FCC Radio Test Report

FCC ID: 2A2PW143750

Report No.	:	eLab-FCCP-1-2303G006
Equipment	:	GPON/EPON ONU
Test Model	:	TA1910-4GVC-W
Series Model	:	OUN1910-4GVC-W
Brand Name	:	FS
Applicant	:	FS.COM Inc.
Address	:	380 Centerpoint Blvd, New Castle, DE 19720, United States
Manufacturer	:	FS.COM Inc.
Address	:	380 Centerpoint Blvd, New Castle, DE 19720, United States
Radio Function	:	WLAN 2.4 GHz
FCC Rule Part(s)	:	FCC CFR Title 47, Part 15, Subpart C (15.247)
Measurement Procedure(s)	:	ANSI C63.10-2013
Date of Receipt	:	2023/3/3
Date of Test	:	2023/9/27 ~ 2023/11/6
Issued Date	:	2024/3/7

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

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Approved by : Sam Chuang, Supervisor

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Declaration

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

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

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

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

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

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

Limitation

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

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

CONTENTS

REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
eLab-FCCP-1-2303G006	R00	Original Report.	2024/1/8	Invalid
eLab-FCCP-1-2303G006	R01	Updated the information of applicant.	2024/1/17	Invalid
eLab-FCCP-1-2303G006	R02	Modified the comments.	2024/3/7	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

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

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

1.1 TEST FACILITY

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

No.64, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City
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	3.44

B. Radiated emissions test :

Test Site	Measurement Frequency Range	U,(dB)
CB01	0.03 GHz ~ 0.2 GHz	4.01
	0.2 GHz ~ 1 GHz	4.64
	1 GHz ~ 6 GHz	5.91
	6 GHz ~ 18 GHz	6.24
	18 GHz ~ 26 GHz	3.93
	26 GHz ~ 40 GHz	4.06

C. Conducted test :

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

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

1.3 TEST ENVIRONMENT CONDITIONS

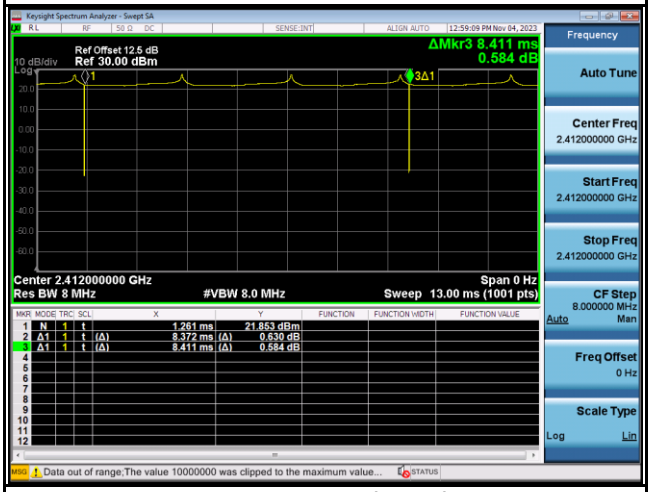
Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	25 °C, 45 %	AC 120V	Hunter Chiang
Radiated emissions below 1 GHz	Refer to data	AC 120V	Hunter Chiang
Radiated emissions above 1 GHz	Refer to data	AC 120V	Hunter Chiang
Bandwidth	25 °C, 46 %	AC 120V	Hunter Chiang
Output Power& e.i.r.p.	25 °C, 46 %	AC 120V	Hunter Chiang
Power Spectral Density	25 °C, 46 %	AC 120V	Hunter Chiang
Antenna conducted Spurious Emission	25 °C, 46 %	AC 120V	Hunter Chiang

1.4 DUTY CYCLE

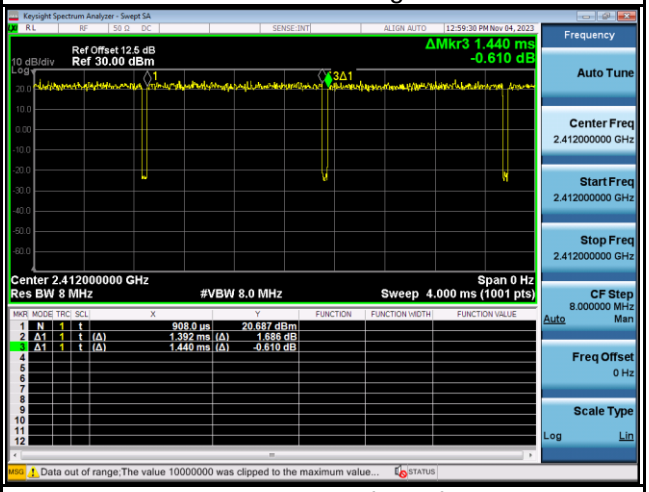
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.

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	8.372	1	8.372	8.411	99.54%	0.02
IEEE 802.11g	1.392	1	1.392	1.440	96.67%	0.15
IEEE 802.11n (HT20)	1.300	1	1.300	1.345	96.65%	0.15
IEEE 802.11n (HT40)	0.646	1	0.646	0.692	93.35%	0.30

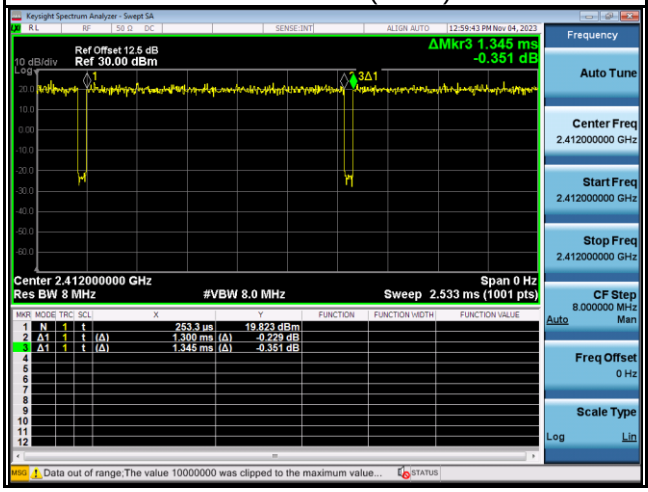
IEEE 802.11b



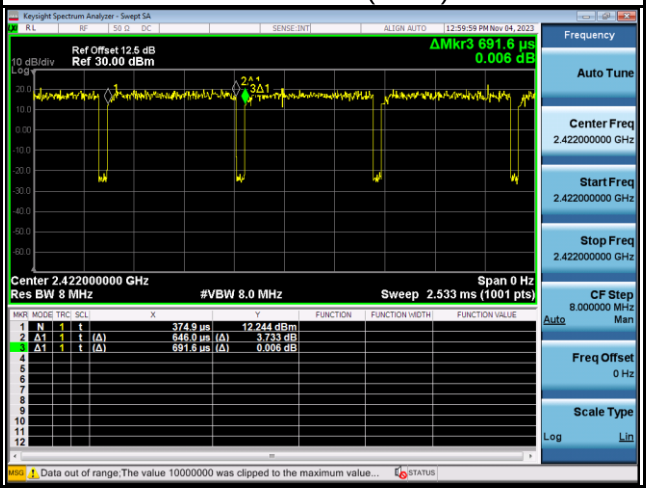
IEEE 802.11g



IEEE 802.11n (HT20)



IEEE 802.11n (HT40)



2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	GPON/EPON ONU
Test Model	TA1910-4GVC-W
Series Model	OUN1910-4GVC-W
Model Difference(s)	Only differ in model name.
Brand Name	FS
Serial Number	N/A
Power Source	DC Voltage supplied from AC adapter. Model: TS-A018-120150AS
Power Rating	I/P: 100-240V~ 50/60Hz 0.6A O/P: 12.0V ⎓ 1.5A
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 300 Mbps
Output Power (Max).	IEEE 802.11b: 24.59 dBm (0.2877 W) IEEE 802.11g: 21.69 dBm (0.1476 W) IEEE 802.11n (HT20): 21.82 dBm (0.1521 W) IEEE 802.11n (HT40): 22.00 dBm (0.1585 W)

NOTE:

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

(2) Channel List:

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

(3) Table for Filed Antenna:

Ant.	Manufacturer	P/N	Type	Frequency (MHz)	Gain (dBi)
1	SHENZHEN ZHONGTIAN XUN Communication Technology Co., Ltd	1.22.00345 2.048.1645-01	PCB	2400-2500	4.21
2	SHENZHEN ZHONGTIAN XUN Communication Technology Co., Ltd	1.22.00346 2.048.1646-01	PCB		5.03

Note:

1) This EUT supports CDD, and all antenna gains are not equal, so Directional gain = G_{ANT}+Array Gain.
For power measurements, Array Gain=0dB (N_{ANT}≤4), so the Directional gain=5.03.
For power spectral density measurements, N_{ANT}=2, N_{SS} = 1.
So the Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/ N_{SS})dBi=5.03+10log(2/1)dBi=8.04.
Then, the power spectral density limit is 8-(8.04-6)=5.96.

(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.

(5) Table for Antenna Configuration:

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

2.2 TEST MODES

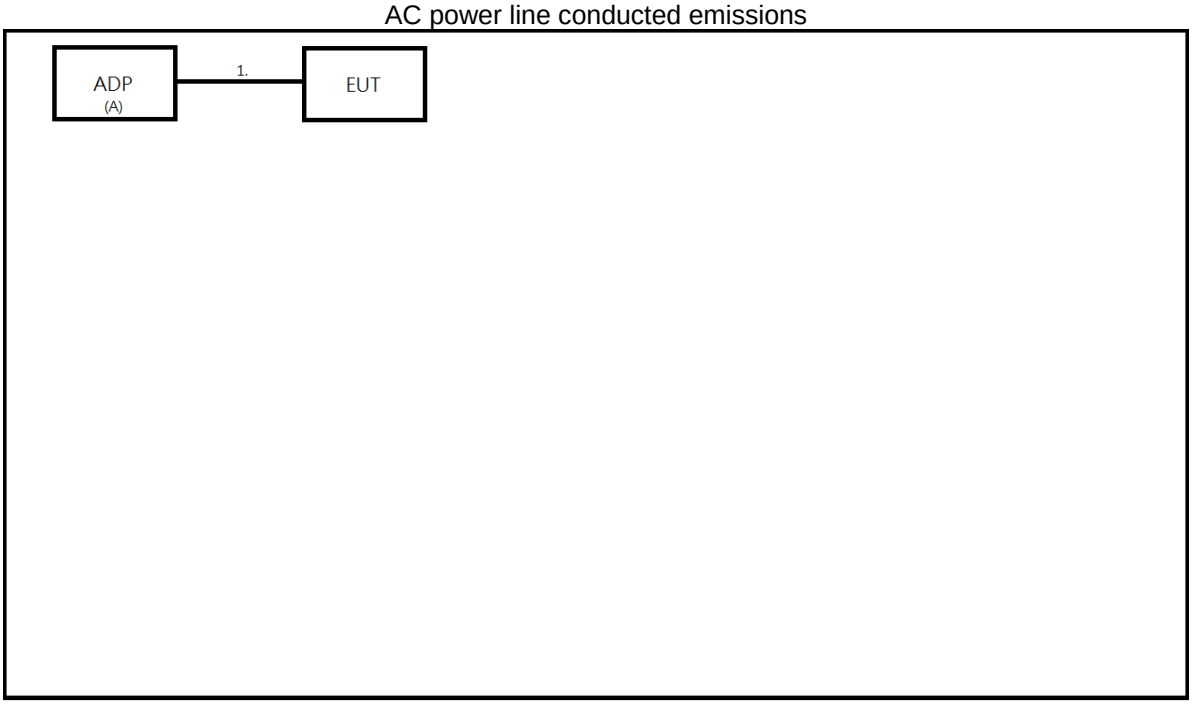
Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	TX Mode_IEEE 802.11b	11	-
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11b	01/11	Bandedge
	TX Mode_IEEE 802.11g		
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE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

NOTE:
(1) For radiated emission bandedge and harmonic test, both Vertical and Horizontal are evaluated, but only the worst case (Vertical) is recorded.
(2) For AC power line conducted emissions and radiated emission below 1 GHz test, the IEEE 802.11b channel 11 is found to be the worst case and recorded.

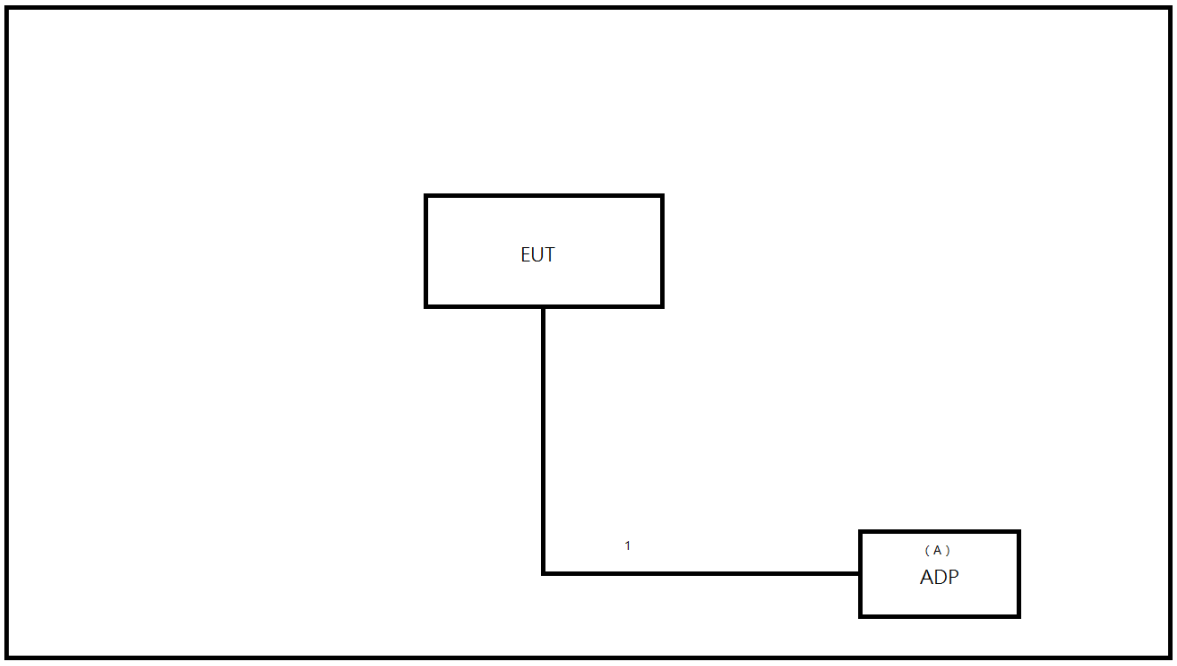
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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

AC power line conducted emissions



Radiated Emissions



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Remarks
A	ADP	tp-link	T120200-2B4	Supplied by test requester

Item	Cable Type	Ferrite Core	Length	Shielded	Remarks
1	DC Cable	NO	1.5m	NO	Supplied by test requester

3 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

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

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

Reading Level		Correct Factor		Measurement Value
38.22	+	3.45	=	41.67

Measurement Value		Limit Value		Margin Level
41.67	-	60	=	-18.33

The following table is the setting of the receiver.

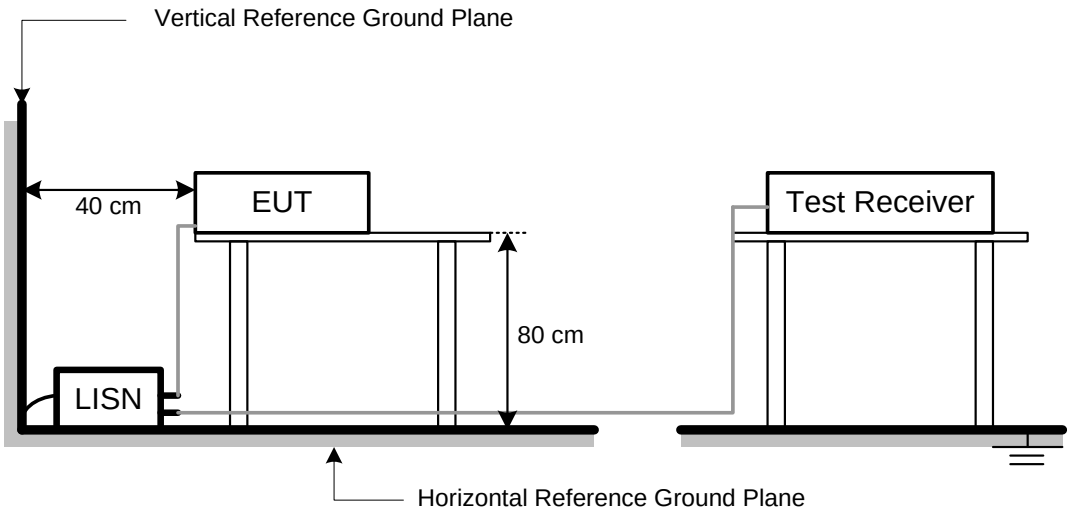
Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.2 TEST PROCEDURE

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

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

3.3 TEST SETUP



3.4 TEST RESULT

Please refer to the APPENDIX A.

4 RADIATED EMISSIONS TEST

4.1 LIMIT

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

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

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

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

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

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

Reading Level		Correct Factor		Measurement Value
19.11	+	2.11	=	21.22

Measurement Value		Limit Value		Margin Level
21.22	-	54	=	-32.78

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

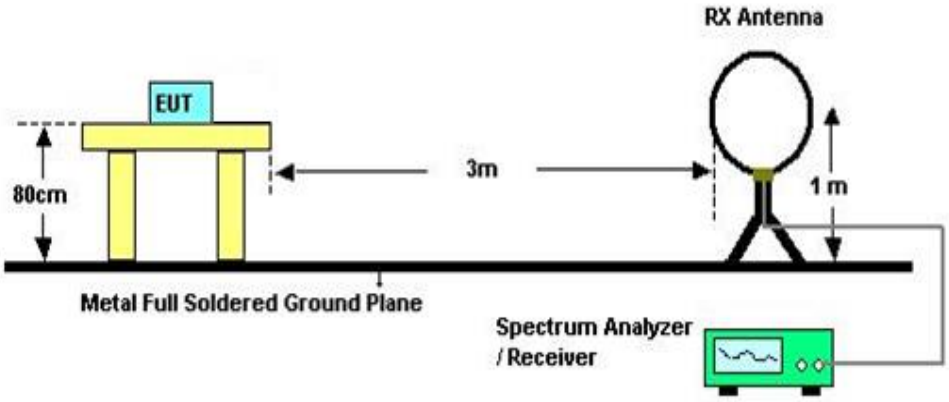
Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP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

4.2 TEST PROCEDURE

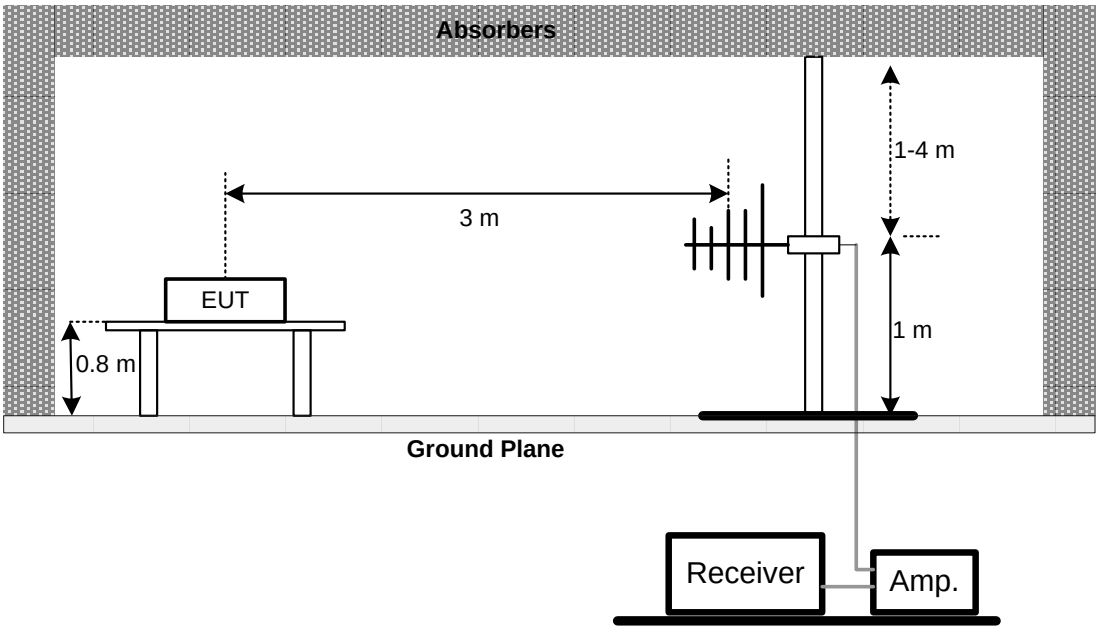
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance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

4.3 TEST SETUP

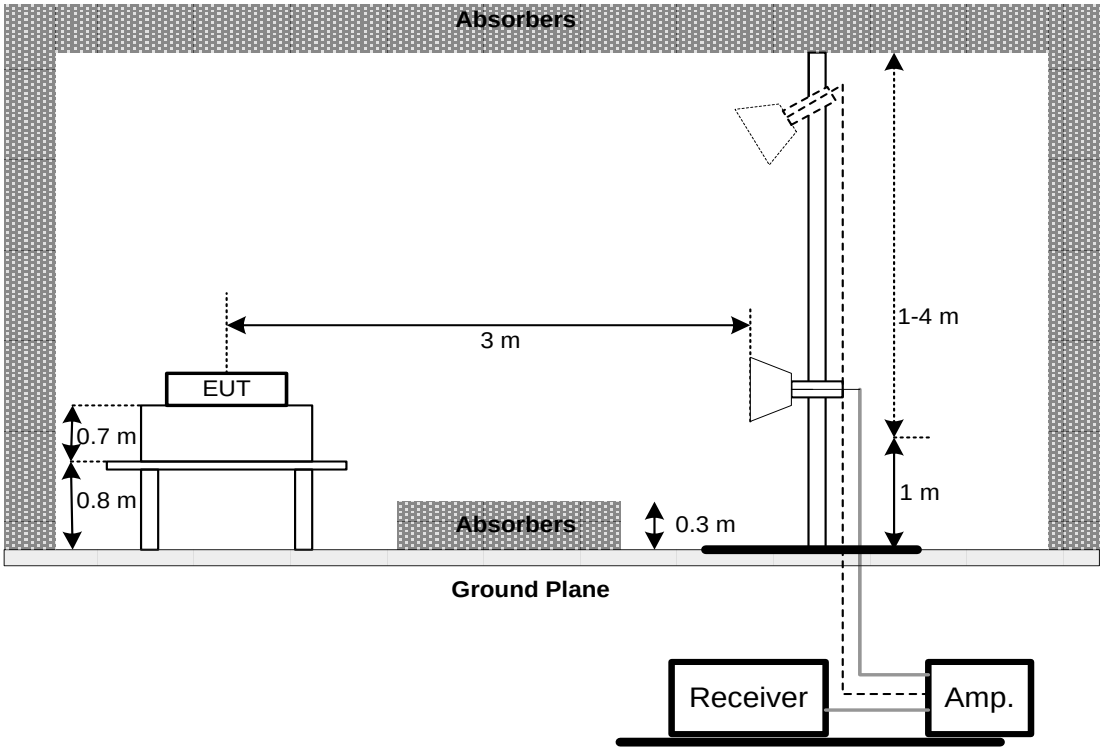
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.5 TEST RESULT – BELOW 30 MHZ

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

4.6 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX B.

4.7 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX C.

NOTE:

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

5 BANDWIDTH TEST

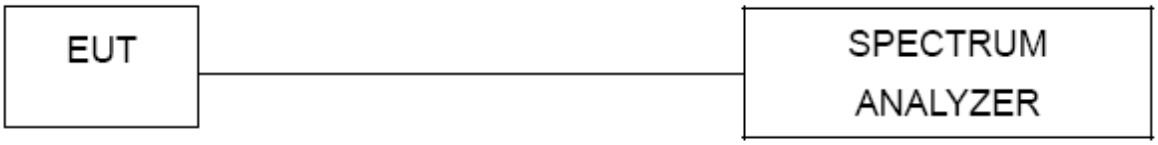
5.1 LIMIT

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

5.2 TEST PROCEDURE

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

5.3 TEST SETUP



5.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.5 TEST RESULT

Please refer to the APPENDIX D.

6 OUTPUT POWER TEST

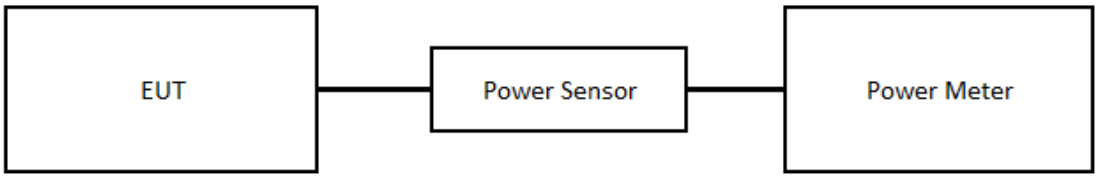
6.1 LIMIT

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

6.2 TEST PROCEDURE

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

6.3 TEST SETUP



6.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.5 TEST RESULT

Please refer to the APPENDIX E.

7 POWER SPECTRAL DENSITY

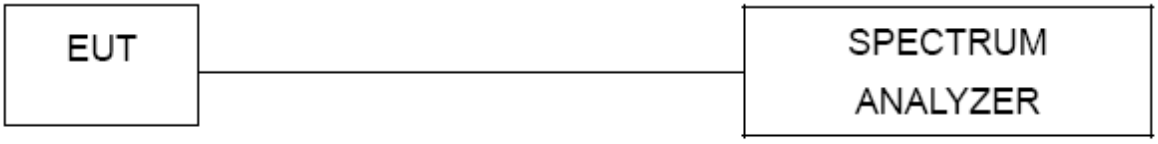
7.1 LIMIT

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

7.2 TEST PROCEDURE

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

7.3 TEST SETUP



7.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.5 TEST RESULT

Please refer to the APPENDIX F.

8 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST

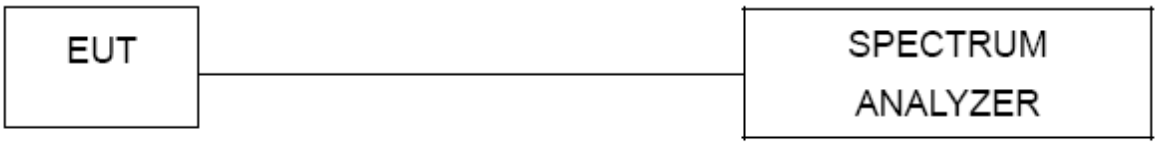
8.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

8.2 TEST PROCEDURE

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

8.3 TEST SETUP



8.4 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.5 TEST RESULT

Please refer to the APPENDIX G.

9 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101051	2023/7/21	2024/7/20
2	Test Cable	EMCI	EMCRG58-BM-BM-9000	210501	2022/12/15	2023/12/14
3	MXE EMI Receiver	Agilent	N9038A	MY54130009	2023/06/26	2024/06/25
4	Measurement Software	EZ	EZ_EMC (Version 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	Preamplifier	EMCI	EMC051845SE	980779	2022/12/19	2023/12/18
2	Preamplifier	EMCI	EMC184045SE	980512	2022/12/02	2023/12/01
3	Preamplifier	EMCI	EMC001340	980555	2022/12/05	2023/12/04
4	Test Cable	EMCI	EMCCFD400-NM-NM-8000	200343	2022/11/15	2023/11/14
5	Test Cable	EMCI	EMC105-SM-SM-3000	210118	2022/12/14	2023/12/13
6	Test Cable	EMCI	EMC105-SM-SM-7000	210117	2022/11/15	2023/11/14
7	Test Cable	EMCI	EMCCFD400-NM-NM-3300	200348	2022/11/15	2023/11/14
8	EXA Signal Analyzer	keysight	N9010A	MY56480554	2023/9/12	2024/9/11
9	Loop Ant	Electro-Metrics	EMCI-LPA600	274	2023/06/28	2024/06/27
10	Horn Antenna	RFSPIN	DRH18-E	BBHA9170340	2023/02/10	2024/02/09
11	Horn Ant	Schwarzbeck	BBHA 9170D	210109A18E	2023/06/29	2024/06/28
12	Log-bicon Antenna	Schwarzbeck	VULB9168	9168-1207	2023/01/13	2024/01/12
13	6dB Attenuator	EMCI	EMCI-N-6-06	AT-N0690	2023/01/13	2024/01/12
14	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Bandwidth						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	keysight	N9010A	MY56480554	2023/9/12	2024/9/11

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	keysight	N9010A	MY56480554	2023/9/12	2024/9/11

Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	keysight	N9010A	MY56480554	2023/9/12	2024/9/11

Antenna conducted Spurious Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EXA Signal Analyzer	keysight	N9010A	MY56480554	2023/9/12	2024/9/11

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

10 EUT TEST PHOTO

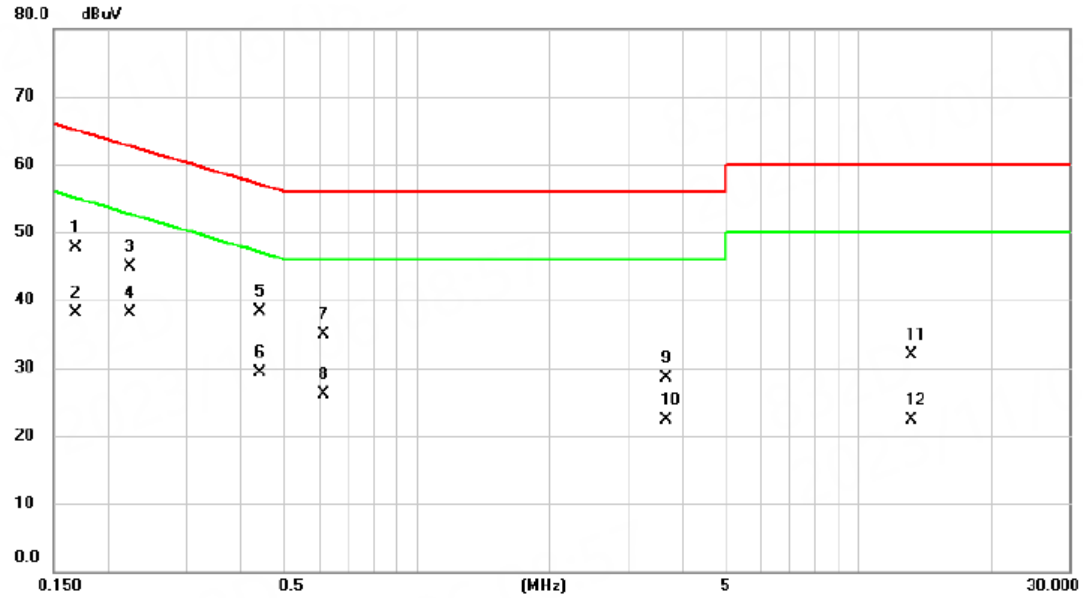
Please refer to APPENDIX-TEST PHOTOS.

11 EUT PHOTOS

Please refer to APPENDIX-EUT PHOTOS.

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

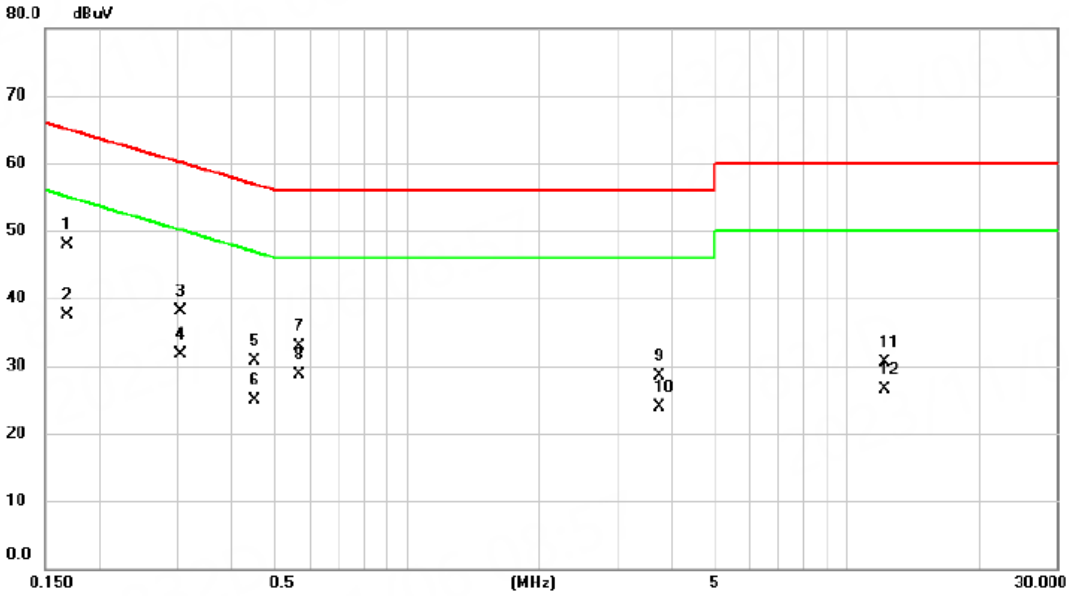
Test Mode	Normal	Tested Date	2023/11/5
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1690	37.99	9.67	47.66	65.01	-17.35	QP	
2		0.1690	28.49	9.67	38.16	55.01	-16.85	AVG	
3		0.2234	35.21	9.67	44.88	62.69	-17.81	QP	
4	*	0.2234	28.39	9.67	38.06	52.69	-14.63	AVG	
5		0.4405	28.65	9.68	38.33	57.05	-18.72	QP	
6		0.4405	19.57	9.68	29.25	47.05	-17.80	AVG	
7		0.6124	25.23	9.70	34.93	56.00	-21.07	QP	
8		0.6124	16.48	9.70	26.18	46.00	-19.82	AVG	
9		3.6590	18.69	9.86	28.55	56.00	-27.45	QP	
10		3.6590	12.46	9.86	22.32	46.00	-23.68	AVG	
11		13.1750	21.79	10.10	31.89	60.00	-28.11	QP	
12		13.1750	12.27	10.10	22.37	50.00	-27.63	AVG	

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

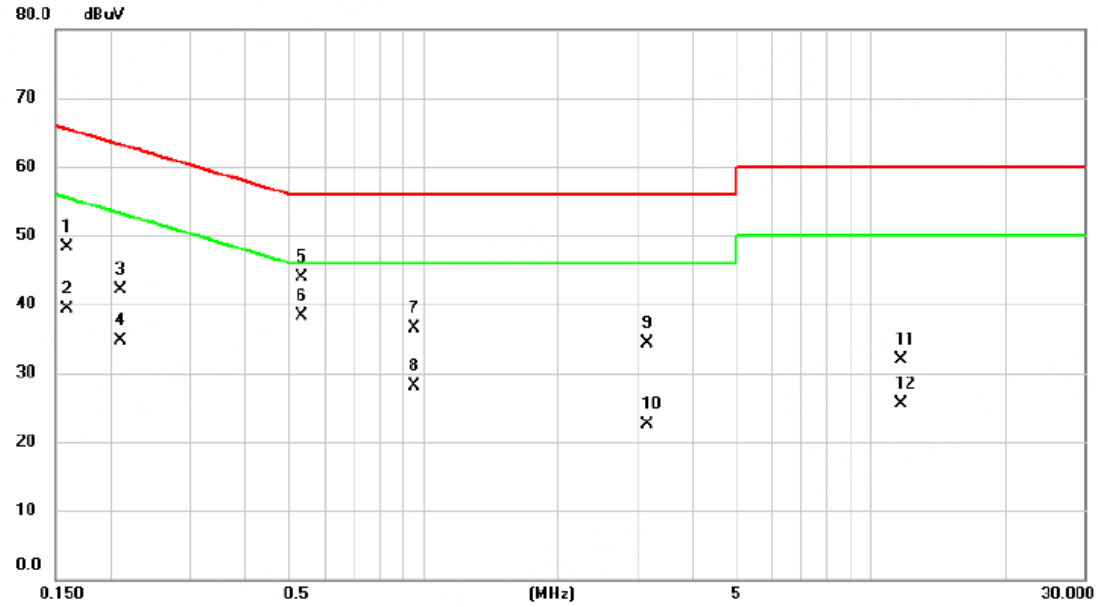
Test Mode	Normal	Tested Date	2023/11/5
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1685	38.33	9.67	48.00	65.03	-17.03	QP	
2		0.1685	27.78	9.67	37.45	55.03	-17.58	AVG	
3		0.3042	28.52	9.65	38.17	60.13	-21.96	QP	
4		0.3042	22.01	9.65	31.66	50.13	-18.47	AVG	
5		0.4490	21.06	9.68	30.74	56.89	-26.15	QP	
6		0.4490	15.14	9.68	24.82	46.89	-22.07	AVG	
7		0.5674	23.21	9.69	32.90	56.00	-23.10	QP	
8		0.5674	19.11	9.69	28.80	46.00	-17.20	AVG	
9		3.7580	18.58	9.87	28.45	56.00	-27.55	QP	
10		3.7580	14.07	9.87	23.94	46.00	-22.06	AVG	
11		12.2250	20.36	10.14	30.50	60.00	-29.50	QP	
12		12.2250	16.37	10.14	26.51	50.00	-23.49	AVG	

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

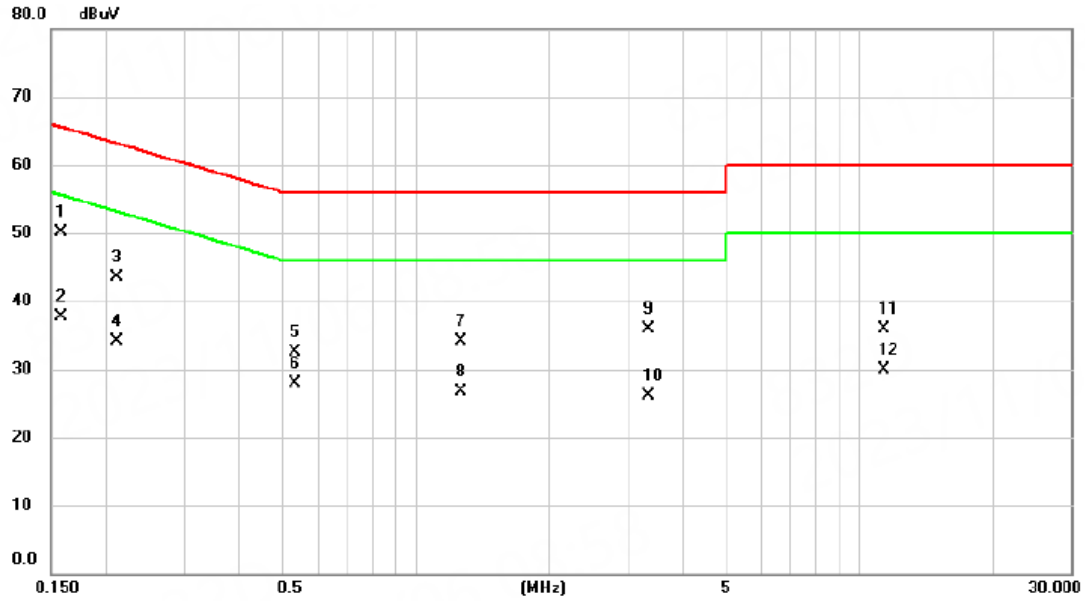
Test Mode	Idle	Tested Date	2023/11/5
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1594	38.60	9.67	48.27	65.50	-17.23	QP	
2		0.1594	29.64	9.67	39.31	55.50	-16.19	AVG	
3		0.2101	32.40	9.67	42.07	63.20	-21.13	QP	
4		0.2101	25.12	9.67	34.79	53.20	-18.41	AVG	
5		0.5315	34.30	9.69	43.99	56.00	-12.01	QP	
6	*	0.5315	28.71	9.69	38.40	46.00	-7.60	AVG	
7		0.9544	26.81	9.73	36.54	56.00	-19.46	QP	
8		0.9544	18.39	9.73	28.12	46.00	-17.88	AVG	
9		3.1550	24.51	9.85	34.36	56.00	-21.64	QP	
10		3.1550	12.57	9.85	22.42	46.00	-23.58	AVG	
11		11.7000	21.73	10.08	31.81	60.00	-28.19	QP	
12		11.7000	15.37	10.08	25.45	50.00	-24.55	AVG	

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

Test Mode	Idle	Tested Date	2023/11/5
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1577	40.50	9.67	50.17	65.58	-15.41	QP	
2		0.1577	28.06	9.67	37.73	55.58	-17.85	AVG	
3		0.2108	33.81	9.66	43.47	63.17	-19.70	QP	
4		0.2108	24.52	9.66	34.18	53.17	-18.99	AVG	
5		0.5314	22.91	9.69	32.60	56.00	-23.40	QP	
6		0.5314	18.20	9.69	27.89	46.00	-18.11	AVG	
7		1.2604	24.39	9.75	34.14	56.00	-21.86	QP	
8		1.2604	17.00	9.75	26.75	46.00	-19.25	AVG	
9		3.3350	25.95	9.87	35.82	56.00	-20.18	QP	
10		3.3350	16.28	9.87	26.15	46.00	-19.85	AVG	
11		11.3500	25.78	10.12	35.90	60.00	-24.10	QP	
12		11.3500	19.81	10.12	29.93	50.00	-20.07	AVG	

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

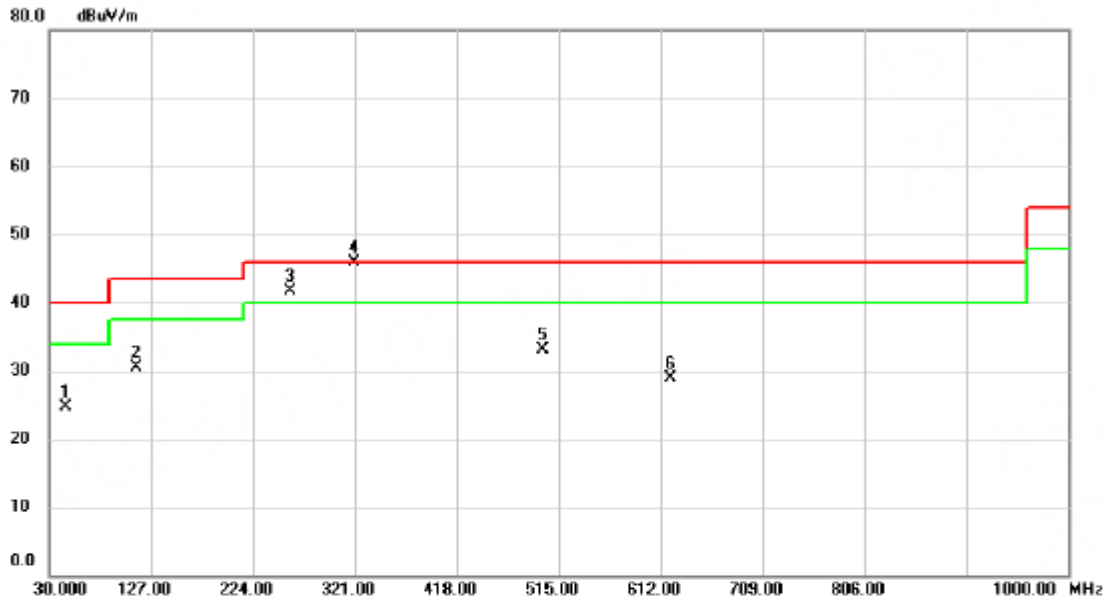
APPENDIX B RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

Test Mode	IEEE 802.11b	Test Date	2023/11/5
Test Frequency	2462MHz	Polarization	Vertical
Temp	25°C	Hum.	60%

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	30.0000	50.55	-13.67	36.88	40.00	-3.12	peak	100	238	
2		114.3900	44.96	-14.53	30.43	43.50	-13.07	peak	100	3	
3		254.0700	47.26	-11.86	35.40	46.00	-10.60	peak	200	278	
4		323.9100	48.84	-9.80	39.04	46.00	-6.96	peak	200	212	
5		500.4500	39.21	-5.32	33.89	46.00	-12.11	peak	100	6	
6		621.7000	37.84	-2.32	35.52	46.00	-10.48	peak	100	208	

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

Test Mode	IEEE 802.11b	Test Date	2023/11/5
Test Frequency	2462MHz	Polarization	Horizontal
Temp	25°C	Hum.	60%

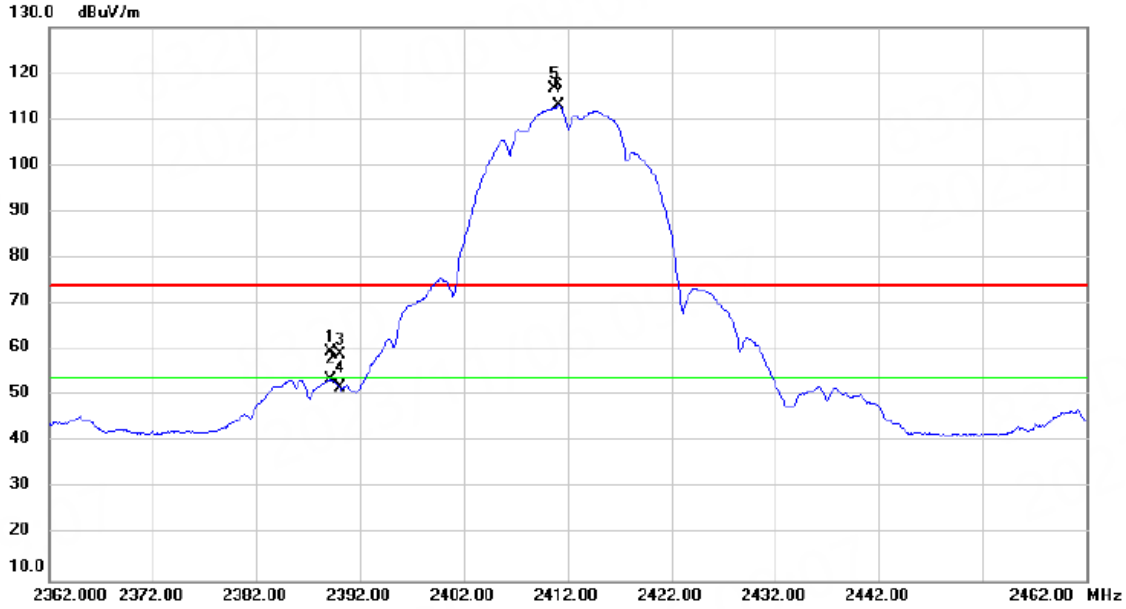


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		46.4900	36.29	-11.68	24.61	40.00	-15.39	peak	200	168	
2		113.4200	45.15	-14.61	30.54	43.50	-12.96	peak	200	101	
3	!	259.8900	53.30	-11.61	41.69	46.00	-4.31	peak	100	189	
4	*	320.0300	55.81	-9.89	45.92	46.00	-0.08	peak	100	316	
5		500.4500	38.52	-5.32	33.20	46.00	-12.80	peak	200	186	
6		621.7000	31.32	-2.32	29.00	46.00	-17.00	peak	134	360	

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

APPENDIX C RADIATED EMISSIONS - ABOVE 1 GHZ

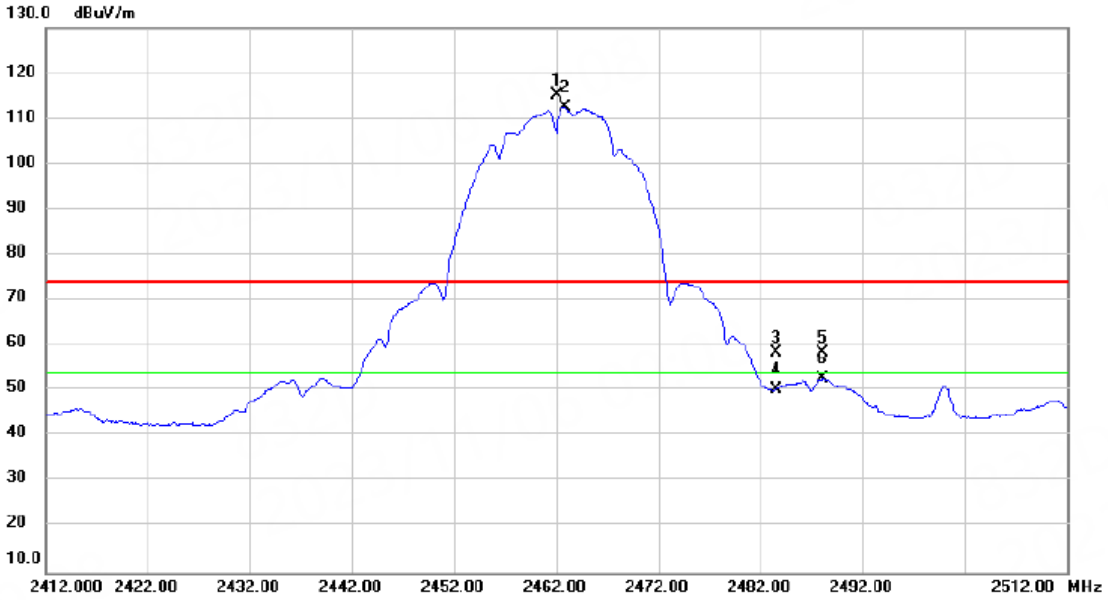
Test Mode	IEEE 802.11b	Test Date	2023/11/4
Test Frequency	2412MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2389.200	55.88	3.76	59.64	74.00	-14.36	peak	143	48	
2		2389.200	49.78	3.76	53.54	54.00	-0.46	AVG			
3		2390.000	55.15	3.76	58.91	74.00	-15.09	peak	143	48	
4		2390.000	48.10	3.76	51.86	54.00	-2.14	AVG			
5	X	2410.700	112.82	3.78	116.60	74.00	42.60	peak	143	48	
6	*	2411.200	109.20	3.78	112.98	54.00	58.98	AVG			

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

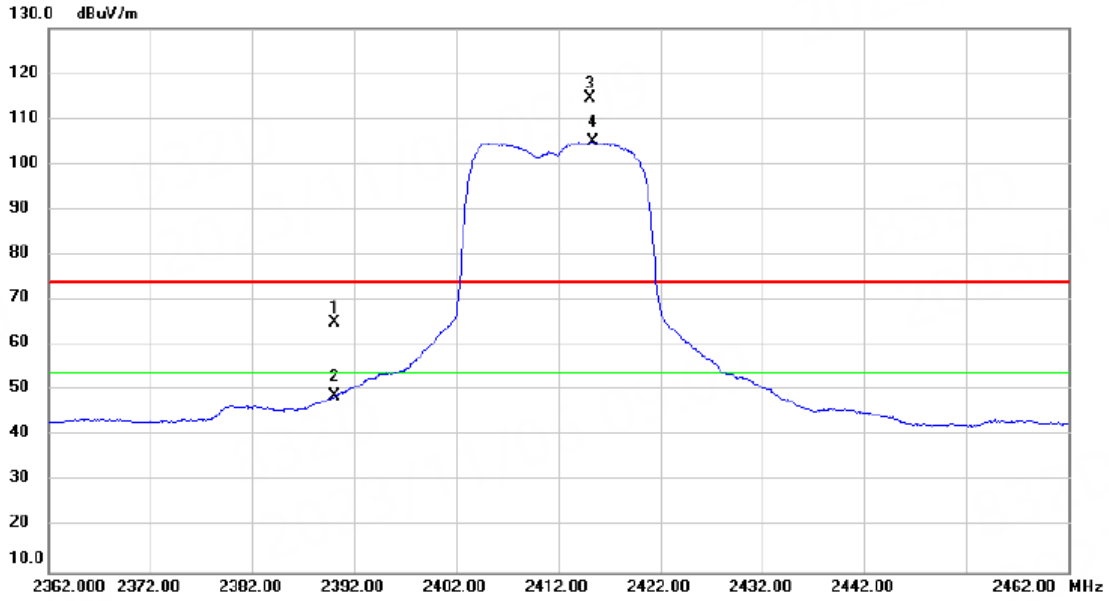
Test Mode	IEEE 802.11b	Test Date	2023/11/4
Test Frequency	2462MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2462.000	111.21	3.82	115.03	74.00	41.03	peak	143	48	
2	*	2462.800	108.73	3.82	112.55	54.00	58.55	AVG			
3		2483.500	54.65	3.83	58.48	74.00	-15.52	peak	143	48	
4		2483.500	46.53	3.83	50.36	54.00	-3.64	AVG			
5		2488.100	54.54	3.83	58.37	74.00	-15.63	peak	143	48	
6		2488.100	48.85	3.83	52.68	54.00	-1.32	AVG			

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

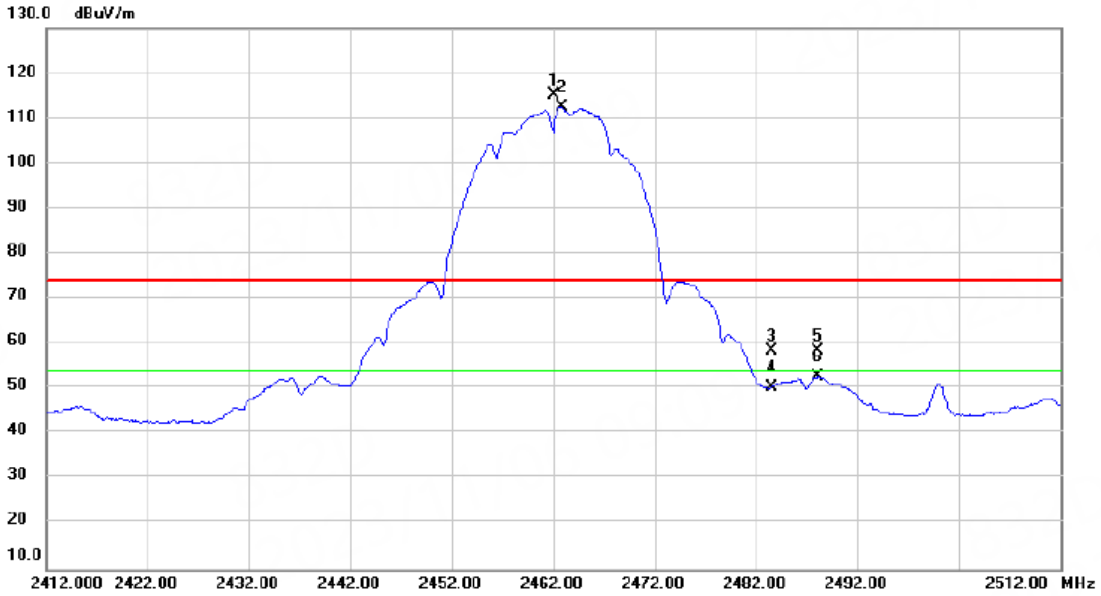
Test Mode	IEEE 802.11g	Test Date	2023/11/4
Test Frequency	2412MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2390.000	61.40	3.76	65.16	74.00	-8.84	peak	143	48	
2		2390.000	45.17	3.76	48.93	54.00	-5.07	AVG			
3	X	2415.100	110.72	3.78	114.50	74.00	40.50	peak	143	48	
4	*	2415.400	101.14	3.78	104.92	54.00	50.92	AVG			

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

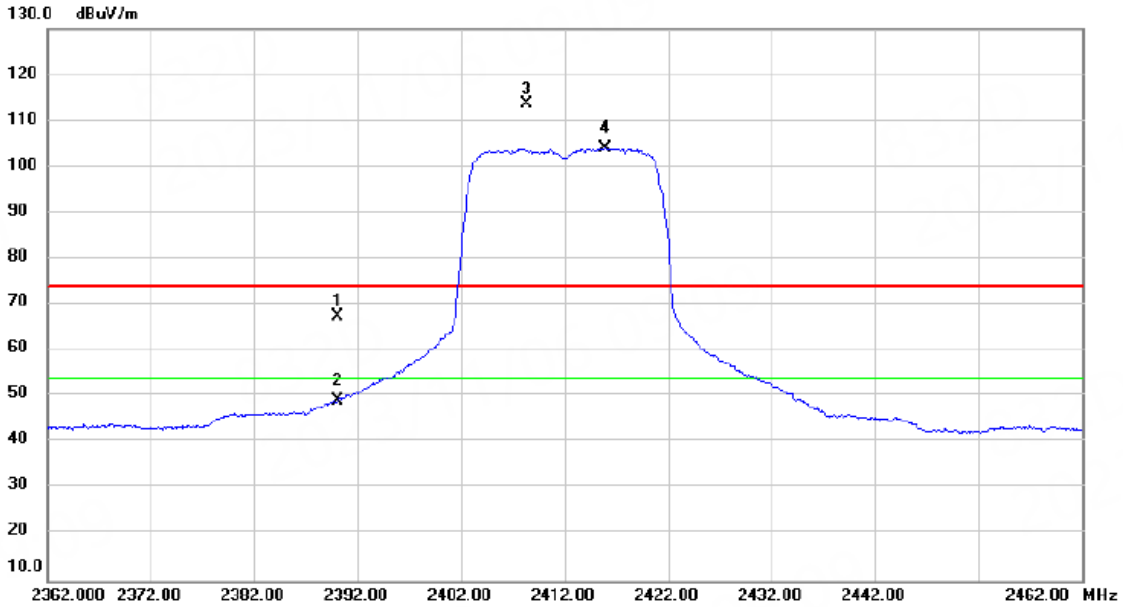
Test Mode	IEEE 802.11g	Test Date	2023/11/4
Test Frequency	2462MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2462.000	111.21	3.82	115.03	74.00	41.03	peak	143	48	
2	*	2462.800	108.73	3.82	112.55	54.00	58.55	AVG			
3		2483.500	54.65	3.83	58.48	74.00	-15.52	peak	143	48	
4		2483.500	46.53	3.83	50.36	54.00	-3.64	AVG			
5		2488.100	54.54	3.83	58.37	74.00	-15.63	peak	143	48	
6		2488.100	48.85	3.83	52.68	54.00	-1.32	AVG			

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

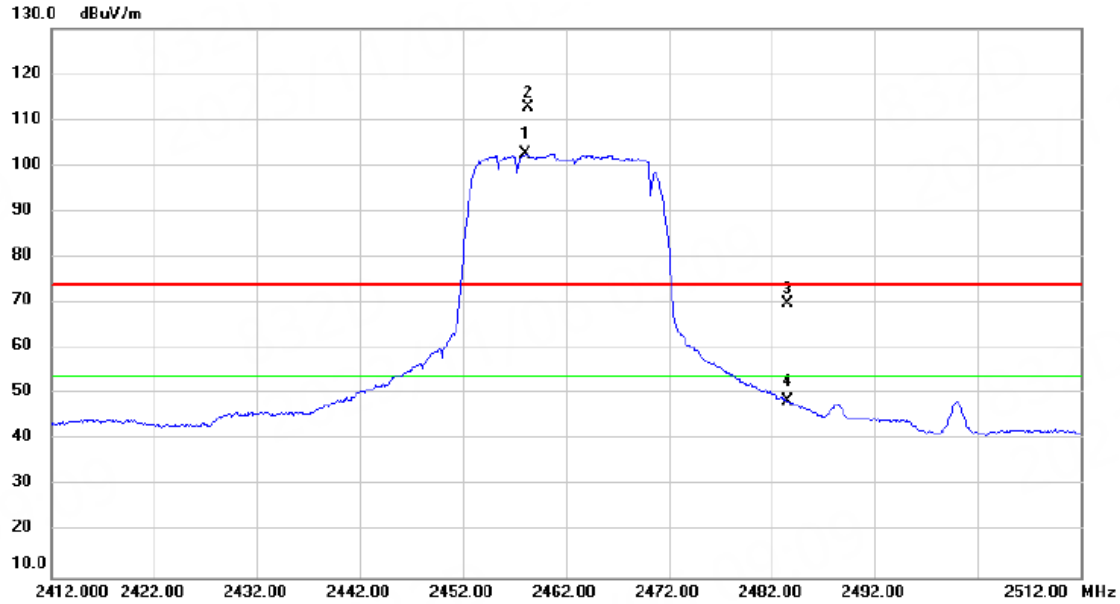
Test Mode	IEEE 802.11n (HT20)	Test Date	2023/11/4
Test Frequency	2412MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2390.000	63.80	3.76	67.56	74.00	-6.44	peak	143	48	
2		2390.000	45.34	3.76	49.10	54.00	-4.90	AVG			
3	X	2408.300	109.99	3.78	113.77	74.00	39.77	peak	143	48	
4	*	2415.900	100.23	3.78	104.01	54.00	50.01	AVG			

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

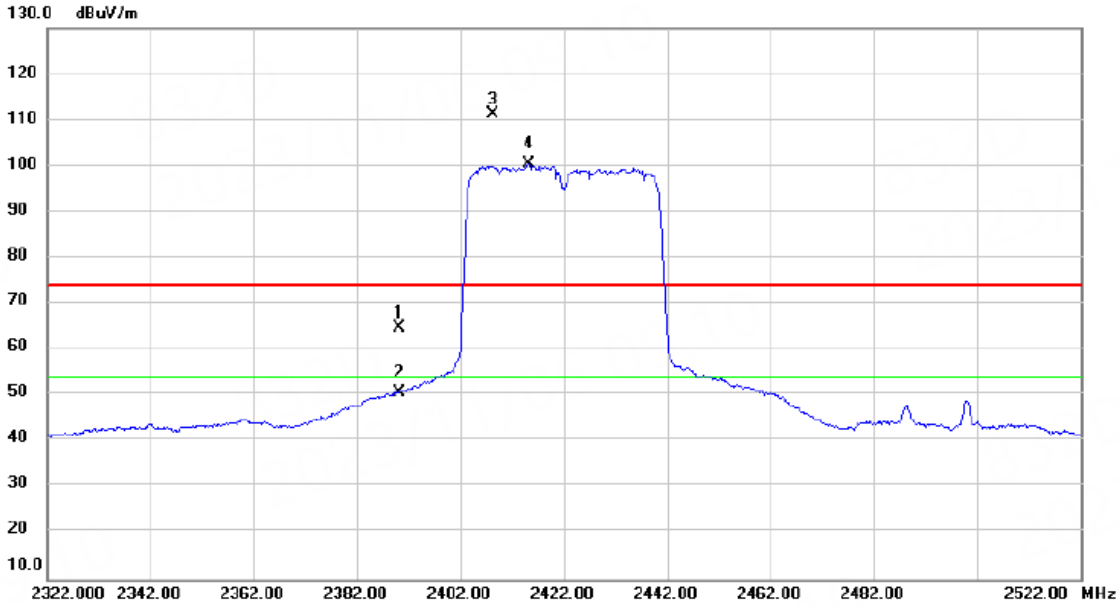
Test Mode	IEEE 802.11n (HT20)	Test Date	2023/11/4
Test Frequency	2462MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2458.000	98.74	3.80	102.54	54.00	48.54	AVG			
2	X	2458.300	108.81	3.80	112.61	74.00	38.61	peak	143	48	
3		2483.500	65.94	3.83	69.77	74.00	-4.23	peak	143	48	
4		2483.500	44.65	3.83	48.48	54.00	-5.52	AVG			

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

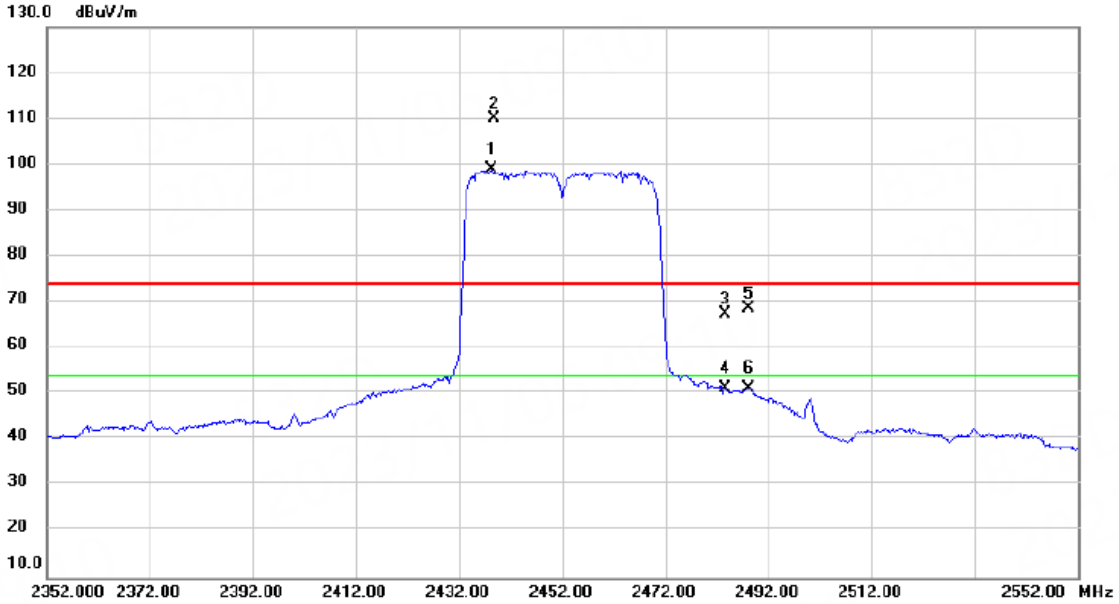
Test Mode	IEEE 802.11n (HT40)	Test Date	2023/11/4
Test Frequency	2422MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2390.000	60.98	3.76	64.74	74.00	-9.26	peak	143	48	
2		2390.000	46.75	3.76	50.51	54.00	-3.49	AVG			
3	X	2408.200	107.55	3.78	111.33	74.00	37.33	peak	143	48	
4	*	2415.200	96.55	3.78	100.33	54.00	46.33	AVG			

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

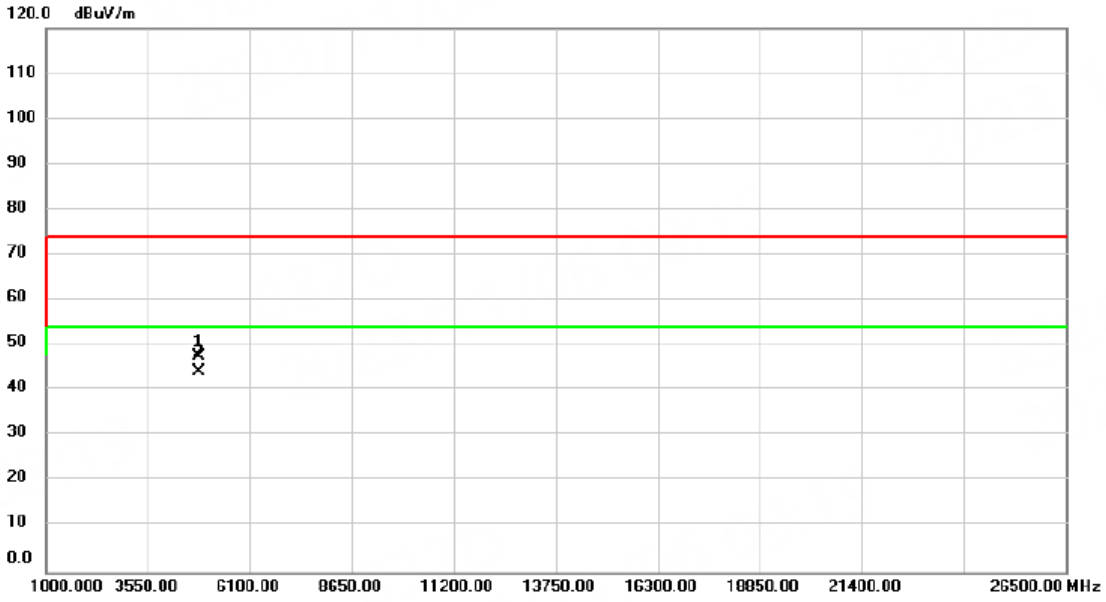
Test Mode	IEEE 802.11n (HT40)	Test Date	2023/11/4
Test Frequency	2452MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2438.200	95.05	3.79	98.84	54.00	44.84	AVG			
2	X	2438.800	106.38	3.79	110.17	74.00	36.17	peak	143	48	
3		2483.500	63.76	3.83	67.59	74.00	-6.41	peak	143	48	
4		2483.500	47.41	3.83	51.24	54.00	-2.76	AVG			
5		2488.000	64.91	3.83	68.74	74.00	-5.26	peak	143	48	
6		2488.000	47.49	3.83	51.32	54.00	-2.68	AVG			

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

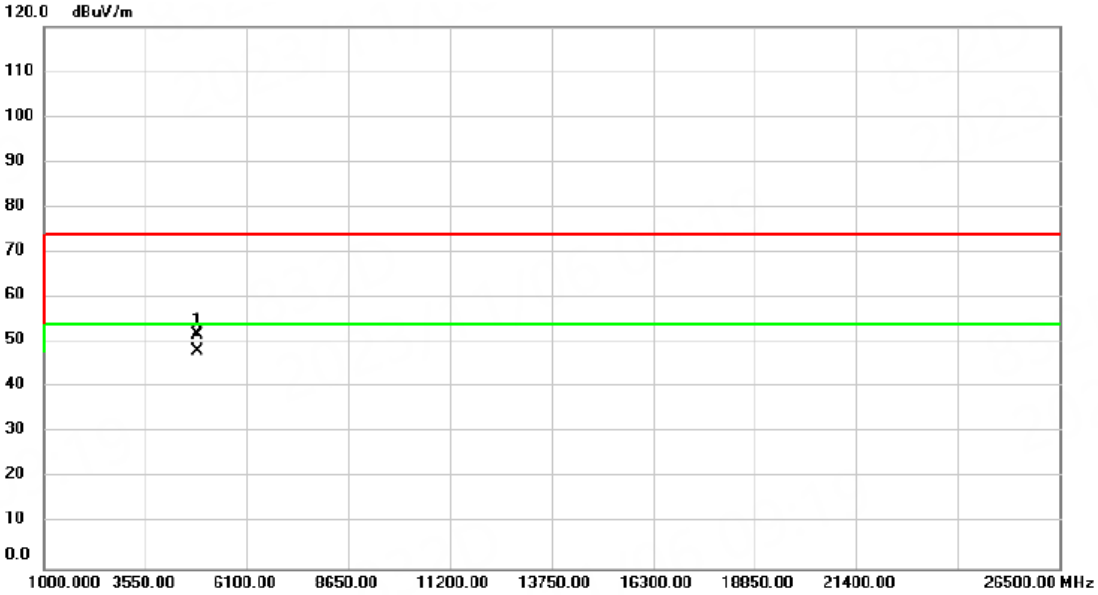
Test Mode	IEEE 802.11b	Test Date	2023/11/4
Test Frequency	2412MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4823.810	47.69	-0.01	47.68	74.00	-26.32	peak	143	48	
2	*	4824.020	44.14	-0.01	44.13	54.00	-9.87	AVG	143	48	

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

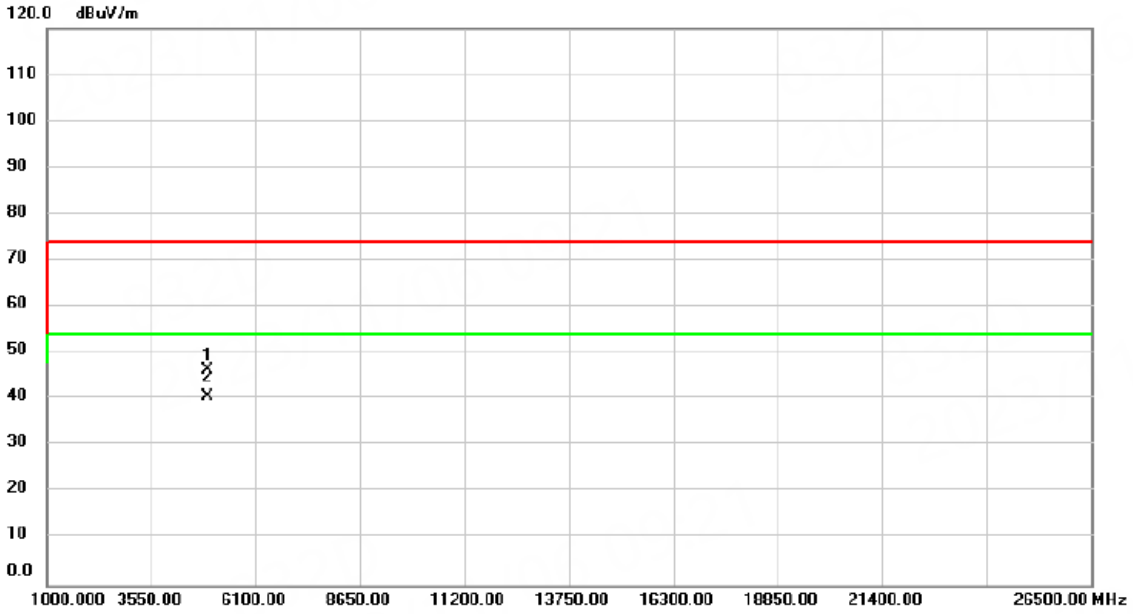
Test Mode	IEEE 802.11b	Test Date	2023/11/4
Test Frequency	2437MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4873.950	51.65	0.14	51.79	74.00	-22.21	peak	143	48	
2	*	4874.005	47.95	0.14	48.09	54.00	-5.91	AVG	143	48	

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

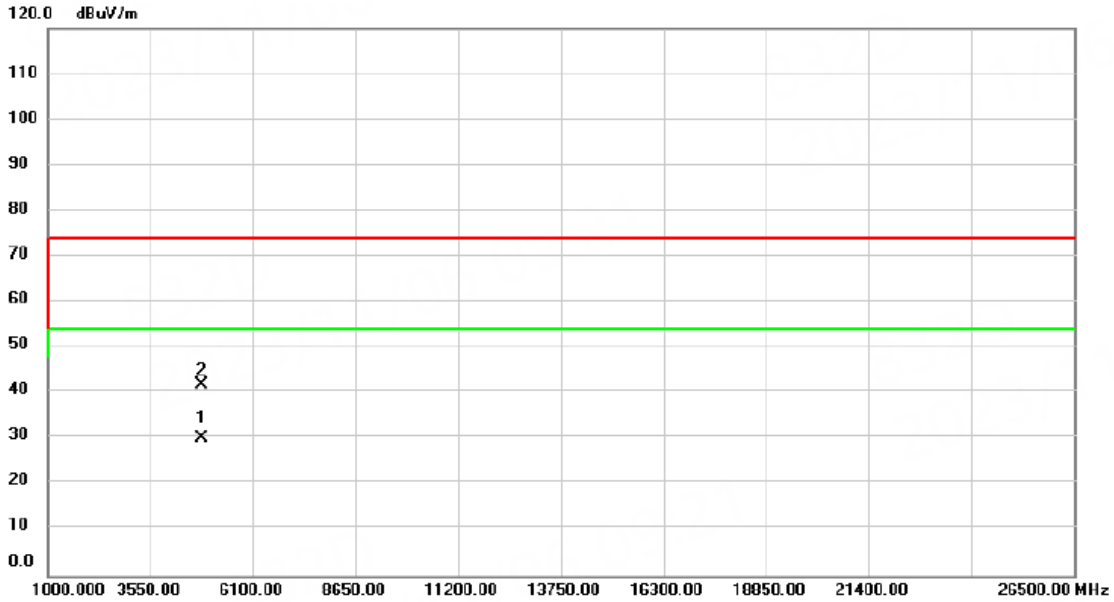
Test Mode	IEEE 802.11b	Test Date	2023/11/4
Test Frequency	2462MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4923.790	46.16	0.28	46.44	74.00	-27.56	peak	143	48	
2	*	4924.000	40.47	0.28	40.75	54.00	-13.25	AVG	143	48	

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

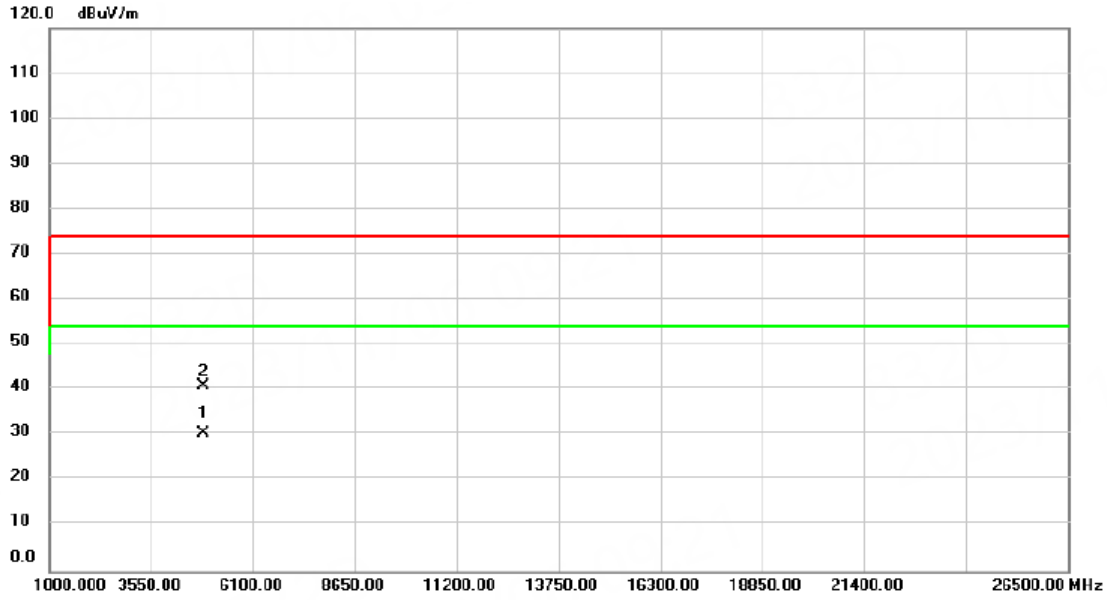
Test Mode	IEEE 802.11g	Test Date	2023/11/4
Test Frequency	2412MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	4821.500	30.12	-0.02	30.10	54.00	-23.90	AVG	143	48	
2		4821.970	41.86	-0.02	41.84	74.00	-32.16	peak	143	48	

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

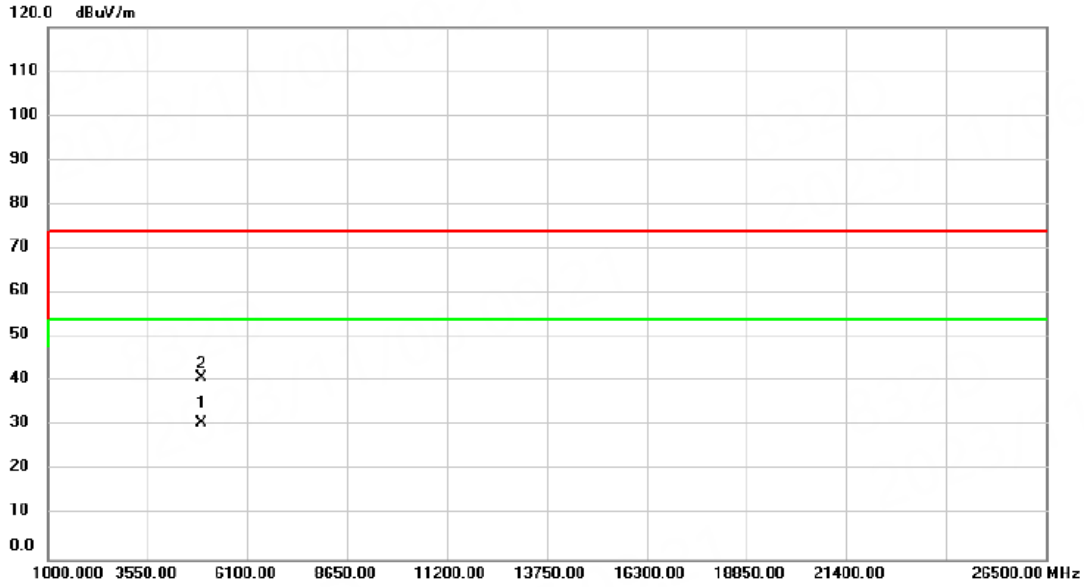
Test Mode	IEEE 802.11g	Test Date	2023/11/4
Test Frequency	2437MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	4871.740	30.20	0.13	30.33	54.00	-23.67	AVG	143	48	
2		4873.080	40.75	0.13	40.88	74.00	-33.12	peak	143	48	

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

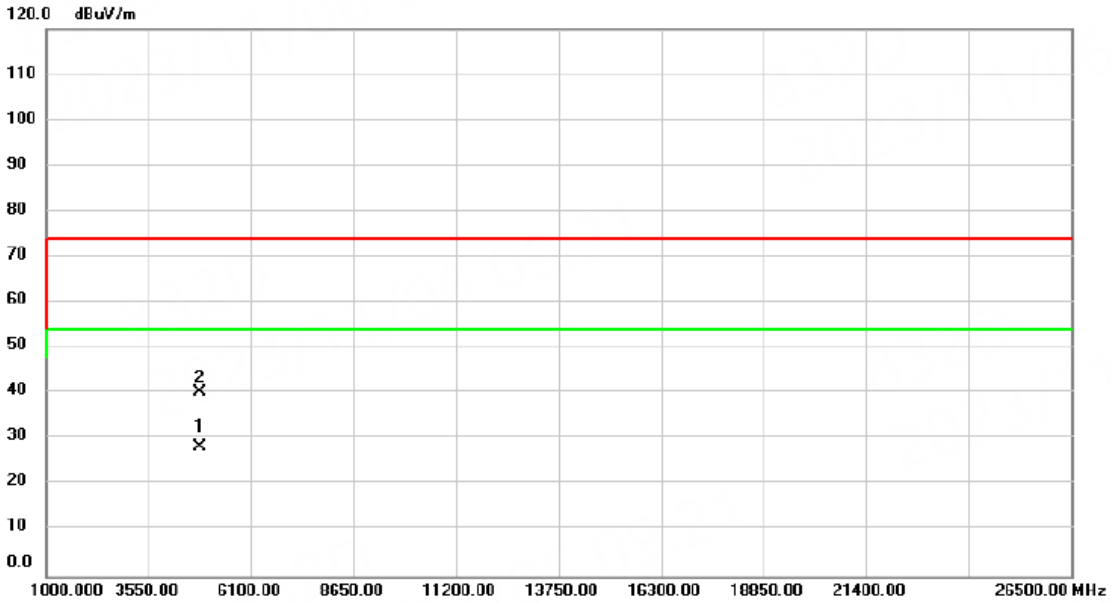
Test Mode	IEEE 802.11g	Test Date	2023/11/4
Test Frequency	2462MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	4921.505	30.55	0.27	30.82	54.00	-23.18	AVG	143	48	
2		4921.780	40.78	0.27	41.05	74.00	-32.95	peak	143	48	

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

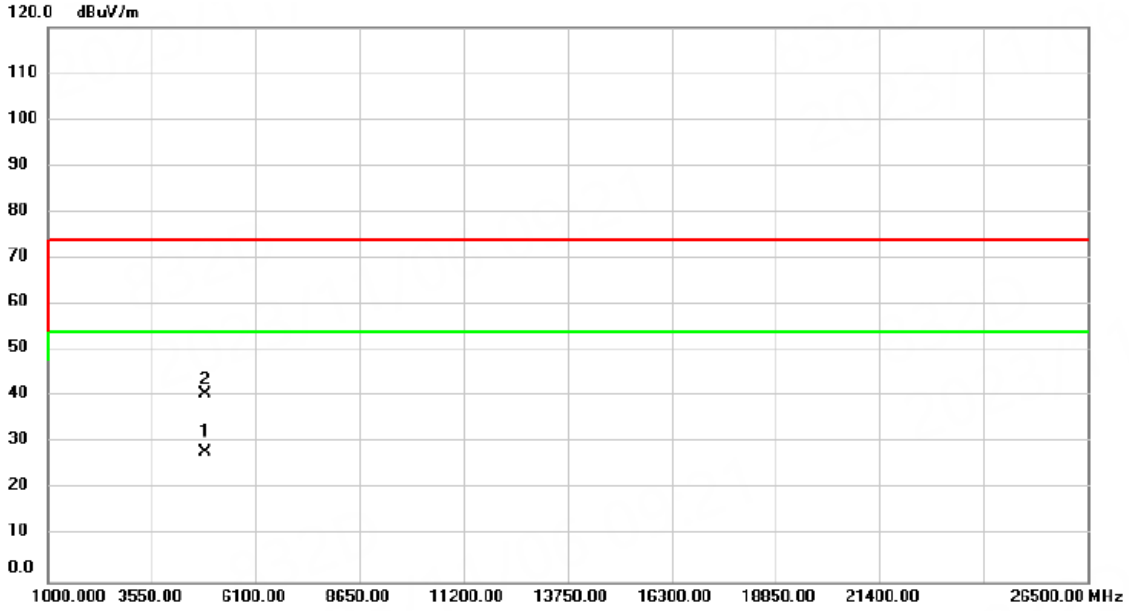
Test Mode	IEEE 802.11n (HT20)	Test Date	2023/11/4
Test Frequency	2412MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	4821.605	28.25	-0.02	28.23	54.00	-25.77	AVG	143	48	
2		4822.200	40.33	-0.02	40.31	74.00	-33.69	peak	143	48	

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

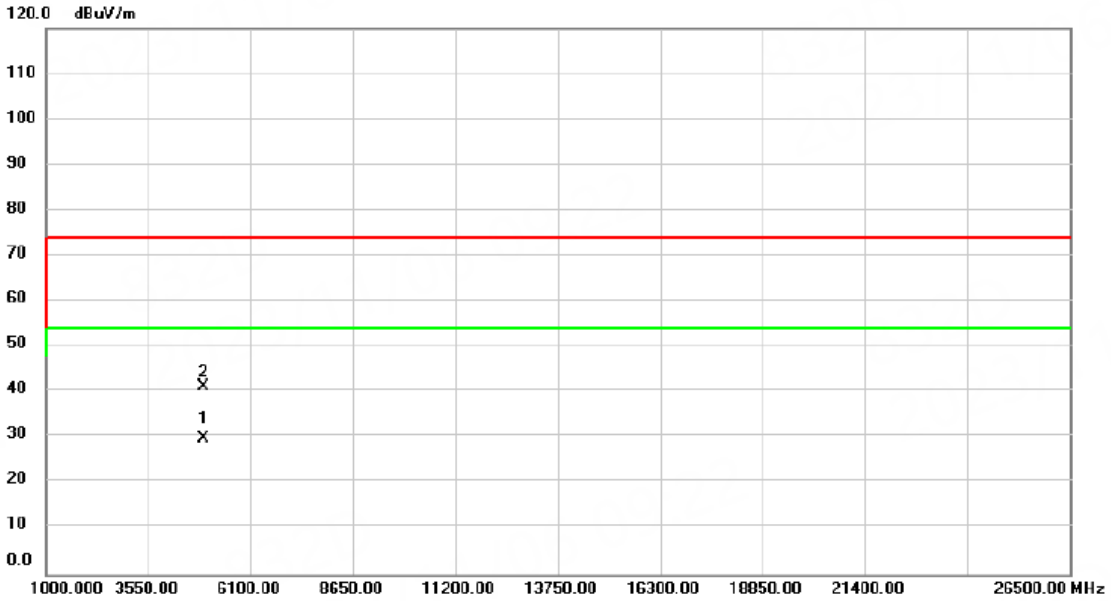
Test Mode	IEEE 802.11n (HT20)	Test Date	2023/11/4
Test Frequency	2437MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	4871.995	27.82	0.13	27.95	54.00	-26.05	AVG	143	48	
2		4874.735	40.53	0.14	40.67	74.00	-33.33	peak	143	48	

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

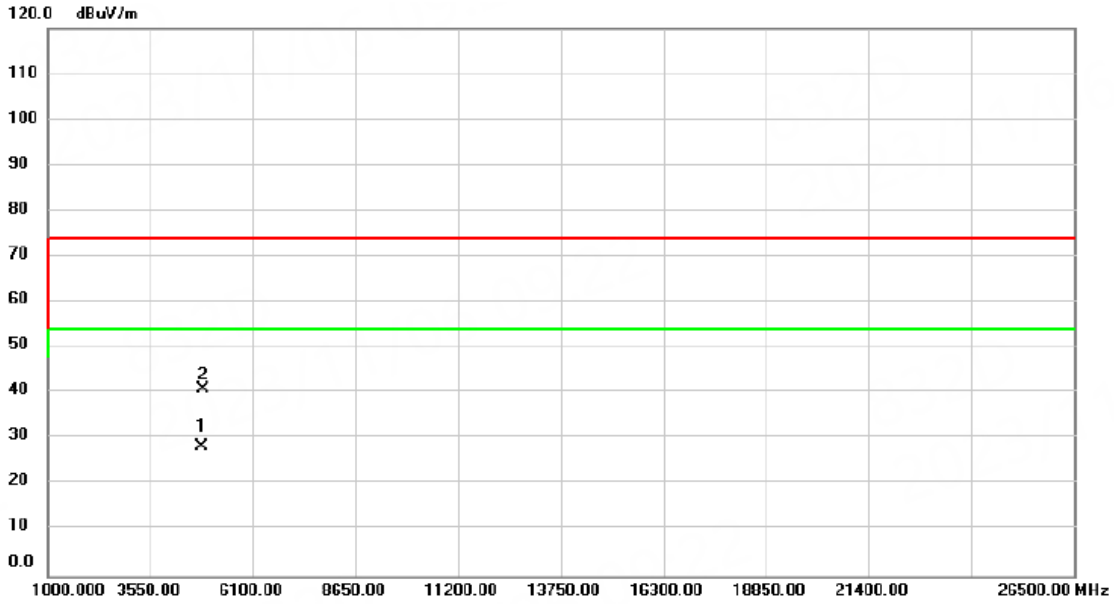
Test Mode	IEEE 802.11n (HT20)	Test Date	2023/11/4
Test Frequency	2462MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	4921.815	29.68	0.27	29.95	54.00	-24.05	AVG	143	48	
2		4921.930	40.93	0.27	41.20	74.00	-32.80	peak	143	48	

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

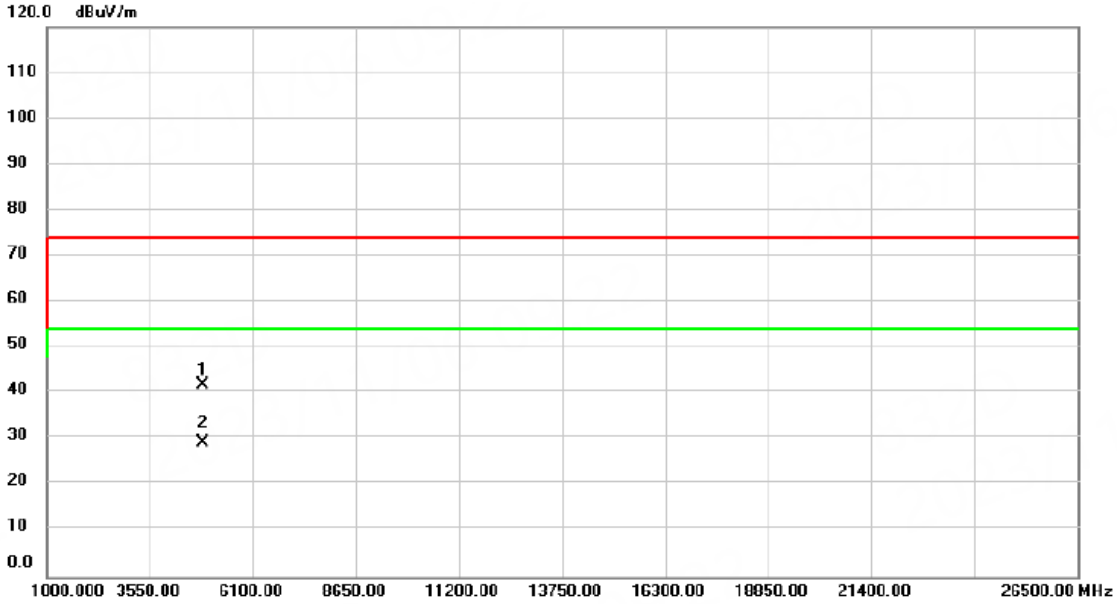
Test Mode	IEEE 802.11n (HT40)	Test Date	2023/11/4
Test Frequency	2422MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	4841.575	28.25	0.04	28.29	54.00	-25.71	AVG	143	48	
2		4842.225	40.93	0.04	40.97	74.00	-33.03	peak	143	48	

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

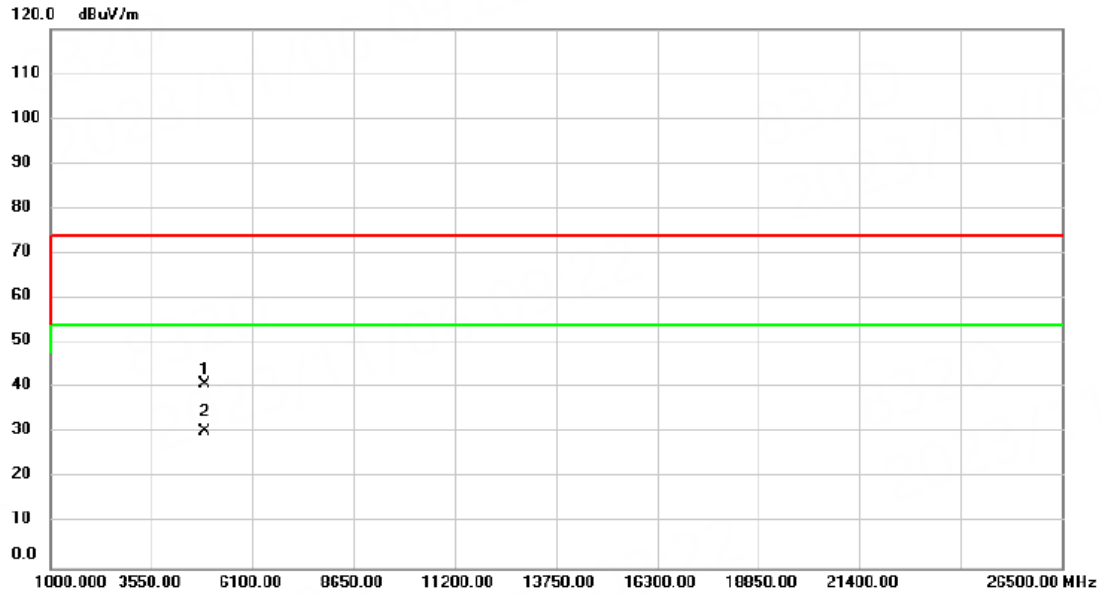
Test Mode	IEEE 802.11n (HT40)	Test Date	2023/11/4
Test Frequency	2437MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4871.905	41.70	0.13	41.83	74.00	-32.17	peak	143	48	
2	*	4873.800	29.18	0.14	29.32	54.00	-24.68	AVG	143	48	

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2023/11/4
Test Frequency	2452MHz	Polarization	Vertical
Temp	24°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4903.845	40.67	0.22	40.89	74.00	-33.11	peak	143	48	
2	*	4906.275	30.14	0.23	30.37	54.00	-23.63	AVG	143	48	

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

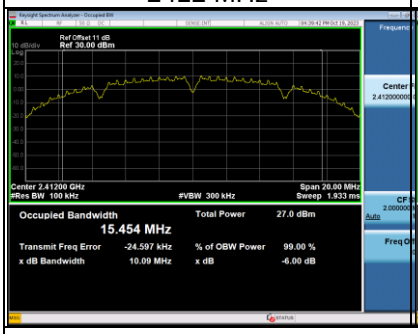
APPENDIX D BANDWIDTH

Test Mode	IEEE 802.11b

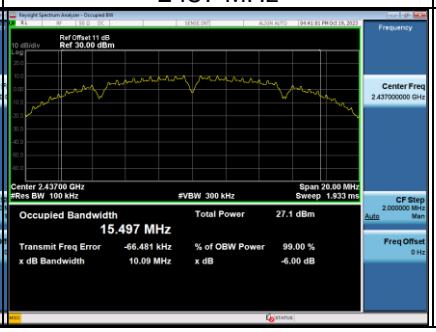
Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	10.09	15.568	≥ 500	Pass
2437	10.09	15.649	≥ 500	Pass
2462	10.09	15.660	≥ 500	Pass

6dB Bandwidth

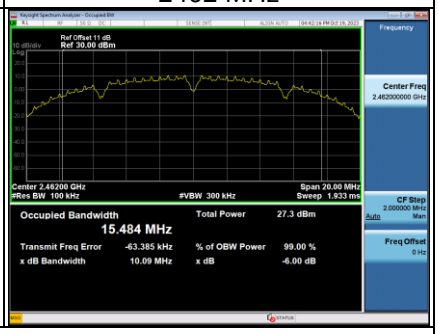
2412 MHz



2437 MHz



2462 MHz

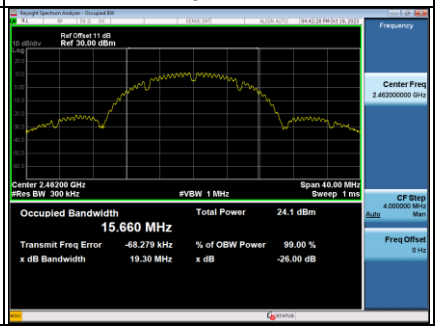


99% Occupied BW

2412 MHz

2437 MHz

2462 MHz

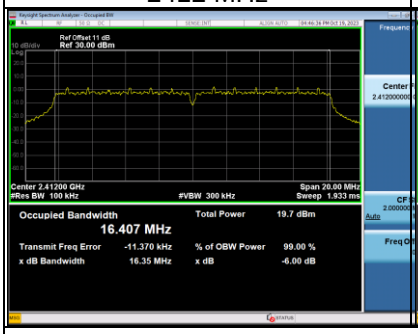


Test Mode	IEEE 802.11g

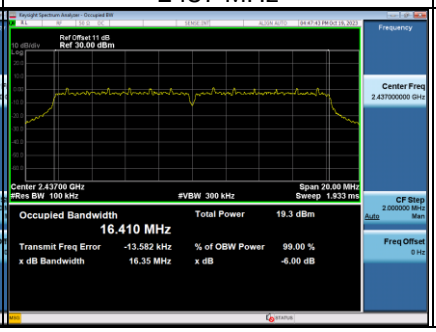
Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	16.35	16.852	≥ 500	Pass
2437	16.35	16.863	≥ 500	Pass
2462	16.35	16.872	≥ 500	Pass

6dB Bandwidth

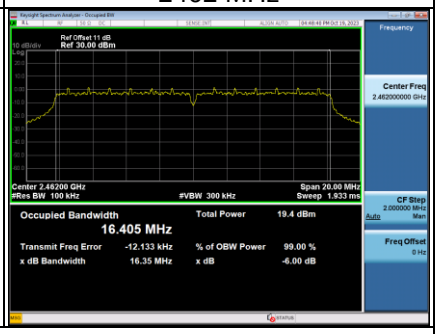
2412 MHz



2437 MHz



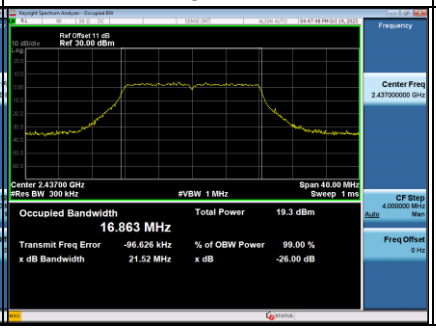
2462 MHz



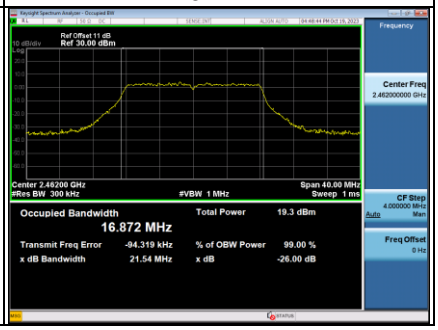
99% Occupied BW

2412 MHz

2437 MHz



2462 MHz

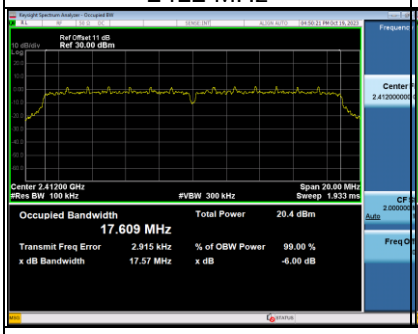


Test Mode	IEEE 802.11n (HT20)

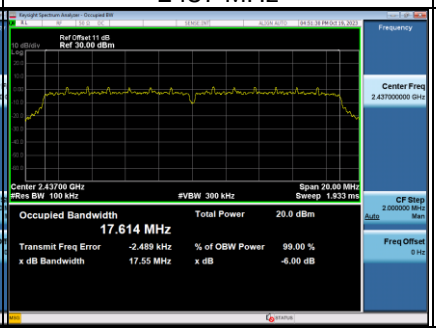
Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	17.57	17.950	≥ 500	Pass
2437	17.55	17.962	≥ 500	Pass
2462	17.57	17.988	≥ 500	Pass

6dB Bandwidth

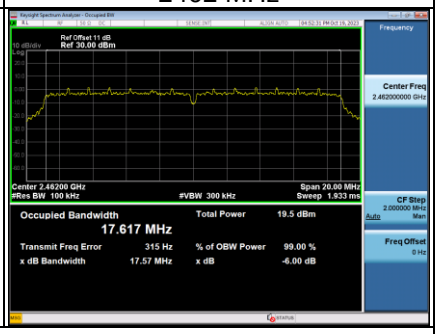
2412 MHz



2437 MHz

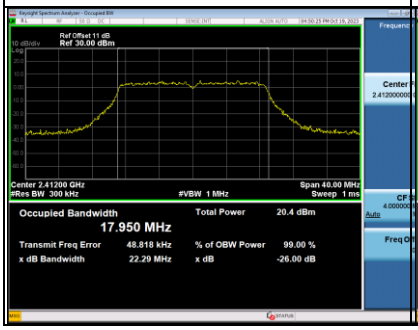


2462 MHz

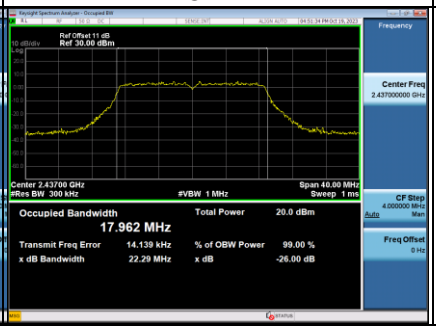


99% Occupied BW

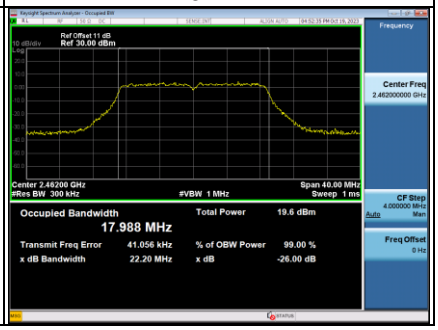
2412 MHz



2437 MHz



2462 MHz

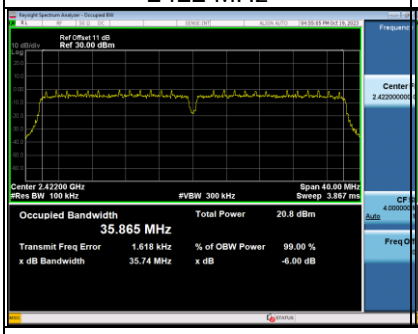


Test Mode	IEEE 802.11n (HT40)

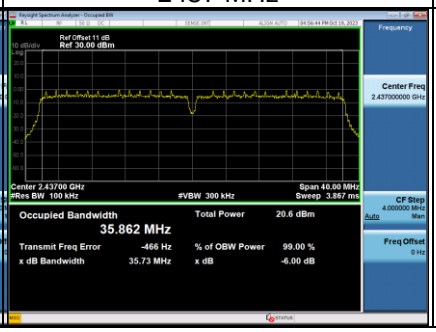
Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2422	35.74	36.019	≥ 500	Pass
2437	35.73	36.046	≥ 500	Pass
2452	35.74	36.044	≥ 500	Pass

6dB Bandwidth

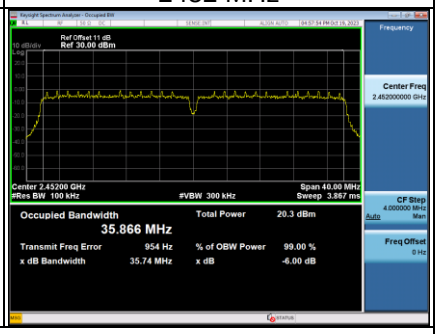
2422 MHz



2437 MHz



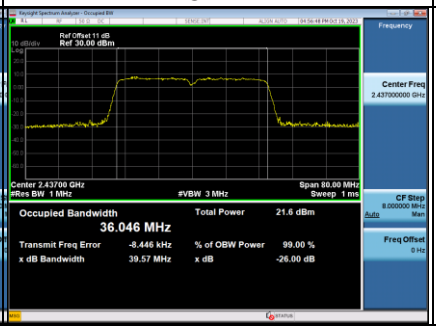
2452 MHz



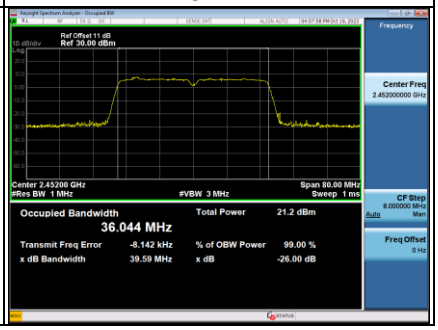
99% Occupied BW

2422 MHz

2437 MHz



2452 MHz



APPENDIX E OUTPUT POWER

Test Mode	IEEE 802.11b_Ant.1	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	20.03	0.1007	0.02	20.05	0.1012	30.00	1.0000	Complies
2437	21.45	0.1396	0.02	21.47	0.1403	30.00	1.0000	Complies
2462	20.71	0.1178	0.02	20.73	0.1183	30.00	1.0000	Complies

Test Mode	IEEE 802.11b_Ant.2	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	19.98	0.0995	0.02	20.00	0.1000	30.00	1.0000	Complies
2437	21.64	0.1459	0.02	21.66	0.1466	30.00	1.0000	Complies
2462	20.67	0.1167	0.02	20.69	0.1172	30.00	1.0000	Complies

Test Mode	IEEE 802.11b_Total	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	23.04	0.2014	0.02	23.06	0.2023	30.00	1.0000	Complies
2437	24.57	0.2864	0.02	24.59	0.2877	30.00	1.0000	Complies
2462	23.72	0.2355	0.02	23.74	0.2366	30.00	1.0000	Complies

Test Mode	IEEE 802.11g_Ant.1	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	18.46	0.0701	0.15	18.61	0.0726	30.00	1.0000	Complies
2437	18.48	0.0705	0.15	18.63	0.0729	30.00	1.0000	Complies
2462	18.54	0.0714	0.15	18.69	0.0740	30.00	1.0000	Complies

Test Mode	IEEE 802.11g_Ant.2	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	18.25	0.0668	0.15	18.40	0.0692	30.00	1.0000	Complies
2437	18.35	0.0684	0.15	18.50	0.0708	30.00	1.0000	Complies
2462	18.45	0.0700	0.15	18.60	0.0724	30.00	1.0000	Complies

Test Mode	IEEE 802.11g_Total	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	21.40	0.1380	0.15	21.55	0.1429	30.00	1.0000	Complies
2437	21.46	0.1400	0.15	21.61	0.1449	30.00	1.0000	Complies
2462	21.54	0.1426	0.15	21.69	0.1476	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)_Ant.1	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	18.87	0.0771	0.15	19.02	0.0798	30.00	1.0000	Complies
2437	18.52	0.0711	0.15	18.67	0.0736	30.00	1.0000	Complies
2462	18.66	0.0735	0.15	18.81	0.0760	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)_Ant.2	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	18.37	0.0687	0.15	18.52	0.0711	30.00	1.0000	Complies
2437	18.20	0.0661	0.15	18.35	0.0684	30.00	1.0000	Complies
2462	18.55	0.0716	0.15	18.70	0.0741	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)_Total	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	21.67	0.1469	0.15	21.82	0.1521	30.00	1.0000	Complies
2437	21.41	0.1384	0.15	21.56	0.1432	30.00	1.0000	Complies
2462	21.65	0.1462	0.15	21.80	0.1514	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40)_Ant.1	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	18.58	0.0721	0.30	18.88	0.0773	30.00	1.0000	Complies
2437	18.40	0.0692	0.30	18.70	0.0741	30.00	1.0000	Complies
2462	18.43	0.0697	0.30	18.73	0.0746	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40)_Ant.2	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	18.74	0.0748	0.30	19.04	0.0802	30.00	1.0000	Complies
2437	18.65	0.0733	0.30	18.95	0.0785	30.00	1.0000	Complies
2462	18.64	0.0731	0.30	18.94	0.0783	30.00	1.0000	Complies

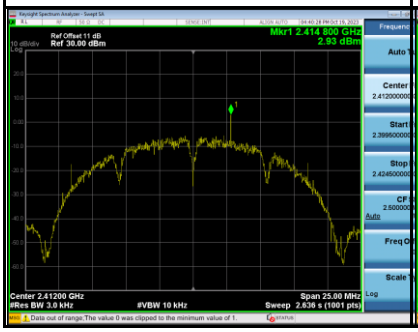
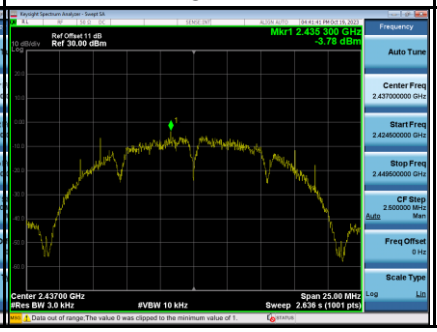
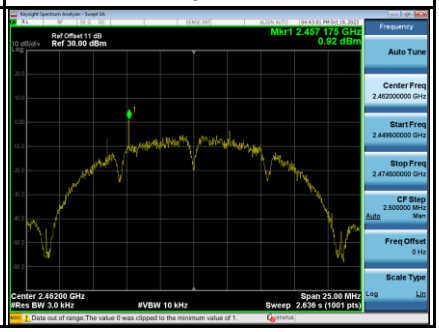
Test Mode	IEEE 802.11n (HT40)_Total	Tested Date	2023/9/27

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Duty Factor	Conducted Power + Duty Factor (dBm)	Conducted Power + Duty Factor (W)	Limit (dBm)	Limit (W)	Result
2412	21.70	0.1479	0.30	22.00	0.1585	30.00	1.0000	Complies
2437	21.57	0.1435	0.30	21.87	0.1538	30.00	1.0000	Complies
2462	21.58	0.1439	0.30	21.88	0.1542	30.00	1.0000	Complies

APPENDIX F POWER SPECTRAL DENSITY

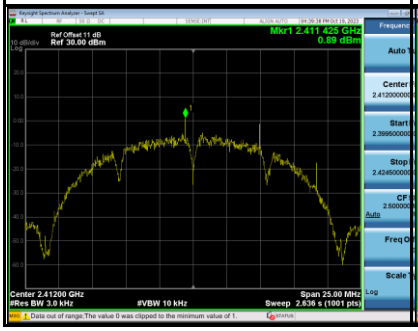
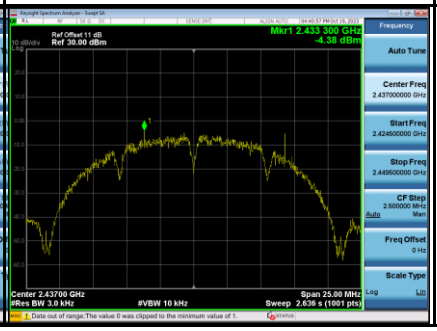
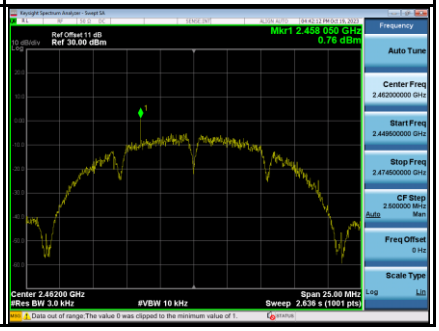
Test Mode	IEEE 802.11b_Ant.1

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	2.93	8.00	Pass
2437	-3.78	8.00	Pass
2462	0.92	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

Test Mode	IEEE 802.11b_Ant.2

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	0.89	8.00	Pass
2437	-4.38	8.00	Pass
2462	0.76	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

Test Mode	IEEE 802.11b_Total

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	5.04	5.96	Pass
2437	-1.06	5.96	Pass
2462	3.85	5.96	Pass