

FCC Radio Test Report

FCC ID: 2AQUTD310-VCAM

Report No. : BTL-FCCP-1-2005T065
Equipment : Connected Vehicle Camera
Model Name : D310, D310F, D310-F, D310F-OTUS, D310-02, D310-02-2C
Brand Name : OTUS
Applicant : OTUS IMAGING, INC.
Address : 3F., No 192, Liancheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C)

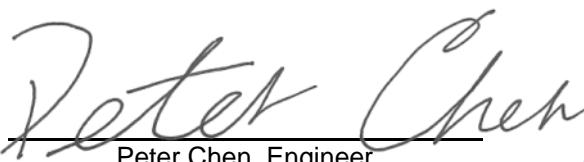
Radio Function : WLAN 2.4 GHz

FCC Rule Part(s) : FCC Part15, Subpart C (15.247)
Measurement : ANSI C63.10-2013
Procedure(s)

Date of Receipt : 2020/5/18
Date of Test : 2020/5/18 ~ 2020/7/2
Issued Date : 2020/7/30

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

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

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

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

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

Limitation

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

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

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	2020/7/30

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	-----	N/A	NOTE(1)
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX A APPENDIX B	Pass	-----
15.247(a)	Bandwidth	APPENDIX C	Pass	-----
15.247(b)	Output Power	APPENDIX D	Pass	-----
15.247(e)	Power Spectral Density	APPENDIX E	Pass	-----
15.247(d)	Antenna conducted Spurious Emission	APPENDIX F	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
 SR06

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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_{cisp} requirement.

A. 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

B. Conducted test :

Test Item	U,(dB)
Bandwidth	1.13
Output power	1.06
Power Spectral Density	1.20
Conducted Spurious emissions	1.14
Conducted Band edges	1.13

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
Radiated emissions below 1 GHz	22 °C, 53 %	DC 5 V	John Chuang
Radiated emissions above 1 GHz	23 °C, 70 %	DC 5 V	John Chuang
Bandwidth	20.1 °C, 52 %	DC 5 V	William Wei
Output Power	20.1 °C, 52 %	DC 5 V	William Wei
Power Spectral Density	20.1 °C, 52 %	DC 5 V	William Wei
Antenna conducted Spurious Emission	20.1 °C, 52 %	DC 5 V	William Wei

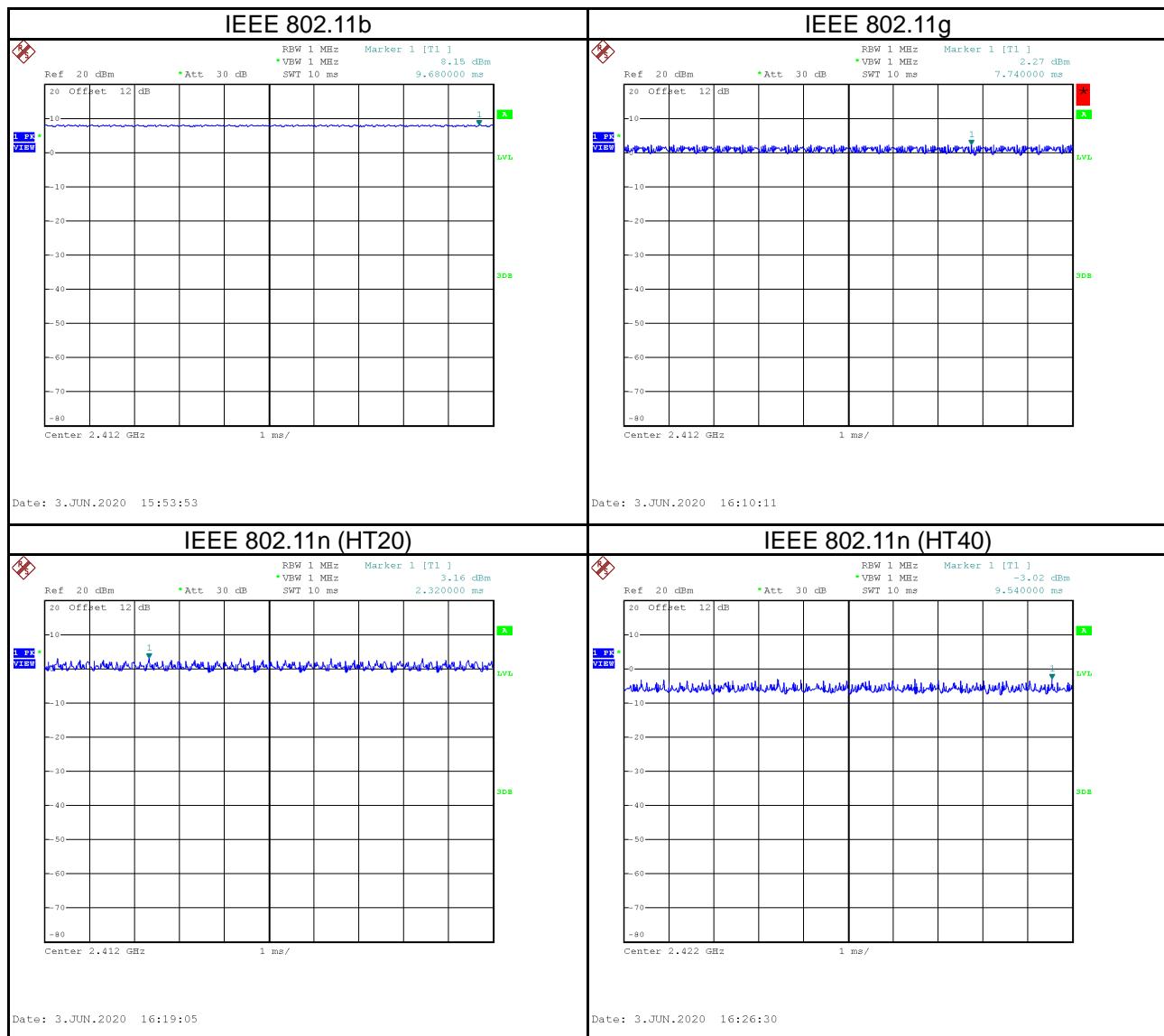
1.4 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

Test Software	Realtek Tool			
Mode	2412 MHz	2437 MHz	2462 MHz	Data Rate
IEEE 802.11b	48	47	49	1 Mbps
IEEE 802.11g	58	63	63	6 Mbps
IEEE 802.11n (HT20)	57	63	60	MCS 0
Mode	2422 MHz	2437 MHz	2452 MHz	Data Rate
IEEE 802.11n (HT40)	54	63	58	MCS 0

1.5 DUTY CYCLE

If duty cycle is $\geq 98\%$, 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	1.000	1	1.000	1.000	100.00%	0.00
IEEE 802.11g	1.000	1	1.000	1.000	100.00%	0.00
IEEE 802.11n (HT20)	1.000	1	1.000	1.000	100.00%	0.00
IEEE 802.11n (HT40)	1.000	1	1.000	1.000	100.00%	0.00

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Connected Vehicle Camera
Model Name	D310, D310F, D310-F, D310F-OTUS, D310-02, D310-02-2C
Brand Name	OTUS
Model Difference	Different model distribute to different area. Please refer to NOTE 4.
Power Source	DC voltage supplied from Car Charger
Power Rating	I/P: 5V—2A
Products Covered	1 * Car Charger: HY-515 1 * AHD Rear Camera
Frequency Range	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 150 Mbps
Output Power Max.	IEEE 802.11b: 19.25 dBm (0.0841 W) IEEE 802.11g: 20.93 dBm (0.1239 W) IEEE 802.11n (HT20): 20.81 dBm (0.1205 W) IEEE 802.11n (HT40): 20.97 dBm (0.1250 W)
Test Model	D310
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:

Ant.	Brand	Test Model	Antenna Type	Connector	Gain (dBi)
1	 WIESON	HT625-0521-001	PIFA	IPEX	-0.41

(4) The model differences are as follows:

Model Name	Host	Power supplied by Car Charger	Rear Camera	UART
D310, D310F, D310-F, D310F-OTUS	YES	YES	YES	YES
D310-02-2C	YES	NO	YES	NO
D310-02	YES	YES	NO	NO

2.2 TEST MODES

Test Items	Test mode	Channel	Note
Transmitter Radiated Emissions (below 1GHz)	TX Mode_IEEE 802.11n (HT20)	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	
Bandwidth	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	
Output Power	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	
Power Spectral Density	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	
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	

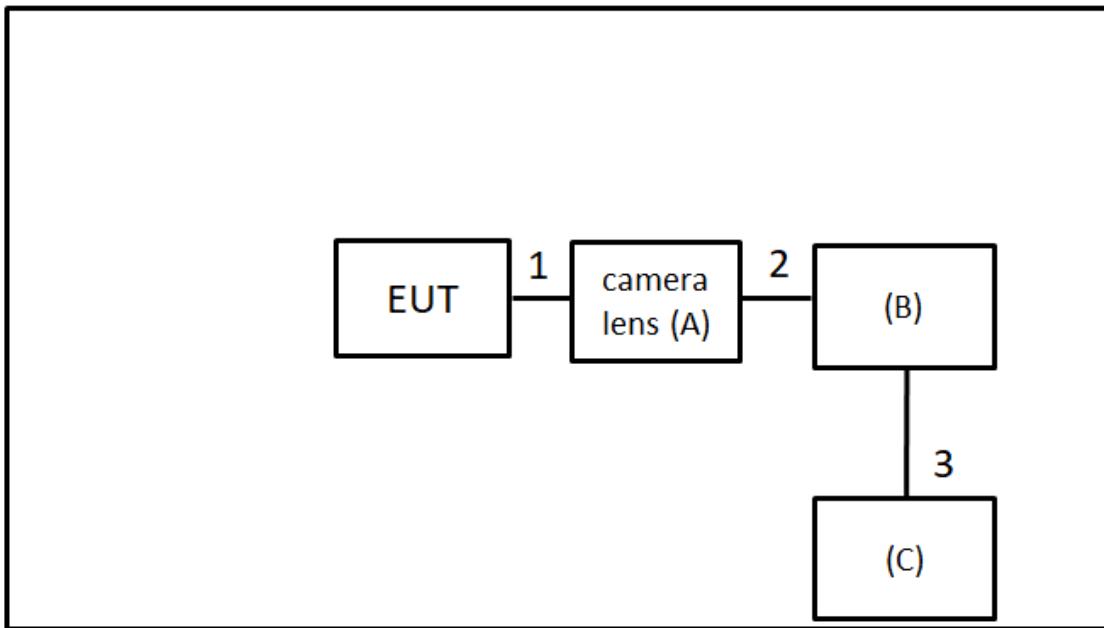
NOTE:

- (1) The Radiated emissions test was verified based on the worst conducted power and Bandwidth test results reported in the original report.
- (2) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Vertical) is recorded.
- (3) All X, Y and Z axes are evaluated, but only the worst case (X axis) is recorded.
- (4) There were no emissions found below 30 MHz within 20 dB of the limit.

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.

Radiated Emissions Test



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	Camera lens	OUTS	NA	NA	Supplied by test requester.
B	Car charger	OUTS	HY-515	NA	Supplied by test requester.
C	DC supply	Twintex	TPS-6015	G271200155	Furnished by test lab

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	NA	NA	2.1M	camera lens Cable	Supplied by test requester.
2	NA	NA	3.5M	Car charger Cable	Supplied by test requester.
3	NA	NA	1M	DC Cable	Furnished by test lab.

3 RADIATED EMISSIONS TEST

3.1 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

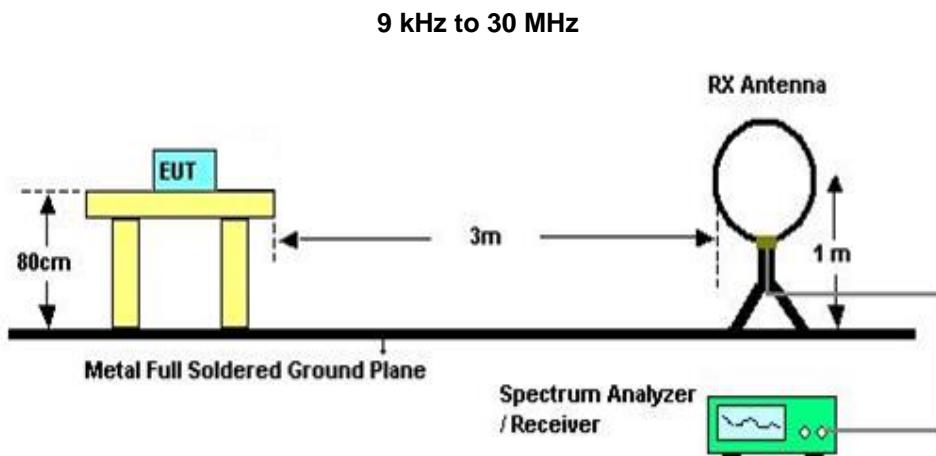
3.2 TEST PROCEDURE

- 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.

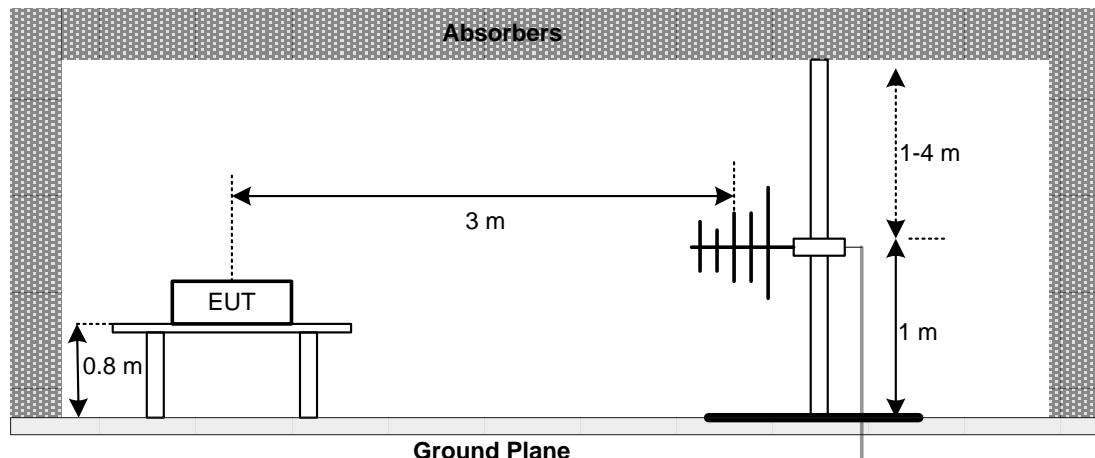
3.3 DEVIATION FROM TEST STANDARD

No deviation.

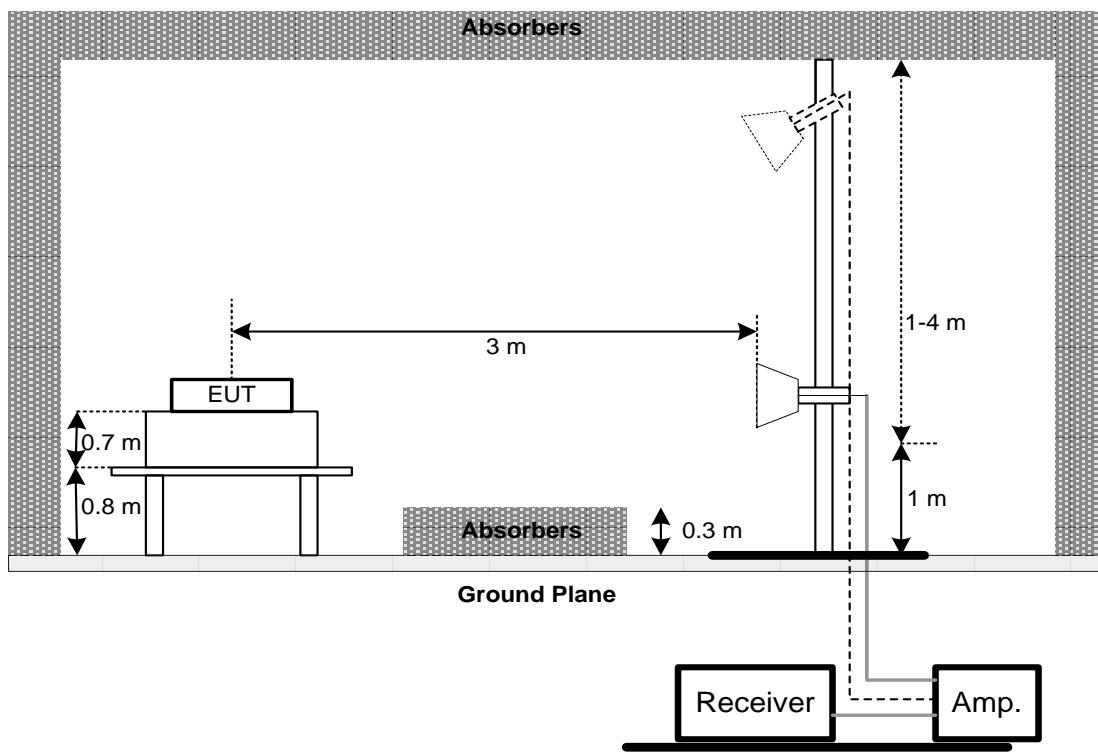
3.4 TEST SETUP



30 MHz to 1 GHz



Above 1 GHz



3.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX A.

3.7 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX B.

NOTE:

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

4 BANDWIDTH TEST

4.1 LIMIT

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

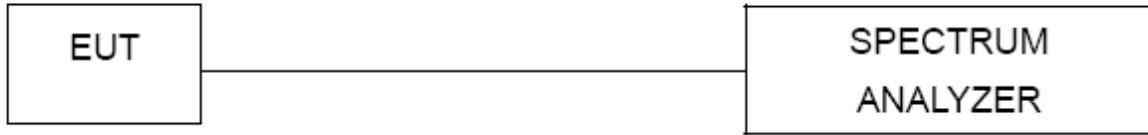
4.2 TEST PROCEDURE

- 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.

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT

Please refer to the APPENDIX C.

5 OUTPUT POWER TEST

5.1 LIMIT

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

5.2 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 method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance.

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 POWER SPECTRAL DENSITY

6.1 LIMIT

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

6.2 TEST PROCEDURE

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

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 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST

7.1 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.

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 = 100 kHz, VBW=300 kHz, Sweep time = Auto.
- c. Offset = antenna gain + cable loss.

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 LIST OF MEASURING EQUIPMENTS

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC001340	980555	2020/4/10	2021/4/9
2	Preamplifier	EMCI	EMC02325B	980217	2020/4/10	2021/4/9
3	Preamplifier	EMCI	EMC012645B	980267	2020/4/10	2021/4/9
4	Test Cable	EMCI	EMC104-SM-SM-800	150207	2020/4/10	2021/4/9
5	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2020/4/10	2021/4/9
6	Test Cable	EMCI	EMC-SM-SM-7000	180408	2020/4/10	2021/4/9
7	MXE EMI Receiver	Agilent	N9038A	MY554200087	2020/6/10	2021/6/9
8	Signal Analyzer	Agilent	N9010A	MY56480554	2020/6/4	2021/6/3
9	Loop Ant	EMCO	6502	274	2020/6/16	2021/6/15
10	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-01783	2019/8/14	2020/8/13
11	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	000352	2019/7/31	2020/7/30
12	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0625	2019/7/31	2020/7/30

Bandwidth						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2020/5/22	2021/5/21

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2020/5/22	2021/5/21
2	Power Meter	Anritsu	ML2487A	6K00004714	2020/6/19	2021/6/18
3	Power Sensor	Anritsu	MA2491A	1725282	2020/6/19	2021/6/18

Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2020/5/22	2021/5/21

Antenna conducted Spurious Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2020/5/22	2021/5/21

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

9 EUT TEST PHOTO

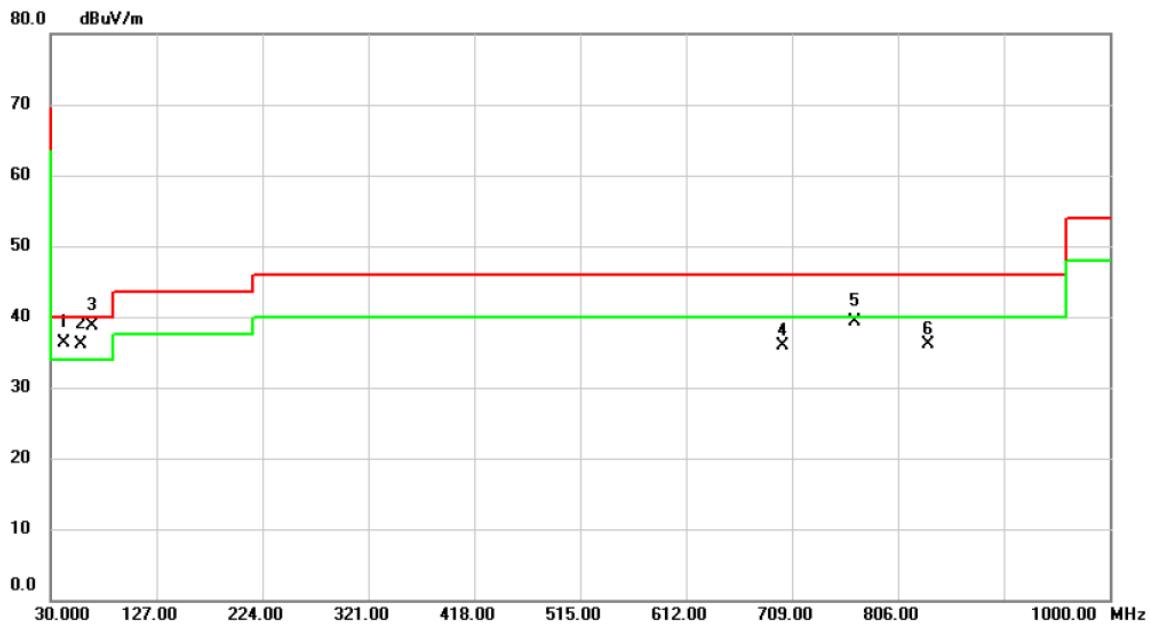
Please refer to document Appendix No.: TP-2005T065-FCCP-1 (APPENDIX-TEST PHOTOS).

10 EUT PHOTOS

Please refer to document Appendix No.: EP-2005T065-1 (APPENDIX-EUT PHOTOS).

APPENDIX A RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/29
Test Frequency	CH11: 2462 MHz	Polarization	Vertical

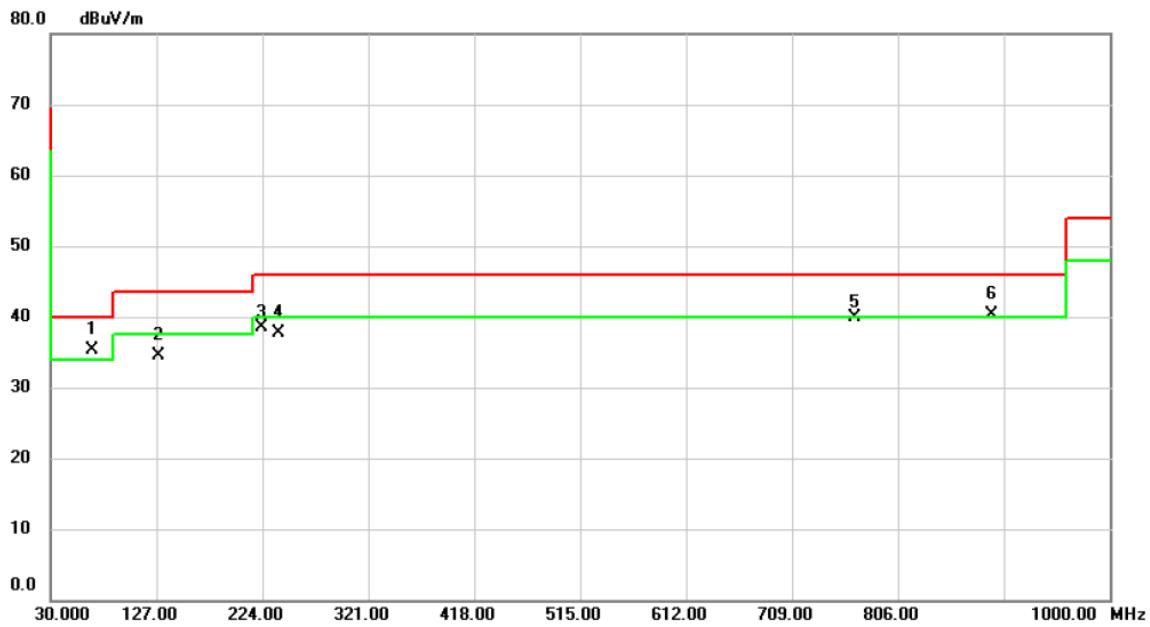


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	!	41.6400	44.42	-8.10	36.32	40.00	-3.68	QP	
2	!	57.1600	44.30	-8.24	36.06	40.00	-3.94	QP	
3	*	67.8300	48.86	-10.20	38.66	40.00	-1.34	QP	
4		700.2700	34.70	1.11	35.81	46.00	-10.19	peak	
5		766.2300	36.94	2.27	39.21	46.00	-6.79	QP	
6		833.1600	33.11	2.99	36.10	46.00	-9.90	peak	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/29
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal



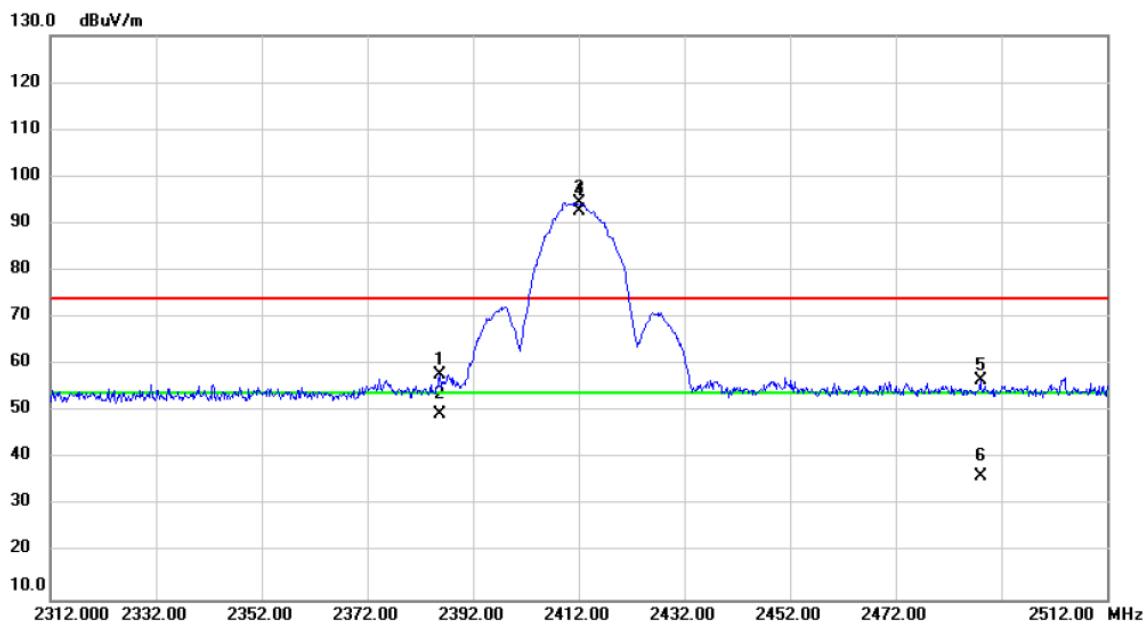
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Over Detector	Comment
1	*	67.8300	45.56	-10.20	35.36	40.00	-4.64	QP
2		128.9400	44.70	-10.15	34.55	43.50	-8.95	QP
3		223.0300	48.80	-10.28	38.52	46.00	-7.48	peak
4		238.5500	47.10	-9.35	37.75	46.00	-8.25	QP
5		766.2300	37.73	2.27	40.00	46.00	-6.00	peak
6	!	891.3600	36.50	3.73	40.23	46.00	-5.77	QP

REMARKS:

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

APPENDIX B RADIATED EMISSIONS - ABOVE 1 GHZ

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Vertical

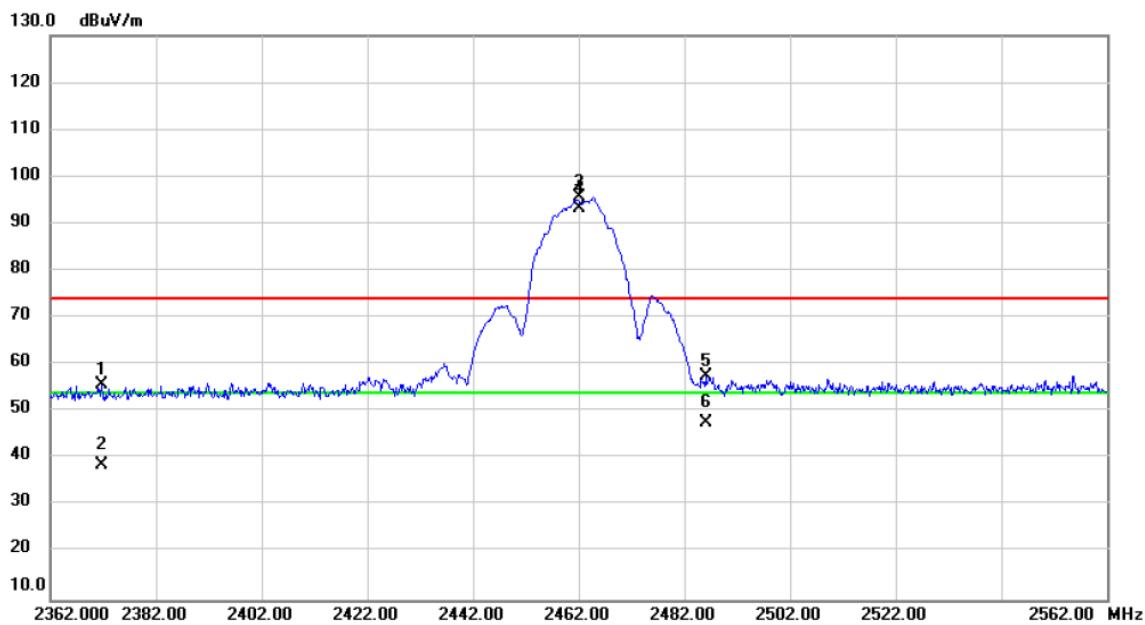


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2385.800	26.77	31.09	57.86	74.00	-16.14	peak	
2		2385.800	18.32	31.09	49.41	54.00	-4.59	AVG	
3	X	2412.000	63.24	31.20	94.44	74.00	20.44	peak	No Limit
4	*	2412.000	61.36	31.20	92.56	54.00	38.56	AVG	No Limit
5		2488.000	25.03	31.48	56.51	74.00	-17.49	peak	
6		2488.000	4.84	31.48	36.32	54.00	-17.68	AVG	

REMARKS:

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

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Vertical

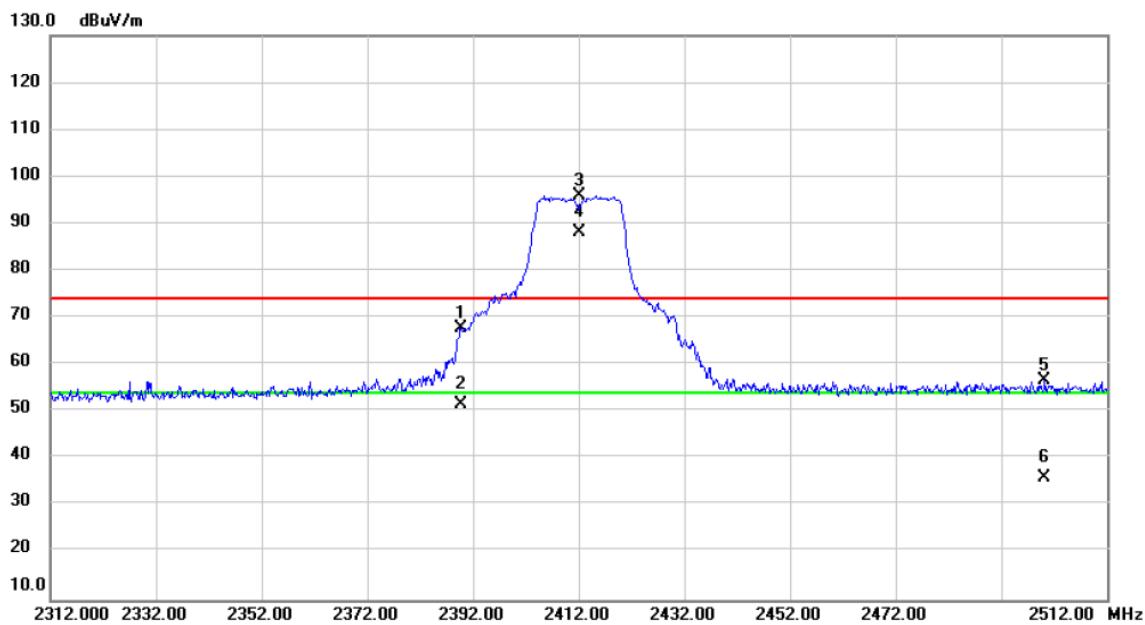


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2371.800	24.78	31.04	55.82	74.00	-18.18	peak	
2		2371.800	7.69	31.04	38.73	54.00	-15.27	AVG	
3	X	2462.000	64.14	31.39	95.53	74.00	21.53	peak	No Limit
4	*	2462.000	61.87	31.39	93.26	54.00	39.26	AVG	No Limit
5		2486.000	26.20	31.48	57.68	74.00	-16.32	peak	
6		2486.000	16.16	31.48	47.64	54.00	-6.36	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Vertical

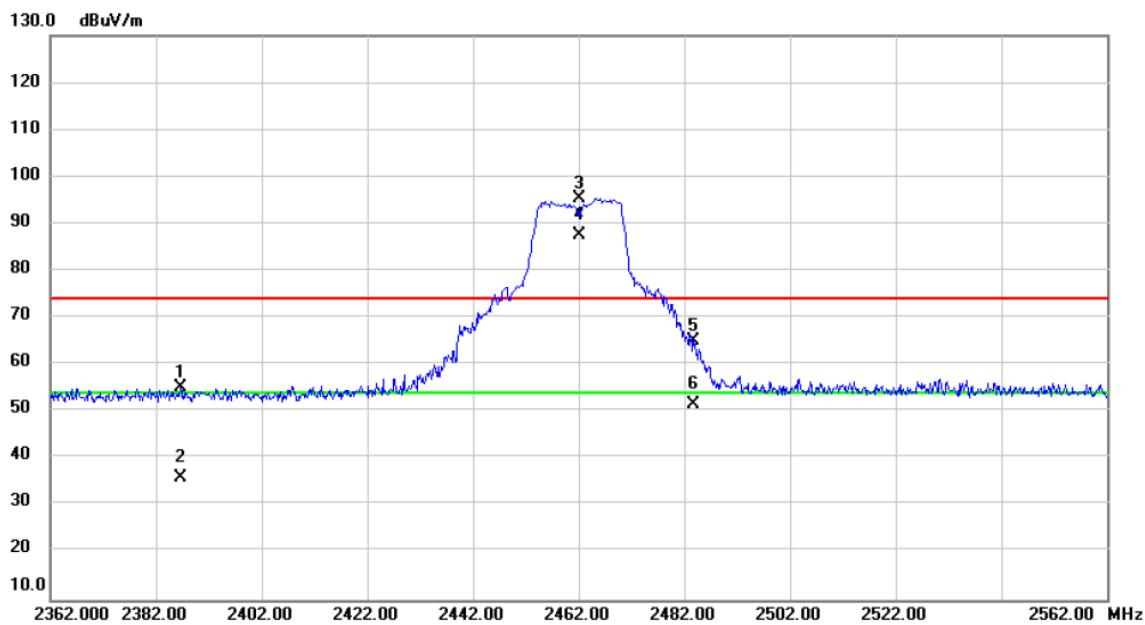


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2389.800	36.78	31.11	67.89	74.00	-6.11	peak	
2		2389.800	20.47	31.11	51.58	54.00	-2.42	AVG	
3	X	2412.000	64.72	31.20	95.92	74.00	21.92	peak	No Limit
4	*	2412.000	57.04	31.20	88.24	54.00	34.24	AVG	No Limit
5		2500.200	25.24	31.53	56.77	74.00	-17.23	peak	
6		2500.200	4.55	31.53	36.08	54.00	-17.92	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Vertical

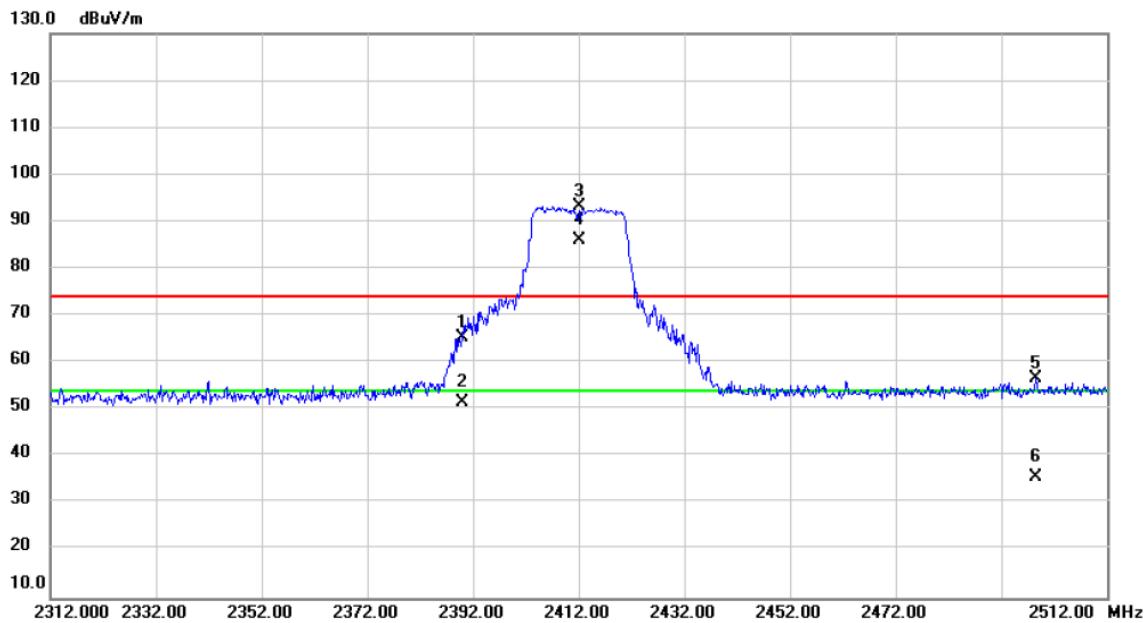


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2386.600	24.19	31.10	55.29	74.00	-18.71	peak	
2		2386.600	4.81	31.10	35.91	54.00	-18.09	AVG	
3	X	2462.000	63.97	31.39	95.36	74.00	21.36	peak	No Limit
4	*	2462.000	56.31	31.39	87.70	54.00	33.70	AVG	No Limit
5		2483.800	33.71	31.47	65.18	74.00	-8.82	peak	
6		2483.800	20.05	31.47	51.52	54.00	-2.48	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Vertical

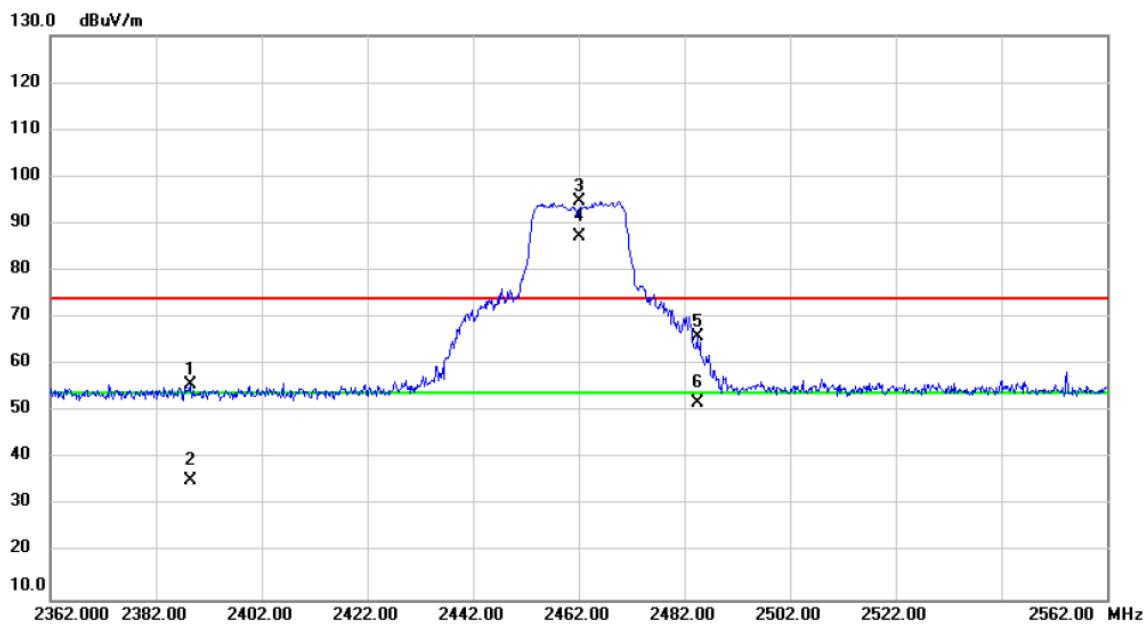


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2390.000	34.27	31.11	65.38	74.00	-8.62	peak	
2		2390.000	20.44	31.11	51.55	54.00	-2.45	AVG	
3	X	2412.000	62.04	31.20	93.24	74.00	19.24	peak	No Limit
4	*	2412.000	54.74	31.20	85.94	54.00	31.94	AVG	No Limit
5		2498.400	25.01	31.52	56.53	74.00	-17.47	peak	
6		2498.400	4.11	31.52	35.63	54.00	-18.37	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Vertical

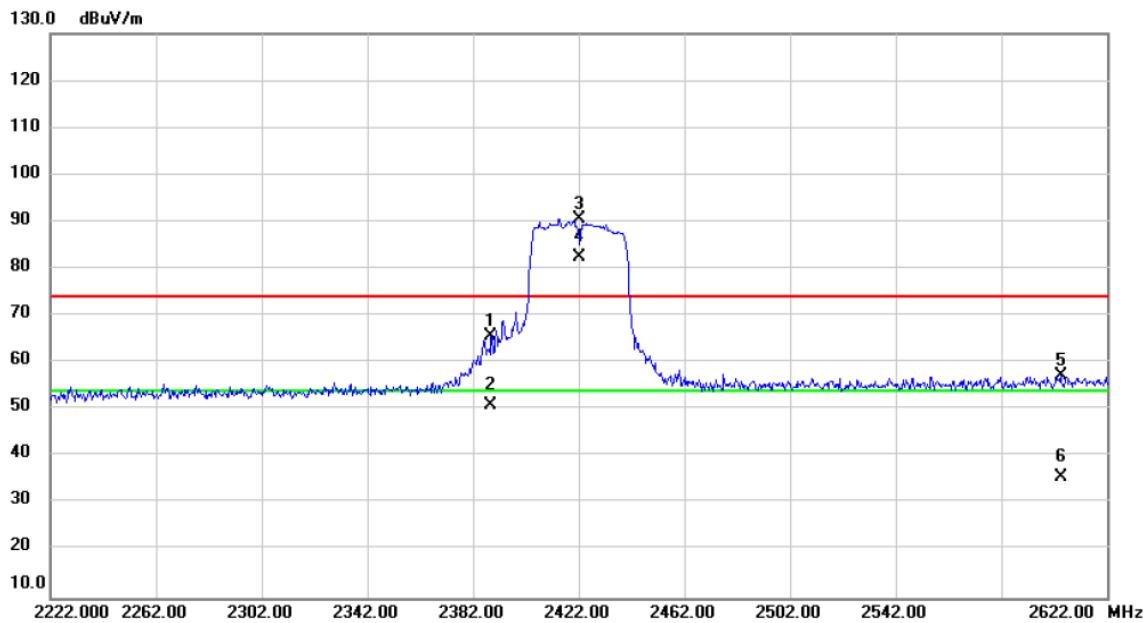


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2388.400	24.66	31.10	55.76	74.00	-18.24	peak	
2		2388.400	4.33	31.10	35.43	54.00	-18.57	AVG	
3	X	2462.000	63.36	31.39	94.75	74.00	20.75	peak	No Limit
4	*	2462.000	55.75	31.39	87.14	54.00	33.14	AVG	No Limit
5		2484.400	34.47	31.47	65.94	74.00	-8.06	peak	
6		2484.400	20.42	31.47	51.89	54.00	-2.11	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH03: 2422 MHz	Polarization	Vertical

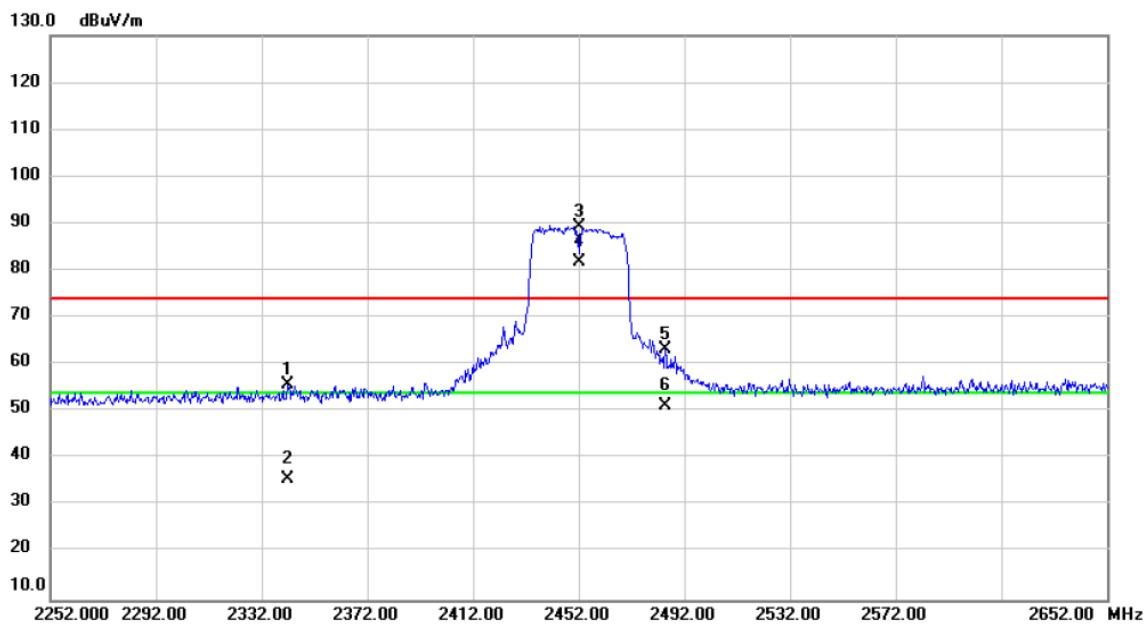


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2388.800	34.51	31.10	65.61	74.00	-8.39	peak	
2		2388.800	19.94	31.10	51.04	54.00	-2.96	AVG	
3	X	2422.000	59.33	31.23	90.56	74.00	16.56	peak	No Limit
4	*	2422.000	51.16	31.23	82.39	54.00	28.39	AVG	No Limit
5		2604.400	25.37	31.84	57.21	74.00	-16.79	peak	
6		2604.400	3.68	31.84	35.52	54.00	-18.48	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH09: 2452 MHz	Polarization	Vertical

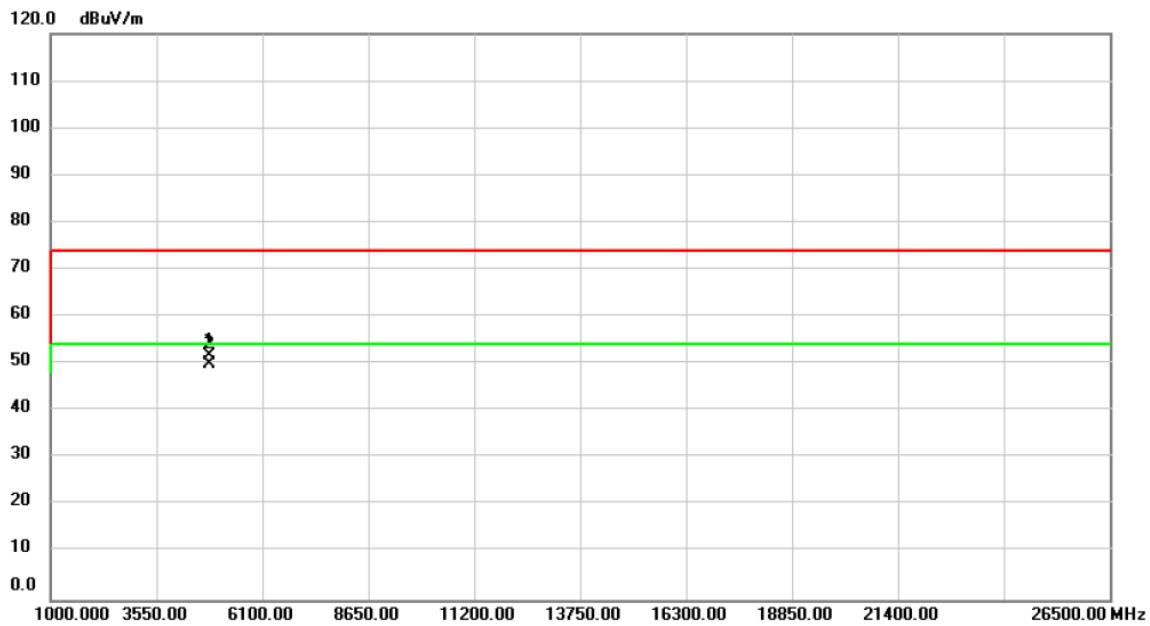


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2342.000	24.89	30.93	55.82	74.00	-18.18	peak	
2		2342.000	4.81	30.93	35.74	54.00	-18.26	AVG	
3	X	2452.000	58.15	31.35	89.50	74.00	15.50	peak	No Limit
4	*	2452.000	50.57	31.35	81.92	54.00	27.92	AVG	No Limit
5		2484.800	31.73	31.47	63.20	74.00	-10.80	peak	
6		2484.800	19.71	31.47	51.18	54.00	-2.82	AVG	

REMARKS:

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

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Vertical

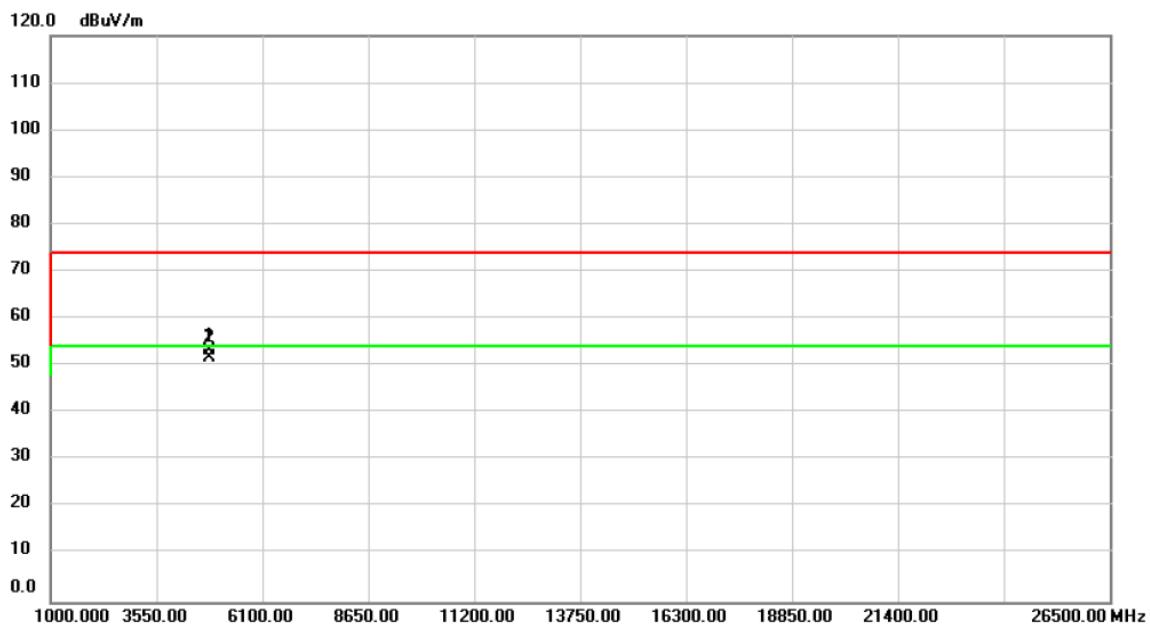


No.	Mk.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4824.000	61.75	-9.93	51.82	74.00	-22.18	peak	
2	*	59.81	-9.93	49.88	54.00	-4.12	AVG	

REMARKS:

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

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal

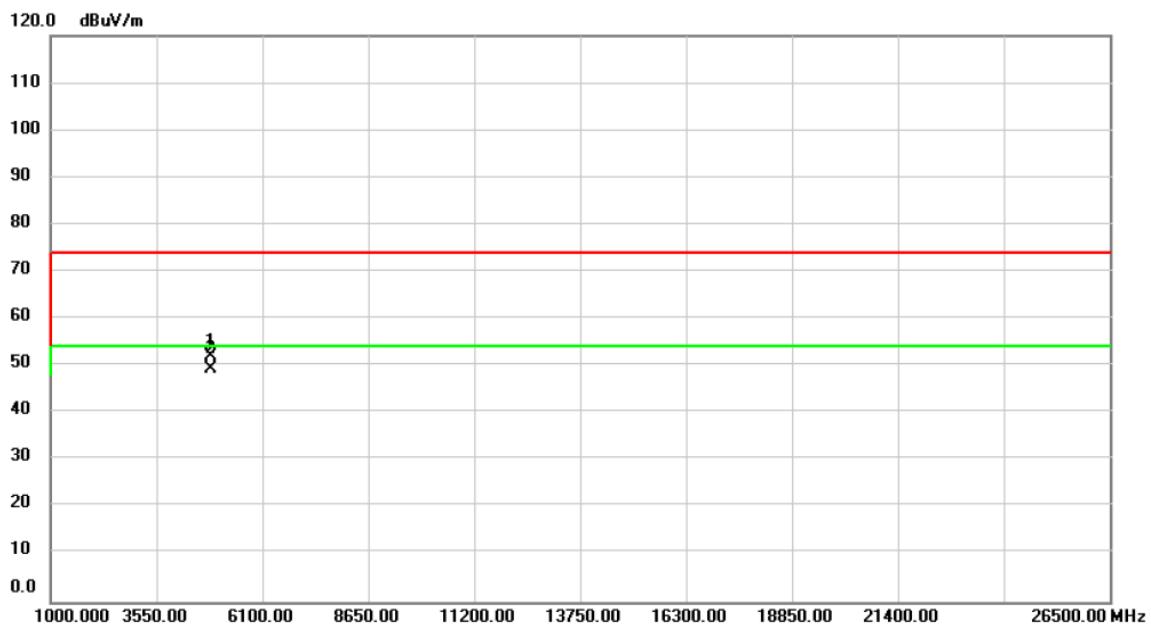


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4824.000	63.19	-9.93	53.26	74.00	-20.74	peak	
2	*	4824.000	61.81	-9.93	51.88	54.00	-2.12	AVG	

REMARKS:

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

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Vertical

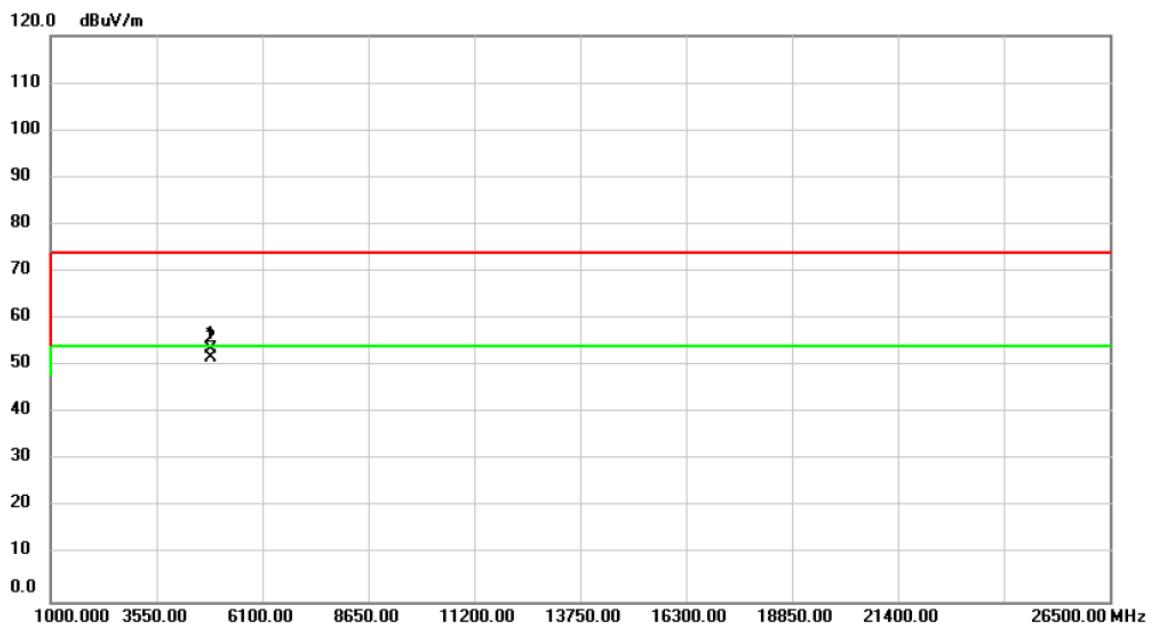


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4874.000	61.84	-9.74	52.10	74.00	-21.90	peak	
2	*	4874.000	59.07	-9.74	49.33	54.00	-4.67	AVG	

REMARKS:

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

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal

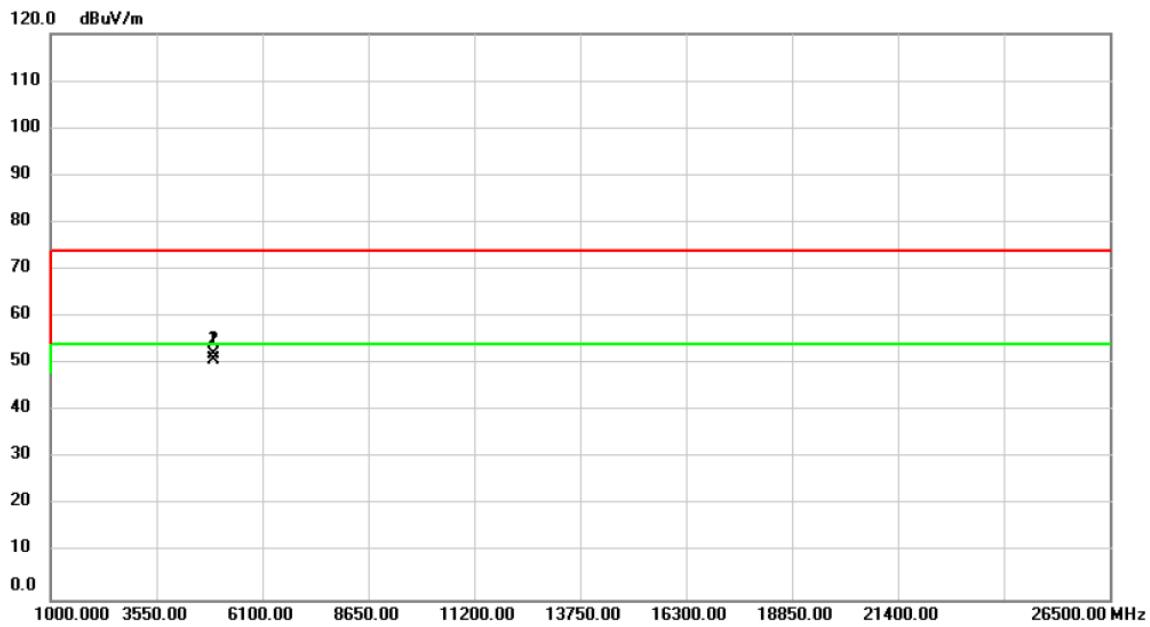


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4874.000	63.19	-9.74	53.45	74.00	-20.55	peak	
2	*	4874.000	61.59	-9.74	51.85	54.00	-2.15	AVG	

REMARKS:

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

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Vertical

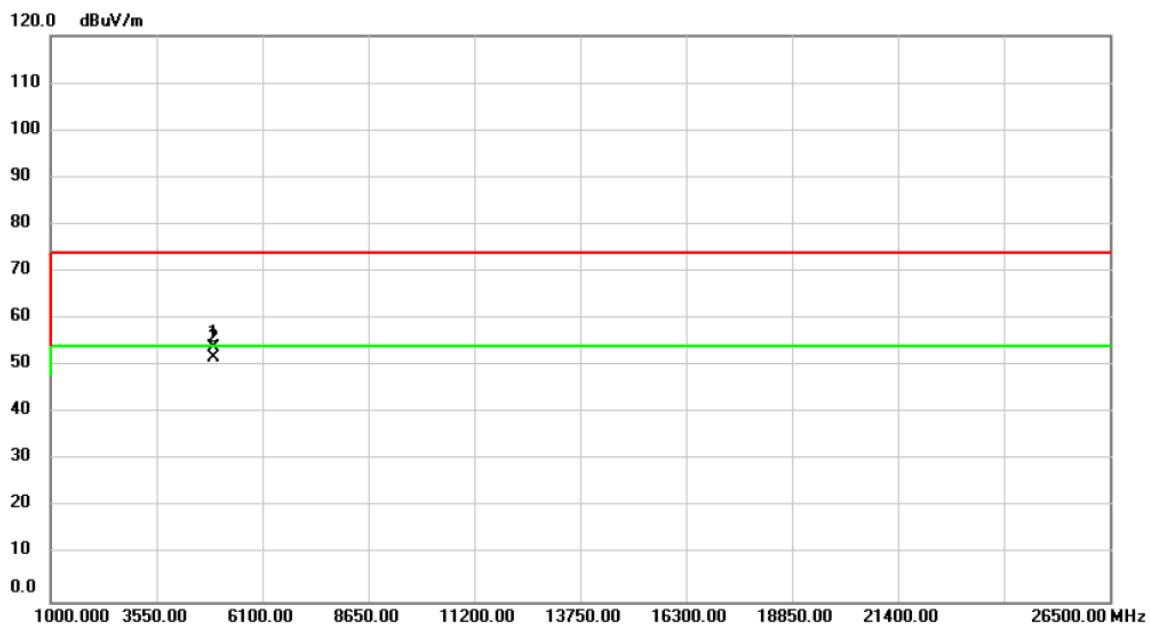


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4924.000	61.69	-9.55	52.14	74.00	-21.86	peak	
2	*	4924.000	60.54	-9.55	50.99	54.00	-3.01	AVG	

REMARKS:

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

Test Mode	IEEE 802.11b	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal

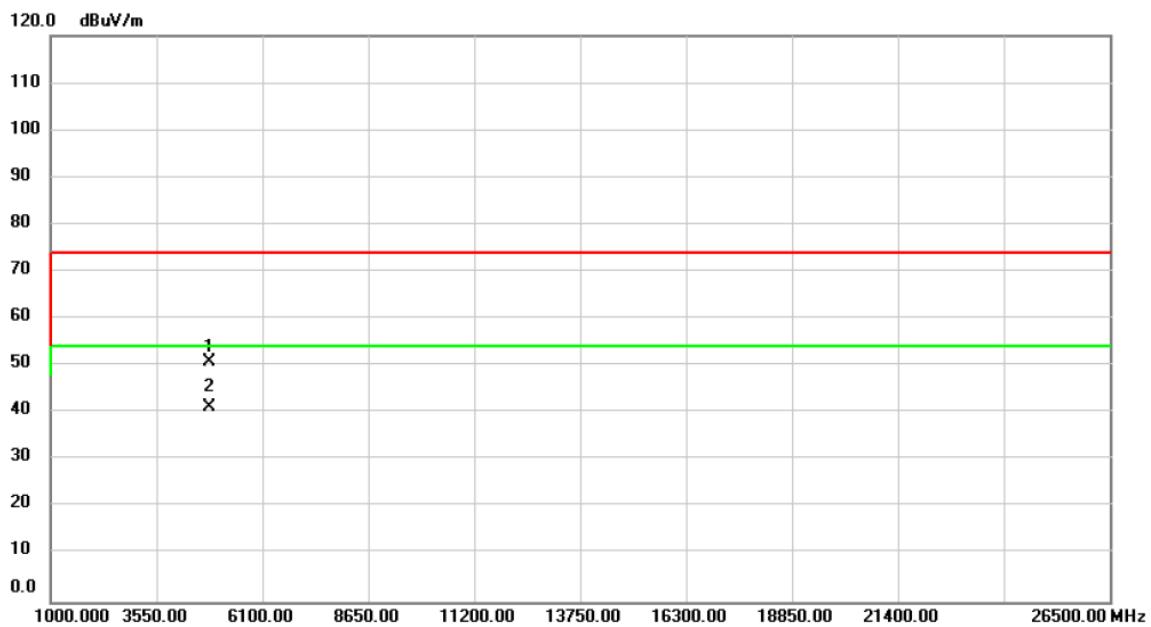


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4924.000	63.43	-9.55	53.88	74.00	-20.12	peak	
2	*	4924.000	61.31	-9.55	51.76	54.00	-2.24	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Vertical

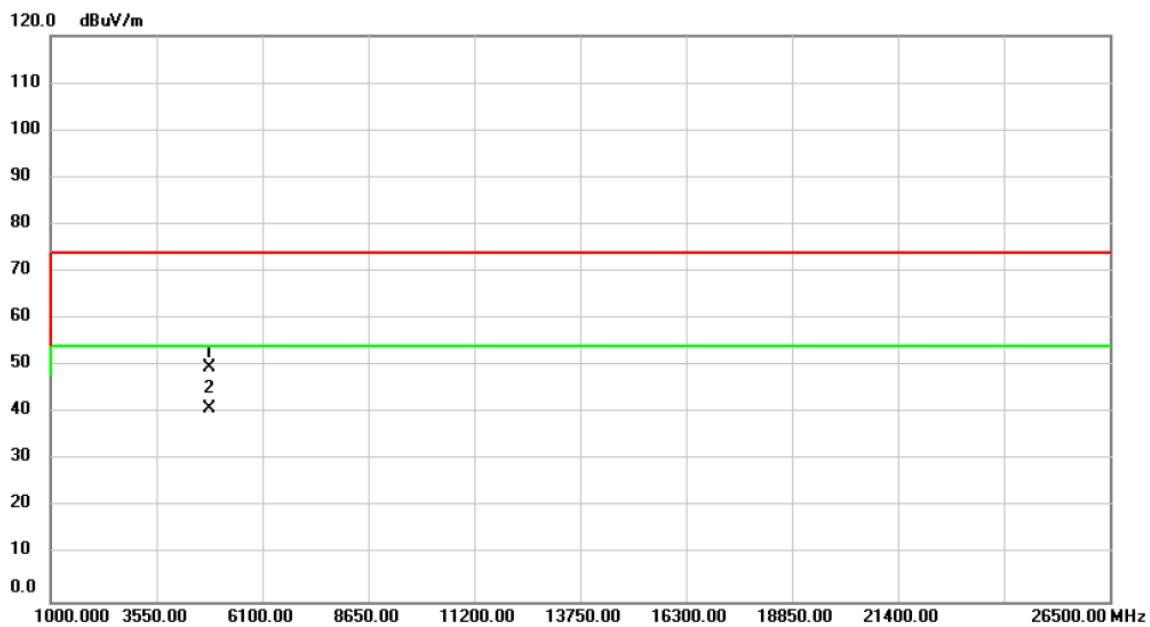


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4824.000	60.64	-9.93	50.71	74.00	-23.29	peak	
2	*	4824.000	51.06	-9.93	41.13	54.00	-12.87	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal

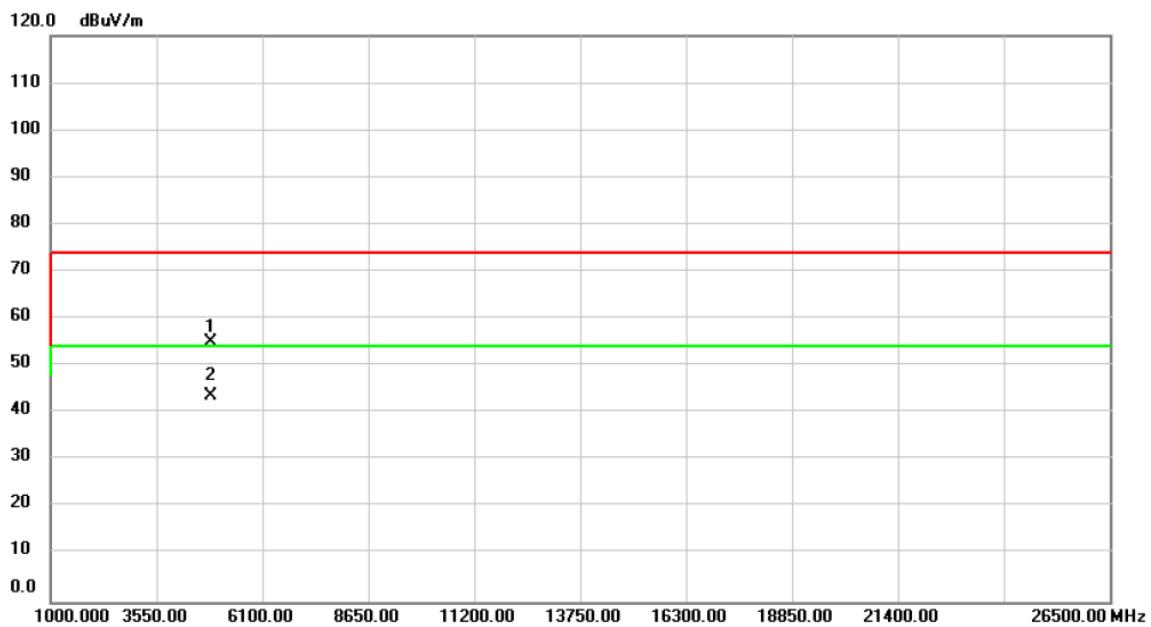


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4824.000	59.52	-9.93	49.59	74.00	-24.41	peak	
2	*	4824.000	50.91	-9.93	40.98	54.00	-13.02	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Vertical

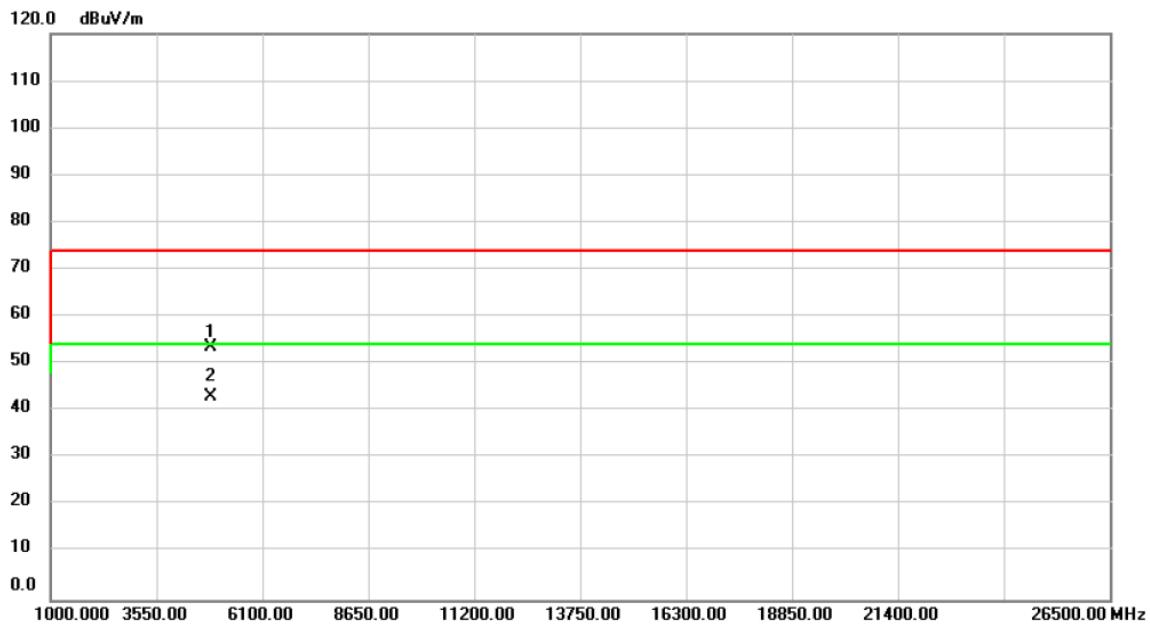


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4874.000	64.75	-9.74	55.01	74.00	-18.99	peak	
2	*	4874.000	53.30	-9.74	43.56	54.00	-10.44	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal

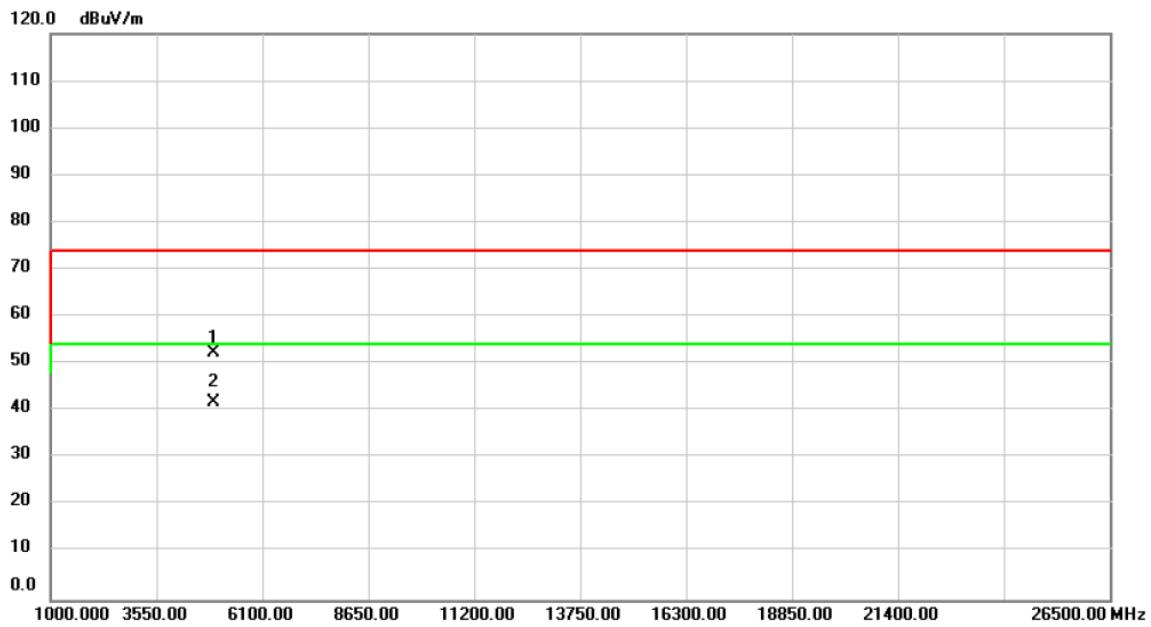


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4874.000	63.23	-9.74	53.49	74.00	-20.51	peak	
2	*	4874.000	52.73	-9.74	42.99	54.00	-11.01	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Vertical

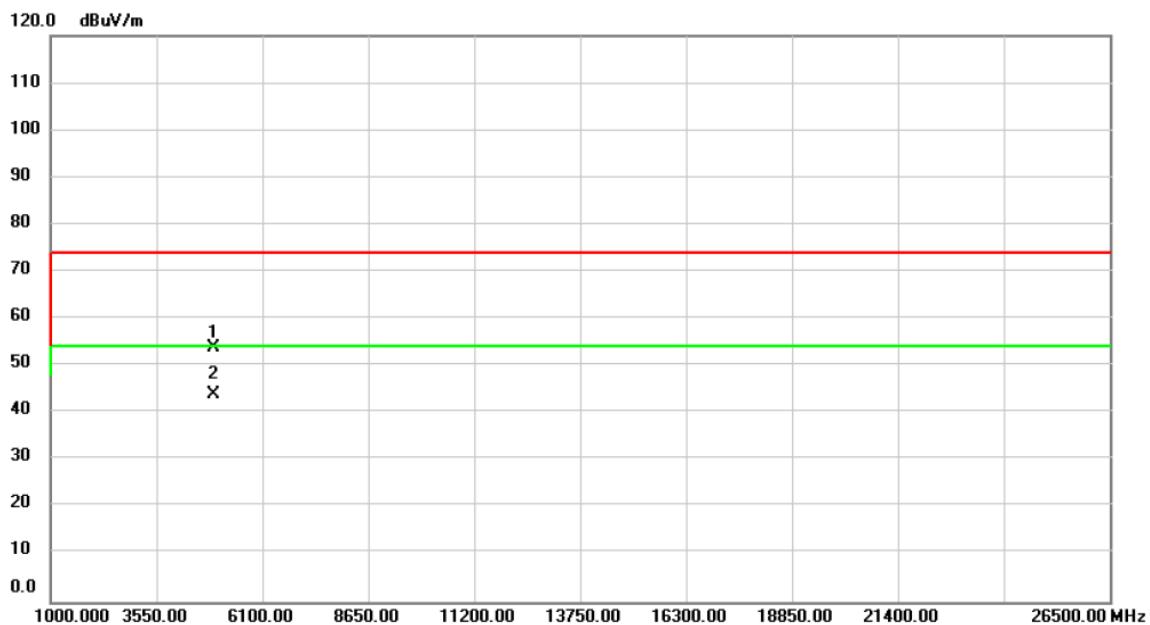


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4924.000	61.98	-9.55	52.43	74.00	-21.57	peak	
2	*	4924.000	51.33	-9.55	41.78	54.00	-12.22	AVG	

REMARKS:

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

Test Mode	IEEE 802.11g	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal

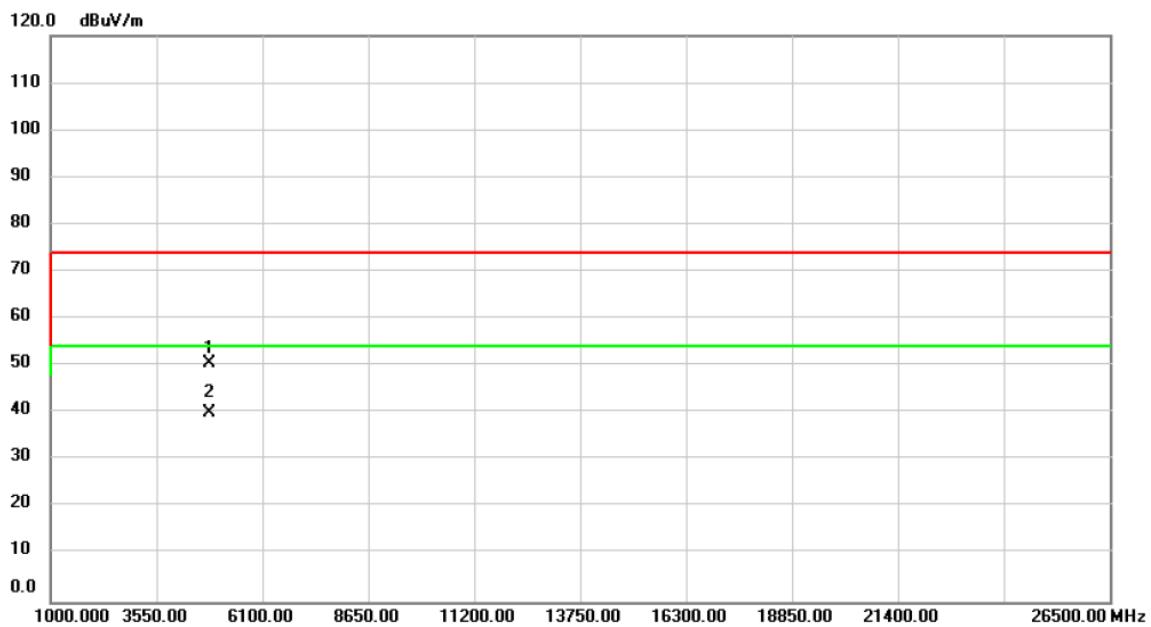


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4924.000	63.42	-9.55	53.87	74.00	-20.13	peak	
2	*	4924.000	53.63	-9.55	44.08	54.00	-9.92	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Vertical

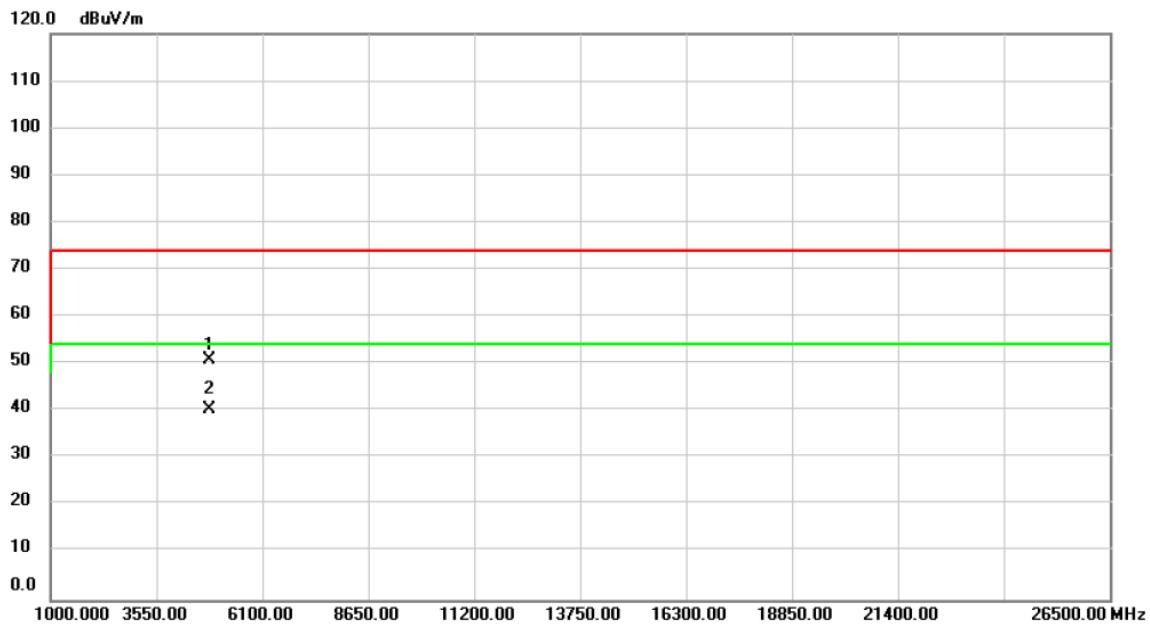


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4824.000	60.61	-9.93	50.68	74.00	-23.32	peak	
2	*	4824.000	49.88	-9.93	39.95	54.00	-14.05	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH01: 2412 MHz	Polarization	Horizontal

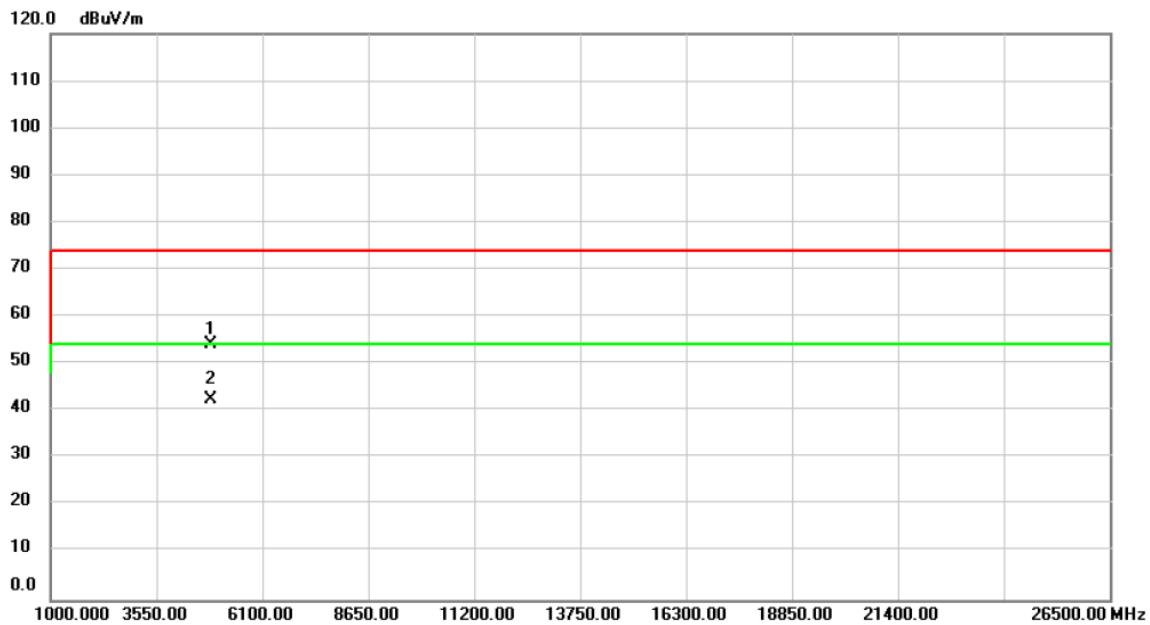


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4824.000	60.73	-9.93	50.80	74.00	-23.20	peak	
2	*	4824.000	50.21	-9.93	40.28	54.00	-13.72	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Vertical

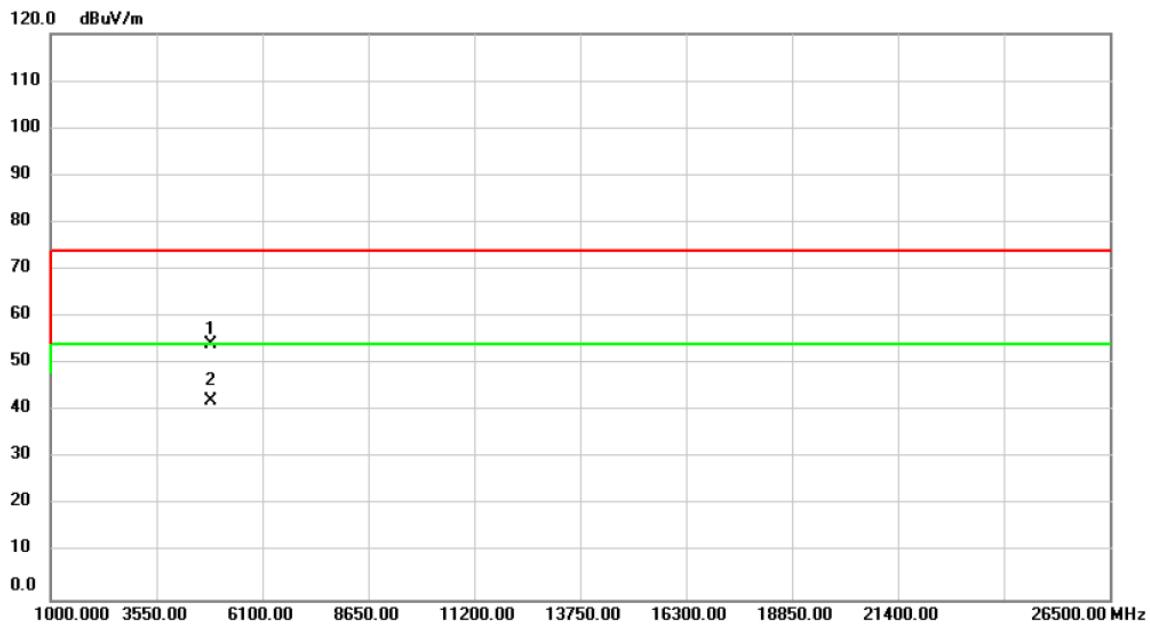


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4874.000	64.00	-9.74	54.26	74.00	-19.74	peak	
2	*	4874.000	52.31	-9.74	42.57	54.00	-11.43	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal

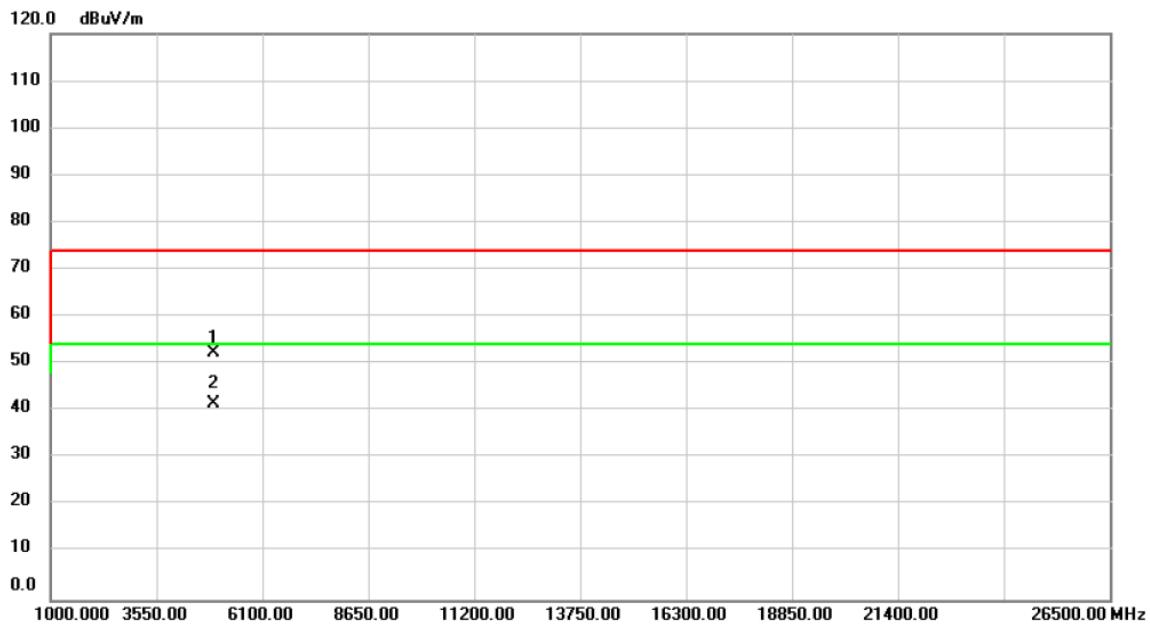


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4874.000	64.02	-9.74	54.28	74.00	-19.72	peak	
2	*	4874.000	51.77	-9.74	42.03	54.00	-11.97	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Vertical

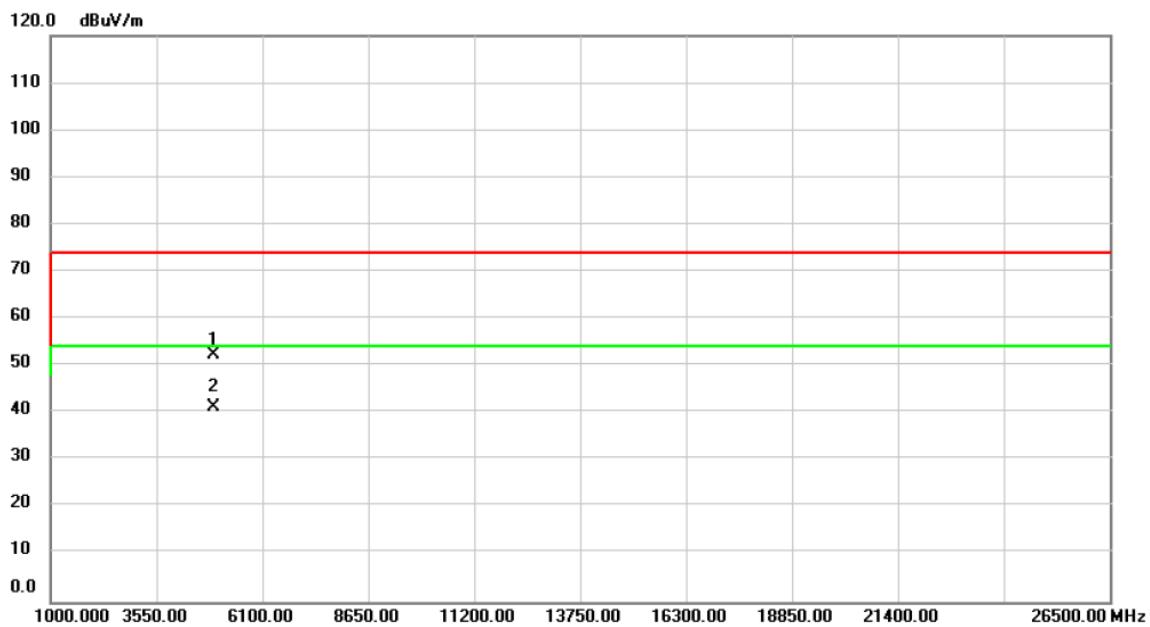


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		4924.000	61.86	-9.55	52.31	74.00	-21.69	peak	
2	*	4924.000	51.12	-9.55	41.57	54.00	-12.43	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT20)	Test Date	2020/6/9
Test Frequency	CH11: 2462 MHz	Polarization	Horizontal

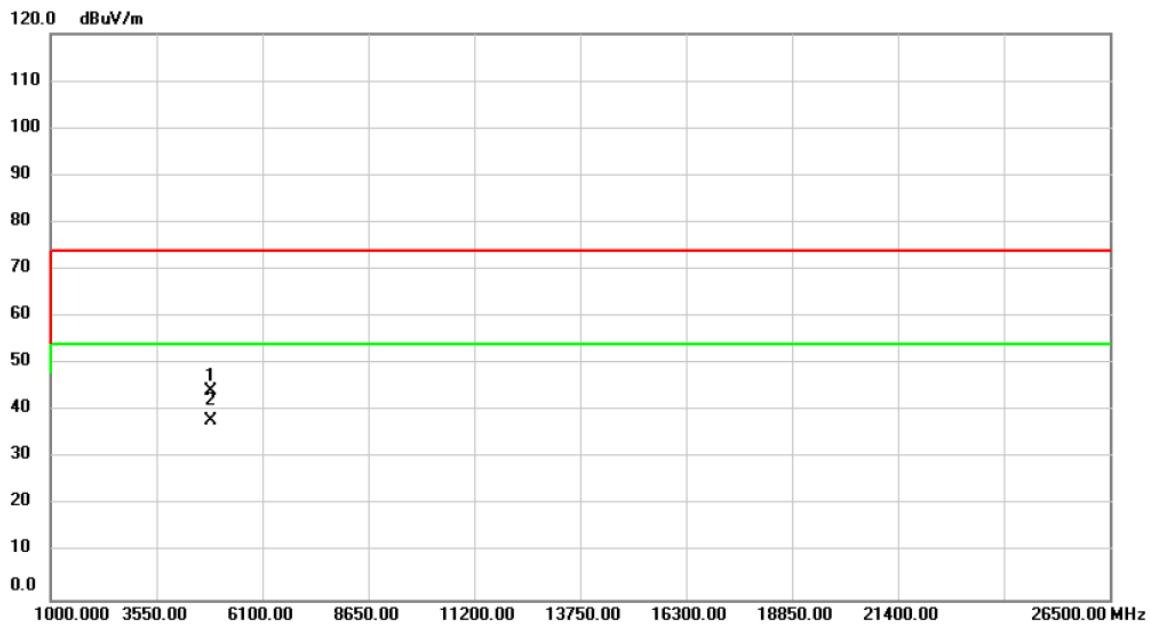


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4924.000	61.83	-9.55	52.28	74.00	-21.72	peak	
2	*	4924.000	50.89	-9.55	41.34	54.00	-12.66	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH03: 2422 MHz	Polarization	Vertical

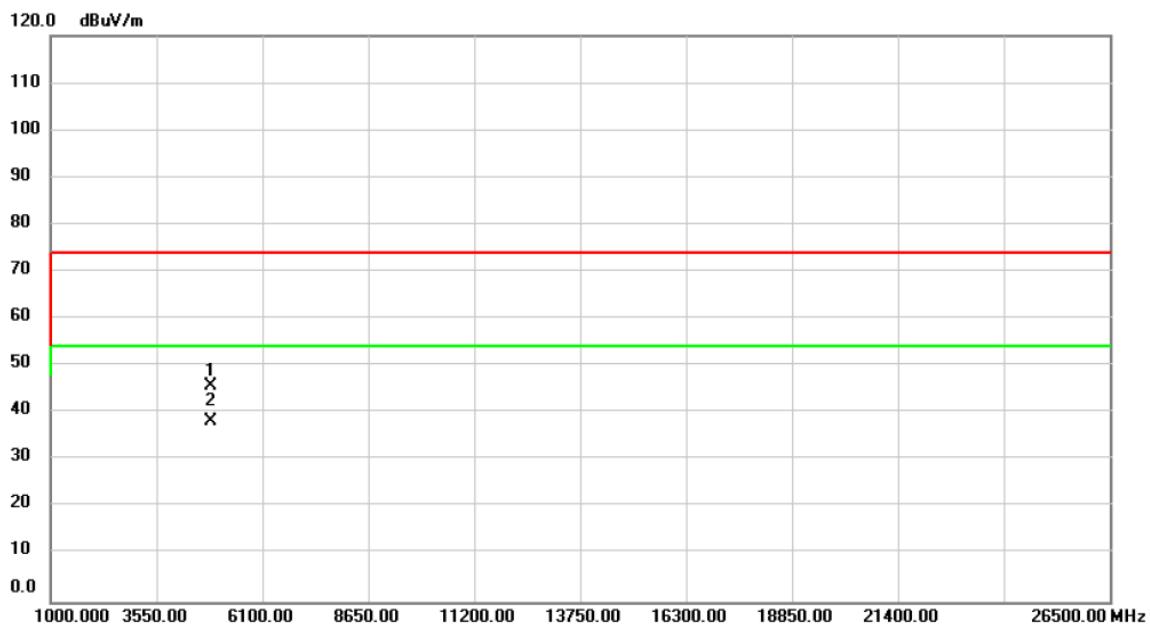


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4844.000	54.11	-9.85	44.26	74.00	-29.74	peak	
2	*	4844.000	47.87	-9.85	38.02	54.00	-15.98	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH03: 2422 MHz	Polarization	Horizontal

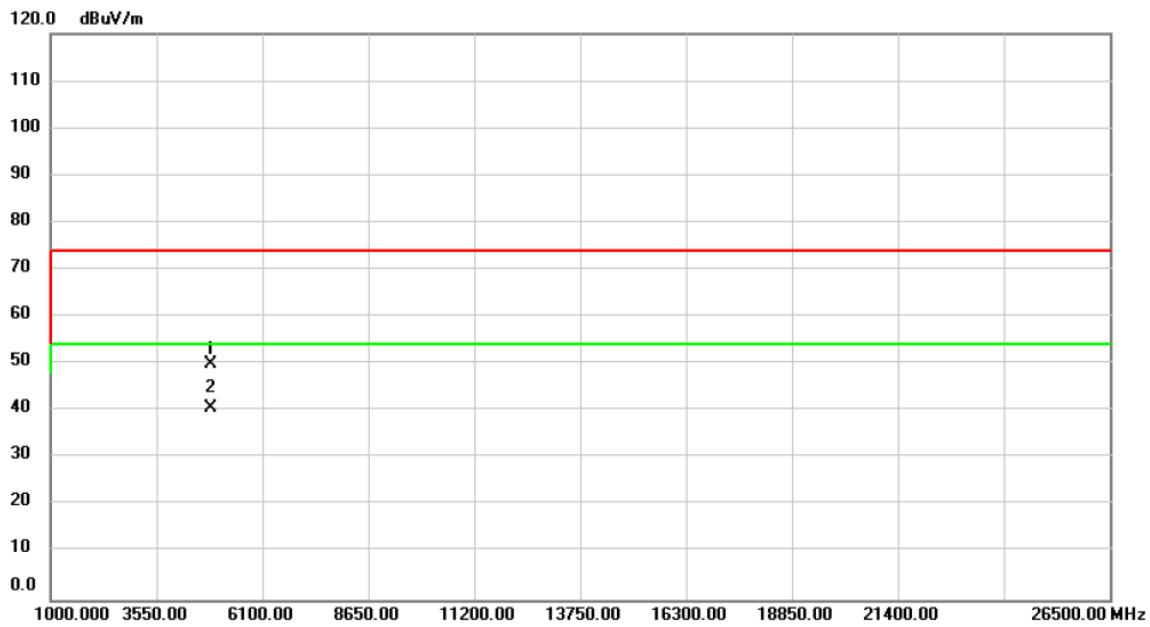


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4844.000	55.63	-9.85	45.78	74.00	-28.22	peak	
2	*	4844.000	48.21	-9.85	38.36	54.00	-15.64	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Vertical

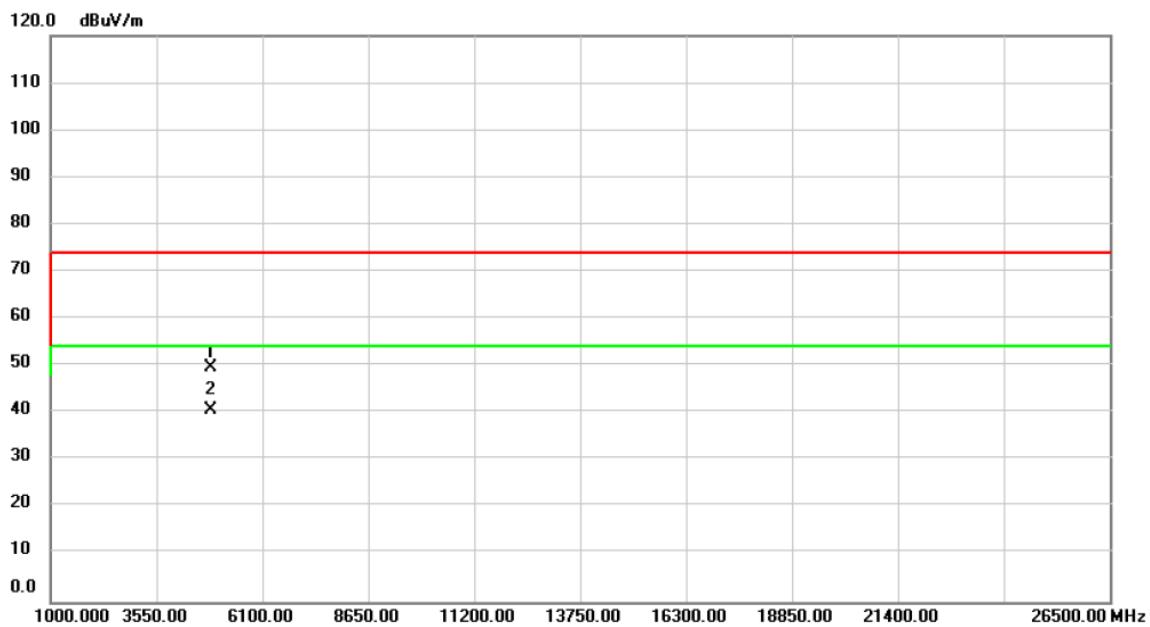


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4874.000	59.55	-9.74	49.81	74.00	-24.19	peak	
2	*	4874.000	50.39	-9.74	40.65	54.00	-13.35	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH06: 2437 MHz	Polarization	Horizontal

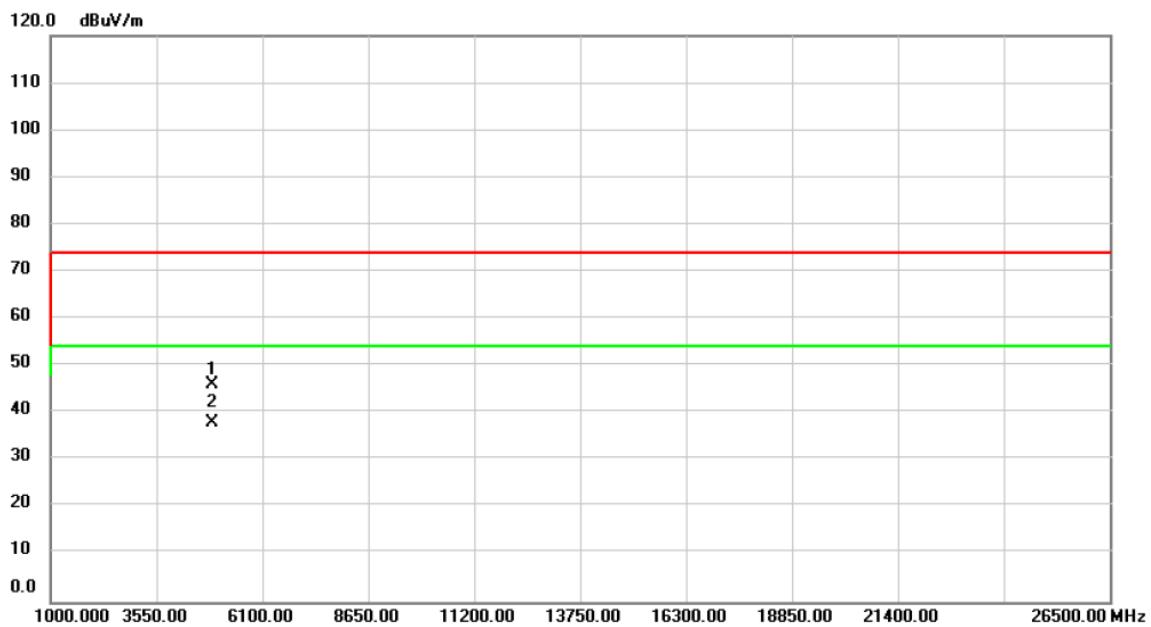


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4874.000	59.31	-9.74	49.57	74.00	-24.43	peak	
2	*	4874.000	50.29	-9.74	40.55	54.00	-13.45	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH09: 2452 MHz	Polarization	Vertical

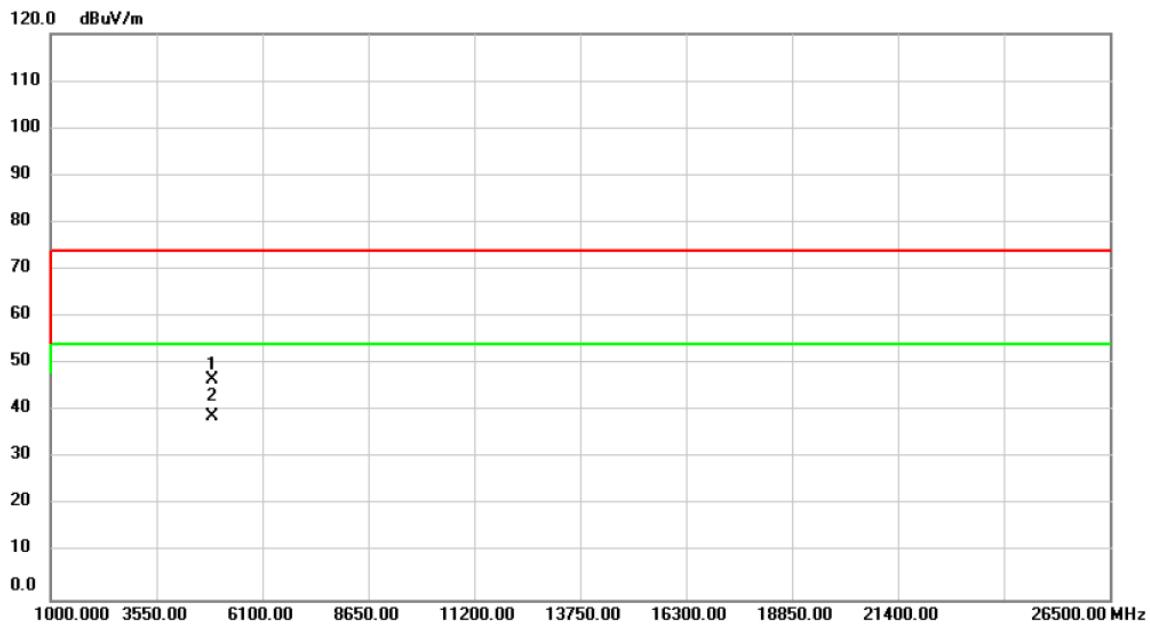


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4904.000	55.77	-9.63	46.14	74.00	-27.86	peak	
2	*	4904.000	47.59	-9.63	37.96	54.00	-16.04	AVG	

REMARKS:

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

Test Mode	IEEE 802.11n (HT40)	Test Date	2020/6/9
Test Frequency	CH09: 2452 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4904.000	56.25	-9.63	46.62	74.00	-27.38	peak	
2	*	4904.000	48.62	-9.63	38.99	54.00	-15.01	AVG	

REMARKS:

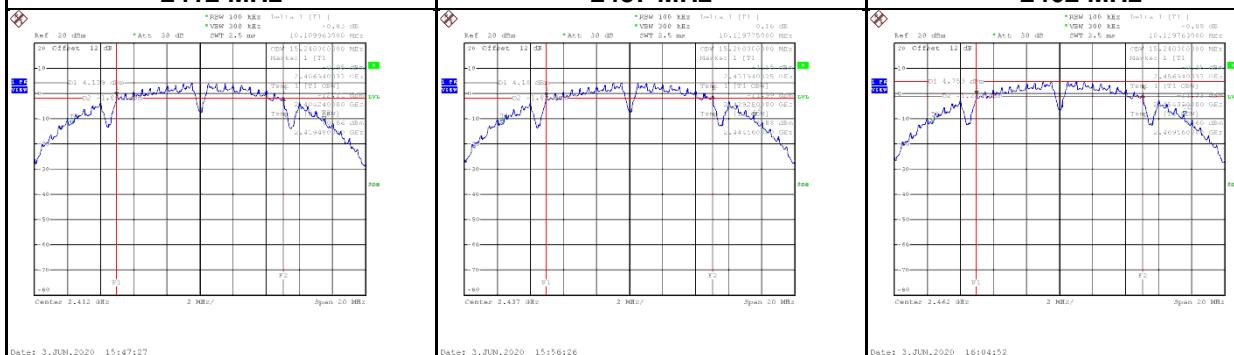
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX C BANDWIDTH

Test Mode	IEEE 802.11b
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Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	10.11	15.36	500	Complies
2437	10.12	15.44	500	Complies
2462	10.12	15.36	500	Complies

6 dB Bandwidth

2412 MHz
2437 MHz
2462 MHz


99 % Occupied Bandwidth

2412 MHz
2437 MHz
2462 MHz


Test Mode	IEEE 802.11g
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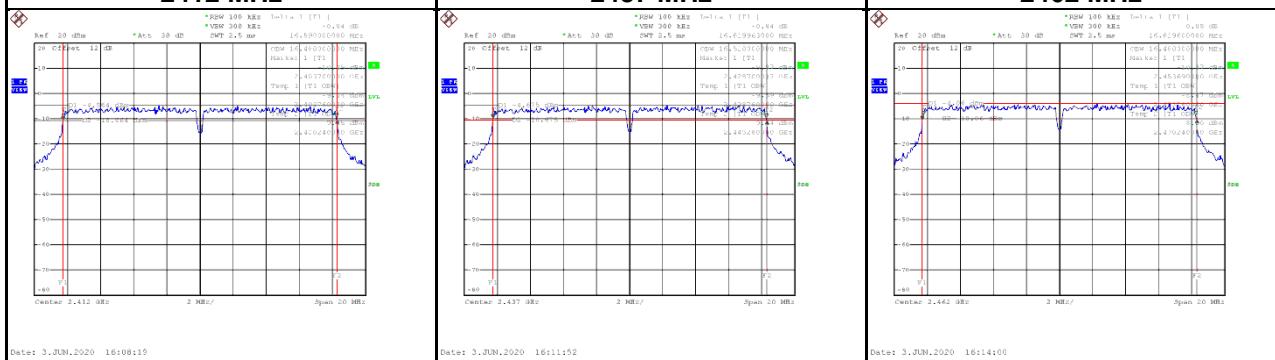
Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	16.59	17.04	500	Complies
2437	16.62	17.04	500	Complies
2462	16.62	17.04	500	Complies

6 dB Bandwidth

2412 MHz

2437 MHz

2462 MHz

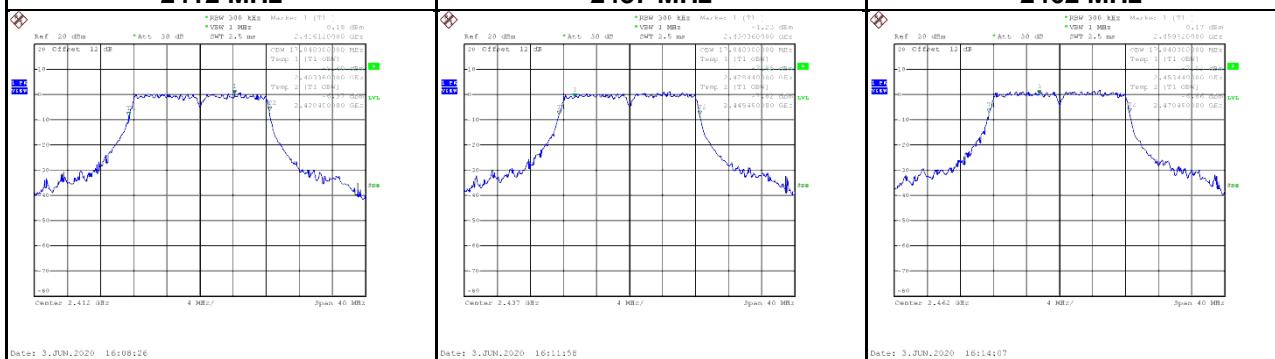


99 % Occupied Bandwidth

2412 MHz

2437 MHz

2462 MHz



Test Mode	IEEE 802.11n (HT20)
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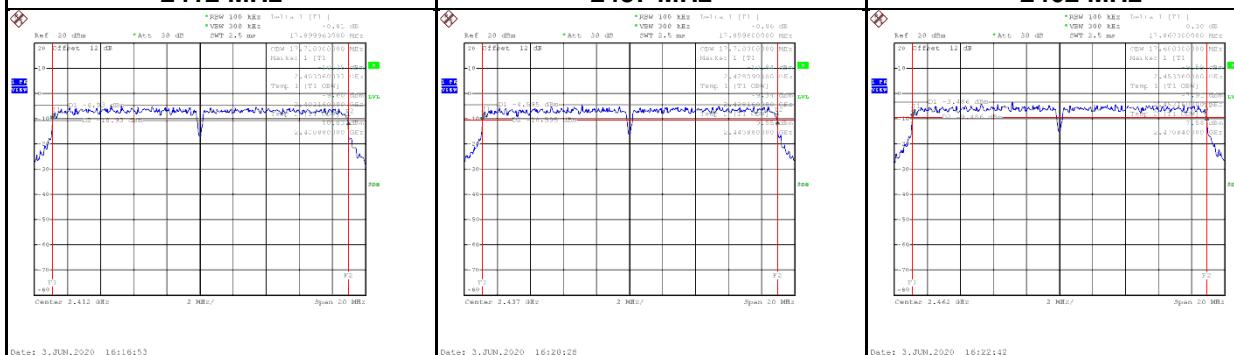
Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	17.90	18.08	500	Complies
2437	17.86	18.16	500	Complies
2462	17.86	18.08	500	Complies

6 dB Bandwidth

2412 MHz

2437 MHz

2462 MHz

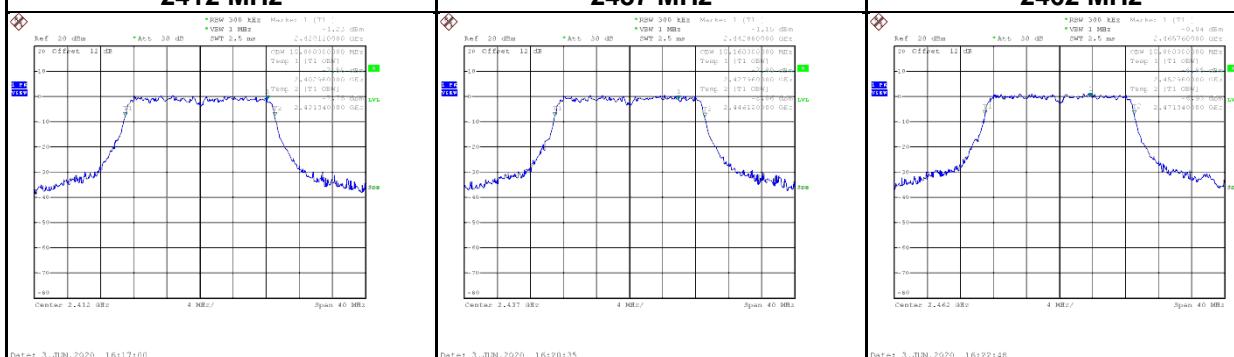


99 % Occupied Bandwidth

2412 MHz

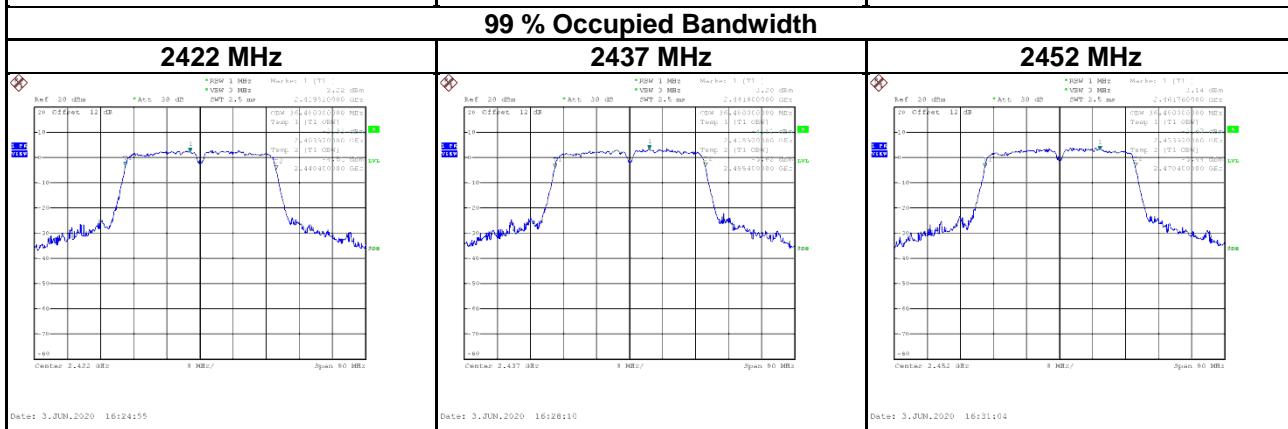
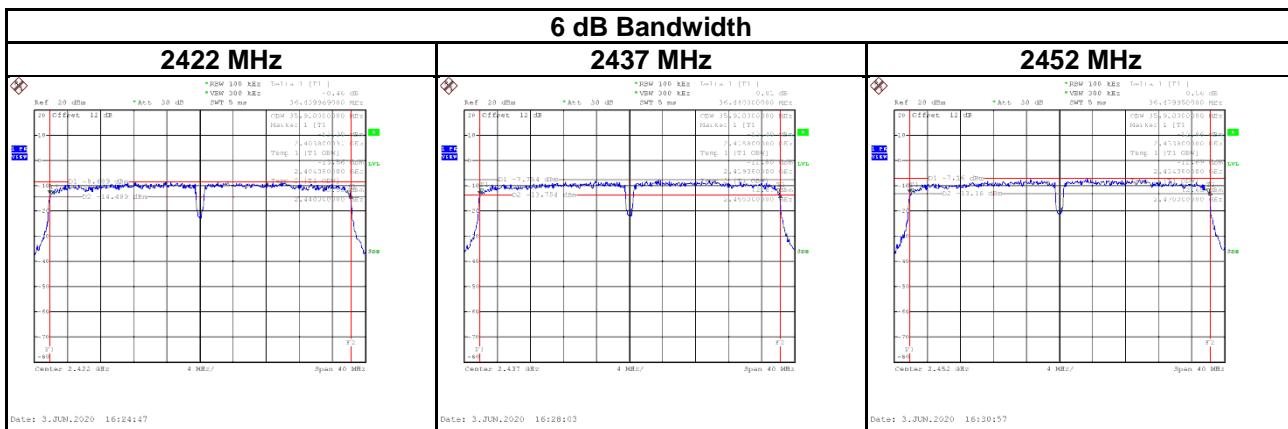
2437 MHz

2462 MHz



Test Mode IEEE 802.11n (HT40)

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2422	36.44	36.48	500	Complies
2437	36.44	36.48	500	Complies
2452	36.48	36.48	500	Complies



APPENDIX D OUTPUT POWER

Test Mode	IEEE 802.11b	Tested Date	2020/7/1
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Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	18.57	0.0719	30.00	1.0000	Complies
2437	18.44	0.0698	30.00	1.0000	Complies
2462	19.25	0.0841	30.00	1.0000	Complies

Test Mode	IEEE 802.11g	Tested Date	2020/7/1
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Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	20.63	0.1156	30.00	1.0000	Complies
2437	20.93	0.1239	30.00	1.0000	Complies
2462	20.79	0.1199	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)	Tested Date	2020/7/1
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Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	20.61	0.1151	30.00	1.0000	Complies
2437	20.81	0.1205	30.00	1.0000	Complies
2462	20.63	0.1156	30.00	1.0000	Complies

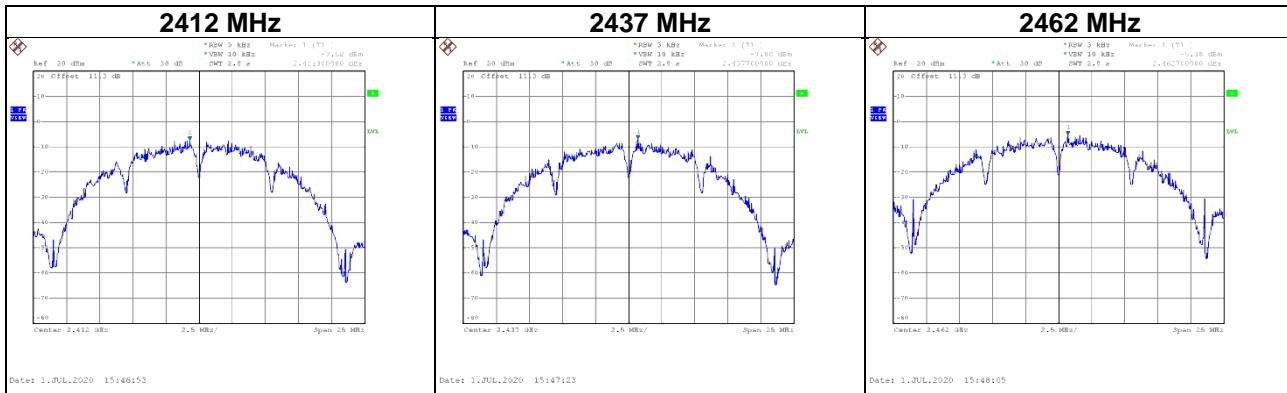
Test Mode	IEEE 802.11n (HT40)	Tested Date	2020/7/1
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Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	20.46	0.1112	30.00	1.0000	Complies
2437	20.97	0.1250	30.00	1.0000	Complies
2452	20.69	0.1172	30.00	1.0000	Complies

APPENDIX E POWER SPECTRAL DENSITY

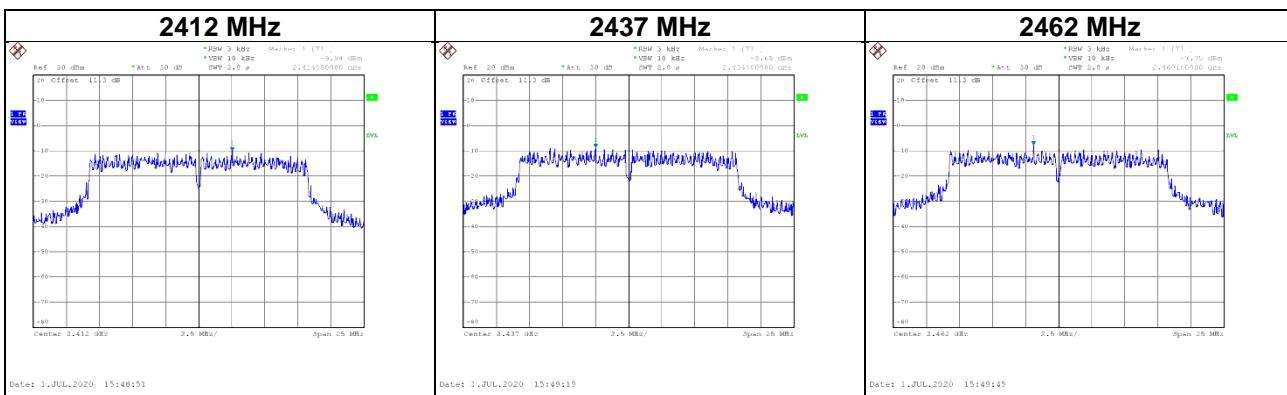
Test Mode IEEE 802.11b

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-7.52	8.00	Complies
2437	-7.00	8.00	Complies
2462	-5.38	8.00	Complies



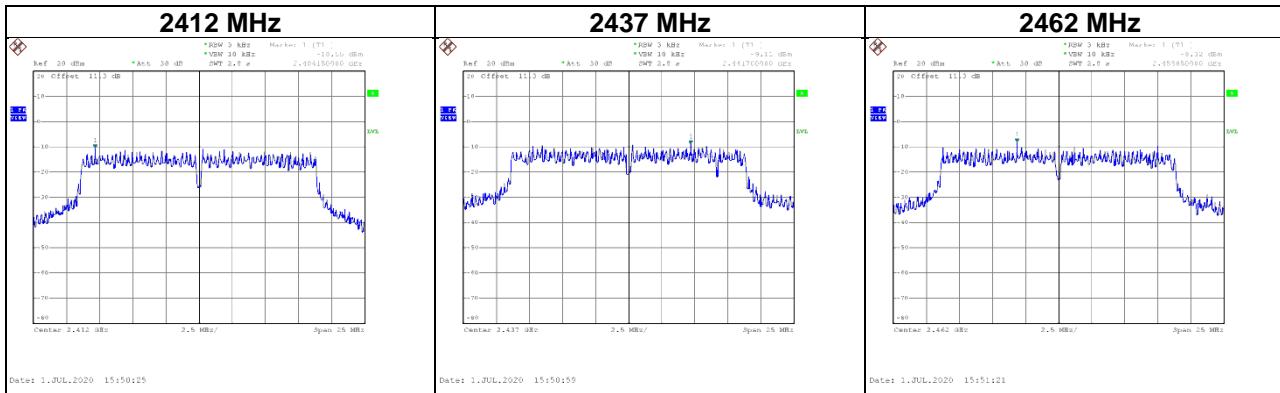
Test Mode IEEE 802.11g

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-9.94	8.00	Complies
2437	-8.68	8.00	Complies
2462	-7.75	8.00	Complies



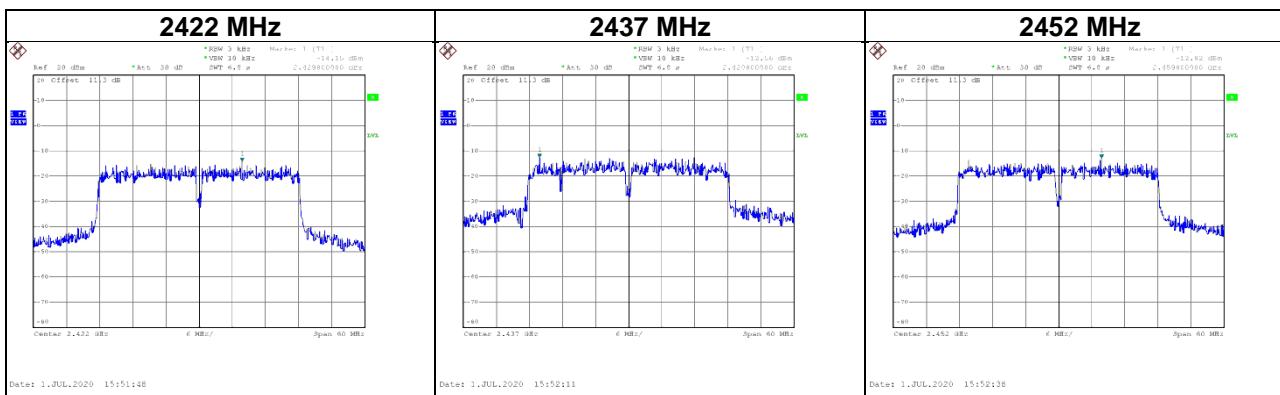
Test Mode	IEEE 802.11n (HT20)
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Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-10.55	8.00	Complies
2437	-9.11	8.00	Complies
2462	-8.32	8.00	Complies



Test Mode	IEEE 802.11n (HT40)
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Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2422	-14.15	8.00	Complies
2437	-12.56	8.00	Complies
2452	-12.82	8.00	Complies

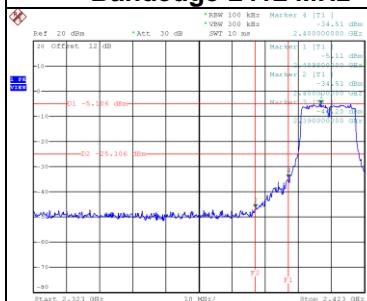


APPENDIX F ANTENNA CONDUCTED SPURIOUS EMISSIONS

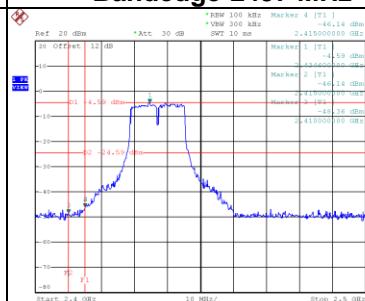
Test Mode	IEEE 802.11b	
<h3>Bandedge-2412 MHz</h3> <p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 30 ms 2.289000000 GHz</p> <p>Marker 1 (T1) -29.01 dBm Marker 2 (T2) -45.94 dBm Marker 3 (T3) -49.40 dBm Marker 4 (T4) -49.06 dBm</p> <p>Start 2.323 GHz 10 MHz/ Stop 2.423 GHz</p> <p>Date: 3.JUN.2020 15:47:41</p>		
<h3>Bandedge-2437 MHz</h3> <p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 10 ms 2.409000000 GHz</p> <p>Marker 1 (T1) -44.03 dBm Marker 2 (T2) -49.76 dBm Marker 3 (T3) -49.49 dBm Marker 4 (T4) -49.06 dBm</p> <p>Start 2.4 GHz 10 MHz/ Stop 2.5 GHz</p> <p>Date: 3.JUN.2020 15:56:40</p>		
<h3>Bandedge-2462 MHz</h3> <p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 10 ms 2.448000000 GHz</p> <p>Marker 1 (T1) -45.83 dBm Marker 2 (T2) -49.64 dBm Marker 3 (T3) -49.63 dBm Marker 4 (T4) -49.63 dBm</p> <p>Start 2.448 GHz 10 MHz/ Stop 2.548 GHz</p> <p>Date: 3.JUN.2020 16:05:06</p>		
<h3>2412 MHz – 10th Harmonics</h3> <p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 300 ms 2.859320000 GHz</p> <p>Marker 1 (T1) -45.94 dBm Marker 2 (T2) -16.37 dBm</p> <p>Start 30 MHz 297 MHz/ Stop 3 MHz</p> <p>Date: 3.JUN.2020 15:47:54</p>		
<p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 1.2 s 14.352000000 GHz</p> <p>Marker 1 (T1) -35.63 dBm Marker 2 (T2) -16.37 dBm</p> <p>Start 3 GHz 1.2 MHz/ Stop 15 GHz</p> <p>Date: 3.JUN.2020 15:48:01</p>		
<p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 1.15 s 25.548000000 GHz</p> <p>Marker 1 (T1) -28.82 dBm Marker 2 (T2) -16.37 dBm</p> <p>Start 15 GHz 1.15 MHz/ Stop 26.5 GHz</p> <p>Date: 3.JUN.2020 15:48:08</p>		
<h3>2437 MHz – 10th Harmonics</h3> <p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 300 ms 1.271140000 GHz</p> <p>Marker 1 (T1) -45.32 dBm Marker 2 (T2) -15.91 dBm</p> <p>Start 30 MHz 297 MHz/ Stop 3 MHz</p> <p>Date: 3.JUN.2020 15:56:53</p>		
<p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 1.2 s 14.352000000 GHz</p> <p>Marker 1 (T1) -32.79 dBm Marker 2 (T2) -15.91 dBm</p> <p>Start 3 GHz 1.2 MHz/ Stop 15 GHz</p> <p>Date: 3.JUN.2020 15:57:00</p>		
<h3>2462 MHz – 10th Harmonics</h3> <p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 1.15 s 25.548000000 GHz</p> <p>Marker 1 (T1) -30.21 dBm Marker 2 (T2) -15.91 dBm</p> <p>Start 15 GHz 1.15 MHz/ Stop 26.5 GHz</p> <p>Date: 3.JUN.2020 15:57:07</p>		
<p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 300 ms 1.164510000 GHz</p> <p>Marker 1 (T1) -45.60 dBm Marker 2 (T2) -15.25 dBm</p> <p>Start 30 MHz 297 MHz/ Stop 3 MHz</p> <p>Date: 3.JUN.2020 16:05:19</p>		
<p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 1.2 s 14.352000000 GHz</p> <p>Marker 1 (T1) -32.20 dBm Marker 2 (T2) -15.25 dBm</p> <p>Start 3 GHz 1.2 MHz/ Stop 15 GHz</p> <p>Date: 3.JUN.2020 16:05:26</p>		
<p>Ref 20 dBm *Att 30 dB *VSW 300 kHz SMT 1.15 s 25.548000000 GHz</p> <p>Marker 1 (T1) -28.23 dBm Marker 2 (T2) -15.25 dBm</p> <p>Start 15 GHz 1.15 MHz/ Stop 26.5 GHz</p> <p>Date: 3.JUN.2020 16:05:33</p>		

Test Mode

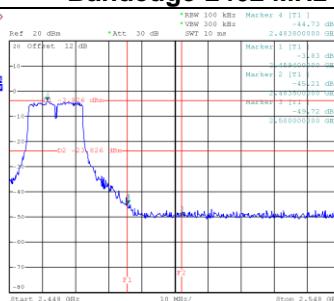
IEEE 802.11g

Bandedge-2412 MHz


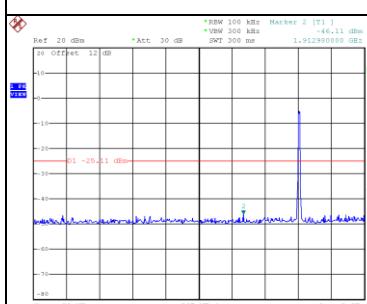
Date: 3.JUN.2020 16:08:50

Bandedge-2437 MHz


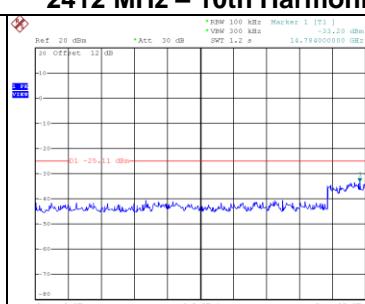
Date: 3.JUN.2020 16:12:23

Bandedge-2462 MHz


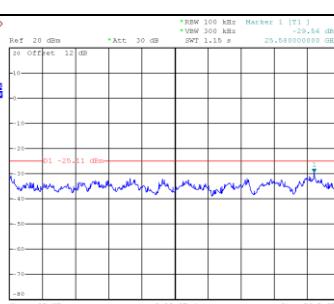
Date: 3.JUN.2020 16:14:15

2412 MHz – 10th Harmonics


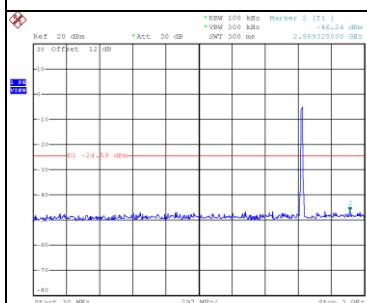
Date: 3.JUN.2020 16:09:02



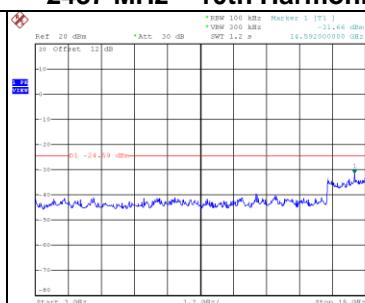
Date: 3.JUN.2020 16:09:09



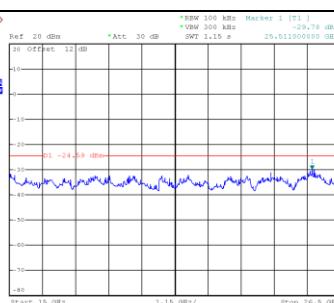
Date: 3.JUN.2020 16:09:16

2437 MHz – 10th Harmonics


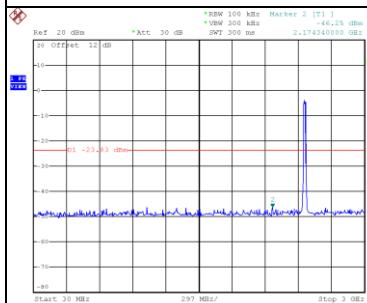
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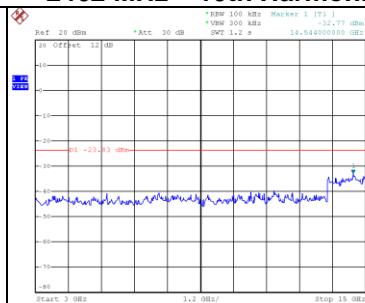
Date: 3.JUN.2020 16:12:42



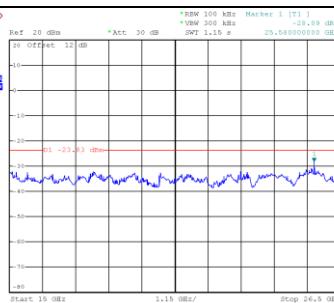
Date: 3.JUN.2020 16:12:49

2462 MHz – 10th Harmonics


Date: 3.JUN.2020 16:14:27



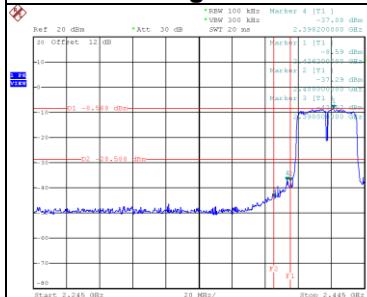
Date: 3.JUN.2020 16:14:34



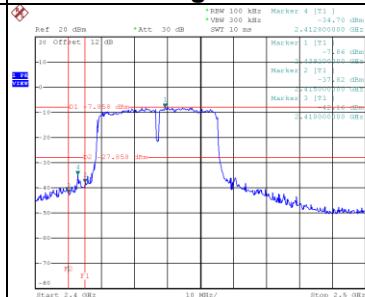
Date: 3.JUN.2020 16:14:41

Test Mode

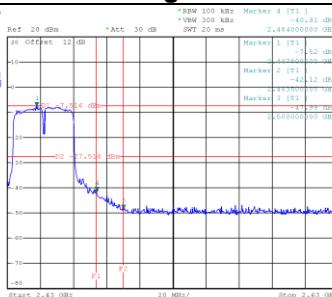
IEEE 802.11n (HT40)

Bandedge-2422 MHz


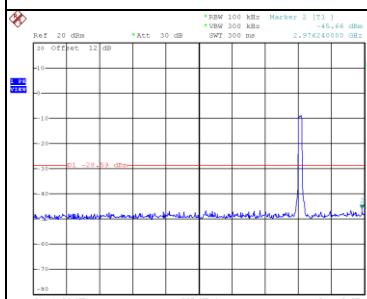
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Bandedge-2437 MHz


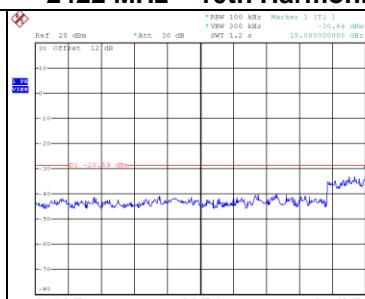
Date: 3.JUN.2020 16:28:34

Bandedge-2452 MHz


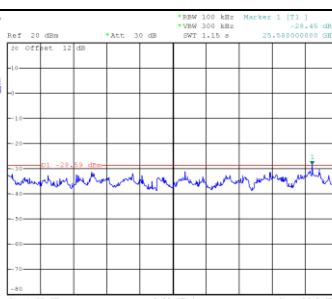
Date: 3.JUN.2020 16:31:27

2422 MHz – 10th Harmonics


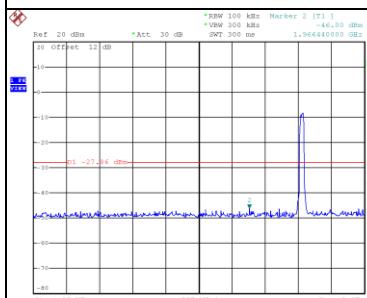
Date: 3.JUN.2020 16:25:14



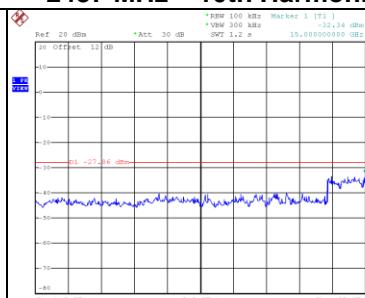
Date: 3.JUN.2020 16:25:21



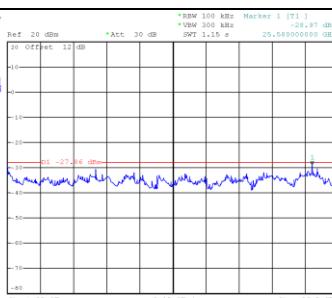
Date: 3.JUN.2020 16:25:28

2437 MHz – 10th Harmonics


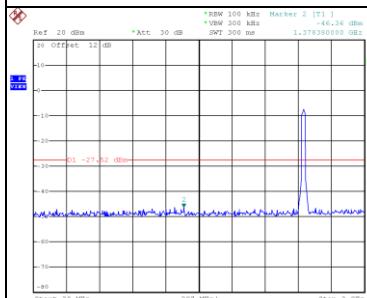
Date: 3.JUN.2020 16:28:46



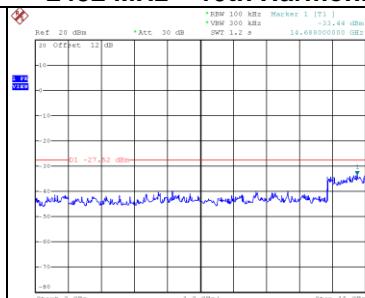
Date: 3.JUN.2020 16:28:53



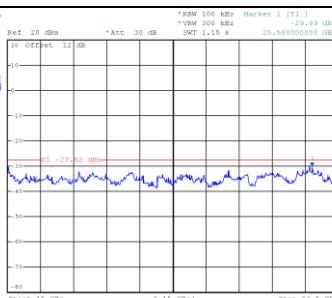
Date: 3.JUN.2020 16:29:00

2452 MHz – 10th Harmonics


Date: 3.JUN.2020 16:31:40



Date: 3.JUN.2020 16:31:47



Date: 3.JUN.2020 16:31:54

End of Test Report