



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 1 of 248

TEST REPORT

Application No.: KSCR2406001000AT
FCC ID: 2APJ4-MA188
Applicant: MeiG Smart Technology Co., Ltd
Address of Applicant: 2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen
Manufacturer: MeiG Smart Technology Co., Ltd
Address of Manufacturer: 2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen
Equipment Under Test (EUT):
EUT Name: Wireless communication module
Model No.: MA188
Trade Mark: MEIGLink
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2024-06-04
Date of Test: 2024-06-11 to 2024-07-11
Date of Issue: 2024-07-11

Test Result:

Pass*

* In the configuration tested, the EUT complied with the standards specified above.

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Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 2 of 248

Revision Record			
Version	Description	Date	Remark
00	Original	2024-07-11	/

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



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 3 of 248

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Customer Declaration

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Conducted Peak Output Power		ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth		ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density		ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement		ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions		ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 4 of 248

3 Contents

	Page
1 COVER PAGE.....	1
2 Test Summary	3
3 Contents	4
4 General Information	5
4.1 Details of E.U.T.....	5
4.2 Power level setting using in test	5
4.3 Description of Support Units	5
4.4 Measurement Uncertainty.....	6
4.5 Test Location	7
4.6 Test Facility.....	7
4.7 Deviation from Standards	7
4.8 Abnormalities from Standard Conditions	7
5 Equipment List.....	8
6 Radio Spectrum Technical Requirement	9
6.1 Antenna Requirement	9
7 Radio Spectrum Matter Test Results.....	10
7.1 Conducted Emissions at AC Power Line (150kHz-30MHz).....	10
7.2 Radiated Emissions which fall in the restricted bands.....	14
7.3 Radiated Spurious Emissions Below 1GHz.....	55
7.4 Radiated Spurious Emissions Above 1GHz	59
7.5 Conducted Peak Output Power	97
7.6 Minimum 6dB Bandwidth	99
7.7 Power Spectrum Density	100
7.8 Conducted Band Edges Measurement.....	101
7.9 Conducted Spurious Emissions.....	103
8 Test Setup Photo	105
9 EUT Constructional Details (EUT Photos)	105
10 Appendix	106

4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.3V-4.3V
Test voltage	DC 3.8V
Operation Frequency:	802.11b/g/n(HT20)/ax(HEW20): 2412MHz to 2462MHz; 802.11n(HT40)/ax(HEW40): 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, 1024-QAM)
Number of Channels:	802.11b/g/n(HT20)/ax(HEW20):11;802.11n(HT40)/ax(HEW40):7
Channel Spacing:	5MHz
Antenna Type:	External Antenna
Antenna Gain:	Ant1:3.95dBi(Provided by the manufacturer) Ant2:3.95dBi(Provided by the manufacturer) Directional gain: 3.95dBi(Provided by the manufacturer)

4.2 Power level setting using in test

Channel	802.11b		802.11g		802.11n(HT20)		802.11ax(HEW20)	
	Ant 1	Ant 2	Ant 2	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2
1	14.5	14.5	13.5	13.5	13.5	13.5	13.5	13.5
6	14.5	14.5	13.5	13.5	13.5	13.5	13.5	13.5
11	14.5	14.5	13.5	13.5	13.5	13.5	13.5	13.5
Channel	802.11n(HT20)		802.11ax(HEW20)					
	Ant 2	Ant 2	Ant 1	Ant 2				
3	13	13	13	13				
6	13	13	13	13				
9	13	13	13	13				

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	LENOVO	K27	EB24537645
AC Adapter	/	/	/

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 6 of 248

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.		

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 7 of 248

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



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 8 of 248

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	Farad	EZ-EMC	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/24/2023	08/23/2024
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/24/2023	08/23/2024
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	08/24/2023	08/23/2024
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/24/2023	08/23/2024
7	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/24/2023	08/23/2024
8	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/19/2024	03/18/2025
9	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/24/2023	08/23/2024
10	Switcher	TST	FY562	KUS2001M001-4	01/15/2024	01/14/2025
11	AC Power Source	EXTECH	6605	KS301178	N.C.R	N.C.R
12	DC Power Supply	Aglient	E3632A	KS301180	N.C.R	N.C.R
13	Conducted Test Cable	Thermax	RF01-RF04	CZ301111- CZ301120	01/15/2024	01/14/2025
14	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/24/2023	08/23/2024
15	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	03/19/2024	03/18/2025
16	Software	BST	TST-PASS	/	NCR	NCR
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/24/2023	08/23/2024
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	03/19/2024	03/18/2025
3	Signal Generator	Agilent	E8257C	KS301066	08/24/2023	08/23/2024
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	08/24/2023	08/23/2024
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	08/24/2023	08/23/2024
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	08/24/2023	08/23/2024
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	03/19/2024	03/18/2025
14	Software	Faratronic	EZ_EMG-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 External Antenna and no consideration of replacement. The best case gain of the antenna 1 is 3.95dBi. and antenna 2 is 3.95dBi.

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: 26.7 °C

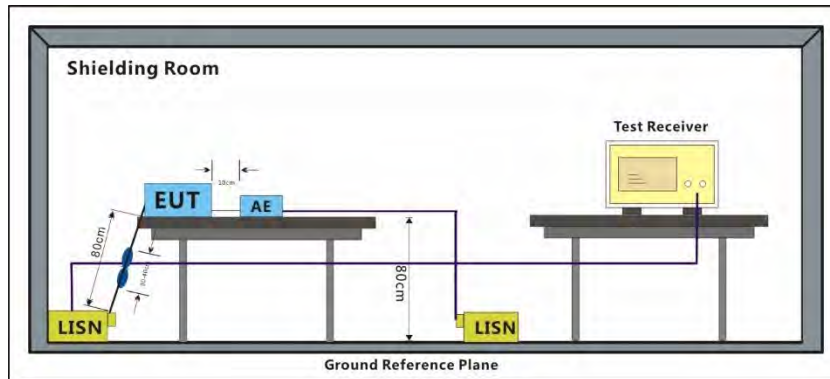
Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). 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

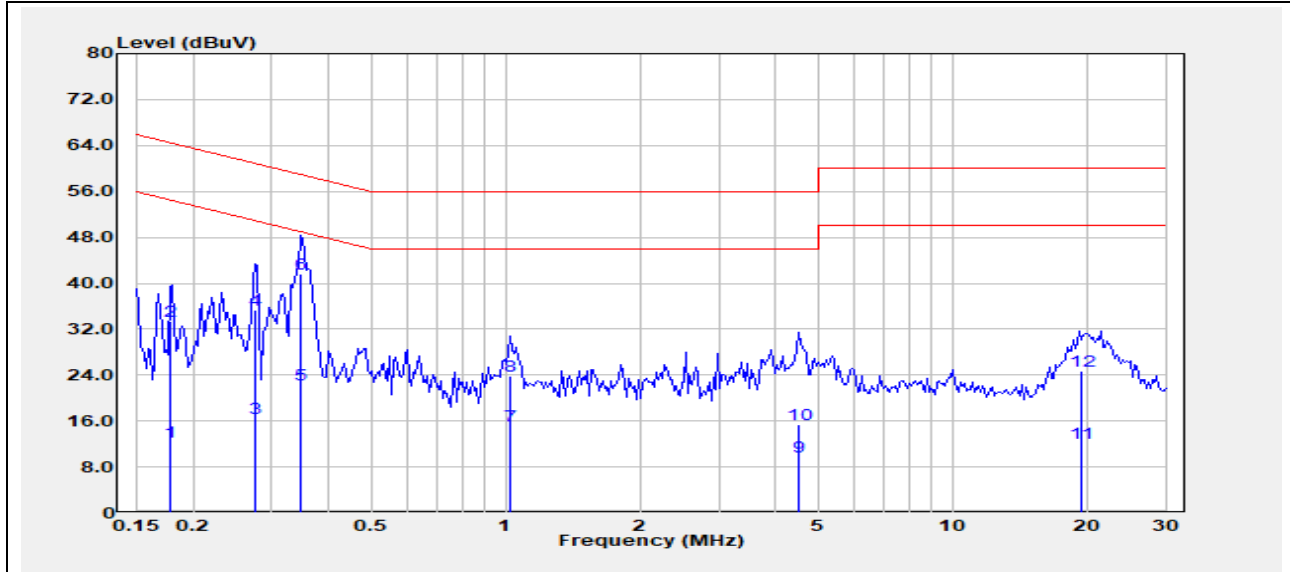
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 12 of 248

Test Mode: 00; Line: Live line



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1783	-7.74	20.13	12.39	54.56	-42.17	Average
2	0.1783	13.34	20.13	33.47	64.56	-31.09	QP
3	0.2742	-3.64	20.07	16.43	50.99	-34.56	Average
4	0.2742	15.36	20.07	35.43	60.99	-25.56	QP
5	0.3488	2.36	20.07	22.43	48.99	-26.56	Average
6	0.3488	21.57	20.07	41.64	58.99	-17.35	QP
7	1.0280	-4.77	19.86	15.09	46.00	-30.91	Average
8	1.0280	4.07	19.86	23.93	56.00	-32.07	QP
9	4.5360	-10.09	19.91	9.82	46.00	-36.18	Average
10	4.5360	-4.57	19.91	15.34	56.00	-40.66	QP
11	19.3700	-7.53	19.76	12.23	50.00	-37.77	Average
12	19.3700	5.05	19.76	24.81	60.00	-35.19	QP

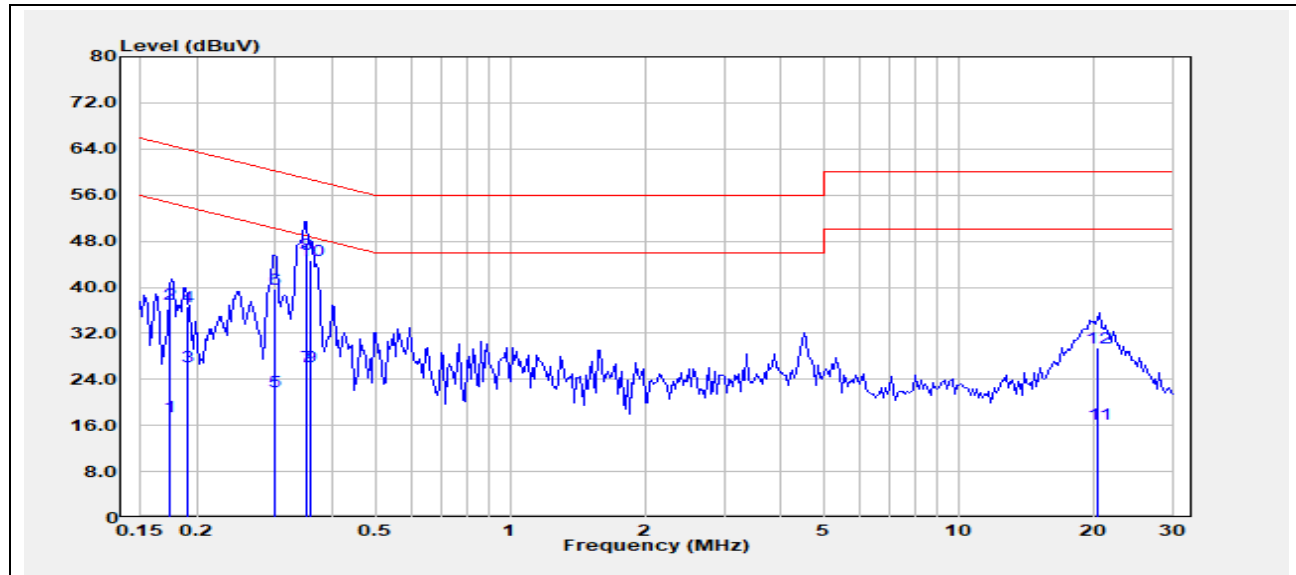
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 13 of 248

Test Mode: 00; Line: Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correct Factor(dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Remark
1	0.1745	-2.65	20.15	17.50	54.74	-37.24	Average
2	0.1745	16.95	20.15	37.10	64.74	-27.64	QP
3	0.1904	6.21	20.13	26.34	54.02	-27.68	Average
4	0.1904	16.58	20.13	36.71	64.02	-27.31	QP
5	0.3000	1.89	20.08	21.97	50.24	-28.27	Average
6	0.3000	19.61	20.08	39.69	60.24	-20.55	QP
7	0.3525	6.21	20.10	26.31	48.90	-22.59	Average
8	0.3525	25.63	20.10	45.73	58.90	-13.17	QP
9	0.3582	6.07	20.10	26.17	48.77	-22.60	Average
10	0.3582	24.65	20.10	44.75	58.77	-14.02	QP
11	20.5240	-3.59	19.81	16.22	50.00	-33.78	Average
12	20.5240	9.78	19.81	29.59	60.00	-30.41	QP

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 14 of 248

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: 21.8 °C

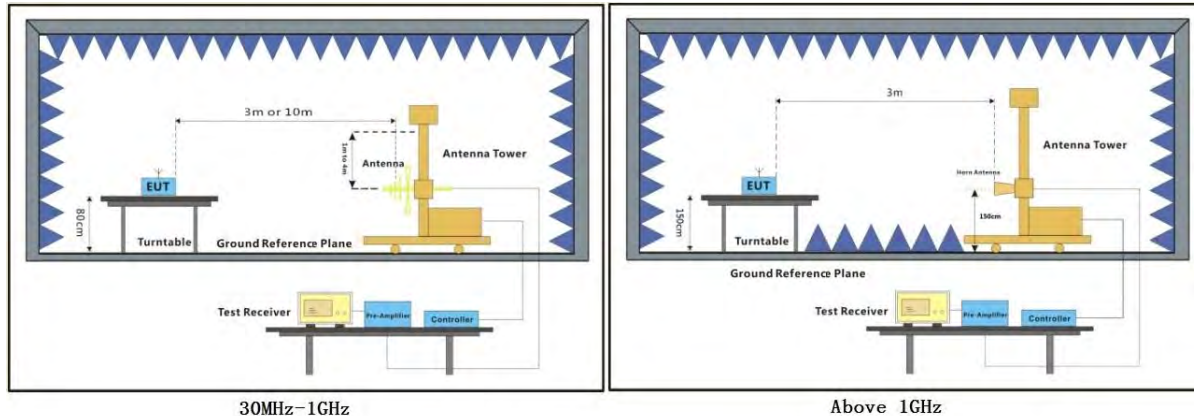
Humidity: 54.3 % RH

Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). 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.

Remark 3: This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 1 operation for b/g modulation and MiMO antenna operation for n modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.

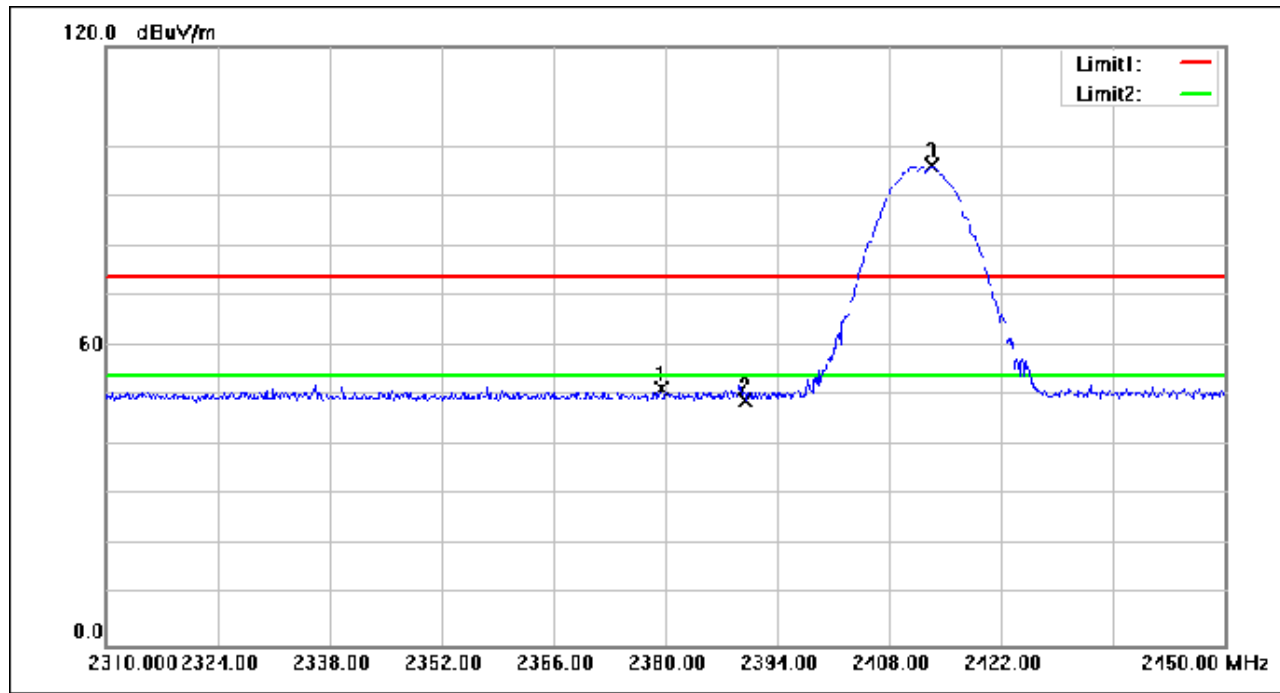
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 16 of 248

Test Mode: 00; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2379.440	76.07	-24.75	51.32	74.00	-22.68	peak
2	2390.000	73.79	-24.71	49.08	74.00	-24.92	peak
3	2413.320	120.62	-24.60	96.02	74.00	22.02	peak

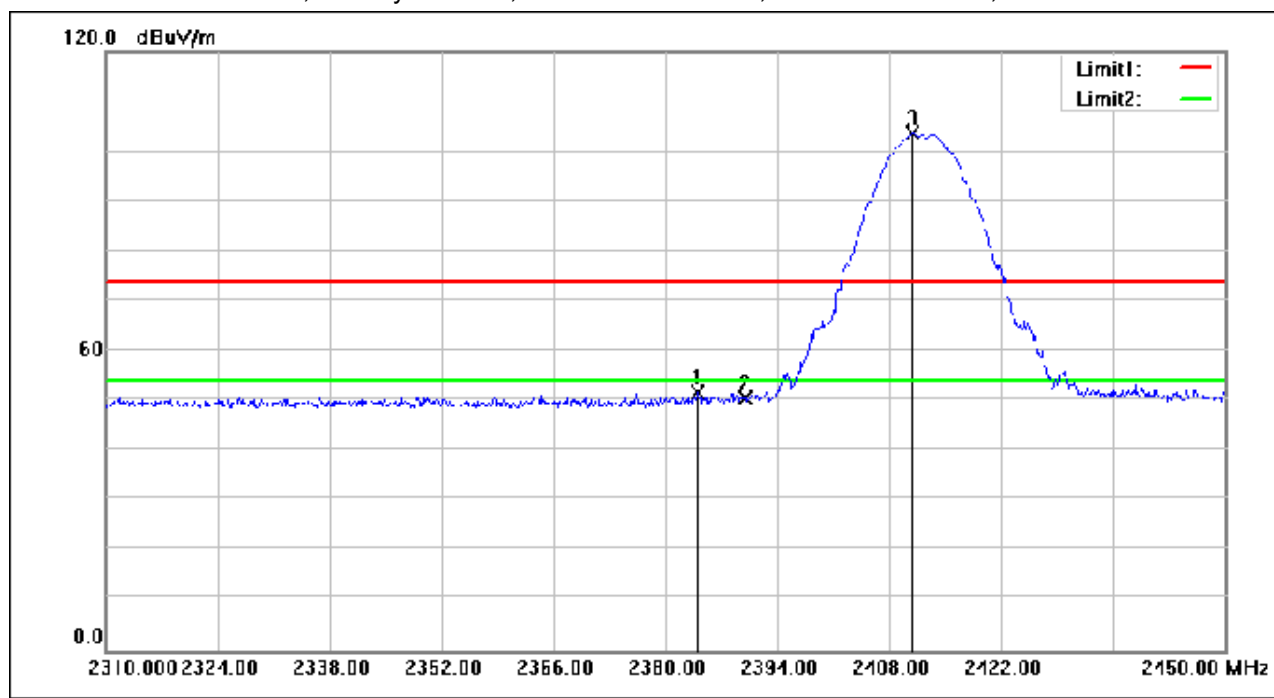
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 17 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.920	76.58	-24.73	51.85	74.00	-22.15	peak
2	2390.000	75.21	-24.71	50.50	74.00	-23.50	peak
3	2410.940	128.15	-24.61	103.54	74.00	29.54	peak

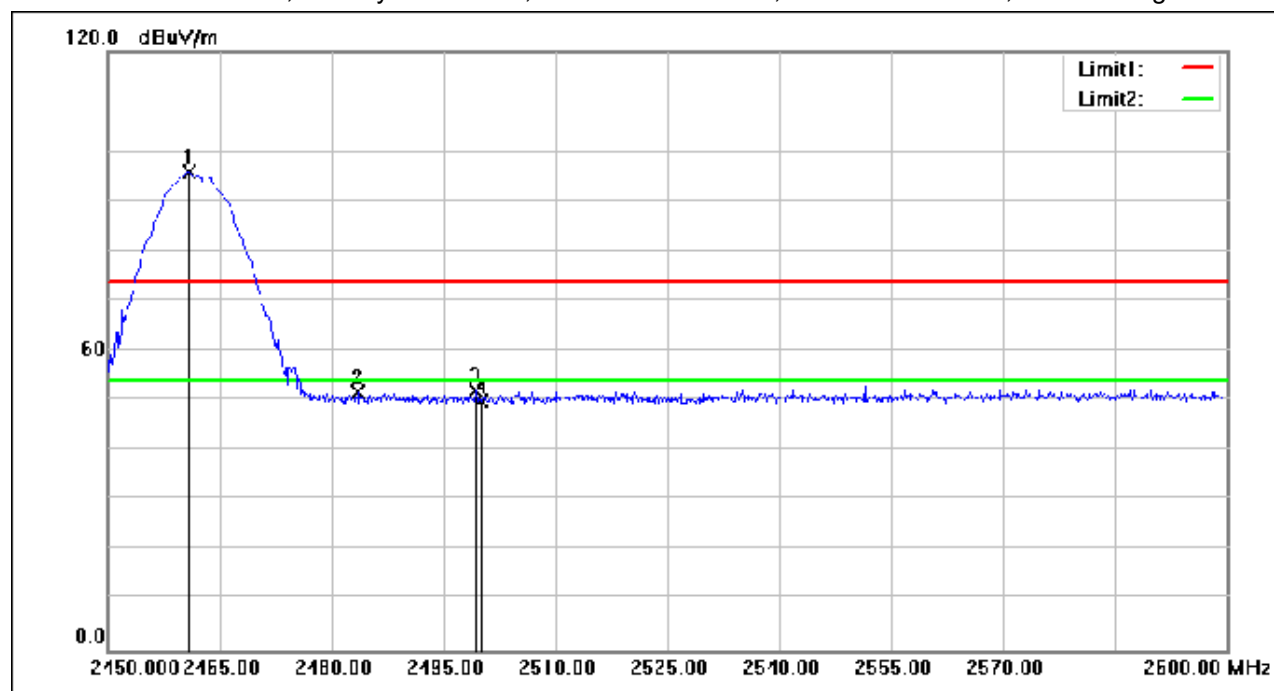
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 18 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11b; Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.800	120.12	-24.38	95.74	74.00	21.74	peak
2	2483.500	75.93	-24.27	51.66	74.00	-22.34	peak
3	2499.200	76.38	-24.19	52.19	74.00	-21.81	peak
4	2500.000	74.22	-24.19	50.03	74.00	-23.97	peak

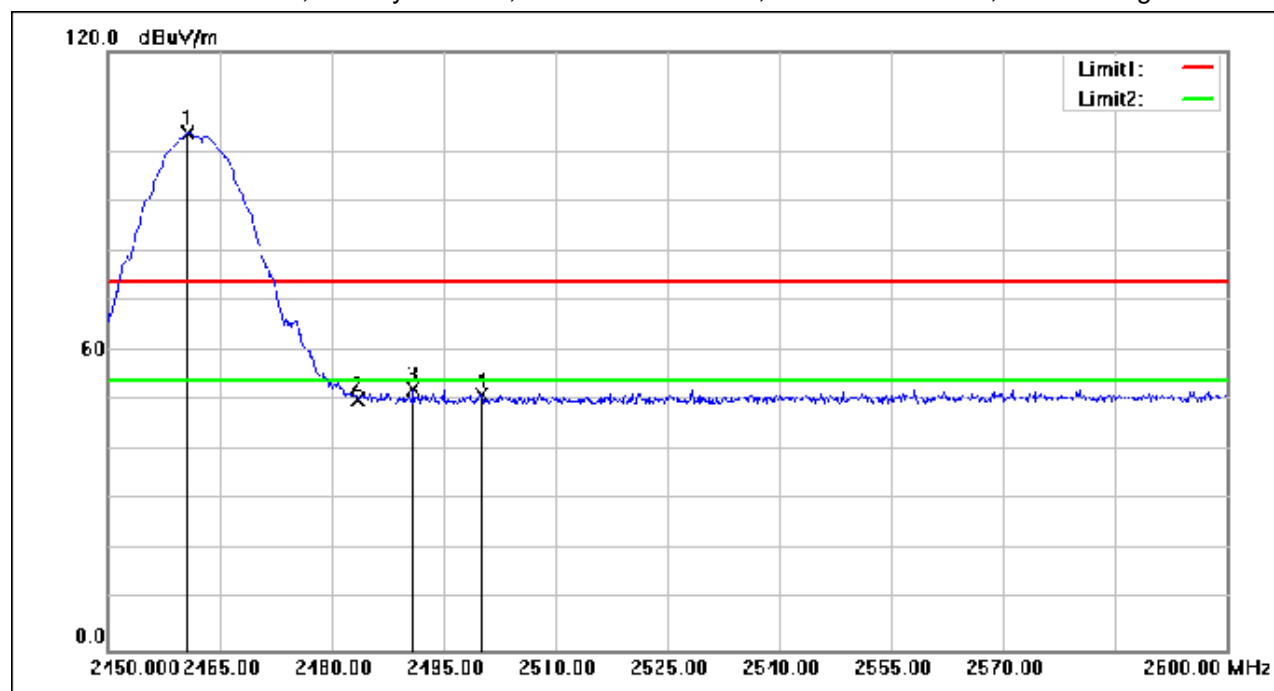
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 19 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.650	127.98	-24.38	103.60	74.00	29.60	peak
2	2483.500	74.46	-24.27	50.19	74.00	-23.81	peak
3	2490.950	76.68	-24.24	52.44	74.00	-21.56	peak
4	2500.000	75.46	-24.19	51.27	74.00	-22.73	peak

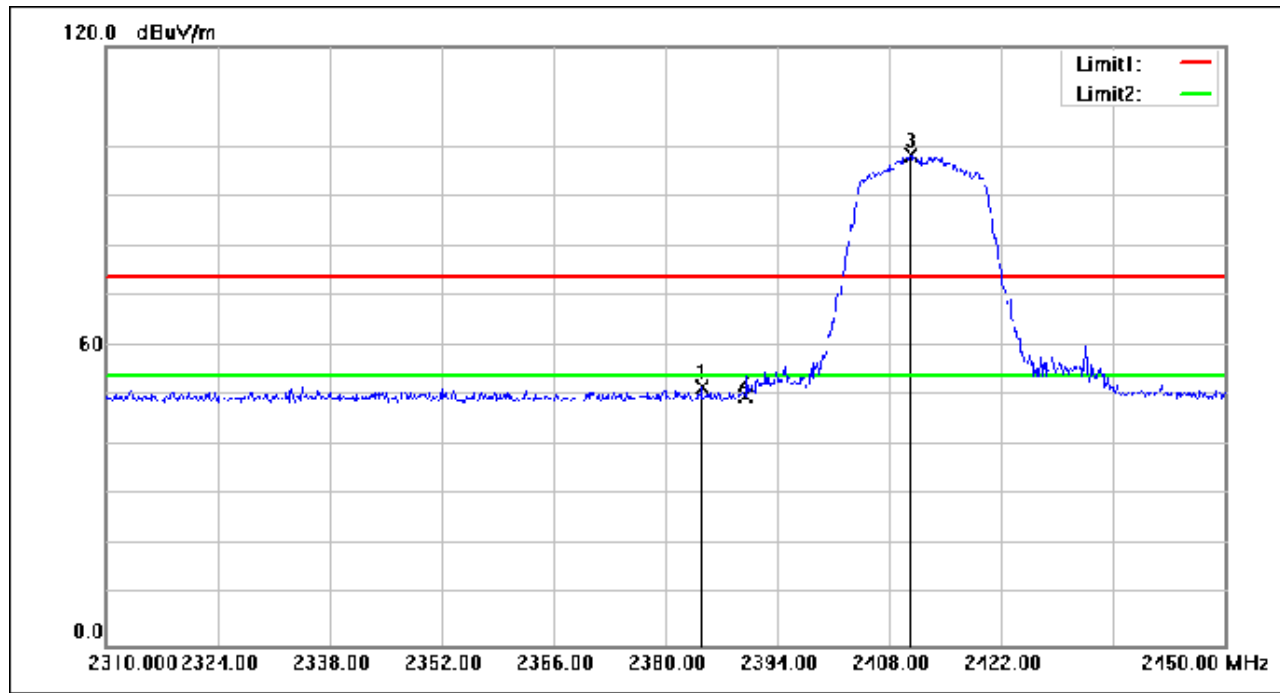
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 20 of 248

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.480	76.57	-24.73	51.84	74.00	-22.16	peak
2	2390.000	74.62	-24.71	49.91	74.00	-24.09	peak
3	2410.660	122.82	-24.61	98.21	74.00	24.21	peak

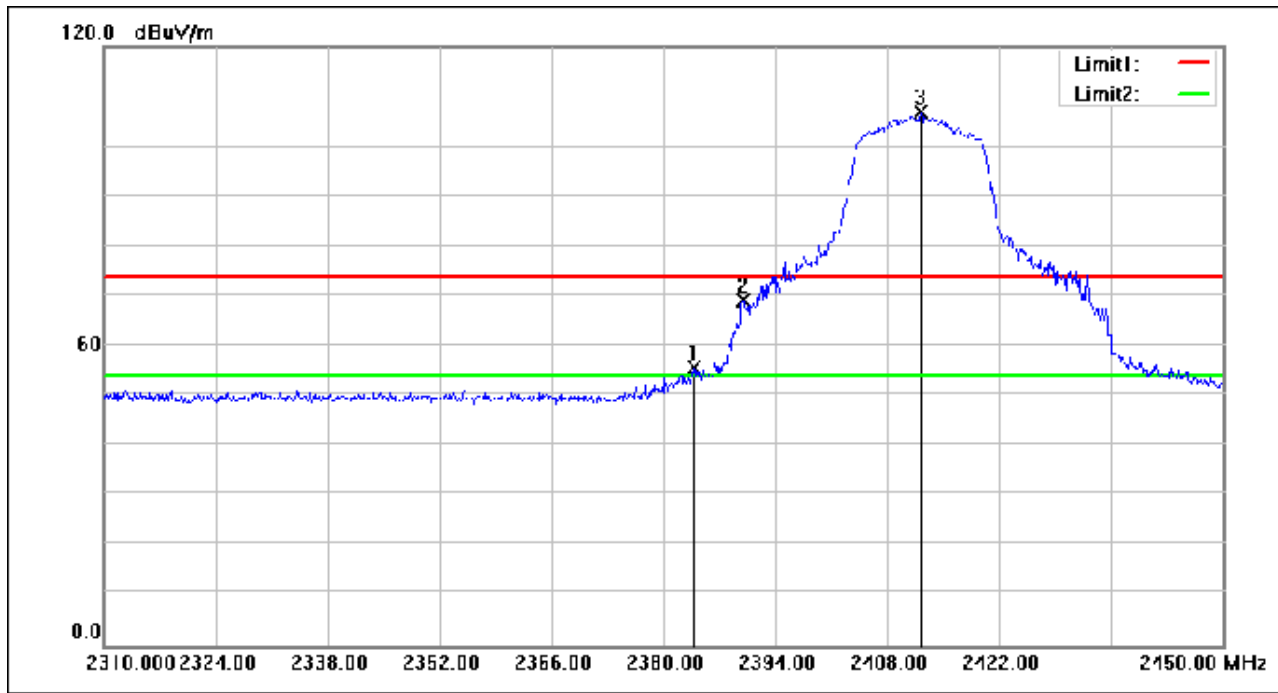
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 21 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.780	80.29	-24.73	55.56	74.00	-18.44	peak
2	2390.000	93.89	-24.71	69.18	74.00	-4.82	peak
3	2412.200	131.41	-24.60	106.81	74.00	32.81	peak

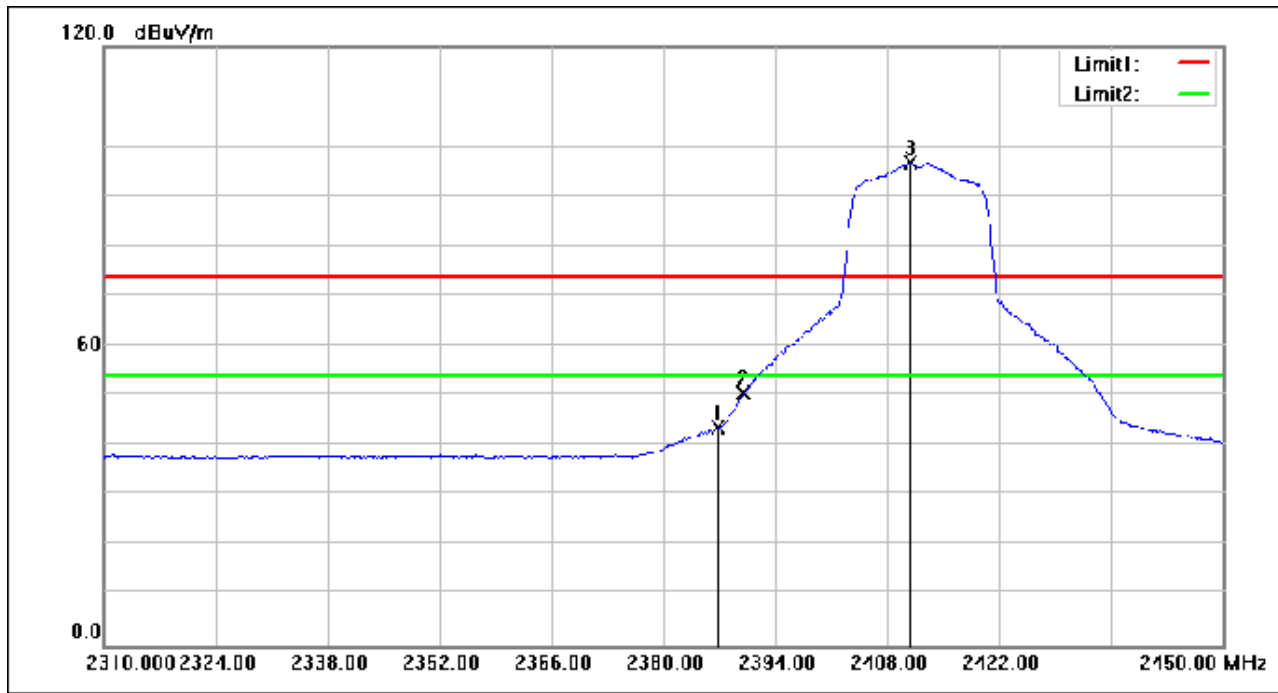
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 22 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.860	68.49	-24.72	43.77	54.00	-10.23	AVG
2	2390.000	75.21	-24.71	50.50	54.00	-3.50	AVG
3	2410.800	121.36	-24.61	96.75	54.00	42.75	AVG

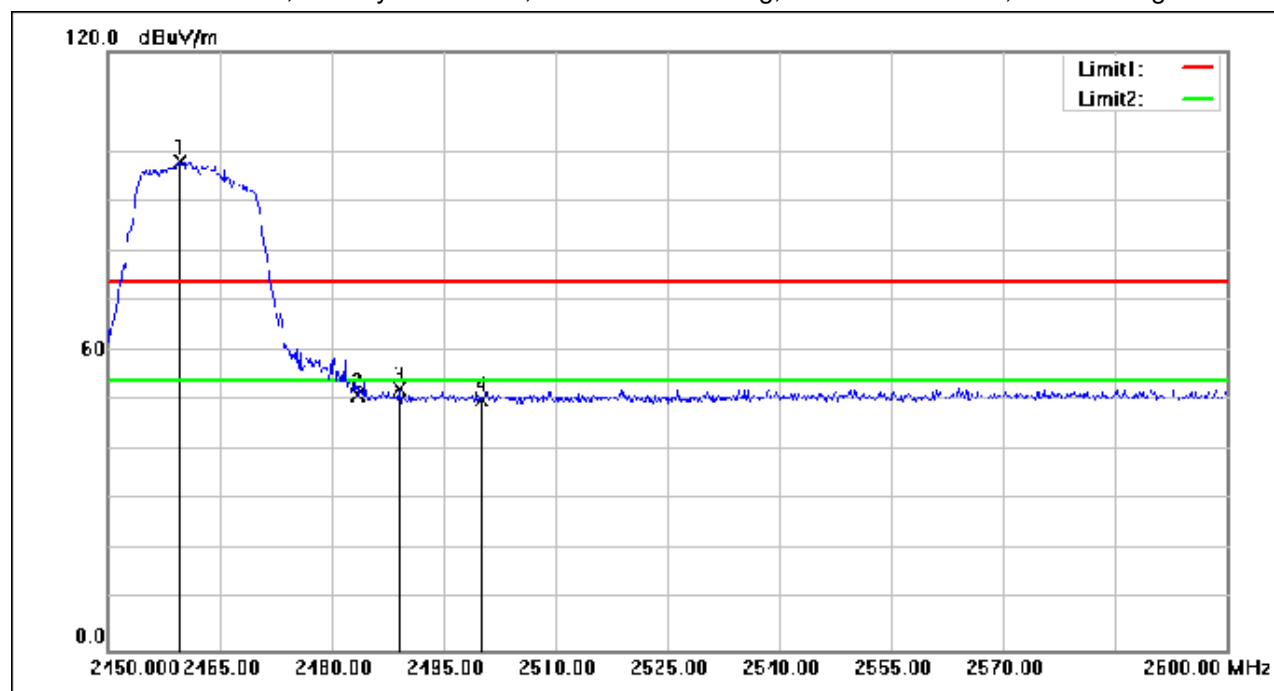
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 23 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11g; Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2459.600	122.30	-24.38	97.92	74.00	23.92	peak
2	2483.500	75.42	-24.27	51.15	74.00	-22.85	peak
3	2489.000	76.52	-24.24	52.28	74.00	-21.72	peak
4	2500.000	74.34	-24.19	50.15	74.00	-23.85	peak

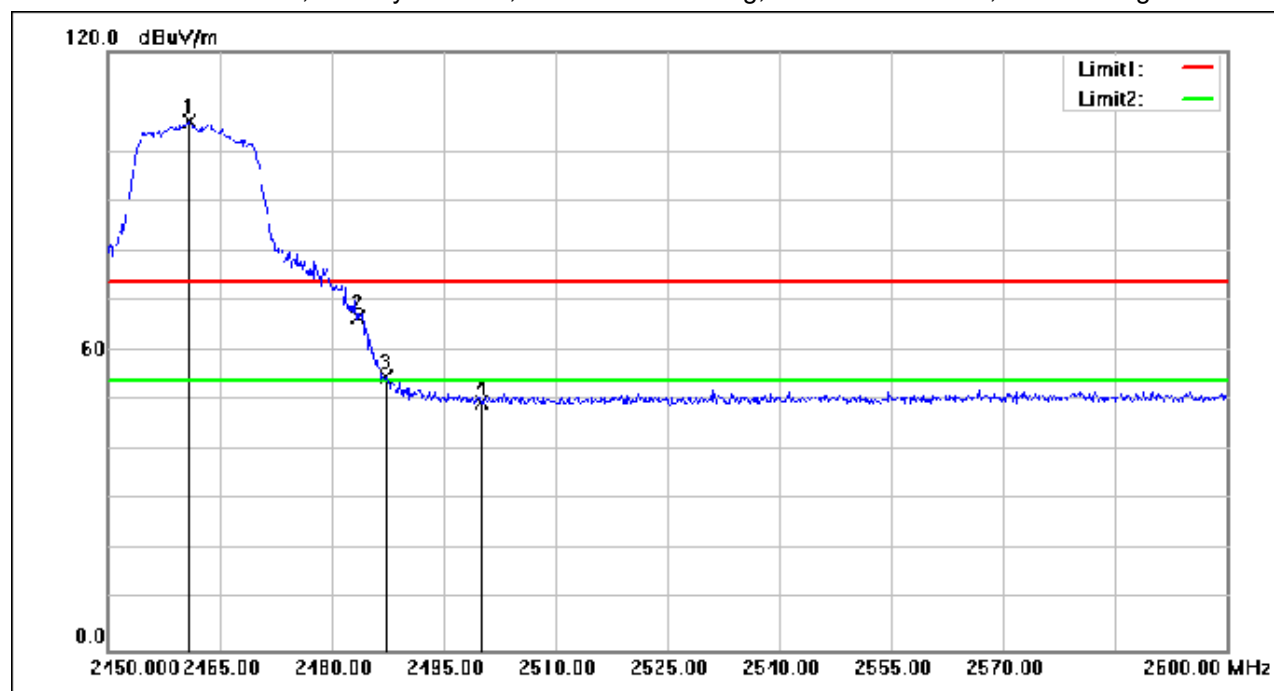
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 24 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.800	130.43	-24.38	106.05	74.00	32.05	peak
2	2483.500	90.96	-24.27	66.69	74.00	-7.31	peak
3	2487.200	79.12	-24.25	54.87	74.00	-19.13	peak
4	2500.000	73.98	-24.19	49.79	74.00	-24.21	peak

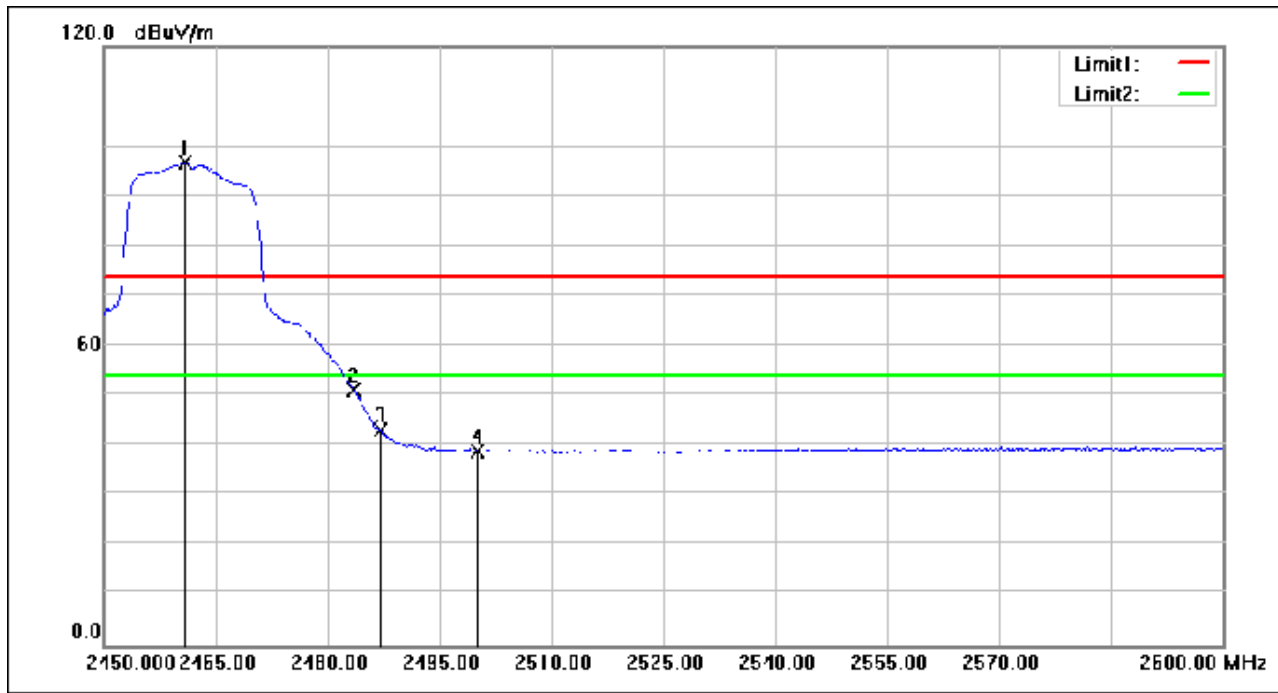
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 25 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.950	121.15	-24.38	96.77	54.00	42.77	AVG
2	2483.500	75.38	-24.27	51.11	54.00	-2.89	AVG
3	2487.050	67.25	-24.25	43.00	54.00	-11.00	AVG
4	2500.000	63.19	-24.19	39.00	54.00	-15.00	AVG

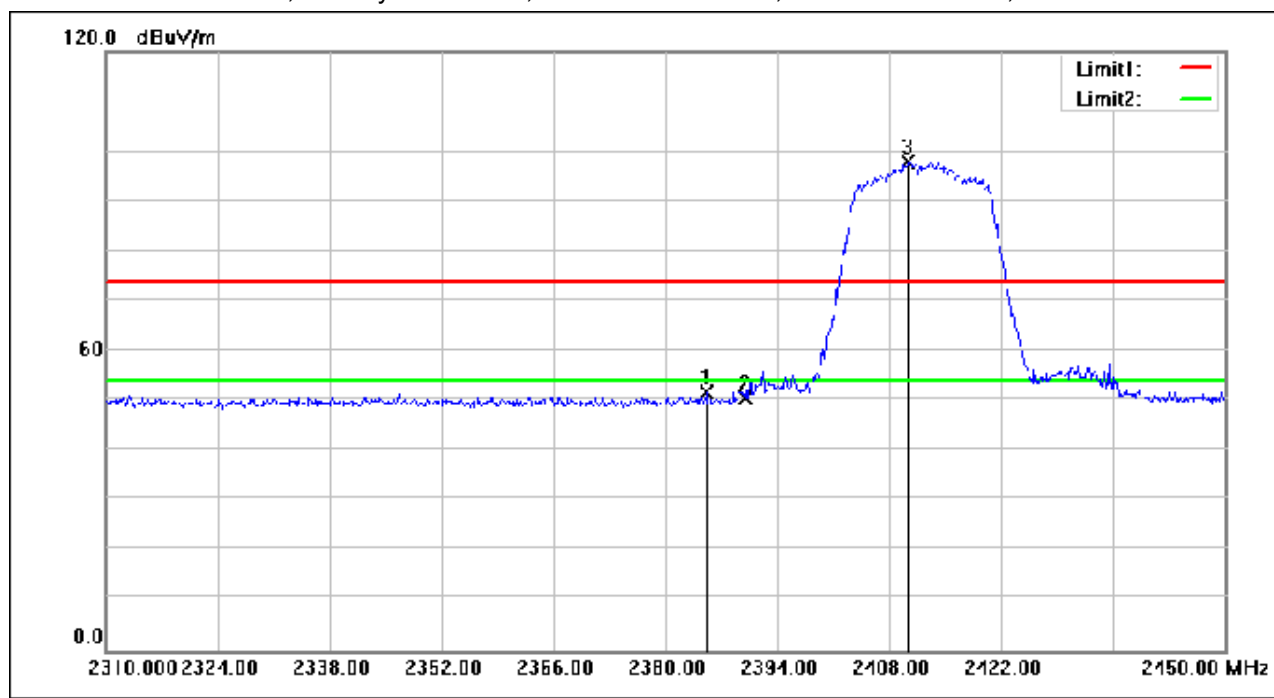
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 26 of 248

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.040	76.50	-24.73	51.77	74.00	-22.23	peak
2	2390.000	75.32	-24.71	50.61	74.00	-23.39	peak
3	2410.380	122.50	-24.61	97.89	74.00	23.89	peak

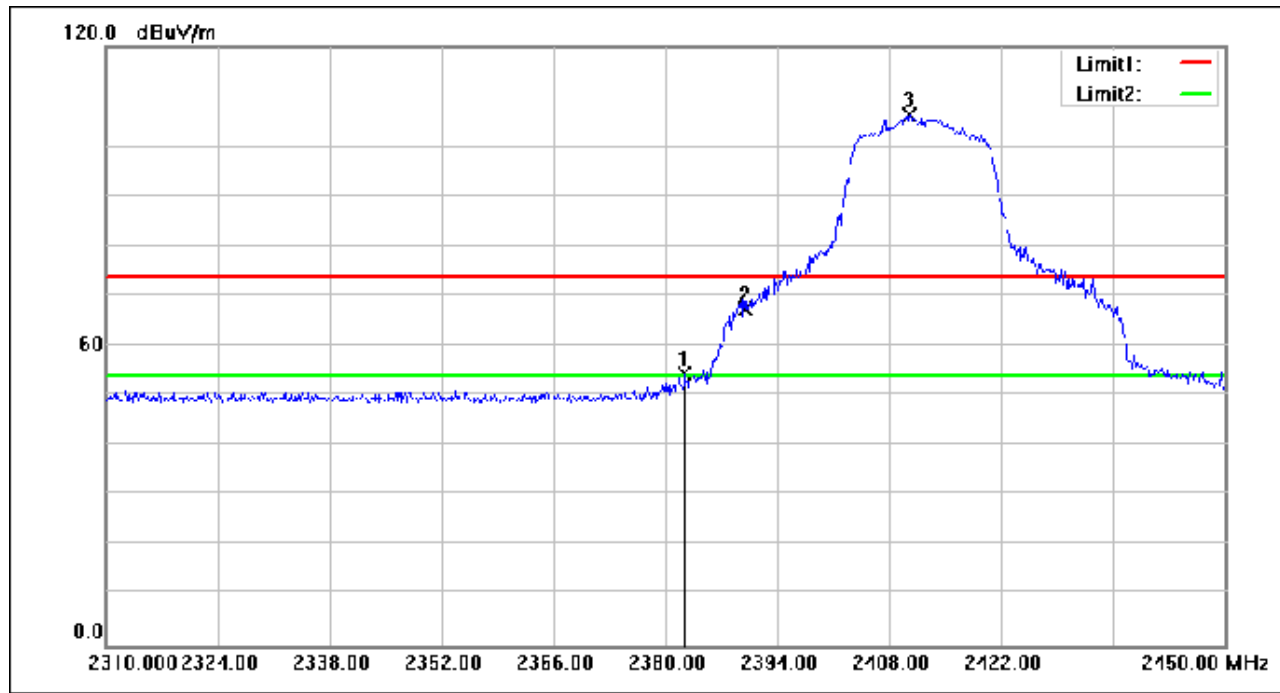
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 27 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2382.380	79.21	-24.74	54.47	74.00	-19.53	peak
2	2390.000	91.99	-24.71	67.28	74.00	-6.72	peak
3	2410.520	131.04	-24.61	106.43	74.00	32.43	peak

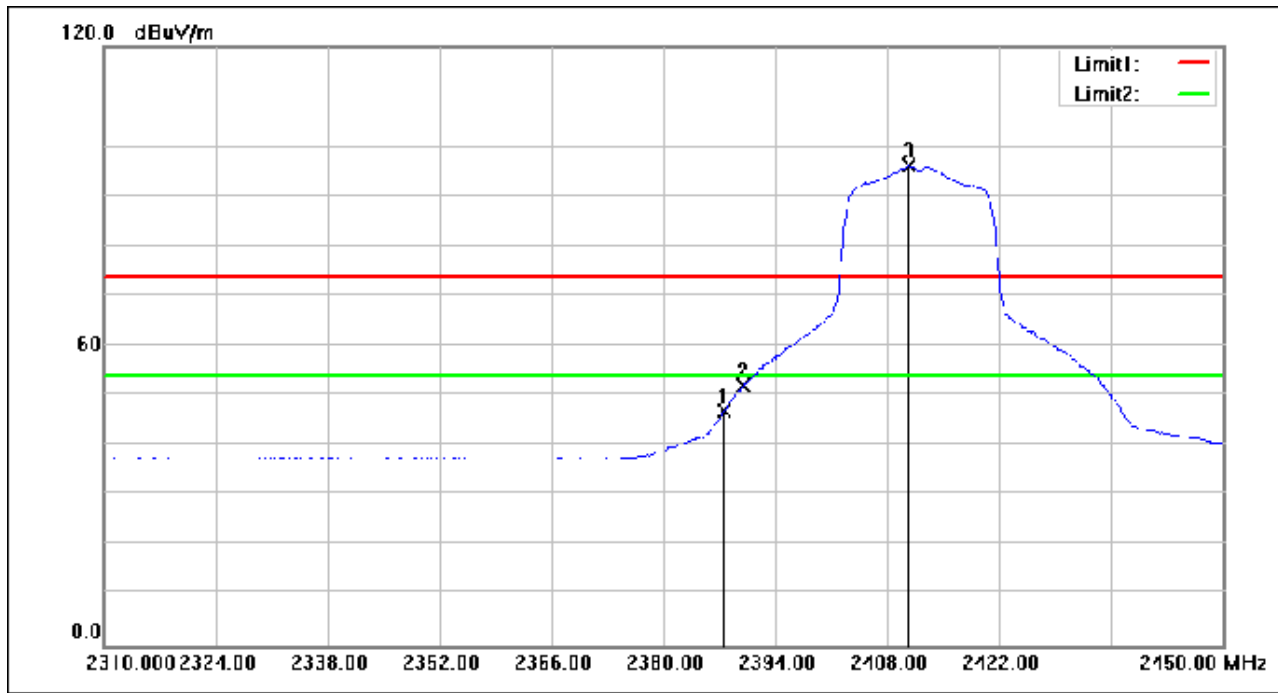
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 28 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.560	71.78	-24.72	47.06	54.00	-6.94	AVG
2	2390.000	76.89	-24.71	52.18	54.00	-1.82	AVG
3	2410.660	120.65	-24.61	96.04	54.00	42.04	AVG

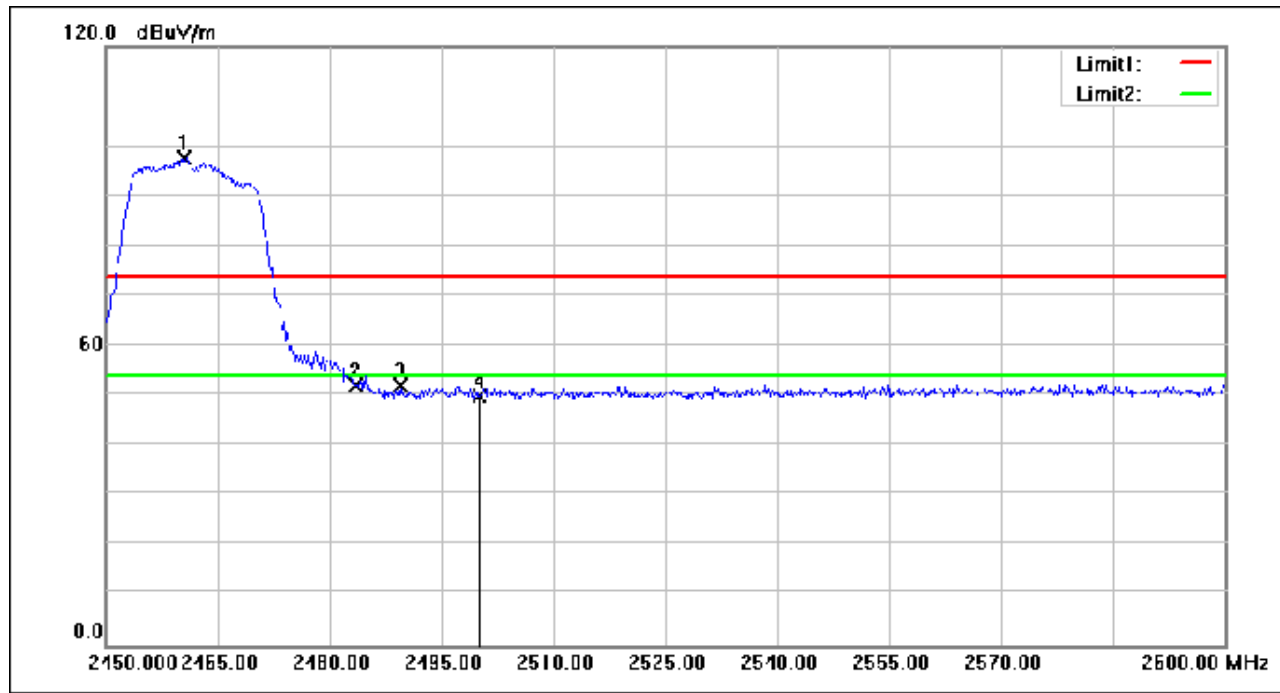
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 29 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.500	122.05	-24.38	97.67	74.00	23.67	peak
2	2483.500	76.42	-24.27	52.15	74.00	-21.85	peak
3	2489.450	76.20	-24.24	51.96	74.00	-22.04	peak
4	2500.000	74.11	-24.19	49.92	74.00	-24.08	peak

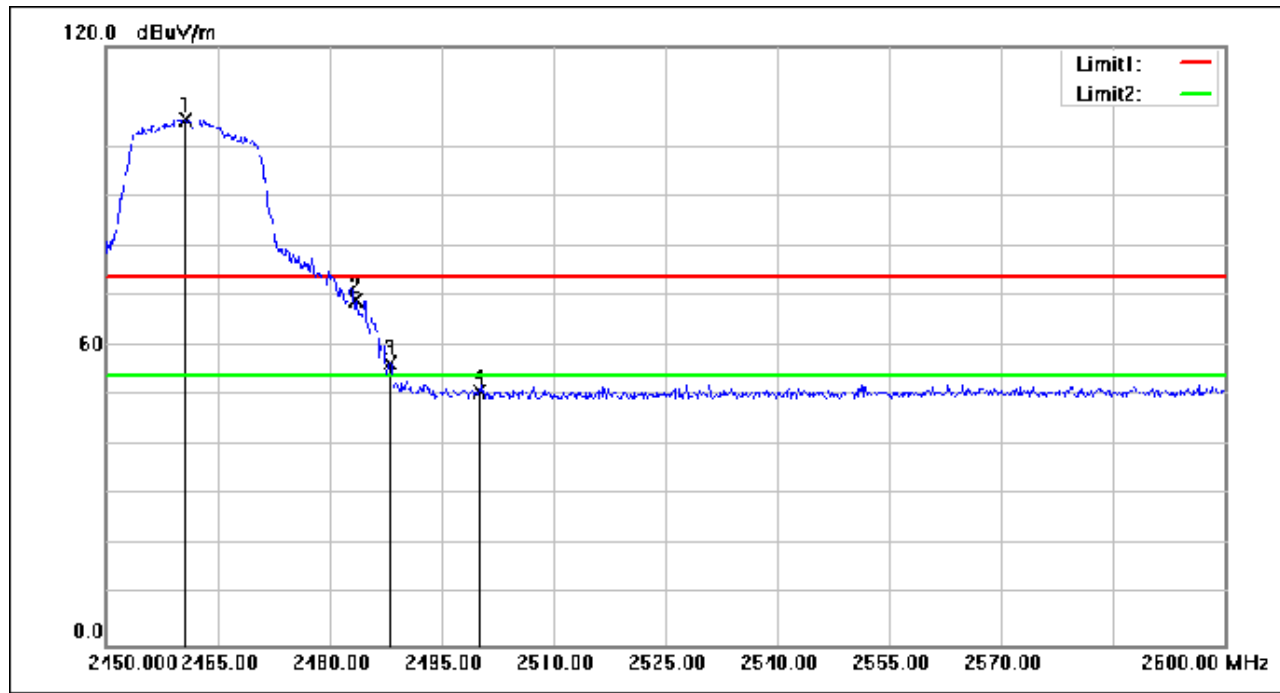
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 30 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.650	129.91	-24.38	105.53	74.00	31.53	peak
2	2483.500	93.34	-24.27	69.07	74.00	-4.93	peak
3	2488.100	80.66	-24.25	56.41	74.00	-17.59	peak
4	2500.000	75.14	-24.19	50.95	74.00	-23.05	peak

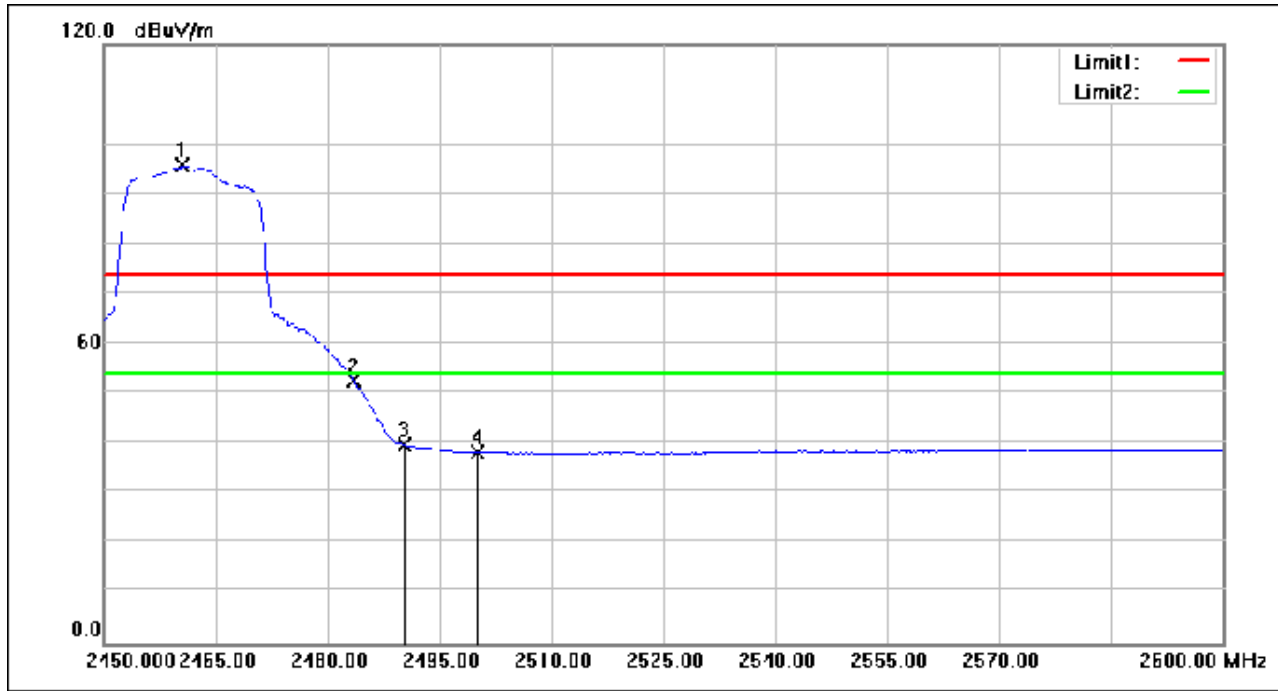
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 31 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.500	120.09	-24.38	95.71	54.00	41.71	AVG
2	2483.500	76.90	-24.27	52.63	54.00	-1.37	AVG
3	2490.350	63.94	-24.24	39.70	54.00	-14.30	AVG
4	2500.000	62.39	-24.19	38.20	54.00	-15.80	AVG

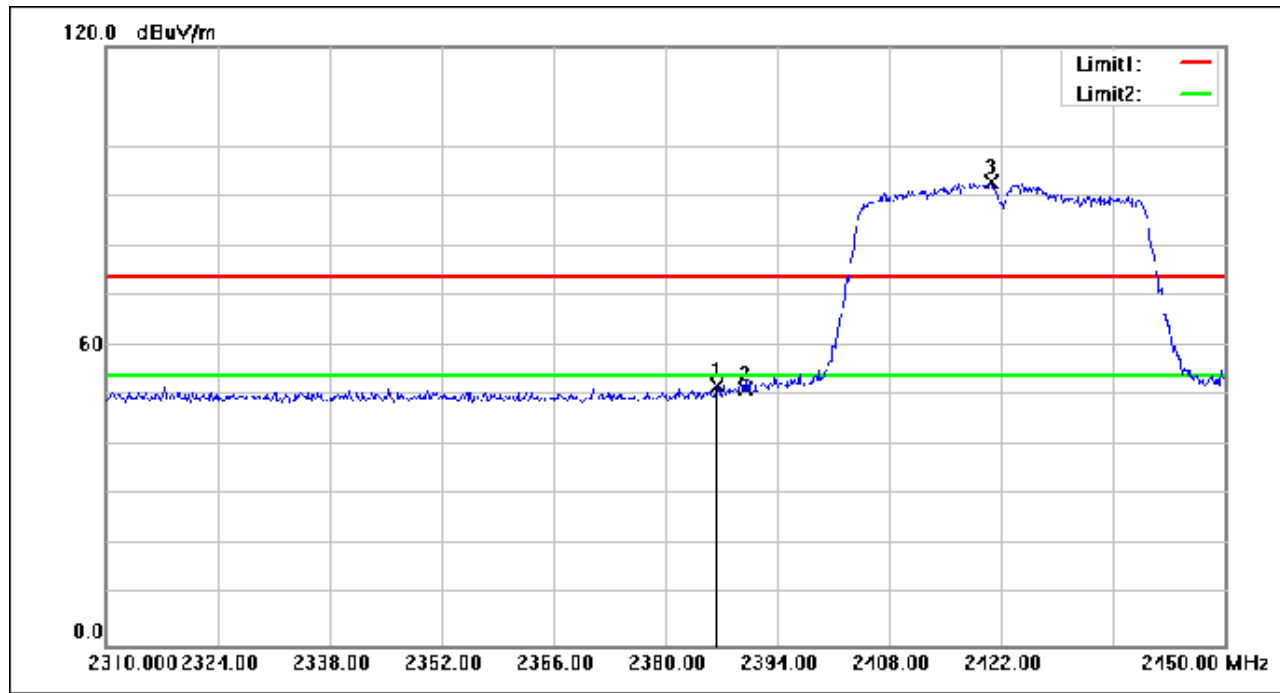
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 32 of 248

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.440	76.79	-24.72	52.07	74.00	-21.93	peak
2	2390.000	76.19	-24.71	51.48	74.00	-22.52	peak
3	2420.740	117.36	-24.57	92.79	74.00	18.79	peak

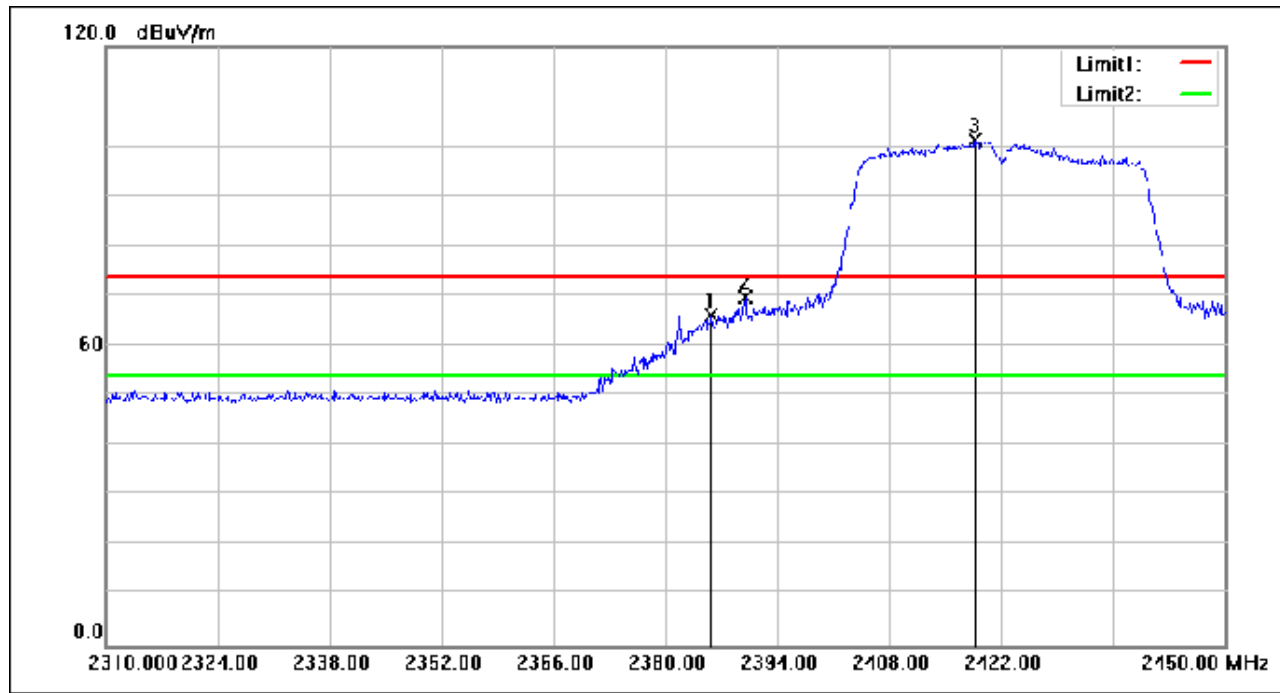
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 33 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.740	90.91	-24.73	66.18	74.00	-7.82	peak
2	2390.000	94.34	-24.71	69.63	74.00	-4.37	peak
3	2418.640	125.94	-24.57	101.37	74.00	27.37	peak

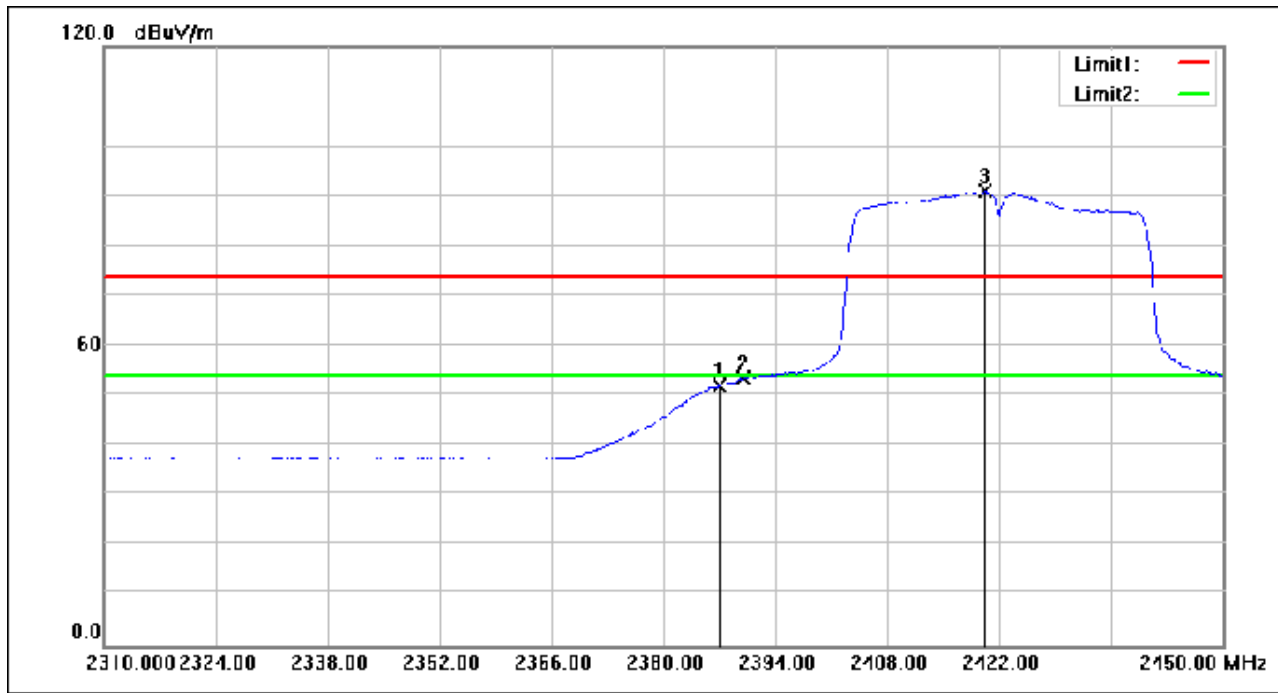
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 34 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.000	76.79	-24.72	52.07	54.00	-1.93	AVG
2	2390.000	78.18	-24.71	53.47	54.00	-0.53	AVG
3	2420.180	115.59	-24.57	91.02	54.00	37.02	AVG

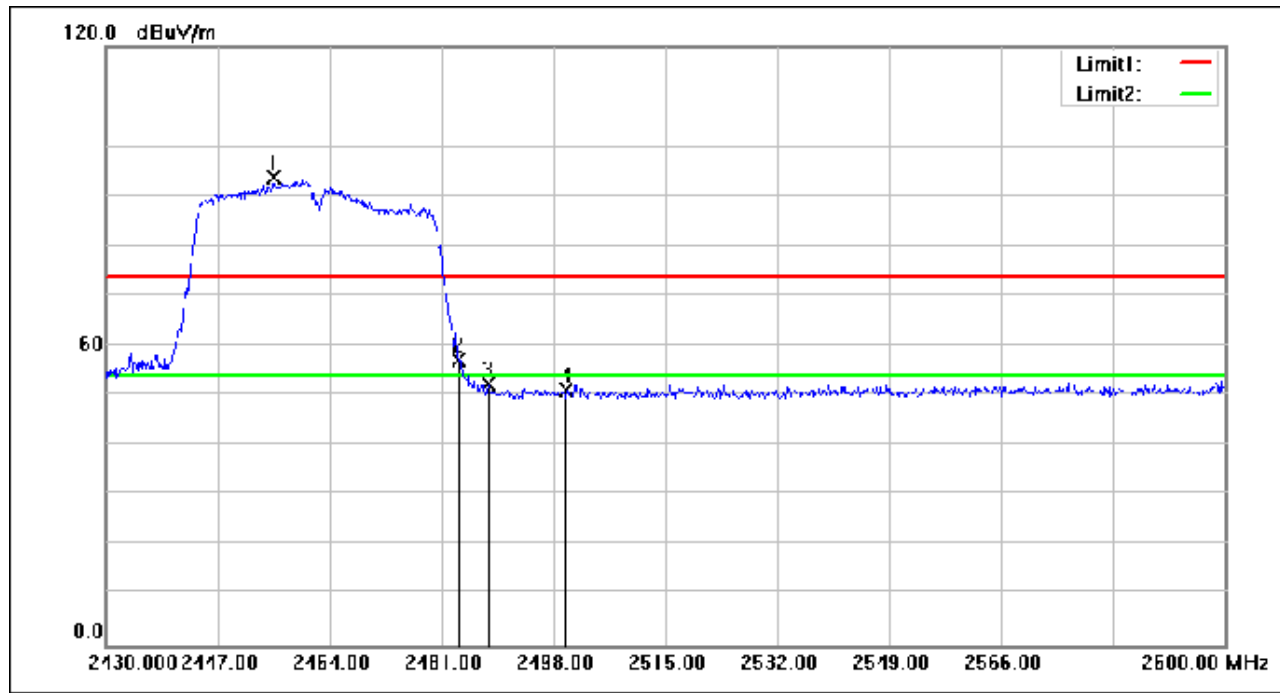
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 35 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2455.500	118.04	-24.40	93.64	74.00	19.64	peak
2	2483.500	81.48	-24.27	57.21	74.00	-16.79	peak
3	2488.140	76.74	-24.25	52.49	74.00	-21.51	peak
4	2500.000	75.31	-24.19	51.12	74.00	-22.88	peak

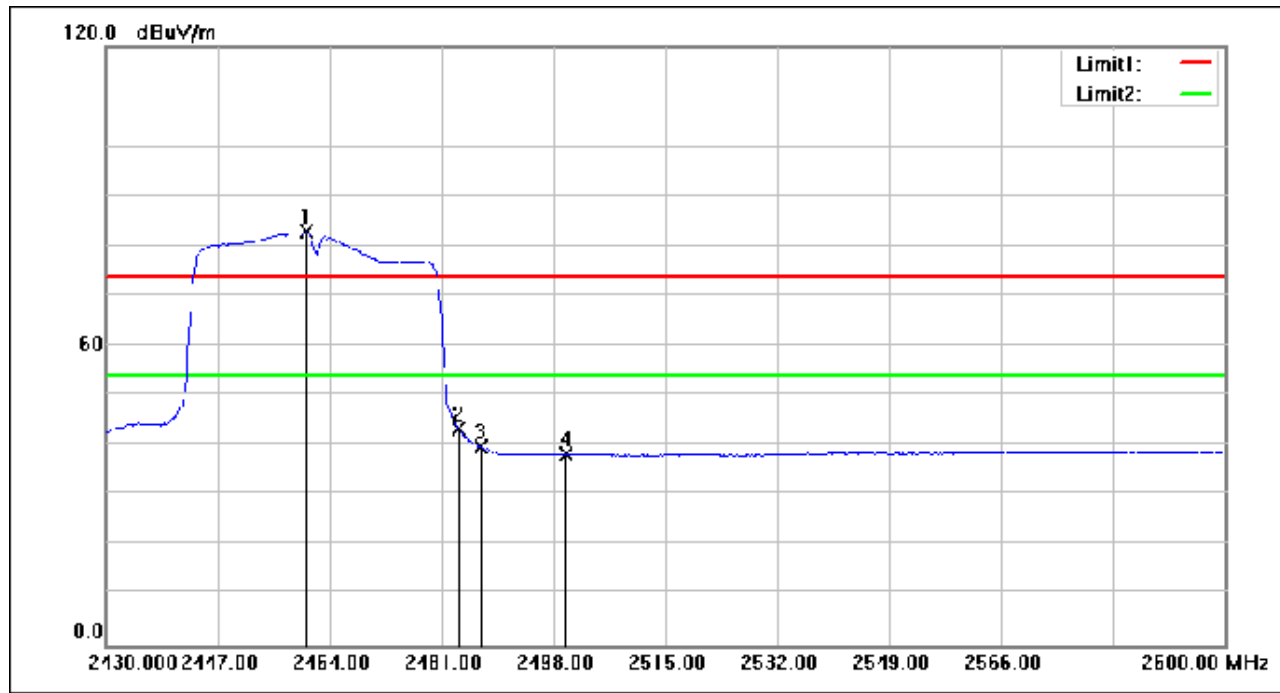
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 36 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.430	107.24	-24.38	82.86	54.00	28.86	AVG
2	2483.500	67.71	-24.27	43.44	54.00	-10.56	AVG
3	2486.950	64.02	-24.25	39.77	54.00	-14.23	AVG
4	2500.000	62.38	-24.19	38.19	54.00	-15.81	AVG

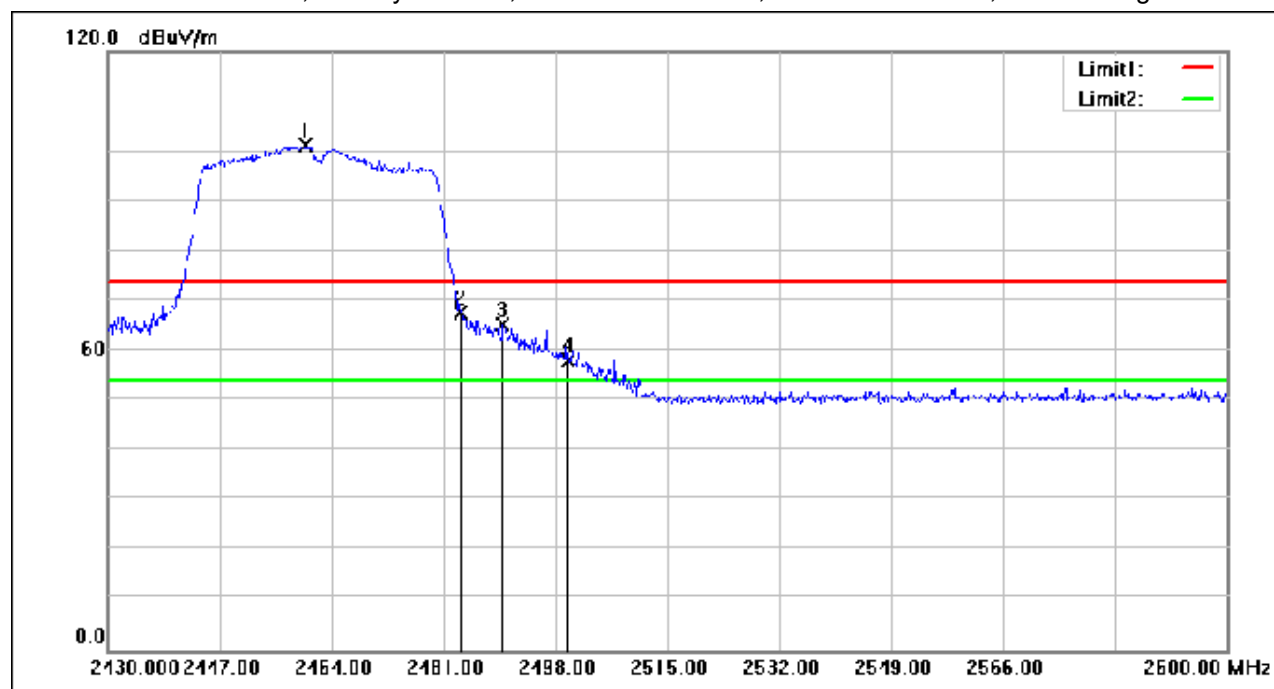
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 37 of 248

Test Mode: 00; Polarity: Vertical; Modulation: 802.11n; Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.090	125.49	-24.38	101.11	74.00	27.11	peak
2	2483.500	92.03	-24.27	67.76	74.00	-6.24	peak
3	2490.010	89.55	-24.24	65.31	74.00	-8.69	peak
4	2500.000	82.21	-24.19	58.02	74.00	-15.98	peak

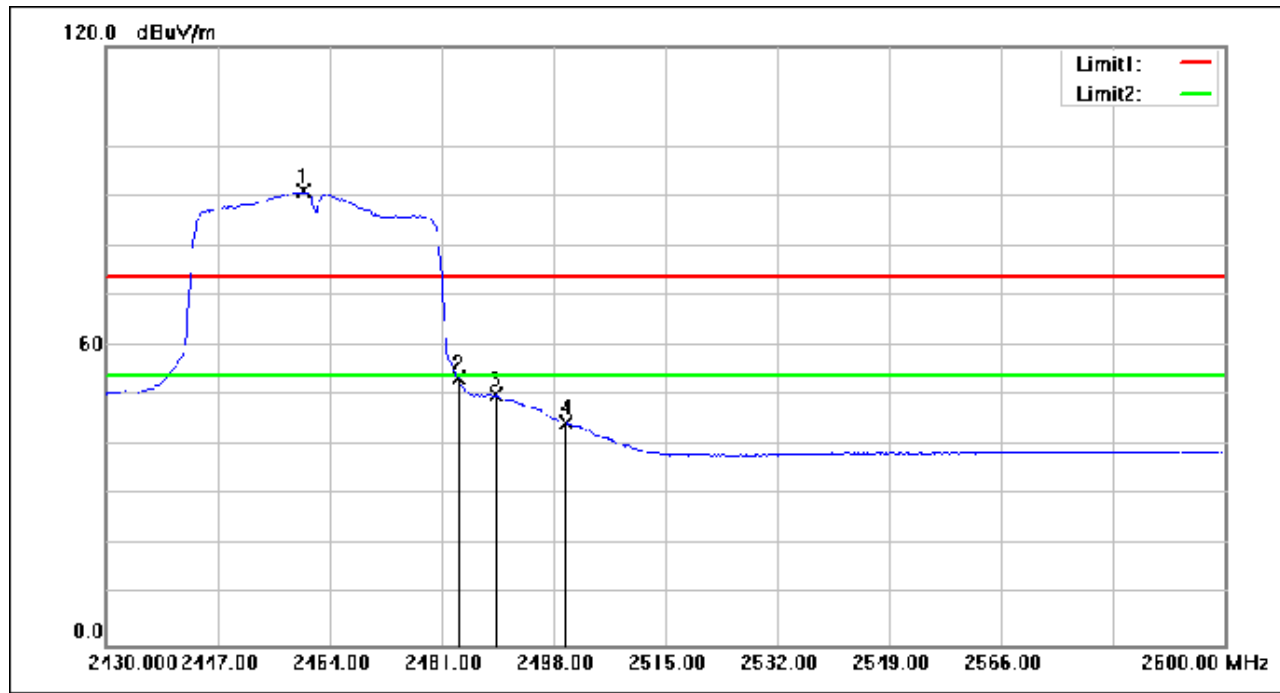
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 38 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.090	115.50	-24.38	91.12	54.00	37.12	AVG
2	2483.500	77.77	-24.27	53.50	54.00	-0.50	AVG
3	2489.160	74.44	-24.24	50.20	54.00	-3.80	AVG
4	2500.000	68.81	-24.19	44.62	54.00	-9.38	AVG

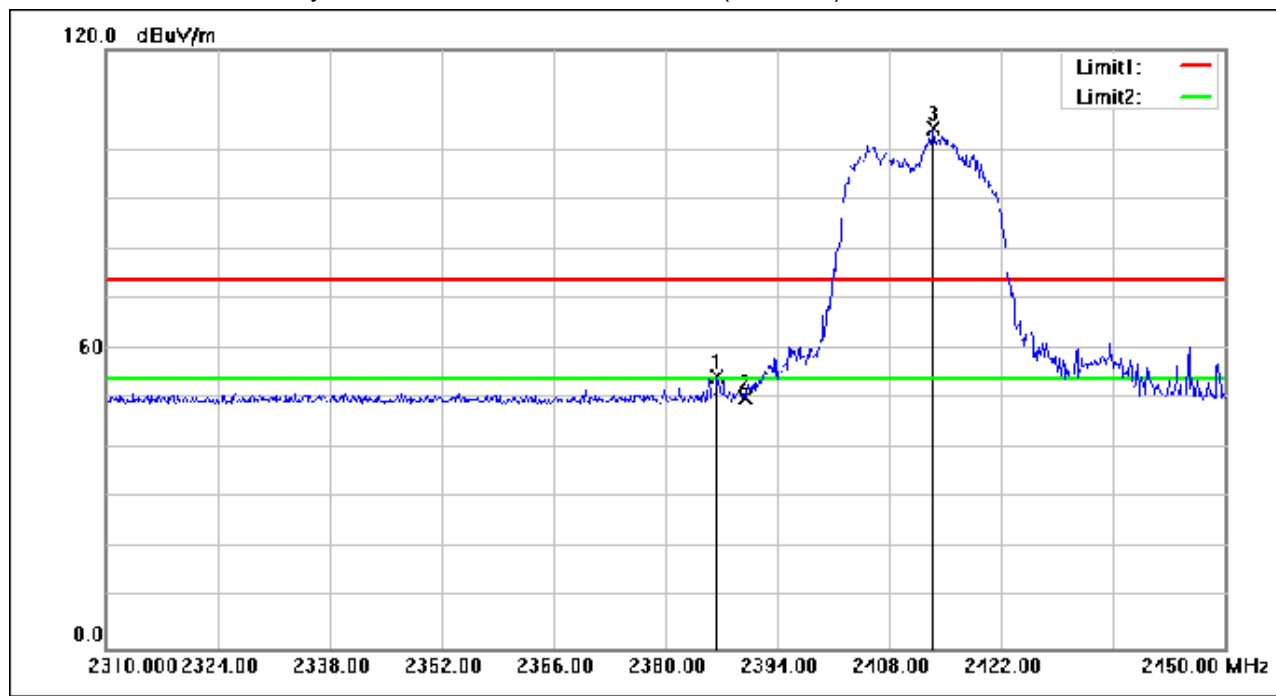
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 39 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.440	79.06	-24.72	54.34	74.00	-19.66	peak
2	2390.000	74.91	-24.71	50.20	74.00	-23.80	peak
3	2413.460	128.78	-24.60	104.18	74.00	30.18	peak

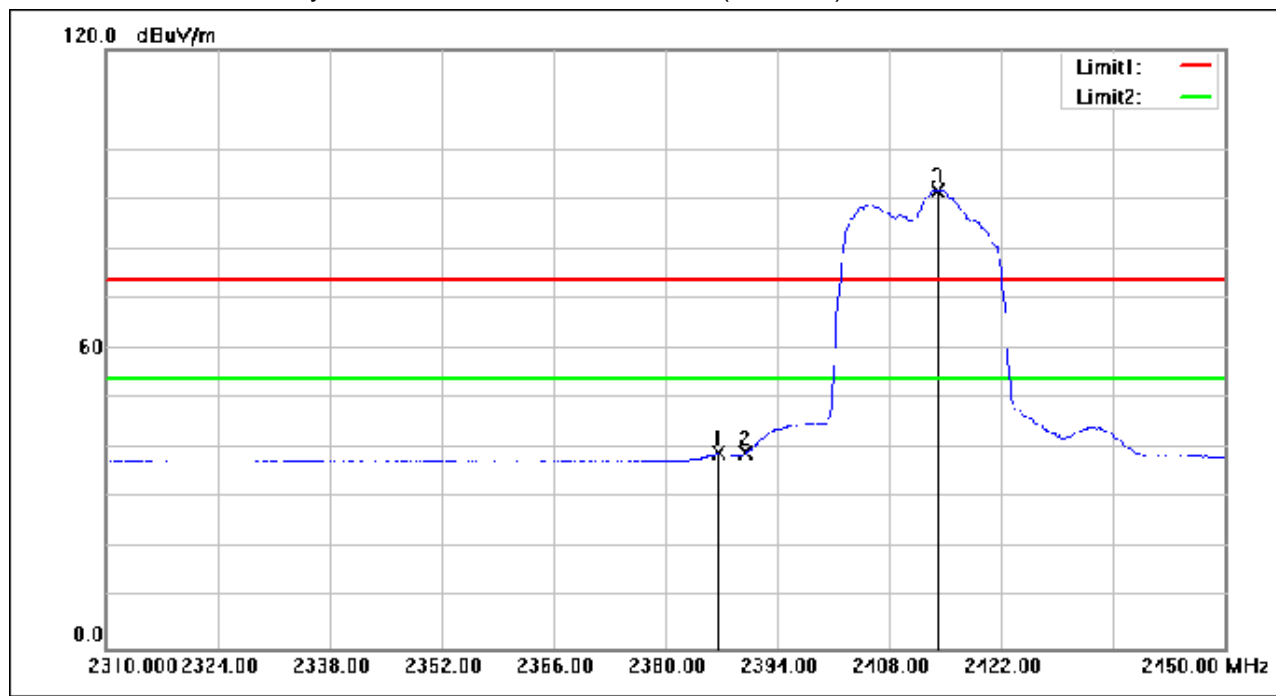
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 40 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.580	63.76	-24.72	39.04	54.00	-14.96	AVG
2	2390.000	63.78	-24.71	39.07	54.00	-14.93	AVG
3	2414.020	116.39	-24.59	91.80	54.00	37.80	AVG

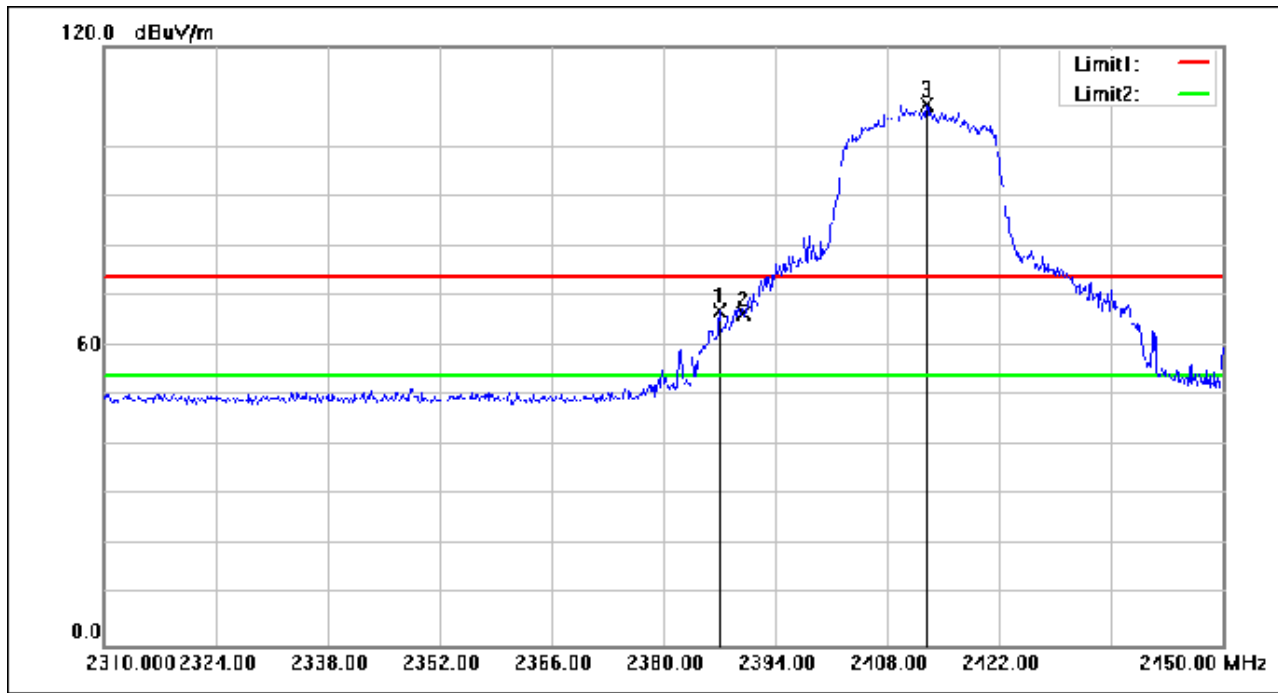
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 41 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.000	91.87	-24.72	67.15	74.00	-6.85	peak
2	2390.000	91.16	-24.71	66.45	74.00	-7.55	peak
3	2412.900	132.94	-24.60	108.34	74.00	34.34	peak

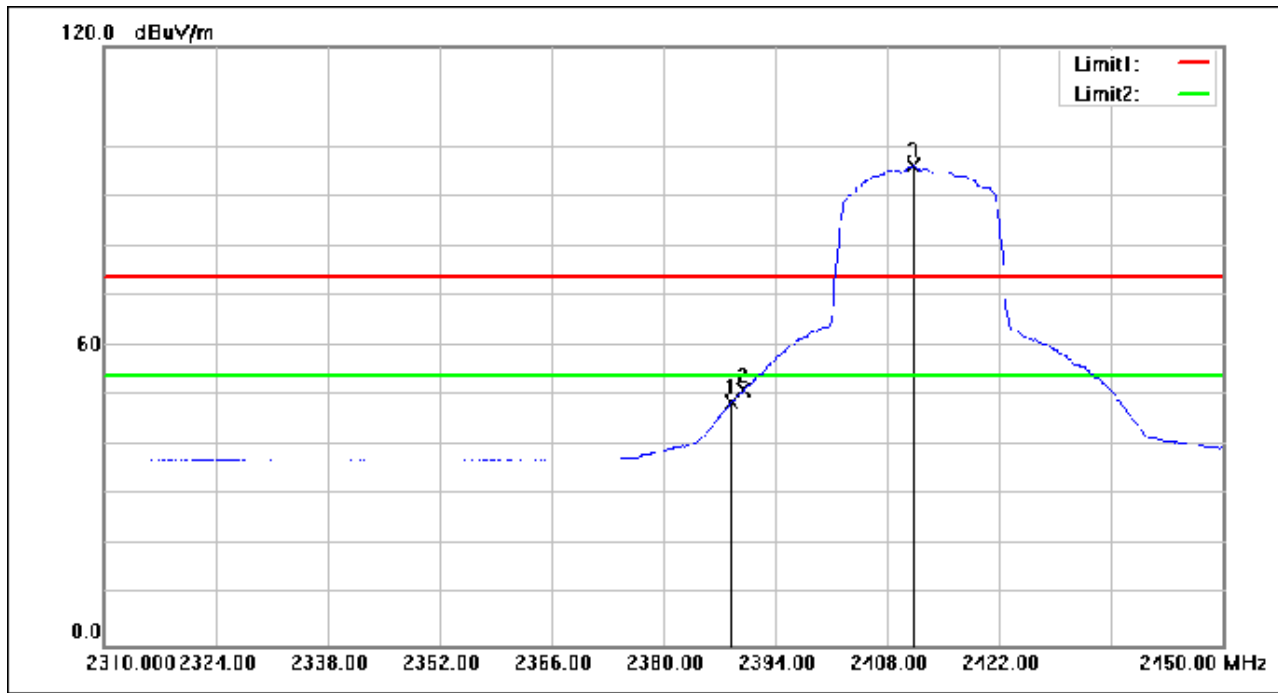
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 42 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.540	73.59	-24.71	48.88	54.00	-5.12	AVG
2	2390.000	75.89	-24.71	51.18	54.00	-2.82	AVG
3	2411.220	120.64	-24.60	96.04	54.00	42.04	AVG

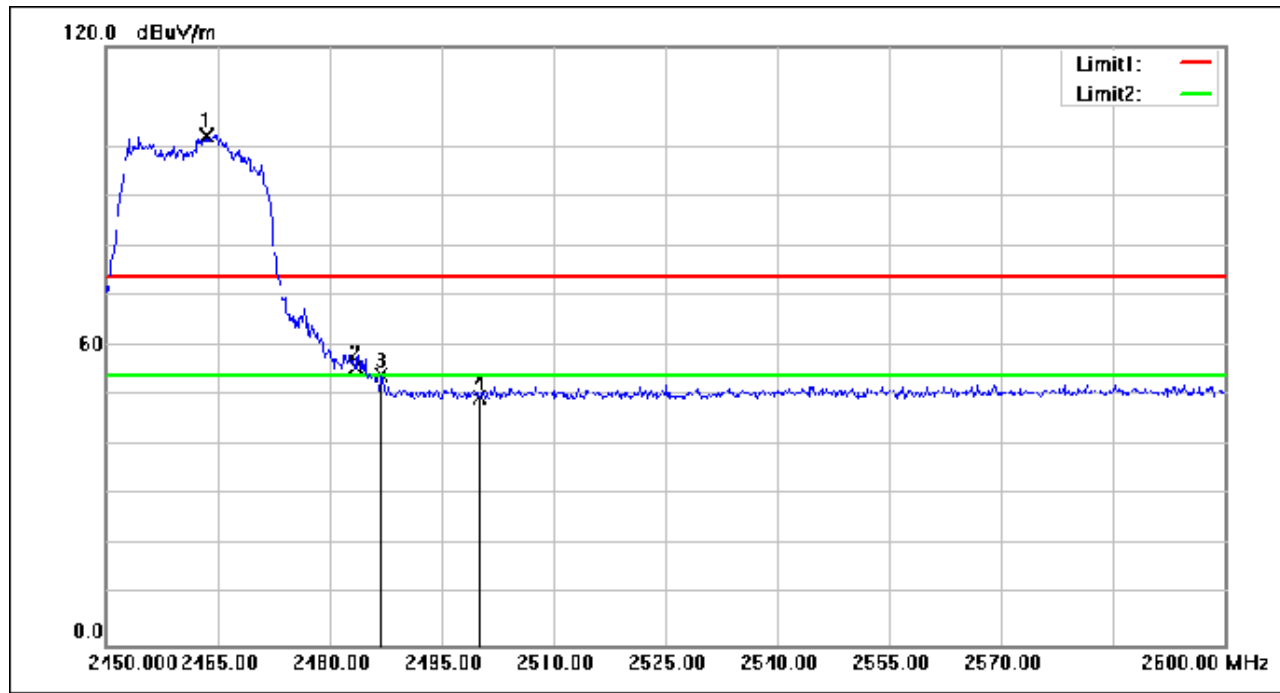
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 43 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.500	126.42	-24.37	102.05	74.00	28.05	peak
2	2483.500	80.04	-24.27	55.77	74.00	-18.23	peak
3	2486.900	78.29	-24.25	54.04	74.00	-19.96	peak
4	2500.000	73.91	-24.19	49.72	74.00	-24.28	peak

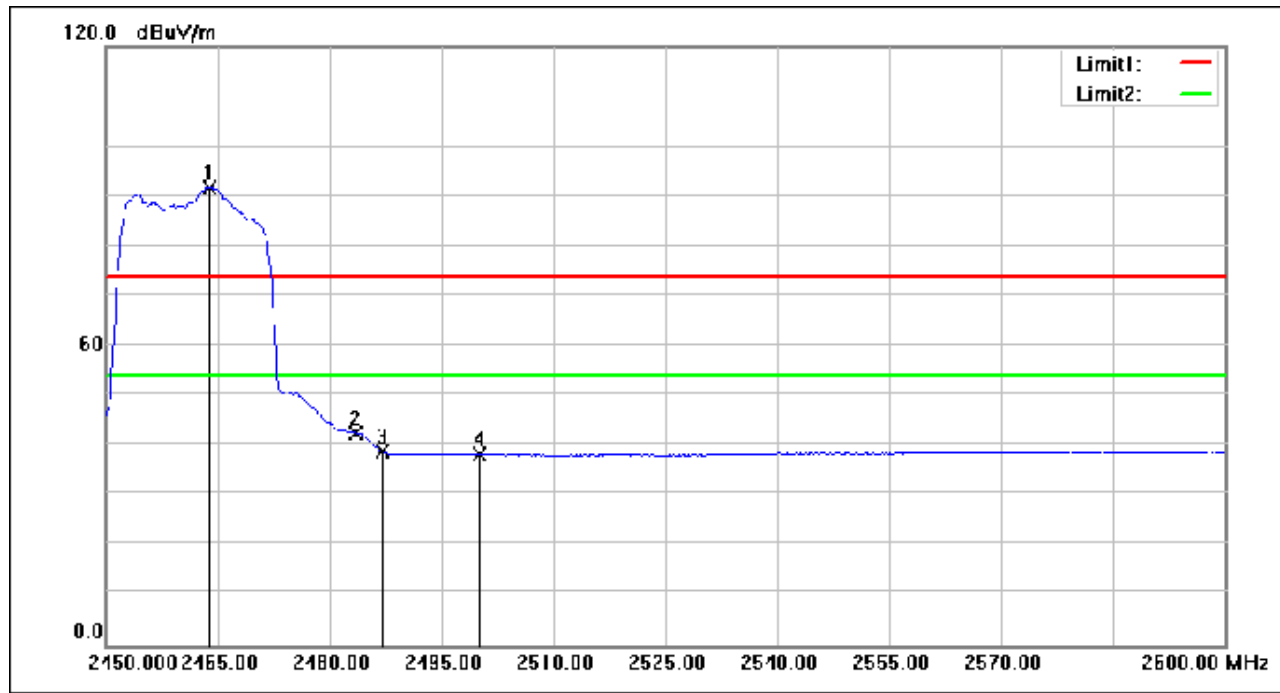
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 44 of 248

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.950	116.13	-24.36	91.77	54.00	37.77	AVG
2	2483.500	66.71	-24.27	42.44	54.00	-11.56	AVG
3	2487.050	63.04	-24.25	38.79	54.00	-15.21	AVG
4	2500.000	62.50	-24.19	38.31	54.00	-15.69	AVG

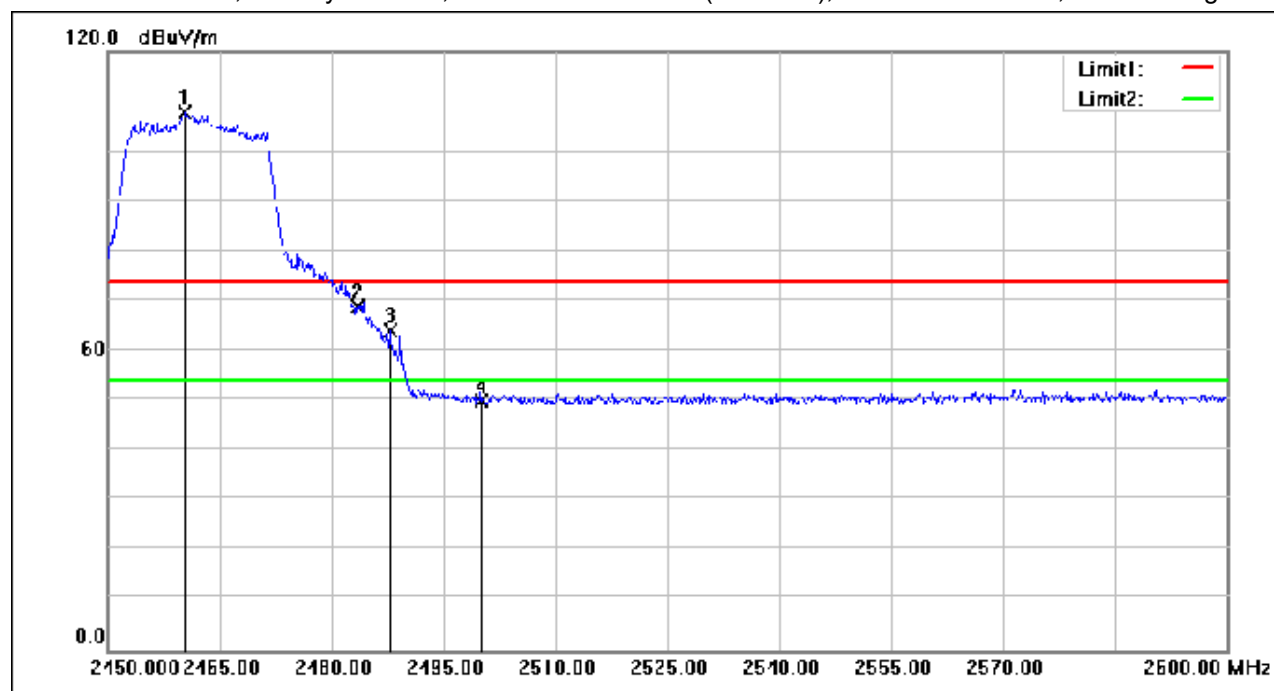
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 45 of 248

Test Mode: 00; Polarity: Vertical; Modulation: 802.11ax(Full RU0); Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.350	132.19	-24.38	107.81	74.00	33.81	peak
2	2483.500	93.25	-24.27	68.98	74.00	-5.02	peak
3	2487.800	88.19	-24.25	63.94	74.00	-10.06	peak
4	2500.000	74.28	-24.19	50.09	74.00	-23.91	peak

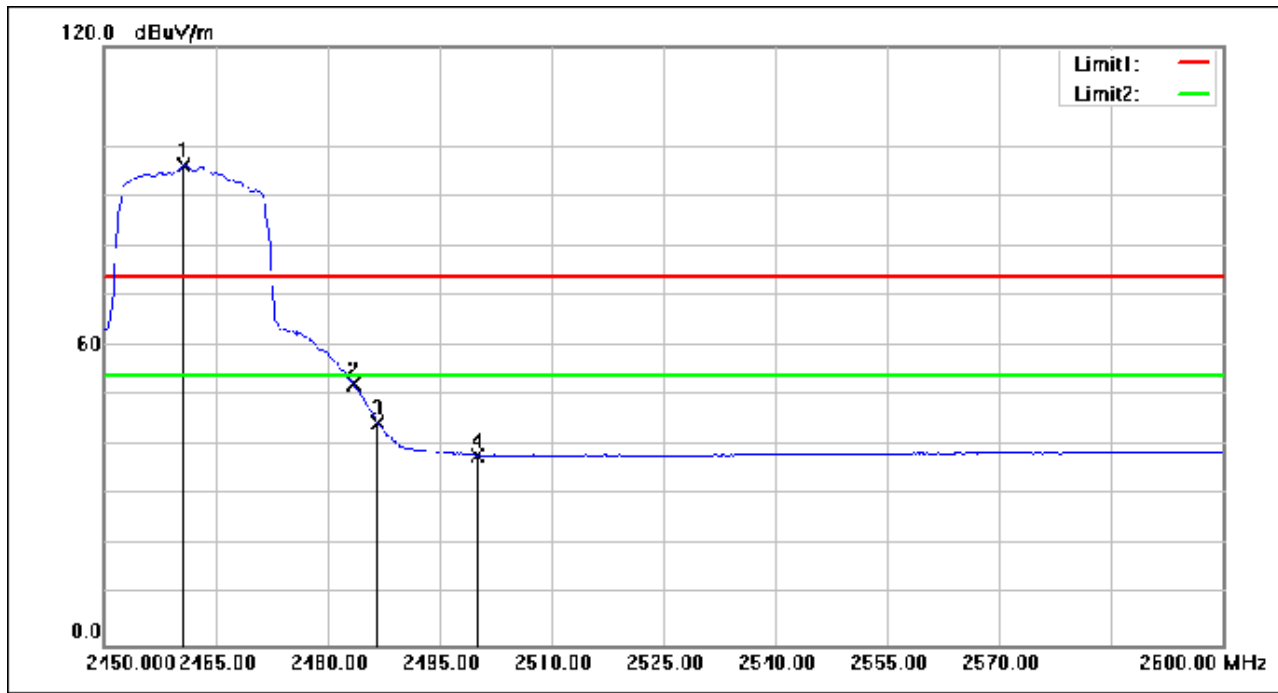
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 46 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.650	120.48	-24.38	96.10	54.00	42.10	AVG
2	2483.500	76.51	-24.27	52.24	54.00	-1.76	AVG
3	2486.750	68.91	-24.25	44.66	54.00	-9.34	AVG
4	2500.000	62.22	-24.19	38.03	54.00	-15.97	AVG

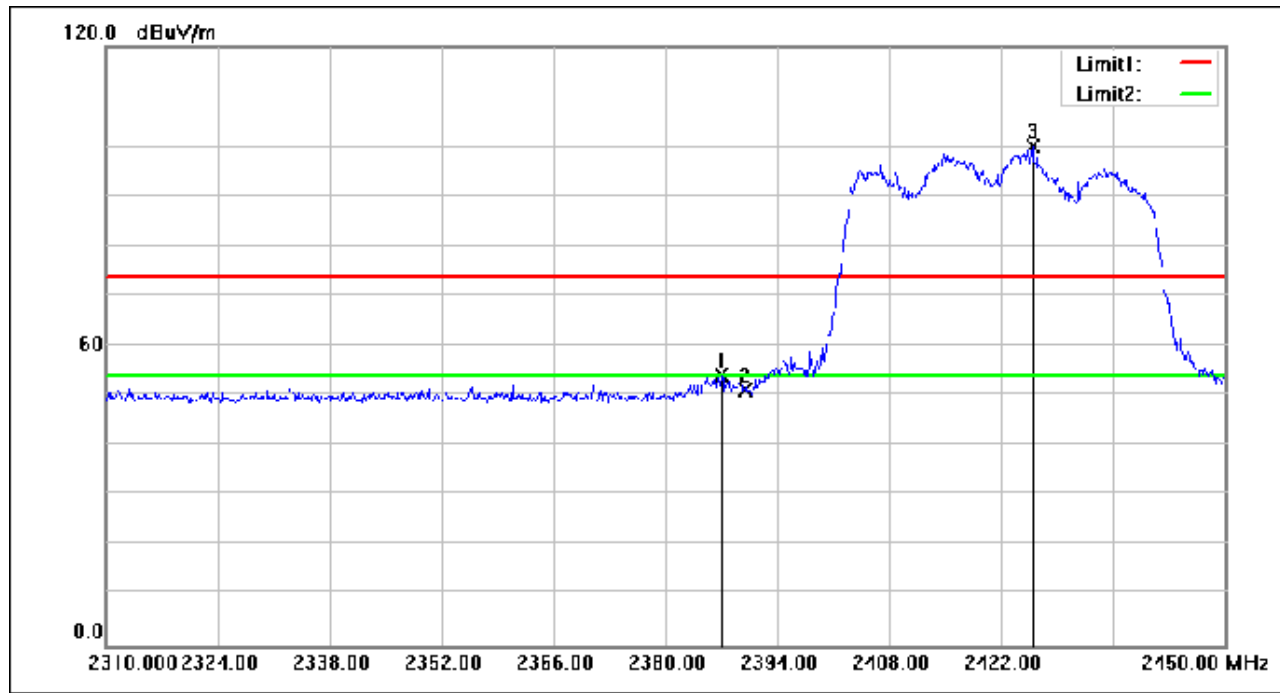
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 47 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.000	78.88	-24.72	54.16	74.00	-19.84	peak
2	2390.000	75.96	-24.71	51.25	74.00	-22.75	peak
3	2425.920	124.50	-24.54	99.96	74.00	25.96	peak

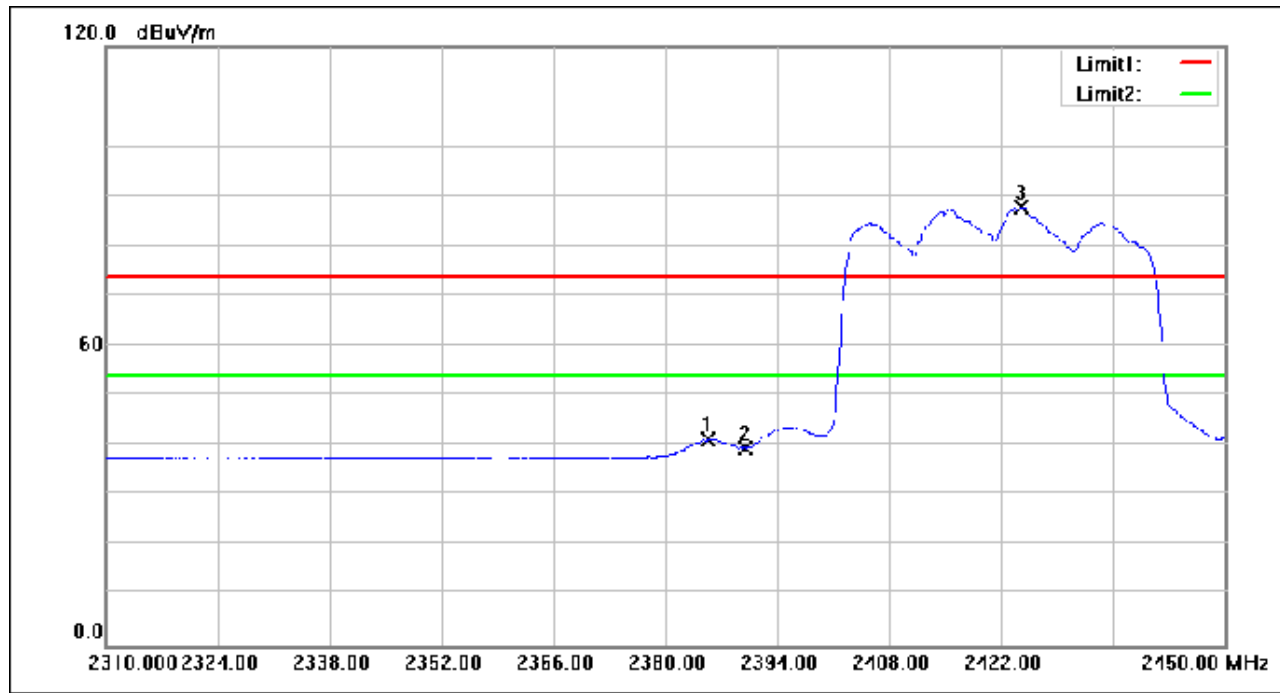
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 48 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.320	66.11	-24.73	41.38	54.00	-12.62	AVG
2	2390.000	64.25	-24.71	39.54	54.00	-14.46	AVG
3	2424.520	112.40	-24.54	87.86	54.00	33.86	AVG

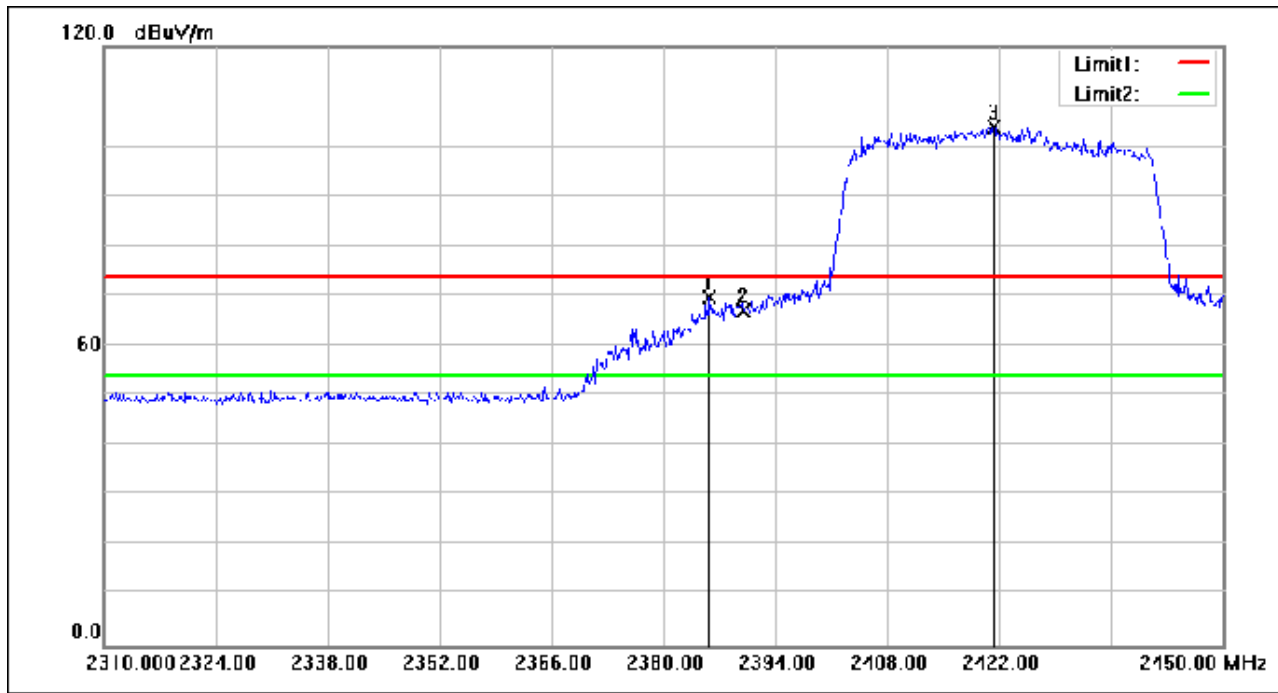
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 49 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.740	94.41	-24.73	69.68	74.00	-4.32	peak
2	2390.000	91.90	-24.71	67.19	74.00	-6.81	peak
3	2421.300	128.64	-24.56	104.08	74.00	30.08	peak

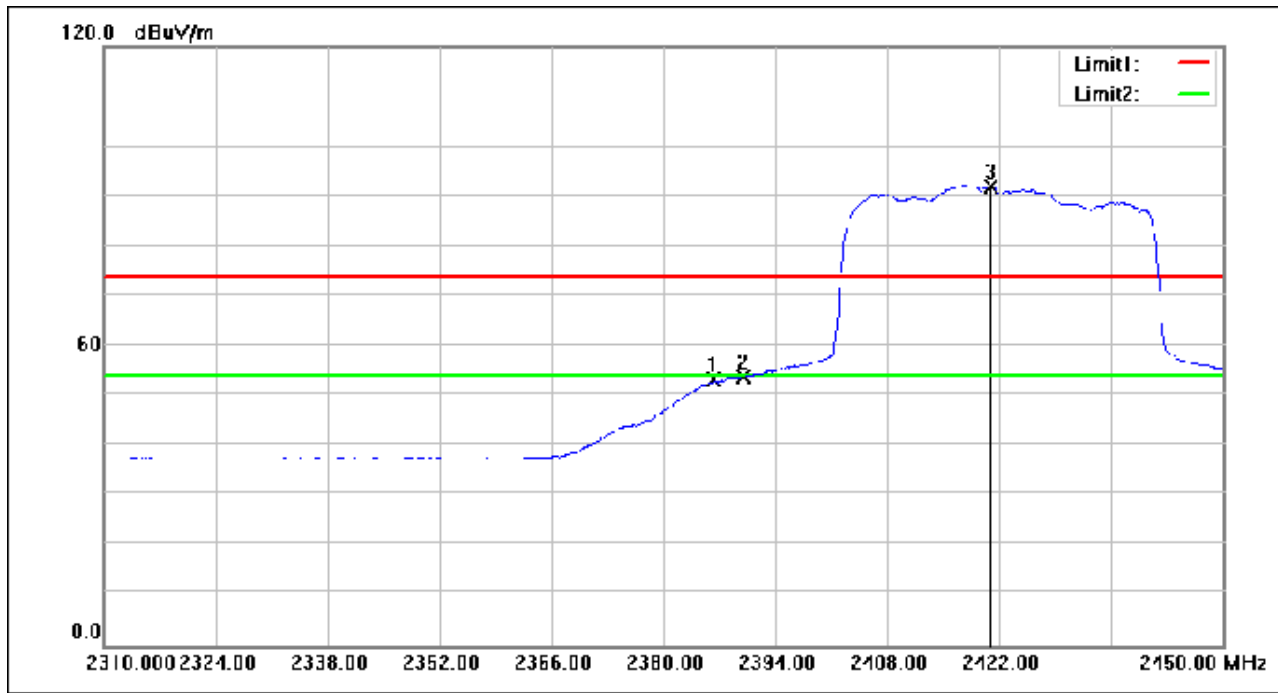
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 50 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:40MHz



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.300	77.86	-24.72	53.14	54.00	-0.86	AVG
2	2390.000	78.41	-24.71	53.70	54.00	-0.30	AVG
3	2421.020	116.55	-24.57	91.98	54.00	37.98	AVG

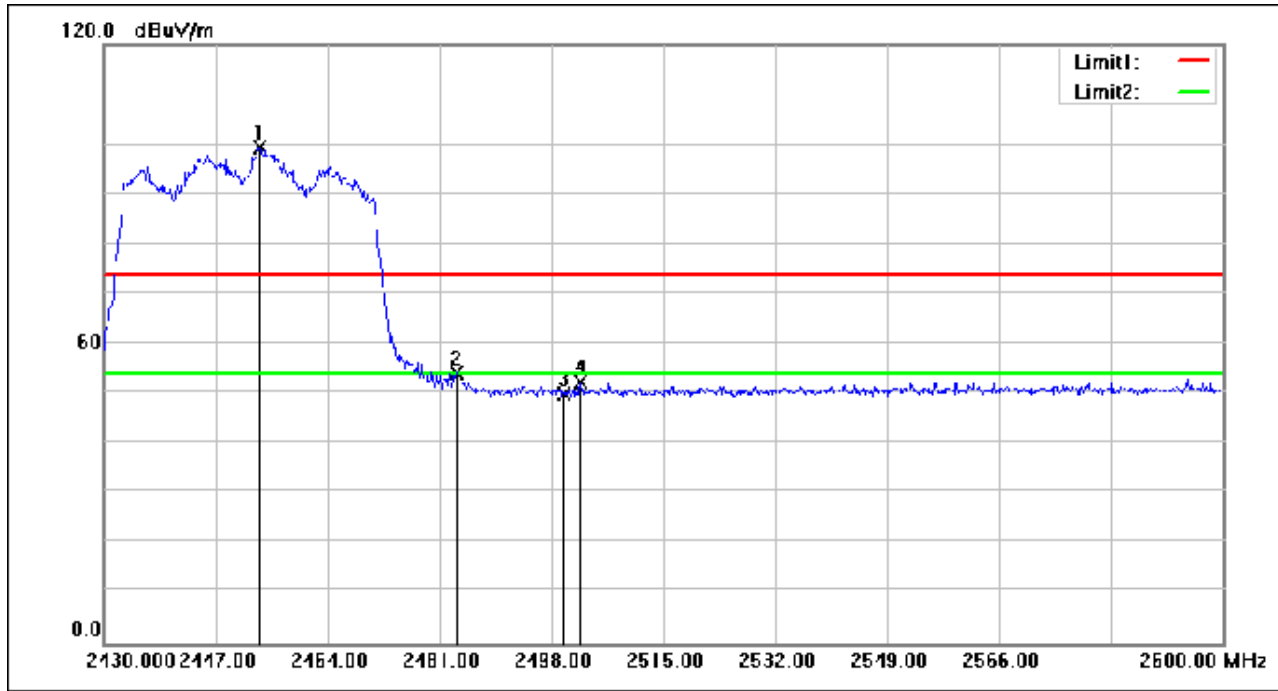
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 51 of 248

Test Mode: 00; Polarity: Horizontal; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2453.630	123.85	-24.41	99.44	74.00	25.44	peak
2	2483.500	78.57	-24.27	54.30	74.00	-19.70	peak
3	2500.000	74.21	-24.19	50.02	74.00	-23.98	peak
4	2502.420	76.57	-24.18	52.39	74.00	-21.61	peak

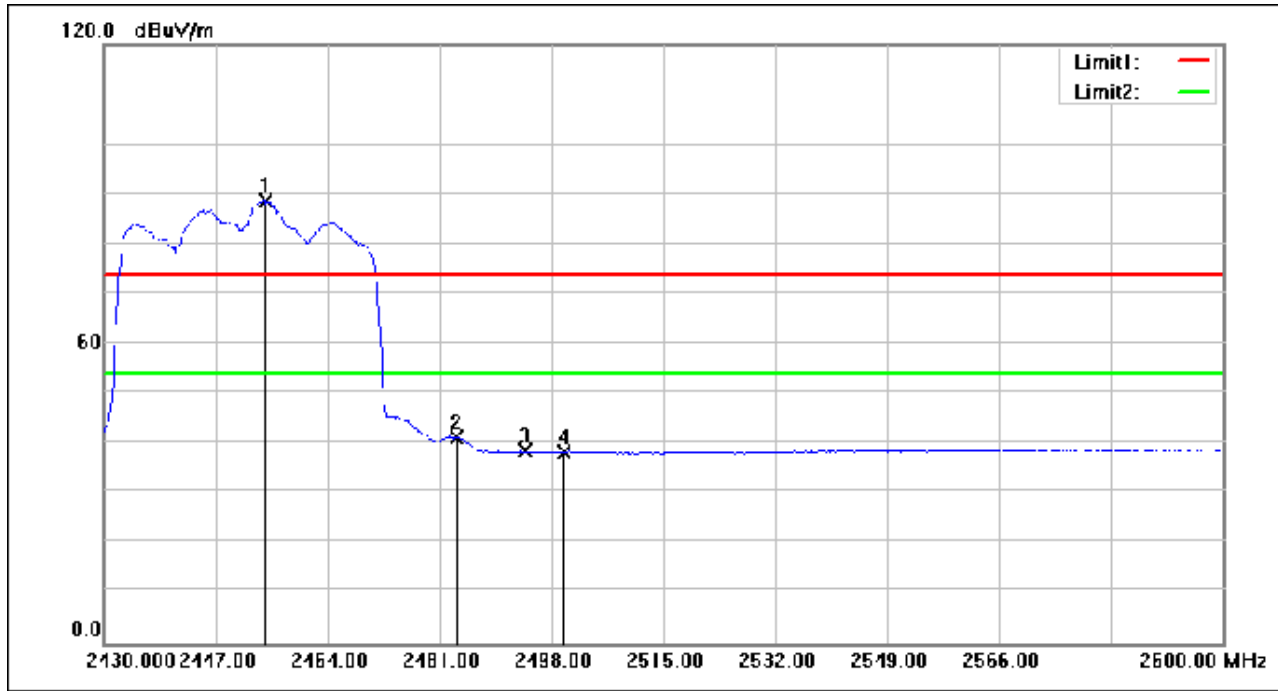
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 52 of 248

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2454.480	112.93	-24.40	88.53	54.00	34.53	AVG
2	2483.500	65.38	-24.27	41.11	54.00	-12.89	AVG
3	2493.920	62.67	-24.21	38.46	54.00	-15.54	AVG
4	2500.000	62.45	-24.19	38.26	54.00	-15.74	AVG

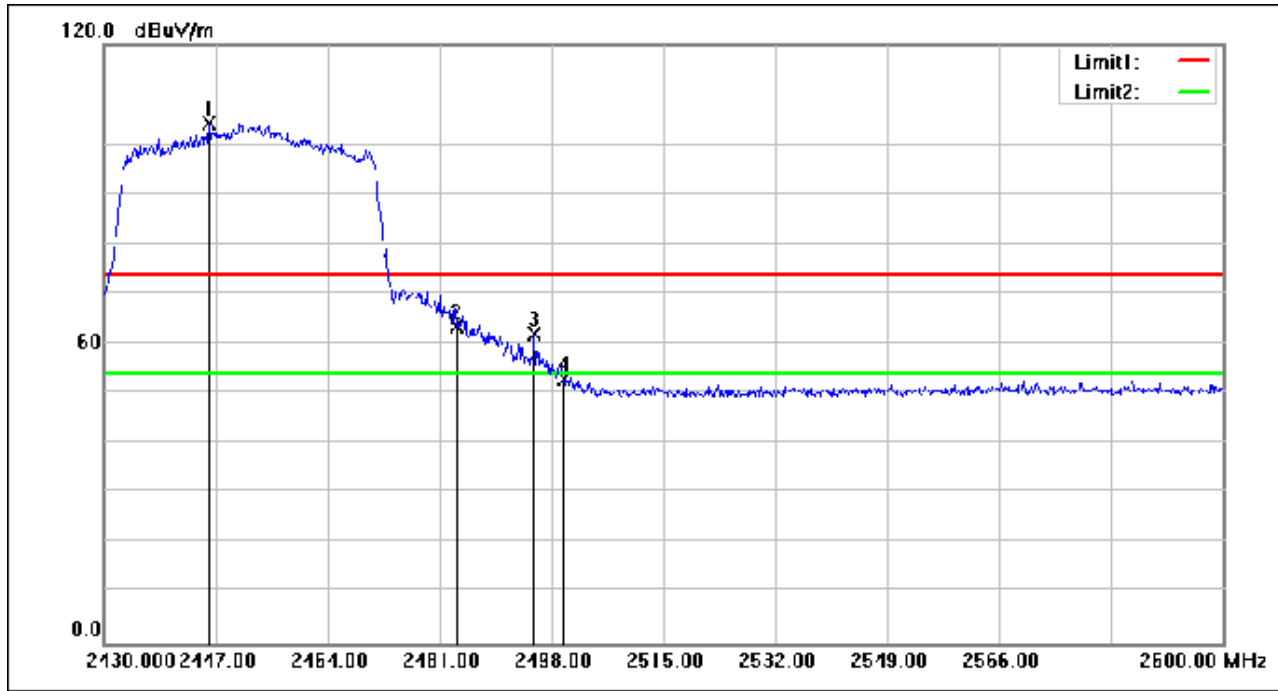
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 53 of 248

Test Mode: 00; Polarity: Vertical; Modulation: 802.11ax(Full RU0); Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2445.980	128.83	-24.45	104.38	74.00	30.38	peak
2	2483.500	87.66	-24.27	63.39	74.00	-10.61	peak
3	2495.450	86.06	-24.21	61.85	74.00	-12.15	peak
4	2500.000	77.16	-24.19	52.97	74.00	-21.03	peak

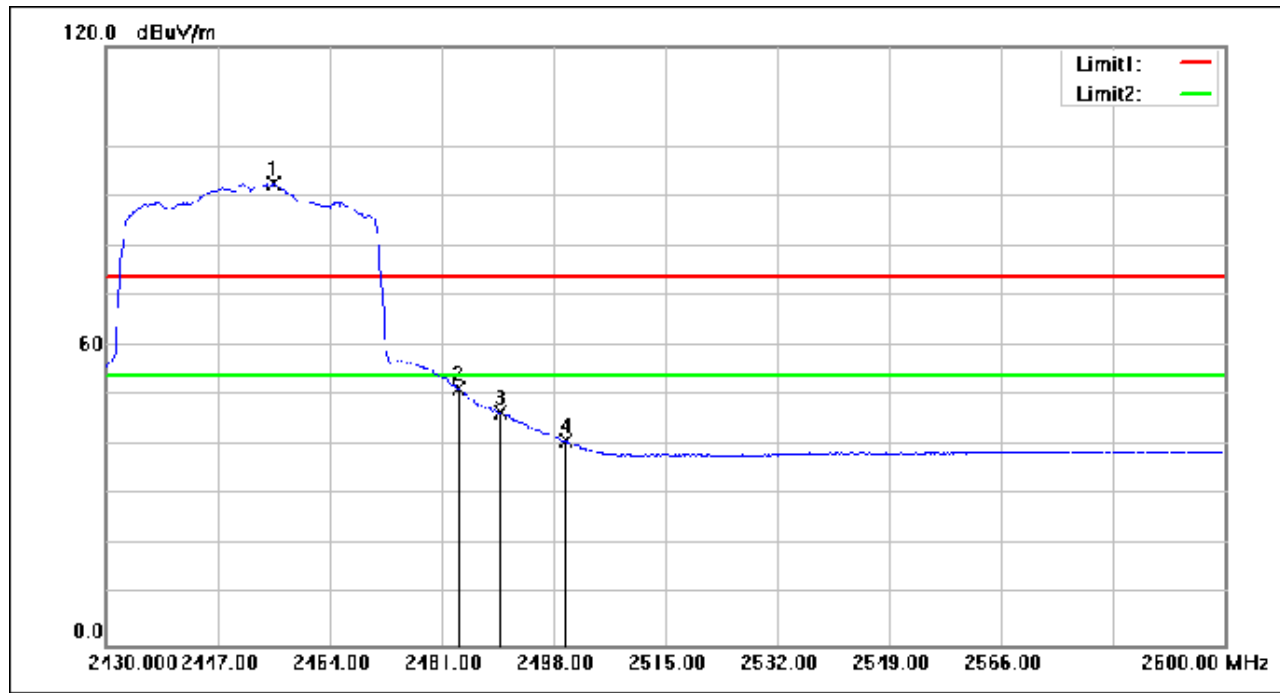
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

Page: 54 of 248

Test Mode: 00; Polarity: Vertical; Modulation:802.11ax(Full RU0); Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2455.500	117.03	-24.40	92.63	54.00	38.63	AVG
2	2483.500	75.66	-24.27	51.39	54.00	-2.61	AVG
3	2490.010	70.79	-24.24	46.55	54.00	-7.45	AVG
4	2500.000	65.03	-24.19	40.84	54.00	-13.16	AVG

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: 22.3 °C

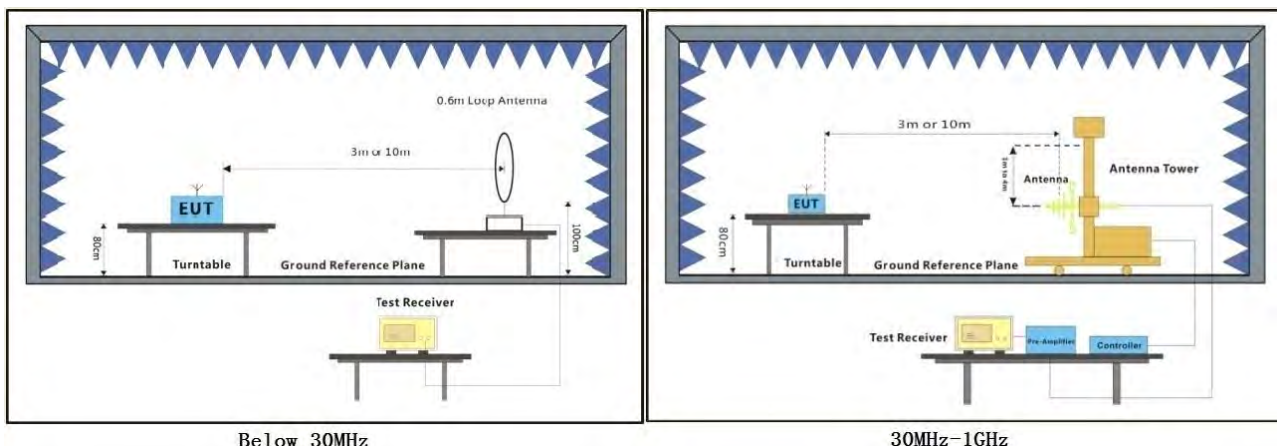
Humidity: 54.1 % RH

Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). 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.
3. This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 1 operation for b/g modulation and MiMO antenna operation for n modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.

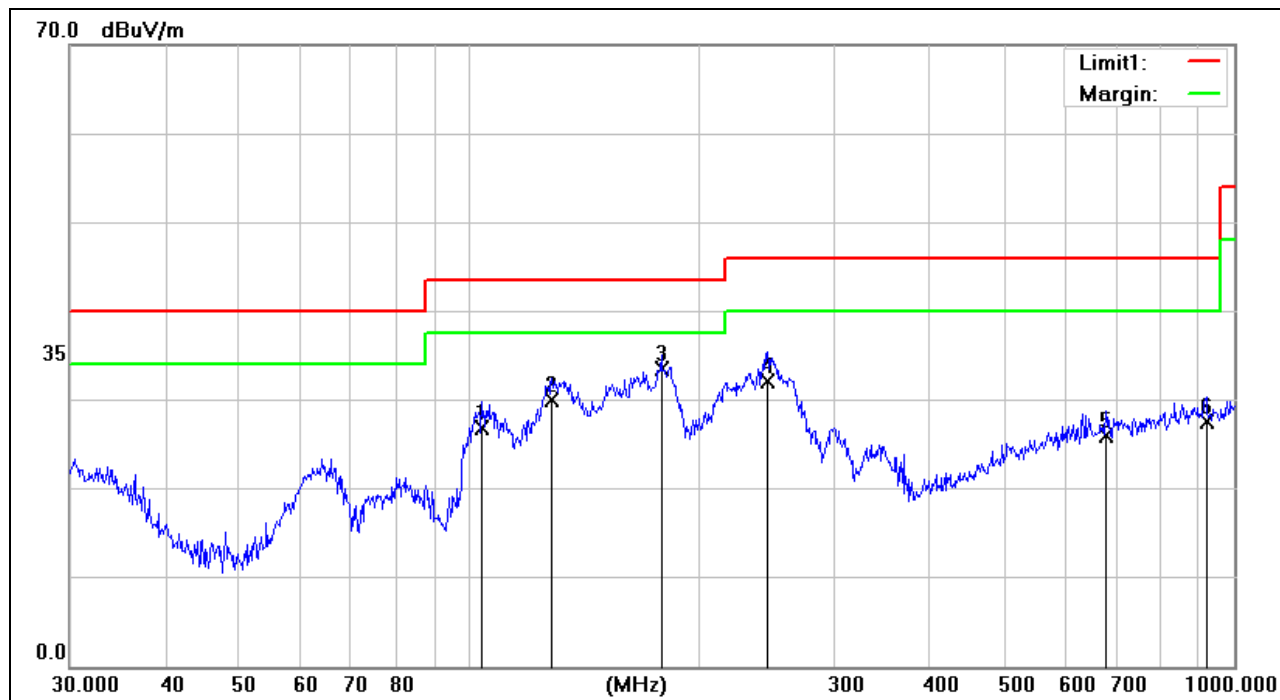
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 57 of 248

Test Mode: 00; 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	103.8055	13.91	12.93	26.84	43.50	-16.66	100	67	QP
2	128.1130	15.61	14.45	30.06	43.50	-13.44	100	84	QP
3	178.1327	21.55	11.96	33.51	43.50	-9.99	100	6	QP
4	245.0900	18.38	13.68	32.06	46.00	-13.94	100	270	QP
5	679.9600	1.88	24.08	25.96	46.00	-20.04	200	108	QP
6	919.2866	2.03	25.48	27.51	46.00	-18.49	100	261	QP

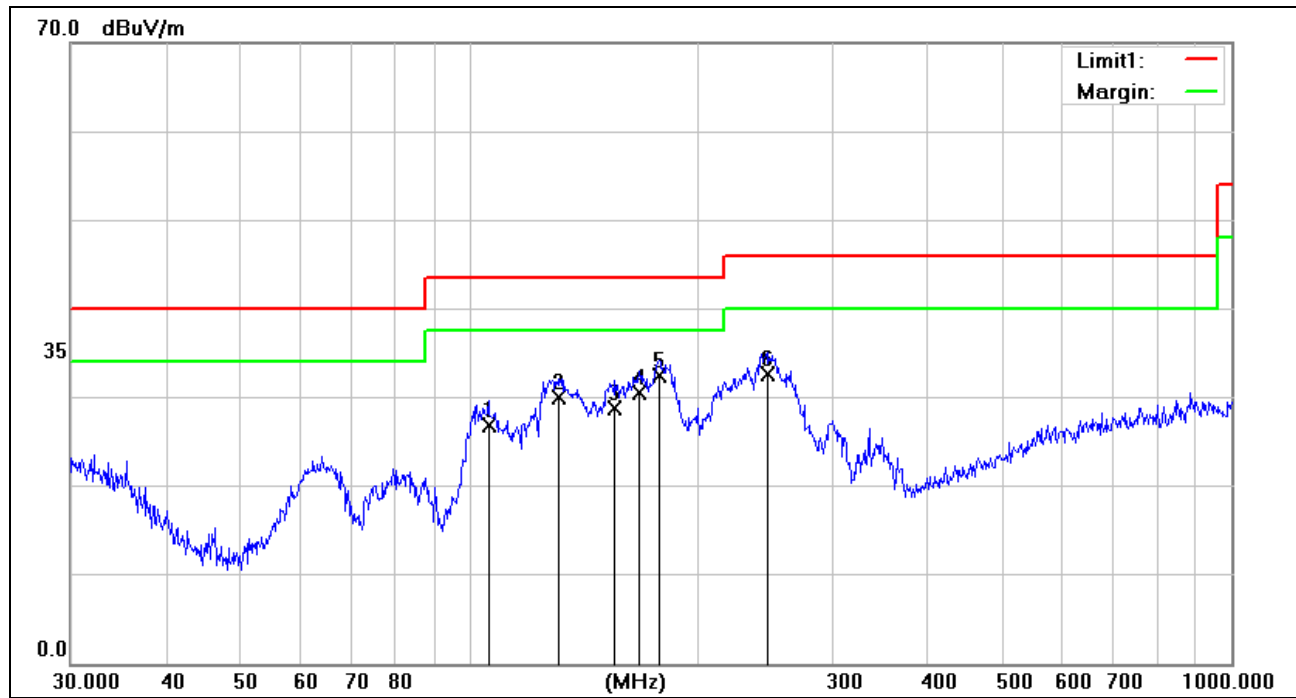
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 58 of 248

Test Mode: 00; 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	106.0126	13.51	13.38	26.89	43.50	-16.61	100	99	QP
2	131.2965	15.41	14.65	30.06	43.50	-13.44	100	80	QP
3	155.3644	17.16	11.68	28.84	43.50	-14.66	100	109	QP
4	167.2368	19.34	11.20	30.54	43.50	-12.96	200	99	QP
5	177.5092	20.16	12.25	32.41	43.50	-11.09	100	30	QP
6	245.9509	18.97	13.63	32.60	46.00	-13.40	100	255	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: 21.7 °C

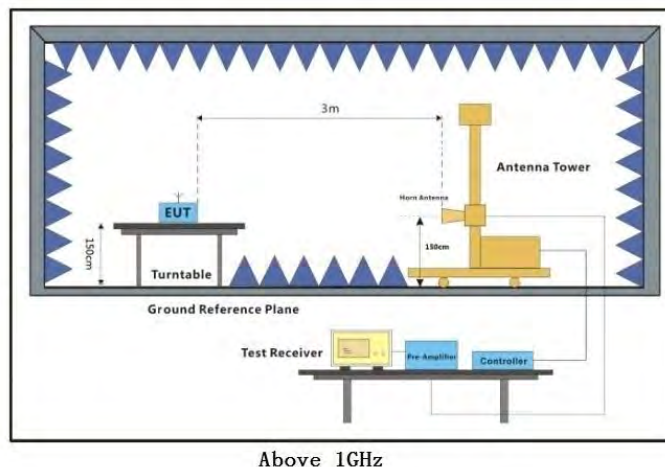
Humidity: 54.6 % RH

Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). 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.
4. This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 1 operation for b/g modulation and MiMO antenna operation for n modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.

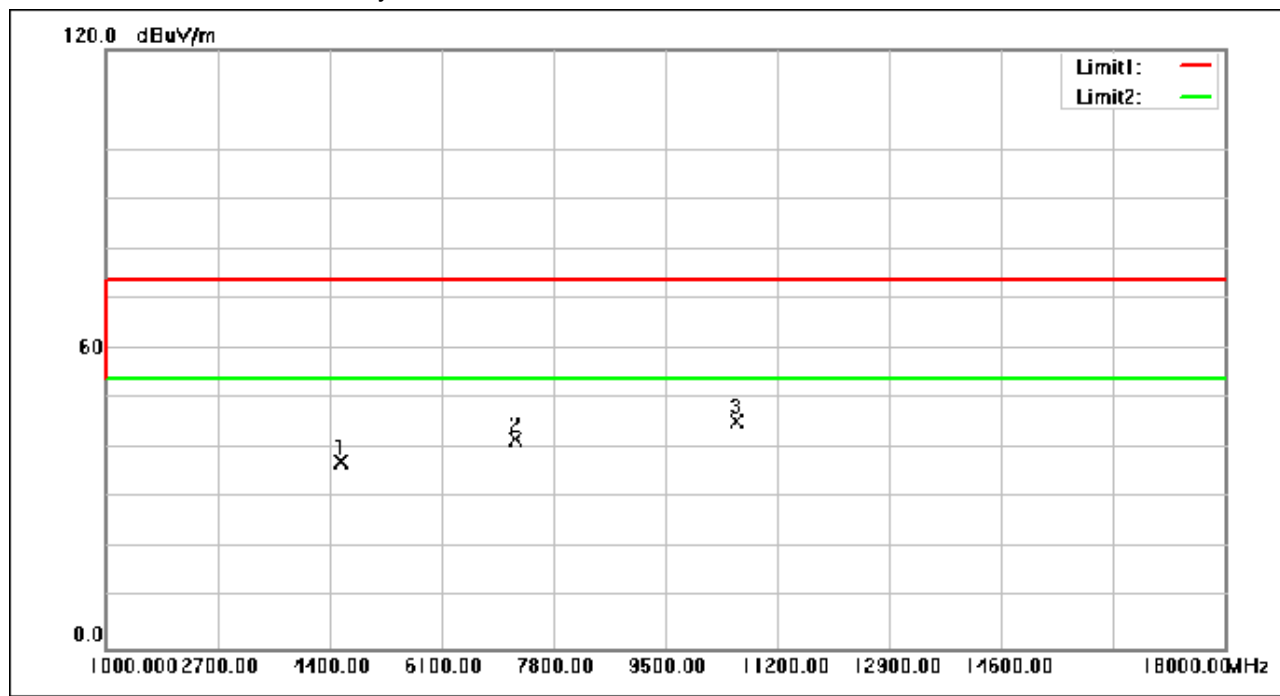
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 61 of 248

Test Mode: 00; 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	4575.440	56.12	-18.75	37.37	74.00	-36.63	peak
2	7226.760	53.47	-11.47	42.00	74.00	-32.00	peak
3	10579.160	52.50	-6.99	45.51	74.00	-28.49	peak

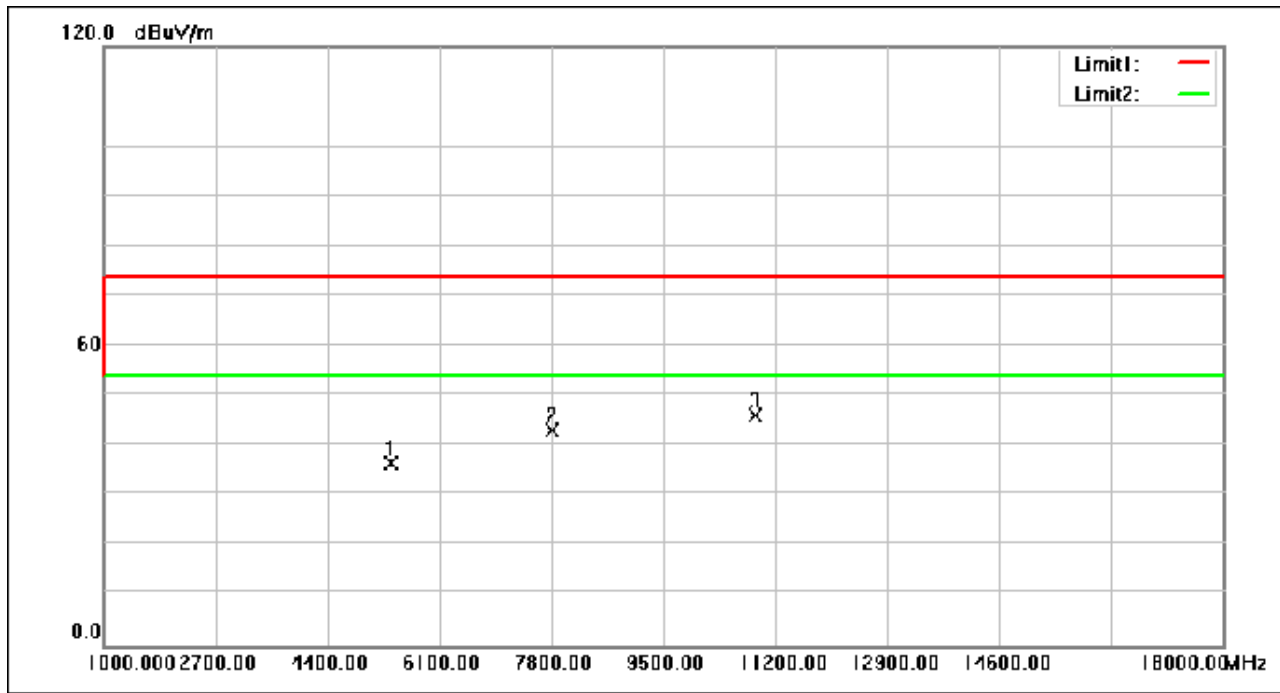
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 62 of 248

Test Mode: 00; 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	5385.320	54.27	-17.87	36.40	74.00	-37.60	peak
2	7823.120	53.86	-10.83	43.03	74.00	-30.97	peak
3	10900.800	52.93	-6.81	46.12	74.00	-27.88	peak

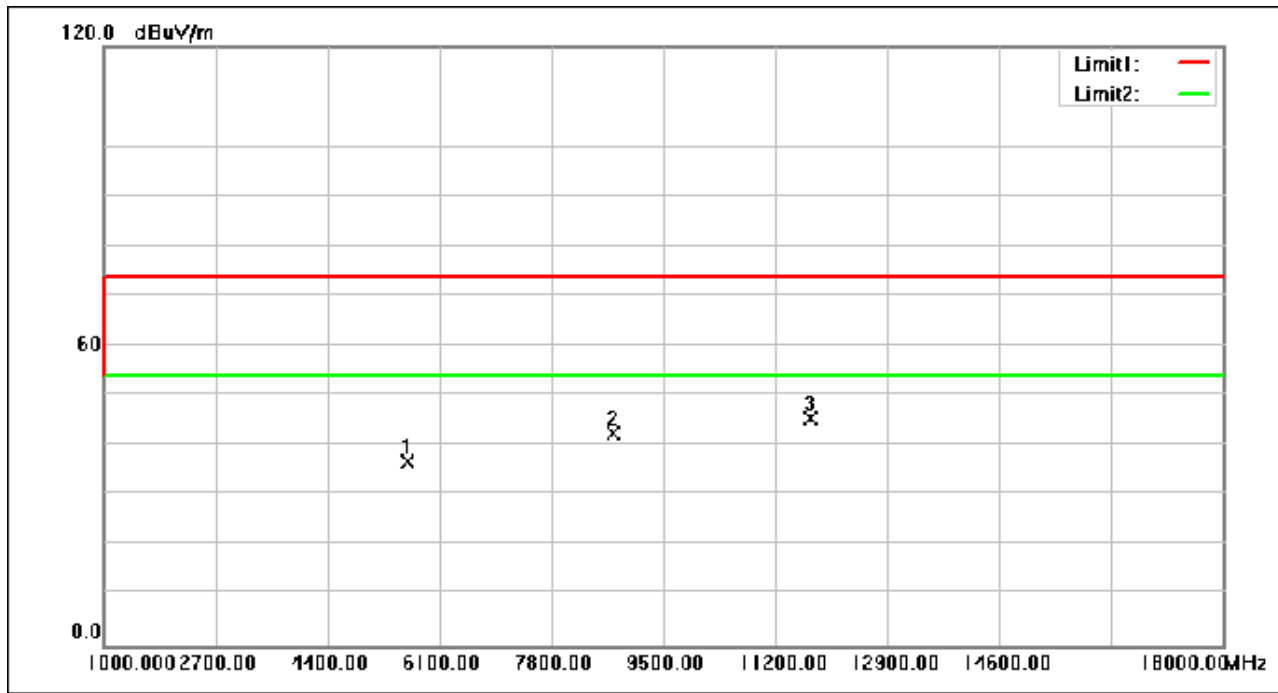
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 63 of 248

Test Mode: 00; 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	5611.080	54.22	-17.39	36.83	74.00	-37.17	peak
2	8735.680	51.93	-9.37	42.56	74.00	-31.44	peak
3	11740.600	51.68	-6.17	45.51	74.00	-28.49	peak

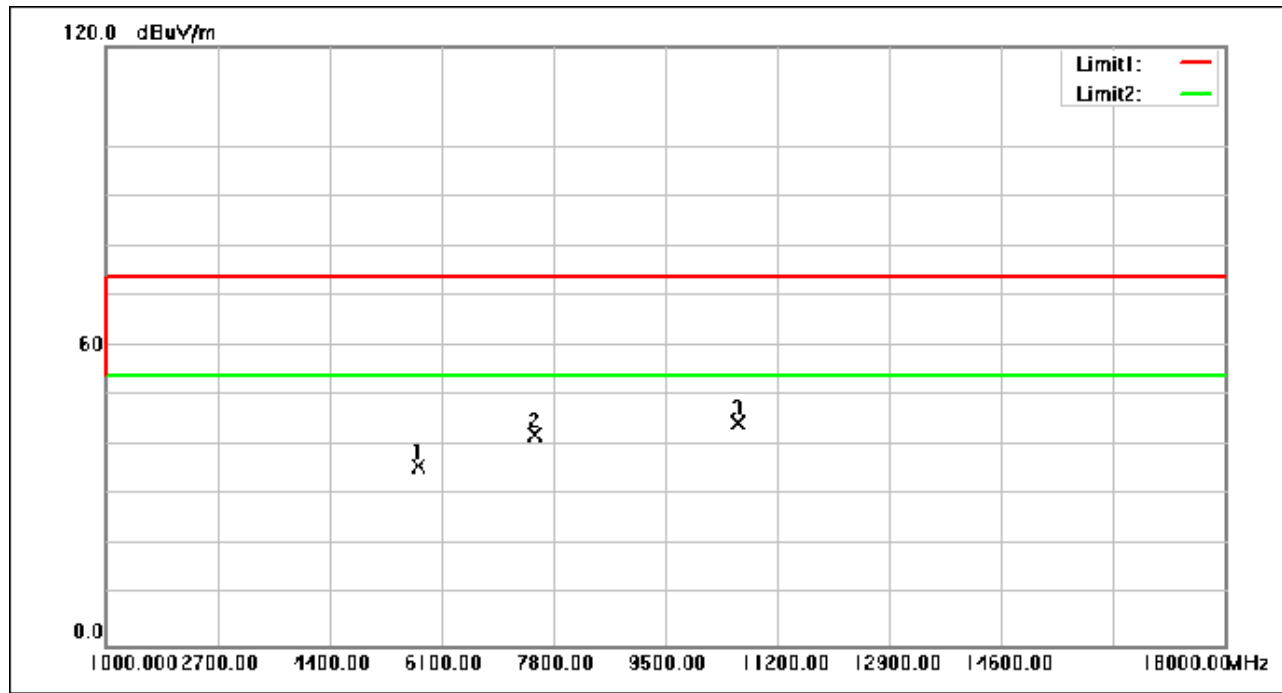
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 64 of 248

Test Mode: 00; 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	5745.720	52.75	-16.84	35.91	74.00	-38.09	peak
2	7525.280	53.24	-11.23	42.01	74.00	-31.99	peak
3	10588.680	51.67	-6.99	44.68	74.00	-29.32	peak

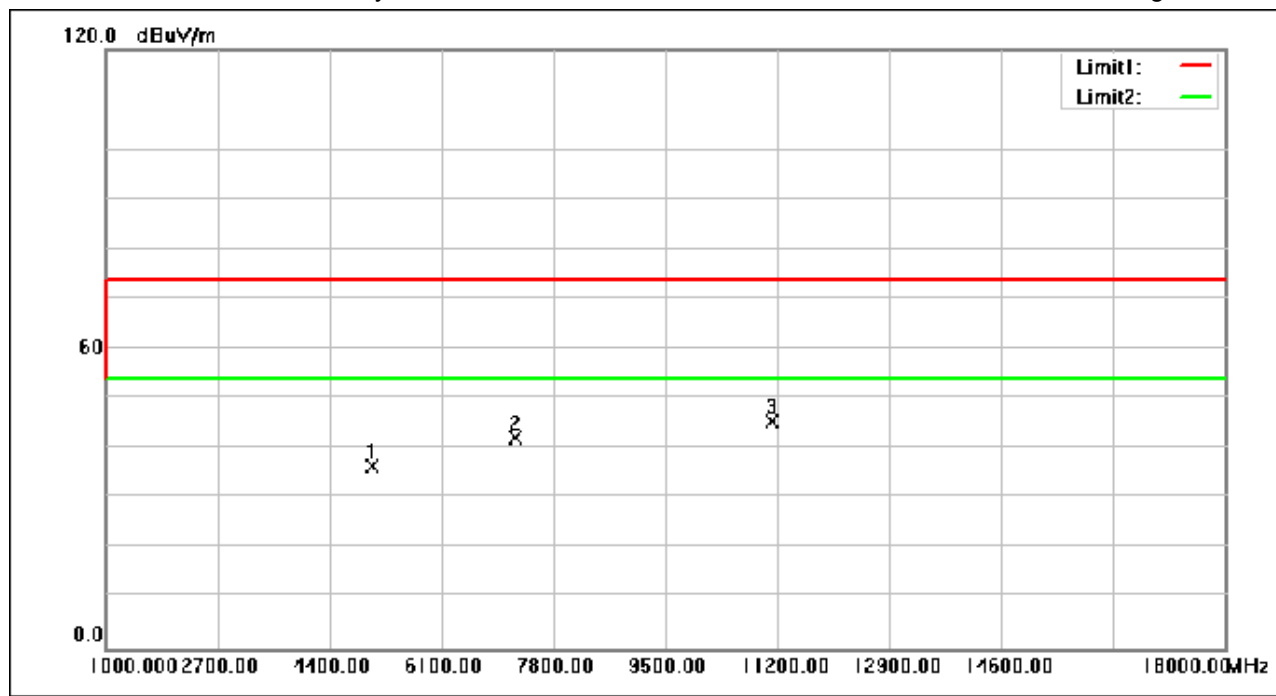
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 65 of 248

Test Mode: 00; 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	5047.360	54.85	-18.37	36.48	74.00	-37.52	peak
2	7232.880	53.59	-11.47	42.12	74.00	-31.88	peak
3	11128.600	52.22	-6.66	45.56	74.00	-28.44	peak

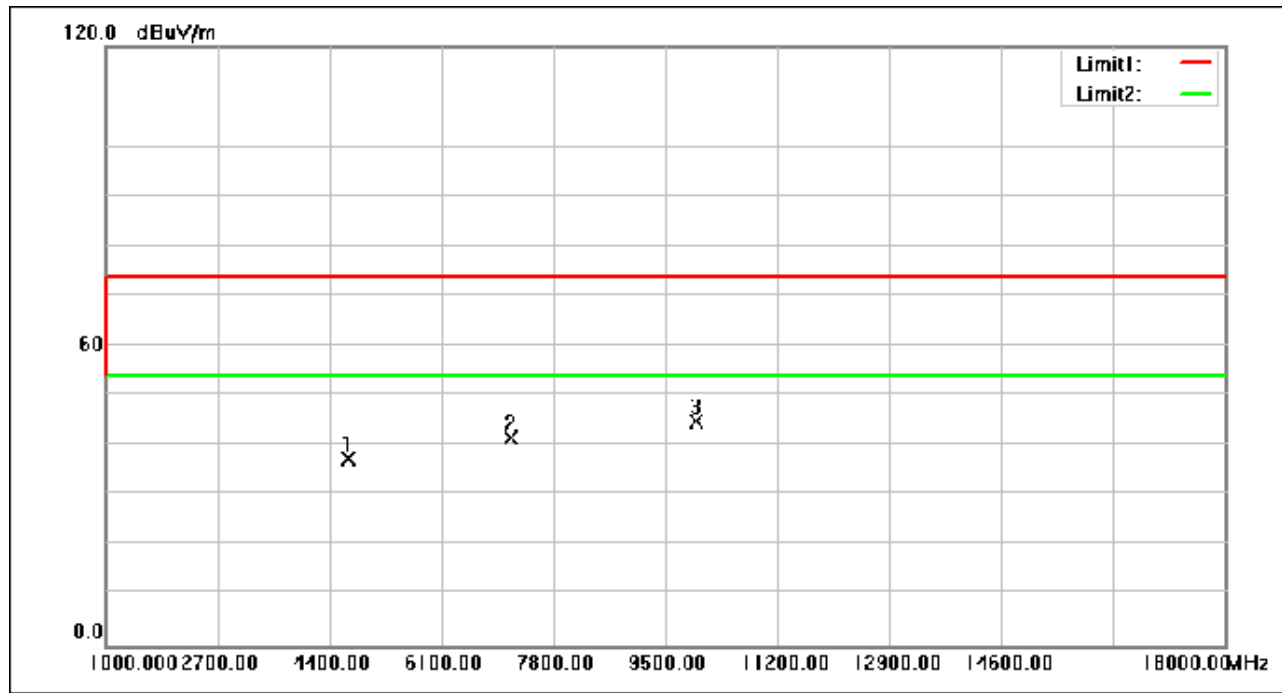
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 66 of 248

Test Mode: 00; 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	4684.920	55.84	-18.63	37.21	74.00	-36.79	peak
2	7161.480	52.96	-11.49	41.47	74.00	-32.53	peak
3	9959.680	52.20	-7.32	44.88	74.00	-29.12	peak

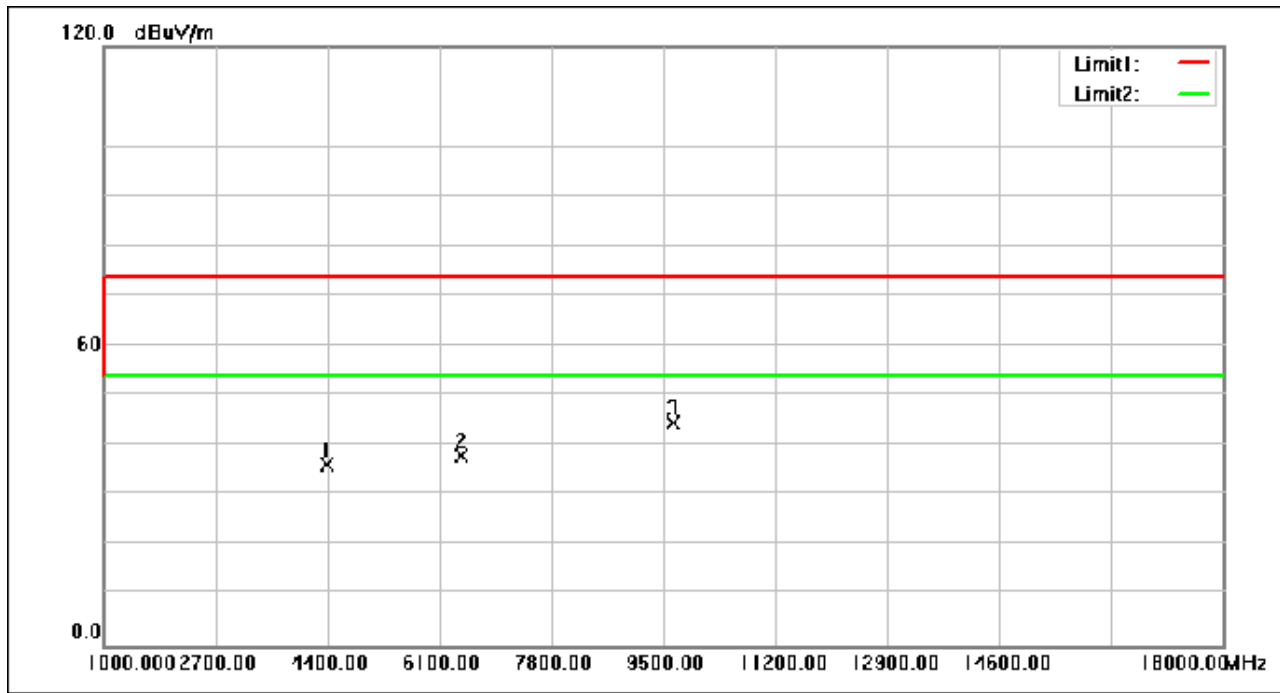
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 67 of 248

Test Mode: 00; 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	4390.480	55.29	-19.28	36.01	74.00	-37.99	peak
2	6433.880	51.65	-13.57	38.08	74.00	-35.92	peak
3	9646.200	52.27	-7.67	44.60	74.00	-29.40	peak

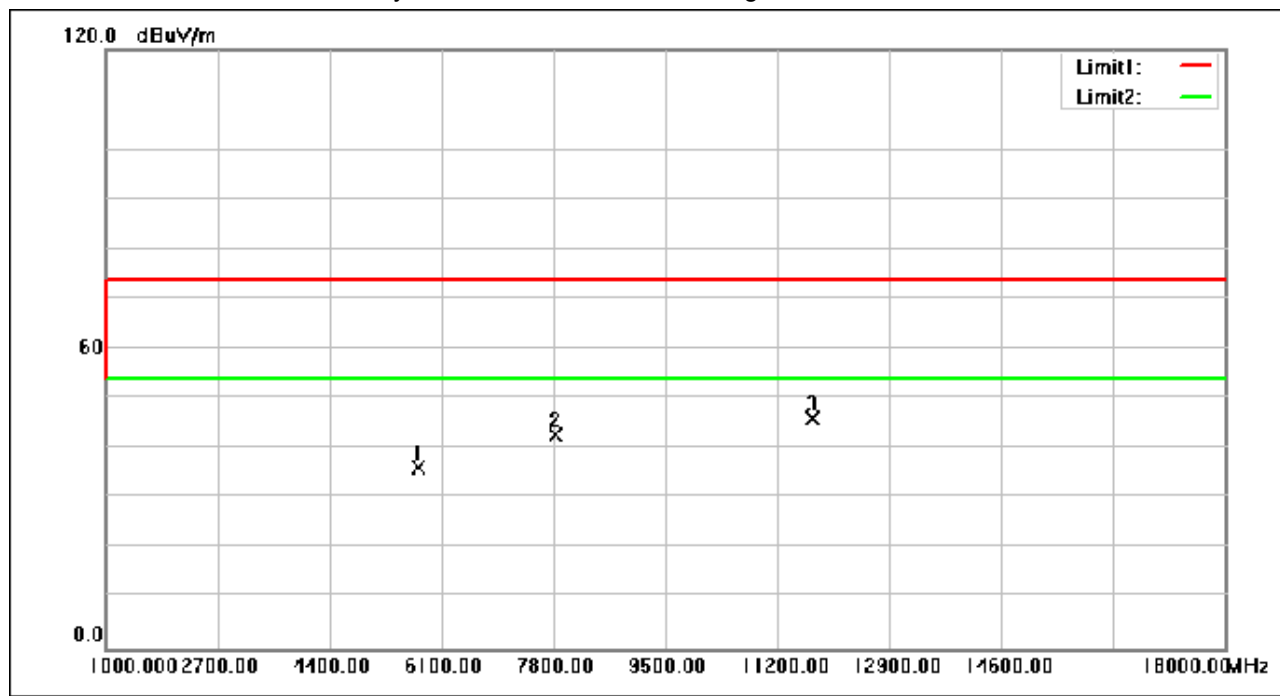
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 68 of 248

Test Mode: 00; 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	5743.000	53.14	-16.85	36.29	74.00	-37.71	peak
2	7836.720	53.49	-10.82	42.67	74.00	-31.33	peak
3	11734.480	52.17	-6.17	46.00	74.00	-28.00	peak

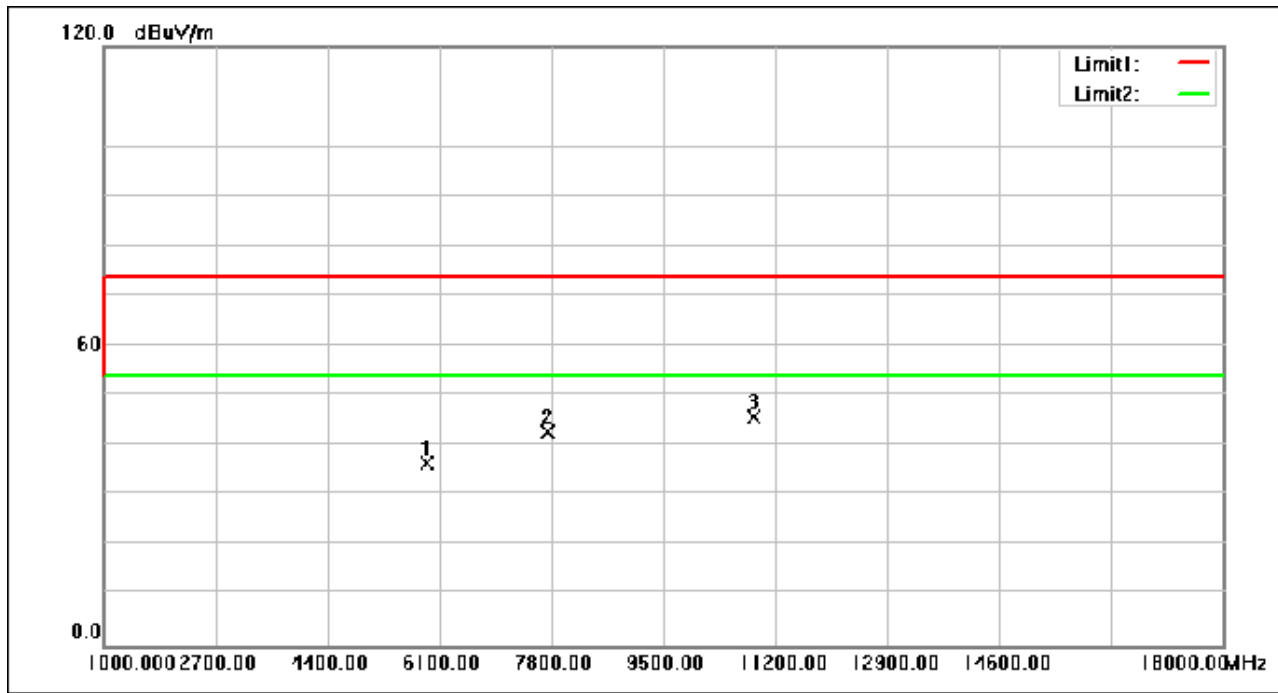
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 69 of 248

Test Mode: 00; 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	5909.600	52.56	-16.16	36.40	74.00	-37.60	peak
2	7748.320	53.54	-10.93	42.61	74.00	-31.39	peak
3	10881.760	52.60	-6.82	45.78	74.00	-28.22	peak

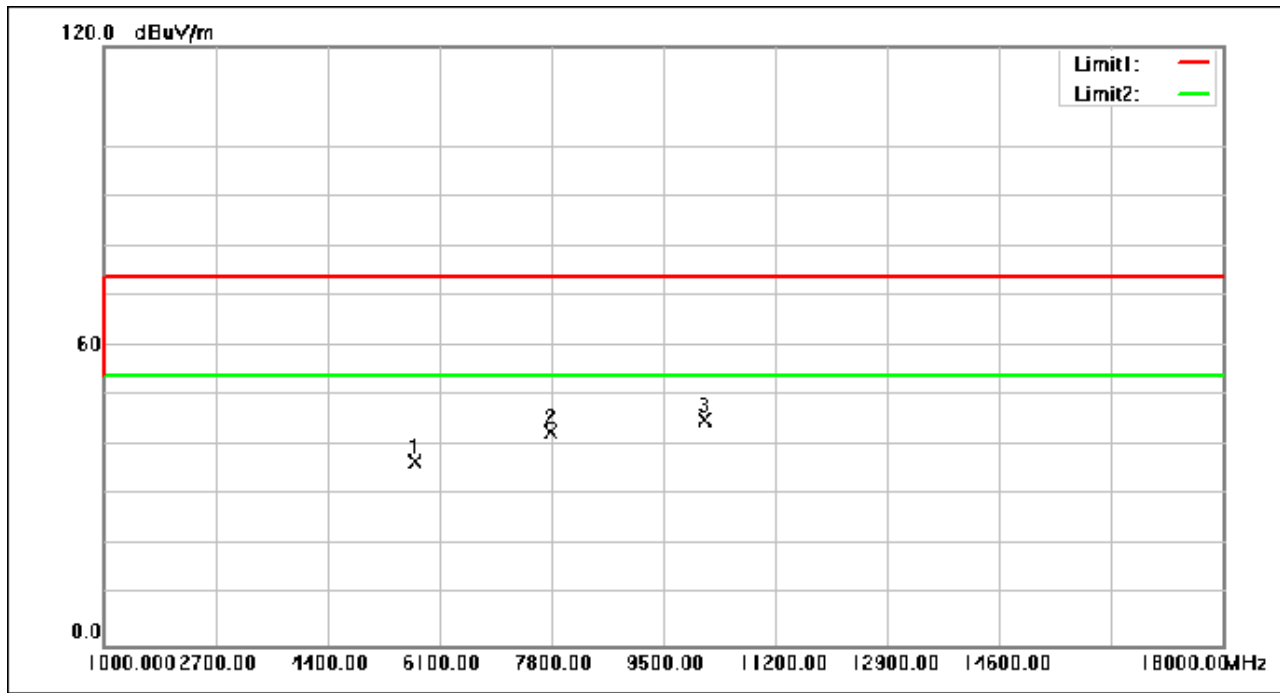
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 70 of 248

Test Mode: 00; Polarity: Vertical; 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	5734.840	53.74	-16.88	36.86	74.00	-37.14	peak
2	7789.120	53.76	-10.88	42.88	74.00	-31.12	peak
3	10130.360	52.47	-7.25	45.22	74.00	-28.78	peak

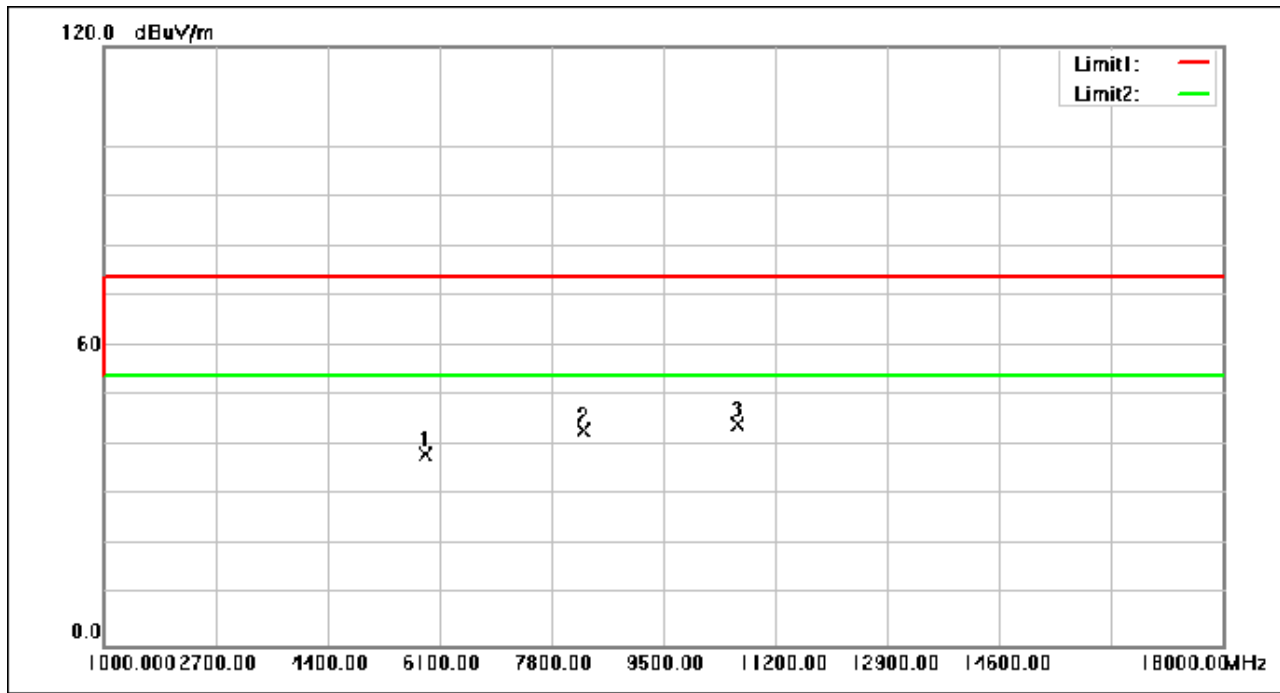
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 71 of 248

Test Mode: 00; 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	5891.920	54.59	-16.22	38.37	74.00	-35.63	peak
2	8282.120	53.06	-10.12	42.94	74.00	-31.06	peak
3	10627.440	51.28	-6.96	44.32	74.00	-29.68	peak

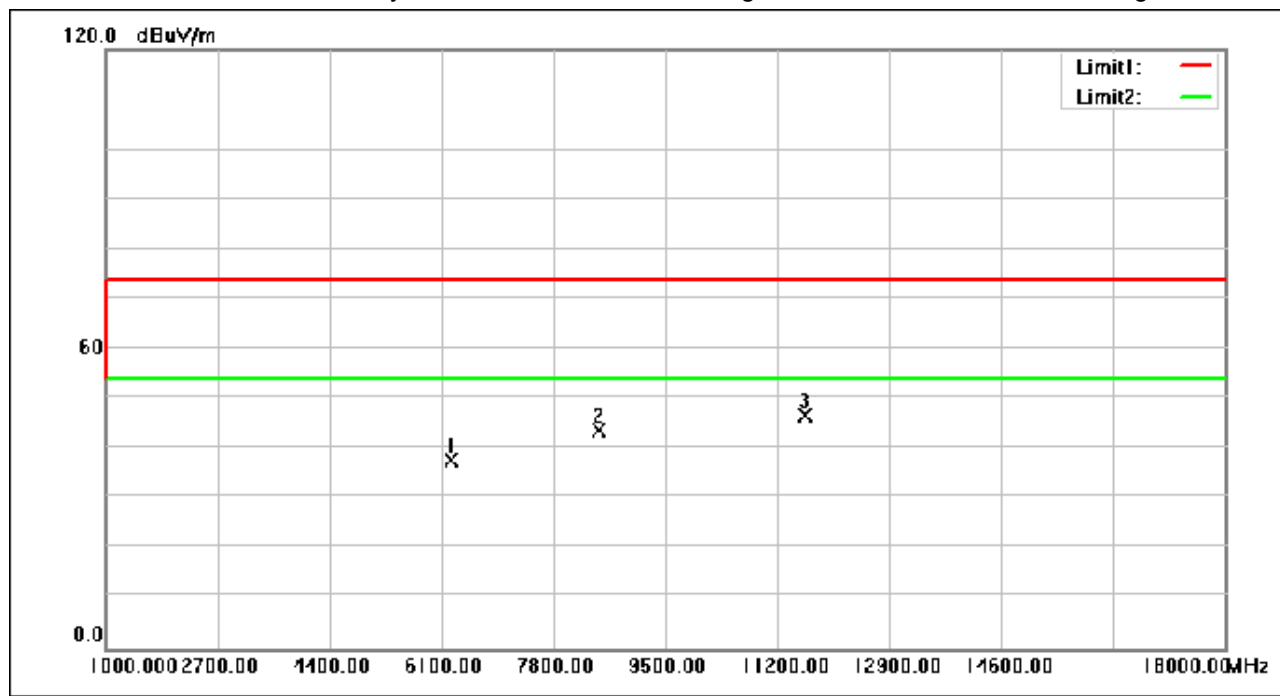
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 72 of 248

Test Mode: 00; 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	6265.920	52.03	-14.45	37.58	74.00	-36.42	peak
2	8487.480	53.29	-9.77	43.52	74.00	-30.48	peak
3	11621.600	52.85	-6.26	46.59	74.00	-27.41	peak

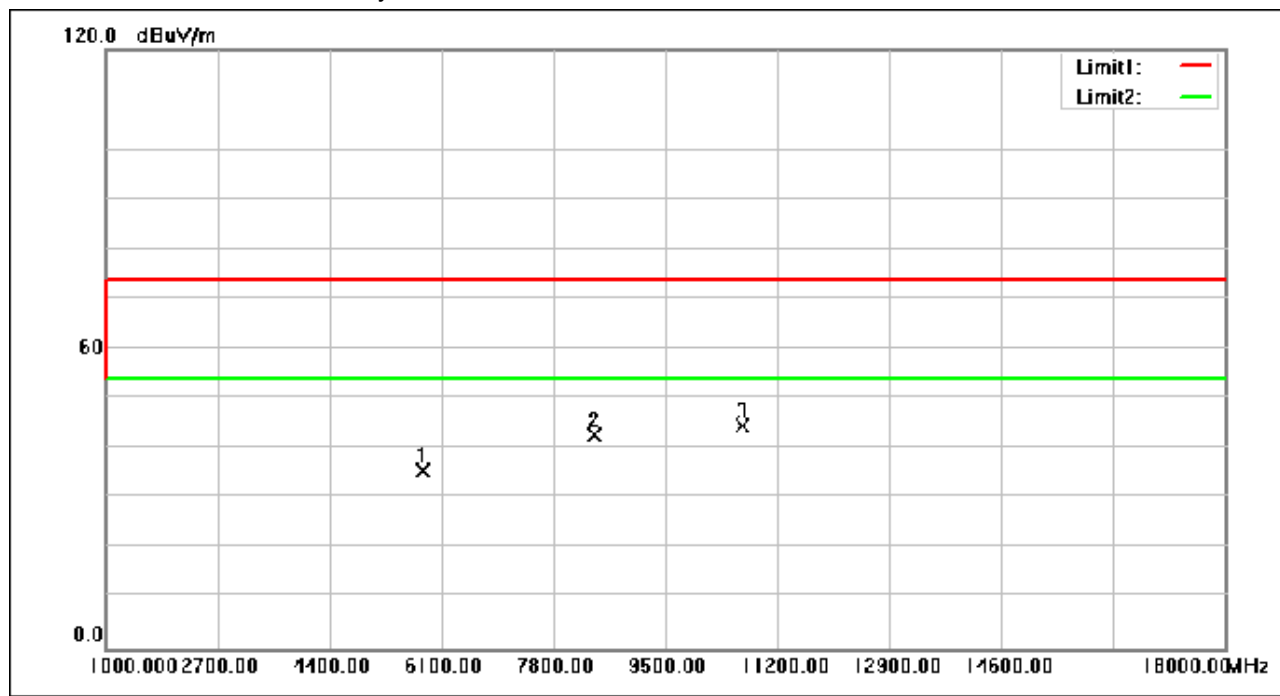
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 73 of 248

Test Mode: 00; 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	5825.280	52.16	-16.51	35.65	74.00	-38.35	peak
2	8443.960	52.58	-9.85	42.73	74.00	-31.27	peak
3	10676.400	51.60	-6.94	44.66	74.00	-29.34	peak

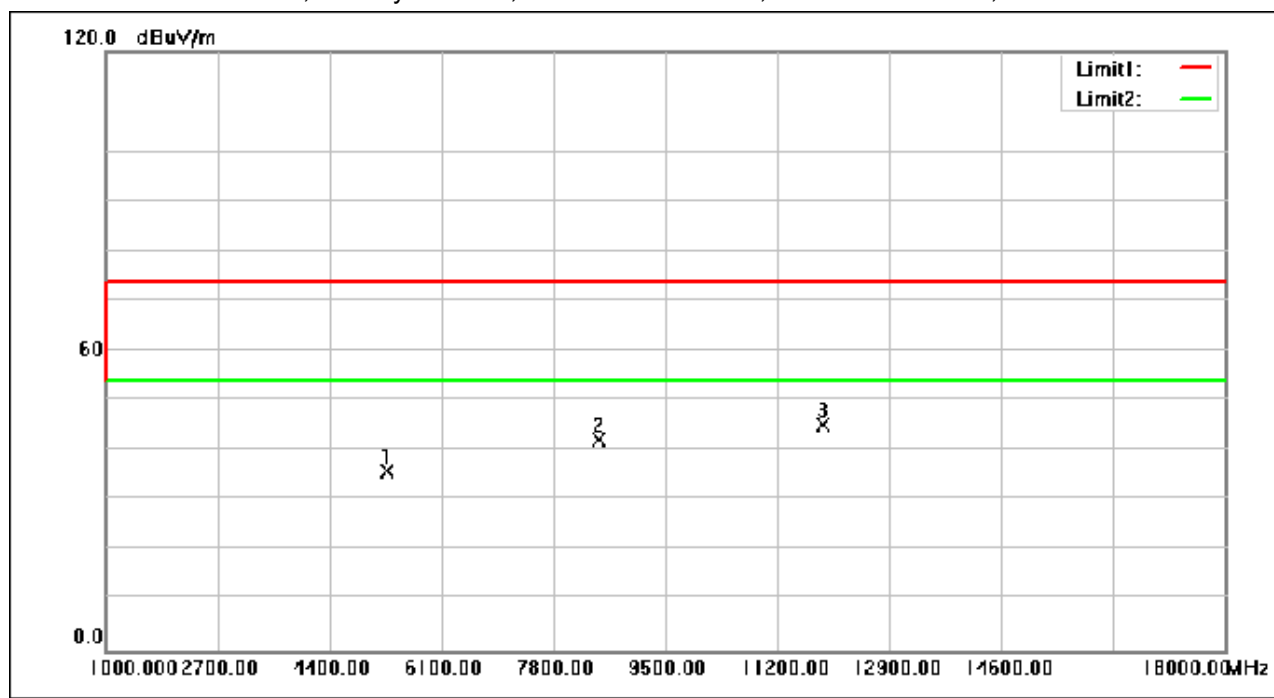
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 74 of 248

Test Mode: 00; 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	5271.080	53.98	-18.03	35.95	74.00	-38.05	peak
2	8492.240	52.05	-9.76	42.29	74.00	-31.71	peak
3	11889.520	51.26	-6.04	45.22	74.00	-28.78	peak

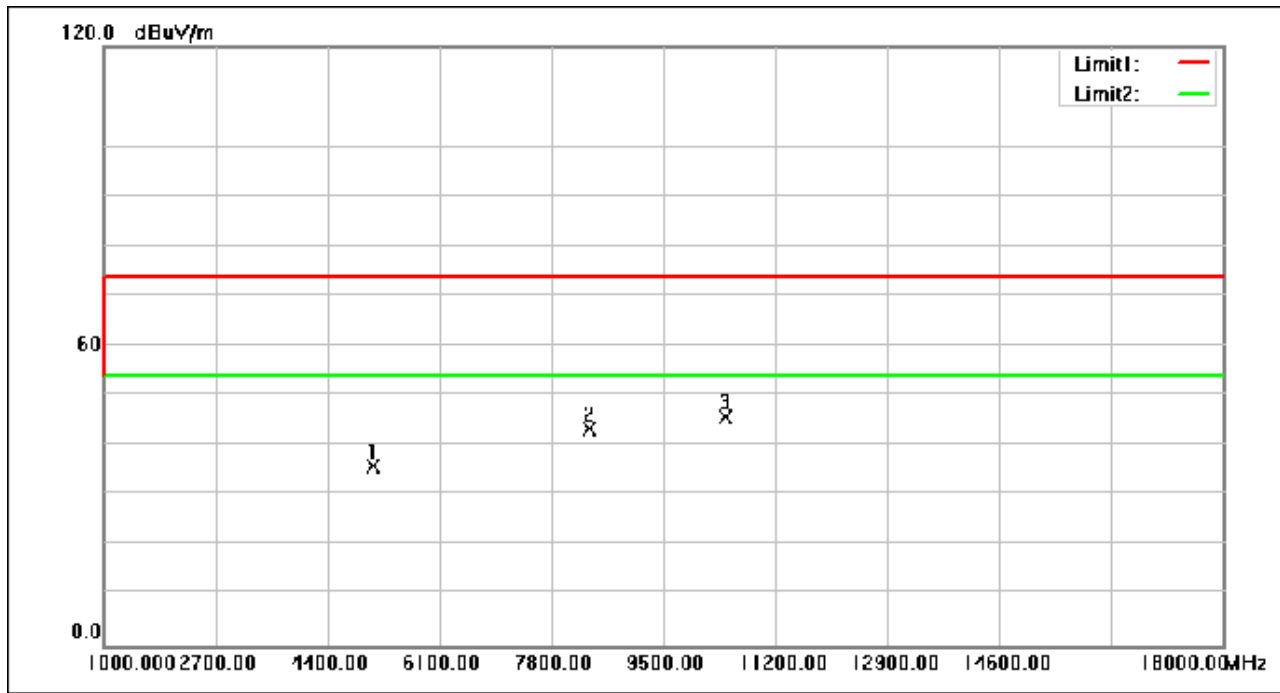
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 75 of 248

Test Mode: 00; 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	5109.240	53.99	-18.28	35.71	74.00	-38.29	peak
2	8384.800	53.16	-9.94	43.22	74.00	-30.78	peak
3	10437.720	52.86	-7.07	45.79	74.00	-28.21	peak

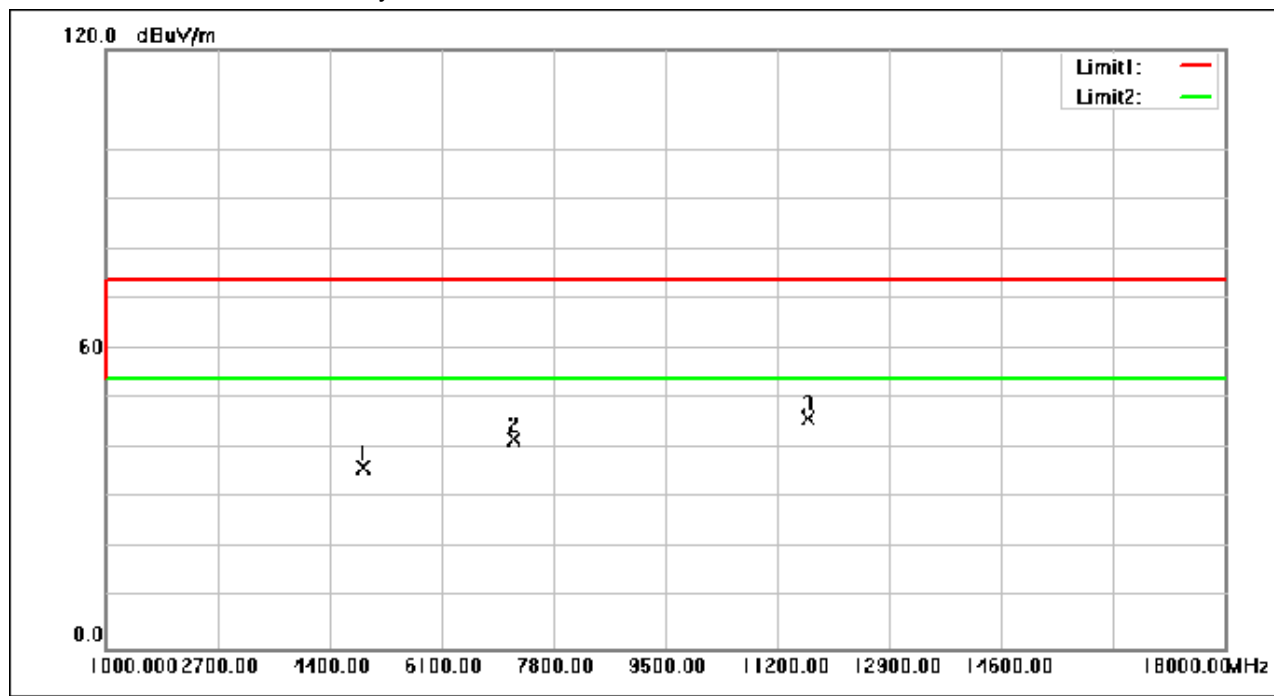
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 76 of 248

Test Mode: 00; 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	4910.680	54.60	-18.50	36.10	74.00	-37.90	peak
2	7219.960	53.41	-11.47	41.94	74.00	-32.06	peak
3	11673.280	52.27	-6.22	46.05	74.00	-27.95	peak

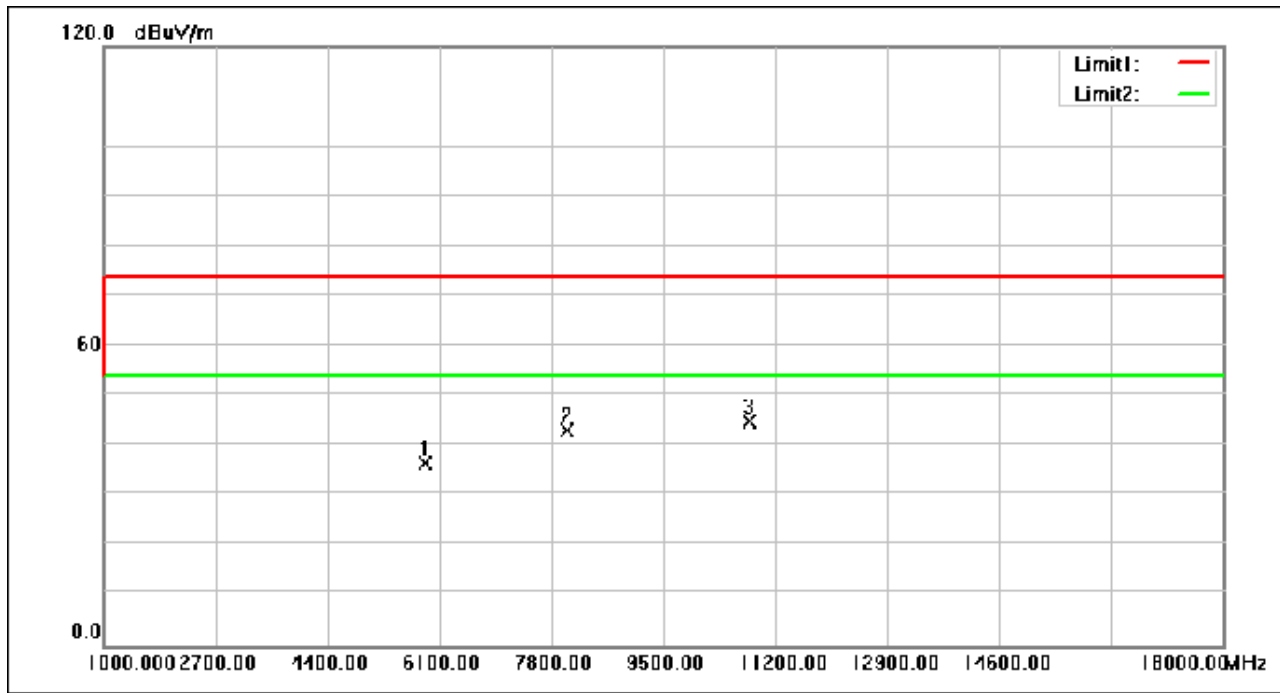
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 77 of 248

Test Mode: 00; 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	5889.200	52.77	-16.24	36.53	74.00	-37.47	peak
2	8038.680	53.57	-10.53	43.04	74.00	-30.96	peak
3	10824.640	51.85	-6.85	45.00	74.00	-29.00	peak

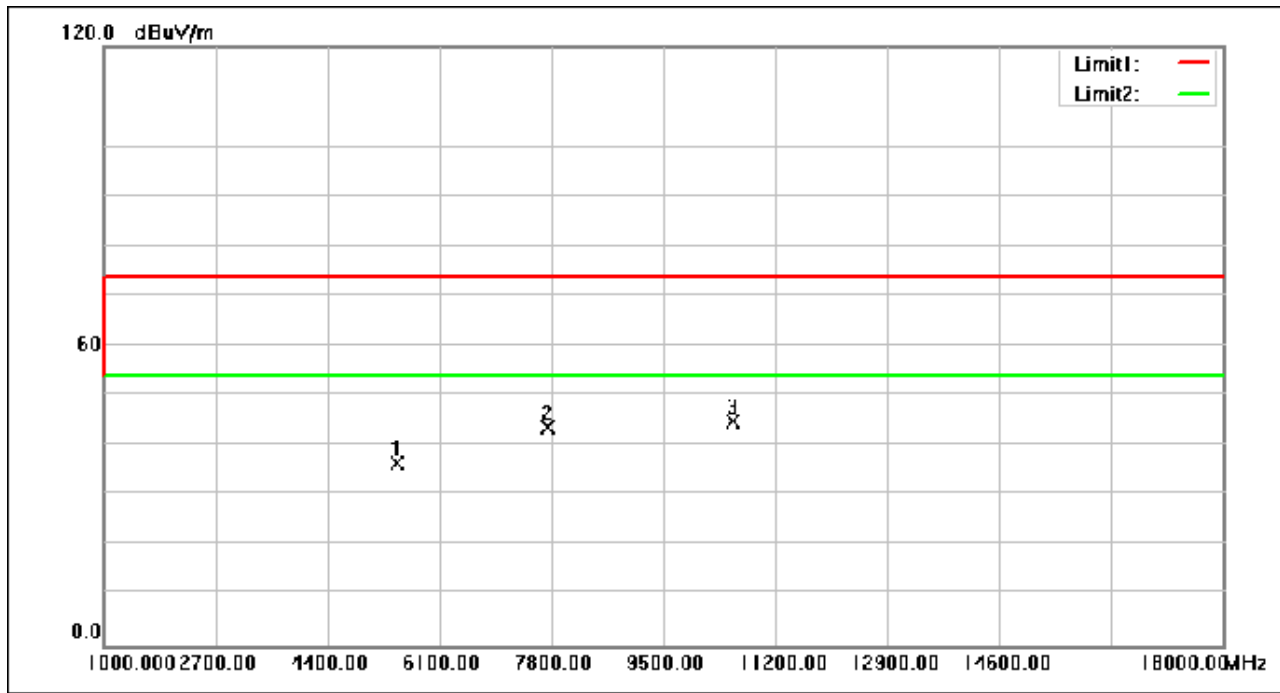
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 78 of 248

Test Mode: 00; 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	5458.760	54.21	-17.76	36.45	74.00	-37.55	peak
2	7740.840	54.46	-10.94	43.52	74.00	-30.48	peak
3	10564.200	51.80	-7.01	44.79	74.00	-29.21	peak

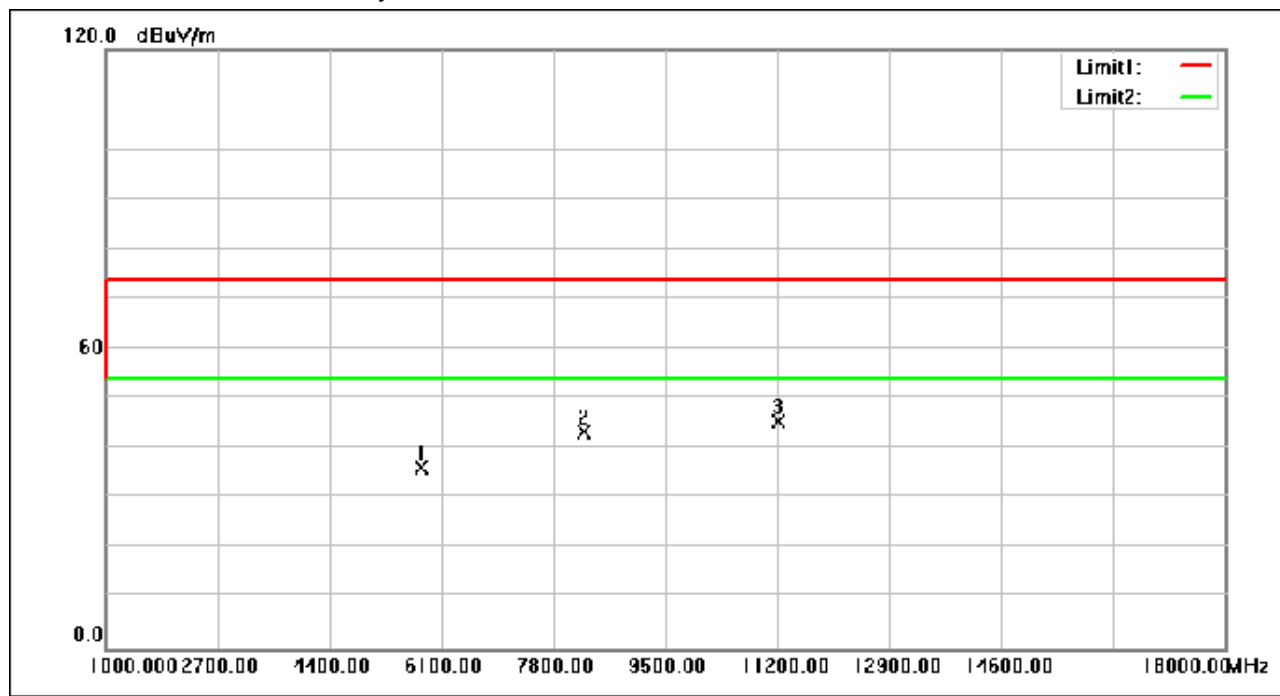
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 79 of 248

Test Mode: 00; 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	5810.320	52.77	-16.56	36.21	74.00	-37.79	peak
2	8263.080	53.39	-10.14	43.25	74.00	-30.75	peak
3	11231.960	51.92	-6.58	45.34	74.00	-28.66	peak

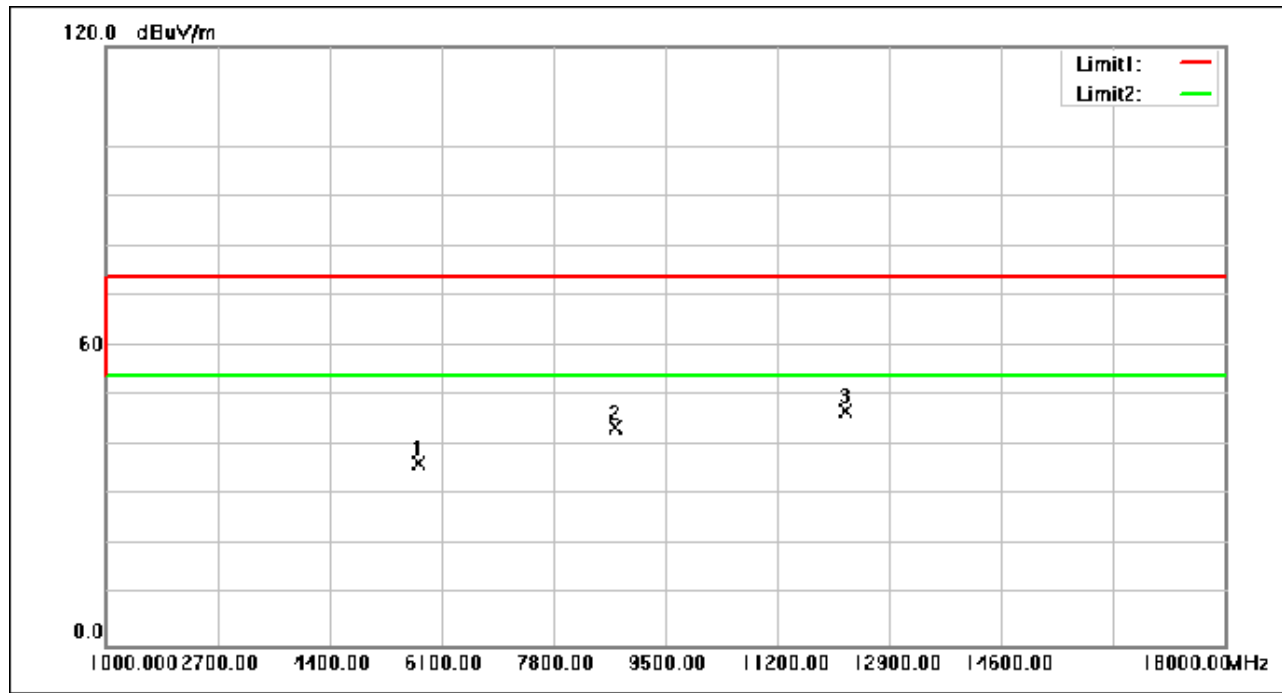
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 80 of 248

Test Mode: 00; 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	5756.600	53.29	-16.79	36.50	74.00	-37.50	peak
2	8743.160	52.86	-9.35	43.51	74.00	-30.49	peak
3	12251.280	52.86	-6.00	46.86	74.00	-27.14	peak

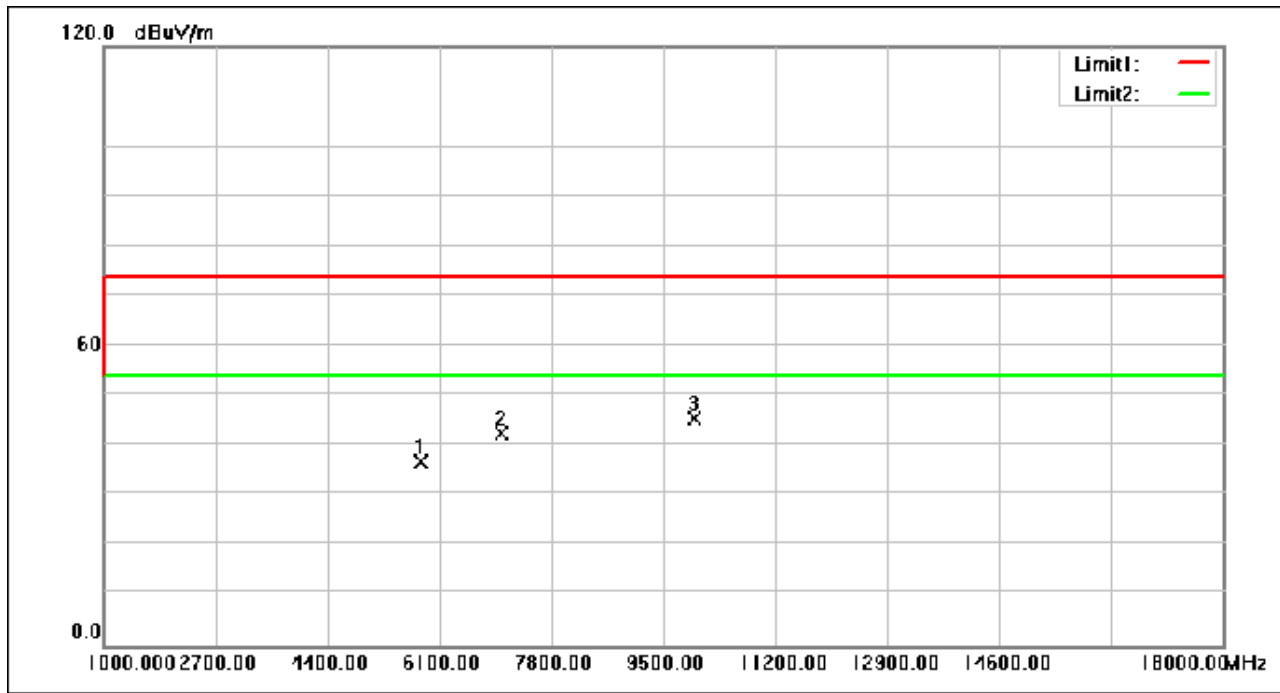
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 81 of 248

Test Mode: 00; 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	5825.280	53.31	-16.51	36.80	74.00	-37.20	peak
2	7039.760	54.06	-11.55	42.51	74.00	-31.49	peak
3	9971.240	52.75	-7.32	45.43	74.00	-28.57	peak

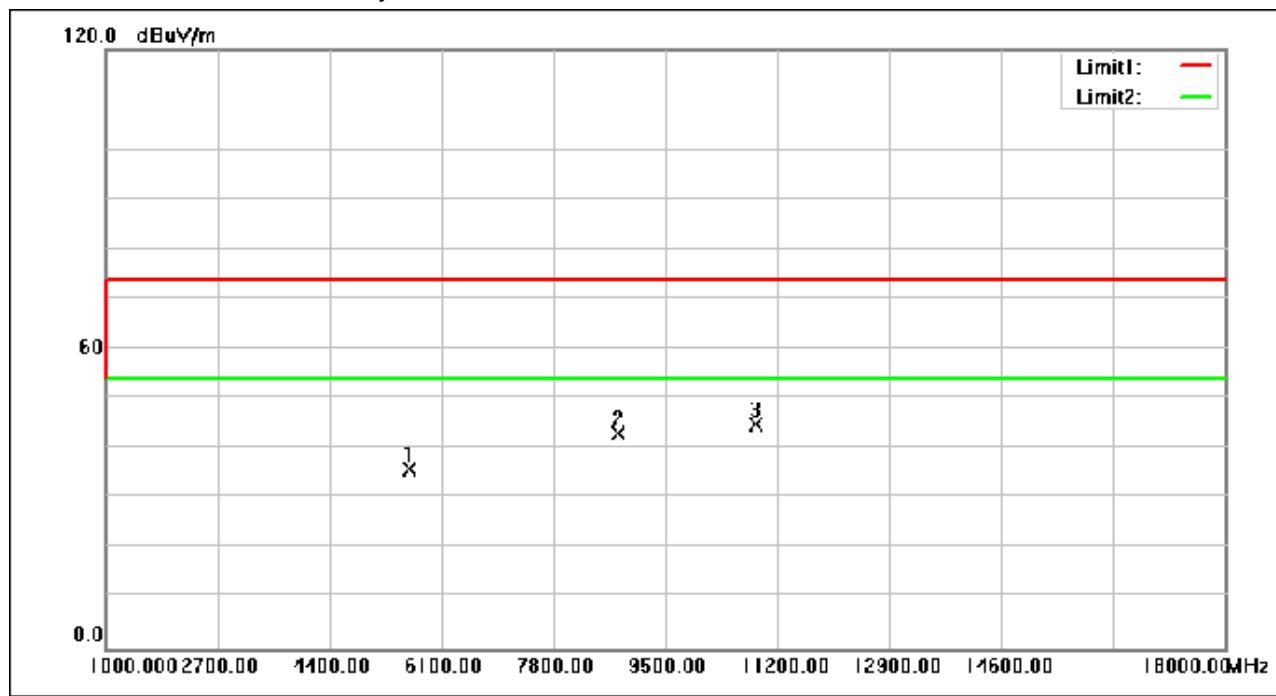
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 82 of 248

Test Mode: 00; 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	5607.680	53.15	-17.41	35.74	74.00	-38.26	peak
2	8793.480	52.46	-9.27	43.19	74.00	-30.81	peak
3	10868.160	51.63	-6.83	44.80	74.00	-29.20	peak

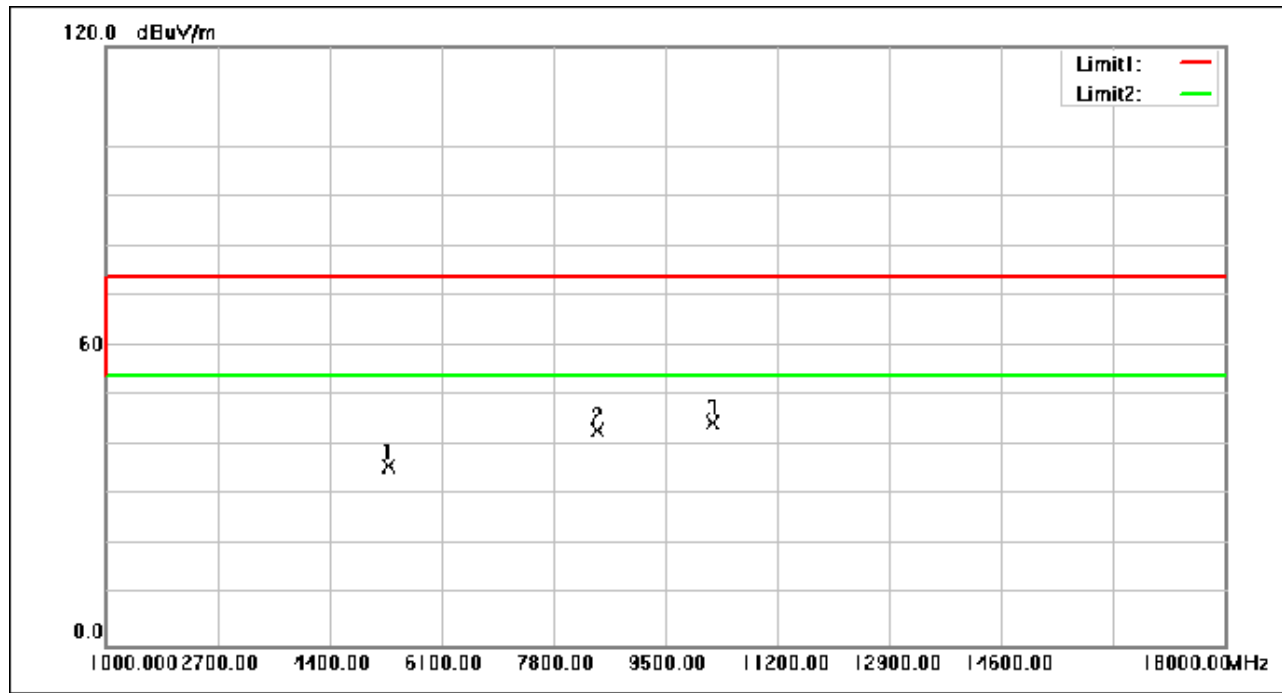
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 83 of 248

Test Mode: 00; 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	5307.800	53.80	-17.98	35.82	74.00	-38.18	peak
2	8469.120	52.83	-9.81	43.02	74.00	-30.98	peak
3	10228.960	51.64	-7.20	44.44	74.00	-29.56	peak

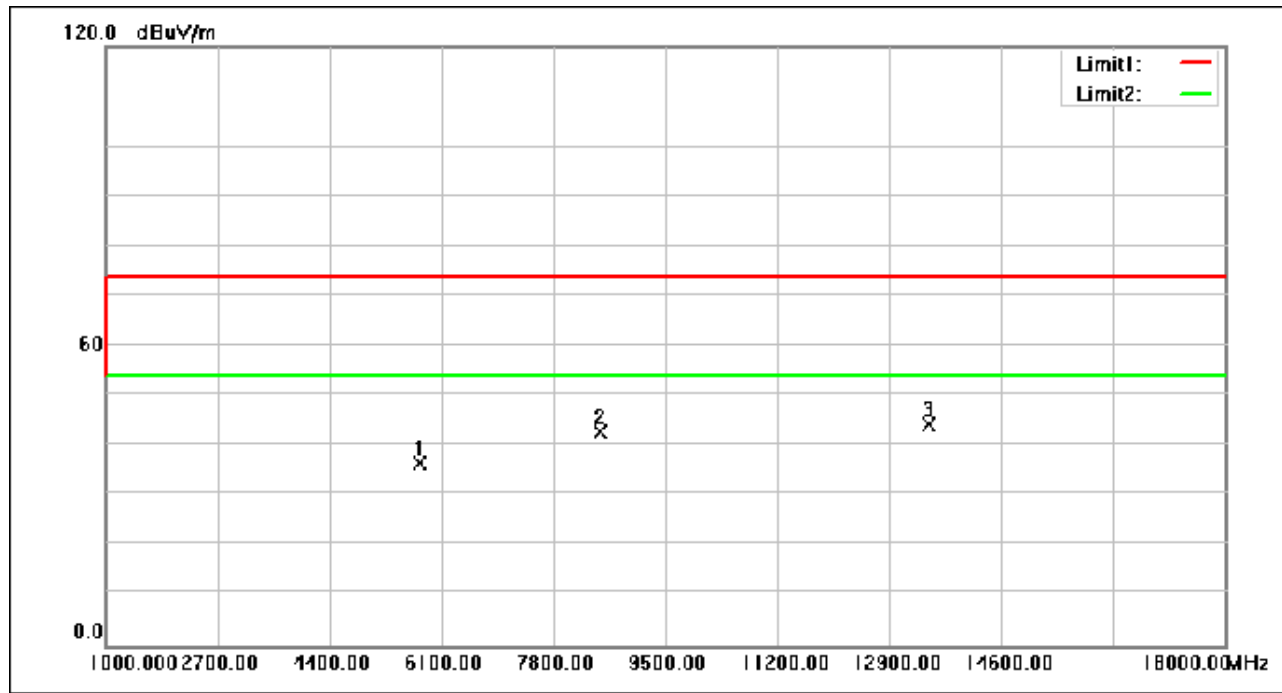
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 84 of 248

Test Mode: 00; 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	5768.160	53.12	-16.75	36.37	74.00	-37.63	peak
2	8524.880	52.43	-9.71	42.72	74.00	-31.28	peak
3	13497.040	50.54	-6.34	44.20	74.00	-29.80	peak

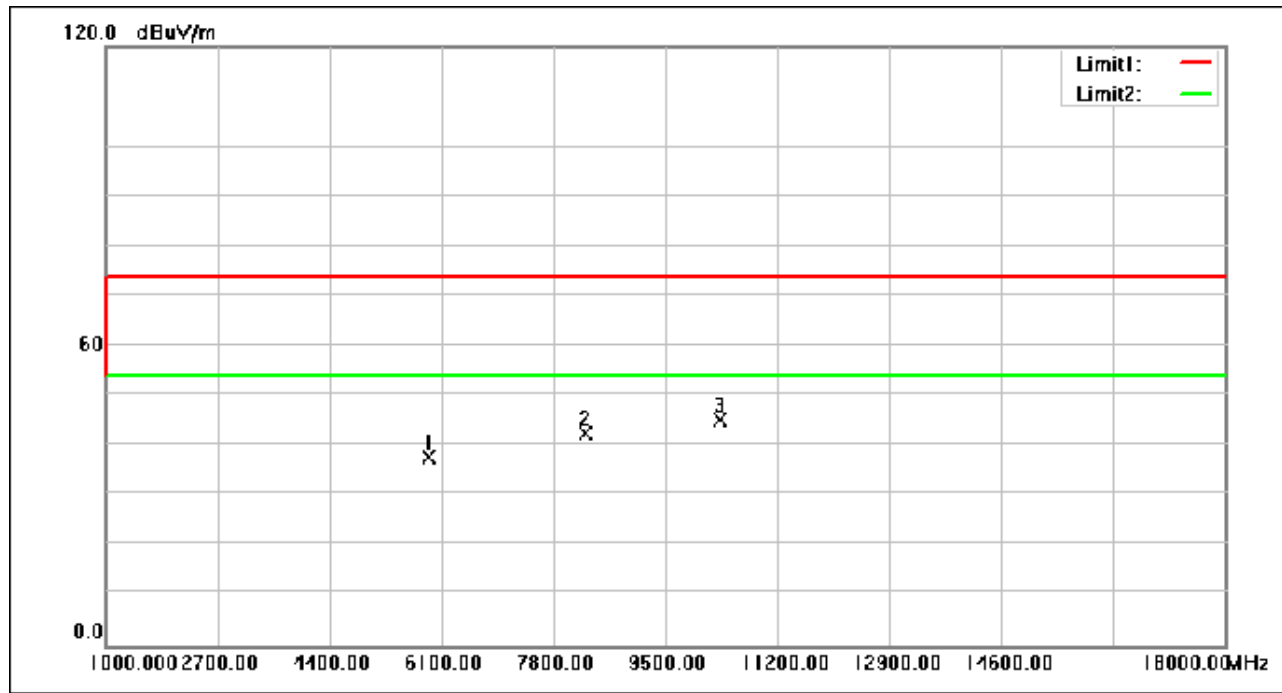
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 85 of 248

Test Mode: 00; 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	5902.800	53.82	-16.18	37.64	74.00	-36.36	peak
2	8282.120	52.72	-10.12	42.60	74.00	-31.40	peak
3	10329.600	52.25	-7.14	45.11	74.00	-28.89	peak

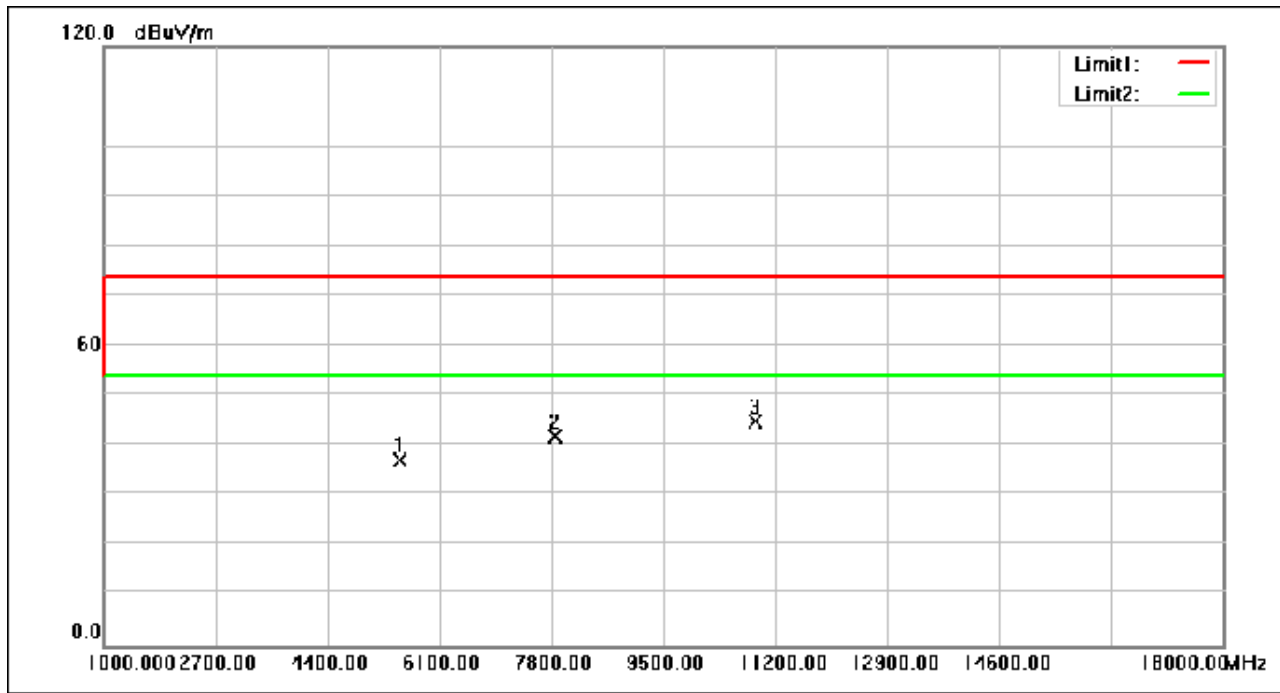
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 86 of 248

Test Mode: 00; 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	5519.960	54.69	-17.67	37.02	74.00	-36.98	peak
2	7854.400	52.62	-10.79	41.83	74.00	-32.17	peak
3	10898.760	51.60	-6.81	44.79	74.00	-29.21	peak

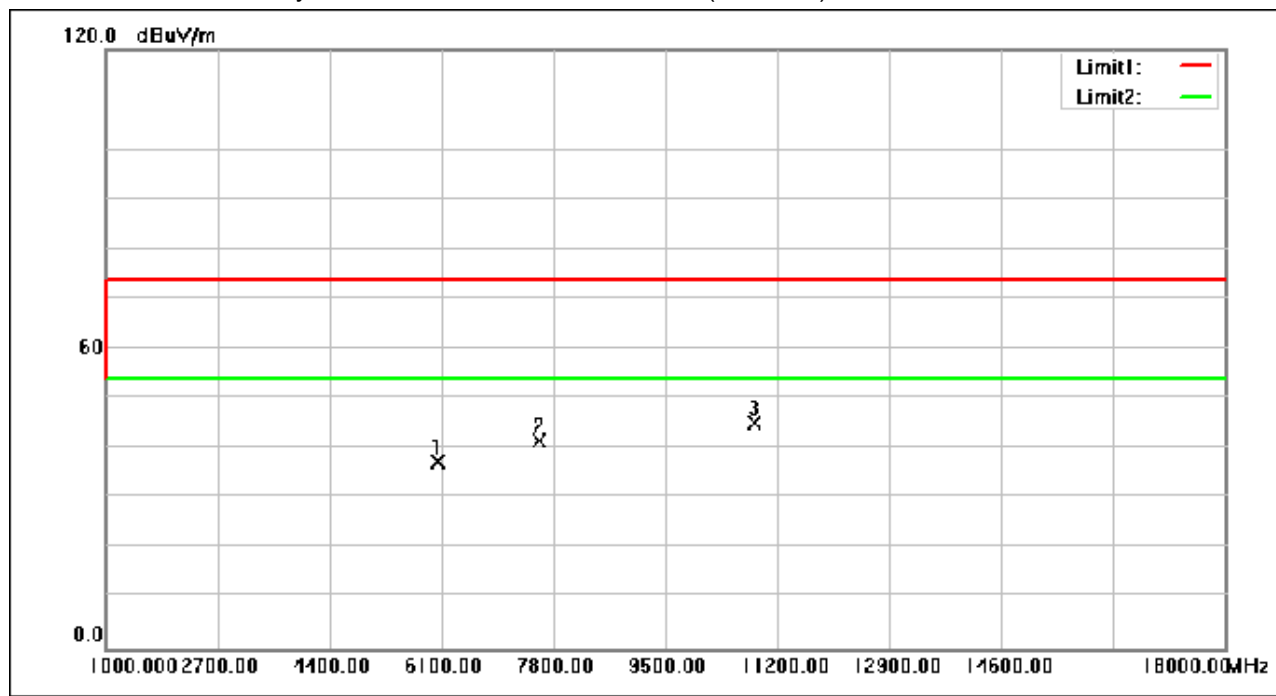
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 87 of 248

Test Mode: 00; 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	6055.120	52.87	-15.52	37.35	74.00	-36.65	peak
2	7590.560	52.64	-11.14	41.50	74.00	-32.50	peak
3	10853.880	51.99	-6.83	45.16	74.00	-28.84	peak

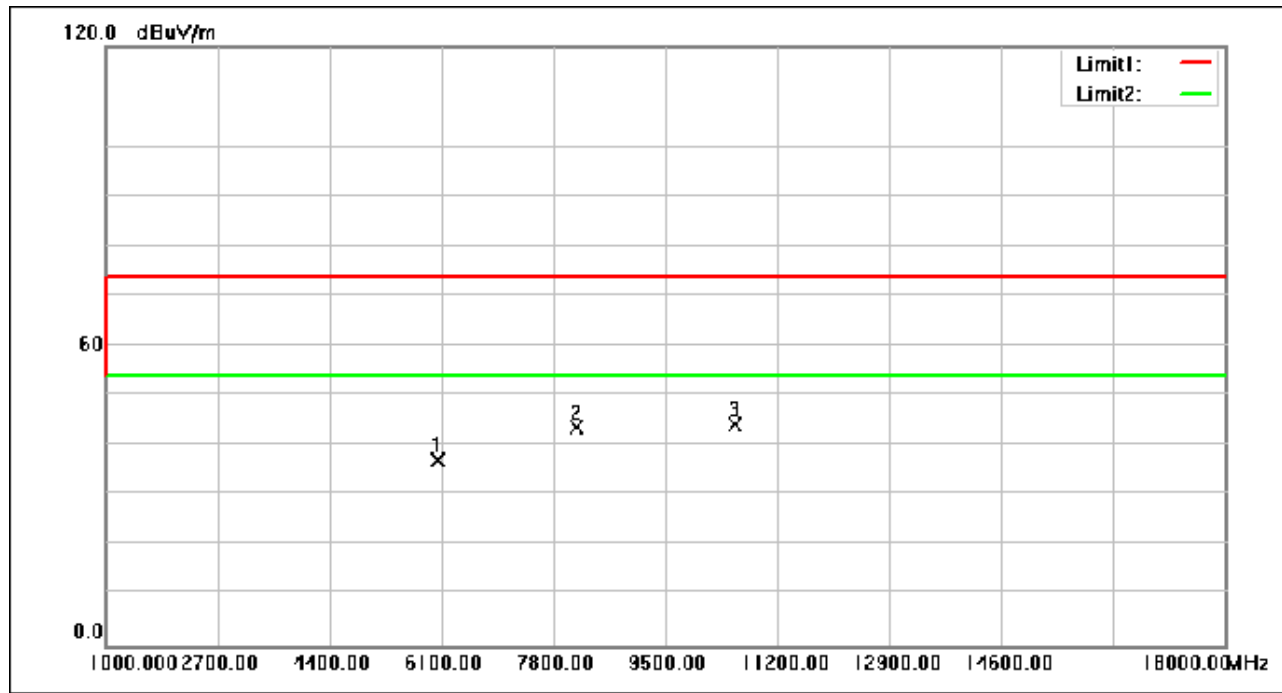
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 88 of 248

Test Mode: 00; 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	6055.800	52.68	-15.52	37.16	74.00	-36.84	peak
2	8153.600	53.96	-10.32	43.64	74.00	-30.36	peak
3	10565.560	51.30	-7.00	44.30	74.00	-29.70	peak

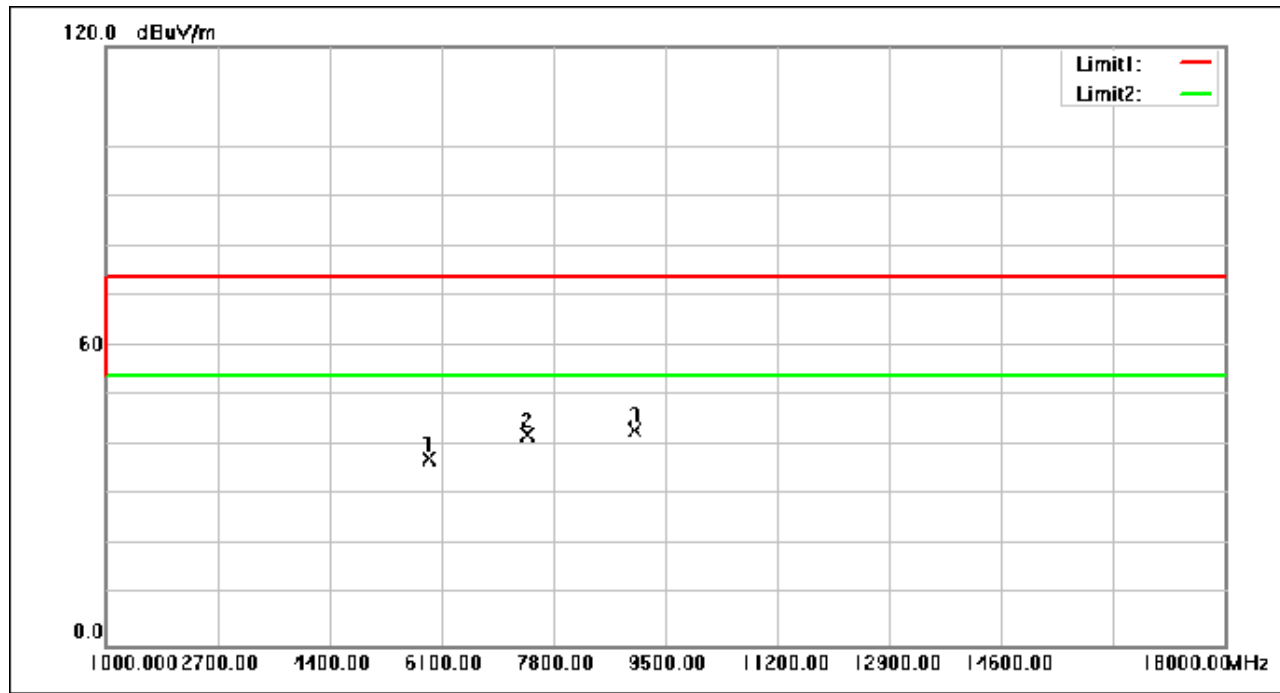
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 89 of 248

Test Mode: 00; 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	5916.400	53.44	-16.13	37.31	74.00	-36.69	peak
2	7411.720	53.48	-11.37	42.11	74.00	-31.89	peak
3	9036.240	51.80	-8.83	42.97	74.00	-31.03	peak

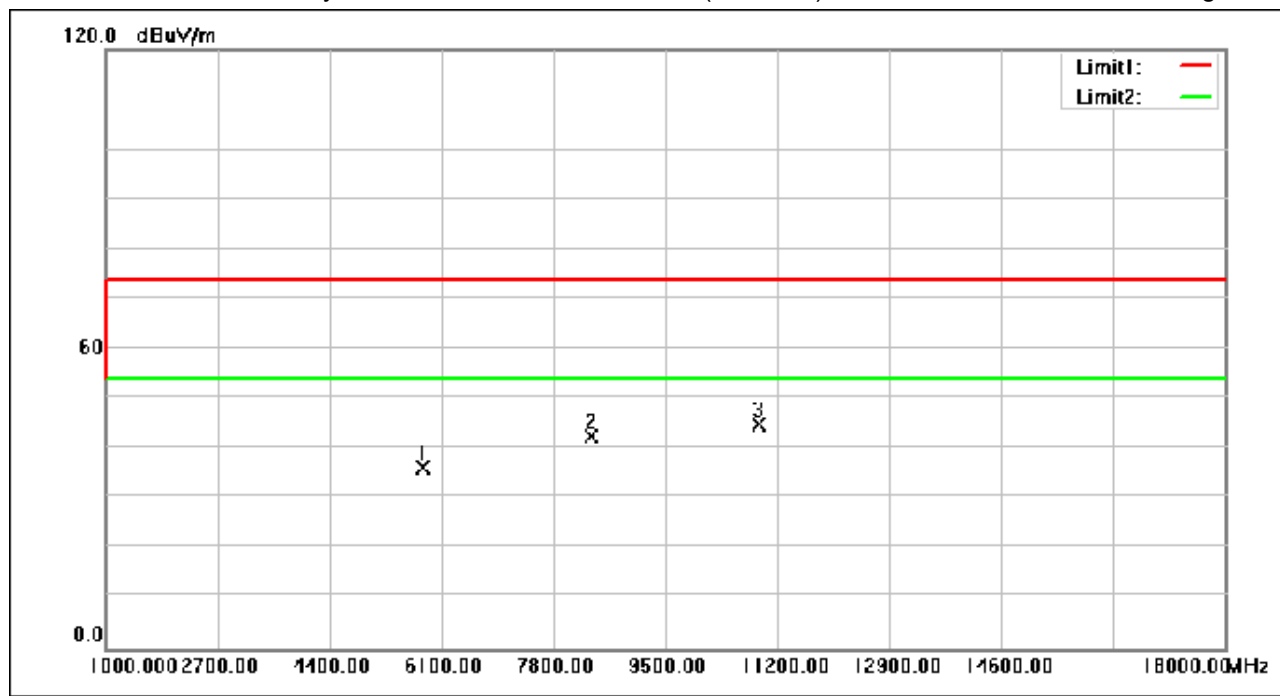
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 90 of 248

Test Mode: 00; 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	5811.680	52.59	-16.56	36.03	74.00	-37.97	peak
2	8391.600	52.48	-9.93	42.55	74.00	-31.45	peak
3	10925.960	51.62	-6.80	44.82	74.00	-29.18	peak

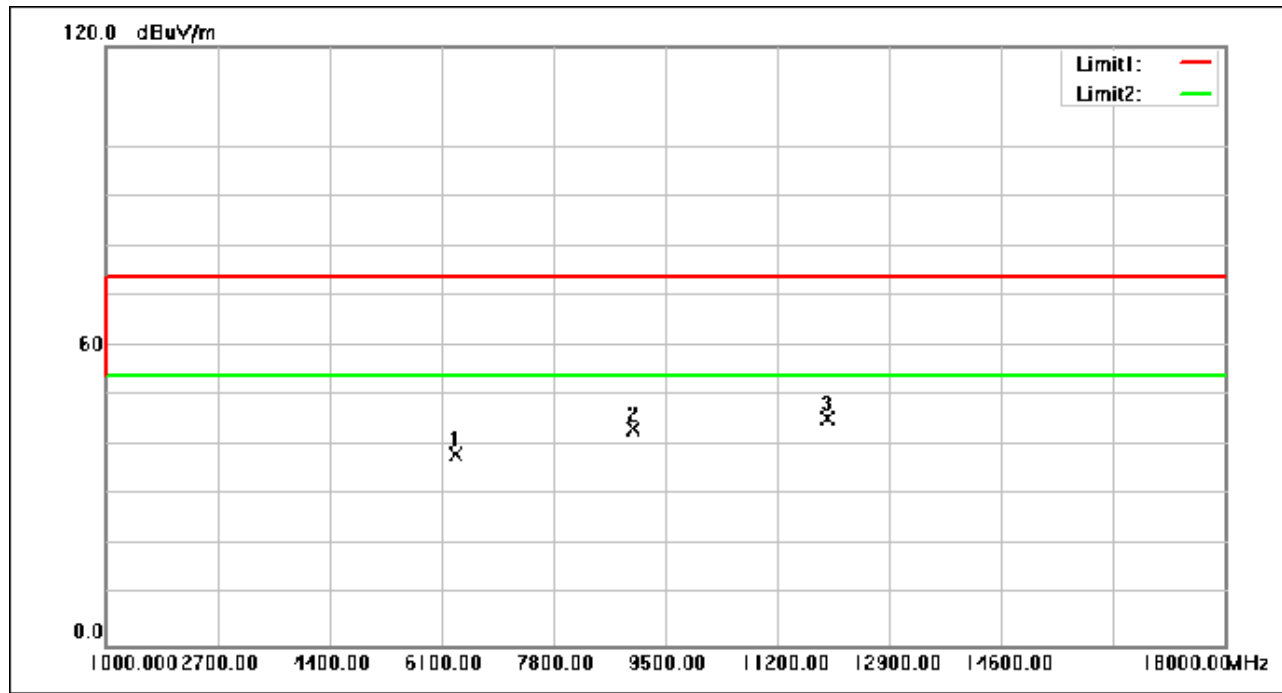
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 91 of 248

Test Mode: 00; 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	6336.640	52.21	-14.08	38.13	74.00	-35.87	peak
2	9014.480	52.09	-8.87	43.22	74.00	-30.78	peak
3	11962.960	51.46	-5.95	45.51	74.00	-28.49	peak

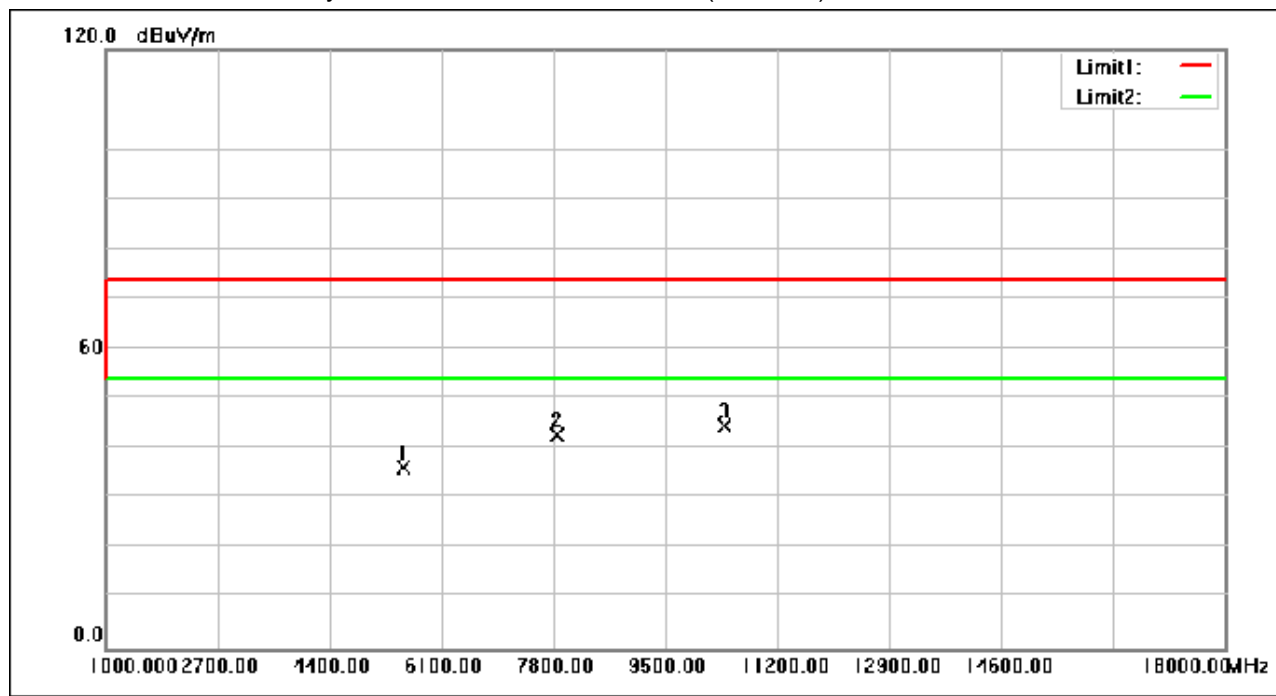
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 92 of 248

Test Mode: 00; 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	5530.840	53.86	-17.65	36.21	74.00	-37.79	peak
2	7851.680	53.43	-10.80	42.63	74.00	-31.37	peak
3	10414.600	51.68	-7.09	44.59	74.00	-29.41	peak

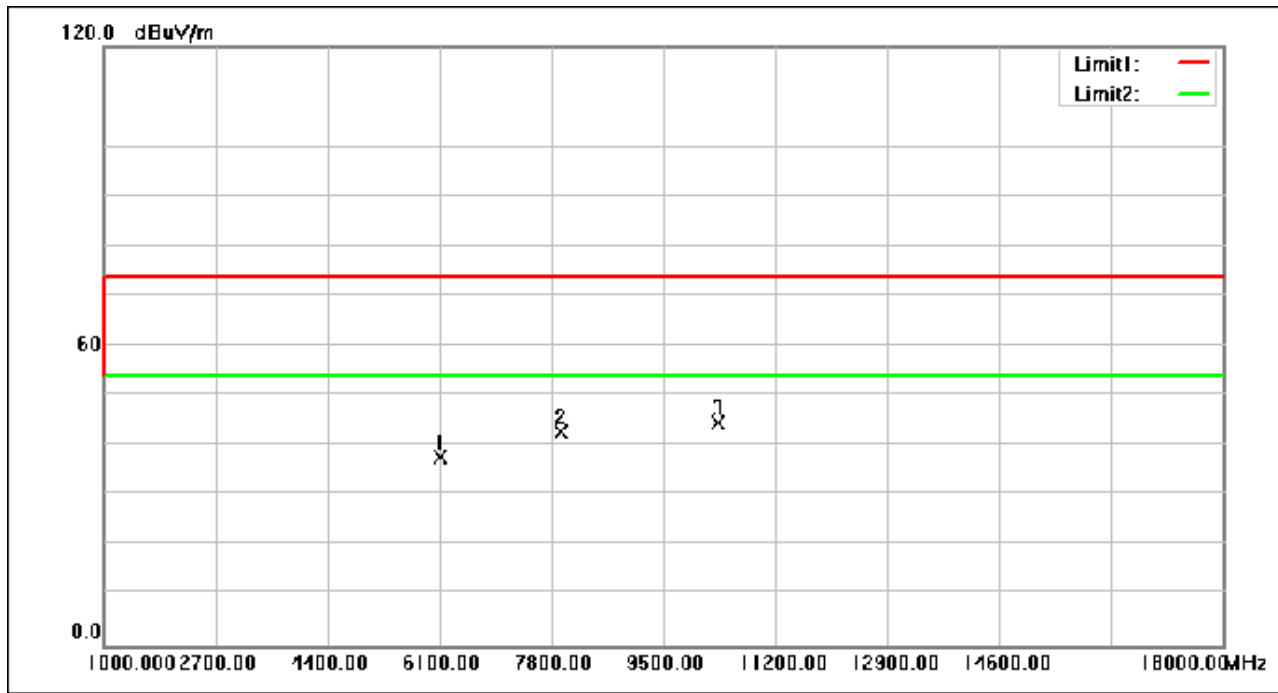
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 93 of 248

Test Mode: 00; 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	6126.520	52.77	-15.17	37.60	74.00	-36.40	peak
2	7960.480	53.48	-10.65	42.83	74.00	-31.17	peak
3	10333.000	51.76	-7.14	44.62	74.00	-29.38	peak

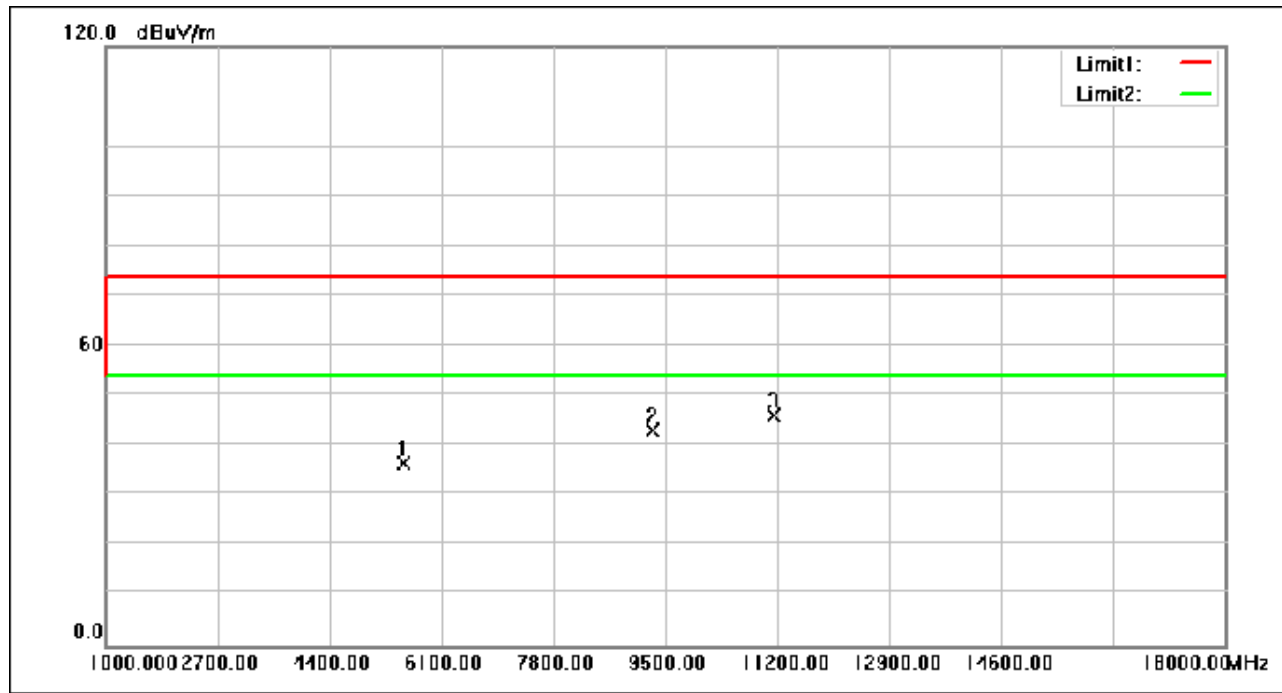
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 94 of 248

Test Mode: 00; 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	5536.960	54.06	-17.64	36.42	74.00	-37.58	peak
2	9302.120	51.52	-8.33	43.19	74.00	-30.81	peak
3	11163.280	52.57	-6.63	45.94	74.00	-28.06	peak

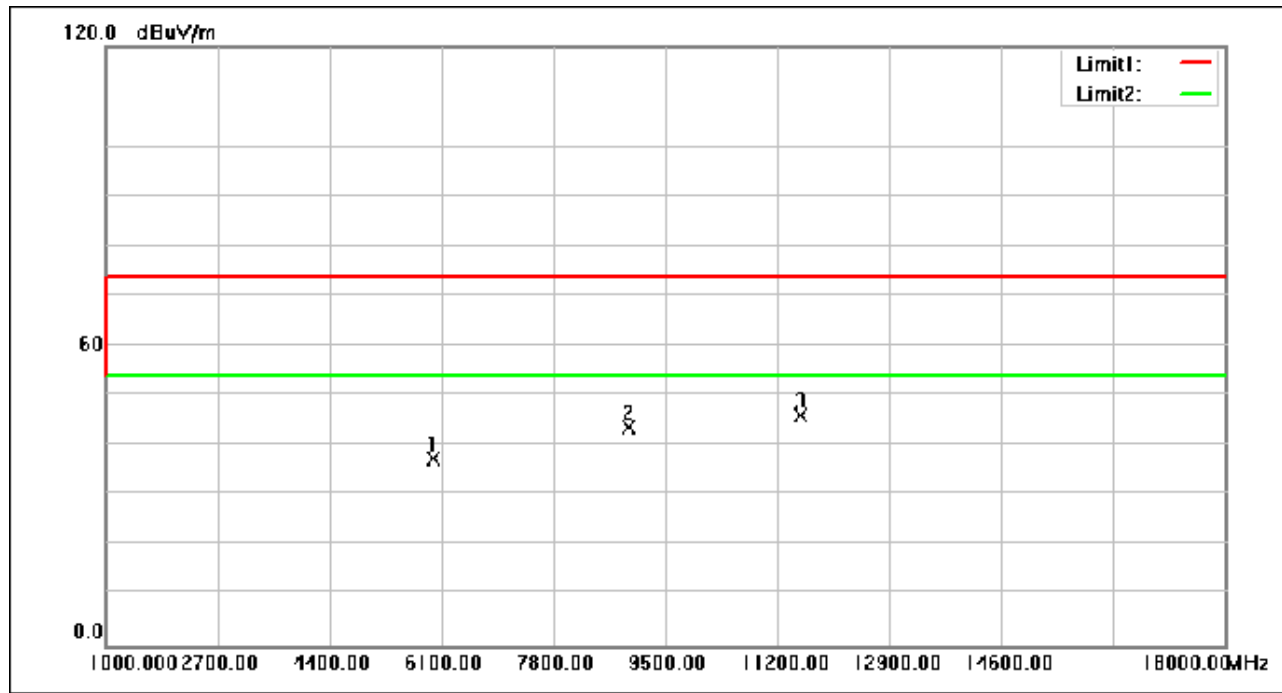
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 95 of 248

Test Mode: 00; 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	5996.640	53.09	-15.79	37.30	74.00	-36.70	peak
2	8939.000	52.70	-9.03	43.67	74.00	-30.33	peak
3	11540.680	52.42	-6.33	46.09	74.00	-27.91	peak

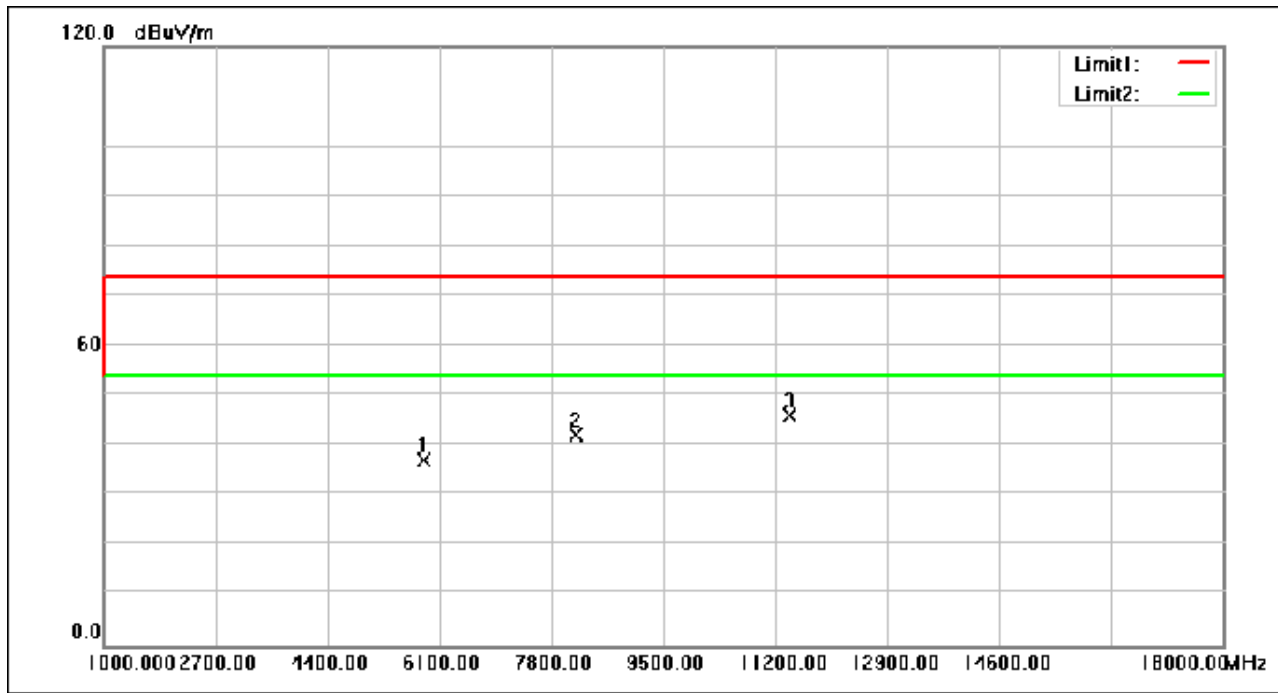
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 96 of 248

Test Mode: 00; 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	5877.640	53.36	-16.29	37.07	74.00	-36.93	peak
2	8178.760	52.55	-10.29	42.26	74.00	-31.74	peak
3	11405.360	52.61	-6.43	46.18	74.00	-27.82	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 11.9.1

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: 26.2 °C

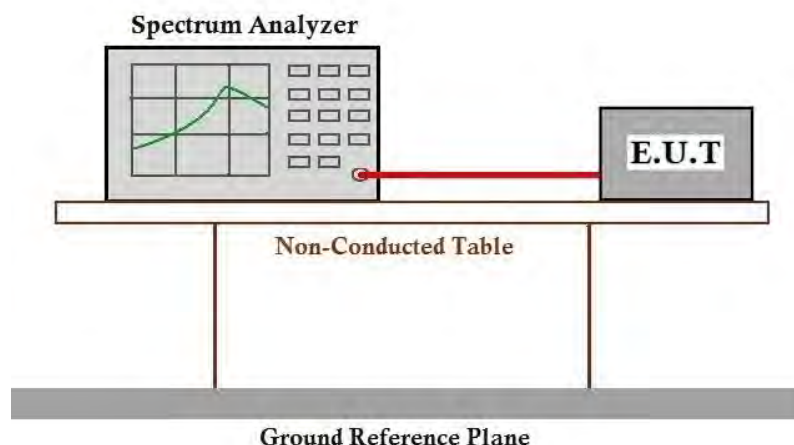
Humidity: 48.5 % RH

Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram





Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 98 of 248

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

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: 26.2 °C

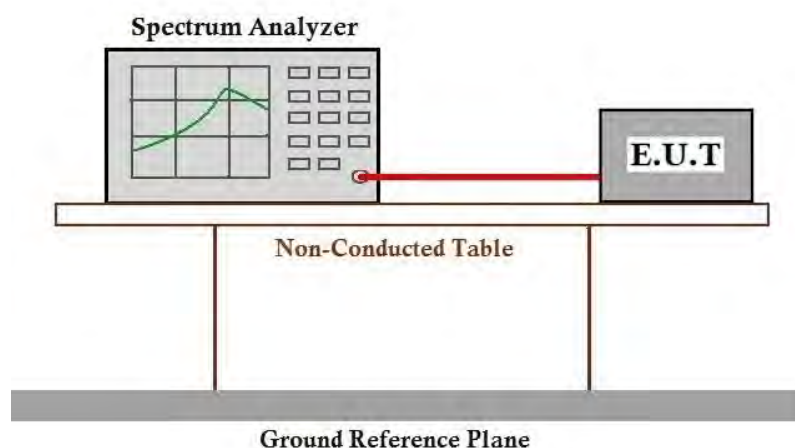
Humidity: 48.5 % RH

Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). 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: 26.2 °C

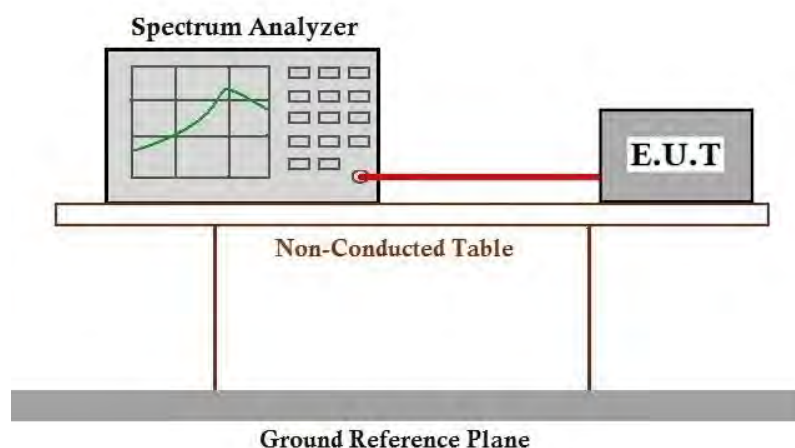
Humidity: 48.5 % RH

Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). 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

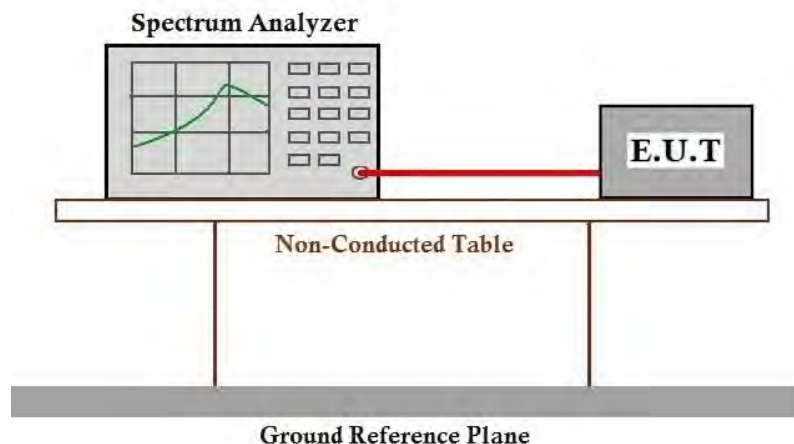
Operating Environment:

Temperature: 26.2 °C Humidity: 48.5 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). Only the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram





Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 102 of 248

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: 26.2 °C

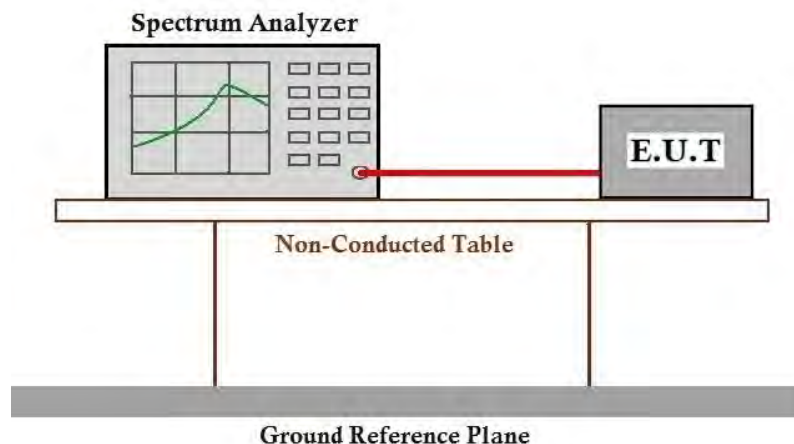
Humidity: 48.5 % RH

Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW40). Only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram





Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 104 of 248

7.9.4 Measurement Procedure and Data

Please Refer to Appendix for Details



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 105 of 248

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2406001000AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2406001000AT

10 Appendix

1. Duty Cycle

1.1 Test Result

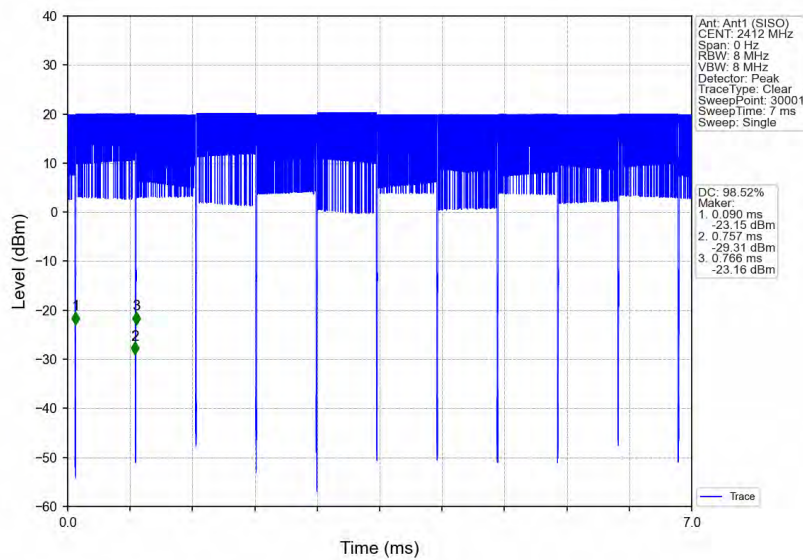
1.1.1 Ant1

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	/	/	0.667	0.677	98.52	0.06	0.03
		2437	/	/	0.667	0.677	98.52	0.06	0.07
		2462	/	/	0.667	0.677	98.52	0.06	0.00
802.11g	SISO	2412	/	/	2.097	2.112	99.29	0.03	0.00
		2437	/	/	2.096	2.112	99.24	0.03	0.03
		2462	/	/	2.097	2.112	99.29	0.03	0.00
802.11n (HT20)	MIMO	2412	/	/	5.398	5.412	99.74	0.01	0.00
		2437	/	/	5.398	5.412	99.74	0.01	0.00
		2462	/	/	5.397	5.412	99.72	0.01	0.00
802.11n (HT40)	MIMO	2422	/	/	5.197	5.212	99.71	0.01	0.04
		2437	/	/	5.197	5.212	99.71	0.01	0.04
		2452	/	/	5.196	5.211	99.71	0.01	0.04
802.11ax (HEW20)	MIMO	2412	RU242	Left	5.418	5.434	99.71	0.01	0.04
		2437	RU242	Left	5.417	5.432	99.72	0.01	0.00
		2462	RU242	Left	5.418	5.434	99.71	0.01	0.04
802.11ax (HEW40)	MIMO	2422	RU484	Left	4.104	4.118	99.66	0.01	0.00
		2437	RU484	Left	4.104	4.118	99.66	0.01	0.00
		2452	RU484	Left	4.103	4.118	99.64	0.02	0.00

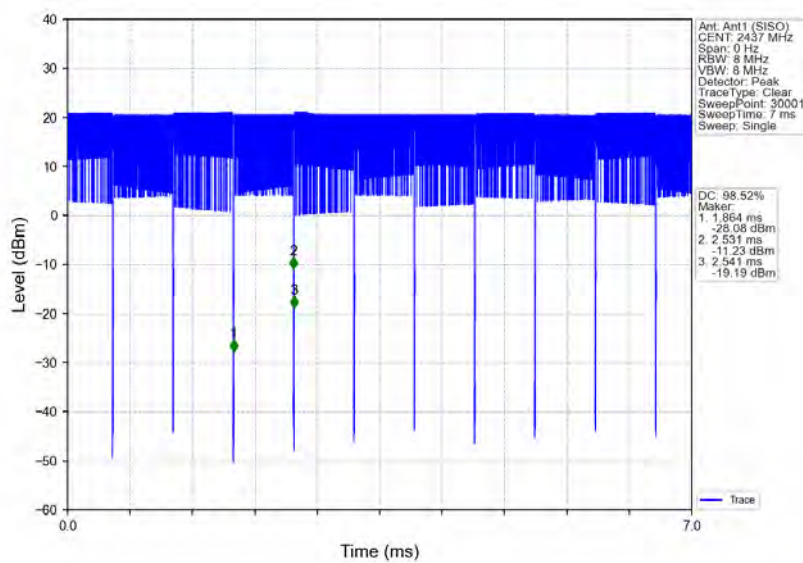
1.2 Test Graph

1.2.1 Ant1

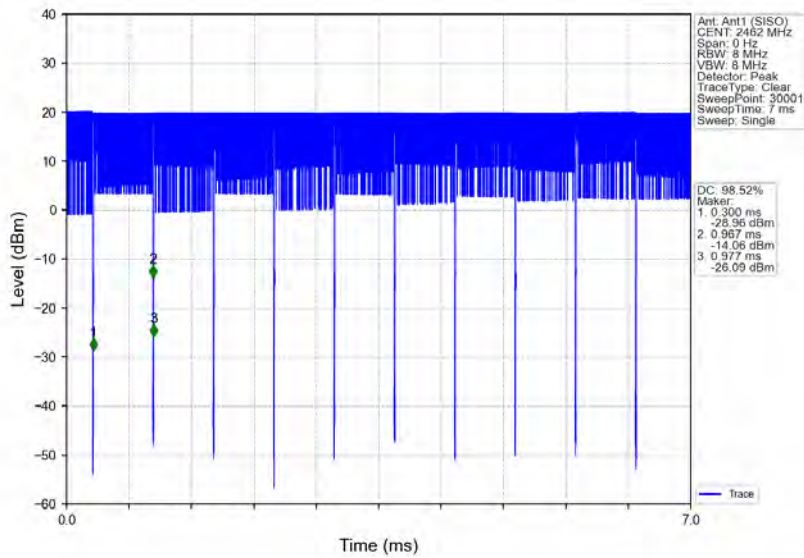
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



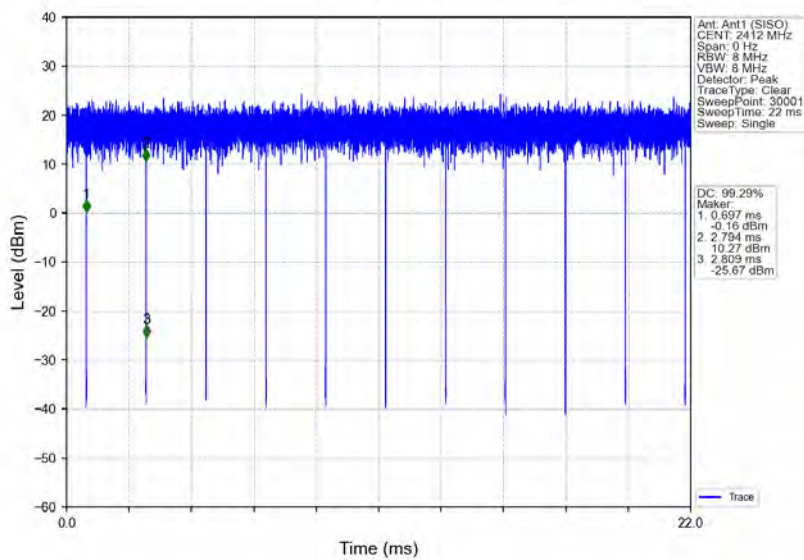
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



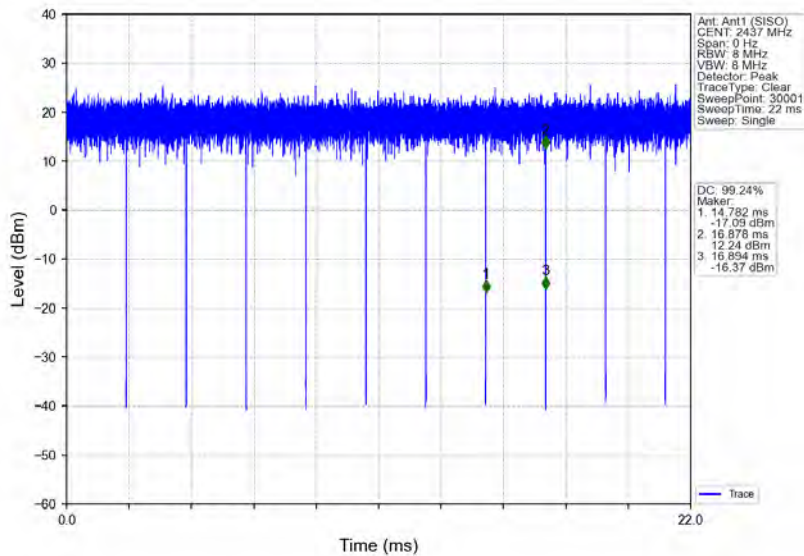
Compliance Certification Services (Kunshan) Inc.

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

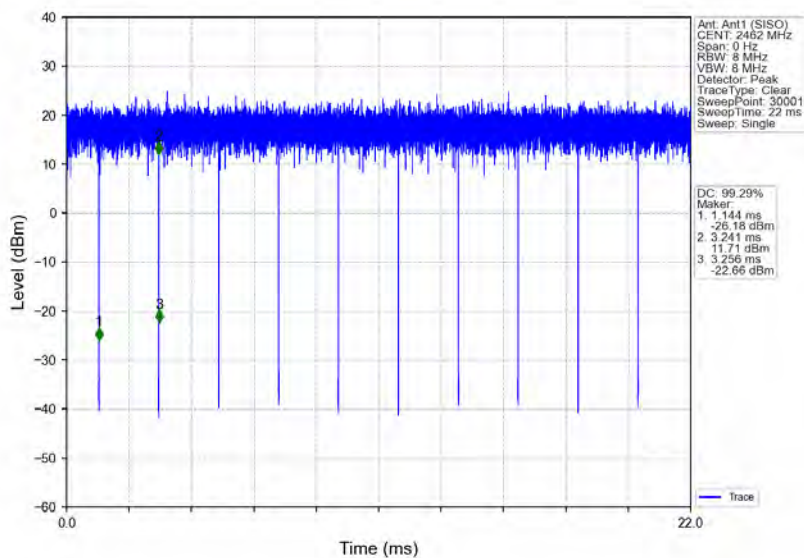
Report No.: KSCR240600100001

Page: 109 of 248

802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



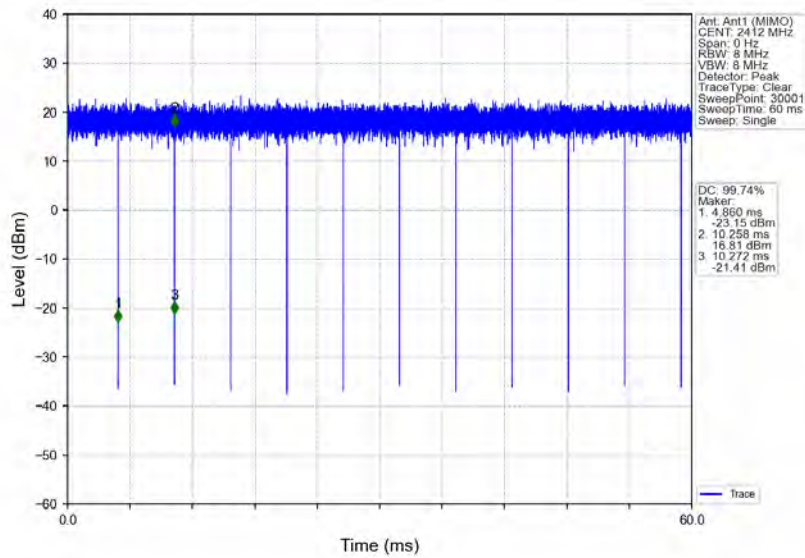
Compliance Certification Services (Kunshan) Inc.

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

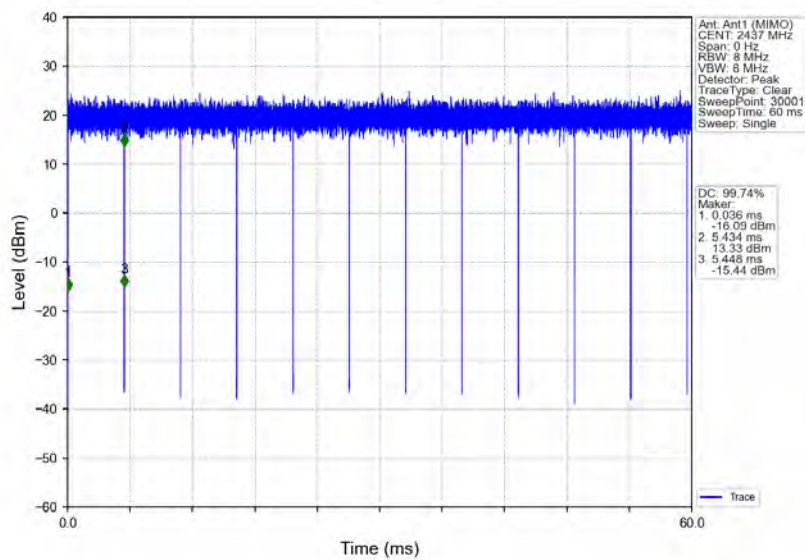
Report No.: KSCR240600100001

Page: 110 of 248

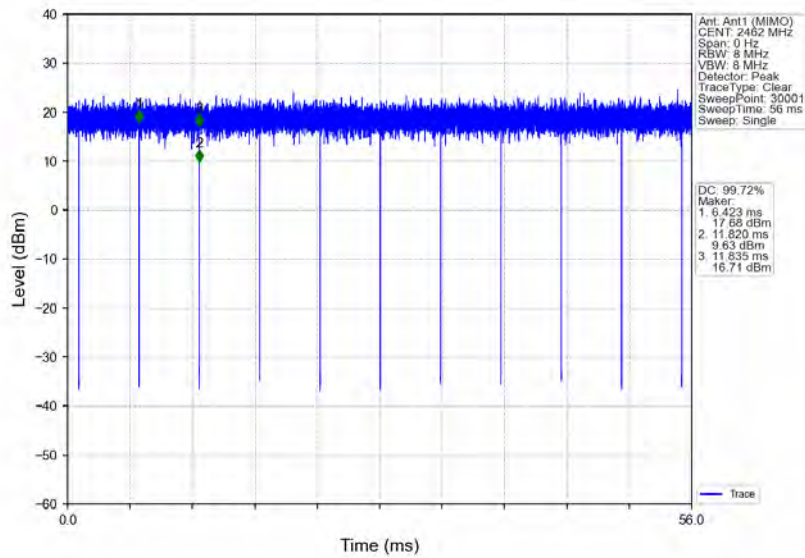
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



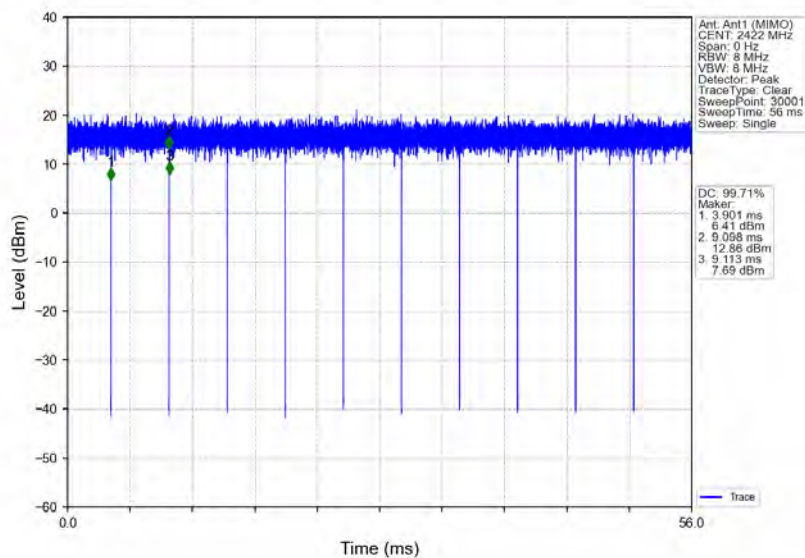
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



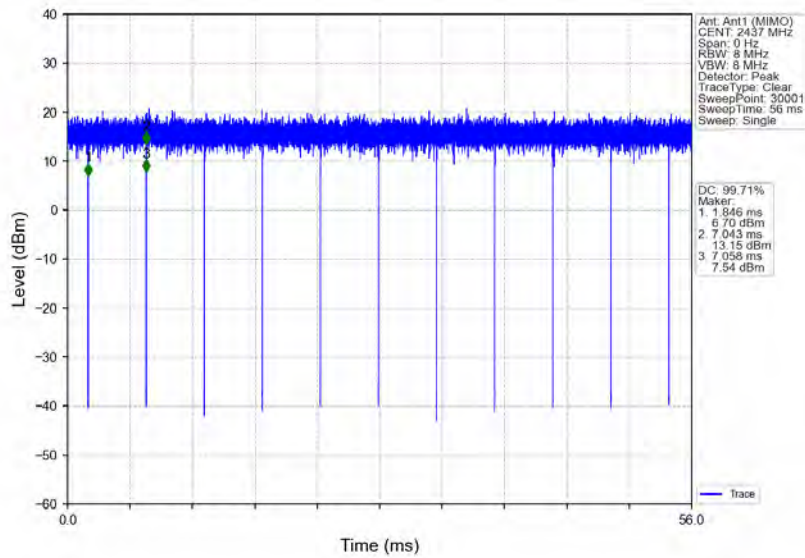
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



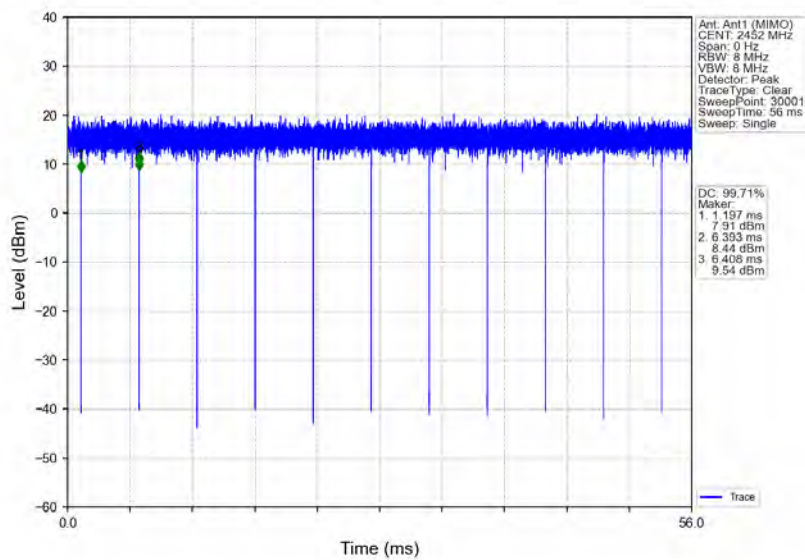
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



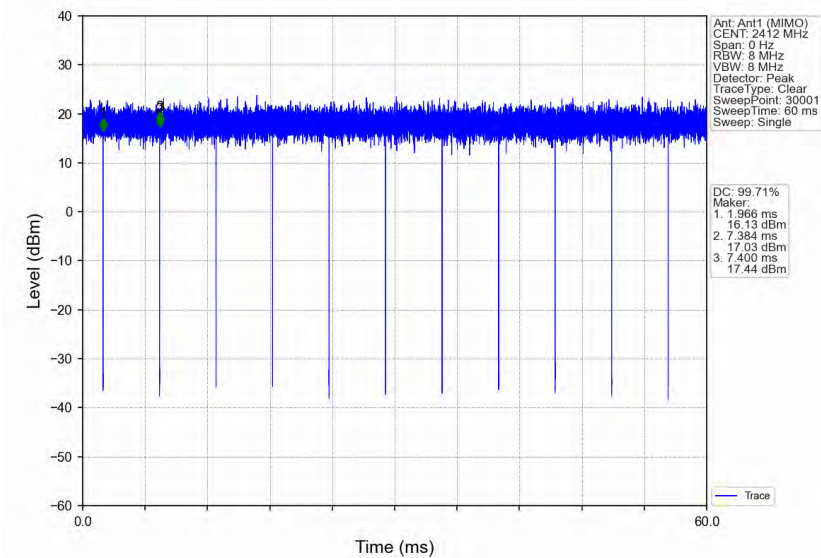
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



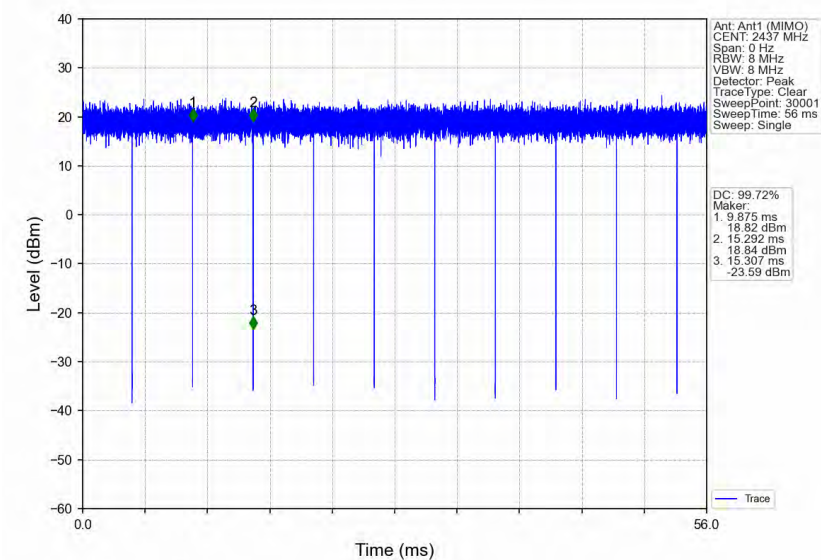
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



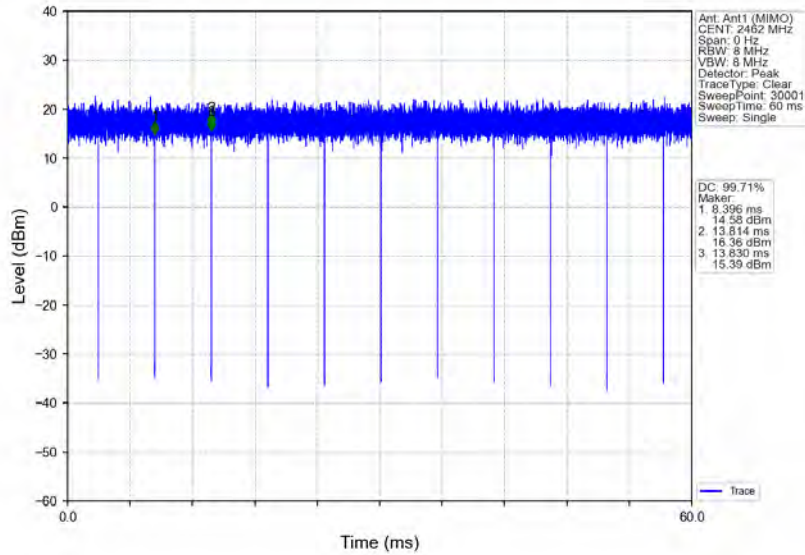
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



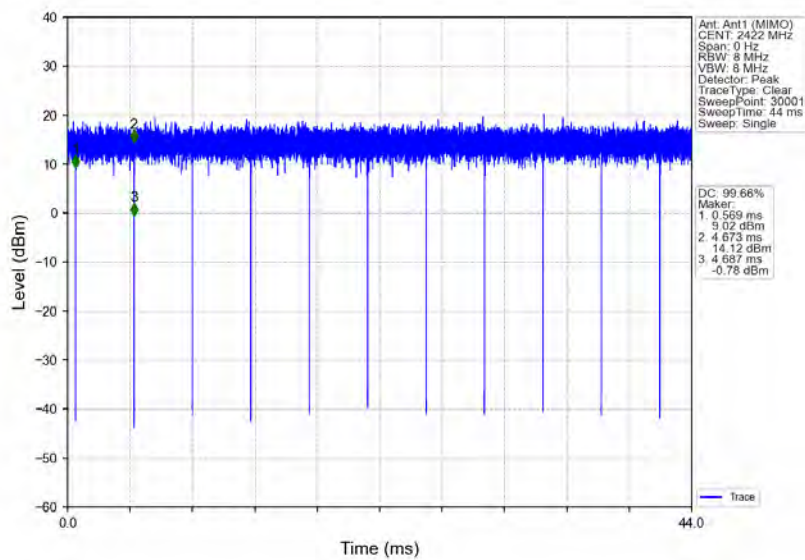
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



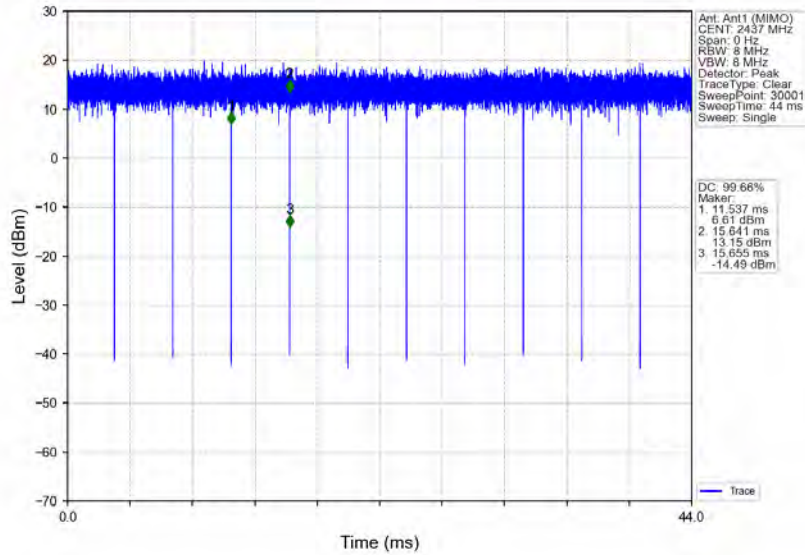
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant1 (MIMO)_NTNV



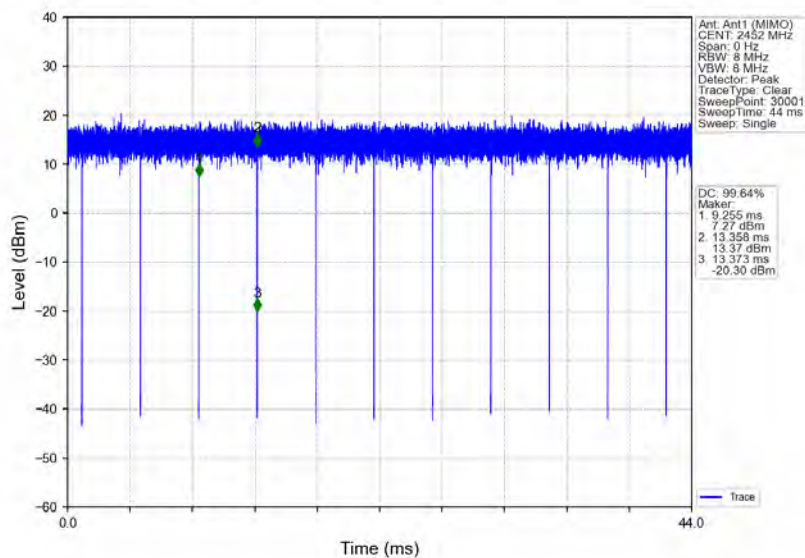
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 116 of 248

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	13.649	/	Pass
					2	13.363	/	Pass
		2437	/	/	1	13.156	/	Pass
					2	14.227	/	Pass
		2462	/	/	1	13.075	/	Pass
					2	13.463	/	Pass
802.11g	SISO	2412	/	/	1	16.600	/	Pass
					2	16.765	/	Pass
		2437	/	/	1	16.670	/	Pass
					2	16.660	/	Pass
		2462	/	/	1	16.616	/	Pass
					2	16.619	/	Pass
802.11n (HT20)	MIMO	2412	/	/	1	18.057	/	Pass
					2	17.865	/	Pass
		2437	/	/	1	17.795	/	Pass
					2	17.778	/	Pass
		2462	/	/	1	17.803	/	Pass
					2	17.748	/	Pass
802.11n (HT40)	MIMO	2422	/	/	1	36.077	/	Pass
					2	36.134	/	Pass
		2437	/	/	1	36.057	/	Pass
					2	36.125	/	Pass
		2452	/	/	1	35.818	/	Pass
					2	36.043	/	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	18.901	/	Pass
					2	18.945	/	Pass
		2437	RU242	Left	1	18.611	/	Pass
					2	18.990	/	Pass
		2462	RU242	Left	1	18.885	/	Pass
					2	18.935	/	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	1	38.135	/	Pass
					2	38.345	/	Pass
		2437	RU484	Left	1	38.112	/	Pass
					2	37.929	/	Pass
		2452	RU484	Left	1	37.747	/	Pass
					1	37.747	/	Pass

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 117 of 248

					2	37.787	/	Pass
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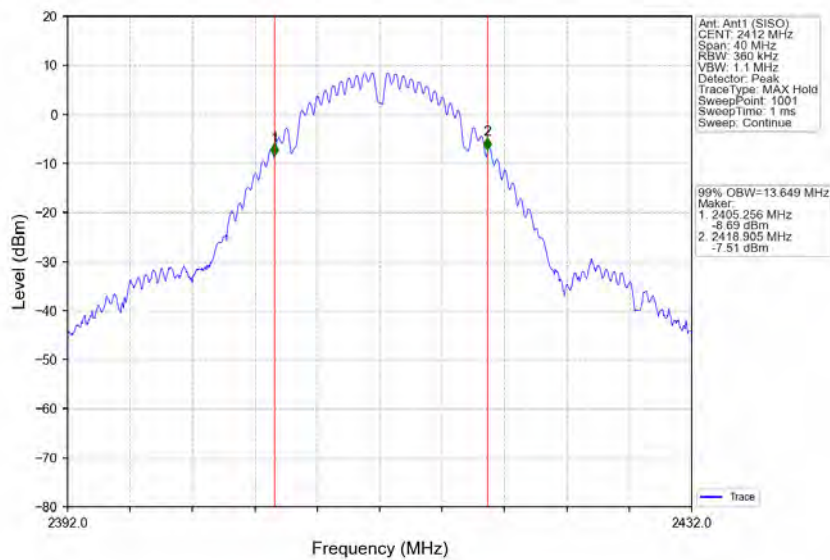
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	8.097	≥ 0.5	Pass
					2	8.038	≥ 0.5	Pass
		2437	/	/	1	7.177	≥ 0.5	Pass
					2	9.181	≥ 0.5	Pass
		2462	/	/	1	8.108	≥ 0.5	Pass
					2	8.120	≥ 0.5	Pass
802.11g	SISO	2412	/	/	1	15.129	≥ 0.5	Pass
					2	15.154	≥ 0.5	Pass
		2437	/	/	1	15.154	≥ 0.5	Pass
					2	15.159	≥ 0.5	Pass
		2462	/	/	1	15.313	≥ 0.5	Pass
					2	15.159	≥ 0.5	Pass
802.11n (HT20)	MIMO	2412	/	/	1	15.350	≥ 0.5	Pass
					2	15.094	≥ 0.5	Pass
		2437	/	/	1	14.127	≥ 0.5	Pass
					2	15.171	≥ 0.5	Pass
		2462	/	/	1	15.452	≥ 0.5	Pass
					2	16.095	≥ 0.5	Pass
802.11n (HT40)	MIMO	2422	/	/	1	35.119	≥ 0.5	Pass
					2	35.124	≥ 0.5	Pass
		2437	/	/	1	35.114	≥ 0.5	Pass
					2	35.130	≥ 0.5	Pass
		2452	/	/	1	35.065	≥ 0.5	Pass
					2	35.067	≥ 0.5	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	15.230	≥ 0.5	Pass
					2	16.182	≥ 0.5	Pass
		2437	RU242	Left	1	13.831	≥ 0.5	Pass
					2	18.189	≥ 0.5	Pass
		2462	RU242	Left	1	15.603	≥ 0.5	Pass
					2	17.795	≥ 0.5	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	1	37.394	≥ 0.5	Pass
					2	36.653	≥ 0.5	Pass
		2437	RU484	Left	1	37.826	≥ 0.5	Pass
					2	35.999	≥ 0.5	Pass
		2452	RU484	Left	1	30.061	≥ 0.5	Pass
					2	35.393	≥ 0.5	Pass

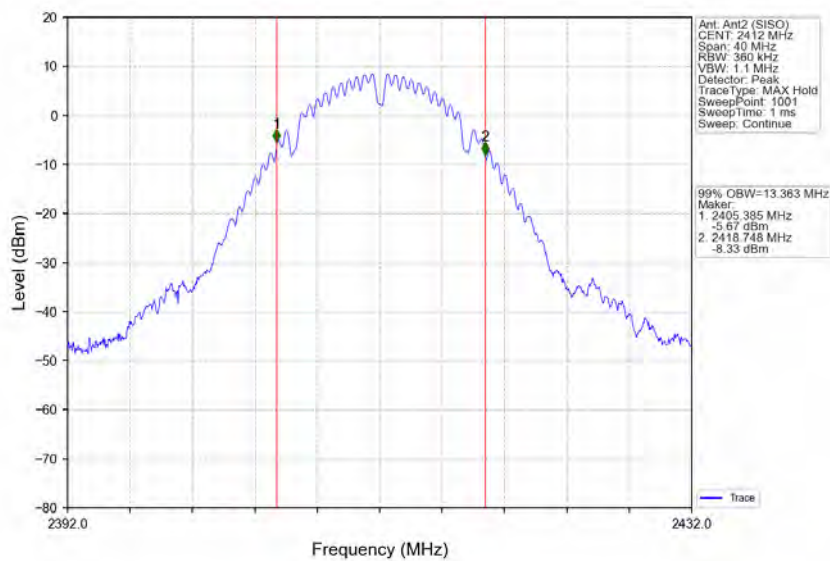
2.2 Test Graph

2.2.1 OBW

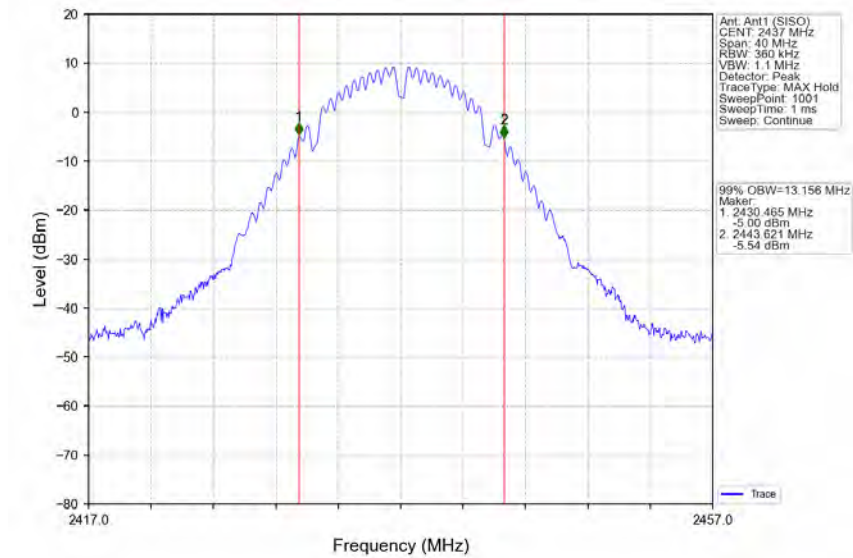
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



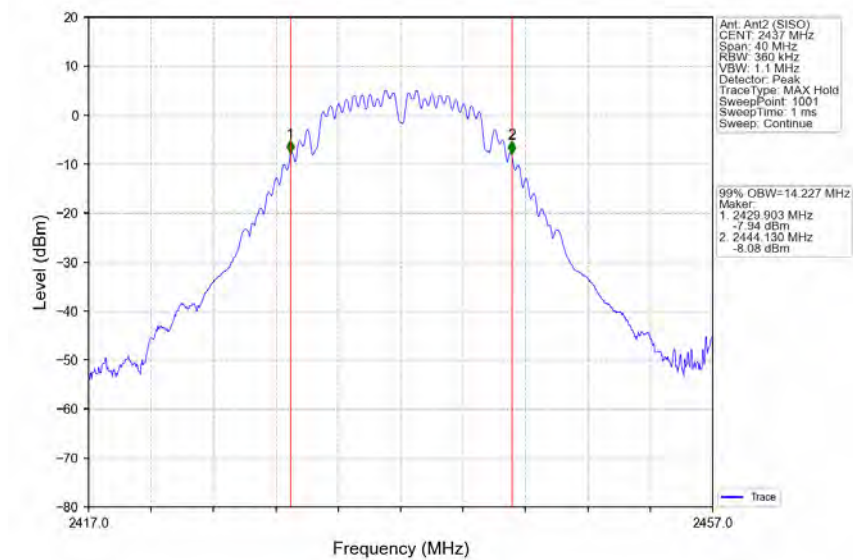
802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



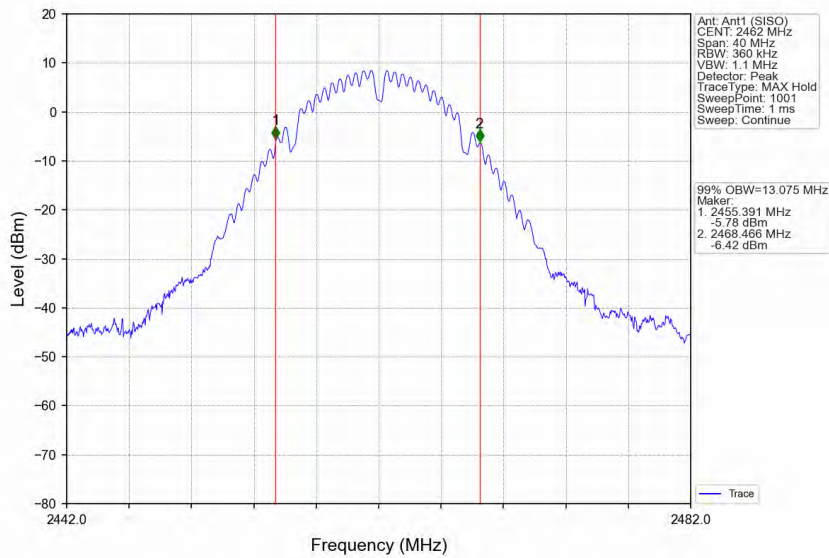
Compliance Certification Services (Kunshan) Inc.

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

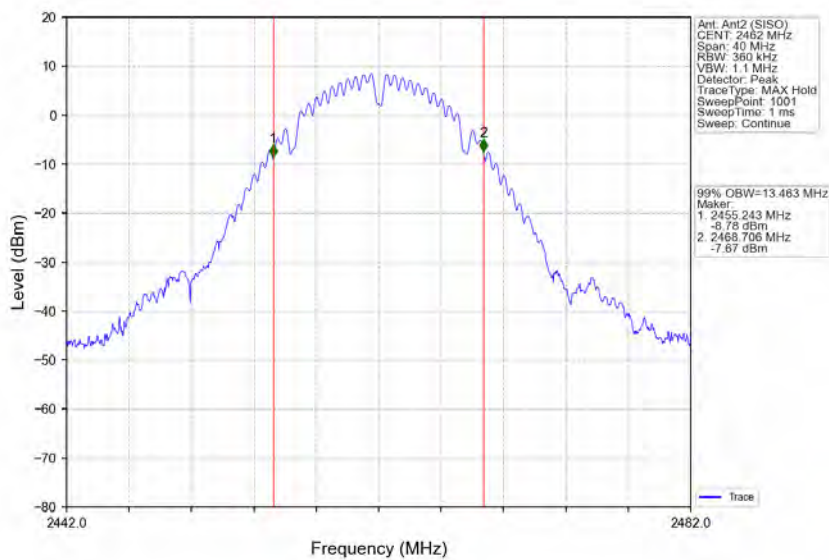
Report No.: KSCR240600100001

Page: 120 of 248

802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



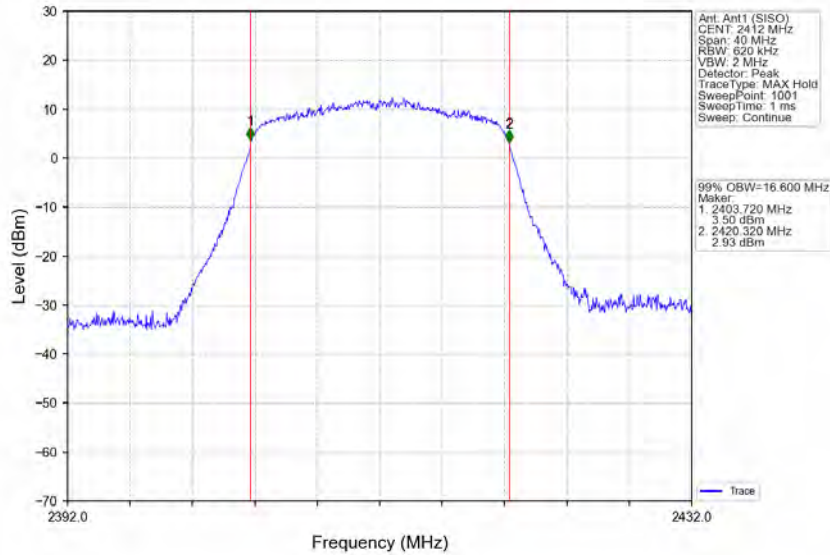
Compliance Certification Services (Kunshan) Inc.

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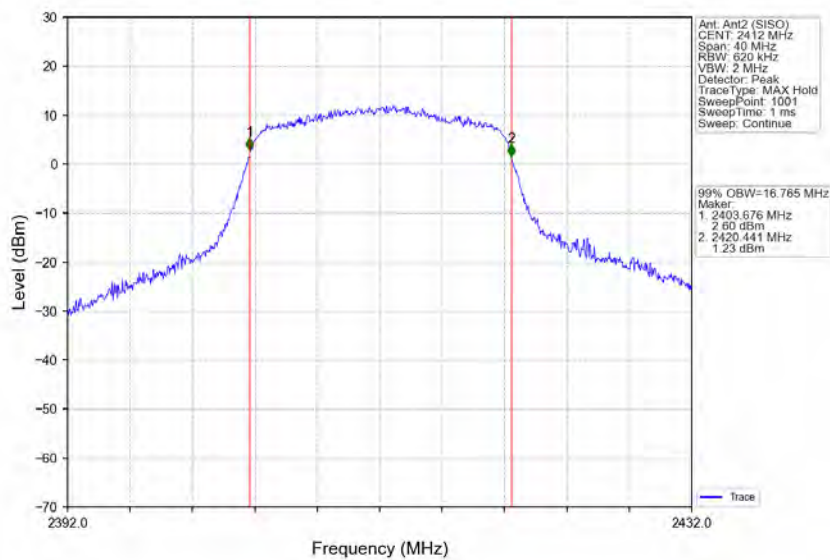
Report No.: KSCR240600100001

Page: 121 of 248

802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



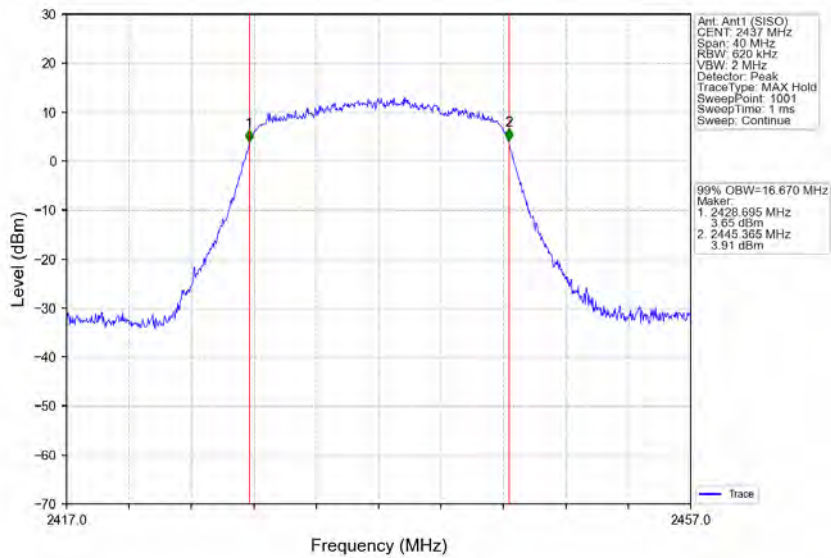
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

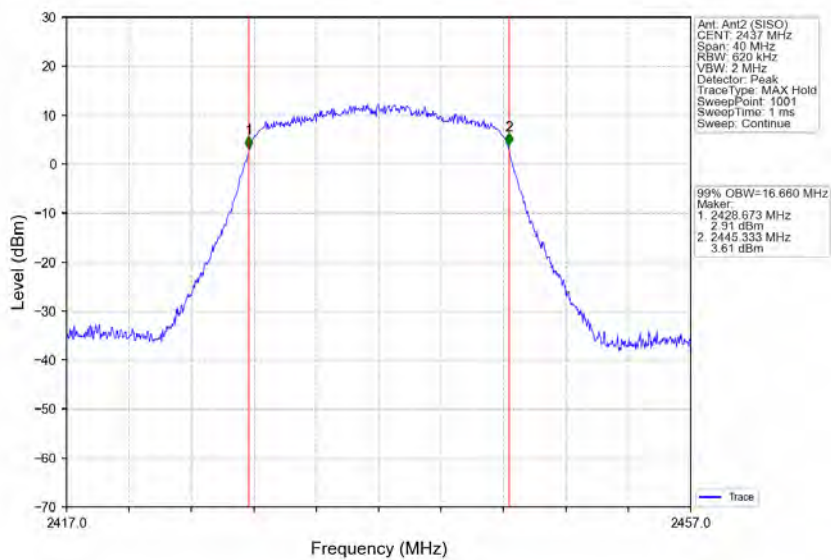
Report No.: KSCR240600100001

Page: 122 of 248

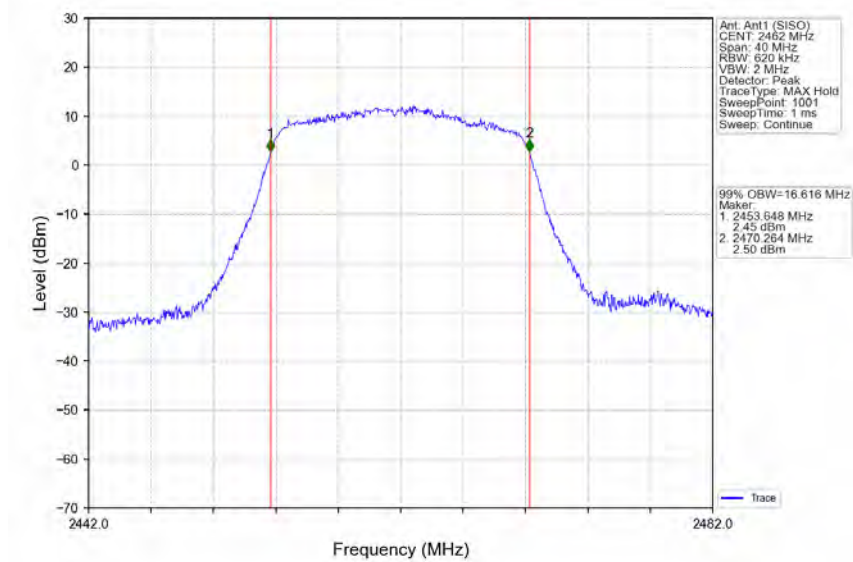
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



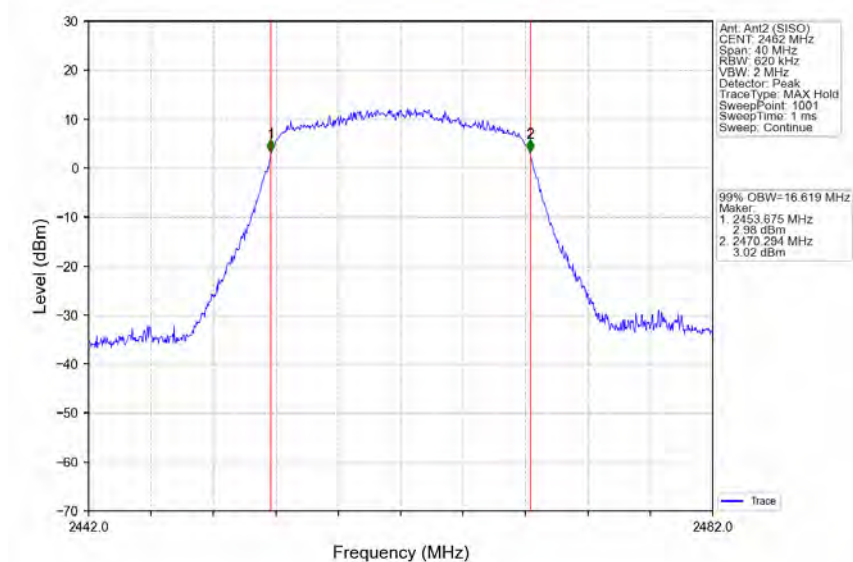
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



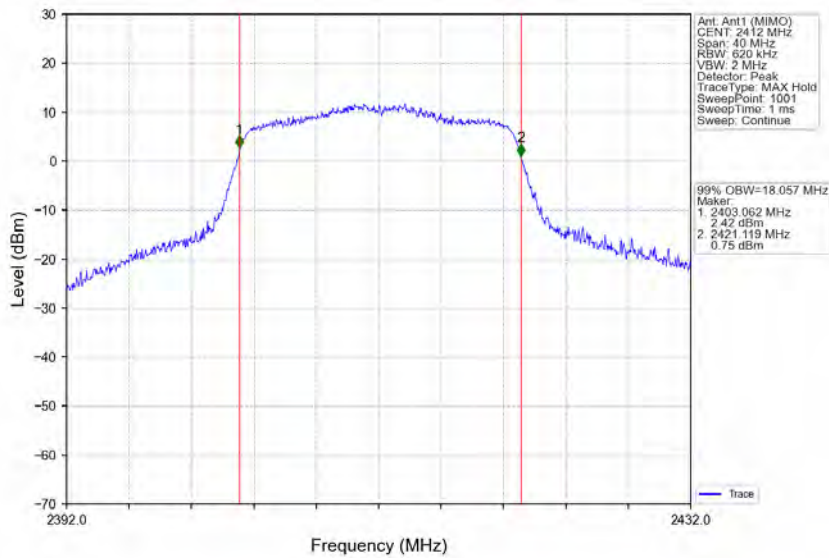
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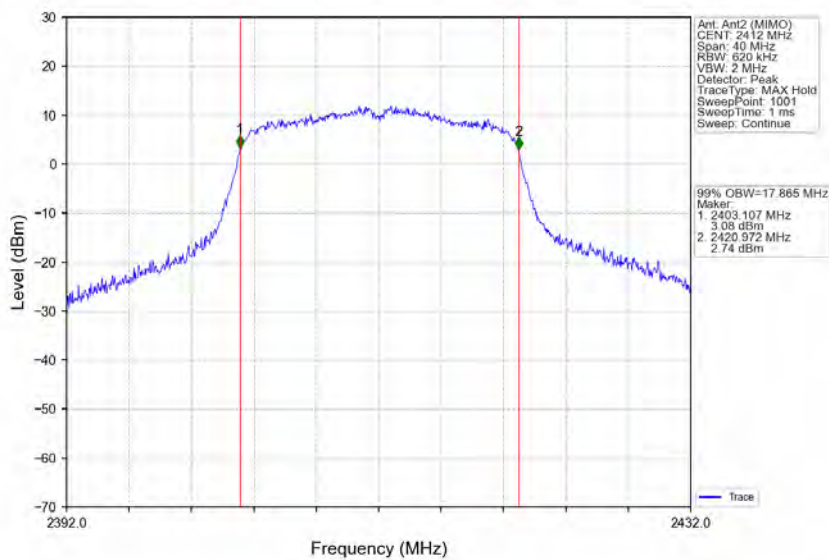
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



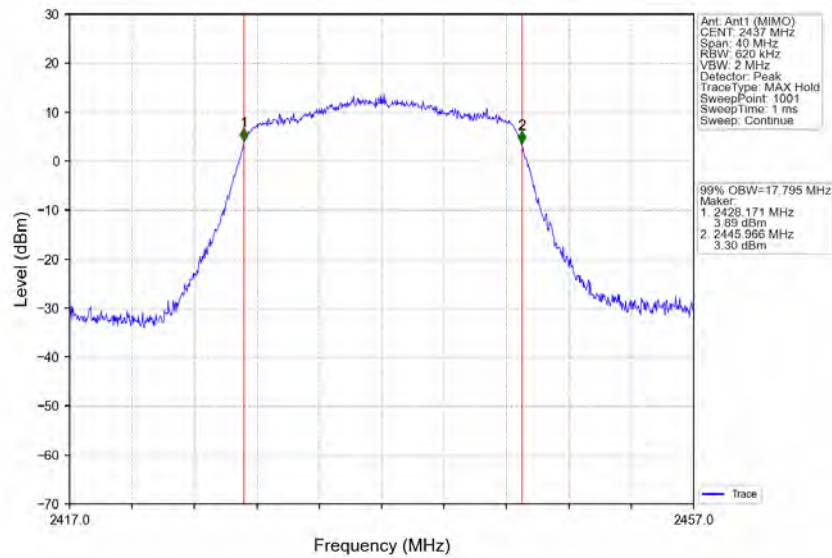
Compliance Certification Services (Kunshan) Inc.

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

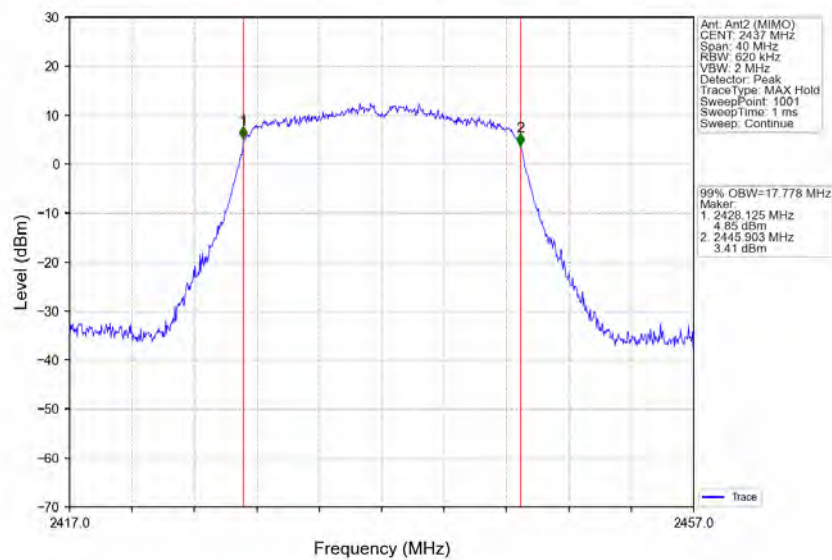
Report No.: KSCR240600100001

Page: 125 of 248

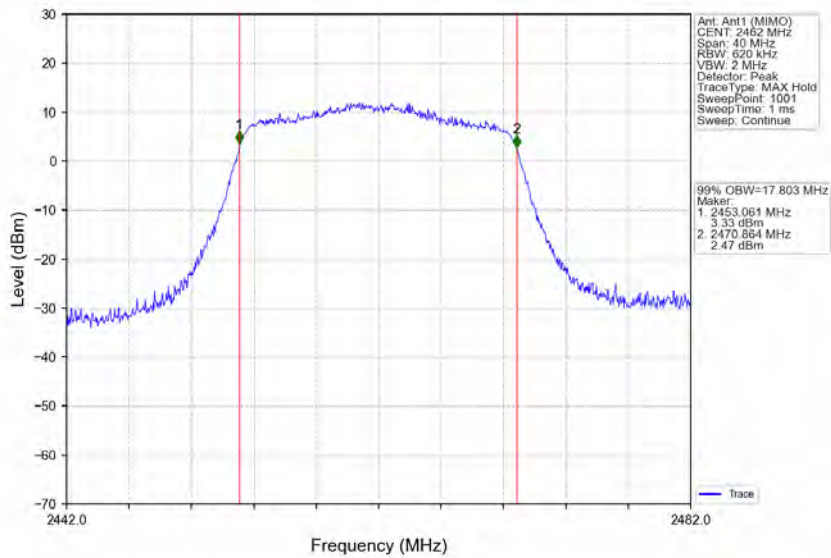
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



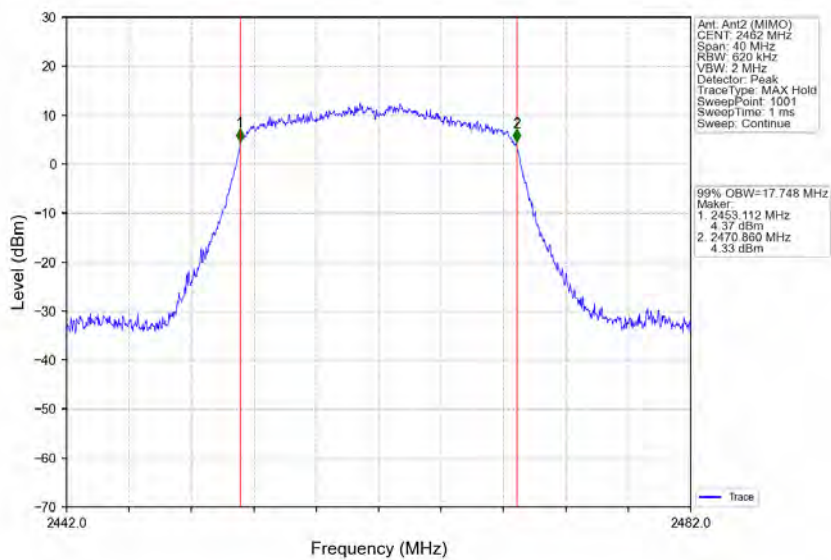
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



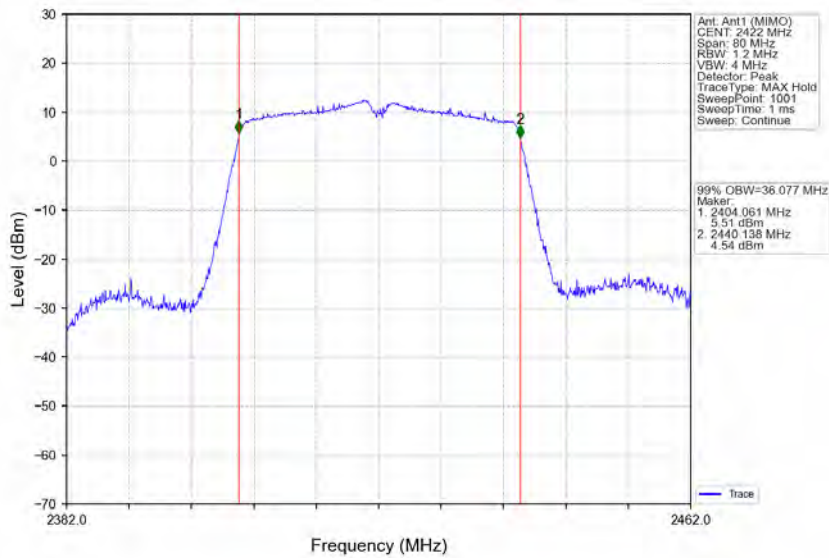
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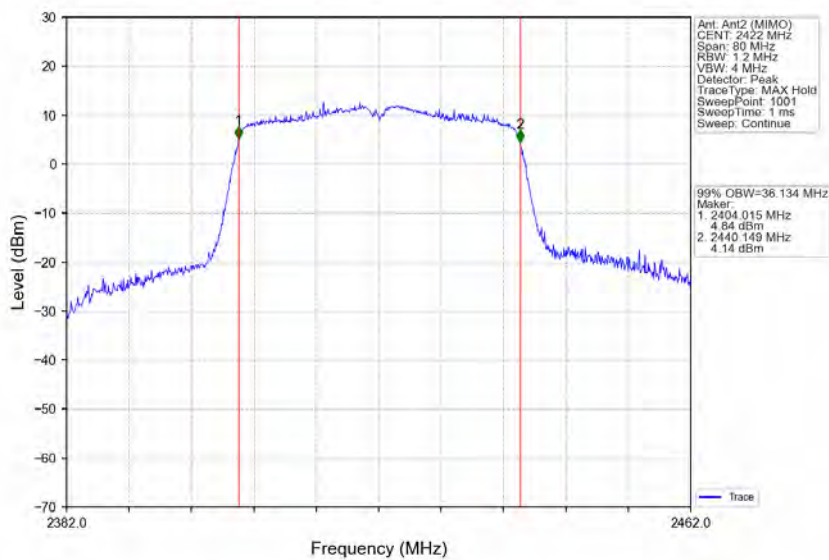
Report No.: KSCR240600100001

Page: 127 of 248

802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



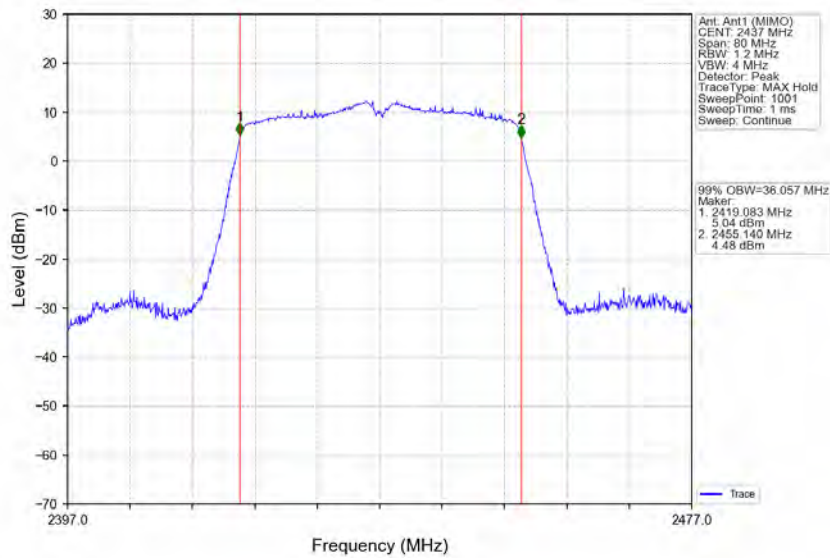
Compliance Certification Services (Kunshan) Inc.

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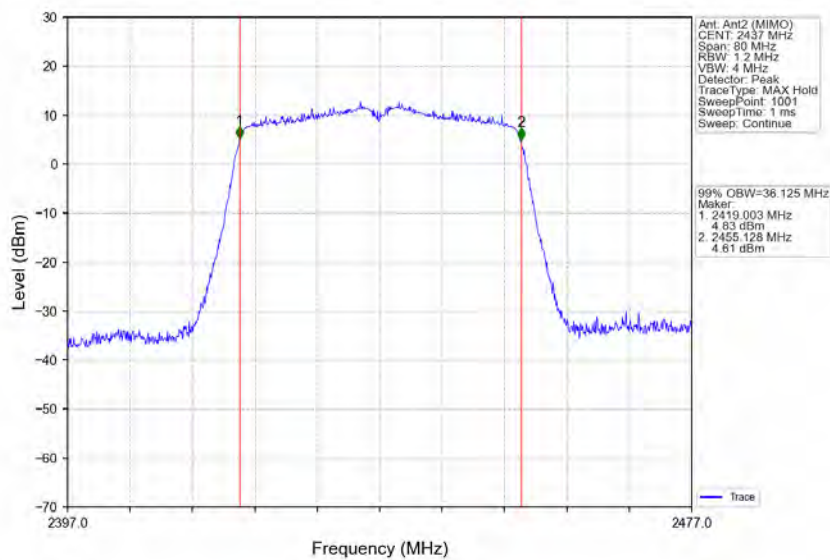
Report No.: KSCR240600100001

Page: 128 of 248

802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



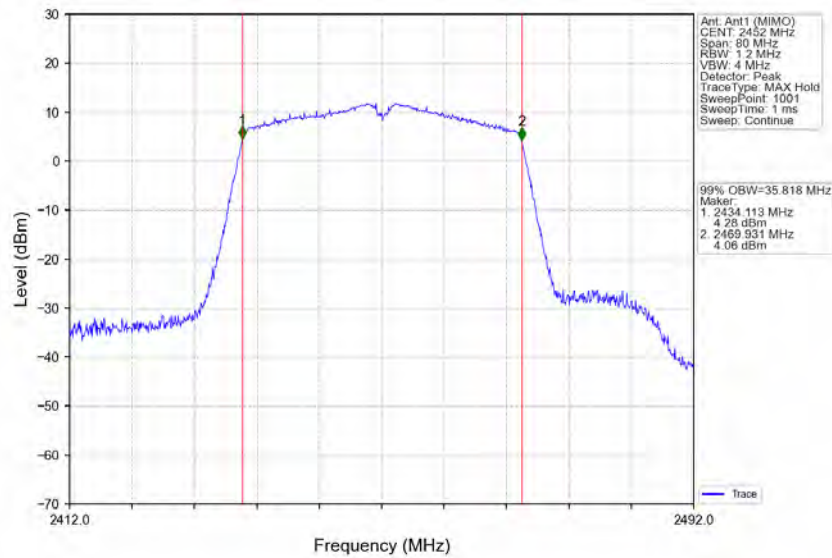
Compliance Certification Services (Kunshan) Inc.

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

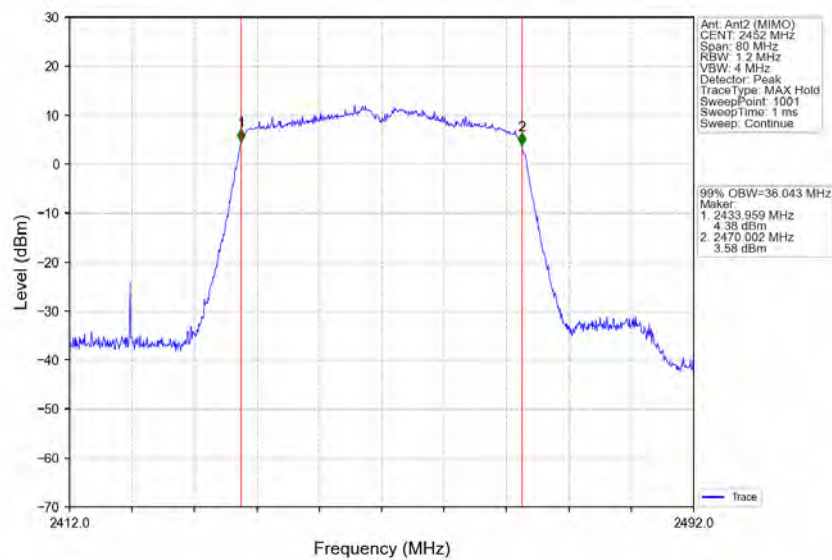
Report No.: KSCR240600100001

Page: 129 of 248

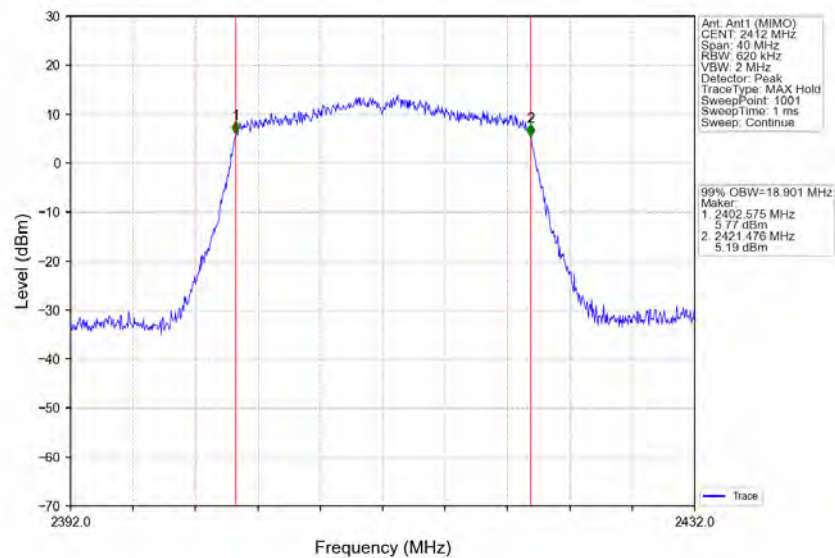
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



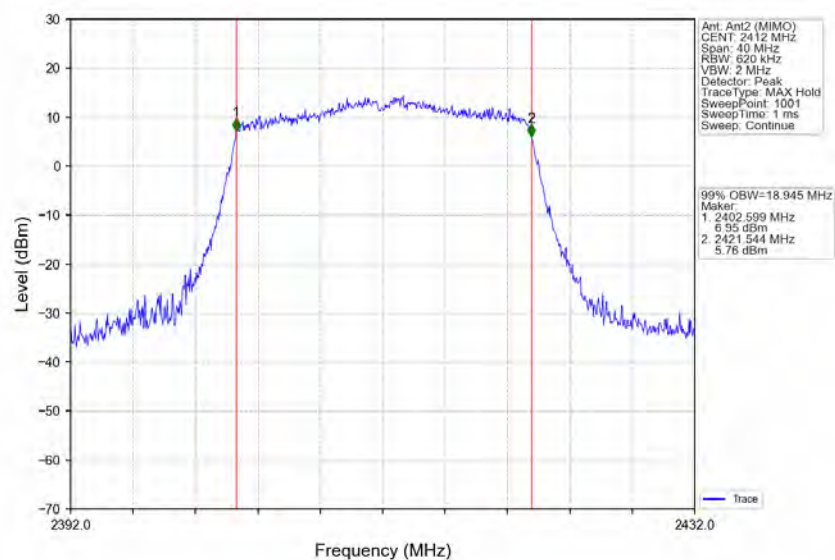
802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



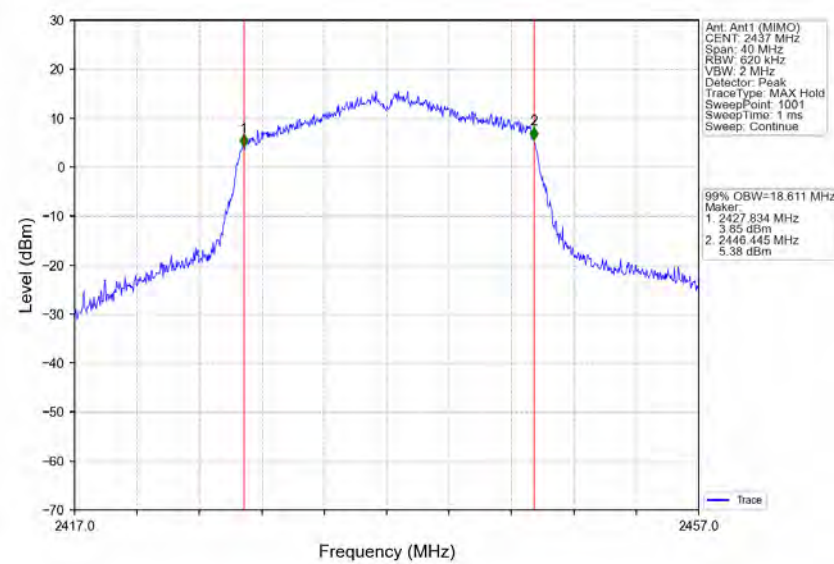
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



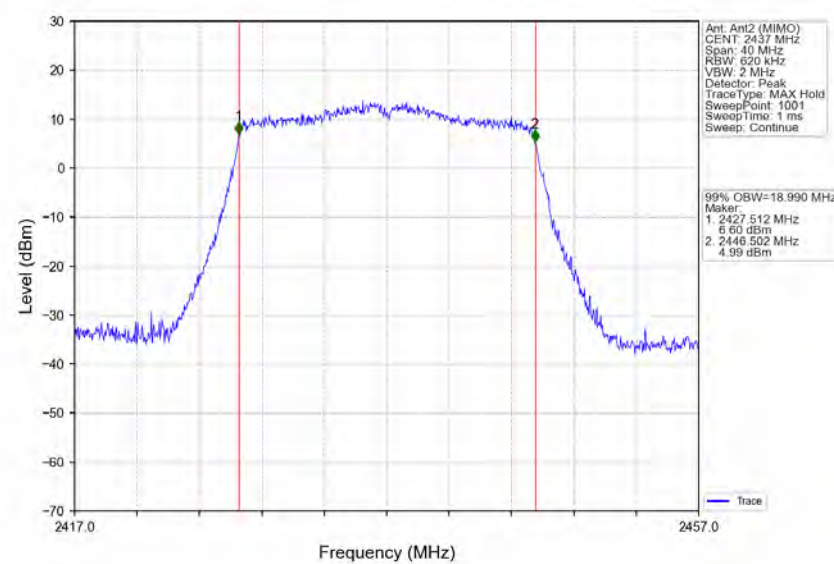
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant2 (MIMO)_NTNV



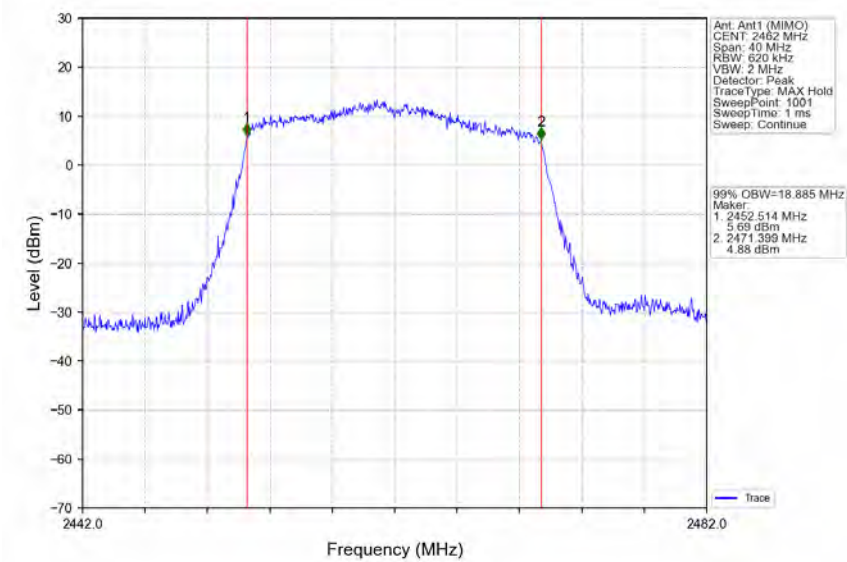
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



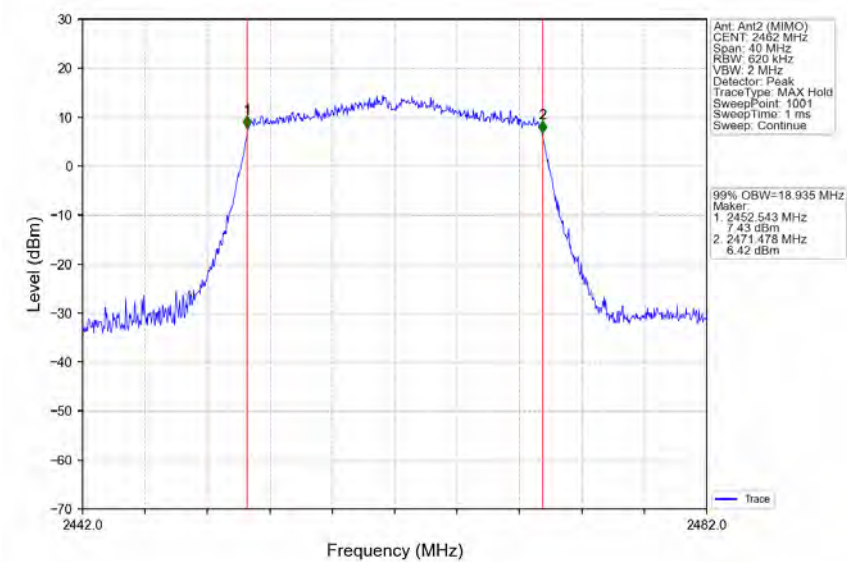
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant2 (MIMO)_NTNV



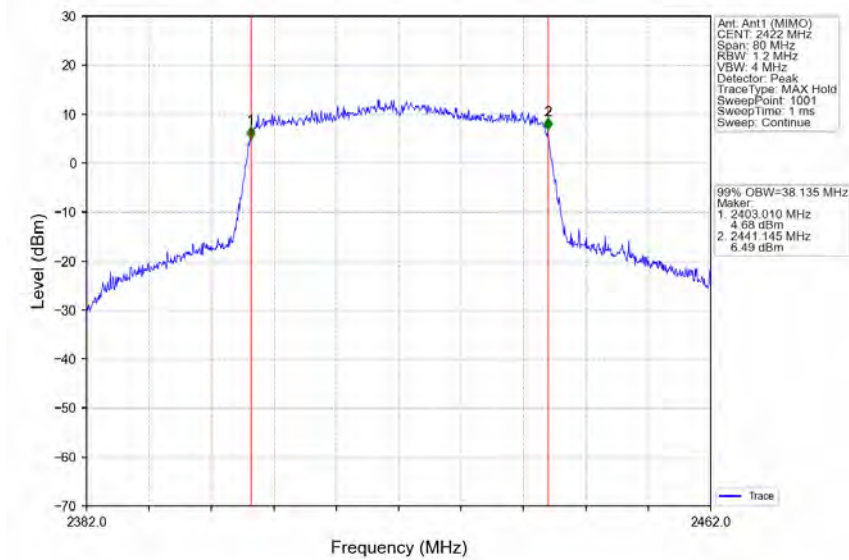
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant1 (MIMO)_NTNV



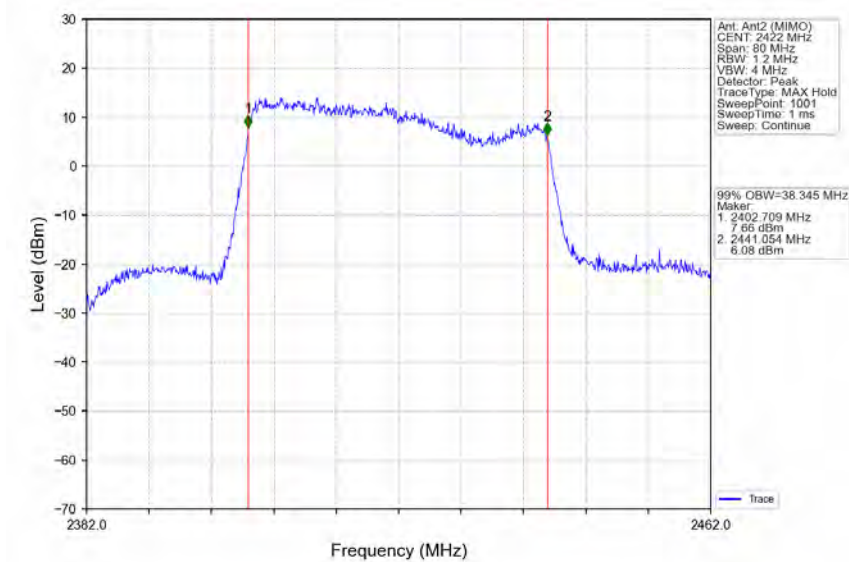
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant2 (MIMO)_NTNV



802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant2 (MIMO)_NTNV



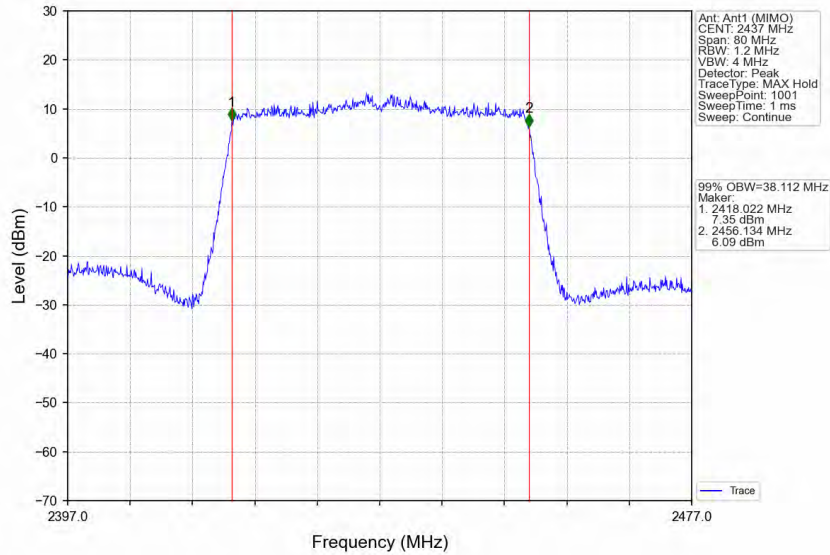
Compliance Certification Services (Kunshan) Inc.

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

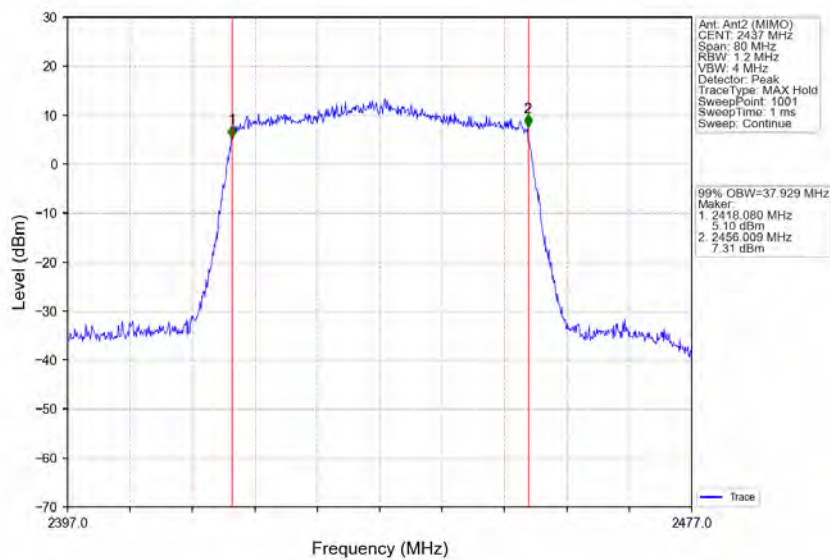
Report No.: KSCR240600100001

Page: 134 of 248

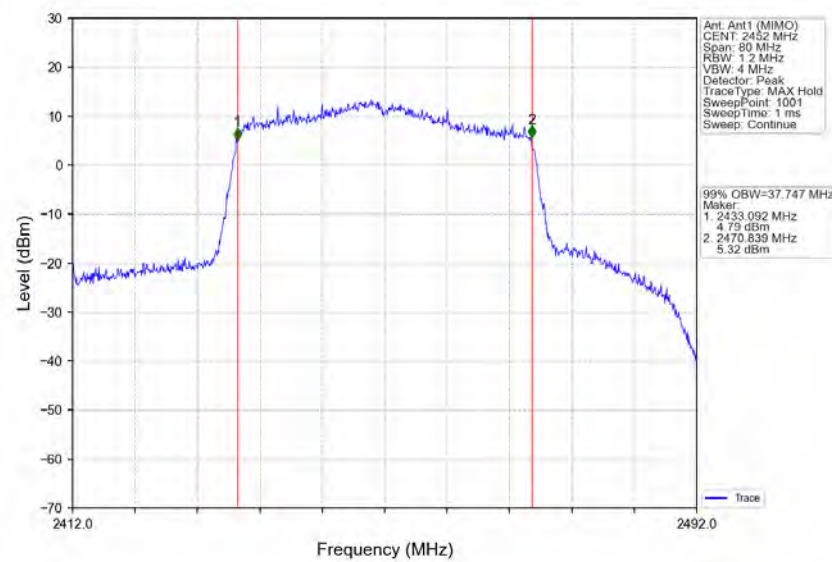
802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant1 (MIMO)_NTNV



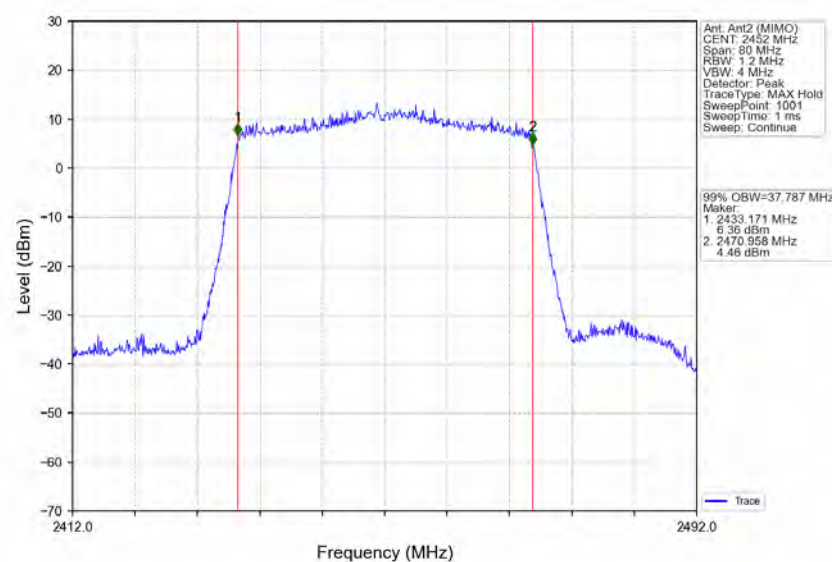
802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant2 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV

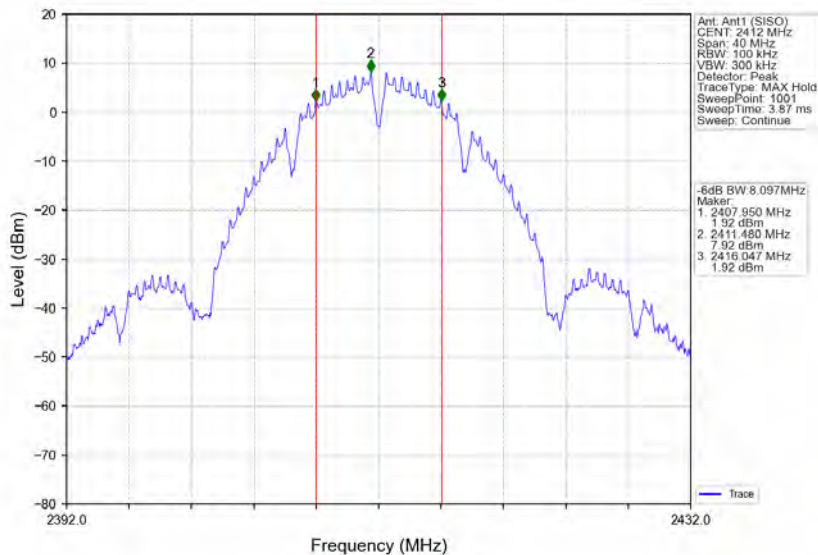


802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant2 (MIMO)_NTNV

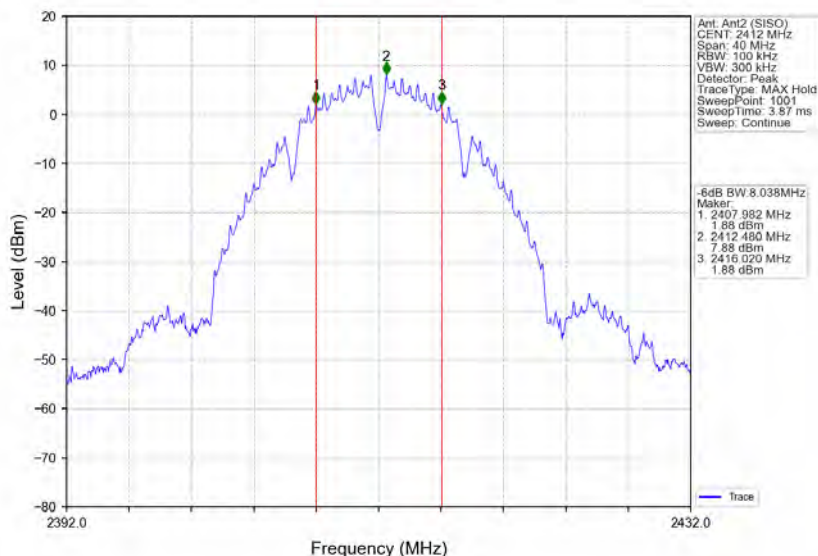


2.2.2 6dB BW

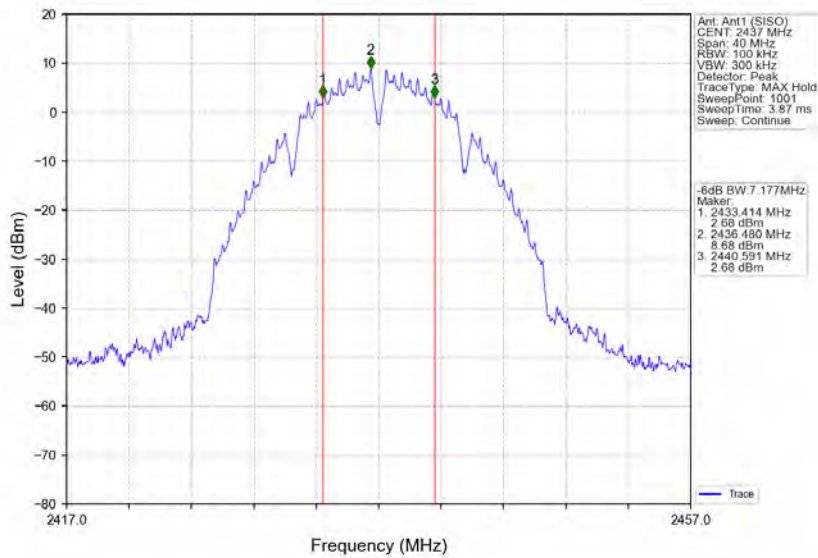
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



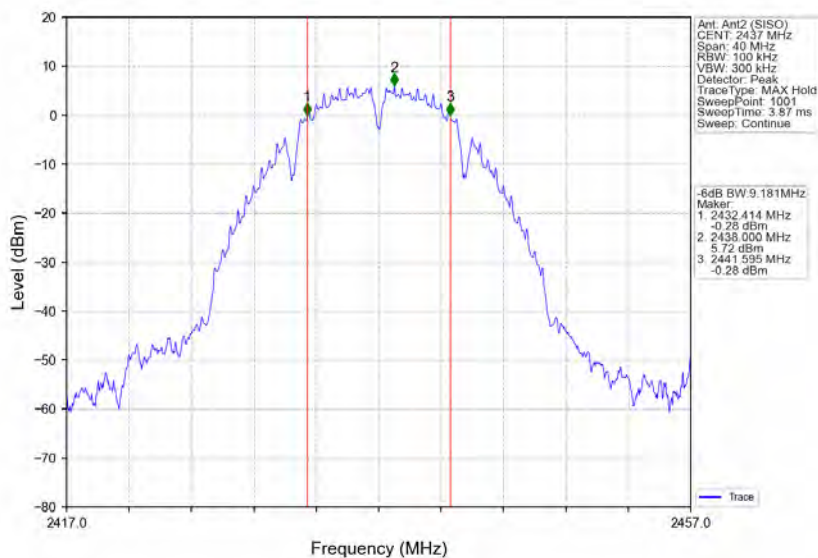
802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



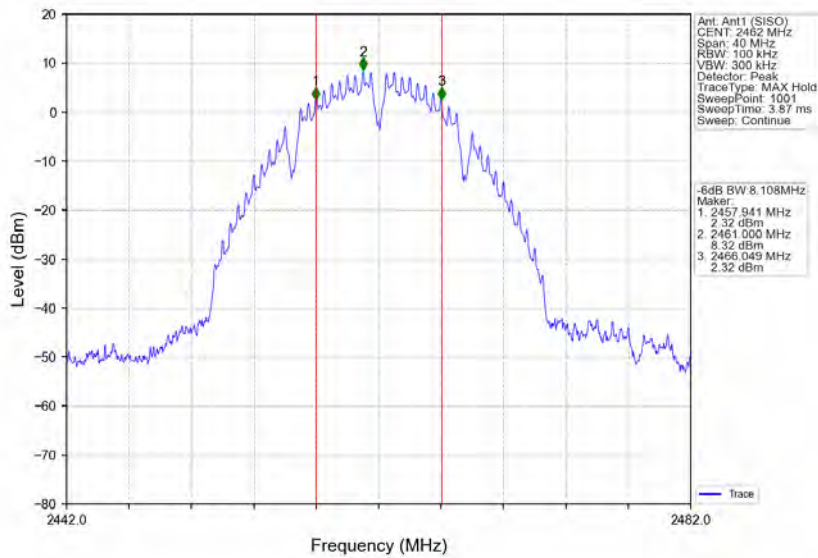
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



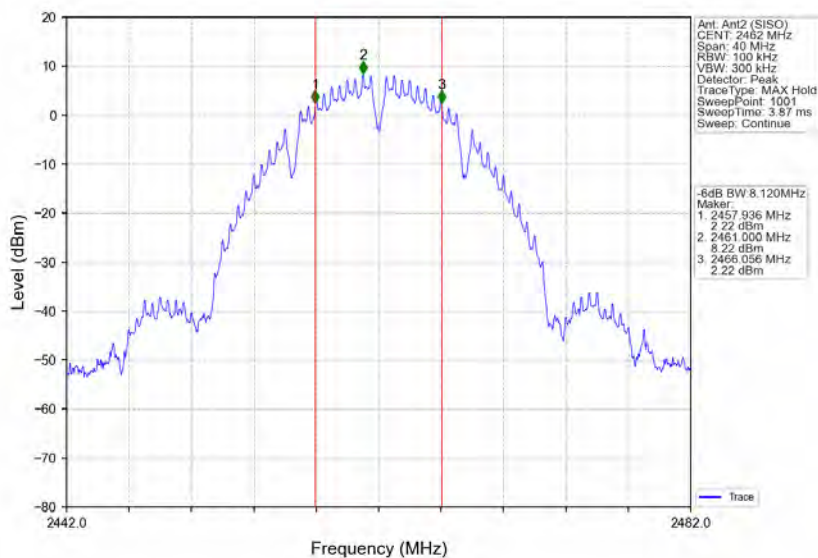
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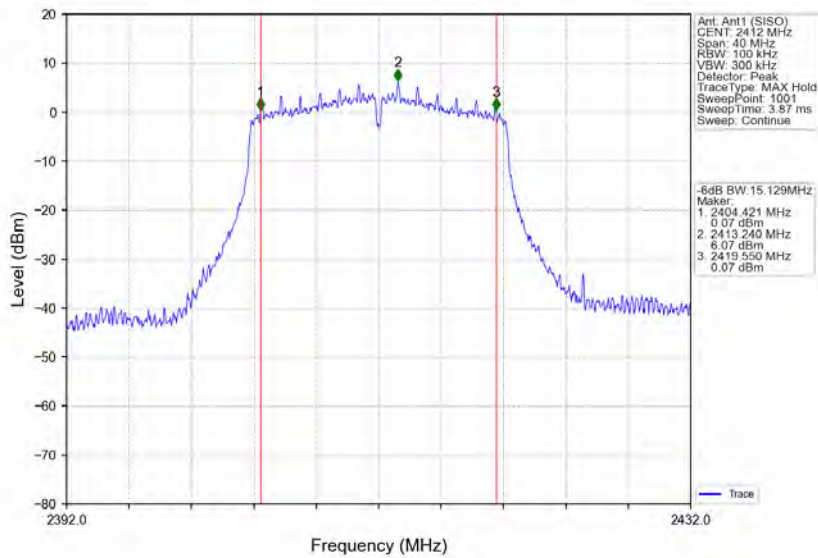
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



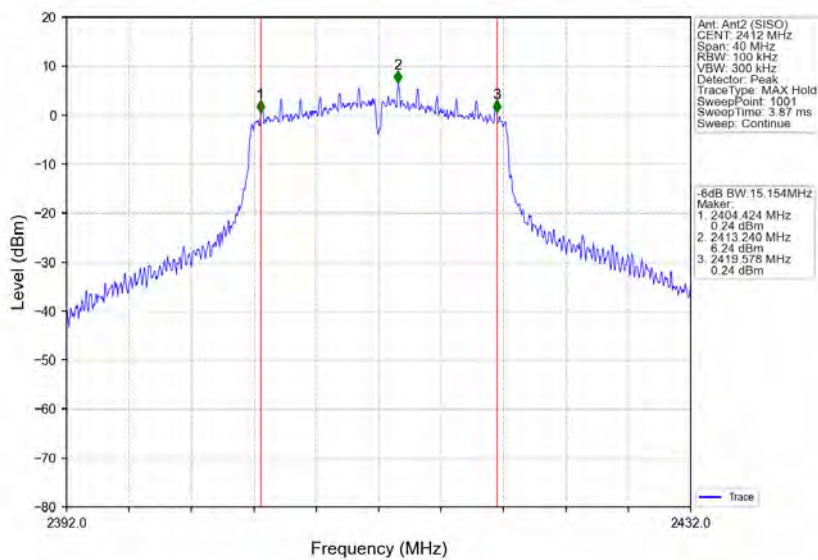
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



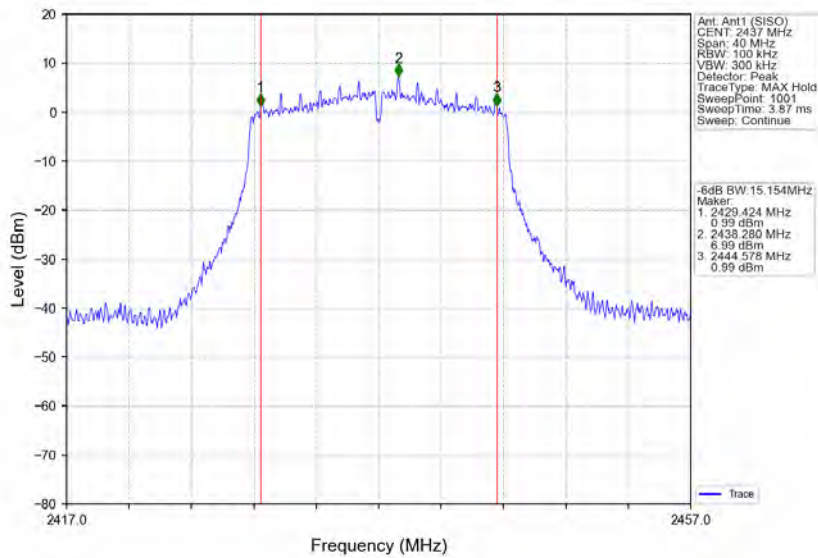
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



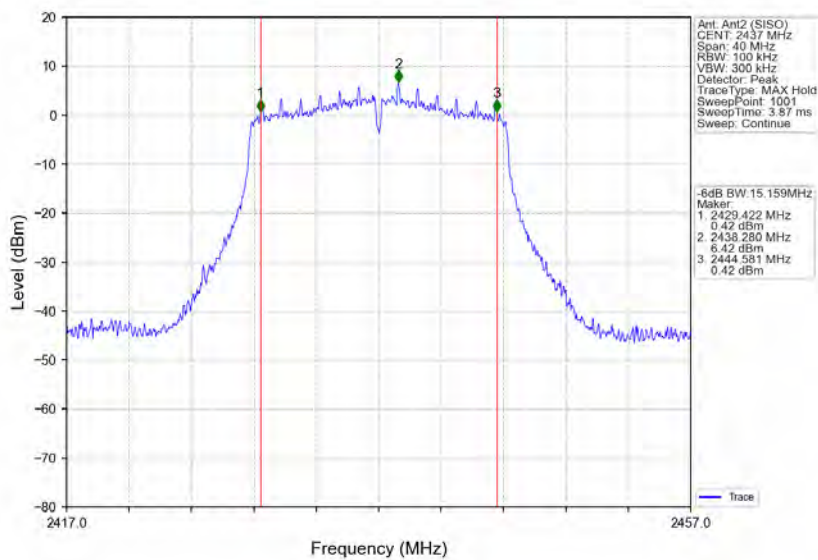
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



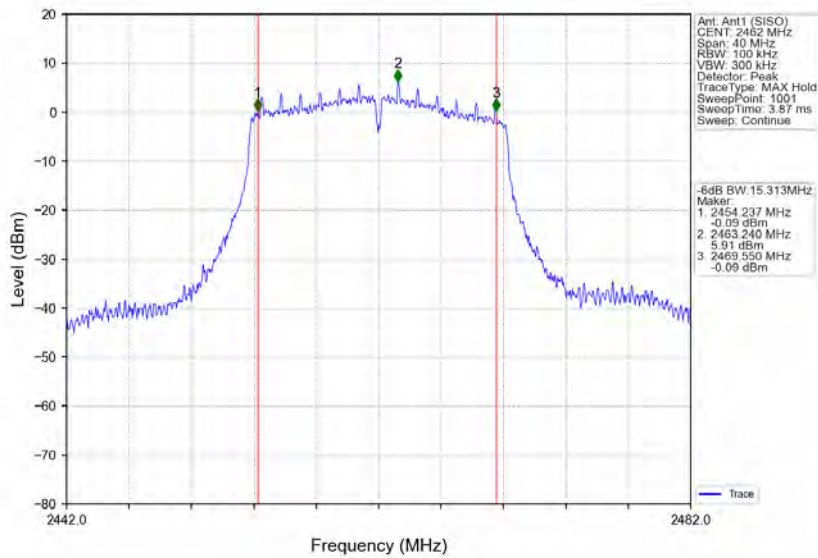
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



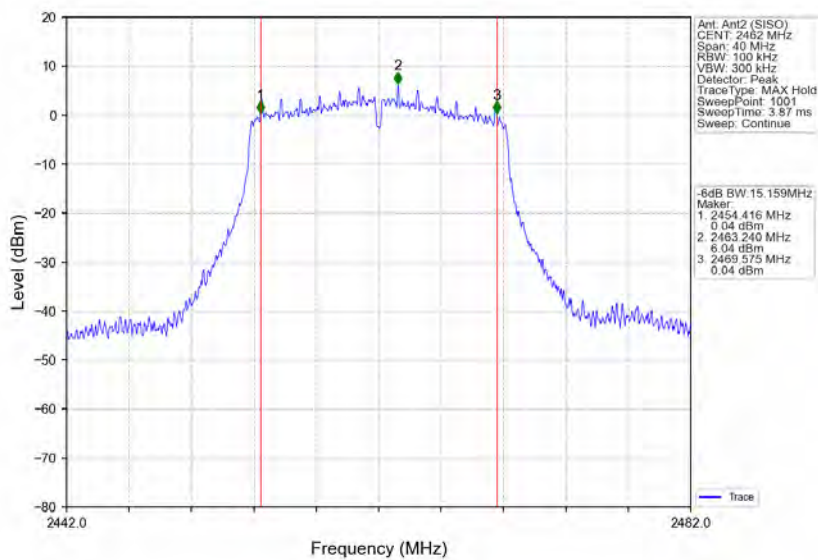
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



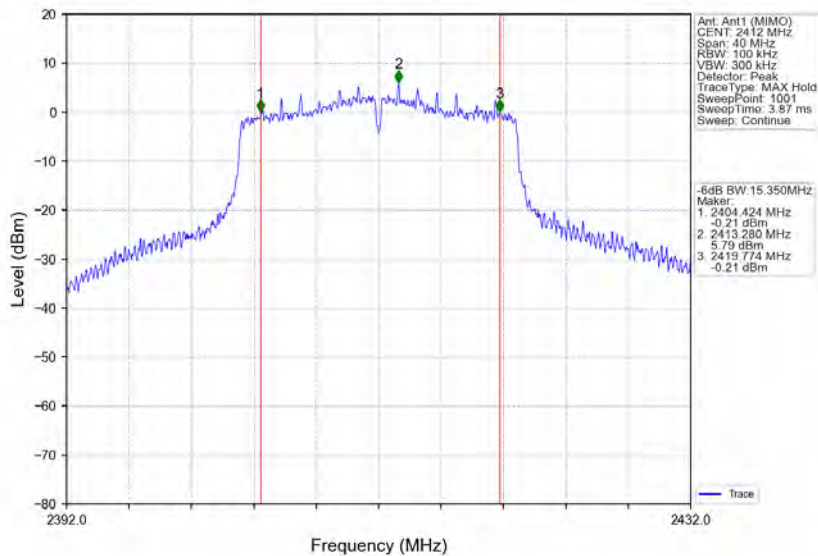
Compliance Certification Services (Kunshan) Inc.

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

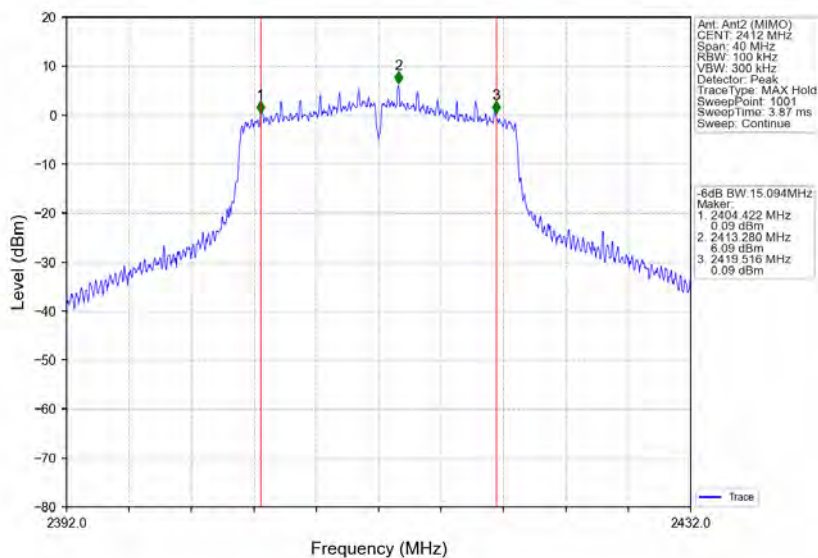
Report No.: KSCR240600100001

Page: 142 of 248

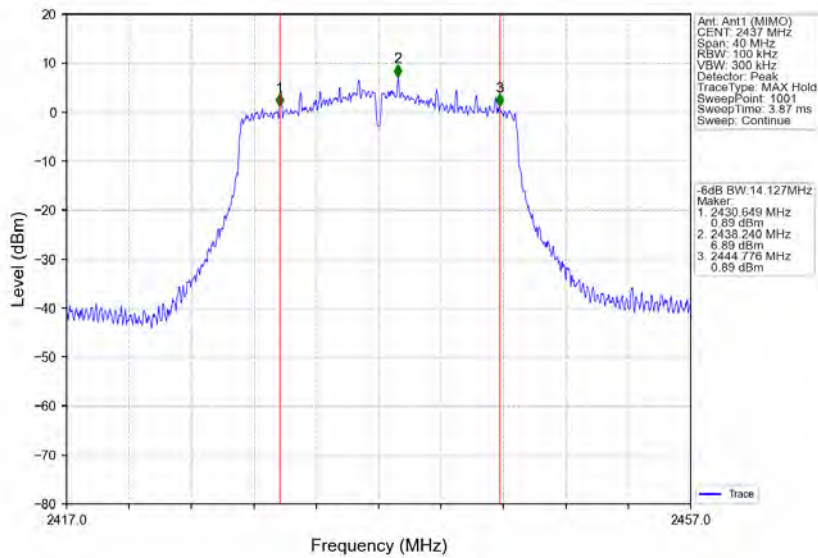
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



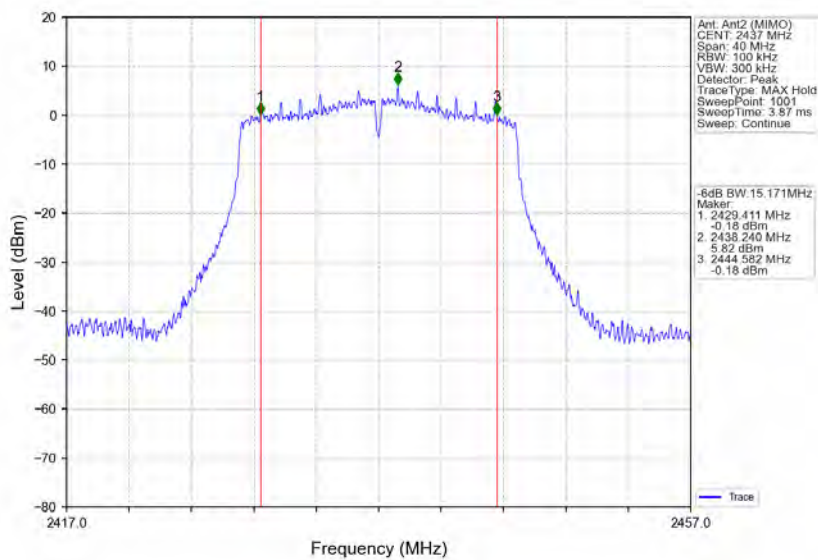
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



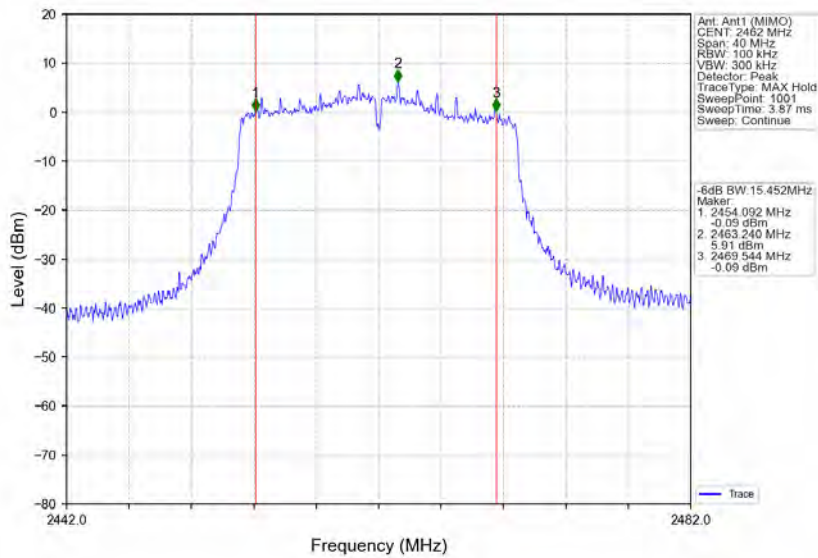
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



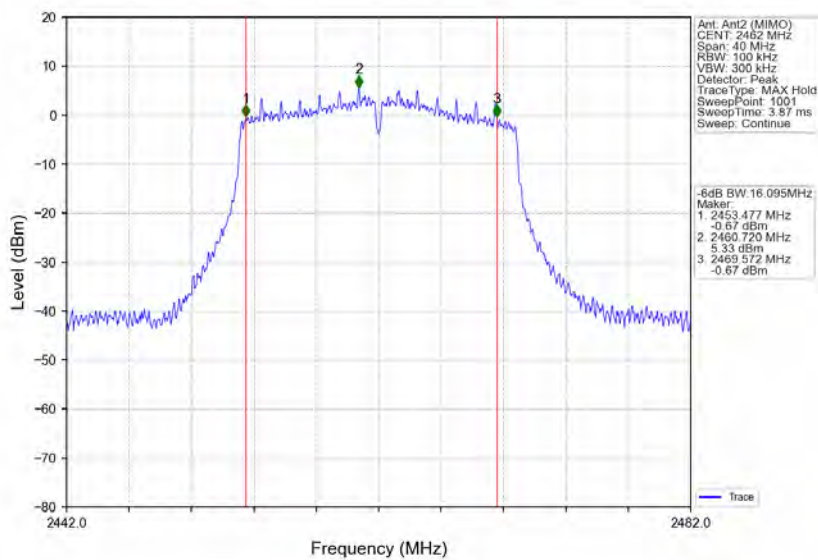
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



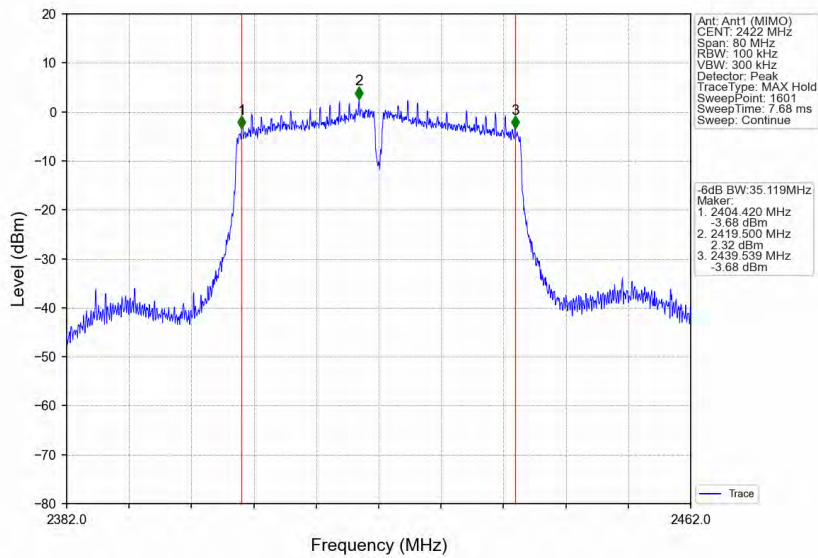
Compliance Certification Services (Kunshan) Inc.

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

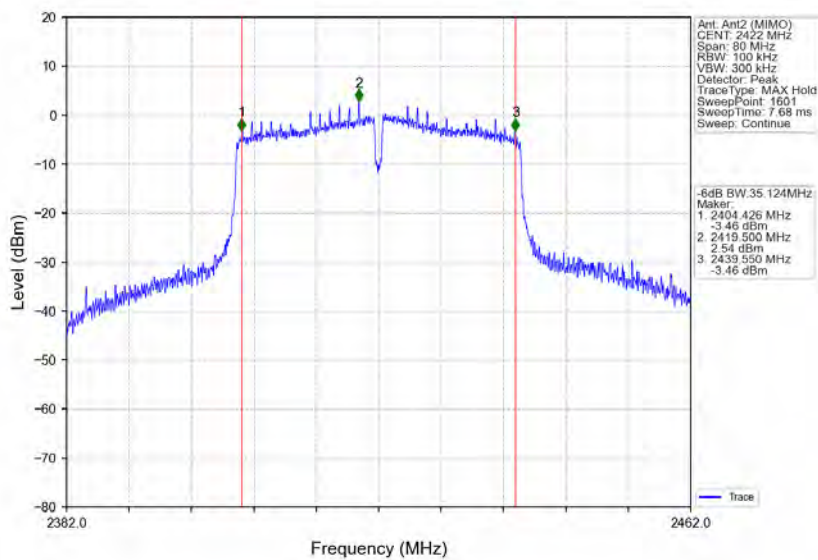
Report No.: KSCR240600100001

Page: 145 of 248

802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



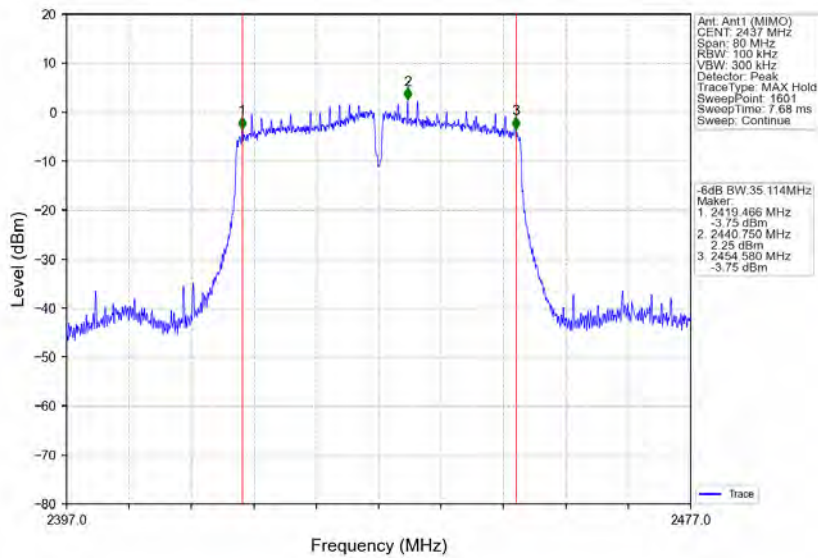
Compliance Certification Services (Kunshan) Inc.

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

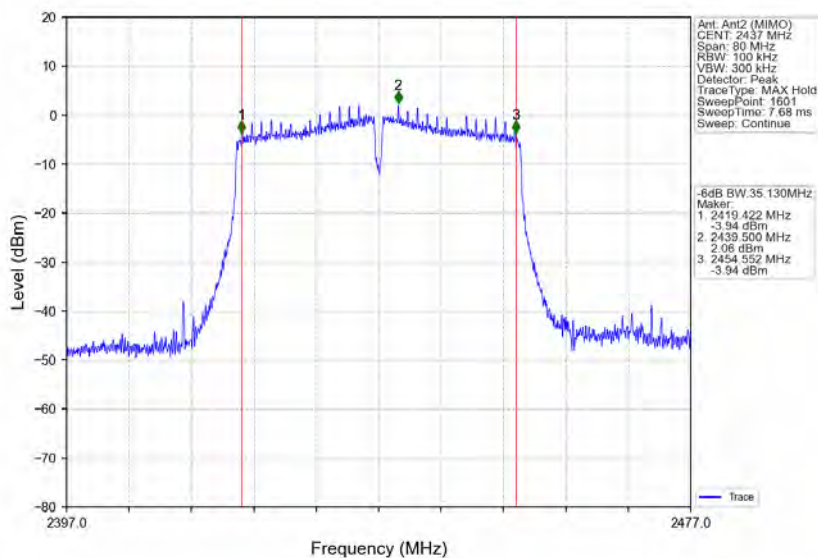
Report No.: KSCR240600100001

Page: 146 of 248

802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



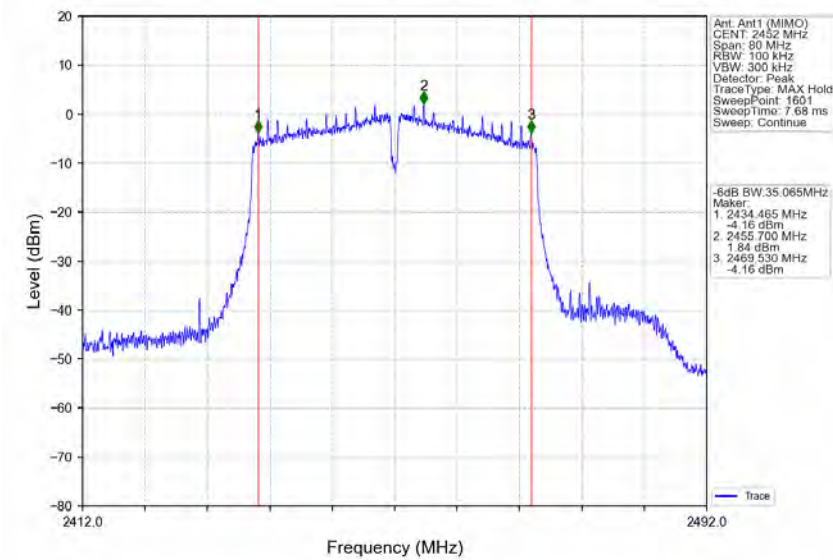
Compliance Certification Services (Kunshan) Inc.

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

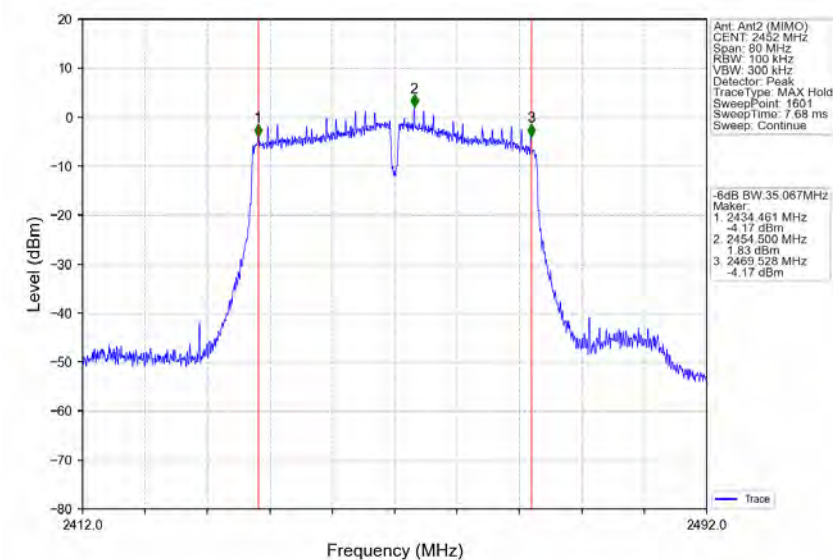
Report No.: KSCR240600100001

Page: 147 of 248

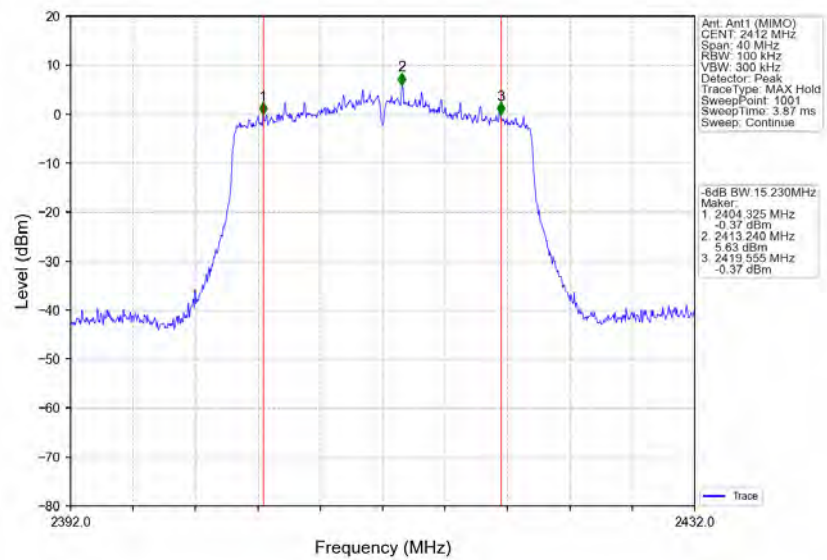
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



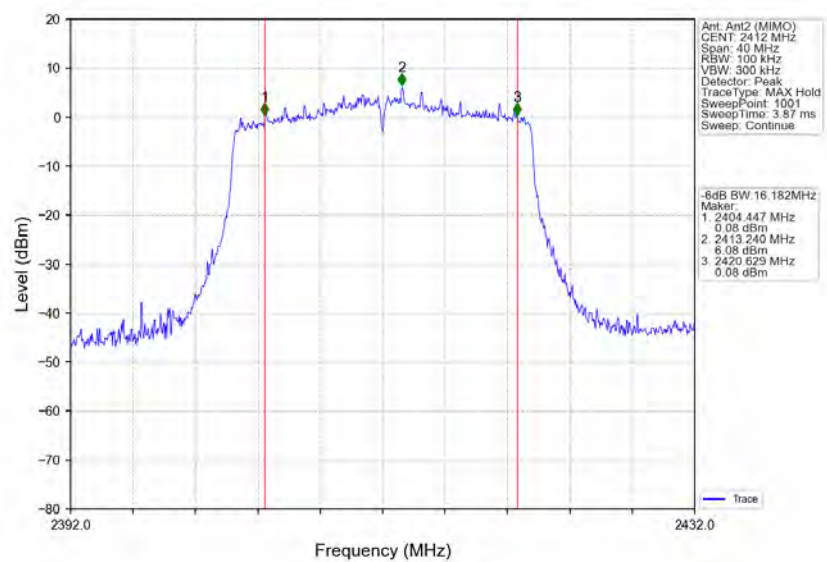
802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



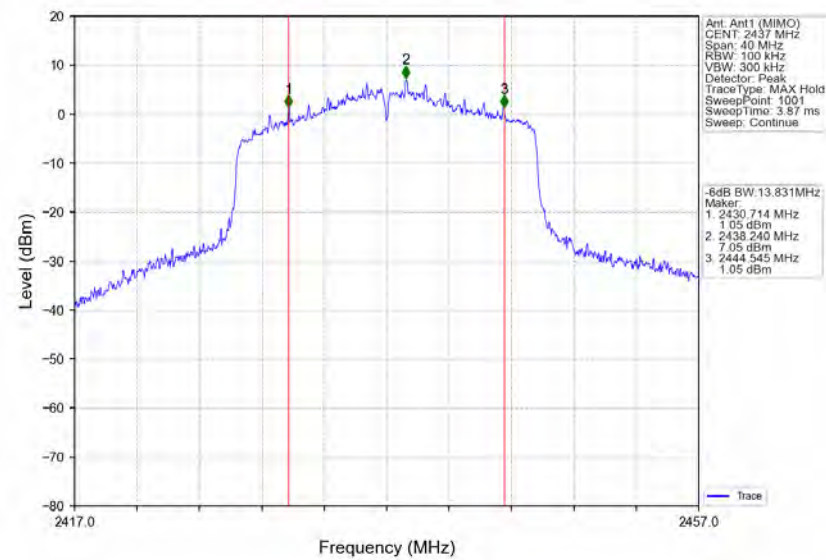
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



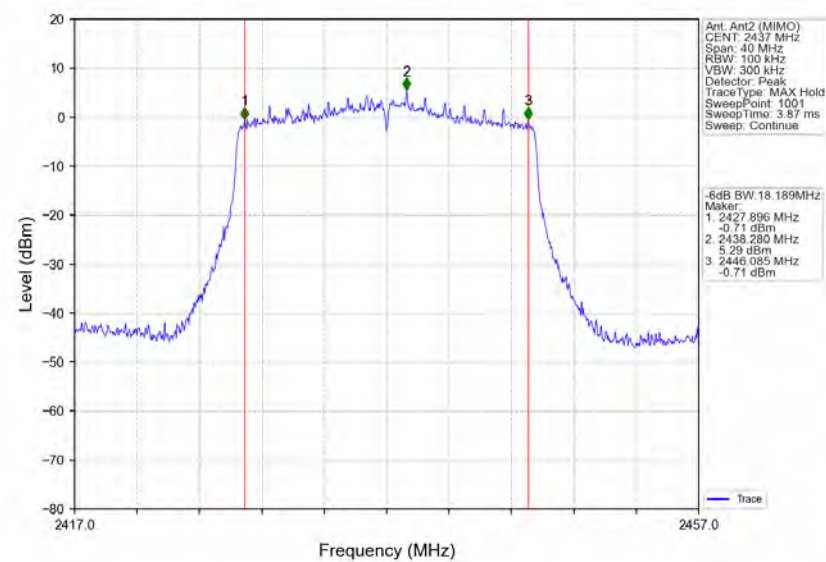
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant2 (MIMO)_NTNV



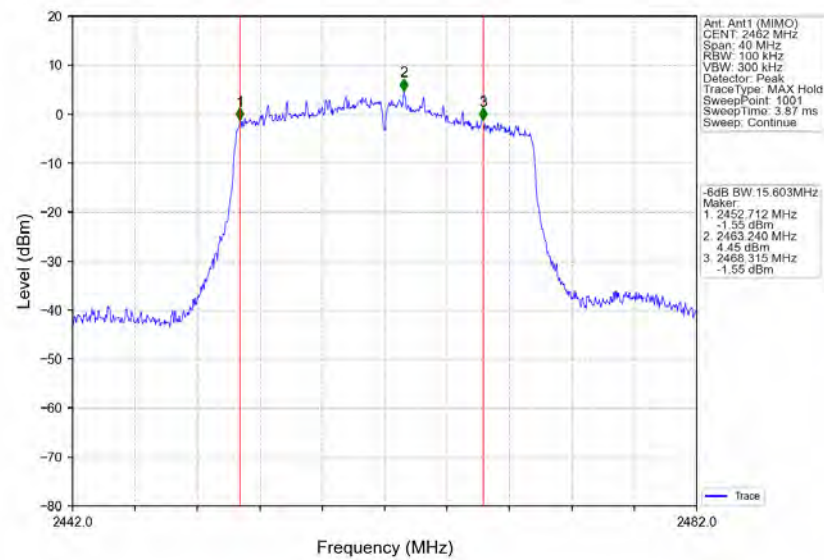
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



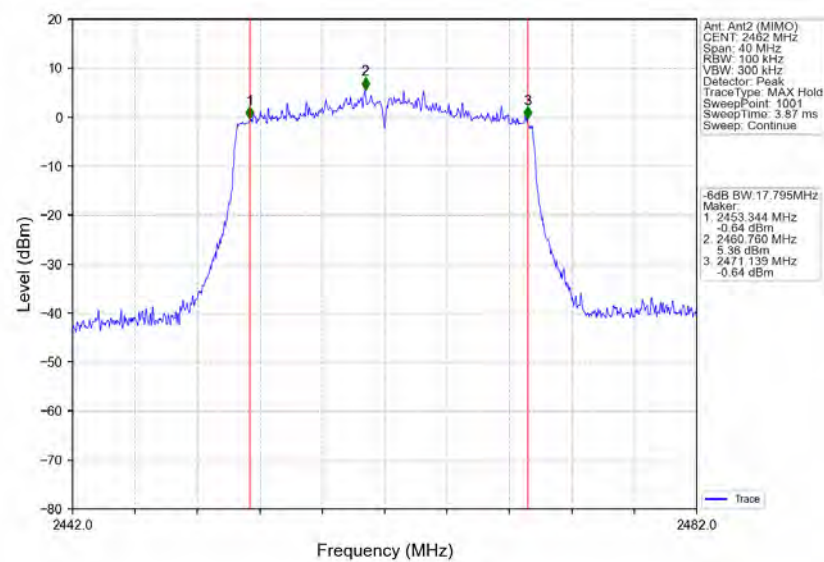
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant2 (MIMO)_NTNV



802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant2 (MIMO)_NTNV



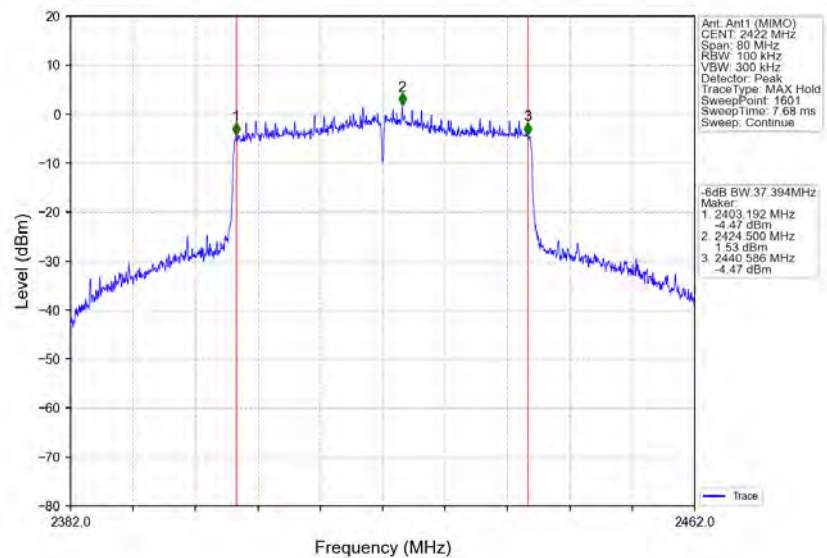
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CCSEM-TRF-001 Rev. 02 Sep 01, 2023

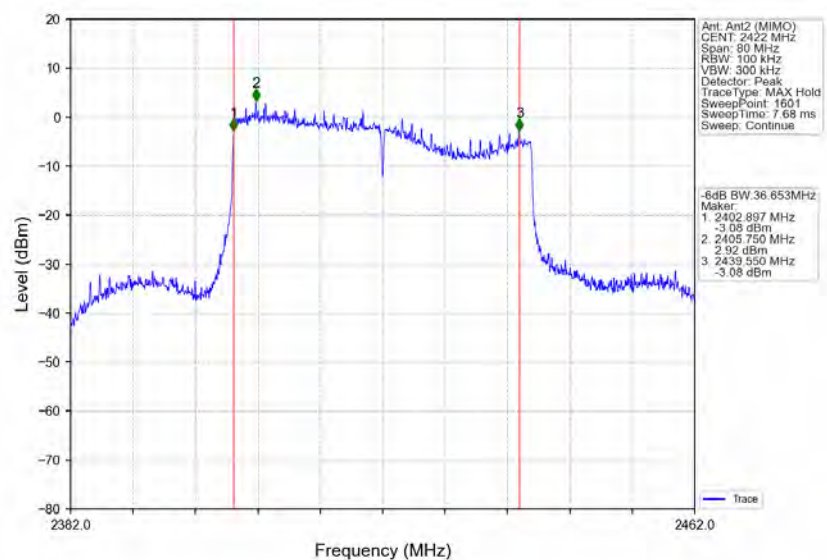
Report No.: KSCR240600100001

Page: 151 of 248

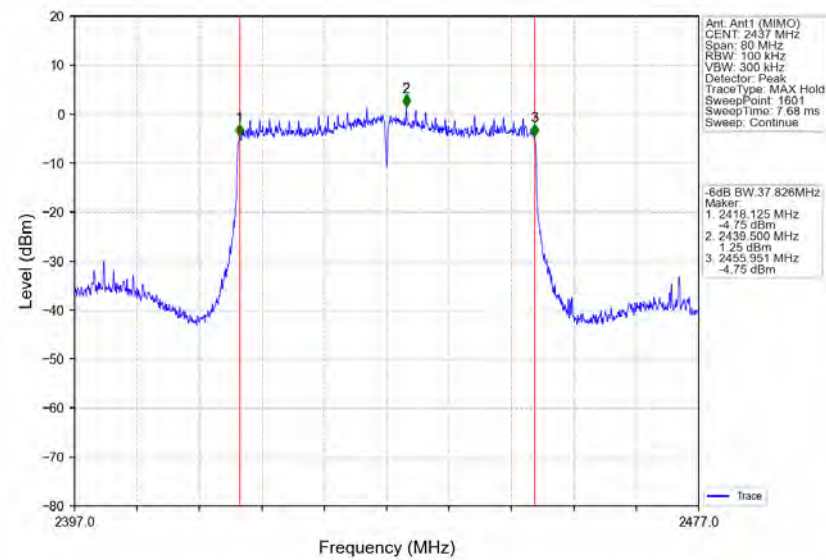
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



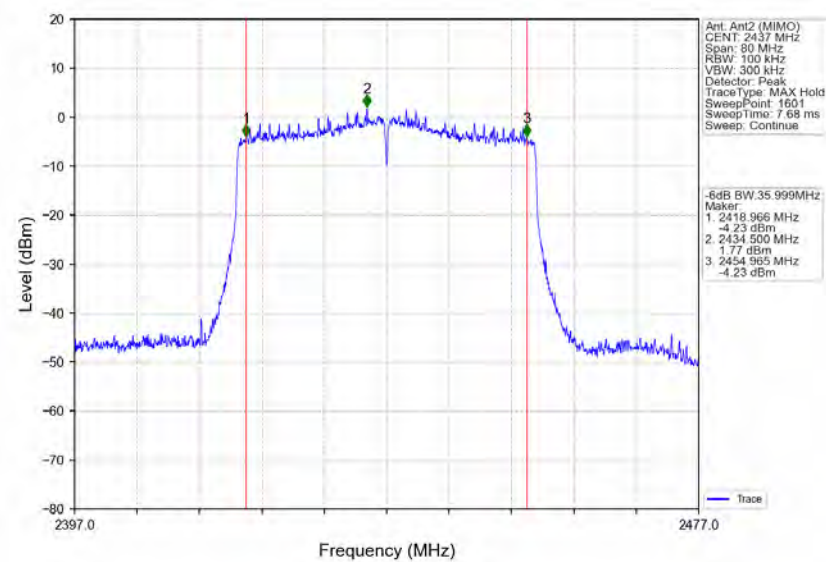
802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant2 (MIMO)_NTNV



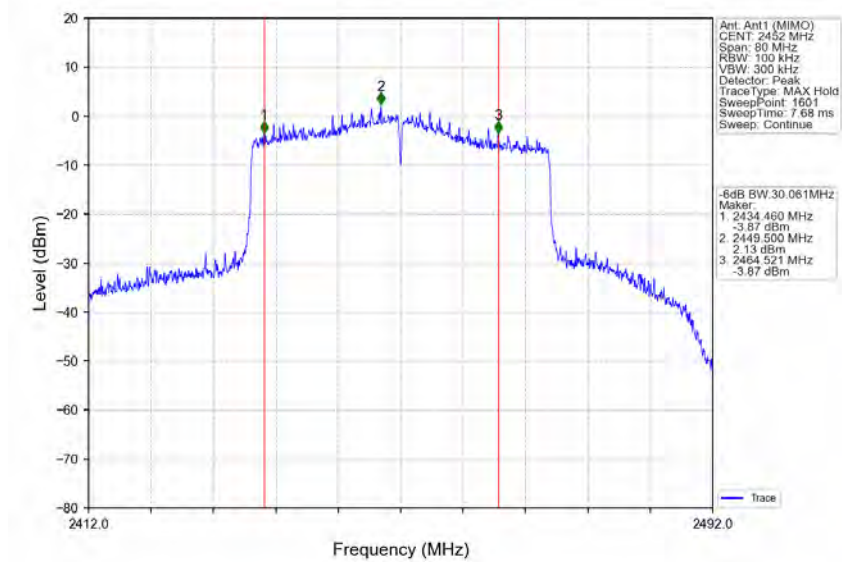
802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant1 (MIMO)_NTNV



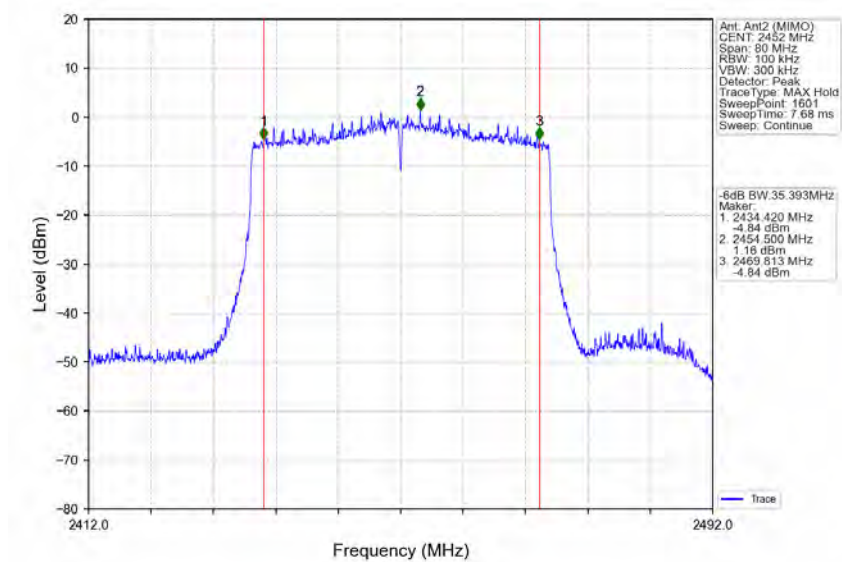
802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant2 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant2 (MIMO)_NTNV



Note1: Antenna Gain: Ant1: 3.95dBi; Ant2: 3.95dBi;
Note2: Directional Gain: Uncorrelated(Directional Gain = Ant Gain)

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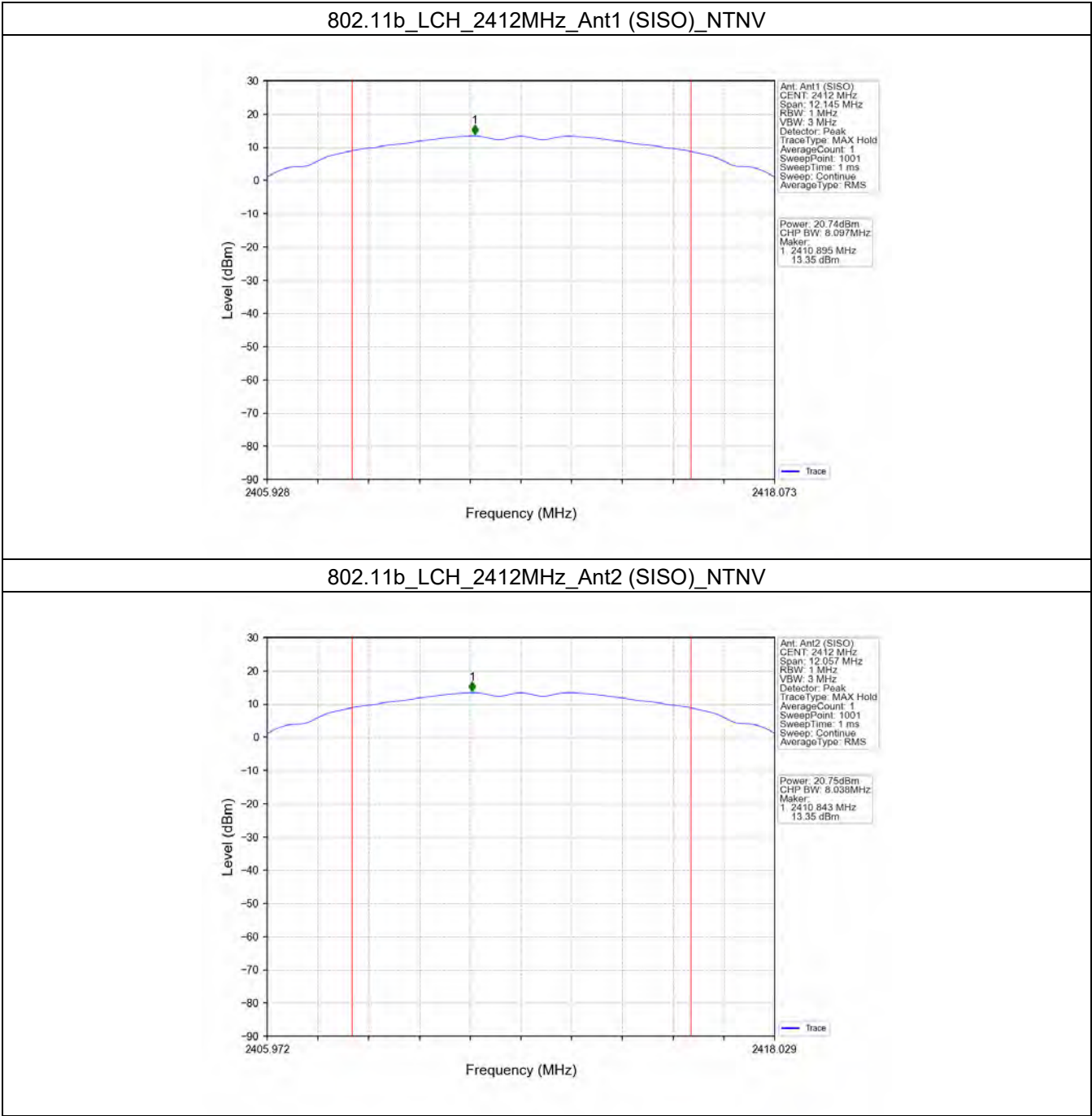
CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600100001

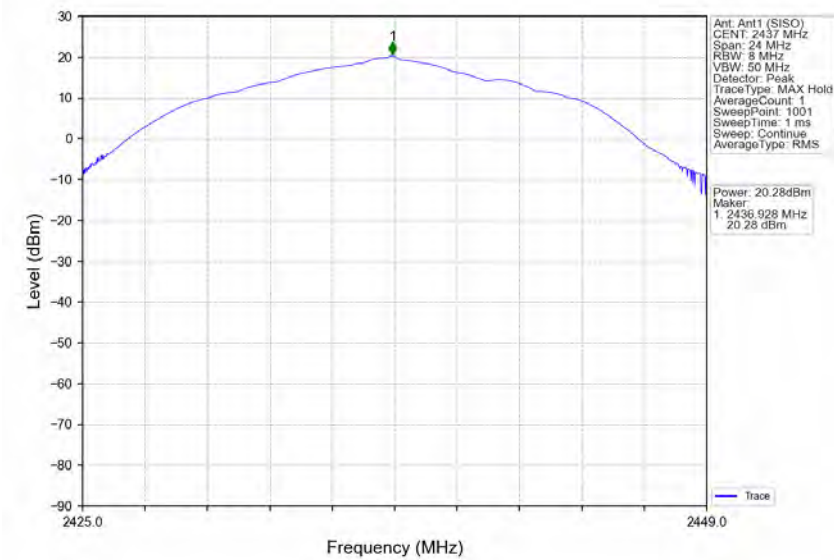
Page: 155 of 248

3.2 Test Graph

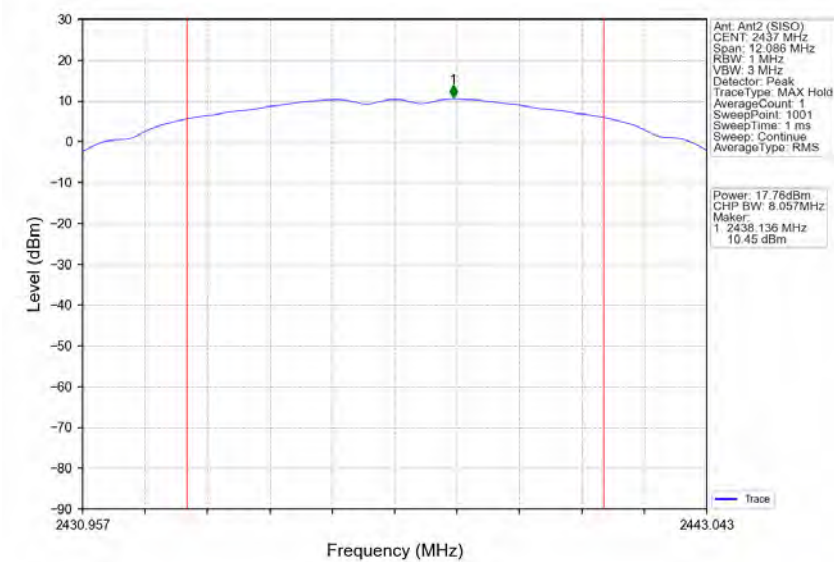
3.2.1 Power



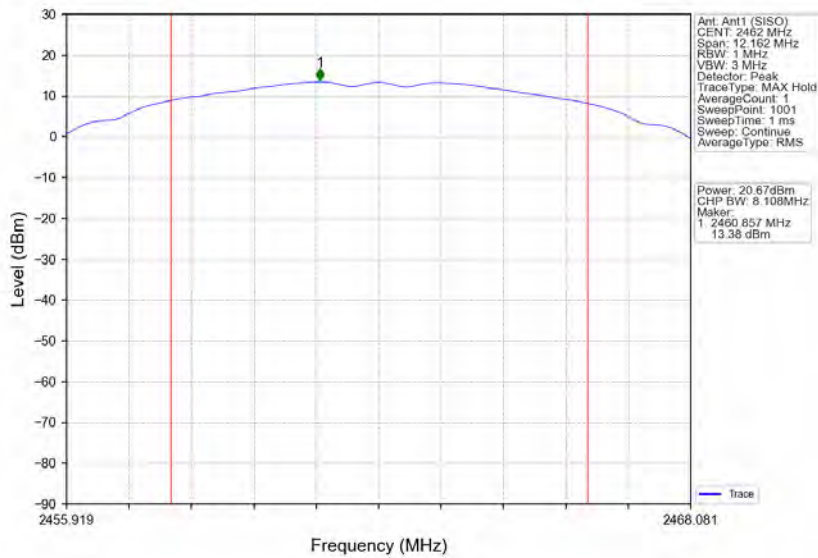
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



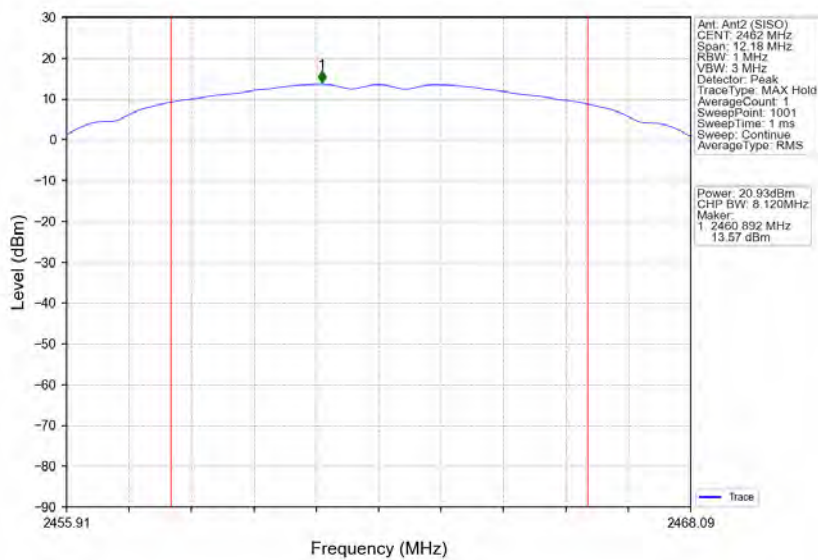
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



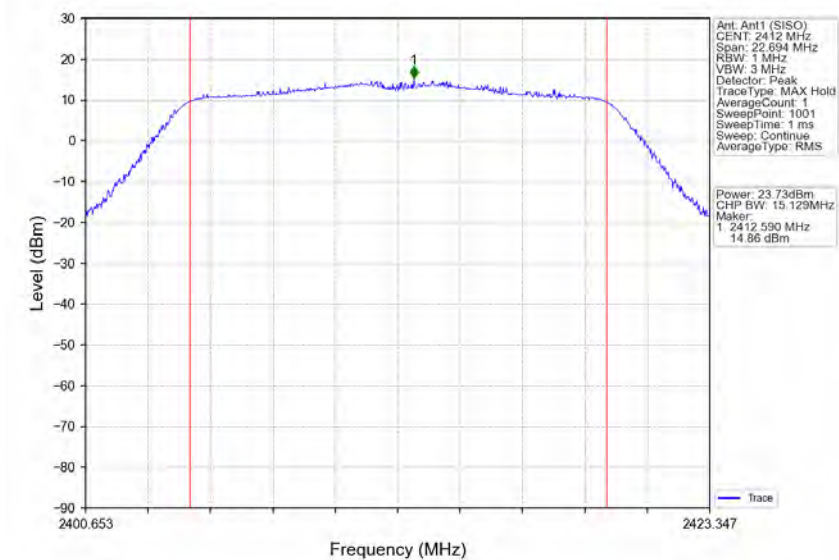
Compliance Certification Services (Kunshan) Inc.

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

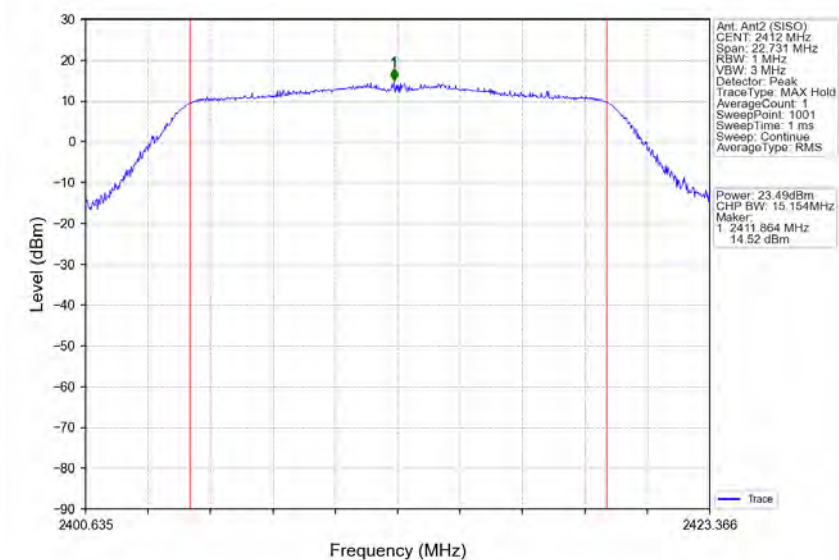
Report No.: KSCR240600100001

Page: 158 of 248

802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



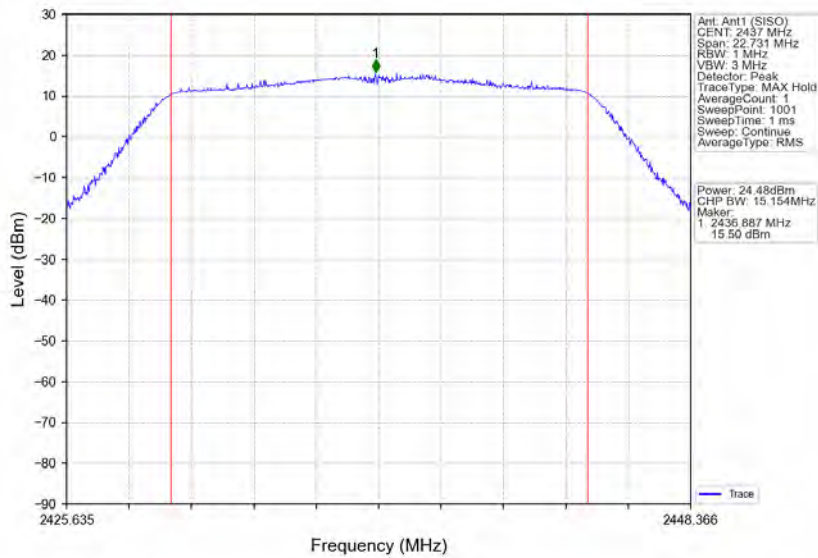
Compliance Certification Services (Kunshan) Inc.

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

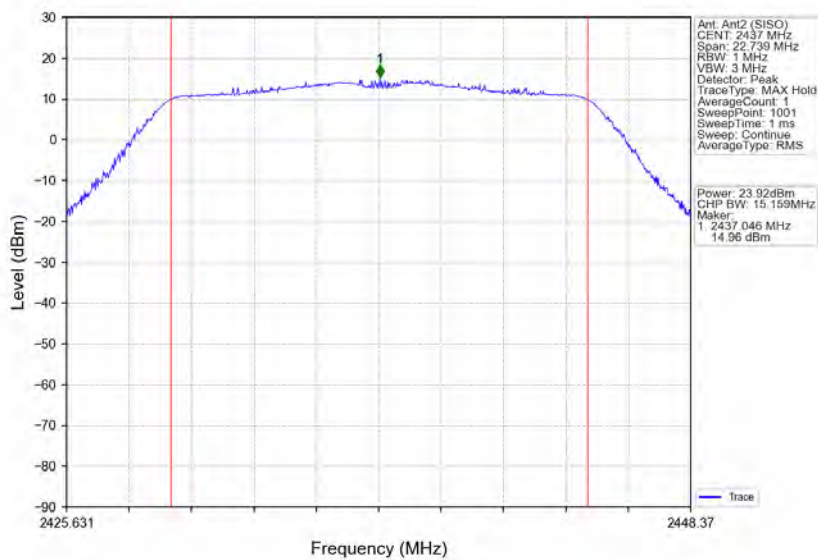
Report No.: KSCR240600100001

Page: 159 of 248

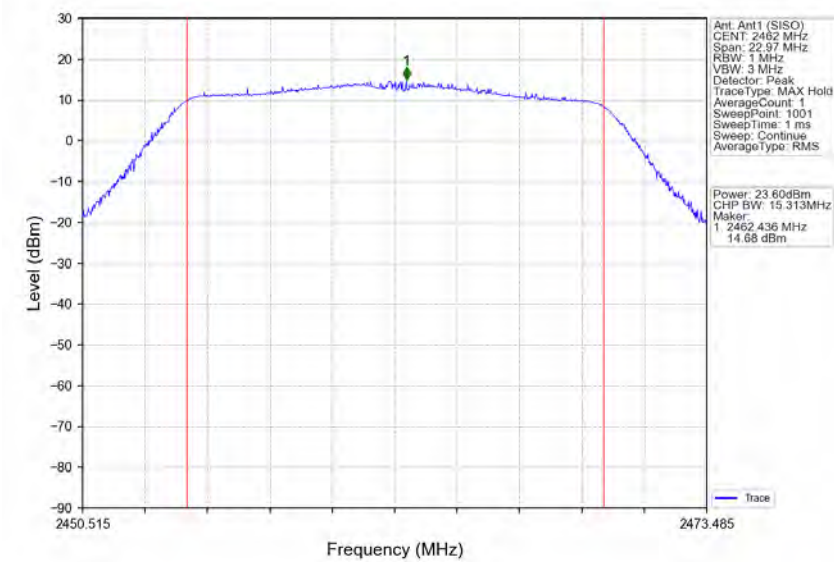
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



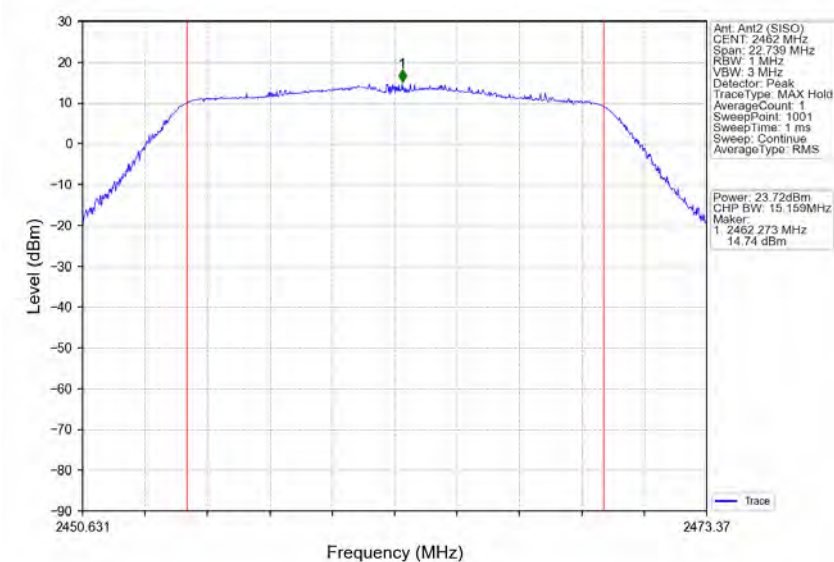
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



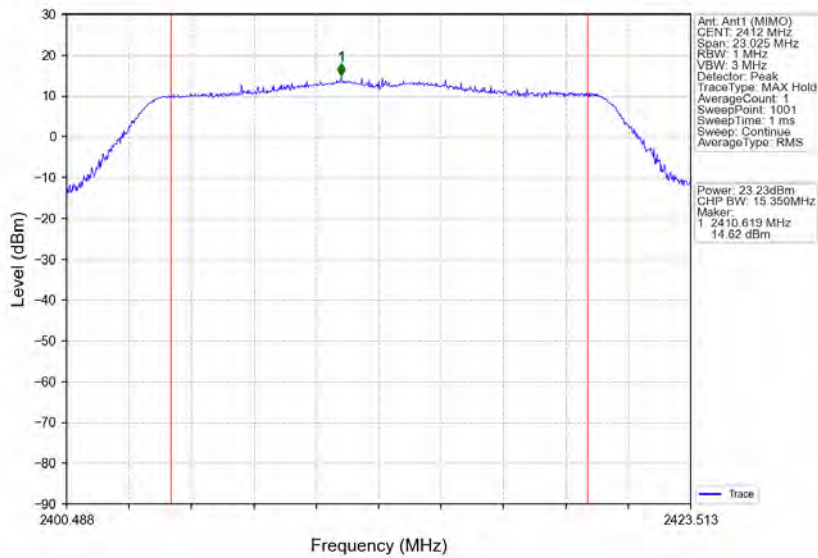
Compliance Certification Services (Kunshan) Inc.

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

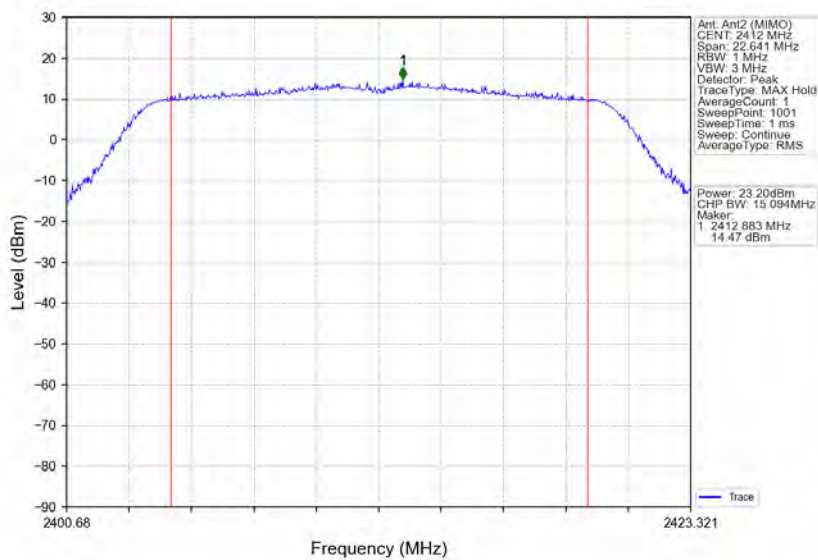
Report No.: KSCR240600100001

Page: 161 of 248

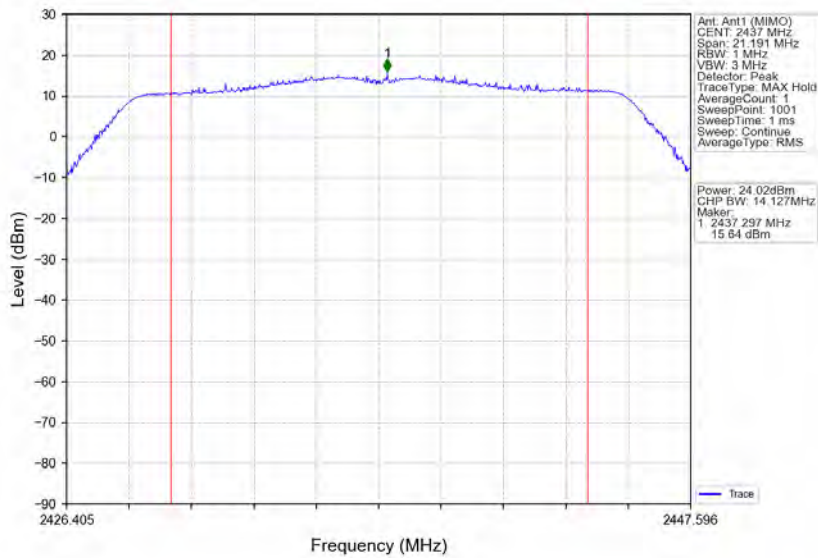
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



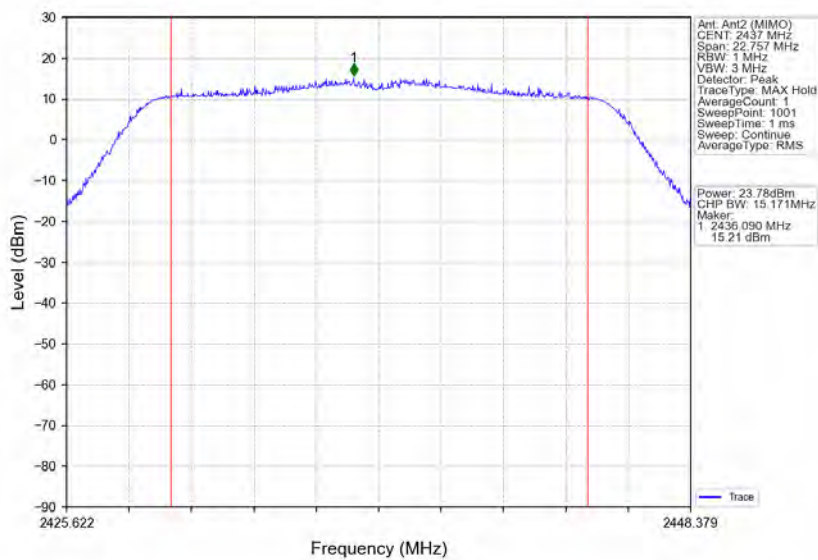
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



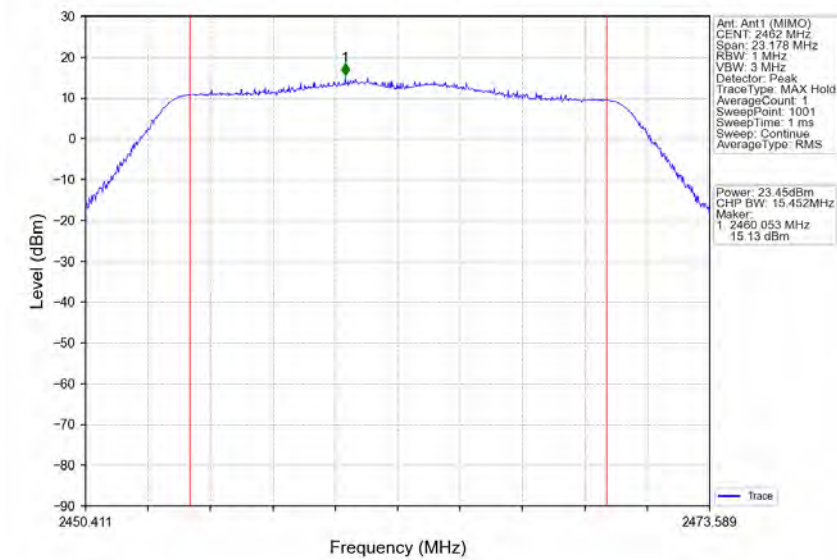
Compliance Certification Services (Kunshan) Inc.

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

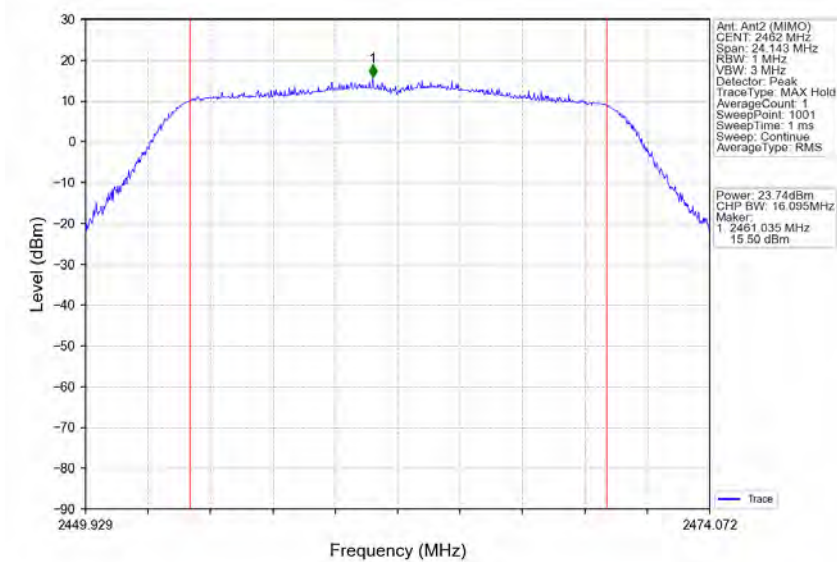
Report No.: KSCR240600100001

Page: 163 of 248

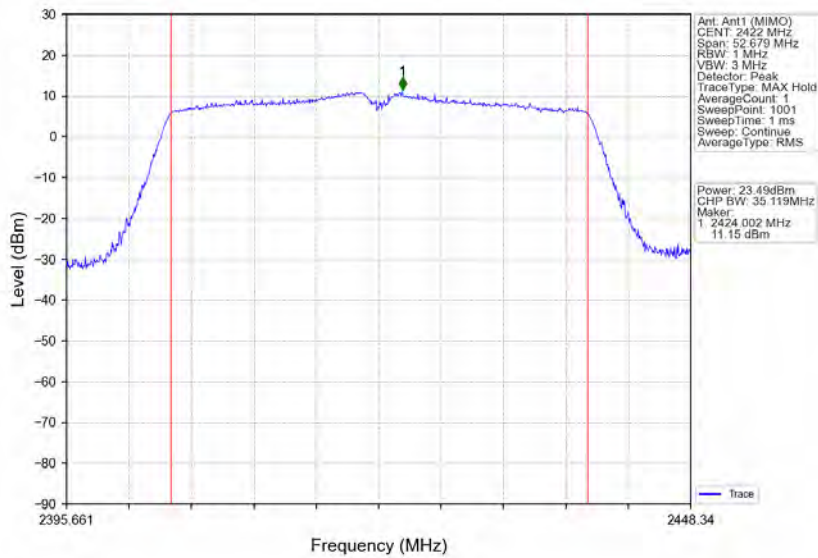
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



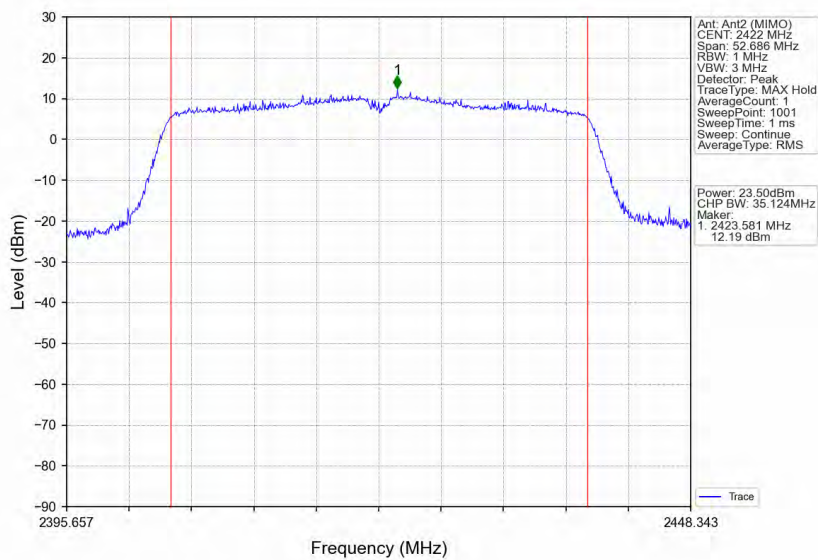
802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



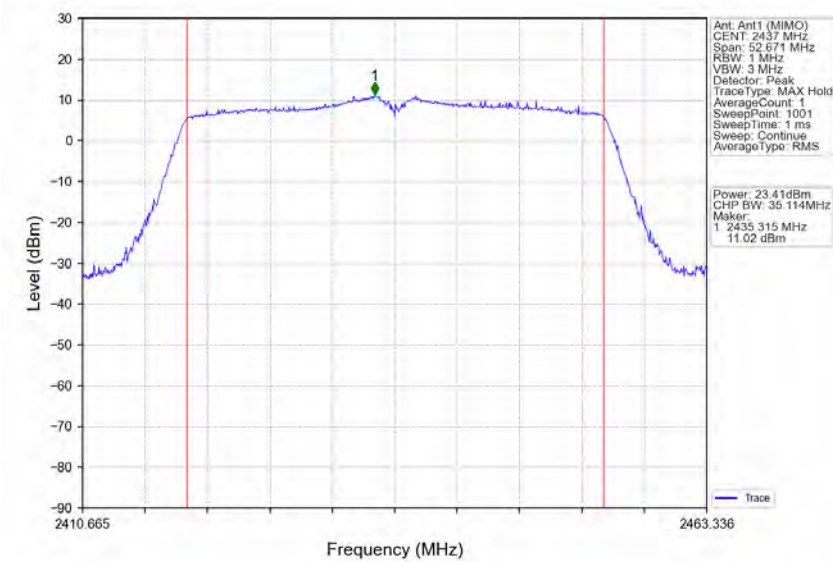
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



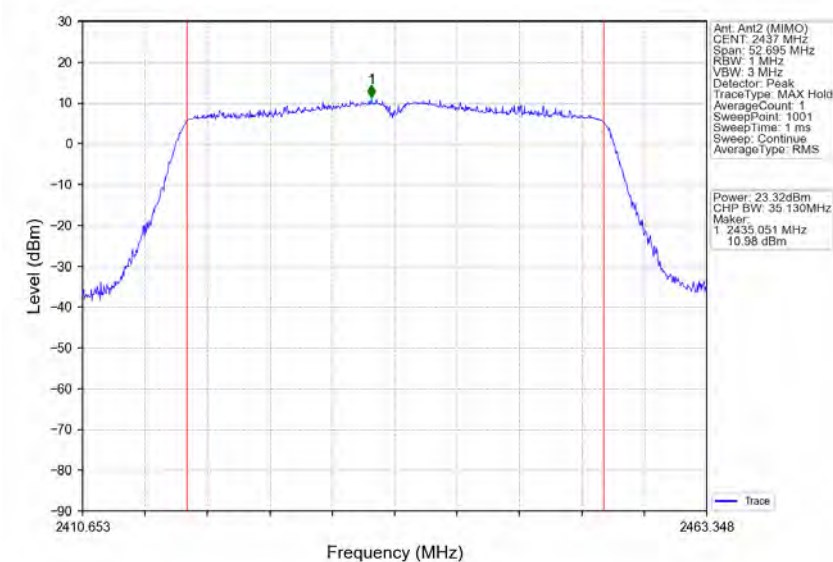
802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



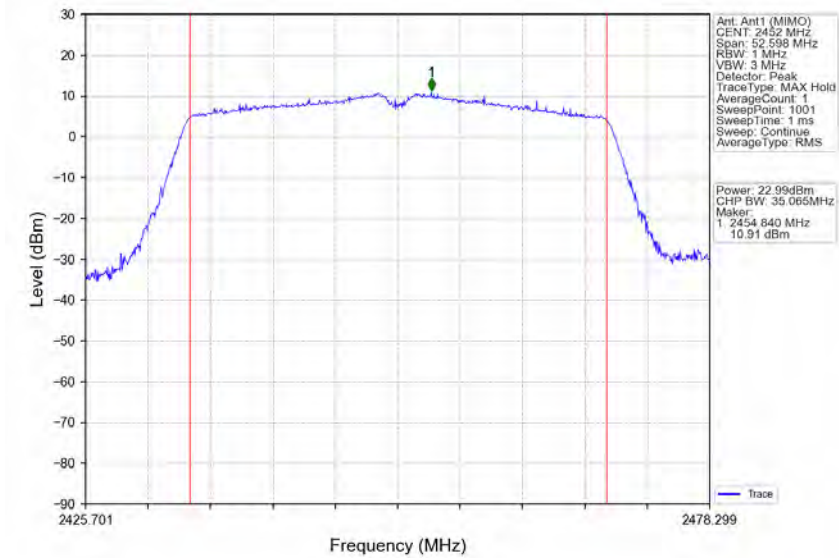
Compliance Certification Services (Kunshan) Inc.

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

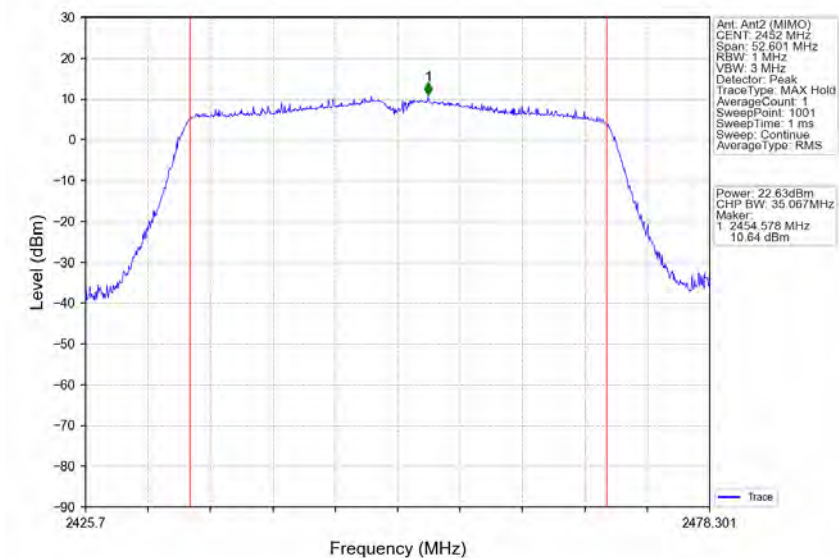
Report No.: KSCR240600100001

Page: 166 of 248

802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



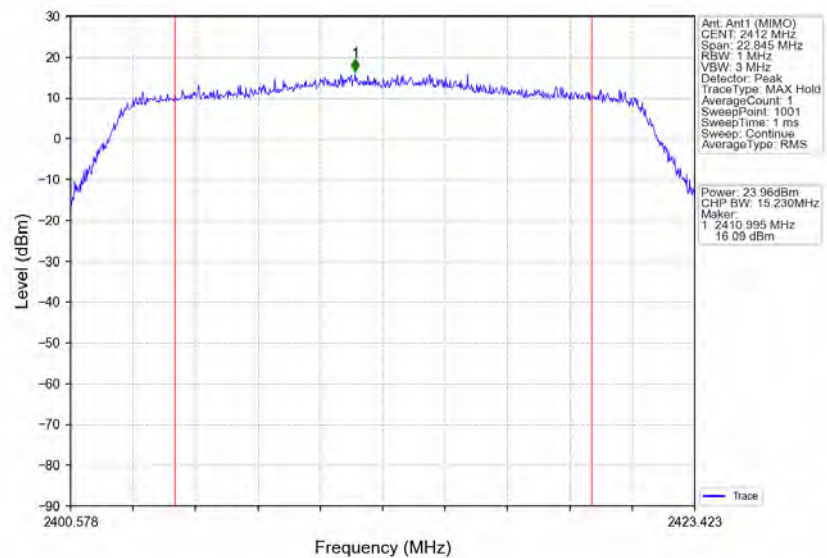
Compliance Certification Services (Kunshan) Inc.

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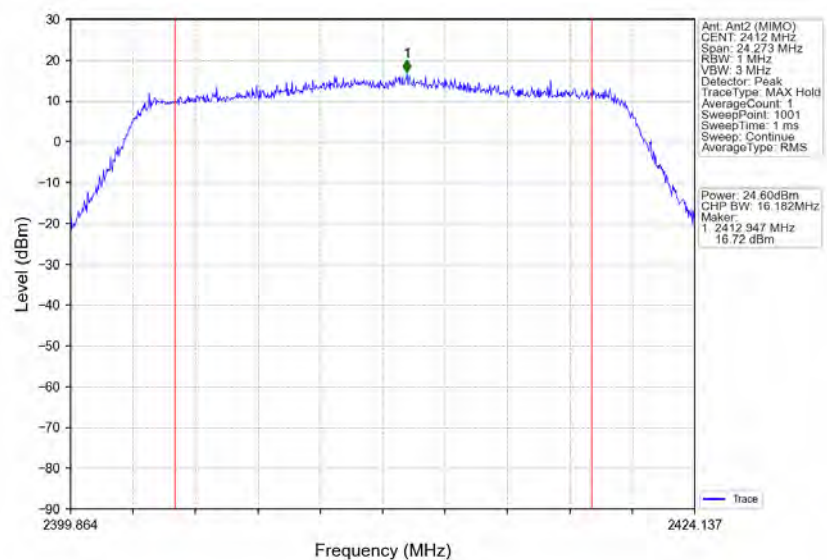
Report No.: KSCR240600100001

Page: 167 of 248

802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant2 (MIMO)_NTNV



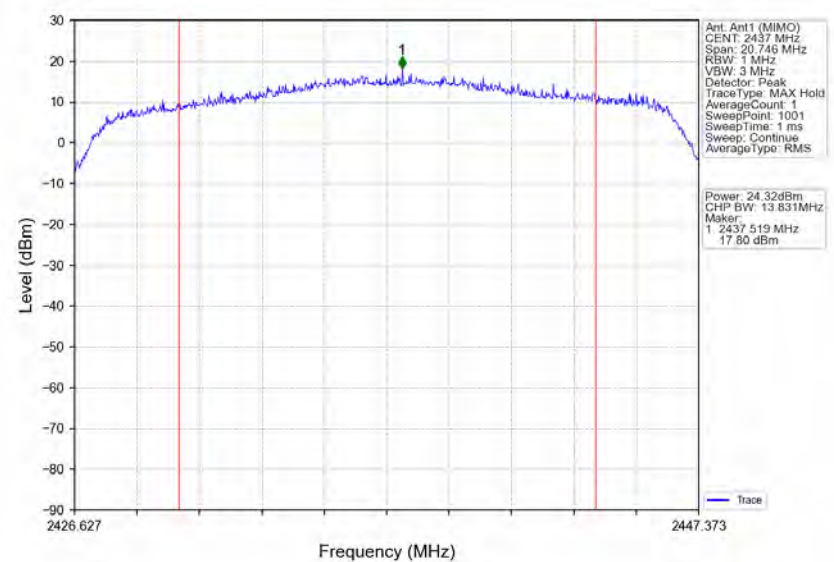
Compliance Certification Services (Kunshan) Inc.

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

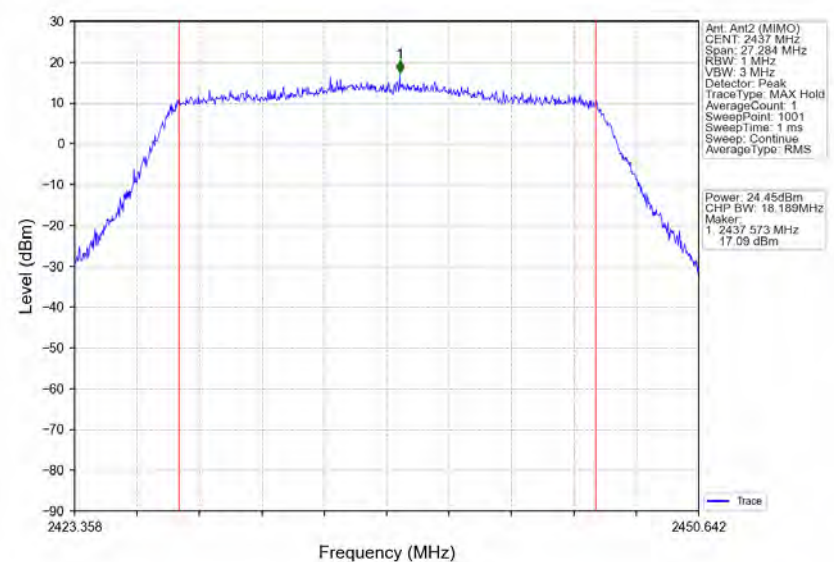
Report No.: KSCR240600100001

Page: 168 of 248

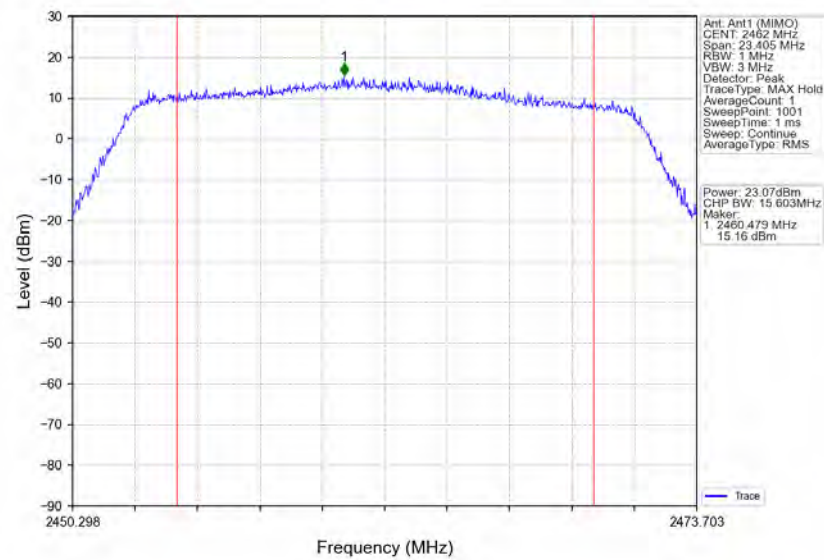
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



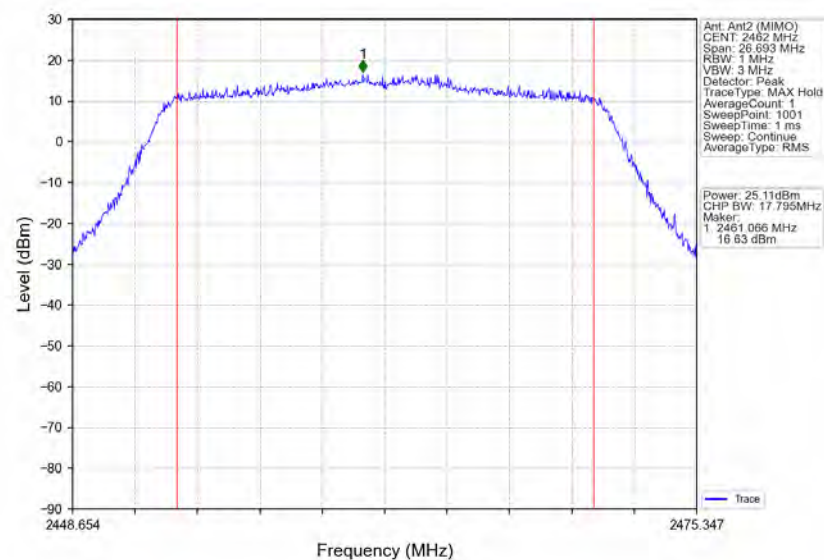
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant2 (MIMO)_NTNV



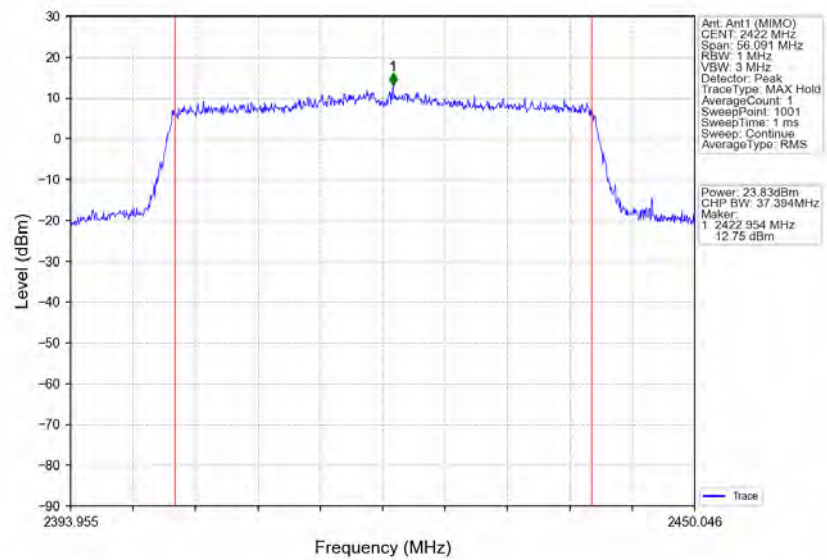
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant1 (MIMO)_NTNV



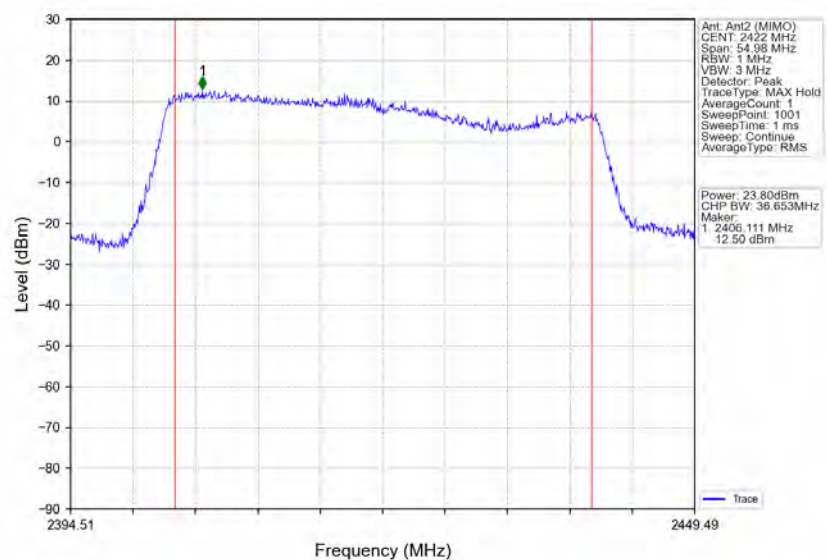
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant2 (MIMO)_NTNV



802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_LCH_2422MHz_RU484_Left_Ant2 (MIMO)_NTNV



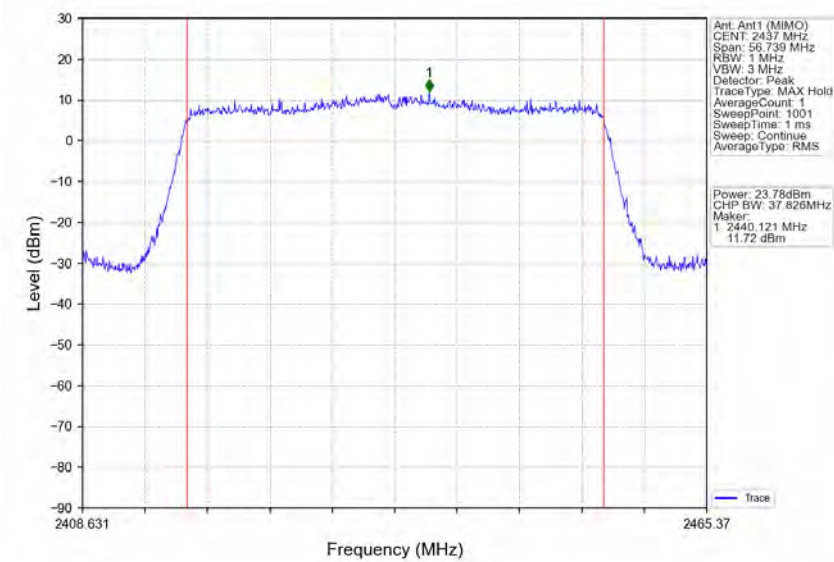
Compliance Certification Services (Kunshan) Inc.

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

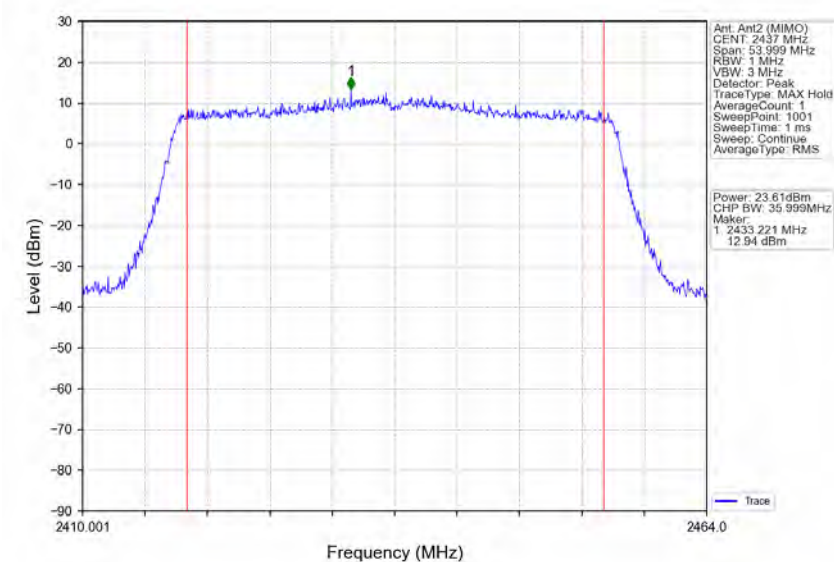
Report No.: KSCR240600100001

Page: 171 of 248

802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_RU484_Left_Ant2 (MIMO)_NTNV



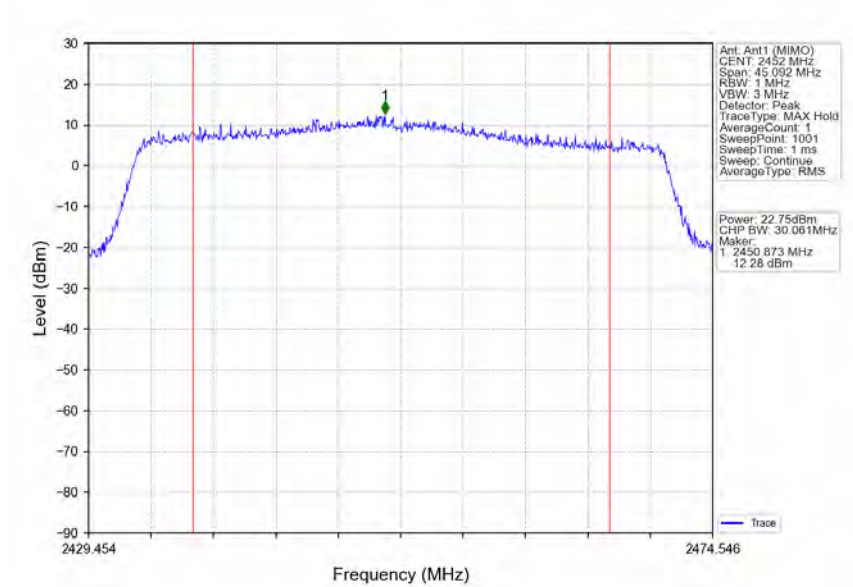
Compliance Certification Services (Kunshan) Inc.

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

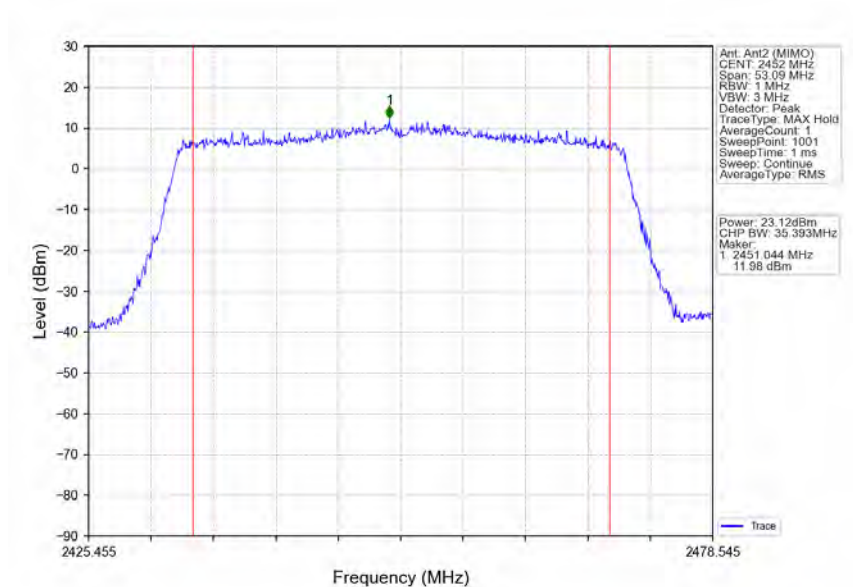
Report No.: KSCR240600100001

Page: 172 of 248

802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_RU484_Left_Ant2 (MIMO)_NTNV



4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

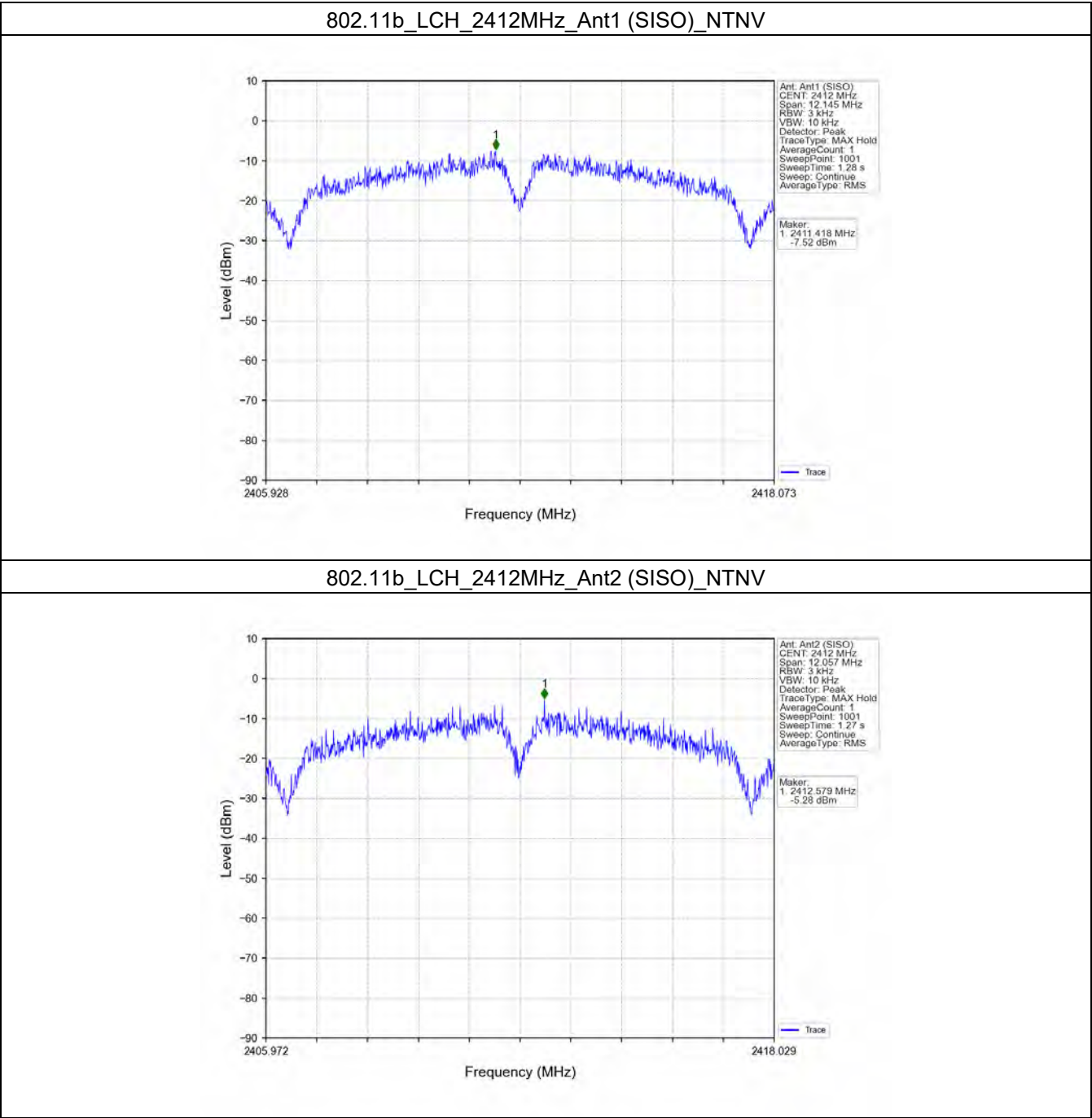
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm/3kHz)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	SISO	2412	/	/	-7.52	-5.28	/	<=8	Pass
		2437	/	/	-6.40	-6.75	/	<=8	Pass
		2462	/	/	-7.65	-7.21	/	<=8	Pass
802.11g	SISO	2412	/	/	-8.35	-8.32	/	<=8	Pass
		2437	/	/	-7.79	-8.61	/	<=8	Pass
		2462	/	/	-8.91	-7.75	/	<=8	Pass
802.11n (HT20)	MIMO	2412	/	/	-8.77	-9.36	-6.69	<=8	Pass
		2437	/	/	-7.69	-8.89	-6.06	<=8	Pass
		2462	/	/	-8.26	-8.58	-6.28	<=8	Pass
802.11n (HT40)	MIMO	2422	/	/	-11.90	-11.65	-9.25	<=8	Pass
		2437	/	/	-11.49	-11.56	-9.37	<=8	Pass
		2452	/	/	-12.46	-12.29	-9.93	<=8	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	-9.17	-9.00	-7.06	<=8	Pass
		2437	RU242	Left	-9.06	-10.28	-7.83	<=8	Pass
		2462	RU242	Left	-10.48	-8.13	-6.88	<=8	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	-13.32	-11.75	-11.09	<=8	Pass
		2437	RU484	Left	-13.83	-13.20	-11.09	<=8	Pass
		2452	RU484	Left	-13.48	-13.94	-11.50	<=8	Pass

Note1: Antenna Gain: Ant1: 3.95dBi; Ant2: 3.95dBi;

Note2: Directional Gain: Uncorrelated(Directional Gain = Ant Gain)

4.2 Test Graph

4.2.1 PSD



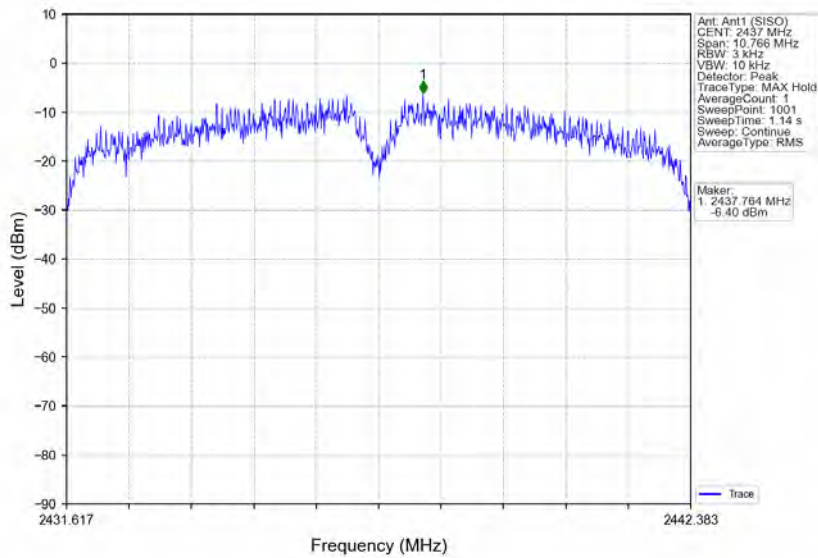
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600100001

Page: 175 of 248

802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV

