Shenzhen HTT Technology Co., Ltd.

TEST REPORT

FCC PART 15.247

Report Reference No..... :	**HTT2025031367F01**
FCC ID..... :	**2AVYJ-HR1010**
Compiled by (position+printed name+signature) .:	File administrators Heber He
Supervised by (position+printed name+signature) .:	Project Engineer Bruce Zhu
Approved by (position+printed name+signature) .:	RF Manager Kevin Yang
Date of issue .....:	Apr. 23, 2025
Testing Laboratory Name .....:	**Shenzhen HTT Technology Co.,Ltd.**
Address.....:	1F, Building B, Huafeng International Robotics Industrial Park, Hangcheng Road,Nanchang Community, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
Applicant's name.....:	**Guangdong WangJia Intelligent Robot Co., LTD.**
Address .....:	Room 101, No. 9 Zhenxing Road, Houjie Qiaotou, Houjie Town, Dongguan City, Guangdong, P.R. China
Test specification .....**:**	
Standard.....:	**FCC PART 15.247**

Test item description .....:	**Robotic Vacuum Cleaner**
Trade Mark .....:	N/A
Manufacturer .....:	Guangdong WangJia Intelligent Robot Co., LTD.
Model/Type reference .....:	HR1010
Listed Models .....:	HR1020, MR1, MR1 SE, MR1 PRO, MR2, MR2 SE, HR10XXX(X=A-Z or number or blank）
Modulation Type.....:	CCK/DSSS/ OFDM
Operation Frequency.....:	From 2412 - 2462MHz
Rating .....:	Battery: 10.8Vdc 2500mAh Input: 15.0Vdc 0.8A
Result .....:	**PASS**

TEST REPORT

Equipment under Test	:	Robotic Vacuum Cleaner
Model /Type	:	HR1010
Series Model No.	:	HR1020, MR1, MR1 SE, MR1 PRO, MR2, MR2 SE, HR10XXX(X=A-Z or number or blank）
Model difference	:	The PCB board, circuit, structure and internal of these models are the same, Only model number and colour is different for these model.
Applicant	:	Guangdong WangJia Intelligent Robot Co., LTD.
Address	:	Room 101, No. 9 Zhenxing Road, Houjie Qiaotou, Houjie Town, Dongguan City, Guangdong, P.R. China
Manufacturer	:	Guangdong WangJia Intelligent Robot Co., LTD.
Address	:	Room 101, No. 9 Zhenxing Road, Houjie Qiaotou, Houjie Town, Dongguan City, Guangdong, P.R. China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.
ANSI C63.10:2013 : American National Standard for Testing Unlicensed Wireless Devices

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 40GHz

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	Apr. 01, 2025
Testing commenced on	:	Apr. 01, 2025
Testing concluded on	:	Apr. 23, 2025

2.2 Product Description

Product Name:	Robotic Vacuum Cleaner
Model/Type reference:	HR1010
Power supply:	Battery: 10.8Vdc 2500mAh Input: 15.0Vdc 0.8A
Adapter 1:	MODEL: SA12BV-150080U INPUT: 100-240V~50/60Hz 0.4A OUTPUT: 15V⎓0.8A
Adapter 2:	MODEL: CZH013150080USWP INPUT: 100-240V~50/60Hz 0.4A Max OUTPUT: 15V⎓0.8A
Adapter 3:	MODEL: NLB080150W1A10S58 INPUT: 100-240V~50/60Hz 0.5A Max OUTPUT: 15V⎓0.8A
testing sample ID：	HTT2025031367-1# (Engineer sample), HTT2025031367-2# (Normal sample)
Hardware version:	/
Software version:	/
WIFI :	
Supported type:	802.11b/802.11g/802.11n(H20)
Modulation:	802.11b: DSSS 802.11g/802.11n(H20): OFDM
Operation frequency:	802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz
Channel number:	802.11b/802.11g/802.11n(H20): 11
Channel separation:	5MHz
Antenna type:	PCB antenna
Antenna gain:	2.50 dBi

2.3 Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	230V / 50 Hz	○	120V / 60Hz
		○	12 V DC	○	24 V DC
		●	Other (specified in blank below)		

DC 10.8V from Battery and 15.0V from Adapter

2.4 Short description of the Equipment under Test (EUT)

This is a Robotic Vacuum Cleaner .
For more details, refer to the user's manual of the EUT.

2.5 EUT operation mode

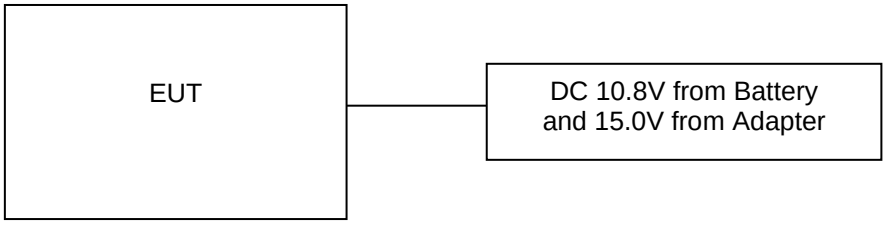
The application provider specific test software to control sample in continuous TX and RX for testing meet KDB558074 test requirement.

Test Software Version	AmebaZ2_mptool_1v3		
Frequency	2412MHz	2437MHz	2462 MHz
802.11b	90	86	85
802.11g	90	86	85
802.11n20	90	86	85

IEEE 802.11b/g/n: Thirteen channels are provided to the EUT.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

2.6 Block Diagram of Test Setup



2.7 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.8 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen HTT Technology Co.,Ltd.
1F, Building B, Huafeng International Robotics Industrial Park, Hangcheng Road,Nanchang Community, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China

3.2 Test Facility

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

FCC-Registration No.: 779513 Designation Number: CN1319
Shenzhen HTT Technology Co.,Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6435.01
Shenzhen HTT Technology Co.,Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

ISED#: 27952 CAB identifier: CN0128
Shenzhen HTT Technology Co.,Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010

3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:
Radiated Emission:

Temperature:	24 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

AC Power Conducted Emission:

Temperature:	25 ° C
Humidity:	46 %
Atmospheric pressure:	950-1050mbar

Conducted testing:

Temperature:	25 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

3.4 Test Description

FCC Requirements		
FCC 15.107(a) FCC 15.207	AC Power Conducted Emission	PASS
FCC 15.247(a)	6dB Bandwidth & 99% Bandwidth	PASS
FCC 15.247(d)	Spurious RF Conducted Emission	PASS
FCC 15.247(b)	Maximum Conducted Output Power	PASS
FCC 15.247(e)	Power Spectral Density	PASS
FCC Part 15.205/ 15.209	Radiated Emissions	PASS
FCC15.205 FCC 15.247(d)	Band Edge	PASS
FCC 15.203	Antenna Requirement	PASS

Data Rate Used:
Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel
Maximum Peak Conducted Output Power Power Spectral Density 6dB Bandwidth Spurious RF conducted emission Radiated Emission 9KHz~1GHz& Radiated Emission 1GHz~10th Harmonic	11b/DSSS	1 Mbps	1/6/11
	11g/OFDM	6 Mbps	1/6/11
	11n(20MHz)/OFDM	6.5Mbps	1/6/11
Band Edge	11b/DSSS	1 Mbps	1/11
	11g/OFDM	6 Mbps	1/11
	11n(20MHz)/OFDM	6.5Mbps	1/11

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen HTT Technology Co.,Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen HTT Technology Co.,Ltd. :

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.12 dB	(1)
Radiated Emission	30~1000MHz	4.37 dB	(1)
Radiated Emission	1~18GHz	5.40 dB	(1)
Radiated Emission	18-40GHz	5.45 dB	(1)
Conducted Disturbance	0.15~30MHz	2.68 dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

3.6 Equipments Used during the Test

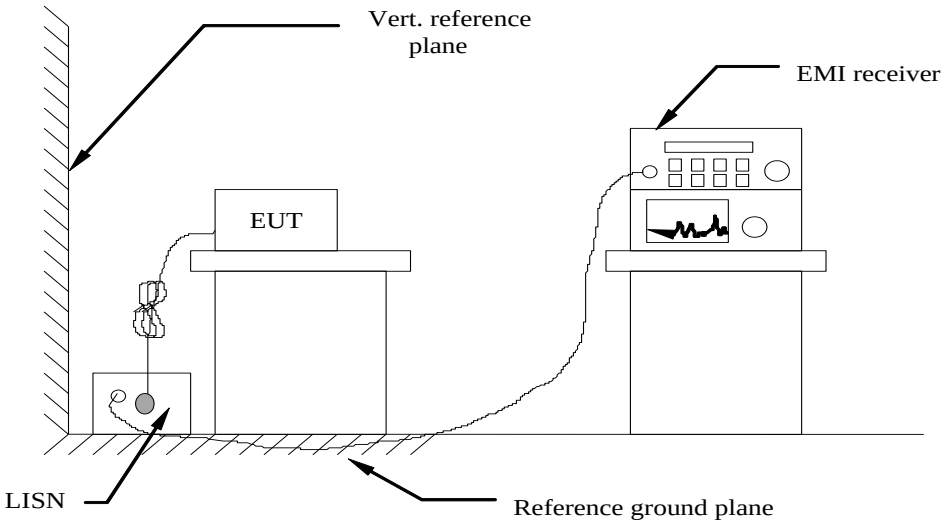
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	Shenzhen C.R.T technology co., LTD	9*6*6	HTT-E028	Aug. 10 2024	Aug. 09 2027
2	Control Room	Shenzhen C.R.T technology co., LTD	4.8*3.5*3.0	HTT-E030	Aug. 10 2024	Aug. 09 2027
3	EMI Test Receiver	Rohde&Schwar	ESCI7	HTT-E022	Apr. 26 2024	Apr. 25 2025
4	Spectrum Analyzer	Rohde&Schwar	FSP	HTT-E037	Apr. 26 2024	Apr. 25 2025
5	Coaxial Cable	ZDecl	ZT26-NJ-NJ-0.6M	HTT-E018	Apr. 26 2024	Apr. 25 2025
6	Coaxial Cable	ZDecl	ZT26-NJ-SMAJ-2M	HTT-E019	Apr. 26 2024	Apr. 25 2025
7	Coaxial Cable	ZDecl	ZT26-NJ-SMAJ-0.6M	HTT-E020	Apr. 26 2024	Apr. 25 2025
8	Coaxial Cable	ZDecl	ZT26-NJ-SMAJ-8.5M	HTT-E021	Apr. 26 2024	Apr. 25 2025
9	Composite logarithmic antenna	Schwarzbeck	VULB 9168	HTT-E017	May. 21 2024	May. 20 2025
10	Horn Antenna	Schwarzbeck	BBHA9120D	HTT-E016	May. 20 2024	May. 19 2025
11	Loop Antenna	Zhinan	ZN30900C	HTT-E039	Apr. 26 2024	Apr. 25 2025
12	Horn Antenna	Beijing Hangwei Dayang	OBH100400	HTT-E040	Apr. 26 2024	Apr. 25 2025
13	low frequency Amplifier	Sonoma Instrument	310	HTT-E015	Apr. 26 2024	Apr. 25 2025
14	high-frequency Amplifier	HP	8449B	HTT-E014	Apr. 26 2024	Apr. 25 2025
15	Variable frequency power supply	Shenzhen Anbiao Instrument Co., Ltd	ANB-10VA	HTT-082	Apr. 26 2024	Apr. 25 2025
16	EMI Test Receiver	Rohde & Schwarz	ESCS30	HTT-E004	Apr. 26 2024	Apr. 25 2025
17	Artificial Mains	Rohde & Schwarz	ESH3-Z5	HTT-E006	May. 23 2024	May. 22 2025
18	Artificial Mains	Rohde & Schwarz	ENV-216	HTT-E038	May. 23 2024	May. 22 2025
19	Cable Line	Robinson	Z302S-NJ-BNCJ-1.5M	HTT-E001	Apr. 26 2024	Apr. 25 2025
20	Attenuator	Robinson	6810.17A	HTT-E007	Apr. 26 2024	Apr. 25 2025
21	Variable frequency power supply	Shenzhen Yanghong Electric Co., Ltd	YF-650（5KVA）	HTT-E032	Apr. 26 2024	Apr. 25 2025
22	Control Room	Shenzhen C.R.T technology co., LTD	8*4*3.5	HTT-E029	Aug. 10 2024	Aug. 09 2027
23	DC power supply	Agilent	E3632A	HTT-E023	Apr. 26 2024	Apr. 25 2025
24	EMI Test Receiver	Agilent	N9020A	HTT-E024	Apr. 26 2024	Apr. 25 2025
25	Analog signal generator	Agilent	N5181A	HTT-E025	Apr. 26 2024	Apr. 25 2025
26	Vector signal generator	Agilent	N5182A	HTT-E026	Apr. 26 2024	Apr. 25 2025
27	Power sensor	Keysight	U2021XA	HTT-E027	Apr. 26 2024	Apr. 25 2025
28	Temperature and humidity meter	Shenzhen Anbiao Instrument Co., Ltd	TH10R	HTT-074	Apr. 28 2024	Apr. 27 2025

29	Radiated Emission Test Software	Farad	EZ-EMC	N/A	N/A	N/A
30	Conducted Emission Test Software	Farad	EZ-EMC	N/A	N/A	N/A
31	RF Test Software	panshanrf	TST	N/A	N/A	N/A

4 TEST CONDITIONS AND RESULTS

4.1 AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10-2013.
2 Support equipment, if needed, was placed as per ANSI C63.10-2013
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013
4 The EUT received power from adapter, the adapter received AC120V/60Hz and AC 240V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments received AC power from a second LISN, if any.
6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT.The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8 During the above scans, the emissions were maximized by cable manipulation.

AC Power Conducted Emission Limit

For intentional device, according to RSS–Gen 8.8. AC Power Conducted Emission Limits is as following：

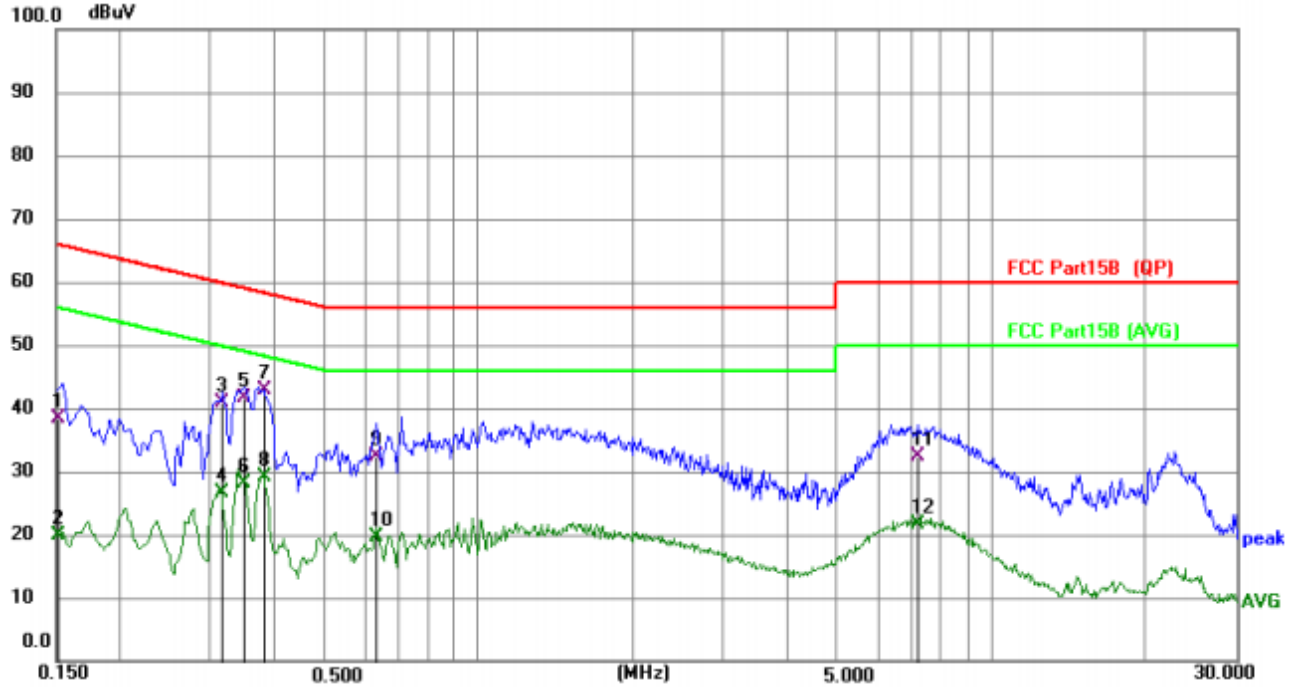
Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

TEST RESULTS

PASS

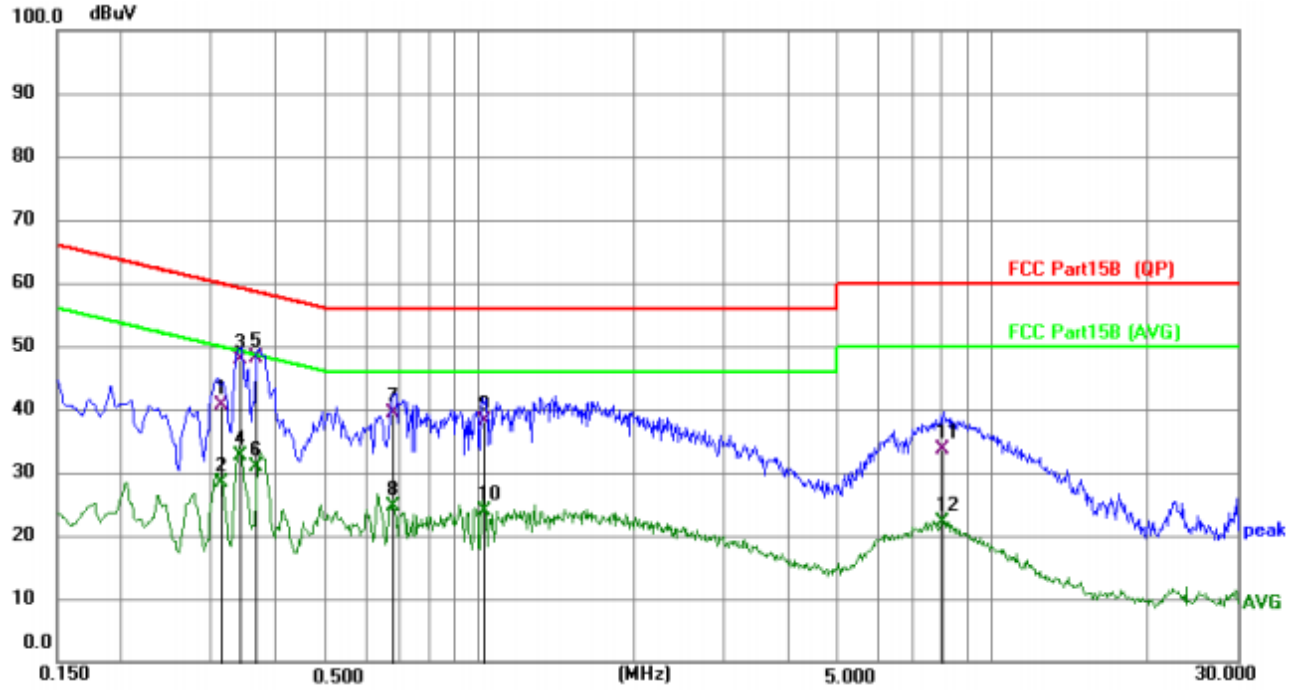
Remark: All three channels (lowest/middle/highest) of each mode were measured below 1GHz and recorded worst case at 802.11b low channel.

Measurement data:
Adapter 1:
Line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1522	28.35	10.08	38.43	65.88	-27.45	QP
2		0.1522	9.87	10.08	19.95	55.88	-35.93	AVG
3		0.3150	30.65	10.19	40.84	59.84	-19.00	QP
4		0.3150	16.49	10.19	26.68	49.84	-23.16	AVG
5		0.3490	31.45	10.13	41.58	58.99	-17.41	QP
6		0.3490	18.12	10.13	28.25	48.99	-20.74	AVG
7	*	0.3795	32.68	10.10	42.78	58.29	-15.51	QP
8		0.3795	19.13	10.10	29.23	48.29	-19.06	AVG
9		0.6342	22.04	10.22	32.26	56.00	-23.74	QP
10		0.6342	9.53	10.22	19.75	46.00	-26.25	AVG
11		7.2055	22.28	10.12	32.40	60.00	-27.60	QP
12		7.2055	11.47	10.12	21.59	50.00	-28.41	AVG

Neutral:

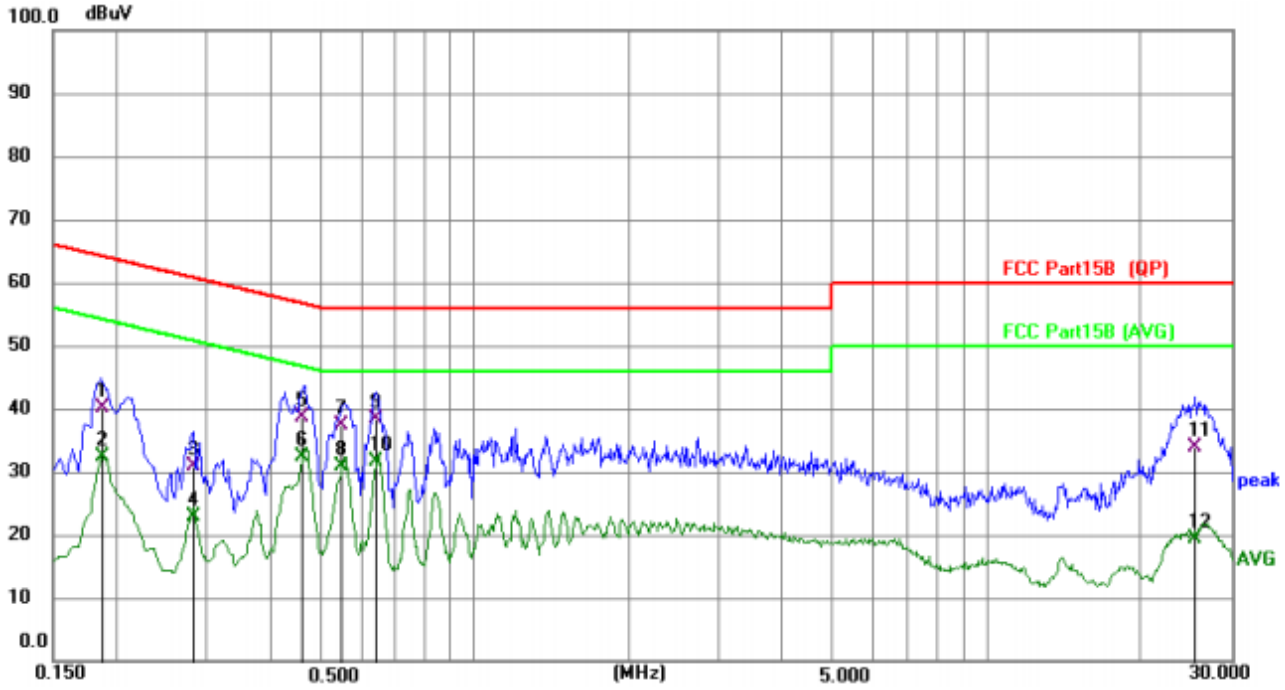


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.3138	30.55	10.20	40.75	59.87	-19.12	QP
2		0.3138	18.25	10.20	28.45	49.87	-21.42	AVG
3		0.3424	37.66	10.17	47.83	59.14	-11.31	QP
4		0.3424	22.53	10.17	32.70	49.14	-16.44	AVG
5	*	0.3688	37.96	10.15	48.11	58.53	-10.42	QP
6		0.3688	20.84	10.15	30.99	48.53	-17.54	AVG
7		0.6823	29.23	10.18	39.41	56.00	-16.59	QP
8		0.6823	14.50	10.18	24.68	46.00	-21.32	AVG
9		1.0246	27.86	10.19	38.05	56.00	-17.95	QP
10		1.0246	13.64	10.19	23.83	46.00	-22.17	AVG
11		8.0428	23.43	10.18	33.61	60.00	-26.39	QP
12		8.0428	11.85	10.18	22.03	50.00	-27.97	AVG

Notes:

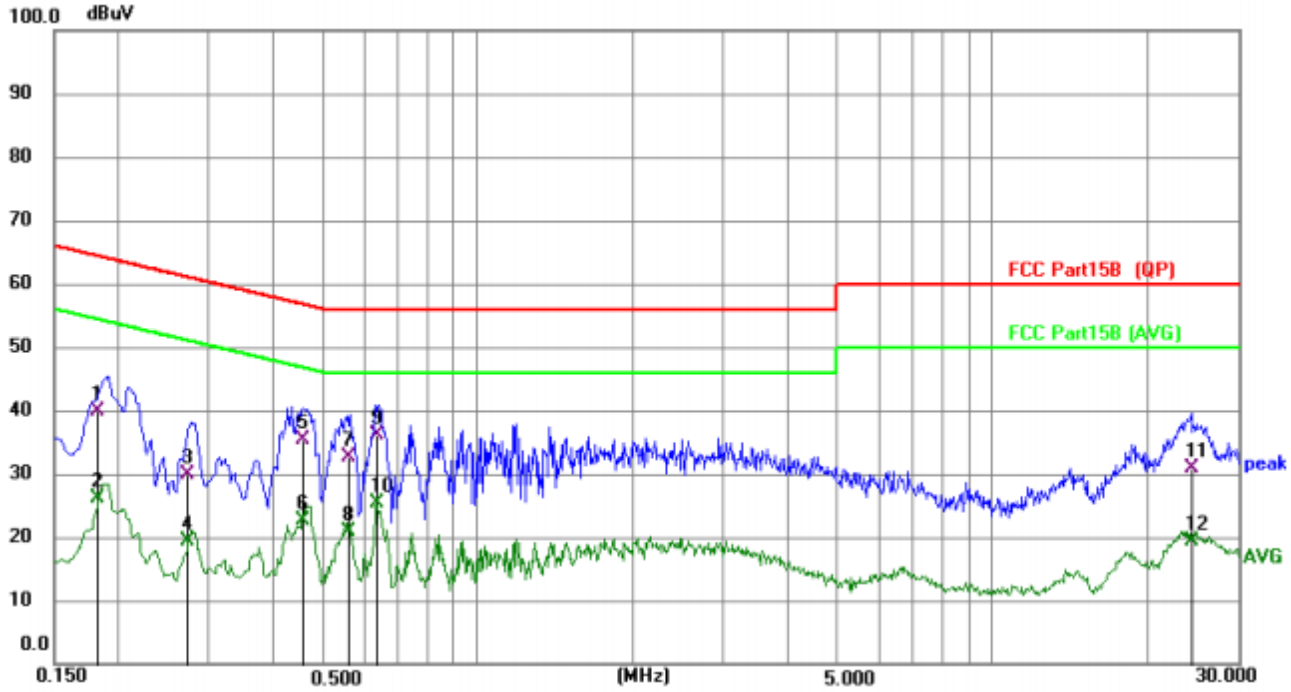
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Los

Adapter 2:
Line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1879	30.00	10.15	40.15	64.13	-23.98	QP
2		0.1879	22.24	10.15	32.39	54.13	-21.74	AVG
3		0.2810	20.63	10.22	30.85	60.79	-29.94	QP
4		0.2810	12.78	10.22	23.00	50.79	-27.79	AVG
5		0.4601	28.59	10.09	38.68	56.69	-18.01	QP
6	*	0.4601	22.37	10.09	32.46	46.69	-14.23	AVG
7		0.5514	27.21	10.16	37.37	56.00	-18.63	QP
8		0.5514	20.80	10.16	30.96	46.00	-15.04	AVG
9		0.6430	28.25	10.22	38.47	56.00	-17.53	QP
10		0.6430	21.49	10.22	31.71	46.00	-14.29	AVG
11		25.5530	22.53	11.47	34.00	60.00	-26.00	QP
12		25.5530	7.96	11.47	19.43	50.00	-30.57	AVG

Neutral:

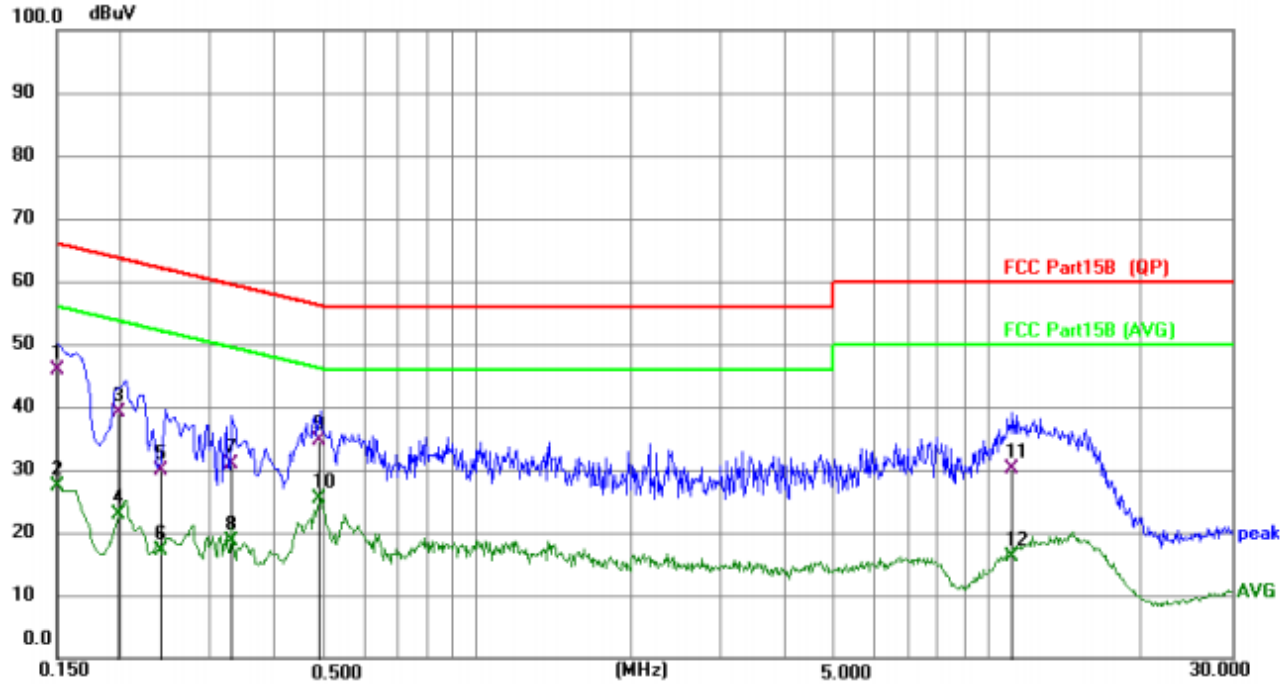


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1833	29.68	10.22	39.90	64.33	-24.43	QP
2		0.1833	15.87	10.22	26.09	54.33	-28.24	AVG
3		0.2742	19.74	10.20	29.94	60.99	-31.05	QP
4		0.2742	9.26	10.20	19.46	50.99	-31.53	AVG
5		0.4562	25.26	10.14	35.40	56.76	-21.36	QP
6		0.4562	12.43	10.14	22.57	46.76	-24.19	AVG
7		0.5598	22.51	10.17	32.68	56.00	-23.32	QP
8		0.5598	10.71	10.17	20.88	46.00	-25.12	AVG
9	*	0.6360	26.03	10.19	36.22	56.00	-19.78	QP
10		0.6360	15.13	10.19	25.32	46.00	-20.68	AVG
11		24.3604	19.41	11.38	30.79	60.00	-29.21	QP
12		24.3604	8.12	11.38	19.50	50.00	-30.50	AVG

Notes:

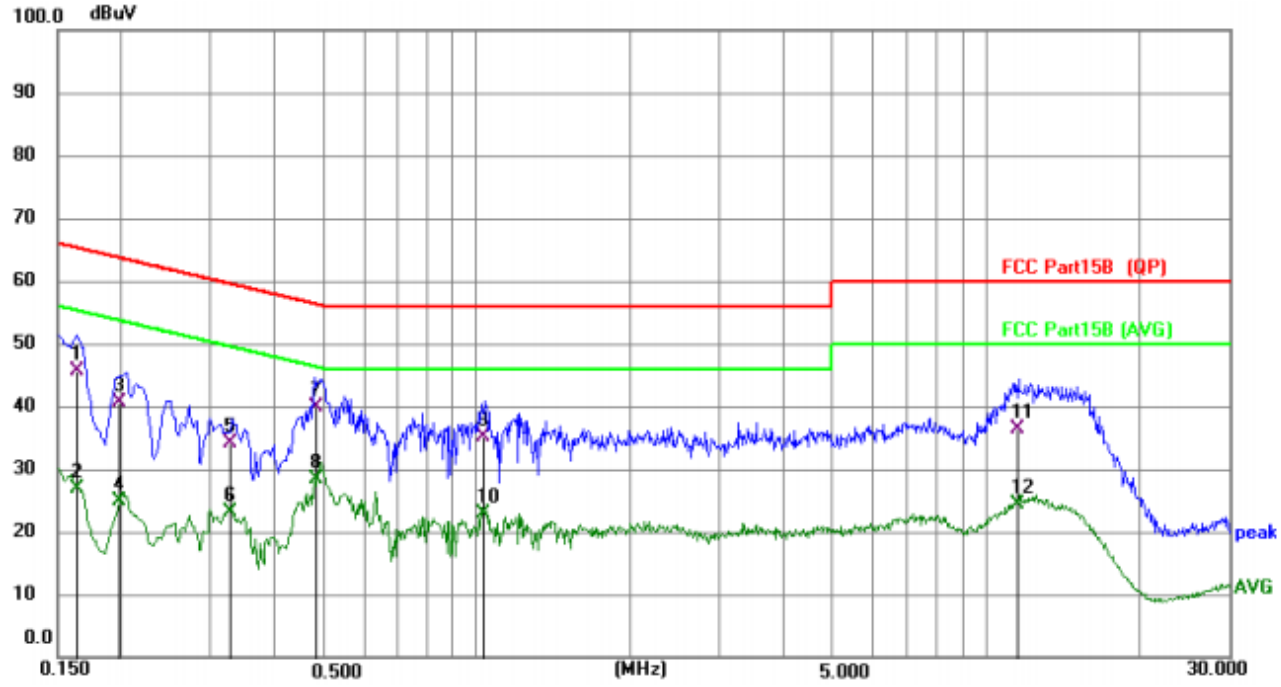
4. An initial pre-scan was performed on the line and neutral lines with peak detector.
5. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
6. Final Level =Receiver Read level + LISN Factor + Cable Los

Adapter 3:
Line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1	*	0.1505	35.74	10.08	45.82	65.97	-20.15	QP
2		0.1505	17.21	10.08	27.29	55.97	-28.68	AVG
3		0.1978	28.95	10.18	39.13	63.70	-24.57	QP
4		0.1978	12.69	10.18	22.87	53.70	-30.83	AVG
5		0.2415	19.76	10.22	29.98	62.04	-32.06	QP
6		0.2415	6.83	10.22	17.05	52.04	-34.99	AVG
7		0.3291	20.72	10.17	30.89	59.47	-28.58	QP
8		0.3291	8.55	10.17	18.72	49.47	-30.75	AVG
9		0.4896	24.47	10.09	34.56	56.17	-21.61	QP
10		0.4896	15.18	10.09	25.27	46.17	-20.90	AVG
11		11.1625	19.88	10.24	30.12	60.00	-29.88	QP
12		11.1625	5.86	10.24	16.10	50.00	-33.90	AVG

Neutral:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1635	35.48	10.20	45.68	65.28	-19.60	QP
2		0.1635	16.77	10.20	26.97	55.28	-28.31	AVG
3		0.1988	30.36	10.20	40.56	63.66	-23.10	QP
4		0.1988	14.64	10.20	24.84	53.66	-28.82	AVG
5		0.3267	24.07	10.18	34.25	59.53	-25.28	QP
6		0.3267	13.07	10.18	23.25	49.53	-26.28	AVG
7	*	0.4849	29.74	10.13	39.87	56.25	-16.38	QP
8		0.4849	18.31	10.13	28.44	46.25	-17.81	AVG
9		1.0303	24.96	10.19	35.15	56.00	-20.85	QP
10		1.0303	12.71	10.19	22.90	46.00	-23.10	AVG
11		11.5582	25.92	10.42	36.34	60.00	-23.66	QP
12		11.5582	13.92	10.42	24.34	50.00	-25.66	AVG

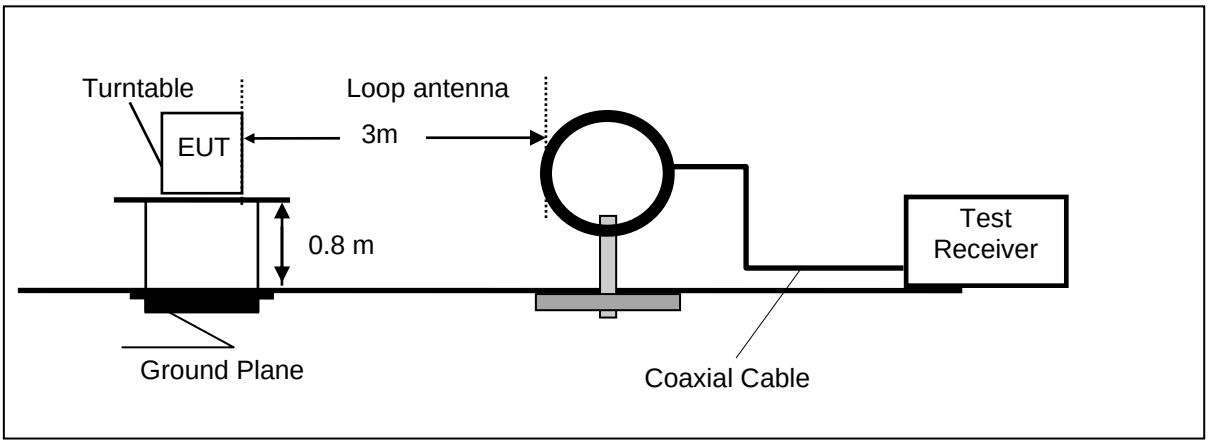
Notes:

7. An initial pre-scan was performed on the line and neutral lines with peak detector.
8. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
9. Final Level =Receiver Read level + LISN Factor + Cable Los

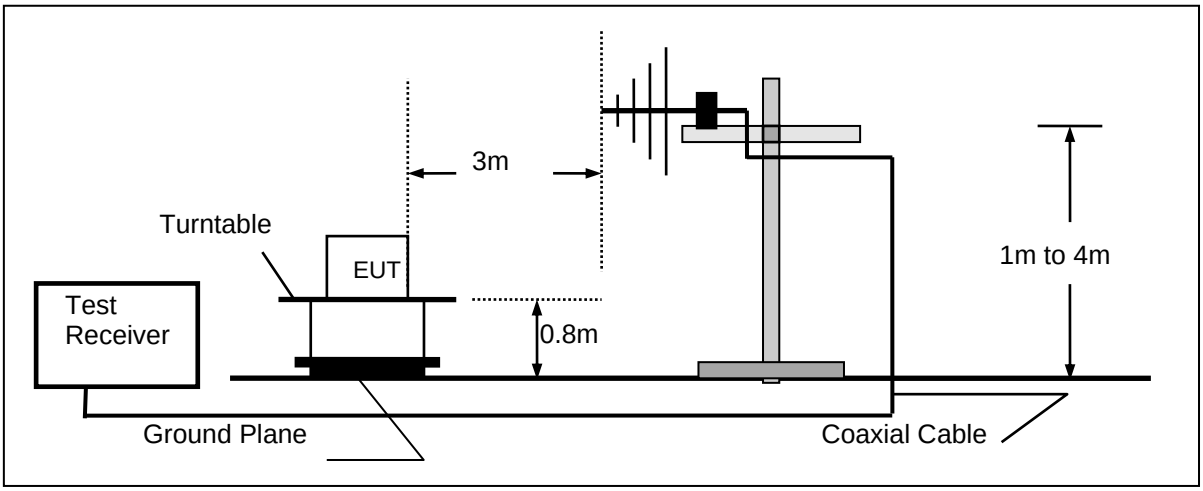
4.2 Radiated Emission

TEST CONFIGURATION

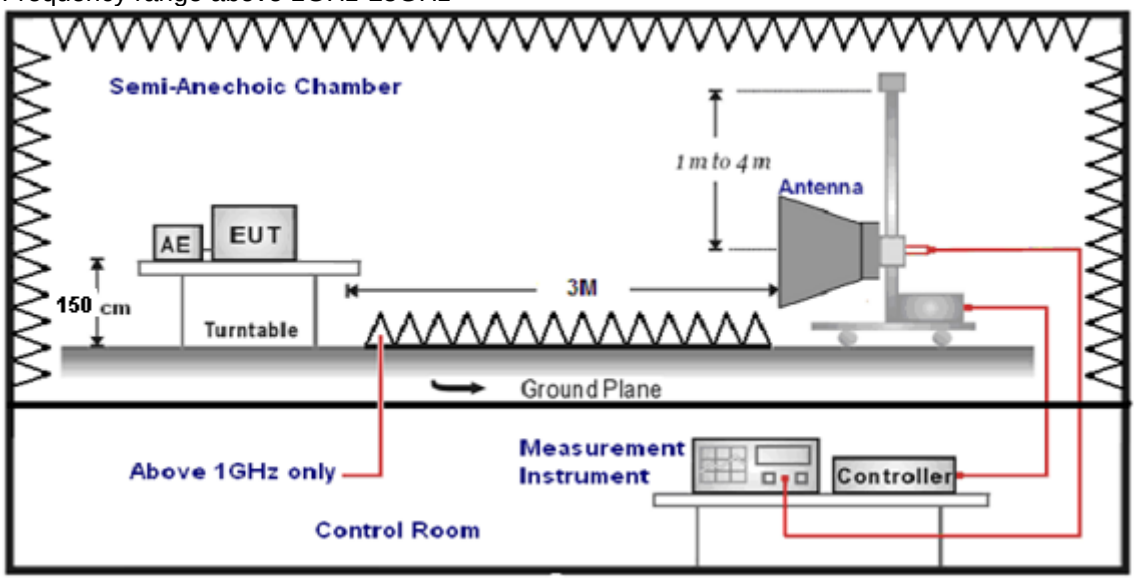
Frequency range 9 KHz – 30MHz



Frequency range 30MHz – 1000MHz



Frequency range above 1GHz-25GHz



TEST PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –1GHz;the EUT was placed on a turn table which is 1.5m above ground plane when testing frequency range 1GHz – 25GHz.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. Radiated emission test frequency band from 9KHz to 25GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Anternna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

Transd=AF +CL-AG

RADIATION LIMIT

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Except when the requirements applicable to a given device state otherwise, emissions from licence‑exempt transmitters shall comply with the field strength limits shown in table below. Additionally, the level of any transmitter emission shall not exceed the level of the transmitter's fundamental emission

Unwanted emissions that fall into restricted bands shall comply with the limits specified in RSS-Gen; and Unwanted emissions that do not fall within the restricted frequency bands shall comply either with the limits specified in the applicable RSS or with those specified in this RSS-Gen.

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)

1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

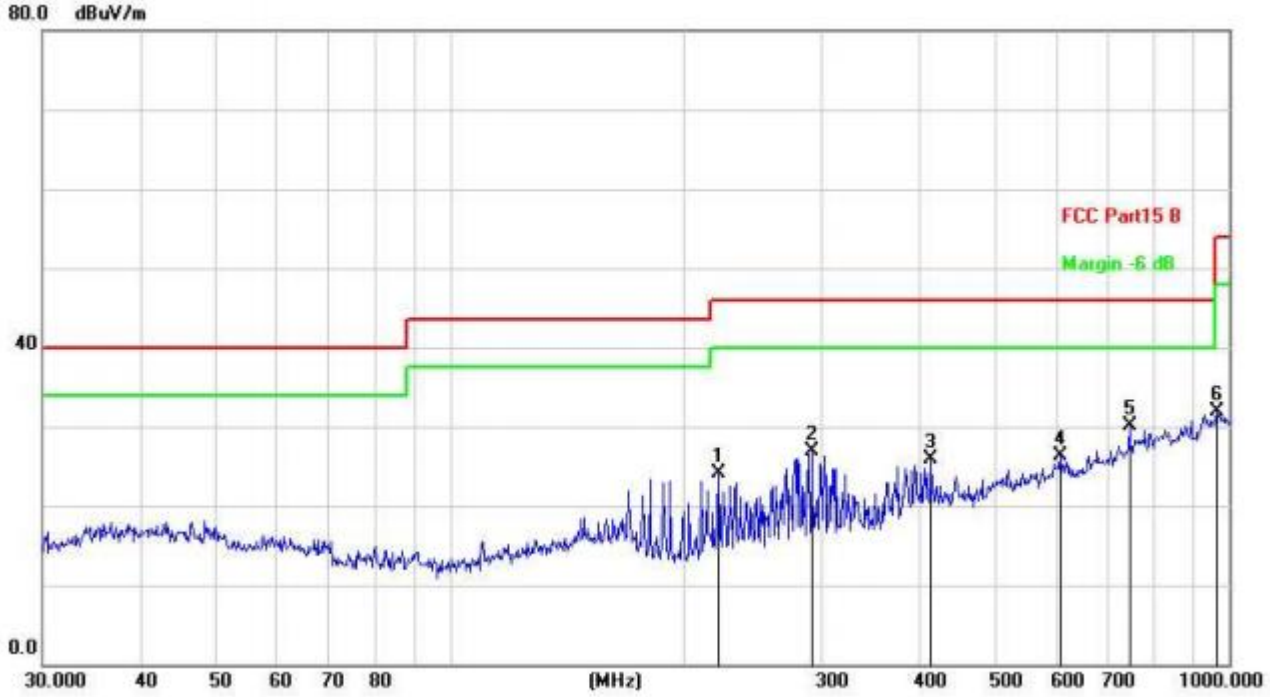
TEST RESULTS

Remark:
1. This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
2. All three channels (lowest/middle/highest) of each mode were measured below 1GHz and recorded worst case at 802.11b low channel.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

For 30MHz-1GHz

Adapter 1:

Horizontal



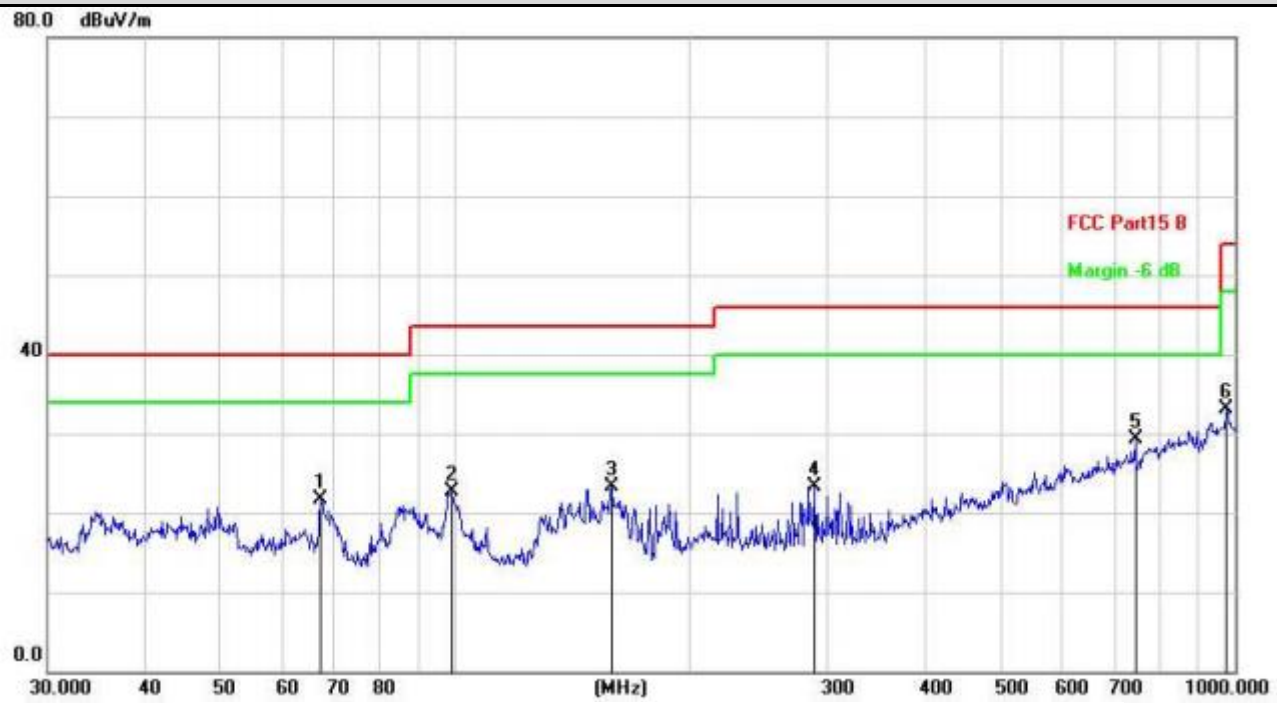
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB/m	dB	Detector
1		221.3921	37.16	-13.12	24.04	46.00	-21.96	peak
2		291.0360	37.69	-10.84	26.85	46.00	-19.15	peak
3		414.7223	33.45	-7.48	25.97	46.00	-20.03	peak
4		607.7867	29.72	-3.37	26.35	46.00	-19.65	peak
5	*	744.8661	30.85	-0.73	30.12	46.00	-15.88	peak
6		965.5421	28.54	3.33	31.87	54.00	-22.13	peak

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB/m	dB	Detector
1		67.2022	34.53	-12.85	21.68	40.00	-18.32	peak
2		99.1796	37.52	-14.89	22.63	43.50	-20.87	peak
3		158.6676	33.82	-10.60	23.22	43.50	-20.28	peak
4		289.0020	34.21	-10.93	23.28	46.00	-22.72	peak
5	*	744.8660	30.02	-0.73	29.29	46.00	-16.71	peak
6		975.7528	29.64	3.41	33.05	54.00	-20.95	peak

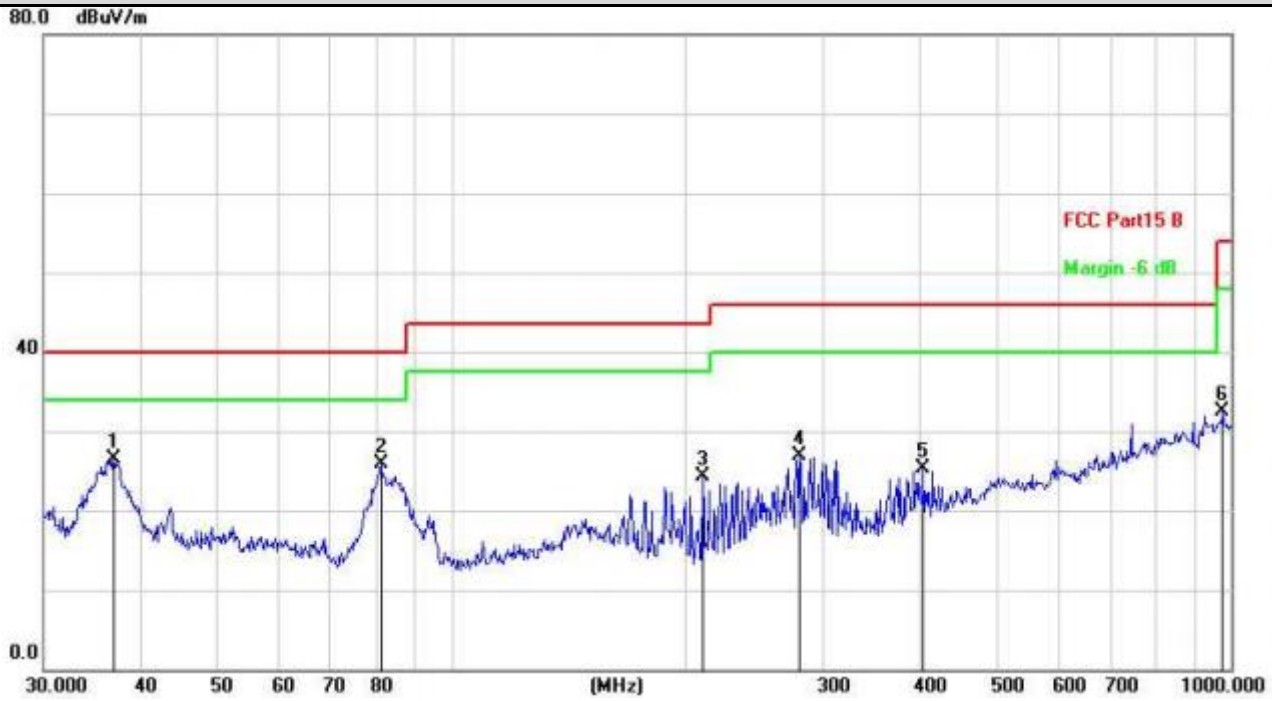
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Adapter 2:

Horizontal



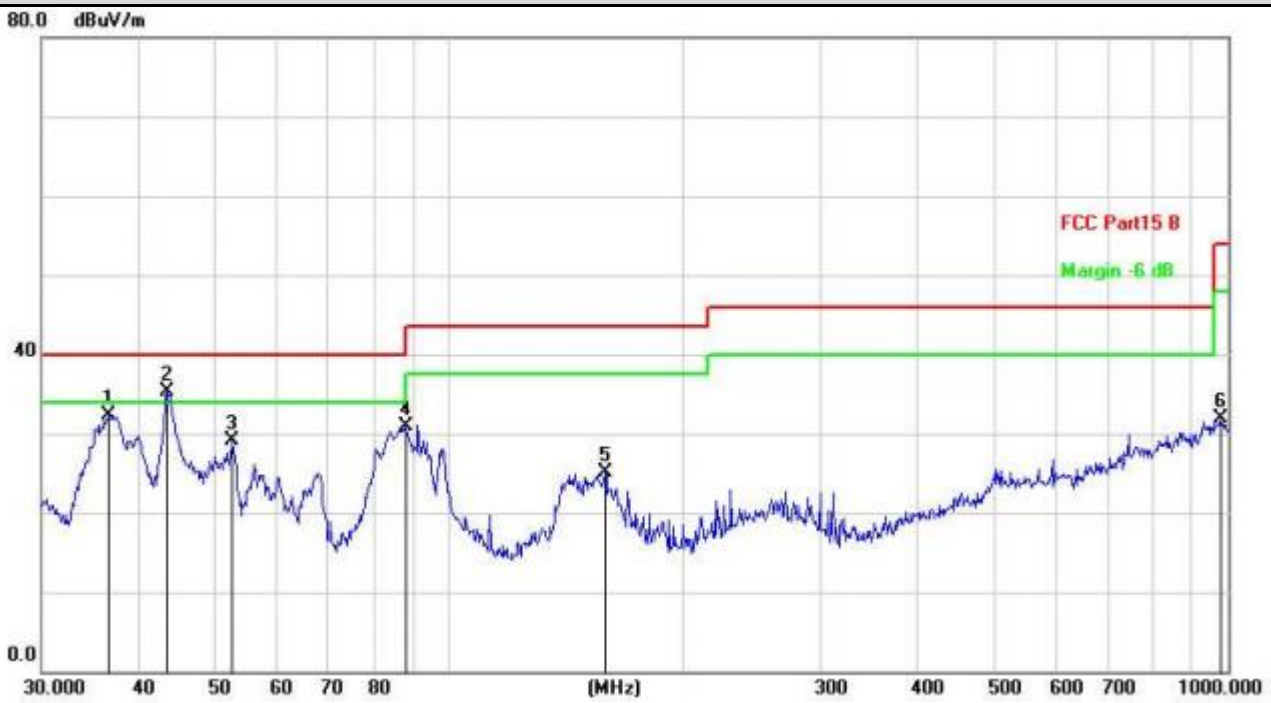
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB/m	dB	Detector
1	*	36.8953	37.21	-10.76	26.45	40.00	-13.55	peak
2		81.2117	41.31	-15.34	25.97	40.00	-14.03	peak
3		210.0482	37.51	-13.30	24.21	43.50	-19.29	peak
4		280.0237	38.34	-11.36	26.98	46.00	-19.02	peak
5		403.2500	33.25	-7.93	25.32	46.00	-20.68	peak
6		975.7529	29.15	3.41	32.56	54.00	-21.44	peak

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB/m	dB	Detector
1		36.6375	43.20	-10.80	32.40	40.00	-7.60	peak
2	*	43.5056	45.55	-10.26	35.29	40.00	-4.71	peak
3		52.7600	40.65	-11.47	29.18	40.00	-10.82	peak
4		88.0328	46.30	-15.48	30.82	43.50	-12.68	peak
5		158.6676	35.70	-10.60	25.10	43.50	-18.40	peak
6		979.1803	28.54	3.43	31.97	54.00	-22.03	peak

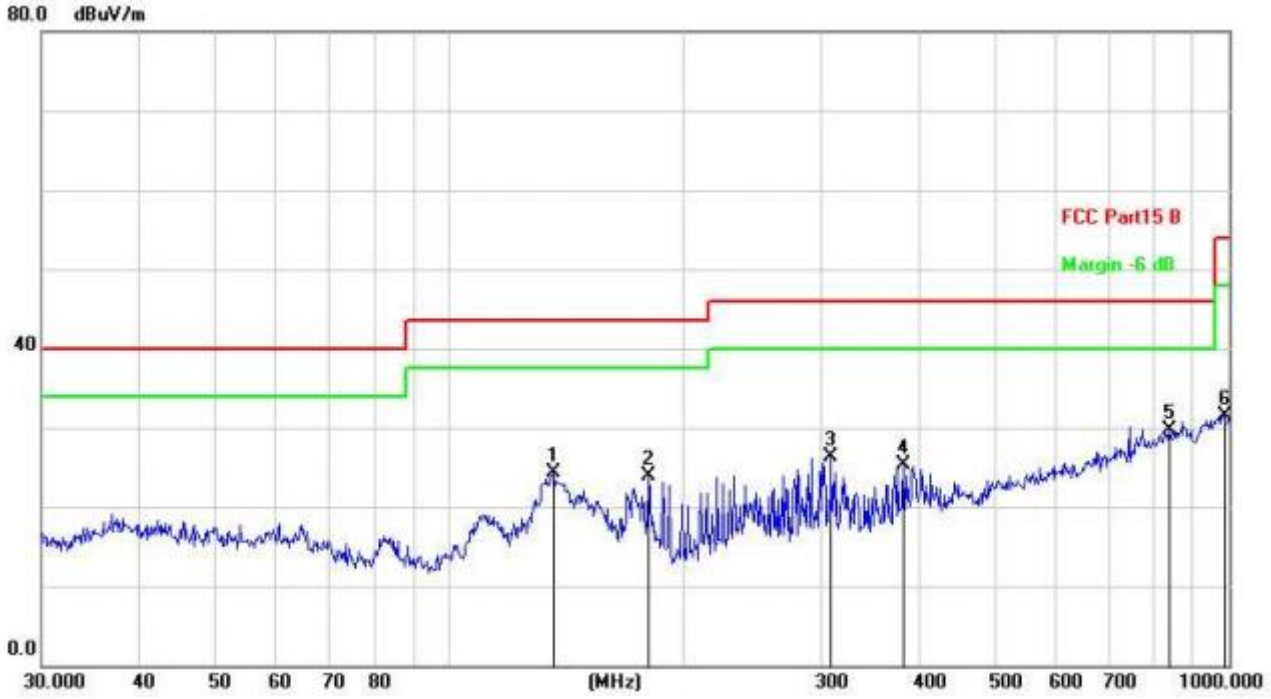
Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Adapter 3:

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB/m	dB	Detector
1		135.9822	36.48	-12.14	24.34	43.50	-19.16	peak
2		180.0165	36.68	-12.80	23.88	43.50	-19.62	peak
3		308.9126	36.76	-10.43	26.33	46.00	-19.67	peak
4		382.5879	33.93	-8.62	25.31	46.00	-20.69	peak
5	*	839.1818	28.94	0.82	29.76	46.00	-16.24	peak
6		986.0717	27.94	3.49	31.43	54.00	-22.57	peak

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB/m	dB	Detector
1	*	40.9881	41.71	-10.23	31.48	40.00	-8.52	peak
2		65.1145	38.44	-12.49	25.95	40.00	-14.05	peak
3		141.3298	45.10	-11.72	33.38	43.50	-10.12	peak
4		155.3643	42.58	-10.59	31.99	43.50	-11.51	peak
5		172.5988	40.53	-11.44	29.09	43.50	-14.41	peak
6		996.4995	27.99	3.57	31.56	54.00	-22.44	peak

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)

For 1GHz to 25GHz

Note: 802.11b/802.11g/802.11n (H20) Mode all have been tested, only worse case 802.11b mode is reported

(above 1GHz)

Frequency(MHz):	**2412**		**Polarity:**		**HORIZONTAL**				
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4824.00	58.95	PK	74	15.05	53.13	31.05	6.52	31.75	5.82
4824.00	44.68	AV	54	9.32	38.86	31.05	6.52	31.75	5.82
7236.00	56.02	PK	74	17.98	43.21	36.08	8.18	31.45	12.81
7236.00	47.47	AV	54	6.53	34.66	36.08	8.18	31.45	12.81

Frequency(MHz):	**2412**		**Polarity:**		**VERTICAL**				
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4824.00	59.80	PK	74	14.20	53.98	31.05	6.52	31.75	5.82
4824.00	44.34	AV	54	9.66	38.52	31.05	6.52	31.75	5.82
7236.00	56.40	PK	74	17.60	43.59	36.08	8.18	31.45	12.81
7236.00	46.57	AV	54	7.43	33.76	36.08	8.18	31.45	12.81

Frequency(MHz):	**2437**		**Polarity:**		**HORIZONTAL**				
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4874.00	60.74	PK	74	13.26	54.30	31.25	6.7	31.51	6.44
4874.00	44.77	AV	54	9.23	38.33	31.25	6.7	31.51	6.44
7311.00	54.77	PK	74	19.23	41.63	36.25	8.31	31.42	13.14
7311.00	46.54	AV	54	7.46	33.40	36.25	8.31	31.42	13.14

Frequency(MHz):	**2437**		**Polarity:**		**VERTICAL**				
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4874.00	61.01	PK	74	12.99	54.57	31.25	6.7	31.51	6.44
4874.00	44.92	AV	54	9.08	38.48	31.25	6.7	31.51	6.44
7311.00	56.14	PK	74	17.86	43.00	36.25	8.31	31.42	13.14
7311.00	46.22	AV	54	7.78	33.08	36.25	8.31	31.42	13.14

Frequency(MHz):	**2462**		**Polarity:**		**HORIZONTAL**				
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4924.00	61.46	PK	74	12.54	54.59	31.52	6.8	31.45	6.87
4924.00	45.80	AV	54	8.20	38.93	31.52	6.8	31.45	6.87
7386.00	56.18	PK	74	17.82	42.62	36.51	8.4	31.35	13.56
7386.00	45.92	AV	54	8.08	32.36	36.51	8.4	31.35	13.56

Frequency(MHz):	**2462**		**Polarity:**		**VERTICAL**				
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4924.00	60.06	PK	74	13.94	53.19	31.52	6.8	31.45	6.87
4924.00	44.07	AV	54	9.93	37.20	31.52	6.8	31.45	6.87
7386.00	57.20	PK	74	16.80	43.64	36.51	8.4	31.35	13.56
7386.00	46.20	AV	54	7.80	32.64	36.51	8.4	31.35	13.56

1) Emission level (dBuV/m) = Meter Reading+ antenna Factor+ cable loss- preamp factor.
2) Margin value = Limits-Emission level.
3) -- Mean the PK detector measured value is below average limit.
4) The other emission levels were very low against the limit.
5) RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

Results of Band Edges Test (Radiated)

Note: 802.11b/802.11g/802.11n (H20) Mode all have been tested, only worse case 802.11b mode is reported

Frequency(MHz):			**2412**		**Polarity:**		**HORIZONTAL**		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	62.42	PK	74	11.58	63.81	27.2	4.31	32.9	-1.39
2390.00	44.67	AV	54	9.33	46.06	27.2	4.31	32.9	-1.39
Frequency(MHz):			**2412**		**Polarity:**		**VERTICAL**		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	59.87	PK	74	14.13	61.26	27.2	4.31	32.9	-1.39
2390.00	46.78	AV	54	7.22	48.17	27.2	4.31	32.9	-1.39
Frequency(MHz):			**2462**		**Polarity:**		**HORIZONTAL**		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	56.86	PK	74	17.14	57.79	27.4	4.47	32.8	-0.93
2483.50	44.49	AV	54	9.51	45.42	27.4	4.47	32.8	-0.93
Frequency(MHz):			**2462**		**Polarity:**		**VERTICAL**		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	55.99	PK	74	18.01	56.92	27.4	4.47	32.8	-0.93
2483.50	43.95	AV	54	10.05	44.88	27.4	4.47	32.8	-0.93

Note：

1) Emission level (dBuV/m) = Meter Reading+ antenna Factor+ cable loss- preamp factor.
2) Margin value = Limits-Emission level.
3) -- Mean the PK detector measured value is below average limit.
4) The other emission levels were very low against the limit.
5) RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

4.3 Maximum Peak Conducted Output Power

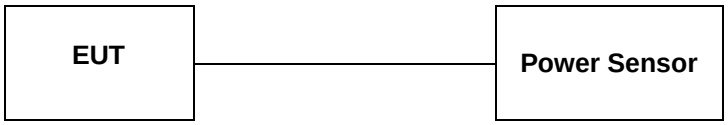
Limit

The Maximum Peak Output Power Measurement is 30dBm.

Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power sensor.

Test Configuration



Test Results

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	18.41	<=30	Pass
		2437	18.50	<=30	Pass
		2462	18.53	<=30	Pass
802.11g	SISO	2412	20.05	<=30	Pass
		2437	20.28	<=30	Pass
		2462	20.43	<=30	Pass
802.11n (HT20)	SISO	2412	20.13	<=30	Pass
		2437	20.24	<=30	Pass
		2462	20.40	<=30	Pass

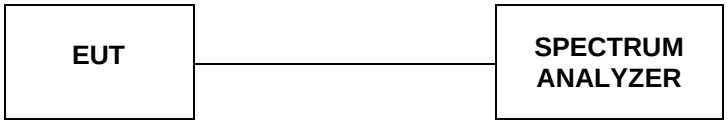
Note:
1) Measured output power at difference data rate for each mode and recorded worst case for each mode.
2) Test results including cable loss.
3) Worst case data at 1Mbps at IEEE 802.11b; 6Mbps at IEEE 802.11g; 6.5Mbps at IEEE 802.11n HT20;

4.4 On Time and Duty Cycle

Standard Applicable

None; for reporting purpose only.

TEST CONFIGURATION

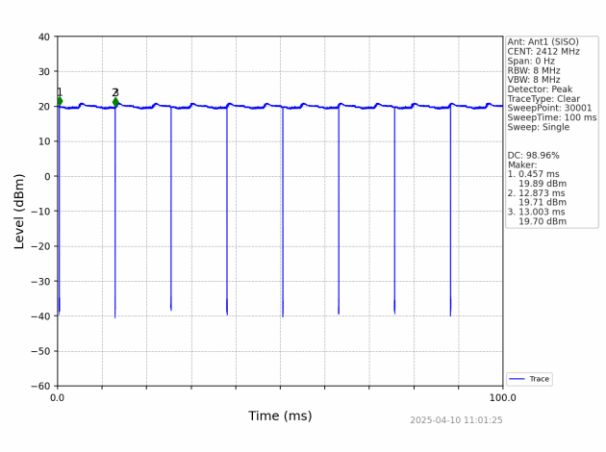
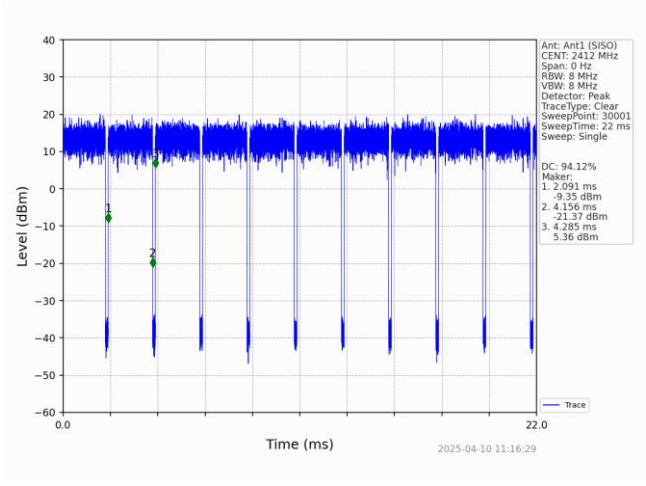
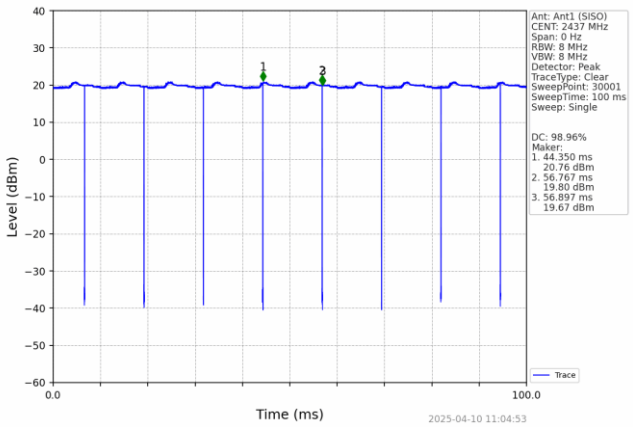
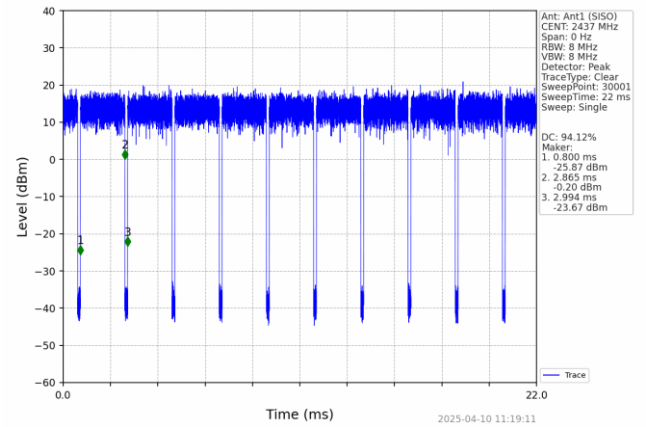
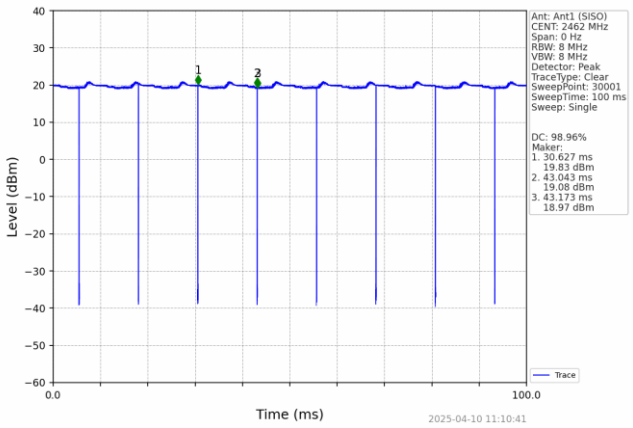
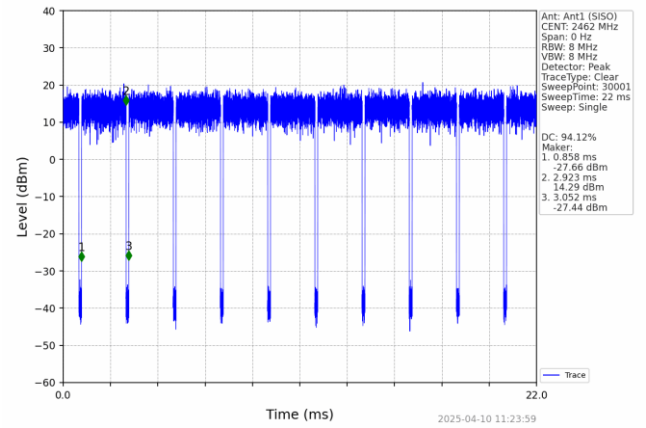


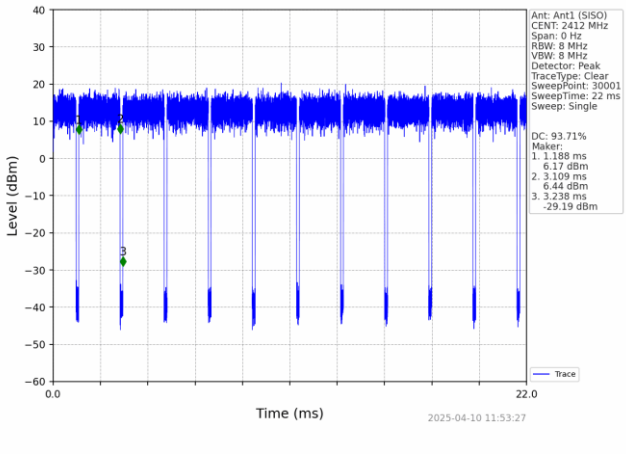
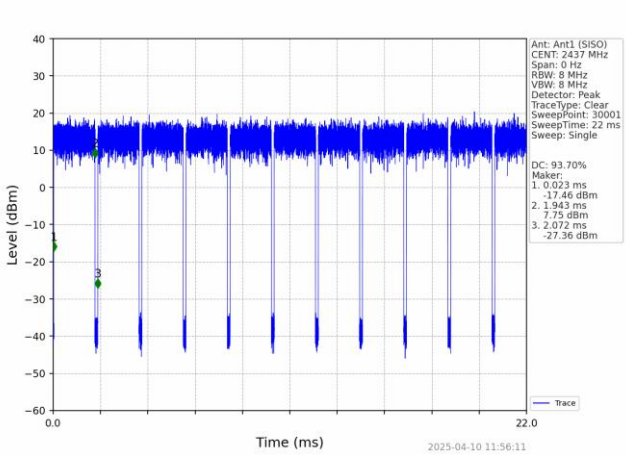
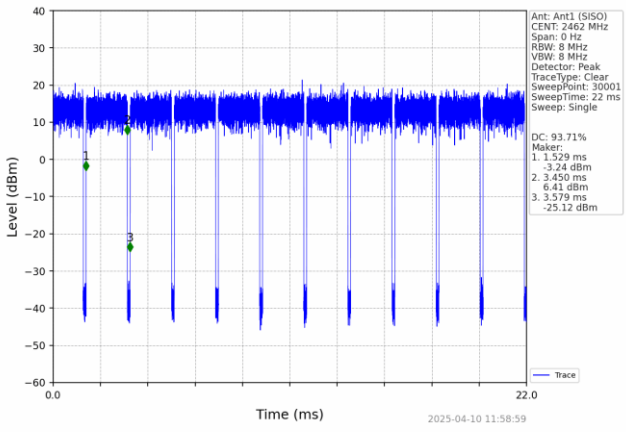
Test Procedures

1). Set the Centre frequency of the spectrum analyzer to the transmitting frequency;
2). Set the span=0MHz, RBW=8MHz, VBW=8MHz, Sweep time=5ms;
3). Detector = peak;
4). Trace mode = Single hold.

TEST RESULTS

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	12.416	12.546	98.96	0.05	0.03
		2437	12.417	12.547	98.96	0.05	0.03
		2462	12.416	12.546	98.96	0.05	0.03
802.11g	SISO	2412	2.065	2.194	94.12	0.26	0.03
		2437	2.065	2.194	94.12	0.26	0.03
		2462	2.065	2.194	94.12	0.26	0.03
802.11n (HT20)	SISO	2412	1.921	2.050	93.71	0.28	0.04
		2437	1.920	2.049	93.70	0.28	0.04
		2462	1.921	2.050	93.71	0.28	0.00

802.11b	*802.11g*
	
CH01	*CH01*
	
CH06	*CH06*
	
CH11	*CH11*

802.11n(HT20)	
	
CH01	
	
CH06	
	
CH11	

4.5 Power Spectral Density

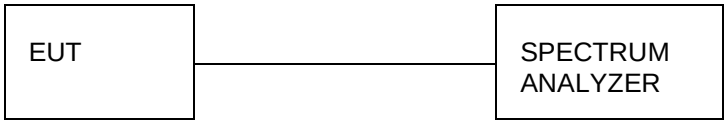
Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW ≥ 3 kHz.
3. Set the VBW ≥ 3× RBW.
4. Set the span to 1.5 times the DTS channel bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum power level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
11. The resulting peak PSD level must be 8dBm.

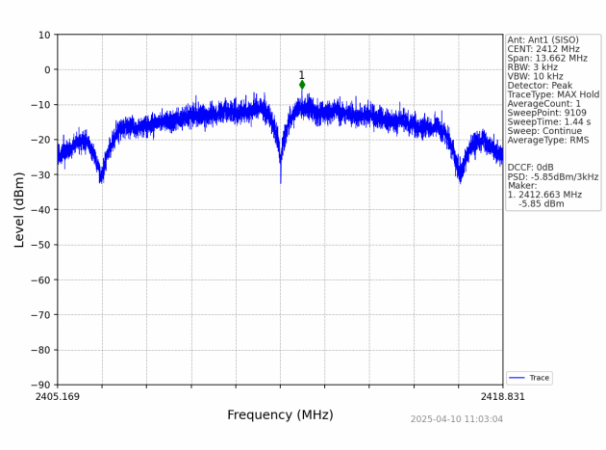
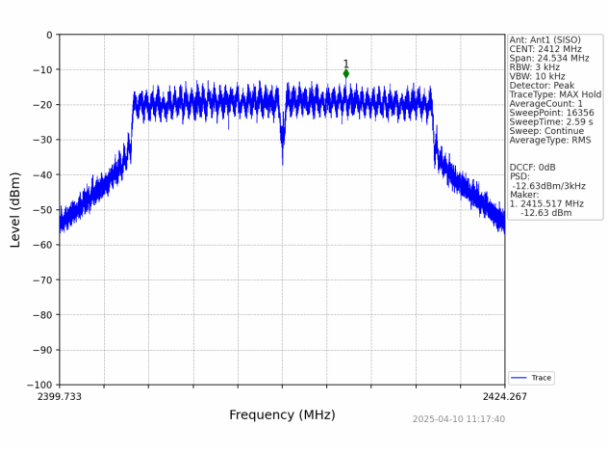
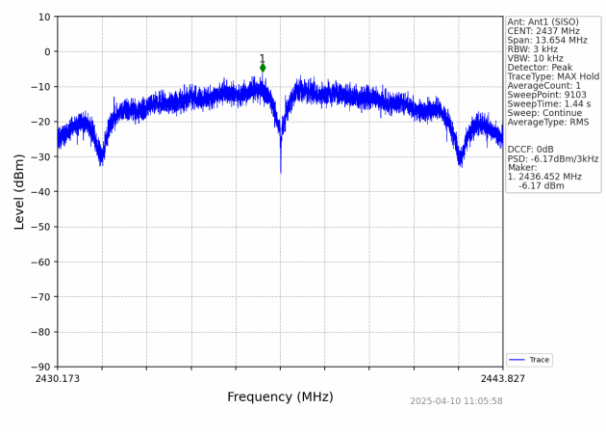
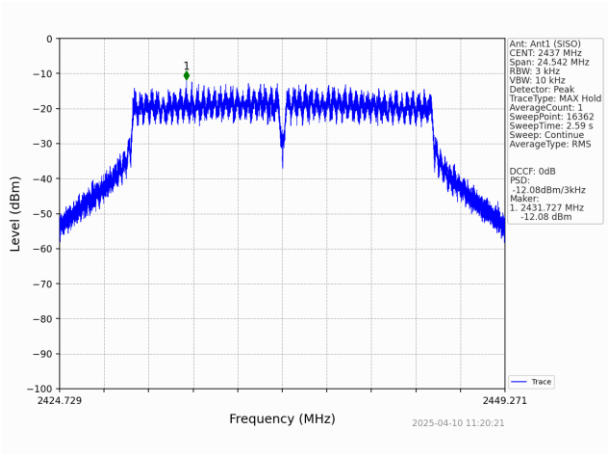
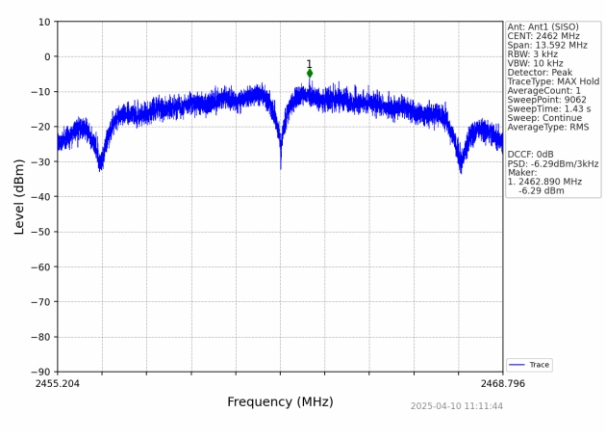
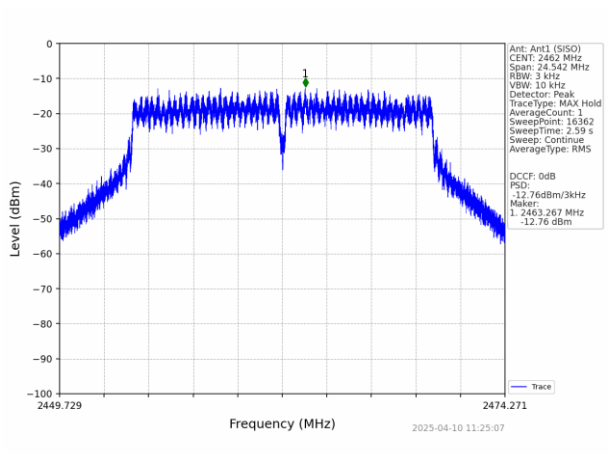
Test Configuration

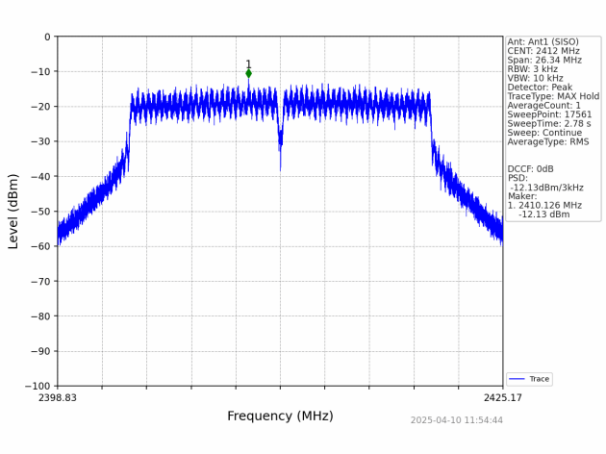
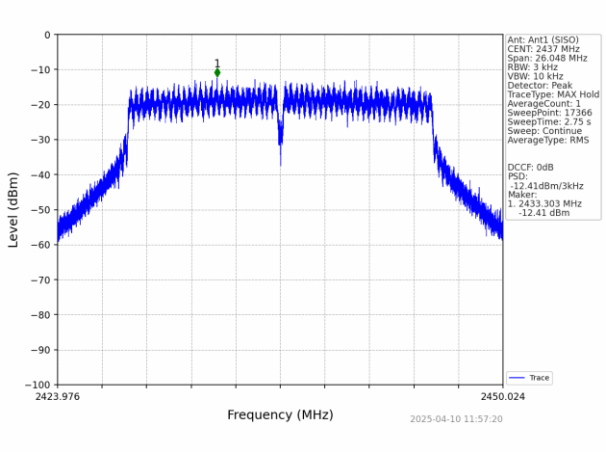
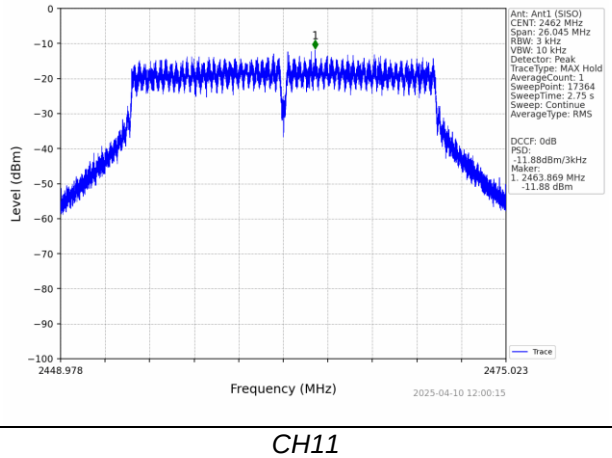


Test Results

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-5.85	<=8	Pass
		2437	-6.17	<=8	Pass
		2462	-6.29	<=8	Pass
802.11g	SISO	2412	-12.63	<=8	Pass
		2437	-12.08	<=8	Pass
		2462	-12.76	<=8	Pass
802.11n (HT20)	SISO	2412	-12.13	<=8	Pass
		2437	-12.41	<=8	Pass
		2462	-11.88	<=8	Pass

Note:
1) Measured peak power spectrum density at difference data rate for each mode and recorded worst case for each mode.
2) Test results including cable loss;
3) Worst case data at 1Mbps at IEEE 802.11b; 6Mbps at IEEE 802.11g; 6.5Mbps at IEEE 802.11n HT20; Please refer to following plots;

802.11b	*802.11g*
	
CH01	*CH01*
	
CH06	*CH06*
	
CH11	*CH11*

802.11n(HT20)	
	
CH01	
	
CH06	
	
CH11	

4.6 6dB Bandwidth and 99% Bandwidth

Limit

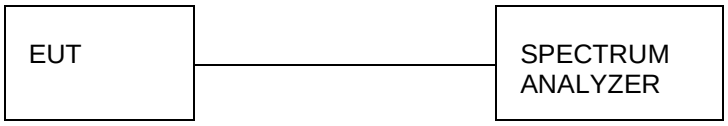
For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz

Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 300 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 430 KHz RBW and 1.3MHz VBW record the 99% bandwidth.

Test Configuration

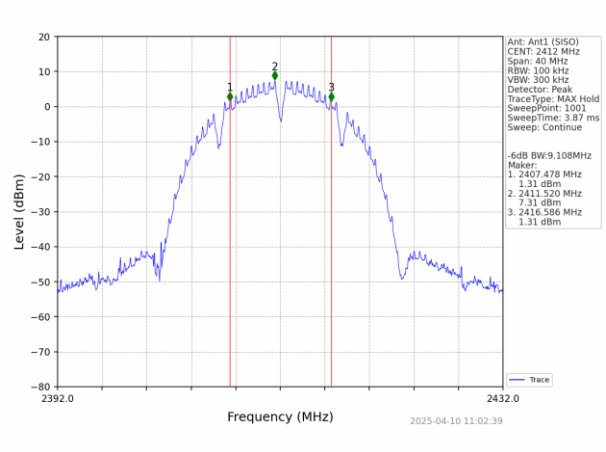
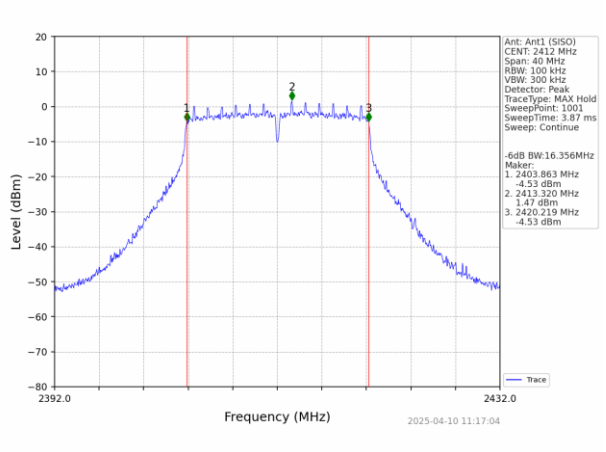
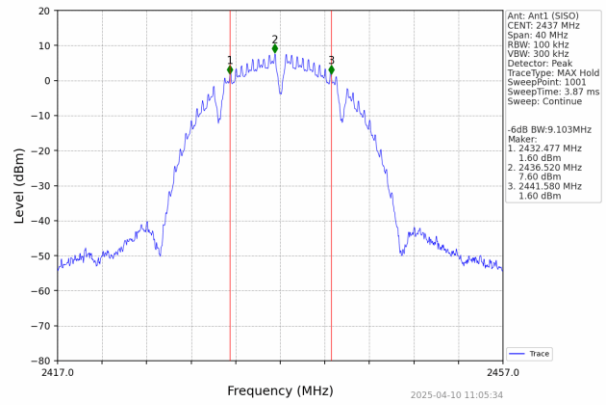
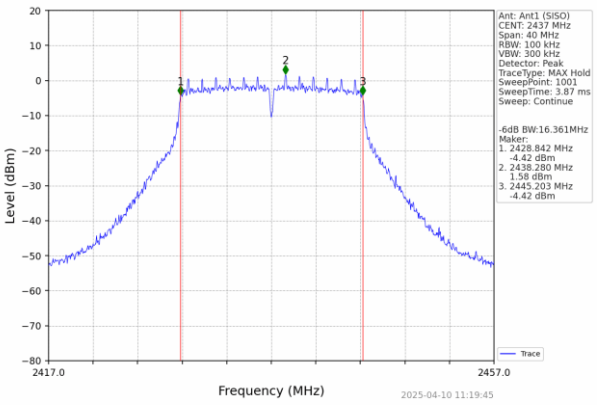
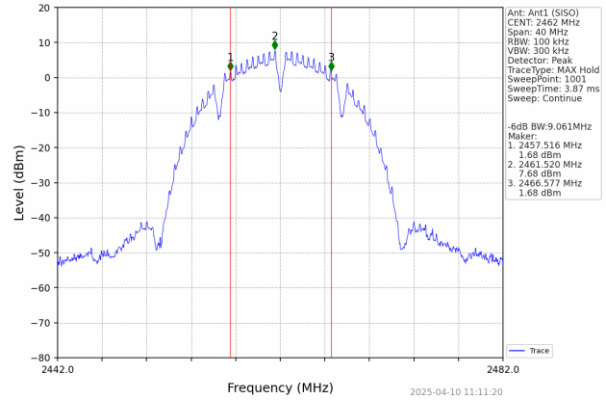
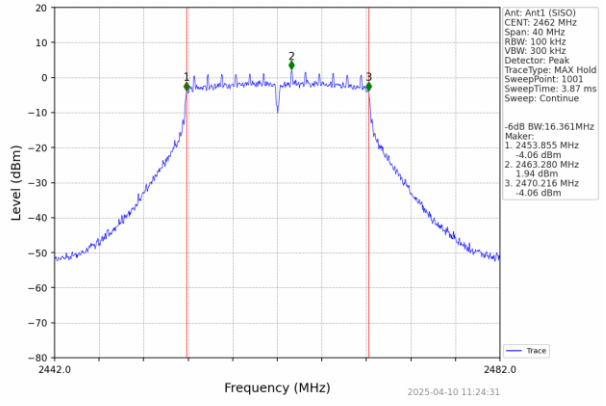


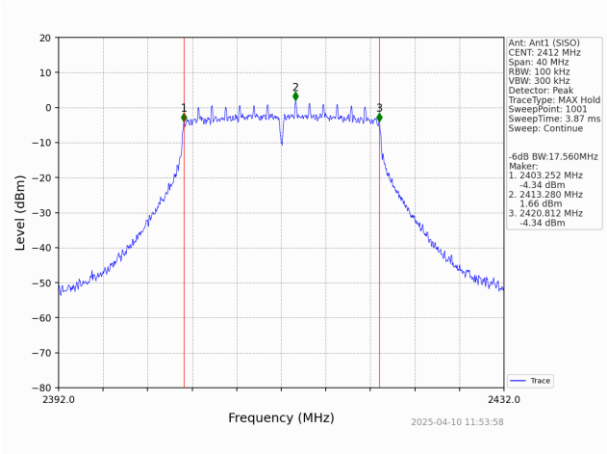
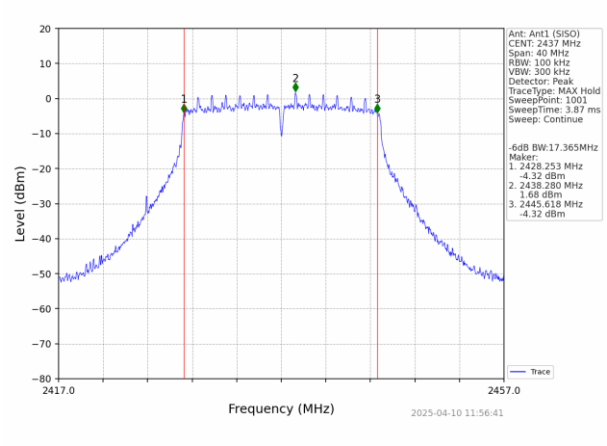
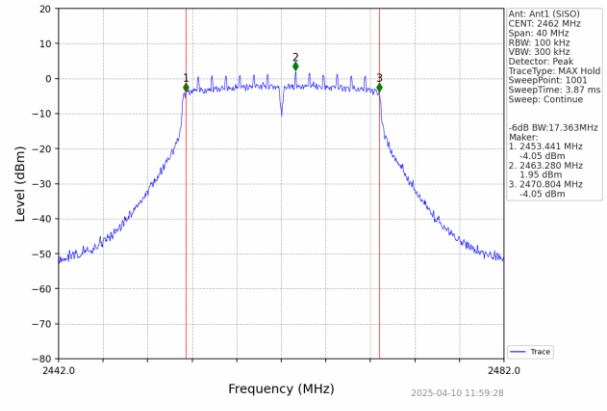
Test Results

Type	Channel	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (KHz)	Result
802.11b	01	9.108	14.102	≥500	Pass
	06	9.103	14.091		
	11	9.061	14.087		
802.11g	01	16.356	17.950	≥500	Pass
	06	16.361	17.950		
	11	16.361	17.910		
802.11n(HT20)	01	17.560	18.865	≥500	Pass
	06	17.365	18.843		
	11	17.363	18.833		

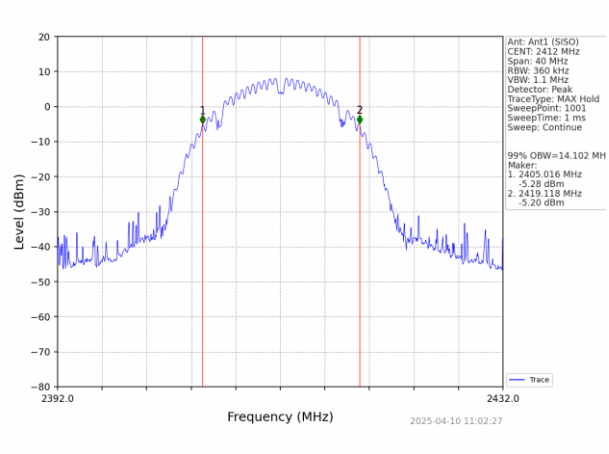
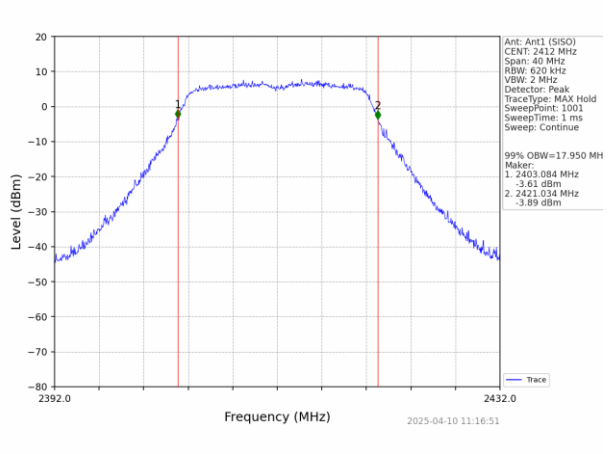
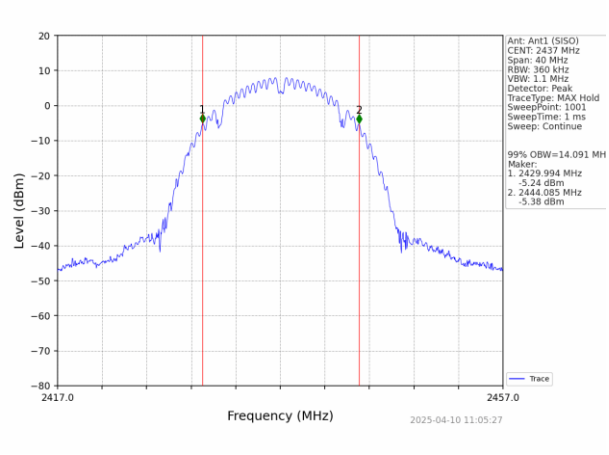
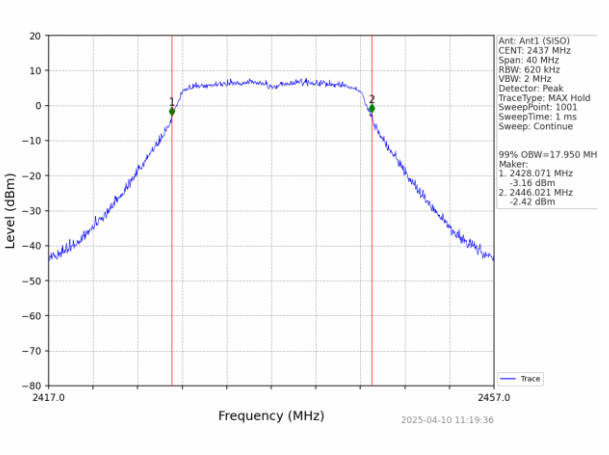
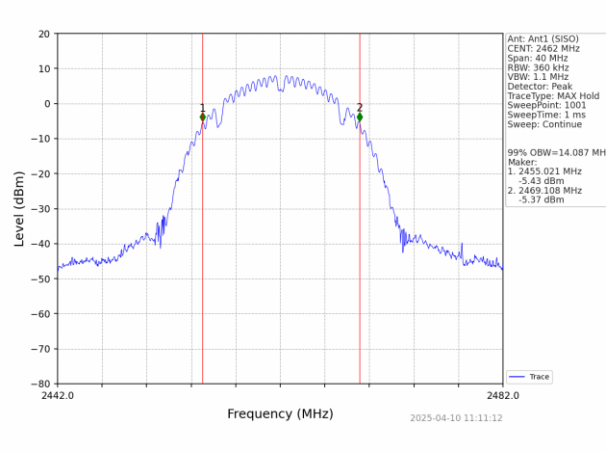
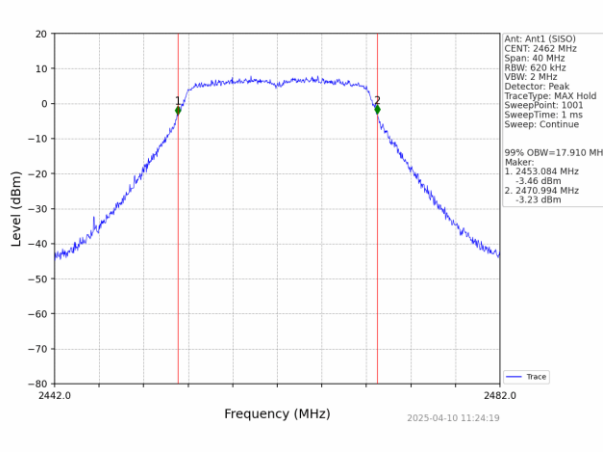
Note:
1) Measured peak power spectrum density at difference data rate for each mode and recorded worst case for each mode.
2) Test results including cable loss;
3) Worst case data at 1Mbps at IEEE 802.11b; 6Mbps at IEEE 802.11g; 6.5Mbps at IEEE 802.11n HT20; Please refer to following plots;

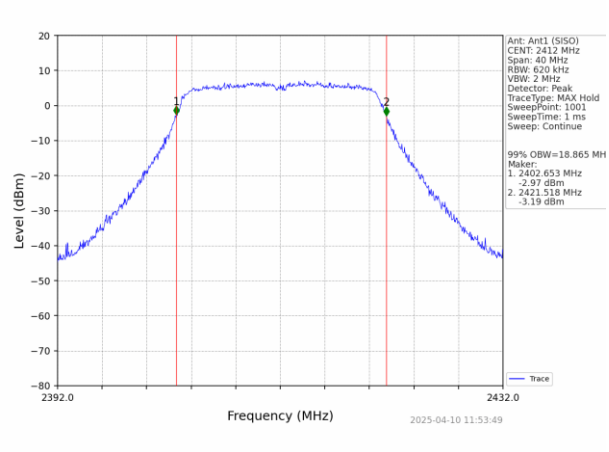
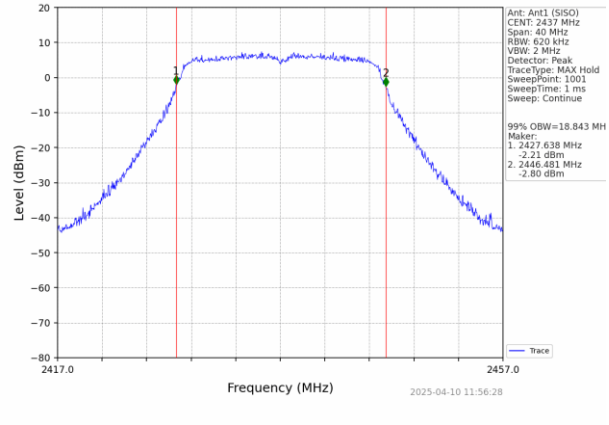
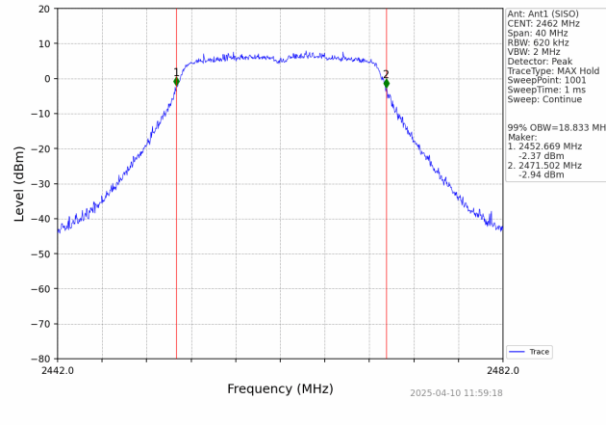
For 6dB Bandwidth:

802.11b	*802.11g*
	
CH01	*CH01*
	
CH06	*CH06*
	
CH11	*CH11*

802.11n(HT20)	
	
CH01	
	
CH06	
	
CH11	

For 99% Bandwidth:

802.11b	*802.11g*
	
CH01	*CH01*
	
CH06	*CH06*
	
CH11	*CH11*

802.11n(HT20)	
	
CH01	
	
CH06	
	
CH11	

4.7 Out-of-band Emissions

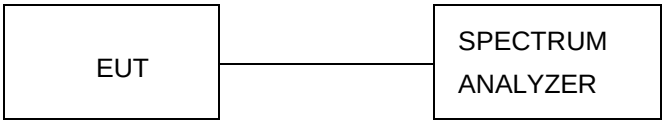
Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF con-ducted or a radiated measurement, pro-vided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter com-plies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

Test Procedure

Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector , and max hold. Measurements utilizing these setting are made of the in-band reference level, bandedge and out-of-band emissions.

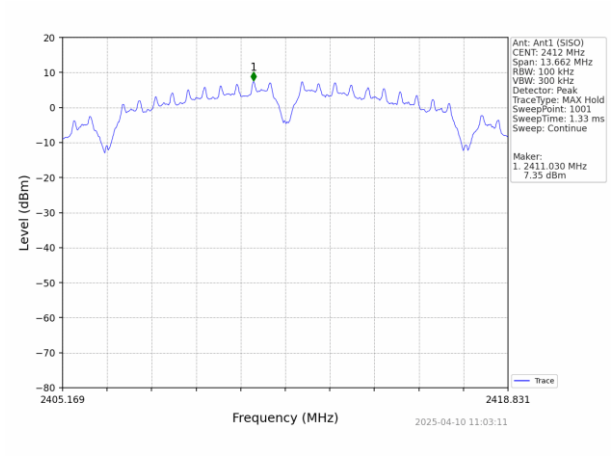
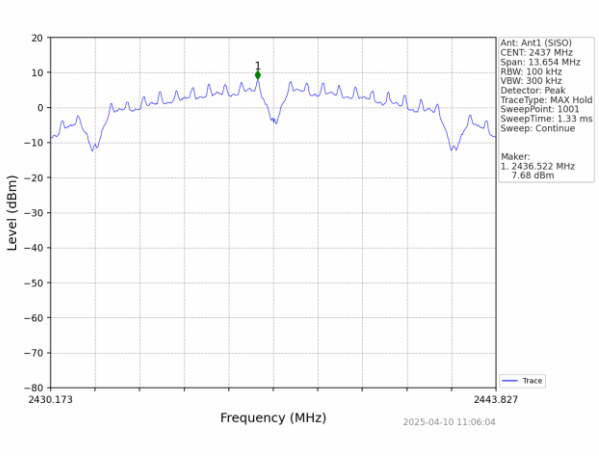
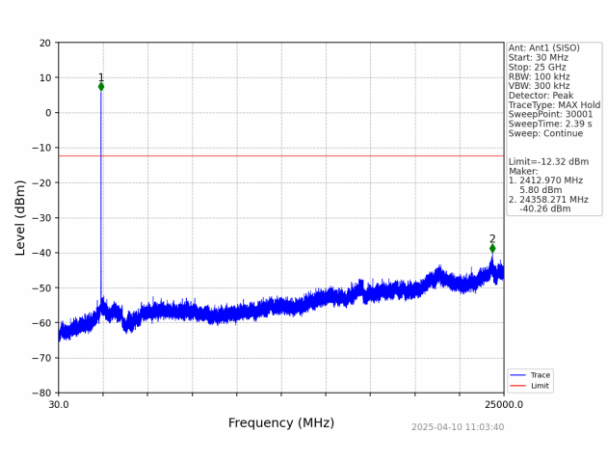
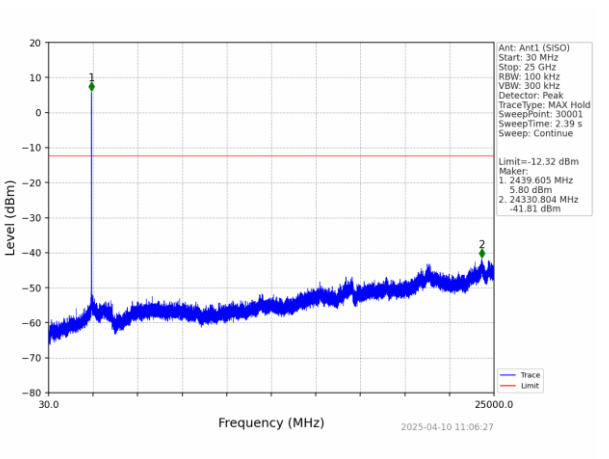
Test Configuration

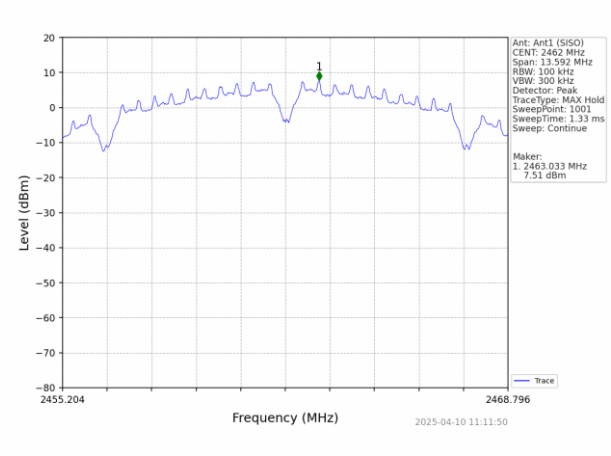
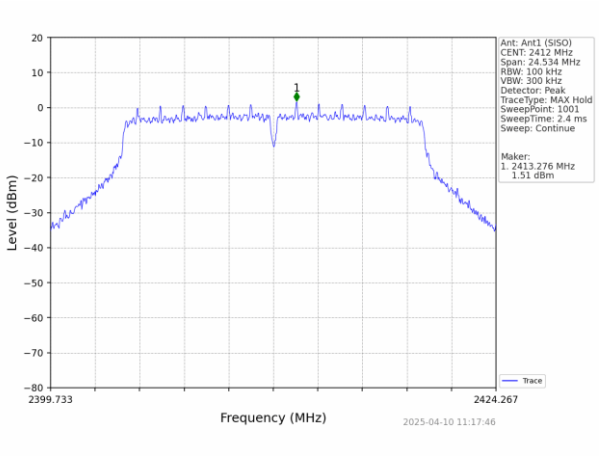
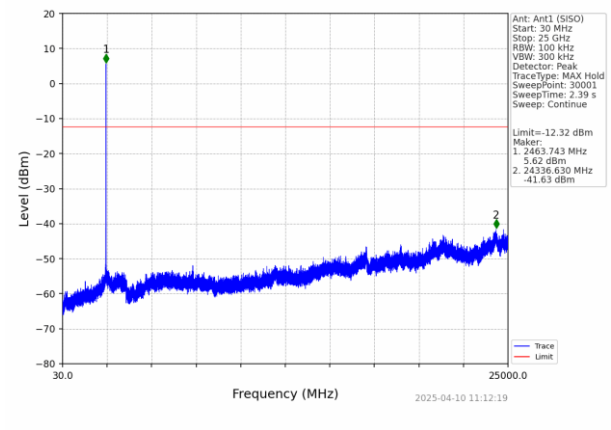
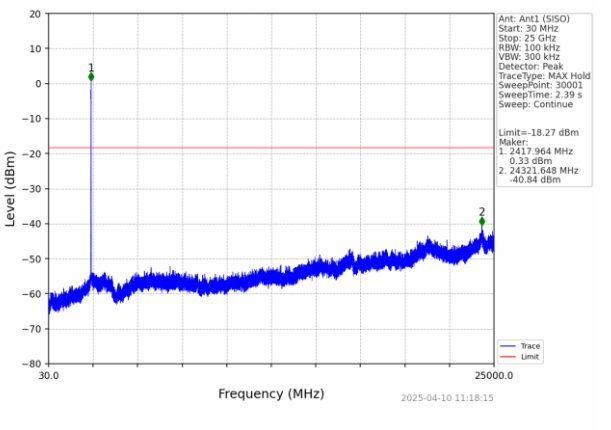


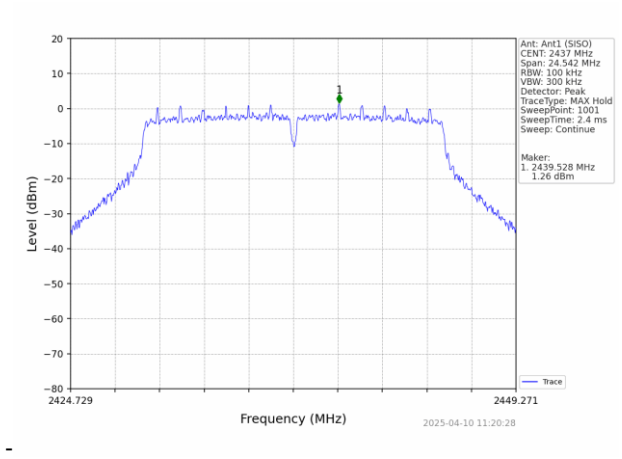
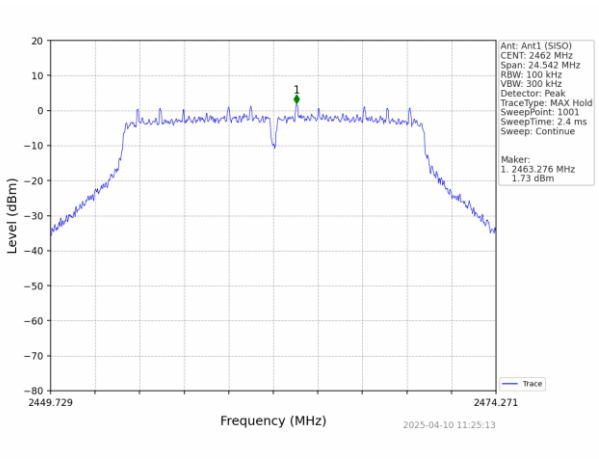
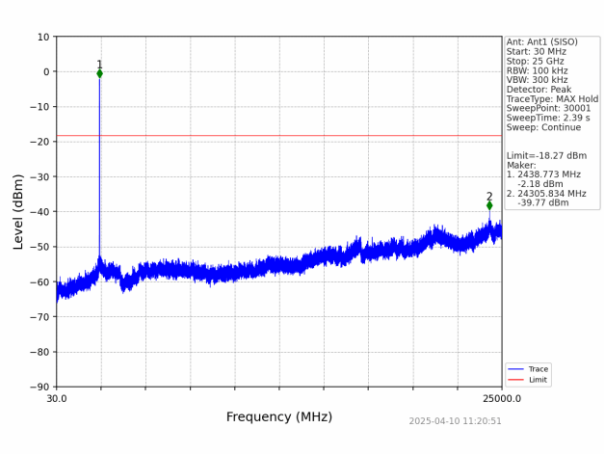
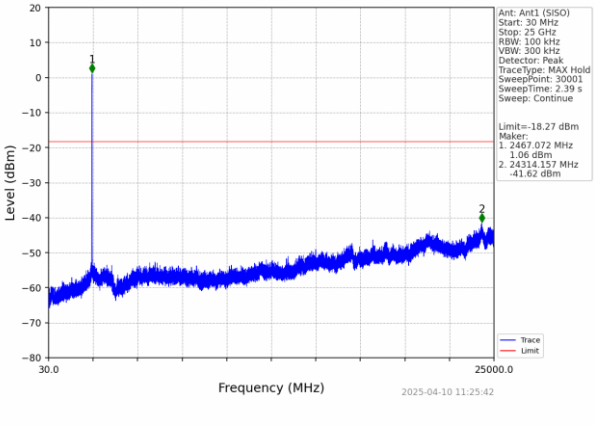
Test Results

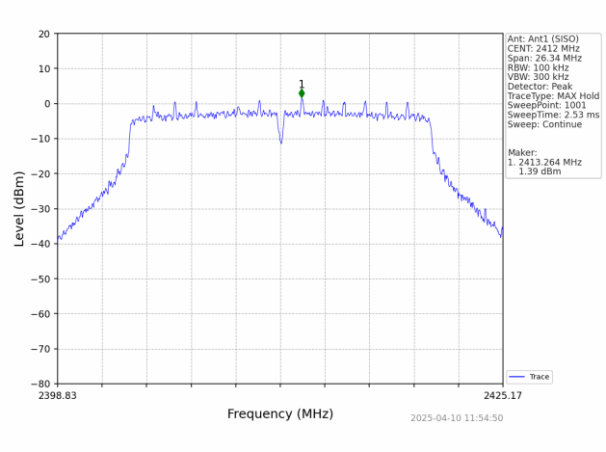
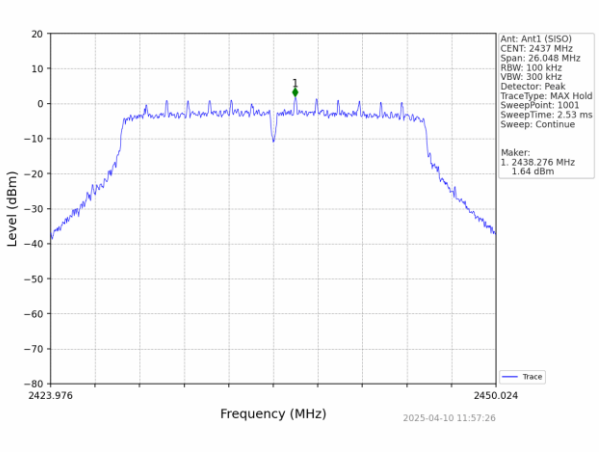
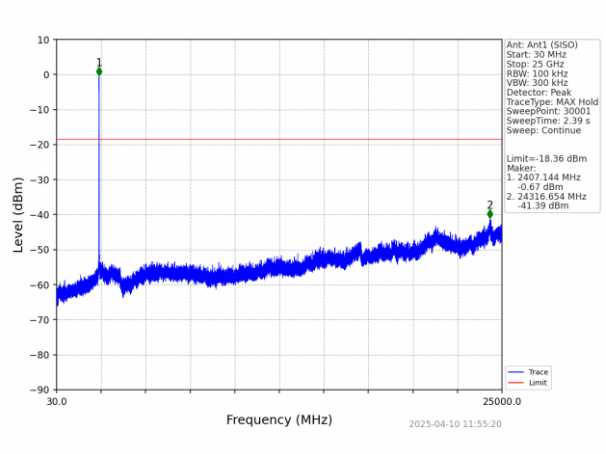
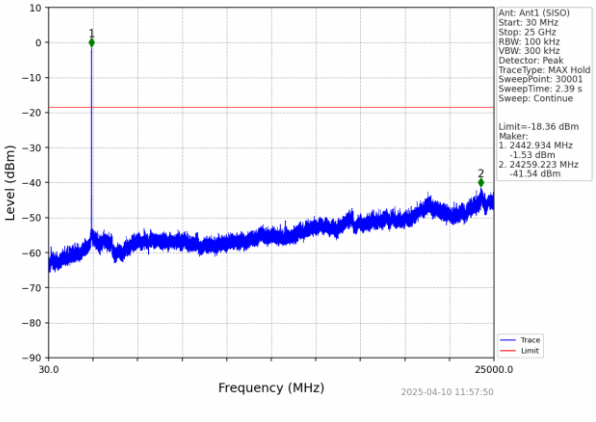
Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandage measurement data. And record the worst data in the report.

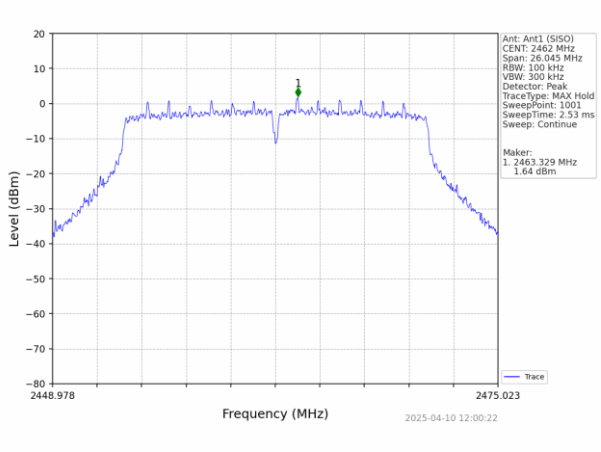
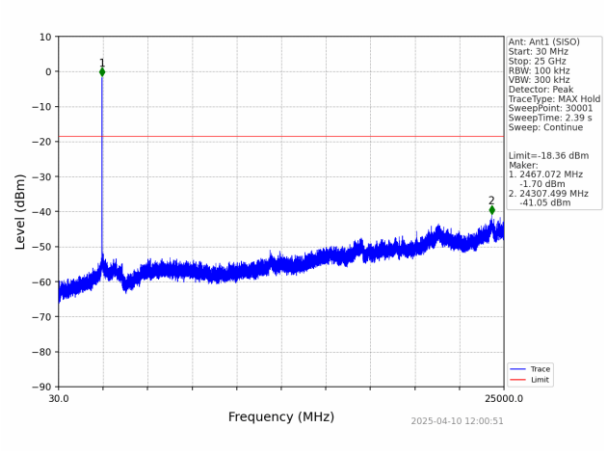
Test plot as follows:

802.11b	
	
Reference	Reference
CH01	***CH06***
	
30MHz-25GHz	30MHz-25GHz

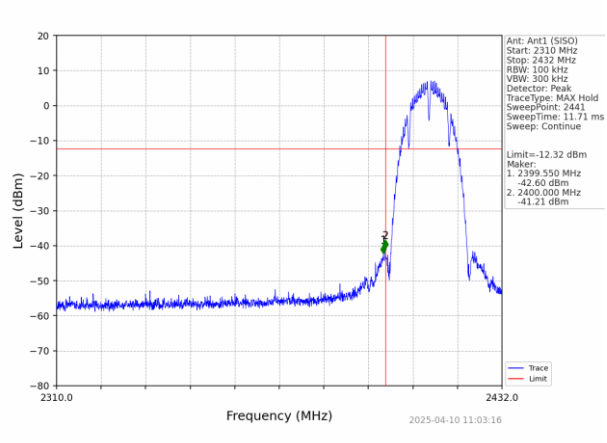
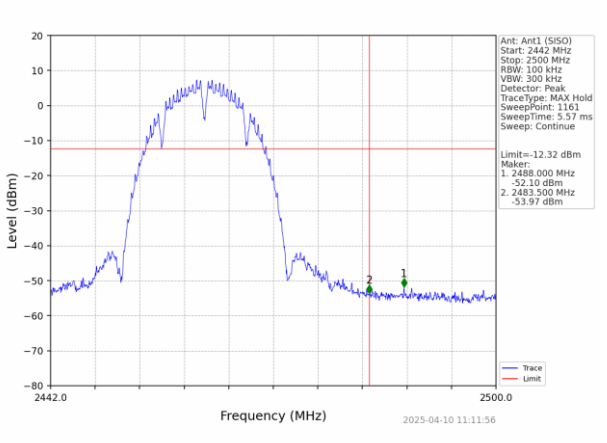
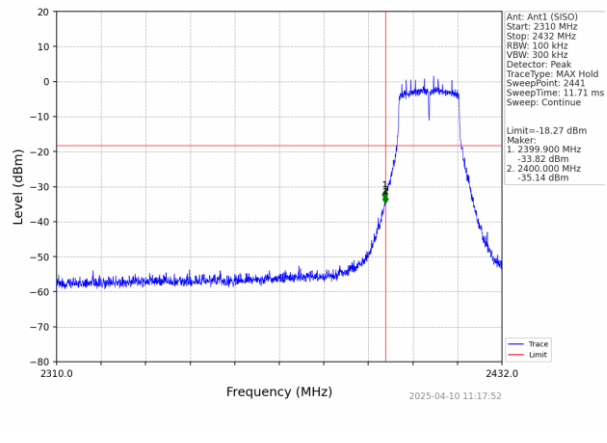
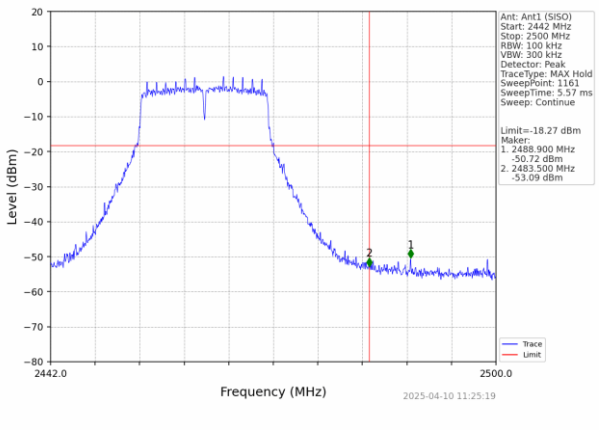
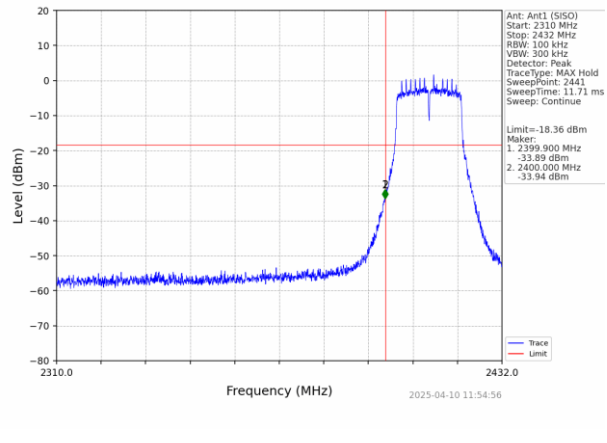
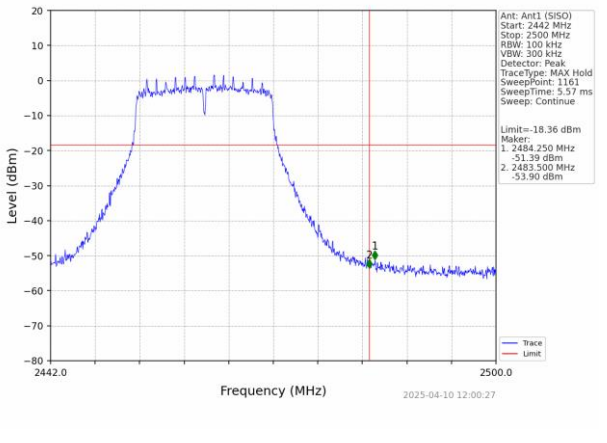
802.11b	***802.11g***
	
Reference	Reference
CH011	***CH01***
	
30MHz-25GHz	30MHz-25GHz

802.11g	
	
Reference	Reference
CH06	***CH11***
	
30MHz-25GHz	30MHz-25GHz

802.11n20	
	
Reference	Reference
CH01	***CH06***
	
30MHz-25GHz	30MHz-25GHz

802.11n20	
	
Reference	
CH11	
	
30MHz-25GHz	

Band-edge Measurements for RF Conducted Emissions:

802.11b	
	
Left bandedge	Right bandedge
802.11g	
	
Left bandedge	Right bandedge
802.11n(HT20)	
	
Left bandedge	Right bandedge

4.8 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR 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, 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

FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1) (I):

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

Test Result:

The maximum gain of antenna was 2.50 dBi.

Remark:The antenna gain is provided by the customer , if the data provided by the customer is not accurate, Shenzhen HTT Technology Co.,Ltd. does not assume any responsibility.

5 Test Setup Photos of the EUT

Reference to the **appendix I** for details.

6 Photos of the EUT

Reference to the **appendix II** for details.

********** End of Report **********