SGS-CSTC Standards Technical Services Ltd.

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057
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FCC REPORT

Application No. :	SZEMO110300833RF
Applicant:	Da Heng metal products Co., Ltd.
Product Name:	Wireless Vscale
Operation Frequency:	2432.999MHz
FCC ID:	ZCDV201
Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249: 2009
Date of Receipt	2011-03-04
Date of Test	2011-03-08 to 2011-03-11
Date of Issue	2011-03-29
Test Result :	**PASS ***

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

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

2 Contents

3 Test Summary

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

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

Fail: The EUT does not comply with the essential requirements in the standard.

4 General Information

4.1 Client Information

Applicant/ Manufacturer /Factory:	Da Heng metal products Co., Ltd.
Address of Applicant/ Manufacturer/Factory:	25 Business street ,178 Buddhas Village industrial district, TongXia Dongguan

4.2 General Description of E.U.T.

Product Name:	Wireless Vscale
Trade Name:	PROFORM
Model No.:	V201
Operation Frequency:	2432.999MHz
Antenna gain:	-2dBi
Modulation type:	2-FSK
Antenna Type:	Integral
Power supply:	6.0V DC (1.5V x 4"AA"Size Batteries)

4.3 E.U.T Operation mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 mbar
Test mode:	
Normal operation mode:	Keep the EUT in communicating mode with the receiver
Transmitting mode:	Keep the EUT transmitted continuous with modulation signal
Idle mode:	Keep the EUT at Idle mode

4.4 Test Facility

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

CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

VCCI

The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.

Date of Registration: September 29, 2008. Valid until September 28, 2011.

FCC – Registration No.: 556682

SGS-CSTC Standards Technical 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 our files. Registration 556682, June 27, 2008.

Industry Canada (IC)

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.6 Other Information Requested by the Customer

None.

4.7 Test Instruments list:

RE in Chamber						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2010-06-17	2011-06-17
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2010-11-05	2011-11-05
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2008-06-18	2011-06-18
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2010-11-09	2011-11-09
6	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2010-11-09	2011-11-09
7	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2010-11-09	2011-11-09
8	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2010-06-02	2011-06-02
9	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2010-10-27	2011-10-27
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002650-30-8P-44	SEL0080	2010-06-04	2011-06-04
11	Band filter	Amindeon	82346	SEL0094	2010-06-02	2011-06-02

5 Test results and Measurement Data

5.1 Antenna requirement:

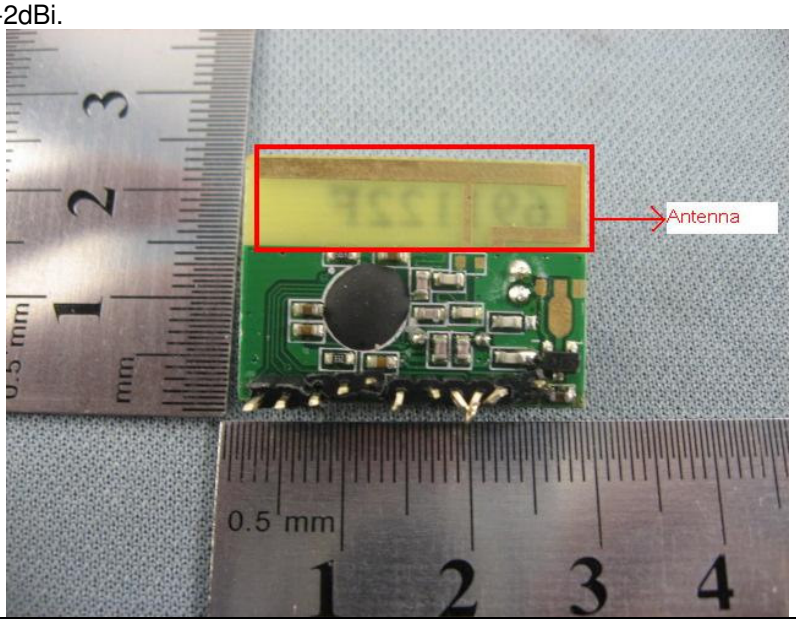
Standard requirement:	FCC Part15 C Section 15.203

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:	

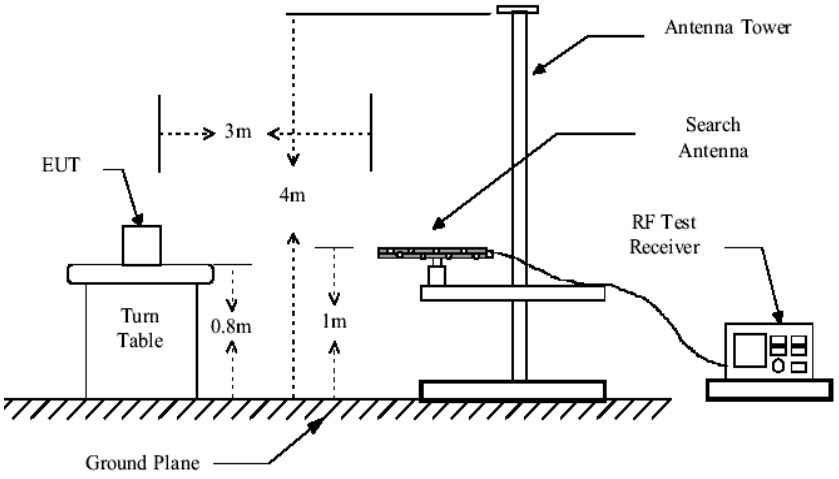
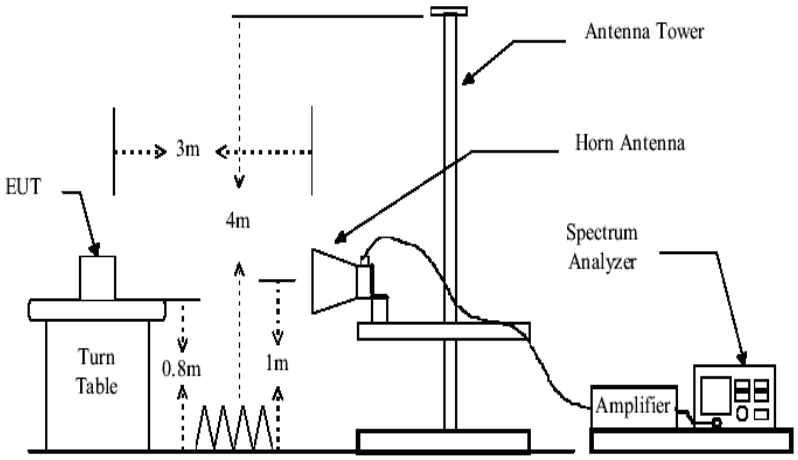
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -2dBi.



5.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.249, 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2009</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</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>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><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">2400MHz-2483.5MHz</td><td>94.0</td><td>Average Value</td></tr>
<tr><td>114.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>The E.U.T and its simulators are placed on a turntable which is 0.8meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 4.7 for details</td></tr>
<tr><td>Test mode:</td><td>Normal operation mode</td></tr>
<tr><td>Test result:</td><td>Pass</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 

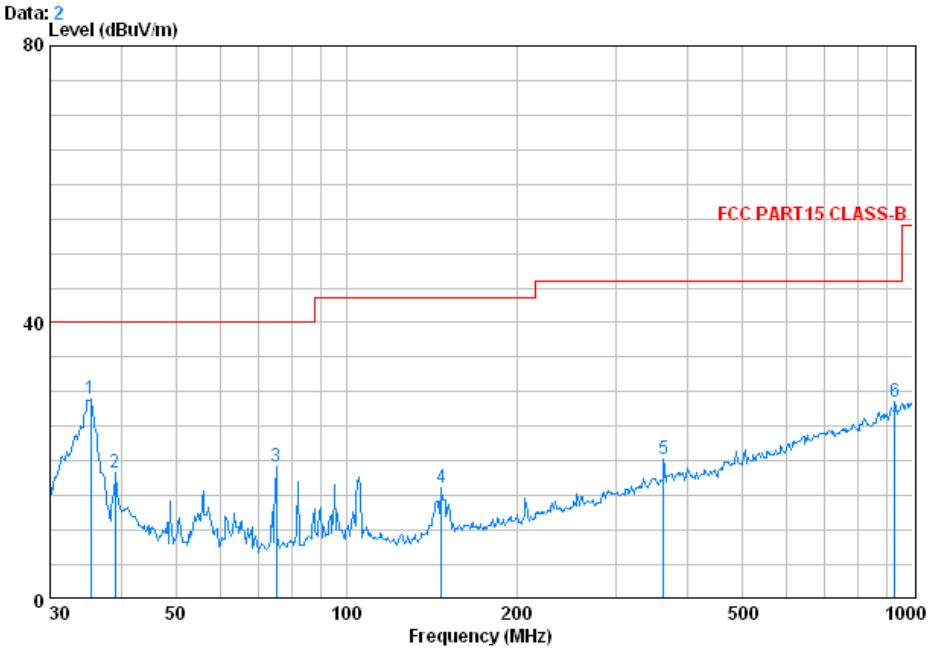
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Emission Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Measurement Data

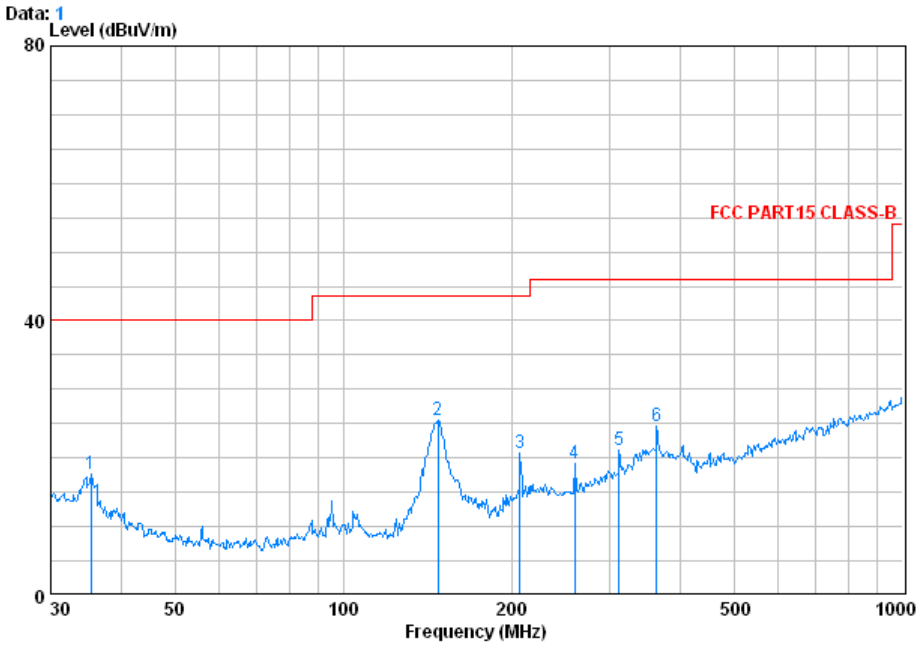
Normal mode Below 1GHz

Vertical



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	35.375	0.60	12.85	27.34	42.84	28.96	40.00	-11.04
2	39.024	0.60	11.50	27.32	33.56	18.33	40.00	-21.67
3	75.182	0.96	7.32	27.24	38.24	19.29	40.00	-20.71
4	147.404	1.31	8.76	26.92	32.92	16.07	43.50	-27.43
5	362.985	2.10	15.72	26.89	29.43	20.35	46.00	-25.65
6 @	929.008	3.63	23.30	26.64	28.24	28.53	46.00	-17.47

Horizontal



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	35.375	0.60	12.90	27.34	31.50	17.67	40.00	-22.33
2 @	147.921	1.32	8.81	26.91	42.37	25.58	43.50	-17.92
3	207.123	1.44	10.57	26.67	35.37	20.70	43.50	-22.80
4	259.234	1.72	12.49	26.51	31.57	19.28	46.00	-26.72
5	311.087	1.94	14.29	26.48	31.37	21.11	46.00	-24.89
6	362.985	2.10	15.72	26.89	33.68	24.60	46.00	-21.40

5.2.1 Field Strength Of The Fundamental Signal

Peak value:

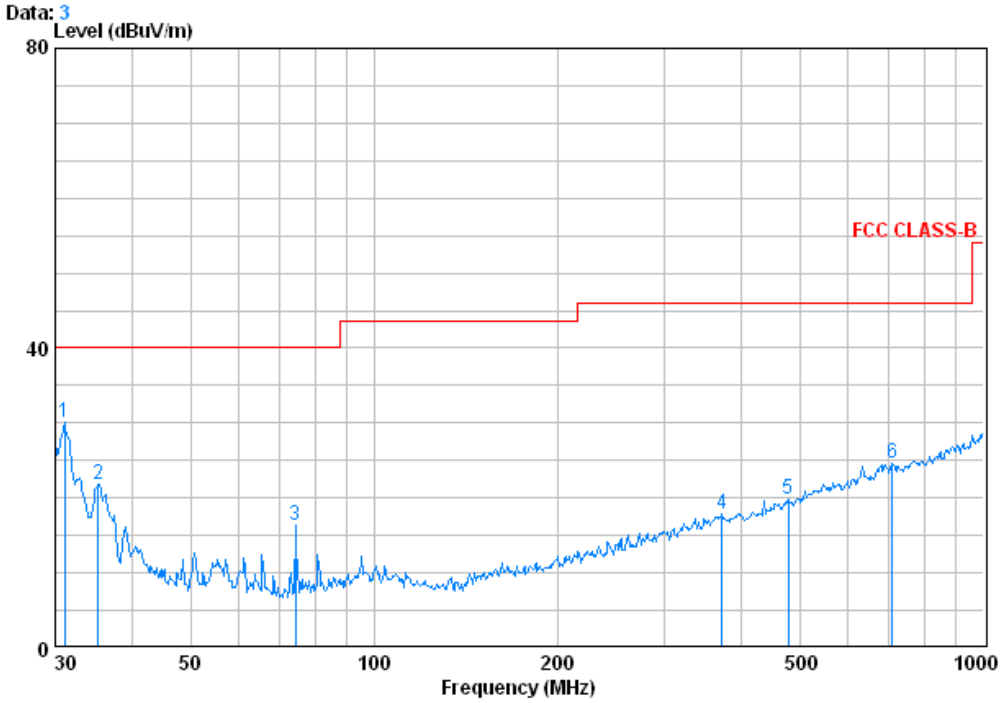
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Antenna Polarization
2432.999	3.00	32.58	39.88	87.24	82.94	114.00	-31.06	Horizontal
2432.999	3.00	32.58	39.88	79.80	75.50	114.00	-38.50	Vertical

Remark:
As shown in this section, the peak field strength of any emission shall not exceed the maximum permitted average limits. So, only the peak measurements were shown in the report.

5.2.2 Spurious Emissions

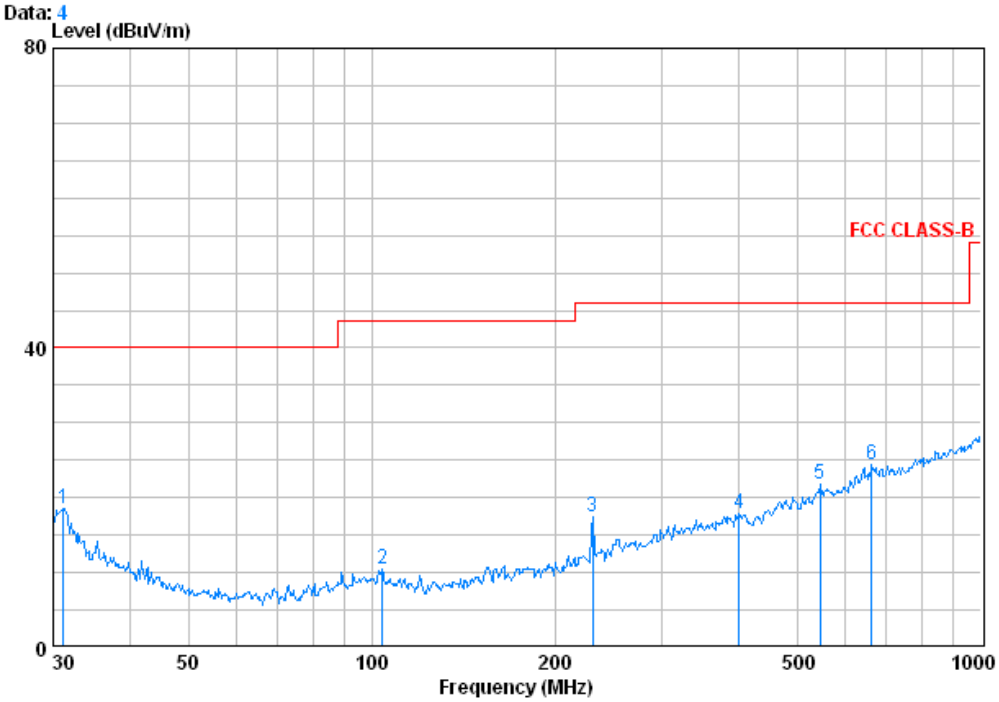
30MHz~1GHz	
Test mode:	Transmitting

Vertical



Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Preamp Factor dB	Read Level dBuV	level dBuV/m	Limit Line dBuV/m	Over Limit dB
31.071	14.83	0.60	27.35	41.95	30.03	40.00	-9.97
35.251	12.90	0.60	27.34	35.67	21.83	40.00	-18.17
74.396	7.28	0.94	27.24	35.39	16.36	40.00	-23.64
372.005	15.94	2.12	26.95	26.65	17.77	46.00	-28.23
478.846	17.80	2.52	27.60	27.04	19.76	46.00	-26.24
709.182	21.60	2.93	27.40	27.41	24.54	46.00	-21.46

Horizontal



Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Preamp Factor dB	Read Level dBuV	level dBuV/m	Limit Line dBuV/m	Over Limit dB
31.180	14.62	0.60	27.35	30.71	18.58	40.00	-21.42
104.170	8.89	1.21	27.17	27.63	10.56	43.50	-32.94
230.907	11.70	1.58	26.59	30.72	17.41	46.00	-28.59
400.432	16.30	2.20	27.13	26.55	17.92	46.00	-28.08
545.183	18.84	2.65	27.63	27.90	21.76	46.00	-24.24
661.151	21.00	2.83	27.46	28.02	24.38	46.00	-21.62

Above 1GHz	
Test mode:	Transmitting

Peak Value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Antenna Polarization
4325.250	4.37	34.73	41.28	48.11	45.93	74.00	-28.07	Vertical
4748.250	4.66	34.81	41.58	48.65	46.54	74.00	-27.46	Vertical
6099.500	5.15	35.82	40.84	48.82	48.95	74.00	-25.05	Vertical
7239.250	5.81	35.90	39.85	48.13	49.99	74.00	-24.01	Vertical
7568.250	6.19	36.00	39.56	49.23	51.86	74.00	-22.14	Vertical
8085.250	6.20	36.03	39.11	49.00	52.12	74.00	-21.88	Vertical
2950.500	3.29	33.33	40.27	47.96	44.31	74.00	-29.69	Horizontal
4125.500	4.24	34.17	41.12	49.16	46.45	74.00	-27.55	Horizontal
4877.500	4.72	34.59	41.68	48.61	46.24	74.00	-27.76	Horizontal
7333.250	5.92	35.94	39.77	49.10	51.19	74.00	-22.81	Horizontal
8743.250	6.17	36.39	38.54	47.84	51.86	74.00	-22.14	Horizontal
10094.500	6.00	37.82	37.49	46.15	52.48	74.00	-21.52	Horizontal

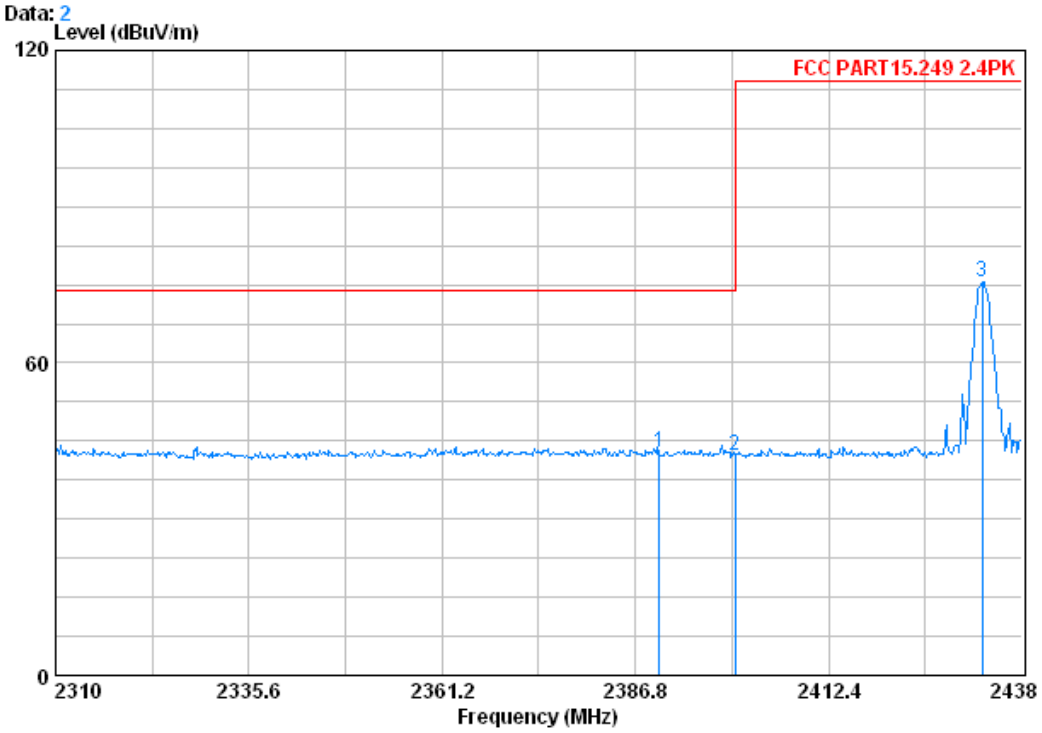
Remark:
The disturbance above 11GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

As shown in this section, the peak field strength of any emission shall not exceed the maximum permitted average limits So, only the peak measurements were shown in the report.

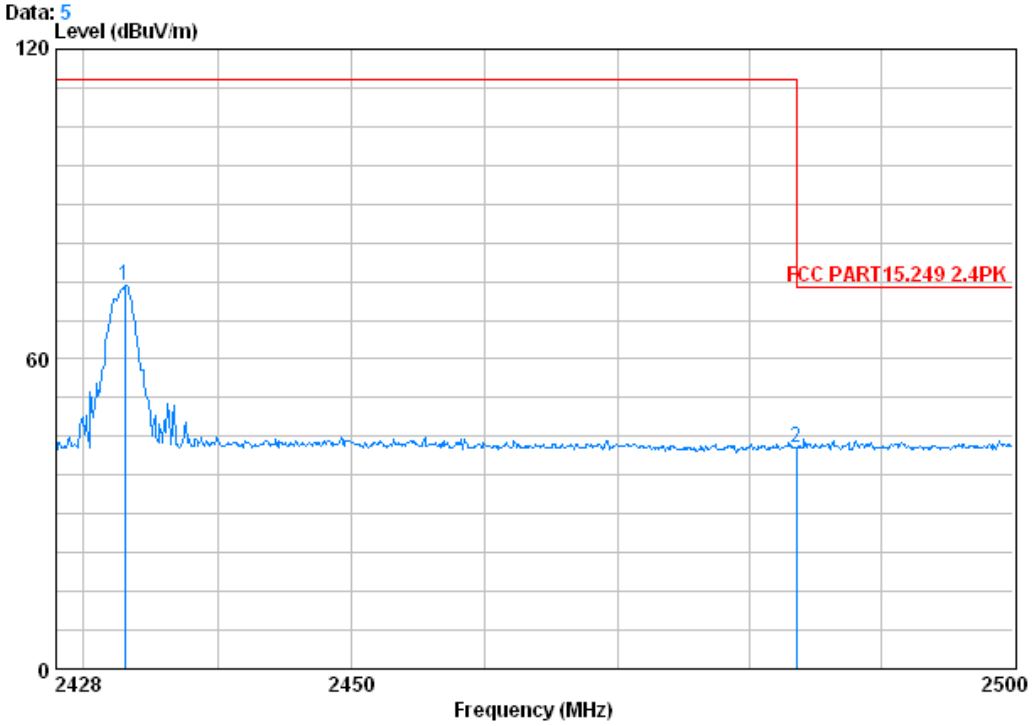
5.2.3 Band edge (Radiated Emission)

Test mode:	Transmitting

Vertical

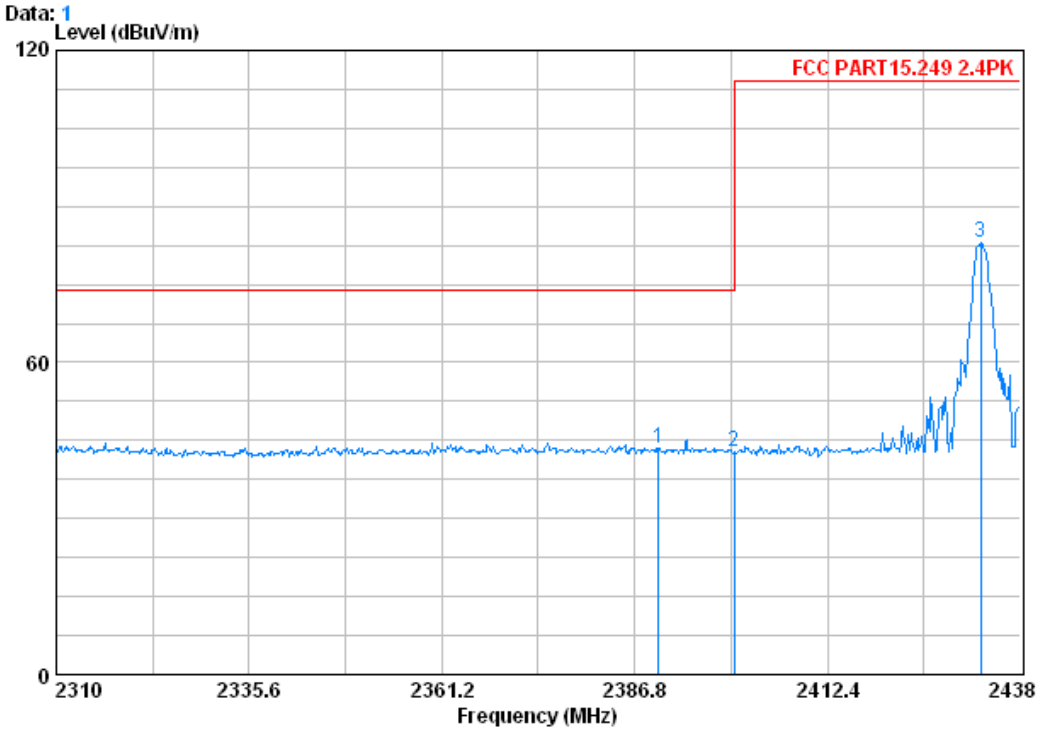


	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2390.000	2.98	32.51	39.85	47.09	42.73	74.00	-31.27
2	2400.000	2.98	32.51	39.86	46.69	42.32	74.00	-31.68
3	2432.999	3.00	32.58	39.88	79.80	75.50	114.00	-38.50

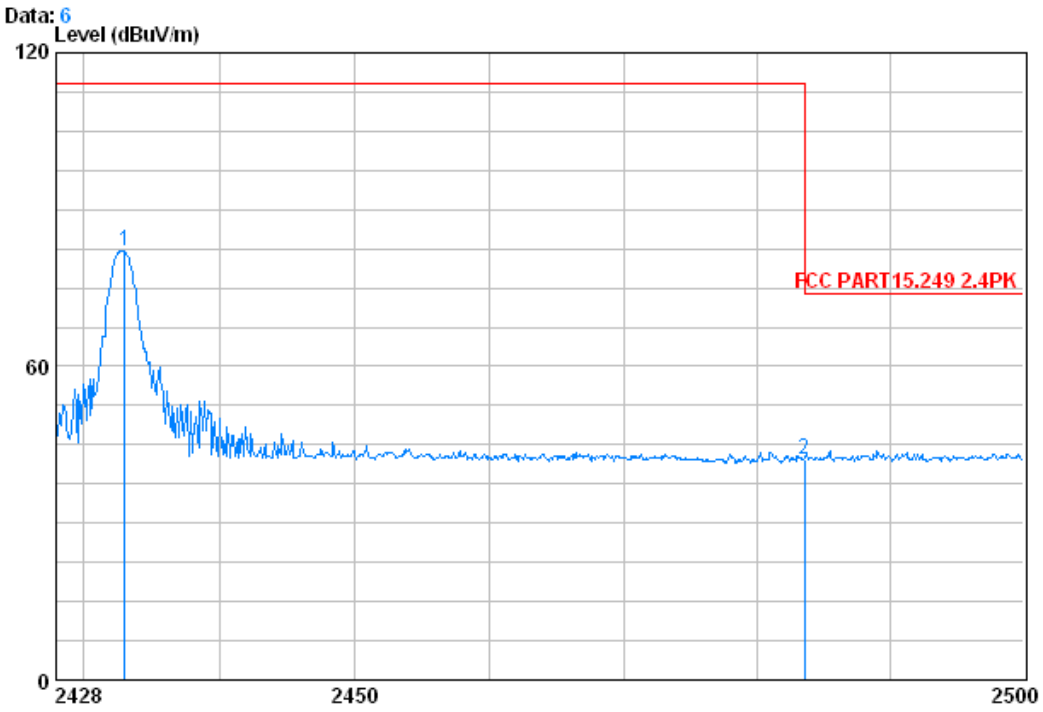


	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2433.112	3.00	32.58	39.88	78.68	74.38	114.00	-39.62
2 @	2483.500	3.03	32.67	39.92	46.99	42.77	74.00	-31.23

Horizontal



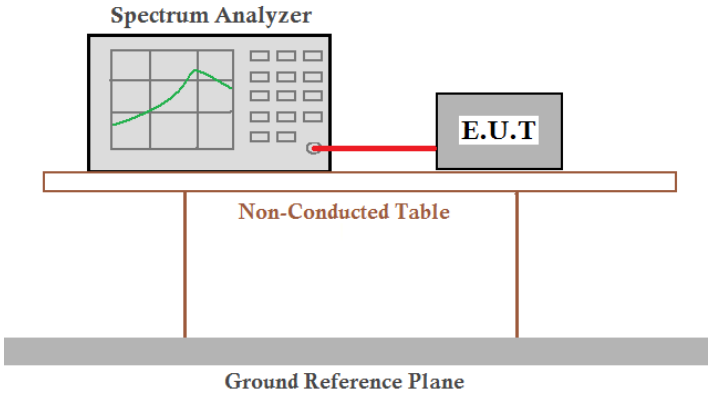
	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2390.000	2.98	32.51	39.85	47.74	43.39	74.00	-30.61
2	2400.000	2.98	32.51	39.86	47.04	42.67	74.00	-31.33
3	2432.999	3.00	32.58	39.88	87.24	82.94	114.00	-31.06



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2433.040	3.00	32.58	39.88	86.43	82.13	114.00	-31.87
2 @	2483.500	3.03	32.67	39.92	46.38	42.16	74.00	-31.84

Remark:
As shown in this section, the peak field strength of any emission shall not exceed the maximum permitted average limits So, only the peak measurements were shown in the report.

5.3 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2009
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:	 *Remark:* *Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.*
Test Instruments:	Refer to section 4.7 for details
Test result:	Pass

Measurement Data

20dB bandwidth (MHz)	Result
0.380	Pass

Test plot as follows: