FCC Radio Test Report

FCC ID: GSSVS20085

Report No.	:	eLAB-FCC-4-2403X002
Equipment	:	PJ-WPD-800
Model Name	:	VS20085
Brand Name	:	ViewSonic
Applicant	:	ViewSonic Corporation
Address	:	10 Pointe Dr. Suite 200. Brea, CA 92821 United States
Radio Function	:	WLAN 2.4 GHz
FCC Rule Part(s)	:	FCC CFR Title 47, Part 15, Subpart C (15.247)
Measurement Procedure(s)	:	ANSI C63.10-2013
Date of Receipt	:	2024/3/14
Date of Test	:	2024/3/27~2024/4/18
Issued Date	:	2024/5/16

The above equipment has been tested and found in compliance with the requirement of the above standards by eTest certification Laboratory Inc. hereinafter referred to as “eLAB”.

Prepared by :

Ray Chen, Engineer

Approved by :

Sam Chuang, Director

Testing Laboratory
4045

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Declaration

eLAB represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

eLAB's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **eLAB** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **eLAB** issued reports.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

eLAB's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

eLAB is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

CONTENTS

REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
eLAB-FCC-4-2403X002	R00	Original Report.	2024/5/16	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

Standard(s) Section	Description	Result	Remark
15.207	AC Power Line Conducted Emissions	Pass	------
15.205 15.209 15.247(d)	Radiated Emissions	Pass	------
15.247(a)	Bandwidth	Pass	------
15.247(b)	Output Power	Pass	------
15.247(e)	Power Spectral Density	Pass	------
15.247(d)	Antenna conducted Spurious Emission	Pass	------
15.203	Antenna Requirement	Pass	------

NOTE:
(1) ”N/A” denotes test is not applicable in this Test Report.
(2) The report format version is FR15CWL2.4_V1.0

1.1 TEST FACILITY

The test locations stated below are under the TAF Accreditation and FCC designation number is 4045.The satellite facilities under the test firm used to collect the test data in this report are:
No. 91, Ln. 298, Wengong 1st Rd., Guishan Dist., Taoyuan City 333001, Taiwan

☒ C01 ☒ CB03 ☐ TR01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expanded uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k = 2**, providing a level of confidence of approximately **95 %**. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The eLab measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C01	CISPR	150 kHz ~ 30MHz	3.4

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U (dB)
CB03	CISPR	0.009 kHz ~ 30 MHz	-	2.9
		30 MHz ~ 1000 MHz	H	3.2
			V	4.0
		1 GHz ~ 6 GHz	H	4.8
			V	4.9
		6 GHz ~ 18 GHz	H	4.8
			V	4.7
		18 GHz	-	4.1

C. Conducted test:

Test Item	U, (dB)
Occupied Bandwidth	1.0502
Output power	1.0406
Power Spectral Density	1.0502
Conducted Spurious emissions	1.1484
Conducted Band edges	1.0518

NOTE:
Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

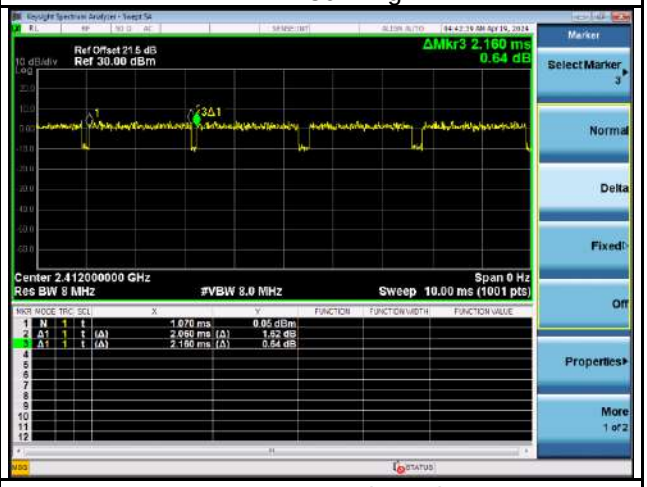
1.3 DUTY CYCLE

If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.

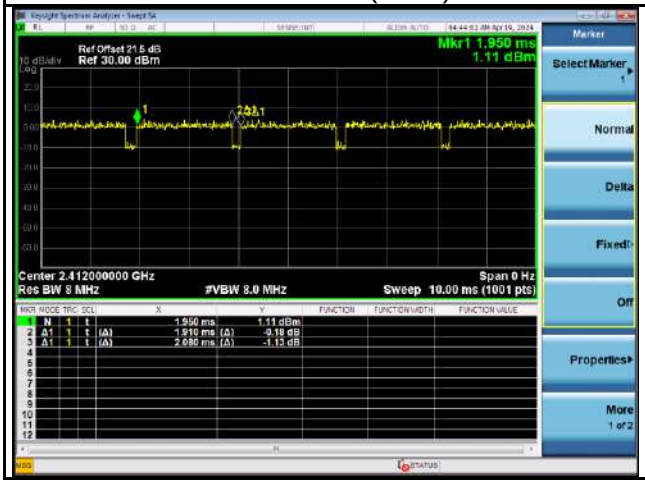
Remark	Delta 1			Delta 2	On Time/Period	10 log(1/Duty Cycle)
Mode	ON (ms)	Numbers (ON)	On Time (B) (ms)	Period (ON+OFF) (ms)	Duty Cycle (%)	Duty Factor (dB)
IEEE 802.11b	12.450	1	12.450	12.830	97.04%	0.13
IEEE 802.11g	2.060	1	2.060	2.160	95.37%	0.21
IEEE 802.11n (HT20)	1.910	1	1.910	2.080	91.83%	0.37
IEEE 802.11n (HT40)	0.930	1	0.930	1.160	80.17%	0.96

IEEE 802.11b

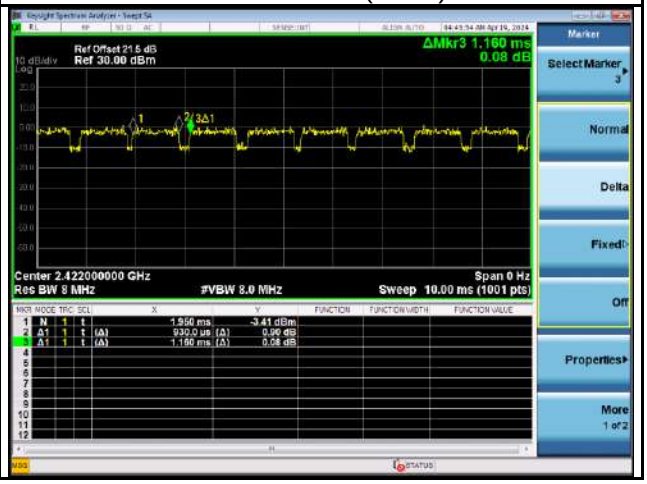
IEEE 802.11g



IEEE 802.11n (HT20)



IEEE 802.11n (HT40)



2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	PJ-WPD-800
Model Name	VS20085
Brand Name	ViewSonic
Serial Number	N/A
Test Software Version	teraterm-4.107
Operation Band	2400 MHz ~ 2483.5 MHz
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Technology	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM
Transfer Rate	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 72.2 Mbps
Output Power (Max). SISO	IEEE 802.11b: 15.58 dBm (0.0361 W) IEEE 802.11g: 21.66 dBm (0.1466 W)
Output Power (Max). MIMO	IEEE 802.11n (HT20): 23.32 dBm (0.2150 W) IEEE 802.11n (HT40): 23.16 dBm (0.2070 W)

NOTE:
(1) The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

(2) Channel List:

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n (HT20) CH03 – CH09 for IEEE 802.11n (HT40)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447	-	-

(3) Table for Filed Antenna:

Antenna	Brand Name	Model Name	Type	Frequency (MHz)	Gain (dBi)
1	ViewSonic	HP47D	PCB	2400-2483.5	2.35
2					4.83

Note:
(a) The EUT incorporates a CDD function. Physically, the EUT provides two completed transmitters and receivers (2T2R)
(b) Directional Gain=6.69 dBi. (The value is declared by manufacturer.) >6dBi.
(c) For Power Spectral Density
The reduced power spectral density limits (dBm/3kHz) =8 - (6.69-6) = 7.31(dBm/3kHz)
(d) For Output Power
For N_{ANT}= 2<5, Direction Gain= G_{ANT} + 0 = 4.83 + 0 = 4.83
The Direction Gain is less than 6dBi, so output power limits will not be reduced.

(4) The above Antenna information is derived from the antenna data sheet provided by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

(5)

Operating Mode \ TX Mode	2TX
IEEE 802.11b	V (Ant. 1)
IEEE 802.11g	V (Ant. 1)
IEEE 802.11n (HT20)	V (Ant. 1+Ant. 2)
IEEE 802.11n (HT40)	V (Ant. 1+Ant. 2)

2.2 TEST MODES

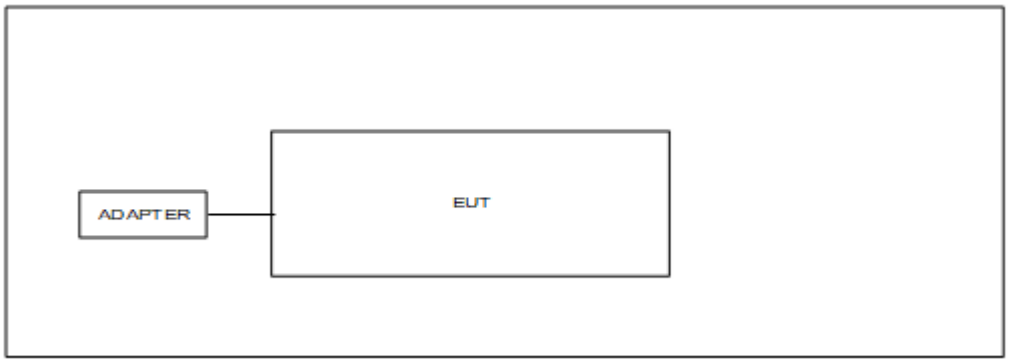
Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal	-	-
Transmitter Radiated Emissions (below 1GHz)	TX Mode_IEEE 802.11g	01	-
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11b	01/11	Bandedge
	TX Mode_IEEE 802.11g		
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11n (HT40)	03/09	
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11b	01/06/11	Harmonic
	TX Mode_IEEE 802.11g		
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11n (HT40)	03/06/09	
Bandwidth & Output Power & Power Spectral Density & Antenna conducted Spurious Emission	TX Mode_IEEE 802.11b	01/06/11	-
	TX Mode_IEEE 802.11g		
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11n (HT40)	03/06/09	

NOTE:
(1) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.

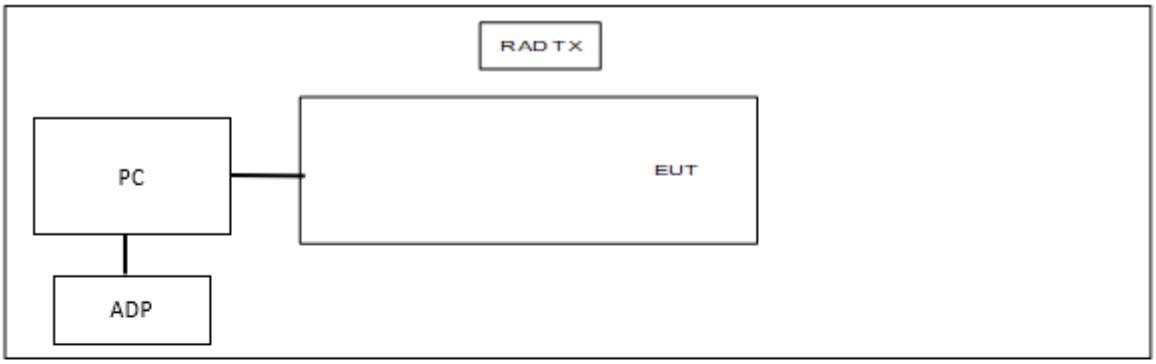
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

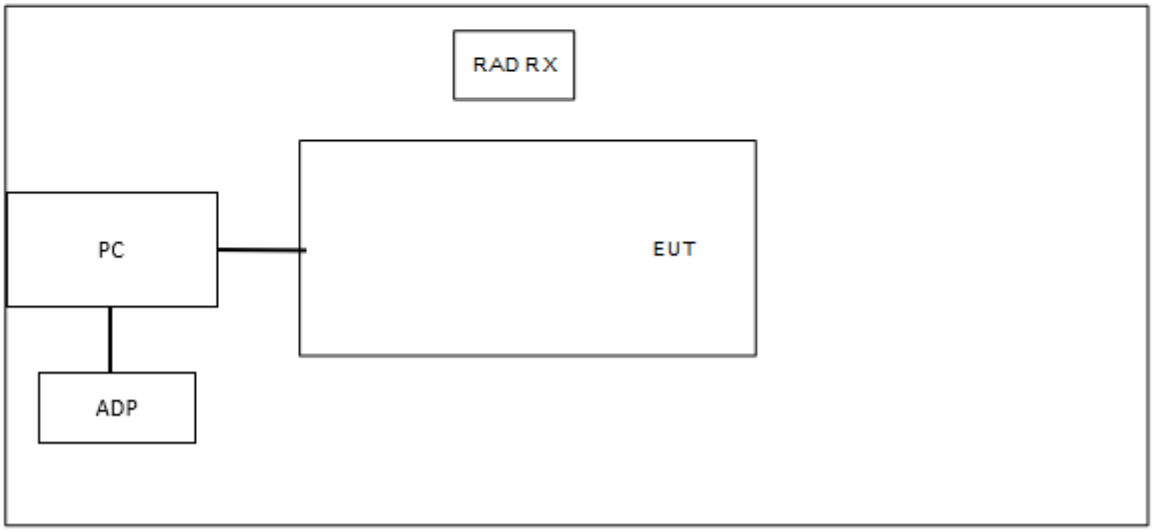
Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.

AC power line conducted emissions



Radiated Emissions





2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Remarks
A	NB	Dynabook	TECRA A40-J	Furnished by test lab.
B	ADP	Dynabook	PAS352E-1AC3	Furnished by test lab.
C	Fixture	ViewSonic	5800-2CUART	Supplied by test requester.
D	Remote Controller	OHSUNG	G10	Supplied by test requester

Item	Cable Type	Ferrite Core	Length	Shielded	Remarks
1	Micro USB	N/A	1.6m	YES	Supplied by test requester.

3 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:
(1) The tighter limit applies at the band edges.
(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)
Margin Level = Measurement Value – Limit Value
Calculation example:

Reading Level (dBμV)		Correct Factor (dB)		Measurement Value (dBμV)
38.22	+	3.45	=	41.67

Measurement Value (dBμV)		Limit Value (dBμV)		Margin Level (dB)
41.67	-	60	=	-18.33

The following table is the setting of the receiver.

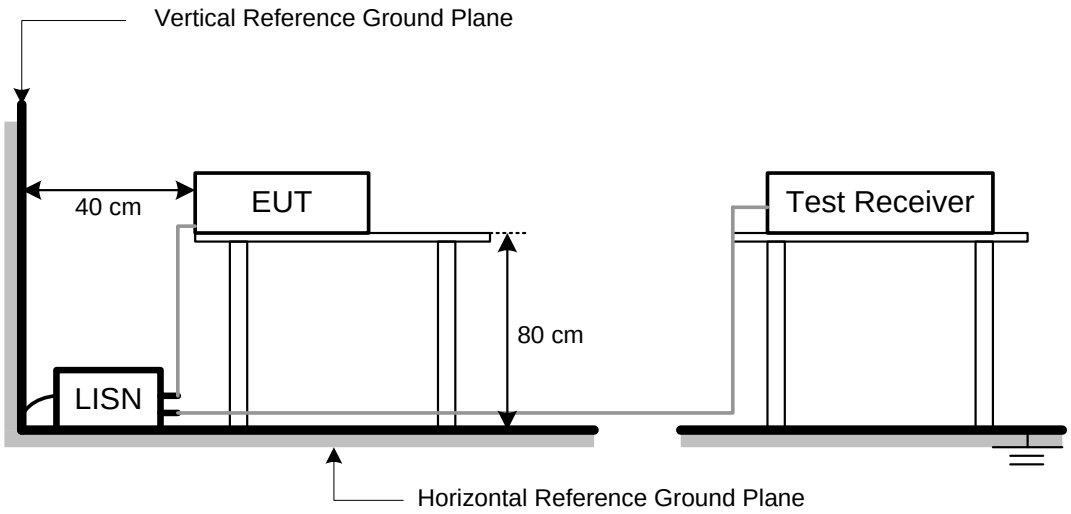
Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.2 TEST PROCEDURE

a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
All other support equipment were powered from an additional LISN(s).
The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle to keep the cable above 40 cm.
c. Excess I/O cables that are not connected to a peripheral shall be bundled in the center.
The end of the cable will be terminated, using the correct terminating impedance.
The overall length shall not exceed 1 m.
d. The LISN is spaced at least 80 cm from the nearest part of the EUT chassis.
e. For the actual test configuration, please refer to the related Item - EUT TEST PHOTO.

NOTE:
(1) In the results, each reading is marked as Peak, QP or AVG per the detector used.
BW=9 kHz (6 dB Bandwidth)
(2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.

3.3 TEST SETUP



3.4 TEST RESULT

Please refer to the **APPENDIX A**.

4 RADIATED EMISSIONS TEST

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205, then the 15.209 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	Radiated Emissions (dBuV/m)		Measurement Distance (meters)
	Peak	Average	
Above 1000	74	54	3

NOTE:
(1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value
Calculation example:

Reading Level (dBµV)		Correct Factor (dB/m)		Measurement Value (dBµV/m)
19.11	+	2.11	=	21.22

Measurement Value (dBµV/m)		Limit Value (dBµV/m)		Margin Level (dB)
21.22	-	40	=	-18.78

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

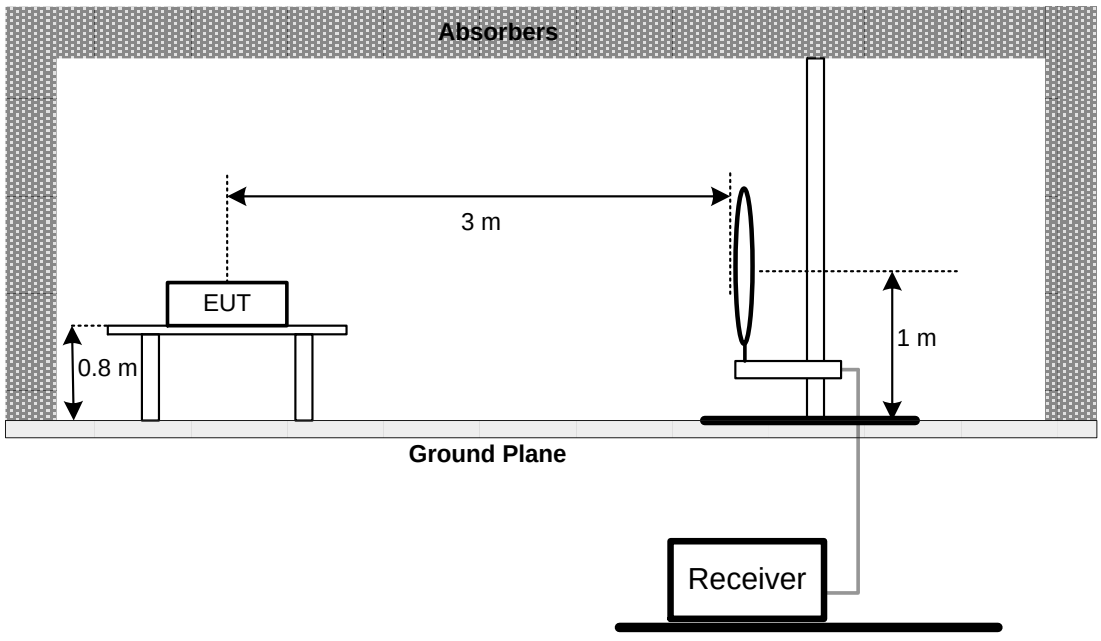
Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2 TEST PROCEDURE

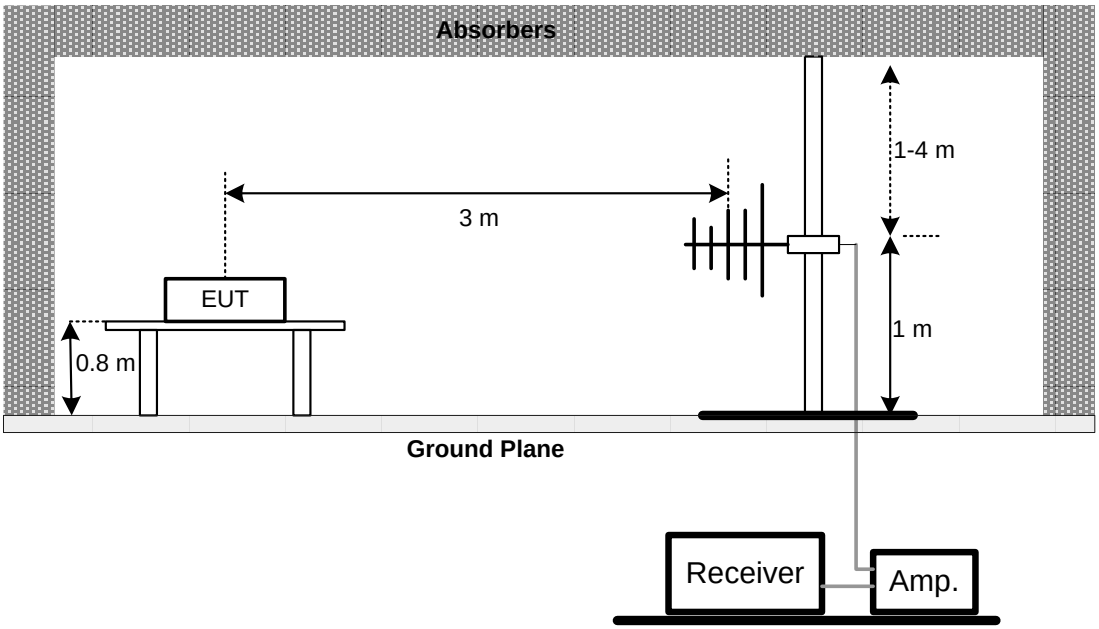
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. For the actual test configuration, please refer to the related Item – EUT TEST PHOTO.

4.3 TEST SETUP

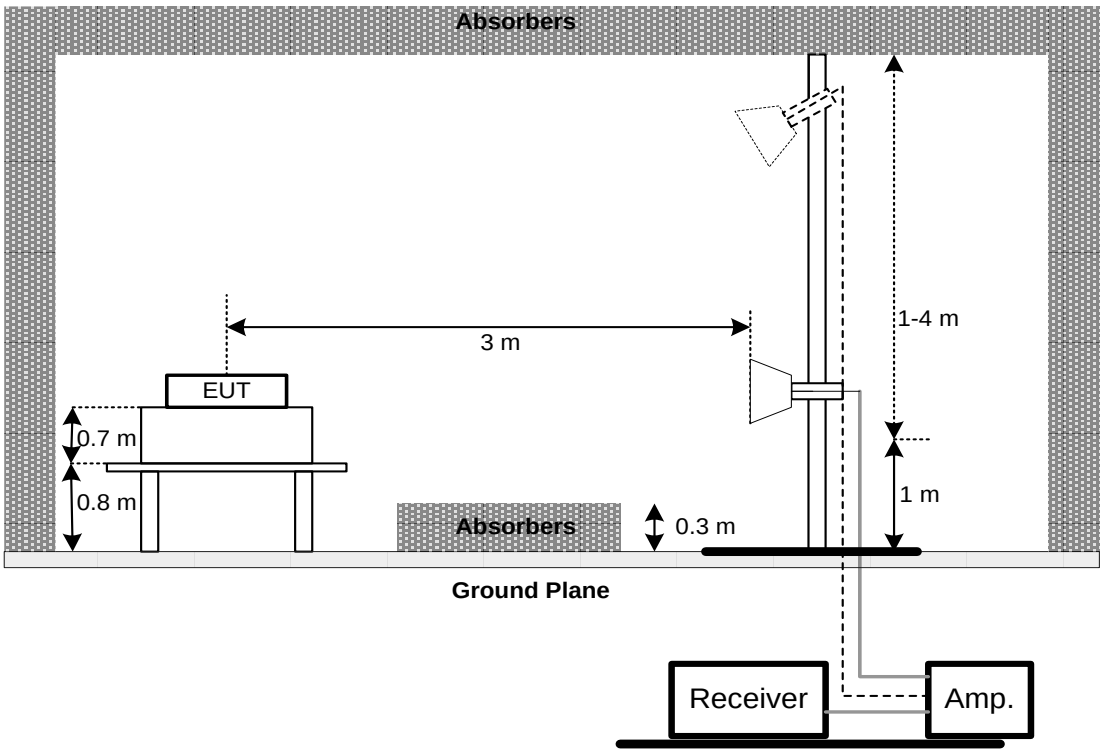
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.5 TEST RESULT – BELOW 30 MHZ

There were no emissions found below 30 MHz within 20 dB of the limit.

4.6 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX B.

4.7 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX C.

NOTE:

(1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5 BANDWIDTH TEST

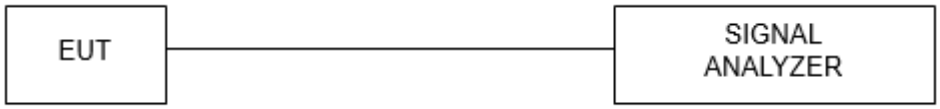
5.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(a)	6 dB Bandwidth	500 kHz

5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

5.3 TEST SETUP



5.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.5 TEST RESULT

Please refer to the APPENDIX D.

6 OUTPUT POWER TEST

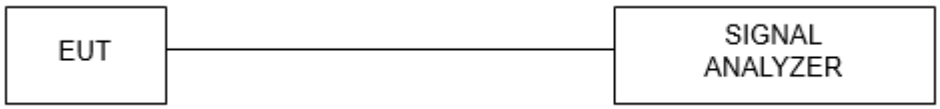
6.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(b)	Maximum Output Power	1 Watt or 30dBm

6.2 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
b. The maximum peak conducted output power was performed in accordance with FCC KDB 558074 D01 15.247 Meas Guidance.
c. Subclause 11.9.1.1 of ANSI C63.10 is applied. The maximum peak conducted output power may be measured using a broadband peak RF power meter.
The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

6.3 TEST SETUP



6.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.5 TEST RESULT

Please refer to the APPENDIX E.

7 POWER SPECTRAL DENSITY

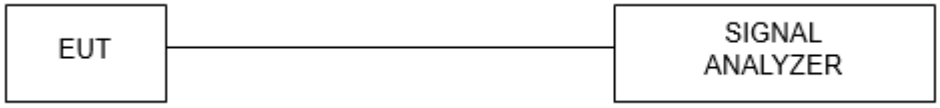
7.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

7.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW = 3 kHz, VBW = 10 kHz, Sweep time = Auto.

7.3 TEST SETUP



7.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.5 TEST RESULT

Please refer to the APPENDIX F.

8 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST

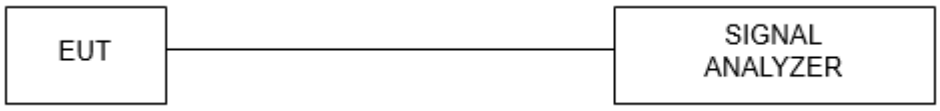
8.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits.

8.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW = 100 kHz, VBW=300 kHz, Sweep time = Auto.
c. Offset = antenna gain + cable loss.

8.3 TEST SETUP



8.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.5 TEST RESULT

Please refer to the APPENDIX G.

9 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101051	2023/7/21	2024/7/20
2	Test Cable	EMCI	EMCRG142S-SM-SM-5000	230609	2023/7/19	2024/7/18
3	EMI Test Receiver	R&S	ESR3	103133	2023/6/29	2024/6/28
4	Measurement Software	Farad	EZ_EMC (Ver. NB-03A1-01)	N/A	N/A	N/A

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Log-Bicon Antenna	Schwarzbeck	VULB 9168	01577	2023/7/6	2024/7/5
2	Attenuator	EMCI	EMCI-N-6-05	AT-N0575	2023/7/6	2024/7/5
3	Pre-Amplifier	EMCI	EMC001330	980908	2023/7/12	2024/7/11
4	Test Cable	EMCI	EMC104-SM-SM-6000	230539	2023/7/14	2024/7/13
5	Test Cable	EMCI	EMC104-SM-SM-2500	230542	2023/7/14	2024/7/13
6	Test Cable	EMCI	EMC104-SM-SN-1000	230543	2023/7/14	2024/7/13
7	EXA Signal Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10
8	Loop Ant.	EMCI	LPA600	296	2023/10/31	2024/10/30
9	Pre-Amplifier	EMCI	EMC001340	980969	2023/7/18	2024/7/17
10	Test Cable	EMCI	EMC104-SM-SM-6000	230539	2023/7/14	2024/7/13
11	Test Cable	EMCI	EMC104-SM-SM-2500	230542	2023/7/14	2024/7/13
12	Test Cable	EMCI	EMC104-SM-SN-1000	230543	2023/7/14	2024/7/13
13	EXA Signal Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10
14	Horn Antenna	RFSPIN	DRH18-E	KV2D01A18ES	2023/6/30	2024/6/29
15	Pre-Amplifier	EMCI	EMC118A45SE	980960	2023/7/18	2024/7/17
16	Test Cable	EMCI	EMC104-SM-SM-6000	230539	2023/7/14	2024/7/13
17	Test Cable	EMCI	EMC104-SM-SM-2500	230542	2023/7/14	2024/7/13
18	Test Cable	EMCI	EMC104-SM-SN-1000	230543	2023/7/14	2024/7/13
19	EXA Signal Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10
20	Measurement Software	Farad	EZ_EMC (Ver. NB-03A1-01)	N/A	N/A	N/A

Bandwidth						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10

Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10

Antenna conducted Spurious Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10

Remark: “N/A” denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

10 EUT TEST PHOTO

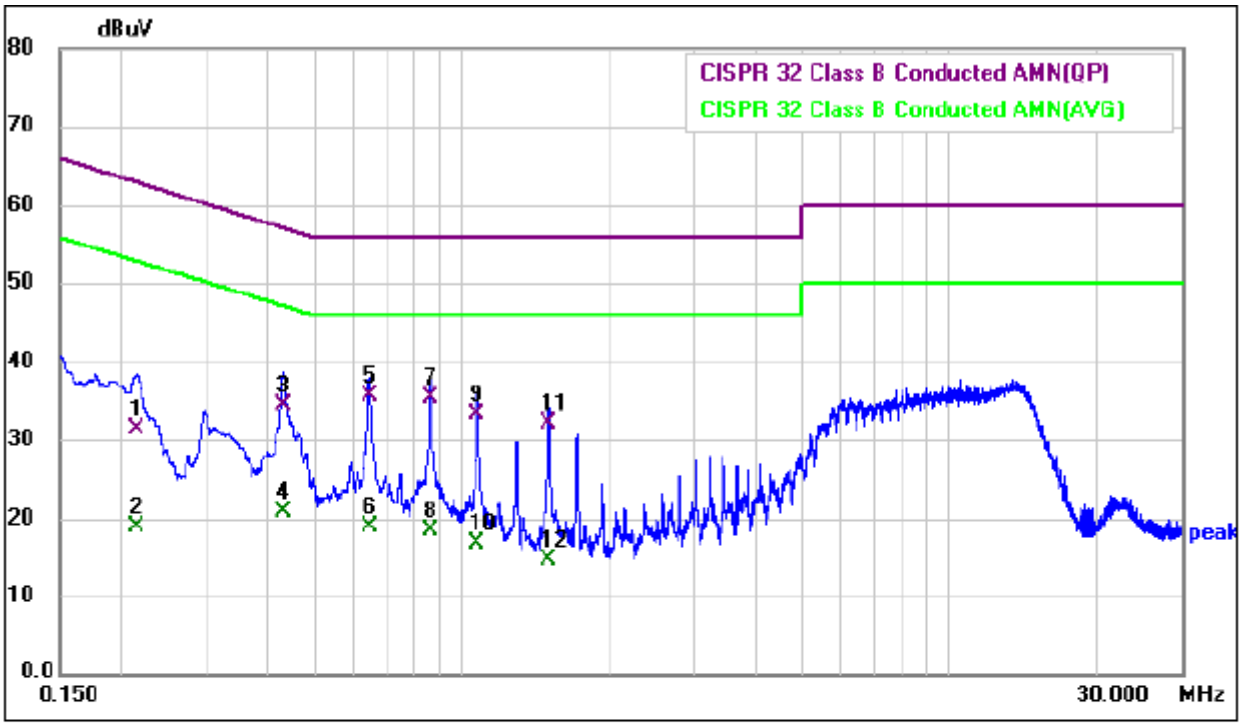
Please refer to APPENDIX-TP-2403X002-1

11 EUT PHOTOS

Please refer to APPENDIX-EP-2403X002-1/ EP-2403X002-2

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

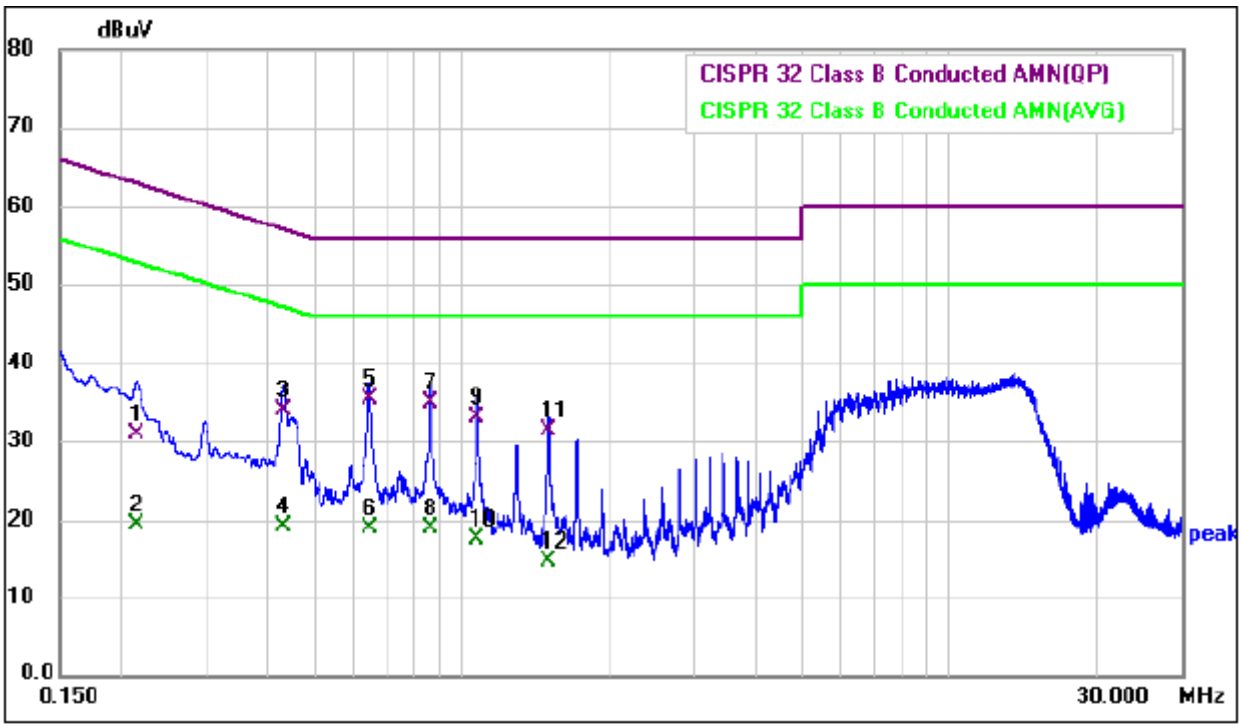
Test Mode	Normal	Tested Date	2024/4/18
Test Frequency	-	Phase	Line



No.	Mk	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1		0.215250	21.70	9.65	31.35	63.00	-31.65	QP	
2		0.215250	9.40	9.65	19.05	53.00	-33.95	AVG	
3		0.431250	24.90	9.64	34.54	57.23	-22.69	QP	
4		0.431250	11.20	9.64	20.84	47.23	-26.39	AVG	
5	*	0.647250	26.10	9.65	35.75	56.00	-20.25	QP	
6		0.647250	9.30	9.65	18.95	46.00	-27.05	AVG	
7		0.861000	25.70	9.66	35.36	56.00	-20.64	QP	
8		0.861000	8.80	9.66	18.46	46.00	-27.54	AVG	
9		1.077000	23.70	9.67	33.37	56.00	-22.63	QP	
10		1.077000	7.20	9.67	16.87	46.00	-29.13	AVG	
11		1.509000	22.40	9.69	32.09	56.00	-23.91	QP	
12		1.509000	4.90	9.69	14.59	46.00	-31.41	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

Test Mode	Normal	Tested Date	2024/4/18
Test Frequency	-	Phase	Neutral

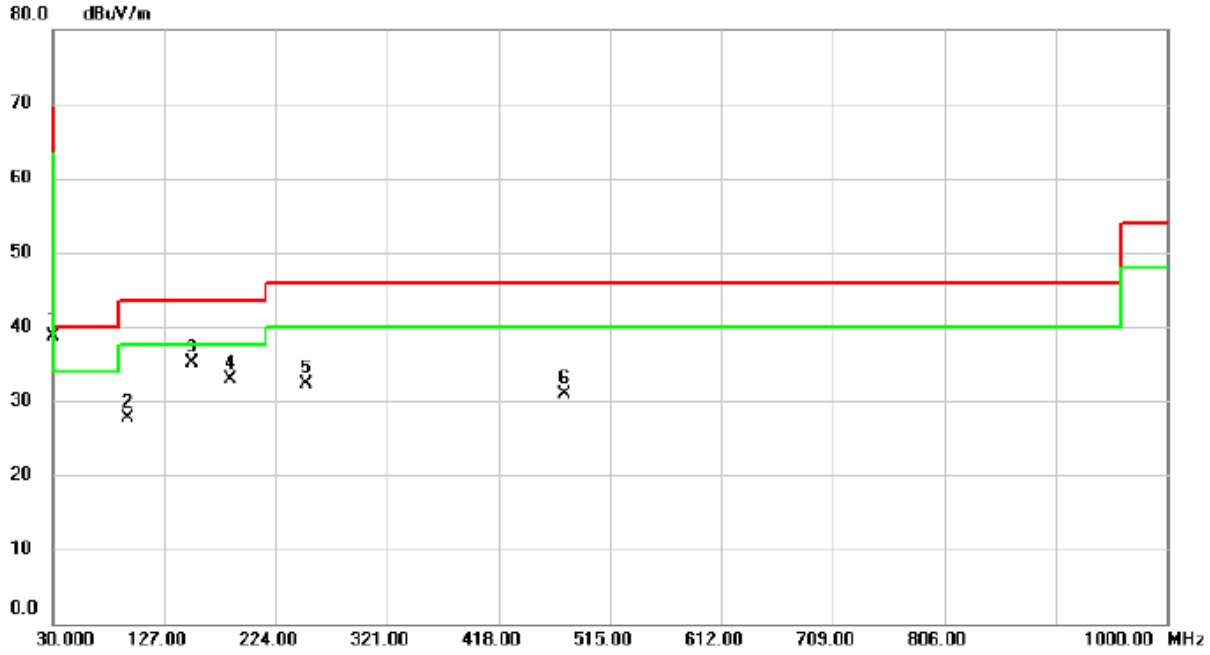


No.	Mk	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1		0.215250	21.20	9.64	30.84	63.00	-32.16	QP	
2		0.215250	9.70	9.64	19.34	53.00	-33.66	AVG	
3		0.431250	24.30	9.64	33.94	57.23	-23.29	QP	
4		0.431250	9.60	9.64	19.24	47.23	-27.99	AVG	
5	*	0.647250	25.70	9.65	35.35	56.00	-20.65	QP	
6		0.647250	9.40	9.65	19.05	46.00	-26.95	AVG	
7		0.861000	25.30	9.65	34.95	56.00	-21.05	QP	
8		0.861000	9.40	9.65	19.05	46.00	-26.95	AVG	
9		1.077000	23.40	9.66	33.06	56.00	-22.94	QP	
10		1.077000	7.80	9.66	17.46	46.00	-28.54	AVG	
11		1.506750	21.70	9.68	31.38	56.00	-24.62	QP	
12		1.506750	5.00	9.68	14.68	46.00	-31.32	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

APPENDIX B RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

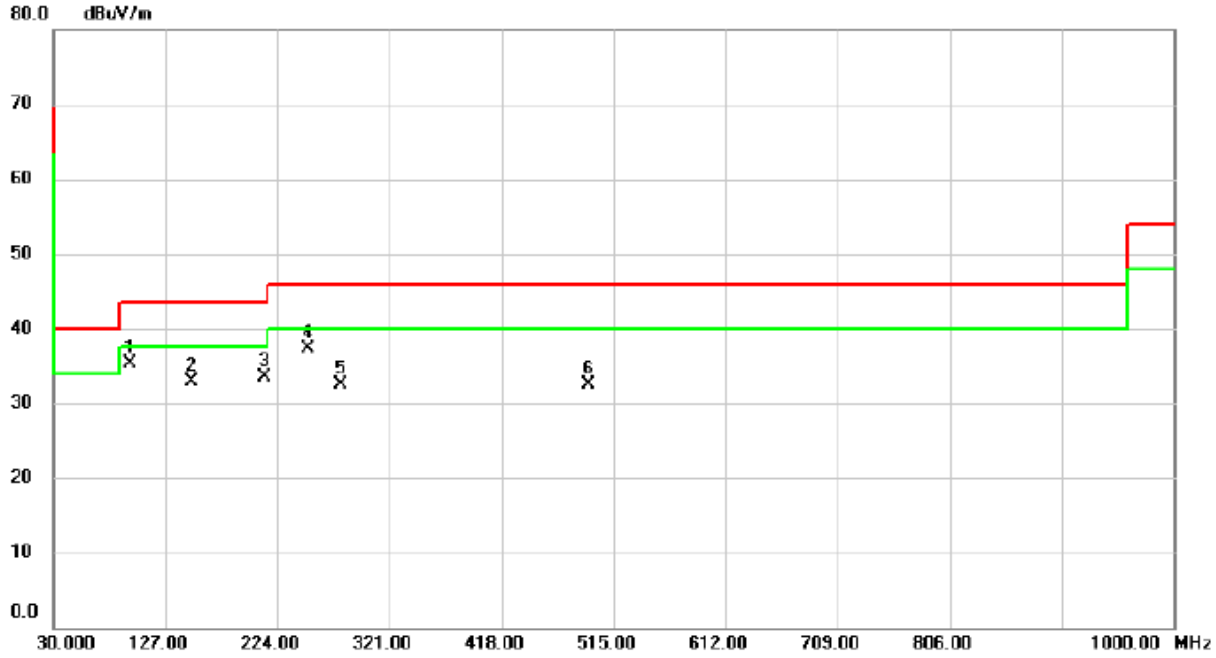
Test Mode	IEEE 802.11	Test Date	2024/4/12
Test Frequency	-	Polarization	Vertical
Temp	23°C	Hum.	64%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30.0000	52.85	-14.06	38.79	40.00	-1.21	peak	
2		94.9900	45.13	-17.40	27.73	43.50	-15.77	peak	
3		151.2500	47.08	-12.00	35.08	43.50	-8.42	peak	
4		184.2300	47.04	-14.12	32.92	43.50	-10.58	peak	
5		250.1900	45.66	-13.31	32.35	46.00	-13.65	peak	
6		475.2300	38.21	-7.22	30.99	46.00	-15.01	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

Test Mode	IEEE 802.11	Test Date	2024/4/12
Test Frequency	-	Polarization	Horizontal
Temp	23°C	Hum.	64%

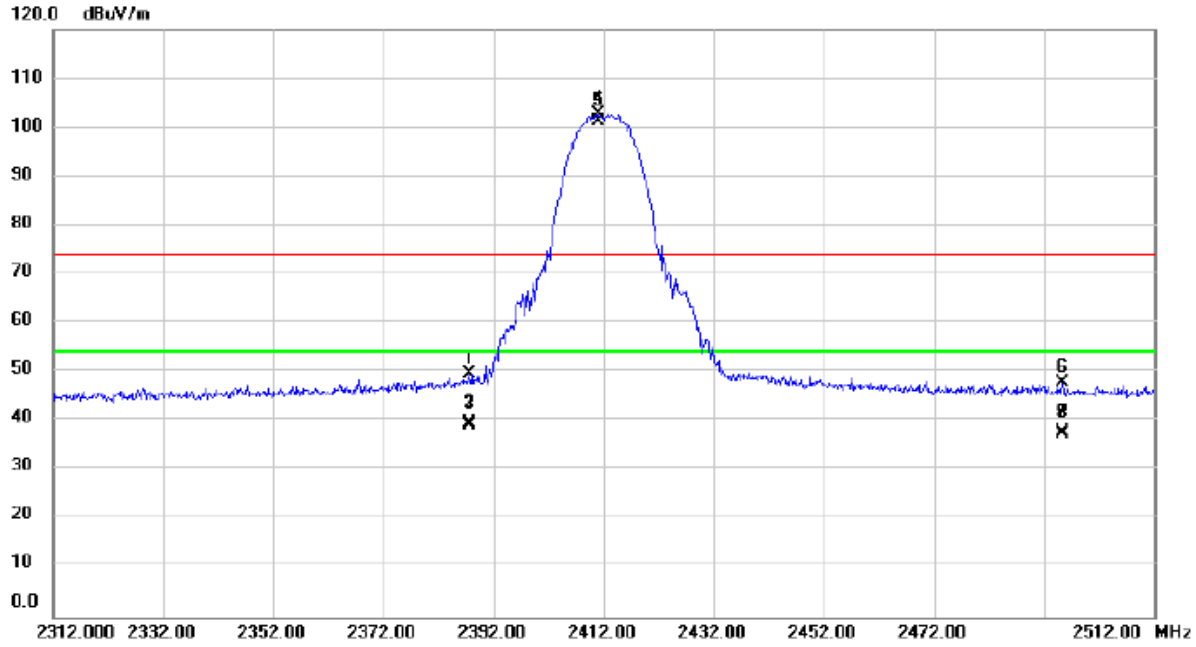


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	96.9300	52.54	-17.16	35.38	43.50	-8.12	peak	
2		149.3100	44.93	-12.07	32.86	43.50	-10.64	peak	
3		212.3600	49.10	-15.53	33.57	43.50	-9.93	peak	
4		250.1900	50.53	-13.31	37.22	46.00	-8.78	peak	
5		279.2900	44.64	-12.09	32.55	46.00	-13.45	peak	
6		493.6600	39.38	-6.95	32.43	46.00	-13.57	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

APPENDIX C RADIATED EMISSIONS - ABOVE 1 GHZ

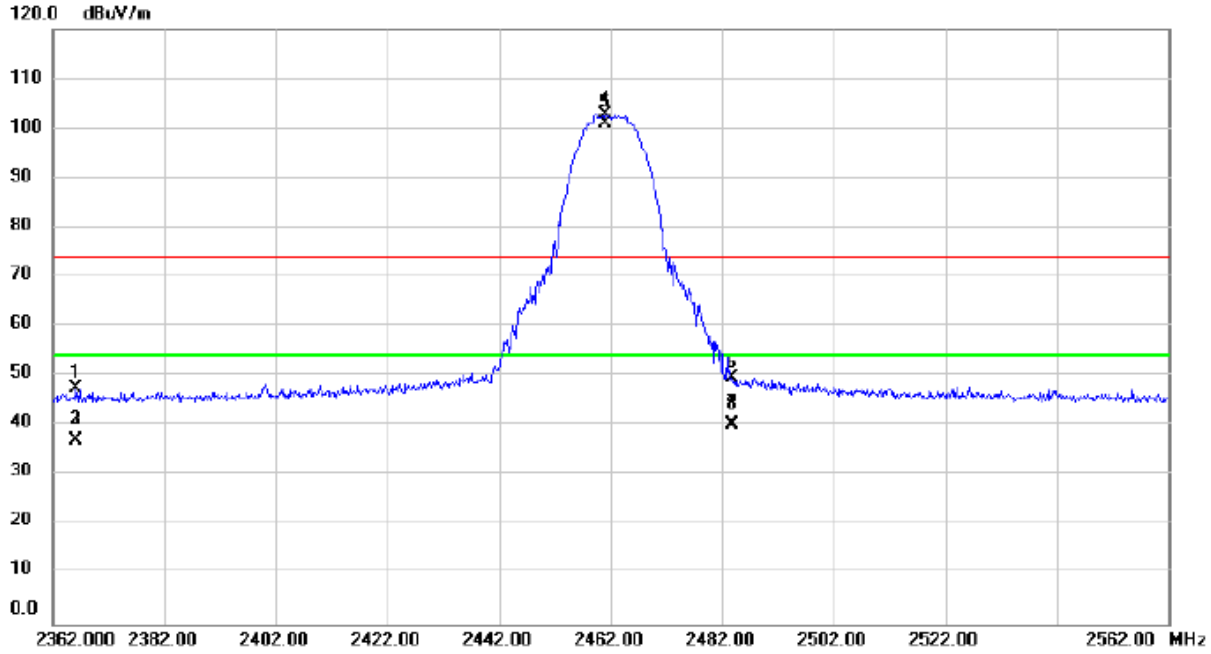
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2387.600	46.18	3.53	49.71	74.00	-24.29	peak	
2		2387.600	35.88	3.53	39.41	54.00	-14.59	AVG	DCF 0.13db
3		2387.600	35.75	3.53	39.28	54.00	-14.72	AVG	
4	X	2411.200	99.16	3.58	102.74	74.00	28.74	peak	
5	*	2411.200	97.55	3.58	101.13	54.00	47.13	AVG	
6		2495.400	44.00	3.72	47.72	74.00	-26.28	peak	
7		2495.400	33.79	3.72	37.51	54.00	-16.49	AVG	DCF 0.13db
8		2495.400	33.66	3.72	37.38	54.00	-16.62	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

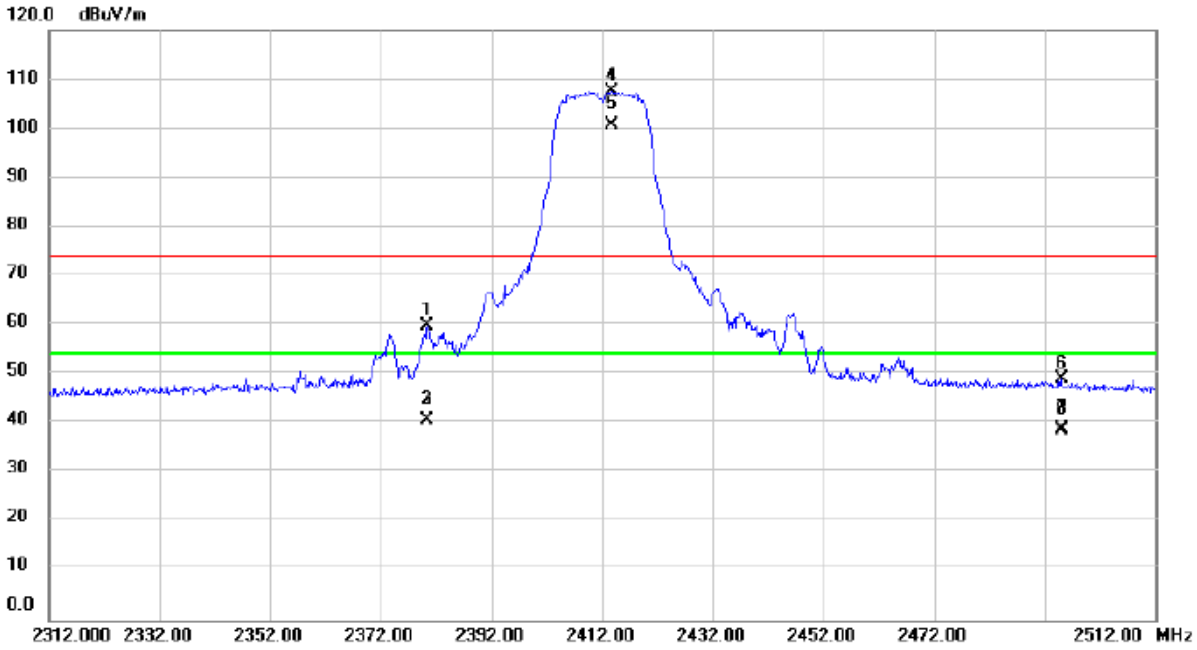
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2366.200	43.92	3.49	47.41	74.00	-26.59	peak	
2		2366.200	33.58	3.49	37.07	54.00	-16.93	AVG	DCF 0.13db
3		2366.200	33.45	3.49	36.94	54.00	-17.06	AVG	
4	X	2461.200	99.13	3.67	102.80	74.00	28.80	peak	
5	*	2461.200	97.34	3.67	101.01	54.00	47.01	AVG	
6		2483.800	46.04	3.71	49.75	74.00	-24.25	peak	
7		2483.800	36.57	3.71	40.28	54.00	-13.72	AVG	DCF 0.13db
8		2483.800	36.44	3.71	40.15	54.00	-13.85	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

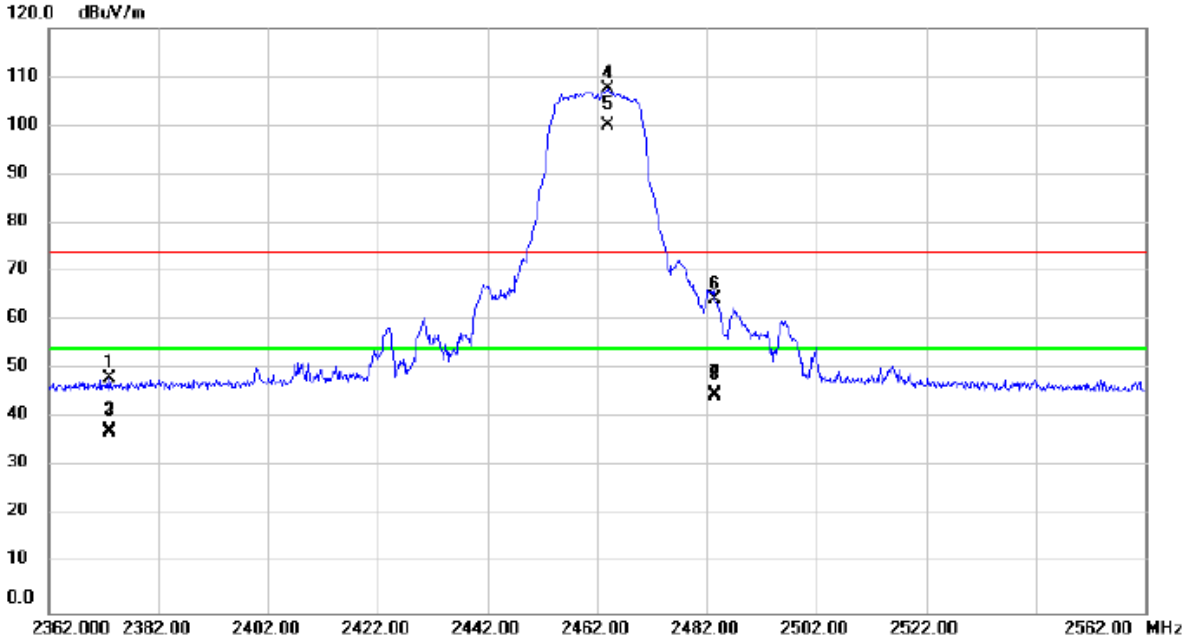
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2380.400	56.49	3.51	60.00	74.00	-14.00	peak	
2		2380.400	37.27	3.51	40.78	54.00	-13.22	AVG	DCF 0.21db
3		2380.400	37.06	3.51	40.57	54.00	-13.43	AVG	
4	X	2413.800	104.0	3.58	107.61	74.00	33.61	peak	
5	*	2413.800	96.95	3.58	100.53	54.00	46.53	AVG	
6		2495.000	45.22	3.72	48.94	74.00	-25.06	peak	
7		2495.000	35.01	3.72	38.73	54.00	-15.27	AVG	DCF 0.21db
8		2495.000	34.80	3.72	38.52	54.00	-15.48	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

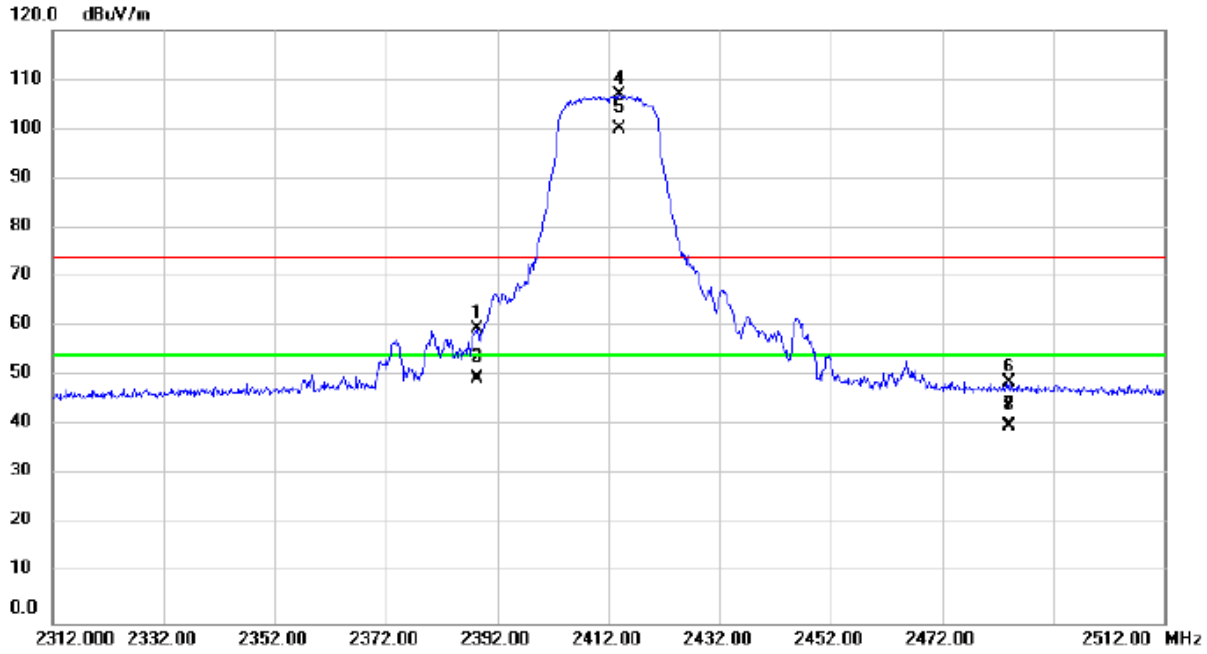
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2373.200	44.57	3.51	48.08	74.00	-25.92	peak	
2		2373.200	33.87	3.51	37.38	54.00	-16.62	AVG	DCF 0.21db
3		2373.200	33.66	3.51	37.17	54.00	-16.83	AVG	
4	X	2464.000	103.7	3.67	107.43	74.00	33.43	peak	
5	*	2464.000	96.45	3.67	100.12	54.00	46.12	AVG	
6		2483.600	60.75	3.71	64.46	74.00	-9.54	peak	
7		2483.600	41.04	3.71	44.75	54.00	-9.25	AVG	DCF 0.21db
8		2483.600	40.83	3.71	44.54	54.00	-9.46	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

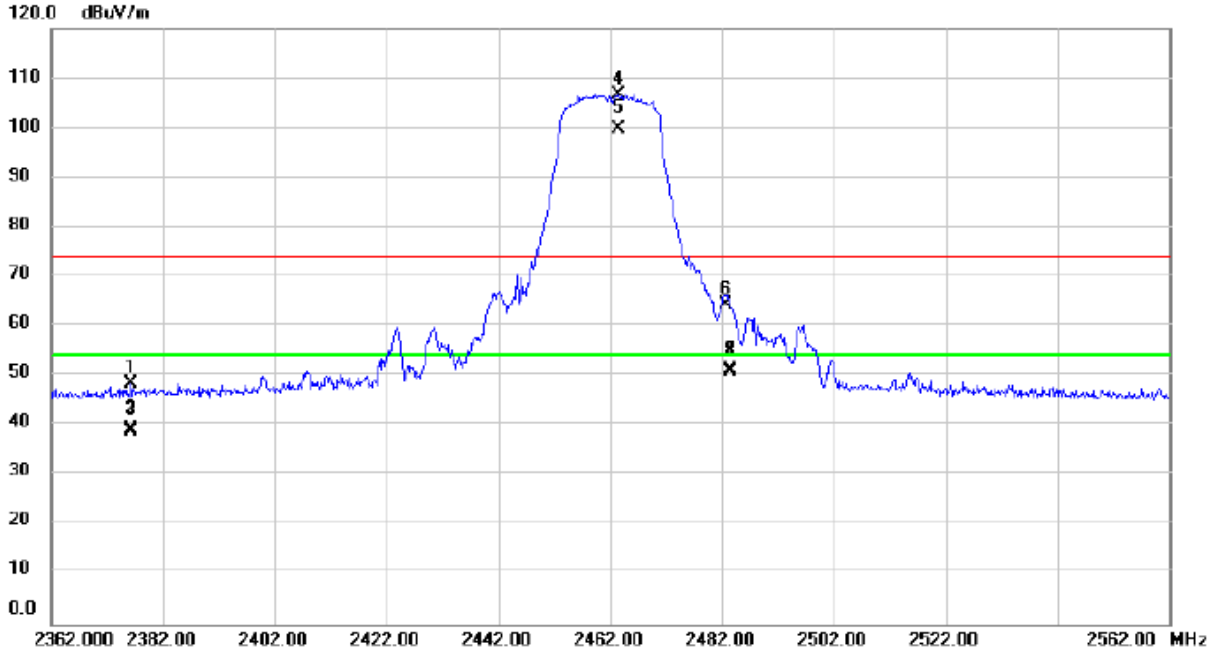
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2388.400	56.11	3.53	59.64	74.00	-14.36	peak	
2		2388.400	46.07	3.53	49.60	54.00	-4.40	AVG	DCF 0.37db
3		2388.400	45.70	3.53	49.23	54.00	-4.77	AVG	
4	X	2414.000	103.2	3.58	106.82	74.00	32.82	peak	
5	*	2414.000	96.44	3.58	100.02	54.00	46.02	AVG	
6		2484.000	45.02	3.71	48.73	74.00	-25.27	peak	
7		2484.000	36.32	3.71	40.03	54.00	-13.97	AVG	DCF 0.37db
8		2484.000	35.95	3.71	39.66	54.00	-14.34	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

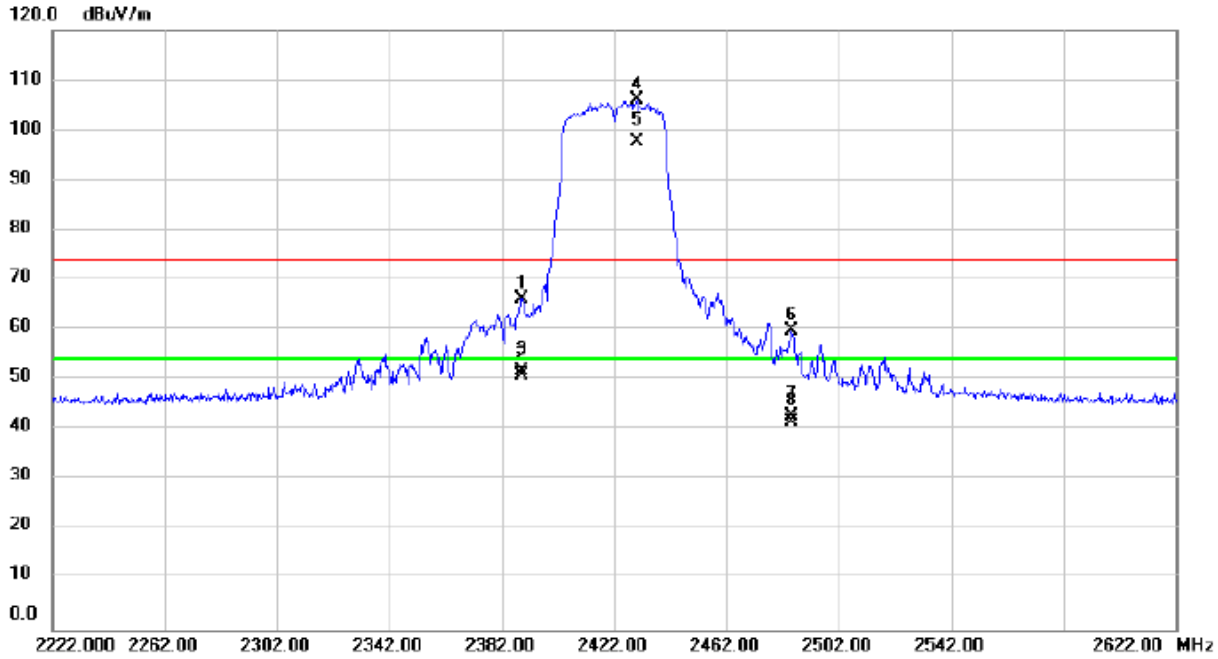
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2376.200	45.05	3.51	48.56	74.00	-25.44	peak	
2		2376.200	35.59	3.51	39.10	54.00	-14.90	AVG	DCF 0.37db
3		2376.200	35.22	3.51	38.73	54.00	-15.27	AVG	
4	X	2463.400	103.0	3.67	106.67	74.00	32.67	peak	
5	*	2463.400	96.08	3.67	99.75	54.00	45.75	AVG	
6		2482.600	60.76	3.71	64.47	74.00	-9.53	peak	
7		2483.600	47.52	3.71	51.23	54.00	-2.77	AVG	DCF 0.37db
8		2483.600	47.15	3.71	50.86	54.00	-3.14	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

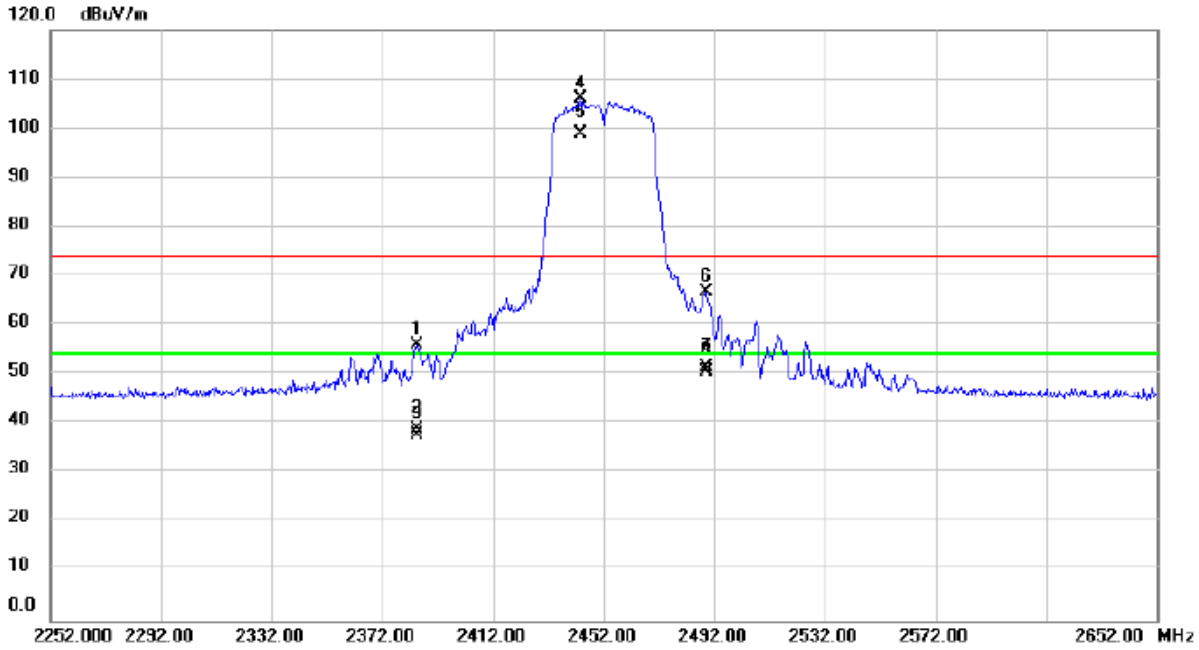
Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/28
Test Frequency	CH03: 2422 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.000	62.63	3.53	66.16	74.00	-7.84	peak	
2		2389.000	47.28	3.53	50.81	54.00	-3.19	AVG	
3		2389.000	48.24	3.53	51.77	54.00	-2.23	AVG	DCF 0.96db
4	X	2430.000	102.3	3.60	105.98	74.00	31.98	peak	
5	*	2430.000	94.08	3.60	97.68	54.00	43.68	AVG	
6		2485.200	56.06	3.71	59.77	74.00	-14.23	peak	
7		2485.200	38.93	3.71	42.64	54.00	-11.36	AVG	DCF 0.96db
8		2485.200	37.97	3.71	41.68	54.00	-12.32	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

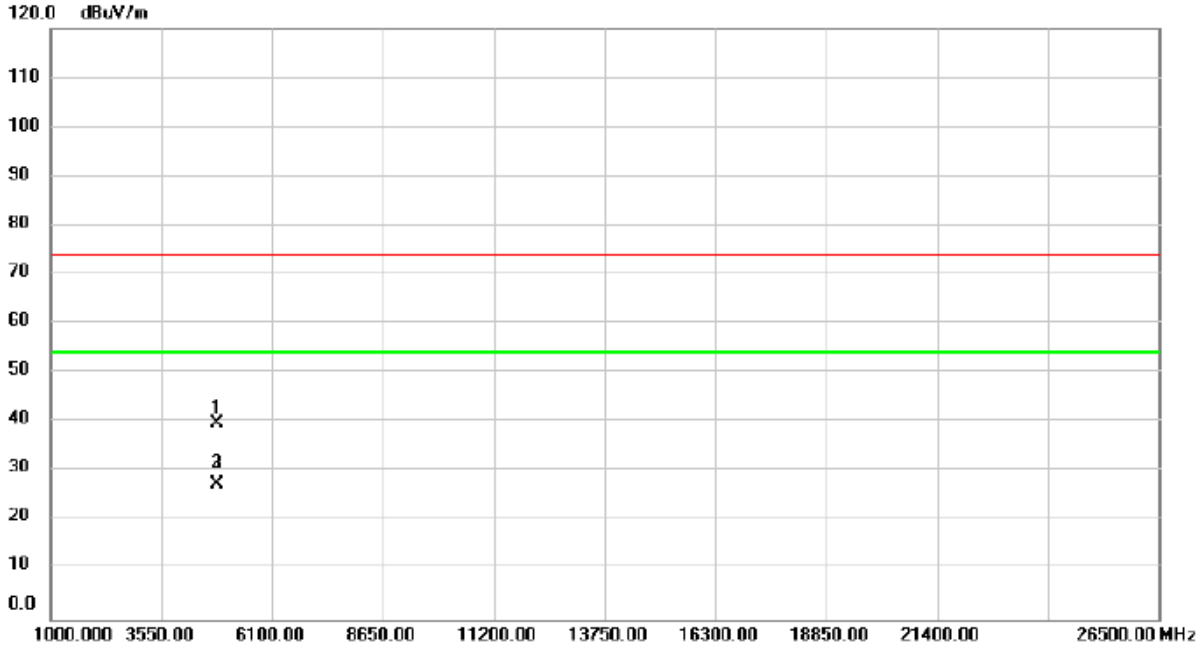
Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/28
Test Frequency	CH09: 2452 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2384.400	52.37	3.53	55.90	74.00	-18.10	peak	
2		2384.400	35.18	3.53	38.71	54.00	-15.29	AVG	DCF 0.96db
3		2384.400	34.22	3.53	37.75	54.00	-16.25	AVG	
4	X	2443.600	102.5	3.62	106.17	74.00	32.17	peak	
5	*	2443.600	95.32	3.62	98.94	54.00	44.94	AVG	
6		2488.800	63.02	3.70	66.72	74.00	-7.28	peak	
7		2488.800	47.67	3.70	51.37	54.00	-2.63	AVG	DCF 0.96db
8		2488.800	46.71	3.70	50.41	54.00	-3.59	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) X and * represent fundamental frequency and with no limit.

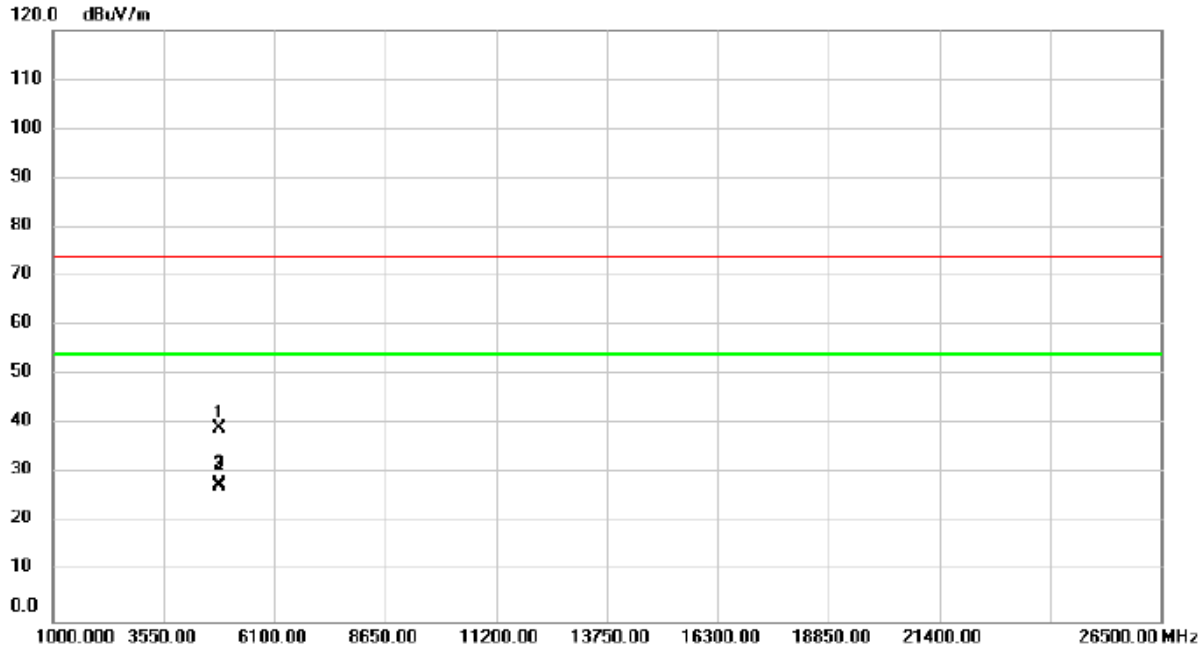
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	39.95	-0.24	39.71	74.00	-34.29	peak	
2		4824.000	27.61	-0.24	27.37	54.00	-26.63	AVG	
3	*	4824.000	27.74	-0.24	27.50	54.00	-26.50	AVG	DCF 0.13db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

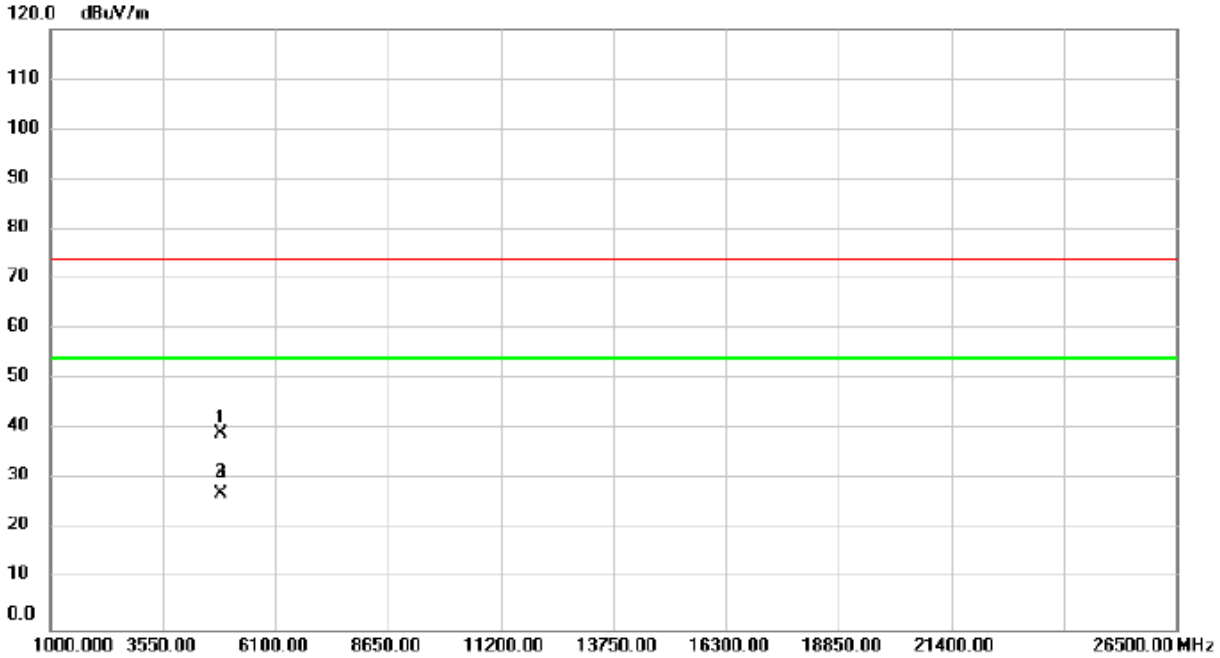
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	39.25	-0.24	39.01	74.00	-34.99	peak	
2		4824.000	27.83	-0.24	27.59	54.00	-26.41	AVG	
3	*	4824.000	27.96	-0.24	27.72	54.00	-26.28	AVG	DCF 0.13db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

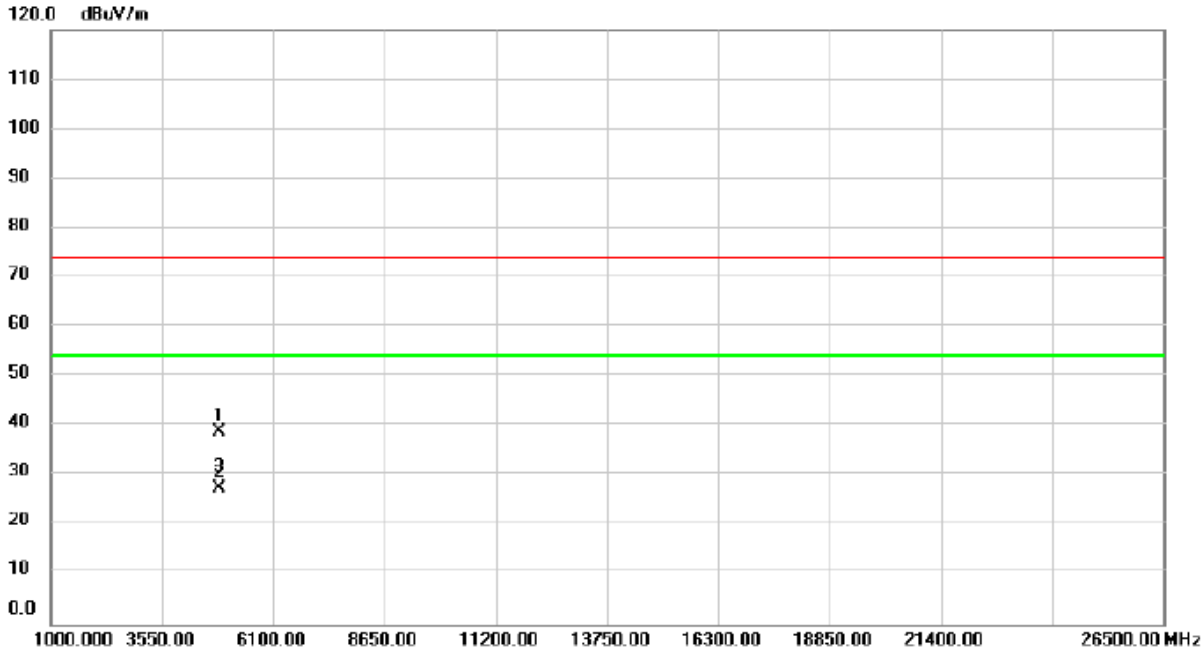
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	39.27	-0.13	39.14	74.00	-34.86	peak	
2		4874.000	27.27	-0.13	27.14	54.00	-26.86	AVG	
3	*	4874.000	27.40	-0.13	27.27	54.00	-26.73	AVG	DCF 0.13db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

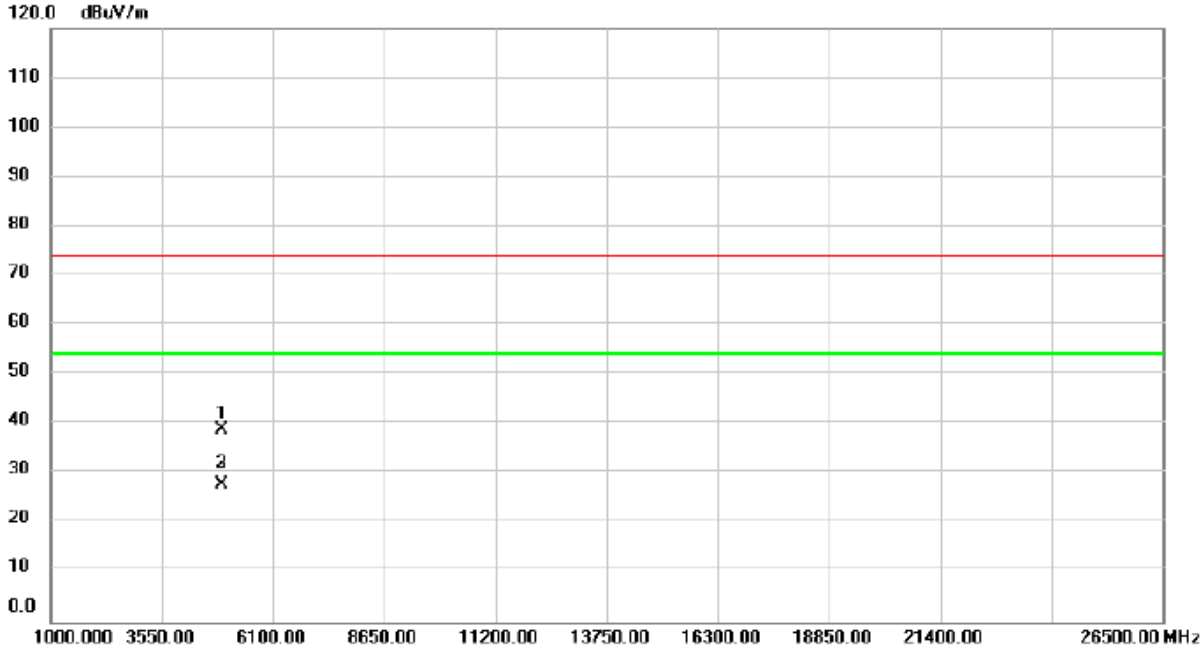
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.95	-0.13	38.82	74.00	-35.18	peak	
2		4874.000	27.67	-0.13	27.54	74.00	-46.46	peak	DCF 0.13db
3	*	4874.000	27.54	-0.13	27.41	54.00	-26.59	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

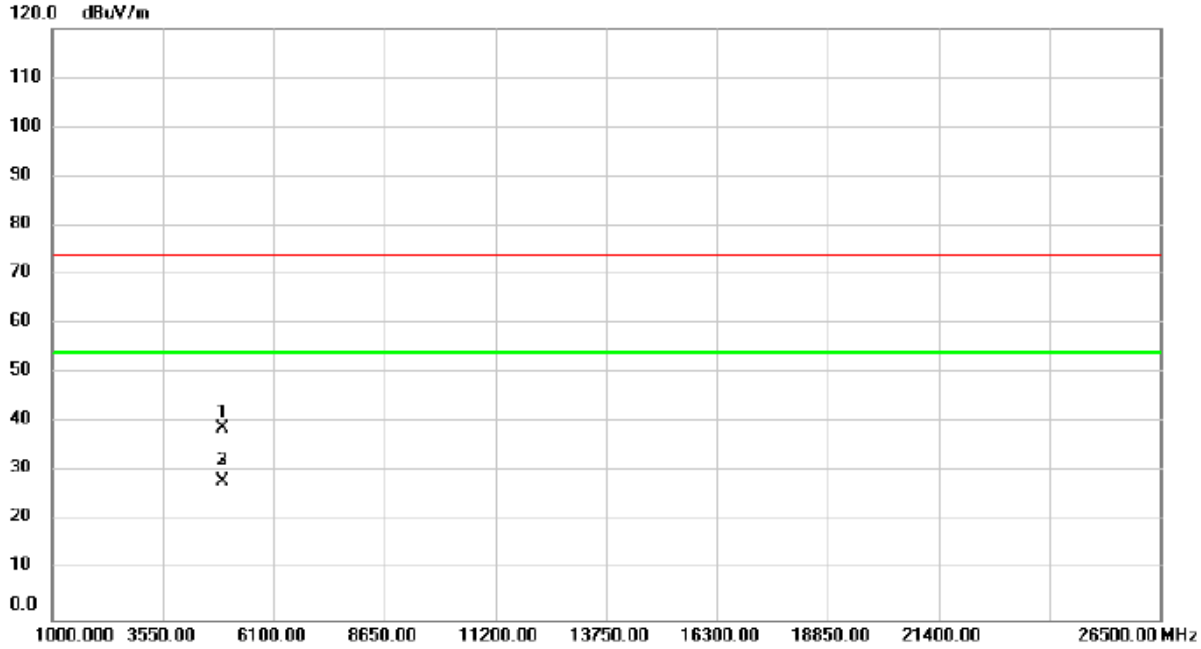
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	38.94	-0.02	38.92	74.00	-35.08	peak	
2		4924.000	27.64	-0.02	27.62	54.00	-26.38	AVG	
3	*	4924.000	27.77	-0.02	27.75	54.00	-26.25	AVG	DCF 0.13db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

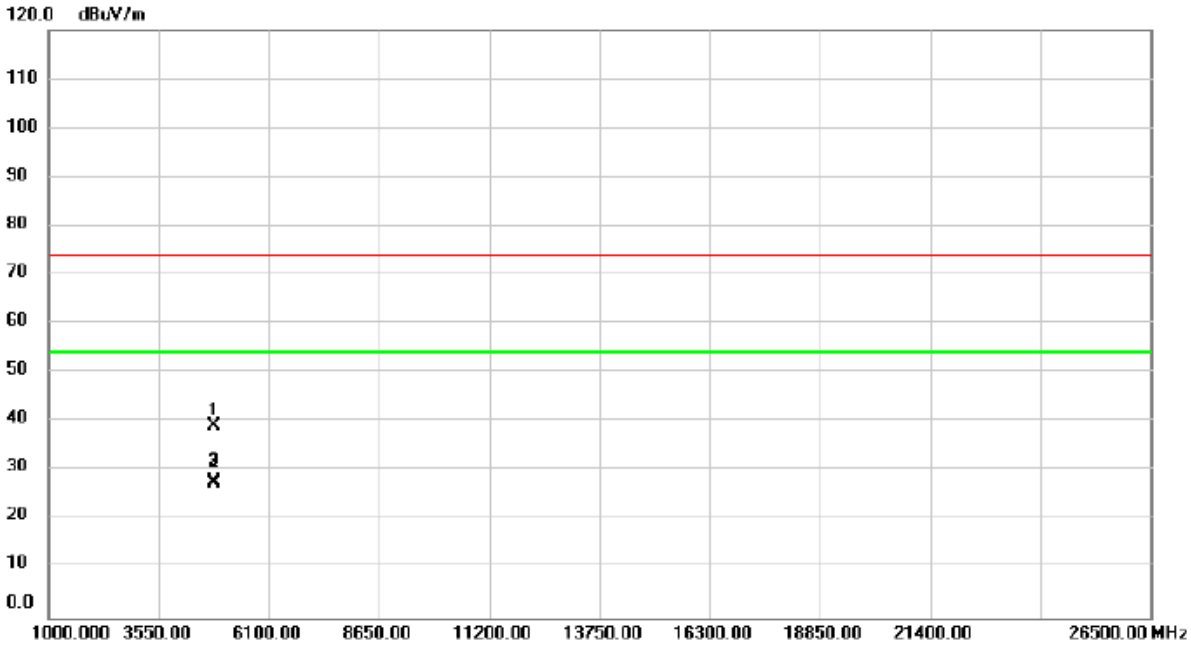
Test Mode	IEEE 802.11b	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	39.01	-0.02	38.99	74.00	-35.01	peak	
2		4924.000	28.03	-0.02	28.01	54.00	-25.99	AVG	
3	*	4924.000	28.16	-0.02	28.14	54.00	-25.86	AVG	DCF 0.13db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

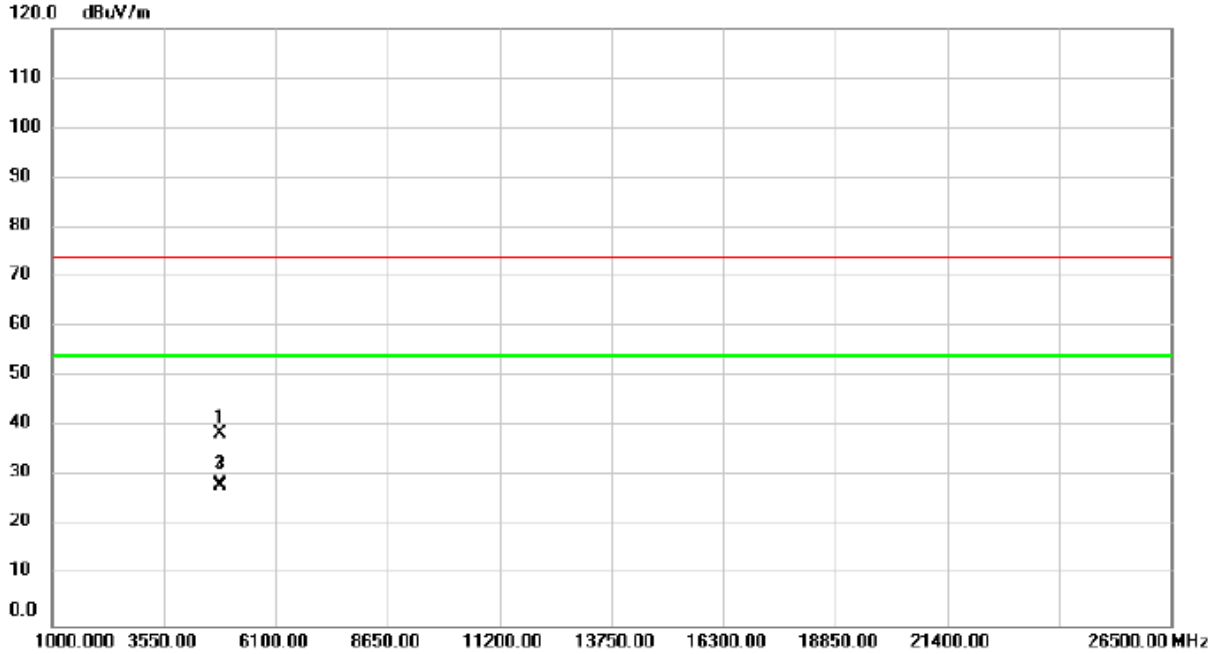
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	39.47	-0.24	39.23	74.00	-34.77	peak	
2		4824.000	27.81	-0.24	27.57	54.00	-26.43	AVG	
3	*	4824.000	28.02	-0.24	27.78	54.00	-26.22	AVG	DCF 0.21db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

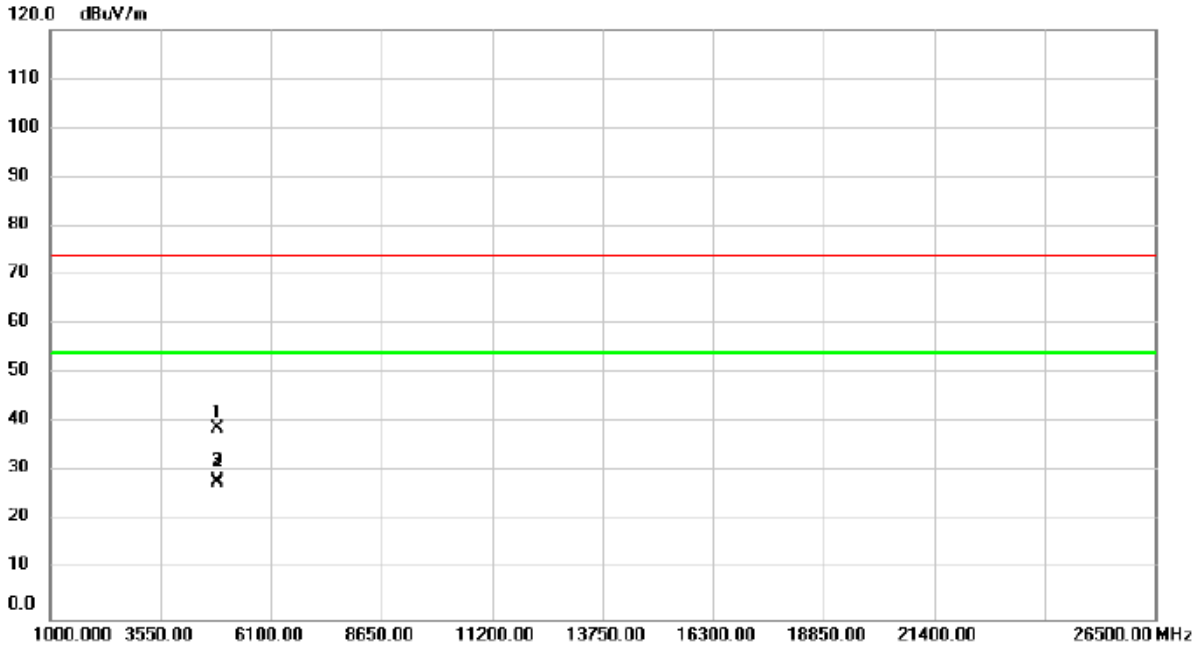
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	38.91	-0.24	38.67	74.00	-35.33	peak	
2	*	4824.000	28.54	-0.24	28.30	54.00	-25.70	AVG	DCF 0.21db
3		4824.000	28.33	-0.24	28.09	54.00	-25.91	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

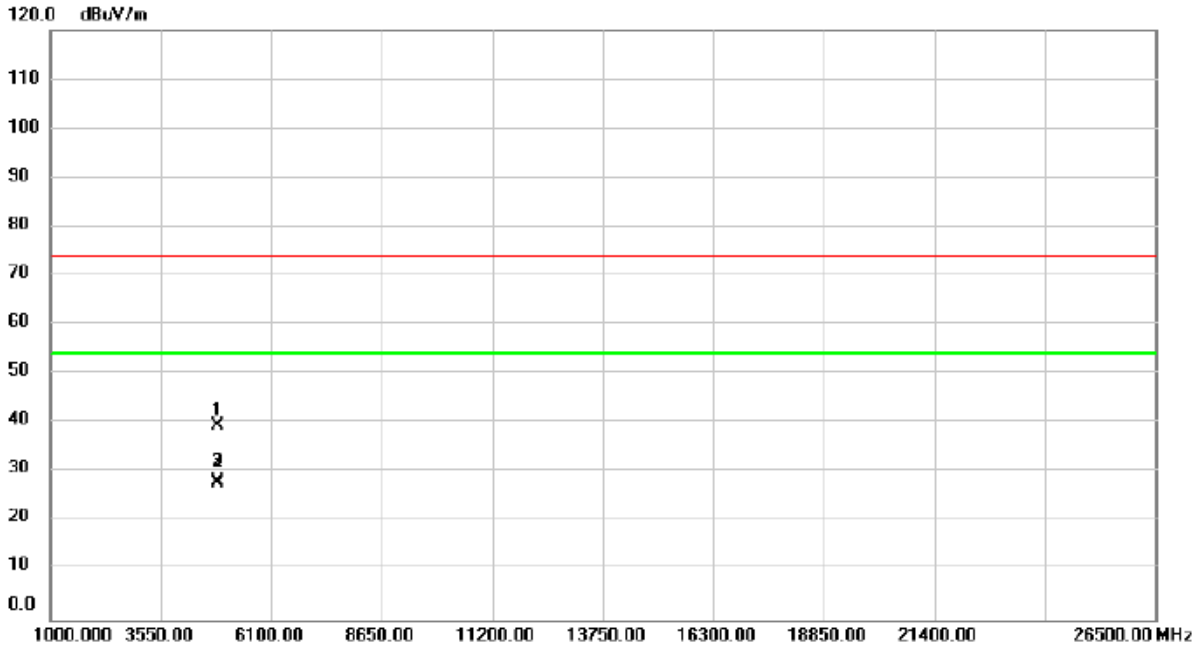
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	39.09	-0.13	38.96	74.00	-35.04	peak	
2		4874.000	27.88	-0.13	27.75	54.00	-26.25	AVG	
3	*	4874.000	28.09	-0.13	27.96	54.00	-26.04	AVG	DCF 0.21db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

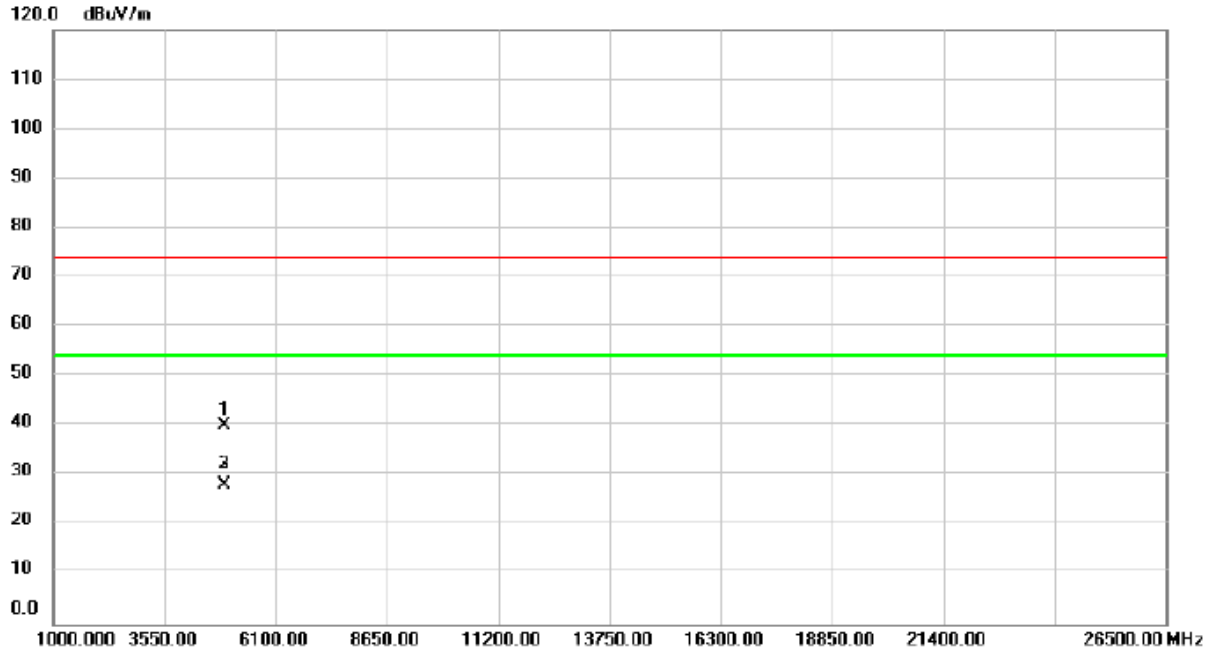
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	39.46	-0.13	39.33	74.00	-34.67	peak	
2		4874.000	27.89	-0.13	27.76	54.00	-26.24	AVG	
3	*	4874.000	28.10	-0.13	27.97	54.00	-26.03	AVG	DCF 0.21db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

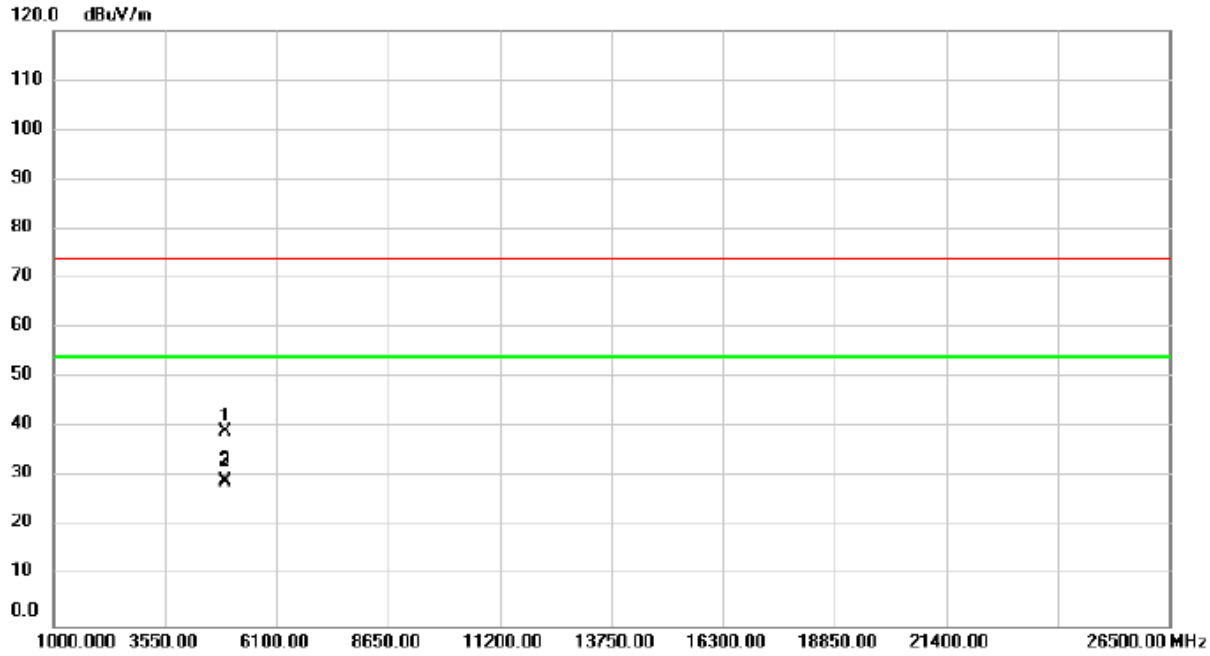
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	40.02	-0.02	40.00	74.00	-34.00	peak	
2		4924.000	27.95	-0.02	27.93	54.00	-26.07	AVG	
3	*	4924.000	28.16	-0.02	28.14	54.00	-25.86	AVG	DCF 0.21db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

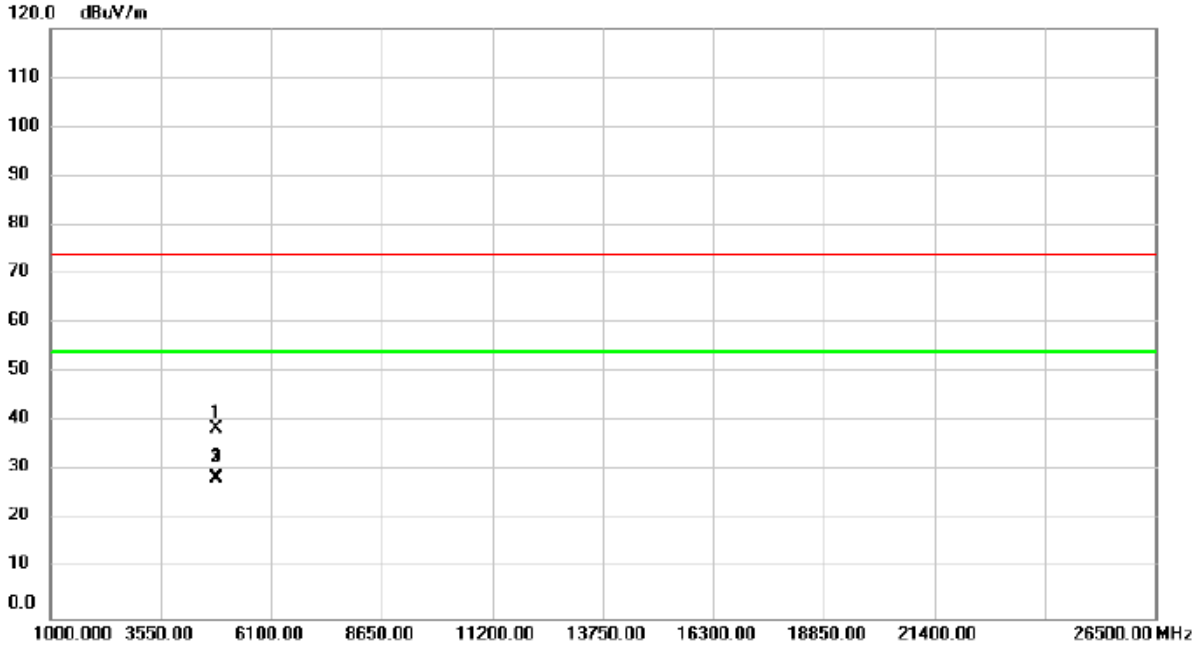
Test Mode	IEEE 802.11g	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	39.10	-0.02	39.08	74.00	-34.92	peak	
2		4924.000	28.94	-0.02	28.92	54.00	-25.08	AVG	
3	*	4924.000	29.15	-0.02	29.13	54.00	-24.87	AVG	DCF 0.21db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

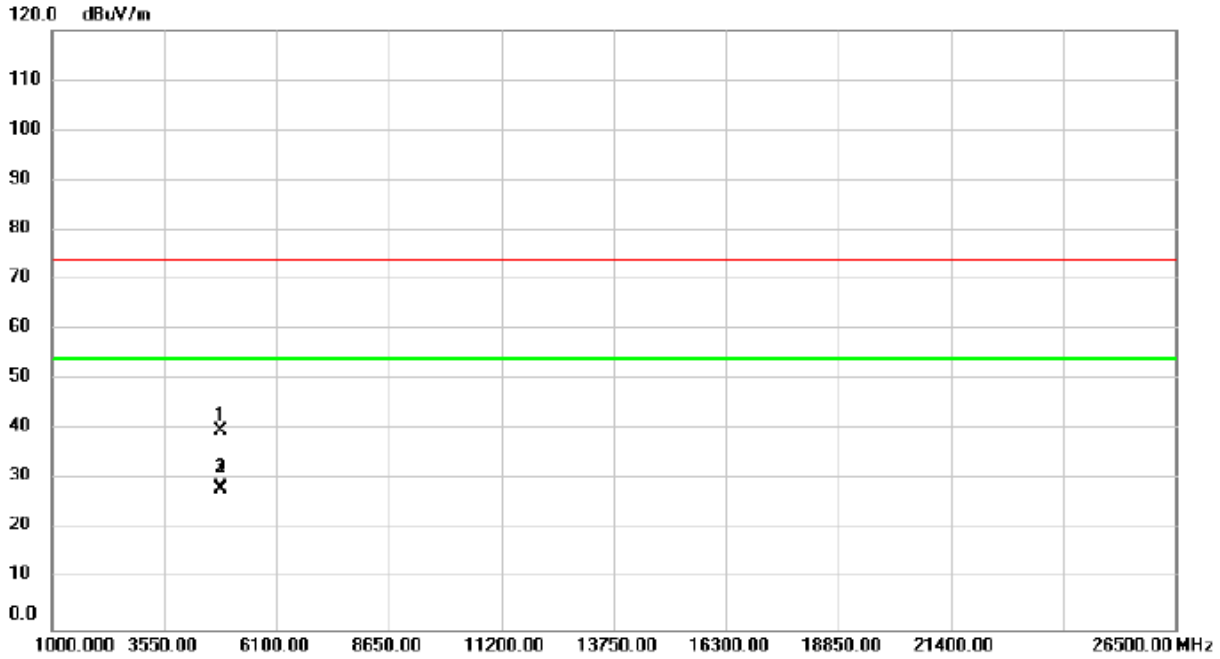
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	38.78	-0.24	38.54	74.00	-35.46	peak	
2		4824.000	28.49	-0.24	28.25	54.00	-25.75	AVG	
3	*	4824.000	28.86	-0.24	28.62	54.00	-25.38	AVG	DCF 0.37db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

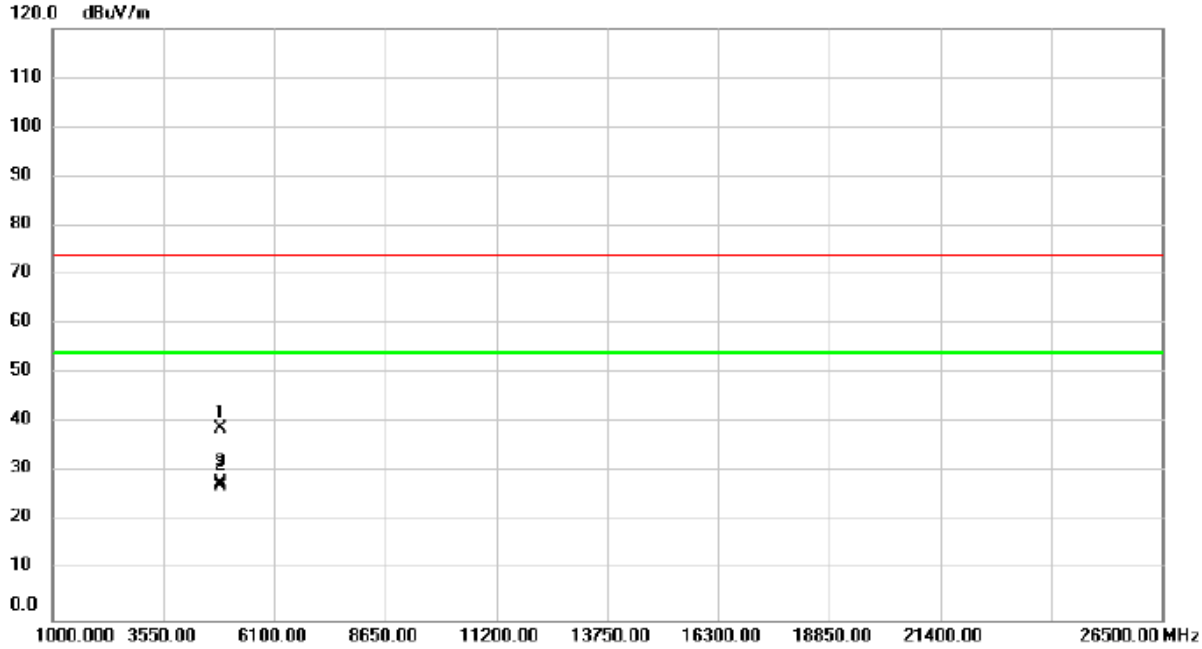
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	40.05	-0.24	39.81	74.00	-34.19	peak	
2		4824.000	28.37	-0.24	28.13	54.00	-25.87	AVG	
3	*	4824.000	28.74	-0.24	28.50	54.00	-25.50	AVG	DCF 0.37db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

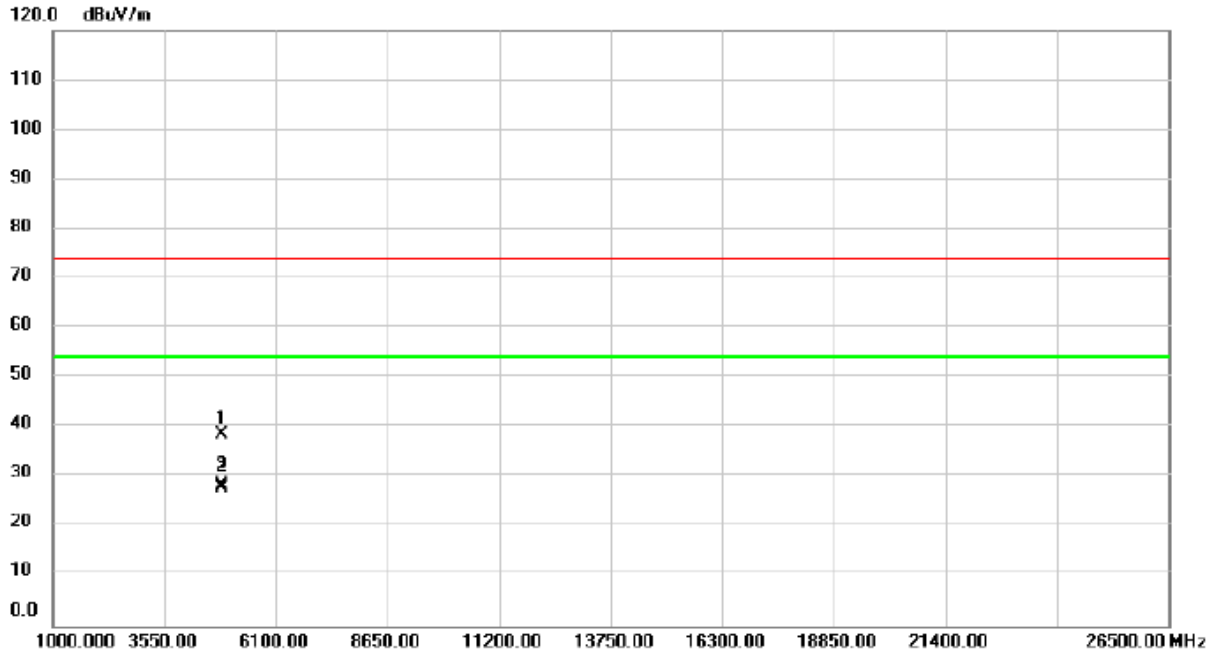
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.90	-0.13	38.77	74.00	-35.23	peak	
2		4874.000	27.38	-0.13	27.25	54.00	-26.75	AVG	
3	*	4874.000	27.75	-0.13	27.62	54.00	-26.38	AVG	DCF 0.37db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

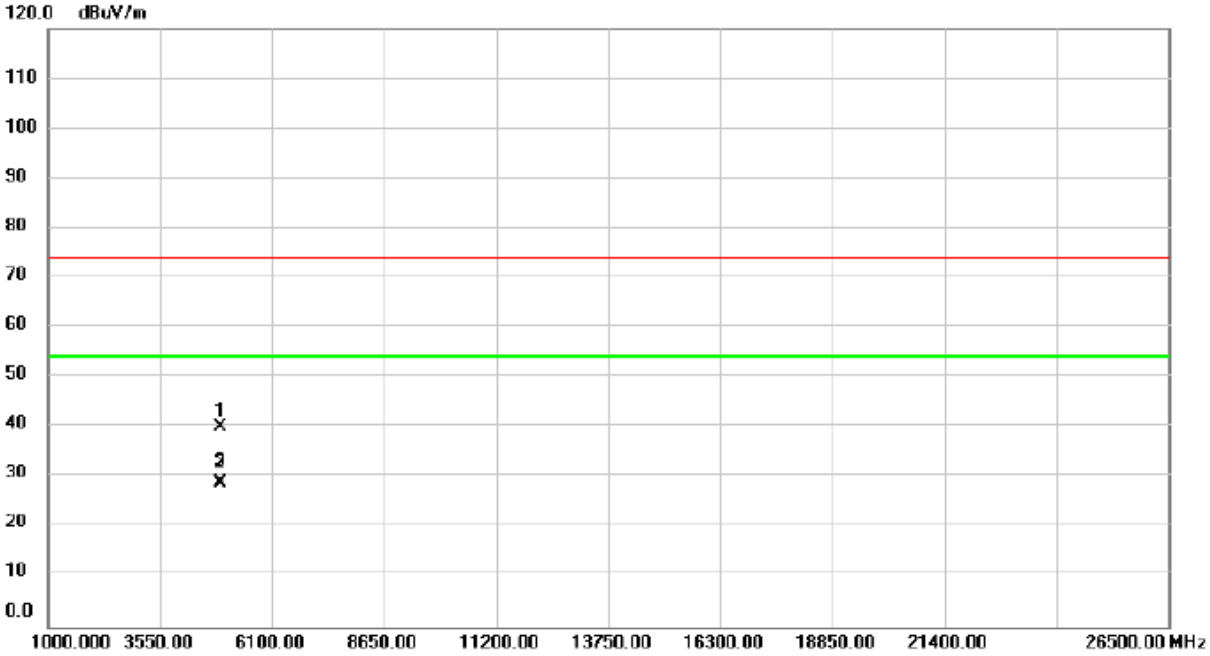
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.80	-0.13	38.67	74.00	-35.33	peak	
2		4874.000	28.00	-0.13	27.87	54.00	-26.13	AVG	
3	*	4874.000	28.37	-0.13	28.24	54.00	-25.76	AVG	DCF 0.37db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

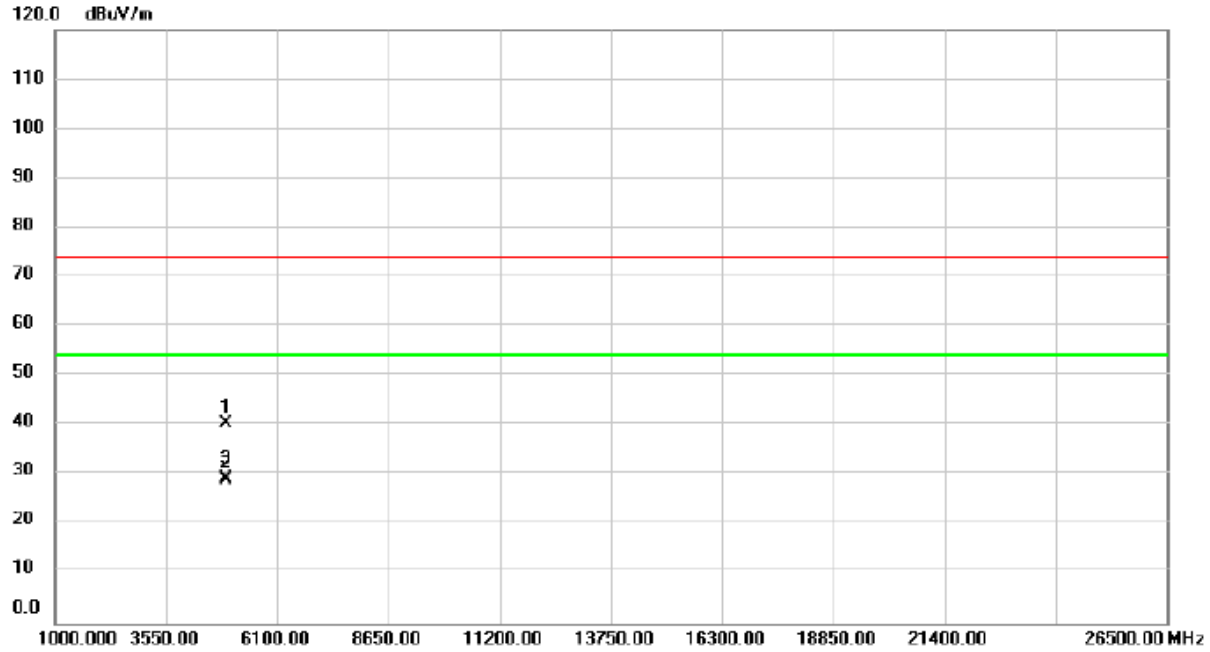
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	40.18	-0.02	40.16	74.00	-33.84	peak	
2		4924.000	28.59	-0.02	28.57	54.00	-25.43	AVG	
3	*	4924.000	28.96	-0.02	28.94	54.00	-25.06	AVG	DCF 0.37db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

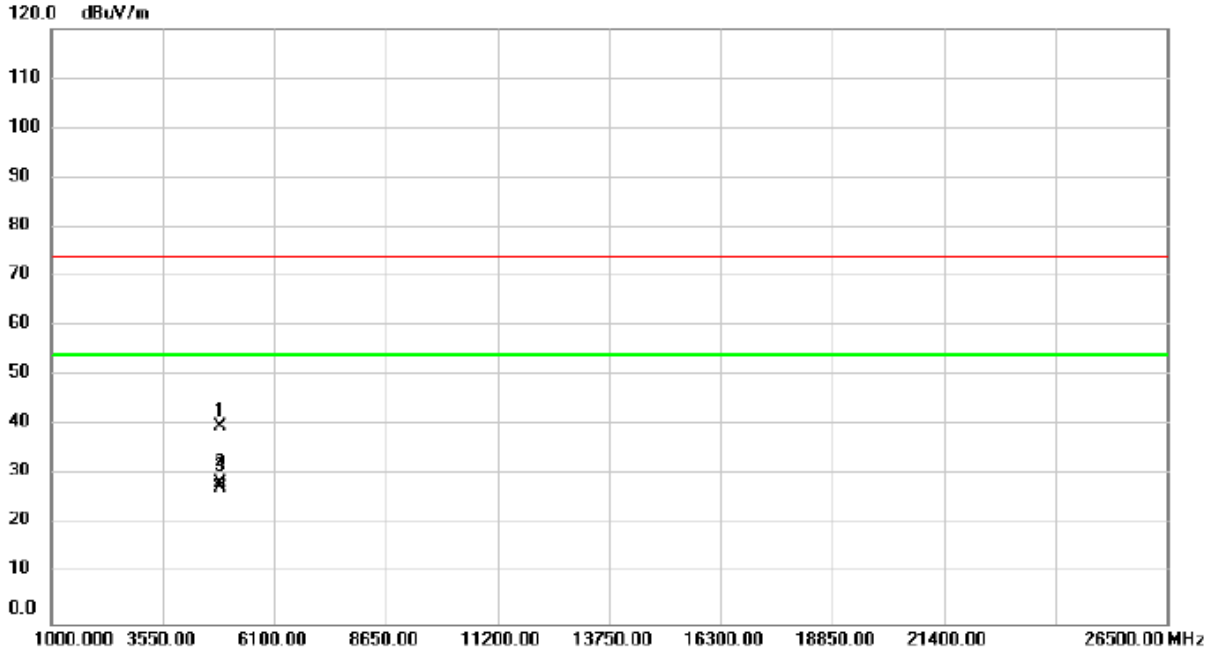
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/3/27
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	40.45	-0.02	40.43	74.00	-33.57	peak	
2		4924.000	29.41	-0.02	29.39	74.00	-44.61	peak	DCF 0.37db
3	*	4924.000	29.04	-0.02	29.02	54.00	-24.98	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

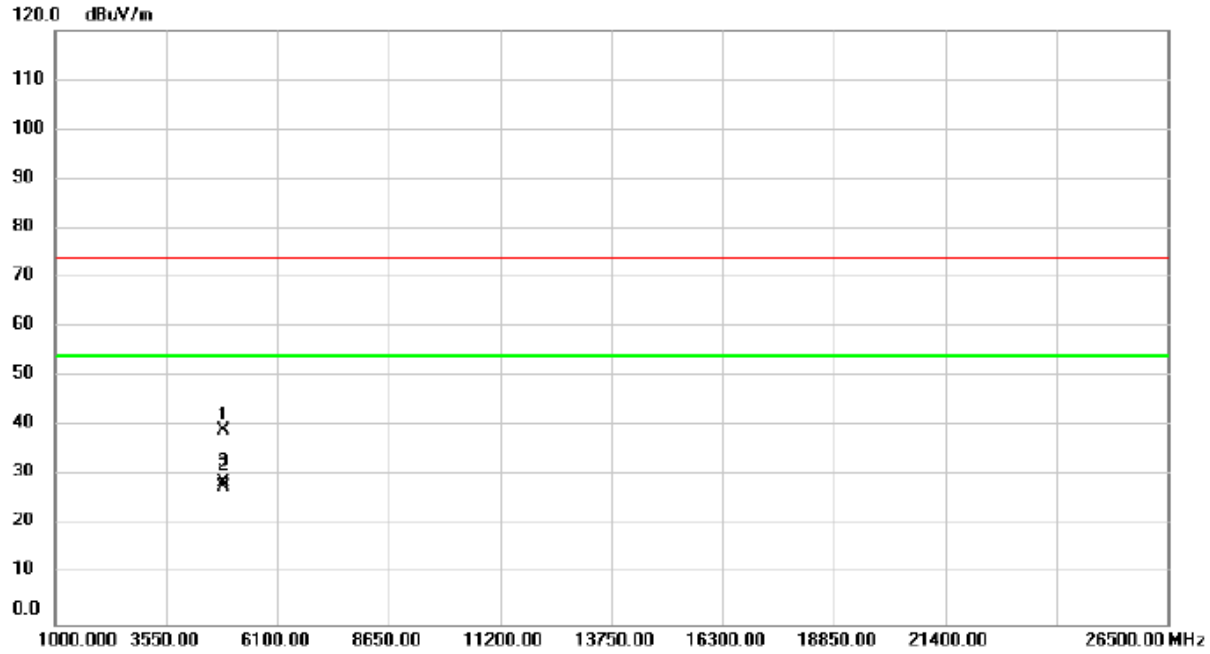
Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/27
Test Frequency	CH03: 2422 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4844.000	39.93	-0.18	39.75	74.00	-34.25	peak	
2	*	4844.000	28.59	-0.18	28.41	54.00	-25.59	AVG	DCF 0.96db
3		4844.000	27.63	-0.18	27.45	54.00	-26.55	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

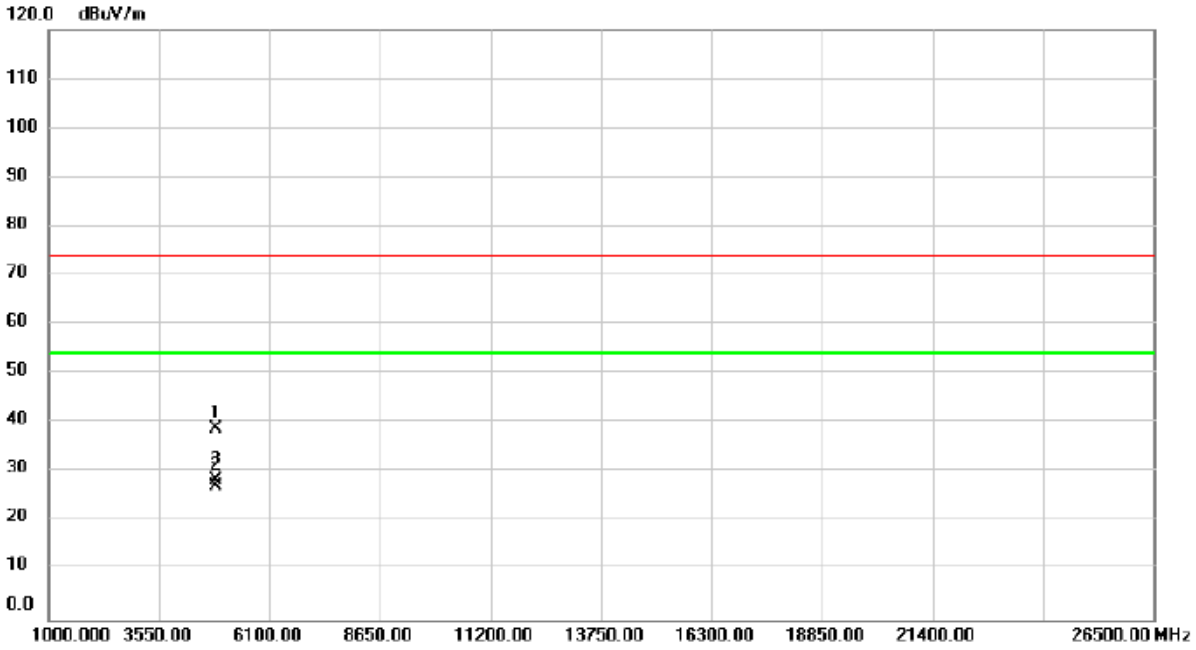
Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/27
Test Frequency	CH03: 2422 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4844.000	39.23	-0.18	39.05	74.00	-34.95	peak	
2		4844.000	27.82	-0.18	27.64	54.00	-26.36	AVG	
3	*	4844.000	28.78	-0.18	28.60	54.00	-25.40	AVG	DCF 0.96db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

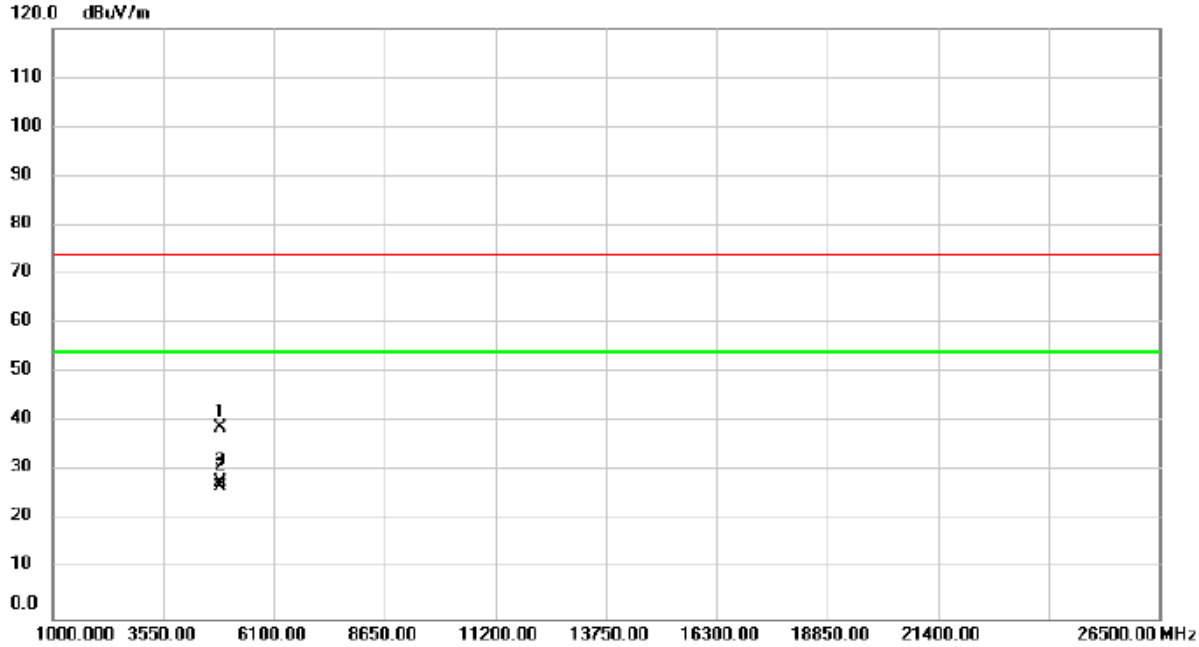
Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	39.04	-0.13	38.91	74.00	-35.09	peak	
2		4874.000	27.41	-0.13	27.28	54.00	-26.72	AVG	
3	*	4874.000	28.37	-0.13	28.24	54.00	-25.76	AVG	DCF 0.96db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

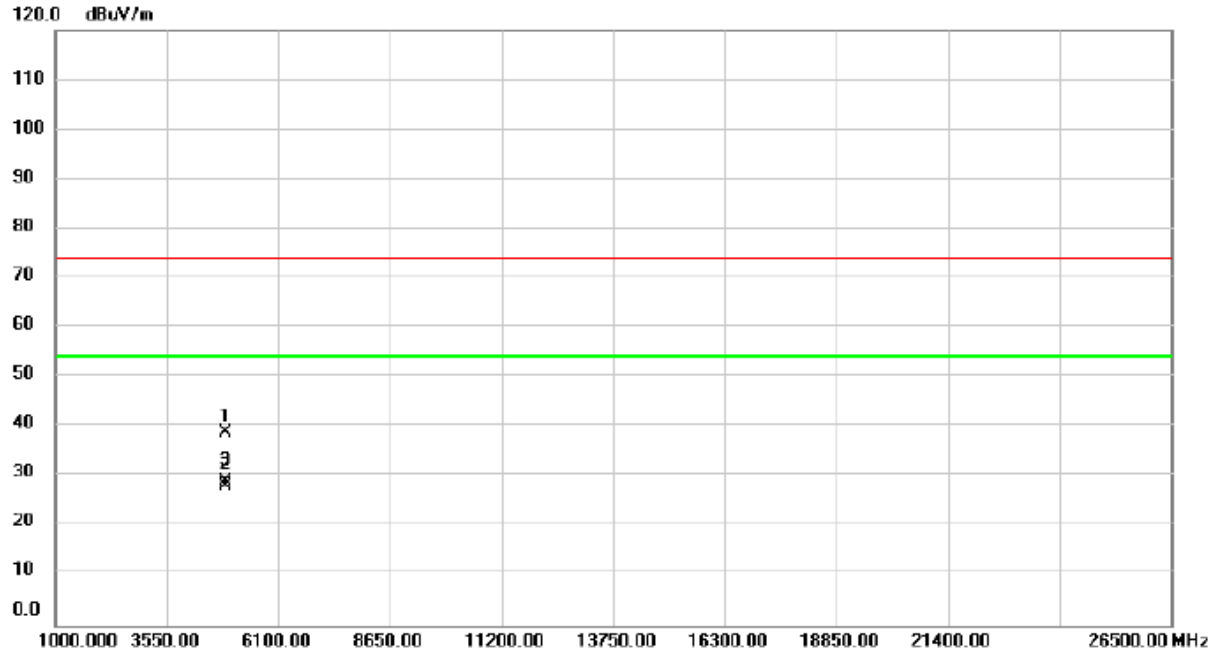
Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/27
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.86	-0.13	38.73	74.00	-35.27	peak	
2		4874.000	27.07	-0.13	26.94	54.00	-27.06	AVG	
3	*	4874.000	28.03	-0.13	27.90	54.00	-26.10	AVG	DCF 0.96db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

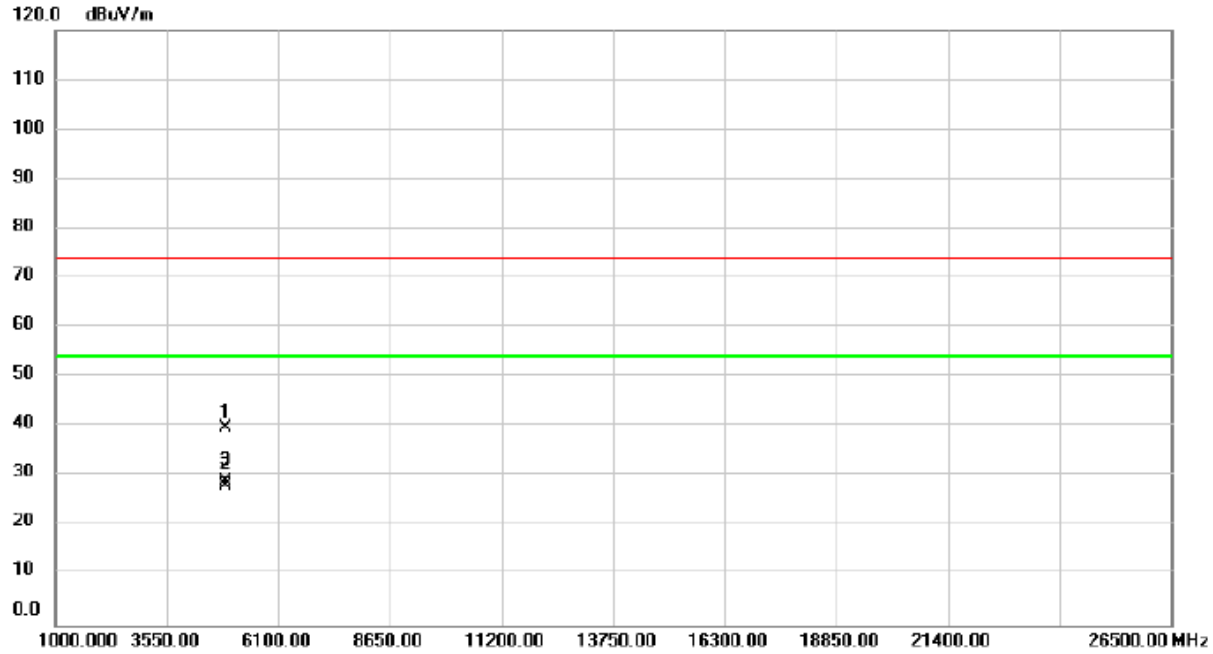
Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/27
Test Frequency	CH11: 2452 MHz	Polarization	Vertical
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4904.000	38.77	-0.06	38.71	74.00	-35.29	peak	
2		4904.000	28.13	-0.06	28.07	54.00	-25.93	AVG	
3	*	4904.000	29.09	-0.06	29.03	54.00	-24.97	AVG	DCF 0.96db

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

Test Mode	IEEE 802.11n (HT40)	Test Date	2024/3/27
Test Frequency	CH11: 2452 MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4904.000	39.76	-0.06	39.70	74.00	-34.30	peak	
2		4904.000	28.19	-0.06	28.13	54.00	-25.87	AVG	
3	*	4904.000	29.15	-0.06	29.09	54.00	-24.91	AVG	DCF 0.96db

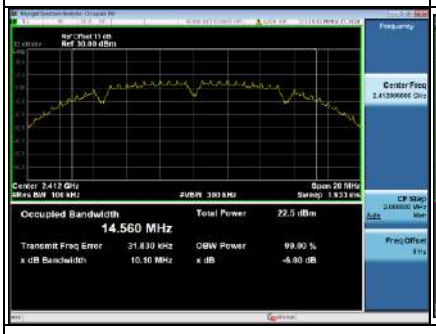
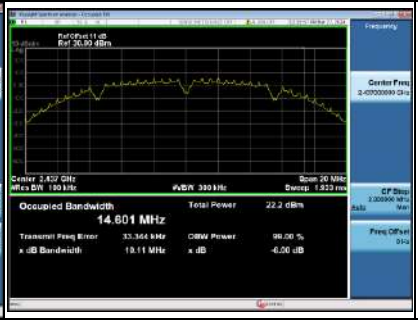
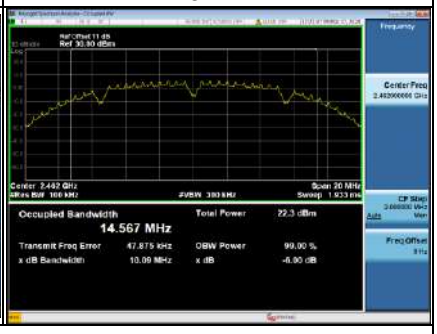
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.
(3) *: Maximum data x: Over limit !: Over margin

APPENDIX D BANDWIDTH

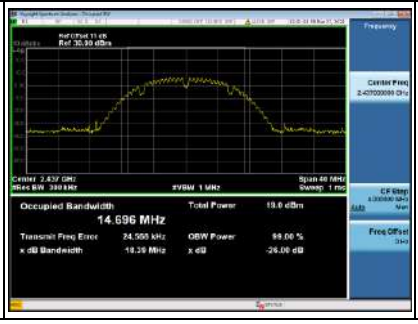
Test Mode	IEEE 802.11b

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	10.10	14.67	≥ 500	Pass
2437	10.11	14.70	≥ 500	Pass
2462	10.09	14.70	≥ 500	Pass

6dB Bandwidth

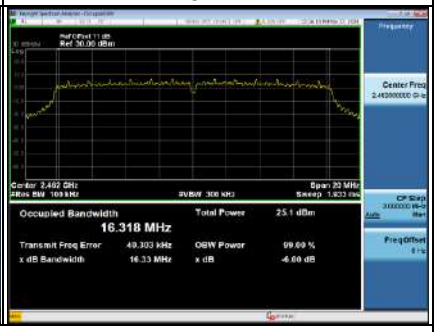
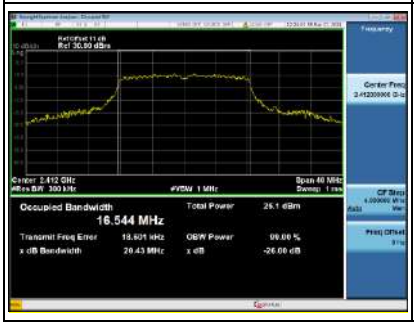
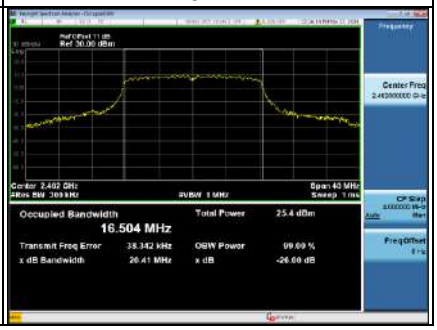
2412 MHz	2437 MHz	2462 MHz
		

99% Occupied BW

2412 MHz	2437 MHz	2462 MHz
		

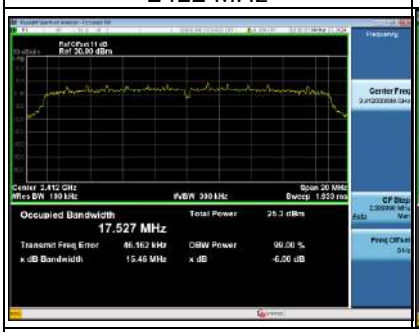
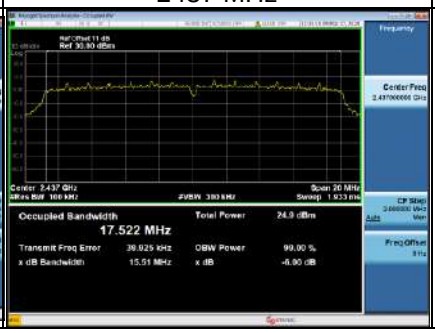
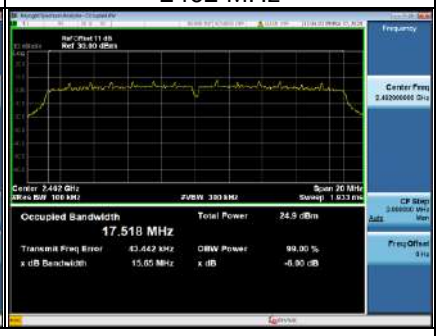
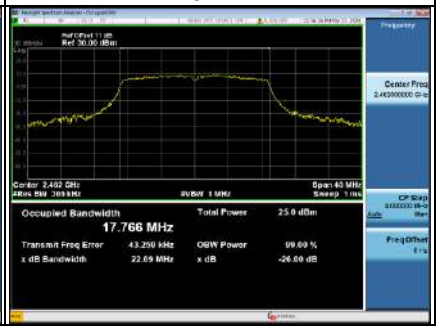
Test Mode	IEEE 802.11g

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	16.32	16.54	≥ 500	Pass
2437	15.73	16.58	≥ 500	Pass
2462	16.33	16.50	≥ 500	Pass

6dB Bandwidth		
2412 MHz	2437 MHz	2462 MHz
		
99% Occupied BW		
2412 MHz	2437 MHz	2462 MHz
		

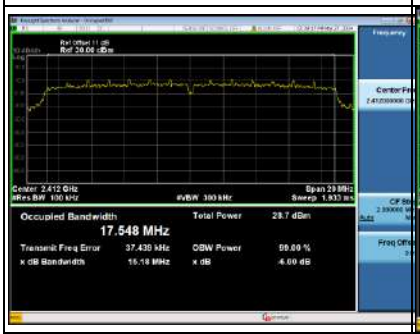
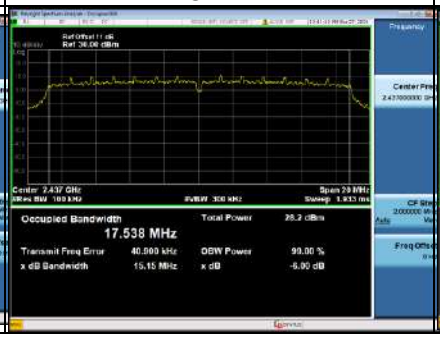
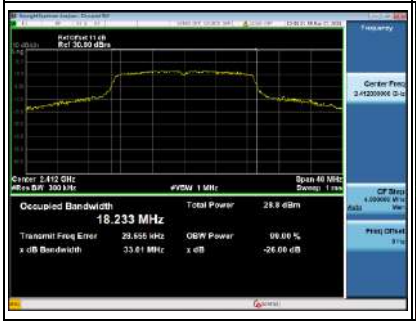
Test Mode	IEEE 802.11n (HT20) ANT1

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	15.46	17.85	≥ 500	Pass
2437	15.51	17.76	≥ 500	Pass
2462	15.65	17.77	≥ 500	Pass

6dB Bandwidth		
2412 MHz	2437 MHz	2462 MHz
		
99% Occupied BW		
2412 MHz	2437 MHz	2462 MHz
		

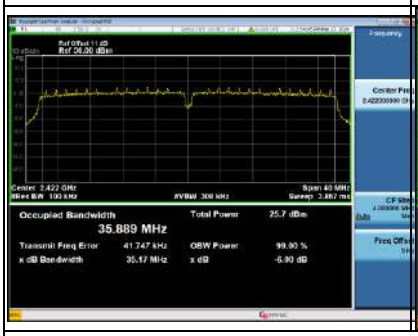
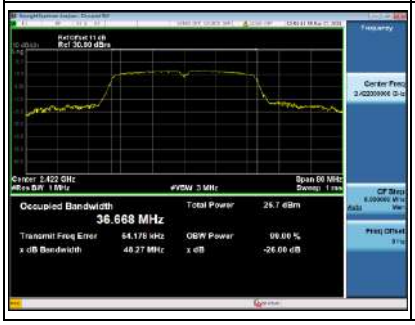
Test Mode	IEEE 802.11n (HT20) ANT2

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	15.18	18.23	≥ 500	Pass
2437	15.15	18.15	≥ 500	Pass
2462	15.11	18.14	≥ 500	Pass

6dB Bandwidth		
2412 MHz	2437 MHz	2462 MHz
		
99% Occupied BW		
2412 MHz	2437 MHz	2462 MHz
		

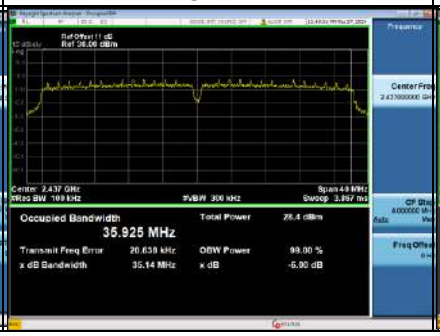
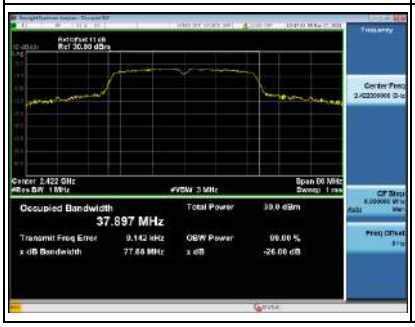
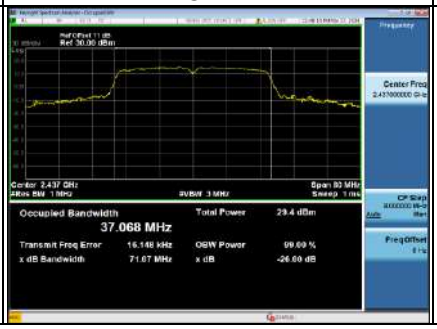
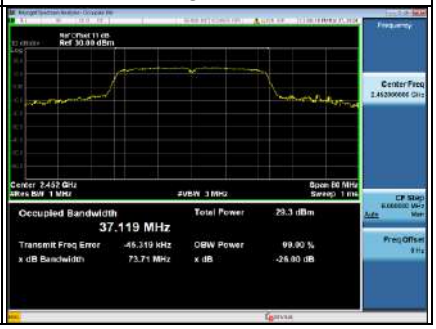
Test Mode	IEEE 802.11n (HT40) ANT1

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2422	35.17	36.67	≥ 500	Pass
2437	35.16	36.61	≥ 500	Pass
2452	35.17	36.63	≥ 500	Pass

6dB Bandwidth		
2422 MHz	2437 MHz	2452 MHz
		
99% Occupied BW		
2422 MHz	2437 MHz	2452 MHz
		

Test Mode	IEEE 802.11n (HT40) ANT2

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2422	35.16	37.90	≥ 500	Pass
2437	35.14	37.07	≥ 500	Pass
2452	35.16	37.12	≥ 500	Pass

6dB Bandwidth		
2422 MHz	2437 MHz	2452 MHz
		
99% Occupied BW		
2422 MHz	2437 MHz	2452 MHz
		

APPENDIX E OUTPUT POWER

Test Mode	IEEE 802.11b	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	15.58	0.0361	30.00	1.0000	Complies
2437	15.44	0.0350	30.00	1.0000	Complies
2462	15.31	0.0339	30.00	1.0000	Complies

Test Mode	IEEE 802.11g	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	21.66	0.1466	30.00	1.0000	Complies
2437	20.95	0.1245	30.00	1.0000	Complies
2462	20.68	0.1169	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20) ANT1	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	18.56	0.0718	30.00	1.0000	Complies
2437	18.28	0.0673	30.00	1.0000	Complies
2462	18.15	0.0653	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20) ANT2	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	21.56	0.1432	30.00	1.0000	Complies
2437	20.84	0.1213	30.00	1.0000	Complies
2462	20.59	0.1146	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20) Total	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	23.32	0.2150	30.00	1.0000	Complies
2437	22.76	0.1886	30.00	1.0000	Complies
2462	22.55	0.1798	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40) ANT1	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	18.58	0.0721	30.00	1.0000	Complies
2437	18.30	0.0675	30.00	1.0000	Complies
2452	18.16	0.0655	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40) ANT2	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	21.30	0.1349	30.00	1.0000	Complies
2437	20.73	0.1183	30.00	1.0000	Complies
2452	20.62	0.1153	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40) Total	Tested Date	2024/3/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	23.16	0.2070	30.00	1.0000	Complies
2437	22.69	0.1858	30.00	1.0000	Complies
2452	22.57	0.1808	30.00	1.0000	Complies

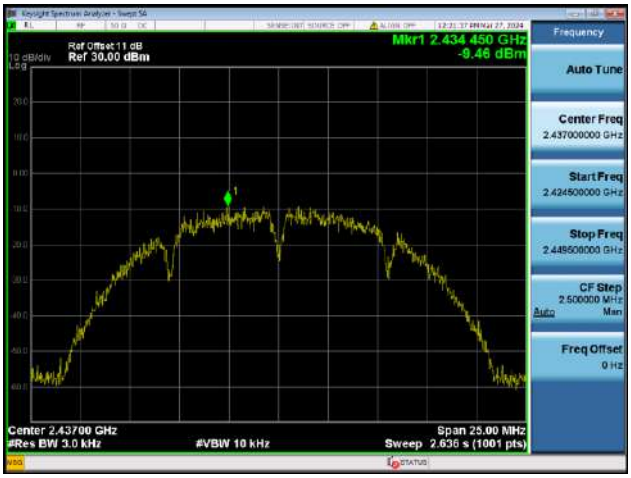
APPENDIX F POWER SPECTRAL DENSITY

Test Mode	IEEE 802.11b

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-8.67	7.31	Pass
2437	-9.46	7.31	Pass
2462	-8.15	7.31	Pass

2412 MHz

2437 MHz

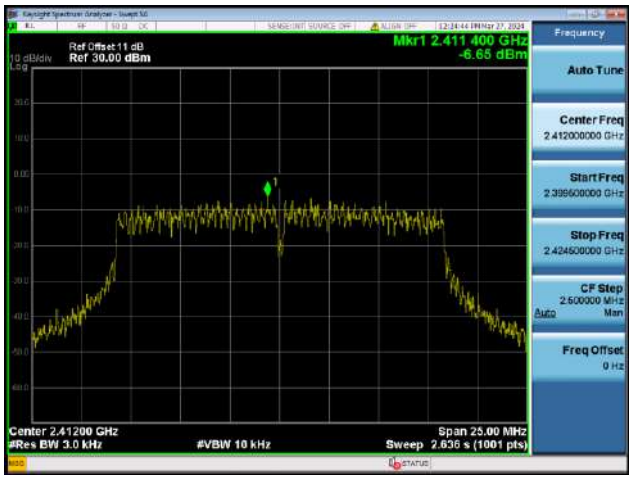


2462 MHz

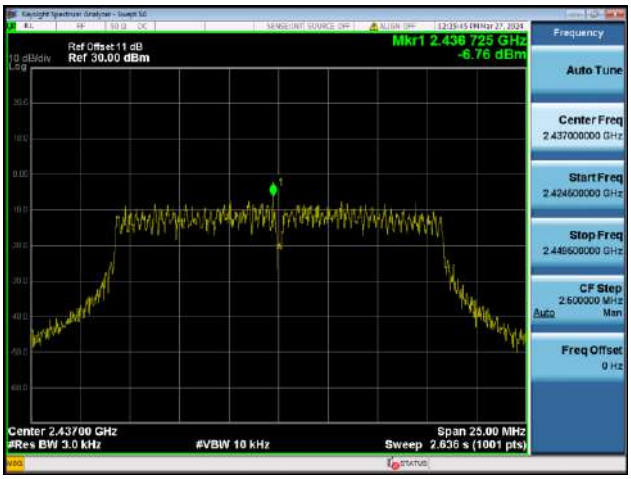
Test Mode	IEEE 802.11g

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-6.65	7.31	Pass
2437	-6.76	7.31	Pass
2462	-7.46	7.31	Pass

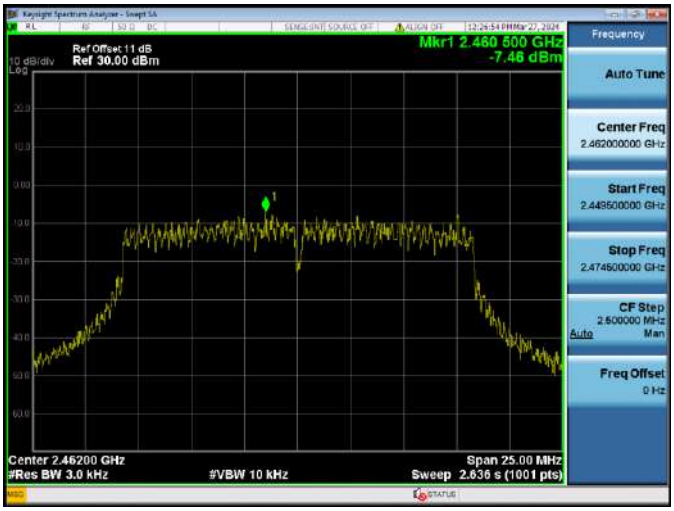
2412 MHz



2437 MHz



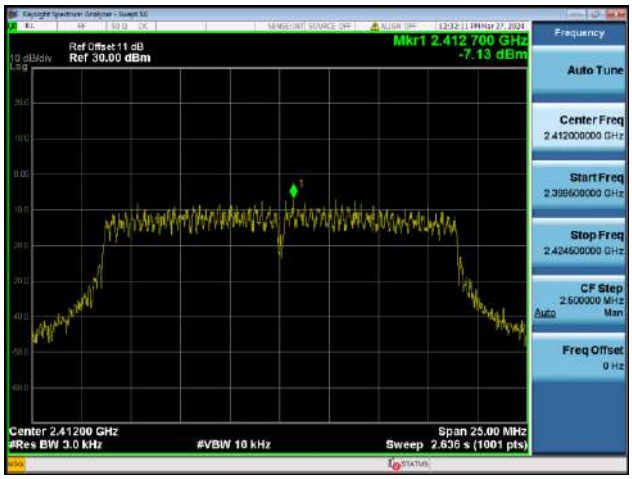
2462 MHz



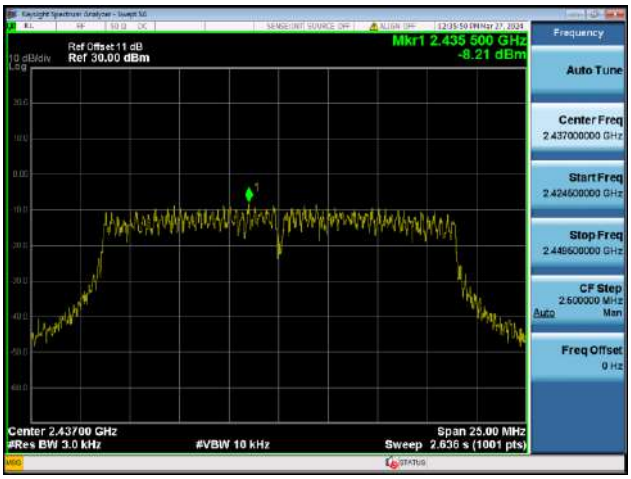
Test Mode	IEEE 802.11n (HT20) ANT1

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-7.13	7.31	Pass
2437	-8.21	7.31	Pass
2462	-7.98	7.31	Pass

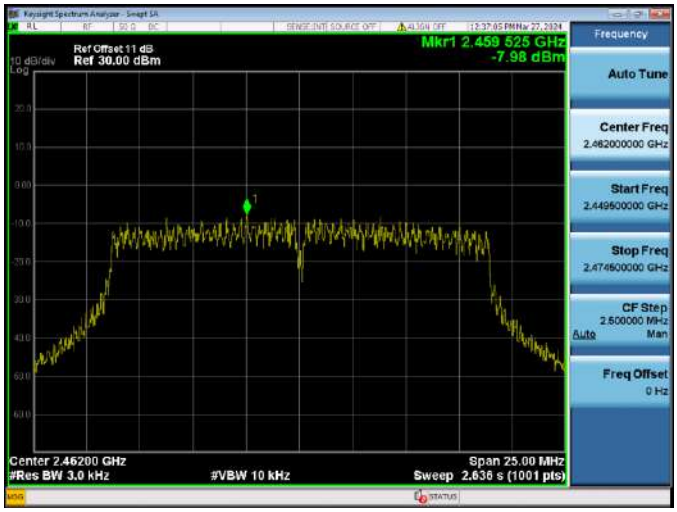
2412 MHz



2437 MHz



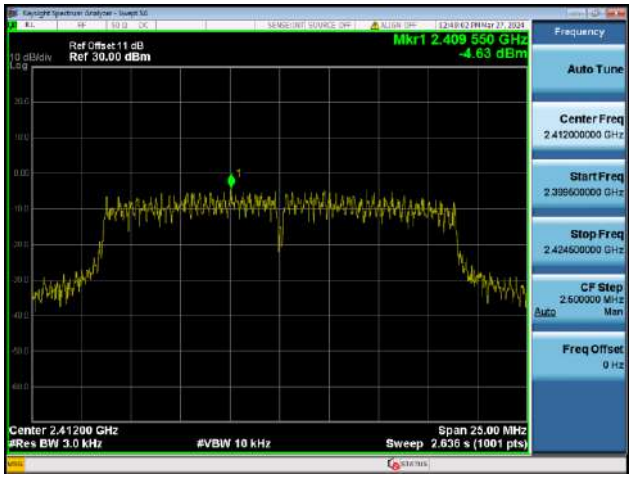
2462 MHz



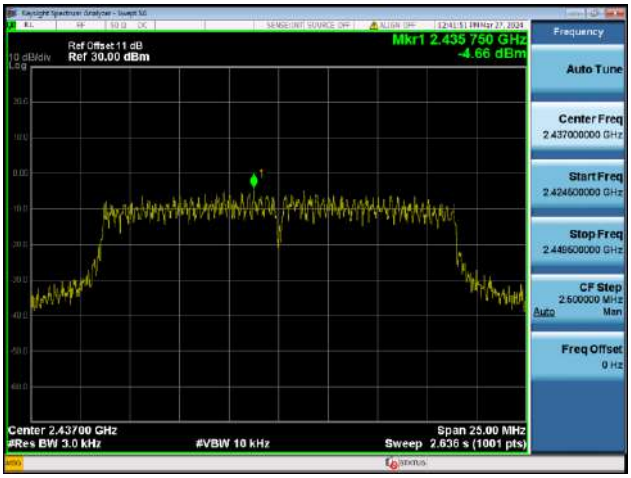
Test Mode	IEEE 802.11n (HT20) ANT2

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-4.63	7.31	Pass
2437	-4.66	7.31	Pass
2462	-3.86	7.31	Pass

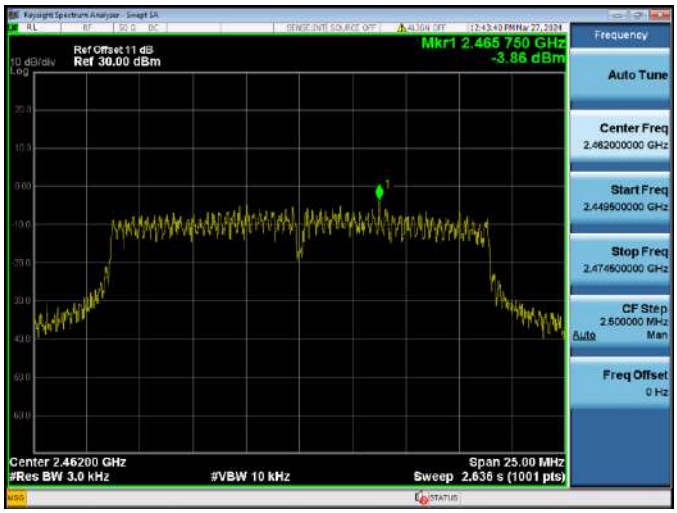
2412 MHz



2437 MHz



2462 MHz



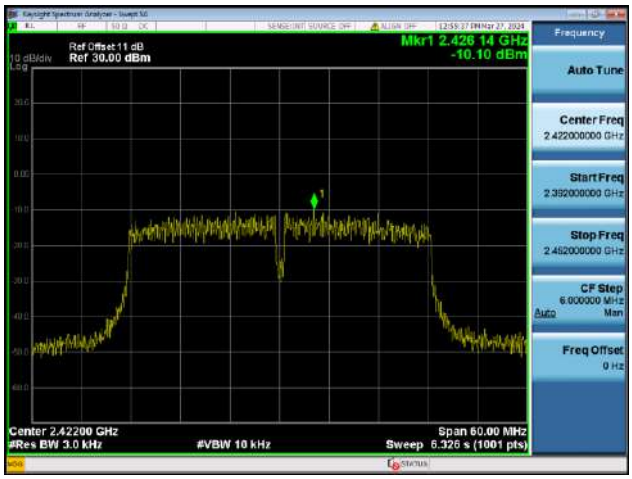
Test Mode	IEEE 802.11n (HT20) Total

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-2.69	7.31	Pass
2437	-3.07	7.31	Pass
2462	-2.44	7.31	Pass

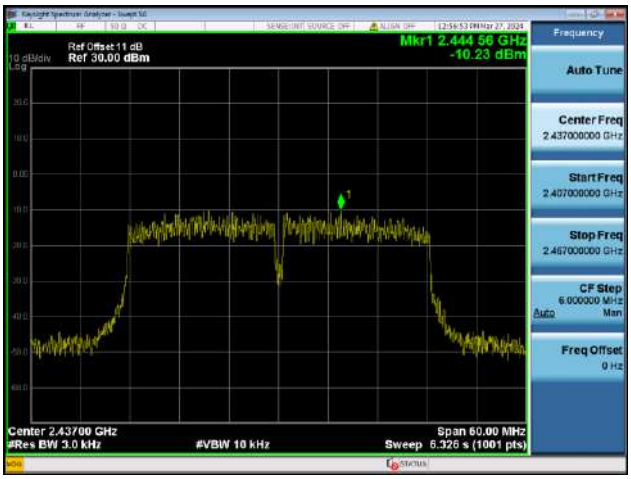
Test Mode	IEEE 802.11n (HT40) ANT1

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2422	-10.10	7.31	Pass
2437	-10.23	7.31	Pass
2452	-10.36	7.31	Pass

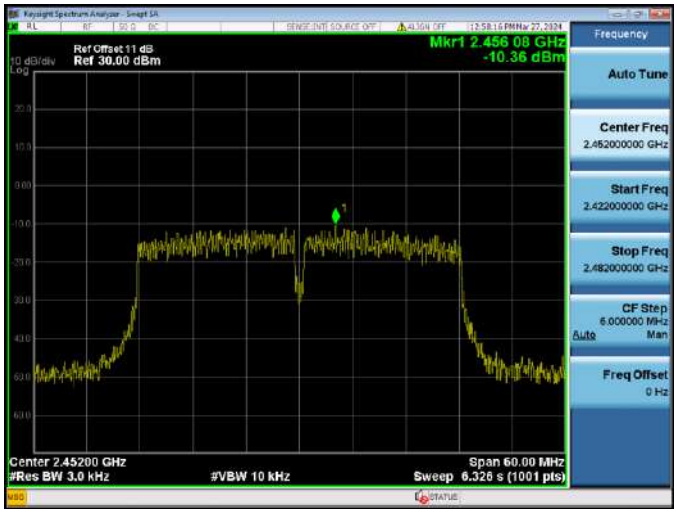
2422 MHz



2437 MHz



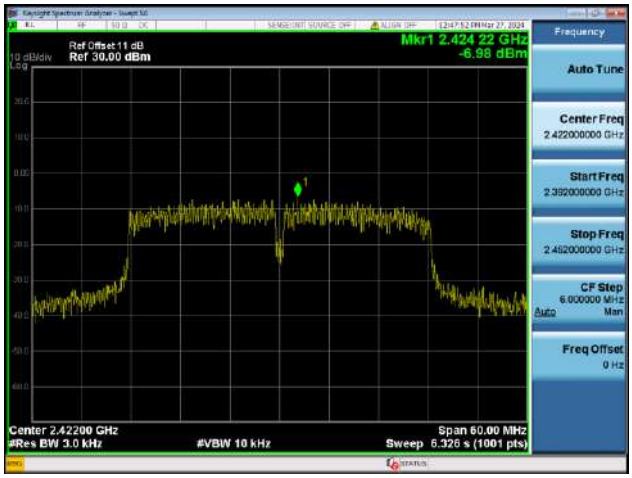
2452 MHz



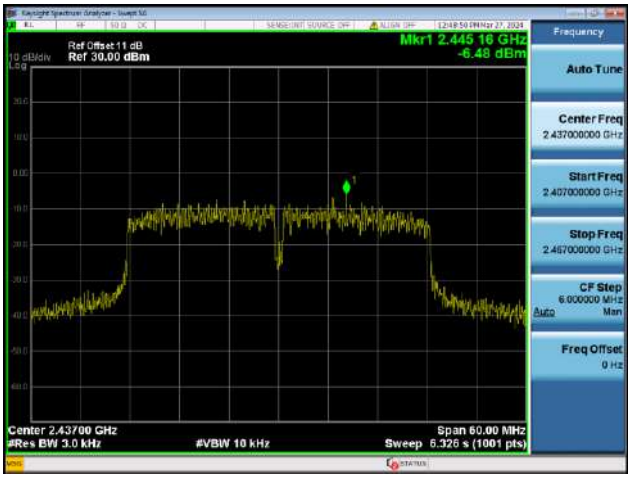
Test Mode	IEEE 802.11n (HT40) ANT2

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2422	-6.98	7.31	Pass
2437	-6.48	7.31	Pass
2452	-7.46	7.31	Pass

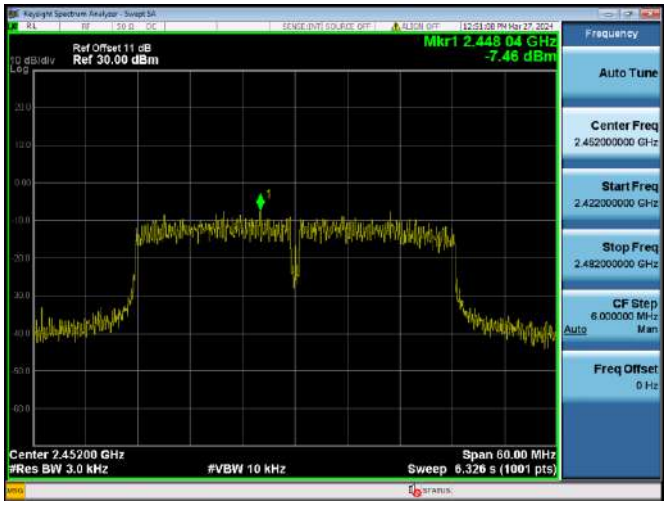
2422 MHz



2437 MHz



2452 MHz



Test Mode	IEEE 802.11n (HT40) Total

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2422	-5.26	7.31	Pass
2437	-4.95	7.31	Pass
2452	-5.66	7.31	Pass

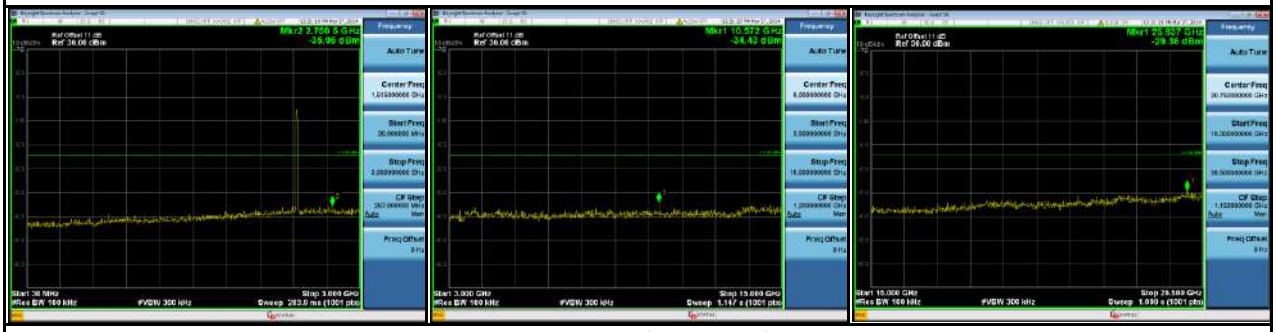
APPENDIX G ANTENNA CONDUCTED SPURIOUS EMISSIONS

Test Mode	IEEE 802.11b

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

2412 MHz-10th Harmonics

2437 MHz-10th Harmonics

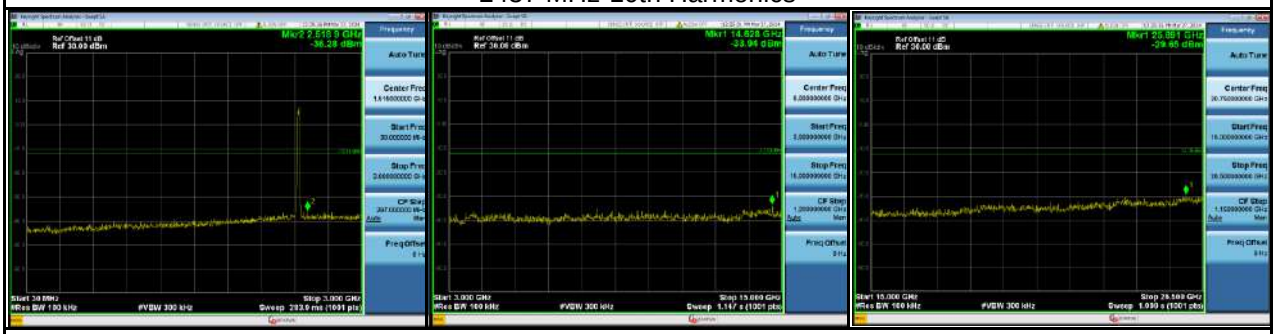
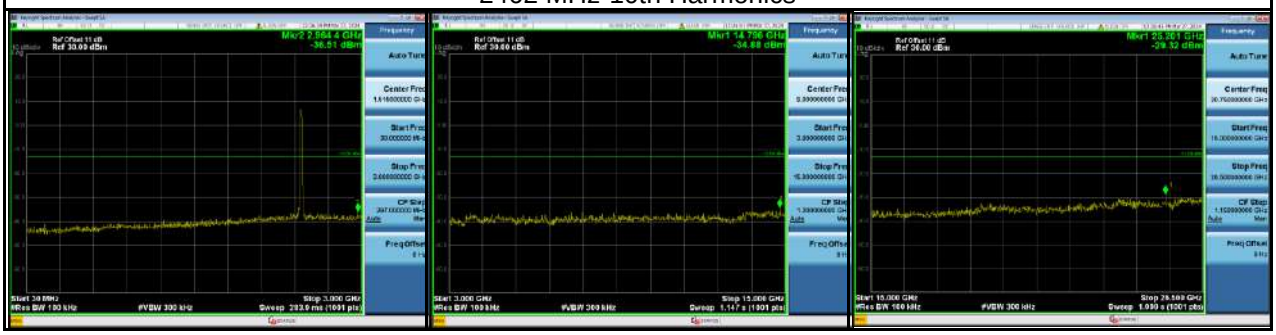


2462 MHz-10th Harmonics

Test Mode	IEEE 802.11g

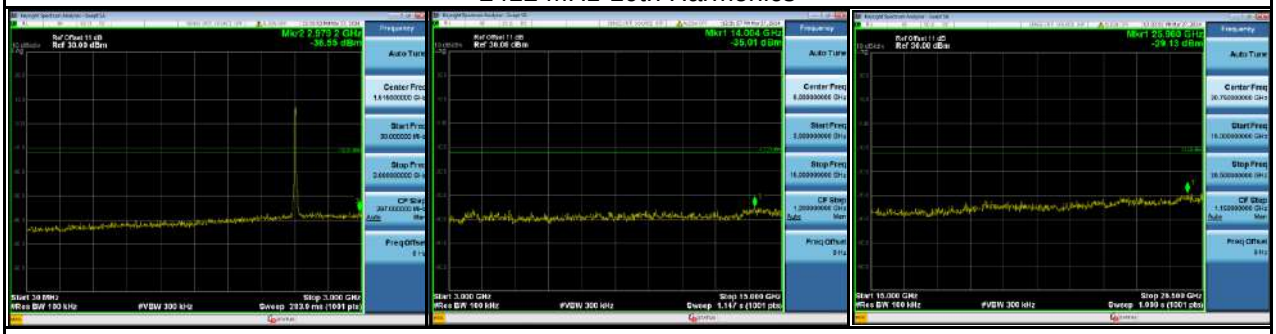
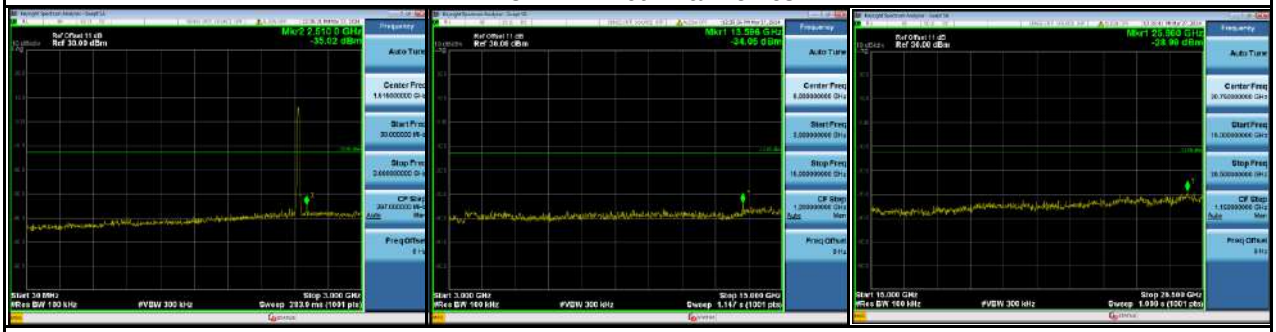
Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

2412 MHz-10th Harmonics

2437 MHz-10th Harmonics

2462 MHz-10th Harmonics


Test Mode	IEEE 802.11n (HT20) ANT1

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

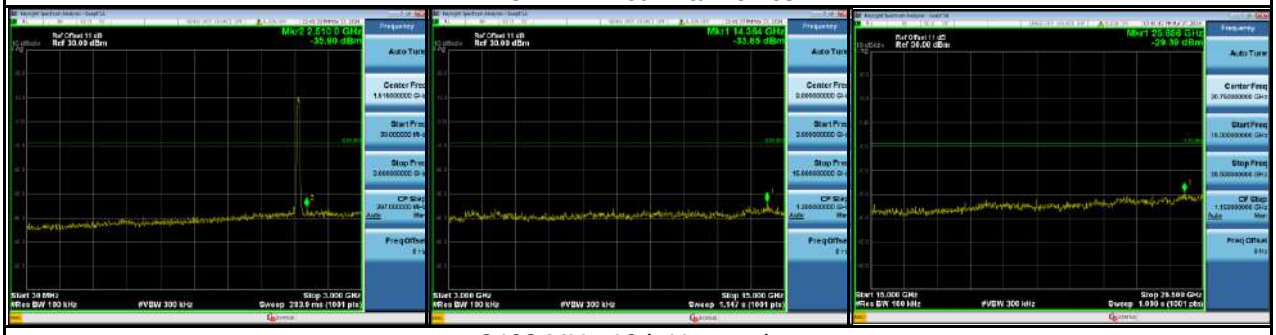
2412 MHz-10th Harmonics

2437 MHz-10th Harmonics

2462 MHz-10th Harmonics


Test Mode	IEEE 802.11n (HT20) ANT2

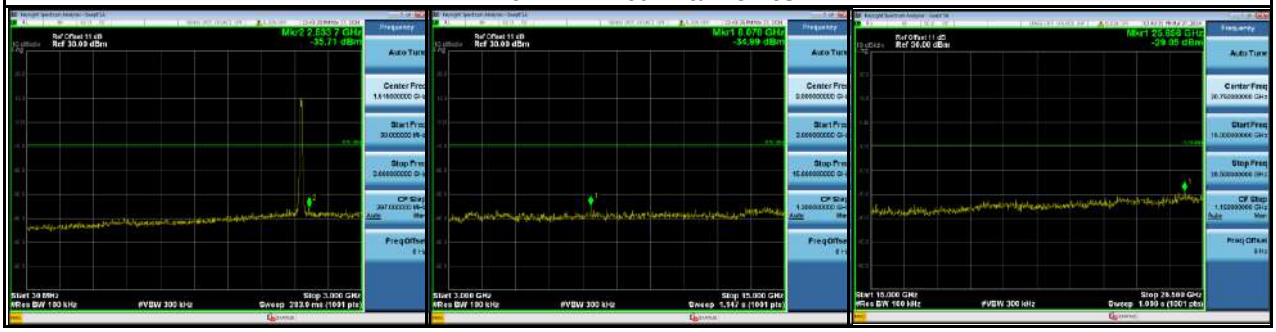
Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

2412 MHz-10th Harmonics

2437 MHz-10th Harmonics

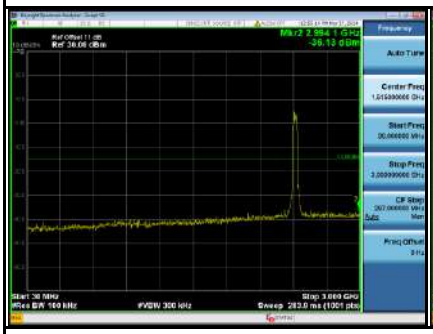
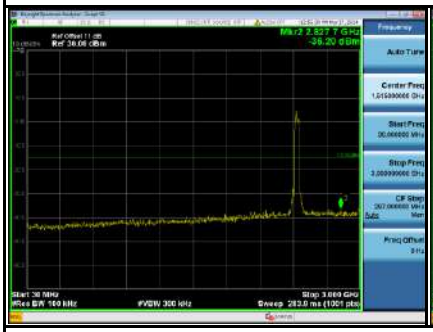


2462 MHz-10th Harmonics



Test Mode	IEEE 802.11n (HT40) ANT1

Low Bandedge-2422 MHz	High Bandedge-2452 MHz
	

2422 MHz-10th Harmonics		
		
2437 MHz-10th Harmonics		
		
2452 MHz-10th Harmonics		
		

Test Mode	IEEE 802.11n (HT40) ANT2

Low Bandedge-2422 MHz	High Bandedge-2452 MHz
	

2422 MHz-10th Harmonics

2437 MHz-10th Harmonics

2452 MHz-10th Harmonics


End of Test Report