

FCC TEST REPORT

FCC ID: 2BEXP-F1-TVGAME

Report No. : SSP24010154-1E

Prepared For : Renhuai City New century department Store

Product Name : TV Game Console

Model Name : F1-TV GAME

FCC Rule : FCC Part 15.249

Date of Issue : 2024-02-06

Prepared By : Shenzhen CCUT Quality Technology Co., Ltd.




Shenzhen CCUT Quality Technology Co., Ltd.

1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen,
Guangdong, China; (Tel.: +86-755-23406590 website: www.ccuttest.com)

This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.

Test Report Basic Information

Applicant:	Renhuai City New century department Store	
Address of Applicant.....:	Renhuai City, Zhongzhong Town, People's Street, Zunyi City, Guizhou Province, China	
Manufacturer:	Renhuai City New century department Store	
Address of Manufacturer.....:	Renhuai City, Zhongzhong Town, People's Street, Zunyi City, Guizhou Province, China	
Product Name:	TV Game Console	
Brand Name:	-	
Main Model:	F1-TV GAME	
Series Models:	AMW100	
Test Standard:	FCC Part 15 Subpart C ANSI C63.10-2013	
Date of Test	2024-01-23 to 2024-01-30	
Test Result:	PASS	
Tested Engineer	<u>Colin Chen</u>	(Colin Chen)
Project Manager:	<u>Lieber Ouyang</u>	(Lieber Ouyang)
Authorized Signatory:	<u>Lahm Peng</u>	(Lahm Peng)



Note : This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.. All test data presented in this test report is only applicable to presented test sample.

CONTENTS

1. General Information.....5

 1.1 Product Information5

 1.2 Test Setup Information.....6

 1.3 Compliance Standards.....7

 1.4 Test Facilities.....7

 1.5 List of Measurement Instruments8

 1.6 Measurement Uncertainty8

2. Summary of Test Results.....9

3. Antenna Requirement.....10

 3.1 Standard and Limit.....10

 3.2 Test Result.....10

4. Conducted Emissions11

 4.1 Standard and Limit.....11

 4.2 Test Procedure.....11

 4.3 Test Data and Results12

5. Radiated Emissions13

 5.1 Standard and Limit.....13

 5.2 Test Procedure.....13

 5.3 Test Data and Results15

6. Out of Band Emissions.....20

 6.1 Standard and Limit.....20

 6.2 Test Procedure.....20

 6.3 Test Data and Results20

7. Occupied Bandwidth25

 7.1 Standard and Limit.....25

 7.2 Test Procedure.....25

 7.3 Test Data and Results25

Revision History

Revision	Issue Date	Description	Revised By
V1.0	2024-02-06	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	TV Game Console
Trade Name:	-
Main Model:	F1-TV GAME
Series Models:	AMW100
Rated Voltage:	DC 3.0V by AAA*2
Hardware Version:	V1.0
Software Version:	V1.0
<p>Note 1: The test data is gathered from a production sample, provided by the manufacturer.</p> <p>Note 2: The color of appearance and model name of series models listed are different from the main model, but the circuit and the electronic construction are the same, declared by the manufacturer.</p>	

Wireless Specification	
Wireless Standard:	2.4G RF
Operating Frequency:	2405 ~ 2475 MHz
Max. Field Strength:	76.33dBuV/m
Quantity of Channel:	16
Modulation:	GFSK
Antenna Gain:	0dBi
Type of Antenna:	PCB Antenna
Type of Device:	<input checked="" type="checkbox"/> Portable Device <input type="checkbox"/> Mobile Device <input type="checkbox"/> Modular Device

1.2 Test Setup Information

List of Test Modes			
Test Mode	Description	Remark	
TM1	Lowest Channel	2405MHz	
TM2	Middle Channel	2441MHz	
TM3	Highest Channel	2475MHz	
List and Details of Auxiliary Cable			
Description	Length (cm)	Shielded/Unshielded	With/Without Ferrite
-	-	-	-
List and Details of Auxiliary Equipment			
Description	Manufacturer	Model	Serial Number
-	-	-	-

List of Channels							
No. of Channel	Frequency MHz	No. of Channel	Frequency MHz	No. of Channel	Frequency MHz	No. of Channel	Frequency MHz
01	2405	05	2422	09	2441	13	2463
02	2408	06	2426	10	2445	14	2466
03	2414	07	2436	11	2453	15	2471
04	2419	08	2439	12	2459	16	2475

1.3 Compliance Standards

Compliance Standards	
FCC Part 15 Subpart C	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Intentional Radiators
All measurements contained in this report were conducted with all above standards	
According to standards for test methodology	
FCC Part 15 Subpart C	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Intentional Radiators
ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.
ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Maintenance of compliance is the responsibility of the manufacturer or applicant. Any modification of the product, which result is lowering the emission, should be checked to ensure compliance has been maintained.	

1.4 Test Facilities

Laboratory Name:	Shenzhen CCUT Quality Technology Co., Ltd. 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6893.01
FCC Registration No.:	583813
ISED Registration No.:	CN0164
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.	

1.5 List of Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Conducted Emissions					
AMN	ROHDE&SCHWARZ	ENV216	101097	2023-10-21	2024-10-20
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2023-07-31	2024-07-30
Radiated Emissions					
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2023-07-31	2024-07-30
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2023-07-31	2024-07-30
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40-N	101692	2023-07-31	2024-07-30
Amplifier	SCHWARZBECK	BBV 9743B	00251	2023-07-31	2024-07-30
Amplifier	HUABO	YXL0518-2.5-45	--	2023-07-31	2024-07-30
Amplifier	COM-MW	DLAN-18G-4G-02	10229104	2023-07-31	2024-07-30
Loop Antenna	DAZE	ZN30900C	21104	2023-08-07	2024-08-06
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2023-08-07	2024-08-06
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2023-08-07	2024-08-06
Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2023-08-07	2024-08-06
Conducted RF Testing					
RF Test System	MWRFTest	MW100-RFCB	220418SQS-37	2023-07-31	2024-07-30
Spectrum Analyzer	KEYSIGHT	N9020A	ATO-90521	2023-07-31	2024-07-30

1.6 Measurement Uncertainty

Test Item	Conditions	Uncertainty
Conducted Emissions	9kHz ~ 30MHz	±1.64 dB
Radiated Emissions	9kHz ~ 30MHz	±2.88 dB
	30MHz ~ 1GHz	±3.32 dB
	1GHz ~ 18GHz	±3.50 dB
	18GHz ~ 40GHz	±3.66 dB
Occupied Bandwidth	9kHz ~ 26GHz	±4.0 %

2. Summary of Test Results

FCC Rule	Description of Test Item	Result
FCC Part 15.203	Antenna Requirement	Passed
FCC Part 15.207	Conducted Emissions	N/A
FCC Part 15.209, 15.249(a)&(d)	Radiated Emissions	Passed
FCC Part 15.249(d)	Out of Band Emissions	Passed
FCC Part 15.215(c)	Occupied Bandwidth	Passed

Passed: The EUT complies with the essential requirements in the standard
Failed: The EUT does not comply with the essential requirements in the standard
N/A: Not applicable

3. Antenna Requirement

3.1 Standard and Limit

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 an PCB antenna, fulfill the requirement of this section.

4. Conducted Emissions

4.1 Standard and Limit

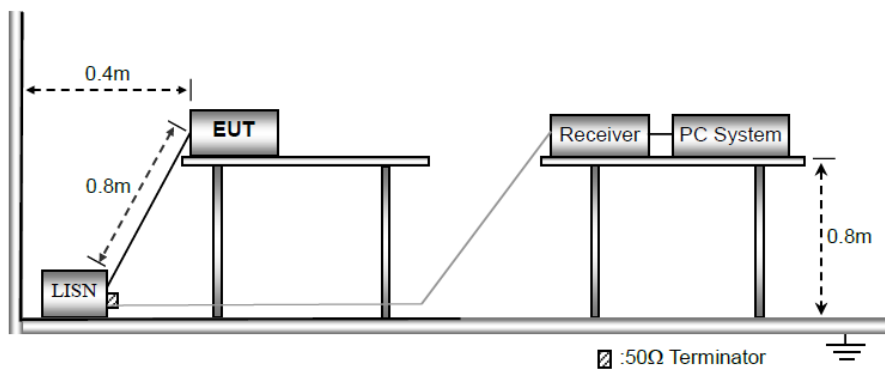
According to the rule FCC Part 15.207, Conducted emissions limit, the limit for a wireless device as below:

Frequency of Emission (MHz)	Conducted emissions (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Note 1: Decreases with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz
 Note 2: The lower limit applies at the band edges

4.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.2.



Test Setup Block Diagram

a) The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

b) The following is the setting of the receiver

- Attenuation: 10dB
- Start Frequency: 0.15MHz
- Stop Frequency: 30MHz
- IF Bandwidth: 9kHz

c) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

d) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

e) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

f) LISN is at least 80 cm from nearest part of EUT chassis.

g) For the actual test configuration, please refer to the related Item - photographs of the test setup.

4.3 Test Data and Results

Because the product power is supply through DC 3V by AAA*2 battery, so not applicable.

5. Radiated Emissions

5.1 Standard and Limit

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

According to §15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

According to the rule FCC Part 15.209, Radiated emission limit for a wireless device as below:

Frequency of emission (MHz)	Radiated emissions (3m)
	Quasi-peak (dBuV/m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

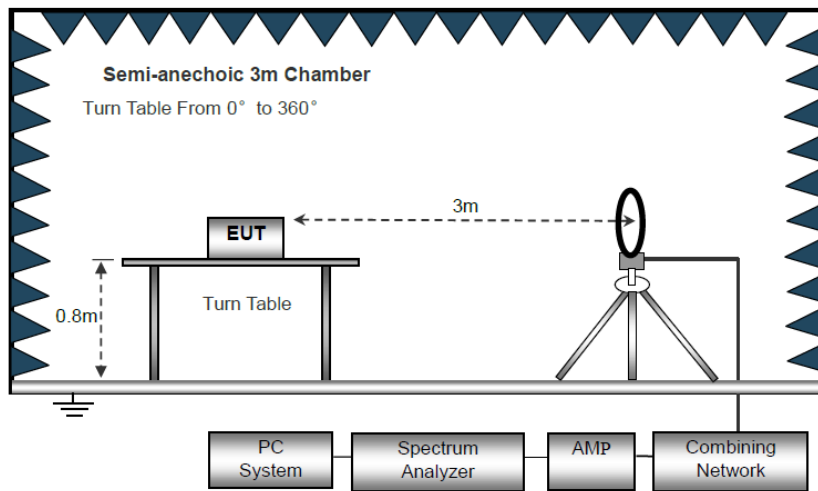
Note: The more stringent limit applies at transition frequencies.

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.

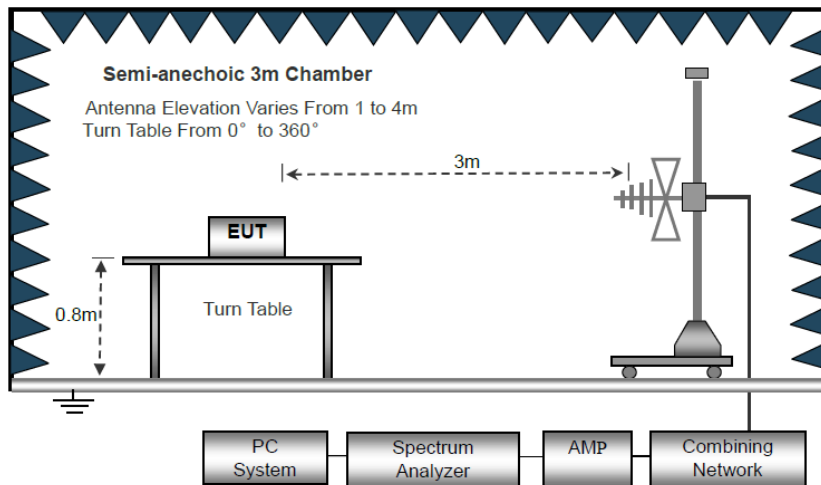
Note: Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

5.2 Test Procedure

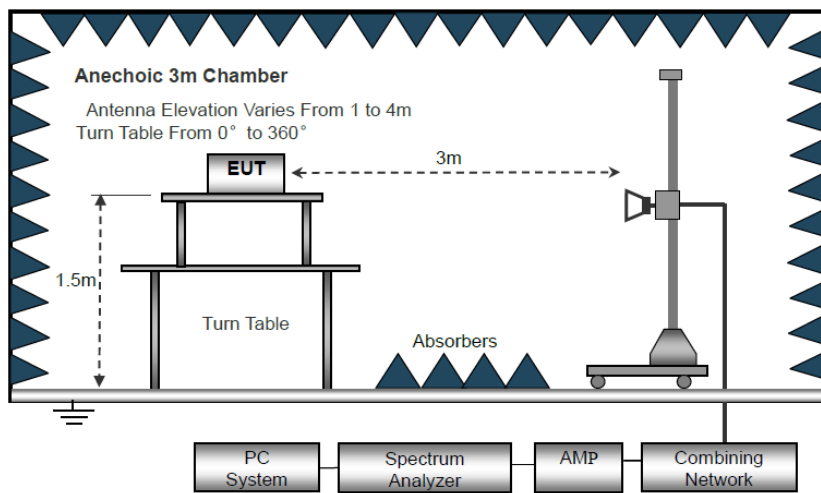
Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.



Block Diagram of Radiated Emission Below 30MHz



Block Diagram of Radiated Emission From 30MHz to 1GHz



Block Diagram of Radiated Emission Above 1GHz

- a) The EUT is placed on a turntable, which is 0.8m above ground plane for test frequency range below 1GHz, and 1.5m above ground plane for test frequency range above 1GHz.
- b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- c) Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for $f \geq 1\text{GHz}$, 100 kHz for $f < 1\text{GHz}$, 10kHz for $f < 30\text{MHz}$
VBW \geq RBW, Sweep = auto
Detector function = peak
Trace = max hold
- d) Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- e) The peak level, once corrected, must comply with the limit specified in Section 15.209. Set the RBW = 1MHz, VBW = 10Hz, Detector = PK for AV value, while maintaining all of the other instrument settings.
- f) For the actual test configuration, please refer to the related item - EUT test photos.

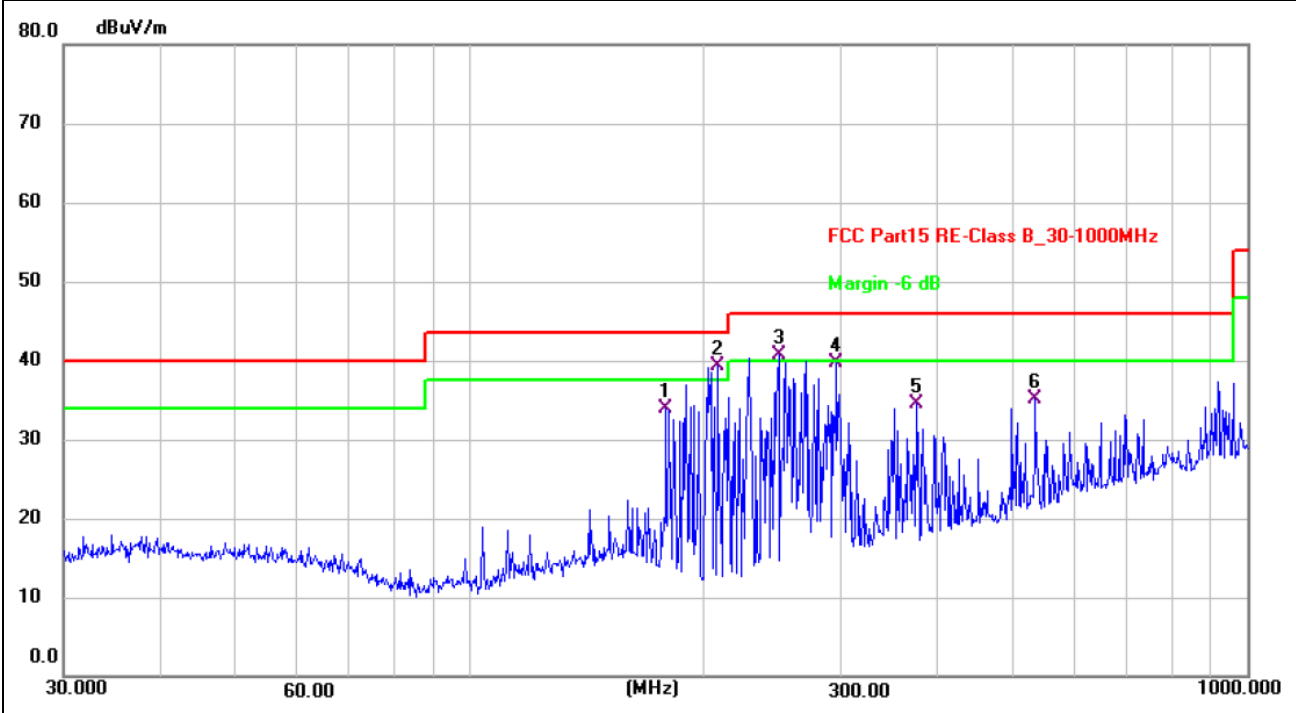
5.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.249 standard limit for a wireless device, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

Radiated Emission Test Data (30MHz to 1GHz)

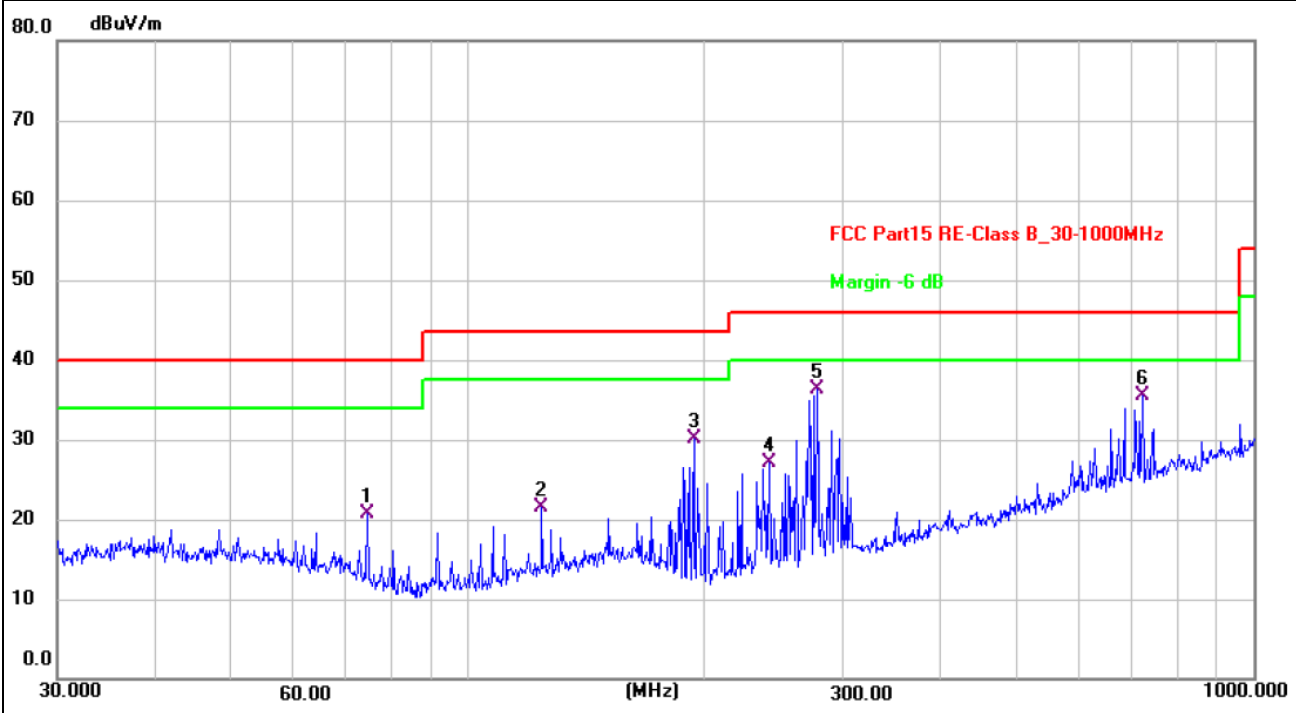
Tested Mode:	TM1
Test Antenna Polarization:	Horizontal
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	178.7584	44.46	-10.54	33.92	43.50	-9.58	QP	100	339	P	
2 *	208.5800	50.98	-11.68	39.30	43.50	-4.20	QP	100	339	P	
3 !	249.4250	50.50	-9.76	40.74	46.00	-5.26	QP	100	349	P	
4	296.1836	48.06	-8.39	39.67	46.00	-6.33	QP	100	8	P	
5	374.6225	41.47	-6.91	34.56	46.00	-11.44	QP	100	1	P	
6	533.8321	38.11	-3.08	35.03	46.00	-10.97	QP	100	37	P	

Radiated Emission Test Data (30MHz to 1GHz)

Tested Mode:	TM1
Test Antenna Polarization:	Vertical
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	74.3955	32.71	-11.98	20.73	40.00	-19.27	QP	100	191	P	
2	124.1330	31.78	-10.32	21.46	43.50	-22.04	QP	100	141	P	
3	193.7728	42.27	-12.13	30.14	43.50	-13.36	QP	100	334	P	
4	241.6763	37.07	-9.90	27.17	46.00	-18.83	QP	100	151	P	
5 *	278.0668	45.13	-8.87	36.26	46.00	-9.74	QP	100	141	P	
6	721.7259	34.74	0.69	35.43	46.00	-10.57	QP	100	303	P	

Radiated Emission Test Data (Above 1GHz)							
Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	PK/AV
Lowest Channel (2405MHz)							
2405	97.22	-20.89	76.33	114	-37.67	H	PK
2405	59.32	-20.89	38.43	94	-55.57	H	AV
4810	74.72	-14.72	60	74	-14	H	PK
4810	62.12	-14.72	47.4	54	-6.6	H	AV
7215	62.97	-8.41	54.56	74	-19.44	H	PK
7215	49.23	-8.41	40.82	54	-13.18	H	AV
2405	87.03	-20.89	66.14	114	-47.86	V	PK
2405	50.20	-20.89	32.31	94	-61.69	V	AV
4810	73.01	-14.72	58.29	74	-15.71	V	PK
4810	58.34	-14.72	43.62	54	-10.38	V	AV
7215	65.32	-8.41	56.91	74	-17.09	V	PK
7215	49.99	-8.41	41.58	54	-12.42	V	AV
Middle Channel (2441MHz)							
2441	94.45	-20.64	69.81	114	-44.19	H	PK
2441	58.53	-20.64	37.89	94	-56.11	H	AV
4880	76.79	-14.64	62.15	74	-11.85	H	PK
4882	62.19	-14.64	47.55	54	-6.45	H	AV
7323	64.04	-8.28	55.76	74	-18.24	H	PK
7323	45.74	-8.28	37.46	54	-16.54	H	AV
2441	83.55	-20.64	62.91	114	-51.09	V	PK
2441	50.53	-29.69	20.84	94	-73.16	V	AV
4880	73.16	-14.64	58.52	74	-15.48	V	PK
4882	59.23	-14.64	44.59	54	-9.41	V	AV
7323	65.39	-8.28	57.11	74	-16.89	V	PK
7323	48.13	-8.28	39.85	54	-14.15	V	AV

Radiated Emission Test Data (Above 1GHz)							
Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	PK/AV
Highest Channel (2475MHz)							
2475	90.79	-20.55	70.24	114	-43.76	H	PK
2475	55.22	-20.55	34.67	94	-59.33	H	AV
4950	79.48	-14.53	64.95	74	-9.05	H	PK
4950	61.52	-14.53	46.99	54	-7.01	H	AV
7425	62.26	-8.13	54.13	74	-19.87	H	PK
7425	47.4	-8.13	39.27	54	-14.73	H	AV
2475	81.06	-20.55	60.51	114	-53.49	V	PK
2475	43.70	-20.55	23.14	94	-70.85	V	AV
4950	76.57	-14.53	62.04	74	-11.96	V	PK
4950	60.6	-14.53	46.07	54	-7.93	V	AV
7425	64.61	-8.13	56.48	74	-17.52	V	PK
7425	46.66	-8.13	38.53	54	-15.47	V	AV

Note 1: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Note 2: Testing is carried out with frequency rang 9kHz to the tenth harmonics. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

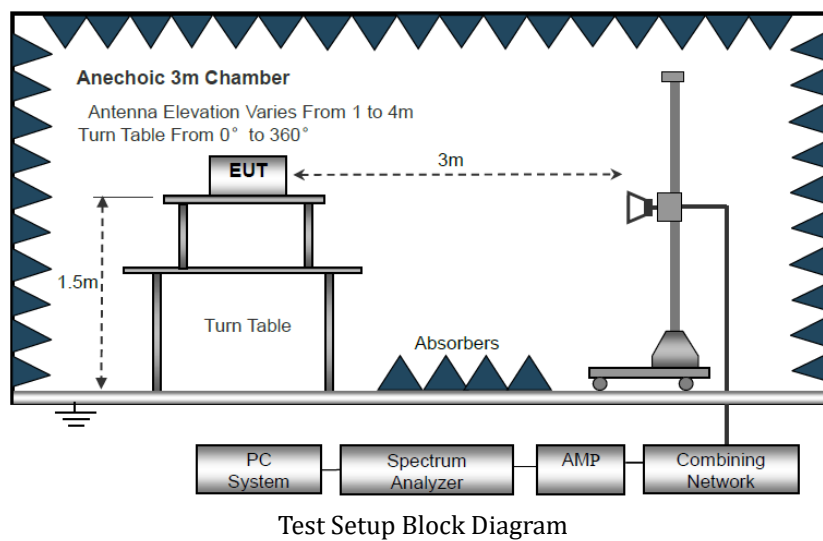
6. Out of Band Emissions

6.1 Standard and Limit

According to §15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

6.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.



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.

6.3 Test Data and Results

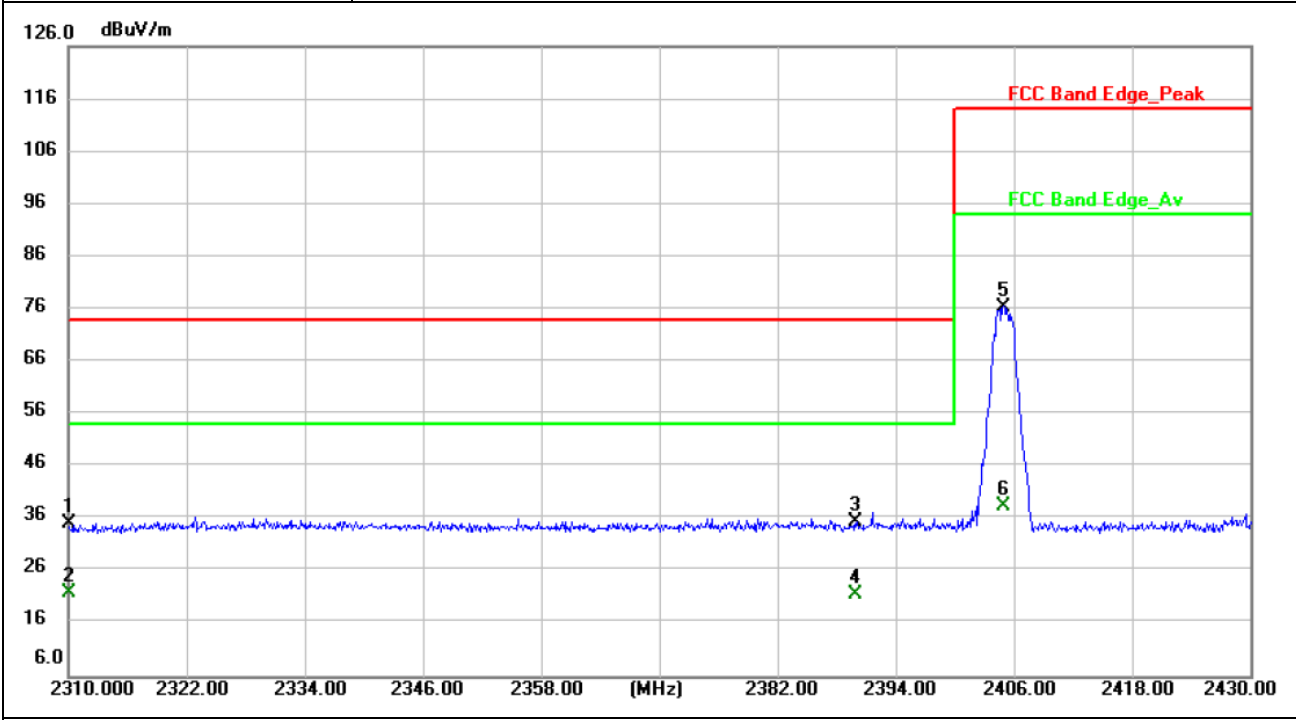
Based on all tested data, the EUT complied with the FCC Part 15.249 standard limit, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

Test Mode	Frequency	Limit	Result
	MHz	dBuV/dBc	
Lowest	2310.00	<54 dBuV	Pass
	2390.00	<54 dBuV	Pass
	2400.00	>30 dBc	Pass
Highest	2483.50	<54 dBuV	Pass
	2500.00	<54 dBuV	Pass

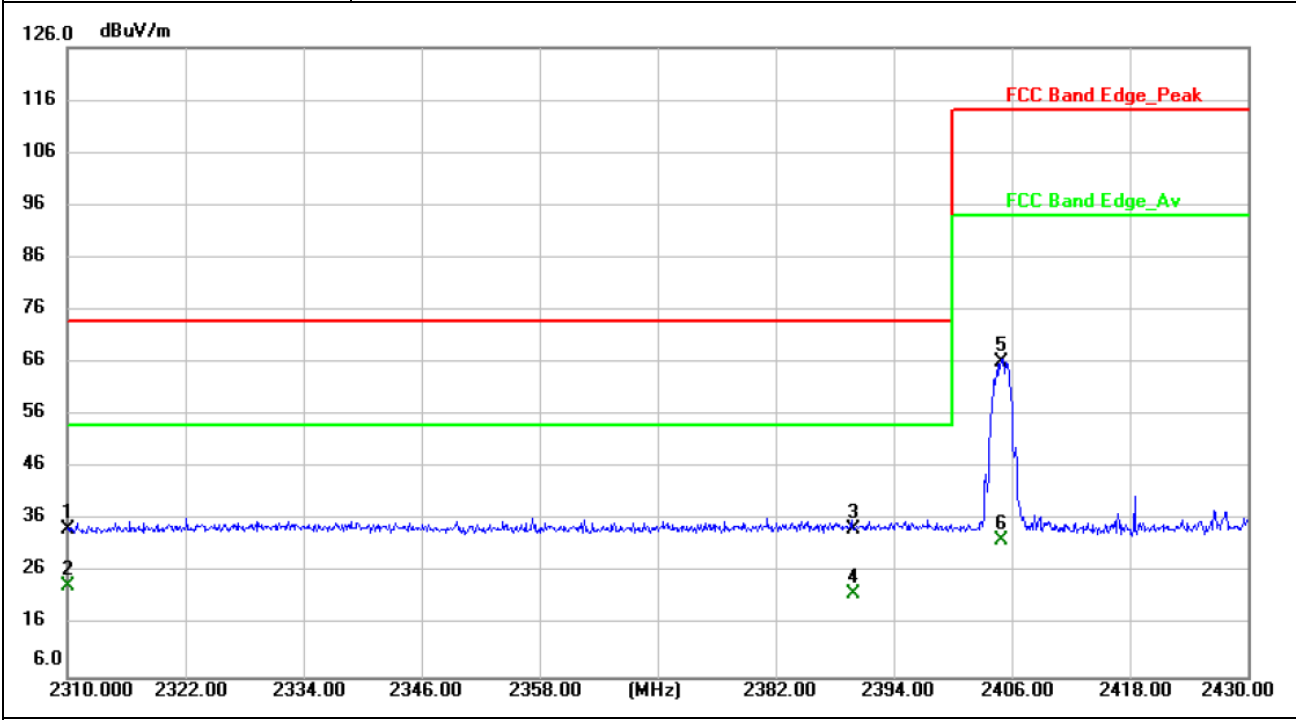
Test Plots and Data of Out of Band Emissions

Tested Mode:	TM1
Test Antenna Polarization:	Horizontal
Test Band-edge:	Lowest band-edge
Remark:	



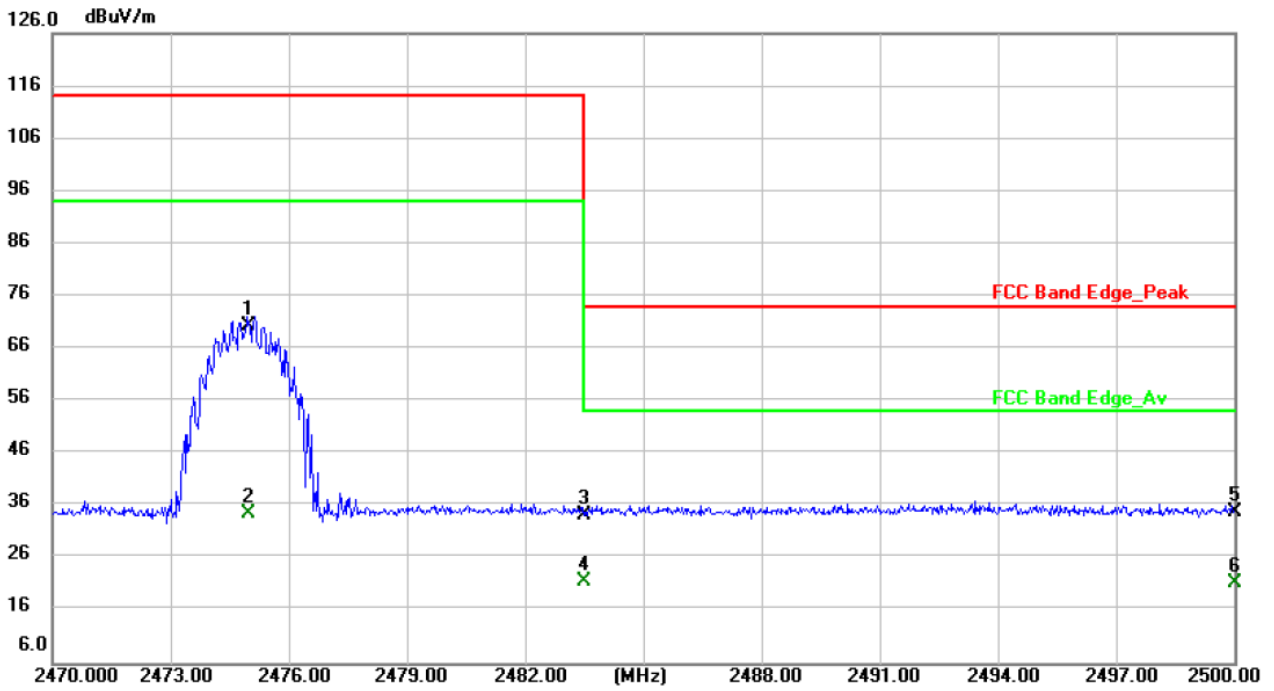
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2310.000	56.74	-21.34	35.40	74.00	-38.60	peak	150	144	P	
2 *	2310.000	43.48	-21.34	22.14	54.00	-31.86	AVG	150	144	P	
3	2390.000	56.39	-20.96	35.43	74.00	-38.57	peak	150	14	P	
4	2390.000	42.72	-20.96	21.76	54.00	-32.24	AVG	150	14	P	
5	2405.000	97.22	-20.89	76.33	114.00	-37.67	peak	150	342	P	
6	2405.000	59.32	-20.89	38.43	94.00	-55.57	AVG	150	342	P	

Test Plots and Data of Out of Band Emissions	
Tested Mode:	TM1
Test Antenna Polarization:	Vertical
Test Band-edge:	Lowest band-edge
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2310.000	55.75	-21.34	34.41	74.00	-39.59	peak	150	321	P	
2 *	2310.000	44.75	-21.34	23.41	54.00	-30.59	AVG	150	321	P	
3	2390.000	55.34	-20.96	34.38	74.00	-39.62	peak	150	317	P	
4	2390.000	42.87	-20.96	21.91	54.00	-32.09	AVG	150	317	P	
5	2405.000	87.03	-20.89	66.14	114.00	-47.86	peak	150	64	P	
6	2405.000	53.20	-20.89	32.31	94.00	-61.69	AVG	150	64	P	

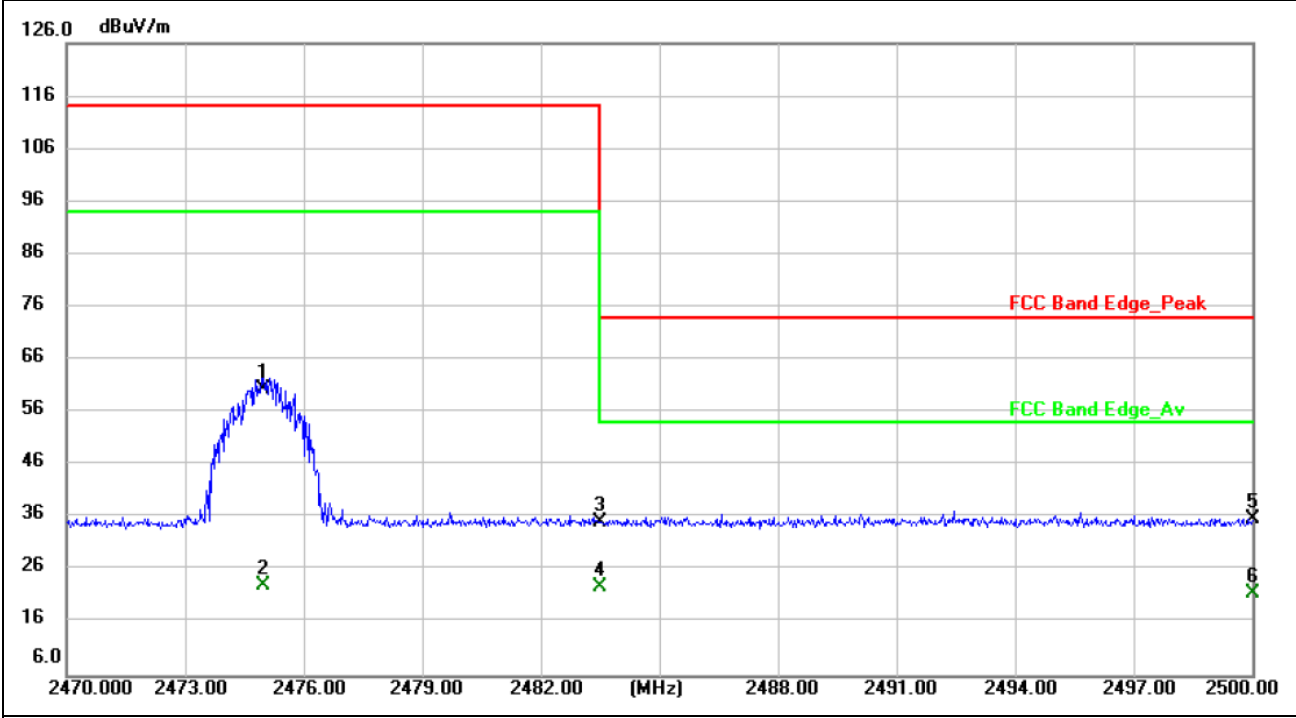
Test Plots and Data of Out of Band Emissions	
Tested Mode:	TM3
Test Antenna Polarization:	Horizontal
Test Band-edge:	Highest band-edge
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2475.000	90.79	-20.55	70.24	114.00	-43.76	peak	150	321	P	
2	2475.000	55.22	-20.55	34.67	94.00	-59.33	AVG	150	321	P	
3	2483.500	54.94	-20.51	34.43	74.00	-39.57	peak	150	24	P	
4 *	2483.500	42.25	-20.51	21.74	54.00	-32.26	AVG	150	24	P	
5	2500.000	55.41	-20.43	34.98	74.00	-39.02	peak	150	167	P	
6	2500.000	41.84	-20.43	21.41	54.00	-32.59	AVG	150	167	P	

Test Plots and Data of Out of Band Emissions

Tested Mode:	TM3
Test Antenna Polarization:	Vertical
Test Band-edge:	Highest band-edge
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2475.000	81.06	-20.55	60.51	114.00	-53.49	peak	150	74	P	
2	2475.000	43.70	-20.55	23.15	94.00	-70.85	AVG	150	74	P	
3	2483.500	55.80	-20.51	35.29	74.00	-38.71	peak	150	127	P	
4 *	2483.500	43.37	-20.51	22.86	54.00	-31.14	AVG	150	127	P	
5	2500.000	56.13	-20.43	35.70	74.00	-38.30	peak	150	52	P	
6	2500.000	42.07	-20.43	21.64	54.00	-32.36	AVG	150	52	P	

7. Occupied Bandwidth

7.1 Standard and Limit

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.

7.2 Test Procedure

According to the ANSI 63.10-2013, section 6.9, 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 = 2MHz, centered on a transmitting channel

RBW \geq 1% 20dB Bandwidth, VBW \geq 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.



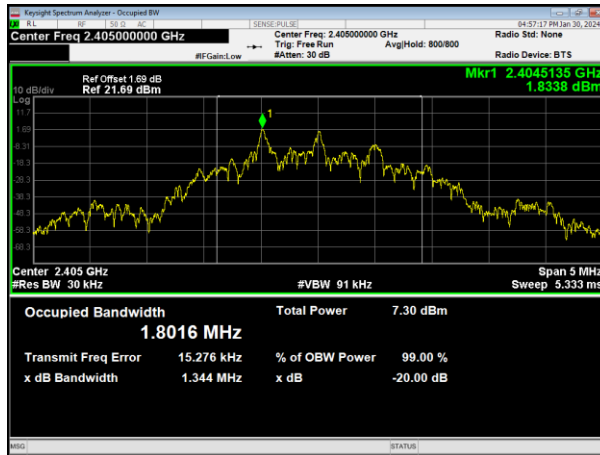
Test Setup Block Diagram

7.3 Test Data and Results

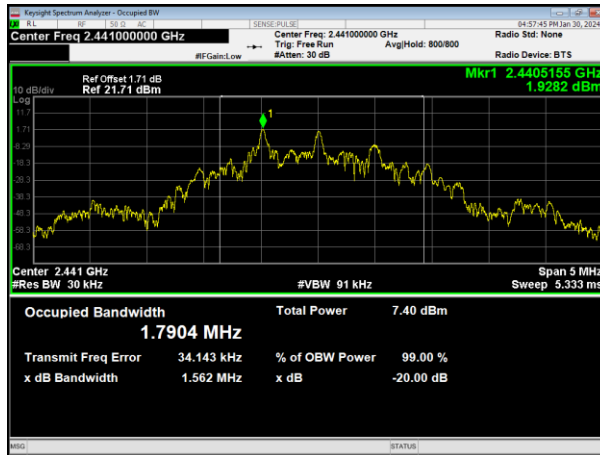
Test Channel	Test Frequency	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
Lowest Channel	2405MHz	1.344	1.8016
Middle Channel	2441MHz	1.562	1.7904
Highest Channel	2475MHz	1.689	1.7992

Test Plots of Occupied Bandwidth

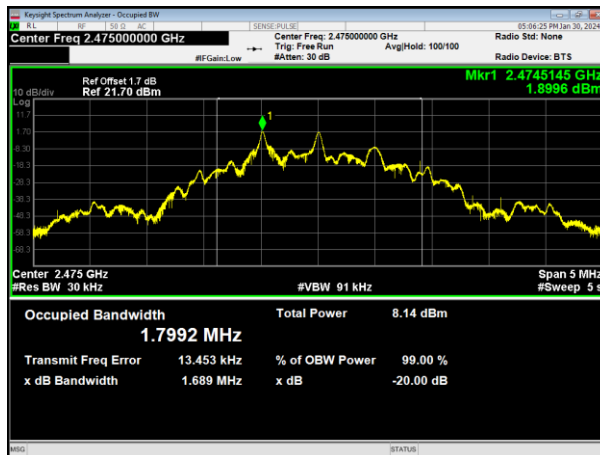
2405MHz



2441MHz



2475MHz



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