TEST REPORT

Reference No.	:	WTX24X11269821W001
FCC ID	:	2ARPV-N4951
Applicant	:	Kool Brands, LLC.
Address	:	1450 Vassar Street Reno, Nevada 89502 United States
Manufacturer	:	Innex, Inc
Address	:	2/F, Bld#10, TongFuYu Industrial park, Lezhujiao, Xixiang, Ban'an, Shenzhen, China
Product Name	:	Wireless 2.4 GHz controller for N64
Model No.	:	N4951
Standards	:	FCC Part 15.249
Date of Receipt sample	:	2024-11-19
Date of Test	:	2024-11-19 to 2024-12-03
Date of Issue	:	2024-12-03
Test Report Form No.	:	WTX_Part 15_249W
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

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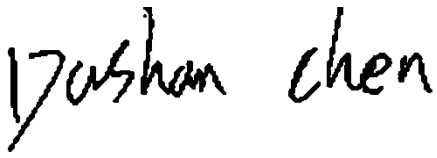
Tested by:



Dashan Chen

Approved by:

Jason Su

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Report version

Version No.	Date of issue	Description
Rev.00	2024-12-03	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Wireless 2.4 GHz controller for N64
Trade Name:	Retro-Bit
Model No.:	N4951
Adding Model(s):	N4952
Rated Voltage:	Charging Port: DC 5V Battery:DC3.7V
Battery Capacity	500mAh
Power Adapter Model:	/
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 N4951, but the circuit and the electronic construction do not change, declared by the manufacturer.	

Technical Characteristics of EUT	
Frequency Range:	2410MHz-2470MHz
Max. Field Strength:	97.79dBuV/m
Modulation:	GFSK
Quantity of Channels:	31
Channel Separation:	2MHz
Antenna Type:	PCB Antenna
Antenna Gain:	1.5dBi
Note The Antenna Gain is provided by the customer and can affect the validity of results.	

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.249: Operation within the bands 902-928MHz, 2400-2483.5MHz, 5725-5875MHz, and 24.0-24.25GHz.
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 mai ntained 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 and the CAB identifier is CN0057.

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	2410MHz
TM2	Middle Channel	2440MHz
TM3	High Channel	2470MHz

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	45~75 %
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
USB Cable	1.0	shielded	Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	N480	/

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
		6-26GHz ±3.92dB

1.7 Test Equipment List and Details

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1041A1001	Communication Tester	Rohde & Schwarz	CMW500	148650	2024-02-24	2025-02-23
WTXE1005A1005	Spectrum Analyzer	Agilent	N9020A	US47140102	2024-03-19	2025-03-18
WTXE1084A1001	Spectrum Analyzer	Agilent	N9020A	MY54320548	2024-02-24	2025-02-23
WTXE1004A1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2024-02-27	2025-02-26
WTXE1103A1003	Attenuator	Pasternack	PE4007-4	/	2024-02-24	2025-02-23
WTXE1003A1-005	Coaxial Cable	/	0M4RFC	/	2024-07-03	2025-01-03
☐ Chamber A: Below 1GHz						
WTXE1005A1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2024-02-24	2025-02-23
WTXE1001A1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2024-03-19	2025-03-18
WTXE1007A1001	Amplifier	HP	8447F	2805A03475	2024-02-24	2025-02-23
WTXE1010A1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1010A1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2024-02-24	2025-02-23
WTXE1104A1032-1	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
WTXE1104A1032-2	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
WTXE1104A1032-3	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
☐ Chamber A: Above 1GHz						
WTXE1005A1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2024-02-24	2025-02-23
WTXE1001A1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2024-03-19	2025-03-18
WTXE1065A1001	Amplifier	C&D	PAP-1G18	2002	2024-02-27	2025-02-26
WTXE1010A1005	Horn Antenna	ETS	3117	00086197	2024-02-26	2025-02-25

WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
WTXE1104A 1033-2	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A10457	2024-02-24	2025-02-23
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2024-02-24	2025-02-23
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2024-07-03	2025-07-02
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2024-02-27	2025-02-26
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1007A 1002	Amplifier	HP	8447F	2944A03869	2024-02-24	2025-02-23
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
☒ Chamber C: Above 1GHz						
WTXE1093A	EMI Test	Rohde &	ESIB 26	100401	2024-02-27	2025-02-26

1001	Receiver	Schwarz				
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2024-02-27	2025-02-26
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
☐ Conducted Room 1#						
WTXE1104A 1029	EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2023-12-12	2024-12-11
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2024-02-24	2025-02-23
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-279	2024-02-24	2025-02-23
WTXE1104A 1036	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
WTXE1104A 1038	Coaxial Cable	/	6MRFC-DP	/	2024-07-03	2025-07-02
☒ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2024-02-24	2025-02-23
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2024-02-24	2025-02-23
WTXE1104A 1037	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02

Software List			
Description	**Manufacturer**	**Model**	**Version**
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
EMI Test Software (Conducted Emission Room 1#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3
EMI Test Software (Conducted Emission Room 2#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3

*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

N/A: Not applicable.

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)
902-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

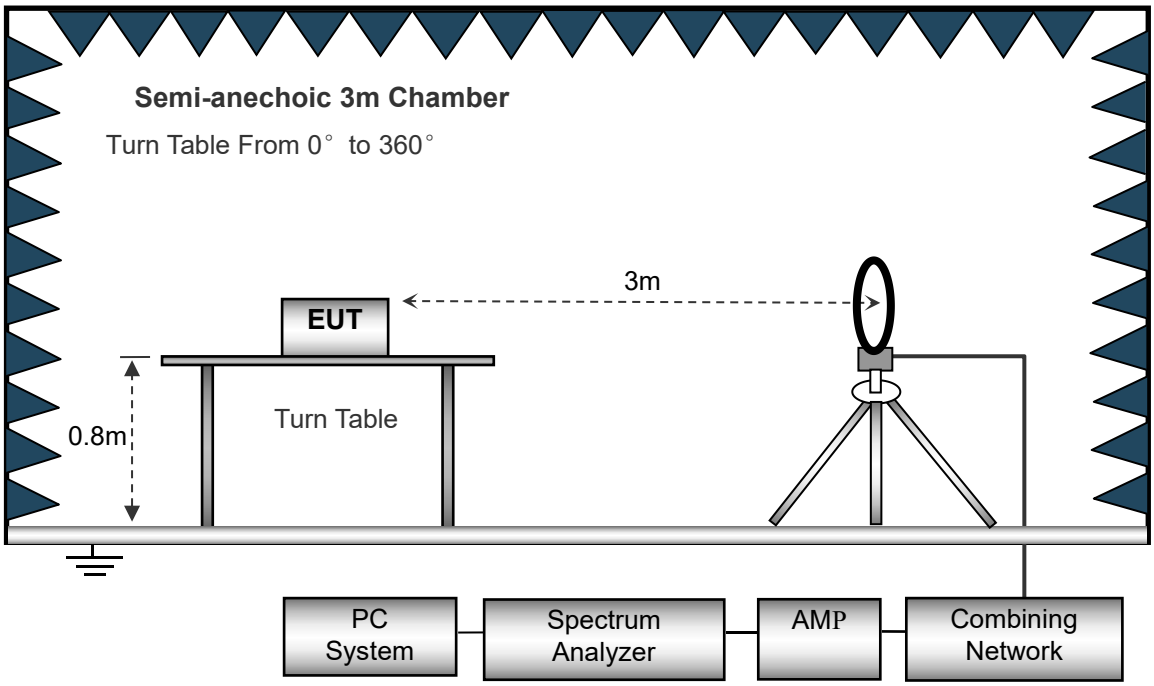
(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

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.

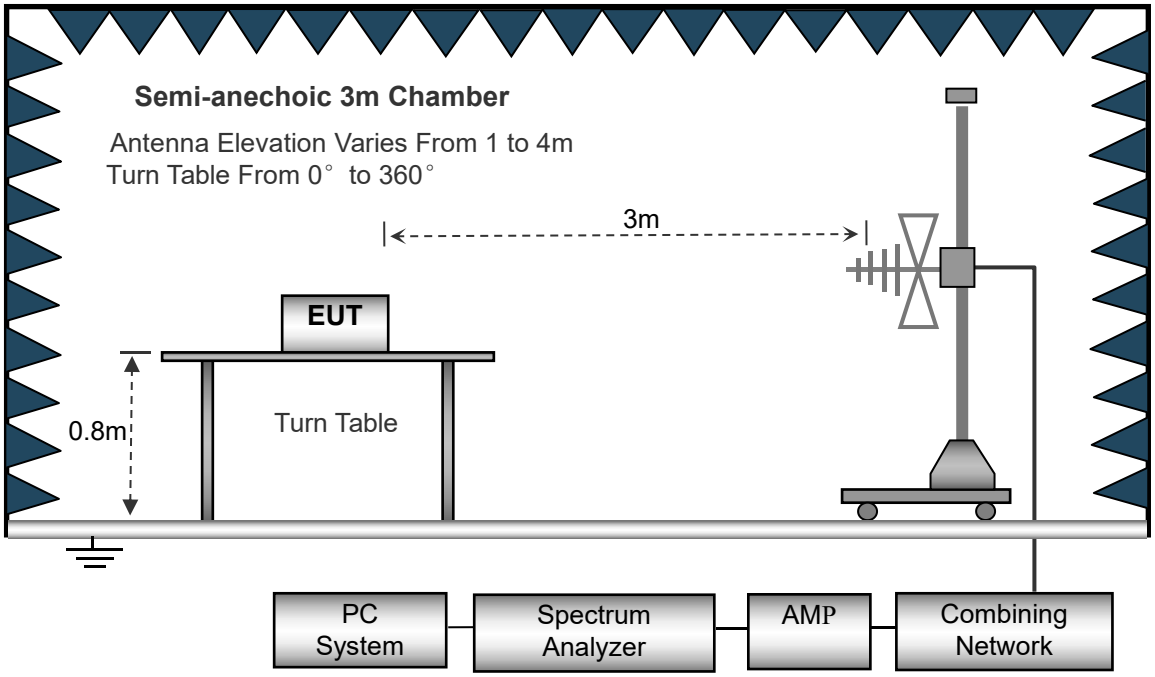
4.2 Test Procedure

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 40cm long in the middle. The spacing between the peripherals was 10cm.

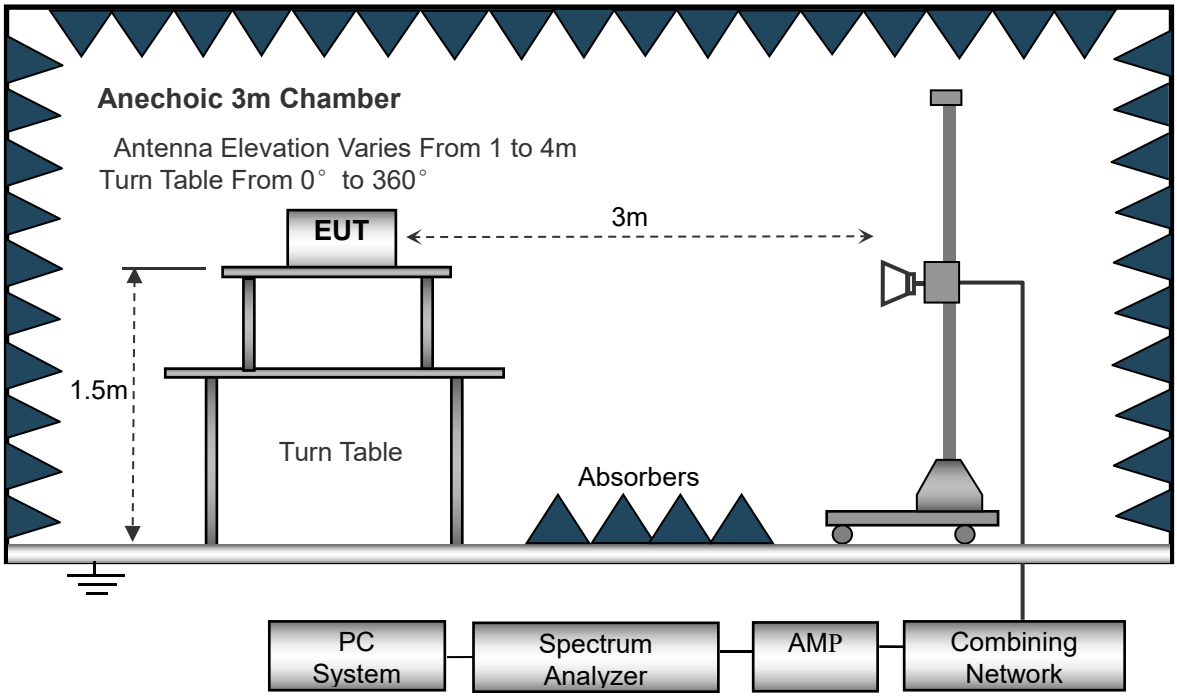
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1GHz.



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:

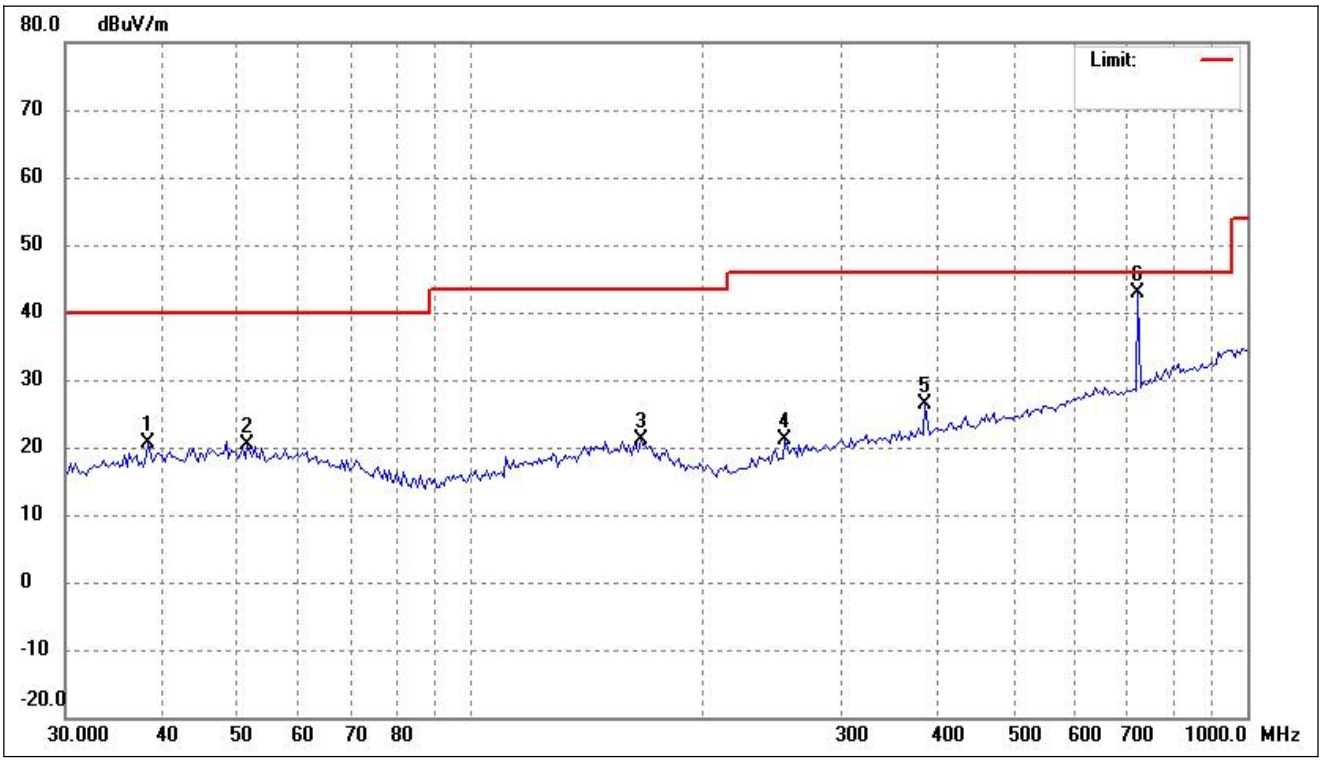
Margin = Corr. Ampl. – FCC Part 15C Limit

4.4 Summary of Test Results/Plots

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

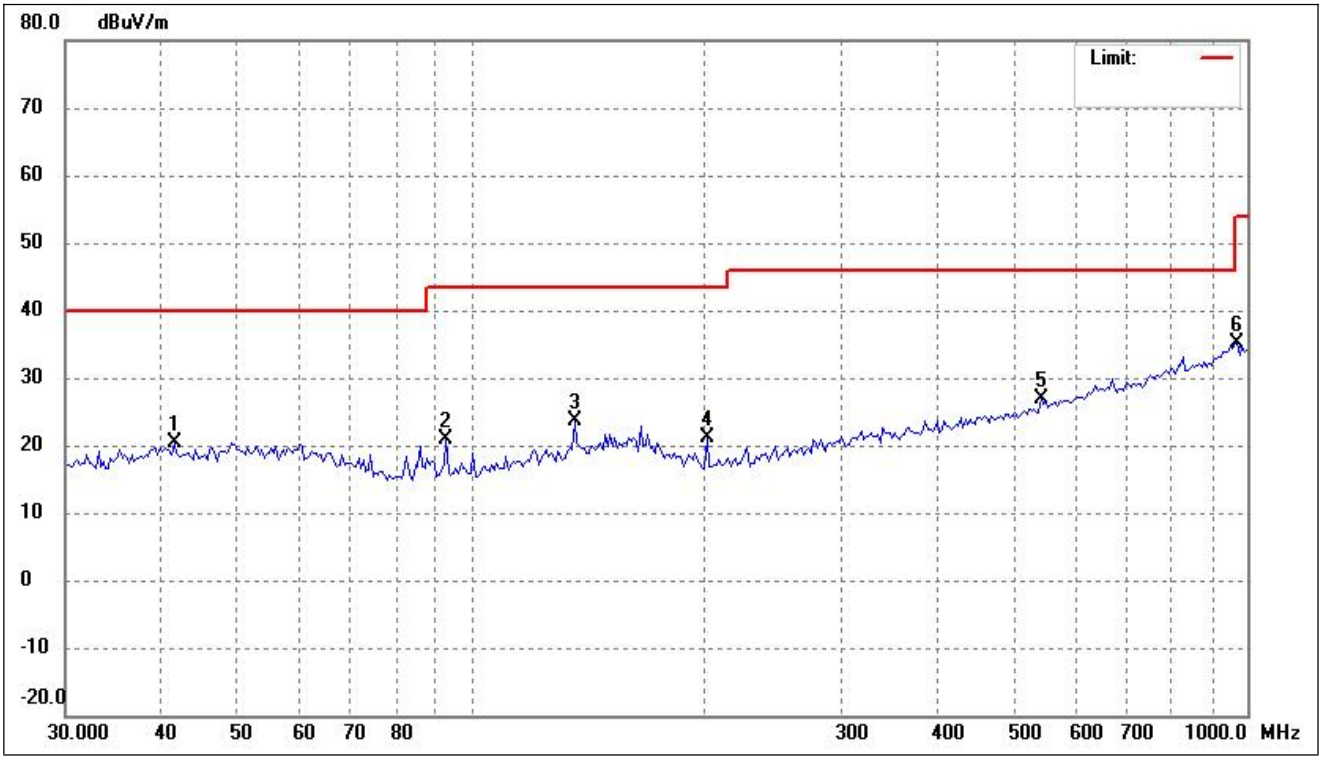
➢ Spurious Emissions Below 1GHz

Test Channel	Low(worst case)	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	38.3651	29.02	-8.30	20.72	40.00	-19.28	-	-	peak
2	51.5365	28.04	-7.74	20.30	40.00	-19.70	-	-	peak
3	165.4716	29.37	-8.19	21.18	43.50	-22.32	-	-	peak
4	254.0312	30.68	-9.54	21.14	46.00	-24.86	-	-	peak
5	384.5447	32.98	-6.48	26.50	46.00	-19.50	-	-	peak
6	723.7930	43.43	-0.49	42.94	46.00	-3.06	-	-	peak

Test Channel	Low(worst case)	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	41.4483	28.46	-7.96	20.50	40.00	-19.50	-	-	peak
2	92.9974	33.39	-12.42	20.97	43.50	-22.53	-	-	peak
3	135.9163	32.79	-9.07	23.72	43.50	-19.78	-	-	peak
4	201.4539	32.64	-11.42	21.22	43.50	-22.28	-	-	peak
5	542.6104	30.59	-3.78	26.81	46.00	-19.19	-	-	peak
6	972.2827	31.69	3.39	35.08	54.00	-18.92	-	-	peak

Remark: '-'Means' the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

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-2410MHz							
2410.00	117.24	-19.45	97.79	114.00	-16.21	H	PK
2410.00	112.65	-19.45	93.20	94.00	-0.80	H	AVG
4820.00	64.45	-13.50	50.95	74.00	-23.05	H	PK
7230.00	60.25	-7.46	52.79	74.00	-21.21	H	PK
2410.00	116.63	-19.45	97.18	114.00	-16.82	V	PK
2410.00	111.85	-19.45	92.40	94.00	-1.60	V	AVG
4820.00	60.29	-13.50	46.79	74.00	-27.21	V	PK
7230.00	60.07	-7.46	52.61	74.00	-21.39	V	PK
Middle Channel-2440MHz							
2440.00	116.73	-19.36	97.28	114.00	-16.72	H	PK
2440.00	111.65	-19.36	92.20	94.00	-1.80	H	AVG
4880.00	64.97	-13.45	51.47	74.00	-22.53	H	PK
7320.00	60.55	-7.70	53.09	74.00	-20.91	H	PK
2440.00	115.92	-19.36	96.47	114.00	-17.53	V	PK
2440.00	110.83	-19.36	91.38	94.00	-2.62	V	AVG
4880.00	59.02	-13.45	45.52	74.00	-28.48	V	PK
7320.00	60.75	-7.70	53.29	74.00	-20.71	V	PK
High Channel-2470MHz							
2470.00	114.17	-19.32	94.72	114.00	-19.28	H	PK
247000	111.59	-19.32	92.14	94.00	-1.86	H	AVG
4960.00	66.00	-13.35	52.50	74.00	-21.50	H	PK
7440.00	59.99	-7.93	52.53	74.00	-21.47	H	PK
2470.00	113.70	-19.32	94.25	114.00	-19.75	V	PK
2470.00	108.62	-19.32	89.17	94.00	-4.83	V	AVG
4960.00	63.63	-13.35	50.13	74.00	-23.87	V	PK
7440.00	61.95	-7.93	54.49	74.00	-19.51	V	PK

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 50dB 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	<54dBuV	Pass
	2390.00	<54dBuV	Pass
	2400.00	<54dBuV	Pass
Highest	2483.50	<54dBuV	Pass
	2500.00	<54dBuV	Pass

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

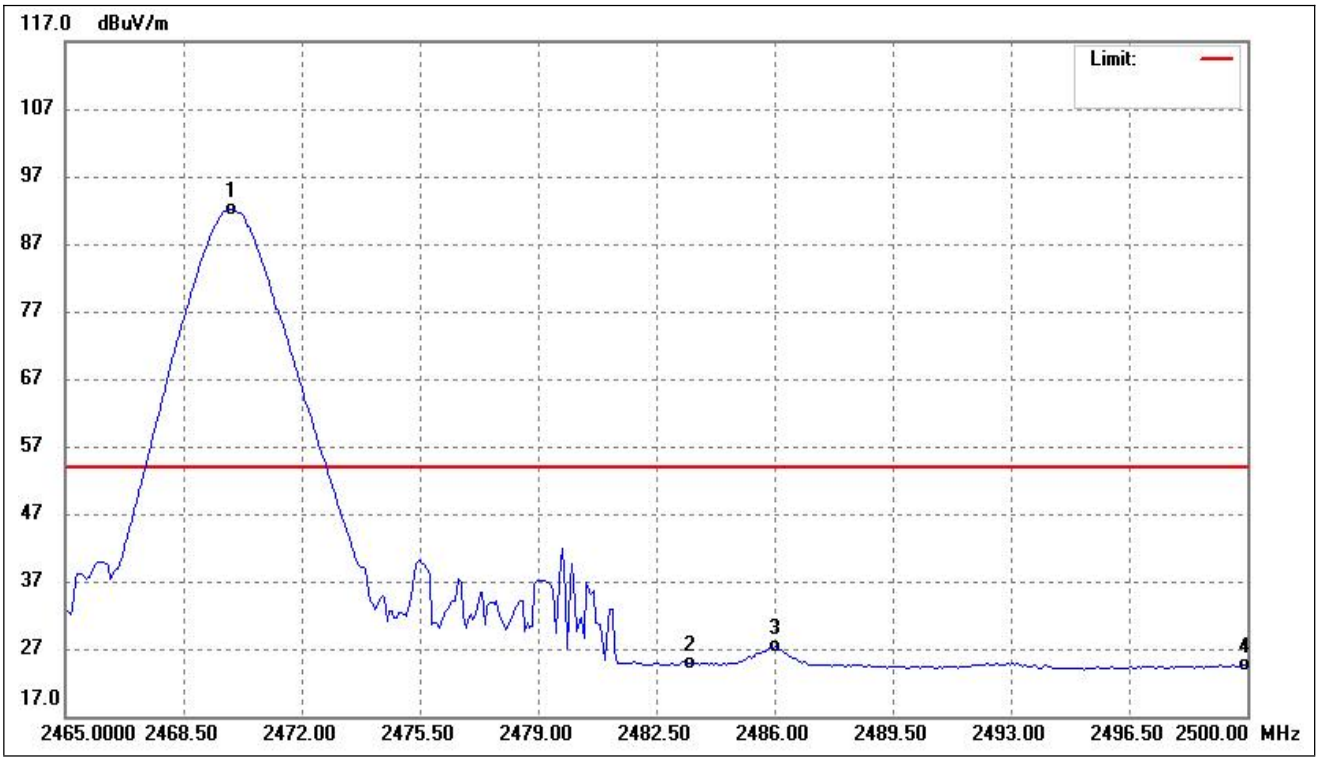
Please refer to the test plots as below.

RBW: 1MHz; VBW: 3MHz

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	43.47	-19.67	23.80	54.00	-30.20	Ave Detector
	2310.000	56.51	-19.67	36.84	74.00	-37.16	Peak Detector
2	2390.000	44.89	-19.49	25.40	54.00	-28.60	Ave Detector
	2390.000	77.59	-19.49	58.10	74.00	-15.90	Peak Detector
3	2410.040	112.70	-19.45	93.25	/	/	Ave Detector
	2413.166	118.15	-19.44	98.71	/	/	Peak Detector

Test Channel	High	Polarity:	Horizontal (worst case)

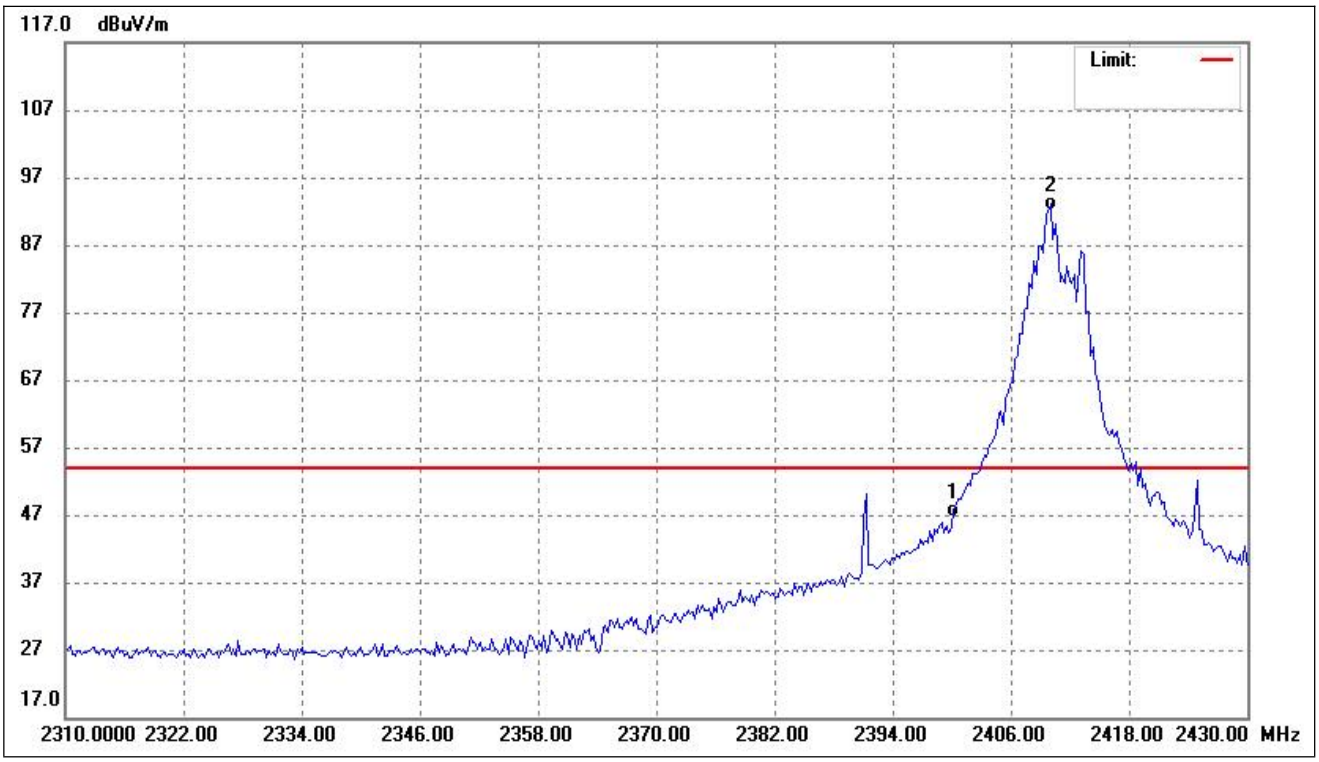


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2469.910	111.53	-19.32	92.21	/	/	Ave Detector
	2469.699	114.33	-19.32	95.01	/	/	Peak Detector
2	2483.500	44.26	-19.29	24.97	54.00	-29.03	Ave Detector
	2483.500	77.40	-19.29	58.11	74.00	-15.89	Peak Detector
3	2486.042	46.55	-19.28	27.27	54.00	-26.73	Ave Detector
4	2500.000	43.83	-19.25	24.58	54.00	-29.42	Ave Detector
	2500.000	66.25	-19.25	47.00	74.00	-27.00	Peak Detector

Band edge

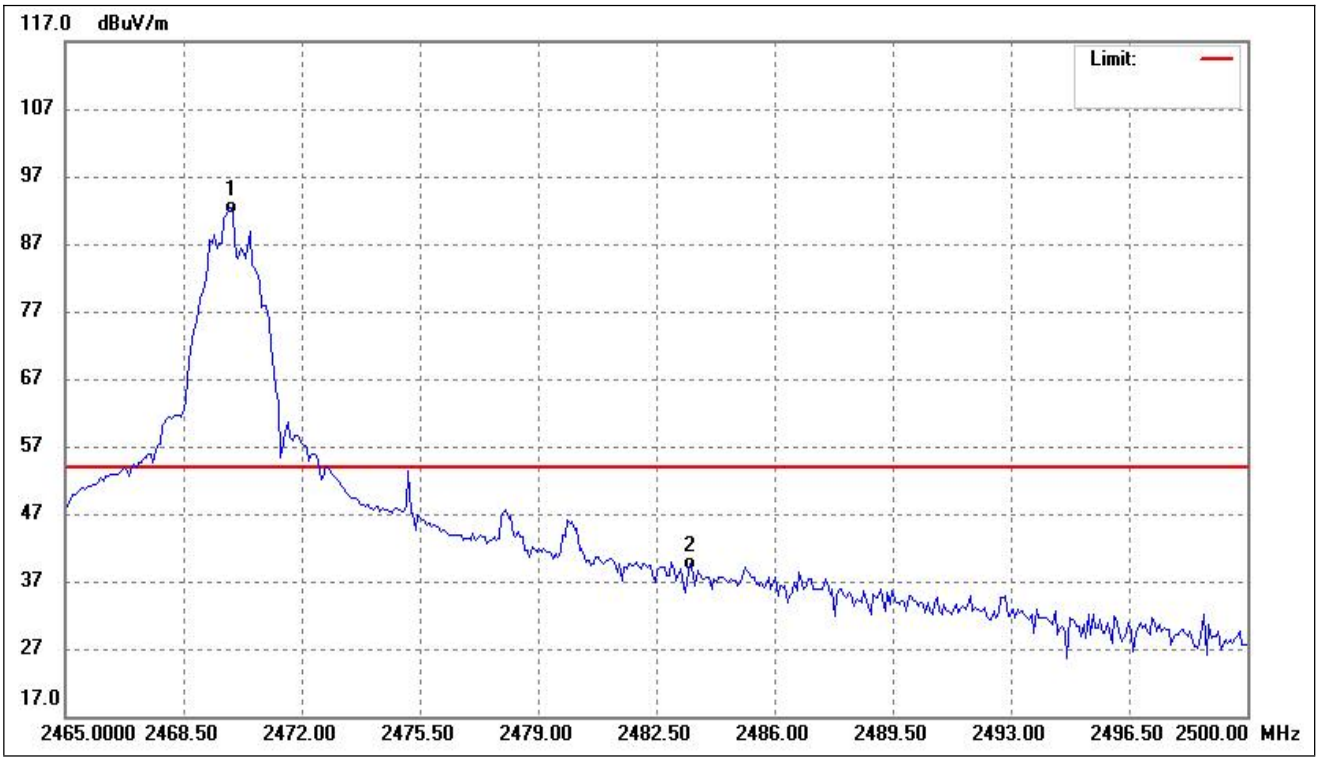
RBW: 100kHz; VBW: 300kHz

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	67.04	-19.48	47.56	54.00	-6.44	Ave Detector
	2400.000	68.04	-19.48	48.56	74.00	-25.44	Peak Detector
2	2410.040	112.65	-19.45	93.20	/	/	Ave Detector
	2410.040	117.24	-19.45	97.79	/	/	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	2469.910	111.59	-19.32	92.27	/	/	Ave Detector
	2469.840	114.17	-19.32	94.85	/	/	Peak Detector
2	2483.500	58.86	-19.29	39.57	54.00	-14.43	Ave Detector
	2483.500	57.84	-19.29	38.55	74.00	-35.45	Peak 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 20dB 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

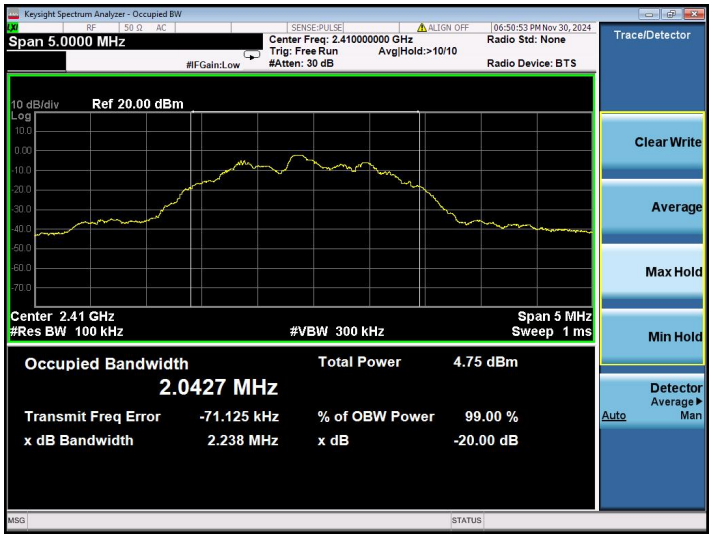
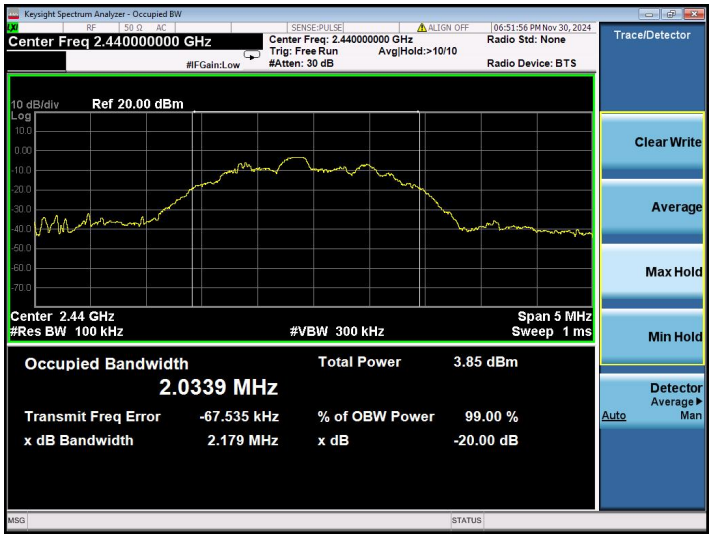
According to the ANSI 63.10-2013, the emission bandwidth test method as follows.

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	2238
Middle Channel	2179
High Channel	2233

Please refer to the following test plots:

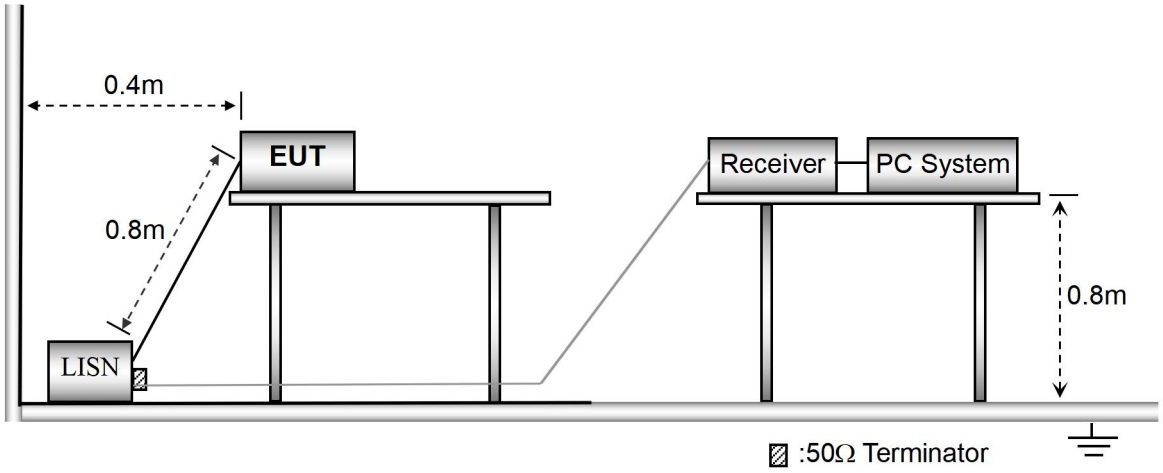
Low Channel	
Middle Channel	
High Channel	

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 40cm long in the middle. The spacing between the peripherals was 10cm.

7.2 Basic Test Setup Block Diagram



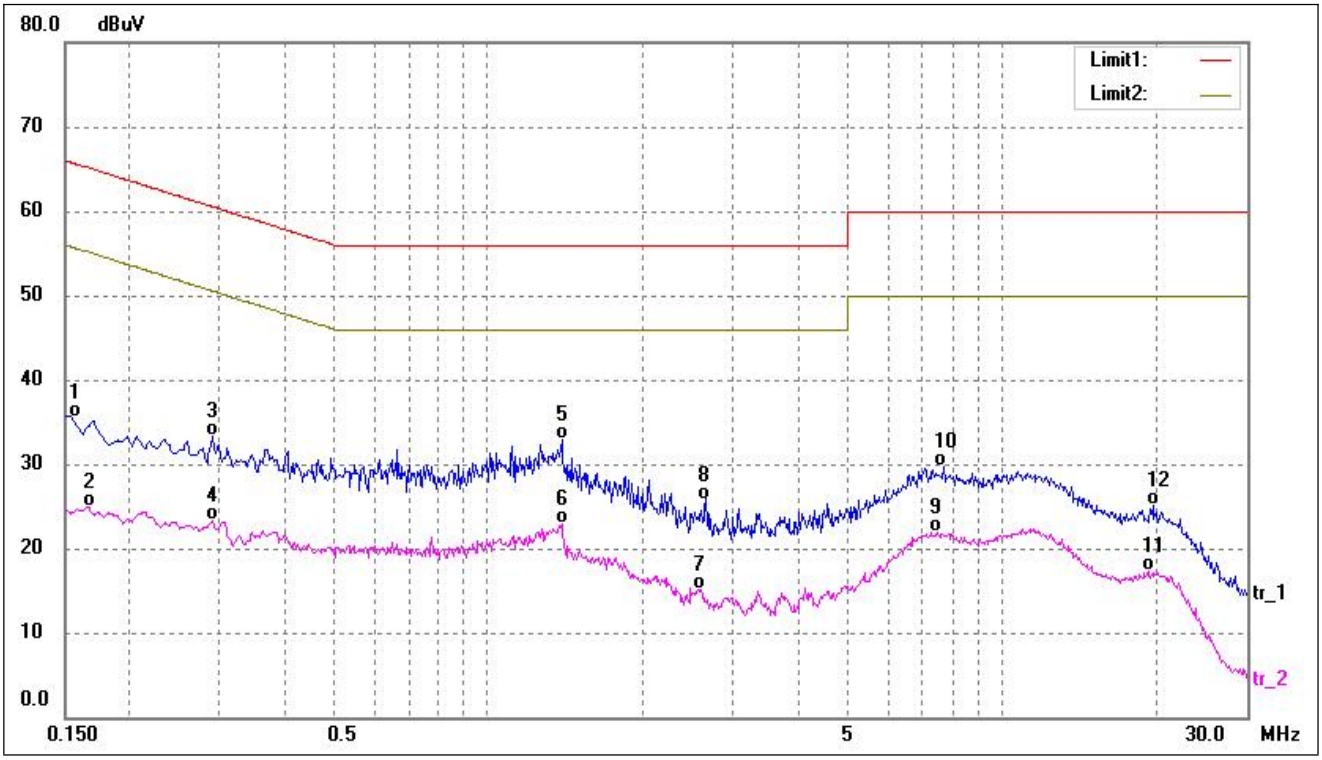
7.3 Test Receiver Setup

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

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

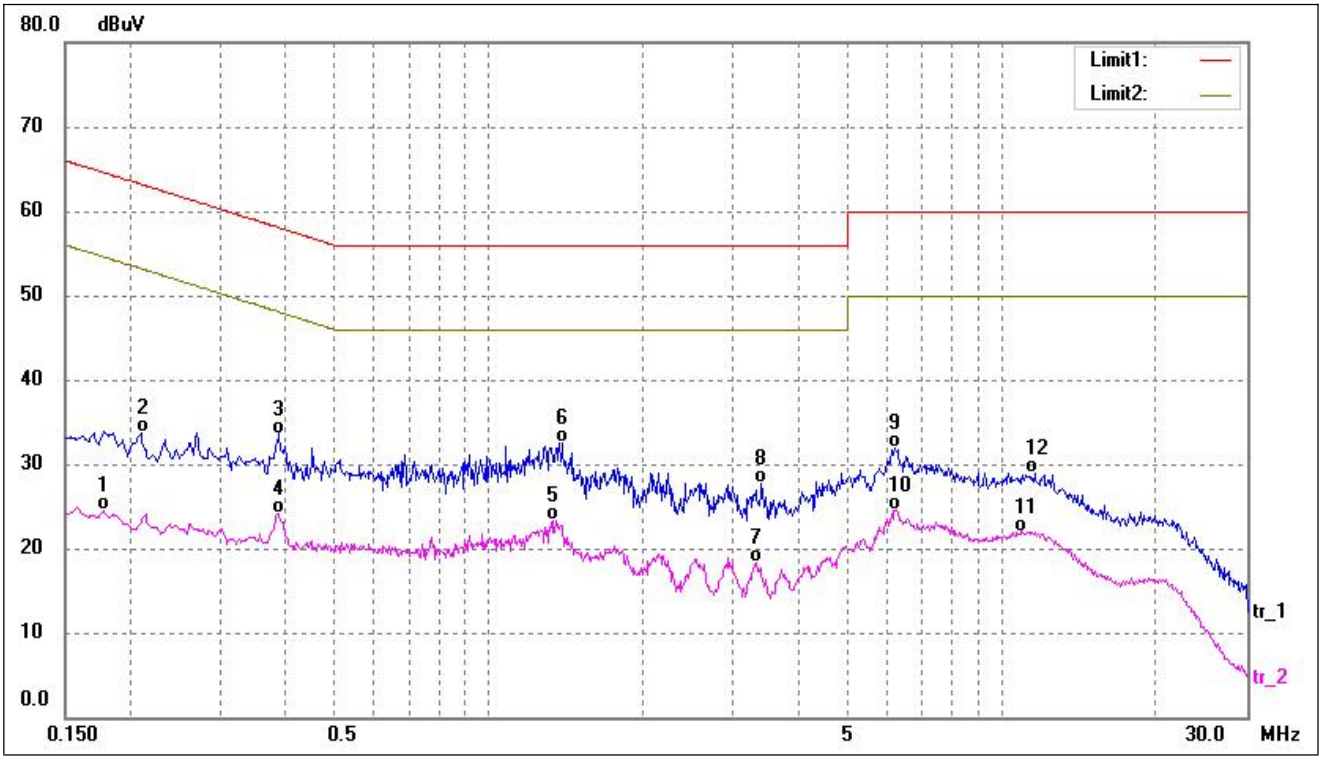
7.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1548	25.70	9.74	35.44	65.73	-30.29	QP
2	0.1660	15.25	9.70	24.95	55.15	-30.20	AVG
3	0.2900	23.68	9.63	33.31	60.52	-27.21	QP
4	0.2900	13.63	9.63	23.26	50.52	-27.26	AVG
5*	1.3940	23.23	9.65	32.88	56.00	-23.12	QP
6	1.3940	13.22	9.65	22.87	46.00	-23.13	AVG
7	2.5740	5.55	9.62	15.17	46.00	-30.83	AVG
8	2.6619	16.18	9.62	25.80	56.00	-30.20	QP
9	7.4940	12.09	9.81	21.90	50.00	-28.10	AVG
10	7.6940	19.89	9.81	29.70	60.00	-30.30	QP
11	19.2900	7.12	10.21	17.33	50.00	-32.67	AVG
12	19.6940	14.80	10.23	25.03	60.00	-34.97	QP

Test Mode	Communication	AC120V 60Hz	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1780	14.85	9.65	24.50	54.57	-30.07	AVG
2	0.2100	24.08	9.58	33.66	63.20	-29.54	QP
3	0.3899	23.91	9.69	33.60	58.06	-24.46	QP
4	0.3899	14.34	9.69	24.03	48.06	-24.03	AVG
5*	1.3420	13.67	9.65	23.32	46.00	-22.68	AVG
6	1.3940	22.92	9.65	32.57	56.00	-23.43	QP
7	3.3300	8.60	9.63	18.23	46.00	-27.77	AVG
8	3.4060	18.12	9.63	27.75	56.00	-28.25	QP
9	6.2020	22.06	9.76	31.82	60.00	-28.18	QP
10	6.2260	14.81	9.76	24.57	50.00	-25.43	AVG
11	10.9420	12.10	9.90	22.00	50.00	-28.00	AVG
12	11.5980	19.01	9.91	28.92	60.00	-31.08	QP

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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