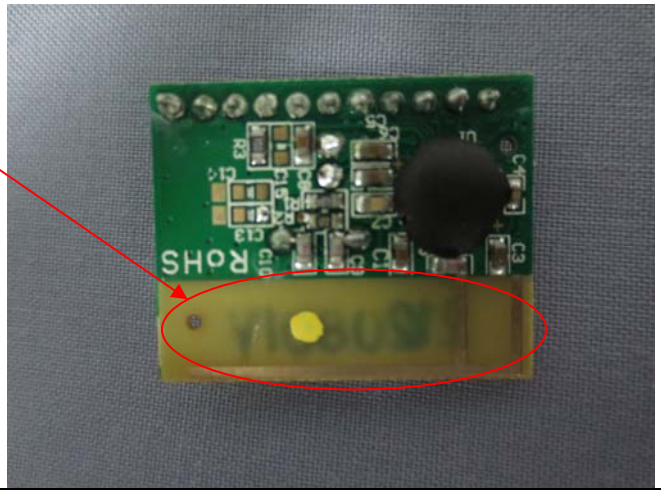
5.8 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	Aug. 09 2012	Aug. 09 2013
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	June 16 2012	June 16 2013
3	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	June 09 2012	June 09 2013
4	Double –ridged waveguide horn antenna(1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	June 09 2012	June 09 2013
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
6	Coaxial Cable	CCIS	N/A	CCIS0016	Mar. 01 2012	Mar. 01 2013
7	Coaxial Cable	CCIS	N/A	CCIS0017	Mar. 01 2012	Mar. 01 2013
8	Coaxial cable	CCIS	N/A	CCIS0018	Mar. 01 2012	Mar. 01 2013
9	Coaxial Cable	CCIS	N/A	CCIS0019	Mar. 01 2012	Mar. 01 2013
10	Coaxial Cable	CCIS	N/A	CCIS0087	Mar. 01 2012	Mar. 01 2013
11	Amplifier(10kHz-1.3GHz)	HP	8447D	CCIS0003	Aug. 03 2012	Aug. 03 2013
12	Amplifier(1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	Aug. 05 2012	Aug. 05 2013
13	Spectrum analyzer	Rohde & Schwarz	FSP	CCIS0023	June 22 2012	June 22 2013
14	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
15	Coaxial Cable	CCIS	N/A	CCIS0095	Mar. 01 2012	Mar. 01 2013
16	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Apr. 01 2012	Mar. 31 2013
17	Horn Antenna(18-26GHz)	ETS-LINDGREN	3160	GTS217	Mar. 30 2012	Mar. 29 2013

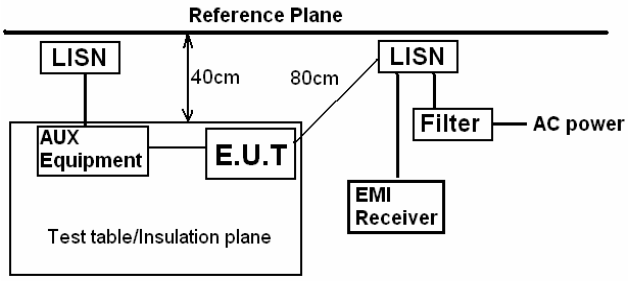
Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2012	June 09 2013
2	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr 01 2012	Apr 01 2013
3	LISN	CHASE	MN2050D	CCIS0074	Apr 01 2012	Apr 01 2013
4	Coaxial Cable	CCIS	N/A	CCIS0086	Apr. 01 2012	Apr. 01 2013
5	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2012	June 09 2013

6 Test results and Measurement Data

6.1 Antenna requirement:

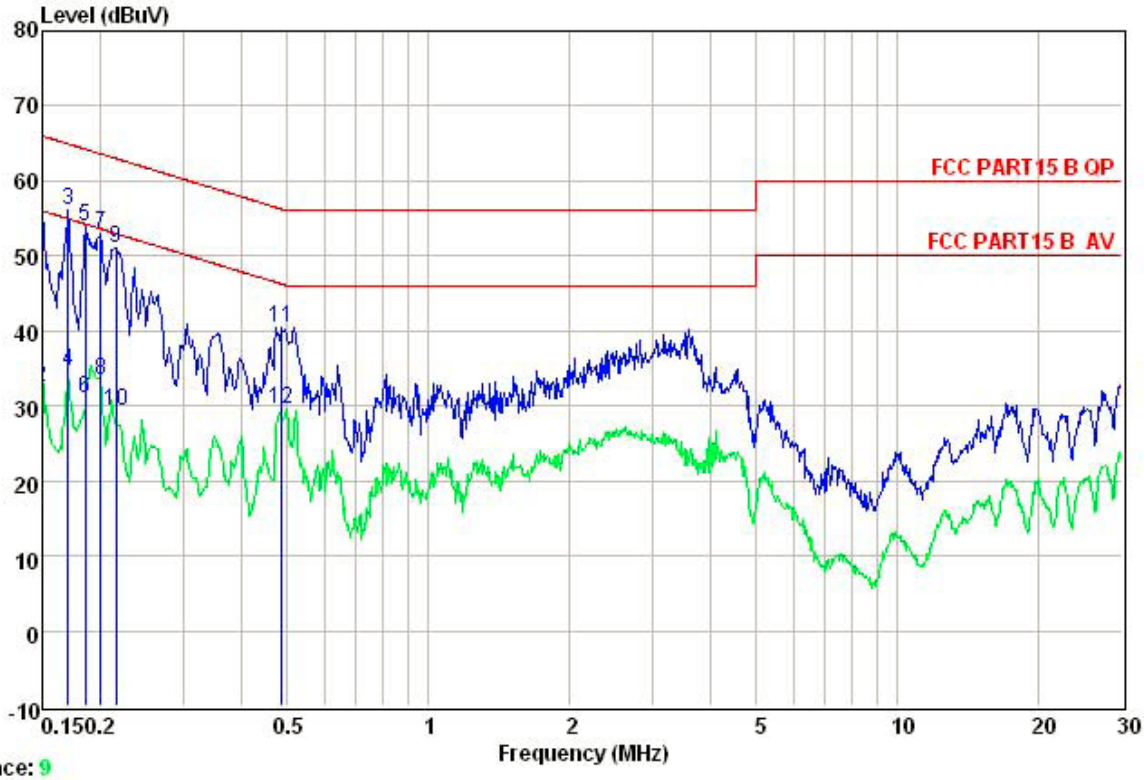
Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: *An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling 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 PCB antenna which cannot detachable . The best case gain of the antenna is 0dBi. Antenna 	

6.2 Conducted Emissions

Test Requirement:	FCC Part 15C 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 5.7 for details
Test mode:	Refer to section 5.3
Test results:	Pass

Measurement Data:

Line:

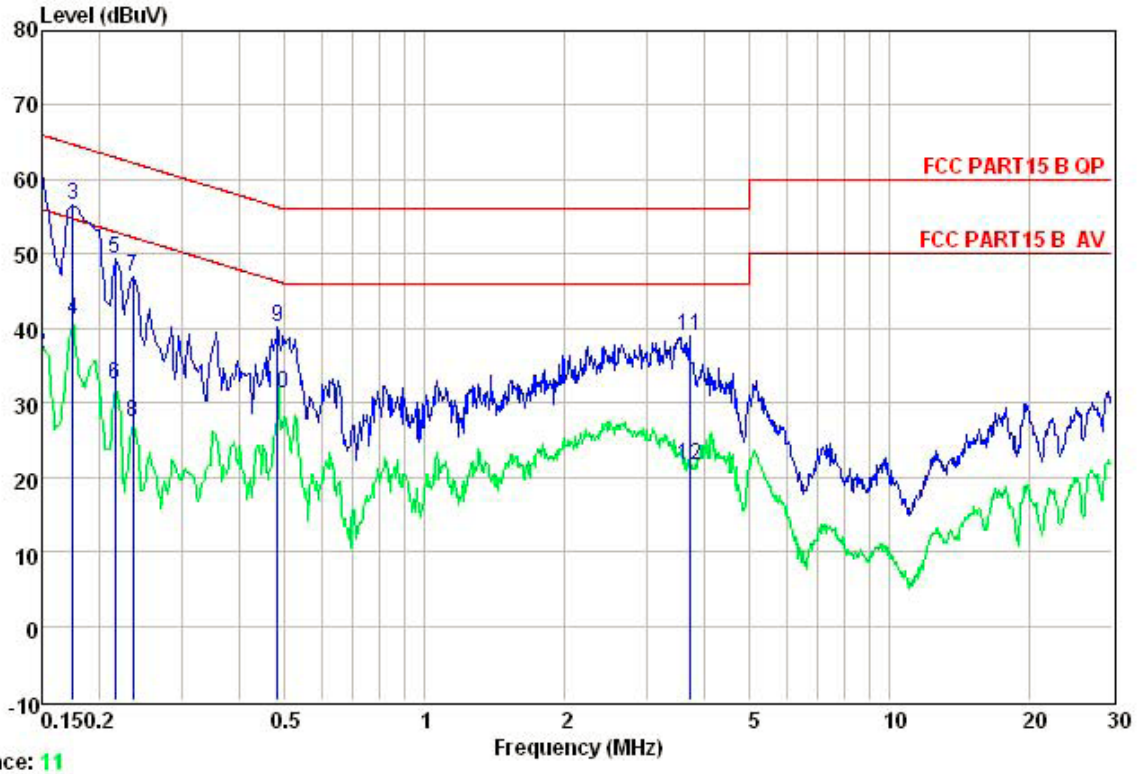


Trace: 9

Site : CCIS Conducted Test Site
Condition : FCC PART15 B QP LISN LINE
Job NO. : 161RF
Test Mode : Wireless mode
Test engieer: Joe

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	44.83	10.25	0.79	55.87	66.00	-10.13	QP
2	0.150	21.52	10.25	0.79	32.56	56.00	-23.44	Average
3	0.170	45.05	10.23	0.78	56.06	64.94	-8.88	QP
4	0.170	23.56	10.23	0.78	34.57	54.94	-20.37	Average
5	0.185	42.85	10.22	0.77	53.84	64.24	-10.40	QP
6	0.185	20.14	10.22	0.77	31.13	54.24	-23.11	Average
7	0.200	41.89	10.21	0.76	52.86	63.62	-10.76	QP
8	0.200	22.54	10.21	0.76	33.51	53.62	-20.11	Average
9	0.215	40.00	10.22	0.76	50.98	63.01	-12.03	QP
10	0.215	18.36	10.22	0.76	29.34	53.01	-23.67	Average
11	0.484	29.52	10.27	0.76	40.55	56.27	-15.72	QP
12	0.484	18.65	10.27	0.76	29.68	46.27	-16.59	Average

Neutral:



Trace: 11

Site : CCIS Conducted Test Site
Condition : FCC PART15 B QP LISN NEUTRAL
Job NO. : 161RF
Test Mode : Wireless mode
Test engieer: Joe

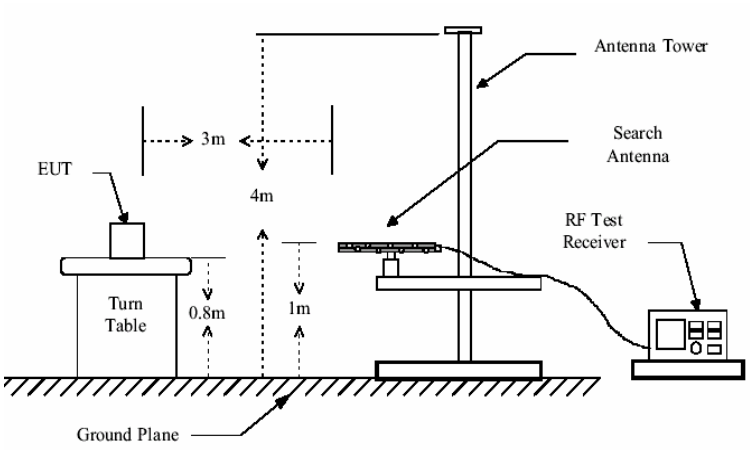
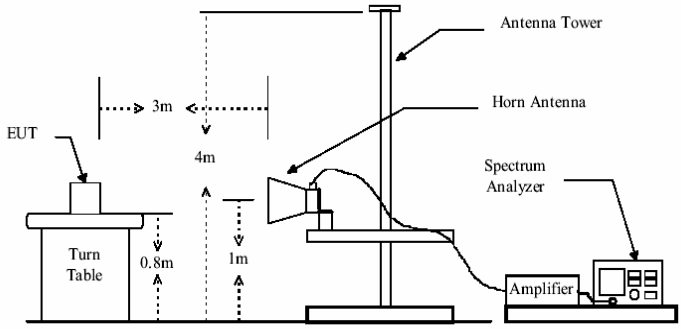
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	49.93	10.27	0.79	60.99	66.00	-5.01	QP
2	0.150	25.41	10.27	0.79	36.47	56.00	-19.53	Average
3	0.175	45.56	10.25	0.77	56.58	64.72	-8.14	QP
4	0.175	30.15	10.25	0.77	41.17	54.72	-13.55	Average
5	0.215	38.35	10.23	0.76	49.34	63.01	-13.67	QP
6	0.215	21.45	10.23	0.76	32.44	53.01	-20.57	Average
7	0.235	36.01	10.23	0.75	46.99	62.26	-15.27	QP
8	0.235	16.36	10.23	0.75	27.34	52.26	-24.92	Average
9	0.481	29.13	10.28	0.76	40.17	56.32	-16.15	QP
10	0.481	20.14	10.28	0.76	31.18	46.32	-15.14	Average
11	3.700	27.82	10.28	0.89	38.99	56.00	-17.01	QP
12	3.700	10.32	10.28	0.89	21.49	46.00	-24.51	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

6.3 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.249 and 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 25000MHz</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>100KHz</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 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 rotatable 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>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.7
Test mode:	Refer to section 5.3
Test results:	Passed

Measurement Data

6.3.1 Field Strength Of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2403.00	77.99	27.54	3.83	30.20	79.16	114.00	-34.84	Horizontal
2403.00	87.36	27.54	3.83	30.20	88.53	114.00	-25.47	Vertical
2441.00	77.33	27.46	3.85	30.40	78.24	114.00	-35.76	Horizontal
2441.00	87.48	27.46	3.85	30.40	88.39	114.00	-25.61	Vertical
2480.00	78.30	27.52	3.89	30.60	79.11	114.00	-25.23	Horizontal
2480.00	87.96	27.52	3.89	30.60	88.77	114.00	-34.89	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2403.00	72.79	27.54	3.83	30.20	73.96	94.00	-18.04	Horizontal
2403.00	82.68	27.54	3.83	30.20	83.85	94.00	-8.15	Vertical
2441.00	72.38	27.46	3.85	30.40	73.29	94.00	-18.71	Horizontal
2441.00	82.48	27.46	3.85	30.40	83.39	94.00	-8.61	Vertical
2480.00	73.06	27.52	3.89	30.60	73.87	94.00	-18.03	Horizontal
2480.00	83.17	27.52	3.89	30.60	83.98	94.00	-8.02	Vertical

6.3.2 Spurious Emissions

30MHz~1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
96.10	43.48	12.90	2.00	30.08	28.30	43.50	-15.20	Vertical
125.01	50.82	9.70	2.22	29.62	33.12	43.50	-10.38	Vertical
143.83	50.39	8.22	2.44	29.32	31.73	43.50	-11.77	Vertical
155.91	48.25	8.51	2.56	29.65	29.67	43.50	-13.83	Vertical
191.75	43.86	10.56	2.81	29.83	27.40	43.50	-16.10	Vertical
96.10	50.67	12.90	2.00	30.08	35.49	43.50	-8.01	Horizontal
143.83	58.57	8.22	2.44	29.32	39.91	43.50	-3.59	Horizontal
155.91	55.89	8.51	2.56	29.65	37.31	43.50	-6.19	Horizontal
167.82	54.85	8.90	2.64	29.01	37.38	43.50	-6.12	Horizontal
191.75	57.19	10.56	2.81	29.83	40.73	43.50	-2.77	Horizontal

Above 1GHz

Test channel:	Lowest	Level:	Peak

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4806.00	46.66	31.78	5.32	24.09	59.67	74.00	-14.33	Vertical
7209.00	42.55	36.15	6.87	26.38	59.19	74.00	-14.81	Vertical
9612.00	37.76	37.95	8.94	25.40	59.25	74.00	-14.75	Vertical
4806.00	44.56	31.78	5.32	24.09	57.57	74.00	-16.43	Horizontal
7209.00	37.42	36.15	6.87	26.38	54.06	74.00	-19.94	Horizontal
9612.00	28.65	37.95	8.94	25.40	50.14	74.00	-23.86	Horizontal

Test channel:	Lowest	Level:	Average

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4806.00	32.87	31.78	5.32	24.09	45.88	54.00	-8.12	Vertical
7209.00	30.75	36.15	6.87	26.38	47.39	54.00	-6.61	Vertical
9612.00	22.87	37.95	8.94	25.40	44.36	54.00	-9.64	Vertical
4806.00	36.76	31.78	5.32	24.09	49.77	54.00	-4.23	Horizontal
7209.00	18.87	36.15	6.87	26.38	35.51	54.00	-18.49	Horizontal
9612.00	16.88	37.95	8.94	25.40	38.37	54.00	-15.63	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test channel:	Middle	Level:	Peak

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4882.00	47.86	31.85	5.40	24.01	61.10	74.00	-12.90	Vertical
7323.00	43.75	36.37	6.91	26.62	60.41	74.00	-13.59	Vertical
9764.00	38.96	38.35	9.01	25.29	61.03	74.00	-12.97	Vertical
4882.00	45.76	31.85	5.40	24.01	59.00	74.00	-15.00	Horizontal
7323.00	38.62	36.37	6.91	26.62	55.28	74.00	-18.72	Horizontal
9764.00	29.85	38.35	9.01	25.29	51.92	74.00	-22.08	Horizontal

Test channel:	Middle	Level:	Average

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4882.00	34.52	31.85	5.40	24.01	47.76	54.00	-6.24	Vertical
7323.00	32.07	36.37	6.91	26.62	48.73	54.00	-5.27	Vertical
9764.00	24.19	38.35	9.01	25.29	46.26	54.00	-7.74	Vertical
4882.00	38.08	31.85	5.40	24.01	51.32	54.00	-2.68	Horizontal
7323.00	20.19	36.37	6.91	26.62	36.85	54.00	-17.15	Horizontal
9764.00	18.20	38.35	9.01	25.29	40.27	54.00	-13.73	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test channel:	Highest	Level:	Peak

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4960.00	44.84	31.93	5.47	23.93	58.31	74.00	-15.69	Vertical
7440.00	40.80	36.59	6.95	26.95	57.39	74.00	-16.61	Vertical
9920.00	36.00	38.81	9.07	25.22	58.66	74.00	-15.34	Vertical
4960.00	43.78	31.93	5.47	23.93	57.25	74.00	-16.75	Horizontal
7440.00	36.77	36.59	6.95	26.95	53.36	74.00	-20.64	Horizontal
9920.00	29.88	38.81	9.07	25.22	52.54	74.00	-21.46	Horizontal

Test channel:	Highest	Level:	Average

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4960.00	33.04	31.93	5.47	23.93	46.51	54.00	-7.49	Vertical
7440.00	28.07	36.59	6.95	26.95	44.66	54.00	-9.34	Vertical
9920.00	20.07	38.81	9.07	25.22	42.73	54.00	-11.27	Vertical
4960.00	34.95	31.93	5.47	23.93	48.42	54.00	-5.58	Horizontal
7440.00	30.07	36.59	6.95	26.95	46.66	54.00	-7.34	Horizontal
9920.00	23.41	38.81	9.07	25.22	46.07	54.00	-7.93	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

6.3.3 Band edge (Radiated Emission)

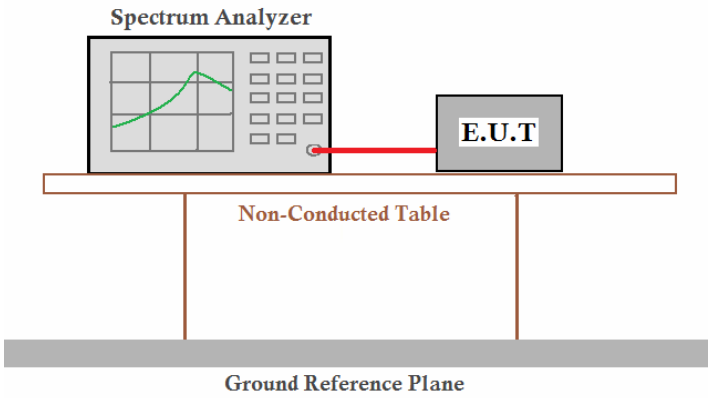
Test channel:	Lowest			Level:	Peak			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	53.15	27.59	3.33	30.10	53.97	74.00	-20.03	Horizontal
2400.00	56.32	27.58	3.37	30.10	57.17	74.00	-16.83	Horizontal
2390.00	58.35	27.59	3.33	30.10	59.17	74.00	-14.83	Vertical
2400.00	57.46	27.58	3.37	30.10	58.31	74.00	-15.69	Vertical

Test channel:	Lowest			Level:	Average			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	42.32	27.59	3.33	30.10	43.14	54.00	-10.86	Horizontal
2400.00	38.62	27.58	3.37	30.10	39.47	54.00	-14.53	Horizontal
2390.00	41.38	27.59	3.33	30.10	42.20	54.00	-11.80	Vertical
2400.00	40.35	27.58	3.37	30.10	41.20	54.00	-12.80	Vertical

Test channel:	Highest			Level:	Peak			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	56.12	27.53	3.49	29.93	57.21	74.00	-16.79	Vertical
2500.00	54.32	27.55	3.52	30.70	54.69	74.00	-19.31	Vertical
2483.50	56.36	27.53	3.49	29.93	57.45	74.00	-16.55	Horizontal
2500.00	57.26	27.55	3.52	30.70	57.63	74.00	-16.37	Horizontal

Test channel:	Highest			Level:	Average			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	42.35	27.53	3.49	29.93	43.44	54.00	-10.56	Vertical
2500.00	39.35	27.55	3.52	30.70	39.72	54.00	-14.28	Vertical
2483.50	41.26	27.53	3.49	29.93	42.35	54.00	-11.65	Horizontal
2500.00	40.35	27.55	3.52	30.70	40.72	54.00	-13.28	Horizontal

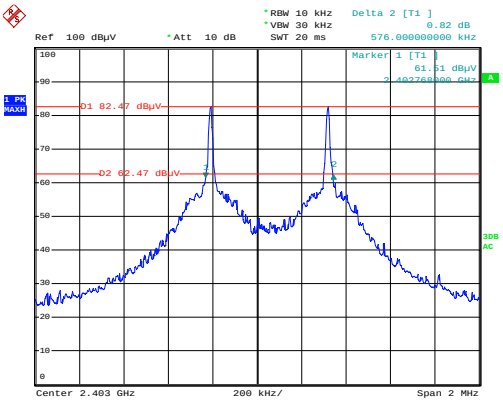
6.4 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.215
Test Method:	ANSI C63.4:2003
Receiver setup:	RBW=10kHz, VBW=30kHz, detector: Peak
Limit:	Operation Frequency range 2400MHz-2483.5MHz
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set the EUT to proper test channel. 3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points. 4. Read 20dB bandwidth.
Test setup:	
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details
Test results:	Passed

Measurement Data

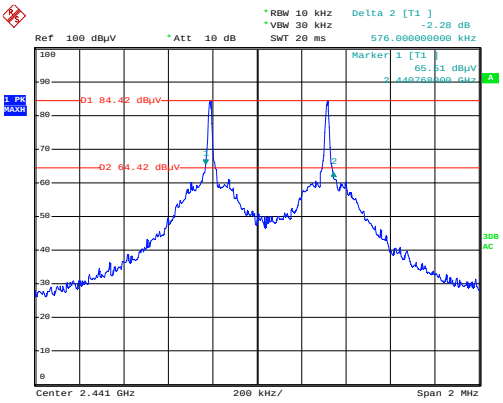
Test channel	20dB bandwidth (MHz)	Results
Lowest	0.576	Pass
Middle	0.576	Pass
Highest	0.580	Pass

Test plot as follows:



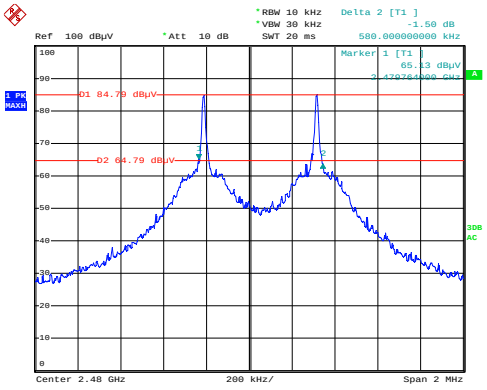
Date: 27.SEP.2012 04:08:42

Lowest channel



Date: 27.SEP.2012 04:10:11

Middle channel



Date: 27.SEP.2012 04:13:18

Highest channel