

TEST REPORT

Applicant:	Chug Inc.		
Address:	7157 Shady Oak Road, Eden Prairie, MN 55344, USA		
Manufacturer:	Dongguan Fanhai Dazhong Intelligent Technology Co., Ltd.		
Address:	Room 101, No. 70, Industrial Road, Huanzhuli, Changping Town, Dongguan City, Guangdong China		
Factory:	Dongguan Fanhai Dazhong Intelligent Technology Co., Ltd.		
Address :	Room 101, No. 70, Industrial Road, Huanzhuli, Changping Town, Dongguan City, Guangdong China		
E.U.T.:	SMARTPHONE CAR ADAPTER		
Model Number:	WMMS002		
Trade mark:	zsou		
FCC ID:	2AO23-WMMS002		
Date of Receipt:	2026-02-02	Date of Test:	2026-02-02 to 2026-02-28
Test Specification:	FCC 47 CFR Part 15, Subpart C		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Prepared by:		Approved & Authorized Signer:	
			
Jerry Hu/ Engineer		Frank. Shen/ Manager	
		Issue Date: 2026-03-06	
Abbreviations: N/A=not applicable E.U.T.=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Dongguan Lepont Testing Service Co., Ltd.			

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[illegible]

1. GENERAL PRODUCT INFORMATION

1.1. PRODUCT FUNCTION

Refer to Technical Construction Form and User Manual.

1.2. EUT TECHNICAL DESCRIPTION

Product Name:	SMARTPHONE CAR ADAPTER
Model No.:	WMMS002
Test Model No:	WMMS002
Difference:	N/A
Serial No.:	N/A
Test sample(s) ID:	LP26010204C02-S005
Sample(s) Status	Engineer sample
Hardware:	V1.0
Software:	V1.0
IEEE 802.11 WLAN Mode Supported :	☒ 802.11b ☒ 802.11g ☒ 802.11n(20MHz channel bandwidth) ☒ 802.11n(40MHz channel bandwidth)
Modulation :	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Operating Frequency Range :	☒ 2412-2462MHz for 802.11b/g/n(HT20) ☒ 2422-2452MHz for 802.11n(HT40)
Number of Channels :	☒ 11 channels for 802.11b/g/n(HT20); ☒ 7 channels for 802.11n(HT40);
Antenna Type :	PCB Antenna
Antenna Gain :	-3.94
Power Supply:	USB: DC 5V

1.3. INDEPENDENT OPERATION MODES

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.

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

Mode	Date Rate	Test Channel
IEEE 802.11b	1Mbps	Low/Middle/High
IEEE 802.11g	6Mbps	Low/Middle/High
IEEE 802.11n HT20	MCS0	Low/Middle/High
IEEE 802.11n HT40	MCS0	Low/Middle/High

Frequency and Channel list

Channel List			
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412		
2	2417		
3	2422	3	2422
4	2427	4	2427
5	2432	5	2432
6	2437	6	2437
7	2442	7	2442
8	2447	8	2447
9	2452	9	2452
10	2457		
11	2462		
802.11b/g/n(HT20)		802.11n(HT40)	

1.4. TEST SOFTWARE

Software	Description
ADB.EXE	Set the ADB Test Tool to set the corresponding Test conditions
TX Level	Default

1.5. GENERAL CONDITION

	Temperature	Humidity
Ambient Condition:	22.4℃	51.2 %RH

1.6. SUPPORT EQUIPMENT

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

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB-A to USB-A	1	Shielded	Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Laptop computer	Lenovo	Xiaoxin Pro IA5HR	PF490VB0

Notes:

- 1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2.Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

2. TEST STANDARDS AND SITES

2.1. DESCRIPTION OF STANDARDS AND RESULTS

The EUT have been tested according to the applicable standards as referenced below.

FCC Part Clause	Test Parameter	Verdict	Remark
15.247(a)(2)	DTS (6dB) Bandwidth and 99% Occupy Bandwidth	PASS	
15.247(b)(3)	Maximum Peak Conducted Output Power	PASS	
15.247(e)	Maximum Power Spectral Density Level	PASS	
15.247(d)	Unwanted Emission Into Non-Restricted Frequency Bands	PASS	
15.247(d) 15.209	Unwanted Emission Into Restricted Frequency Bands (conducted)	PASS	
15.247(d); 15.209	Radiated Spurious Emission	PASS	
15.207	Conducted Emission Test	PASS	
15.203	Antenna Application	PASS	

NOTE1: N/A (Not Applicable)

NOTE2: The report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.

2.2. LIST OF TEST AND MEASUREMENT INSTRUMENTS

For conducted emission at the mains terminals test(Shielded Room 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESCS30	1102.4500	Dec. 10, 2025	1 Year	LEP-E002	☑
Artificial Mains Network	Baluelec	LSN016	BL041122050121	Oct. 21, 2025	1 Year	LEP-E067	☑
Shielded Room 1	MR	MR-L05	LEP-E053	Oct. 21, 2025	3 Year	LEP-E053	☑
Test software	EZ-EMC	Fala	LEPONT-03A2	N/A	N/A	N/A	☑
For radiated(9K-30M) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESR 3	101849	Dec. 10, 2025	1 Year	LEP-E006	☑
Active Loop Antenna	Schwarzbeck	FMZB 1519C	00008	Feb. 02, 2024	3 Year	LEP-E068	☑
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For radiated(30M-1G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESR 3	101849	Dec. 10, 2025	1 Year	LEP-E006	☑
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	743	Oct. 26, 2025	3 Year	LEP-E005	☑
Signal Amplifier	HP	8447D	1726A01222	Dec. 03, 2025	1 Year	LEP-E007	☐
6dB Attenuator	RswTech	5W 6dB	LEP-E084	Dec. 03, 2025	1 Year	LEP-E084	☐
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For radiated(1-18G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Agilent	N9020A	MY49100060	Nov. 26, 2025	1 Year	LEP-E020	☑
Horn antenna	Schwarzbeck	BBHA 9120D	01875	Oct. 26, 2025	3 Year	LEP-E024	☑
Preamplifier	Schwarzbeck	BBN 9718B	00010	Dec. 03, 2025	1 Year	LEP-E025	☑
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For radiated(18-40G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Rohde & Schwarz	FSV40	101412	Oct. 21, 2025	1 Year	LEP-E076	☑
Horn antenna+Preamplifier	COM-POWER	AH840	10100020	Sep. 01, 2025	3 Year	LEP-E075	☑
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For RF test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Rohde & Schwarz	FSV40	101412	Nov. 26, 2025	1 Year	LEP-E076	☑
Spectrum analyzer	Agilent	N9020A	MY49100060	Nov. 26, 2025	1 Year	LEP-E020	☑
Vector source	Agilent	N5182A	MY47420382	Dec. 03, 2025	1 Year	LEP-E021	☑
Analog signal source	Agilent	N5171B	MY51350292	Dec. 03, 2025	1 Year	LEP-E022	☑
All instrument	Rohde & Schwarz	CMW 500	1201.002K50	Dec. 03, 2025	1 Year	LEP-E019	☑
High and low temperature chamber	Math-mart	MT-1202-40	LEP-E041	Dec. 03, 2025	1 Year	LEP-E041	☑
control unit	Tonscend	JS0806-2	10165	N/A	1 Year	LEP-E034	☑
Testing software	Tonscend	JSTS1120-3	Ver 2.6.77.0518	Nov. 26, 2025	N/A	N/A	☑

2.3. MEASUREMENT UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-5}$
Maximum Peak Output Power Test	$\pm 1.0\%$
Conducted Emissions Test	$\pm 3.08\text{dB}$
Radiated Emission Test	$\pm 4.60\text{dB}$
Power Density	$\pm 0.9\%$
Occupied Bandwidth Test	$\pm 2.3\%$
Band Edge Test	$\pm 1.2\%$
Antenna Port Emission	$\pm 3\text{dB}$
Temperature	$\pm 3.2\%$
Humidity	$\pm 2.5\%$
Measurement Uncertainty for a level of Confidence of 95%	

2.4. TEST FACILITY

EMC Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS/CL01
The Certificate Registration Number is L10100.
The Laboratory has been assessed and proved to be in compliance with A2LA
The Certificate Registration Number is 6901.01
FCC Designation No.: CN1351
Test Firm Registration No.: 397428
ISED CAB identifier: CN0151
Test Firm Registration No.: 20133

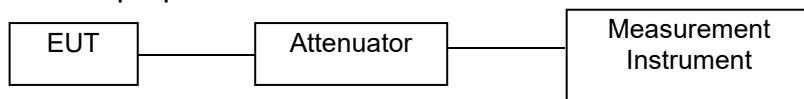
Test Location : Dongguan Lepont Testing Service Co., Ltd.

Address : Room 102, Building 11, No.7, Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China

3. SETUP OF EQUIPMENT UNDER TEST

3.1. RADIO FREQUENCY TEST SETUP 1

The component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



3.2. RADIO FREQUENCY TEST SETUP 2

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2020 The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2020 and CAN/CSA-CEI/IEC CISPR 32.

Below 30MHz:

The EUT is placed on a turntable 0.8meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

Above 30MHz:

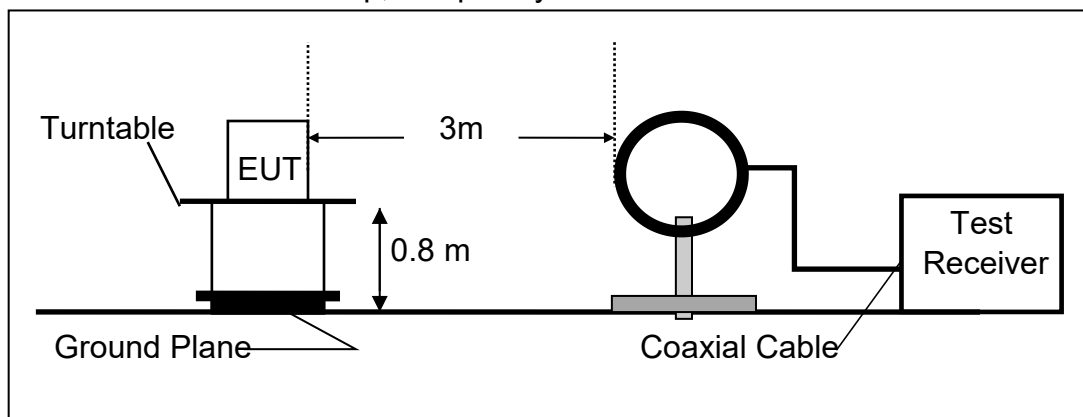
The EUT is placed on a turntable 0.8meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:

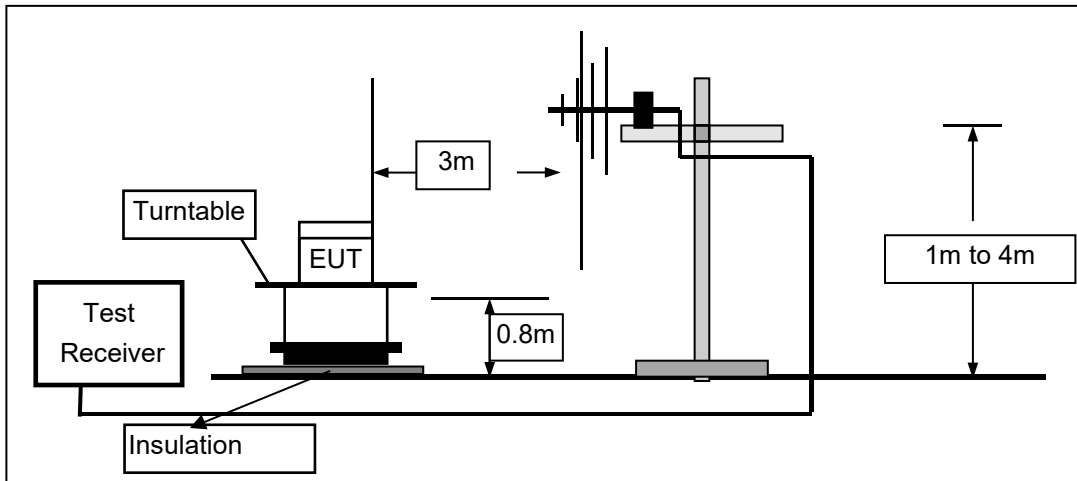
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

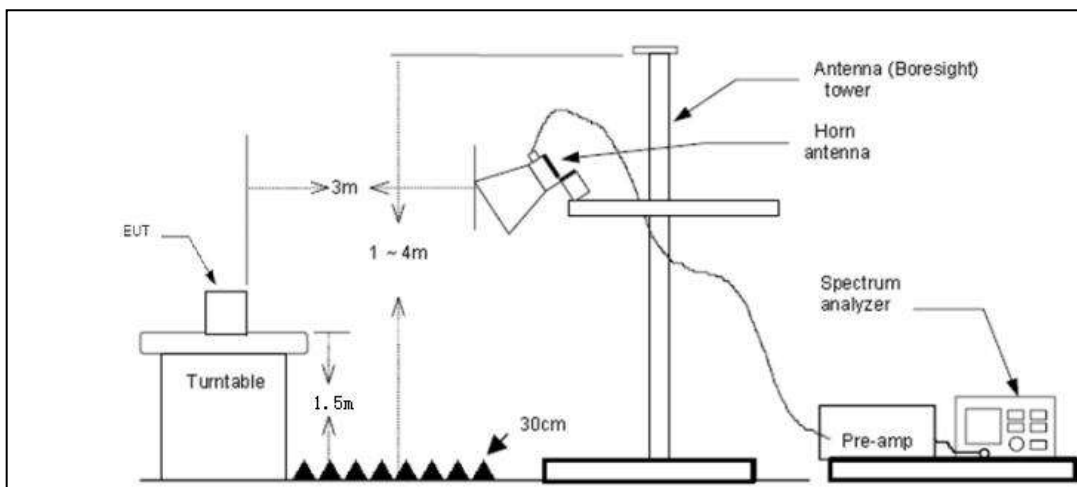
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz

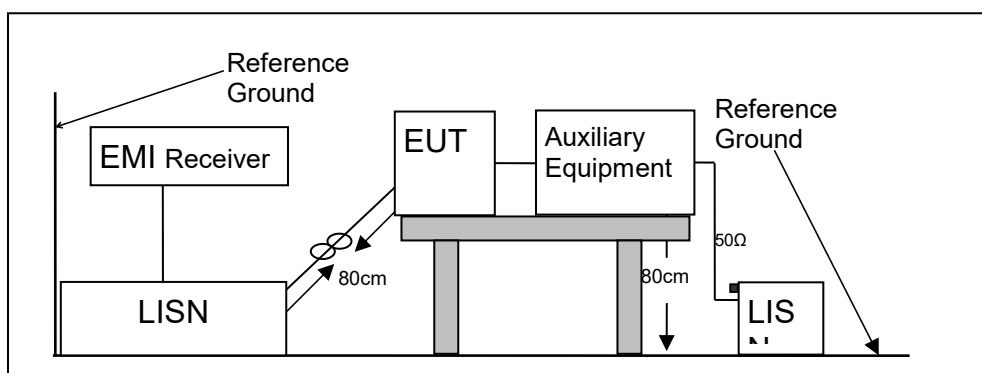


3.3. CONDUCTED EMISSION TEST SETUP

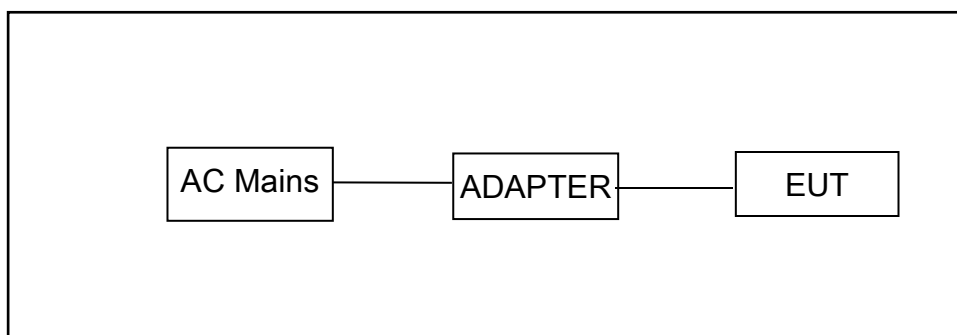
The mains cable of the EUT (Perfect Share Mini) must be connected to LISN. The LISN shall be placed 0.8m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.8m.

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2020 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.



3.4. BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



4. TEST RESULTS AND MEASUREMENT DATA

4.1. DTS (6DB) BANDWIDTH AND 99% OCCUPY BANDWIDTH

4.1.1. Applicable Standard

According to FCC Part 15.247(a)(2) and KDB 558074 D01 15.247 Meas Guidance v05r02

4.1.2. Conformance Limit

The minimum -6 dB bandwidth shall be at least 500 kHz.

4.1.3. Test Configuration

Test according to clause 3.1 radio frequency test setup 1

4.1.4. Test Procedure

The EUT was operating in IEEE 802.11b/g/n mode and controlled its channel. Printed out the test result from the spectrum by hard copy function.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously

Set RBW = 1%-5%*OBW.

Set the VBW $\geq 3 \times$ RBW (about 300kHz).

Set Span = 2 times OBW

Set Detector = Peak.

Set Trace mode = max hold.

Set Sweep = auto couple.

Allow the trace to stabilize.

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Measure and record the results in the test report.

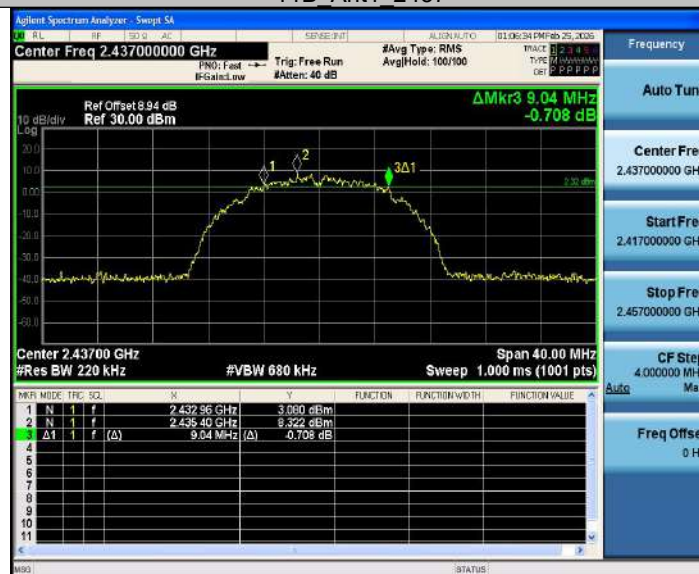
Test Results:

TestMode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.600	2406.960	2416.560	0.5	PASS
		2437	9.040	2432.960	2442.000	0.5	PASS
		2462	8.800	2457.400	2466.200	0.5	PASS
11G	Ant1	2412	16.440	2403.760	2420.200	0.5	PASS
		2437	16.480	2428.680	2445.160	0.5	PASS
		2462	16.480	2453.680	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.400	2403.280	2420.680	0.5	PASS
		2437	17.400	2428.240	2445.640	0.5	PASS
		2462	17.480	2453.160	2470.640	0.5	PASS
11N40SISO	Ant1	2422	35.680	2404.000	2439.680	0.5	PASS
		2437	35.360	2419.240	2454.600	0.5	PASS
		2452	36.080	2433.920	2470.000	0.5	PASS

11B Ant1 2412



11B Ant1 2437



11B_Ant1_2462



11G_Ant1_2412



11G_Ant1_2437



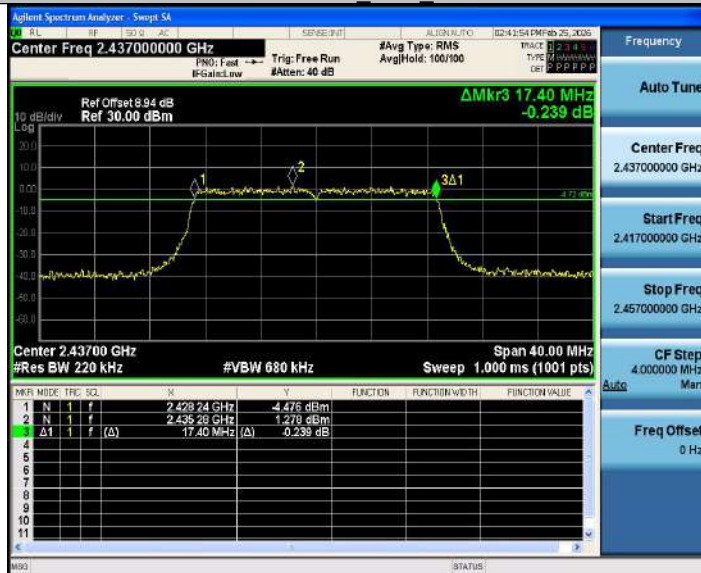
11G Ant1_2462



11N20SISO Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



Occupied Channel Bandwidth:

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.155	2405.3207	2418.4757	---	PASS
		2437	13.006	2430.4304	2443.4364	---	PASS
		2462	12.985	2455.4074	2468.3924	---	PASS
11G	Ant1	2412	16.773	2403.5904	2420.3634	---	PASS
		2437	16.858	2428.5427	2445.4007	---	PASS
		2462	16.839	2453.5638	2470.4028	---	PASS
11N20SISO	Ant1	2412	17.596	2403.1773	2420.7733	---	PASS
		2437	17.590	2428.1767	2445.7667	---	PASS
		2462	17.618	2453.1448	2470.7628	---	PASS
11N40SISO	Ant1	2422	35.936	2403.9787	2439.9147	---	PASS
		2437	35.947	2418.9855	2454.9325	---	PASS
		2452	35.949	2433.9740	2469.9230	---	PASS

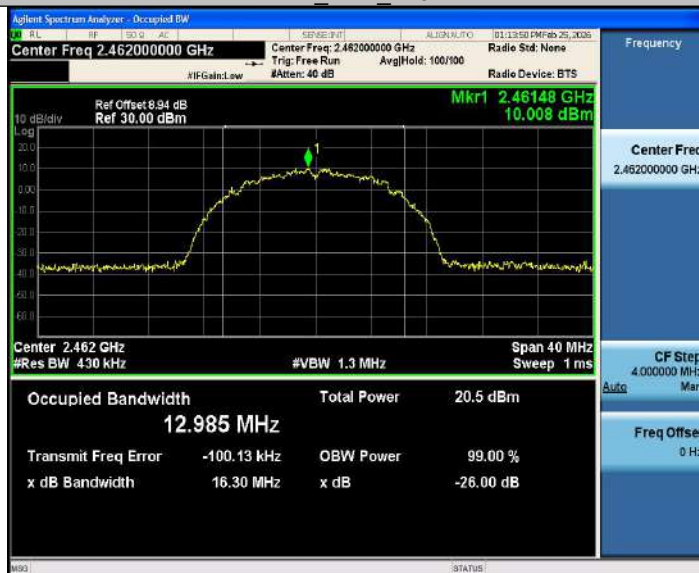
11B Ant1 2412



11B Ant1 2437



11B_Ant1_2462



11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462



11N20SISO_Ant1_2412

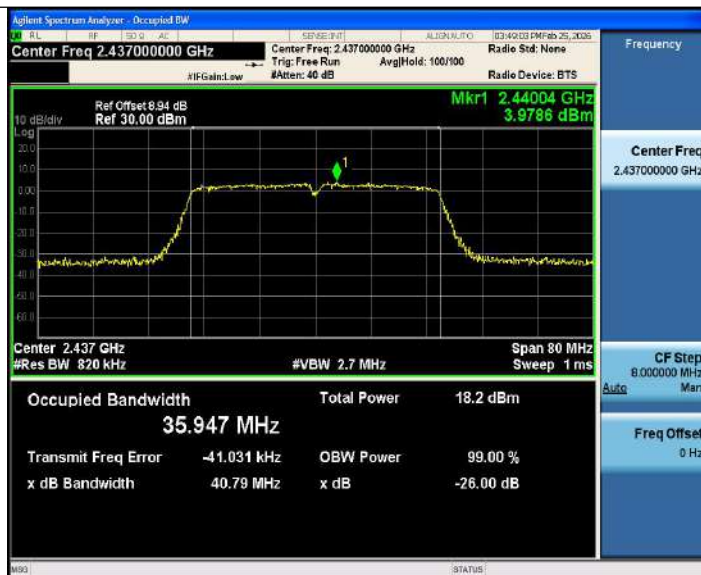




11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO Ant1_2452



4.2. MAXIMUM PEAK CONDUCTED OUTPUT POWER

4.2.1. Applicable Standard

According to FCC Part 15.247(b)(1) and KDB 558074 D01 15.247 Meas Guidance v05r02

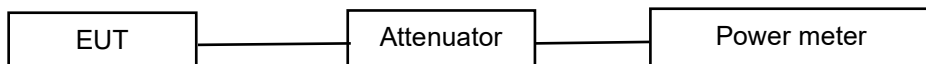
4.2.2. Conformance Limit

The maximum conducted output power of the intentional radiator for systems using digital modulation in the 2400 - 2483.5 MHz bands shall not exceed: 1 Watt (30dBm).

4.2.3. Test Configuration

Test according to clause 4.2.4 radio frequency test setup 1

4.2.4. Test Procedure



■ According to FCC Part 15.247(b)(3)

Place the EUT on the desktop and set it to launch mode. Remove the antenna from the EUT and connect the low-loss RF cable from the antenna port to the power meter. Measure the peak power of each channel.

■ According to FCC Part 15.247(b)(4):

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Results

Test Mode	Frequency [MHz]	Conducted output power Result [dBm]	Conducted power Limit [dBm]	Verdict
11B	2412	17.92	≤30.00	PASS
	2437	18.57	≤30.00	PASS
	2462	18.67	≤30.00	PASS
11G	2412	17.02	≤30.00	PASS
	2437	17.63	≤30.00	PASS
	2462	17.84	≤30.00	PASS
11N20SISO	2412	16.01	≤30.00	PASS
	2437	16.66	≤30.00	PASS
	2462	16.99	≤30.00	PASS
11N40SISO	2422	15.70	≤30.00	PASS
	2437	16.22	≤30.00	PASS
	2452	16.33	≤30.00	PASS

4.3. MAXIMUM POWER SPECTRAL DENSITY

4.3.1. Applicable Standard

According to FCC Part15.247(e) and KDB 558074 D01 15.247 Meas Guidance v05r02

4.3.2. Conformance Limit

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.3. Test Configuration

Test according to clause 3.1 radio frequency test setup 1

4.3.4. Test Procedure

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance

The transmitter output (antenna port) was connected to the spectrum analyzer

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz

Set the VBW to:10 kHz.

Set Detector =Peak.

Set Sweep time = auto couple.

Set Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

Note: If antenna Gain exceeds 6 dBi, then PSD Limit=8-(Gain- 6)

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-3.77	≤8.00	PASS
		2437	-7.64	≤8.00	PASS
		2462	-7.01	≤8.00	PASS
11G	Ant1	2412	-11.80	≤8.00	PASS
		2437	-11.41	≤8.00	PASS
		2462	-11.46	≤8.00	PASS
11N20SISO	Ant1	2412	-12.98	≤8.00	PASS
		2437	-12.62	≤8.00	PASS
		2462	-12.46	≤8.00	PASS
11N40SISO	Ant1	2422	-15.72	≤8.00	PASS
		2437	-15.59	≤8.00	PASS
		2452	-15.58	≤8.00	PASS

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



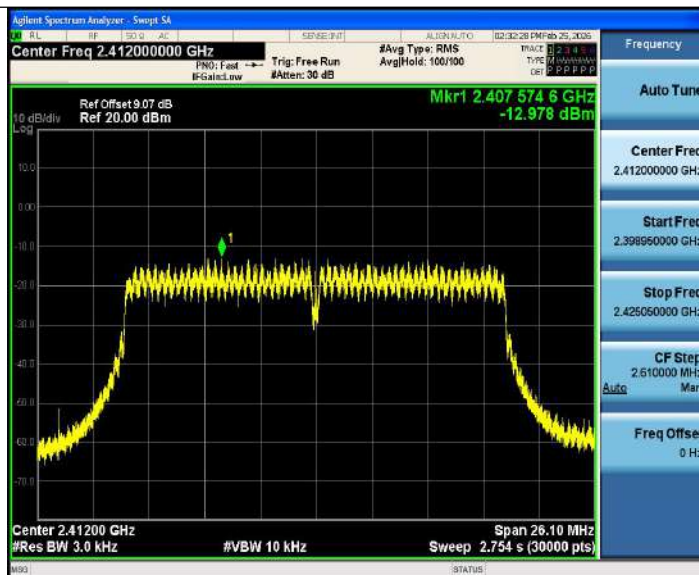
11G_Ant1_2437



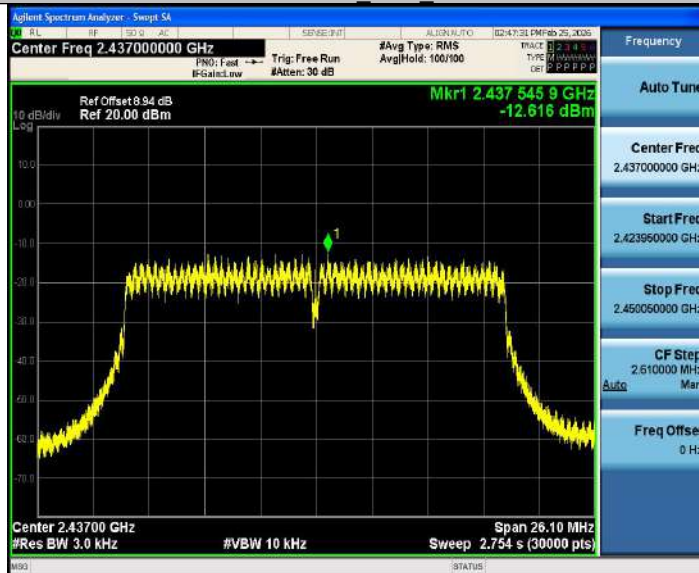
11G_Ant1_2462



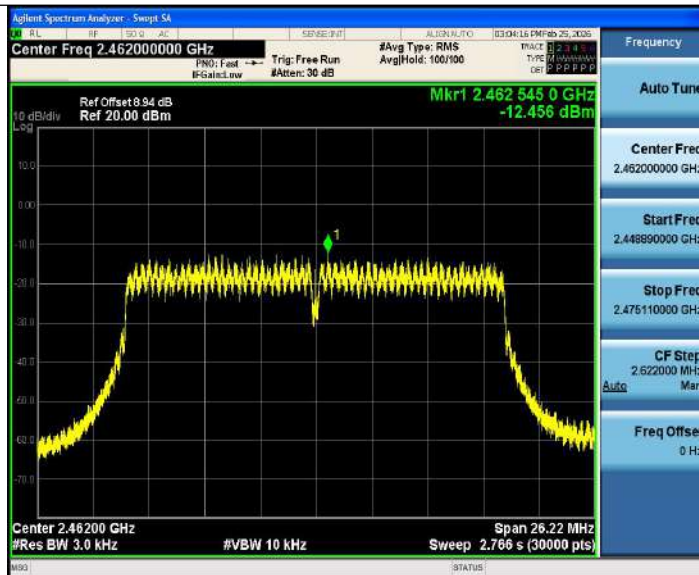
11N20SISO_Ant1_2412



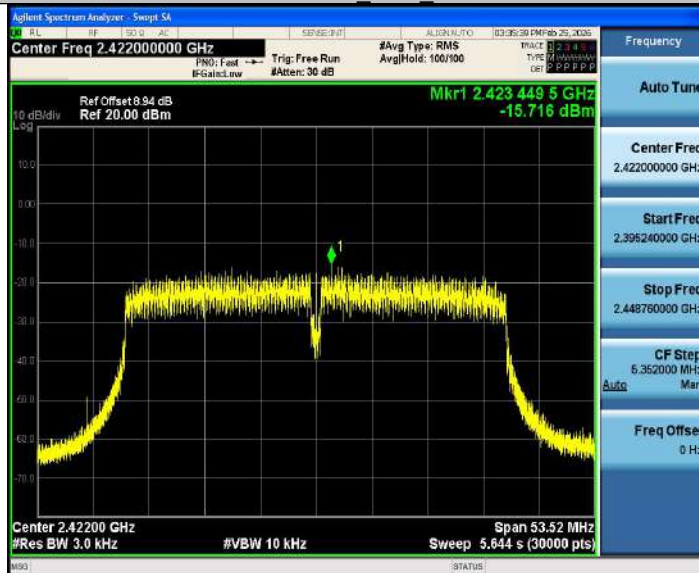
11N20SISO_Ant1_2437



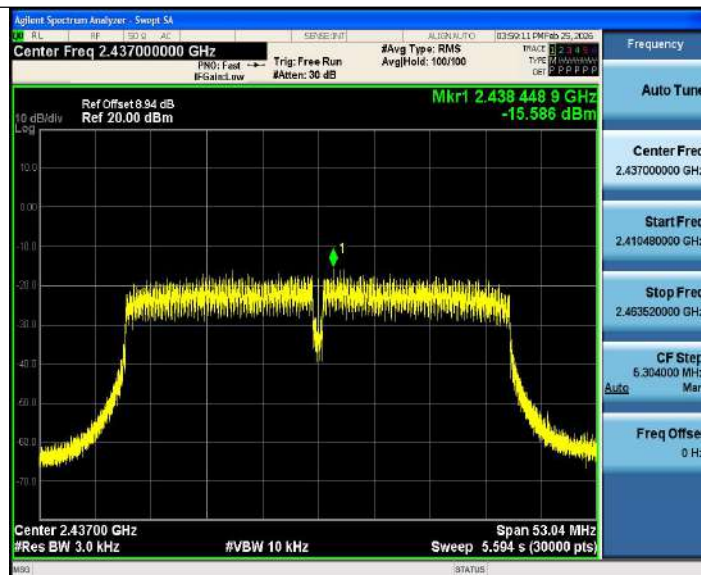
11N20SISO_Ant1_2462



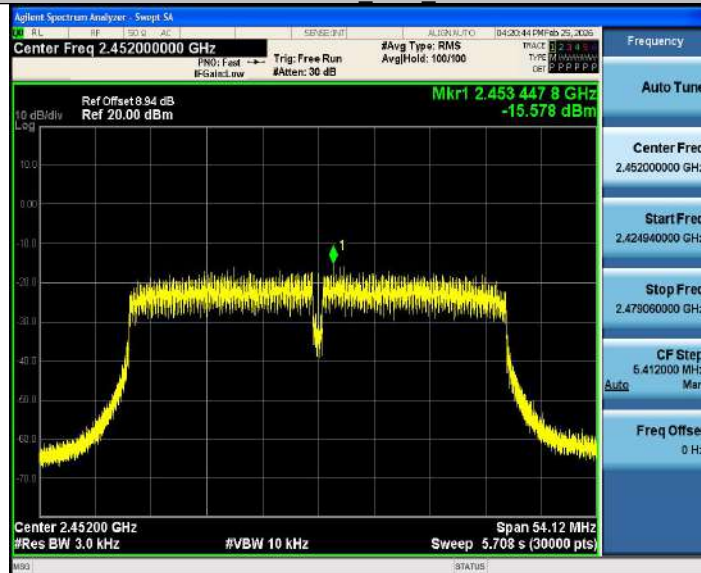
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



4.4. UNWANTED EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS

4.4.1. Applicable Standard

According to FCC Part 15.247(d) and KDB 558074 D01 15.247 Meas Guidance v05r02

4.4.2. Conformance Limit

According to FCC Part 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.

4.4.3. Test Configuration

Test according to clause 3.1 radio frequency test setup 1

4.4.4. Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer

Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ≥ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW $\geq 3 \times$ RBW.

Set Detector = peak.

Set Sweep time = auto couple.

Set Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

Emission level measurement

Set the center frequency and span to encompass frequency range to be measured.

Set the RBW = 100 kHz.

Set the VBW = 300 kHz.

Set Detector = Peak

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements. Report the three highest emissions relative to the limit.

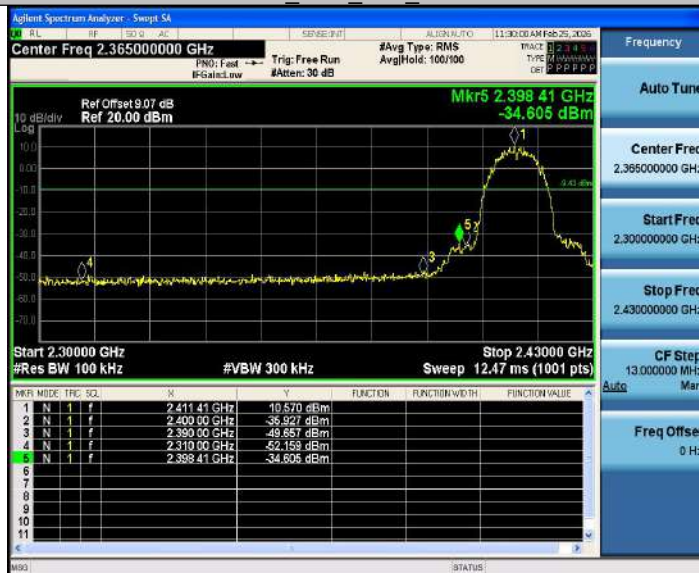
Test Results

All the antennas and modulation modes were tested, and the worst data for is shown in the table below.

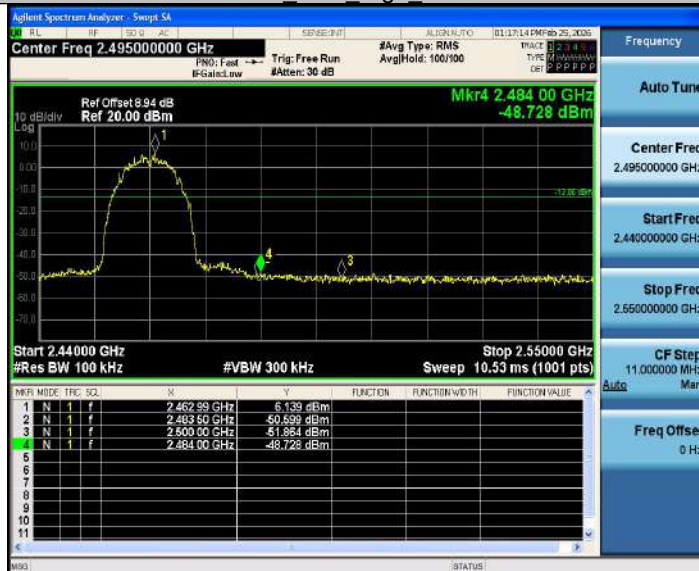
Note: the test RF cable loss is 0.5 dB, we checked all test conducted spurious test data with this loss that complied with FCC rule requirement.

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	10.57	-34.61	≤-9.43	PASS
		High	2462	6.14	-48.73	≤-13.86	PASS
11G	Ant1	Low	2412	1.44	-39.81	≤-18.56	PASS
		High	2462	0.11	-45.65	≤-19.89	PASS
11N20SISO	Ant1	Low	2412	-0.38	-41.48	≤-20.38	PASS
		High	2462	0.78	-47.58	≤-19.22	PASS
11N40SISO	Ant1	Low	2422	-3.35	-42.14	≤-23.35	PASS
		High	2452	-3.01	-46.84	≤-23.01	PASS

11B_Ant1_Low_2412



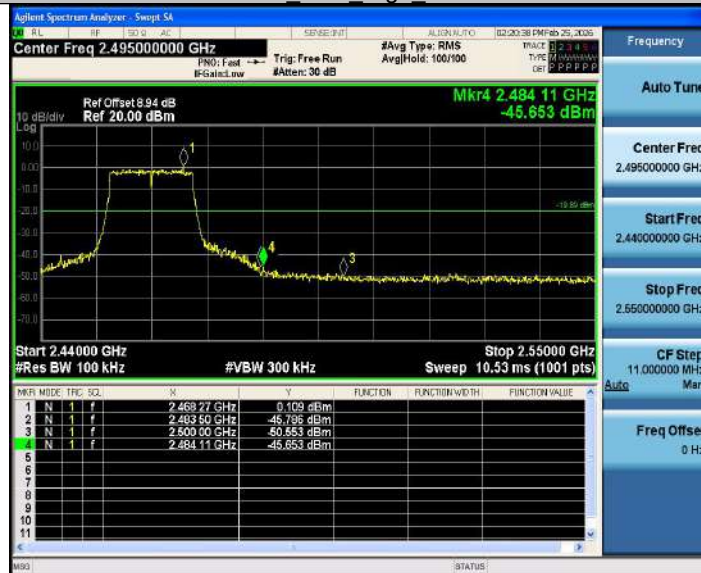
11B_Ant1_High_2462



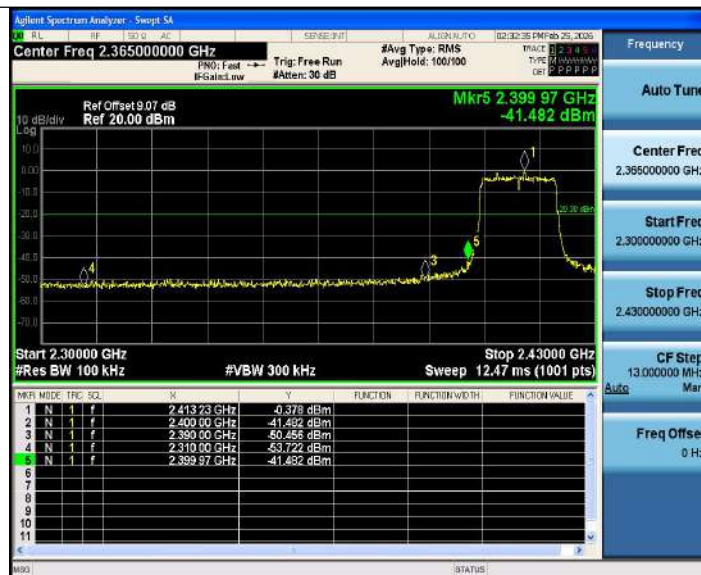
11G_Ant1_Low_2412



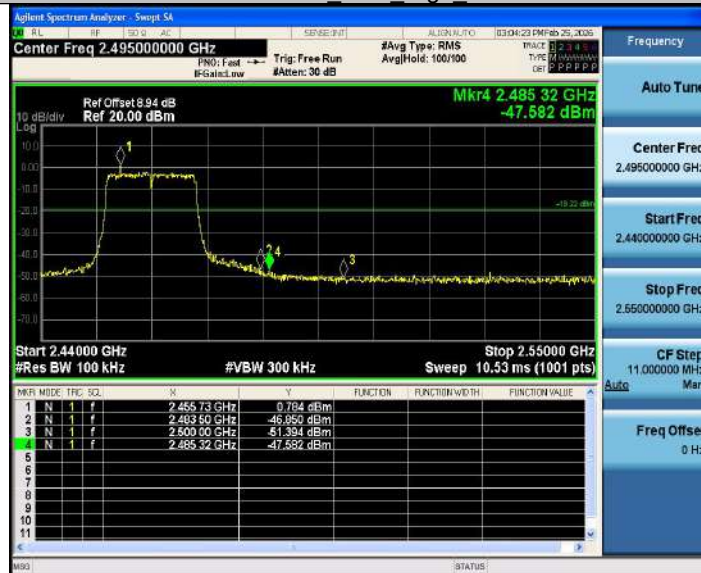
11G Ant1 High 2462



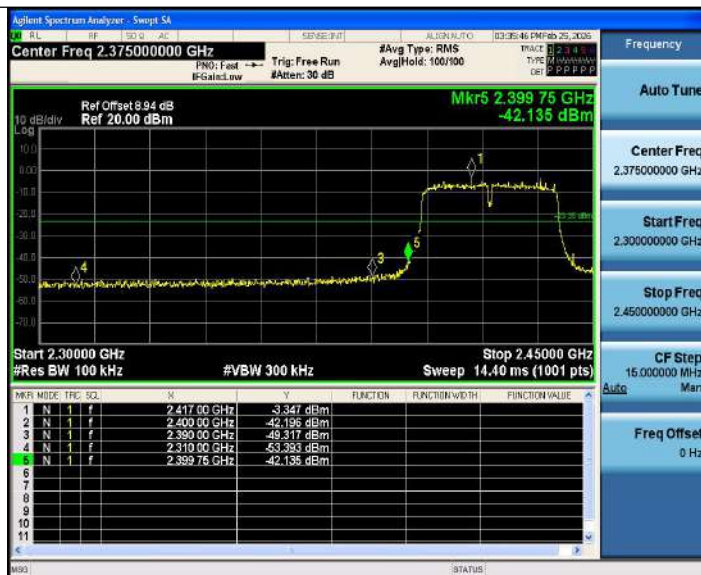
11N20SIS0 Ant1 Low 2412



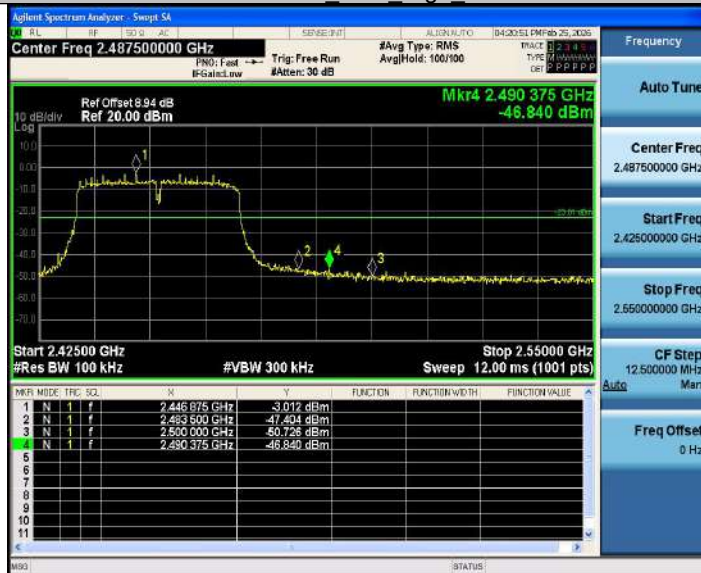
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO Ant1 High 2452



Conducted Spurious Emission

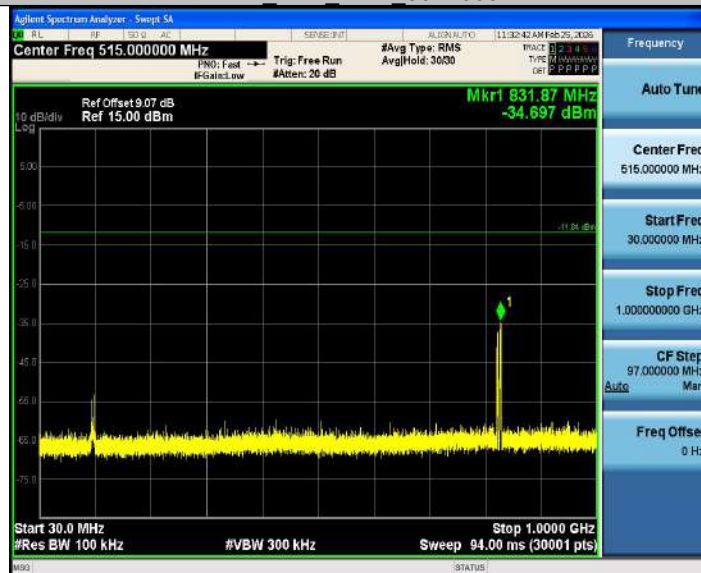
Test Result:

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	8.16	8.16	---	PASS
			30~1000	8.16	-34.7	≤-11.84	PASS
			1000~26500	8.16	-46.36	≤-11.84	PASS
		2437	Reference	4.27	4.27	---	PASS
			30~1000	4.27	-31.57	≤-15.73	PASS
			1000~26500	4.27	-47.18	≤-15.73	PASS
		2462	Reference	4.62	4.62	---	PASS
			30~1000	4.62	-53.65	≤-15.38	PASS
			1000~26500	4.62	-47.23	≤-15.38	PASS
11G	Ant1	2412	Reference	-1.24	-1.24	---	PASS
			30~1000	-1.24	-53.66	≤-21.24	PASS
			1000~26500	-1.24	-47.38	≤-21.24	PASS
		2437	Reference	-1.25	-1.25	---	PASS
			30~1000	-1.25	-41.43	≤-21.25	PASS
			1000~26500	-1.25	-47.11	≤-21.25	PASS
		2462	Reference	-0.74	-0.74	---	PASS
			30~1000	-0.74	-34.2	≤-20.74	PASS
			1000~26500	-0.74	-47.29	≤-20.74	PASS
11N20SISO	Ant1	2412	Reference	-0.56	-0.56	---	PASS
			30~1000	-0.56	-43.62	≤-20.56	PASS
			1000~26500	-0.56	-46.36	≤-20.56	PASS
		2437	Reference	-2.72	-2.72	---	PASS
			30~1000	-2.72	-41.03	≤-22.72	PASS
			1000~26500	-2.72	-47.38	≤-22.72	PASS
		2462	Reference	-2.27	-2.27	---	PASS
			30~1000	-2.27	-46.59	≤-22.27	PASS
			1000~26500	-2.27	-47.5	≤-22.27	PASS
11N40SISO	Ant1	2422	Reference	-4.43	-4.43	---	PASS
			30~1000	-4.43	-54.35	≤-24.43	PASS
			1000~26500	-4.43	-47.22	≤-24.43	PASS
		2437	Reference	-3.47	-3.47	---	PASS
			30~1000	-3.47	-54.19	≤-23.47	PASS
			1000~26500	-3.47	-47.47	≤-23.47	PASS
		2452	Reference	-2.82	-2.82	---	PASS
			30~1000	-2.82	-53.03	≤-22.82	PASS
			1000~26500	-2.82	-46.3	≤-22.82	PASS

11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



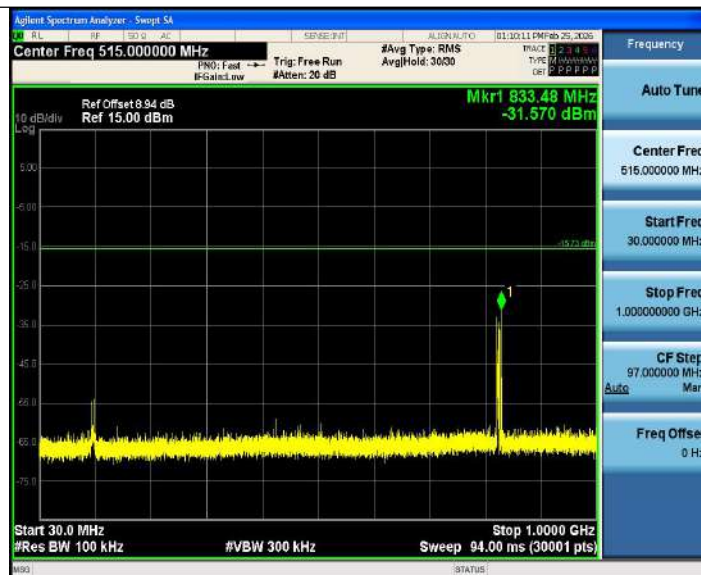
11B_Ant1_2412_1000~26500



11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



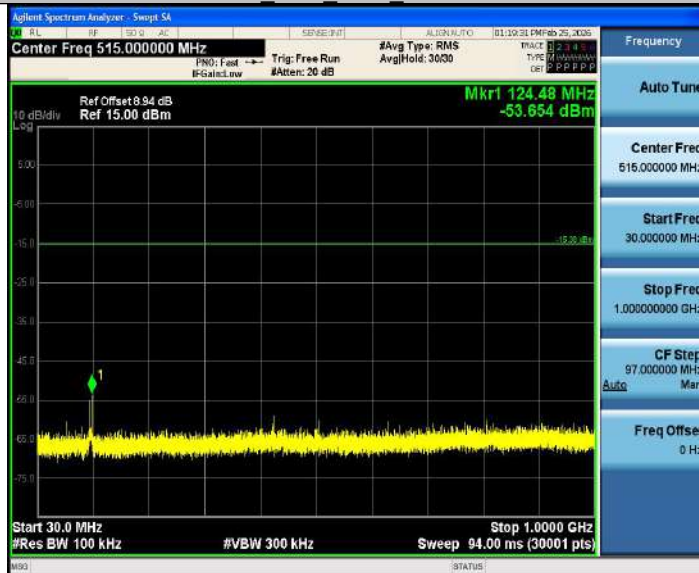
11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference



11B_Ant1_2462_30~1000



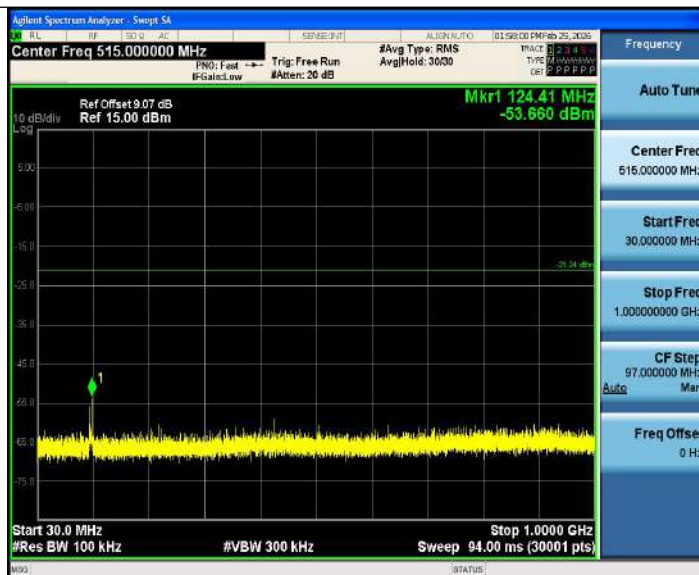
11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



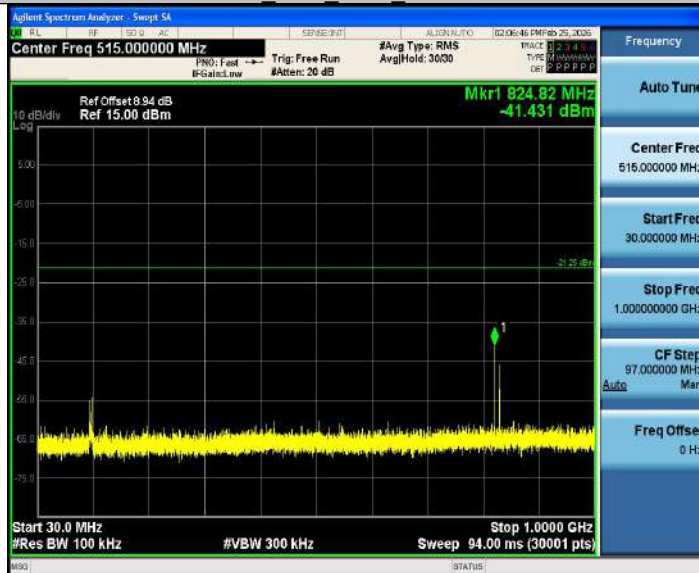
11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



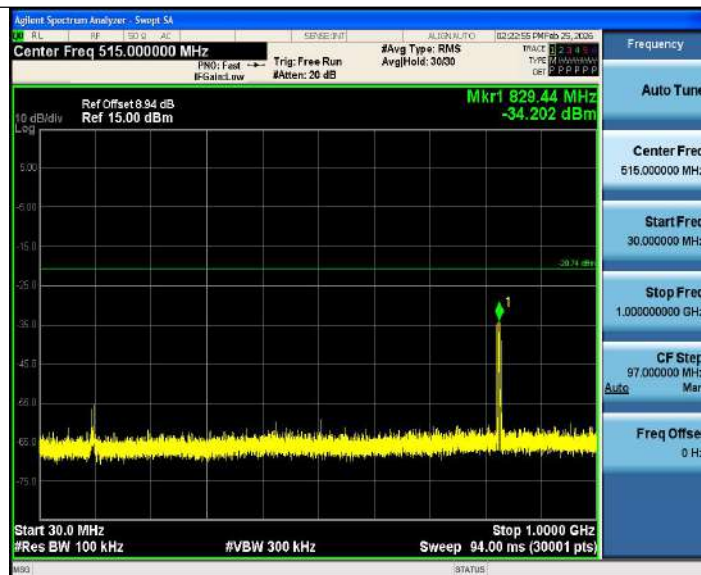
11G_Ant1_2437_1000~26500



11G_Ant1_2462_0~Reference



11G_Ant1_2462_30~1000



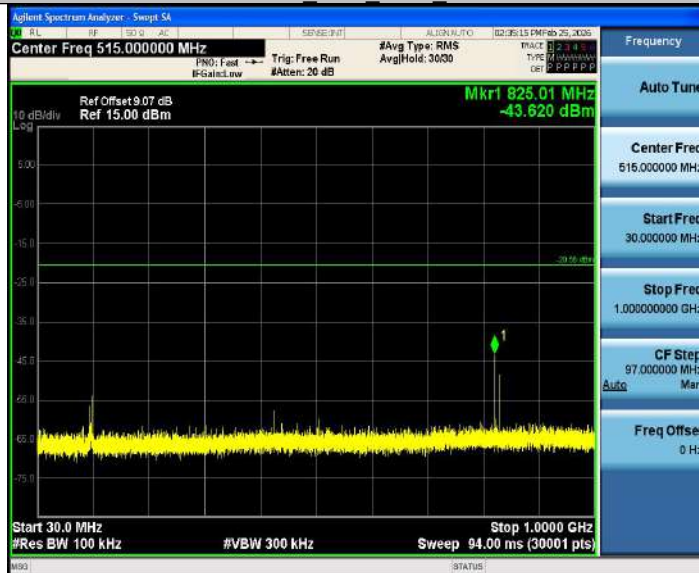
11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000



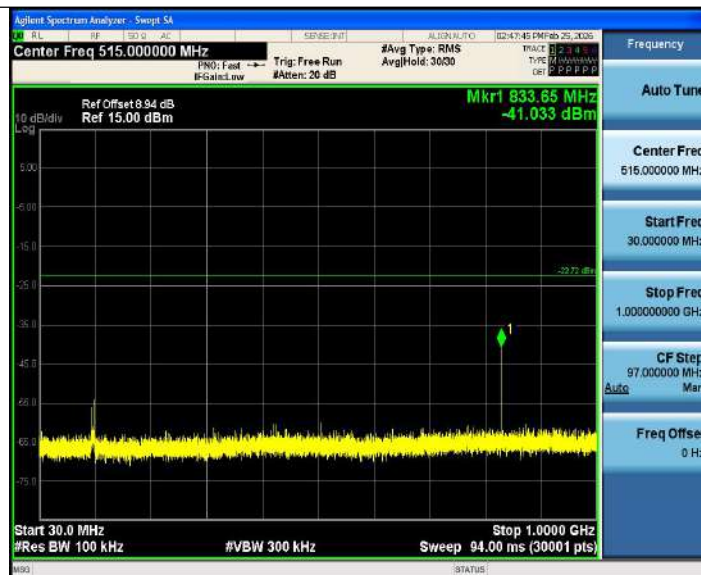
11N20SISO_Ant1_2412_1000~26500



11N20SISO_Ant1_2437_0~Reference



11N20SISO_Ant1_2437_30~1000



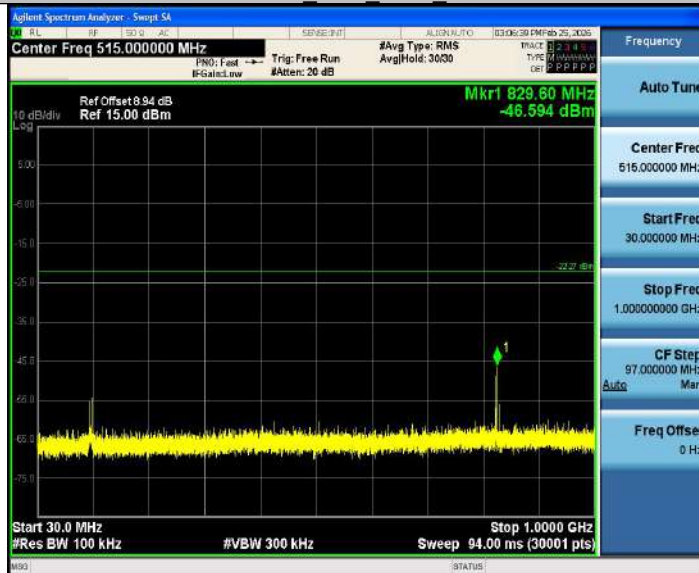
11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference



11N20SISO_Ant1_2462_30~1000



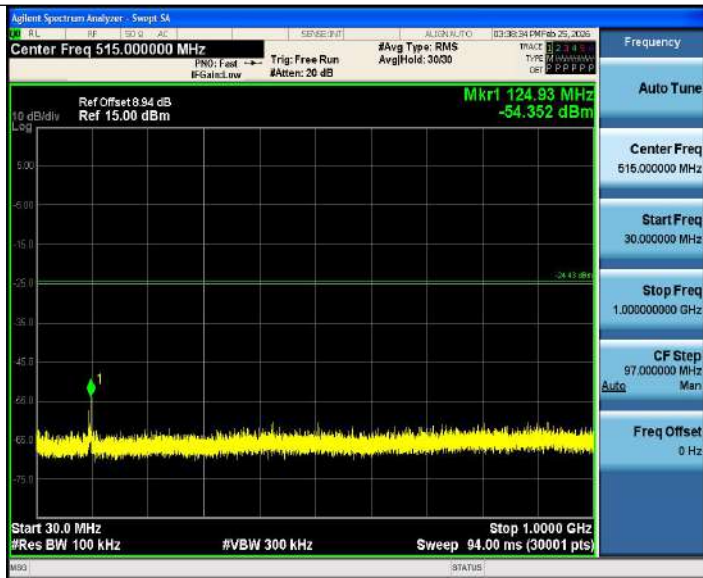
11N20SISO_Ant1_2462_1000~26500



11N40SISO_Ant1_2422_0~Reference



11N40SISO_Ant1_2422_30~1000



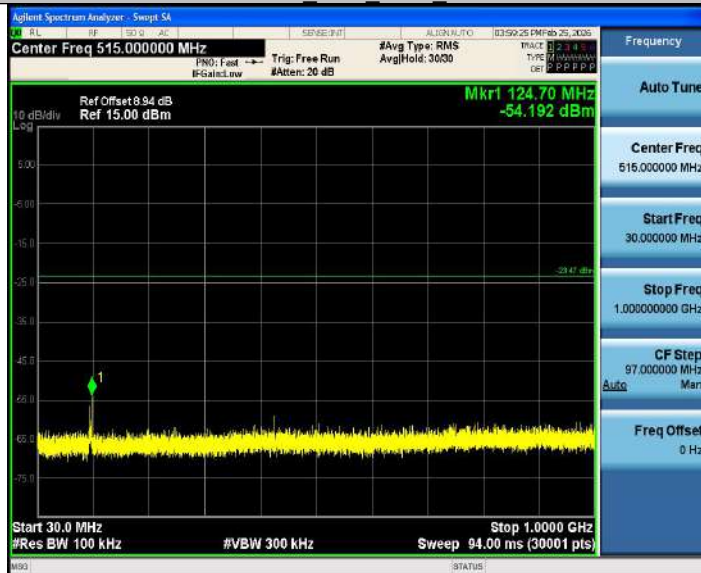
11N40SISO_Ant1_2422_1000~26500



11N40SISO_Ant1_2437_0~Reference



11N40SISO_Ant1_2437_30~1000



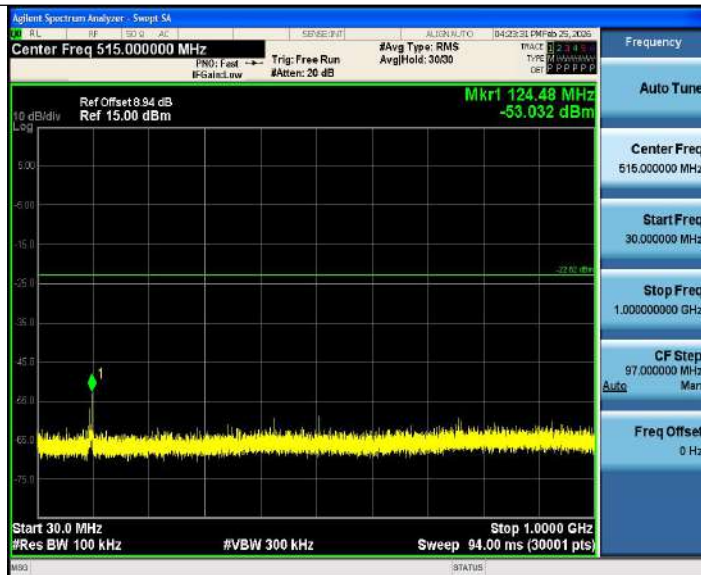
11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



11N40SISO Ant1 2452 1000~26500



4.5. RADIATED SPURIOUS EMISSION

4.5.1. Applicable Standard

According to FCC Part 15.247(d) and 15.209 and KDB 558074 D01
15.247 MEAS GUIDANCE v05r02

4.5.2. Conformance Limit

According to FCC Part 15.247(d): 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)).

According to FCC Part15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

According to FCC Part15.205, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	24000/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

4.5.3. Test Configuration

Test according to clause 3.2 radio frequency test setup 2

4.5.4. Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

For Above 1GHz:

The EUT was placed on a turn table which is 1.5m above ground plane.

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

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For Below 1GHz:

The EUT was placed on a turn table which is 0.8m above ground plane.

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

Span = wide enough to fully capture the emission being measured

RBW = 100 kHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For Below 30MHz:

The EUT was placed on a turn table which is 0.8m above ground plane.

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

Span = wide enough to fully capture the emission being measured

RBW = 9kHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For Below 150KHz:

The EUT was placed on a turn table which is 0.8m above ground plane.

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

Span = wide enough to fully capture the emission being measured

RBW = 200Hz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Follow the guidelines in ANSI C63.10-2020 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the

hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the 15.209 limit. Submit this data.
Repeat above procedures until all frequency measured was complete.

Test Results:

■ Spurious Emission below 30MHz (9KHz to 30MHz)

Frequency	Factor	Meter Reading	Emission Level	Limits	Margin	Detector Type	Ant. Pol.
(MHz)	(dB)	(dBμV)	(dBμV/m)	(dBμV/m)	(dB)		H/V
--	--	--	--	--	--	--	--

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 = $40\log(\text{Specific distance}/ \text{test distance})$ (dB);

Limit line = Specific limits(dBuV) + distance extrapolation factor

■ Spurious Emission Above 1GHz (1GHz to 25GHz)

All modes 2.4G 802.11b/g/n have been tested, and the worst result recorded was report as below:

Test mode:	802.11B		Frequency:	Channel 1: 2412MHz		Test Voltage:	DC 5V
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
3414	48.18	-3.56	44.62	74	-29.38	peak	V
4825	44.56	-3.29	41.27	74	-32.73	peak	V
7120	40.39	2.74	43.13	74	-30.87	peak	V
3431	33.86	-3.53	30.33	54	-23.67	AVG	V
4842	33.81	-3.31	30.5	54	-23.5	AVG	V
7103	30.26	2.74	33	54	-21	AVG	V
4825	45.59	-3.29	42.3	74	-31.7	peak	H
7086	40.52	2.76	43.28	74	-30.72	peak	H
9313	43.36	4.17	47.53	74	-26.47	peak	H
4842	34.71	-3.31	31.4	54	-22.6	AVG	H
7103	30.12	2.74	32.86	54	-21.14	AVG	H
9653	30.82	4.31	35.13	54	-18.87	AVG	H

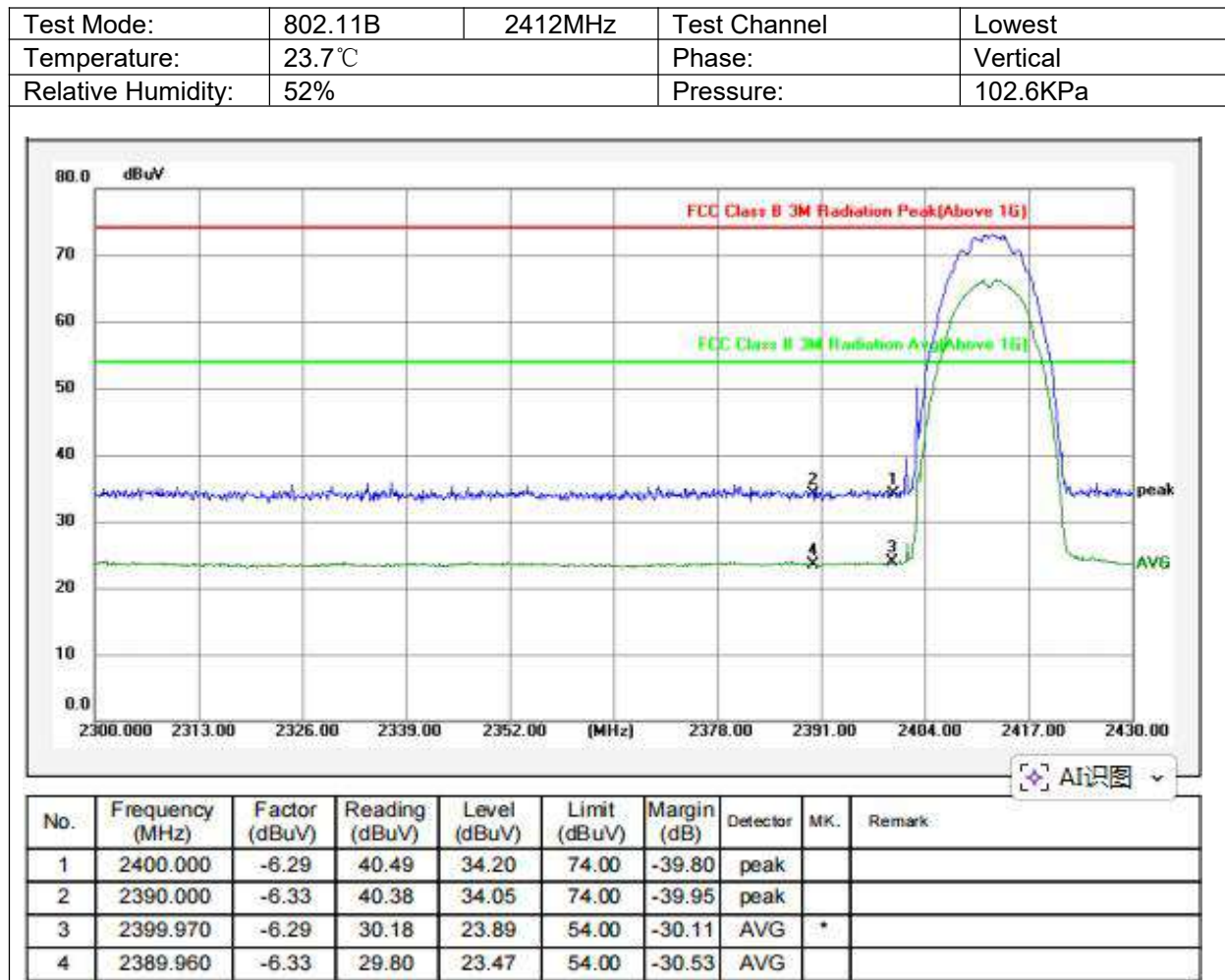
Test mode:	802.11B		Frequency:	Channel 6: 2437MHz		Test Voltage:	DC 5V
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
3414	46.13	-3.56	42.57	74	-31.43	peak	V
4876	45.86	-3.34	42.52	74	-31.48	peak	V
7086	41.14	2.76	43.9	74	-30.1	peak	V
3431	31.97	-3.53	28.44	54	-25.56	AVG	V
4893	33.62	-3.34	30.28	54	-23.72	AVG	V
7103	30.18	2.74	32.92	54	-21.08	AVG	V
1782	58.08	-7.93	50.15	74	-23.85	peak	H
4876	44.07	-3.34	40.73	74	-33.27	peak	H
7103	40.61	2.74	43.35	74	-30.65	peak	H
1799	42.5	-7.91	34.59	54	-19.41	AVG	H
4893	33.16	-3.34	29.82	54	-24.18	AVG	H
7103	30.09	2.74	32.83	54	-21.17	AVG	H

Test mode:	802.11B		Frequency:	Channel 11: 2462MHz		Test Voltage:	DC 5V
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
3414	47.87	-3.56	44.31	74	-29.69	peak	V
6049	41.08	0.13	41.21	74	-32.79	peak	V
7698	42.08	2.35	44.43	74	-29.57	peak	V
3431	33.66	-3.53	30.13	54	-23.87	AVG	V
6253	29.08	0.72	29.8	54	-24.2	AVG	V
8208	30.36	2.49	32.85	54	-21.15	AVG	V
1765	66.49	-7.95	58.54	74	-15.46	peak	H
3958	40.78	-2.75	38.03	74	-35.97	peak	H
7120	40.9	2.74	43.64	74	-30.36	peak	H
1782	52.2	-7.93	44.27	54	-9.73	AVG	H
3924	28.75	-2.8	25.95	54	-28.05	AVG	H
7103	30.13	2.74	32.87	54	-21.13	AVG	H

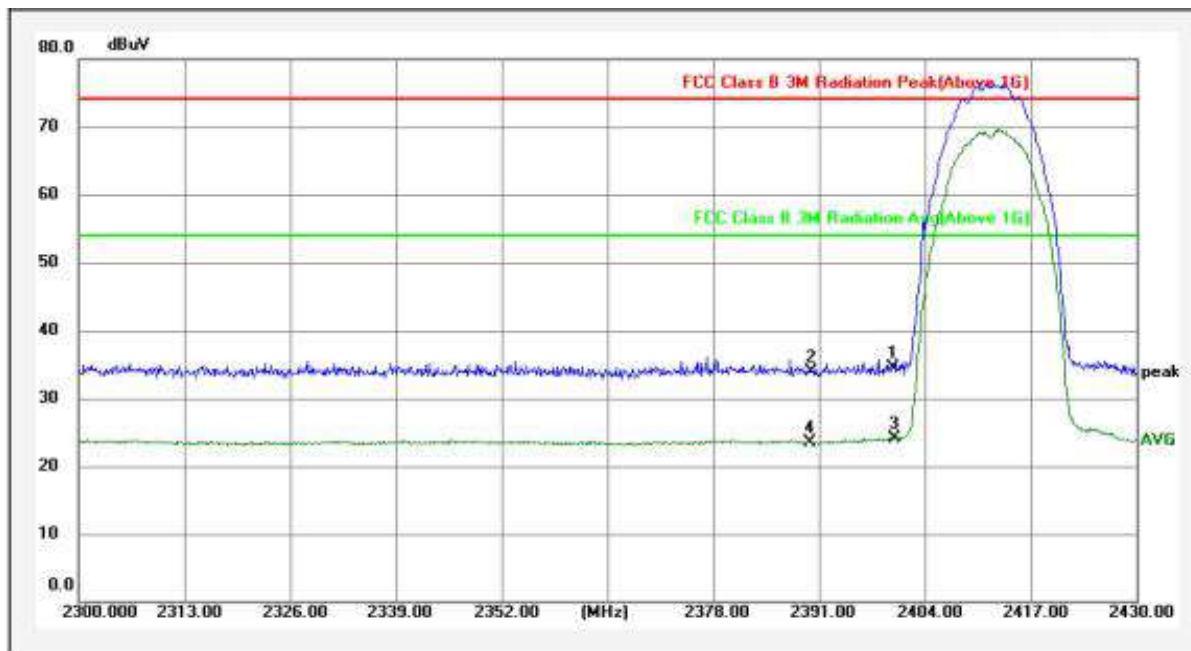
Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L-Preamp

■ Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz

All modes 2.4G 802.11b/g/n have been tested, and the worst result recorded was report as below:

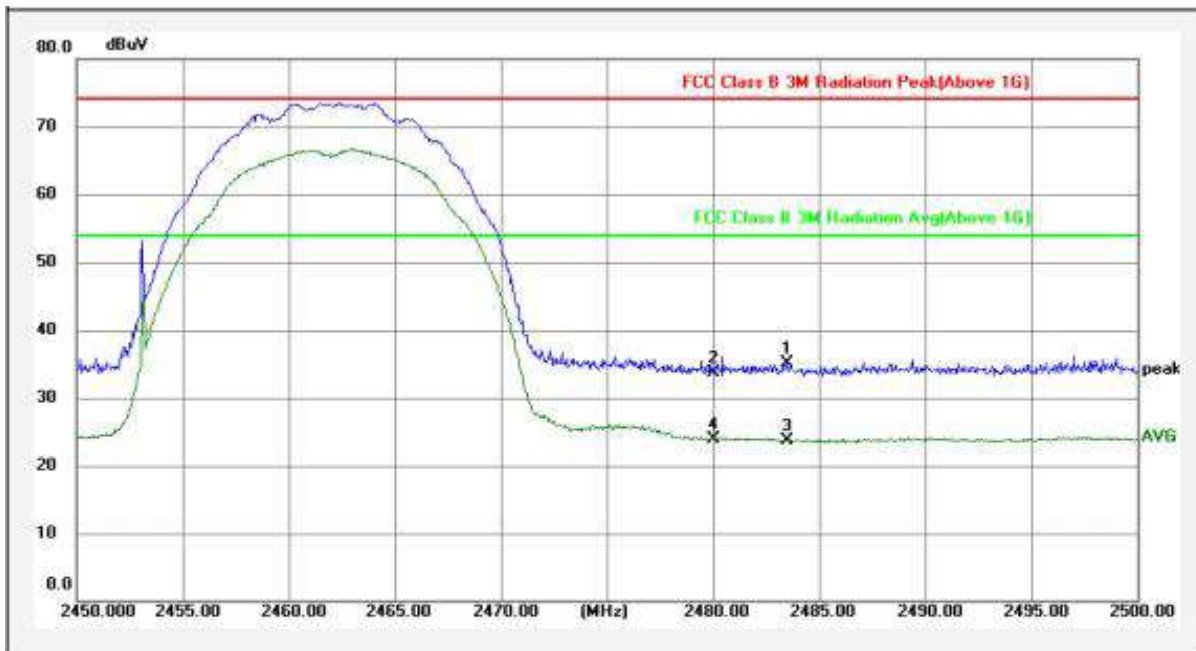


Test Mode:	802.11B	2412MHz	Test Channel	Lowest
Temperature:	23.7℃		Phase:	Horizontal
Relative Humidity:	52%		Pressure:	102.6KPa



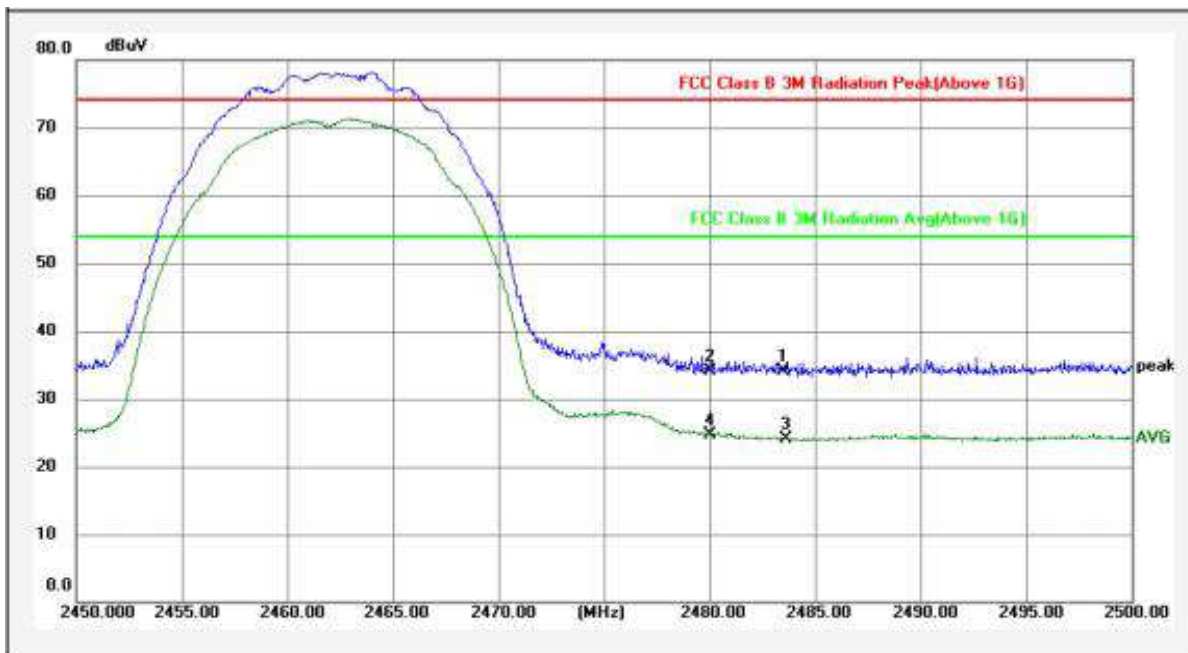
No.	Frequency (MHz)	Factor (dBuV)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	MK.	Remark
1	2400.000	-6.29	40.85	34.56	74.00	-39.44	peak		
2	2390.000	-6.33	40.14	33.81	74.00	-40.19	peak		
3	2400.230	-6.29	30.42	24.13	54.00	-29.87	AVG	*	
4	2389.830	-6.33	29.88	23.55	54.00	-30.45	AVG		

Test Mode:	802.11B	2462MHz	Test Channel	Highest
Temperature:	23.7℃		Phase:	Vertical
Relative Humidity:	52%		Pressure:	102.6KPa



No.	Frequency (MHz)	Factor (dBuV)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	MK.	Remark
1	2483.500	-5.99	41.05	35.06	74.00	-38.94	peak		
2	2480.000	-6.01	39.77	33.76	74.00	-40.24	peak		
3	2483.500	-5.99	29.60	23.61	54.00	-30.39	AVG		
4	2480.000	-6.01	29.98	23.97	54.00	-30.03	AVG	*	

Test Mode:	802.11B	2462MHz	Test Channel	Highest
Temperature:	23.7℃		Phase:	Horizontal
Relative Humidity:	52%		Pressure:	102.6KPa



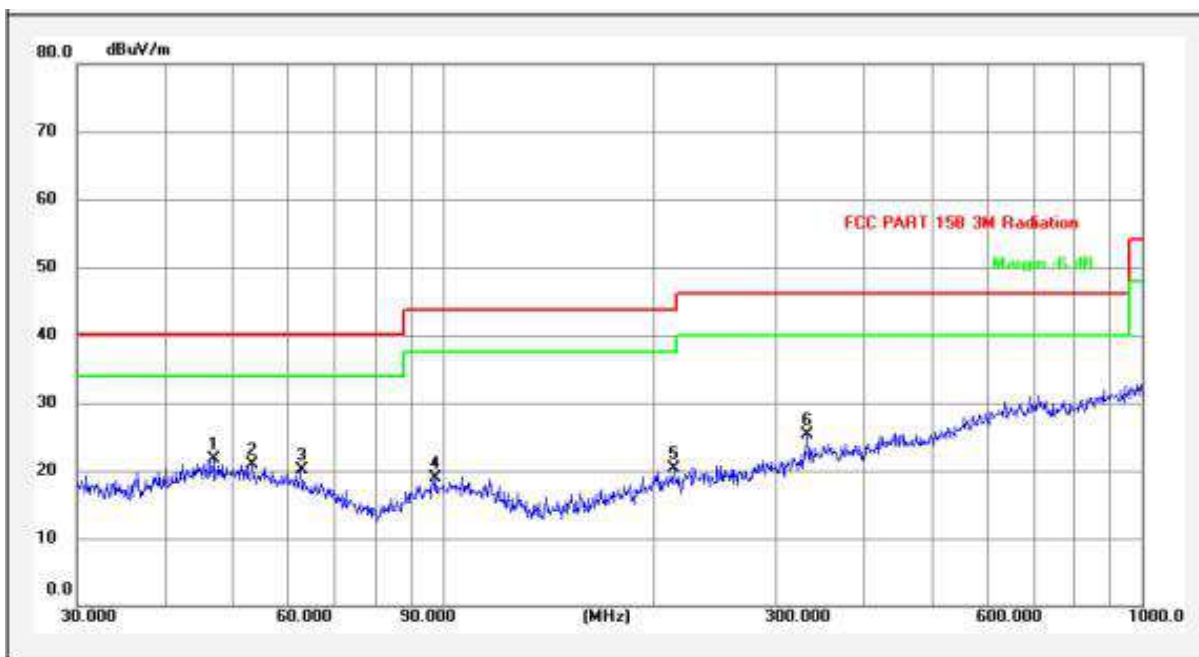
No.	Frequency (MHz)	Factor (dBuV)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	MK.	Remark
1	2483.500	-5.99	40.14	34.15	74.00	-39.85	peak		
2	2480.000	-6.01	40.09	34.08	74.00	-39.92	peak		
3	2483.600	-5.99	30.06	24.07	54.00	-29.93	AVG		
4	2480.000	-6.01	30.63	24.62	54.00	-29.38	AVG	*	

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor.
 (3) Correct Factor= Ant_F + Cab_L - Preamp

■ Spurious Emission below 1GHz (30MHz to 1GHz)

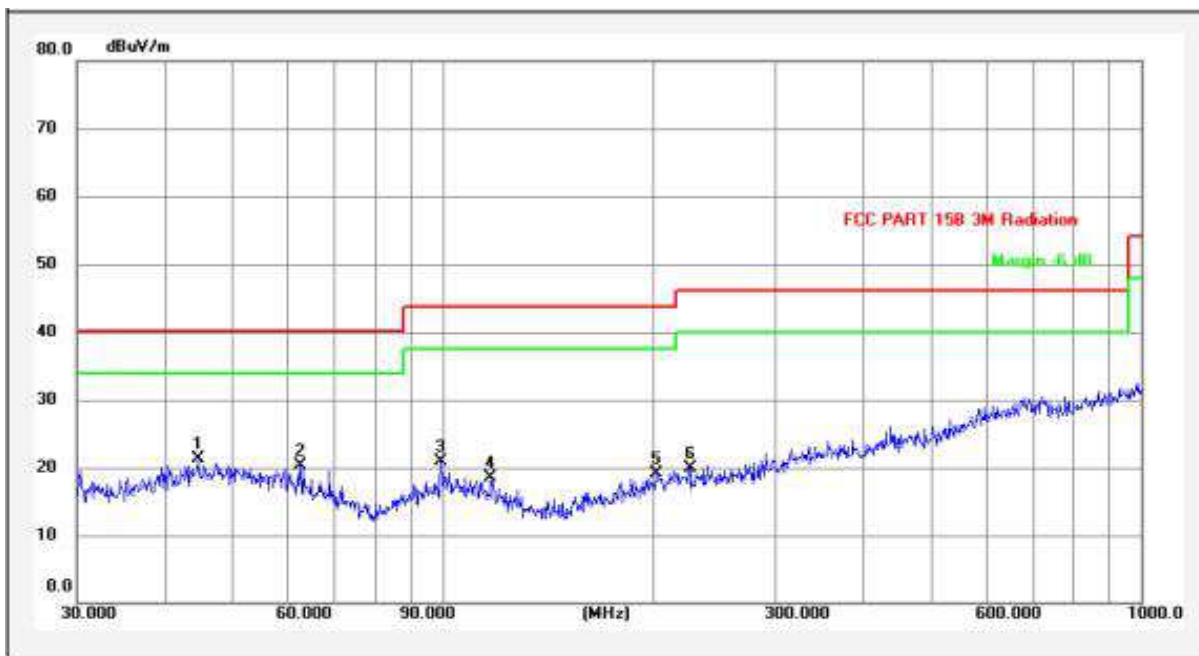
All antenna modes 2.4G 802.11b/g/n have been tested, and the worst result 802.11B recorded was report as below:

Test Mode:	802.11B	2412MHz	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Vertical
Relative Humidity:	57%		Pressure:	101.3KPa



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	46.9948	12.63	9.11	21.74	40.00	-18.26	QP	*	
2	53.5052	12.04	8.77	20.81	40.00	-19.19	QP		
3	62.6507	10.74	9.35	20.09	40.00	-19.91	QP		
4	97.7983	10.18	8.64	18.82	43.50	-24.68	QP		
5	213.7634	10.91	9.43	20.34	43.50	-23.16	QP		
6	332.5187	13.81	11.42	25.23	46.00	-20.77	QP		

Test Mode:	802.11B	2412MHz	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Horizontal
Relative Humidity:	57%		Pressure:	101.3KPa



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	44.7433	12.70	8.64	21.34	40.00	-18.66	QP	*	
2	62.6506	10.74	9.60	20.34	40.00	-19.66	QP		
3	99.5281	10.51	10.45	20.96	43.50	-22.54	QP		
4	117.3602	9.47	9.08	18.55	43.50	-24.95	QP		
5	202.1004	10.82	8.37	19.19	43.50	-24.31	QP		
6	226.0994	11.01	8.91	19.92	46.00	-26.08	QP		

4.6. CONDUCTED EMISSION TEST

4.6.1. Applicable Standard

According to FCC Part 15.207(a)

4.6.2. Conformance Limit

Conducted Emission Limit		
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.

Remark: Test results were obtained from the following equation:

Measurement (dBμV) = LISN Factor (dB) + Cable Loss (dB) + Reading (dBμV)

Margin (dB) = Measurement (dBμV) - Limit (dBμV)

4.6.3. Test Configuration

Test according to clause 3.3 conducted emission test setup

4.6.4. Test Procedure

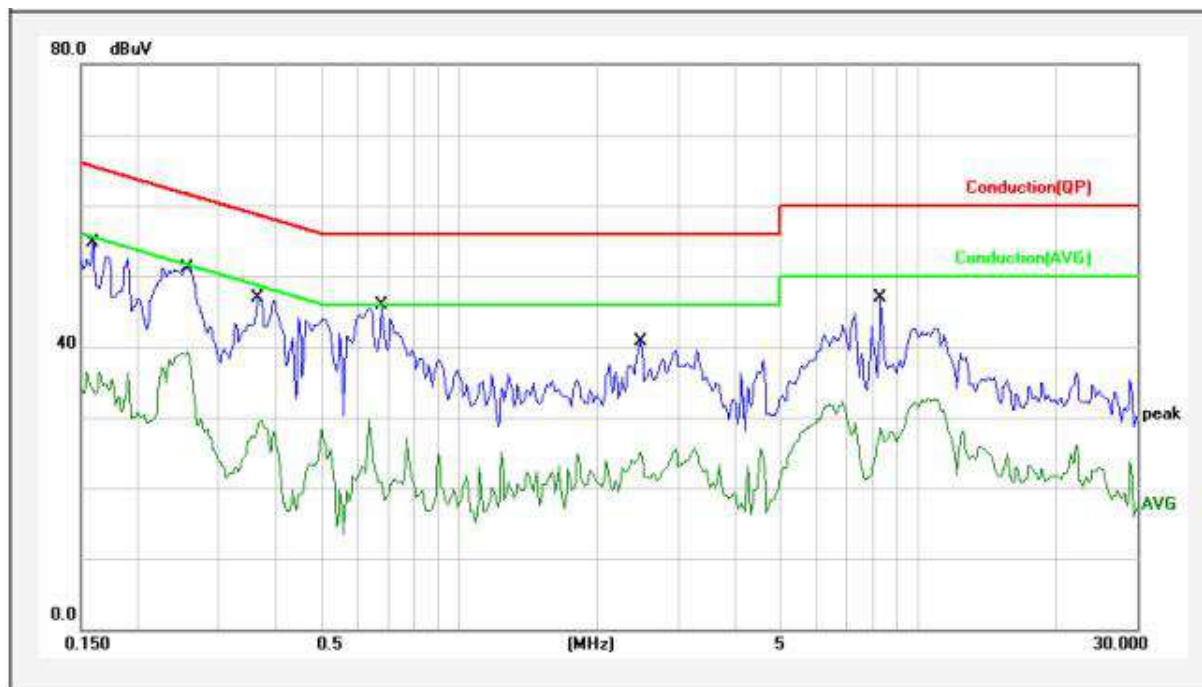
The EUT was placed on a table which is 0.8m above ground plane.

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

Repeat above procedures until all frequency measured were complete.

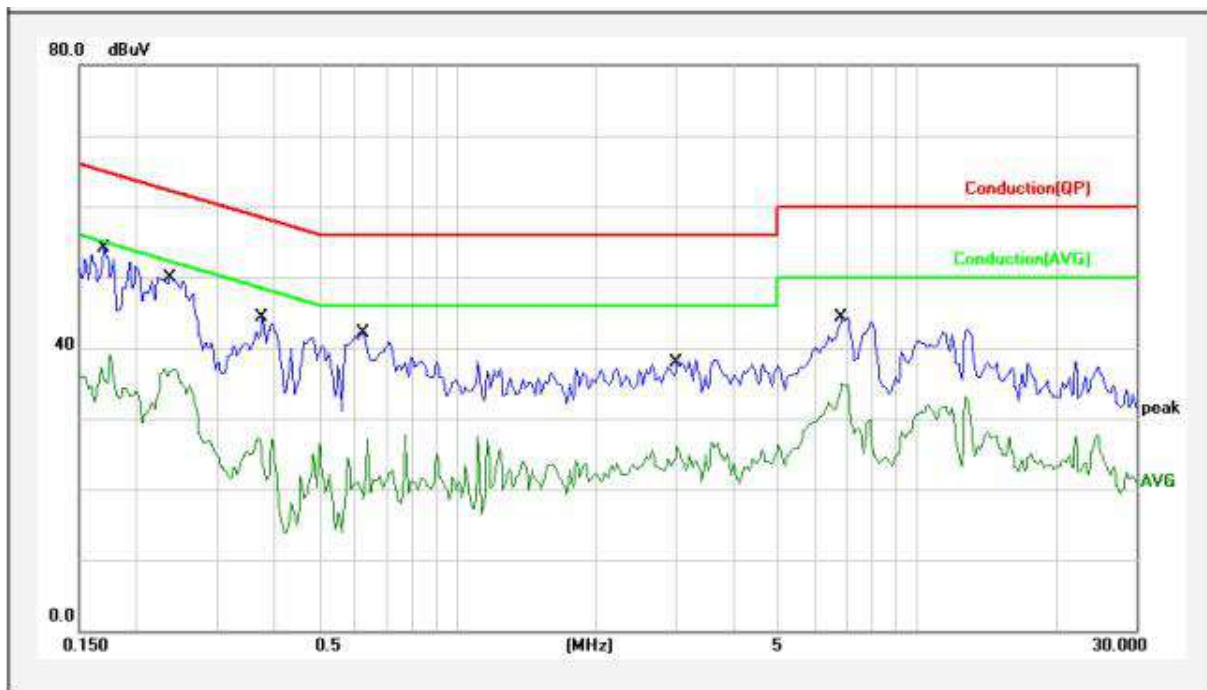
Test Results :

Test Mode:	Working	Test Voltage:	AC 120V/60Hz
Temperature:	24.1℃	Phase:	L1
Relative Humidity:	51%	Pressure:	101.5KPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1597	10.18	44.44	54.62	65.48	-10.86	QP	P	
2	0.1597	10.18	26.21	36.39	55.48	-19.09	AVG	P	
3	0.2571	10.21	40.96	51.17	61.52	-10.35	QP	P	
4	0.2571	10.21	29.01	39.22	51.52	-12.30	AVG	P	
5	0.3648	10.25	36.70	46.95	58.62	-11.67	QP	P	
6	0.3648	10.25	19.27	29.52	48.62	-19.10	AVG	P	
7	0.6774	10.35	35.46	45.81	56.00	-10.19	QP	P	
8	0.6774	10.35	19.38	29.73	46.00	-16.27	AVG	P	
9	2.4904	10.52	30.16	40.68	56.00	-15.32	QP	P	
10	2.4904	10.52	14.50	25.02	46.00	-20.98	AVG	P	
11	8.2852	10.72	36.12	46.84	60.00	-13.16	QP	P	
12	8.2852	10.72	21.52	32.24	50.00	-17.76	AVG	P	

Test Mode:	Working	Test Voltage:	AC 120V/60Hz
Temperature:	24.1℃	Phase:	N
Relative Humidity:	51%	Pressure:	101.5KPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1703	10.23	43.84	54.07	64.95	-10.88	QP	P	
2	0.1703	10.23	28.68	38.91	54.95	-16.04	AVG	P	
3	0.2376	10.25	39.72	49.97	62.18	-12.21	QP	P	
4	0.2376	10.25	26.79	37.04	52.18	-15.14	AVG	P	
5	0.3765	10.29	34.04	44.33	58.36	-14.03	QP	P	
6	0.3765	10.29	17.05	27.34	48.36	-21.02	AVG	P	
7	0.6260	10.35	31.70	42.05	56.00	-13.95	QP	P	
8	0.6260	10.35	16.81	27.16	46.00	-18.84	AVG	P	
9	3.0000	10.52	27.42	37.94	56.00	-18.06	QP	P	
10	3.0000	10.52	15.50	26.02	46.00	-19.98	AVG	P	
11	6.8483	10.66	33.74	44.40	60.00	-15.60	QP	P	
12	6.8483	10.66	24.25	34.91	50.00	-15.09	AVG	P	

4.7. ANTENNA APPLICATION

4.7.1. Antenna Requirement

Standard	Requirement
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2. Result

PASS.

The EUT has 1 antenna: an PCB Antenna for WIFI 2.4G, antenna has a gain of -3.94dBi;

Note:which in accordance to section 15.203, please refer to the internal photos.

----- END OF REPORT -----