FCC Radio Test Report

FCC ID: 2AZL6-LB60004G

Report No.	:	BTL-FCCP-3-2103T093
Equipment	:	LBeacon
Model Name	:	LB60004G
Brand Name	:	BiDaE Technology, Incorporated
Applicant	:	BiDaE Technology, Incorporated
Address	:	1F., NO. 5, LN. 96, SEC. 1, DA-AN RD., DA-AN DIST., TAIPEI CITY 106, TAIWAN (R.O.C.)
Radio Function	:	WLAN 2.4 GHz
FCC Rule Part(s)	:	FCC Part15, Subpart C (15.247)
Measurement Procedure(s)	:	ANSI C63.10-2013
Date of Receipt	:	2021/4/7
Date of Test	:	2021/4/7 ~ 2021/6/24
Issued Date	:	2021/7/12

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

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Declaration

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

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

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

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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.

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REVISON HISTORY

Report No.	Version	Description	Issued Date
BTL-FCCP-3-2103T093	R00	Original Report.	2021/7/12

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

FCC Part 15, Subpart C (15.247)				
Standard(s) Section	**Description**	**Test Result**	**Judgement**	**Remark**
15.207	AC Power Line Conducted Emissions	APPENDIX A	Pass	------
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX B APPENDIX C	Pass	------
15.247(a)	Bandwidth	APPENDIX D	Pass	------
15.247(b)	Output Power	APPENDIX E	Pass	------
15.247(e)	Power Spectral Density	APPENDIX F	Pass	------
15.247(d)	Antenna conducted Spurious Emission	APPENDIX G	Pass	------
15.203	Antenna Requirement	------	Pass	------

NOTE:
(1) ”N/A” denotes test is not applicable in this Test Report.
(2) The report format version is TP.1.1.1.

1.1 TEST FACILITY

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

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
The test sites and facilities are covered under FCC RN: 674415 and DN: TW0659.

☒ C05 ☐ CB08 ☐ CB11 ☒ CB15 ☐ CB16
☒ SR05

1.2 MEASUREMENT UNCERTAINTY

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

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C05	CISPR	150 kHz ~ 30MHz	3.44

B. Radiated emissions test :

Test Site	Measurement Frequency Range	U,(dB)
CB15	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	0.5334
Output power	0.3669
Power Spectral Density	0.6591
Conducted Spurious emissions	0.5416
Conducted Band edges	0.5348

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	22 °C, 70 %	AC 120V	Paul Shen
Radiated emissions below 1 GHz	23 °C, 51 %	AC 120V	Jay Kao
Radiated emissions above 1 GHz	22~23 °C, 51~61 %	AC 120V	Jay Kao
Bandwidth	23.5 °C, 51 %	AC 120V	Nero Hsieh
Output Power	23.5 °C, 51 %	AC 120V	Nero Hsieh
Power Spectral Density	23.5 °C, 51 %	AC 120V	Nero Hsieh
Antenna conducted Spurious Emission	23.5 °C, 51 %	AC 120V	Nero Hsieh

1.4 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

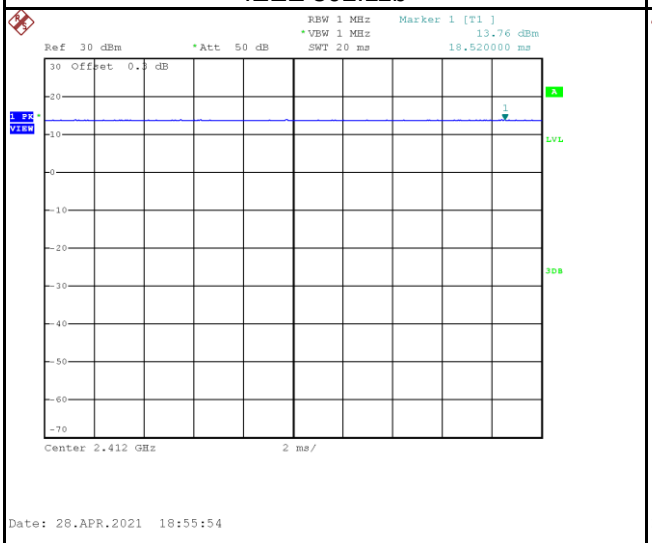
Test Software	art2_ver_4_9_815			
Mode	2412 MHz	2437 MHz	2462 MHz	Data Rate
IEEE 802.11b	46	49	42	1 Mbps
IEEE 802.11g	40	55	34	6 Mbps
IEEE 802.11n (HT20)	40	56	35	MCS 0
Mode	2422 MHz	2437 MHz	2452 MHz	Data Rate
IEEE 802.11n (HT40)	37	57	36	MCS 0

1.5 DUTY CYCLE

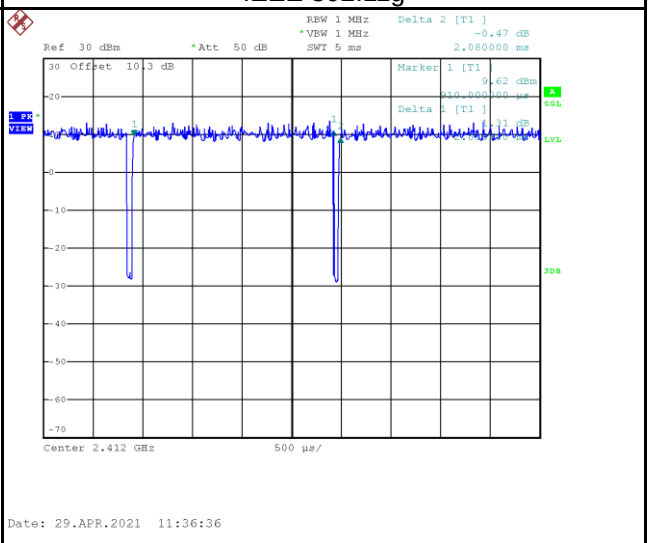
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.

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	1.00	1	1.00	1.00	100.00%	0.00
IEEE 802.11g	2.010	1	2.010	2.080	96.63%	0.15
IEEE 802.11n (HT20)	1.880	1	1.880	1.950	96.41%	0.16
IEEE 802.11n (HT40)	0.924	1	0.924	0.976	94.67%	0.24

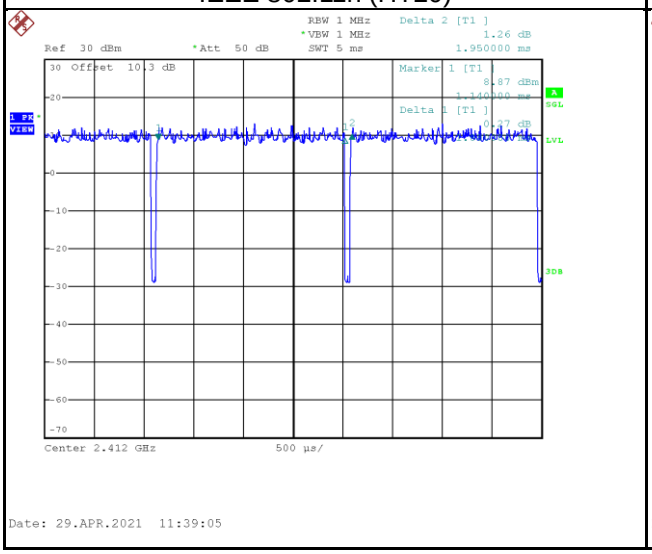
IEEE 802.11b



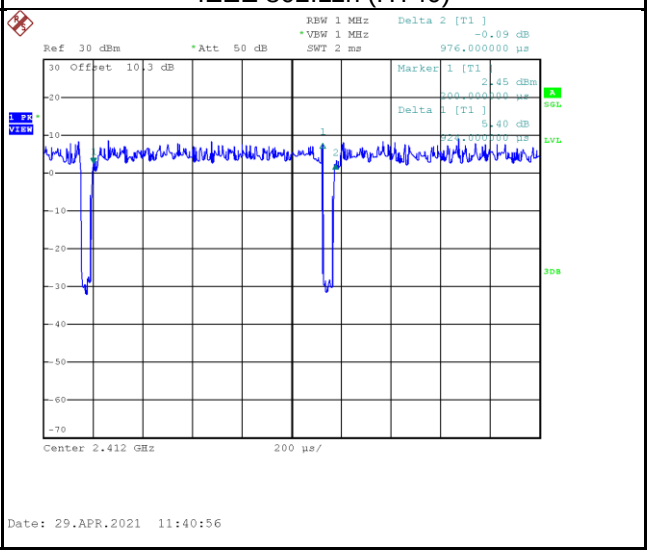
IEEE 802.11g



IEEE 802.11n (HT20)



IEEE 802.11n (HT40)



2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	LBeacon
Model Name	LB60004G
Brand Name	BiDaE Technology, Incorporated
Model Difference	N/A
Power Source	DC Voltage supplied from AC/DC adapter.
Power Rating	Input: 100-240V~ 50/60Hz 0.5A Output: 5.0V⎓ 2.5A
Products Covered	1 * Power Adapter: CHANNEL WELL TECHNOLOGY/2AEAO13BA3B
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: 24.38 dBm (0.2742 W) IEEE 802.11g: 24.39 dBm (0.2748 W) IEEE 802.11n (HT20): 24.39 dBm (0.2748 W) IEEE 802.11n (HT40): 24.39 dBm (0.2748 W)
Test Model	LB60004G
Sample Status	Engineering Sample
EUT Modification(s)	N/A

NOTE:
(1) For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

(2) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		

(3) Table for Filed Antenna:

Antenna	Manufacture	Model name	Type	Connector	Frequency (MHz)	Gain (dBi)
P1 (TX)	ALFA	Pi-WiFi-ANT	PIFA	I-PEX	2400	1.94
					2450	1.70
					2500	1.82
P3 (RX)	ALFA	Pi-WiFi-ANT	PIFA	I-PEX	2400	0.02
					2450	0.14
					2500	0.21

2.2 TEST MODES

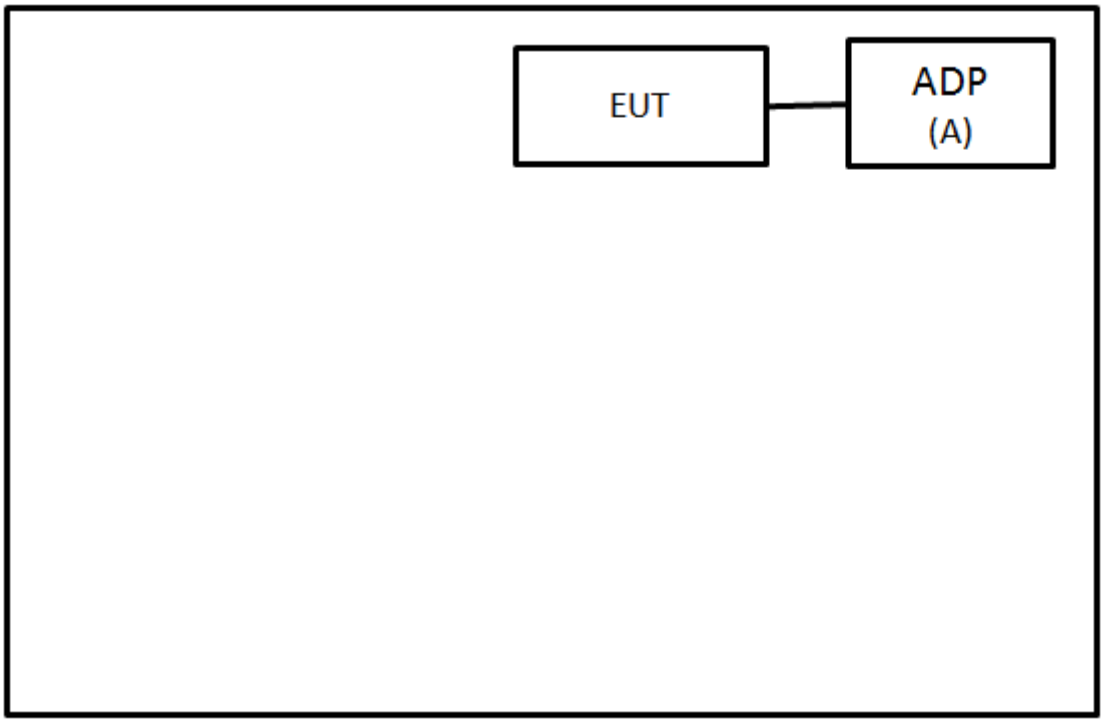
Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	TX Mode_IEEE 802.11n (HT20)	06	-
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11b	01/11	Bandedge
	TX Mode_IEEE 802.11g		
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE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

NOTE:
(1) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.
(2) All X, Y and Z axes are evaluated, but only the worst case (X axis) is recorded.

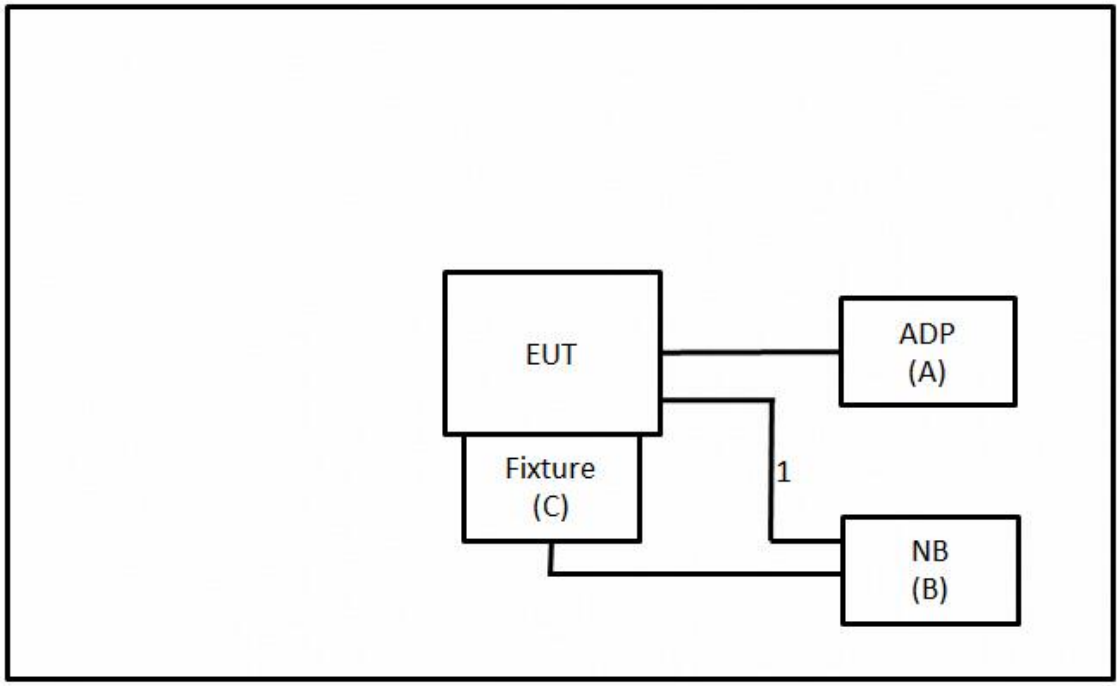
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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

AC power line conducted emissions



Radiated Emissions



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	Adapter	CHANNEL WELL TECHNOLOGY	2AEA013BA3B	N/A	Supplied by test requester
B	NB	acer	MS2351	N/A	Furnished by test lab.
C	Fixture	CSR	USB-SPI	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	1.5m	USB Cable	Furnished by test lab.

3 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

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

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

Reading Level		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

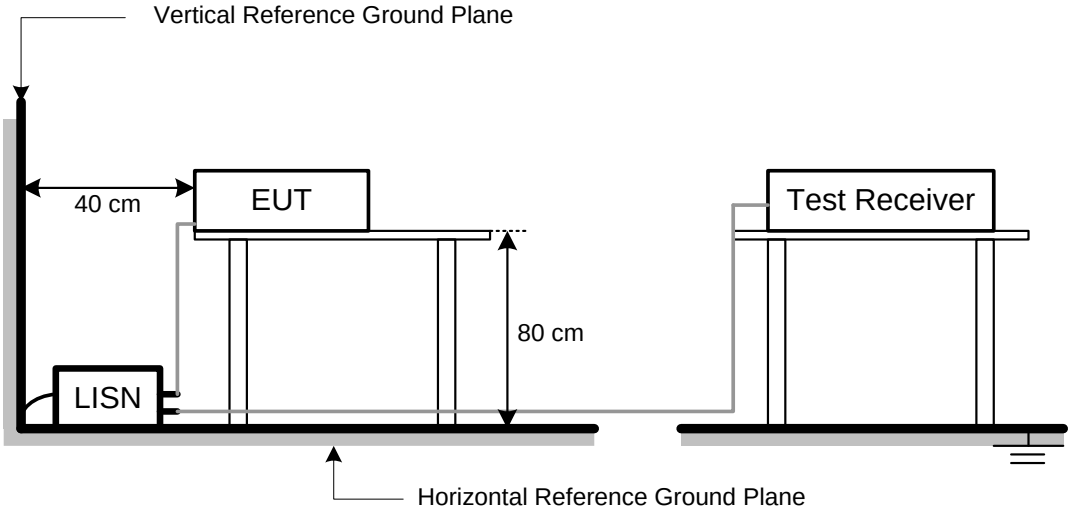
a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
All other support equipment were powered from an additional LISN(s).
The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.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

No deviation.

3.4 TEST SETUP



3.5 TEST RESULT

Please refer to the APPENDIX A.

4 RADIATED EMISSIONS TEST

4.1 LIMIT

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

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

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

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

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

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

Reading Level		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

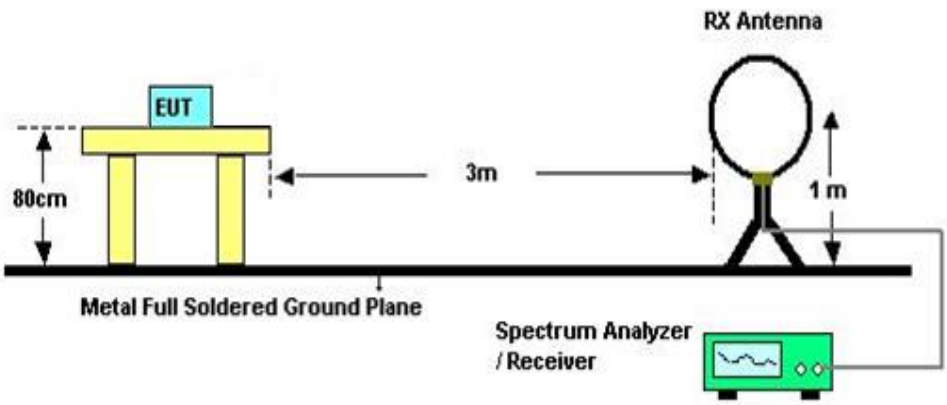
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance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

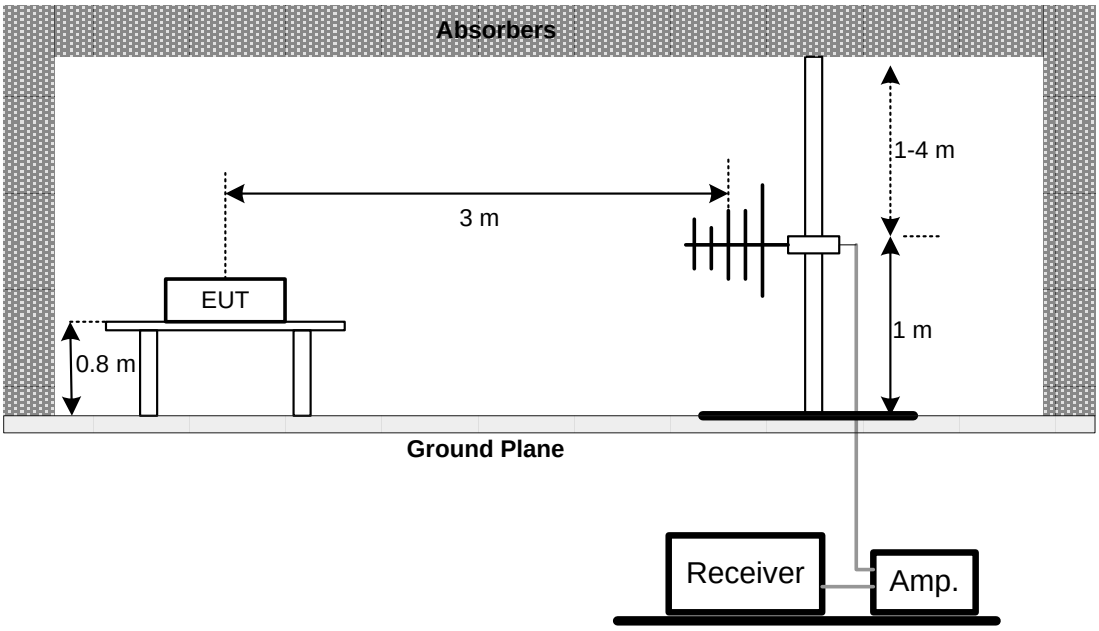
No deviation.

4.4 TEST SETUP

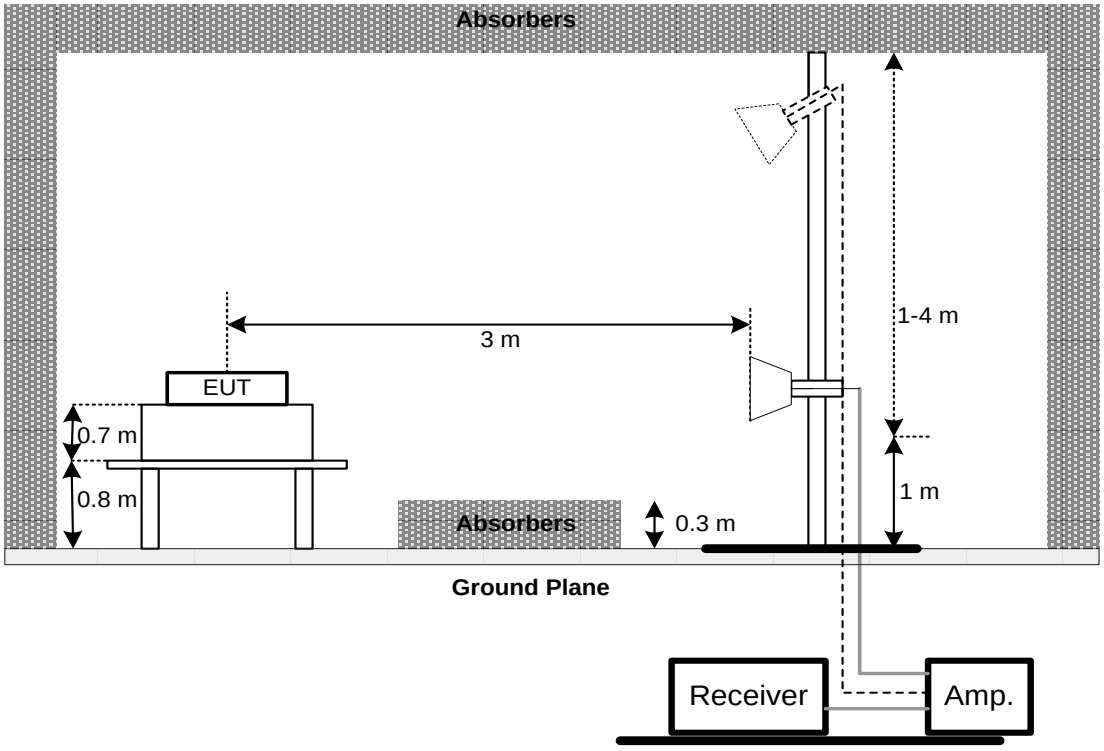
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT – BELOW 30 MHZ

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

4.7 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX B.

4.8 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

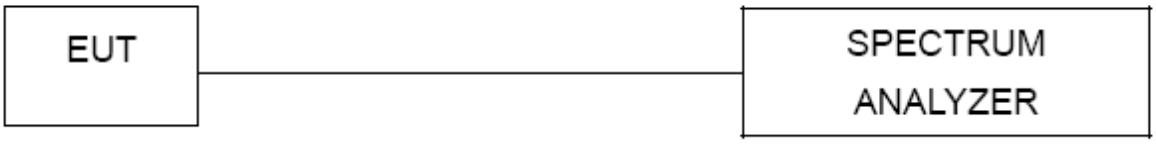
5.2 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT

Please refer to the APPENDIX 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 DEVIATION FROM TEST STANDARD

No deviation.

6.4 TEST SETUP

6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULT

Please refer to the APPENDIX 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)

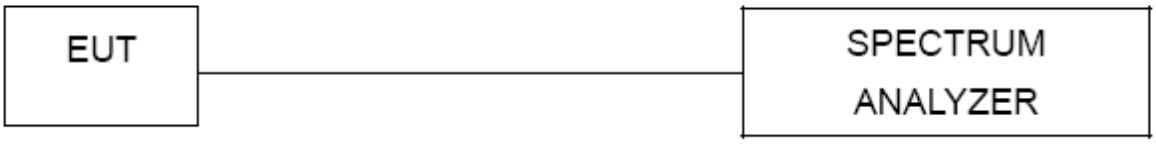
7.2 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULT

Please refer to the APPENDIX 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.

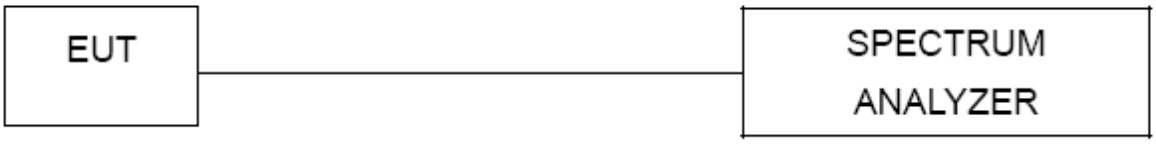
8.2 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULT

Please refer to the APPENDIX 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	101339	2021/3/10	2022/3/9
2	Test Cable	EMCI	EMCRG58-BM-BM-9000	210501	2021/5/3	2022/5/2
3	EMI Test Receiver	R&S	ESR 7	101433	2020/12/11	2021/12/10
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	EMC02325B	980217	2021/4/8	2022/4/7
2	Preamplifier	EMCI	EMC012645B	980267	2021/4/8	2022/4/7
3	Preamplifier	EMCI	EMC001340	980555	2021/4/8	2022/4/7
4	Test Cable	EMCI	EMC-SM-SM-1000	180809	2021/4/8	2022/4/7
5	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2021/4/8	2022/4/7
6	Test Cable	EMCI	EMC-SM-SM-7000	180408	2021/4/8	2022/4/7
7	MXE EMI Receiver	Agilent	N9038A	MY554200087	2021/5/27	2022/5/26
8	Signal Analyzer	Agilent	N9010A	MY56480554	2020/8/25	2021/8/24
9	Loop Ant	Electro-Metrics	EMCI-LPA600	274	2021/6/1	2022/5/31
10	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2021/6/2	2022/6/1
11	Horn Ant	Schwarzbeck	BBHA 9170	BBHA 9170340	2020/7/9	2021/7/8
12	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	VULB 9168-352	2020/7/24	2021/7/23
13	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0625	2020/7/24	2021/7/23
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	Spectrum Analyzer	R&S	FSP 30	100854	2021/4/16	2022/4/15

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Power Meter	Anritsu	ML2495A	1128008	2021/5/26	2022/5/25
2	Power Sensor	Anritsu	MA2411B	1126001	2021/5/26	2022/5/25

Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 30	100854	2021/4/16	2022/4/15

Antenna conducted Spurious Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 30	100854	2021/4/16	2022/4/15

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

10 EUT TEST PHOTO

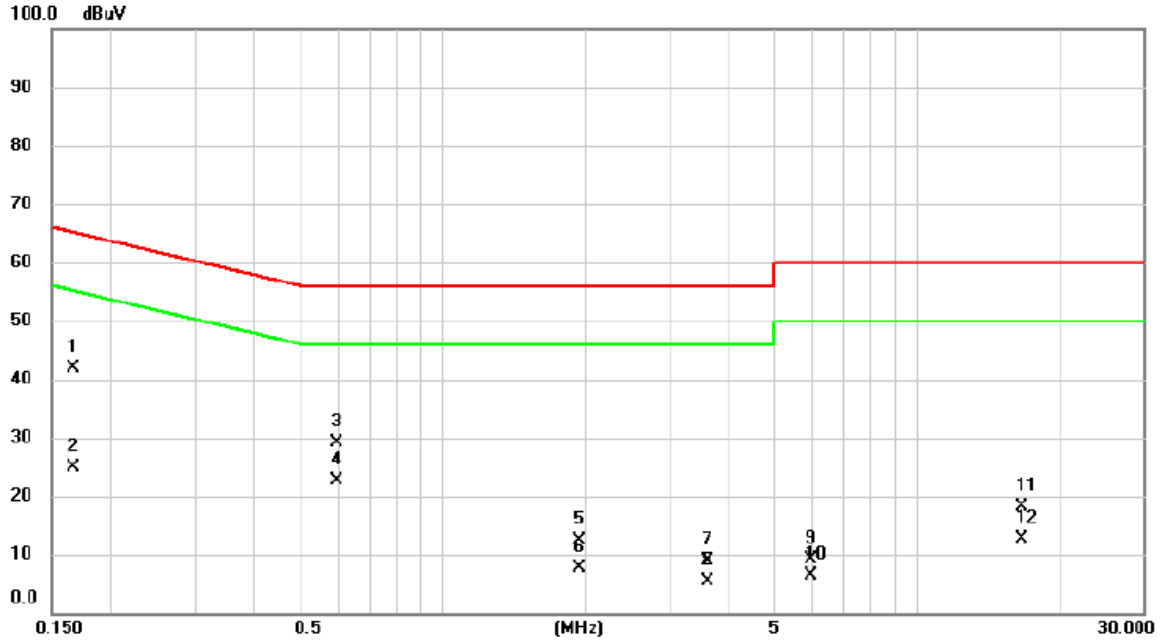
Please refer to document Appendix No.: TP-2103T093-FCCP-1 (APPENDIX-TEST PHOTOS).

11 EUT PHOTOS

Please refer to document Appendix No.: EP-2103T093-1 (APPENDIX-EUT PHOTOS).

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

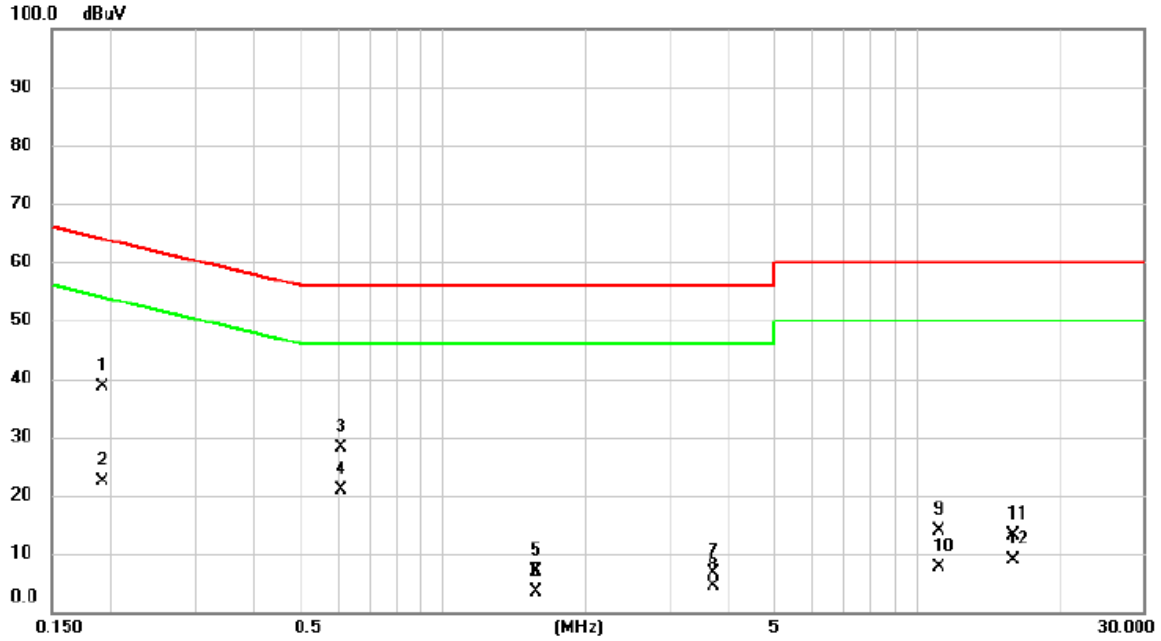
Test Mode	Normal	Tested Date	2021/5/7
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1658	32.13	9.70	41.83	65.17	-23.34	QP	
2		0.1658	15.26	9.70	24.96	55.17	-30.21	AVG	
3		0.5977	19.55	9.70	29.25	56.00	-26.75	QP	
4		0.5977	12.86	9.70	22.56	46.00	-23.44	AVG	
5		1.9455	2.57	9.76	12.33	56.00	-43.67	QP	
6		1.9455	-2.01	9.76	7.75	46.00	-38.25	AVG	
7		3.6038	-0.82	9.80	8.98	56.00	-47.02	QP	
8		3.6038	-4.32	9.80	5.48	46.00	-40.52	AVG	
9		5.9753	-0.61	9.85	9.24	60.00	-50.76	QP	
10		5.9753	-3.45	9.85	6.40	50.00	-43.60	AVG	
11		16.6628	8.19	9.90	18.09	60.00	-41.91	QP	
12		16.6628	2.64	9.90	12.54	50.00	-37.46	AVG	

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

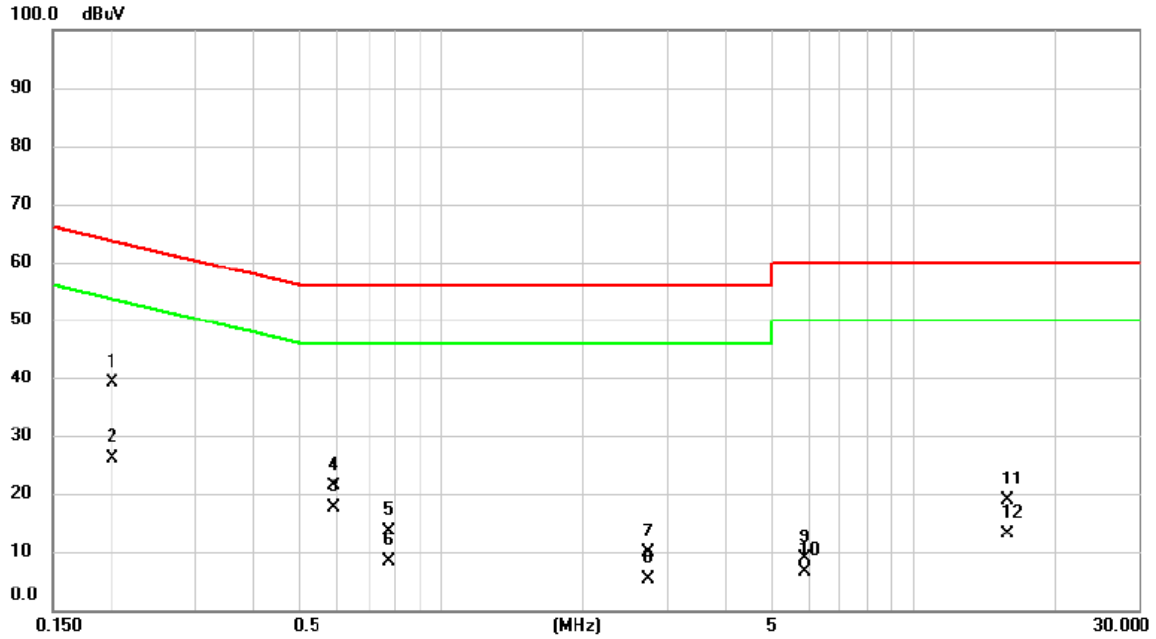
Test Mode	Normal	Tested Date	2021/5/7
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1914	29.00	9.69	38.69	63.98	-25.29	QP	
2		0.1914	12.73	9.69	22.42	53.98	-31.56	AVG	
3		0.6112	18.32	9.71	28.03	56.00	-27.97	QP	
4	*	0.6112	11.18	9.71	20.89	46.00	-25.11	AVG	
5		1.5765	-2.90	9.75	6.85	56.00	-49.15	QP	
6		1.5765	-6.34	9.75	3.41	46.00	-42.59	AVG	
7		3.7275	-3.16	9.81	6.65	56.00	-49.35	QP	
8		3.7275	-5.33	9.81	4.48	46.00	-41.52	AVG	
9		11.0873	3.85	9.96	13.81	60.00	-46.19	QP	
10		11.0873	-2.25	9.96	7.71	50.00	-42.29	AVG	
11		15.9225	3.10	9.99	13.09	60.00	-46.91	QP	
12		15.9225	-1.17	9.99	8.82	50.00	-41.18	AVG	

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

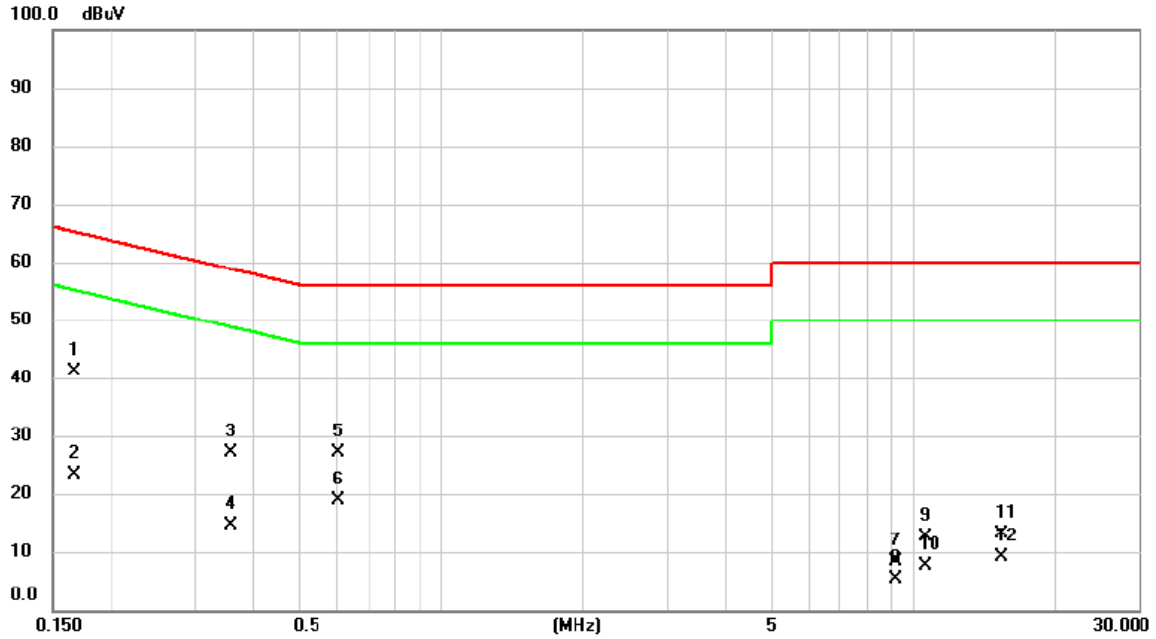
Test Mode	Idle	Tested Date	2021/5/7
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2017	29.37	9.69	39.06	63.54	-24.48	QP	
2		0.2017	16.56	9.69	26.25	53.54	-27.29	AVG	
3		0.5910	7.92	9.70	17.62	56.00	-38.38	QP	
4		0.5910	11.63	9.70	21.33	46.00	-24.67	AVG	
5		0.7755	4.01	9.71	13.72	56.00	-42.28	QP	
6		0.7755	-1.35	9.71	8.36	46.00	-37.64	AVG	
7		2.7443	0.15	9.77	9.92	56.00	-46.08	QP	
8		2.7443	-4.30	9.77	5.47	46.00	-40.53	AVG	
9		5.8875	-0.89	9.85	8.96	60.00	-51.04	QP	
10		5.8875	-3.24	9.85	6.61	50.00	-43.39	AVG	
11		15.7740	9.01	9.90	18.91	60.00	-41.09	QP	
12		15.7740	3.35	9.90	13.25	50.00	-36.75	AVG	

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

Test Mode	Idle	Tested Date	2021/5/7
Test Frequency	-	Phase	Neutral

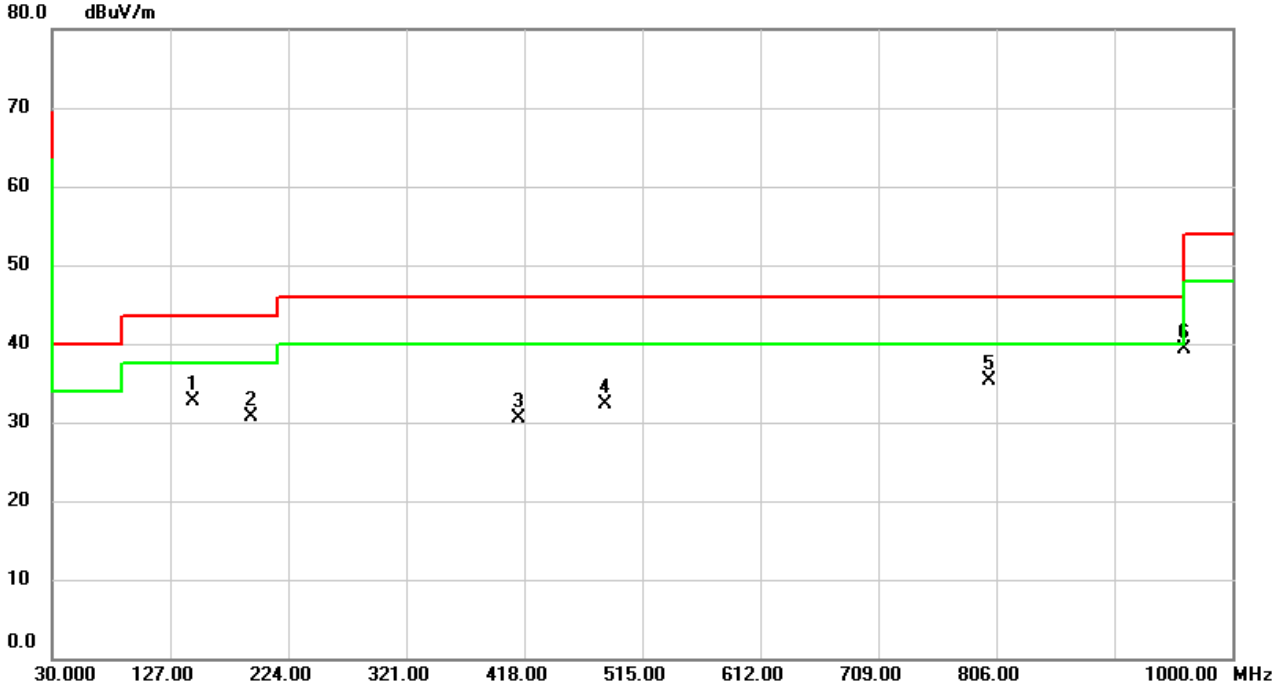


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1668	31.55	9.70	41.25	65.12	-23.87	QP	
2		0.1668	13.76	9.70	23.46	55.12	-31.66	AVG	
3		0.3592	17.45	9.71	27.16	58.75	-31.59	QP	
4		0.3592	4.89	9.71	14.60	48.75	-34.15	AVG	
5		0.6045	17.33	9.71	27.04	56.00	-28.96	QP	
6		0.6045	9.20	9.71	18.91	46.00	-27.09	AVG	
7		9.1613	-1.60	9.94	8.34	60.00	-51.66	QP	
8		9.1613	-4.46	9.94	5.48	50.00	-44.52	AVG	
9		10.5495	2.71	9.96	12.67	60.00	-47.33	QP	
10		10.5495	-2.29	9.96	7.67	50.00	-42.33	AVG	
11		15.3915	3.16	9.99	13.15	60.00	-46.85	QP	
12		15.3915	-0.91	9.99	9.08	50.00	-40.92	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

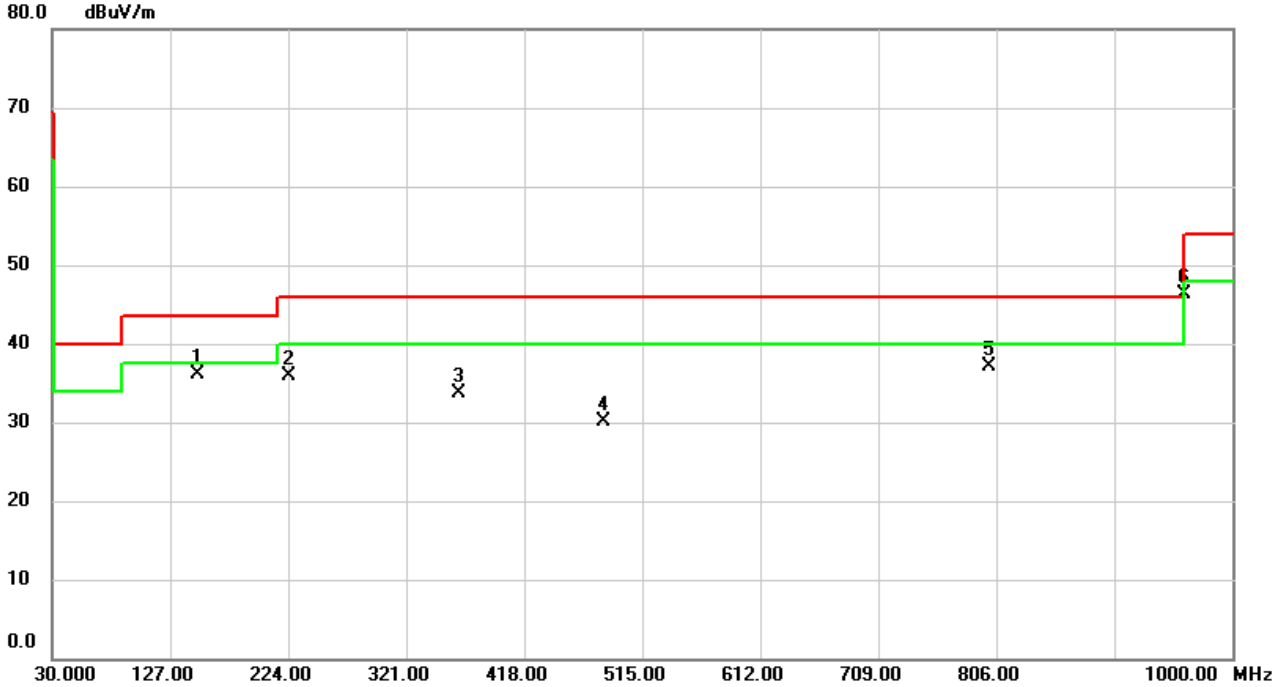
Test Mode	IEEE802.11n (HT20)	Test Date	2021/6/23
Test Frequency	2437MHz	Polarization	Vertical
Temp	23°C	Hum.	51%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		145.6240	41.28	-8.58	32.70	43.50	-10.80	peak	
2		193.0247	41.36	-10.67	30.69	43.50	-12.81	peak	
3		413.9583	35.00	-4.51	30.49	46.00	-15.51	peak	
4		484.8653	35.37	-3.09	32.28	46.00	-13.72	peak	
5	*	800.0183	32.90	2.47	35.37	46.00	-10.63	peak	
6		960.0683	34.29	5.10	39.39	54.00	-14.61	peak	

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

Test Mode	IEEE802.11n (HT20)	Test Date	2021/6/23
Test Frequency	2437MHz	Polarization	Horizontal
Temp	23°C	Hum.	51%

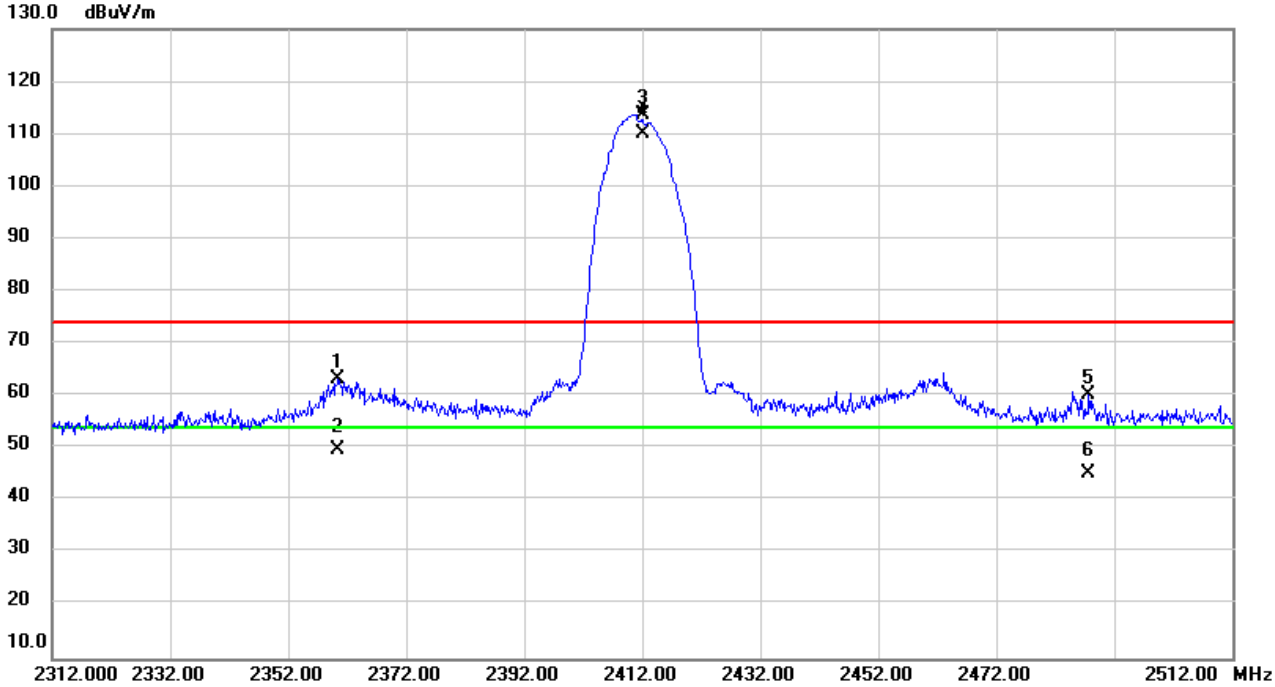


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	149.4716	44.63	-8.55	36.08	43.50	-7.42	peak	
2		225.0023	46.49	-10.63	35.86	46.00	-10.14	peak	
3		363.7123	39.48	-5.83	33.65	46.00	-12.35	peak	
4		482.8930	33.27	-3.12	30.15	46.00	-15.85	peak	
5		799.9537	34.65	2.47	37.12	46.00	-8.88	peak	
6		960.0683	41.14	5.10	46.24	54.00	-7.76	peak	

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

APPENDIX C RADIATED EMISSIONS - ABOVE 1 GHZ

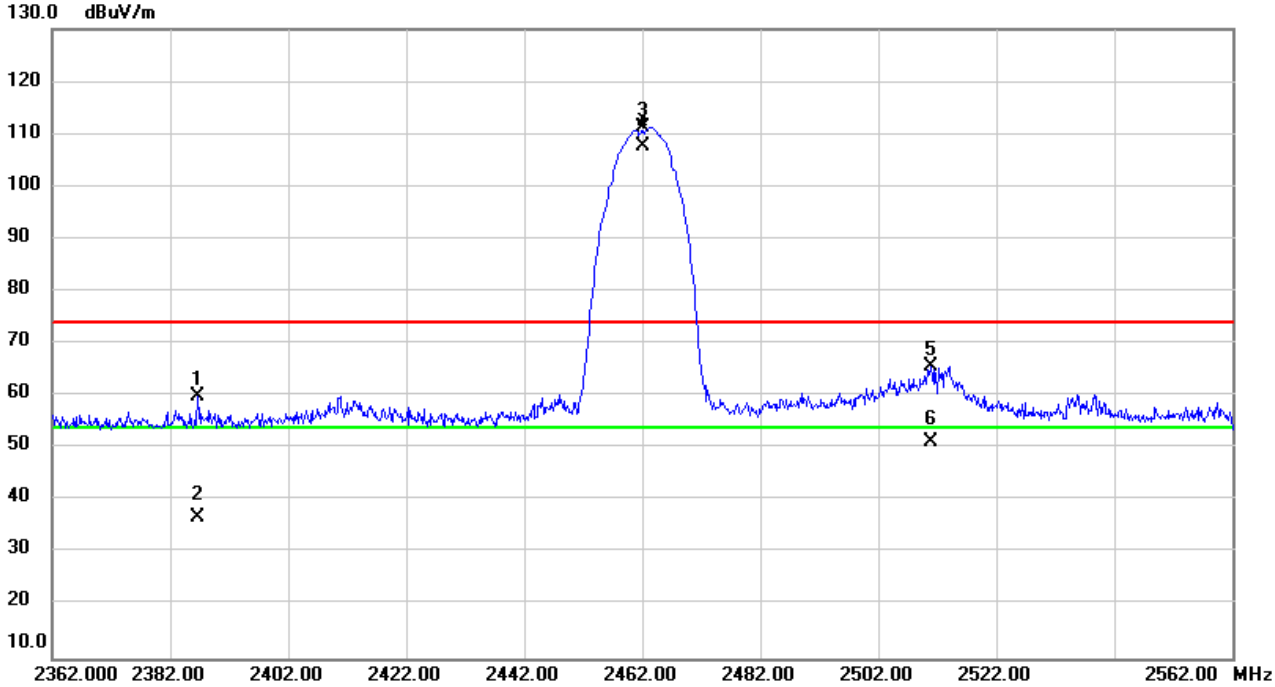
Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2360.467	32.61	30.68	63.29	74.00	-10.71	peak	
2		2360.467	19.20	30.68	49.88	54.00	-4.12	AVG	
3	X	2412.000	82.83	30.88	113.71	74.00	39.71	peak	NoLimit
4	*	2412.000	79.09	30.88	109.97	54.00	55.97	AVG	NoLimit
5		2487.647	29.02	31.18	60.20	74.00	-13.80	peak	
6		2487.647	14.02	31.18	45.20	54.00	-8.80	AVG	

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

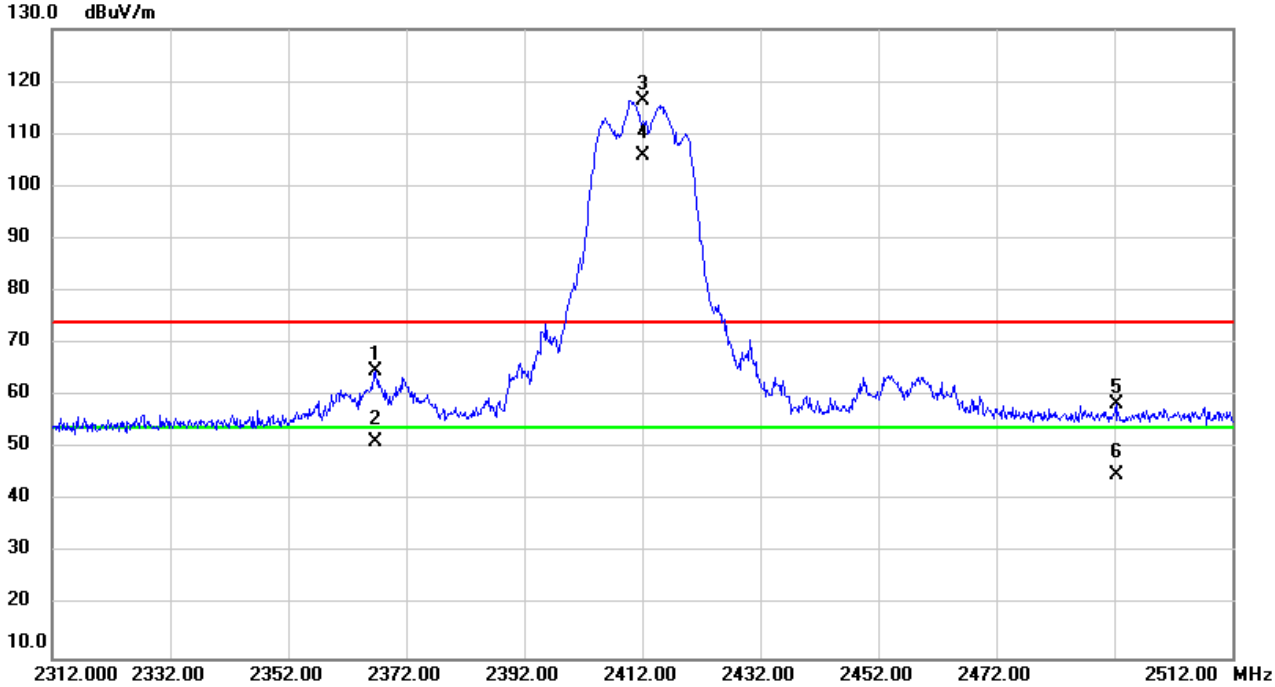
Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2386.733	29.15	30.77	59.92	74.00	-14.08	peak	
2		2386.733	5.94	30.77	36.71	54.00	-17.29	AVG	
3	X	2462.000	80.28	31.08	111.36	74.00	37.36	peak	NoLimit
4	*	2462.000	76.52	31.08	107.60	54.00	53.60	AVG	NoLimit
5		2510.940	34.45	31.28	65.73	74.00	-8.27	peak	
6		2510.940	19.88	31.28	51.16	54.00	-2.84	AVG	

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

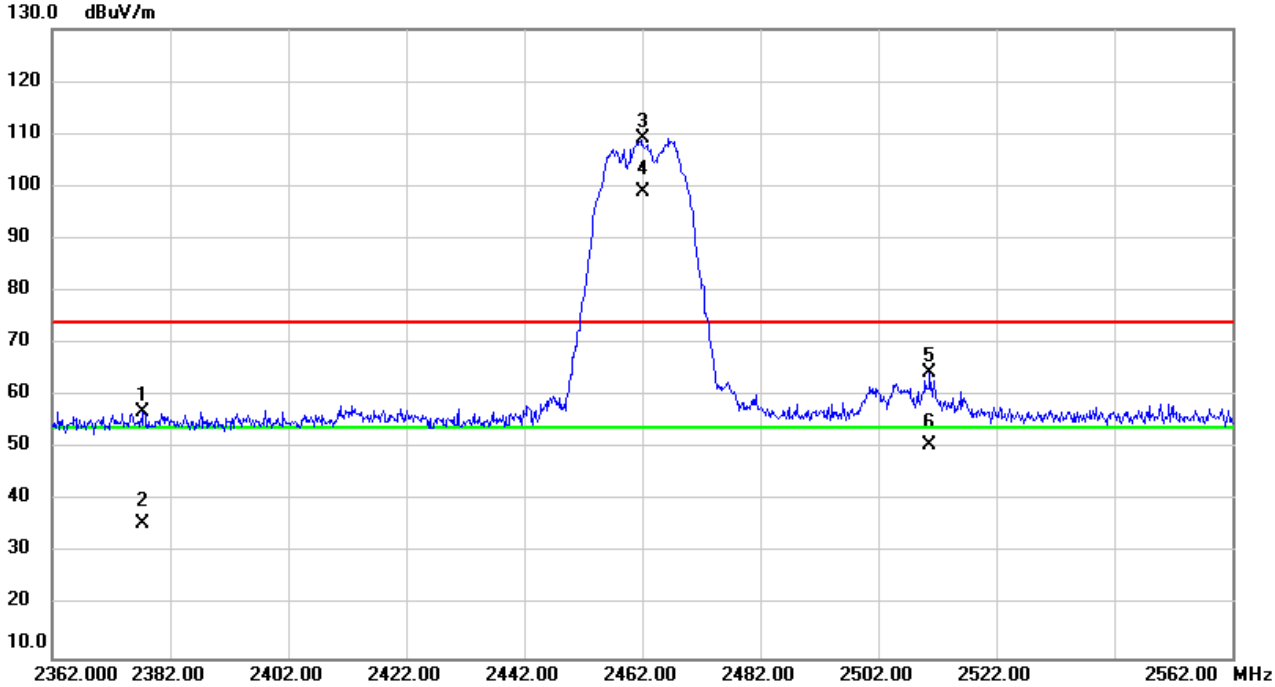
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2366.800	34.17	30.70	64.87	74.00	-9.13	peak	
2		2366.800	20.49	30.70	51.19	54.00	-2.81	AVG	
3	X	2412.000	85.40	30.88	116.28	74.00	42.28	peak	NoLimit
4	*	2412.000	75.09	30.88	105.97	54.00	51.97	AVG	NoLimit
5		2492.313	27.27	31.20	58.47	74.00	-15.53	peak	
6		2492.313	13.64	31.20	44.84	54.00	-9.16	AVG	

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

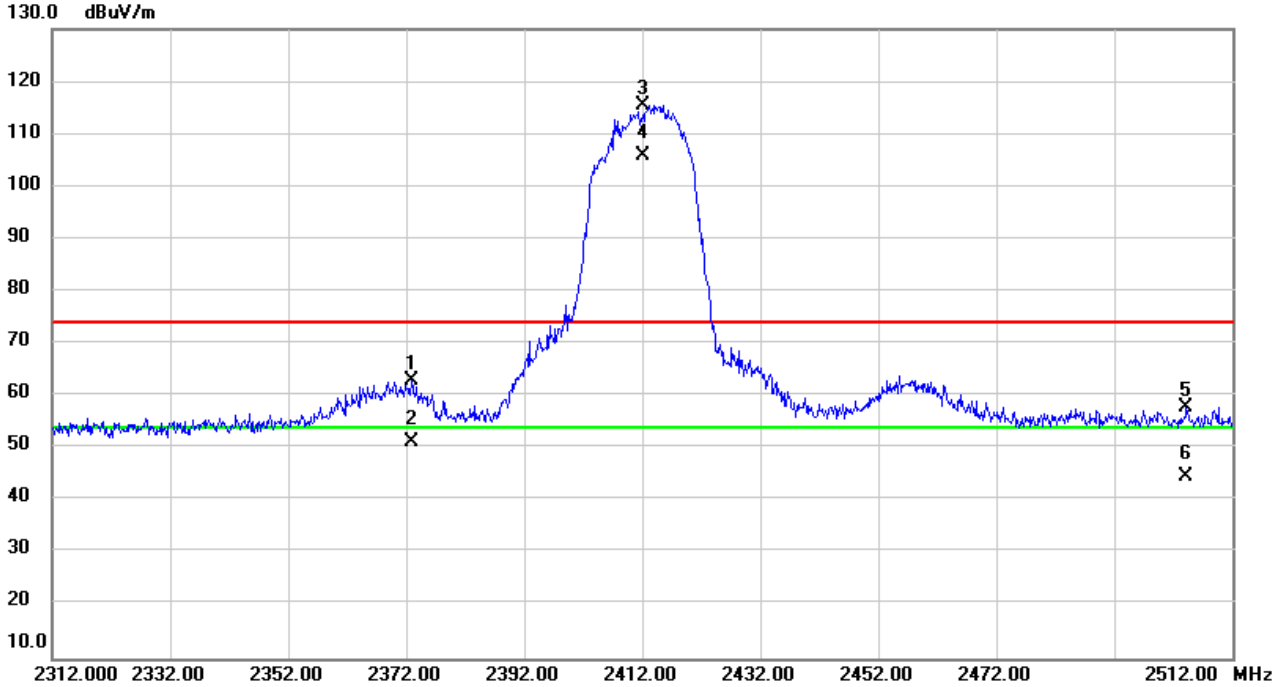
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2377.440	26.35	30.74	57.09	74.00	-16.91	peak	
2		2377.440	4.83	30.74	35.57	54.00	-18.43	AVG	
3	X	2462.000	78.22	31.08	109.30	74.00	35.30	peak	NoLimit
4	*	2462.000	67.77	31.08	98.85	54.00	44.85	AVG	NoLimit
5		2510.620	33.06	31.27	64.33	74.00	-9.67	peak	
6		2510.620	19.35	31.27	50.62	54.00	-3.38	AVG	

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

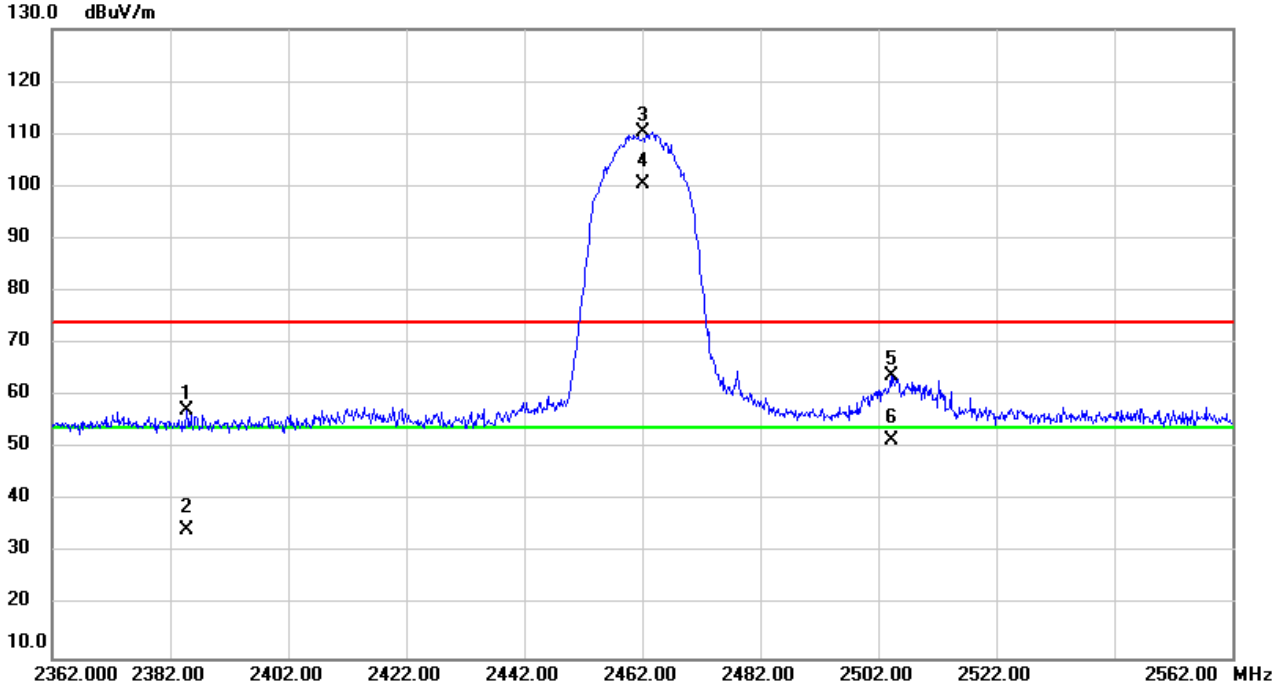
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2372.900	32.35	30.72	63.07	74.00	-10.93	peak	
2		2372.900	20.46	30.72	51.18	54.00	-2.82	AVG	
3	X	2412.000	84.66	30.88	115.54	74.00	41.54	peak	NoLimit
4	*	2412.000	74.87	30.88	105.75	54.00	51.75	AVG	NoLimit
5		2504.227	26.58	31.24	57.82	74.00	-16.18	peak	
6		2504.227	13.56	31.24	44.80	54.00	-9.20	AVG	

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

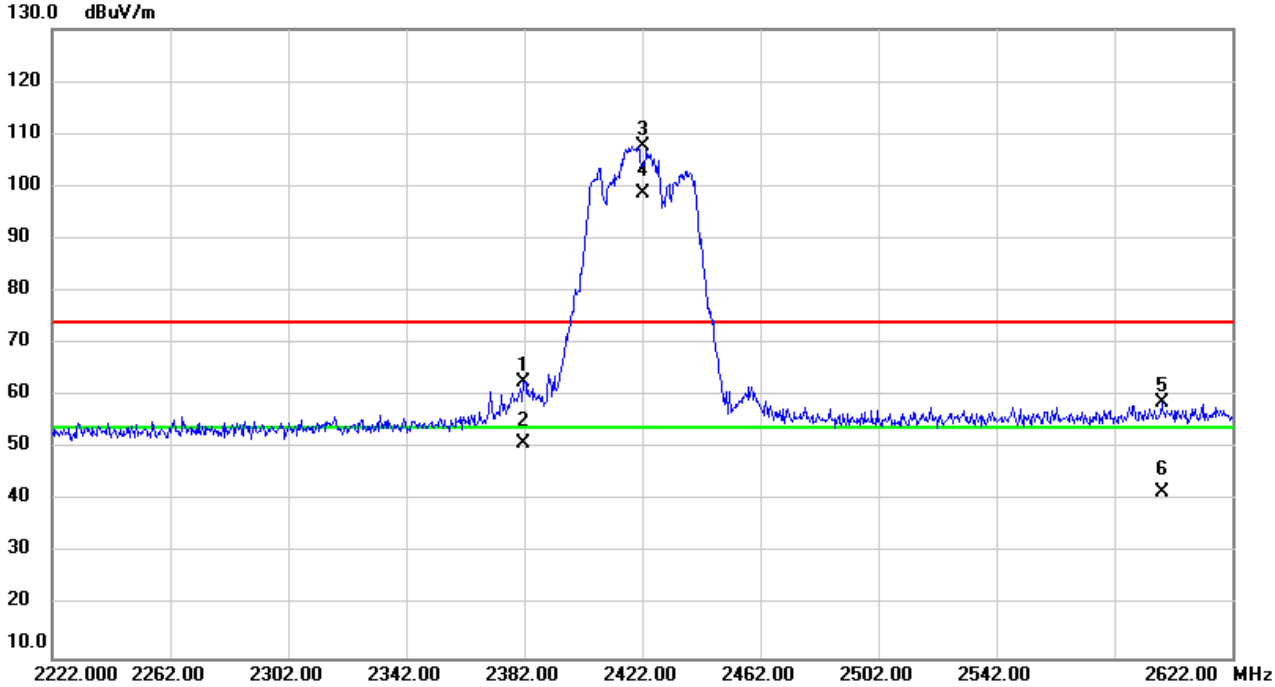
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2384.727	26.40	30.77	57.17	74.00	-16.83	peak	
2		2384.727	3.66	30.77	34.43	54.00	-19.57	AVG	
3	X	2462.000	79.31	31.08	110.39	74.00	36.39	peak	NoLimit
4	*	2462.000	69.27	31.08	100.35	54.00	46.35	AVG	NoLimit
5		2504.153	32.61	31.24	63.85	74.00	-10.15	peak	
6		2504.153	20.31	31.24	51.55	54.00	-2.45	AVG	

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

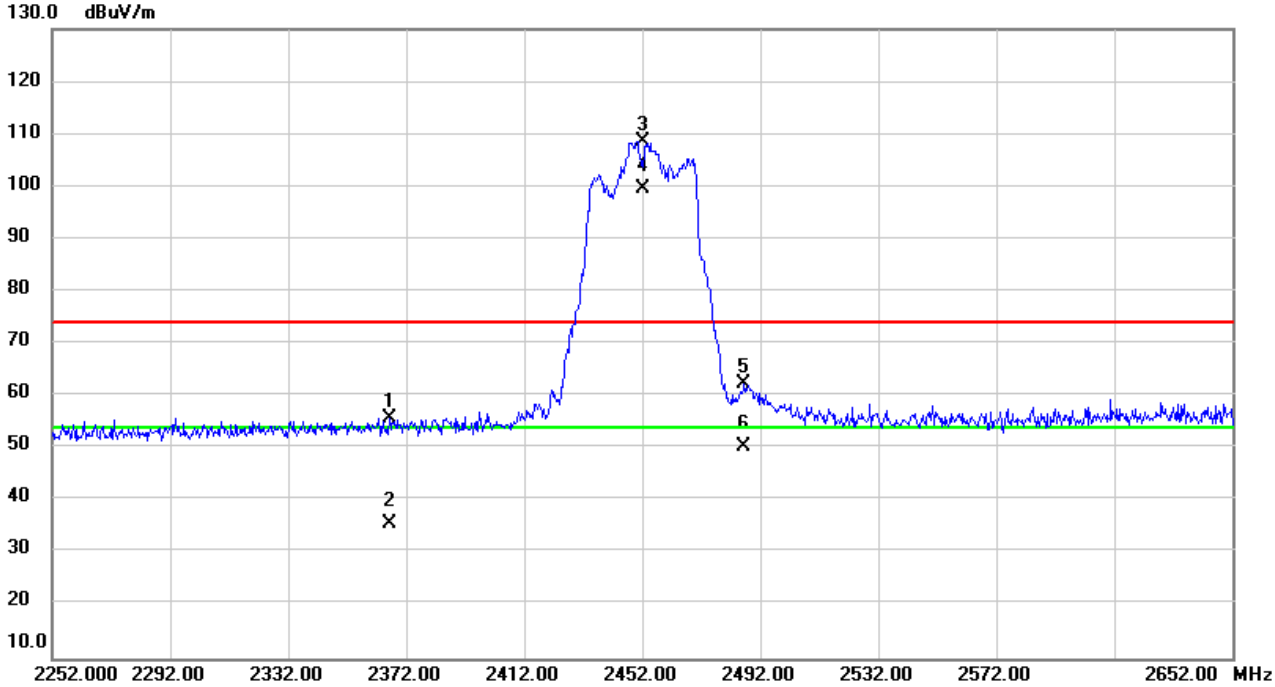
Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2422MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2381.680	31.83	30.76	62.59	74.00	-11.41	peak	
2		2381.680	20.33	30.76	51.09	54.00	-2.91	AVG	
3	X	2422.000	76.85	30.91	107.76	74.00	33.76	peak	NoLimit
4	*	2422.000	67.83	30.91	98.74	54.00	44.74	AVG	NoLimit
5		2598.360	27.18	31.63	58.81	74.00	-15.19	peak	
6		2598.360	9.92	31.63	41.55	54.00	-12.45	AVG	

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

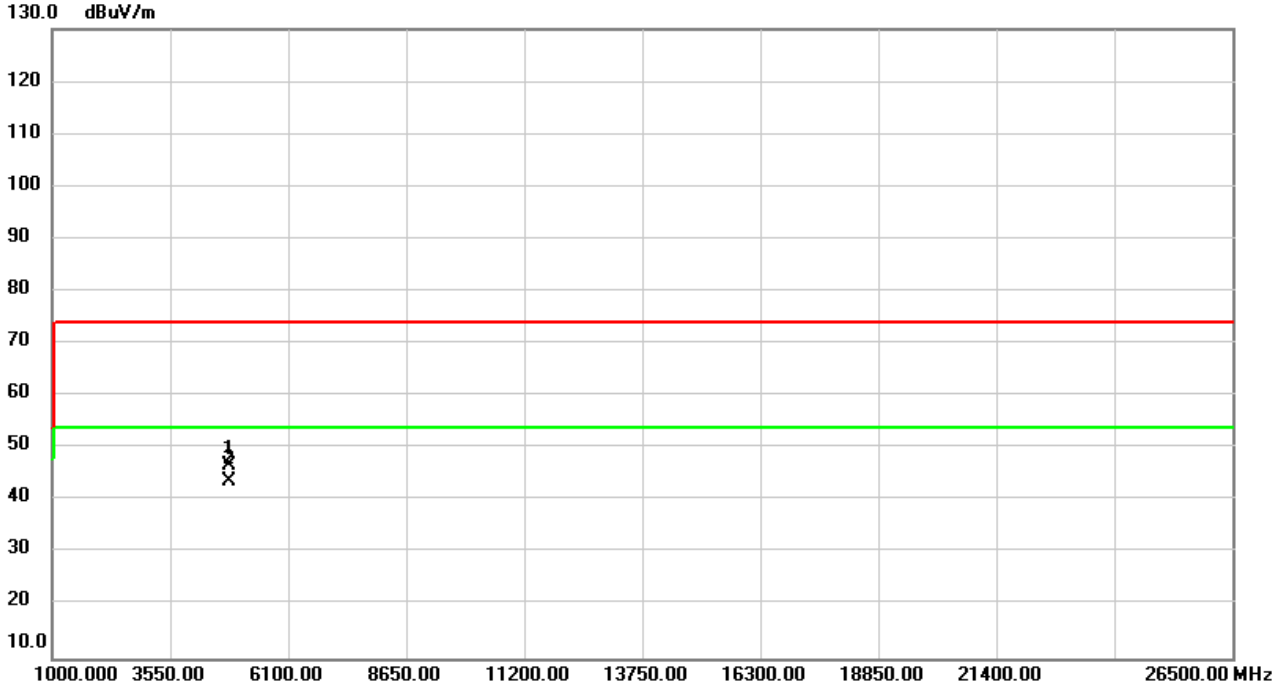
Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2366.227	25.19	30.70	55.89	74.00	-18.11	peak	
2		2366.227	4.84	30.70	35.54	54.00	-18.46	AVG	
3	X	2452.000	77.64	31.04	108.68	74.00	34.68	peak	NoLimit
4	*	2452.000	68.46	31.04	99.50	54.00	45.50	AVG	NoLimit
5		2486.533	31.24	31.17	62.41	74.00	-11.59	peak	
6		2486.533	19.17	31.17	50.34	54.00	-3.66	AVG	

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

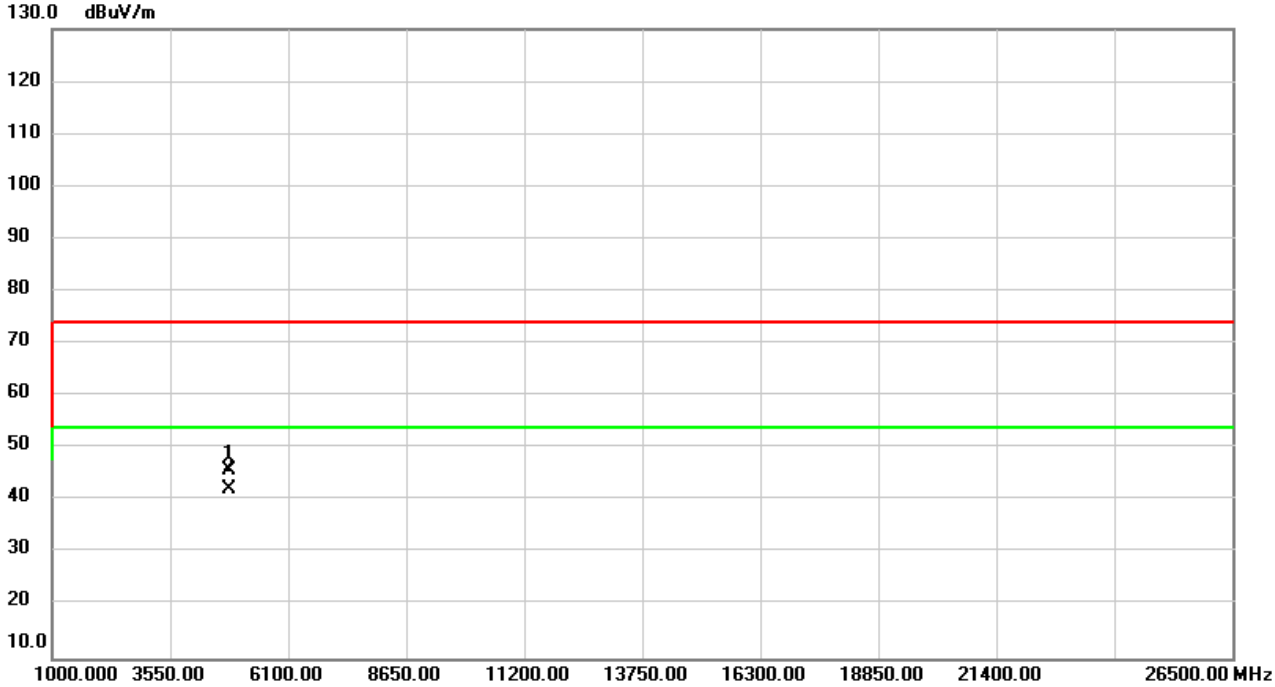
Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	56.77	-9.96	46.81	74.00	-27.19	peak	
2	*	4824.000	53.86	-9.96	43.90	54.00	-10.10	AVG	

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

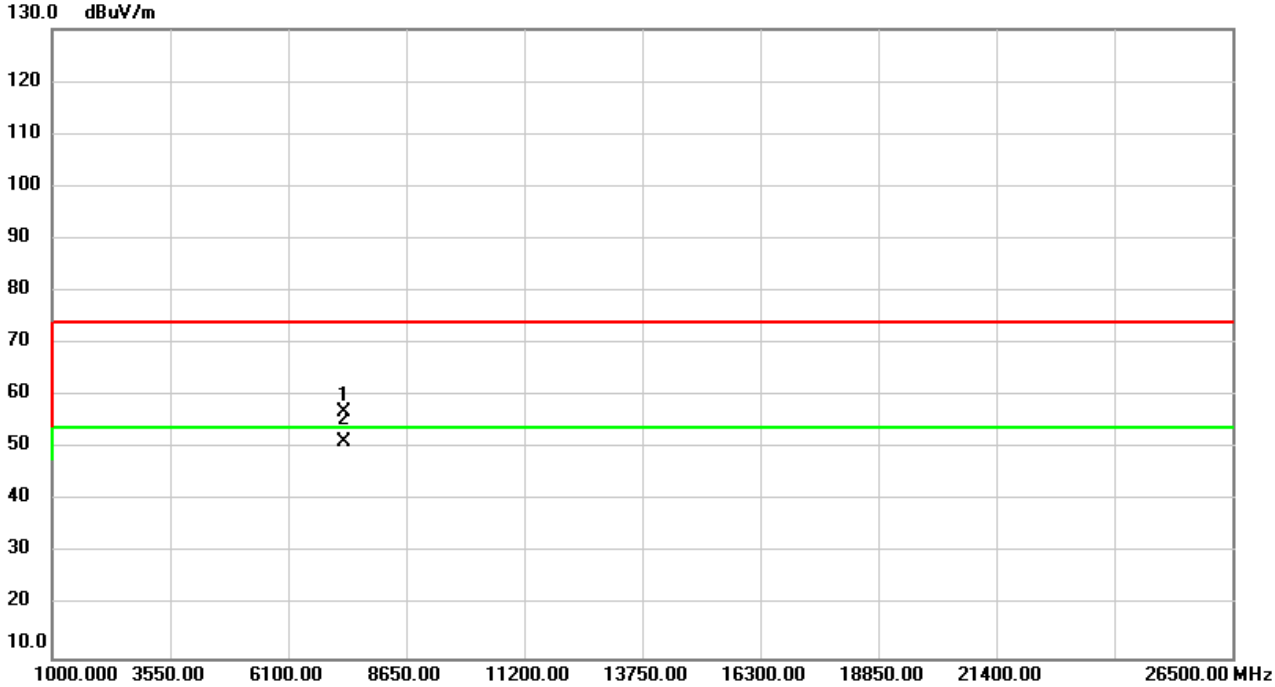
Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	55.78	-9.96	45.82	74.00	-28.18	peak	
2	*	4824.000	52.16	-9.96	42.20	54.00	-11.80	AVG	

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

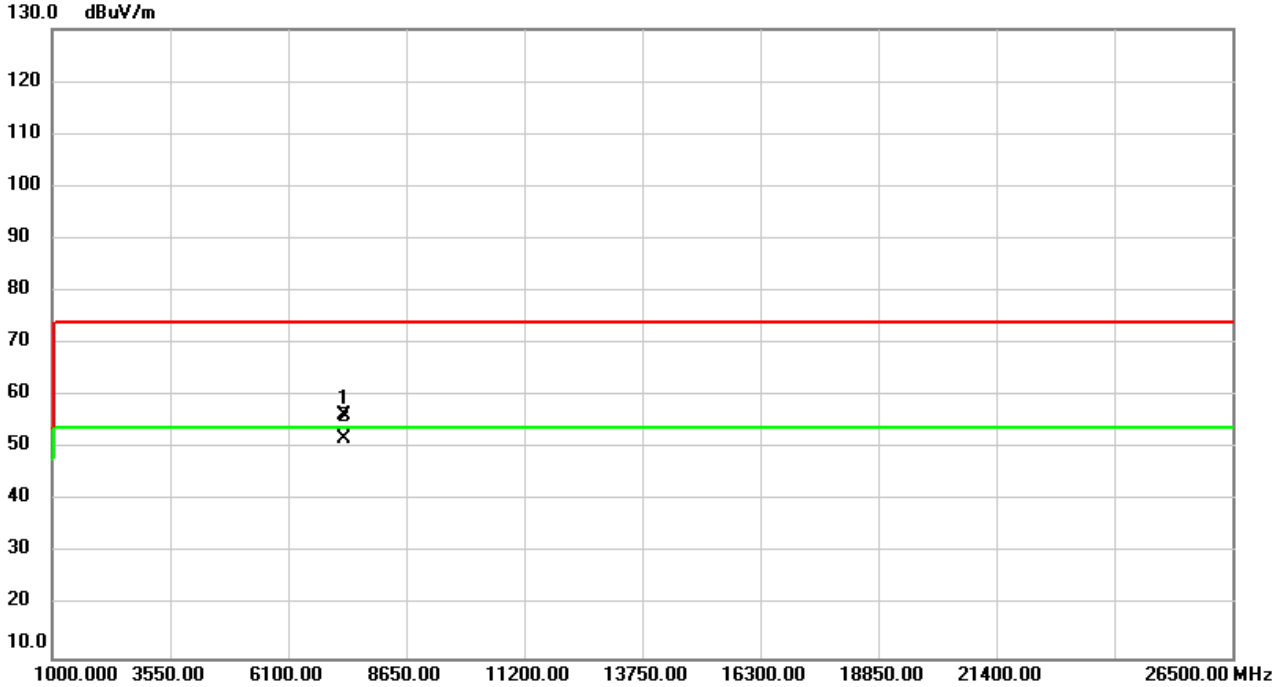
Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	59.50	-2.43	57.07	74.00	-16.93	peak	
2	*	7311.000	53.71	-2.43	51.28	54.00	-2.72	AVG	

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

Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	58.84	-2.43	56.41	74.00	-17.59	peak	
2	*	7311.000	54.24	-2.43	51.81	54.00	-2.19	AVG	

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

Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Vertical
Temp	22°C	Hum.	61%

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	55.60	-2.09	53.51	74.00	-20.49	peak	
2	*	7386.000	46.63	-2.09	44.54	54.00	-9.46	AVG	

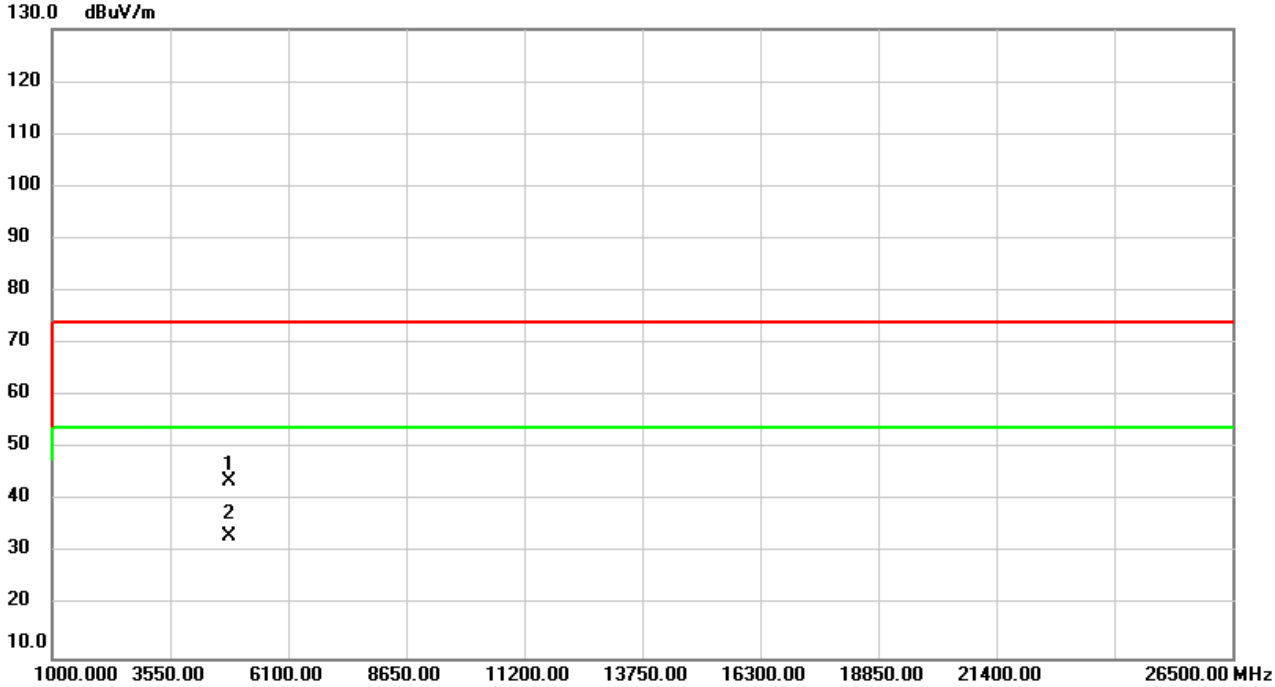
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE802.11b	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	56.20	-2.09	54.11	74.00	-19.89	peak	
2	*	7386.000	49.36	-2.09	47.27	54.00	-6.73	AVG	

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

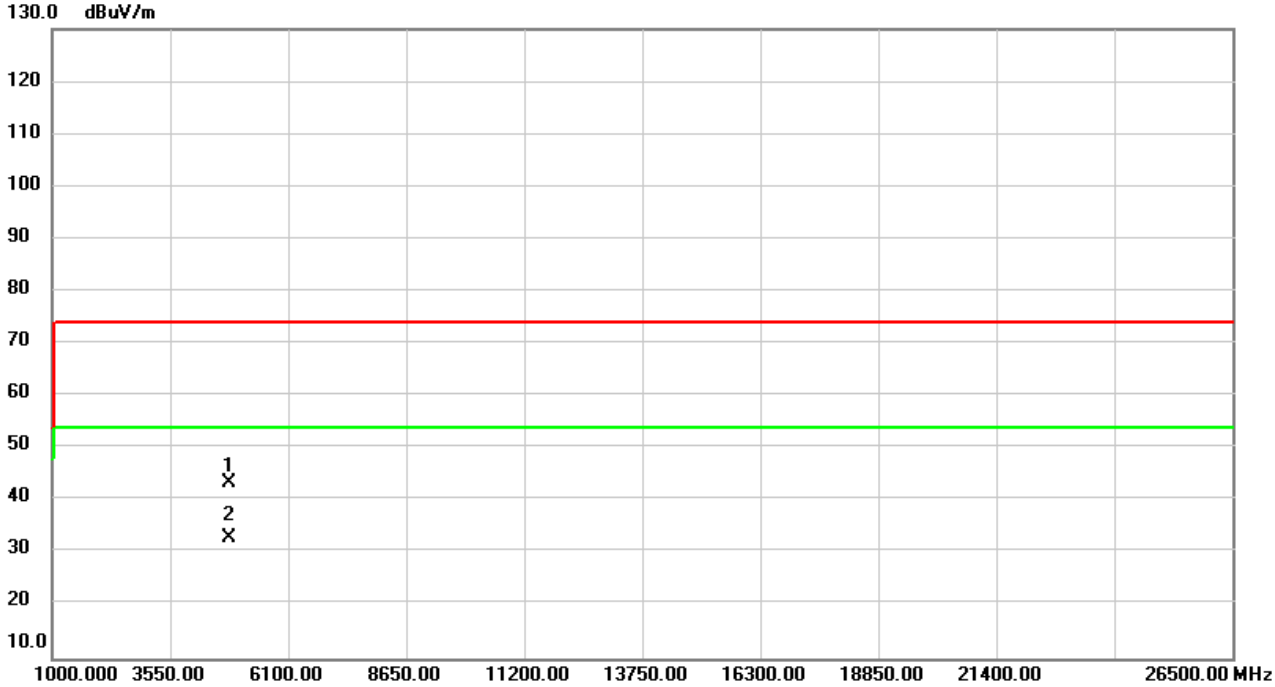
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	53.58	-9.96	43.62	74.00	-30.38	peak	
2	*	4824.000	43.19	-9.96	33.23	54.00	-20.77	AVG	

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

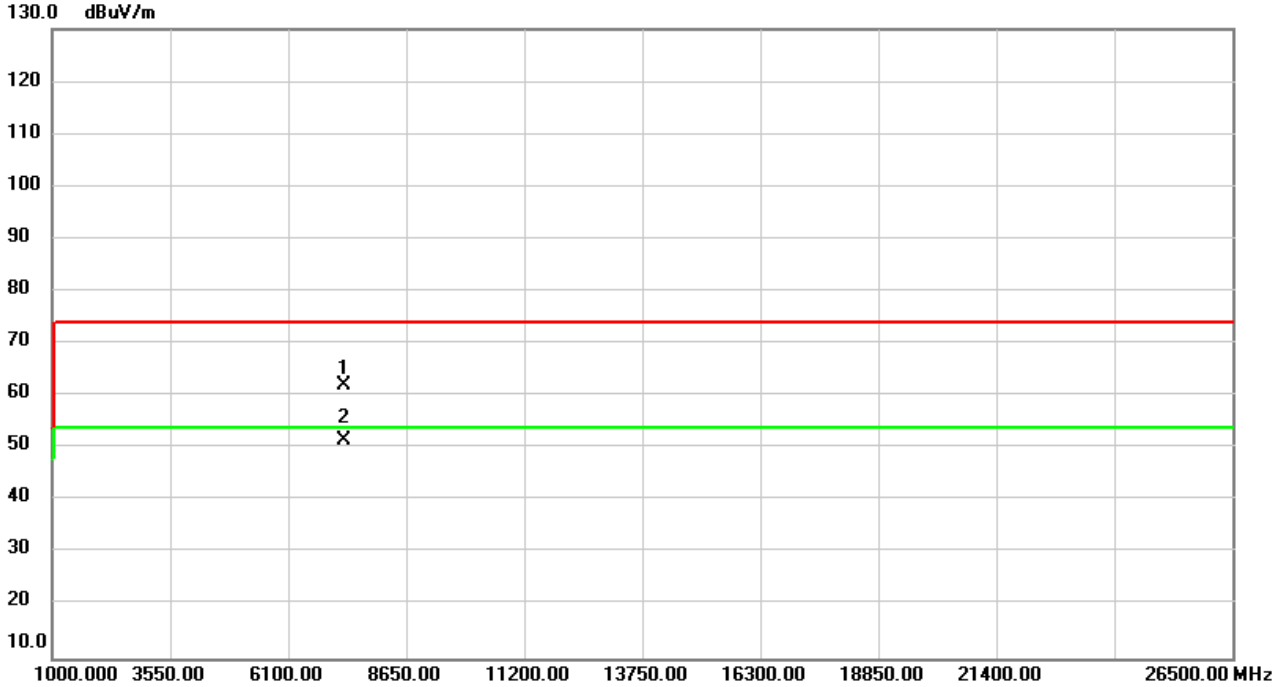
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	53.47	-9.96	43.51	74.00	-30.49	peak	
2	*	4824.000	42.80	-9.96	32.84	54.00	-21.16	AVG	

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

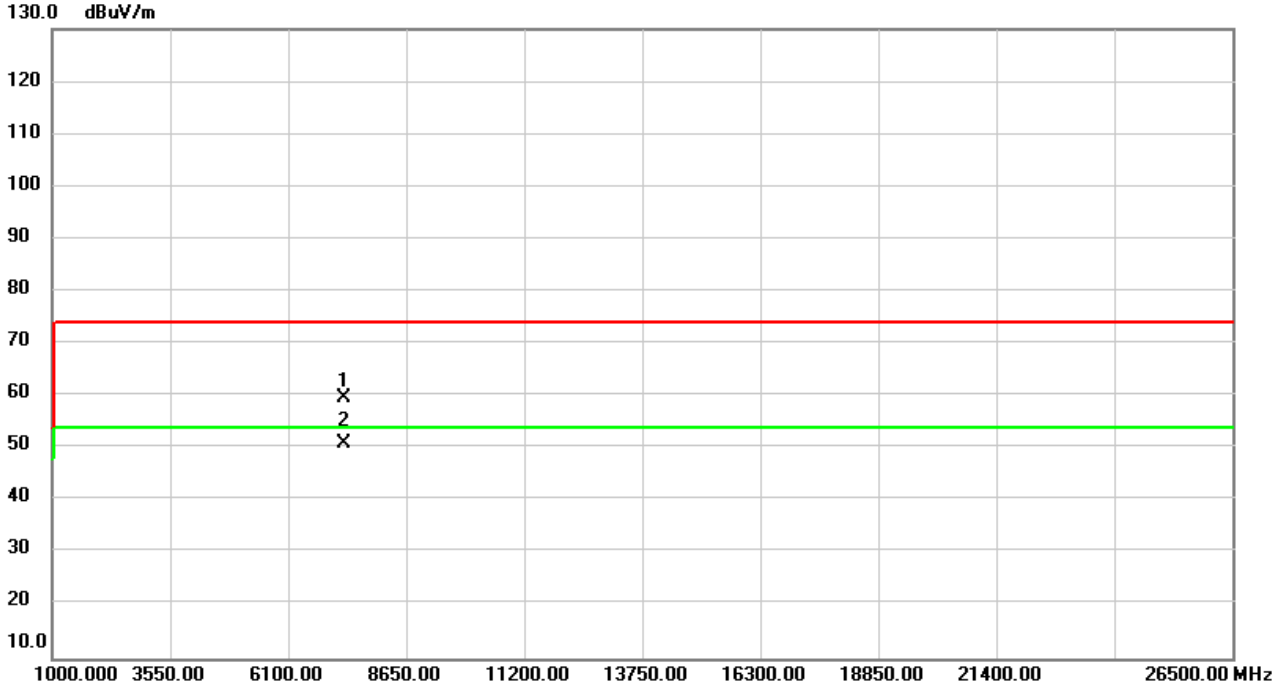
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	64.45	-2.43	62.02	74.00	-11.98	peak	
2	*	7311.000	53.97	-2.43	51.54	54.00	-2.46	AVG	

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

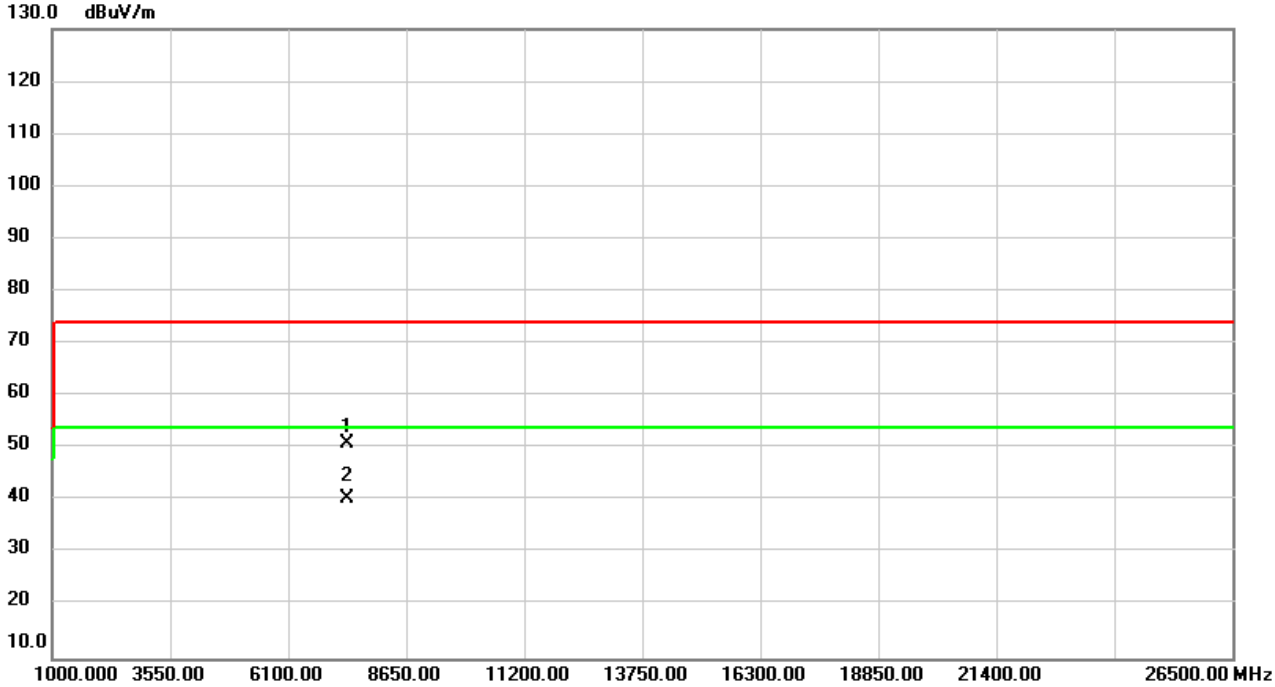
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	62.10	-2.43	59.67	74.00	-14.33	peak	
2	*	7311.000	53.46	-2.43	51.03	54.00	-2.97	AVG	

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

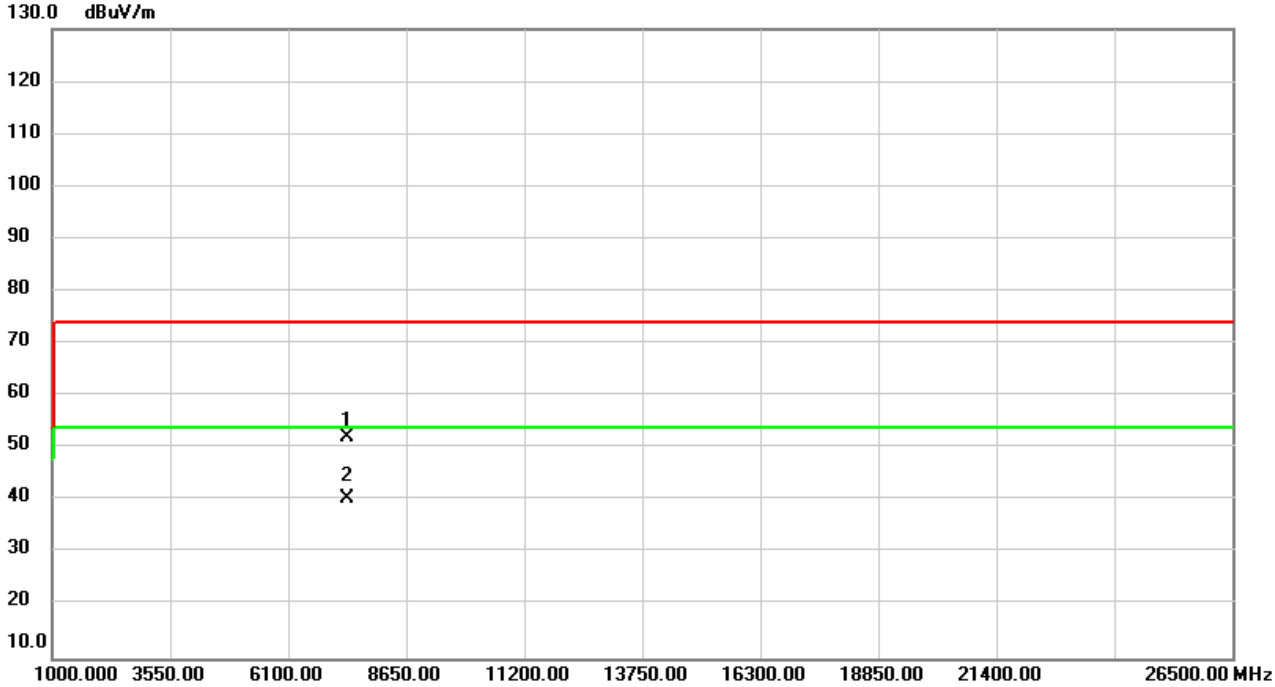
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	53.04	-2.09	50.95	74.00	-23.05	peak	
2	*	7386.000	42.44	-2.09	40.35	54.00	-13.65	AVG	

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

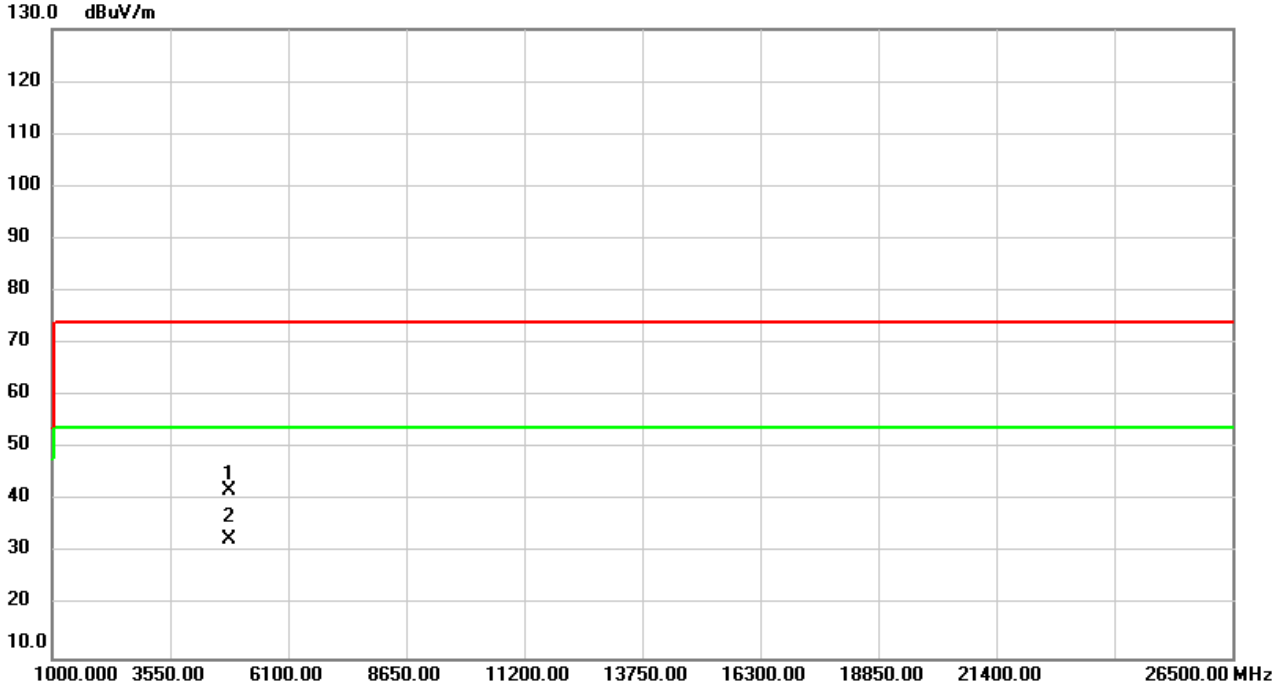
Test Mode	IEEE802.11g	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	54.28	-2.09	52.19	74.00	-21.81	peak	
2	*	7386.000	42.53	-2.09	40.44	54.00	-13.56	AVG	

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

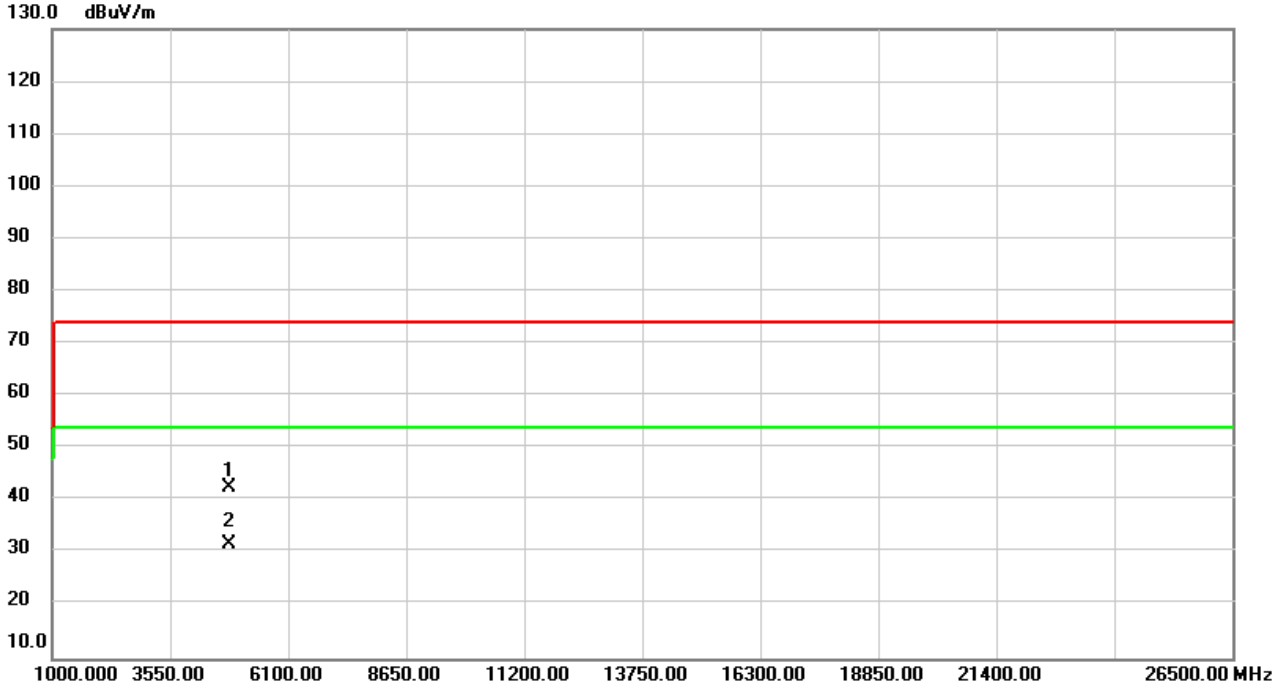
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	51.77	-9.96	41.81	74.00	-32.19	peak	
2	*	4824.000	42.65	-9.96	32.69	54.00	-21.31	AVG	

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

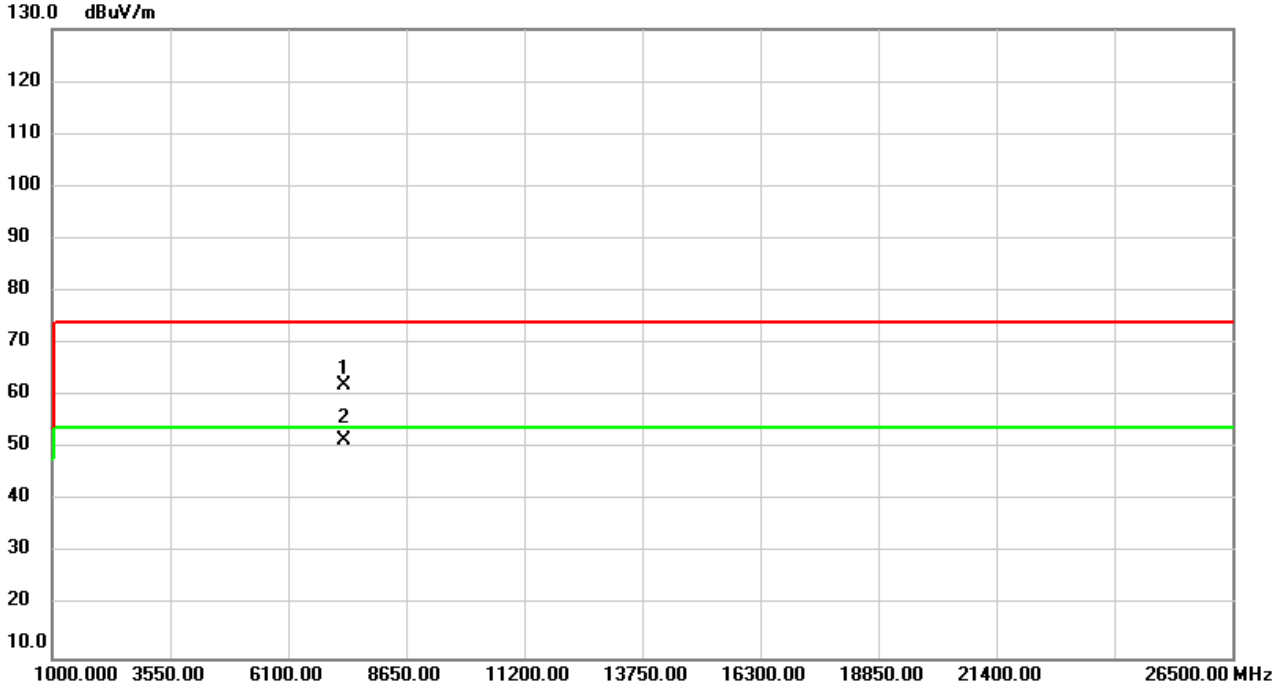
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2412MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	52.55	-9.96	42.59	74.00	-31.41	peak	
2	*	4824.000	41.86	-9.96	31.90	54.00	-22.10	AVG	

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

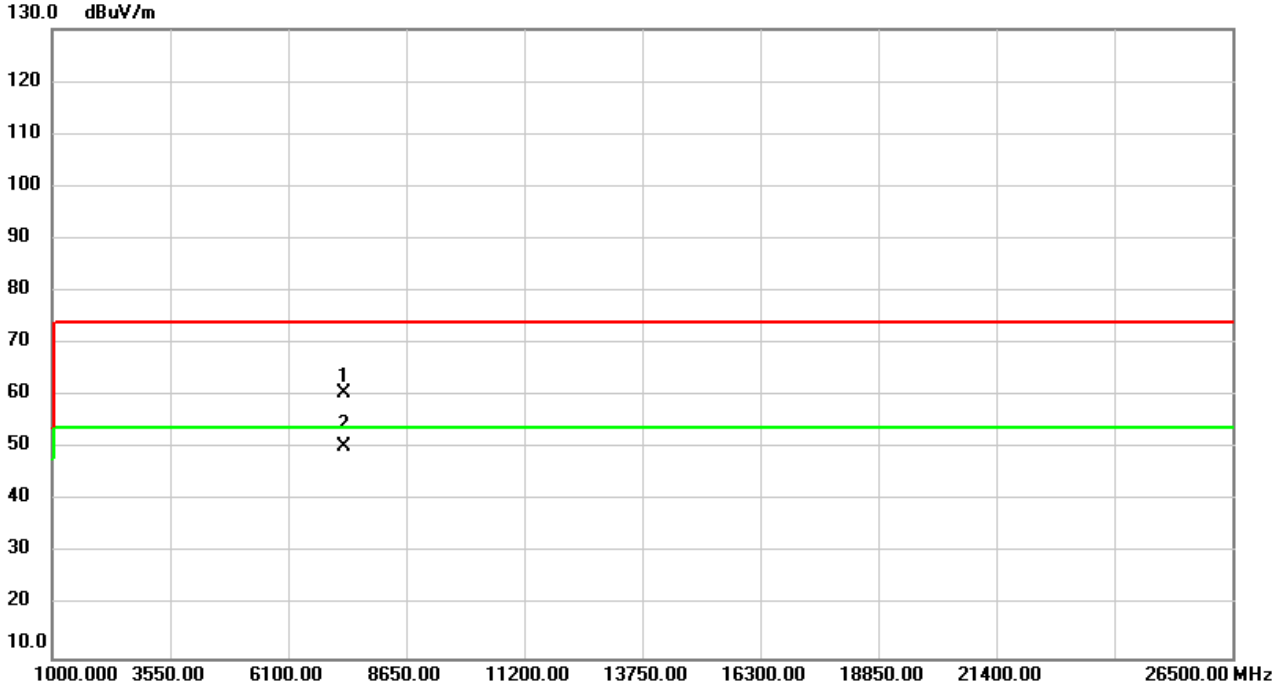
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	64.47	-2.43	62.04	74.00	-11.96	peak	
2	*	7311.000	54.09	-2.43	51.66	54.00	-2.34	AVG	

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

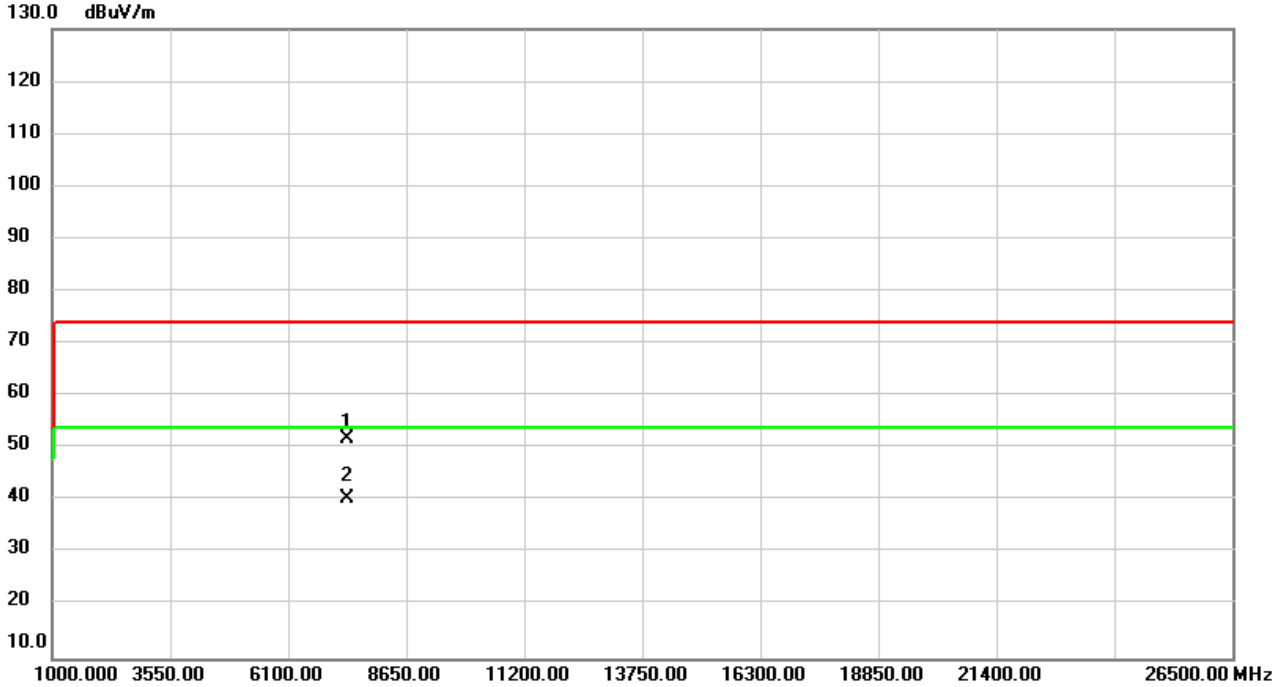
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	63.09	-2.43	60.66	74.00	-13.34	peak	
2	*	7311.000	52.93	-2.43	50.50	54.00	-3.50	AVG	

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

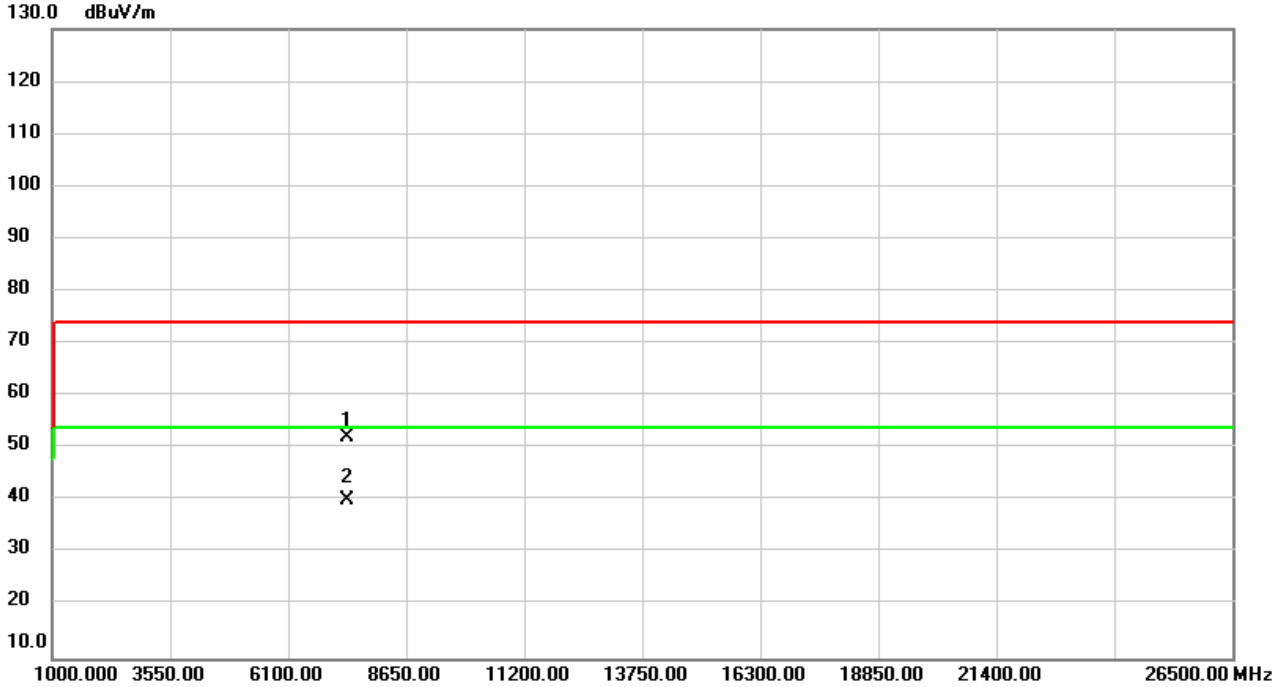
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	54.00	-2.09	51.91	74.00	-22.09	peak	
2	*	7386.000	42.63	-2.09	40.54	54.00	-13.46	AVG	

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

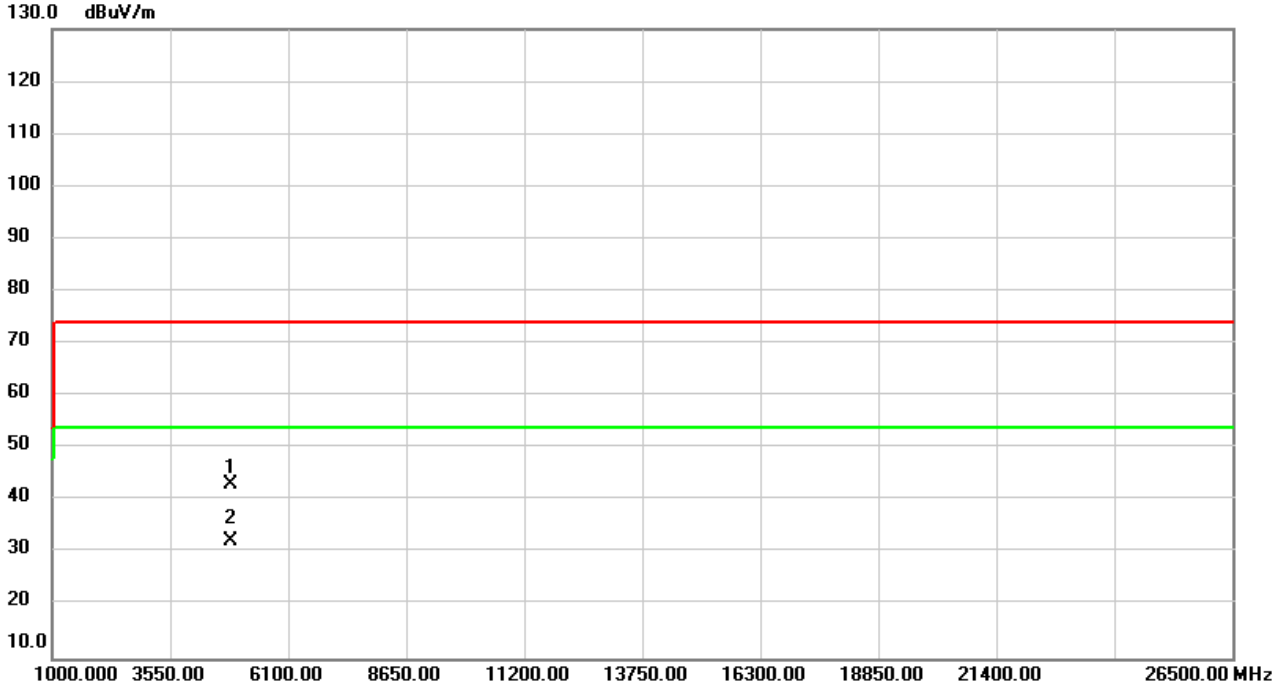
Test Mode	IEEE802.11n (HT20)	Test Date	2021/4/17
Test Frequency	2462MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7386.000	54.22	-2.09	52.13	74.00	-21.87	peak	
2	*	7386.000	42.29	-2.09	40.20	54.00	-13.80	AVG	

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

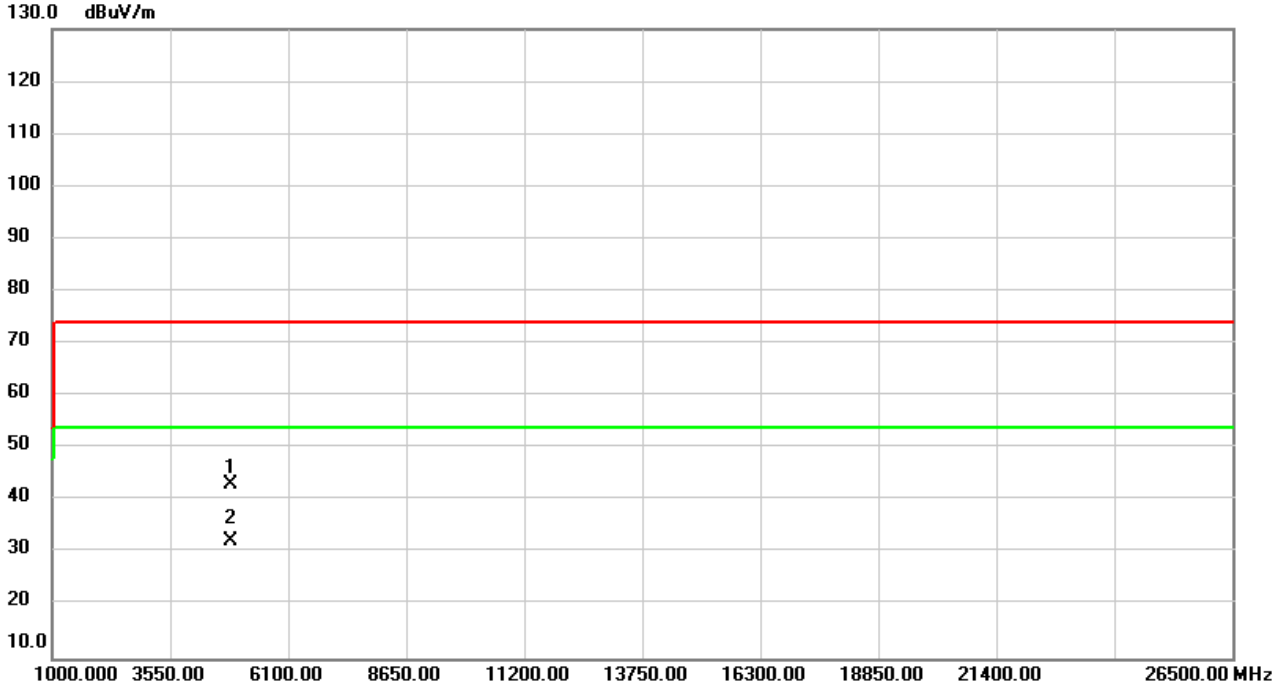
Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2422MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4844.000	53.05	-9.89	43.16	74.00	-30.84	peak	
2	*	4844.000	42.38	-9.89	32.49	54.00	-21.51	AVG	

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

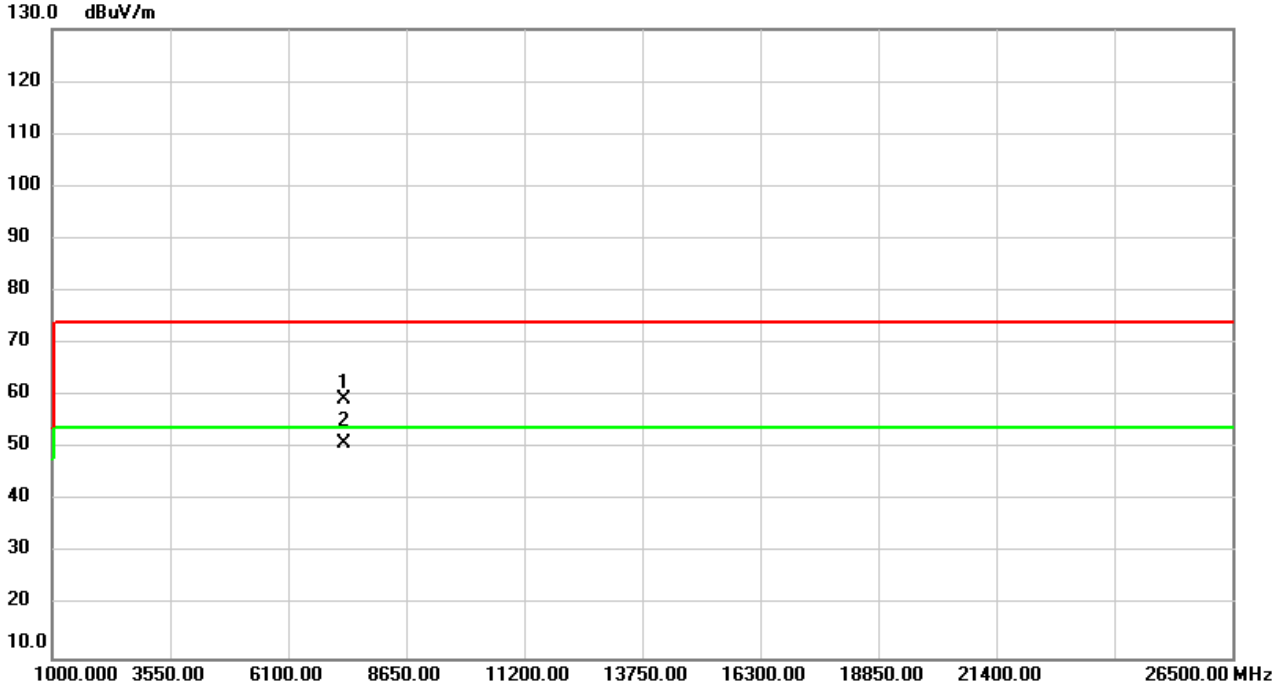
Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2422MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4844.000	53.04	-9.89	43.15	74.00	-30.85	peak	
2	*	4844.000	42.28	-9.89	32.39	54.00	-21.61	AVG	

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

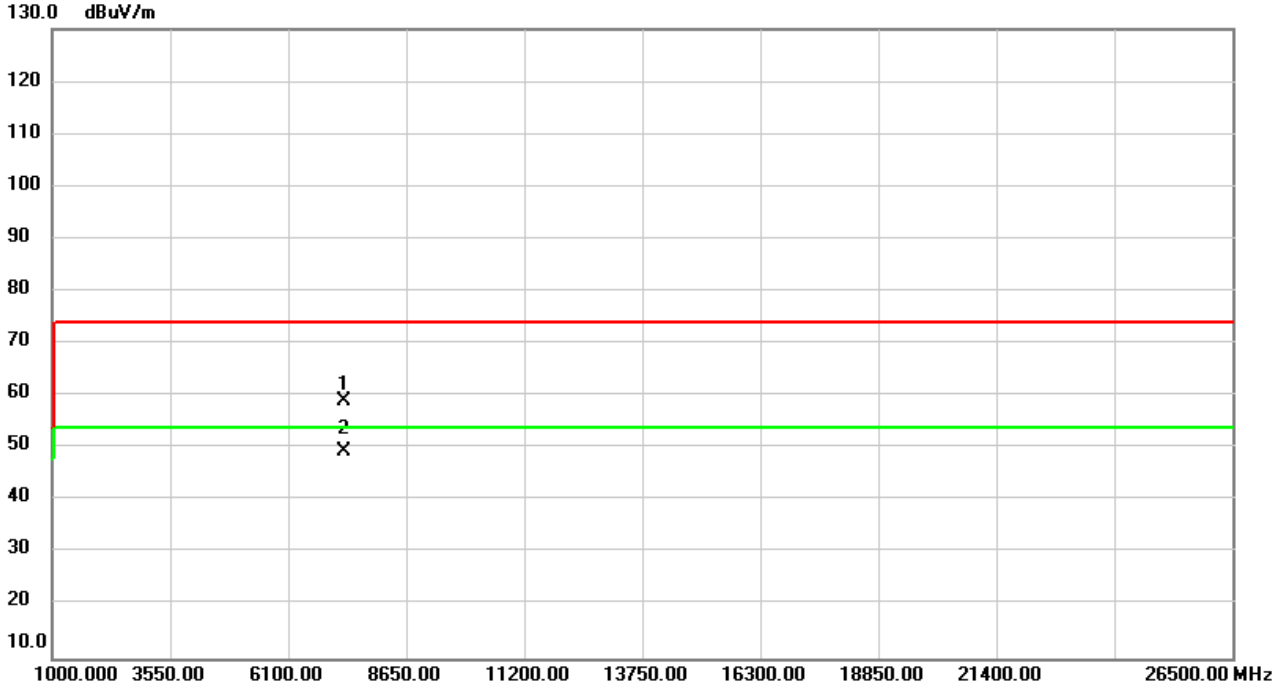
Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	61.93	-2.43	59.50	74.00	-14.50	peak	
2	*	7311.000	53.46	-2.43	51.03	54.00	-2.97	AVG	

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

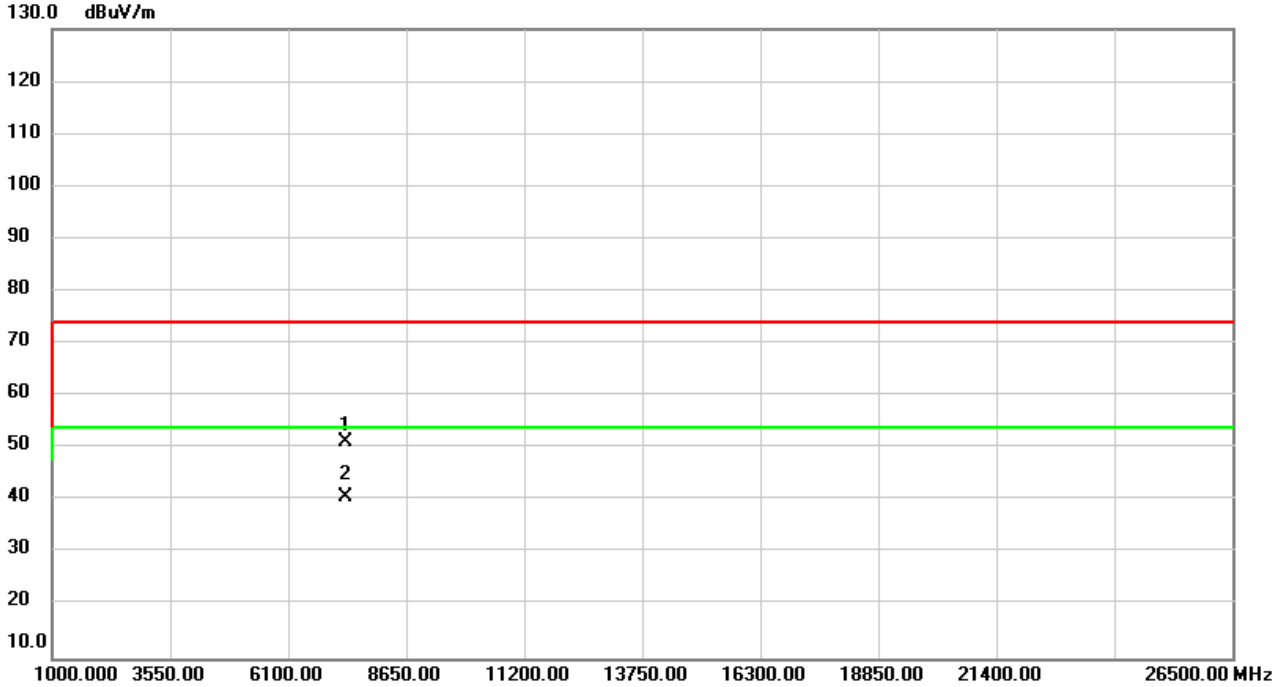
Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2437MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7311.000	61.39	-2.43	58.96	74.00	-15.04	peak	
2	*	7311.000	51.79	-2.43	49.36	54.00	-4.64	AVG	

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

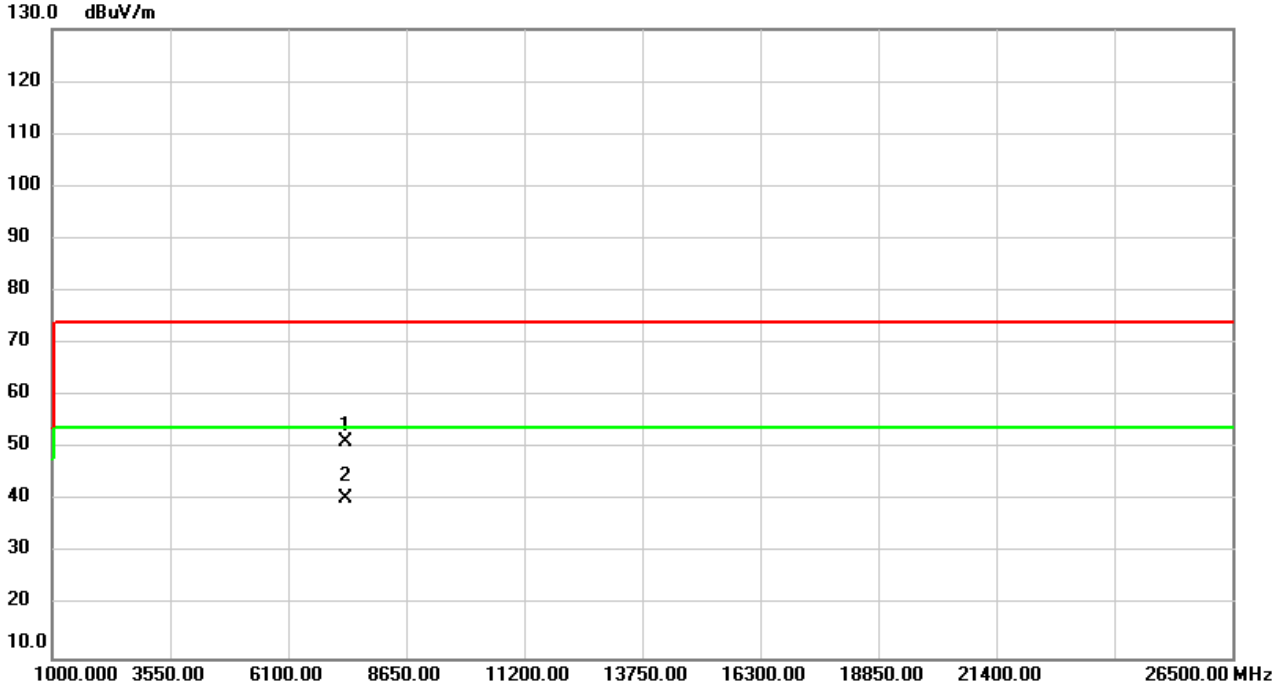
Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2452MHz	Polarization	Vertical
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7356.000	53.44	-2.23	51.21	74.00	-22.79	peak	
2	*	7356.000	42.87	-2.23	40.64	54.00	-13.36	AVG	

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

Test Mode	IEEE802.11n (HT40)	Test Date	2021/4/17
Test Frequency	2452MHz	Polarization	Horizontal
Temp	22°C	Hum.	61%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7356.000	53.62	-2.23	51.39	74.00	-22.61	peak	
2	*	7356.000	42.72	-2.23	40.49	54.00	-13.51	AVG	

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

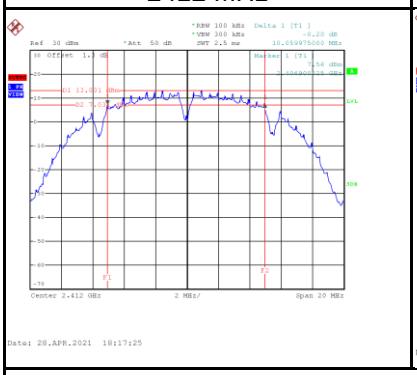
APPENDIX D BANDWIDTH

Test Mode	IEEE 802.11b

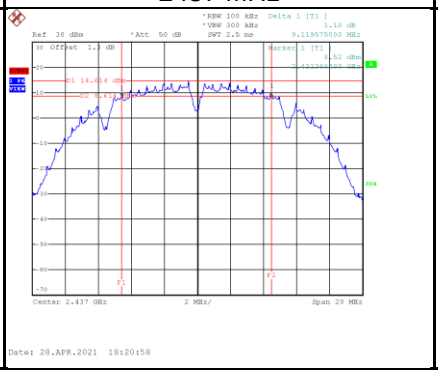
Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	10.06	13.36	≥ 500	Pass
2437	9.12	13.52	≥ 500	Pass
2462	9.12	13.28	≥ 500	Pass

6dB Bandwidth

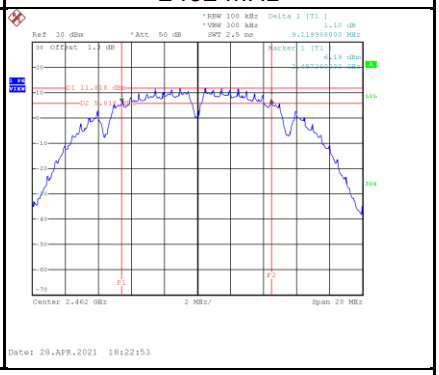
2412 MHz



2437 MHz

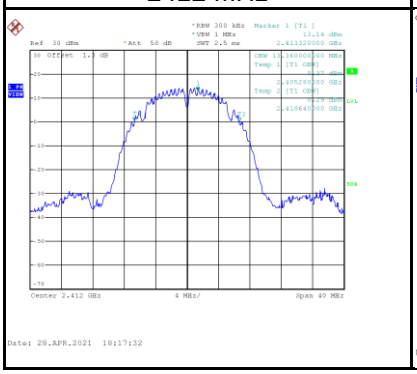


2462 MHz

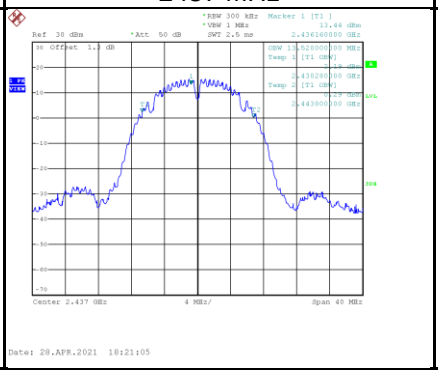


99% Occupied BW

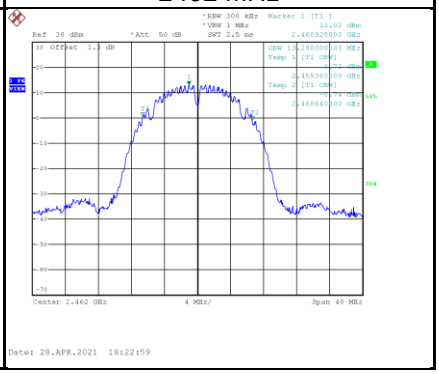
2412 MHz



2437 MHz



2462 MHz

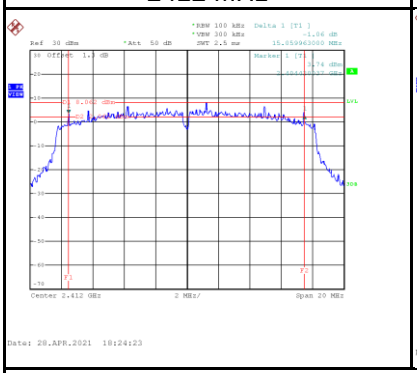


Test Mode	IEEE 802.11g

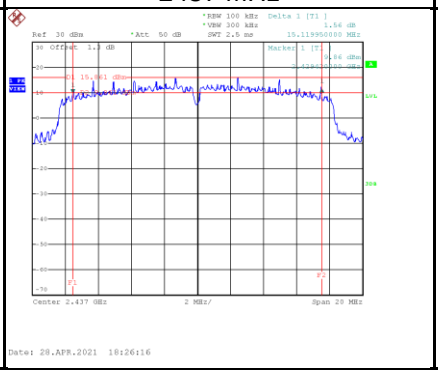
Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2412	15.06	16.24	≥ 500	Pass
2437	15.12	16.72	≥ 500	Pass
2462	13.90	16.24	≥ 500	Pass

6dB Bandwidth

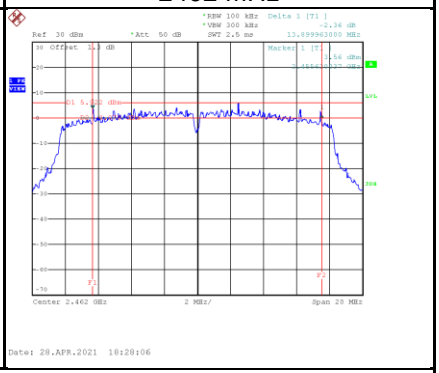
2412 MHz



2437 MHz

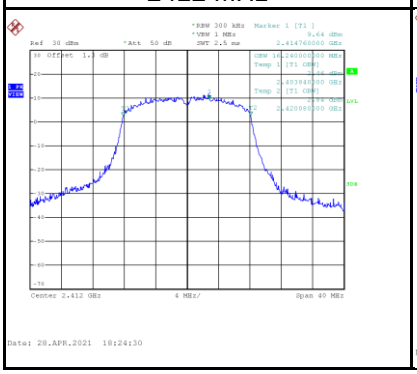


2462 MHz

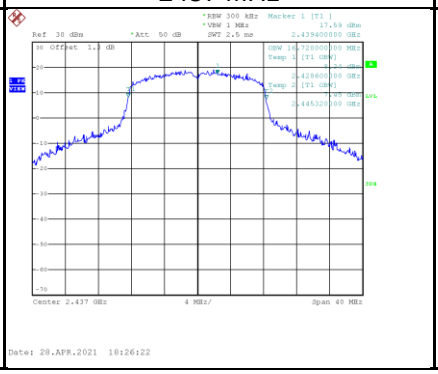


99% Occupied BW

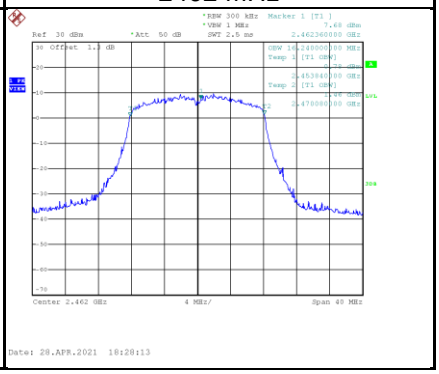
2412 MHz



2437 MHz

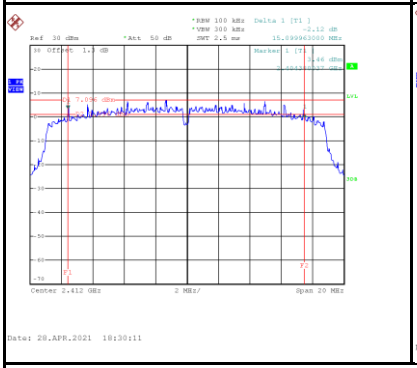
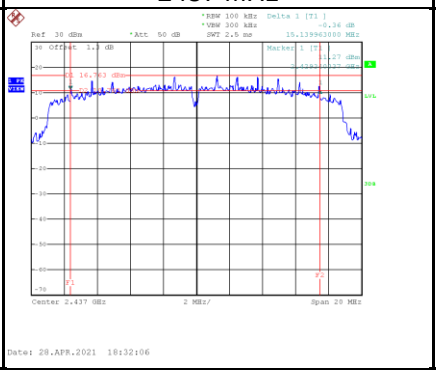
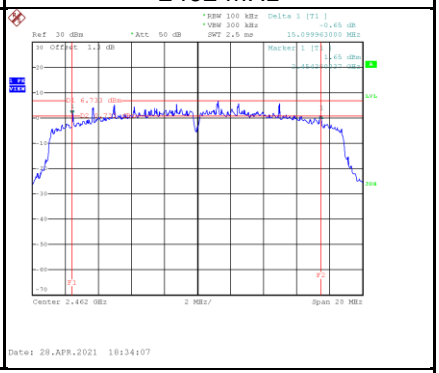
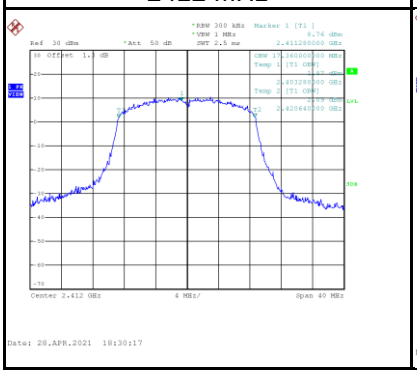
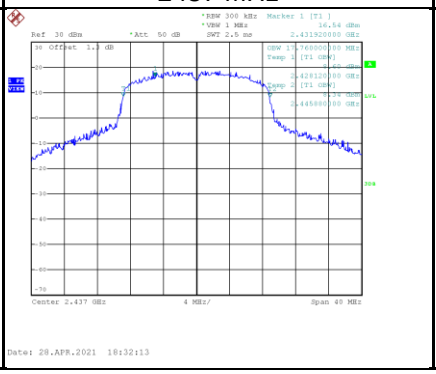
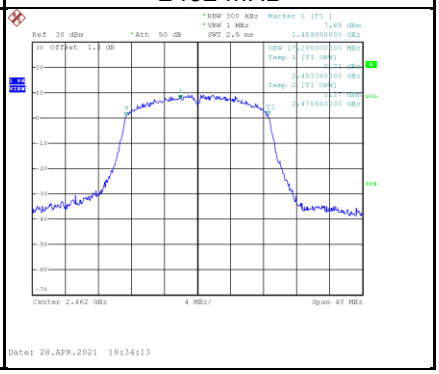


2462 MHz



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	15.10	17.36	≥ 500	Pass
2437	15.14	17.76	≥ 500	Pass
2462	15.10	17.20	≥ 500	Pass

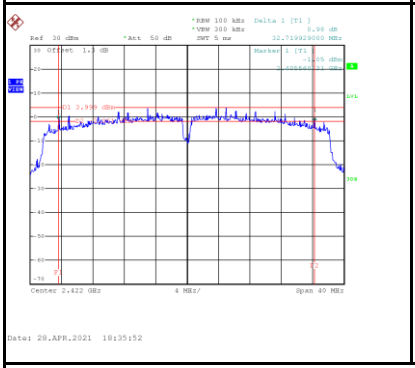
6dB Bandwidth		
2412 MHz	2437 MHz	2462 MHz
		
99% Occupied BW		
2412 MHz	2437 MHz	2462 MHz
		

Test Mode	IEEE 802.11n (HT40)

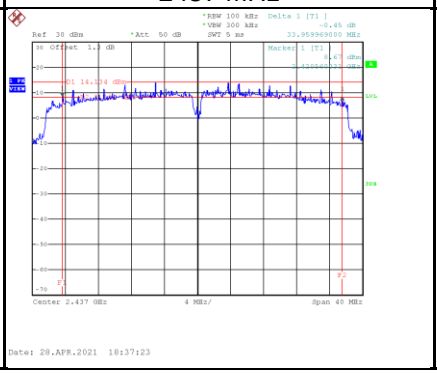
Test Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Minimum 6 dB Bandwidth Limit (kHz)	Result
2422	32.72	36.00	≥ 500	Pass
2437	33.96	37.28	≥ 500	Pass
2452	33.88	36.00	≥ 500	Pass

6dB Bandwidth

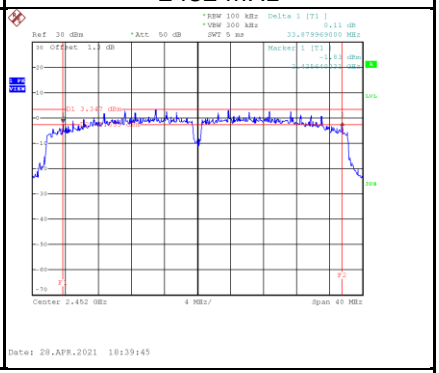
2422 MHz



2437 MHz

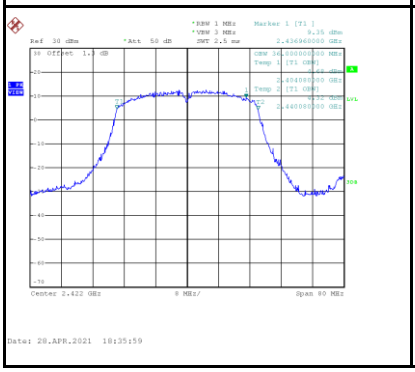


2452 MHz

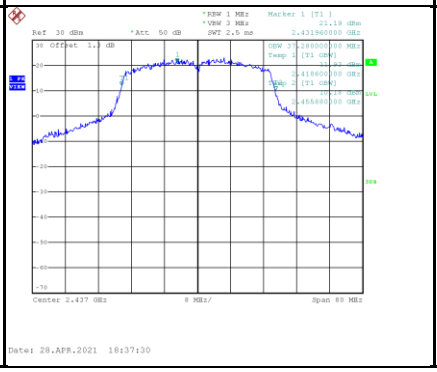


99% Occupied BW

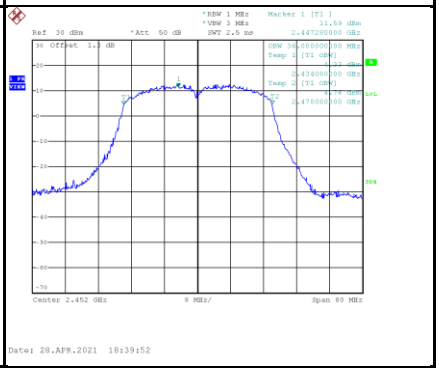
2422 MHz



2437 MHz



2452 MHz



APPENDIX E OUTPUT POWER

Test Mode	IEEE 802.11b	Tested Date	2021/6/23

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	23.57	0.2275	30.00	1.0000	Complies
2437	24.38	0.2742	30.00	1.0000	Complies
2462	22.62	0.1828	30.00	1.0000	Complies

Test Mode	IEEE 802.11g_	Tested Date	2021/6/23

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	23.32	0.2148	30.00	1.0000	Complies
2437	24.39	0.2748	30.00	1.0000	Complies
2462	22.27	0.1687	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)	Tested Date	2021/6/23

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	23.35	0.2163	30.00	1.0000	Complies
2437	24.39	0.2748	30.00	1.0000	Complies
2462	22.76	0.1888	30.00	1.0000	Complies

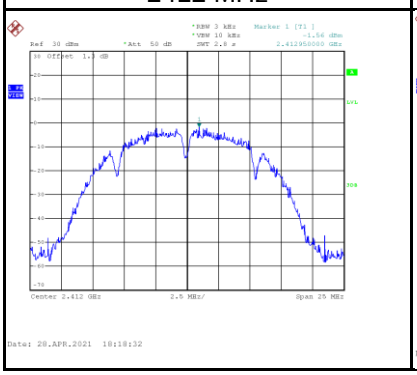
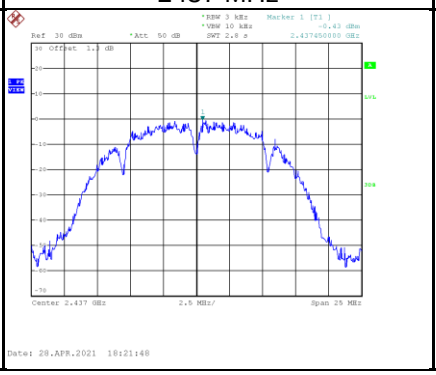
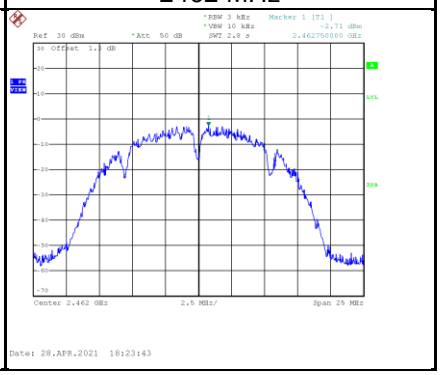
Test Mode	IEEE 802.11n (HT40)	Tested Date	2021/6/23

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	21.38	0.1374	30.00	1.0000	Complies
2437	24.39	0.2748	30.00	1.0000	Complies
2452	21.94	0.1563	30.00	1.0000	Complies

APPENDIX F POWER SPECTRAL DENSITY

Test Mode	IEEE 802.11b

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-1.56	8.00	Pass
2437	-0.43	8.00	Pass
2462	-2.71	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

Test Mode	IEEE 802.11g

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	-7.59	8.00	Pass
2437	1.34	8.00	Pass
2462	-8.23	8.00	Pass

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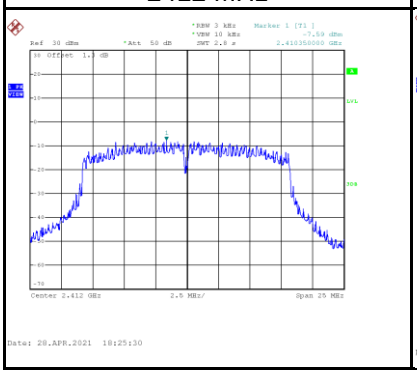
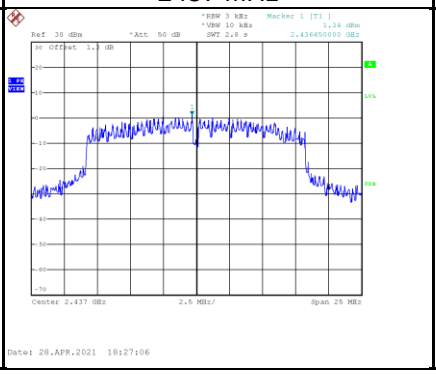
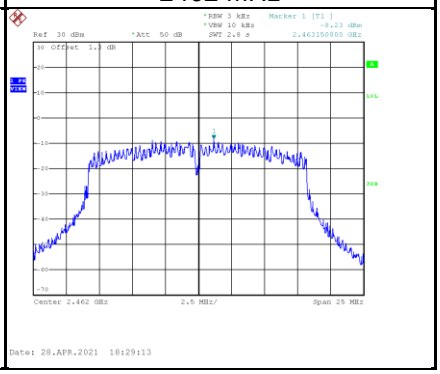
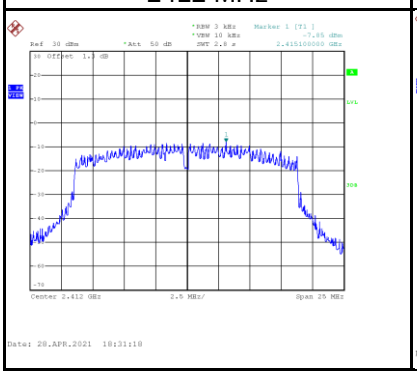
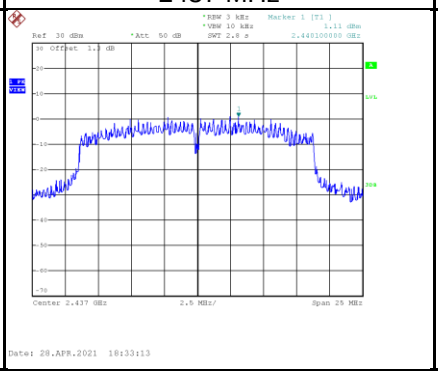
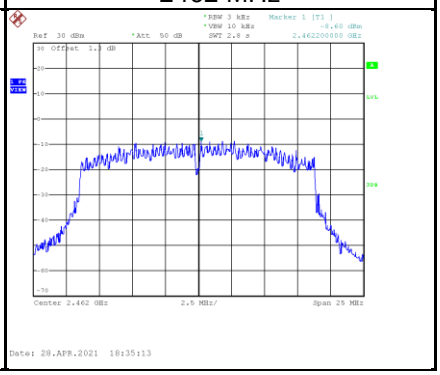
2412 MHz	2437 MHz	2462 MHz
		

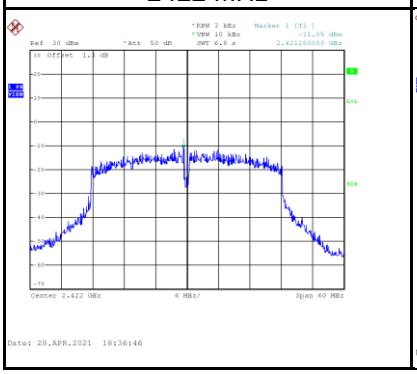
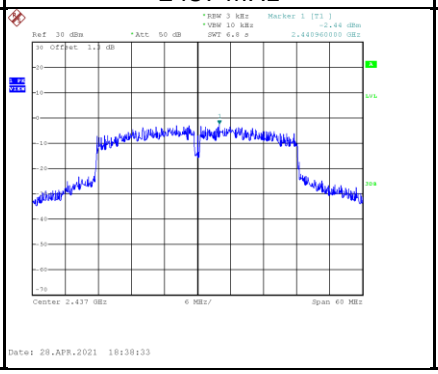
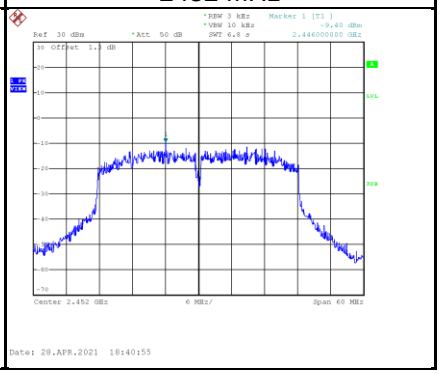
Test Mode	IEEE 802.11n (HT20)

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2412	1.26	8.00	Pass
2437	1.11	8.00	Pass
2462	-8.60	8.00	Pass

2412 MHz	2437 MHz	2462 MHz
		

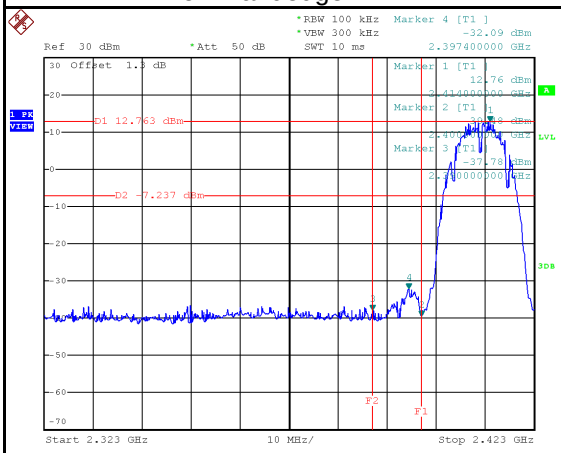
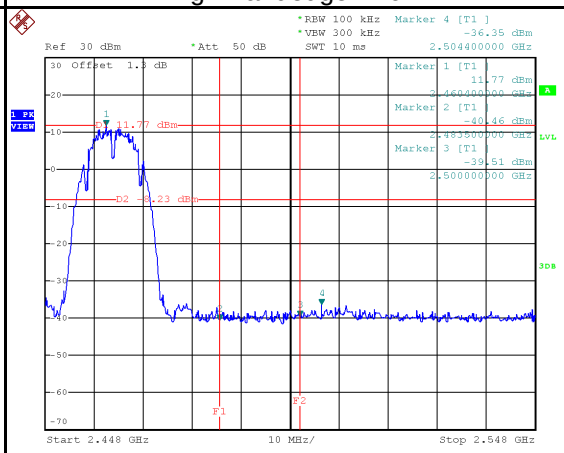
Test Mode	IEEE 802.11n (HT40)

Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2422	-11.05	8.00	Pass
2437	-2.44	8.00	Pass
2452	-9.40	8.00	Pass

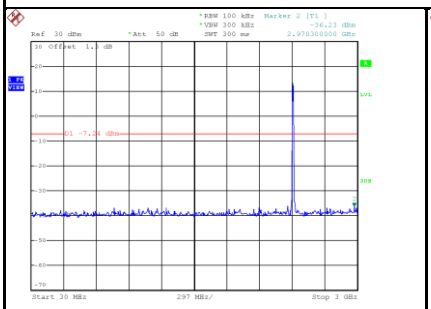
2422 MHz	2437 MHz	2452 MHz
		

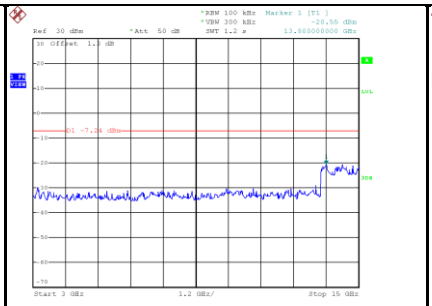
APPENDIX G ANTENNA CONDUCTED SPURIOUS EMISSIONS

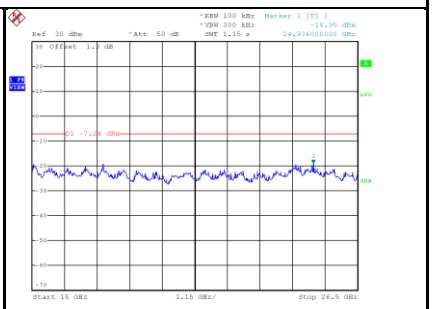
Test Mode	IEEE 802.11b

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	
Date: 28.APR.2021 18:17:56	Date: 28.APR.2021 18:23:07

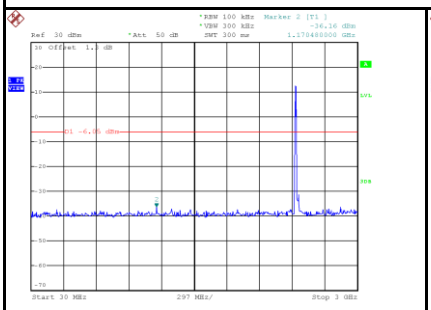
2412 MHz-10th Harmonics

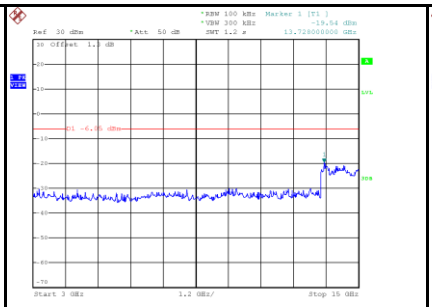

Date: 28.APR.2021 18:18:09

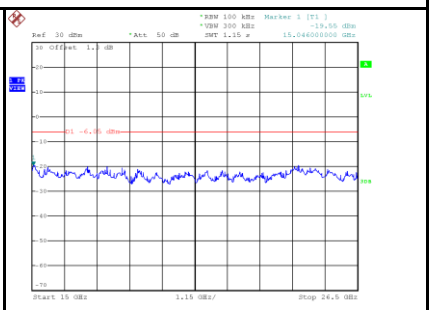

Date: 28.APR.2021 18:18:16


Date: 28.APR.2021 18:18:23

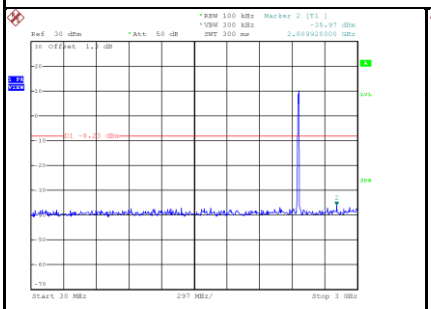
2437 MHz-10th Harmonics

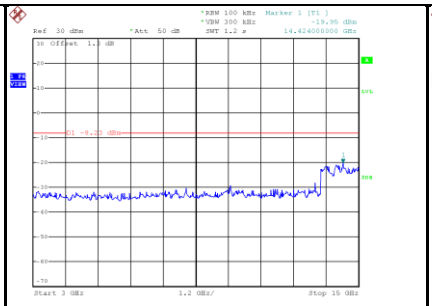

Date: 28.APR.2021 18:21:25

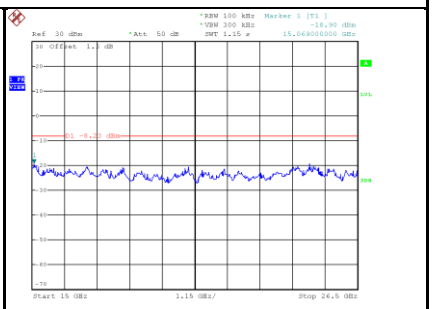

Date: 28.APR.2021 18:21:32


Date: 28.APR.2021 18:21:39

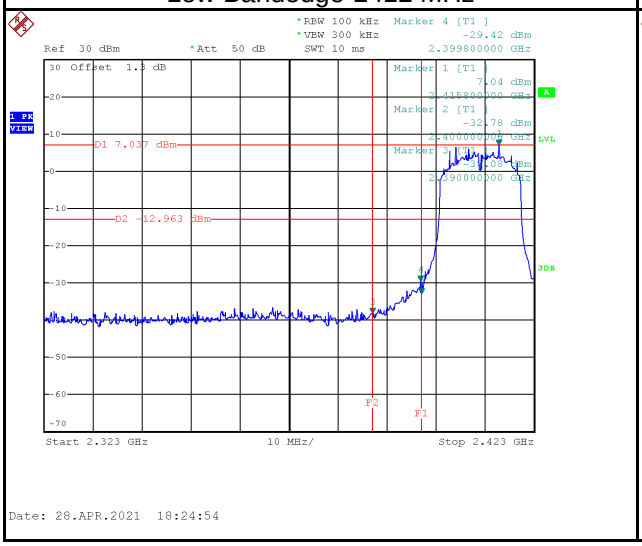
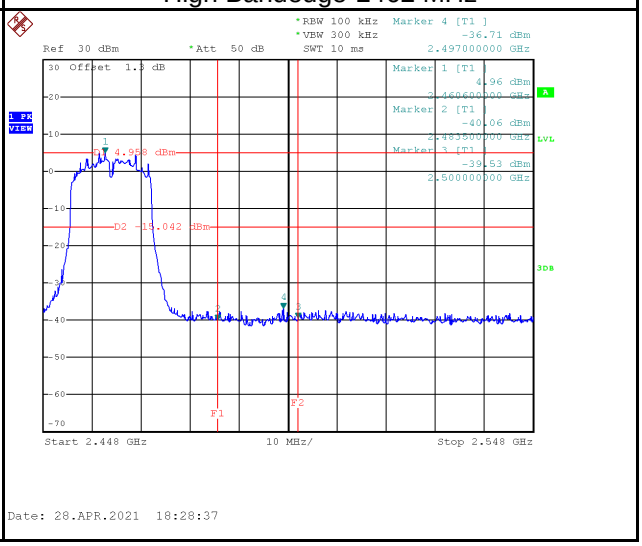
2462 MHz-10th Harmonics


Date: 28.APR.2021 18:23:20

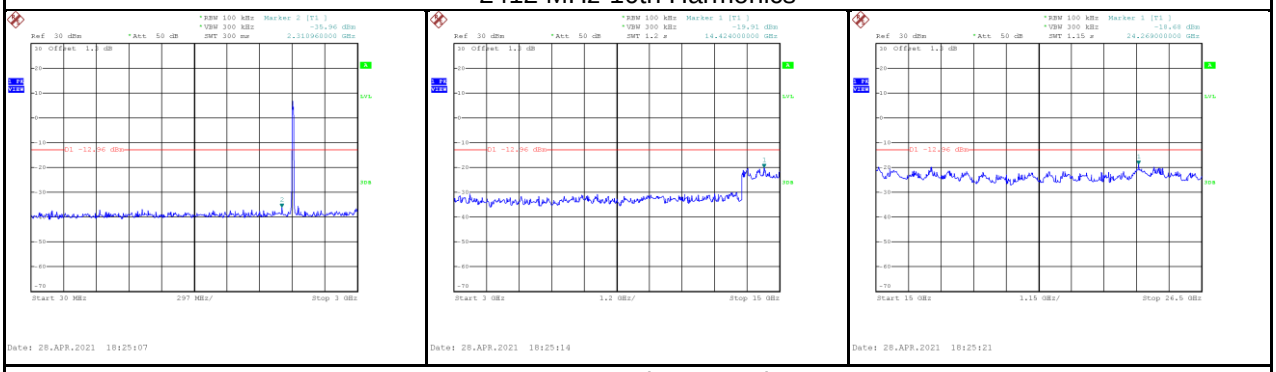

Date: 28.APR.2021 18:23:27


Date: 28.APR.2021 18:23:34

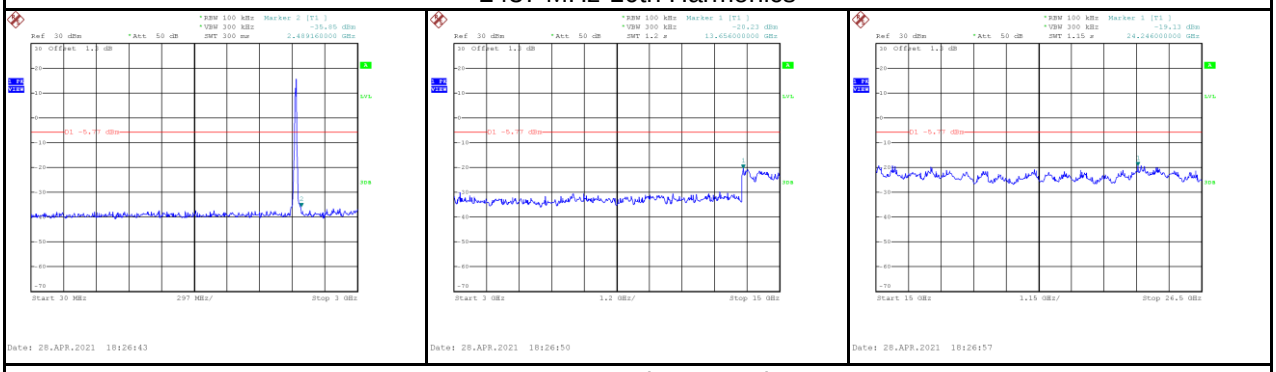
Test Mode	IEEE 802.11g

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

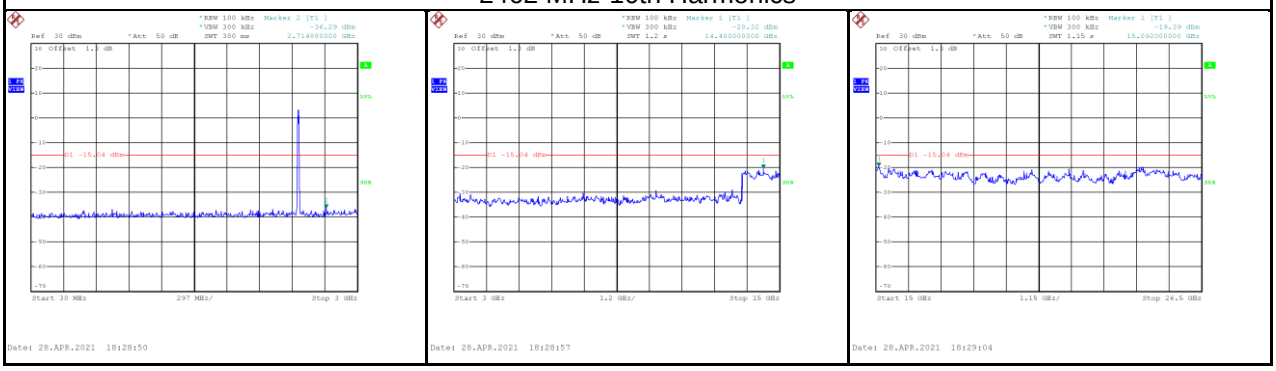
2412 MHz-10th Harmonics



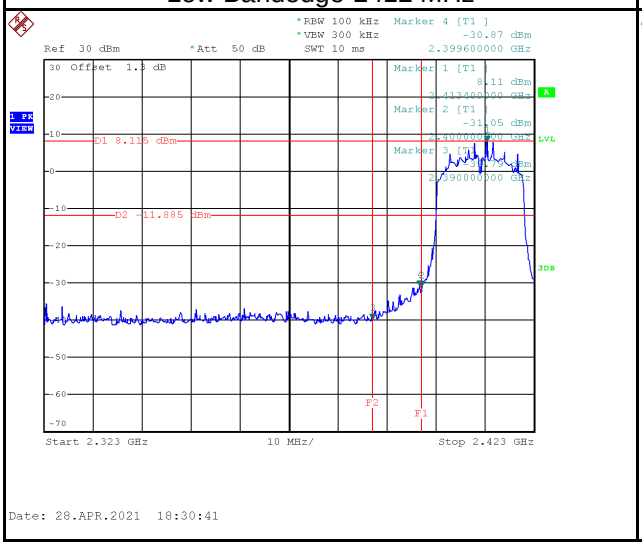
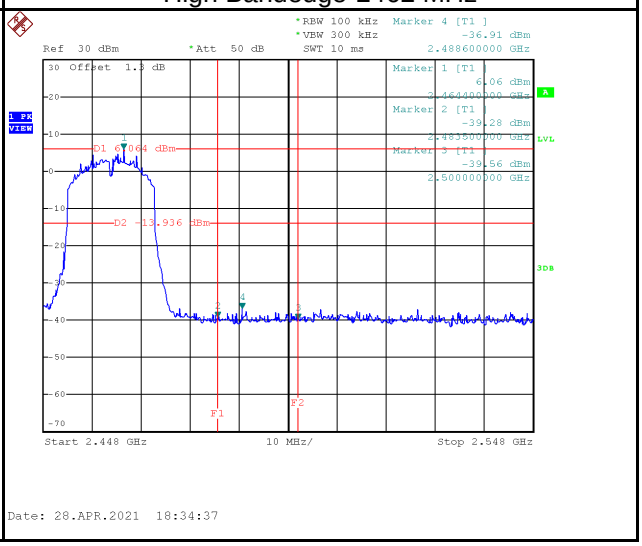
2437 MHz-10th Harmonics



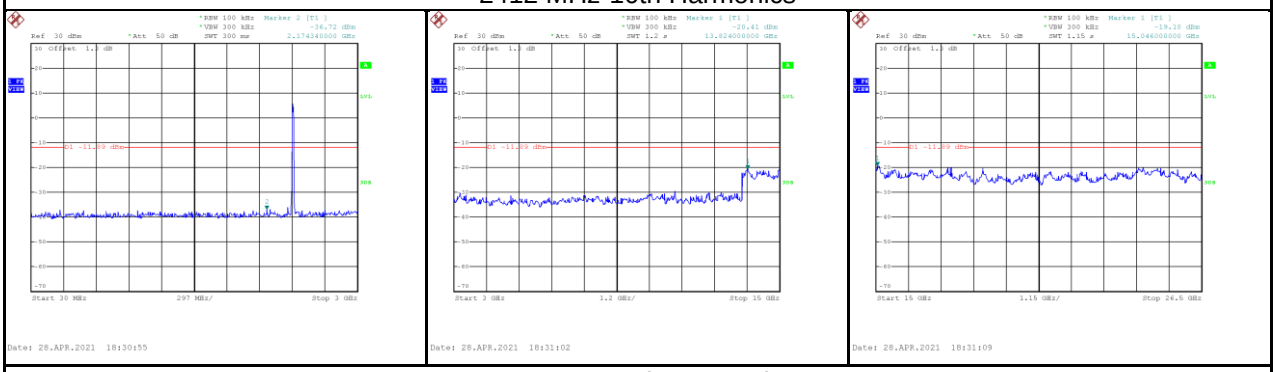
2462 MHz-10th Harmonics



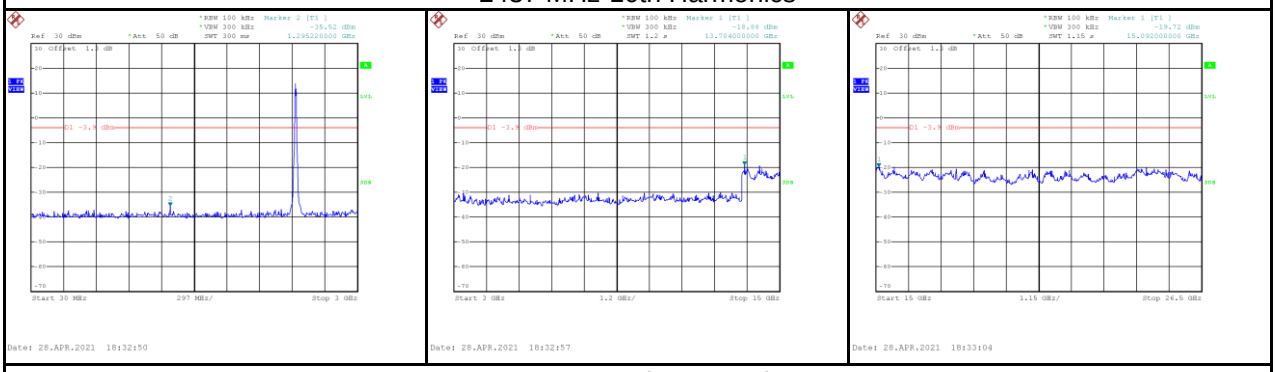
Test Mode	IEEE 802.11n (HT20)

Low Bandedge-2412 MHz	High Bandedge-2462 MHz
	

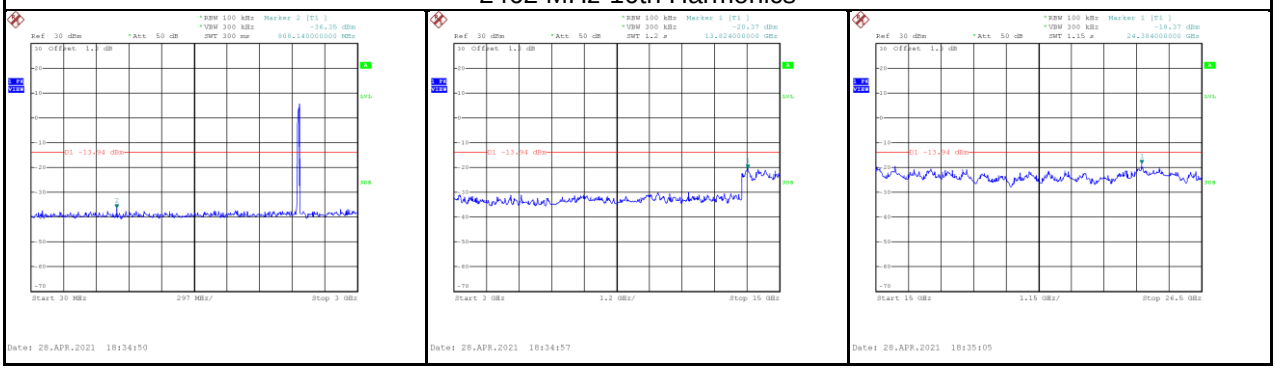
2412 MHz-10th Harmonics



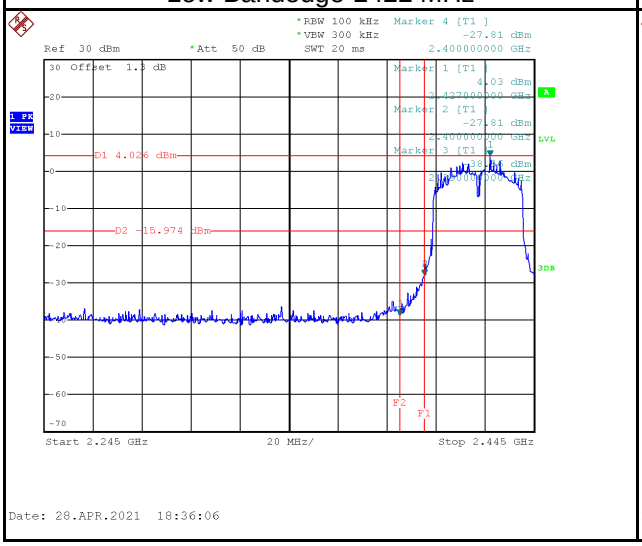
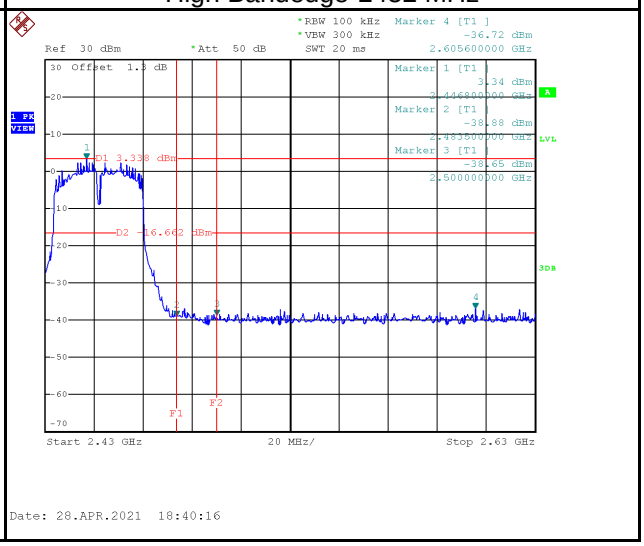
2437 MHz-10th Harmonics



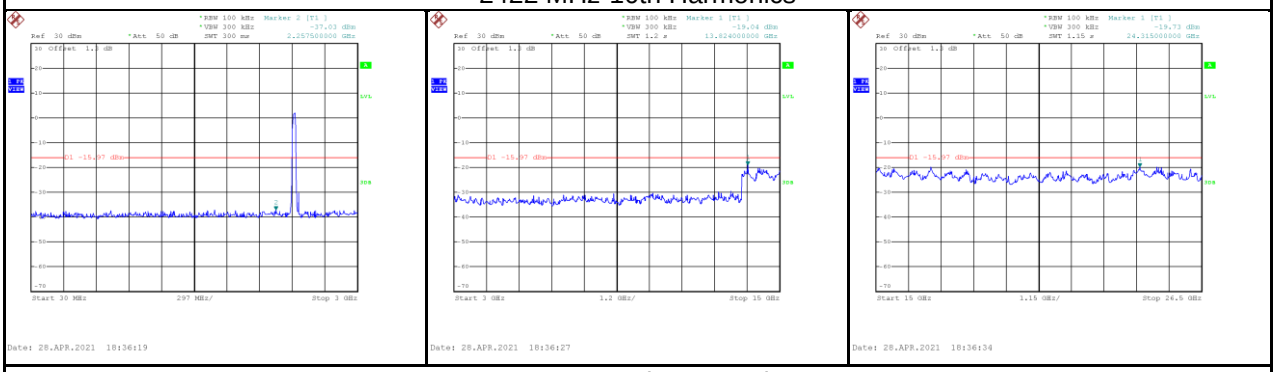
2462 MHz-10th Harmonics



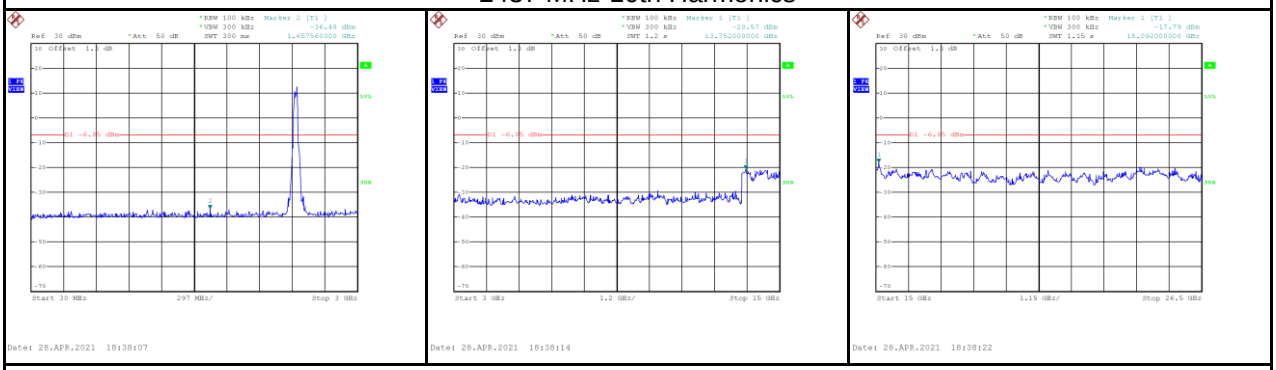
Test Mode	IEEE 802.11n (HT40)

Low Bandedge-2422 MHz	High Bandedge-2452 MHz
	

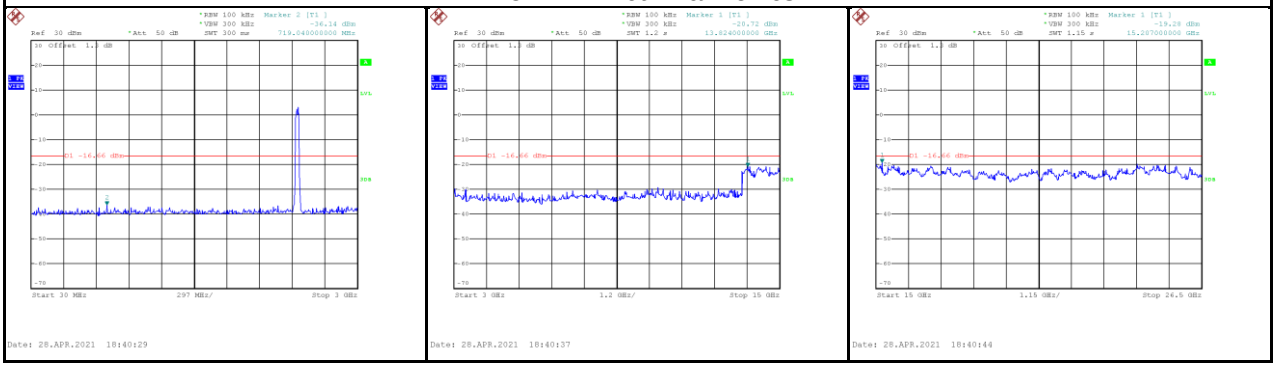
2422 MHz-10th Harmonics



2437 MHz-10th Harmonics



2452 MHz-10th Harmonics



End of Test Report