FCC TEST REPORT

FCC ID: 2BSMZ-BQP

Product	:	Somndeep Sleep Optimization System
Model Name	:	BQP
Brand	:	N/A
Report No.	:	PTC25070105401E-FC02

Prepared for

Shengzhou Intelligent Equipment R&D Co., Ltd.

Room 705, Hongyu Building, No. 495 Donghuan 2nd Road, Yucui Community, Longhua Street, Longhua District, Shenzhen City

Prepared by

Precise Testing & Certification Co., Ltd

Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

1 TEST RESULT CERTIFICATION

Applicant's name	:	Shengzhou Intelligent Equipment R&D Co., Ltd.
Address	:	Room 705, Hongyu Building, No. 495 Donghuan 2nd Road, Yucui Community, Longhua Street, Longhua District, Shenzhen City
Manufacture's name	:	KENNEDE ELECTRONICS MFG CO.,LTD.
Address	:	No.21 Jintong Road,Tangxia Town,Pengjiang District,Jiangmen City, Guangdong Province,China.
Product name	:	Somndeep Sleep Optimization System
Model name	:	BQP
Standards	:	FCC CFR47 Part 15 Section 15.247
Test procedure	:	ANSI C63.10-2020
Test Date	:	July 18, 2025 to July 28, 2025
Date of Issue	:	July 28, 2025
Test Result	:	Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Test Engineer:

Jack zhou / Engineer

Technical Manager:

Simon Pu / Manager

Contents

Page

1 TEST RESULT CERTIFICATION 2

2 TEST SUMMARY 5

3 GENERAL INFORMATION 6

3.1 GENERAL DESCRIPTION OF E.U.T. 6

3.2 CHANNEL LIST 7

3.3 TEST SITE 8

4 EQUIPMENT DURING TEST 9

4.1 EQUIPMENTS LIST 9

4.2 MEASUREMENT UNCERTAINTY 11

4.3 DESCRIPTION OF SUPPORT UNITS 12

5 CONDUCTED EMISSION 13

5.1 E.U.T. OPERATION 13

5.2 EUT SETUP 13

5.3 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) 14

5.4 MEASUREMENT PROCEDURE 14

5.5 CONDUCTED EMISSION LIMIT 14

5.6 MEASUREMENT DESCRIPTION 14

5.7 CONDUCTED EMISSION TEST RESULT 14

6 RADIATED SPURIOUS EMISSIONS 17

6.1 EUT OPERATION 17

6.2 TEST SETUP 18

6.3 SPECTRUM ANALYZER SETUP 19

6.4 TEST PROCEDURE 20

6.5 SUMMARY OF TEST RESULTS 21

7 CONDUCTED SPURIOUS EMISSION 29

7.1 TEST PROCEDURE 29

7.2 TEST SETUP 29

7.3 TEST RESULT 29

8 BAND EDGE MEASUREMENT **45**

8.1 TEST PROCEDURE 45

8.2 TEST SETUP 45

8.3 TEST RESULT 45

9 6DB BANDWIDTH MEASUREMENT **49**

9.1 TEST PROCEDURE 49

9.2 TEST SETUP 49

9.3 TEST RESULT 49

10 MAXIMUM CONDUCTED OUTPUT POWER **55**

10.1 TEST PROCEDURE 55

10.2 TEST SETUP 55

10.3 TEST RESULT 55

11 POWER SPECTRAL DENSITY **56**

11.1 TEST PROCEDURE 56

11.2 TEST SETUP 56

11.3 TEST RESULT 56

12 ANTENNA APPLICATION **62**

12.1 ANTENNA REQUIREMENT 62

12.2 RESULT 62

13 TEST SETUP **63**

14 EUT PHOTOS **65**

2 Test Summary

Test Items	Test Requirement	Result
Conduct Emission	15.207	PASS
Radiated Spurious Emissions	15.205(a) 15.209 15.247(d)	PASS
Conducted Spurious Emission	15.247(d)	PASS
Band edge	15.247(d) 15.205(a)	PASS
6dB Bandwidth	15.247(a)(2)	PASS
Maximum Peak Output Power	15.247(b)(3)	PASS
Power Spectral Density	15.247(e)	PASS
Antenna Requirement	15.203	PASS
Remark: N/A: Not Applicable		

3 General Information

3.1General Description of E.U.T.

Product Name	:	Somndeep Sleep Optimization System
Model Name	:	BQP
Specification	:	802.11b/g/n HT20
Operating frequency	:	2412-2462MHz for 802.11b/g/ n(HT20)
Numbers of Channel	:	11 channels for 802.11b/g/ n(HT20)
Smart System		802.11 b/g/n20
Antenna Type	:	Ceramic antenna
Antenna Gain	:	4.8 dBi
Type of Modulation	:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Power Supply	:	Input:DC 5V 400mA
Hardware Version	:	REV.三
Software Version	:	8.1.33
Test sample No.	:	PTC25070105401E-1/2, PTC25070105401E-2/2

3.2 Channel List

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (802.11b: 1 Mbps; 802.11g: 6 Mbps; 802.11n (HT20): MCS0;) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for 802.11 b/g/n (HT20)

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

The maximum duty cycle as following table:

Test Mode	Duty Cycle(%)
802.11b	100%
802.11g	100%
802.11n(HT20)	100%

3.3Test Site

Precise Testing & Certification Co., Ltd

Address: Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A

FCC Designation Number: CN1219

4 Equipment During Test

4.1Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
MXG Signal Analyzer	Agilent	N9020A	SER MY5111038	10Hz-26.5GHz	Aug. 15, 2024	1 Year
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug. 15, 2024	1 Year
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug. 15, 2024	1 Year
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug. 15, 2024	1 Year
DC power Supply	Agilent	E3642A	MY52420017	0-8V,5A/0-20 ,2.5A	Aug. 15, 2024	1 Year
Humidity Chamber	AISRY	ASR-HW2-1000	20230926003	-40℃-150℃	Feb. 23 ,2025	1Year
Test S/W	Tonscend	JS1120-3	/	/	/	/

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESPI7	101671	9KHz-7GHz	Aug. 15, 2024	1 Year
Loop Antenna	Schwarzbeck	FMZB 1519	192	9 KHz -30MHz	Nov. 28, 2024	1 Year
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Sep. 10, 2024	1 Year
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	9KHz-1GHz	Mar. 21, 2025	1 Year
Cable	IMRO	AK-9515E(9m)	Cable-L	9KHz-3GHz	Aug. 15, 2024	1 Year
Spectrum Analyzer	Rohde&Schwarz	FSV40	6625-01-588-5515	9KHz-40GHz	Aug. 15, 2024	1 Year
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1246	1GHz-18GHz	Dec. 12, 2024	1 Year

Power Amplifier	ZHINAN	ZN3380C	15002	1GHz-26.5GHz	Aug. 15, 2024	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-1066	15GHz-40GHz	Jul. 24, 2024	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-1066	15GHz-40GHz	Jul. 23, 2025	1 Year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz	Jul. 25, 2024	1 Year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz	Jul. 24, 2025	1 Year
Cable	H+S	CBL-26	N/A	1GHz-26.5GHz	Aug. 15, 2024	1 Year
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug. 15, 2024	1 Year
Test S/W	Tonscend	TS+	/	/	/	/

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Date	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESCI3	101417	9KHz-3GHz	Aug. 15, 2024	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	102453	9KHz-300MHz	Oct. 30, 2024	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	9KHz-300MHz	Oct. 30, 2024	1 Year
Limiter	R&S	ESH3-Z2	0357.8810.54-102808-NB	0Hz-30MHz	Aug. 15, 2024	1 Year
RF Switch	DIAMOND ANTENNA	CX-210	/	0.09MHz-6GHz	Mar. 21,2025	1 Year
Test S/W	Tonscend	JS32-CE	/	/	/	/

4.2Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(9kHz~30MHz)	±3.15dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB

4.3Description of Support Units

Equipment	Model No.	Series No.
Adapter	Model: PS65B050Y3000S	N/A

5 Conducted Emission

Test Requirement:	:	FCC CFR 47 Part 15 Section 15.207
Test Method	:	ANSI C63.10: 2013
Test Result	:	PASS
Frequency Range	:	150kHz to 30MHz
Class/Severity	:	Class B

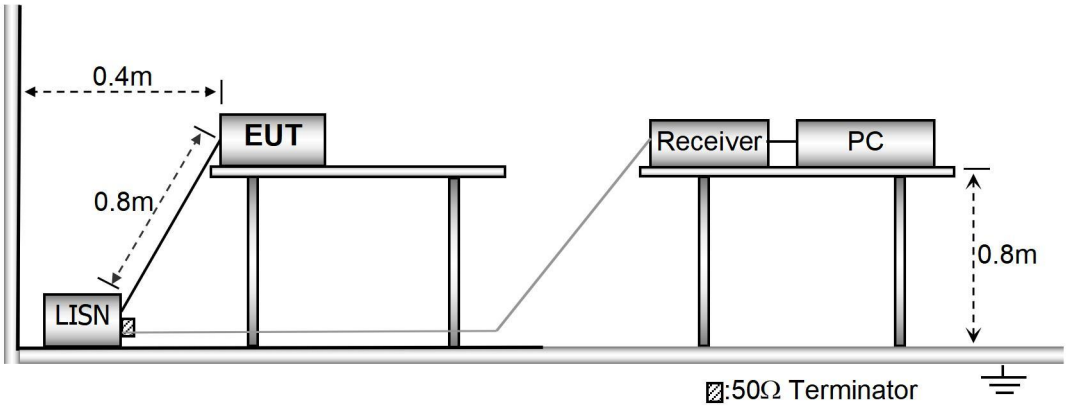
5.1E.U.T. Operation

Operating Environment :

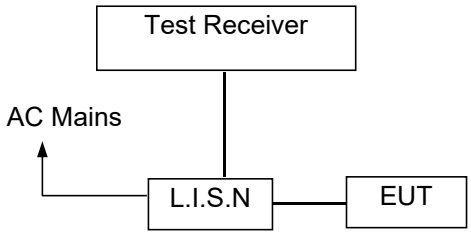
Temperature	:	23.9 °C
Humidity	:	51.4 % RH
Atmospheric Pressure	:	101.21kPa

5.2EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10-2020.



5.3Test SET-UP (Block Diagram of Configuration)



5.4Measurement Procedure

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.5Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:
1. The lower limit shall apply at the transition frequencies
2.The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.6Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

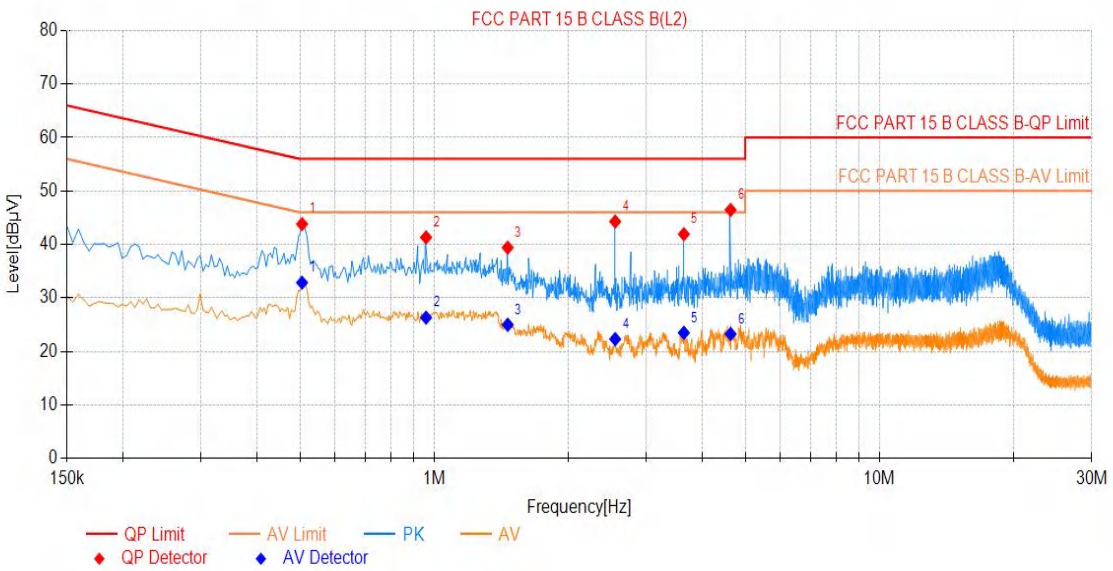
5.7Conducted Emission Test Result

Pass.

All the modulation modes were tested the data of the worst mode, and it was found that (120Vac/60Hz, TX 802.11b Low Channel) was a poor mode, and the report only reflected the poor mode.

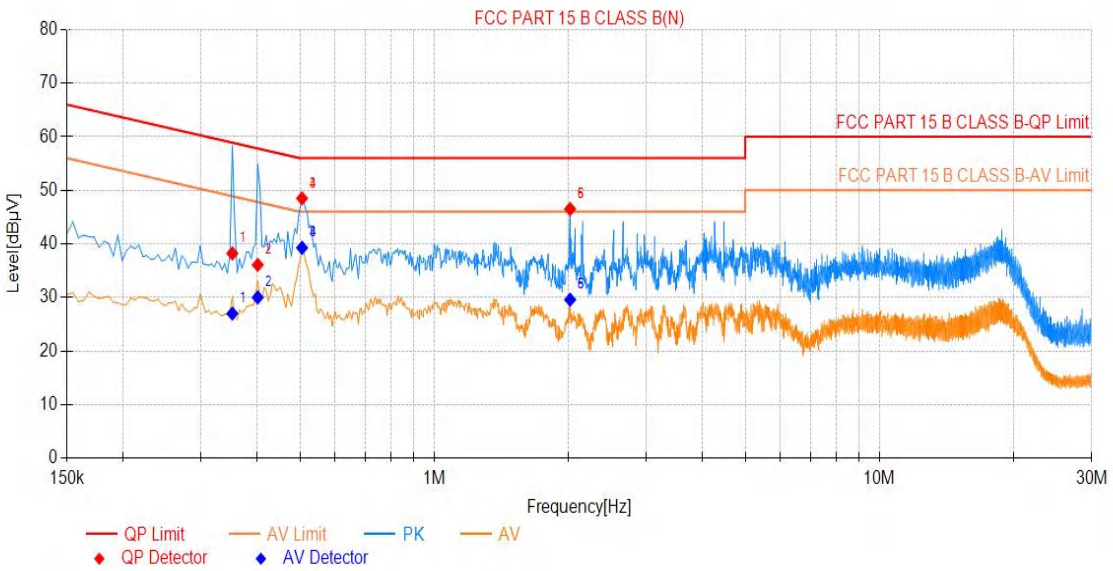
Please refer to the following pages.

Line- AC 120V/60Hz



Final Data List											
NO.	Freq. [MHz]	QP Reading	Factor [dB]	QP Value	QP Limit	QP Margin	AV Reading	AV Value	AV Limit	AV Margin	Verdict
1	0.506	34.00	9.81	43.81	56.00	12.19	23.05	32.86	46.00	13.14	PASS
2	0.960	31.50	9.83	41.33	56.00	14.67	16.49	26.32	46.00	19.68	PASS
3	1.464	29.58	9.83	39.41	56.00	16.59	15.15	24.98	46.00	21.02	PASS
4	2.553	34.47	9.82	44.29	56.00	11.71	12.48	22.30	46.00	23.70	PASS
5	3.642	32.09	9.83	41.92	56.00	14.08	13.65	23.48	46.00	22.52	PASS
6	4.637	36.57	9.89	46.46	56.00	9.54	13.36	23.25	46.00	22.75	PASS

Neutral-AC 120V/60Hz



Final Data List											
NO.	Freq. [MHz]	QP Reading	Factor [dB]	QP Value	QP Limit	QP Margin	AV Reading	AV Value	AV Limit	AV Margin	Verdict
1	0.353	28.41	9.81	38.22	58.90	20.68	17.18	26.99	48.90	21.91	PASS
2	0.402	26.27	9.81	36.08	57.81	21.73	20.19	30.00	47.81	17.81	PASS
3	0.506	38.69	9.81	48.50	56.00	7.50	29.46	39.27	46.00	6.73	PASS
4	0.506	38.69	9.81	48.50	56.00	7.50	29.46	39.27	46.00	6.73	PASS
5	2.022	36.70	9.82	46.52	56.00	9.48	19.76	29.58	46.00	16.42	PASS
6	2.022	36.70	9.82	46.52	56.00	9.48	19.76	29.58	46.00	16.42	PASS

Note: QP Margin[dB]= QP Limit[dBµV]- QP Value[dBµV], AV Margin[dB]= AV Limit[dBµV]- AV Value[dBµV].

6 Radiated Spurious Emissions

Test Requirement : FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method : ANSI C63.10-2020

Test Result : PASS

Measurement Distance : 3m

Limit : See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1EUT Operation

Operating Environment :

Temperature: : 24.5 °C

Humidity: : 52 % RH

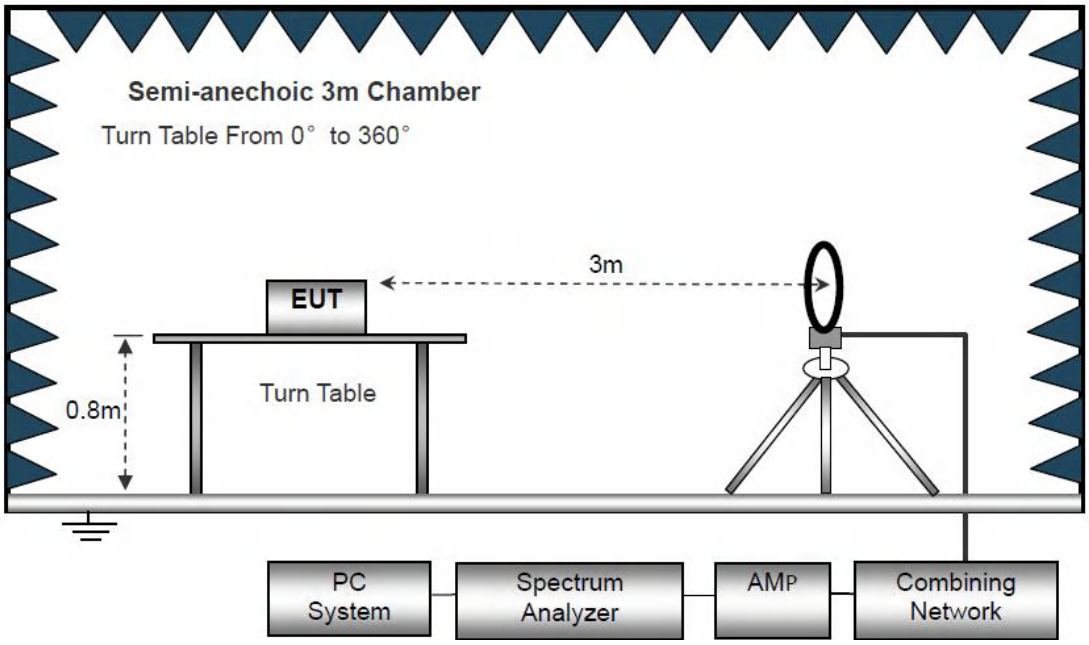
Atmospheric Pressure: : 101.3kPa

Test Voltage : AC 120V 60Hz

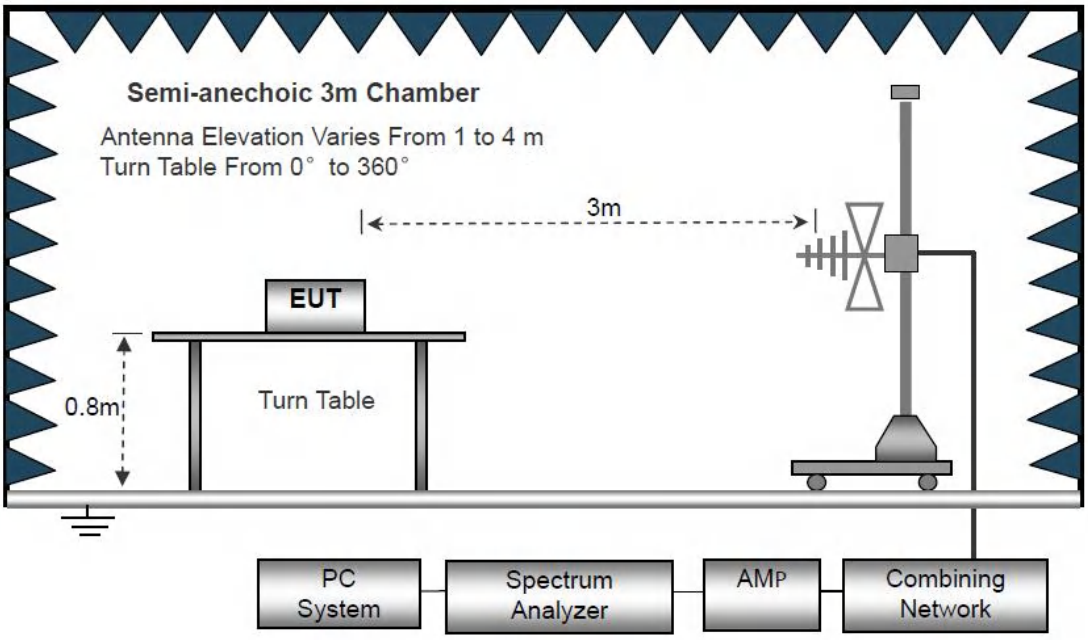
6.2Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

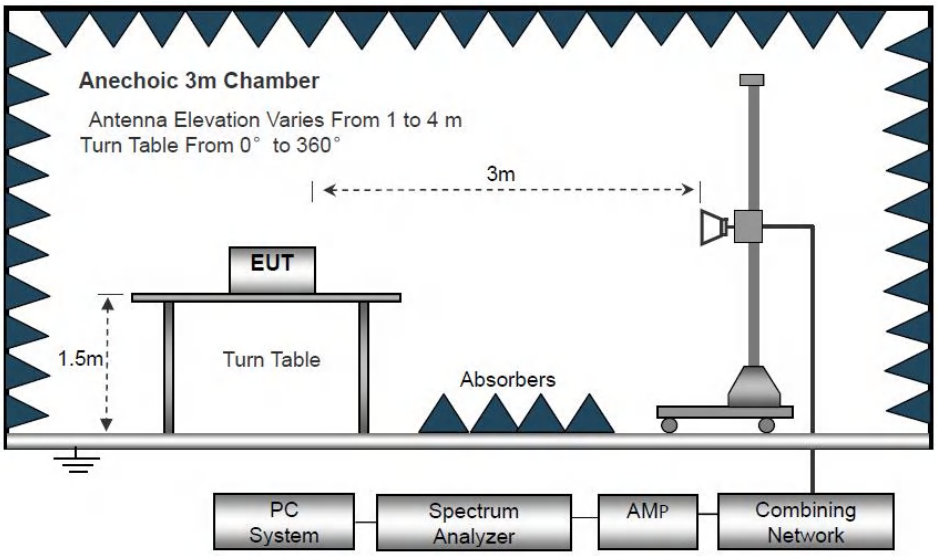
The test setup for emission measurement below 30MHz



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



The test setup for emission measurement above 1 GHz



6.3Spectrum Analyzer Setup

	Frequency	Detector	RBW	VBW	Remark
Receiver Setup	Below 30MHz	--	10kHz	10kHz	--
	30MHz ~ 1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	Average Value

6.4Test Procedure

1. Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane, And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.

3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

6. Repeat above procedures until the measurements for all frequencies are complete.

7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room

6.5Summary of Test Results

Test Frequency: 9KHz-30MHz

Note:

The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

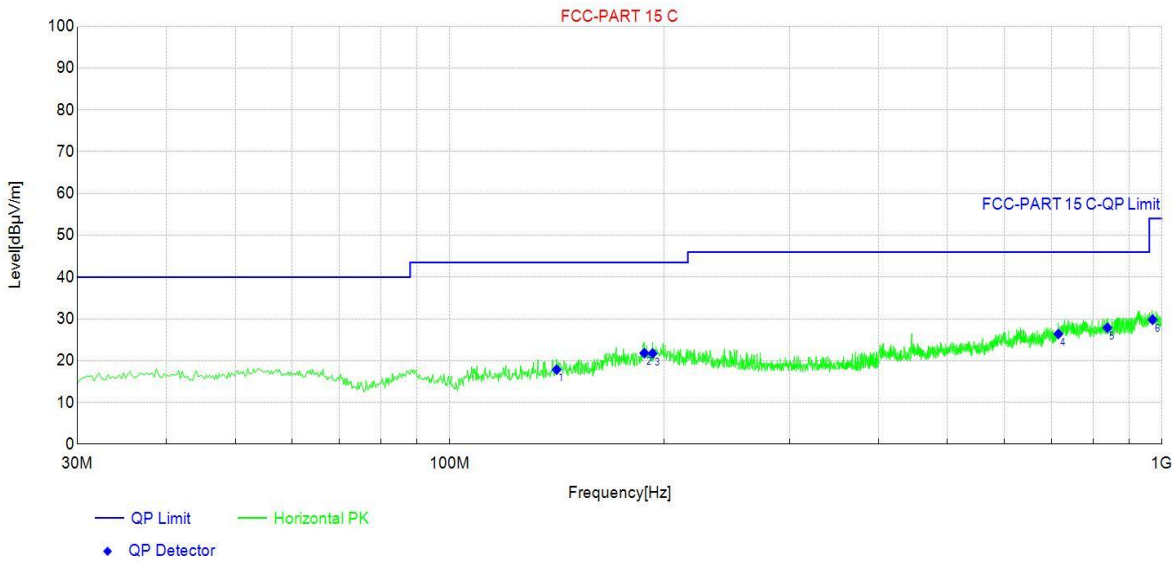
Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor.

Test Frequency: 30MHz ~ 1GHz

All the modulation modes were tested the data of the worst mode (TX 802.11b Low Channel) are recorded in the following pages and the others modulation methods do not exceed the limits.

Please refer to the following test plots:

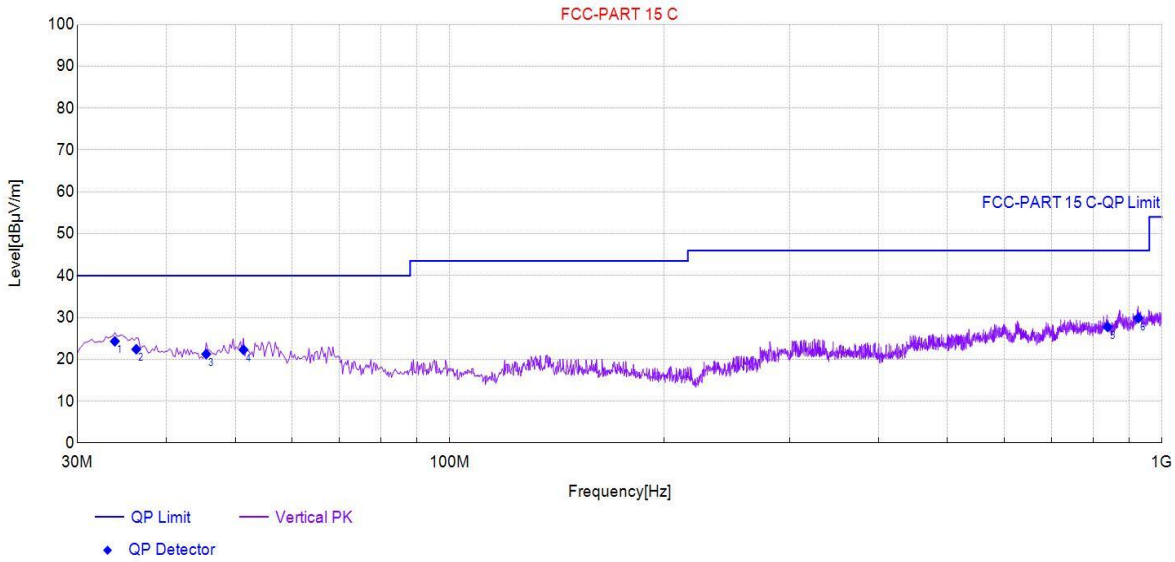
Antenna Polarization: Horizontal



Final Data List[QP]								
NO.	Freq. [MHz]	QP Reading [dBµV]	Factor [dB/m]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity	Verdict
1	141.31	27.83	-9.95	17.88	43.50	25.62	Horizontal	PASS
2	187.63	33.87	-12.04	21.83	43.50	21.67	Horizontal	PASS
3	192.72	34.05	-12.30	21.75	43.50	21.75	Horizontal	PASS
4	715.31	26.12	0.29	26.41	46.00	19.59	Horizontal	PASS
5	838.25	26.51	1.38	27.89	46.00	18.11	Horizontal	PASS
6	970.17	26.49	3.33	29.82	54.00	24.18	Horizontal	PASS

Remark:1. QP Value= QP Reading+ Factor;
2.QP Margin= QP Limit- QP Value；
3.Factor= ANT Factor+ Cable Loss -AMP Factor.

Antenna Polarization: Vertical



Final Data List[QP]								
NO.	Freq. [MHz]	QP Reading [dBµV]	Factor [dB/m]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity	Verdict
1	33.88	35.65	-11.33	24.32	40.00	15.68	Vertical	PASS
2	36.31	33.37	-10.95	22.42	40.00	17.58	Vertical	PASS
3	45.52	31.31	-10.06	21.25	40.00	18.75	Vertical	PASS
4	51.34	32.26	-9.96	22.30	40.00	17.70	Vertical	PASS
5	838.98	26.32	1.43	27.75	46.00	18.25	Vertical	PASS
6	926.04	26.21	3.65	29.86	46.00	16.14	Vertical	PASS

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor

Test Frequency: From 1GHz to 18GHz

2.4G WiFi (802.11b/g/n)mode have been tested, and the worse mode(802.11b) was report as below:

802.11b

Test Mode: 2412					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4824	46.94	32.35	4.12	28.44	54.97	74	-19.03	V
7236	38.55	36.08	6.3	27.74	53.19	74	-20.81	V
9648	35.74	38.25	7.91	24.65	57.25	74	-16.75	V
4824	43.04	32.35	4.12	28.44	51.07	74	-22.93	H
7236	38.14	36.08	6.3	27.74	52.78	74	-21.22	H
9648	34.95	38.25	7.91	24.65	56.46	74	-17.54	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4824	31.95	32.35	4.12	28.44	39.98	54	-14.02	V
7236	25.16	36.08	6.3	27.74	39.80	54	-14.20	V
9648	20.84	38.25	7.91	24.65	42.35	54	-11.65	V
4824	30.98	32.35	4.12	28.44	39.01	54	-14.99	H
7236	25.56	36.08	6.3	27.74	40.20	54	-13.80	H
9648	21.51	38.25	7.91	24.65	43.02	54	-10.98	H

802.11b

Test Mode: 2437					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4874	46.15	32.35	4.12	28.44	54.18	74	-19.82	V
7311	38.87	36.08	6.3	27.74	53.51	74	-20.49	V
9748	35.76	38.25	7.91	24.65	57.27	74	-16.73	V
4874	43.65	32.35	4.12	28.44	51.68	74	-22.32	H
7311	38.13	36.08	6.3	27.74	52.77	74	-21.23	H
9748	33.86	38.25	7.91	24.65	55.37	74	-18.63	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4874	31.63	32.35	4.12	28.44	39.66	54	-14.34	V
7311	23.29	36.08	6.3	27.74	37.93	54	-16.07	V
9748	20.69	38.25	7.91	24.65	42.20	54	-11.80	V
4874	30.86	32.35	4.12	28.44	38.89	54	-15.11	H
7311	24.89	36.08	6.3	27.74	39.53	54	-14.47	H
9748	21.20	38.25	7.91	24.65	42.71	54	-11.29	H

802.11b

Test Mode: 2462					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4924	46.46	32.41	4.14	28.42	54.59	74	-19.41	V
7386	38.44	36.15	6.36	27.68	53.27	74	-20.73	V
9848	35.20	38.35	7.97	24.33	57.19	74	-16.81	V
4924	42.77	32.41	4.14	28.42	50.90	74	-23.10	H
7386	38.39	36.15	6.36	27.68	53.22	74	-20.78	H
9848	33.67	38.35	7.97	24.33	55.66	74	-18.34	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4924	30.45	32.41	4.14	28.42	38.58	54	-15.42	V
7386	25.04	36.15	6.36	27.68	39.87	54	-14.13	V
9848	20.72	38.35	7.97	24.33	42.71	54	-11.29	V
4924	30.93	32.41	4.14	28.42	39.06	54	-14.94	H
7386	25.72	36.15	6.36	27.68	40.55	54	-13.45	H
9848	20.92	38.35	7.97	24.33	42.91	54	-11.09	H

Note:

1. The testing has been conformed to 10*2462MHz=24620MHz.
2. All other emissions more than 30dB below the limit.
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
   Emission Level = Reading + Factor
   Margin=Emission Level-Limit
4. X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz
2.4G WiFi (802.11b/g/n)mode have been tested, and the worst result(802.11g) was report as below:
Test Mode: 802.11g Low Channel 2412MHz

Test Mode: 802.11g Low Channel 2412MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	Test Value
2310	48.84	28.67	6.72	37.26	46.97	74	-27.03	H	Peak
2390	59.89	28.08	6.81	37.12	57.66	74	-16.34	H	
2310	48.25	28.67	6.72	37.26	46.38	74	-27.62	V	
2390	55.86	28.08	6.81	37.12	53.63	74	-20.37	V	
2310	40.71	28.67	6.72	37.26	38.84	54	-15.16	H	Average
2390	44.14	28.08	6.81	37.12	41.91	54	-12.09	H	
2310	39.82	28.67	6.72	37.26	37.95	54	-16.05	V	
2390	45.30	28.08	6.81	37.12	43.07	54	-10.93	V	

Test Mode: 802.11g High Channel 2462MHz

Test Mode: 802.11g High Channel 2462MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	Test Value
2483.5	59.98	27.38	6.15	36.29	57.22	74	-16.78	H	Peak
2500	48.20	27.43	6.68	36.79	45.52	74	-28.48	H	
2483.5	59.65	27.38	6.15	36.29	56.89	74	-17.11	V	
2500	49.81	27.43	6.68	36.79	47.13	74	-26.87	V	
2483.5	41.73	27.38	6.15	36.29	38.97	54	-15.03	H	Average
2500	40.40	27.43	6.68	36.79	37.72	54	-16.28	H	
2483.5	43.72	27.38	6.15	36.29	40.96	54	-13.04	V	
2500	39.55	27.43	6.68	36.79	36.87	54	-17.13	V	

Test Frequency: From 18GHz to 25GHz

According to ANSI C63.10-2013 clause 6.6.4.3:The final measurements are performed on a site meeting the requirements of 5.2. Using the orientation and equipment arrangement of the EUT based on the measurement results found during the preliminary (exploratory) measurements per 6.6.4.2, the EUTarrangement, appropriate modulation, and modes of operation that produce the emissions that have the highest amplitude relative to the limit shall be selected for the final measurement. The final measurement shall follow all the procedures in 6.3 with the EUT operating on frequencies per 5.6. For each mode selected, record the frequency and amplitude of the highest fundamental emission (if applicable), as well as the frequency and amplitude of the six highest spurious emissions relative to the limit. Emissions more than 20 dB below the limit do not need to be reported.

The measurements were more than 20dB below the limit and not reported.

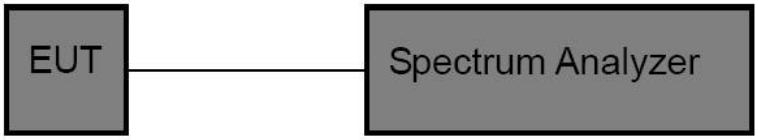
7 Conducted Spurious Emission

Test Requirement : FCC CFR47 Part 15 Section 15.247
Test Method : ANSI C63.10-2020
Test Limit : Regulation 15.247 (d),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 conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies 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. 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) (see §15.205(c)).

7.1Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto
Detector function = peak, Trace = max hold

7.2Test Setup



7.3Test Result

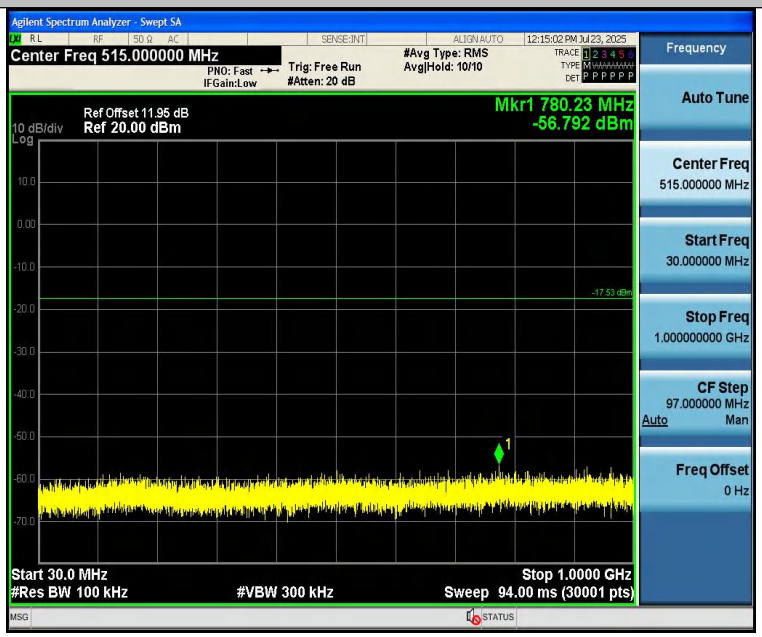
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	0~Reference	2.47	2.47	---	PASS
11B	Ant1	2412	30~1000	2.47	-56.79	≤-17.53	PASS
11B	Ant1	2412	1000~26500	2.47	-26.11	≤-17.53	PASS
11B	Ant1	2437	0~Reference	2.54	2.54	---	PASS
11B	Ant1	2437	30~1000	2.54	-57.63	≤-17.46	PASS
11B	Ant1	2437	1000~26500	2.54	-21.92	≤-17.46	PASS
11B	Ant1	2462	0~Reference	3.34	3.34	---	PASS
11B	Ant1	2462	30~1000	3.34	-56.74	≤-16.66	PASS

11B	Ant1	2462	1000~26500	3.34	-18.7	≤-16.66	PASS
11G	Ant1	2412	0~Reference	1.01	1.01	---	PASS
11G	Ant1	2412	30~1000	1.01	-57.45	≤-18.99	PASS
11G	Ant1	2412	1000~26500	1.01	-30.91	≤-18.99	PASS
11G	Ant1	2437	0~Reference	1.46	1.46	---	PASS
11G	Ant1	2437	30~1000	1.46	-57.48	≤-18.54	PASS
11G	Ant1	2437	1000~26500	1.46	-28.8	≤-18.54	PASS
11G	Ant1	2462	0~Reference	0.25	0.25	---	PASS
11G	Ant1	2462	30~1000	0.25	-56.96	≤-19.75	PASS
11G	Ant1	2462	1000~26500	0.25	-26.69	≤-19.75	PASS
11N20SISO	Ant1	2412	0~Reference	0.39	0.39	---	PASS
11N20SISO	Ant1	2412	30~1000	0.39	-57.18	≤-19.61	PASS
11N20SISO	Ant1	2412	1000~26500	0.39	-30.89	≤-19.61	PASS
11N20SISO	Ant1	2437	0~Reference	-0.01	-0.01	---	PASS
11N20SISO	Ant1	2437	30~1000	-0.01	-57.71	≤-20.01	PASS
11N20SISO	Ant1	2437	1000~26500	-0.01	-30.54	≤-20.01	PASS
11N20SISO	Ant1	2462	0~Reference	-0.11	-0.11	---	PASS
11N20SISO	Ant1	2462	30~1000	-0.11	-57.32	≤-20.11	PASS
11N20SISO	Ant1	2462	1000~26500	-0.11	-31.67	≤-20.11	PASS

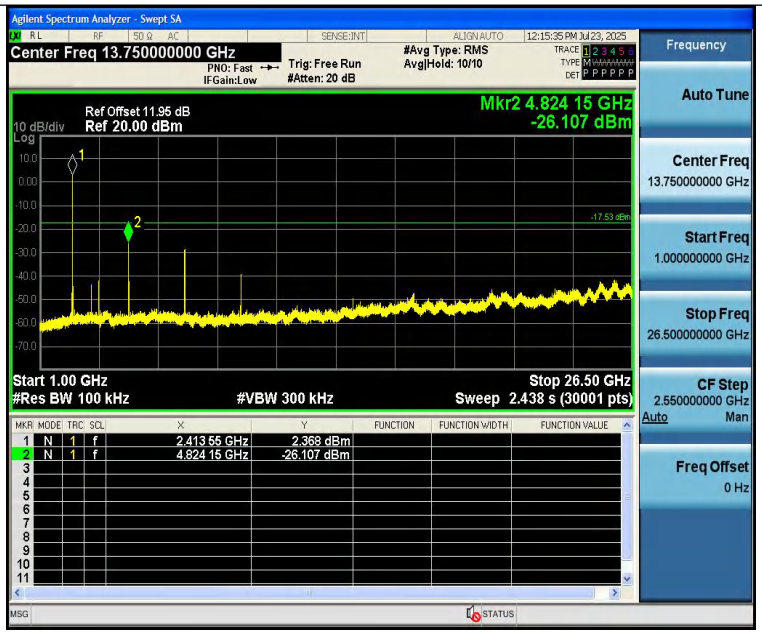
Test Graphs:

11B-Ant1-2412-0~Reference-PASS

11B-Ant1-2412-30~1000-PASS

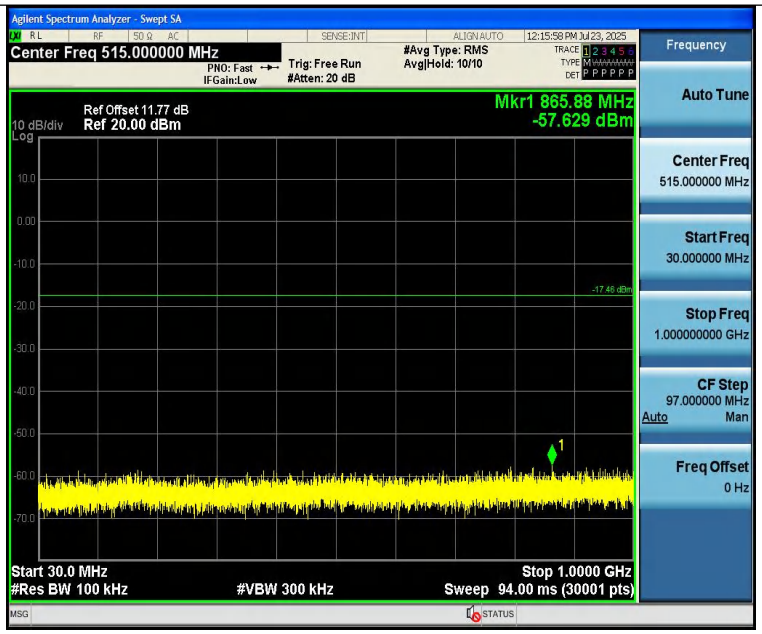


11B-Ant1-2412-1000~26500-PASS

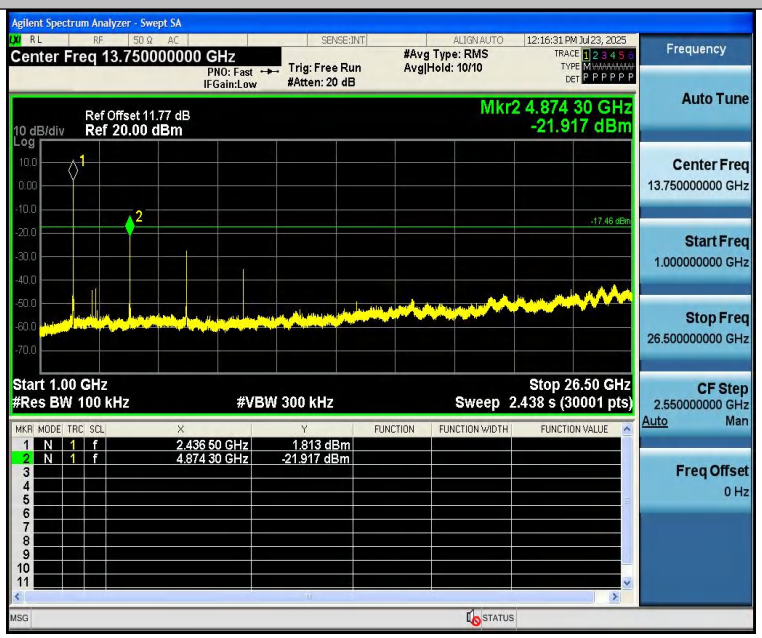


11B-Ant1-2437-0~Reference-PASS

11B-Ant1-2437-30~1000-PASS

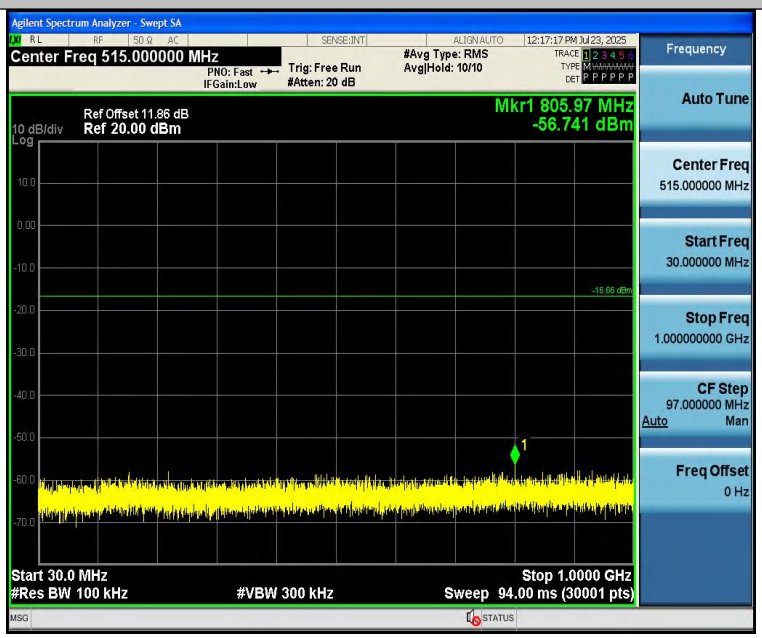


11B-Ant1-2437-1000~26500-PASS

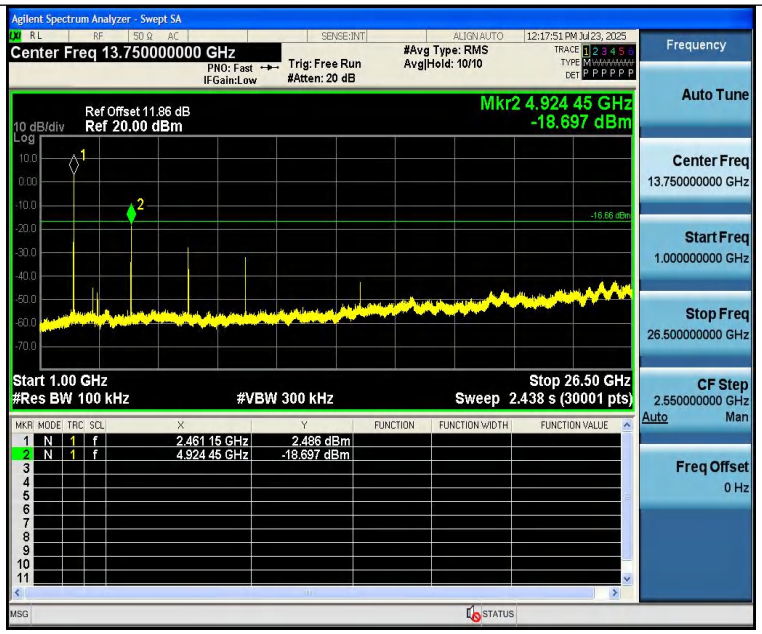


11B-Ant1-2462-0~Reference-PASS

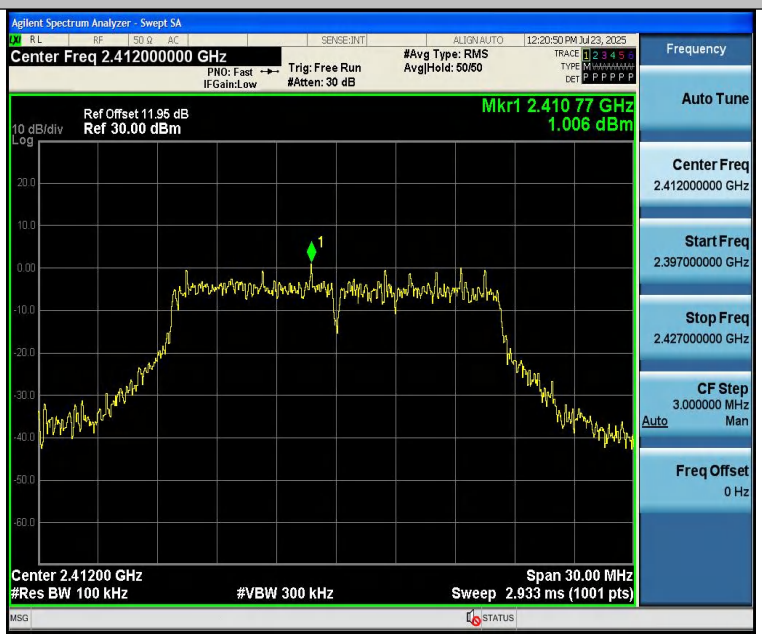
11B-Ant1-2462-30~1000-PASS



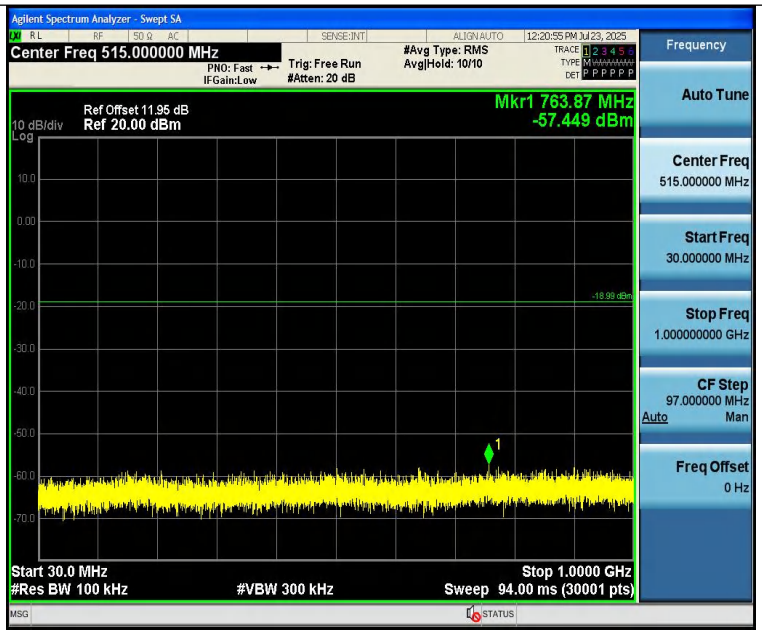
11B-Ant1-2462-1000~26500-PASS



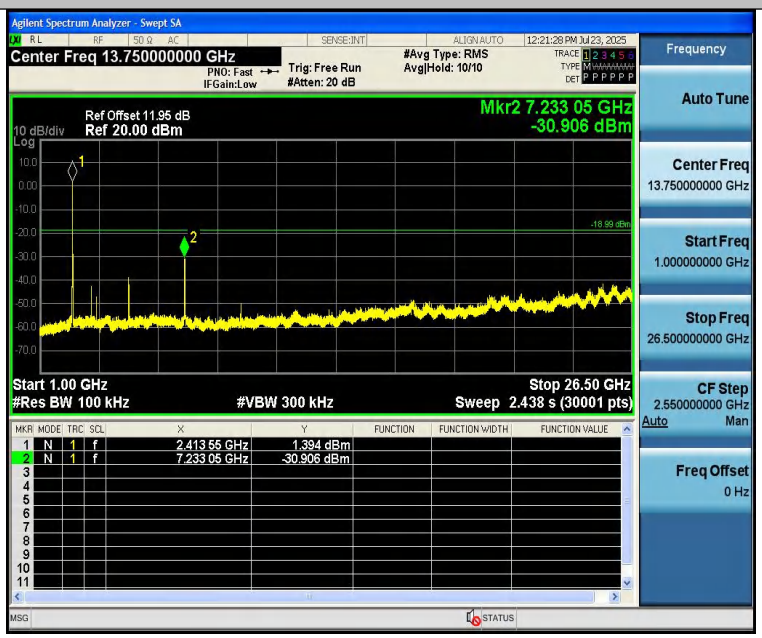
11G-Ant1-2412-0~Reference-PASS



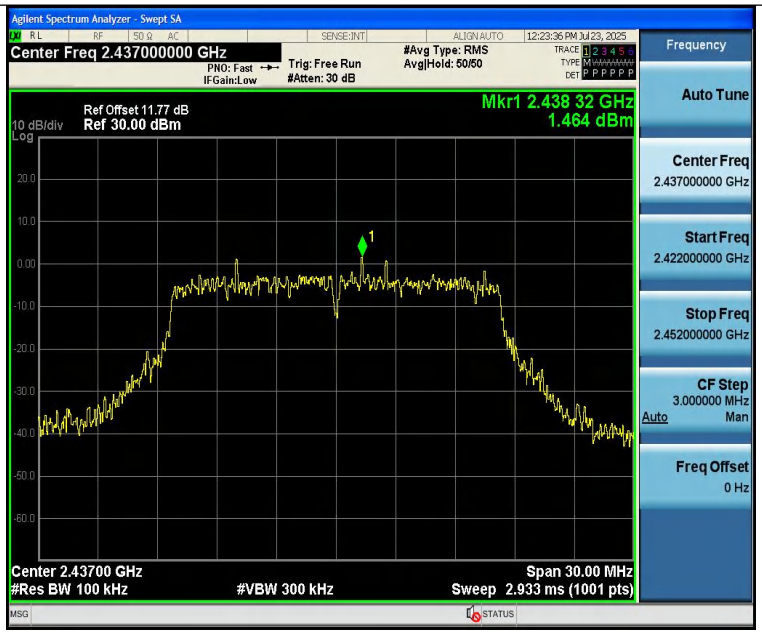
11G-Ant1-2412-30~1000-PASS



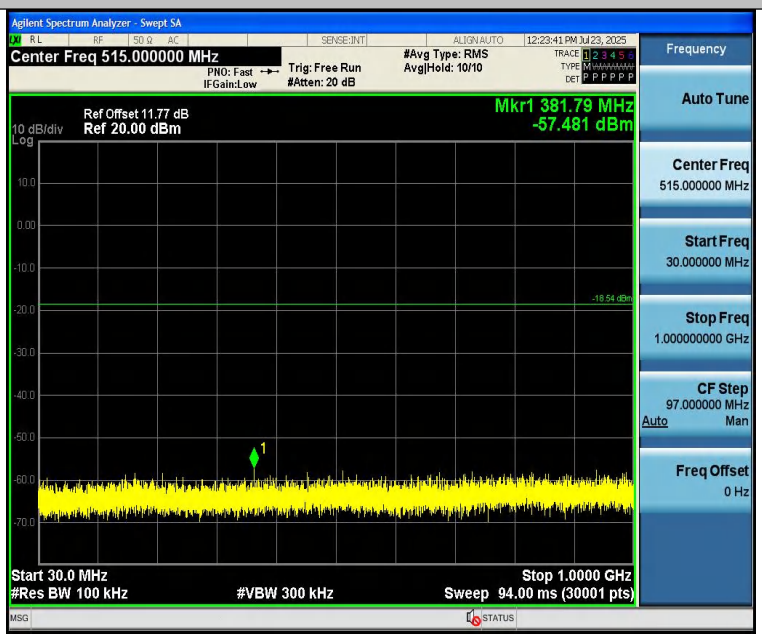
11G-Ant1-2412-1000~26500-PASS



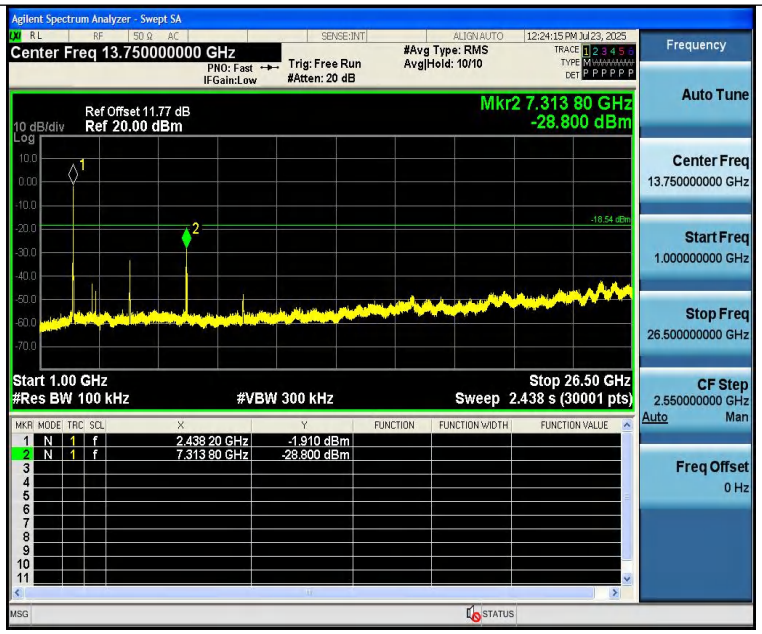
11G-Ant1-2437-0~Reference-PASS



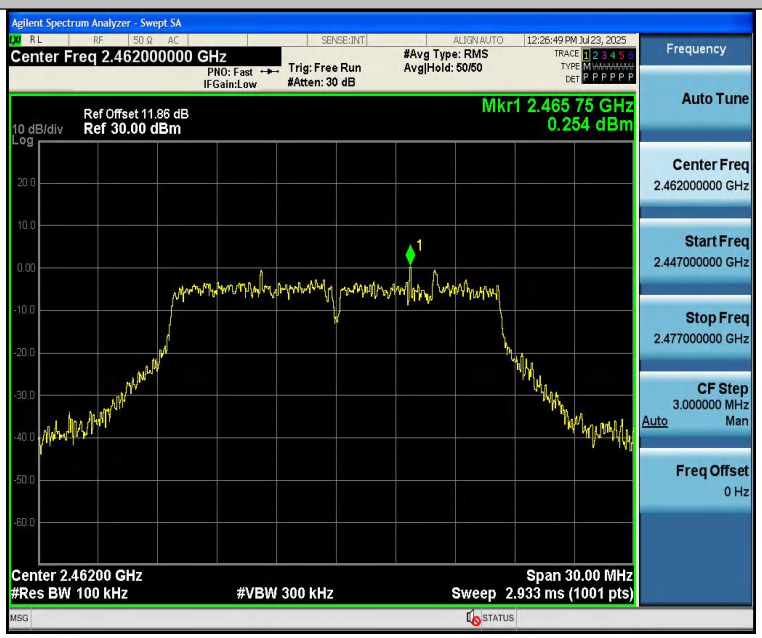
11G-Ant1-2437-30~1000-PASS



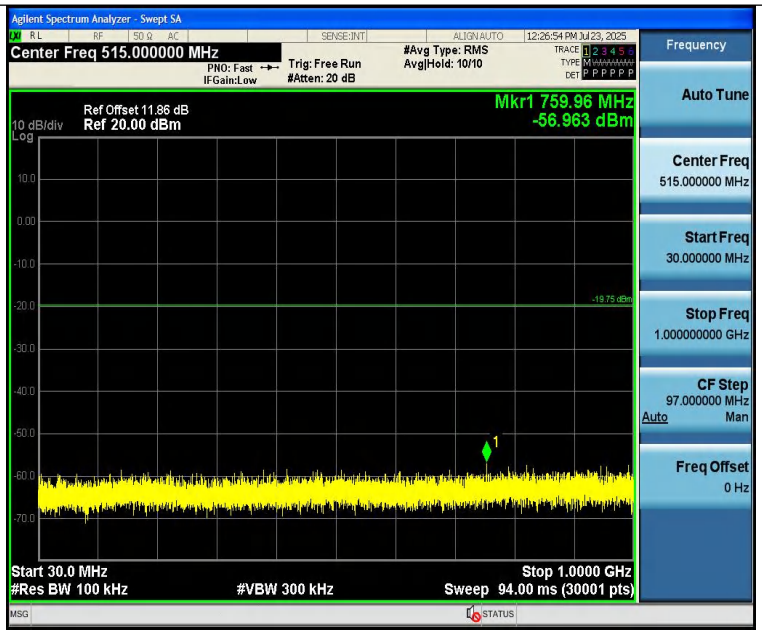
11G-Ant1-2437-1000~26500-PASS



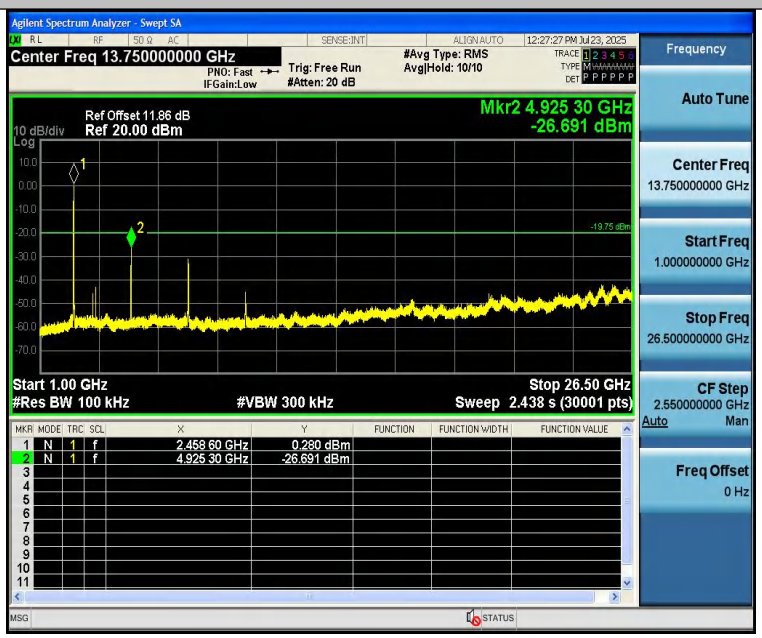
11G-Ant1-2462-0~Reference-PASS



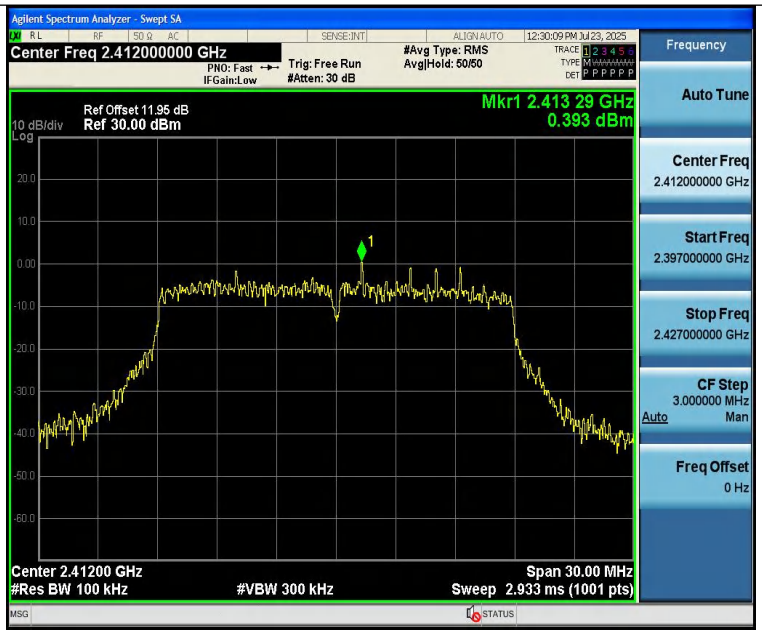
11G-Ant1-2462-30~1000-PASS



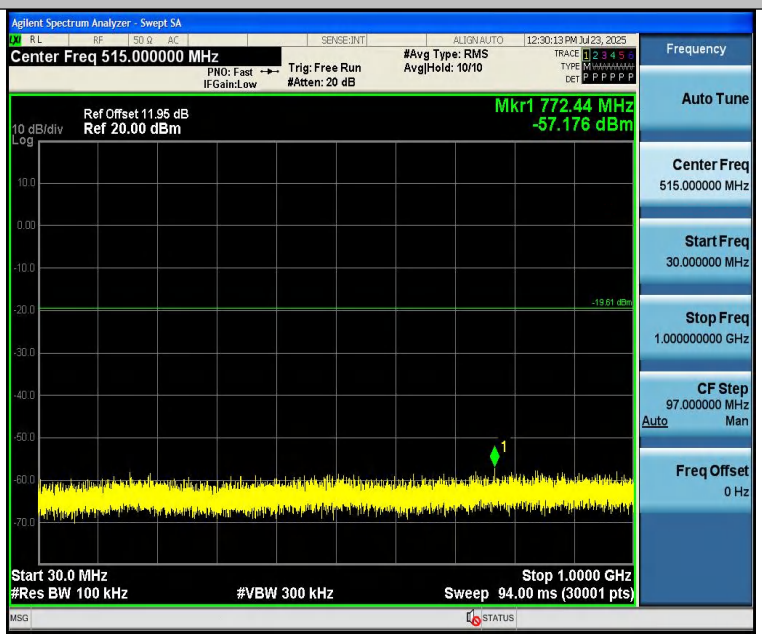
11G-Ant1-2462-1000~26500-PASS



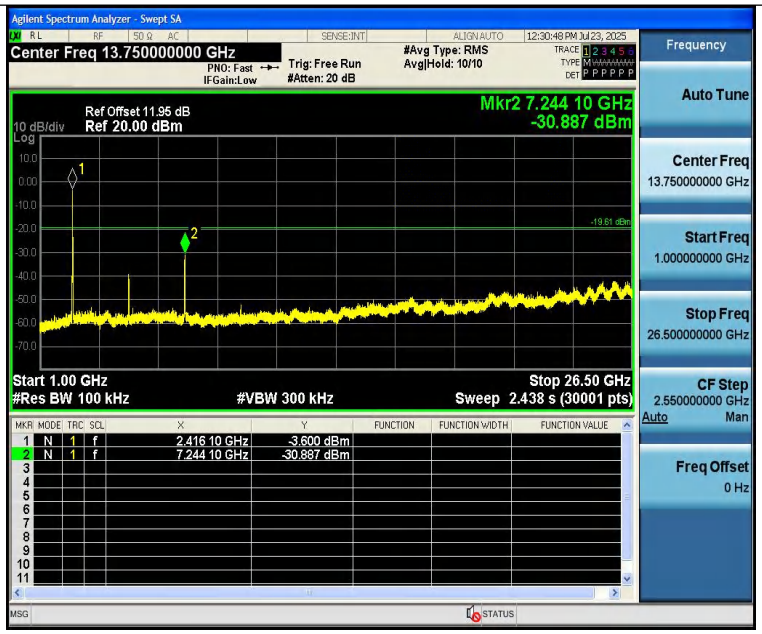
11N20SISO-Ant1-2412-0~Reference-PASS



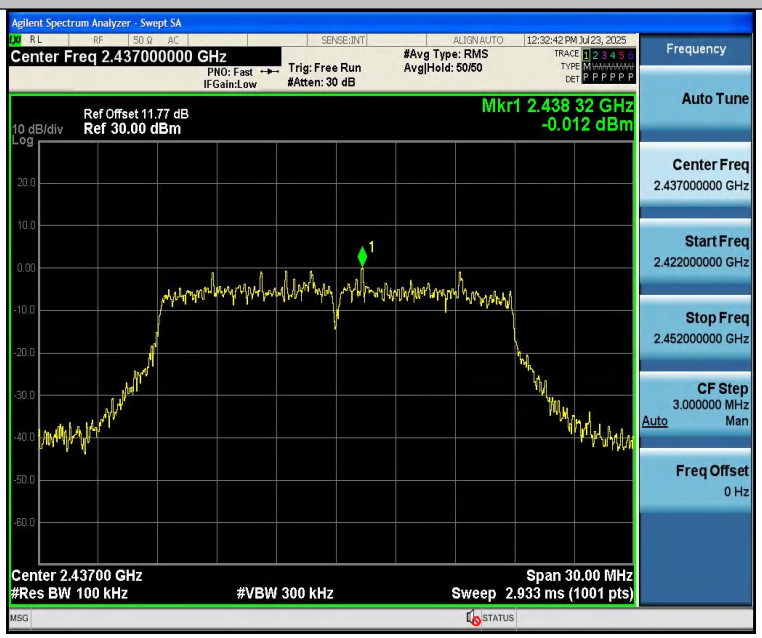
11N20SISO-Ant1-2412-30~1000-PASS



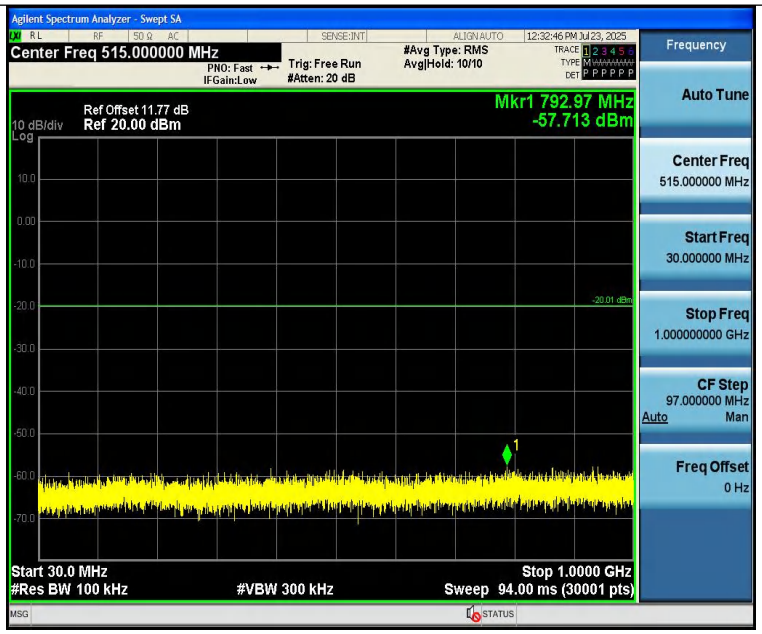
11N20SISO-Ant1-2412-1000~26500-PASS



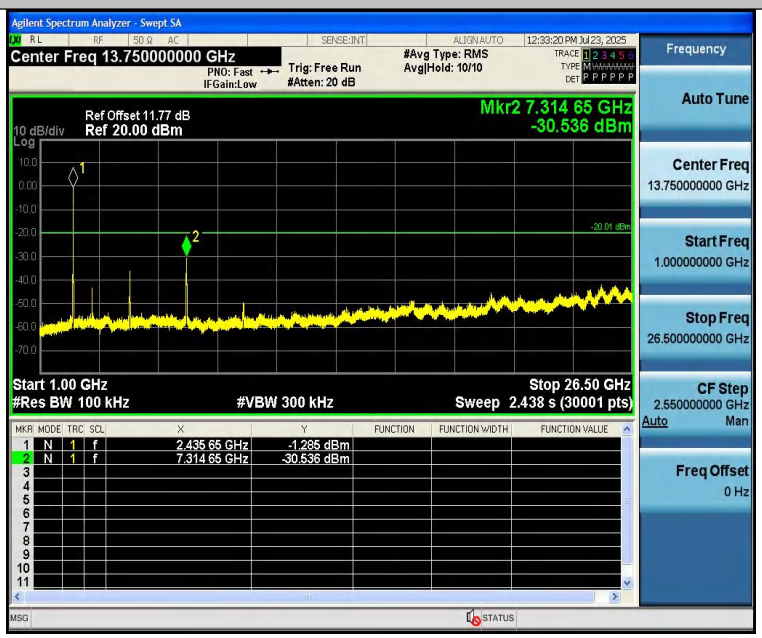
11N20SISO-Ant1-2437-0~Reference-PASS



11N20SISO-Ant1-2437-30~1000-PASS

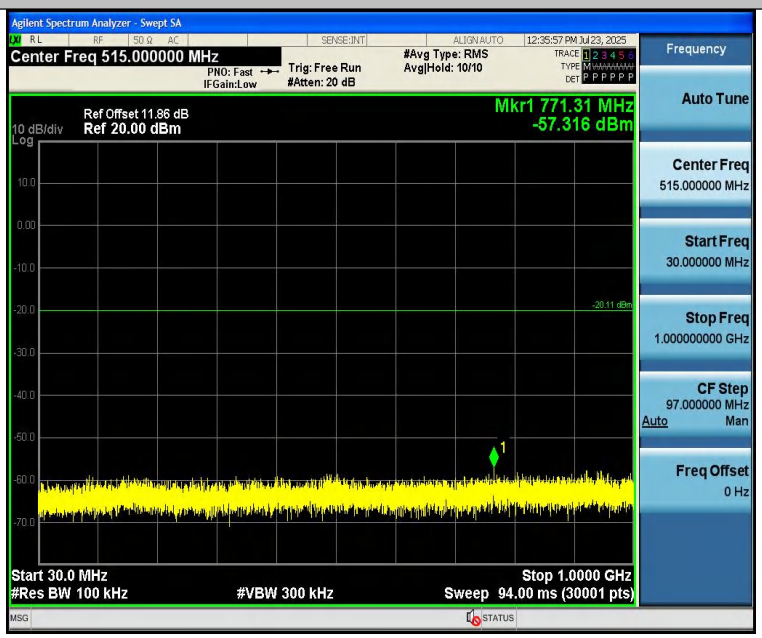


11N20SISO-Ant1-2437-1000~26500-PASS

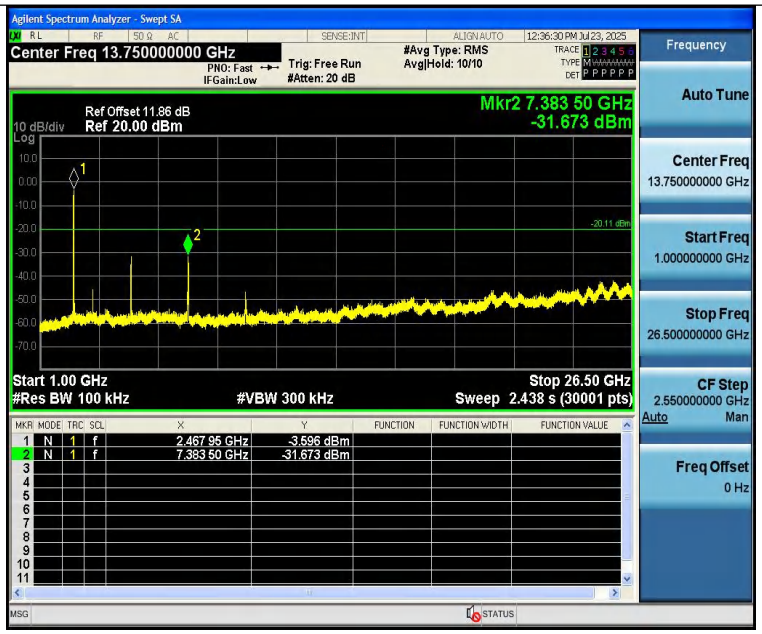


11N20SISO-Ant1-2462-0~Reference-PASS

11N20SISO-Ant1-2462-30~1000-PASS



11N20SISO-Ant1-2462-1000~26500-PASS


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 10/10
12:36:30 PM Jul 23, 2025
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 11.86 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr2 7.383 50 GHz
-31.673 dBm
-20.11 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.438 s (30001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.467 95 GHz -3.596 dBm
2 N 1 f 7.383 50 GHz -31.673 dBm
MSG
STATUS

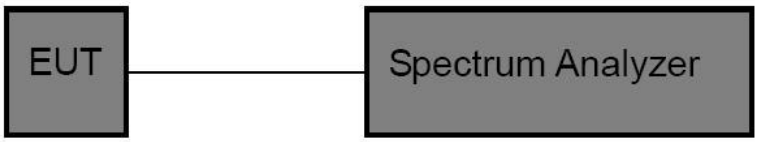
8 Band Edge Measurement

Test Requirement	:	Section 15.247(d) In addition, radiated emissions which fall in the restricted bands. as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).
Test Method	:	ANSI C63.10-2020
Test Limit	:	Regulation 15.247 (d),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 conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies 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. 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) (see §15.205(c)).

8.1Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto
Detector function = peak, Trace = max hold

8.2Test Setup

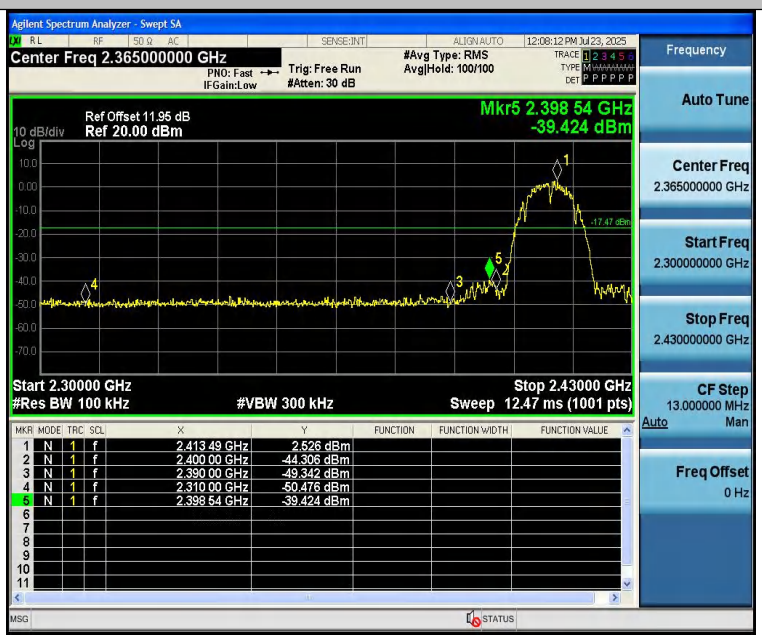


8.3Test Result

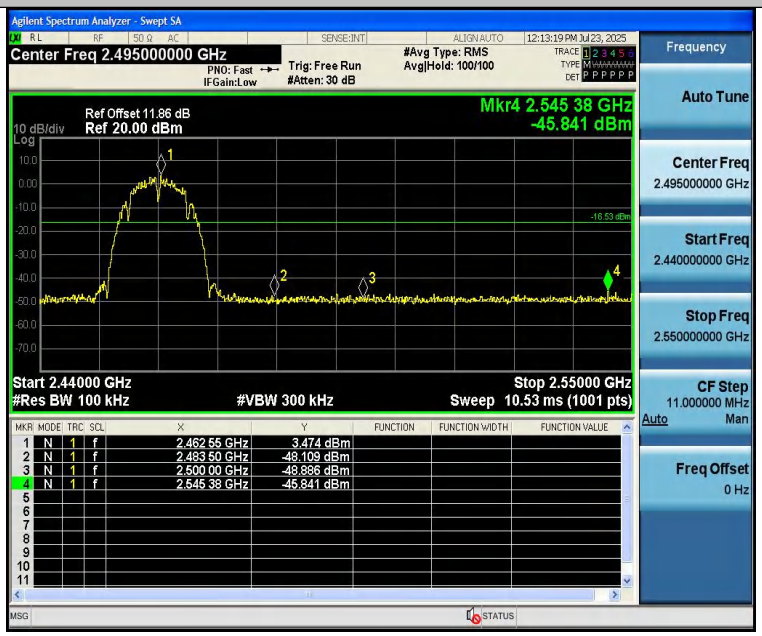
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.53	-39.42	≤-17.47	PASS
11B	Ant1	High	2462	3.47	-45.84	≤-16.53	PASS
11G	Ant1	Low	2412	1.58	-32.23	≤-18.42	PASS
11G	Ant1	High	2462	1.03	-43.11	≤-18.97	PASS
11N20SISO	Ant1	Low	2412	0.50	-32.72	≤-19.5	PASS
11N20SISO	Ant1	High	2462	0.39	-44.55	≤-19.61	PASS

Test Graphs:

11B-Ant1-2412-PASS

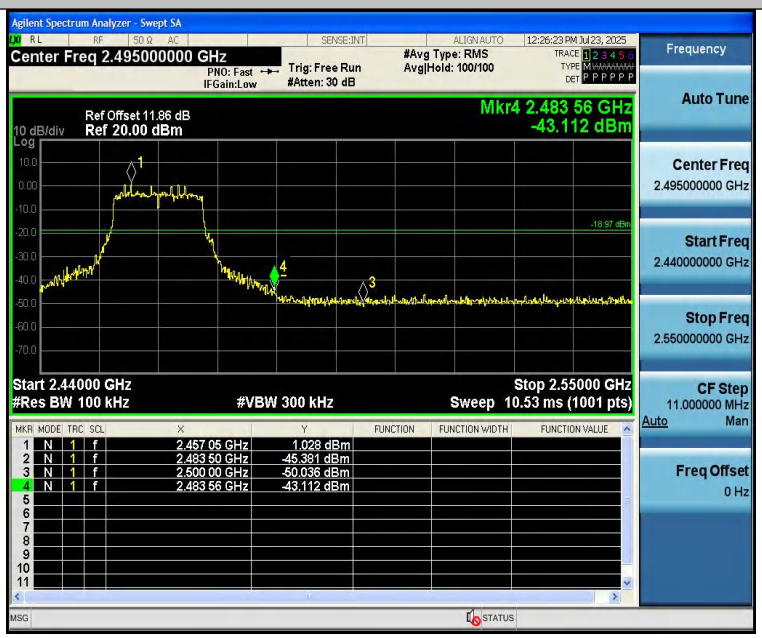


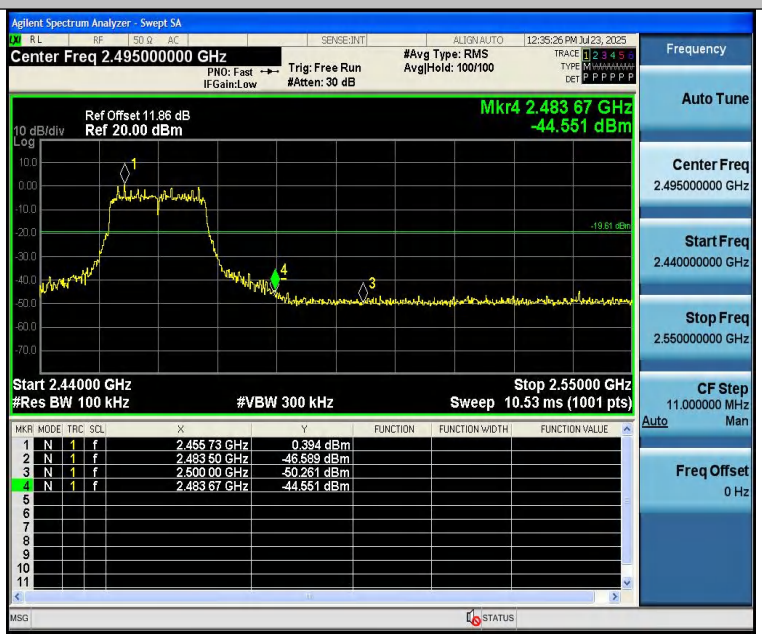
11B-Ant1-2462-PASS



11G-Ant1-2412-PASS

11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS

11N20SISO-Ant1-2462-PASS