FCC Radio Test Report

FCC ID: 2BCGWD235

Report No.	:	eLab-FCCP-1-2401G101
Equipment	:	Tapo Video Doorbell Camera
Brand Name	:	tp-link
Test Model	:	Tapo D235
Series Model	:	TD25, Tapo D225
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
Measurement Procedure(s)	:	ANSI C63.10-2013
Date of Receipt	:	2024/2/5
Date of Test	:	2024/2/6 ~ 2024/4/17
Issued Date	:	2024/5/16

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

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Declaration

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

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

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

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

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

Limitation

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

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

Table of Contents Page

REPORT ISSUED HISTORY 6
1 . SUMMARY OF TEST RESULTS 7
1.1 TEST FACILITY 8
1.2 MEASUREMENT UNCERTAINTY 8
1.3 TEST ENVIRONMENT CONDITIONS 8
2 . GENERAL INFORMATION 9
2.1 GENERAL DESCRIPTION OF EUT 9
2.2 DESCRIPTION OF TEST MODES 10
2.3 PARAMETERS OF TEST SOFTWARE 11
2.4 DUTY CYCLE 12
2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 13
2.6 SUPPORT UNITS 14
2.7 CUSTOMER INFORMATION DESCRIPTION 14
3 . AC POWER LINE CONDUCTED EMISSIONS 15
3.1 LIMIT 15
3.2 TEST PROCEDURE 15
3.3 DEVIATION FROM TEST STANDARD 16
3.4 TEST SETUP 16
3.5 EUT OPERATION CONDITIONS 16
3.6 TEST RESULTS 16
4 . RADIATED EMISSIONS 17
4.1 LIMIT 17
4.2 TEST PROCEDURE 18
4.3 DEVIATION FROM TEST STANDARD 19
4.4 TEST SETUP 19
4.5 EUT OPERATION CONDITIONS 20
4.6 TEST RESULTS - 9 KHZ TO 30 MHZ 20
4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ 20
4.8 TEST RESULTS - ABOVE 1000 MHZ 20
5 . BANDWIDTH 21
5.1 LIMIT 21
5.2 TEST PROCEDURE 21
5.3 DEVIATION FROM STANDARD 21

Table of Contents Page

5.4 TEST SETUP 21
5.5 EUT OPERATION CONDITIONS 21
5.6 TEST RESULTS 21
6 . MAXIMUM OUTPUT POWER 22
6.1 LIMIT 22
6.2 TEST PROCEDURE 22
6.3 DEVIATION FROM STANDARD 22
6.4 TEST SETUP 22
6.5 EUT OPERATION CONDITIONS 22
6.6 TEST RESULTS 22
7 . CONDUCTED SPURIOUS EMISSIONS 23
7.1 LIMIT 23
7.2 TEST PROCEDURE 23
7.3 DEVIATION FROM STANDARD 23
7.4 TEST SETUP 23
7.5 EUT OPERATION CONDITIONS 23
7.6 TEST RESULTS 23
8 . POWER SPECTRAL DENSITY 24
8.1 LIMIT 24
8.2 TEST PROCEDURE 24
8.3 DEVIATION FROM STANDARD 24
8.4 TEST SETUP 24
8.5 EUT OPERATION CONDITIONS 24
8.6 TEST RESULTS 24
9 . MEASUREMENT INSTRUMENTS LIST 25
10 . EUT TEST PHOTO 26
11 . EUT PHOTO 26
APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS 27
APPENDIX B - RADIATED EMISSION - 30 MHZ TO 1000 MHZ 30
APPENDIX C - RADIATED EMISSION- ABOVE 1000 MHZ 33
APPENDIX D - BANDWIDTH 58
APPENDIX E - MAXIMUM OUTPUT POWER 62

Table of Contents Page

APPENDIX F - CONDUCTED SPURIOUS EMISSIONS **64**

APPENDIX G - POWER SPECTRAL DENSITY **68**

REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
eLab-FCCP-1-2401G101	R00	Original Report.	2024/4/30	Invalid
eLab-FCCP-1-2401G101	R01	Modified the comments of TCB.	2024/5/16	Valid

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	**Test Item**	**Test Result**	**Judgment**	**Remark**
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	------
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C	PASS	------
15.247(a)(2)	Bandwidth	APPENDIX D	PASS	------
15.247(b)(3)	Maximum Output Power	APPENDIX E	PASS	------
15.247(d)	Conducted Spurious Emissions	APPENDIX F	PASS	------
15.247(e)	Power Spectral Density	APPENDIX G	PASS	------
15.203	Antenna Requirement	------	PASS	**Note(2)**

Note:

(1) “N/A” denotes test is not applicable in this test report.
(2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.
(3) The report format version is FR15CWL2.4_V1.0

1.1 TEST FACILITY

The test facilities used to collect the test data in this report:

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: 681248 and DN: TW4045.
☒ C01 ☒ CB01 ☒ TR01

1.2 MEASUREMENT UNCERTAINTY

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

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	*U* (dB)
C01	CISPR	150 kHz ~ 30MHz	2.4498

B. Radiated emissions test:

Test Site	Measurement Frequency Range	*U*,(dB)
CB01	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*,(dB)
Occupied Bandwidth	1.0502
Output power	1.0406
Conducted Spurious emissions	1.20
Conducted Band edges	1.0518
Power Spectral Density	1.20

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	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	20°C	58%	AC 120V/60Hz	Ray Chen
Radiated Emissions-30MHz to 1000MHz	25°C	60%	DC 5V	Ray Chen
Radiated Emissions-Above 1000MHz	25°C	60%	DC 5V	Ray Chen
Bandwidth	22°C	58%	DC 5V	Cheng Tsai
Maximum Output Power	25.6°C	62%	DC 5V	Nero Hsieh
Conducted Spurious Emissions	22°C	58%	DC 5V	Cheng Tsai
Power Spectral Density	22°C	58%	DC 5V	Cheng Tsai

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Tapo Video Doorbell Camera
Brand Name	tp-link
Test Model	Tapo D235
Series Model	TD25, Tapo D225
Model Difference(s)	Only differ in model name.
HVIN	Tapo D235
PMN	Tapo Video Doorbell Camera
Power Source	1# Supplied from Type-C port. 2# AC Mains. 3# Battery supplied. Model: Tapo A111-INT
Power Rating	1# 5V ⎓ 2A 2# 8-24V~ 1A 50/60Hz 3# 3.6V 10000mAh 36Wh Charging Voltage: 4.2V
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM
Bit Rate of Transmitter	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 65 Mbps
Maximum Output Power	IEEE 802.11n(HT20): 21.13 dBm (0.1297 W)

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the 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)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	BIG FIELD GLOBAL PTE. LTD.	N/A	Dipole	IPEX	-0.11
2	BIG FIELD GLOBAL PTE. LTD.	N/A	Dipole	IPEX	-0.14

Note:

1) Smart antenna system with two transmit/receive chains, but operating in a mode where only one transmit/receive chain is used. Ant.1 refers to Main Antenna, Ant.2 refers to Aux Antenna.
2) Two antennas are tested, the worst case is Ant. 1 and recorded.

2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11
Mode 4	TX N(HT20) Mode Channel 06

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 4	TX N(HT20) Mode Channel 06

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 4	TX N(HT20) Mode Channel 06

Radiated emissions test- Above 1GHz	
Final Test Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11

Conducted test	
Final Test Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11

NOTE:
(1) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
(2) For AC power line conducted emissions and radiated emission below 1 GHz test, the TX N(HT20) Mode Channel 06 is found to be the worst case and recorded.
(3) For radiated emission above 1 GHz test, the polarization of Vertical and Hoizontal are evaluated, the worst case is Vertical for Band edge and recorded.

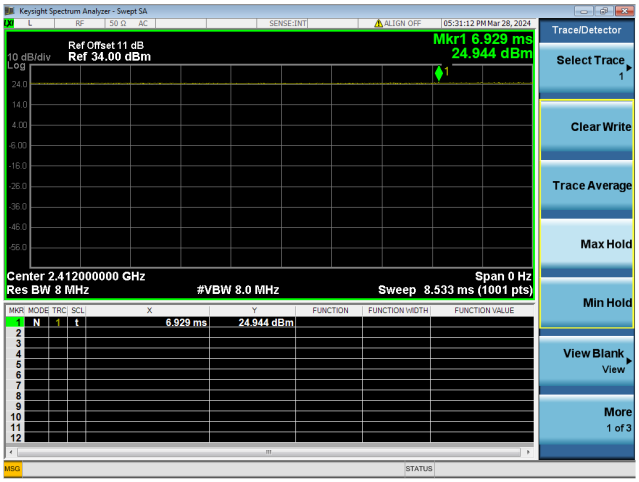
2.3 PARAMETERS OF TEST SOFTWARE

Test Software Version	IPOP V4.0		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	16	16	16
IEEE 802.11g	16	16	16
IEEE 802.11n(HT20)	16	16	16

2.4 DUTY CYCLE

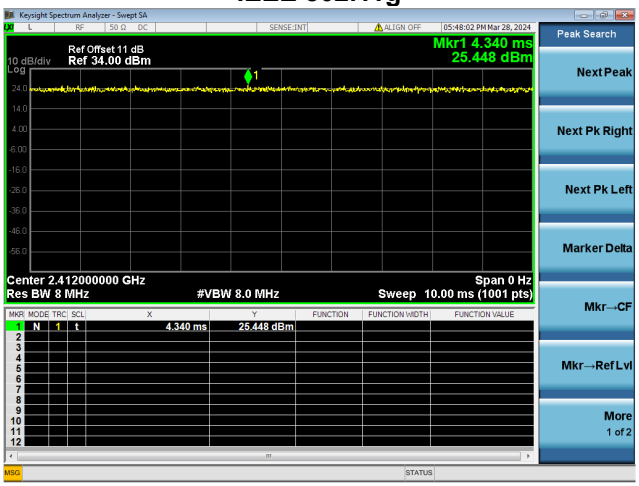
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.
The output power = measured power + duty factor.

IEEE 802.11b



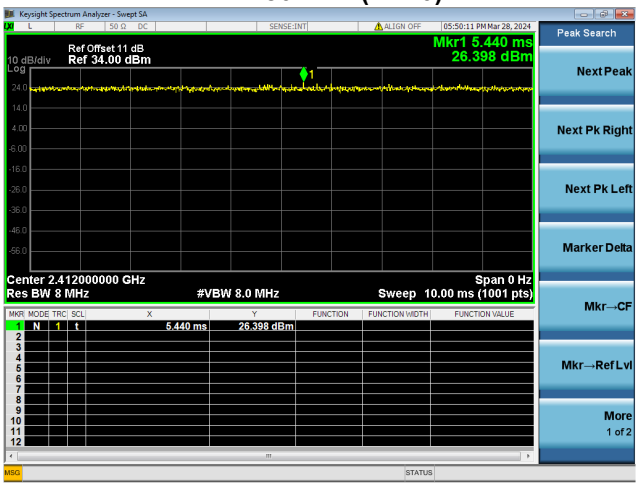
Duty cycle = 1000.000 ms / 1000.000 ms = 100%
Duty Factor = 10 log(1/Duty cycle) = 0.00

IEEE 802.11g



Duty cycle = 1000.000 ms / 1000.000 ms = 100%
Duty Factor = 10 log(1/Duty cycle) = 0.00

IEEE 802.11n(HT20)



Duty cycle = 1000.000 ms / 1000.000 ms = 100%
Duty Factor = 10 log(1/Duty cycle) = 0.00

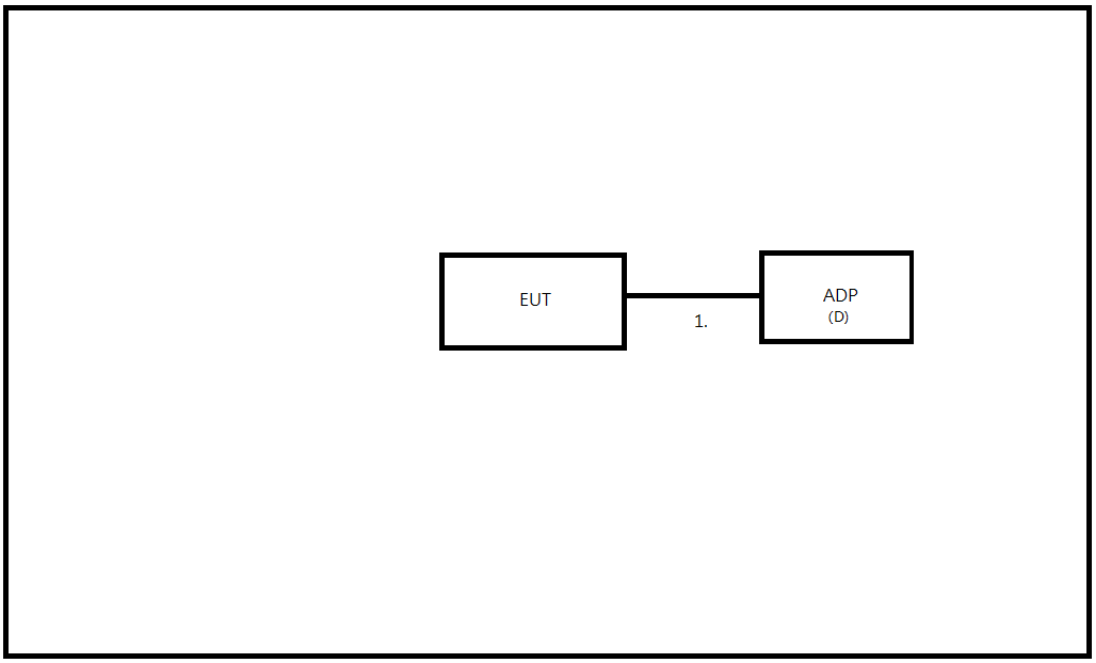
NOTE:
For IEEE 802.11b:
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz.

For IEEE 802.11g:
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz.

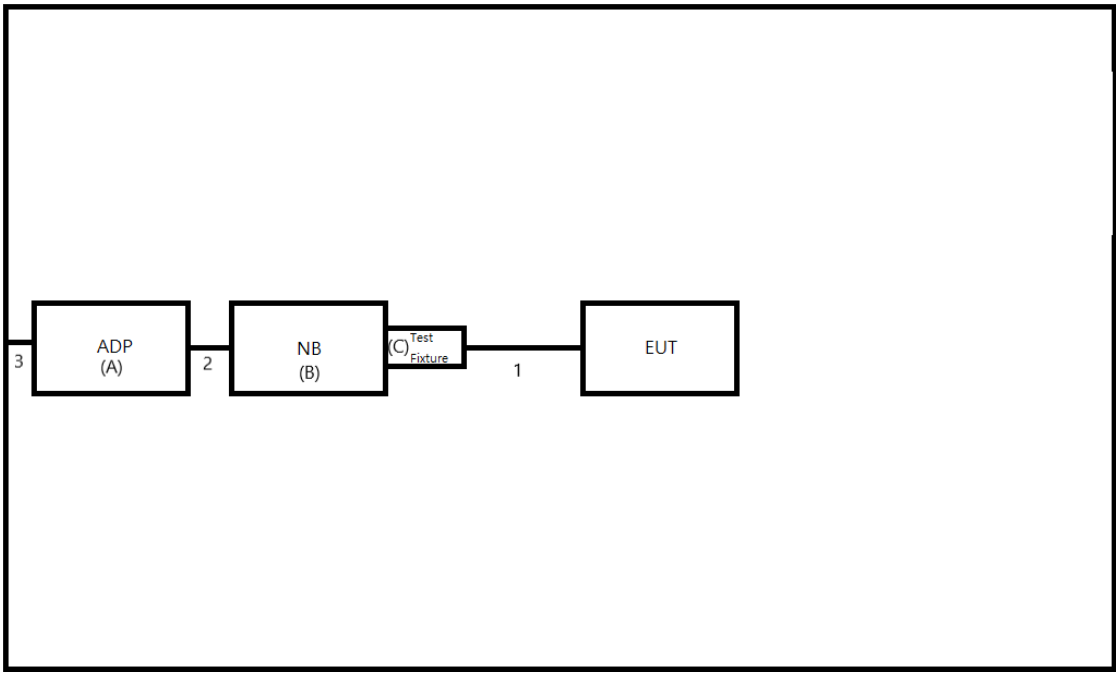
For IEEE 802.11n(HT20):
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz.

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

AC Power Line Conducted Emissions Test



Others Test



2.6 SUPPORT UNITS

Item	Equipment	Manufacturer	Model Name	Series No.	Note
A	ADP	TOSHIBA	PA5279E-1AC3	N/A	Furnished by test lab
B	NB	Dynabook	TECRA A40-J	N/A	Furnished by test lab
C	Test Fixture	SZFXSC	FT232RL	N/A	Furnished by test lab
D	ADP	JIJIN	AC-DK23T	N/A	Furnished by test lab

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
1	USB Cable	NO	NO	0.1m	Furnished by test lab
2	DC Cable	NO	YES	1.5m	Furnished by test lab
3	AC Cable	NO	NO	1m	Furnished by test lab

2.7 CUSTOMER INFORMATION DESCRIPTION

1) The antenna gain is provided by the manufacturer.
2) Except for AC power line conducted emissions and radiated emissions, the results of all test items include cable losses. All cable losses are provided by the testing laboratory.

3. AC POWER LINE CONDUCTED EMISSIONS

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 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

3.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling 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 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

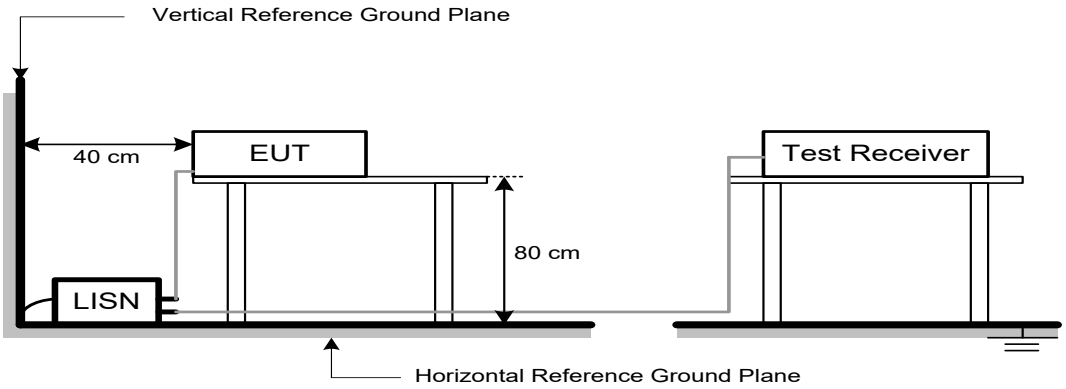
The following table is the setting of the receiver:

Receiver Parameters	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP



3.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

4. RADIATED EMISSIONS

4.1 LIMIT

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

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-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
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

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 (dBuV)		Correct Factor (dB)		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

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 1 GHz)
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 1 GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; 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 1 GHz.
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 1 GHz)
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 1 GHz)
i. For the actual test configuration, please refer to the related Item -EUT Test Photos.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1 MHz / 3 MHz for PK value 1 MHz / 1/T Hz for AVG value

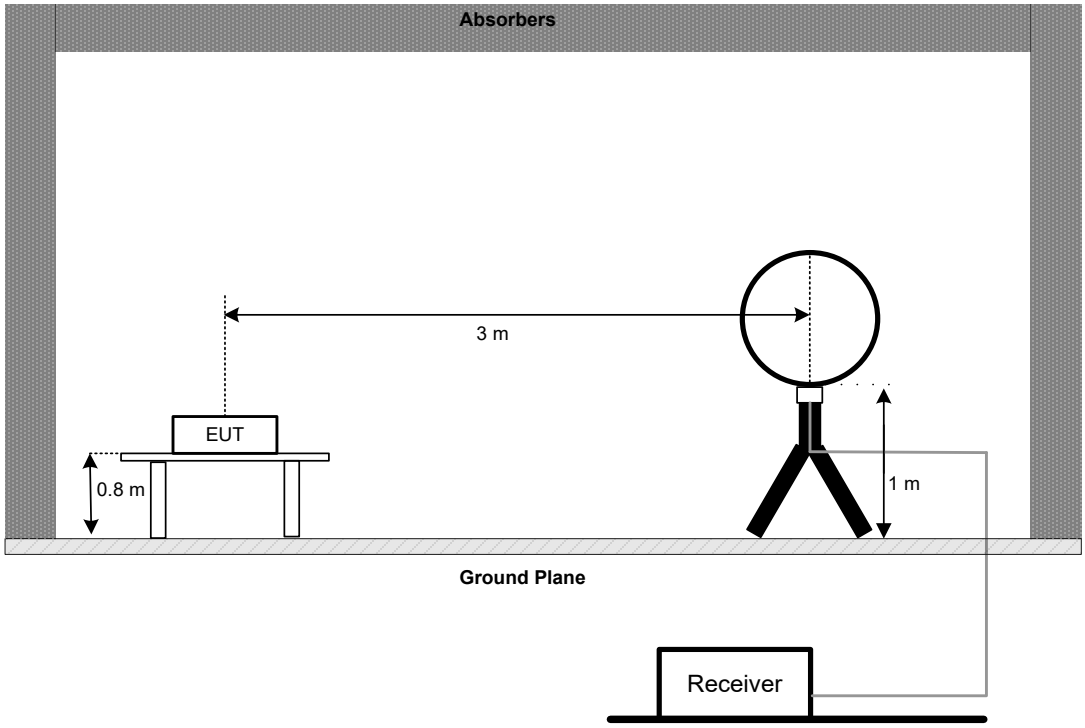
Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5 GHz for PK/AVG detector

4.3 DEVIATION FROM TEST STANDARD

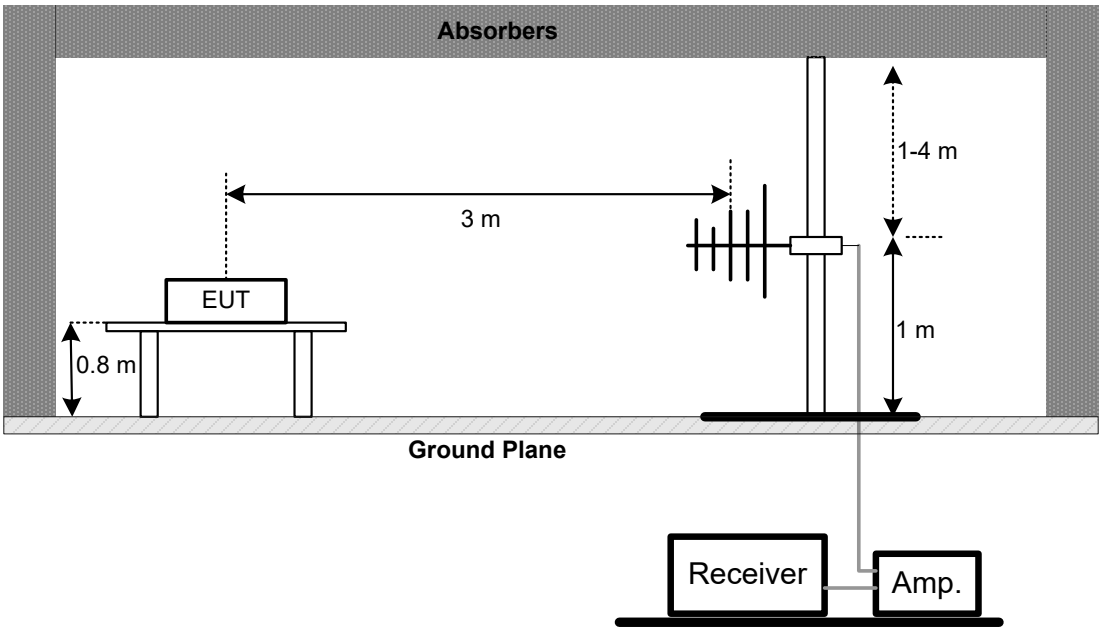
No deviation.

4.4 TEST SETUP

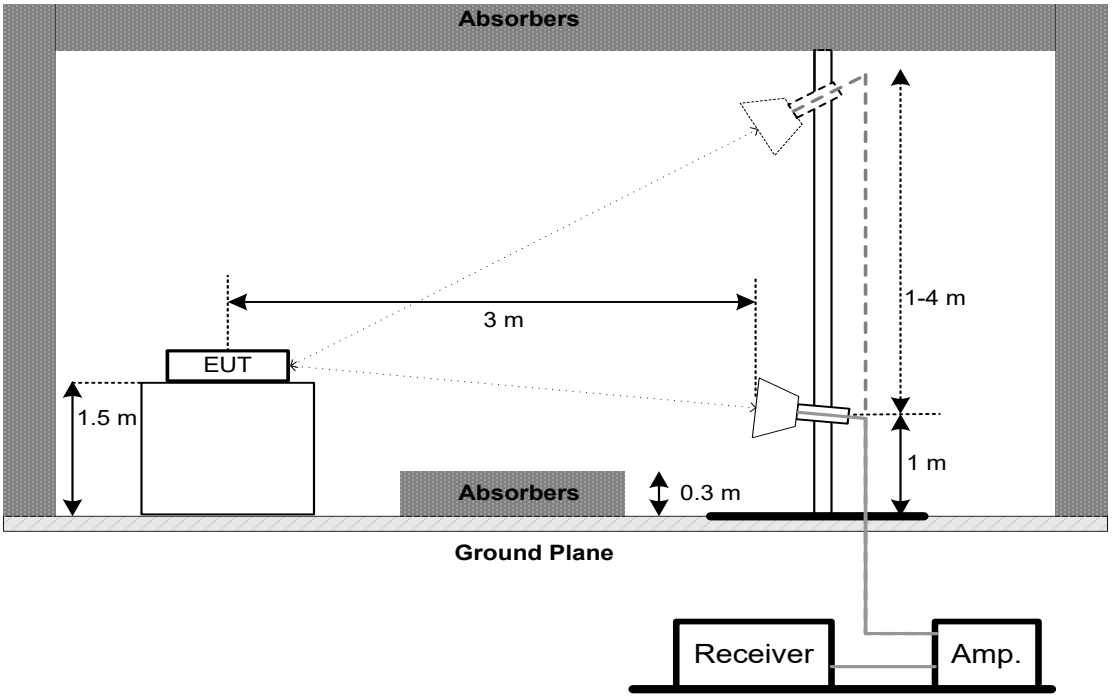
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULTS - 9 KHZ TO 30 MHZ

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

4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX B.

4.8 TEST RESULTS - ABOVE 1000 MHZ

Please refer to the APPENDIX C.

Remark:

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

5. BANDWIDTH

5.1 LIMIT

Section	Test Item	Limit
FCC 15.247(a)(2)	6 dB Bandwidth	Minimum 500 kHz
	99% Emission Bandwidth	-

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. The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

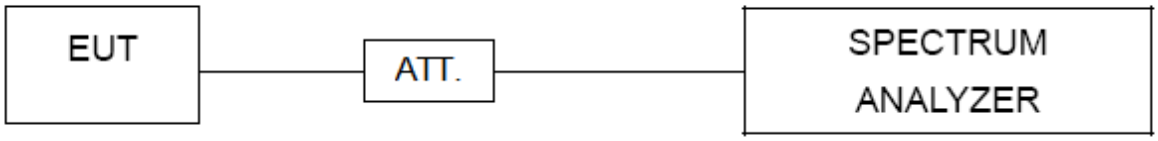
For 99% Emission Bandwidth:

Spectrum Parameters	Setting
Span Frequency	Between 1.5 times and 5.0 times the OBW
RBW	300 kHz For 20MHz
VBW	1 MHz For 20MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX D.

6. MAXIMUM OUTPUT POWER

6.1 LIMIT

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000 Watt or 30.00 dBm

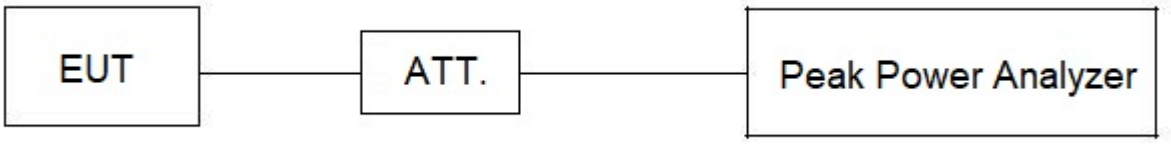
6.2 TEST PROCEDURE

a. The EUT was directly connected to the peak power analyzer and antenna output port as show in the block diagram below.
b. The maximum conducted output power was performed in accordance with method 11.9.2.3.1 of ANSI C63.10-2013.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX E.

7. CONDUCTED SPURIOUS EMISSIONS

7.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

7.2 TEST PROCEDURE

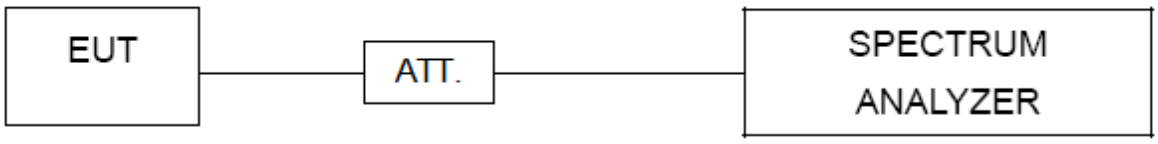
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX F.

8. POWER SPECTRAL DENSITY

8.1 LIMIT

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

8.2 TEST PROCEDURE

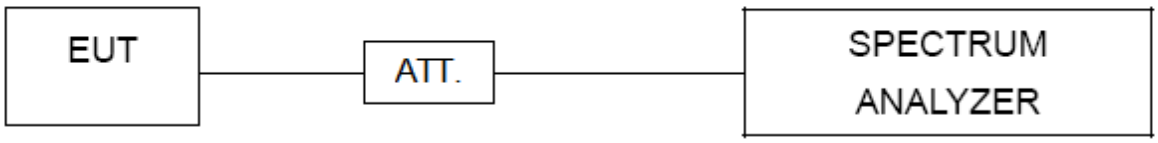
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	25 MHz (20 MHz)
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX G.

9. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Two-Line V-Network	R&S	ENV216	101051	2023/7/21	2024/7/20
2	EMI Test Receiver	Keysight	N9038A	MY54130009	2023/6/26	2024/6/25

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Pre-Amplifier	EMCI	EMC001330-20201222	980807	2023/12/11	2024/12/10
2	Pre-Amplifier	EMCI	EMC184045SE	980512	2023/12/11	2024/12/10
3	Pre-Amplifier	EMCI	EMC051845SE	980779	2023/12/11	2024/12/10
4	Test Cable	EMCI	EMC105-SM-SM-3000	210118	2023/12/11	2024/12/10
5	Test Cable	EMCI	EMC105-SM-SM-1000	210119	2023/12/11	2024/12/10
6	EMI Test Receiver	Keysight	N9038A	MY54130009	2023/6/26	2024/6/25
7	EXA Spectrum Analyzer	keysight	N9010A	MY56480554	2023/9/12	2024/9/11
8	Broad-Band Horn Antenna	RFSPIN	DRH18-E	210109A18E	2024/1/10	2025/1/9
9	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	340	2023/6/29	2024/6/28
10	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	01207	2023/12/18	2024/12/17
11	Loop Ant.	Electro-Metrics	EMCI-LPA600	274	2023/6/28	2024/6/27
12	6dB Attenuator	EMCI	EMCI-N-6-05	N/A	2023/12/18	2024/12/17
13	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Bandwidth & Conducted Spurious Emissions & Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Spectrum Analyzer	Keysight	N9010A	MY52220990	2023/8/11	2024/8/10

Maximum Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	POWER METER	Anritsu	MA24408A	12591	2023/10/25	2024/10/24

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

10. EUT TEST PHOTO

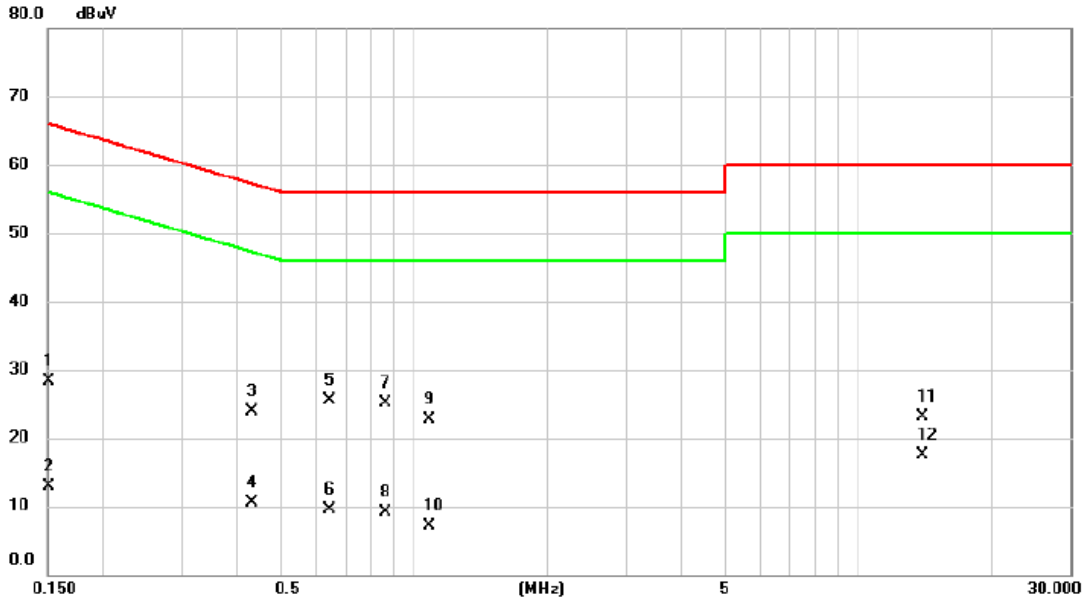
Please refer to APPENDIX-TEST PHOTOS.

11. EUT PHOTO

Please refer to APPENDIX-EUT PHOTOS.

APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

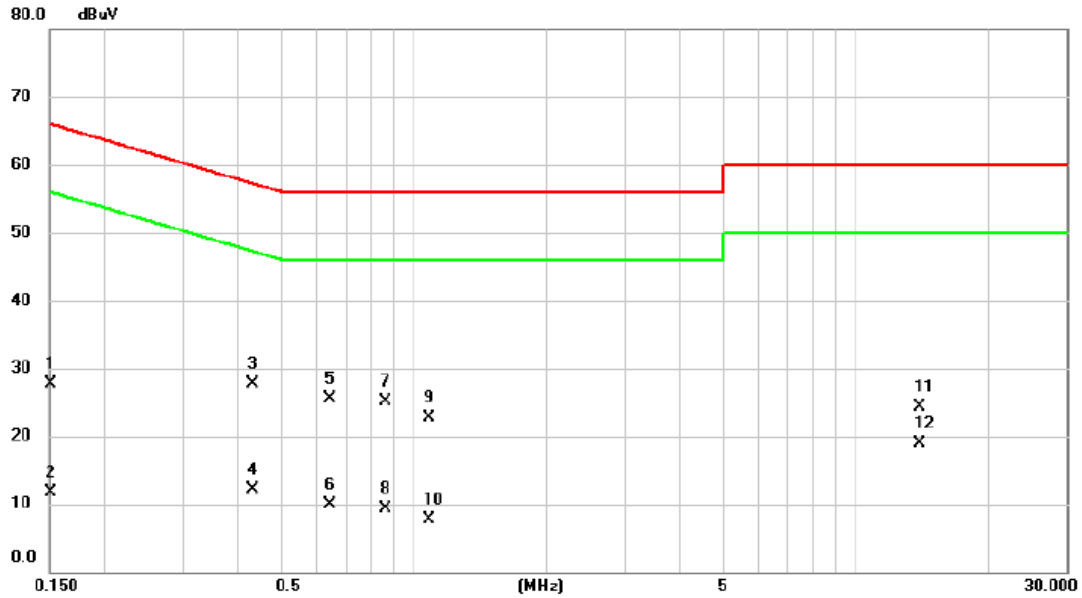
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/2
Test Frequency	2437MHz	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	28.20	0.04	28.24	66.00	-37.76	QP	
2		0.1500	12.80	0.04	12.84	56.00	-43.16	AVG	
3		0.4312	23.90	0.04	23.94	57.23	-33.29	QP	
4		0.4312	10.50	0.04	10.54	47.23	-36.69	AVG	
5	*	0.6472	25.40	0.05	25.45	56.00	-30.55	QP	
6		0.6472	9.50	0.05	9.55	46.00	-36.45	AVG	
7		0.8632	25.00	0.05	25.05	56.00	-30.95	QP	
8		0.8632	9.00	0.05	9.05	46.00	-36.95	AVG	
9		1.0792	22.60	0.06	22.66	56.00	-33.34	QP	
10		1.0792	7.00	0.06	7.06	46.00	-38.94	AVG	
11		13.9020	22.80	0.23	23.03	60.00	-36.97	QP	
12		13.9020	17.20	0.23	17.43	50.00	-32.57	AVG	

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

Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/2
Test Frequency	2437MHz	Phase	Neutral

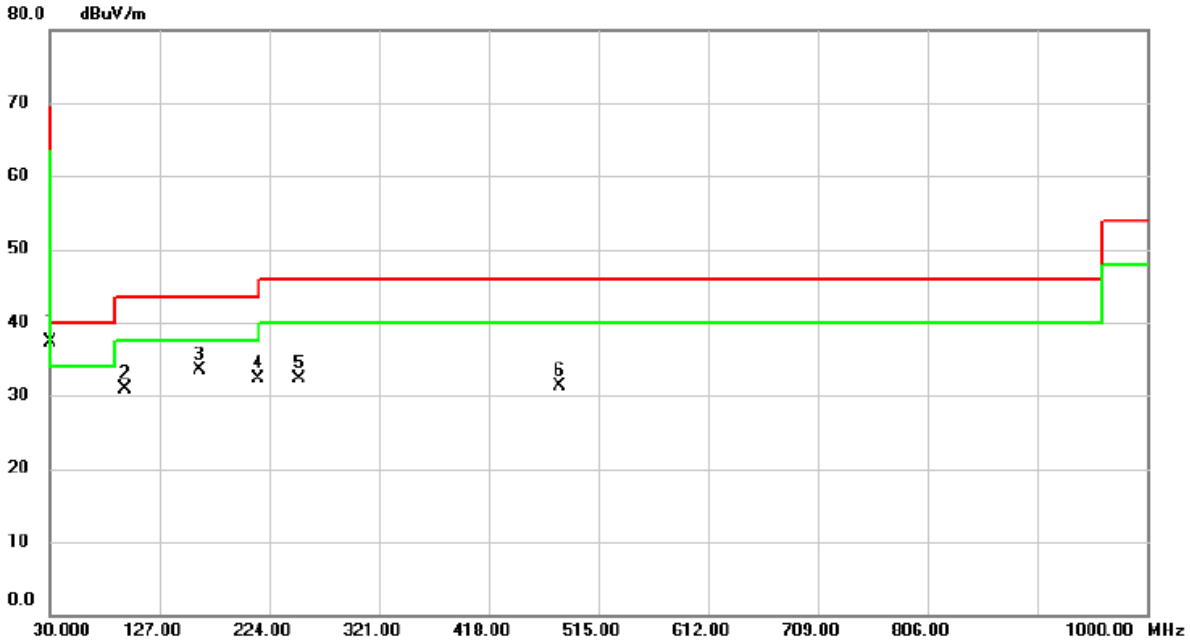


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	27.60	0.04	27.64	66.00	-38.36	QP	
2		0.1500	11.60	0.04	11.64	56.00	-44.36	AVG	
3	*	0.4312	27.70	0.04	27.74	57.23	-29.49	QP	
4		0.4312	12.10	0.04	12.14	47.23	-35.09	AVG	
5		0.6472	25.40	0.05	25.45	56.00	-30.55	QP	
6		0.6472	9.80	0.05	9.85	46.00	-36.15	AVG	
7		0.8632	25.00	0.05	25.05	56.00	-30.95	QP	
8		0.8632	9.30	0.05	9.35	46.00	-36.65	AVG	
9		1.0792	22.60	0.06	22.66	56.00	-33.34	QP	
10		1.0792	7.60	0.06	7.66	46.00	-38.34	AVG	
11		13.9065	24.10	0.23	24.33	60.00	-35.67	QP	
12		13.9065	18.60	0.23	18.83	50.00	-31.17	AVG	

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

APPENDIX B - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

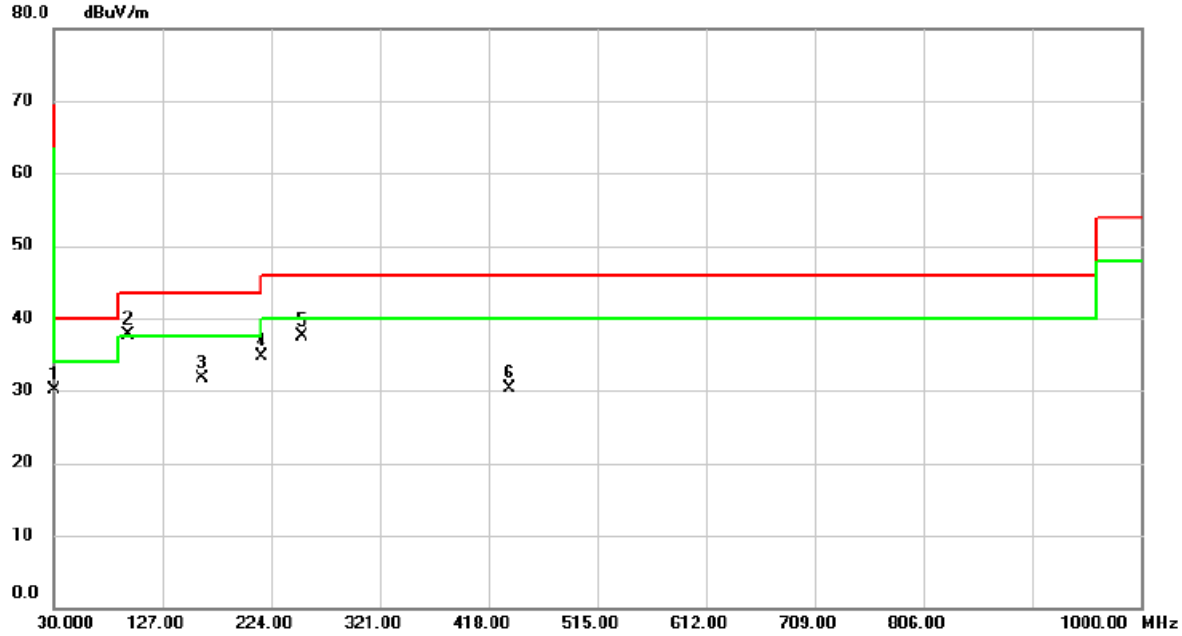
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/2
Test Frequency	2437MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30.9700	51.66	-14.44	37.22	40.00	-2.78	QP	
2		95.9600	48.57	-17.69	30.88	43.50	-12.62	peak	
3		162.8900	45.98	-12.56	33.42	43.50	-10.08	peak	
4		214.3000	48.14	-15.89	32.25	43.50	-11.25	peak	
5		250.1900	46.04	-13.70	32.34	46.00	-13.66	peak	
6		481.0500	38.94	-7.60	31.34	46.00	-14.66	peak	

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

Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/2
Test Frequency	2437MHz	Polarization	Horizontal

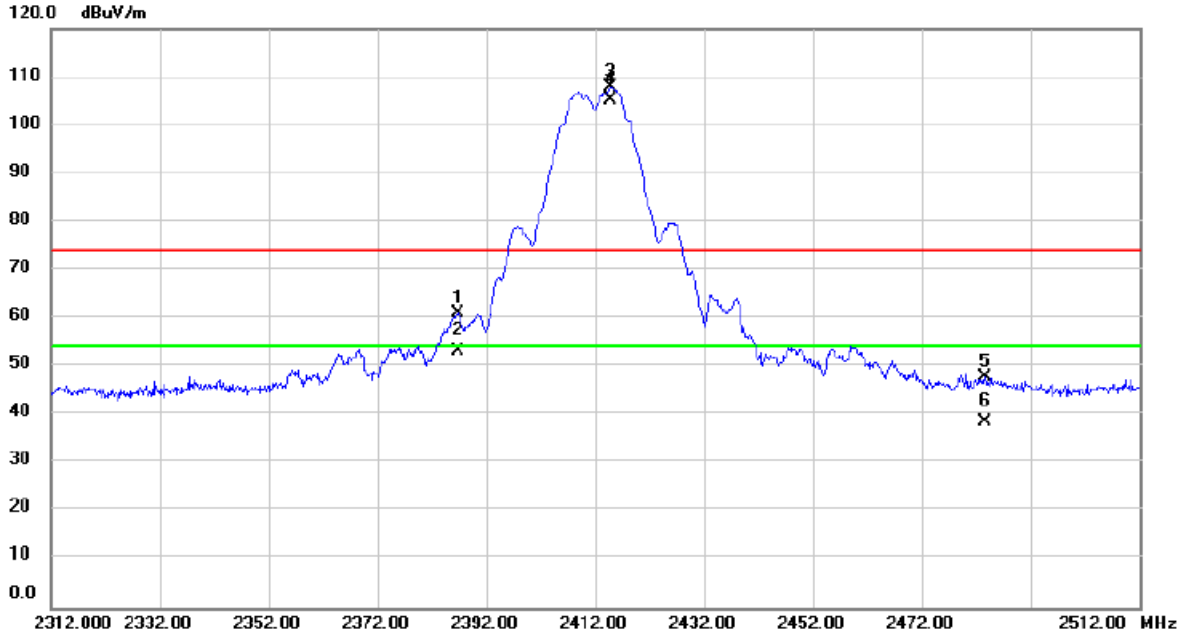


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		30.0000	44.62	-14.50	30.12	40.00	-9.88	peak	
2	*	95.9600	55.34	-17.69	37.65	43.50	-5.85	peak	
3		161.9200	44.10	-12.47	31.63	43.50	-11.87	peak	
4		215.2700	50.51	-15.90	34.61	43.50	-8.89	peak	
5		252.1300	51.07	-13.65	37.42	46.00	-8.58	peak	
6		436.4300	38.77	-8.40	30.37	46.00	-15.63	peak	

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

APPENDIX C - RADIATED EMISSION- ABOVE 1000 MHZ

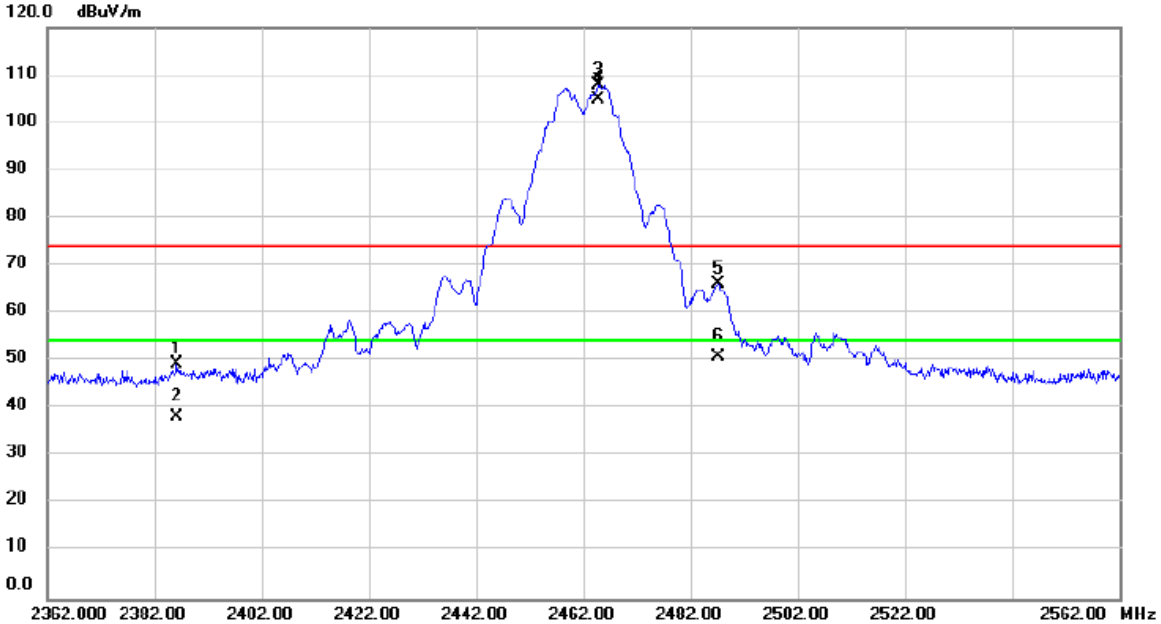
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2386.800	57.40	3.53	60.93	74.00	-13.07	peak	
2		2386.800	49.59	3.53	53.12	54.00	-0.88	AVG	
3	X	2414.800	104.3	3.58	107.97	74.00	33.97	peak	
4	*	2414.800	101.4	3.58	105.05	54.00	51.05	AVG	
5		2483.600	44.14	3.71	47.85	74.00	-26.15	peak	
6		2483.600	34.72	3.71	38.43	54.00	-15.57	AVG	

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

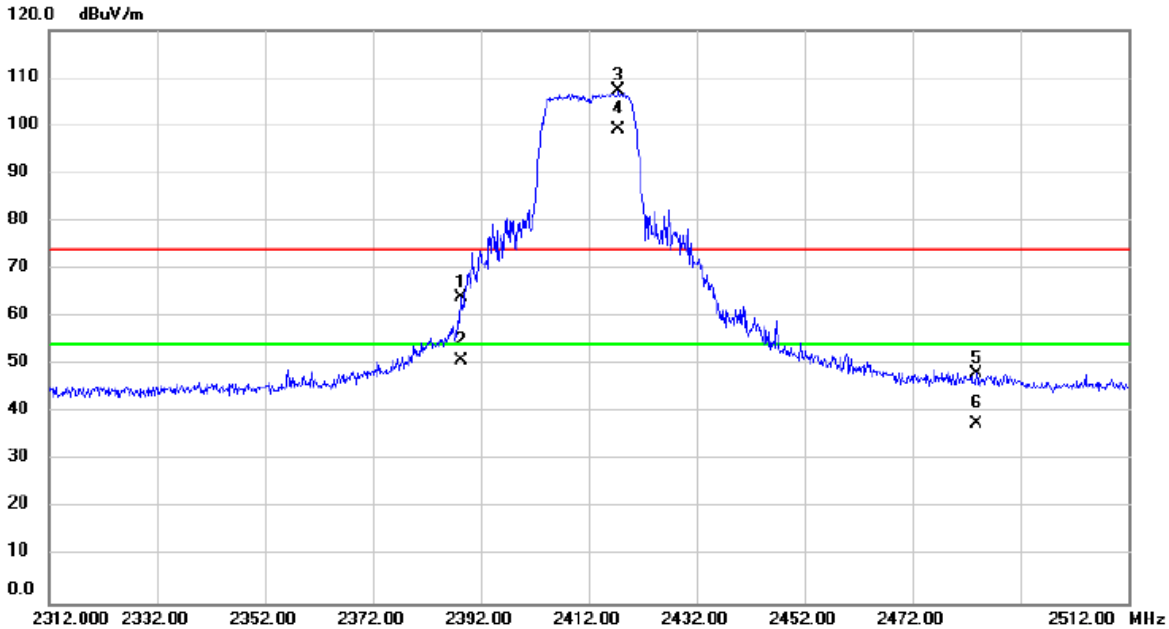
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2386.200	45.74	3.53	49.27	74.00	-24.73	peak	
2		2386.200	34.73	3.53	38.26	54.00	-15.74	AVG	
3	X	2464.800	104.32	3.67	107.99	74.00	33.99	peak	
4	*	2464.800	101.15	3.67	104.82	54.00	50.82	AVG	
5		2487.200	62.49	3.71	66.20	74.00	-7.80	peak	
6		2487.200	47.17	3.71	50.88	54.00	-3.12	AVG	

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

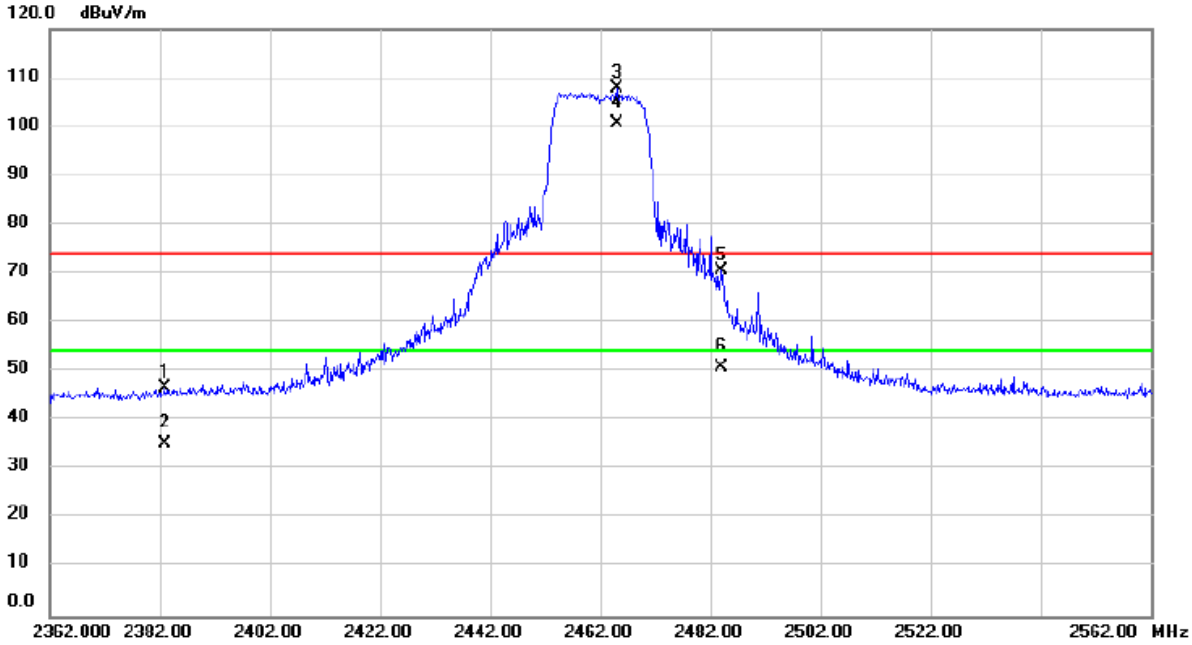
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2388.400	60.42	3.53	63.95	74.00	-10.05	peak	
2		2388.400	47.40	3.53	50.93	54.00	-3.07	AVG	
3	X	2417.600	103.57	3.58	107.15	74.00	33.15	peak	
4	*	2417.600	95.60	3.58	99.18	54.00	45.18	AVG	
5		2483.800	44.34	3.71	48.05	74.00	-25.95	peak	
6		2483.800	34.02	3.71	37.73	54.00	-16.27	AVG	

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

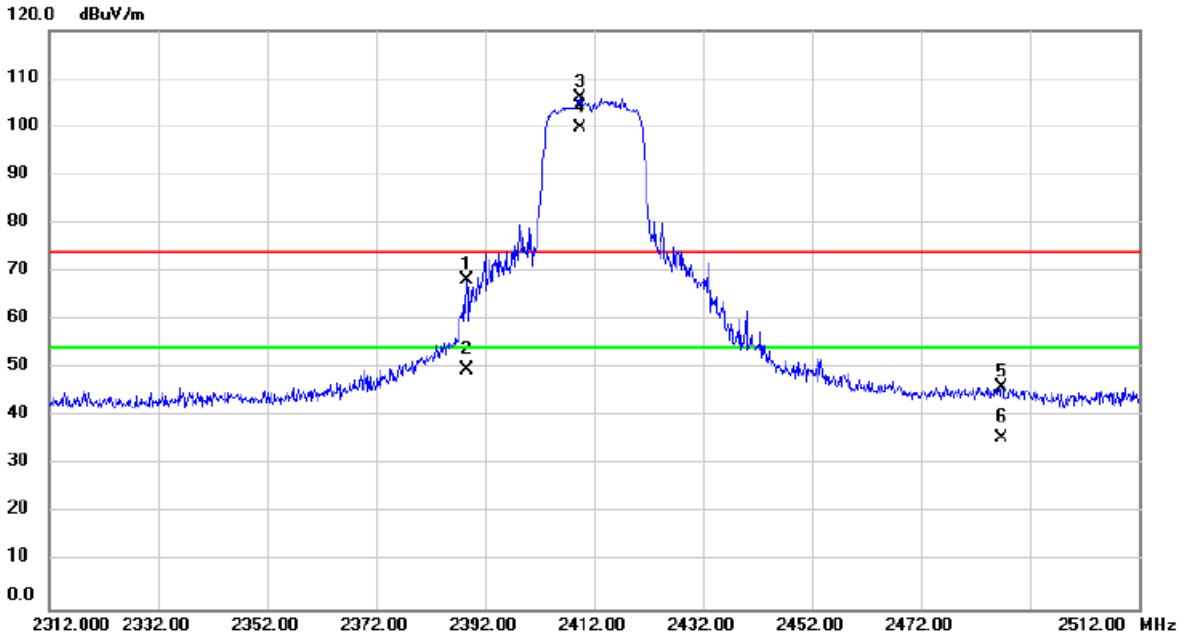
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2382.800	43.19	3.52	46.71	74.00	-27.29	peak	
2		2382.800	31.88	3.52	35.40	54.00	-18.60	AVG	
3	X	2465.000	104.3	3.67	108.00	74.00	34.00	peak	
4	*	2465.000	97.09	3.67	100.76	54.00	46.76	AVG	
5		2484.000	66.84	3.71	70.55	74.00	-3.45	peak	
6		2484.000	47.21	3.71	50.92	54.00	-3.08	AVG	

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

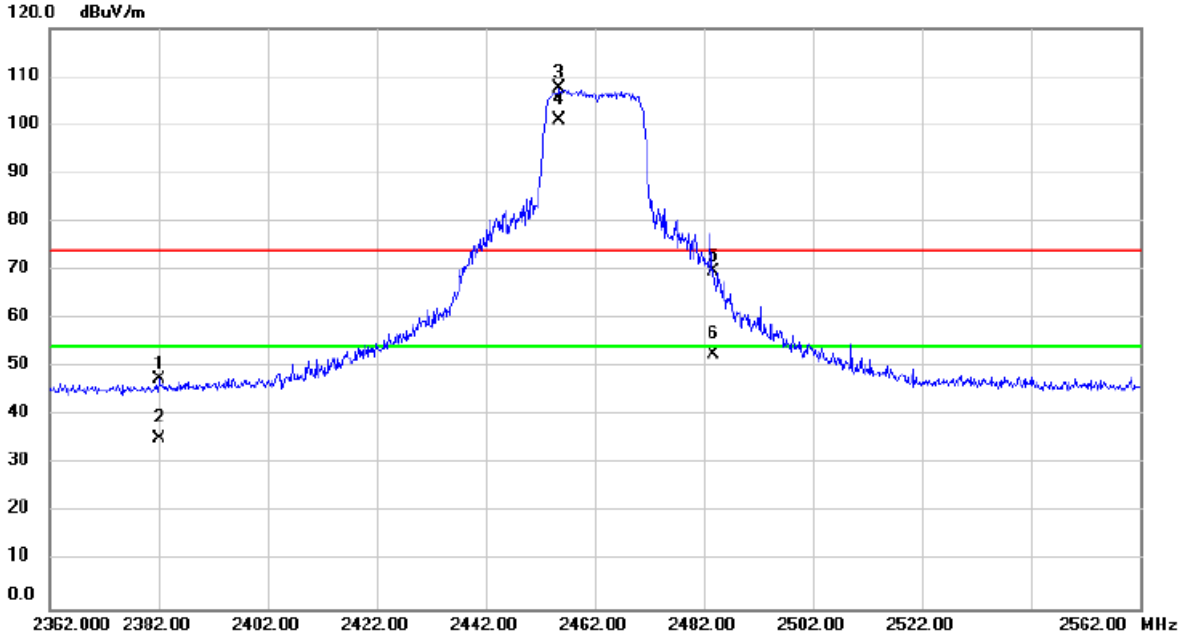
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2388.600	64.75	3.53	68.28	74.00	-5.72	peak	
2		2388.600	46.27	3.53	49.80	54.00	-4.20	AVG	
3	X	2409.600	102.5	3.57	106.15	74.00	32.15	peak	
4	*	2409.600	96.31	3.57	99.88	54.00	45.88	AVG	
5		2486.800	42.45	3.71	46.16	74.00	-27.84	peak	
6		2486.800	31.72	3.71	35.43	54.00	-18.57	AVG	

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

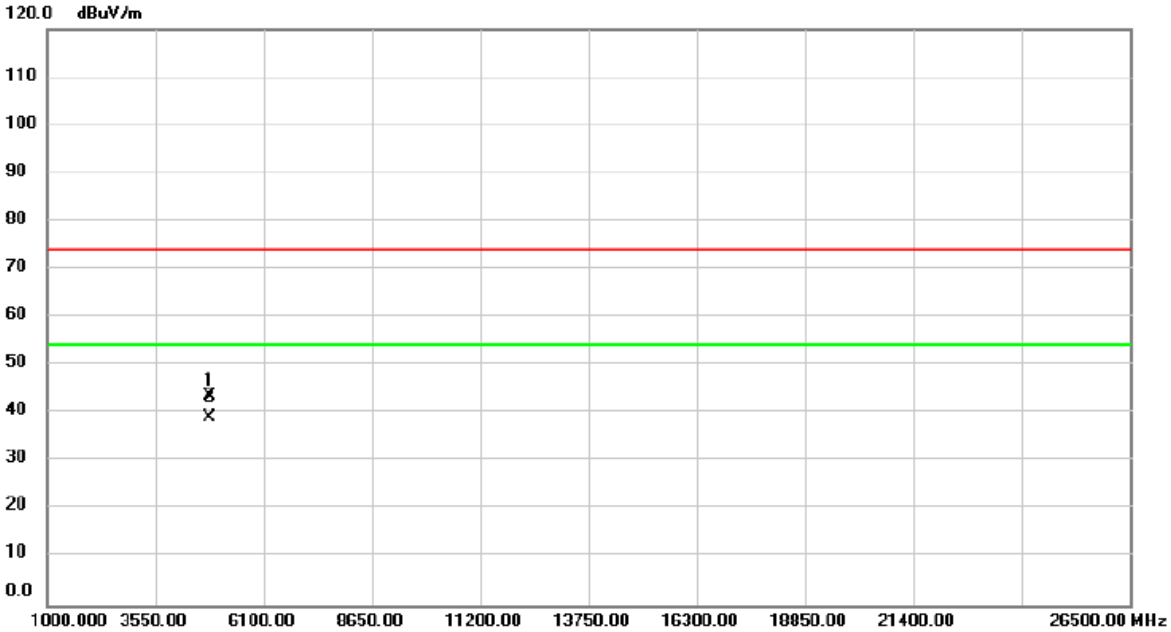
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2382.000	44.01	3.51	47.52	74.00	-26.48	peak	
2		2382.000	31.68	3.51	35.19	54.00	-18.81	AVG	
3	X	2455.600	103.8	3.65	107.53	74.00	33.53	peak	
4	*	2455.600	97.17	3.65	100.82	54.00	46.82	AVG	
5		2483.800	66.06	3.71	69.77	74.00	-4.23	peak	
6		2483.800	48.81	3.71	52.52	54.00	-1.48	AVG	

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

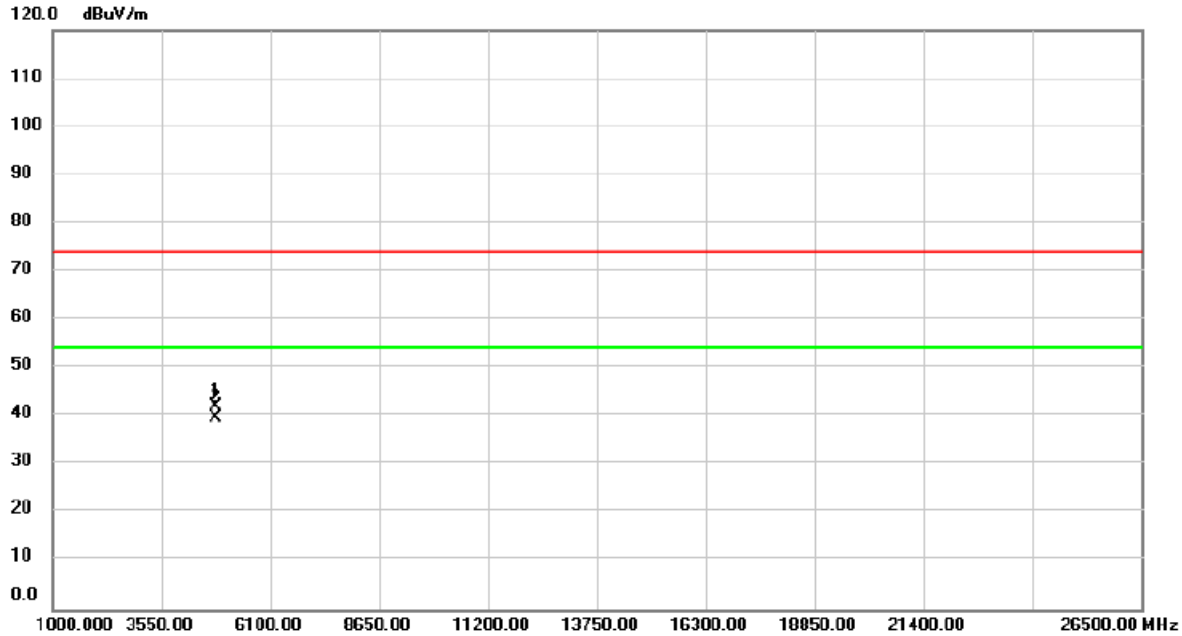
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	43.96	-0.24	43.72	74.00	-30.28	peak	
2	*	4824.000	39.53	-0.24	39.29	54.00	-14.71	AVG	

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

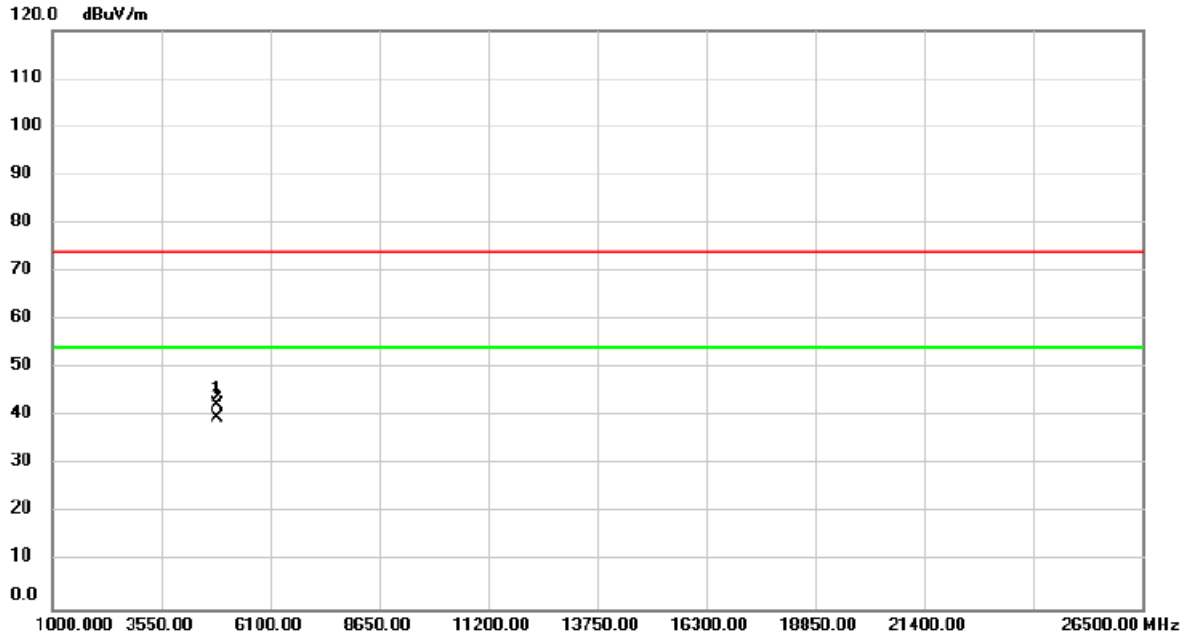
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	42.41	-0.24	42.17	74.00	-31.83	peak	
2	*	4824.000	39.91	-0.24	39.67	54.00	-14.33	AVG	

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

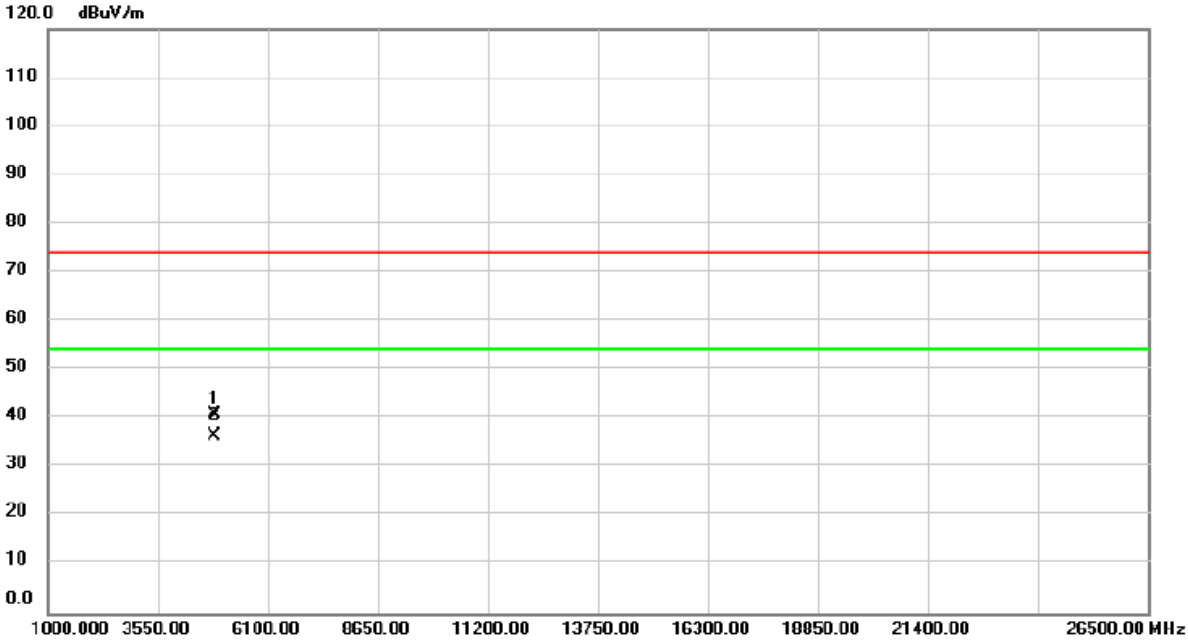
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2437MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	42.49	-0.13	42.36	74.00	-31.64	peak	
2	*	4874.000	39.90	-0.13	39.77	54.00	-14.23	AVG	

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

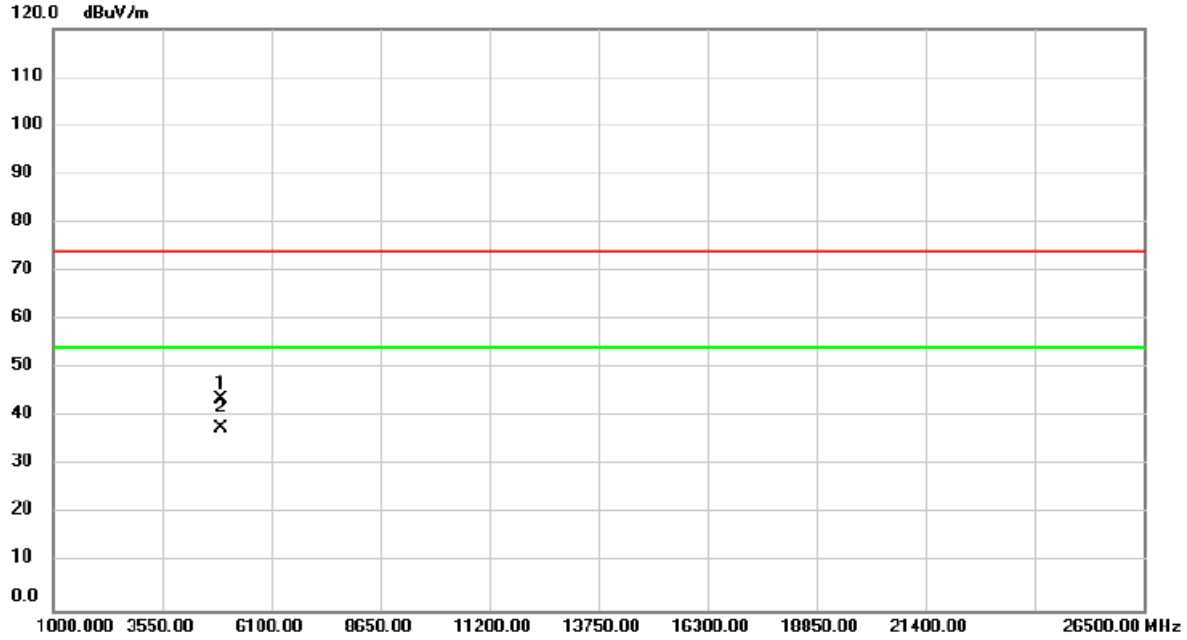
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2437MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	41.15	-0.13	41.02	74.00	-32.98	peak	
2	*	4874.000	36.55	-0.13	36.42	54.00	-17.58	AVG	

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

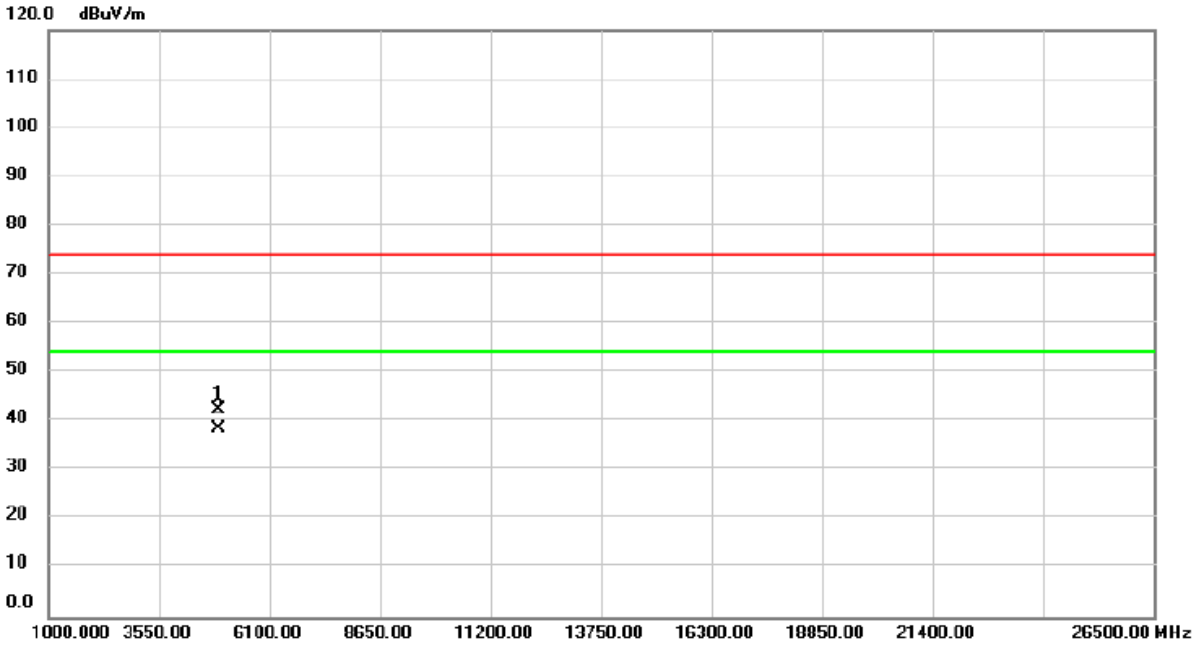
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	43.74	-0.02	43.72	74.00	-30.28	peak	
2	*	4924.000	37.58	-0.02	37.56	54.00	-16.44	AVG	

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

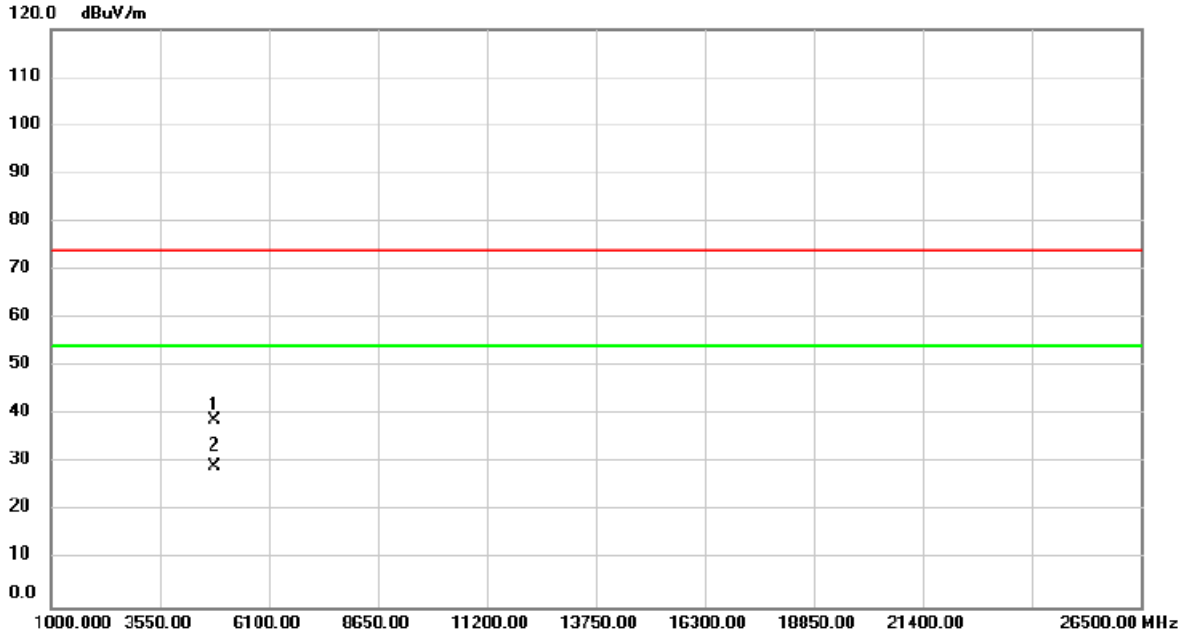
Test Mode	IEEE 802.11b	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	42.38	-0.02	42.36	74.00	-31.64	peak	
2	*	4924.000	38.65	-0.02	38.63	54.00	-15.37	AVG	

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

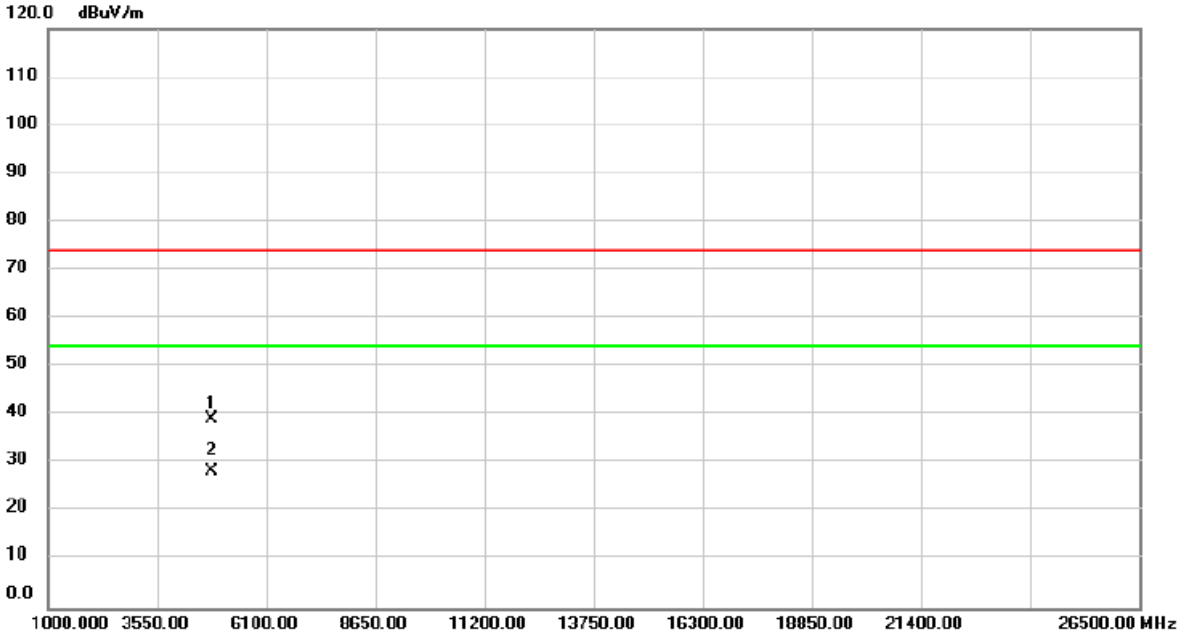
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	39.06	-0.24	38.82	74.00	-35.18	peak	
2	*	4824.000	29.55	-0.24	29.31	54.00	-24.69	AVG	

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

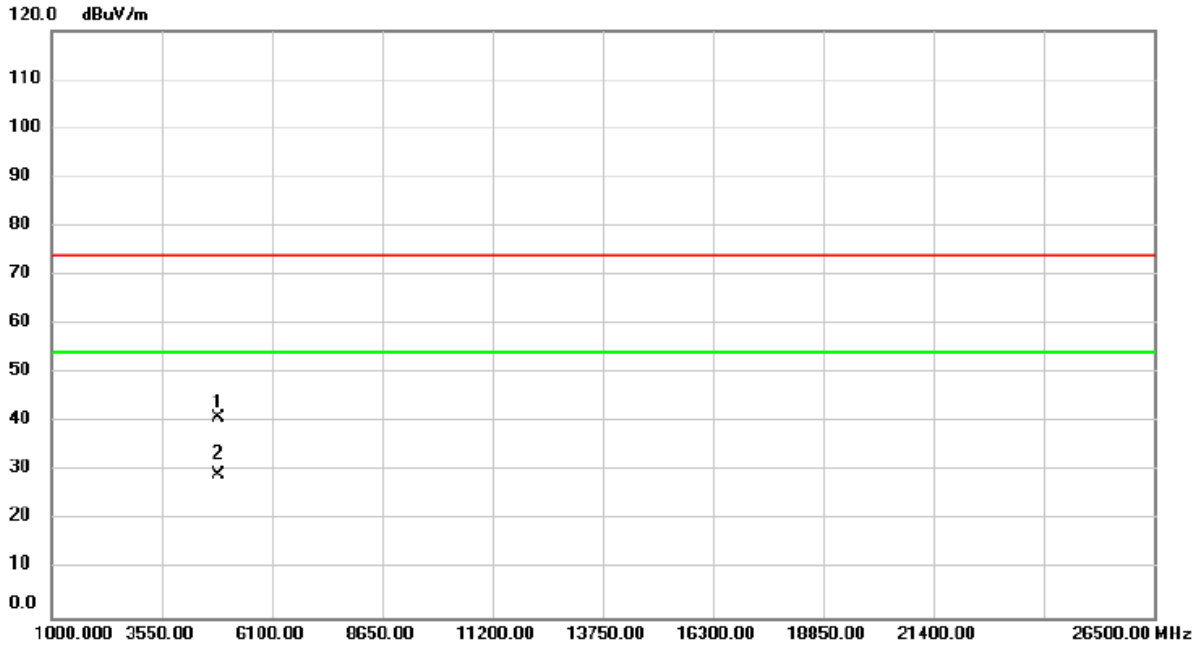
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	39.40	-0.24	39.16	74.00	-34.84	peak	
2	*	4824.000	28.55	-0.24	28.31	54.00	-25.69	AVG	

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

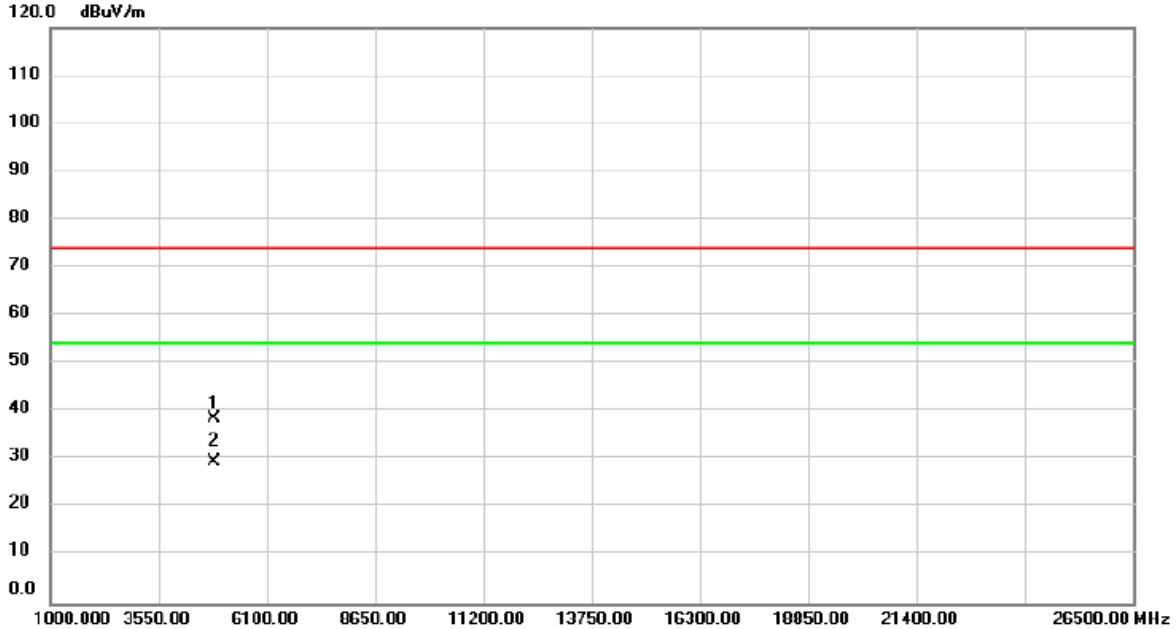
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2437MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	40.98	-0.13	40.85	74.00	-33.15	peak	
2	*	4874.000	29.46	-0.13	29.33	54.00	-24.67	AVG	

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

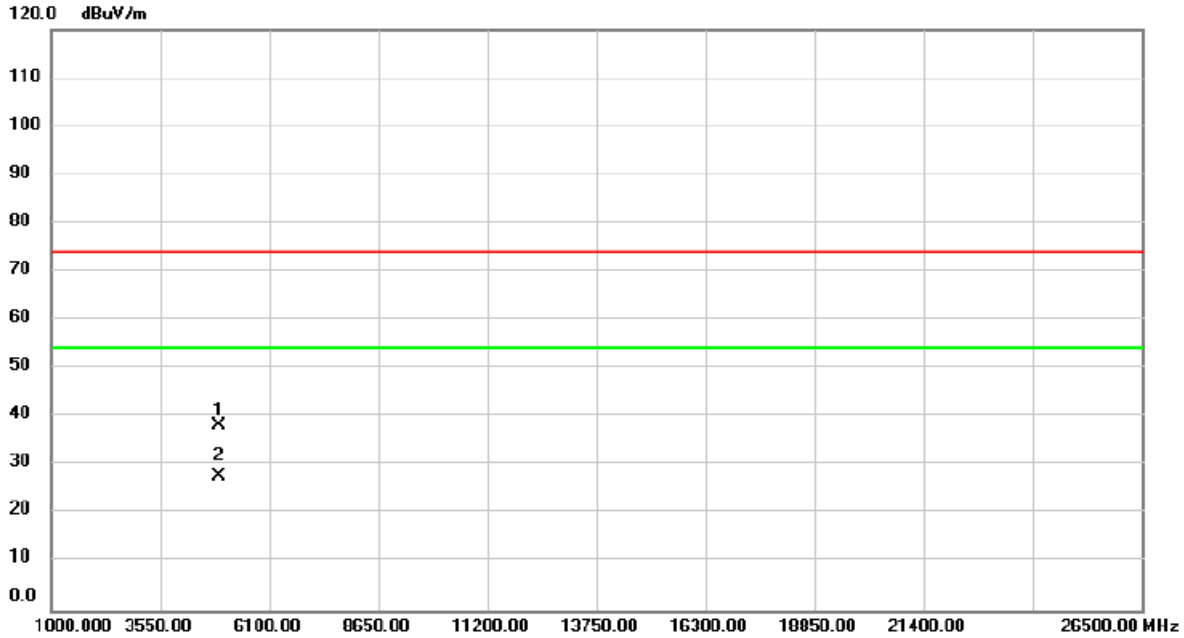
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2437MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.66	-0.13	38.53	74.00	-35.47	peak	
2	*	4874.000	29.62	-0.13	29.49	54.00	-24.51	AVG	

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

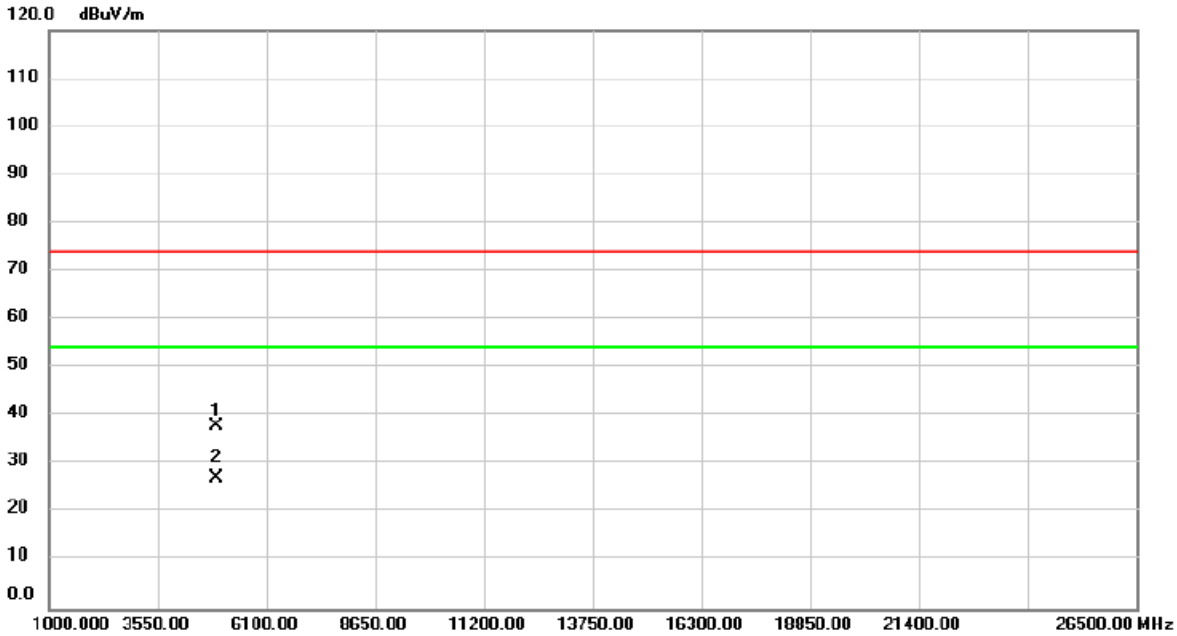
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	38.21	-0.02	38.19	74.00	-35.81	peak	
2	*	4924.000	27.64	-0.02	27.62	54.00	-26.38	AVG	

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

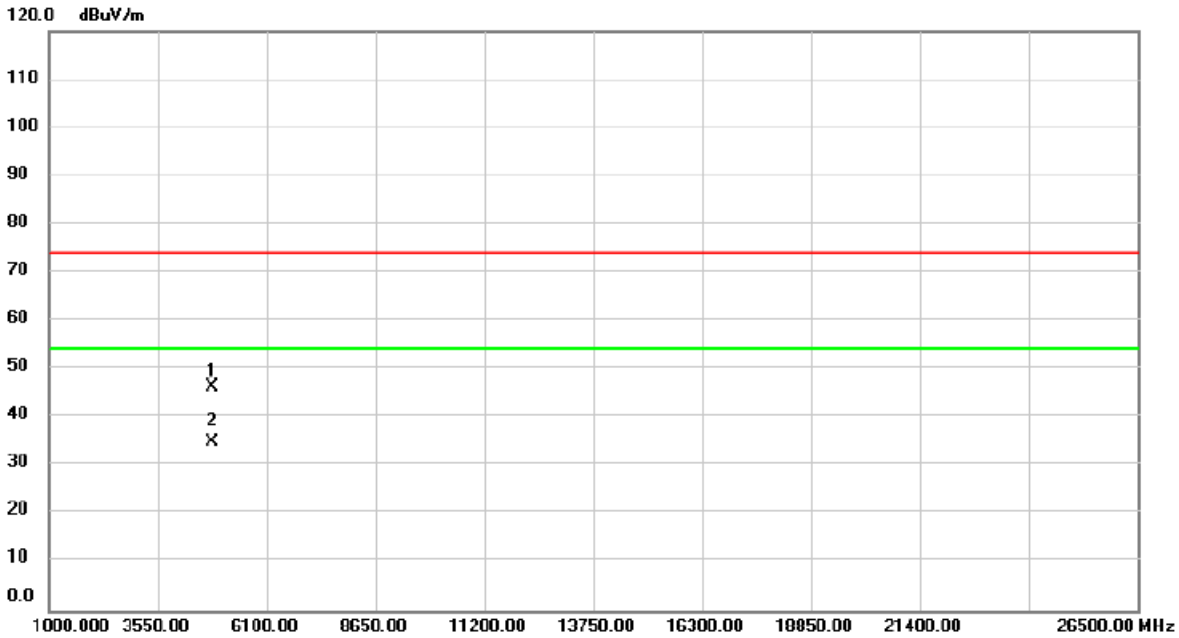
Test Mode	IEEE 802.11g	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	37.94	-0.02	37.92	74.00	-36.08	peak	
2	*	4924.000	27.17	-0.02	27.15	54.00	-26.85	AVG	

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

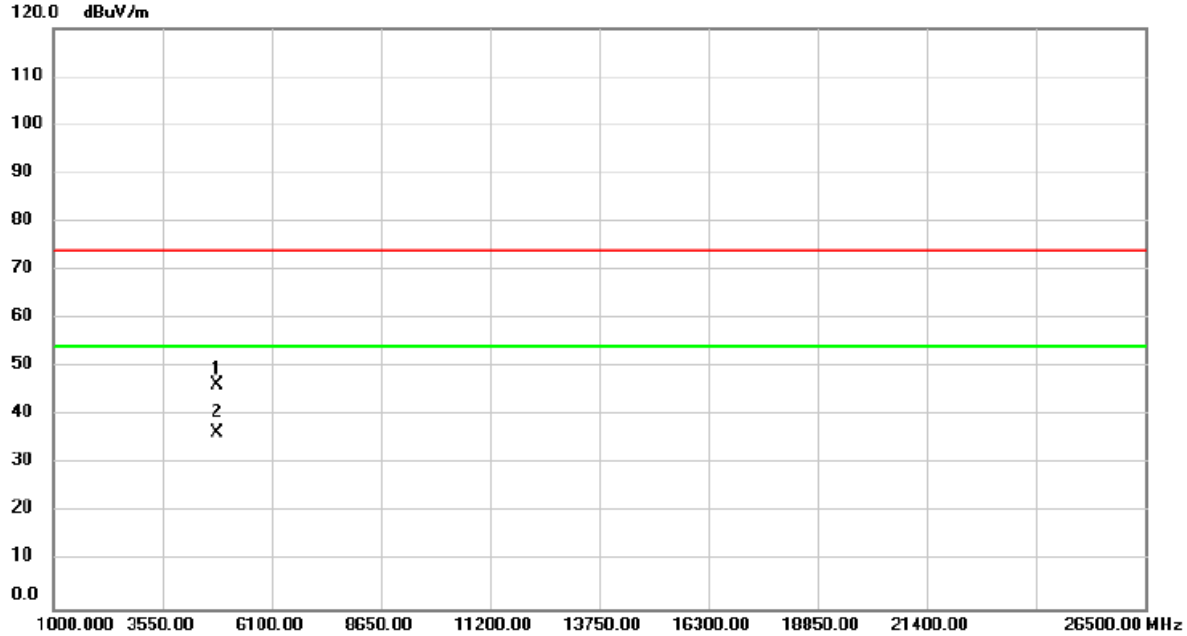
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	46.58	-0.24	46.34	74.00	-27.66	peak	
2	*	4824.000	35.14	-0.24	34.90	54.00	-19.10	AVG	

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

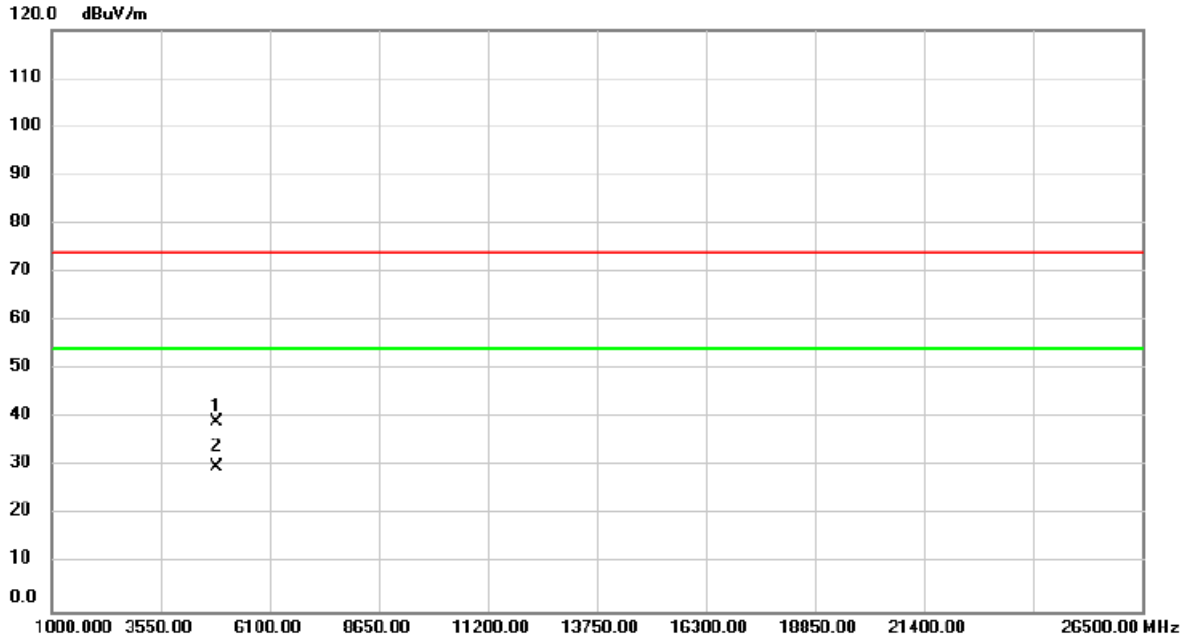
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2412MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	46.49	-0.24	46.25	74.00	-27.75	peak	
2	*	4824.000	36.82	-0.24	36.58	54.00	-17.42	AVG	

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

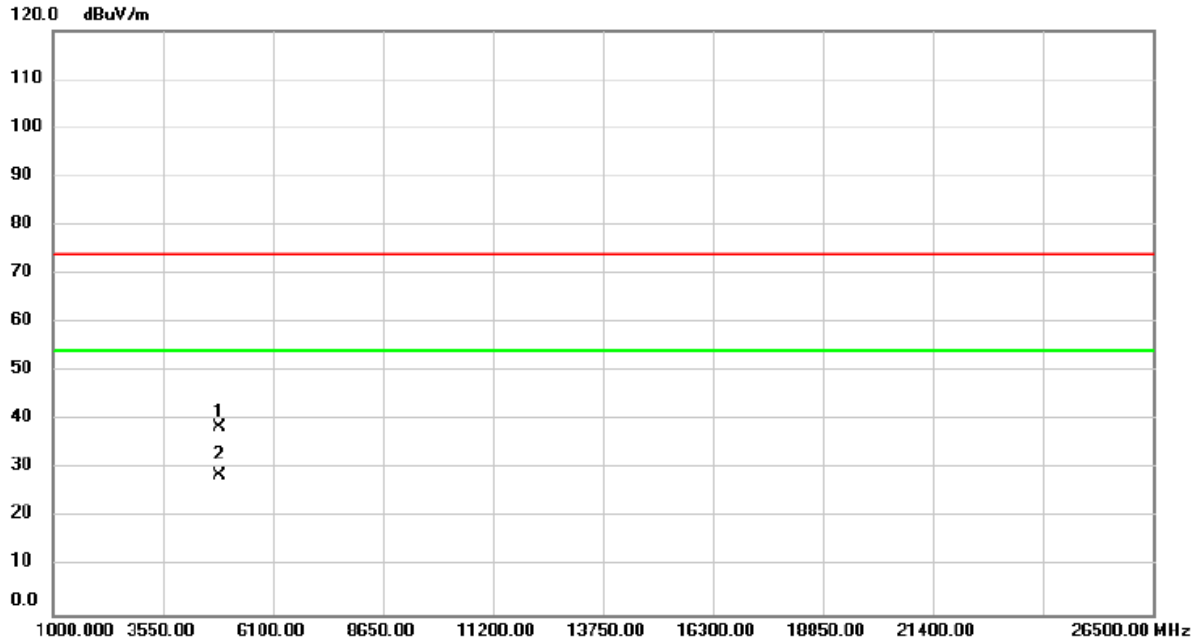
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2437MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	39.14	-0.13	39.01	74.00	-34.99	peak	
2	*	4874.000	29.99	-0.13	29.86	54.00	-24.14	AVG	

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

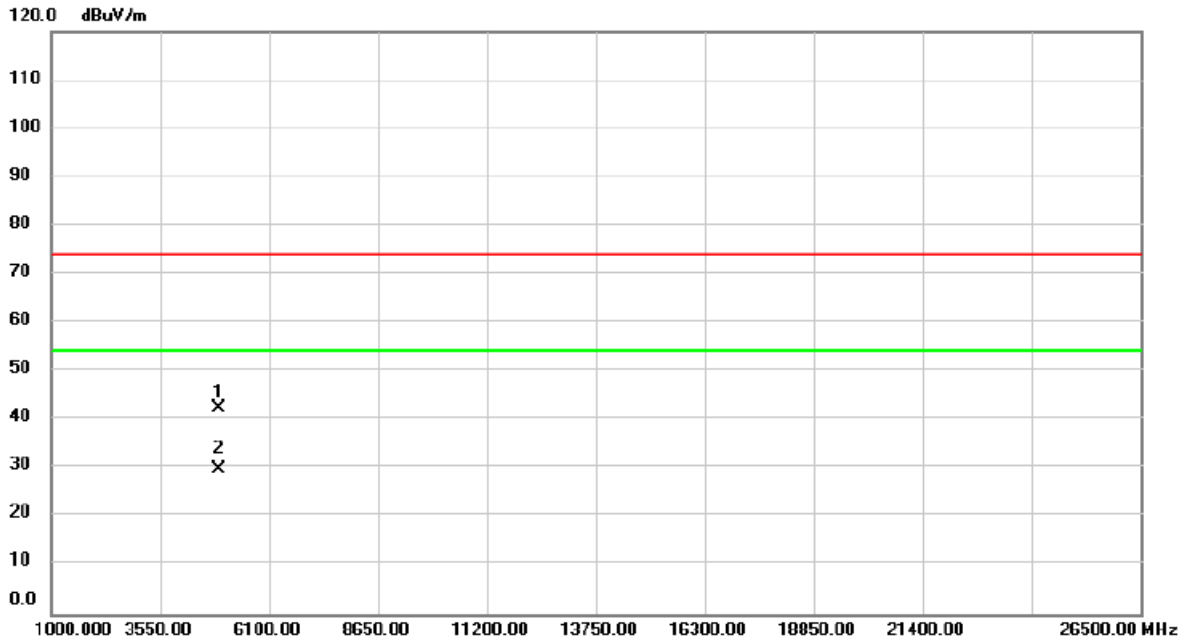
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2437MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	38.69	-0.13	38.56	74.00	-35.44	peak	
2	*	4874.000	28.92	-0.13	28.79	54.00	-25.21	AVG	

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

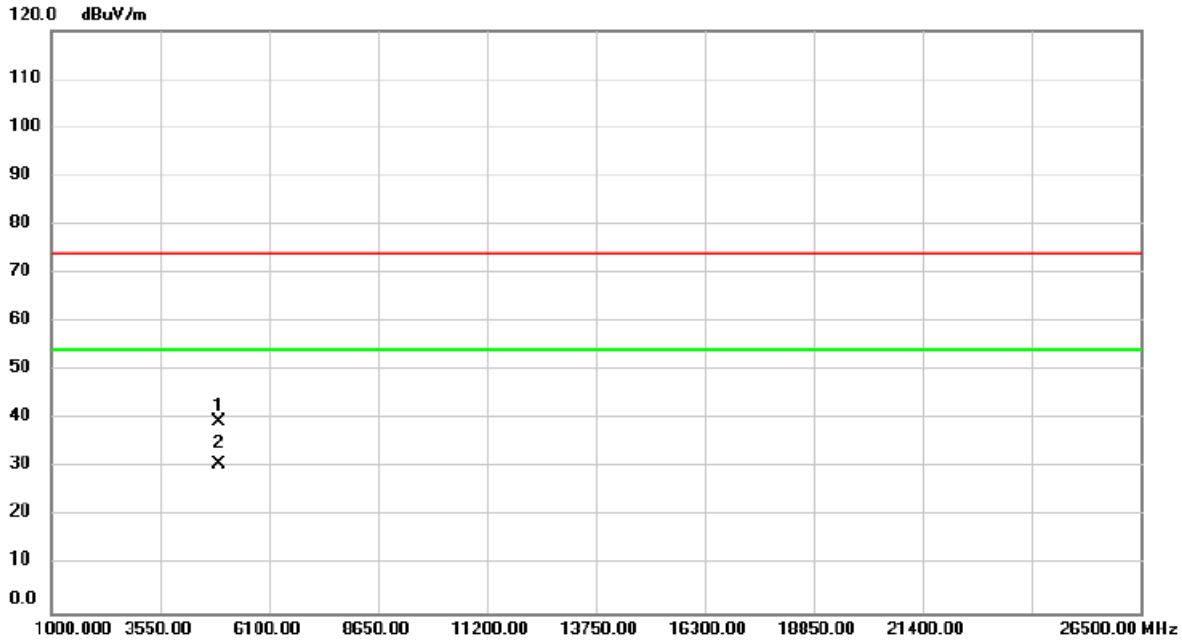
Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	42.40	-0.02	42.38	74.00	-31.62	peak	
2	*	4924.000	29.85	-0.02	29.83	54.00	-24.17	AVG	

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

Test Mode	IEEE 802.11n(HT20)	Test Date	2024/4/1
Test Frequency	2462MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	39.60	-0.02	39.58	74.00	-34.42	peak	
2	*	4924.000	30.89	-0.02	30.87	54.00	-23.13	AVG	

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

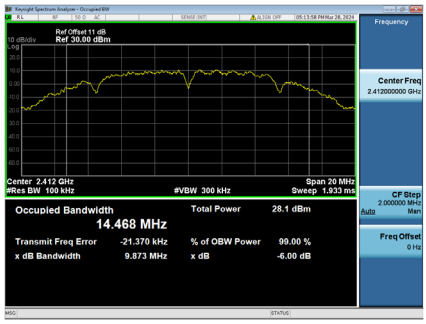
APPENDIX D - BANDWIDTH

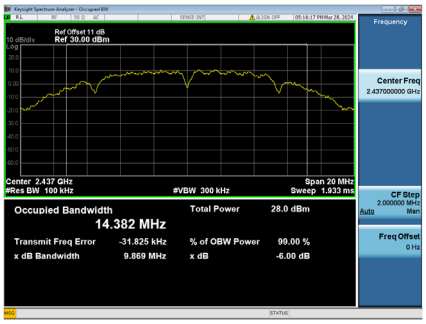
Test Mode	TX B Mode

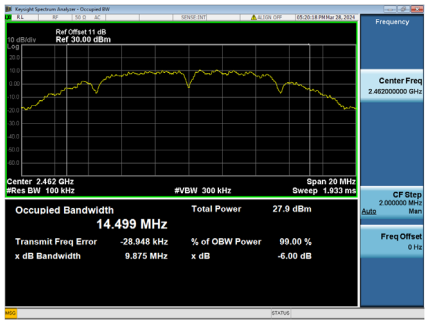
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	9.873	14.693	0.5	Complies
06	2437	9.869	14.544	0.5	Complies
11	2462	9.875	14.730	0.5	Complies

CH01 **CH06** **CH11**

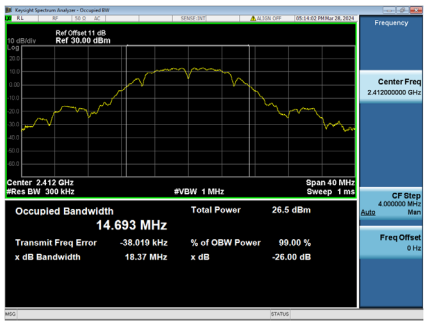
6 dB Bandwidth

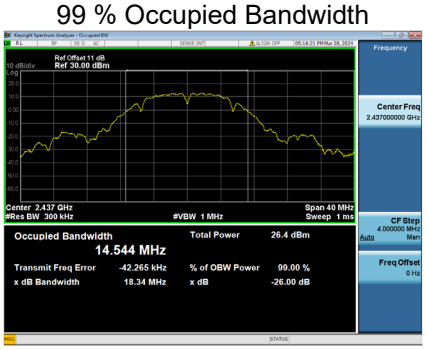


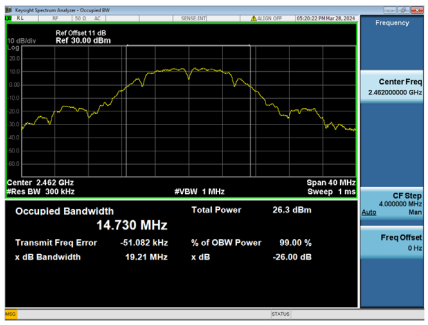




99 % Occupied Bandwidth





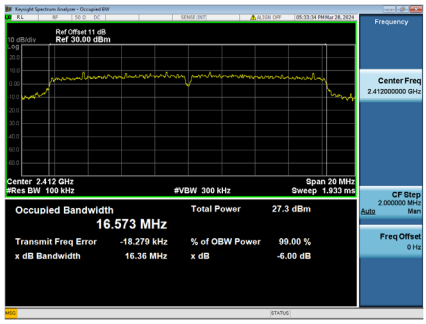


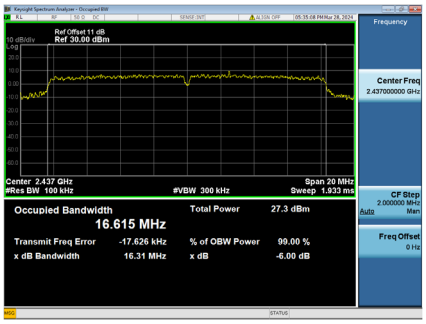
Test Mode	TX G Mode

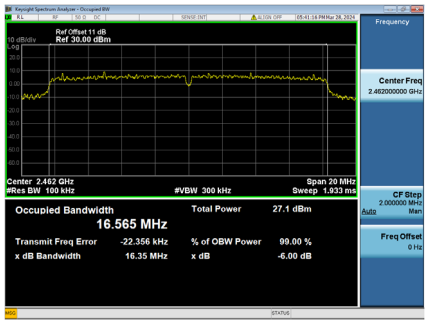
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	16.360	23.899	0.5	Complies
06	2437	16.309	23.585	0.5	Complies
11	2462	16.346	23.575	0.5	Complies

CH01 **CH06** **CH11**

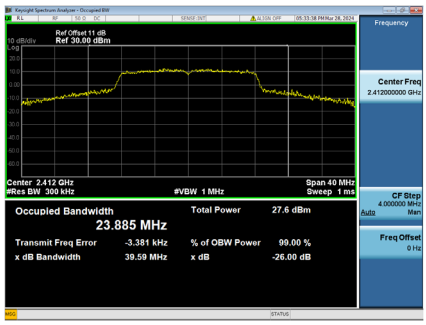
6 dB Bandwidth

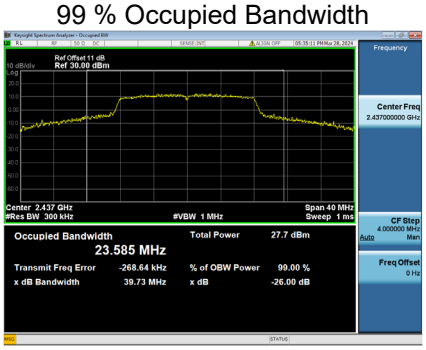


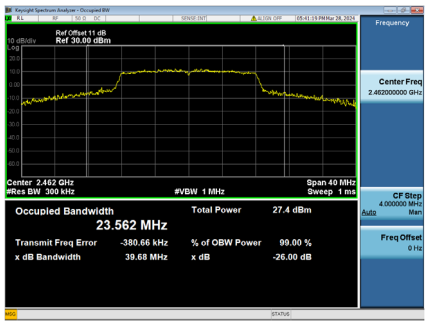




99 % Occupied Bandwidth





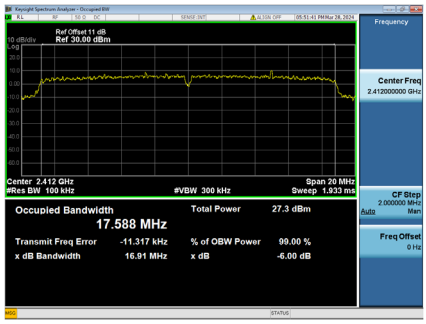


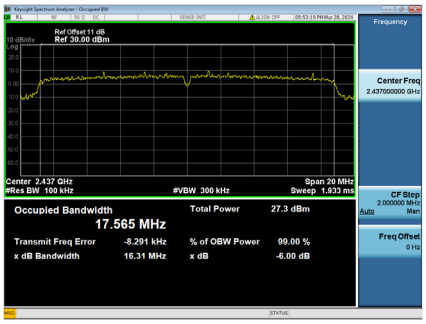
Test Mode	TX N(HT20) Mode

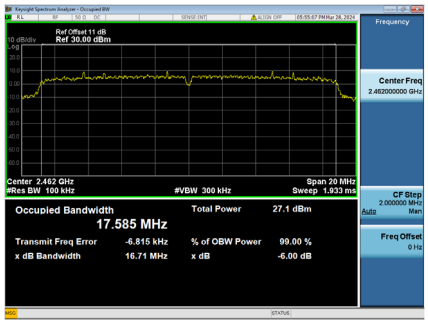
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	16.913	24.329	0.5	Complies
06	2437	16.314	24.451	0.5	Complies
11	2462	16.713	24.033	0.5	Complies

CH01 **CH06** **CH11**

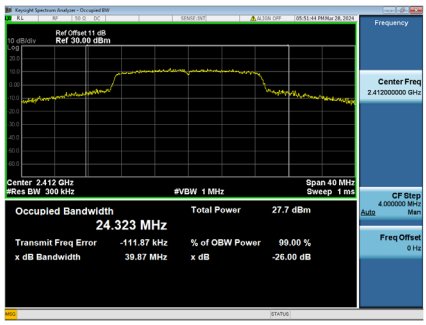
6 dB Bandwidth

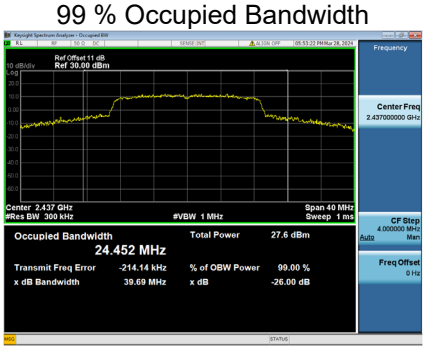


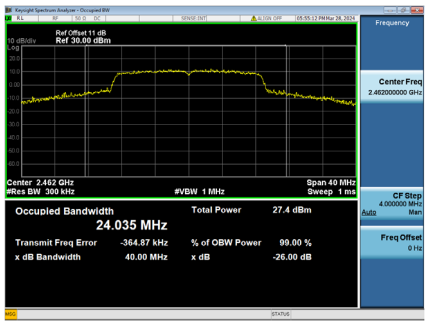




99 % Occupied Bandwidth







APPENDIX E - MAXIMUM OUTPUT POWER

Test Mode	TX B Mode	Test Date	2024/3/28

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.93	0.00	20.93	30.00	1.0000	Complies
06	2437	20.94	0.00	20.94	30.00	1.0000	Complies
11	2462	20.88	0.00	20.88	30.00	1.0000	Complies

Test Mode	TX G Mode	Test Date	2024/3/28

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.96	0.00	20.96	30.00	1.0000	Complies
06	2437	20.89	0.00	20.89	30.00	1.0000	Complies
11	2462	20.96	0.00	20.96	30.00	1.0000	Complies

Test Mode	TX N(HT20) Mode	Test Date	2024/3/28

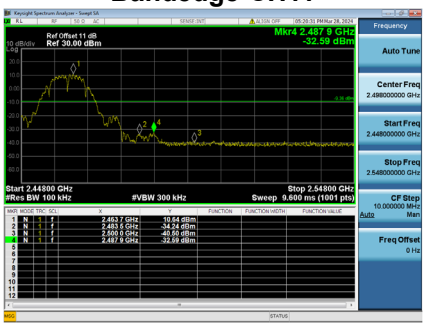
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.03	0.00	21.03	30.00	1.0000	Complies
06	2437	21.13	0.00	21.13	30.00	1.0000	Complies
11	2462	21.12	0.00	21.12	30.00	1.0000	Complies

APPENDIX F - CONDUCTED SPURIOUS EMISSIONS

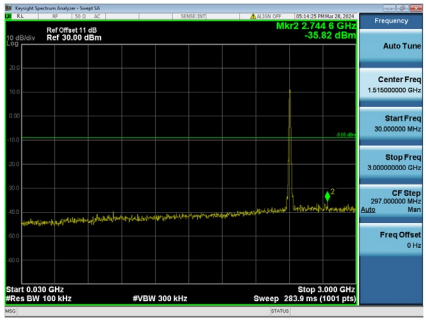
Test Mode	TX B Mode

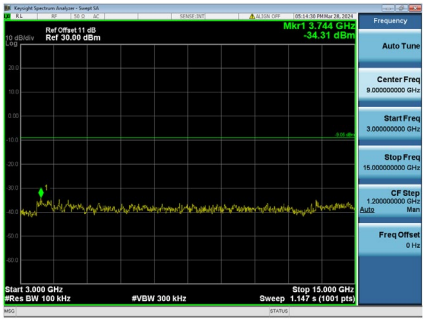
Bandedge-CH01

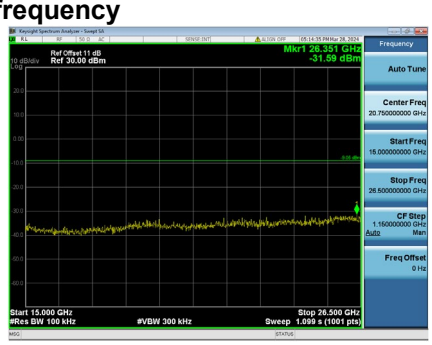
Bandedge-CH11



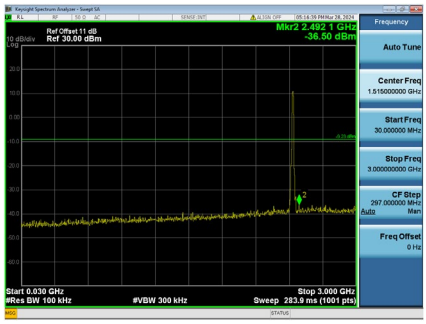
CH01 – 10th Harmonic of the fundamental frequency

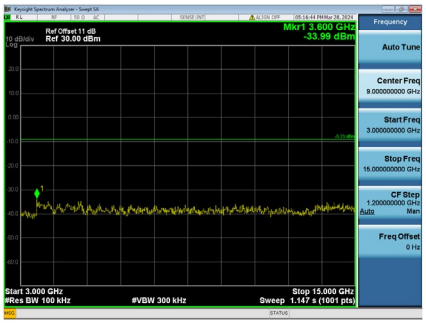


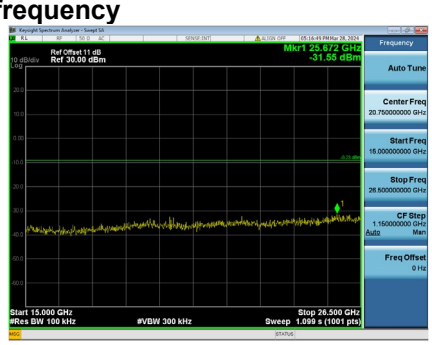




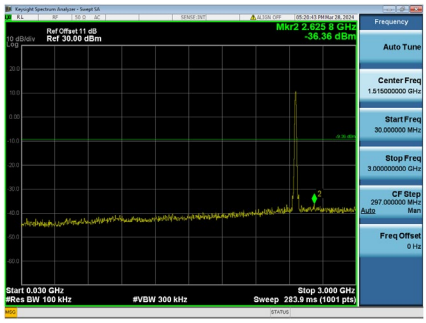
CH06 – 10th Harmonic of the fundamental frequency

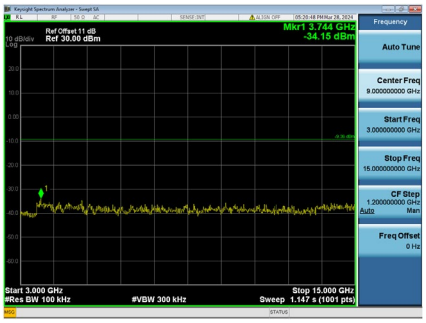


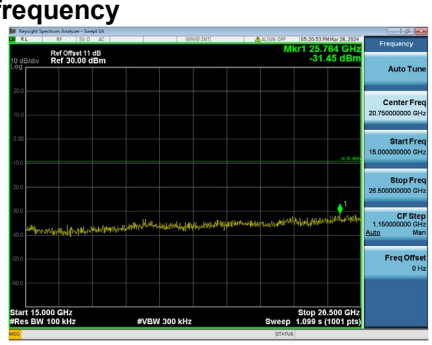




CH11 – 10th Harmonic of the fundamental frequency





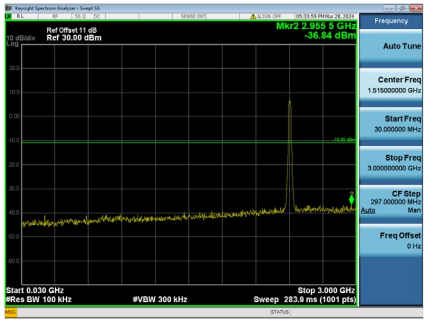


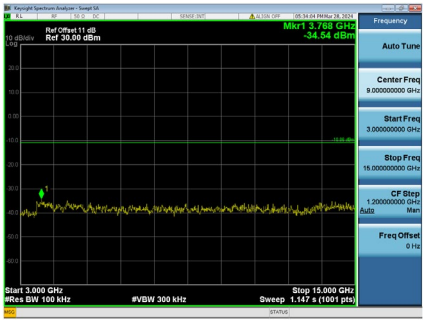
Test Mode	TX G Mode

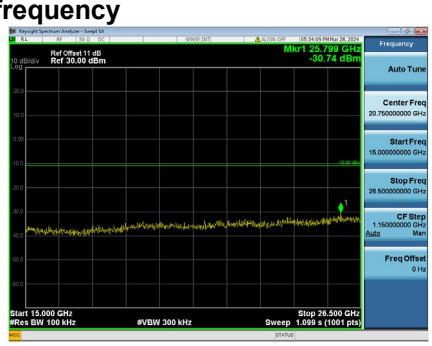
Bandedge-CH01

Bandedge-CH11

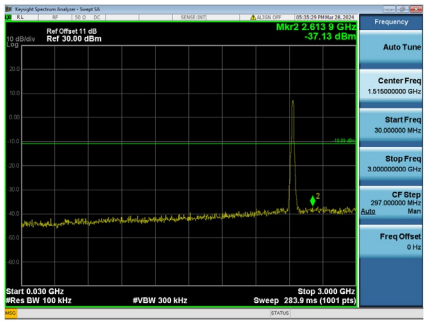
CH01 – 10th Harmonic of the fundamental frequency

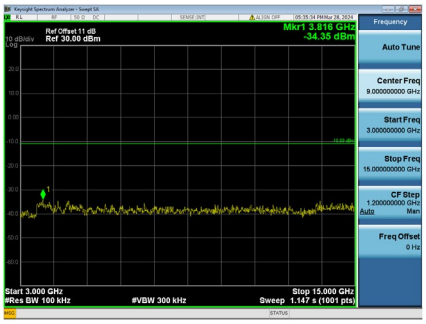


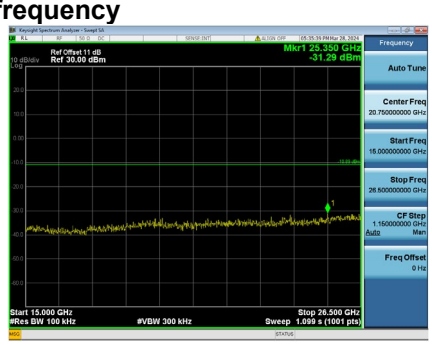




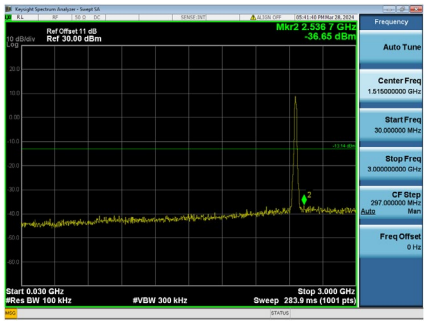
CH06 – 10th Harmonic of the fundamental frequency

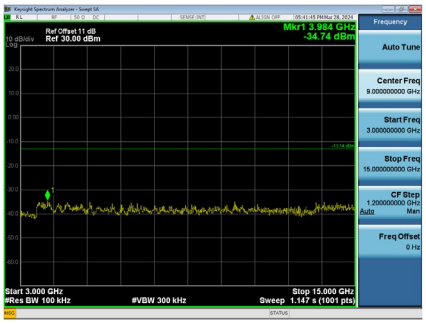


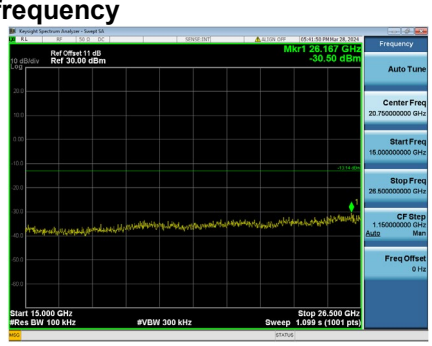




CH11 – 10th Harmonic of the fundamental frequency





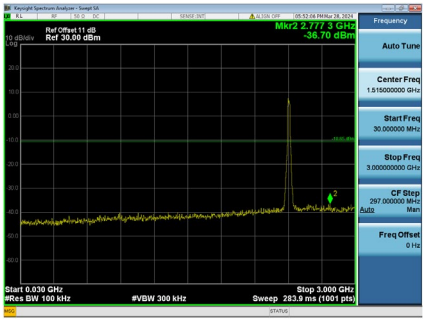


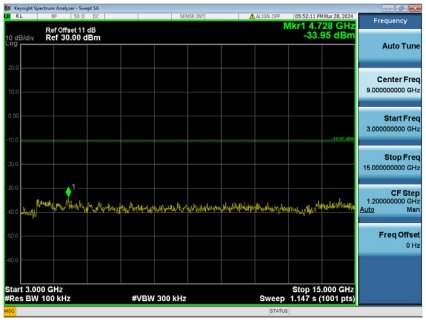
Test Mode	TX N(HT20) Mode

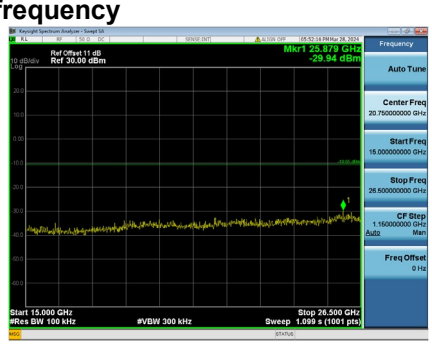
Bandedge-CH01

Bandedge-CH11

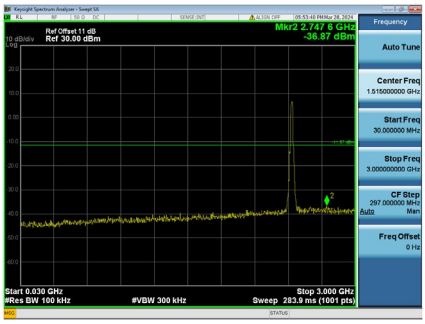
CH01 – 10th Harmonic of the fundamental frequency

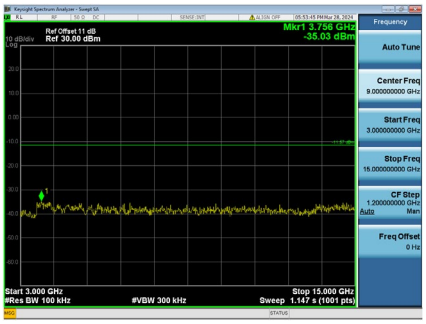


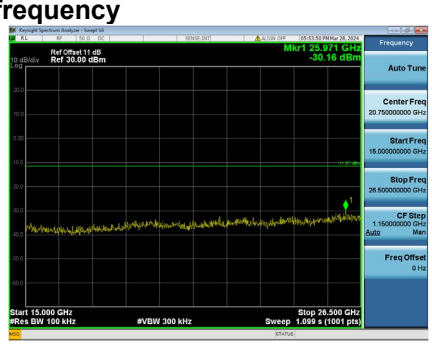




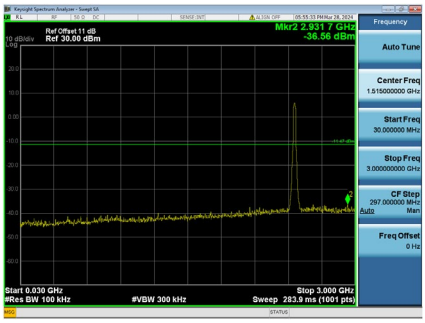
CH06 – 10th Harmonic of the fundamental frequency

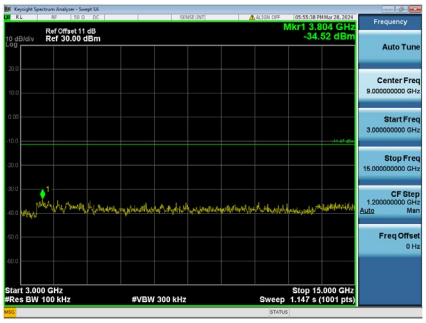


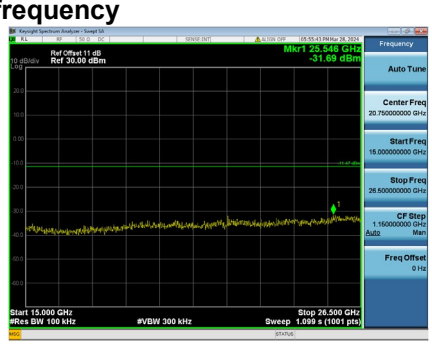




CH11 – 10th Harmonic of the fundamental frequency





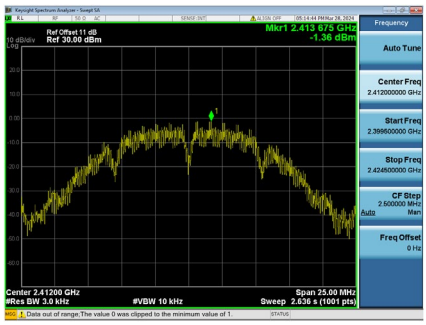


APPENDIX G - POWER SPECTRAL DENSITY

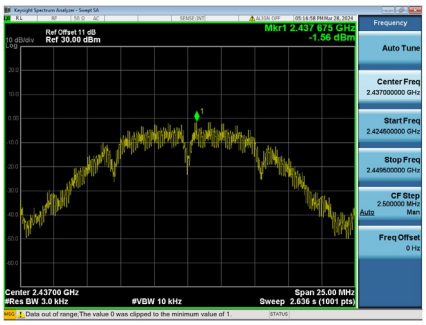
Test Mode	TX B Mode

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-1.36	8.00	Complies
06	2437	-1.56	8.00	Complies
11	2462	-1.68	8.00	Complies

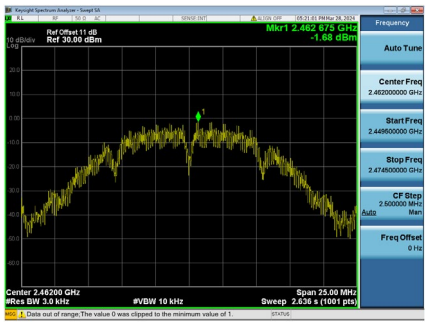
CH01



CH06



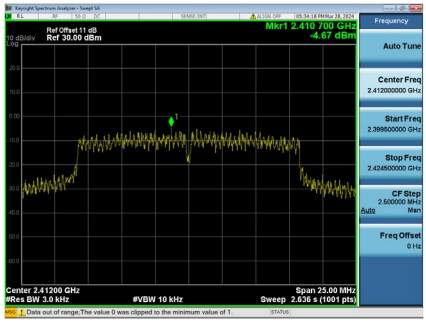
CH11



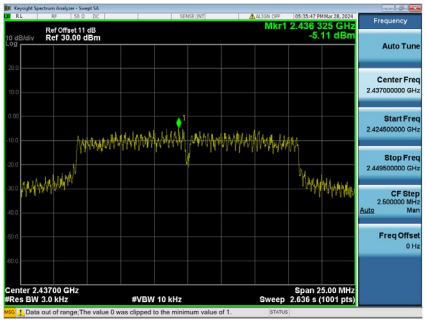
Test Mode	TX G Mode

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-4.67	8.00	Complies
06	2437	-5.11	8.00	Complies
11	2462	-5.36	8.00	Complies

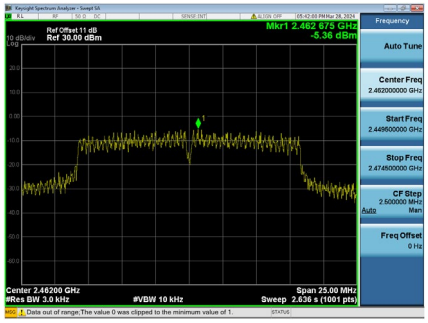
CH01



CH06



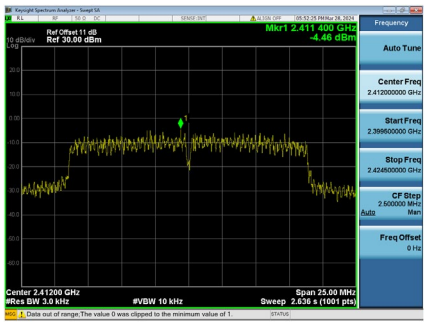
CH11



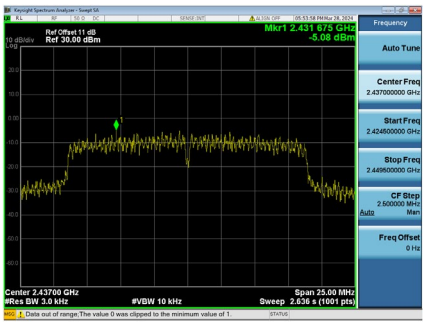
Test Mode	TX N(HT20) Mode

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-4.46	8.00	Complies
06	2437	-5.08	8.00	Complies
11	2462	-5.25	8.00	Complies

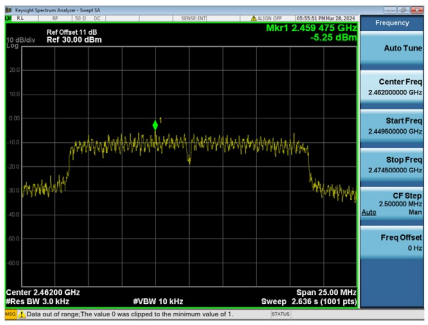
CH01



CH06



CH11



End of Test Report