FCC TEST REPORT
for
Seal Shield Corporation

2.4GHz Wireless Keyboard
Model No.: SSKSV099W, SK-042AG, SK-032SAG

Prepared for	:	Seal Shield Corporation
Address	:	3105 Riverside Avenue Jacksonville, FL 32205 USA

Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
Address	:	1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China Tel: (86) 755-26066544 Fax: (86) 755-26014772

Report Number	:	R011511261I
Date of Test	:	Nov. 10~ Dec. 03, 2015
Date of Report	:	Dec. 04, 2015

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Test Report

TEST REPORT

Applicant	:	Seal Shield Corporation
Manufacturer	:	Seal Shield Corporation
EUT	:	2.4GHz Wireless Keyboard
Model No.	:	SSKSV099W, SK-042AG, SK-032SAG
Serial No.	:	N.A.
Trade Mark	:	SEAL SHIELD™
Rating	:	DC 3.7V, 4mA

Measurement Procedure Used:

FCC Part15 Subpart C, Paragraph 15.207, 15.249 & 15.209

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.
This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Nov. 10~ Dec. 03, 2015

Prepared by : Kebo Zhang
(Tested Engineer / Kebo Zhang)

Reviewer : Amy Ding
(Project Manager / Amy Ding)

Approved & Authorized Signer : Tom Chen
(Manager / Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	2.4GHz Wireless Keyboard
Model Number	:	SSKSV099W, SK-042AG, SK-032SAG (Note: All samples are the same except the model number and colour, so we prepare "SSKSV099W" for test only.)
Test Power Supply	:	AC 120V, 60Hz for Adatper / AC 240V, 60Hz for adapter / DC 3.7V Battery Inside
Frequency	:	2408-2474MHz
Channel Space	:	2MHz
No. of Channels	:	34
Antenna Specification	:	PCB Antenna: -0.61 dBi
Applicant	:	Seal Shield Corporation
Address	:	3105 Riverside Avenue Jacksonville, FL 32205 USA
Manufacturer	:	Seal Shield Corporation
Address	:	3105 Riverside Avenue Jacksonville, FL 32205 USA
Factory	:	Seal Shield Corporation
Address	:	3105 Riverside Avenue Jacksonville, FL 32205 USA
Date of receipt	:	Nov. 10, 2015
Date of Test	:	Nov. 10~ Dec. 03, 2015

1.2. Auxiliary Equipment Used during Test

Adapter	:	Manufacturer: ZTE M/N: STC-A2050I1000USBA-C S/N: 201202102100876 Input: 100-240V~50/60Hz 0.3A Output: DC 5V, 1000mA

1.3. Description of Test Facility

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

CNAS - LAB Code: L3503
Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed 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 752021, July 10, 2013.

IC-Registration No.: 8058A-1
Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, February 22, 2013.

Test Location
All Emissions tests were performed at
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.4. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.1 dB (Horizontal) Ur = 4.3 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4dB

2. Test Procedure

GENERAL: This report shall NOT be reproduced except in full without the written approval of Shenzhen Anbotek Compliance Laboratory Limited. The EUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.10-2013 using a spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the EUT was 74.3oF with a humidity of 69%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

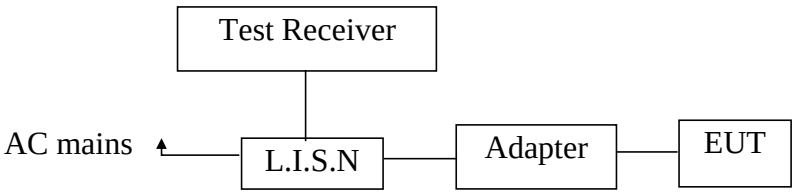
Example:
Freq (MHz) METER READING + ACF = FS
20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.10-2013 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.
When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

3. Conducted Emission Test

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



3.2. Power Line Conducted Emission Measurement Limits (15.207)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

3.4.3. Let the EUT work in test mode (Charging) and measure it.

3.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test results are reported on Section 3.6.

3.6. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Apr. 17, 2015	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 17, 2015	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 17, 2015	1 Year

3.7. Power Line Conducted Emission Measurement Results

PASS.

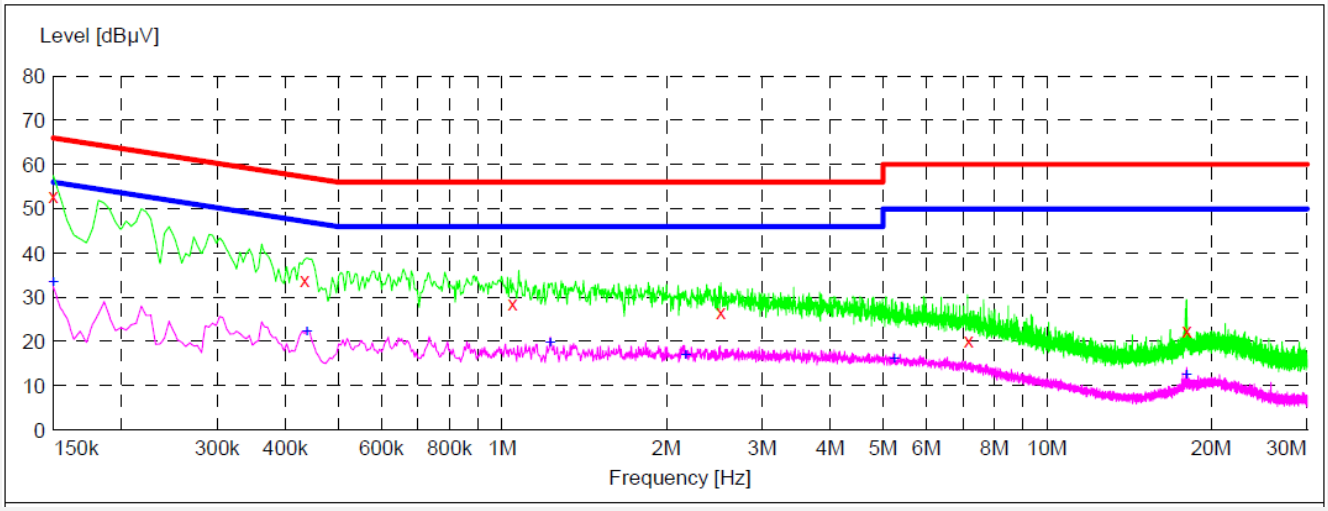
The frequency range from 150KHz to 30 MHz is investigated.

Please refer the following pages.

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging
Test Specification:	AC 120V, 60Hz for adapter
Comment:	Live Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



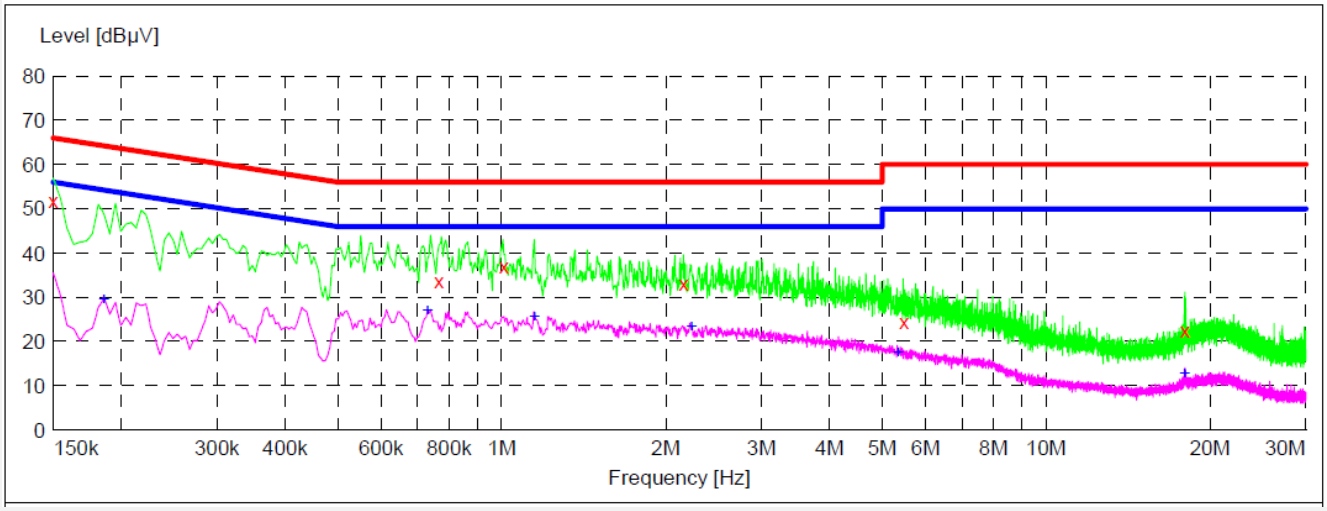
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	52.80	20.1	66	13.2	QP	L1	GND
0.433500	34.00	20.1	57	23.2	QP	L1	GND
1.045000	28.80	20.2	56	27.2	QP	L1	GND
2.521000	26.60	20.4	56	29.4	QP	L1	GND
7.174000	20.40	20.5	60	39.6	QP	L1	GND
18.023500	22.60	20.8	60	37.4	QP	L1	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	33.40	20.1	56	22.6	AV	L1	GND
0.438000	22.20	20.1	47	24.9	AV	L1	GND
1.225000	19.80	20.2	46	26.2	AV	L1	GND
2.170000	17.00	20.3	46	29.0	AV	L1	GND
5.243500	16.00	20.5	50	34.0	AV	L1	GND
18.046000	12.60	20.8	50	37.4	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging
Test Specification:	AC 120V, 60Hz for adapter
Comment:	Neutral Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



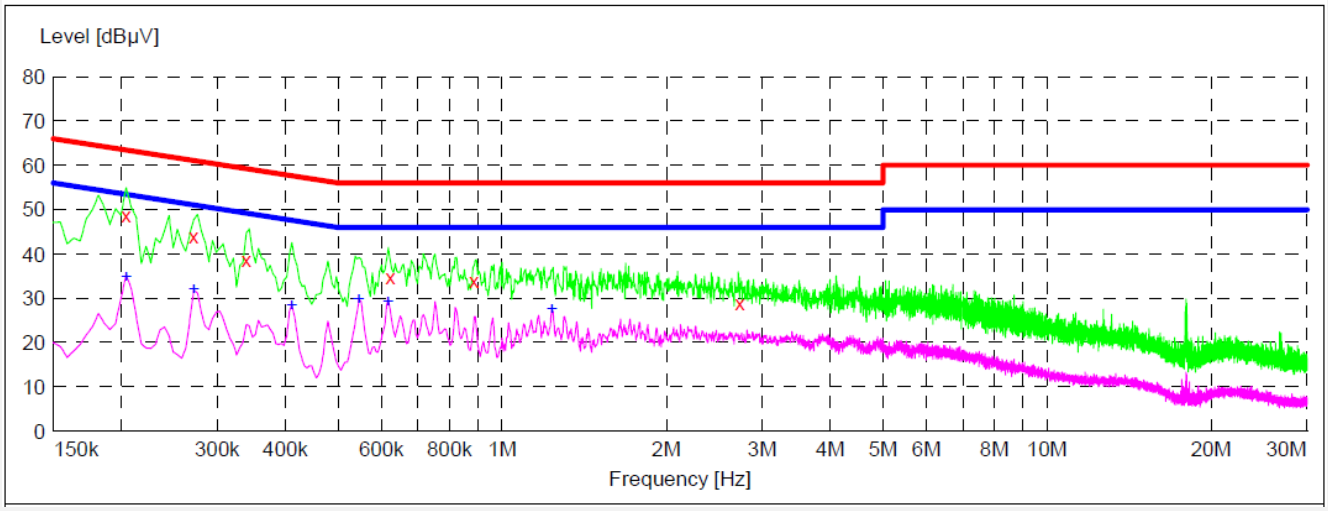
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	51.90	20.1	66	14.1	QP	N	GND
0.766500	33.80	20.1	56	22.2	QP	N	GND
1.009000	37.10	20.2	56	18.9	QP	N	GND
2.156500	33.10	20.3	56	22.9	QP	N	GND
5.486500	24.50	20.5	60	35.5	QP	N	GND
17.978500	22.60	20.8	60	37.4	QP	N	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	29.50	20.1	54	24.7	AV	N	GND
0.730500	27.00	20.1	46	19.0	AV	N	GND
1.148500	25.60	20.2	46	20.4	AV	N	GND
2.233000	23.30	20.3	46	22.7	AV	N	GND
5.347000	17.60	20.5	50	32.4	AV	N	GND
17.983000	12.80	20.8	50	37.2	AV	N	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging
Test Specification:	AC 240V, 60Hz for adapter
Comment:	Live Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



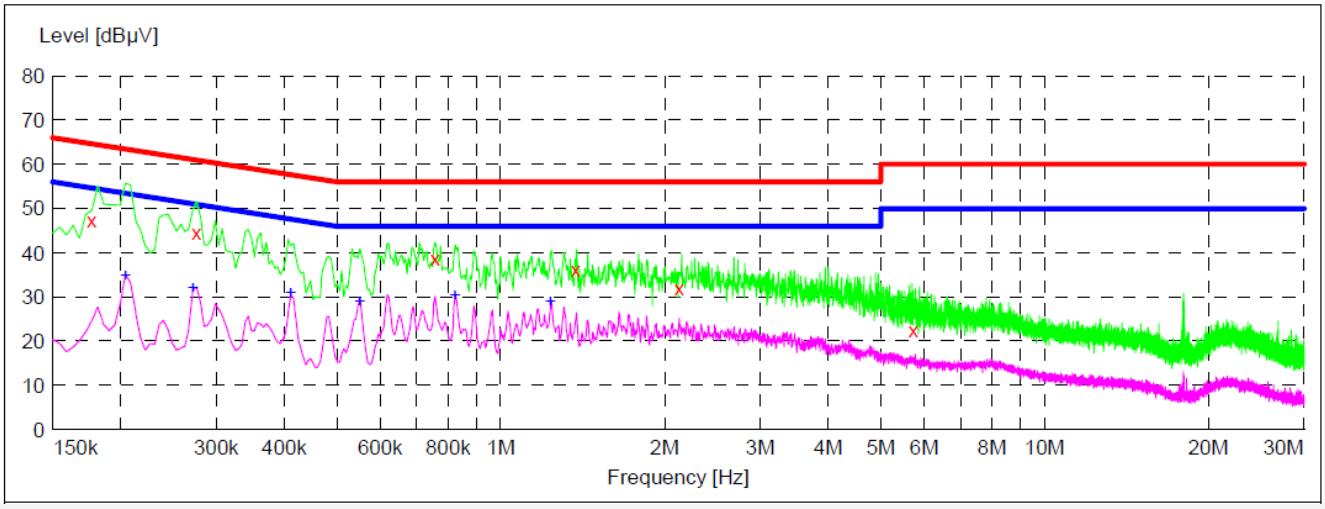
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.204000	48.80	20.1	63	14.6	QP	L1	GND
0.271500	43.90	20.1	61	17.2	QP	L1	GND
0.339000	38.70	20.1	59	20.5	QP	L1	GND
0.622500	35.00	20.1	56	21.0	QP	L1	GND
0.888000	34.00	20.1	56	22.0	QP	L1	GND
2.732500	28.90	20.4	56	27.1	QP	L1	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.204000	35.00	20.1	53	18.4	AV	L1	GND
0.271500	31.90	20.1	51	19.2	AV	L1	GND
0.411000	28.50	20.1	48	19.1	AV	L1	GND
0.546000	29.70	20.1	46	16.3	AV	L1	GND
0.618000	29.30	20.1	46	16.7	AV	L1	GND
1.234000	27.70	20.2	46	18.3	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging
Test Specification:	AC 240V, 60Hz for adapter
Comment:	Neutral Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	47.50	20.1	65	17.1	QP	N	GND
0.276000	44.60	20.1	61	16.3	QP	N	GND
0.757500	38.70	20.1	56	17.3	QP	N	GND
1.373500	36.20	20.2	56	19.8	QP	N	GND
2.129500	31.90	20.3	56	24.1	QP	N	GND
5.734000	22.50	20.5	60	37.5	QP	N	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.204000	34.80	20.1	53	18.6	AV	N	GND
0.271500	32.00	20.1	51	19.1	AV	N	GND
0.411000	30.80	20.1	48	16.8	AV	N	GND
0.550500	28.90	20.1	46	17.1	AV	N	GND
0.825000	30.20	20.1	46	15.8	AV	N	GND
1.234000	29.10	20.2	46	16.9	AV	N	GND

4. Radiation Interference

4.1. Requirements (15.249, 15.209):

FIELD STRENGTH of Fundamental: @3M	FIELD STRENGTH of Harmonics	S15.209	
902-928 MHZ		88 - 216 MHz	43.5
2.4-2.4835 GHz		216 - 960 MHz	46
94 dBμV/m @3m	54 dBμV/m @3m	ABOVE 960 MHz	54dBuV/m

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 15.209, whichever is the lesser attenuation.

4.2. Test Procedure

For below 1GHz, the EUT is placed on a turn table which is 0.8 meter high above the ground. For above 1GHz, the EUT is placed on a turn table which is 1.5 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation. The test results are listed in Section 4.3.

Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 17, 2015	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 17, 2015	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 17, 2015	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 20, 2015	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 20, 2015	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 17, 2015	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8	Power Sensor	DAER	RPR3006W	15I00041SN046	Jun 30, 2015	1 Year
9	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun 30, 2015	1 Year
10	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun 30, 2015	1 Year
11	Signal Generator	Agilent	E4421B	MY41000743	Jun 30, 2015	1 Year
12	DC Power supply	IV	IV-8080	YQSB0096	Jun 30, 2015	1 Year
13	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150M8	SE-0137	Mar 16, 2015	1 Year

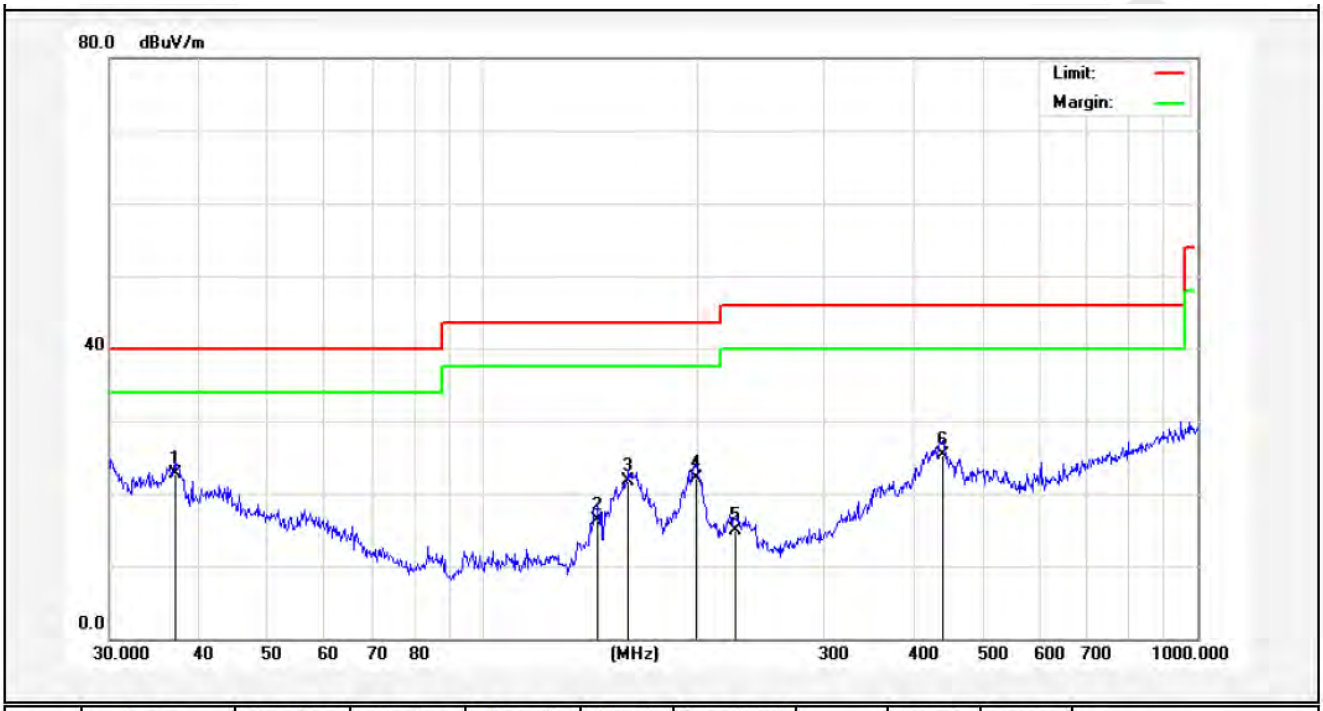
4.3. Test Results

PASS.

The EUT was tested on (Charging, On) modes, only the worst data of (On) is attached in the following pages.
Only the worst case (x orientation).

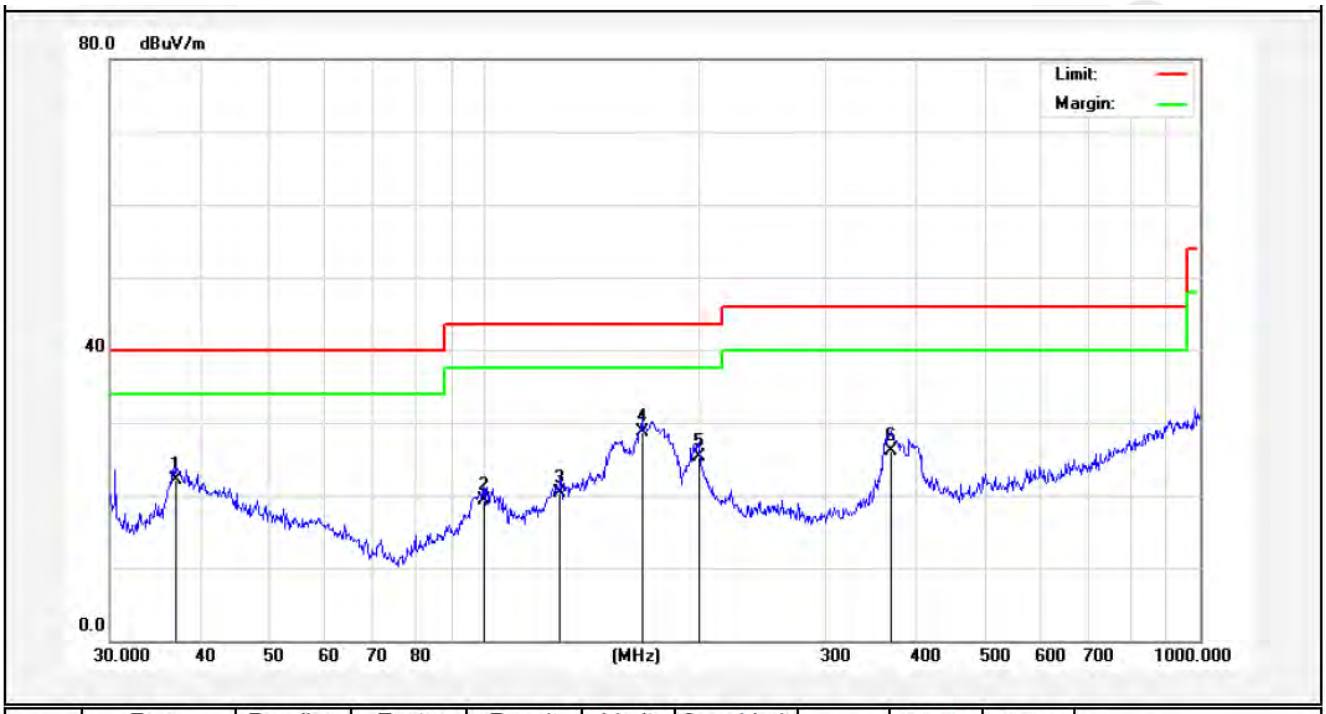
Below 1GHz:

Job No.:	**011511261I**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Mode:	**On**	**Distance:**	**3m**
Note:	**30-1000MHz**		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	37.1550	35.28	-12.60	22.68	40.00	-17.32	QP	300	0	
2	144.3348	39.80	-23.43	16.37	43.50	-27.13	QP	300	360	
3	159.7844	44.52	-22.88	21.64	43.50	-21.86	QP	300	0	
4	198.5879	42.89	-20.88	22.01	43.50	-21.49	QP	300	360	
5	225.3079	34.54	-19.57	14.97	46.00	-31.03	QP	300	0	
6	440.1963	37.42	-12.21	25.21	46.00	-20.79	QP	300	360	

Job No.:	**011511261I**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Mode:	**On**	**Distance:**	**3m**
Note:	**30-1000MHz**		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	37.0248	34.87	-12.70	22.17	40.00	-17.83	QP	100	0	
2	99.8777	35.09	-15.78	19.31	43.50	-24.19	QP	100	360	
3	127.6645	37.68	-17.47	20.21	43.50	-23.29	QP	100	360	
4	166.0680	46.35	-17.68	28.67	43.50	-14.83	QP	100	360	
5	199.9856	41.12	-15.87	25.25	43.50	-18.25	QP	100	0	
6	370.7022	38.59	-12.45	26.14	46.00	-19.86	QP	100	0	

Above 1 GHz:

Horizontal
CH Low (2408MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2408.000	2.17	31.21	35.30	85.94	84.02	114.0	-29.98	Peak
2408.000	2.17	31.21	35.30	78.19	76.27	94.0	-17.73	AV
4816.170	2.56	34.01	34.71	46.03	47.89	74.0	-26.11	Peak
4816.170	2.56	34.01	34.71	35.91	37.77	54.0	-16.23	AV
7224.290	2.98	36.16	35.15	42.55	46.54	74.0	-27.46	Peak
7224.290	2.98	36.16	35.15	32.79	36.78	54.0	-17.22	AV
9632.000	---	---	---	---	---	---	---	---
12040.00	---	---	---	---	---	---	---	---
14448.00	---	---	---	---	---	---	---	---
16856.00	---	---	---	---	---	---	---	---

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Vertical
CH Low (2408MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2408.000	2.17	31.21	35.30	89.07	87.15	114.0	-26.85	Peak
2408.000	2.17	31.21	35.30	80.44	78.52	94.0	-15.48	AV
4816.190	2.56	34.01	34.71	46.25	48.11	74.0	-25.89	Peak
4816.190	2.56	34.01	34.71	37.07	38.93	54.0	-15.07	AV
7224.330	2.98	36.16	35.15	40.29	44.28	74.0	-29.72	Peak
7224.330	2.98	36.16	35.15	33.18	37.17	54.0	-16.83	AV
9632.000	---	---	---	---	---	---	---	---
12040.00	---	---	---	---	---	---	---	---
14448.00	---	---	---	---	---	---	---	---
16856.00	---	---	---	---	---	---	---	---

Horizontal
CH Middle (2440MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2440.000	2.19	31.22	34.60	90.15	88.96	114.0	-25.04	Peak
2440.000	2.19	31.22	34.60	82.44	81.25	94.0	-12.75	AV
4880.310	2.57	35.00	34.58	46.19	49.18	74.0	-24.82	Peak
4880.310	2.57	35.00	34.58	37.51	40.5	54.0	-13.5	AV
7320.680	3.00	36.17	35.14	40.88	44.91	74.0	-29.09	Peak
7320.680	3.00	36.17	35.14	36.65	40.68	54.0	-13.32	AV
9760.000	---	---	---	---	---	---	---	---
12200.00	---	---	---	---	---	---	---	---
14640.00	---	---	---	---	---	---	---	---
17080.00	---	---	---	---	---	---	---	---

Vertical
CH Middle (2440MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2440.000	2.19	31.22	34.60	89.66	88.47	114.0	-25.53	Peak
2440.000	2.19	31.22	34.60	81.54	80.35	94.0	-13.65	AV
4880.340	2.57	35.00	34.58	46.03	49.02	74.0	-24.98	Peak
4880.340	2.57	35.00	34.58	38.79	41.78	54.0	-12.22	AV
7320.620	3.00	36.17	35.14	45.01	49.04	74.0	-24.96	Peak
7320.620	3.00	36.17	35.14	38.67	42.7	54.0	-11.3	AV
9760.000	---	---	---	---	---	---	---	---
12200.00	---	---	---	---	---	---	---	---
14640.00	---	---	---	---	---	---	---	---
17080.00	---	---	---	---	---	---	---	---

Horizontal
CH High (2474MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2474.000	2.20	31.65	36.00	91.49	89.34	114.0	-24.66	Peak
2474.000	2.20	31.65	36.00	80.57	78.42	94.0	-15.58	AV
4948.430	2.58	35.06	34.79	46.19	49.04	74.0	-24.96	Peak
4948.430	2.58	35.06	34.79	37.51	40.36	54.0	-13.64	AV
7422.860	3.02	36.19	34.90	48.64	52.95	74.0	-21.05	Peak
7422.860	3.02	36.20	35.20	39.51	43.53	54.0	-10.47	AV
9896.000	---	---	---	---	---	---	---	---
12370.00	---	---	---	---	---	---	---	---
14844.00	---	---	---	---	---	---	---	---
17318.00	---	---	---	---	---	---	---	---

Vertical
CH High (2474MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2474.000	2.20	31.65	36.00	92.01	89.86	114.0	-24.14	Peak
2474.000	2.20	31.65	36.00	85.11	82.96	94.0	-11.04	AV
4948.400	2.58	35.06	34.79	48.44	51.29	74.0	-22.71	Peak
4948.400	2.58	35.06	34.79	39.29	42.14	54.0	-11.86	AV
7422.770	3.02	36.19	34.90	48.76	53.07	74.0	-20.93	Peak
7422.770	3.02	36.20	35.20	38.84	42.86	54.0	-11.14	AV
9896.000	---	---	---	---	---	---	---	---
12370.00	---	---	---	---	---	---	---	---
14844.00	---	---	---	---	---	---	---	---
17318.00	---	---	---	---	---	---	---	---

NOTE: " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. The results of different modulations are the same.

5. Bandedge

5.1. Requirements (15.249):

The field strength of any emissions appearing outside the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

5.2. Test Procedure

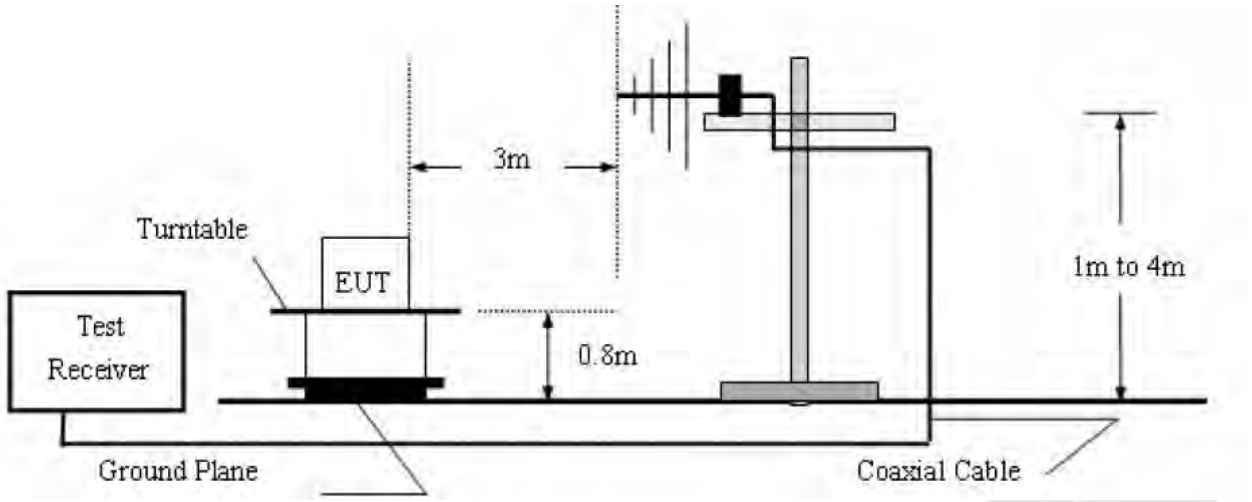
The EUT is placed on a turn table which is 1.5 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test. The device is evaluated in xyz orientation.

Test Equipment

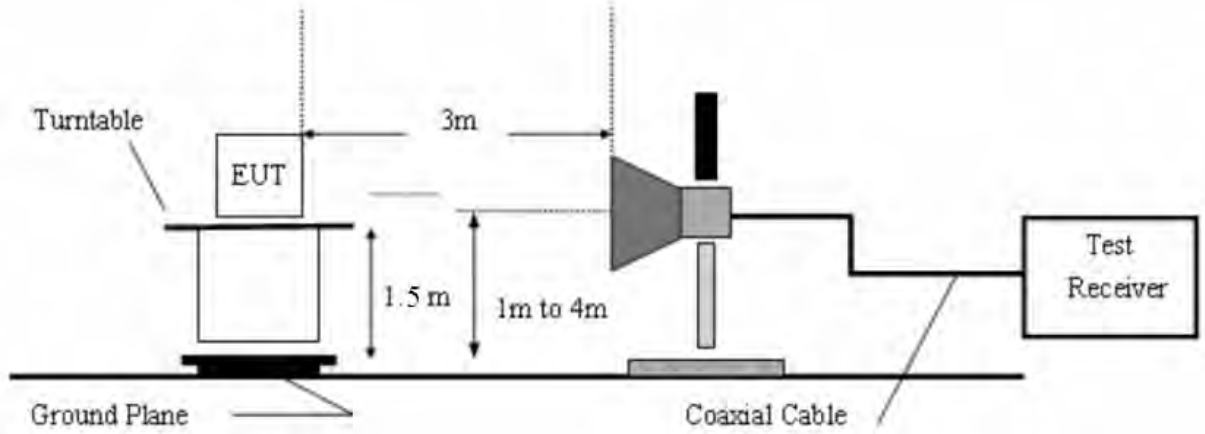
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 17, 2015	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 17, 2015	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 17, 2015	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 20, 2015	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 20, 2015	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 17, 2015	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8	Power Sensor	DAER	RPR3006W	15I00041SN046	Jun 30, 2015	1 Year
9	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun 30, 2015	1 Year
10	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun 30, 2015	1 Year
11	Signal Generator	Agilent	E4421B	MY41000743	Jun 30, 2015	1 Year
12	DC Power supply	IV	IV-8080	YQSB0096	Jun 30, 2015	1 Year
13	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150M8	SE-0137	Mar 16, 2015	1 Year

5.3. Test Configuration:

30M to 1G emissions:



1G to 40G emissions:

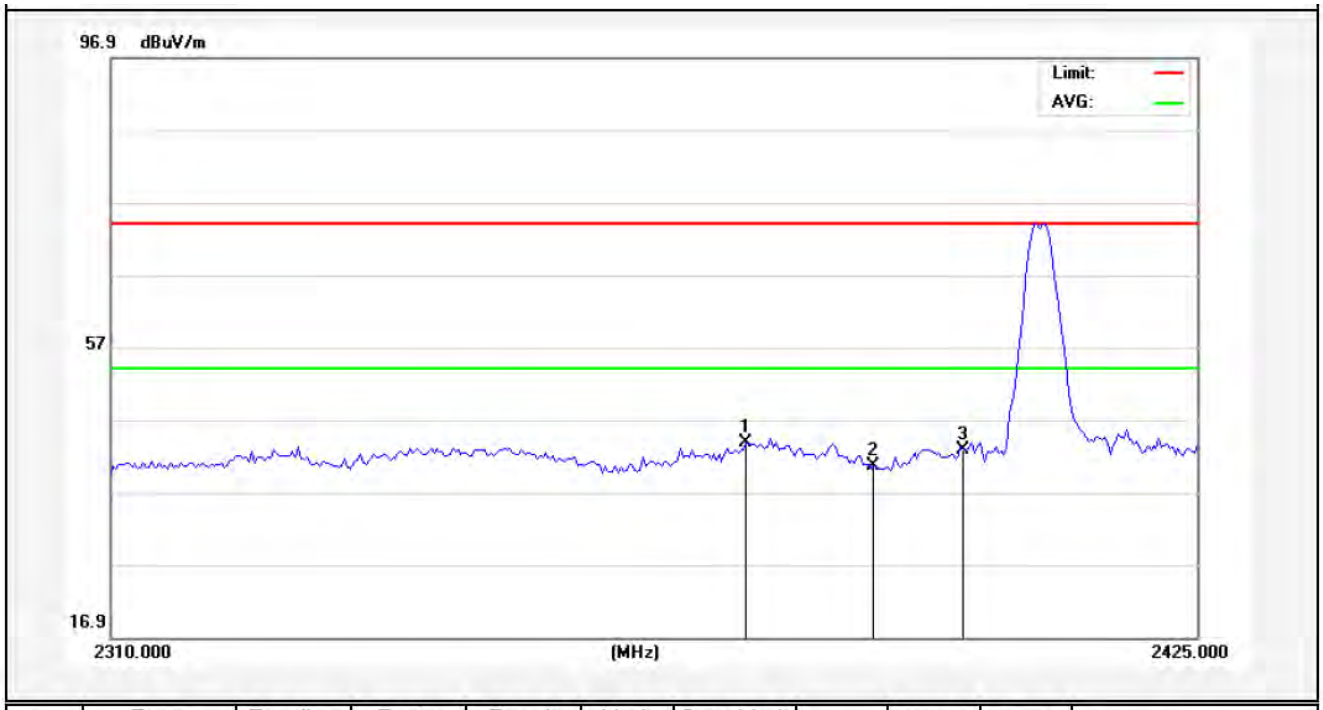


5.4. Test Results

Pass.

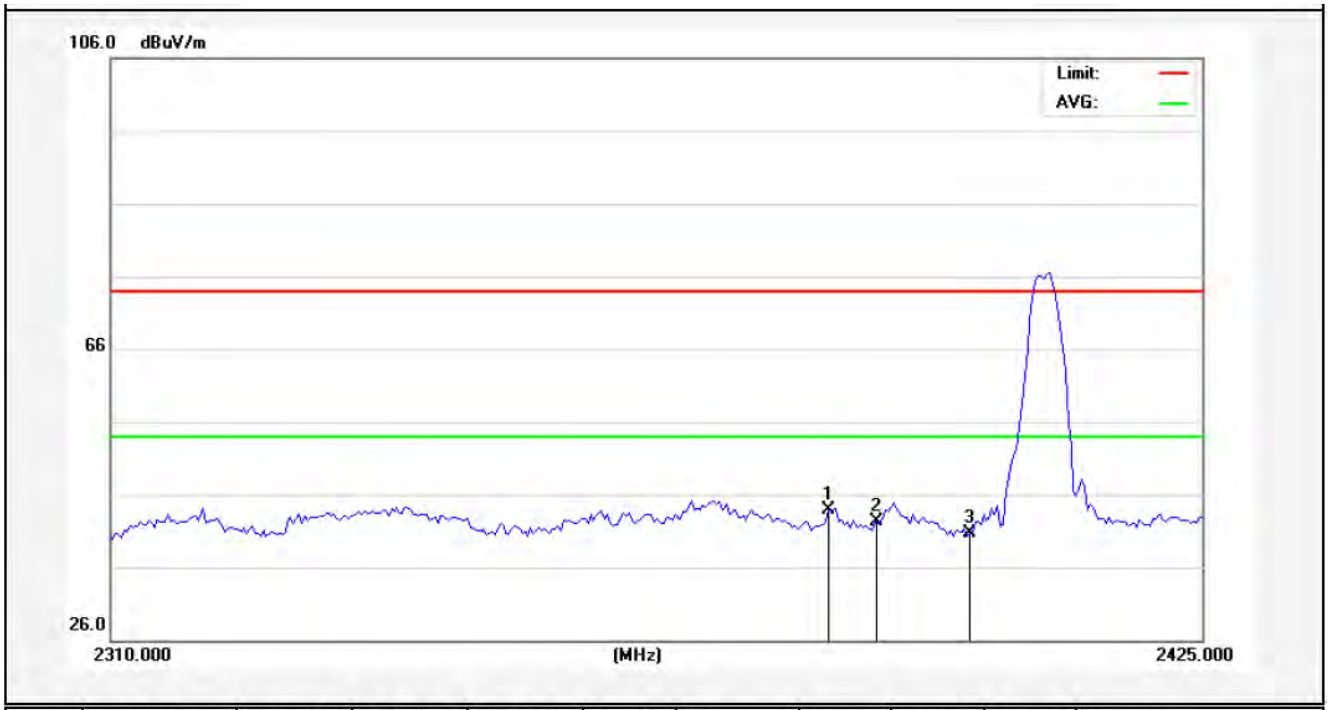
Please refer the following plot. Only the worst case (x orientation).

Job No.:	**011511261I**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**PEAK**	**Distance:**	**3m**



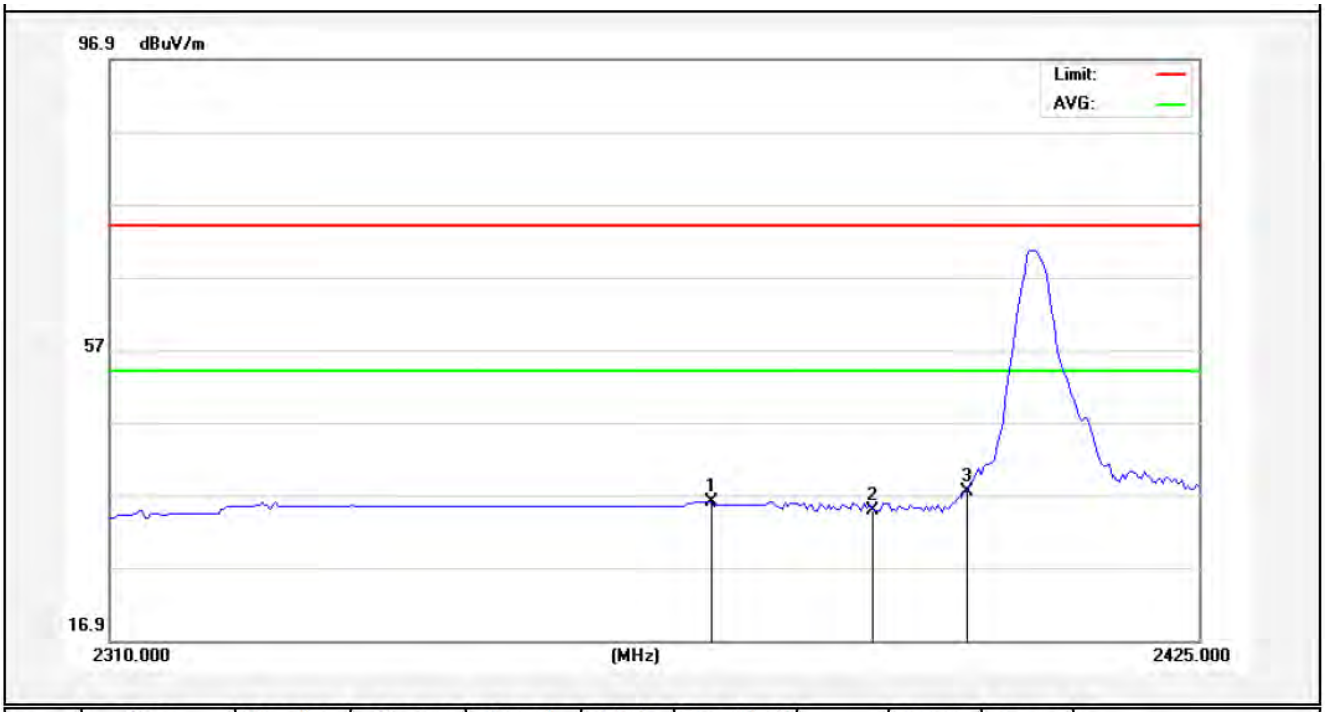
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2376.700	46.39	-2.54	43.85	74.00	-30.15	peak			
2	2390.000	43.11	-2.51	40.60	74.00	-33.40	peak			
3	2400.000	45.34	-2.49	42.85	74.00	-31.15	peak			

Job No.:	**011511261I**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**PEAK**	**Distance:**	**3m**



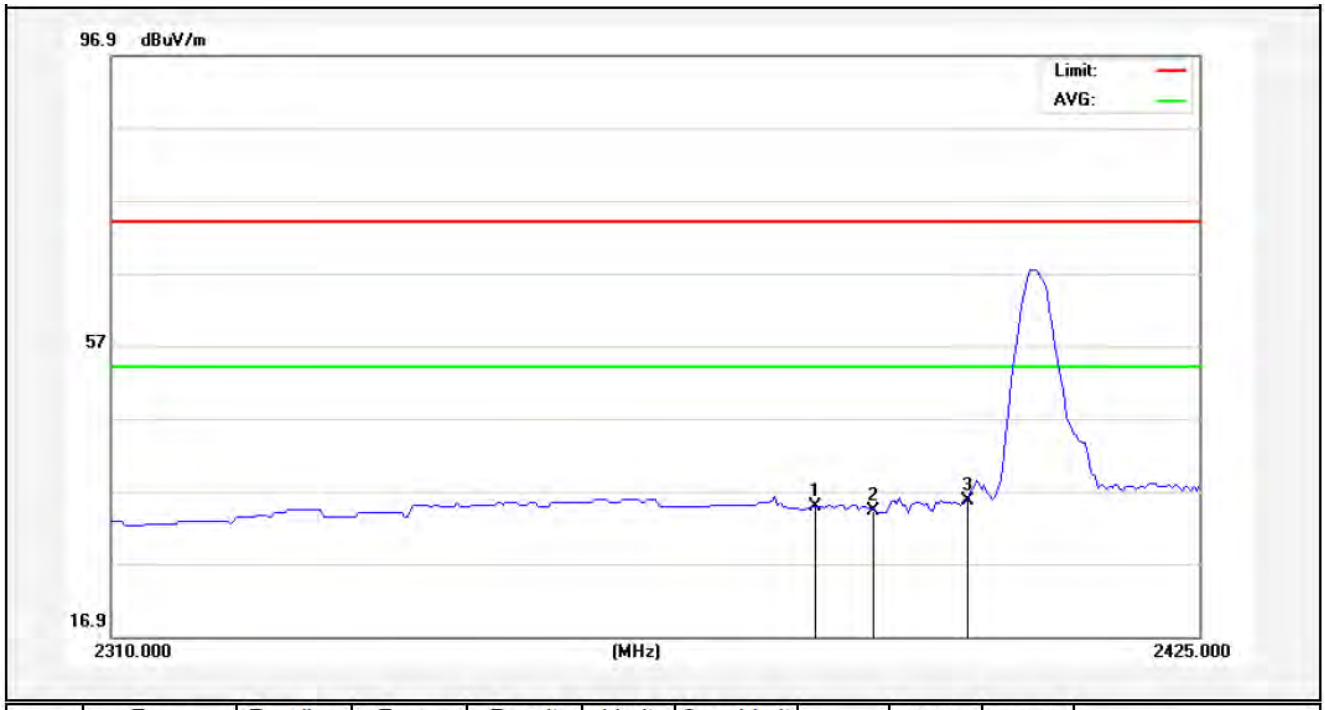
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2385.037	46.53	-2.53	44.00	74.00	-30.00	peak			
2	2390.000	44.90	-2.51	42.39	74.00	-31.61	peak			
3	2400.000	43.21	-2.49	40.72	74.00	-33.28	peak			

Job No.:	**011511261I**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**AV**	**Distance:**	**3m**



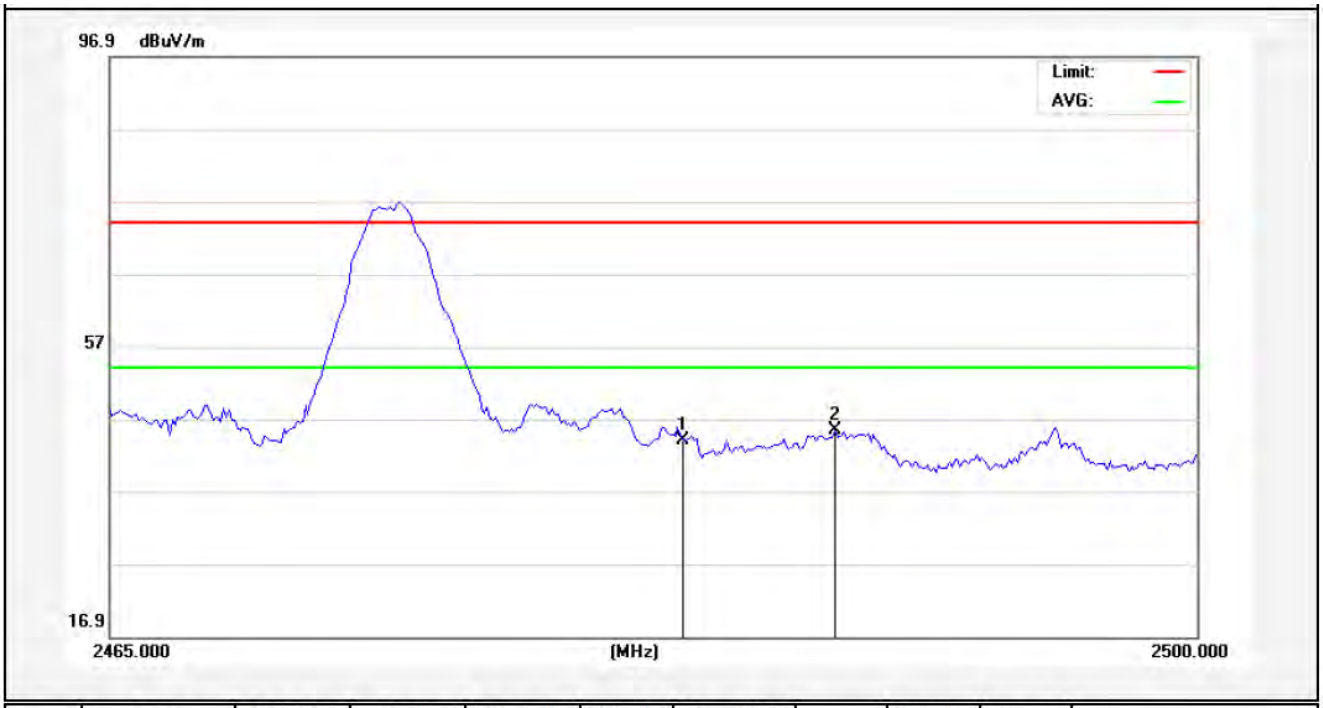
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2372.963	38.54	-2.55	35.99	54.00	-18.01	AVG			
2	2390.000	37.41	-2.51	34.90	54.00	-19.10	AVG			
3	2400.000	39.92	-2.49	37.43	54.00	-16.57	AVG			

Job No.:	**011511261I**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**AV**	**Distance:**	**3m**



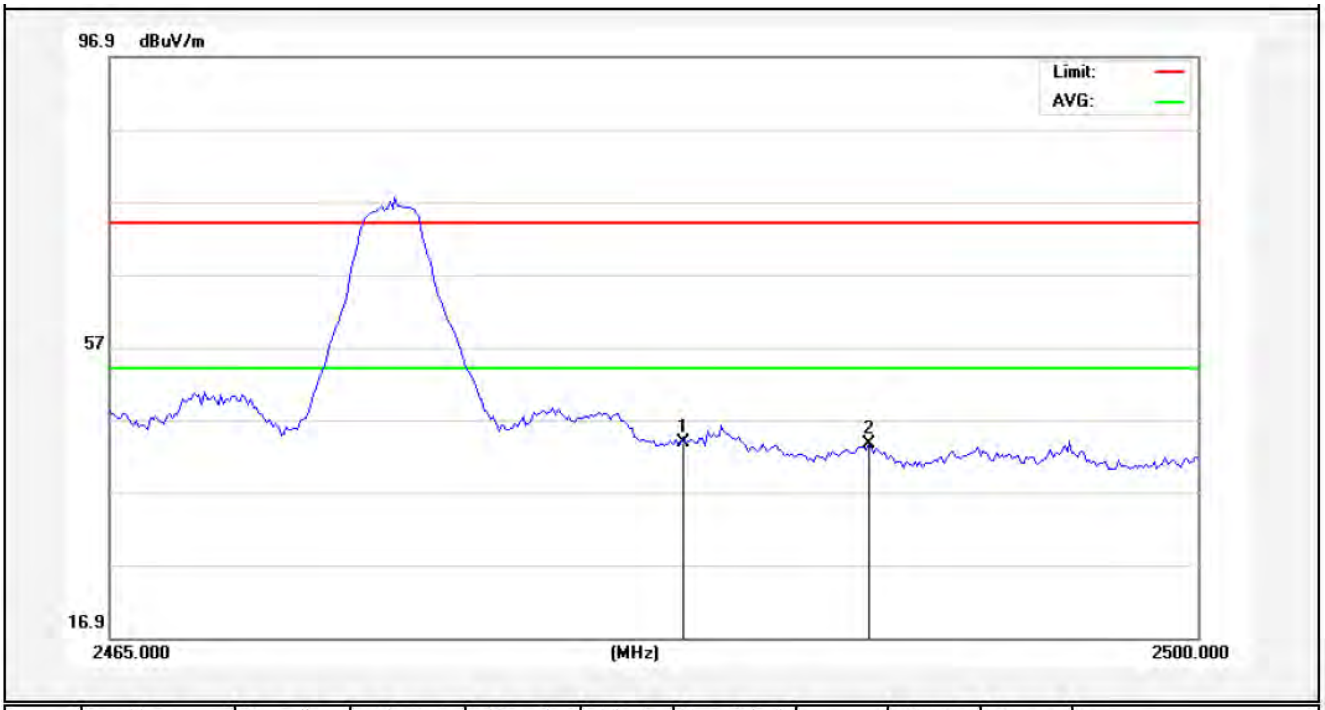
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2383.887	37.38	-2.53	34.85	54.00	-19.15	AVG			
2	2390.000	36.63	-2.51	34.12	54.00	-19.88	AVG			
3	2400.000	38.04	-2.49	35.55	54.00	-18.45	AVG			

Job No.:	**011511261I**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**PEAK**	**Distance:**	**3m**



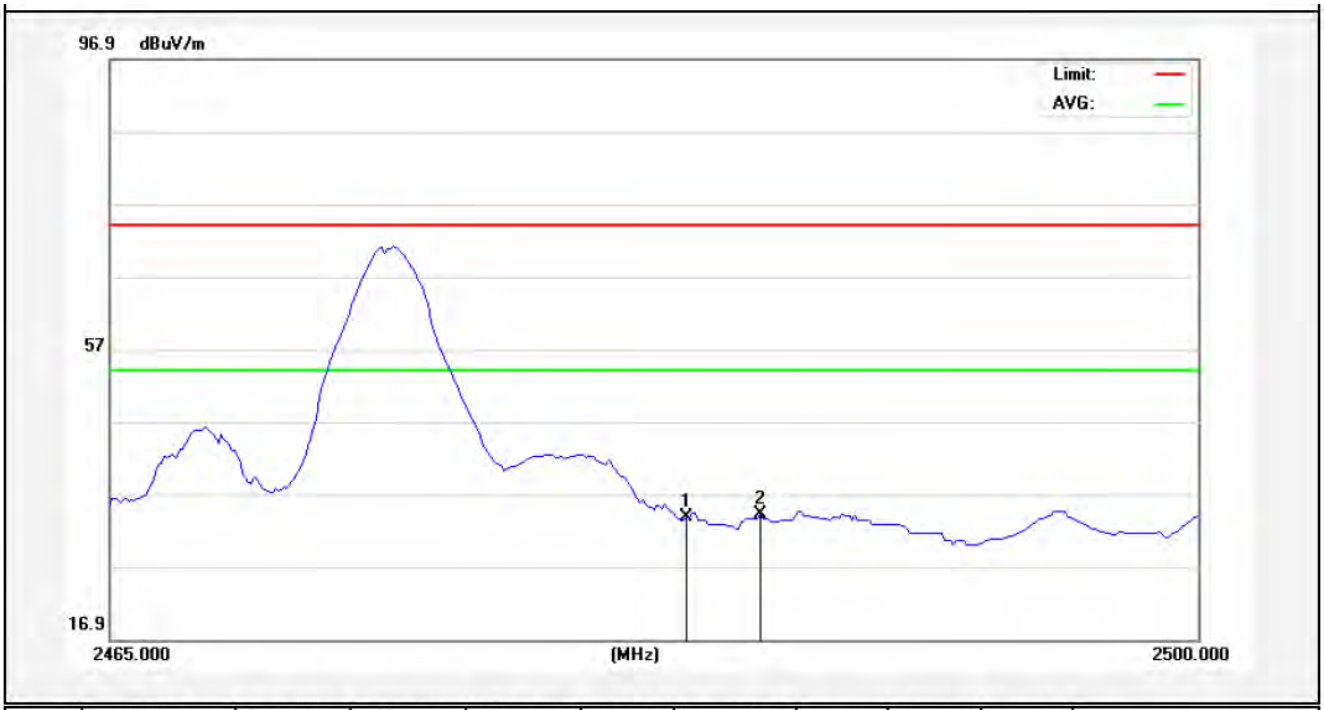
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	46.38	-2.31	44.07	74.00	-29.93	peak			
2	2488.363	47.68	-2.30	45.38	74.00	-28.62	peak			

Job No.:	**011511261I**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**PEAK**	**Distance:**	**3m**



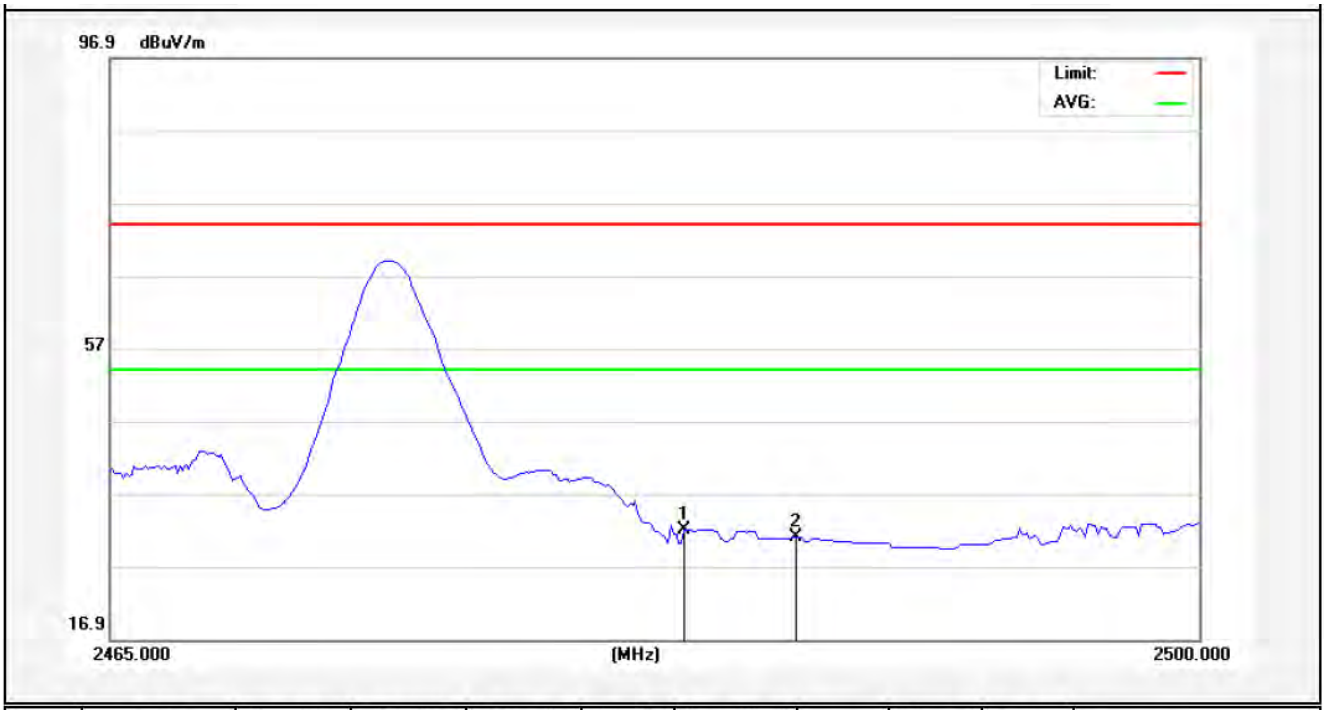
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	46.02	-2.31	43.71	74.00	-30.29	peak			
2	2489.412	45.97	-2.29	43.68	74.00	-30.32	peak			

Job No.:	**011511261I**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**AV**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	36.19	-2.31	33.88	54.00	-20.12	AVG			
2	2485.912	36.48	-2.30	34.18	54.00	-19.82	AVG			

Job No.:	**011511261I**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 3.7V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**AV**	**Distance:**	**3m**



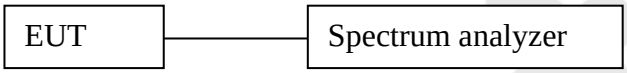
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	34.29	-2.31	31.98	54.00	-22.02	AVG			
2	2487.050	33.22	-2.30	30.92	54.00	-23.08	AVG			

6. Occupied Bandwidth

6.1. Requirements :

According to 15.215 (c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

6.2. Test SET-UP



6.3 Test Equipment

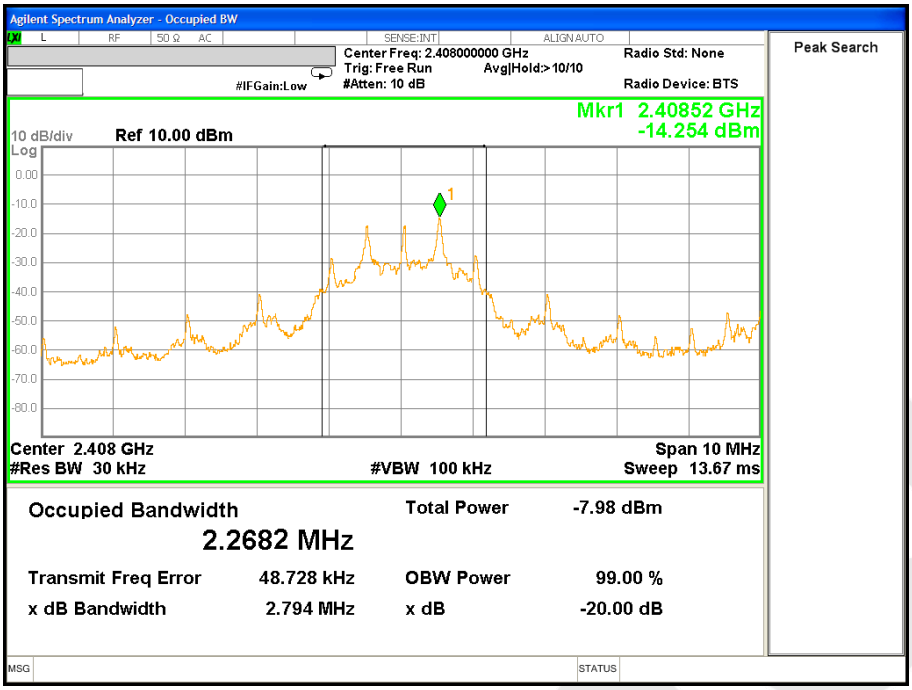
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 17, 2015	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 17, 2015	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 17, 2015	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 20, 2015	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 20, 2015	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 17, 2015	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8	Power Sensor	DAER	RPR3006W	15I00041SN046	Jun 30, 2015	1 Year
9	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun 30, 2015	1 Year
10	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun 30, 2015	1 Year
11	Signal Generator	Agilent	E4421B	MY41000743	Jun 30, 2015	1 Year
12	DC Power supply	IV	IV-8080	YQSB0096	Jun 30, 2015	1 Year
13	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150M8	SE-0137	Mar 16, 2015	1 Year

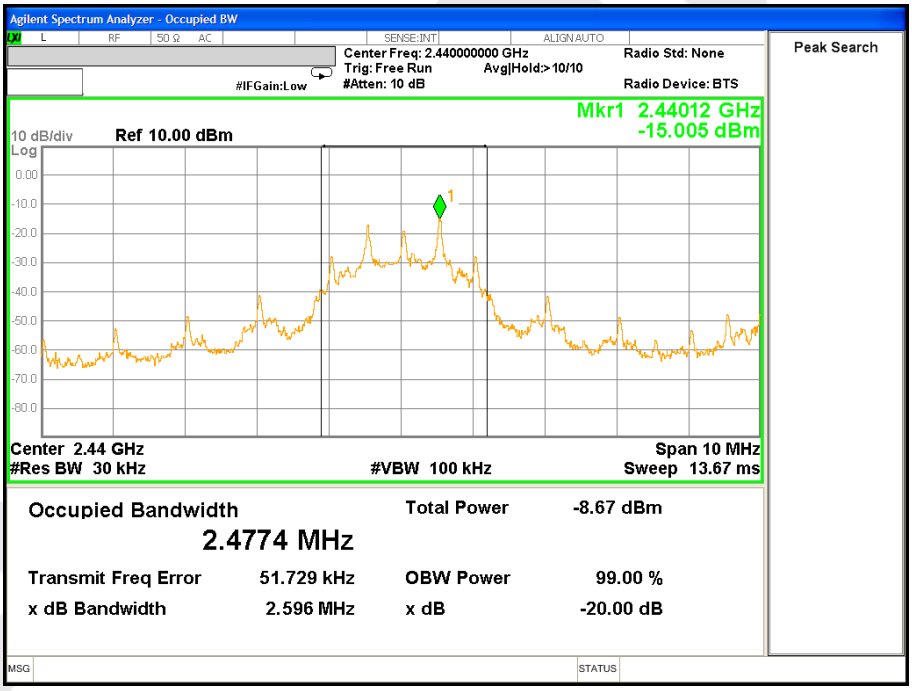
6.4. Test Results

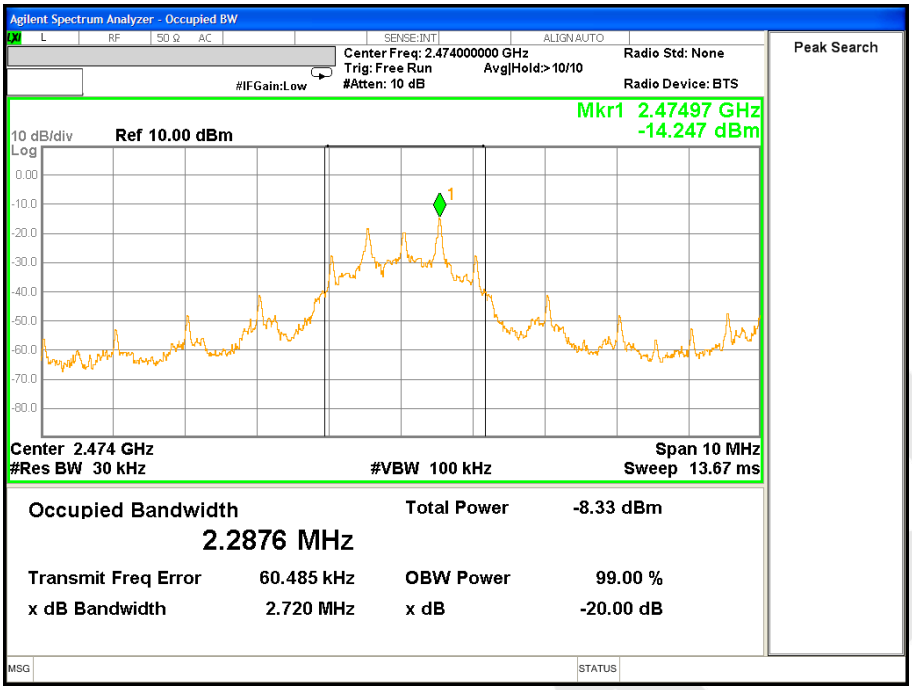
Pass.

Please refer the following plot.

20dB Down:


Agilent Spectrum Analyzer - Occupied BW
Center Freq: 2.408000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Peak Search
Mkr1 2.40852 GHz
-14.254 dBm
10 dB/div
Log
Ref 10.00 dBm
Center 2.408 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
Sweep 13.67 ms
Occupied Bandwidth
2.2682 MHz
Total Power -7.98 dBm
Transmit Freq Error 48.728 kHz
OBW Power 99.00 %
x dB Bandwidth 2.794 MHz
x dB -20.00 dB
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
Center Freq: 2.440000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Peak Search
Mkr1 2.44012 GHz
-15.005 dBm
10 dB/div
Log
Ref 10.00 dBm
Center 2.44 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
Sweep 13.67 ms
Occupied Bandwidth
2.4774 MHz
Total Power -8.67 dBm
Transmit Freq Error 51.729 kHz
OBW Power 99.00 %
x dB Bandwidth 2.596 MHz
x dB -20.00 dB
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
Center Freq: 2.474000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 10 dB
Radio Std: None
Radio Device: BTS
Peak Search
Mkr1 2.47497 GHz
-14.247 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.474 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
Sweep 13.67 ms
Occupied Bandwidth
2.2876 MHz
Total Power -8.33 dBm
Transmit Freq Error 60.485 kHz
OBW Power 99.00 %
x dB Bandwidth 2.720 MHz
x dB -20.00 dB
MSG
STATUS

7. ANTENNA APPLICATION

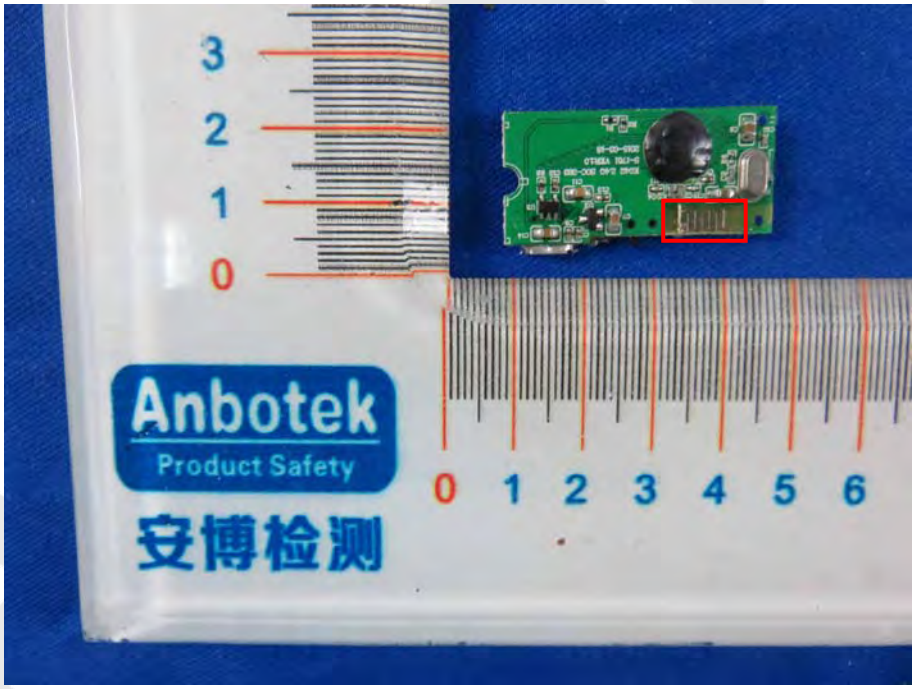
7.1. Antenna requirement

The EUT'S antenna is met the requirement of FCC part 15C section 15.203.

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 shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

7.2. Result

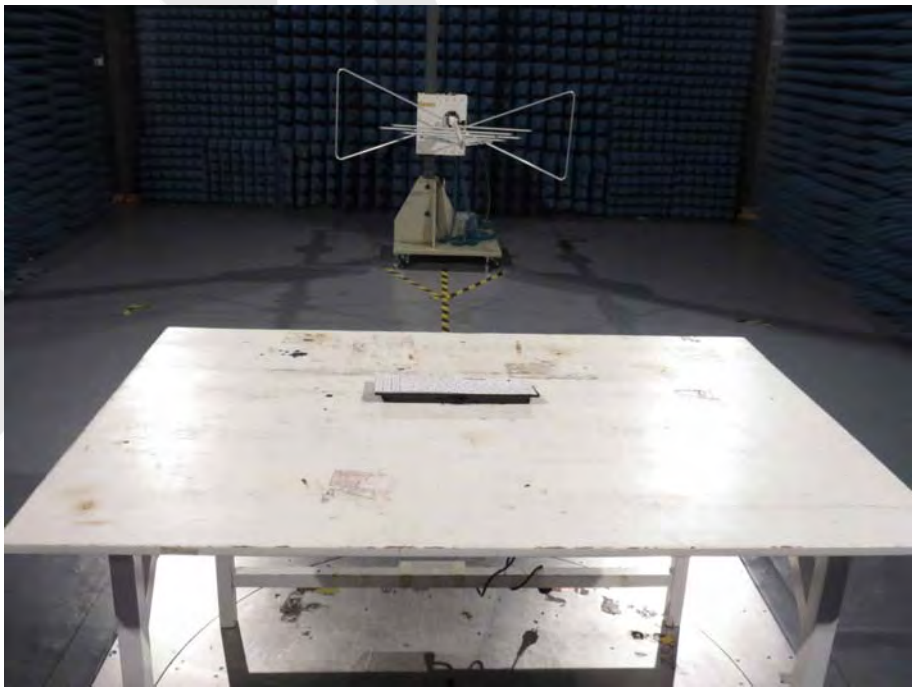
The EUT's antenna used a PCB antenna which is permanently attached, The antenna's gain is -0.61dBi and meets the requirement.

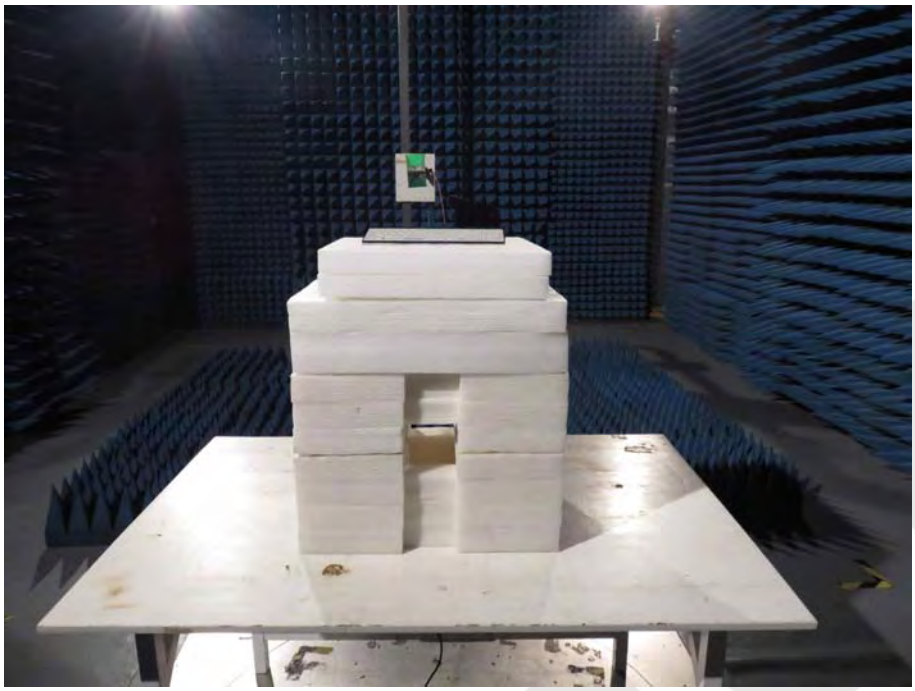


8. PHOTOGRAPH

8.1. Photo of Conducted Emission Test

8.2. Photo of Radiation Emission Test





APPENDIX I (External Photos)

Figure 1
The EUT-Overall View

Figure 2
The EUT-Top View

Figure 3
The EUT-Bottom View

Figure 4
The EUT-Front View

Figure 5
The EUT-Back View

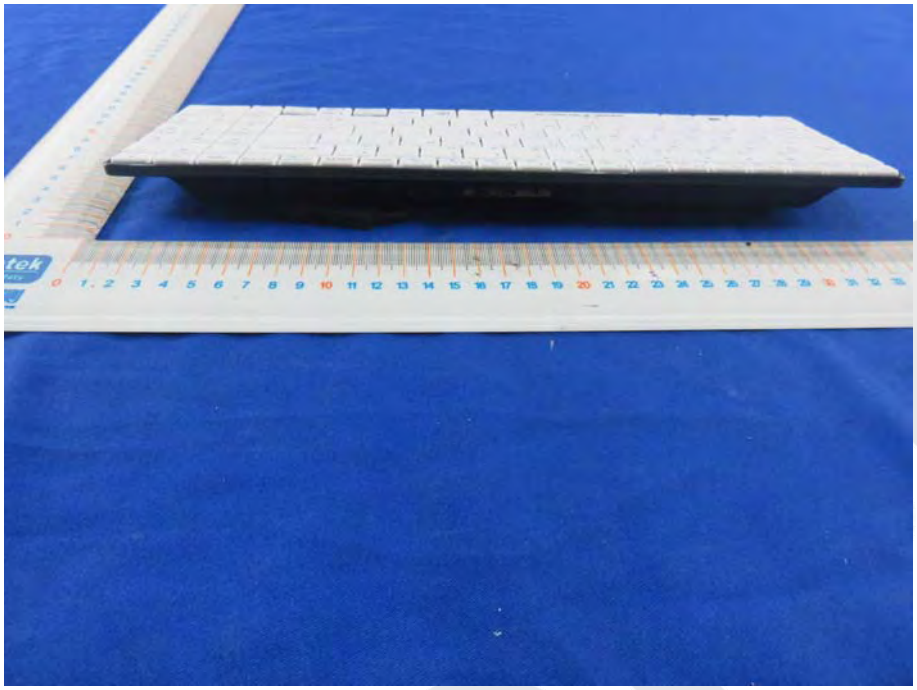


Figure 6
The EUT-Right View

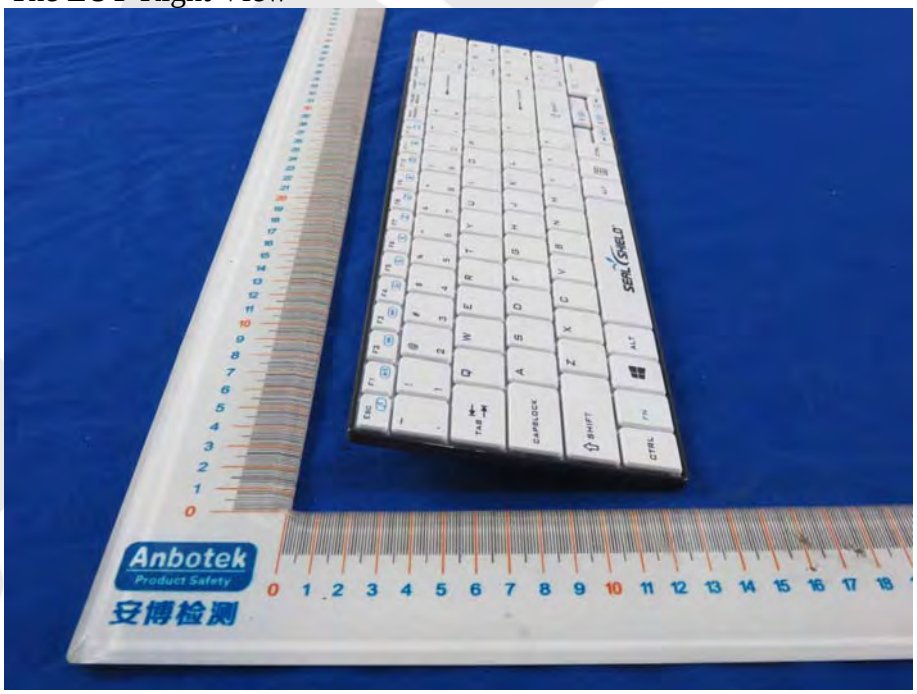
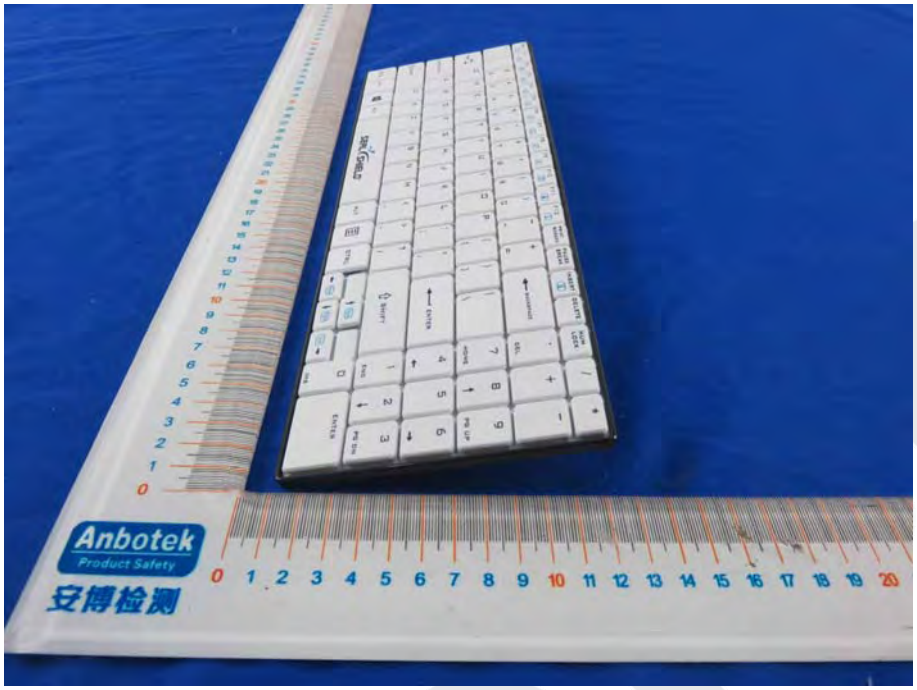


Figure 7
The EUT-Left View



APPENDIX Ⅱ(Internal Photos)

Figure 8
The EUT-Inside View

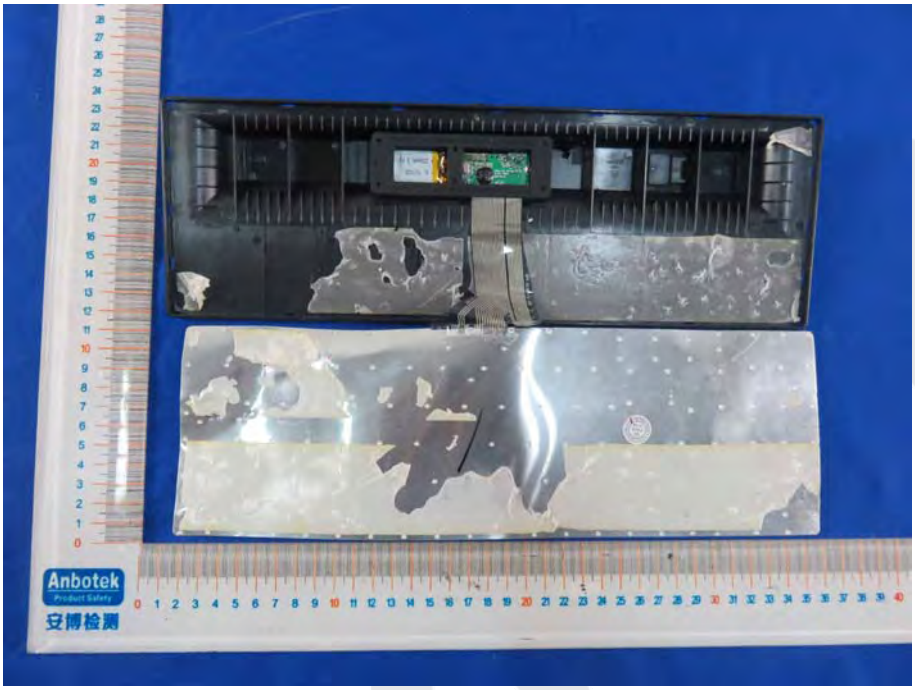


Figure 9
The EUT-Battery View

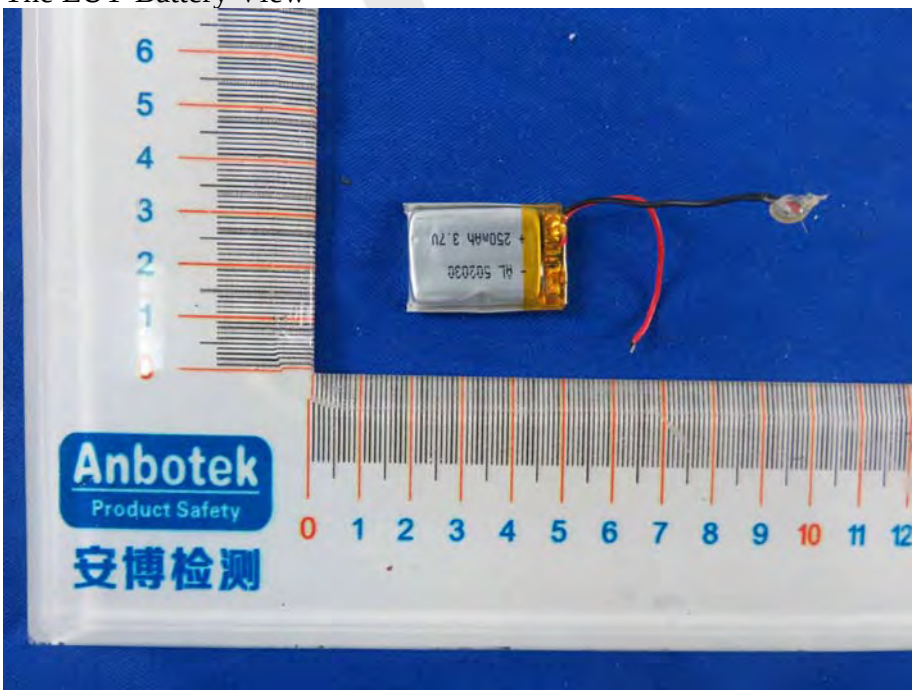


Figure 10
PCB of the EUT-Front View

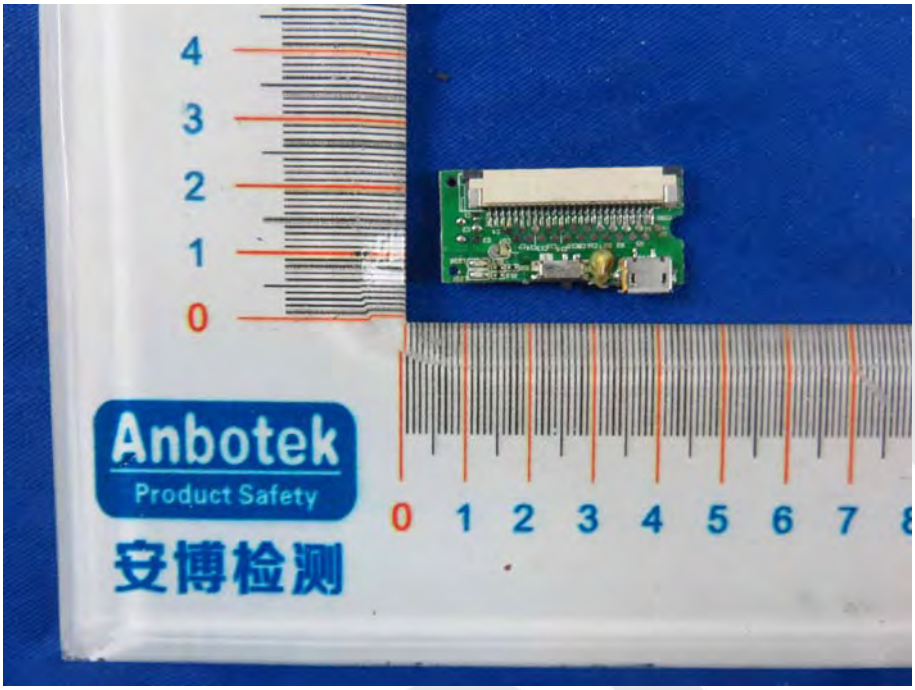


Figure 11
PCB of the EUT-Back View

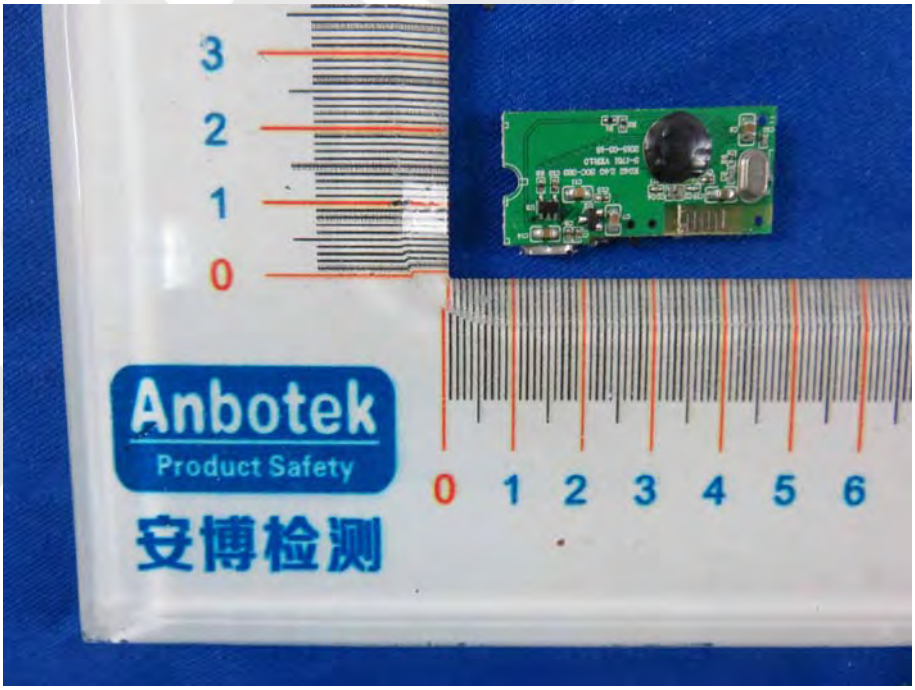


Figure 12
PCB of the EUT-Front View

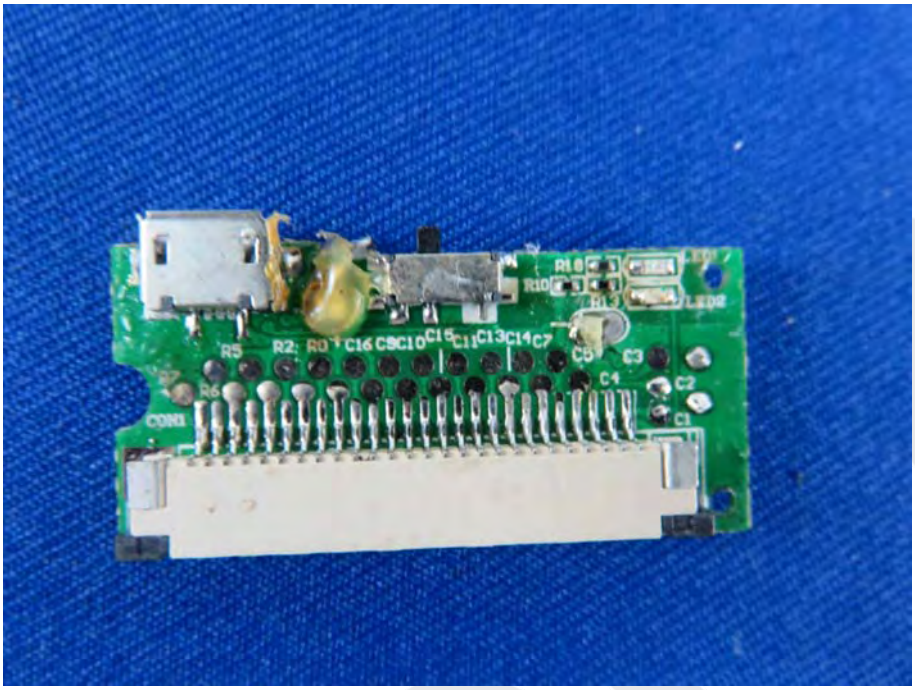


Figure 13
PCB of the EUT-Back View