

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 1 of 234

TEST REPORT

Application No.: KSCR2406000993AT
FCC ID: 2AEIM-TAF68E
Applicant: TESLA INC
Address of Applicant: 3500 Deer Creek Rd, Palo Alto, CA 94304 USA
Manufacturer: TESLA INC
Address of Manufacturer: 3500 Deer Creek Rd, Palo Alto, CA 94304 USA
Equipment Under Test (EUT):
EUT Name: Wi-Fi & Bluetooth Module
Model No.: TAF68E
Trade Mark: Tesla
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2024-06-04
Date of Test: 2024-06-05 to 2024-07-31
Date of Issue: 2024-08-01

Test Result:	Pass*
---------------------	--------------

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 2 of 234

Revision Record			
Version	Description	Date	Remark
00	Original	2024-08-01	/

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

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
Conducted Peak Output Power		ANSI C63.10 (2013) Section 11.9.2	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
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

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 Description of Support Units	5
4.3 Power level setting using in test:	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.....	11
7.1 Conducted Emissions at AC Power Line (150kHz-30MHz).....	11
7.2 Radiated Emissions which fall in the restricted bands.....	15
7.3 Radiated Spurious Emissions Below 1GHz.....	61
7.4 Radiated Spurious Emissions Above 1GHz	65
7.5 Conducted Peak Output Power	103
7.6 Minimum 6dB Bandwidth	105
7.7 Power Spectrum Density	106
7.8 Conducted Band Edges Measurement.....	107
7.9 Conducted Spurious Emissions.....	109
8 Test Setup Photo	111
9 EUT Constructional Details (EUT Photos)	111
10 Appendix	112

4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.3-4.8V, Typ: 3.85V
Test voltage:	DC 3.85V
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:	ANT5 (WIFI0): 3.1dBi (Provided by the manufacturer) ANT6 (WIFI1):3dBi (Provided by the manufacturer) Directional gain: 3.05dBi (The transmitted signal is uncorrelated)

4.2 Description of Support Units

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

4.3 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	16.5	16.5	16	16	15.5	15.5	14	14
6	18.5	18.5	18	18	17.5	17.5	17.5	17.5
11	16.5	16.5	14.5	14.5	13	13	12	12
Channel	802.11n(HT40)		802.11ax(HEW40)					
	Ant 2	Ant 2	Ant 1	Ant 2				
3	12.5	12.5	12.5	12.5				
6	17	17	17	17				
9	12	12	12.5	12.5				

4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.5 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

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

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

No tests were sub-contracted.

Note:

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

4.6 Test Facility

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

- **A2LA**

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

- **FCC**

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

- **ISED**

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

- **VCCI**

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

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 8 of 234

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 ANT5 (WIFI0) and ANT6 (WIFI1) is External antenna, and all no consideration of replacement. The best case gain of the ANT5 (WIFI0) is 3.1dBi. and ANT6 (WIFI1) is 3dBi.

Antenna location: Refer to internal photo.



Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 10 of 234

Directional Gain Calculations for MIMO:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

Basic methodology with NANT transmit antennas, each with the same directional gain GANT dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be computed as follows:

- If any transmit signals are correlated with each other,
Directional gain = $GANT + 10 \log(NANT)$ dBi
- If all transmit signals are completely uncorrelated with each other,
Directional gain = GANT

Unequal antenna gains, with equal transmit powers. For antenna gains given by $G_1, G_2, \dots, G_N$ dBi

- If transmit signals are correlated, then
Directional gain = $10 \log[(10G_1/20 + 10G_2/20 + \dots + 10G_N/20)^2 / NANT]$ dBi [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]
- If all transmit signals are completely uncorrelated, then
Directional gain = $10 \log[(10G_1/10 + 10G_2/10 + \dots + 10G_N/10)/NANT]$ dBi

Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain.

All antennas have the same gain:

Operation Frequency	ANT5(WIFI0) (dBi)	ANT6(WIFI1) (dBi)	Directional gain For Power(dBi)	Directional gain For PSD(dBi)
2400 MHz to 2483.5 MHz	3.1	3	3.05	3.05

2400 MHz to 2483.5 MHz:

Power Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

PSD Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

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: 20.5 °C

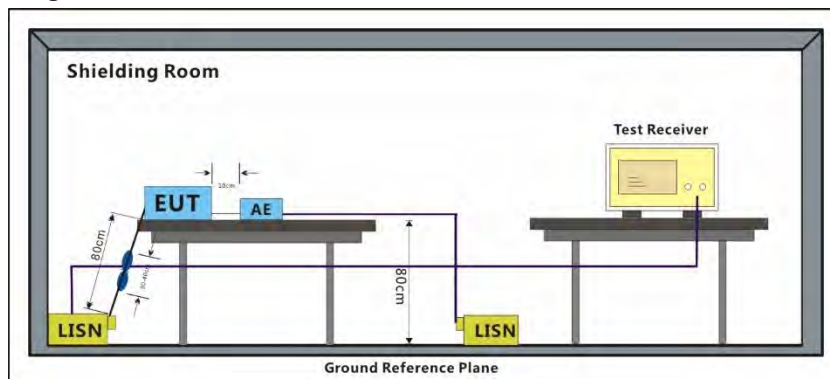
Humidity: 54.0 % RH

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

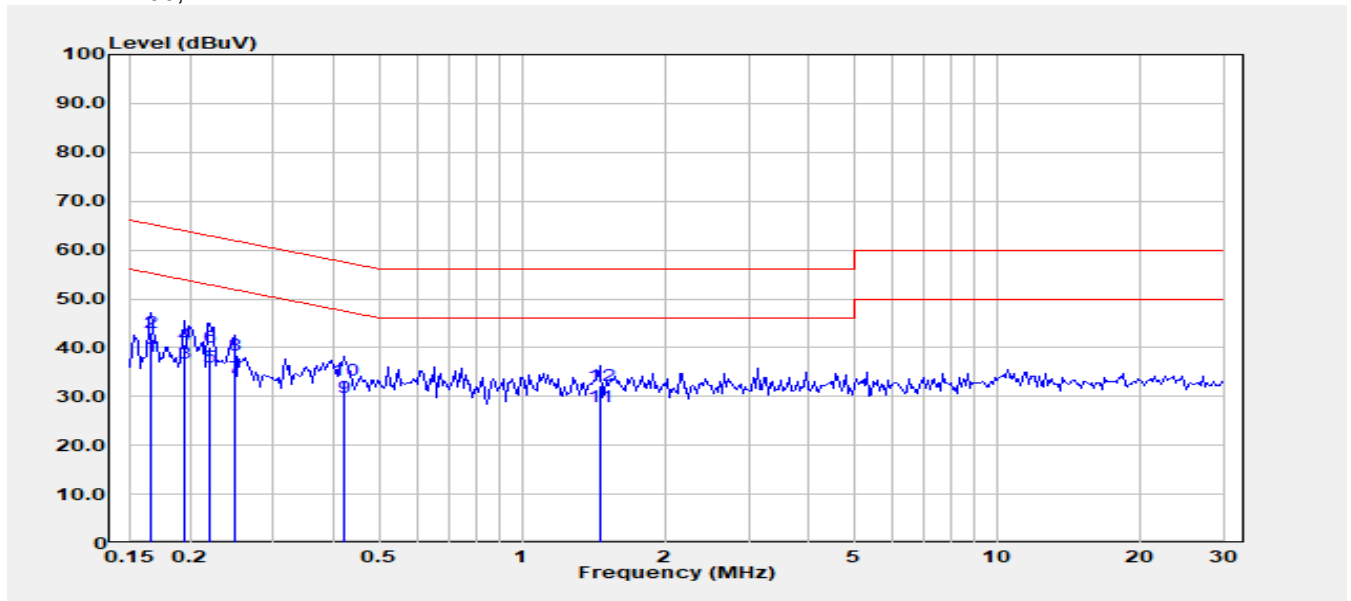
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 13 of 234

Test Mode: 00; Line: Live line



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1650	17.92	20.19	38.11	55.21	-17.10	Average
2	0.1650	22.93	20.19	43.12	65.21	-22.09	QP
3	0.1955	16.79	20.07	36.86	53.80	-16.94	Average
4	0.1955	20.59	20.07	40.66	63.80	-23.14	QP
5	0.2197	15.95	20.06	36.01	52.83	-16.82	Average
6	0.2197	19.93	20.06	39.99	62.83	-22.84	QP
7	0.2495	13.77	20.07	33.84	51.78	-17.93	Average
8	0.2495	18.50	20.07	38.56	61.78	-23.21	QP
9	0.4237	9.87	20.06	29.93	47.37	-17.45	Average
10	0.4237	13.26	20.06	33.31	57.37	-24.06	QP
11	1.4640	7.84	19.97	27.81	46.00	-18.19	Average
12	1.4640	12.40	19.97	32.37	56.00	-23.63	QP

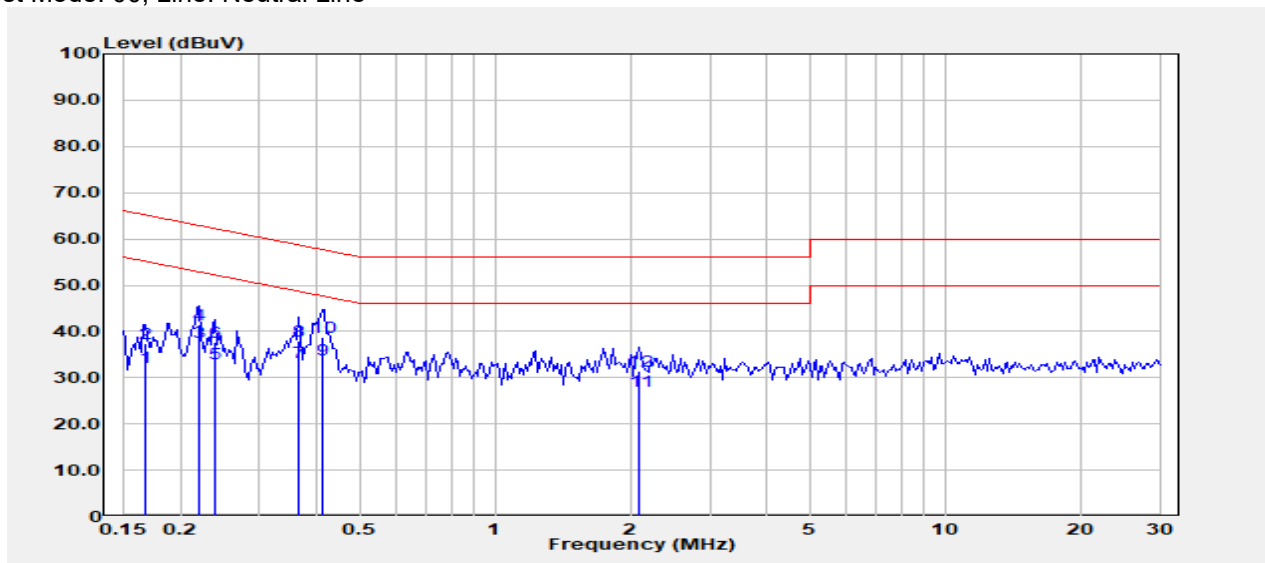
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 14 of 234

Test Mode: 00; Line: Neutral Line



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1668	12.12	20.16	32.28	55.12	-22.84	Average
2	0.1668	17.37	20.16	37.53	65.12	-27.59	QP
3	0.2197	17.62	20.11	37.73	52.83	-15.10	Average
4	0.2197	21.29	20.11	41.40	62.83	-21.43	QP
5	0.2391	12.94	20.10	33.04	52.13	-19.08	Average
6	0.2391	17.46	20.10	37.56	62.13	-24.57	QP
7	0.3653	13.14	20.10	33.24	48.61	-15.36	Average
8	0.3653	17.89	20.10	37.99	58.61	-20.61	QP
9	0.4148	13.79	20.08	33.88	47.55	-13.67	Average
10	0.4148	18.54	20.08	38.63	57.55	-18.92	QP
11	2.0990	7.13	19.90	27.02	46.00	-18.98	Average
12	2.0990	11.67	19.90	31.57	56.00	-24.43	QP

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 15 of 234

7.2 Radiated Emissions which fall in the restricted bands

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

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

Limit:

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

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

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C

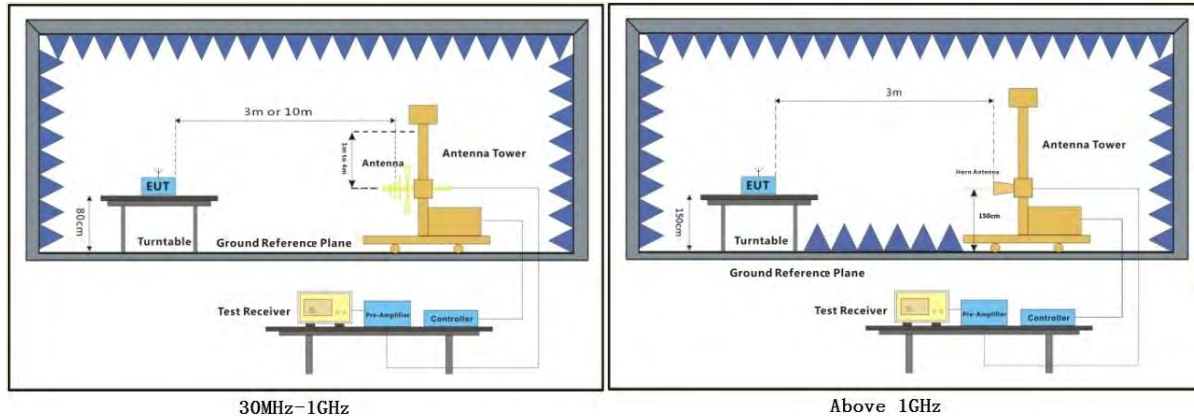
Humidity: 54.6 % RH

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.

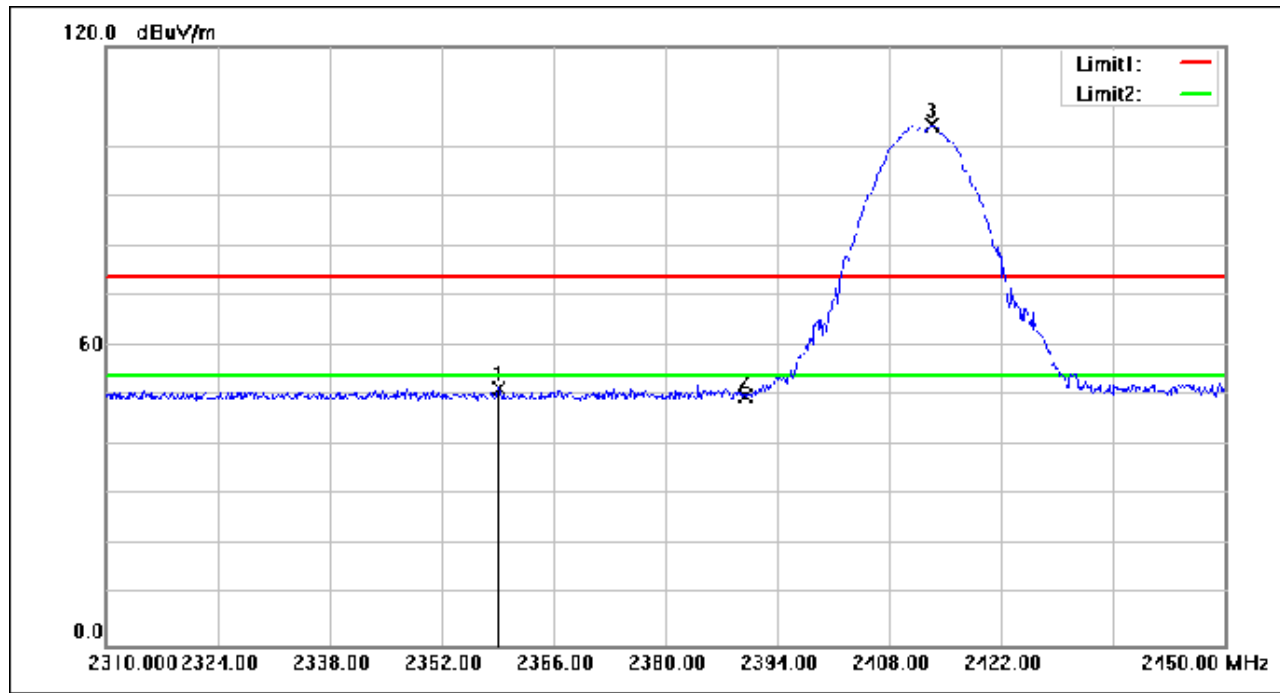
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 17 of 234

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	2359.140	76.45	-24.85	51.60	74.00	-22.40	peak
2	2390.000	74.76	-24.71	50.05	74.00	-23.95	peak
3	2413.320	128.87	-24.60	104.27	74.00	30.27	peak

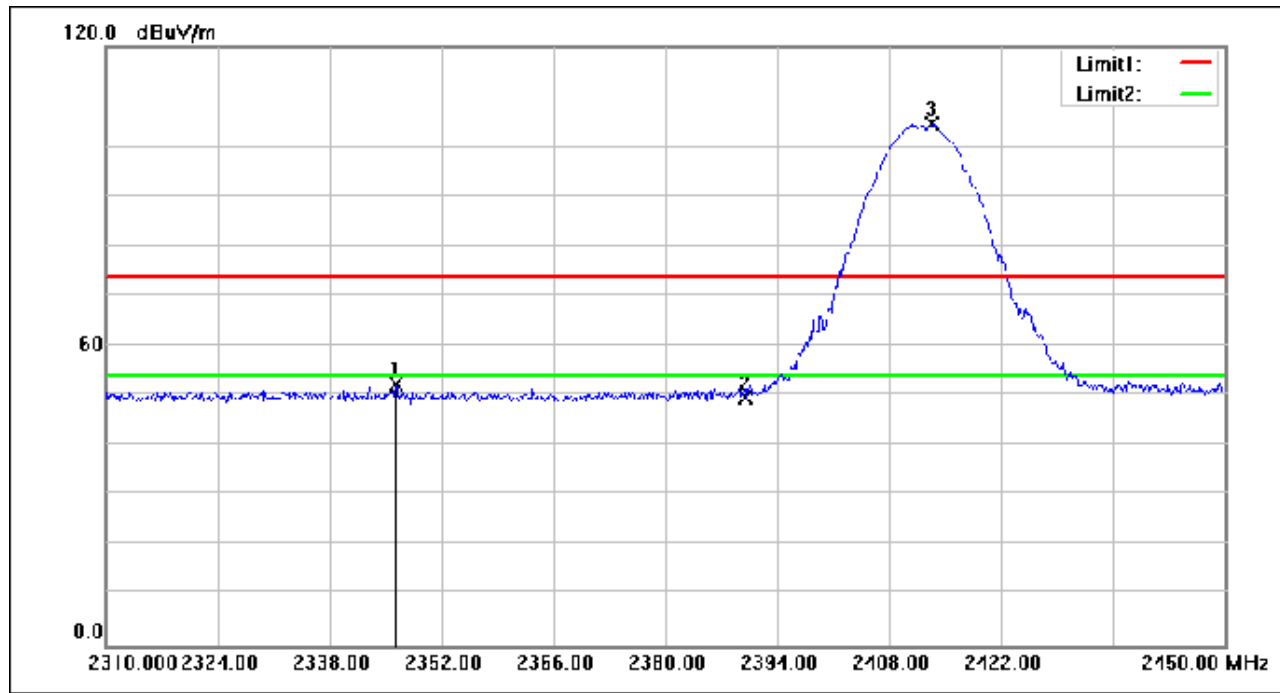
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 18 of 234

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	2346.260	77.18	-24.91	52.27	74.00	-21.73	peak
2	2390.000	74.30	-24.71	49.59	74.00	-24.41	peak
3	2413.320	129.10	-24.60	104.50	74.00	30.50	peak

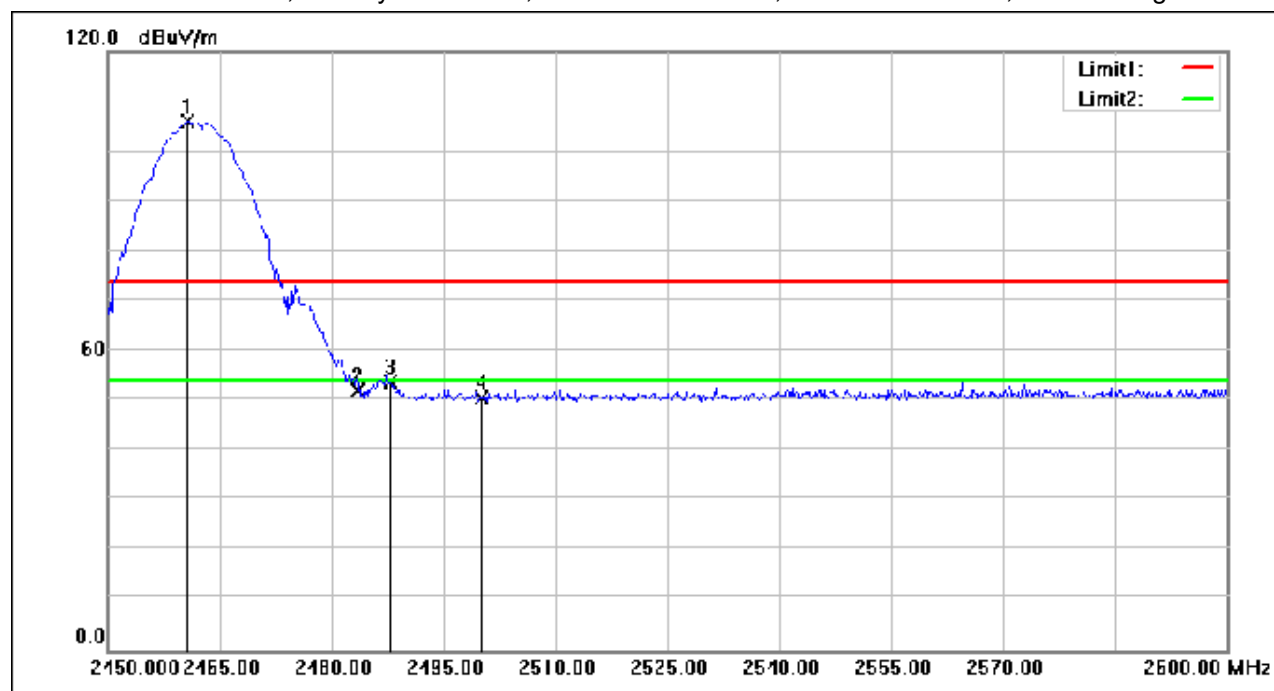
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 19 of 234

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	2460.650	130.38	-24.38	106.00	74.00	32.00	peak
2	2483.500	76.26	-24.27	51.99	74.00	-22.01	peak
3	2487.950	78.02	-24.25	53.77	74.00	-20.23	peak
4	2500.000	74.86	-24.19	50.67	74.00	-23.33	peak

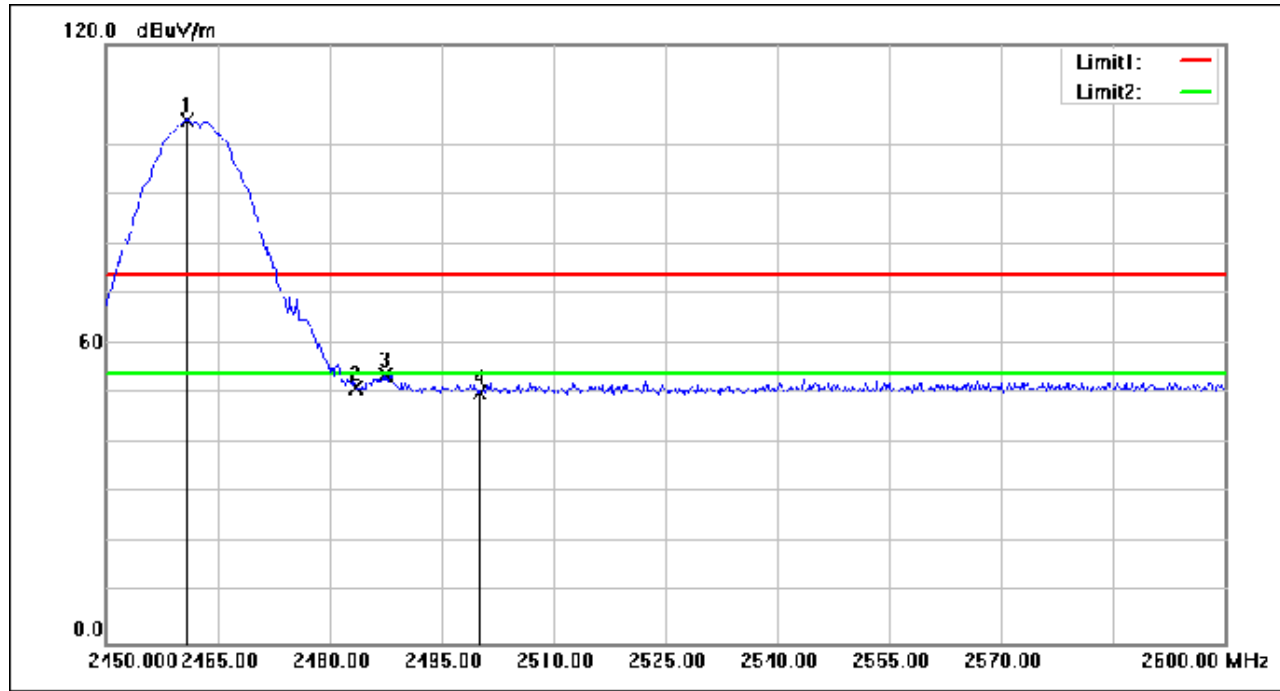
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 20 of 234

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	2460.800	129.38	-24.38	105.00	74.00	31.00	peak
2	2483.500	75.51	-24.27	51.24	74.00	-22.76	peak
3	2487.500	77.97	-24.25	53.72	74.00	-20.28	peak
4	2500.000	74.48	-24.19	50.29	74.00	-23.71	peak

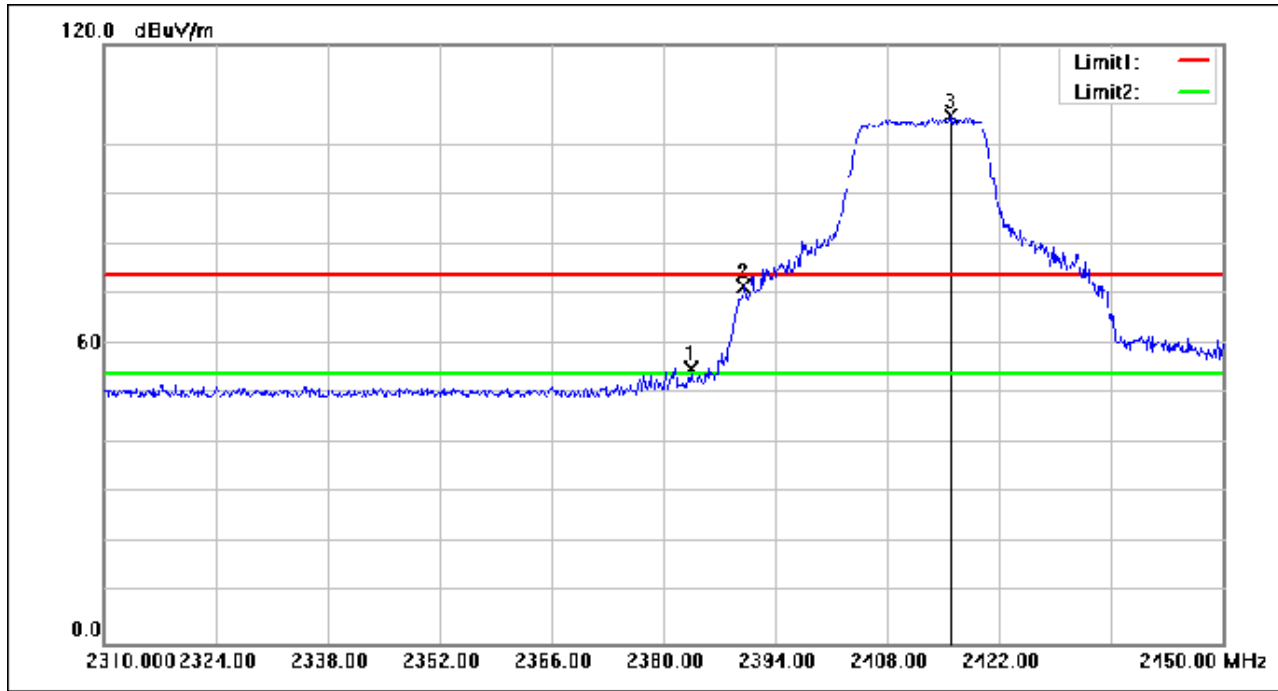
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 21 of 234

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	2383.500	79.68	-24.73	54.95	74.00	-19.05	peak
2	2390.000	96.25	-24.71	71.54	74.00	-2.46	peak
3	2415.840	130.46	-24.59	105.87	74.00	31.87	peak

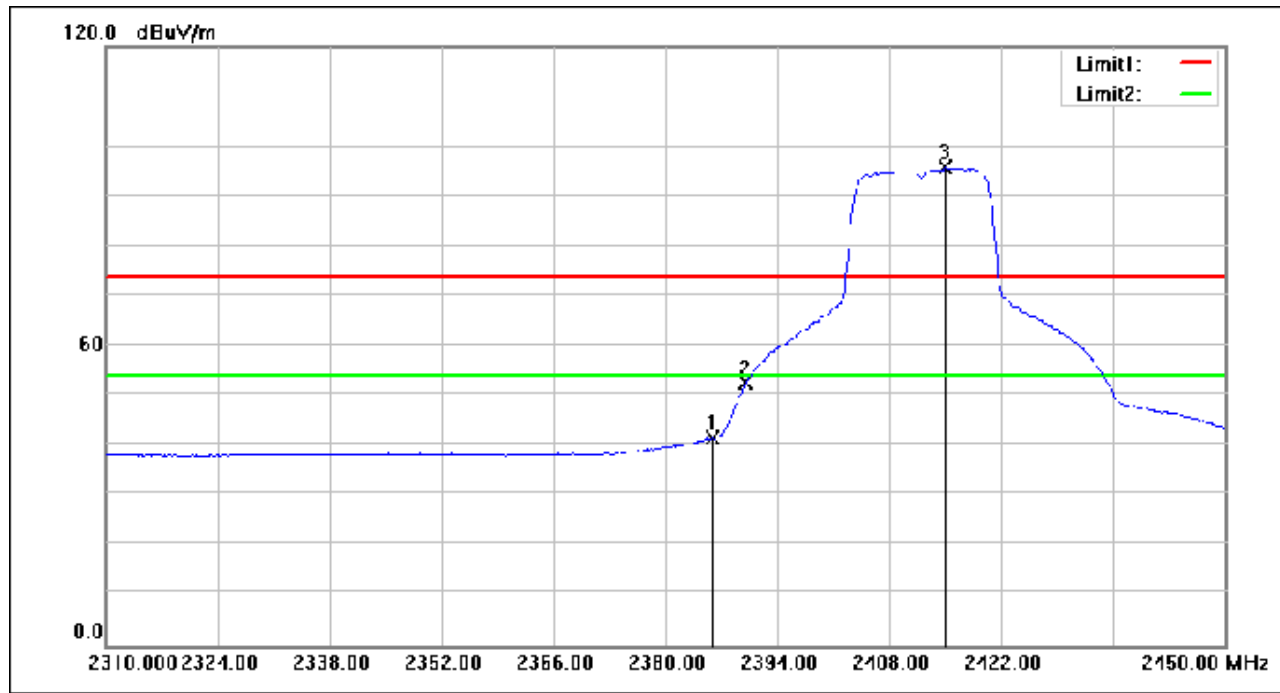
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 22 of 234

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	2385.880	66.20	-24.72	41.48	54.00	-12.52	AVG
2	2390.000	77.42	-24.71	52.71	54.00	-1.29	AVG
3	2415.000	120.35	-24.59	95.76	54.00	41.76	AVG

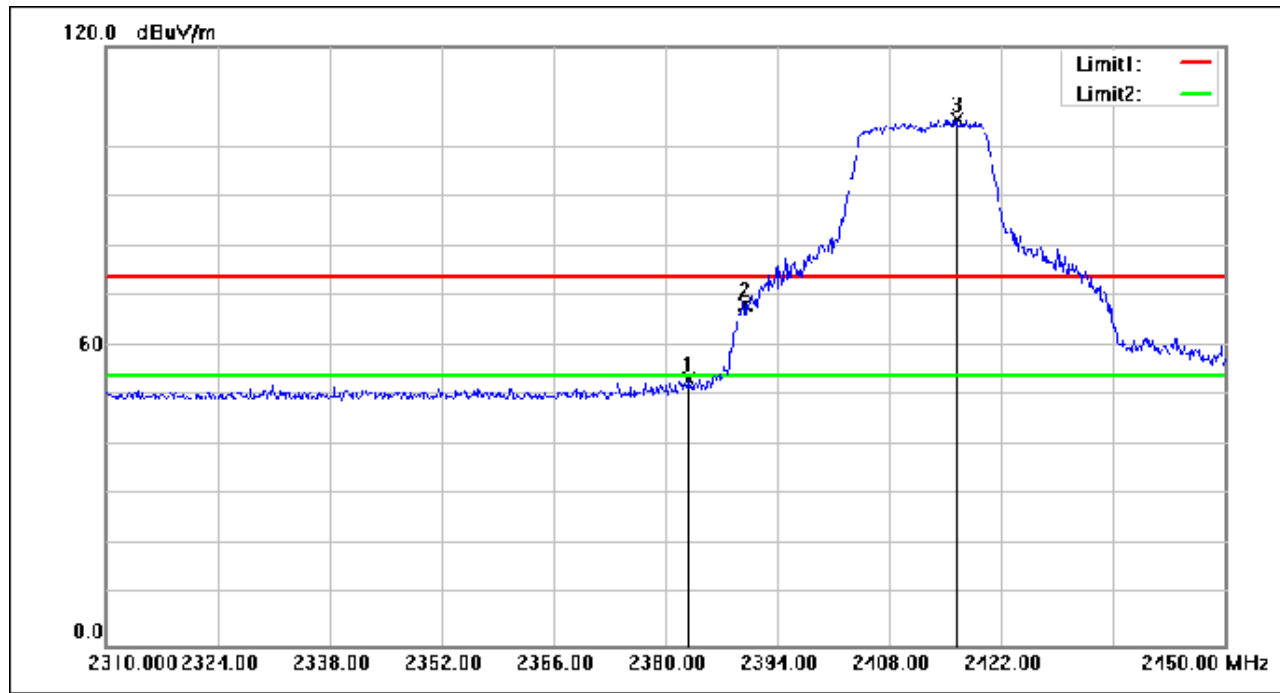
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 23 of 234

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	2382.940	77.97	-24.74	53.23	74.00	-20.77	peak
2	2390.000	93.07	-24.71	68.36	74.00	-5.64	peak
3	2416.400	129.92	-24.58	105.34	74.00	31.34	peak

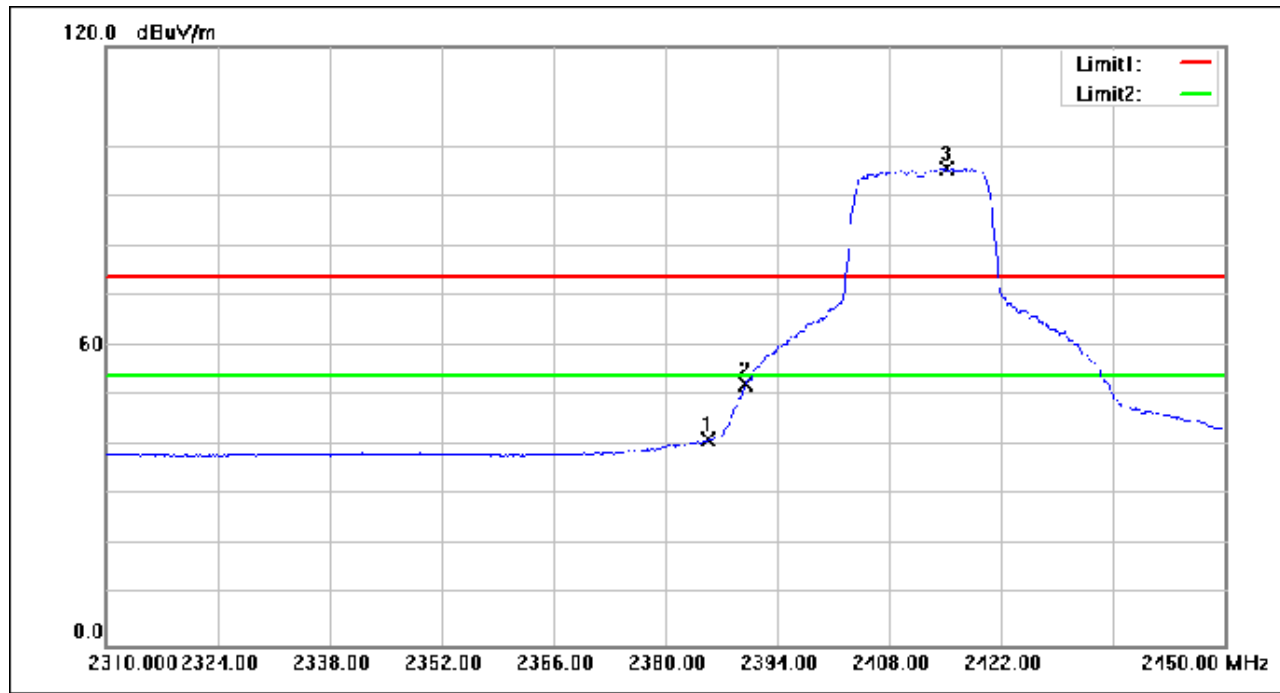
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 24 of 234

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	2385.320	65.96	-24.73	41.23	54.00	-12.77	AVG
2	2390.000	76.95	-24.71	52.24	54.00	-1.76	AVG
3	2415.140	120.18	-24.59	95.59	54.00	41.59	AVG

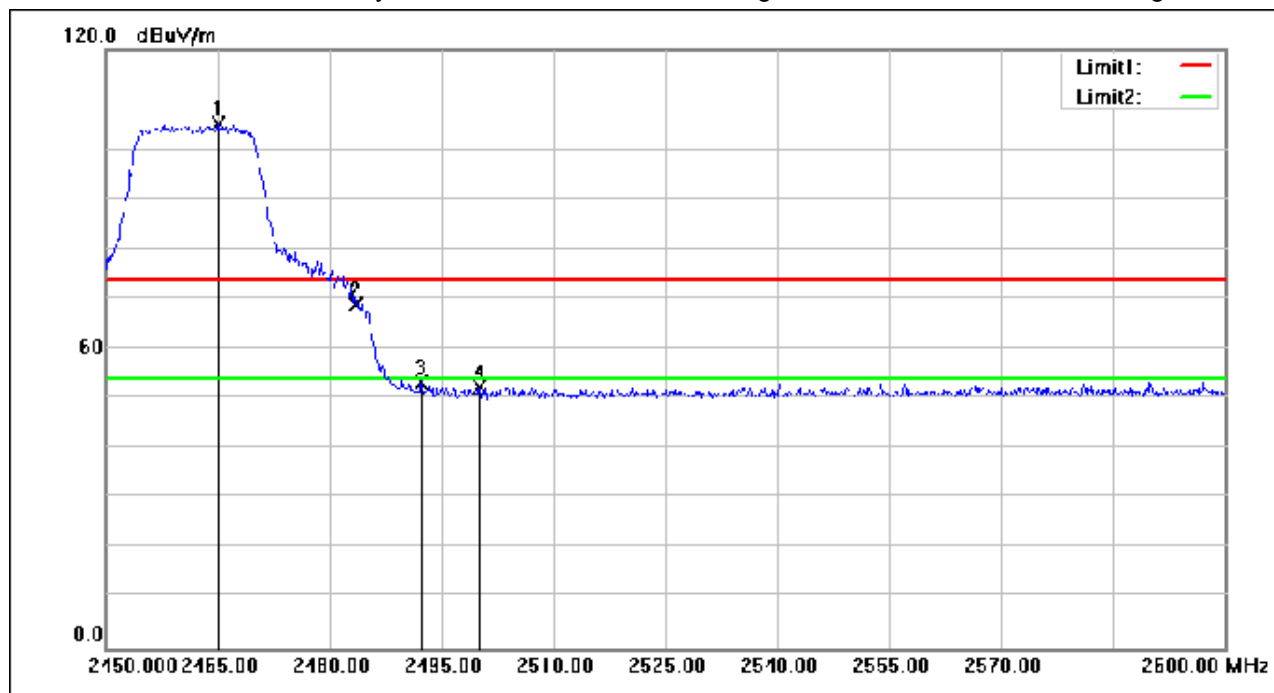
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 25 of 234

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	2465.000	129.46	-24.35	105.11	74.00	31.11	peak
2	2483.500	93.21	-24.27	68.94	74.00	-5.06	peak
3	2492.300	77.37	-24.23	53.14	74.00	-20.86	peak
4	2500.000	76.42	-24.19	52.23	74.00	-21.77	peak

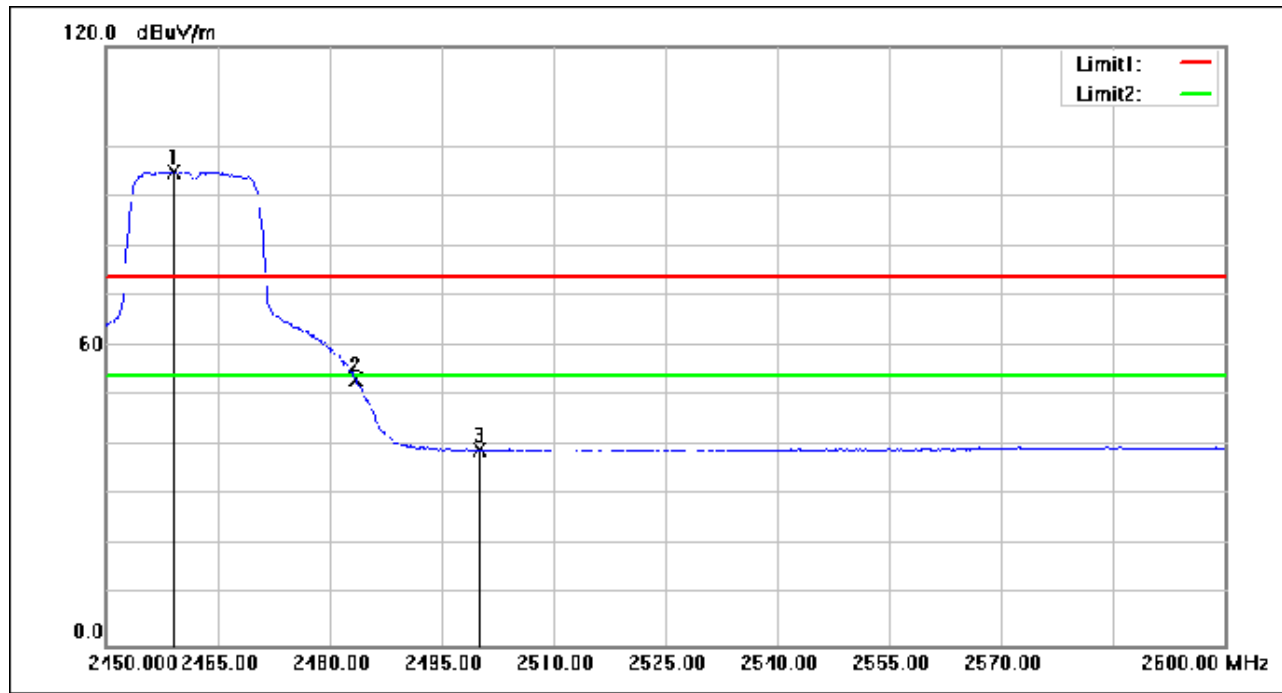
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 26 of 234

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	2459.150	119.33	-24.38	94.95	54.00	40.95	AVG
2	2483.500	77.42	-24.27	53.15	54.00	-0.85	AVG
3	2500.000	63.21	-24.19	39.02	54.00	-14.98	AVG

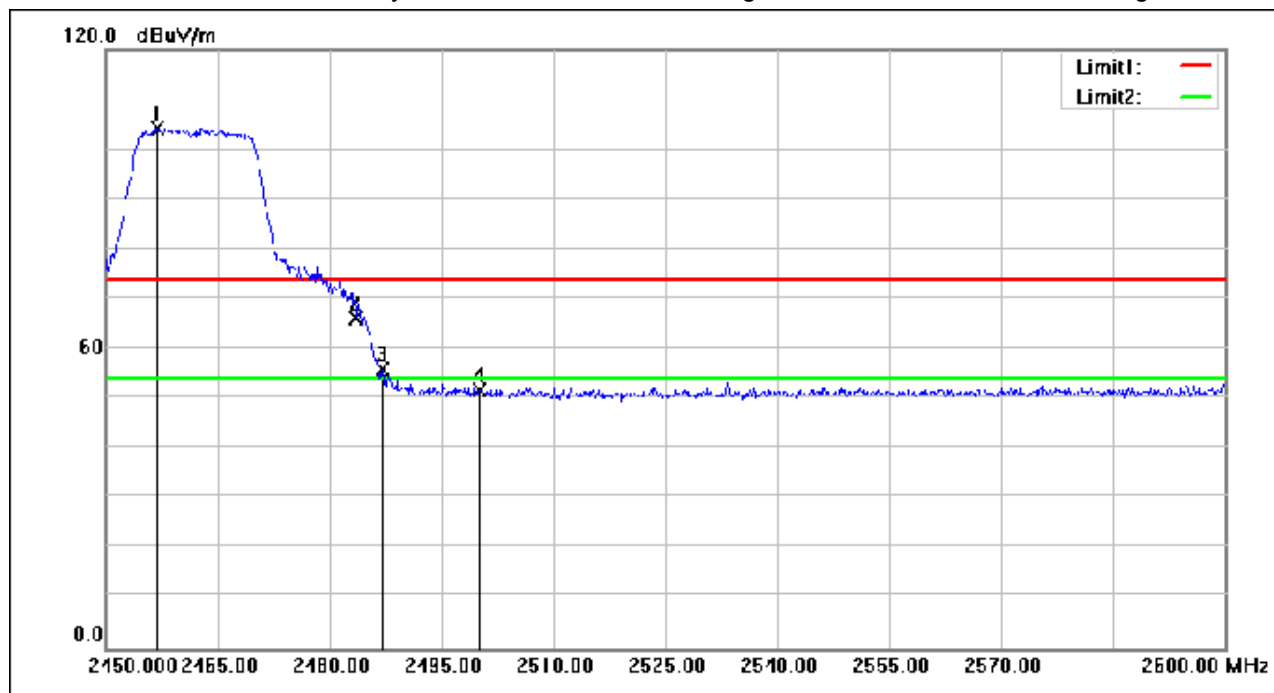
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 27 of 234

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	2456.900	128.77	-24.39	104.38	74.00	30.38	peak
2	2483.500	90.36	-24.27	66.09	74.00	-7.91	peak
3	2487.050	80.19	-24.25	55.94	74.00	-18.06	peak
4	2500.000	75.90	-24.19	51.71	74.00	-22.29	peak

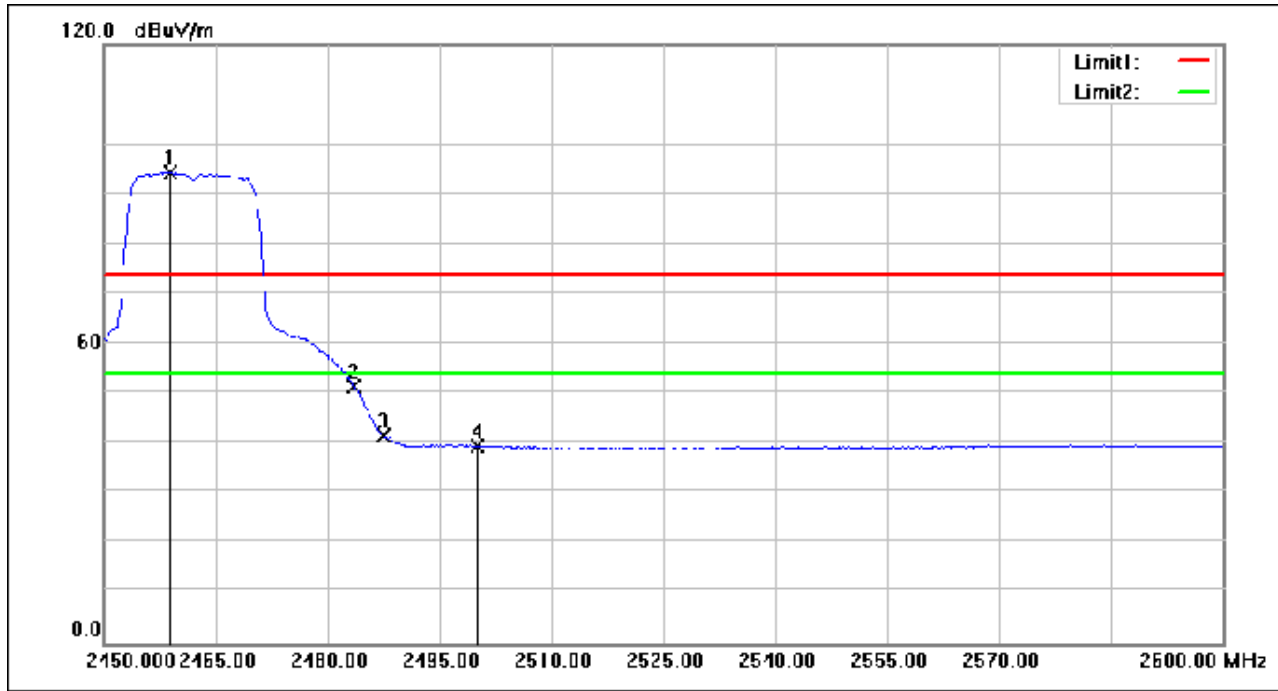
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 28 of 234

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	2458.850	118.76	-24.38	94.38	54.00	40.38	AVG
2	2483.500	75.64	-24.27	51.37	54.00	-2.63	AVG
3	2487.500	65.81	-24.25	41.56	54.00	-12.44	AVG
4	2500.000	63.66	-24.19	39.47	54.00	-14.53	AVG

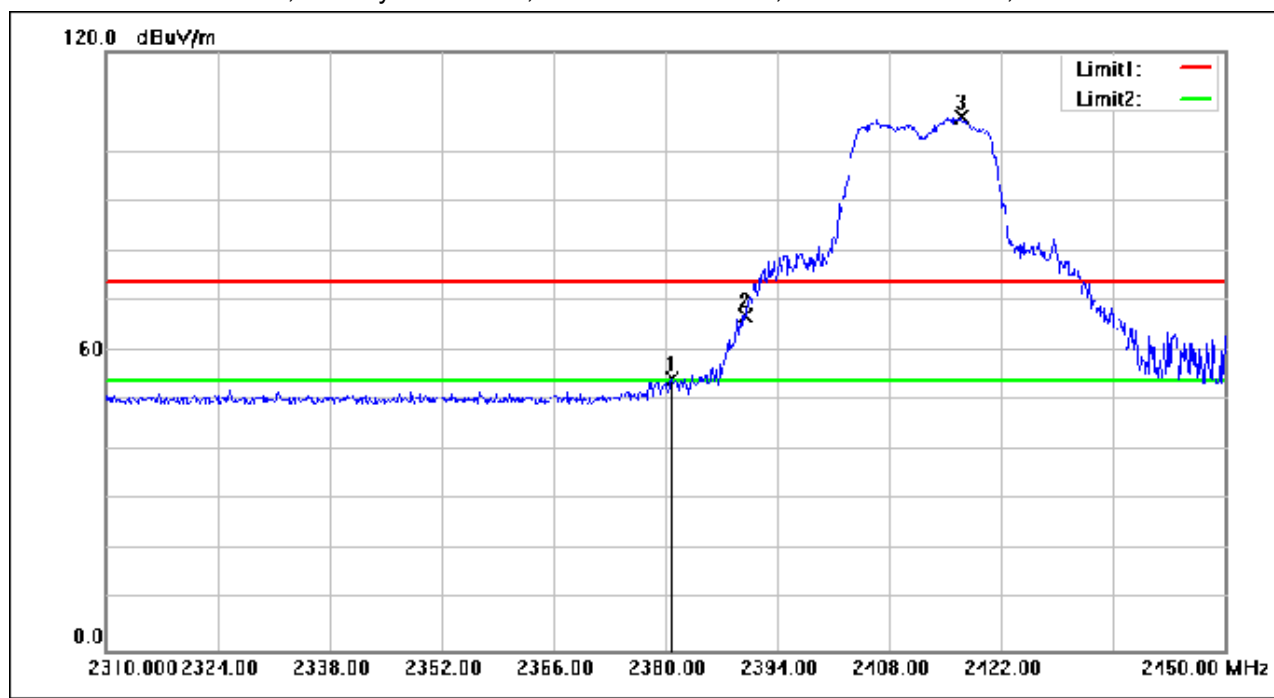
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 29 of 234

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	2380.840	79.10	-24.75	54.35	74.00	-19.65	peak
2	2390.000	91.84	-24.71	67.13	74.00	-6.87	peak
3	2416.960	131.50	-24.58	106.92	74.00	32.92	peak

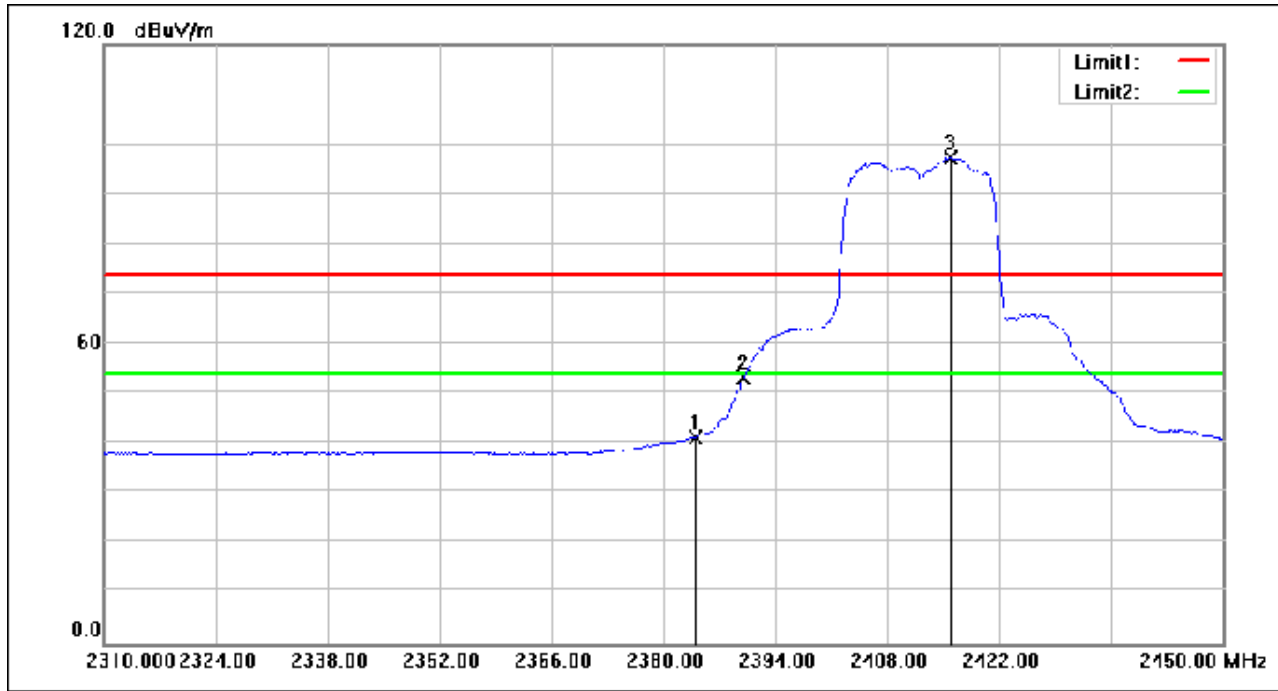
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 30 of 234

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	2384.060	66.13	-24.73	41.40	54.00	-12.60	AVG
2	2390.000	77.95	-24.71	53.24	54.00	-0.76	AVG
3	2415.980	121.97	-24.59	97.38	54.00	43.38	AVG

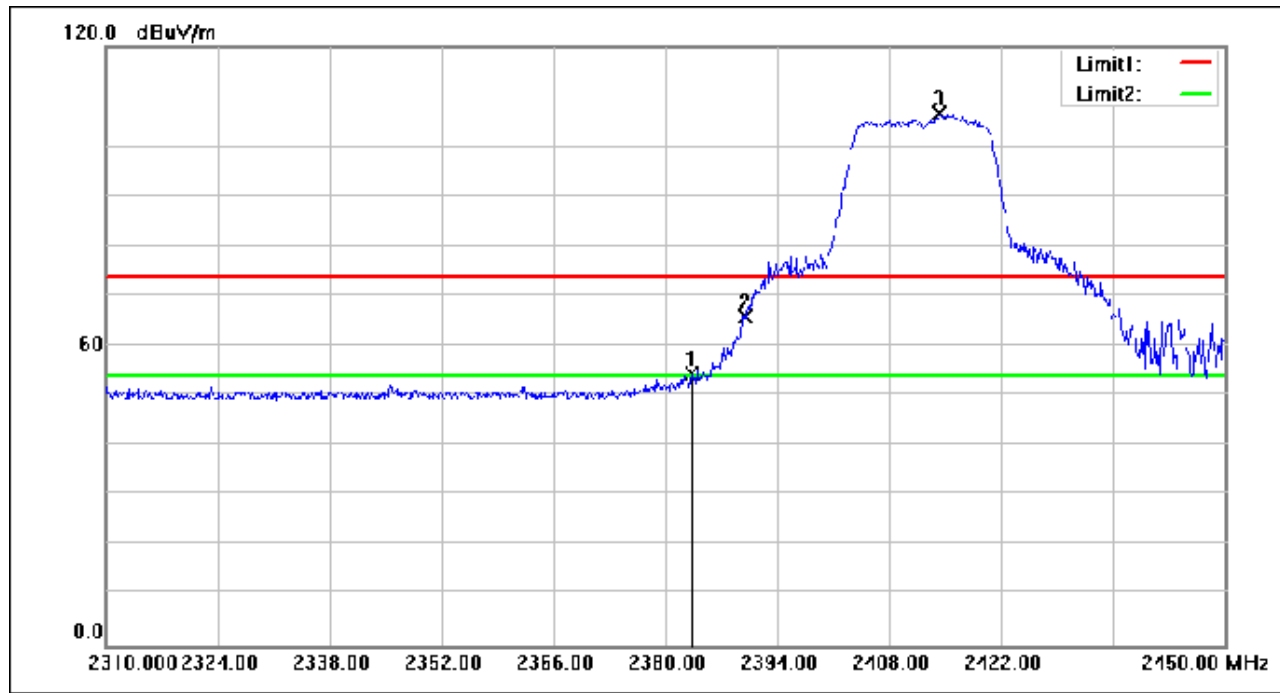
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 31 of 234

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	2383.220	79.27	-24.74	54.53	74.00	-19.47	peak
2	2390.000	90.52	-24.71	65.81	74.00	-8.19	peak
3	2414.300	131.35	-24.59	106.76	74.00	32.76	peak

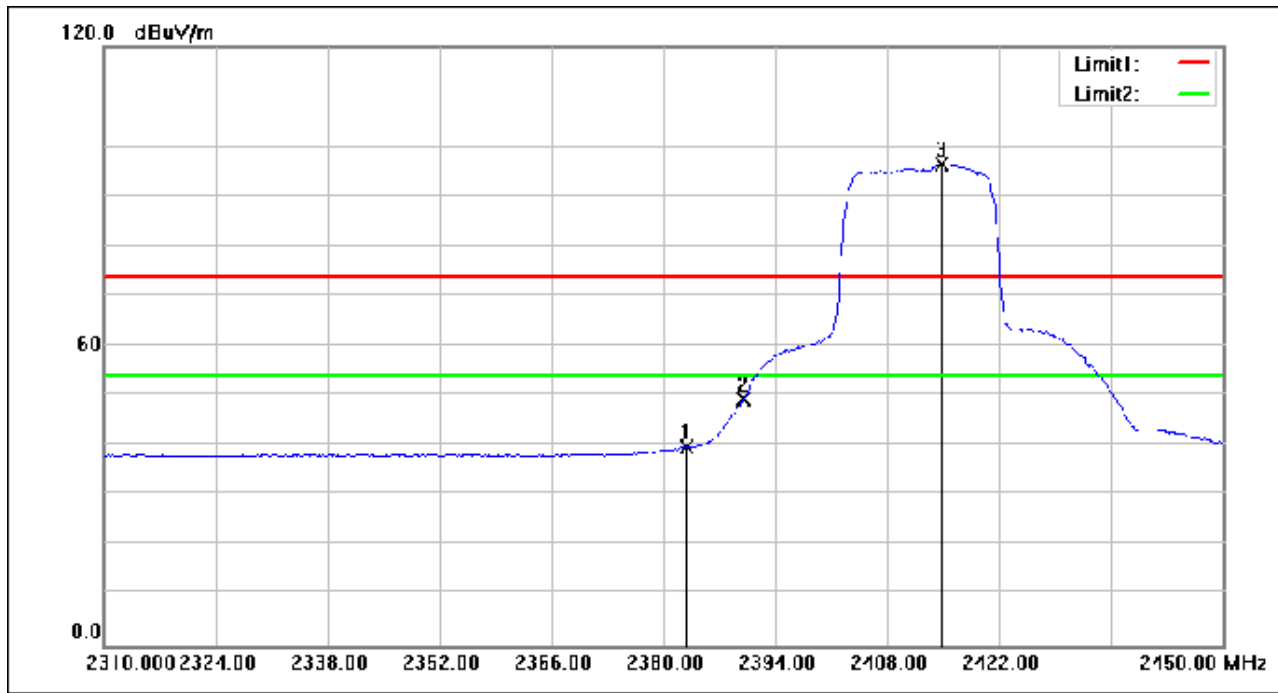
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 32 of 234

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	2382.800	64.53	-24.74	39.79	54.00	-14.21	AVG
2	2390.000	74.12	-24.71	49.41	54.00	-4.59	AVG
3	2414.860	121.15	-24.59	96.56	54.00	42.56	AVG

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 33 of 234

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	2456.300	129.33	-24.39	104.94	74.00	30.94	peak
2	2483.500	90.78	-24.27	66.51	74.00	-7.49	peak
3	2487.500	83.48	-24.25	59.23	74.00	-14.77	peak
4	2500.000	75.72	-24.19	51.53	74.00	-22.47	peak

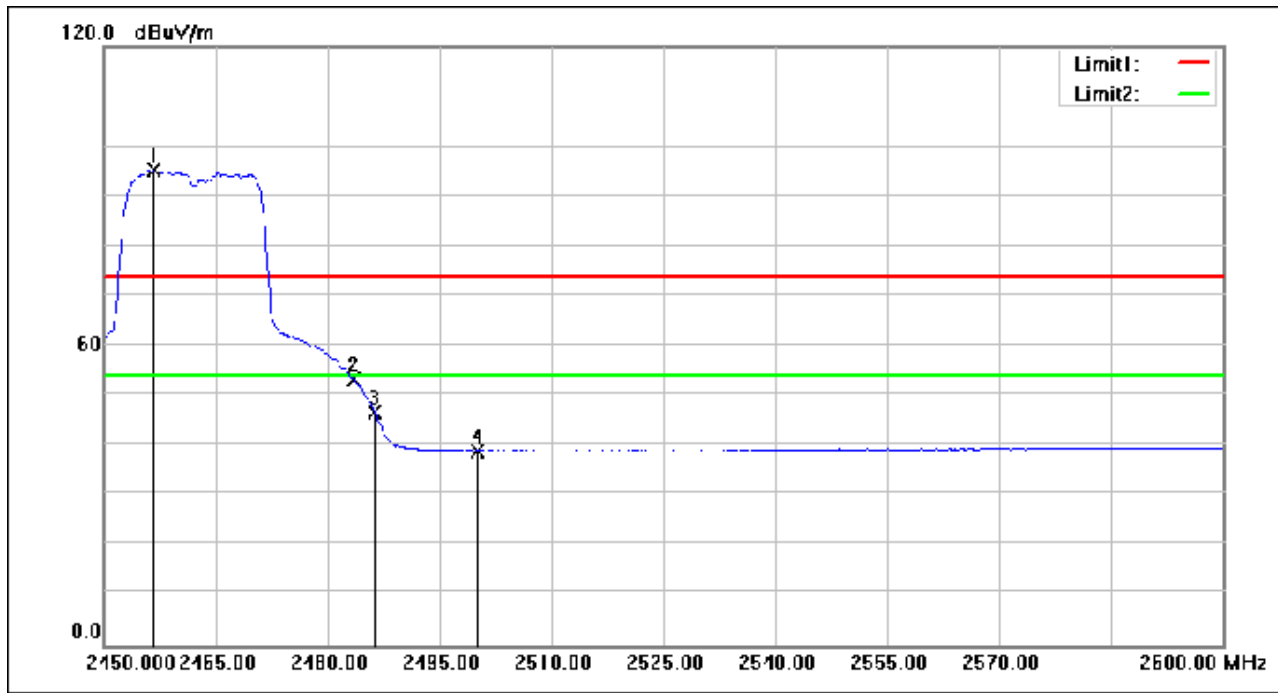
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 34 of 234

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	2456.600	119.57	-24.39	95.18	54.00	41.18	AVG
2	2483.500	77.46	-24.27	53.19	54.00	-0.81	AVG
3	2486.300	70.98	-24.25	46.73	54.00	-7.27	AVG
4	2500.000	63.19	-24.19	39.00	54.00	-15.00	AVG

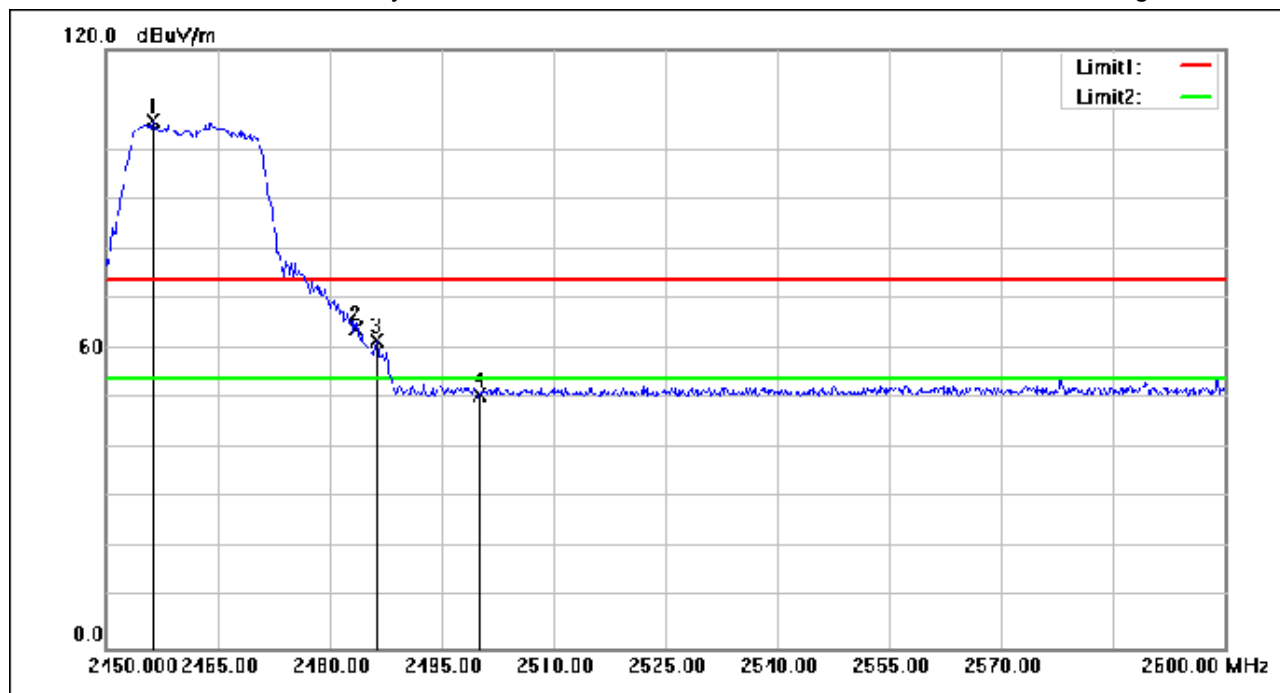
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 35 of 234

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	2456.300	130.13	-24.39	105.74	74.00	31.74	peak
2	2483.500	88.42	-24.27	64.15	74.00	-9.85	peak
3	2486.300	85.90	-24.25	61.65	74.00	-12.35	peak
4	2500.000	75.08	-24.19	50.89	74.00	-23.11	peak

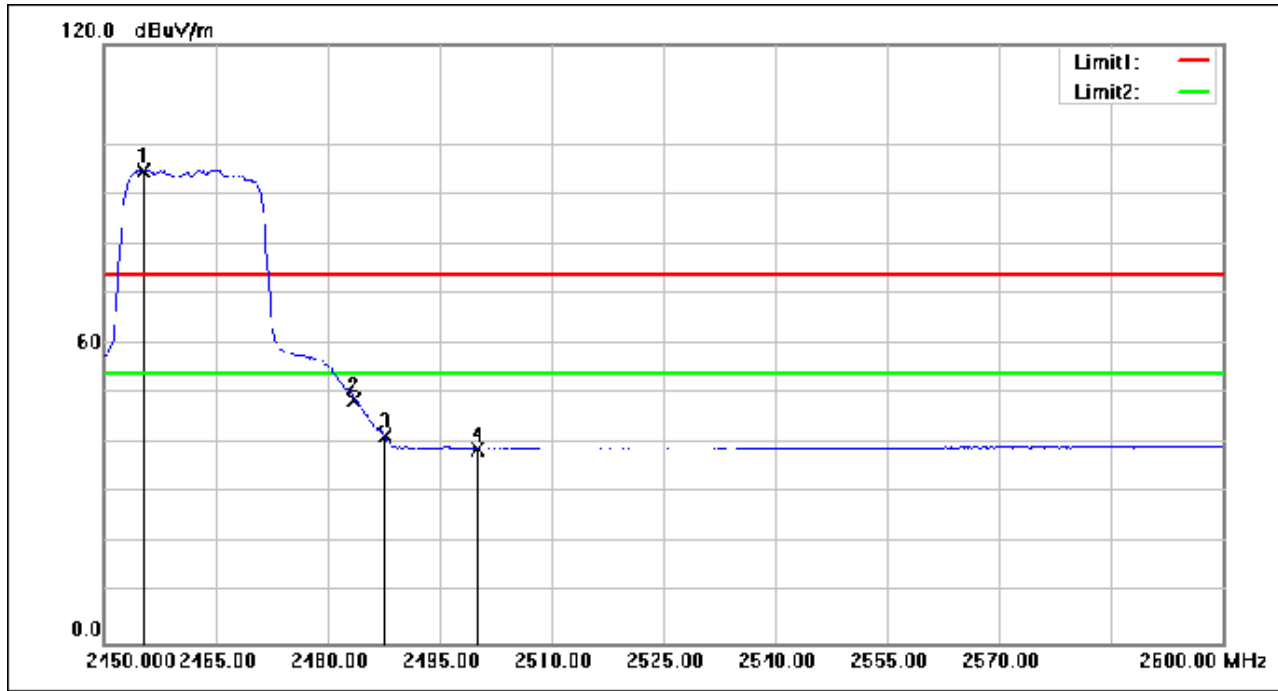
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 36 of 234

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	2455.250	119.20	-24.40	94.80	54.00	40.80	AVG
2	2483.500	73.15	-24.27	48.88	54.00	-5.12	AVG
3	2487.650	65.86	-24.25	41.61	54.00	-12.39	AVG
4	2500.000	63.17	-24.19	38.98	54.00	-15.02	AVG

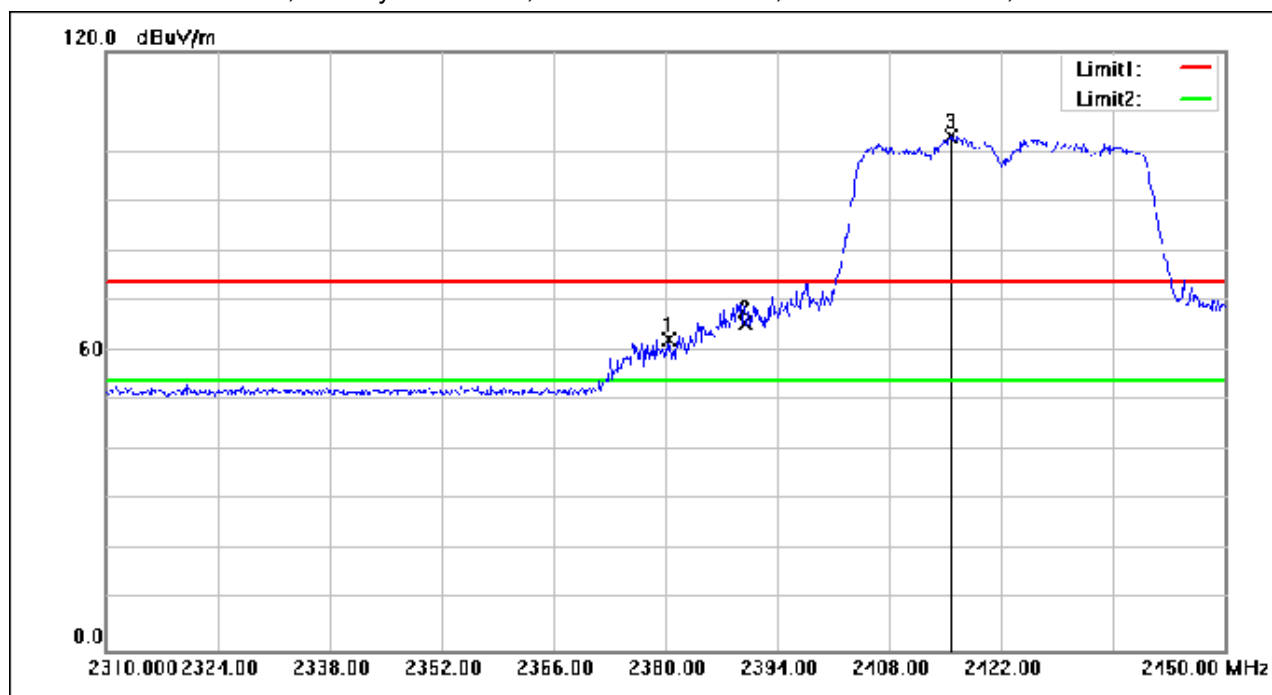
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 37 of 234

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	2380.420	87.09	-24.75	62.34	74.00	-11.66	peak
2	2390.000	90.40	-24.71	65.69	74.00	-8.31	peak
3	2415.700	127.77	-24.59	103.18	74.00	29.18	peak

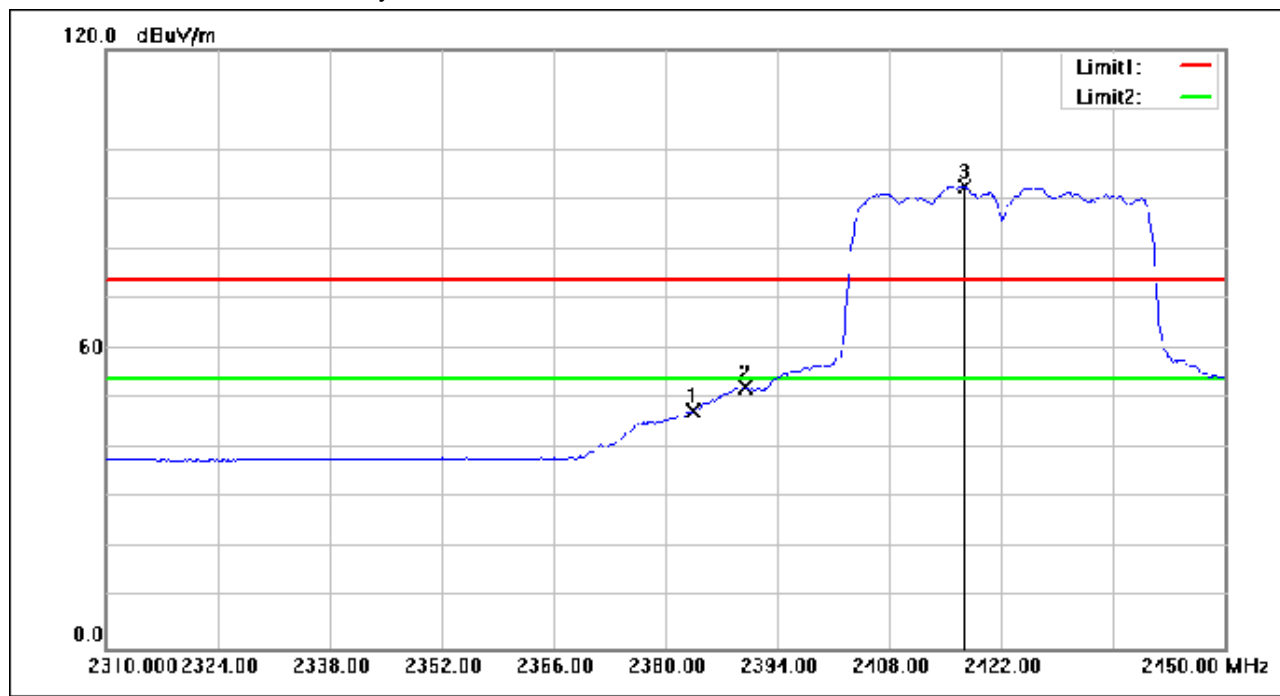
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 38 of 234

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	2383.500	72.33	-24.73	47.60	54.00	-6.40	AVG
2	2390.000	77.05	-24.71	52.34	54.00	-1.66	AVG
3	2417.380	117.26	-24.58	92.68	54.00	38.68	AVG

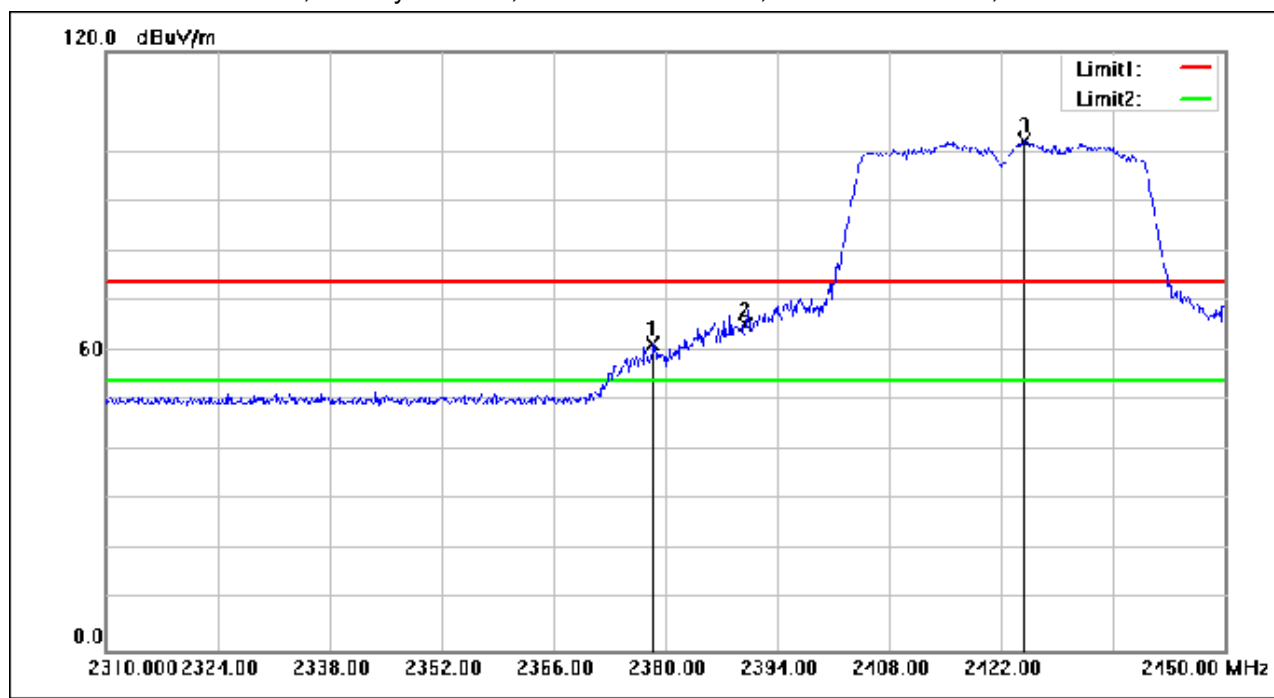
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 39 of 234

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	2378.460	86.07	-24.76	61.31	74.00	-12.69	peak
2	2390.000	90.04	-24.71	65.33	74.00	-8.67	peak
3	2424.940	126.62	-24.54	102.08	74.00	28.08	peak

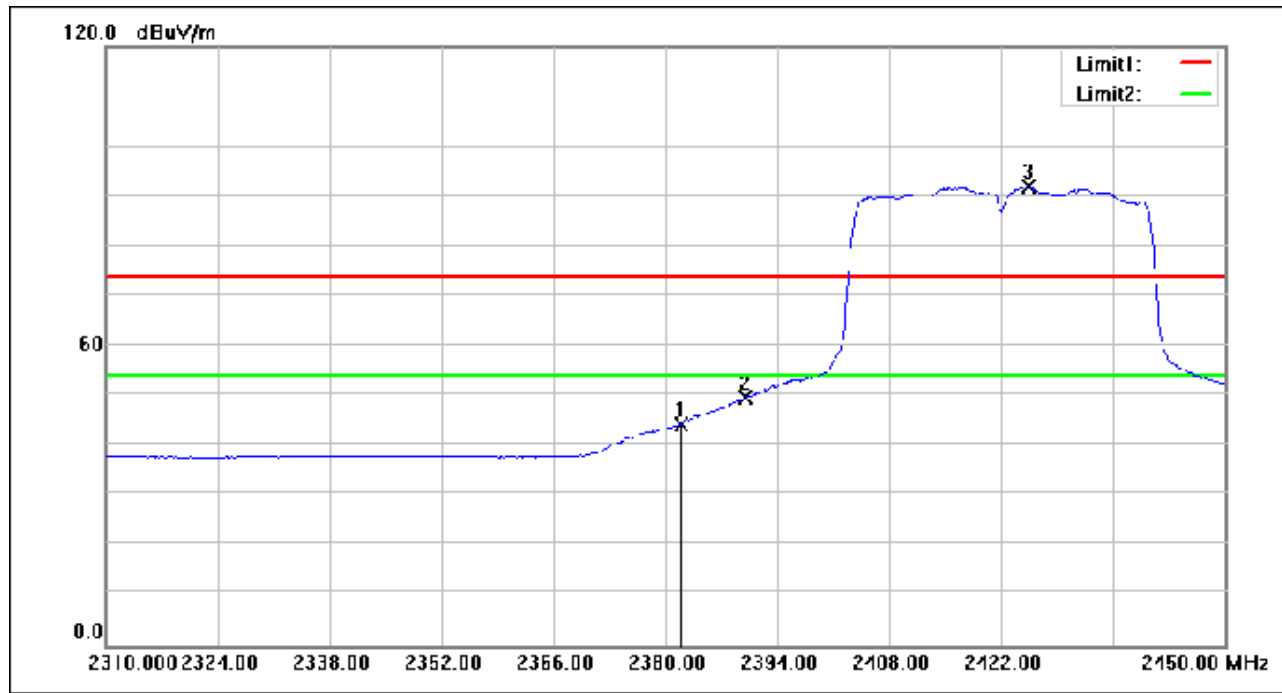
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 40 of 234

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	2381.960	69.08	-24.74	44.34	54.00	-9.66	AVG
2	2390.000	74.44	-24.71	49.73	54.00	-4.27	AVG
3	2425.360	116.40	-24.54	91.86	54.00	37.86	AVG

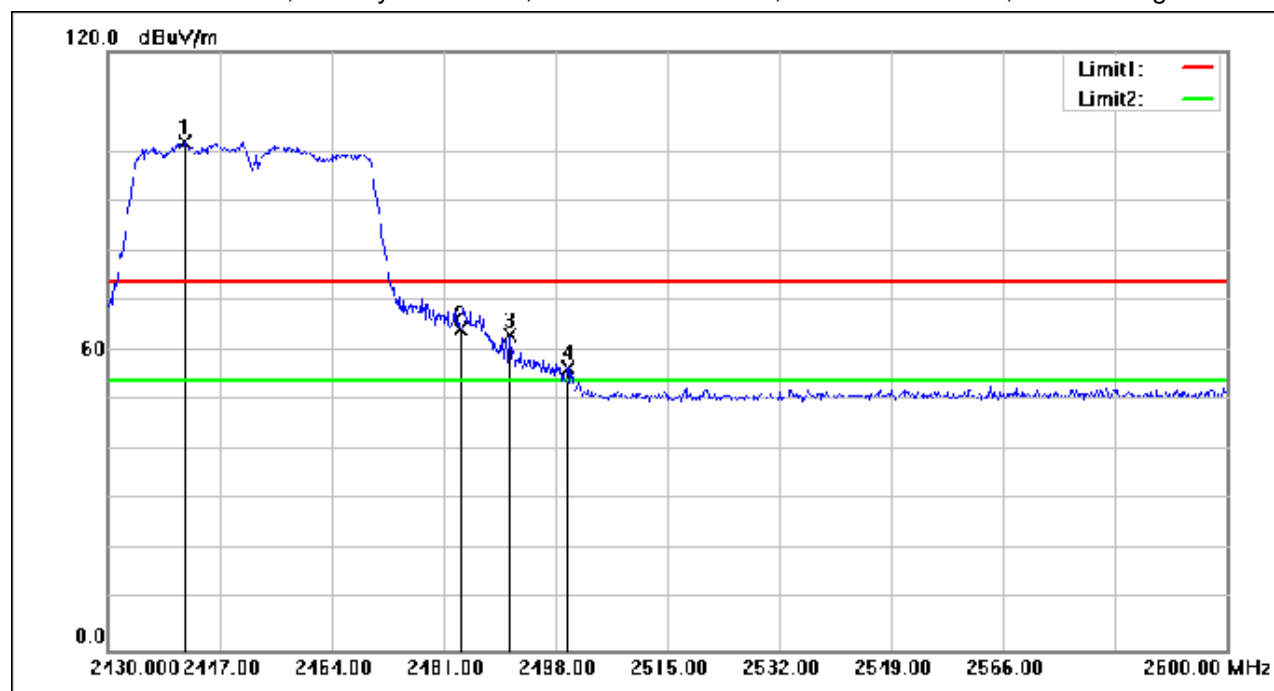
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 41 of 234

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	2441.560	126.24	-24.46	101.78	74.00	27.78	peak
2	2483.500	88.50	-24.27	64.23	74.00	-9.77	peak
3	2491.030	87.26	-24.24	63.02	74.00	-10.98	peak
4	2500.000	80.77	-24.19	56.58	74.00	-17.42	peak

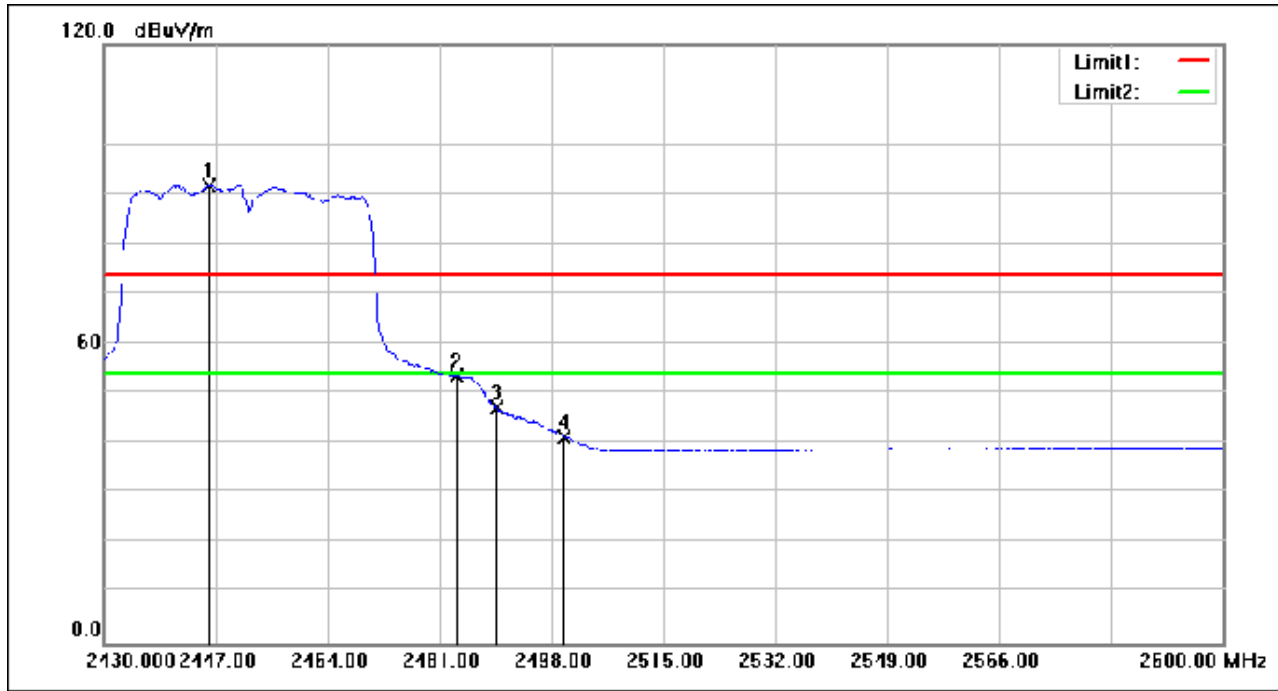
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 42 of 234

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	2445.980	116.20	-24.45	91.75	54.00	37.75	AVG
2	2483.500	77.72	-24.27	53.45	54.00	-0.55	AVG
3	2489.670	71.36	-24.24	47.12	54.00	-6.88	AVG
4	2500.000	65.59	-24.19	41.40	54.00	-12.60	AVG

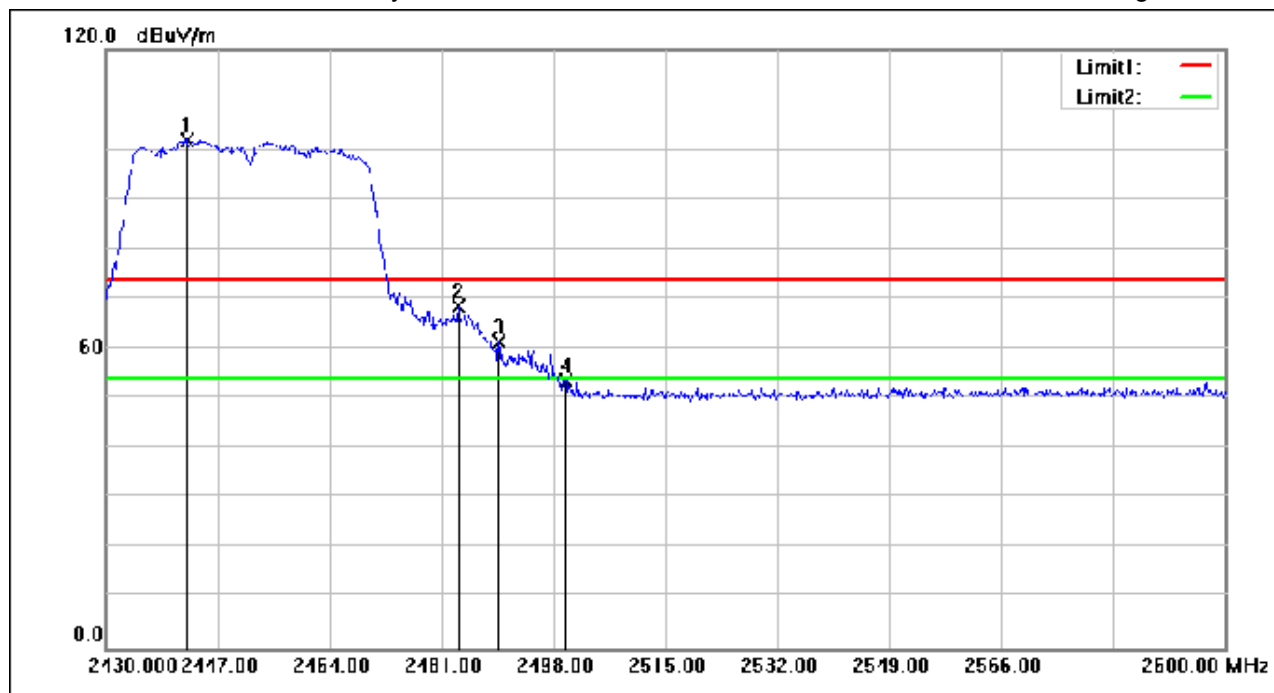
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 43 of 234

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	2442.240	126.46	-24.46	102.00	74.00	28.00	peak
2	2483.500	92.78	-24.27	68.51	74.00	-5.49	peak
3	2489.670	85.68	-24.24	61.44	74.00	-12.56	peak
4	2500.000	77.73	-24.19	53.54	74.00	-20.46	peak

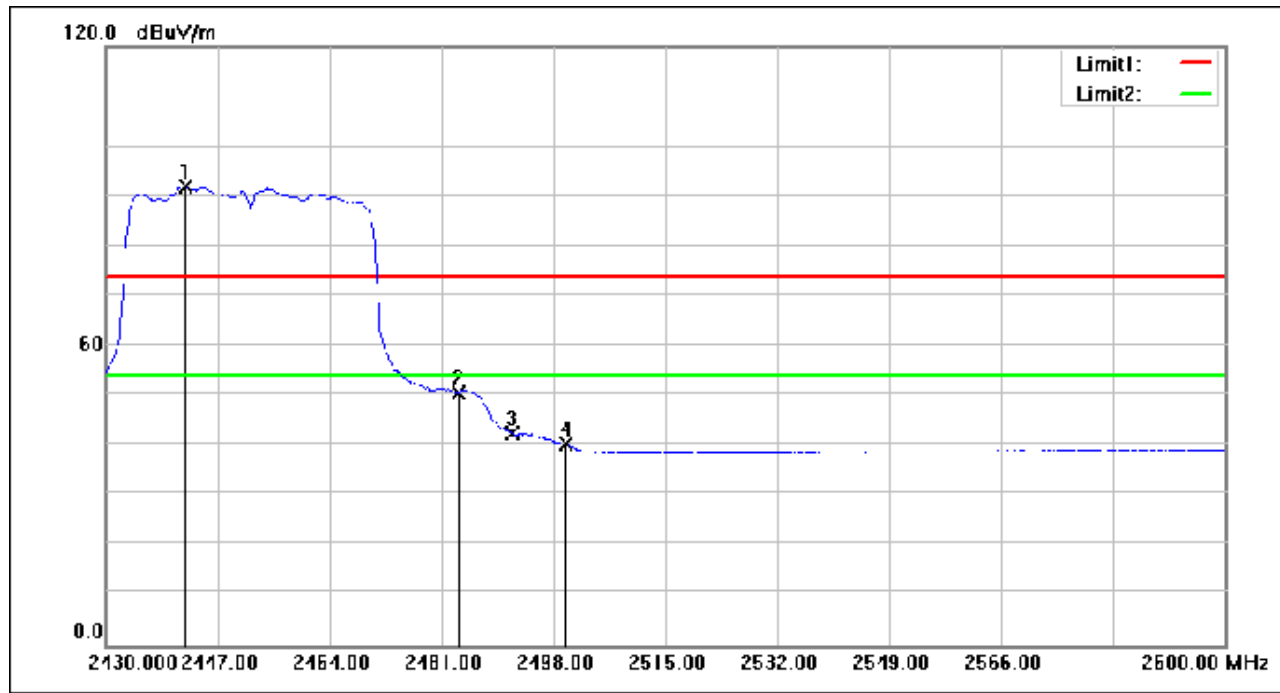
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 44 of 234

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	2442.070	116.54	-24.46	92.08	54.00	38.08	AVG
2	2483.500	74.88	-24.27	50.61	54.00	-3.39	AVG
3	2491.710	66.80	-24.23	42.57	54.00	-11.43	AVG
4	2500.000	64.40	-24.19	40.21	54.00	-13.79	AVG

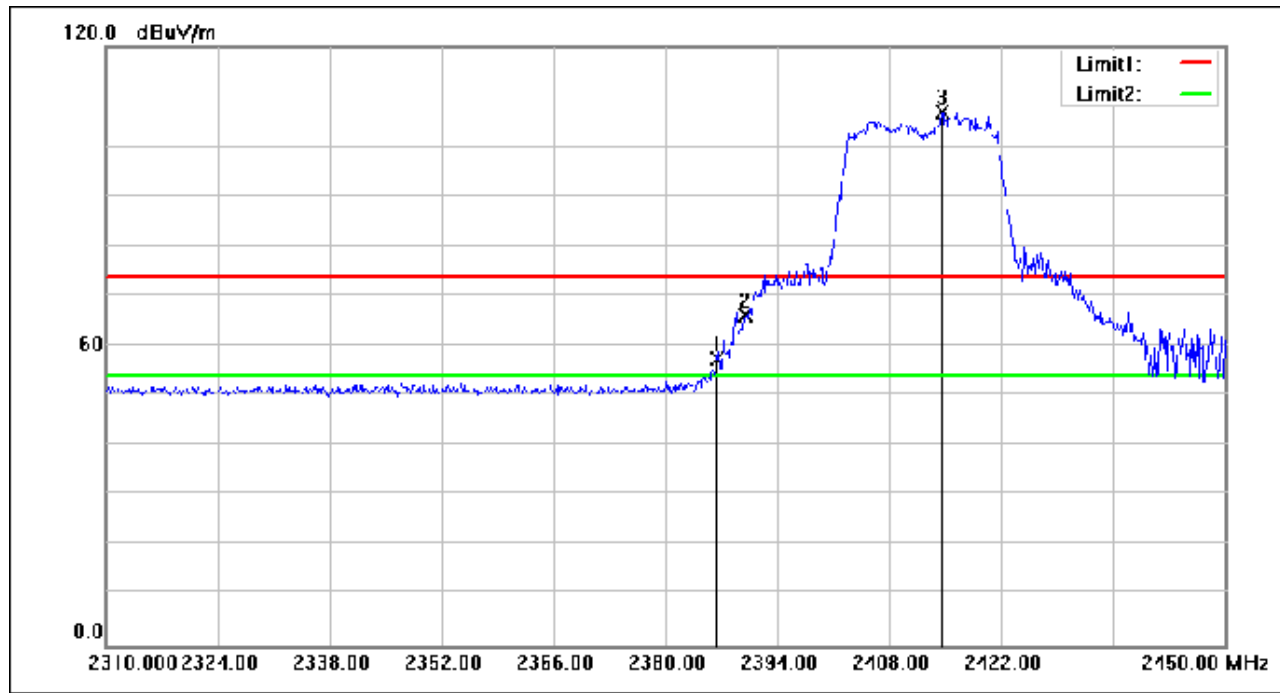
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 45 of 234

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.440	82.32	-24.72	57.60	74.00	-16.40	peak
2	2390.000	90.88	-24.71	66.17	74.00	-7.83	peak
3	2414.580	131.54	-24.59	106.95	74.00	32.95	peak

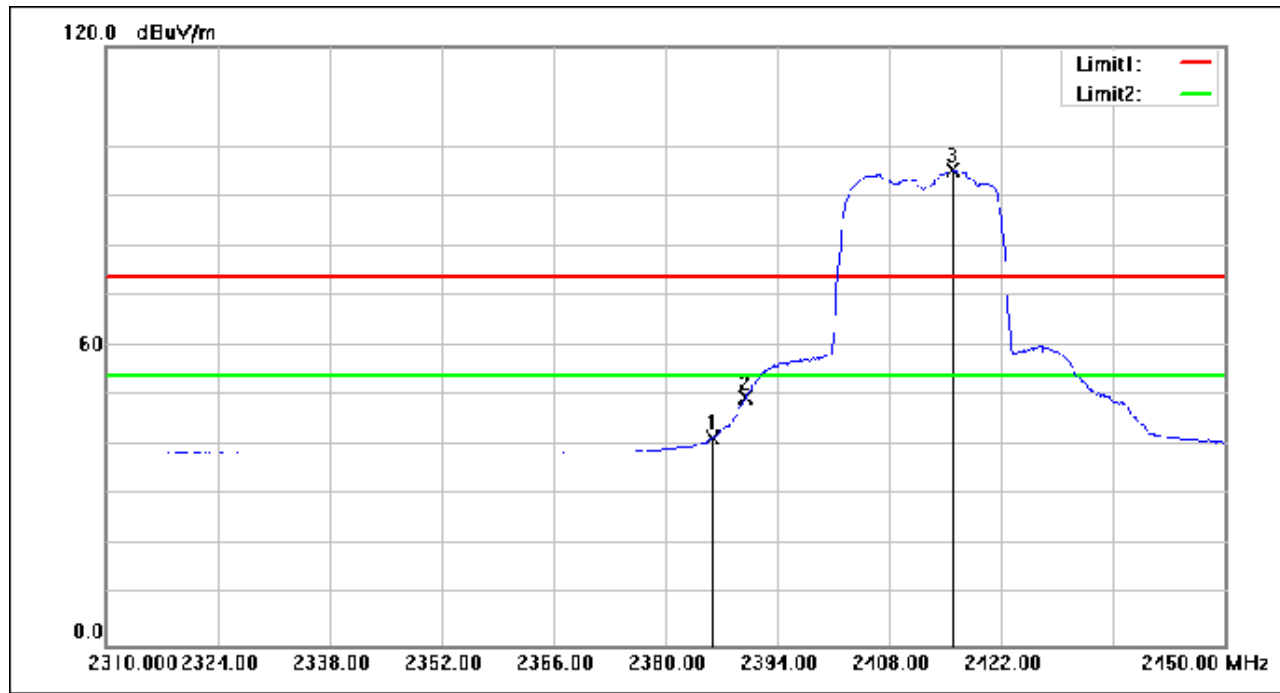
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 46 of 234

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.880	66.38	-24.72	41.66	54.00	-12.34	AVG
2	2390.000	74.38	-24.71	49.67	54.00	-4.33	AVG
3	2415.980	119.88	-24.59	95.29	54.00	41.29	AVG

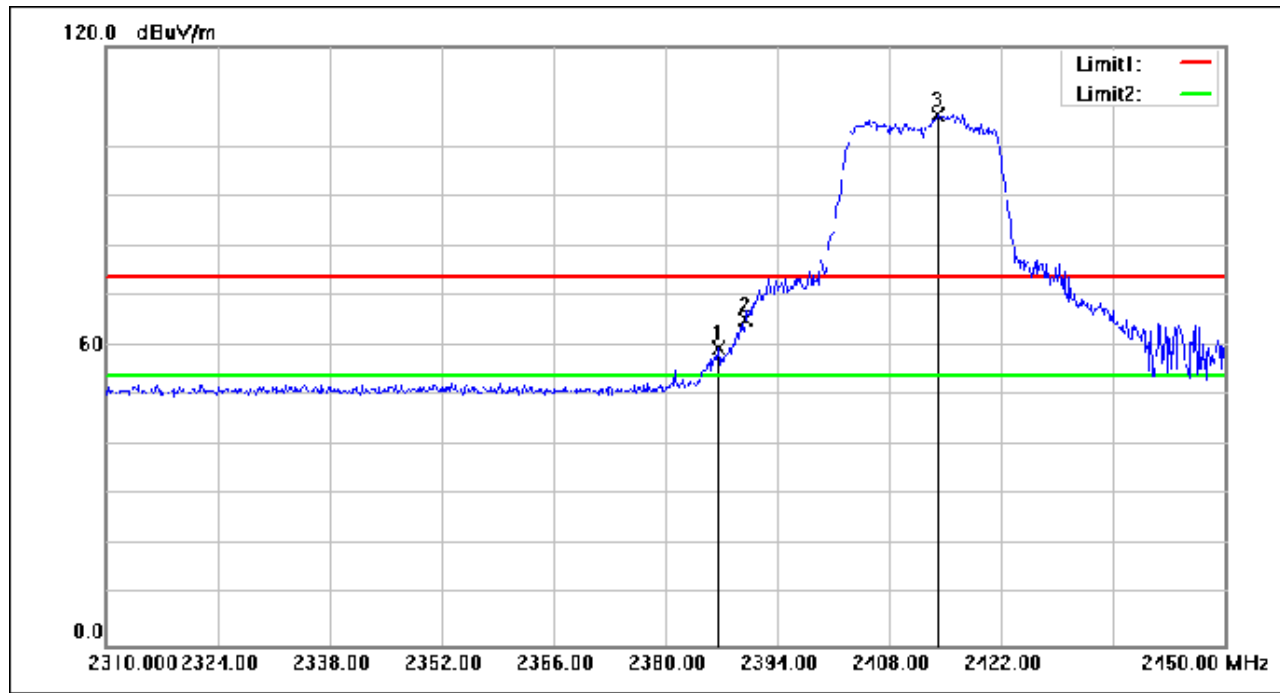
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 47 of 234

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.580	84.20	-24.72	59.48	74.00	-14.52	peak
2	2390.000	89.87	-24.71	65.16	74.00	-8.84	peak
3	2414.020	131.07	-24.59	106.48	74.00	32.48	peak

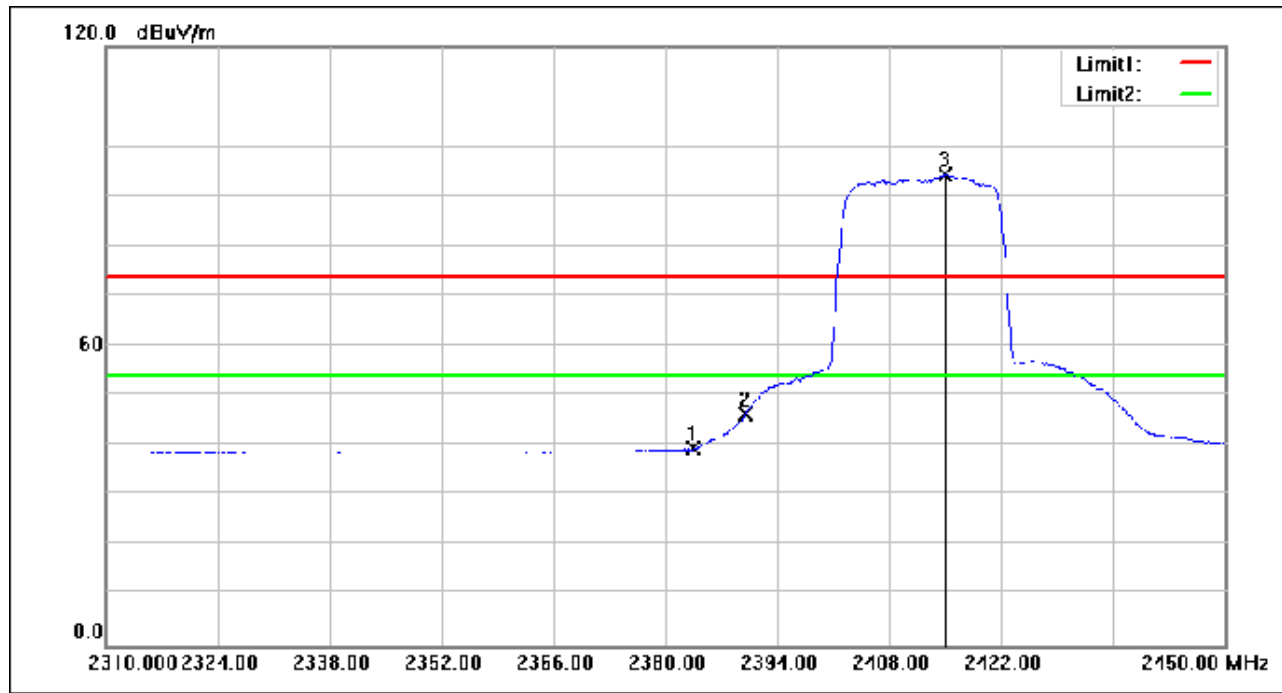
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 48 of 234

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.500	64.13	-24.73	39.40	54.00	-14.60	AVG
2	2390.000	71.16	-24.71	46.45	54.00	-7.55	AVG
3	2415.000	118.89	-24.59	94.30	54.00	40.30	AVG

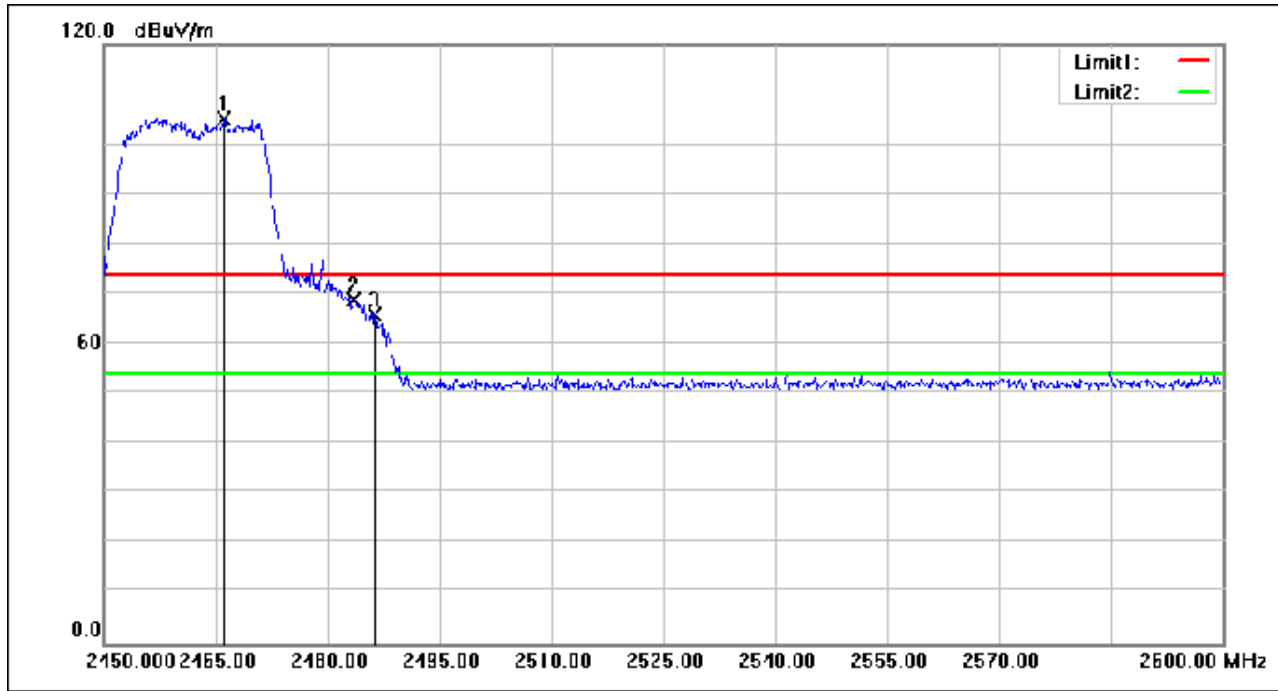
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 49 of 234

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	2466.050	129.58	-24.35	105.23	74.00	31.23	peak
2	2483.500	93.12	-24.27	68.85	74.00	-5.15	peak
3	2486.300	90.13	-24.25	65.88	74.00	-8.12	peak

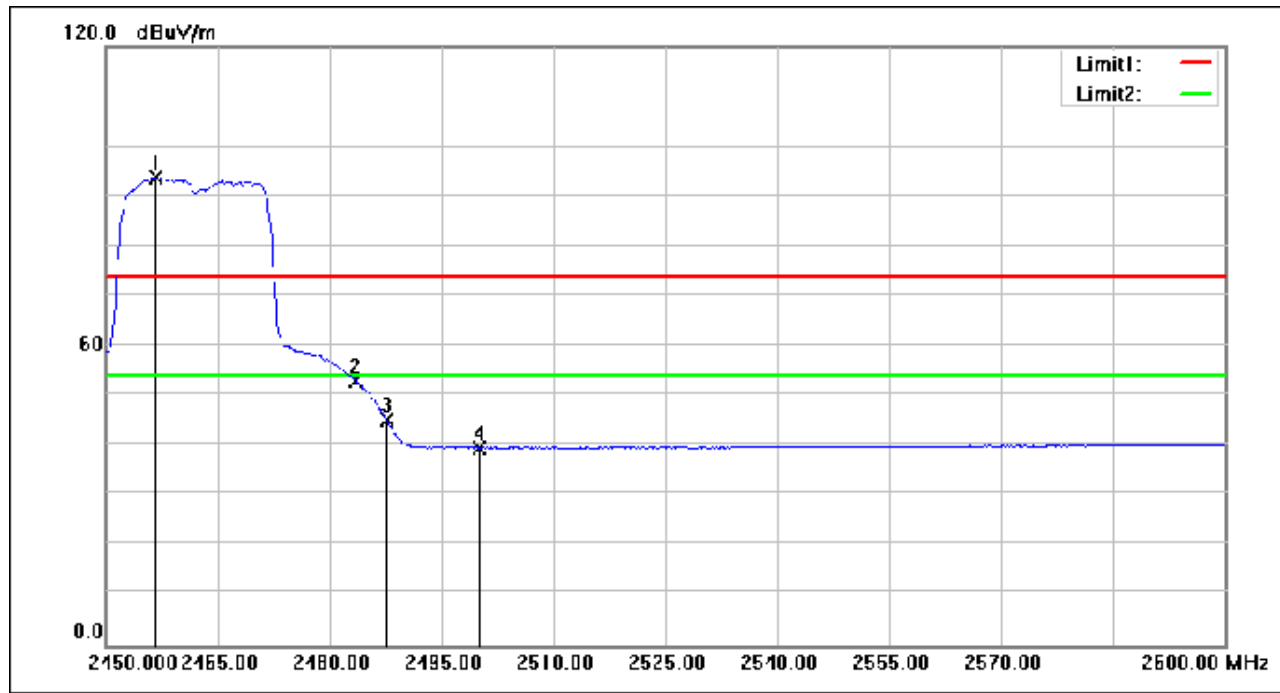
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 50 of 234

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	2456.750	118.28	-24.39	93.89	54.00	39.89	AVG
2	2483.500	77.37	-24.27	53.10	54.00	-0.90	AVG
3	2487.650	69.49	-24.25	45.24	54.00	-8.76	AVG
4	2500.000	63.78	-24.19	39.59	54.00	-14.41	AVG

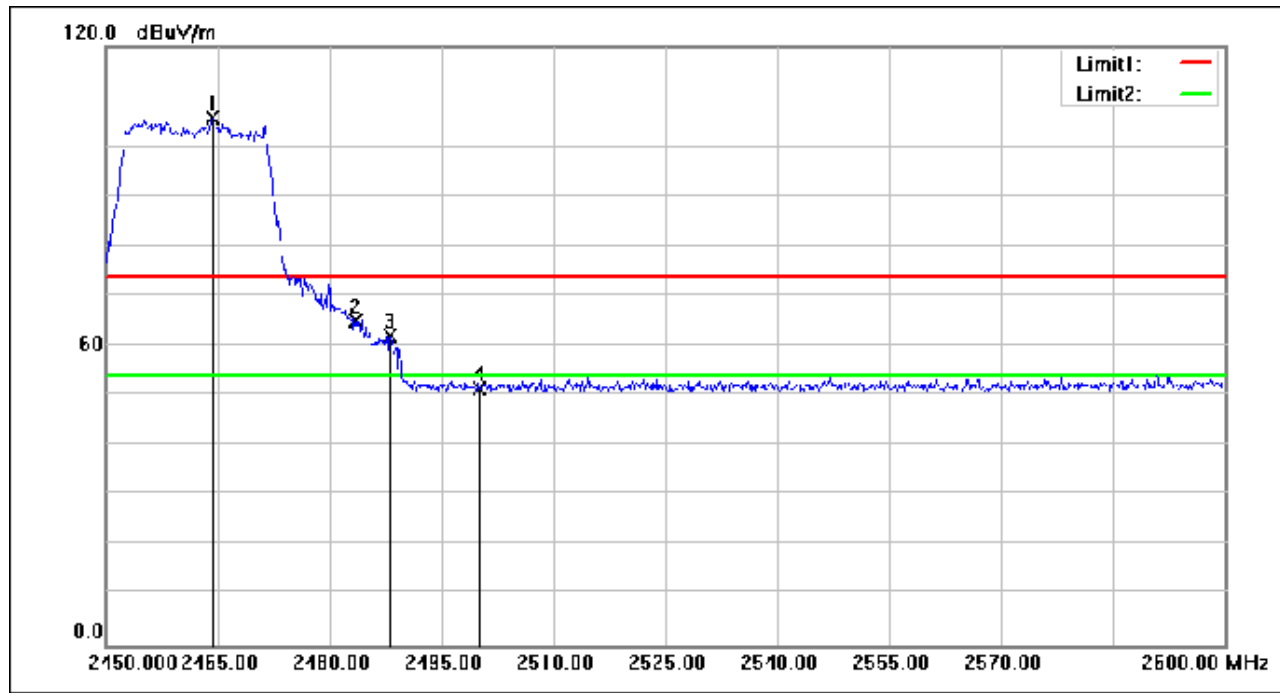
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 51 of 234

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	2464.250	130.23	-24.36	105.87	74.00	31.87	peak
2	2483.500	89.31	-24.27	65.04	74.00	-8.96	peak
3	2488.100	86.09	-24.25	61.84	74.00	-12.16	peak
4	2500.000	75.77	-24.19	51.58	74.00	-22.42	peak

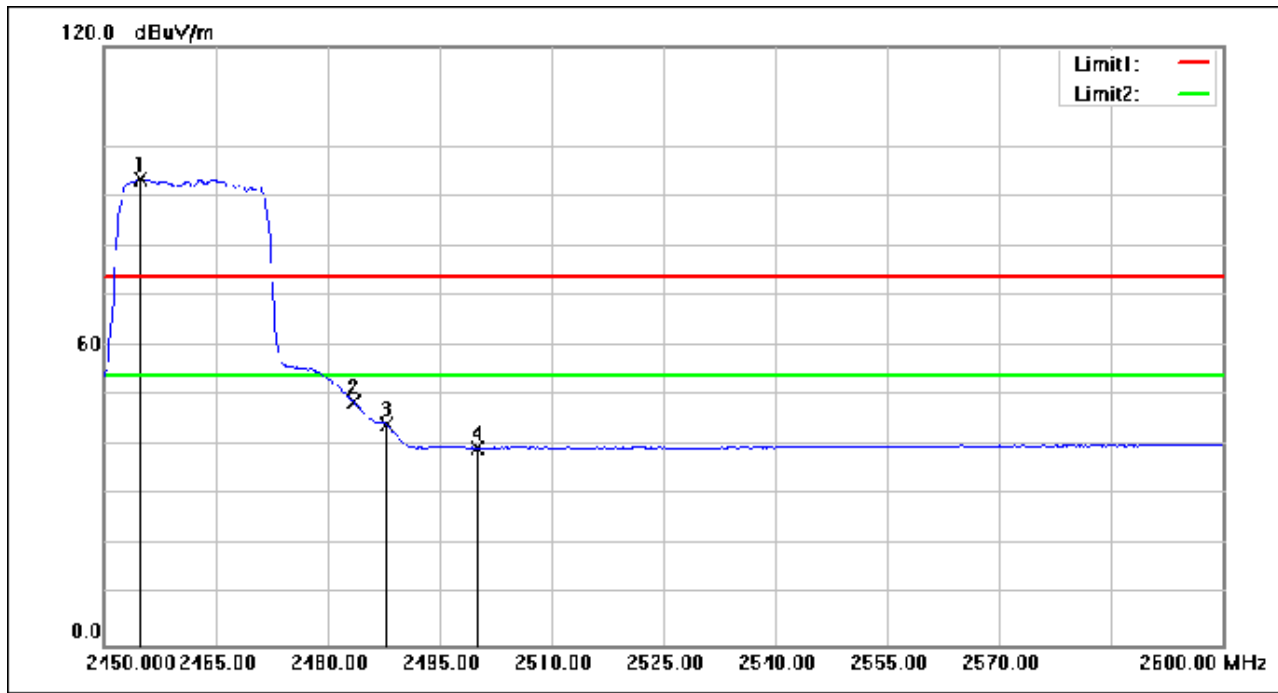
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 52 of 234

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	2454.800	117.91	-24.40	93.51	54.00	39.51	AVG
2	2483.500	72.98	-24.27	48.71	54.00	-5.29	AVG
3	2487.950	68.36	-24.25	44.11	54.00	-9.89	AVG
4	2500.000	63.78	-24.19	39.59	54.00	-14.41	AVG

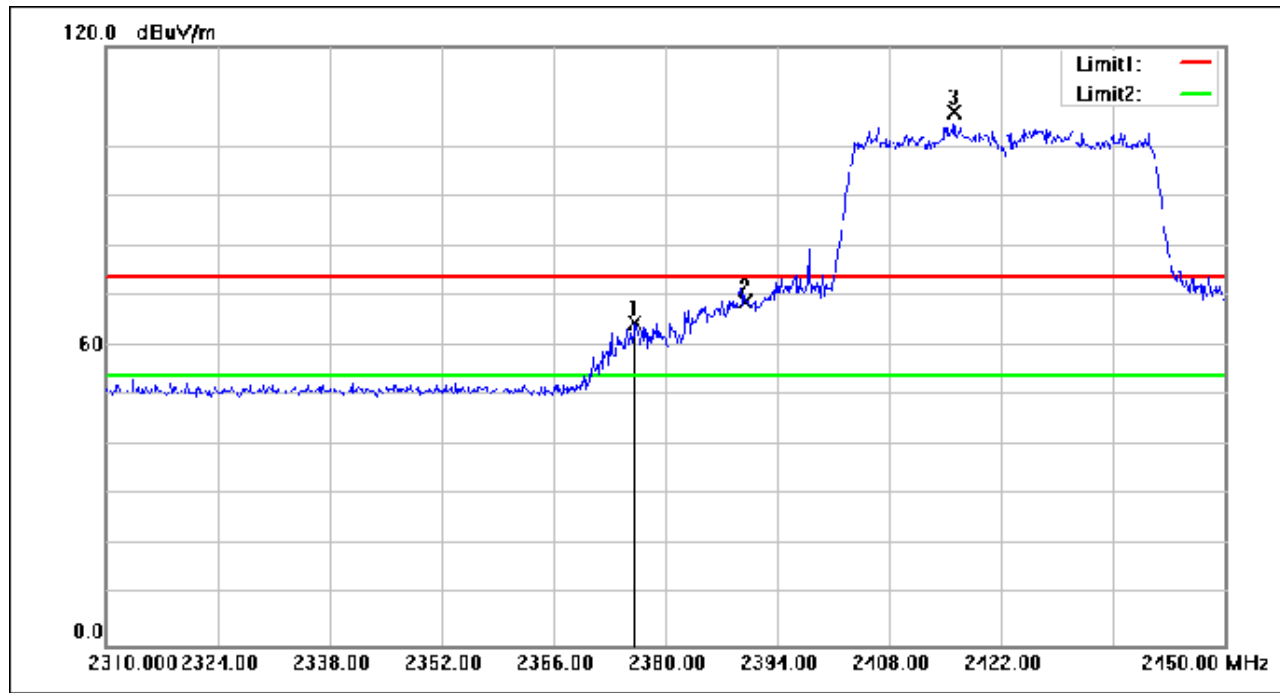
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 53 of 234

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	2376.220	89.54	-24.77	64.77	74.00	-9.23	peak
2	2390.000	93.44	-24.71	68.73	74.00	-5.27	peak
3	2416.120	131.43	-24.58	106.85	74.00	32.85	peak

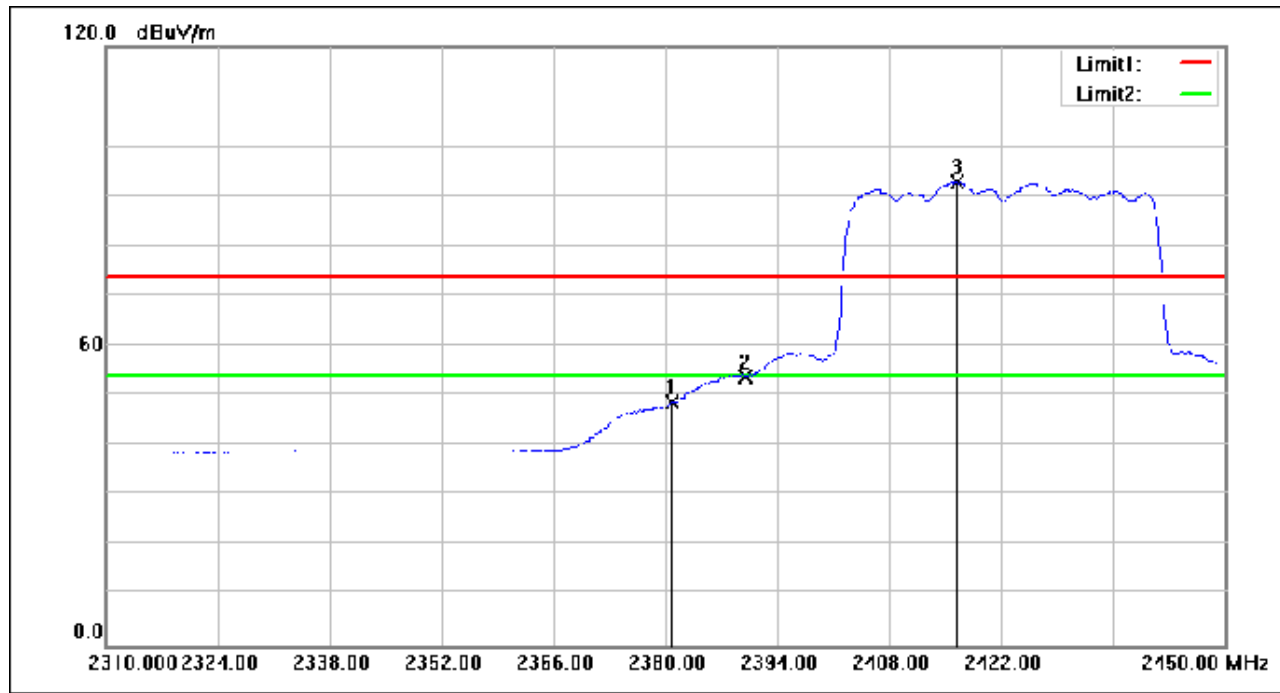
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 54 of 234

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	2380.840	73.45	-24.75	48.70	54.00	-5.30	AVG
2	2390.000	78.66	-24.71	53.95	54.00	-0.05	AVG
3	2416.400	117.32	-24.58	92.74	54.00	38.74	AVG

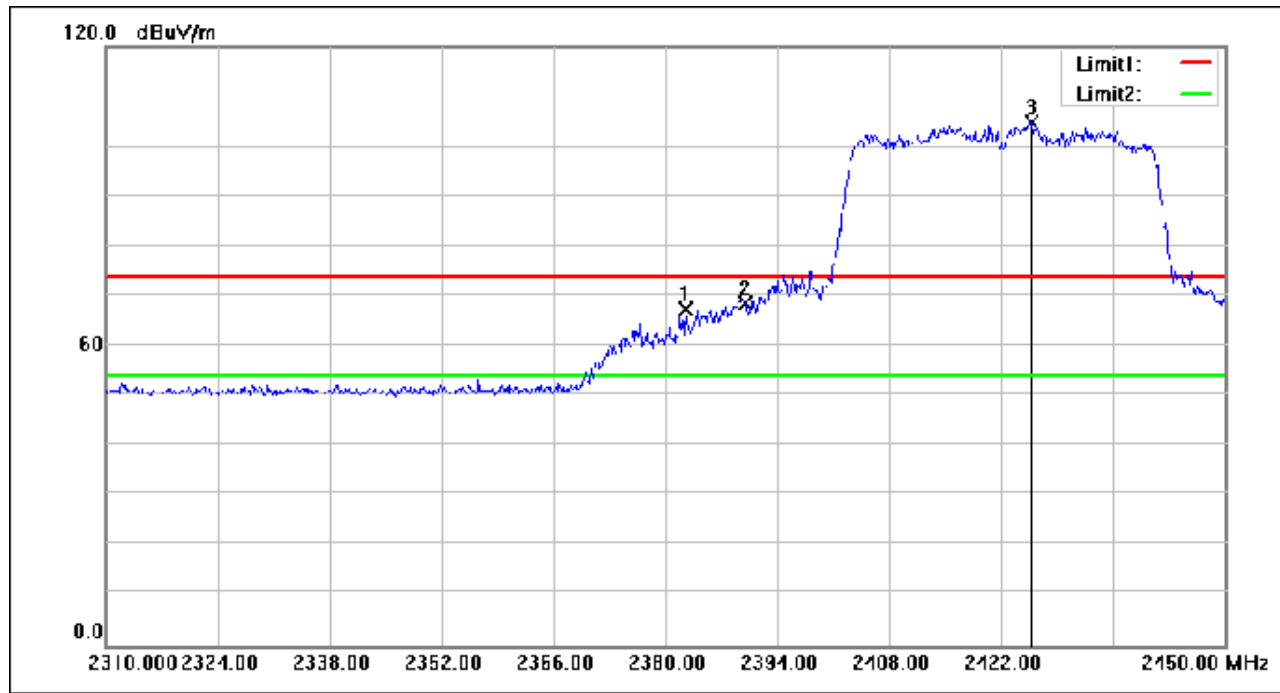
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 55 of 234

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	2382.520	91.97	-24.74	67.23	74.00	-6.77	peak
2	2390.000	93.20	-24.71	68.49	74.00	-5.51	peak
3	2425.780	129.34	-24.54	104.80	74.00	30.80	peak

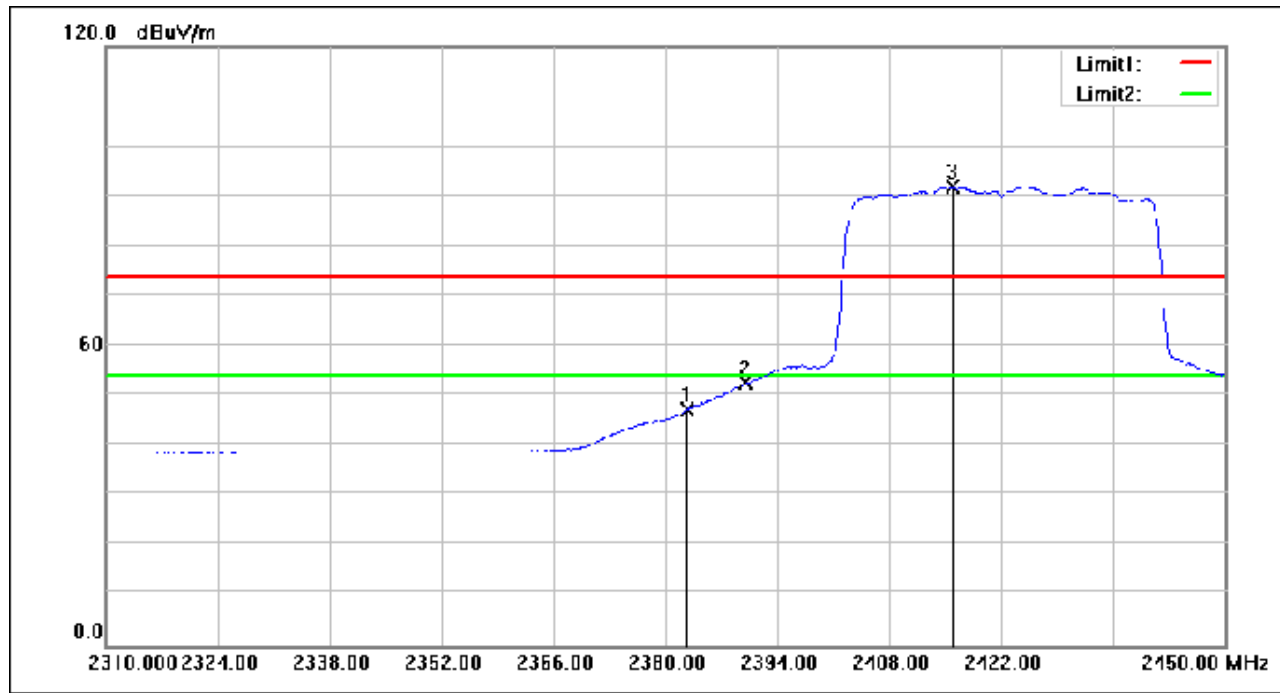
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 56 of 234

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	2382.660	72.07	-24.74	47.33	54.00	-6.67	AVG
2	2390.000	77.29	-24.71	52.58	54.00	-1.42	AVG
3	2415.980	116.48	-24.59	91.89	54.00	37.89	AVG

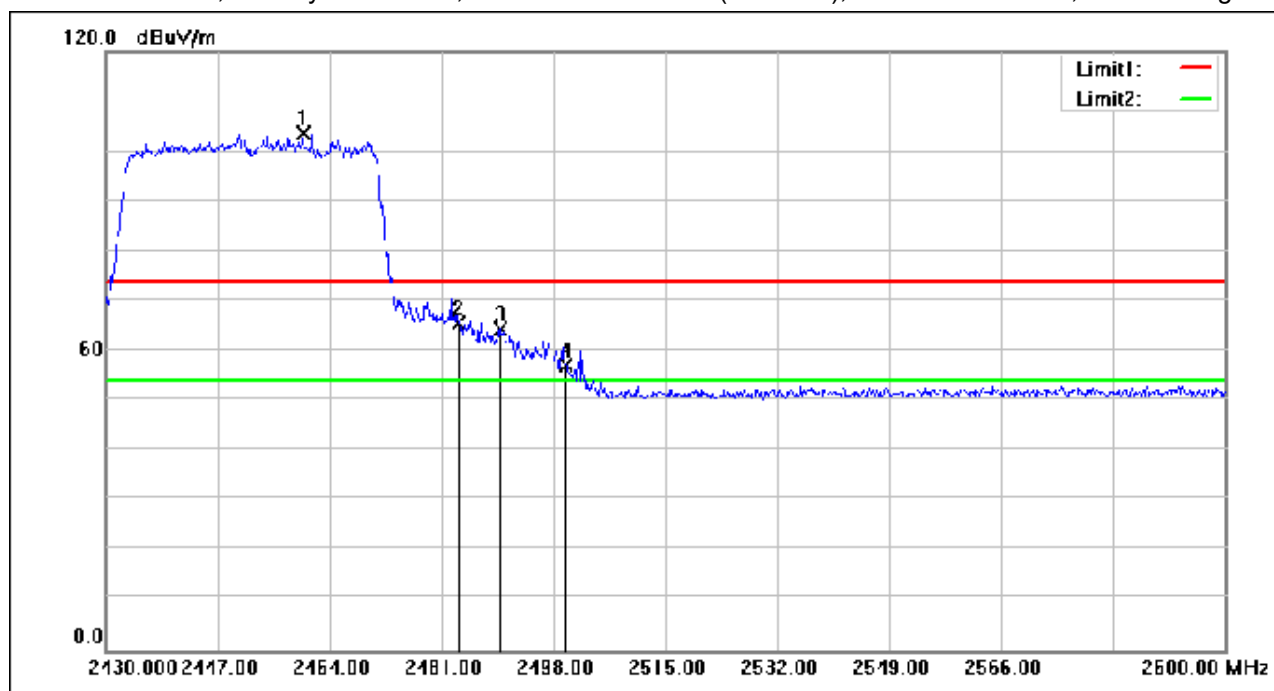
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 57 of 234

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	2459.920	128.18	-24.38	103.80	74.00	29.80	peak
2	2483.500	89.90	-24.27	65.63	74.00	-8.37	peak
3	2489.840	88.64	-24.24	64.40	74.00	-9.60	peak
4	2500.000	81.49	-24.19	57.30	74.00	-16.70	peak

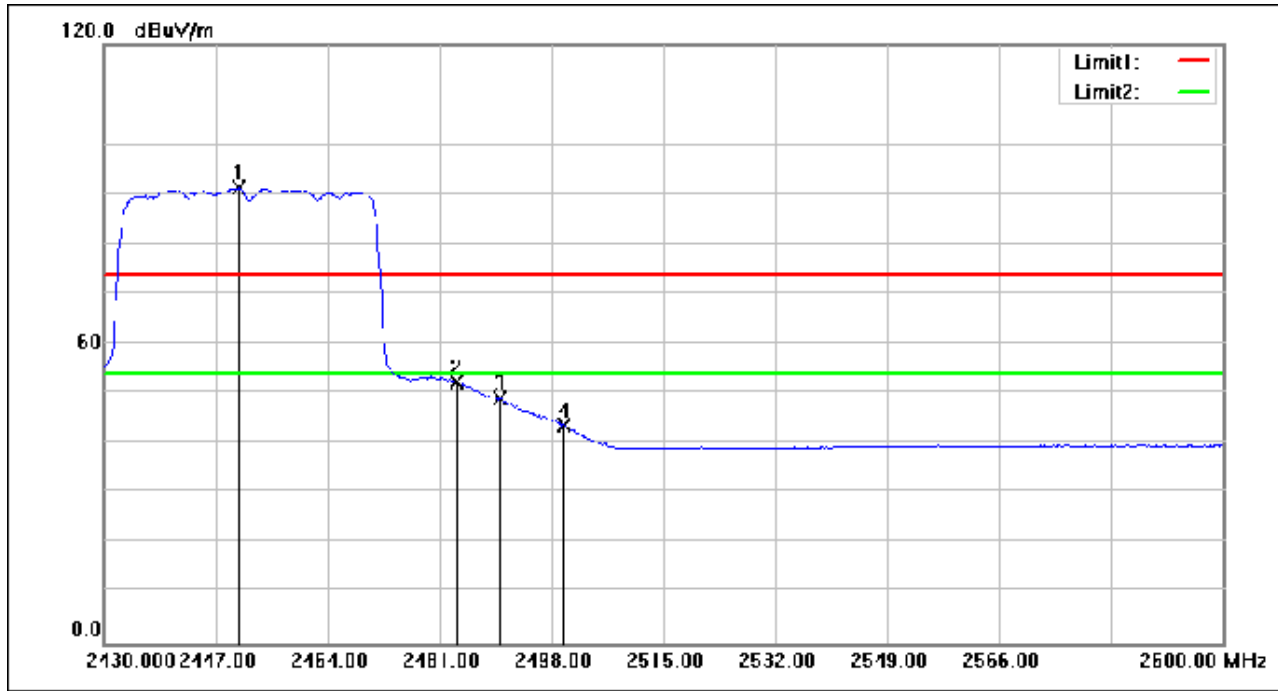
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 58 of 234

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	2450.570	115.64	-24.42	91.22	54.00	37.22	AVG
2	2483.500	76.54	-24.27	52.27	54.00	-1.73	AVG
3	2490.180	73.23	-24.24	48.99	54.00	-5.01	AVG
4	2500.000	67.78	-24.19	43.59	54.00	-10.41	AVG

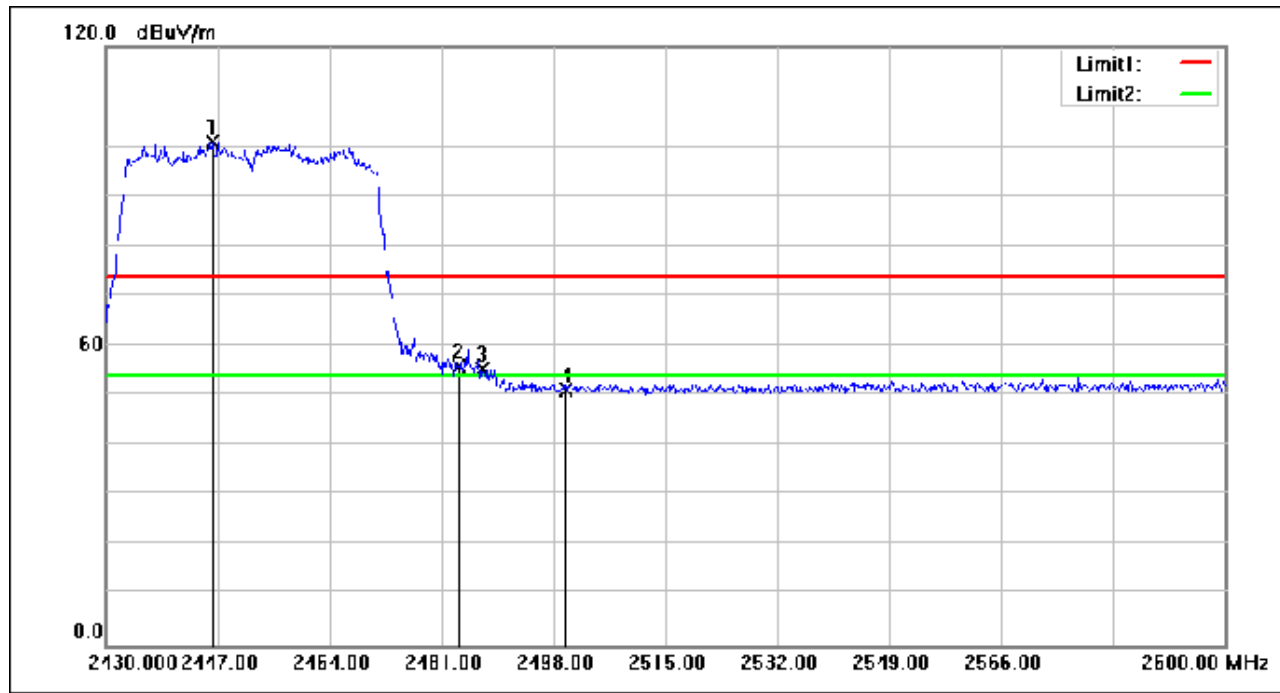
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 59 of 234

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	2446.150	125.37	-24.44	100.93	74.00	26.93	peak
2	2483.500	80.21	-24.27	55.94	74.00	-18.06	peak
3	2487.120	79.52	-24.25	55.27	74.00	-18.73	peak
4	2500.000	75.47	-24.19	51.28	74.00	-22.72	peak

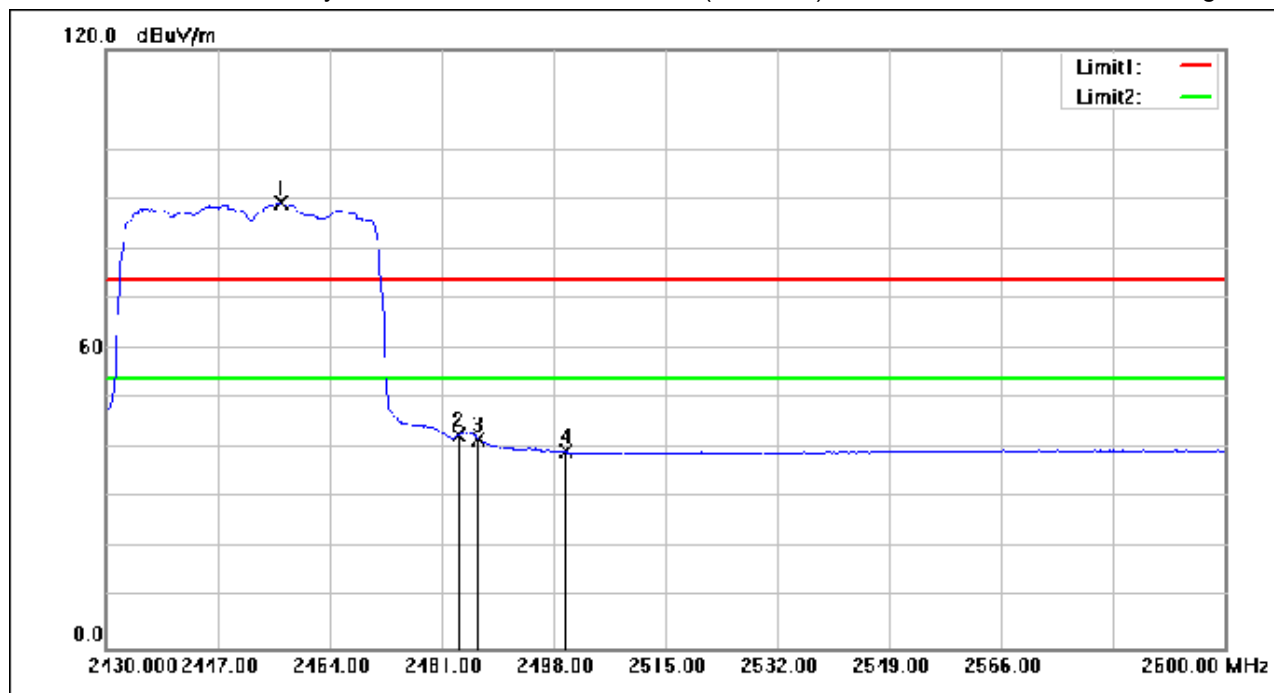
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 60 of 234

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	2456.520	113.61	-24.39	89.22	54.00	35.22	AVG
2	2483.500	66.89	-24.27	42.62	54.00	-11.38	AVG
3	2486.610	66.21	-24.25	41.96	54.00	-12.04	AVG
4	2500.000	63.59	-24.19	39.40	54.00	-14.60	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: 21.7 °C

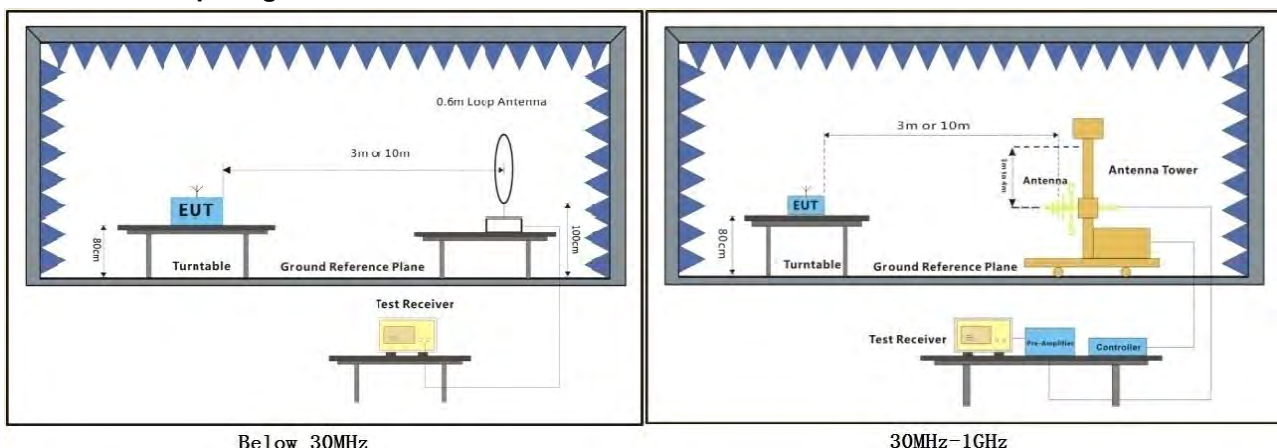
Humidity: 55.1 % RH

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.

Compliance Certification Services (Kunshan) Inc.

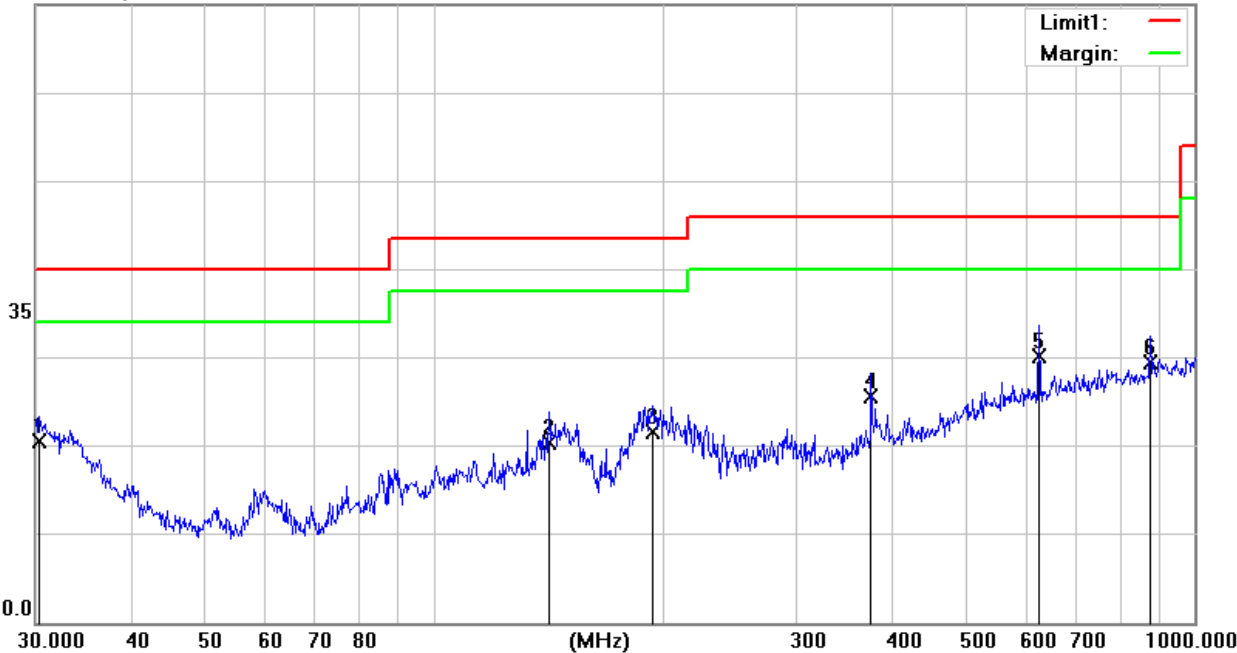
CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600099303

Page: 63 of 234

Test Mode: 00; Polarity: Horizontal

70.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.3173	1.39	19.17	20.56	40.00	-19.44	100	189	QP
2	141.8262	6.59	13.87	20.46	43.50	-23.04	400	254	QP
3	193.7728	9.87	11.66	21.53	43.50	-21.97	100	0	QP
4	375.9385	8.57	16.99	25.56	46.00	-20.44	100	199	QP
5	625.0780	7.24	22.91	30.15	46.00	-15.85	100	357	QP
6	875.2470	4.27	25.26	29.53	46.00	-16.47	200	264	QP

Compliance Certification Services (Kunshan) Inc.

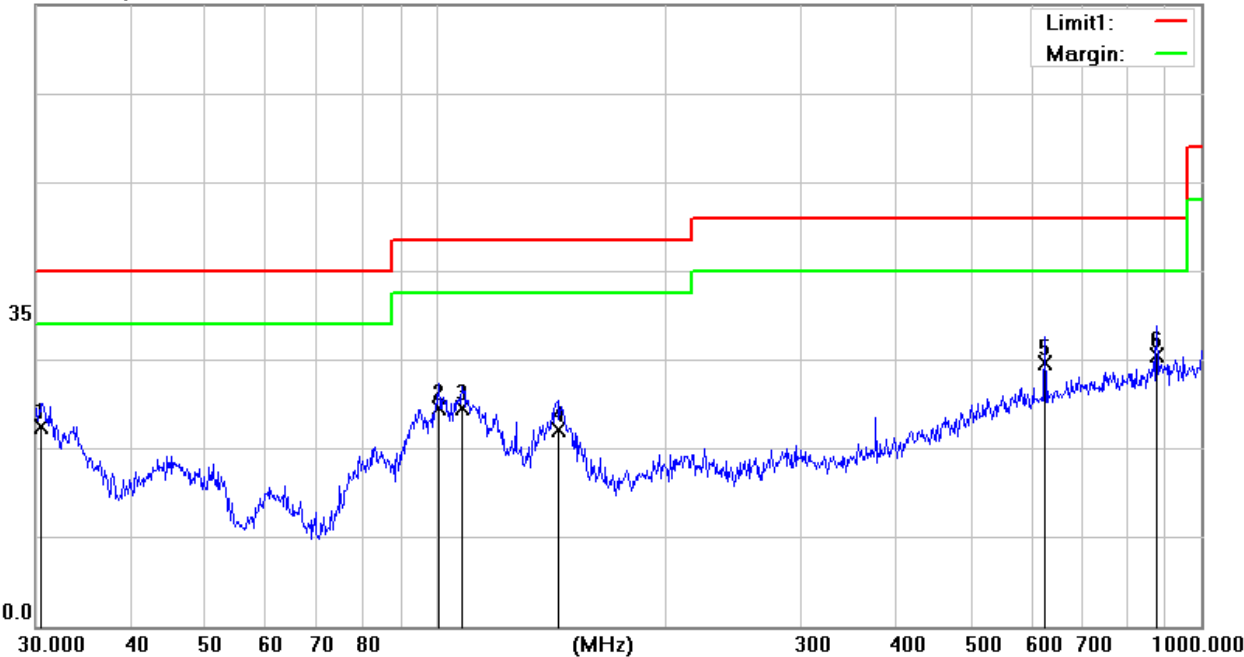
CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240600099303

Page: 64 of 234

Test Mode: 00; Polarity: Vertical

70.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.5306	3.53	19.00	22.53	40.00	-17.47	400	100	QP
2	100.9340	11.76	12.77	24.53	43.50	-18.97	100	360	QP
3	108.2667	10.77	13.79	24.56	43.50	-18.94	100	296	QP
4	144.3348	8.81	13.35	22.16	43.50	-21.34	100	7	QP
5	625.0780	6.71	22.91	29.62	46.00	-16.38	200	188	QP
6	875.2470	5.32	25.26	30.58	46.00	-15.42	100	262	QP

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 65 of 234

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: 22.3 °C

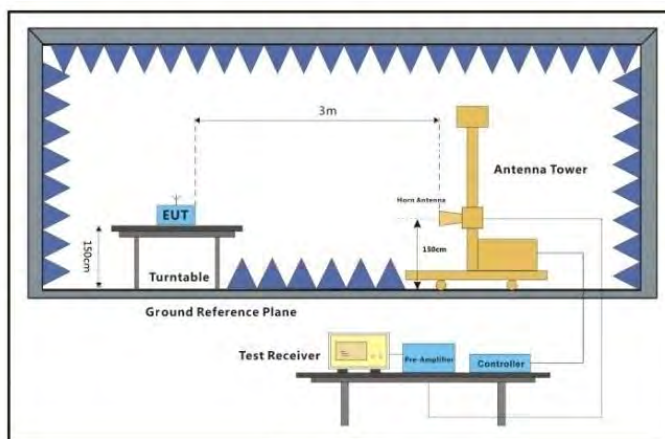
Humidity: 54.9 % RH

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



Above 1GHz

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.

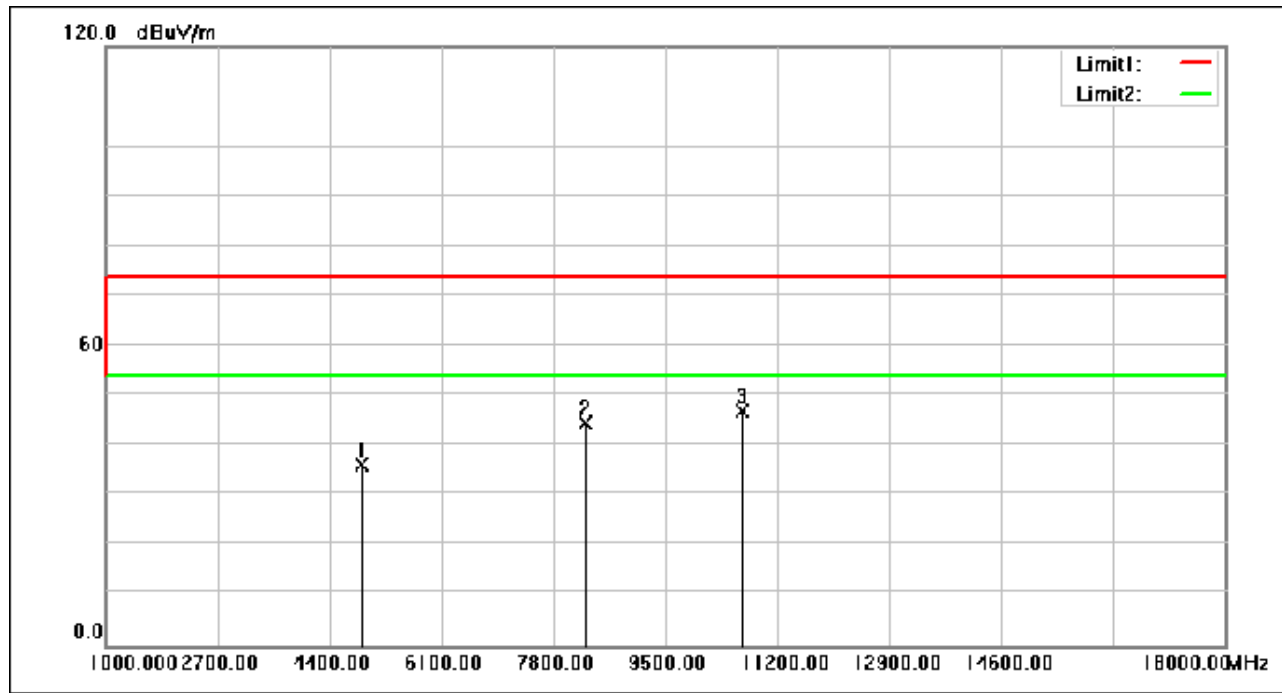
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 67 of 234

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	4884.160	54.58	-18.51	36.07	74.00	-37.93	peak
2	8287.560	54.69	-10.10	44.59	74.00	-29.41	peak
3	10681.840	53.74	-6.93	46.81	74.00	-27.19	peak

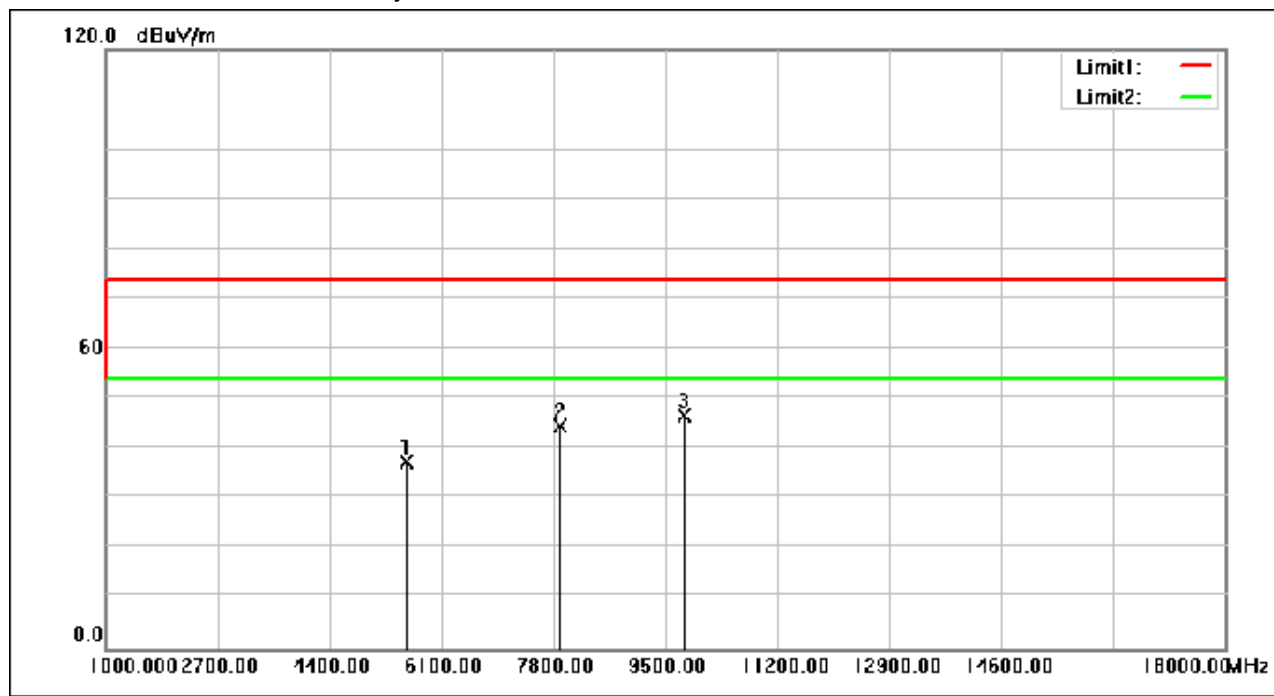
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 68 of 234

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	5579.800	54.74	-17.52	37.22	74.00	-36.78	peak
2	7913.560	55.32	-10.71	44.61	74.00	-29.39	peak
3	9787.640	54.12	-7.41	46.71	74.00	-27.29	peak

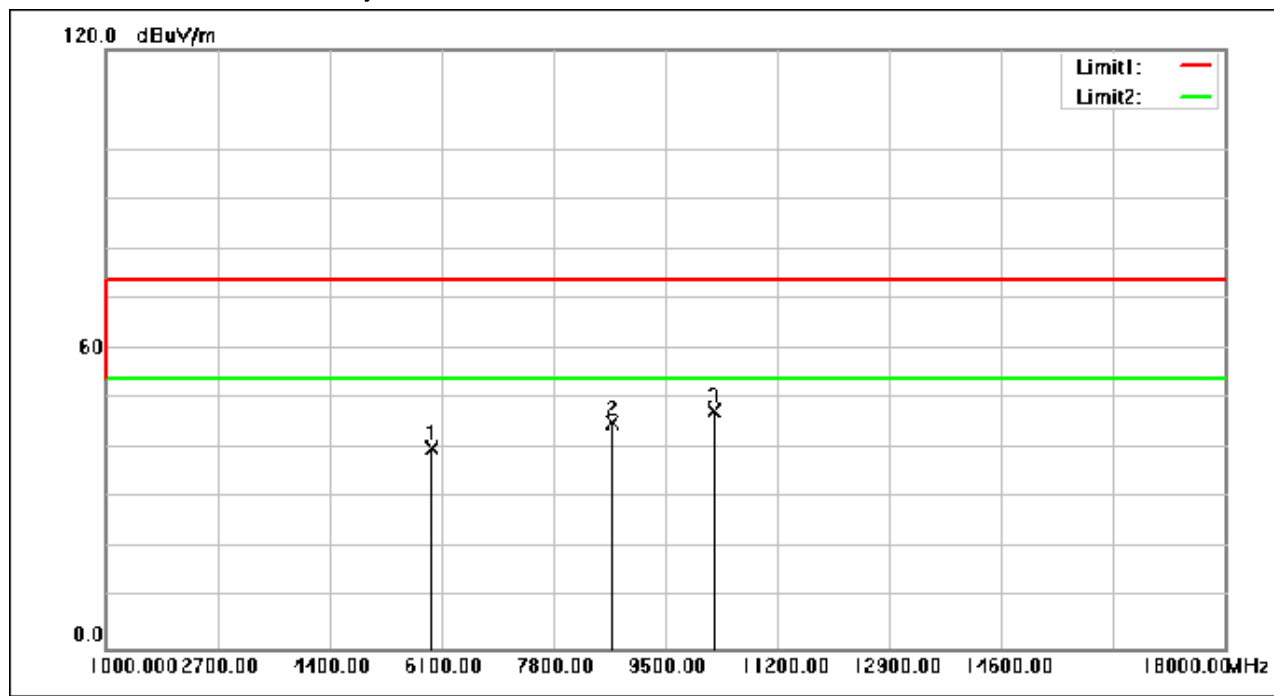
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 69 of 234

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	5959.240	56.04	-15.95	40.09	74.00	-33.91	peak
2	8709.840	54.50	-9.41	45.09	74.00	-28.91	peak
3	10239.840	54.66	-7.19	47.47	74.00	-26.53	peak

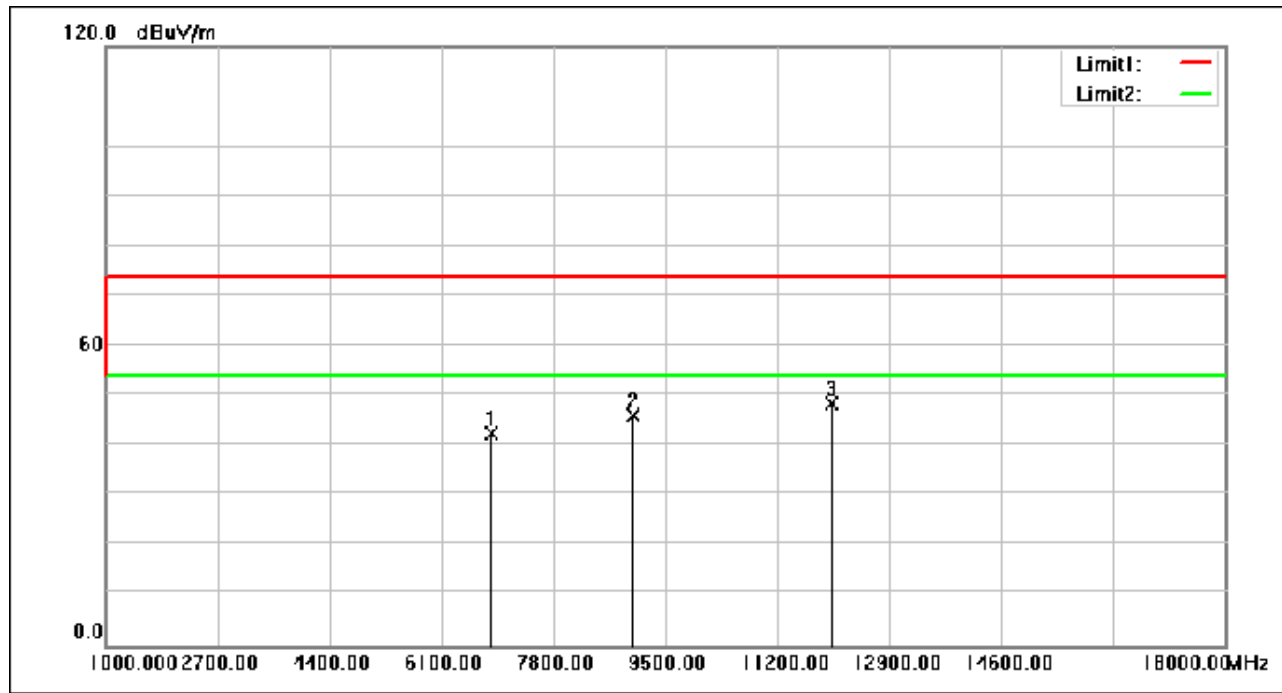
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 70 of 234

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	6851.400	54.30	-11.82	42.48	74.00	-31.52	peak
2	9021.280	54.92	-8.86	46.06	74.00	-27.94	peak
3	12033.000	54.46	-5.91	48.55	74.00	-25.45	peak

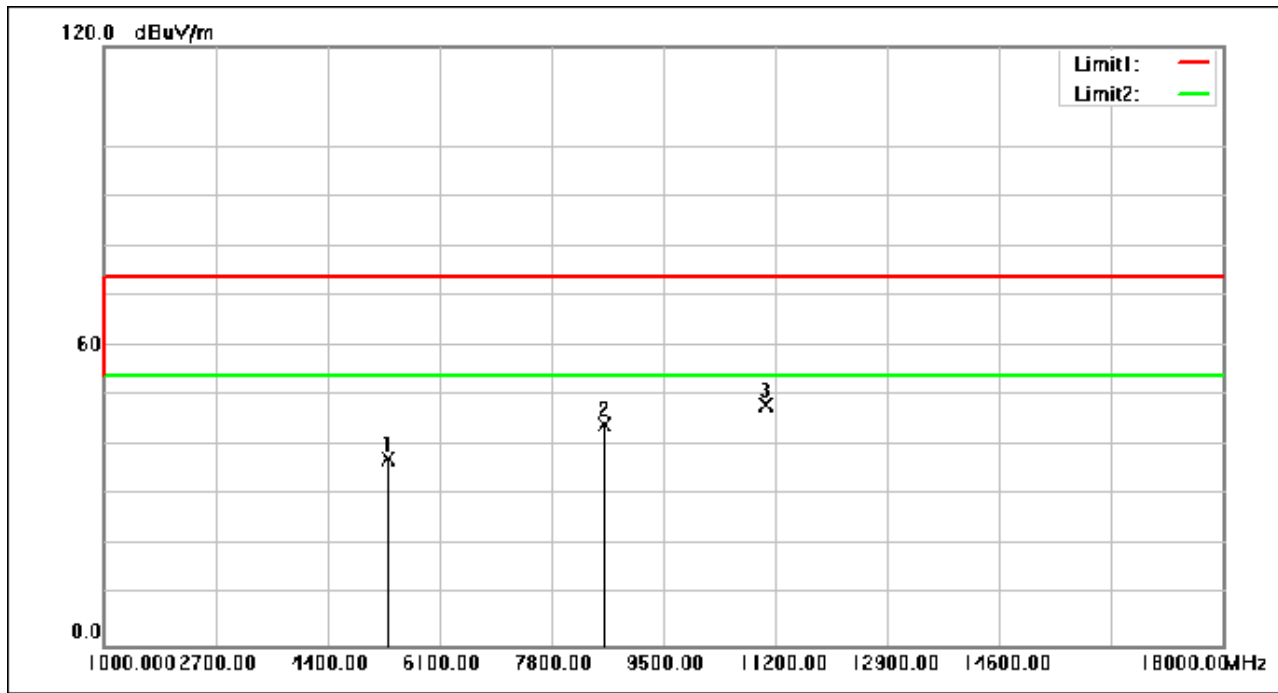
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 71 of 234

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	5329.560	55.33	-17.95	37.38	74.00	-36.62	peak
2	8614.640	53.94	-9.57	44.37	74.00	-29.63	peak
3	11061.280	54.87	-6.71	48.16	74.00	-25.84	peak

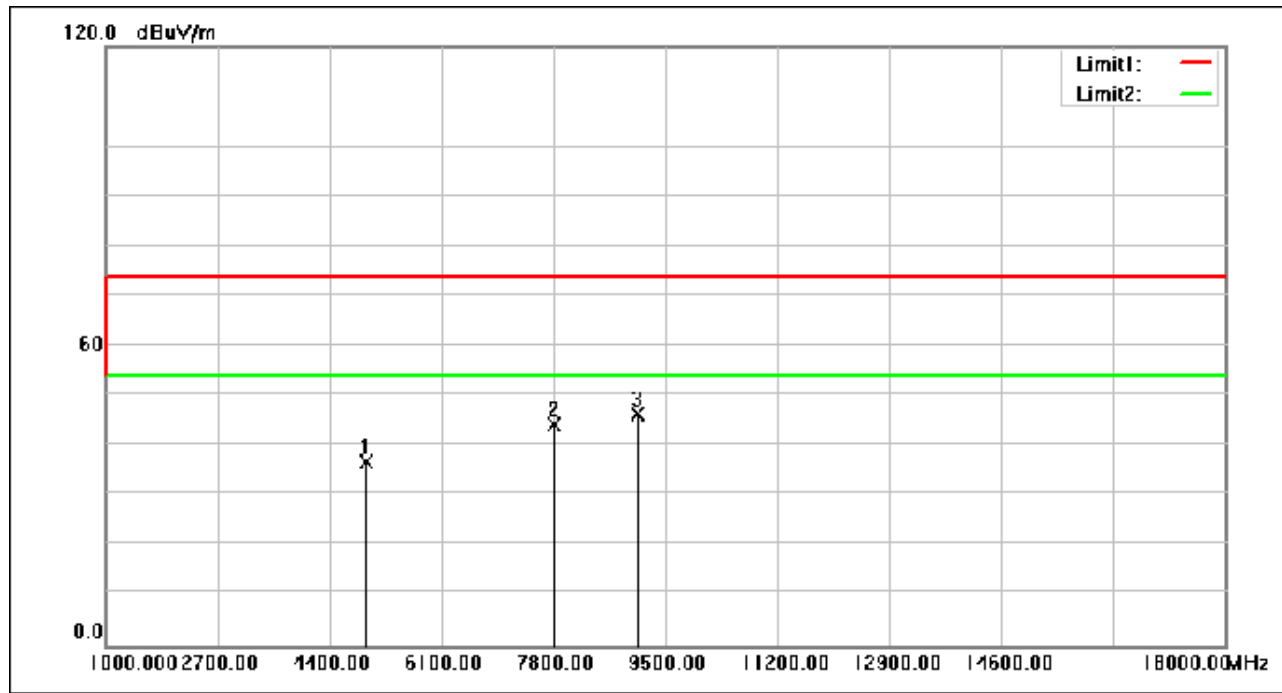
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 72 of 234

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	4972.560	55.24	-18.46	36.78	74.00	-37.22	peak
2	7817.000	55.02	-10.84	44.18	74.00	-29.82	peak
3	9082.480	54.97	-8.74	46.23	74.00	-27.77	peak

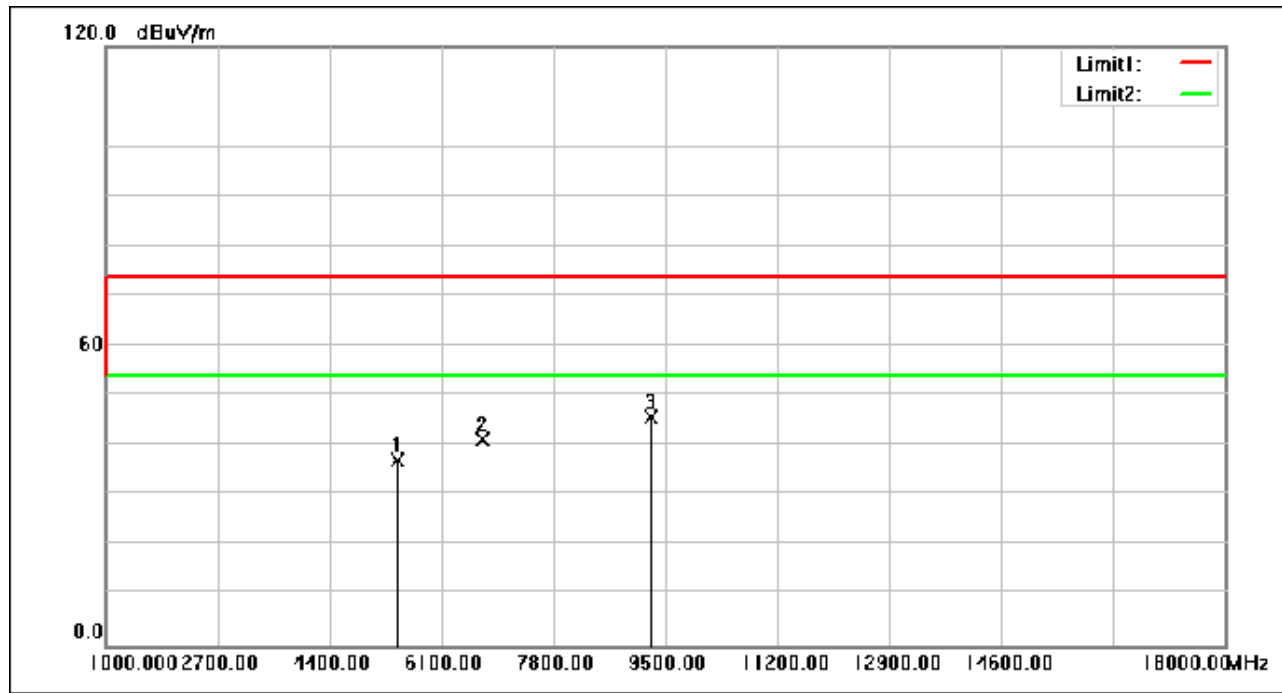
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 73 of 234

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	5452.640	54.80	-17.76	37.04	74.00	-36.96	peak
2	6713.360	53.25	-12.12	41.13	74.00	-32.87	peak
3	9289.200	54.05	-8.35	45.70	74.00	-28.30	peak

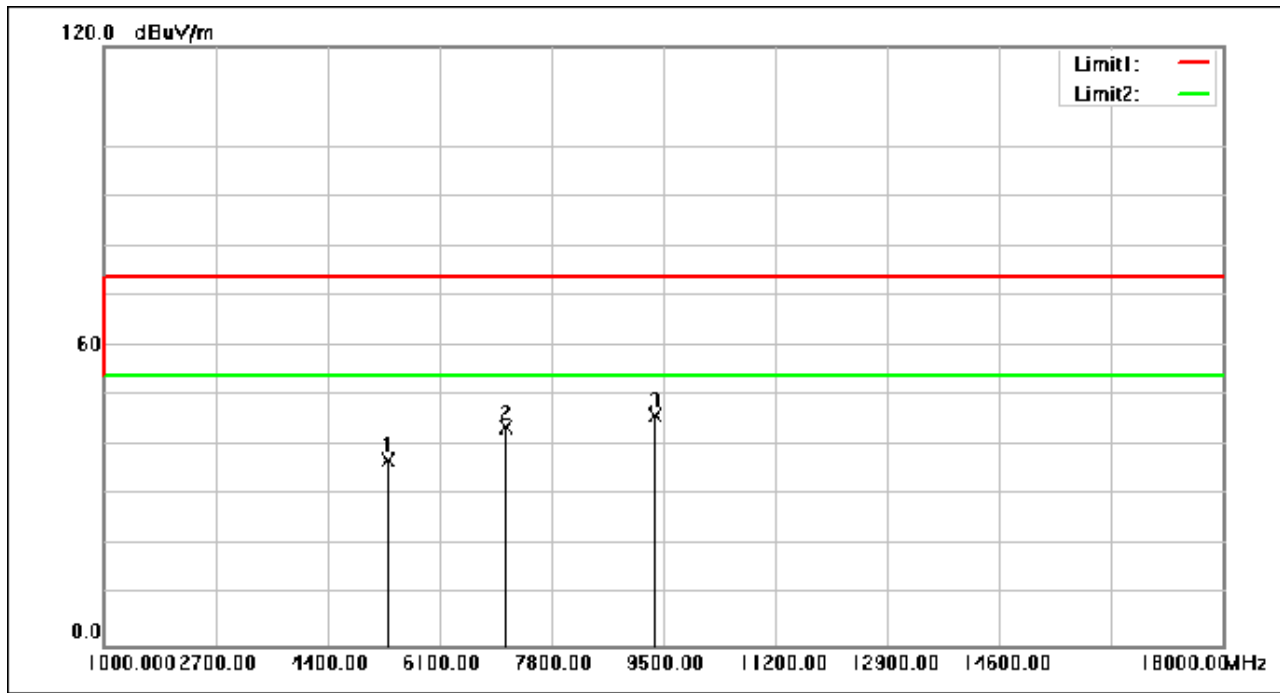
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 74 of 234

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	5318.680	54.92	-17.96	36.96	74.00	-37.04	peak
2	7114.560	55.12	-11.51	43.61	74.00	-30.39	peak
3	9379.640	54.17	-8.18	45.99	74.00	-28.01	peak

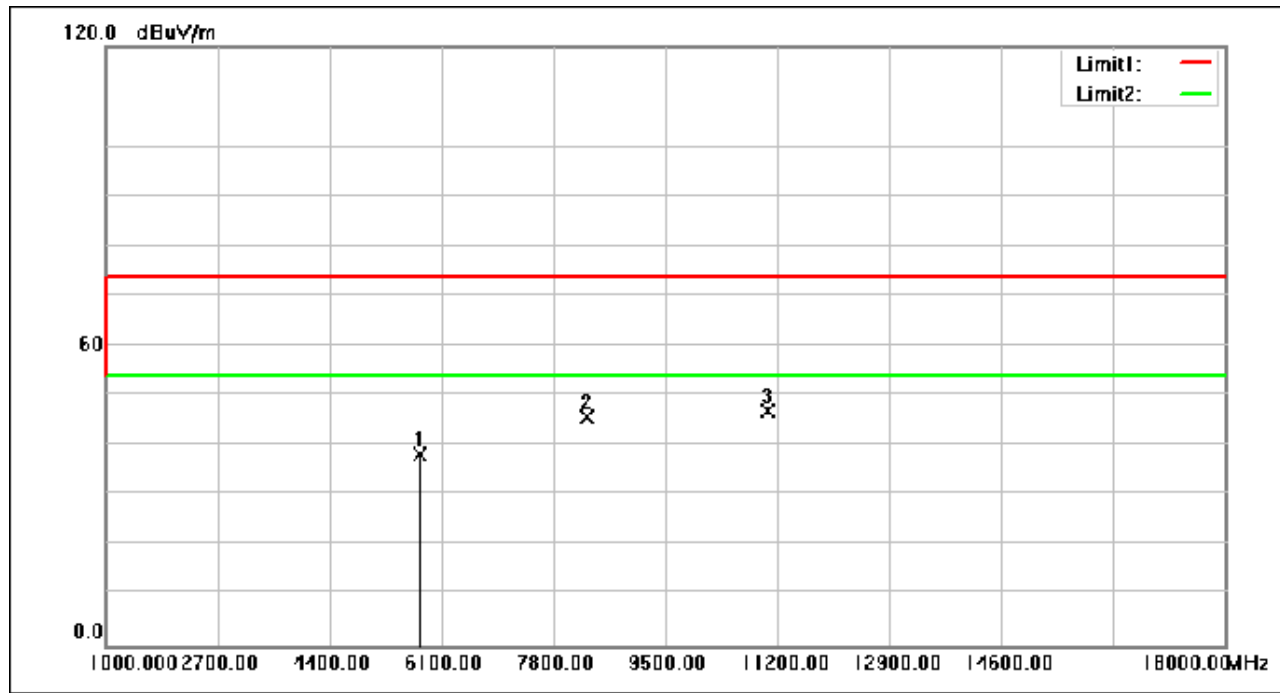
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 75 of 234

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	5777.680	55.07	-16.70	38.37	74.00	-35.63	peak
2	8325.640	55.92	-10.04	45.88	74.00	-28.12	peak
3	11056.520	53.65	-6.71	46.94	74.00	-27.06	peak

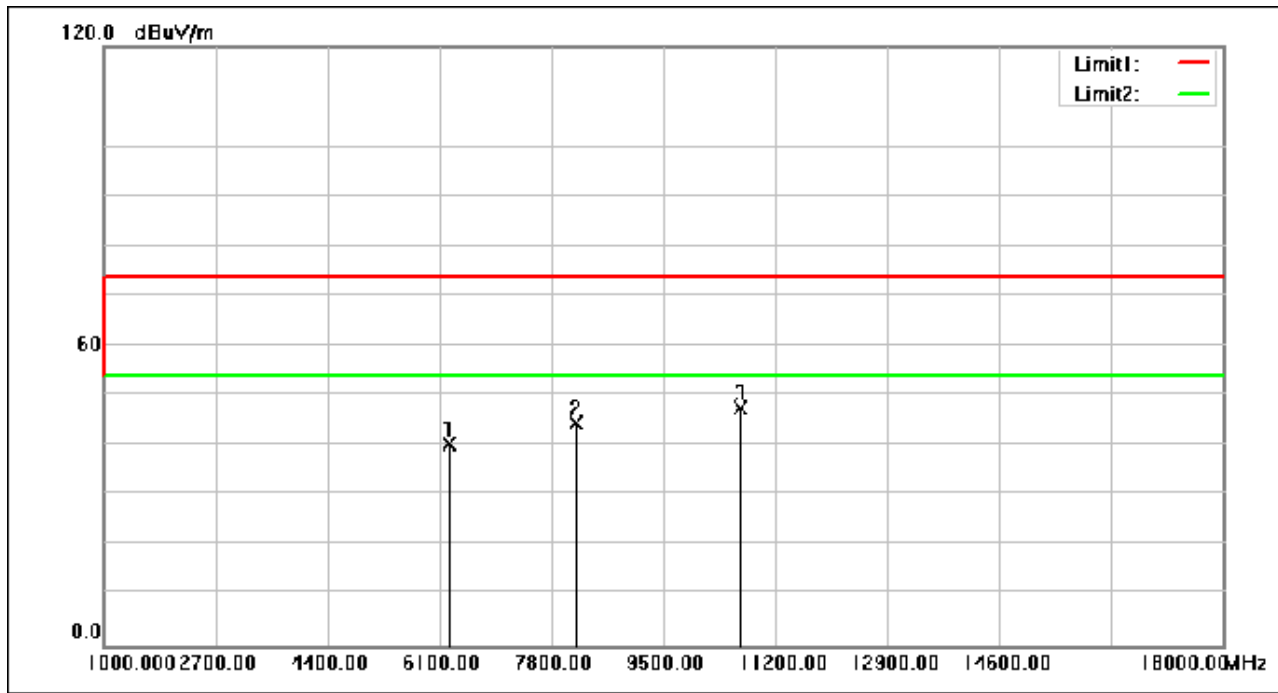
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 76 of 234

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	6247.560	54.81	-14.54	40.27	74.00	-33.73	peak
2	8174.680	54.93	-10.29	44.64	74.00	-29.36	peak
3	10683.880	54.36	-6.93	47.43	74.00	-26.57	peak

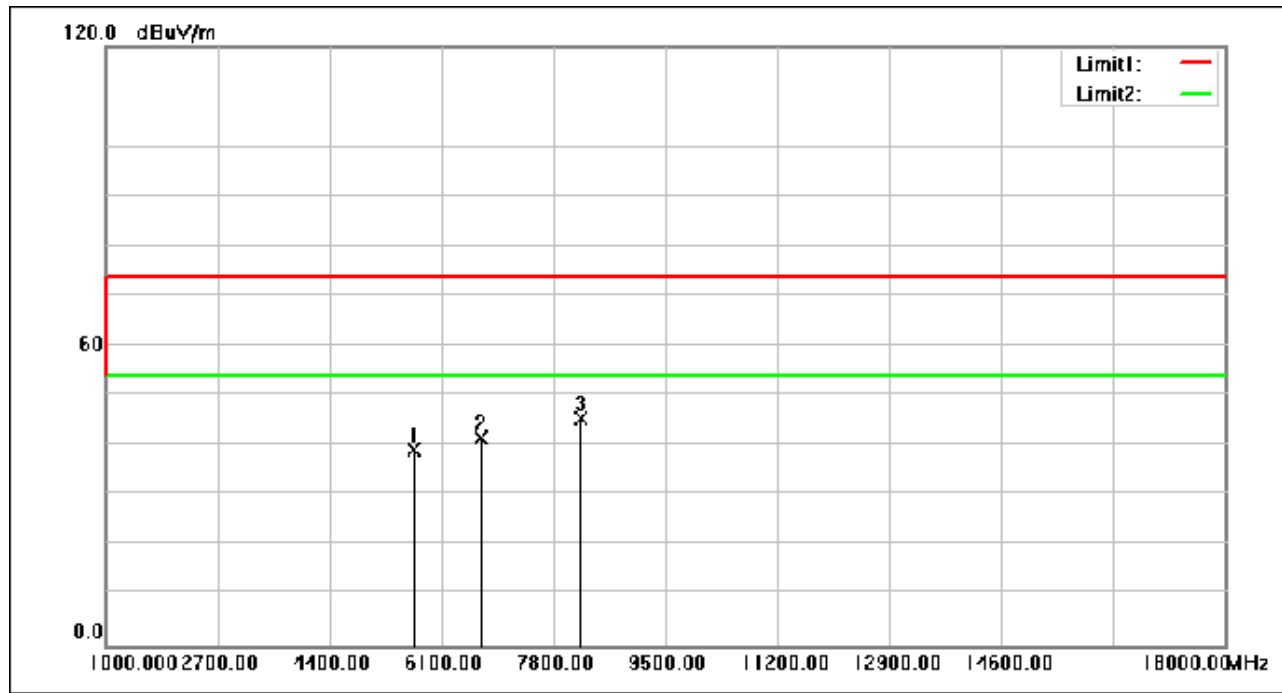
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 77 of 234

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	5675.680	56.28	-17.12	39.16	74.00	-34.84	peak
2	6707.920	53.75	-12.14	41.61	74.00	-32.39	peak
3	8234.520	55.59	-10.19	45.40	74.00	-28.60	peak

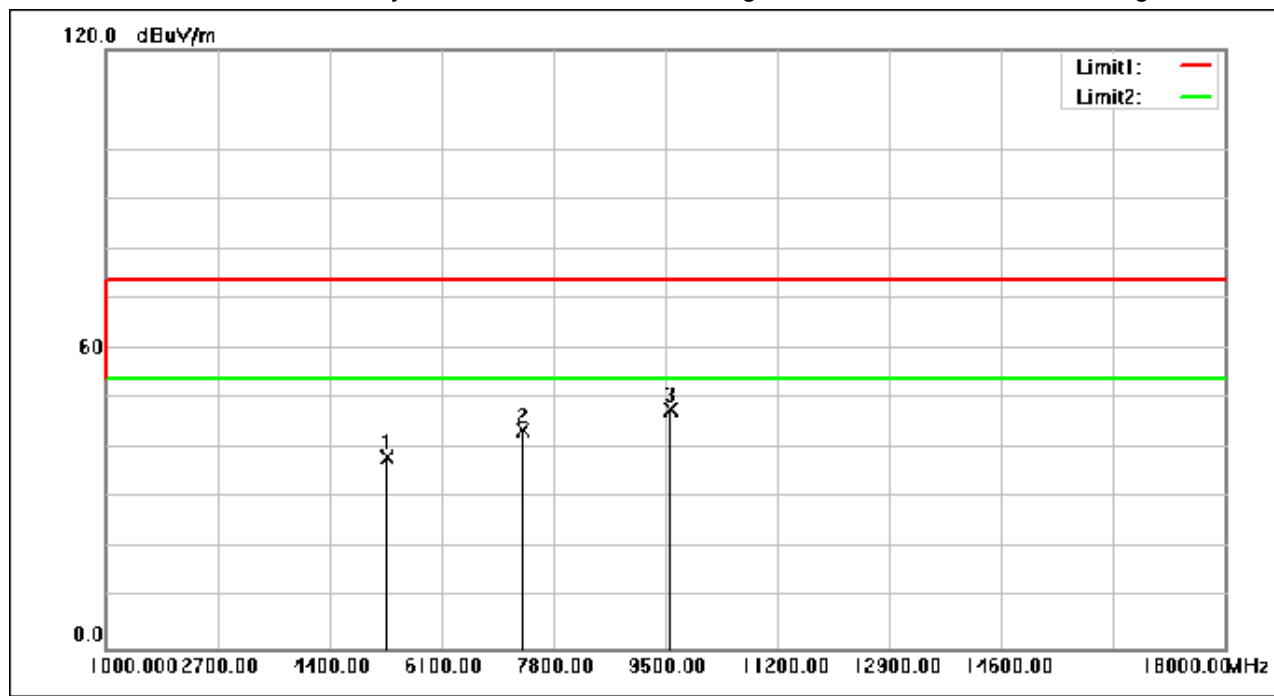
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 78 of 234

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	5276.520	56.41	-18.02	38.39	74.00	-35.61	peak
2	7351.200	55.15	-11.41	43.74	74.00	-30.26	peak
3	9595.200	55.51	-7.77	47.74	74.00	-26.26	peak

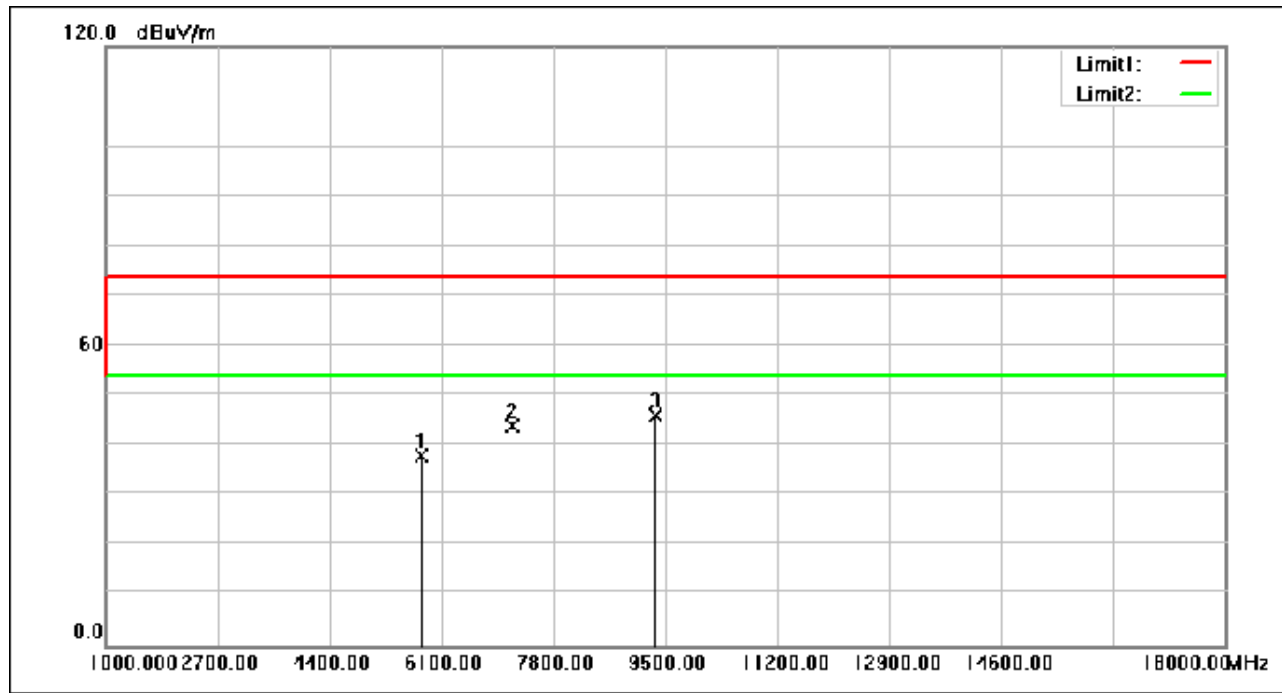
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 79 of 234

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	5807.600	54.48	-16.58	37.90	74.00	-36.10	peak
2	7179.160	55.39	-11.49	43.90	74.00	-30.10	peak
3	9361.960	54.37	-8.22	46.15	74.00	-27.85	peak

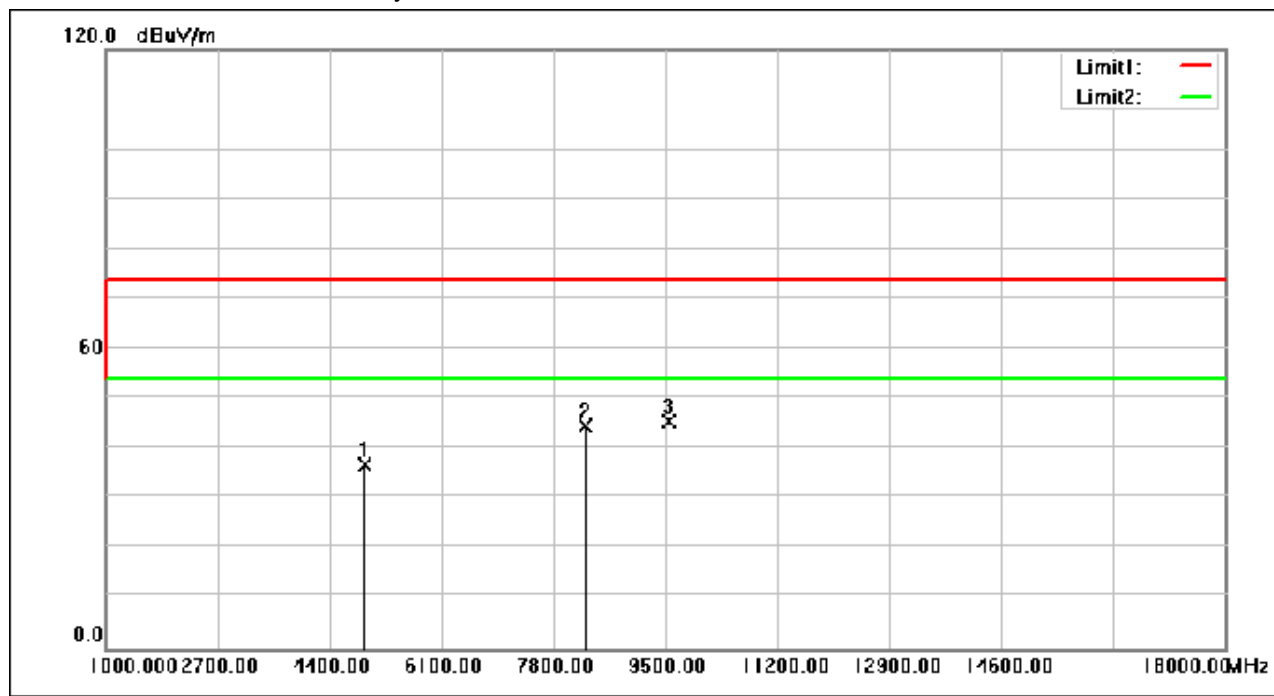
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 80 of 234

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	4934.480	55.11	-18.48	36.63	74.00	-37.37	peak
2	8280.760	54.64	-10.12	44.52	74.00	-29.48	peak
3	9564.600	53.36	-7.84	45.52	74.00	-28.48	peak

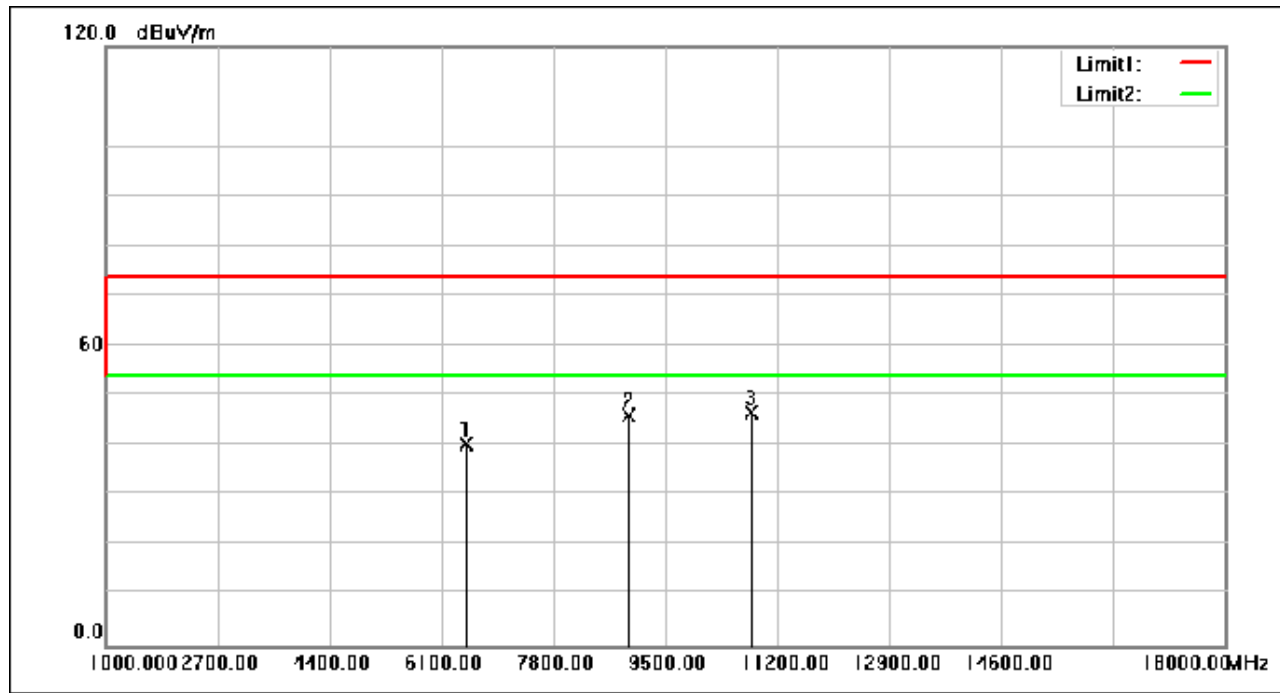
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 81 of 234

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	6480.120	53.77	-13.33	40.44	74.00	-33.56	peak
2	8946.480	55.06	-9.02	46.04	74.00	-27.96	peak
3	10794.720	53.44	-6.87	46.57	74.00	-27.43	peak

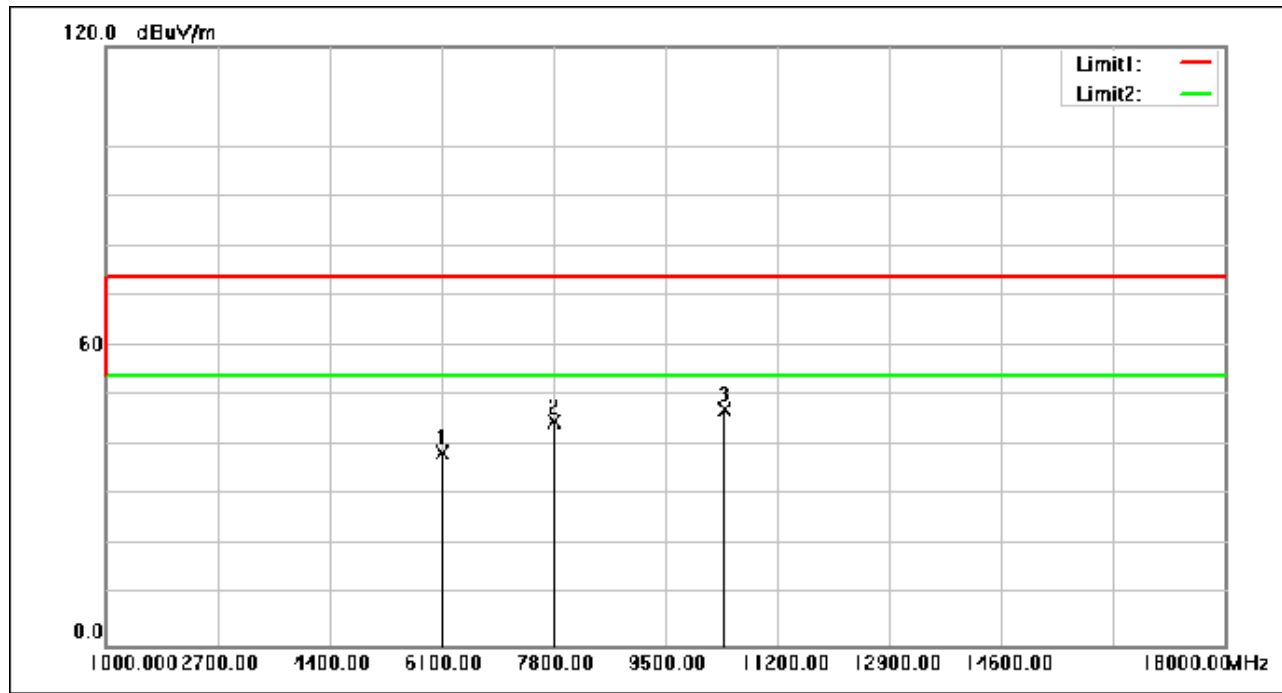
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 82 of 234

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	6102.040	53.73	-15.30	38.43	74.00	-35.57	peak
2	7814.280	55.63	-10.84	44.79	74.00	-29.21	peak
3	10390.120	54.35	-7.11	47.24	74.00	-26.76	peak

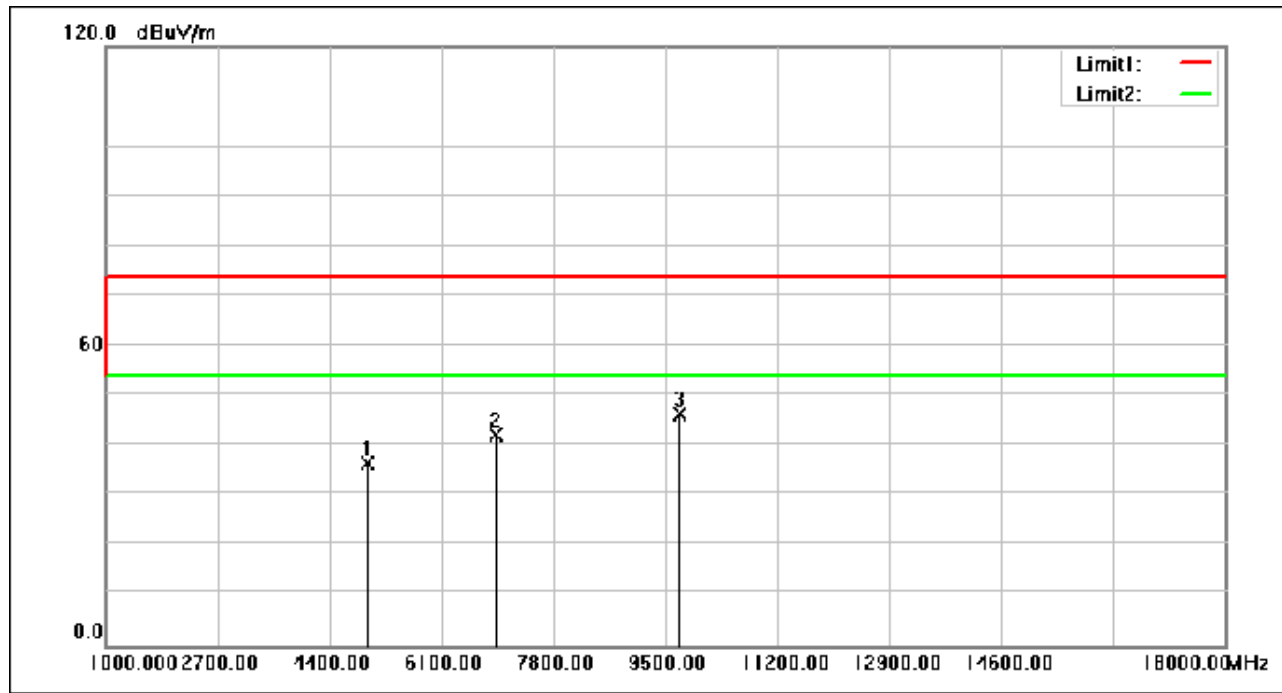
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 83 of 234

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	4981.400	54.91	-18.46	36.45	74.00	-37.55	peak
2	6949.320	53.67	-11.66	42.01	74.00	-31.99	peak
3	9706.040	53.87	-7.56	46.31	74.00	-27.69	peak

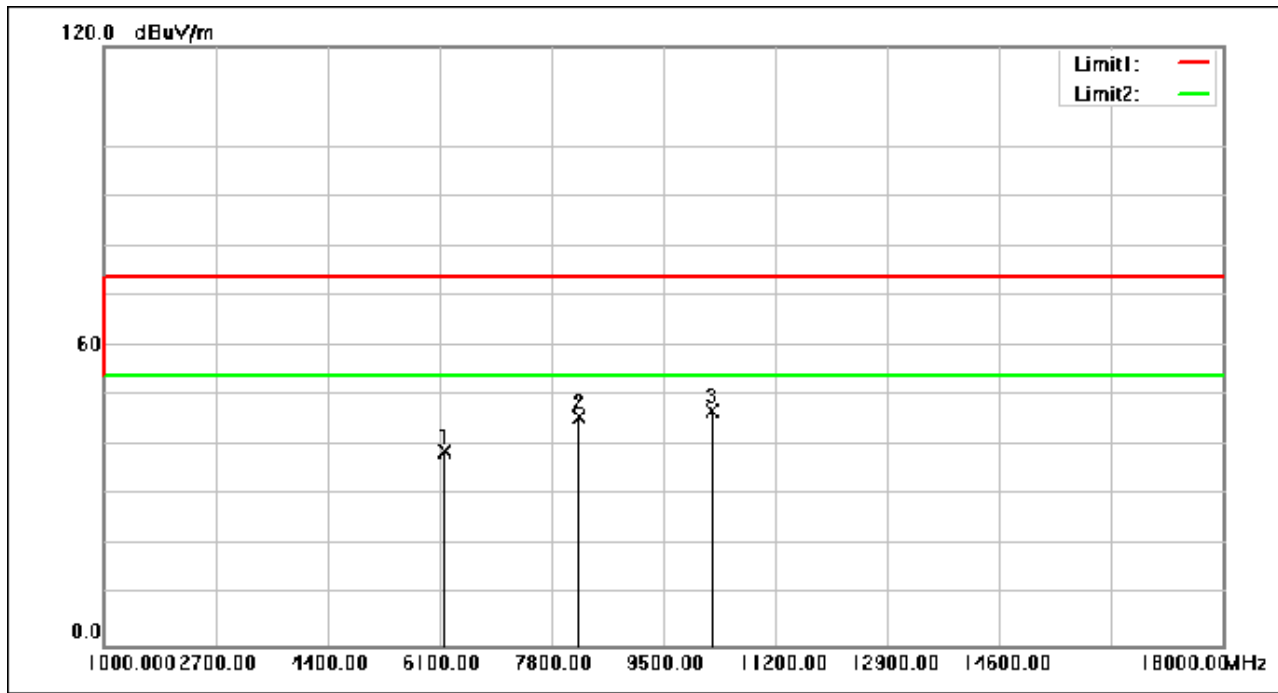
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 84 of 234

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	6197.240	53.77	-14.80	38.97	74.00	-35.03	peak
2	8218.880	56.00	-10.21	45.79	74.00	-28.21	peak
3	10239.840	54.06	-7.19	46.87	74.00	-27.13	peak

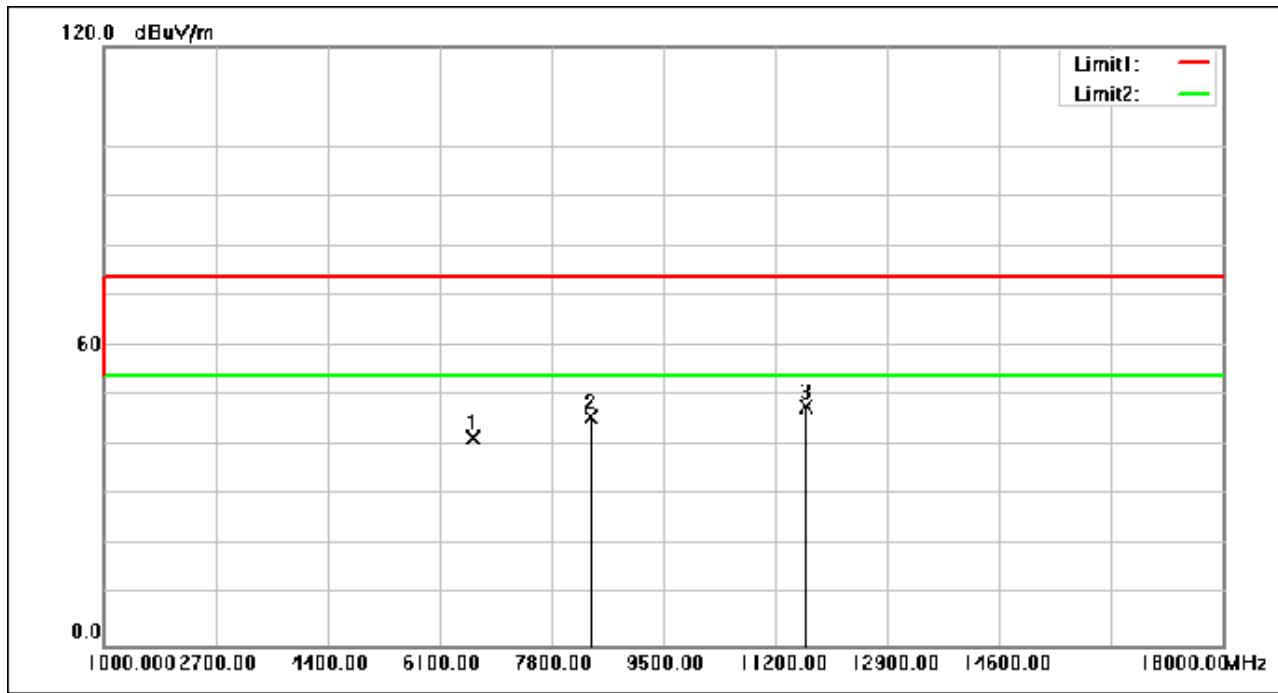
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 85 of 234

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	6619.520	54.06	-12.60	41.46	74.00	-32.54	peak
2	8409.960	55.59	-9.91	45.68	74.00	-28.32	peak
3	11665.800	54.06	-6.22	47.84	74.00	-26.16	peak

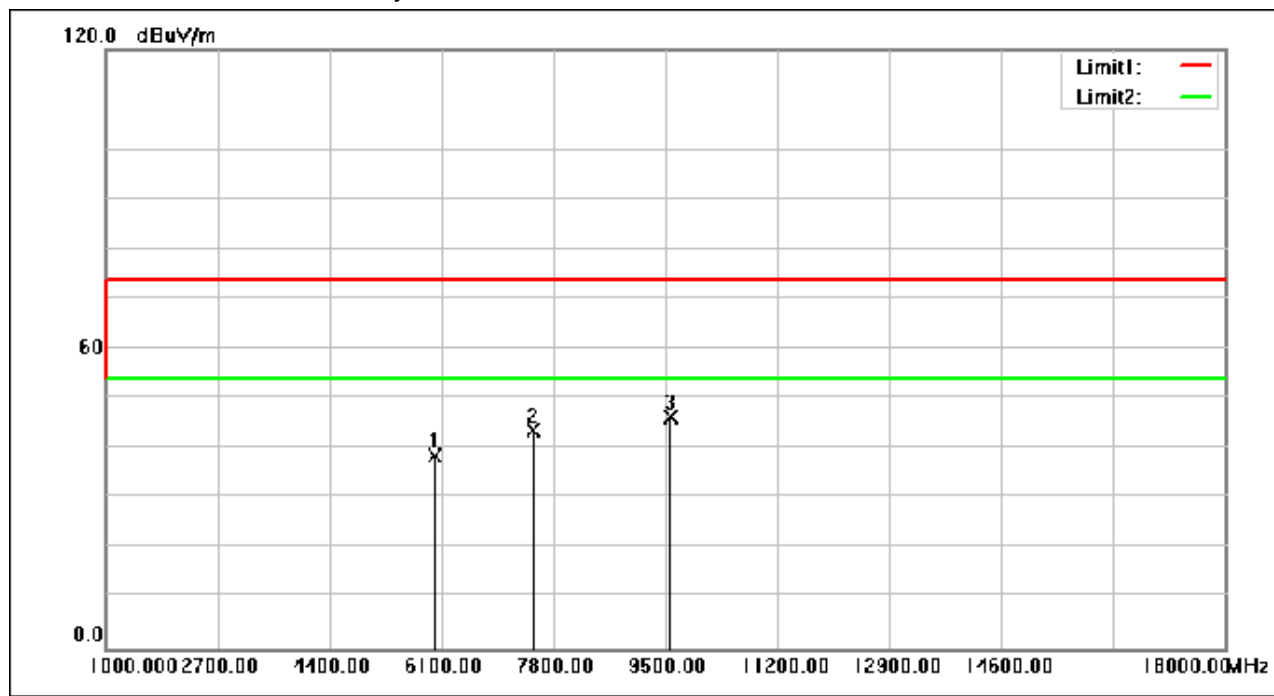
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 86 of 234

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	6004.120	54.34	-15.76	38.58	74.00	-35.42	peak
2	7508.280	54.96	-11.25	43.71	74.00	-30.29	peak
3	9597.920	54.18	-7.77	46.41	74.00	-27.59	peak

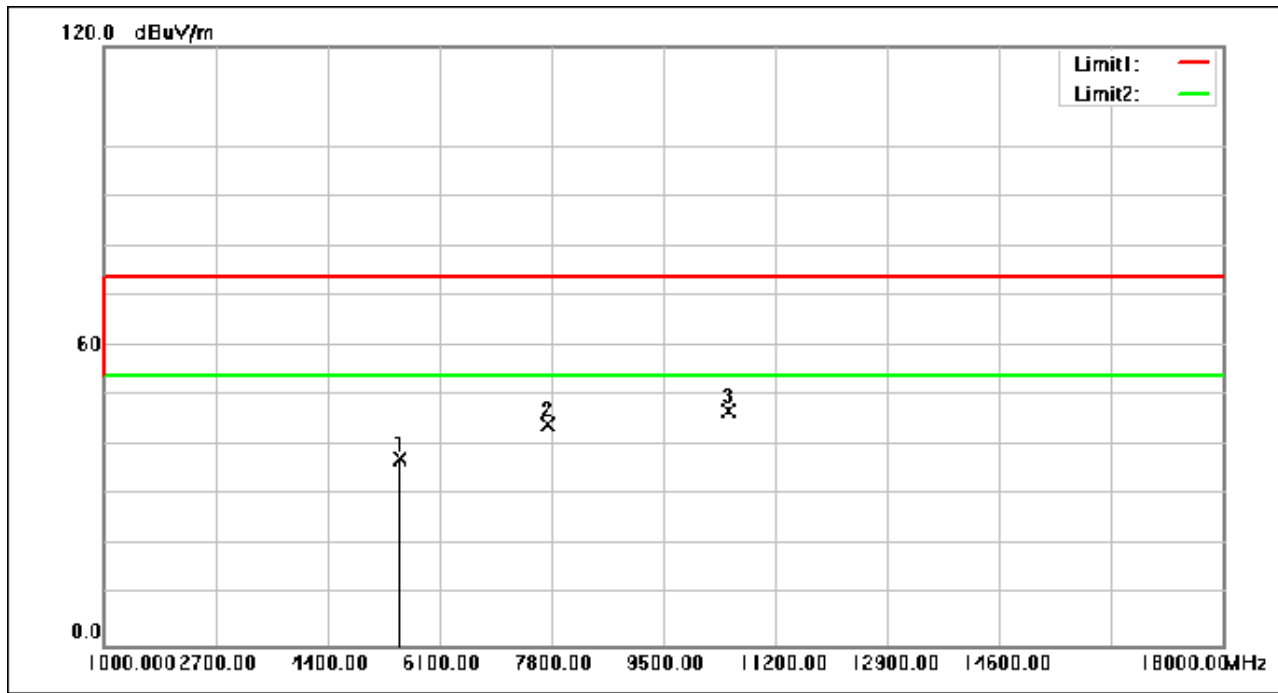
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 87 of 234

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	5498.880	55.08	-17.70	37.38	74.00	-36.62	peak
2	7754.440	55.24	-10.92	44.32	74.00	-29.68	peak
3	10489.400	54.06	-7.05	47.01	74.00	-26.99	peak

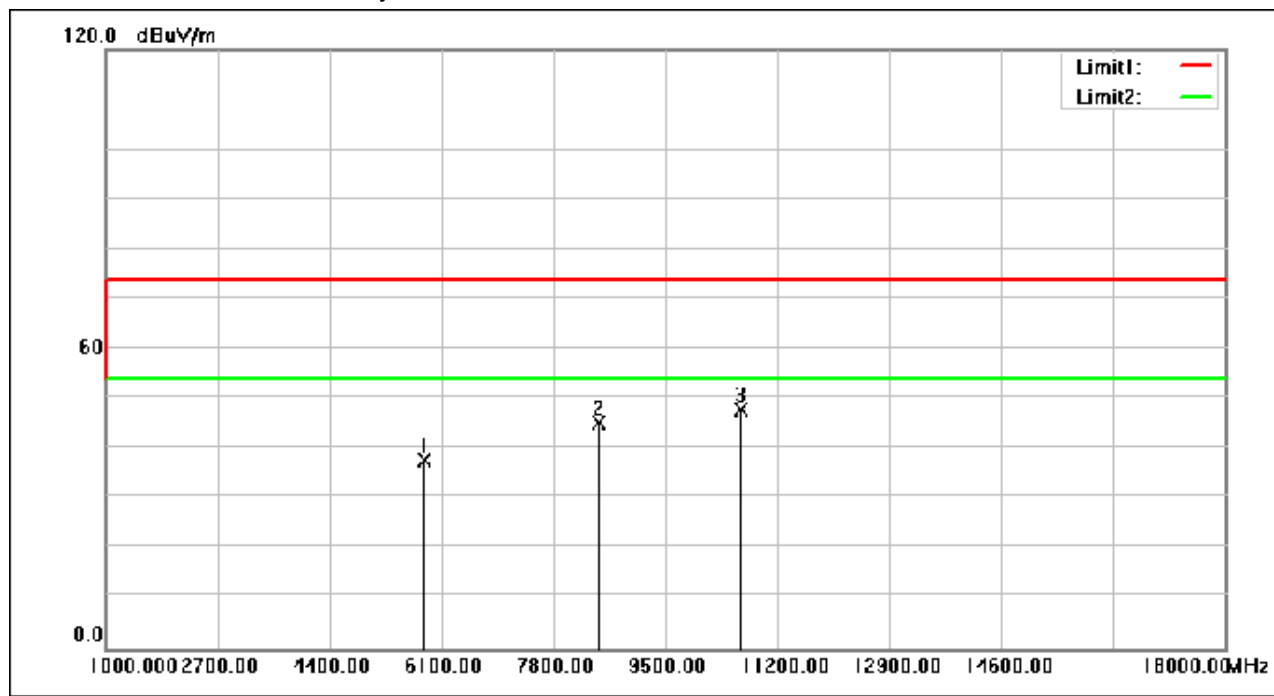
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 88 of 234

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	5853.840	54.02	-16.38	37.64	74.00	-36.36	peak
2	8503.800	54.81	-9.75	45.06	74.00	-28.94	peak
3	10649.200	54.73	-6.96	47.77	74.00	-26.23	peak

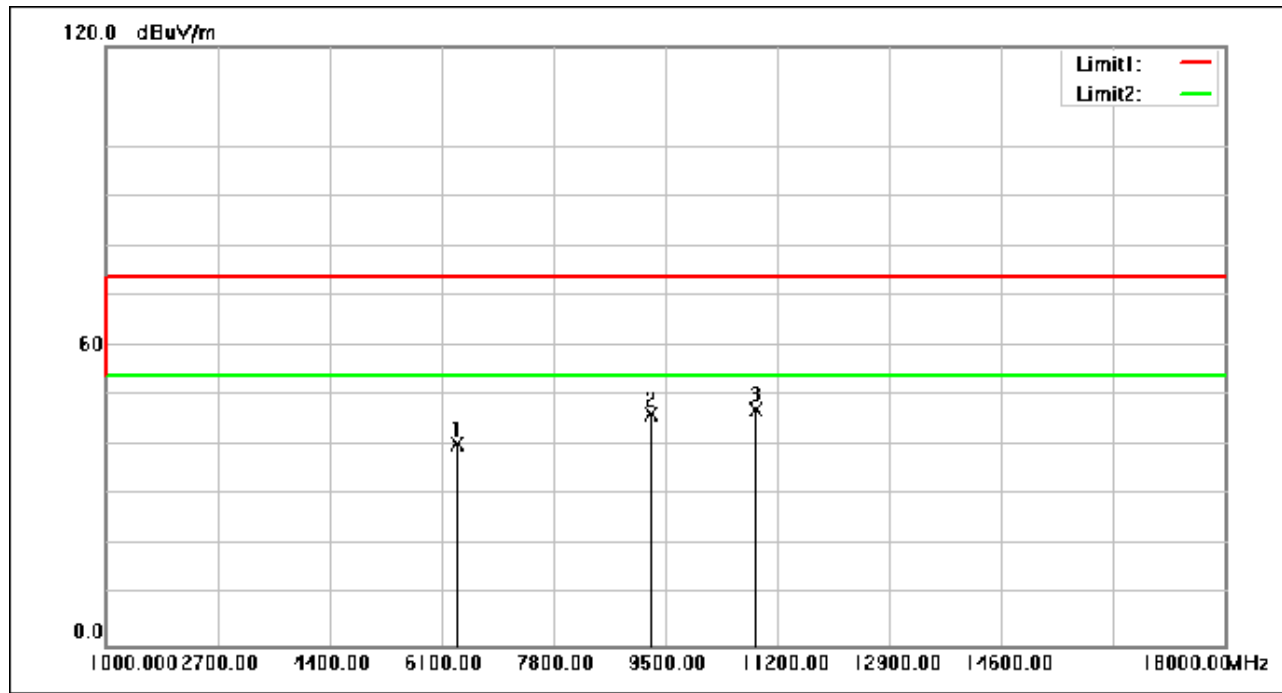
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 89 of 234

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	6349.560	54.21	-14.01	40.20	74.00	-33.80	peak
2	9291.240	54.68	-8.35	46.33	74.00	-27.67	peak
3	10889.240	54.01	-6.82	47.19	74.00	-26.81	peak

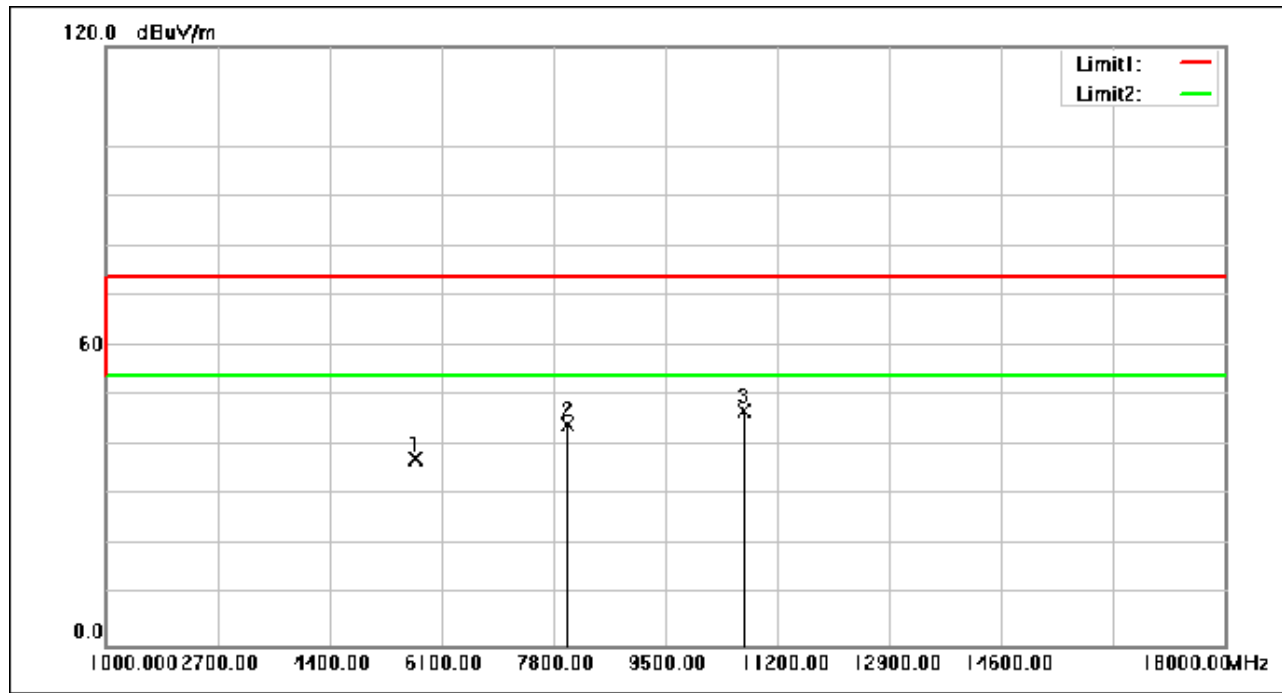
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 90 of 234

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	5706.280	54.44	-17.00	37.44	74.00	-36.56	peak
2	8025.080	54.91	-10.55	44.36	74.00	-29.64	peak
3	10698.160	53.84	-6.92	46.92	74.00	-27.08	peak

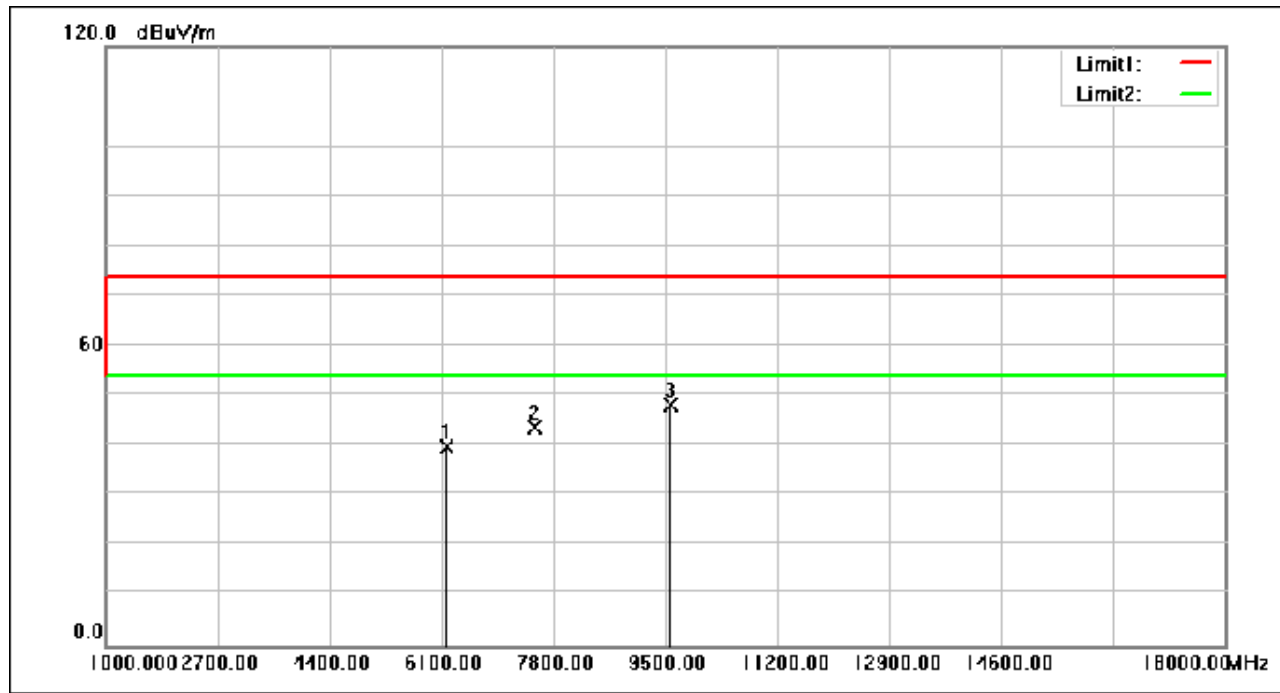
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 91 of 234

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6197.920	54.60	-14.80	39.80	74.00	-34.20	peak
2	7526.640	55.01	-11.23	43.78	74.00	-30.22	peak
3	9585.680	56.07	-7.79	48.28	74.00	-25.72	peak

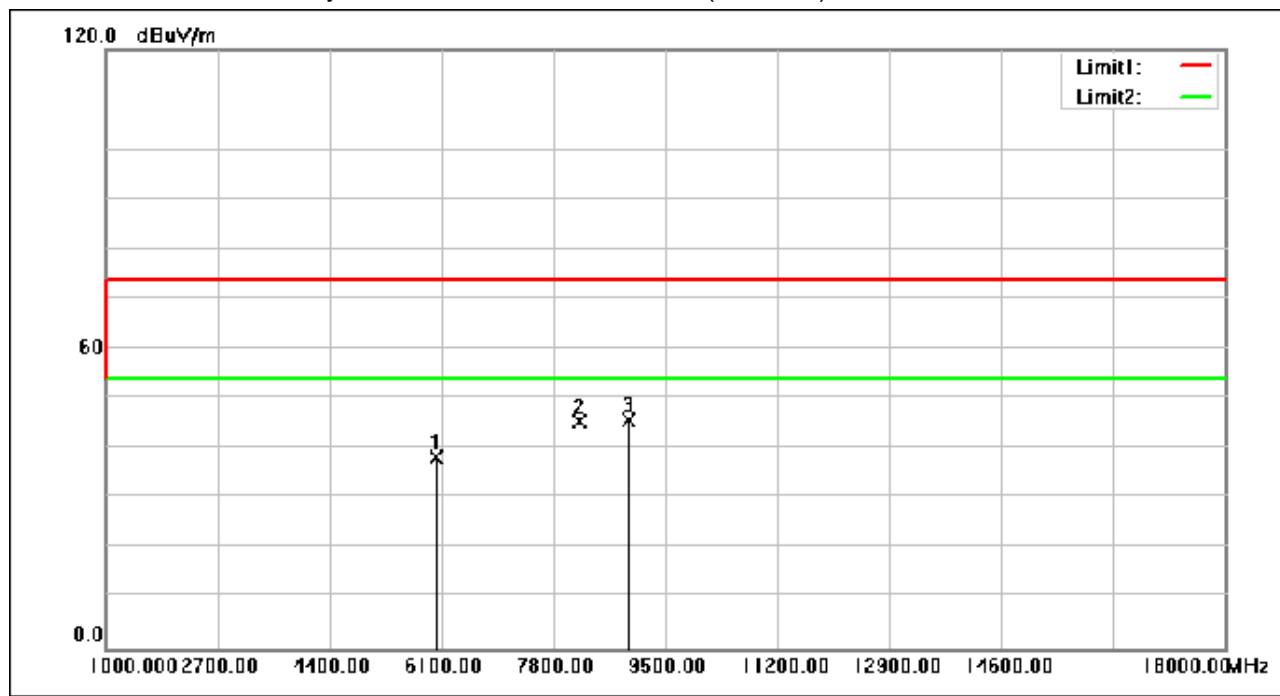
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 92 of 234

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6021.800	54.08	-15.68	38.40	74.00	-35.60	peak
2	8203.240	55.79	-10.24	45.55	74.00	-28.45	peak
3	8952.600	54.75	-9.00	45.75	74.00	-28.25	peak

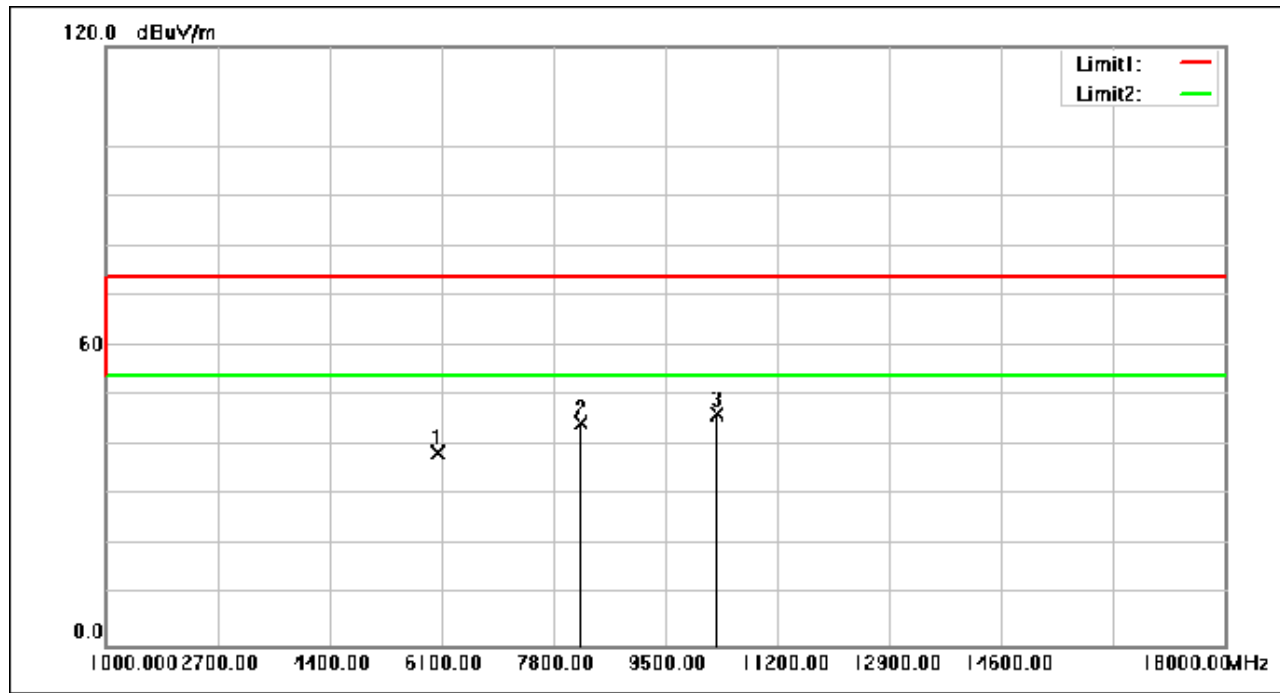
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 93 of 234

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	6040.160	54.17	-15.59	38.58	74.00	-35.42	peak
2	8233.840	54.78	-10.19	44.59	74.00	-29.41	peak
3	10296.280	53.56	-7.15	46.41	74.00	-27.59	peak

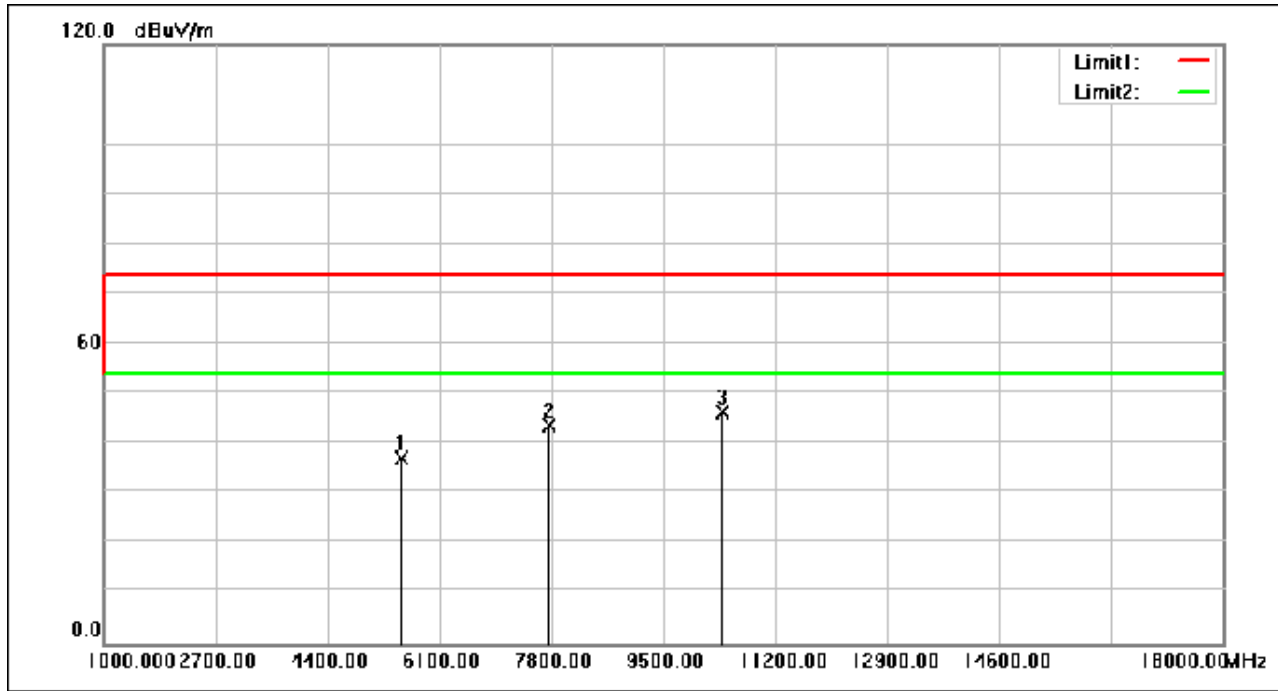
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 94 of 234

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	5530.840	54.79	-17.65	37.14	74.00	-36.86	peak
2	7770.080	54.67	-10.90	43.77	74.00	-30.23	peak
3	10409.840	53.47	-7.09	46.38	74.00	-27.62	peak

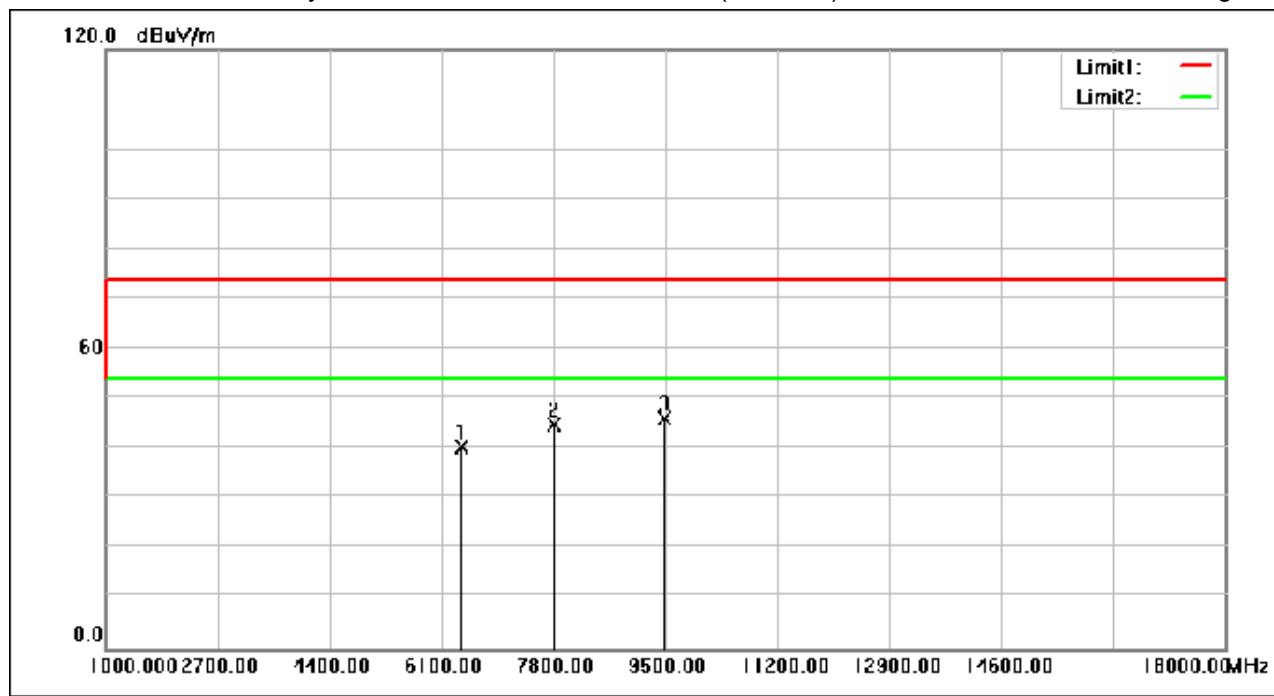
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 95 of 234

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	6416.880	54.09	-13.66	40.43	74.00	-33.57	peak
2	7829.240	55.71	-10.83	44.88	74.00	-29.12	peak
3	9499.320	54.13	-7.96	46.17	74.00	-27.83	peak

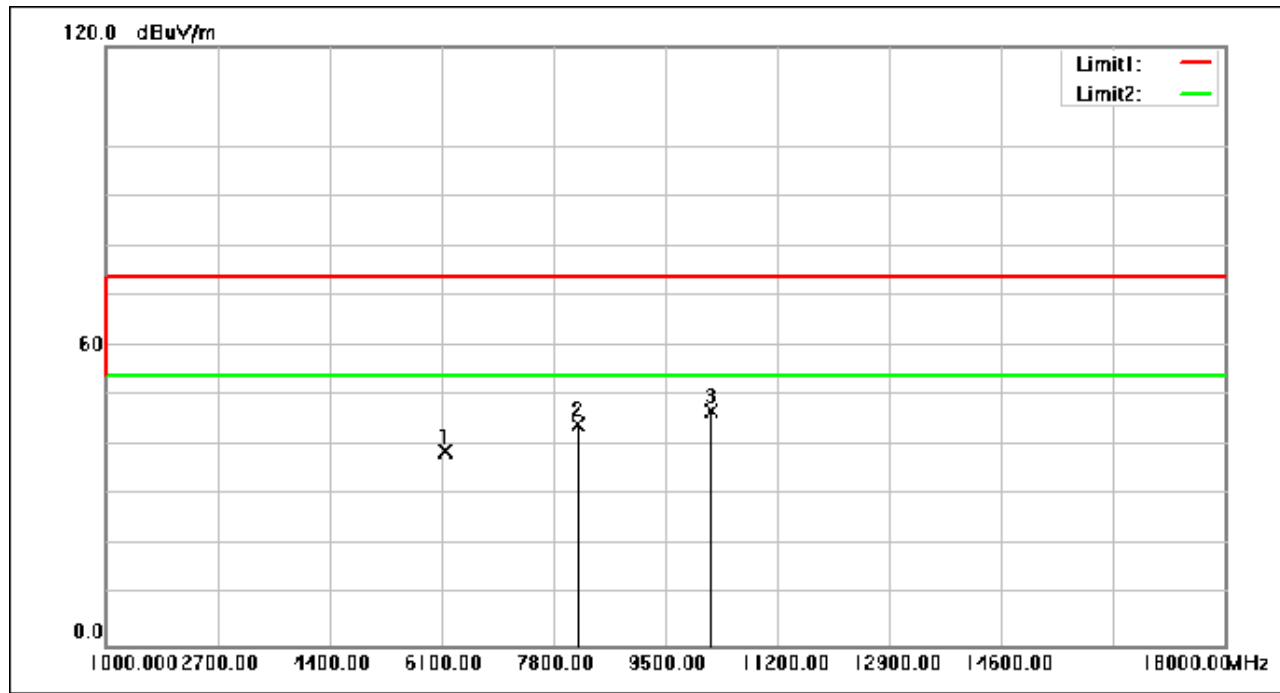
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 96 of 234

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	6161.880	53.91	-14.99	38.92	74.00	-35.08	peak
2	8178.080	54.69	-10.29	44.40	74.00	-29.60	peak
3	10208.560	54.15	-7.20	46.95	74.00	-27.05	peak

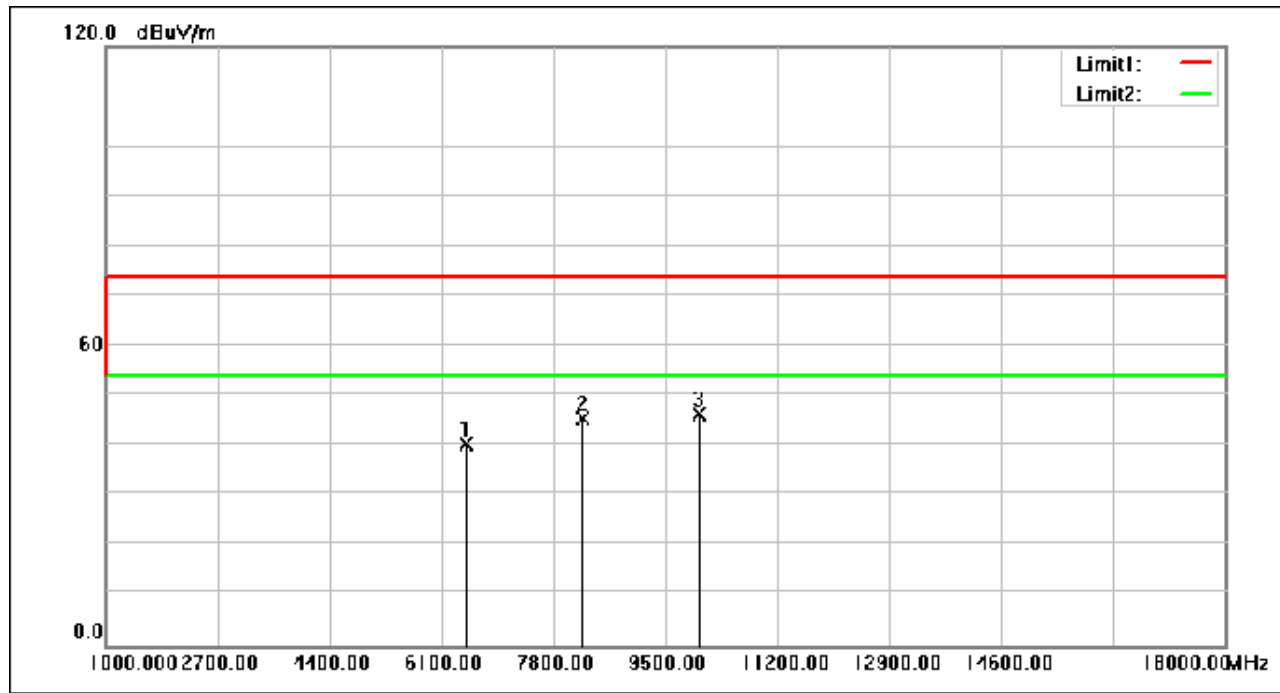
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 97 of 234

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	6482.160	53.69	-13.32	40.37	74.00	-33.63	peak
2	8250.840	55.64	-10.16	45.48	74.00	-28.52	peak
3	10015.440	53.71	-7.32	46.39	74.00	-27.61	peak

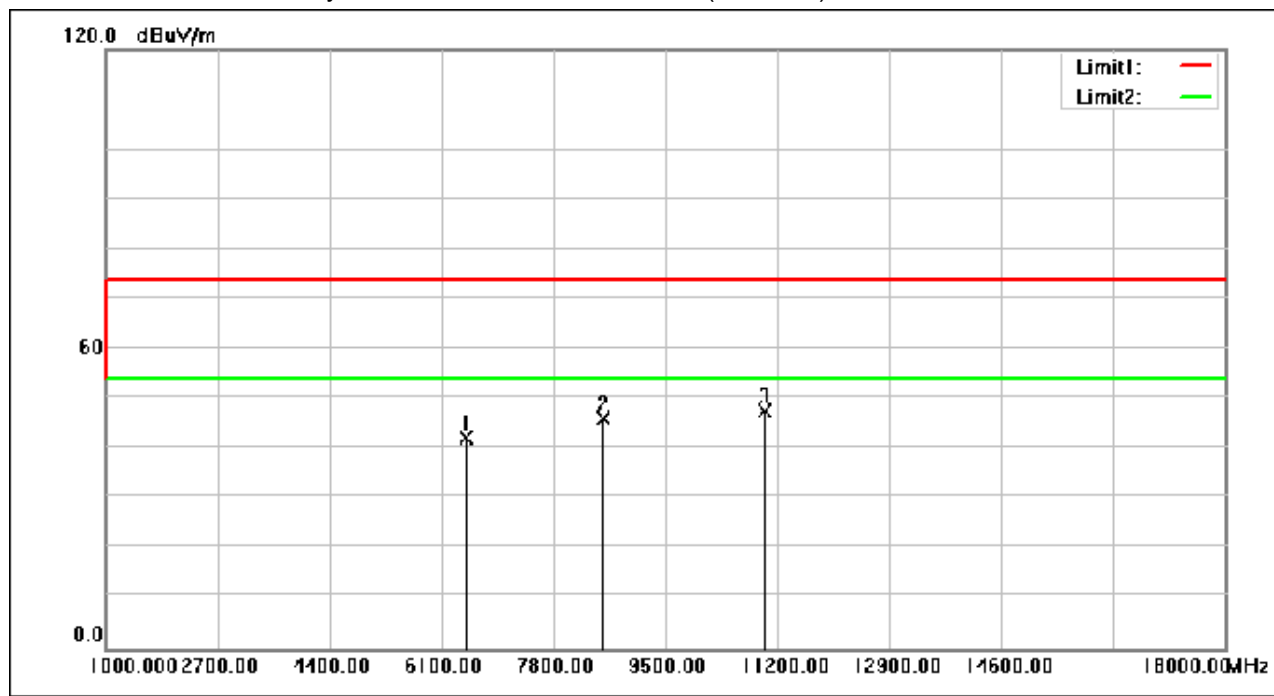
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 98 of 234

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	6481.480	55.39	-13.32	42.07	74.00	-31.93	peak
2	8564.320	55.56	-9.65	45.91	74.00	-28.09	peak
3	11021.160	54.37	-6.75	47.62	74.00	-26.38	peak

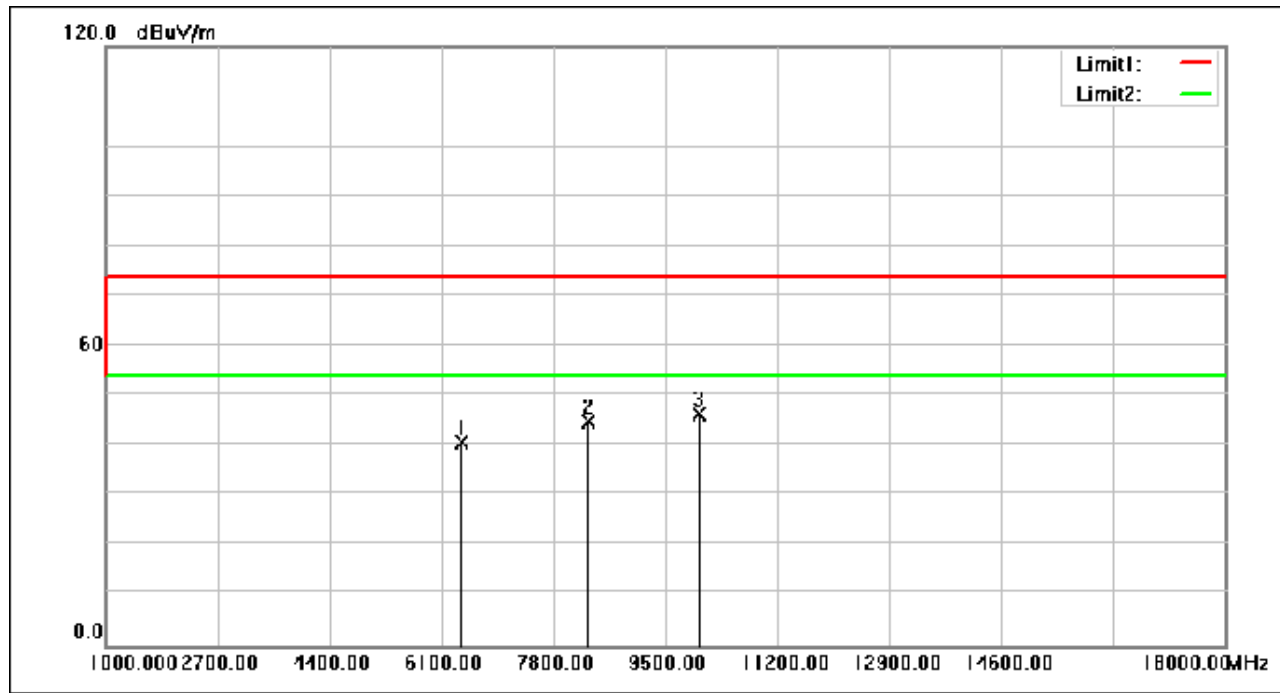
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 99 of 234

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	6409.400	54.24	-13.70	40.54	74.00	-33.46	peak
2	8338.560	54.99	-10.02	44.97	74.00	-29.03	peak
3	10024.280	53.61	-7.31	46.30	74.00	-27.70	peak

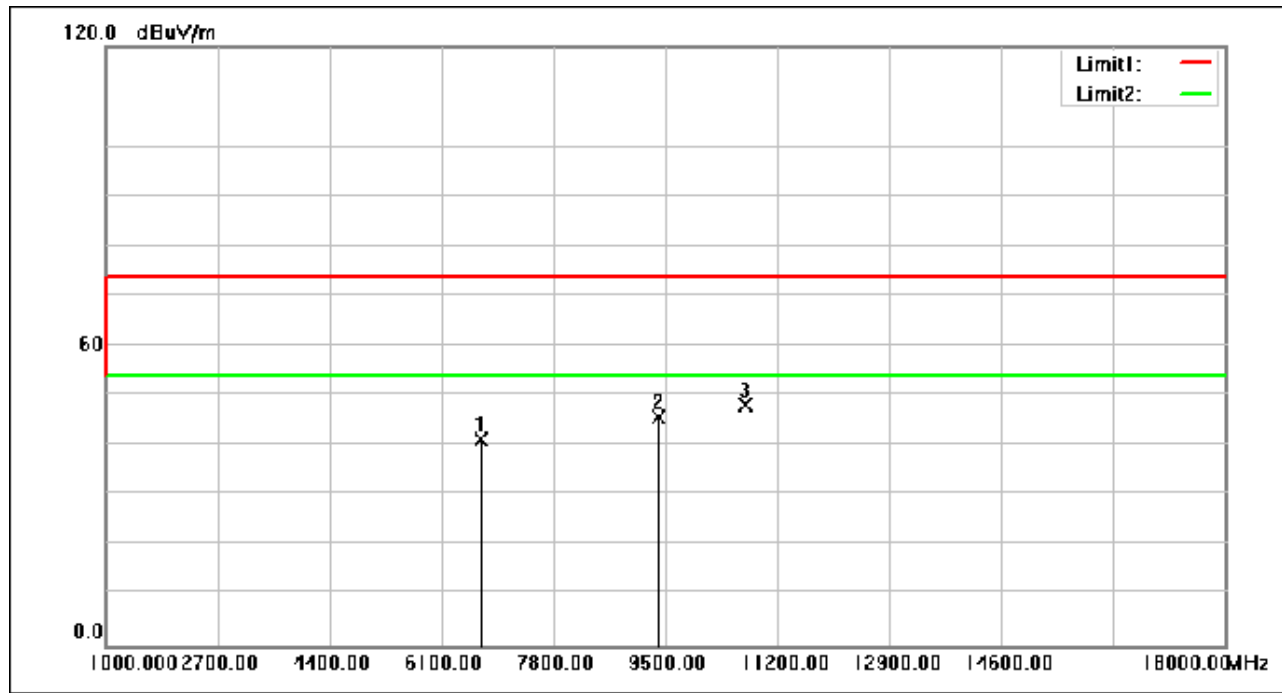
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 100 of 234

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	6697.720	53.33	-12.19	41.14	74.00	-32.86	peak
2	9406.160	53.94	-8.13	45.81	74.00	-28.19	peak
3	10707.000	55.03	-6.92	48.11	74.00	-25.89	peak

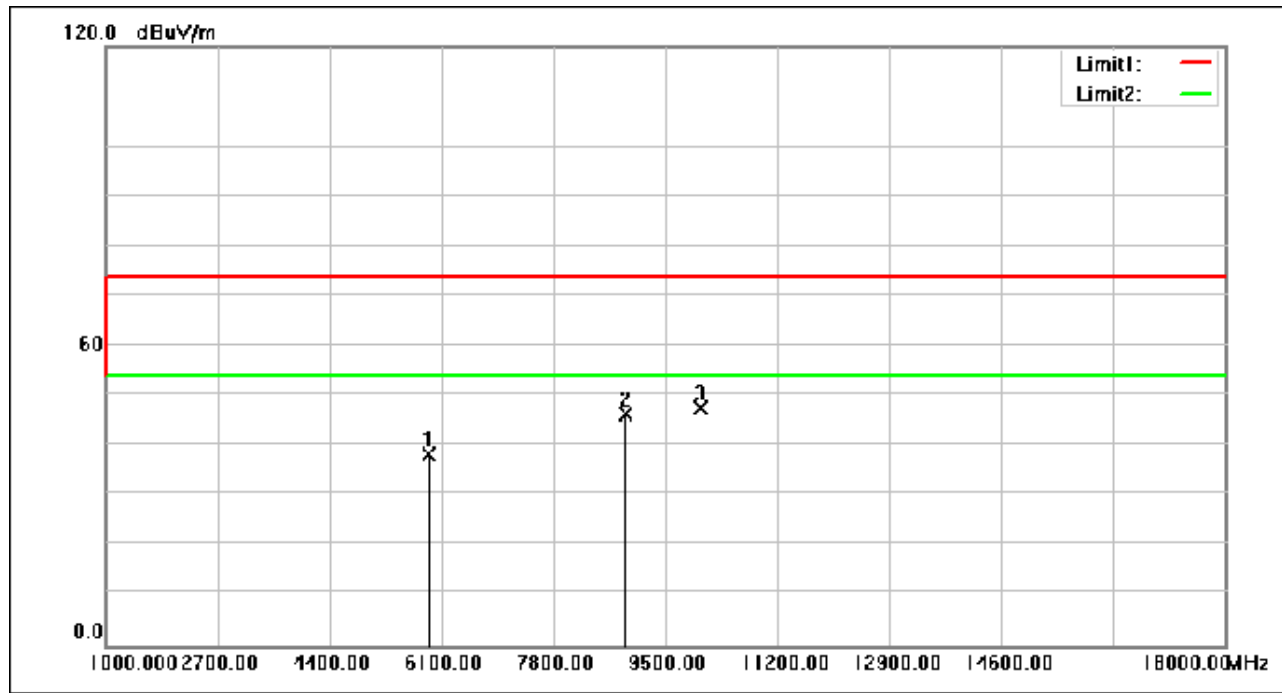
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 101 of 234

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	5905.520	54.54	-16.17	38.37	74.00	-35.63	peak
2	8912.480	55.35	-9.08	46.27	74.00	-27.73	peak
3	10033.120	54.91	-7.31	47.60	74.00	-26.40	peak

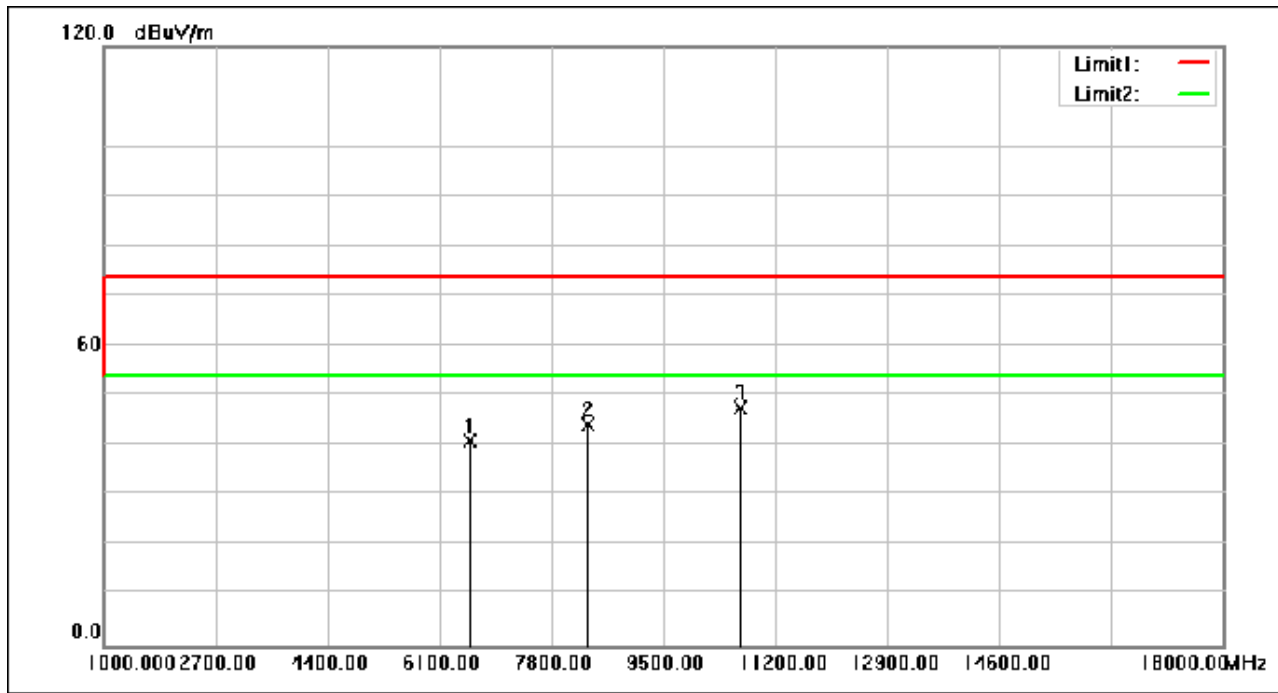
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 102 of 234

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	6571.920	53.80	-12.85	40.95	74.00	-33.05	peak
2	8348.080	54.19	-10.01	44.18	74.00	-29.82	peak
3	10662.120	54.47	-6.95	47.52	74.00	-26.48	peak

7.5 Conducted Peak Output Power

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

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

Limit:

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

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 20.5 °C

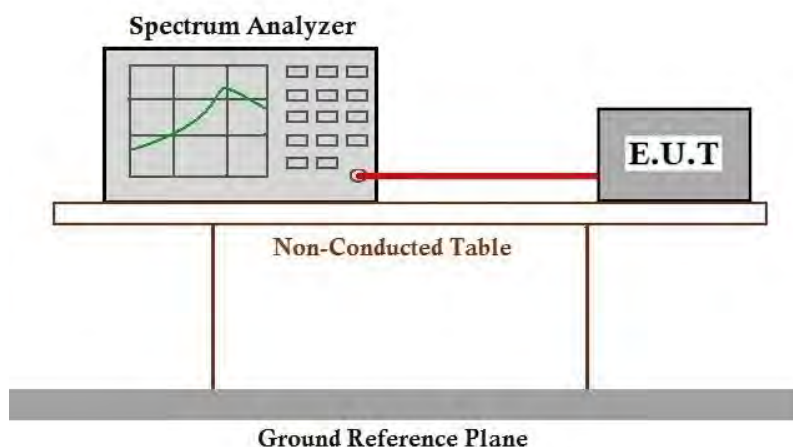
Humidity: 54.0 % RH

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.: KSCR240600099303

Page: 104 of 234

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

Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 105 of 234

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: 20.5 °C

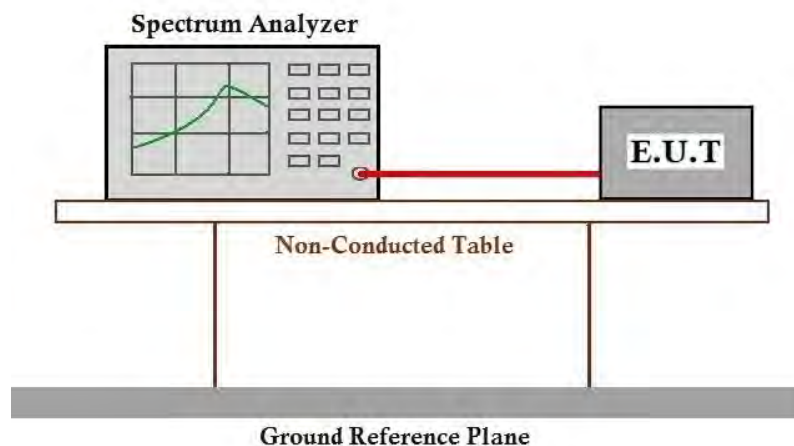
Humidity: 54.0 % RH

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: 20.5 °C

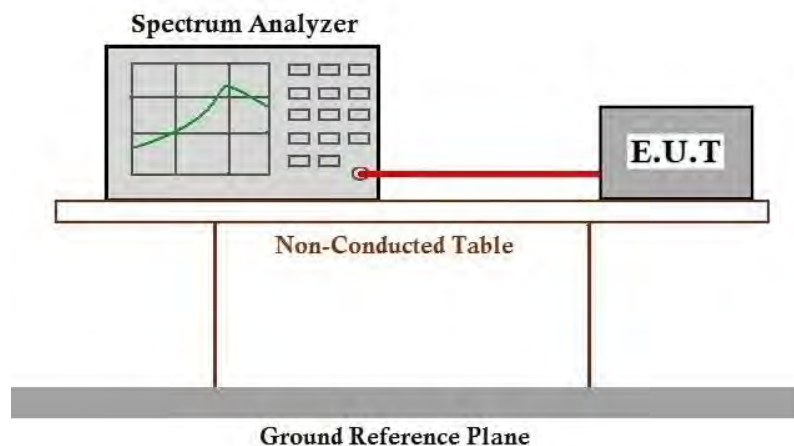
Humidity: 54.0 % RH

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

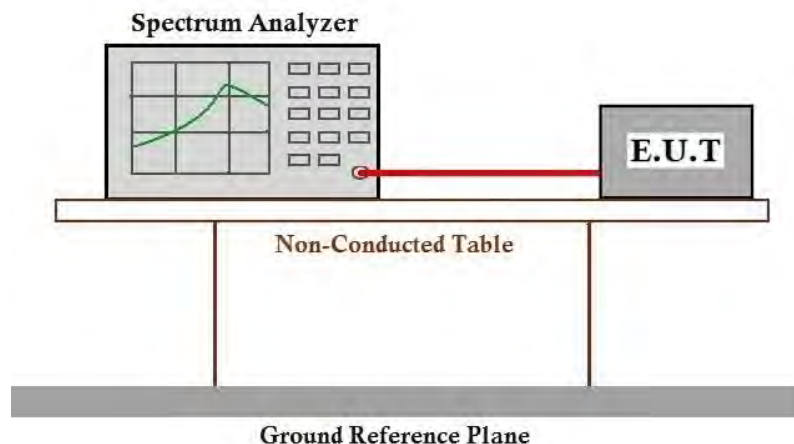
Operating Environment:

Temperature: 20.5 °C Humidity: 54.0 % 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.: KSCR240600099303

Page: 108 of 234

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: 20.5 °C

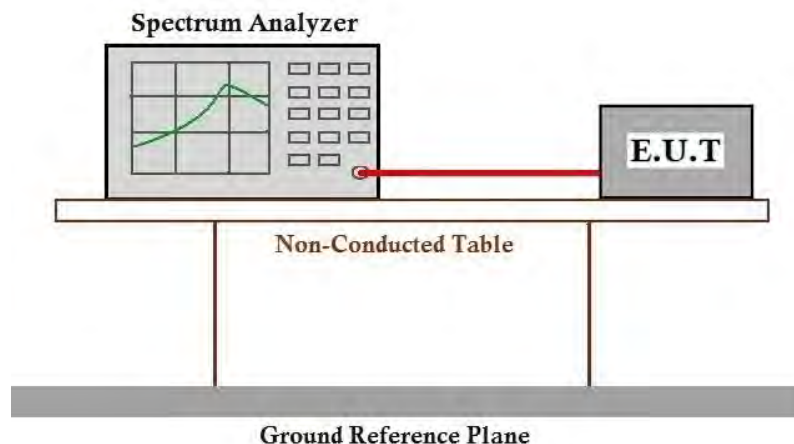
Humidity: 54.0 % RH

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.: KSCR240600099303

Page: 110 of 234

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.: KSCR240600099303

Page: 111 of 234

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2406000993AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2406000993AT

10 Appendix

1. Duty Cycle

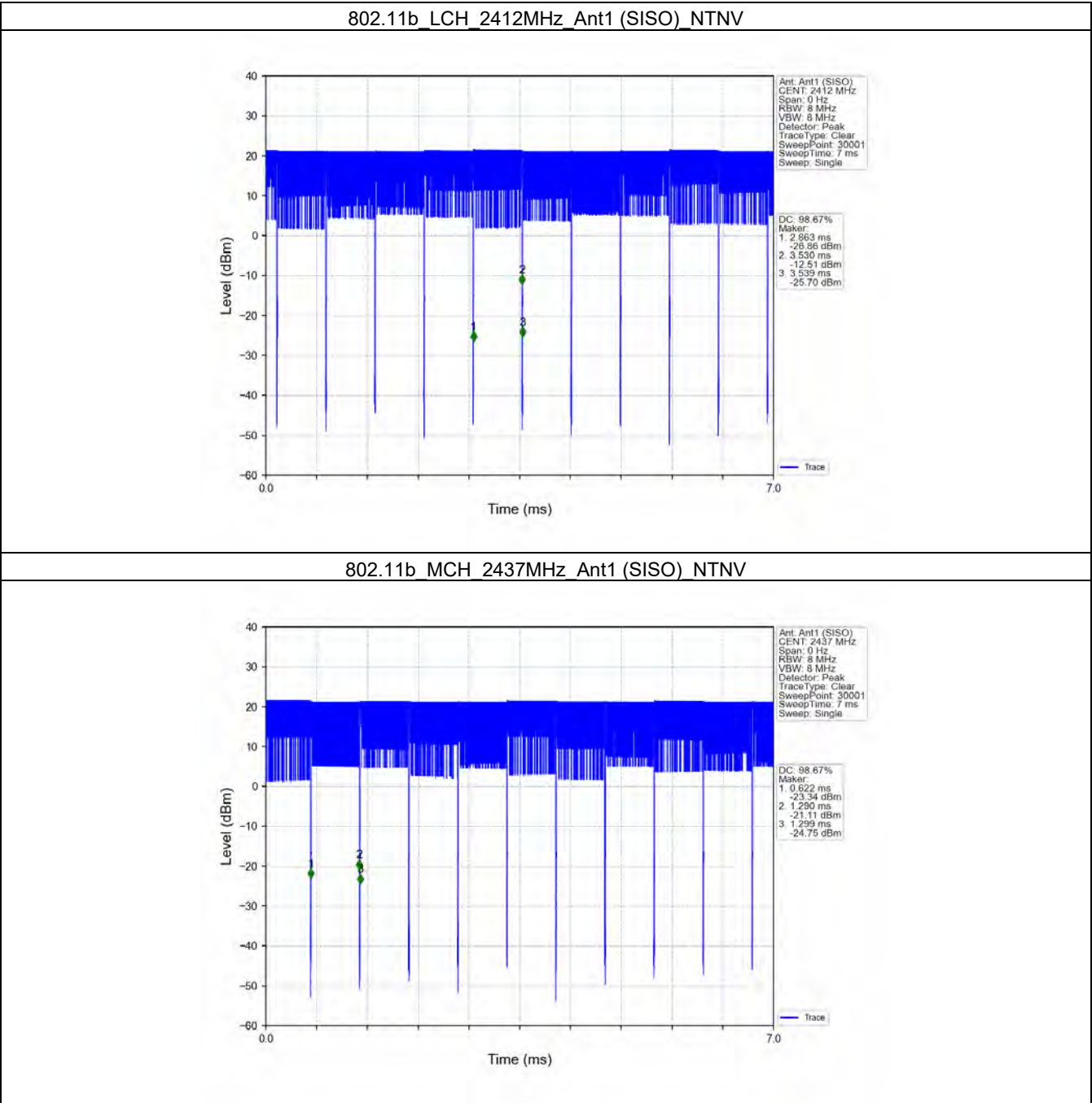
1.1 Test Result

1.1.1 Ant1

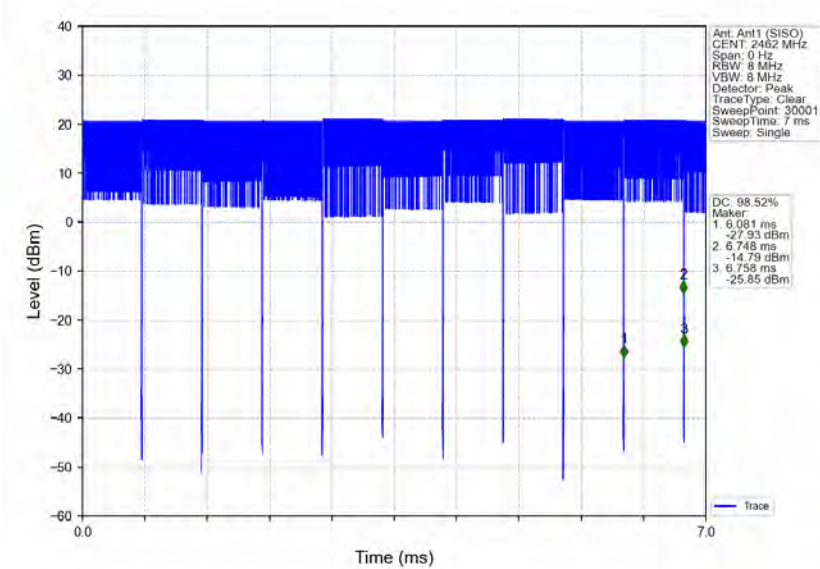
Ant1									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	T _{on} (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	/	/	0.667	0.676	98.67	0.06	0.03
		2437	/	/	0.668	0.677	98.67	0.06	0.03
		2462	/	/	0.667	0.677	98.52	0.06	0.07
802.11g	SISO	2412	/	/	2.096	2.112	99.24	0.03	0.03
		2437	/	/	2.097	2.112	99.29	0.03	0.03
		2462	/	/	2.097	2.112	99.29	0.03	0.03
802.11n (HT20)	MIMO	2412	/	/	5.396	5.411	99.72	0.01	0.00
		2437	/	/	5.396	5.412	99.70	0.01	0.04
		2462	/	/	5.396	5.412	99.70	0.01	0.00
802.11n (HT40)	MIMO	2422	/	/	5.195	5.210	99.71	0.01	0.04
		2437	/	/	5.196	5.212	99.69	0.01	0.03
		2452	/	/	5.194	5.209	99.71	0.01	0.00
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	0.03
802.11ax (HEW40)	MIMO	2422	RU484	Left	4.105	4.120	99.64	0.02	0.03
		2437	RU484	Left	4.103	4.118	99.64	0.02	0.00
		2452	RU484	Left	4.104	4.118	99.66	0.01	0.00

1.2 Test Graph

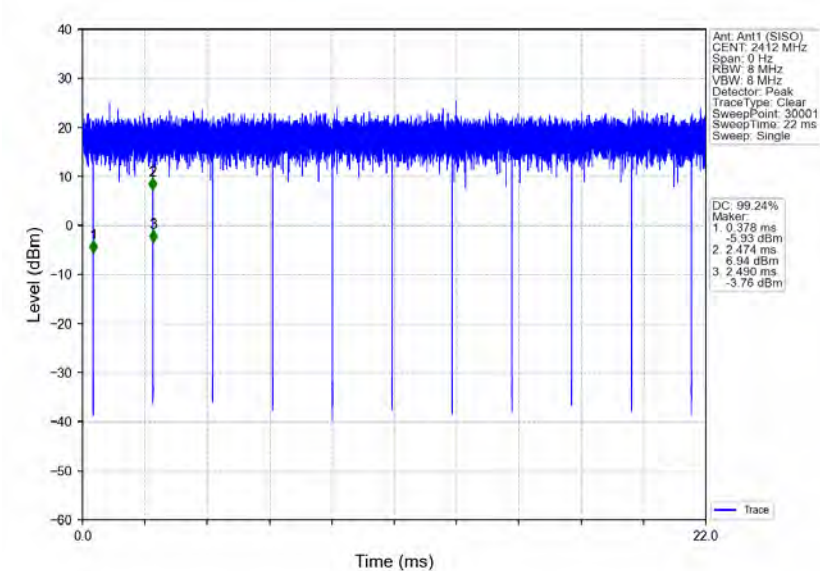
1.2.1 Ant1



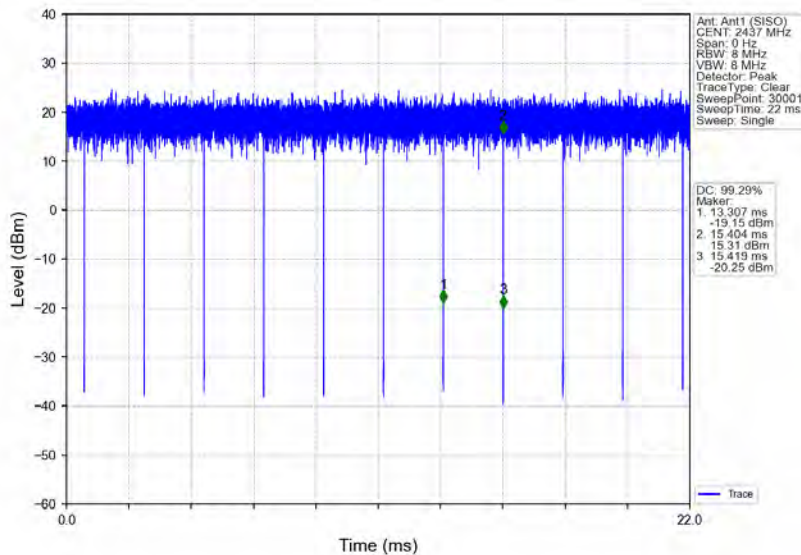
802.11b HCH 2462MHz Ant1 (SISO) NTN



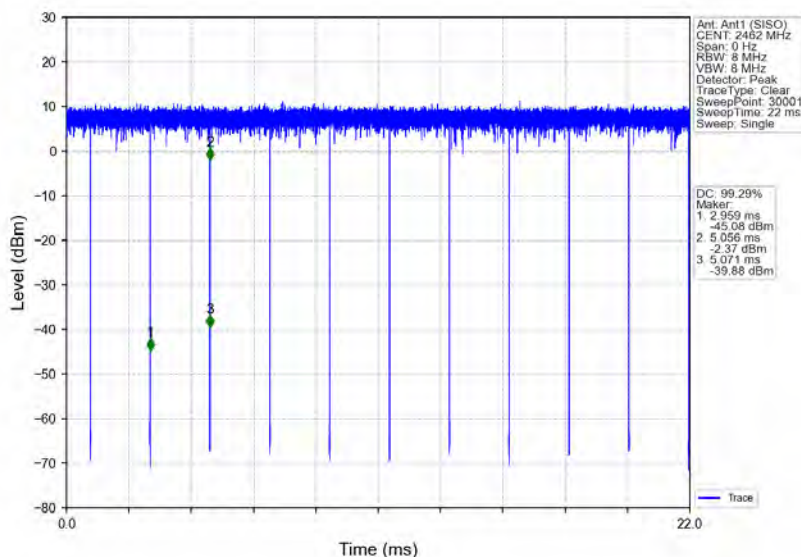
802.11g LCH 2412MHz Ant1 (SISO) NTN



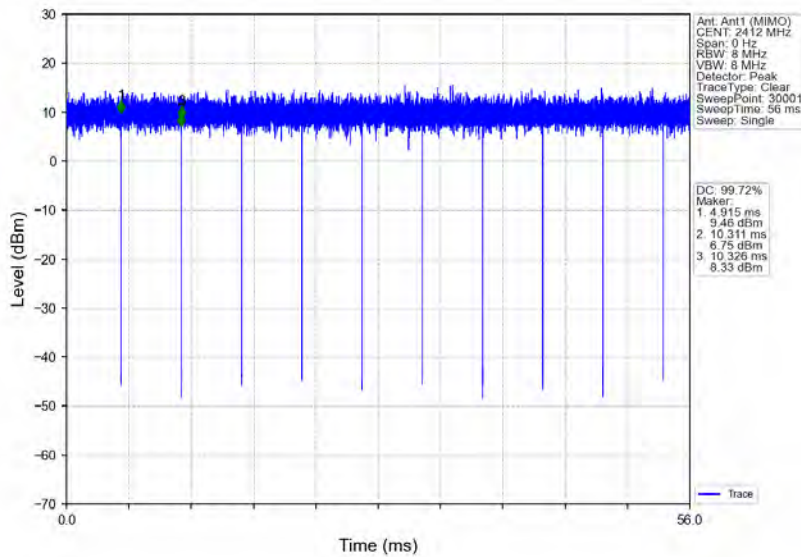
802.11g_MCH_2437MHz_Ant1 (SISO) NTN



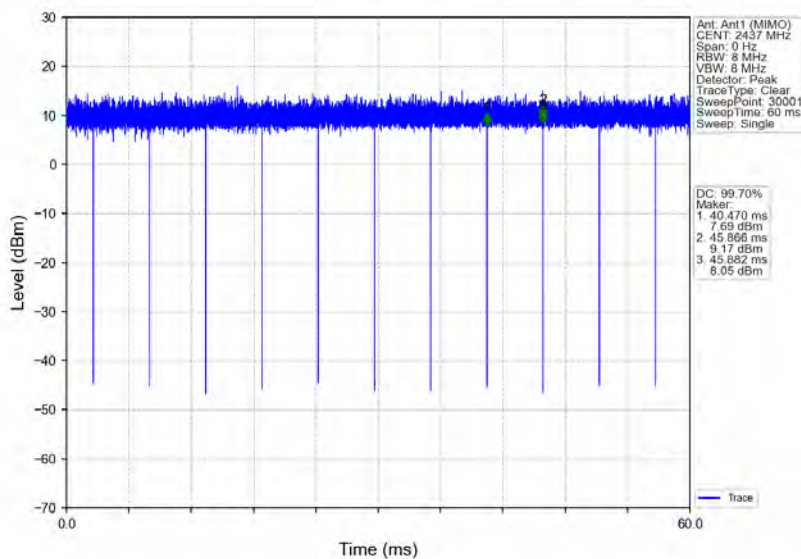
802.11g_HCH_2462MHz_Ant1 (SISO) NTN



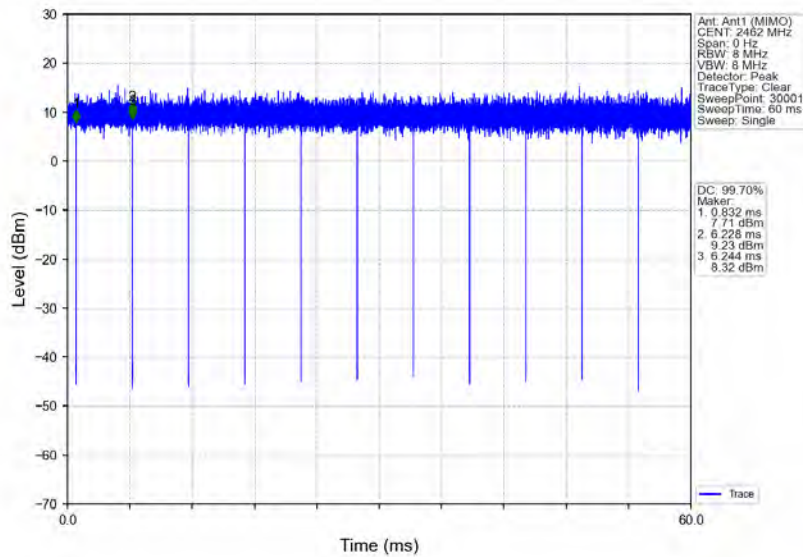
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTN



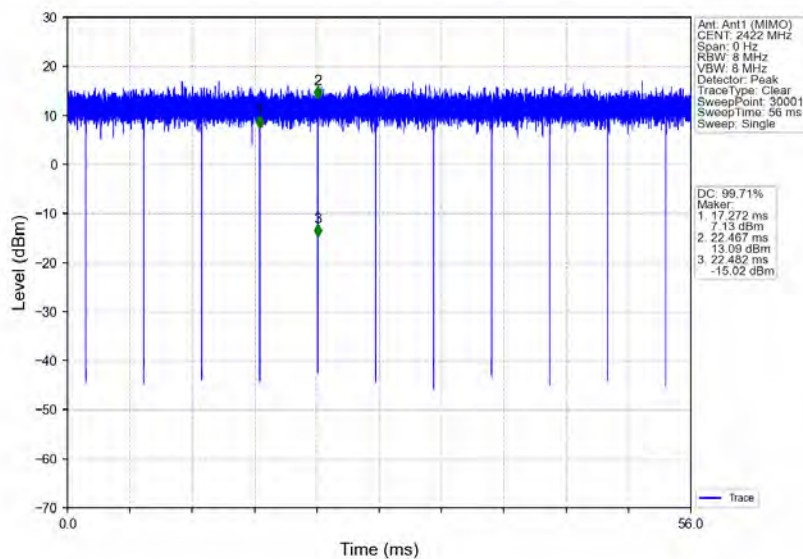
802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



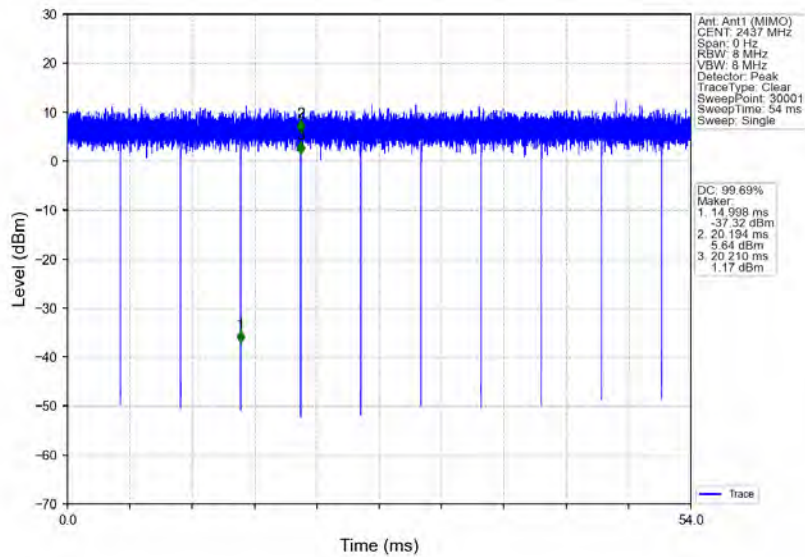
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



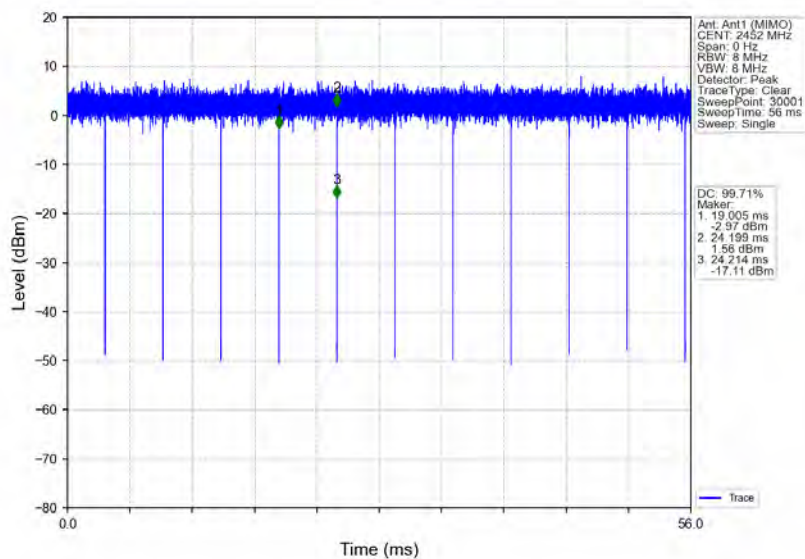
802.11n(HT40) LCH 2422MHz Ant1 (MIMO) NTN



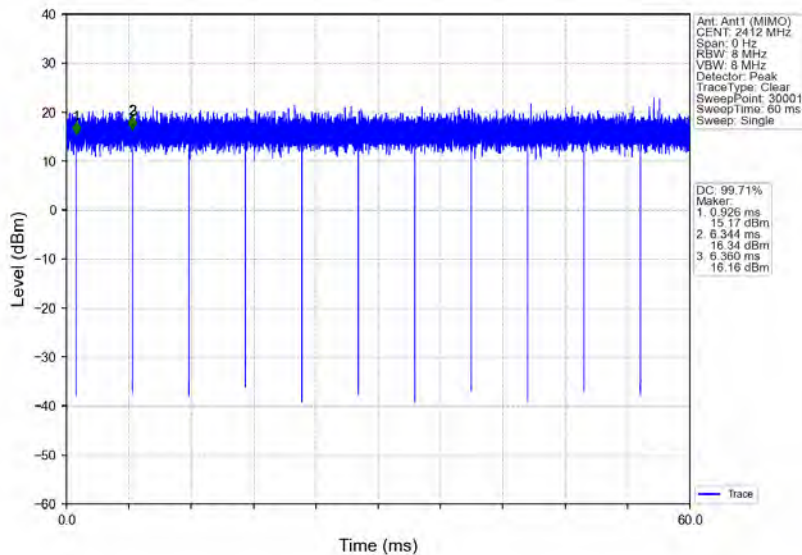
802.11n(HT40) MCH 2437MHz Ant1 (MIMO) NTN



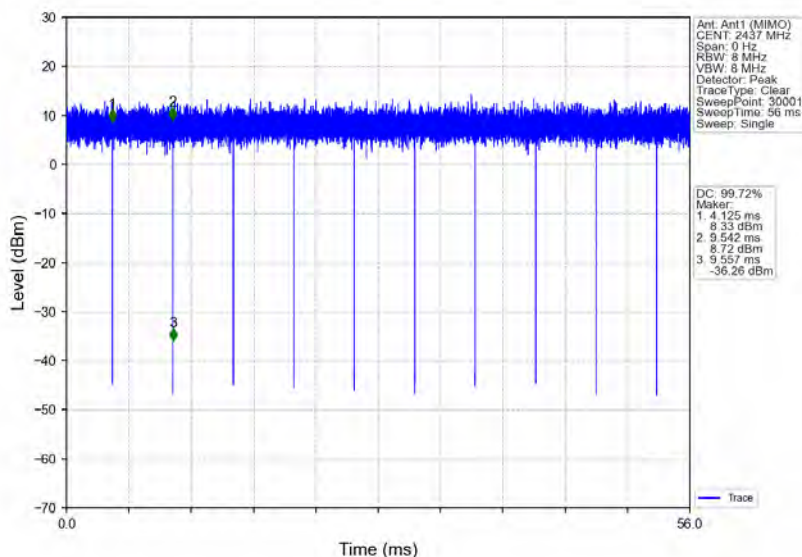
802.11n(HT40) HCH 2452MHz Ant1 (MIMO) NTN



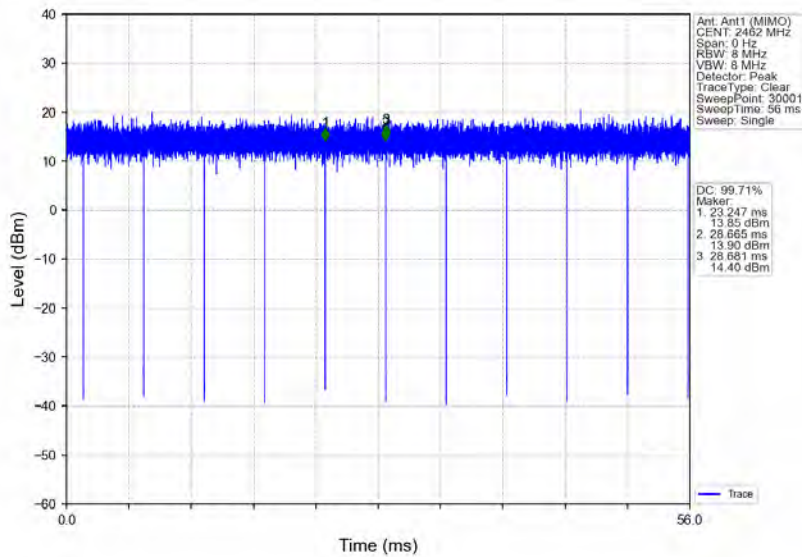
802.11ax(HEW20) LCH 2412MHz RU242 Left Ant1 (MIMO) NTN



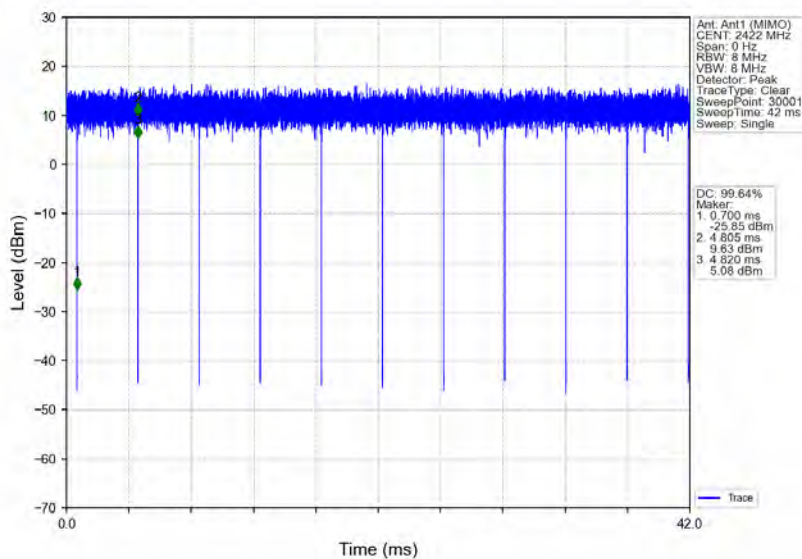
802.11ax(HEW20) MCH 2437MHz RU242 Left Ant1 (MIMO) NTN



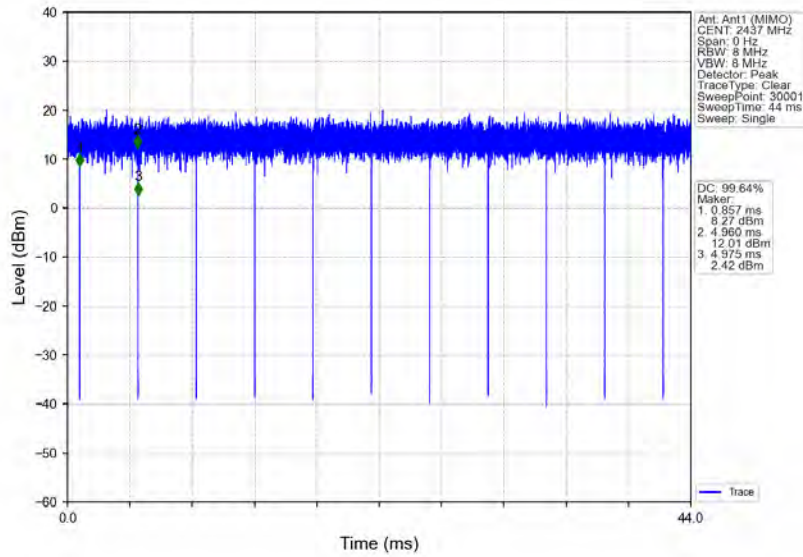
802.11ax(HEW20) HCH 2462MHz RU242 Left Ant1 (MIMO) NTN



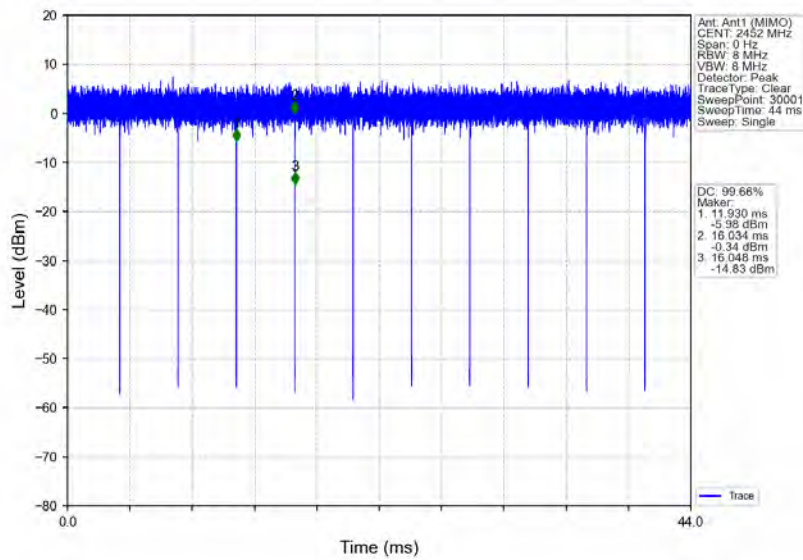
802.11ax(HEW40) LCH 2422MHz RU484 Left Ant1 (MIMO) NTN



802.11ax(HEW40) MCH 2437MHz RU484 Left Ant1 (MIMO) NTNv



802.11ax(HEW40) HCH 2452MHz RU484 Left Ant1 (MIMO) NTNv



2. Bandwidth

2.1 Test Result

2.1.1 OBW

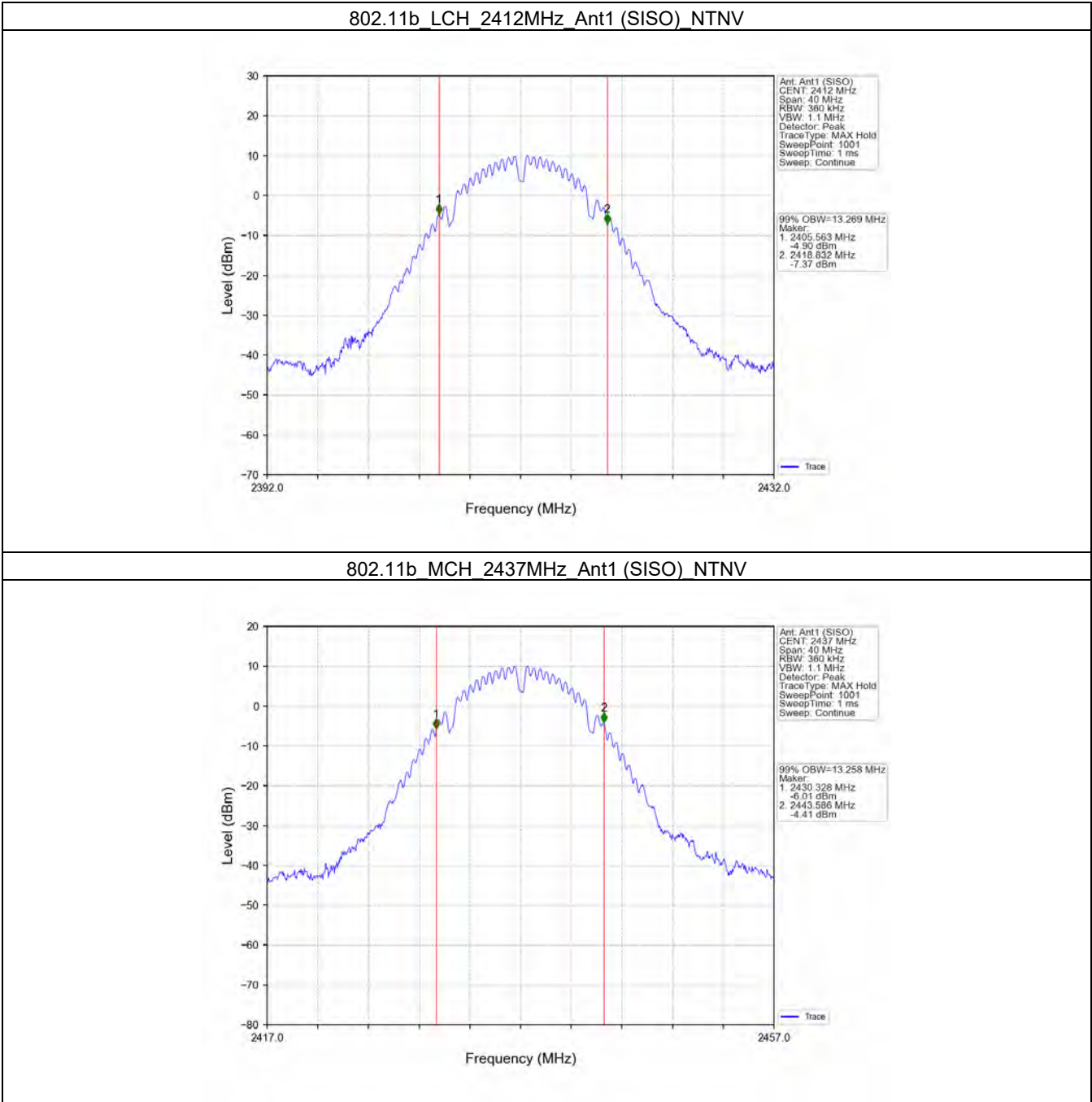
Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	99% Occupied Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	13.269	/	Pass
		2437	/	/	1	13.258	/	Pass
		2462	/	/	1	13.089	/	Pass
802.11g	SISO	2412	/	/	1	17.033	/	Pass
		2437	/	/	1	17.041	/	Pass
		2462	/	/	1	16.815	/	Pass
802.11n (HT20)	MIMO	2412	/	/	1	17.950	/	Pass
		2437	/	/	1	17.982	/	Pass
		2462	/	/	1	17.950	/	Pass
802.11n (HT40)	MIMO	2422	/	/	1	36.015	/	Pass
		2437	/	/	1	36.352	/	Pass
		2452	/	/	1	36.356	/	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	19.140	/	Pass
		2437	RU242	Left	1	19.162	/	Pass
		2462	RU242	Left	1	19.143	/	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	1	37.940	/	Pass
		2437	RU484	Left	1	38.332	/	Pass
		2452	RU484	Left	1	38.129	/	Pass

2.1.2 6dB BW

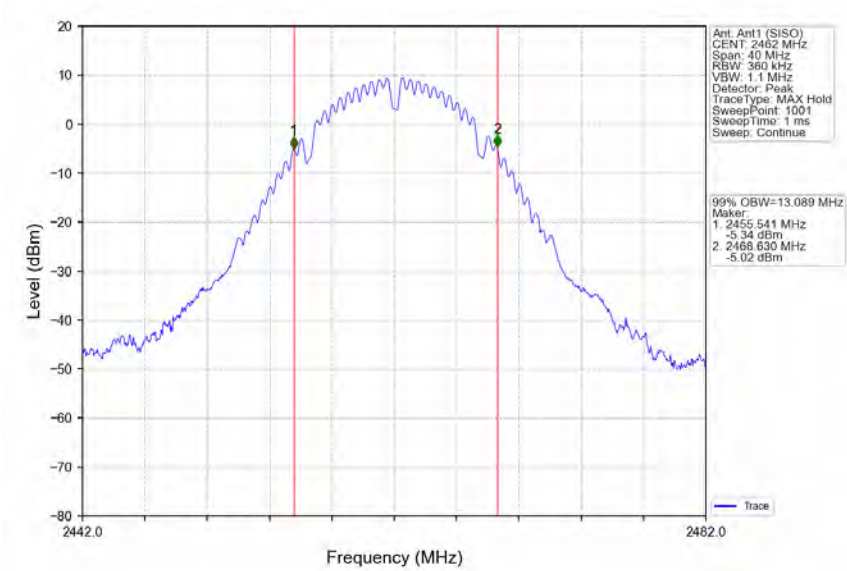
Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	8.571	>=0.5	Pass
		2437	/	/	1	8.136	>=0.5	Pass
		2462	/	/	1	8.106	>=0.5	Pass
802.11g	SISO	2412	/	/	1	16.118	>=0.5	Pass
		2437	/	/	1	16.355	>=0.5	Pass
		2462	/	/	1	16.321	>=0.5	Pass
802.11n (HT20)	MIMO	2412	/	/	1	16.701	>=0.5	Pass
		2437	/	/	1	17.330	>=0.5	Pass
		2462	/	/	1	17.346	>=0.5	Pass
802.11n (HT40)	MIMO	2422	/	/	1	35.168	>=0.5	Pass
		2437	/	/	1	35.700	>=0.5	Pass
		2452	/	/	1	36.072	>=0.5	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	18.337	>=0.5	Pass
		2437	RU242	Left	1	18.867	>=0.5	Pass
		2462	RU242	Left	1	18.842	>=0.5	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	1	37.263	>=0.5	Pass
		2437	RU484	Left	1	37.940	>=0.5	Pass
		2452	RU484	Left	1	38.017	>=0.5	Pass

2.2 Test Graph

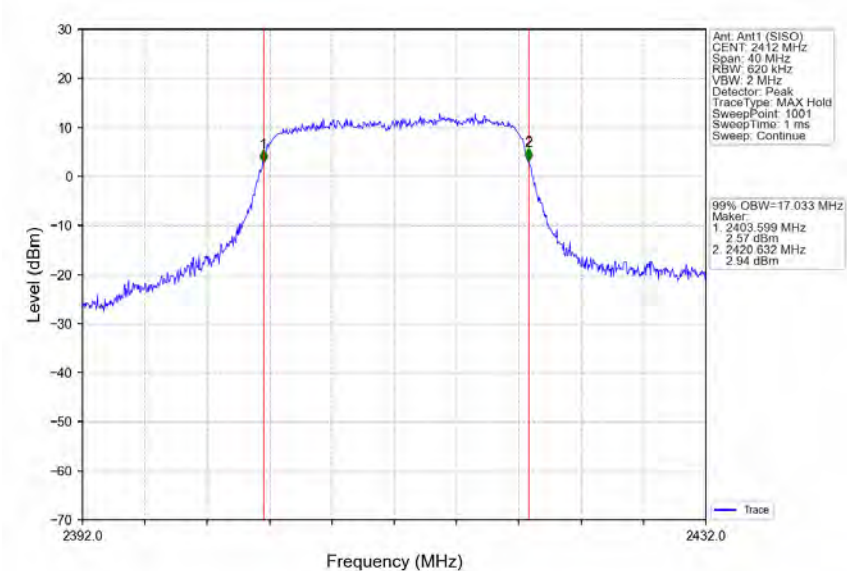
2.2.1 OBW



802.11b HCH 2462MHz Ant1 (SISO) NTNV



802.11g LCH 2412MHz Ant1 (SISO) NTNV



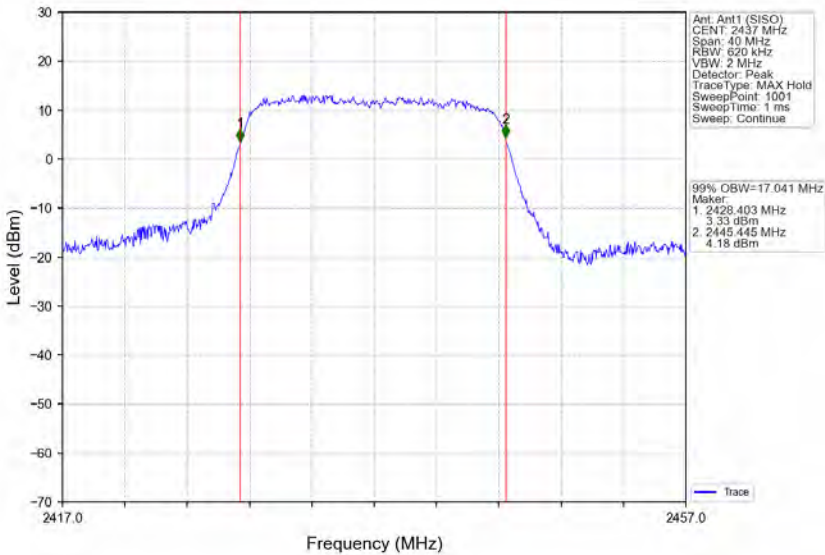
Compliance Certification Services (Kunshan) Inc.

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

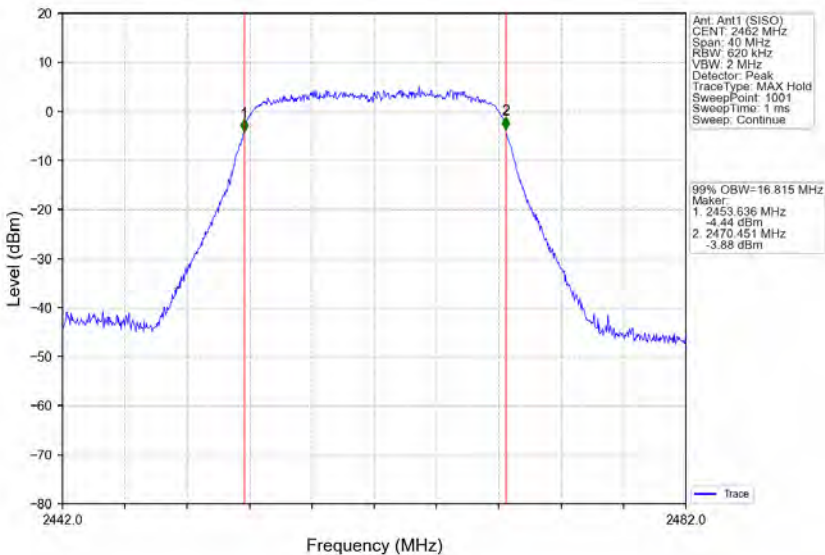
Report No.: KSCR240600099303

Page: 125 of 234

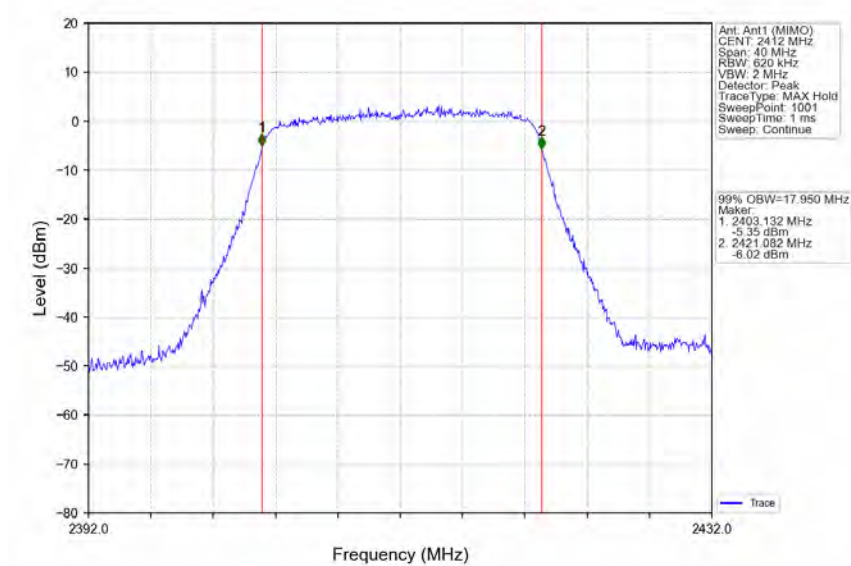
802.11g_MCH_2437MHz_Ant1 (SISO) NTN



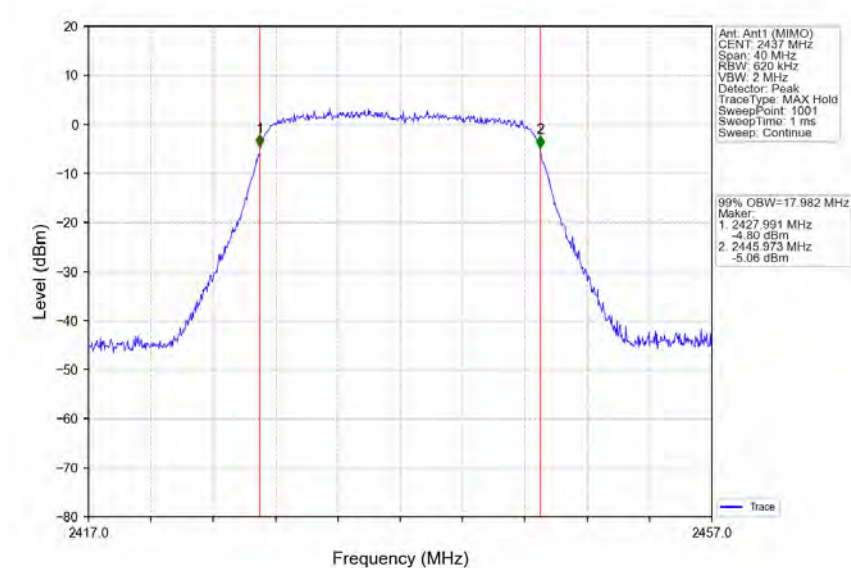
802.11g_HCH_2462MHz_Ant1 (SISO) NTN



802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTN



802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



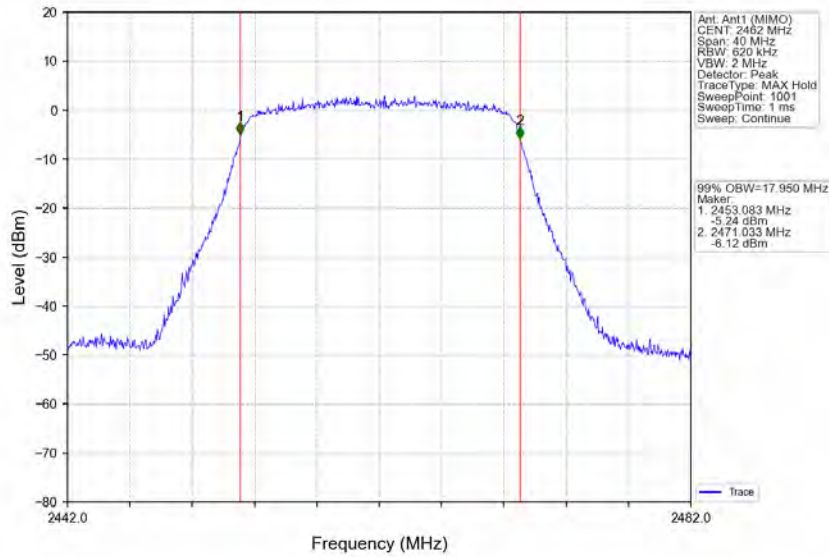
Compliance Certification Services (Kunshan) Inc.

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

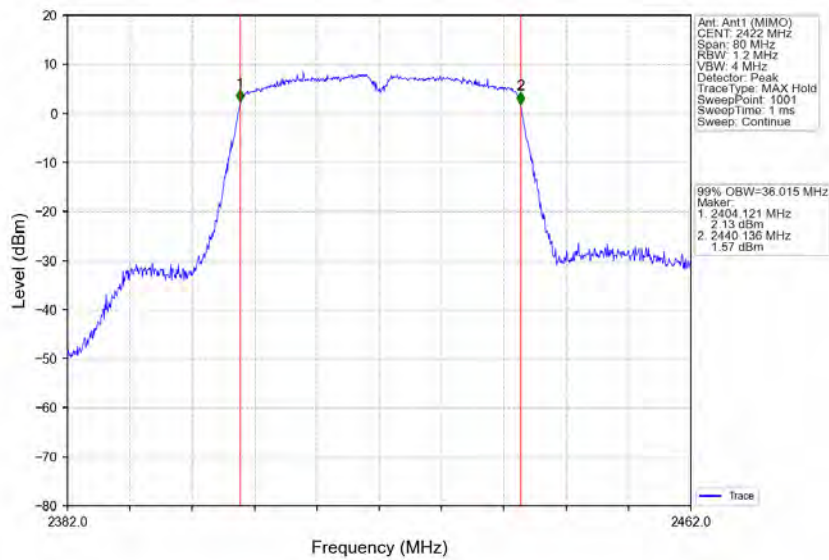
Report No.: KSCR240600099303

Page: 127 of 234

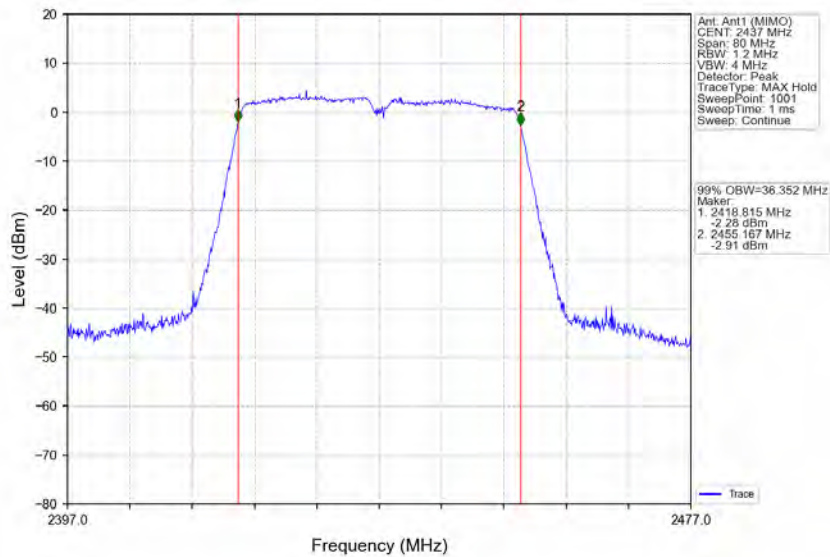
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTNV



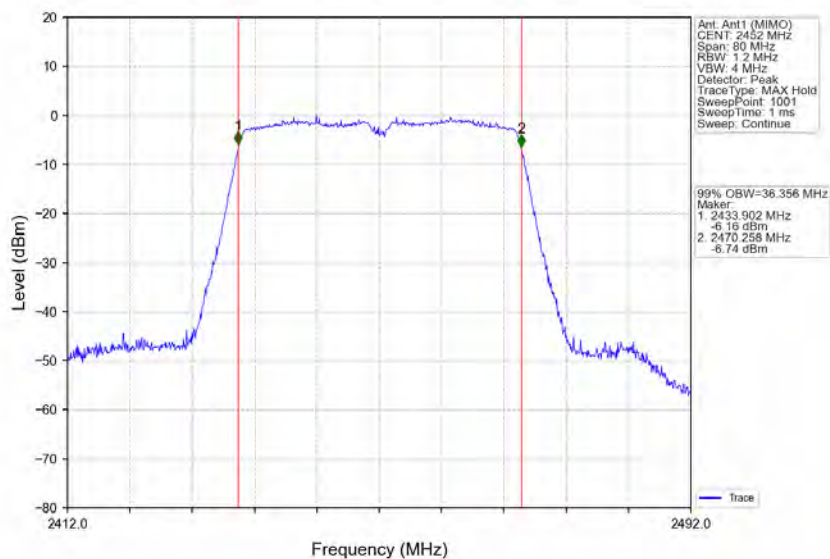
802.11n(HT40) LCH 2422MHz Ant1 (MIMO) NTNV



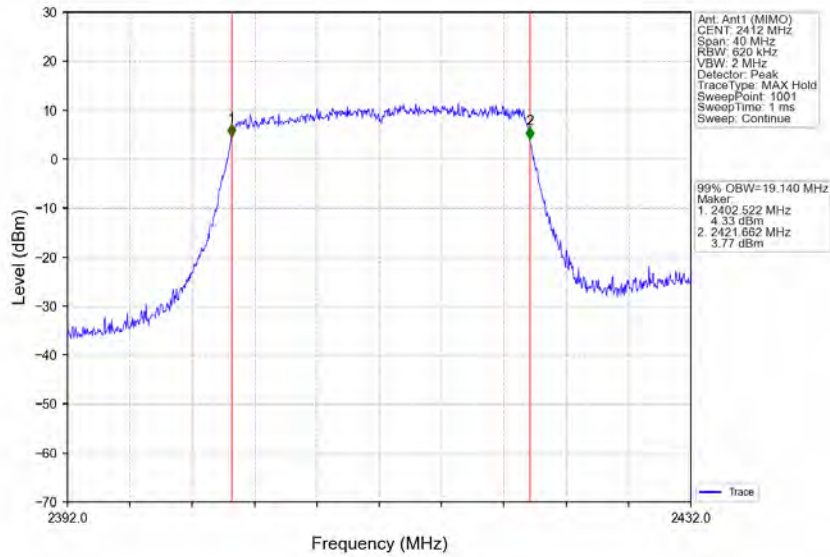
802.11n(HT40) MCH 2437MHz Ant1 (MIMO) NTNV



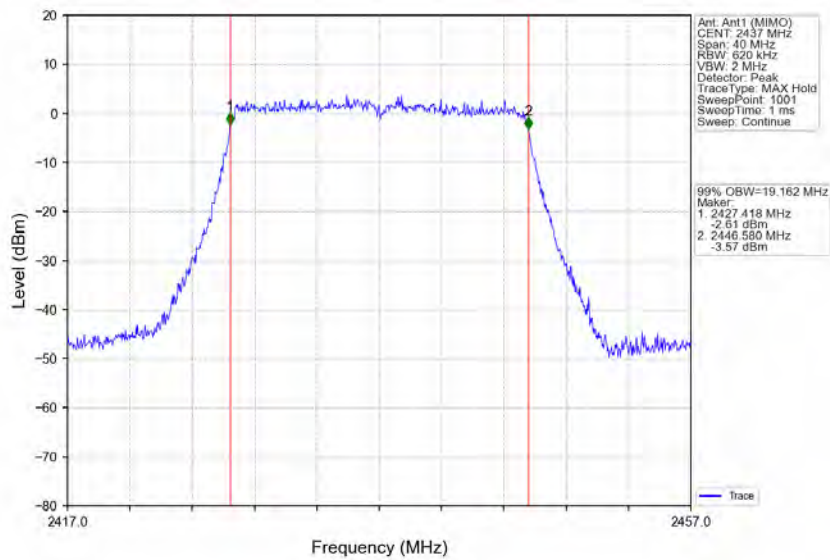
802.11n(HT40) HCH 2452MHz Ant1 (MIMO) NTNV



802.11ax(HEW20) LCH 2412MHz RU242 Left Ant1 (MIMO) NTN



802.11ax(HEW20) MCH 2437MHz RU242 Left Ant1 (MIMO) NTN



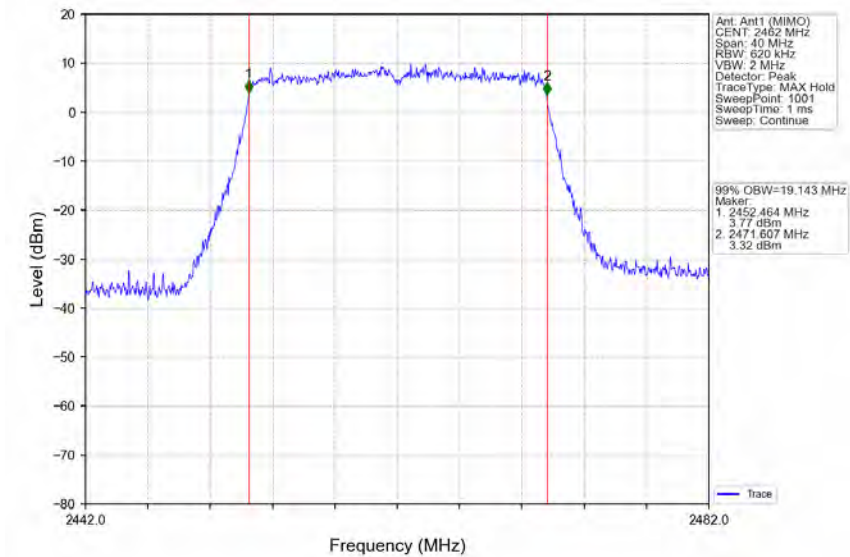
Compliance Certification Services (Kunshan) Inc.

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

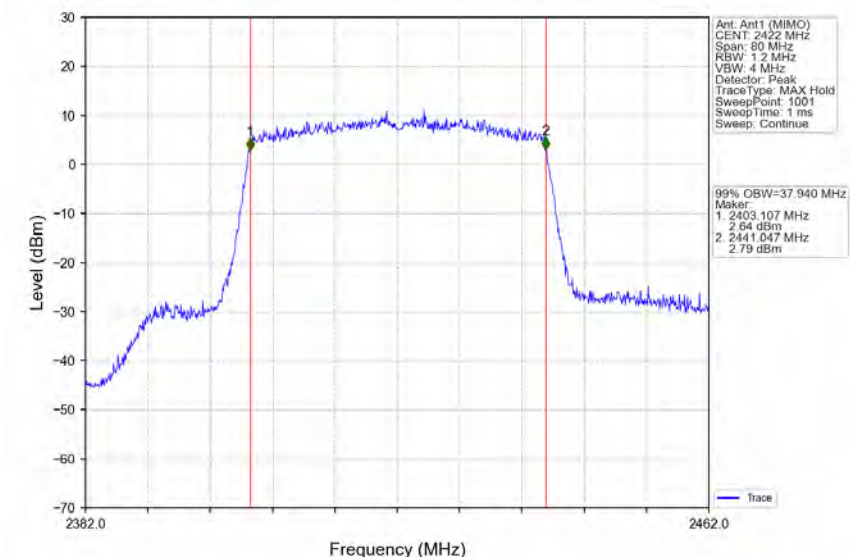
Report No.: KSCR240600099303

Page: 130 of 234

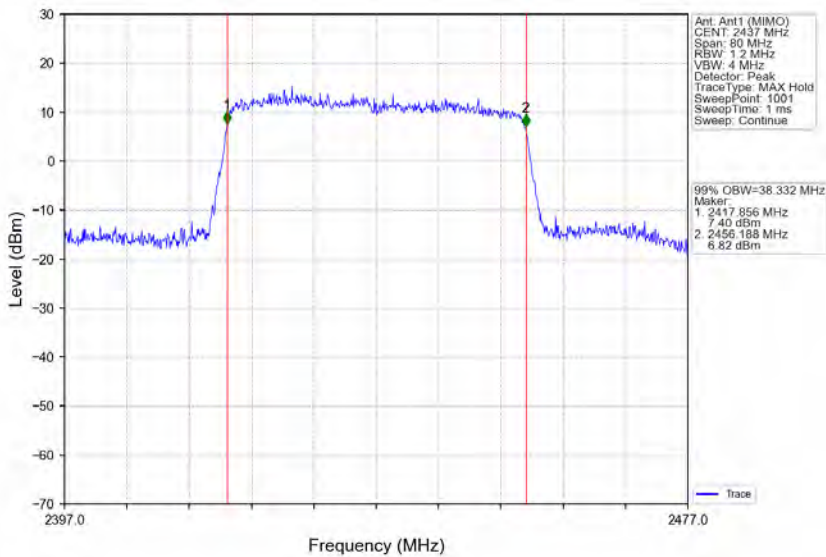
802.11ax(HEW20) HCH 2462MHz RU242 Left Ant1 (MIMO) NTN



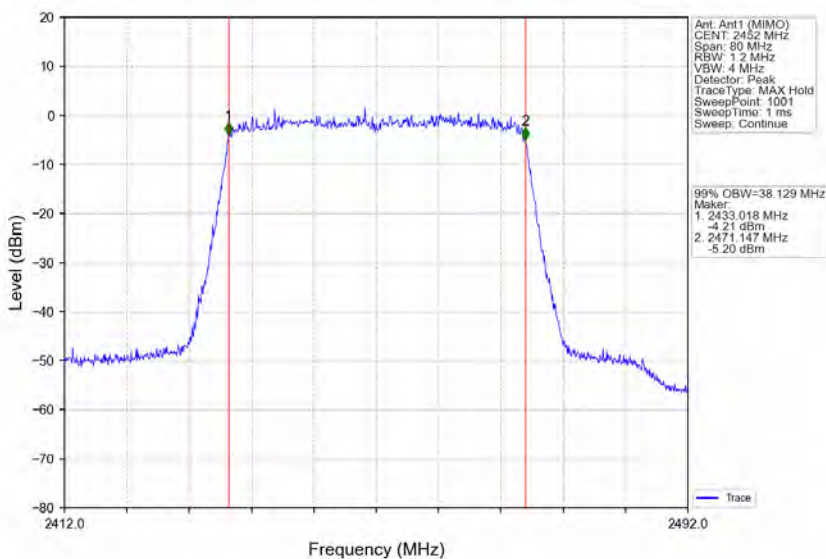
802.11ax(HEW40) LCH 2422MHz RU484 Left Ant1 (MIMO) NTN



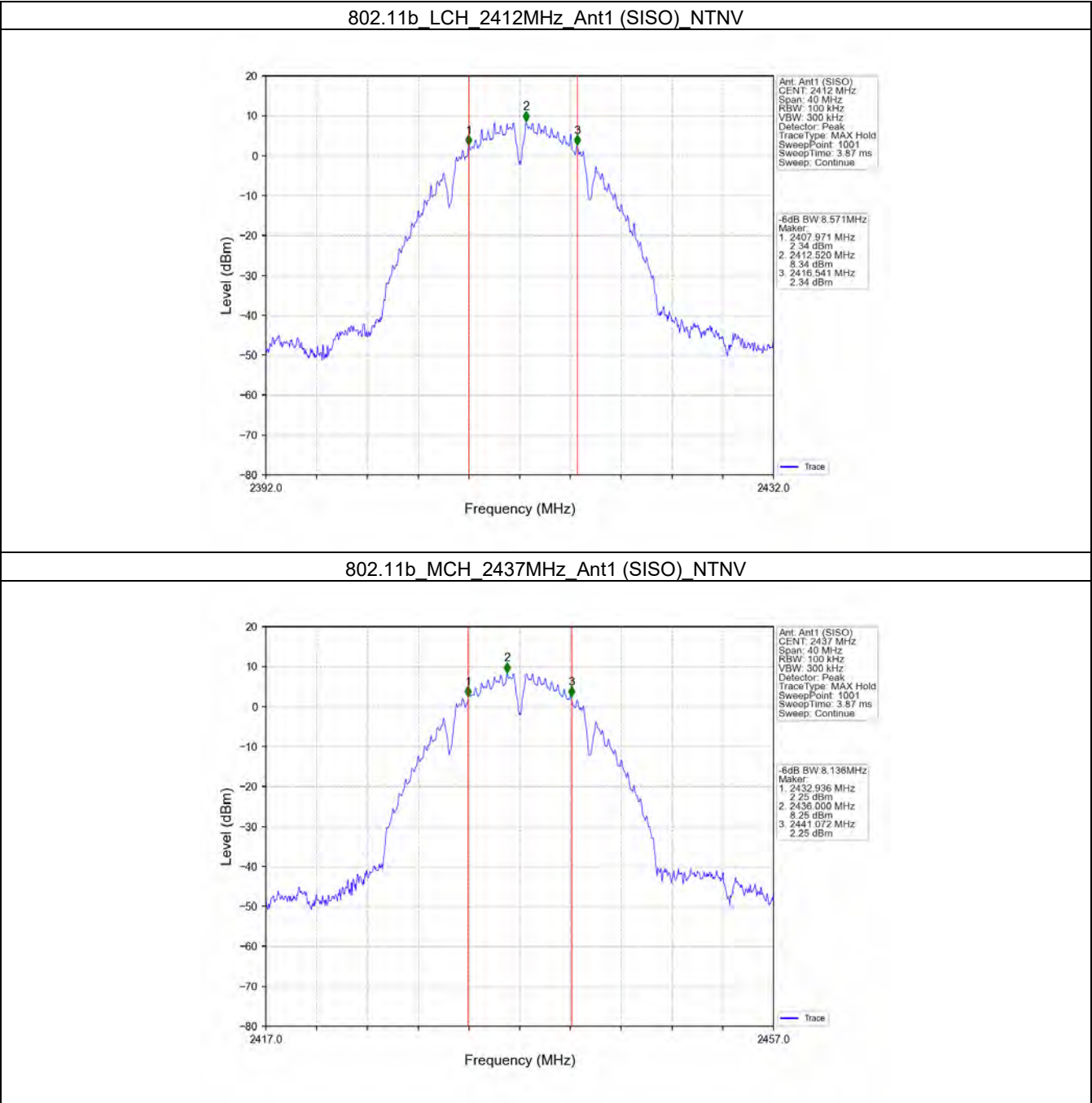
802.11ax(HEW40) MCH 2437MHz RU484 Left Ant1 (MIMO) NTN



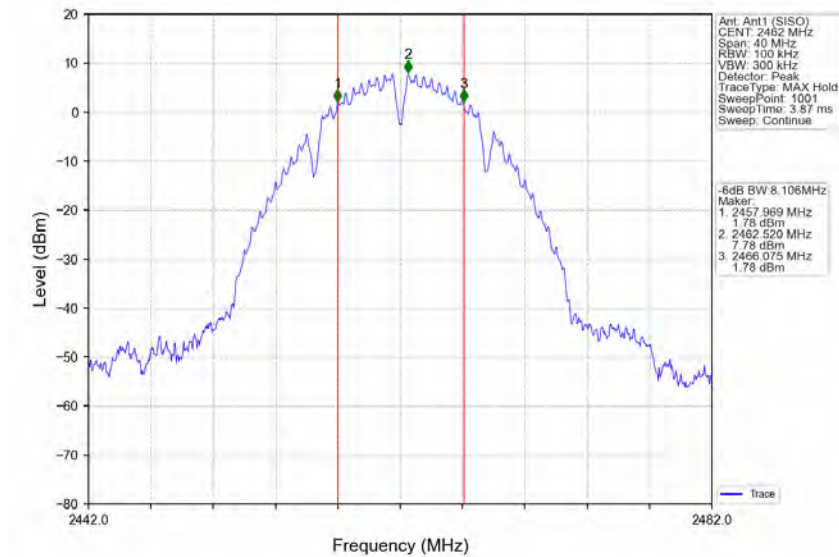
802.11ax(HEW40) HCH 2452MHz RU484 Left Ant1 (MIMO) NTN



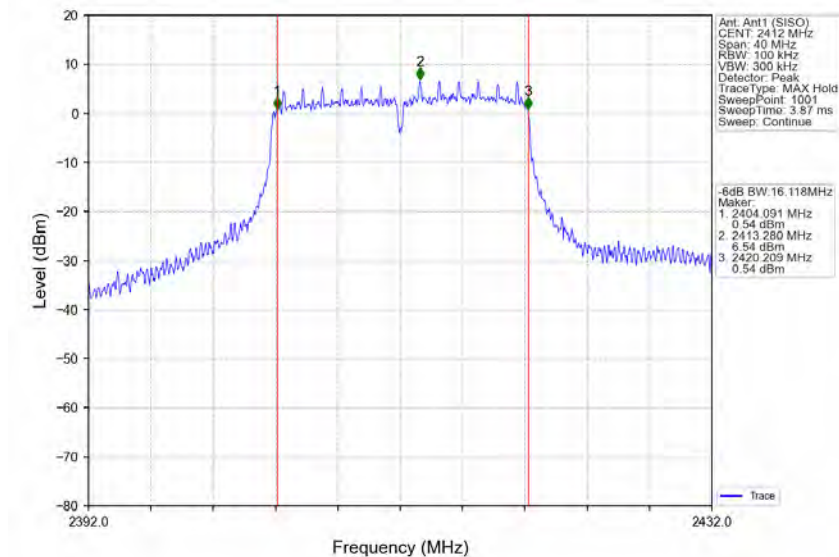
2.2.2 6dB BW



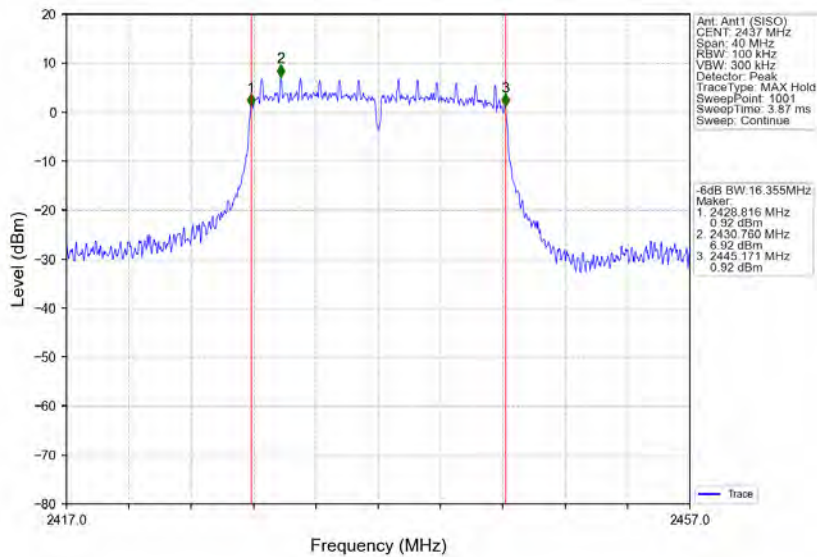
802.11b HCH 2462MHz Ant1 (SISO) NTNV



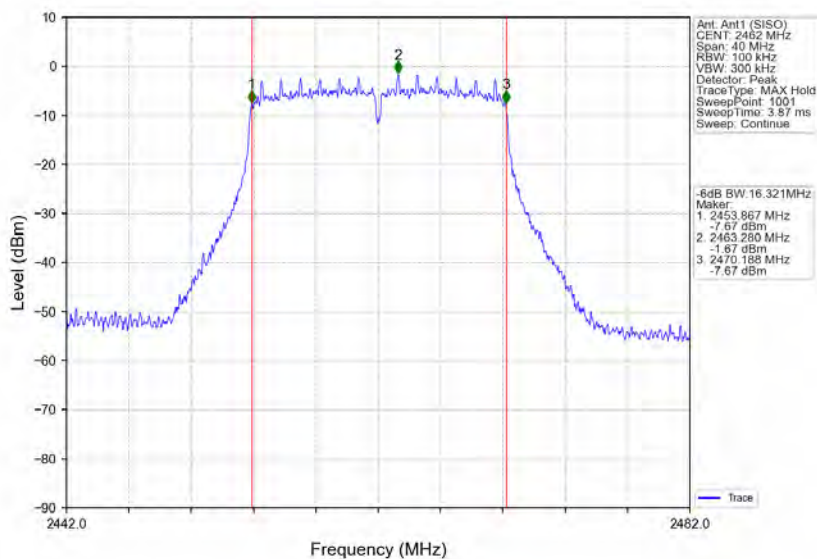
802.11g LCH 2412MHz Ant1 (SISO) NTNV



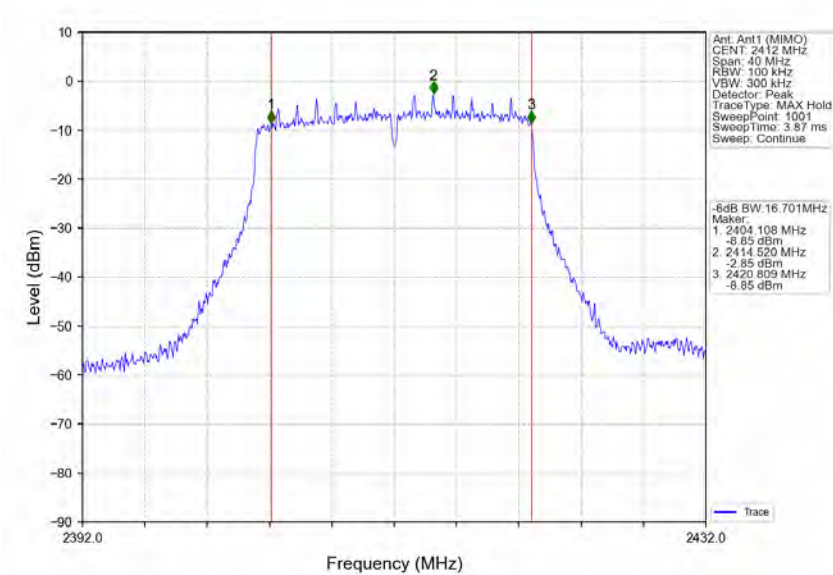
802.11g_MCH_2437MHz_Ant1 (SISO) NTN



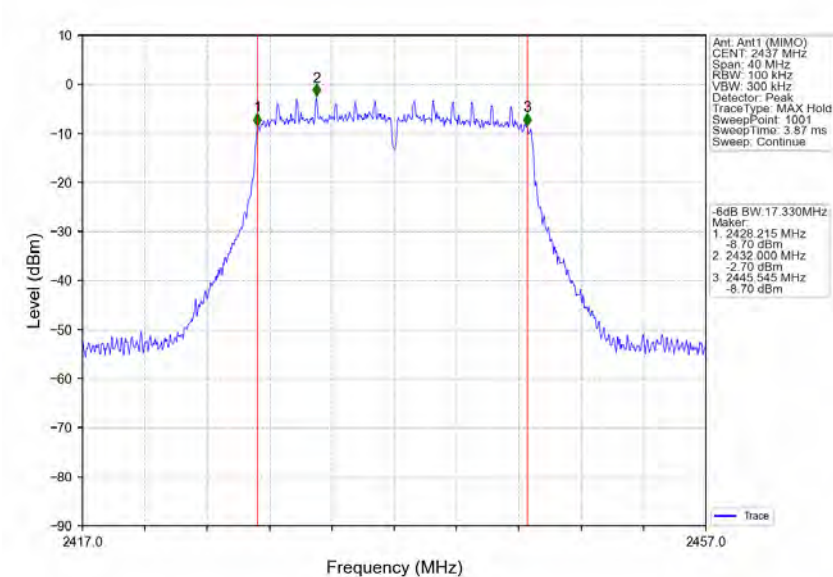
802.11g_HCH_2462MHz_Ant1 (SISO) NTN



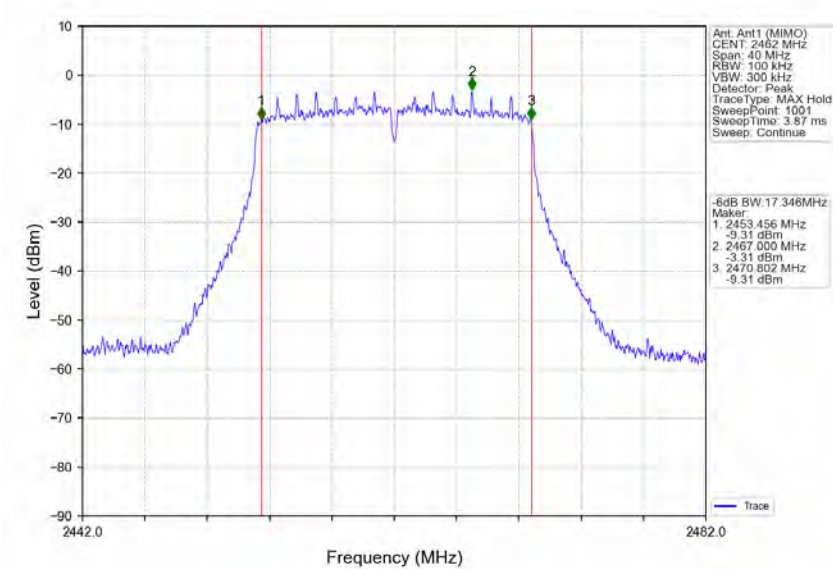
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTN



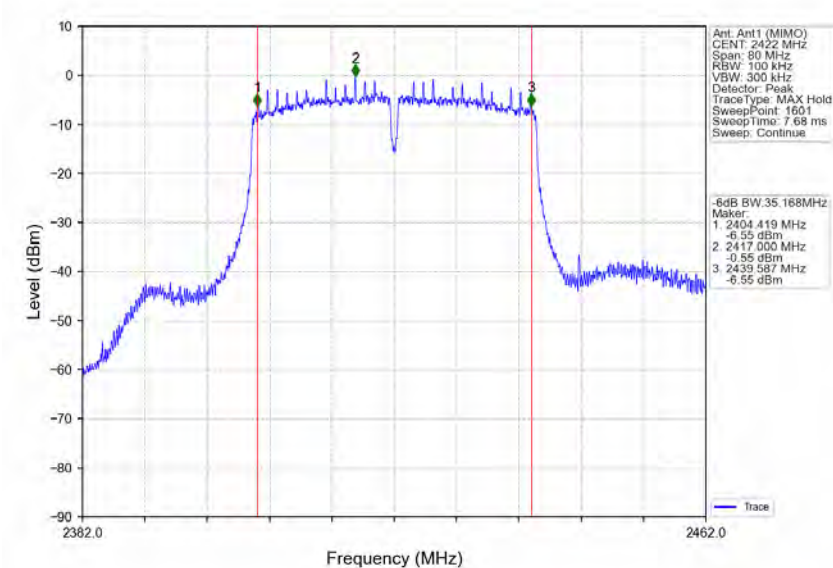
802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



802.11n(HT40) LCH 2422MHz Ant1 (MIMO) NTN



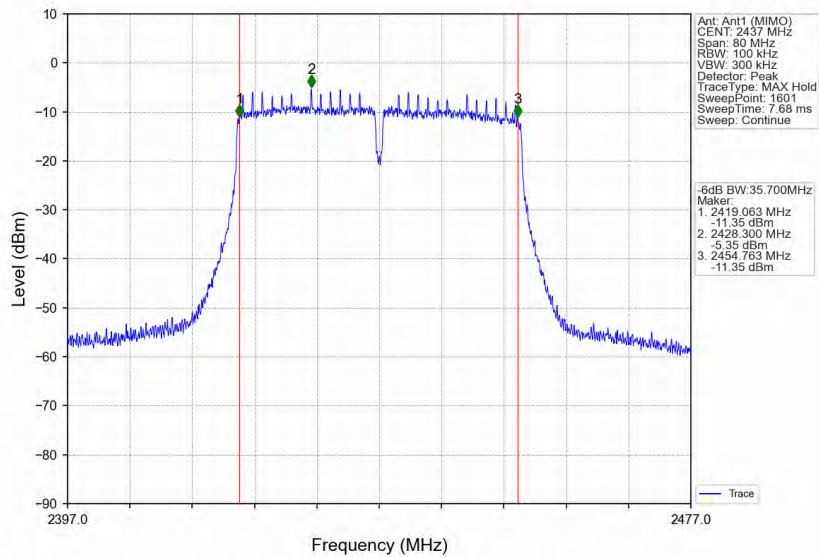
Compliance Certification Services (Kunshan) Inc.

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

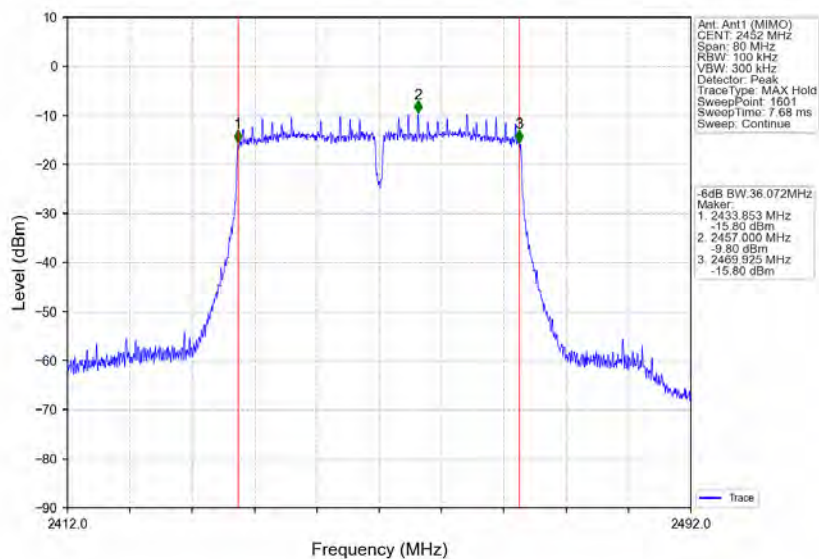
Report No.: KSCR240600099303

Page: 137 of 234

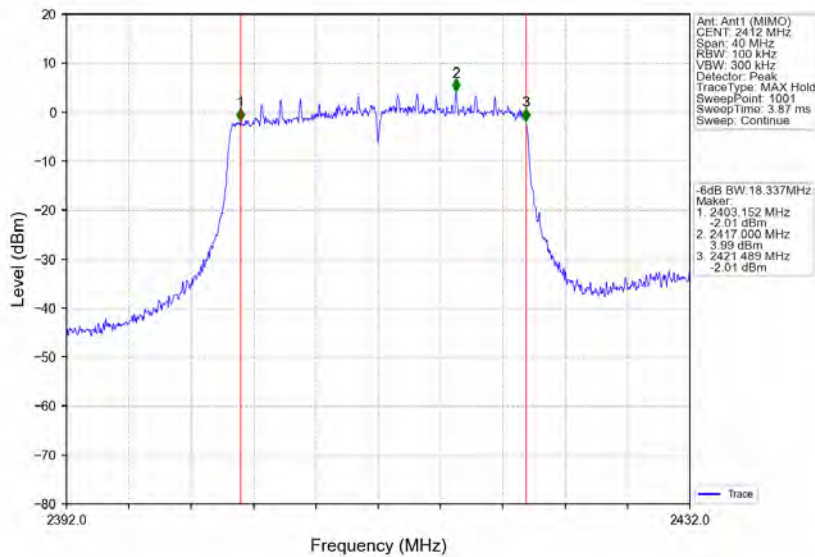
802.11n(HT40) MCH 2437MHz Ant1 (MIMO) NTNV



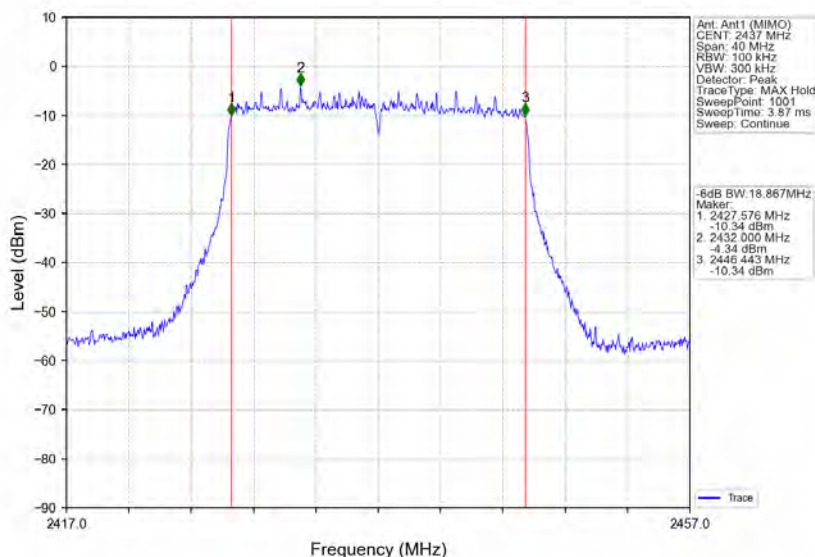
802.11n(HT40) HCH 2452MHz Ant1 (MIMO) NTNV



802.11ax(HEW20) LCH 2412MHz RU242 Left Ant1 (MIMO) NTVN



802.11ax(HEW20) MCH 2437MHz RU242 Left Ant1 (MIMO) NTVN



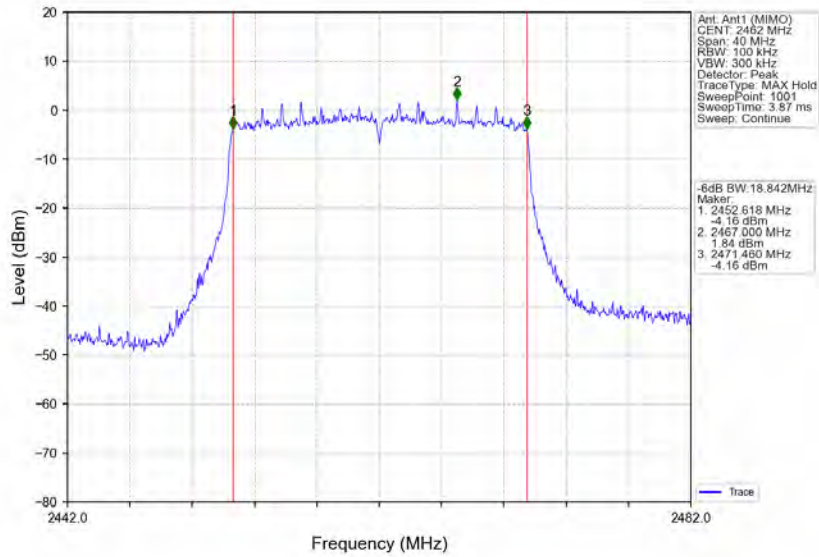
Compliance Certification Services (Kunshan) Inc.

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

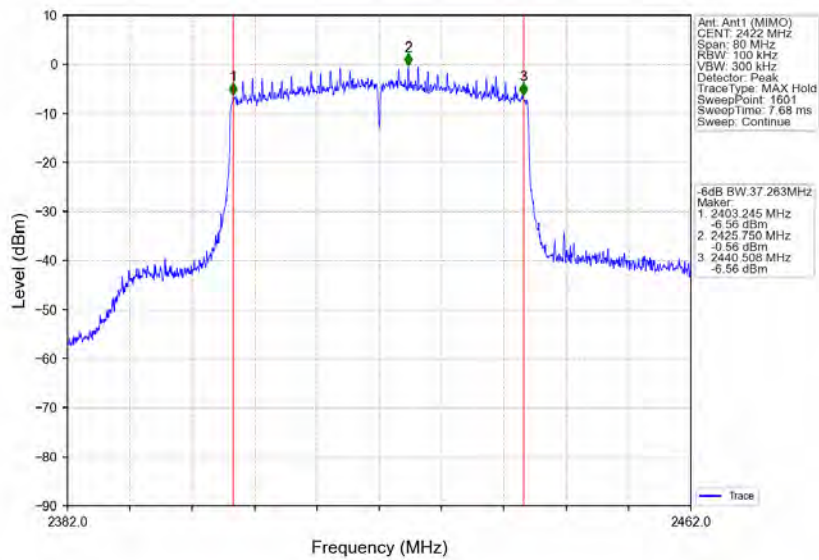
Report No.: KSCR240600099303

Page: 139 of 234

802.11ax(HEW20) HCH 2462MHz RU242 Left Ant1 (MIMO) NTNv



802.11ax(HEW40) LCH 2422MHz RU484 Left Ant1 (MIMO) NTNv



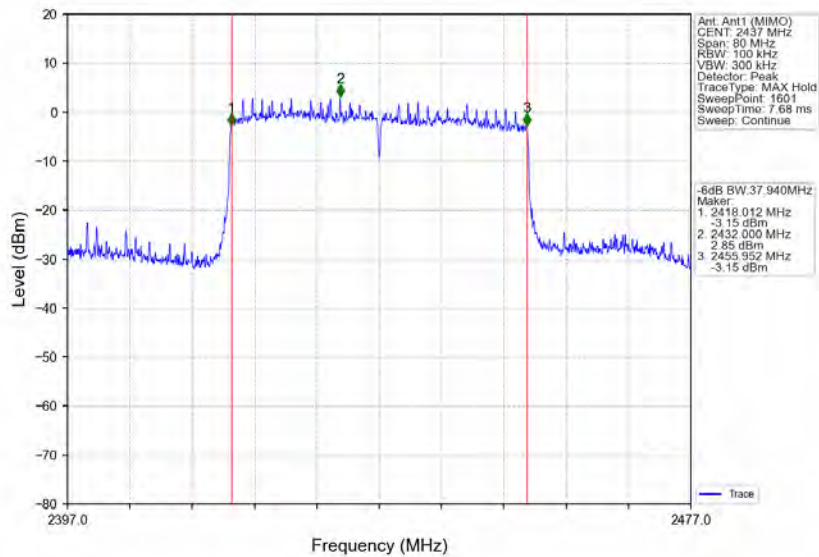
Compliance Certification Services (Kunshan) Inc.

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

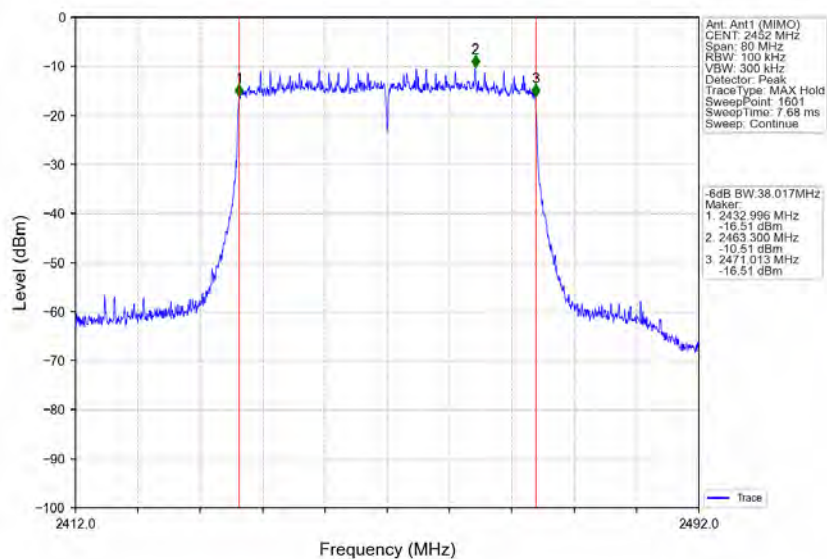
Report No.: KSCR240600099303

Page: 140 of 234

802.11ax(HEW40) MCH 2437MHz RU484 Left Ant1 (MIMO) NTNv



802.11ax(HEW40) HCH 2452MHz RU484 Left Ant1 (MIMO) NTNv



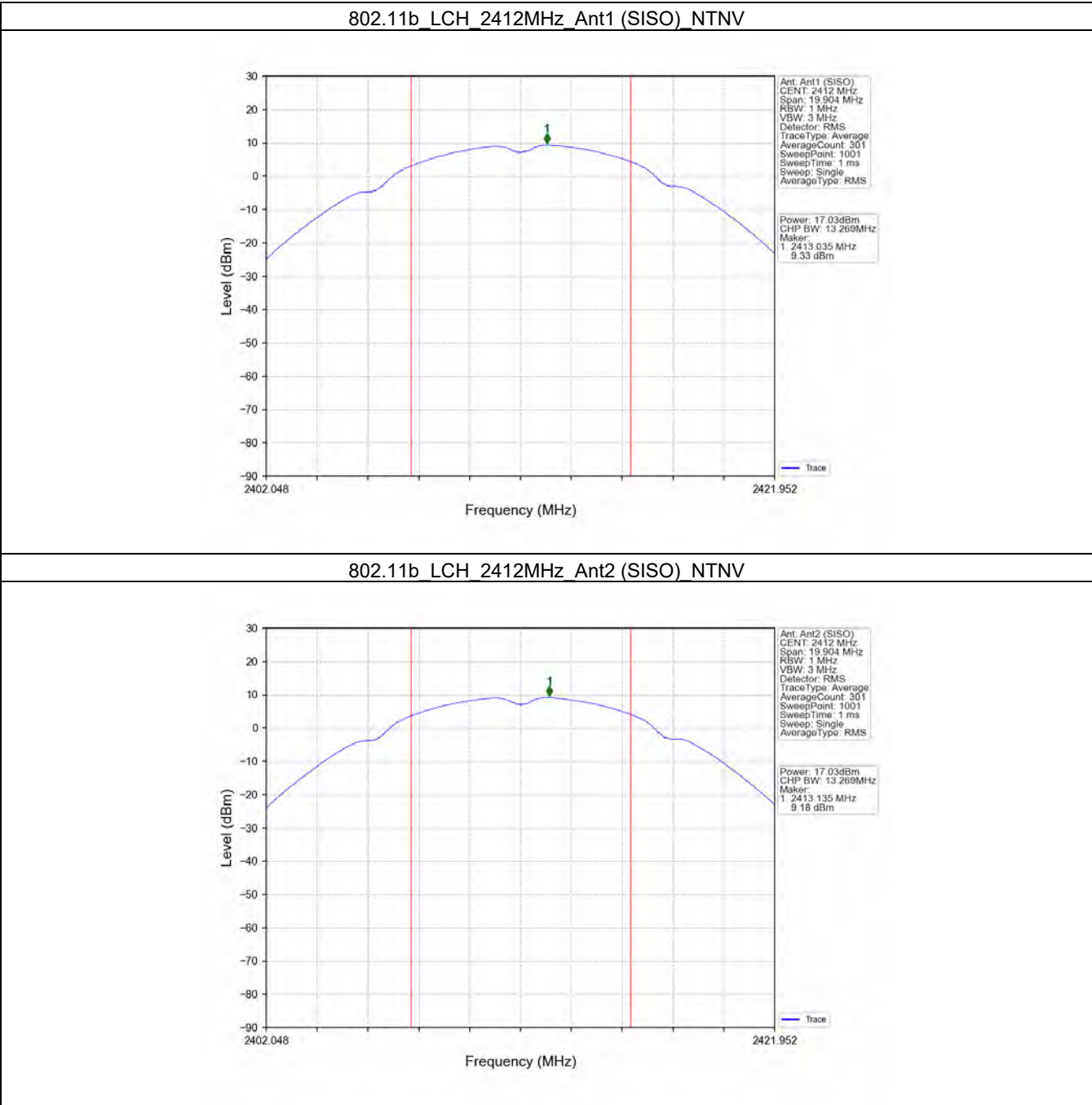
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Average Conducted Output Power (dBm)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	SISO	2412	/	/	17.03	17.03	/	<=30	Pass
		2437	/	/	17.51	17.55	/	<=30	Pass
		2462	/	/	16.89	17.08	/	<=30	Pass
802.11g	SISO	2412	/	/	17.06	17.12	/	<=30	Pass
		2437	/	/	17.63	17.62	/	<=30	Pass
		2462	/	/	14.57	14.54	/	<=30	Pass
802.11n (HT20)	MIMO	2412	/	/	15.65	16.06	18.87	<=30	Pass
		2437	/	/	16.04	16.10	19.08	<=30	Pass
		2462	/	/	13.18	13.77	16.50	<=30	Pass
802.11n (HT40)	MIMO	2422	/	/	12.20	12.36	15.29	<=30	Pass
		2437	/	/	15.90	16.06	18.99	<=30	Pass
		2452	/	/	11.44	12.24	14.87	<=30	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	13.89	14.27	17.09	<=30	Pass
		2437	RU242	Left	16.83	16.94	19.90	<=30	Pass
		2462	RU242	Left	12.20	12.74	15.49	<=30	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	12.16	12.25	15.22	<=30	Pass
		2437	RU484	Left	15.82	15.87	18.86	<=30	Pass
		2452	RU484	Left	11.41	12.22	14.84	<=30	Pass

Note1: Antenna Gain: Ant1: 3.10dBi; Ant2: 3dBi;

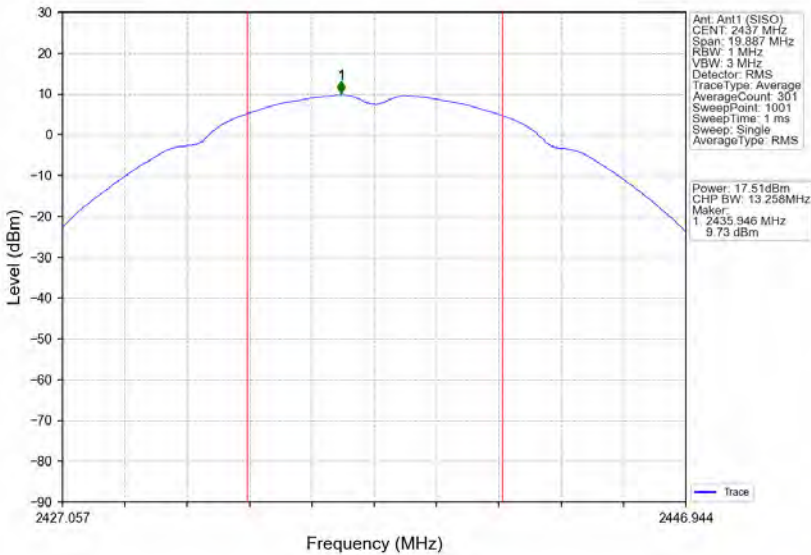
Note2: Directional Gain: Uncorrelated/Directional Gain = 3dBi

3.2 Test Graph

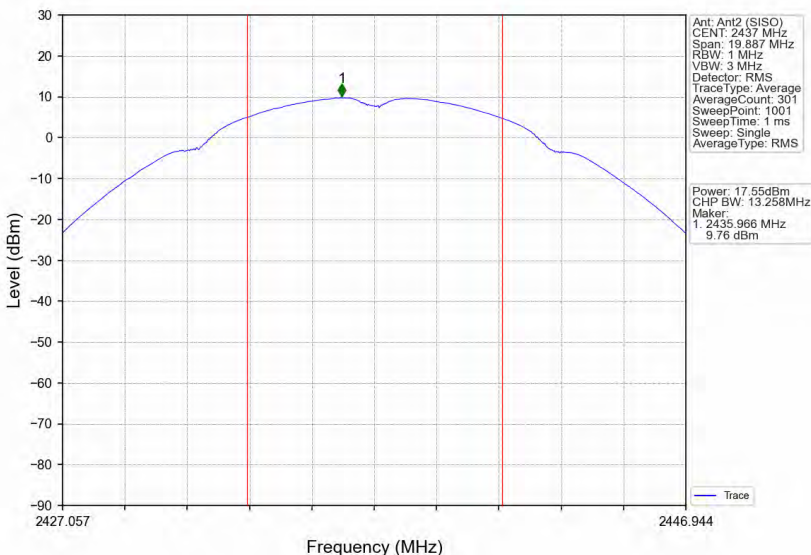
3.2.1 Power



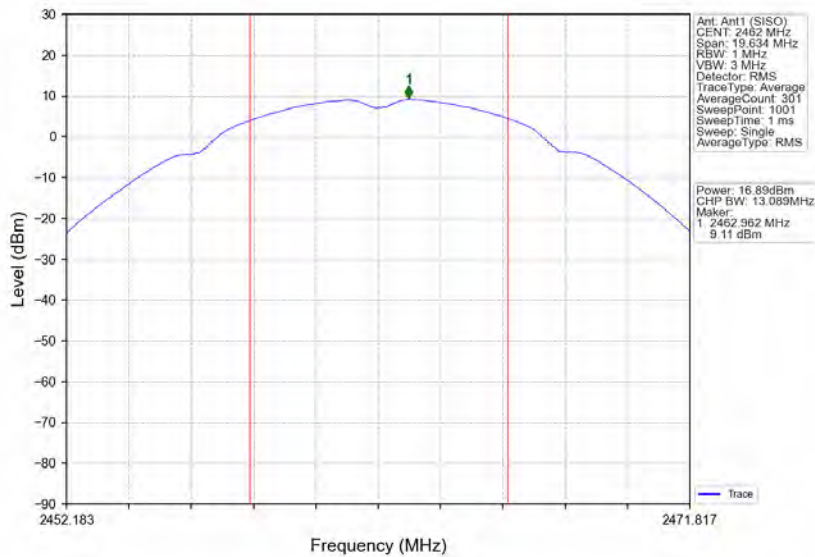
802.11b MCH 2437MHz Ant1 (SISO) NTN



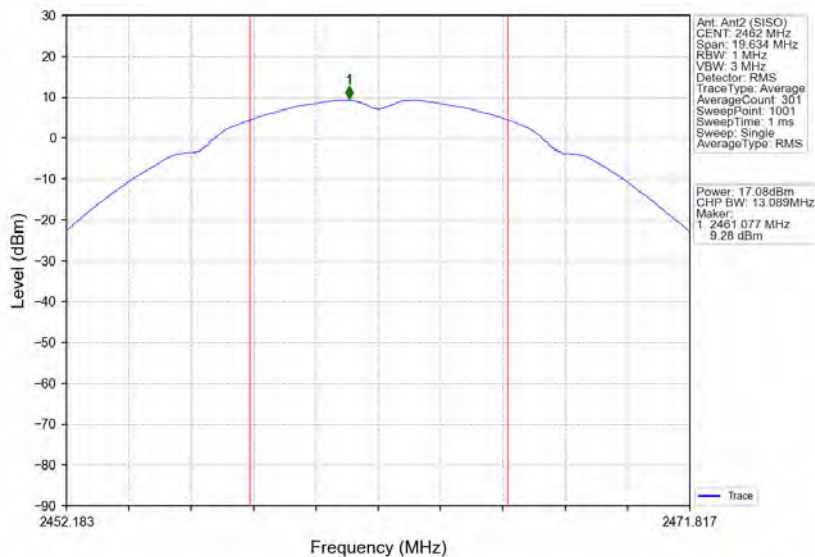
802.11b MCH 2437MHz Ant2 (SISO) NTN



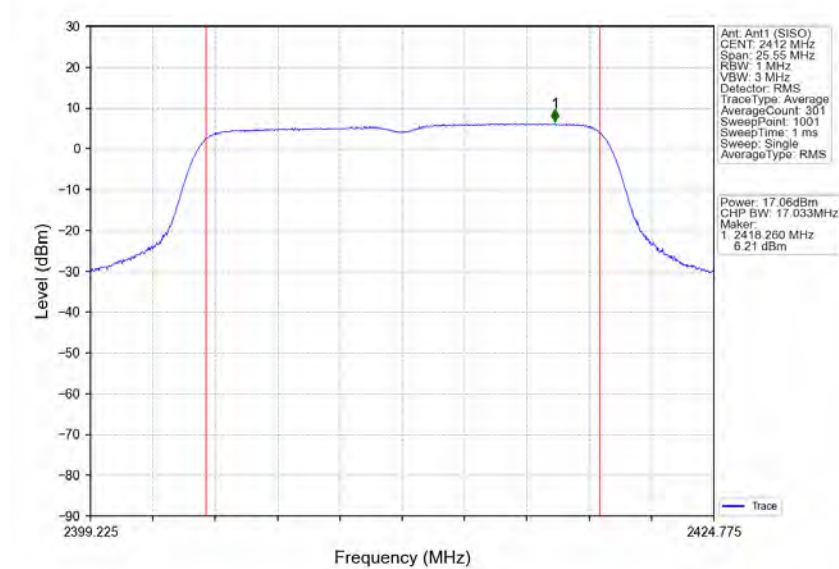
802.11b HCH 2462MHz Ant1 (SISO) NTN



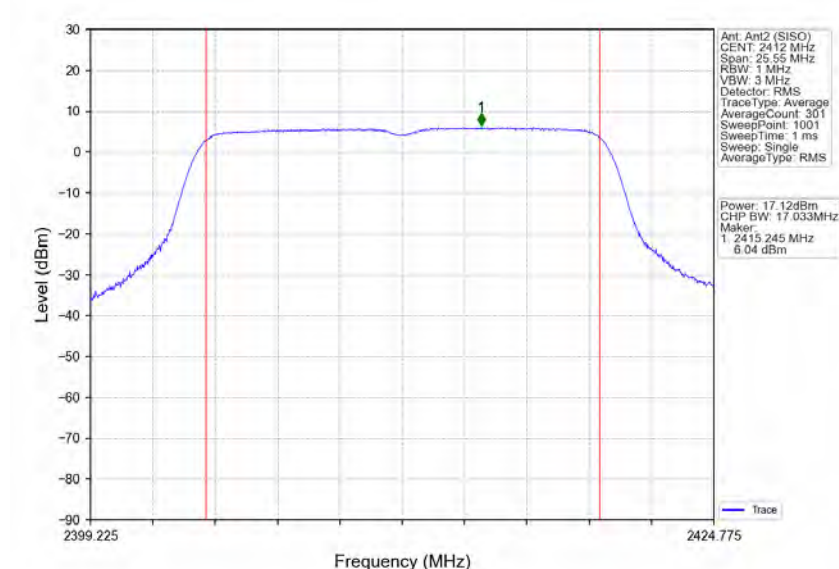
802.11b HCH 2462MHz Ant2 (SISO) NTN



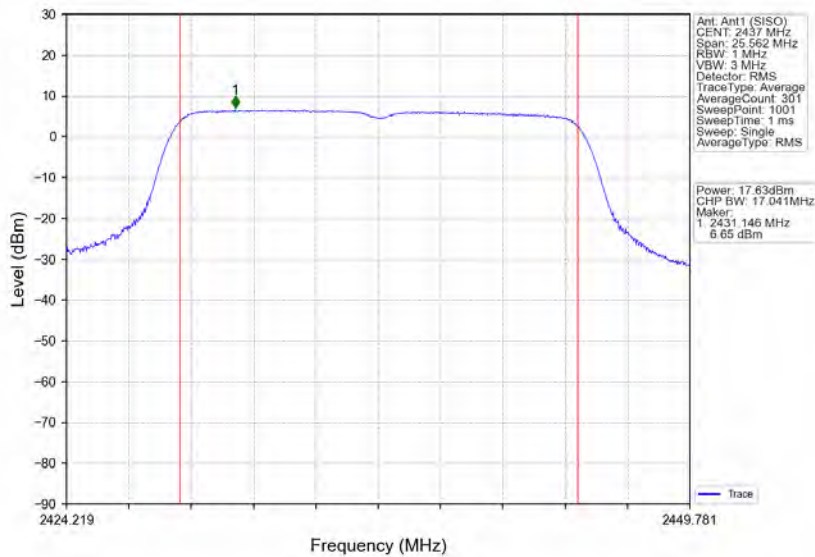
802.11g_LCH_2412MHz_Ant1 (SISO) NTN



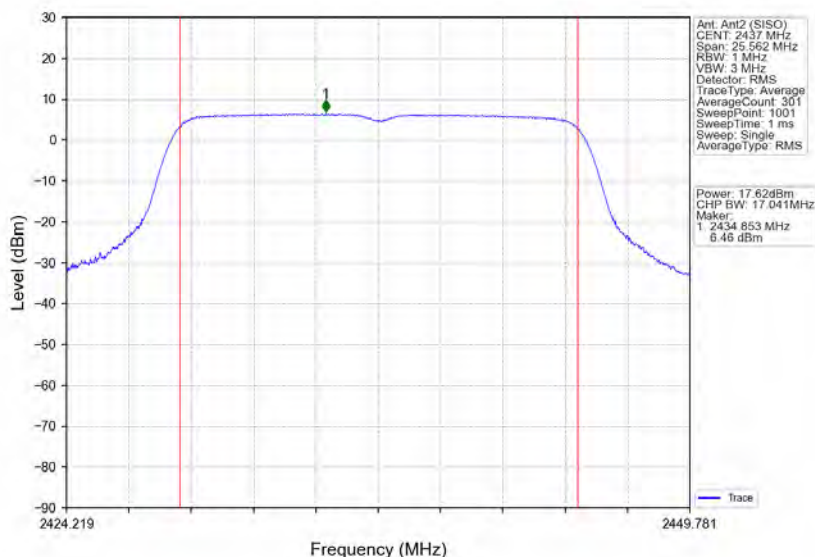
802.11g_LCH_2412MHz_Ant2 (SISO) NTN



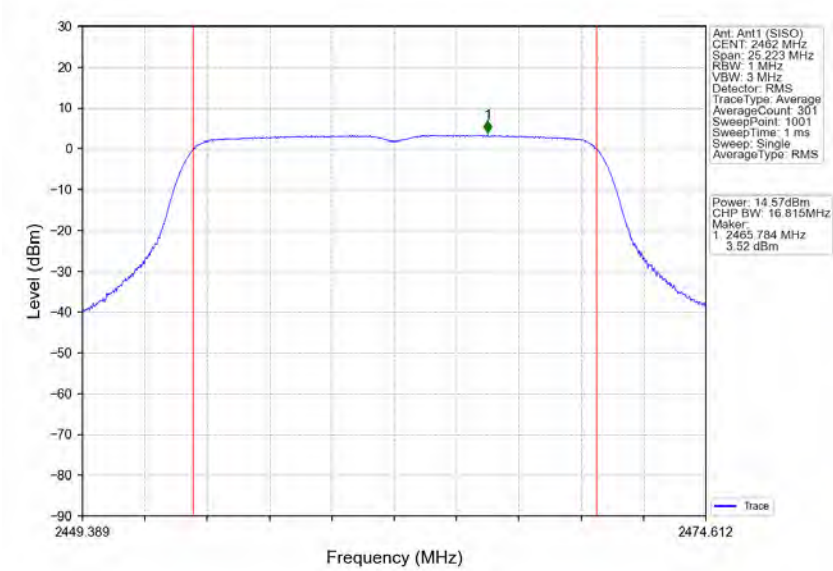
802.11g_MCH_2437MHz_Ant1 (SISO) NTN



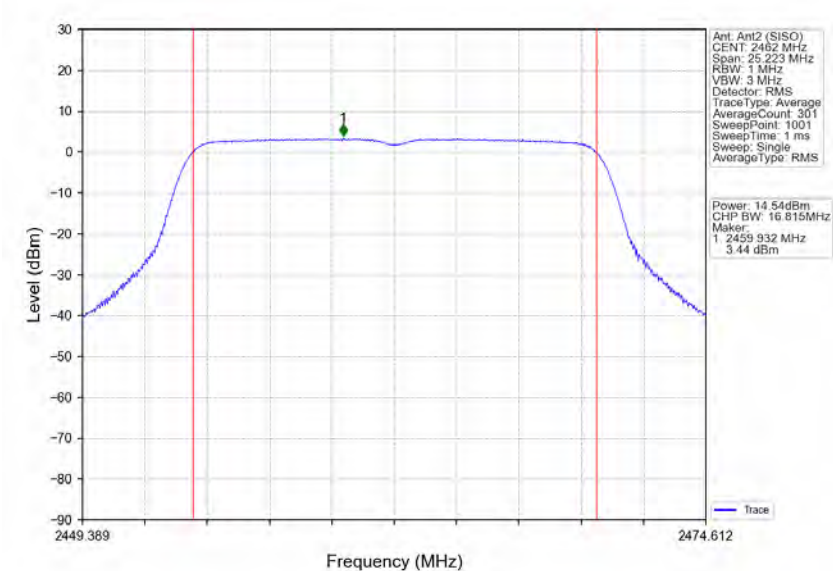
802.11g_MCH_2437MHz_Ant2 (SISO) NTN



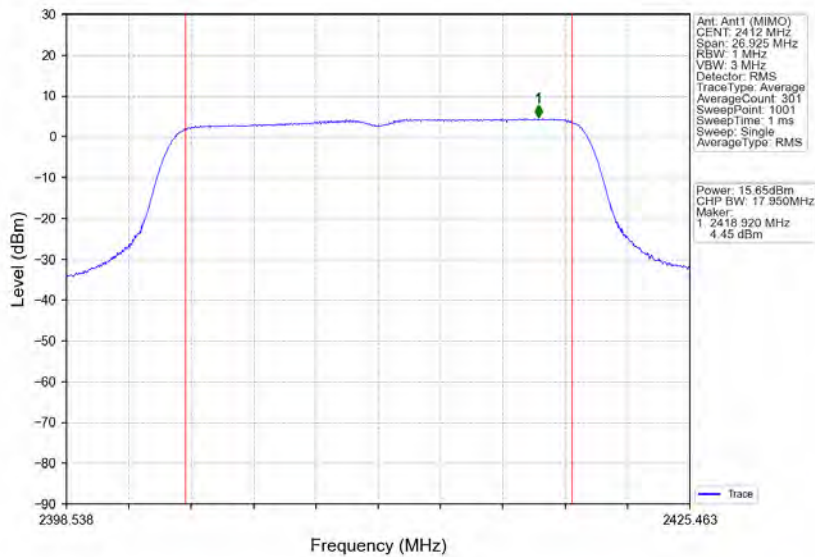
802.11g_HCH_2462MHz_Ant1 (SISO) NTN



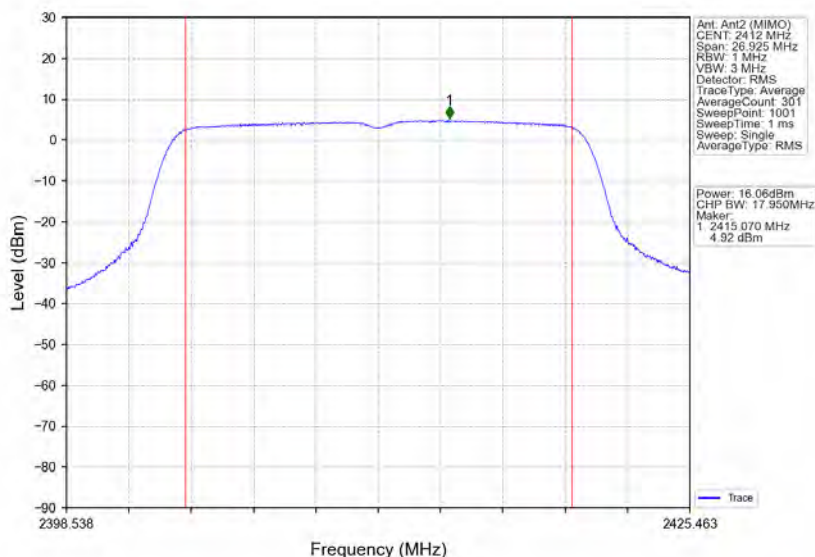
802.11g_HCH_2462MHz_Ant2 (SISO) NTN



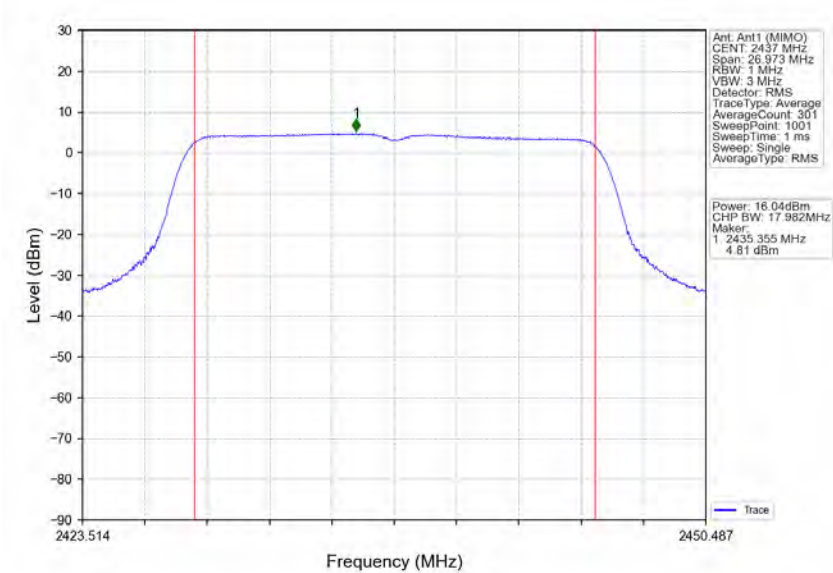
802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTVN



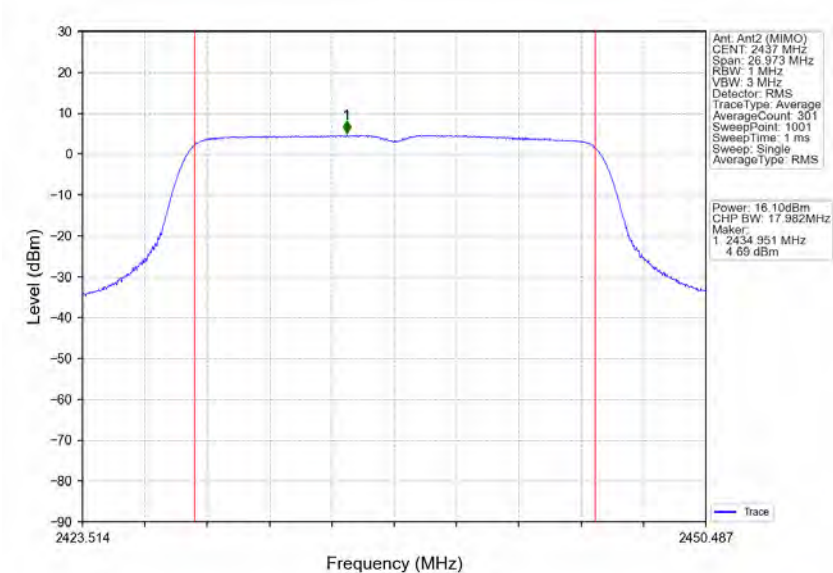
802.11n(HT20) LCH 2412MHz Ant2 (MIMO) NTVN



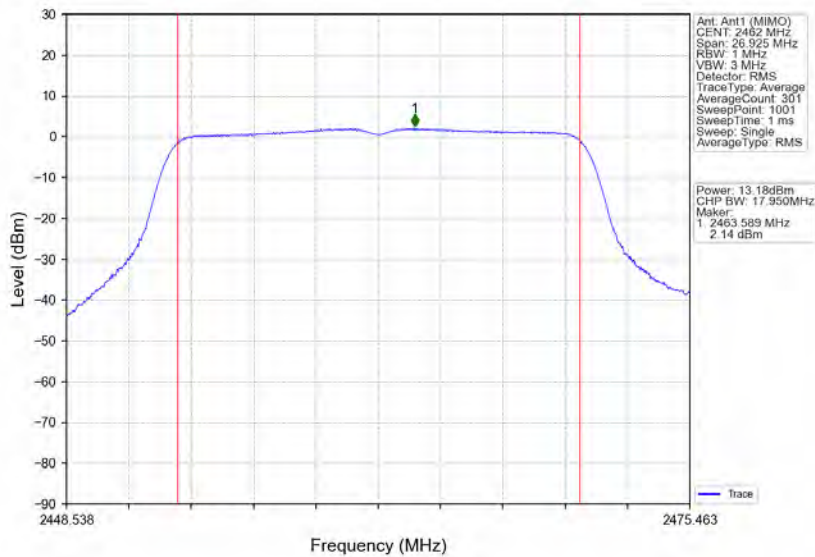
802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



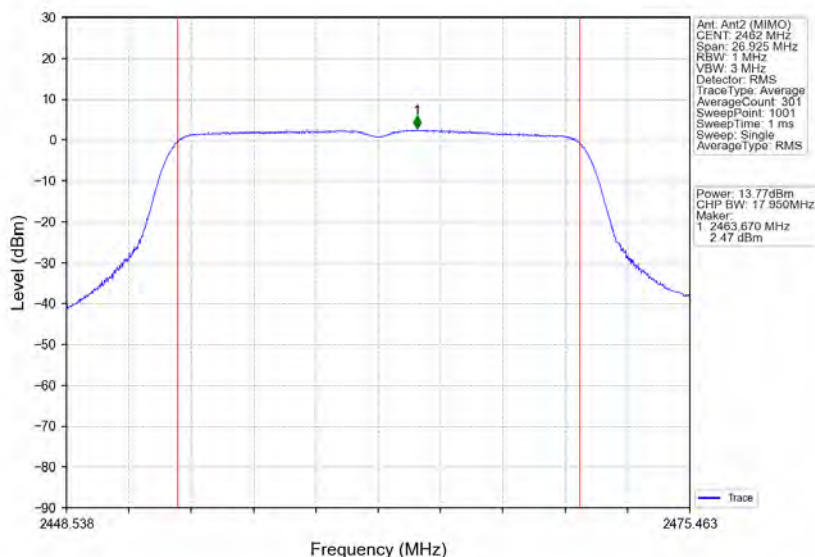
802.11n(HT20) MCH 2437MHz Ant2 (MIMO) NTN



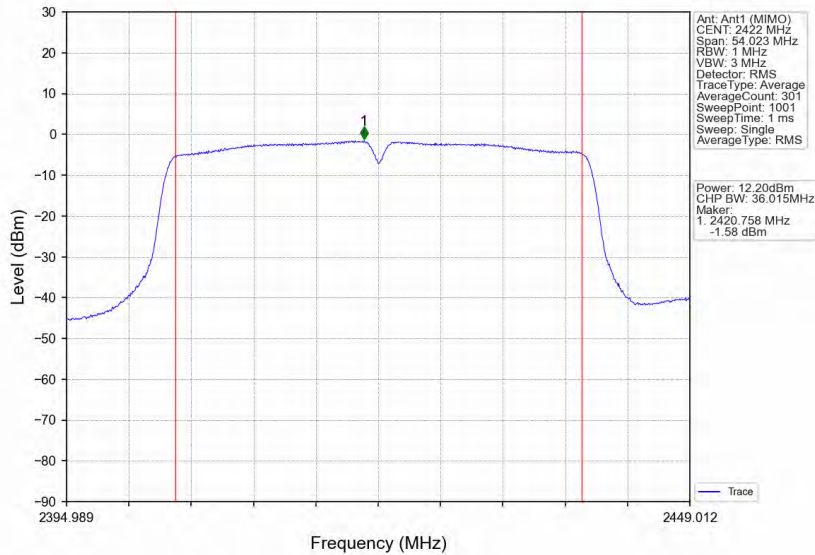
802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



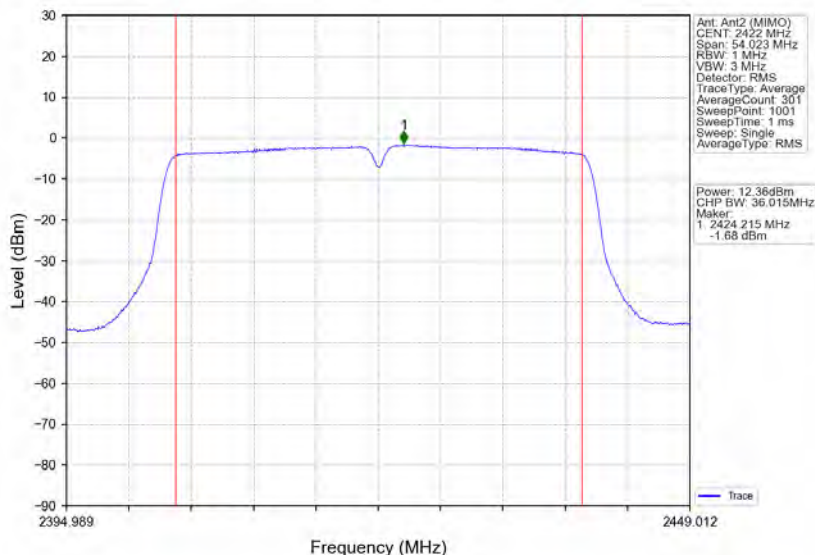
802.11n(HT20) HCH 2462MHz Ant2 (MIMO) NTN



802.11n(HT40) LCH 2422MHz Ant1 (MIMO) NTVN



802.11n(HT40) LCH 2422MHz Ant2 (MIMO) NTVN



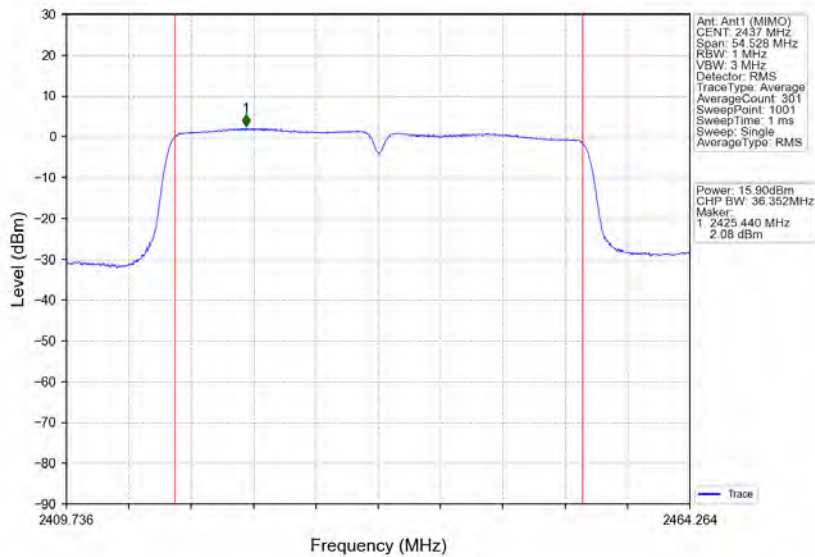
Compliance Certification Services (Kunshan) Inc.

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

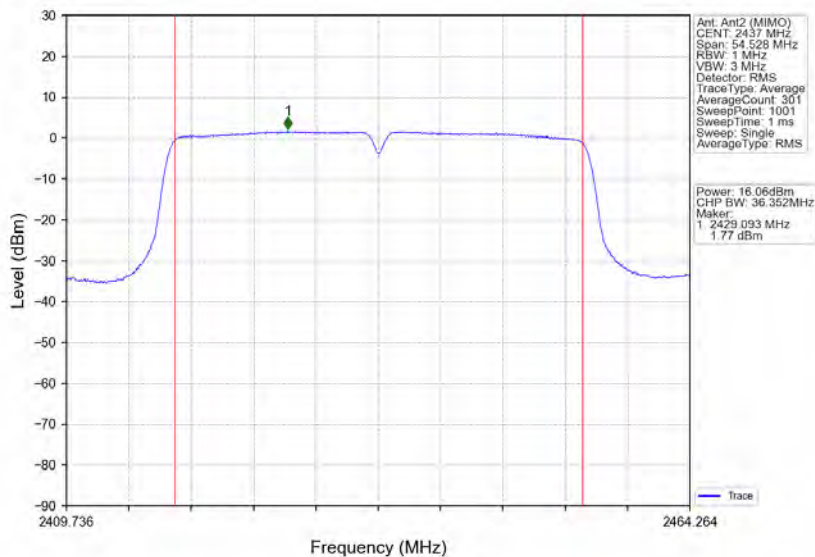
Report No.: KSCR240600099303

Page: 152 of 234

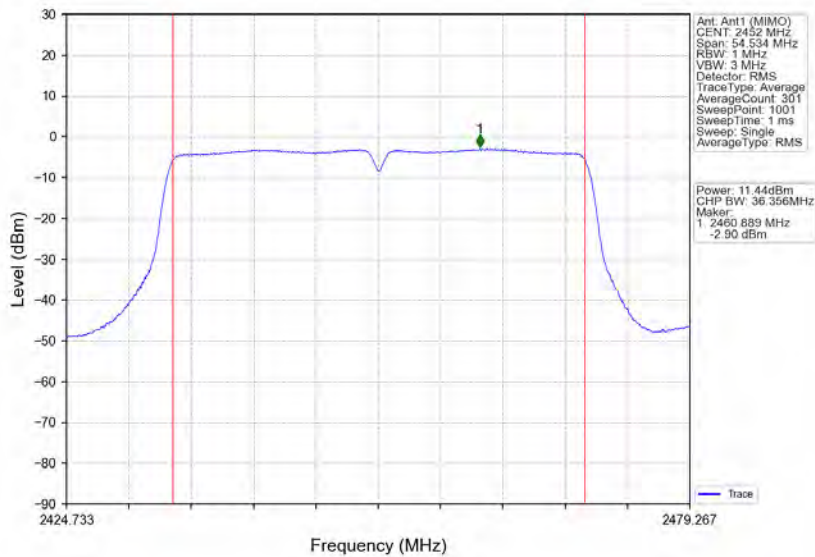
802.11n(HT40) MCH 2437MHz Ant1 (MIMO) NTNV



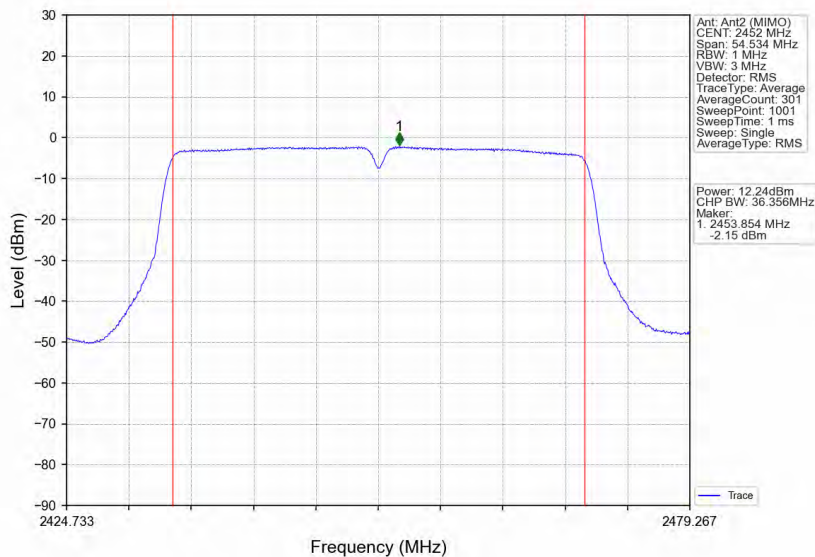
802.11n(HT40) MCH 2437MHz Ant2 (MIMO) NTNV



802.11n(HT40) HCH 2452MHz Ant1 (MIMO) NTNV



802.11n(HT40) HCH 2452MHz Ant2 (MIMO) NTNV



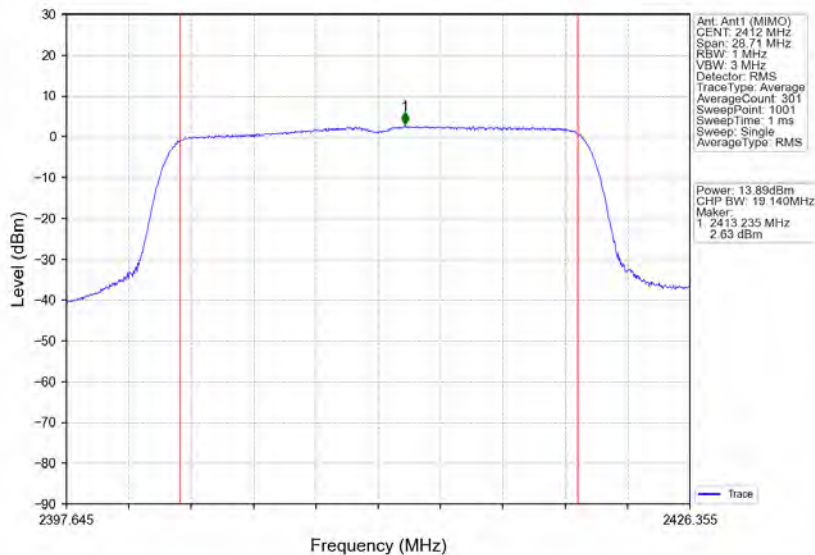
Compliance Certification Services (Kunshan) Inc.

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

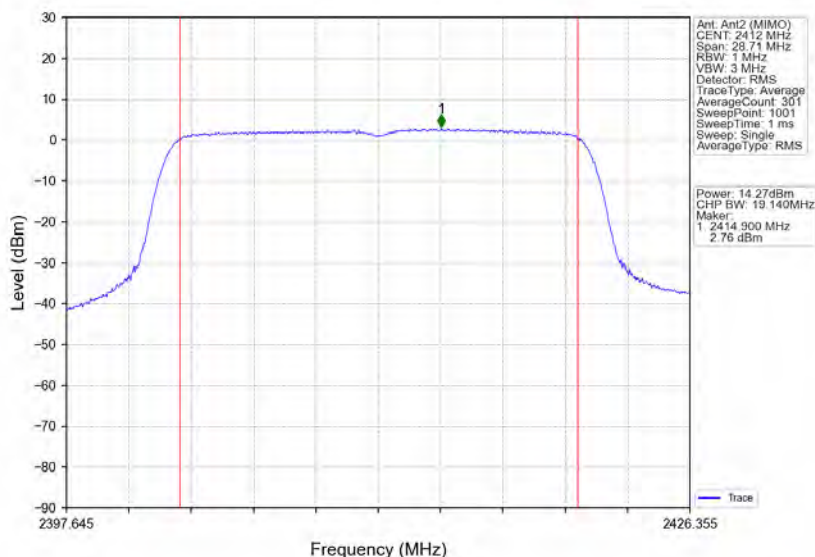
Report No.: KSCR240600099303

Page: 154 of 234

802.11ax(HEW20) LCH 2412MHz RU242 Left Ant1 (MIMO) NTNv



802.11ax(HEW20) LCH 2412MHz RU242 Left Ant2 (MIMO) NTNv



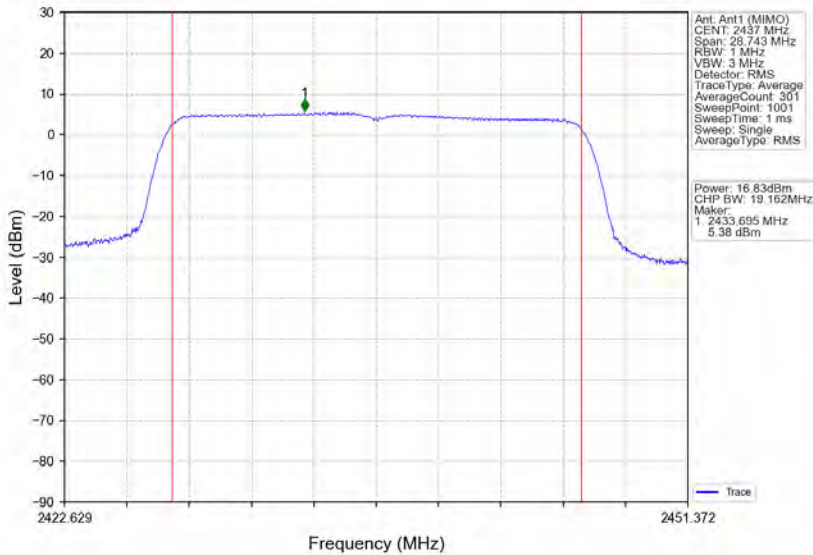
Compliance Certification Services (Kunshan) Inc.

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

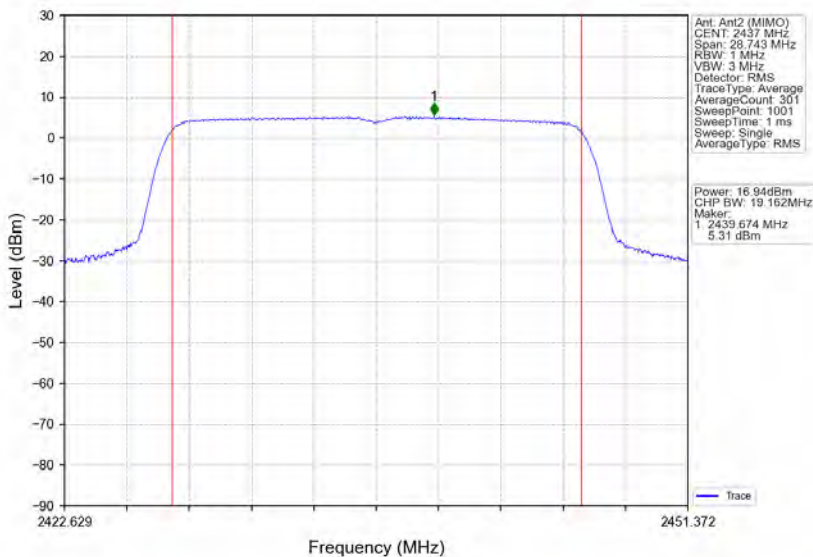
Report No.: KSCR240600099303

Page: 155 of 234

802.11ax(HEW20) MCH 2437MHz RU242 Left Ant1 (MIMO) NTN



802.11ax(HEW20) MCH 2437MHz RU242 Left Ant2 (MIMO) NTN



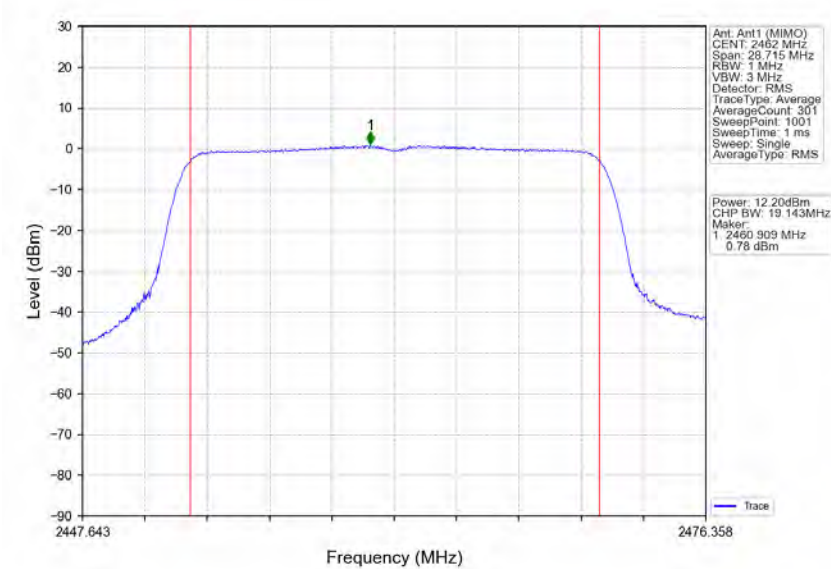
Compliance Certification Services (Kunshan) Inc.

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

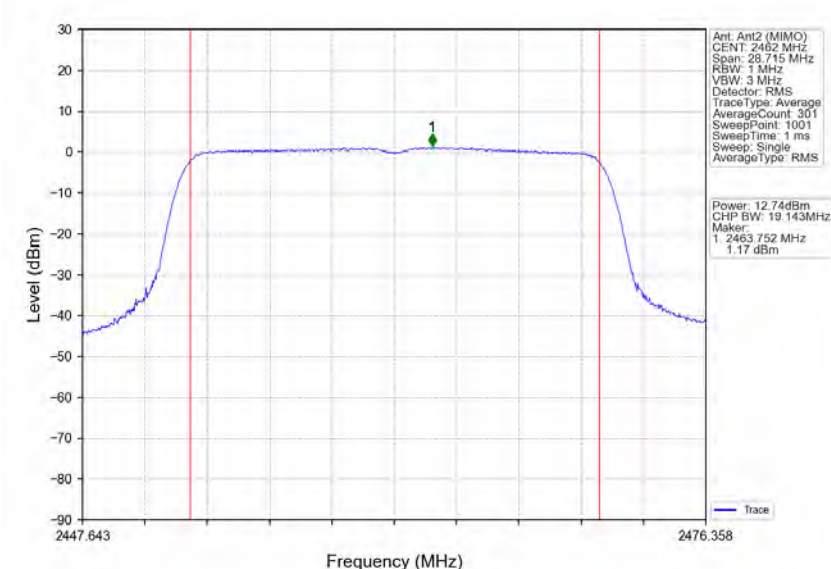
Report No.: KSCR240600099303

Page: 156 of 234

802.11ax(HEW20) HCH 2462MHz RU242 Left Ant1 (MIMO) NTNv



802.11ax(HEW20) HCH 2462MHz RU242 Left Ant2 (MIMO) NTNv



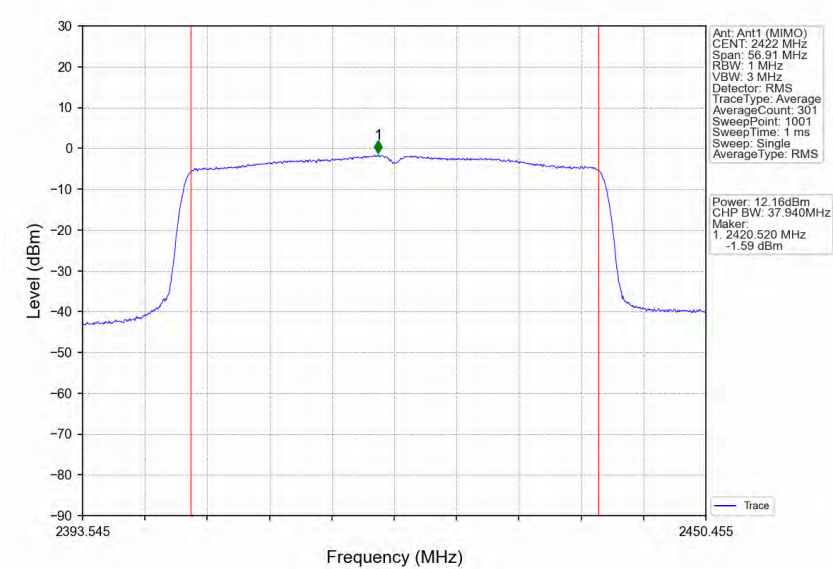
Compliance Certification Services (Kunshan) Inc.

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

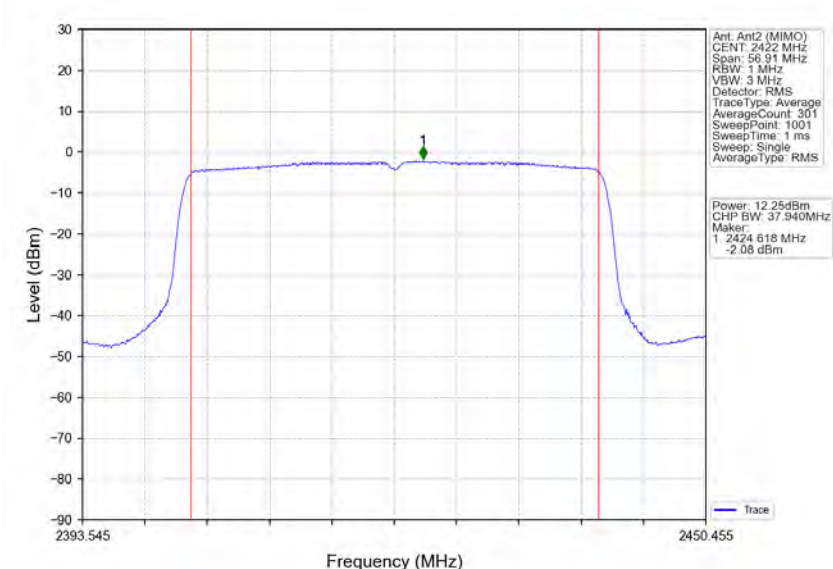
Report No.: KSCR240600099303

Page: 157 of 234

802.11ax(HEW40) LCH 2422MHz RU484 Left Ant1 (MIMO) NTNV



802.11ax(HEW40) LCH 2422MHz RU484 Left Ant2 (MIMO) NTNV



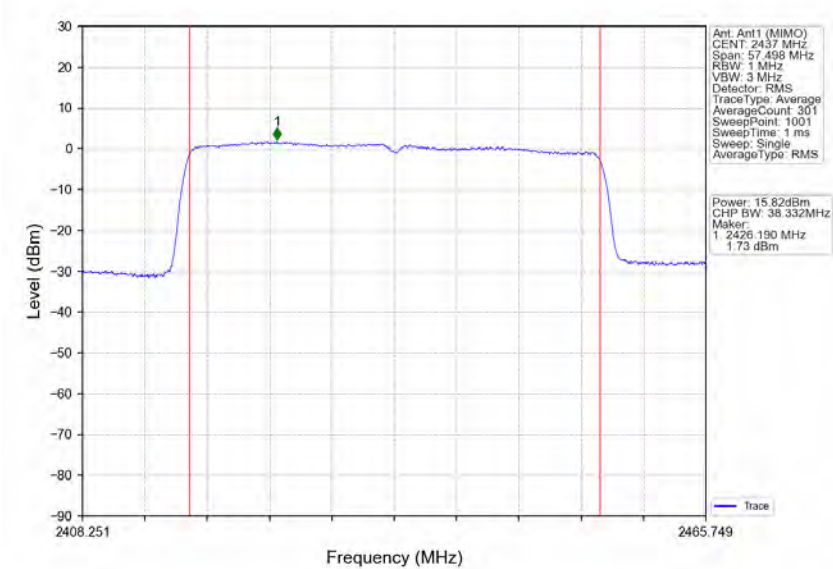
Compliance Certification Services (Kunshan) Inc.

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

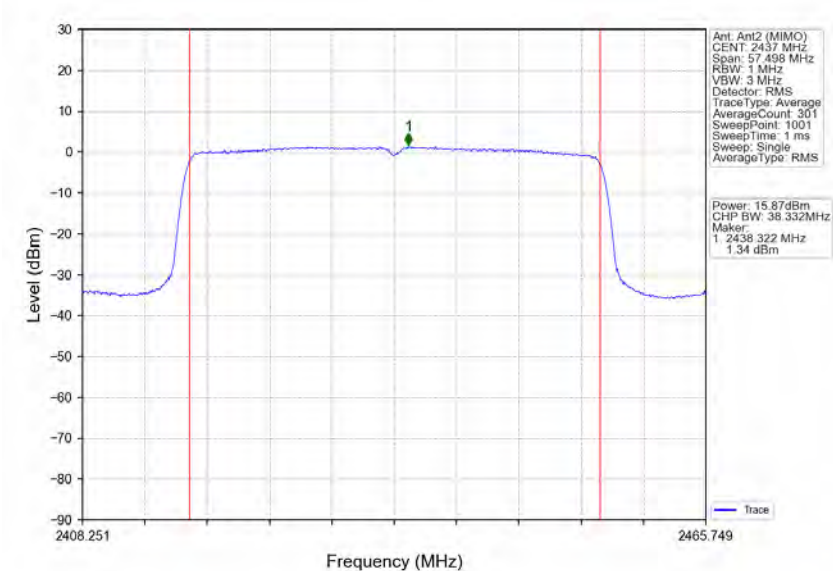
Report No.: KSCR240600099303

Page: 158 of 234

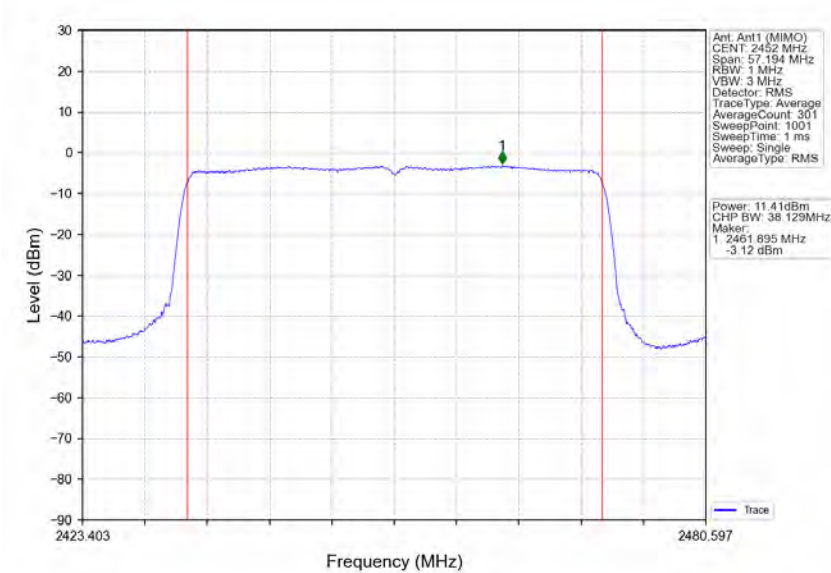
802.11ax(HEW40) MCH 2437MHz RU484 Left Ant1 (MIMO) NTN



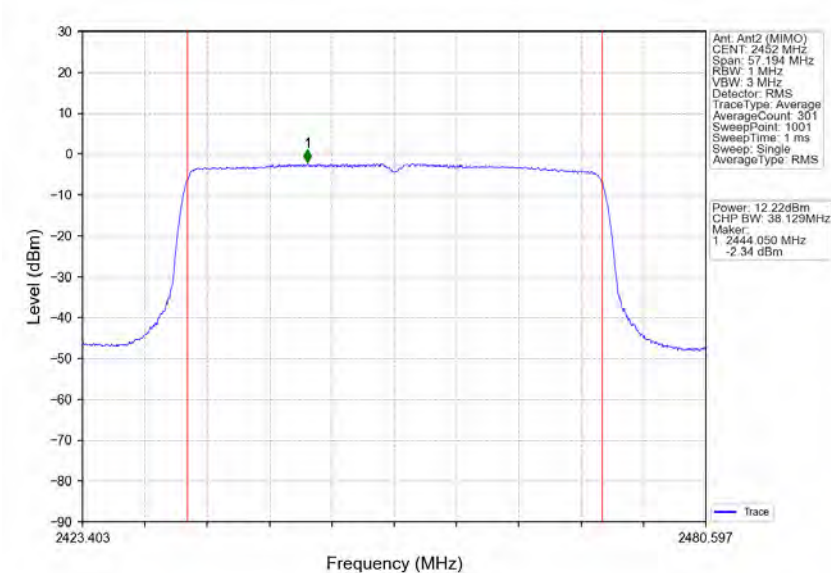
802.11ax(HEW40) MCH 2437MHz RU484 Left Ant2 (MIMO) NTN



802.11ax(HEW40) HCH 2452MHz RU484 Left Ant1 (MIMO) NTNv



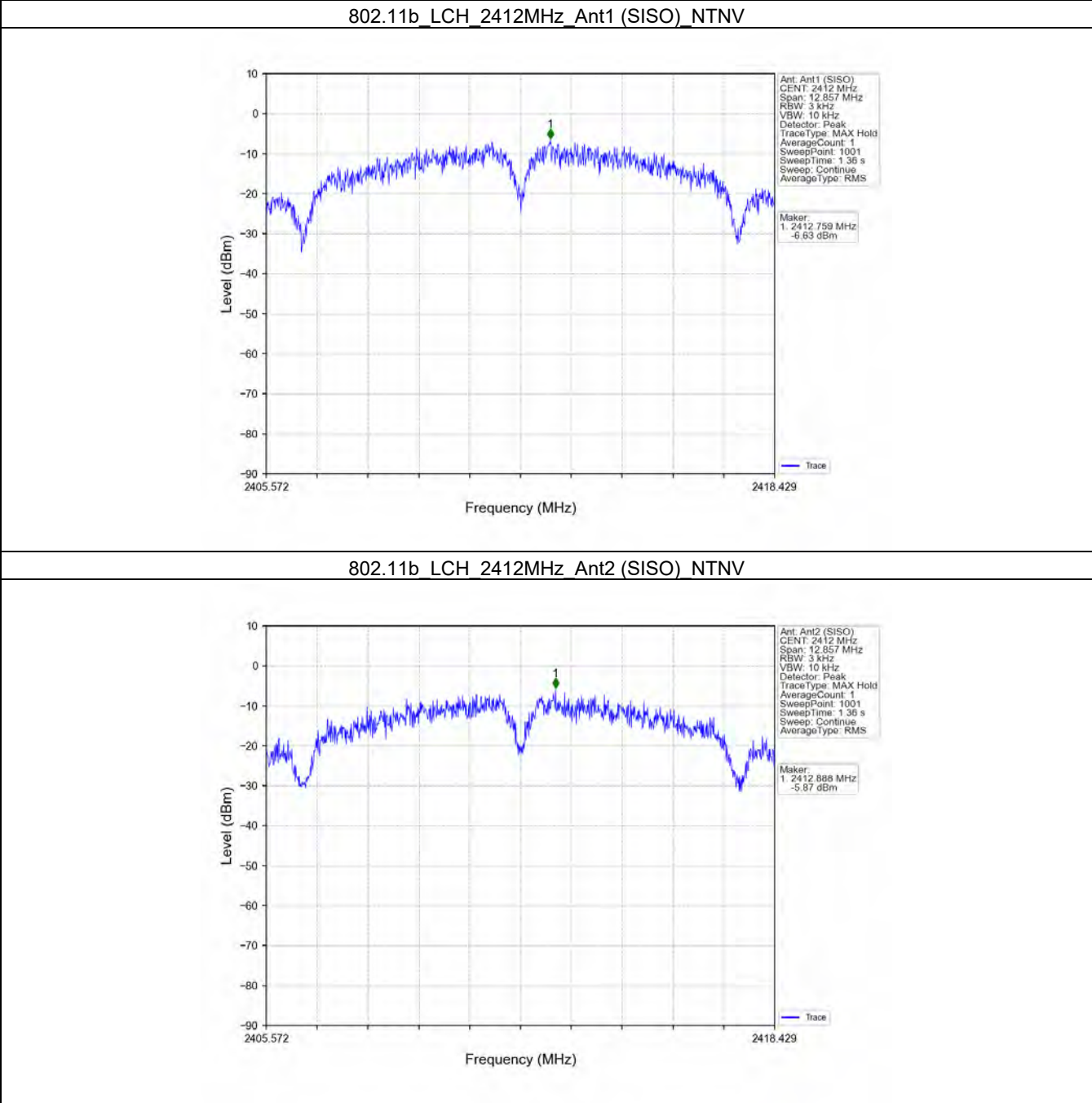
802.11ax(HEW40) HCH 2452MHz RU484 Left Ant2 (MIMO) NTNv



Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm/3kHz)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	SISO	2412	/	/	-6.63	-5.87	/	<=8	Pass
		2437	/	/	-4.48	-5.95	/	<=8	Pass
		2462	/	/	-8.06	-7.30	/	<=8	Pass
802.11g	SISO	2412	/	/	-7.57	-8.41	/	<=8	Pass
		2437	/	/	-7.68	-8.52	/	<=8	Pass
		2462	/	/	-10.53	-10.90	/	<=8	Pass
802.11n (HT20)	MIMO	2412	/	/	-10.53	-8.82	-6.84	<=8	Pass
		2437	/	/	-9.77	-9.40	-7.43	<=8	Pass
		2462	/	/	-11.81	-10.86	-9.59	<=8	Pass
802.11n (HT40)	MIMO	2422	/	/	-16.48	-15.70	-13.65	<=8	Pass
		2437	/	/	-12.07	-11.98	-9.18	<=8	Pass
		2452	/	/	-16.49	-15.87	-13.66	<=8	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	-10.79	-12.36	-9.77	<=8	Pass
		2437	RU242	Left	-9.80	-9.34	-7.23	<=8	Pass
		2462	RU242	Left	-14.66	-13.28	-11.97	<=8	Pass
802.11ax (HEW40)	MIMO	2422	RU484	Left	-16.73	-16.39	-14.56	<=8	Pass
		2437	RU484	Left	-12.51	-13.58	-10.37	<=8	Pass
		2452	RU484	Left	-18.58	-17.13	-15.53	<=8	Pass
Note1: Antenna Gain: Ant1: 3.10dBi; Ant2: 3dBi; Note2: Directional Gain: Uncorrelated/Directional Gain = 3.05dBi									

4.2 Test Graph

4.2.1 PSD



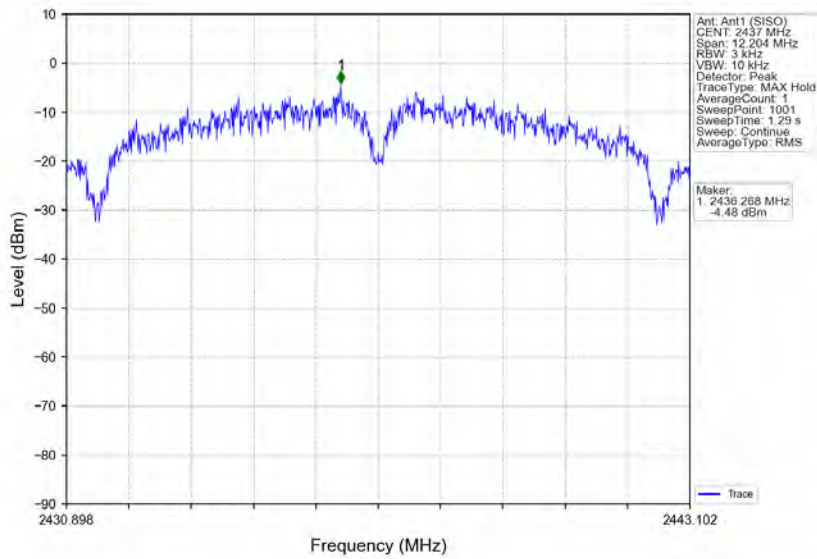
Compliance Certification Services (Kunshan) Inc.

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

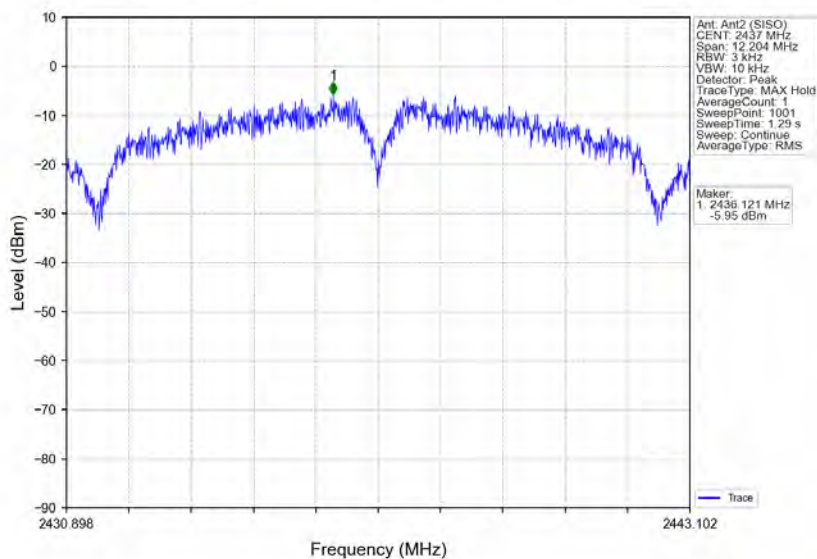
Report No.: KSCR240600099303

Page: 162 of 234

802.11b MCH 2437MHz Ant1 (SISO) NTN



802.11b MCH 2437MHz Ant2 (SISO) NTN



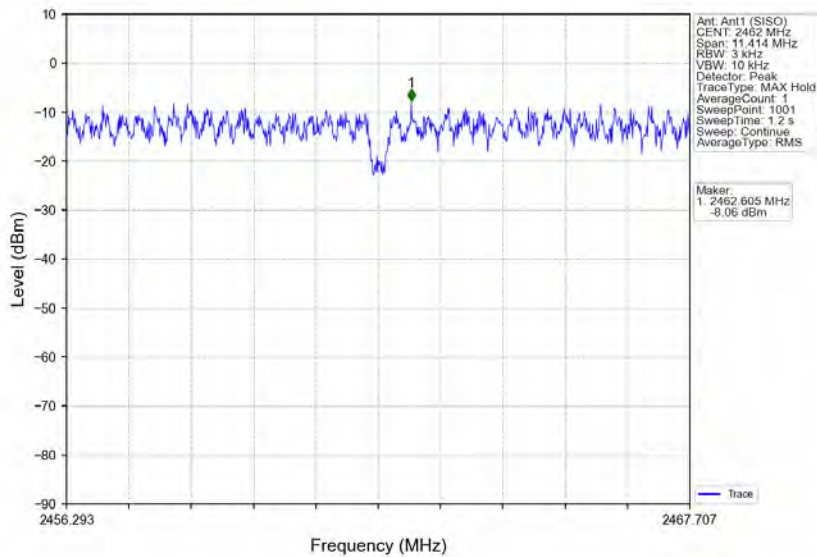
Compliance Certification Services (Kunshan) Inc.

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

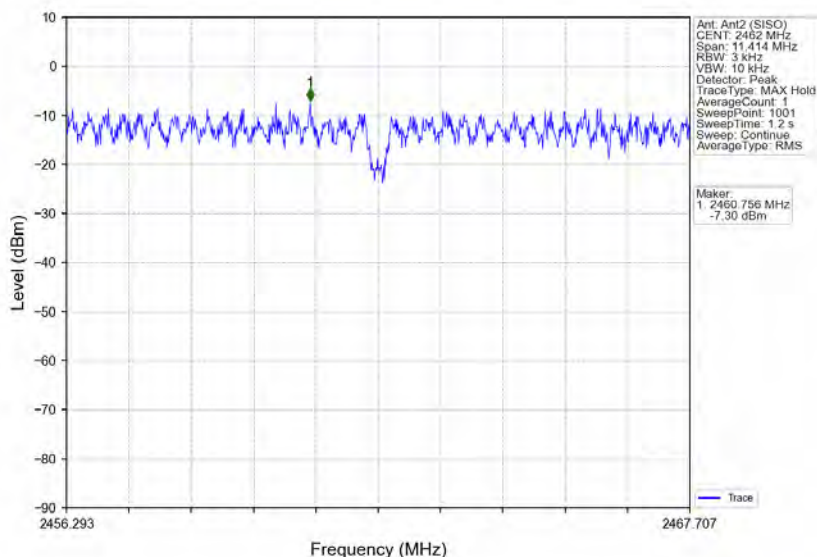
Report No.: KSCR240600099303

Page: 163 of 234

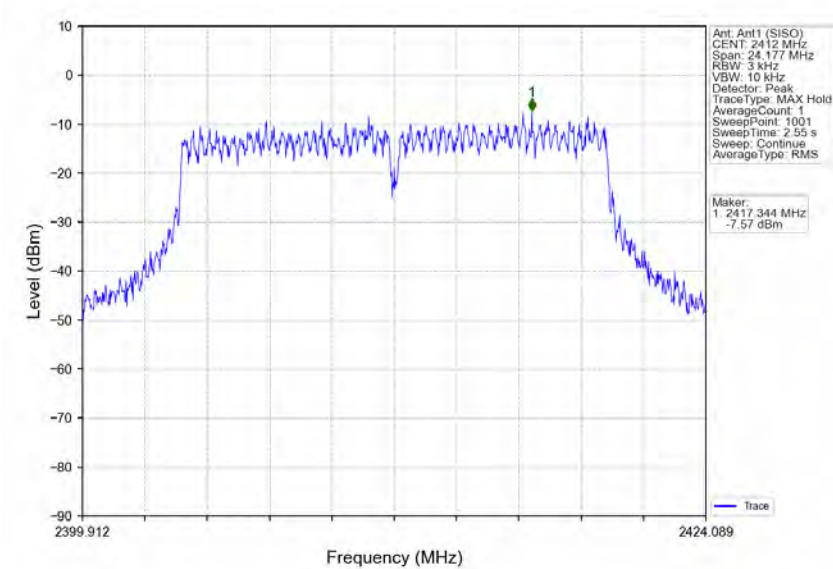
802.11b HCH 2462MHz Ant1 (SISO) NTNV



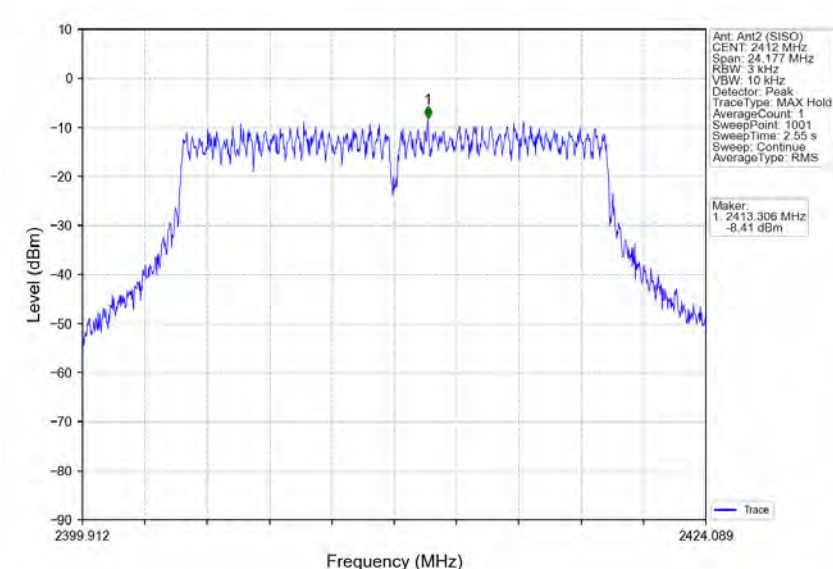
802.11b HCH 2462MHz Ant2 (SISO) NTNV



802.11g_LCH_2412MHz_Ant1 (SISO) NTN



802.11g_LCH_2412MHz_Ant2 (SISO) NTN



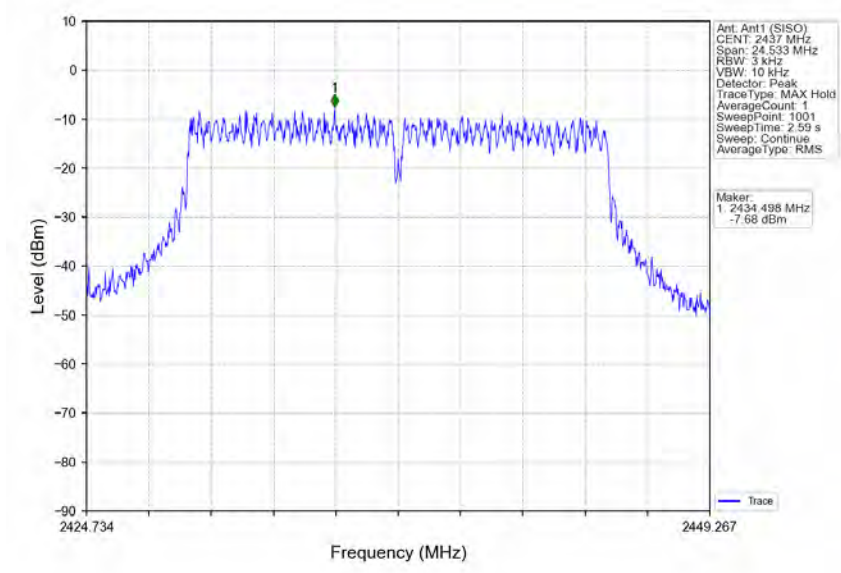
Compliance Certification Services (Kunshan) Inc.

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

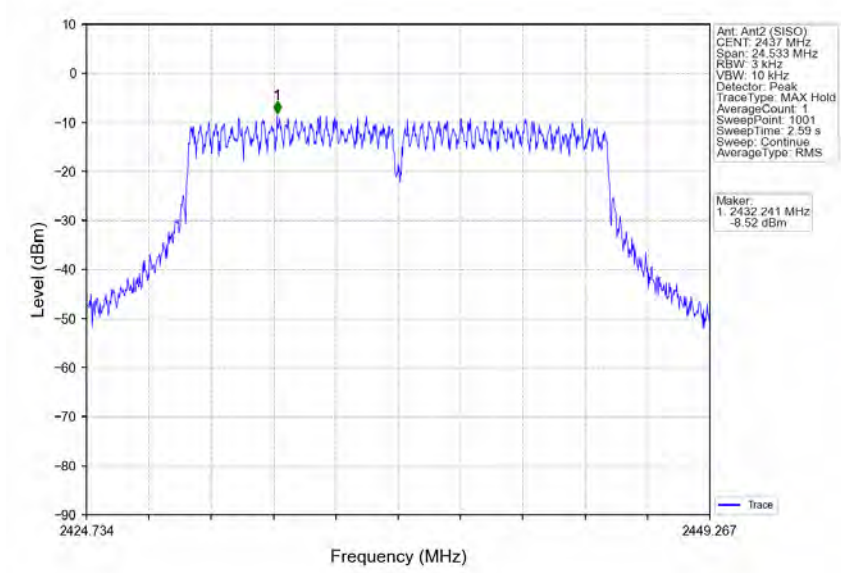
Report No.: KSCR240600099303

Page: 165 of 234

802.11g_MCH_2437MHz_Ant1 (SISO) NTN



802.11g_MCH_2437MHz_Ant2 (SISO) NTN



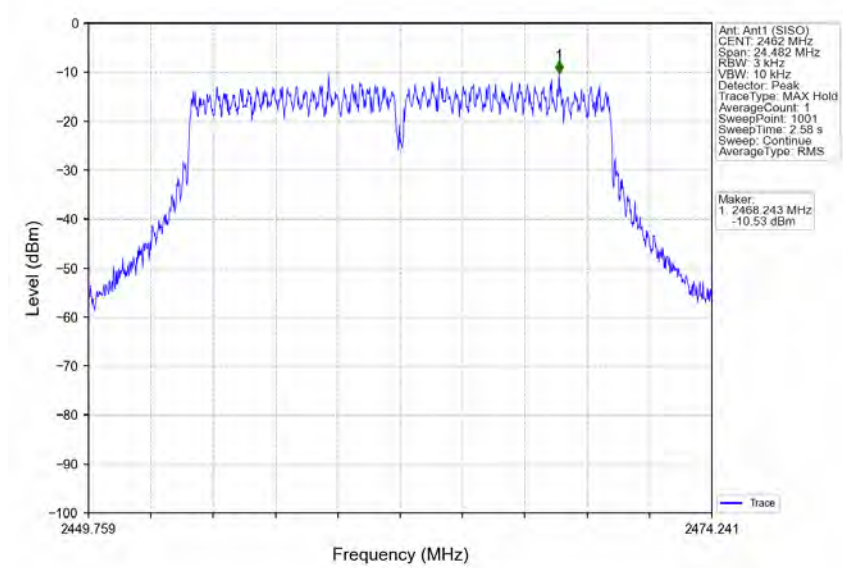
Compliance Certification Services (Kunshan) Inc.

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

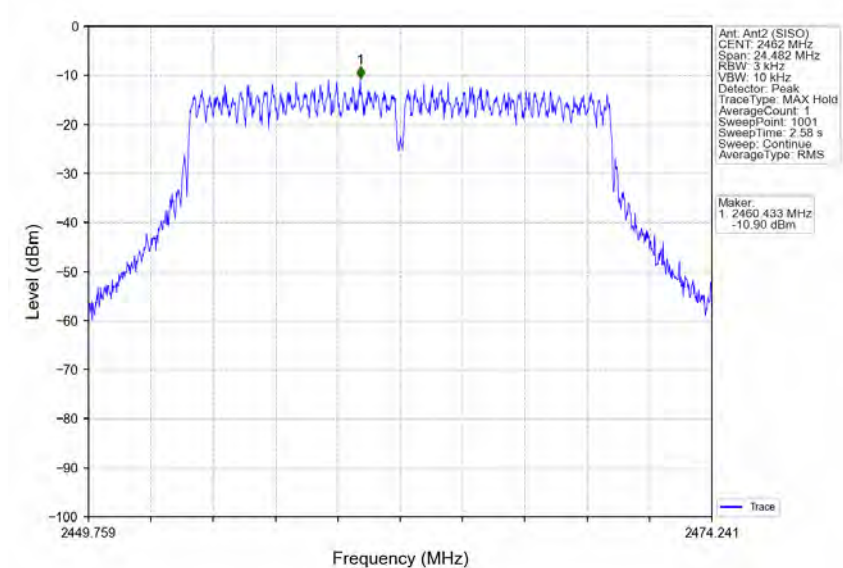
Report No.: KSCR240600099303

Page: 166 of 234

802.11g_HCH_2462MHz_Ant1 (SISO) NTN



802.11g_HCH_2462MHz_Ant2 (SISO) NTN



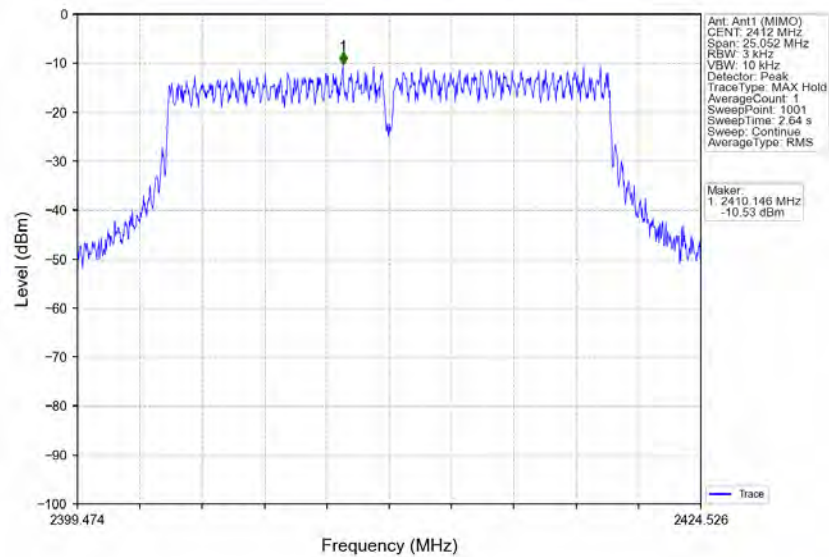
Compliance Certification Services (Kunshan) Inc.

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

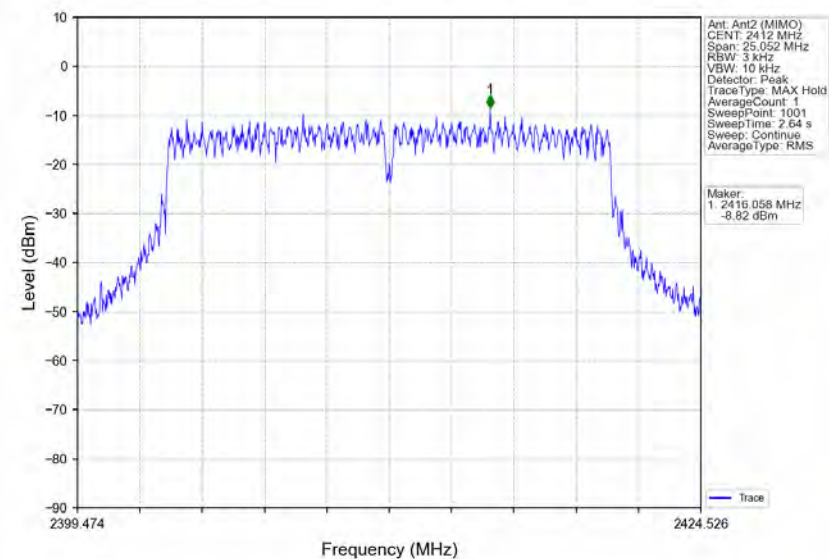
Report No.: KSCR240600099303

Page: 167 of 234

802.11n(HT20) LCH 2412MHz Ant1 (MIMO) NTN



802.11n(HT20) LCH 2412MHz Ant2 (MIMO) NTN



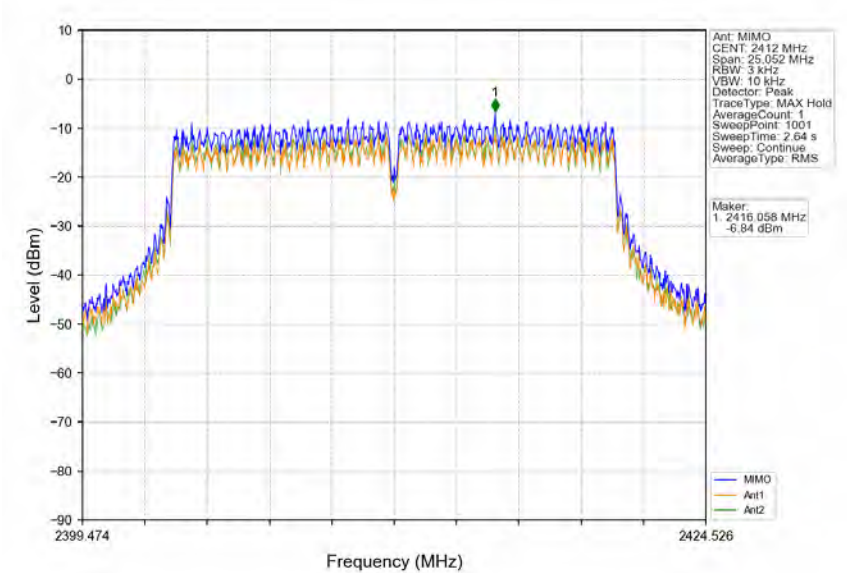
Compliance Certification Services (Kunshan) Inc.

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

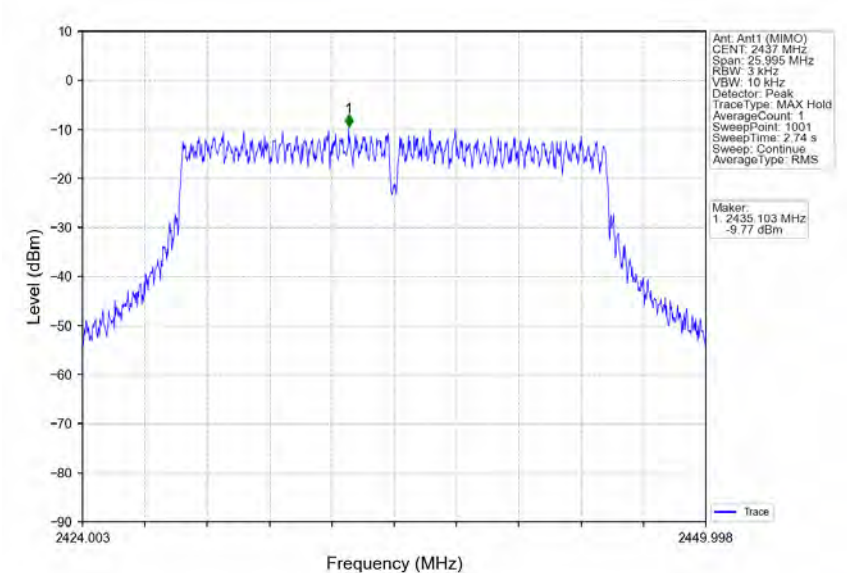
Report No.: KSCR240600099303

Page: 168 of 234

802.11n(HT20) LCH 2412MHz MIMO NTN



802.11n(HT20) MCH 2437MHz Ant1 (MIMO) NTN



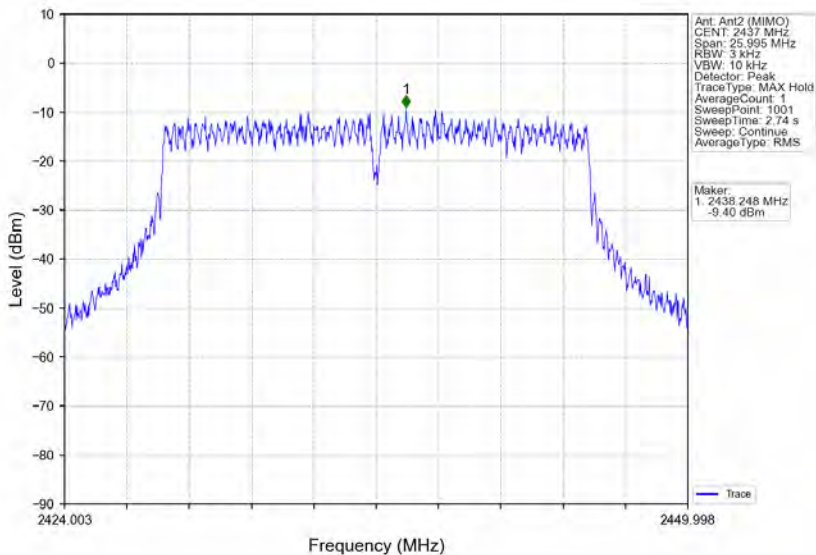
Compliance Certification Services (Kunshan) Inc.

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

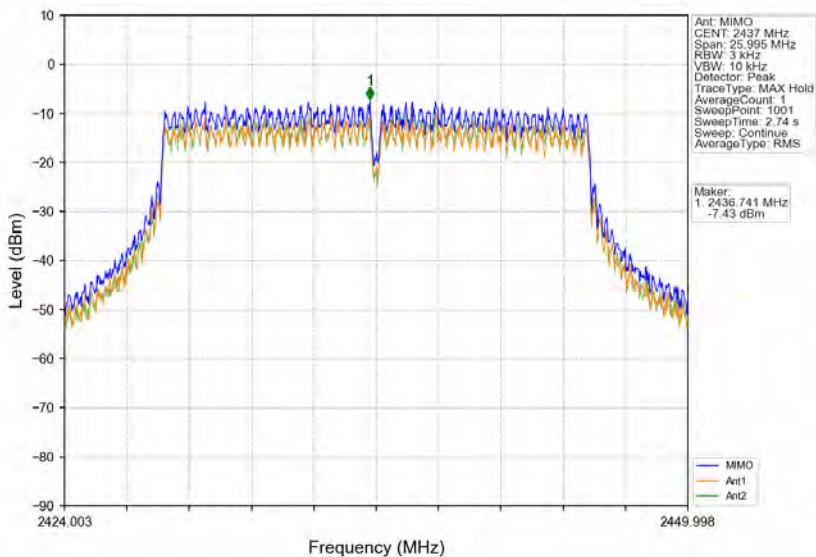
Report No.: KSCR240600099303

Page: 169 of 234

802.11n(HT20) MCH 2437MHz Ant2 (MIMO) NTNV



802.11n(HT20) MCH 2437MHz MIMO NTNV



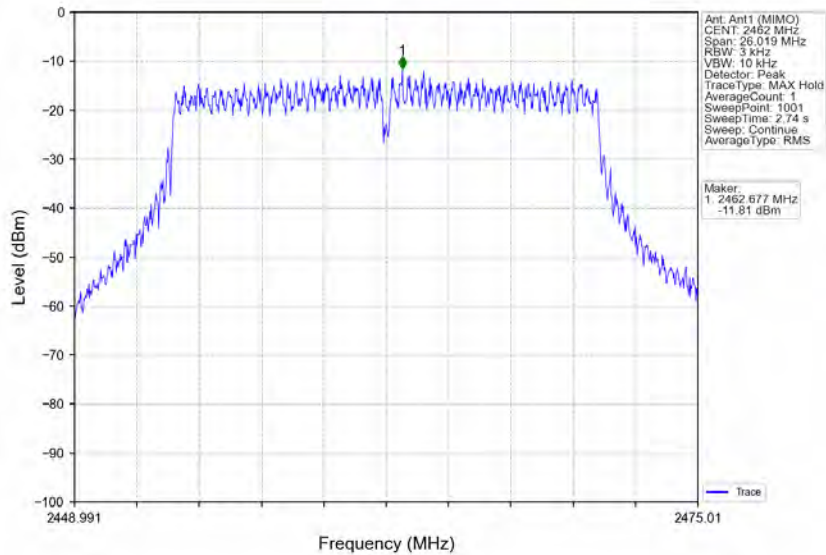
Compliance Certification Services (Kunshan) Inc.

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

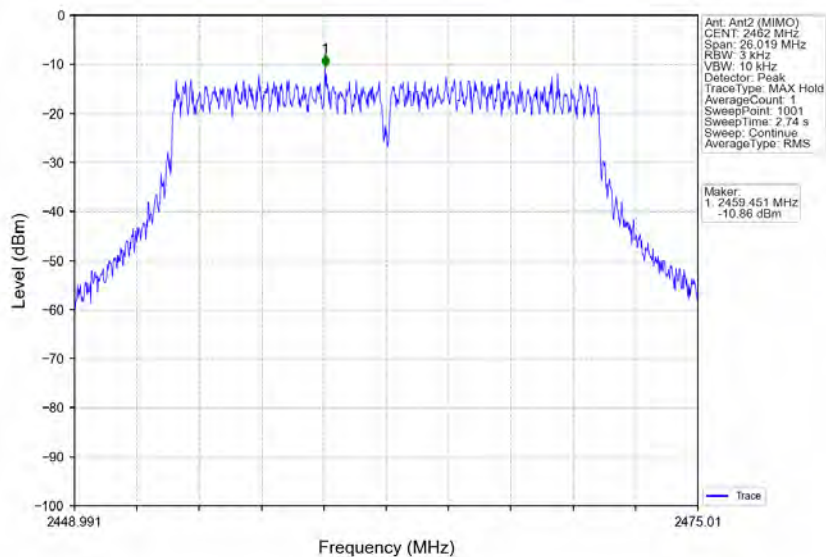
Report No.: KSCR240600099303

Page: 170 of 234

802.11n(HT20) HCH 2462MHz Ant1 (MIMO) NTN



802.11n(HT20) HCH 2462MHz Ant2 (MIMO) NTN



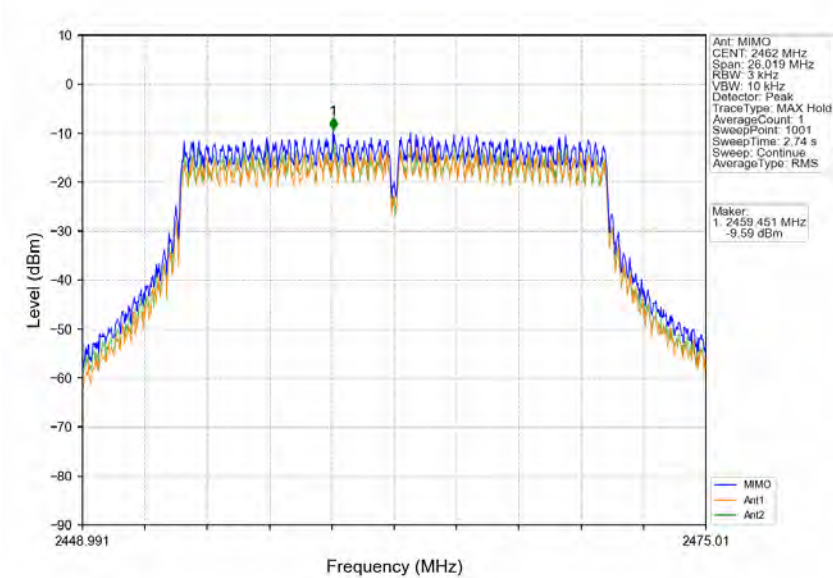
Compliance Certification Services (Kunshan) Inc.

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

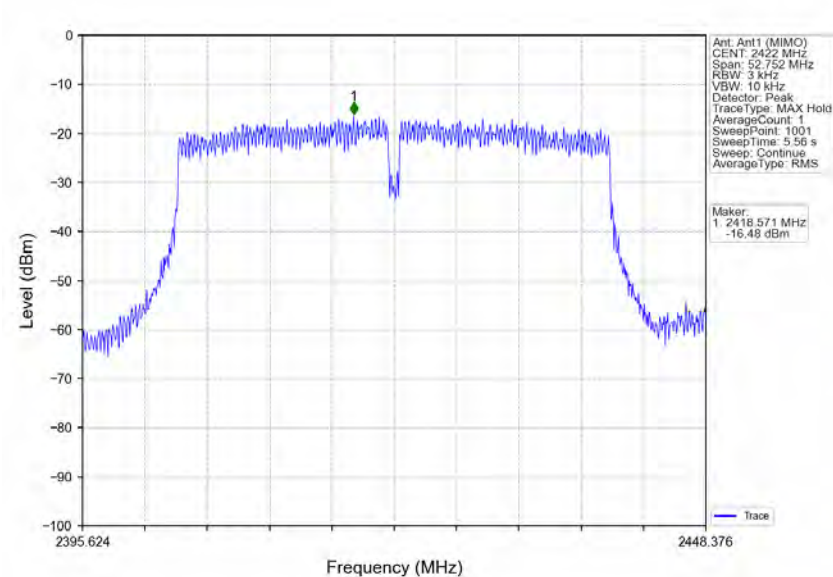
Report No.: KSCR240600099303

Page: 171 of 234

802.11n(HT20) HCH 2462MHz MIMO NTN



802.11n(HT40) LCH 2422MHz Ant1 (MIMO) NTN



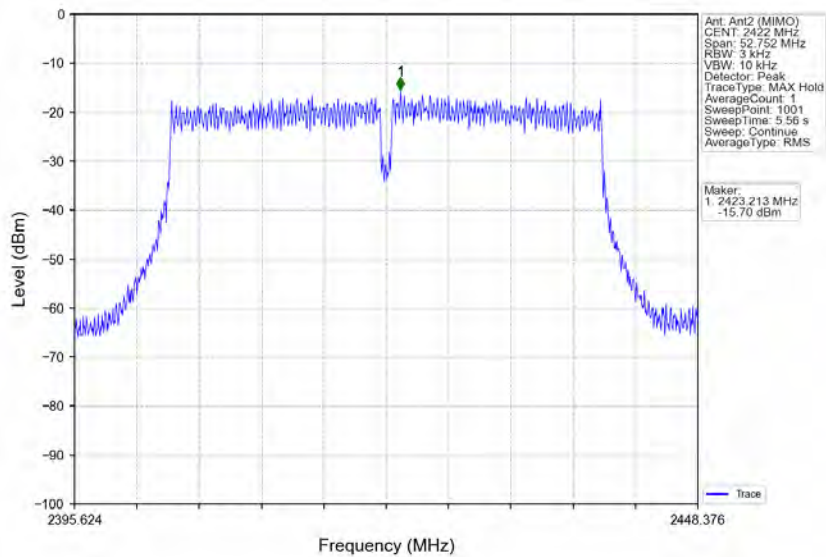
Compliance Certification Services (Kunshan) Inc.

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

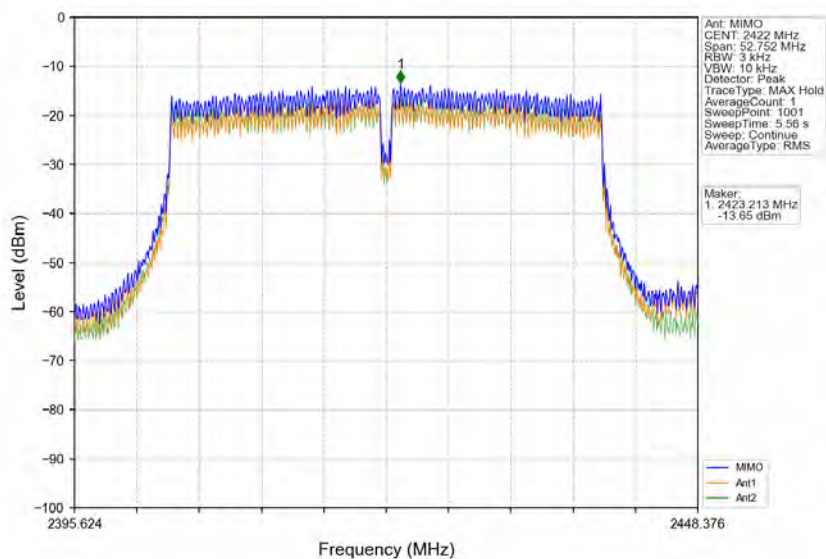
Report No.: KSCR240600099303

Page: 172 of 234

802.11n(HT40) LCH 2422MHz Ant2 (MIMO) NTVN



802.11n(HT40) LCH 2422MHz MIMO NTVN



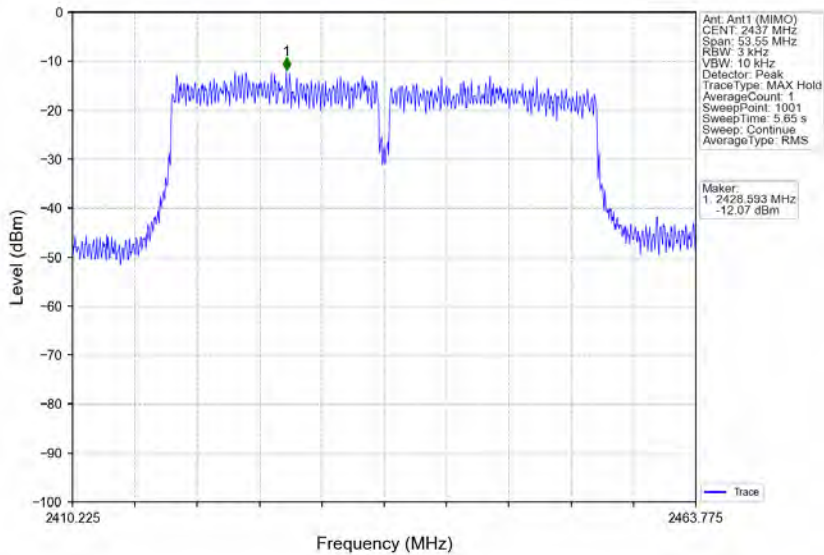
Compliance Certification Services (Kunshan) Inc.

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

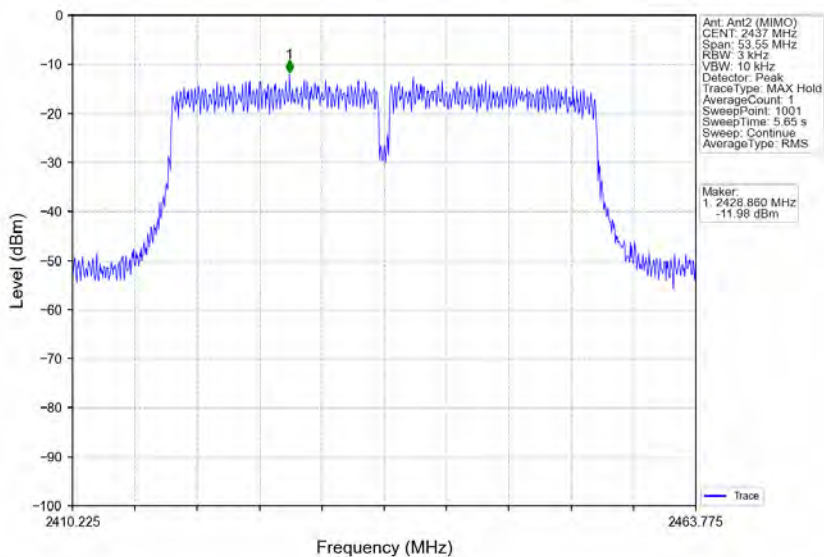
Report No.: KSCR240600099303

Page: 173 of 234

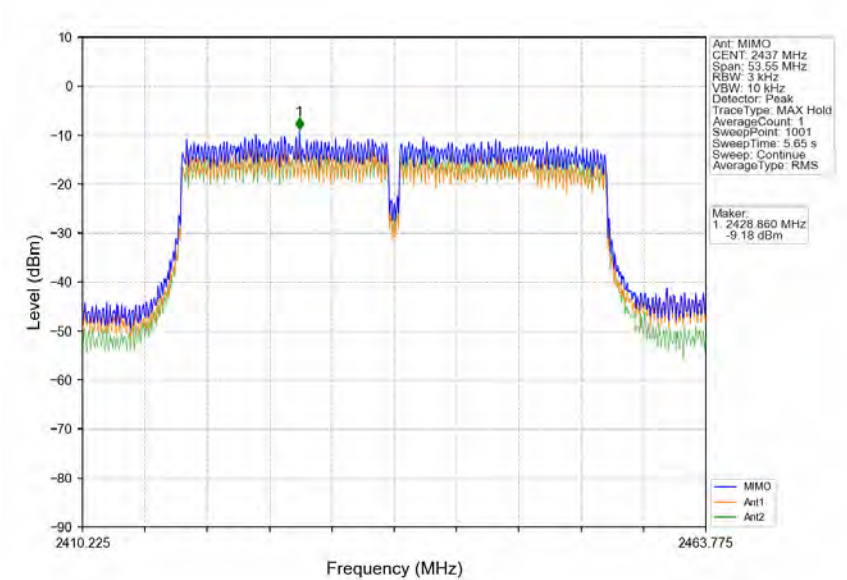
802.11n(HT40) MCH 2437MHz Ant1 (MIMO) NTN



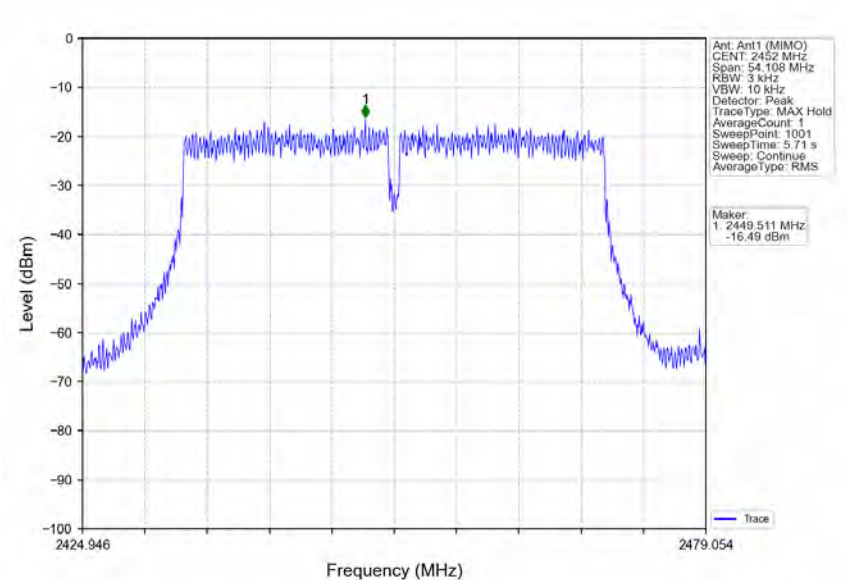
802.11n(HT40) MCH 2437MHz Ant2 (MIMO) NTN



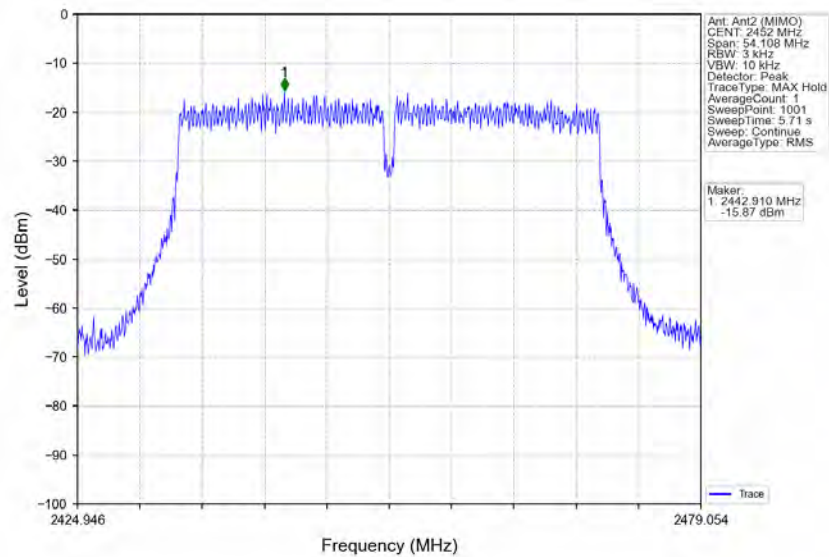
802.11n(HT40) MCH 2437MHz MIMO NTN



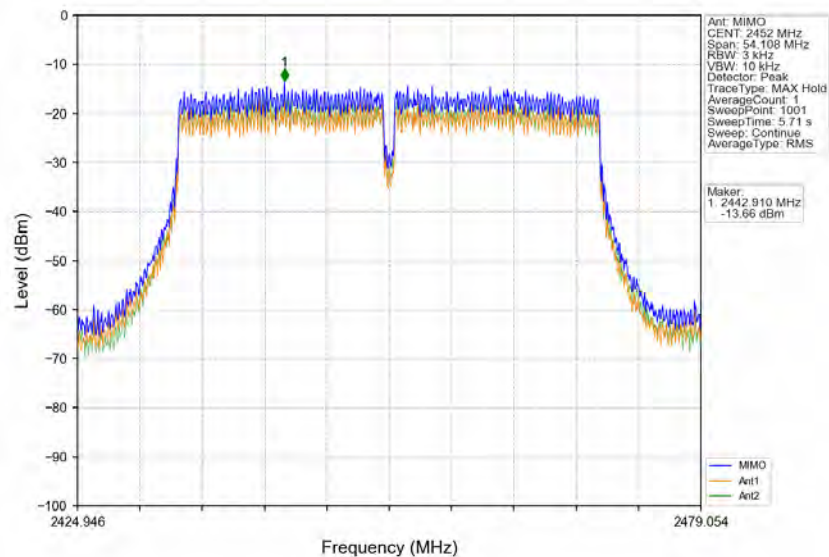
802.11n(HT40) HCH 2452MHz Ant1 (MIMO) NTN



802.11n(HT40) HCH 2452MHz Ant2 (MIMO) NTN



802.11n(HT40) HCH 2452MHz MIMO NTN



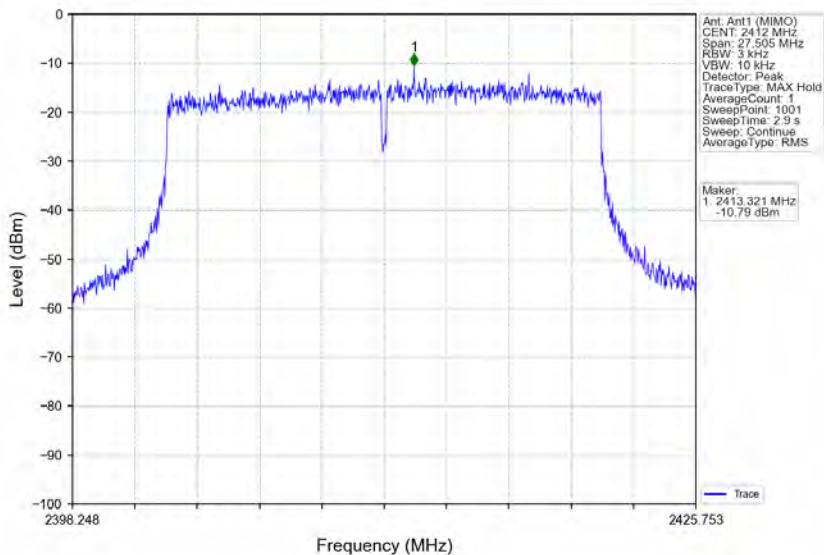
Compliance Certification Services (Kunshan) Inc.

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

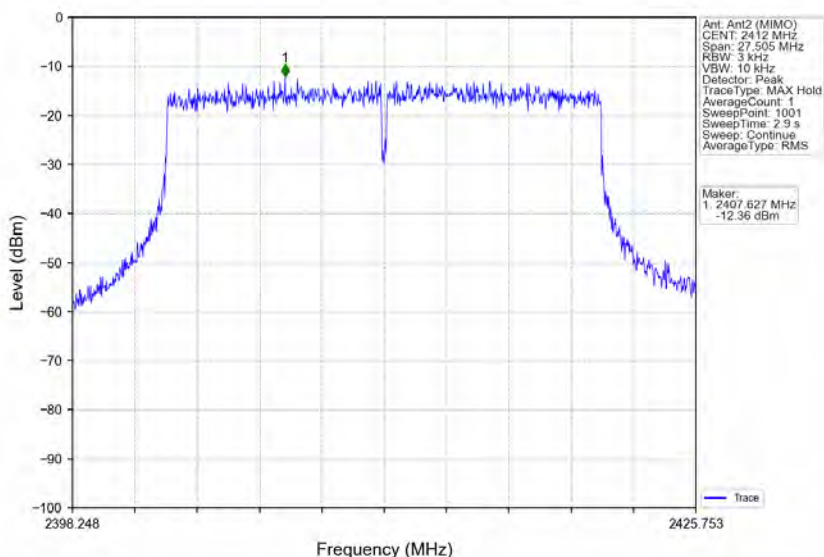
Report No.: KSCR240600099303

Page: 176 of 234

802.11ax(HEW20) LCH 2412MHz RU242 Left Ant1 (MIMO) NTN



802.11ax(HEW20) LCH 2412MHz RU242 Left Ant2 (MIMO) NTN



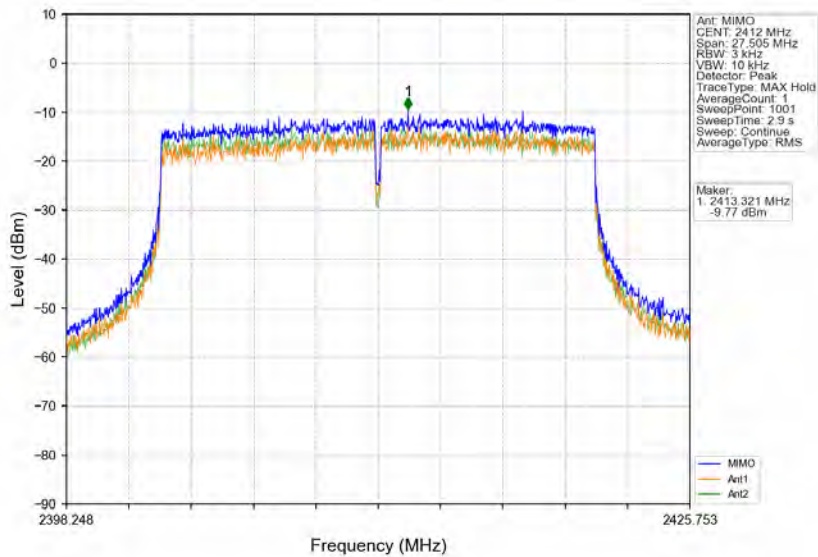
Compliance Certification Services (Kunshan) Inc.

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

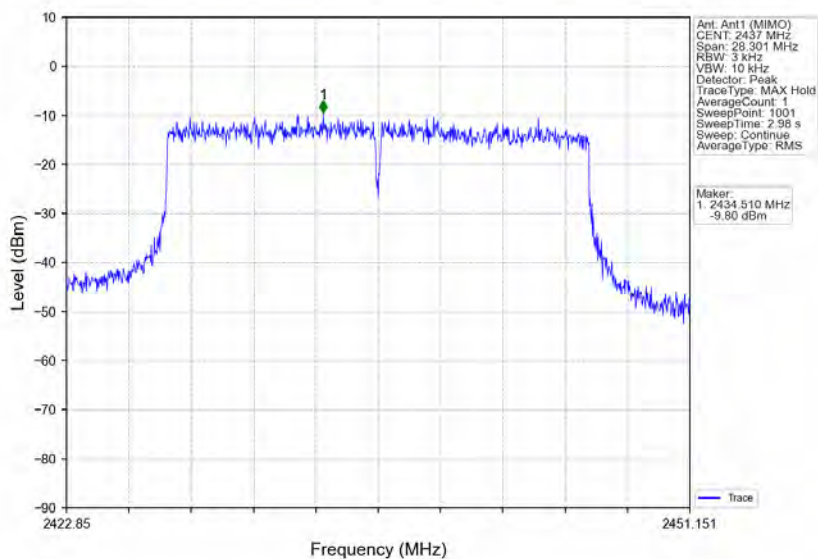
Report No.: KSCR240600099303

Page: 177 of 234

802.11ax(HEW20) LCH 2412MHz RU242 Left MIMO NTN



802.11ax(HEW20) MCH 2437MHz RU242 Left Ant1 (MIMO) NTN



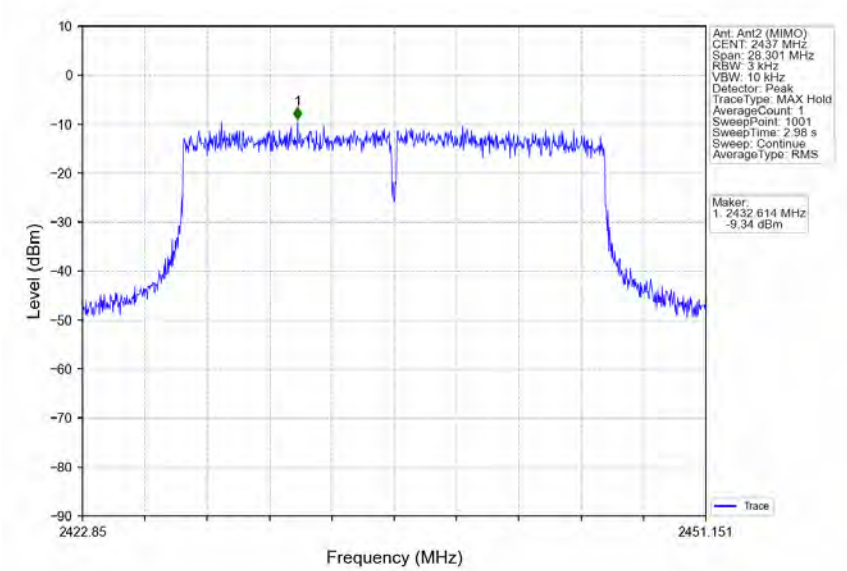
Compliance Certification Services (Kunshan) Inc.

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

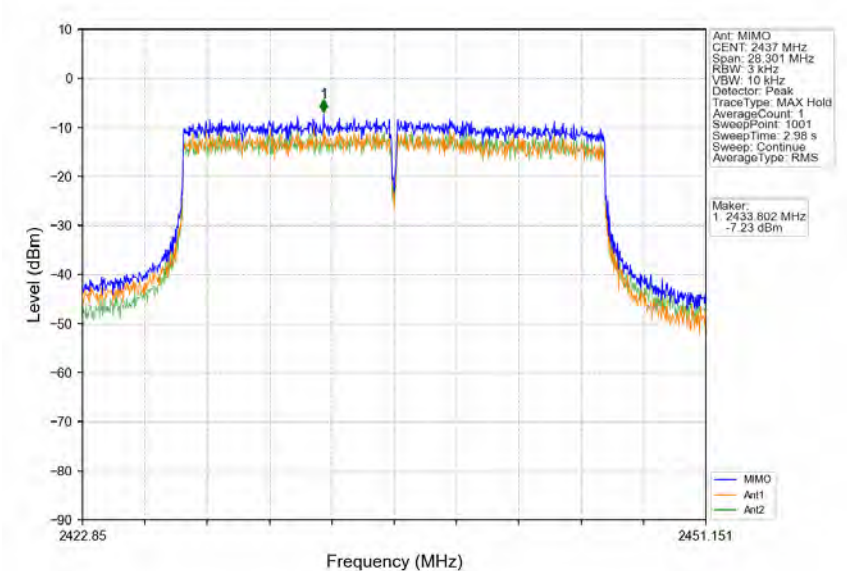
Report No.: KSCR240600099303

Page: 178 of 234

802.11ax(HEW20) MCH 2437MHz RU242 Left Ant2 (MIMO) NTN



802.11ax(HEW20) MCH 2437MHz RU242 Left MIMO NTN



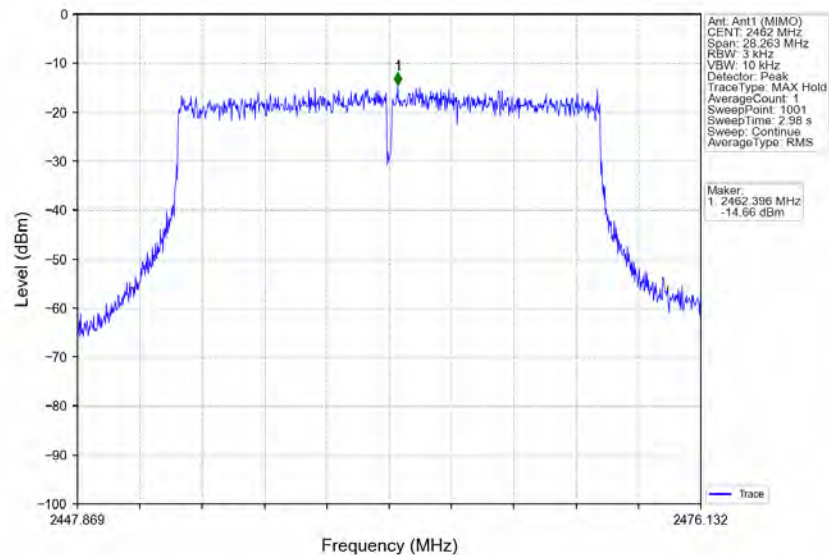
Compliance Certification Services (Kunshan) Inc.

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

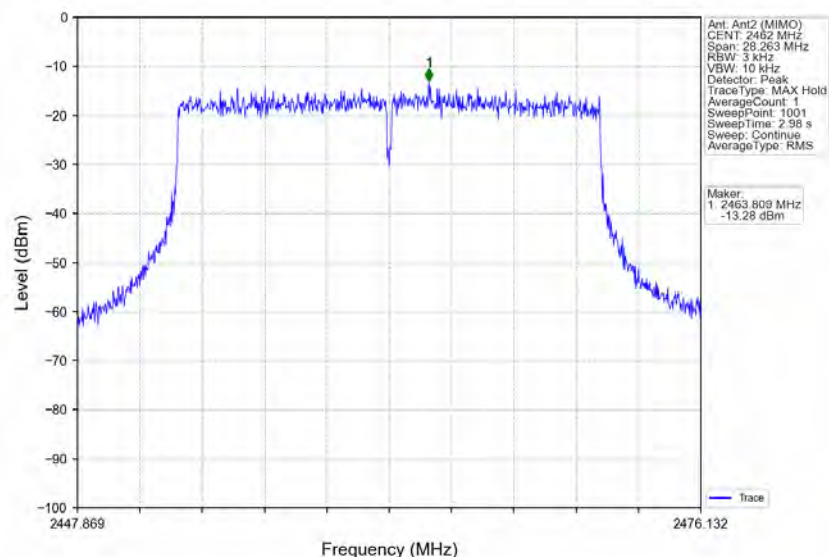
Report No.: KSCR240600099303

Page: 179 of 234

802.11ax(HEW20) HCH 2462MHz RU242 Left Ant1 (MIMO) NTN



802.11ax(HEW20) HCH 2462MHz RU242 Left Ant2 (MIMO) NTN



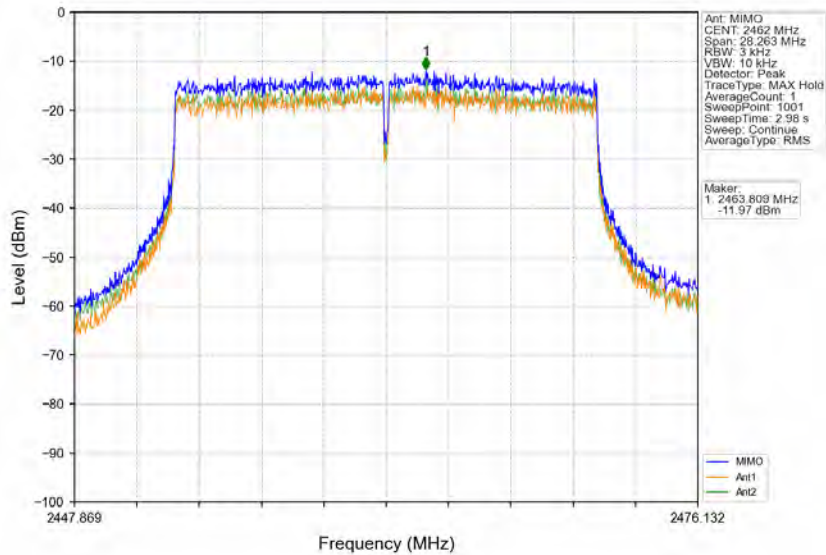
Compliance Certification Services (Kunshan) Inc.

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

Report No.: KSCR240600099303

Page: 180 of 234

802.11ax(HEW20) HCH 2462MHz RU242 Left MIMO NTN



802.11ax(HEW40) LCH 2422MHz RU484 Left Ant1 (MIMO) NTN

