TEST REPORT

Application No.:	KSCR2408001490AT
FCC ID:	2AL8S-0235C9A1
Applicant:	Zhejiang Uniview Technologies Co., Ltd.
Address of Applicant:	No. 369, Xietong Road, Xixing Sub-district, Binjiang District, Hangzhou City, 310051, Zhejiang Province, China
Manufacturer:	Zhejiang Uniview Technologies Co., Ltd.
Address of Manufacturer:	No. 369, Xietong Road, Xixing Sub-district, Binjiang District, Hangzhou City, 310051, Zhejiang Province, China
Factory:	Zhejiang Uniview System Technology Co., Ltd.
Address of Factory:	No.1277 Qingfeng South Road（South）, Tongxiang Economic Development Zone, Tongxiang City, Jiaxing City, 314500, Zhejiang, China
Equipment Under Test (EUT):	
EUT Name:	IP Camera
Model No.:	Uho-P1H-M3F4D,Uho-P1H-xxxxxxxx-yyyyyyyy-zzzz(where x,y,z may be blank, one letter or more combination letters from '0-9, A-Z and a-z'; '-' is optional) ♣
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2024-08-02
Date of Test:	2024-08-03 to 2024-08-20
Date of Issue:	2024-08-21
Test Result:	**Pass***

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

Revision Record			
Version	**Description**	***Date***	***Remark***
00	Original	2024-08-21	/

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)	

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Conducted Average 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

Model No.: Uho-P1H-M3F4D,Uho-P1H-xxxxxxxx-yyyyyyyy-zzzz(where x,y,z may be blank, one letter or more combination letters from '0-9, A-Z and a-z'; '-' is optional)

Only the model Uho-P1H-M3F4D was tested.

There are series models mentioned in this report, and they are identical in electrical and electronic characters. Only the model Uho-P1H-M3F4D was tested since their differences were the model number and appearance.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	DC 12V/1A
Test voltage:	AC 120V/60Hz
Operation Frequency:	802.11b/g/n(HT20)/ax(HE20):2412MHz to 2462MHz; 802.11n(HT40)/ax(HE40):2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK), 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Number of Channels:	802.11b/g/n(HT20)/ax(HE20):11;802.11n(HT40)/ax(HE40):7
Channel Spacing:	5MHz
Antenna Type:	Dipole Antenna
Antenna Gain:	4.5dBi (Provided by manufacturer)

4.2 Power level setting using in test

Channel	802.11b	802.11g	802.11n(HT20)	802.11ax(HE20)
	Ant 1	Ant 1	Ant 1	Ant 1
1	Default	Default	Default	Default
6	Default	Default	Default	Default
11	Default	Default	Default	Default

Channel	802.11n(HT40)	802.11ax(HE40)
	Ant 1	Ant 1
3	Default	Default
6	Default	Default
9	Default	Default

4.3 Description of Support Units

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

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

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_EMC-v 3A1	/	NCR	NCR
15	Software	ESE	E3_V 6.111221a	/	NCR	NCR

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

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

6.1.2 Conclusion

Standard Requirement:

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

15.247(b) (4) requirement:

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

EUT Antenna:

The antenna is Dipole antenna on the main PCB and no consideration of replacement. The best case gain of the antenna is 4.5dBi.

Antenna location: Refer to internal photo.

7 Radio Spectrum Matter Test Results

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

Test Requirement 47 CFR Part 15, Subpart C 15.207
Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

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

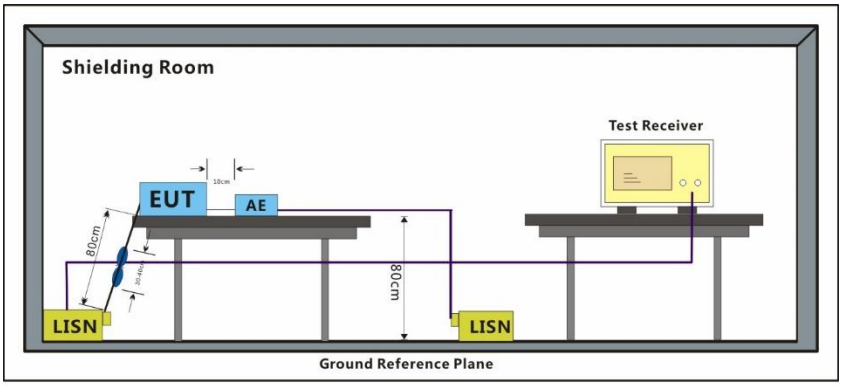
7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 20.5 °C Humidity: 50.5 % 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(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). 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.

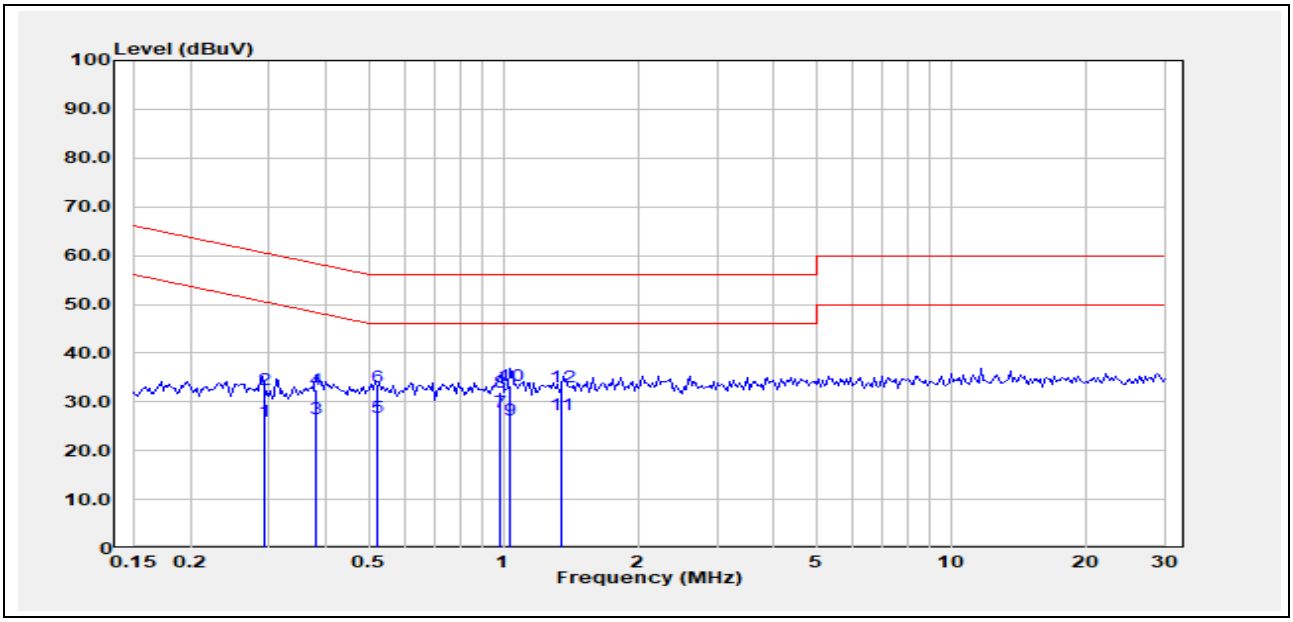
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test 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

Test Mode: 00; Line: Live line

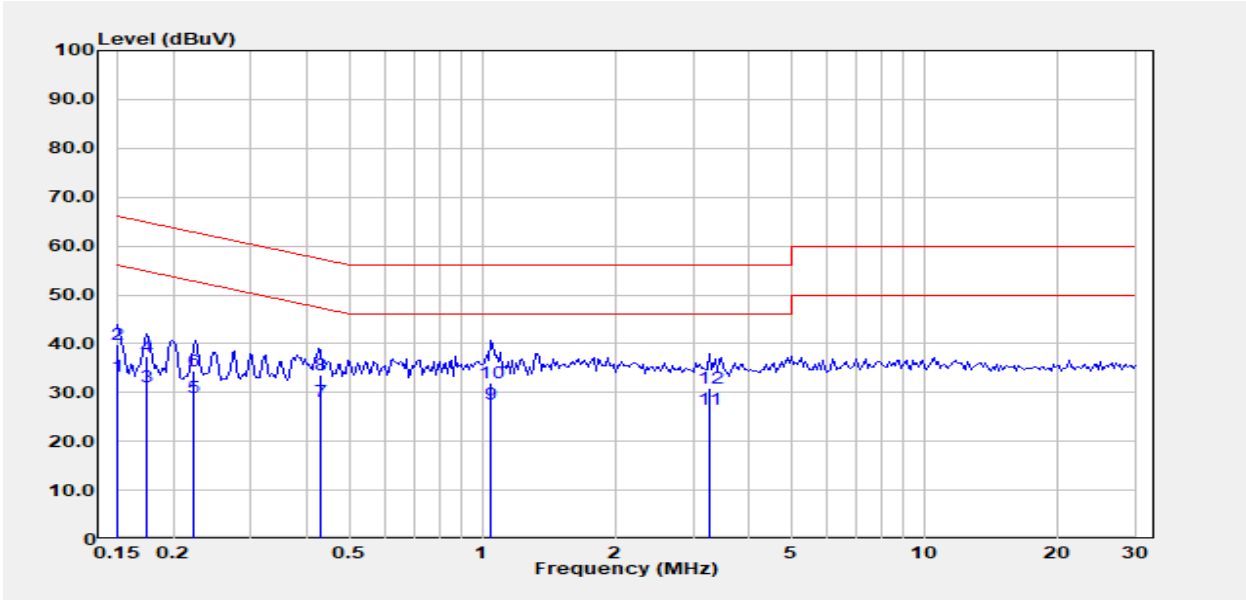
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2919	5.82	20.08	25.90	50.47	-24.57	Average
2	0.2919	12.43	20.08	32.51	60.47	-27.96	QP
3	0.3829	6.42	20.07	26.49	48.22	-21.73	Average
4	0.3829	12.48	20.07	32.55	58.22	-25.67	QP
5	0.5227	6.72	19.99	26.71	46.00	-19.29	Average
6	0.5227	12.96	19.99	32.95	56.00	-23.05	QP
7	0.9795	8.15	19.84	27.99	46.00	-18.01	Average
8	0.9795	12.18	19.84	32.02	56.00	-23.98	QP
9	1.0370	6.51	19.86	26.37	46.00	-19.63	Average
10	1.0370	13.48	19.86	33.34	56.00	-22.66	QP
11	1.3500	7.43	19.94	27.37	46.00	-18.63	Average
12	1.3500	13.14	19.94	33.08	56.00	-22.92	QP

Test Mode: 00; Line: Neutral Line

Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1501	13.17	20.18	33.35	56.00	-22.65	Average
2	0.1501	19.70	20.18	39.88	66.00	-26.12	QP
3	0.1747	11.08	20.15	31.23	54.73	-23.50	Average
4	0.1747	17.28	20.15	37.43	64.73	-27.30	QP
5	0.2233	9.02	20.10	29.12	52.70	-23.58	Average
6	0.2233	14.32	20.10	34.42	62.70	-28.28	QP
7	0.4321	8.14	20.05	28.19	47.21	-19.02	Average
8	0.4321	13.47	20.05	33.52	57.21	-23.69	QP
9	1.0500	7.69	19.91	27.60	46.00	-18.40	Average
10	1.0500	12.02	19.91	31.93	56.00	-24.07	QP
11	3.2680	6.53	19.94	26.47	46.00	-19.53	Average
12	3.2680	10.98	19.94	30.92	56.00	-25.08	QP

7.2 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

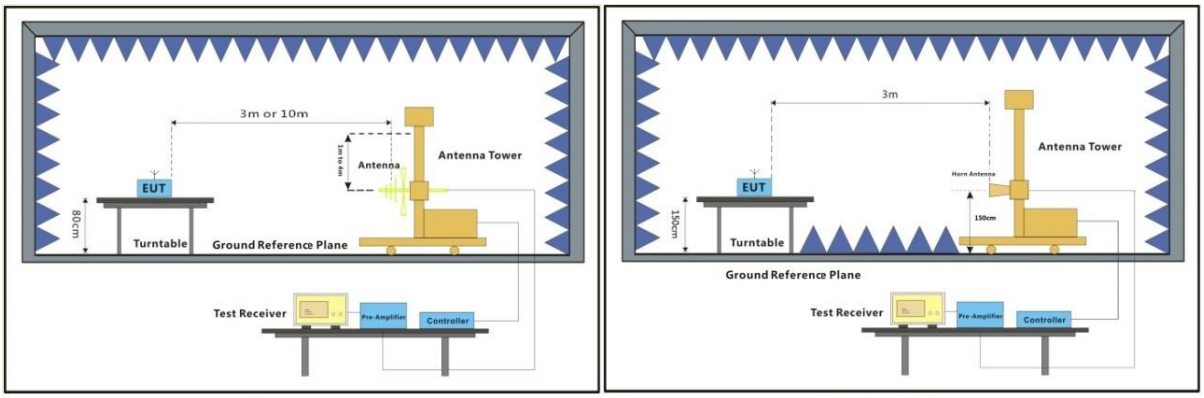
7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 21.8 °C Humidity: 51.2 % 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(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). Only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



30MHz-1GHz　　Above 1GHz

7.2.4 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. 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.

c. 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.

d. 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.

e. 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.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. 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.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

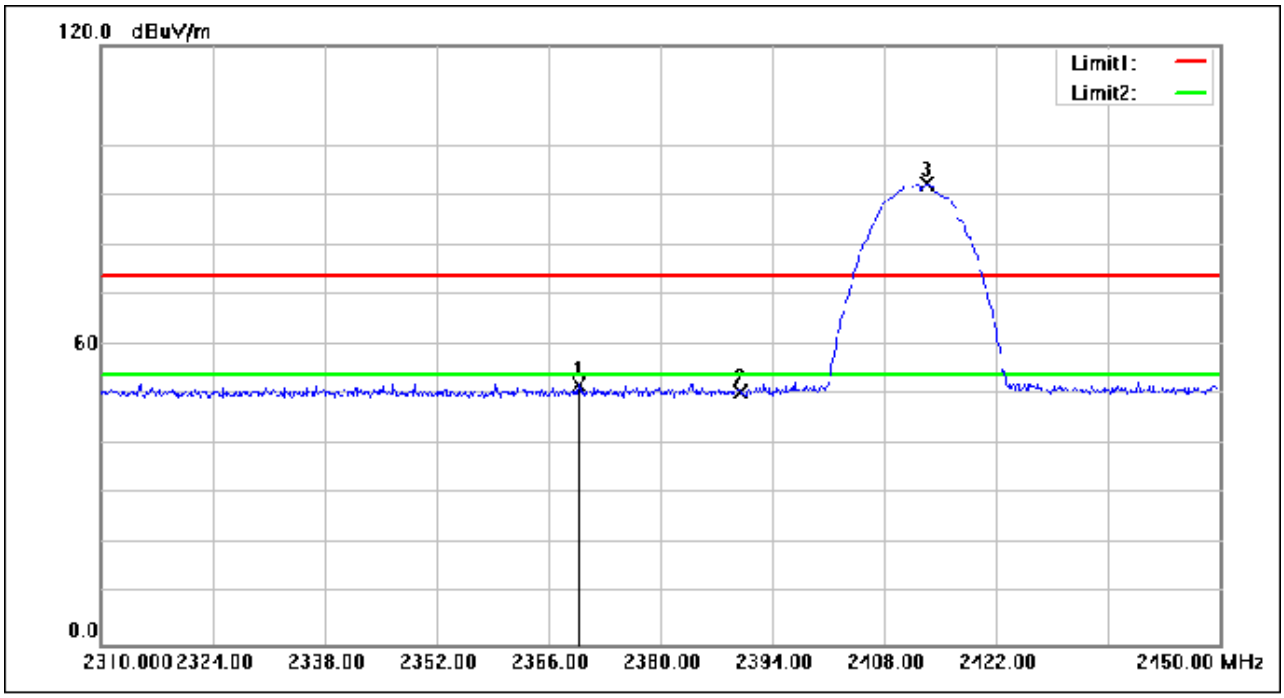
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

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

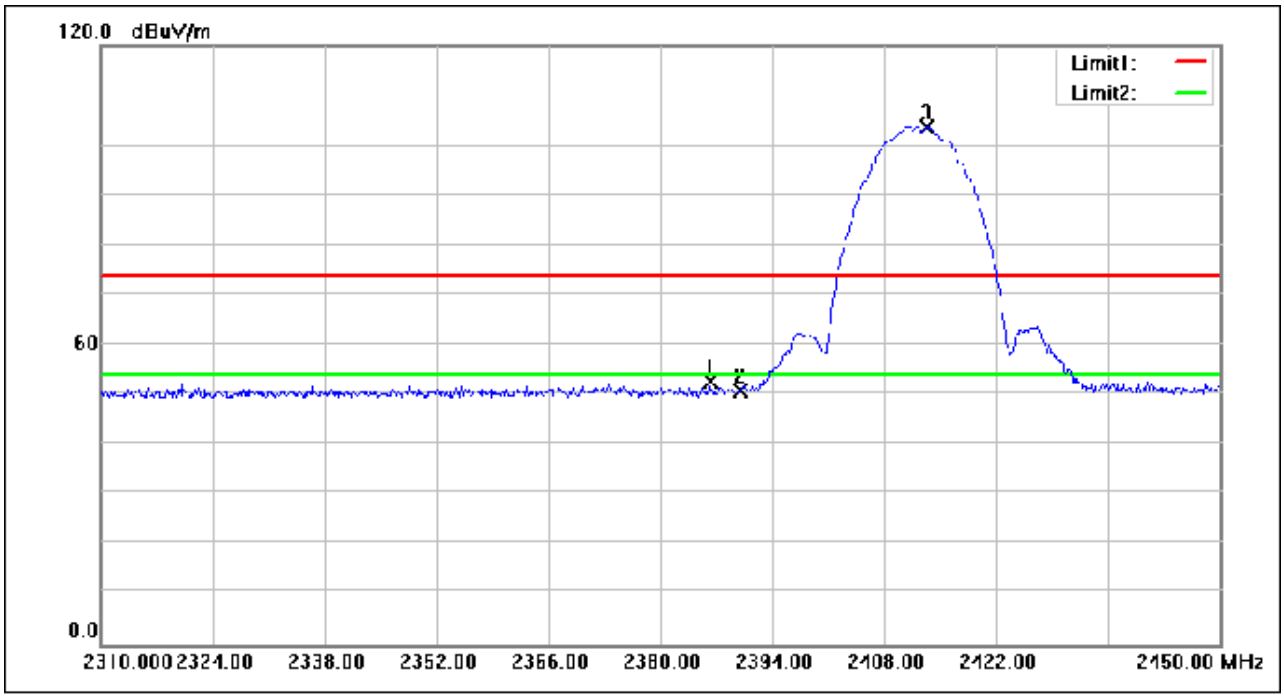
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level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

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



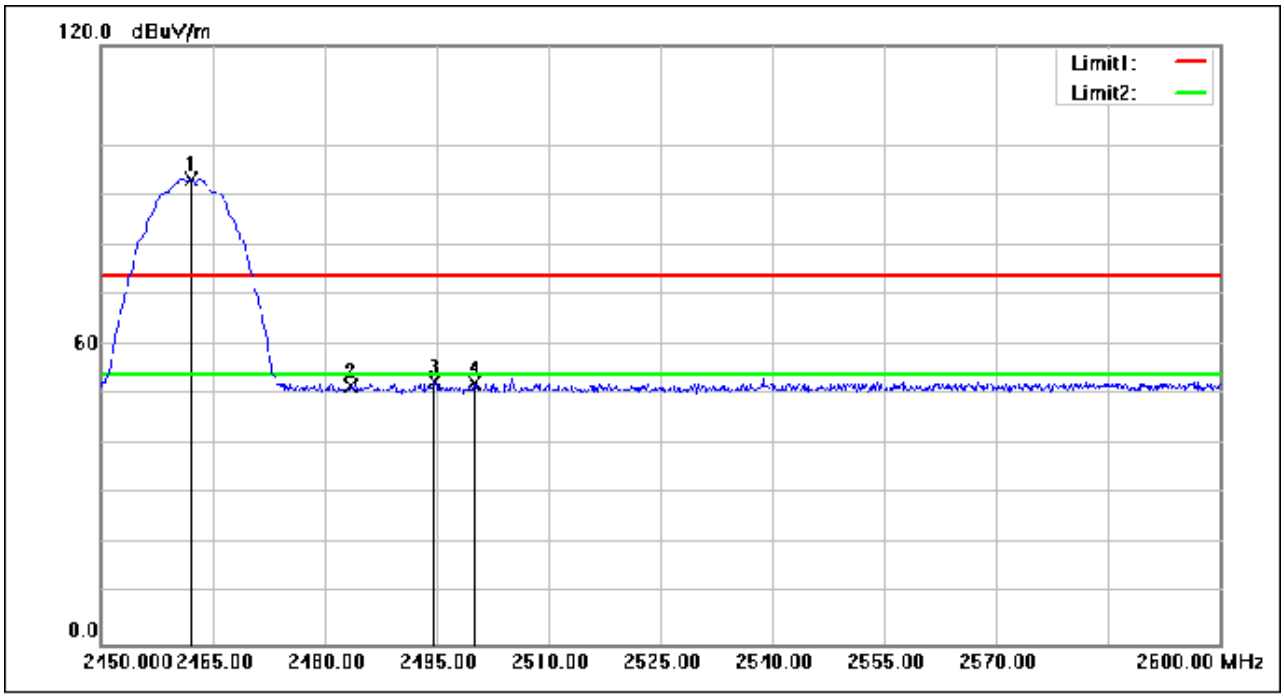
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2369.780	76.74	-24.80	51.94	74.00	-22.06	peak
2	2390.000	75.36	-24.71	50.65	74.00	-23.35	peak
3	2413.320	116.87	-24.60	92.27	74.00	18.27	peak

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



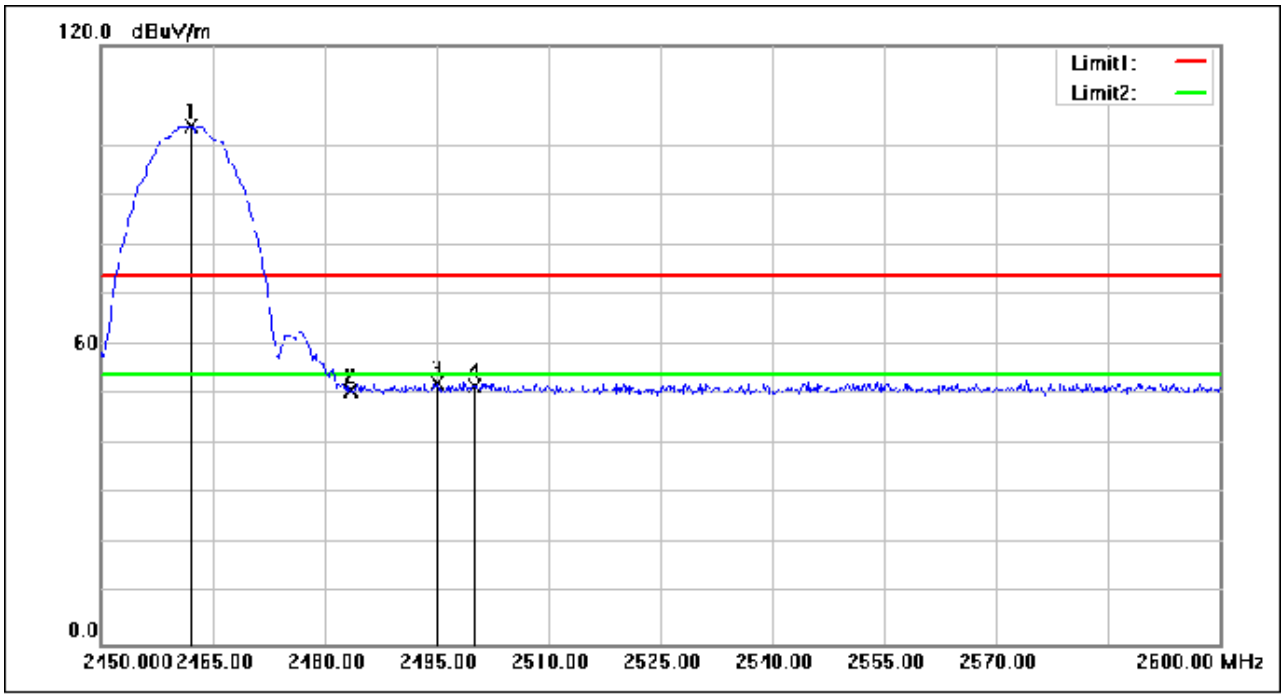
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.160	77.35	-24.72	52.63	74.00	-21.37	peak
2	2390.000	75.58	-24.71	50.87	74.00	-23.13	peak
3	2413.320	128.26	-24.60	103.66	74.00	29.66	peak

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



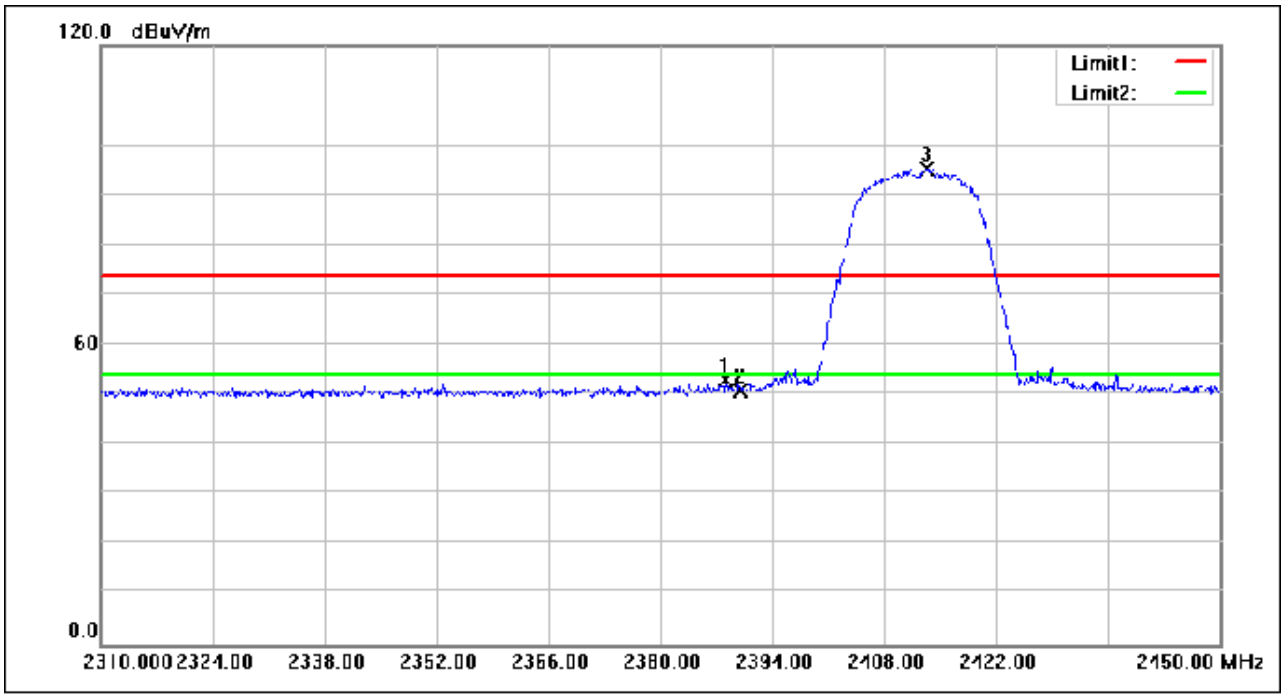
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2462.000	117.63	-24.37	93.26	74.00	19.26	peak
2	2483.500	75.98	-24.27	51.71	74.00	-22.29	peak
3	2494.700	76.74	-24.21	52.53	74.00	-21.47	peak
4	2500.000	76.49	-24.19	52.30	74.00	-21.70	peak

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



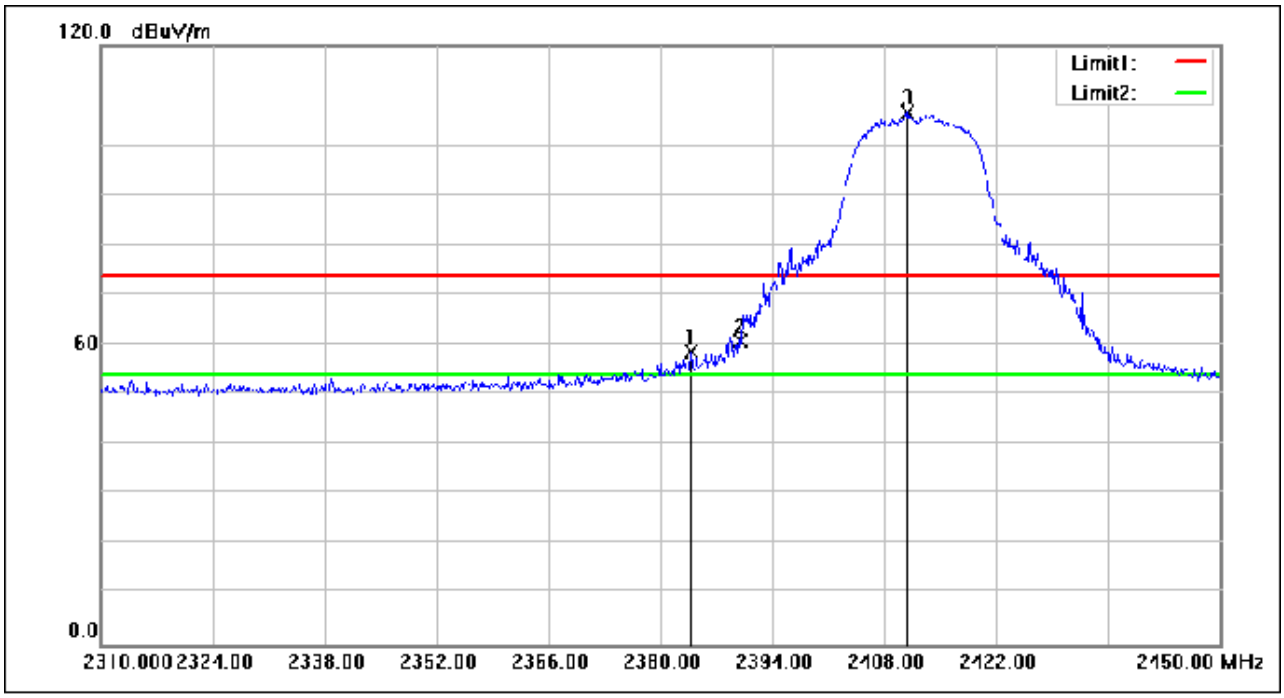
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2462.000	128.19	-24.37	103.82	74.00	29.82	peak
2	2483.500	75.04	-24.27	50.77	74.00	-23.23	peak
3	2495.150	76.68	-24.21	52.47	74.00	-21.53	peak
4	2500.000	75.80	-24.19	51.61	74.00	-22.39	peak

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



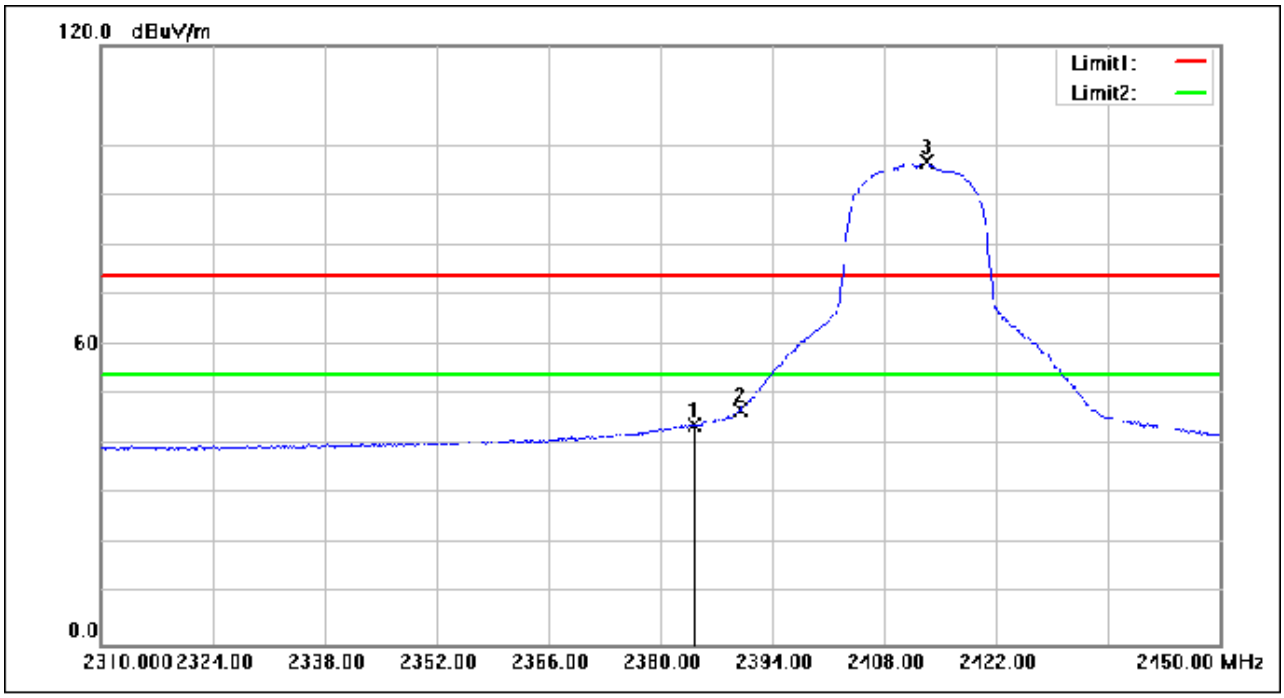
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.120	77.70	-24.72	52.98	74.00	-21.02	peak
2	2390.000	75.71	-24.71	51.00	74.00	-23.00	peak
3	2413.320	119.95	-24.60	95.35	74.00	21.35	peak

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



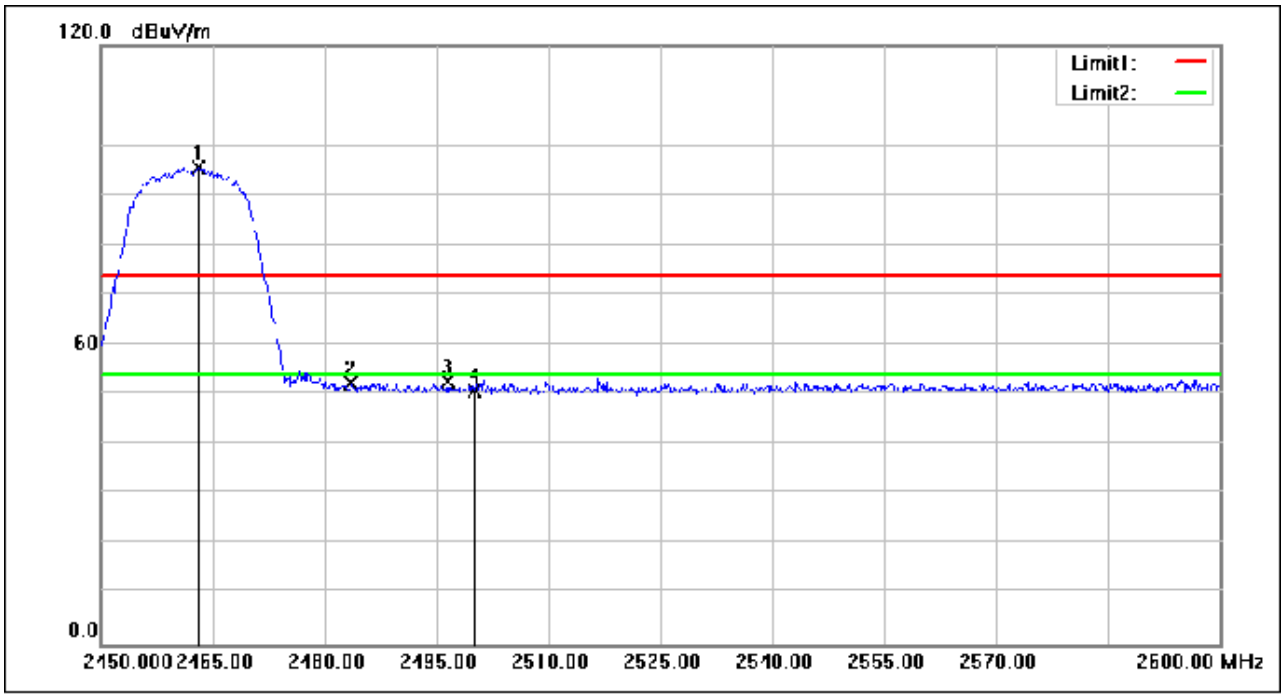
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.780	83.39	-24.73	58.66	74.00	-15.34	peak
2	2390.000	85.61	-24.71	60.90	74.00	-13.10	peak
3	2410.940	131.23	-24.61	106.62	74.00	32.62	peak

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



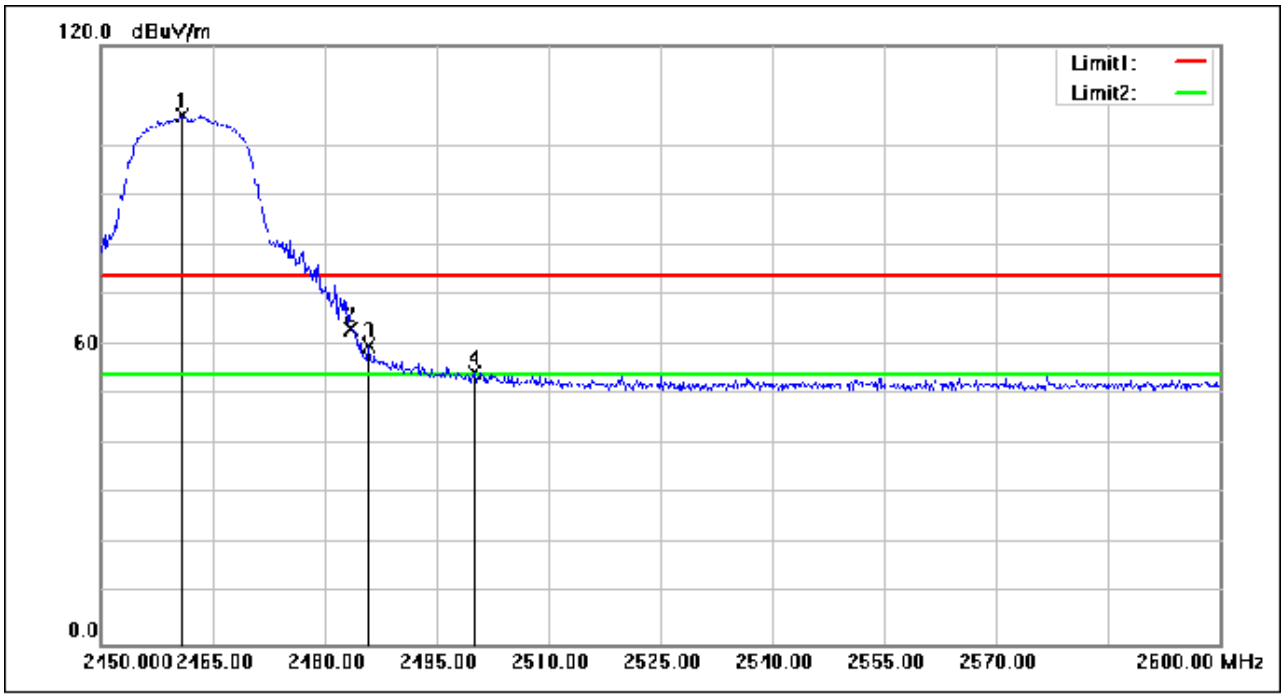
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.200	68.82	-24.73	44.09	54.00	-9.91	AVG
2	2390.000	71.80	-24.71	47.09	54.00	-6.91	AVG
3	2413.320	121.22	-24.60	96.62	54.00	42.62	AVG

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



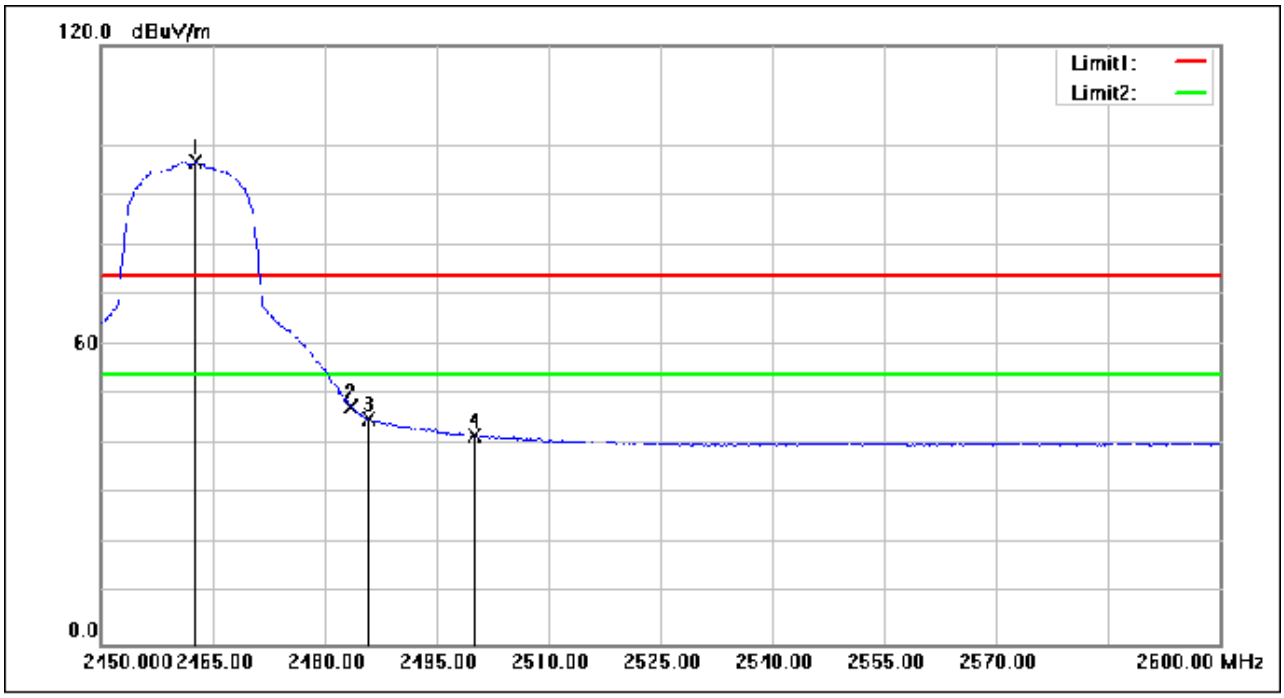
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.050	120.00	-24.37	95.63	74.00	21.63	peak
2	2483.500	76.62	-24.27	52.35	74.00	-21.65	peak
3	2496.500	76.79	-24.20	52.59	74.00	-21.41	peak
4	2500.000	75.19	-24.19	51.00	74.00	-23.00	peak

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



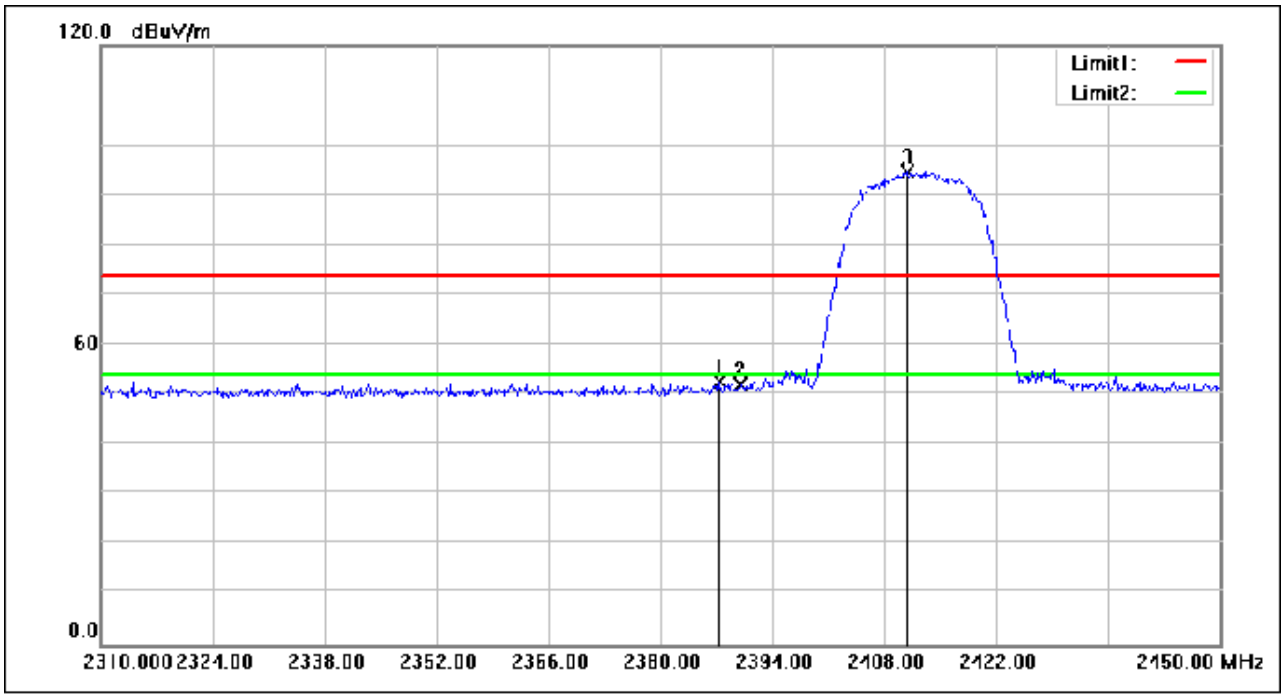
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.950	130.49	-24.38	106.11	74.00	32.11	peak
2	2483.500	87.54	-24.27	63.27	74.00	-10.73	peak
3	2485.850	83.96	-24.26	59.70	74.00	-14.30	peak
4	2500.000	78.52	-24.19	54.33	74.00	-19.67	peak

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



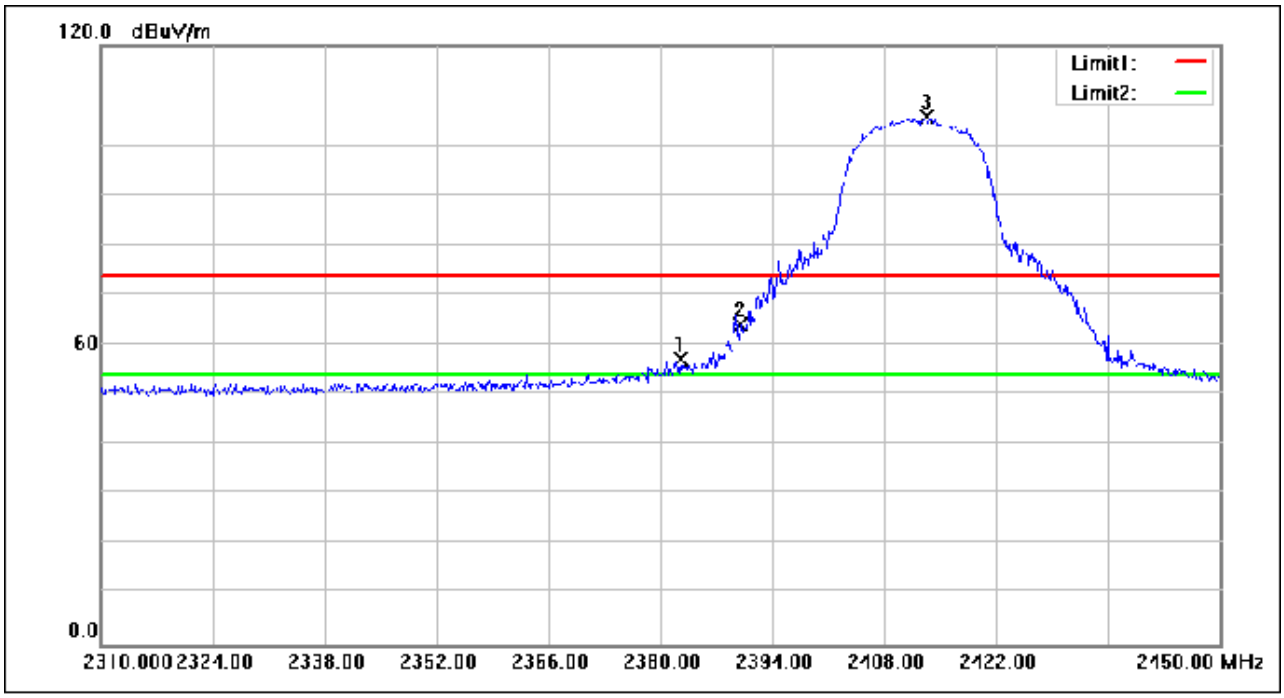
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2462.600	121.07	-24.37	96.70	54.00	42.70	AVG
2	2483.500	71.95	-24.27	47.68	54.00	-6.32	AVG
3	2485.850	69.43	-24.26	45.17	54.00	-8.83	AVG
4	2500.000	65.92	-24.19	41.73	54.00	-12.27	AVG

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



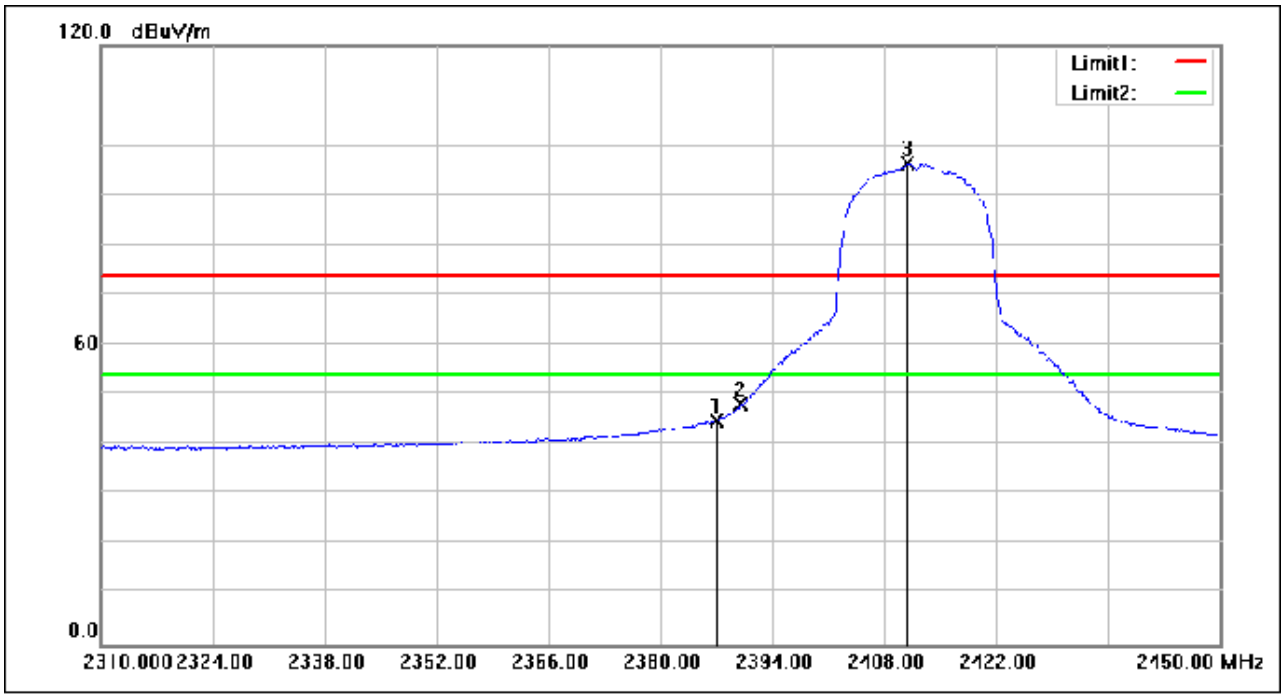
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.280	77.38	-24.72	52.66	74.00	-21.34	peak
2	2390.000	76.73	-24.71	52.02	74.00	-21.98	peak
3	2410.940	119.39	-24.61	94.78	74.00	20.78	peak

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



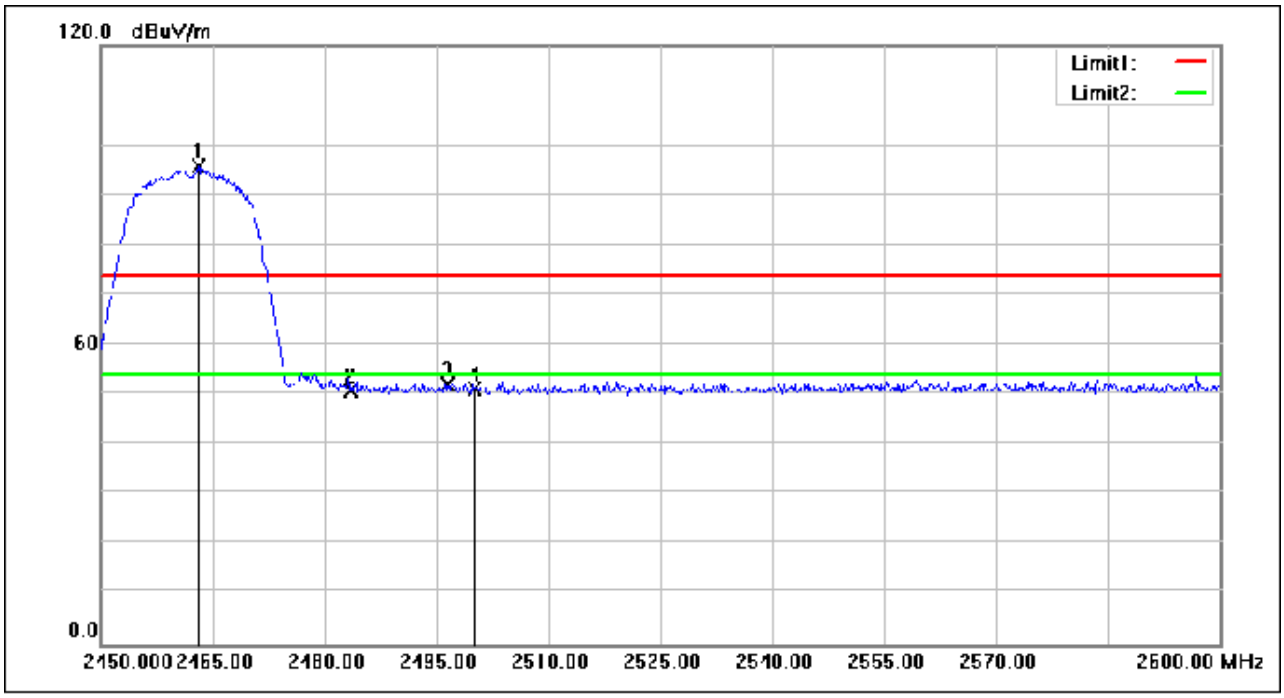
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2382.520	81.82	-24.74	57.08	74.00	-16.92	peak
2	2390.000	88.78	-24.71	64.07	74.00	-9.93	peak
3	2413.320	130.22	-24.60	105.62	74.00	31.62	peak

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



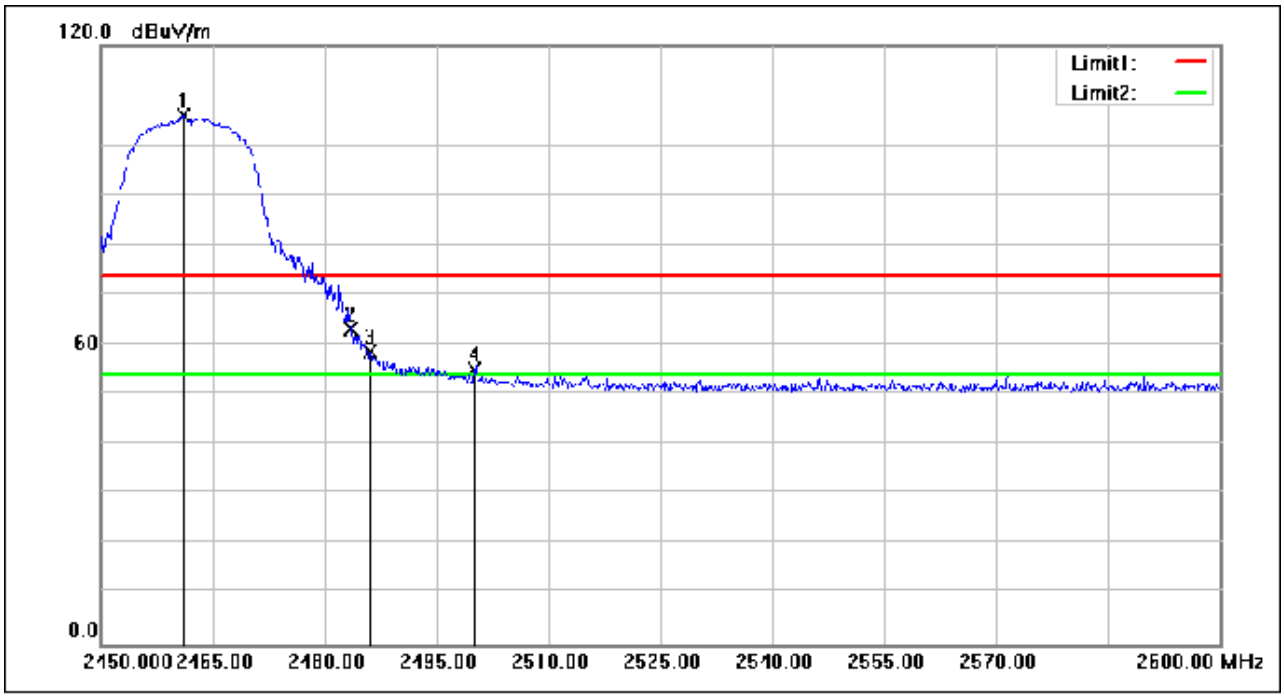
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.000	69.66	-24.72	44.94	54.00	-9.06	AVG
2	2390.000	72.75	-24.71	48.04	54.00	-5.96	AVG
3	2410.940	120.93	-24.61	96.32	54.00	42.32	AVG

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



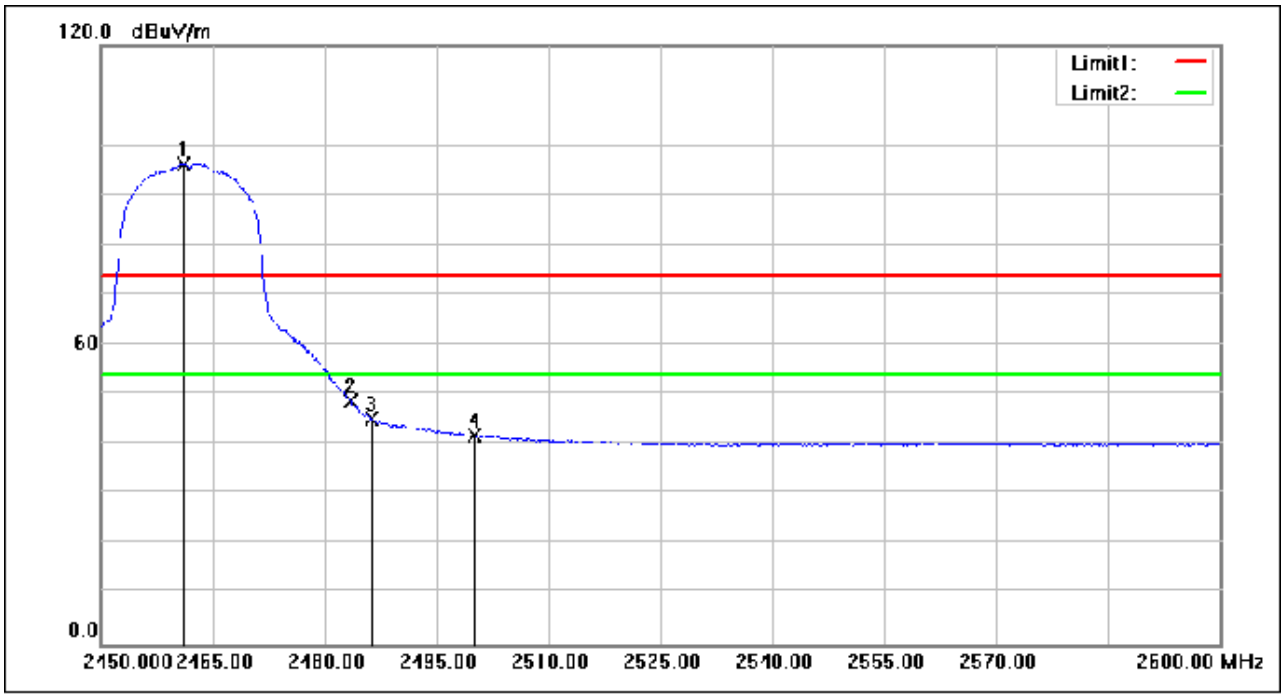
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.050	120.18	-24.37	95.81	74.00	21.81	peak
2	2483.500	75.18	-24.27	50.91	74.00	-23.09	peak
3	2496.500	76.34	-24.20	52.14	74.00	-21.86	peak
4	2500.000	75.49	-24.19	51.30	74.00	-22.70	peak

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



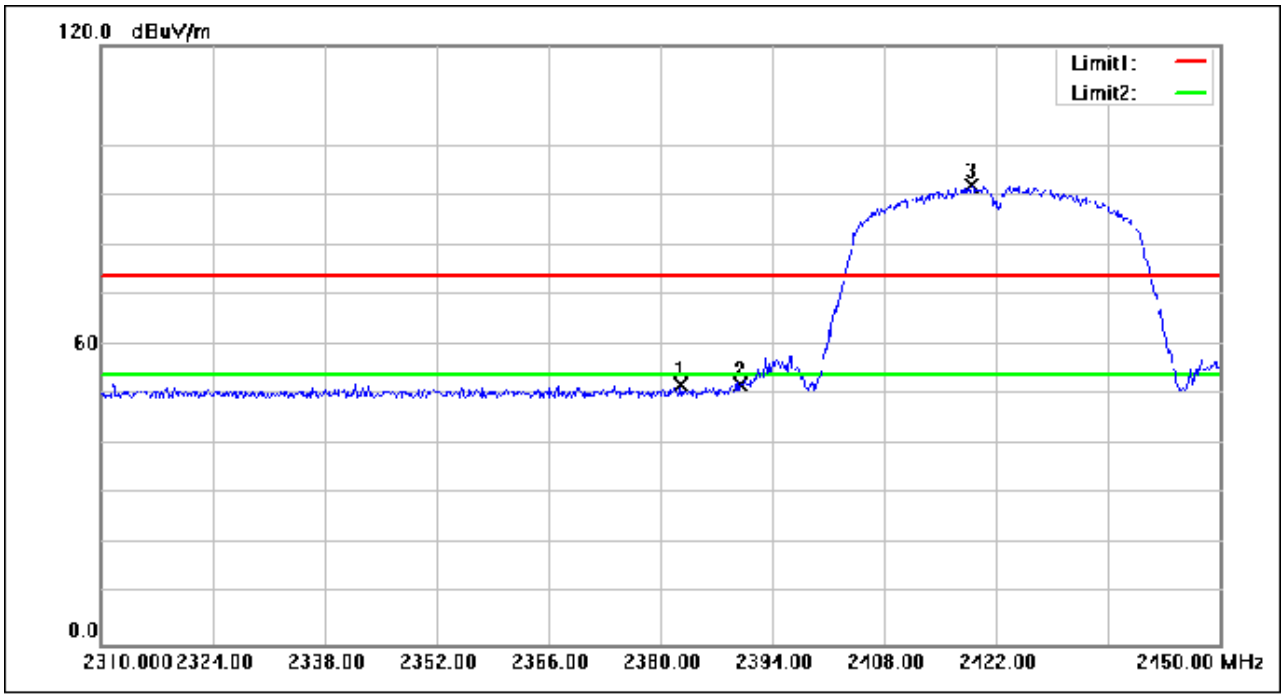
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2461.100	130.41	-24.38	106.03	74.00	32.03	peak
2	2483.500	87.28	-24.27	63.01	74.00	-10.99	peak
3	2486.150	82.78	-24.26	58.52	74.00	-15.48	peak
4	2500.000	79.11	-24.19	54.92	74.00	-19.08	peak

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



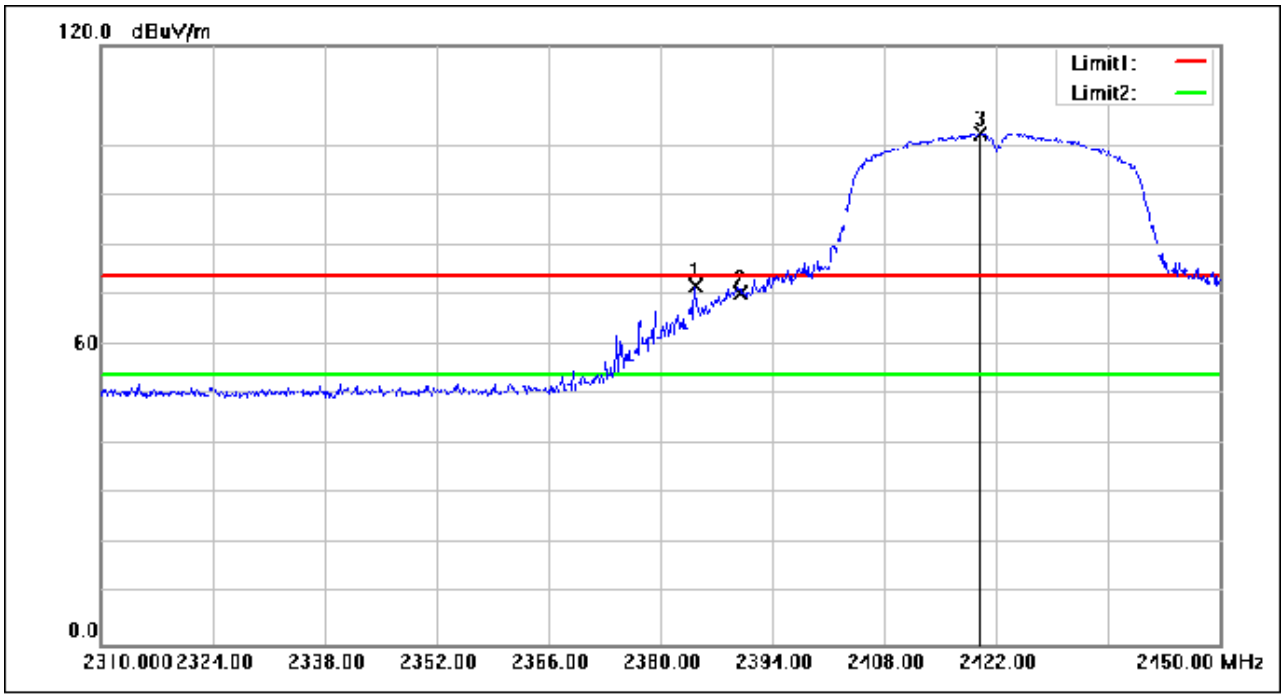
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2461.100	120.67	-24.38	96.29	54.00	42.29	AVG
2	2483.500	72.90	-24.27	48.63	54.00	-5.37	AVG
3	2486.300	69.36	-24.25	45.11	54.00	-8.89	AVG
4	2500.000	65.96	-24.19	41.77	54.00	-12.23	AVG

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



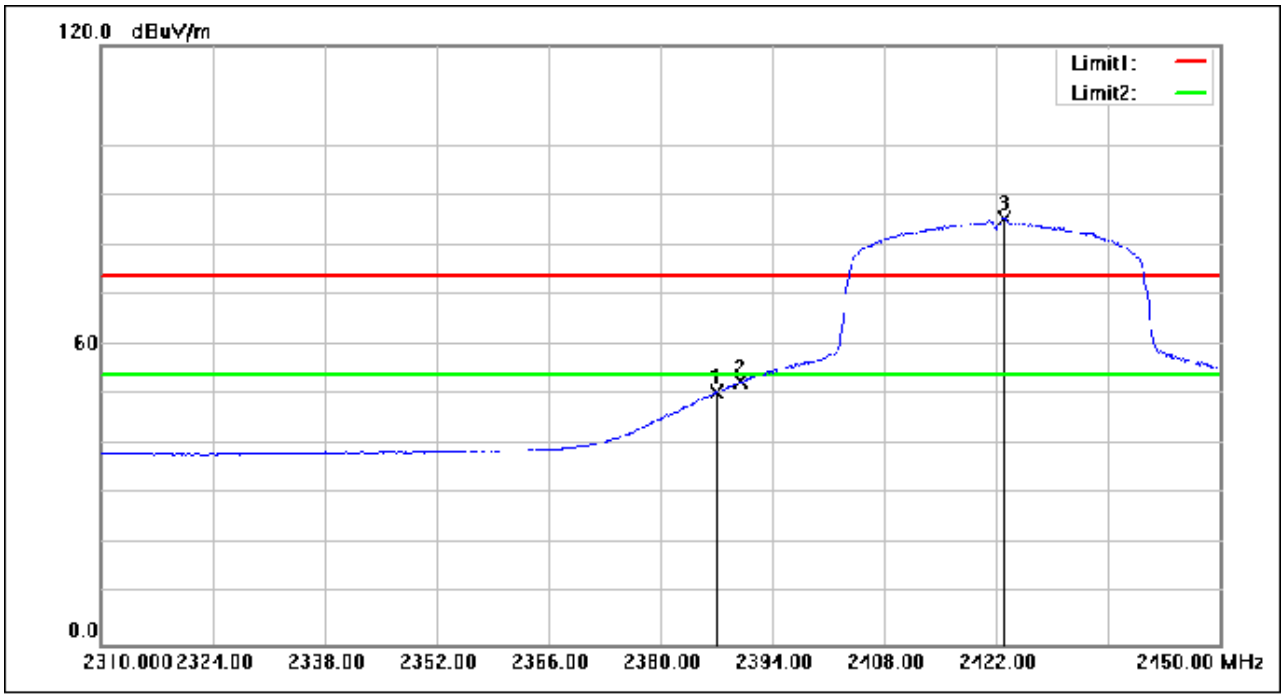
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2382.520	76.90	-24.74	52.16	74.00	-21.84	peak
2	2390.000	76.64	-24.71	51.93	74.00	-22.07	peak
3	2418.920	116.51	-24.57	91.94	74.00	17.94	peak

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



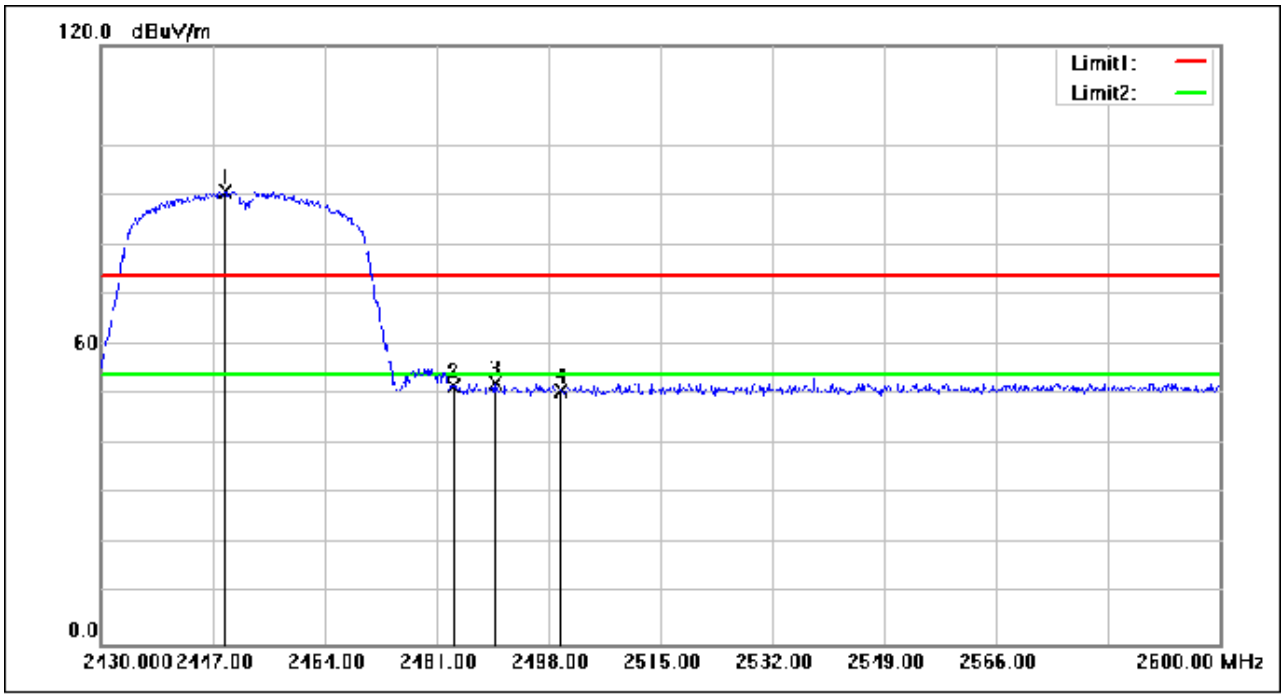
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.340	96.70	-24.73	71.97	74.00	-2.03	peak
2	2390.000	95.11	-24.71	70.40	74.00	-3.60	peak
3	2420.040	127.10	-24.57	102.53	74.00	28.53	peak

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



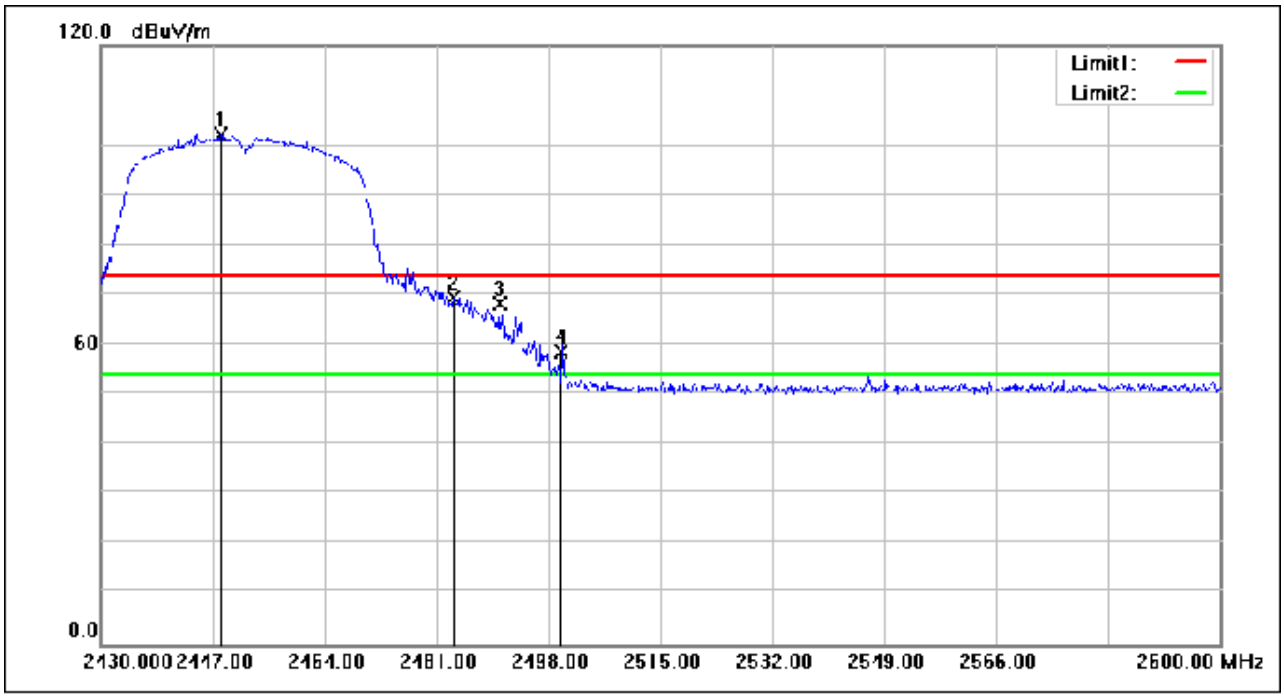
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.000	75.29	-24.72	50.57	54.00	-3.43	AVG
2	2390.000	77.42	-24.71	52.71	54.00	-1.29	AVG
3	2422.980	110.01	-24.55	85.46	54.00	31.46	AVG

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



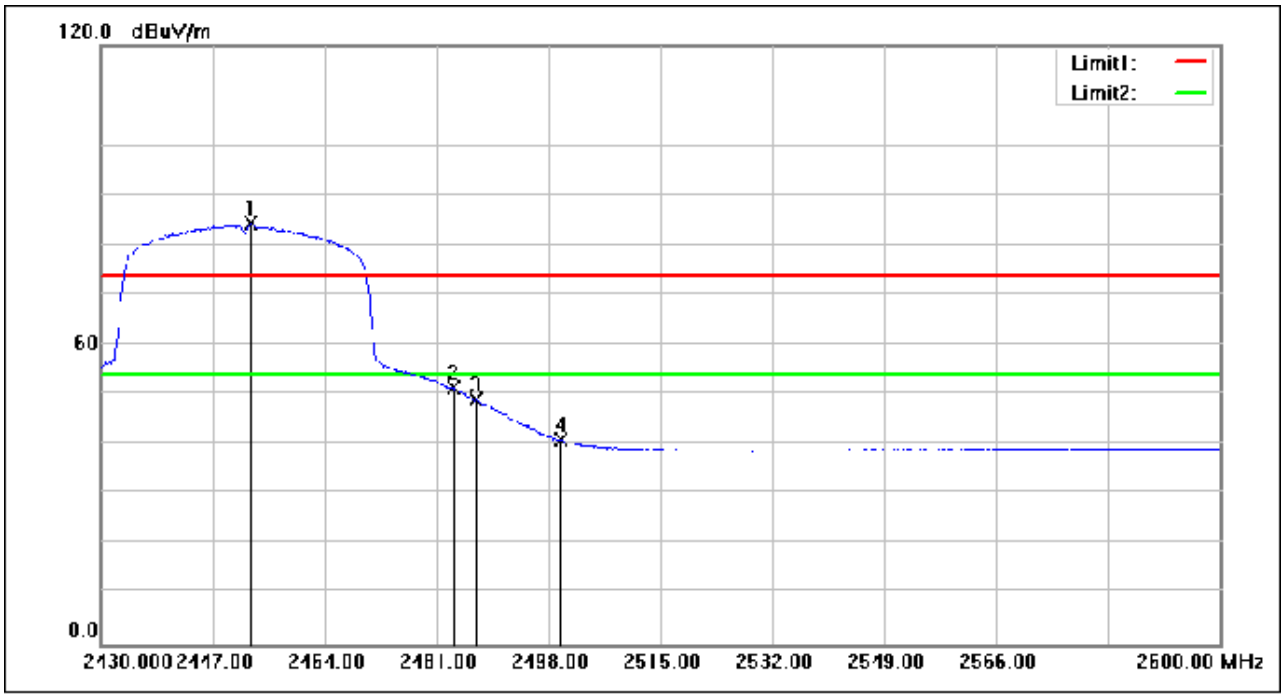
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2448.870	115.29	-24.43	90.86	74.00	16.86	peak
2	2483.500	75.90	-24.27	51.63	74.00	-22.37	peak
3	2489.840	76.64	-24.24	52.40	74.00	-21.60	peak
4	2500.000	75.06	-24.19	50.87	74.00	-23.13	peak

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



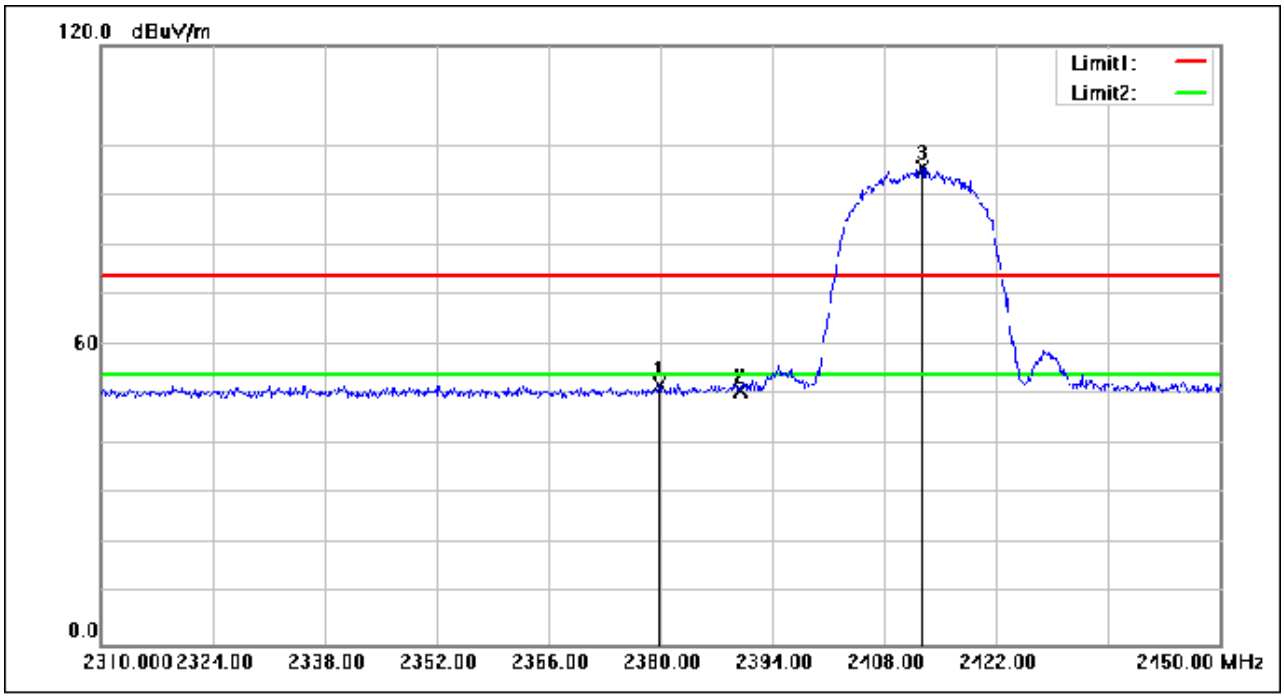
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2448.190	126.69	-24.44	102.25	74.00	28.25	peak
2	2483.500	93.66	-24.27	69.39	74.00	-4.61	peak
3	2490.520	92.48	-24.24	68.24	74.00	-5.76	peak
4	2500.000	82.72	-24.19	58.53	74.00	-15.47	peak

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



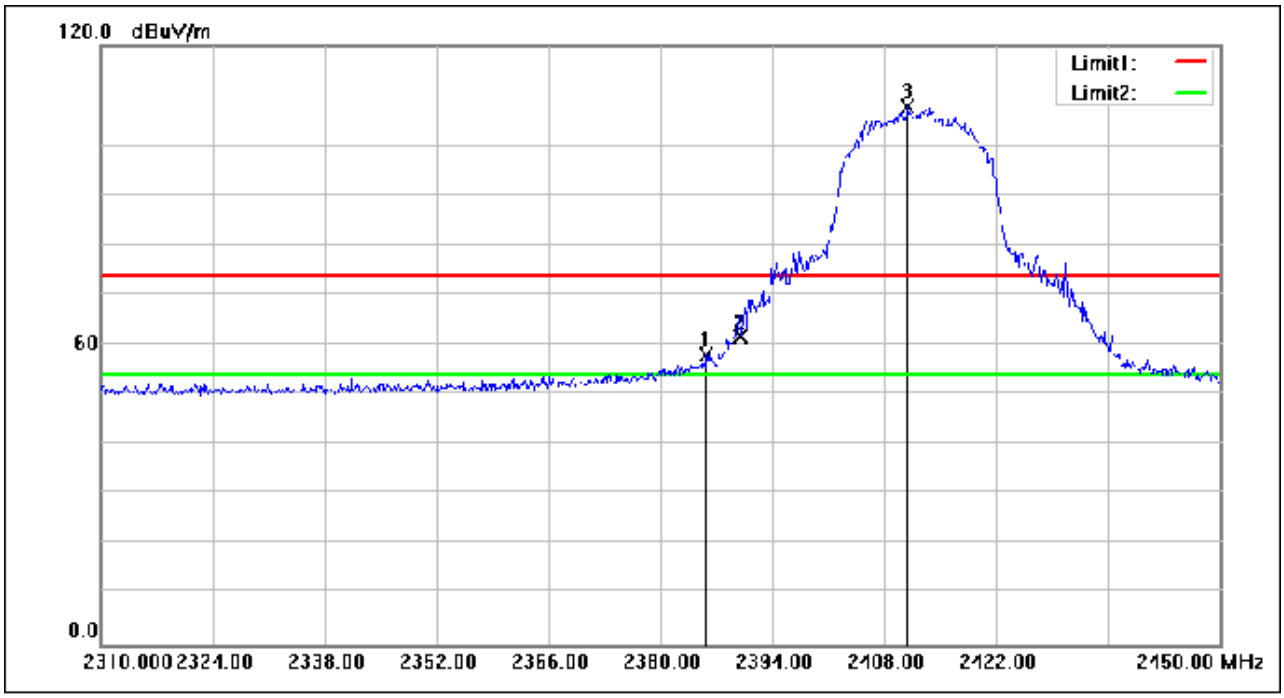
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2452.780	108.83	-24.41	84.42	54.00	30.42	AVG
2	2483.500	75.65	-24.27	51.38	54.00	-2.62	AVG
3	2486.950	73.37	-24.25	49.12	54.00	-4.88	AVG
4	2500.000	65.08	-24.19	40.89	54.00	-13.11	AVG

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



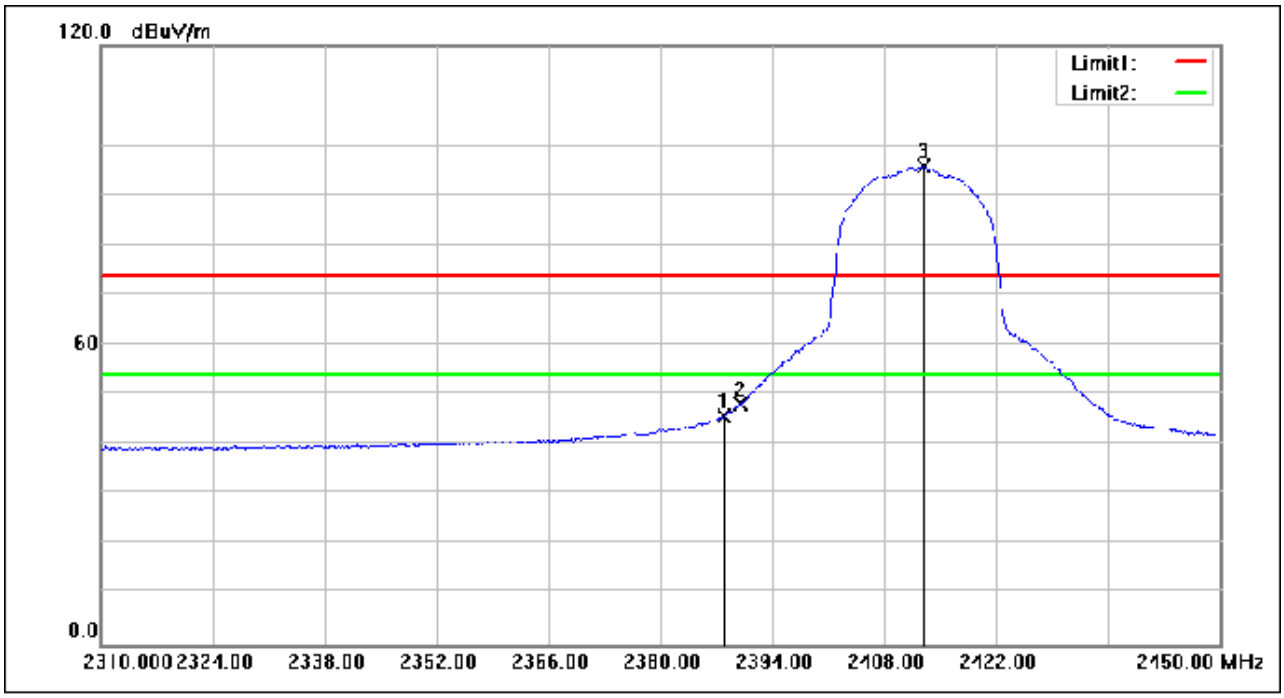
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2379.860	76.78	-24.75	52.03	74.00	-21.97	peak
2	2390.000	75.57	-24.71	50.86	74.00	-23.14	peak
3	2412.760	120.15	-24.60	95.55	74.00	21.55	peak

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	2385.740	82.87	-24.73	58.14	74.00	-15.86	peak
2	2390.000	86.40	-24.71	61.69	74.00	-12.31	peak
3	2410.940	132.34	-24.61	107.73	74.00	33.73	peak

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

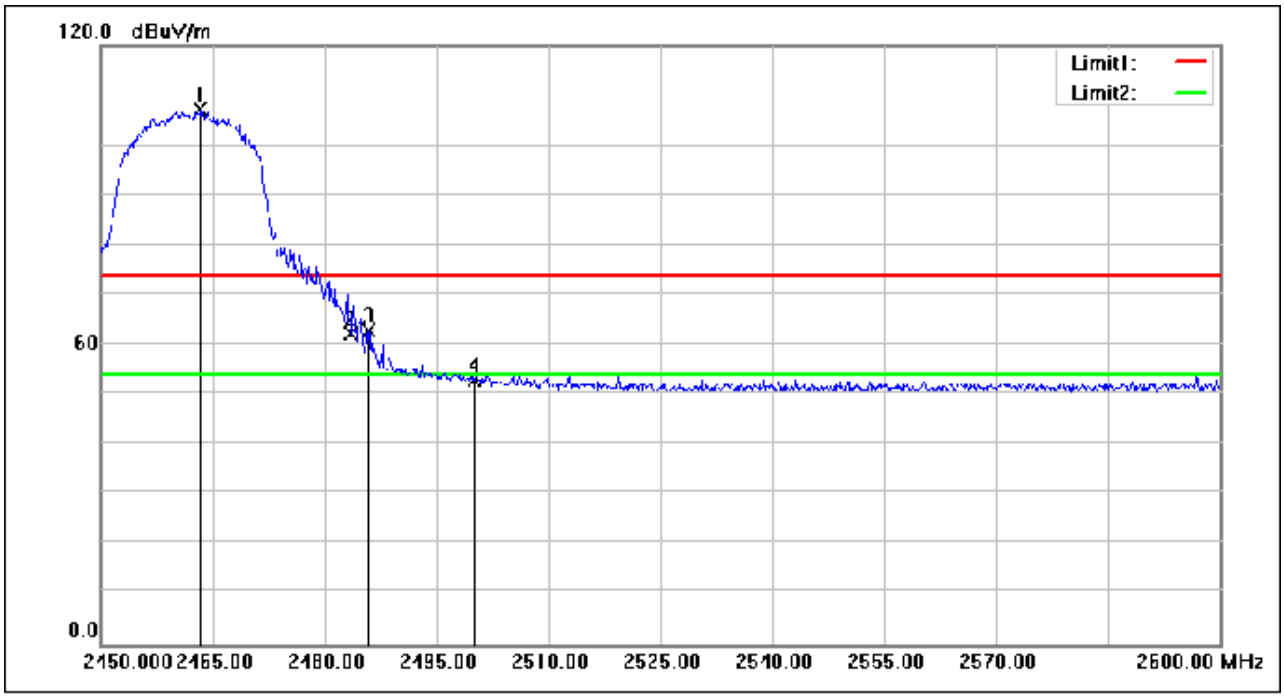


No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.980	70.50	-24.72	45.78	54.00	-8.22	AVG
2	2390.000	72.84	-24.71	48.13	54.00	-5.87	AVG
3	2412.900	120.39	-24.60	95.79	54.00	41.79	AVG

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	2463.350	120.84	-24.37	96.47	74.00	22.47	peak
2	2483.500	77.43	-24.27	53.16	74.00	-20.84	peak
3	2495.150	76.82	-24.21	52.61	74.00	-21.39	peak
4	2500.000	74.52	-24.19	50.33	74.00	-23.67	peak

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

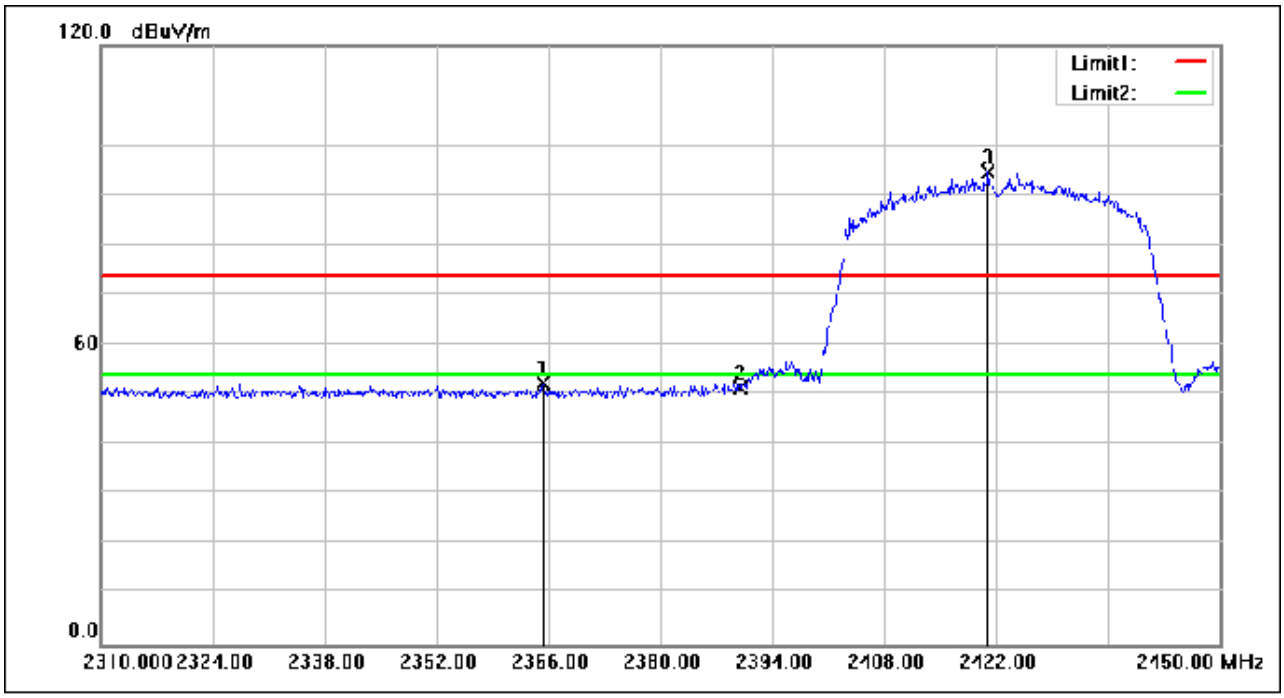


No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.350	131.72	-24.37	107.35	74.00	33.35	peak
2	2483.500	86.46	-24.27	62.19	74.00	-11.81	peak
3	2485.850	87.20	-24.26	62.94	74.00	-11.06	peak
4	2500.000	77.00	-24.19	52.81	74.00	-21.19	peak

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

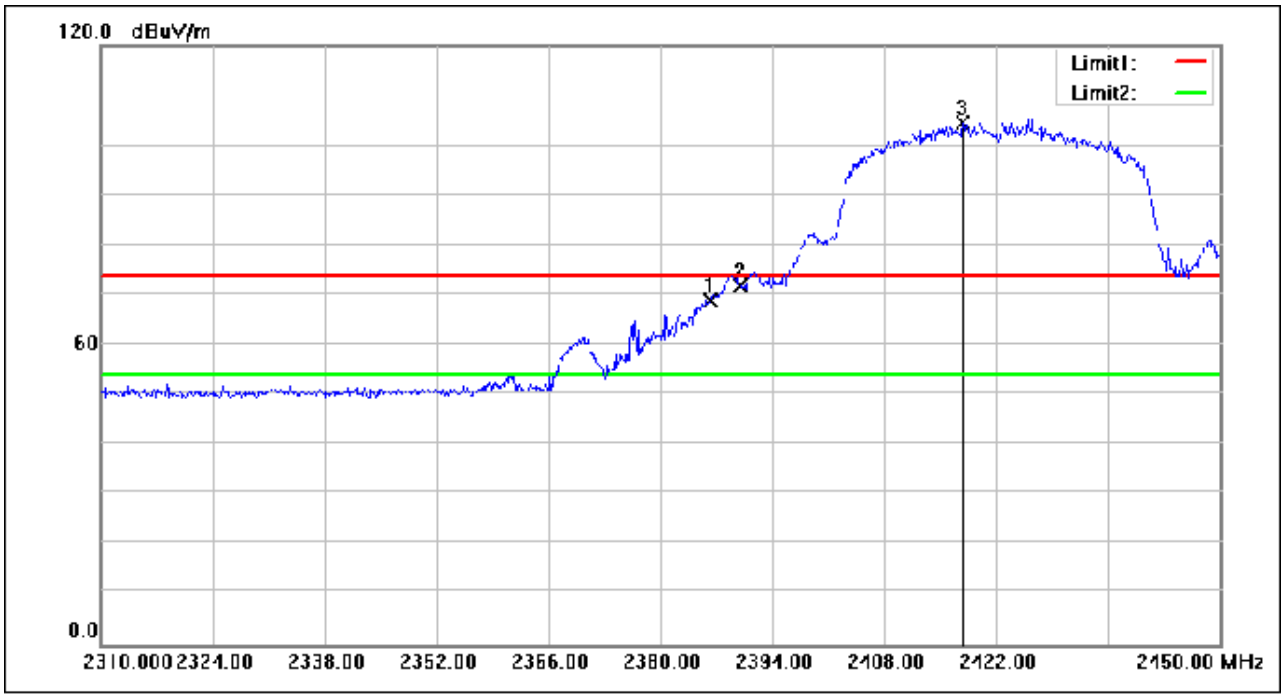
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.050	120.33	-24.37	95.96	54.00	41.96	AVG
2	2483.500	73.12	-24.27	48.85	54.00	-5.15	AVG
3	2485.550	70.34	-24.26	46.08	54.00	-7.92	AVG
4	2500.000	65.85	-24.19	41.66	54.00	-12.34	AVG

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



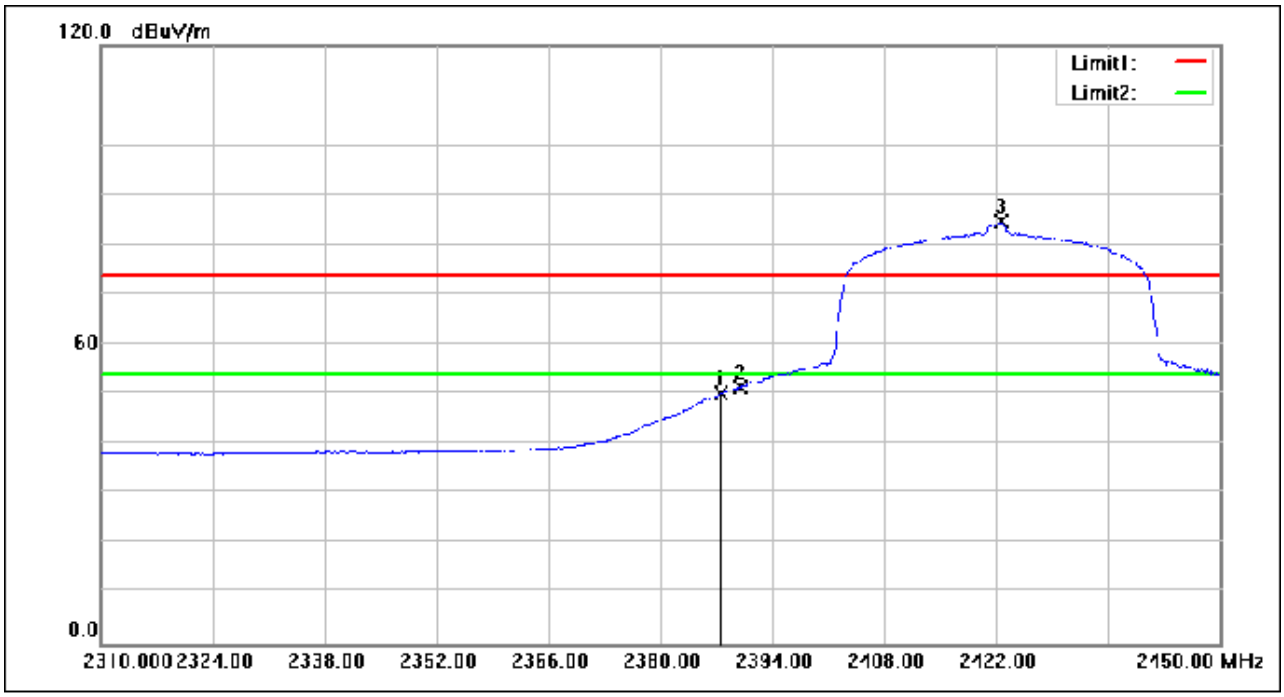
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2365.300	77.09	-24.82	52.27	74.00	-21.73	peak
2	2390.000	76.23	-24.71	51.52	74.00	-22.48	peak
3	2421.020	119.14	-24.57	94.57	74.00	20.57	peak

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



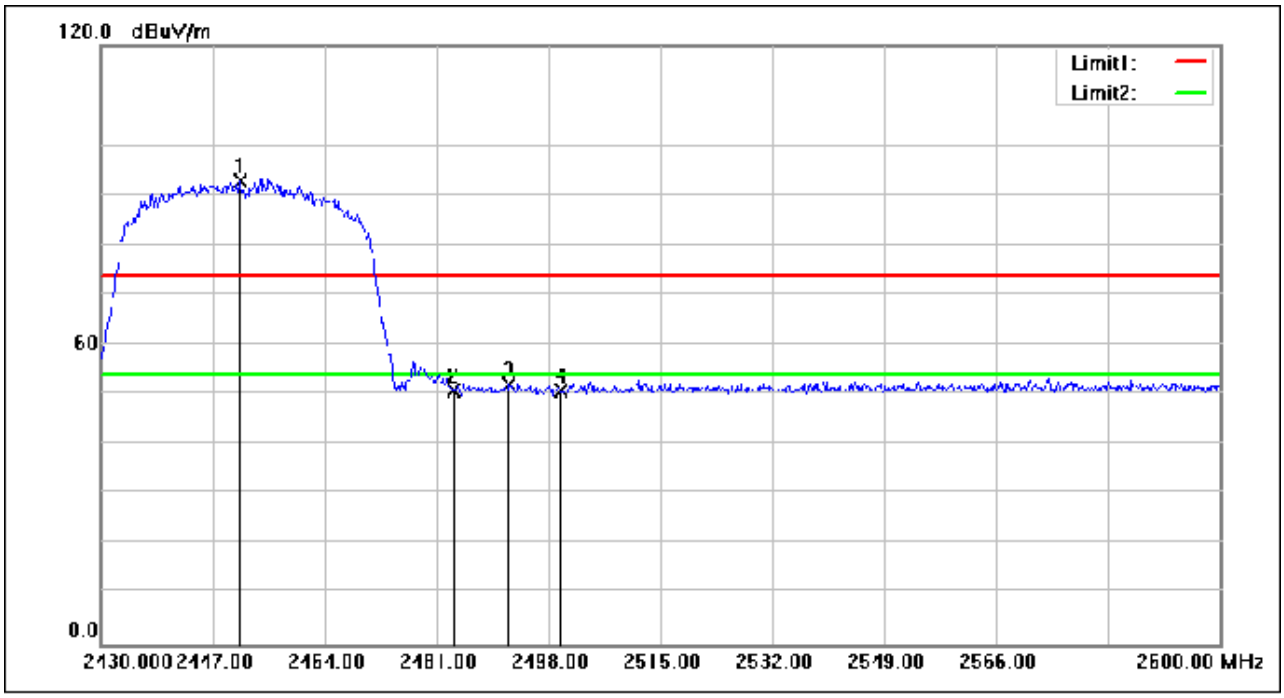
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.300	93.72	-24.72	69.00	74.00	-5.00	peak
2	2390.000	96.44	-24.71	71.73	74.00	-2.27	peak
3	2417.800	129.19	-24.58	104.61	74.00	30.61	peak

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



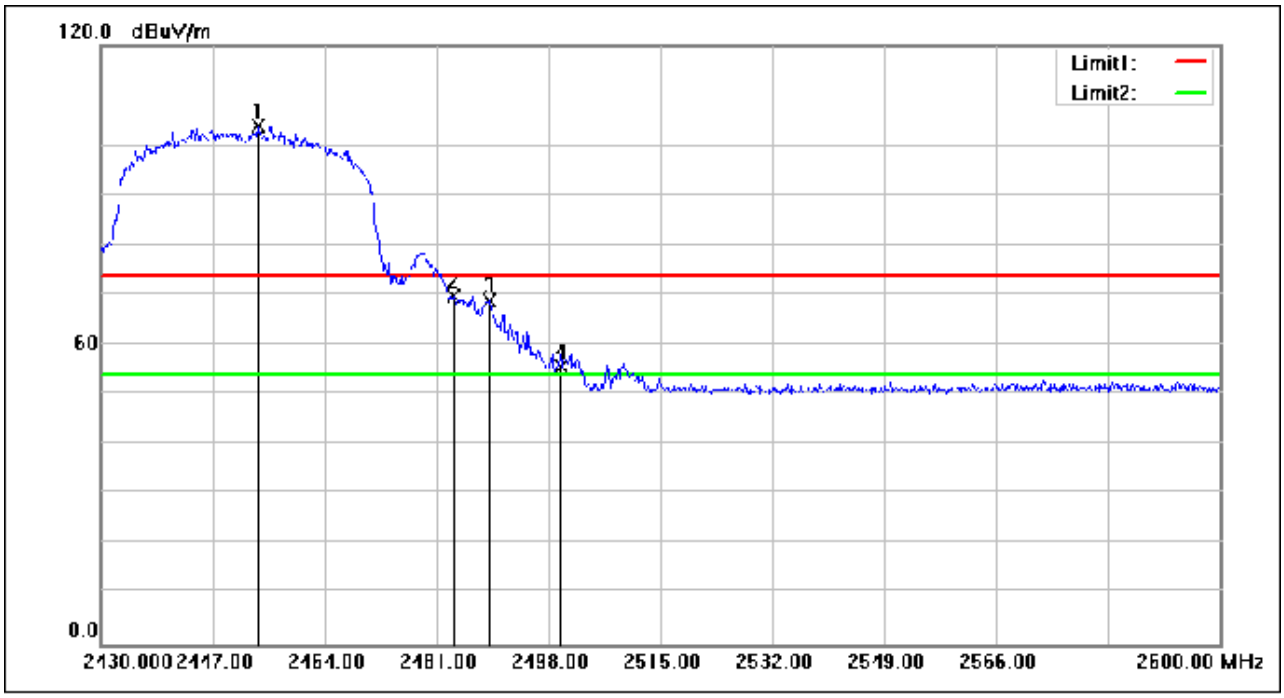
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.560	75.10	-24.72	50.38	54.00	-3.62	AVG
2	2390.000	76.29	-24.71	51.58	54.00	-2.42	AVG
3	2422.700	109.17	-24.55	84.62	54.00	30.62	AVG

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



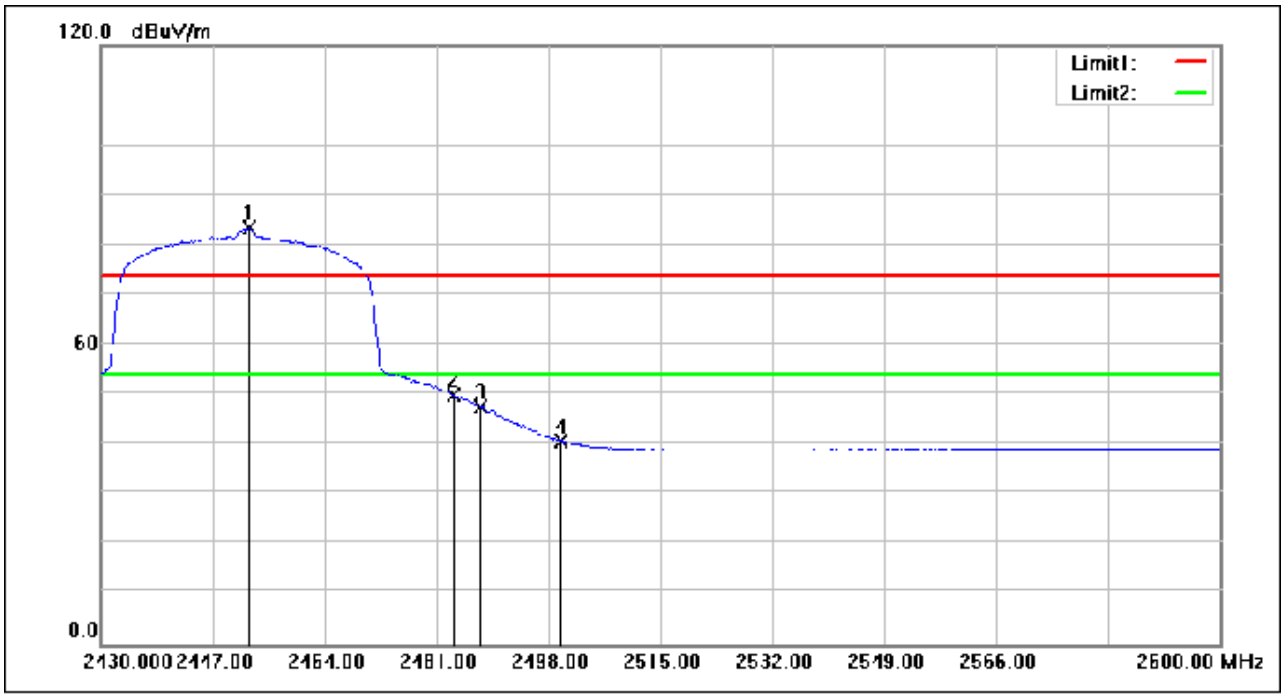
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2451.080	117.23	-24.42	92.81	74.00	18.81	peak
2	2483.500	75.27	-24.27	51.00	74.00	-23.00	peak
3	2492.050	76.41	-24.23	52.18	74.00	-21.82	peak
4	2500.000	75.03	-24.19	50.84	74.00	-23.16	peak

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	2453.800	128.48	-24.40	104.08	74.00	30.08	peak
2	2483.500	94.05	-24.27	69.78	74.00	-4.22	peak
3	2488.990	92.99	-24.24	68.75	74.00	-5.25	peak
4	2500.000	79.87	-24.19	55.68	74.00	-18.32	peak

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	2452.610	107.87	-24.41	83.46	54.00	29.46	AVG
2	2483.500	74.37	-24.27	50.10	54.00	-3.90	AVG
3	2487.630	71.90	-24.25	47.65	54.00	-6.35	AVG
4	2500.000	64.97	-24.19	40.78	54.00	-13.22	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

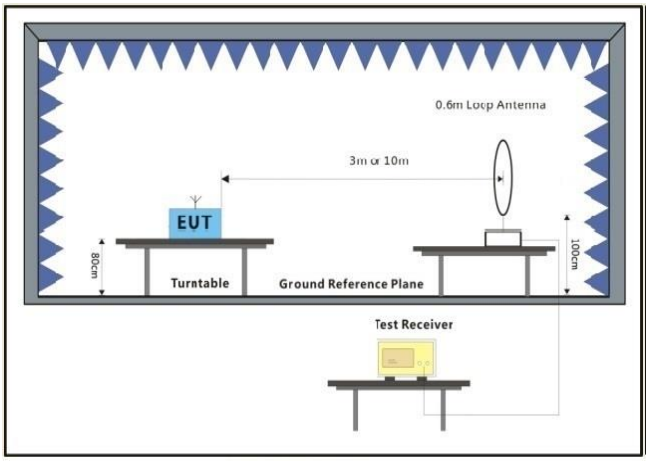
Operating Environment:

Temperature: 21.6 °C Humidity: 52.3 % RH Atmospheric Pressure: 1010 mbar

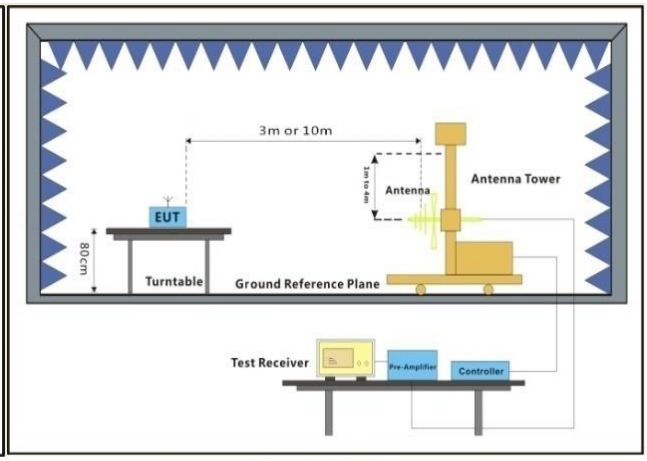
7.3.2 Test Mode Description

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(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). Only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



Below 30MHz



30MHz-1GHz

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.

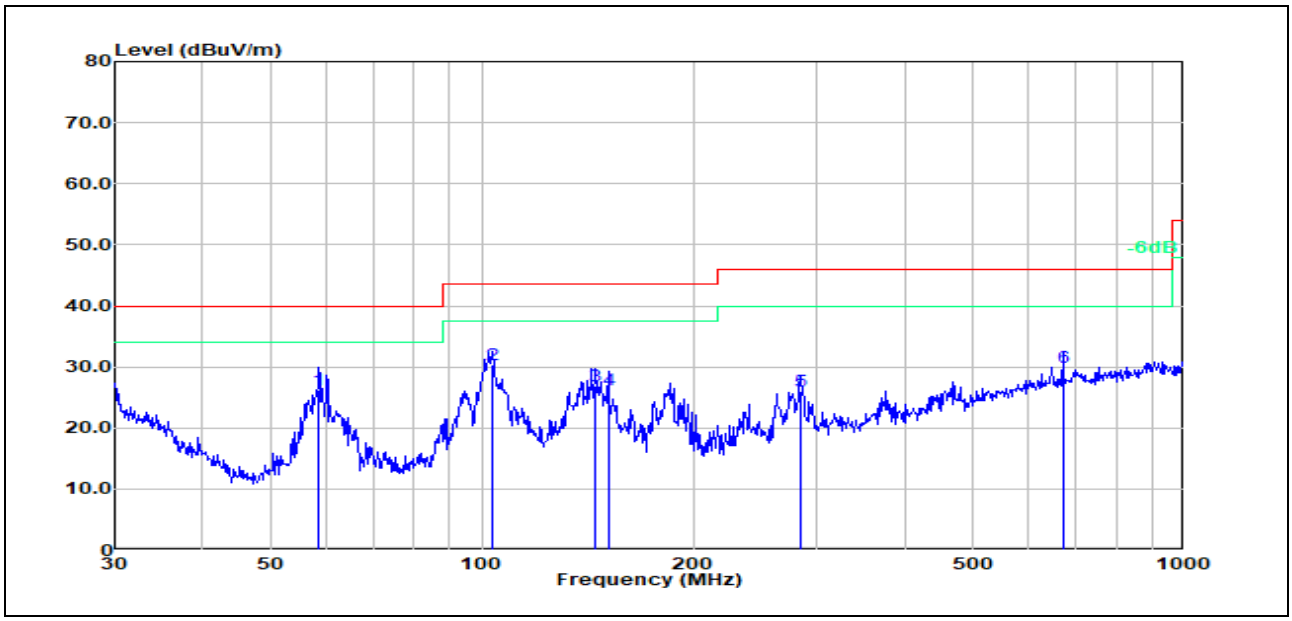
Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp 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.

Test Mode: 00; Polarity: Horizontal

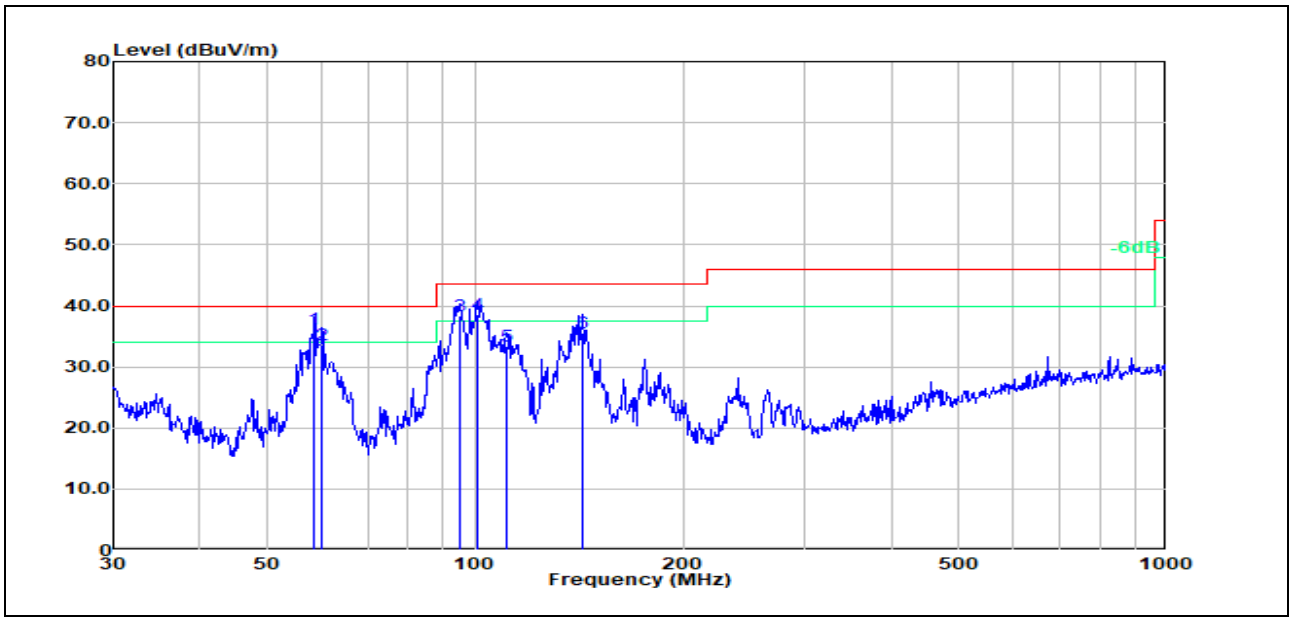
Test Data :



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	58.6126	20.42	5.88	26.30	40.00	-13.70	100	52	QP
2	103.4421	17.55	12.86	30.41	43.50	-13.09	100	316	QP
3	145.3506	14.07	12.78	26.85	43.50	-16.65	100	72	QP
4	151.5972	13.68	12.63	26.31	43.50	-17.19	200	294	QP
5	283.9792	10.27	15.69	25.96	46.00	-20.04	100	72	QP
6	672.8445	6.39	23.63	30.02	46.00	-15.98	100	294	QP

Test Mode: 00; Polarity: Vertical

Test Data :



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	58.6126	30.41	5.88	36.29	40.00	-3.71	200	1	QP
2	60.0691	27.34	6.18	33.52	40.00	-6.48	100	45	QP
3	95.0930	25.83	12.59	38.42	43.50	-5.08	100	269	QP
4	100.9340	25.85	12.77	38.62	43.50	-4.88	100	269	QP
5	111.3468	19.34	13.95	33.29	43.50	-10.21	100	322	QP
6	143.3261	21.85	13.64	35.49	43.50	-8.01	100	138	QP

7.4 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
Test Method: ANSI C63.10 (2013) Section 6.6

Limit:

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

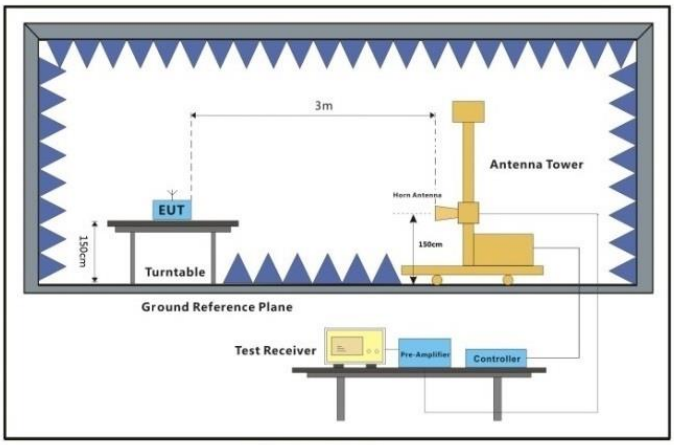
7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 21.7 °C Humidity: 51.8 % 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(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). 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.

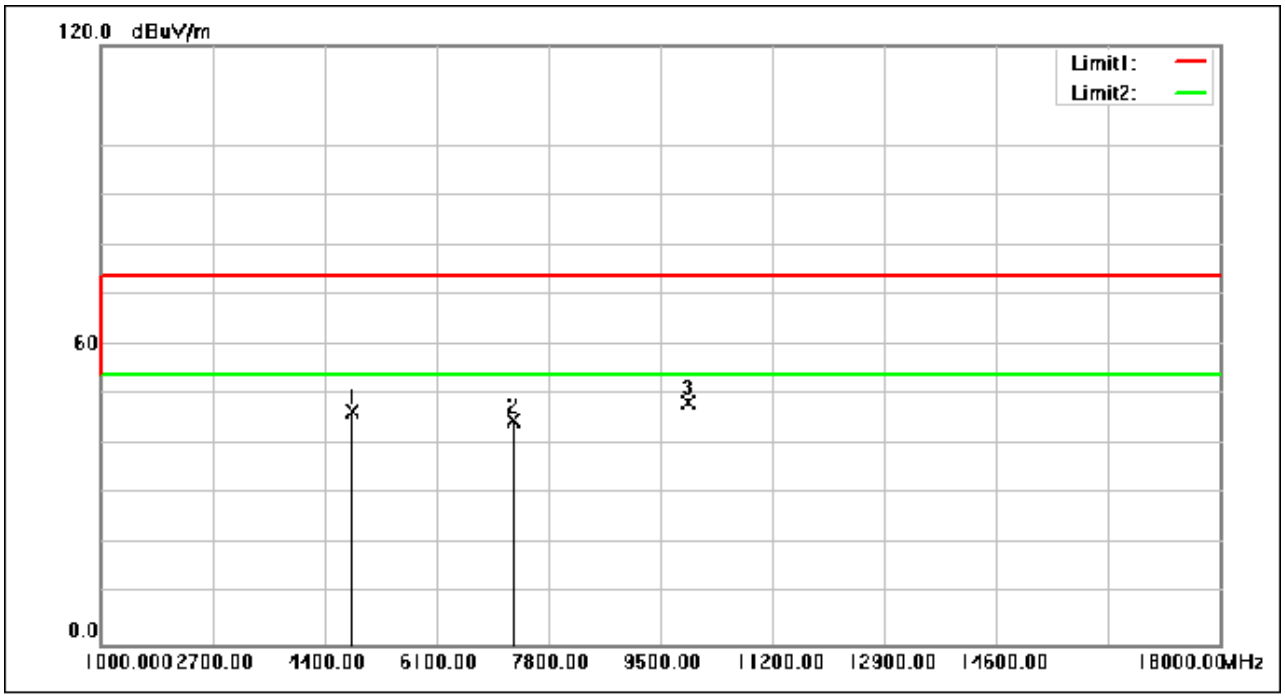
Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp 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.

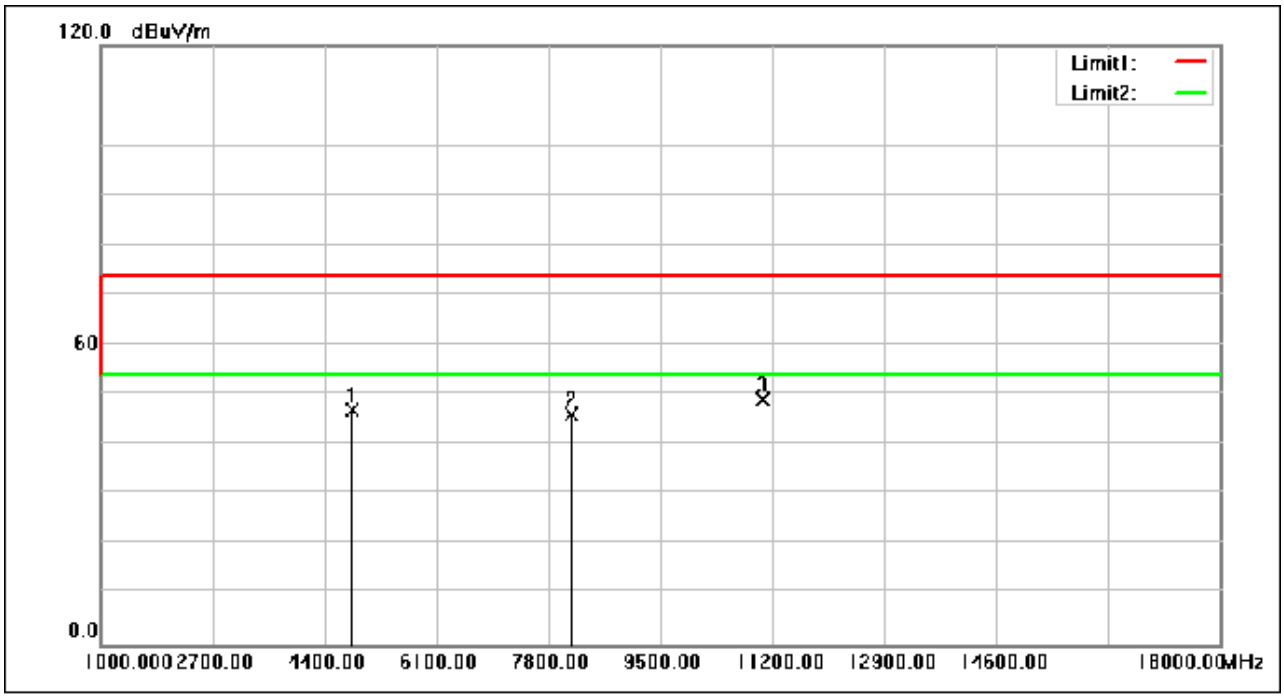
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions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

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



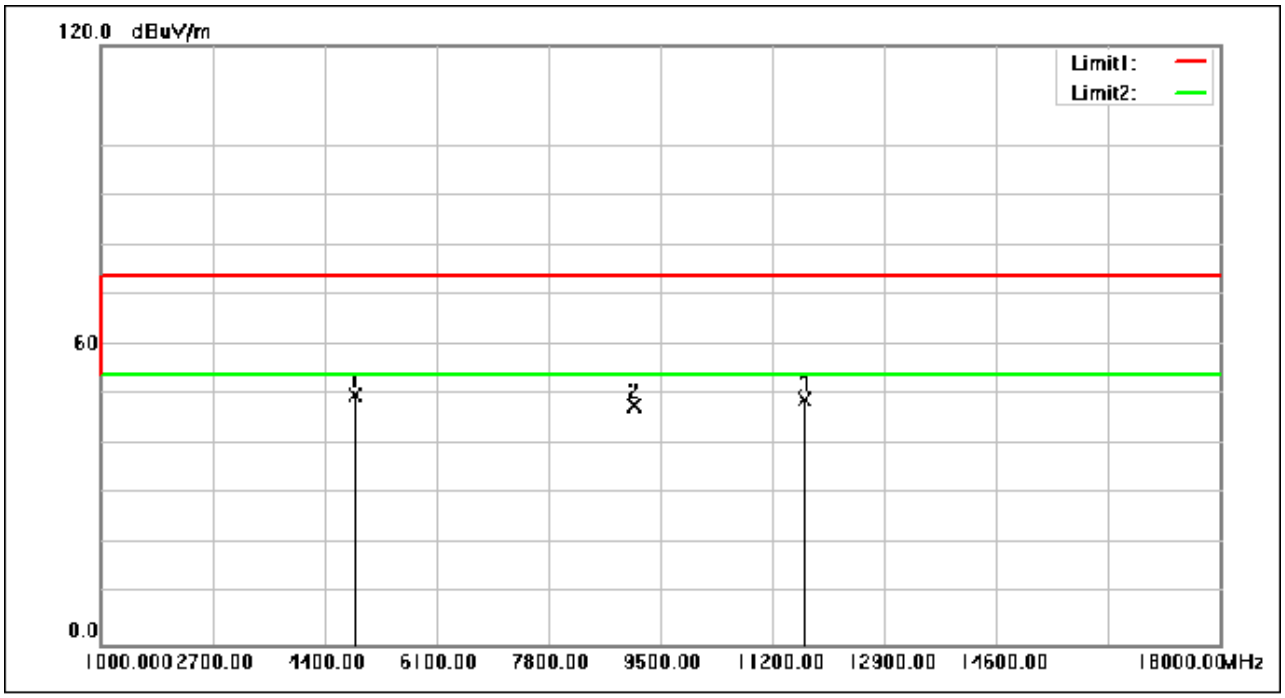
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4823.640	65.10	-18.55	46.55	74.00	-27.45	peak
2	7273.000	56.37	-11.44	44.93	74.00	-29.07	peak
3	9929.080	55.75	-7.31	48.44	74.00	-25.56	peak

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



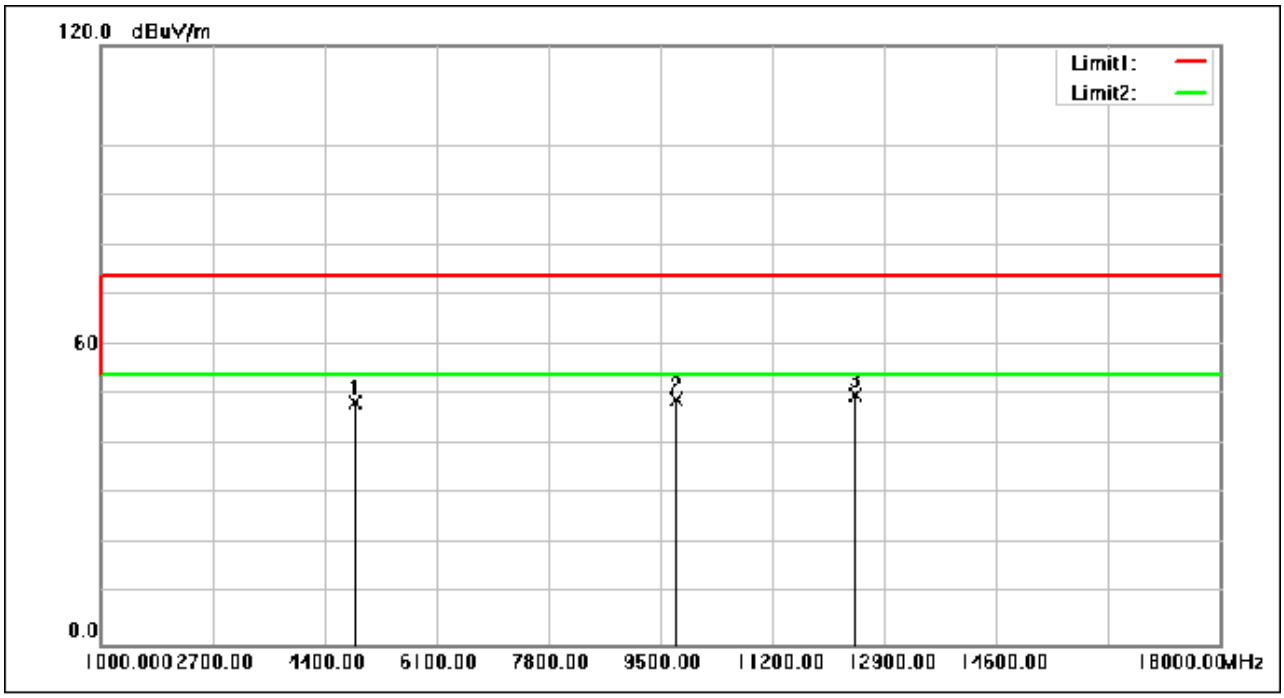
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.320	65.62	-18.54	47.08	74.00	-26.92	peak
2	8144.760	56.35	-10.34	46.01	74.00	-27.99	peak
3	11051.080	55.78	-6.72	49.06	74.00	-24.94	peak

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



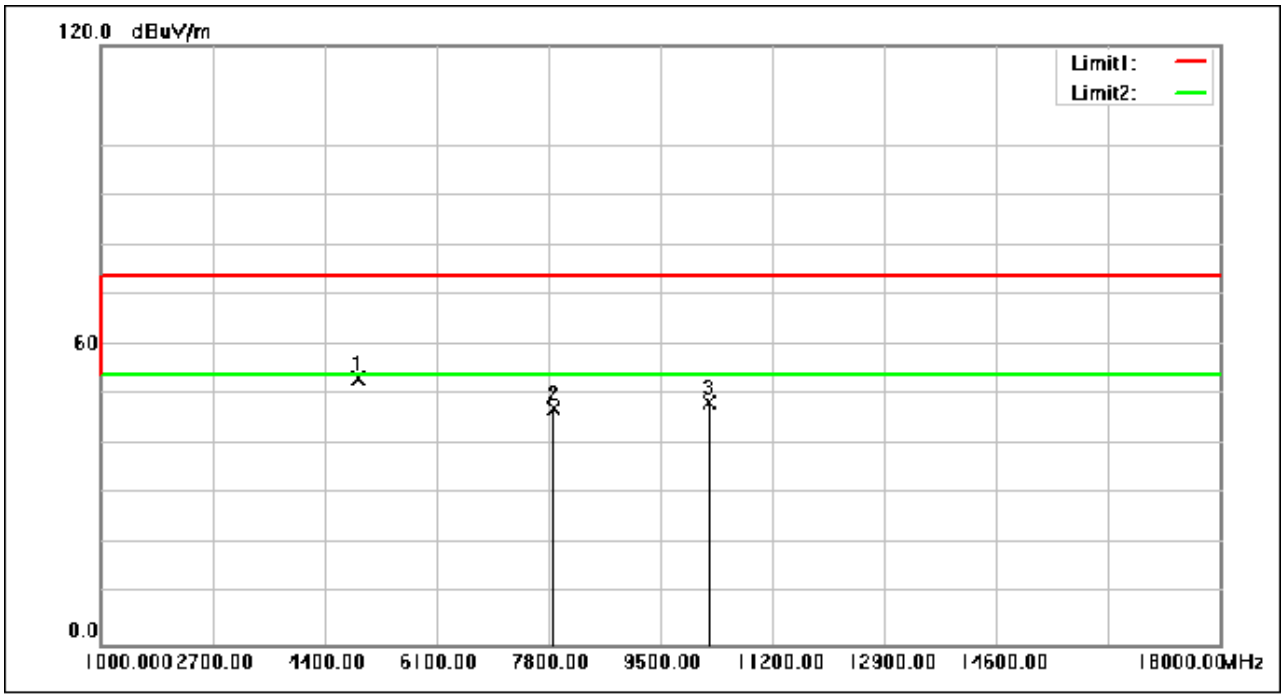
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4873.960	68.48	-18.52	49.96	74.00	-24.04	peak
2	9100.160	56.42	-8.71	47.71	74.00	-26.29	peak
3	11697.760	55.15	-6.20	48.95	74.00	-25.05	peak

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



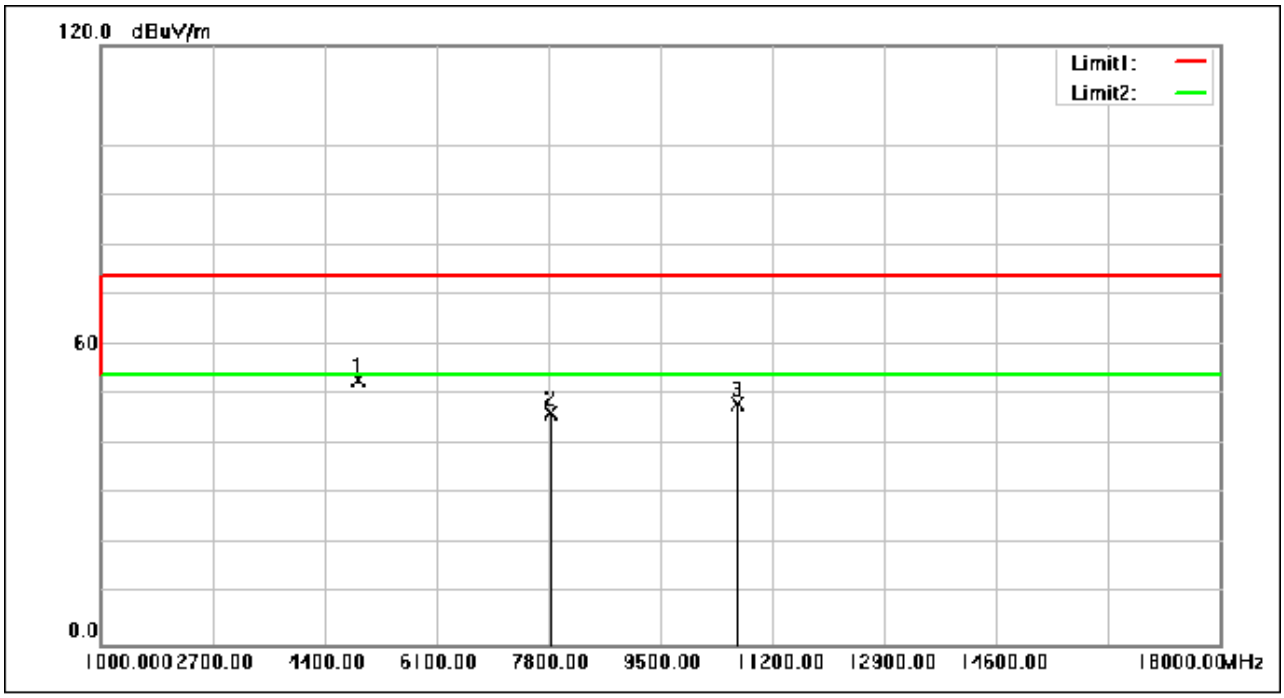
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4873.960	67.06	-18.52	48.54	74.00	-25.46	peak
2	9748.200	56.41	-7.48	48.93	74.00	-25.07	peak
3	12465.480	56.08	-6.10	49.98	74.00	-24.02	peak

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



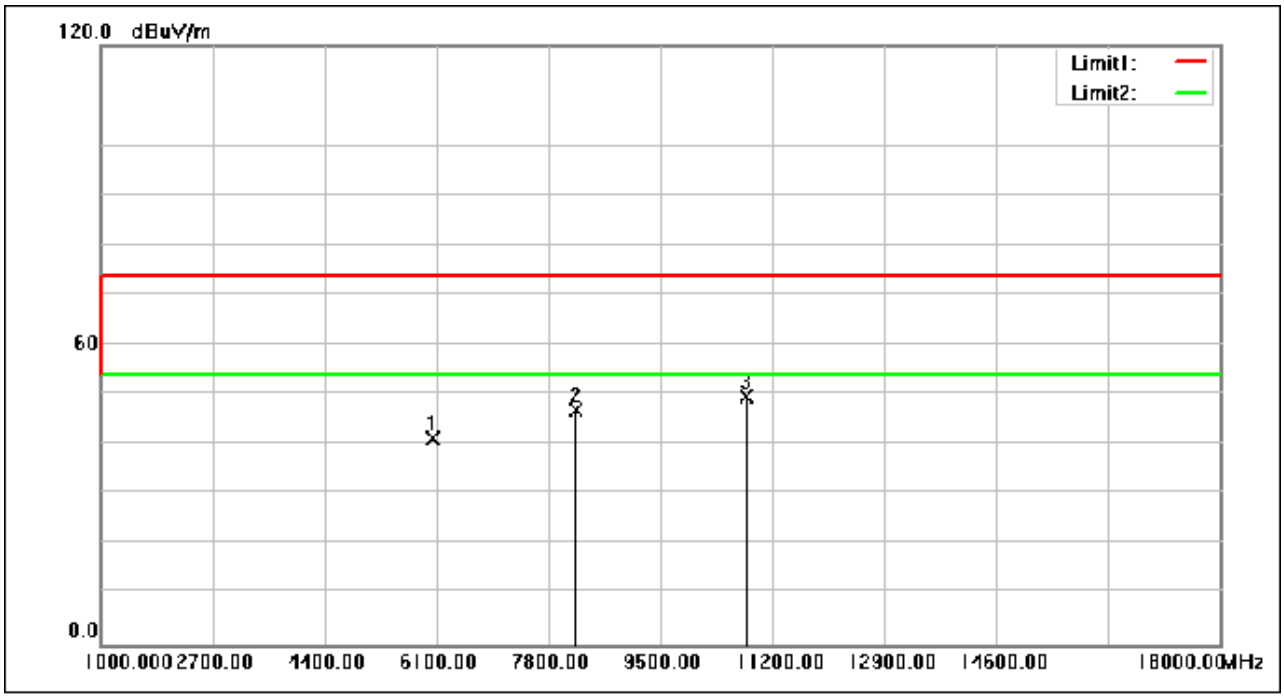
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.280	71.64	-18.49	53.15	74.00	-20.85	peak
2	7901.320	57.85	-10.73	47.12	74.00	-26.88	peak
3	10233.040	55.57	-7.20	48.37	74.00	-25.63	peak

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



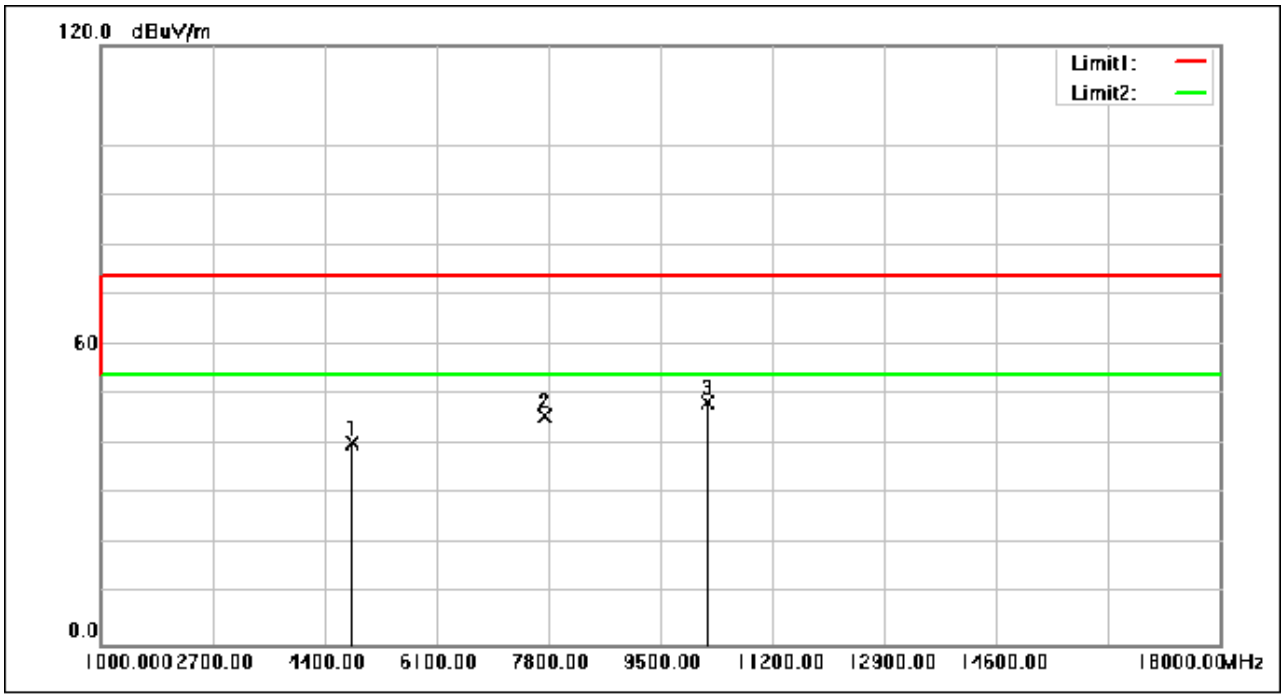
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.280	71.55	-18.49	53.06	74.00	-20.94	peak
2	7846.920	57.06	-10.80	46.26	74.00	-27.74	peak
3	10678.440	55.23	-6.94	48.29	74.00	-25.71	peak

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



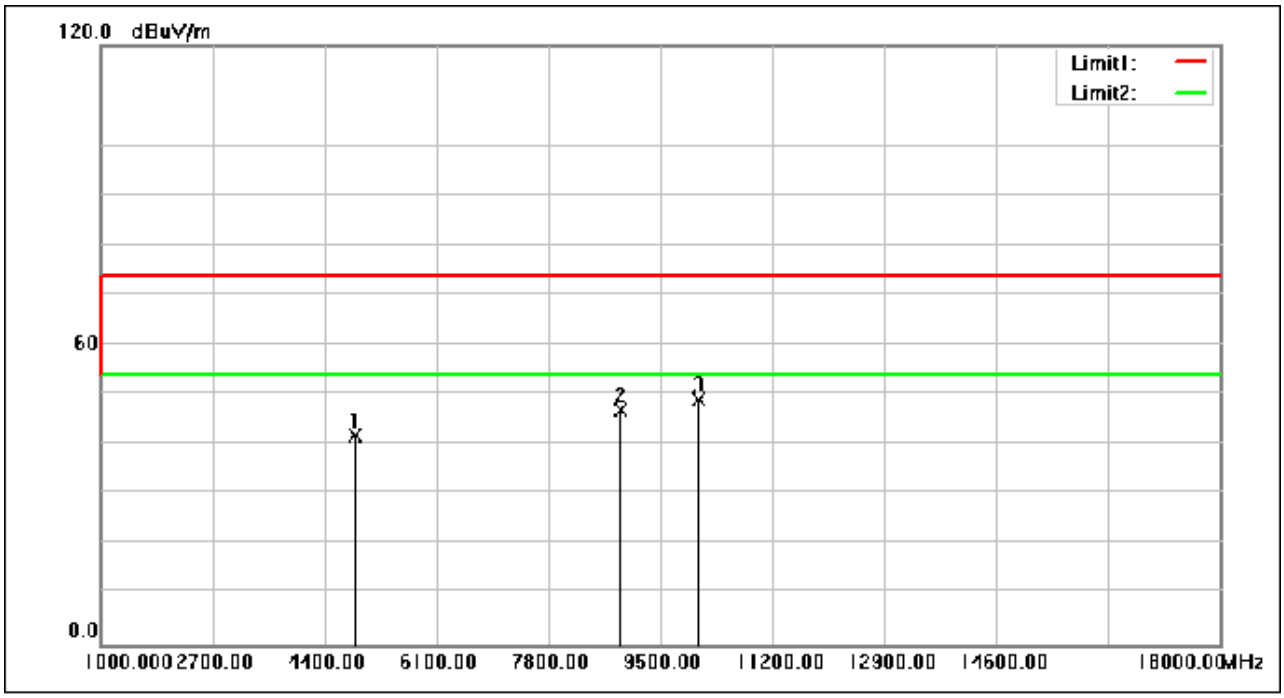
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6034.720	56.90	-15.61	41.29	74.00	-32.71	peak
2	8214.120	57.30	-10.23	47.07	74.00	-26.93	peak
3	10804.920	56.62	-6.87	49.75	74.00	-24.25	peak

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



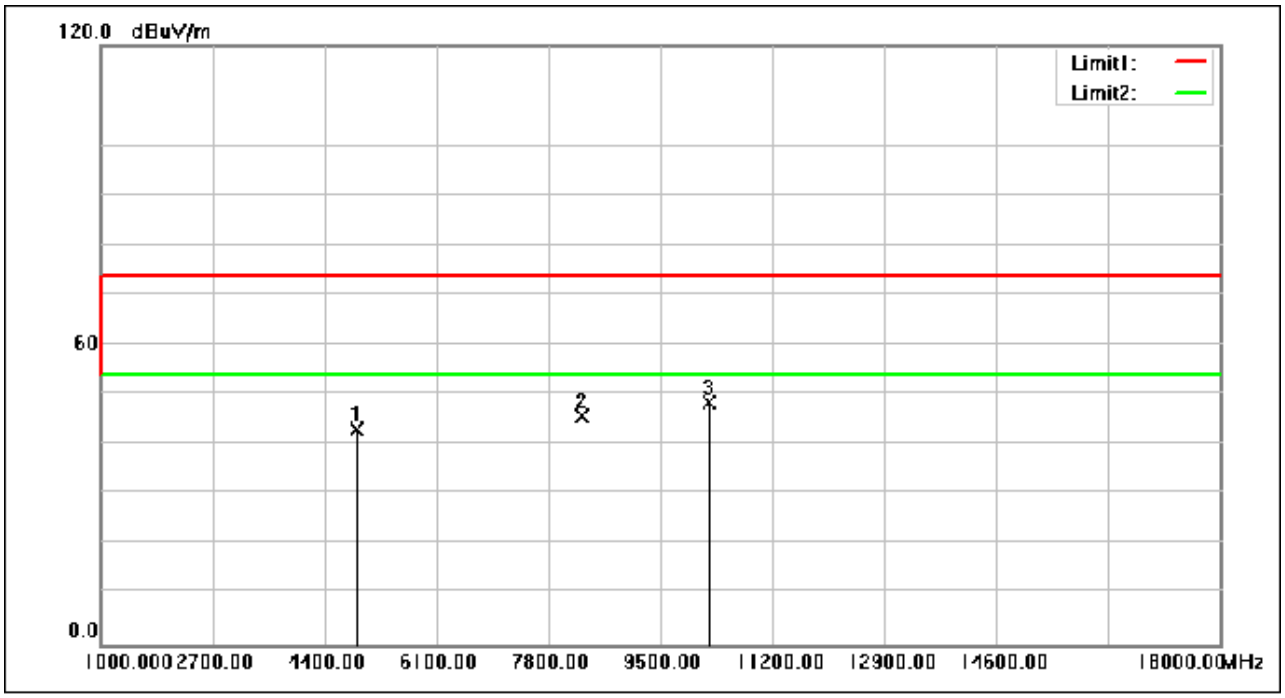
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4822.280	58.93	-18.55	40.38	74.00	-33.62	peak
2	7745.600	56.80	-10.94	45.86	74.00	-28.14	peak
3	10226.240	55.70	-7.20	48.50	74.00	-25.50	peak

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



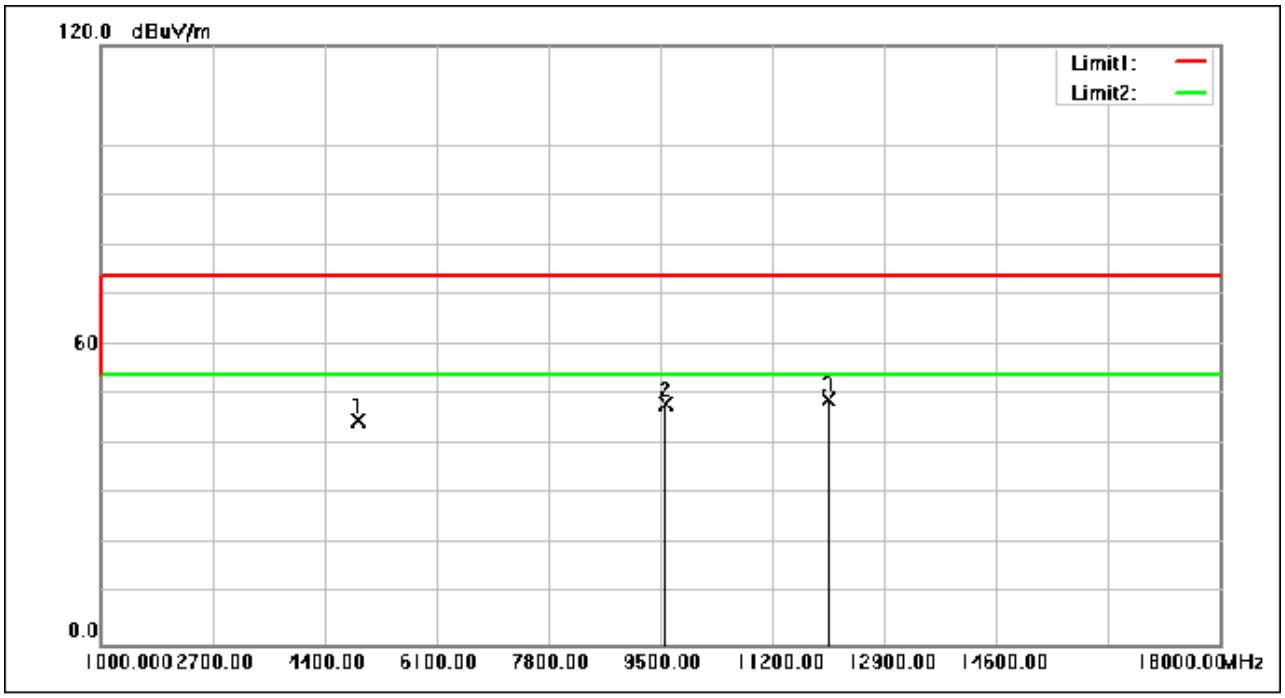
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4869.880	60.51	-18.52	41.99	74.00	-32.01	peak
2	8911.120	56.14	-9.08	47.06	74.00	-26.94	peak
3	10086.840	56.21	-7.28	48.93	74.00	-25.07	peak

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



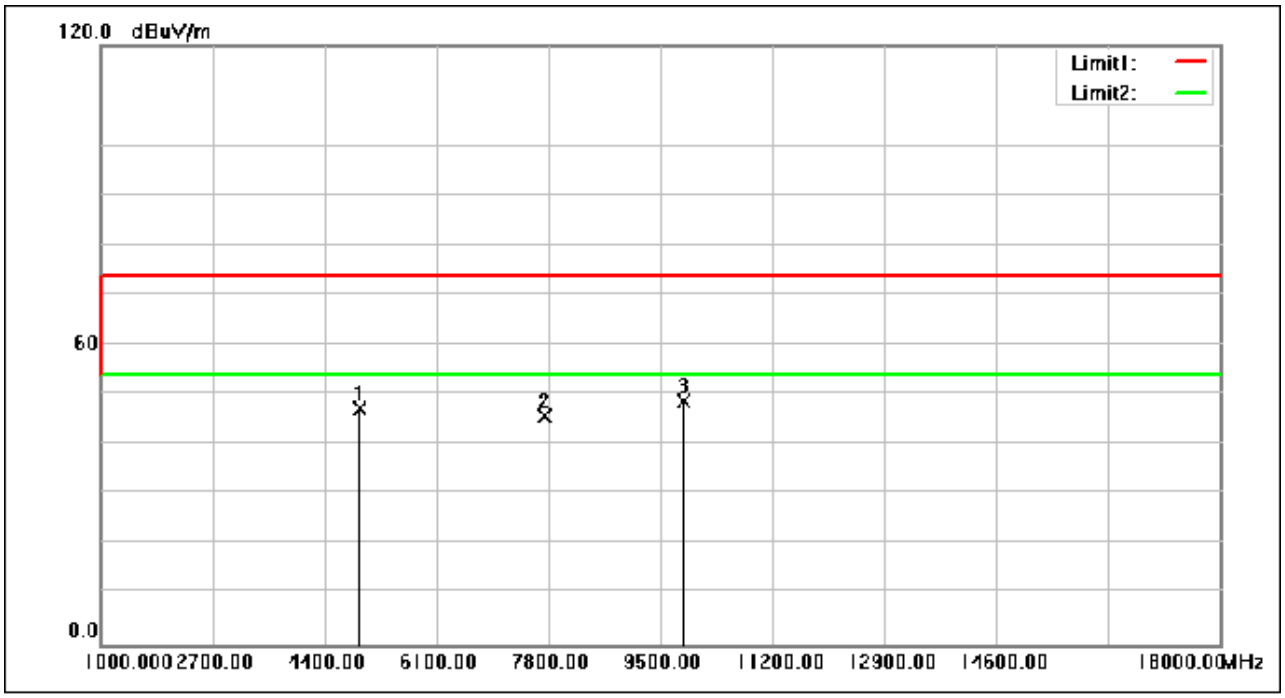
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4876.680	61.43	-18.52	42.91	74.00	-31.09	peak
2	8317.480	55.70	-10.05	45.65	74.00	-28.35	peak
3	10242.560	55.53	-7.19	48.34	74.00	-25.66	peak

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



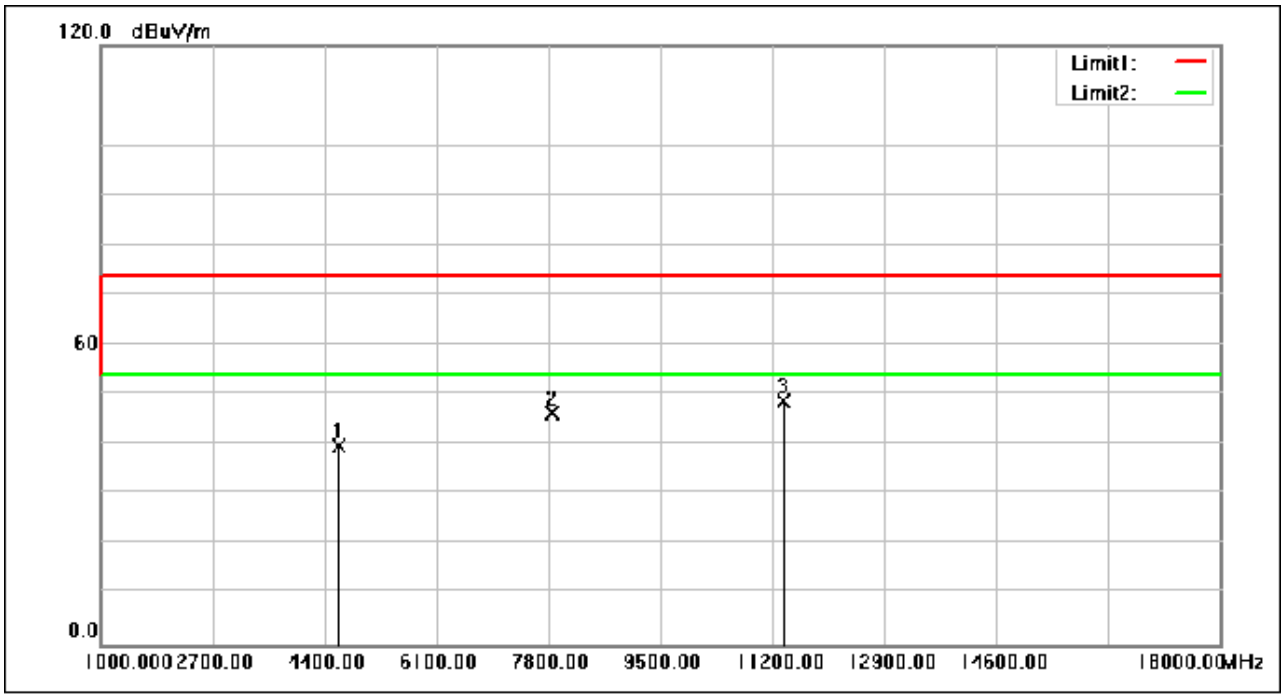
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4922.240	63.22	-18.49	44.73	74.00	-29.27	peak
2	9569.360	55.93	-7.83	48.10	74.00	-25.90	peak
3	12064.960	54.87	-5.92	48.95	74.00	-25.05	peak

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



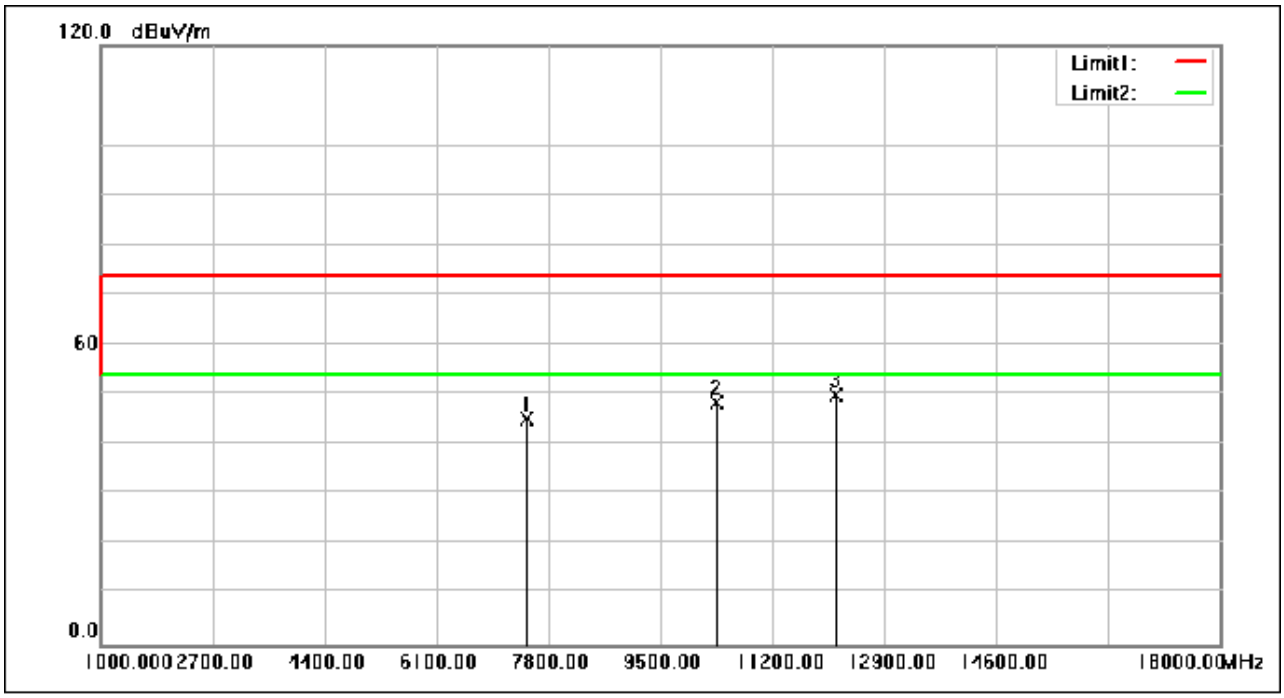
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4927.680	65.67	-18.49	47.18	74.00	-26.82	peak
2	7743.560	56.77	-10.94	45.83	74.00	-28.17	peak
3	9848.160	56.16	-7.29	48.87	74.00	-25.13	peak

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



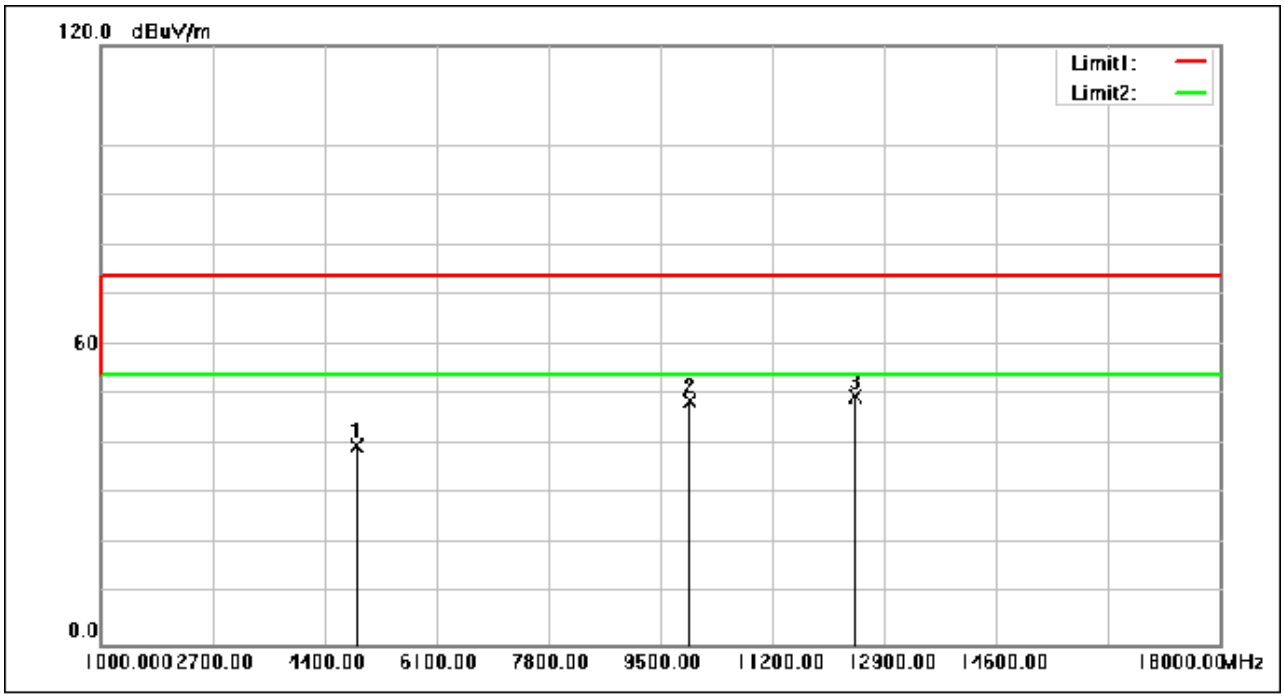
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4623.720	58.35	-18.66	39.69	74.00	-34.31	peak
2	7858.480	57.19	-10.79	46.40	74.00	-27.60	peak
3	11384.960	55.17	-6.46	48.71	74.00	-25.29	peak

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



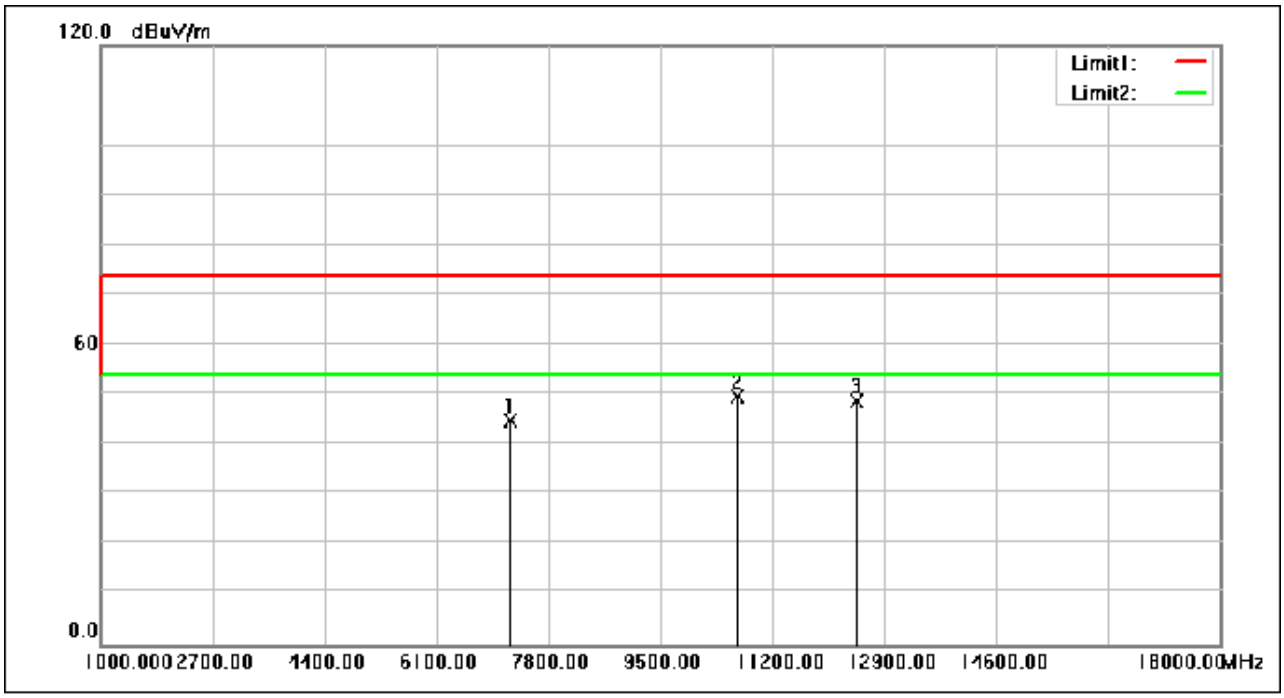
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7484.480	56.56	-11.28	45.28	74.00	-28.72	peak
2	10364.960	55.47	-7.11	48.36	74.00	-25.64	peak
3	12176.480	55.86	-5.96	49.90	74.00	-24.10	peak

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



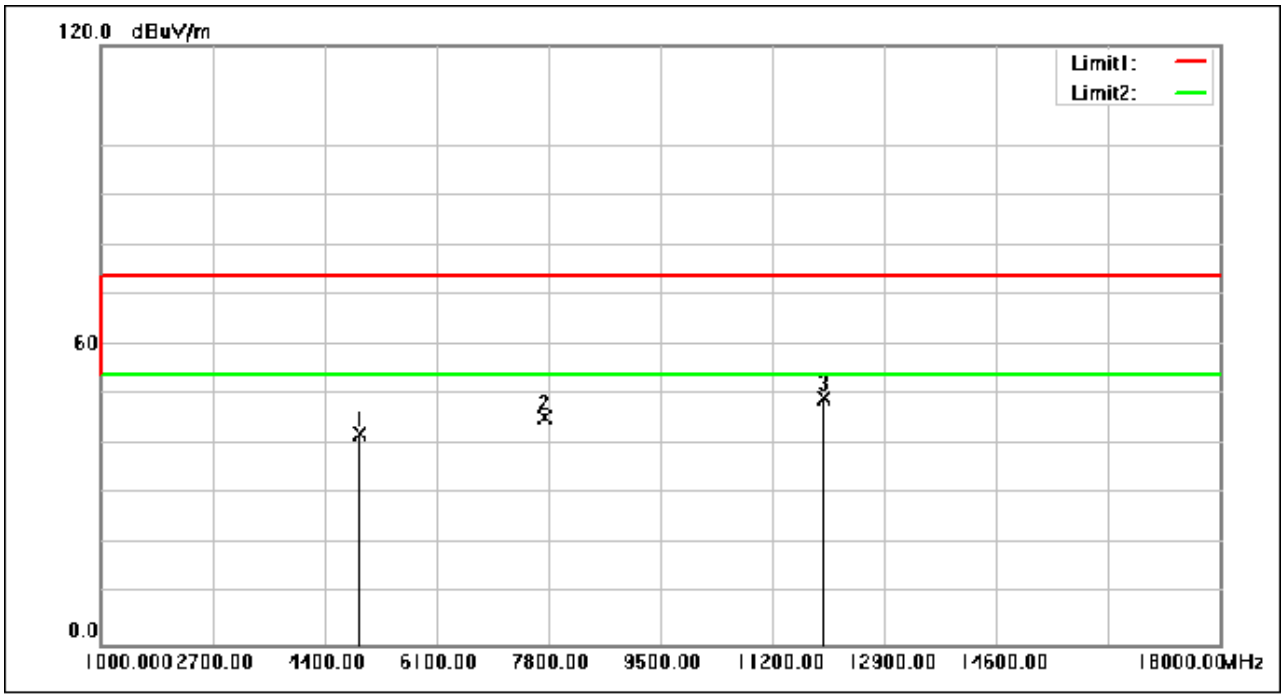
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4878.720	58.21	-18.52	39.69	74.00	-34.31	peak
2	9942.000	56.07	-7.31	48.76	74.00	-25.24	peak
3	12461.400	55.71	-6.10	49.61	74.00	-24.39	peak

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



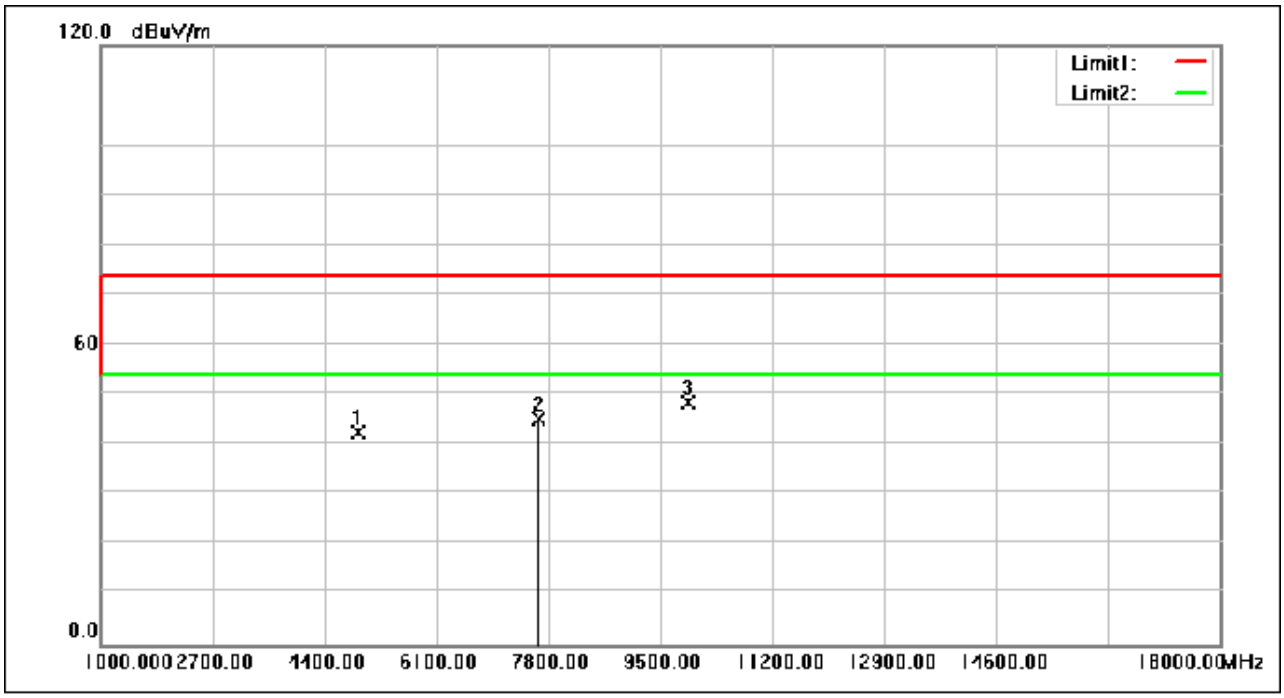
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7230.840	56.38	-11.47	44.91	74.00	-29.09	peak
2	10681.840	56.51	-6.93	49.58	74.00	-24.42	peak
3	12484.520	54.98	-6.10	48.88	74.00	-25.12	peak

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



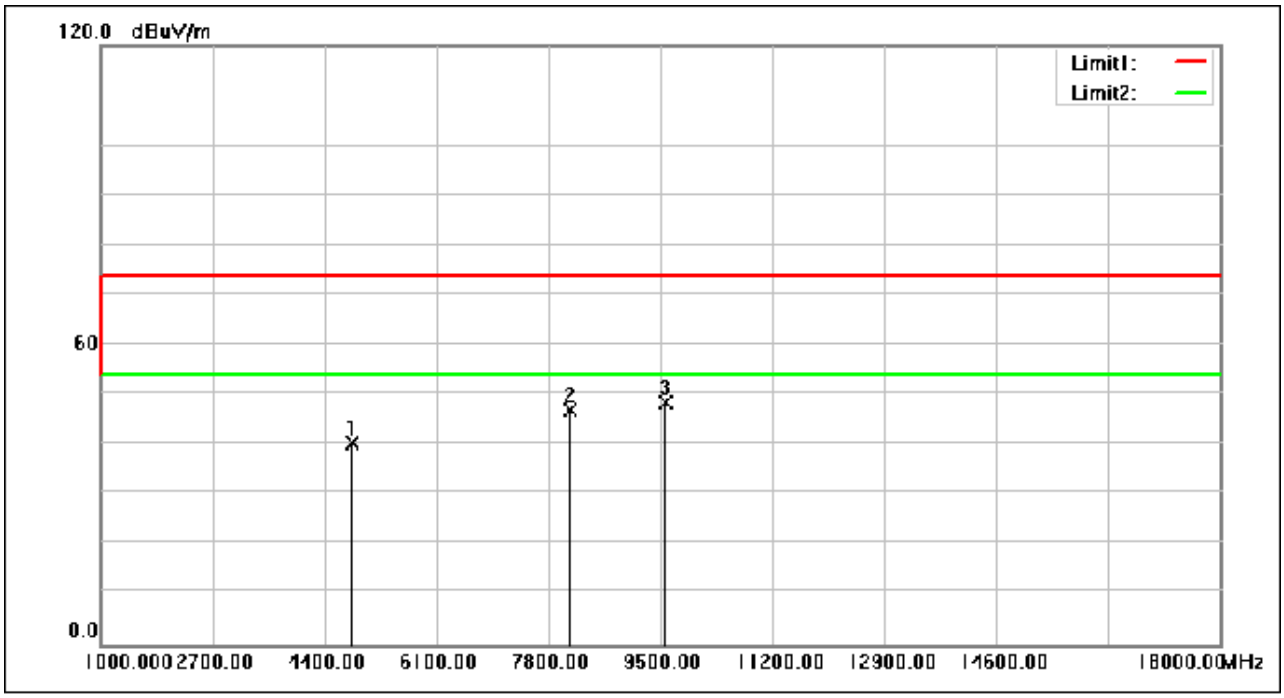
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4927.000	60.58	-18.49	42.09	74.00	-31.91	peak
2	7734.040	56.32	-10.95	45.37	74.00	-28.63	peak
3	11988.120	55.40	-5.90	49.50	74.00	-24.50	peak

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



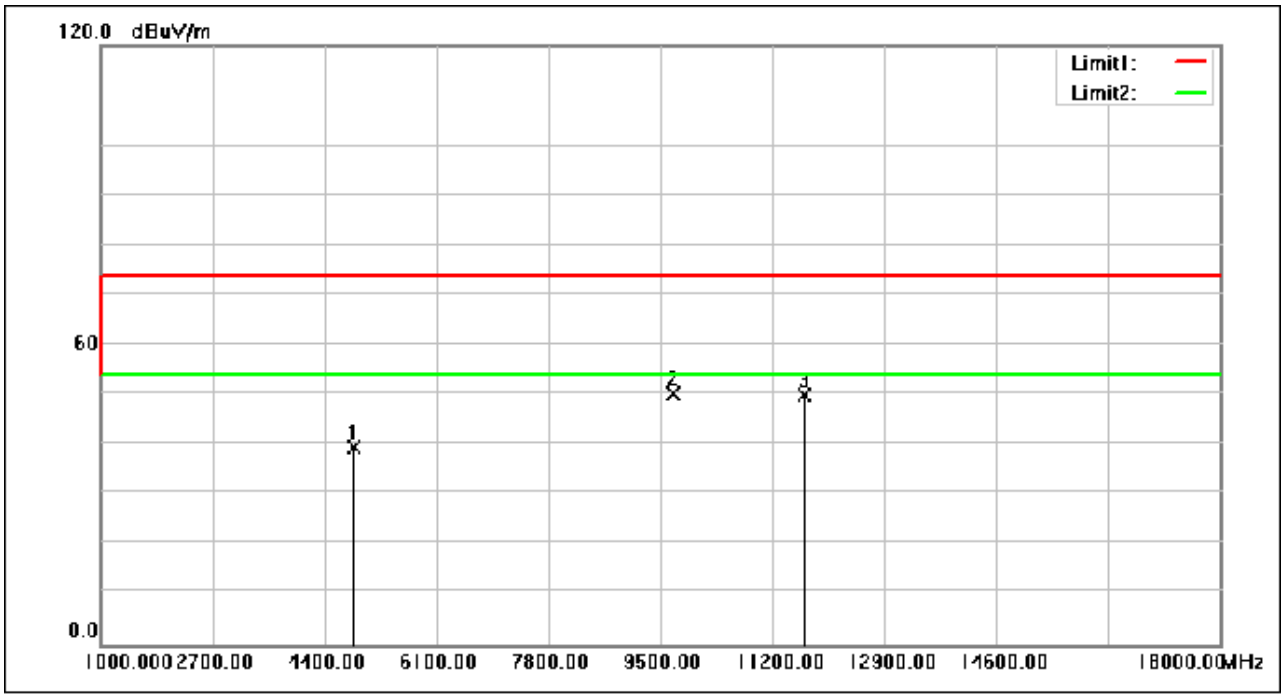
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4918.840	61.00	-18.49	42.51	74.00	-31.49	peak
2	7661.960	56.28	-11.04	45.24	74.00	-28.76	peak
3	9933.840	55.68	-7.31	48.37	74.00	-25.63	peak

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



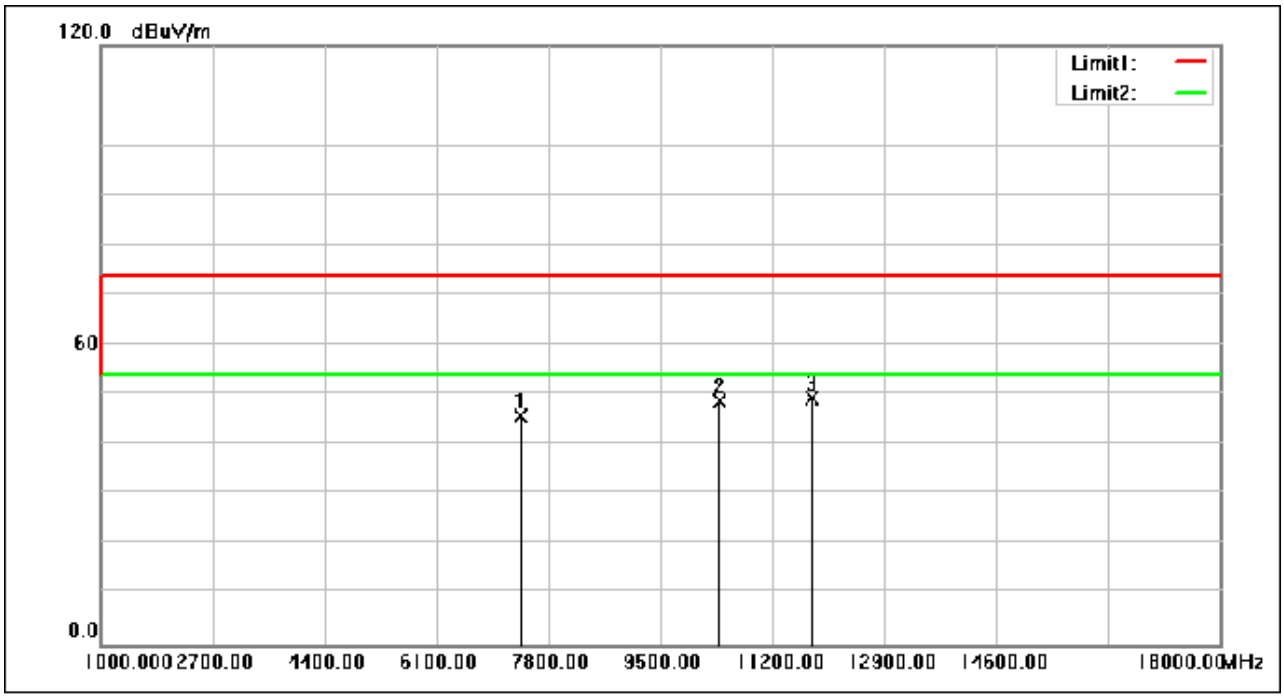
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4839.280	58.84	-18.54	40.30	74.00	-33.70	peak
2	8135.920	57.26	-10.36	46.90	74.00	-27.10	peak
3	9595.200	56.36	-7.77	48.59	74.00	-25.41	peak

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



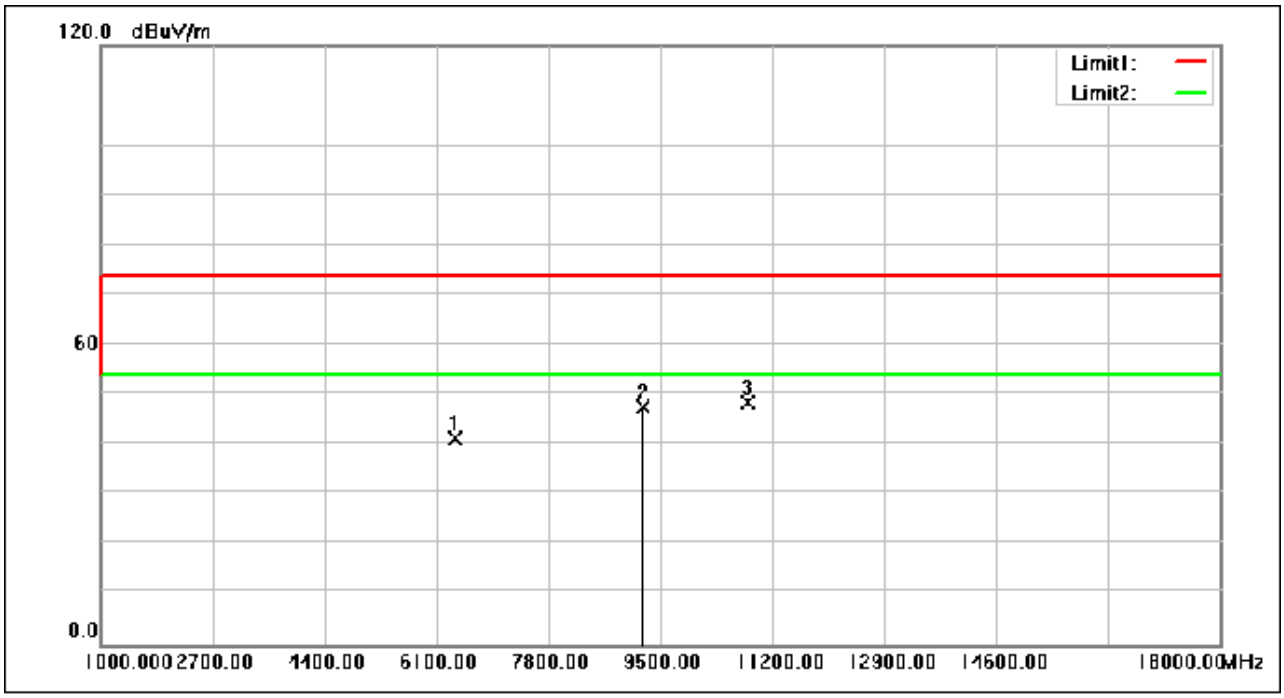
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4848.800	57.94	-18.54	39.40	74.00	-34.60	peak
2	9688.360	57.97	-7.60	50.37	74.00	-23.63	peak
3	11682.800	56.10	-6.21	49.89	74.00	-24.11	peak

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



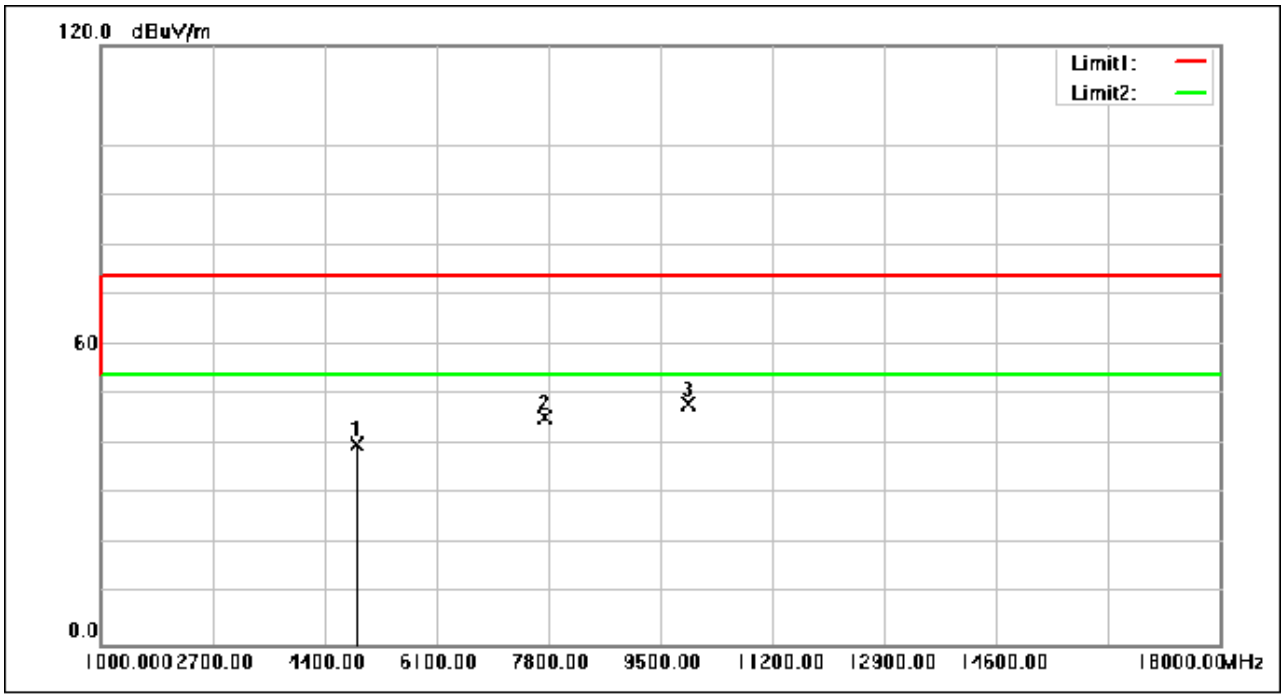
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7385.200	57.25	-11.40	45.85	74.00	-28.15	peak
2	10409.160	55.93	-7.09	48.84	74.00	-25.16	peak
3	11811.320	55.46	-6.11	49.35	74.00	-24.65	peak

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



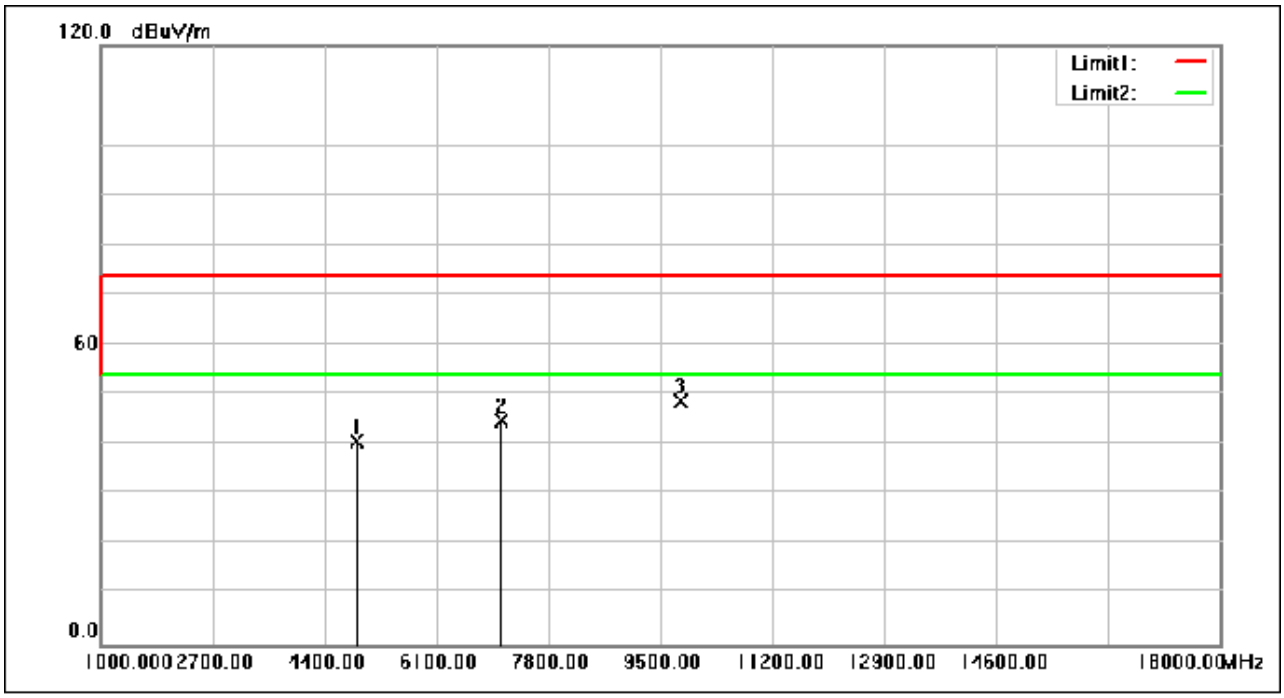
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6401.920	55.05	-13.74	41.31	74.00	-32.69	peak
2	9232.080	56.03	-8.46	47.57	74.00	-26.43	peak
3	10836.880	55.35	-6.84	48.51	74.00	-25.49	peak

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



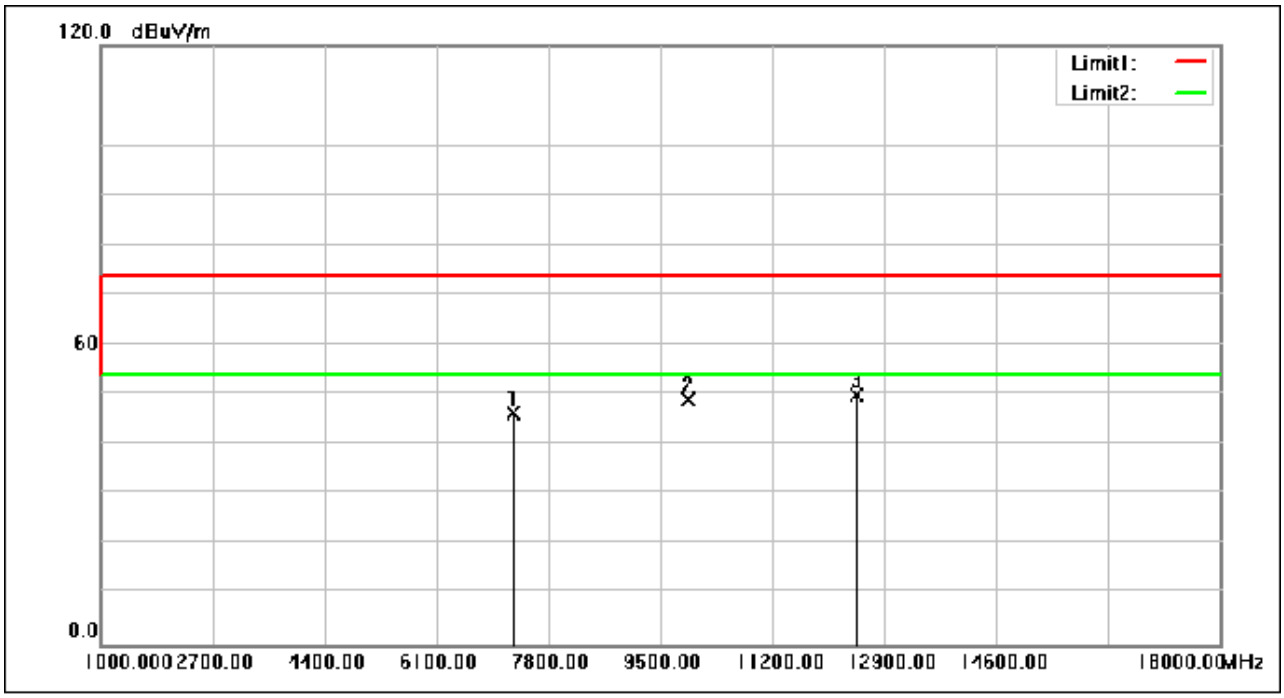
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4895.720	58.56	-18.51	40.05	74.00	-33.95	peak
2	7746.960	56.32	-10.93	45.39	74.00	-28.61	peak
3	9929.080	55.60	-7.31	48.29	74.00	-25.71	peak

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



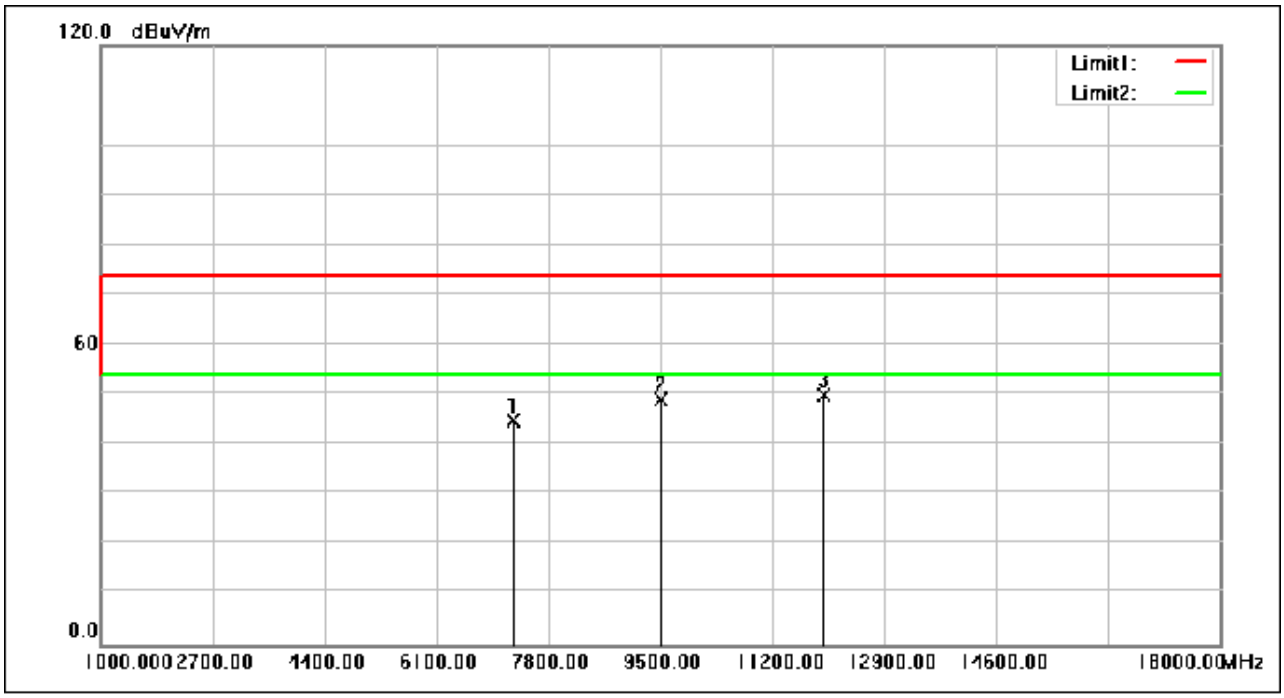
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4907.280	59.03	-18.50	40.53	74.00	-33.47	peak
2	7100.960	56.41	-11.52	44.89	74.00	-29.11	peak
3	9808.720	56.11	-7.37	48.74	74.00	-25.26	peak

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



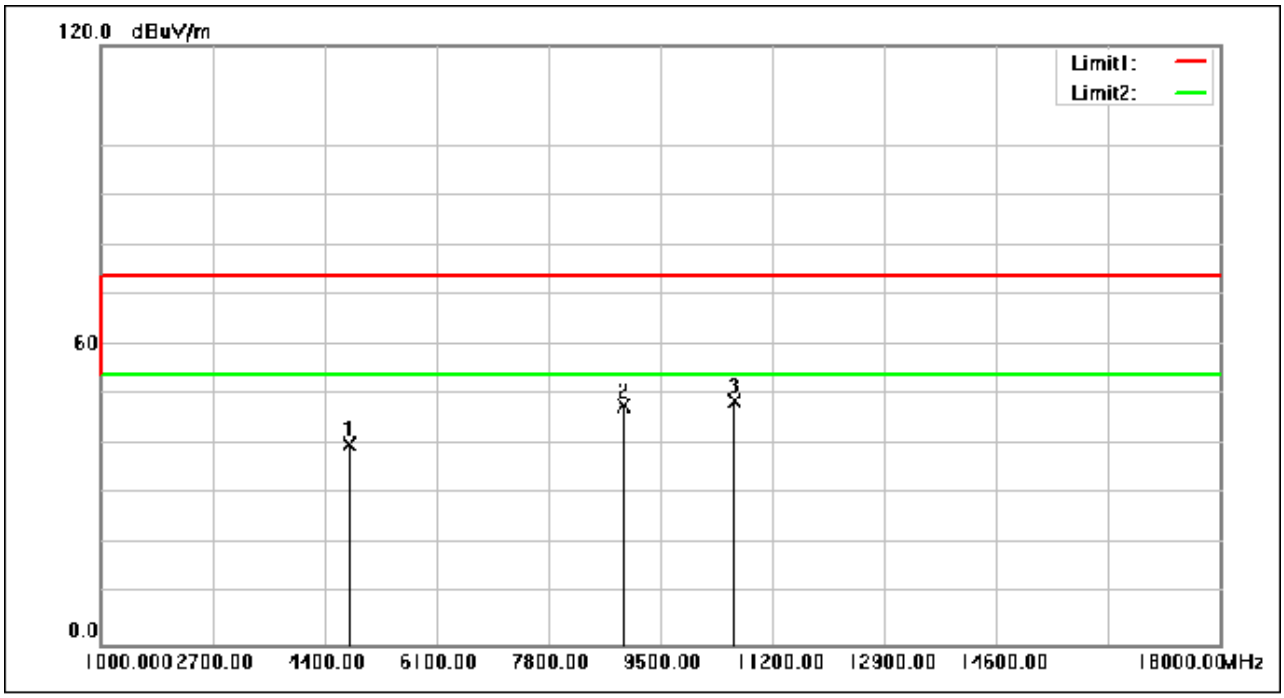
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7256.680	57.85	-11.45	46.40	74.00	-27.60	peak
2	9936.560	56.39	-7.31	49.08	74.00	-24.92	peak
3	12479.080	56.04	-6.11	49.93	74.00	-24.07	peak

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



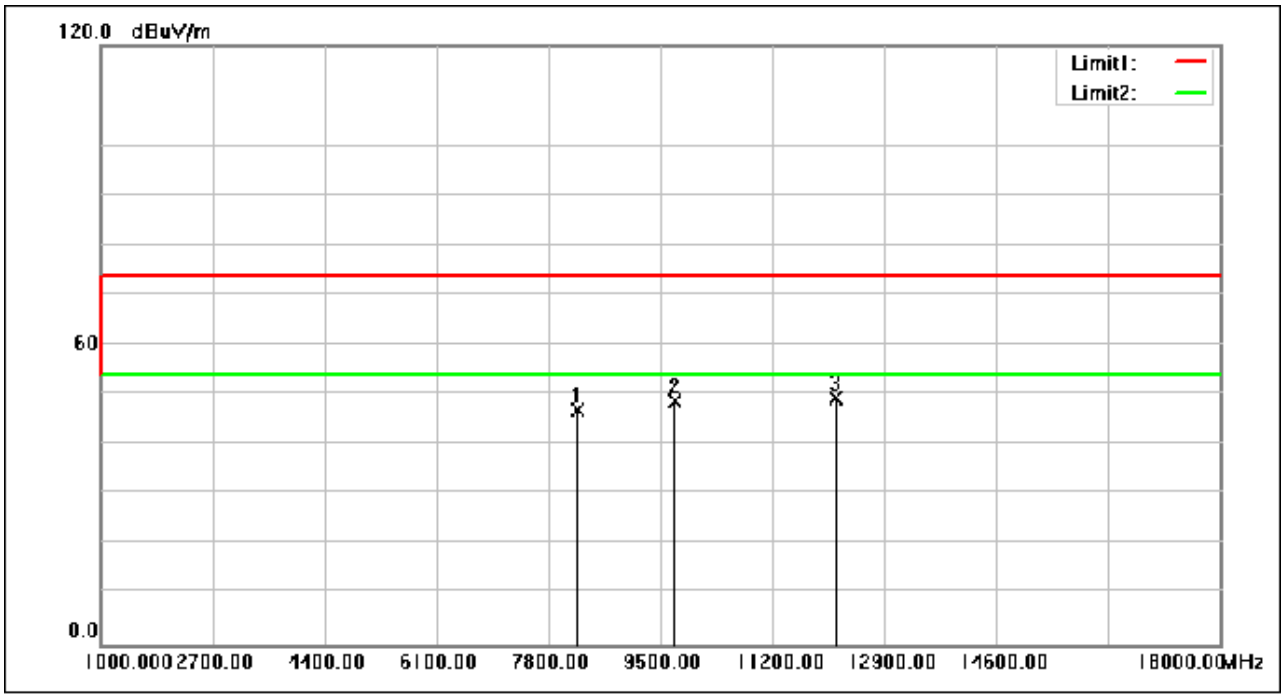
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7260.080	56.22	-11.45	44.77	74.00	-29.23	peak
2	9508.160	56.91	-7.94	48.97	74.00	-25.03	peak
3	11988.800	55.73	-5.90	49.83	74.00	-24.17	peak

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



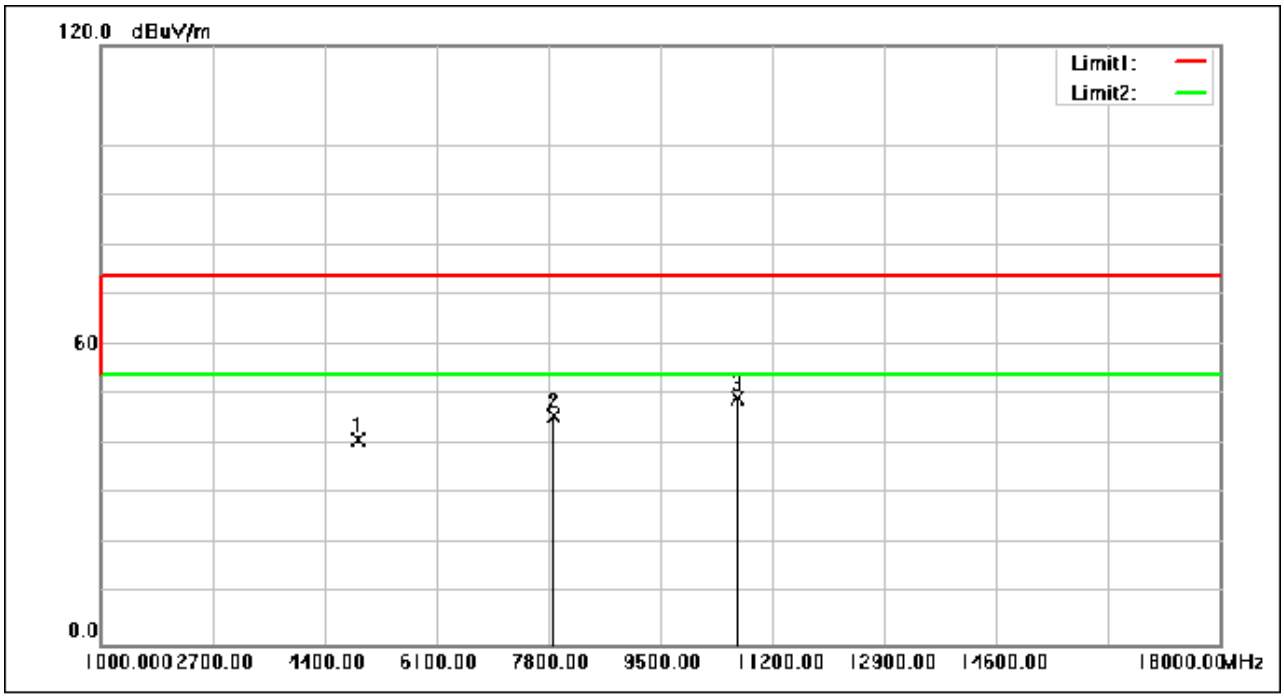
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4786.920	58.57	-18.57	40.00	74.00	-34.00	peak
2	8951.920	56.80	-9.00	47.80	74.00	-26.20	peak
3	10627.440	55.59	-6.96	48.63	74.00	-25.37	peak

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



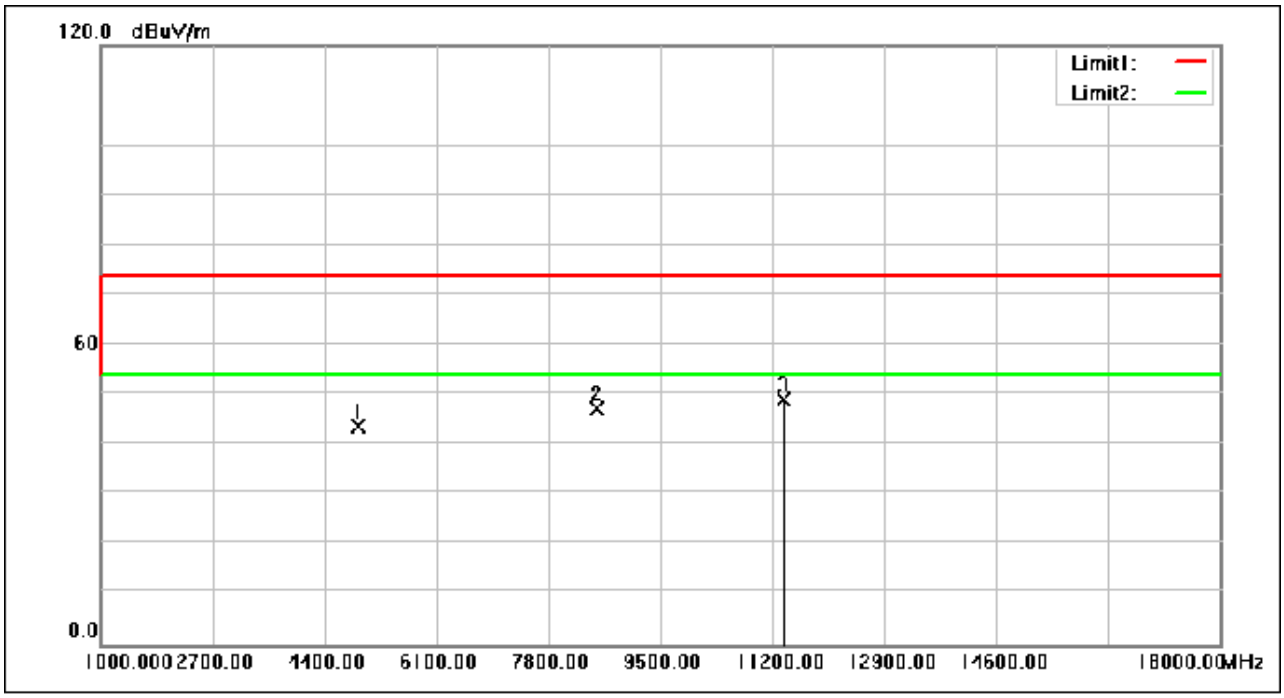
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8253.560	57.17	-10.16	47.01	74.00	-26.99	peak
2	9704.680	56.36	-7.57	48.79	74.00	-25.21	peak
3	12168.320	55.39	-5.97	49.42	74.00	-24.58	peak

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



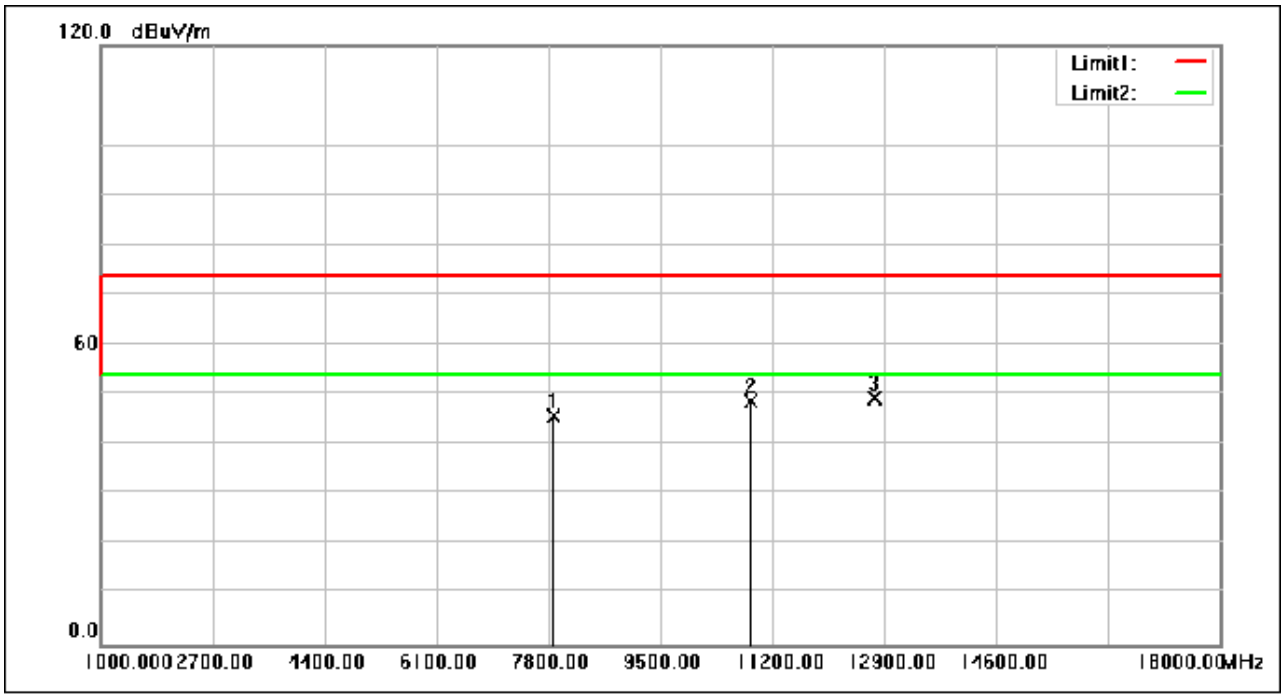
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.280	59.32	-18.49	40.83	74.00	-33.17	peak
2	7900.640	56.40	-10.73	45.67	74.00	-28.33	peak
3	10664.160	56.23	-6.95	49.28	74.00	-24.72	peak

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



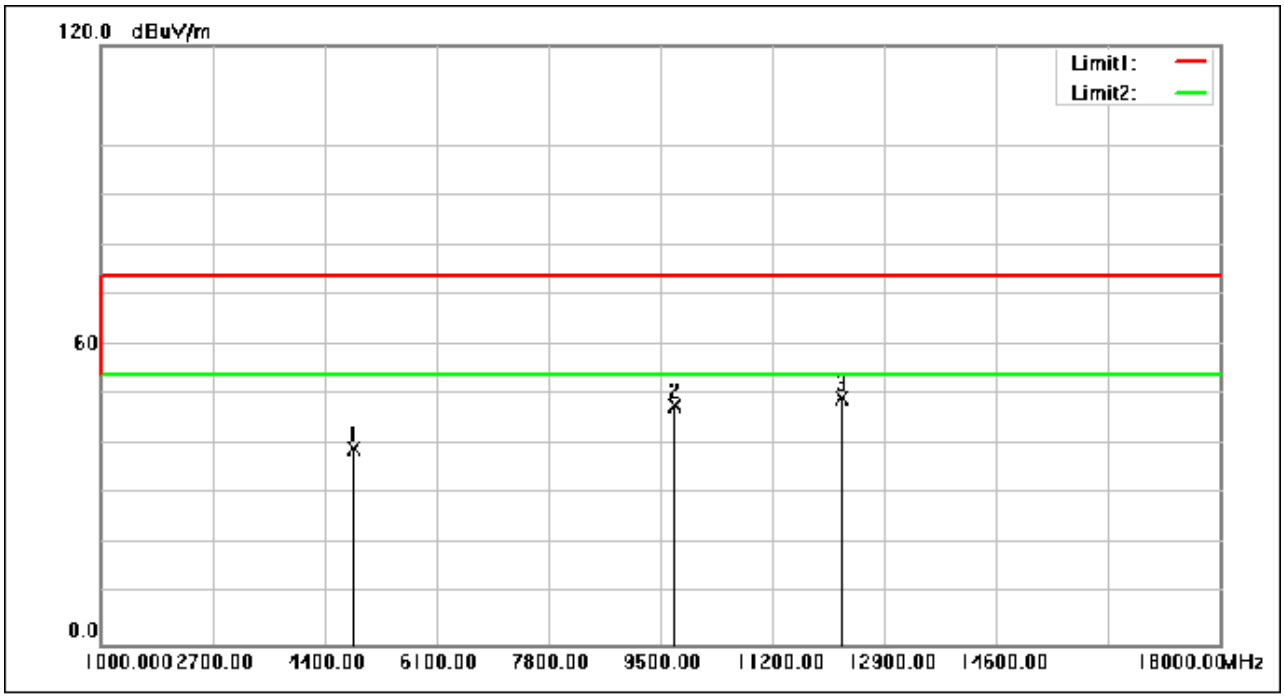
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.280	62.29	-18.49	43.80	74.00	-30.20	peak
2	8533.040	56.83	-9.70	47.13	74.00	-26.87	peak
3	11383.600	55.47	-6.46	49.01	74.00	-24.99	peak

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



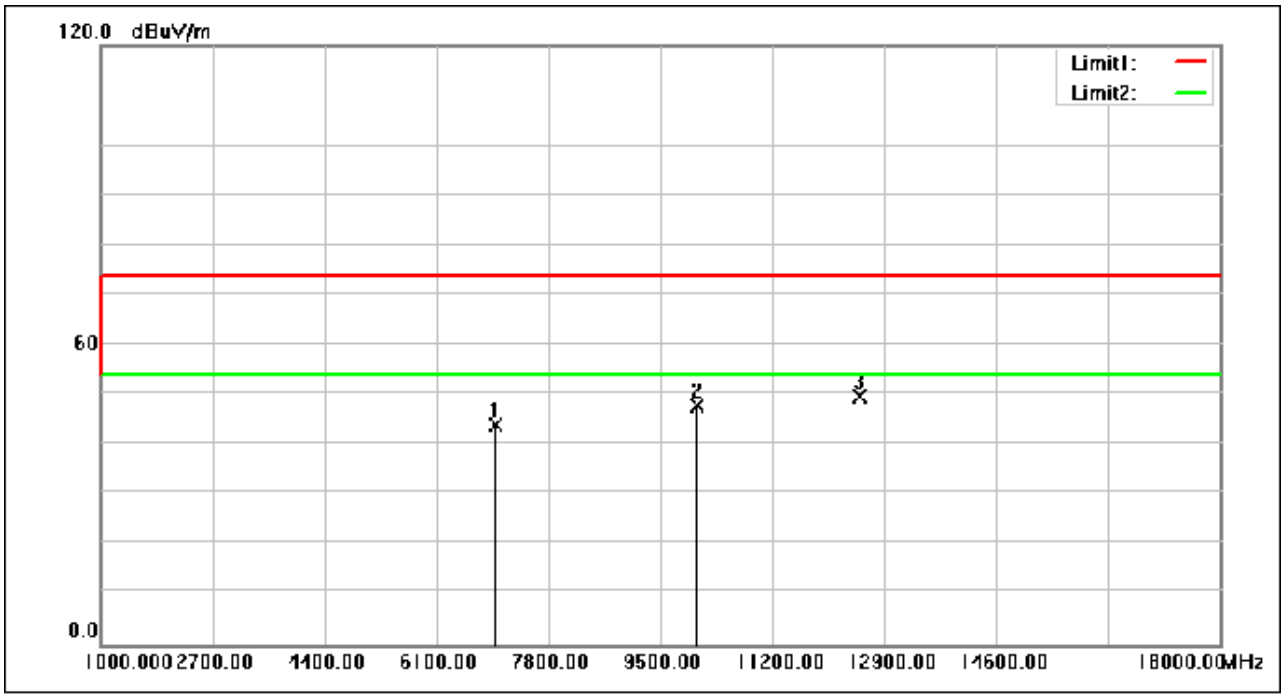
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7878.200	56.57	-10.77	45.80	74.00	-28.20	peak
2	10889.240	55.50	-6.82	48.68	74.00	-25.32	peak
3	12761.960	55.60	-6.23	49.37	74.00	-24.63	peak

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



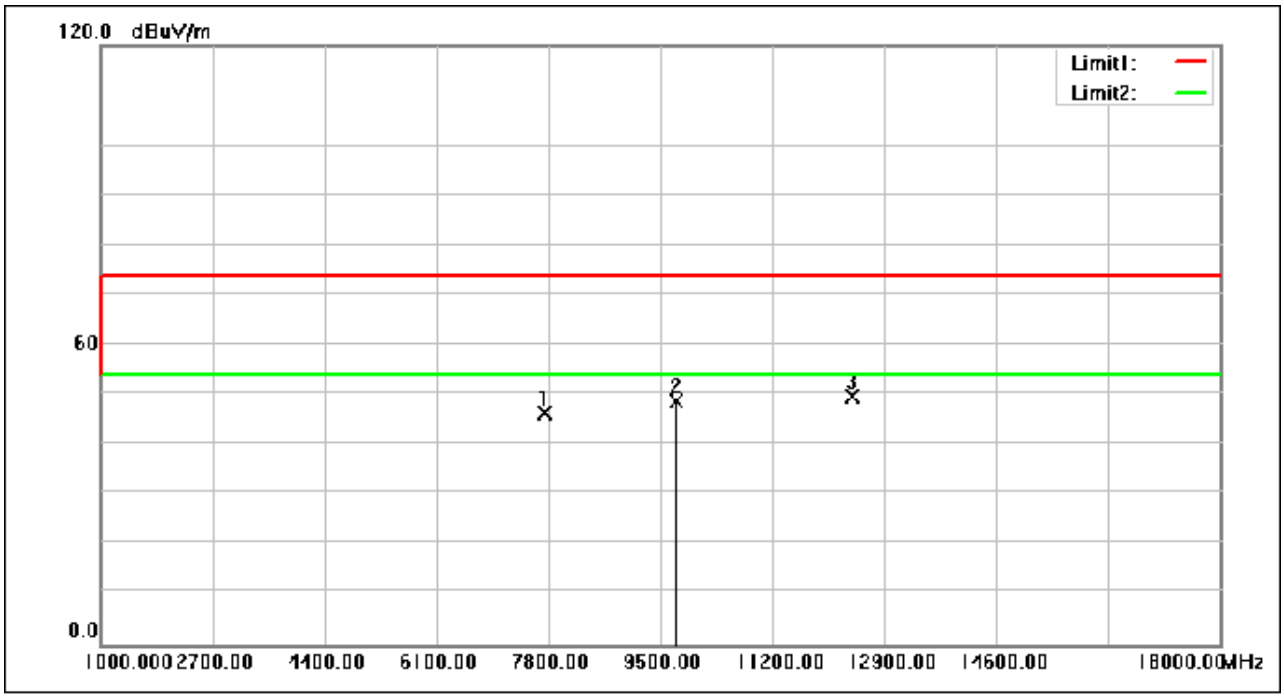
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4848.120	57.71	-18.54	39.17	74.00	-34.83	peak
2	9706.040	55.54	-7.56	47.98	74.00	-26.02	peak
3	12270.320	55.44	-6.01	49.43	74.00	-24.57	peak

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



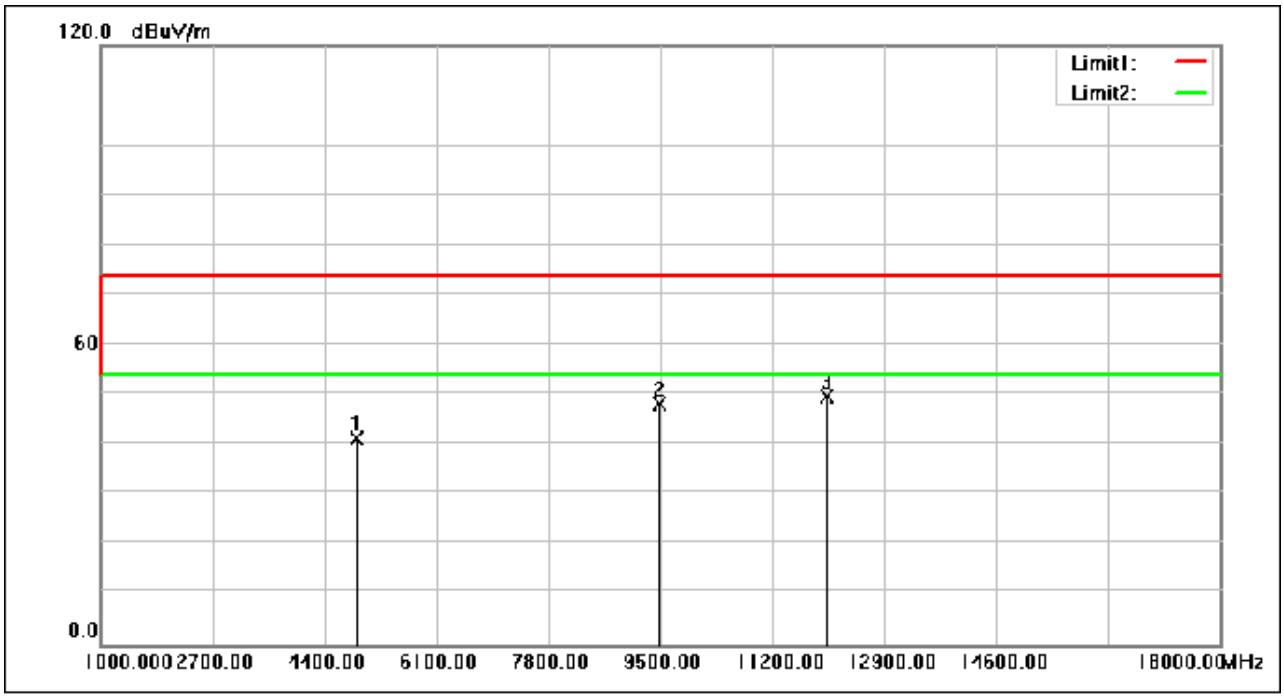
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7003.720	55.57	-11.56	44.01	74.00	-29.99	peak
2	10062.360	55.29	-7.30	47.99	74.00	-26.01	peak
3	12532.120	55.77	-6.13	49.64	74.00	-24.36	peak

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



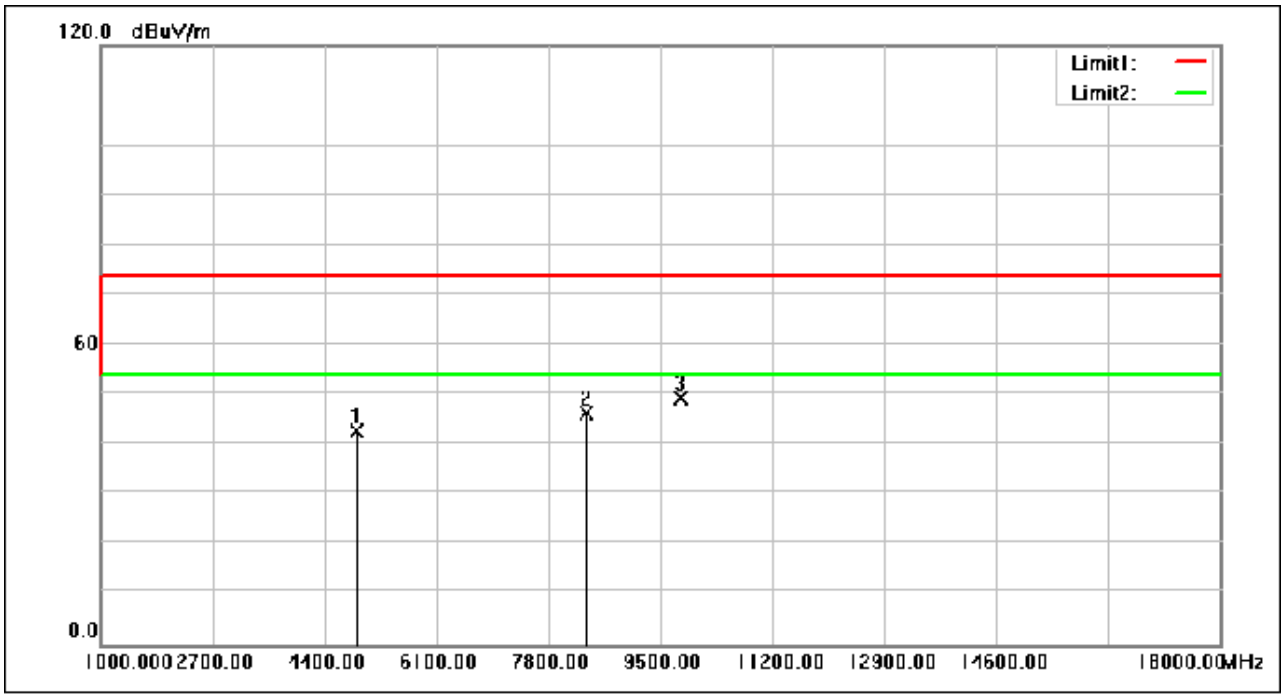
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7738.800	57.38	-10.95	46.43	74.00	-27.57	peak
2	9748.200	56.18	-7.48	48.70	74.00	-25.30	peak
3	12410.400	55.83	-6.07	49.76	74.00	-24.24	peak

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	4903.880	59.78	-18.50	41.28	74.00	-32.72	peak
2	9495.240	55.97	-7.96	48.01	74.00	-25.99	peak
3	12035.040	55.47	-5.90	49.57	74.00	-24.43	peak

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	4900.480	61.16	-18.50	42.66	74.00	-31.34	peak
2	8381.400	56.19	-9.95	46.24	74.00	-27.76	peak
3	9808.040	56.63	-7.37	49.26	74.00	-24.74	peak

7.5 Conducted Average 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≤ 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

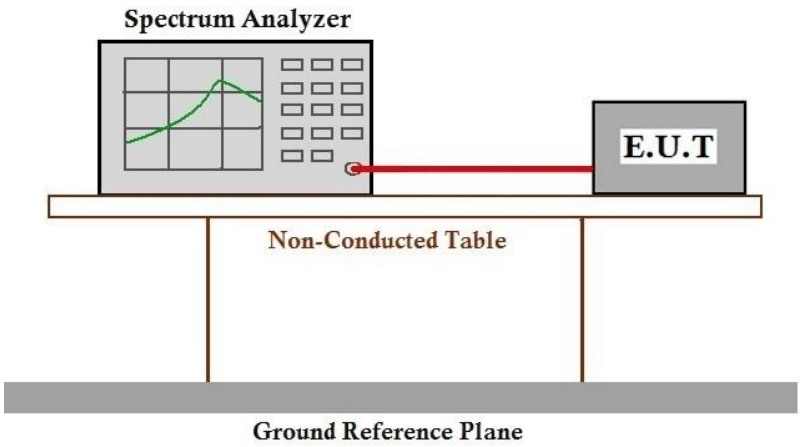
7.5.1 E.U.T. Operation

Operating Environment:
Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

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

Please Refer to Appendix for Details

7.6 Minimum 6dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)
Test Method: ANSI C63.10 (2013) Section 11.8.1

Limit:

≥500 kHz

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). Only the data of worst case is recorded in the report.

7.6.3 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: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). Only the data of worst case is recorded in the report.

7.7.3 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: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). Only the data of worst case is recorded in the report.

7.8.3 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: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HE40). Only the data of worst case is recorded in the report.

7.9.3 Measurement Procedure and Data

Please Refer to Appendix for Details

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2408001490AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2408001490AT

10 Appendix

1. Duty Cycle

1.1 Test Result

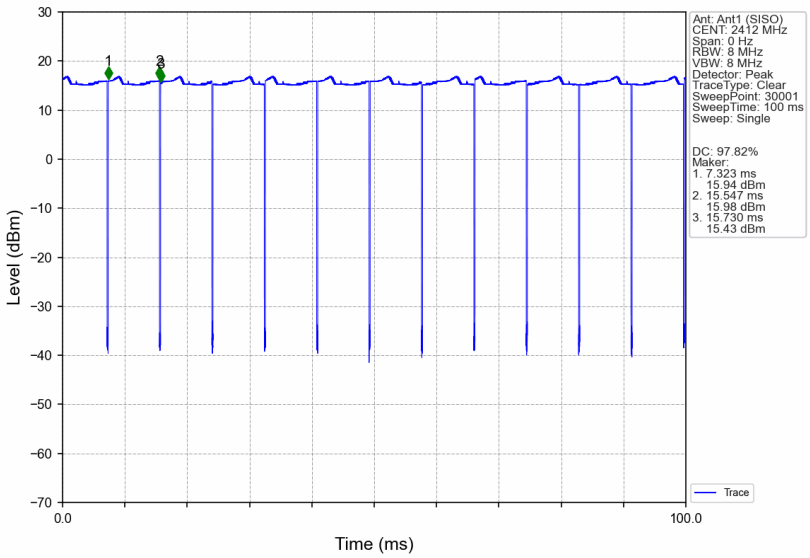
1.1.1 Ant1

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	/	/	8.224	8.407	97.82	0.10	0.04
		2437	/	/	8.223	8.406	97.82	0.10	0.04
		2462	/	/	8.224	8.407	97.82	0.10	0.04
802.11g	SISO	2412	/	/	1.364	1.550	88.00	0.56	0.03
		2437	/	/	1.364	1.550	88.00	0.56	0.03
		2462	/	/	1.365	1.550	88.06	0.55	0.03
802.11n (HT20)	SISO	2412	/	/	1.276	1.462	87.28	0.59	0.03
		2437	/	/	1.276	1.462	87.28	0.59	0.00
		2462	/	/	1.276	1.462	87.28	0.59	0.00
802.11n (HT40)	SISO	2422	/	/	0.636	0.822	77.37	1.11	0.03
		2437	/	/	0.636	0.822	77.37	1.11	0.03
		2452	/	/	0.636	0.822	77.37	1.11	0.03
802.11ax (HE20)	SISO	2412	RU242	Left	0.996	1.181	84.34	0.74	0.03
		2437	RU242	Left	0.996	1.182	84.26	0.74	0.03
		2462	RU242	Left	0.996	1.181	84.34	0.74	0.01
802.11ax (HE40)	SISO	2422	RU484	Left	0.528	0.714	73.95	1.31	0.03
		2437	RU484	Left	0.528	0.714	73.95	1.31	0.02
		2452	RU484	Left	0.528	0.714	73.95	1.31	0.02

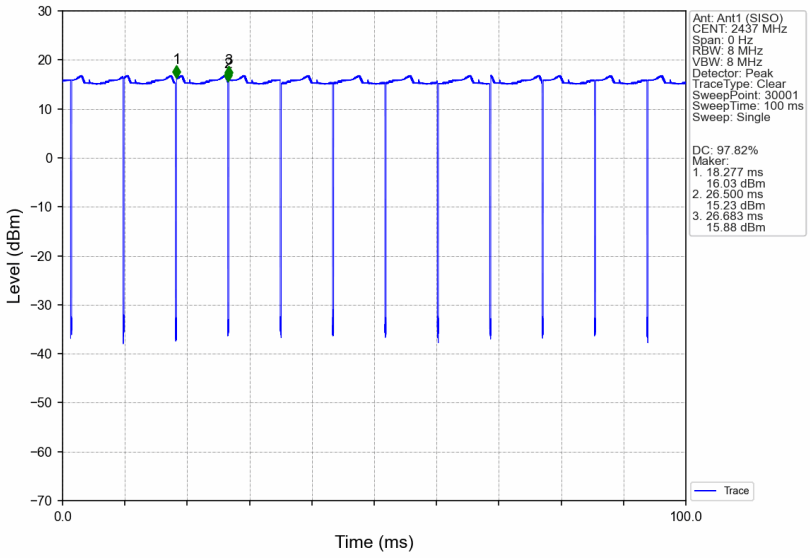
1.2 Test Graph

1.2.1 Ant1

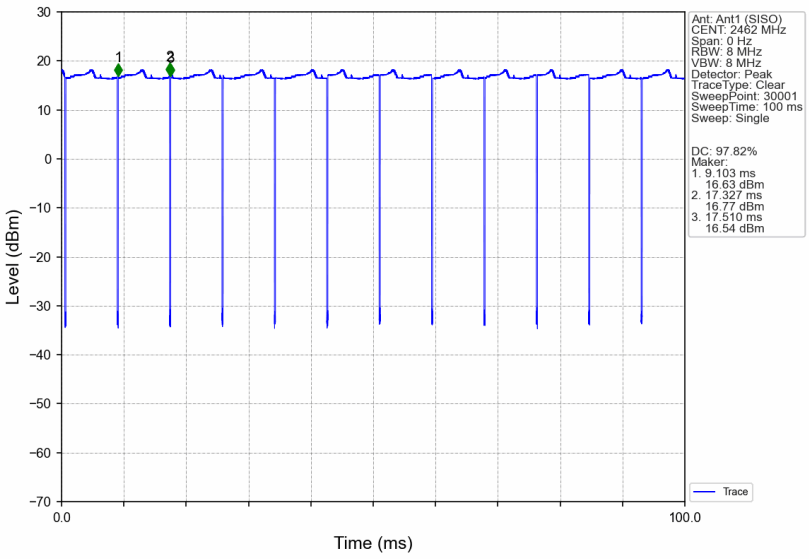
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



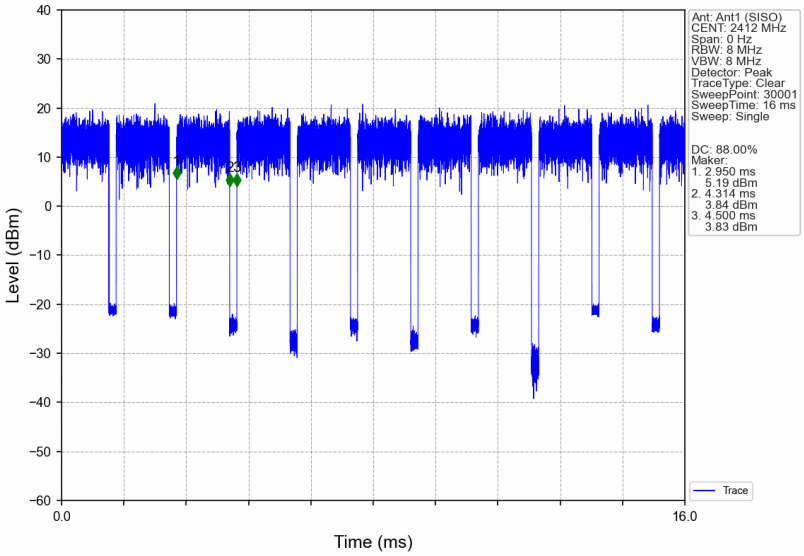
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



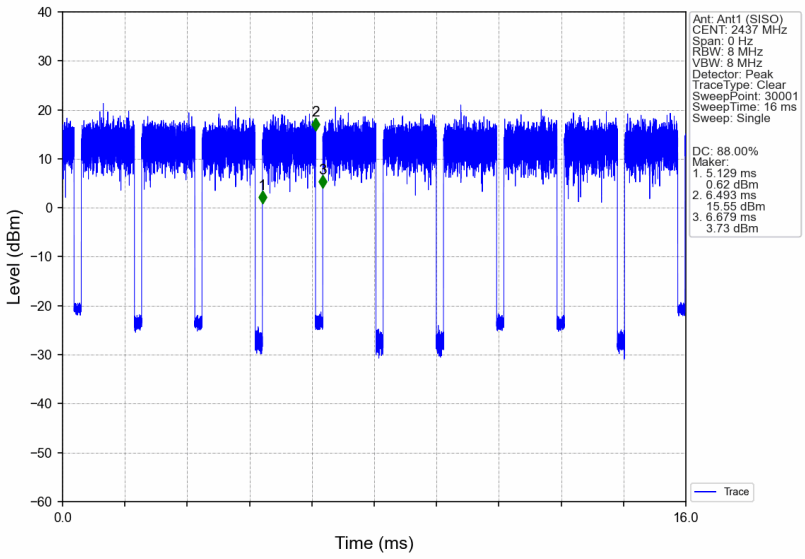
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



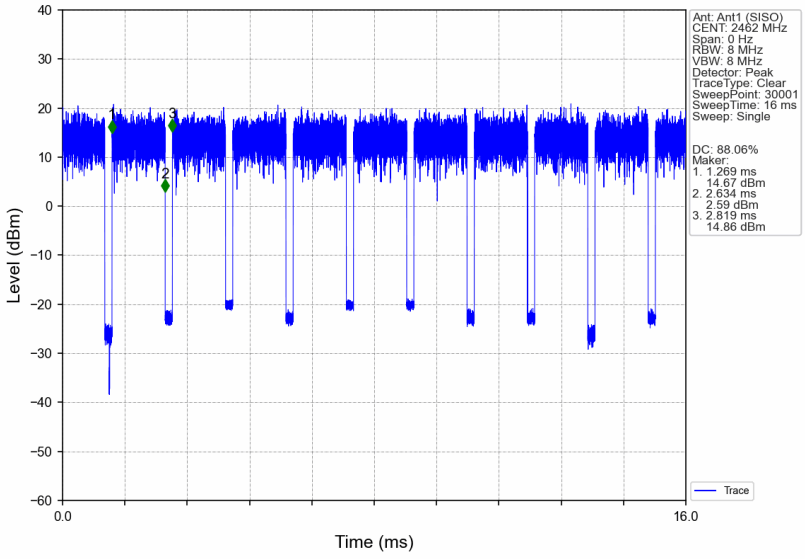
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



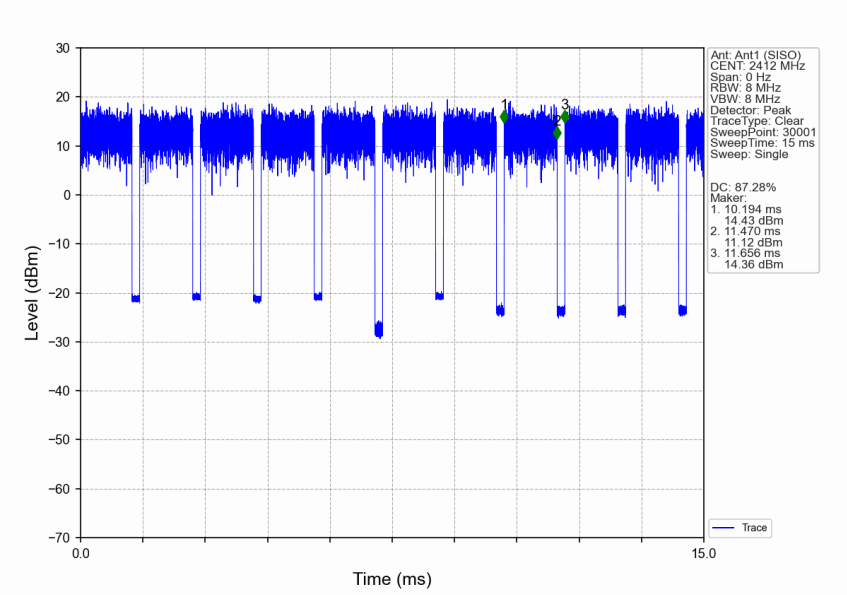
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



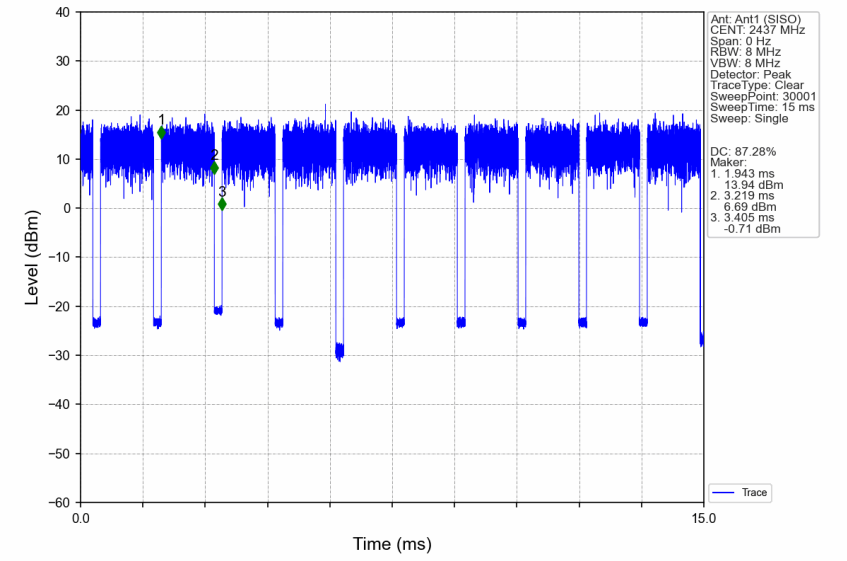
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



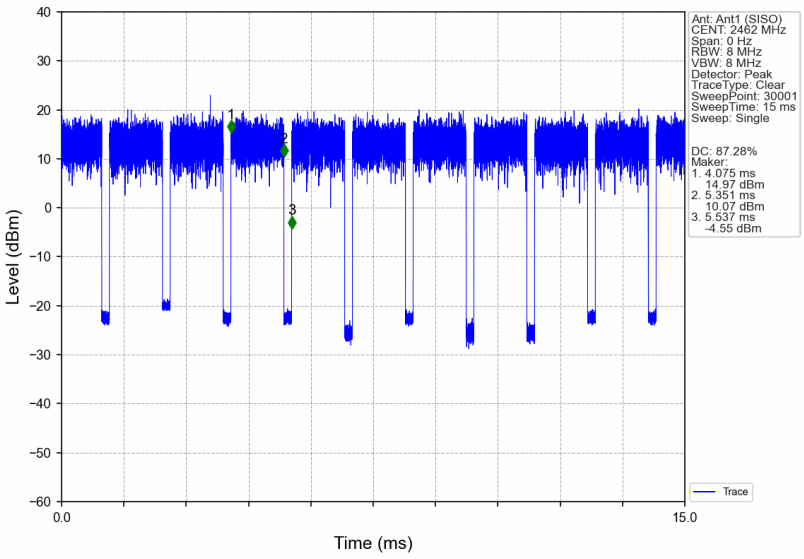
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



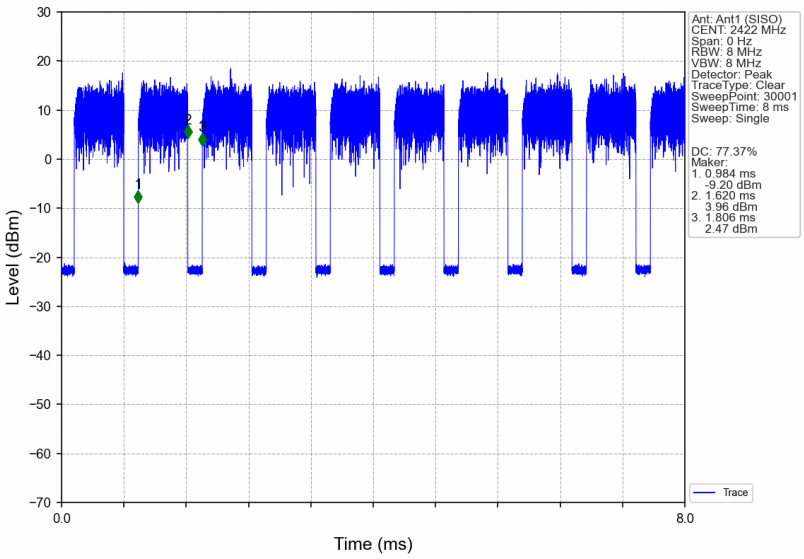
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



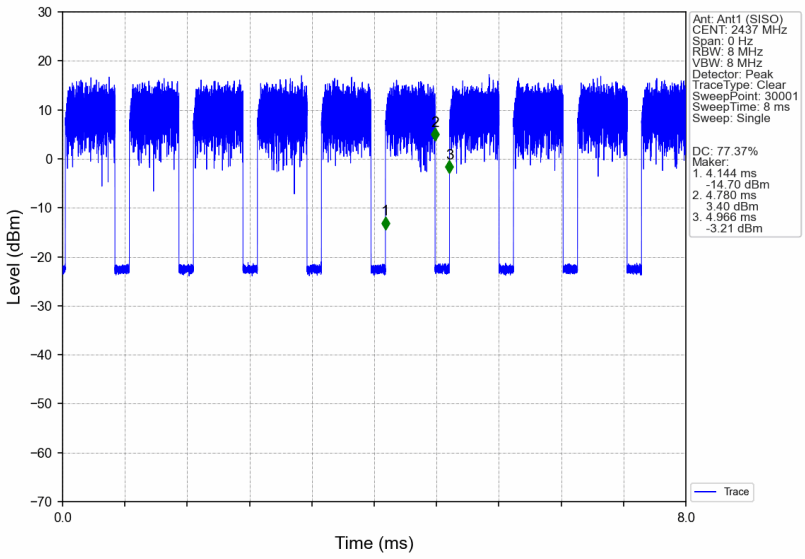
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



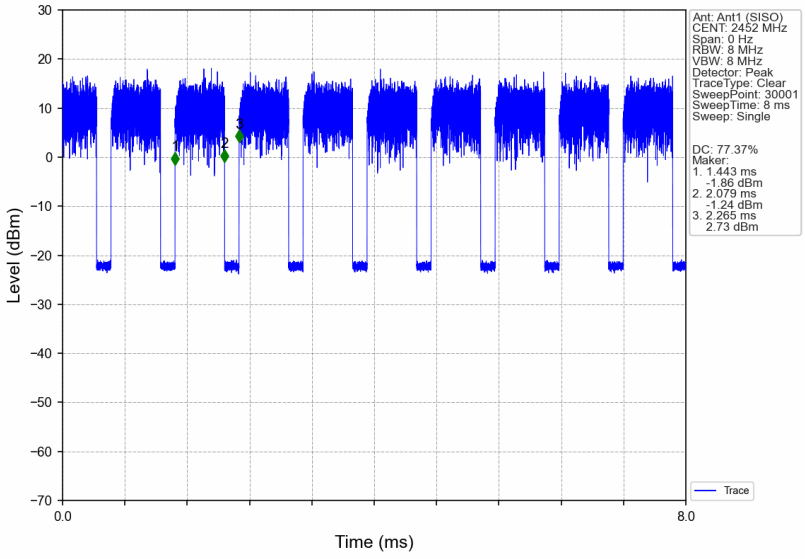
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



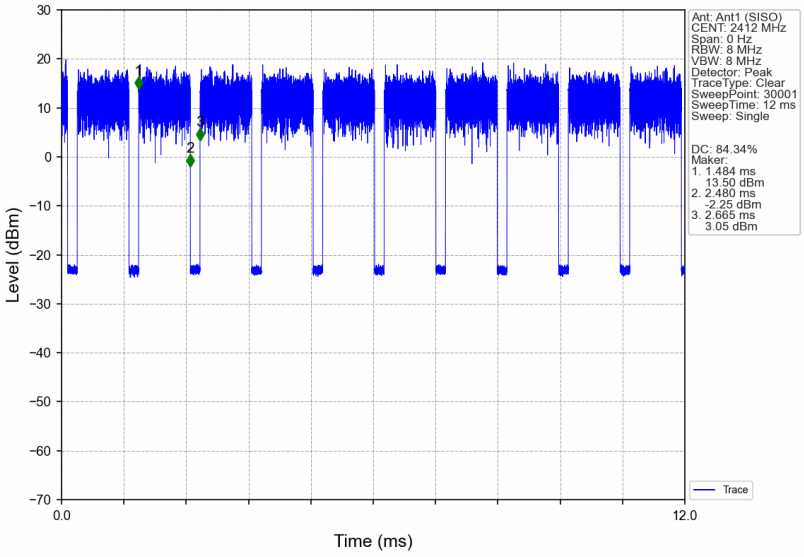
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



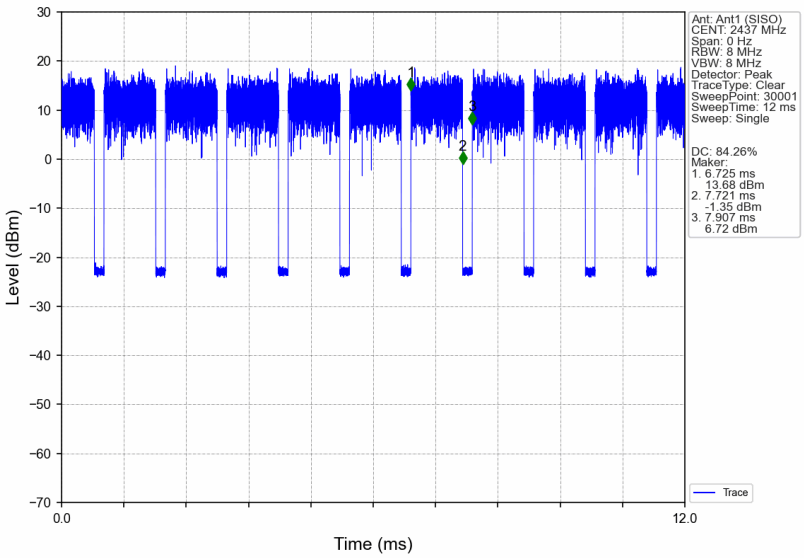
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



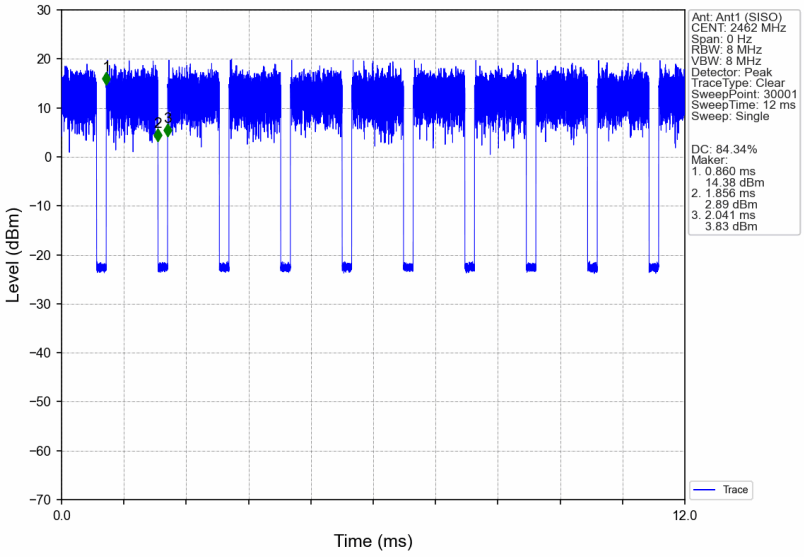
802.11ax(HE20)_LCH_2412MHz_RU242_Left_Ant1 (SISO)_NTNV



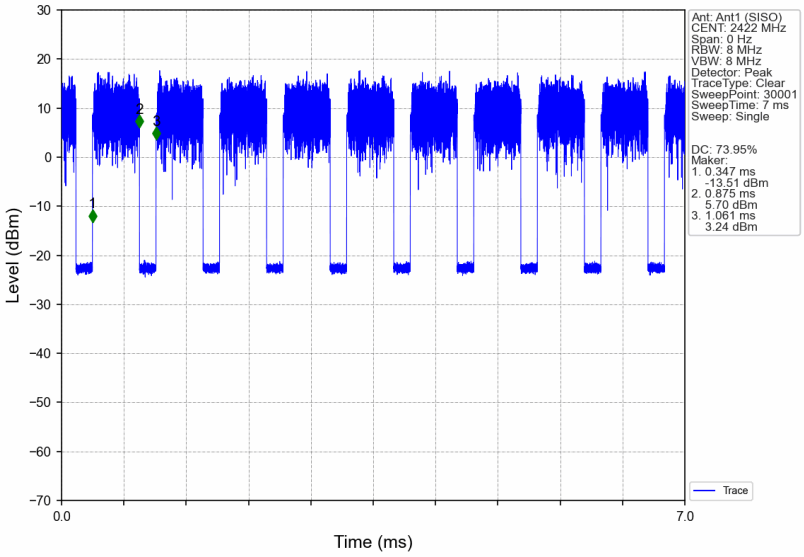
802.11ax(HE20)_MCH_2437MHz_RU242_Left_Ant1 (SISO)_NTNV



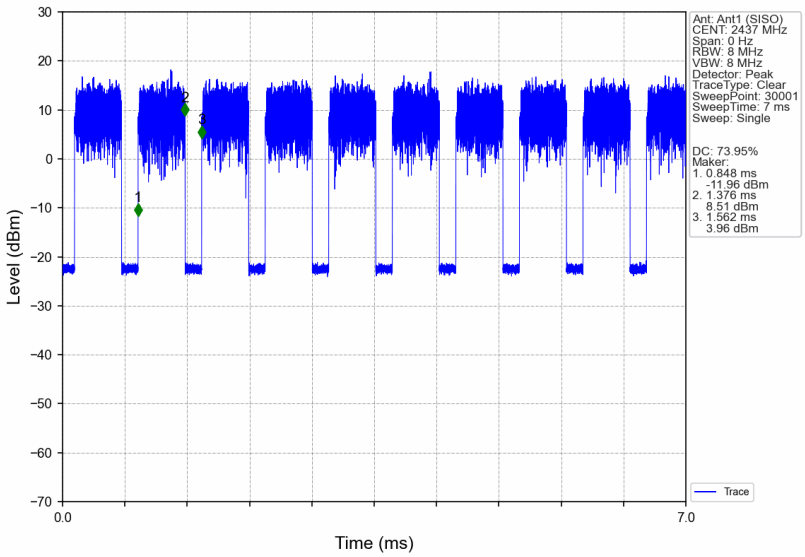
802.11ax(HE20)_HCH_2462MHz_RU242_Left_Ant1 (SISO)_NTNV



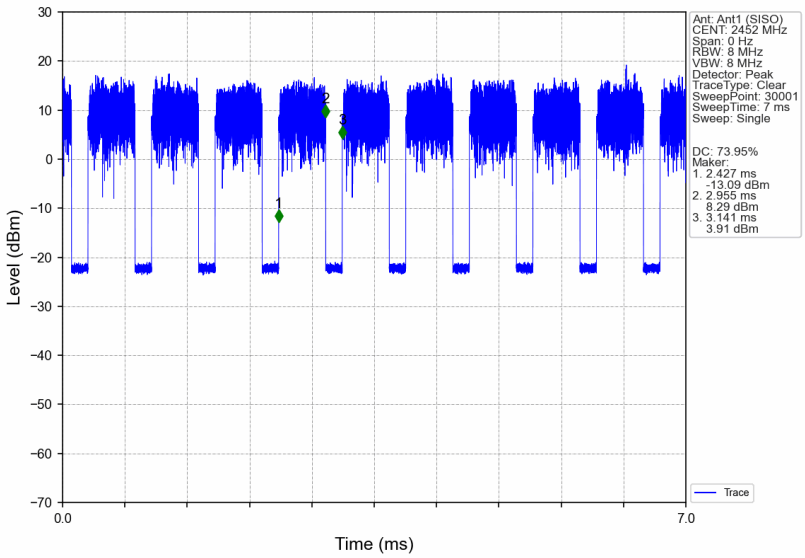
802.11ax(HE40)_LCH_2422MHz_RU484_Left_Ant1 (SISO)_NTNV



802.11ax(HE40)_MCH_2437MHz_RU484_Left_Ant1 (SISO)_NTNV



802.11ax(HE40)_HCH_2452MHz_RU484_Left_Ant1 (SISO)_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	13.841	/	Pass
		2437	/	/	1	13.847	/	Pass
		2462	/	/	1	13.808	/	Pass
802.11g	SISO	2412	/	/	1	16.440	/	Pass
		2437	/	/	1	16.474	/	Pass
		2462	/	/	1	16.421	/	Pass
802.11n (HT20)	SISO	2412	/	/	1	17.398	/	Pass
		2437	/	/	1	17.362	/	Pass
		2462	/	/	1	17.380	/	Pass
802.11n (HT40)	SISO	2422	/	/	1	35.403	/	Pass
		2437	/	/	1	35.284	/	Pass
		2452	/	/	1	35.335	/	Pass
802.11ax (HE20)	SISO	2412	RU242	Left	1	18.195	/	Pass
		2437	RU242	Left	1	18.159	/	Pass
		2462	RU242	Left	1	18.137	/	Pass
802.11ax (HE40)	SISO	2422	RU484	Left	1	36.570	/	Pass
		2437	RU484	Left	1	36.501	/	Pass
		2452	RU484	Left	1	36.389	/	Pass

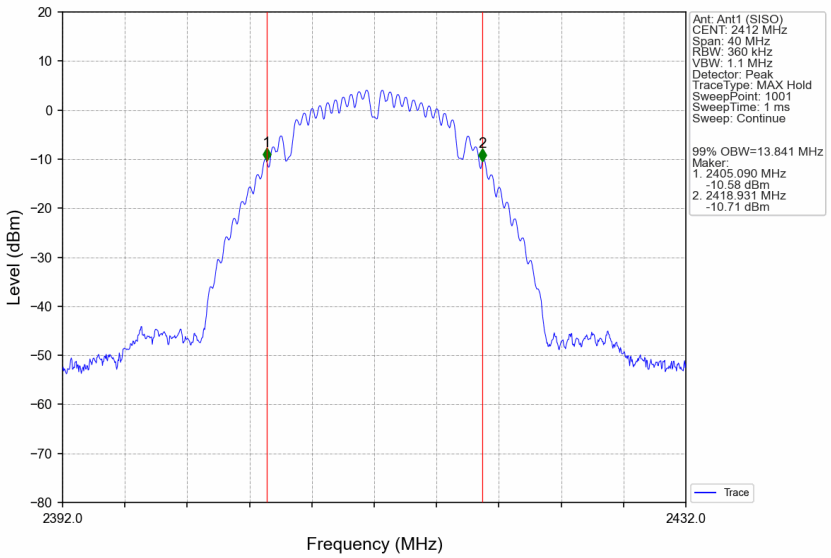
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	10.043	>=0.5	Pass
		2437	/	/	1	9.122	>=0.5	Pass
		2462	/	/	1	9.590	>=0.5	Pass
802.11g	SISO	2412	/	/	1	12.681	>=0.5	Pass
		2437	/	/	1	12.678	>=0.5	Pass
		2462	/	/	1	12.674	>=0.5	Pass
802.11n (HT20)	SISO	2412	/	/	1	15.054	>=0.5	Pass
		2437	/	/	1	12.675	>=0.5	Pass
		2462	/	/	1	12.665	>=0.5	Pass
802.11n (HT40)	SISO	2422	/	/	1	32.593	>=0.5	Pass
		2437	/	/	1	32.585	>=0.5	Pass
		2452	/	/	1	31.324	>=0.5	Pass
802.11ax (HE20)	SISO	2412	RU242	Left	1	13.838	>=0.5	Pass
		2437	RU242	Left	1	13.853	>=0.5	Pass
		2462	RU242	Left	1	13.834	>=0.5	Pass
802.11ax (HE40)	SISO	2422	RU484	Left	1	32.595	>=0.5	Pass
		2437	RU484	Left	1	32.577	>=0.5	Pass
		2452	RU484	Left	1	31.336	>=0.5	Pass

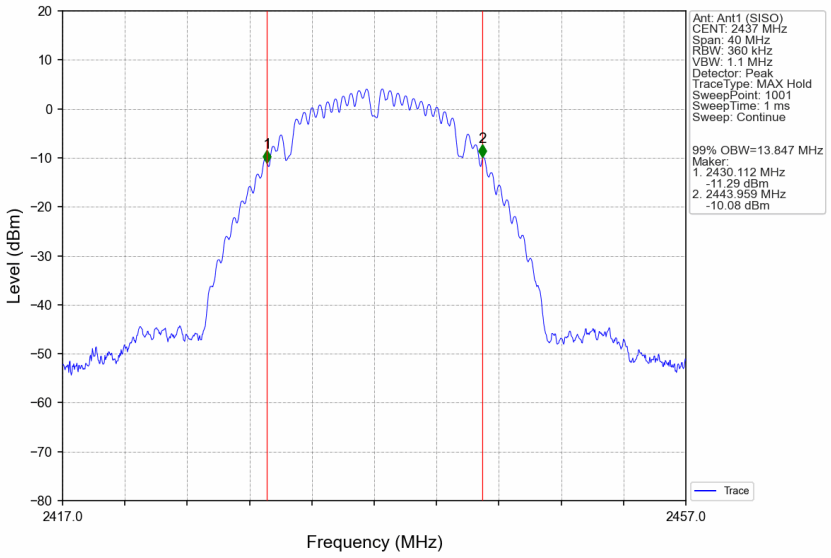
2.2 Test Graph

2.2.1 OBW

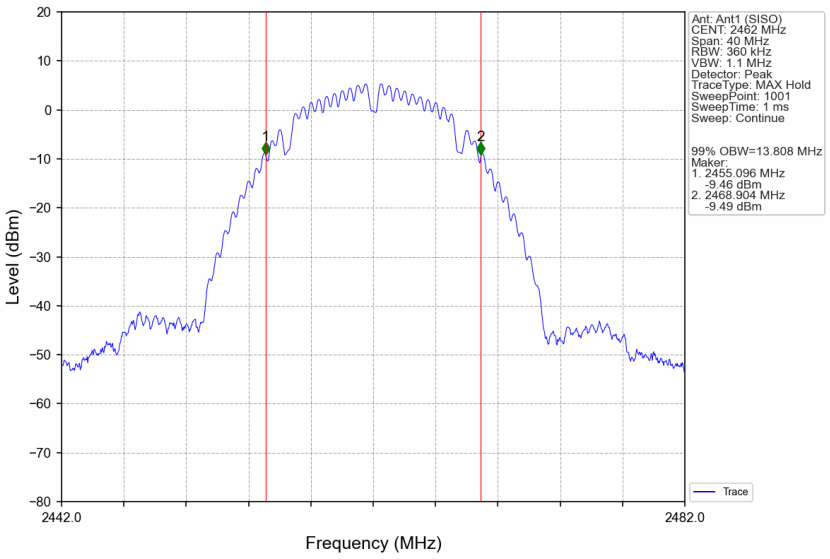
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



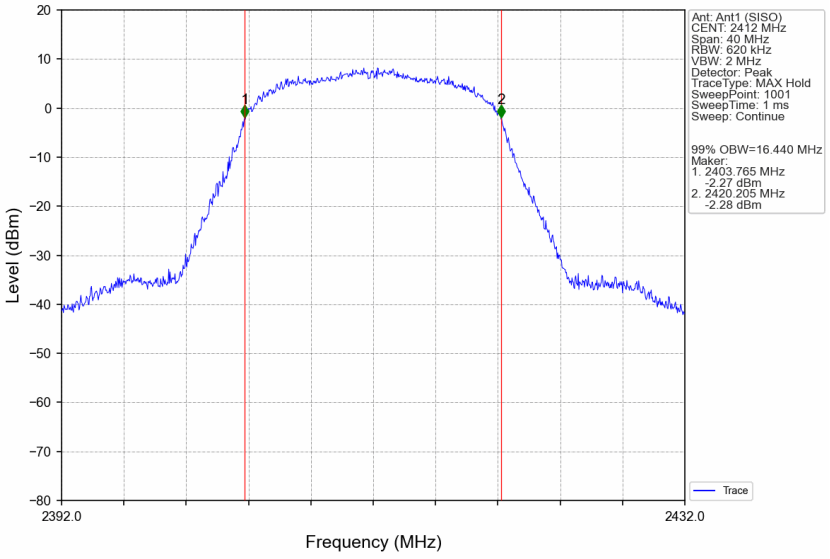
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



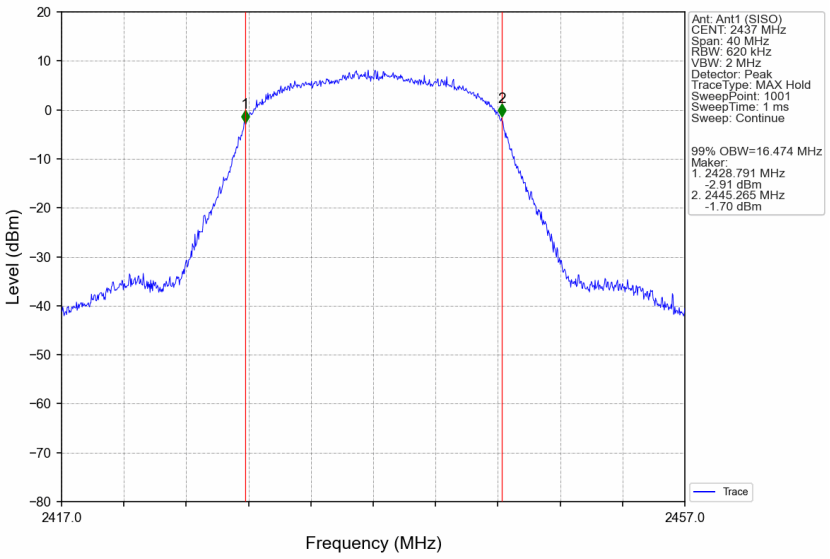
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



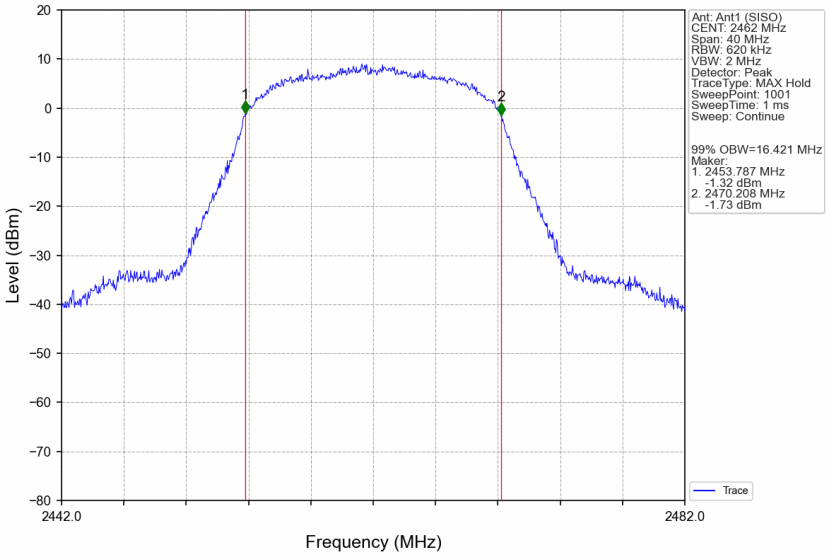
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



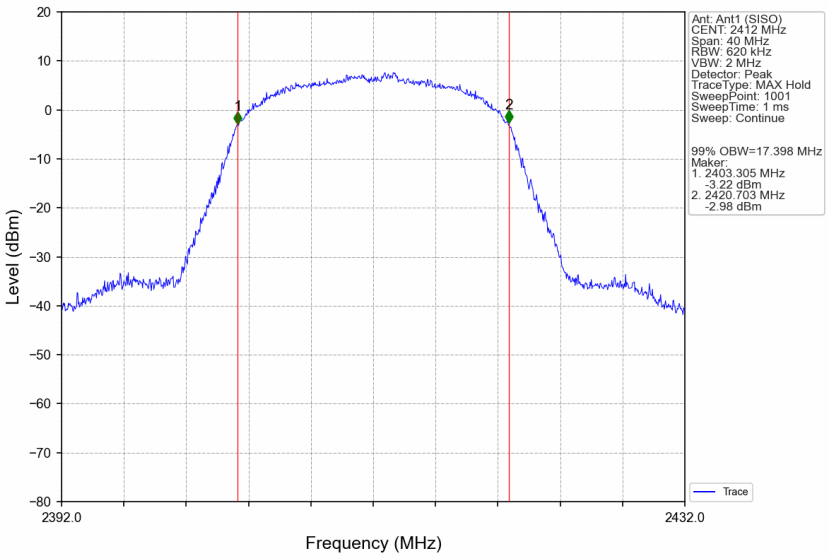
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



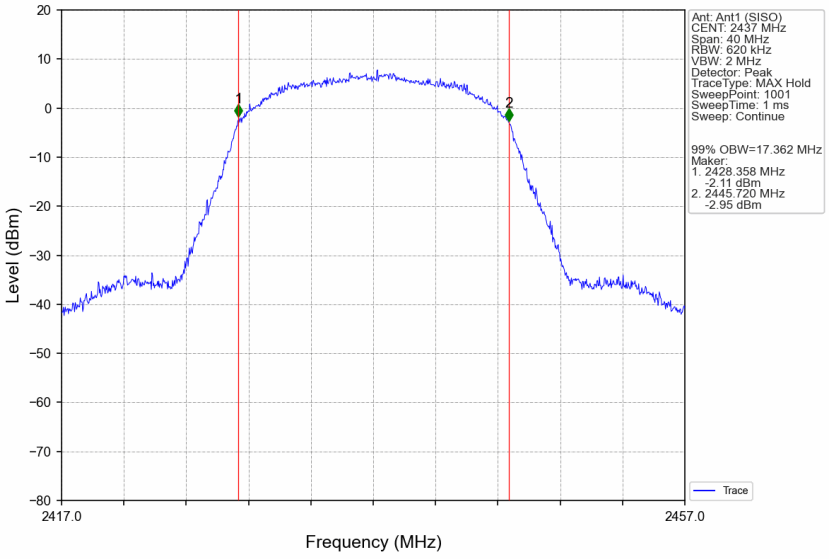
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



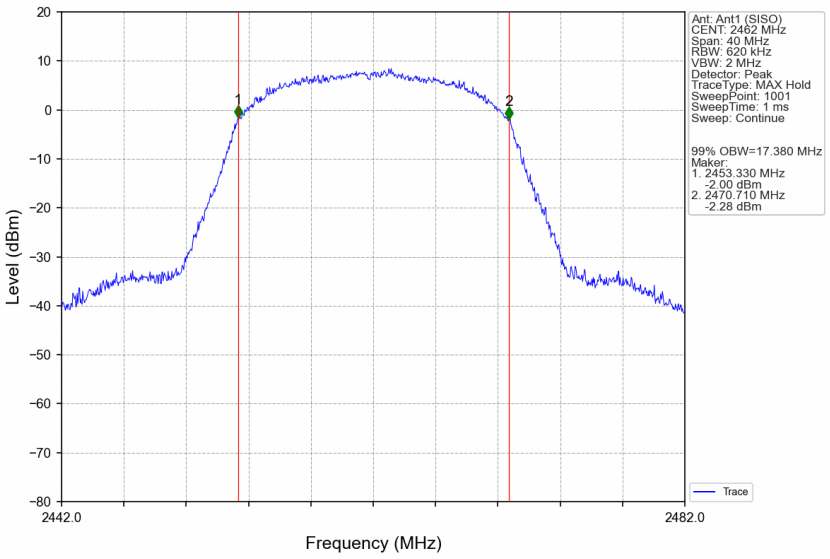
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



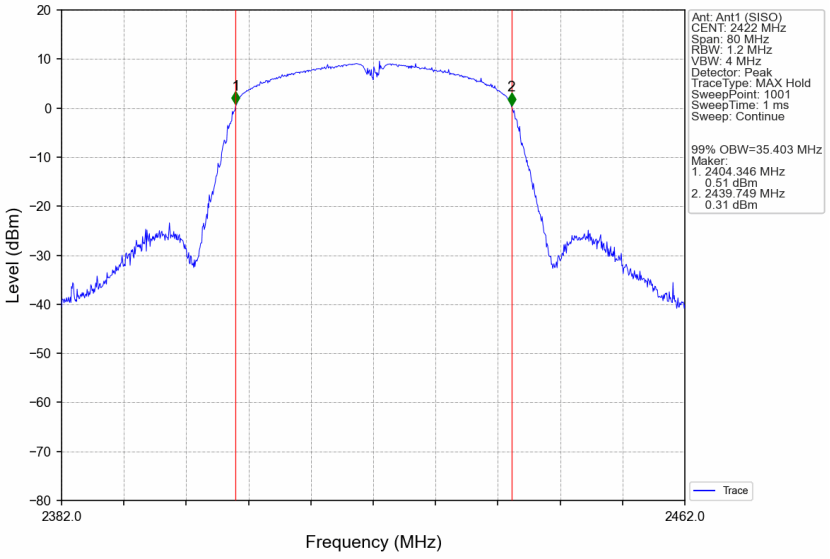
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



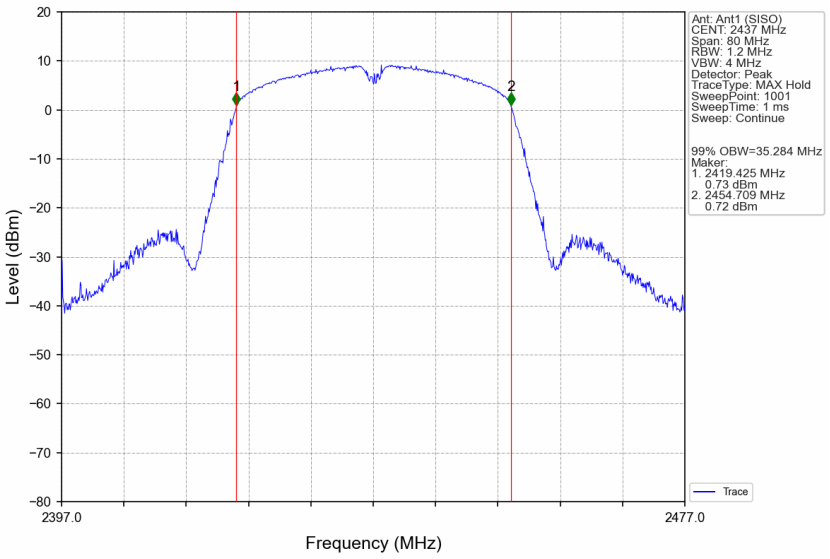
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



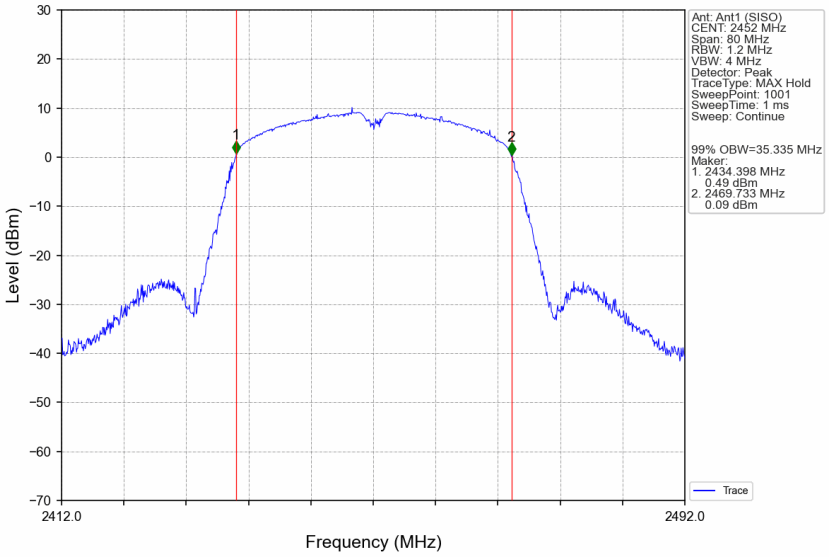
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



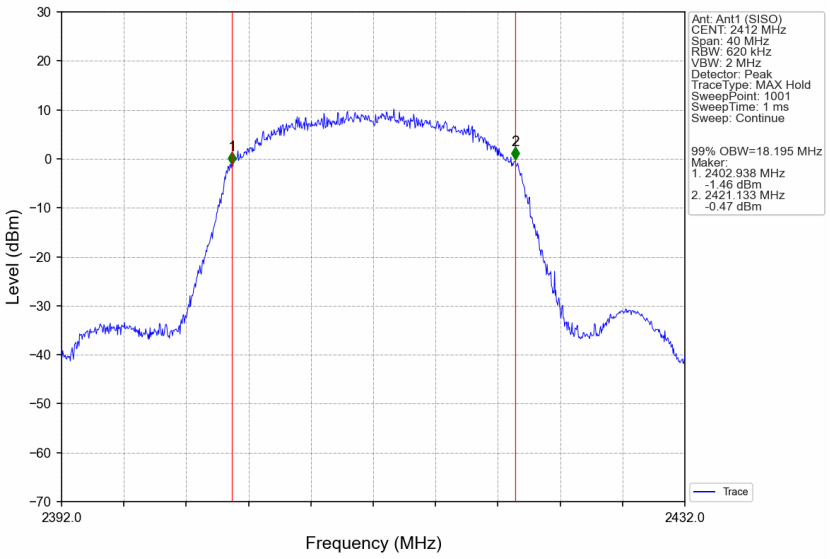
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



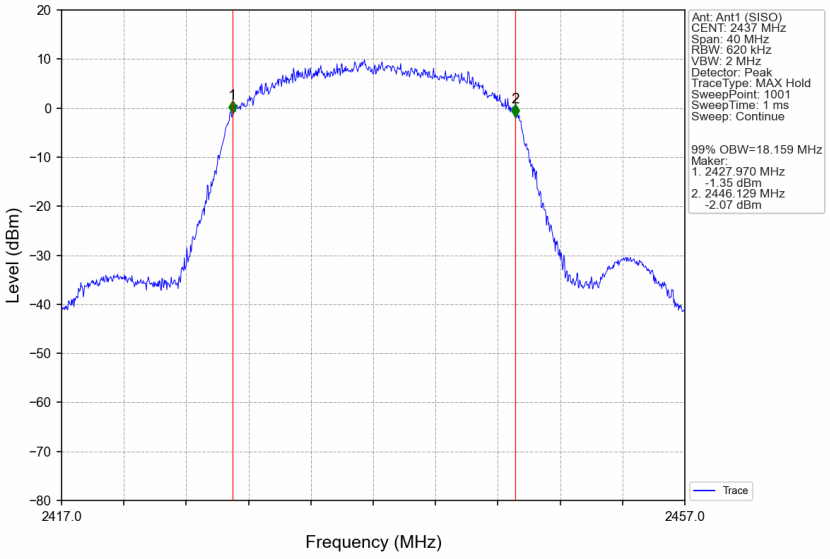
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



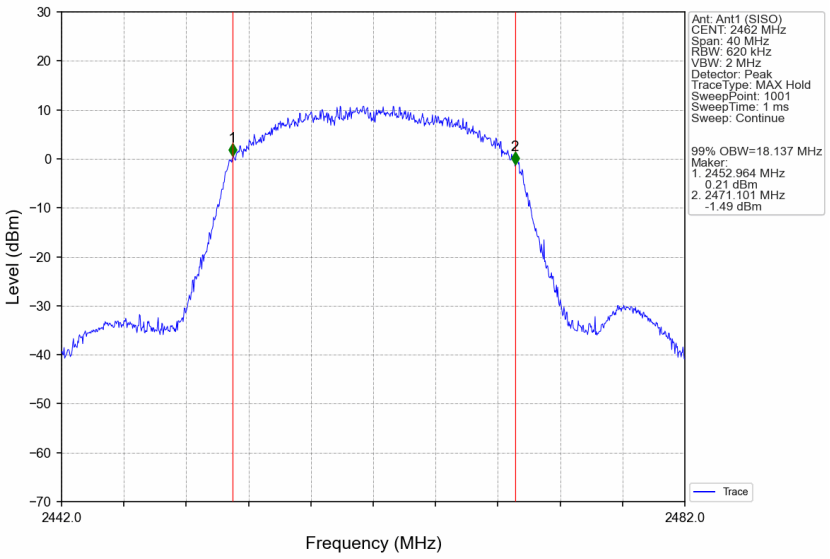
802.11ax(HE20)_LCH_2412MHz_RU242_Left_Ant1 (SISO)_NTNV



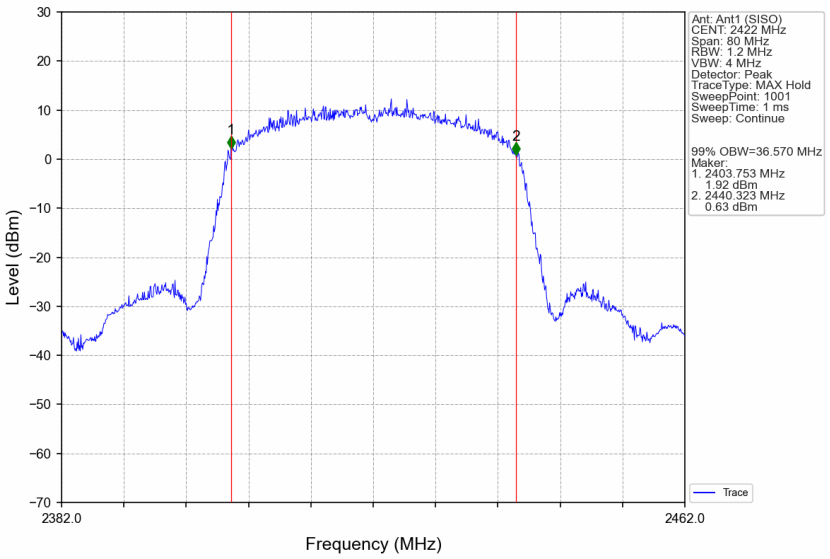
802.11ax(HE20)_MCH_2437MHz_RU242_Left_Ant1 (SISO)_NTNV



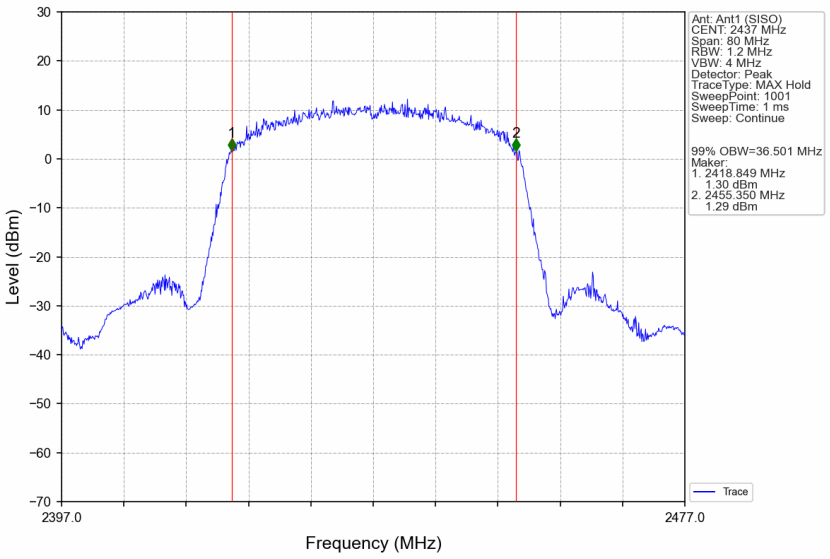
802.11ax(HE20)_HCH_2462MHz_RU242_Left_Ant1 (SISO)_NTNV



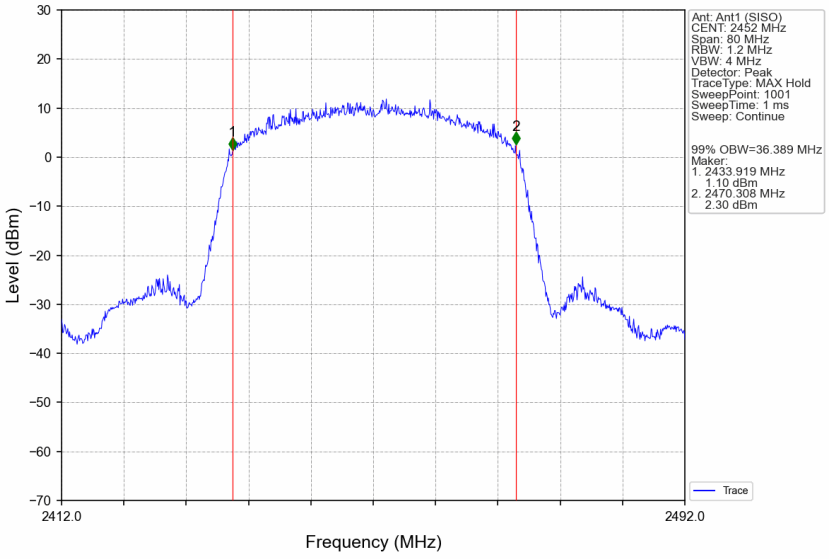
802.11ax(HE40)_LCH_2422MHz_RU484_Left_Ant1 (SISO)_NTNV



802.11ax(HE40)_MCH_2437MHz_RU484_Left_Ant1 (SISO)_NTNV

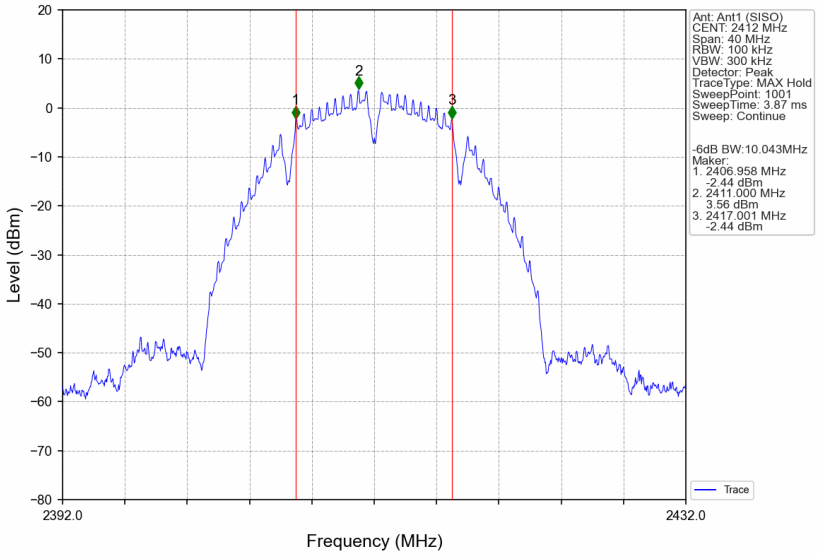


802.11ax(HE40)_HCH_2452MHz_RU484_Left_Ant1 (SISO)_NTNV

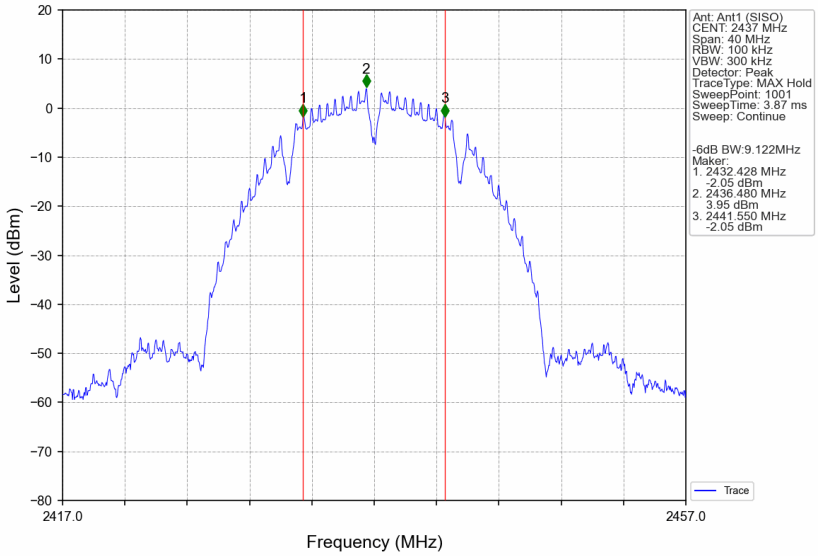


2.2.2 6dB BW

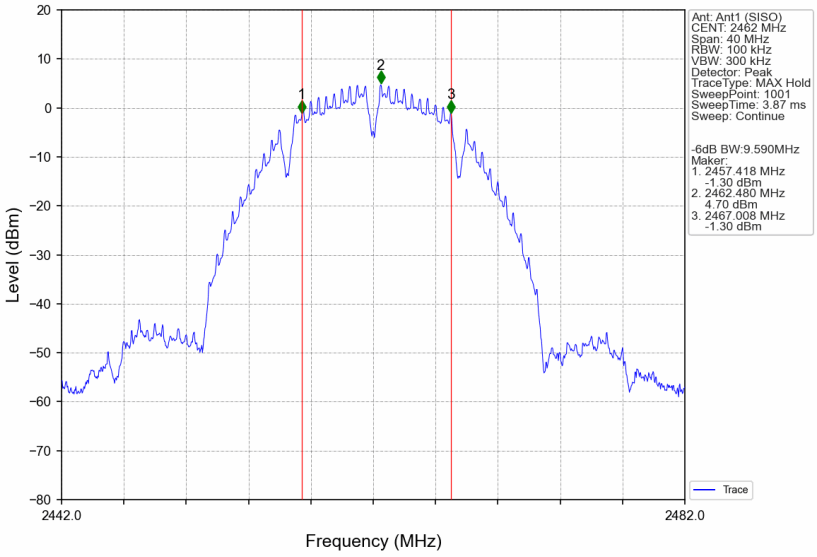
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



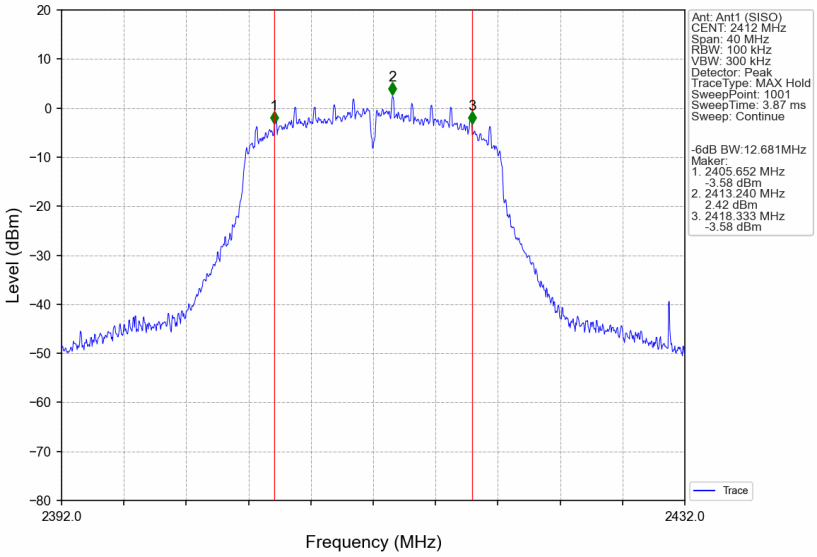
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



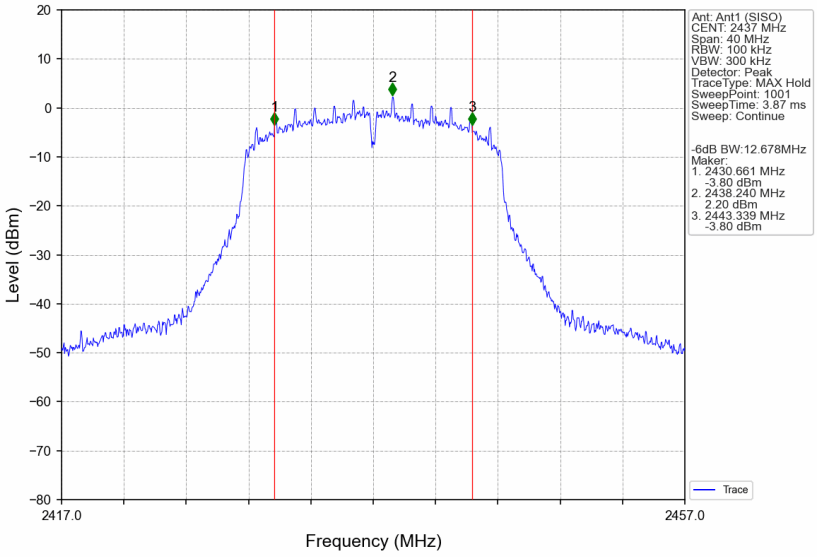
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



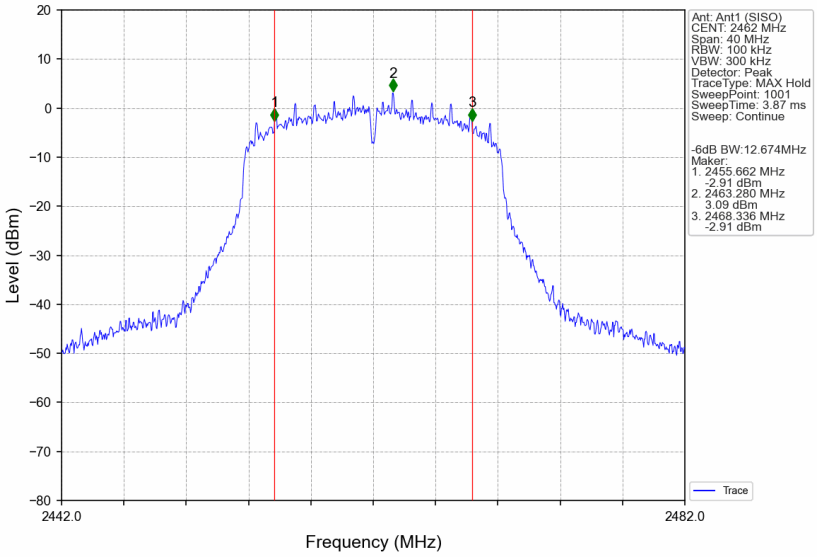
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



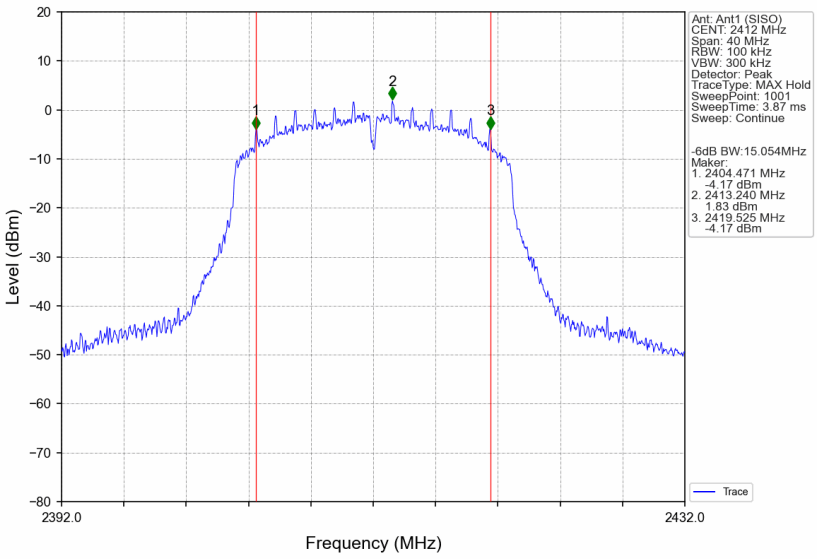
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



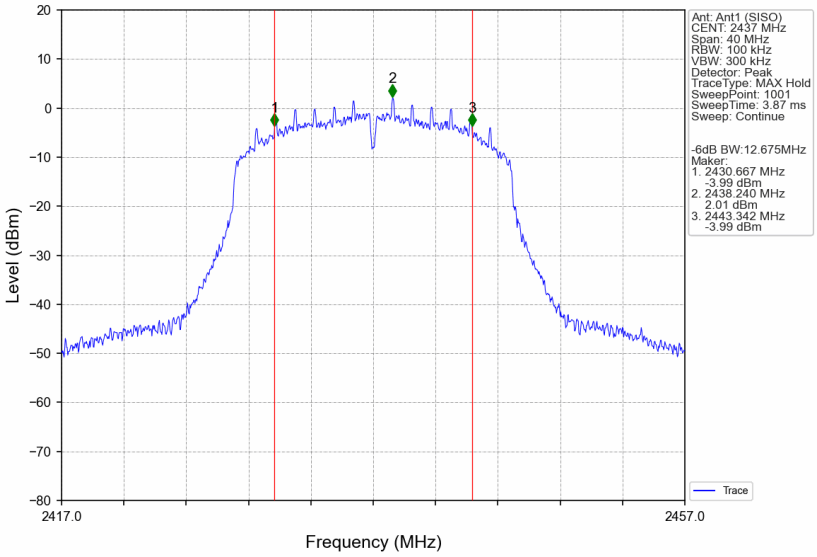
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



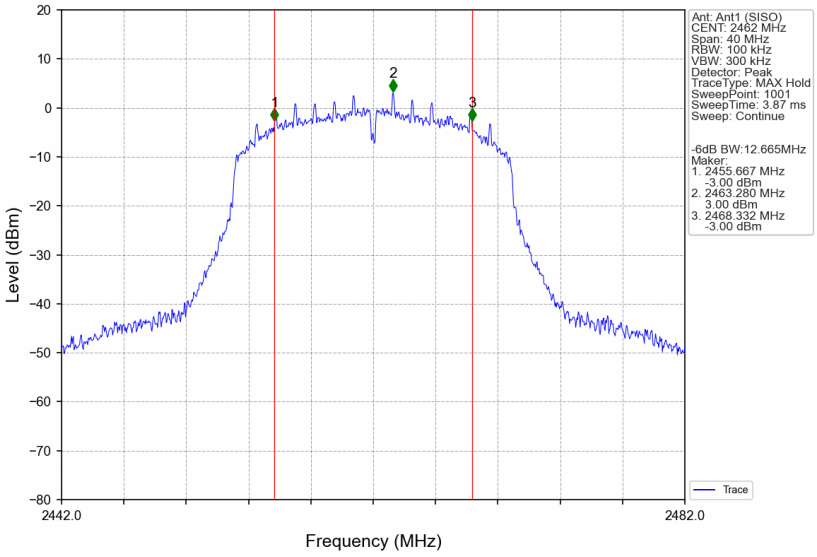
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



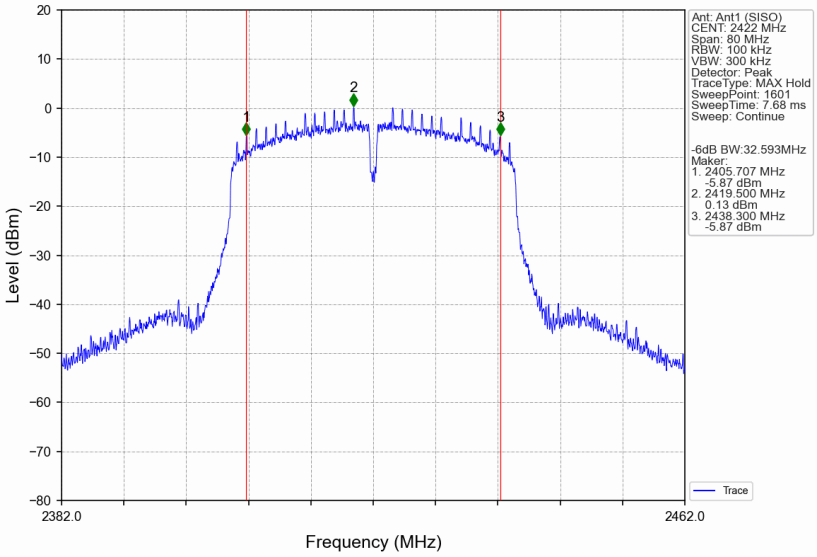
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



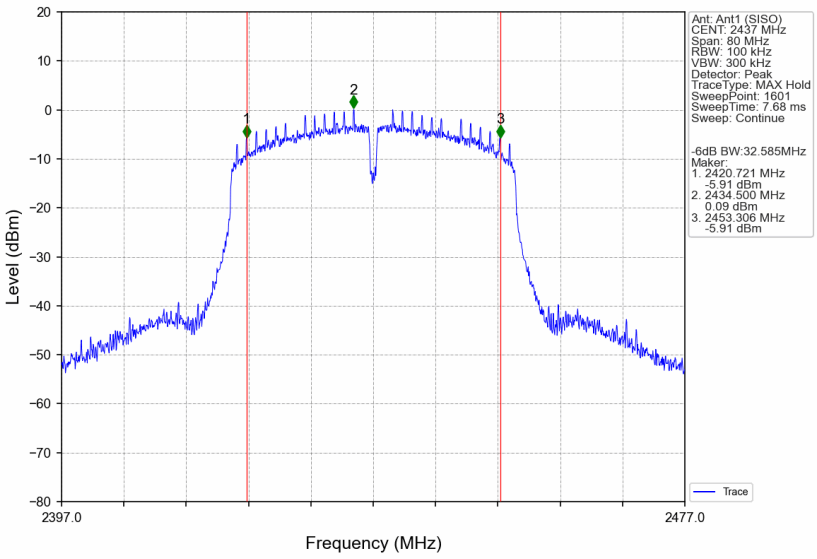
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV