SGS-CSTC Standards Technical Services Co., Ltd.

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technological Development District, Guangzhou, China 510663
Telephone: +86 (0) 20 82155555
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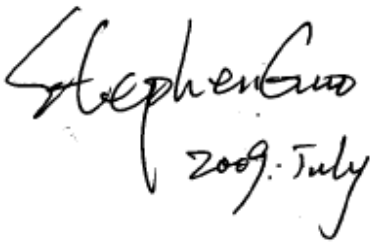
Email: sgs_internet_operations@sgs.com

TEST REPORT

Application No. :	GLEMO090601898RF
Applicant:	Vtech Electronics Limited
FCC ID:	G2R-0788
Frequency Band	2409-2479MHz
Equipment Under Test (EUT):	
Name:	V.smile motion
Model No.:	80- 0788XX♣
♣	Please refer to section 2 of this report which indicates which item was actually tested and which were **electrically** identical.
Serial No.:	Not supplied by client
Standards:	FCC PART 15 SUBPART C: 2008
	Please refer to section 2 for further details.
Date of Receipt:	26 June 2009
Date of Test:	03 July 2009
Date of Issue:	08 July 2009
Test Result :	**PASS ***

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

Authorized Signature:



Stephen Guo
Manager

2 Test Summary

Test	Test Requirement	Stanadard Paragraph	Result
Flied Strength of Fundamental	FCC PART 15 :2007	Section 15.249 (a)	PASS
Flied Strength of Unwanted Emissions	FCC PART 15 :2007	Section 15.249 (a) Section 15.249 (d)	PASS
Occupied Bandwidth	FCC PART 15 :2007	Section 15.249	PASS
Band Edges	FCC PART 15 :2007	Section 15.249 (d)	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15 :2007	Section 15.207	PASS

Remark:

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

♣Item No.: 80-0788XX

According to the confirmation from the applicant, since the electrical circuit design, layout, components used and internal wiring were identical for the above items, only difference being the item numbers or outer decoration.

Therefore only one item 80-0788 was tested in this report.

3 Contents

4 General Information

4.1 Client Information

Applicant Name:	Vtech Electronics Limited
Address of Applicant:	23/F,Tai Ping Industrial Centre, Block 1, 57 Ting Kok Road, Tai Po, Hong Kong

4.2 General Description of E.U.T.

Product Name:	V.smile motion
Model:	80- 0788XX
Power Supply:	DC 9V OR 6V (4 x 1.5V'AA' size batteries) for host.
Adaptor:	Input: AC 120/60Hz; Output: DC 9V 300mA
Power Cord:	1.8mX 2 wires unscreened Audio,Video cable.
	1.8mX 2 wires unscreened AC/DC cable.
	2.8m unscreened control lines.
	1.7m unscreened mic lines.

4.3 Description of EUT operation

Type of Modulation	FHSS
Frequency Band	2409MHz ~ 2479MHz
Antenna Type	Integrate Antenna

4.4 Standards Applicable for Testing

The standard used was FCC PART 15, SUBPART C (2008) section 15.249.

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District,

Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.6 Other Information Requested by the Customer

None.

4.7 Test Facility

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

- **NVLAP – Lab Code: 200611-0**

  SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **FCC – Registration No.: 282399**

  SGS-CSTC Standards Technical Services Co., Ltd., 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 our files. Registration 282399, May 31, 2002.

5 Equipments Used during Test

	RE in Chamber					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	N/A	N/A
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	28-01-2009	28-01-2010
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	10036	14-07-2008	14-07-2009
N/A	EMI Test Software	Audix	E3	N/A	N/A	N/A
EMC0514	Coaxial cable	SGS	N/A	N/A	04-12-2008	04-12-2009
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	08-10-2008	08-10-2009
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	08-10-2008	08-10-2009
EMC0517	Horn Antenna	Rohde & Schwarz	HF906	100095	12-08-2008	12-08-2009
EMC0040	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	05-12-2008	05-12-2009
EMC0520	0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A06252	11-03-2009	11-03-2010
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	11-03-2009	11-03-2010
EMC0075	310N Amplifier	Sonama	310N	272683	10-09-2008	10-09-2009
EMC0523	Active Loop Antenna	EMCO	6502	00042963	09-08-2008	09-08-2010
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	10-08-2008	10-08-2009

	Conducted Emission					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m^3	N/A	N/A	N/A
EMC0102	LISN	Schaffner Chase	MNZ050D/1	1421	14-12-2008	14-12-2009
EMC0118	Two-line v-netwok	Rohde & Schwarz	ENV216	3560.6550.02	28-07-2008	28-07-2009
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	14-12-2008	14-12-2009
EMC0107	Coaxial Cable	SGS	2m	N/A	26-11-2008	26-11-2009
EMC0106	Voltage Probe	SGS	N/A	N/A	N/A	N/A
EMC0120	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	20550	21-02-2009	21-02-2010
EMC0121	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	20549	21-02-2009	21-02-2010
EMC0122	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	20548	21-02-2009	21-02-2010

	General used equipment					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC0006	DMM	Fluke	73	70681569	23-12-2008	23-12-2009
EMC0007	DMM	Fluke	73	70671122	23-12-2008	23-12-2009

6 Test Result

6.1 E.U.T. Operation

Input voltage:	DC 9V or 6V for host.
Operating Environment:	
Temperature:	26°C
Humidity:	56% RH
Atmospheric Pressure:	1005mbar
EUT Operation:	The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed by manufacturer .Channel lowest (2409MHz), middle (2449MHz) and highest (2479MHz) are chosen for full testing. Test the Host in transmitting mode.

6.2 Test Procedure & Measurement Data

6.2.1 Flied Strength of Fundamental& Flied Strength of Unwanted Emissions

Test Requirement:	FCC Part15 C Section 15.249(a) & (d)
Test Method:	Based on FCC Part15 C Section 15.249 & ANSI C63.4
Test Date:	July 03, 2009
Measurement Distance:	3m (Semi-Anechoic Chamber)
Frequency range	30 MHz – 25GHz for transmitting mode.
	Test instrumentation resolution bandwidth 120 kHz (30 MHz - 1000 MHz), 1 MHz (1000 M – 25GHz)
Operation:	Receive antenna scan height 1 - 4 m, polarization Vertical/ Horizontal, a turntable rotate through 360^0 in the horizontal plane and it is used to support the test sample at 0.8m above the ground plane.

Requirements:

FCC Part 15.249(a)

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m @ 3m)	Field Strength of Harmonics (dBuV/m @ 3m)
902 to 928	94.0	54.0
2400 to 2483.5	94.0	54.0
5725 to 5875	94.0	54.0
24000 to 24250	108.0	68.0

FCC Part 15.249(d)

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.

Remark:

The fundamental frequency rang of the EUT is 2409MHz ~ 2479MHz.

The limit for average field strength dBuv/m for the fundamental frequency = 94.0 dBμV/m.

The limit for Peak field strength dBuv/m for the fundamental frequency = 114.0 dBμV/m.

No fundamental is allowed in the restricted bands.

The limit for average field strength dBμV/m for the harmonics = 54.0 dBμV/m.

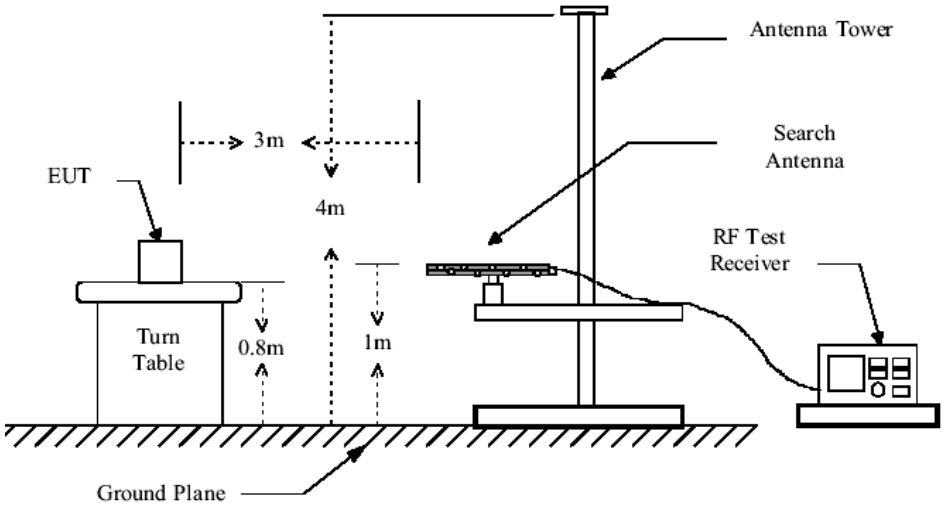
The limit for peak field strength dBμV/m for the harmonics = 74.0 dBμV/m.

Emission radiated outside of the specified frequency bands,except for harmonics,shall be attenuated by at least 50dB below the level of the fundamental or 54.0 dBμV/m in 15.209. Here the limit for the other emission is 54.0 dBμV/m.

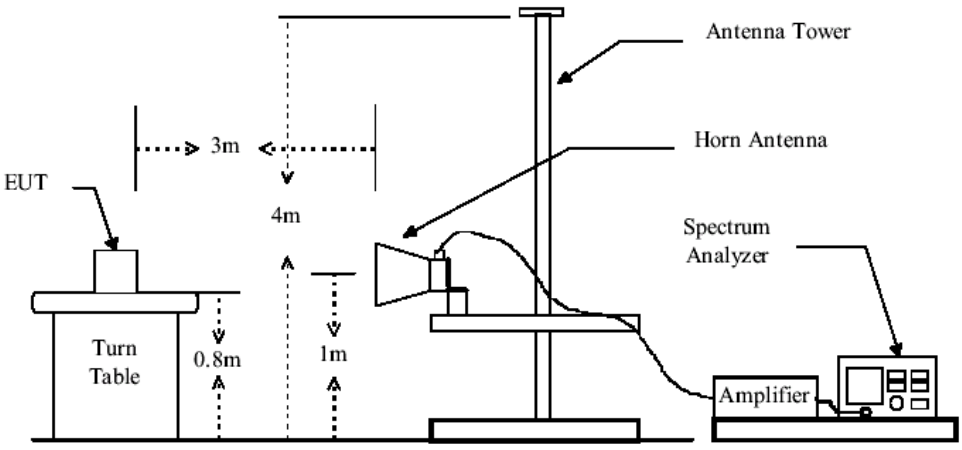
Test Procedure: The procedure uesd was ANSI Standard C63.4-2003. The receive was scanned from 30MHz to 25GHz.When an emission was found,the table was roated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment,the equipment tests shall be performed using a new battery The worst case emissions were reported.

Test Configuration:

30MHz to 1GHz:



Above 1GHz:



The field strength is calculated by adding the Antenna Factor, Cable Factor & Peramplifier . The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Peramlifer Factor

The following test results were performed on the Host:

1.Test in Channel lowest (2409MHz), keep in continuously transmitting status.

(a) Antenna polarization: Horizontal

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)	Remark
2409.000	94.3	28.6	4.3	36.9	90.3	114.0	-23.7	PEAK
2409.000	65.4	28.6	4.3	36.9	61.4	94.0	-32.6	AVERAG
4814.000	51.0	33.2	6.2	36.3	54.1	74.0	-19.9	PEAK
4814.000	38.6	33.2	6.2	36.3	41.7	54.0	-12.3	AVERAG

(b) Antenna polarization: Vertical

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)	Remark
2409.000	102.6	28.6	4.3	36.9	98.6	114.0	-15.4	PEAK
2409.000	79.4	28.6	4.3	36.9	75.4	94.0	-18.6	AVERAG
4814.000	49.4	33.2	6.2	36.3	52.5	74.0	-21.5	PEAK
4814.000	37.7	33.2	6.2	36.3	40.8	54.0	-13.2	AVERAG

2. Test in Channel middle (2449MHz), keep in continuously transmitting status.

(a) Antenna polarization: Horizontal

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)	Remark
2449.000	96.4	28.7	4.4	37.1	92.4	114.0	-21.6	PEAK
2449.000	69.7	28.7	4.4	37.1	65.7	94.0	-28.3	AVERAG
4898.000	49.7	33.3	6.2	36.2	53.0	74.0	-21.0	PEAK
4898.000	36.8	33.3	6.2	36.2	40.1	54.0	-13.9	AVERAG

(b) Antenna polarization: Vertical

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)	Remark
2449.000	101.1	28.7	4.4	37.1	97.1	114.0	-16.9	PEAK
2449.000	81.0	28.7	4.4	37.1	77.0	94.0	-17.0	AVERAG
4898.000	49.7	33.3	6.2	36.2	53.0	74.0	-21.0	PEAK
4898.000	36.3	33.3	6.2	36.2	39.6	54.0	-14.4	AVERAG

3.Test in Channel highest (2479MHz), keep in continuously transmitting status.

(a) Antenna polarization: Horizontal

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)	Remark
2479.000	96.2	28.8	4.4	37.0	92.4	114.0	-21.6	PEAK
2479.000	68.8	28.8	4.4	37.0	65.0	94.0	-29.0	AVERAG
4958.000	51.6	33.3	6.2	36.1	55.0	74.0	-19.0	PEAK
4958.000	38.9	33.3	6.2	36.1	42.3	54.0	-11.7	AVERAG

(b) Antenna polarization: Vertical

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)	Remark
2479.000	102.4	28.8	4.4	37.0	98.6	114.0	-15.4	PEAK
2479.000	83.3	28.8	4.4	37.0	79.5	94.0	-14.5	AVERAG
4958.000	50.0	33.3	6.2	36.1	53.4	74.0	-20.6	PEAK
4958.000	37.1	33.3	6.2	36.1	40.5	54.0	-13.5	AVERAG

Remark:

1). According to 15.249 (e) As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

2）Sweep from 30MHz to 25GHz, find the max radiated emissions and record it, when the emissions are too weak to be detected, it will not be reported.

TEST RESULTS: The unit does meet the FCC requirements.

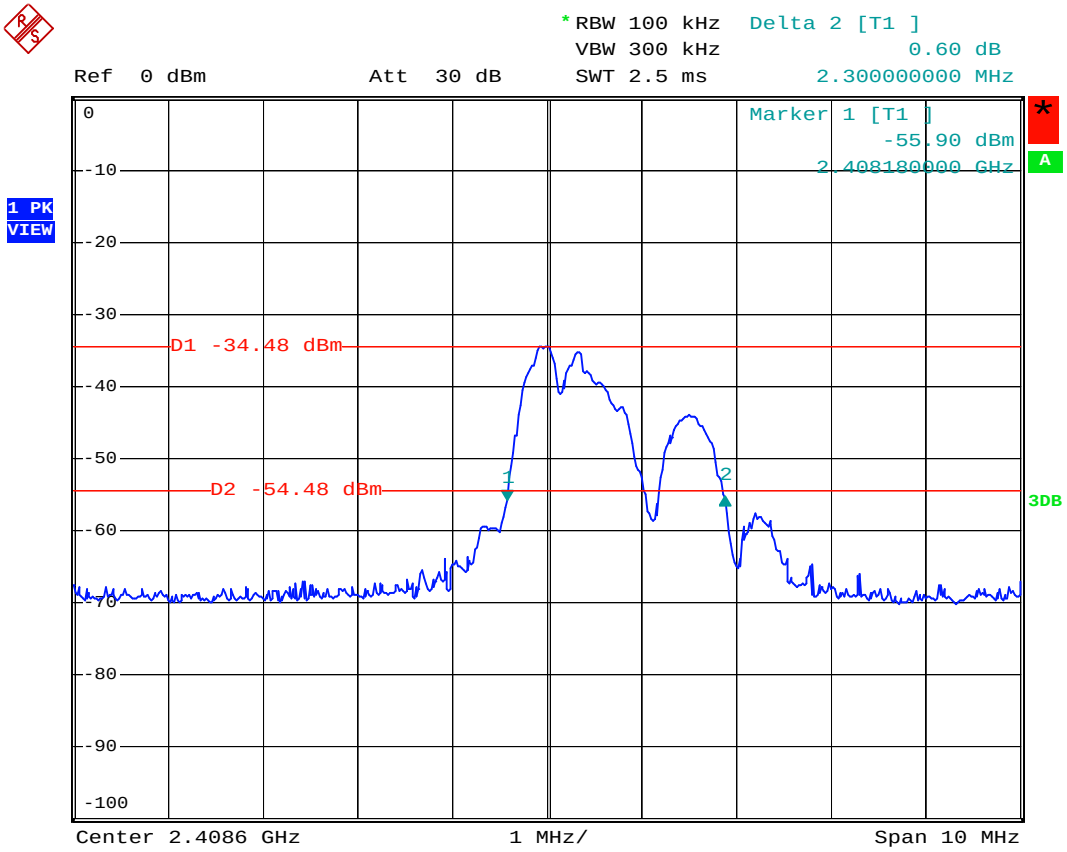
6.2.2 Occupied Bandwidth & Band Edge

Test Requirement:	FCC Part 15 C Section 15.249
Test Method:	ANSI C63.4 and FCC Part 2.1049
	Operation within the band 2400-2483.5MHz
Test Date:	12 March 2008
Requirements:	15.249 (d) 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.
Method of measurement:	A small sample of the transmitter output was fed into the Spectrum Analyzer and the attached plot was taken.

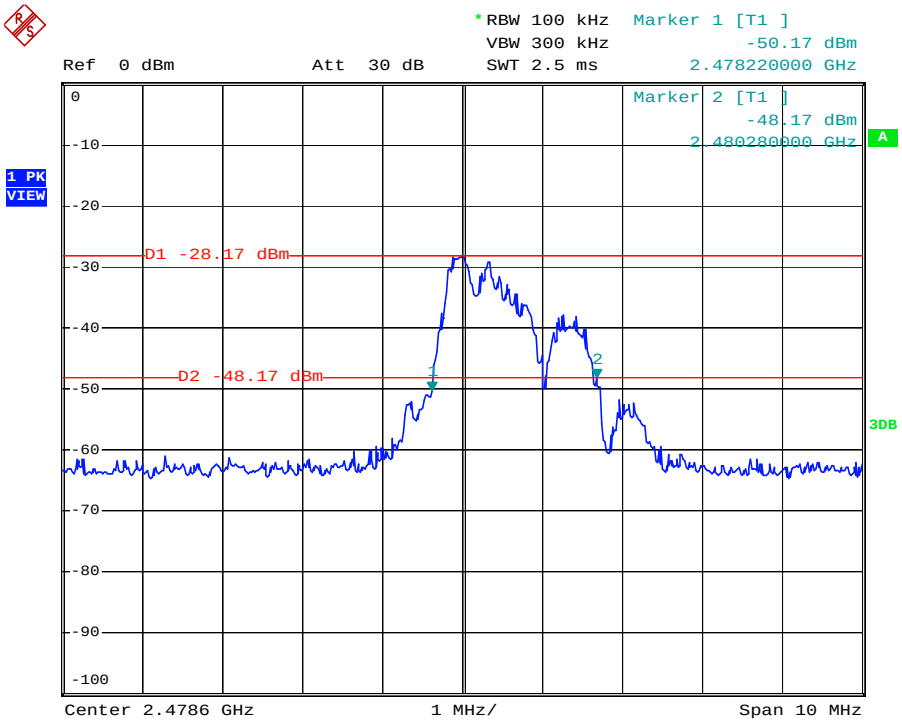
For Host:

The occupied bandwidth as below:

Lowest Channel:2409MHz:



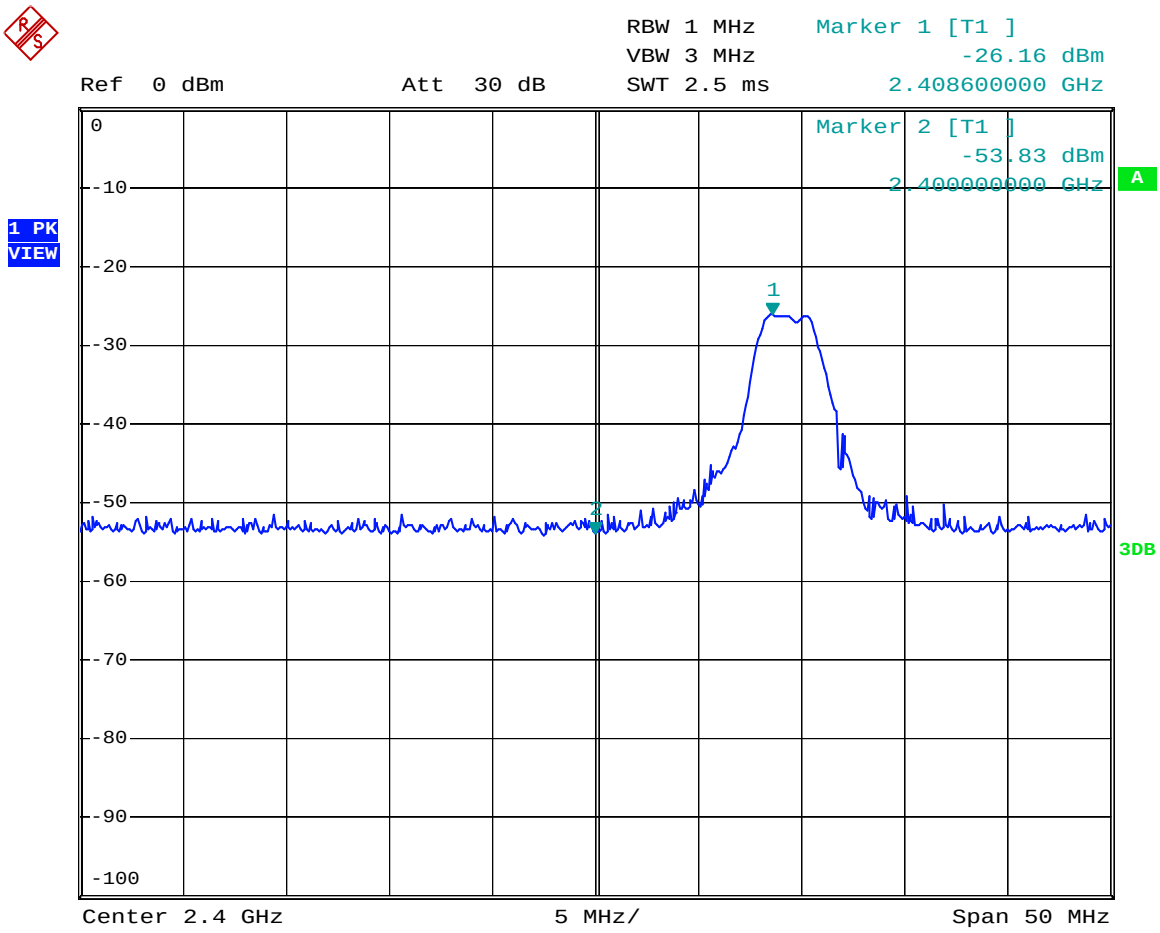
Highest Channel 2479MHz:



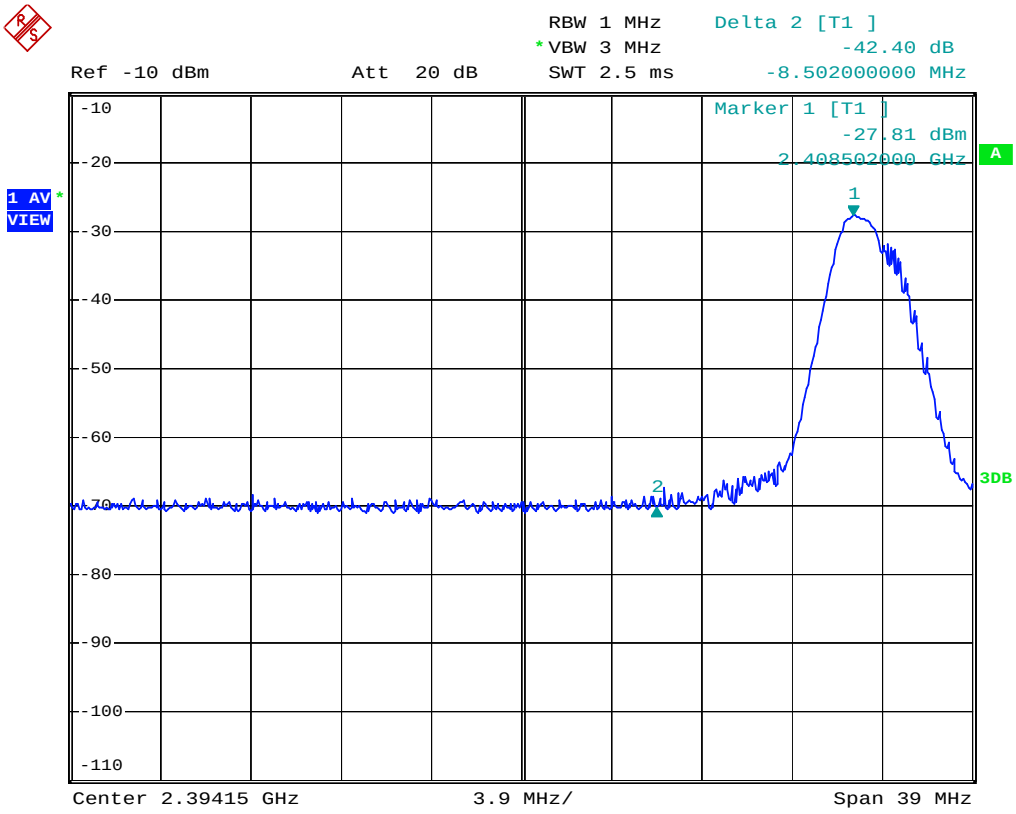
The Band Edge Emission as below:

Lowest Band Edage 2400MHz

Detector mode:Peak



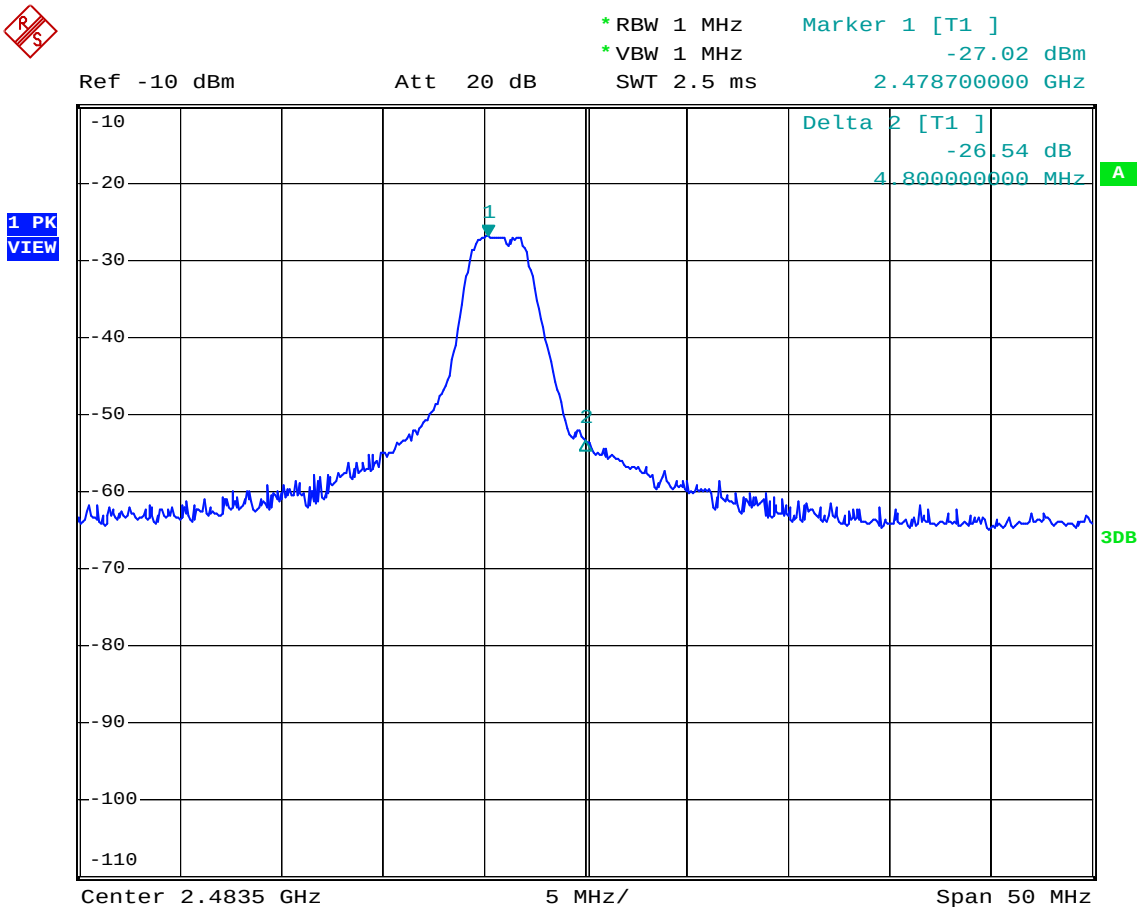
Detector mode:Average



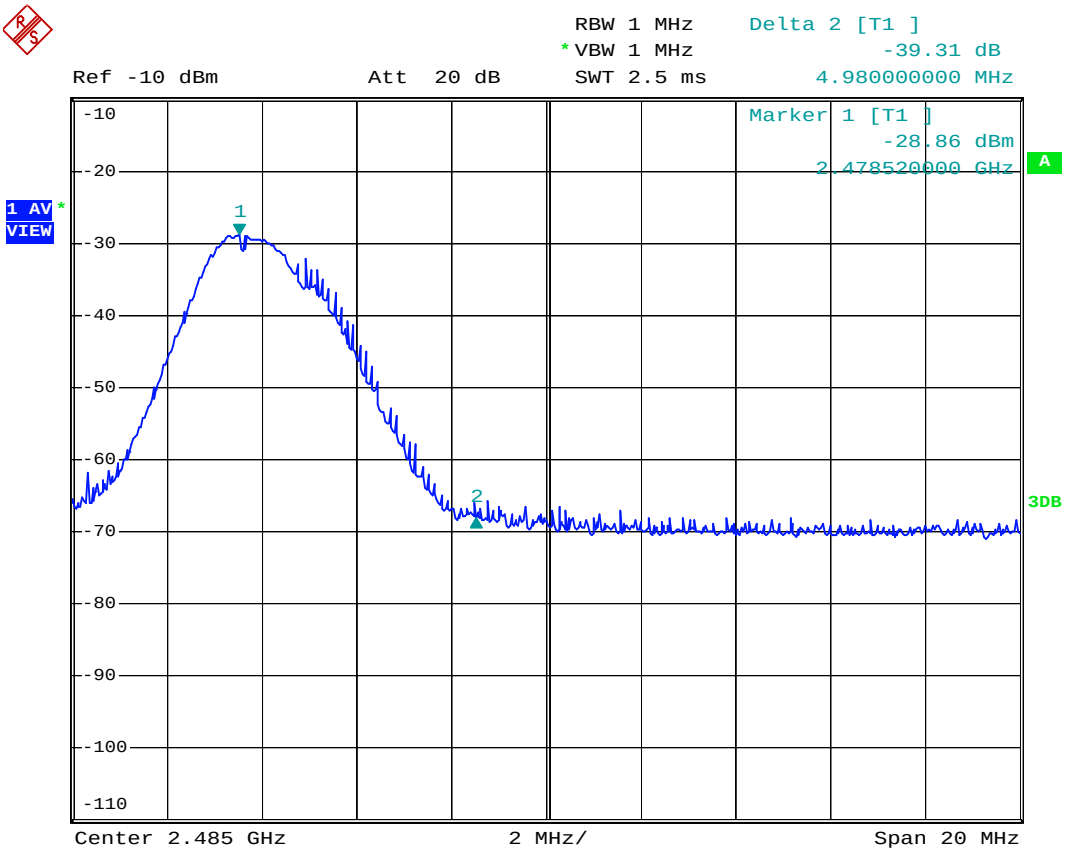
For 2400MHz bandedge checked with 2409MHz frequency operated,the delta shown at the plots are 27.7dB for peak detector mode and 42.4dB for Average detector mode.

With the peak value 98.7dBuV/m and average value at 75.6dBuV/m presented at the report 11 for the fundamental, the spurious emission level at 2400MHz were 71.0dBuV/m for peak and 33.2dBuV/m for average.

Highest Band Edge 2483.5MHz
Detector mode:Peak



Detector mode:Average



For 2483.5MHz bandedge checked with 2479MHz frequency operated,the delta shown at the plots are 26.5dB for peak detector mode and 39.3dB for Average detector mode.

With the peak value 98.8dBuV/m and average value at 79.6dBuV/m presented at the report 12 for the fundamental, the spurious emission level at 2483.5MHz were 72.3dBuV/m for peak and 40.3dBuV/m for average.

The test result for the Emissions radiated outside of the specified frequency bands , please refer to the section 5.3.1 of this report.

The results: The unit does meet the FCC requirements.

6.2.3 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement:	FCC Part15.207
Test Method:	ANSI C63.4
Test Date:	March 31 2008
Frequency Range:	150KHz to 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)
	Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

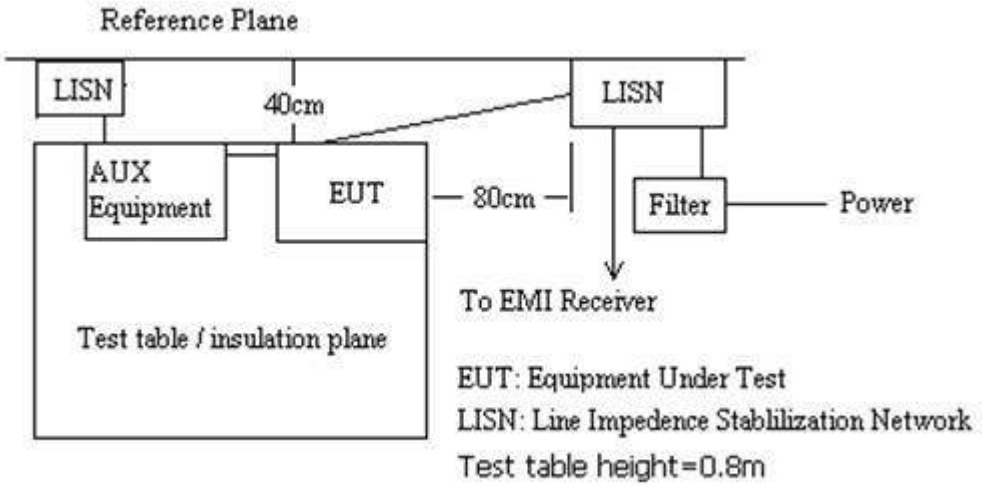
6.2.3.1 E.U.T. Operation

Operating Environment:

Temperature: 20.0 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

EUT Operation: Test the Host in transmitting mode. Pretest in lowest, middle, highest channel transmitting status to find the worst case to reported.

6.2.3.2 Plan View of Test Setup



6.2.3.3 Measurement Data

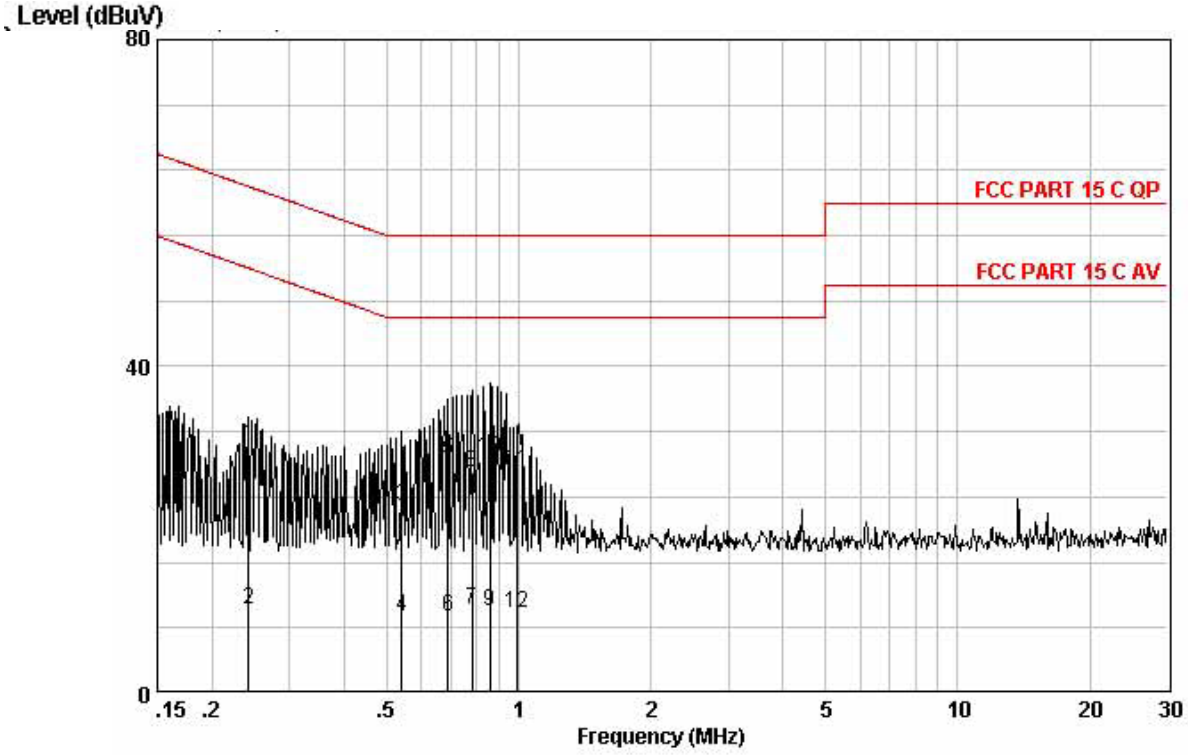
An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

The following Quasi-Peak and Average measurements were performed on the EUT in middle channel transmitting status (worst case):

Live Line:

Peak Scan:

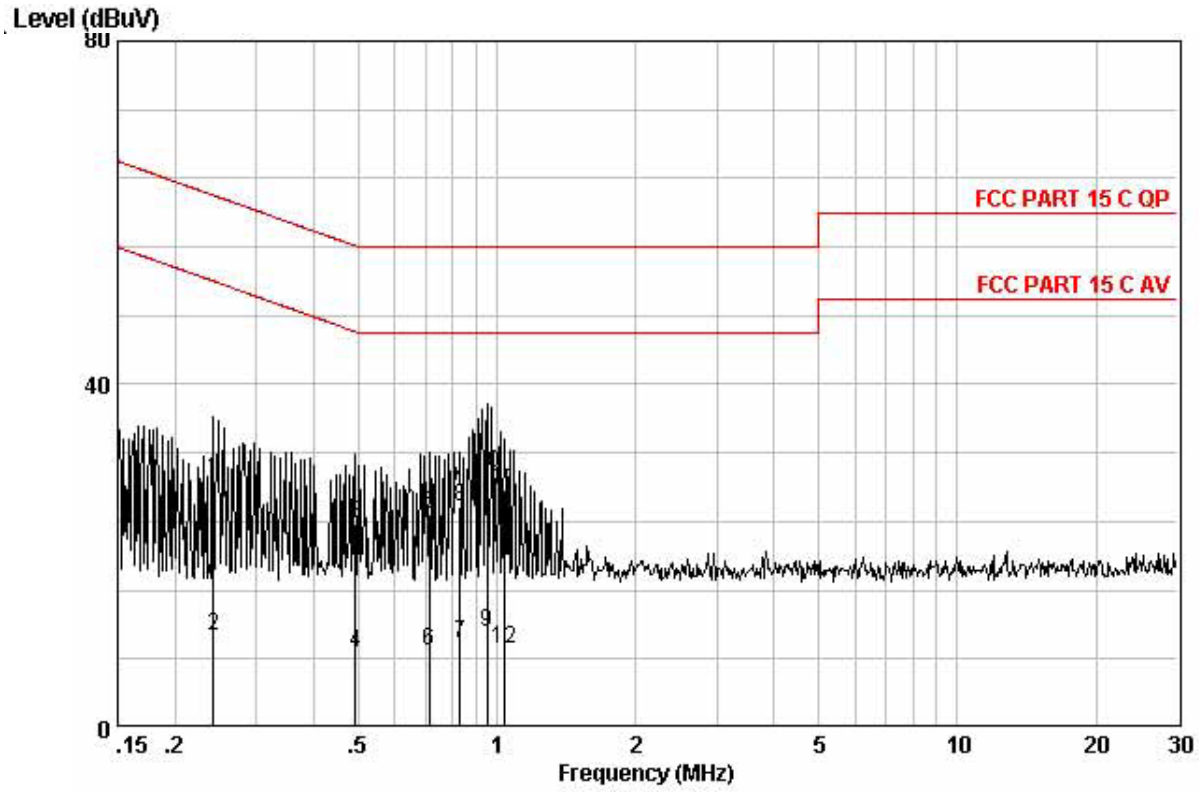


Quasi-peak and Average measurement:

Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.242	20.40	0.00	9.88	30.28	62.04	-31.76	QP
0.242	0.30	0.00	9.88	10.18	52.04	-41.86	AVERAGE
0.541	13.02	0.00	9.93	22.95	56.00	-33.05	QP
0.541	-0.48	0.00	9.93	9.45	46.00	-36.55	AVERAGE
0.690	18.74	0.00	9.88	28.62	56.00	-27.38	QP
0.690	-0.55	0.00	9.88	9.33	46.00	-36.67	AVERAGE
0.783	0.44	0.00	9.85	10.29	46.00	-35.71	AVERAGE
0.783	17.28	0.00	9.85	27.13	56.00	-28.87	QP
0.857	0.10	0.00	9.83	9.93	46.00	-36.07	AVERAGE
0.857	18.84	0.00	9.83	28.67	56.00	-27.33	QP
0.994	17.40	0.00	9.79	27.19	56.00	-28.81	QP
0.994	-0.04	0.00	9.79	9.75	46.00	-36.25	AVERAGE

Neutral Line

Peak Scan:



Quasi-peak and Average measurement:

Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.242	19.14	0.00	9.89	29.03	62.04	-33.01	QP
0.242	0.77	0.00	9.89	10.66	52.04	-41.38	AVERAGE
0.491	13.82	0.00	9.94	23.76	56.14	-32.38	QP
0.491	-1.17	0.00	9.94	8.77	46.14	-37.37	AVERAGE
0.712	15.06	0.00	9.88	24.94	56.00	-31.06	QP
0.712	-0.86	0.00	9.88	9.02	46.00	-36.98	AVERAGE
0.830	-0.04	0.00	9.85	9.81	46.00	-36.19	AVERAGE
0.830	15.84	0.00	9.85	25.69	56.00	-30.31	QP
0.953	1.21	0.00	9.83	11.04	46.00	-34.96	AVERAGE
0.953	19.80	0.00	9.83	29.63	56.00	-26.37	QP
1.037	17.78	0.00	9.82	27.60	56.00	-28.40	QP
1.037	-0.63	0.00	9.82	9.19	46.00	-36.81	AVERAGE

End of report