FCC Part 15C
Measurement and Test Report

For

Shenzhen Riitek Ecommerce Co.,LTD

Room 401,4F,B Building Zhongkenuo Industry Park,Hezhou Community,

Hangcheng Street,Baoan Zone,Shenzhen City,China

FCC ID: 2AVGN-RT851

FCC Rule(s):	FCC Part 15.249
Product Description:	Mini Wireless Keyboard Touchpad IR Combo
Tested Model:	RT851
Report No.:	WTX19X12089644W
Sample Receipt Date:	Dec.23, 2019
Tested Date:	Dec.23, 2019 to Mar.27, 2020
Issued Date:	Mar.27, 2020
Tested By:	Jack Huang / Engineer
Reviewed By:	Lion Cai / RF Manager
Approved & Authorized By:	Silin Chen / Manager

Prepared By:

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Rev.00	Mar.27, 2020	Original
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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Shenzhen Riitek Ecommerce Co.,LTD
Address of applicant:	Room 401,4F,B Building Zhongkenuo Industry Park,Hezhou Community,Hangcheng Street,Baoan Zone,Shenzhen City,China
Manufacturer:	Shenzhen Riitek Ecommerce Co.,LTD
Address of manufacturer:	Room 401,4F,B Building Zhongkenuo Industry Park,Hezhou Community,Hangcheng Street,Baoan Zone,Shenzhen City,China

General Description of EUT	
Product Name:	Mini Wireless Keyboard Touchpad IR Combo
Trade Name:	/
Model No.:	RT851
Adding Model(s):	F8, F8+, I8, I8+, I8L, H9, H9+
Rated Voltage:	Battery:DC3.7V
Battery Capacity	400mAh
Power Adapter Model:	/
Software Version:	RT851_Touch_RFRZ_V1.3
Hardware Version:	RT851_Main_PCB_V1.1
Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model RT851, but the circuit and the electronic construction do not change, declared by the manufacturer.	

Technical Characteristics of EUT	
Frequency Range:	2404MHz-2479MHz
Max. Field Strength:	97.75dBuV/m
Modulation:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	0dBi

➢ Center Frequency of Each of Channel:

Channel	Frequency (MHz)
0	2404
1	2406
2	2407
3	2408
4	2409
5	2411
6	2412
7	2413
8	2414
9	2415
10	2423
11	2424
12	2425
13	2426
14	2427
15	2437
16	2438
17	2439
18	2440
19	2441
20	2442
21	2443
22	2444
23	2445
24	2446
25	2448
26	2449
27	2450
28	2451
29	2456
30	2457
31	2458
32	2459
33	2460
34	2470
35	2471
36	2472
37	2473
38	2479

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013,
The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) 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 maintain ed in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	Low Channel	2404MHz
TM2	Middle Channel	2442MHz
TM3	High Channel	2479MHz

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	50~55 %.
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Adapter	/	KA1517-0502000CNU	/
USB Cable	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	±0.42dB
Occupied Bandwidth	Conducted	±1.5%
Conducted Spurious Emission	Conducted	±2.17dB
Conducted Emissions	Conducted	9-150kHz ±3.74dB
		0.15-30MHz ±3.34dB
Transmitter Spurious Emissions	Radiated	30-200MHz ±4.52dB
		0.2-1GHz ±5.56dB
		1-6GHz ±3.84dB
		6-18GHz ±3.92dB

1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2019-04-30	2020-04-29
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2019-04-30	2020-04-29
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2019-04-30	2020-04-29
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2019-04-30	2020-04-29
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2019-04-30	2020-04-29
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
SEMT-1042	Horn Antenna	ETS	3117	00086197	2019-05-05	2021-05-04
SEMT-1121	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	2019-05-05	2021-05-04
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2019-05-05	2021-05-04
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2019-04-30	2020-04-29
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2019-04-30	2020-04-29
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2019-04-30	2020-04-29
SEMT-1168	Pre-amplifier	Direction Systems Inc.	PAP-0126	14141-12838	2019-04-30	2020-04-29
SEMT-1169	Pre-amplifier	Direction Systems Inc.	PAP-2640	14145-14153	2019-04-30	2020-04-29
SEMT-1163	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2019-04-30	2020-04-29
SEMT-1170	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2019-05-05	2021-05-04
SEMT-1166	Power Limiter	Agilent	N9356B	MY45450376	2019-04-30	2020-04-29
SEMT-1048	RF Limiter	ATTEN	AT-BSF-2400~2500	/	2019-04-30	2020-04-29
SEMT-1076	RF Switcher	Top Precision	RCS03-A2	/	2019-04-30	2020-04-29
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	2019-03-18	2020-03-17
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	2019-03-18	2020-03-17
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	2019-03-18	2020-03-17
SEMT-C004	Cable	Zheng DI	2M0RFC	/	2019-03-18	2020-03-17
SEMT-C005	Cable	Zheng DI	1M0RFC	/	2019-03-18	2020-03-17
SEMT-C006	Cable	Zheng DI	1M0RFC	/	2019-03-18	2020-03-17
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	2020-03-17	2021-03-16
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	2020-03-17	2021-03-16
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	2020-03-17	2021-03-16
SEMT-C004	Cable	Zheng DI	2M0RFC	/	2020-03-17	2021-03-16
SEMT-C005	Cable	Zheng DI	1M0RFC	/	2020-03-17	2021-03-16
SEMT-C006	Cable	Zheng DI	1M0RFC	/	2020-03-17	2021-03-16

Software List			
Description	**Manufacturer**	**Model**	**Version**
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission)*	Farad	EZ-EMC	RA-03A1

*Remark: indicates software version used in the compliance certification testing

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§15.203	Antenna Requirement	Compliant
§15.205	Restricted Band of Operation	Compliant
§15.207(a)	Conducted Emission	Compliant
§15.209(a)(f)	Radiated Spurious Emissions	Compliant
§15.249(a)	Field Strength of Emissions	Compliant
§15.249(d)	Out of Band Emission	Compliant
§15.215(c)	Emission Bandwidth	Compliant

3. Antenna Requirements

3.1 Standard Applicable

According to FCC Part 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.

3.2 Test Result

This product has a PCB antenna, fulfill the requirement of this section.

4. Radiated Emissions

4.1 Standard Applicable

According to §15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

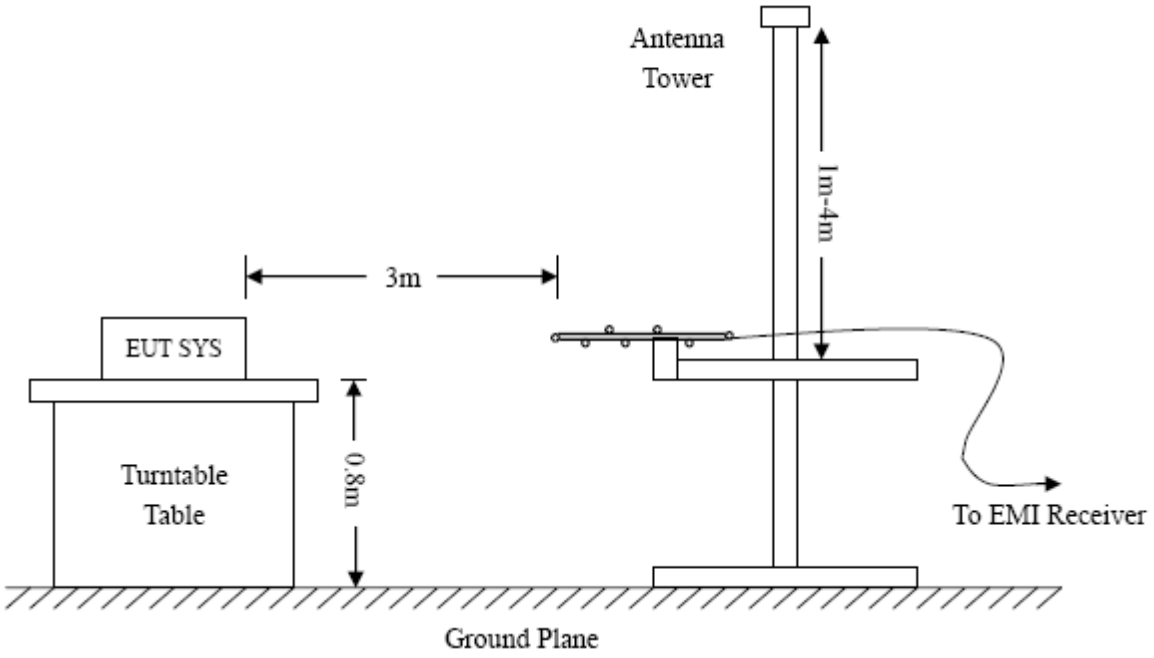
Fundamental Frequency	Field strength of fundamental (milli-volts/meter)	Field strength of Harmonics (micro-volts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

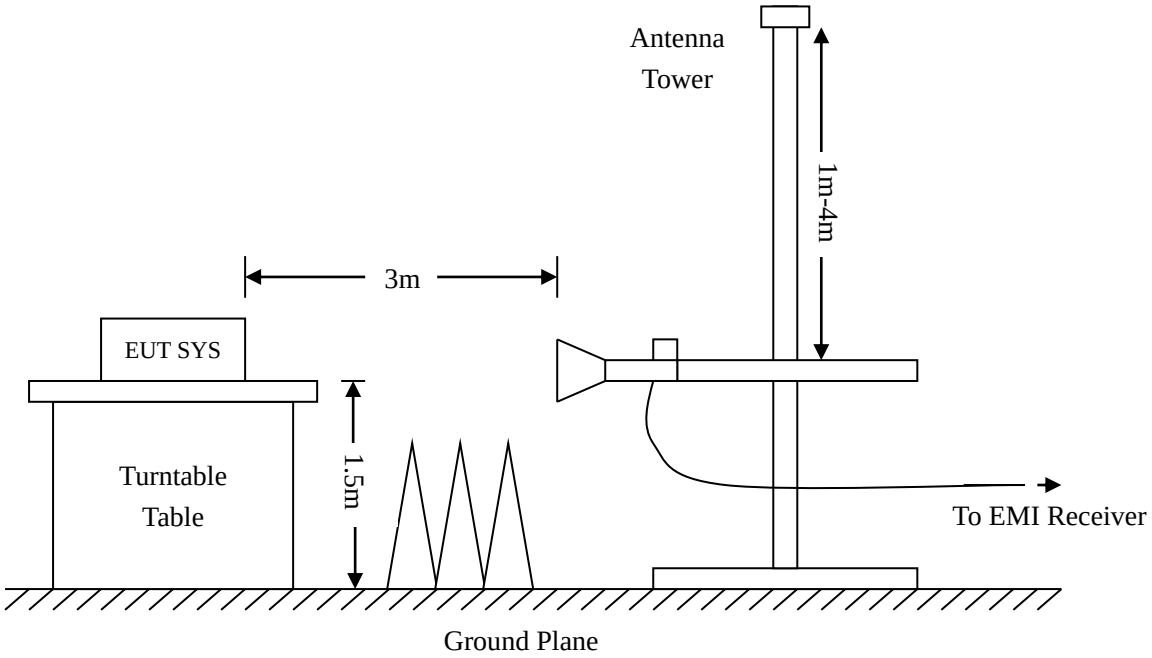
(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

4.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.249(a) and FCC Part 15.209 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.





Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit. The equation for margin calculation is as follows:

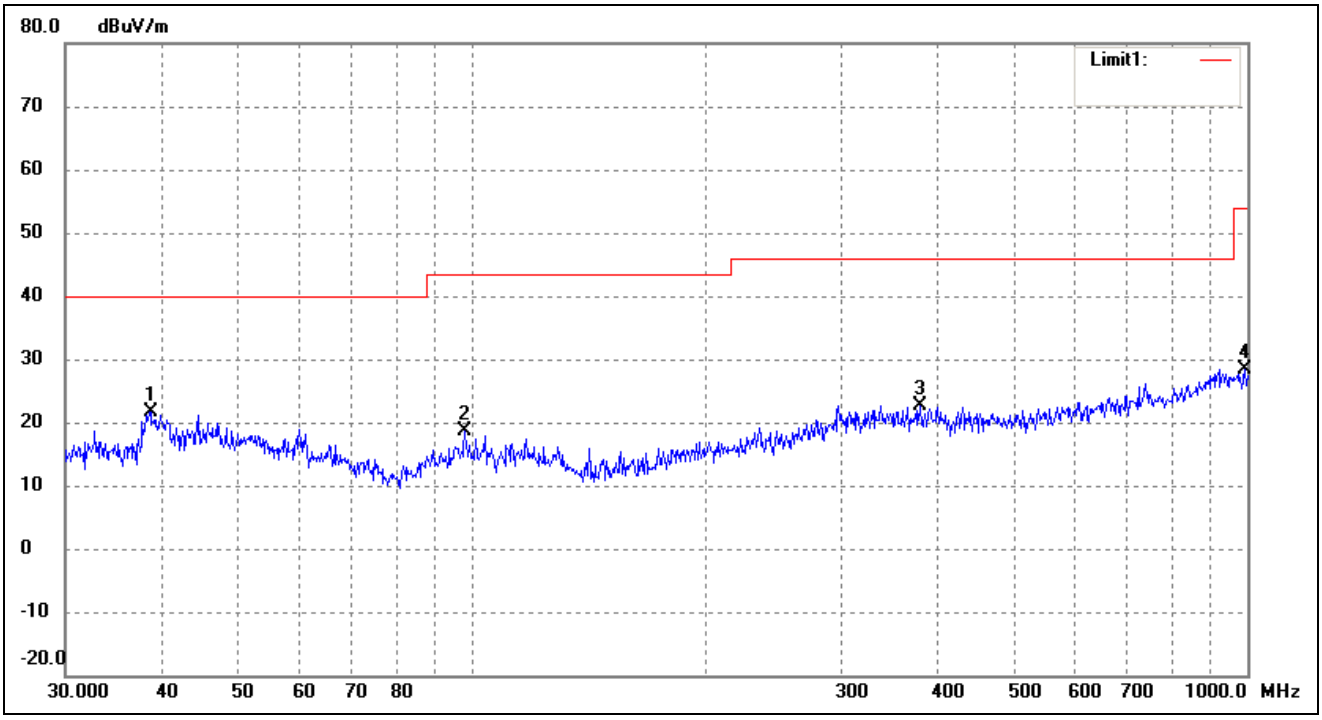
Margin = Corr. Ampl. – FCC Part 15C Limit

4.4 Summary of Test Results/Plots

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

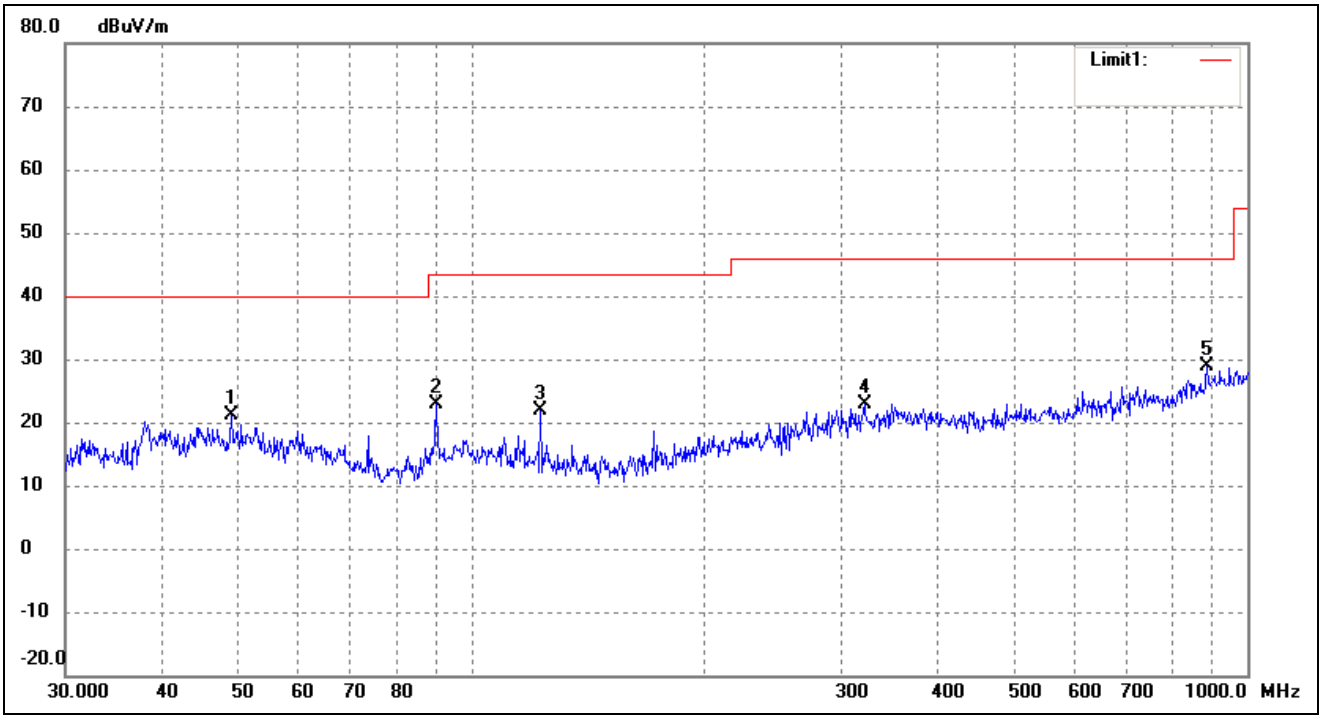
➢ Spurious Emissions Below 1GHz

Test Channel	Low	Polarity:	Horizontal



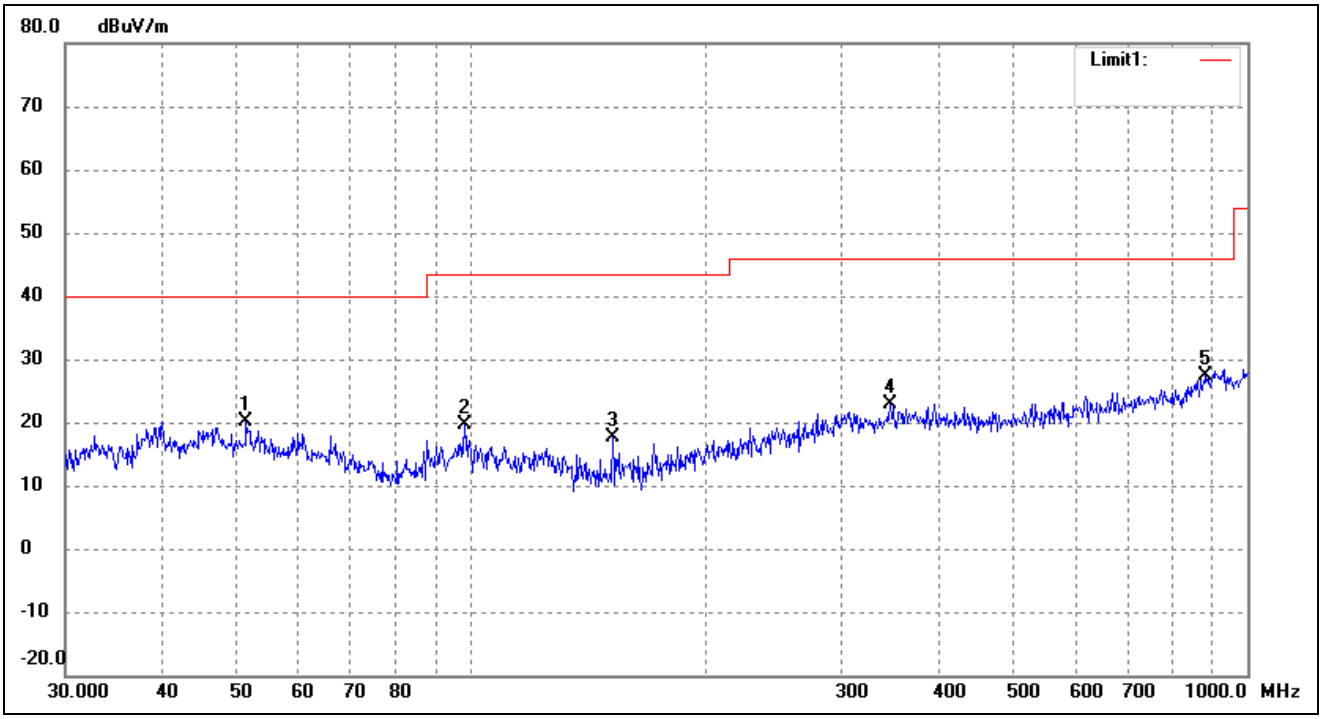
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	38.6161	36.34	-14.70	21.64	40.00	-18.36	307	100	peak
2	98.1419	34.02	-15.29	18.73	43.50	-24.77	314	100	peak
3	378.5843	30.60	-7.95	22.65	46.00	-23.35	84	100	peak
4	993.0114	28.88	-0.56	28.32	54.00	-25.68	177	100	peak

Test Channel	Low	Polarity:	Vertical



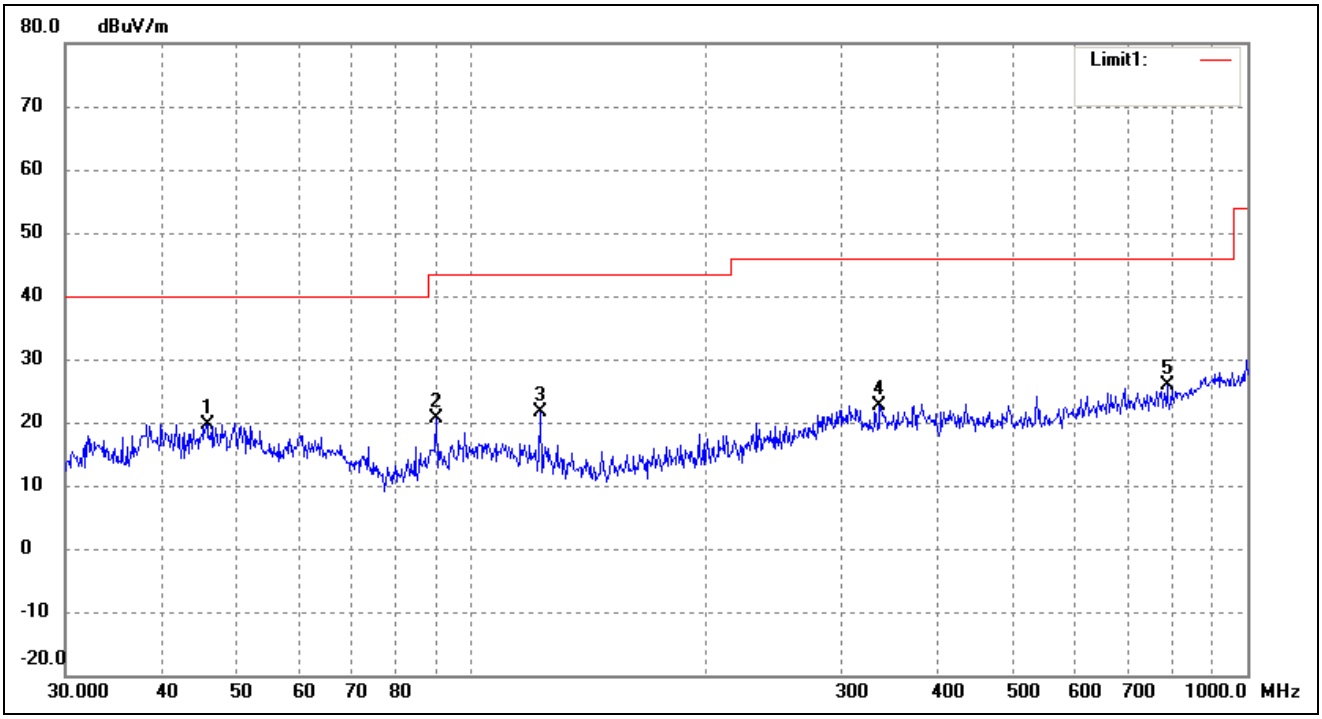
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	49.1866	34.92	-13.68	21.24	40.00	-18.76	201	100	peak
2	90.2205	39.62	-16.86	22.76	43.50	-20.74	94	100	peak
3	122.8340	38.25	-16.34	21.91	43.50	-21.59	344	100	peak
4	321.0608	31.34	-8.38	22.96	46.00	-23.04	104	100	peak
5	887.6099	30.73	-1.76	28.97	46.00	-17.03	227	100	peak

Test Channel	Middle	Polarity:	Horizontal



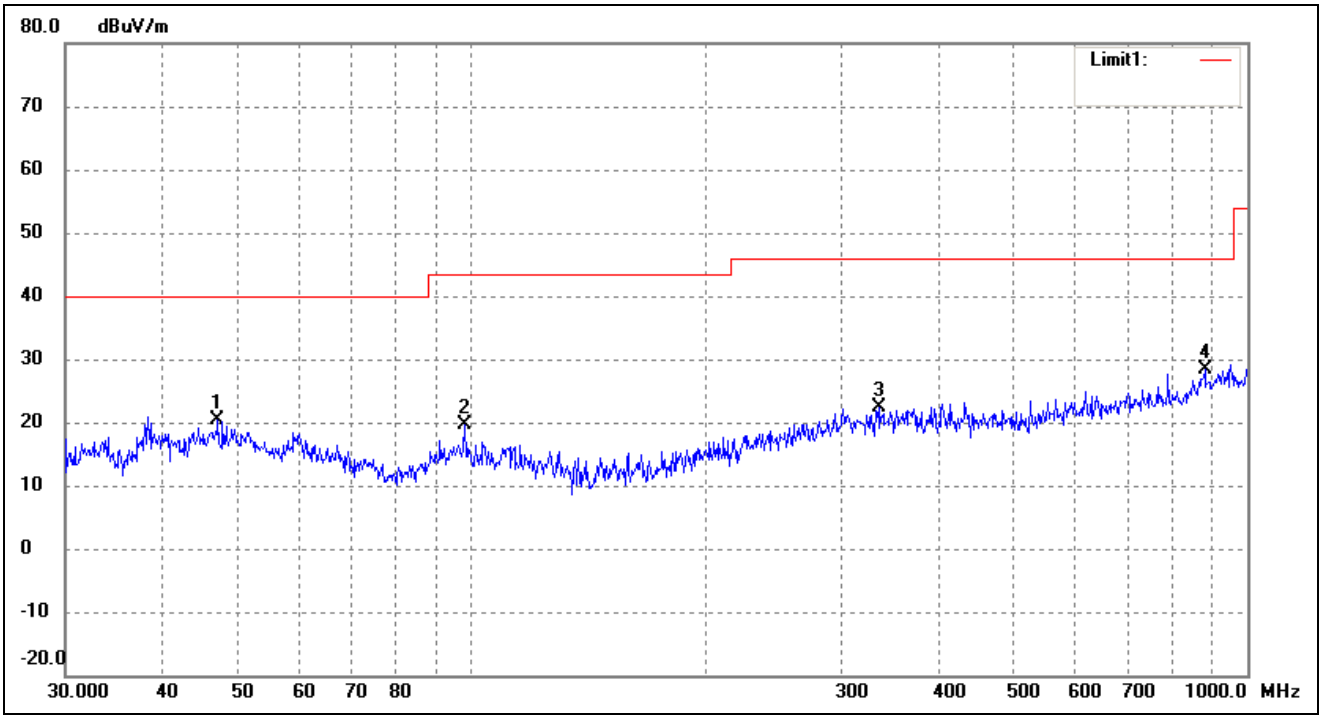
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	51.3005	34.02	-14.00	20.02	40.00	-19.98	316	100	peak
2	98.1419	34.90	-15.29	19.61	43.50	-23.89	133	100	peak
3	152.1297	33.88	-16.36	17.52	43.50	-25.98	56	100	peak
4	346.8092	30.48	-7.70	22.78	46.00	-23.22	147	100	peak
5	884.5029	29.21	-1.90	27.31	46.00	-18.69	181	100	peak

Test Channel	Middle	Polarity:	Vertical



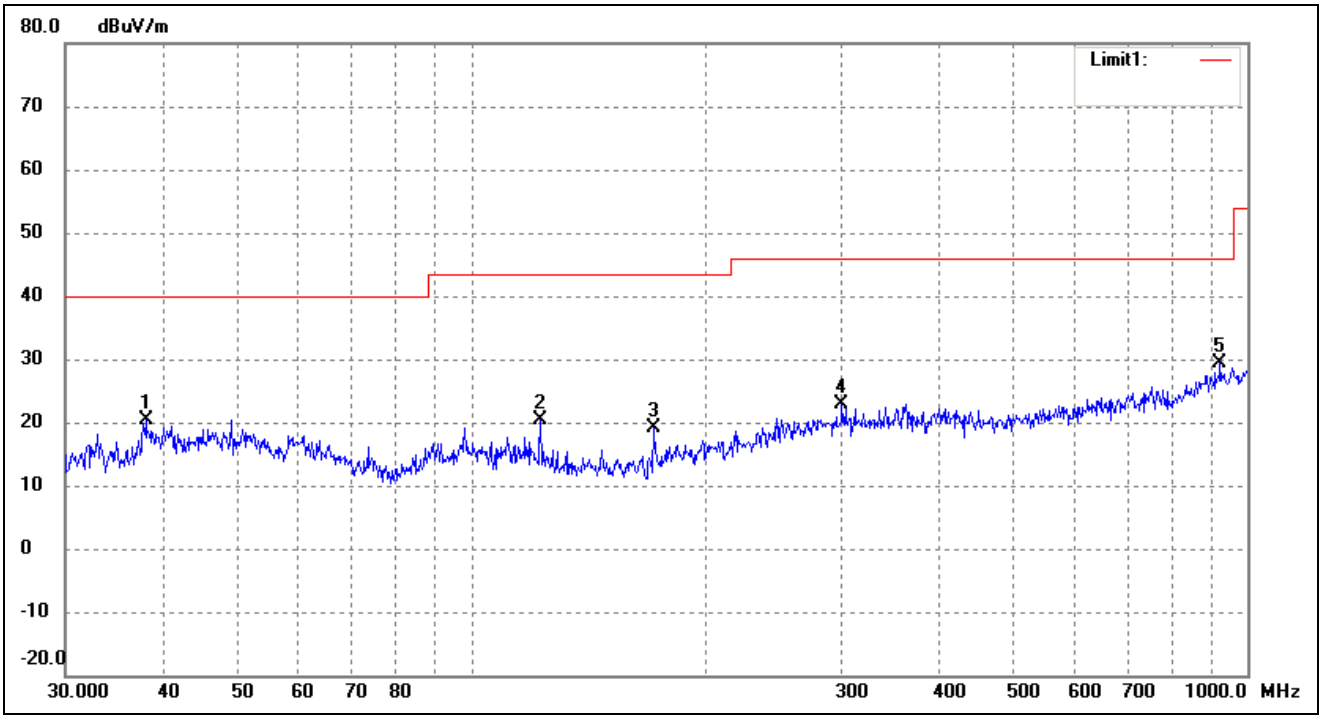
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	45.6948	33.59	-13.89	19.70	40.00	-20.30	288	100	peak
2	90.2205	37.46	-16.86	20.60	43.50	-22.90	192	100	peak
3	122.8340	37.89	-16.34	21.55	43.50	-21.95	99	100	peak
4	336.0352	30.66	-8.08	22.58	46.00	-23.42	108	100	peak
5	787.8513	30.23	-4.42	25.81	46.00	-20.19	210	100	peak

Test Channel	High	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	47.1599	34.22	-13.80	20.42	40.00	-19.58	208	100	peak
2	98.1419	35.04	-15.29	19.75	43.50	-23.75	94	100	peak
3	334.8589	30.55	-8.13	22.42	46.00	-23.58	234	100	peak
4	881.4067	30.41	-2.04	28.37	46.00	-17.63	102	100	peak

Test Channel	High	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	38.0783	35.25	-14.90	20.35	40.00	-19.65	306	100	peak
2	122.8340	36.63	-16.34	20.29	43.50	-23.21	347	100	peak
3	171.9946	34.58	-15.51	19.07	43.50	-24.43	58	100	peak
4	300.3673	30.62	-7.83	22.79	46.00	-23.21	257	100	peak
5	922.5157	30.27	-0.82	29.45	46.00	-16.55	162	100	peak

Spurious Emissions Above 1GHz

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2404MHz							
2404	104.76	-9.48	95.28	114	-18.72	H	PK
2404	101.54	-9.48	92.06	94	-1.94	H	AV
4808	65.81	-4.42	61.39	74	-12.61	H	PK
4808	45.25	-4.42	40.83	54	-13.17	H	AV
7212	56.38	-2.13	54.25	74	-19.75	H	PK
7212	44.65	-2.13	42.52	54	-11.48	H	AV
2404	103.12	-9.48	93.64	114	-20.36	V	PK
2404	100.89	-9.48	91.41	94	-2.59	V	AV
4808	62.14	-4.42	57.72	74	-16.28	V	PK
4808	44.40	-4.42	39.98	54	-14.02	V	AV
7212	48.36	-2.13	46.23	74	-27.77	V	PK
7212	41.04	-2.13	38.91	54	-15.09	V	AV
Middle Channel-2442MHz							
2442	101.32	-9.47	91.85	114	-22.15	H	PK
2442	100.26	-9.47	90.79	94	-3.21	H	AV
4884	63.83	-4.42	59.41	74	-14.59	H	PK
4884	44.49	-4.42	40.07	54	-13.93	H	AV
7326	53.07	-2.13	50.94	74	-23.06	H	PK
7326	43.81	-2.13	41.68	54	-12.32	H	AV
2442	100.23	-9.47	90.76	114	-23.24	V	PK
2442	99.46	-9.47	89.99	94	-4.01	V	AV
4884	62.08	-4.42	57.66	74	-16.34	V	PK
4884	43.20	-4.42	38.78	54	-15.22	V	AV
7326	45.81	-2.13	43.68	74	-30.32	V	PK
7326	42.63	-2.13	40.50	54	-13.50	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
High Channel-2479MHz							
2479	107.07	-9.32	97.75	114	-16.25	H	PK
2479	101.82	-9.32	92.5	94	-1.50	H	AV
4958	63.33	-4.42	58.91	74	-15.09	H	PK
4958	44.21	-4.42	39.79	54	-14.21	H	AV
7437	52.09	-2.13	49.96	74	-24.04	H	PK
7437	42.48	-2.13	40.35	54	-13.65	H	AV
2479	106.12	-9.32	96.80	114	-17.20	V	PK
2479	99.48	-9.32	90.16	94	-3.84	V	AV
4958	63.55	-4.42	59.13	74	-14.87	V	PK
4958	41.81	-4.42	37.39	54	-16.61	V	AV
7437	45.14	-2.13	43.01	74	-30.99	V	PK
7437	43.45	-2.13	41.32	54	-12.68	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 5th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
The measurements greater than 20dB below the limit from 9kHz to 30MHz..

5. Out of Band Emissions

5.1 Standard Applicable

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.

5.2 Test Procedure

As the radiation test, set the Lowest and Highest Transmitting Channel, observed the outside band of 2400MHz to 2483.5MHz, than mark the higher-level emission for comparing with the FCC rules.

5.3 Summary of Test Results/Plots

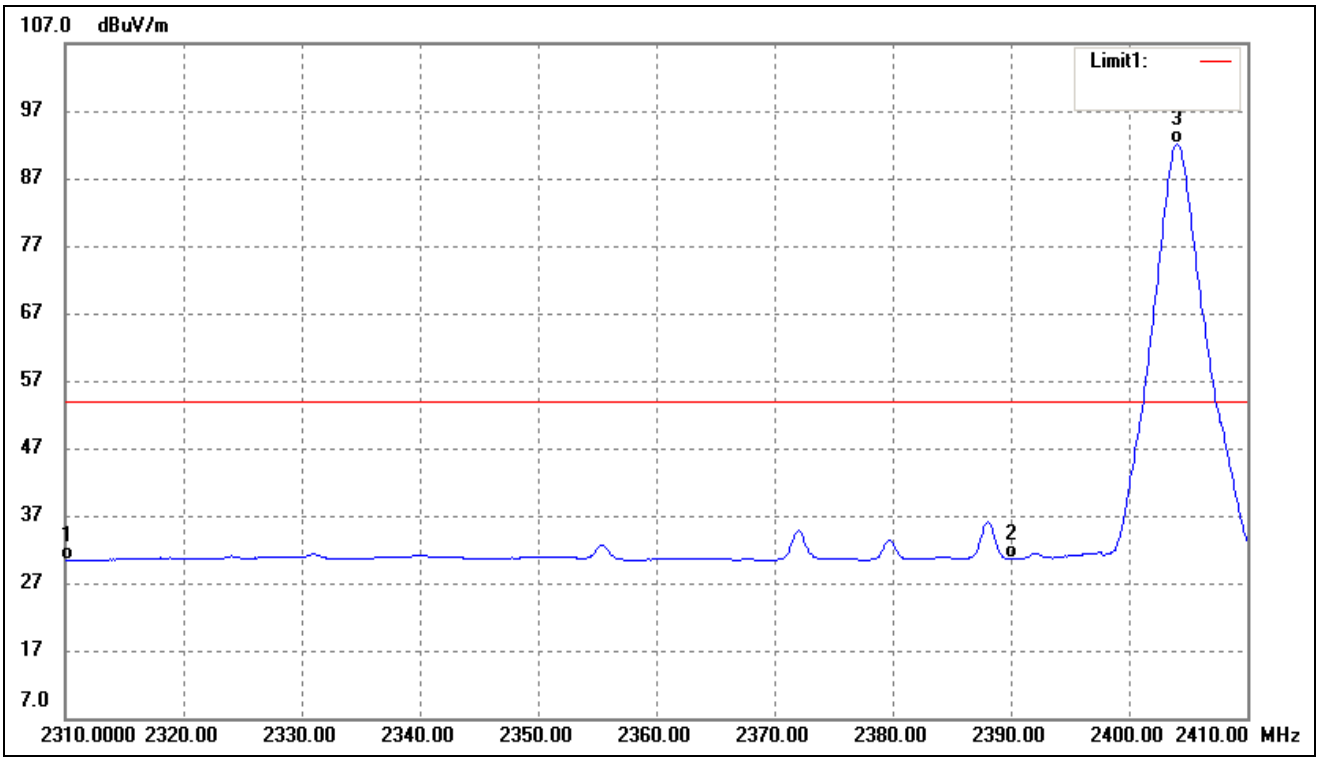
Test mode	Frequency	Limit	Result
	MHz	dBuV / dBc	
Lowest	2310.00	<54 dBuV	Pass
	2390.00	<54 dBuV	Pass
	2400.00	<54 dBuV	Pass
Highest	2483.50	<54 dBuV	Pass
	2500.00	<54 dBuV	Pass

The edge emissions are below the FCC 15.209 Limits or complies with the 15.249 requirements.

Please refer to the test plots as below.

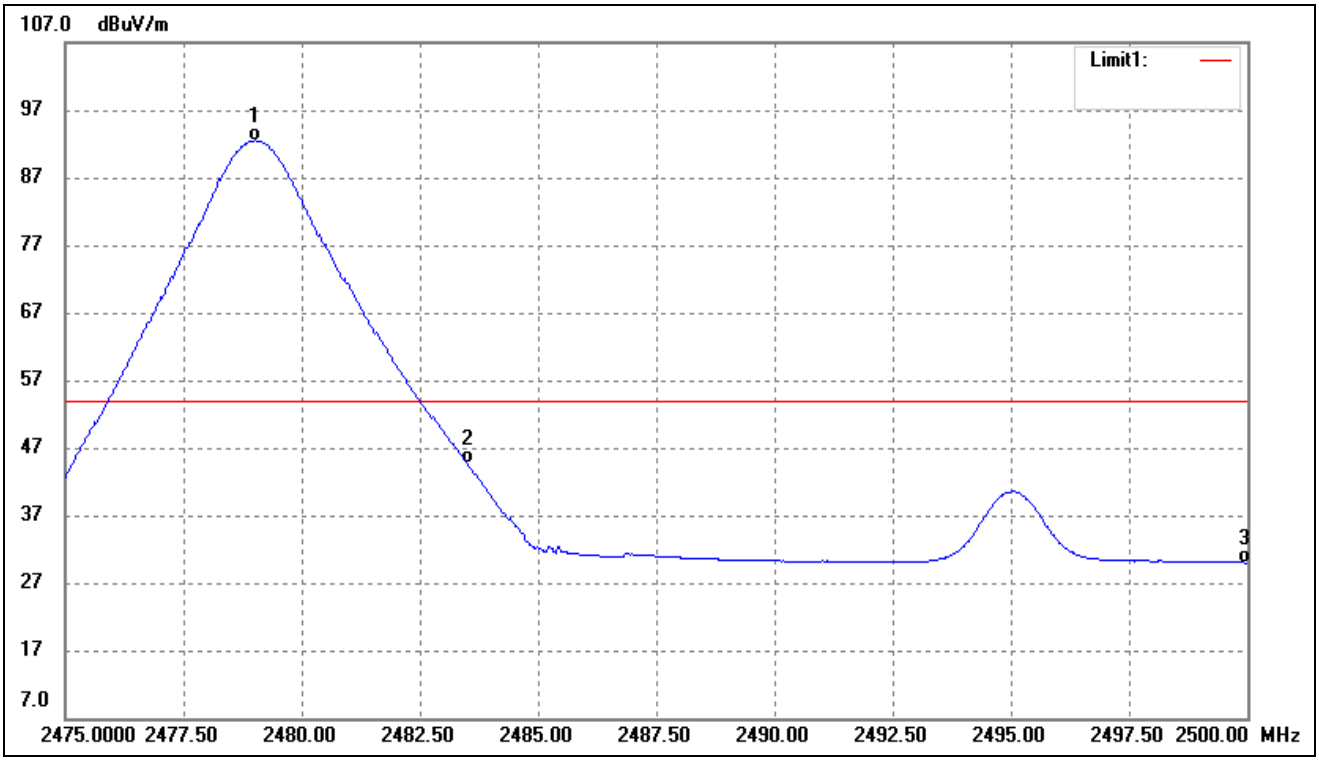
➢ Restricted Band

Test Channel	Low	Polarity:	Horizontal (worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	40.11	-9.66	30.45	54.00	-23.55	Ave Detector
	2310.000	52.73	-9.66	43.07	74.00	-30.93	Peak Detector
2	2390.000	40.03	-9.50	30.53	54.00	-23.47	Ave Detector
	2390.000	52.63	-9.50	43.13	74.00	-30.87	Peak Detector
3	2404.100	101.54	-9.48	92.06	/	/	Ave Detector
	2404.000	104.76	-9.48	95.28	/	/	Peak Detector

Test Channel	High	Polarity:	Horizontal (worst case)

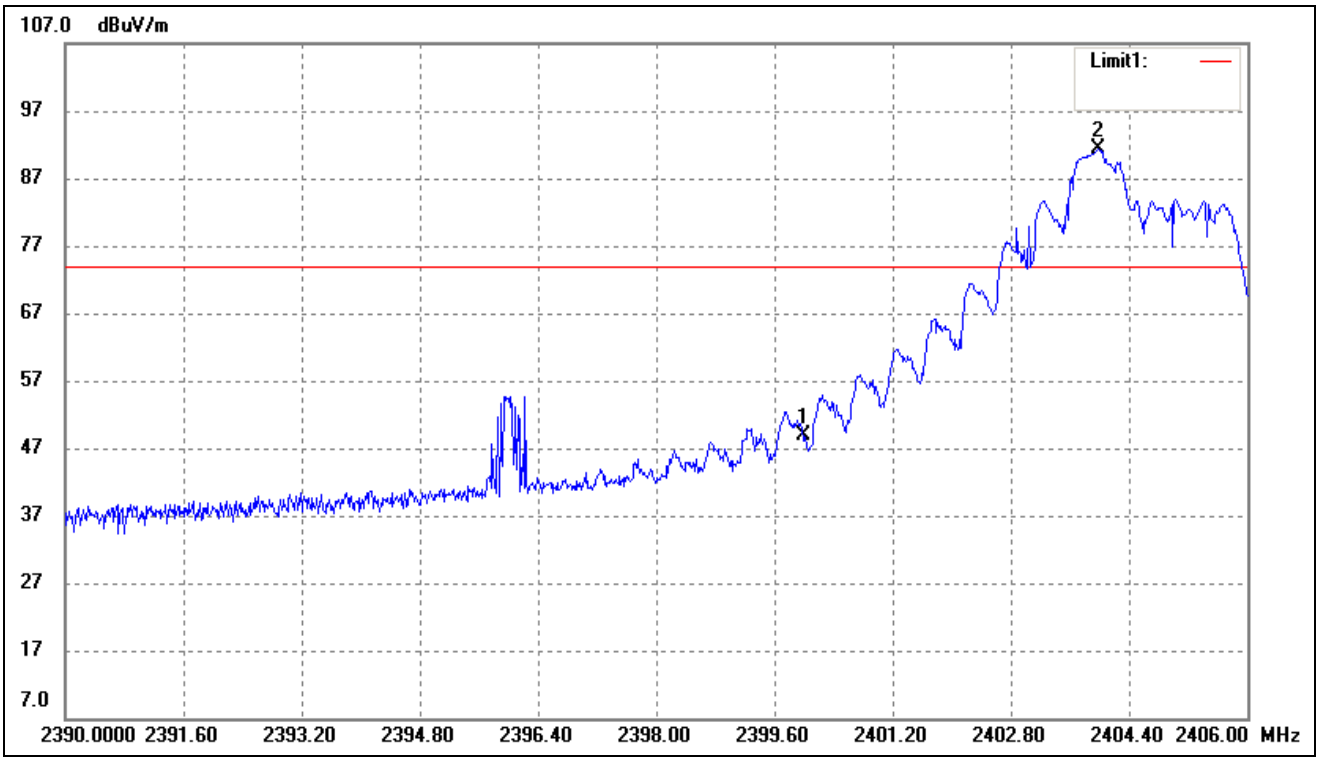


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2479.000	101.82	-9.32	92.50	/	/	Ave Detector
	2478.975	107.07	-9.32	97.75	/	/	Peak Detector
2	2483.500	54.00	-9.31	44.69	54.00	-9.31	Ave Detector
	2483.500	58.81	-9.31	49.50	74.00	-24.50	Peak Detector
3	2500.000	39.25	-9.28	29.97	54.00	-24.03	Ave Detector
	2500.000	51.57	-9.28	42.29	74.00	-31.71	Peak Detector

➢ Band edge

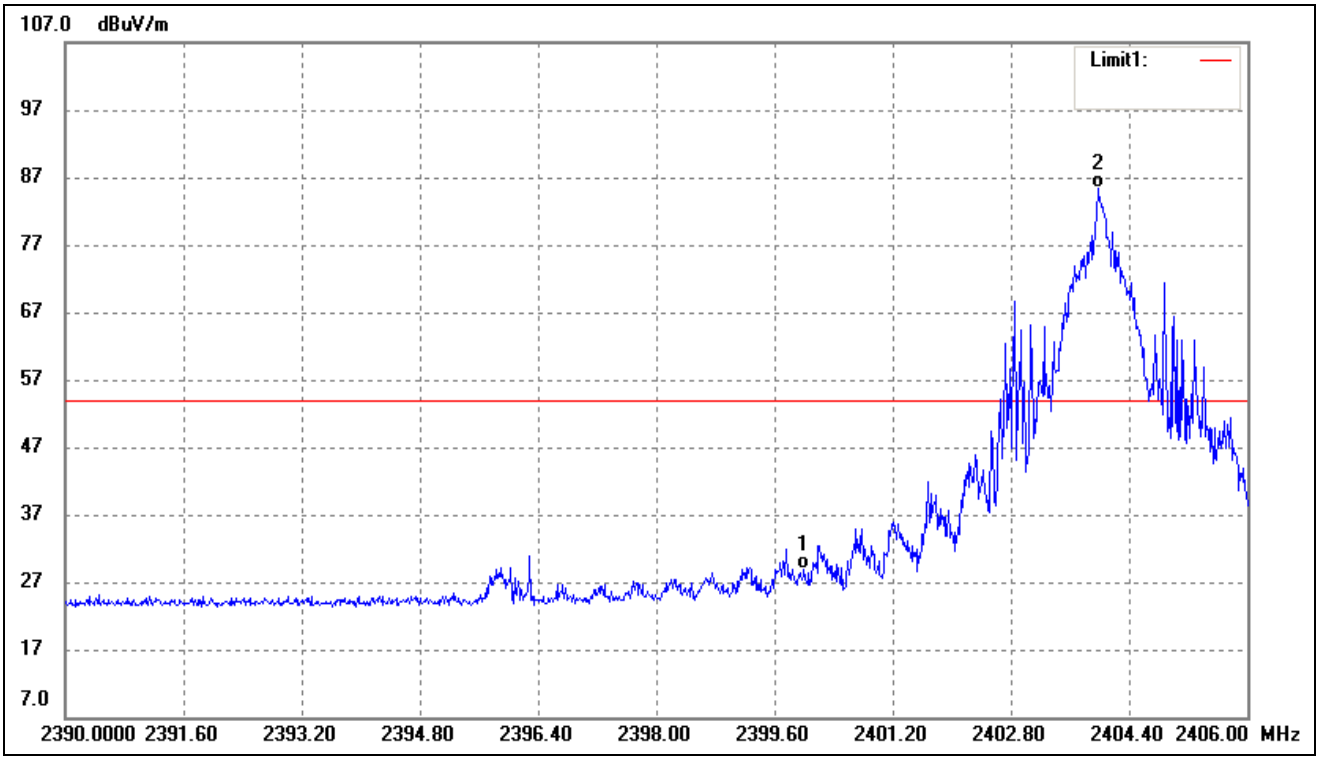
RBW:100kHz VBW:300kHz

Test Channel	Low	Polarity:	Horizontal (worst case)



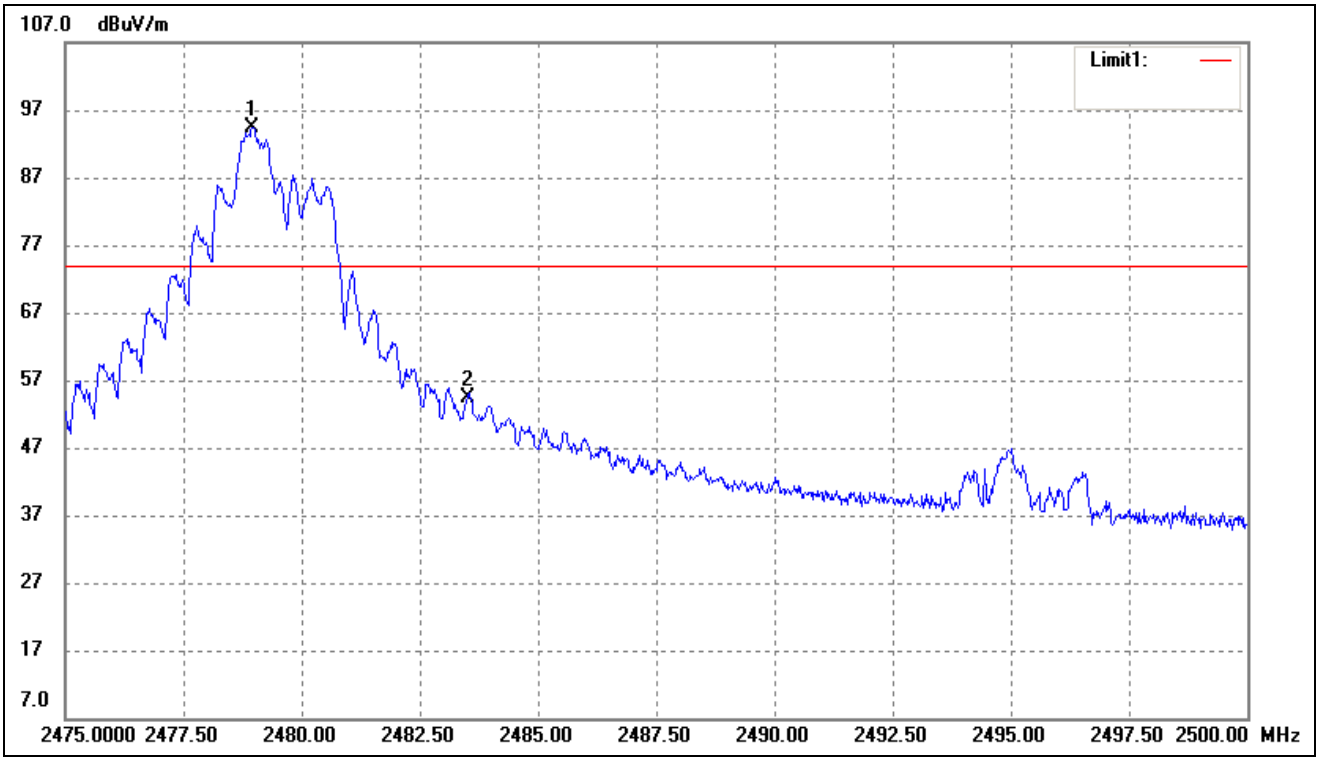
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2400.000	58.33	-9.48	48.85	74.00	-25.15	Peak Detector
2	2403.984	100.80	-9.48	91.32	/	/	Peak Detector

Test Channel	Low	Polarity:	Horizontal (worst case)



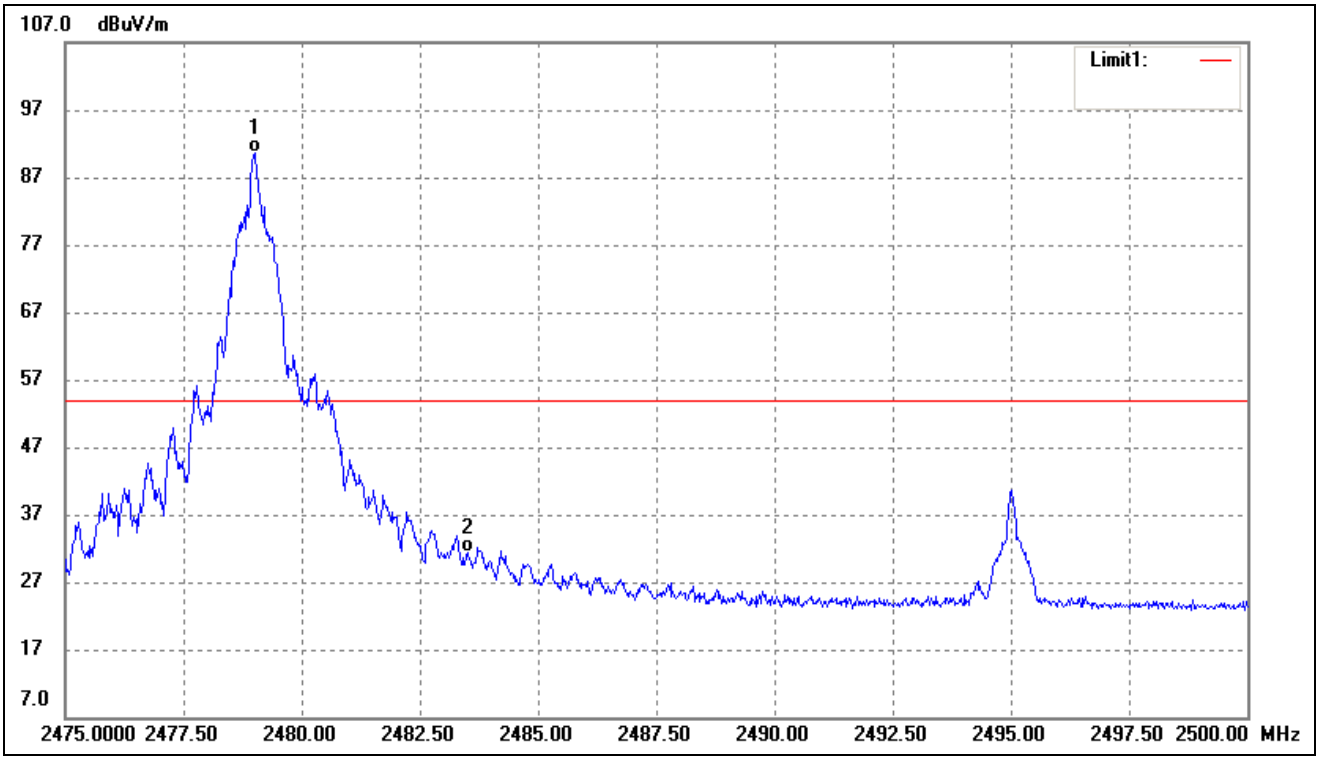
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2400.000	38.46	-9.48	28.98	54.00	-25.02	Ave Detector
2	2403.984	94.86	-9.48	85.38	/	/	Ave Detector

Test Channel	High	Polarity:	Horizontal (worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2478.950	103.76	-9.32	94.44	/	/	Peak Detector
2	2483.500	63.60	-9.31	54.29	74.00	-19.71	Peak Detector

Test Channel	High	Polarity:	Horizontal (worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2479.000	99.85	-9.32	90.53	/	/	Ave Detector
2	2483.500	40.70	-9.31	31.39	54.00	-22.61	Ave Detector

6. Emission Bandwidth

6.1 Standard Applicable

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 Procedure

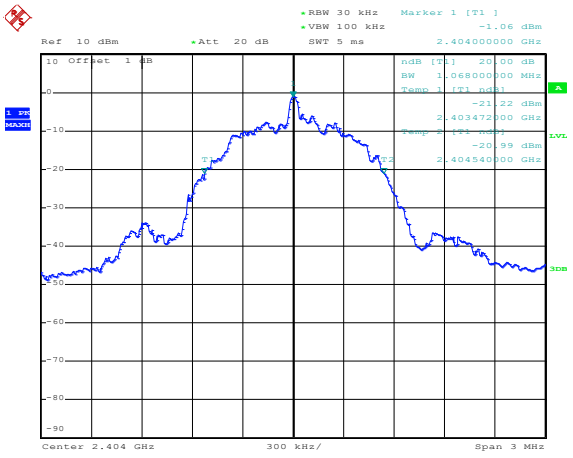
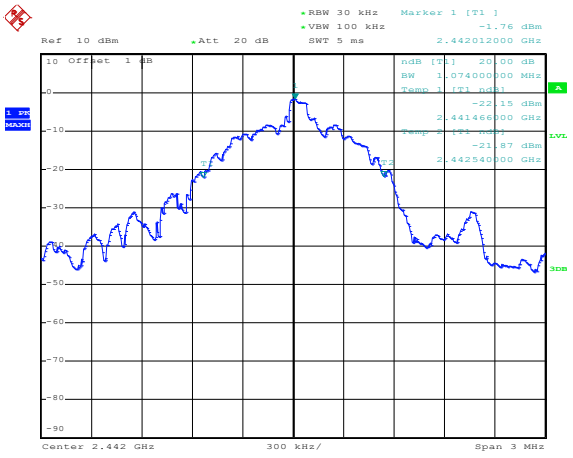
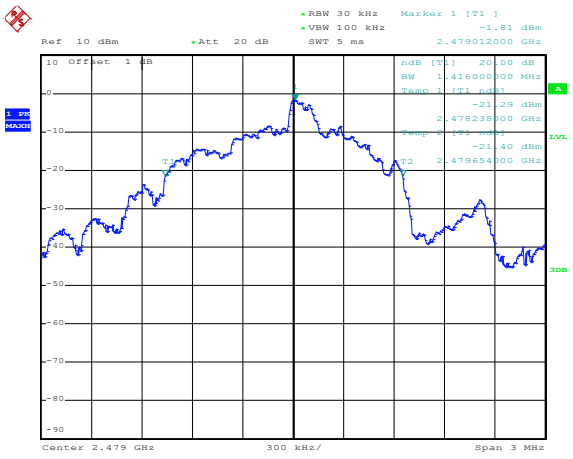
According to the ANSI 63.10-2013, the emission bandwidth test method as follows.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
Set span = 1MHz, centered on a transmitting channel
RBW ≥1% 20dB Bandwidth, VBW ≥RBW
Sweep = auto
Detector function = peak
Trace = max hold
All the trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission, use the marker-delta function to measure and record the 20dB down and 99% bandwidth of the emission.

6.3 Summary of Test Results/Plots

Test Channel	20dB Bandwidth(kHz)
Low Channel	1068
Middle Channel	1074
High Channel	1416

Please refer to the following test plots

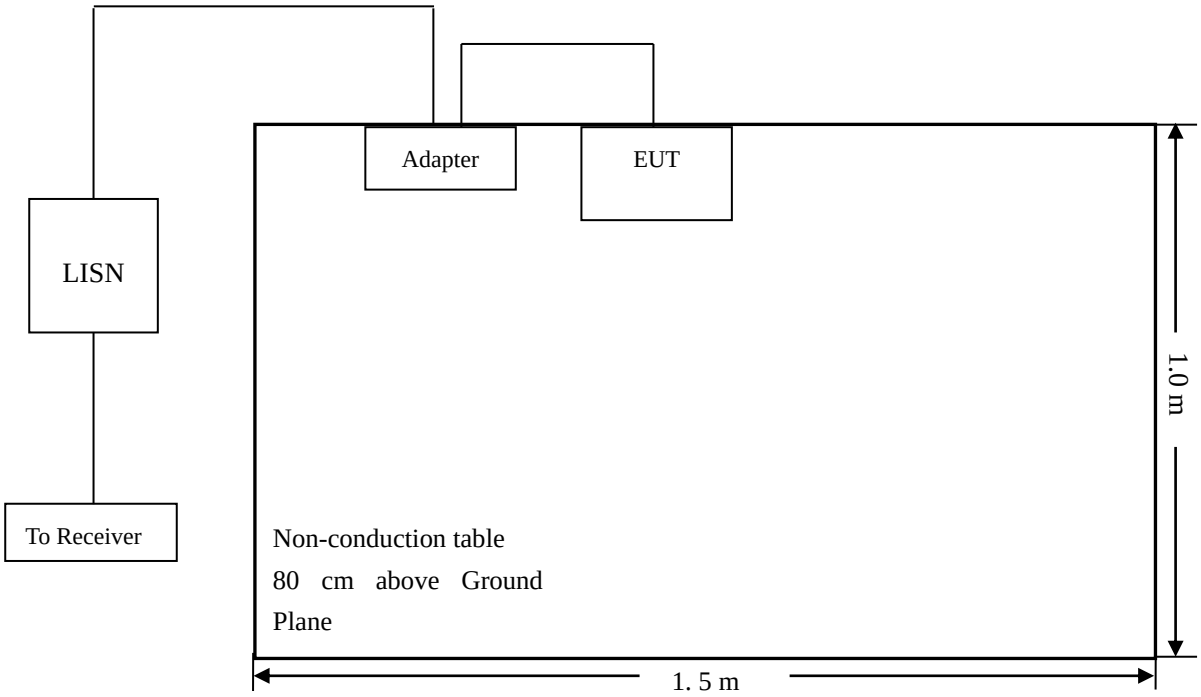
Low Channel	
Middle Channel	
High Channel	

7. Conducted Emissions

7.1 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.

7.2 Basic Test Setup Block Diagram



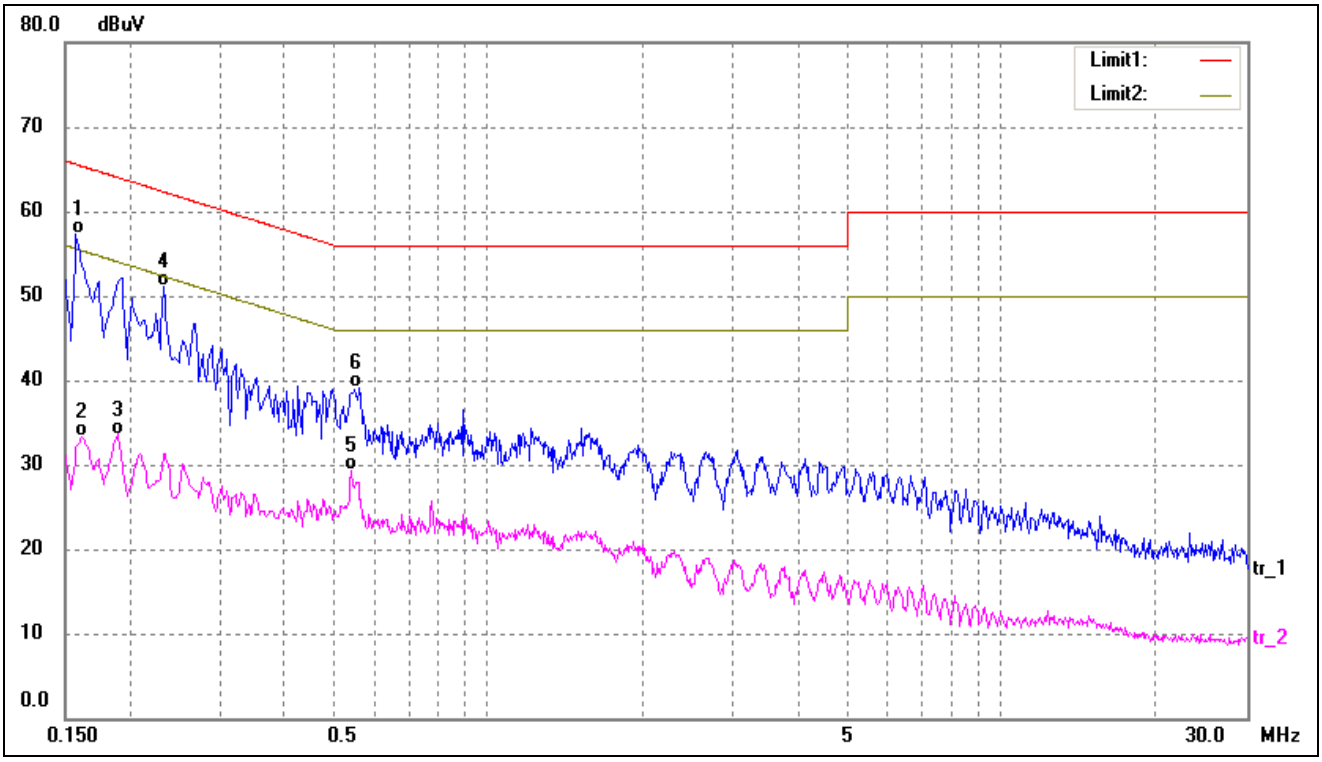
7.3 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 150 kHz
Stop Frequency ..... 30 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 9 kHz
Quasi-Peak Adapter Mode ..... Normal

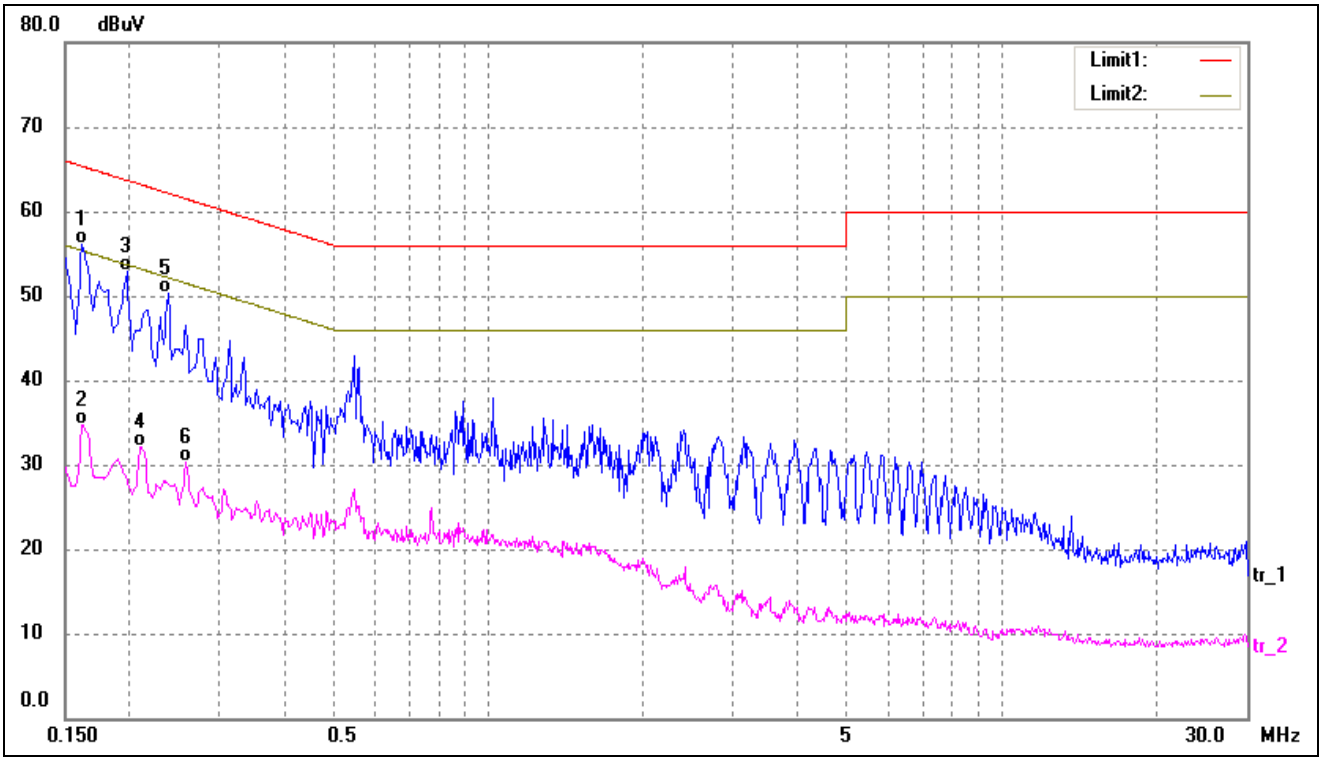
7.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1580	47.28	9.95	57.23	65.57	-8.34	QP
2	0.1620	23.28	9.95	33.23	55.36	-22.13	AVG
3	0.1900	23.64	9.96	33.60	54.04	-20.44	AVG
4	0.2340	41.02	10.00	51.02	62.31	-11.29	QP
5	0.5420	19.24	10.03	29.27	46.00	-16.73	AVG
6	0.5620	29.06	10.04	39.10	56.00	-16.90	QP

Test Mode	Communication	AC120V 60Hz	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1620	46.17	9.95	56.12	65.36	-9.24	QP
2	0.1620	24.80	9.95	34.75	55.36	-20.61	AVG
3	0.1980	42.92	9.97	52.89	63.69	-10.80	QP
4	0.2100	22.17	9.98	32.15	53.21	-21.06	AVG
5	0.2380	40.30	10.00	50.30	62.17	-11.87	QP
6	0.2580	20.19	10.02	30.21	51.50	-21.29	AVG

******* END OF REPORT *******