



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240700121704

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TEST REPORT

Application No.: KSCR2407001217AT
FCC ID: RF41761B
IC: 5798A-1761B
Applicant: KEYENCE CORPORATION
Address of Applicant: 1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
Manufacturer: KEYENCE CORPORATION
Address of Manufacturer: 1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
Factory: KEYENCE CORPORATION
Address of Factory: 1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
Equipment Under Test (EUT):
EUT Name: Handheld Terminal
Model No.: BT-A600
Trade Mark: KEYENCE
Standard(s) : 47 CFR Part 15, Subpart C 15.247
RSS-247 Issue 3, August 2023
RSS-Gen Issue 5 Amendment 2 (February 2021)
Date of Receipt: 2024-07-02
Date of Test: 2024-08-27 to 2024-09-12
Date of Issue: 2024-09-12

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

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Revision Record			
Version	Description	Date	Remark
00	Original	2024-09-12	/

Authorized for issue by:			
Tested By		Maker Qi	
		Maker_Qi/Project Engineer	
Approved By		Terry Hou	
		Terry Hou /Reviewer	



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	FCC Requirement	IC Requirement	Method	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	RSS-Gen Clause 6.8	N/A	Customer Declaration

N/A: Not applicable

Radio Spectrum Matter Part				
Item	FCC Requirement	IC Requirement	Method	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.207	RSS-Gen Clause 8.8	ANSI C63.10 (2013) Section 6.2	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247a(2)	RSS-247 Clause 5.2(a)	ANSI C63.10 (2013) Section 11.8.1	Pass
Conducted Average Output Power	47 CFR Part 15, Subpart C 15.247(b)(3)	RSS-247 Clause 5.4(d)	ANSI C63.10 (2013) Section 11.9.2	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247(e)	RSS-247 Clause 5.2(b)	ANSI C63.10 (2013) Section 11.10.3	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247(d)	RSS-247 Clause 5.5	ANSI C63.10 (2013) Section 11.13.3.2	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247(d)	RSS-247 Clause 5.5	ANSI C63.10 (2013) Section 11.11	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	RSS-247 Section 3.3 & RSS-Gen Section 8.9	ANSI C63.10 (2013) Section 6.10.5	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	RSS-247 Section 3.3 & RSS-Gen Section 8.9	ANSI C63.10 (2013) Section 6.4,6.5,6.6	Pass
99% Bandwidth	-	RSS-Gen Section 6.7	ANSI C63.10 Section 6.9.3	Pass



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.6V by Rechargeable Battery Battery information: Model: DX-BC6 Rate Capacity: 6270mAh Rate Energy: 22.57Wh Normal Voltage: DC 3.6V
Operation Frequency:	802.11b/g/n(HT20)/ax(HE20): 2412MHz to 2462MHz, 802.11n(HT40)/ax(HE40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK), 802.11ax: OFDMA (BPSK,QPSK,16QAM,64QAM,256QAM,1024QAM)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20)/ax(HE20): 11, 802.11n(HT40)/ax(HE40):7
Antenna Type:	FPC Antenna
Antenna Gain:	Ant1: 1.69dBi(Provided by the manufacturer) Ant5: 1.98dBi(Provided by the manufacturer)

4.2 Power level setting using in test

Channel	802.11b		802.11g		802.11n(HT20)		802.11ax(HE20)	
	Ant 1	Ant 5	Ant 1	Ant 5	Ant 1	Ant 5	Ant 1	Ant 5
1	15	15	10	10	7	7	7	7
6	15	15	10	10	7	7	7	7
11	15	15	10	10	7	7	7	7
Channel	802.11n(HT40)		802.11ax(HE40)					
	Ant 1	Ant 5	Ant 1	Ant 5				
3	7	7	7	7				
6	7	7	7	7				
9	7	7	7	7				

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			

4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%
Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

4.5 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

- **FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

- **ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

- **VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

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5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals						
1	EMI Test Receive	R&S	ESCI	KS301101	01/15/2024	01/14/2025
2	LISN	R&S	ENV216	KS301197	01/15/2024	01/14/2025
3	LISN	Schwarzbeck	NNLK 8129	KS301091	01/15/2024	01/14/2025
4	Pulse Limiter	R&S	ESH3-Z2	KUS1902E001	01/15/2024	01/14/2025
5	CE test Cable	Thermax	/	CZ301102	01/15/2024	01/14/2025
6	Test Software	ESE	E3_V 6.111221a	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/01/2024	07/31/2025
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/01/2024	07/31/2025
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	01/15/2024	01/14/2025
4	Signal Generator	R&S	SMBV100B	KSEM032	03/19/2024	03/18/2025
5	Signal Generator	R&S	SMW200A	KSEM020-1	08/02/2024	08/01/2025
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/01/2024	07/31/2025
7	Signal Generator	Agilent	E8257C	KS301066	08/06/2024	08/05/2025
8	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/01/2024	07/31/2025
9	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/19/2024	03/18/2025
10	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/12/2024	08/11/2025
11	Switcher	TST	FY562	KUS2001M001-4	01/15/2024	01/14/2025
12	Conducted Test Cable	Thermax	RF01-RF04	CZ301111-CZ301120	01/15/2024	01/14/2025
13	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/26/2024	08/25/2025
14	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	03/19/2024	03/18/2025
15	Software	BST	TST-PASS	/	NCR	NCR
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/06/2024	08/05/2025
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	03/19/2024	03/18/2025
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	03/18/2023	03/17/2025
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2023	06/28/2025
6	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E006	03/19/2024	03/18/2025
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	03/23/2024	08/22/2026
8	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	KS301186	04/07/2023	04/06/2025
9	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	01/07/2024	01/06/2026
10	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/15/2024	01/14/2025
11	Amplifier(18~40GHz)	PANSHAN TECHNOLOGY	LNA180400G40	KSEM038	08/12/2024	08/11/2025
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	08/12/2024	08/11/2025
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	03/21/2024	03/20/2025
14	Software	Faratronic	EZ_EMC-v 3A1	/	NCR	NCR
15	Software	ESE	E3_V 6.111221a	/	NCR	NCR

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is Ant1: 1.69dBi; Ant5: 1.98dBi.

Antenna location: Refer to internal photo.

7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency.		
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz		

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C

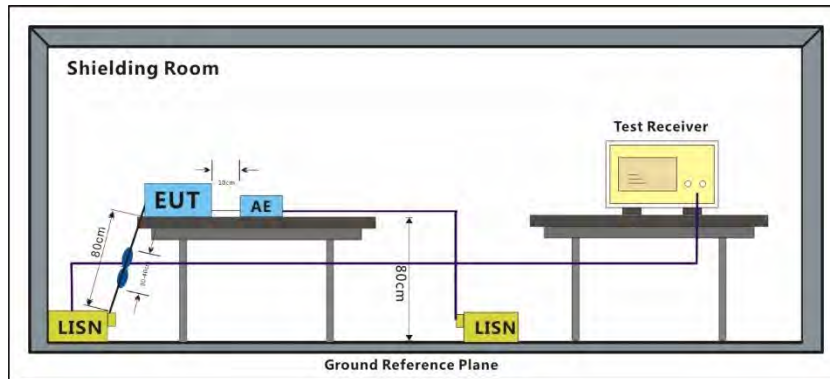
Humidity: 52.6 % RH

Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor

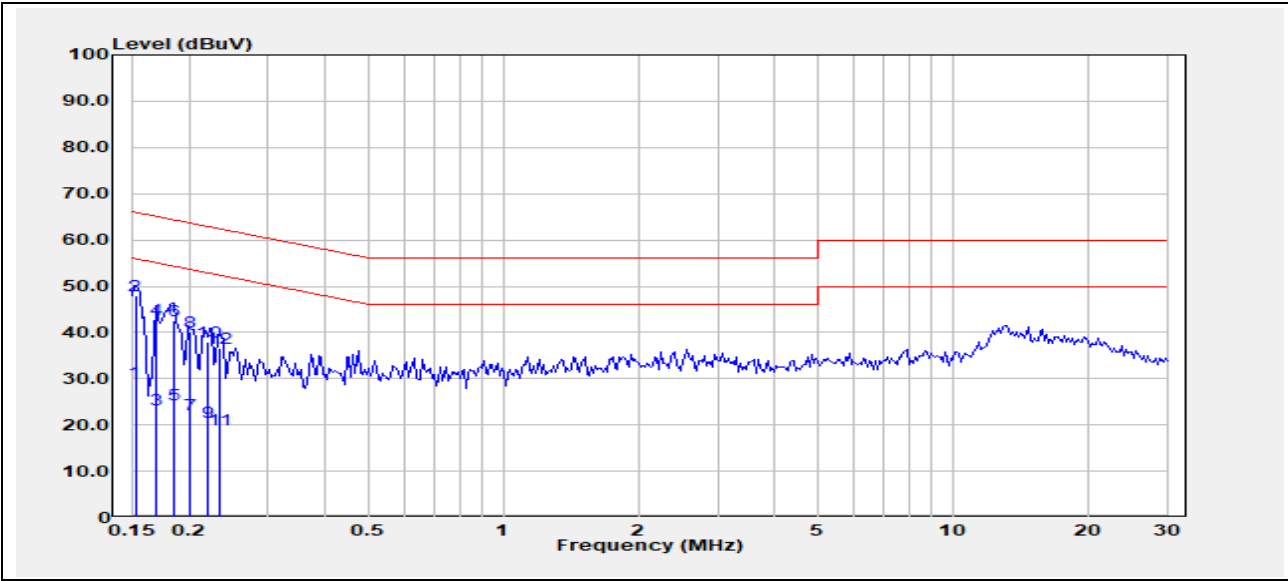
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Test Mode: 13; Line: Live line



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1517	9.15	20.25	29.40	55.91	-26.51	Average
2	0.1517	27.62	20.25	47.87	65.91	-18.04	QP
3	0.1689	3.09	20.17	23.26	55.01	-31.75	Average
4	0.1689	22.69	20.17	42.86	65.01	-22.15	QP
5	0.1850	4.26	20.11	24.37	54.26	-29.89	Average
6	0.1850	22.34	20.11	42.45	64.26	-21.81	QP
7	0.2012	2.16	20.05	22.21	53.56	-31.35	Average
8	0.2012	19.95	20.05	40.00	63.56	-23.56	QP
9	0.2210	0.45	20.06	20.51	52.78	-32.27	Average
10	0.2210	17.79	20.06	37.85	62.78	-24.93	QP
11	0.2327	-1.20	20.06	18.86	52.35	-33.49	Average
12	0.2327	16.47	20.06	36.53	62.35	-25.82	QP

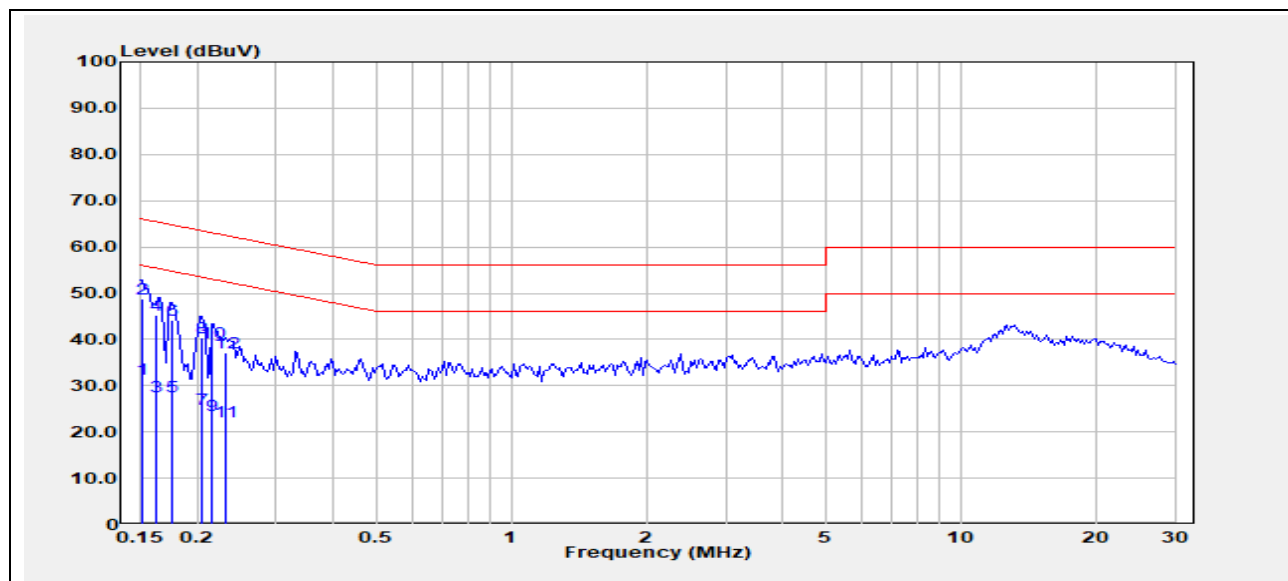
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Test Mode: 13; Line: Neutral Line



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1510	11.31	20.18	31.49	55.95	-24.46	Average
2	0.1510	28.50	20.18	48.68	65.95	-17.27	QP
3	0.1627	7.46	20.16	27.62	55.32	-27.70	Average
4	0.1627	25.22	20.16	45.38	65.32	-19.94	QP
5	0.1759	7.49	20.15	27.64	54.68	-27.04	Average
6	0.1759	24.02	20.15	44.17	64.68	-20.51	QP
7	0.2039	4.86	20.11	24.97	53.45	-28.48	Average
8	0.2039	20.39	20.11	40.50	63.45	-22.95	QP
9	0.2153	3.45	20.11	23.56	53.00	-29.44	Average
10	0.2153	19.25	20.11	39.36	63.00	-23.64	QP
11	0.2315	2.25	20.10	22.35	52.40	-30.05	Average
12	0.2315	16.94	20.10	37.04	62.40	-25.36	QP

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7.2 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C

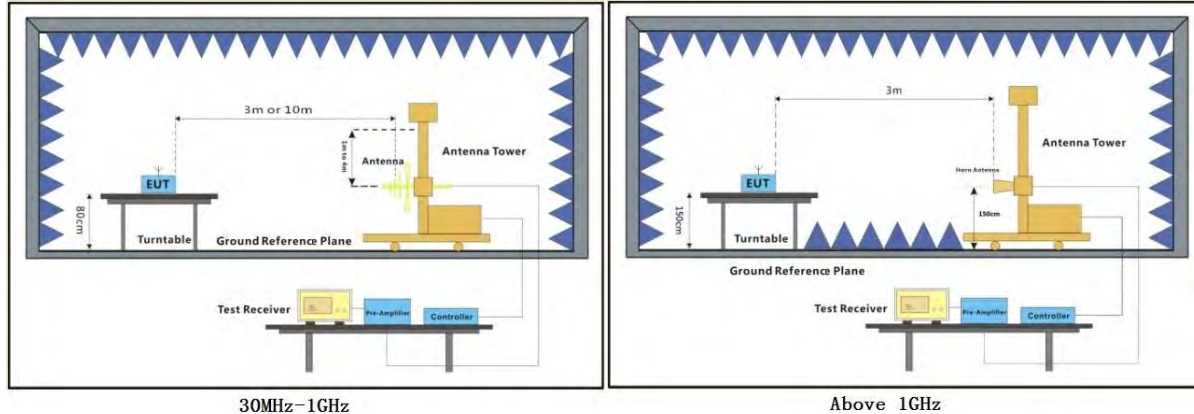
Humidity: 51.8 % RH

Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

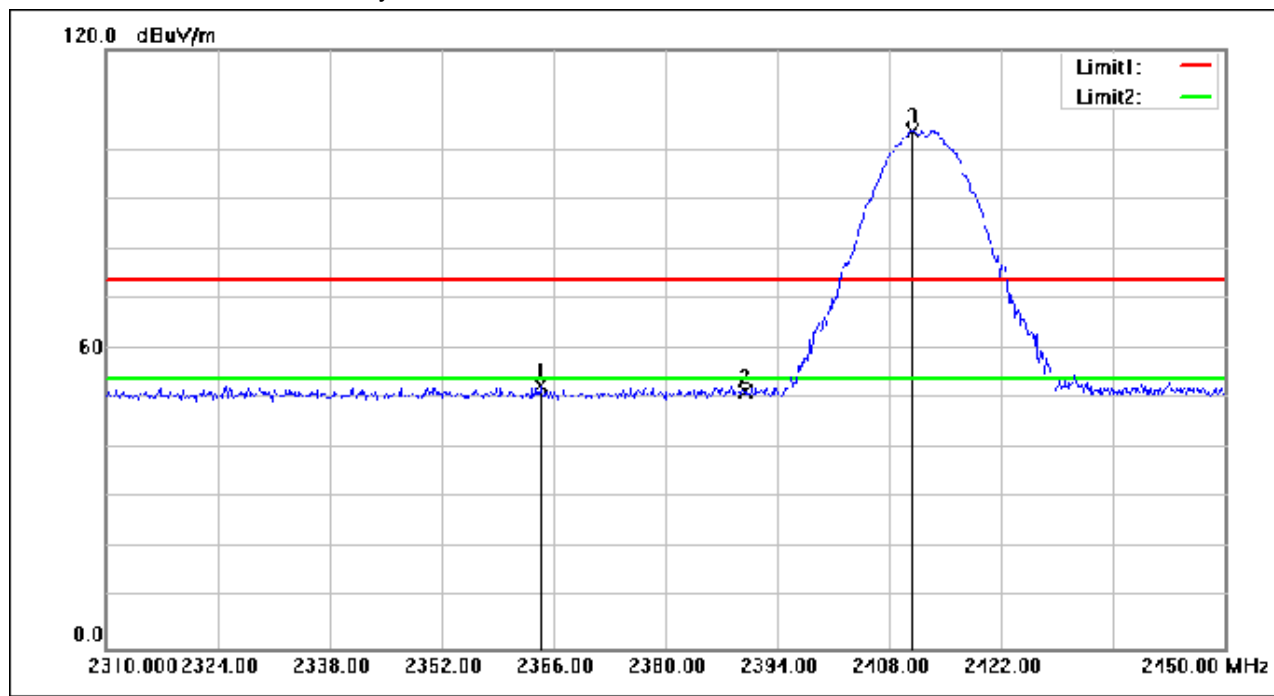
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2364.460	77.44	-24.82	52.62	74.00	-21.38	peak
2	2390.000	76.04	-24.71	51.33	74.00	-22.67	peak
3	2410.940	128.31	-24.61	103.70	74.00	29.70	peak

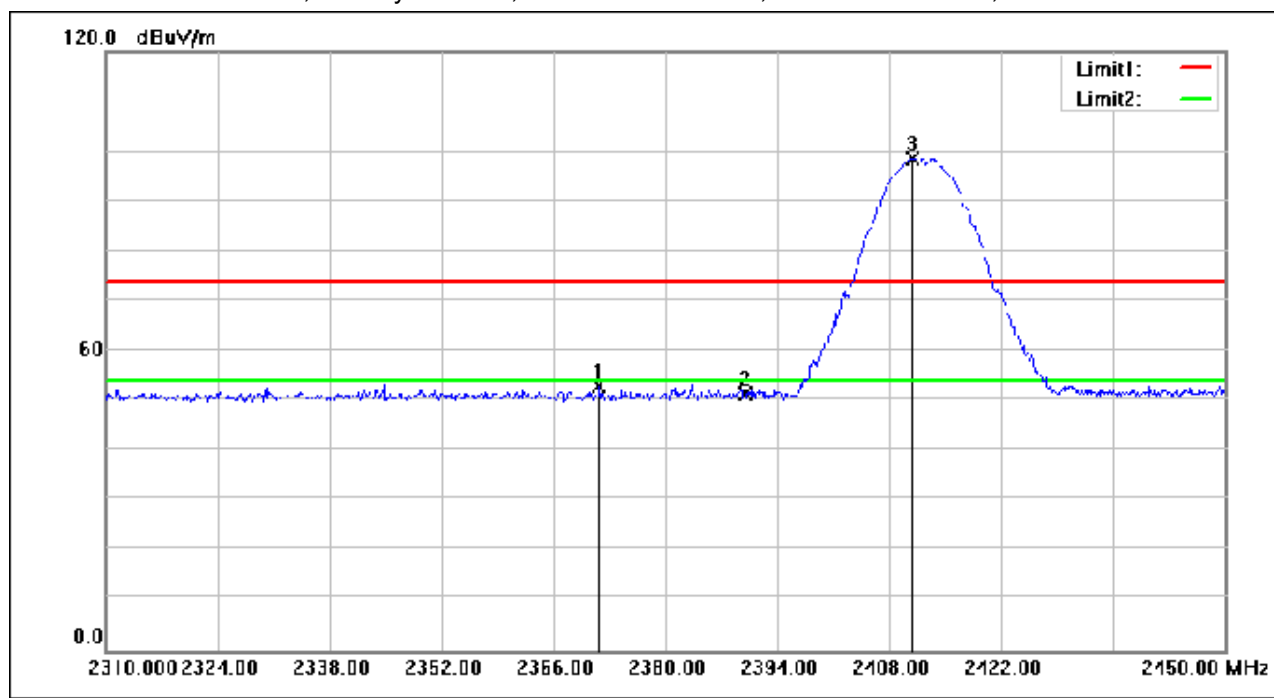
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2371.740	77.72	-24.79	52.93	74.00	-21.07	peak
2	2390.000	76.08	-24.71	51.37	74.00	-22.63	peak
3	2410.940	123.24	-24.61	98.63	74.00	24.63	peak

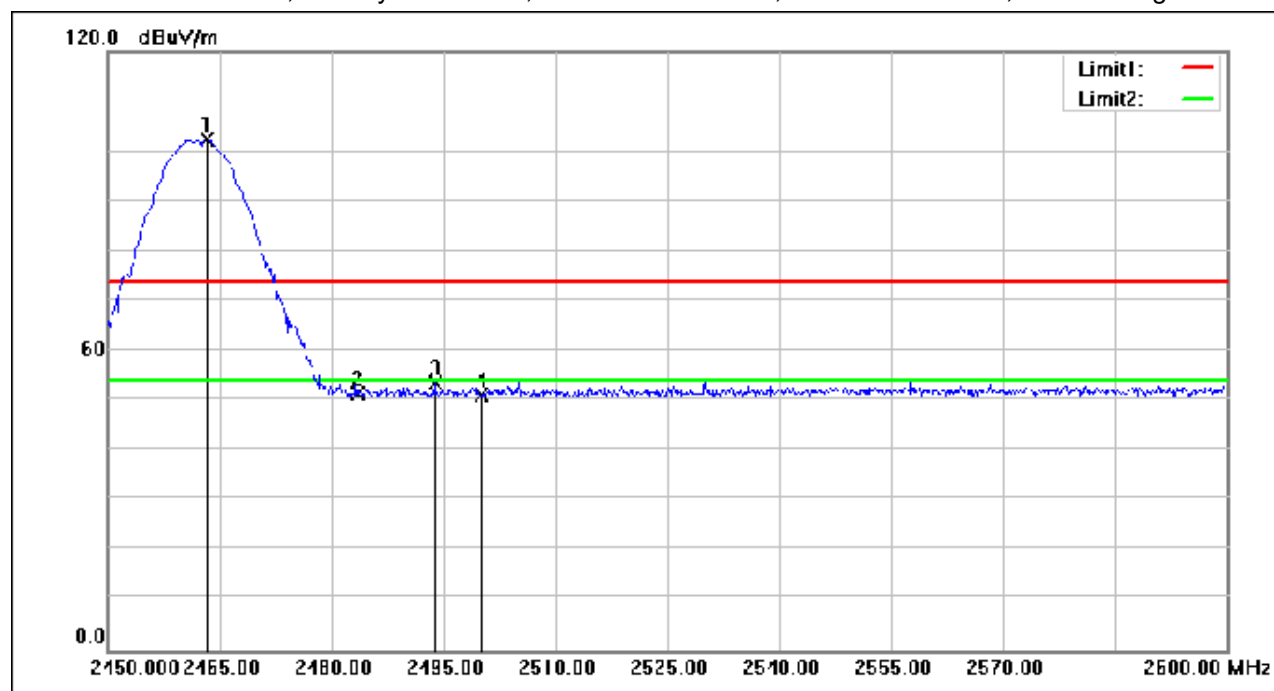
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.350	126.75	-24.37	102.38	74.00	28.38	peak
2	2483.500	75.82	-24.27	51.55	74.00	-22.45	peak
3	2493.800	77.80	-24.22	53.58	74.00	-20.42	peak
4	2500.000	75.26	-24.19	51.07	74.00	-22.93	peak

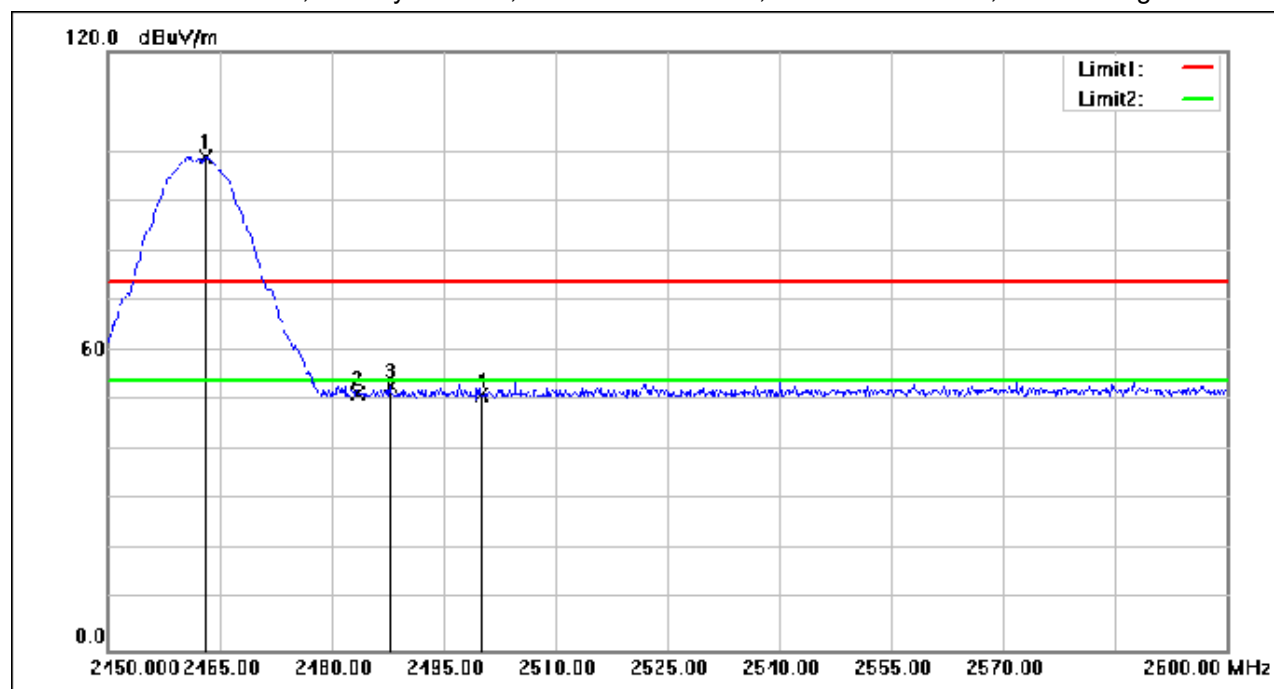
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.050	123.16	-24.37	98.79	74.00	24.79	peak
2	2483.500	75.78	-24.27	51.51	74.00	-22.49	peak
3	2487.800	77.22	-24.25	52.97	74.00	-21.03	peak
4	2500.000	75.35	-24.19	51.16	74.00	-22.84	peak

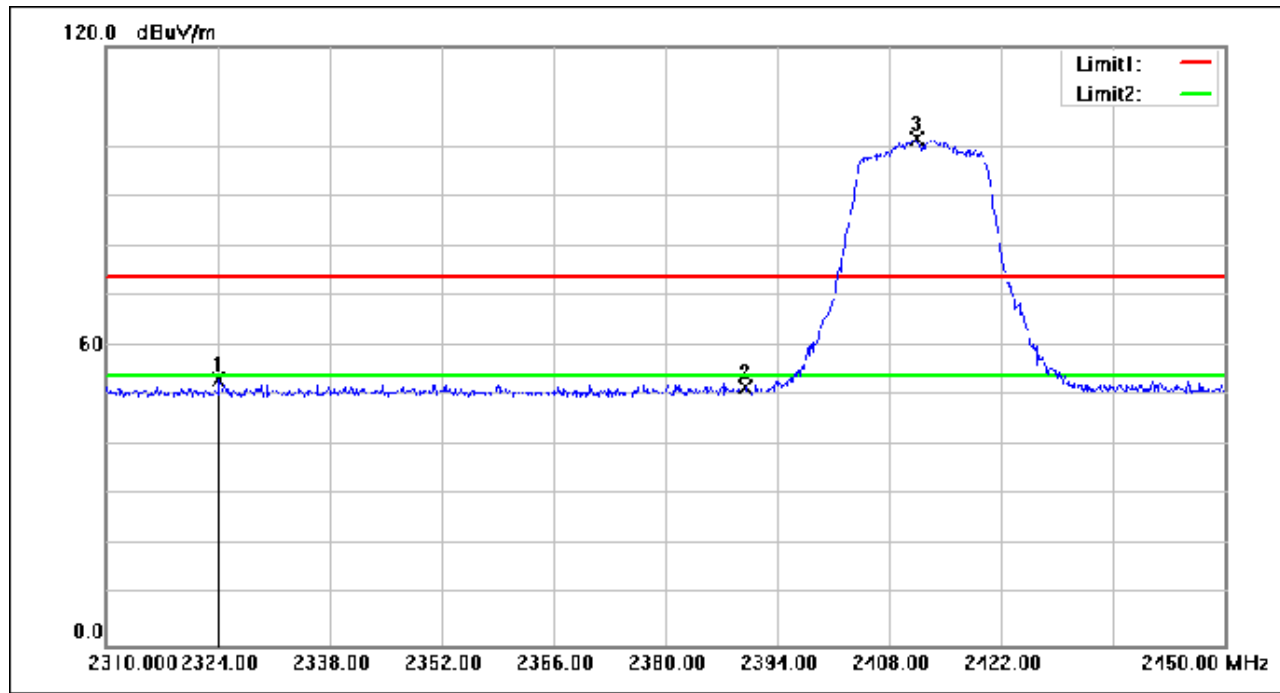
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2324.140	78.17	-24.99	53.18	74.00	-20.82	peak
2	2390.000	76.34	-24.71	51.63	74.00	-22.37	peak
3	2411.360	126.02	-24.60	101.42	74.00	27.42	peak

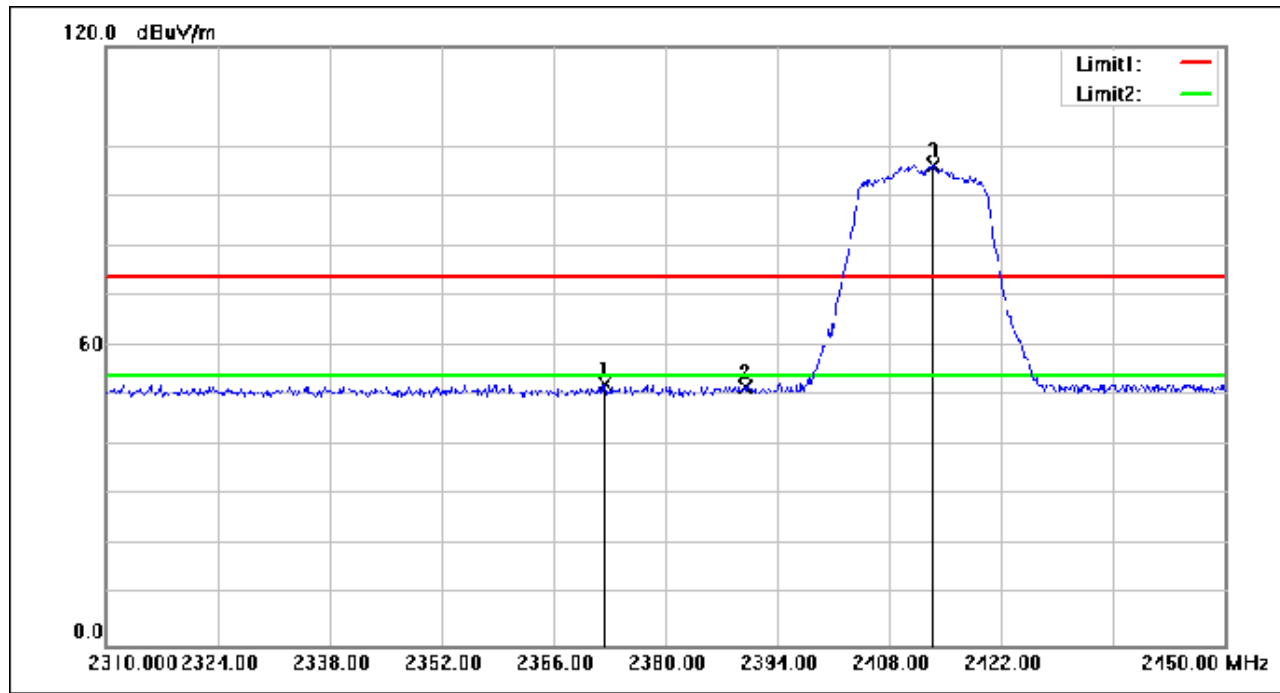
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2372.440	77.02	-24.79	52.23	74.00	-21.77	peak
2	2390.000	76.37	-24.71	51.66	74.00	-22.34	peak
3	2413.460	120.70	-24.60	96.10	74.00	22.10	peak

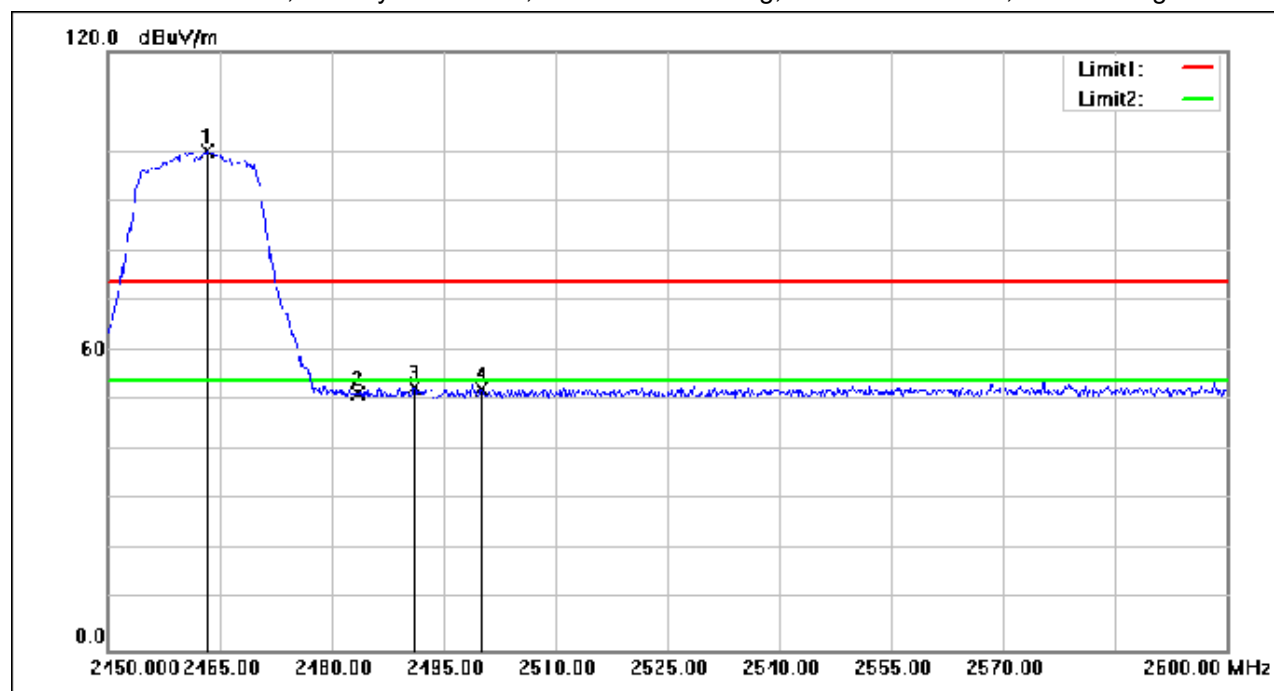
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.200	124.31	-24.37	99.94	74.00	25.94	peak
2	2483.500	75.83	-24.27	51.56	74.00	-22.44	peak
3	2491.100	76.94	-24.24	52.70	74.00	-21.30	peak
4	2500.000	76.43	-24.19	52.24	74.00	-21.76	peak

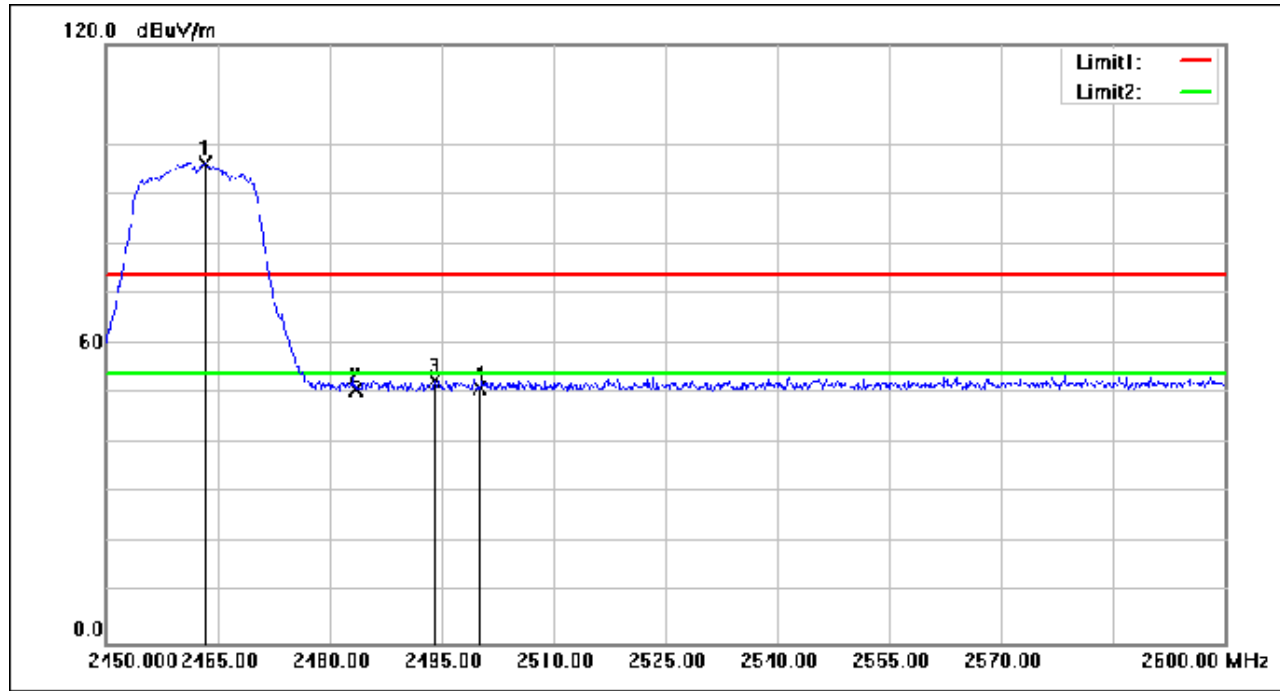
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.200	120.60	-24.37	96.23	74.00	22.23	peak
2	2483.500	75.26	-24.27	50.99	74.00	-23.01	peak
3	2494.100	76.87	-24.21	52.66	74.00	-21.34	peak
4	2500.000	75.48	-24.19	51.29	74.00	-22.71	peak

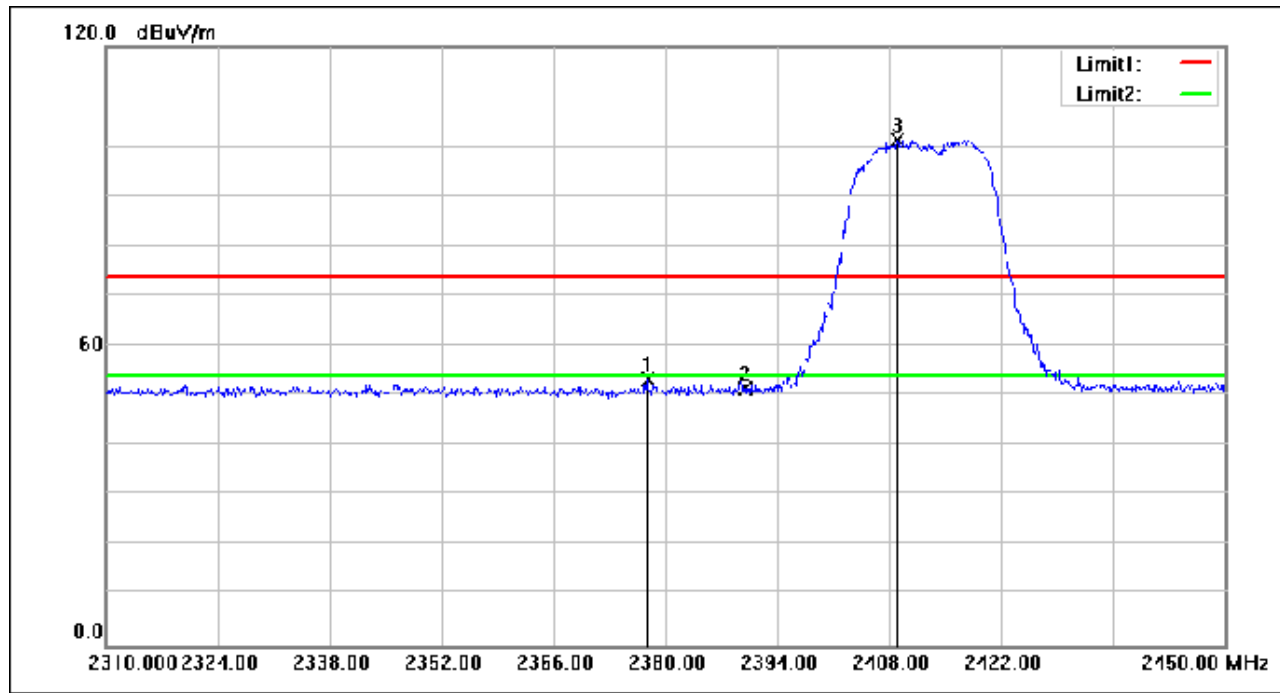
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2377.760	77.98	-24.77	53.21	74.00	-20.79	peak
2	2390.000	76.15	-24.71	51.44	74.00	-22.56	peak
3	2408.980	125.92	-24.61	101.31	74.00	27.31	peak

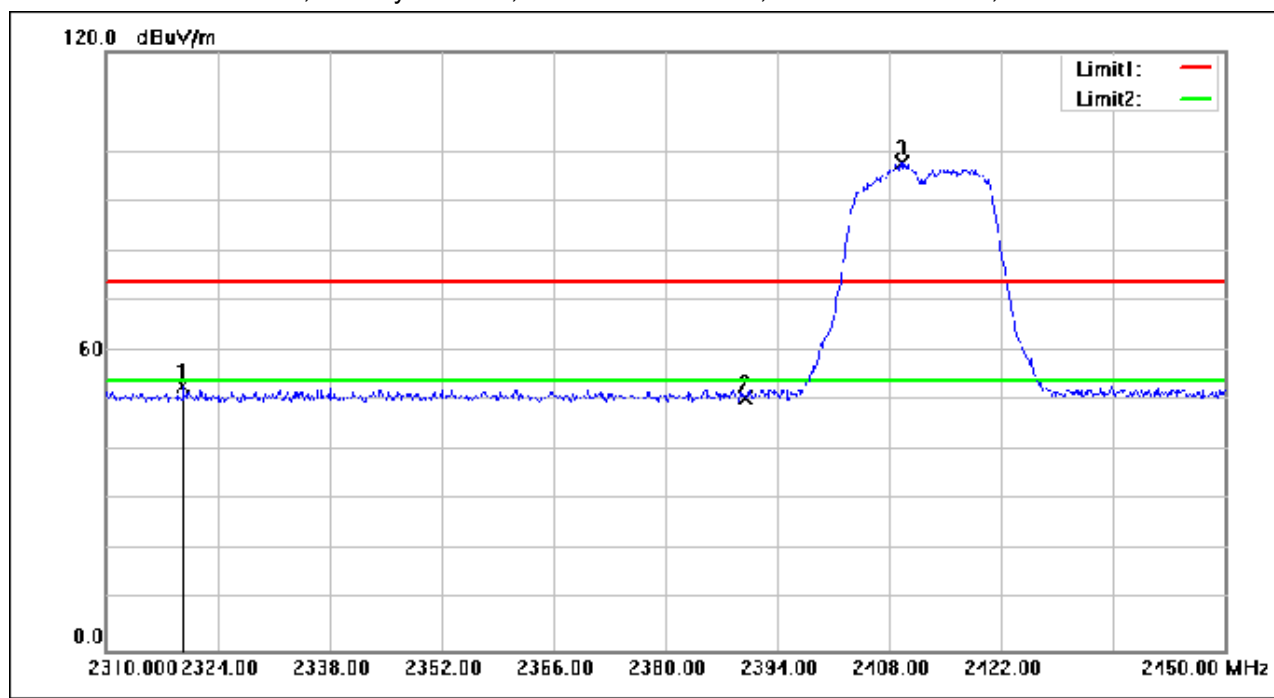
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2319.660	77.90	-25.01	52.89	74.00	-21.11	peak
2	2390.000	75.20	-24.71	50.49	74.00	-23.51	peak
3	2409.540	122.32	-24.61	97.71	74.00	23.71	peak

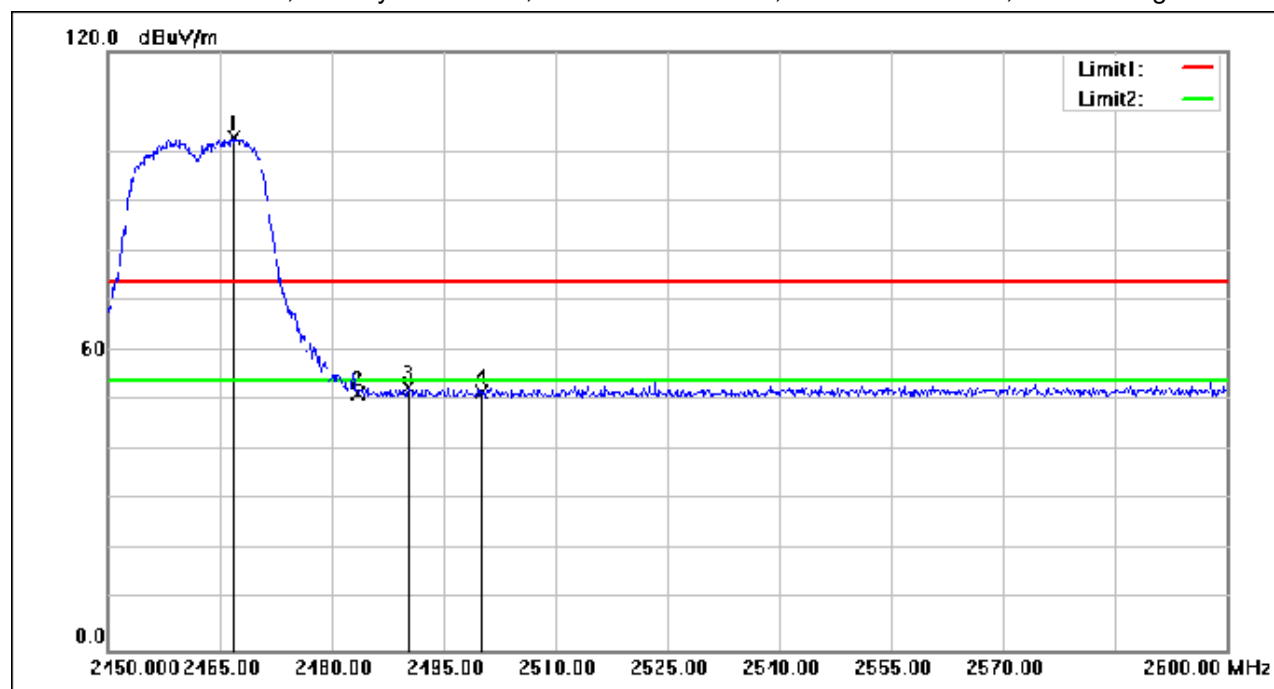
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2466.800	127.16	-24.34	102.82	74.00	28.82	peak
2	2483.500	75.80	-24.27	51.53	74.00	-22.47	peak
3	2490.350	76.91	-24.24	52.67	74.00	-21.33	peak
4	2500.000	76.02	-24.19	51.83	74.00	-22.17	peak

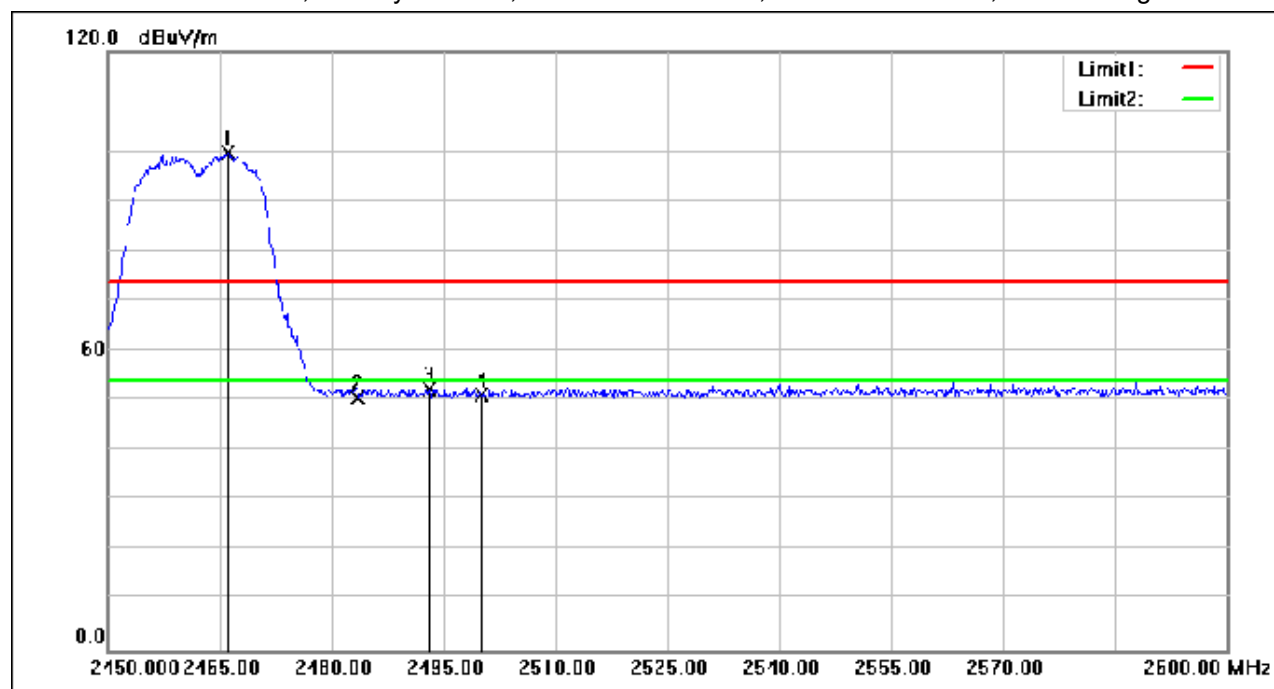
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2466.050	124.02	-24.35	99.67	74.00	25.67	peak
2	2483.500	74.88	-24.27	50.61	74.00	-23.39	peak
3	2493.050	76.70	-24.22	52.48	74.00	-21.52	peak
4	2500.000	75.33	-24.19	51.14	74.00	-22.86	peak

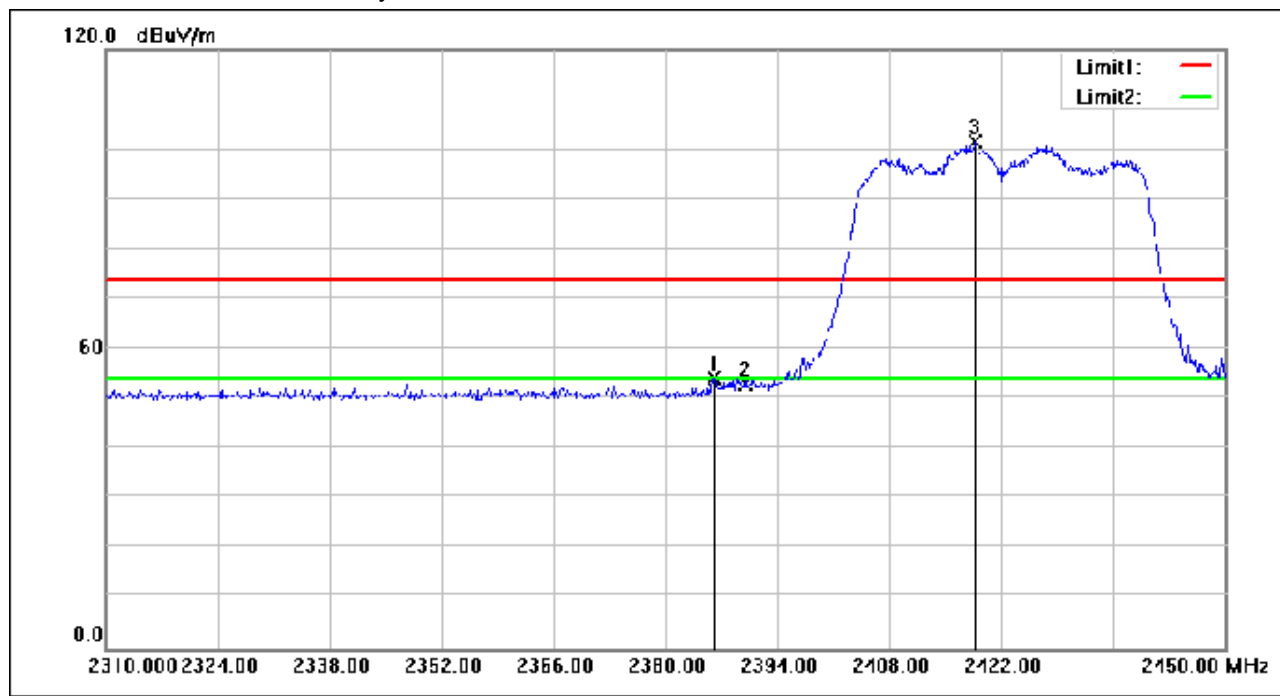
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.020	78.89	-24.72	54.17	74.00	-19.83	peak
2	2390.000	77.72	-24.71	53.01	74.00	-20.99	peak
3	2418.780	126.01	-24.57	101.44	74.00	27.44	peak

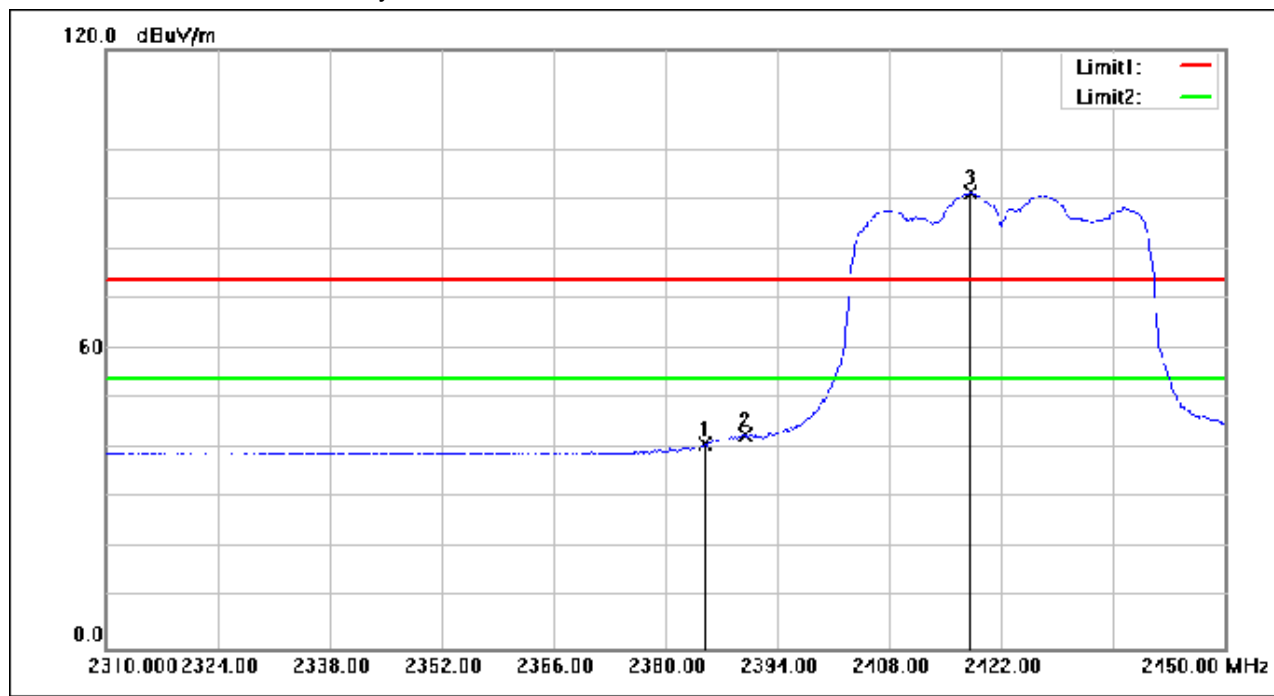
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.900	65.54	-24.73	40.81	54.00	-13.19	AVG
2	2390.000	67.34	-24.71	42.63	54.00	-11.37	AVG
3	2418.220	115.99	-24.58	91.41	54.00	37.41	AVG

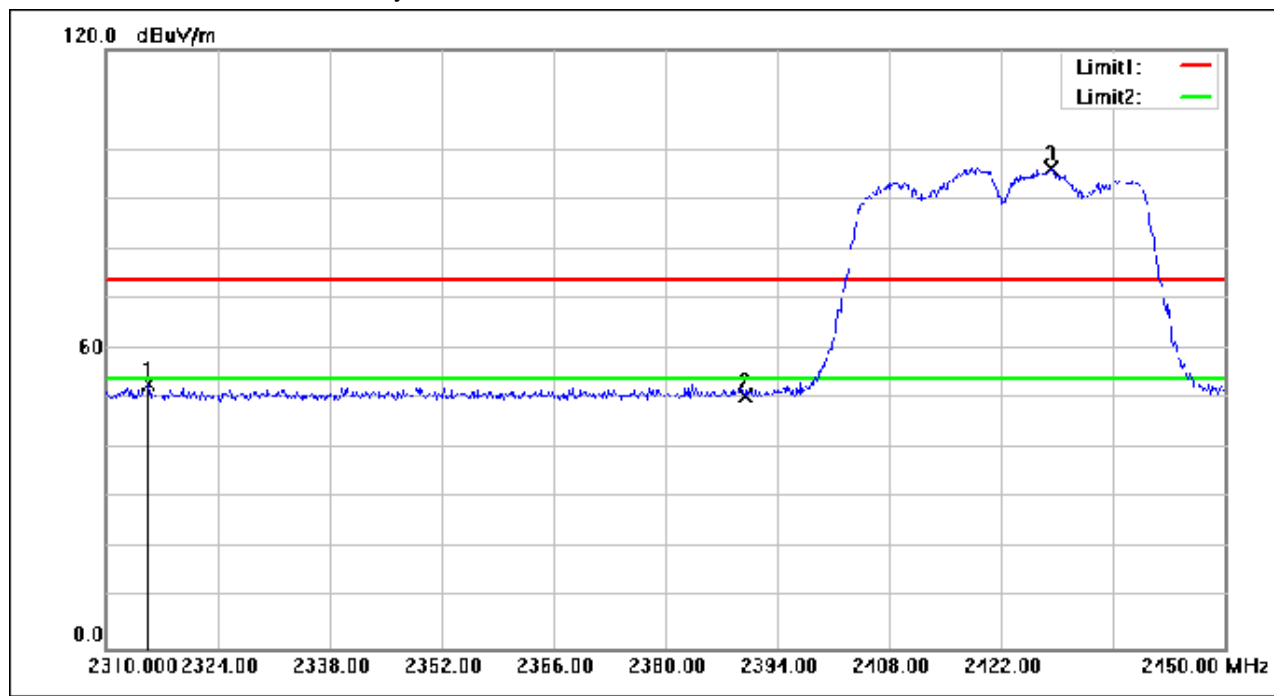
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2315.320	78.13	-25.03	53.10	74.00	-20.90	peak
2	2390.000	75.37	-24.71	50.66	74.00	-23.34	peak
3	2428.300	120.65	-24.53	96.12	74.00	22.12	peak

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2448.360	126.39	-24.44	101.95	74.00	27.95	peak
2	2483.500	81.32	-24.27	57.05	74.00	-16.95	peak
3	2486.610	80.90	-24.25	56.65	74.00	-17.35	peak
4	2500.000	75.63	-24.19	51.44	74.00	-22.56	peak

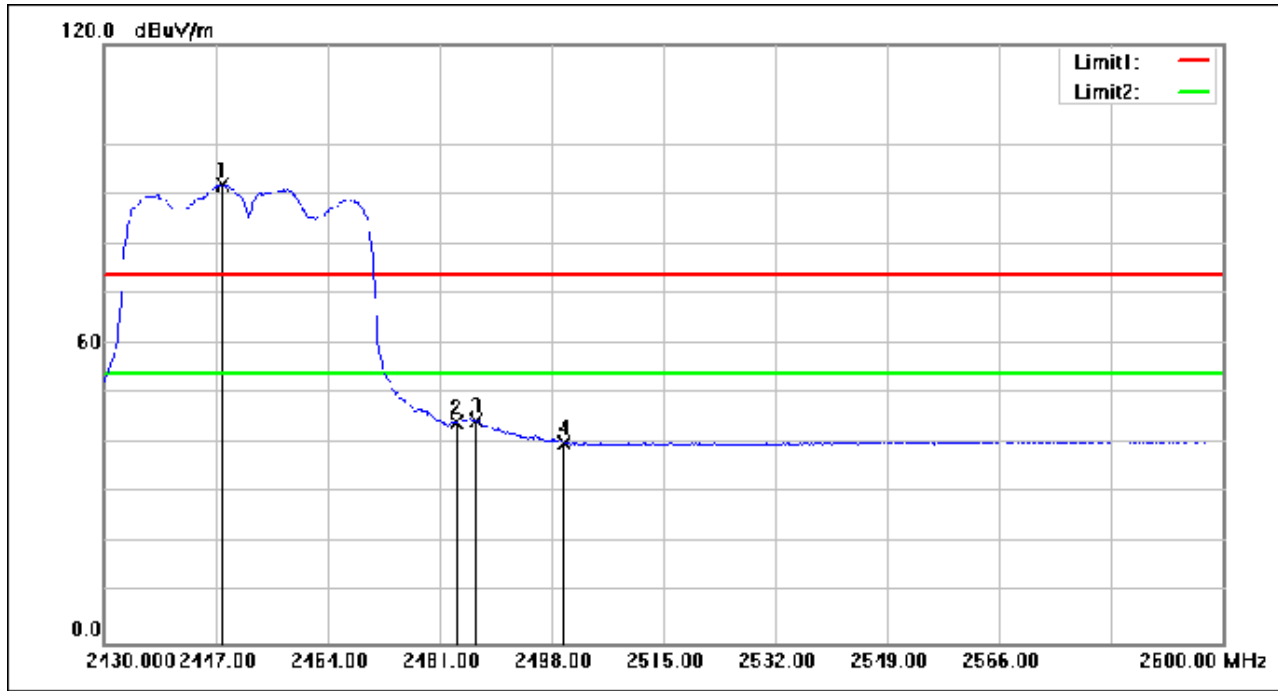
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2448.020	116.33	-24.44	91.89	54.00	37.89	AVG
2	2483.500	68.47	-24.27	44.20	54.00	-9.80	AVG
3	2486.440	68.79	-24.25	44.54	54.00	-9.46	AVG
4	2500.000	64.35	-24.19	40.16	54.00	-13.84	AVG

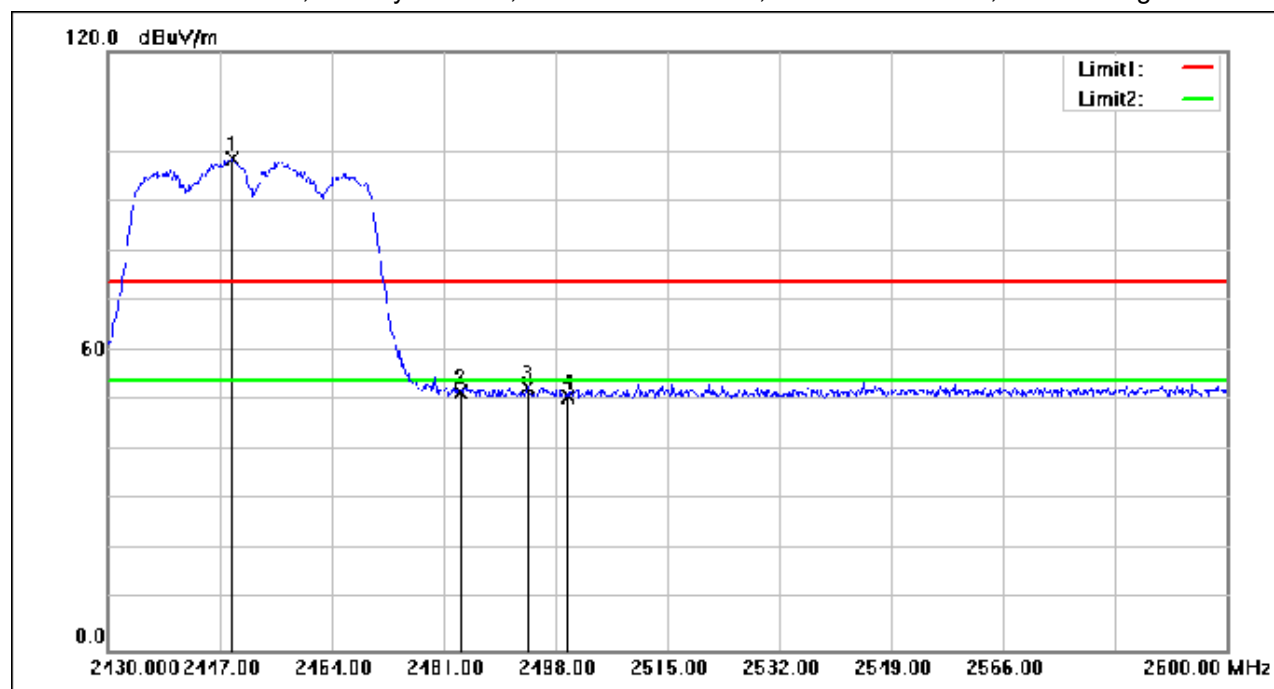
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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2448.870	122.88	-24.43	98.45	74.00	24.45	peak
2	2483.500	76.17	-24.27	51.90	74.00	-22.10	peak
3	2493.750	77.02	-24.22	52.80	74.00	-21.20	peak
4	2500.000	75.14	-24.19	50.95	74.00	-23.05	peak

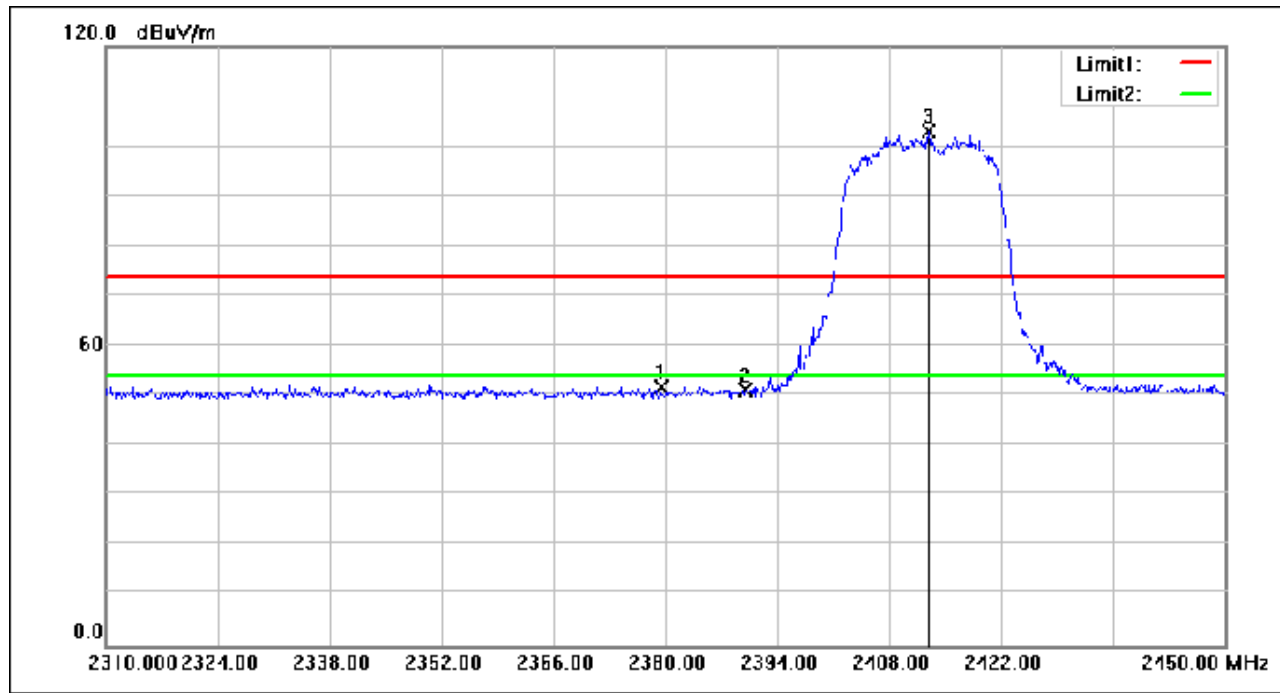
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Test Mode: 13; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2379.440	76.57	-24.75	51.82	74.00	-22.18	peak
2	2390.000	75.89	-24.71	51.18	74.00	-22.82	peak
3	2412.900	127.52	-24.60	102.92	74.00	28.92	peak

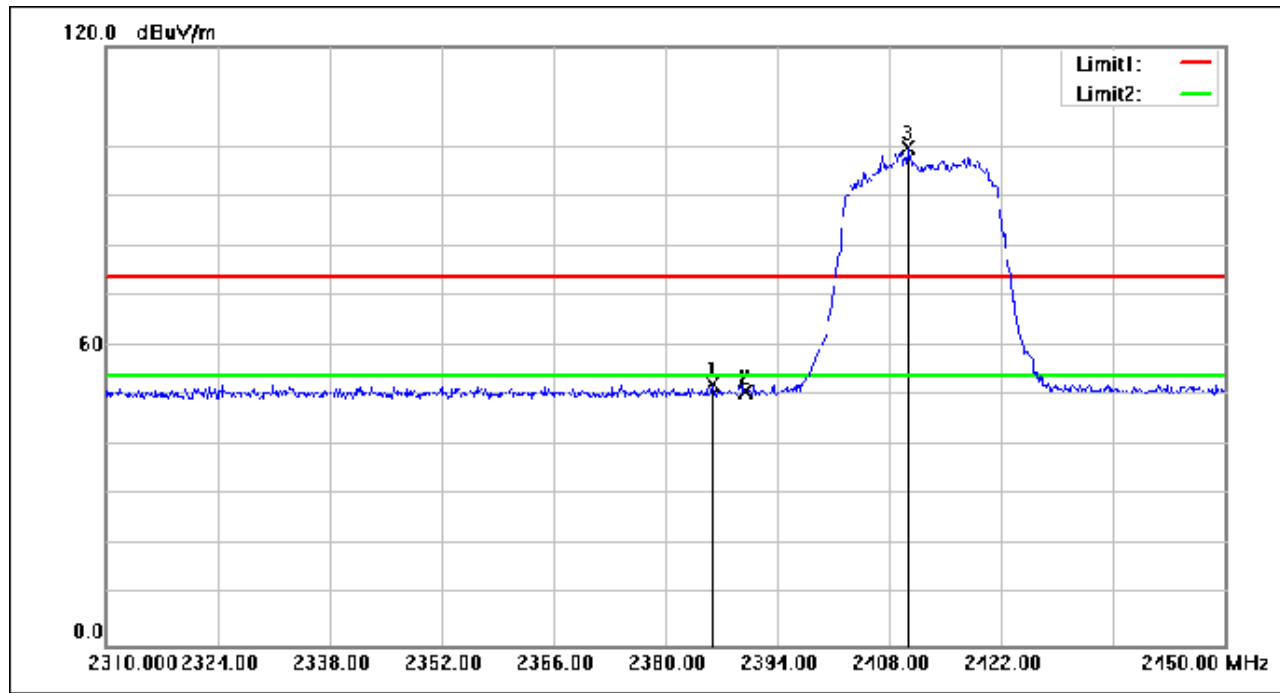
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Test Mode: 13; Polarity: Vertical; Modulation: 802.11ax(Full RU0); Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.880	77.13	-24.72	52.41	74.00	-21.59	peak
2	2390.000	75.67	-24.71	50.96	74.00	-23.04	peak
3	2410.240	124.41	-24.61	99.80	74.00	25.80	peak

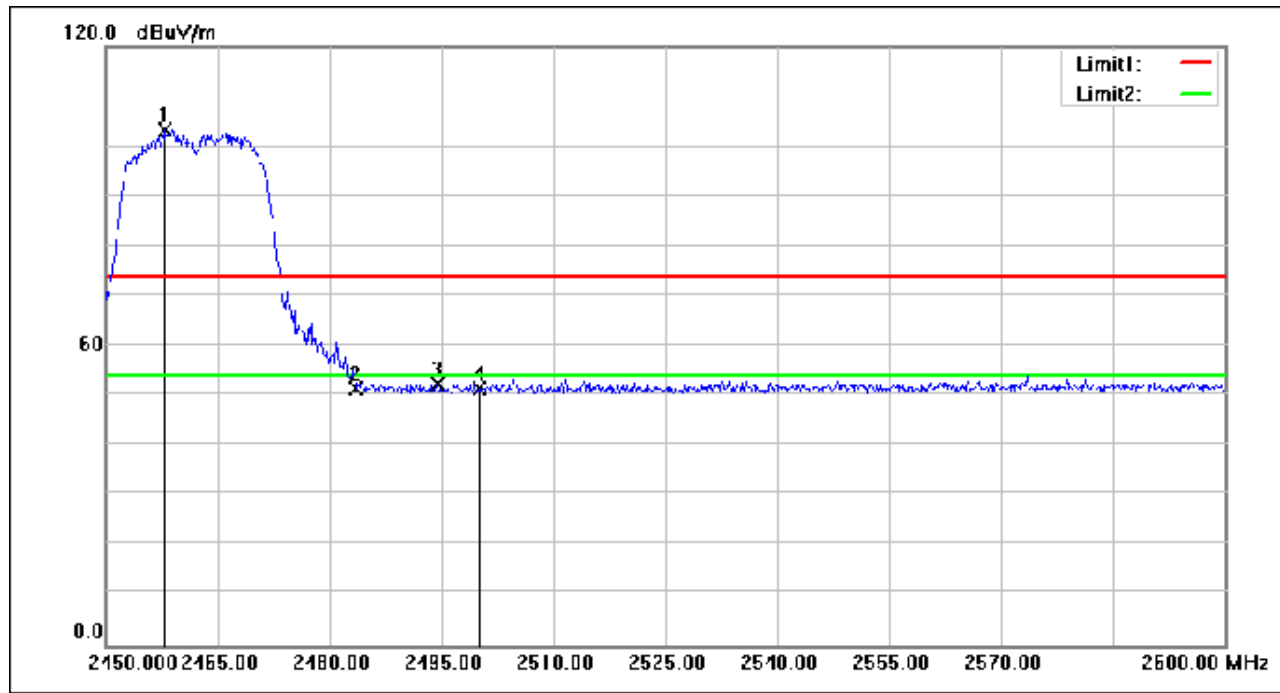
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2457.950	127.72	-24.39	103.33	74.00	29.33	peak
2	2483.500	75.70	-24.27	51.43	74.00	-22.57	peak
3	2494.400	76.61	-24.21	52.40	74.00	-21.60	peak
4	2500.000	75.53	-24.19	51.34	74.00	-22.66	peak

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Test Mode: 13; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2457.950	124.93	-24.39	100.54	74.00	26.54	peak
2	2483.500	75.74	-24.27	51.47	74.00	-22.53	peak
3	2494.400	75.96	-24.21	51.75	74.00	-22.25	peak
4	2500.000	76.15	-24.19	51.96	74.00	-22.04	peak

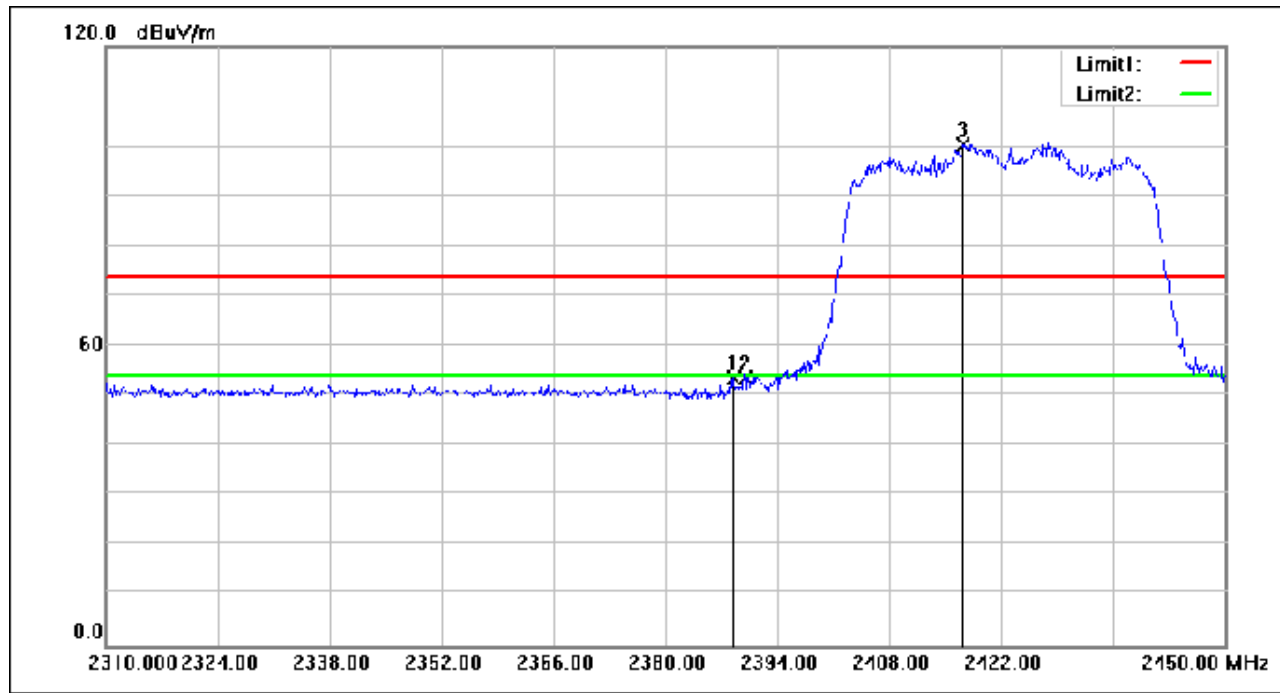
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Test Mode: 13; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.400	78.33	-24.71	53.62	74.00	-20.38	peak
2	2390.000	78.36	-24.71	53.65	74.00	-20.35	peak
3	2417.240	125.02	-24.58	100.44	74.00	26.44	peak

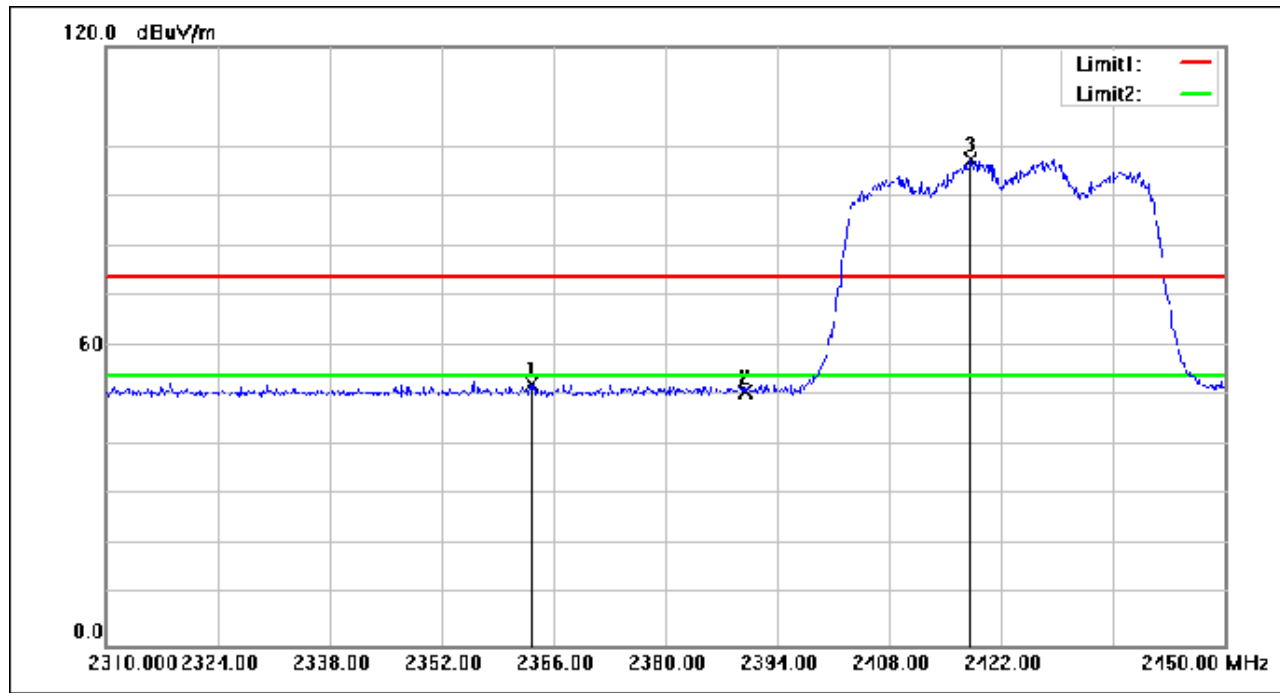
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Test Mode: 13; Polarity: Vertical; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2363.200	77.07	-24.84	52.23	74.00	-21.77	peak
2	2390.000	75.65	-24.71	50.94	74.00	-23.06	peak
3	2418.220	122.02	-24.58	97.44	74.00	23.44	peak

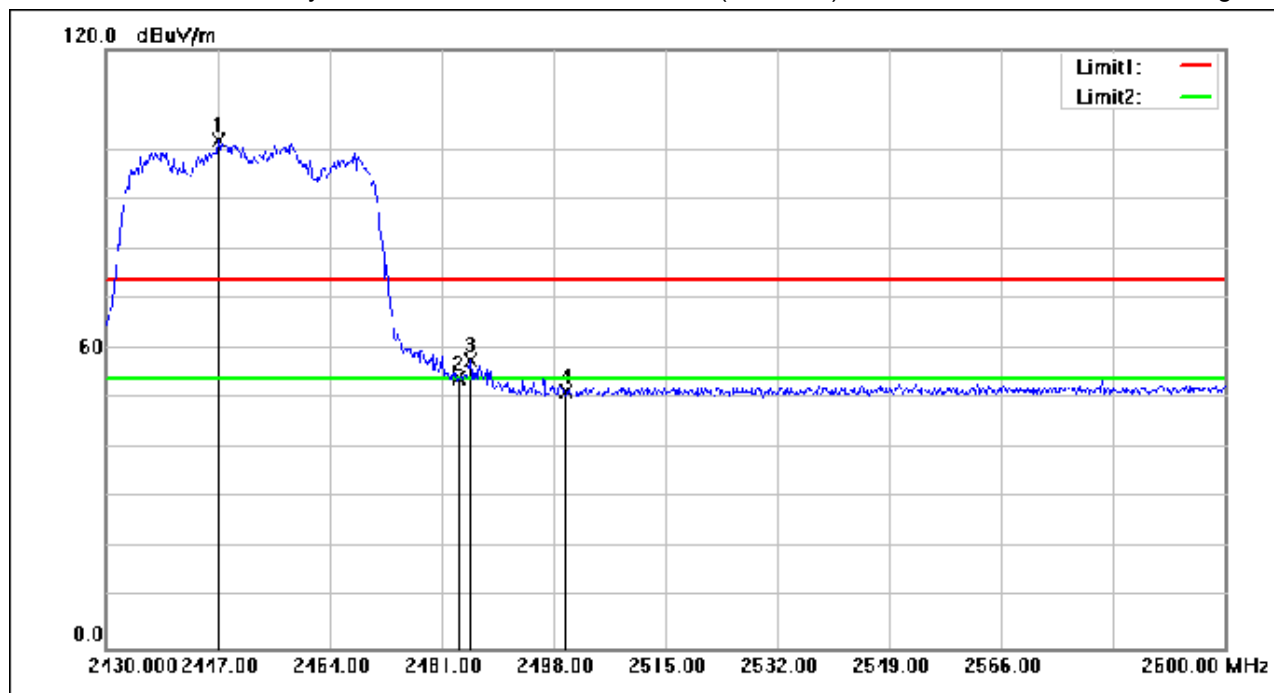
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2447.000	126.21	-24.44	101.77	74.00	27.77	peak
2	2483.500	78.37	-24.27	54.10	74.00	-19.90	peak
3	2485.420	81.90	-24.26	57.64	74.00	-16.36	peak
4	2500.000	75.56	-24.19	51.37	74.00	-22.63	peak

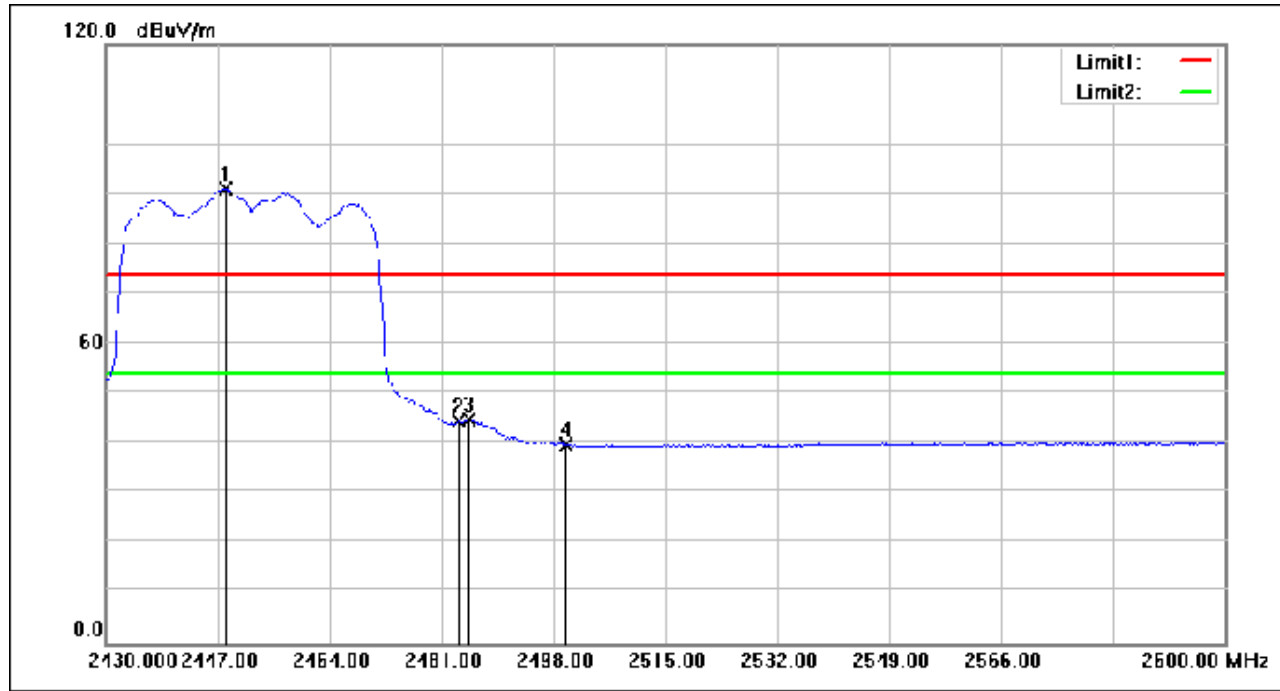
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2448.190	115.49	-24.44	91.05	54.00	37.05	AVG
2	2483.500	68.68	-24.27	44.41	54.00	-9.59	AVG
3	2485.250	69.10	-24.26	44.84	54.00	-9.16	AVG
4	2500.000	63.91	-24.19	39.72	54.00	-14.28	AVG

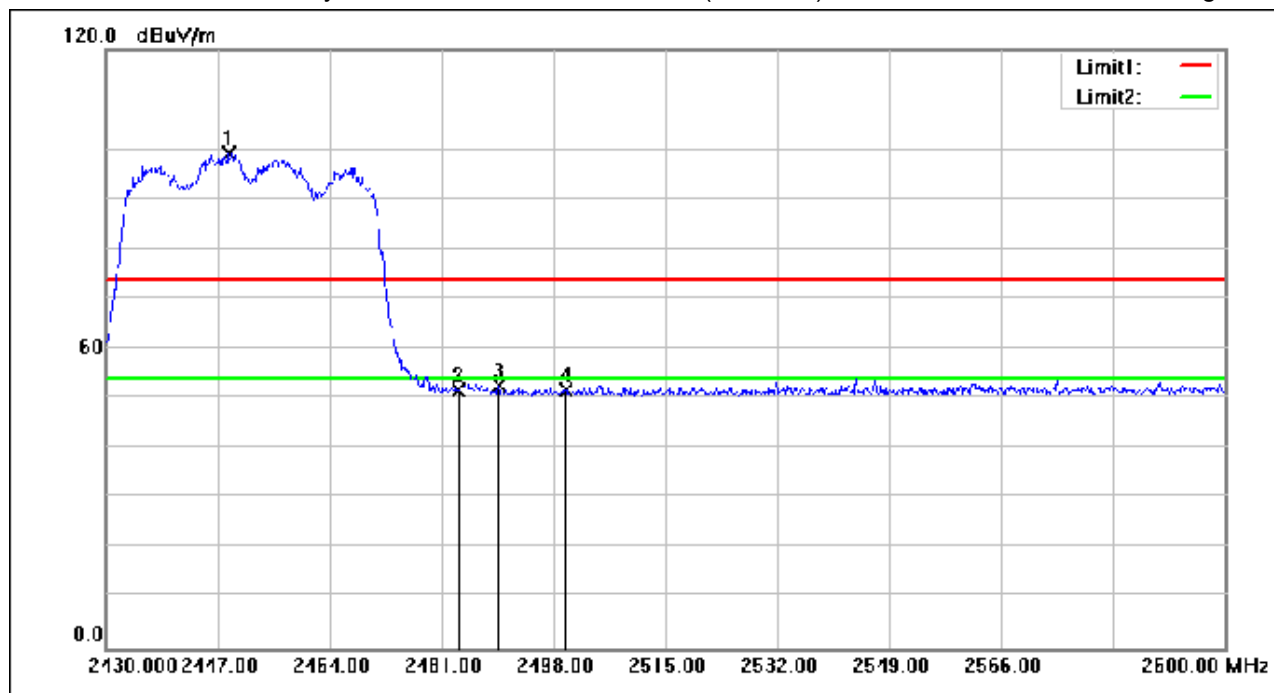
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Test Mode: 13; Polarity: Vertical; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2448.700	123.63	-24.43	99.20	74.00	25.20	peak
2	2483.500	76.16	-24.27	51.89	74.00	-22.11	peak
3	2489.670	76.88	-24.24	52.64	74.00	-21.36	peak
4	2500.000	75.96	-24.19	51.77	74.00	-22.23	peak

7.3 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

Limit:

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

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C

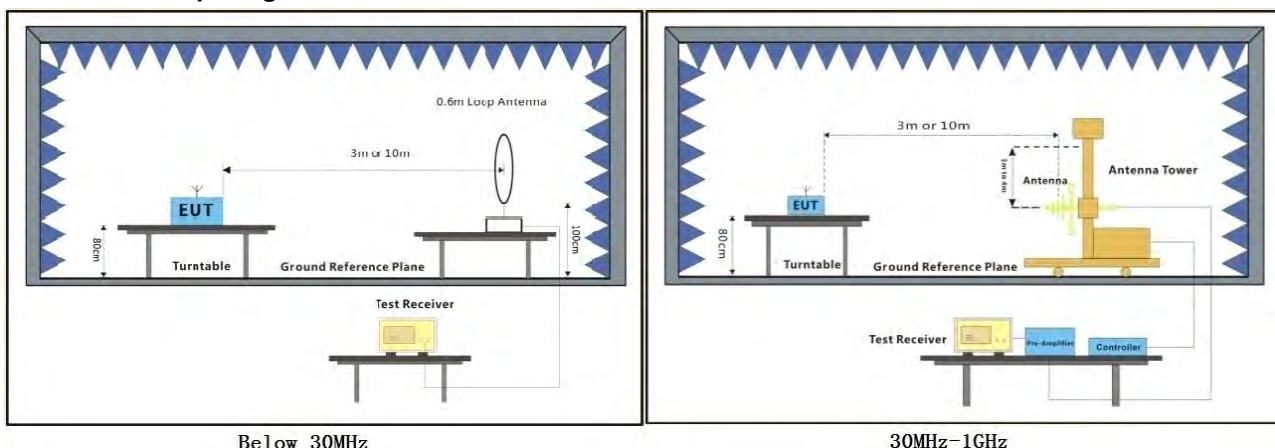
Humidity: 49.7 % RH

Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. 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 from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamplifier Factor}$
2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

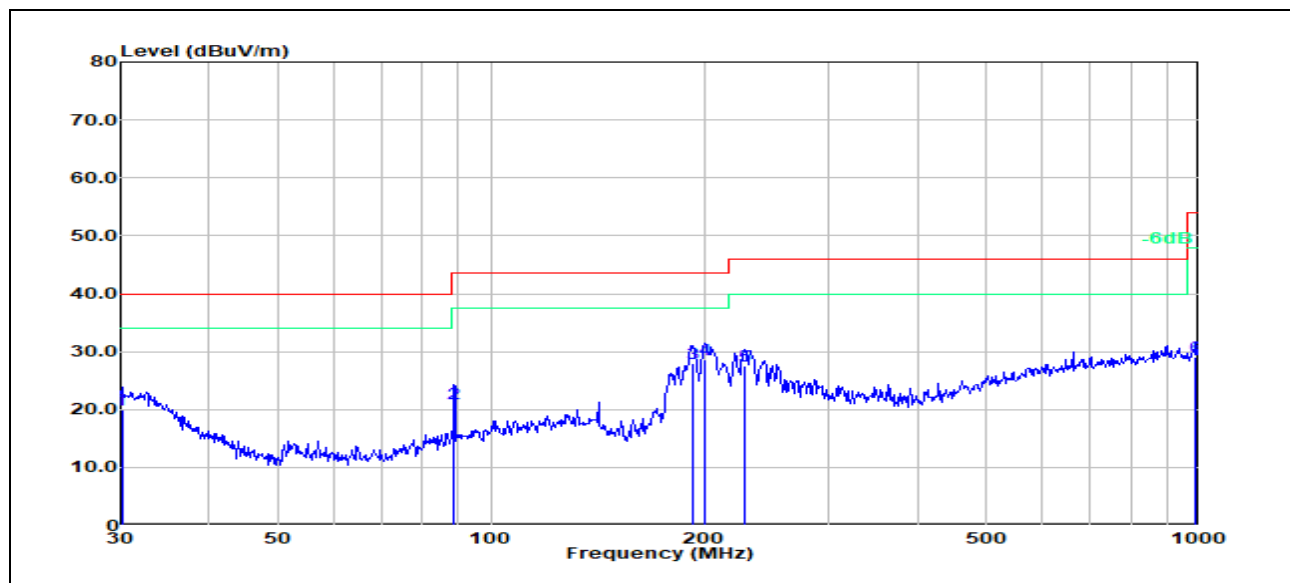
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Test Mode: 13; Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.1054	0.71	19.34	20.05	40.00	-19.95	100	147	QP
2	88.6525	9.55	11.50	21.05	43.50	-22.45	100	355	QP
3	193.0945	16.38	11.66	28.04	43.50	-15.46	200	32	QP
4	199.9856	17.16	11.47	28.63	43.50	-14.87	100	32	QP
5	228.4904	14.70	12.93	27.63	46.00	-18.37	100	19	QP
6	989.5355	3.39	25.57	28.96	54.00	-25.04	100	13	QP

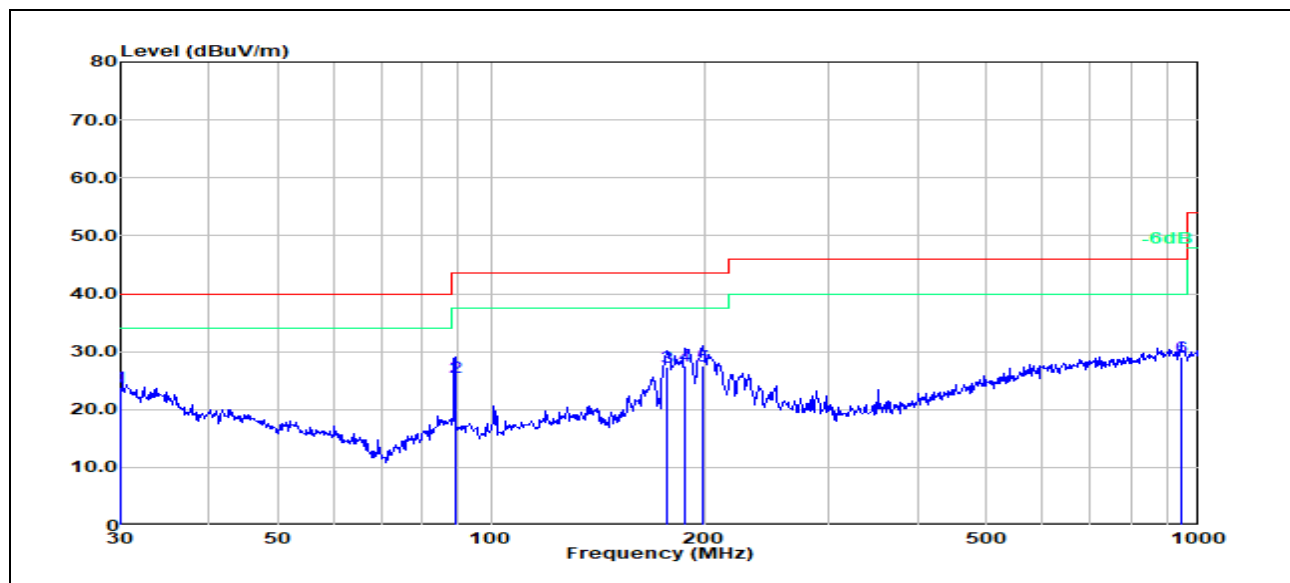
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Test Mode: 13; Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.0000	4.52	19.42	23.94	40.00	-16.06	100	329	QP
2	88.9639	14.04	11.59	25.63	43.50	-17.87	100	187	QP
3	176.8878	14.91	12.50	27.41	43.50	-16.09	200	174	QP
4	188.4125	15.41	12.13	27.54	43.50	-15.96	100	200	QP
5	199.2855	15.88	11.75	27.63	43.50	-15.87	100	0	QP
6	942.1305	3.33	25.63	28.96	46.00	-17.04	100	270	QP

7.4 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.6

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 21.8 °C

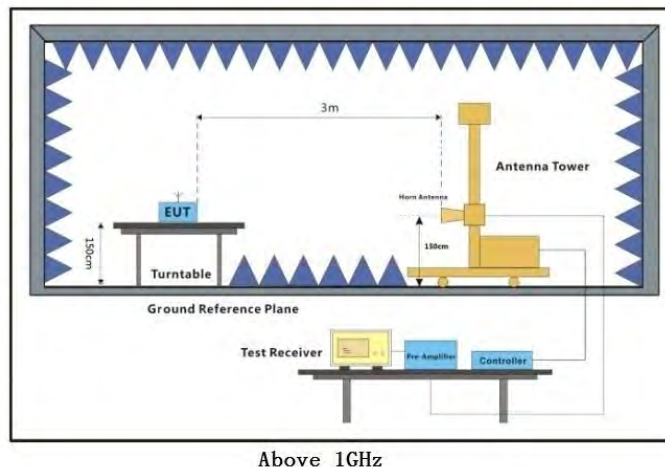
Humidity: 51.2 % RH

Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. 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 from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamplifier Factor}$
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

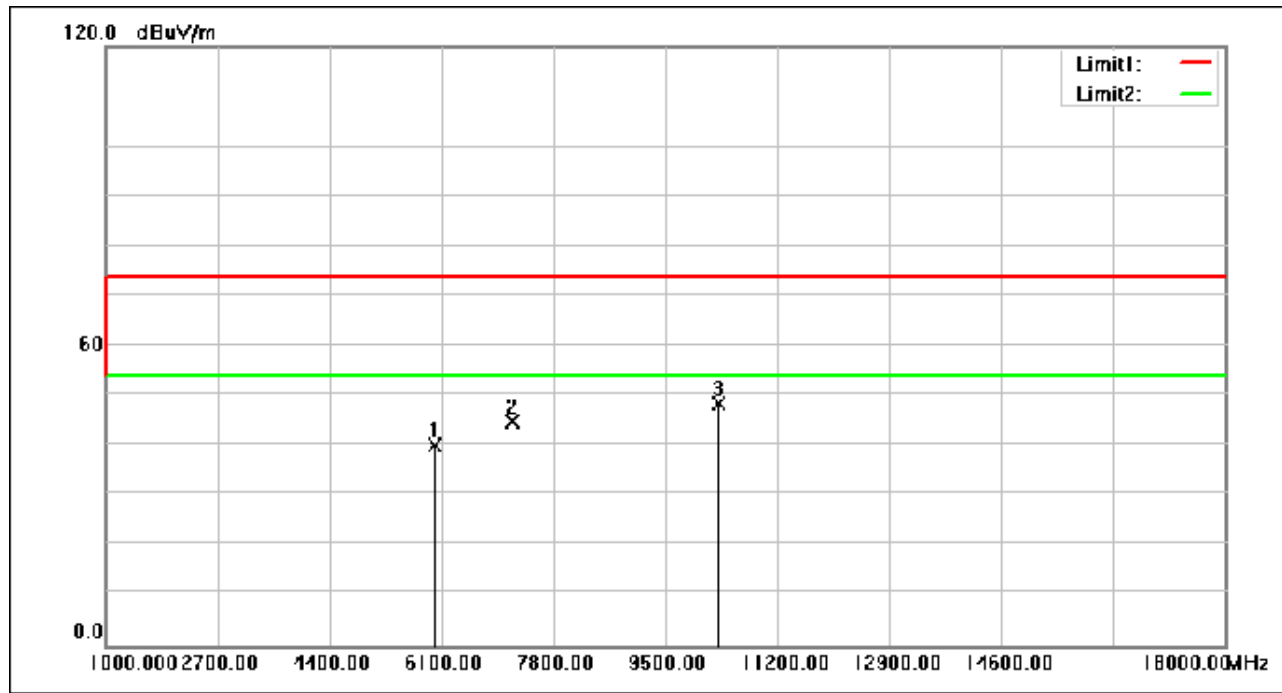
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6000.720	55.77	-15.78	39.99	74.00	-34.01	peak
2	7181.880	56.45	-11.49	44.96	74.00	-29.04	peak
3	10309.880	55.55	-7.15	48.40	74.00	-25.60	peak

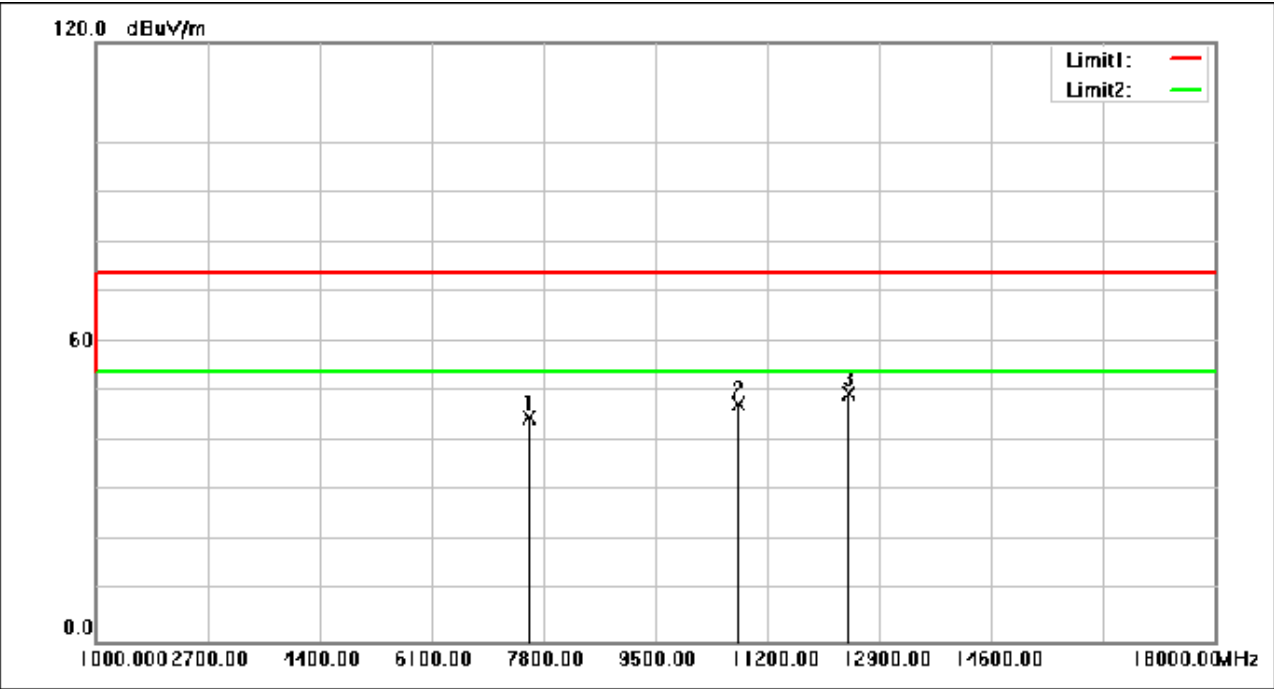
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Test Mode: 13; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7593.960	55.93	-11.14	44.79	74.00	-29.21	peak
2	10758.680	54.33	-6.89	47.44	74.00	-26.56	peak
3	12456.640	55.80	-6.09	49.71	74.00	-24.29	peak

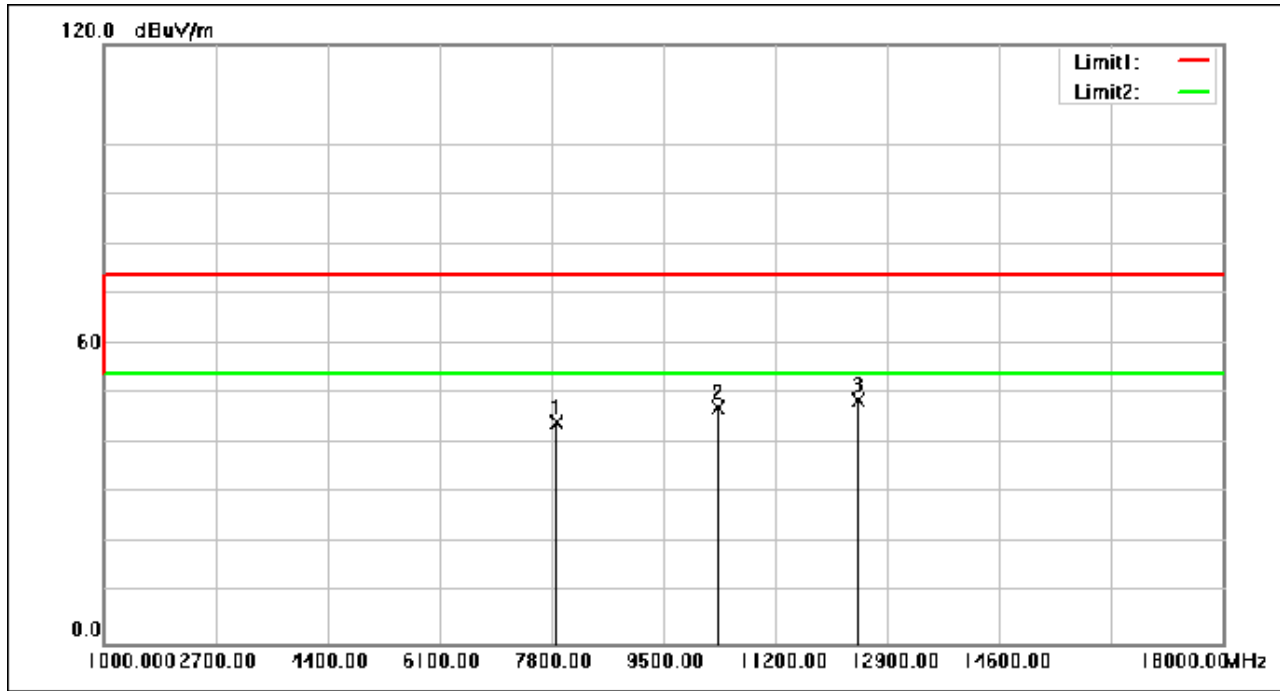
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7888.400	54.92	-10.75	44.17	74.00	-29.83	peak
2	10317.360	54.48	-7.15	47.33	74.00	-26.67	peak
3	12461.400	54.86	-6.10	48.76	74.00	-25.24	peak

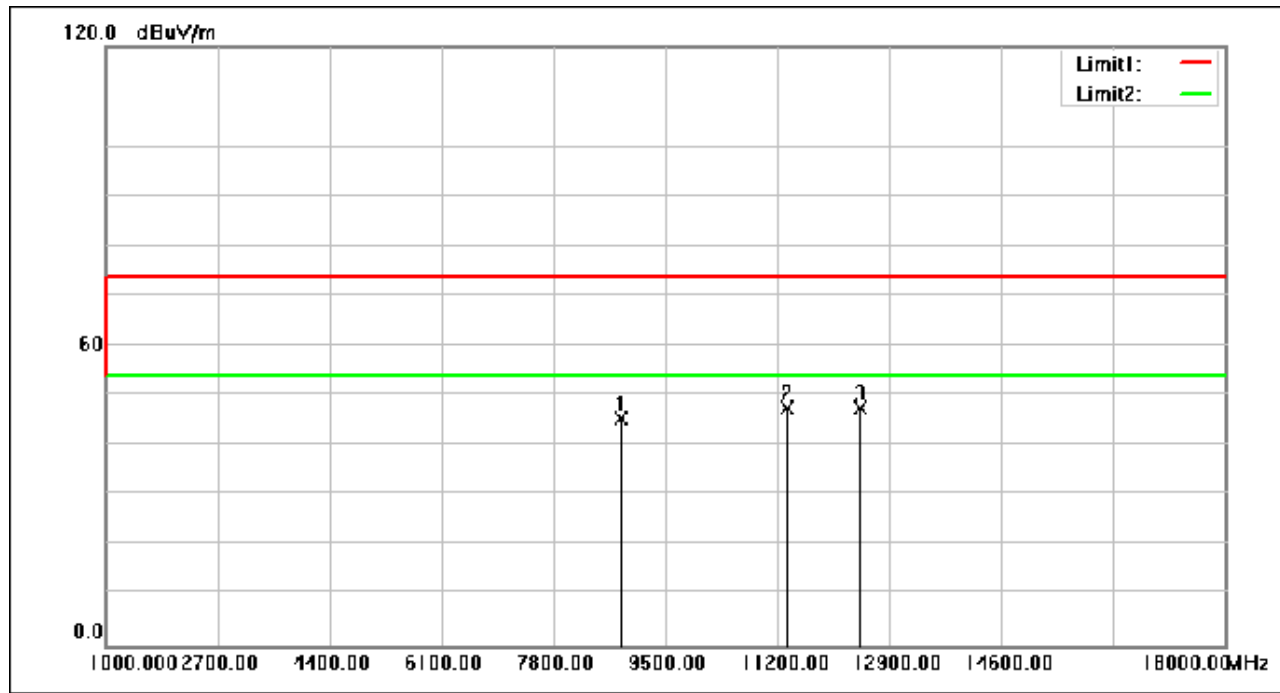
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Test Mode: 13; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8820.000	54.65	-9.22	45.43	74.00	-28.57	peak
2	11358.440	53.93	-6.47	47.46	74.00	-26.54	peak
3	12464.120	53.58	-6.10	47.48	74.00	-26.52	peak

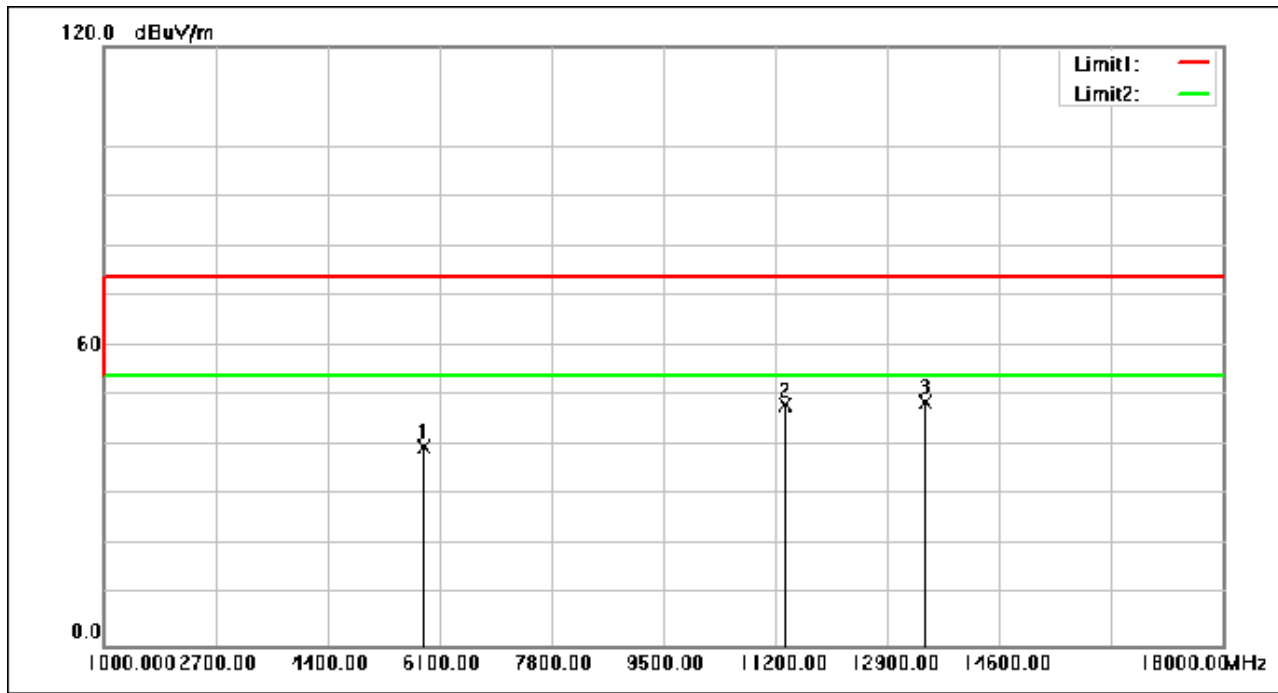
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5874.920	56.20	-16.30	39.90	74.00	-34.10	peak
2	11352.320	54.76	-6.48	48.28	74.00	-25.72	peak
3	13490.240	54.98	-6.34	48.64	74.00	-25.36	peak

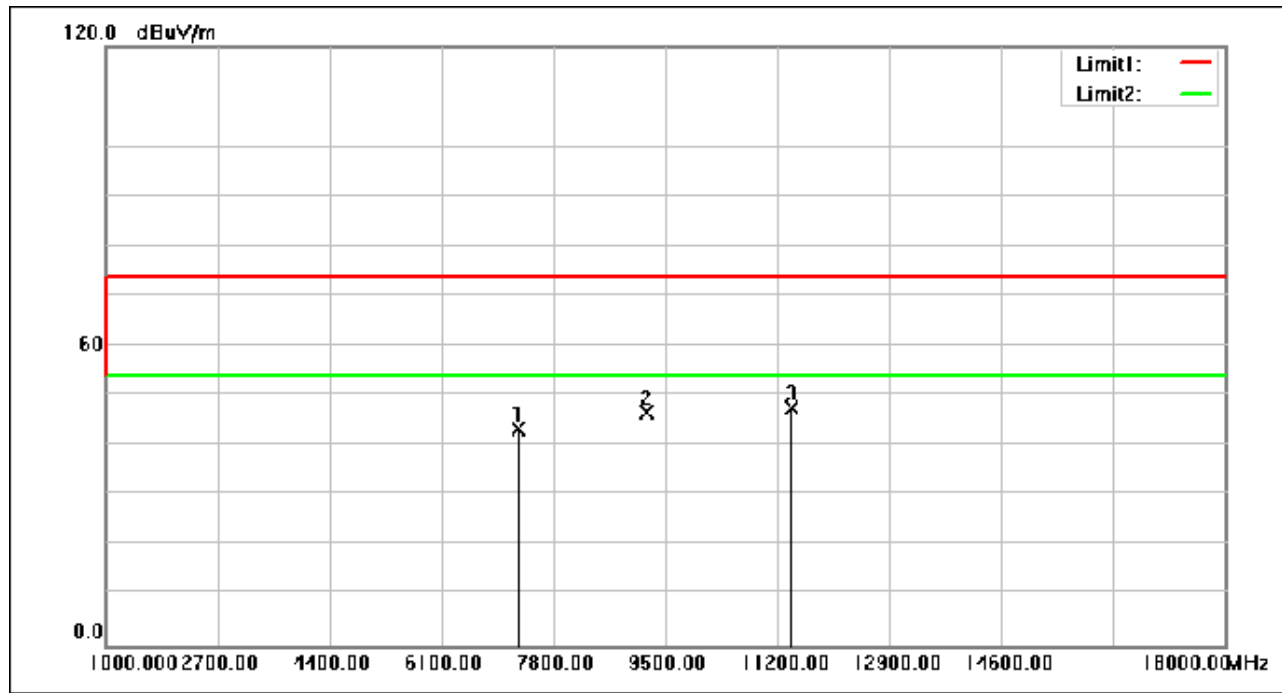
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Test Mode: 13; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7256.000	54.89	-11.45	43.44	74.00	-30.56	peak
2	9224.600	55.01	-8.47	46.54	74.00	-27.46	peak
3	11407.400	53.87	-6.43	47.44	74.00	-26.56	peak

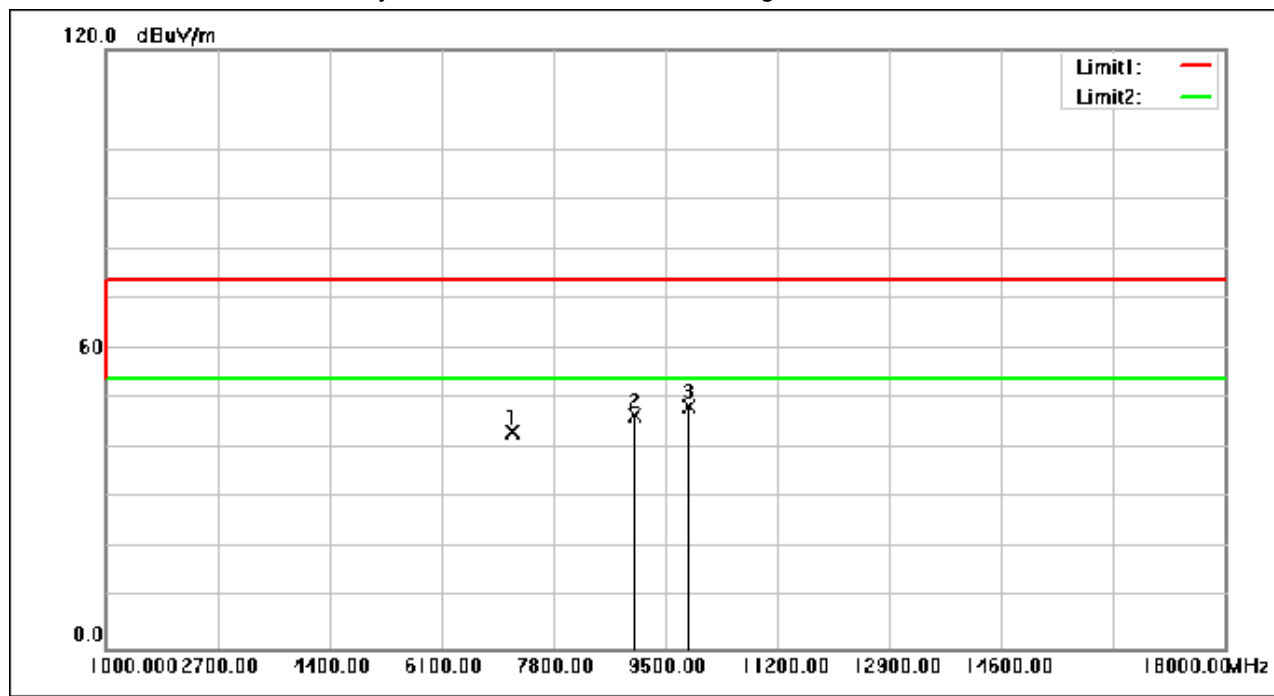
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7178.480	54.91	-11.49	43.42	74.00	-30.58	peak
2	9045.080	55.41	-8.81	46.60	74.00	-27.40	peak
3	9842.720	55.66	-7.30	48.36	74.00	-25.64	peak

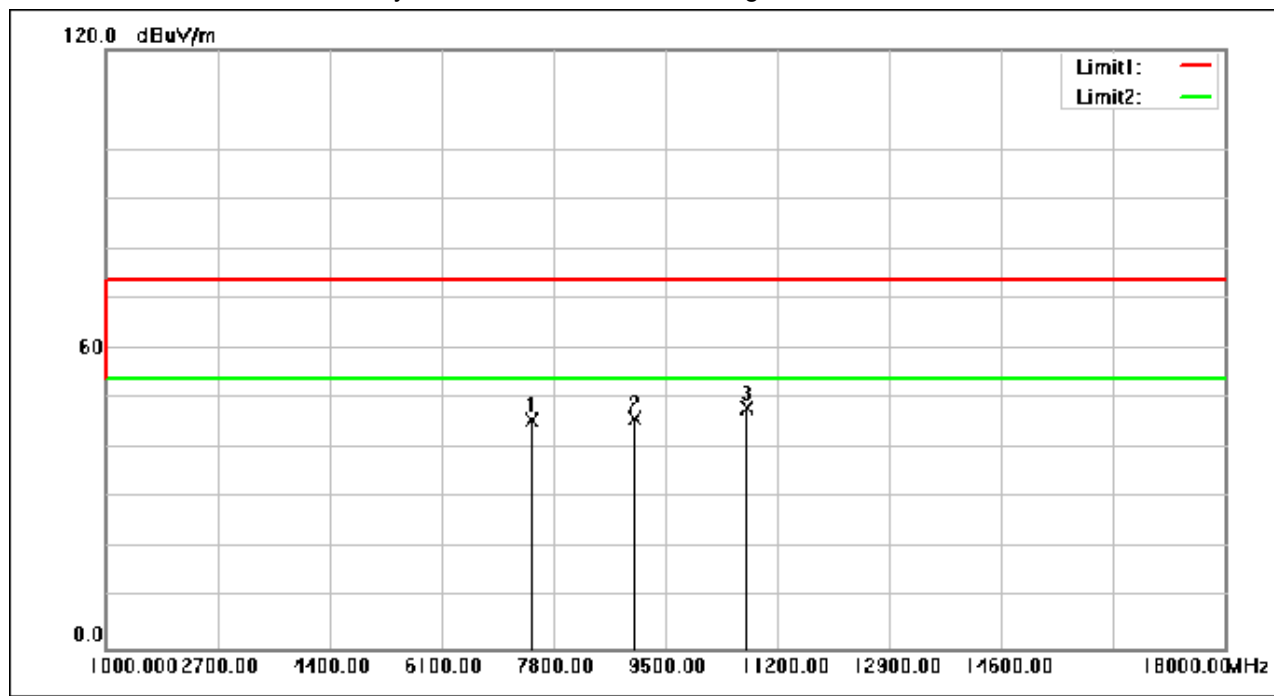
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Test Mode: 13; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7487.880	56.99	-11.28	45.71	74.00	-28.29	peak
2	9036.920	55.01	-8.83	46.18	74.00	-27.82	peak
3	10744.400	55.08	-6.90	48.18	74.00	-25.82	peak

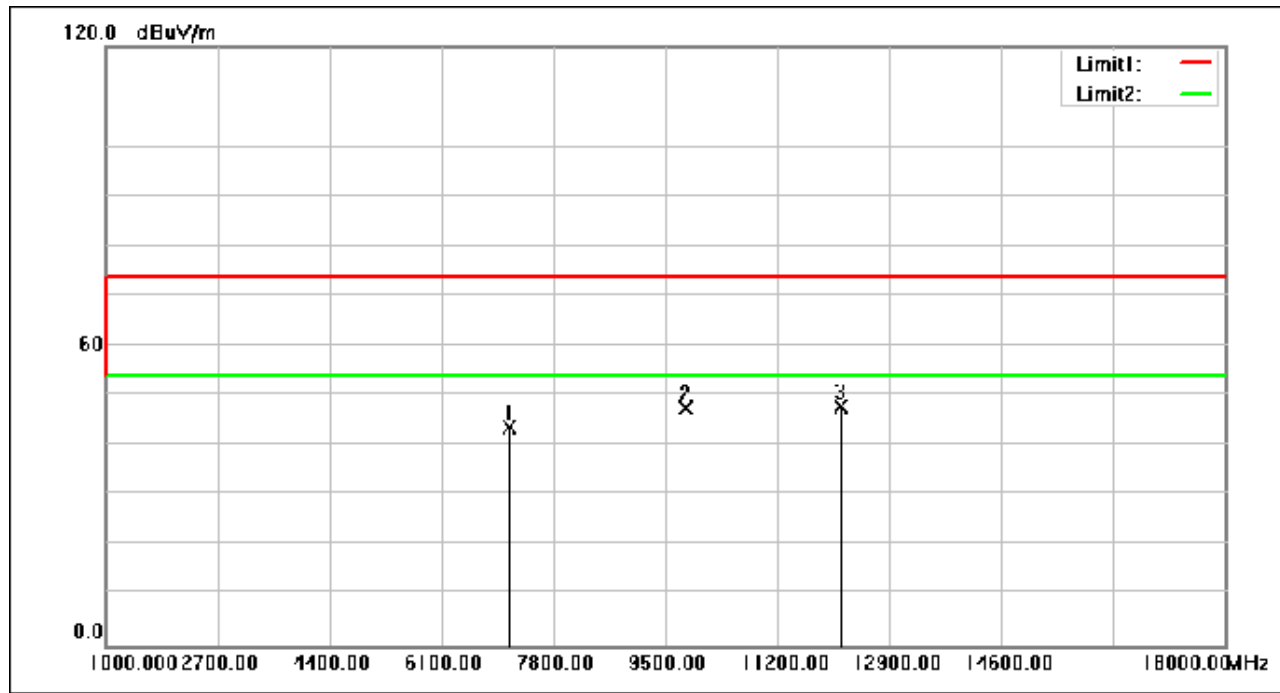
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7144.480	55.28	-11.50	43.78	74.00	-30.22	peak
2	9808.040	55.02	-7.37	47.65	74.00	-26.35	peak
3	12177.840	53.70	-5.97	47.73	74.00	-26.27	peak

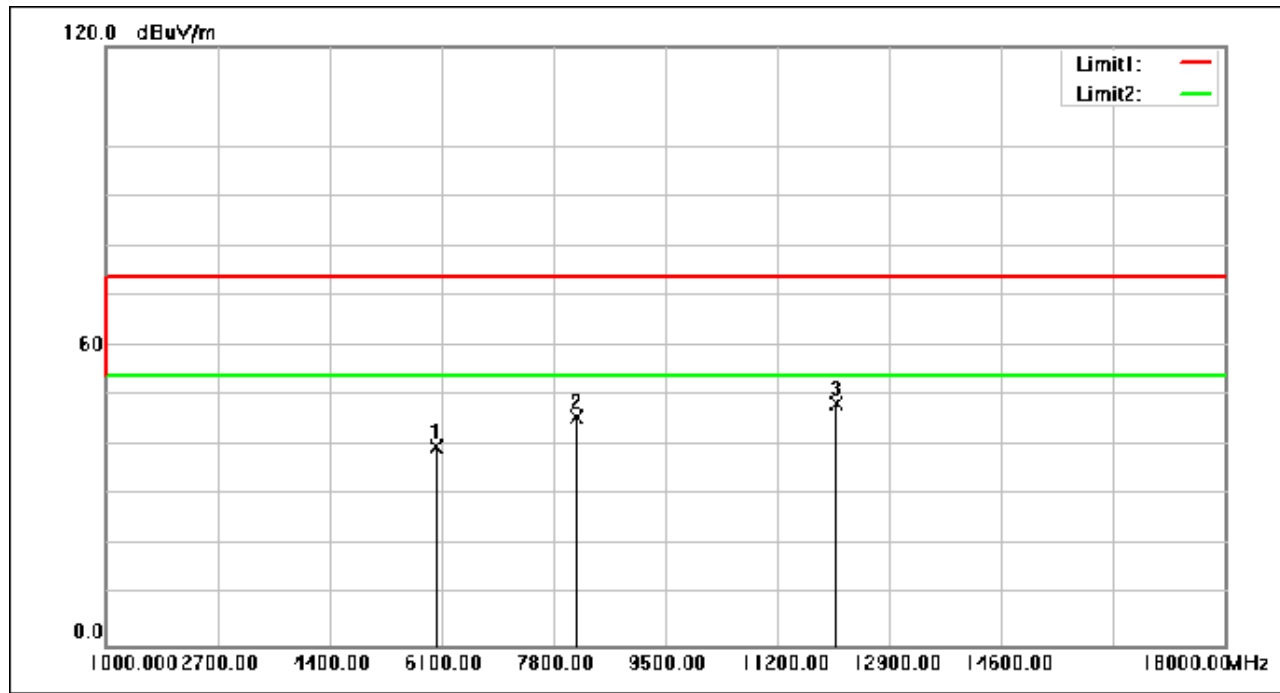
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No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6018.400	55.34	-15.69	39.65	74.00	-34.35	peak
2	8152.240	56.00	-10.32	45.68	74.00	-28.32	peak
3	12111.200	54.47	-5.94	48.53	74.00	-25.47	peak

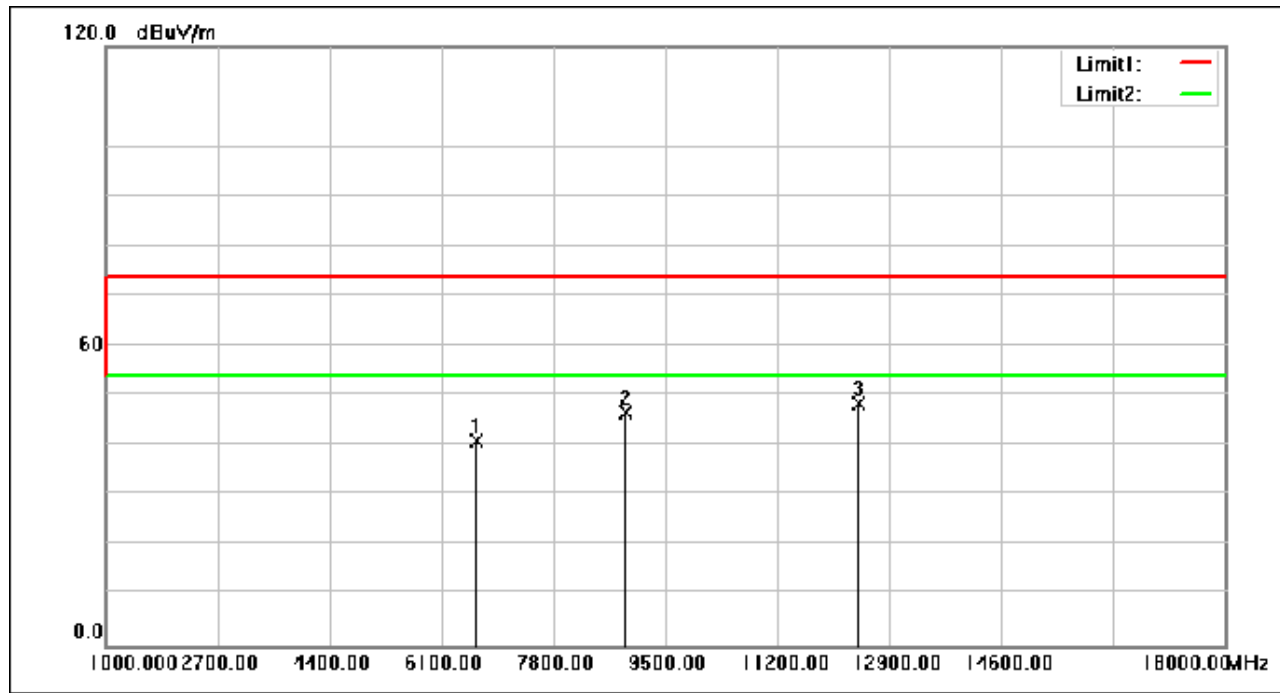
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6641.960	53.47	-12.48	40.99	74.00	-33.01	peak
2	8916.560	55.87	-9.07	46.80	74.00	-27.20	peak
3	12428.760	54.60	-6.08	48.52	74.00	-25.48	peak

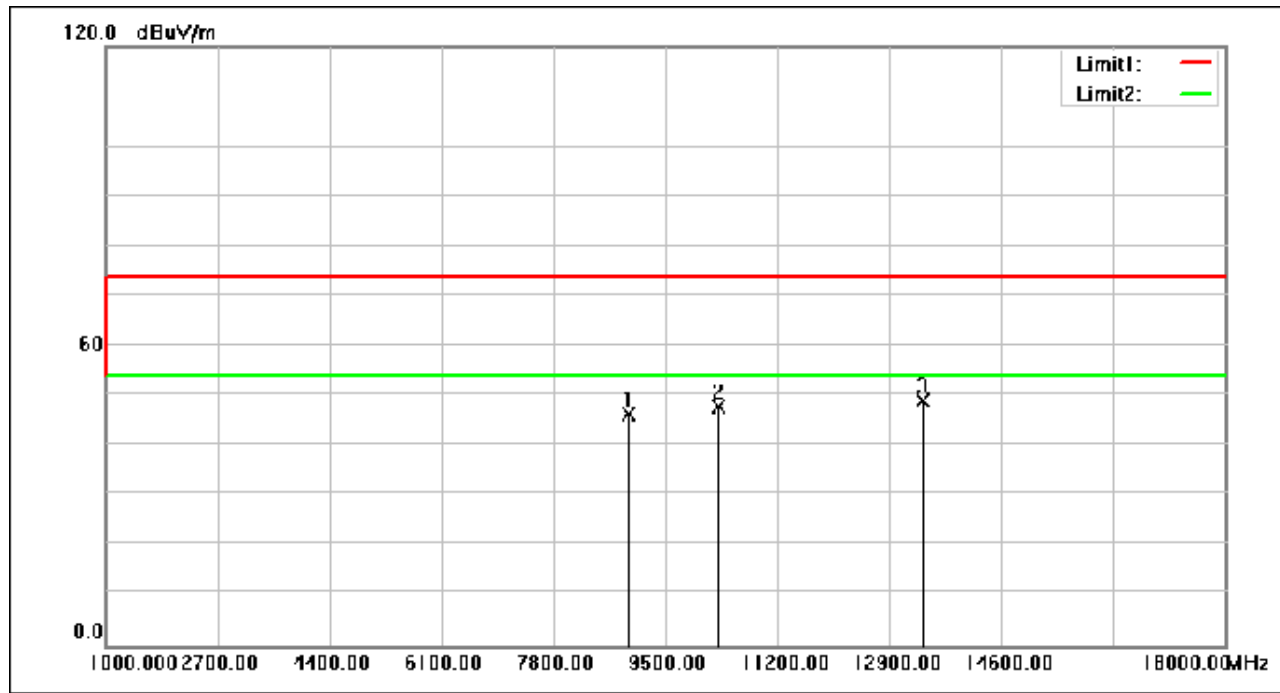
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No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8943.760	55.28	-9.02	46.26	74.00	-27.74	peak
2	10311.920	54.90	-7.15	47.75	74.00	-26.25	peak
3	13419.520	55.29	-6.32	48.97	74.00	-25.03	peak

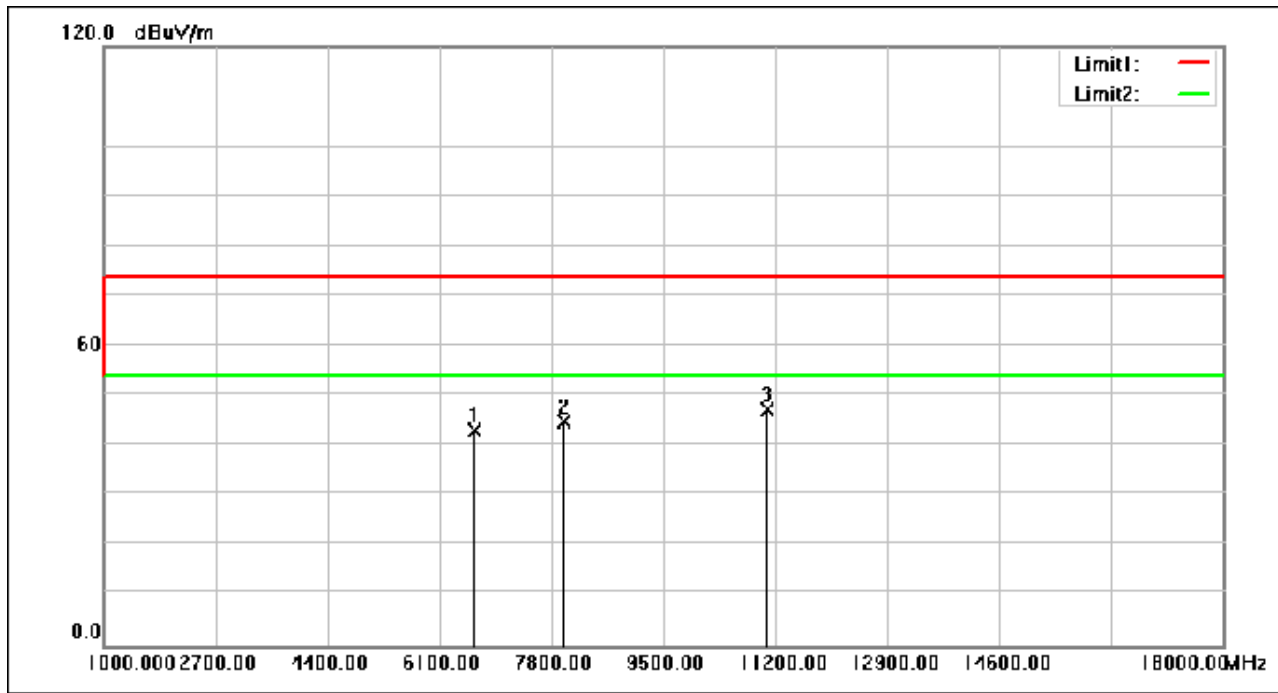
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6639.240	55.66	-12.50	43.16	74.00	-30.84	peak
2	7993.120	55.36	-10.61	44.75	74.00	-29.25	peak
3	11064.680	53.82	-6.71	47.11	74.00	-26.89	peak

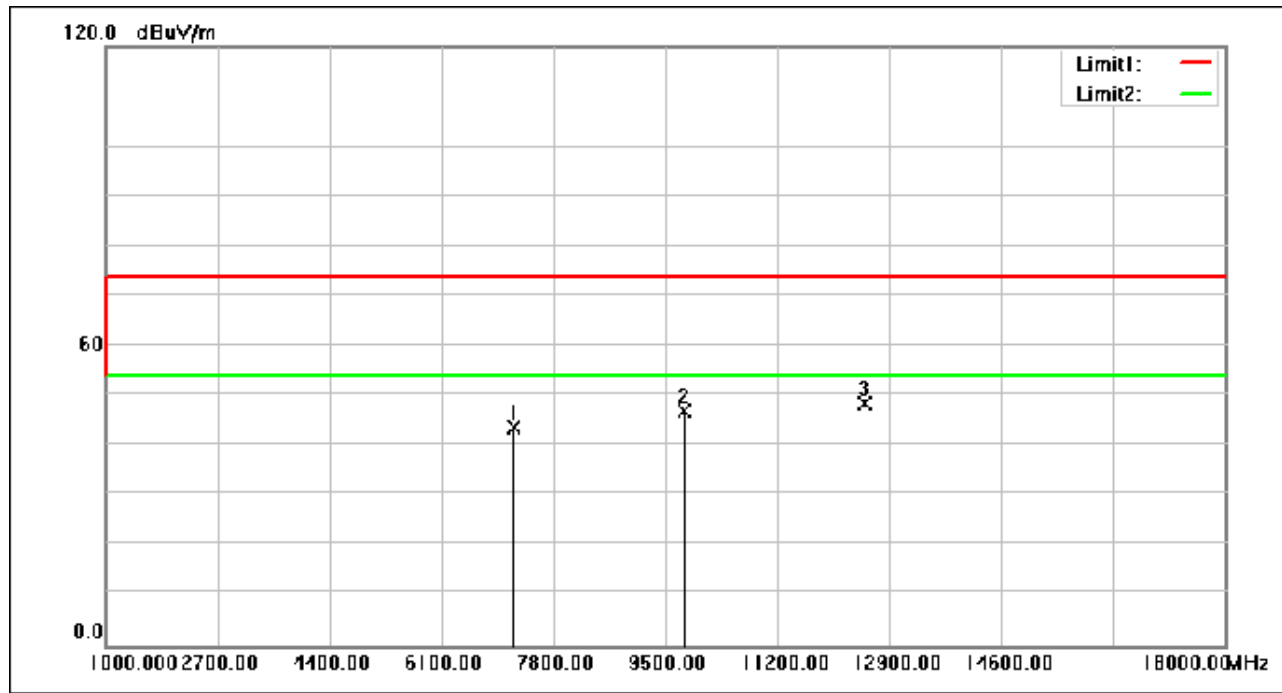
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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7211.120	55.05	-11.47	43.58	74.00	-30.42	peak
2	9774.040	54.38	-7.44	46.94	74.00	-27.06	peak
3	12532.800	54.61	-6.13	48.48	74.00	-25.52	peak

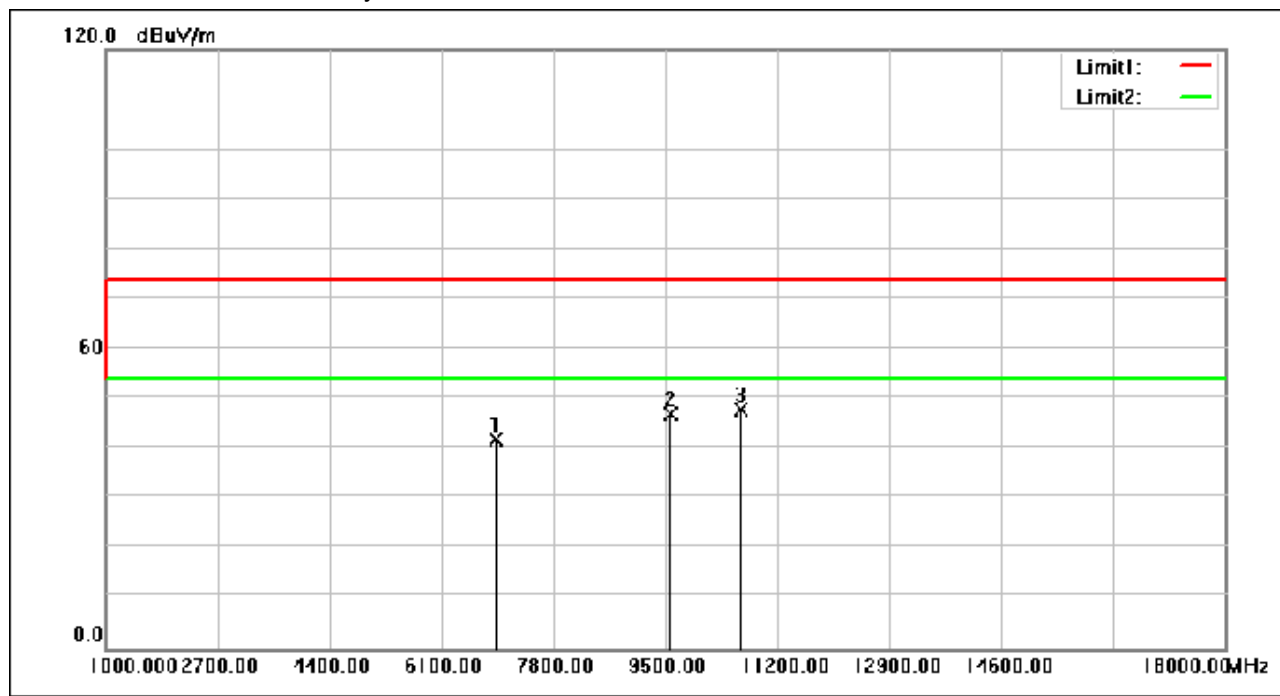
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6943.200	53.62	-11.66	41.96	74.00	-32.04	peak
2	9569.360	54.76	-7.83	46.93	74.00	-27.07	peak
3	10640.360	54.75	-6.96	47.79	74.00	-26.21	peak

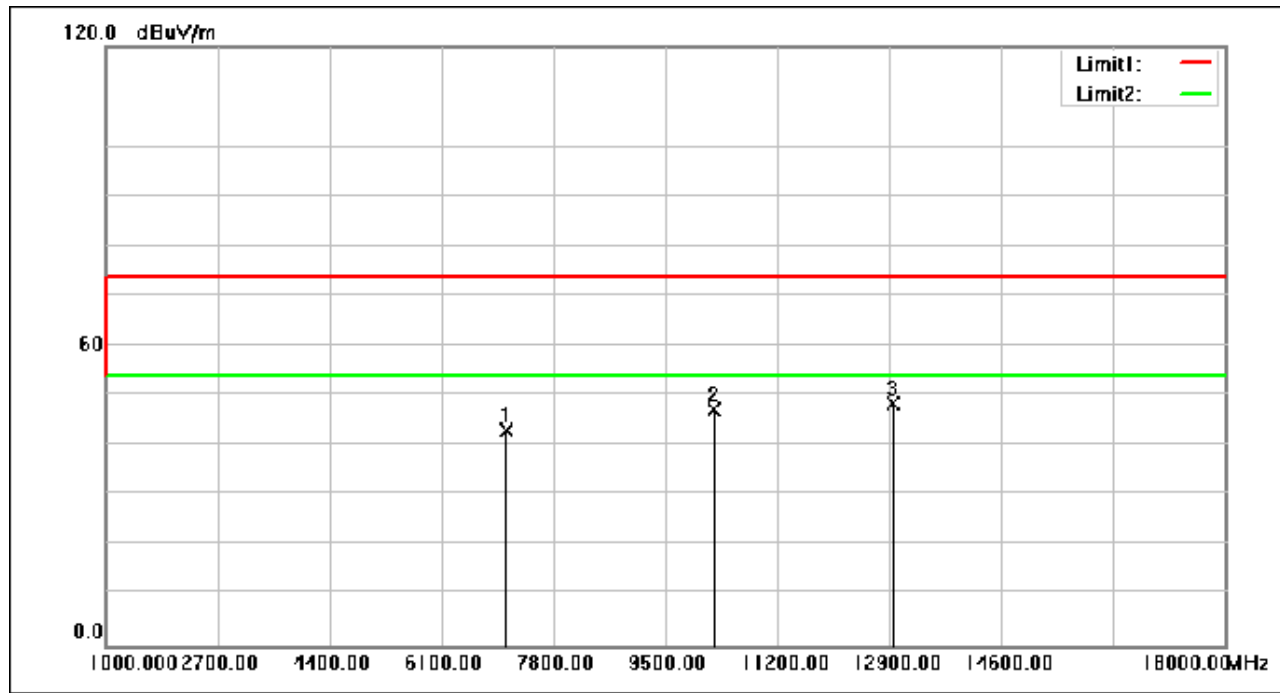
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7097.560	54.71	-11.52	43.19	74.00	-30.81	peak
2	10234.400	54.32	-7.20	47.12	74.00	-26.88	peak
3	12965.280	54.67	-6.32	48.35	74.00	-25.65	peak

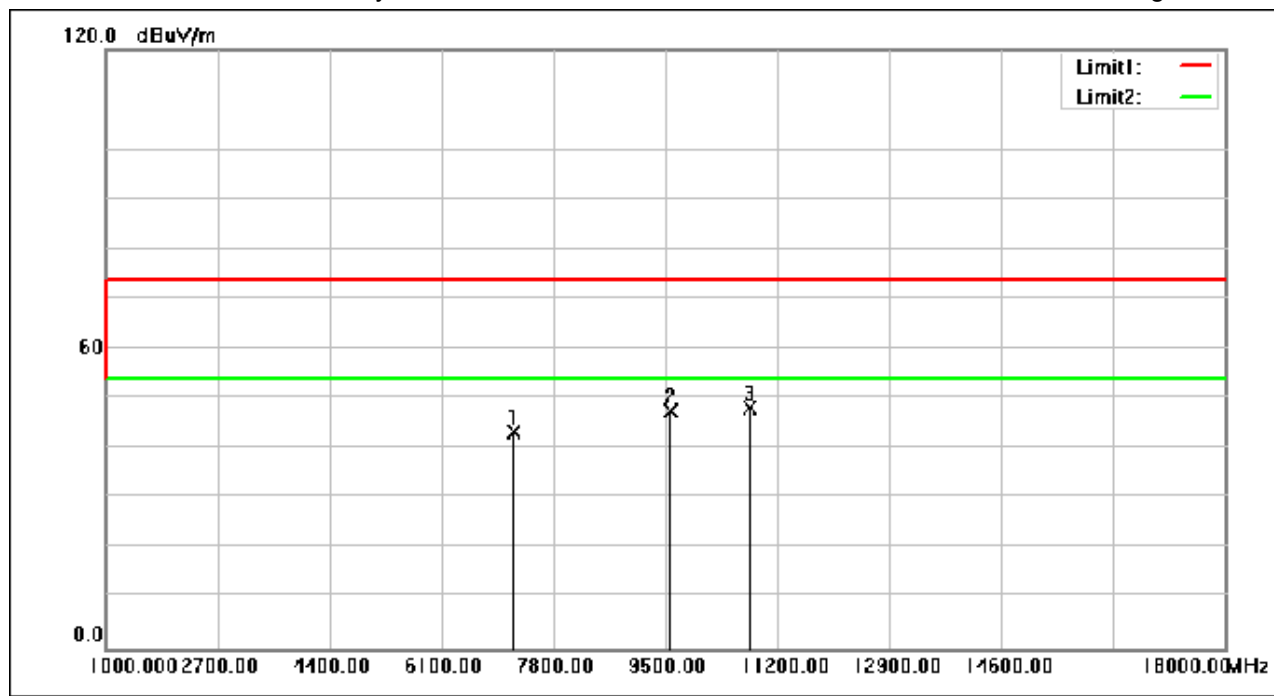
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7205.000	54.76	-11.47	43.29	74.00	-30.71	peak
2	9578.880	55.25	-7.81	47.44	74.00	-26.56	peak
3	10786.560	54.88	-6.87	48.01	74.00	-25.99	peak

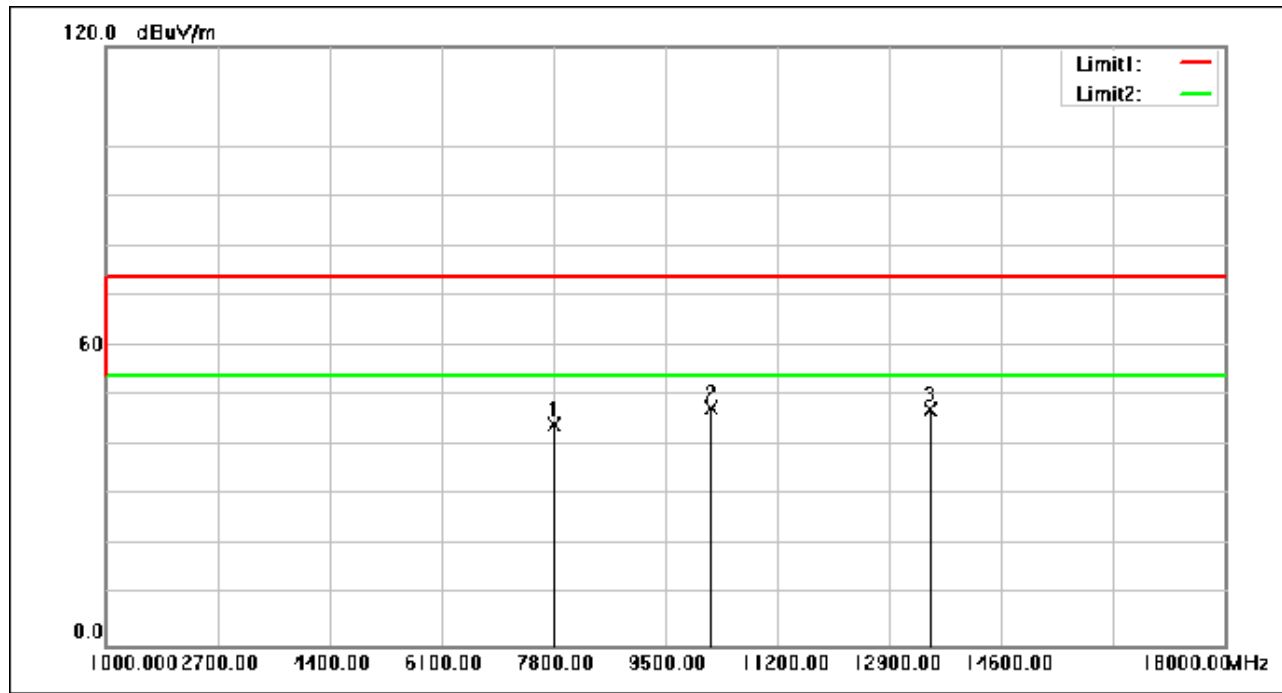
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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7801.360	55.10	-10.86	44.24	74.00	-29.76	peak
2	10203.120	54.67	-7.21	47.46	74.00	-26.54	peak
3	13524.240	53.72	-6.34	47.38	74.00	-26.62	peak

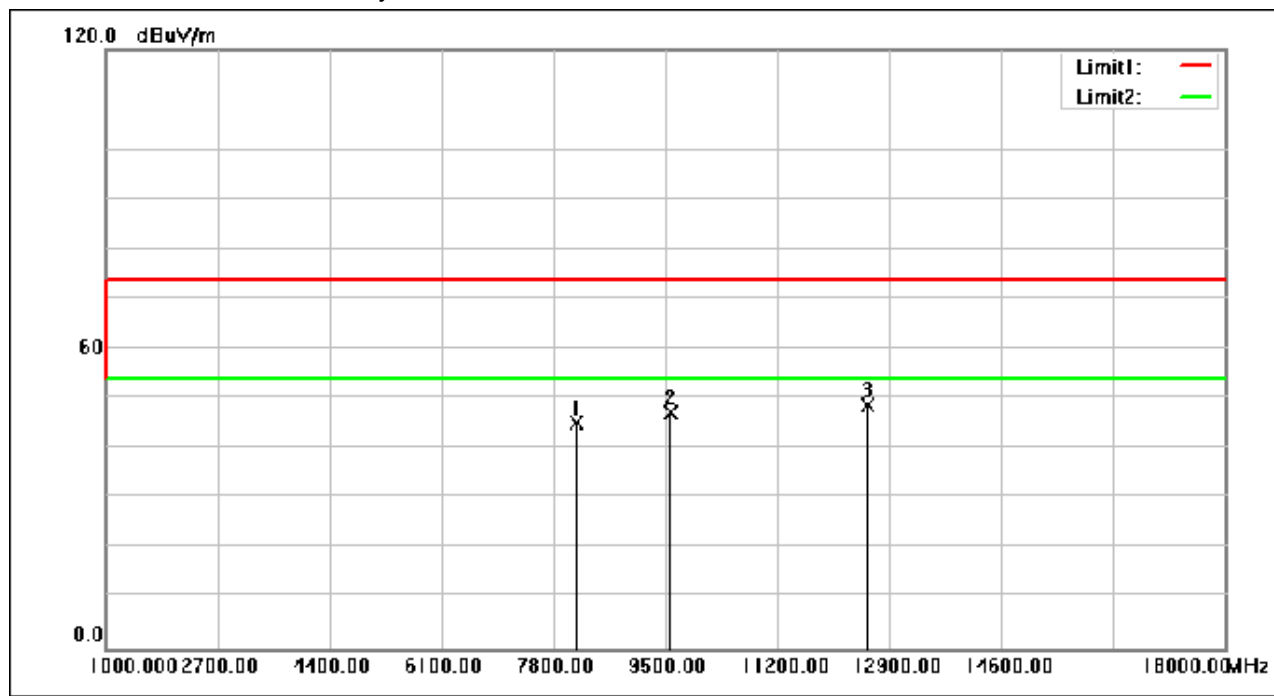
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8140.000	55.42	-10.35	45.07	74.00	-28.93	peak
2	9578.880	55.21	-7.81	47.40	74.00	-26.60	peak
3	12591.280	54.87	-6.16	48.71	74.00	-25.29	peak

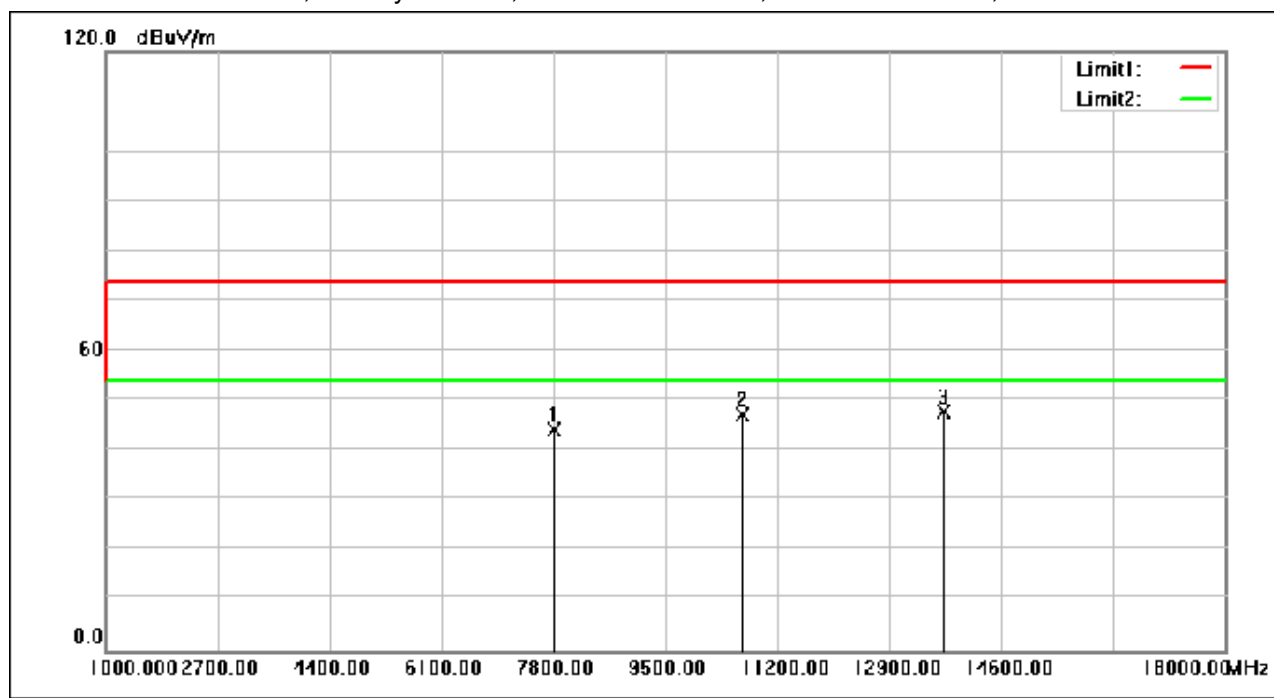
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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7831.280	55.00	-10.83	44.17	74.00	-29.83	peak
2	10670.960	54.10	-6.94	47.16	74.00	-26.84	peak
3	13739.120	54.36	-6.38	47.98	74.00	-26.02	peak

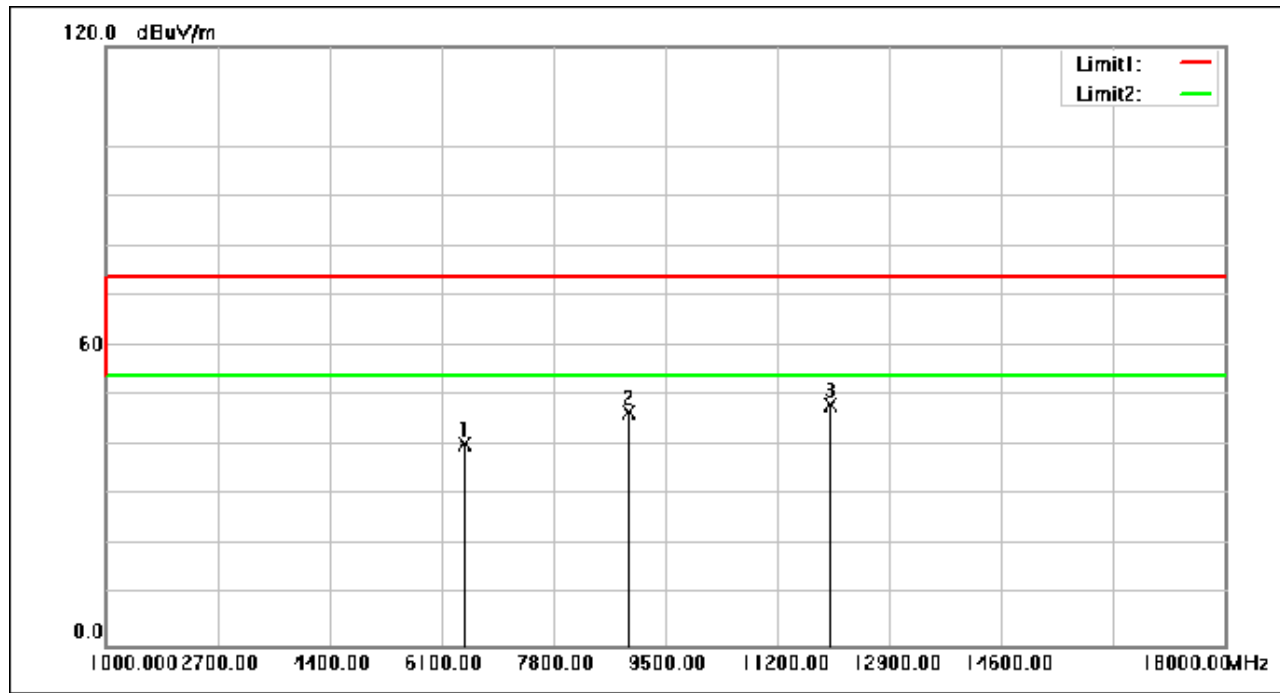
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6463.120	53.79	-13.42	40.37	74.00	-33.63	peak
2	8944.440	55.59	-9.02	46.57	74.00	-27.43	peak
3	12013.280	54.12	-5.89	48.23	74.00	-25.77	peak

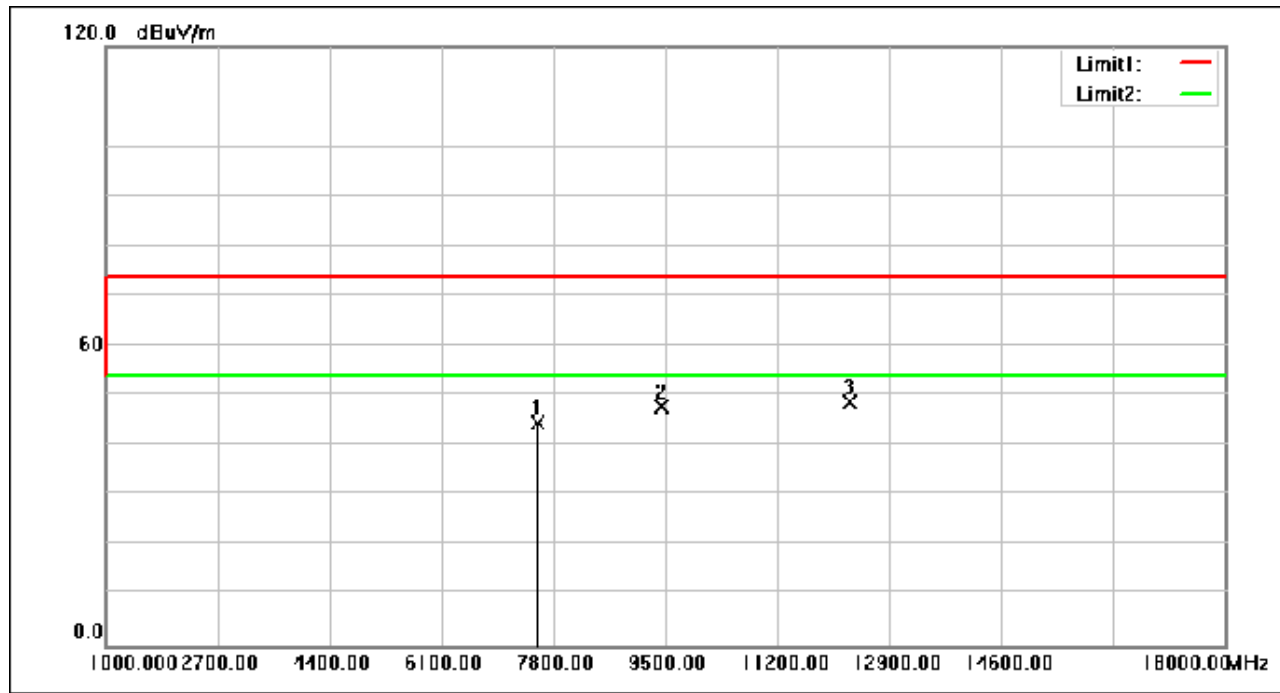
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7572.200	55.82	-11.16	44.66	74.00	-29.34	peak
2	9454.440	55.93	-8.04	47.89	74.00	-26.11	peak
3	12303.640	54.64	-6.02	48.62	74.00	-25.38	peak

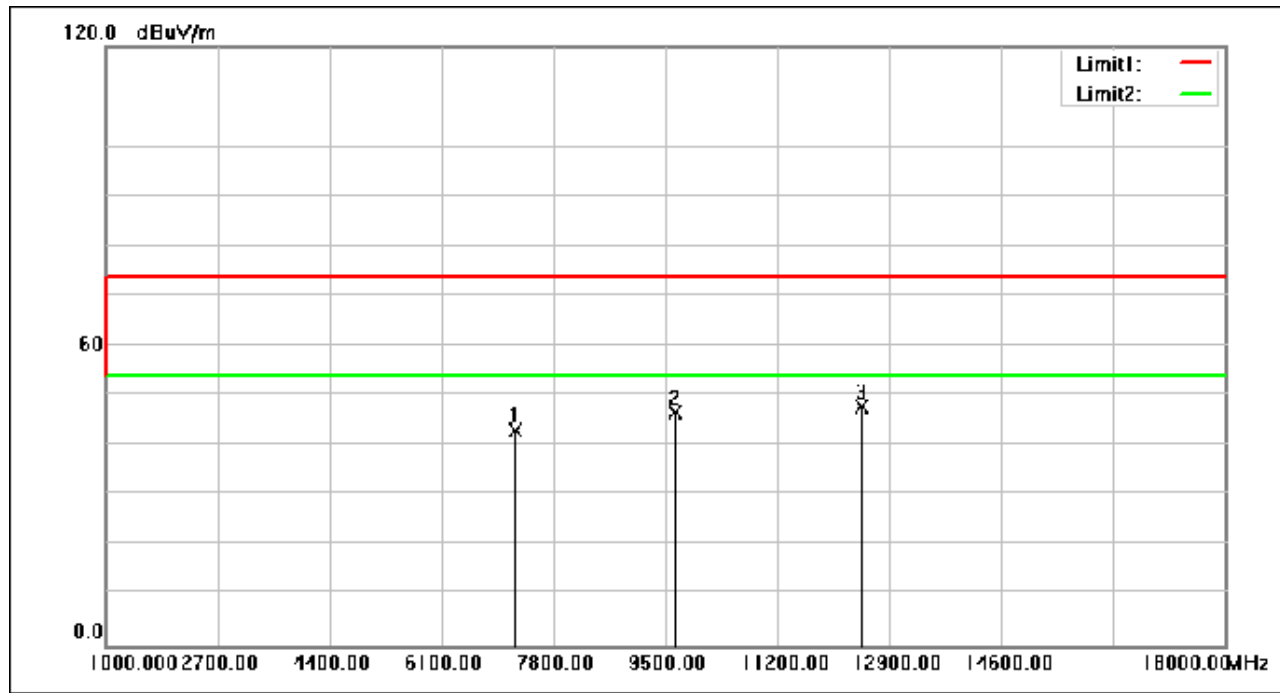
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7226.080	54.41	-11.47	42.94	74.00	-31.06	peak
2	9644.840	54.27	-7.68	46.59	74.00	-27.41	peak
3	12476.360	53.83	-6.10	47.73	74.00	-26.27	peak

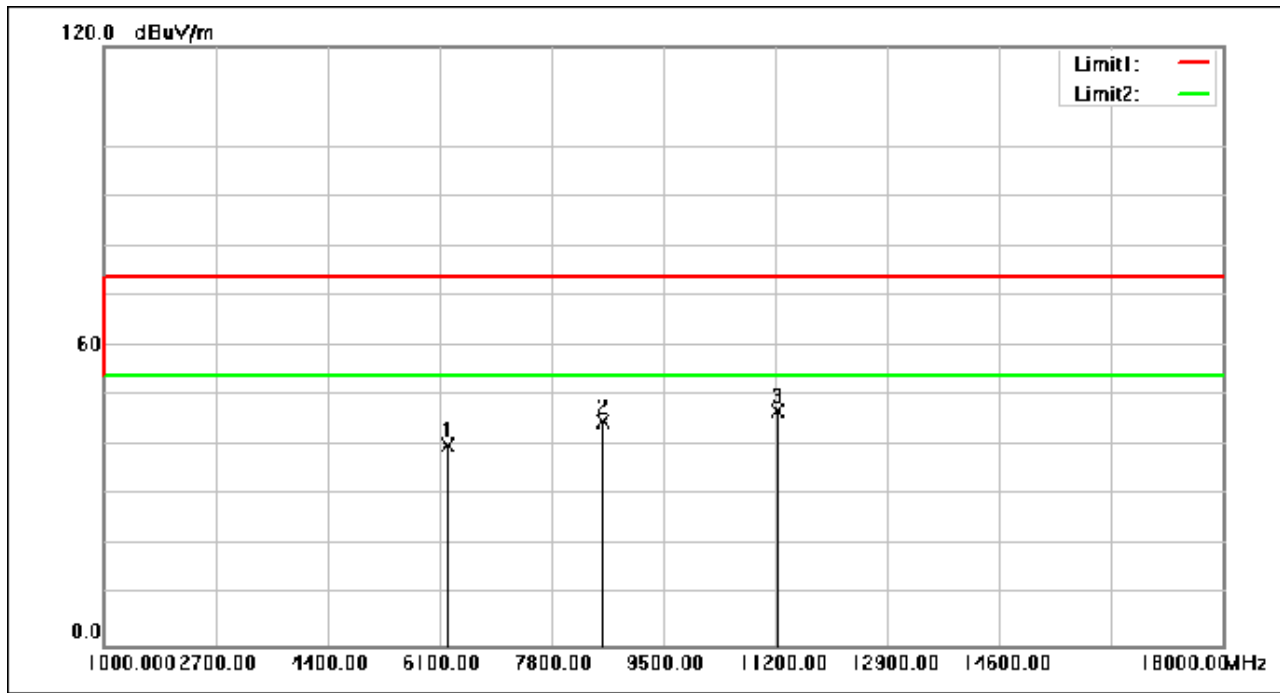
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Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6229.200	54.65	-14.64	40.01	74.00	-33.99	peak
2	8588.800	54.39	-9.60	44.79	74.00	-29.21	peak
3	11246.240	53.61	-6.56	47.05	74.00	-26.95	peak

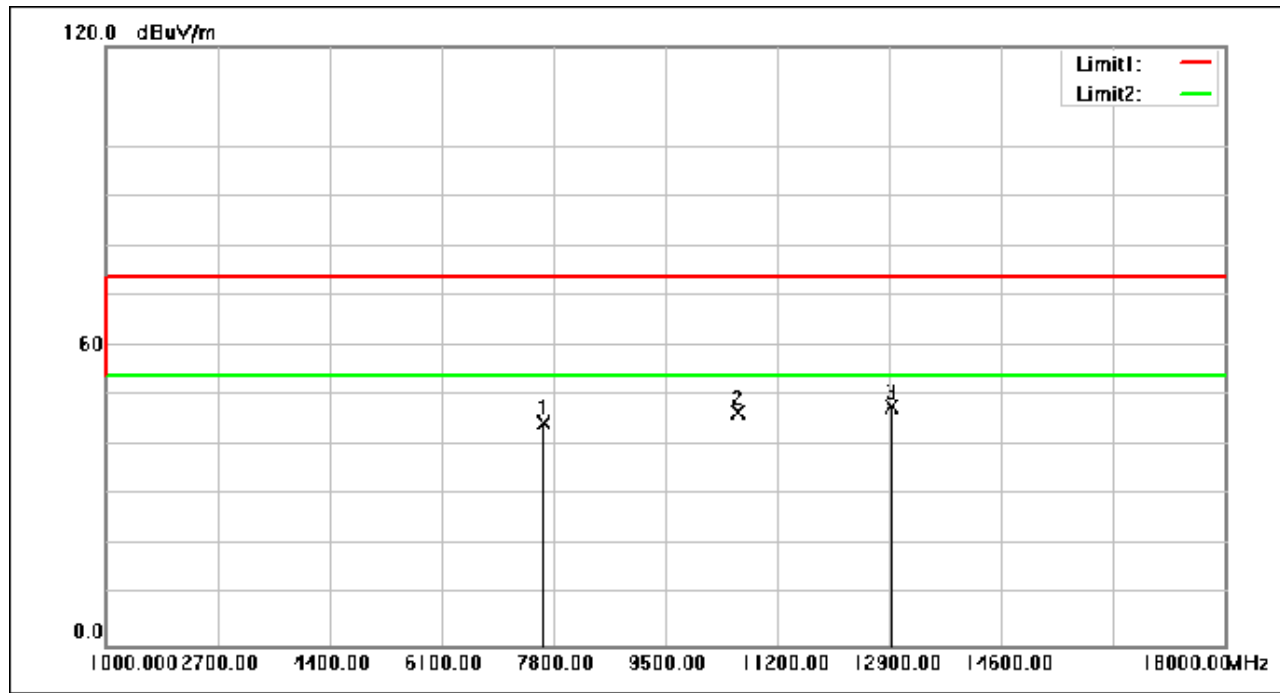
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7659.920	55.73	-11.05	44.68	74.00	-29.32	peak
2	10591.400	53.76	-6.99	46.77	74.00	-27.23	peak
3	12936.720	54.27	-6.31	47.96	74.00	-26.04	peak

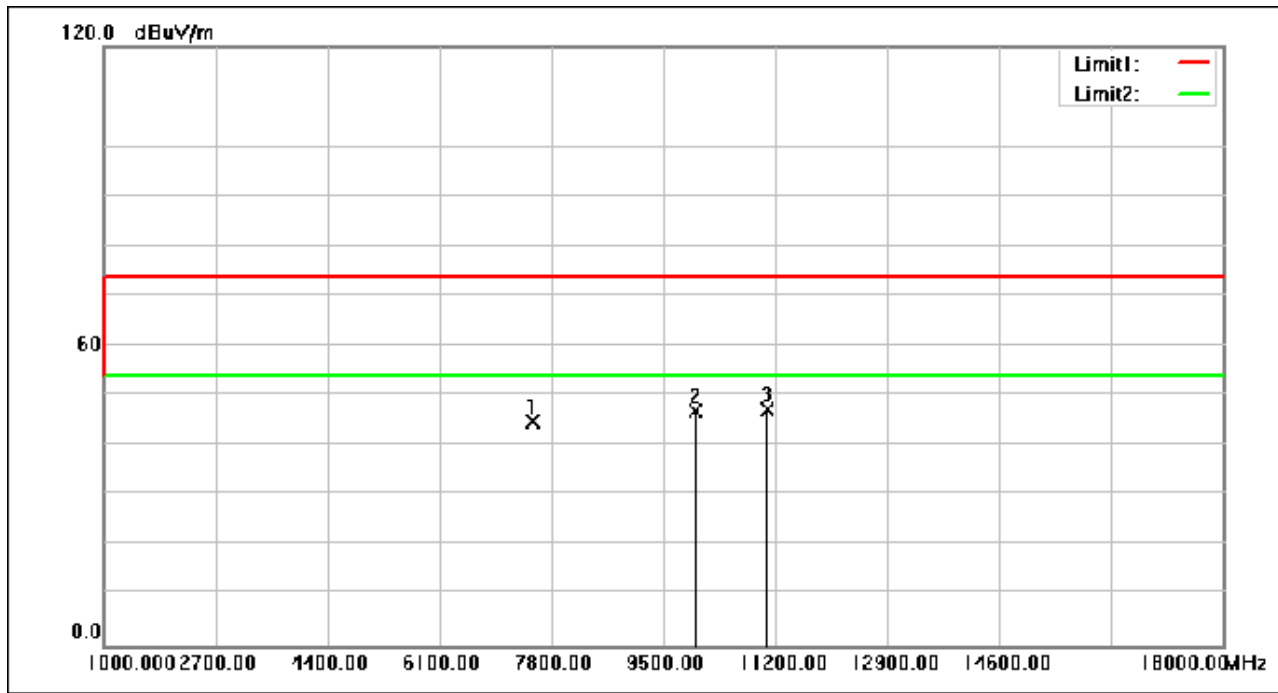
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7520.520	56.16	-11.23	44.93	74.00	-29.07	peak
2	9994.360	54.37	-7.33	47.04	74.00	-26.96	peak
3	11068.760	53.97	-6.71	47.26	74.00	-26.74	peak

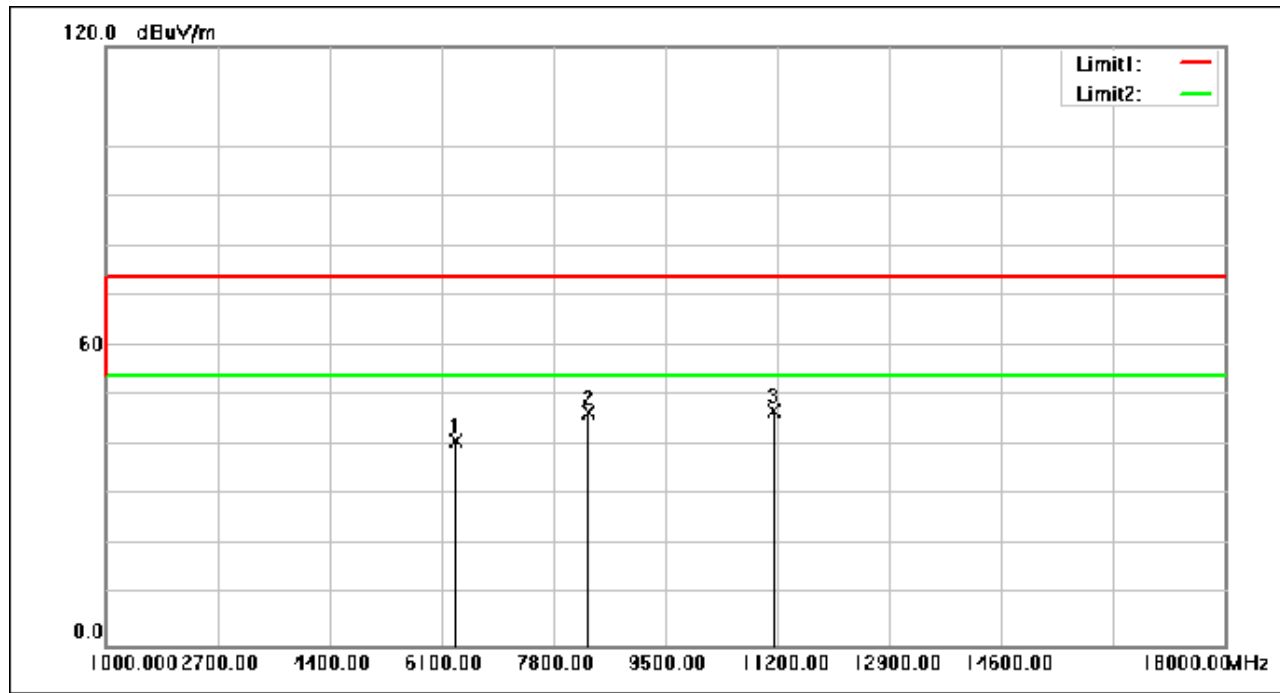
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6329.840	54.94	-14.12	40.82	74.00	-33.18	peak
2	8329.040	56.54	-10.03	46.51	74.00	-27.49	peak
3	11142.200	53.74	-6.65	47.09	74.00	-26.91	peak

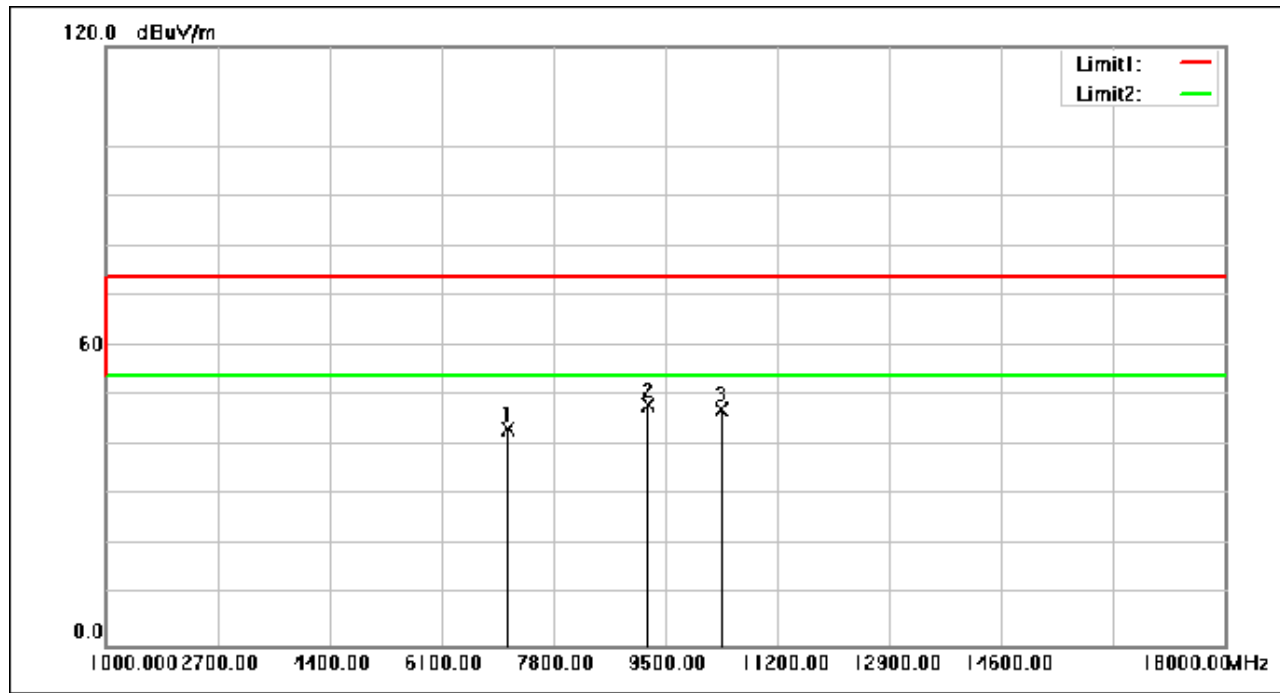
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Test Mode: 13; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7115.240	55.01	-11.51	43.50	74.00	-30.50	peak
2	9233.440	56.46	-8.45	48.01	74.00	-25.99	peak
3	10350.680	54.51	-7.12	47.39	74.00	-26.61	peak

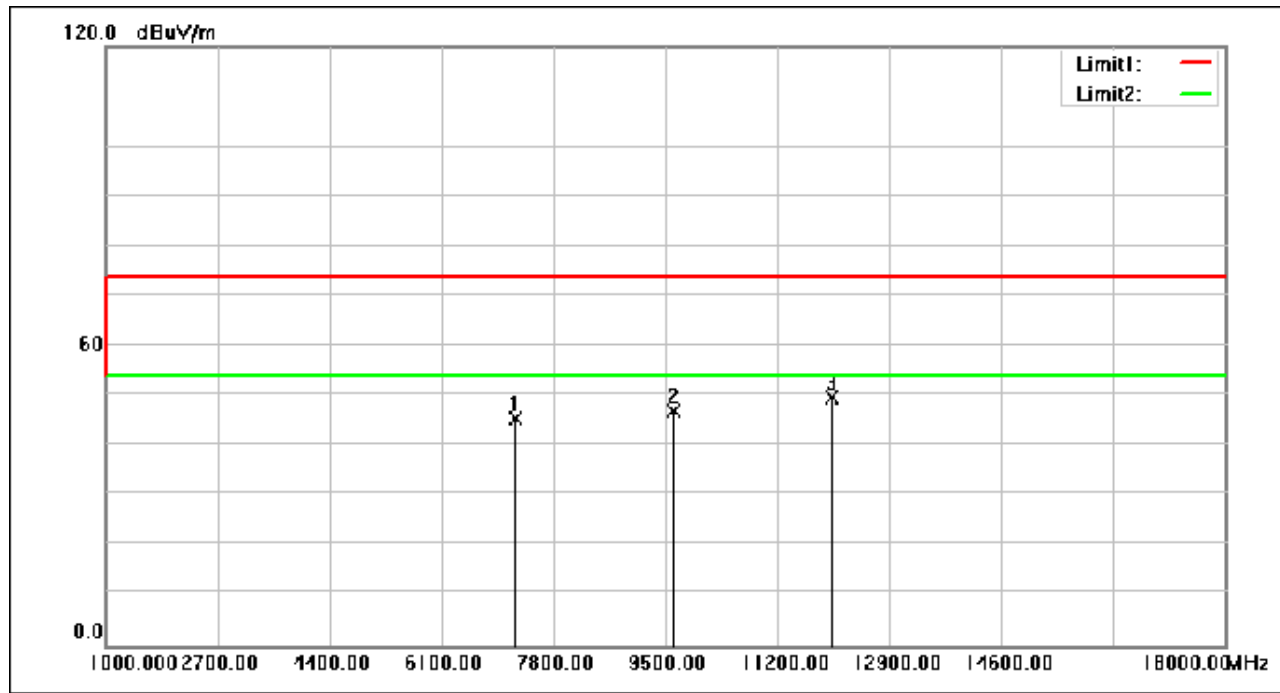
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7237.640	56.86	-11.46	45.40	74.00	-28.60	peak
2	9621.040	54.73	-7.72	47.01	74.00	-26.99	peak
3	12022.800	55.48	-5.90	49.58	74.00	-24.42	peak

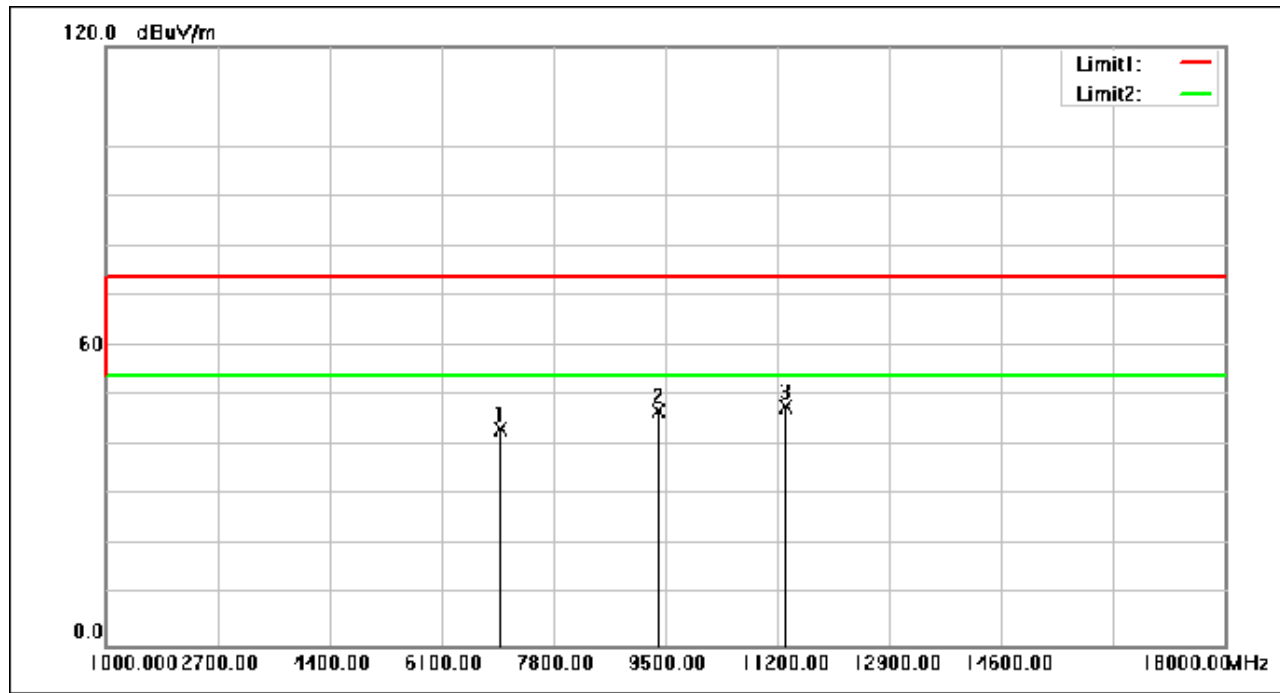
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Test Mode: 13; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7000.320	55.04	-11.57	43.47	74.00	-30.53	peak
2	9400.040	55.22	-8.14	47.08	74.00	-26.92	peak
3	11333.960	54.22	-6.50	47.72	74.00	-26.28	peak

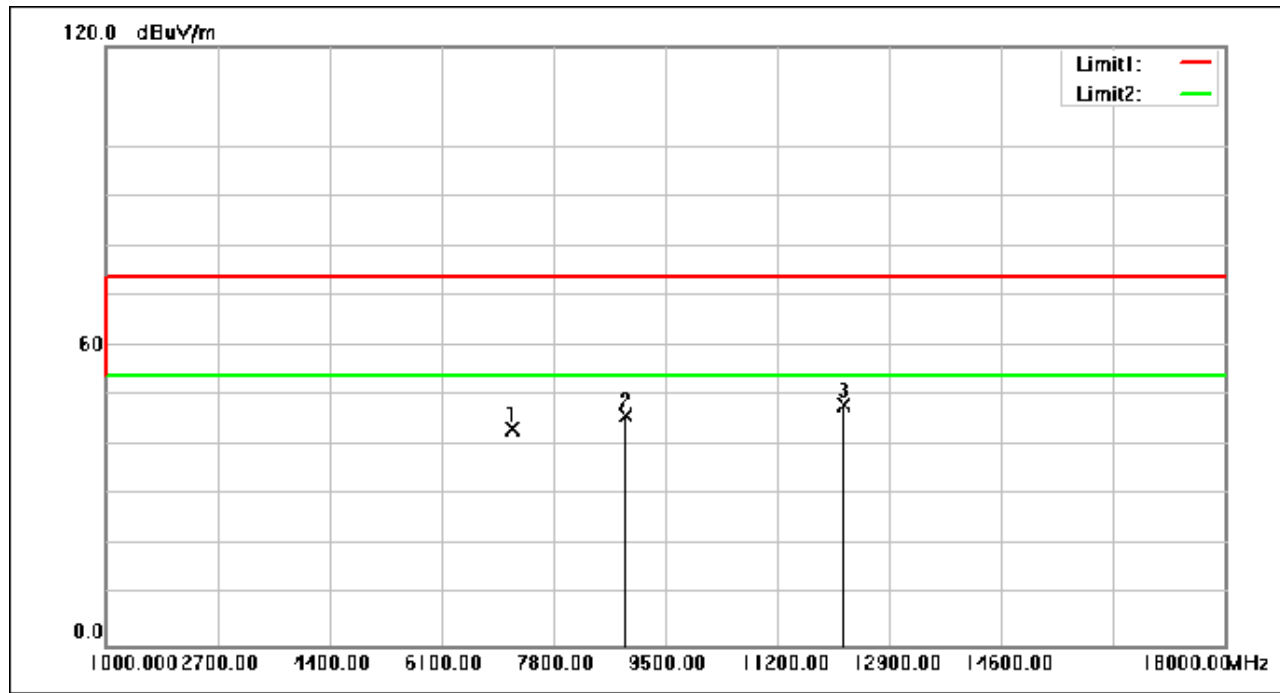
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7174.400	54.89	-11.48	43.41	74.00	-30.59	peak
2	8891.400	55.05	-9.10	45.95	74.00	-28.05	peak
3	12217.280	54.26	-5.99	48.27	74.00	-25.73	peak

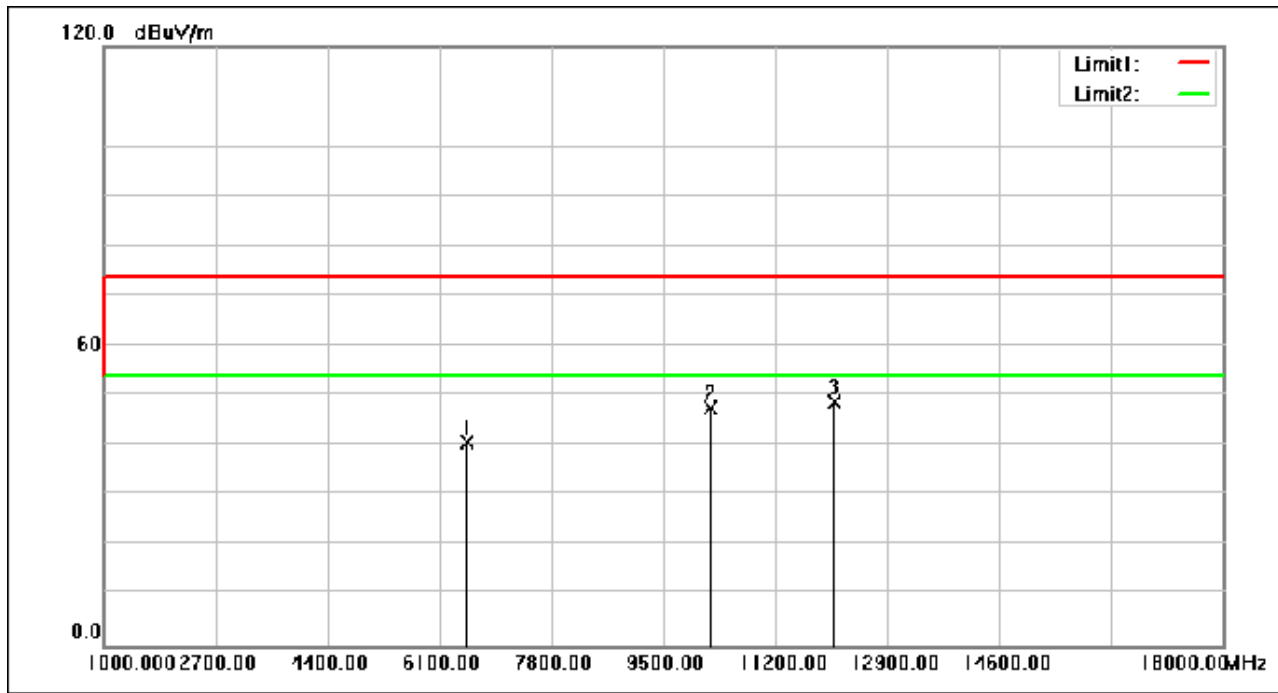
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6539.280	53.58	-13.02	40.56	74.00	-33.44	peak
2	10220.800	54.89	-7.21	47.68	74.00	-26.32	peak
3	12102.360	54.58	-5.93	48.65	74.00	-25.35	peak

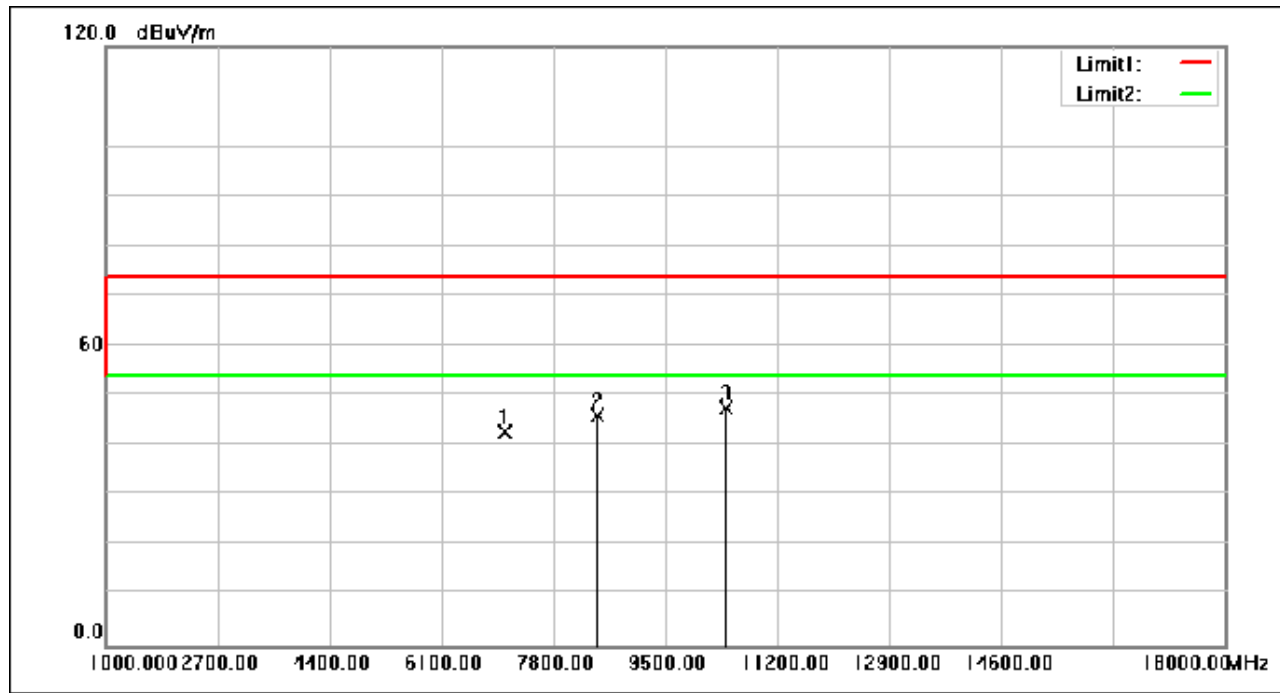
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Test Mode: 13; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7052.680	54.33	-11.54	42.79	74.00	-31.21	peak
2	8464.360	55.94	-9.81	46.13	74.00	-27.87	peak
3	10430.920	54.73	-7.08	47.65	74.00	-26.35	peak

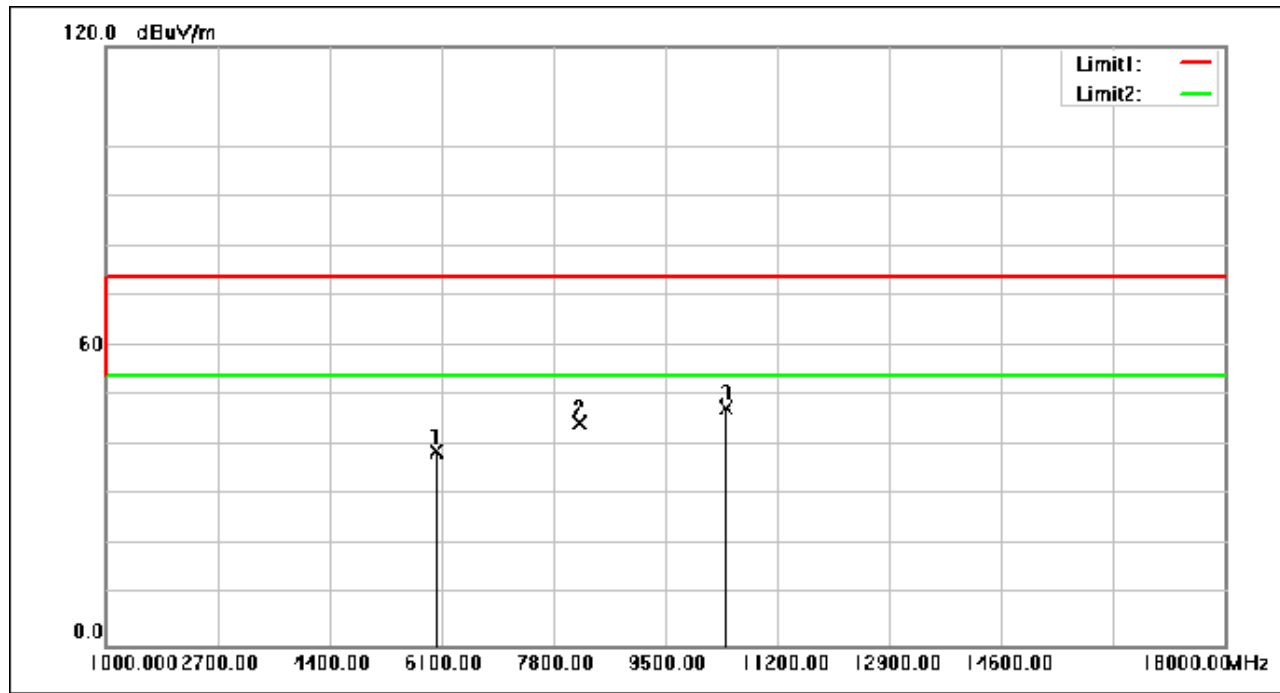
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Test Mode: 13; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6024.520	54.61	-15.66	38.95	74.00	-35.05	peak
2	8203.920	54.77	-10.24	44.53	74.00	-29.47	peak
3	10422.080	54.53	-7.08	47.45	74.00	-26.55	peak

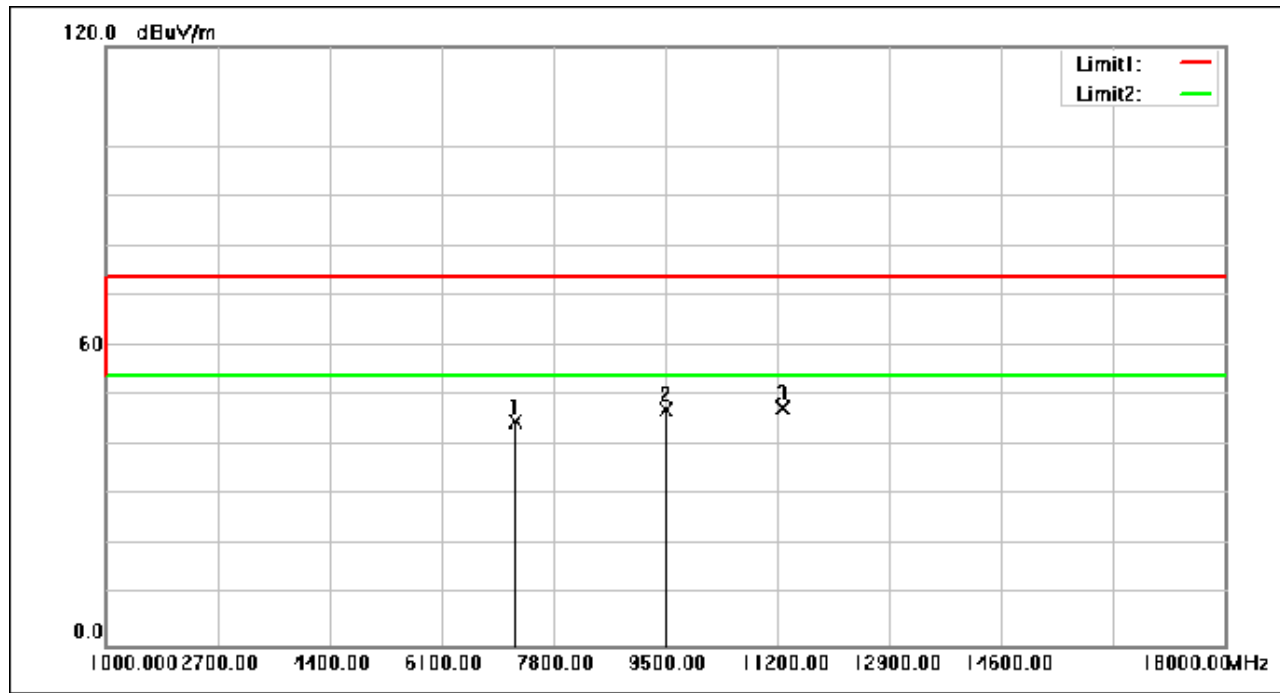
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 13; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7224.720	56.23	-11.46	44.77	74.00	-29.23	peak
2	9531.960	55.14	-7.89	47.25	74.00	-26.75	peak
3	11282.960	54.16	-6.54	47.62	74.00	-26.38	peak

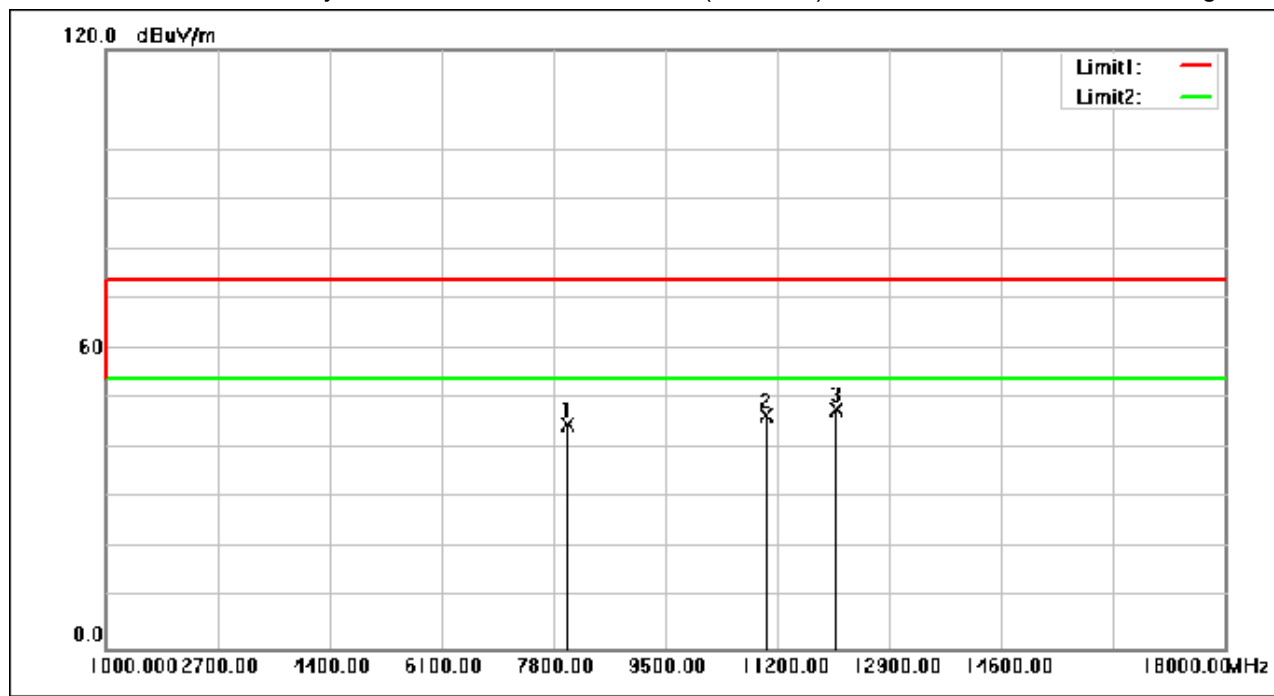
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Test Mode: 13; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8013.520	55.32	-10.58	44.74	74.00	-29.26	peak
2	11030.000	53.26	-6.74	46.52	74.00	-27.48	peak
3	12116.640	53.94	-5.94	48.00	74.00	-26.00	peak

7.5 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)

Test Method: ANSI C63.10 (2013) Section 11.9.2

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C

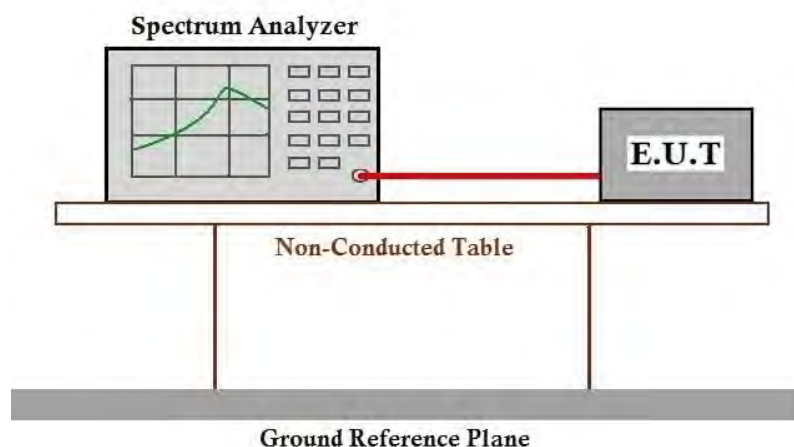
Humidity: 52.6 % RH

Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram





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7.5.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details

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7.6 Minimum 6dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)

Test Method: ANSI C63.10 (2013) Section 11.8.1

Limit:
≥500 kHz

7.6.1 E.U.T. Operation

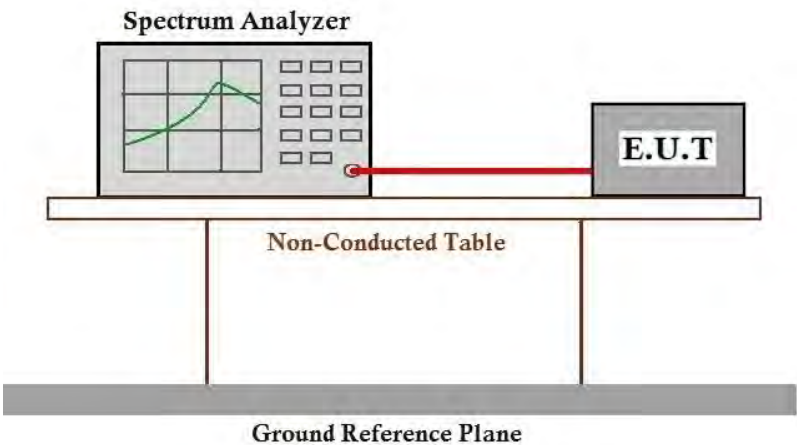
Operating Environment:

Temperature: 25.3 °C Humidity: 52.6 % RH Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.7 Power Spectrum Density

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)

Test Method: ANSI C63.10 (2013) Section 11.10.2

Limit:

≤8dBm in any 3 kHz band during any time interval of continuous transmission

7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C

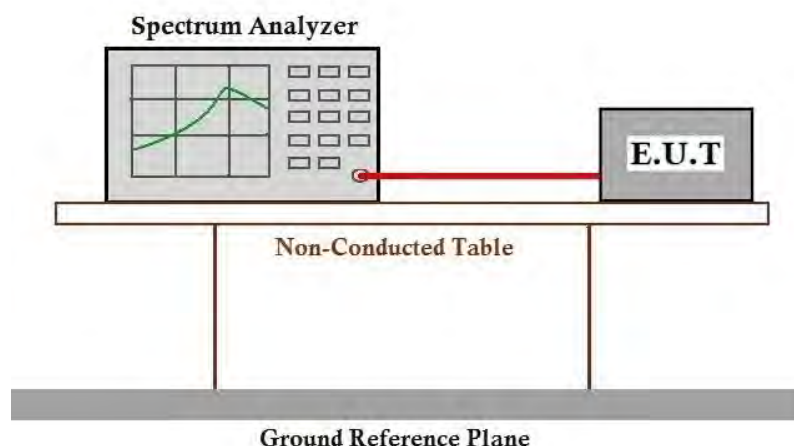
Humidity: 52.6 % RH

Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.8 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)
Test Method: ANSI C63.10 (2013) Section 11.13.3.2

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.8.1 E.U.T. Operation

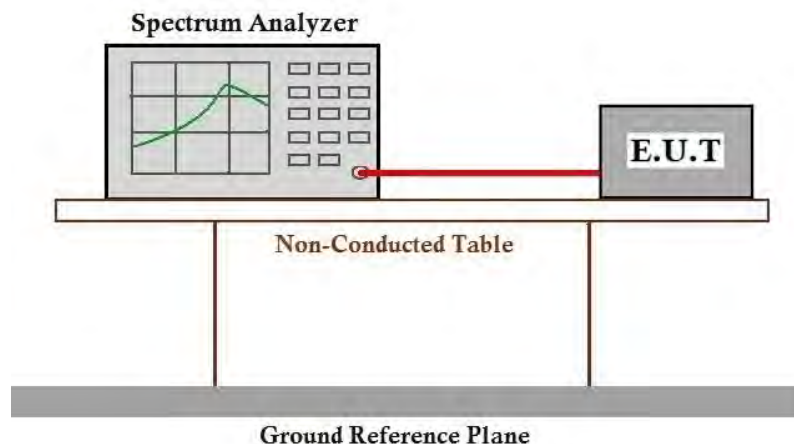
Operating Environment:

Temperature: 25.3 °C Humidity: 52.6 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram





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7.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.9 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.11

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.9.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C

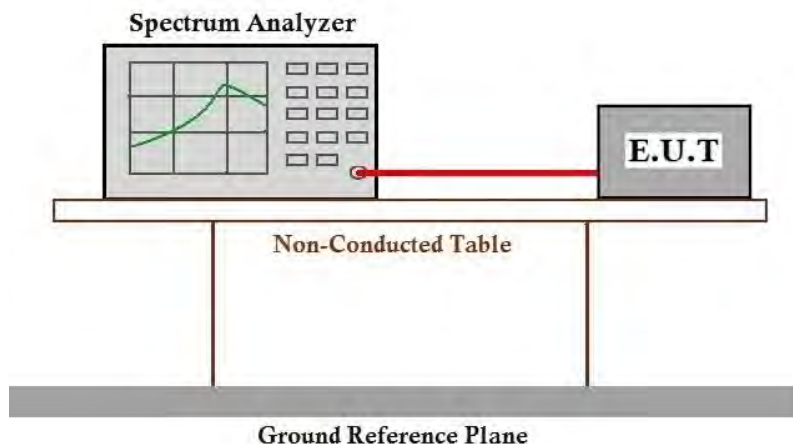
Humidity: 52.6 % RH

Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram





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7.9.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.10 99% Bandwidth

Test Requirement RSS-Gen Section 6.7
Test Method: ANSI C63.10 (2013) Section 6.9.3

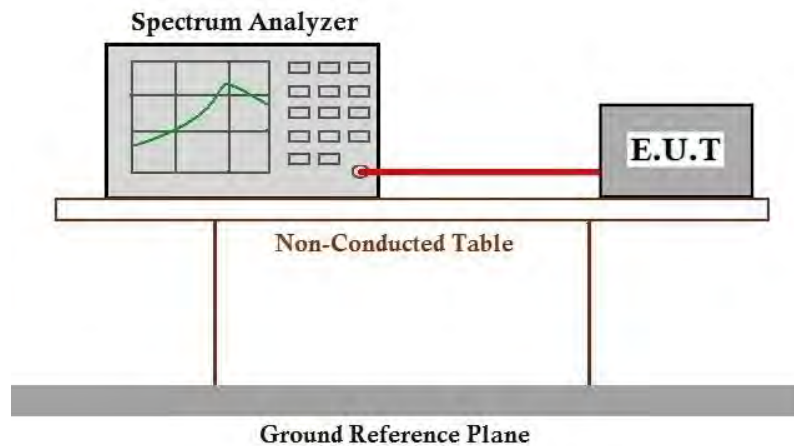
7.10.1 E.U.T. Operation

Operating Environment:
Temperature: 25.4 °C Humidity: 44.1 % RH Atmospheric Pressure: 1010 mbar

7.10.1 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.10.2 Test Setup Diagram



7.10.3 Measurement Procedure and Data

Please Refer to Appendix for Details



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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2407001217AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2407001217AT

10 Appendix

1. Duty Cycle

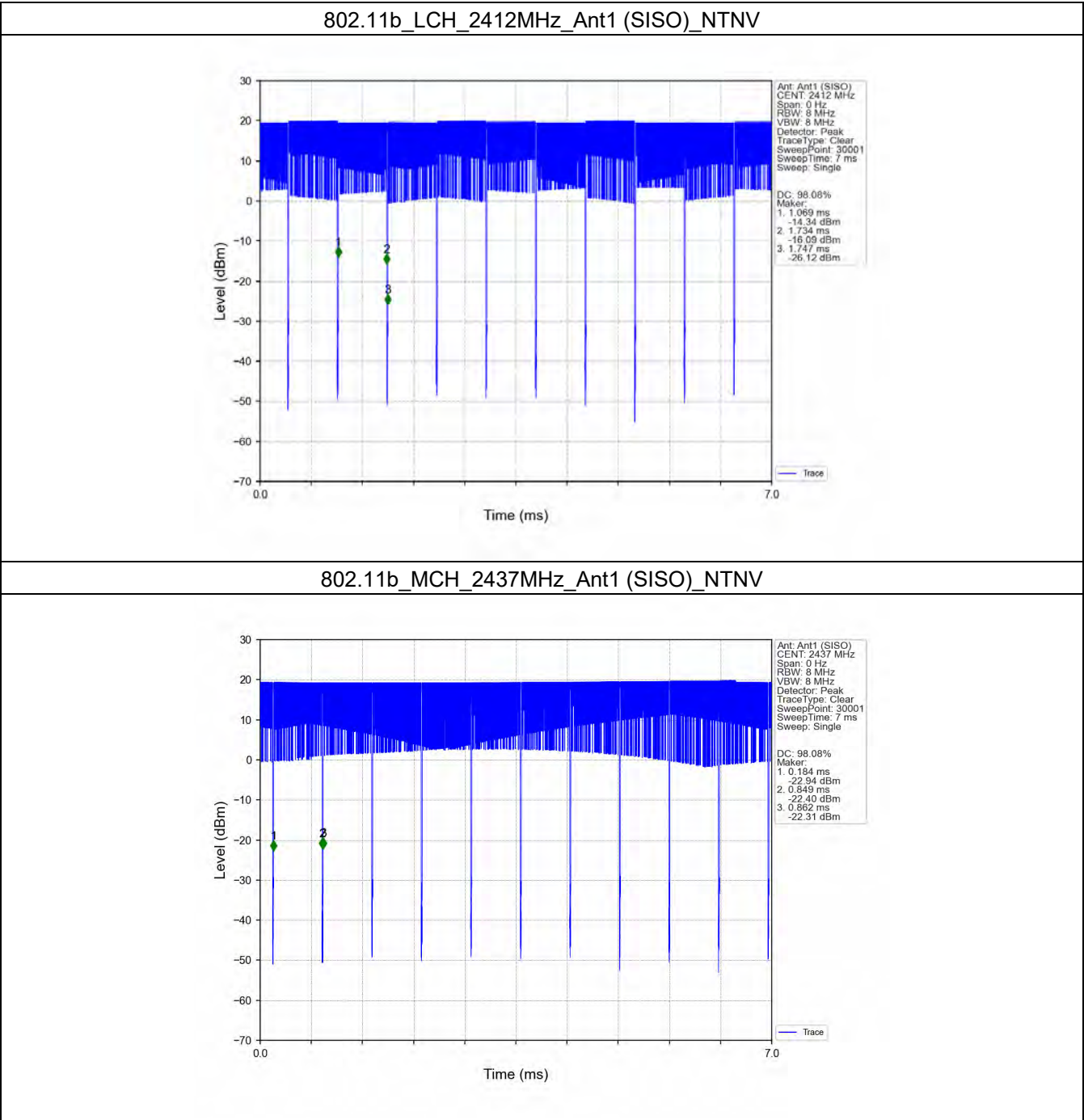
1.1 Test Result

1.1.1 Ant1

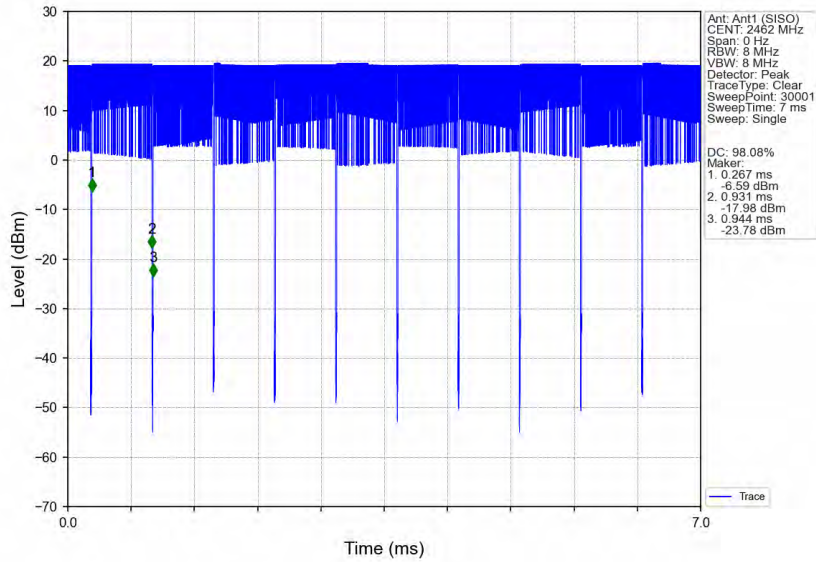
Ant1									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	/	/	0.665	0.678	98.08	0.08	0.00
		2437	/	/	0.665	0.678	98.08	0.08	0.00
		2462	/	/	0.664	0.677	98.08	0.08	0.03
802.11g	SISO	2412	/	/	2.097	2.113	99.24	0.03	0.03
		2437	/	/	2.096	2.112	99.24	0.03	0.03
		2462	/	/	2.096	2.112	99.24	0.03	0.03
802.11n (HT20)	MIMO	2412	/	/	5.327	5.342	99.72	0.01	0.00
		2437	/	/	5.329	5.344	99.72	0.01	0.00
		2462	/	/	5.329	5.344	99.72	0.01	0.00
802.11n (HT40)	MIMO	2422	/	/	5.412	5.428	99.71	0.01	0.04
		2437	/	/	5.412	5.428	99.71	0.01	0.04
		2452	/	/	5.412	5.428	99.71	0.01	0.04
802.11ax (HEW20)	MIMO	2412	RU242	Left	5.338	5.355	99.68	0.01	0.03
		2437	RU242	Left	5.338	5.355	99.68	0.01	0.03
		2462	RU242	Left	5.338	5.354	99.70	0.01	0.04
802.11ax (HEW40)	MIMO	2422	RU484	Left	5.391	5.406	99.72	0.01	0.00
		2437	RU484	Left	5.391	5.405	99.74	0.01	0.00
		2452	RU484	Left	5.392	5.406	99.74	0.01	0.00

1.2 Test Graph

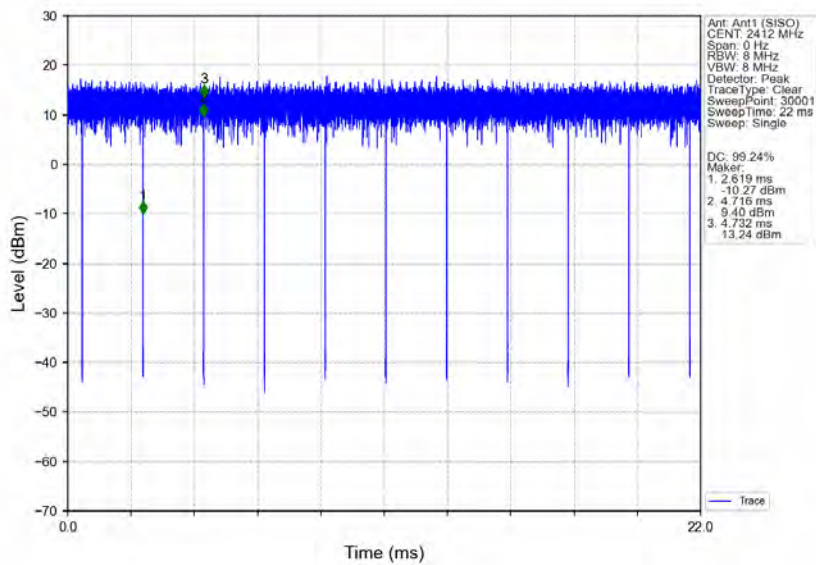
1.2.1 Ant1



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



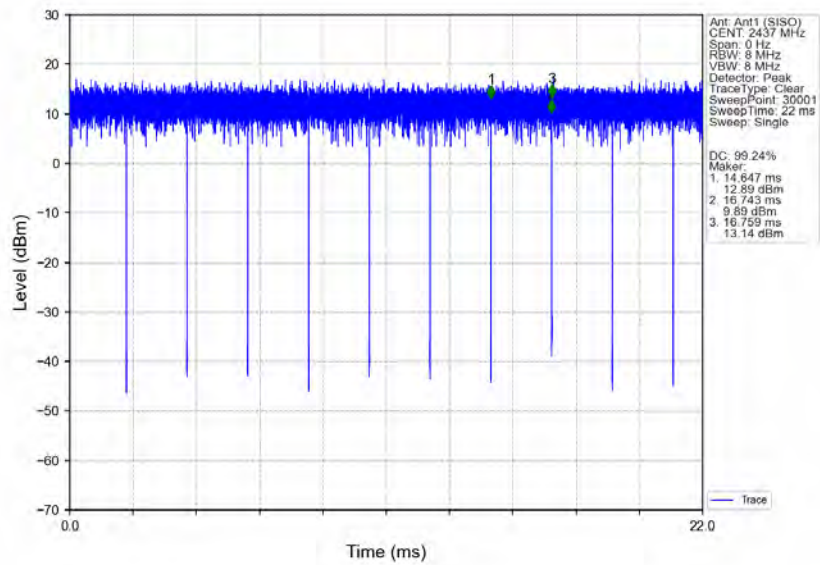
Compliance Certification Services (Kunshan) Inc.

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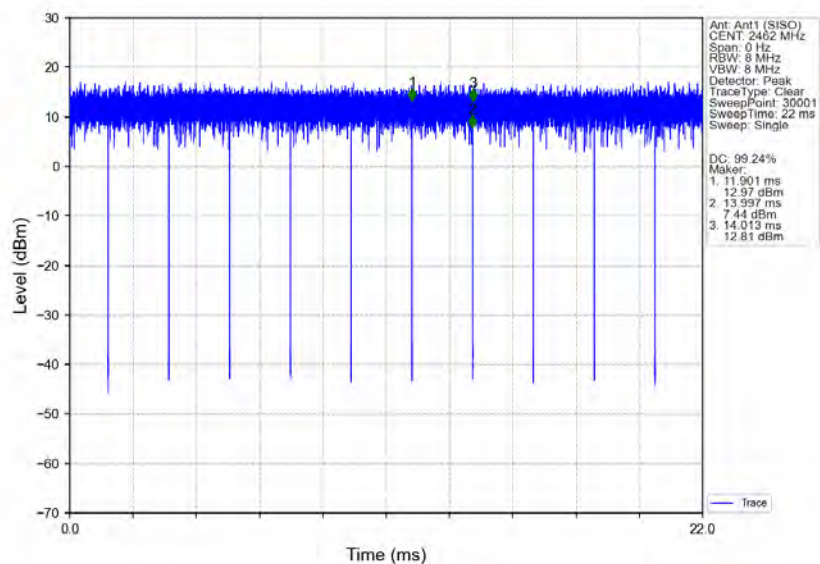
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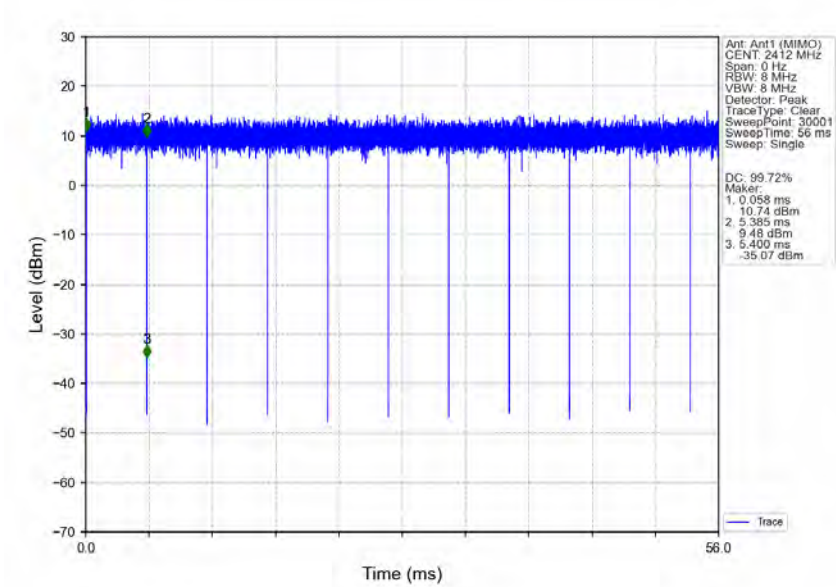
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



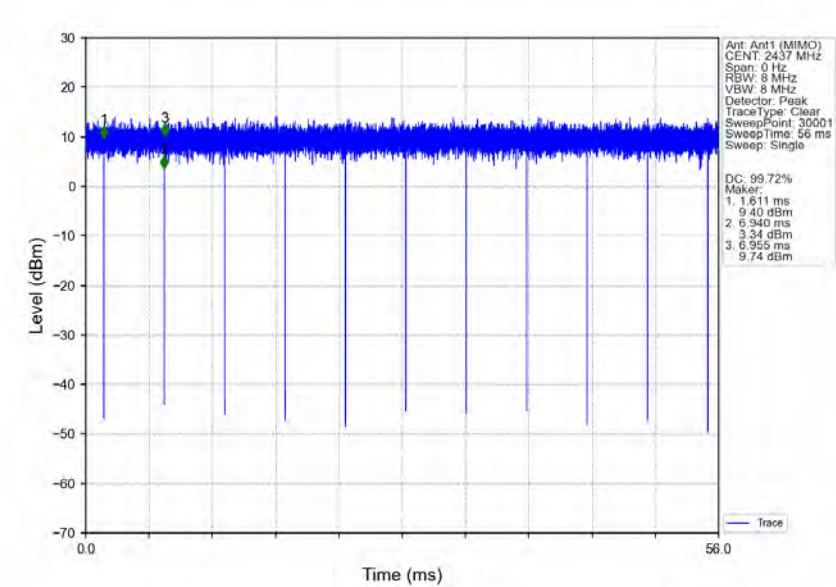
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



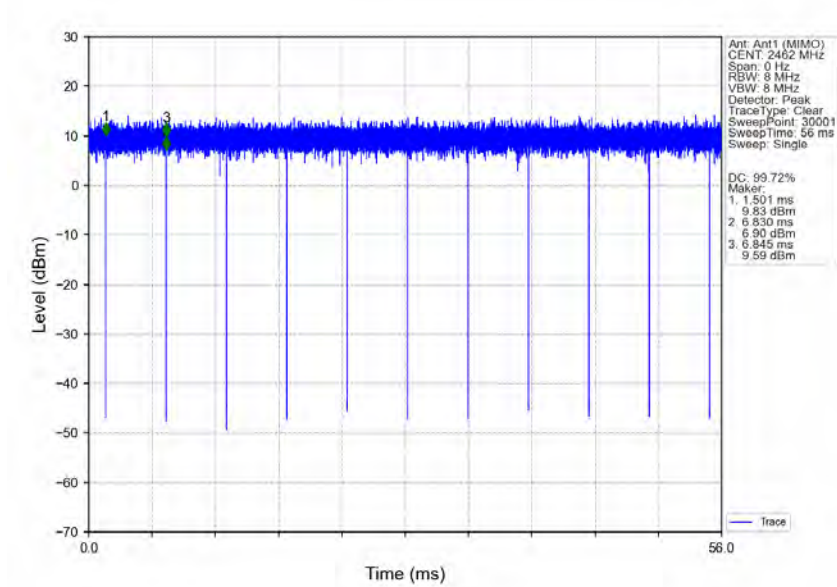
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



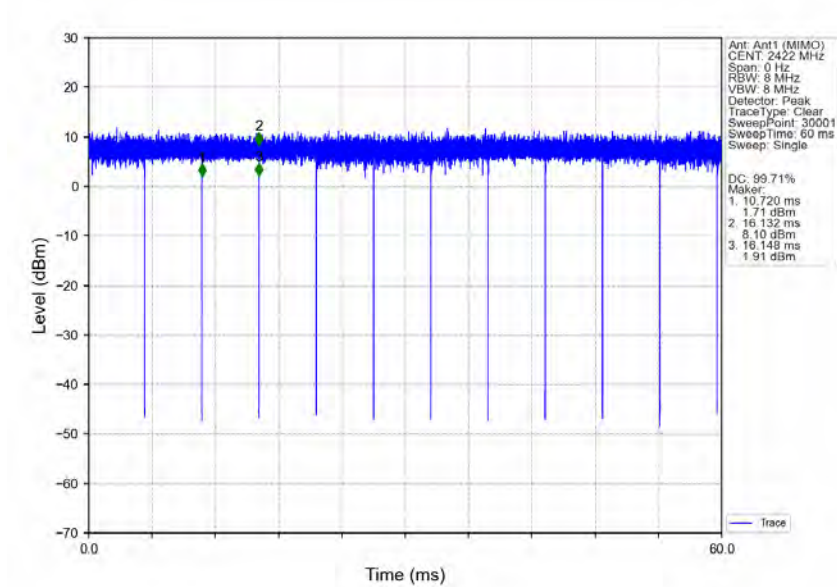
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



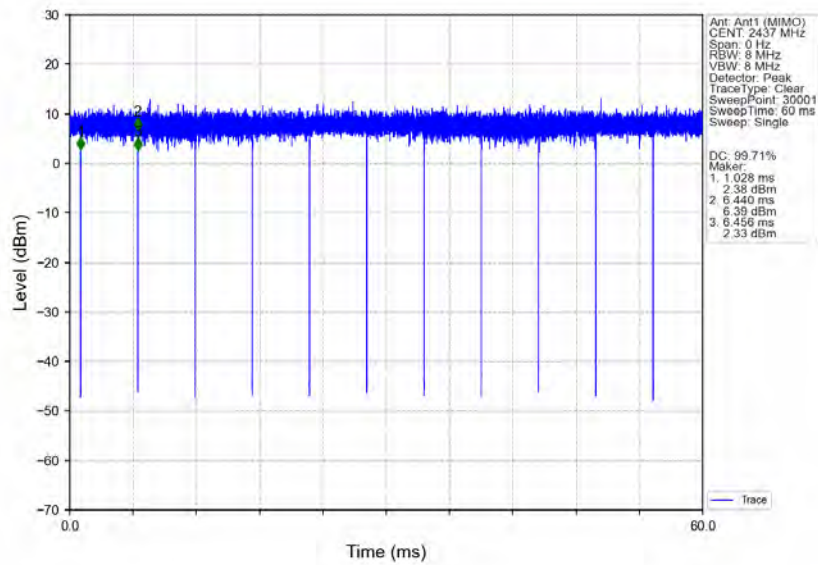
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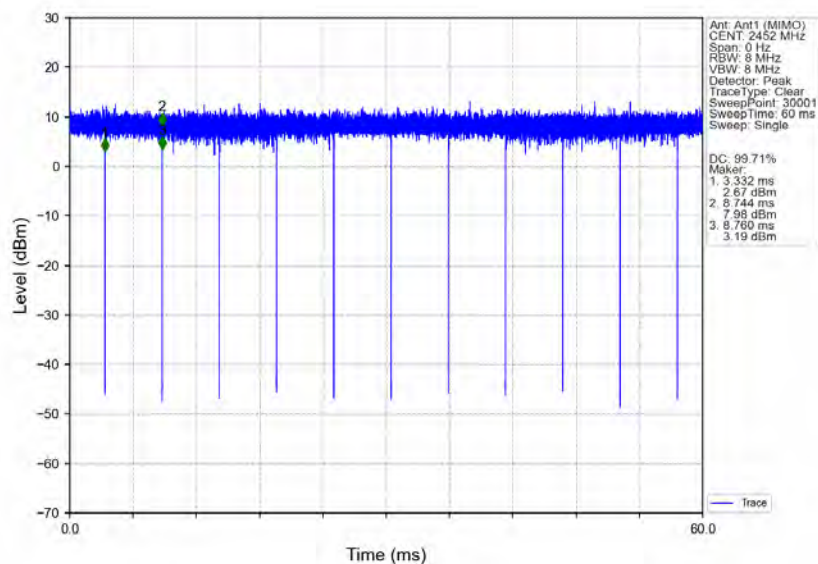
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



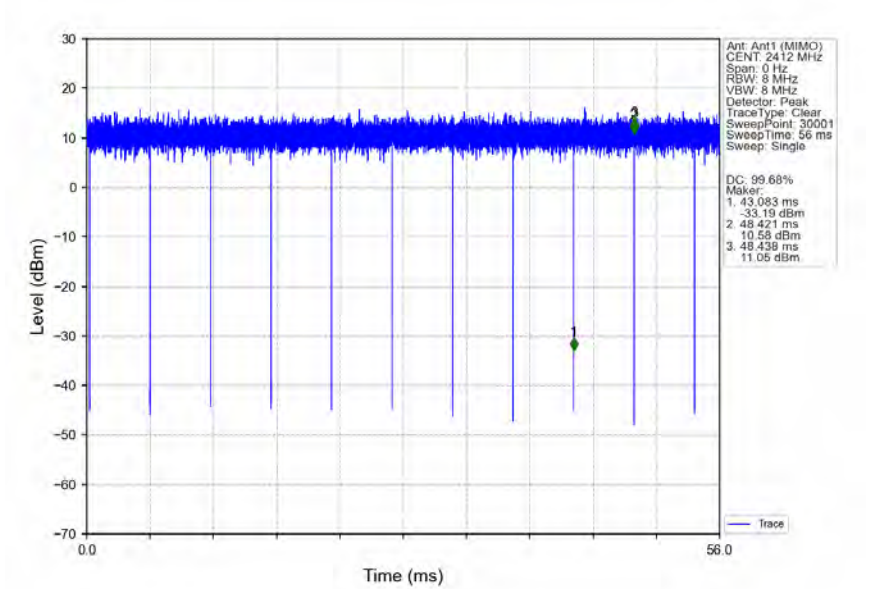
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



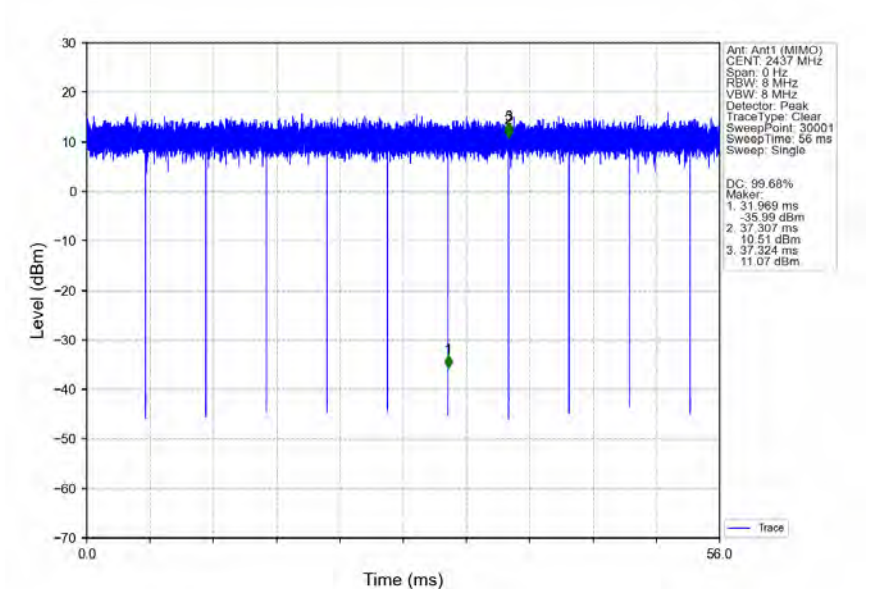
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



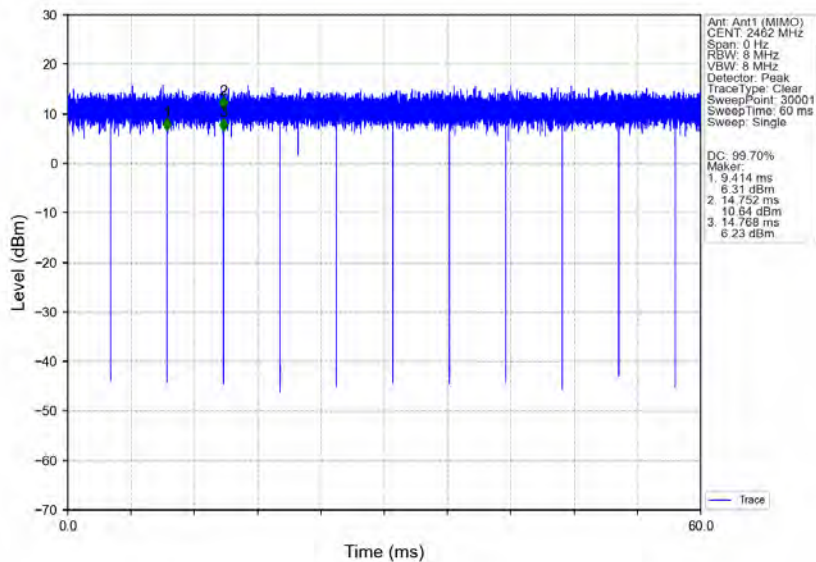
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



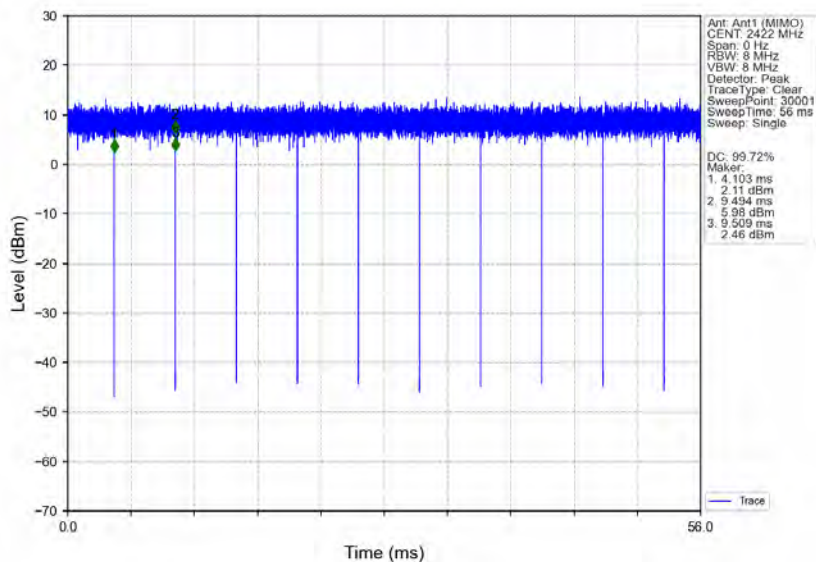
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



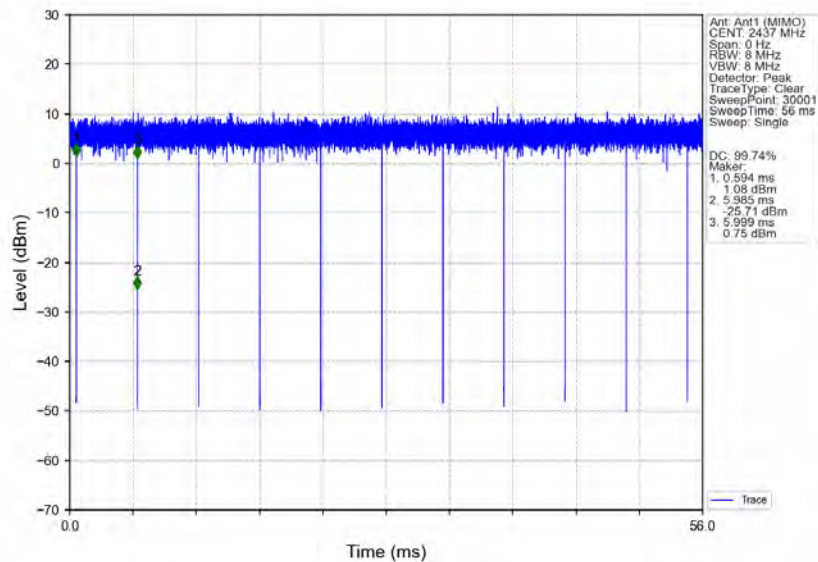
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant1 (MIMO)_NTNV



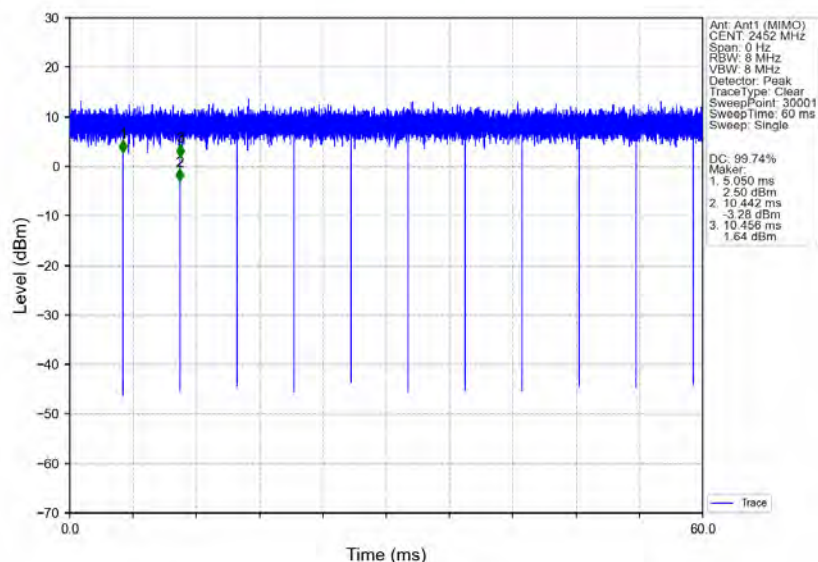
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV



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2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	99% Occupied Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	13.083	/	Pass
		2437	/	/	1	13.164	/	Pass
		2462	/	/	1	13.124	/	Pass
802.11g	SISO	2412	/	/	1	16.504	/	Pass
		2437	/	/	1	16.623	/	Pass
		2462	/	/	1	16.637	/	Pass
802.11n (HT20)	MIMO	2412	/	/	1	17.748	/	Pass
		2437	/	/	1	17.796	/	Pass
		2462	/	/	1	17.782	/	Pass
802.11n (HT40)	MIMO	2422	/	/	1	36.082	/	Pass
		2437	/	/	1	36.059	/	Pass
		2452	/	/	1	35.973	/	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	18.988	/	Pass
		2437	RU242	Left	1	18.932	/	Pass
		2462	RU242	Left	1	18.962	/	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	1	37.748	/	Pass
		2437	RU484	Left	1	37.752	/	Pass
		2452	RU484	Left	1	37.694	/	Pass

2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	8.103	≥ 0.5	Pass
		2437	/	/	1	8.103	≥ 0.5	Pass
		2462	/	/	1	8.109	≥ 0.5	Pass
802.11g	SISO	2412	/	/	1	15.125	≥ 0.5	Pass
		2437	/	/	1	15.166	≥ 0.5	Pass
		2462	/	/	1	15.163	≥ 0.5	Pass
802.11n (HT20)	MIMO	2412	/	/	1	13.913	≥ 0.5	Pass
		2437	/	/	1	15.119	≥ 0.5	Pass
		2462	/	/	1	15.160	≥ 0.5	Pass
802.11n (HT40)	MIMO	2422	/	/	1	35.082	≥ 0.5	Pass
		2437	/	/	1	34.500	≥ 0.5	Pass
		2452	/	/	1	31.407	≥ 0.5	Pass



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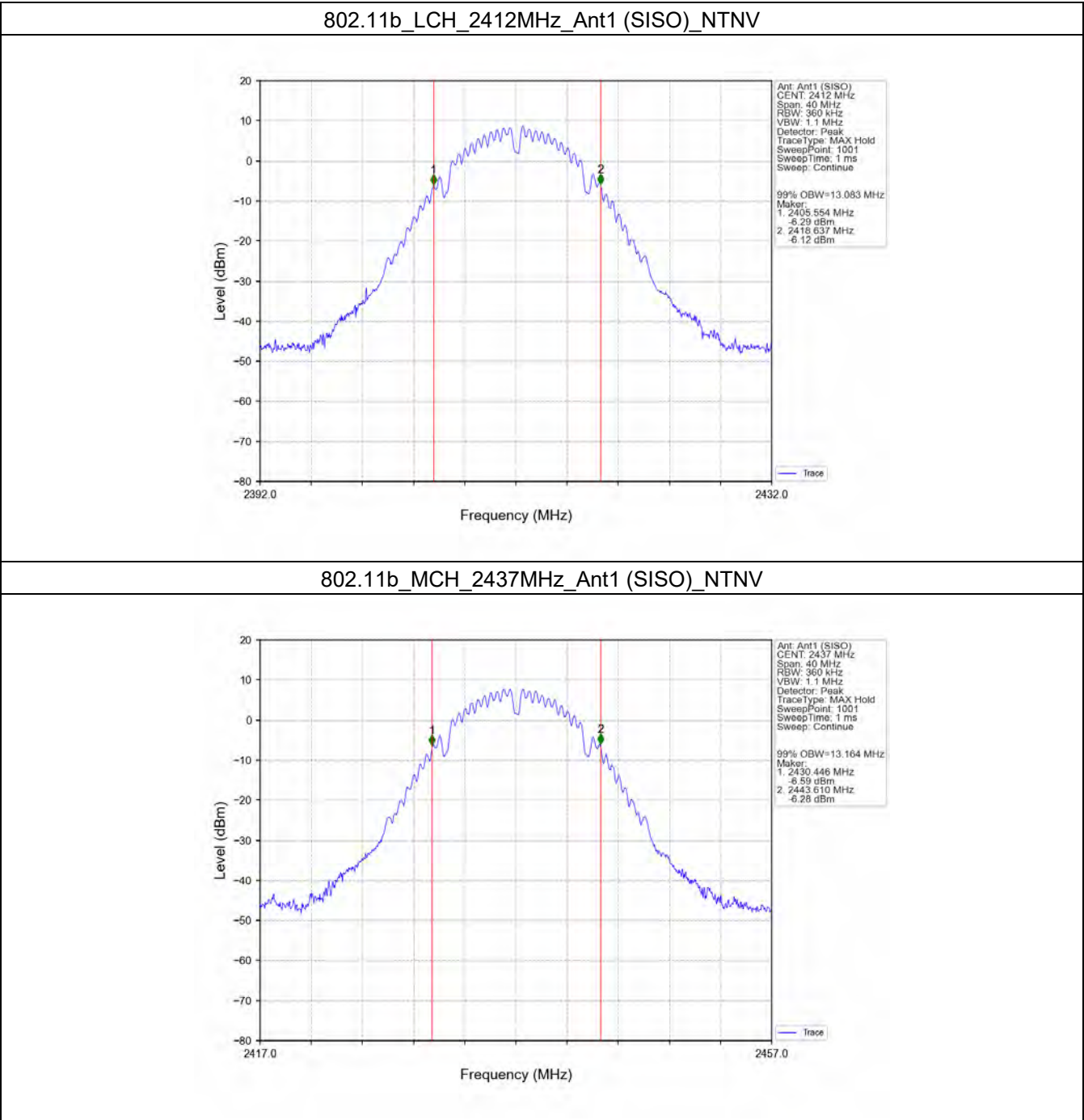
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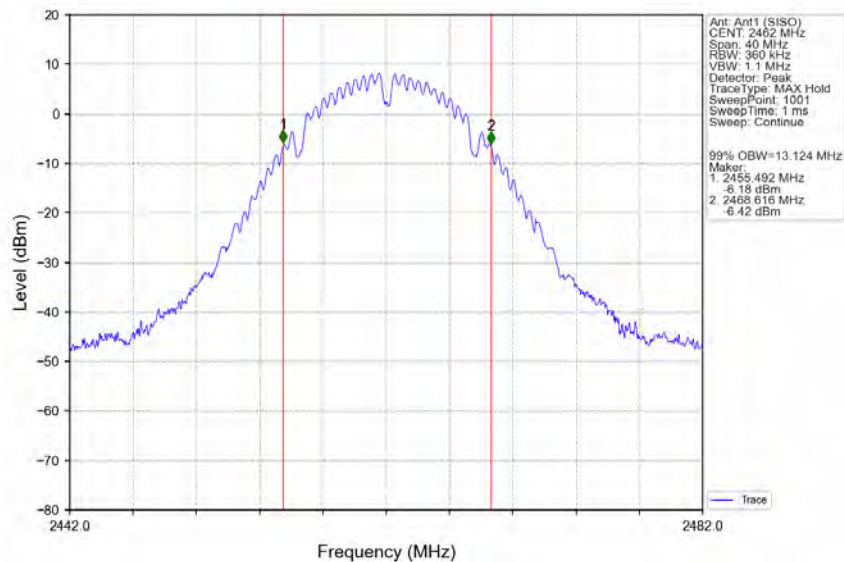
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	15.704	≥ 0.5	Pass
		2437	RU242	Left	1	15.430	≥ 0.5	Pass
		2462	RU242	Left	1	16.012	≥ 0.5	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	1	35.319	≥ 0.5	Pass
		2437	RU484	Left	1	36.286	≥ 0.5	Pass
		2452	RU484	Left	1	35.362	≥ 0.5	Pass

2.2 Test Graph

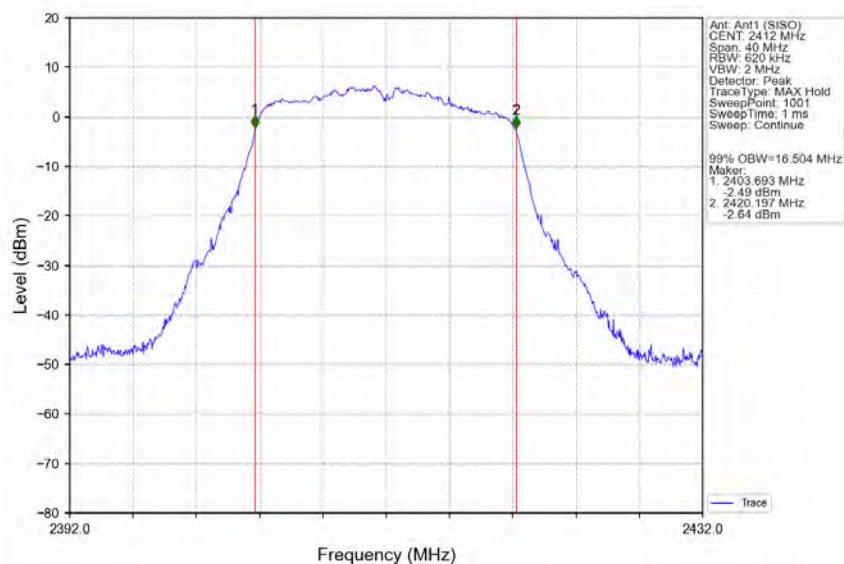
2.2.1 OBW



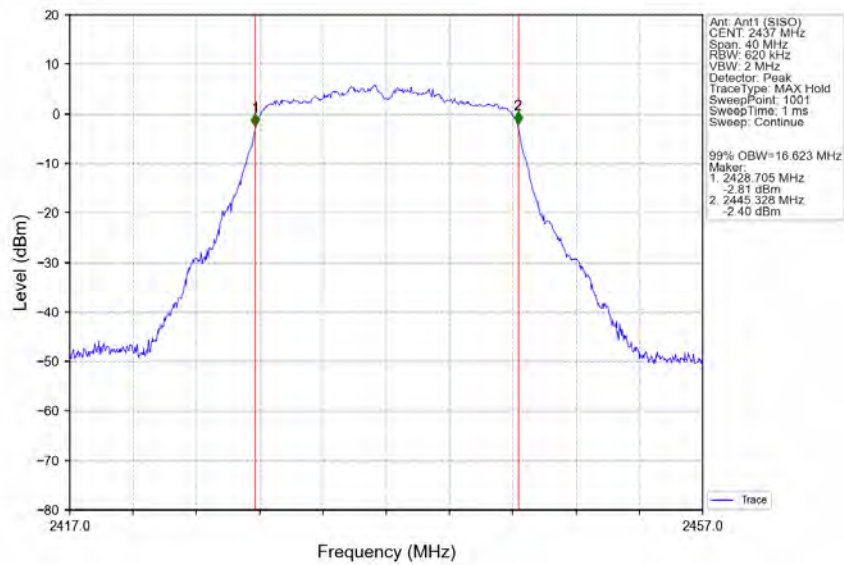
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



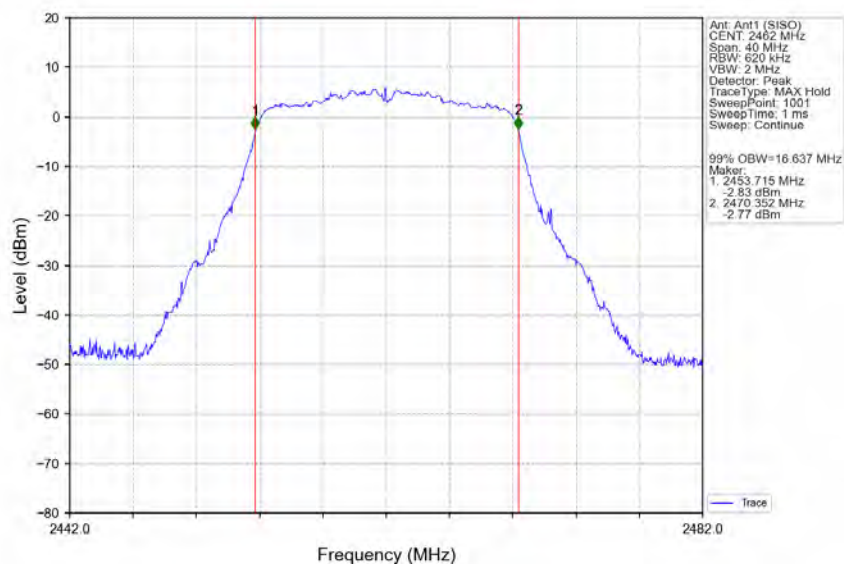
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



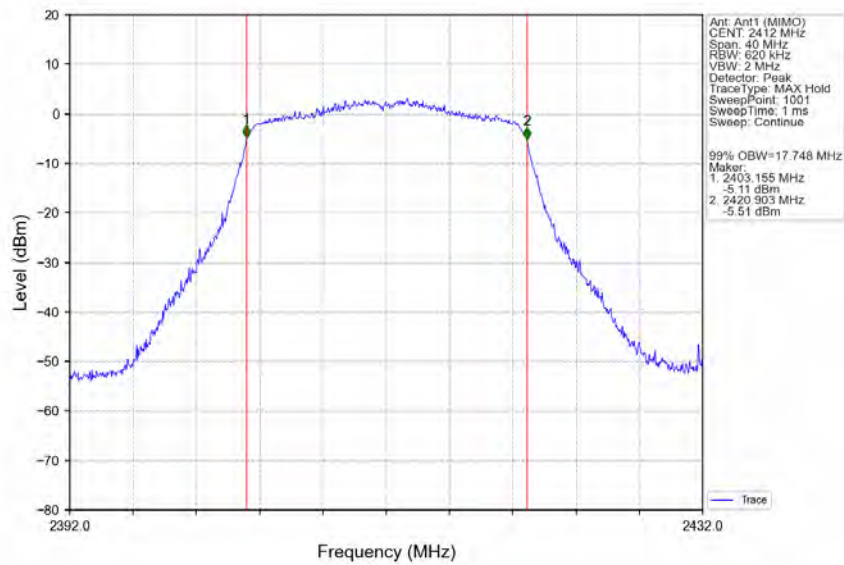
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



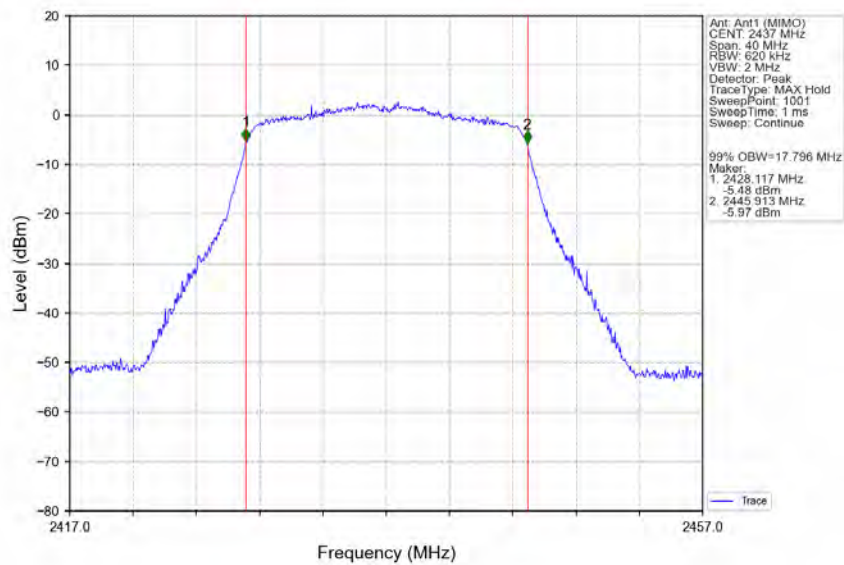
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



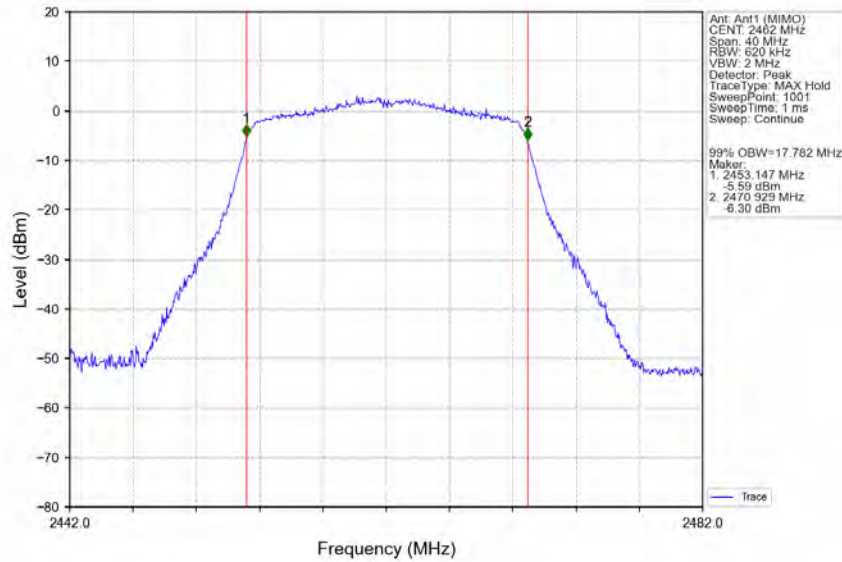
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



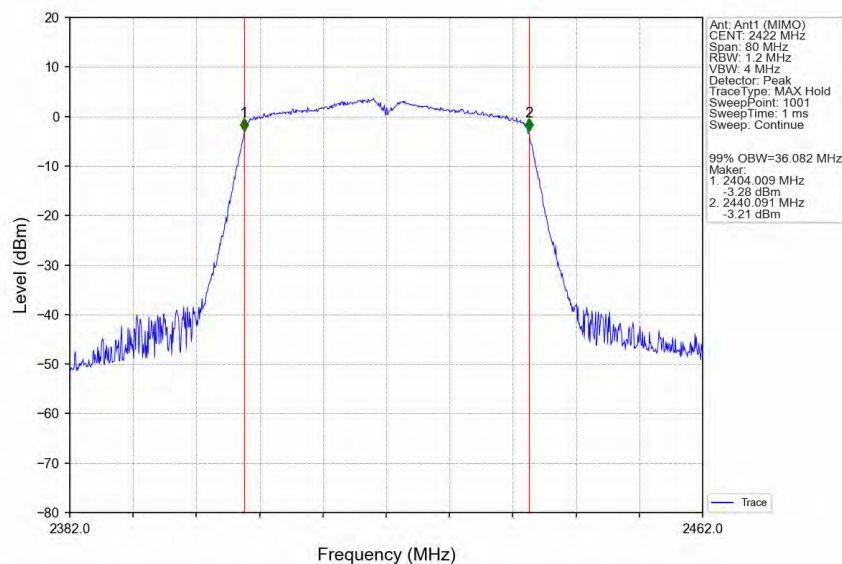
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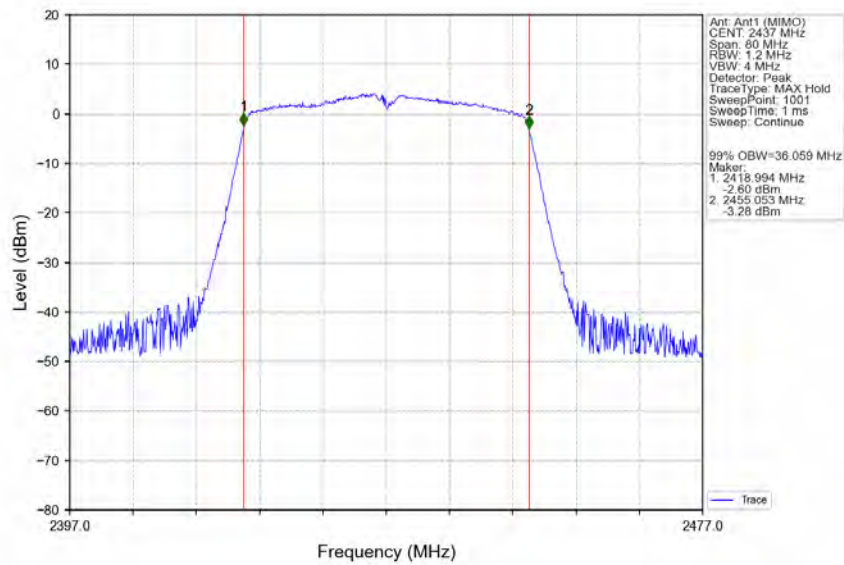
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



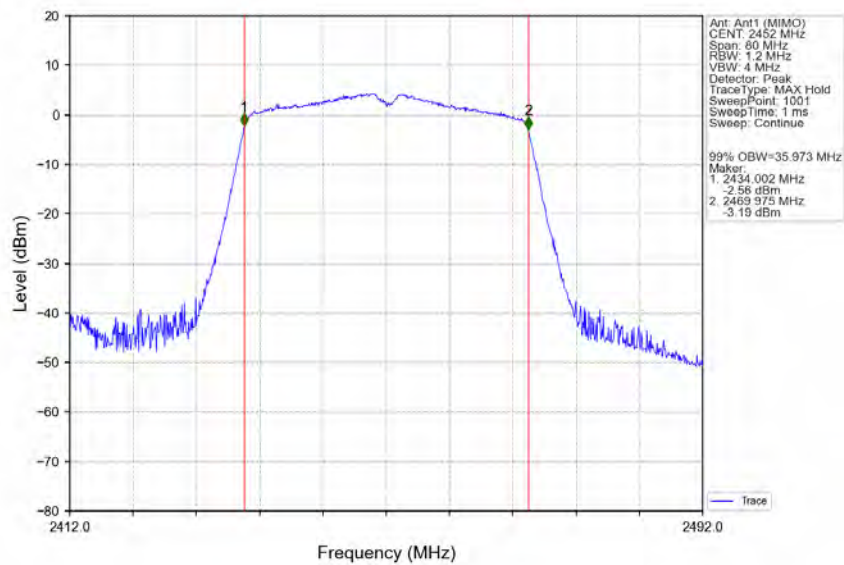
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



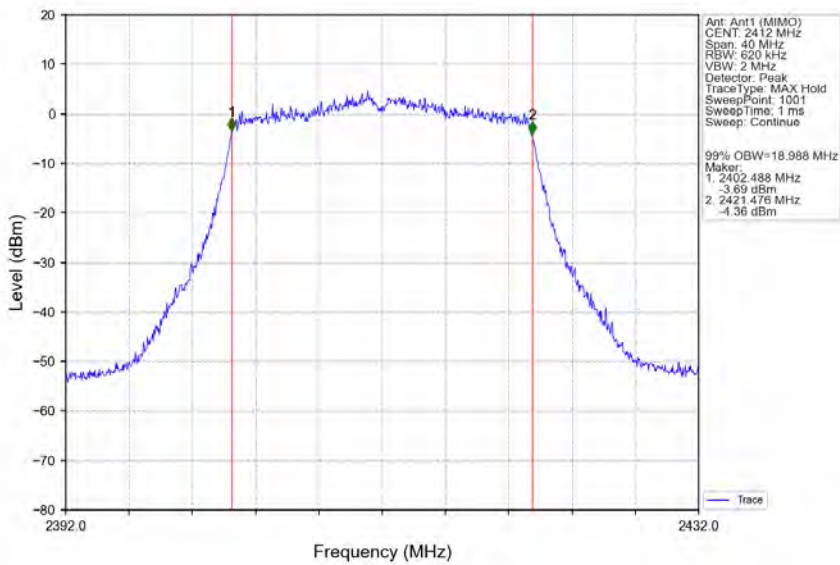
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



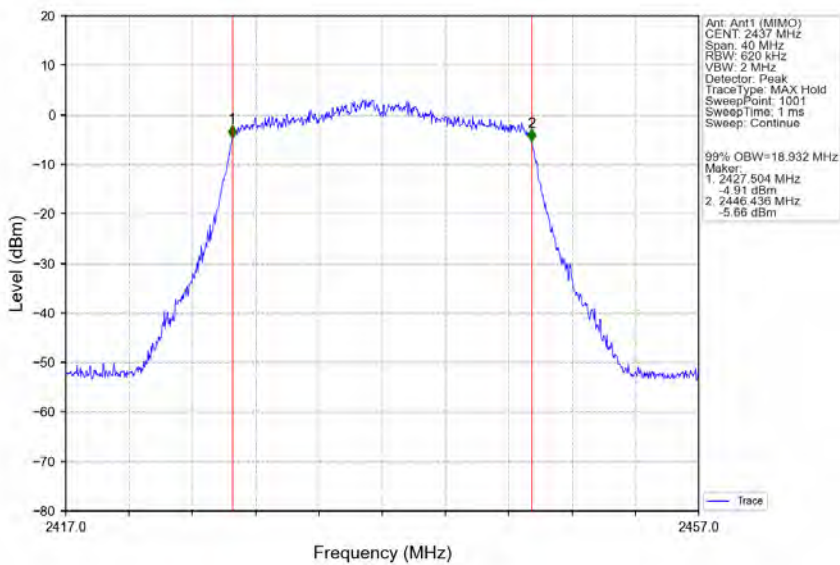
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



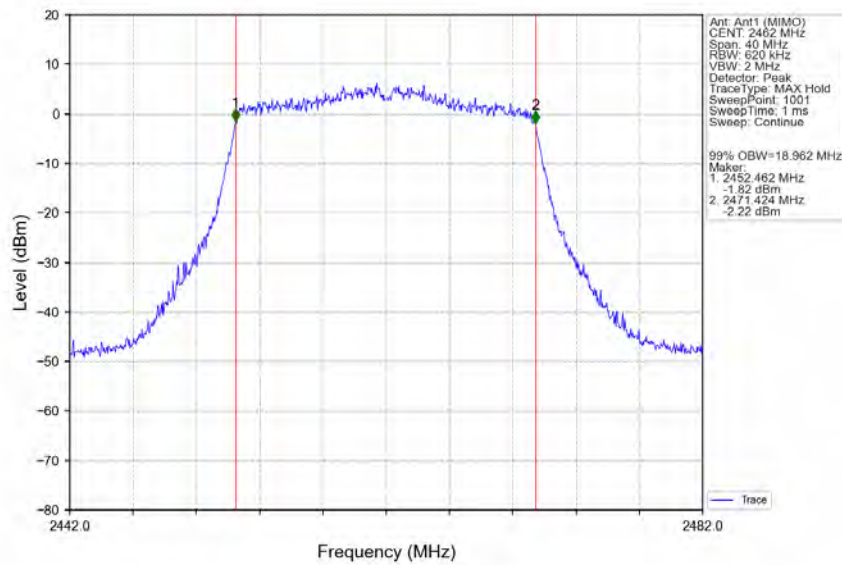
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



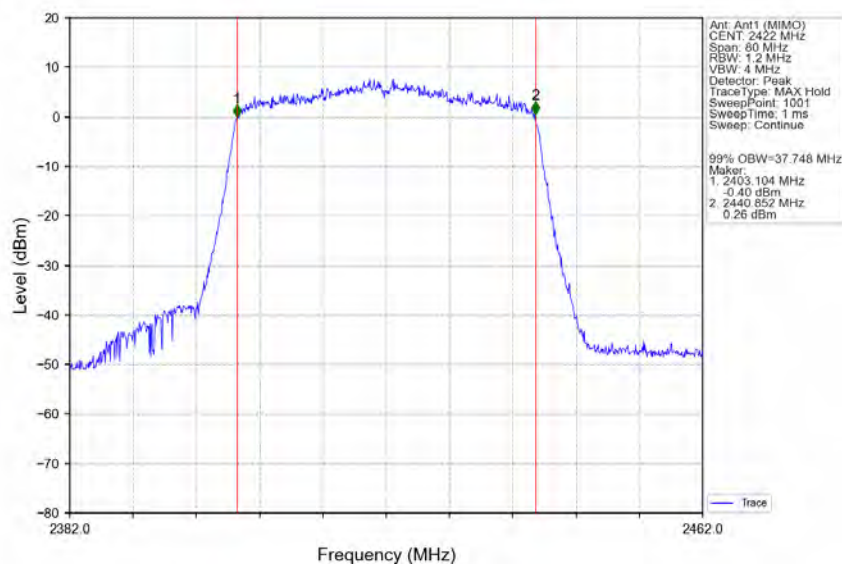
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



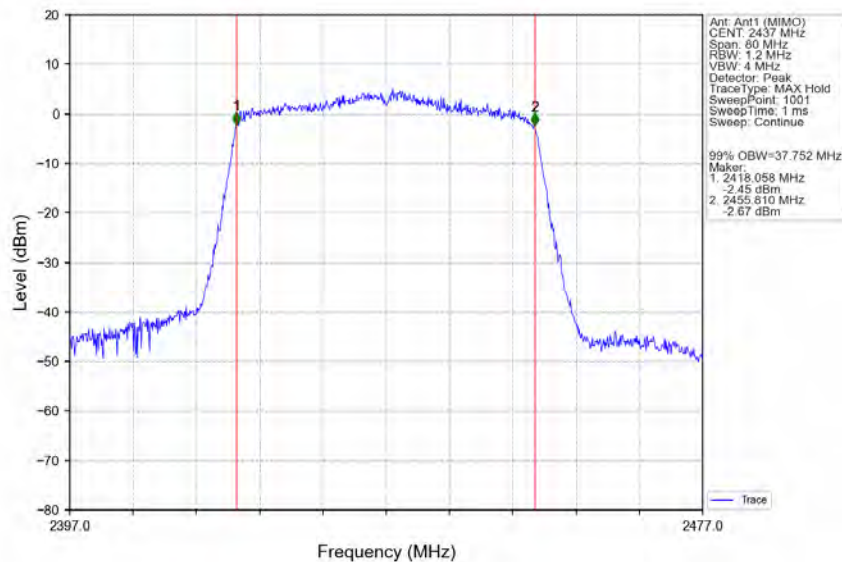
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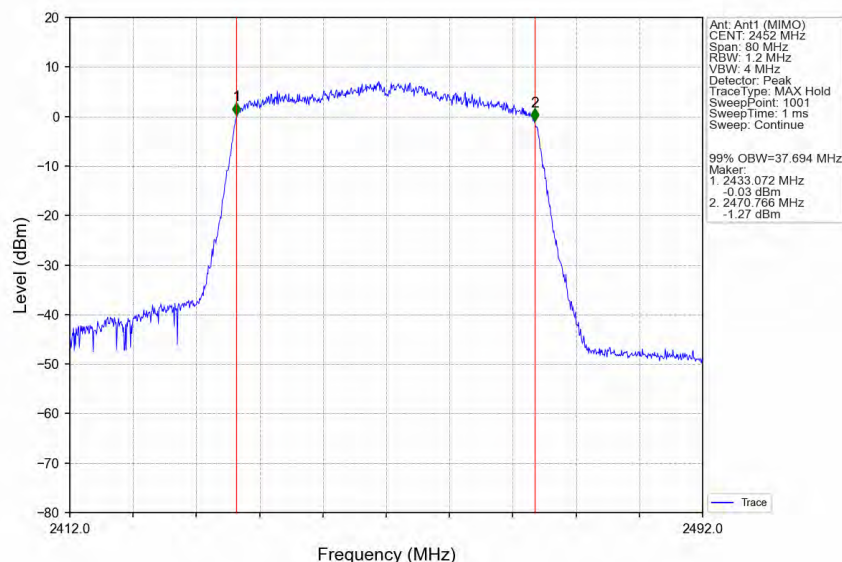
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant1 (MIMO)_NTNV

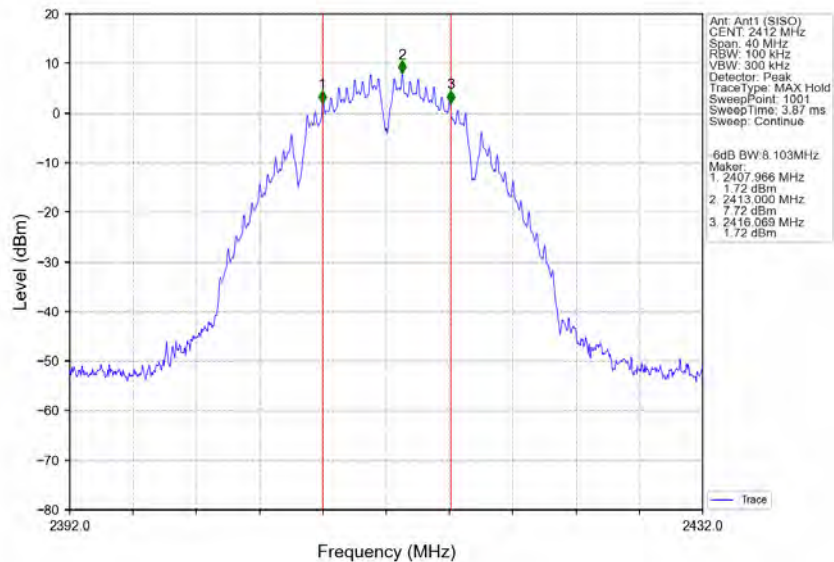


802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV

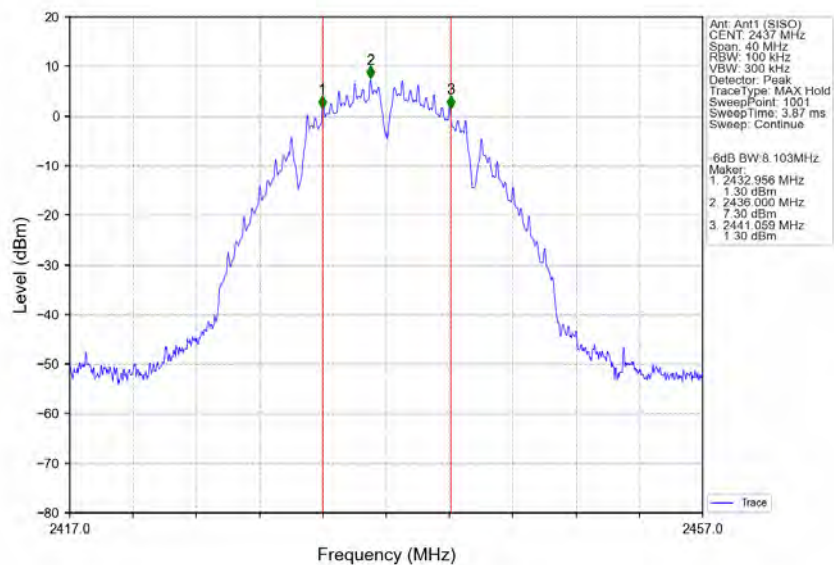


2.2.2 6dB BW

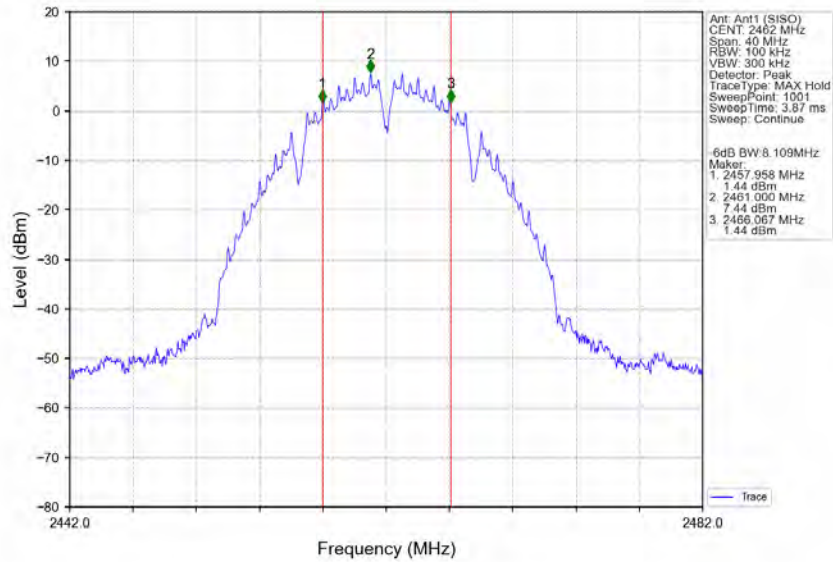
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



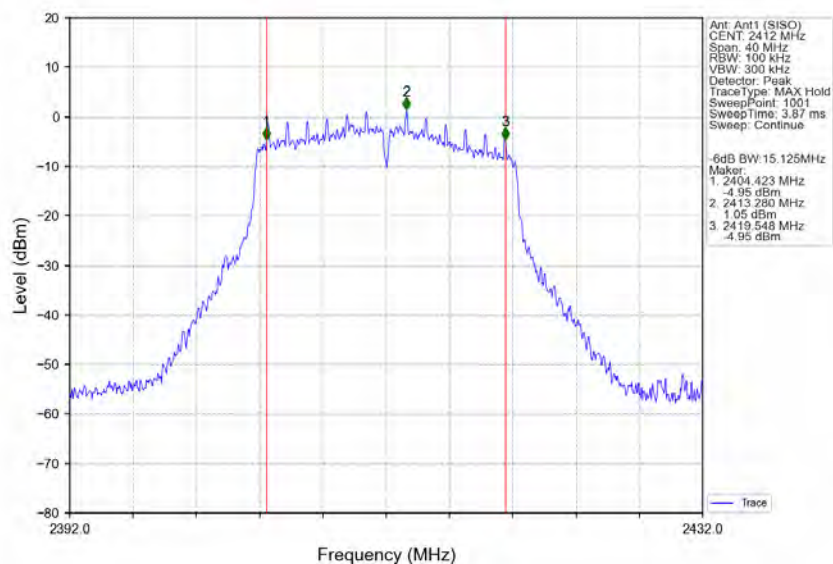
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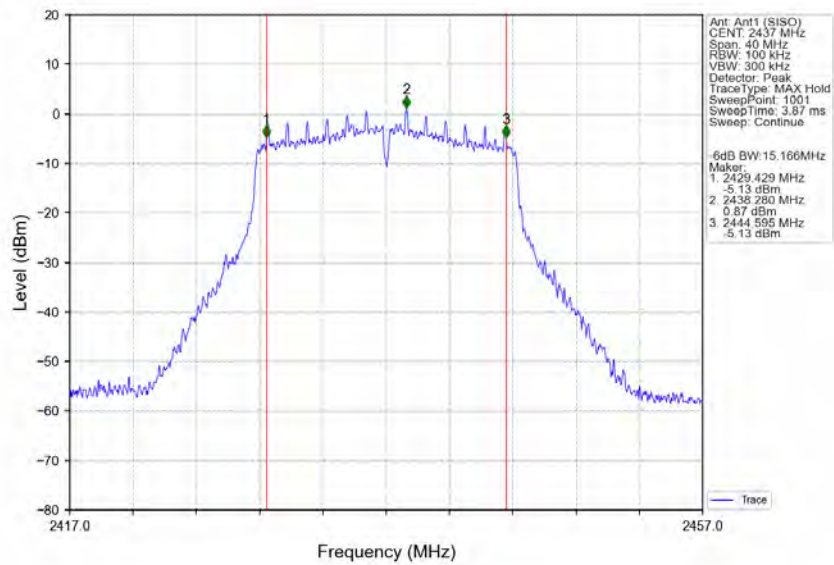
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



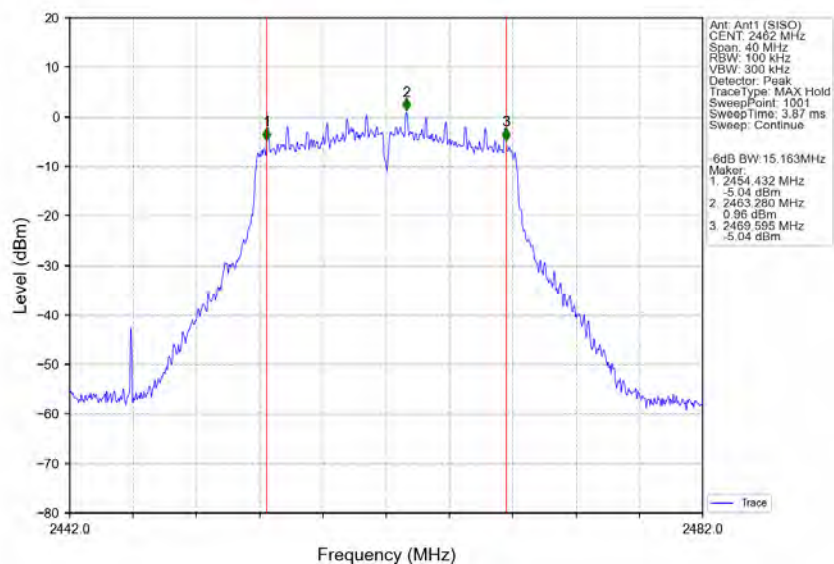
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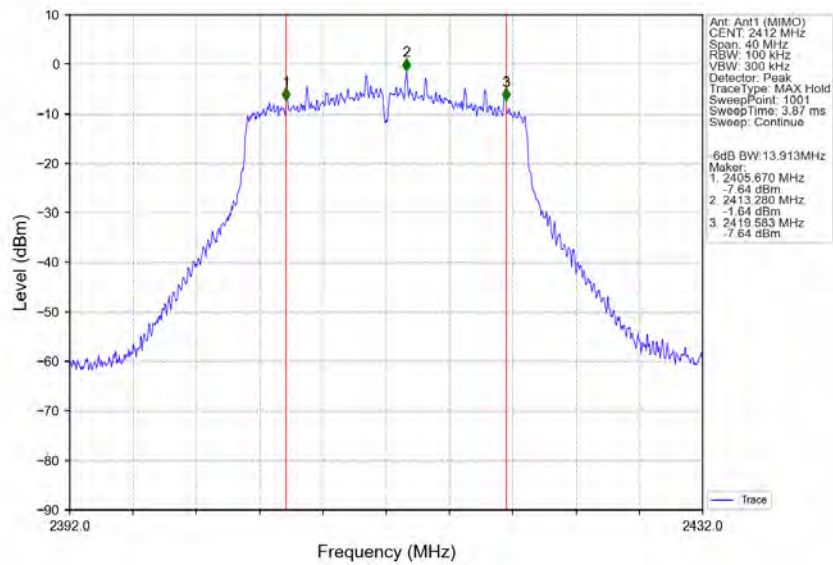
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



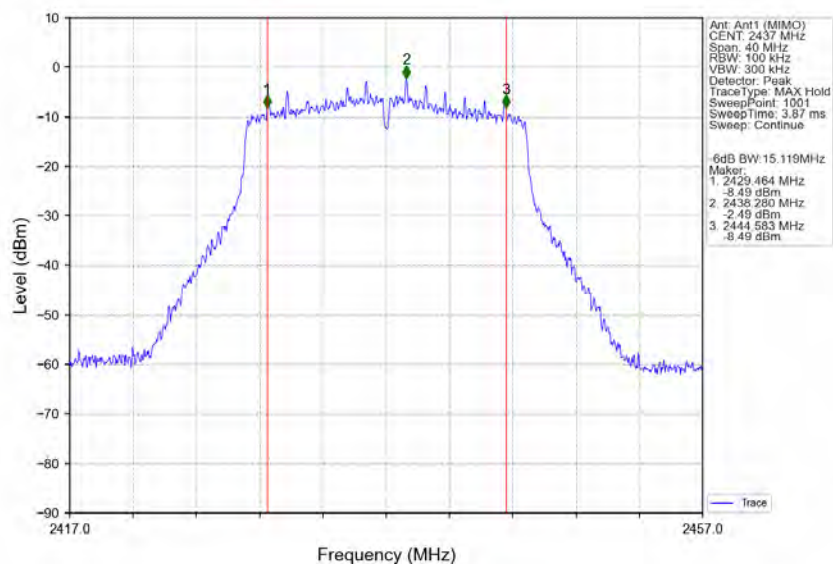
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



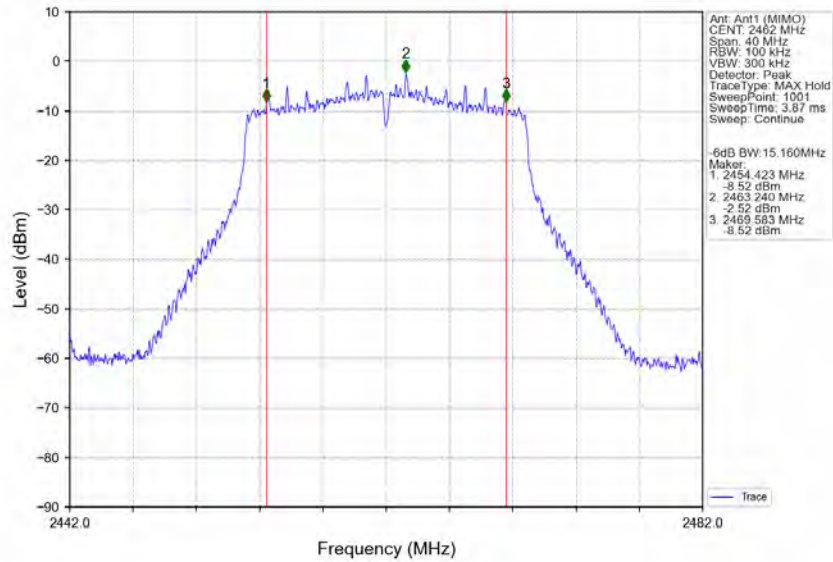
Compliance Certification Services (Kunshan) Inc.

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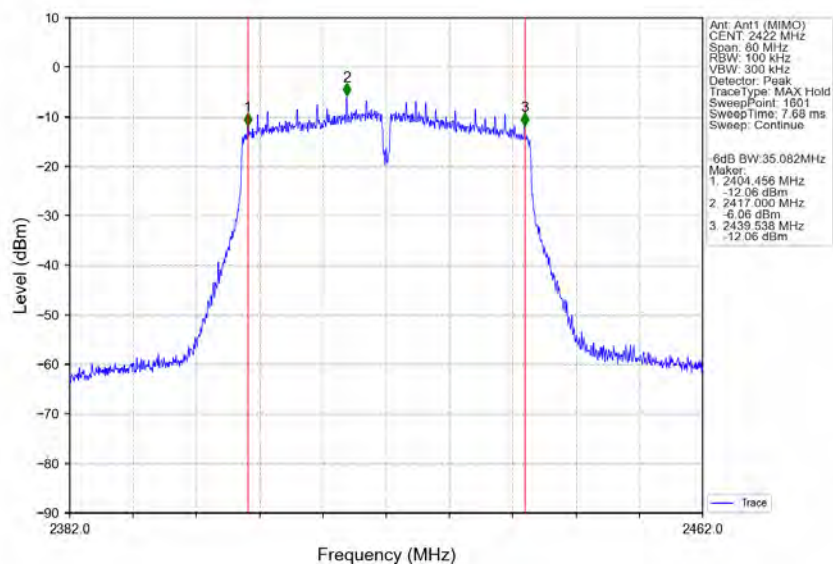
Report No.: KSCR240700121704

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802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



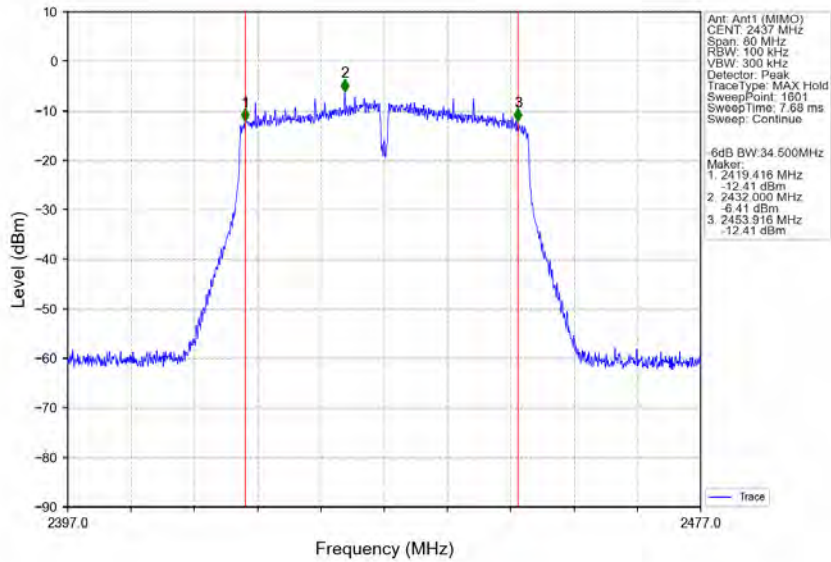
Compliance Certification Services (Kunshan) Inc.

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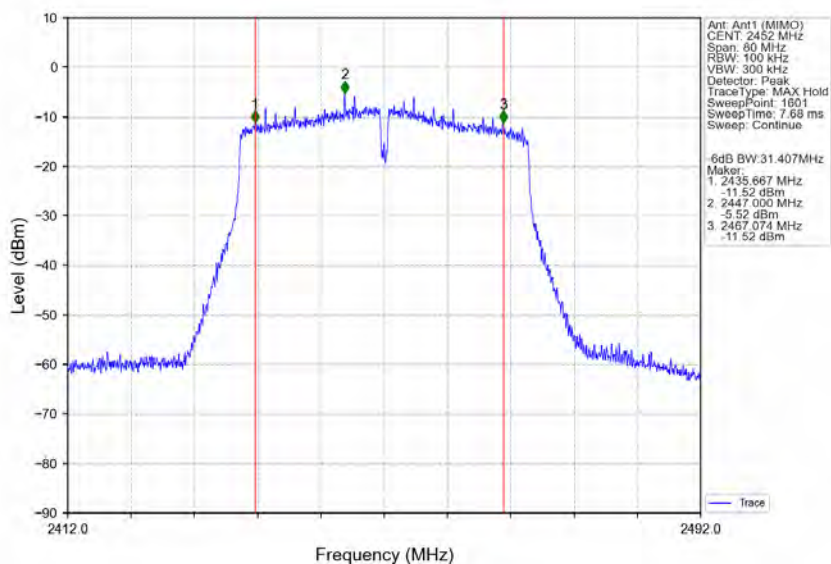
Report No.: KSCR240700121704

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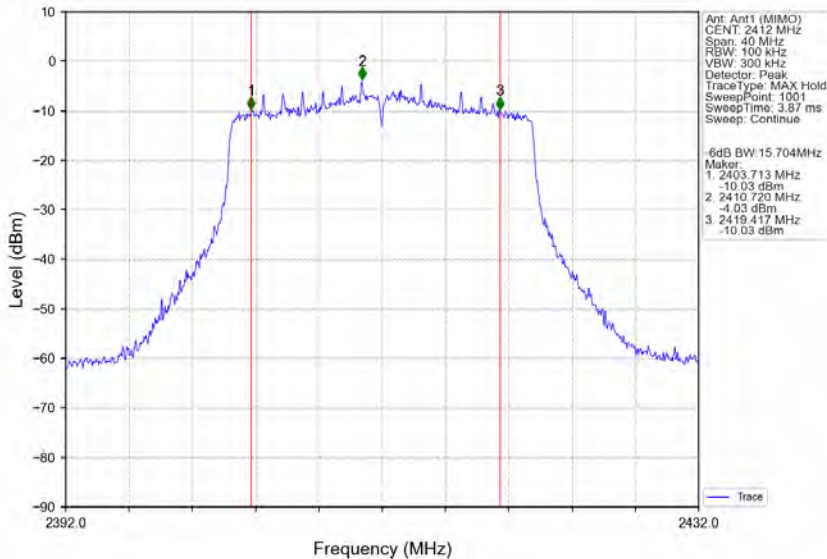
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



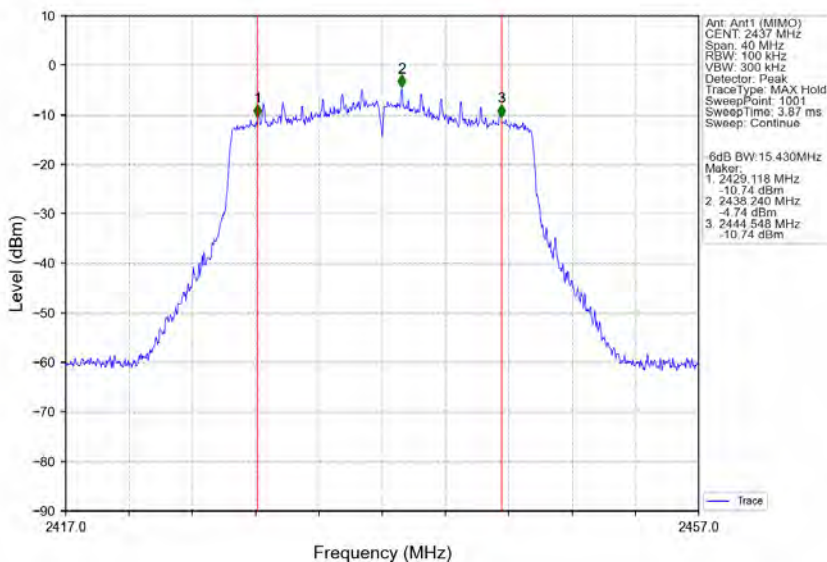
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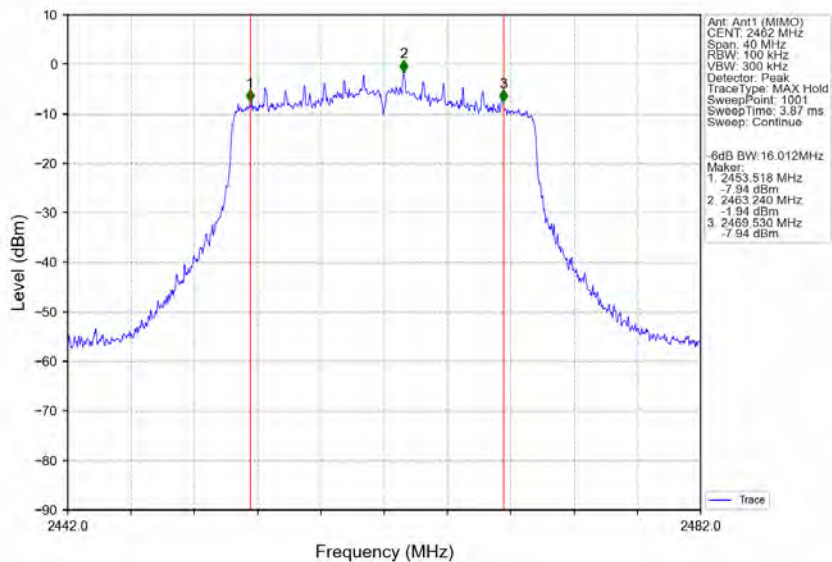
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



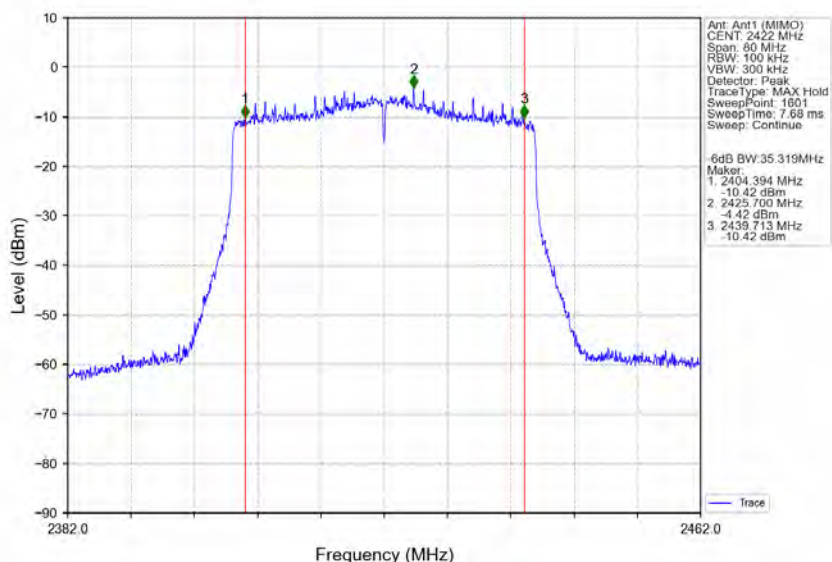
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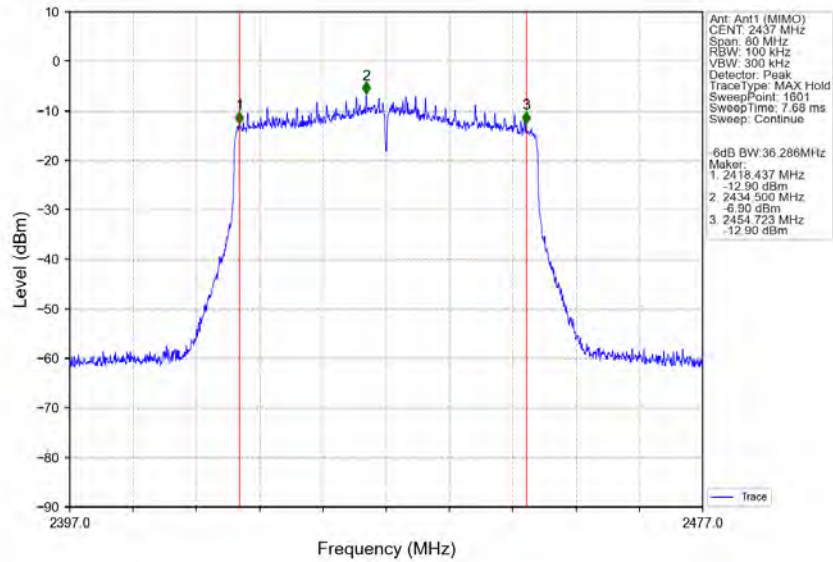
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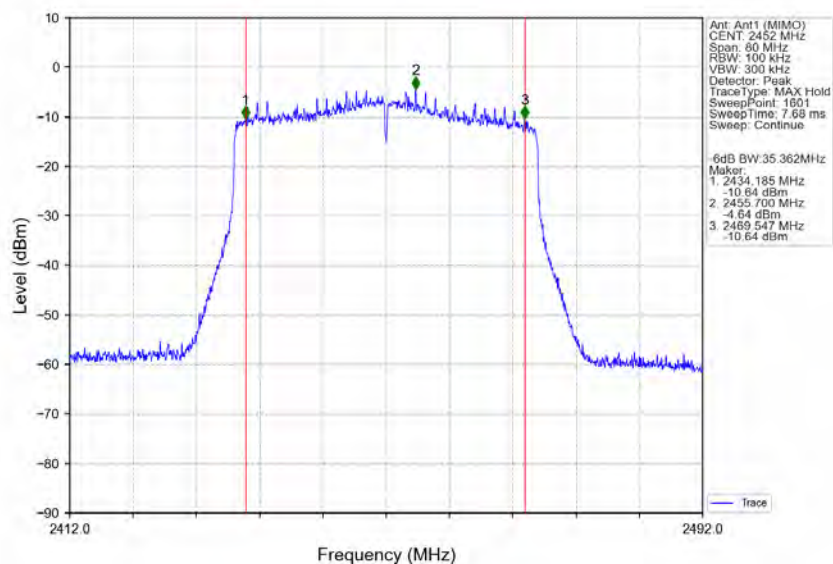
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

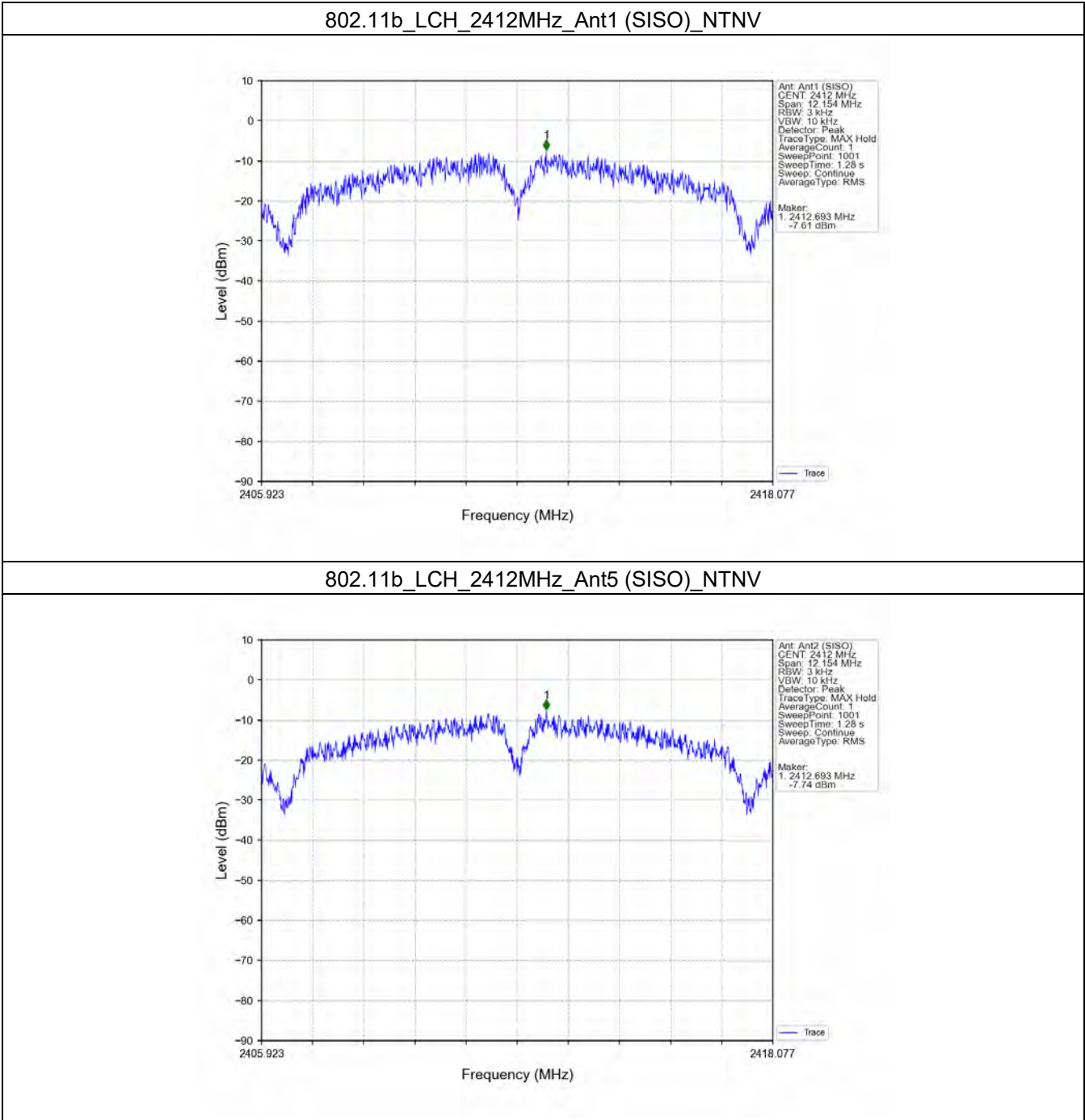
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Peak Conducted Output Power (dBm)				Verdict
					ANT1	ANT5	MIMO	Limit	
802.11b	SISO	2412	/	/	18.45	17.86	/	<=30	Pass
		2437	/	/	17.81	17.82	/	<=30	Pass
		2462	/	/	17.97	18.23	/	<=30	Pass
802.11g	SISO	2412	/	/	18.07	18.36	/	<=30	Pass
		2437	/	/	17.75	18.17	/	<=30	Pass
		2462	/	/	17.81	18.52	/	<=30	Pass
802.11n (HT20)	MIMO	2412	/	/	14.75	12.98	16.96	<=30	Pass
		2437	/	/	14.32	12.74	16.61	<=30	Pass
		2462	/	/	14.52	15.43	18.01	<=30	Pass
802.11n (HT40)	MIMO	2422	/	/	14.58	14.52	17.56	<=30	Pass
		2437	/	/	15.51	12.90	17.41	<=30	Pass
		2452	/	/	15.05	15.19	18.13	<=30	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	14.28	13.91	17.11	<=30	Pass
		2437	RU242	Left	15.12	14.43	17.80	<=30	Pass
		2462	RU242	Left	14.98	13.93	17.50	<=30	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	14.63	14.19	17.43	<=30	Pass
		2437	RU484	Left	15.55	14.42	18.03	<=30	Pass
		2452	RU484	Left	15.08	14.53	17.82	<=30	Pass
Note1: Antenna Gain: Ant1: 1.69dBi; Ant5: 1.98dBi; Note2: Directional Gain: Uncorrelated(Directional Gain = Ant Gain)									

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Average Conducted Output Power (dBm)				Verdict
					ANT1	ANT5	MIMO	Limit	
802.11b	SISO	2412	/	/	15.74	15.72	/	<=30	Pass
		2437	/	/	15.57	15.60	/	<=30	Pass
		2462	/	/	15.37	16.11	/	<=30	Pass
802.11g	SISO	2412	/	/	10.61	10.80	/	<=30	Pass
		2437	/	/	10.28	10.69	/	<=30	Pass
		2462	/	/	10.35	11.04	/	<=30	Pass
802.11n (HT20)	MIMO	2412	/	/	7.27	5.75	9.59	<=30	Pass
		2437	/	/	6.72	4.73	8.85	<=30	Pass
		2462	/	/	6.91	7.47	10.21	<=30	Pass
802.11n (HT40)	MIMO	2422	/	/	7.46	8.34	10.93	<=30	Pass
		2437	/	/	7.95	5.59	9.94	<=30	Pass

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm/3kHz)				Verdict
					ANT1	ANT5	MIMO	Limit	
802.11b	SISO	2412	/	/	-7.61	-7.74	/	<=8	Pass
		2437	/	/	-7.82	-8.18	/	<=8	Pass
		2462	/	/	-7.25	-7.50	/	<=8	Pass
802.11g	SISO	2412	/	/	-14.89	-15.23	/	<=8	Pass
		2437	/	/	-15.81	-15.36	/	<=8	Pass
		2462	/	/	-15.49	-14.06	/	<=8	Pass
802.11n (HT20)	MIMO	2412	/	/	-16.40	-18.95	-15.02	<=8	Pass
		2437	/	/	-17.99	-17.71	-15.78	<=8	Pass
		2462	/	/	-17.54	-16.60	-14.76	<=8	Pass
802.11n (HT40)	MIMO	2422	/	/	-21.14	-20.63	-18.51	<=8	Pass
		2437	/	/	-19.76	-21.36	-18.35	<=8	Pass
		2452	/	/	-18.91	-19.15	-16.10	<=8	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	-19.89	-20.10	-17.47	<=8	Pass
		2437	RU242	Left	-21.00	-22.03	-19.02	<=8	Pass
		2462	RU242	Left	-19.15	-17.63	-15.94	<=8	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	-19.55	-21.67	-18.09	<=8	Pass
		2437	RU484	Left	-21.84	-22.57	-20.24	<=8	Pass
		2452	RU484	Left	-20.01	-20.04	-17.99	<=8	Pass
Note1: Antenna Gain: Ant1: 1.69dBi; Ant5: 1.98dBi; Note2: Directional Gain: Uncorrelated(Directional Gain = Ant Gain)									

4.2 Test Graph

4.2.1 PSD



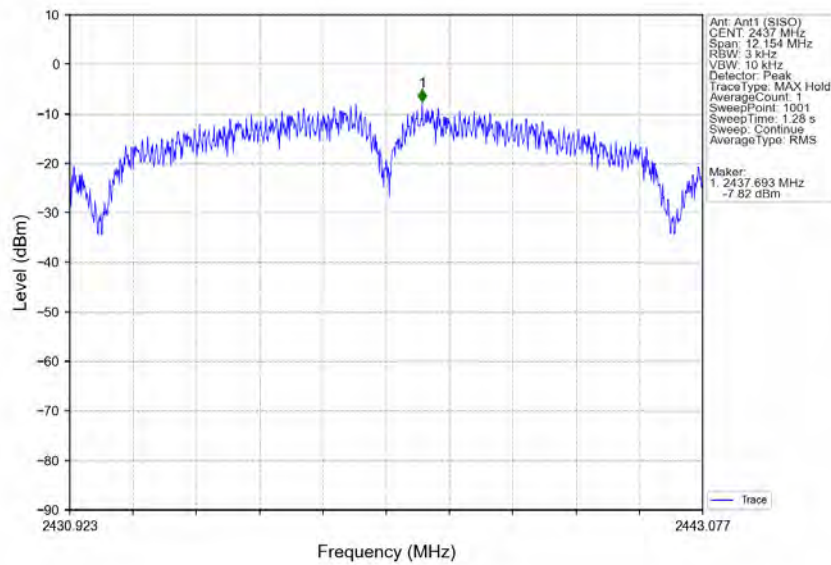
Compliance Certification Services (Kunshan) Inc.

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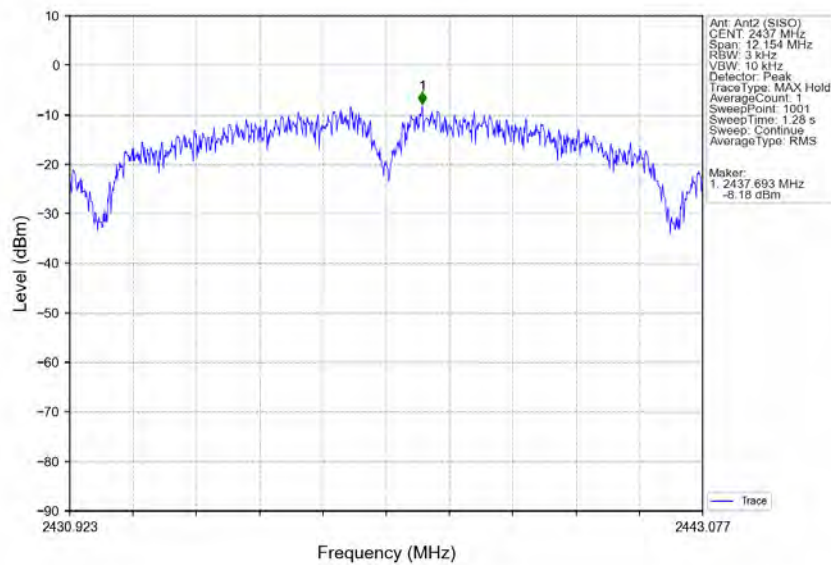
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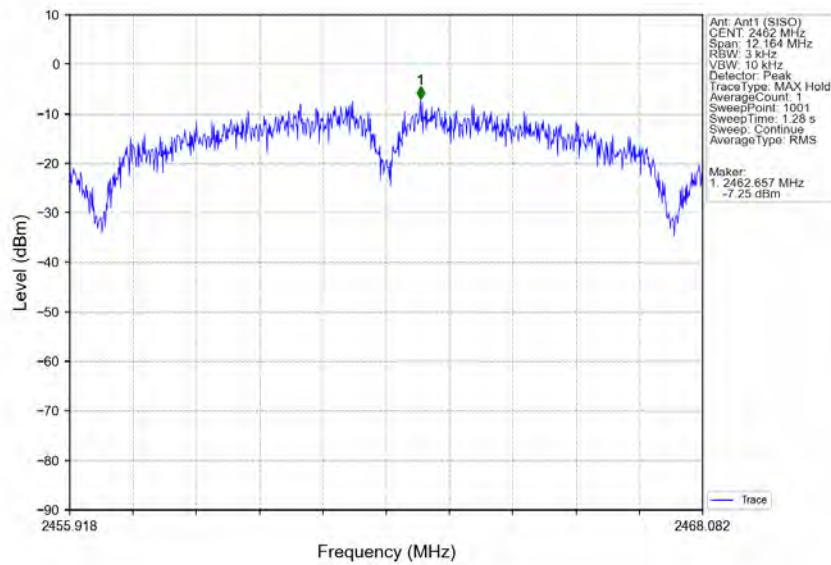
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



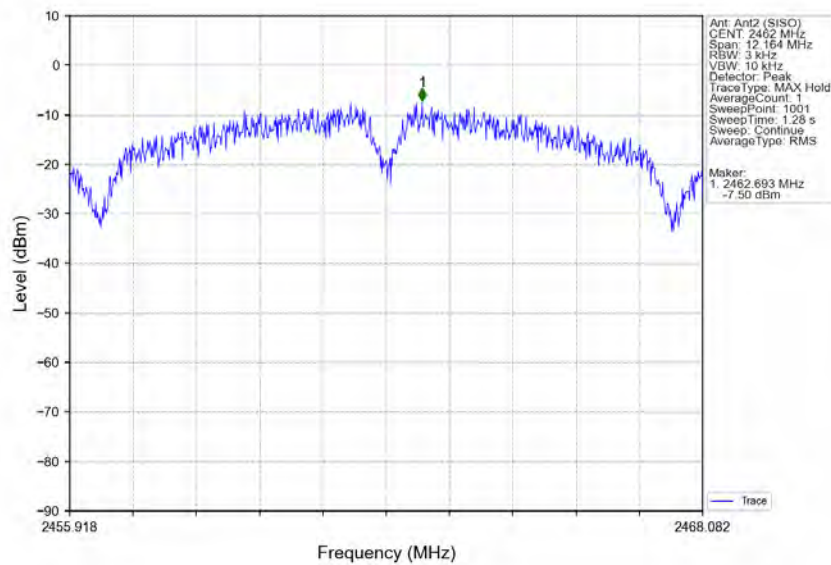
802.11b_MCH_2437MHz_Ant5 (SISO)_NTNV



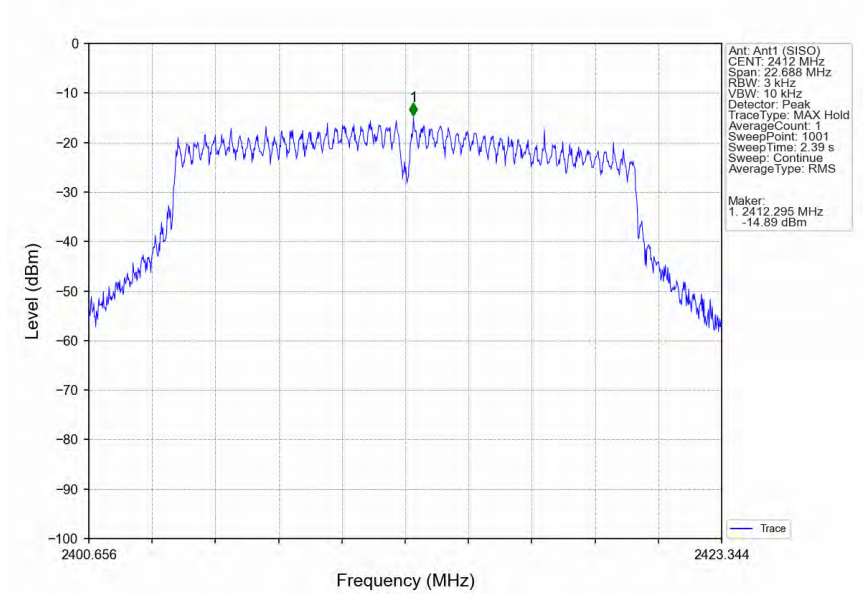
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



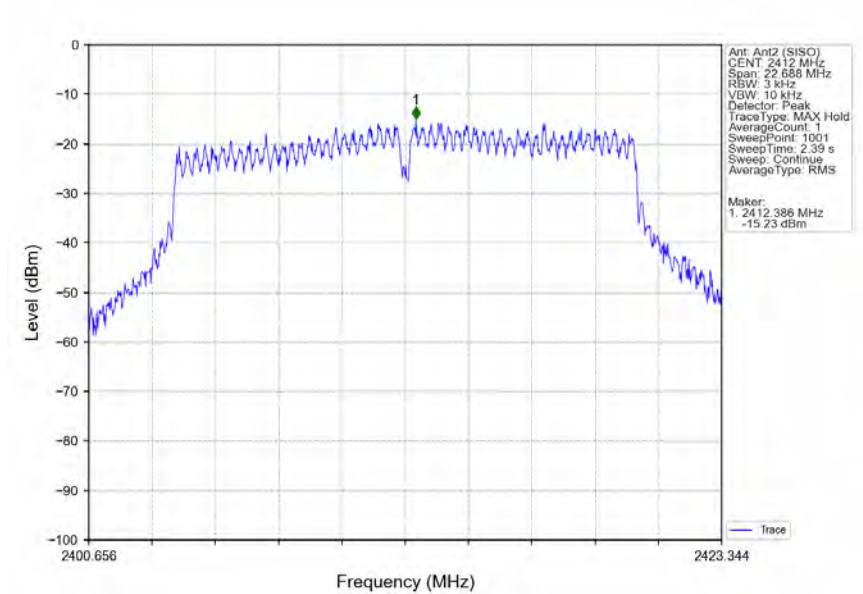
802.11b_HCH_2462MHz_Ant5 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant5 (SISO)_NTNV



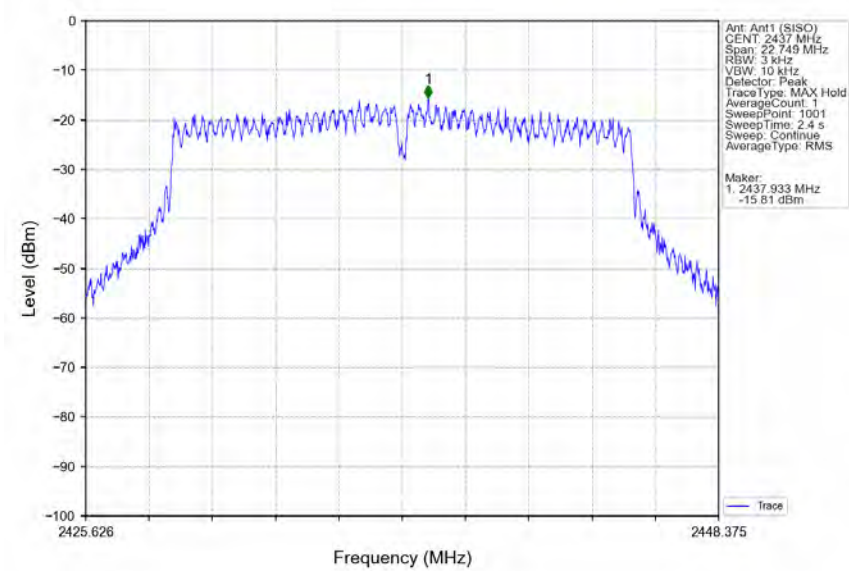
Compliance Certification Services (Kunshan) Inc.

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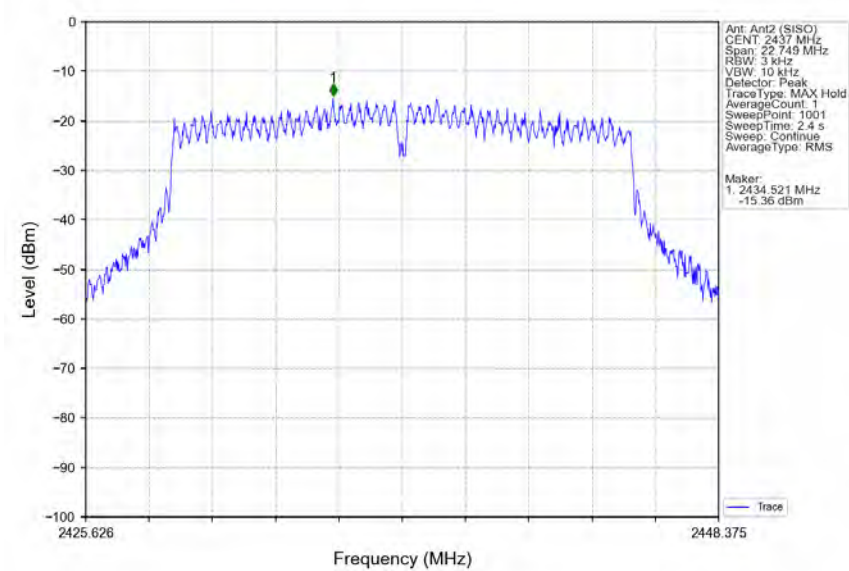
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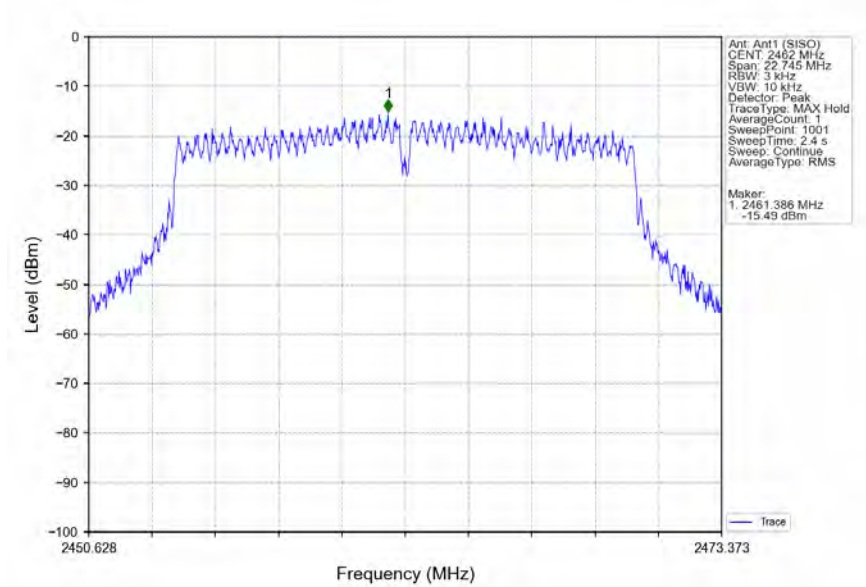
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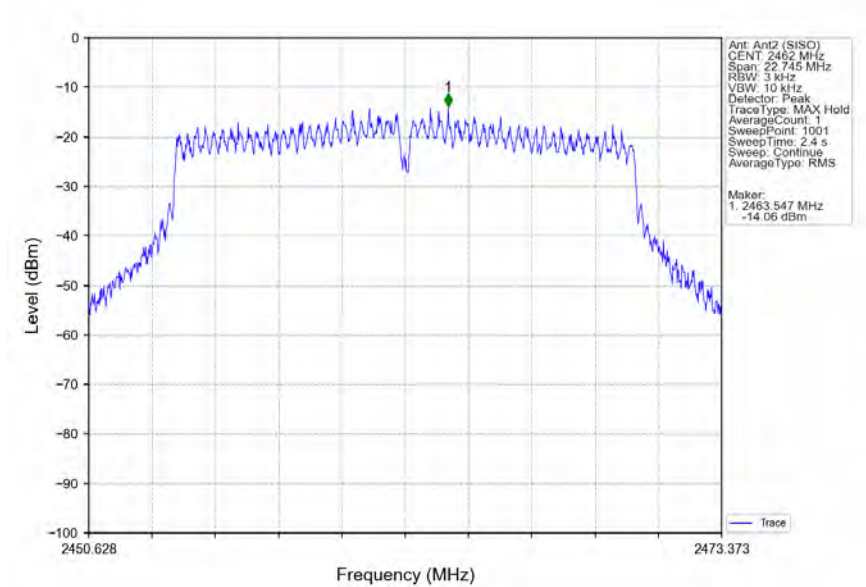
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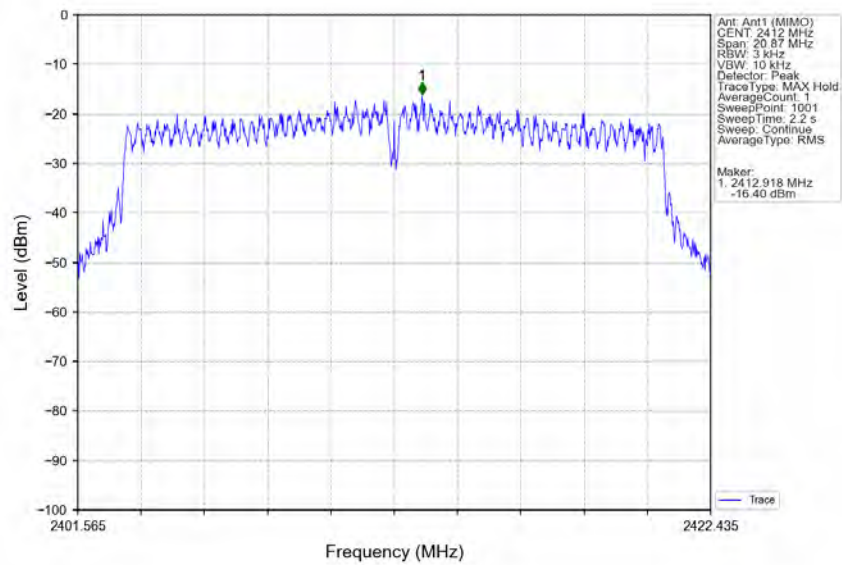
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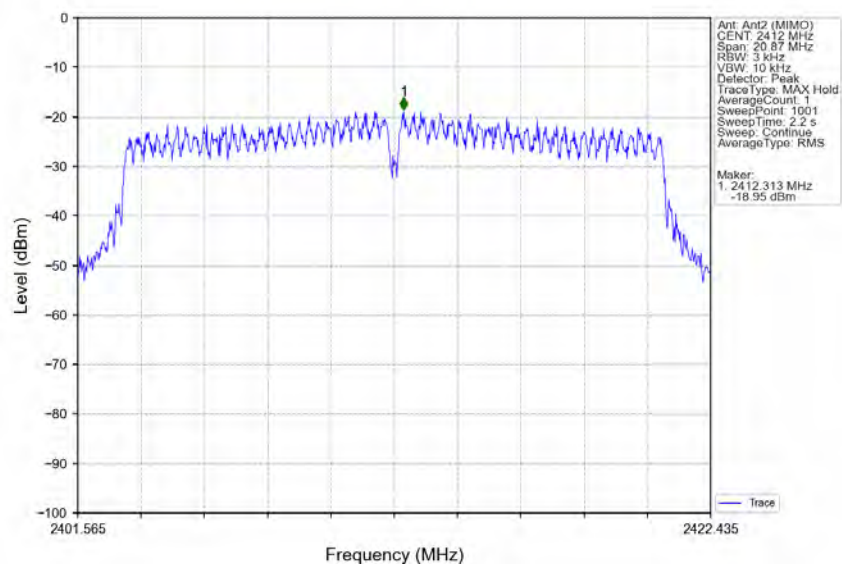
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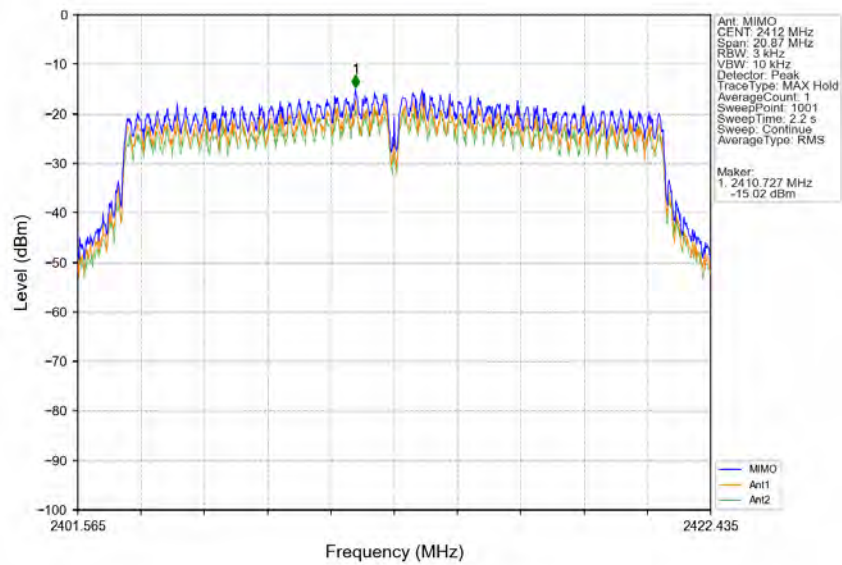
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



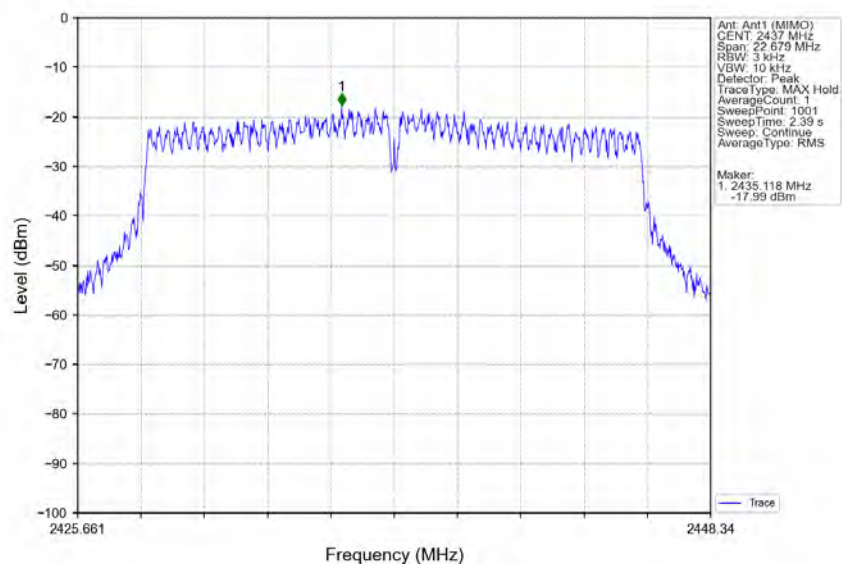
802.11n(HT20)_LCH_2412MHz_Ant5 (MIMO)_NTNV



802.11n(HT20)_LCH_2412MHz_MIMO_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



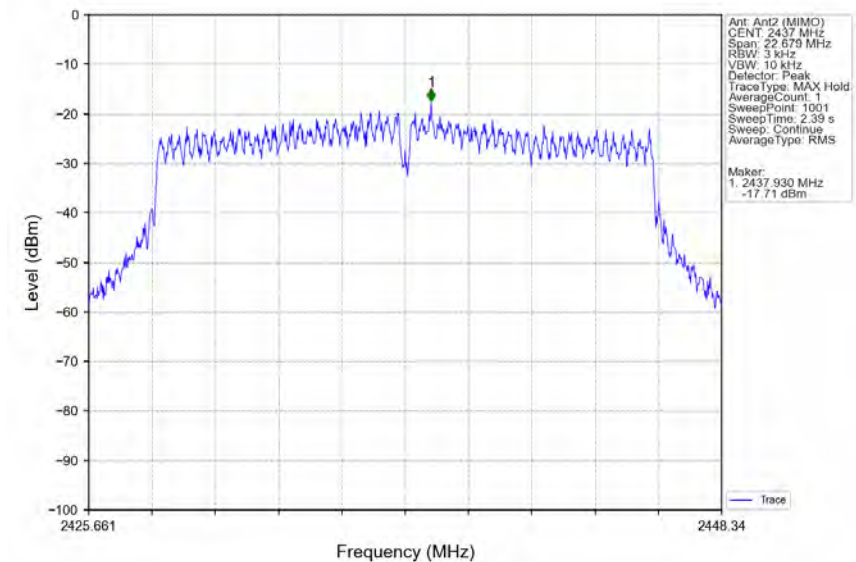
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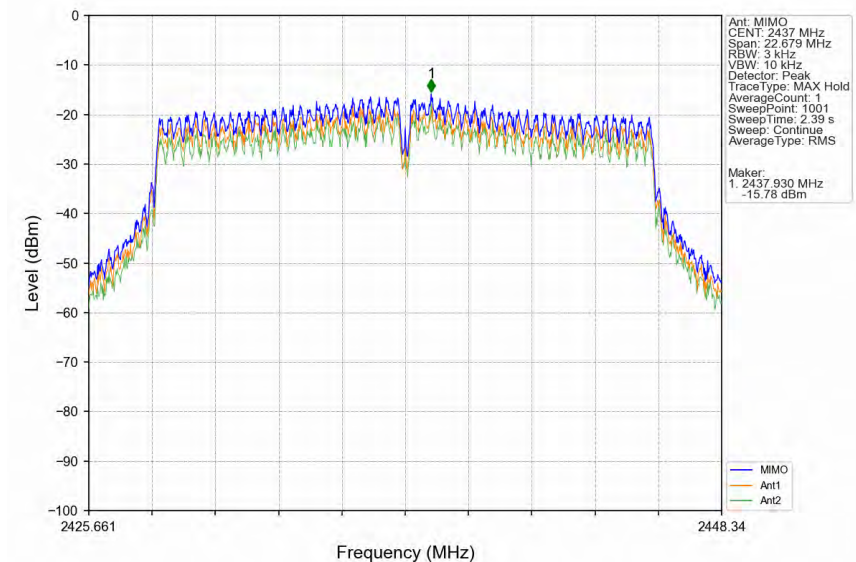
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802.11n(HT20)_MCH_2437MHz_Ant5 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_MIMO_NTNV



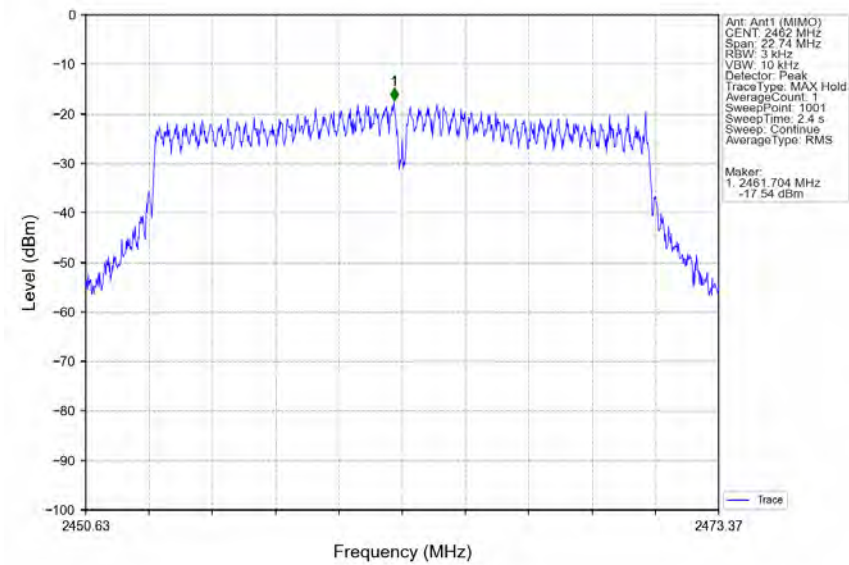
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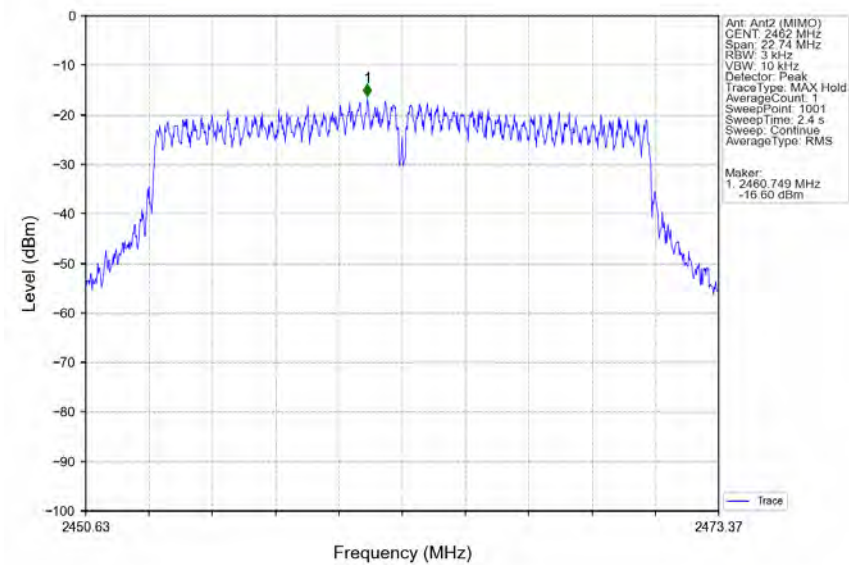
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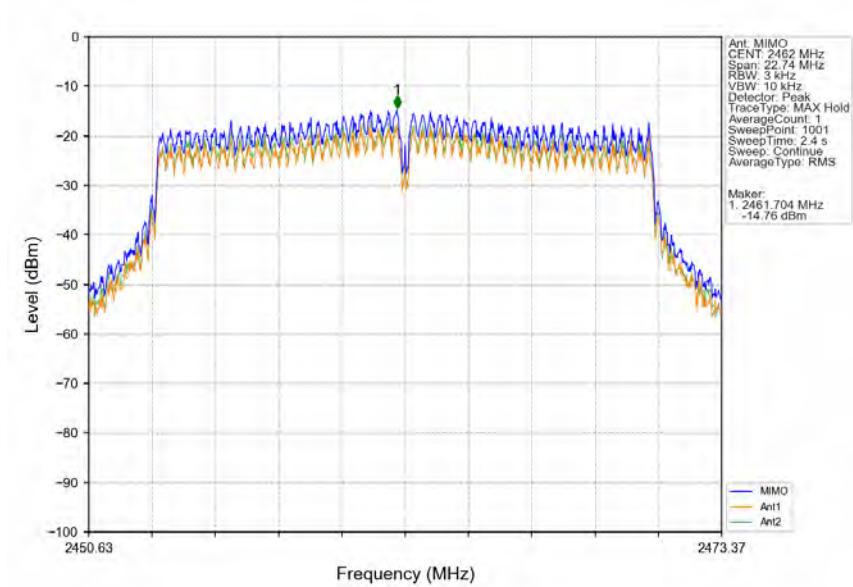
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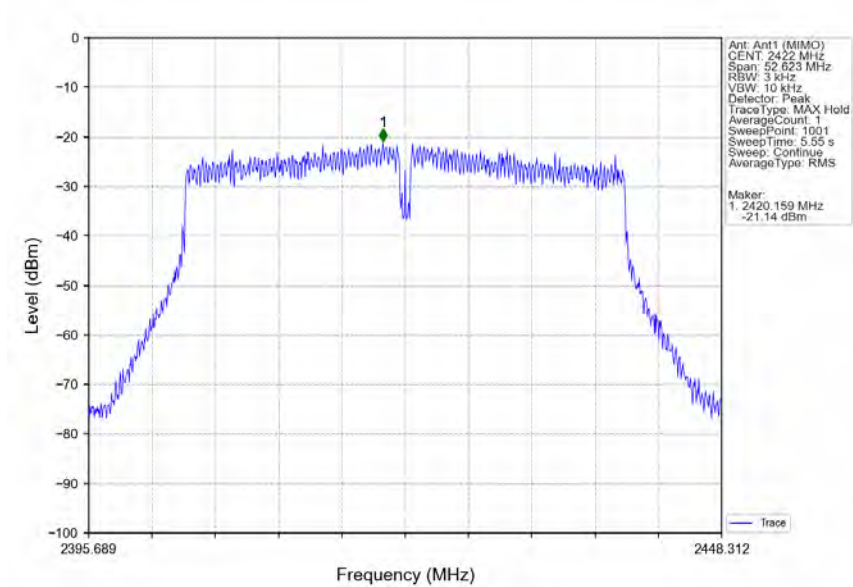
802.11n(HT20)_HCH_2462MHz_Ant5 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_MIMO_NTNV



802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



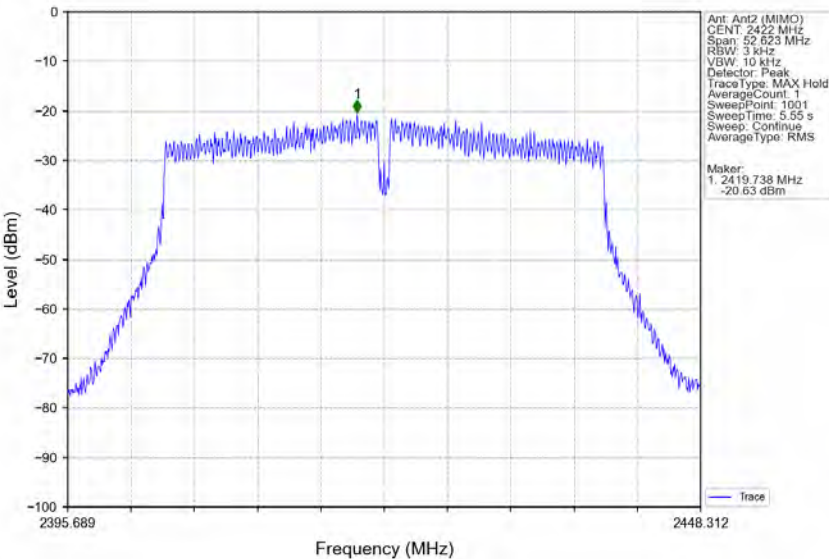
Compliance Certification Services (Kunshan) Inc.

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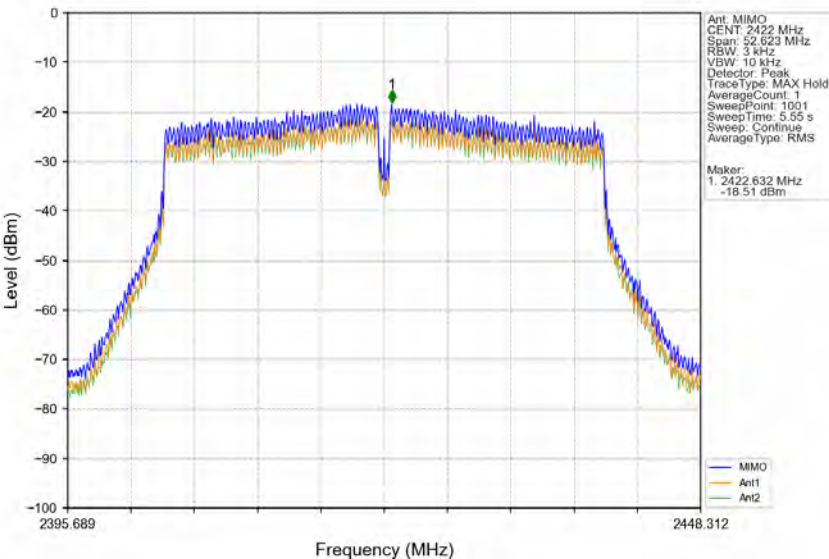
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802.11n(HT40)_LCH_2422MHz_Ant5 (MIMO)_NTNV



802.11n(HT40)_LCH_2422MHz_MIMO_NTNV



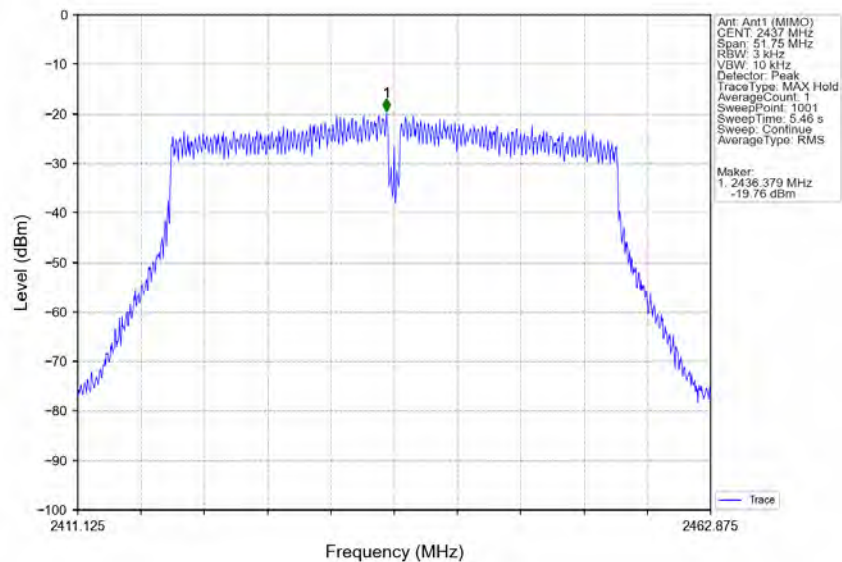
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

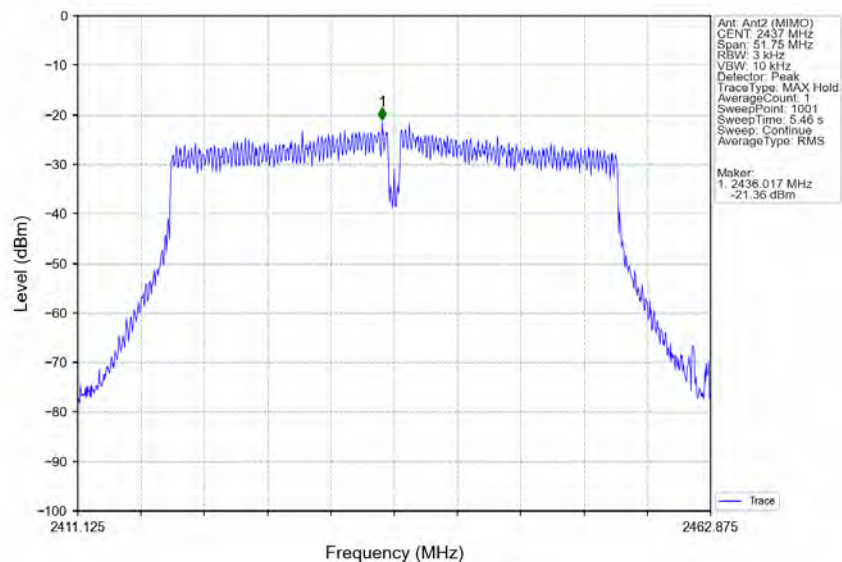
Report No.: KSCR240700121704

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802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant5 (MIMO)_NTNV



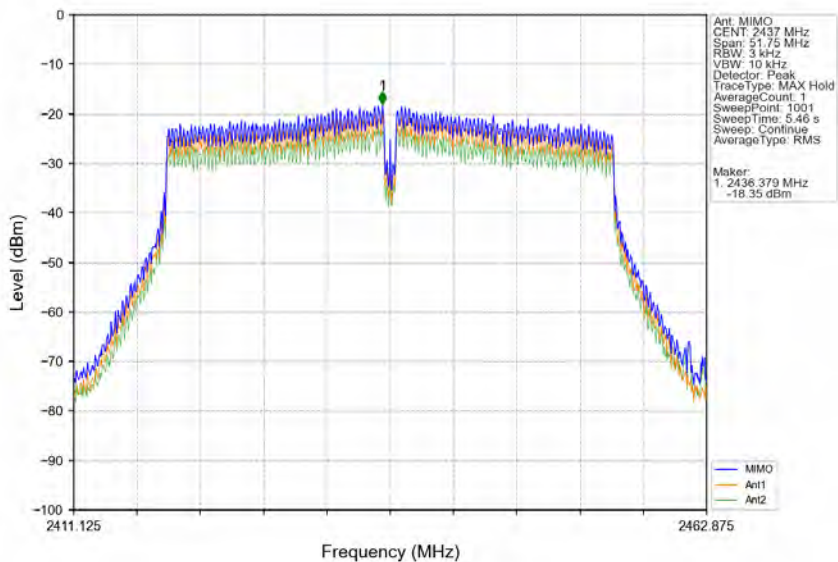
Compliance Certification Services (Kunshan) Inc.

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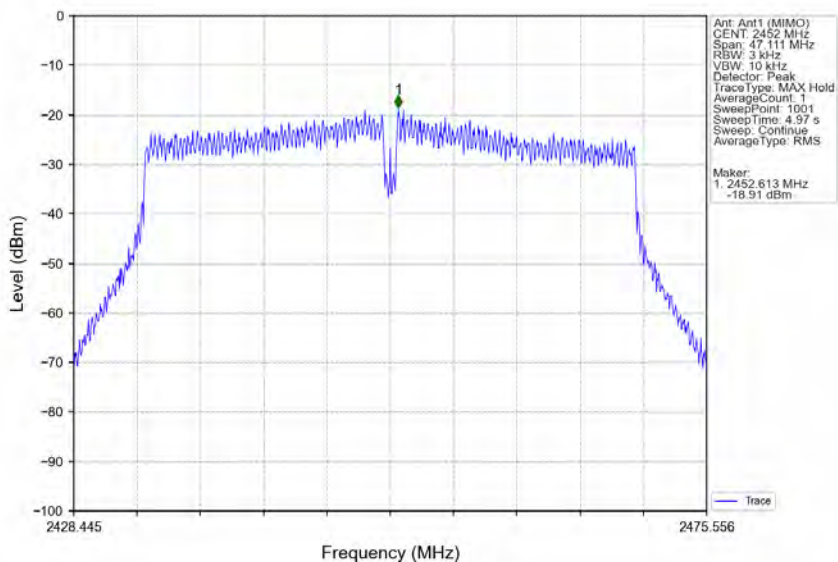
Report No.: KSCR240700121704

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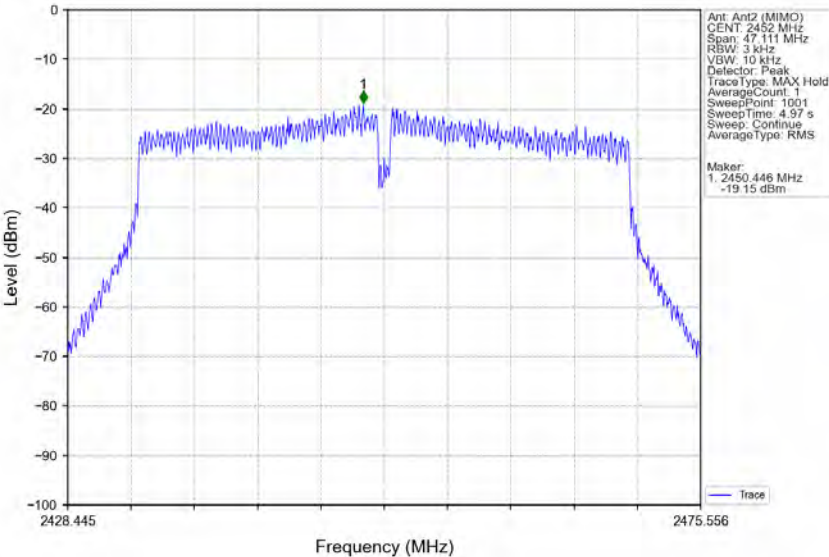
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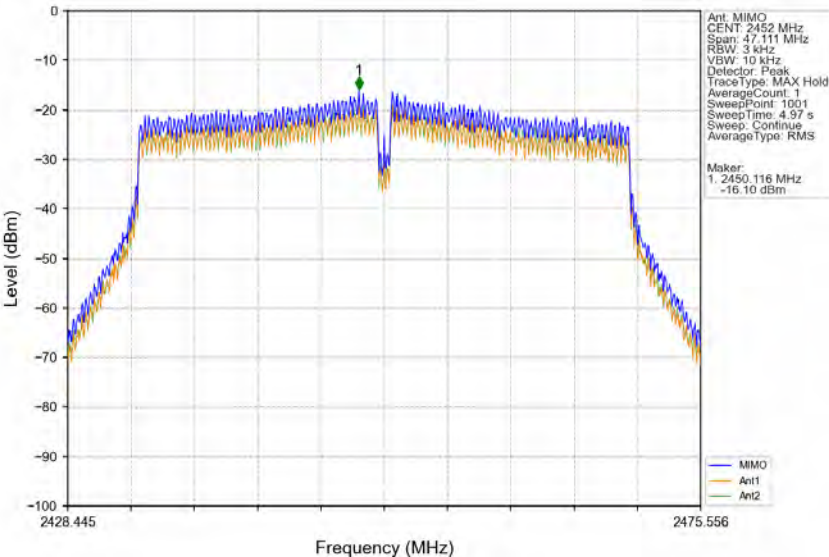
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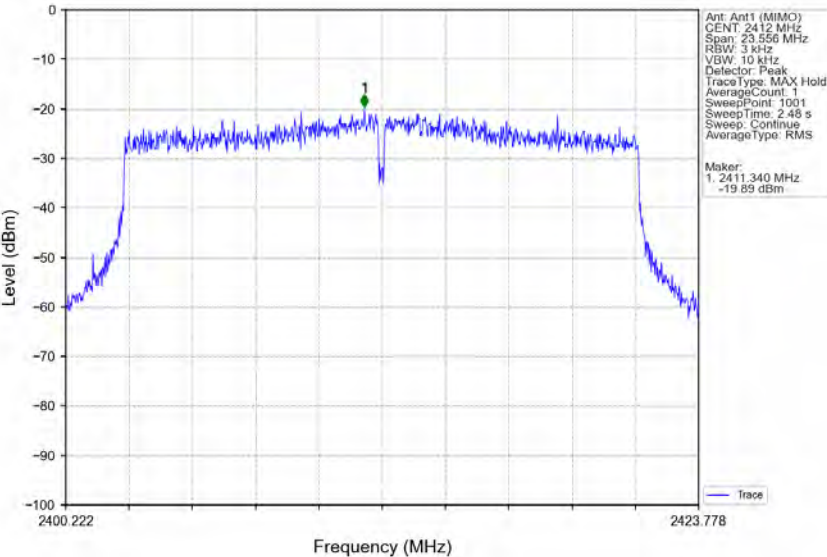
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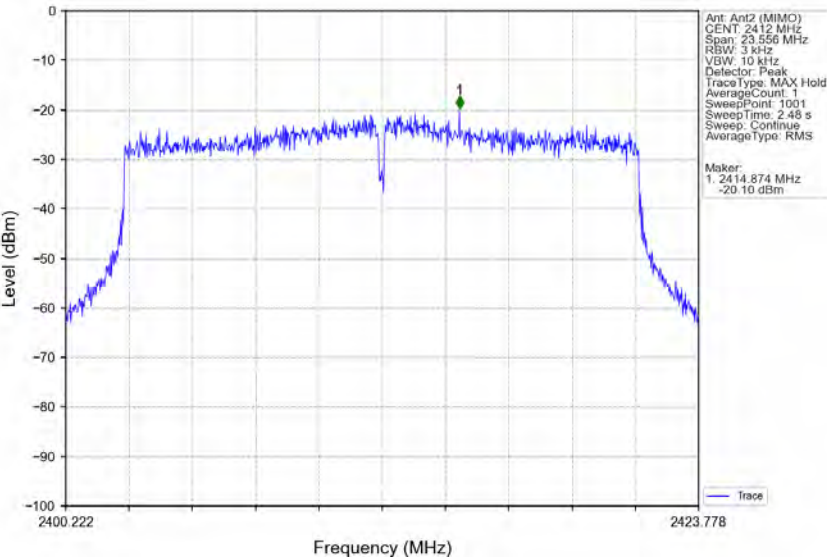
802.11n(HT40)_HCH_2452MHz_MIMO_NTNV



802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant5 (MIMO)_NTNV



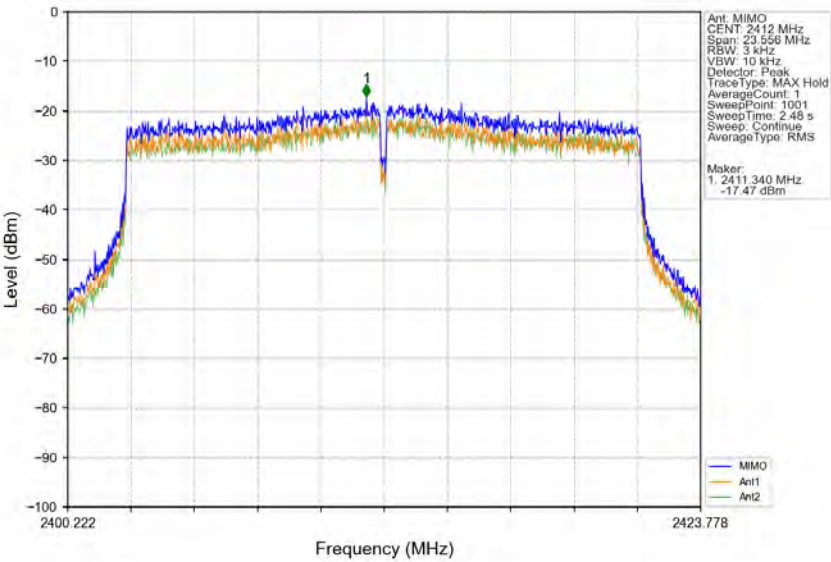
Compliance Certification Services (Kunshan) Inc.

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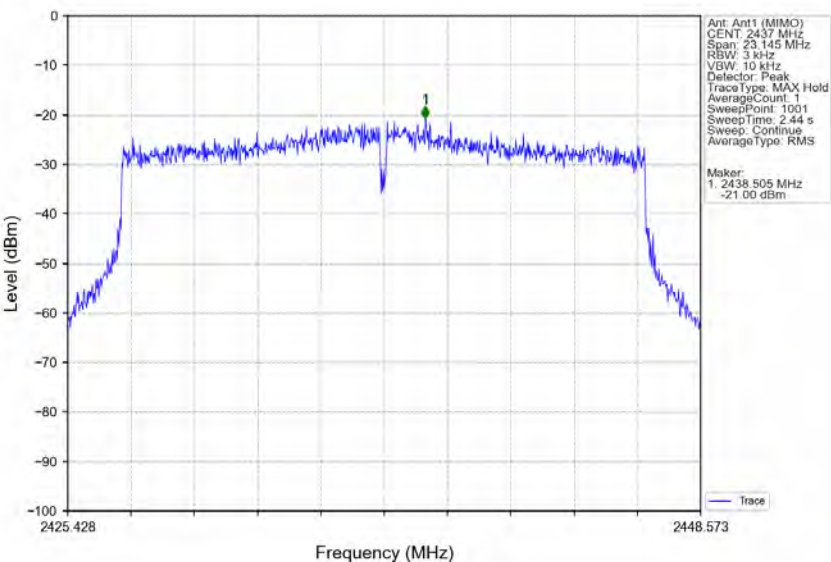
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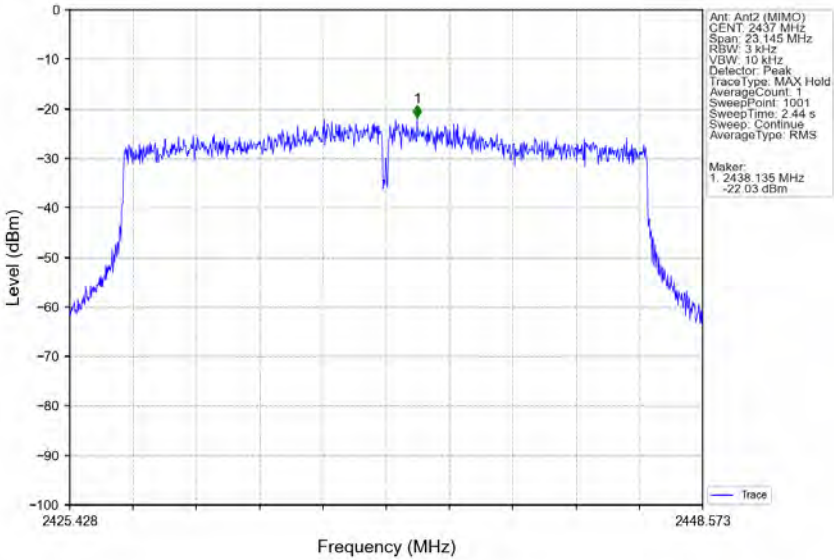
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_MIMO_NTNV



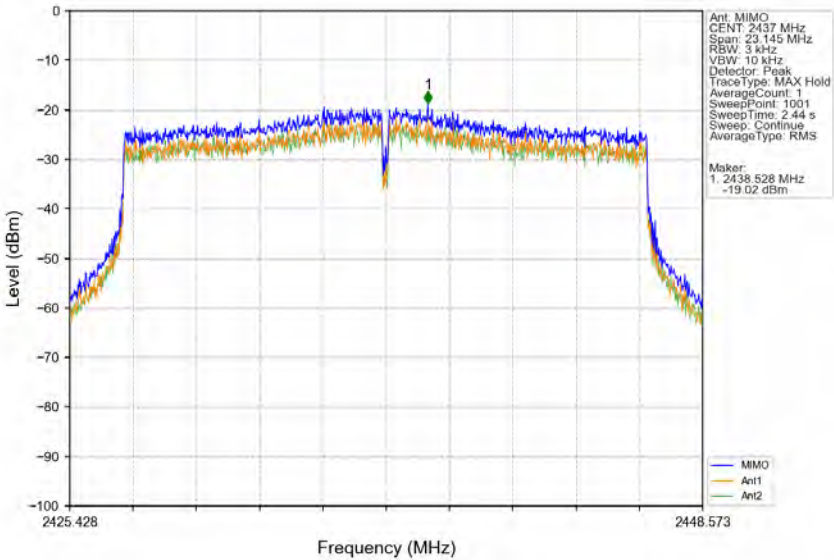
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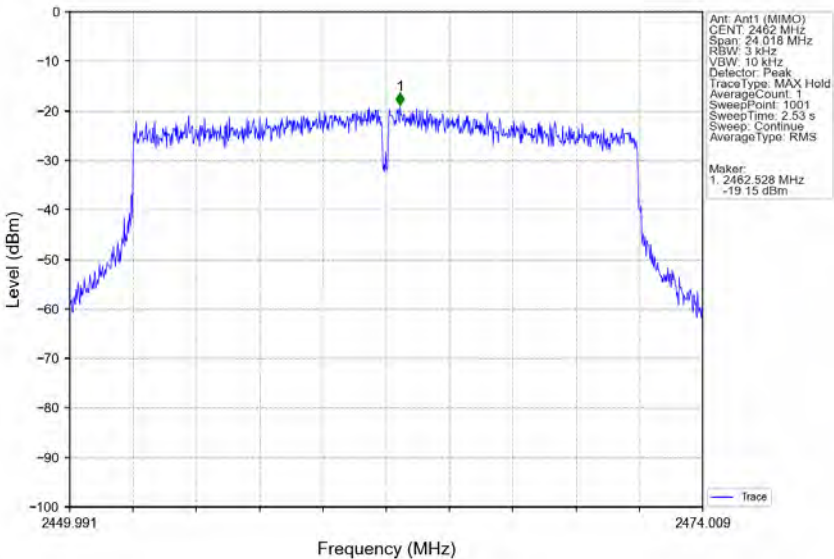
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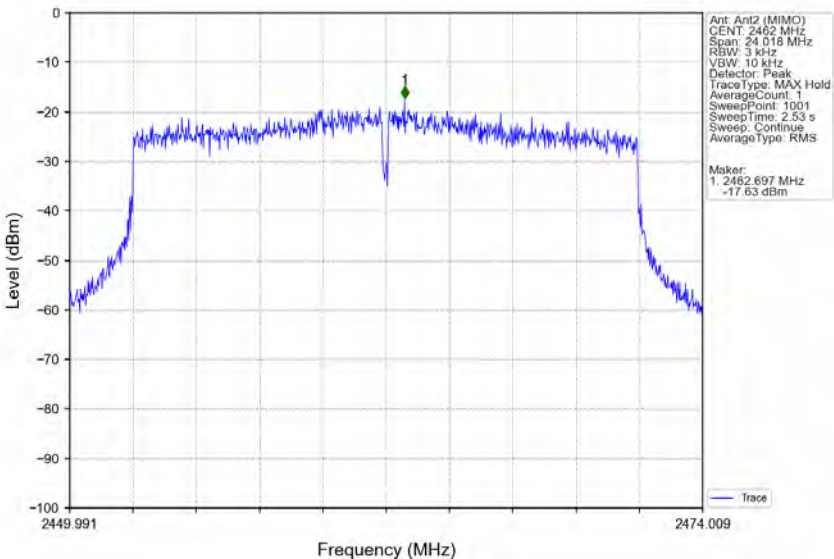
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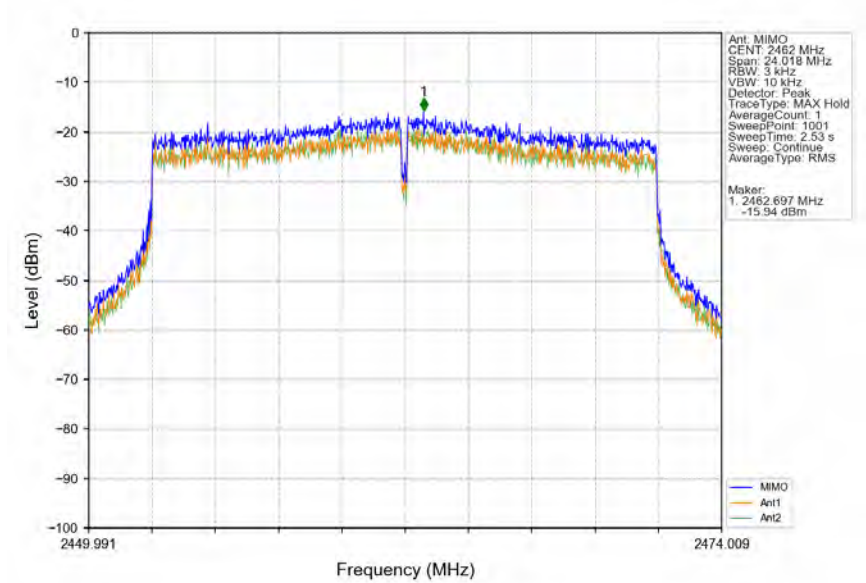
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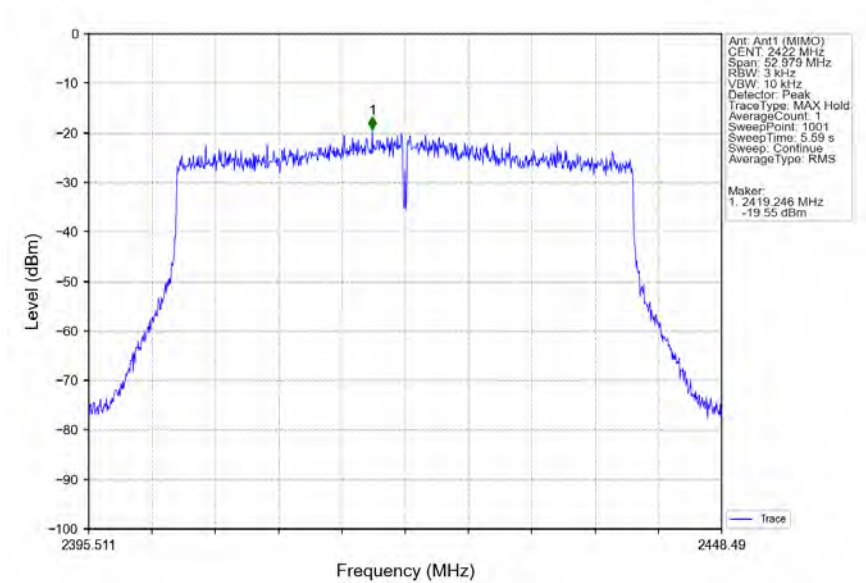
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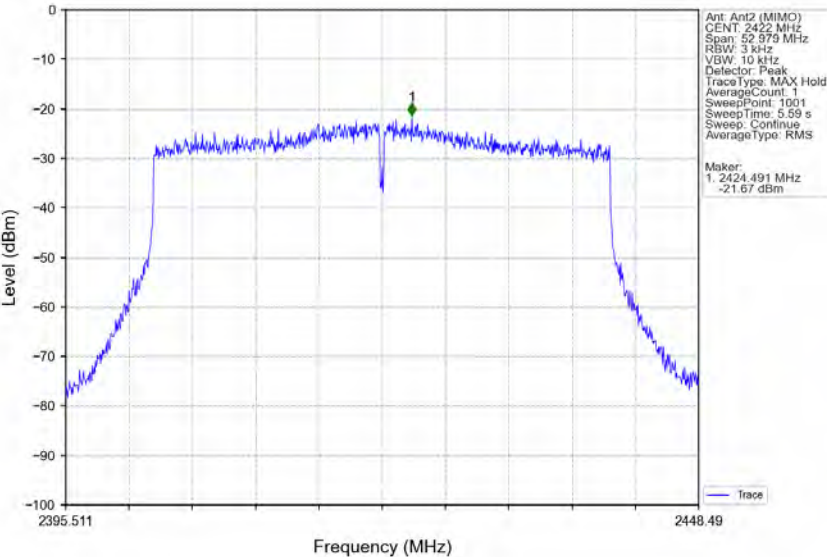
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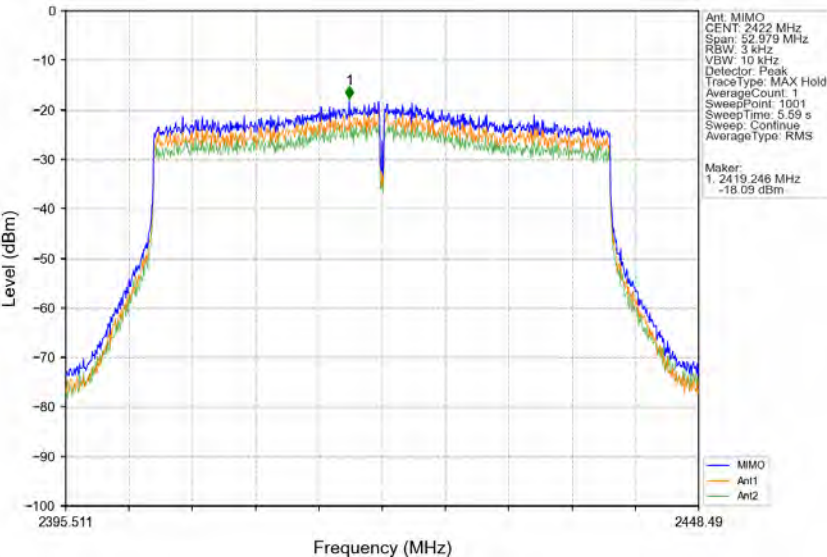
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant5 (MIMO)_NTNV



802.11ax(HEW40)_LCH_2422MHz_RU484_Left_MIMO_NTNV



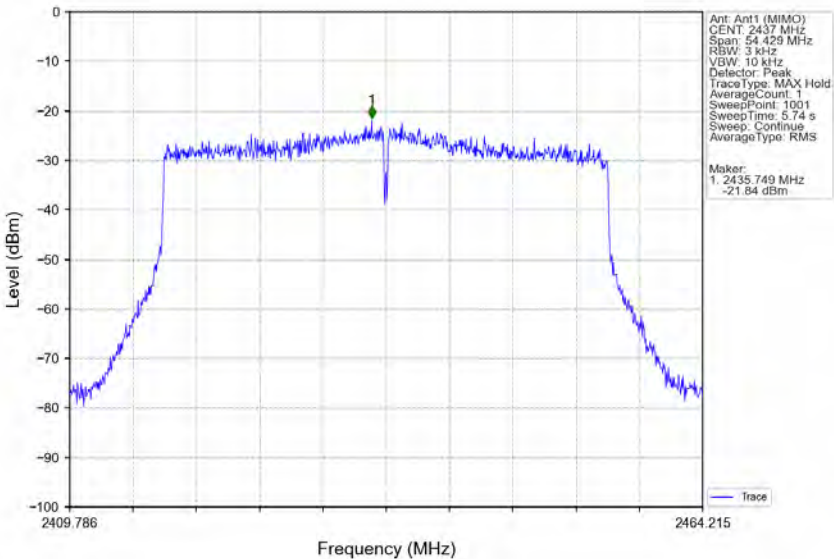
Compliance Certification Services (Kunshan) Inc.

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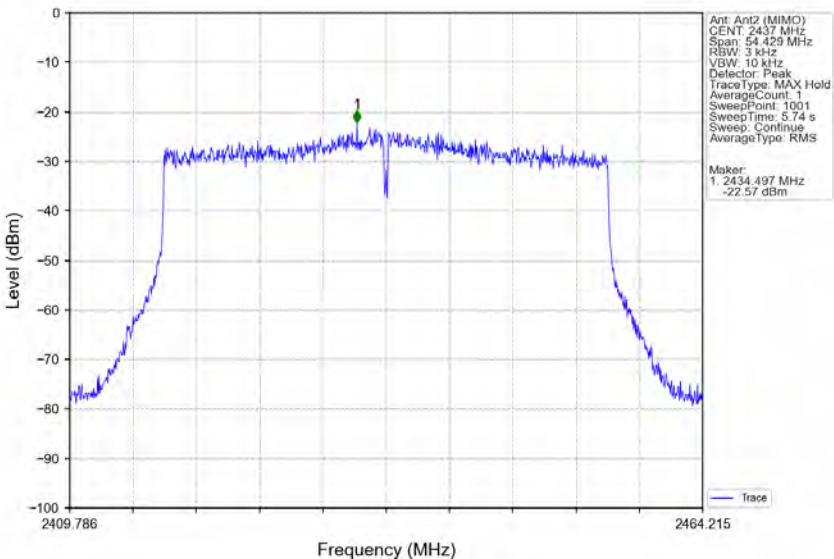
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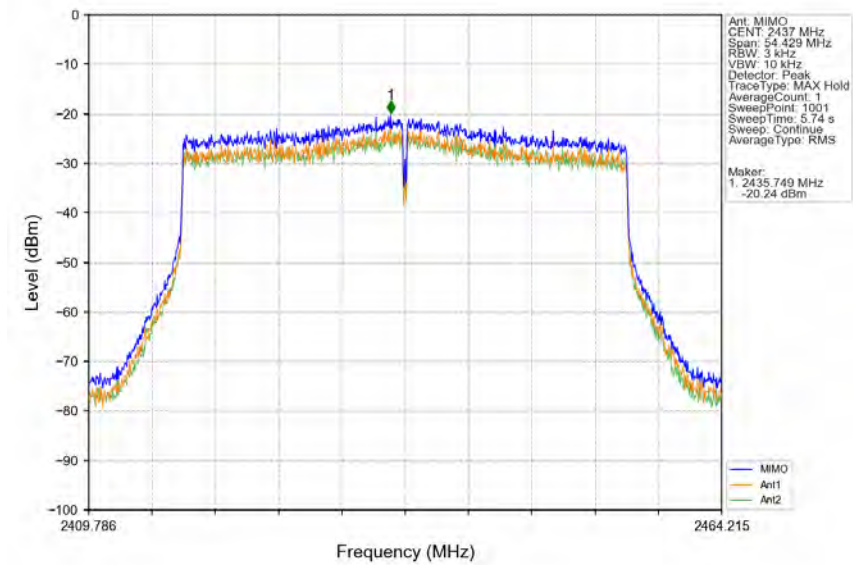
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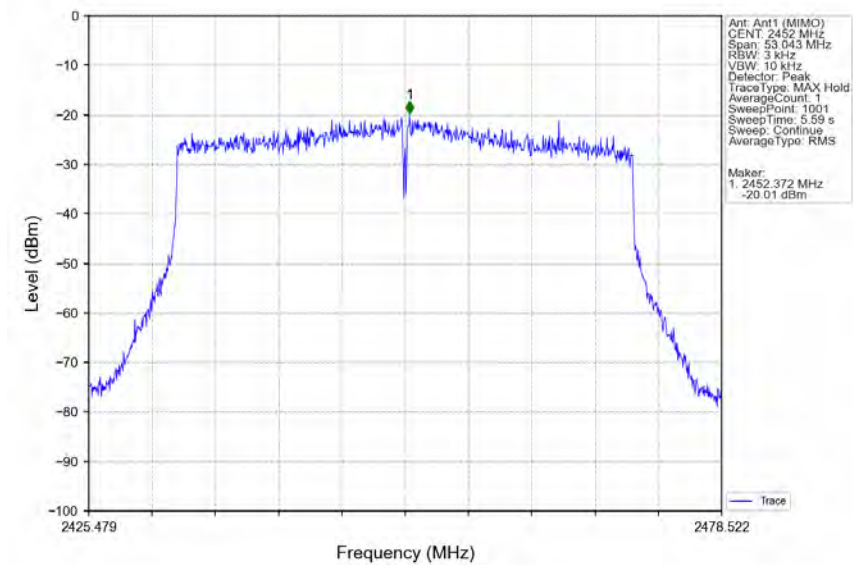
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802.11ax(HEW40)_MCH_2437MHz_RU484_Left_MIMO_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV



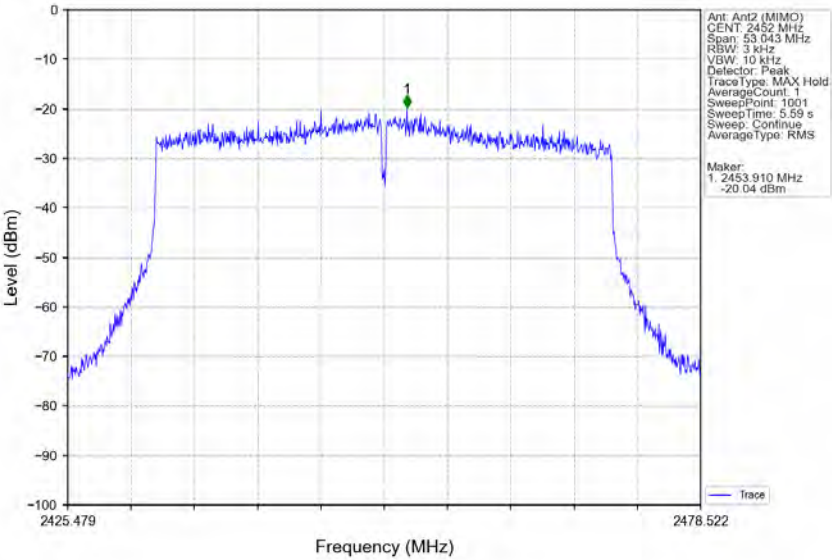
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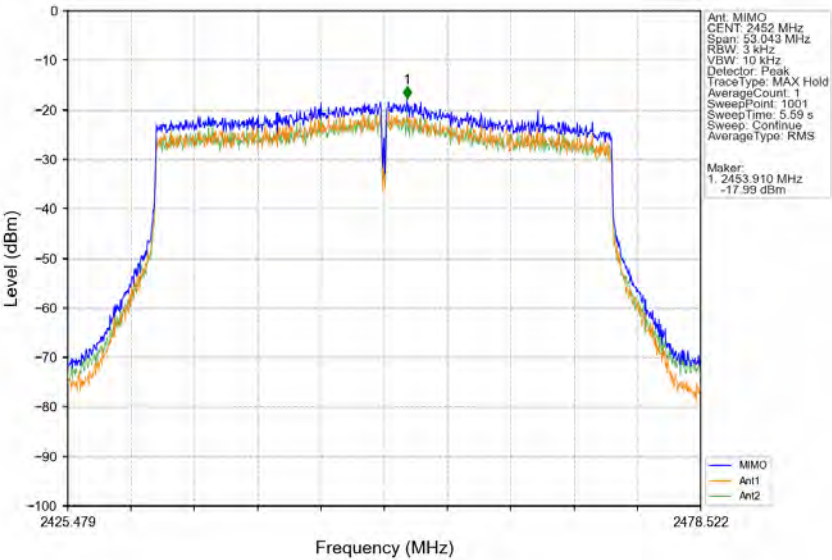
Report No.: KSCR240700121704

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802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant5 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_MIMO_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	Level of Reference (dBm)
802.11b	SISO	2412	/	/	1	7.76
					5	7.53
		2437	/	/	1	7.30
					5	7.41
		2462	/	/	1	7.48
					5	8.02
802.11g	SISO	2412	/	/	1	1.06
					5	1.69
		2437	/	/	1	0.85
					5	1.04
		2462	/	/	1	1.02
					5	1.69
802.11n (HT20)	MIMO	2412	/	/	1	-1.90
					5	-4.24
		2437	/	/	1	-2.51
					5	-4.14
		2462	/	/	1	-2.12
					5	-1.58
802.11n (HT40)	MIMO	2422	/	/	1	-6.80
					5	-7.21
		2437	/	/	1	-7.52
					5	-8.08
		2452	/	/	1	-6.41
					5	-5.90
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	-3.68
					5	-5.08
		2437	RU242	Left	1	-4.72
					5	-5.48

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802.11ax (HEW40)	MIMO	2462	RU242	Left	1	-1.90
					5	-2.25
		2422	RU484	Left	1	-4.10
					5	-6.68
		2437	RU484	Left	1	-7.19
					5	-7.90
		2452	RU484	Left	1	-5.28
					5	-4.96

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.1.2 CSE

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	/	/	1	7.76	-12.24	Pass
					5	8.02	-11.98	Pass
		2437	/	/	1	7.76	-12.24	Pass
					5	8.02	-11.98	Pass
		2462	/	/	1	7.76	-12.24	Pass
					5	8.02	-11.98	Pass
802.11g	SISO	2412	/	/	1	1.06	-18.94	Pass
					5	1.69	-18.31	Pass
		2437	/	/	1	1.06	-18.94	Pass
					5	1.69	-18.31	Pass
		2462	/	/	1	1.06	-18.94	Pass
					5	1.69	-18.31	Pass
802.11n (HT20)	MIMO	2412	/	/	1	-1.90	-21.90	Pass
					5	-1.58	-21.58	Pass
		2437	/	/	1	-1.90	-21.90	Pass
					5	-1.58	-21.58	Pass
		2462	/	/	1	-1.90	-21.90	Pass
					5	-1.58	-21.58	Pass
802.11n (HT40)	MIMO	2422	/	/	1	-6.41	-26.41	Pass
					5	-5.90	-25.90	Pass
		2437	/	/	1	-6.41	-26.41	Pass
					5	-5.90	-25.90	Pass
		2452	/	/	1	-6.41	-26.41	Pass
					5	-5.90	-25.90	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	-1.90	-21.90	Pass
					5	-2.25	-22.25	Pass
		2437	RU242	Left	1	-1.90	-21.90	Pass



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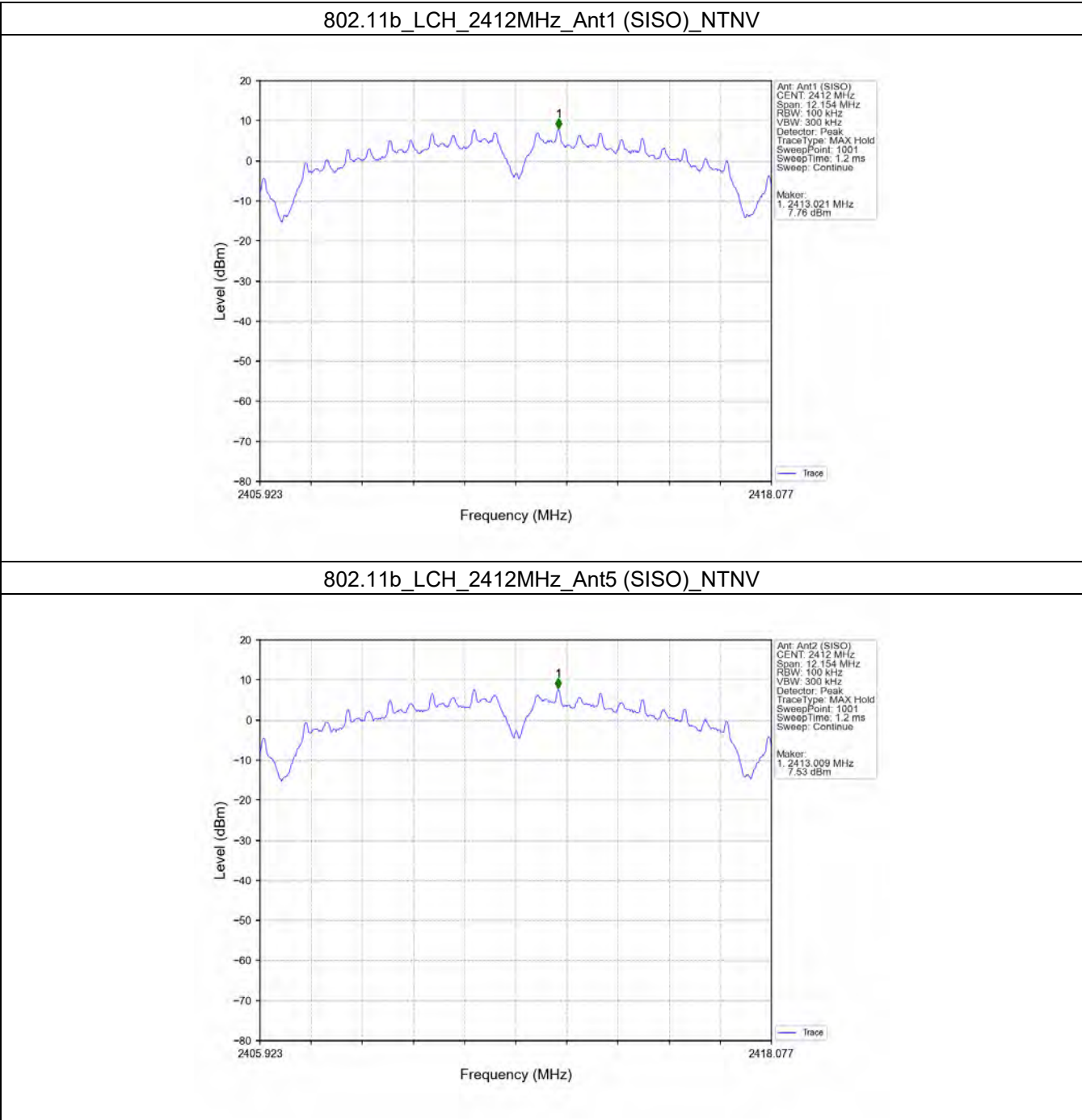
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802.11ax (HEW40)	MIMO	2462	RU242	Left	5	-2.25	-22.25	Pass
					1	-1.90	-21.90	Pass
					5	-2.25	-22.25	Pass
		2422	RU484	Left	1	-4.10	-24.10	Pass
					5	-4.96	-24.96	Pass
		2437	RU484	Left	1	-4.10	-24.10	Pass
					5	-4.96	-24.96	Pass
		2452	RU484	Left	1	-4.10	-24.10	Pass
					5	-4.96	-24.96	Pass

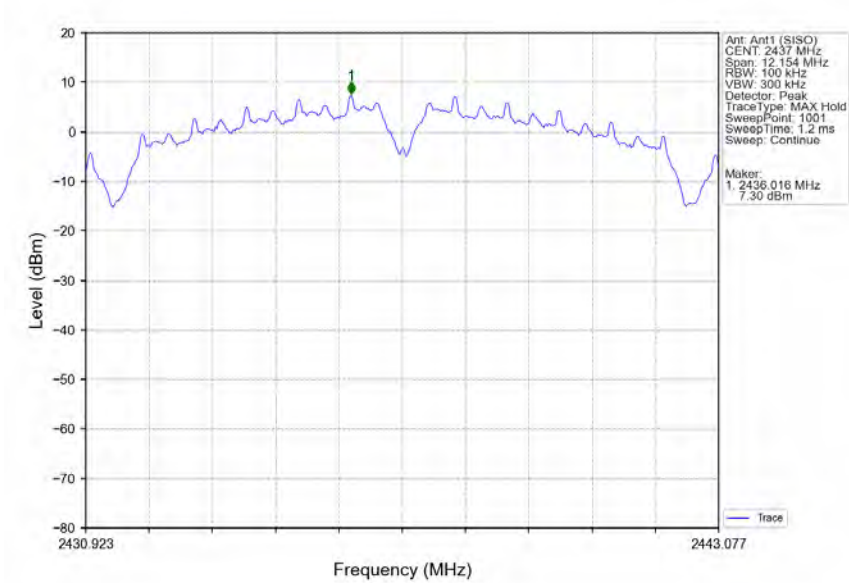
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.2 Test Graph

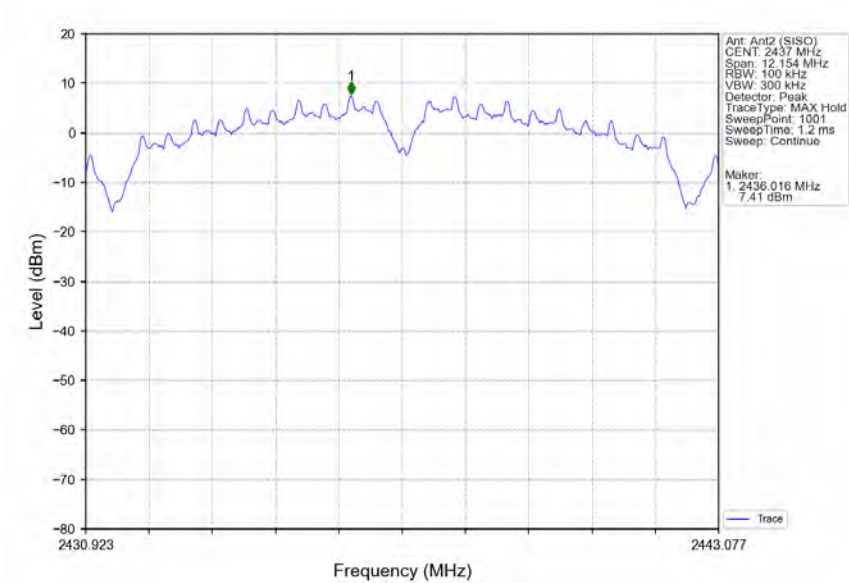
5.2.1 Ref



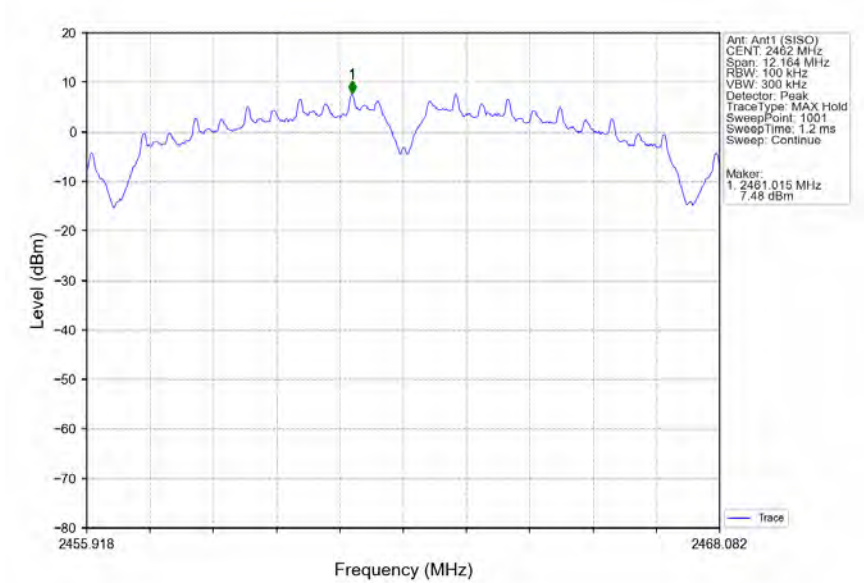
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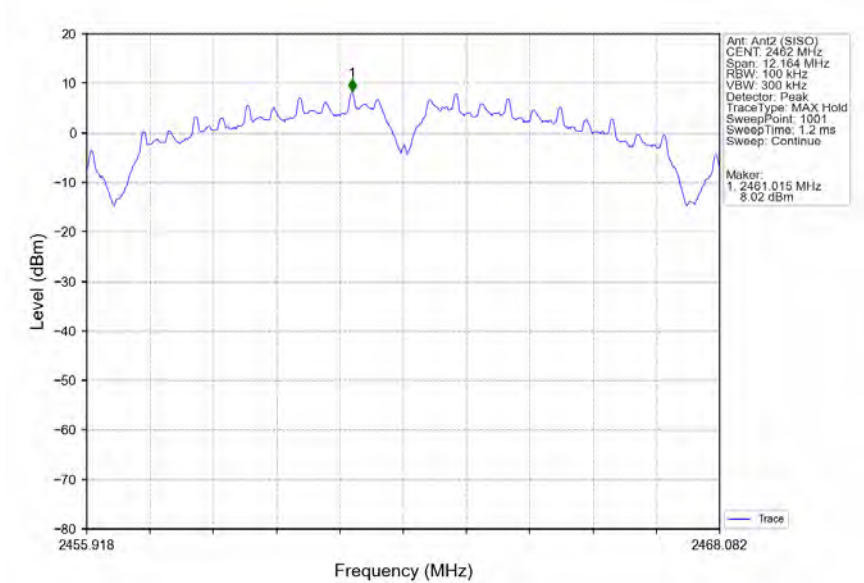
802.11b_MCH_2437MHz_Ant5 (SISO)_NTNV



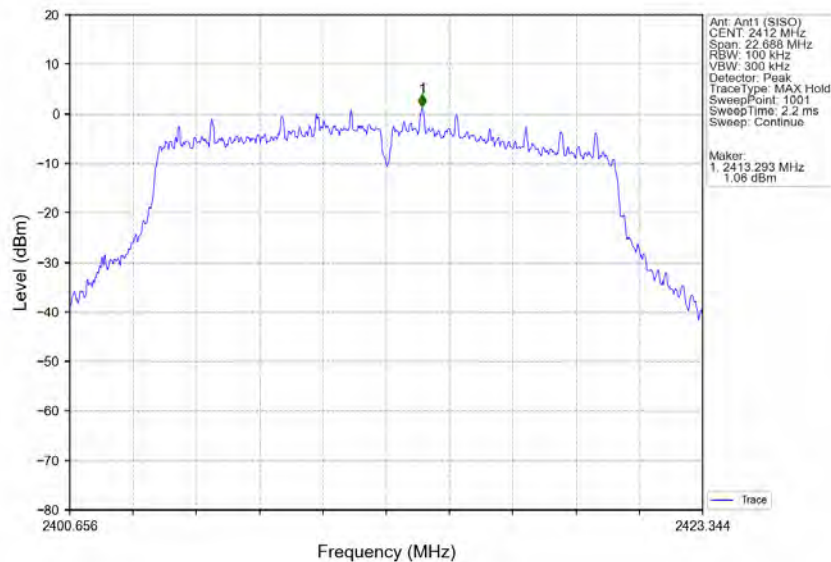
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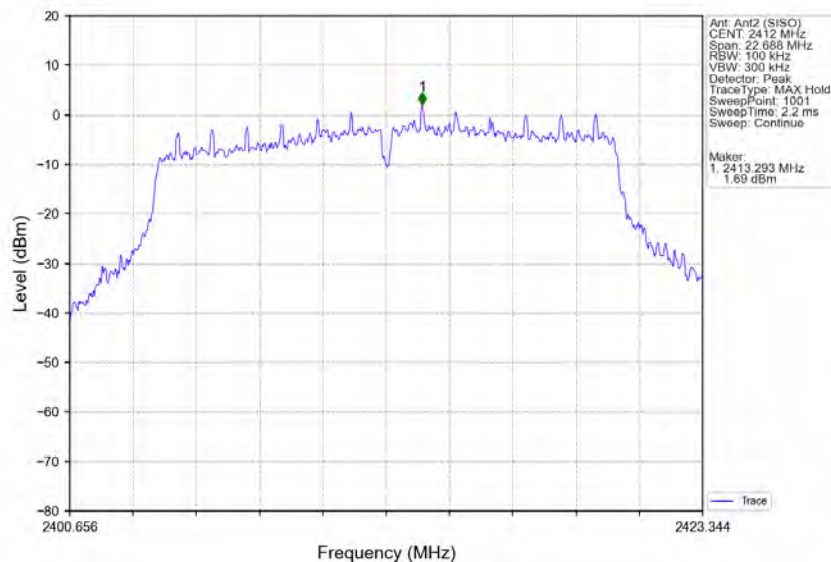
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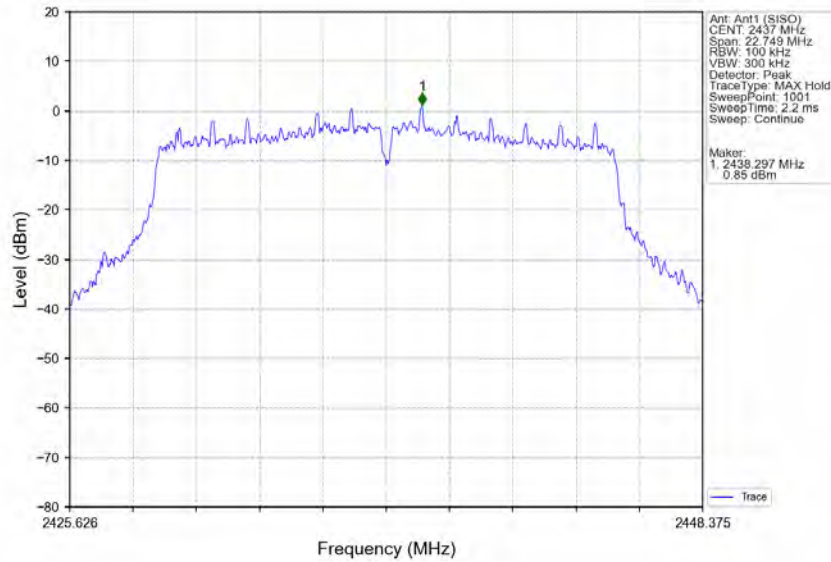
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



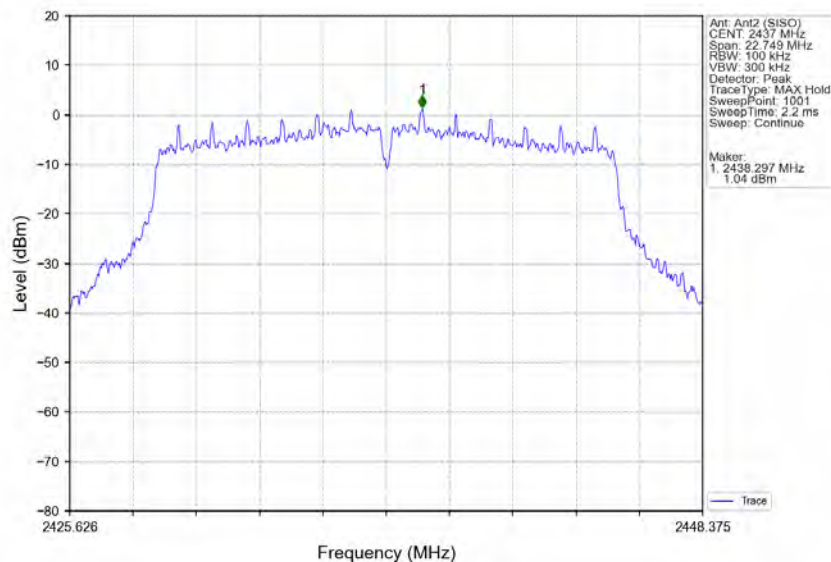
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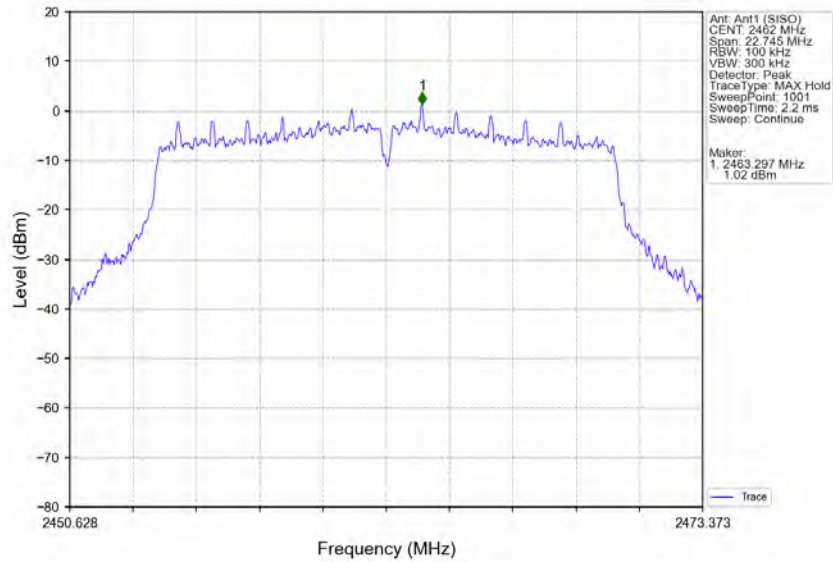
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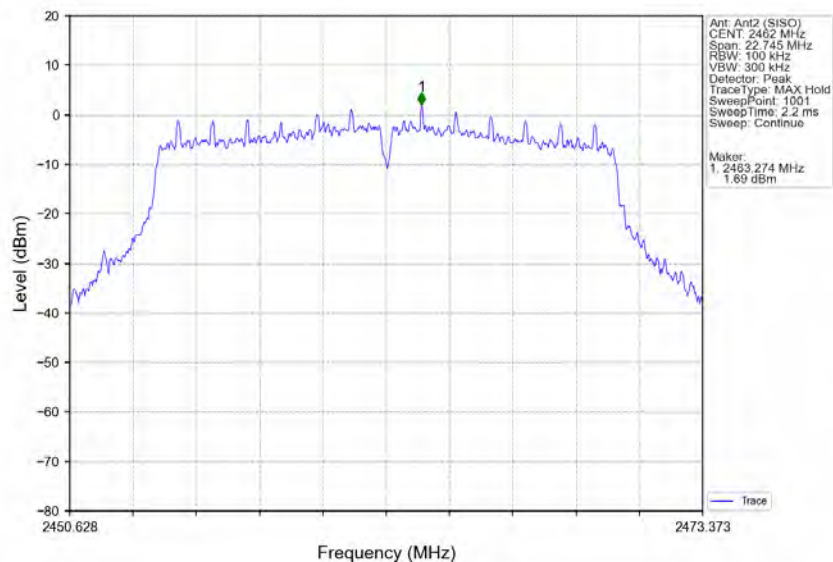
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802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant5 (SISO)_NTNV



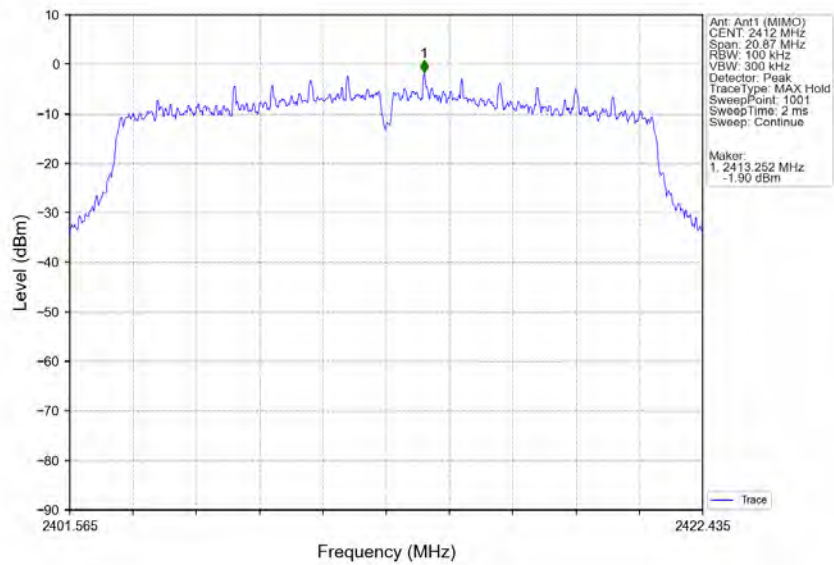
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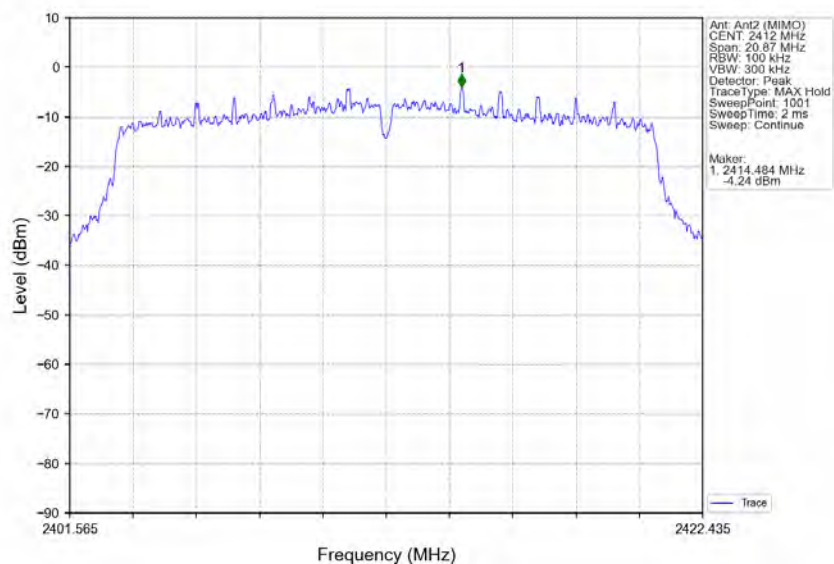
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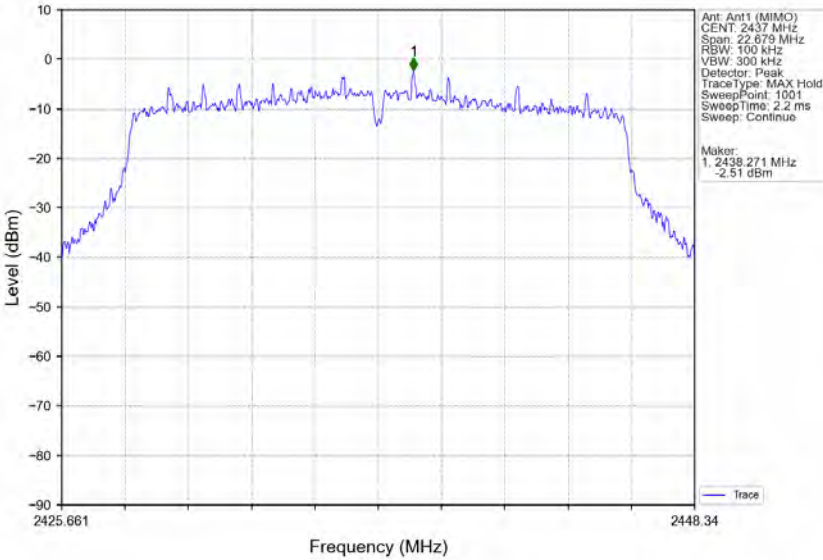
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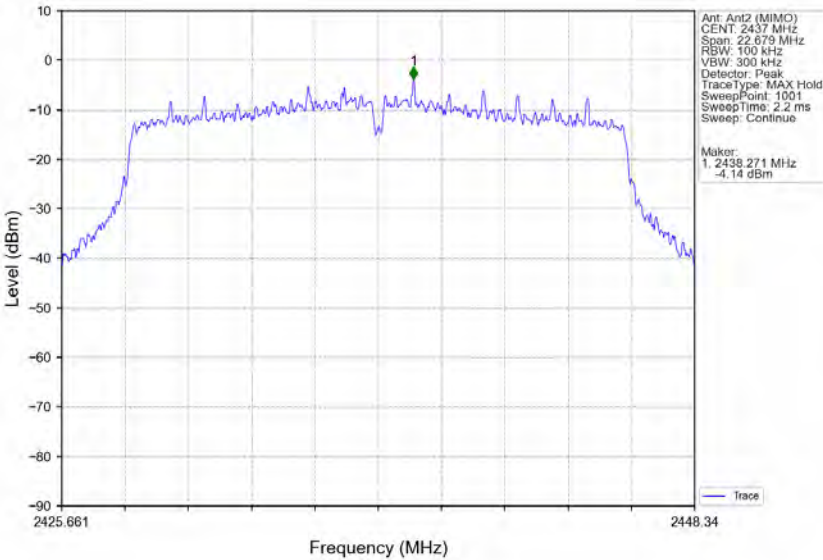
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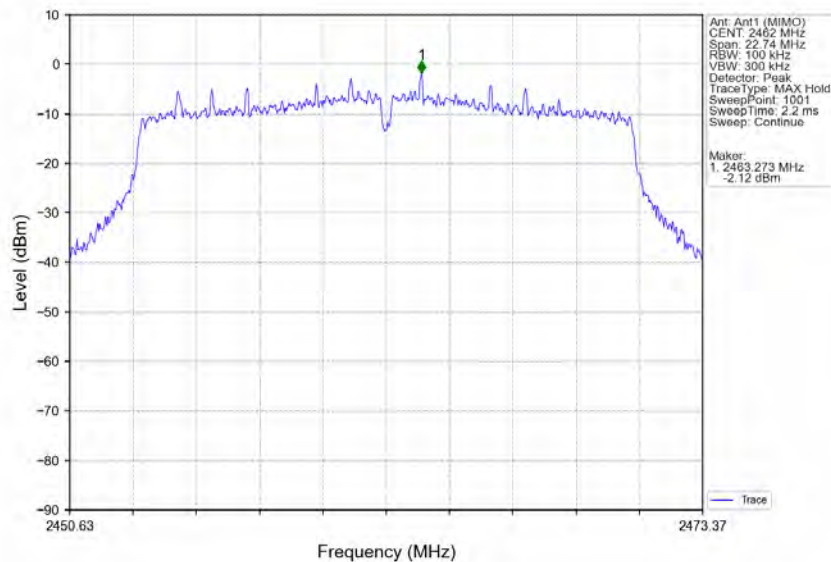
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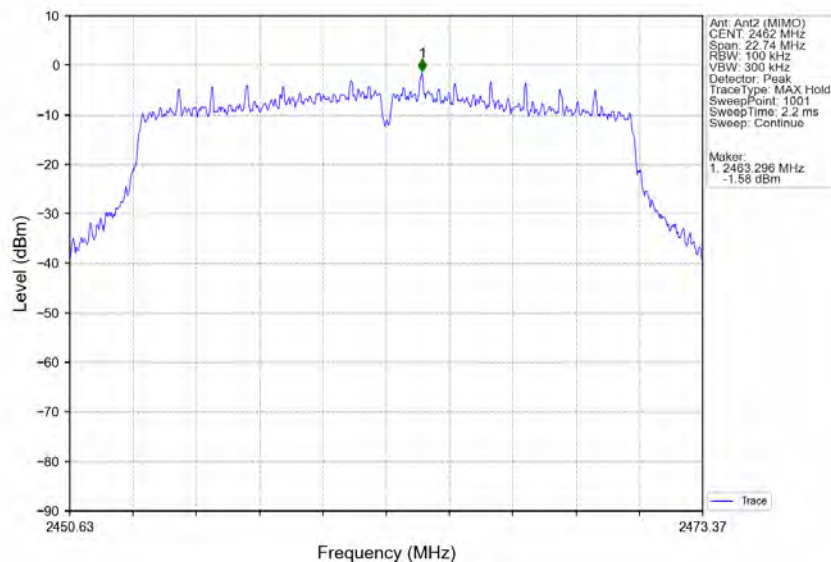
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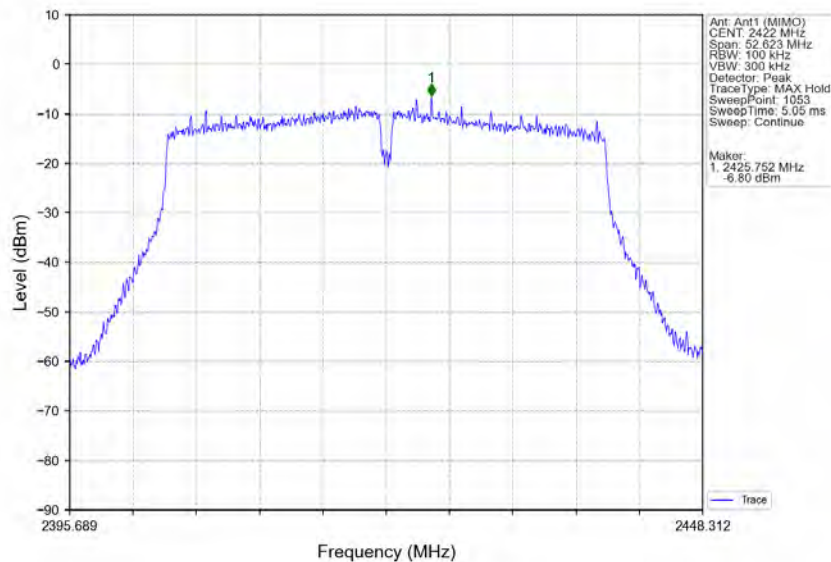
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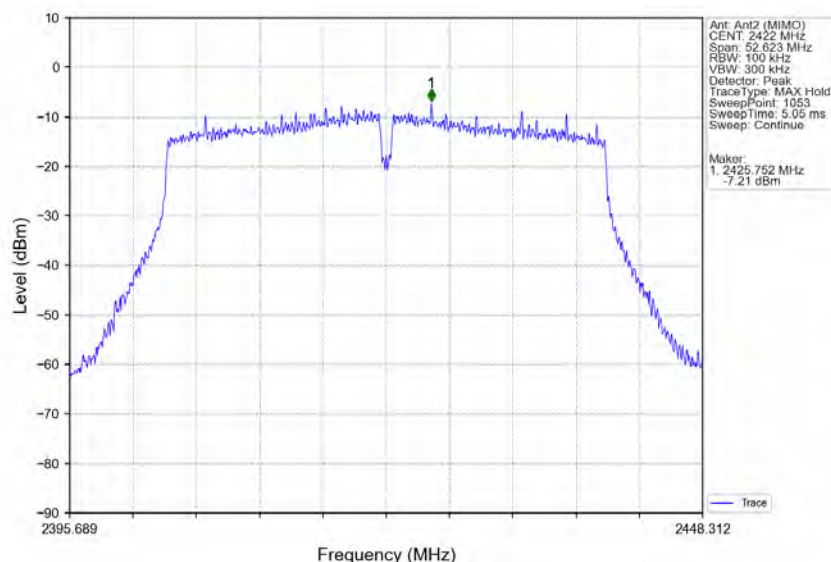
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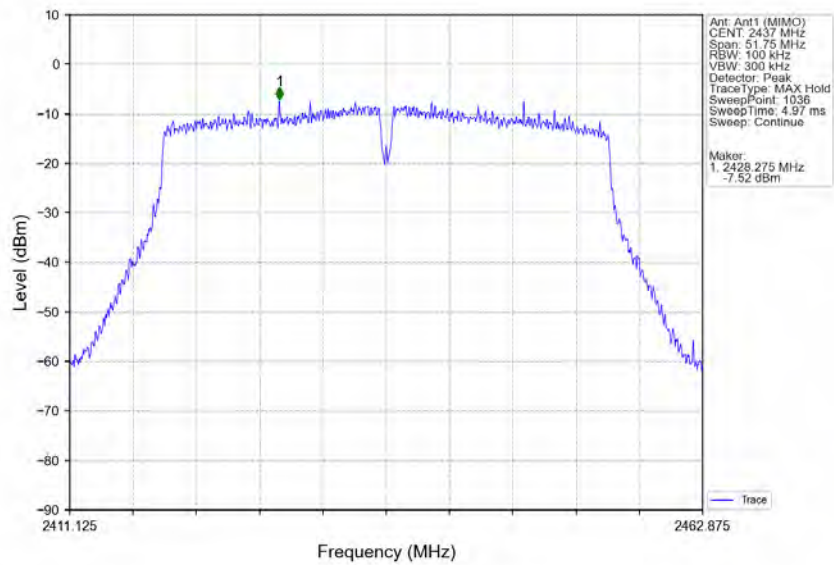
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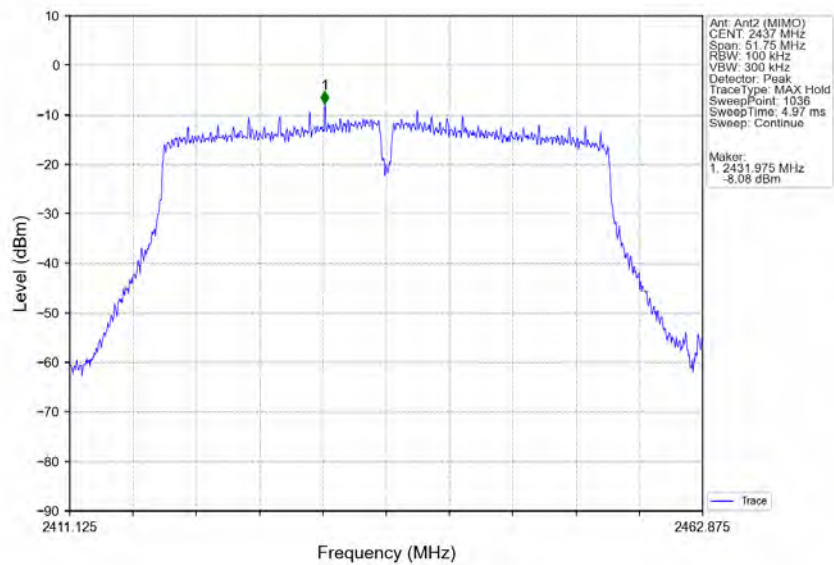
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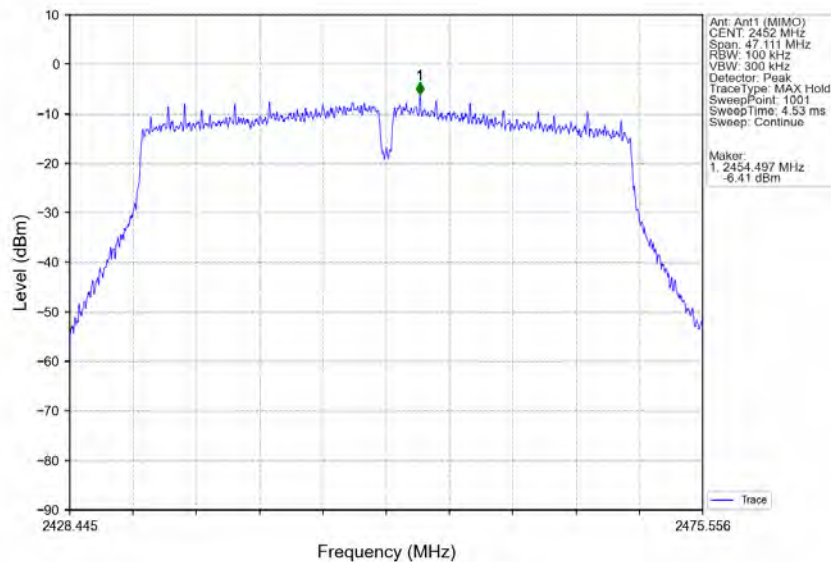
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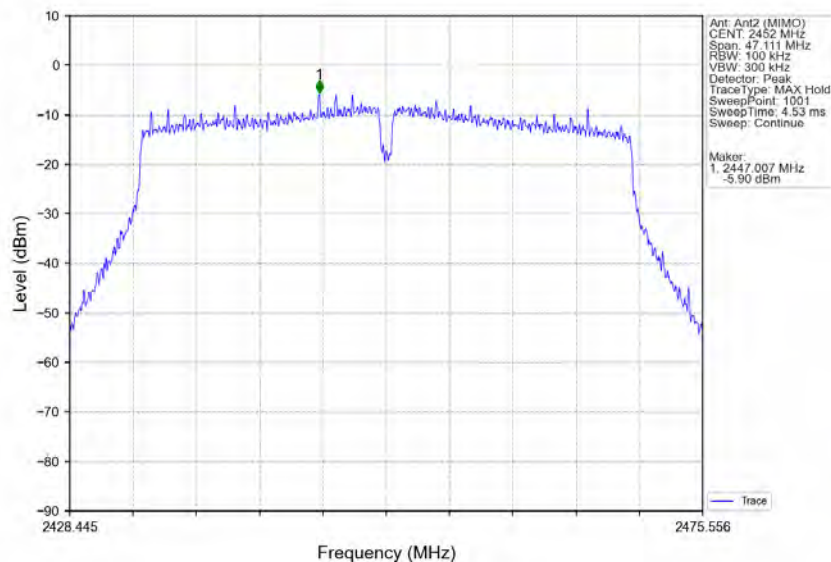
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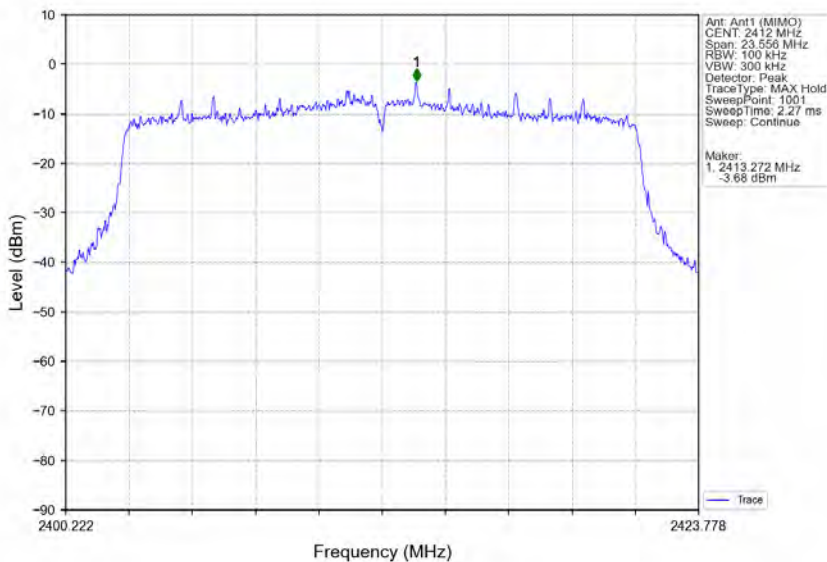
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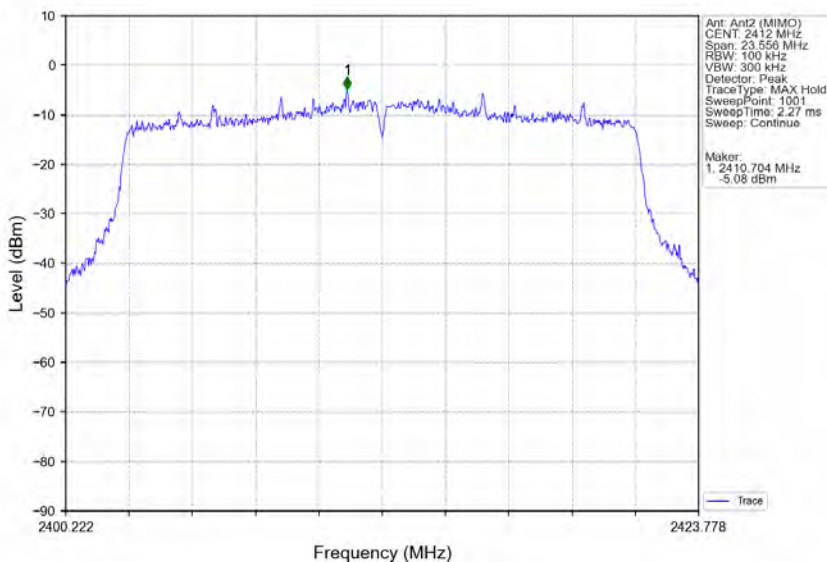
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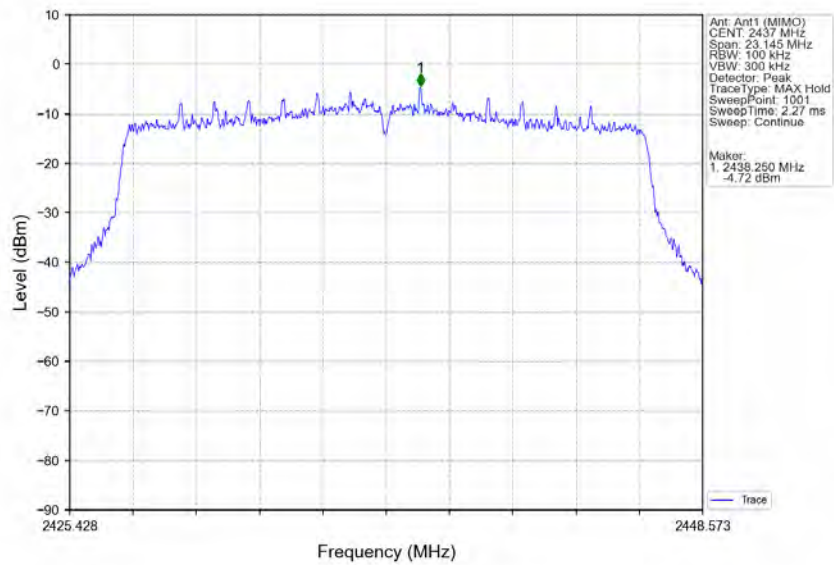
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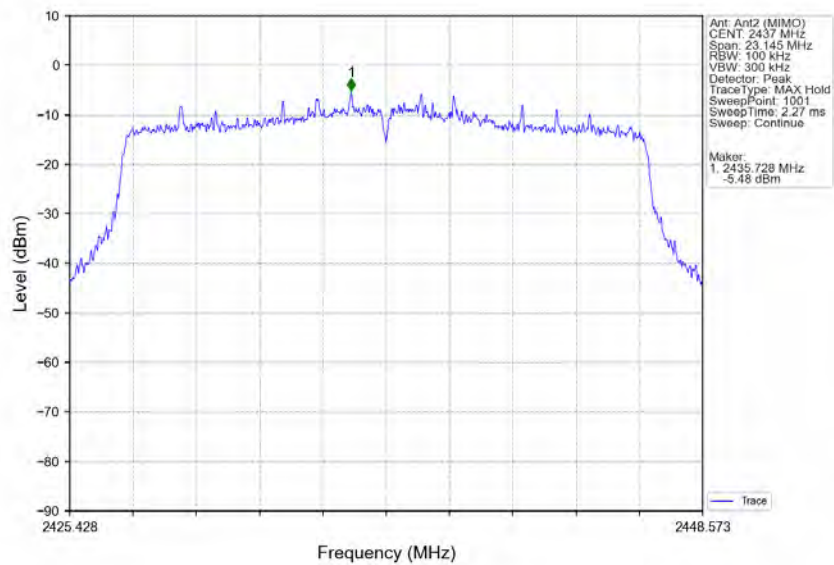
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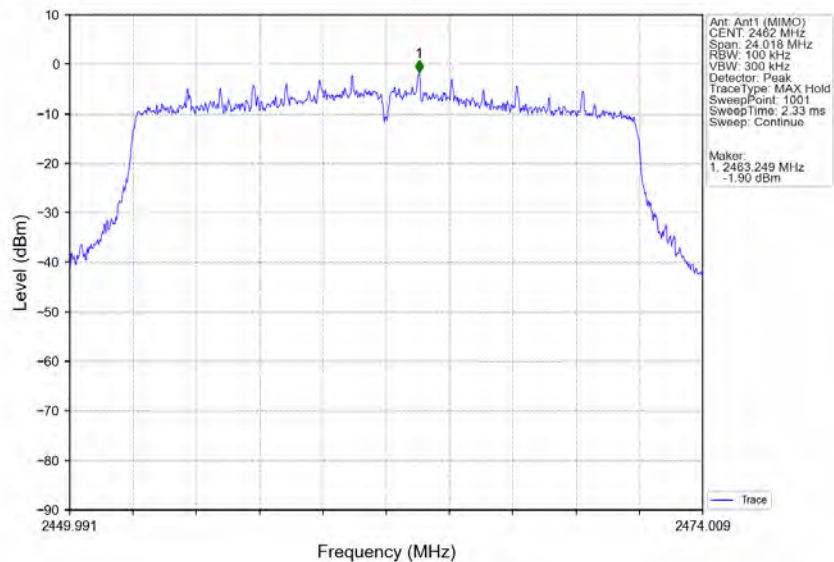
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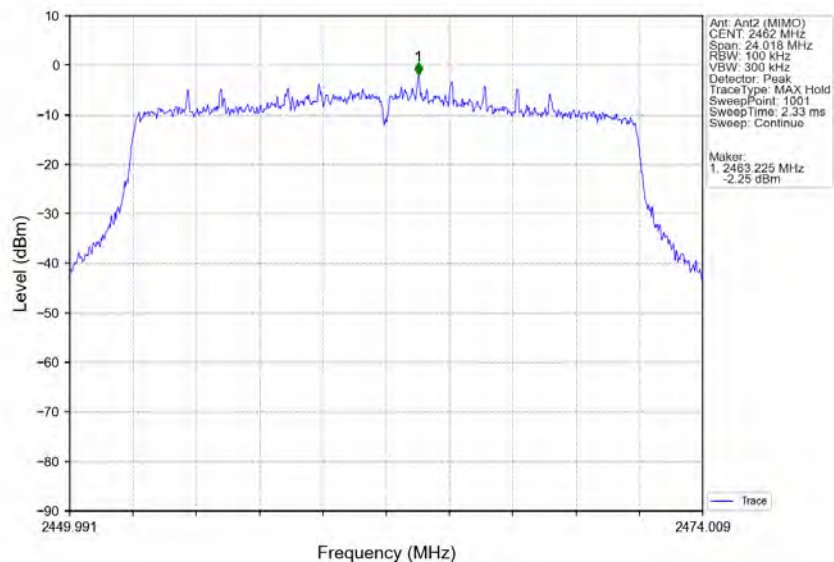
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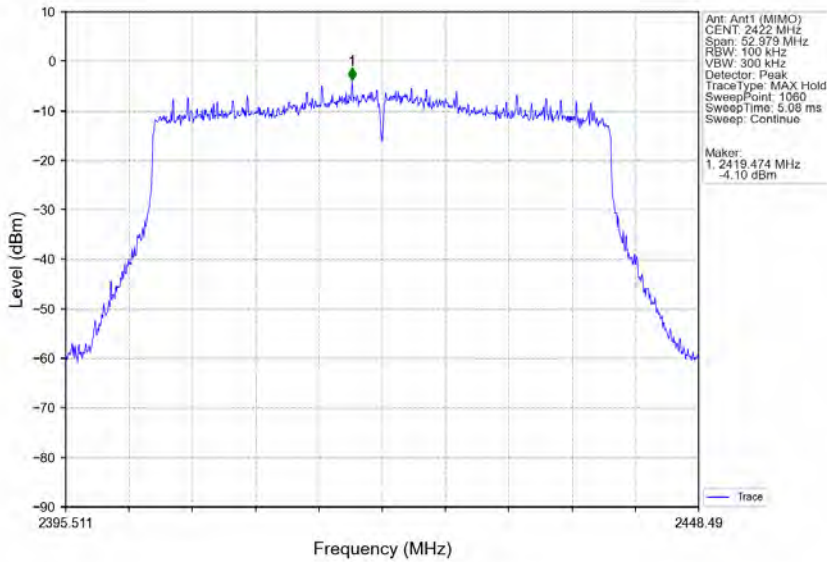
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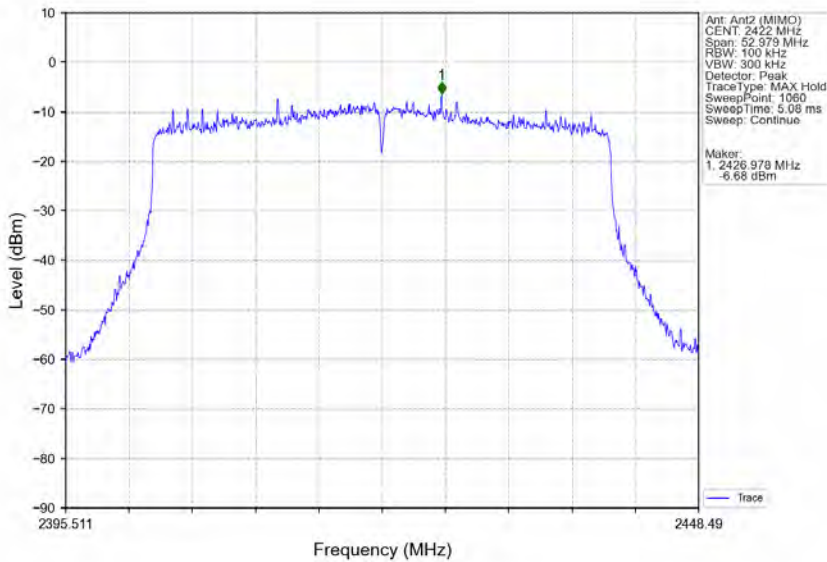
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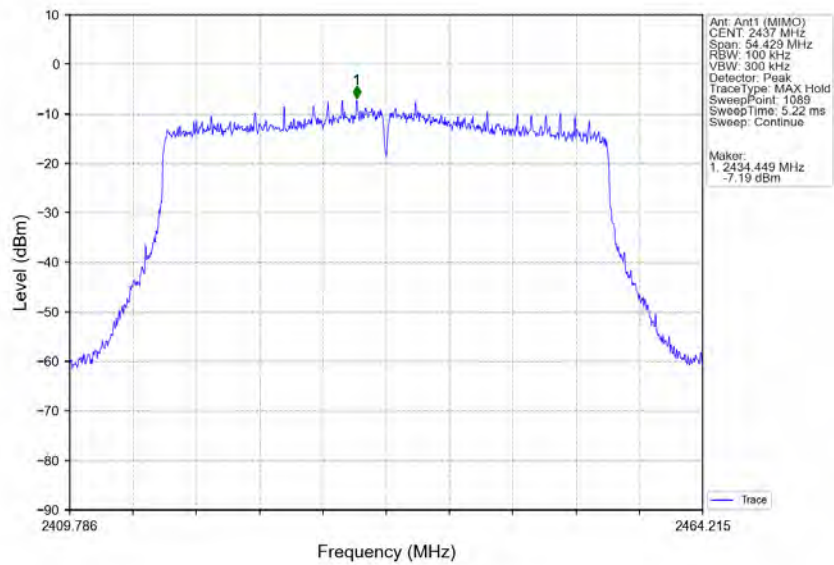
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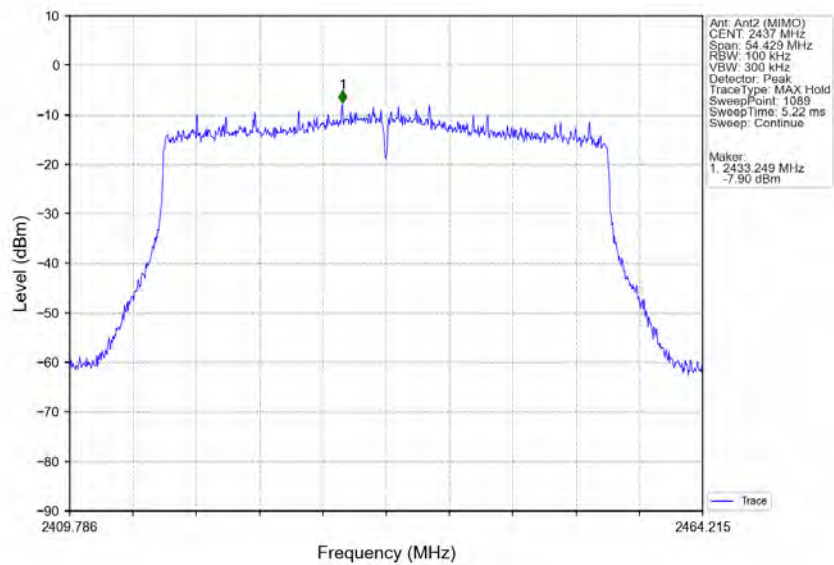
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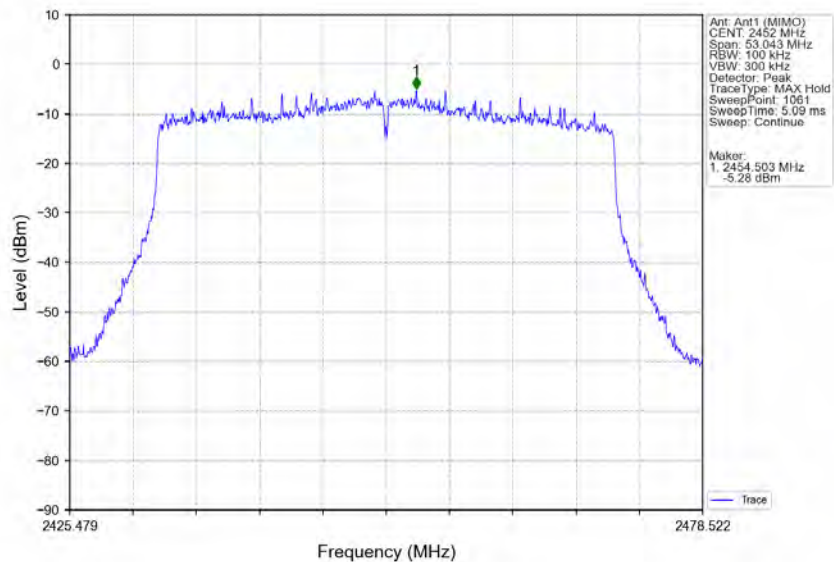
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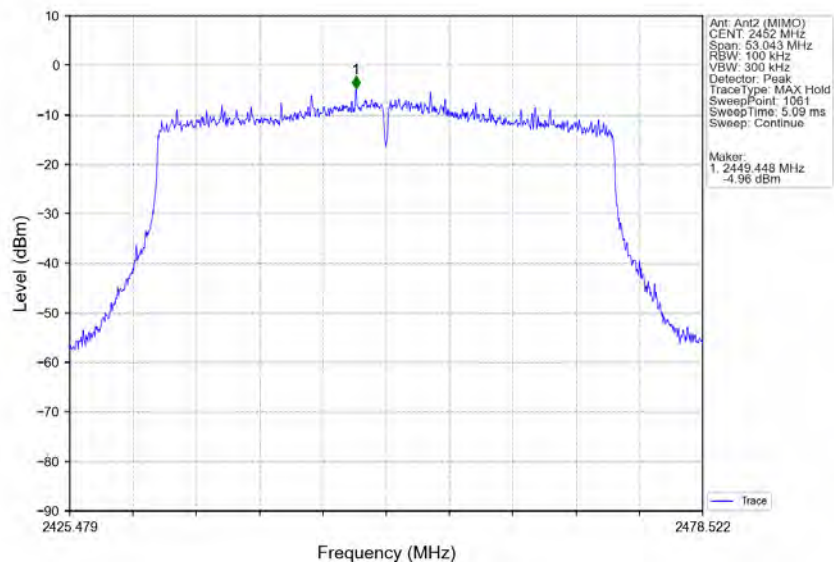
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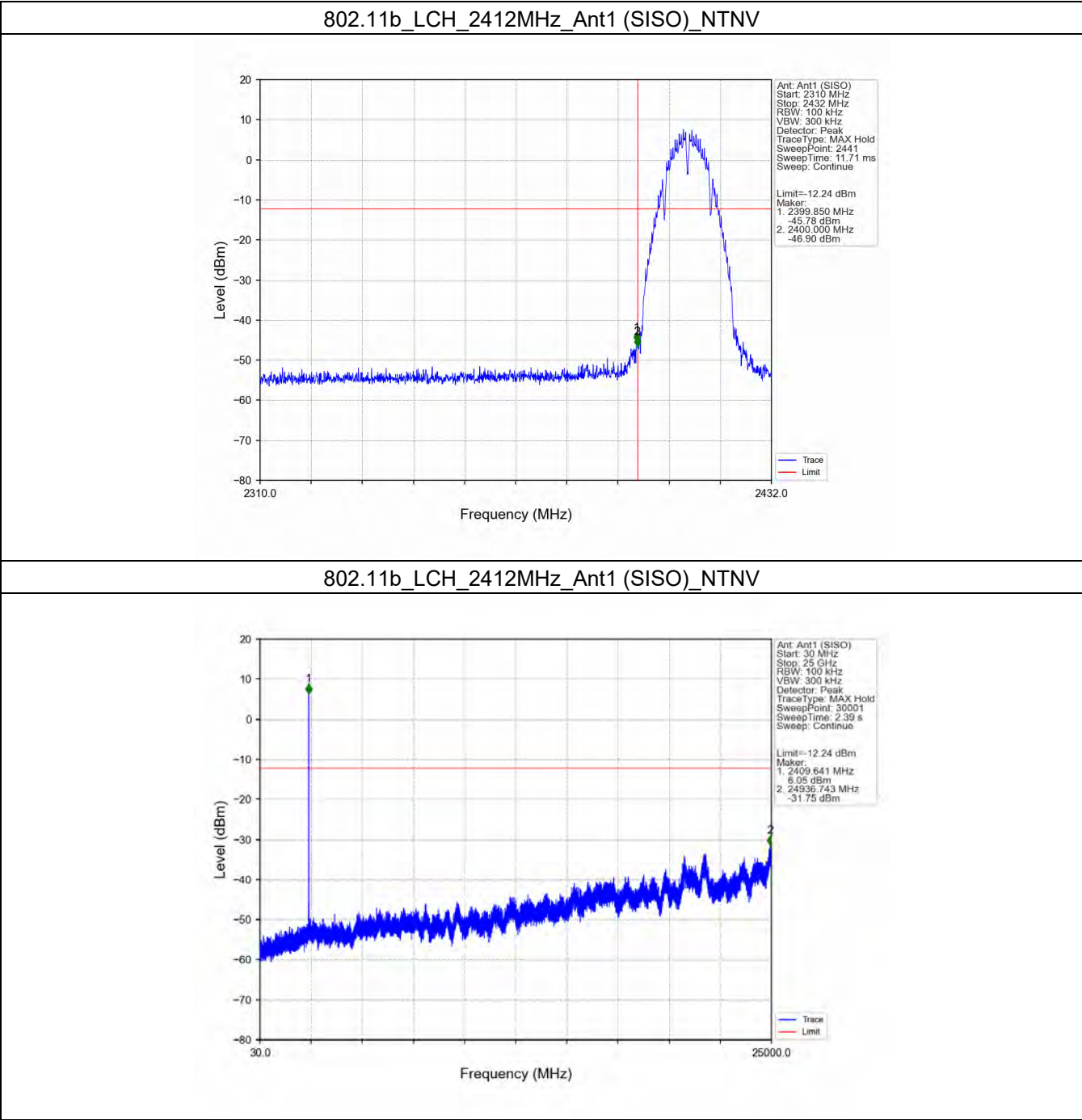
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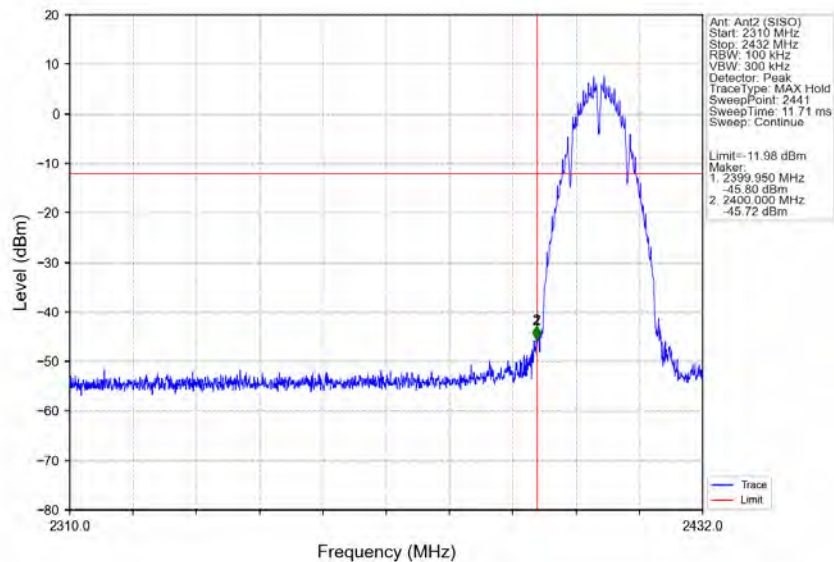
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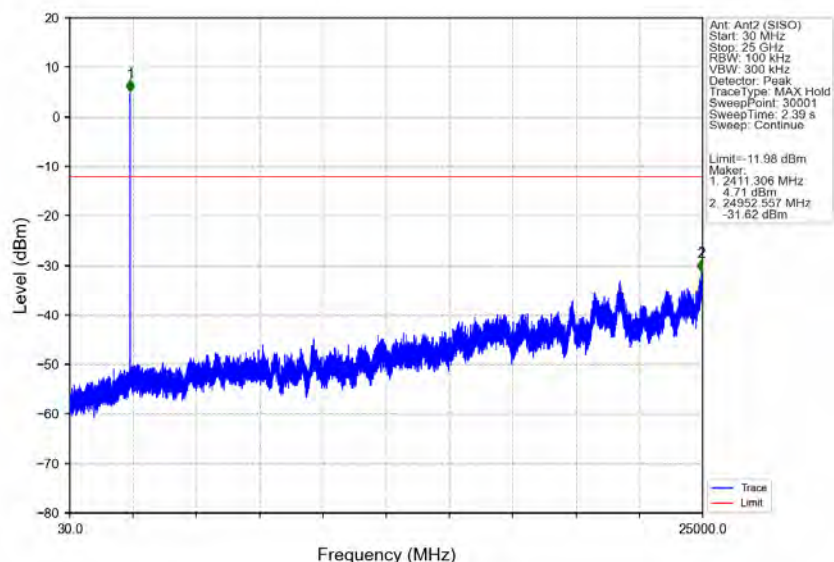
5.2.2 CSE



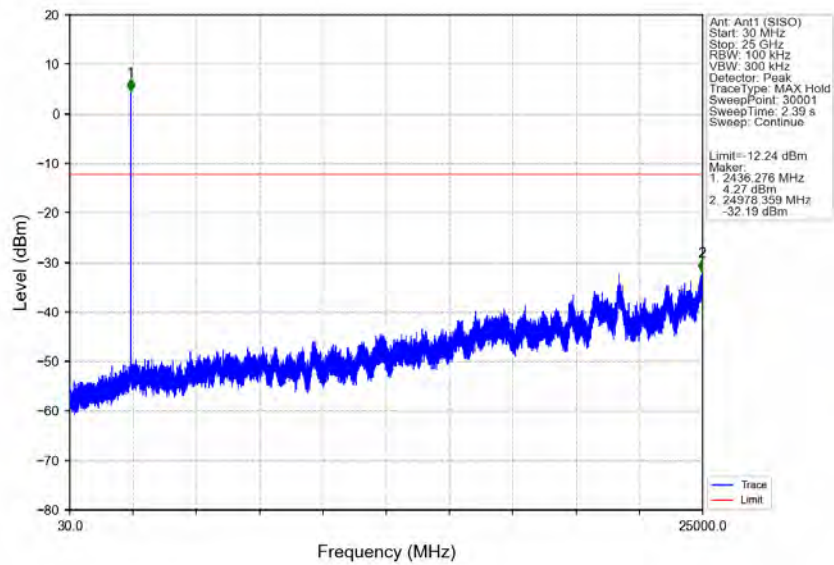
802.11b_LCH_2412MHz_Ant5 (SISO)_NTNV



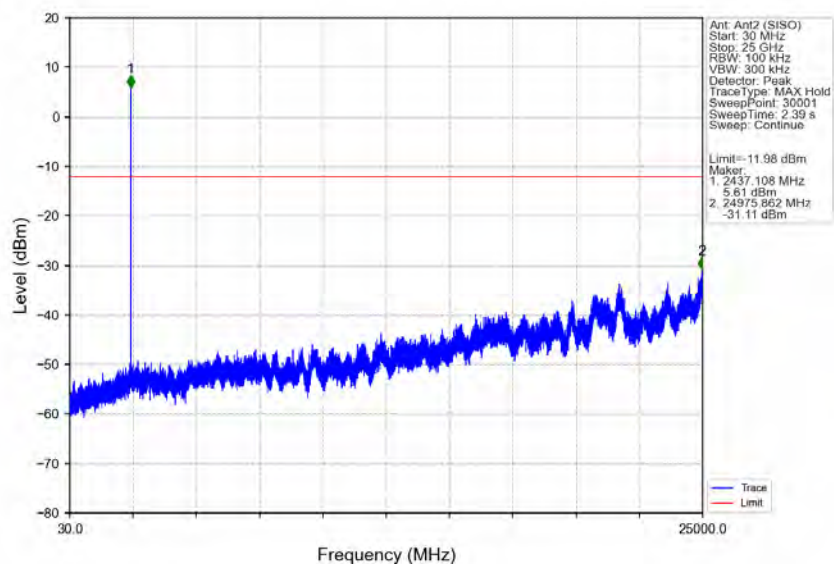
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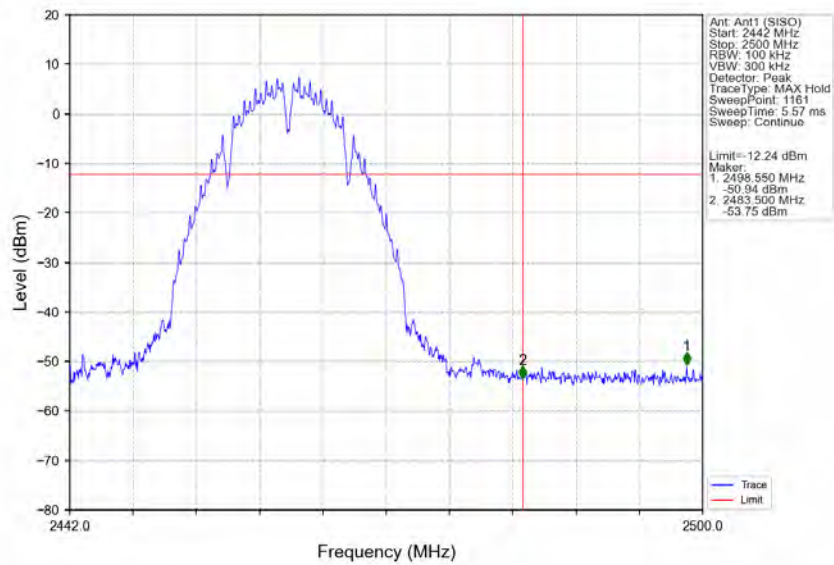
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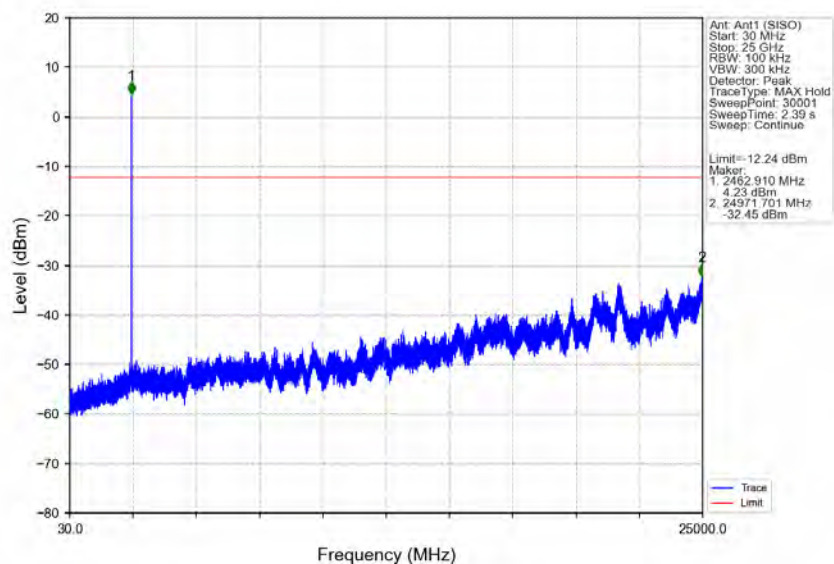
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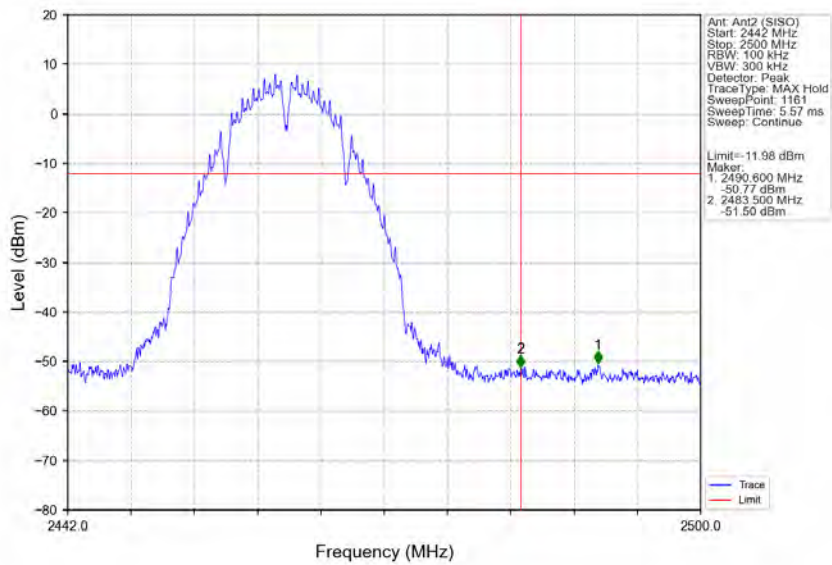
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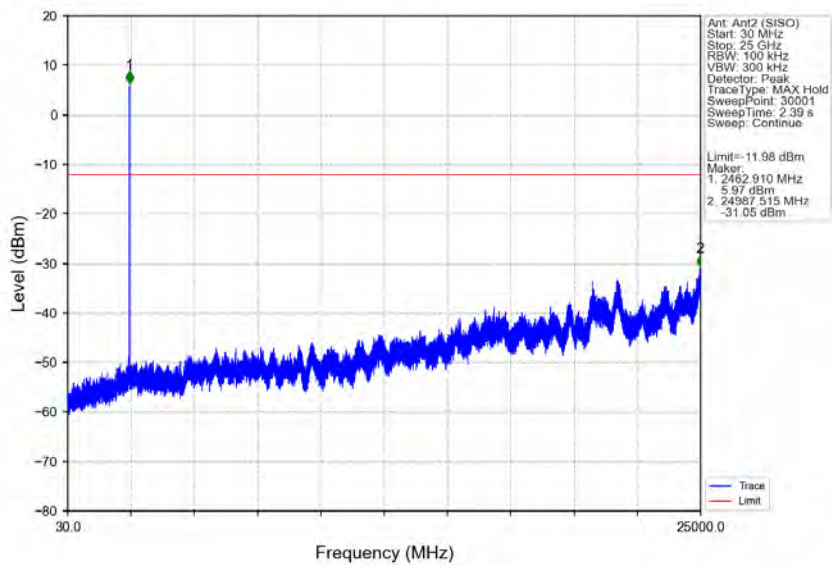
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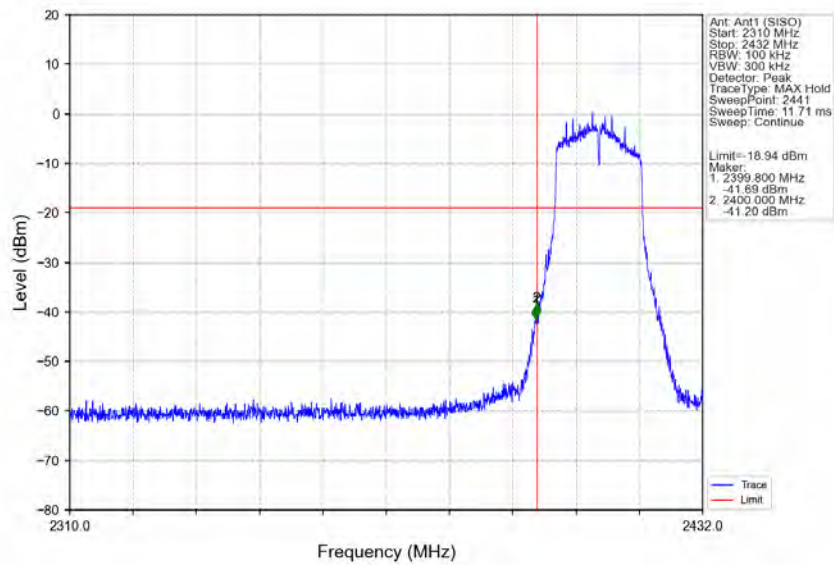
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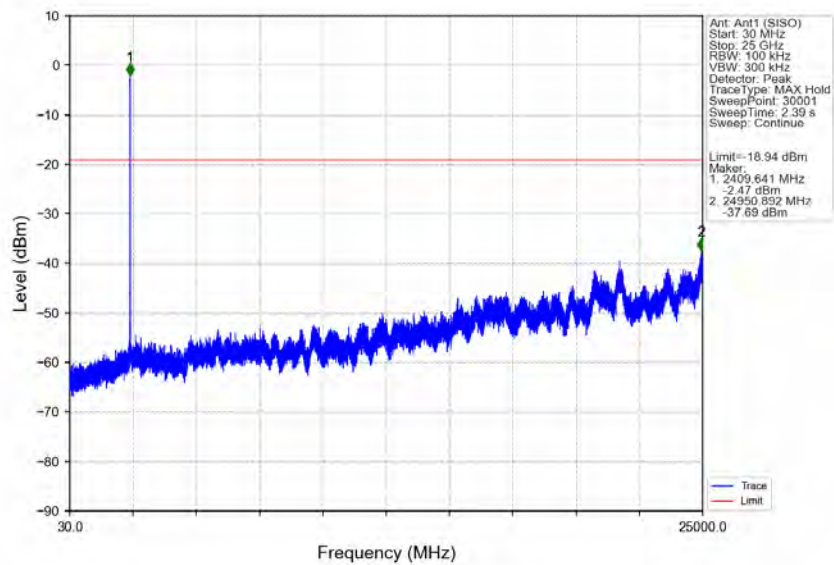
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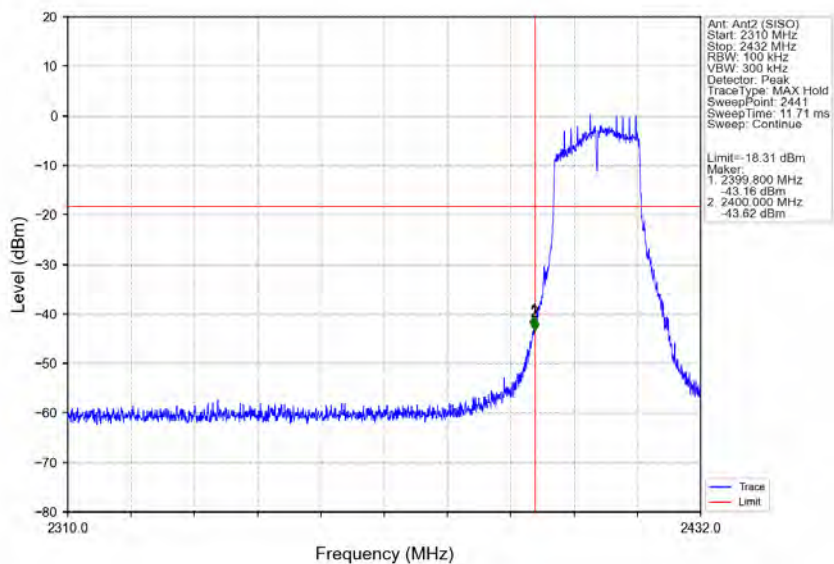
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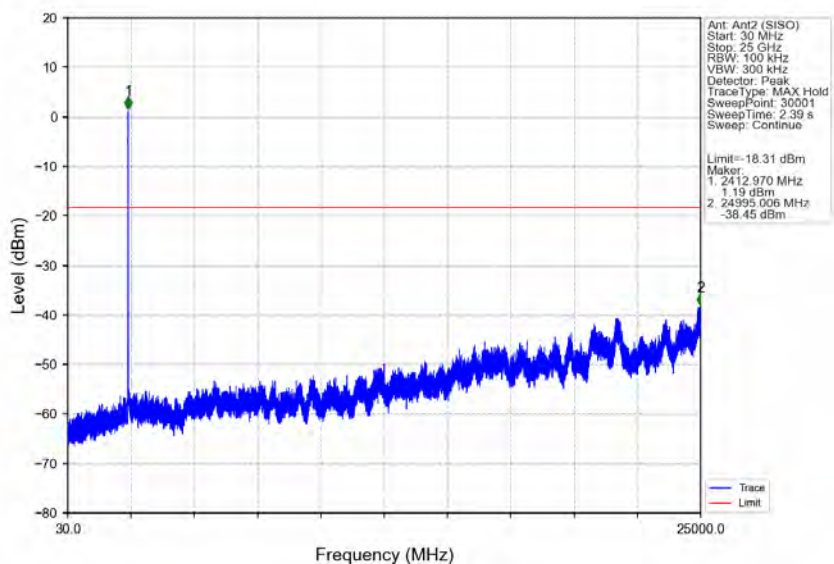
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802.11g_LCH_2412MHz_Ant5 (SISO)_NTNV



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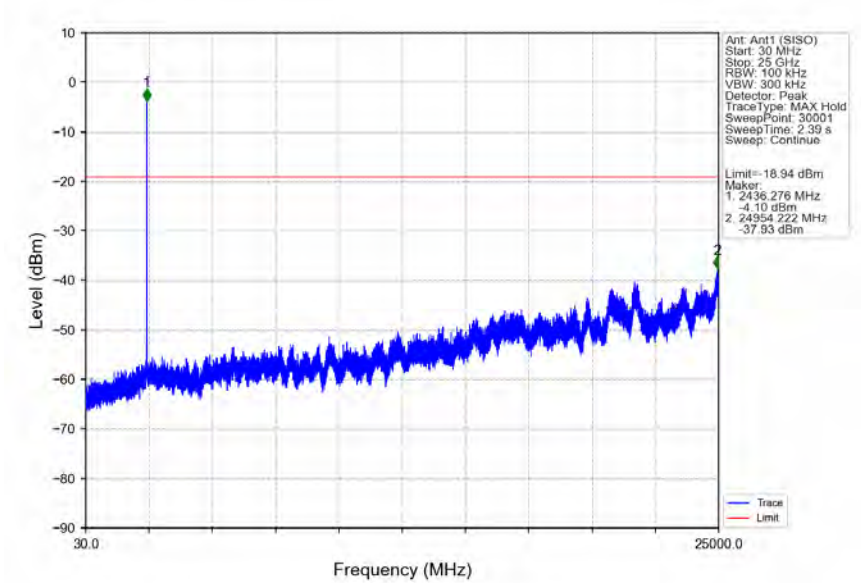
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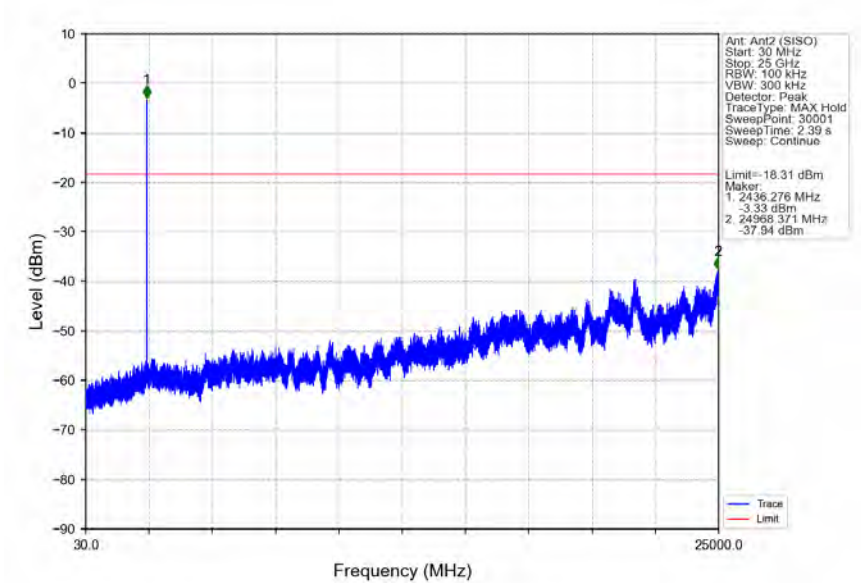
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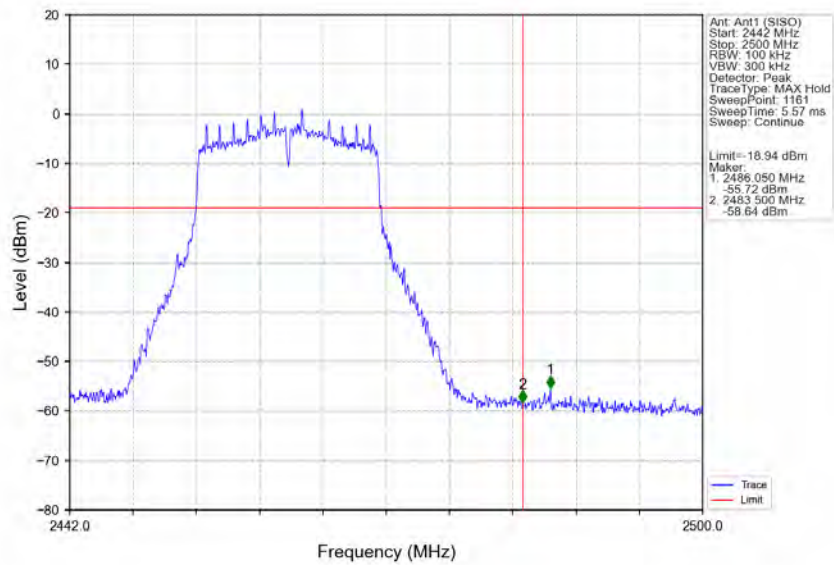
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



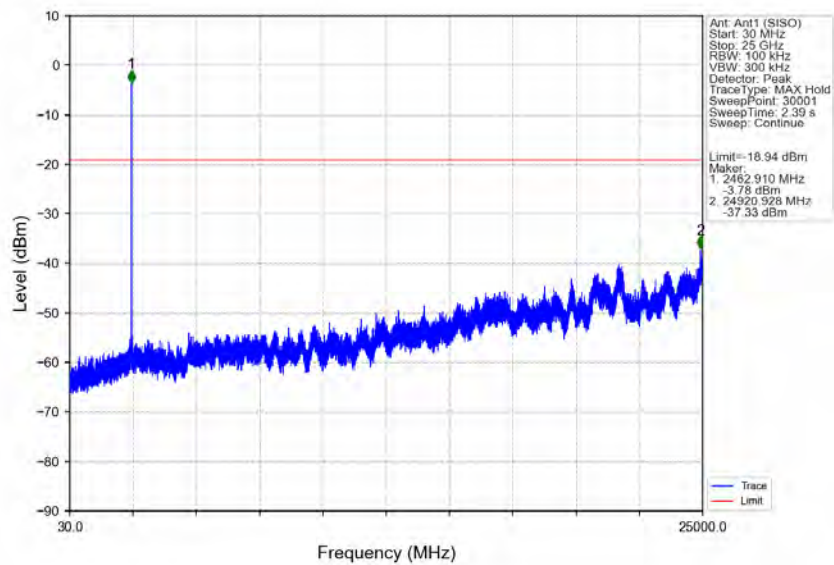
802.11g_MCH_2437MHz_Ant5 (SISO)_NTNV



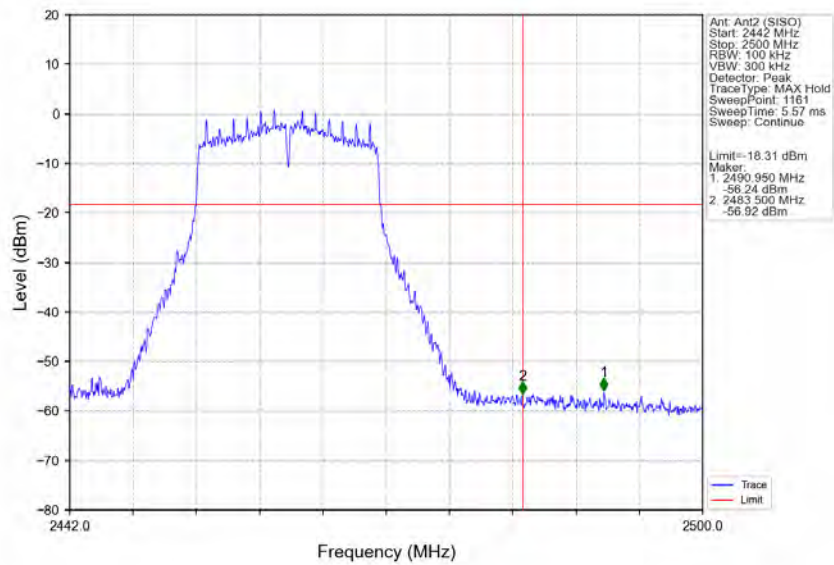
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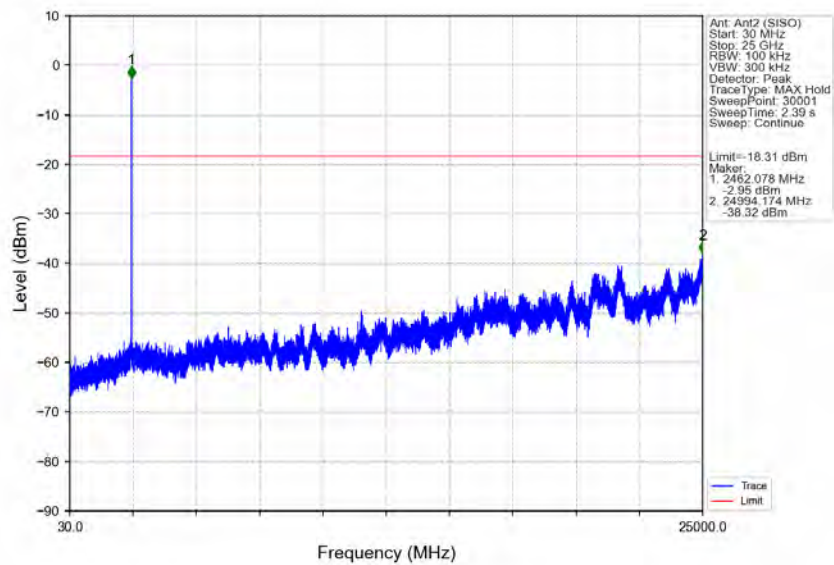
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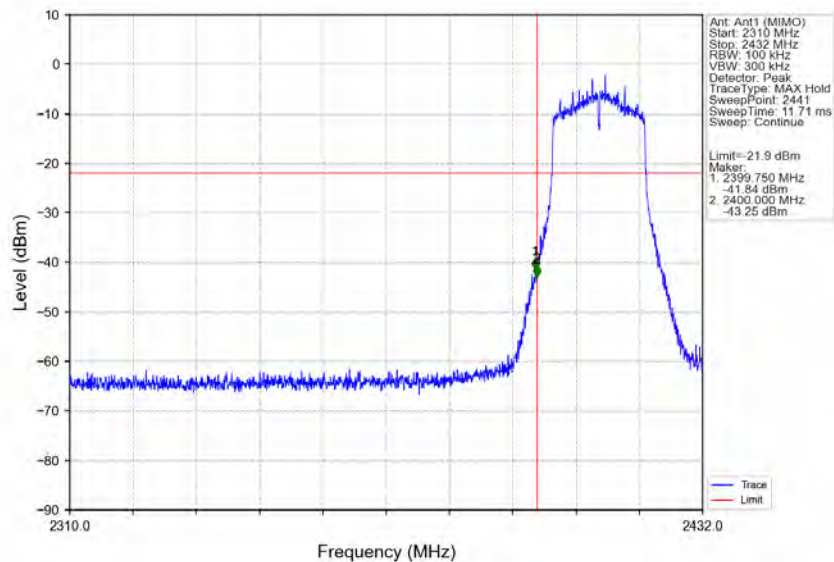
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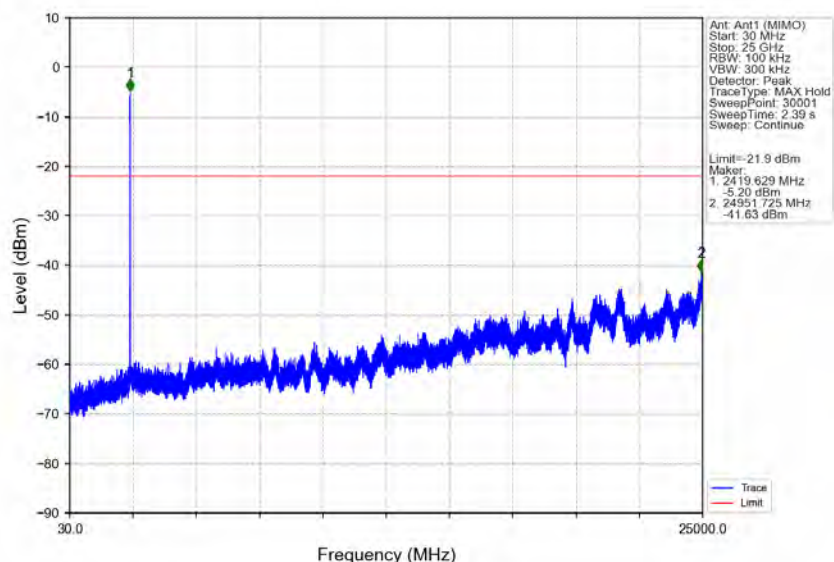
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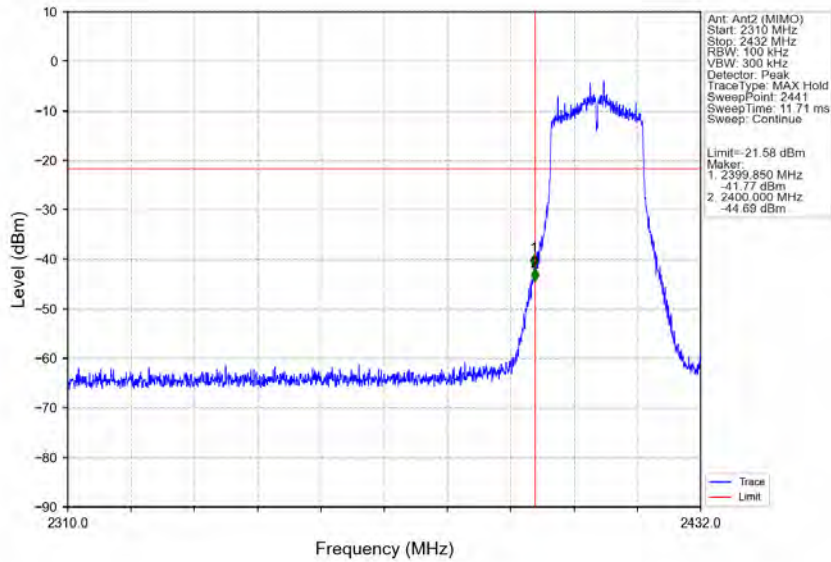
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



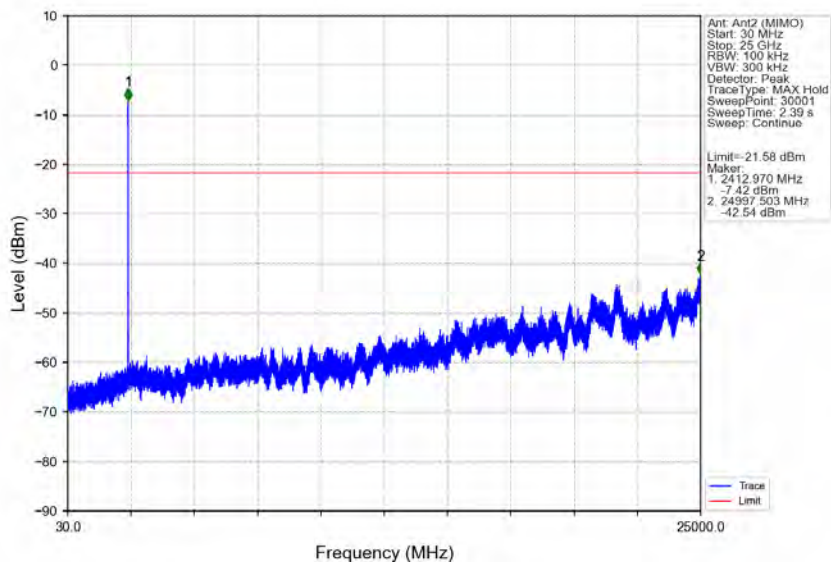
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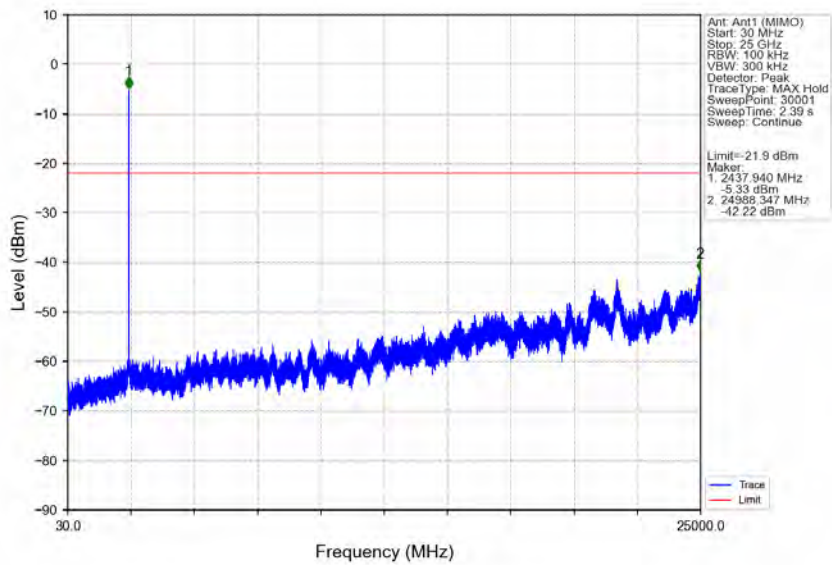
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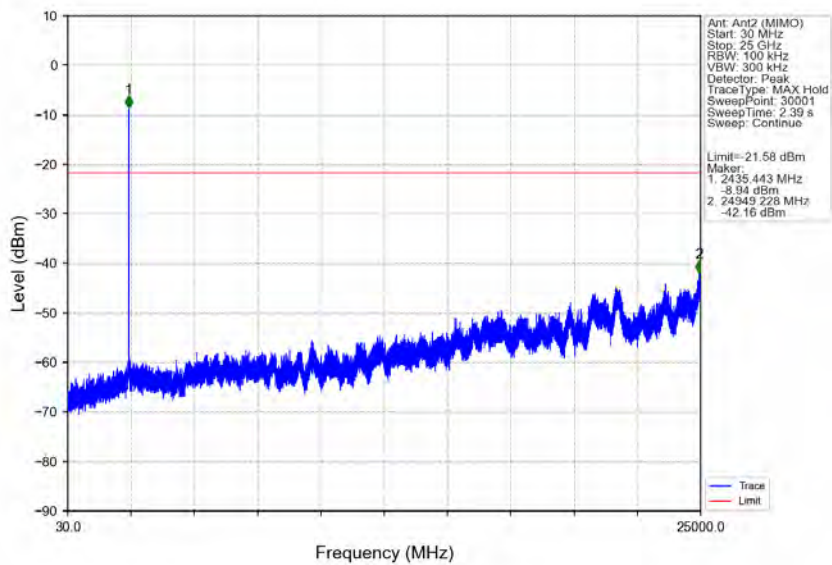
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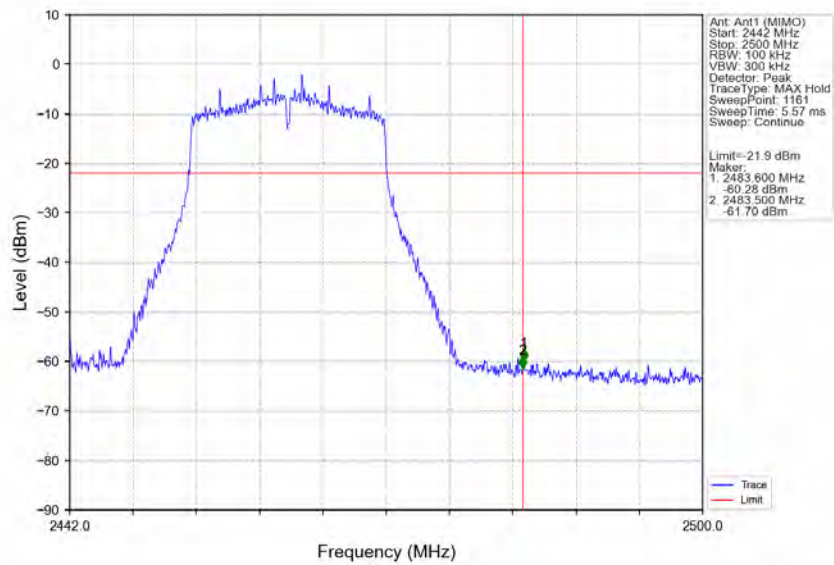
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



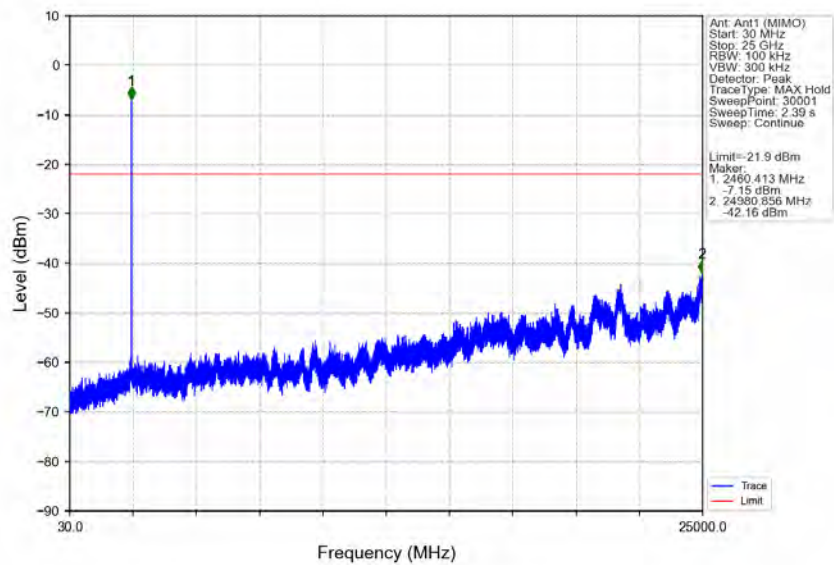
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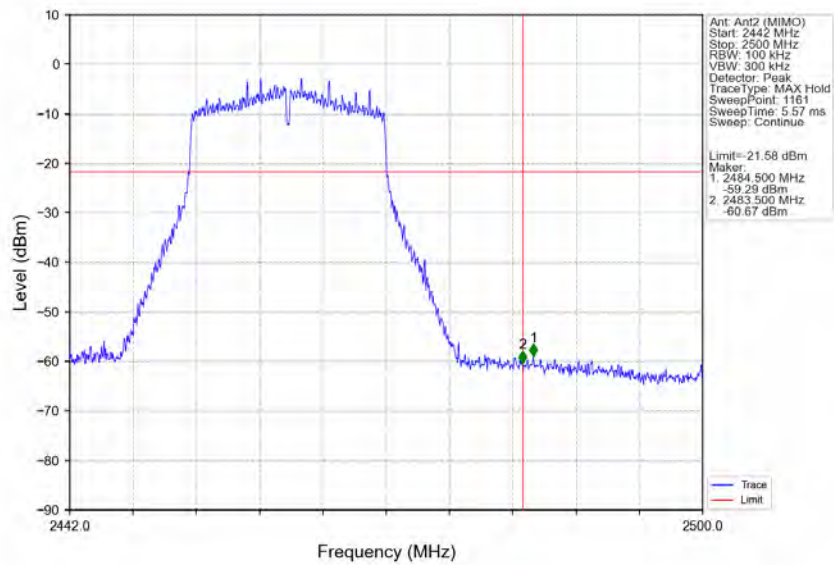
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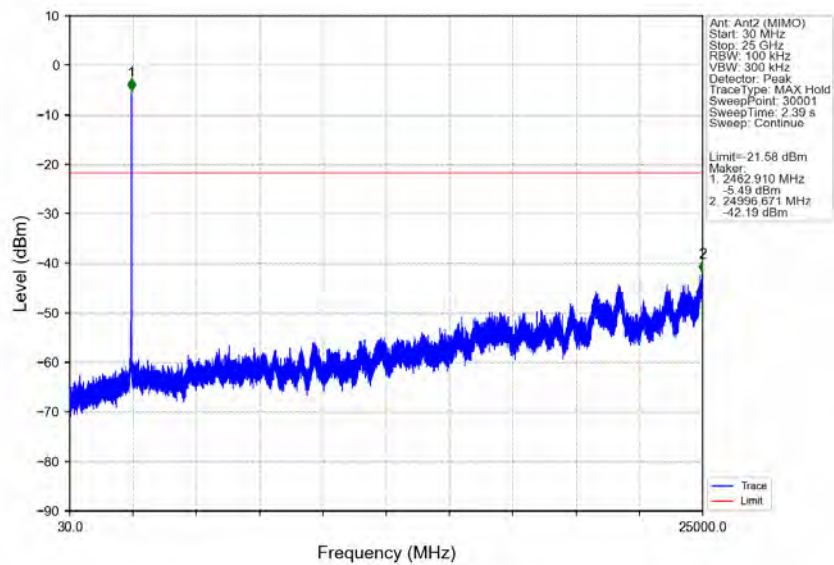
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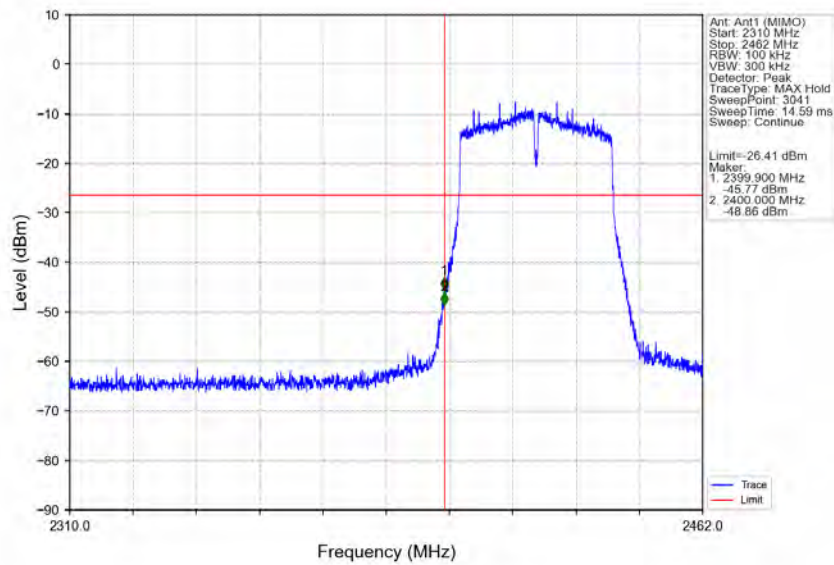
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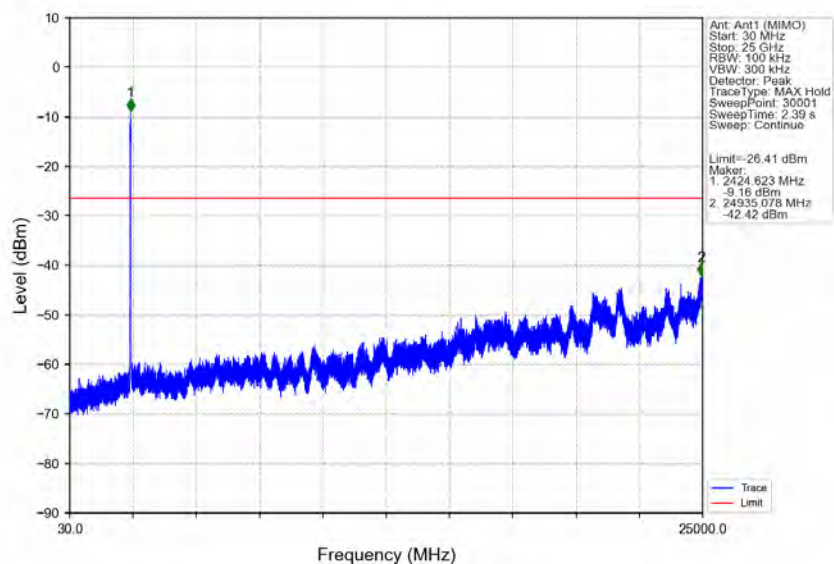
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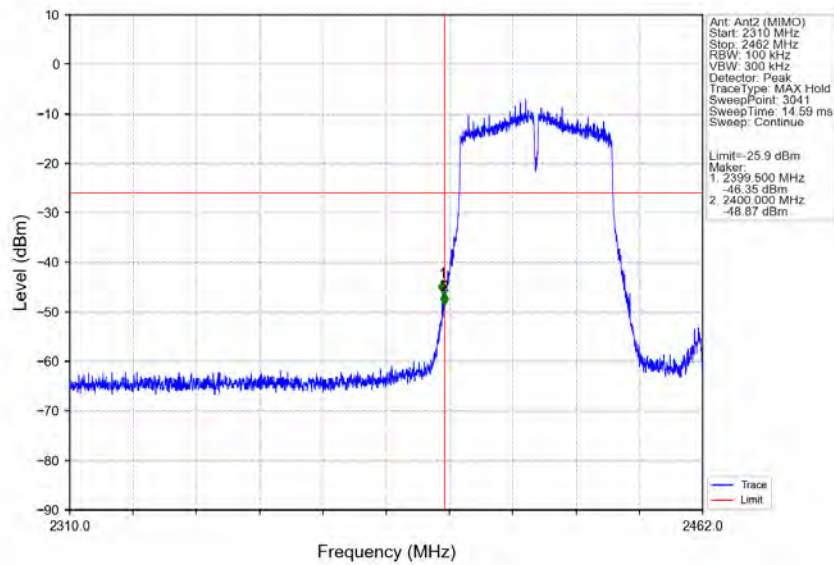
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



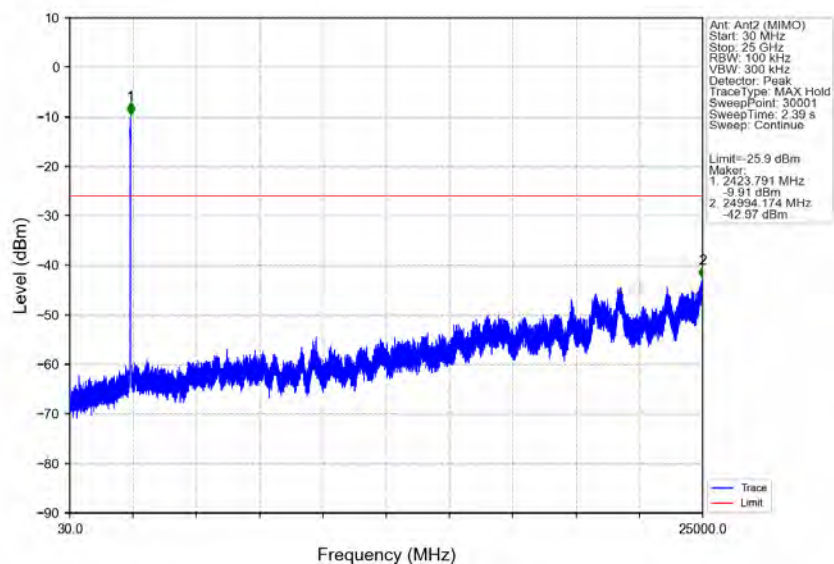
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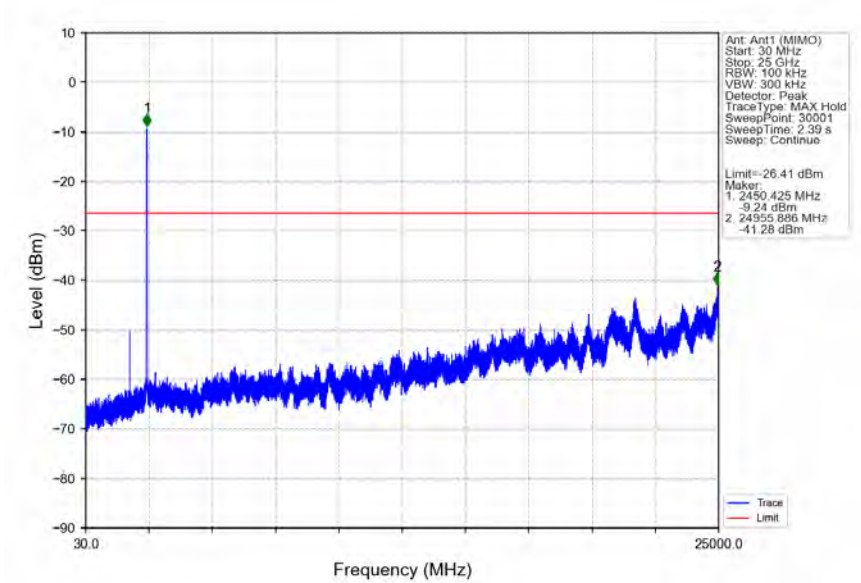
802.11n(HT40)_LCH_2422MHz_Ant5 (MIMO)_NTNV



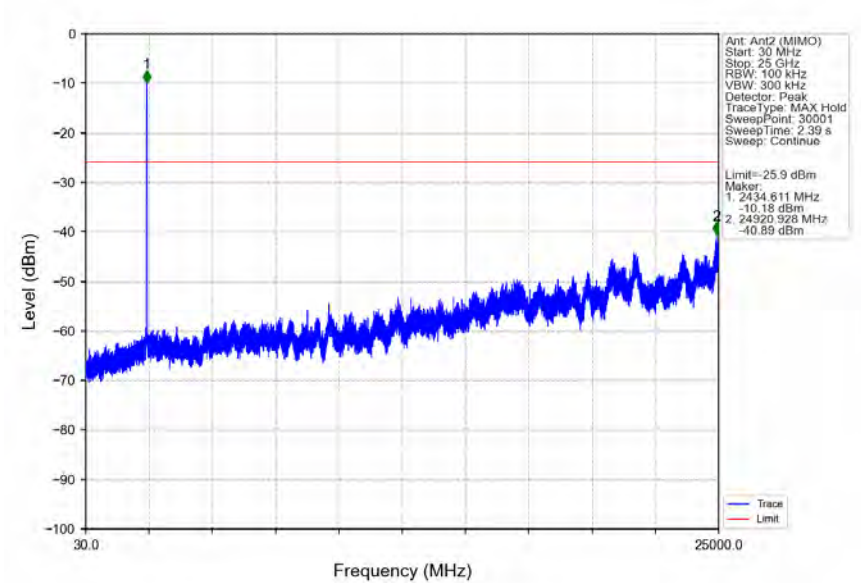
802.11n(HT40)_LCH_2422MHz_Ant5 (MIMO)_NTNV



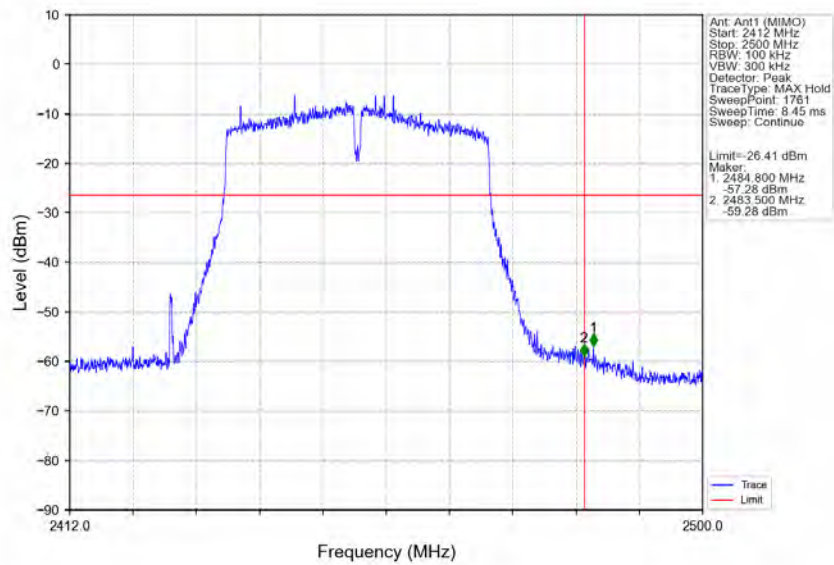
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



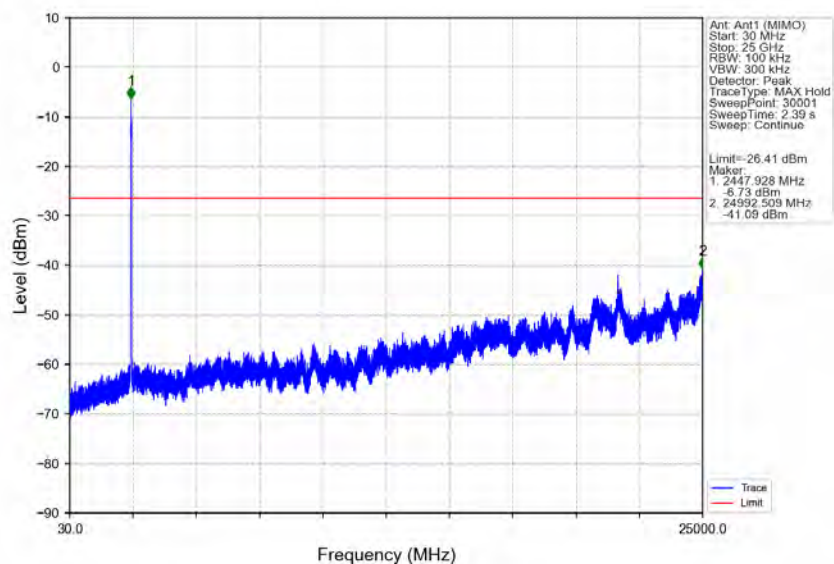
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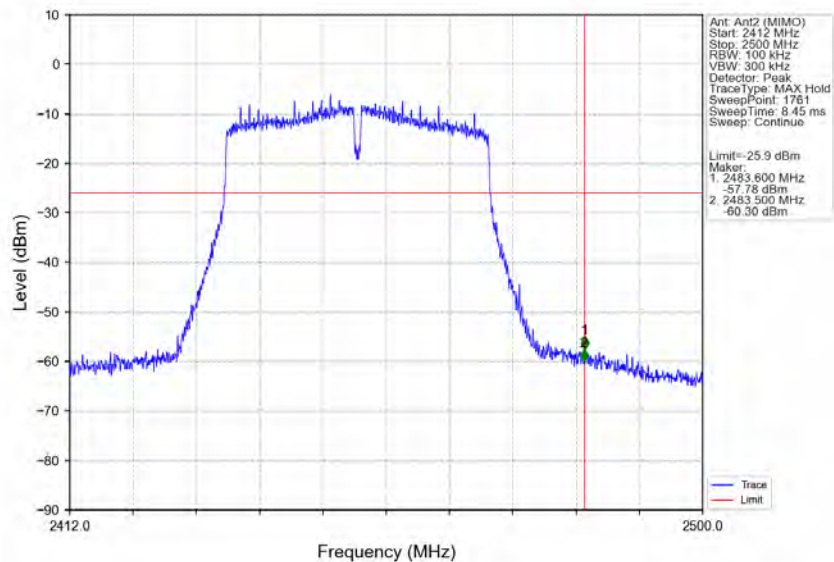
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



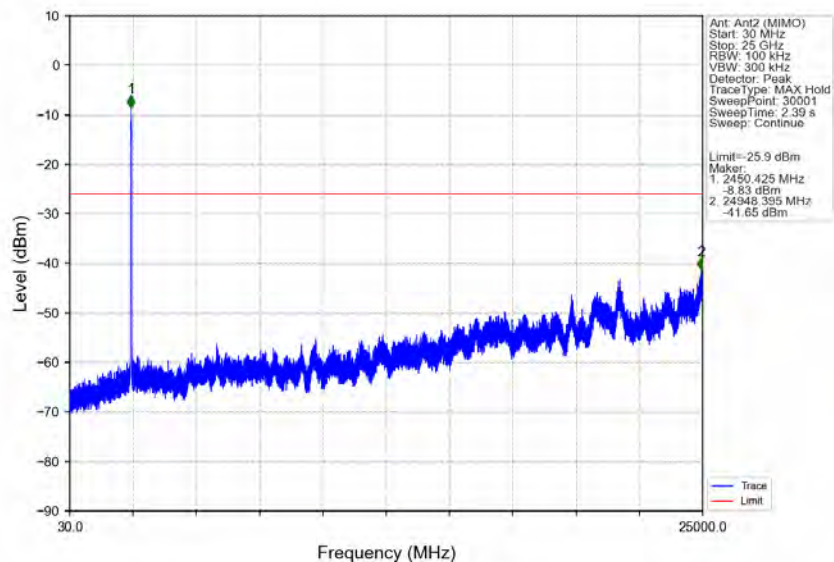
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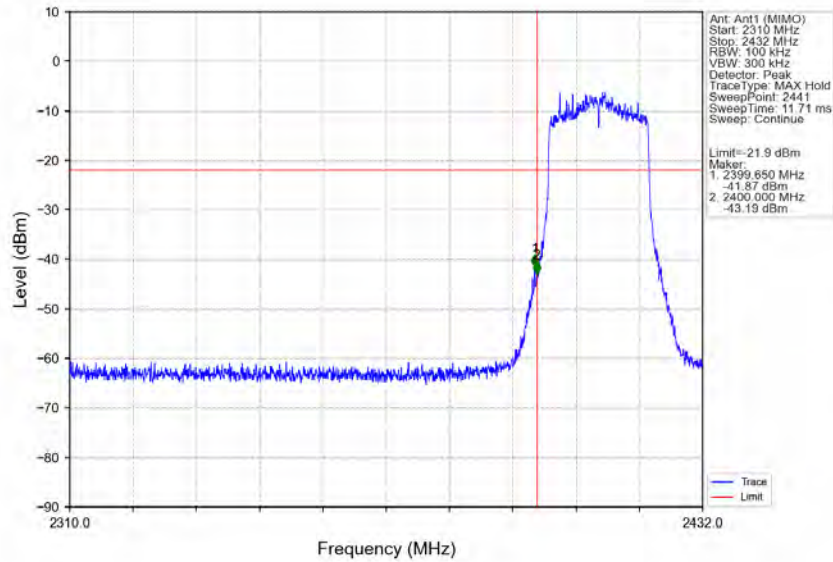
802.11n(HT40)_HCH_2452MHz_Ant5 (MIMO)_NTNV



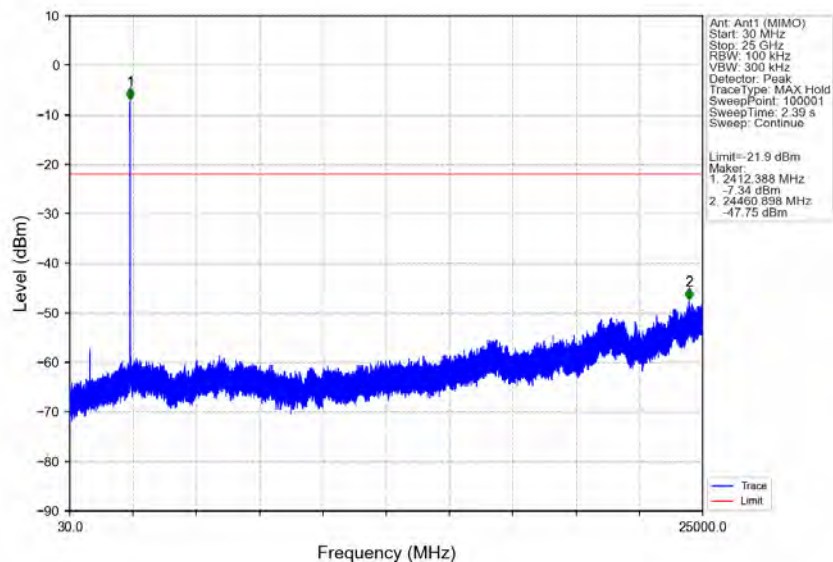
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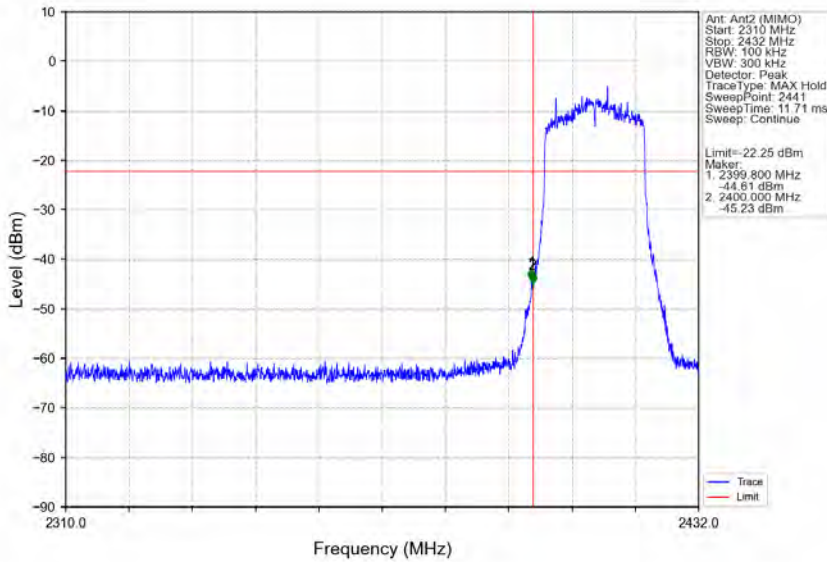
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



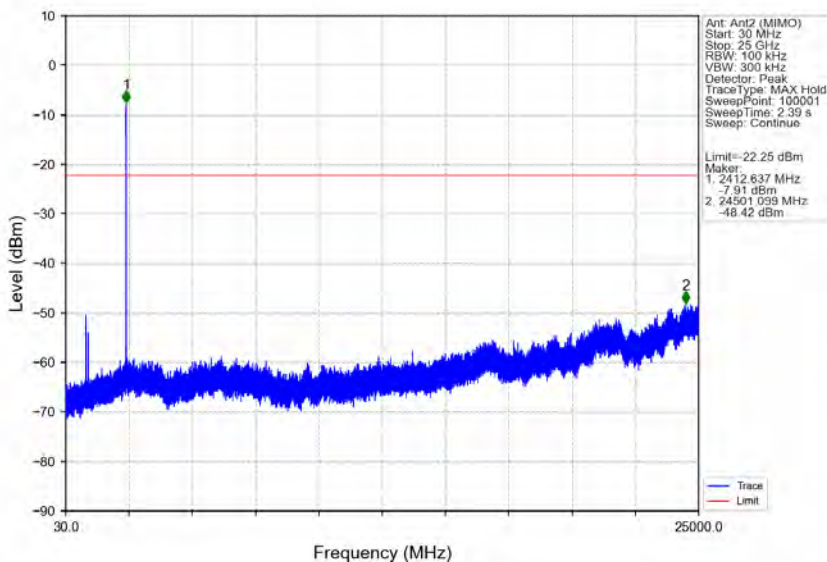
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



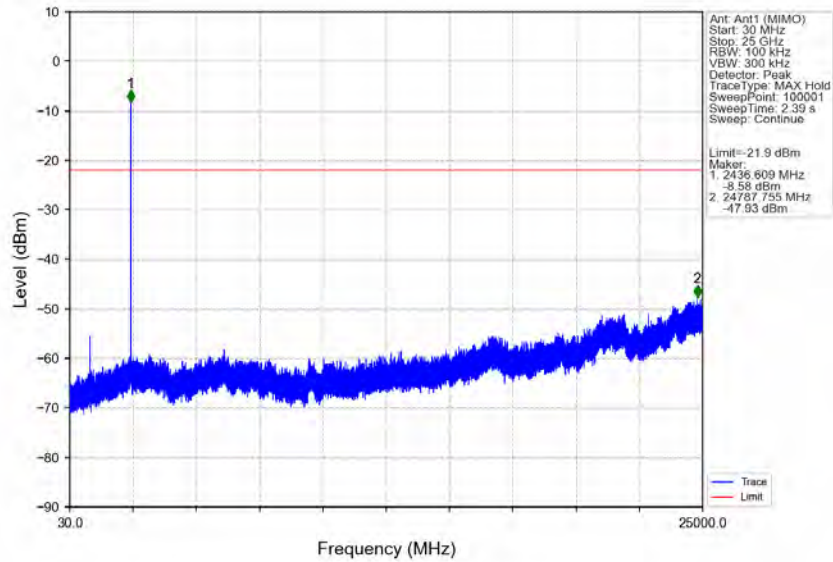
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant5 (MIMO)_NTNV



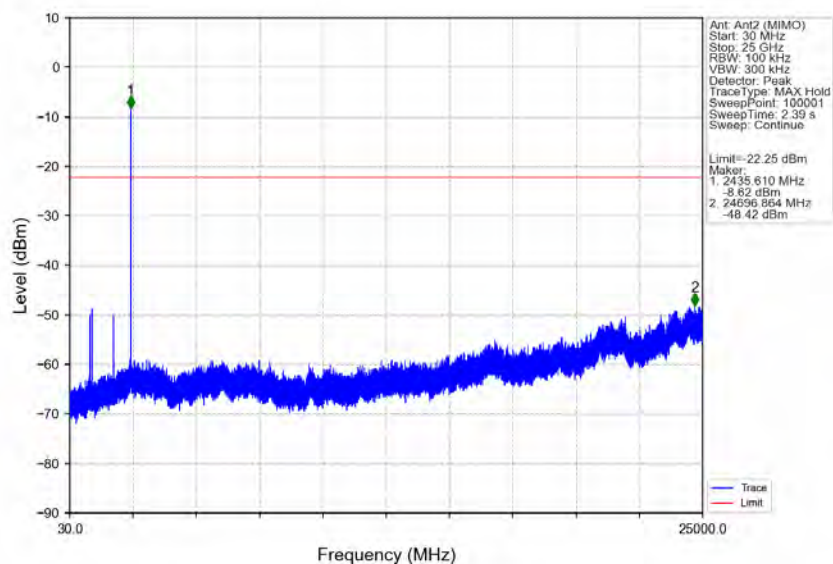
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant5 (MIMO)_NTNV



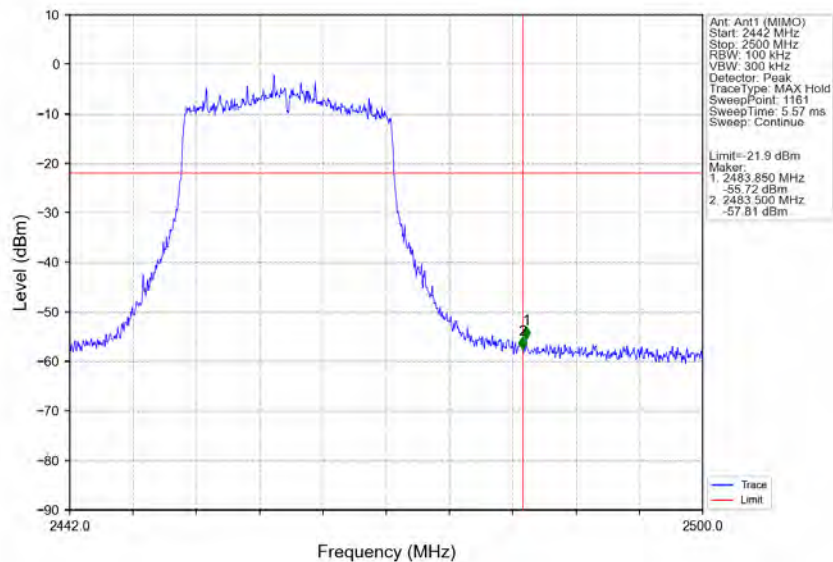
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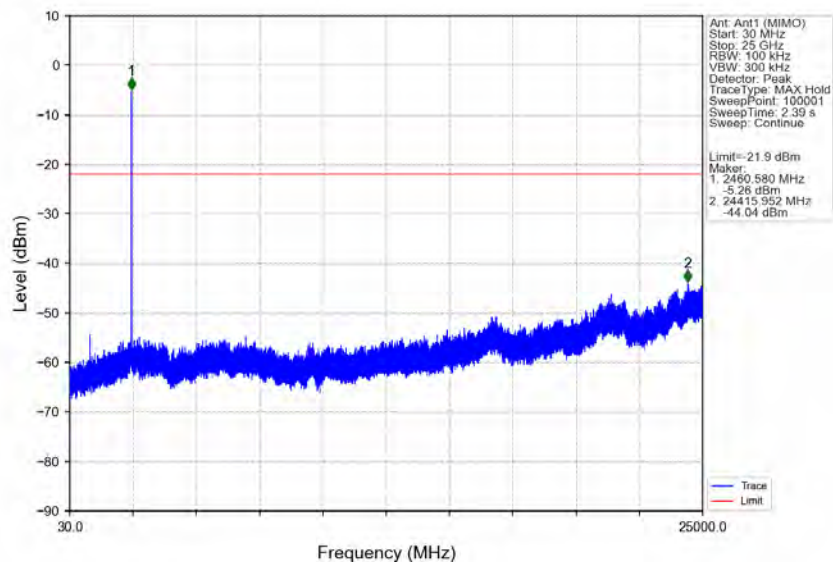
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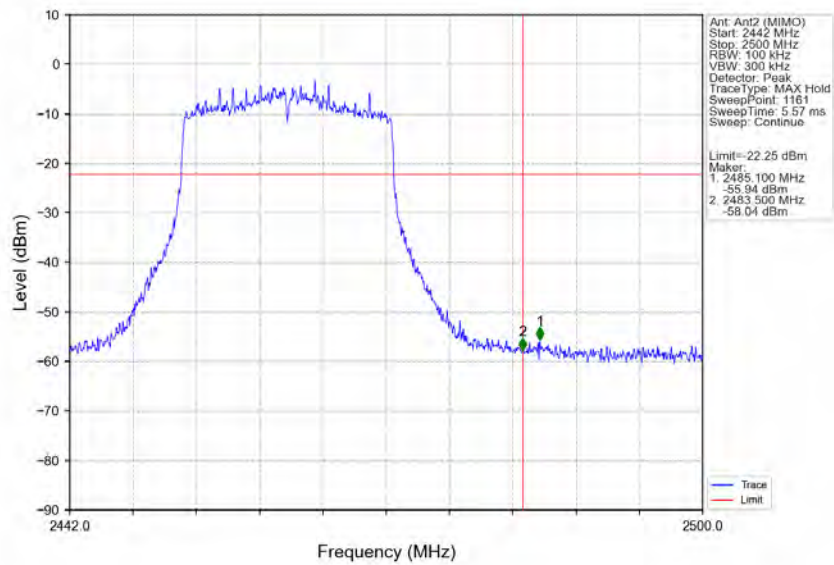
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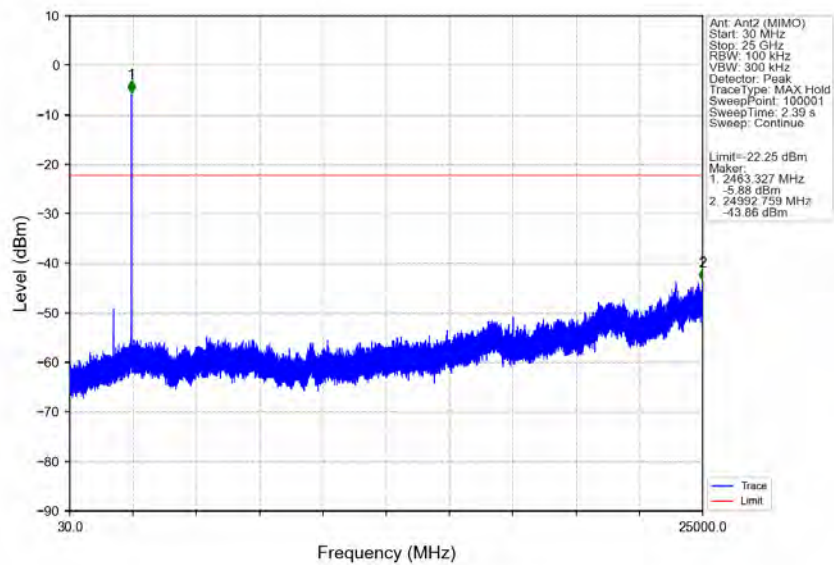
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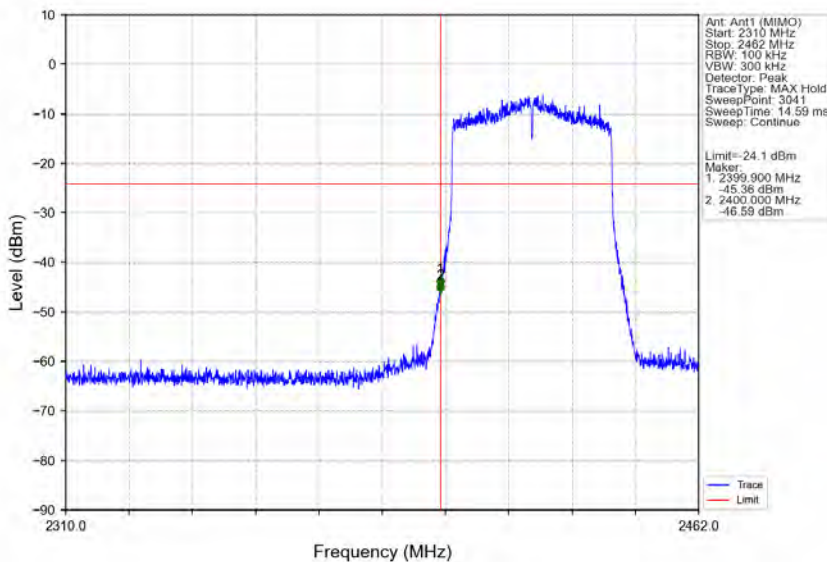
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant5 (MIMO)_NTNV



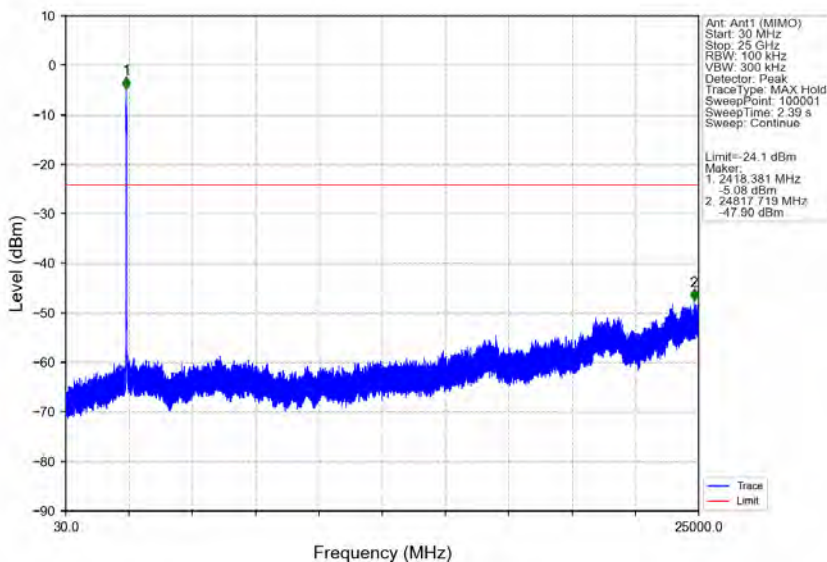
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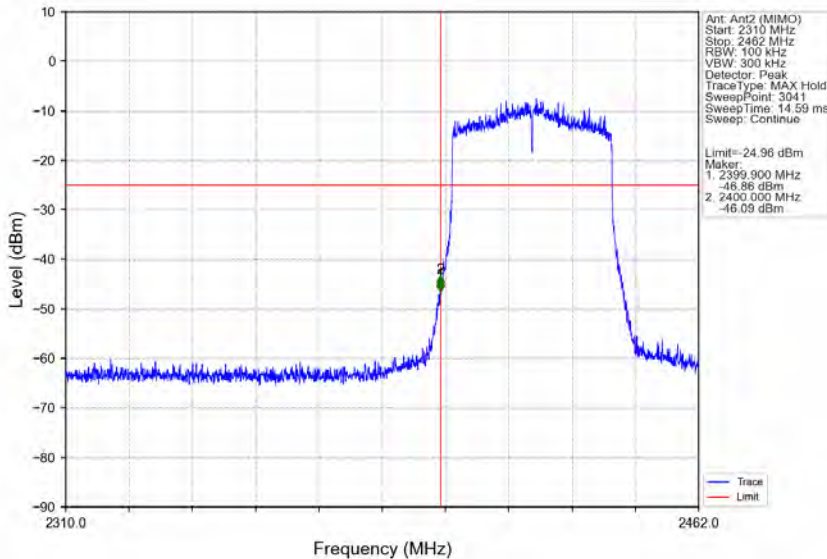
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



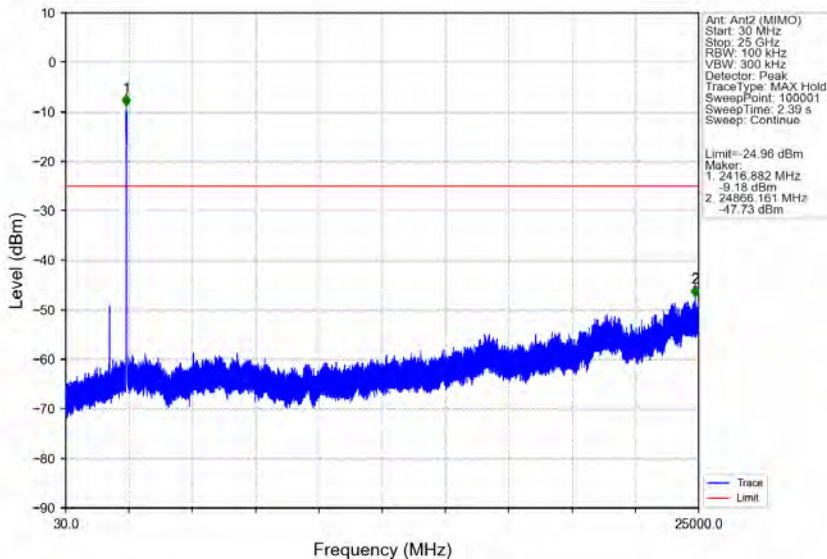
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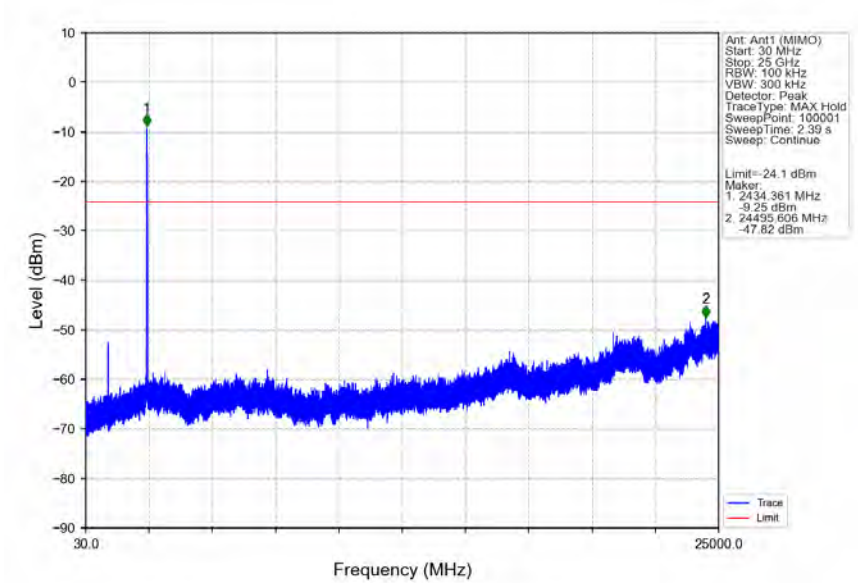
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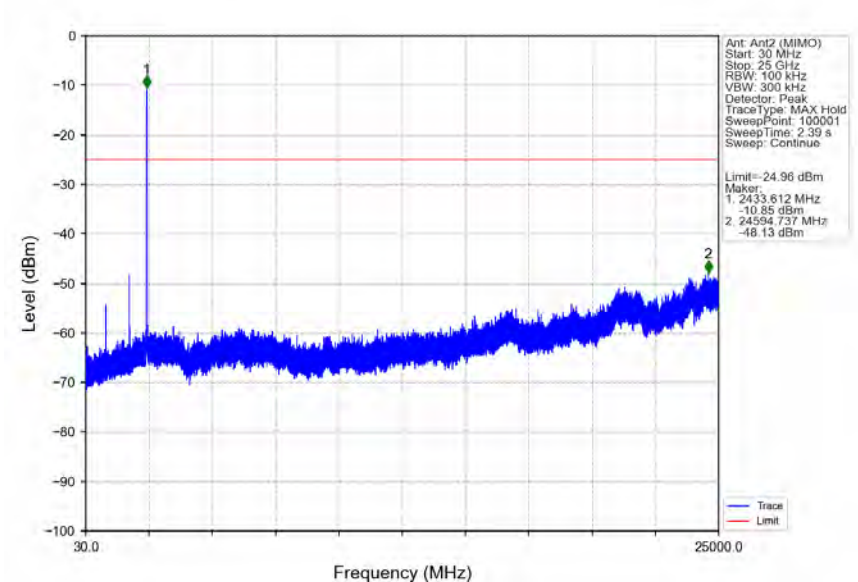
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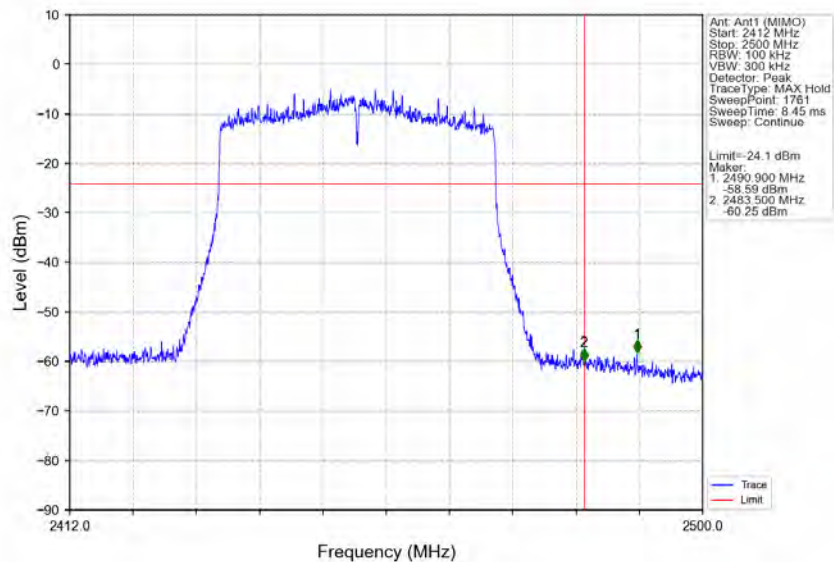
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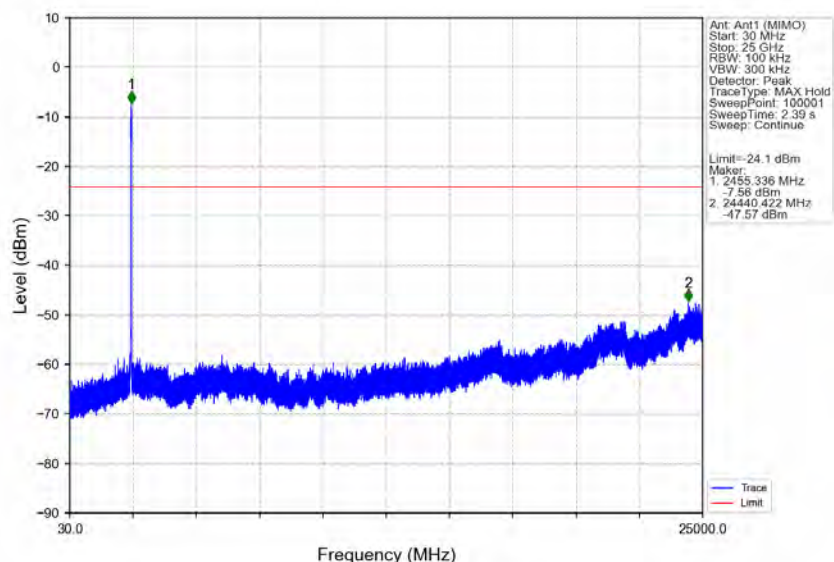
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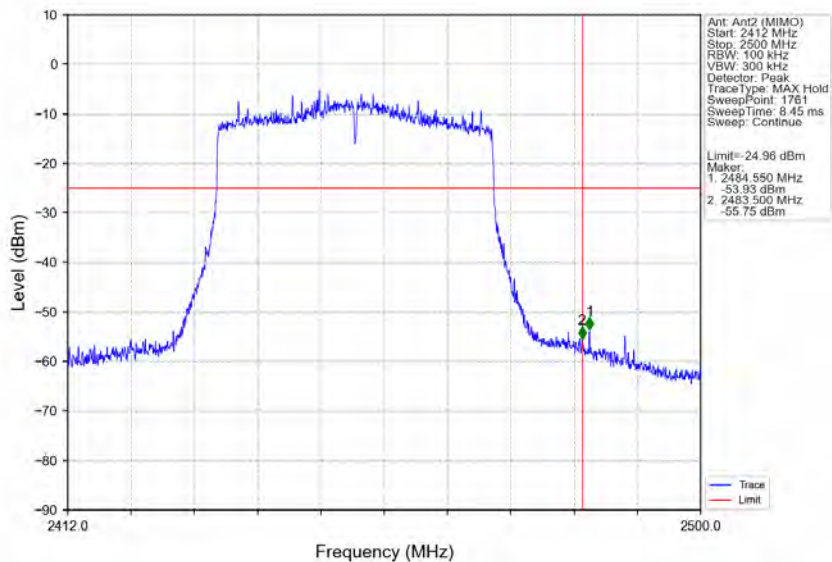
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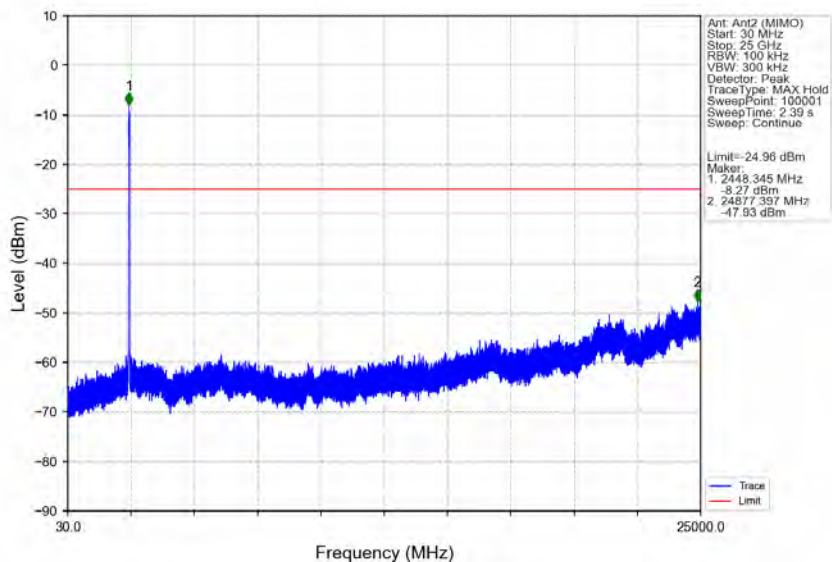
802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant5 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant5 (MIMO)_NTNV



6. Frequency Error

6.1 Test Result

6.1.1 Ant1

Ant1									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
802.11b	SISO	2412	/	/	20	102	2412.040	2406.767 to 2417.233	Pass
						120	2412.040	2406.767 to 2417.233	Pass
						138	2412.060	2406.767 to 2417.233	Pass
					-20	120	2412.060	2406.767 to 2417.233	Pass
					50	120	2412.060	2406.767 to 2417.233	Pass
		2437	/	/	20	102	2437.040	2431.734 to 2442.266	Pass
						120	2437.040	2431.734 to 2442.266	Pass
						138	2437.040	2431.734 to 2442.266	Pass
					-20	120	2437.040	2431.734 to 2442.266	Pass
					50	120	2437.040	2431.734 to 2442.266	Pass
		2462	/	/	20	102	2462.040	2456.75 to 2467.25	Pass
						120	2462.040	2456.75 to 2467.25	Pass
						138	2462.040	2456.75 to 2467.25	Pass
					-20	120	2462.040	2456.75 to 2467.25	Pass
					50	120	2462.040	2456.75 to 2467.25	Pass
802.11g	SISO	2412	/	/	20	102	2412.000	2405.398 to 2418.602	Pass
						120	2412.000	2405.398 to 2418.602	Pass
						138	2412.000	2405.398 to 2418.602	Pass
					-20	120	2412.000	2405.398 to 2418.602	Pass
					50	120	2412.000	2405.398 to 2418.602	Pass
		2437	/	/	20	102	2437.040	2430.351 to 2443.649	Pass
						120	2437.040	2430.351 to 2443.649	Pass
						138	2437.040	2430.351 to 2443.649	Pass
					-20	120	2437.040	2430.351 to 2443.649	Pass
					50	120	2437.040	2430.351 to 2443.649	Pass
		2462	/	/	20	102	2462.040	2455.345 to 2468.655	Pass
						120	2462.060	2455.345 to 2468.655	Pass
						138	2462.060	2455.345 to 2468.655	Pass
					-20	120	2462.060	2455.345 to 2468.655	Pass
					50	120	2462.040	2455.345 to 2468.655	Pass
802.11n (HT20)	MIMO	2412	/	/	20	102	2412.040	2404.901 to 2419.099	Pass
						120	2412.040	2404.901 to 2419.099	Pass

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						138	2412.020	2404.901 to 2419.099	Pass
					-20	120	2412.060	2404.901 to 2419.099	Pass
					50	120	2412.040	2404.901 to 2419.099	Pass
		2437	/	/	20	102	2437.020	2429.882 to 2444.118	Pass
						120	2437.020	2429.882 to 2444.118	Pass
						138	2437.020	2429.882 to 2444.118	Pass
					-20	120	2437.040	2429.882 to 2444.118	Pass
					50	120	2437.020	2429.882 to 2444.118	Pass
		2462	/	/	20	102	2462.040	2454.887 to 2469.113	Pass
						120	2462.020	2454.887 to 2469.113	Pass
						138	2462.020	2454.887 to 2469.113	Pass
					-20	120	2462.040	2454.887 to 2469.113	Pass
					50	120	2462.020	2454.887 to 2469.113	Pass
802.11n (HT40)	MIMO	2422	/	/	20	102	2422.080	2407.567 to 2436.433	Pass
						120	2422.080	2407.567 to 2436.433	Pass
						138	2422.080	2407.567 to 2436.433	Pass
					-20	120	2422.080	2407.567 to 2436.433	Pass
					50	120	2422.040	2407.567 to 2436.433	Pass
		2437	/	/	20	102	2437.040	2422.576 to 2451.424	Pass
						120	2437.040	2422.576 to 2451.424	Pass
						138	2437.040	2422.576 to 2451.424	Pass
					-20	120	2437.080	2422.576 to 2451.424	Pass
					50	120	2437.040	2422.576 to 2451.424	Pass
		2452	/	/	20	102	2452.040	2437.611 to 2466.389	Pass
						120	2452.040	2437.611 to 2466.389	Pass
						138	2452.040	2437.611 to 2466.389	Pass
					-20	120	2452.040	2437.611 to 2466.389	Pass
					50	120	2452.040	2437.611 to 2466.389	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	20	102	2412.000	2404.405 to 2419.595	Pass
						120	2411.980	2404.405 to 2419.595	Pass
						138	2411.980	2404.405 to 2419.595	Pass
					-20	120	2411.980	2404.405 to 2419.595	Pass
					50	120	2411.980	2404.405 to 2419.595	Pass
		2437	RU242	Left	20	102	2437.000	2429.427 to 2444.573	Pass
						120	2436.980	2429.427 to 2444.573	Pass
						138	2436.960	2429.427 to 2444.573	Pass
					-20	120	2436.980	2429.427 to 2444.573	Pass
					50	120	2436.980	2429.427 to 2444.573	Pass
		2462	RU242	Left	20	102	2461.960	2454.415 to 2469.585	Pass
						120	2461.960	2454.415 to 2469.585	Pass
						138	2461.960	2454.415 to 2469.585	Pass
					-20	120	2461.980	2454.415 to 2469.585	Pass
					50	120	2461.980	2454.415 to 2469.585	Pass
802.11ax	MIMO	2422	RU484	Left	20	102	2421.920	2406.901 to 2437.099	Pass

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(HEW40)						120	2422.000	2406.901 to 2437.099	Pass
						138	2421.960	2406.901 to 2437.099	Pass
					-20	120	2422.000	2406.901 to 2437.099	Pass
					50	120	2421.960	2406.901 to 2437.099	Pass
		2437	RU484	Left	20	102	2437.000	2421.899 to 2452.101	Pass
						120	2437.000	2421.899 to 2452.101	Pass
						138	2437.000	2421.899 to 2452.101	Pass
					-20	120	2436.960	2421.899 to 2452.101	Pass
	50	120	2436.920	2421.899 to 2452.101	Pass				
	2452	RU484	Left	20	102	2452.000	2436.922 to 2467.078	Pass	
					120	2452.000	2436.922 to 2467.078	Pass	
					138	2452.000	2436.922 to 2467.078	Pass	
				-20	120	2451.960	2436.922 to 2467.078	Pass	
				50	120	2451.960	2436.922 to 2467.078	Pass	

6.1.2 Ant5

Ant5									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
802.11b	SISO	2412	/	/	20	102	2412.040	2406.767 to 2417.233	Pass
						120	2412.040	2406.767 to 2417.233	Pass
						138	2412.040	2406.767 to 2417.233	Pass
					-20	120	2412.040	2406.767 to 2417.233	Pass
					50	120	2412.040	2406.767 to 2417.233	Pass
		2437	/	/	20	102	2437.040	2431.734 to 2442.266	Pass
						120	2437.040	2431.734 to 2442.266	Pass
						138	2437.040	2431.734 to 2442.266	Pass
					-20	120	2437.040	2431.734 to 2442.266	Pass
					50	120	2437.040	2431.734 to 2442.266	Pass
		2462	/	/	20	102	2462.040	2456.75 to 2467.25	Pass
						120	2462.040	2456.75 to 2467.25	Pass
						138	2462.040	2456.75 to 2467.25	Pass
					-20	120	2462.040	2456.75 to 2467.25	Pass
					50	120	2462.040	2456.75 to 2467.25	Pass
802.11g	SISO	2412	/	/	20	102	2412.180	2405.398 to 2418.602	Pass
						120	2412.140	2405.398 to 2418.602	Pass
						138	2412.180	2405.398 to 2418.602	Pass
					-20	120	2412.160	2405.398 to 2418.602	Pass
					50	120	2412.160	2405.398 to 2418.602	Pass
		2437	/	/	20	102	2437.040	2430.351 to 2443.649	Pass
						120	2437.020	2430.351 to 2443.649	Pass
						138	2437.040	2430.351 to 2443.649	Pass
					-20	120	2437.040	2430.351 to 2443.649	Pass

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					50	120	2437.060	2430.351 to 2443.649	Pass
		2462	/	/	20	102	2462.040	2455.345 to 2468.655	Pass
						120	2462.040	2455.345 to 2468.655	Pass
						138	2462.040	2455.345 to 2468.655	Pass
						-20	120	2462.040	2455.345 to 2468.655
					50	120	2462.040	2455.345 to 2468.655	Pass
802.11n (HT20)	MIMO	2412	/	/	20	102	2412.040	2404.901 to 2419.099	Pass
						120	2412.040	2404.901 to 2419.099	Pass
						138	2412.040	2404.901 to 2419.099	Pass
						-20	120	2412.060	2404.901 to 2419.099
					50	120	2412.040	2404.901 to 2419.099	Pass
		2437	/	/	20	102	2437.040	2429.882 to 2444.118	Pass
						120	2437.040	2429.882 to 2444.118	Pass
						138	2437.020	2429.882 to 2444.118	Pass
						-20	120	2437.020	2429.882 to 2444.118
					50	120	2437.040	2429.882 to 2444.118	Pass
		2462	/	/	20	102	2462.020	2454.887 to 2469.113	Pass
						120	2462.040	2454.887 to 2469.113	Pass
						138	2462.040	2454.887 to 2469.113	Pass
						-20	120	2462.020	2454.887 to 2469.113
					50	120	2462.020	2454.887 to 2469.113	Pass
802.11n (HT40)	MIMO	2422	/	/	20	102	2422.040	2407.567 to 2436.433	Pass
						120	2422.080	2407.567 to 2436.433	Pass
						138	2422.080	2407.567 to 2436.433	Pass
						-20	120	2422.080	2407.567 to 2436.433
					50	120	2422.080	2407.567 to 2436.433	Pass
		2437	/	/	20	102	2437.080	2422.576 to 2451.424	Pass
						120	2437.080	2422.576 to 2451.424	Pass
						138	2437.040	2422.576 to 2451.424	Pass
						-20	120	2437.080	2422.576 to 2451.424
					50	120	2437.080	2422.576 to 2451.424	Pass
		2452	/	/	20	102	2452.080	2437.611 to 2466.389	Pass
						120	2452.040	2437.611 to 2466.389	Pass
						138	2452.040	2437.611 to 2466.389	Pass
						-20	120	2452.080	2437.611 to 2466.389
					50	120	2452.040	2437.611 to 2466.389	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	20	102	2412.020	2404.405 to 2419.595	Pass
						120	2411.980	2404.405 to 2419.595	Pass
						138	2412.000	2404.405 to 2419.595	Pass
						-20	120	2412.000	2404.405 to 2419.595
					50	120	2412.000	2404.405 to 2419.595	Pass
		2437	RU242	Left	20	102	2436.980	2429.427 to 2444.573	Pass
						120	2436.980	2429.427 to 2444.573	Pass
						138	2436.980	2429.427 to 2444.573	Pass



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802.11ax (HEW40)	MIMO	2462	RU242	Left	-20	120	2436.980	2429.427 to 2444.573	Pass
					50	120	2436.980	2429.427 to 2444.573	Pass
					20	102	2461.980	2454.415 to 2469.585	Pass
						120	2461.980	2454.415 to 2469.585	Pass
						138	2461.980	2454.415 to 2469.585	Pass
					-20	120	2461.960	2454.415 to 2469.585	Pass
					50	120	2461.960	2454.415 to 2469.585	Pass
		2422	RU484	Left	20	102	2422.000	2406.901 to 2437.099	Pass
						120	2421.960	2406.901 to 2437.099	Pass
						138	2421.960	2406.901 to 2437.099	Pass
					-20	120	2421.960	2406.901 to 2437.099	Pass
					50	120	2421.960	2406.901 to 2437.099	Pass
		2437	RU484	Left	20	102	2436.960	2421.899 to 2452.101	Pass
						120	2437.000	2421.899 to 2452.101	Pass
						138	2436.960	2421.899 to 2452.101	Pass
					-20	120	2436.960	2421.899 to 2452.101	Pass
					50	120	2436.960	2421.899 to 2452.101	Pass
		2452	RU484	Left	20	102	2451.960	2436.922 to 2467.078	Pass
						120	2452.000	2436.922 to 2467.078	Pass
						138	2451.920	2436.922 to 2467.078	Pass
					-20	120	2451.960	2436.922 to 2467.078	Pass
					50	120	2451.960	2436.922 to 2467.078	Pass

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