FCC Radio Test Report

FCC ID: 2BH7FC520WSV2

Report No.	:	BTL-FCCP-2-2407G080B
Equipment	:	Outdoor Pan/Tilt Security Wi-Fi Camera
Model Name	:	Tapo C520WS
Brand Name	:	tp-link
Applicant	:	TP-Link Systems Inc.
Address	:	10 Mauchly, Irvine, CA 92618
Manufacturer	:	TP-Link Systems Inc.
Address	:	10 Mauchly, Irvine, CA 92618
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	:	2024/9/23
Date of Test	:	2024/10/01 ~ 2024/10/19
Issued Date	:	2024/12/10

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

Prepared by : Poken Huang, Engineer

Approved by : Peter Chen, Manager

BTL Inc.

No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan

Tel: +886-2-2657-3299 Fax: +886-2-2657-3331 Web: www.newbtl.com Service mail: btl_qa@newbtl.com

Declaration

BTL 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).

BTL'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. **BTL** assumes no responsibility for the data provided by the Customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by **BTL**.

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.

BTL'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.

BTL 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
BTL-FCCP-2-2407G080B	R00	Original Report.	2024/12/2	Invalid
BTL-FCCP-2-2407G080B	R01	Modified the comments of ACB.	2024/12/10	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

Standard(s) Section	Description	Test Result	Judgement	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	Pass	------
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	Pass	------
15.247(a)	Bandwidth	APPENDIX E	Pass	------
15.247(b)	Output Power	APPENDIX F	Pass	------
15.247(e)	Power Spectral Density	APPENDIX G	Pass	------
15.247(d)	Antenna conducted Spurious Emission	APPENDIX H	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 TP.1.1.1.

1.1 TEST FACILITY

The test locations stated below are under the TAF Accreditation Number 0659.
The test location(s) used to collect the test data in this report are:
(FCC DN: TW0659)
No.64, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)
☒ CB20 ☒ TR01 ☒ C01

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 BTL 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	2.4498

B. Radiated emissions test :

Test Site	Measurement Frequency Range	U (dB)
CB20	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

C. Conducted test :

Test Item	U
Occupied Bandwidth	86 %
Output power	0.8412 dB
Power Spectral Density	0.8602 dB
Conducted Spurious emissions	1.8304 dB
Conducted Band edges	1.8338 dB

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 TEST ENVIRONMENT CONDITIONS

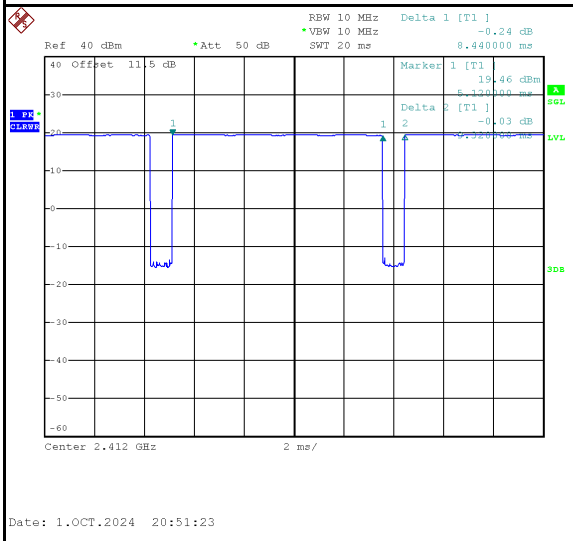
Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	25°C, 45%	AC 120V	Barry Tsui
Radiated emissions below 1 GHz	25°C, 65%	AC 120V	Barry Tsui
Radiated emissions above 1 GHz	25°C, 65%	AC 120V	Barry Tsui
Bandwidth	25°C, 88%	AC 120V	Cheng Tsai
Output Power	25°C, 88%	AC 120V	Cheng Tsai
Power Spectral Density	25°C, 88%	AC 120V	Cheng Tsai
Antenna conducted Spurious Emission	25°C, 88%	AC 120V	Cheng Tsai

1.4 DUTY CYCLE

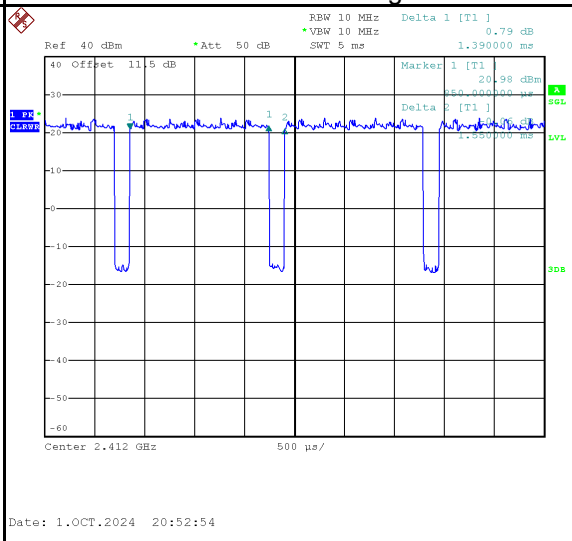
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.

Remark	Delta 1			Delta 2	On Time/Period	10 log(1/Duty Cycle)	1/On Time (B)
Mode	ON (ms)	Numbers (ON)	On Time (B) (ms)	Period (ON+OFF) (ms)	Duty Cycle (%)	Duty Factor (dB)	1/B Minimum VBW (kHz)
IEEE 802.11b	8.440	1	8.440	9.320	90.56%	0.43	0.118
IEEE 802.11g	1.390	1	1.390	1.550	89.68%	0.47	0.719
IEEE 802.11n (HT20)	1.300	1	1.300	1.440	90.28%	0.44	0.769
IEEE 802.11ax (HEW20)	1.008	1	1.008	1.080	93.33%	0.30	0.992

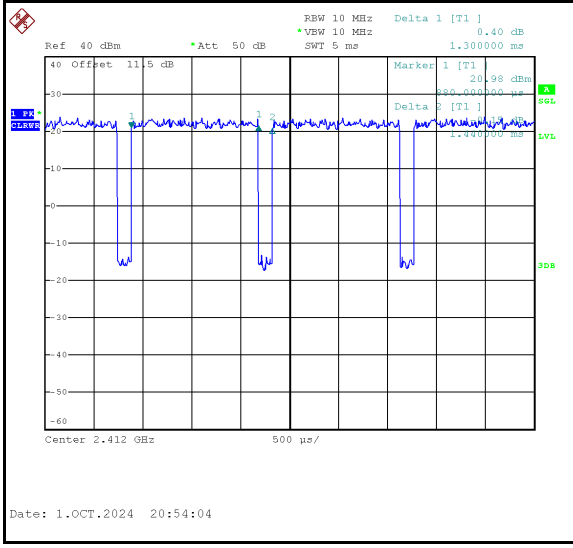
IEEE 802.11b



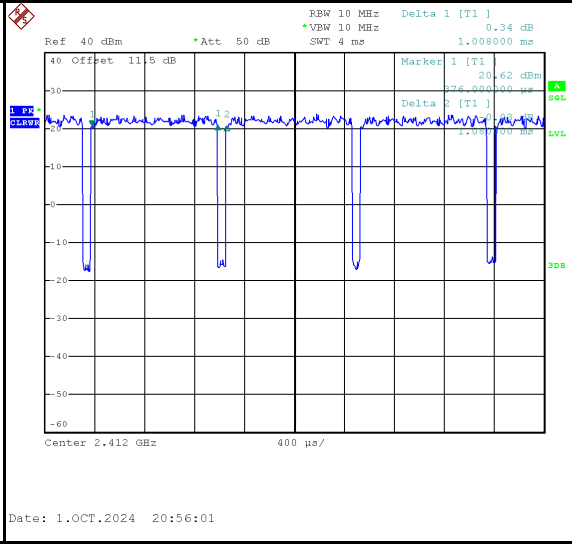
IEEE 802.11g



IEEE 802.11n (HT20)



IEEE 802.11ax(HE20)



2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Outdoor Pan/Tilt Security Wi-Fi Camera
Model Name	Tapo C520WS
Brand Name	tp-link
Model Difference	N/A
Power Source	DC voltage from AC adapter. Model: T090085-2B1
Power Rating	I/P: 100-240V~ 50/60Hz 0.3A O/P: 9V⎓0.85A
HW Version	2.0
SW Version	2.0
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 IEEE 802.11ax: OFDMA
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 IEEE 802.11ax: up to 143.4 Mbps
Maximum Output Power	IEEE 802.11b: 19.76 dBm (0.0946 W) IEEE 802.11g: 19.86 dBm (0.0968 W) IEEE 802.11n (HT20): 19.75 dBm(0.0944 W) IEEE 802.11ax (HE20): 19.65 dBm(0.0923 W)
Test Software Version	AltobeamWLANFacility_V1.0.19
Test Model	Tapo C520WS
Sample Status	Engineering Sample
EUT Modification(s)	N/A

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:

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	Manufacture	Model Name	Type	Connector	Gain (dBi)
1	TP-Link Systems Inc.	Tapo C520WS	dipole	N/A	0.5
2	TP-Link Systems Inc.	Tapo C520WS	dipole	N/A	0.5

Note: Smart antenna system with two transmit/receive chains, but operating in a mode where only one transmit/receive chain is used.

(4) The above Antenna information are 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.

2.2 TEST MODES

Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	IEEE 802.11g	11	-
Transmitter Radiated Emissions (above 1GHz)	IEEE 802.11b	01/11	Bandedge
	IEEE 802.11g		
	IEEE 802.11n (HT20)		
	IEEE 802.11ax (HE20)		
Transmitter Radiated Emissions (above 1GHz)	IEEE 802.11b	01/06/11	Harmonic
	IEEE 802.11g		
	IEEE 802.11n (HT20)		
	IEEE 802.11ax (HE20)		
Transmitter Radiated Emissions (above 18GHz)	IEEE 802.11g	11	-
Bandwidth & Output Power & Power Spectral Density & Antenna conducted Spurious Emission	IEEE 802.11b	01/06/11	-
	IEEE 802.11g		
	IEEE 802.11n (HT20)		
	IEEE 802.11ax (HE20)		

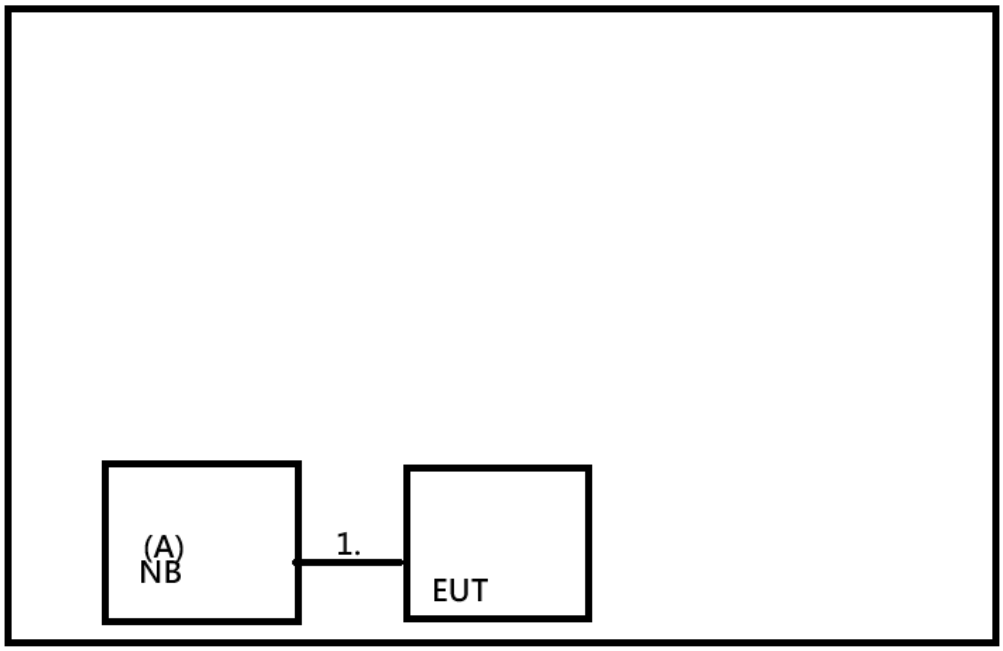
NOTE:
(1) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.
(2) All X, Y and Z axes are evaluated, but only the worst case (X axis) is recorded.
(3) For radiated emission below 1 GHz and above 18GHz test, the IEEE 802.11g Mode Channel 11 is found to be the worst case and recorded.

2.3 PARAMETERS OF TEST SOFTWARE

Test Software Version	AltobeamWLANFacility_V1.0.19		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	19	19	19
IEEE 802.11g	20	19	19
IEEE 802.11n(HT20)	20	19	19
IEEE 802.11ax(HE20)	20	18.5	18

2.4 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.



2.5 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	NB	Lenovo	ThinkBook 14 G4 IAP	MP28KHAH	Furnished by test lab

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	YES	NO	0.3m	USB Cable	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 (dBuV)		Correct Factor (dB)		Measurement Value (dBuV)
38.22	+	3.45	=	41.67

Measurement Value (dBuV)		Limit Value (dBuV)		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

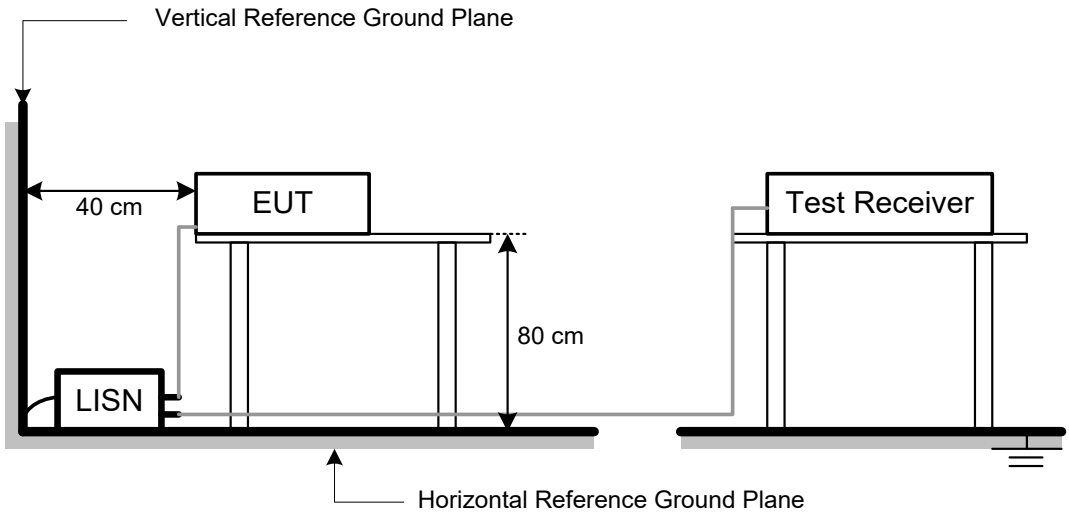
a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
All other support equipment were powered from an additional LISN(s).
The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.
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 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP



3.5 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 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 (dBuV)		Correct Factor (dB/m)		Measurement Value (dBuV/m)
19.11	+	2.11	=	21.22

Measurement Value (dBuV/m)		Limit Value (dBuV/m)		Margin Level (dB)
21.22	-	54	=	-32.78

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

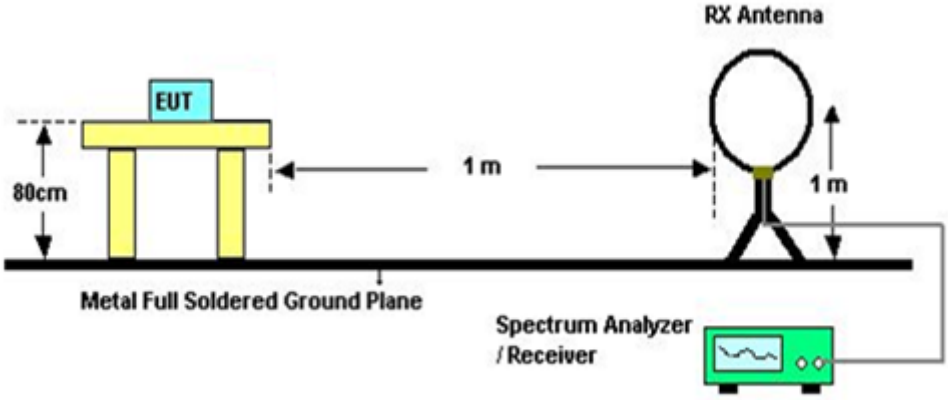
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance 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 DEVIATION FROM TEST STANDARD

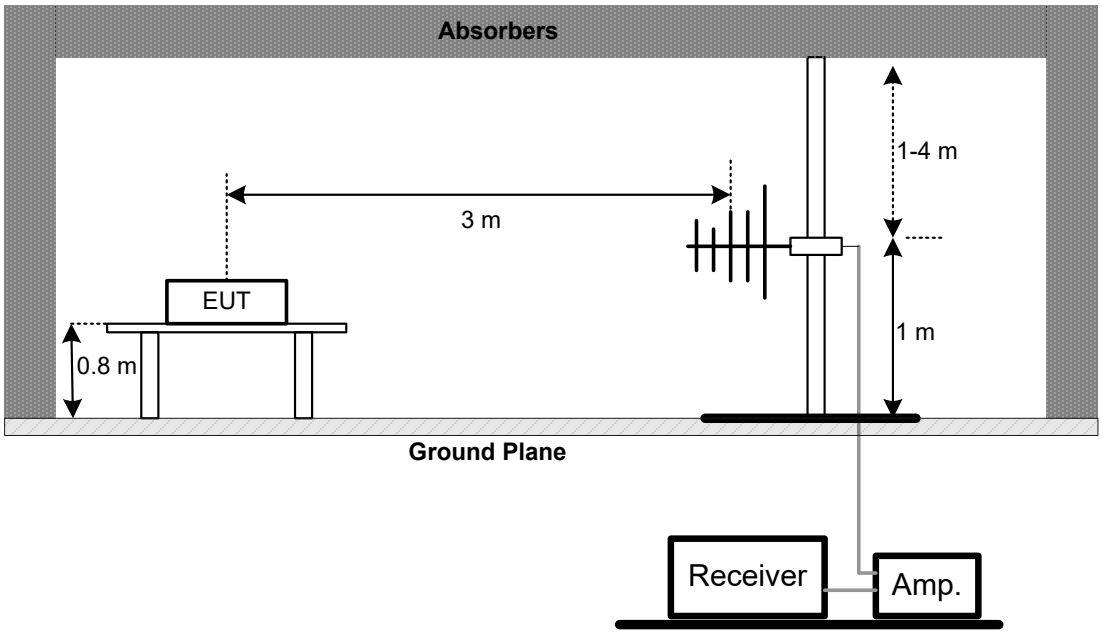
No deviation.

4.4 TEST SETUP

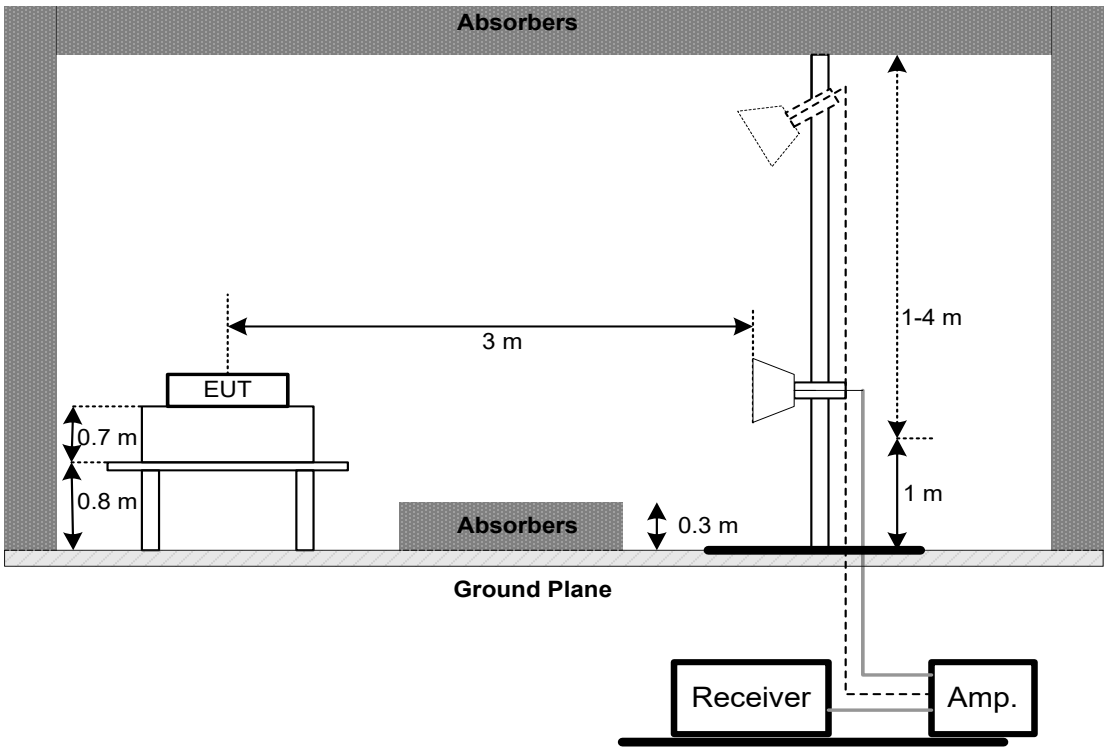
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

NOTE:

(1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
(2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.6 TEST RESULT – 9kHz TO 30 MHz

Please refer to the APPENDIX B.

4.7 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX C.

4.8 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX D.

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

Section	Test Item	Limit
15.247(a)	6 dB Bandwidth	500 kHz

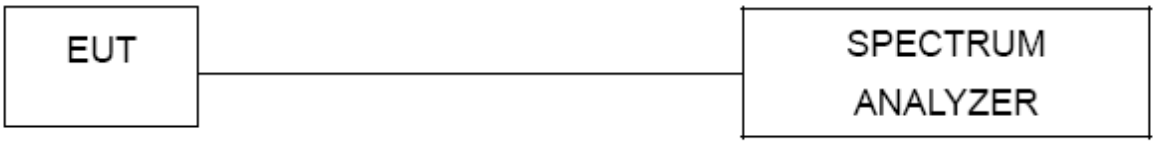
5.2 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT

Please refer to the APPENDIX E.

6 OUTPUT POWER TEST

6.1 LIMIT

Section	Test Item	Limit
15.247(b)	Maximum Output Power	1 Watt or 30dBm

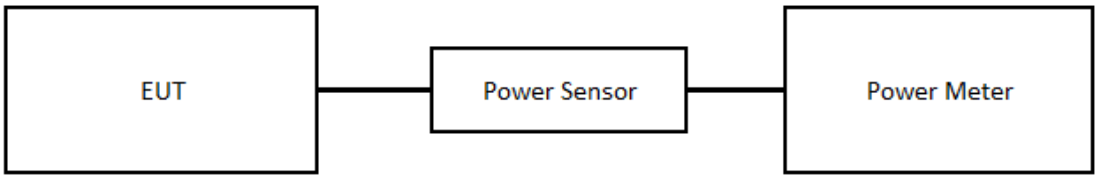
6.2 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULT

Please refer to the APPENDIX F.

7 POWER SPECTRAL DENSITY

7.1 LIMIT

Section	Test Item	Limit
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

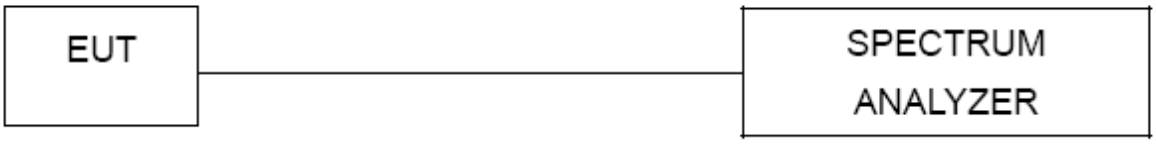
7.2 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULT

Please refer to the APPENDIX G.

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.

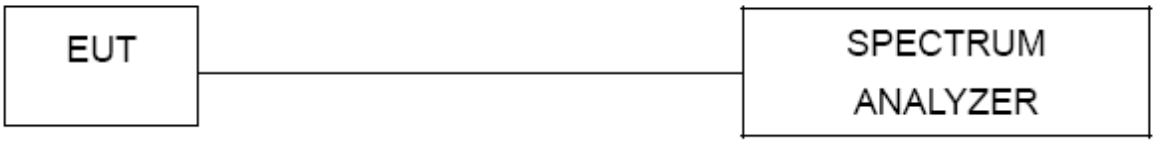
8.2 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULT

Please refer to the APPENDIX H.

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	2024/6/26	2025/6/25
2	Test Cable	EMCI	EMCRG58-BM-BM-9000	210501	2023/12/11	2024/12/10
3	EMC Receiver	Keysight	N9038A	MY54130009	2024/6/27	2025/6/26
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	Pre-Amplifier	EMCI	EMC184045SE	980512	2023/12/11	2024/12/10
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	340	2024/6/27	2025/6/26
3	Test Cable	EMCI	EMC102-KM-KM-1000	220328	2023/12/11	2024/12/10
4	Test Cable	EMCI	EMC101G-KM-KM-3000	220330	2023/12/11	2024/12/10
5	Broad-Band Horn Antenna	RFSPIN	DRH18-E	210109A18E	2024/1/10	2025/1/9
6	Pre-Amplifier	EMCI	EMC051845SE	980779	2023/12/11	2024/12/10
7	Test Cable	EMCI	EMC105-SM-SM-1000	210119	2023/12/11	2024/12/10
8	Test Cable	EMCI	EMC105-SM-SM-3000	210118	2023/12/11	2024/12/10
9	Test Cable	EMCI	EMC105-SM-SM-7000	210117	2023/12/11	2024/12/10
10	EXA Spectrum Analyzer	keysight	N9010A	MY56480554/016	2024/9/13	2025/9/12
11	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	01207	2023/12/18	2024/12/17
12	EMC Receiver	Keysight	N9038A	MY54130009	2024/6/27	2025/6/26
13	Pre-Amplifier	EMCI	EMC001330-20201222	980807	2023/12/11	2024/12/10
14	Test Cable	EMCI	EMC-8D-NM-NM-5000	150106	2023/12/11	2024/12/10
15	Test Cable	EMCI	EMC-CFD-400-NM-NM-8000	200348	2023/12/11	2024/12/10
16	Test Cable	EMCI	EMC-CFD-400-NM-NM-3300	200343	2023/12/11	2024/12/10
17	Loop Ant.	Electro-Metrics	EMCI-LPA600	274	2024/7/5	2025/7/4
18	Pre-Amplifler	EMCI	EMC001340	980555	2023/12/1	2024/11/30
19	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	Spectrum Analyzer	R&S	FSP 30	100854	2024/6/27	2025/6/26
2	10dbAttenuator	INMET	AHC-10dB	1	N/A	N/A
3	BTL-Conducred Test	N/A	1247788684	N/A	N/A	N/A

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	USB Peak Power Sensor	Anritsu	MA24408A	12589	2023/10/25	2024/10/24
2	20dbAttenuator	INMET	AHC-20dB	1	N/A	N/A
3	Measurement Software	Anritsu	MA2440A Peak Power analyzer (Ver1.1.0.0)	N/A	N/A	N/A

Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 30	100854	2024/6/27	2025/6/26
2	10dbAttenuator	INMET	AHC-10dB	1	N/A	N/A
3	BTL-Conducred Test	N/A	1247788684	N/A	N/A	N/A

Antenna conducted Spurious Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 30	100854	2024/6/27	2025/6/26
2	10dbAttenuator	INMET	AHC-10dB	1	N/A	N/A
3	BTL-Conducred Test	N/A	1247788684	N/A	N/A	N/A

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

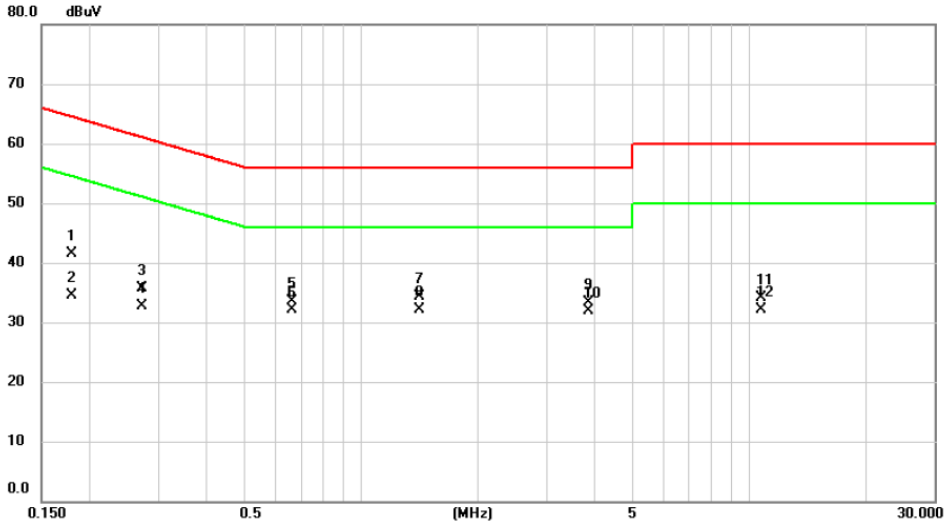
Please refer to document Appendix No.: TP-2407G080B-1 (APPENDIX-TEST PHOTOS).

11 EUT PHOTOS

Please refer to document Appendix No.: EP-2407G080B-1 (APPENDIX-EUT PHOTOS).

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

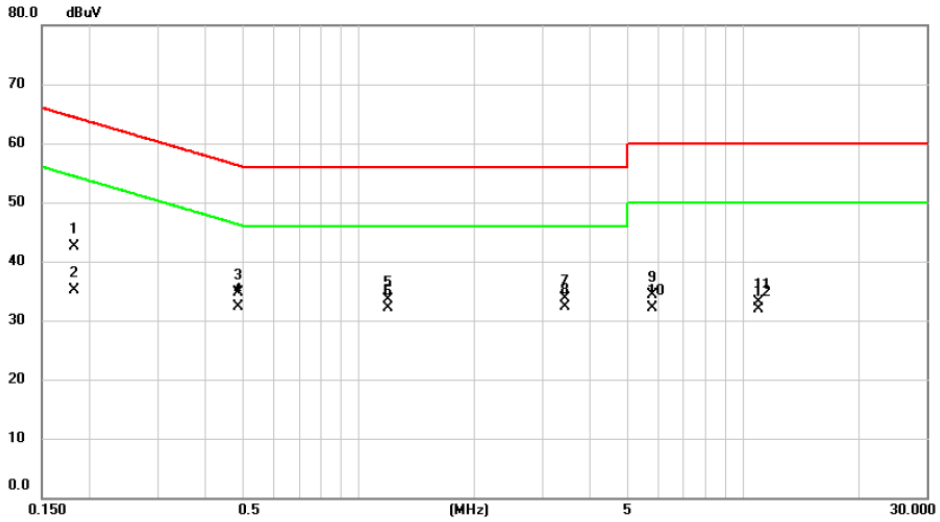
Test Mode	Normal	Tested Date	2024/10/4
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1797	31.89	9.64	41.53	64.50	-22.97	QP	
2		0.1797	24.94	9.64	34.58	54.50	-19.92	AVG	
3		0.2725	26.02	9.64	35.66	61.04	-25.38	QP	
4		0.2725	23.13	9.64	32.77	51.04	-18.27	AVG	
5		0.6620	23.93	9.67	33.60	56.00	-22.40	QP	
6		0.6620	22.42	9.67	32.09	46.00	-13.91	AVG	
7		1.4135	24.54	9.73	34.27	56.00	-21.73	QP	
8	*	1.4135	22.37	9.73	32.10	46.00	-13.90	AVG	
9		3.8615	23.40	9.86	33.26	56.00	-22.74	QP	
10		3.8615	22.14	9.86	32.00	46.00	-14.00	AVG	
11		10.7250	24.10	10.05	34.15	60.00	-25.85	QP	
12		10.7250	22.03	10.05	32.08	50.00	-17.92	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

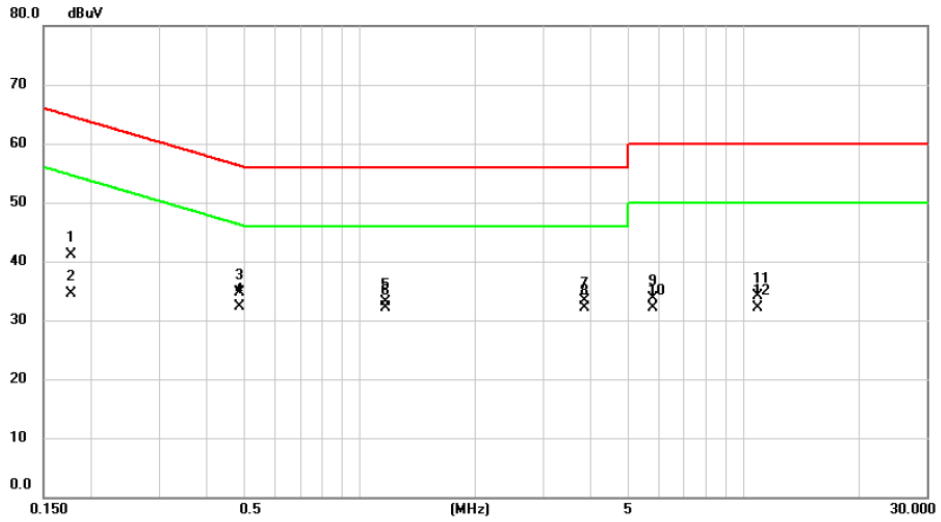
Test Mode	Normal	Tested Date	2024/10/4
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1822	32.95	9.63	42.58	64.38	-21.80	QP	
2		0.1822	25.44	9.63	35.07	54.38	-19.31	AVG	
3		0.4867	24.97	9.64	34.61	56.22	-21.61	QP	
4		0.4867	22.66	9.64	32.30	46.22	-13.92	AVG	
5		1.1930	23.70	9.71	33.41	56.00	-22.59	QP	
6		1.1930	22.48	9.71	32.19	46.00	-13.81	AVG	
7		3.4385	23.79	9.83	33.62	56.00	-22.38	QP	
8	*	3.4385	22.49	9.83	32.32	46.00	-13.68	AVG	
9		5.8000	24.36	9.92	34.28	60.00	-25.72	QP	
10		5.8000	22.28	9.92	32.20	50.00	-17.80	AVG	
11		10.9250	23.11	10.05	33.16	60.00	-26.84	QP	
12		10.9250	21.91	10.05	31.96	50.00	-18.04	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

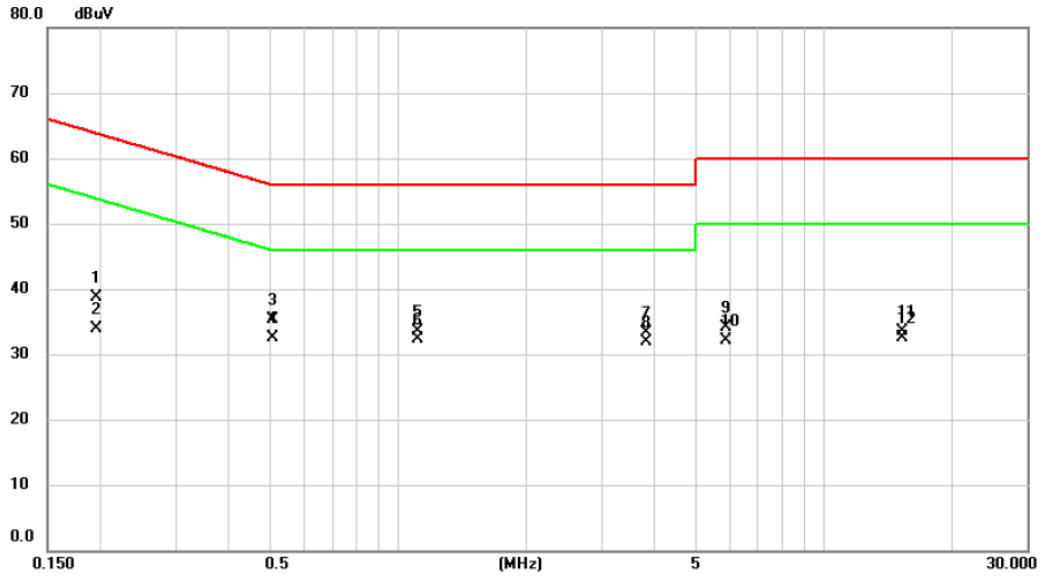
Test Mode	Idle	Tested Date	2024/10/4
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1776	31.43	9.64	41.07	64.60	-23.53	QP	
2		0.1776	24.87	9.64	34.51	54.60	-20.09	AVG	
3		0.4878	24.99	9.66	34.65	56.21	-21.56	QP	
4	*	0.4878	22.74	9.66	32.40	46.21	-13.81	AVG	
5		1.1660	23.48	9.71	33.19	56.00	-22.81	QP	
6		1.1660	22.47	9.71	32.18	46.00	-13.82	AVG	
7		3.8525	23.44	9.86	33.30	56.00	-22.70	QP	
8		3.8525	22.18	9.86	32.04	46.00	-13.96	AVG	
9		5.8000	23.75	9.92	33.67	60.00	-26.33	QP	
10		5.8000	22.19	9.92	32.11	50.00	-17.89	AVG	
11		10.8500	24.12	10.05	34.17	60.00	-25.83	QP	
12		10.8500	22.11	10.05	32.16	50.00	-17.84	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	Idle	Tested Date	2024/10/4
Test Frequency	-	Phase	Neutral

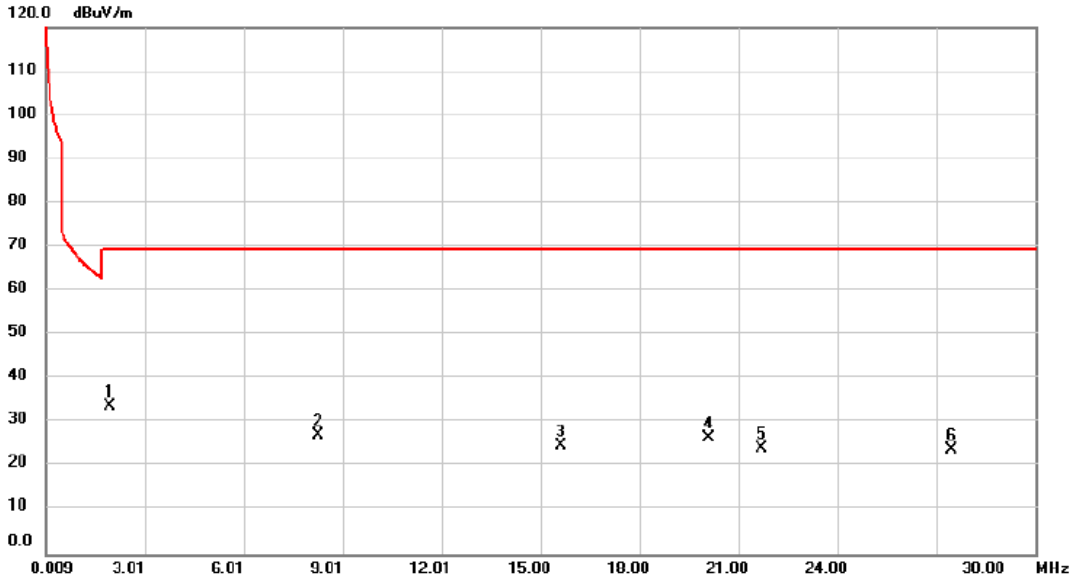


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1958	29.11	9.63	38.74	63.79	-25.05	QP	
2		0.1958	24.19	9.63	33.82	53.79	-19.97	AVG	
3		0.5090	25.57	9.64	35.21	56.00	-20.79	QP	
4	*	0.5090	22.79	9.64	32.43	46.00	-13.57	AVG	
5		1.1120	23.75	9.70	33.45	56.00	-22.55	QP	
6		1.1120	22.54	9.70	32.24	46.00	-13.76	AVG	
7		3.8300	23.39	9.85	33.24	56.00	-22.76	QP	
8		3.8300	22.14	9.85	31.99	46.00	-14.01	AVG	
9		5.8750	24.26	9.92	34.18	60.00	-25.82	QP	
10		5.8750	22.25	9.92	32.17	50.00	-17.83	AVG	
11		15.3000	23.36	10.16	33.52	60.00	-26.48	QP	
12		15.3000	22.36	10.16	32.52	50.00	-17.48	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX B RADIATED EMISSIONS - 9 KHZ TO 30 MHZ

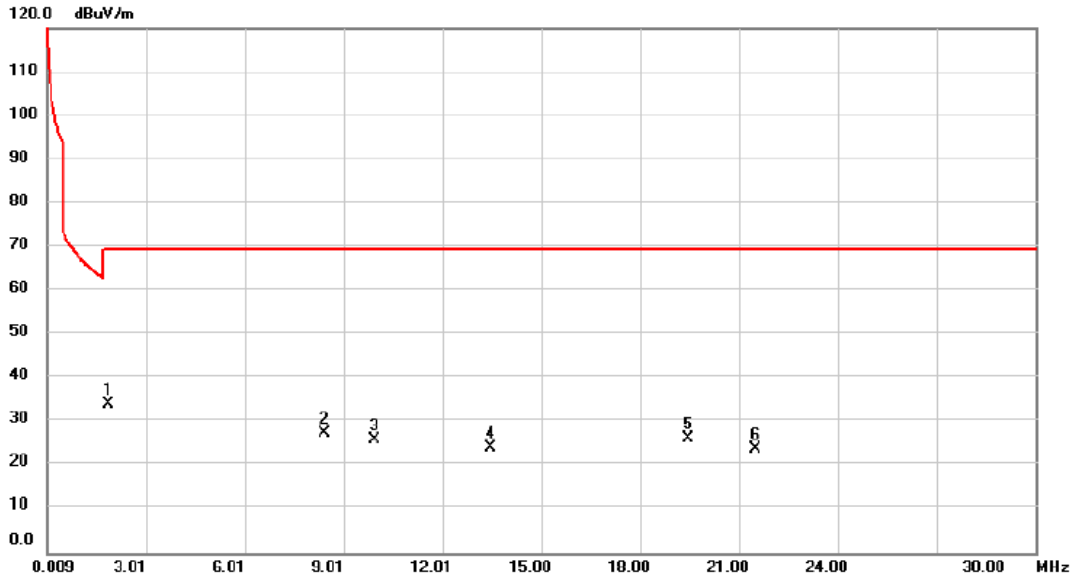
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	1.9584	37.36	-3.50	33.86	69.54	-35.68	peak	
2		8.2565	31.03	-3.87	27.16	69.54	-42.38	peak	
3		15.6343	29.47	-4.76	24.71	69.54	-44.83	peak	
4		20.1030	31.05	-4.55	26.50	69.54	-43.04	peak	
5		21.6924	29.60	-5.53	24.07	69.54	-45.47	peak	
6		27.4508	29.88	-6.16	23.72	69.54	-45.82	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

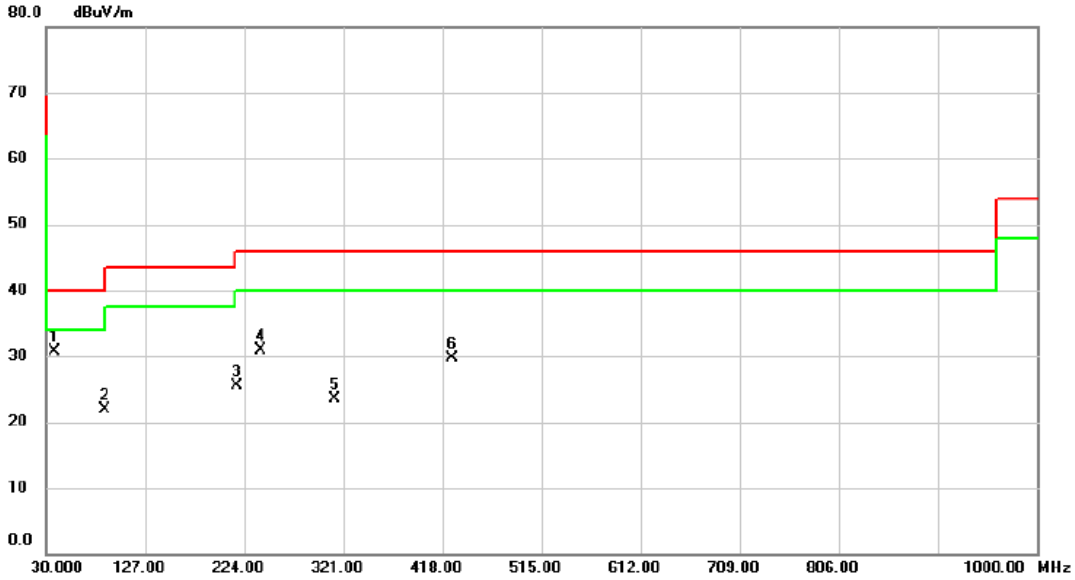


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	1.8684	37.41	-3.25	34.16	69.54	-35.38	peak	
2		8.4065	31.30	-3.92	27.38	69.54	-42.16	peak	
3		9.9660	30.11	-4.13	25.98	69.54	-43.56	peak	
4		13.4450	28.56	-4.41	24.15	69.54	-45.39	peak	
5		19.4432	30.58	-4.45	26.13	69.54	-43.41	peak	
6		21.5125	29.29	-5.39	23.90	69.54	-45.64	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX C RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

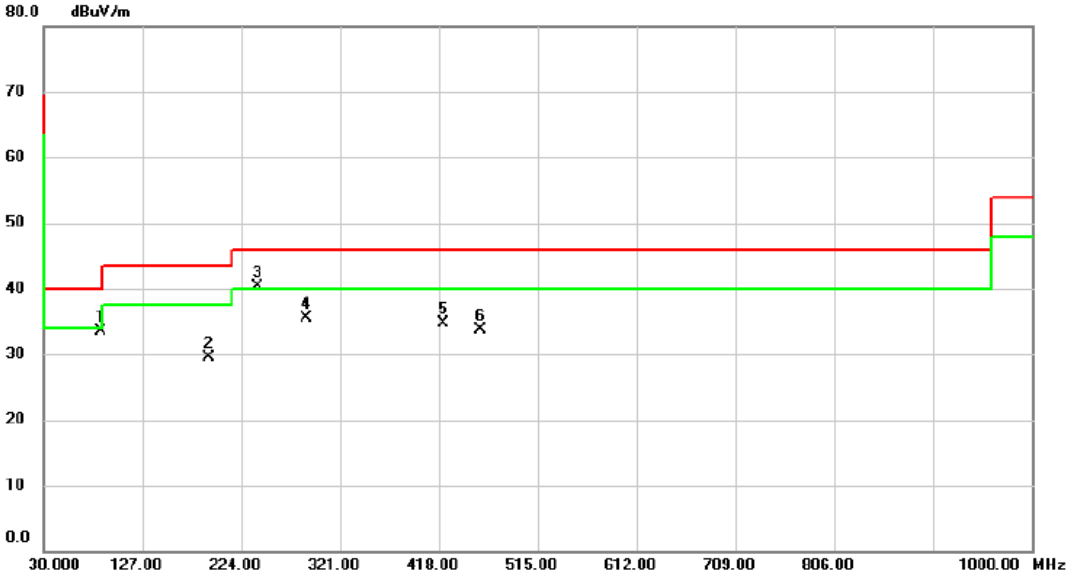
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	38.7300	43.52	-12.78	30.74	40.00	-9.26	peak	
2		87.2300	38.90	-16.98	21.92	40.00	-18.08	peak	
3		216.2400	39.56	-14.11	25.45	46.00	-20.55	peak	
4		239.5200	43.28	-12.34	30.94	46.00	-15.06	peak	
5		312.2700	33.47	-9.92	23.55	46.00	-22.45	peak	
6		427.7000	36.43	-6.66	29.77	46.00	-16.23	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

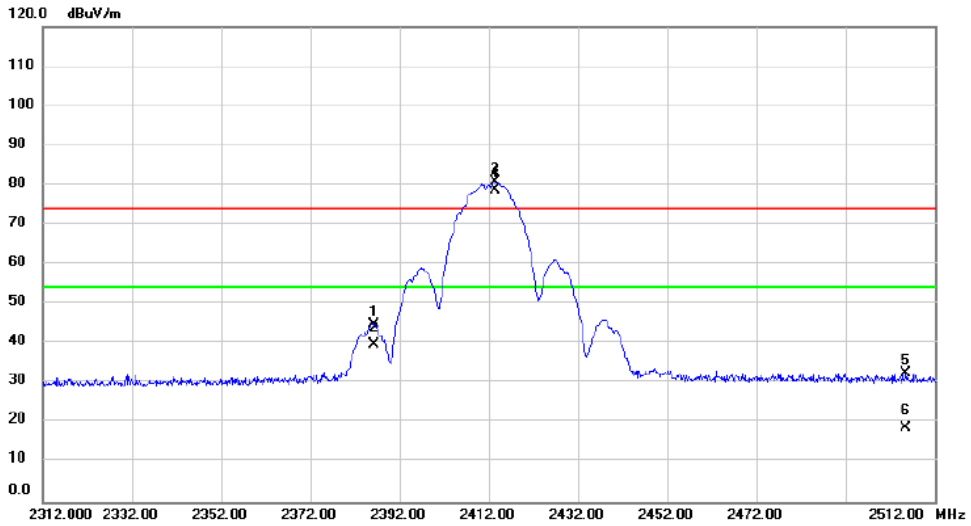


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		86.2600	50.40	-16.86	33.54	40.00	-6.46	peak	
2		191.9900	43.26	-13.85	29.41	43.50	-14.09	peak	
3	*	240.4900	52.57	-12.25	40.32	46.00	-5.68	peak	
4		288.0200	45.91	-10.43	35.48	46.00	-10.52	peak	
5		422.8500	41.54	-6.81	34.73	46.00	-11.27	peak	
6		458.7400	39.58	-5.88	33.70	46.00	-12.30	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX D RADIATED EMISSIONS - ABOVE 1 GHZ

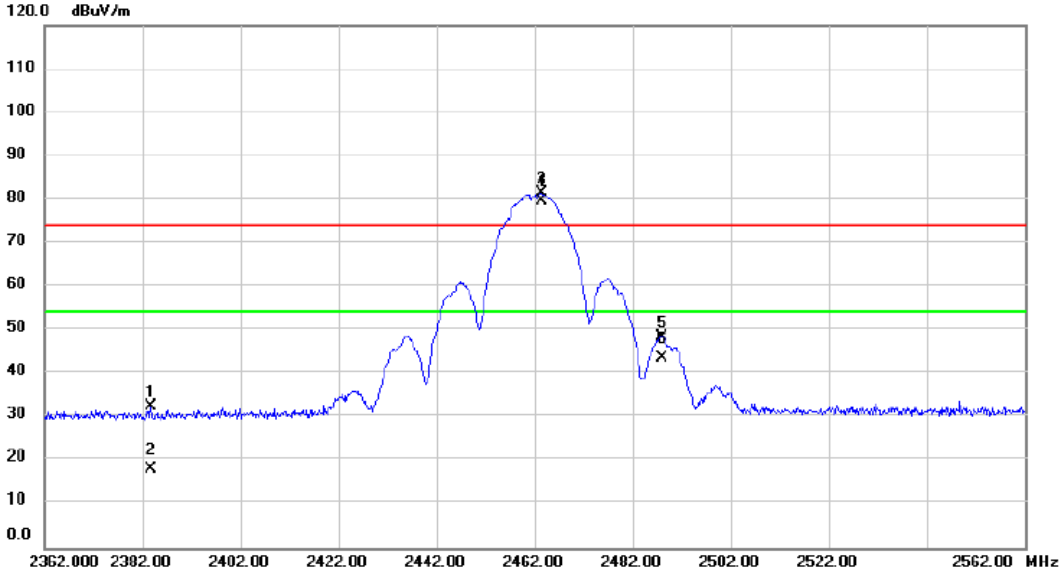
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2386.200	51.13	-6.13	45.00	74.00	-29.00	peak	
2		2386.200	45.79	-6.13	39.66	54.00	-14.34	AVG	
3	X	2413.600	86.82	-6.06	80.76	74.00	6.76	peak	No Limit
4	*	2413.600	84.92	-6.06	78.86	54.00	24.86	AVG	No Limit
5		2505.600	38.38	-5.86	32.52	74.00	-41.48	peak	
6		2505.600	24.56	-5.86	18.70	54.00	-35.30	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

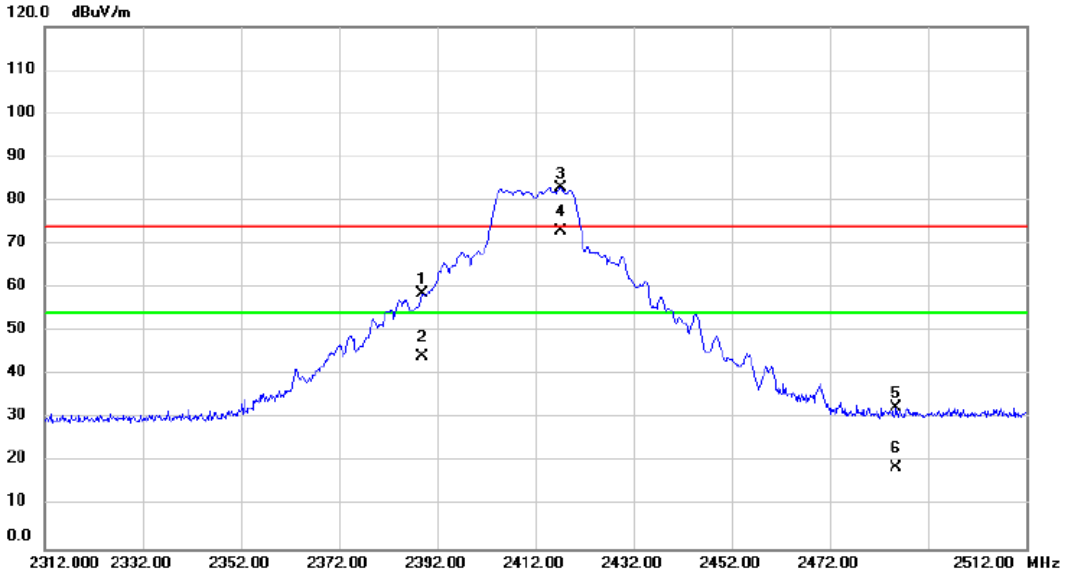
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2383.800	38.59	-6.13	32.46	74.00	-41.54	peak	
2		2383.800	24.40	-6.13	18.27	54.00	-35.73	AVG	
3	X	2463.400	87.41	-5.96	81.45	74.00	7.45	peak	No Limit
4	*	2463.400	85.51	-5.96	79.55	54.00	25.55	AVG	No Limit
5		2488.000	54.47	-5.90	48.57	74.00	-25.43	peak	
6		2488.000	49.42	-5.90	43.52	54.00	-10.48	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

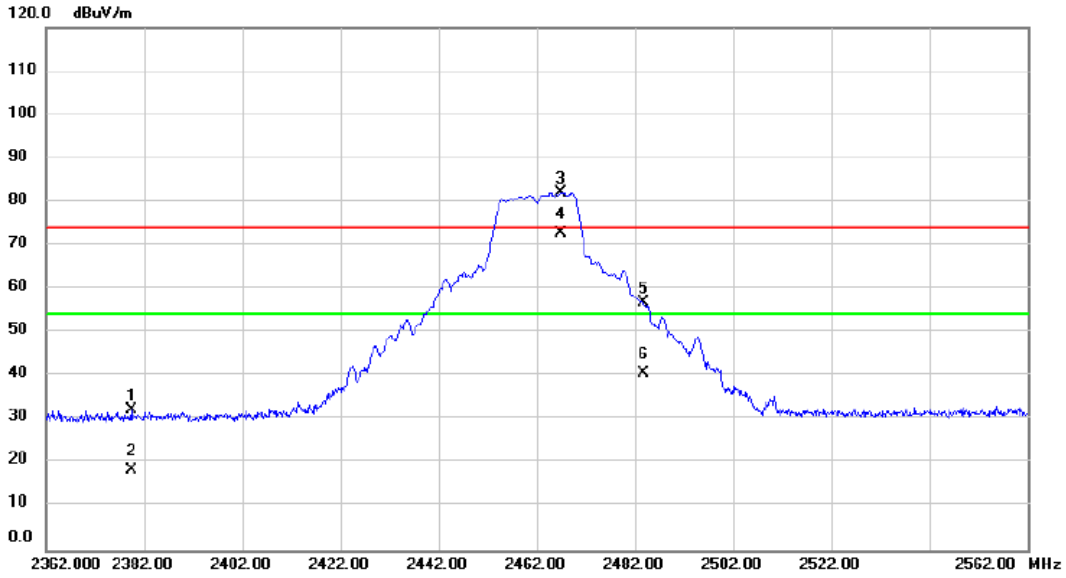
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.000	64.64	-6.12	58.52	74.00	-15.48	peak	
2		2389.000	50.48	-6.12	44.36	54.00	-9.64	AVG	
3	X	2417.200	89.08	-6.06	83.02	74.00	9.02	peak	No Limit
4	*	2417.200	79.12	-6.06	73.06	54.00	19.06	AVG	No Limit
5		2485.600	38.49	-5.91	32.58	74.00	-41.42	peak	
6		2485.600	24.79	-5.91	18.88	54.00	-35.12	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

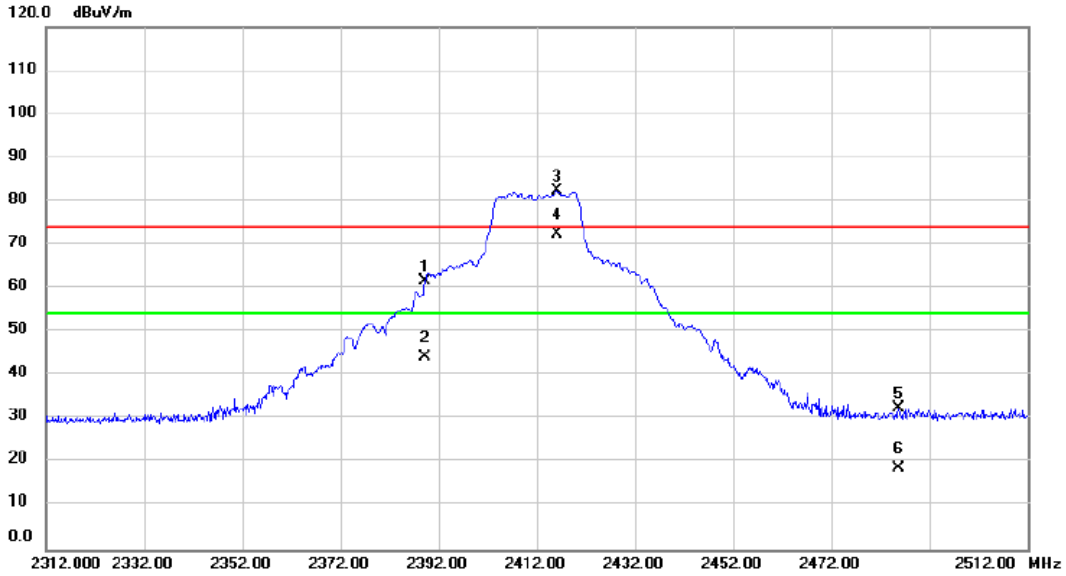
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2379.400	38.26	-6.14	32.12	74.00	-41.88	peak	
2		2379.400	24.56	-6.14	18.42	54.00	-35.58	AVG	
3	X	2467.000	88.13	-5.95	82.18	74.00	8.18	peak	No Limit
4	*	2467.000	78.63	-5.95	72.68	54.00	18.68	AVG	No Limit
5		2483.800	62.73	-5.92	56.81	74.00	-17.19	peak	
6		2483.800	46.60	-5.92	40.68	54.00	-13.32	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

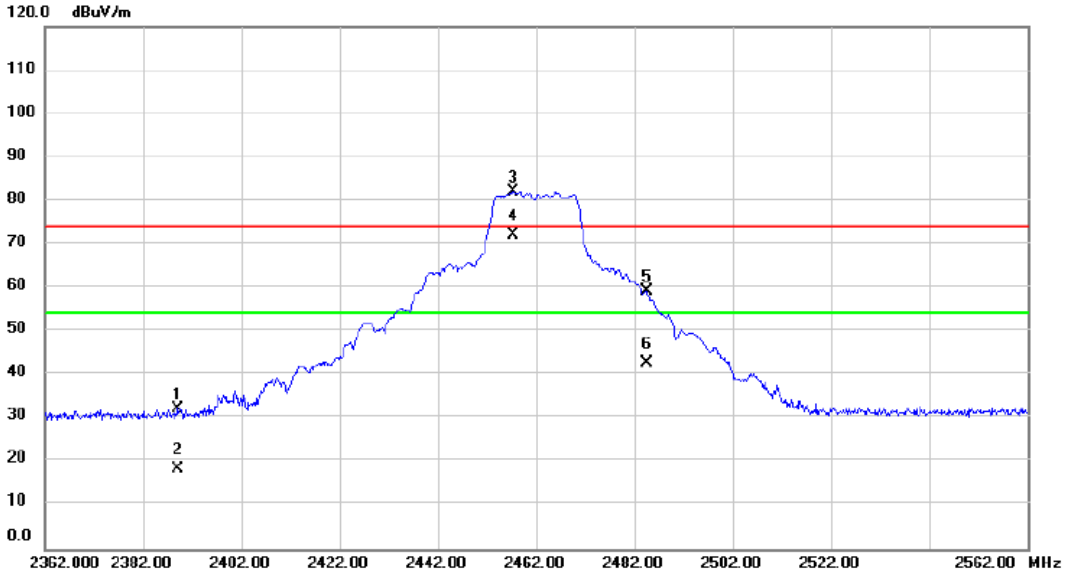
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.200	67.65	-6.12	61.53	74.00	-12.47	peak	
2		2389.200	50.49	-6.12	44.37	54.00	-9.63	AVG	
3	X	2416.000	88.43	-6.06	82.37	74.00	8.37	peak	No Limit
4	*	2416.000	78.37	-6.06	72.31	54.00	18.31	AVG	No Limit
5		2485.800	38.43	-5.91	32.52	74.00	-41.48	peak	
6		2485.800	24.80	-5.91	18.89	54.00	-35.11	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.200	38.52	-6.12	32.40	74.00	-41.60	peak	
2		2389.200	24.66	-6.12	18.54	54.00	-35.46	AVG	
3	X	2457.400	88.08	-5.97	82.11	74.00	8.11	peak	No Limit
4	*	2457.400	78.08	-5.97	72.11	54.00	18.11	AVG	No Limit
5		2484.400	65.12	-5.91	59.21	74.00	-14.79	peak	
6		2484.400	48.54	-5.91	42.63	54.00	-11.37	AVG	

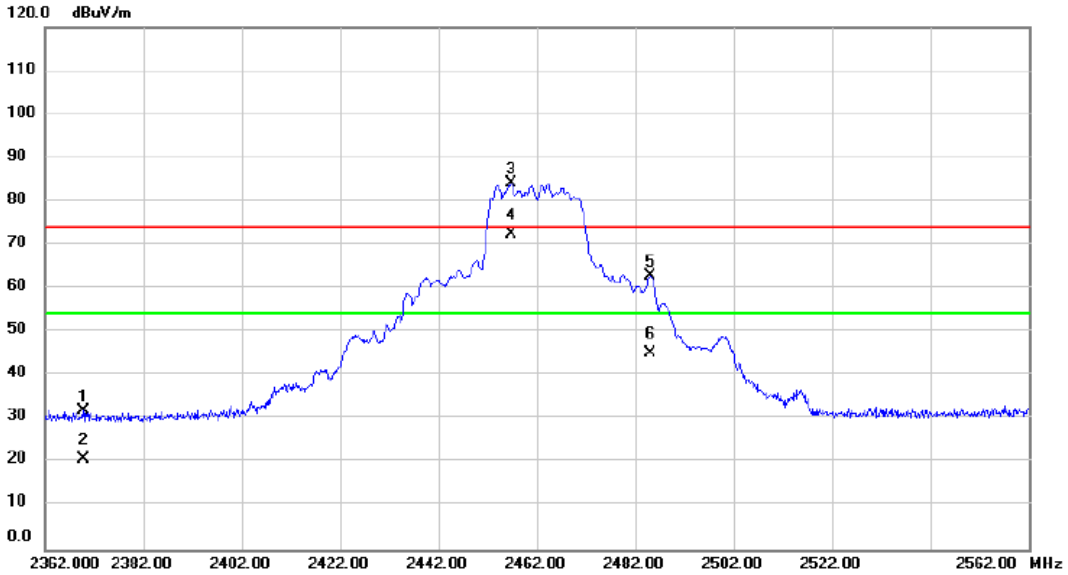
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.200	70.31	-6.12	64.19	74.00	-9.81	peak	
2		2389.200	55.42	-6.12	49.30	54.00	-4.70	AVG	
3	X	2406.800	90.95	-6.08	84.87	74.00	10.87	peak	No Limit
4	*	2406.800	79.15	-6.08	73.07	54.00	19.07	AVG	No Limit
5		2488.400	38.61	-5.90	32.71	74.00	-41.29	peak	
6		2488.400	27.18	-5.90	21.28	54.00	-32.72	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

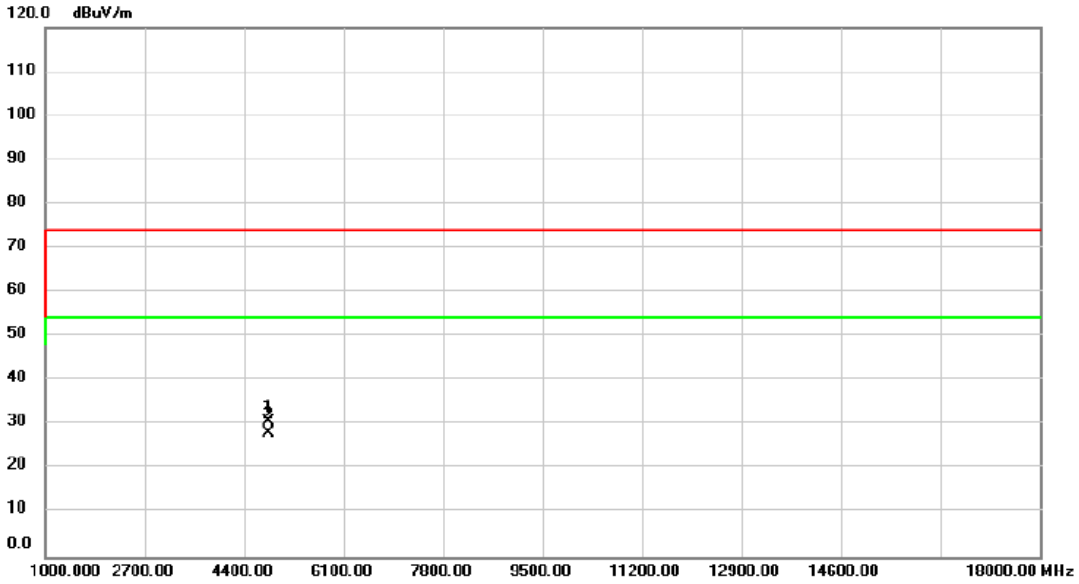
Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2369.800	38.05	-6.16	31.89	74.00	-42.11	peak	
2		2369.800	27.04	-6.16	20.88	54.00	-33.12	AVG	
3	X	2456.800	90.00	-5.97	84.03	74.00	10.03	peak	No Limit
4	*	2456.800	78.38	-5.97	72.41	54.00	18.41	AVG	No Limit
5		2485.200	68.69	-5.91	62.78	74.00	-11.22	peak	
6		2485.200	50.94	-5.91	45.03	54.00	-8.97	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

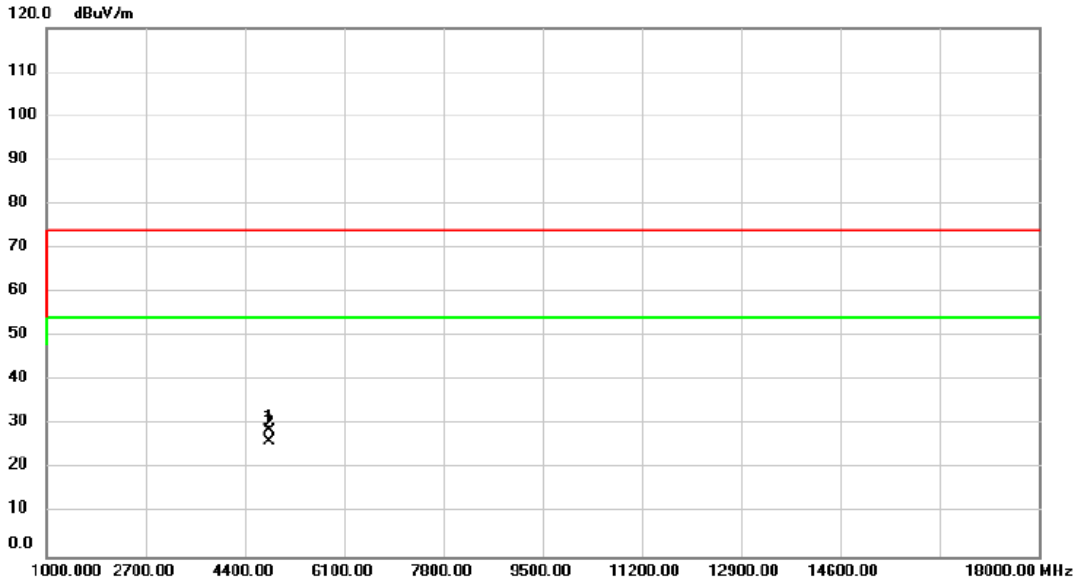
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	39.19	-8.57	30.62	74.00	-43.38	peak	
2	*	4824.000	36.55	-8.57	27.98	54.00	-26.02	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

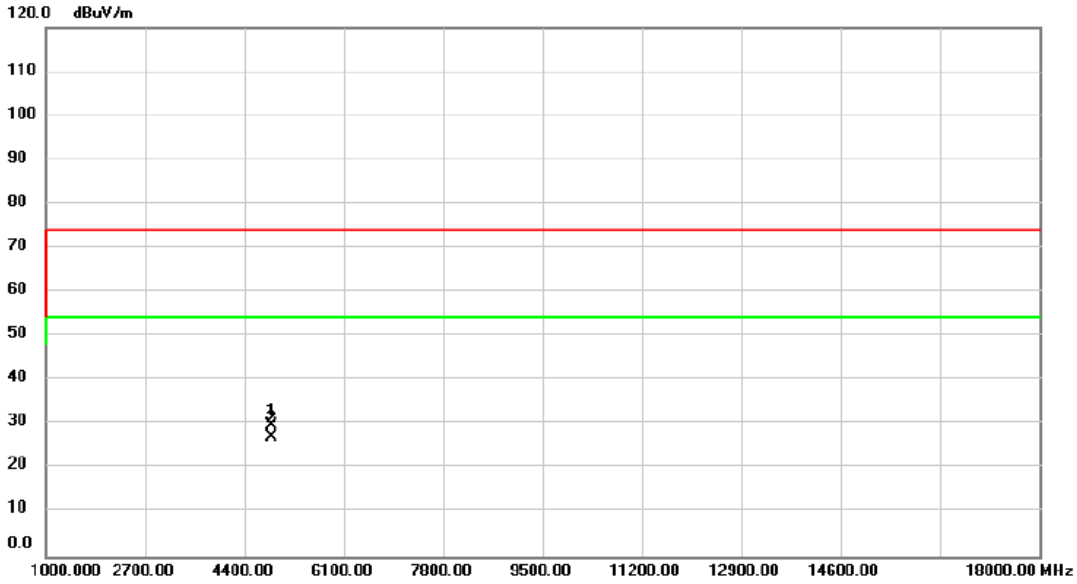
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	37.32	-8.57	28.75	74.00	-45.25	peak	
2	*	4824.000	34.78	-8.57	26.21	54.00	-27.79	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

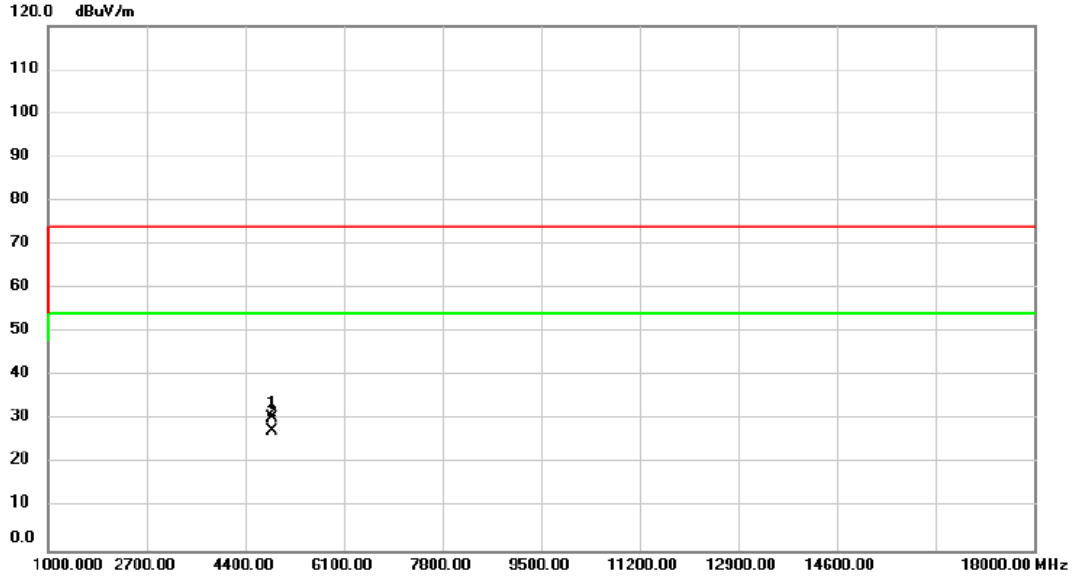
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2437MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.24	-8.44	29.80	74.00	-44.20	peak	
2	*	4874.000	35.58	-8.44	27.14	54.00	-26.86	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

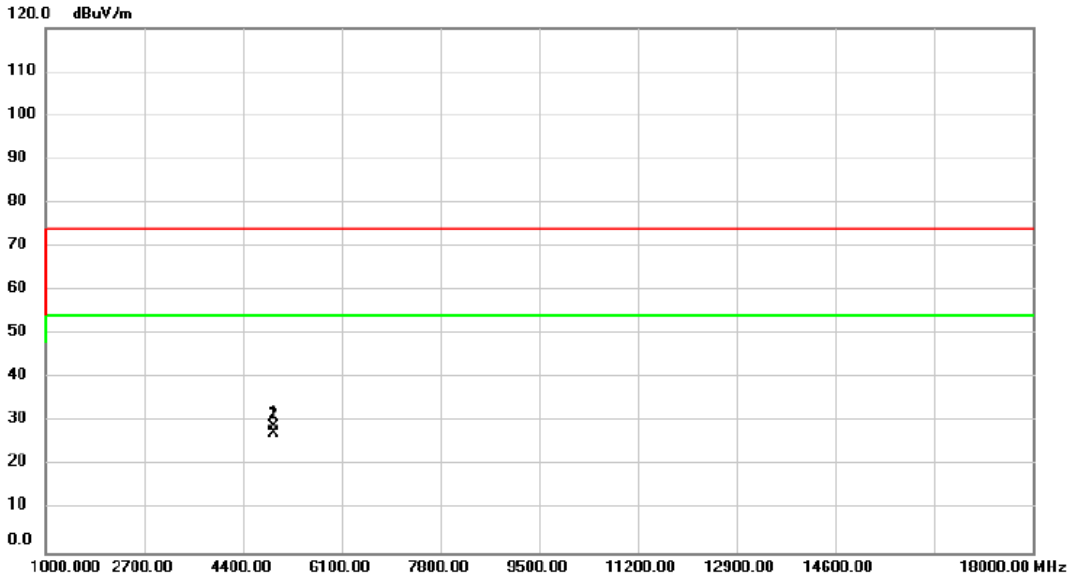
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2437MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.87	-8.44	30.43	74.00	-43.57	peak	
2	*	4874.000	36.00	-8.44	27.56	54.00	-26.44	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

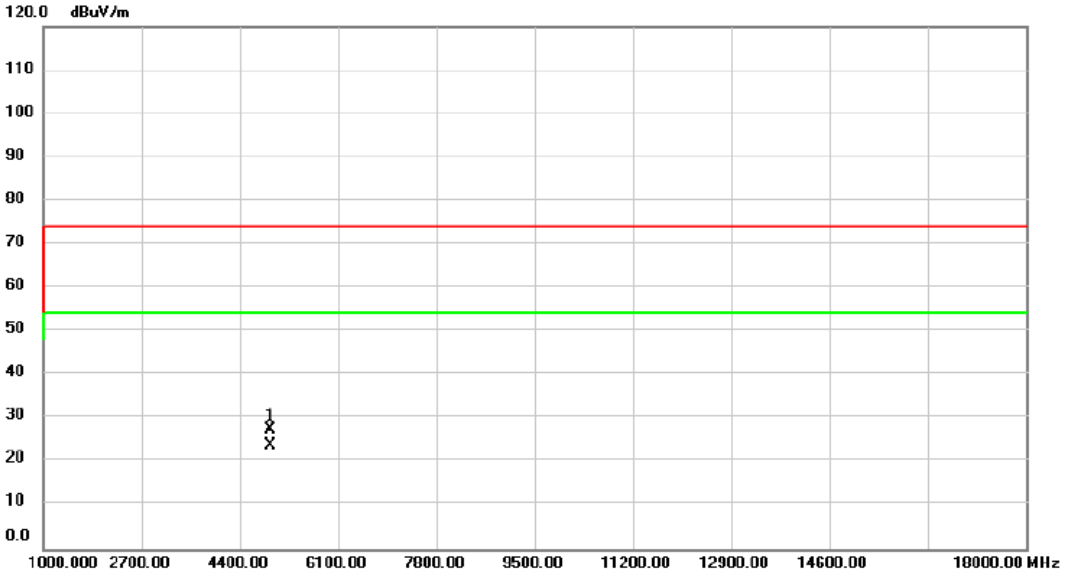
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	37.39	-8.33	29.06	74.00	-44.94	peak	
2	*	4924.000	35.66	-8.33	27.33	54.00	-26.67	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

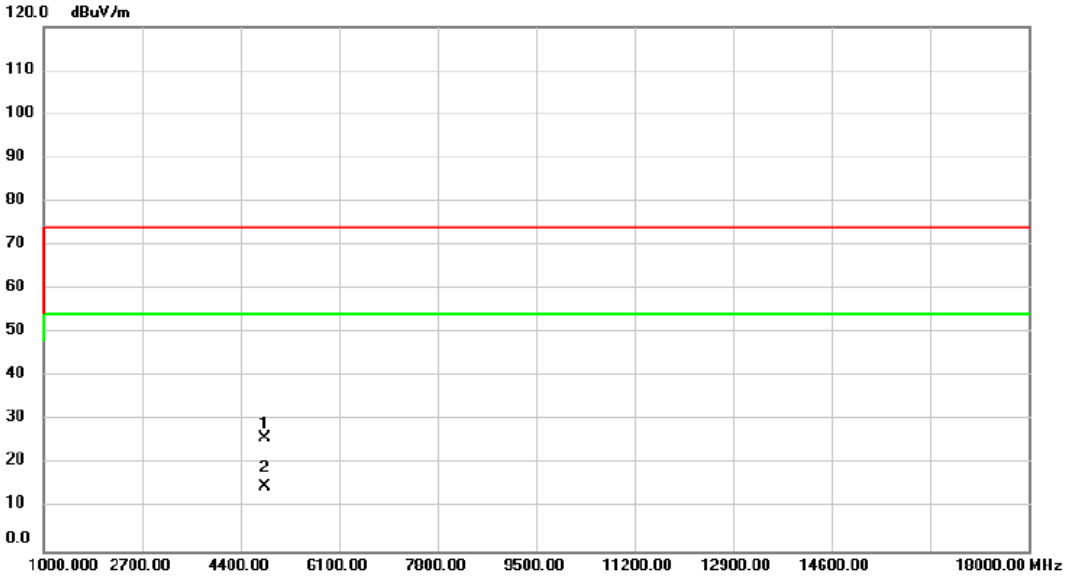
Test Mode	IEEE 802.11b	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	35.68	-8.33	27.35	74.00	-46.65	peak	
2	*	4924.000	32.33	-8.33	24.00	54.00	-30.00	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

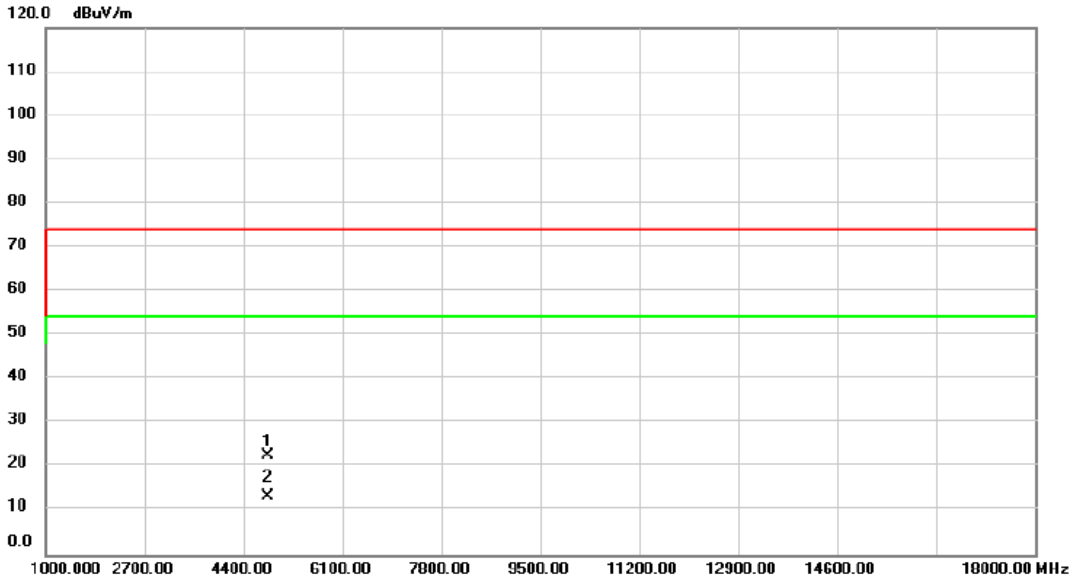
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	34.41	-8.57	25.84	74.00	-48.16	peak	
2	*	4824.000	23.36	-8.57	14.79	54.00	-39.21	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

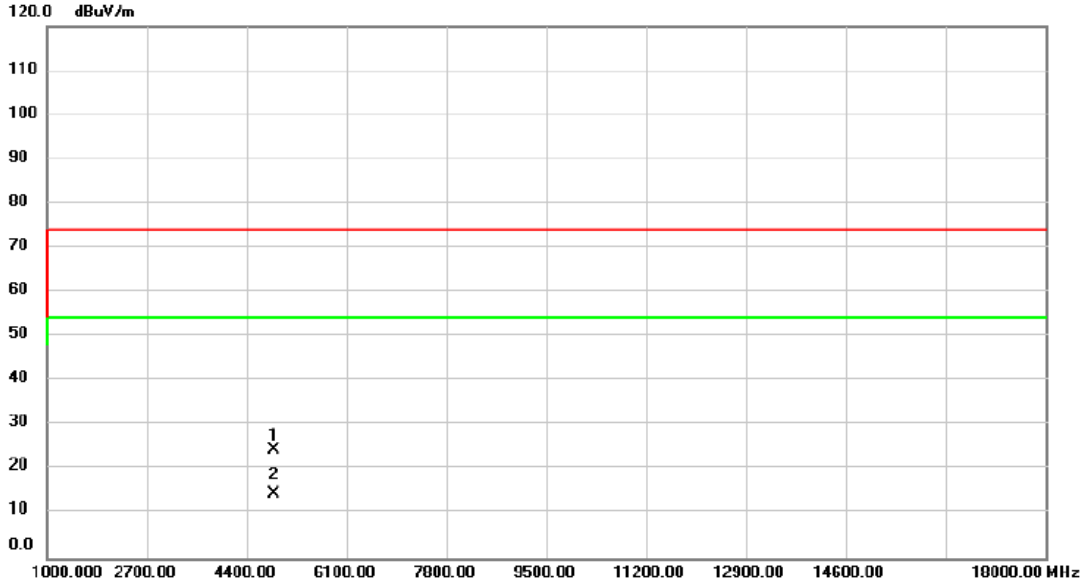
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	31.36	-8.57	22.79	74.00	-51.21	peak	
2	*	4824.000	21.86	-8.57	13.29	54.00	-40.71	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

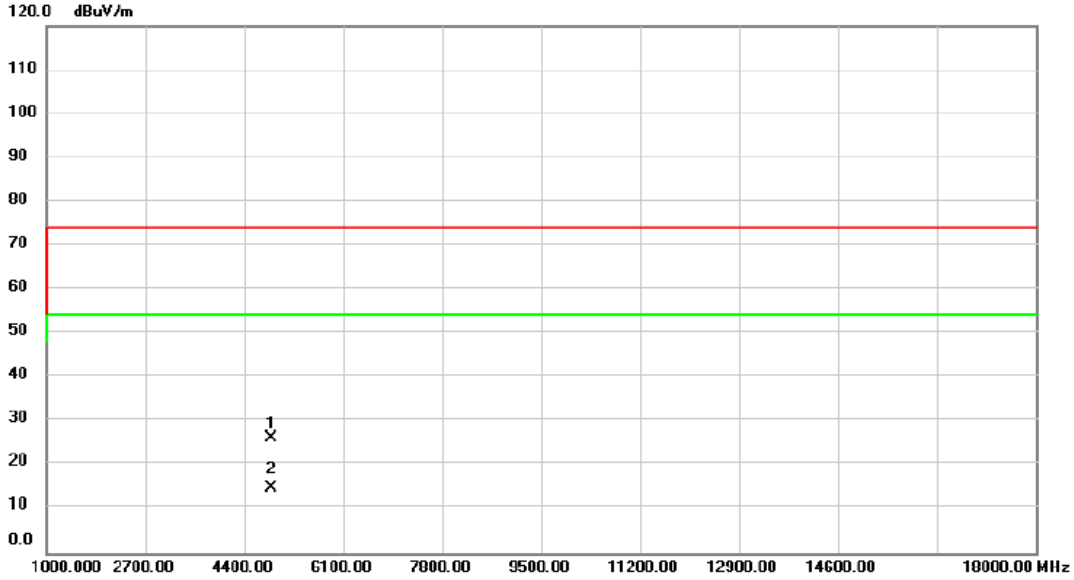
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2437MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	32.79	-8.44	24.35	74.00	-49.65	peak	
2	*	4874.000	23.12	-8.44	14.68	54.00	-39.32	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

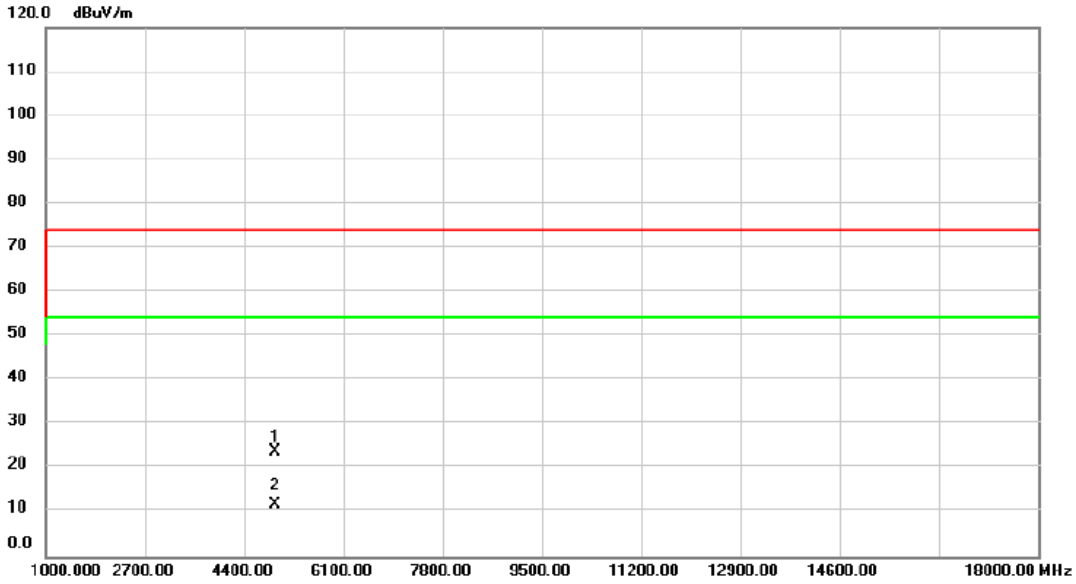
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2437MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	34.69	-8.44	26.25	74.00	-47.75	peak	
2	*	4874.000	23.32	-8.44	14.88	54.00	-39.12	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

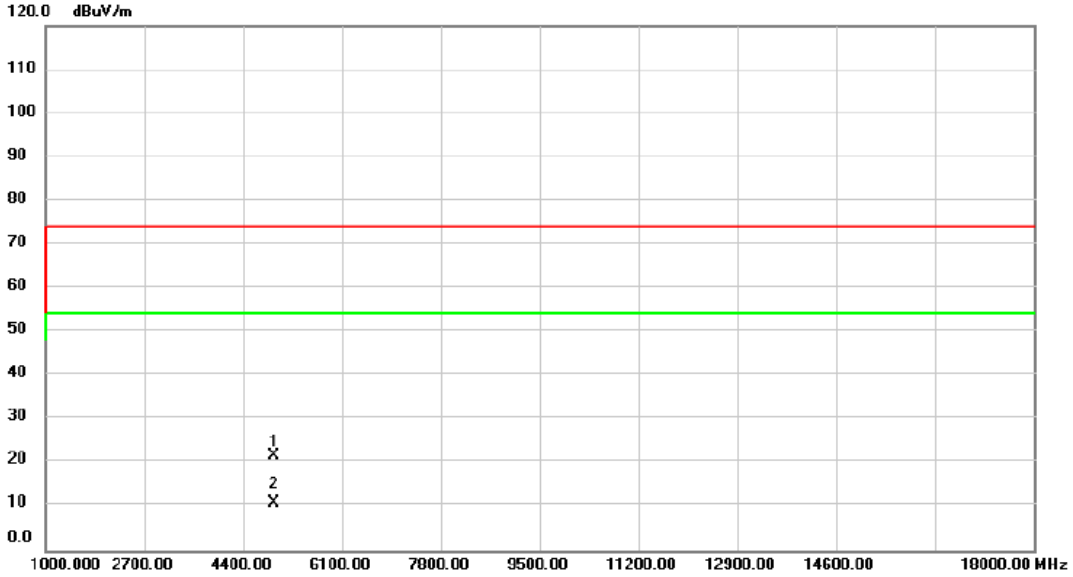
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	32.09	-8.33	23.76	74.00	-50.24	peak	
2	*	4924.000	20.22	-8.33	11.89	54.00	-42.11	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

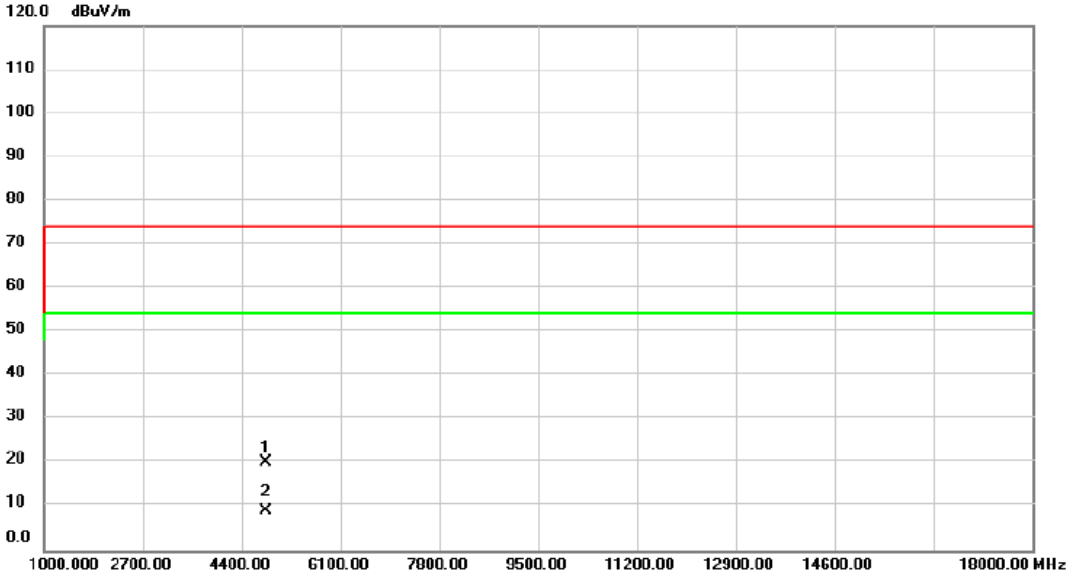
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	29.97	-8.33	21.64	74.00	-52.36	peak	
2	*	4924.000	19.22	-8.33	10.89	54.00	-43.11	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

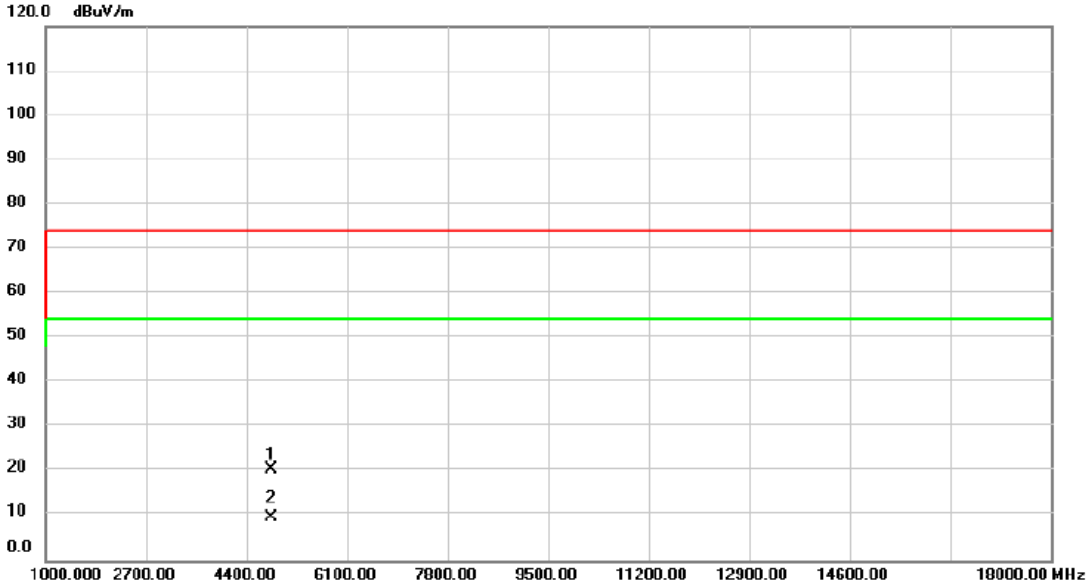
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	28.96	-8.57	20.39	74.00	-53.61	peak	
2	*	4824.000	17.69	-8.57	9.12	54.00	-44.88	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

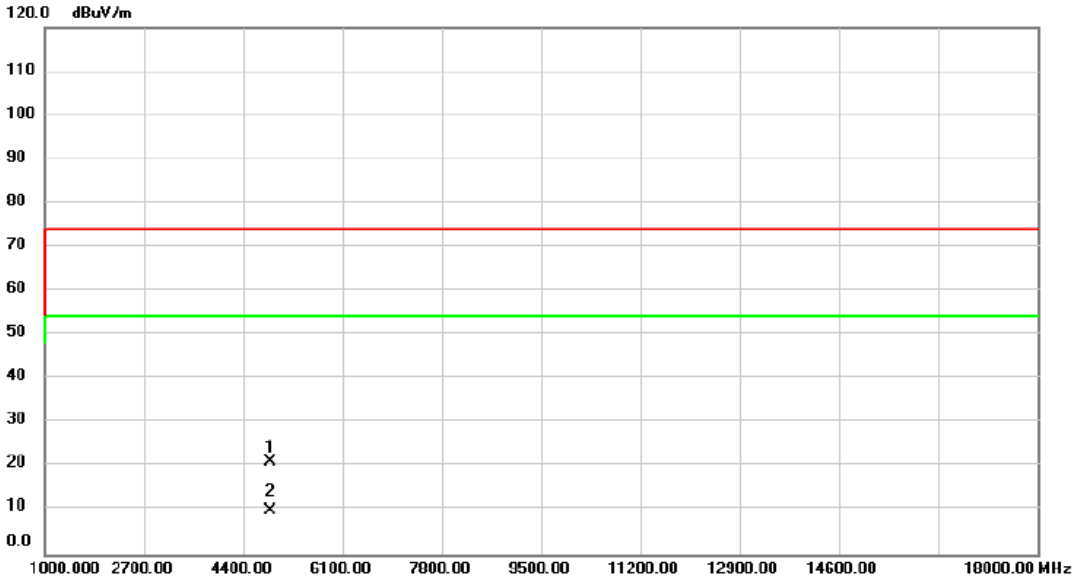
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	29.27	-8.57	20.70	74.00	-53.30	peak	
2	*	4824.000	18.26	-8.57	9.69	54.00	-44.31	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

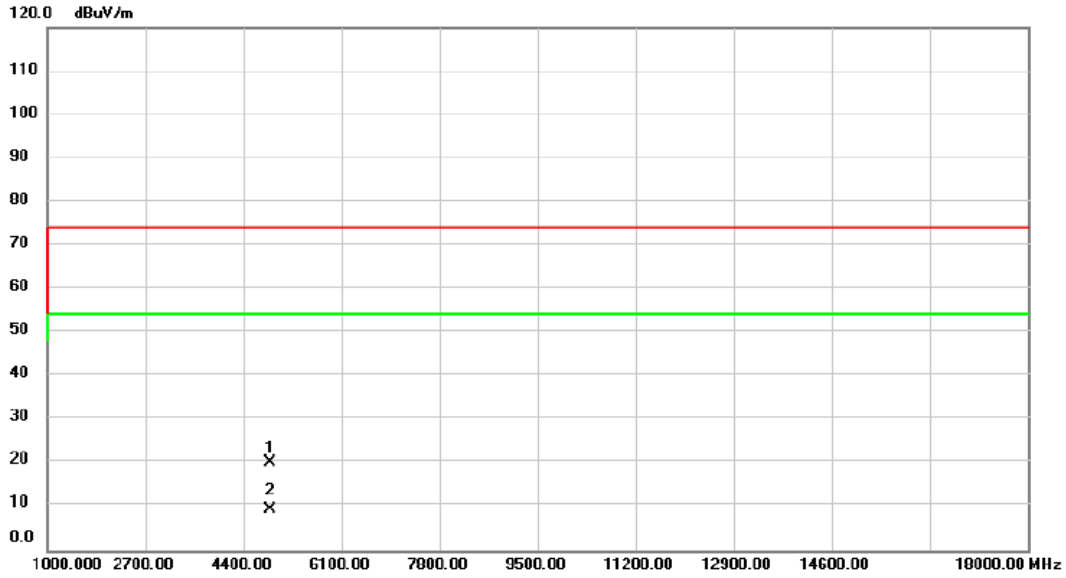
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2437MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	29.60	-8.44	21.16	74.00	-52.84	peak	
2	*	4874.000	18.43	-8.44	9.99	54.00	-44.01	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

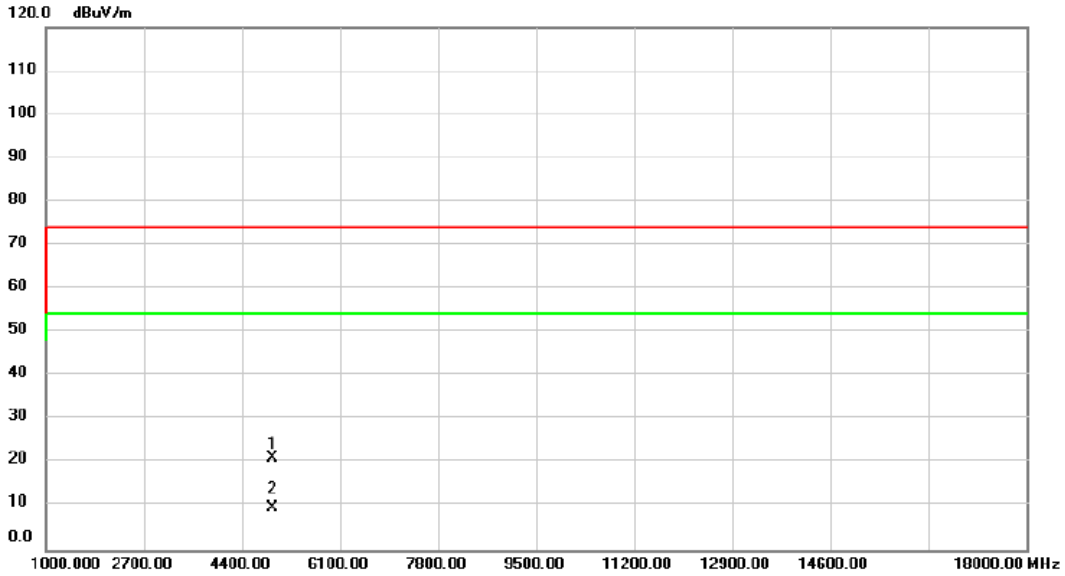
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	28.75	-8.44	20.31	74.00	-53.69	peak	
2	*	4874.000	18.01	-8.44	9.57	54.00	-44.43	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

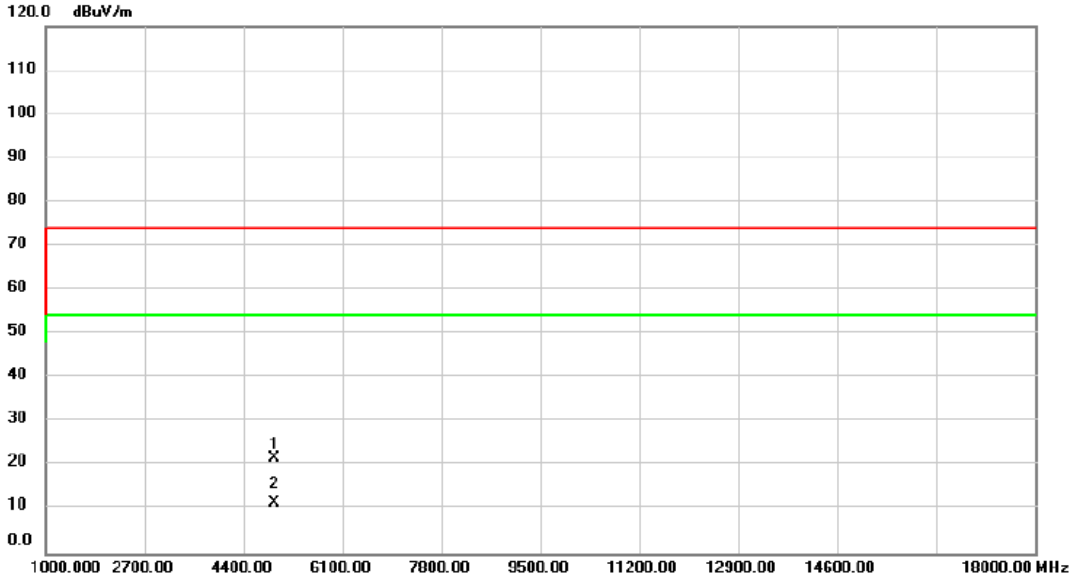
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	29.62	-8.33	21.29	74.00	-52.71	peak	
2	*	4924.000	18.01	-8.33	9.68	54.00	-44.32	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

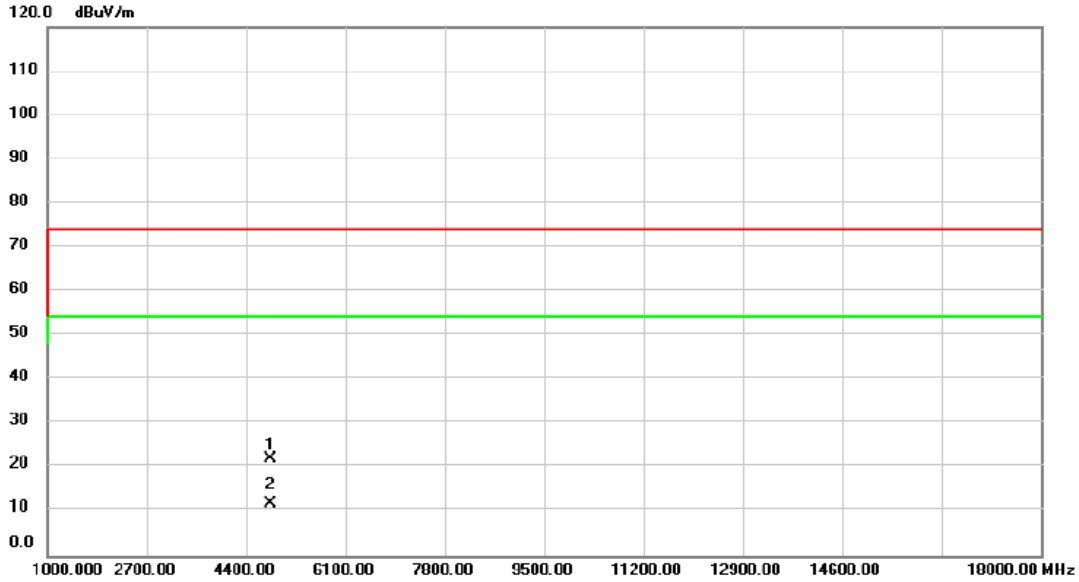
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	30.13	-8.33	21.80	74.00	-52.20	peak	
2	*	4924.000	19.86	-8.33	11.53	54.00	-42.47	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

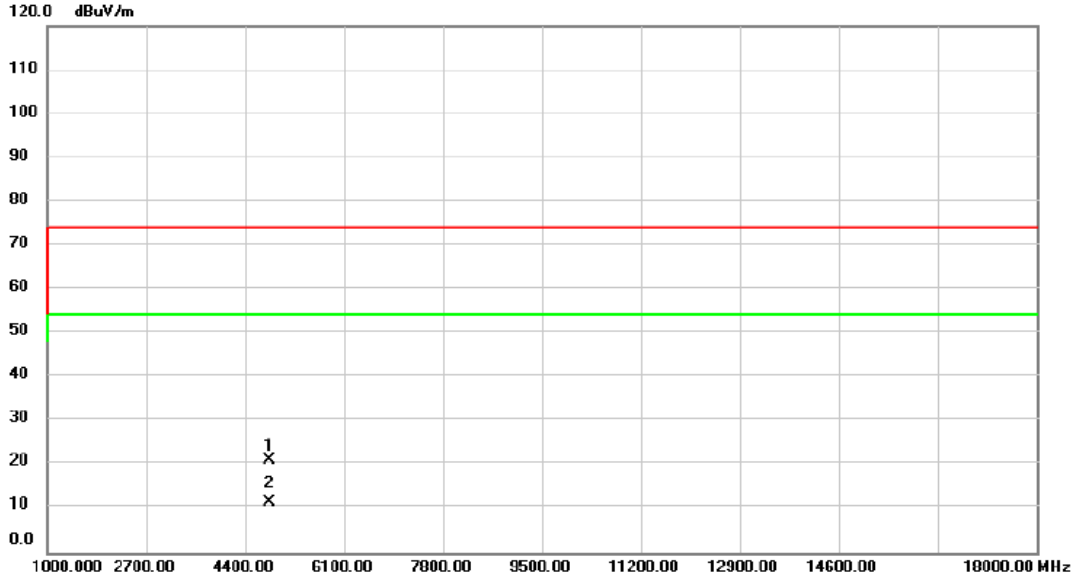
Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	30.51	-8.57	21.94	74.00	-52.06	peak	
2	*	4824.000	20.42	-8.57	11.85	54.00	-42.15	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

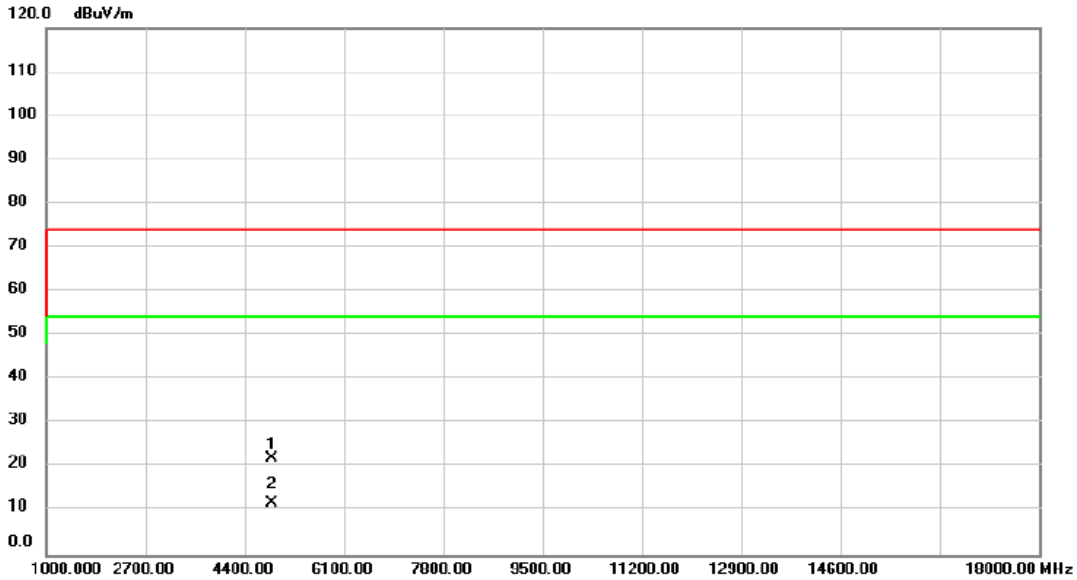
Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	29.58	-8.57	21.01	74.00	-52.99	peak	
2	*	4824.000	20.00	-8.57	11.43	54.00	-42.57	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

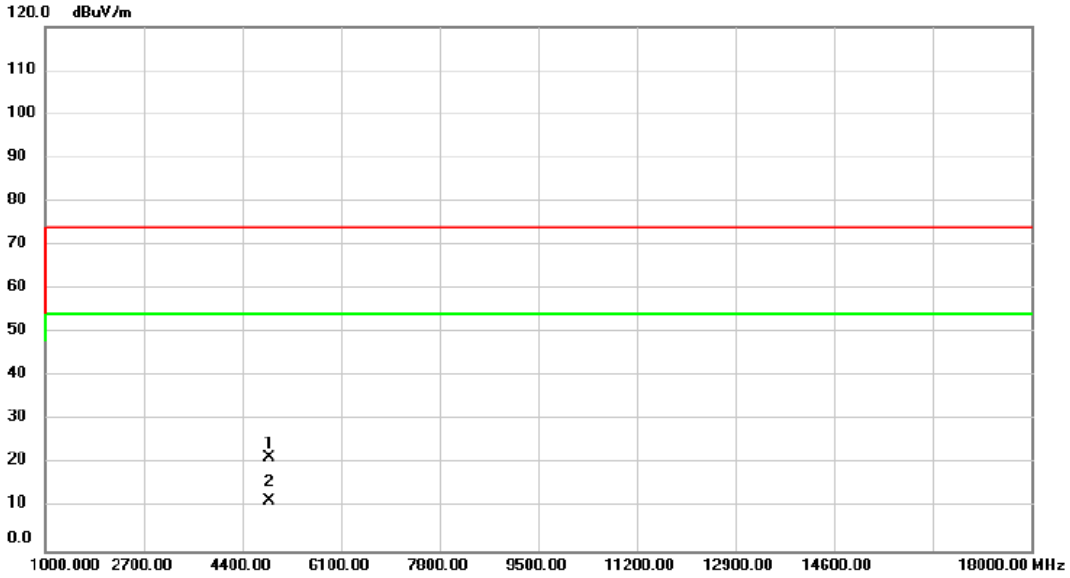
Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2437MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	30.37	-8.44	21.93	74.00	-52.07	peak	
2	*	4874.000	20.23	-8.44	11.79	54.00	-42.21	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

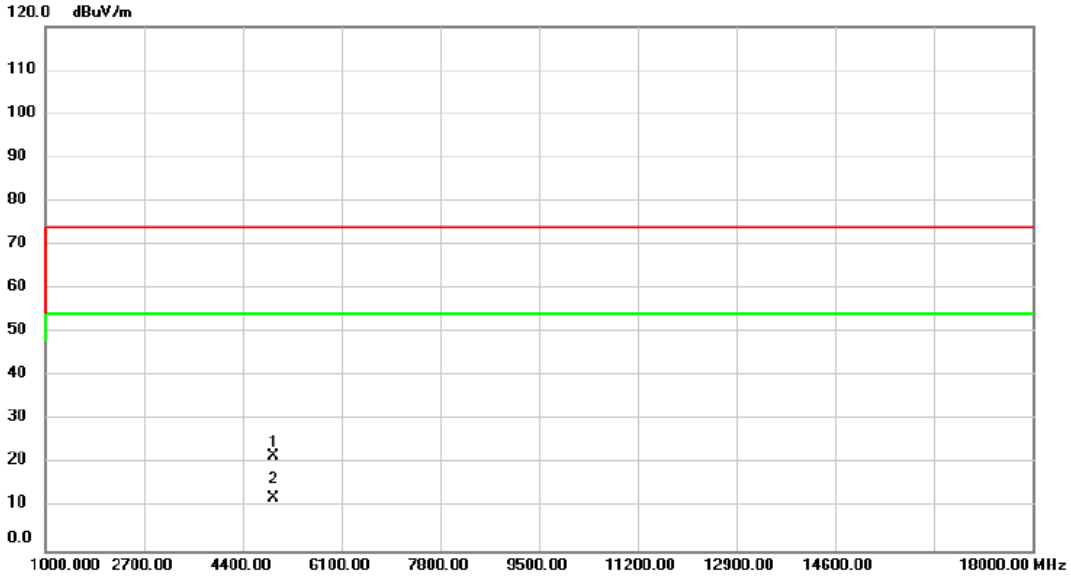
Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	30.03	-8.44	21.59	74.00	-52.41	peak	
2	*	4874.000	19.85	-8.44	11.41	54.00	-42.59	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

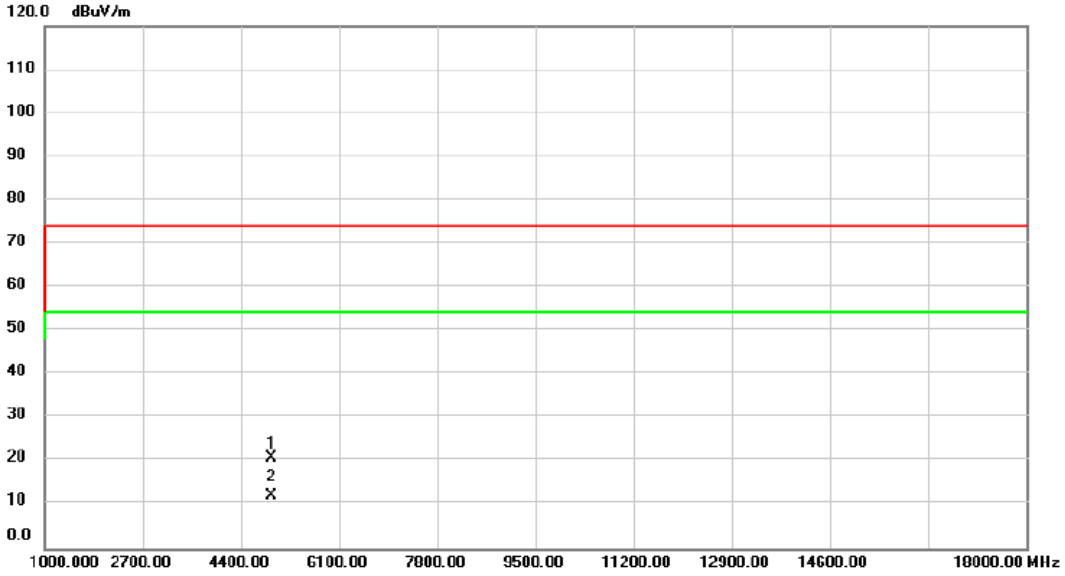
Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	30.02	-8.33	21.69	74.00	-52.31	peak	
2	*	4924.000	20.47	-8.33	12.14	54.00	-41.86	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

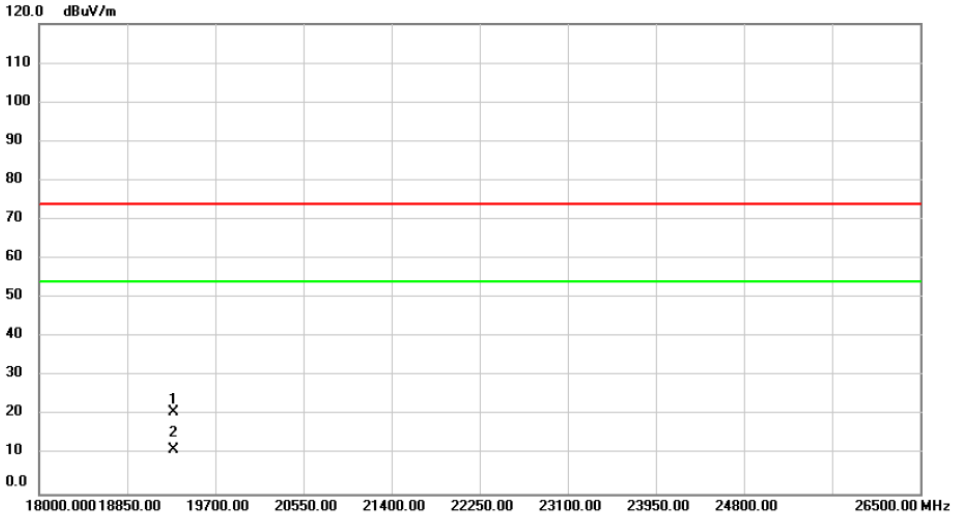
Test Mode	IEEE 802.11ax (HE20)	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	29.21	-8.33	20.88	74.00	-53.12	peak	
2	*	4924.000	20.47	-8.33	12.14	54.00	-41.86	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

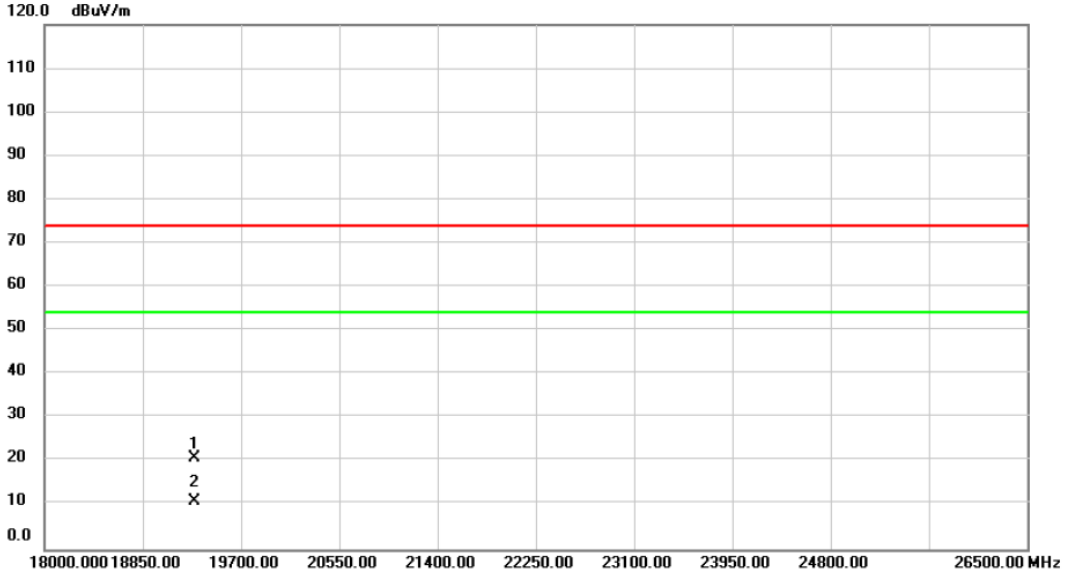
Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		19296.00	31.27	-10.43	20.84	74.00	-53.16	peak	
2	*	19296.00	21.79	-10.43	11.36	54.00	-42.64	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11g	Test Date	2024/10/7
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



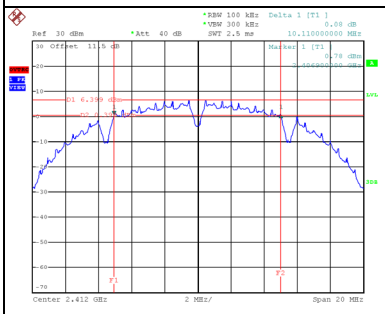
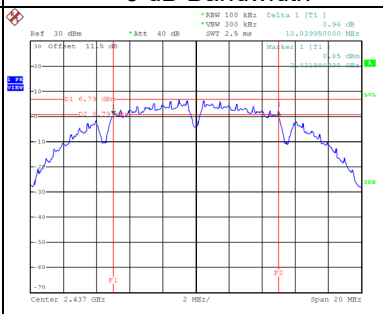
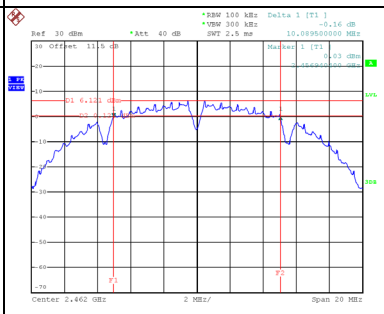
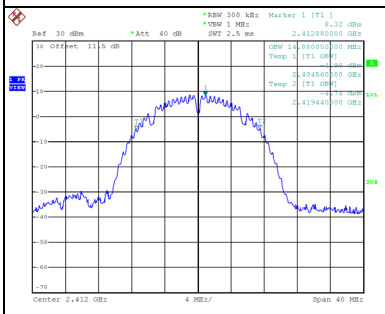
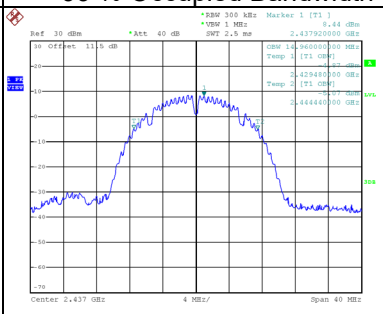
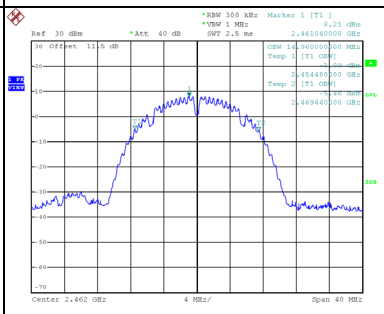
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		19296.00	31.17	-10.43	20.74	74.00	-53.26	peak	
2	*	19296.00	21.30	-10.43	10.87	54.00	-43.13	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX E BANDWIDTH

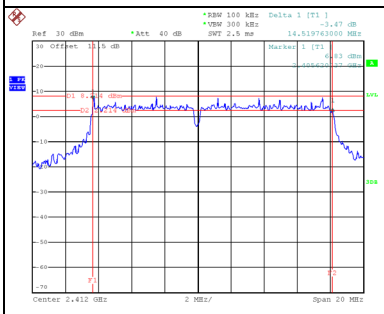
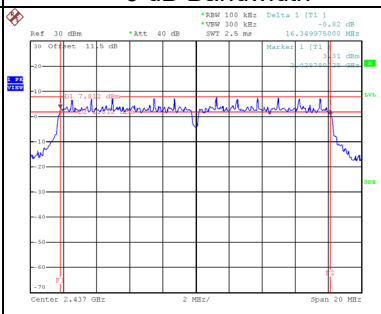
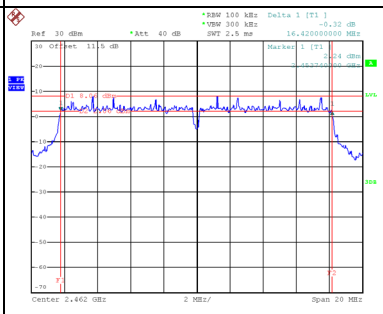
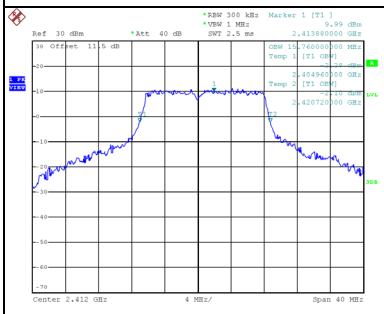
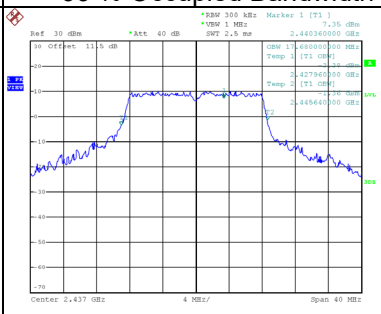
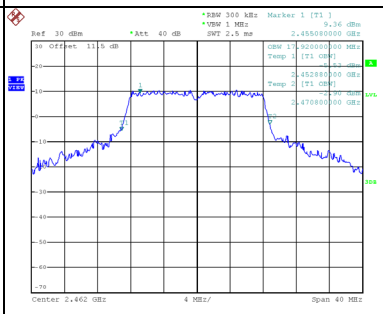
Test Mode	TX B Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	10.110	14.880	0.5	Complies
06	2437	10.040	14.960	0.5	Complies
11	2462	10.090	14.960	0.5	Complies

CH01	CH06	CH11
6 dB Bandwidth		
		
99 % Occupied Bandwidth		
		

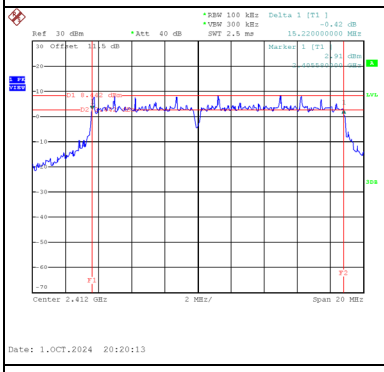
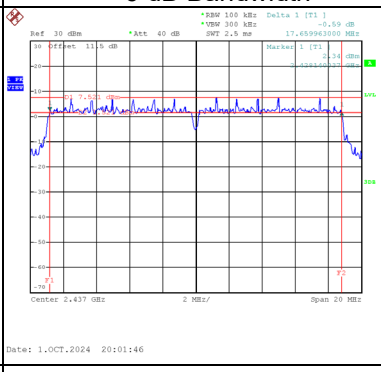
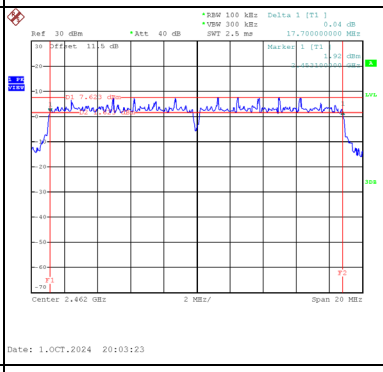
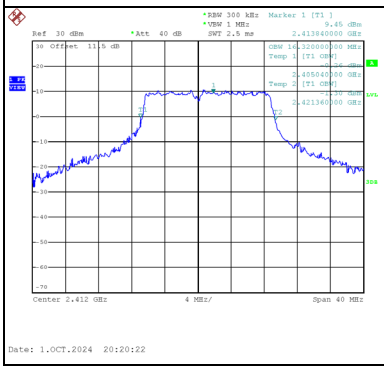
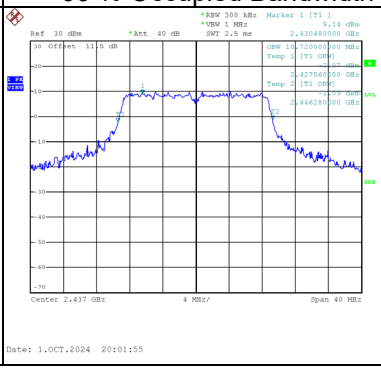
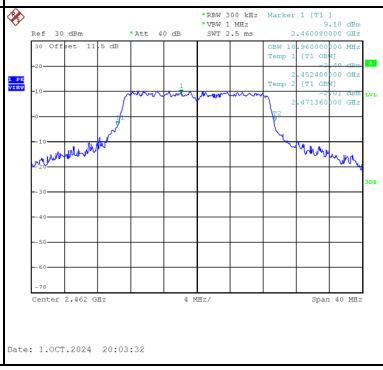
Test Mode	TX G Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	14.520	15.760	0.5	Complies
06	2437	16.350	17.680	0.5	Complies
11	2462	16.420	17.920	0.5	Complies

CH01	CH06	CH11
6 dB Bandwidth		
		
99 % Occupied Bandwidth		
		

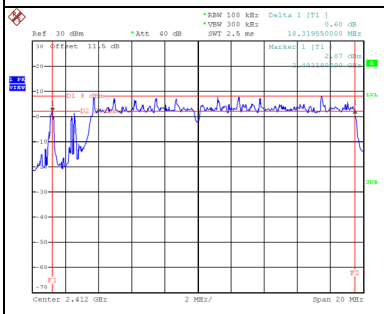
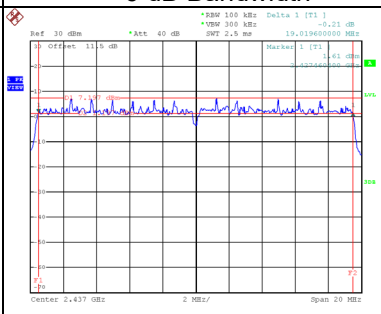
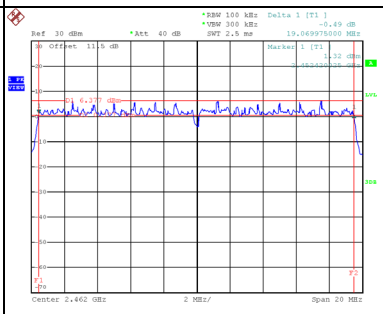
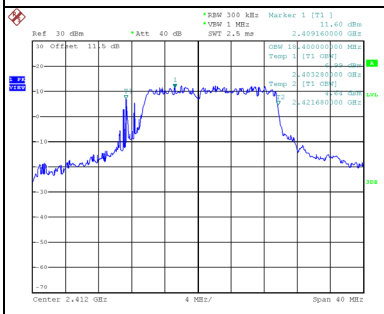
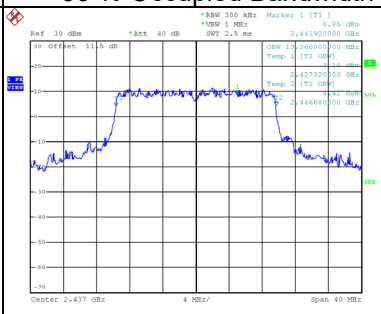
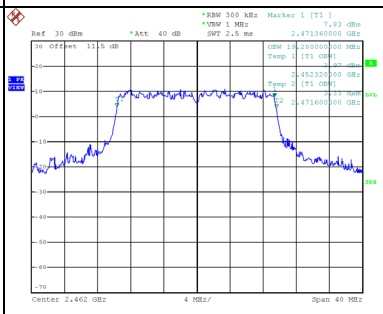
Test Mode	TX N(HT20) Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	15.220	16.320	0.5	Complies
06	2437	17.660	18.720	0.5	Complies
11	2462	17.700	18.960	0.5	Complies

CH01	CH06	CH11
	6 dB Bandwidth	
		
	99 % Occupied Bandwidth	
		

Test Mode	TX AX(HE20) Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	18.320	18.400	0.5	Complies
06	2437	19.020	19.360	0.5	Complies
11	2462	19.070	19.280	0.5	Complies

CH01	CH06	CH11
	6 dB Bandwidth	
		
	99 % Occupied Bandwidth	
		

APPENDIX F OUTPUT POWER

Test Mode	IEEE 802.11b	Tested Date	2024/10/1

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.24	0.43	19.67	30.00	1.0000	Complies
06	2437	19.22	0.43	19.65	30.00	1.0000	Complies
11	2462	19.33	0.43	19.76	30.00	1.0000	Complies

Test Mode	IEEE 802.11g	Tested Date	2024/10/1

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.22	0.47	19.69	30.00	1.0000	Complies
06	2437	19.39	0.47	19.86	30.00	1.0000	Complies
11	2462	19.15	0.47	19.62	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)	Tested Date	2024/10/1

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.09	0.44	19.53	30.00	1.0000	Complies
06	2437	19.27	0.44	19.71	30.00	1.0000	Complies
11	2462	19.31	0.44	19.75	30.00	1.0000	Complies

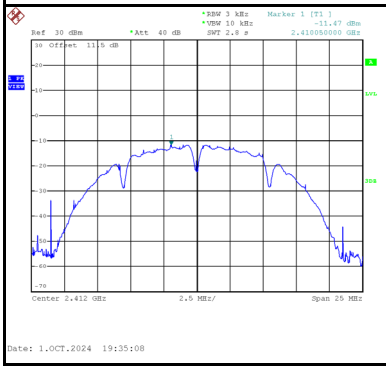
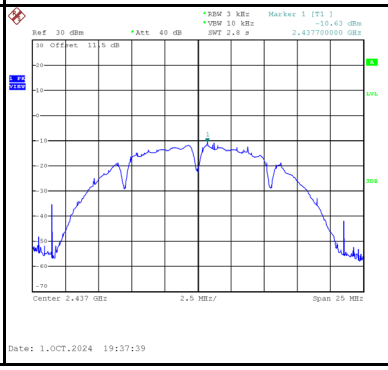
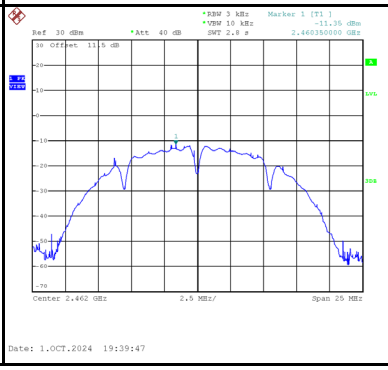
Test Mode	IEEE 802.11ax (HE20)	Tested Date	2024/10/1

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.29	0.30	19.59	30.00	1.0000	Complies
06	2437	19.26	0.30	19.56	30.00	1.0000	Complies
11	2462	19.35	0.30	19.65	30.00	1.0000	Complies

APPENDIX G POWER SPECTRAL DENSITY

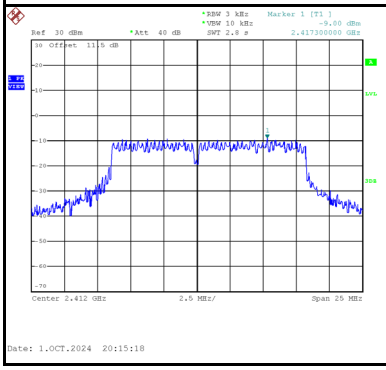
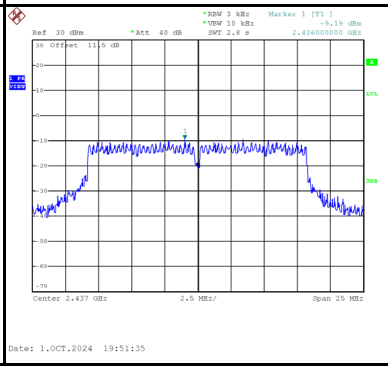
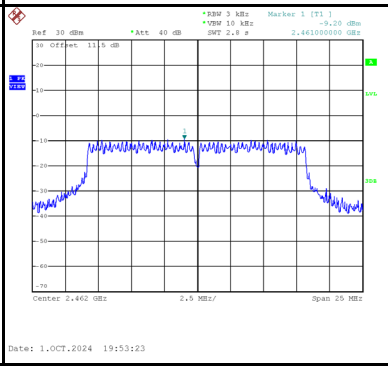
Test Mode	IEEE 802.11b

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-11.47	8.00	Pass
2437	-10.63	8.00	Pass
2462	-11.35	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

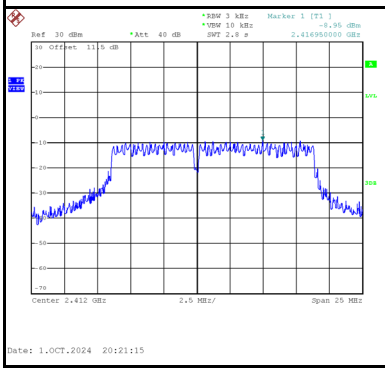
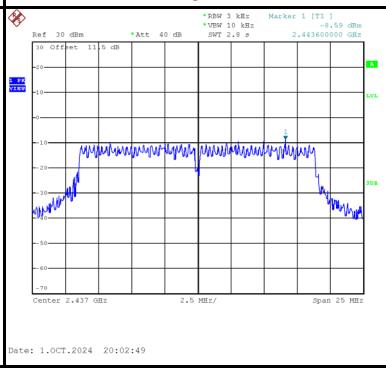
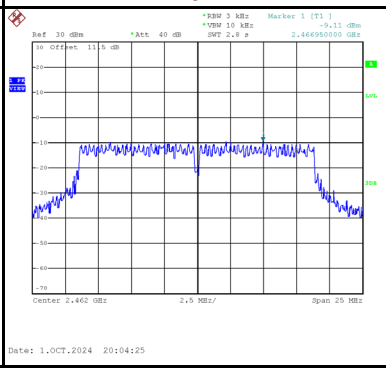
Test Mode	IEEE 802.11g

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-9.00	8.00	Pass
2437	-9.19	8.00	Pass
2462	-9.20	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

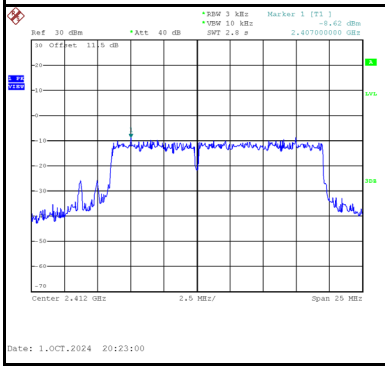
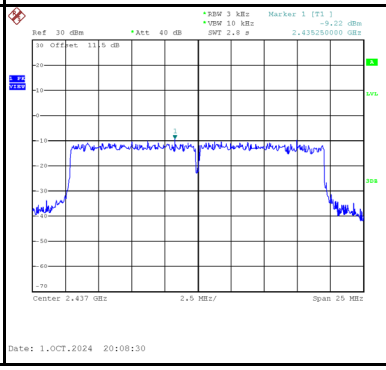
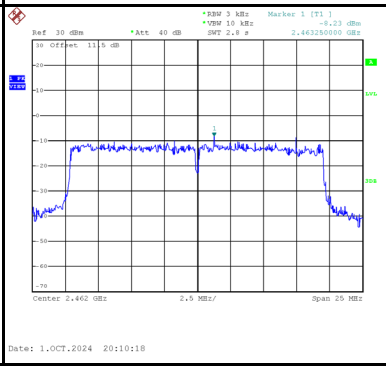
Test Mode	IEEE 802.11n (HT20)

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-8.95	8.00	Pass
2437	-8.59	8.00	Pass
2462	-9.11	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

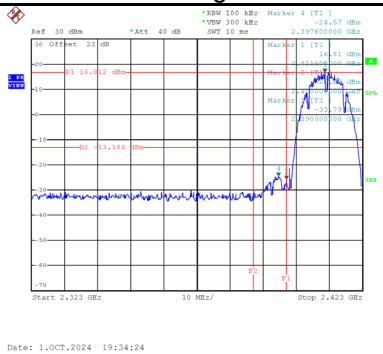
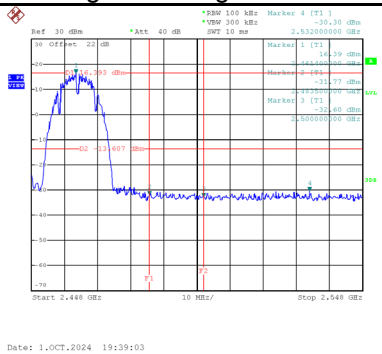
Test Mode	IEEE 802.11ax (HE20)

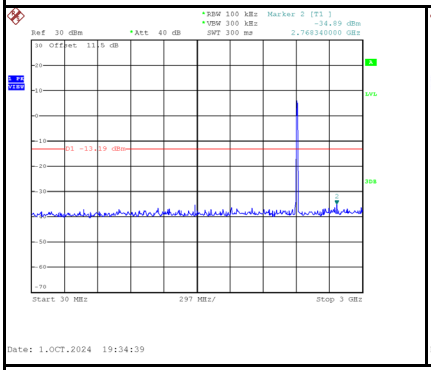
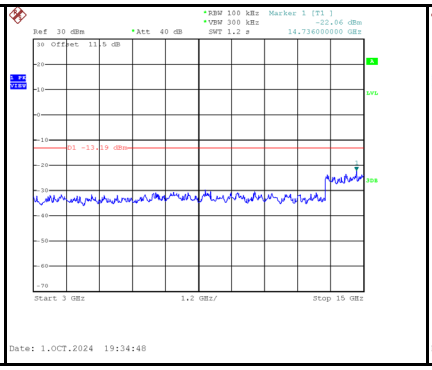
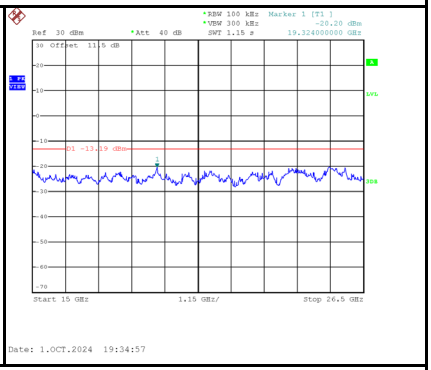
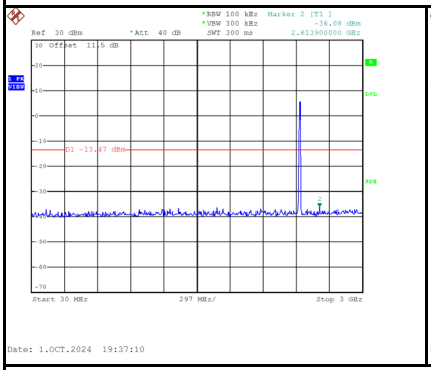
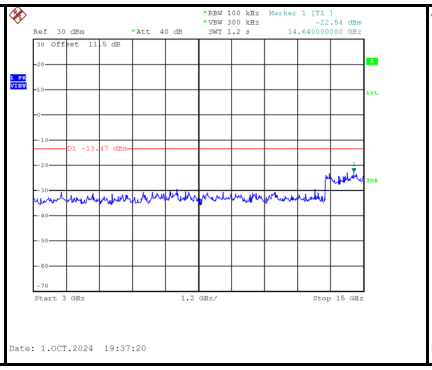
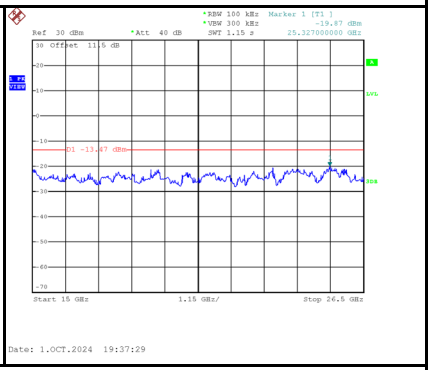
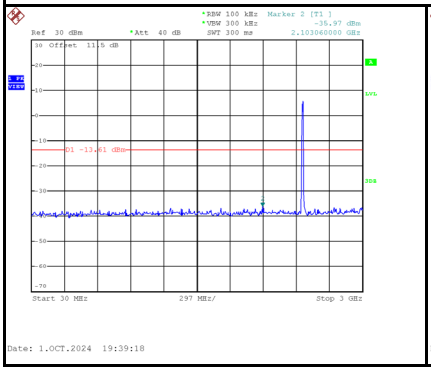
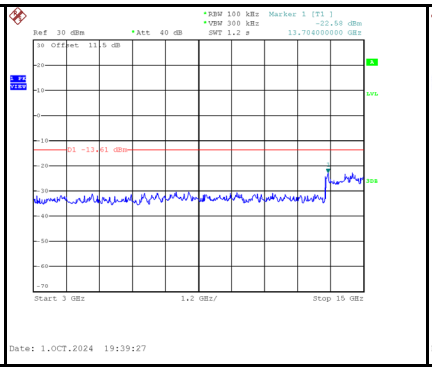
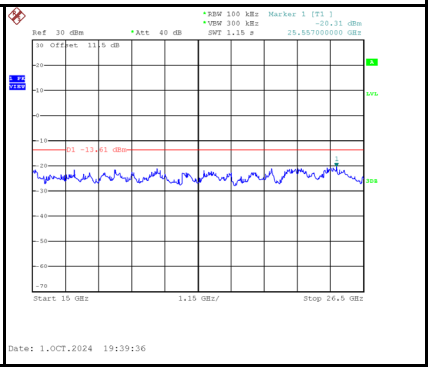
Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-8.62	8.00	Pass
2437	-9.22	8.00	Pass
2462	-8.23	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

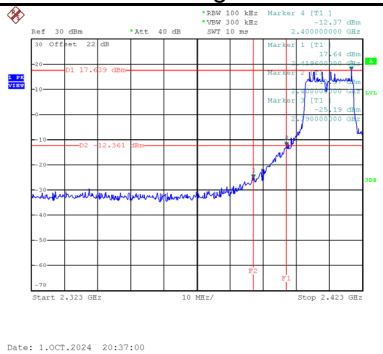
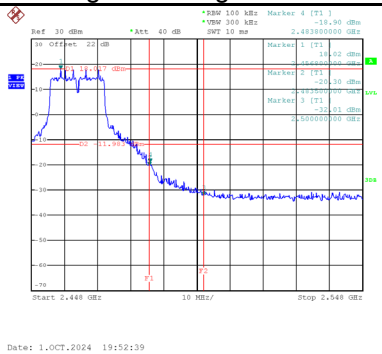
APPENDIX H ANTENNA CONDUCTED SPURIOUS EMISSIONS

Test Mode	IEEE 802.11b

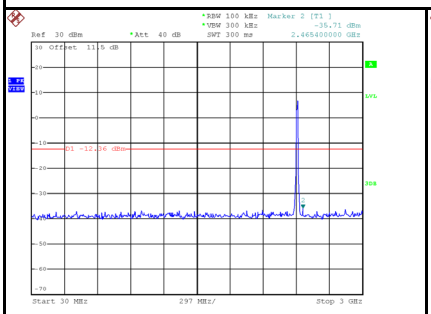
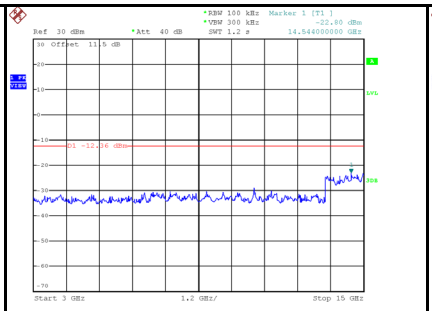
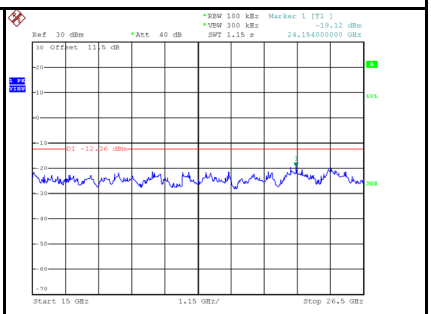
Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

2412 MHz-10th Harmonics		
		
2437 MHz-10th Harmonics		
		
2462 MHz-10th Harmonics		
		

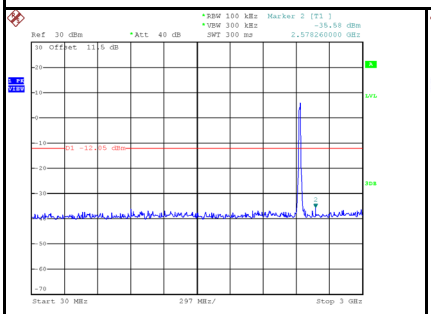
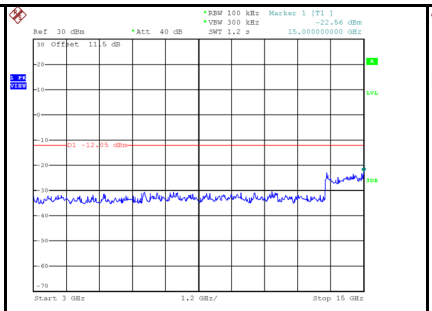
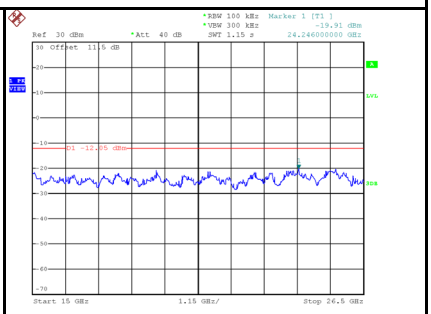
Test Mode	IEEE 802.11g

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

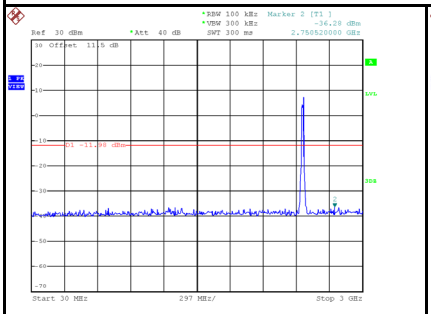
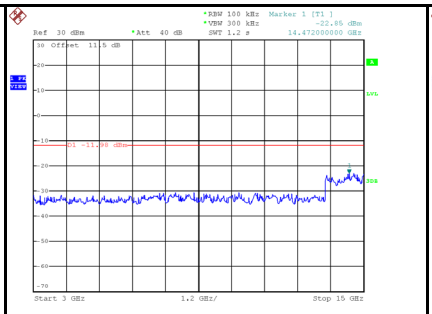
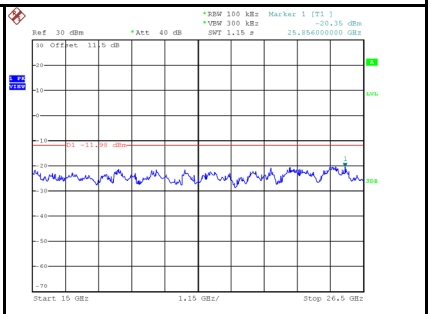
2412 MHz-10th Harmonics

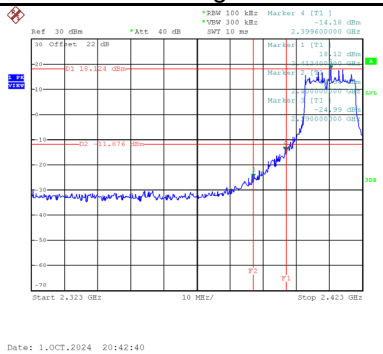
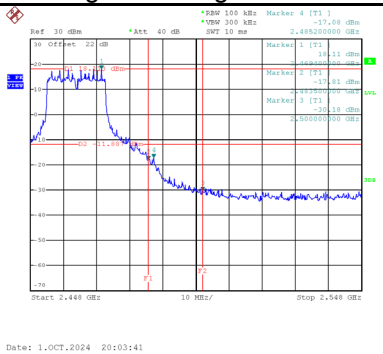
2437 MHz-10th Harmonics

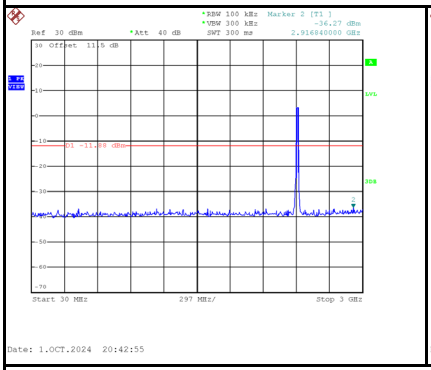
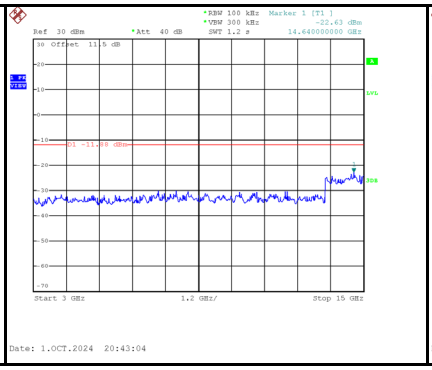
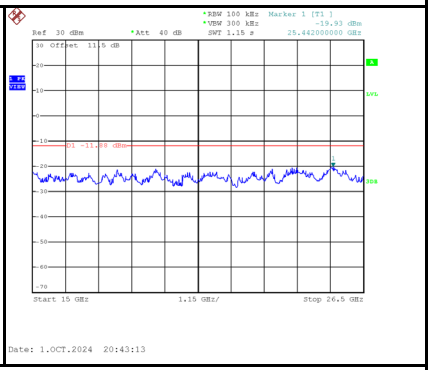
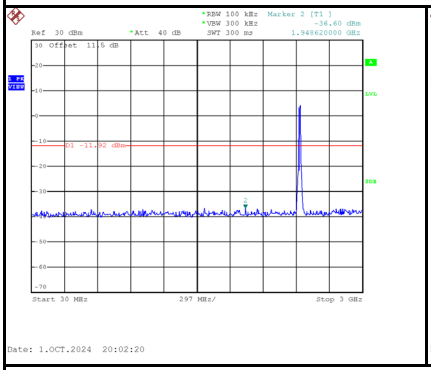
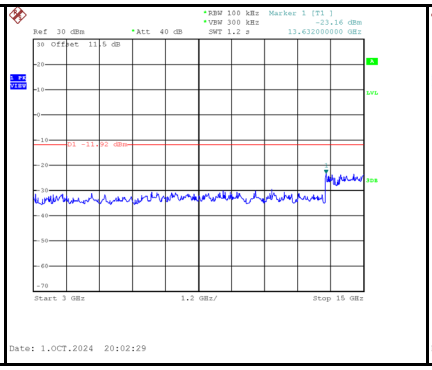
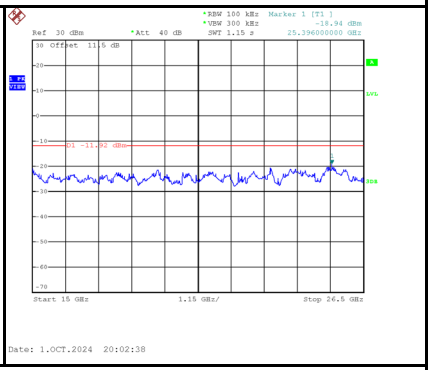
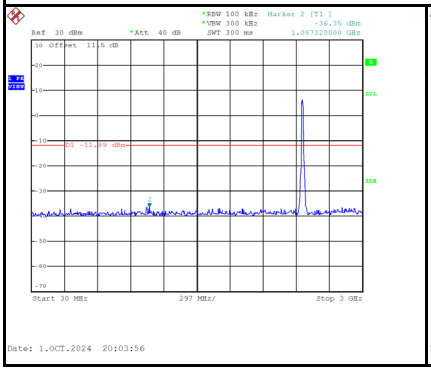
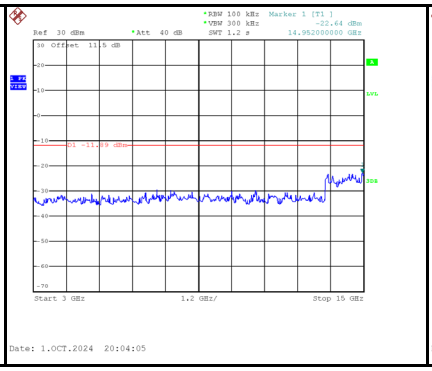
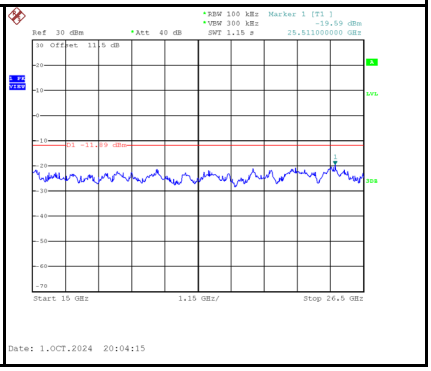




2462 MHz-10th Harmonics

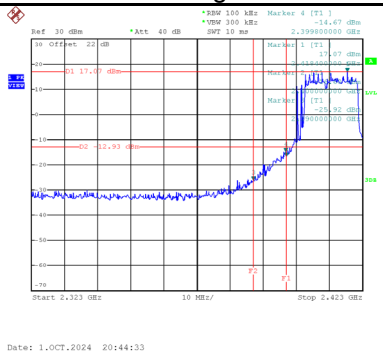
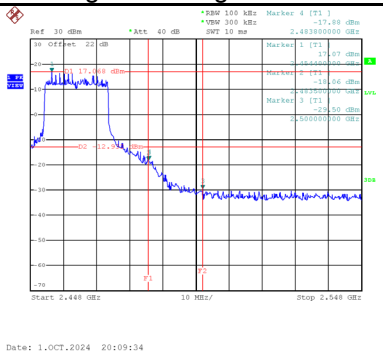




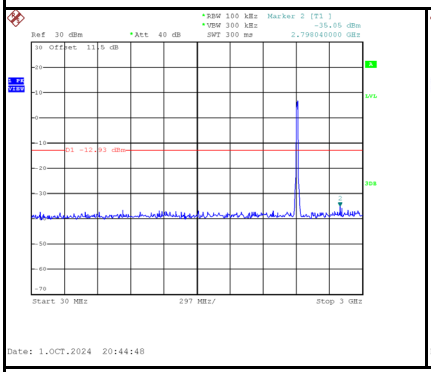
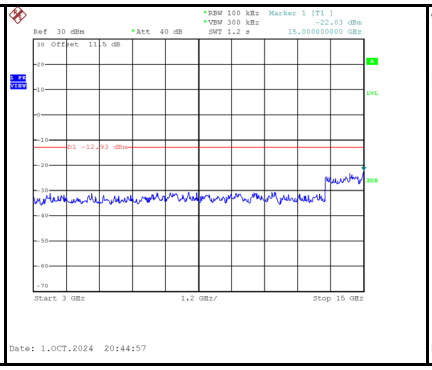
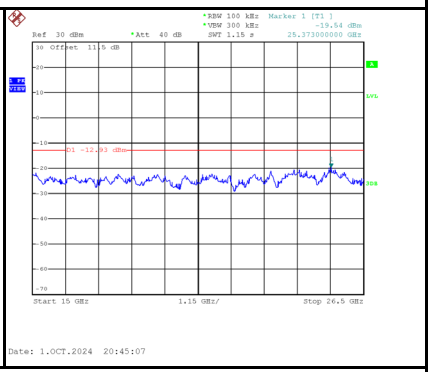
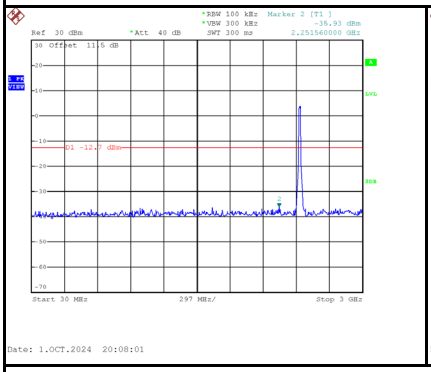
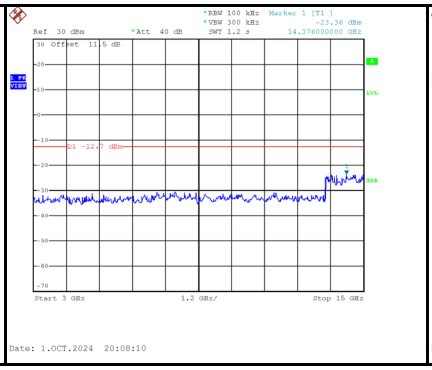
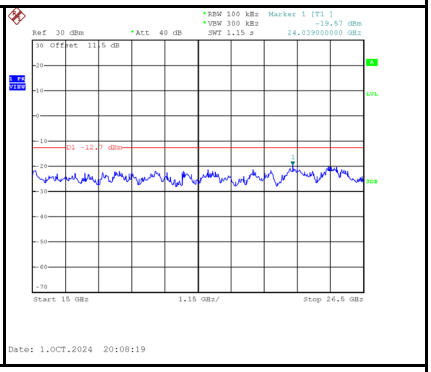
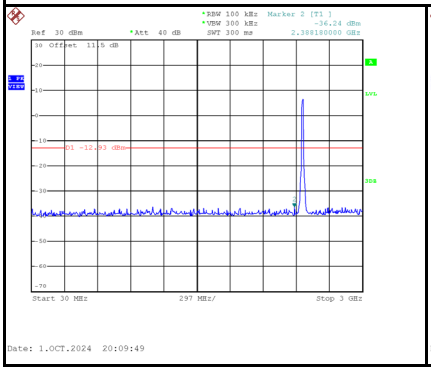
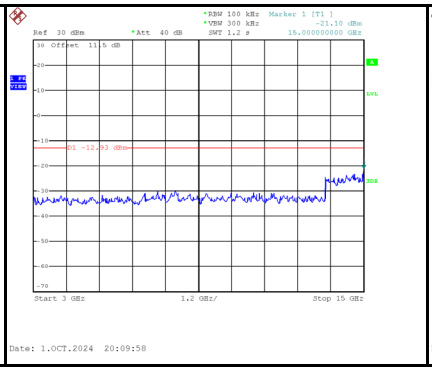
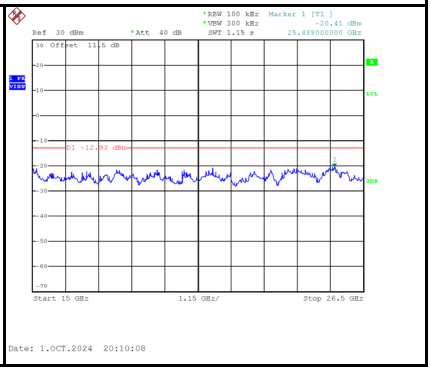
Test Mode	IEEE 802.11n (HT20)

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

2412 MHz-10th Harmonics		
		
2437 MHz-10th Harmonics		
		
2462 MHz-10th Harmonics		
		

Test Mode	IEEE 802.11ax (HE20)

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

2412 MHz-10th Harmonics		
		
2437 MHz-10th Harmonics		
		
2462 MHz-10th Harmonics		
		

End of Test Report