FCC Radio Test Report

FCC ID: 2BCGWC410

Report No.	:	BTL-FCCP-1-2312G166B
Equipment	:	Smart Wire-Free Indoor/Outdoor Security Camera
Model Name	:	Tapo C410, Tapo C402, TC82
Brand Name	:	tp-link
Applicant	:	TP-LINK CORPORATION PTE. LTD.
Address	:	7 Temasek Boulevard #29-03 Suntec Tower One, Singapore 038987
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	:	2024/09/05
Date of Test	:	2024/09/06 ~ 2024/09/20
Issued Date	:	2024/10/11

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

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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** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** 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.

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-1-2312G166B	R00	Original Report.	2024/10/11	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.

(3) All test items have been re-evaluated by sample of FCC ID: 2BCGWC410, model name: Tapo C410, TC82, Tapo C402. It is found that the new data are the worst, so the test data are reissue from the
FCC ID: 2BCGWC410, model name: Tapo C410, TC82, Tapo C402.
Model difference(s):

a. Added a battery with reduced cell capacity (without RF circuit).
b. On the basis of the original, one patch antenna was removed, and two antennas were used alternately (ANT1 antenna was removed and ANT2 was retained).
c. The adapter plug will not be sale together, and the USB cable will be sale together.
d. Updated the Hardware Version.

(4) The original test records and results please refer to the test report number: eLab-FCCP-1-2312G166, issued date is 2024/3/22.
Which was accredited by TAF, FCC registration number is 681248, with the scopes of cited standards in this test report.
This report is only valid conjunction with the above referenced test report.

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:
No.64, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
The test sites and facilities are covered under FCC RN: 674415 and DN: TW0659.
☒ C01 ☒ CB20 ☒ 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 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	3.44

B. Radiated emissions test :

Test Site	Measurement Frequency Range (GHz)	U (dB)	U_{CISPR} (dB)
CB20 (3m)	0.03~0.2	4.01	6
	0.02~1	4.64	6
	1 ~ 6	5.91	6
	6 ~ 18	6.24	6
	18 ~ 26	3.93	6
	26 ~ 40	4.06	6

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

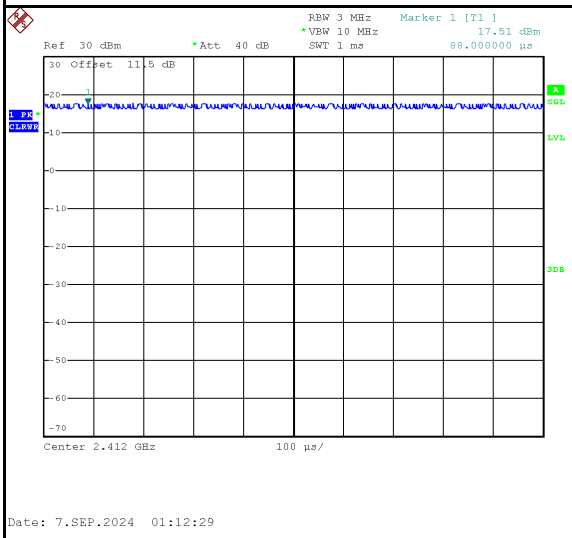
Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	25°C, 45%	AC 120V	Ken Lu
Radiated emissions below 1 GHz	Refer to data	AC 120V	Ken Lu
Radiated emissions above 1 GHz	Refer to data	AC 120V	Ken Lu
Bandwidth	25°C, 70%	DC 5V	Cheng Tsai
Output Power	25°C, 70%	DC 5V	Tye Lin
Power Spectral Density	25°C, 70%	DC 5V	Cheng Tsai
Antenna conducted Spurious Emission	25°C, 70%	DC 5V	Cheng Tsai

1.4 DUTY CYCLE

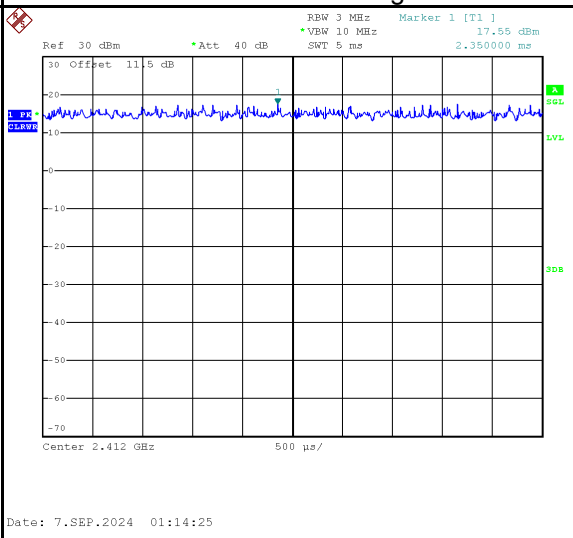
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.

Remark	Delta 1			Delta 2	On Time/Period	10 log(1/Duty Cycle)
Mode	ON (ms)	Numbers (ON)	On Time (B) (ms)	Period (ON+OFF) (ms)	Duty Cycle (%)	Duty Factor (dB)
IEEE 802.11b	0.090	1	0.090	0.090	100.00%	0.00
IEEE 802.11g	1.000	1	1.000	1.000	100.00%	0.00
IEEE 802.11n (HT20)	0.470	1	0.470	0.470	100.00%	0.00

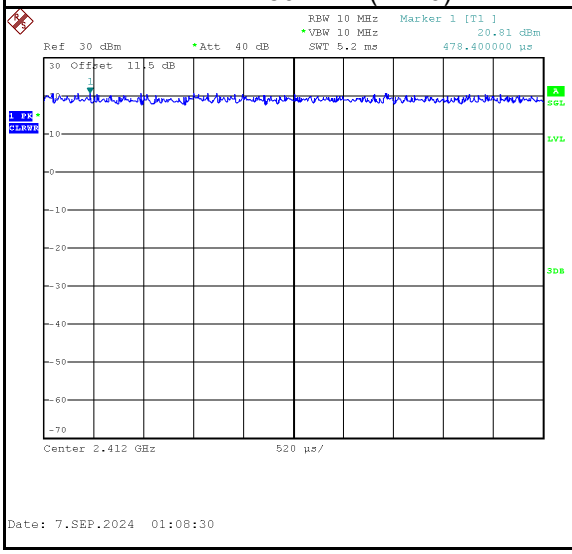
IEEE 802.11b



IEEE 802.11g



IEEE 802.11n (HT20)



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2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Smart Wire-Free Indoor/Outdoor Security Camera
Model Name	Tapo C410, TC82, Tapo C402
Brand Name	tp-link
Model Difference	Only differ in model name.
Software Version	1.X
Hardware Version	1.20
Power Source	1# DC Voltage supplied from AC adapter (support unit). 2# Supplied from battery. 1) Model: INR18650/33V 2) Model: CMICR18650F8 3# Supplied from solar panel. Model: Tapo A201
Power Rating	1# I/P: 100-240V~ 50/60Hz 0.2A Max. O/P: 5V⎓1A 2# 1) DC 3.3V*2 2) DC 3.7V*2 3# DC 5V
Products Covered	N/A
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.	IEEE 802.11b: 22.61 dBm (0.1824 W)
Test Model	Tapo C410
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:

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n (HT20)					
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:

Ant.	Manufacturer	P/N	Antenna Type	Connector	Gain (dBi)
1	BIG FIELD GLOBAL PTE. LTD	3101506732	Dipole	N/A	0

(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

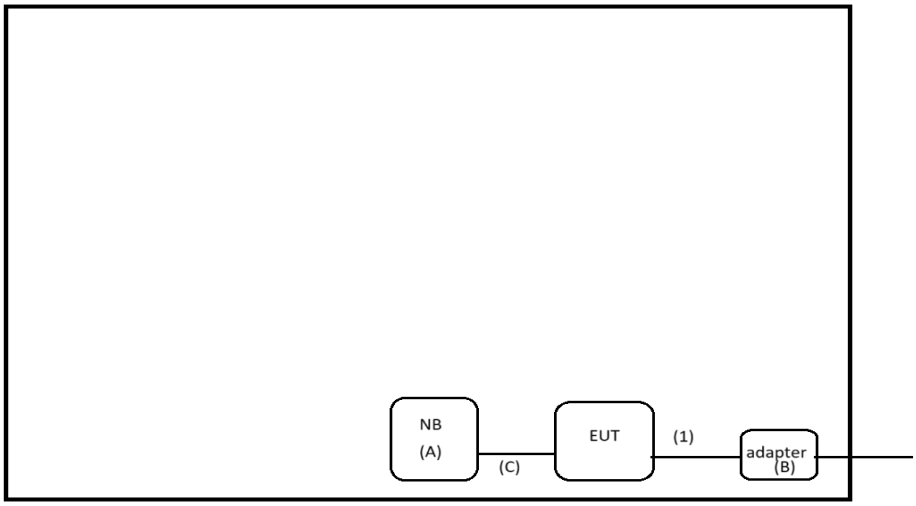
Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal	-	-
Transmitter Radiated Emissions (below 1GHz)	TX Mode_IEEE 802.11b	01	-
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11b	01/11	Bandedge
	TX Mode_IEEE 802.11g		
	TX Mode_IEEE 802.11n (HT20)		
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11b	01/06/11	Harmonic
	TX Mode_IEEE 802.11g		
	TX Mode_IEEE 802.11n (HT20)		
Transmitter Radiated Emissions (above 18GHz)	TX Mode_IEEE 802.11b	01	-
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)		

NOTE:
(1) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Vertical) is recorded.
(2) For radiated spurious emissions(below 1GHz& above 18GHz), only tested the worst case(TX Mode_IEEE 802.11b Channel 01) and recorded.
(3) All X, Y and Z axes are evaluated, but only the worst case (X axis) is recorded.

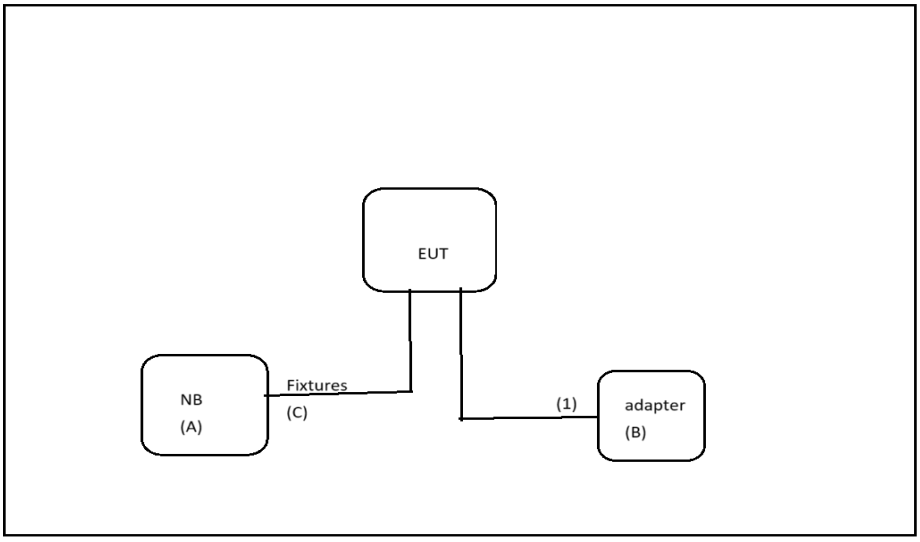
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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.	Series No.	Remarks
A	NB	Lenovo	ThinkBook 14 G4 IAP	MP28KHAH	Furnished by test lab.
B	adapter	N/A	N/A	N/A	Supplied by test requester.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	Yes	No	1m	USB to USB Cable	Supplied by test requester.
C	No	No	1m	Fixture Cable	Furnished by test lab.

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

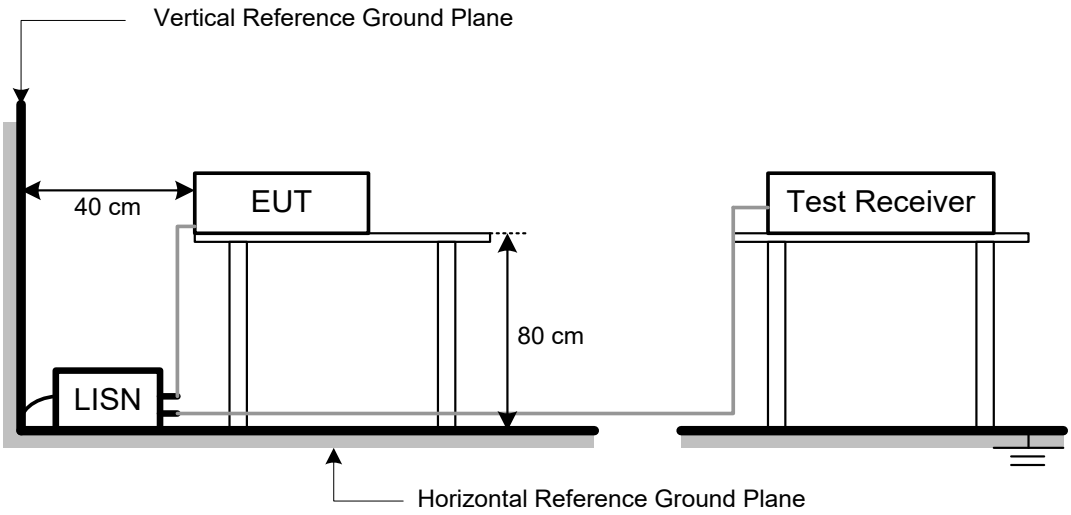
a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
All other support equipment were powered from an additional LISN(s).
The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.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

Mode	VBW(Hz)
IEEE 802.11b	1.8k
IEEE 802.11g	750
IEEE 802.11n (HT20)	300
IEEE 802.11n (HT40)	300
IEEE 802.11ax (HE20)	300
IEEE 802.11ax (HE40)	300

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

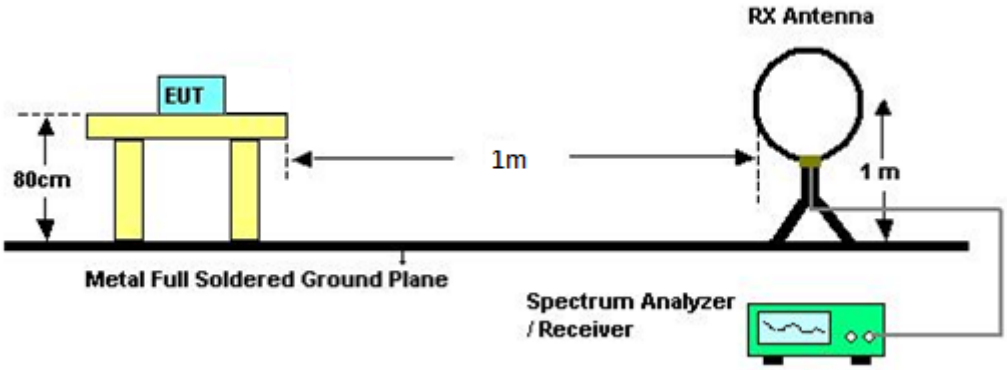
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance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

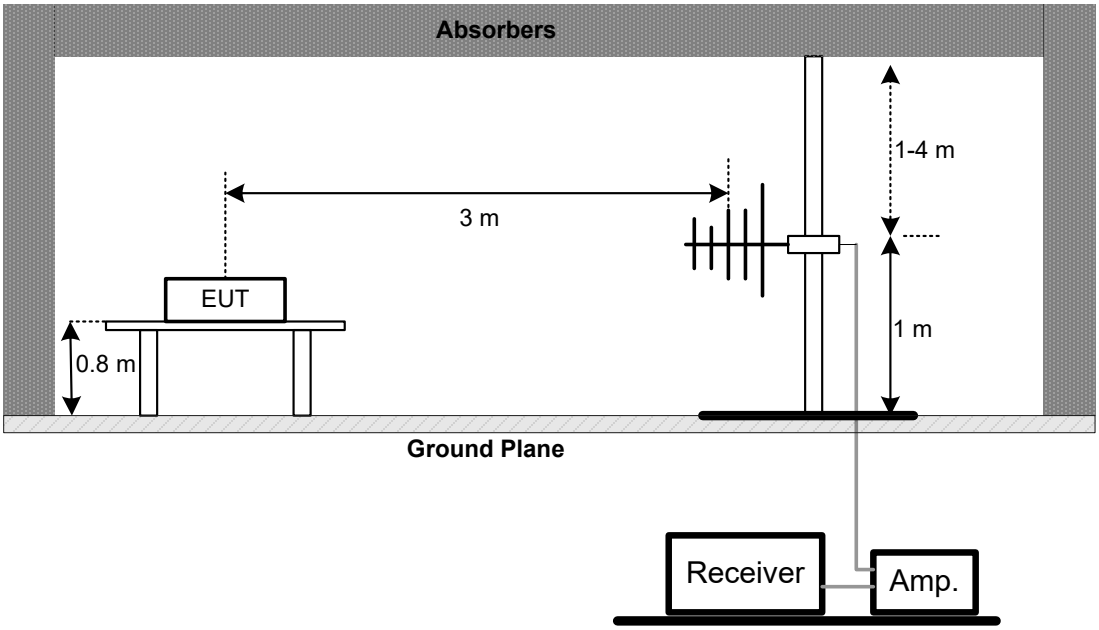
No deviation.

4.4 TEST SETUP

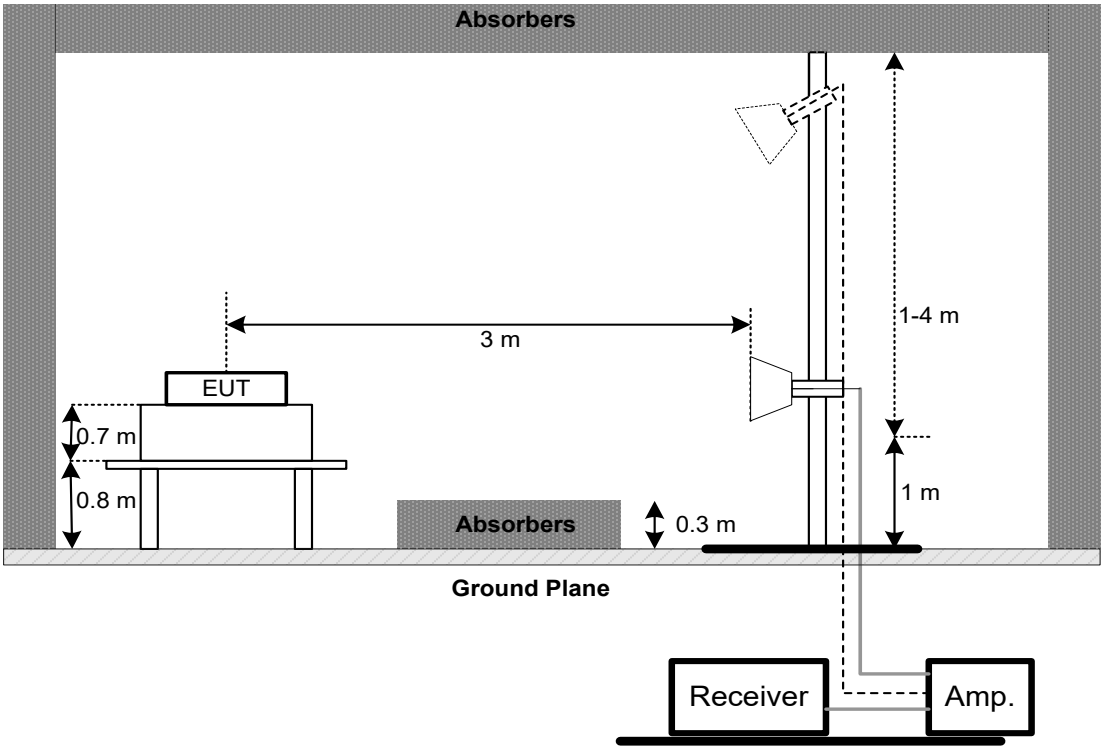
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

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

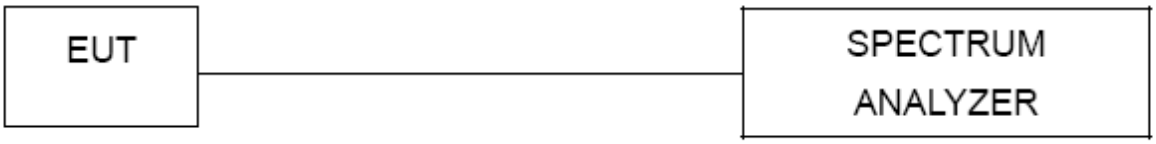
5.2 TEST PROCEDURE

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

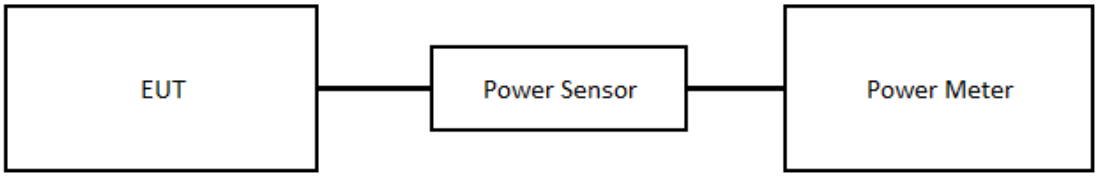
6.2 TEST PROCEDURE

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)

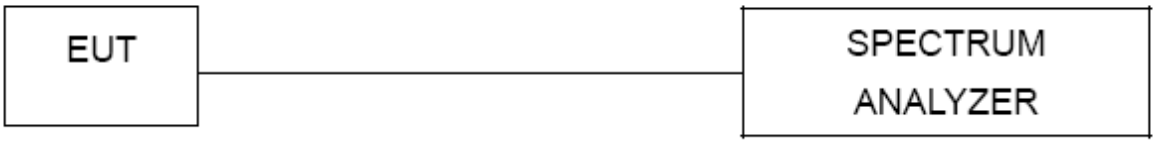
7.2 TEST PROCEDURE

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.

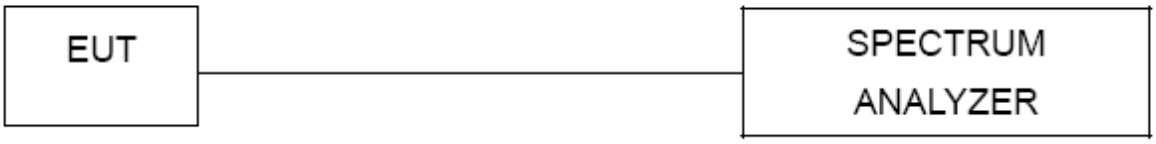
8.2 TEST PROCEDURE

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	Loop Ant.	Electro-Metrics	EMCI-LPA600	274	2024/7/5	2025/7/4
2	EMC Receiver	Keysight	N9038A	MY54130009	2024/6/27	2025/6/26
3	Pre-Amplifler	EMCI	EMC001340	980555	2023/12/1	2024/11/30
4	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	01207	2023/12/18	2024/12/17
5	EMC Receiver	Keysight	N9038A	MY54130009	2024/6/27	2025/6/26
6	Pre-Amplifier	EMCI	EMC001330-2020 1222	980807	2023/12/11	2024/12/10
7	Test Cable	EMCI	EMC-8D-NM-NM-5000	150106	2023/12/11	2024/12/10
8	Test Cable	EMCI	EMC-CFD-400-NM-NM-8000	200348	2023/12/11	2024/12/10
9	Broad-Band Horn Antenna	RFSPIN	DRH18-E	210109A18E	2024/1/10	2025/1/9
10	Pre-Amplifier	EMCI	EMC051845SE	980779	2023/12/11	2024/12/10
11	Test Cable	EMCI	EMC105-SM-SM-1000	210119	2023/12/11	2024/12/10
12	Test Cable	EMCI	EMC105-SM-SM-3000	210118	2023/12/11	2024/12/10
13	Test Cable	EMCI	EMC105-SM-SM-7000	210117	2023/12/11	2024/12/10
14	EXA Spectrum Analyzer	keysight	N9020B	MY59050137	2023/11/24	2024/11/23
15	Pre-Amplifier	EMCI	EMC184045SE	980512	2023/12/11	2024/12/10
16	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	340	2024/6/27	2025/6/26
17	Test Cable	EMCI	EMC102-KM-KM-1000	220328	2023/12/11	2024/12/10
18	Test Cable	EMCI	EMC101G-KM-KM-3000	220330	2023/12/11	2024/12/10
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	BTL	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	BTL	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	BTL	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

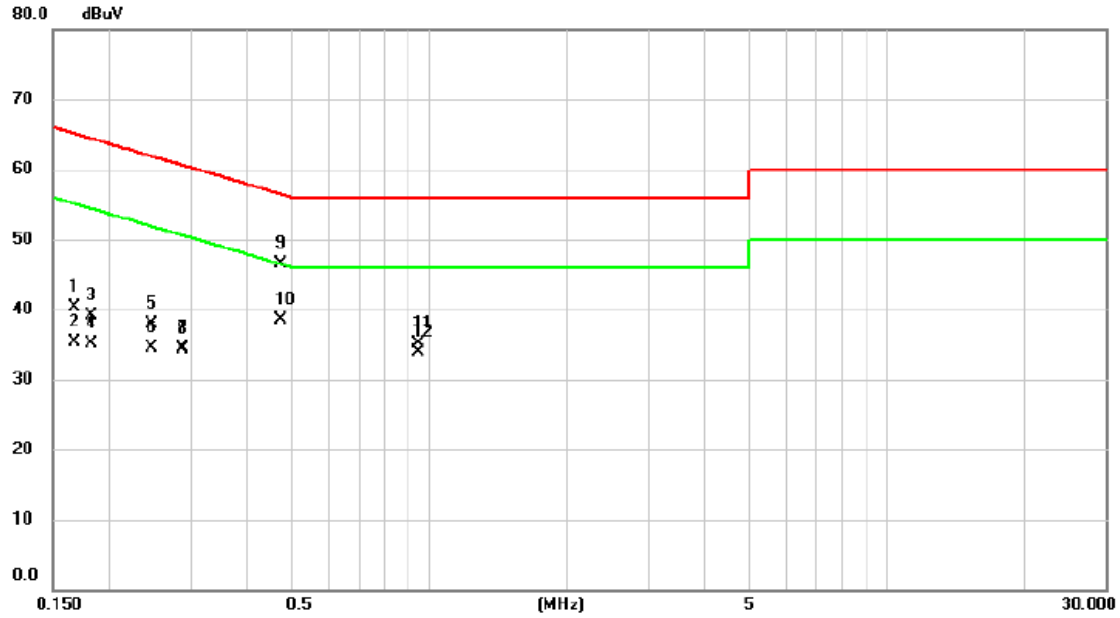
Please refer to document Appendix No.: TP-2312G166B-1 (APPENDIX-TEST PHOTOS).

11 EUT PHOTOS

Please refer to document Appendix No.: EP-2312G166B-1 (APPENDIX-EUT PHOTOS).

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

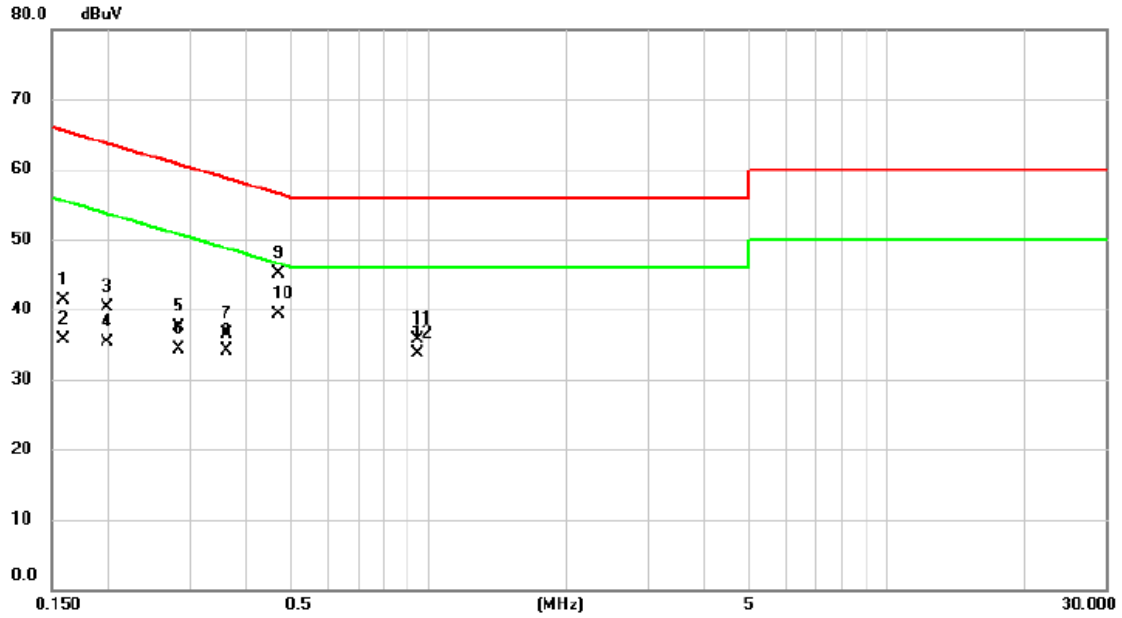
Test Mode	Normal	Tested Date	2024/9/11
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1668	30.70	9.65	40.35	65.12	-24.77	QP	
2		0.1668	25.74	9.65	35.39	55.12	-19.73	AVG	
3		0.1825	29.44	9.64	39.08	64.37	-25.29	QP	
4		0.1825	25.47	9.64	35.11	54.37	-19.26	AVG	
5		0.2476	28.36	9.64	38.00	61.84	-23.84	QP	
6		0.2476	24.96	9.64	34.60	51.84	-17.24	AVG	
7		0.2881	24.76	9.65	34.41	60.58	-26.17	QP	
8		0.2881	24.71	9.65	34.36	50.58	-16.22	AVG	
9		0.4724	36.83	9.66	46.49	56.47	-9.98	QP	
10	*	0.4724	28.85	9.66	38.51	46.47	-7.96	AVG	
11		0.9455	25.44	9.70	35.14	56.00	-20.86	QP	
12		0.9455	24.28	9.70	33.98	46.00	-12.02	AVG	

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

Test Mode	Normal	Tested Date	2024/9/11
Test Frequency	-	Phase	Neutral

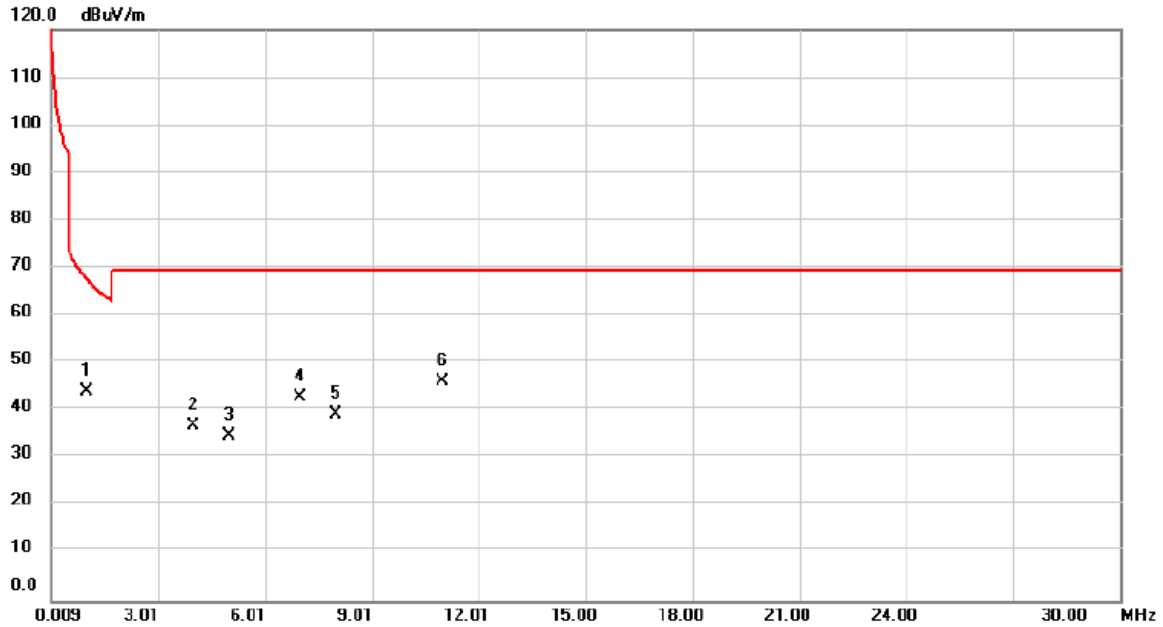


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	31.58	9.63	41.21	65.52	-24.31	QP	
2		0.1590	26.03	9.63	35.66	55.52	-19.86	AVG	
3		0.1986	30.60	9.63	40.23	63.67	-23.44	QP	
4		0.1986	25.76	9.63	35.39	53.67	-18.28	AVG	
5		0.2844	27.93	9.64	37.57	60.69	-23.12	QP	
6		0.2844	24.71	9.64	34.35	50.69	-16.34	AVG	
7		0.3621	26.83	9.63	36.46	58.68	-22.22	QP	
8		0.3621	24.45	9.63	34.08	48.68	-14.60	AVG	
9		0.4685	35.54	9.64	45.18	56.54	-11.36	QP	
10	*	0.4685	29.71	9.64	39.35	46.54	-7.19	AVG	
11		0.9455	25.99	9.69	35.68	56.00	-20.32	QP	
12		0.9455	24.09	9.69	33.78	46.00	-12.22	AVG	

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

APPENDIX B RADIATED EMISSIONS - 9 KHZ TO 30 MHZ

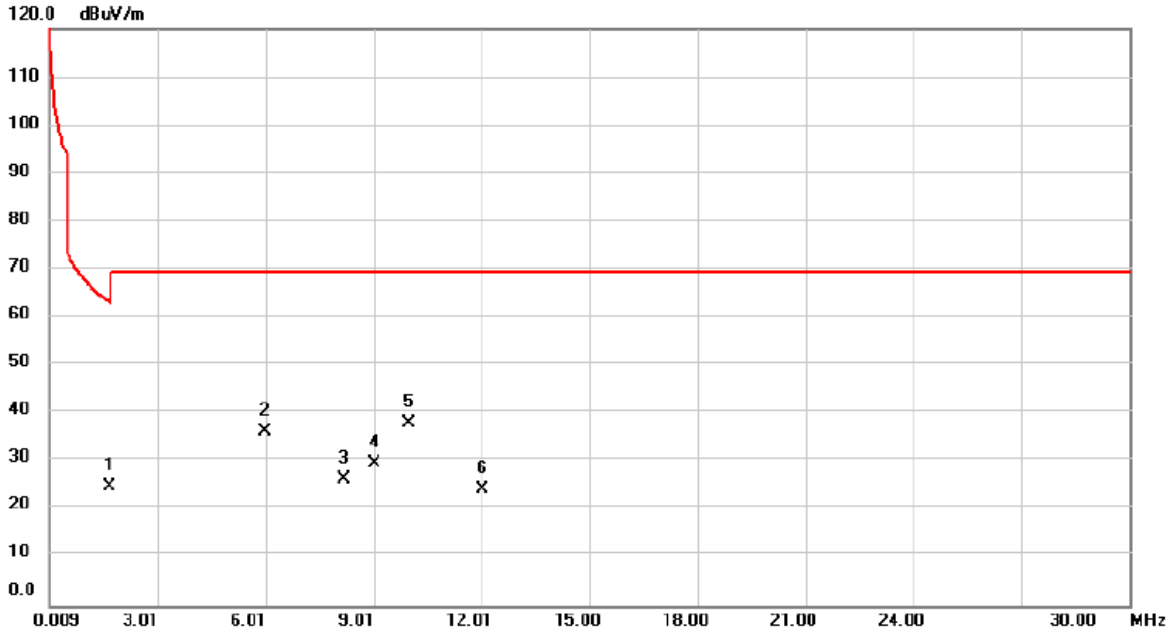
Test Mode	IEEE 802.11b	Test Date	2024/9/12
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.9987	44.83	-0.84	43.99	67.61	-23.62	QP	
2		3.9978	42.46	-5.68	36.78	69.54	-32.76	QP	
3		4.9875	40.25	-5.63	34.62	69.54	-34.92	QP	
4		6.9970	46.52	-3.77	42.75	69.54	-26.79	QP	
5		7.9866	42.89	-3.79	39.10	69.54	-30.44	QP	
6	*	10.9857	50.36	-4.21	46.15	69.54	-23.39	QP	

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

Test Mode	IEEE 802.11b	Test Date	2024/9/12
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

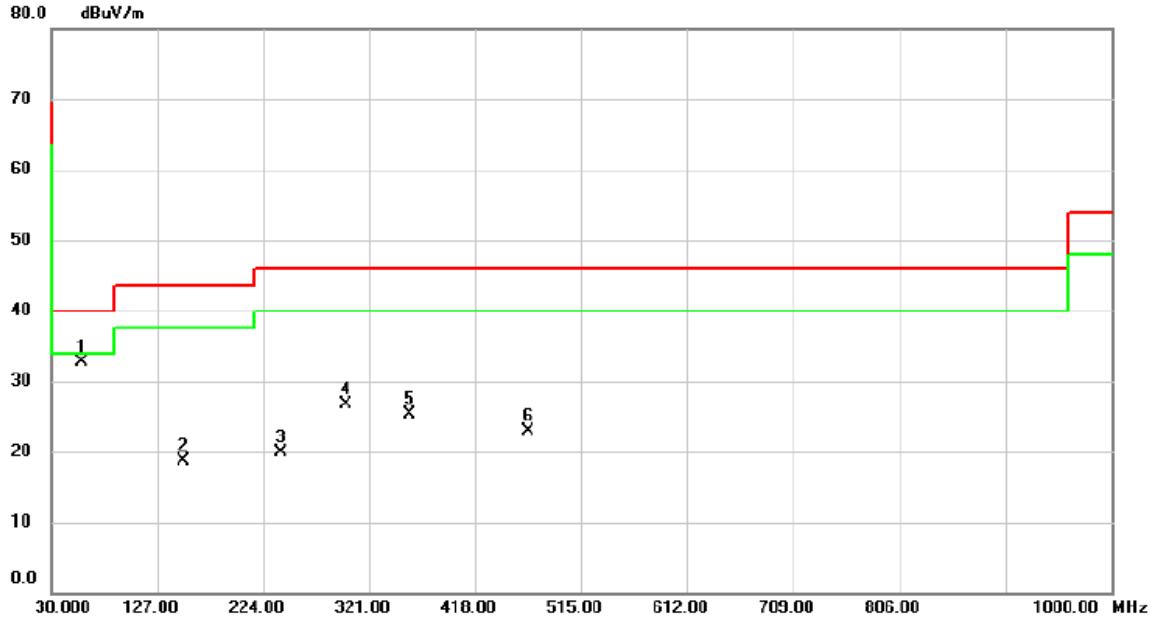


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1.6585	27.46	-2.68	24.78	63.21	-38.43	QP	
2		6.0071	40.36	-4.15	36.21	69.54	-33.33	QP	
3		8.1965	30.11	-3.85	26.26	69.54	-43.28	QP	
4		9.0063	33.52	-4.11	29.41	69.54	-40.13	QP	
5	*	9.9960	42.14	-4.13	38.01	69.54	-31.53	QP	
6		12.0054	28.16	-4.11	24.05	69.54	-45.49	QP	

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

APPENDIX C RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

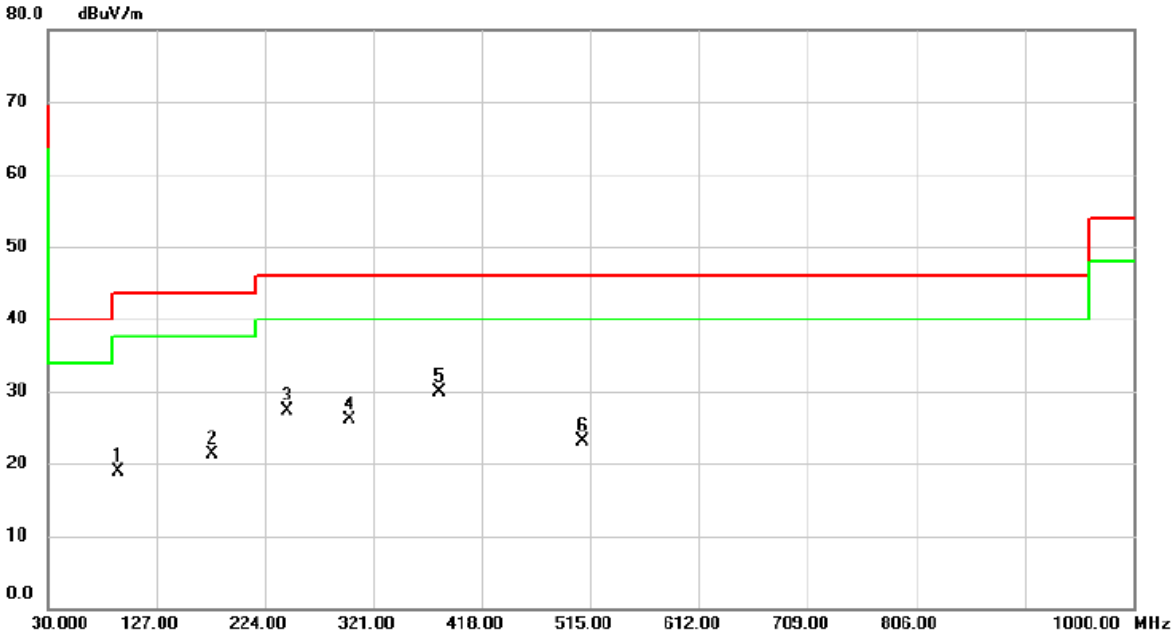
Test Mode	IEEE 802.11b	Test Date	2024/9/12
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	57.1600	44.47	-11.70	32.77	40.00	-7.23	peak	
2		151.2500	29.85	-11.11	18.74	43.50	-24.76	peak	
3		240.4900	32.25	-12.25	20.00	46.00	-26.00	peak	
4		299.6600	36.96	-10.25	26.71	46.00	-19.29	peak	
5		357.8600	33.95	-8.70	25.25	46.00	-20.75	peak	
6		466.5000	28.65	-5.75	22.90	46.00	-23.10	peak	

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

Test Mode	IEEE 802.11b	Test Date	2024/9/12
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

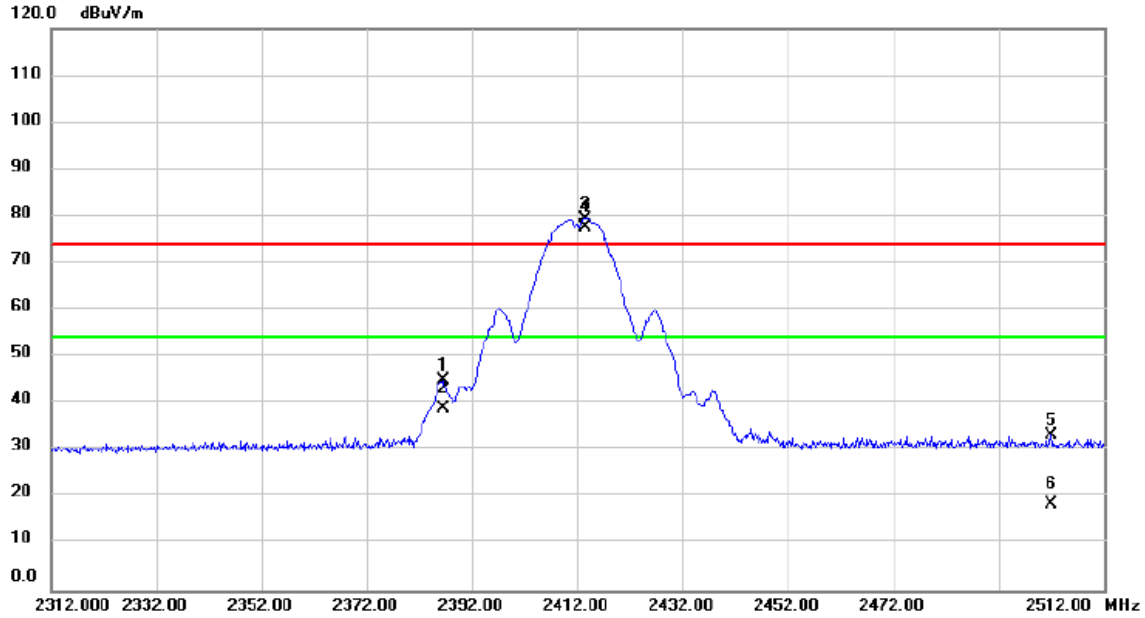


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		93.0500	35.81	-16.95	18.86	43.50	-24.64	peak	
2		176.4700	33.56	-12.33	21.23	43.50	-22.27	peak	
3		244.3700	39.38	-12.15	27.23	46.00	-18.77	peak	
4		299.6600	36.31	-10.25	26.06	46.00	-19.94	peak	
5	*	379.2000	37.93	-8.07	29.86	46.00	-16.14	peak	
6		508.2100	28.19	-5.07	23.12	46.00	-22.88	peak	

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

APPENDIX D RADIATED EMISSIONS - ABOVE 1 GHZ

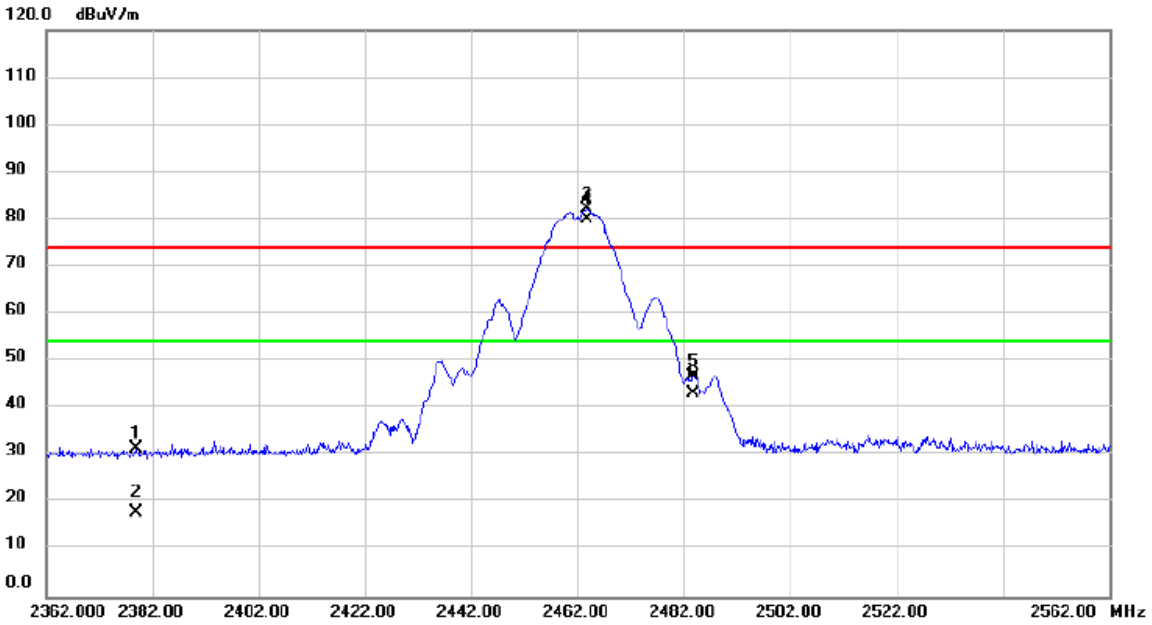
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2386.400	50.91	-6.13	44.78	74.00	-29.22	peak	
2		2386.400	44.95	-6.13	38.82	54.00	-15.18	AVG	
3	X	2413.600	85.54	-6.06	79.48	74.00	5.48	peak	No Limit
4	*	2413.600	83.58	-6.06	77.52	54.00	23.52	AVG	No Limit
5		2502.000	38.97	-5.87	33.10	74.00	-40.90	peak	
6		2502.000	24.32	-5.87	18.45	54.00	-35.55	AVG	

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

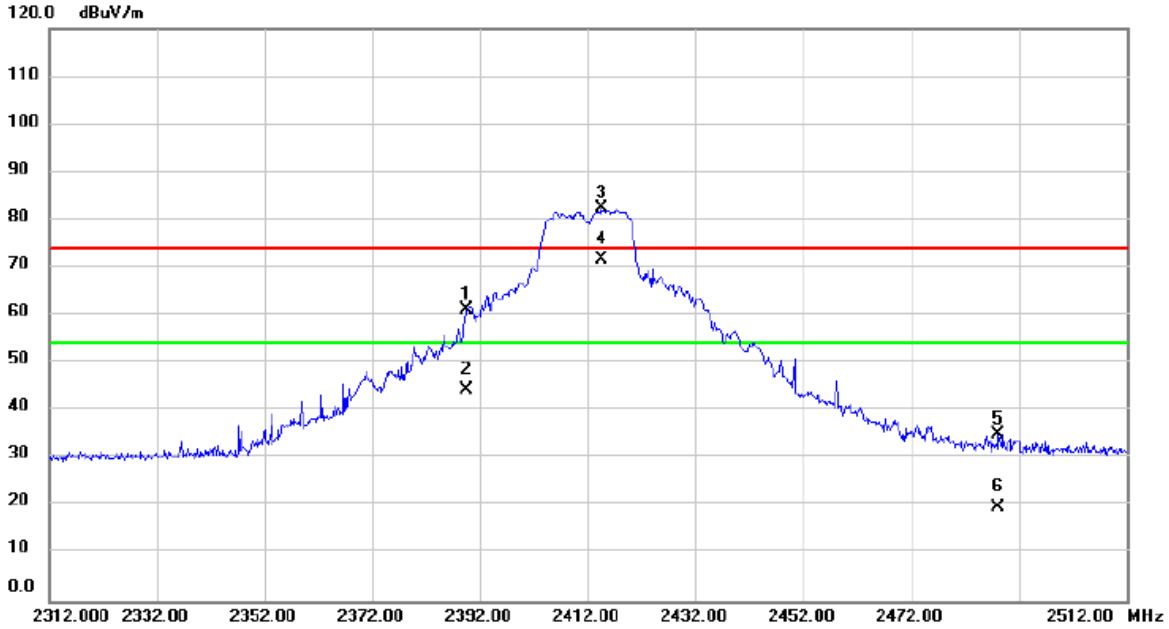
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2378.800	37.61	-6.15	31.46	74.00	-42.54	peak	
2		2378.800	24.12	-6.15	17.97	54.00	-36.03	AVG	
3	X	2463.800	87.89	-5.95	81.94	74.00	7.94	peak	No Limit
4	*	2463.800	85.98	-5.95	80.03	54.00	26.03	AVG	No Limit
5		2483.800	52.48	-5.92	46.56	74.00	-27.44	peak	
6		2483.800	48.85	-5.92	42.93	54.00	-11.07	AVG	

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

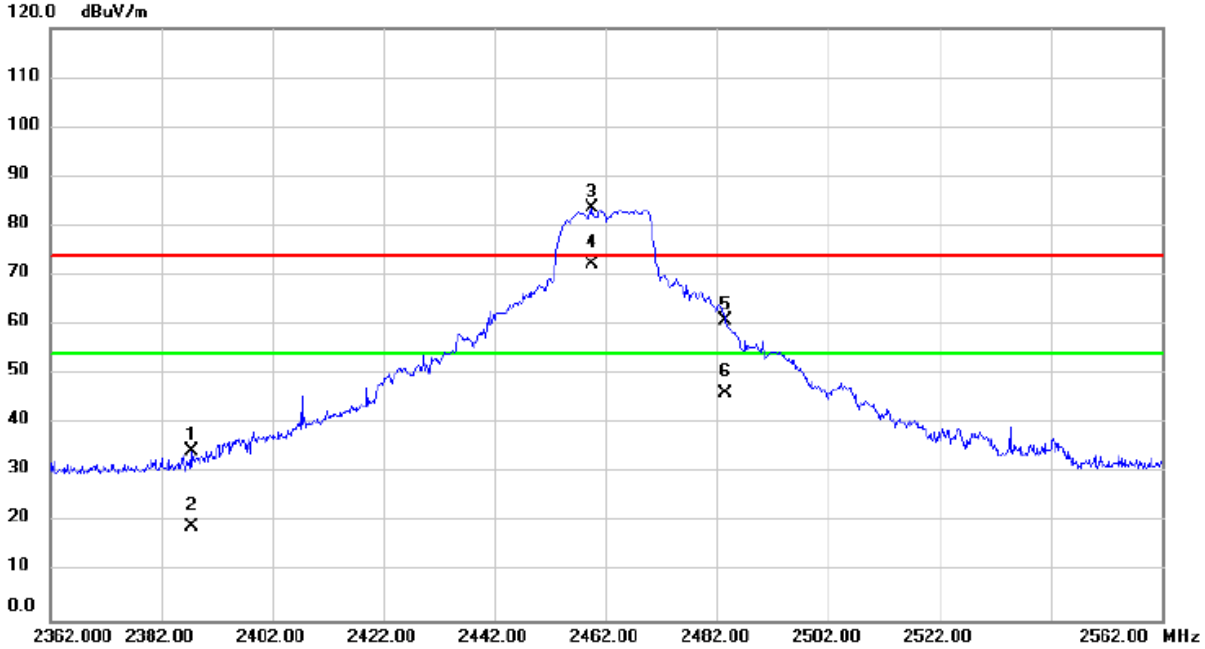
Test Mode	IEEE 802.11g	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.600	67.14	-6.12	61.02	74.00	-12.98	peak	
2		2389.600	50.35	-6.12	44.23	54.00	-9.77	AVG	
3	X	2414.400	88.38	-6.06	82.32	74.00	8.32	peak	No Limit
4	*	2414.400	77.54	-6.06	71.48	54.00	17.48	AVG	No Limit
5		2488.200	40.92	-5.90	35.02	74.00	-38.98	peak	
6		2488.200	25.41	-5.90	19.51	54.00	-34.49	AVG	

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

Test Mode	IEEE 802.11g	Test Date	2024/9/20
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		2387.400	40.49	-6.13	34.36	74.00	-39.64	peak	
2		2387.400	25.18	-6.13	19.05	54.00	-34.95	AVG	
3	X	2459.400	89.49	-5.97	83.52	74.00	9.52	peak	No Limit
4	*	2459.400	78.11	-5.97	72.14	54.00	18.14	AVG	No Limit
5		2483.600	66.75	-5.92	60.83	74.00	-13.17	peak	
6		2483.600	52.01	-5.92	46.09	54.00	-7.91	AVG	

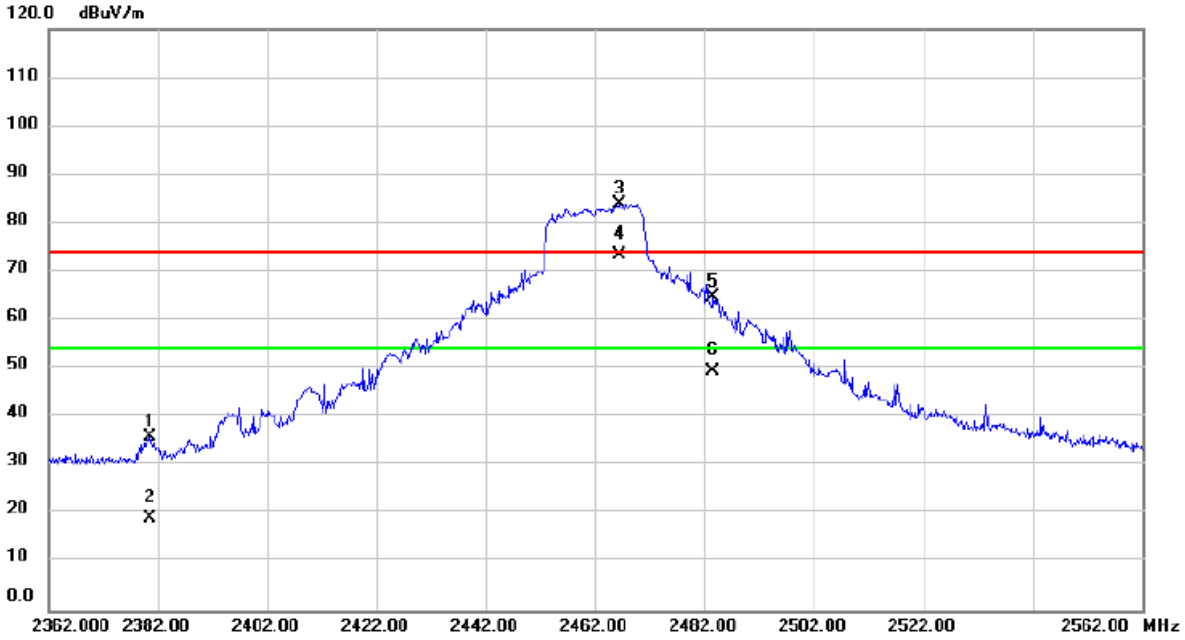
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11n (HT 20)	Test Date	2024/9/20
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		2389.200	66.14	-6.12	60.02	74.00	-13.98	peak	
2		2389.200	51.88	-6.12	45.76	54.00	-8.24	AVG	
3	X	2418.200	87.63	-6.06	81.57	74.00	7.57	peak	No Limit
4	*	2418.200	77.19	-6.06	71.13	54.00	17.13	AVG	No Limit
5		2494.200	40.36	-5.90	34.46	74.00	-39.54	peak	
6		2494.200	25.57	-5.90	19.67	54.00	-34.33	AVG	

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

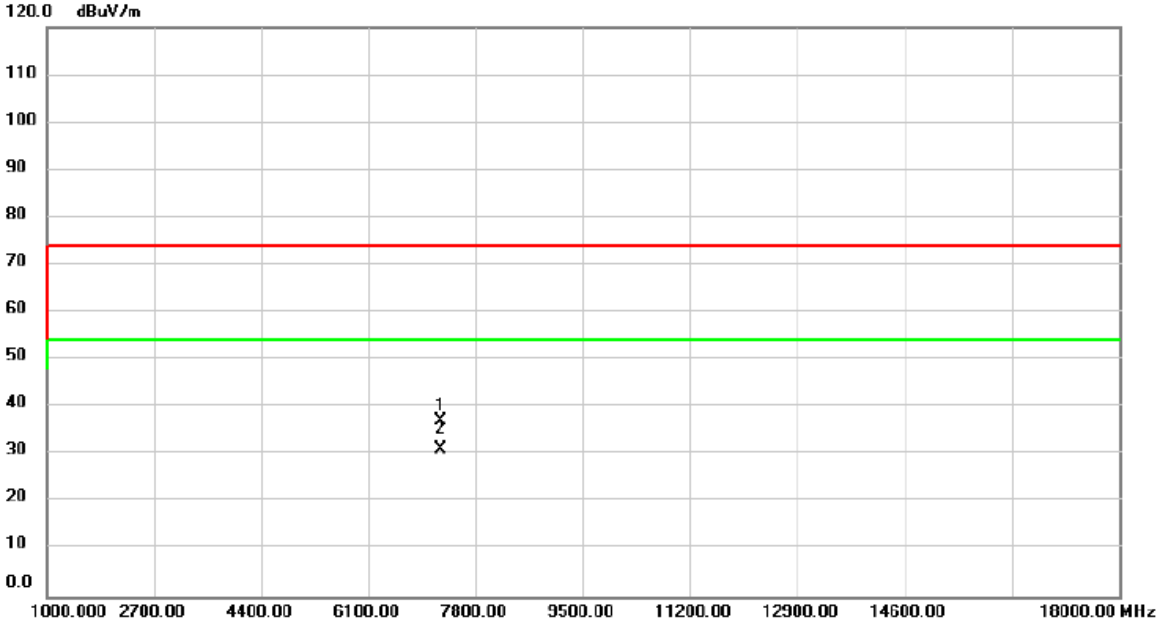
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2380.400	41.92	-6.13	35.79	74.00	-38.21	peak	
2		2380.400	25.09	-6.13	18.96	54.00	-35.04	AVG	
3	X	2466.400	89.94	-5.95	83.99	74.00	9.99	peak	No Limit
4	*	2466.400	79.16	-5.95	73.21	54.00	19.21	AVG	No Limit
5		2483.600	70.50	-5.92	64.58	74.00	-9.42	peak	
6		2483.600	55.35	-5.92	49.43	54.00	-4.57	AVG	

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

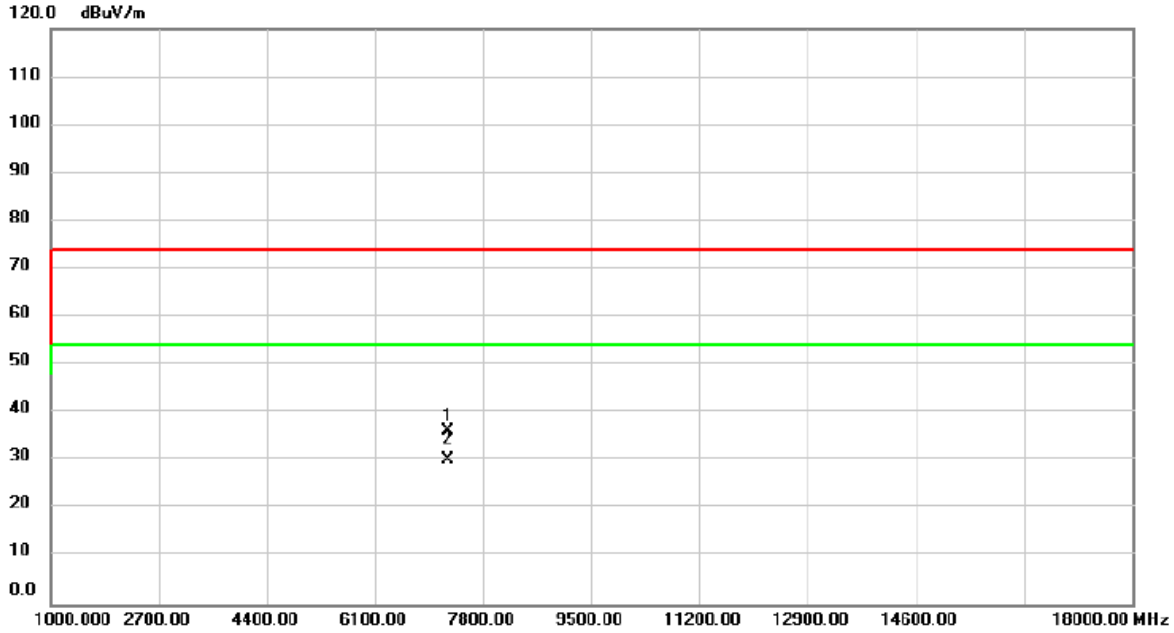
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7239.000	40.57	-3.63	36.94	74.00	-37.06	peak	
2	*	7239.000	34.83	-3.63	31.20	54.00	-22.80	AVG	

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

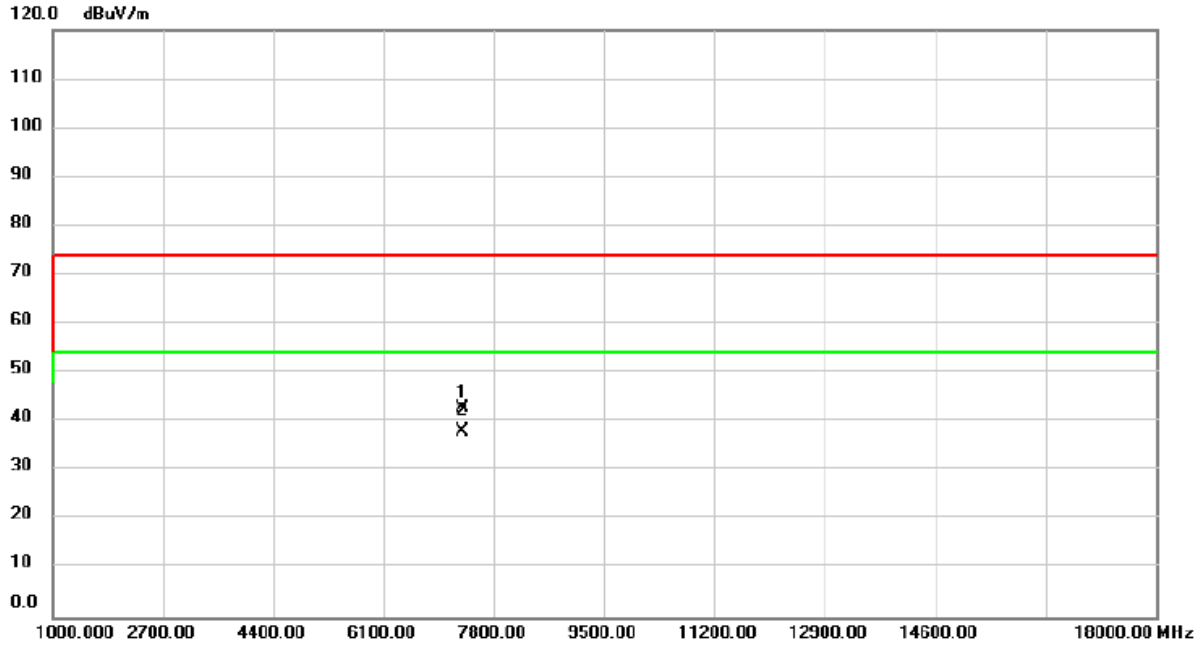
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7239.000	39.89	-3.63	36.26	74.00	-37.74	peak	
2	*	7239.000	33.74	-3.63	30.11	54.00	-23.89	AVG	

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

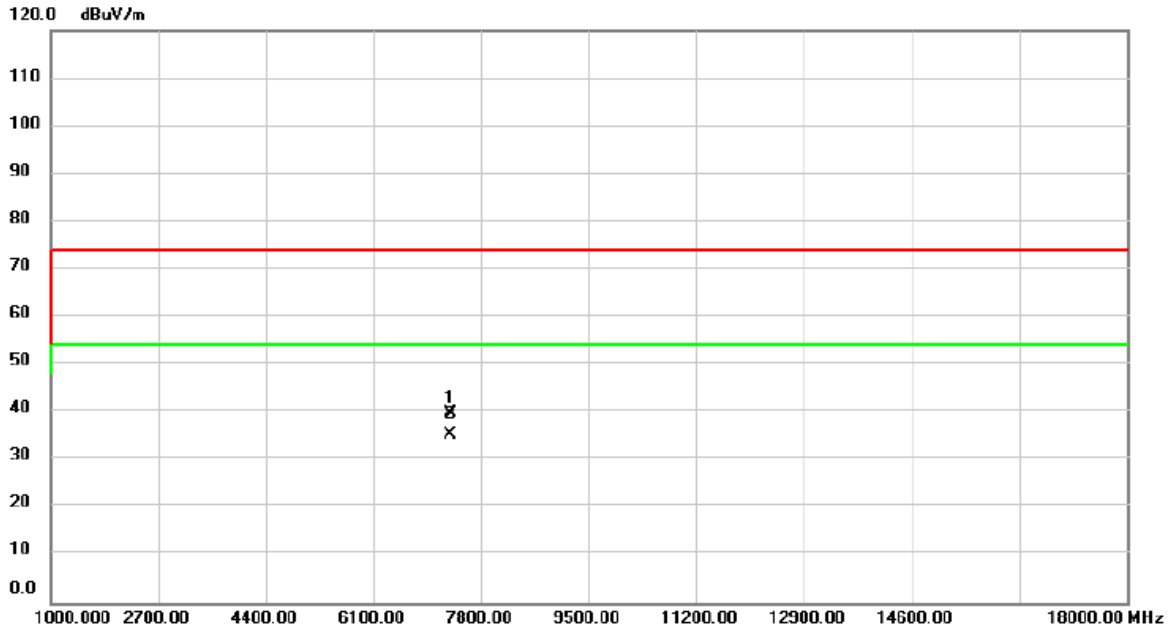
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2437MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7307.000	46.20	-3.51	42.69	74.00	-31.31	peak	
2	*	7307.000	41.46	-3.51	37.95	54.00	-16.05	AVG	

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

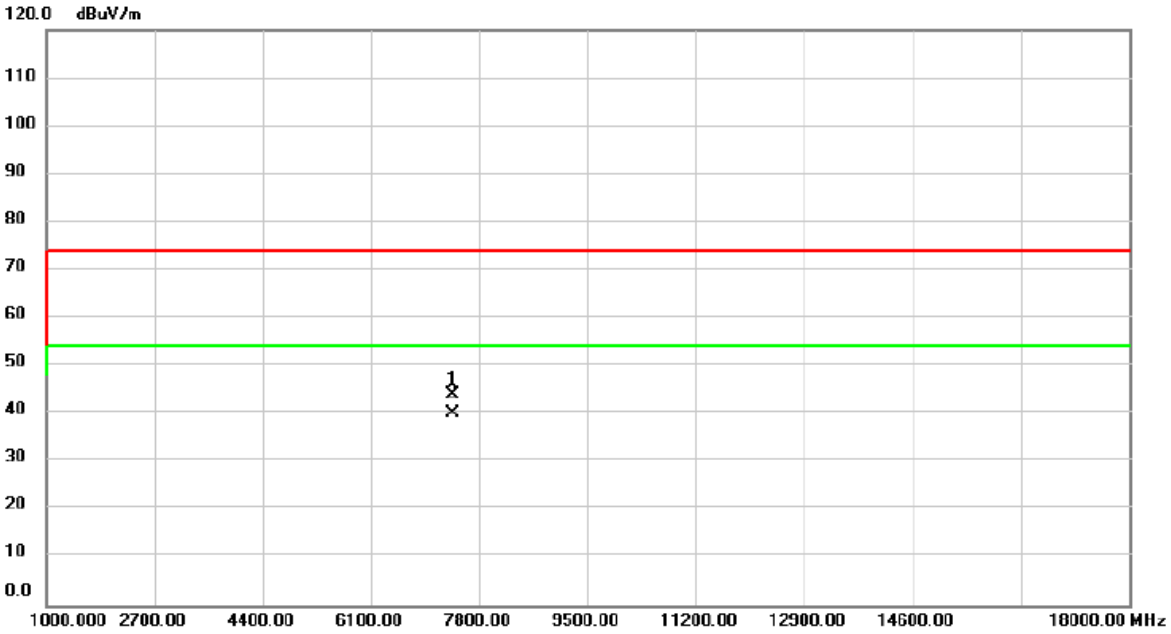
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2437MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7307.000	43.21	-3.51	39.70	74.00	-34.30	peak	
2	*	7307.000	38.84	-3.51	35.33	54.00	-18.67	AVG	

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

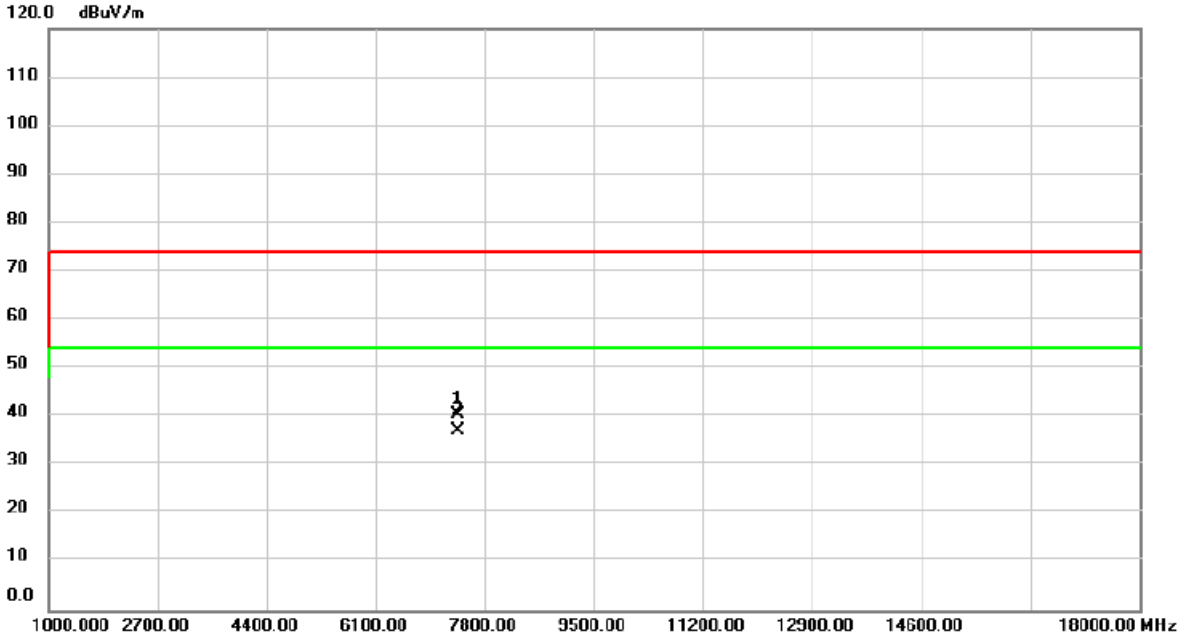
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	47.46	-3.36	44.10	74.00	-29.90	peak	
2	*	7386.000	43.33	-3.36	39.97	54.00	-14.03	AVG	

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

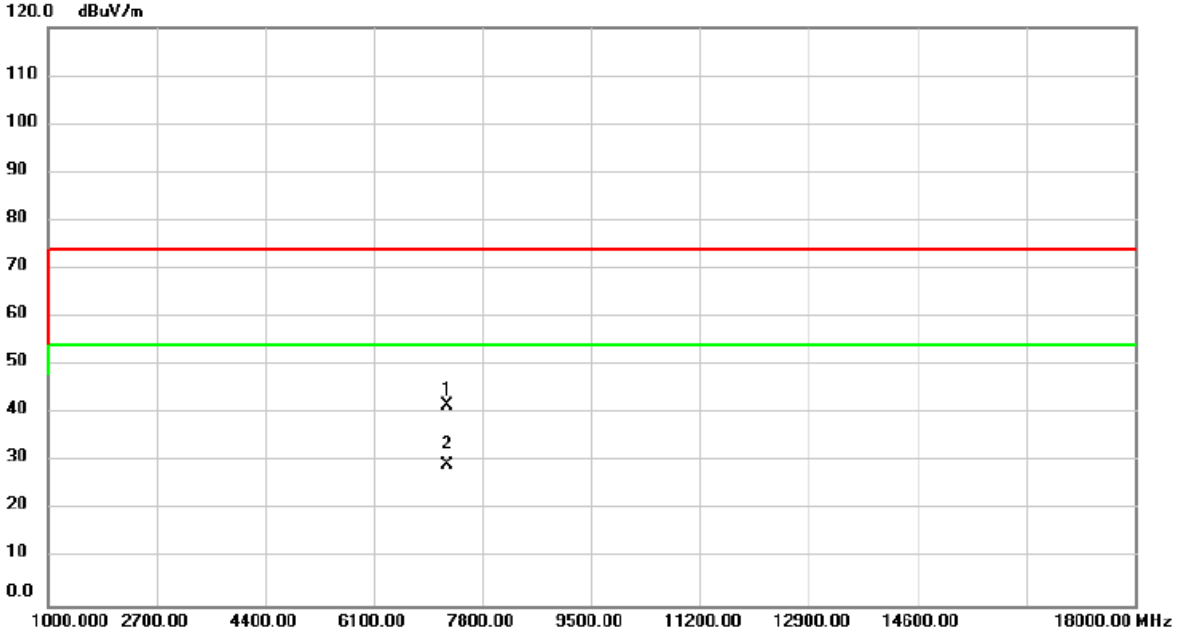
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	43.78	-3.36	40.42	74.00	-33.58	peak	
2	*	7386.000	40.45	-3.36	37.09	54.00	-16.91	AVG	

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

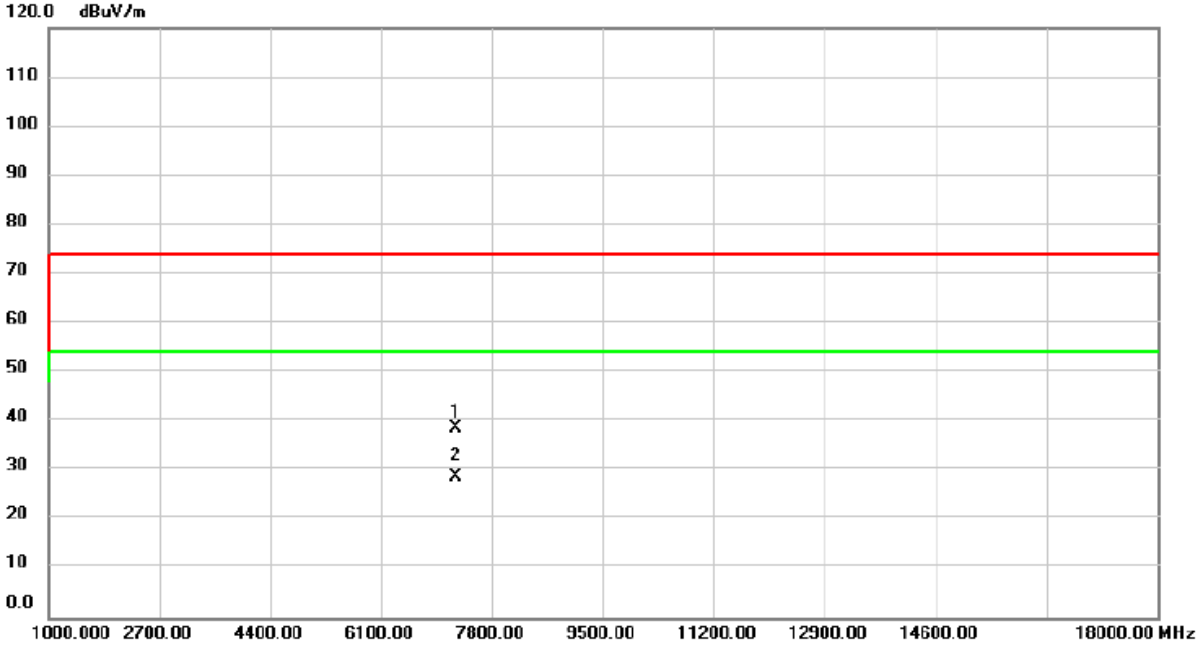
Test Mode	IEEE 802.11g	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7236.000	45.26	-3.64	41.62	74.00	-32.38	peak	
2	*	7236.000	32.87	-3.64	29.23	54.00	-24.77	AVG	

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

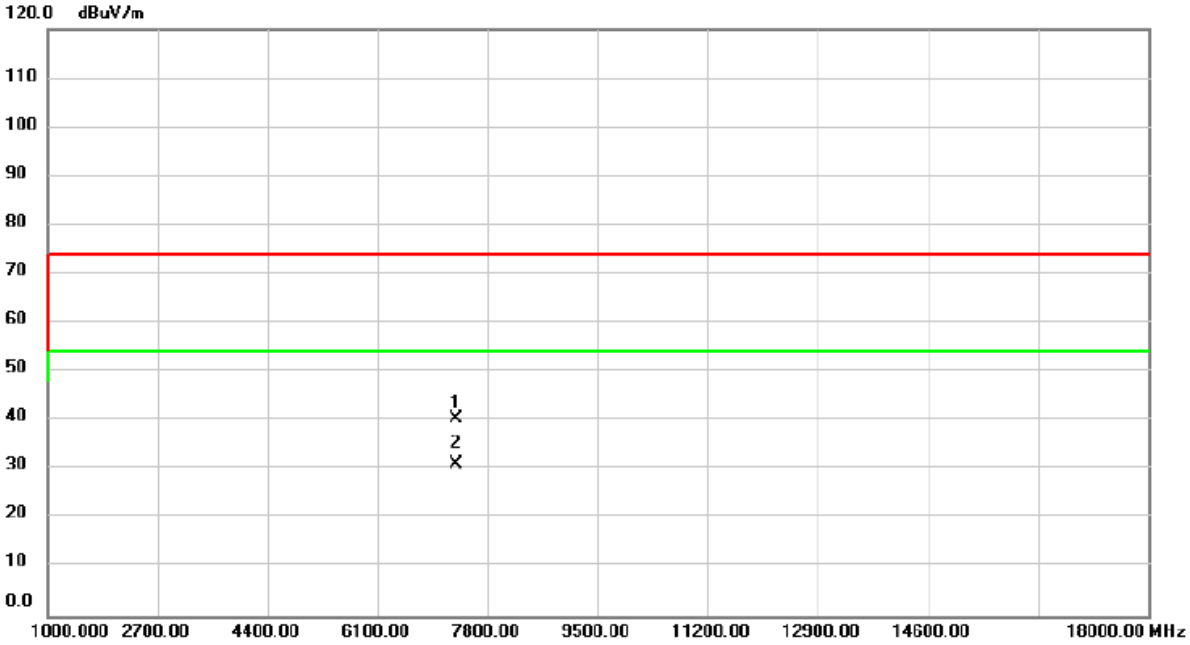
Test Mode	IEEE 802.11g	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7236.000	42.12	-3.64	38.48	74.00	-35.52	peak	
2	*	7236.000	32.20	-3.64	28.56	54.00	-25.44	AVG	

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

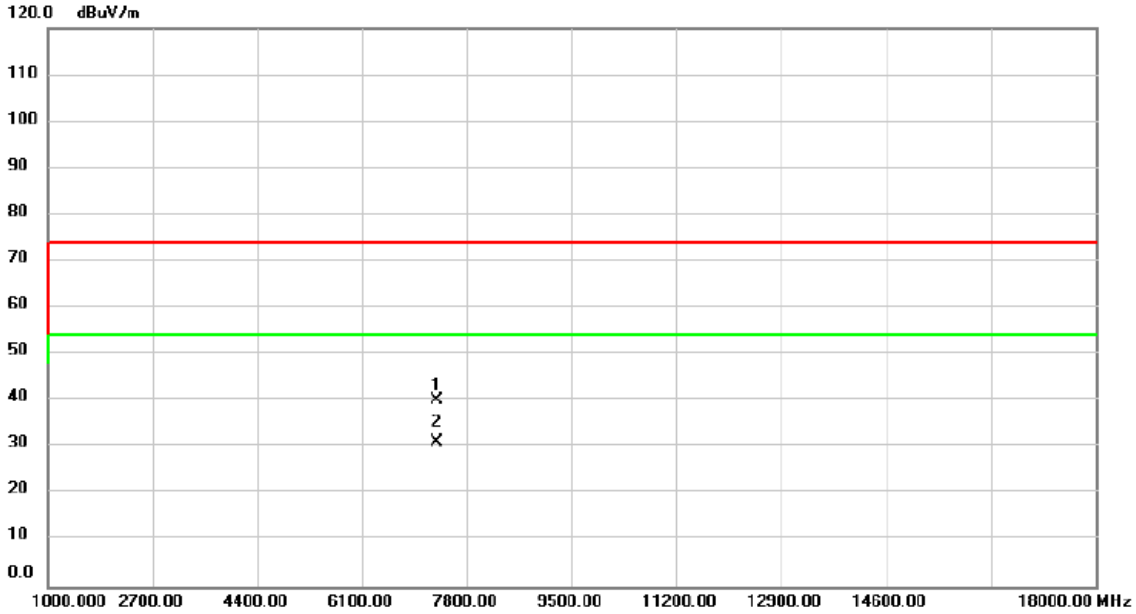
Test Mode	IEEE 802.11g	Test Date	2024/9/20
Test Frequency	2437MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	44.00	-3.50	40.50	74.00	-33.50	peak	
2	*	7311.000	34.48	-3.50	30.98	54.00	-23.02	AVG	

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

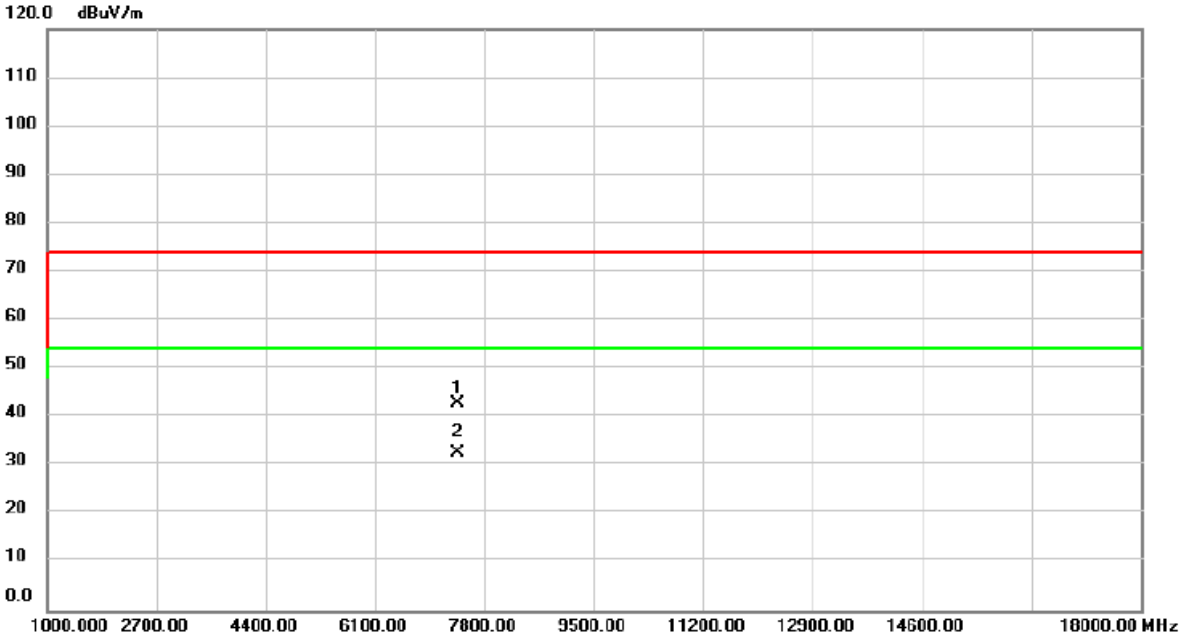
Test Mode	IEEE 802.11g	Test Date	2024/9/20
Test Frequency	2437MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	43.67	-3.50	40.17	74.00	-33.83	peak	
2	*	7311.000	34.55	-3.50	31.05	54.00	-22.95	AVG	

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

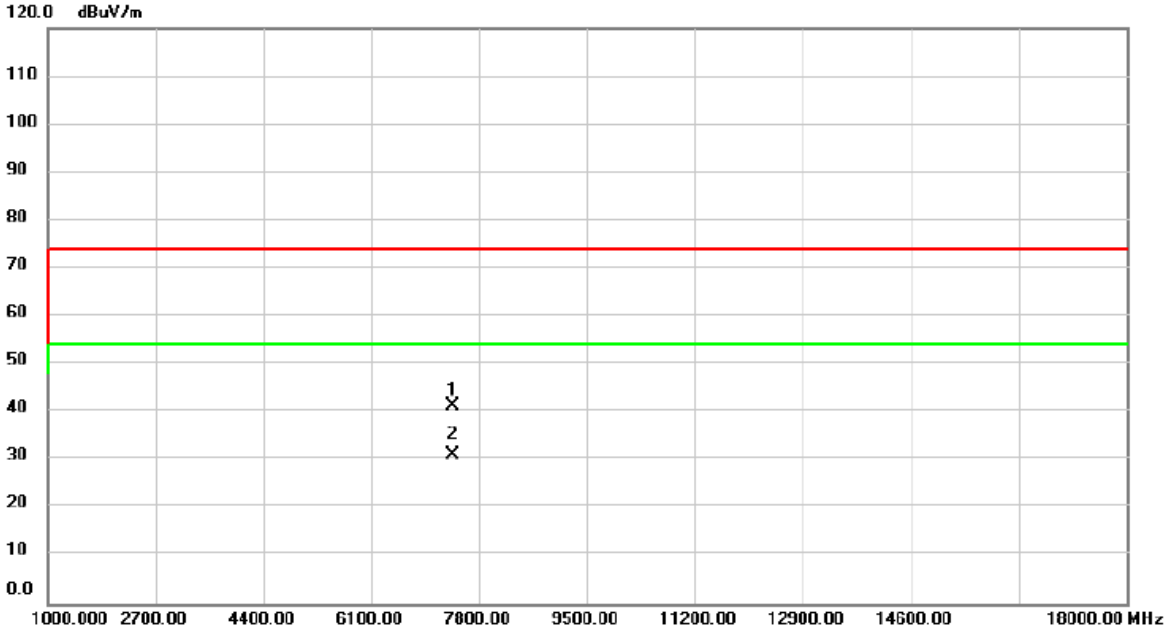
Test Mode	IEEE 802.11g	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	46.05	-3.36	42.69	74.00	-31.31	peak	
2	*	7386.000	35.85	-3.36	32.49	54.00	-21.51	AVG	

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

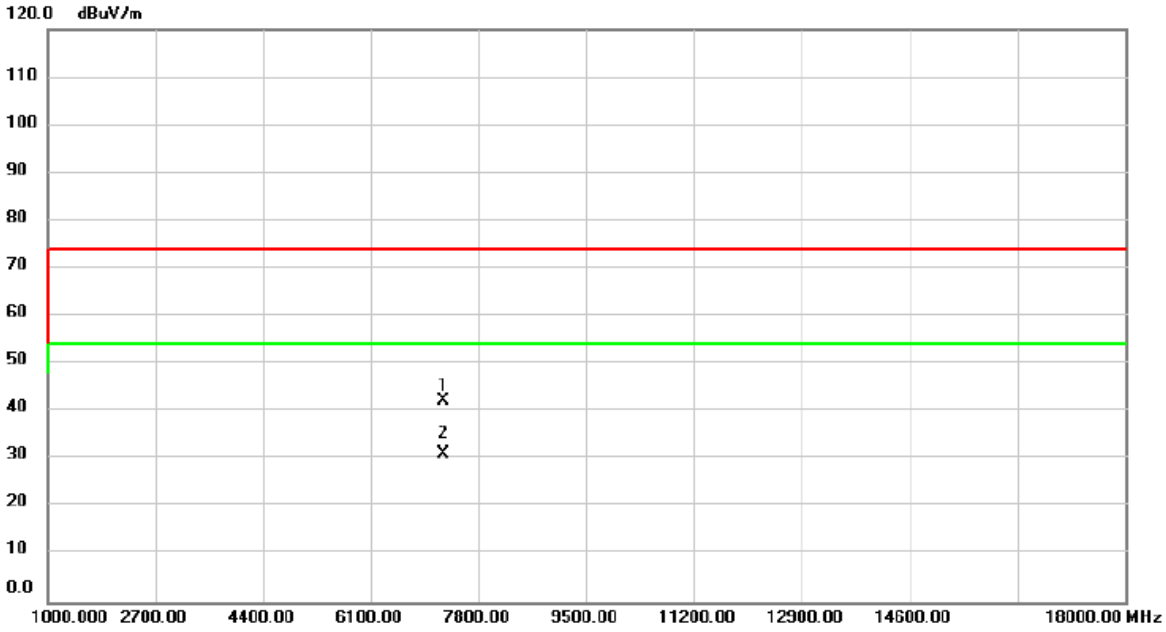
Test Mode	IEEE 802.11g	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	44.70	-3.36	41.34	74.00	-32.66	peak	
2	*	7386.000	34.56	-3.36	31.20	54.00	-22.80	AVG	

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

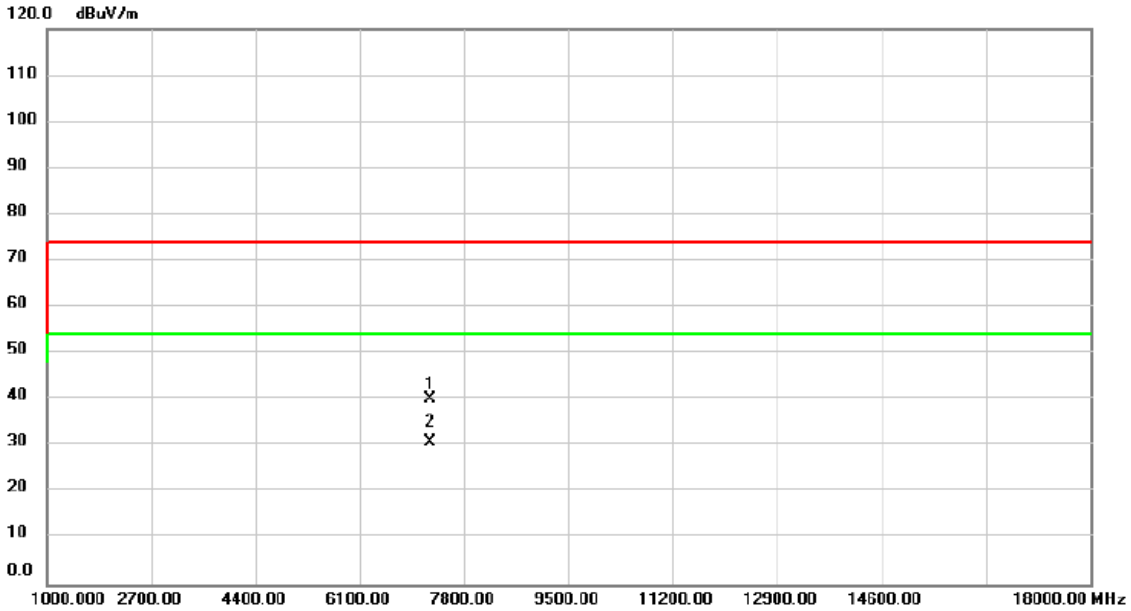
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7236.000	45.74	-3.64	42.10	74.00	-31.90	peak	
2	*	7236.000	34.71	-3.64	31.07	54.00	-22.93	AVG	

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

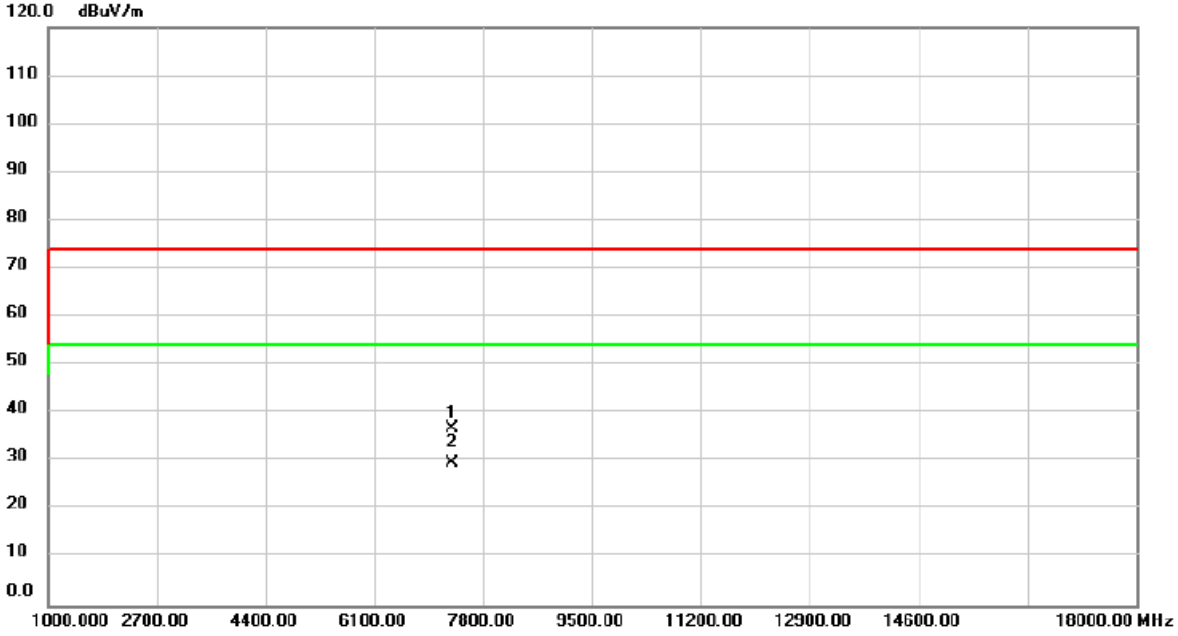
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7236.000	43.75	-3.64	40.11	74.00	-33.89	peak	
2	*	7236.000	34.42	-3.64	30.78	54.00	-23.22	AVG	

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

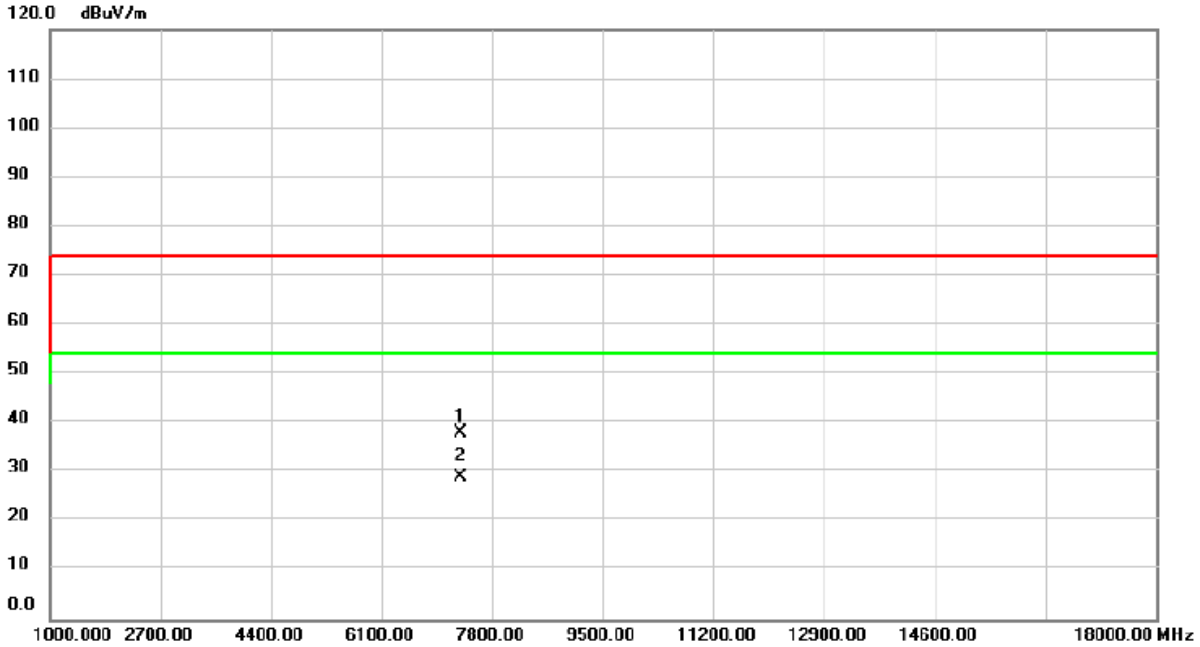
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/9/20
Test Frequency	2437MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	40.32	-3.50	36.82	74.00	-37.18	peak	
2	*	7311.000	32.91	-3.50	29.41	54.00	-24.59	AVG	

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

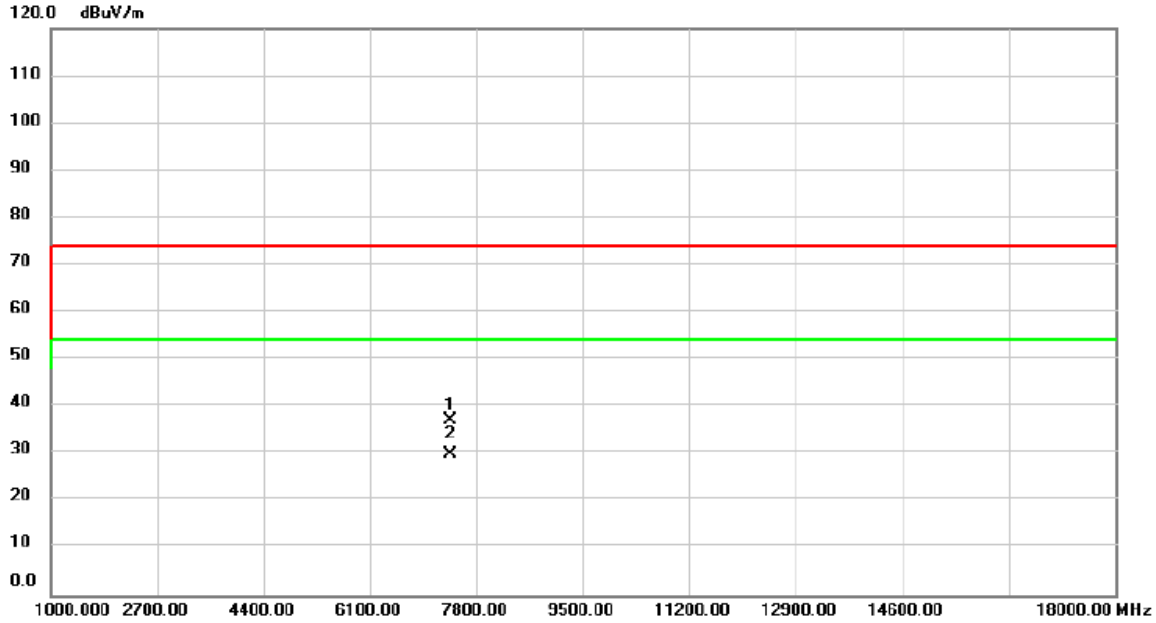
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/9/20
Test Frequency	2437MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	41.36	-3.50	37.86	74.00	-36.14	peak	
2	*	7311.000	32.36	-3.50	28.86	54.00	-25.14	AVG	

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

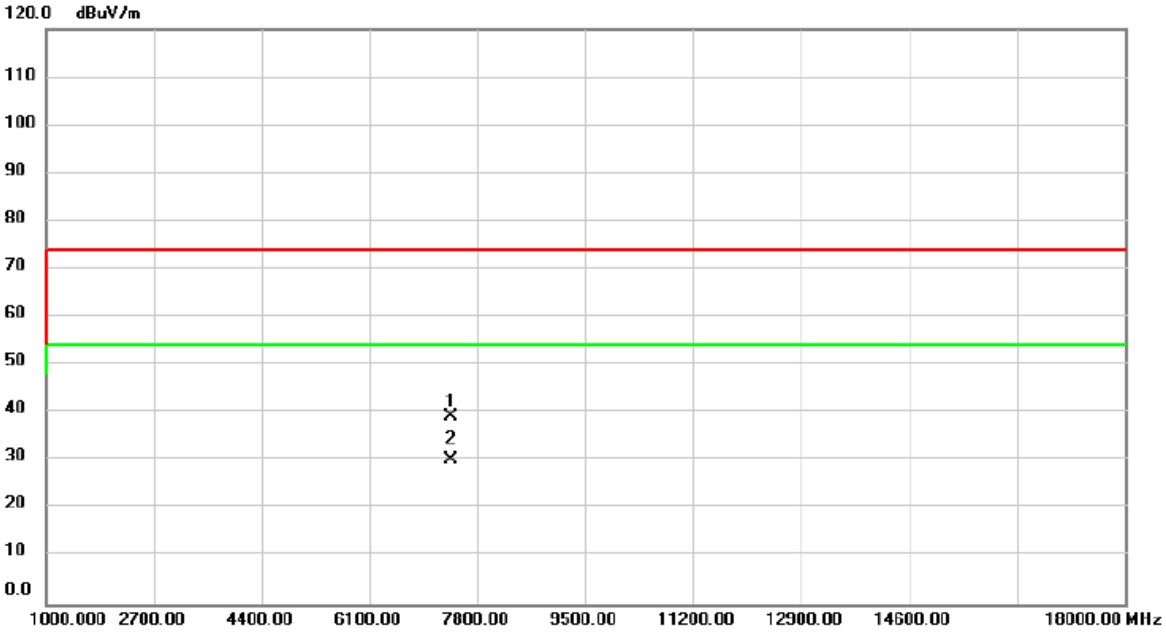
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	40.41	-3.36	37.05	74.00	-36.95	peak	
2	*	7386.000	33.27	-3.36	29.91	54.00	-24.09	AVG	

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

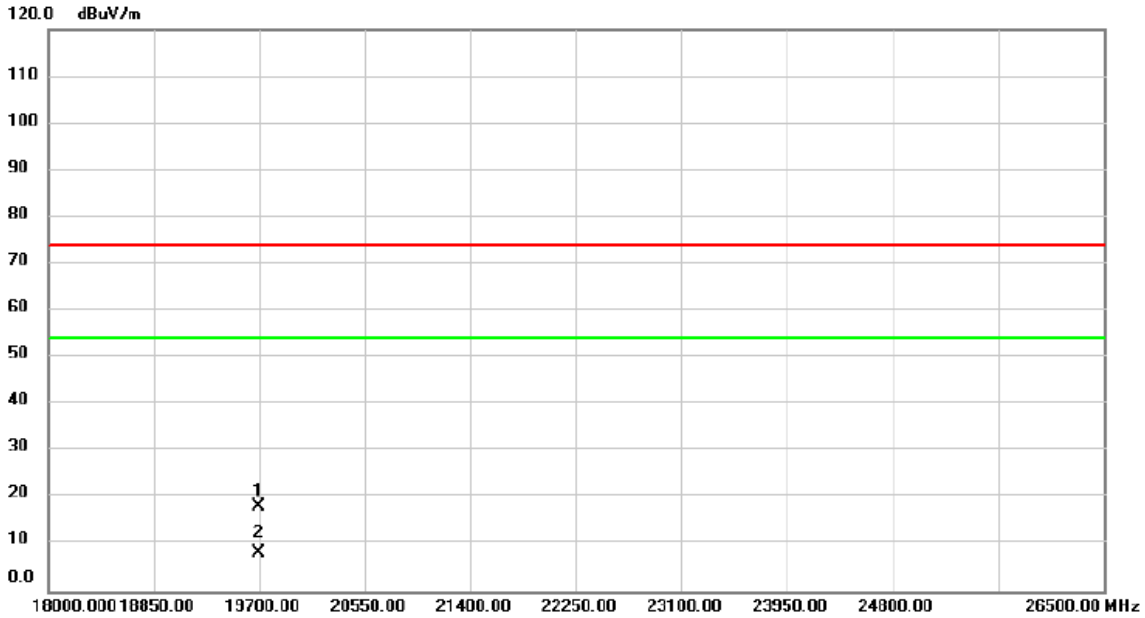
Test Mode	IEEE 802.11n (HT20)	Test Date	2024/9/20
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	42.52	-3.36	39.16	74.00	-34.84	peak	
2	*	7386.000	33.58	-3.36	30.22	54.00	-23.78	AVG	

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

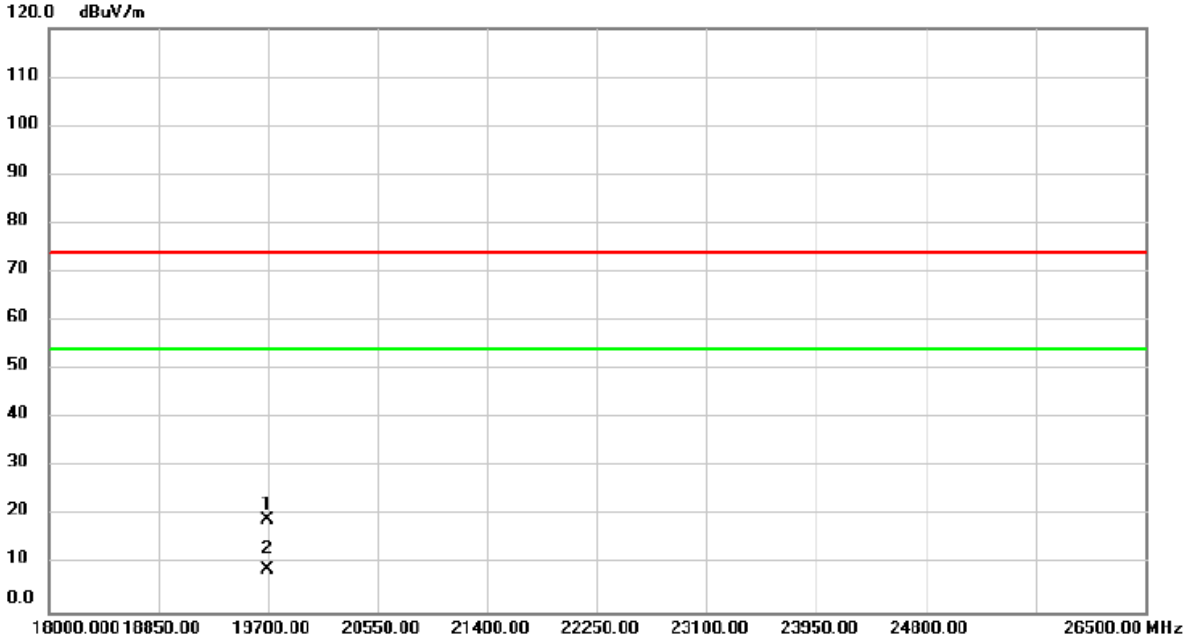
Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		19696.00	28.40	-10.11	18.29	74.00	-55.71	peak	
2	*	19696.00	18.31	-10.11	8.20	54.00	-45.80	AVG	

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

Test Mode	IEEE 802.11b	Test Date	2024/9/20
Test Frequency	2412MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



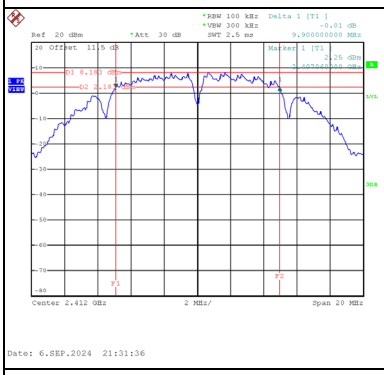
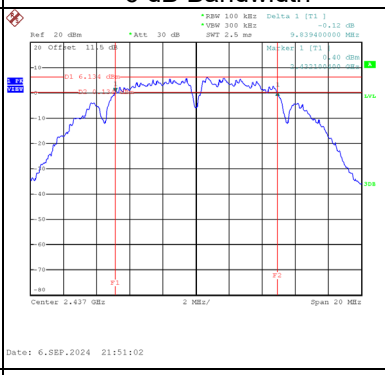
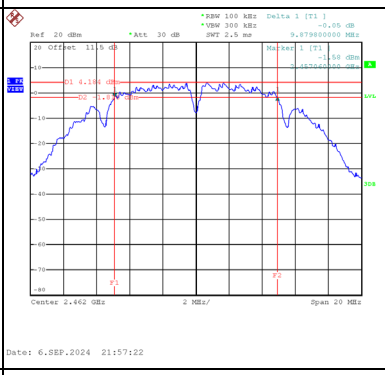
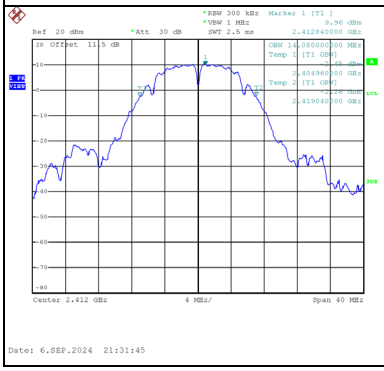
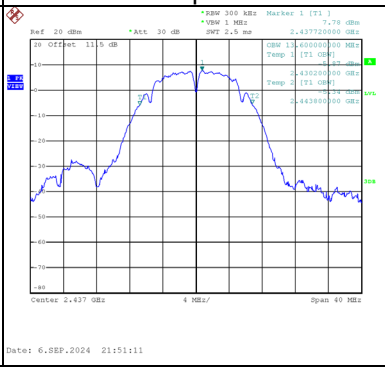
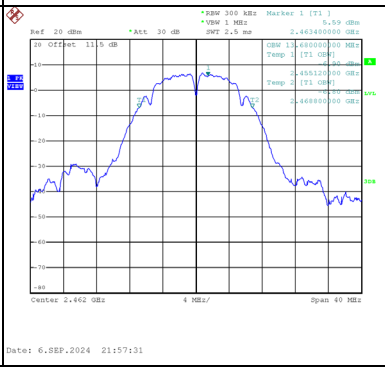
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		19696.00	29.06	-10.11	18.95	74.00	-55.05	peak	
2	*	19696.00	19.11	-10.11	9.00	54.00	-45.00	AVG	

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

APPENDIX E BANDWIDTH

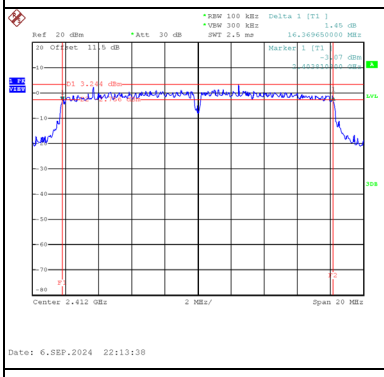
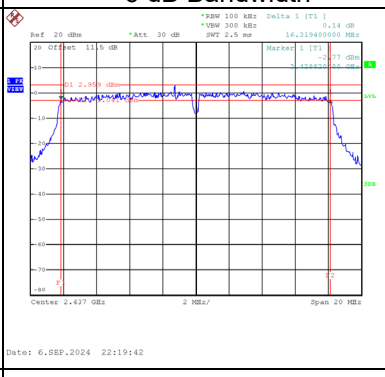
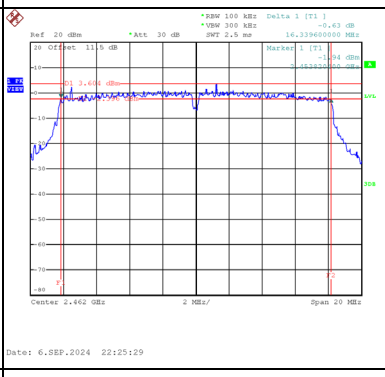
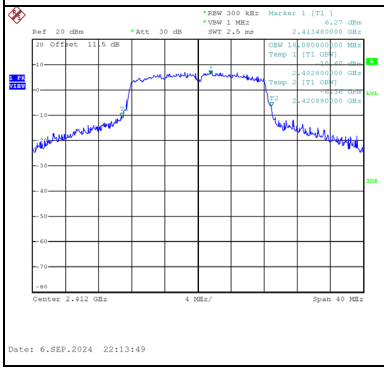
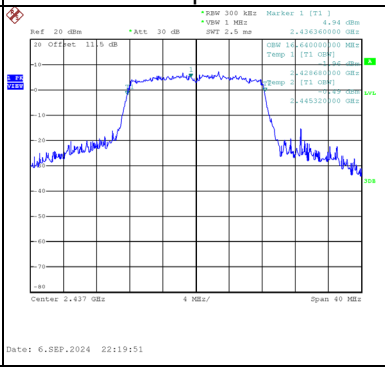
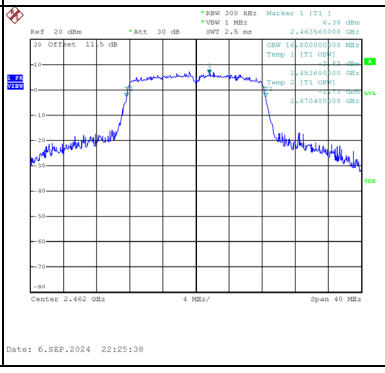
Test Mode	IEEE 802.11b

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	9.900	14.080	≥ 500	Pass
2437	9.839	13.600	≥ 500	Pass
2462	9.880	13.680	≥ 500	Pass

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

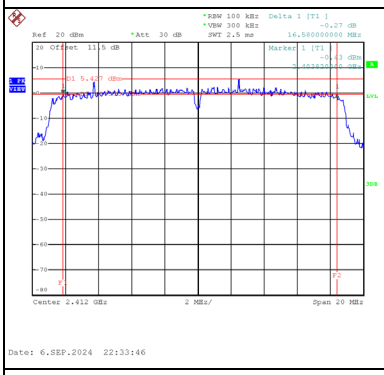
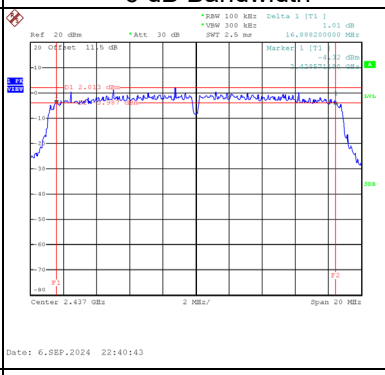
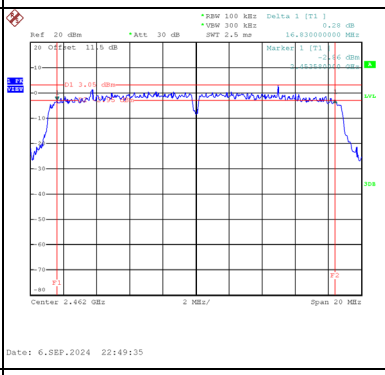
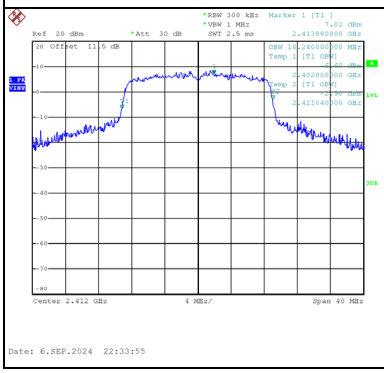
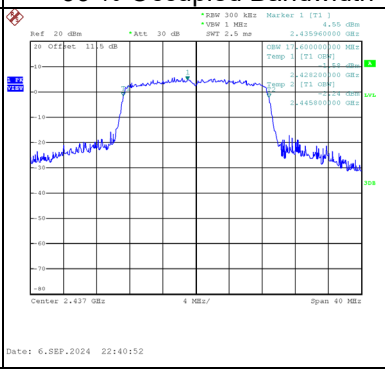
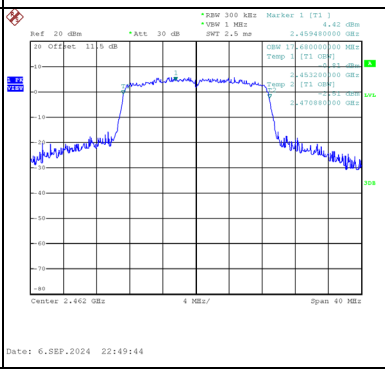
Test Mode	IEEE 802.11g

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	16.370	18.080	≥ 500	Pass
2437	16.319	16.640	≥ 500	Pass
2462	16.340	16.800	≥ 500	Pass

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

Test Mode	IEEE 802.11n (HT20)

Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	16.580	18.240	≥ 500	Pass
2437	16.888	17.600	≥ 500	Pass
2462	16.830	17.680	≥ 500	Pass

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

APPENDIX F OUTPUT POWER

Test Mode	IEEE 802.11b	Tested Date	2024/9/6

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.61	0.00	22.61	30.00	1.0000	Complies
06	2437	22.46	0.00	22.46	30.00	1.0000	Complies
11	2462	22.35	0.00	22.35	30.00	1.0000	Complies

Test Mode	IEEE 802.11g	Tested Date	2024/9/6

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.23	0.00	21.23	30.00	1.0000	Complies
06	2437	21.15	0.00	21.15	30.00	1.0000	Complies
11	2462	21.04	0.00	21.04	30.00	1.0000	Complies

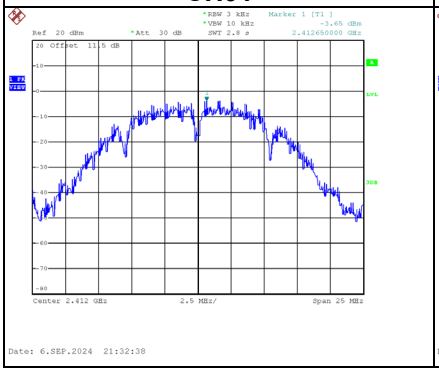
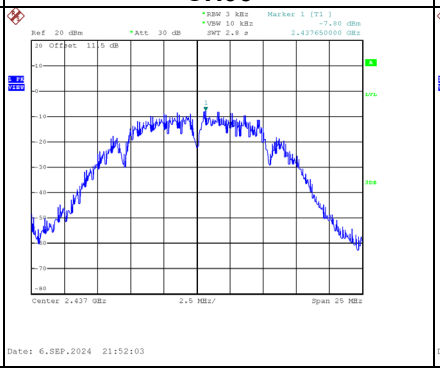
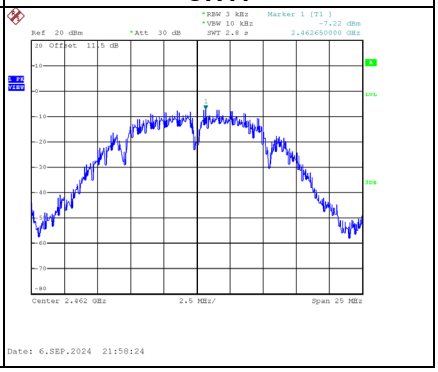
Test Mode	IEEE 802.11n (HT20)	Tested Date	2024/9/6

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.98	0.00	18.98	30.00	1.0000	Complies
06	2437	21.08	0.00	21.08	30.00	1.0000	Complies
11	2462	20.91	0.00	20.91	30.00	1.0000	Complies

APPENDIX G POWER SPECTRAL DENSITY

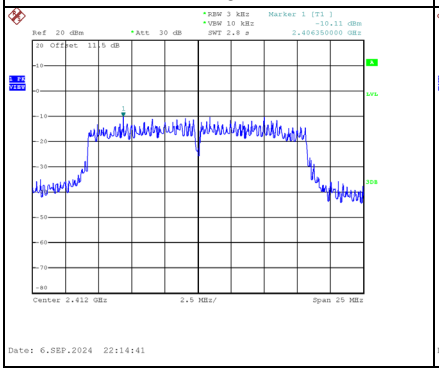
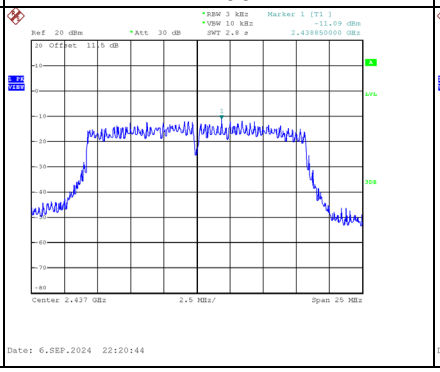
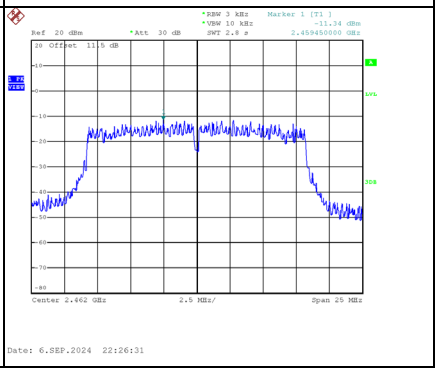
Test Mode	IEEE 802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-3.65	8.00	Complies
06	2437	-7.80	8.00	Complies
11	2462	-7.22	8.00	Complies

CH01	CH06	CH11
		

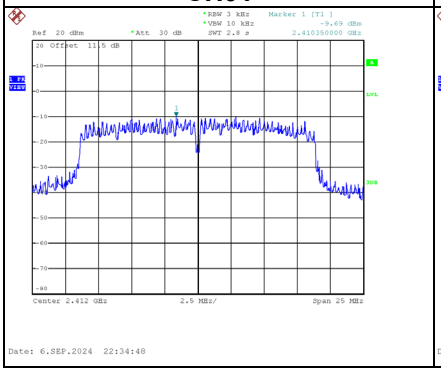
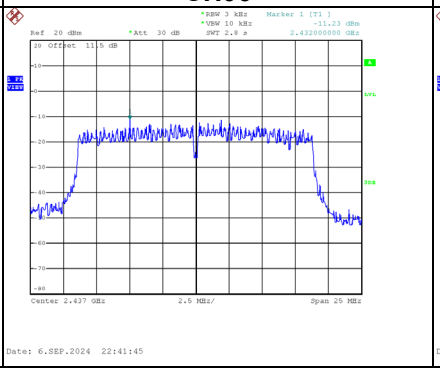
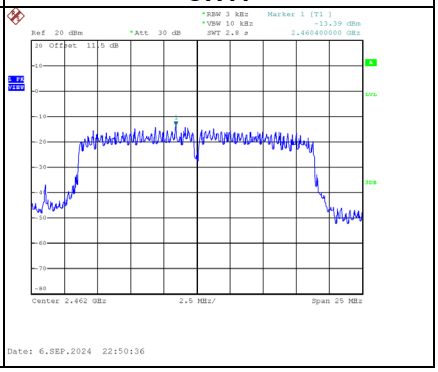
Test Mode	IEEE 802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-10.11	8.00	Complies
06	2437	-11.09	8.00	Complies
11	2462	-11.34	8.00	Complies

CH01	CH06	CH11
		

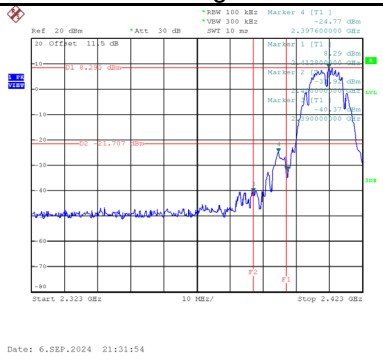
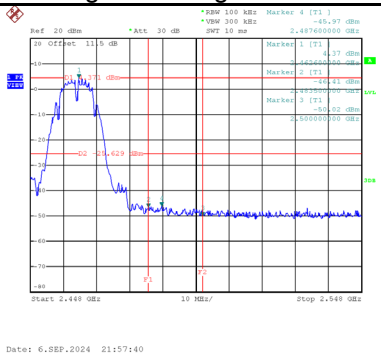
Test Mode	IEEE 802.11n (HT20)

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-9.69	8.00	Complies
06	2437	-11.23	8.00	Complies
11	2462	-13.39	8.00	Complies

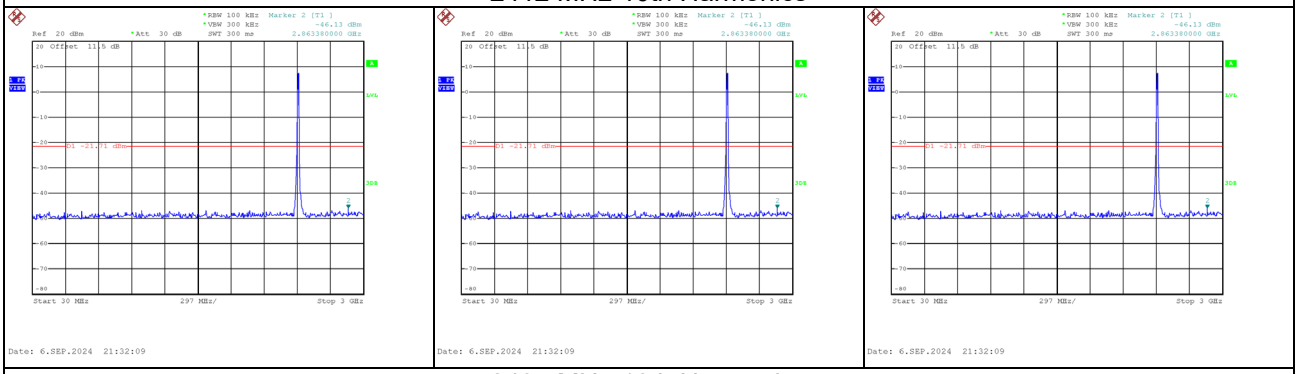
CH01	CH06	CH11
		

APPENDIX H ANTENNA CONDUCTED SPURIOUS EMISSIONS

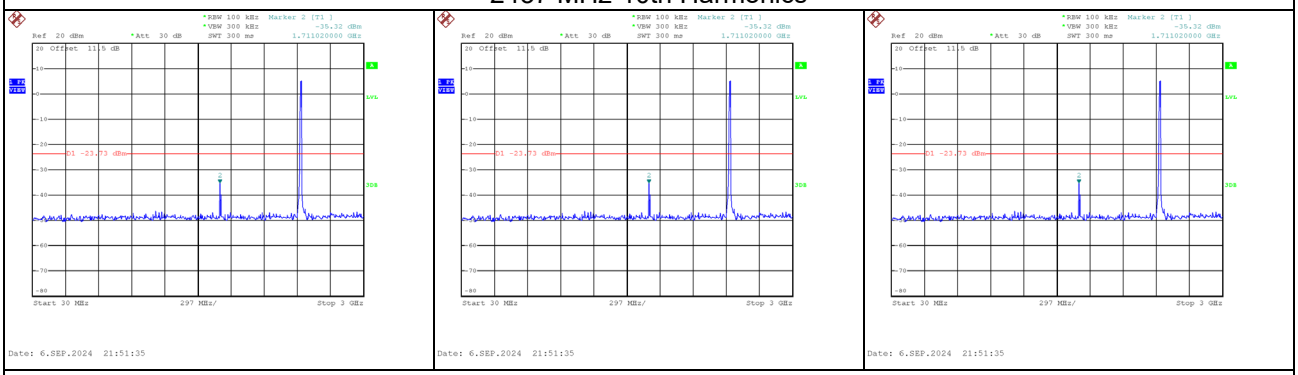
Test Mode	IEEE 802.11b

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

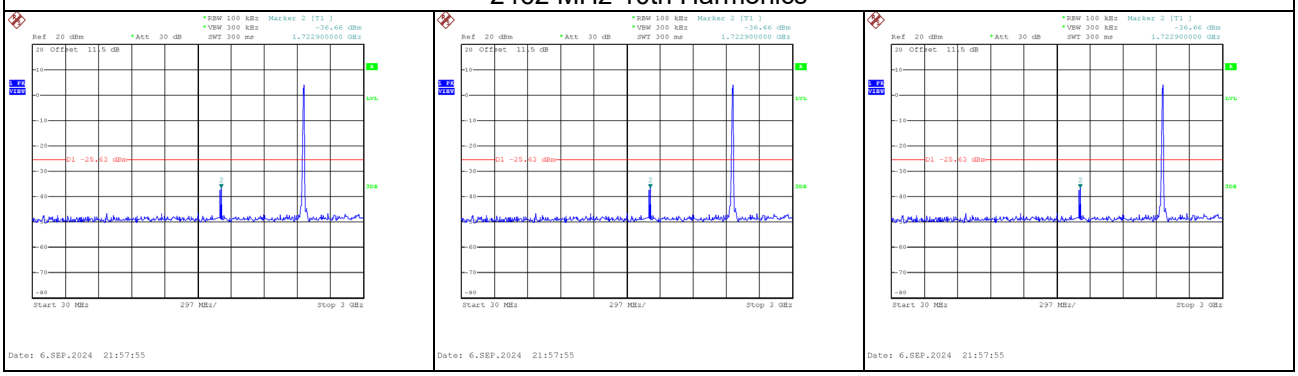
2412 MHz-10th Harmonics



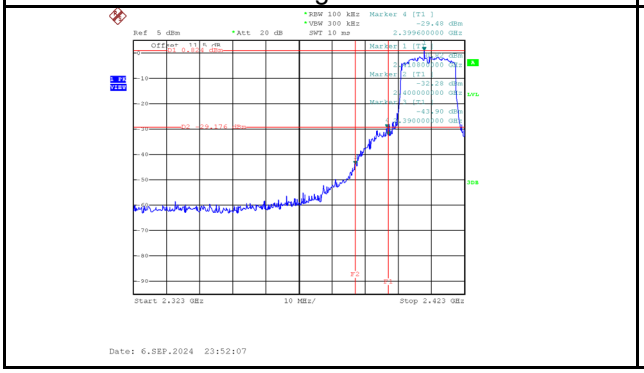
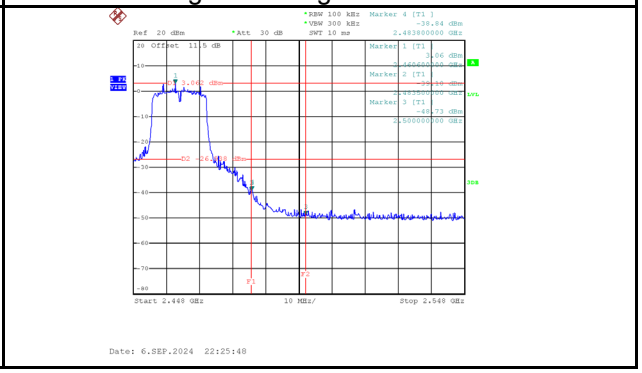
2437 MHz-10th Harmonics



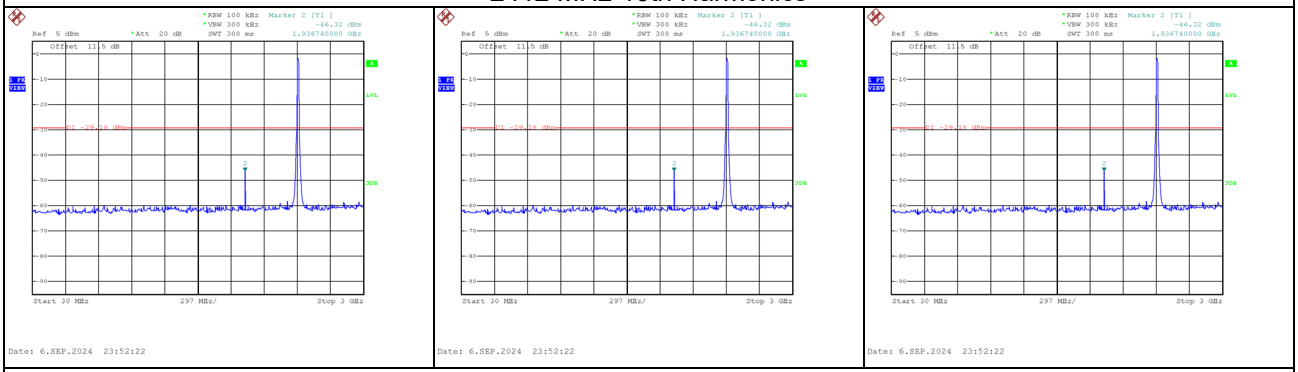
2462 MHz-10th Harmonics



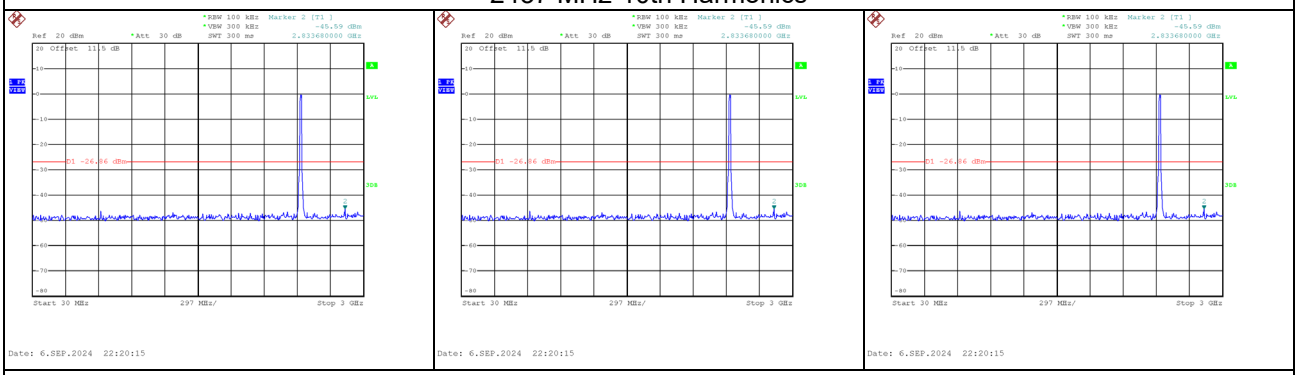
Test Mode	IEEE 802.11g

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

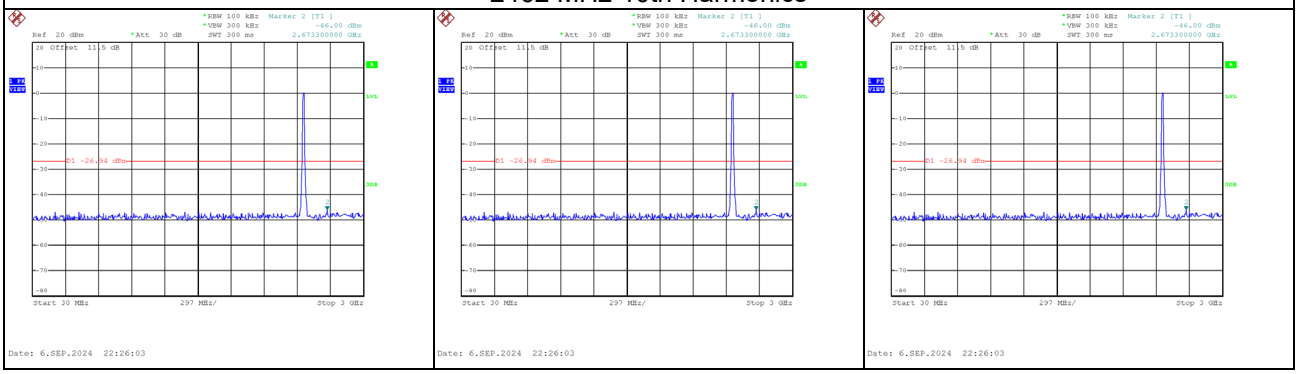
2412 MHz-10th Harmonics



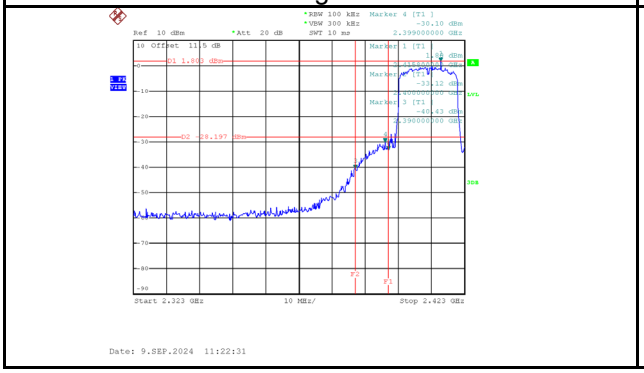
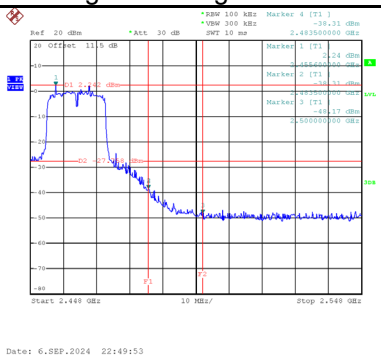
2437 MHz-10th Harmonics

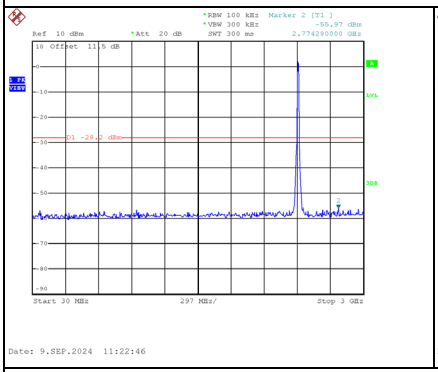
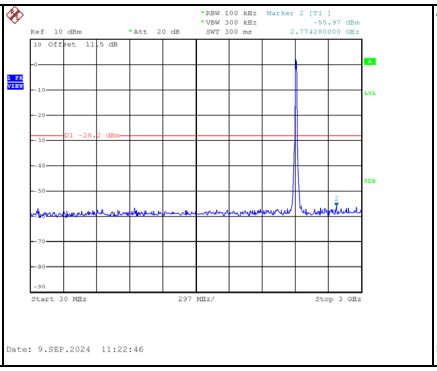
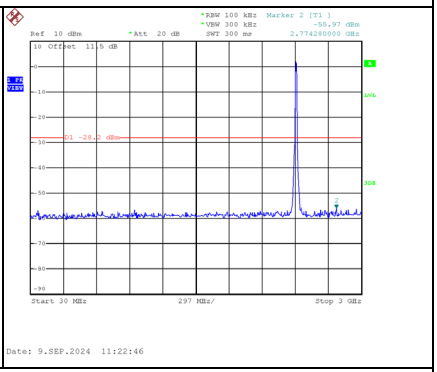
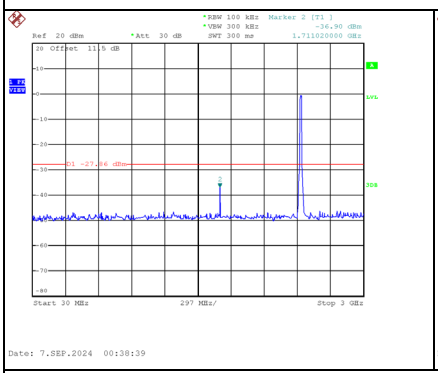
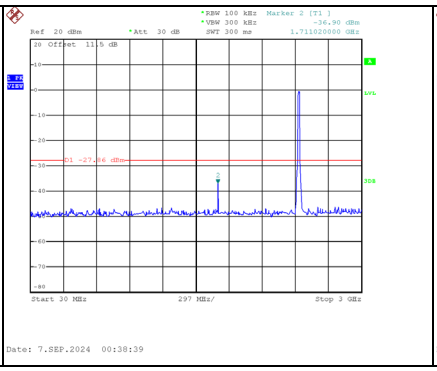
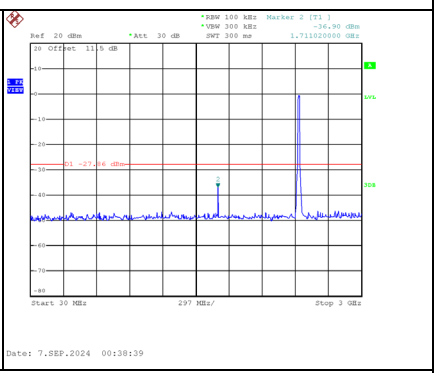
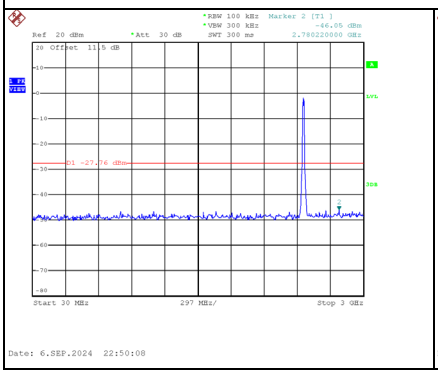
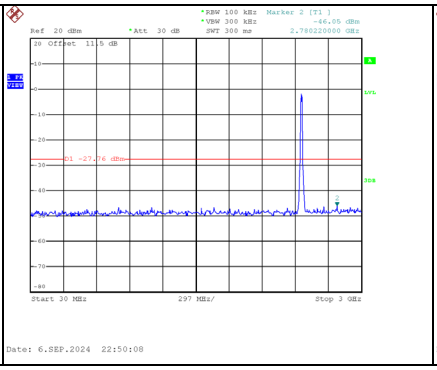
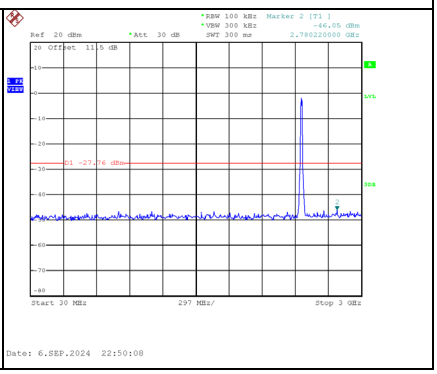


2462 MHz-10th Harmonics



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		
		

End of Test Report