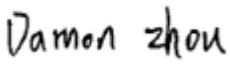
TEST REPORT

Application No.:	KSCR2502000154AT
FCC ID:	2BEWX-TPA08
Applicant:	Zhejiang Lingzhu Technology Co., Ltd.
Address of Applicant:	Room 302,No 1 Building Huace Center,Xihu District, Hangzhou City, Zhejiang Province,China
Manufacturer:	Zhejiang Lingzhu Technology Co., Ltd.
Address of Manufacturer:	Room 302,No 1 Building Huace Center,Xihu District, Hangzhou City, Zhejiang Province,China
Factory:	Ningbo Wise Electronic Technology Co., Ltd.
Address of Factory:	104, Factory Building 13, Huiding Chuangzhi Park, No. 277 Shengyuan Road, Jiangkou Street, Fenghua District, Ningbo, Zhejiang
Equipment Under Test (EUT):	
EUT Name:	Control Panel 8 Pro
Model No.:	TPA08-M3U
Standard(s) :	47 CFR Part 15, Subpart E 15.407
Date of Receipt:	2025-02-07
Date of Test:	2025-02-21 to 2025-03-04
Date of Issue:	2025-03-04
Test Result:	**Pass***

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

Revision Record			
Version	**Description**	***Date***	***Remark***
00	Original	2025-03-04	/

Authorized for issue by:				
Tested By				
		Damon_Zhou/Project Engineer		
Approved By				
		Terry Hou /Reviewer		

2 Test Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart E 15.407	N/A	47 CFR Part 15, Subpart C 15.203	Pass
Transmission in the Absence of Data		N/A	47 CFR Part 15, Subpart E 15.407 (c)	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart E 15.407	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)	Pass
Maximum Conducted output power		ANSI C63.10 (2013) Section 12.3	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Radiated Emissions (Below 1GHz)		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions (Above 1GHz)		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Channel Move Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass
Duty Cycle		ANSI C63.10 (2013) Section 12.2	ANSI C63.10 (2013) Section 12.2	Pass
99% Bandwidth		ANSI C63.10 (2013) Section 12.4.2	ANSI C63.10 (2013) Section 12.4.2	Pass
26dB Emission bandwidth		ANSI C63.10 (2013) Section 12.4.1	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Minimum 6 dB bandwidth (5.725-5.85 GHz band)		ANSI C63.10 (2013) Section 6.9.2	47 CFR Part 15, Subpart E 15.407 (e)	Pass
Peak Power spectrum density		ANSI C63.10 (2013) Section 12.5	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Frequency Stability		ANSI C63.10 (2013) Section 6.8	47 CFR Part 15, Subpart E 15.407 (g)	Pass
Non-occupancy period		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass
Channel Closing Transmission Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	AC 100-240V,50/60Hz
Operation Frequency/Number of channels (20MHz):	U-NII-1:5180-5240MHz (4 Channels); U-NII-2A: 5260-5320MHz (4 Channels); U-NII-2C: 5500-5700MHz (11 Channels); U-NII-3: 5745-5825MHz (5 Channels)
Operation Frequency/Number of channels/(40MHz):	U-NII-1:5190-5230MHz (2 Channels); U-NII-2A: 5270-5310MHz (2 Channels); U-NII-2C: 5510-5670MHz (5 Channels); U-NII-3: 5755-5795MHz (2 Channels)
Modulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing:	802.11a/n20: 20MHz; 802.11n40: 40MHz
DFS Function:	Slave without Radar detection
TPC Function:	Without TPC function
Antenna Type:	PIFA Antenna
Antenna Gain:	4.92dBi(Provided by the manufacturer)

4.2 Power level setting using in test

Channel	802.11a	802.11n(HT20)
	Ant 1	Ant 1
36	16	13
40	16	13
48	16	14
52	16	14
60	16	14
64	16	14
100	16	14
116	16	14
140	17	15
149	18	16
157	18	16
165	18	16

Channel	802.11n(HT40)
	Ant 1
38	14
46	14
54	14
62	14
102	14
110	14
134	14
151	15
159	15

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	Lenovo	/	/

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	03/19/2024	03/18/2025
2	LISN	R&S	ENV216	KS301197	01/15/2025	01/14/2026
3	LISN	Schwarzbeck	NNLK 8129	KS301091	01/15/2025	01/14/2026
4	Pulse Limiter	R&S	ESH3-Z2	KUS1902E001	12/05/2024	12/04/2025
5	CE test Cable	Thermax	/	CZ301102	01/14/2025	01/13/2026
6	Test Software	ESE	E3_V 6.111221a	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/01/2024	07/31/2025
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/01/2024	07/31/2025
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	01/15/2025	01/14/2026
4	Signal Generator	R&S	SMBV100B	KSEM032	03/19/2024	03/18/2025
5	Signal Generator	R&S	SMW200A	KSEM020-1	08/02/2024	08/01/2025
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/01/2024	07/31/2025
7	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/01/2024	07/31/2025
8	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/19/2024	03/18/2025
9	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/13/2024	08/12/2025
10	Switcher	TST	FY562	KUS2001M001-4	01/15/2025	01/14/2026
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	01/14/2025	01/13/2026
14	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/26/2024	08/25/2025
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	08/06/2024	08/05/2025
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	03/19/2024	03/18/2025
3	Signal Generator	Agilent	E8257C	KS301066	08/06/2024	08/05/2025
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	03/18/2023	03/17/2025
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2023	06/28/2025
6	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E006	03/19/2024	03/18/2025
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	03/23/2024	03/22/2025
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	01/15/2025	01/14/2026
11	Amplifier(18~40GHz)	PANSHAN TECHNOLOGY	LNA180400G40	KSEM038	08/12/2024	08/11/2025
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	08/23/2024	08/22/2025
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 PIFA Antenna and no consideration of replacement. The best case gain of the antenna is 4.92dBi.

Antenna location: Refer to internal photo.

6.2 Transmission in the Absence of Data

6.2.1 Test Requirement:

47 CFR Part 15, Subpart E 15.407 (c)

6.2.2 Conclusion

Conclusion

Standard Requirement:

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Applicants shall include in their application for equipment authorization a description of how this requirement is met.

EUT Details:

WIFI chip support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.

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 & Subpart E 15.407 b(9)
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.		

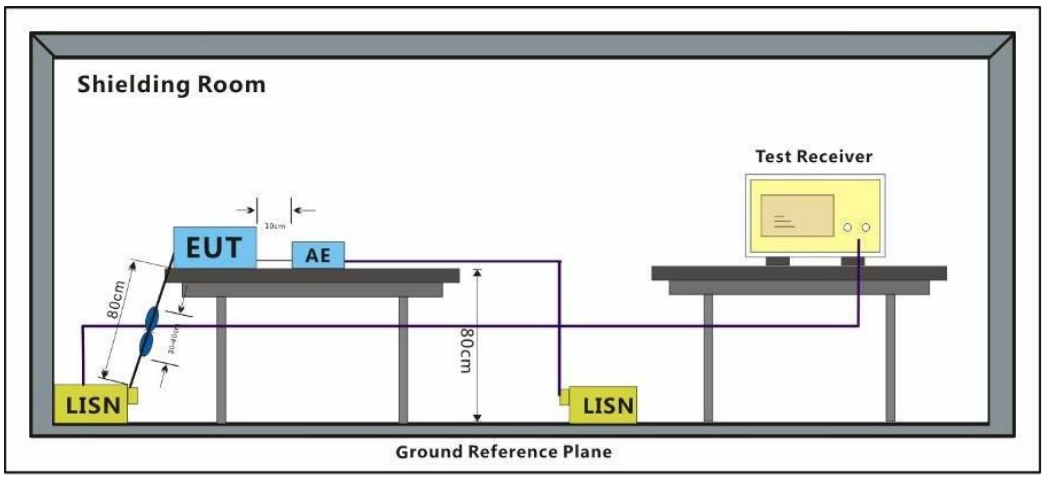
7.1.1 E.U.T. Operation

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	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and 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.

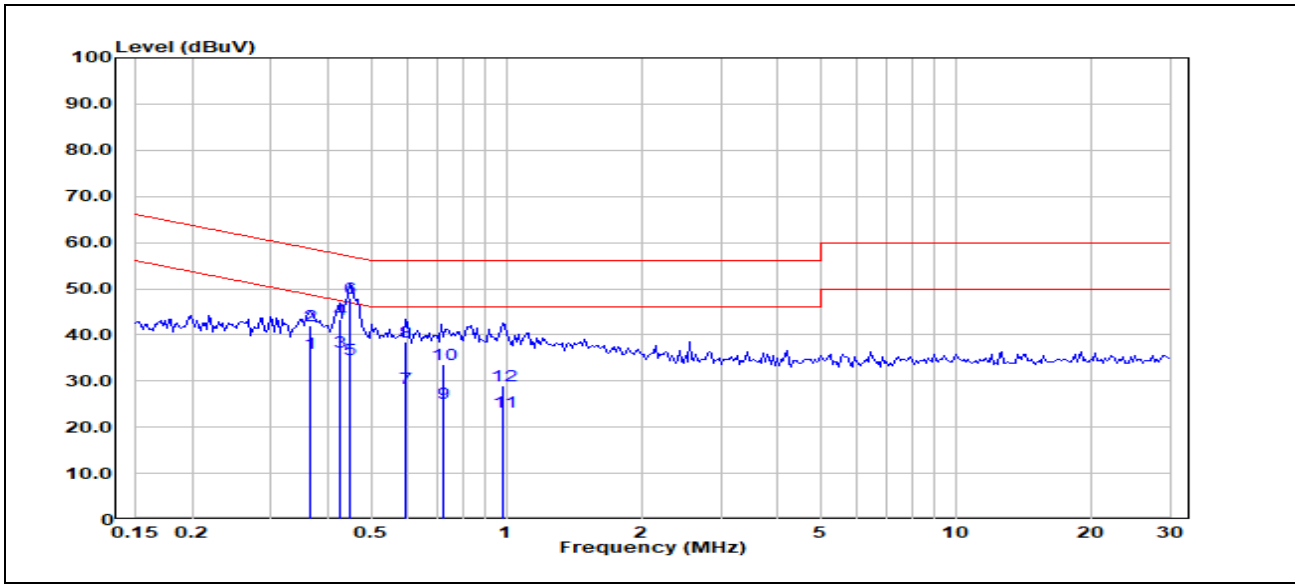
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

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.

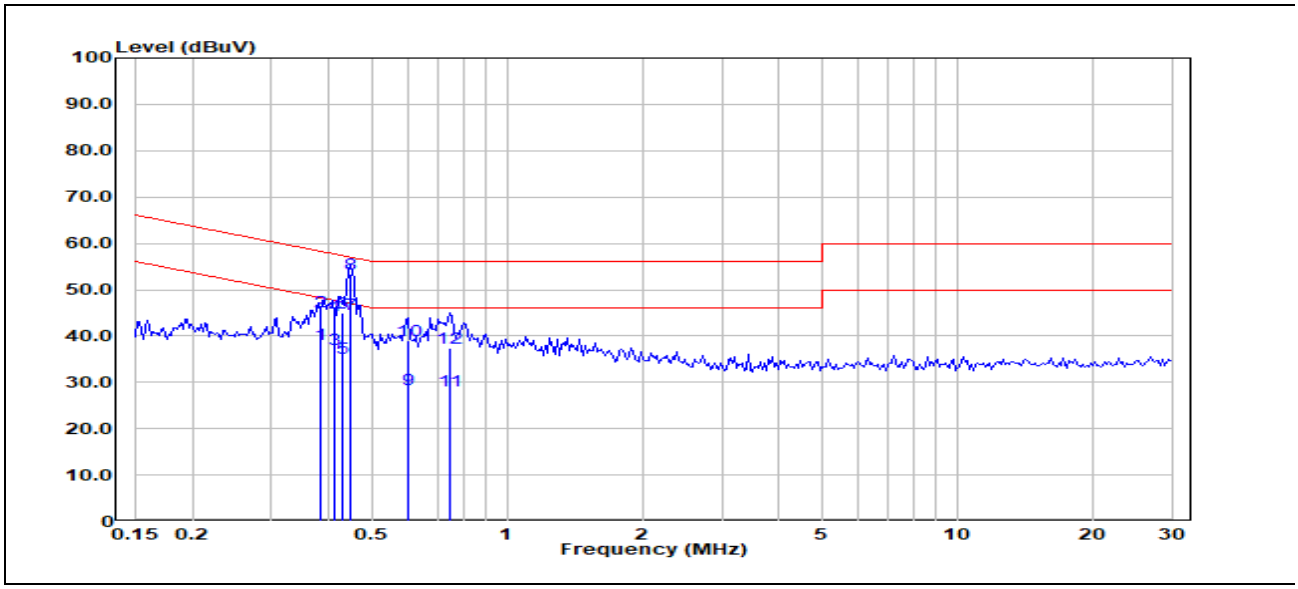
Remark: Level=Read Level+ Cable Loss+ LISN Factor

Test Mode: 05; Line: Live line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.3656	16.01	20.07	36.08	48.60	-12.52	Average
2	0.3656	22.07	20.07	42.14	58.60	-16.46	QP
3	0.4271	16.22	20.05	36.27	47.31	-11.04	Average
4	0.4271	23.33	20.05	43.38	57.31	-13.93	QP
5	0.4474	14.56	20.05	34.61	46.92	-12.31	Average
6	0.4474	27.90	20.05	47.95	56.92	-8.97	QP
7	0.5994	8.52	19.88	28.40	46.00	-17.60	Average
8	0.5994	18.61	19.88	38.49	56.00	-17.51	QP
9	0.7259	5.40	19.77	25.17	46.00	-20.83	Average
10	0.7259	13.86	19.77	33.63	56.00	-22.37	QP
11	0.9849	3.51	19.85	23.36	46.00	-22.64	Average
12	0.9849	9.09	19.85	28.94	56.00	-27.06	QP

Test Mode: 05; Line: Neutral Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.3865	18.12	20.11	38.23	48.14	-9.91	Average
2	0.3865	25.18	20.11	45.29	58.14	-12.85	QP
3	0.4136	17.02	20.09	37.11	47.58	-10.47	Average
4	0.4136	24.27	20.09	44.36	57.58	-13.22	QP
5	0.4316	15.27	20.05	35.32	47.22	-11.90	Average
6	0.4316	24.99	20.05	45.04	57.22	-12.18	QP
7	0.4480	24.58	20.02	44.60	46.91	-2.31	Average
8	0.4480	33.24	20.02	53.26	56.91	-3.65	QP
9	0.6011	8.48	19.88	28.36	46.00	-17.64	Average
10	0.6011	19.07	19.88	38.95	56.00	-17.05	QP
11	0.7433	8.28	19.84	28.12	46.00	-17.88	Average
12	0.7433	17.51	19.84	37.35	56.00	-18.65	QP

7.2 Maximum Conducted output power

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)
Test Method: ANSI C63.10 (2013) Section 12.3

Limit:

Frequency band(MHz)	Limit
5150-5250	≤1W(30dBm) for master device
	≤250mW(24dBm) for client device
5250-5350	≤250mW(24dBm) or 11dBm+10logB*
5470-5725	≤250mW(24dBm) or 11dBm+10logB*
5725-5850	≤1W(30dBm)
Remark:	* Where B is the 26dB emission bandwidth in MHz. The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

7.2.1 E.U.T. Operation

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

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.2.3 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

7.3 Radiated Emissions (Below 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: ANSI C63.10 (2013) Section 6.4,6.5
Measurement Distance: 3M

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

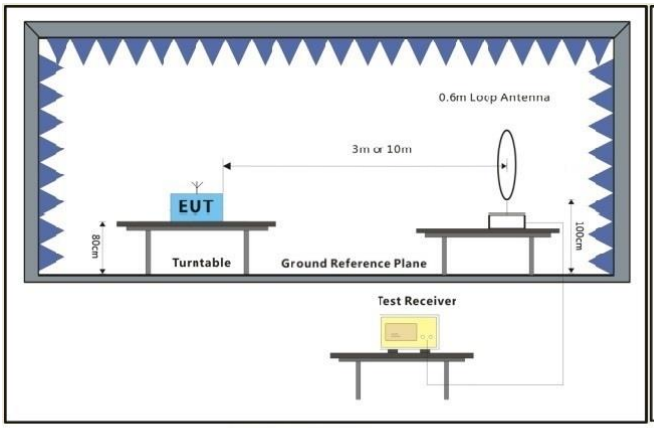
7.3.1 E.U.T. Operation

Operating Environment:
Temperature: 23.3 °C Humidity: 45.2 % RH Atmospheric Pressure: 1010 mbar

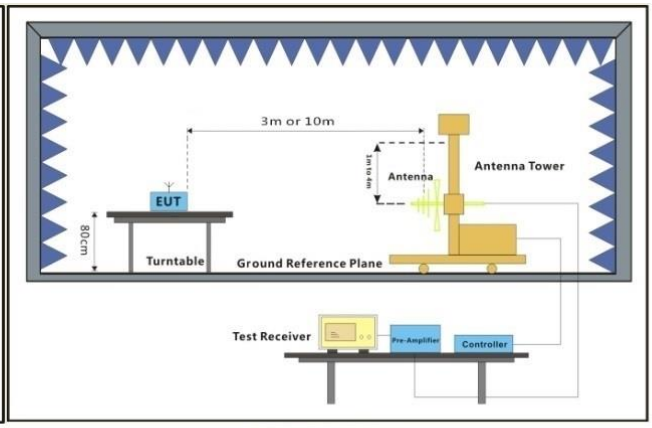
7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and 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 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:

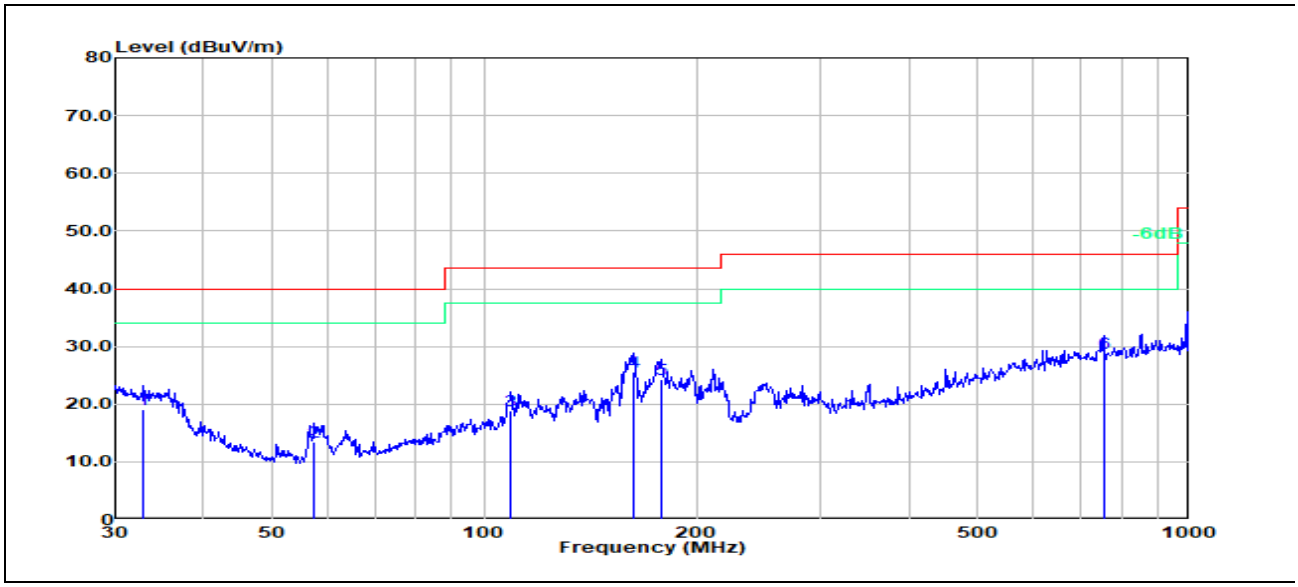
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. For emission below 1GHz, through the pre-scan found the worst case is the lowest channel of 802.11a. Only the worst case is recorded in the report.

3. 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.

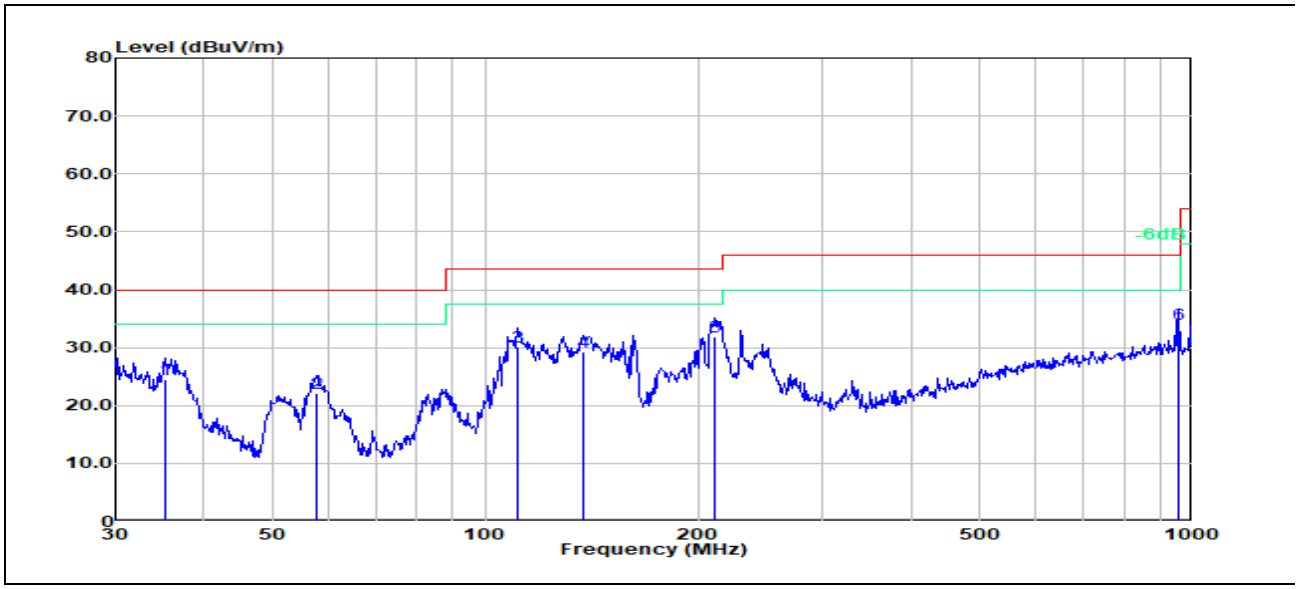
4. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

Test Mode: 05; Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	32.8640	1.64	17.47	19.11	40.00	-20.89	100	0	QP
2	57.3920	7.29	6.25	13.54	40.00	-26.46	100	10	QP
3	109.0290	5.31	13.51	18.82	43.50	-24.68	200	296	QP
4	162.6110	14.11	11.45	25.56	43.50	-17.94	200	282	QP
5	178.1330	12.37	11.96	24.33	43.50	-19.17	100	275	QP
6	755.3870	4.62	24.12	28.74	46.00	-17.26	200	0	QP

Test Mode: 05; Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	35.2512	8.67	15.84	24.51	40.00	-15.49	100	359	QP
2	57.5939	15.92	6.20	22.12	40.00	-17.88	100	17	QP
3	111.3468	16.17	13.95	30.12	43.50	-13.38	100	346	QP
4	137.4202	14.53	14.70	29.23	43.50	-14.27	100	138	QP
5	211.5265	19.42	12.35	31.77	43.50	-11.73	100	359	QP
6	955.4382	8.64	25.36	34.00	46.00	-12.00	100	346	QP

7.4 Radiated Emissions (Above 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: ANSI C63.10 (2013) Section 6.6
Measurement Distance: 3M

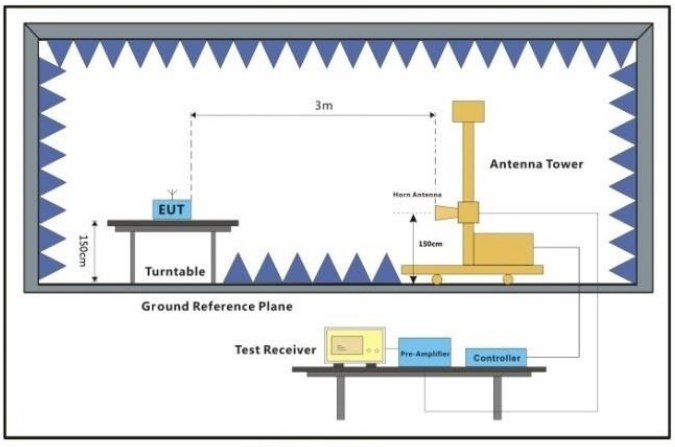
7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 23.3 °C Humidity: 45.2 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and 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 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

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

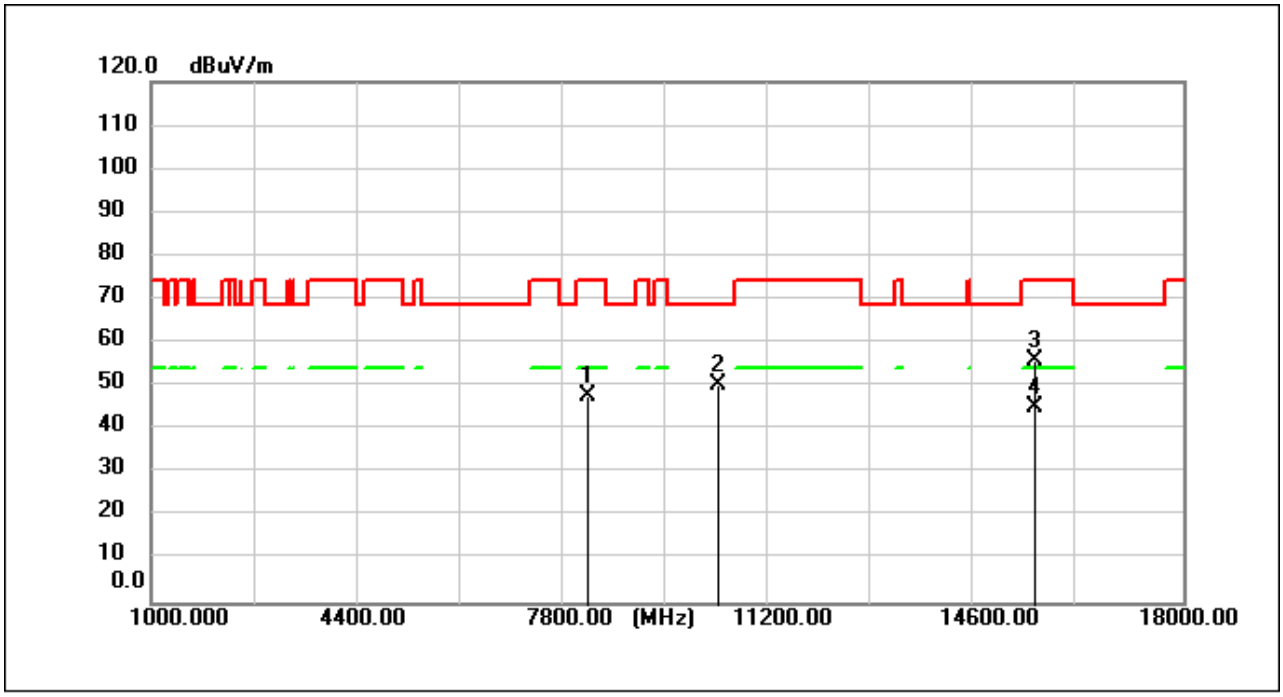
4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

5. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.

6.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

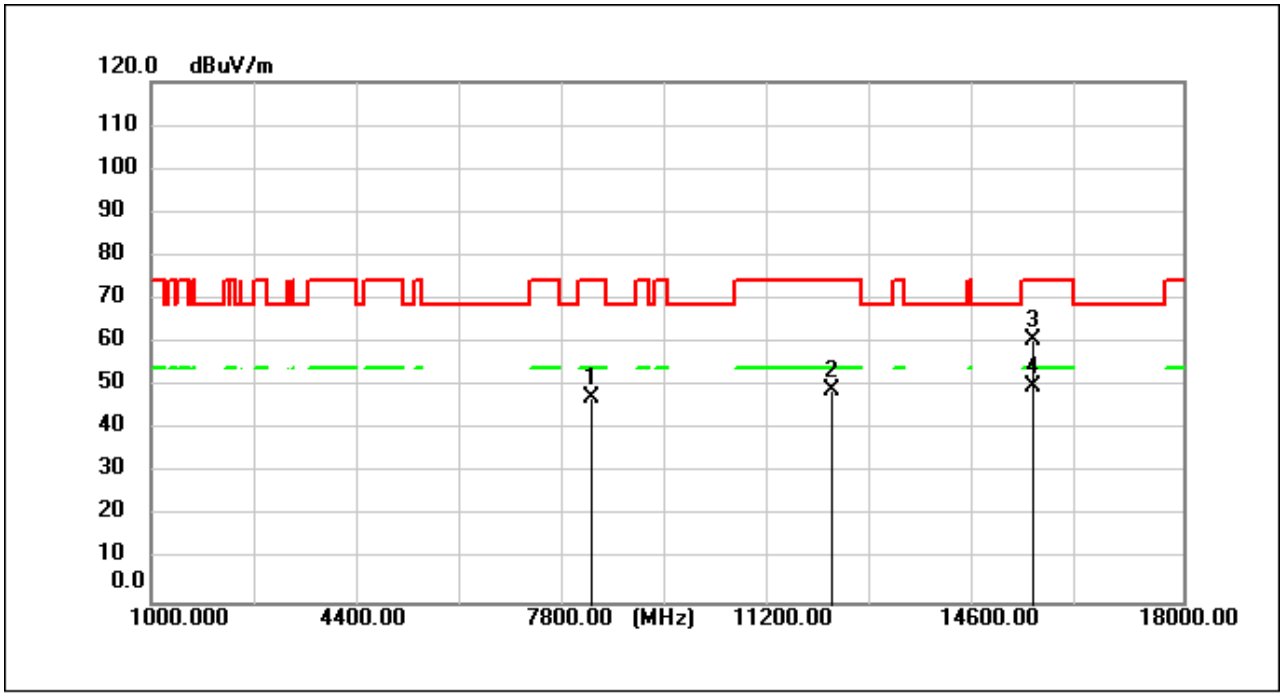
7. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geqslant$1/T (Duty cycle$<$98%) or 10Hz (Duty cycle$\geqslant$98%) for Average detection (AV) at frequency above 1GHz.

Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



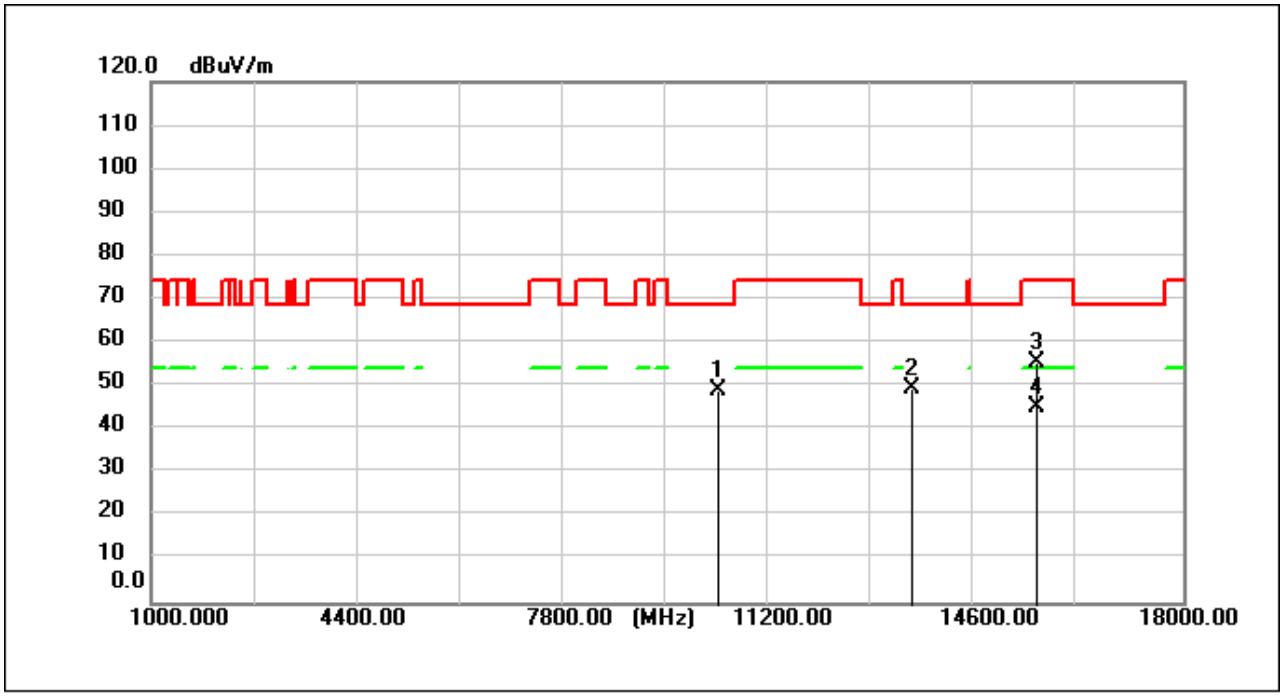
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8201.200	56.86	-8.99	47.87	74.00	-26.13	peak
2	10327.900	56.04	-5.85	50.19	68.30	-18.11	peak
3	15541.800	59.72	-3.85	55.87	74.00	-18.13	peak
4	15541.800	48.96	-3.85	45.11	54.00	-8.89	AVG

Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



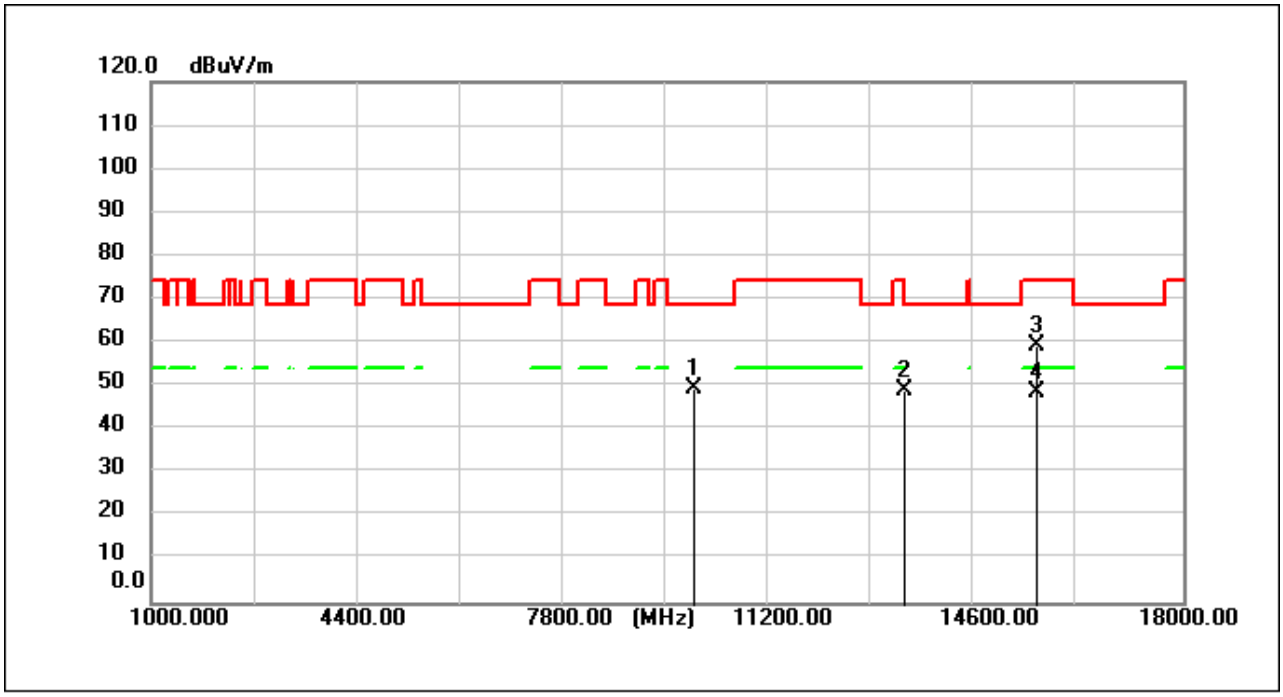
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8256.450	56.23	-8.90	47.33	74.00	-26.67	peak
2	12202.150	55.58	-6.31	49.27	74.00	-24.73	peak
3	15535.000	64.70	-3.87	60.83	74.00	-13.17	peak
4	15535.000	53.85	-3.87	49.98	54.00	-4.02	AVG

Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



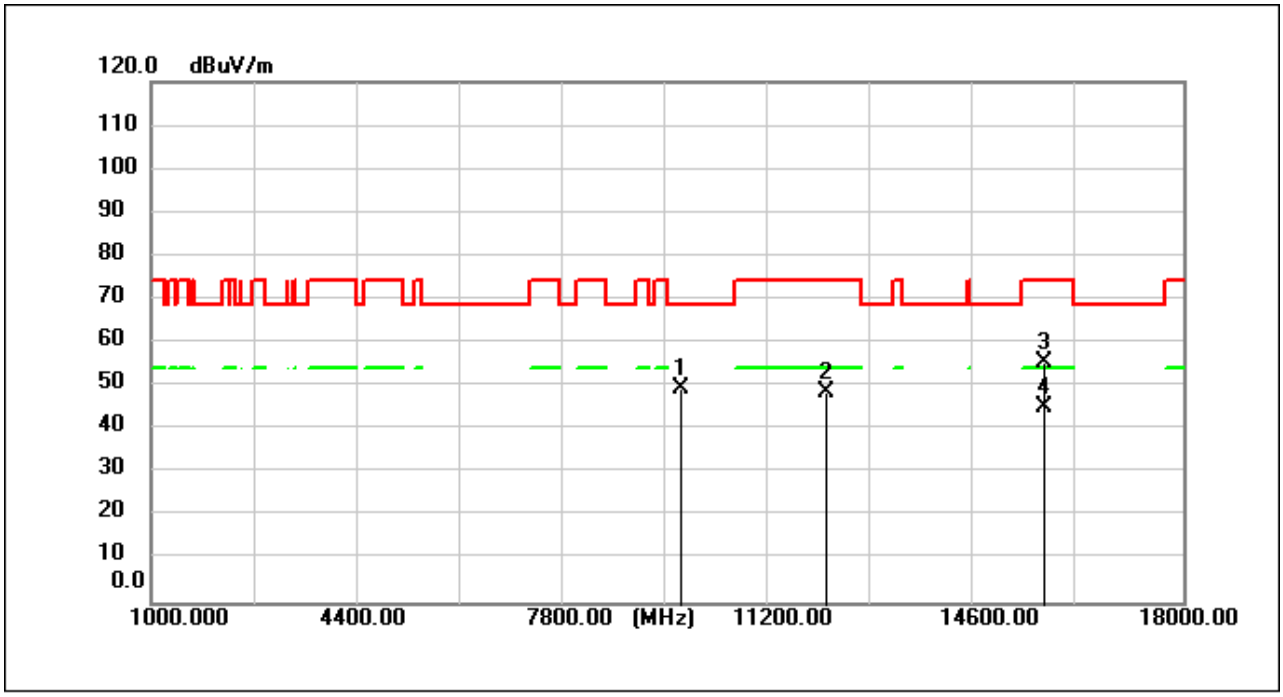
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10337.250	54.72	-5.86	48.86	68.30	-19.44	peak
2	13523.050	54.87	-5.53	49.34	68.30	-18.96	peak
3	15597.050	59.18	-3.76	55.42	74.00	-18.58	peak
4	15597.050	48.79	-3.76	45.03	54.00	-8.97	AVG

Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



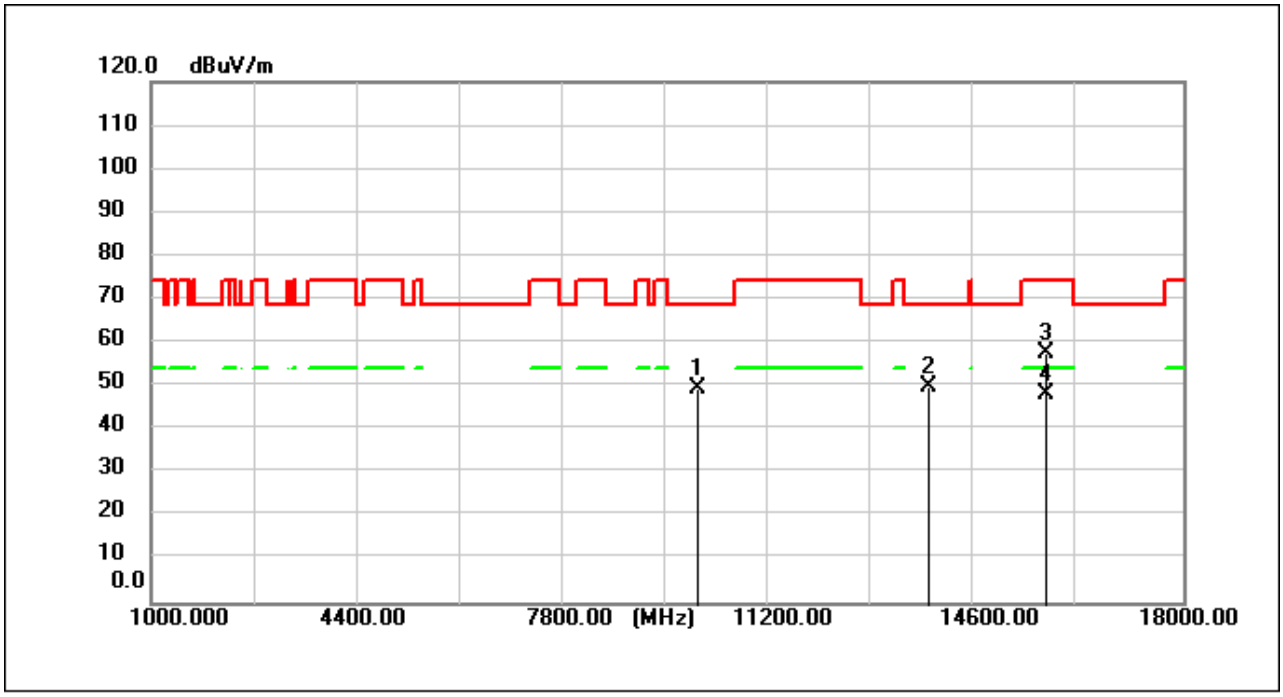
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9958.150	55.22	-5.59	49.63	68.30	-18.67	peak
2	13412.550	54.61	-5.59	49.02	68.30	-19.28	peak
3	15595.350	63.34	-3.77	59.57	74.00	-14.43	peak
4	15595.350	52.37	-3.77	48.60	54.00	-5.40	AVG

Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



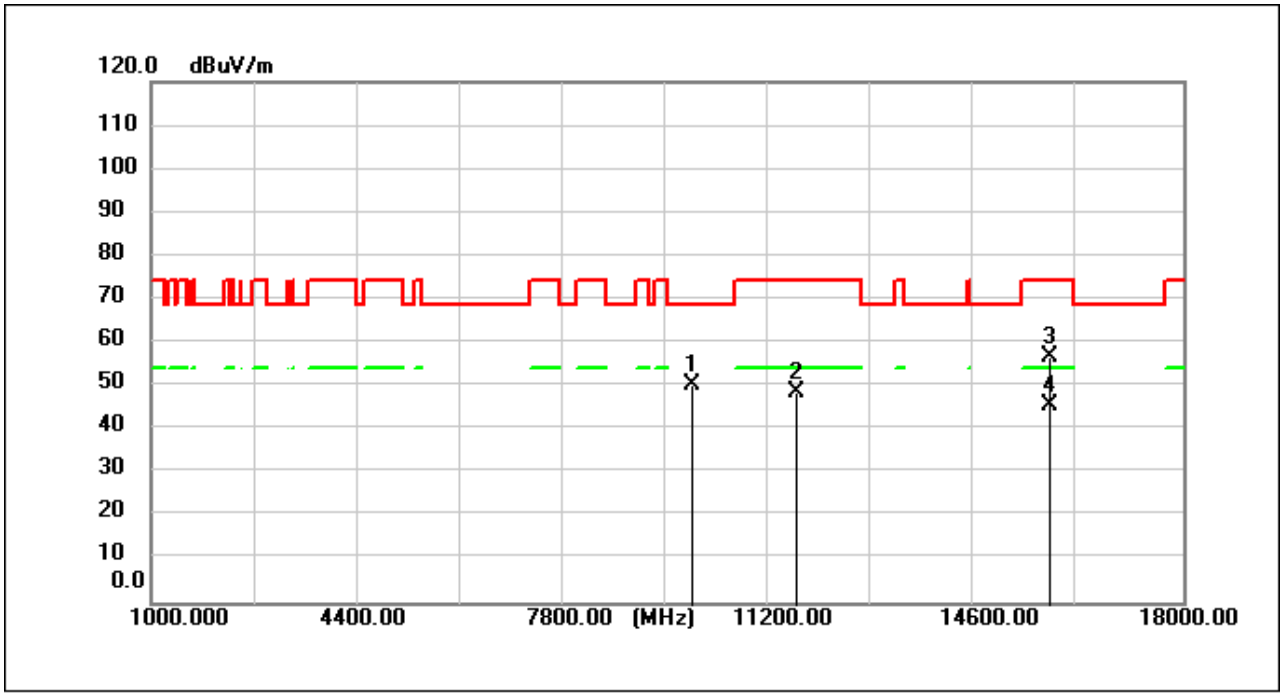
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9715.050	55.48	-5.98	49.50	68.30	-18.80	peak
2	12116.300	55.15	-6.35	48.80	74.00	-25.20	peak
3	15718.600	58.96	-3.56	55.40	74.00	-18.60	peak
4	15718.600	48.83	-3.56	45.27	54.00	-8.73	AVG

Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



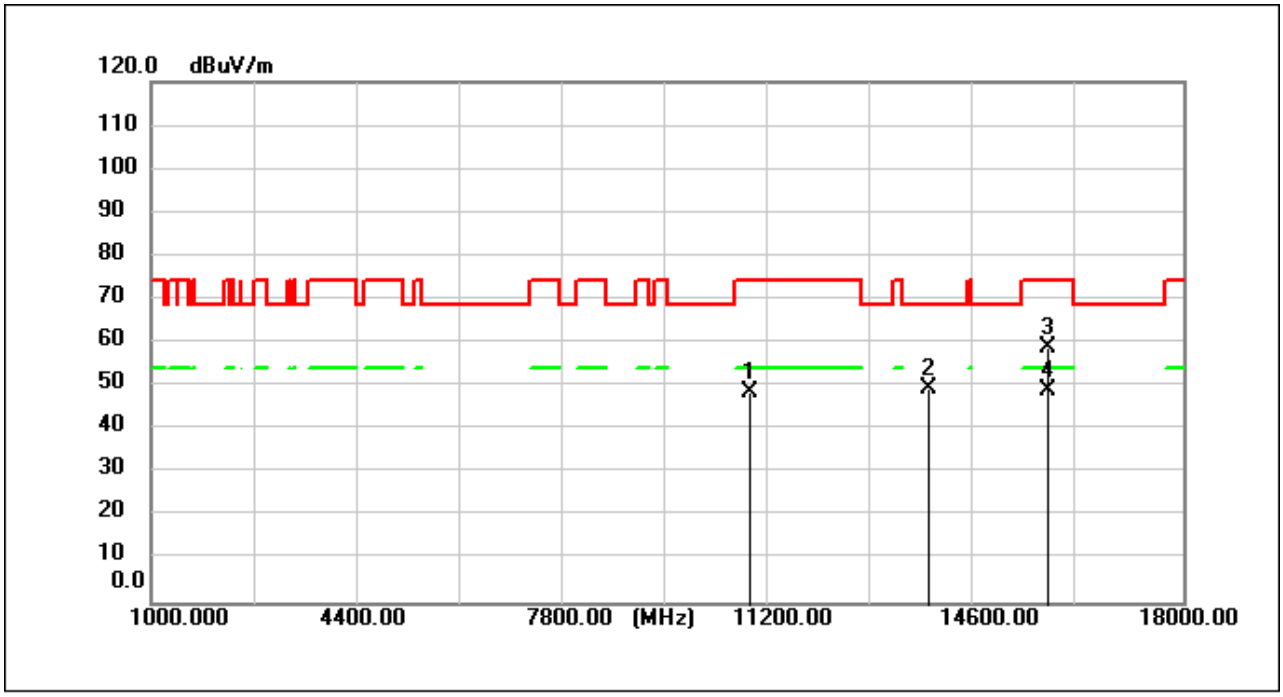
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10000.650	55.12	-5.58	49.54	68.30	-18.76	peak
2	13801.000	55.49	-5.39	50.10	68.30	-18.20	peak
3	15726.250	61.12	-3.55	57.57	74.00	-16.43	peak
4	15726.250	51.56	-3.55	48.01	54.00	-5.99	AVG

Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



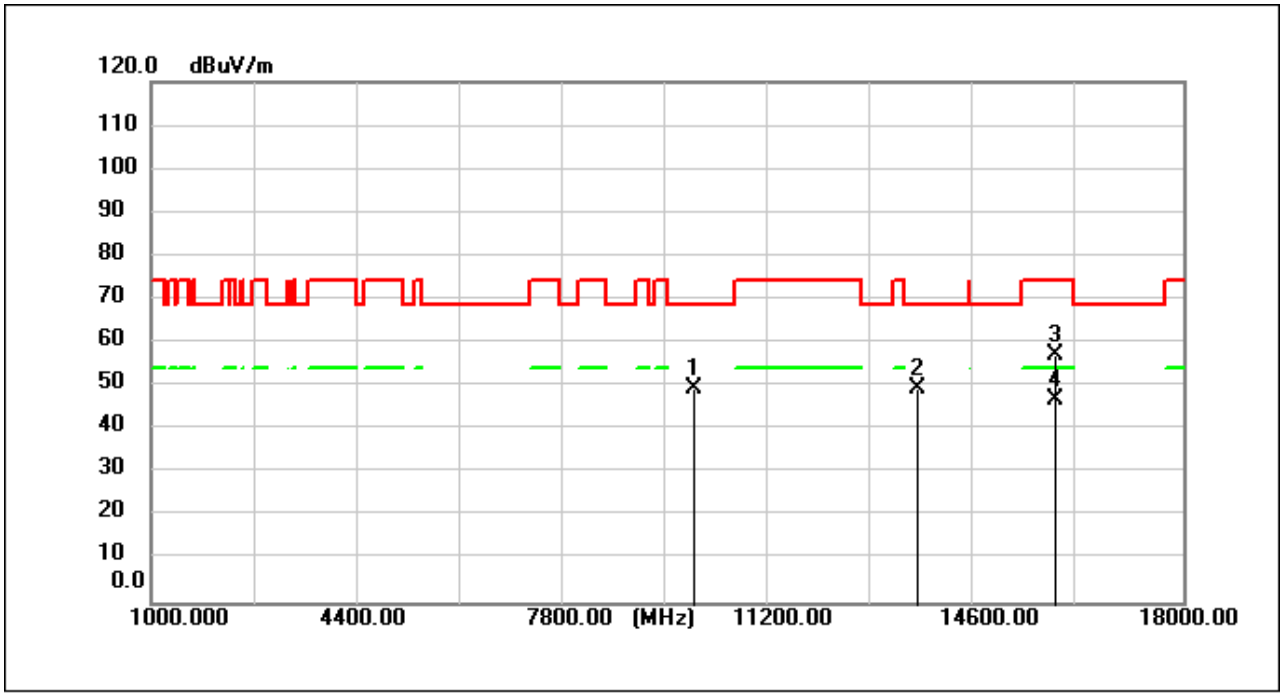
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9895.250	56.02	-5.63	50.39	68.30	-17.91	peak
2	11636.050	54.99	-6.47	48.52	74.00	-25.48	peak
3	15792.550	60.30	-3.44	56.86	74.00	-17.14	peak
4	15792.550	49.14	-3.44	45.70	54.00	-8.30	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



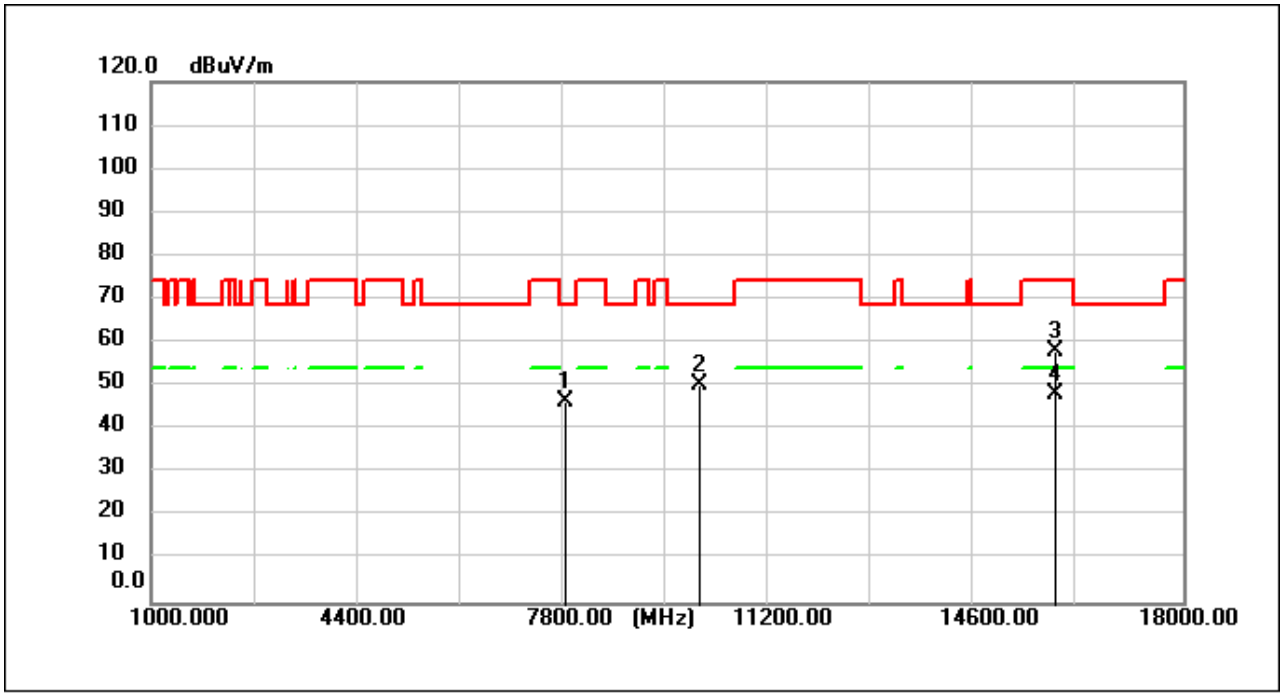
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10846.400	54.79	-6.28	48.51	74.00	-25.49	peak
2	13806.100	55.09	-5.38	49.71	68.30	-18.59	peak
3	15773.000	62.30	-3.47	58.83	74.00	-15.17	peak
4	15773.000	52.48	-3.47	49.01	54.00	-4.99	AVG

Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



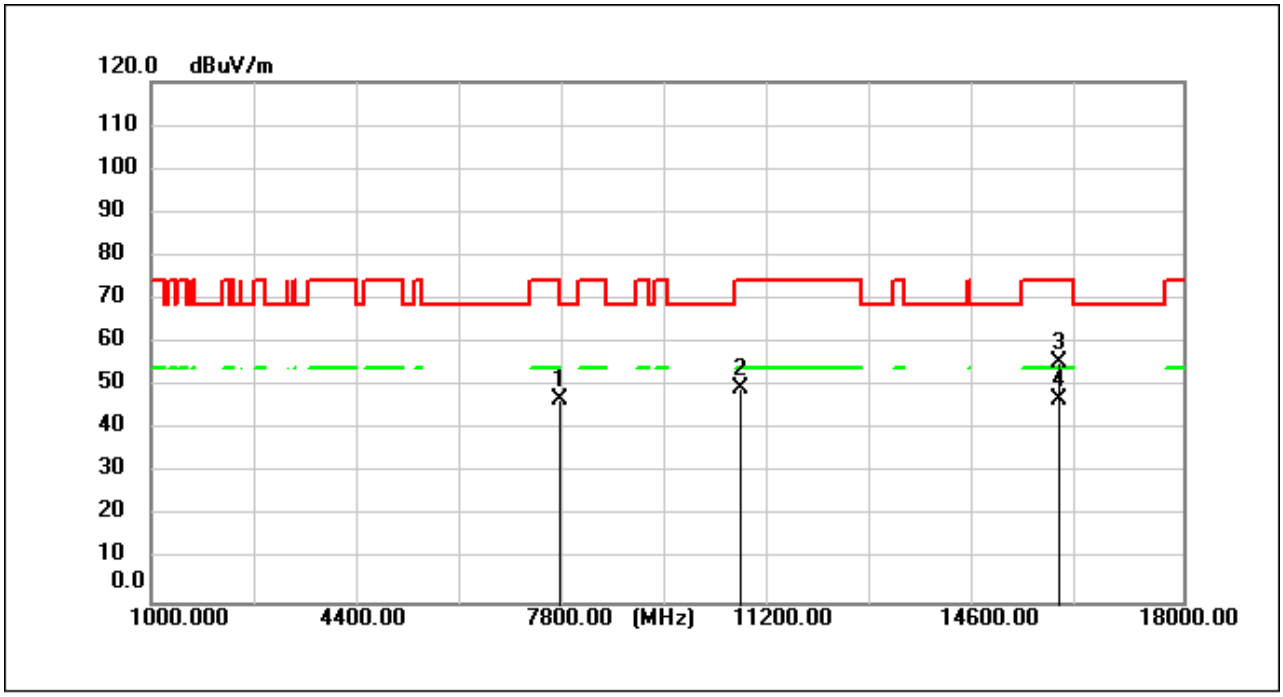
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9945.400	54.91	-5.60	49.31	68.30	-18.99	peak
2	13602.950	54.93	-5.49	49.44	68.30	-18.86	peak
3	15903.900	60.44	-3.24	57.20	74.00	-16.80	peak
4	15903.900	50.14	-3.24	46.90	54.00	-7.10	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



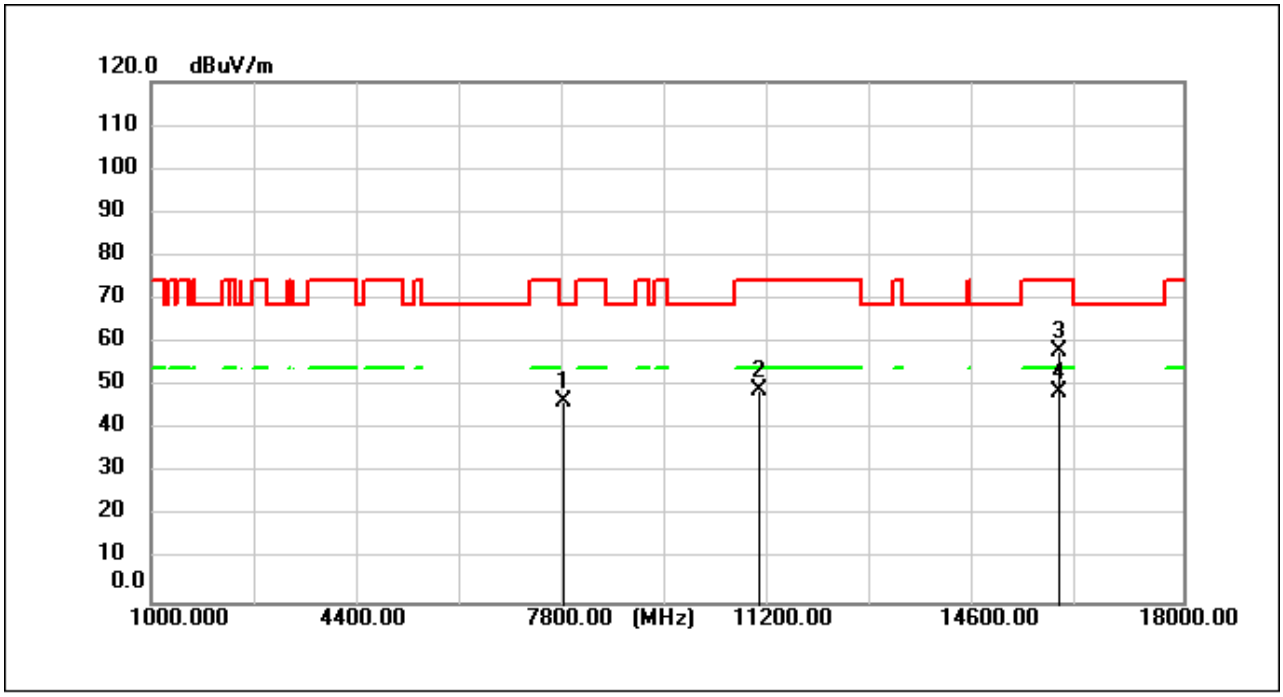
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7815.300	55.81	-9.51	46.30	68.30	-22.00	peak
2	10033.800	55.91	-5.60	50.31	68.30	-17.99	peak
3	15900.500	61.42	-3.25	58.17	74.00	-15.83	peak
4	15900.500	51.52	-3.25	48.27	54.00	-5.73	AVG

Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



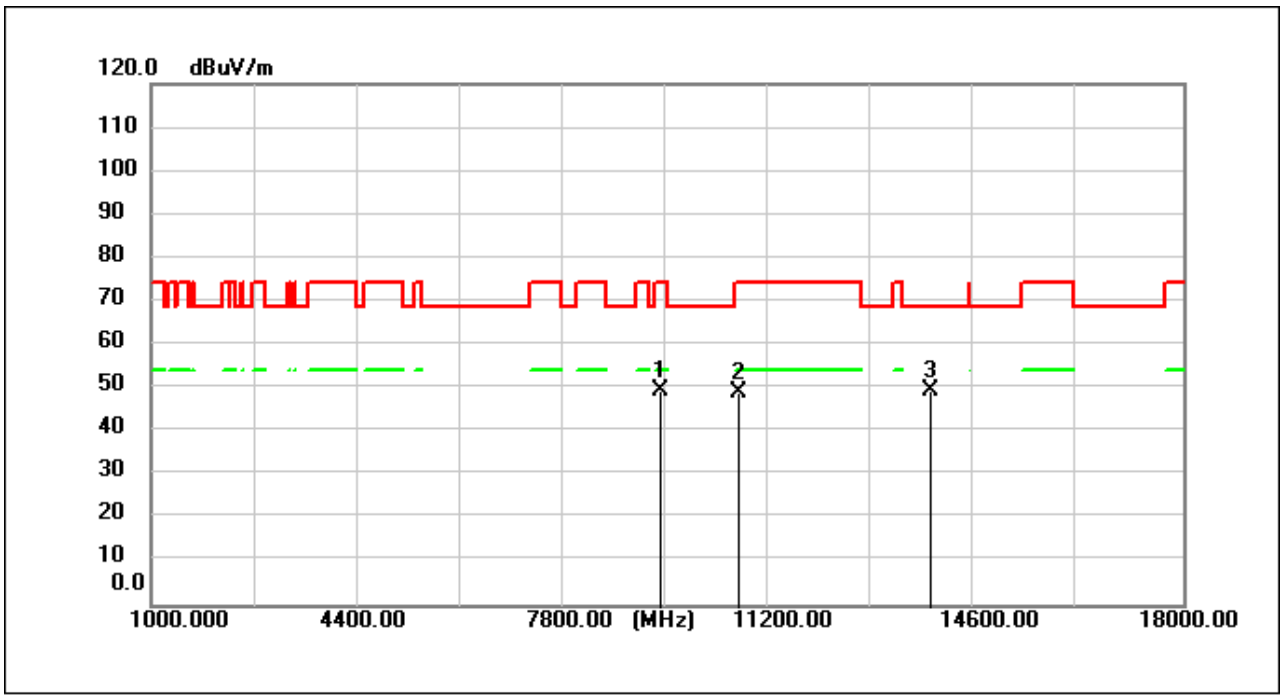
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7747.300	56.39	-9.59	46.80	74.00	-27.20	peak
2	10714.650	55.51	-6.18	49.33	74.00	-24.67	peak
3	15957.450	58.65	-3.14	55.51	74.00	-18.49	peak
4	15957.450	49.97	-3.14	46.83	54.00	-7.17	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



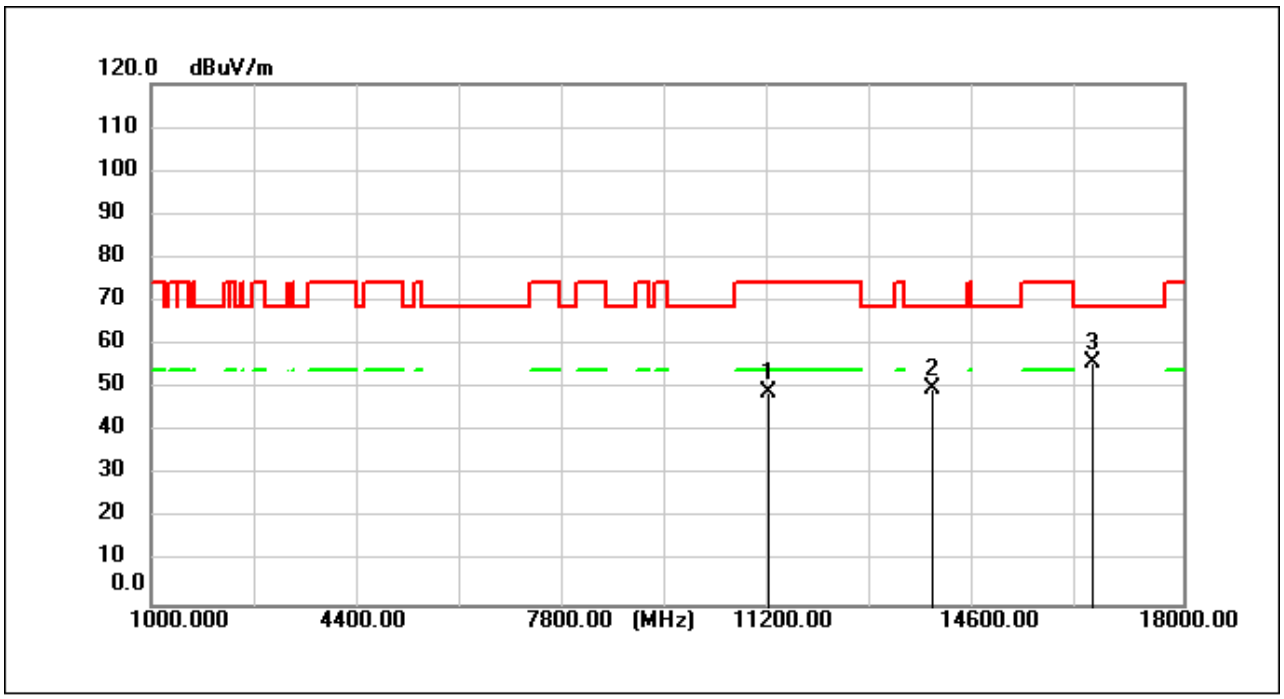
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7783.000	56.08	-9.55	46.53	68.30	-21.77	peak
2	10997.700	55.63	-6.42	49.21	74.00	-24.79	peak
3	15956.600	61.11	-3.14	57.97	74.00	-16.03	peak
4	15956.600	51.70	-3.14	48.56	54.00	-5.44	AVG

Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



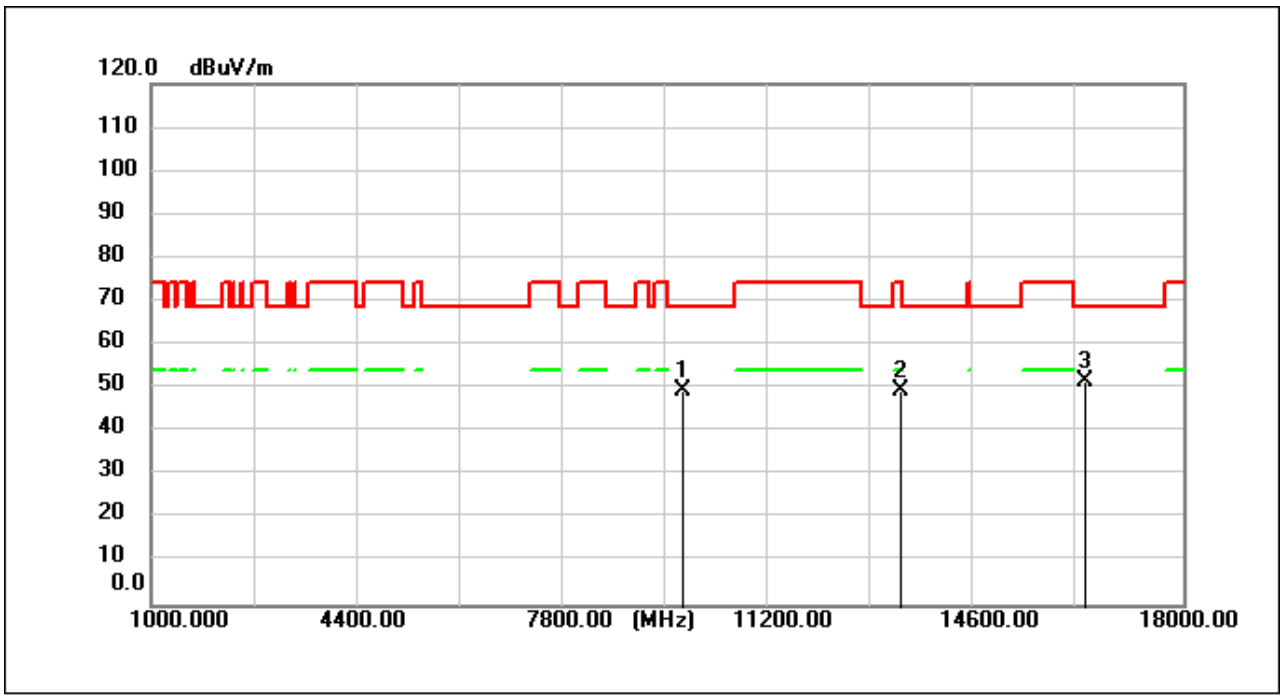
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9385.250	56.40	-6.81	49.59	74.00	-24.41	peak
2	10688.300	55.19	-6.15	49.04	74.00	-24.96	peak
3	13825.650	54.79	-5.38	49.41	68.30	-18.89	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



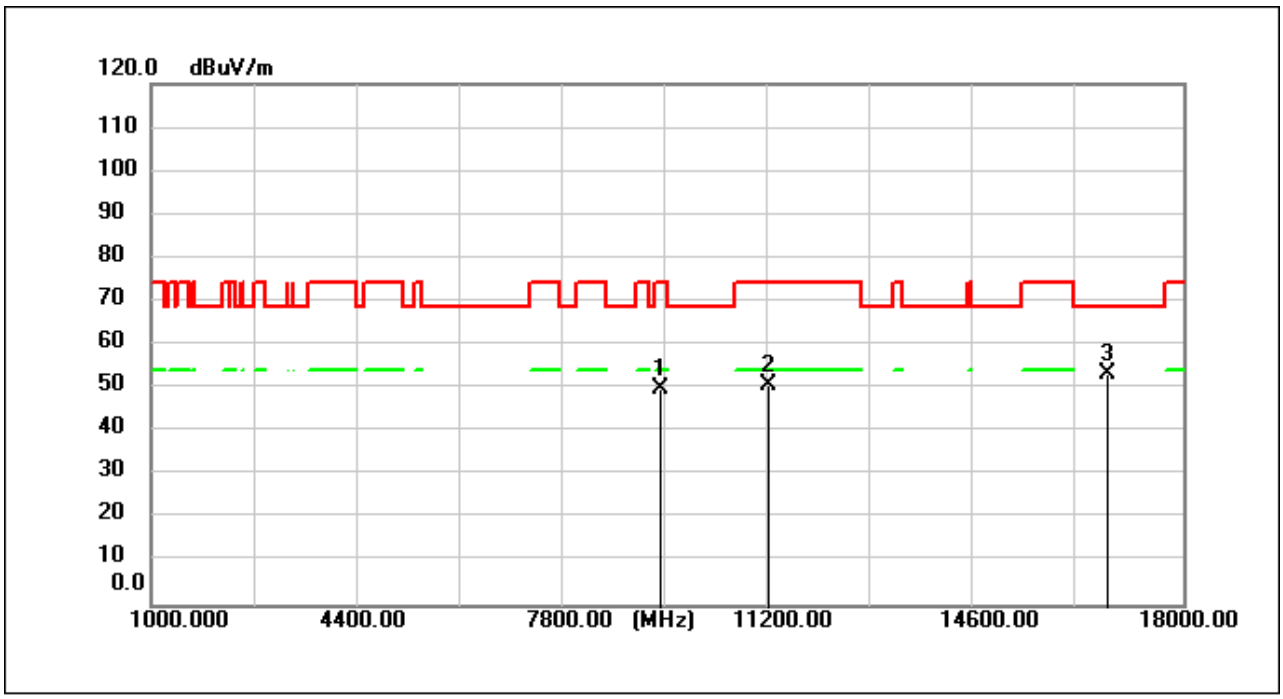
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11168.550	55.51	-6.43	49.08	74.00	-24.92	peak
2	13863.050	55.36	-5.35	50.01	68.30	-18.29	peak
3	16506.550	58.19	-2.41	55.78	68.30	-12.52	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



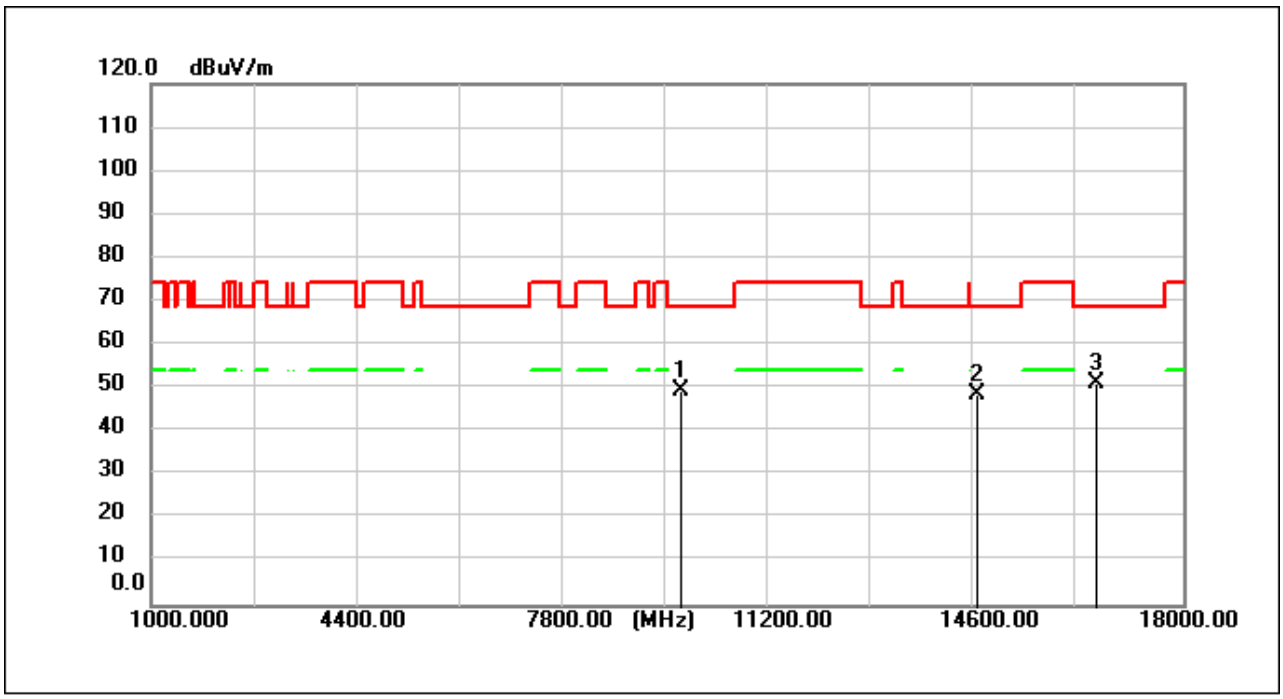
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9742.250	55.26	-5.91	49.35	68.30	-18.95	peak
2	13353.050	54.98	-5.62	49.36	74.00	-24.64	peak
3	16398.600	54.14	-2.55	51.59	68.30	-16.71	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



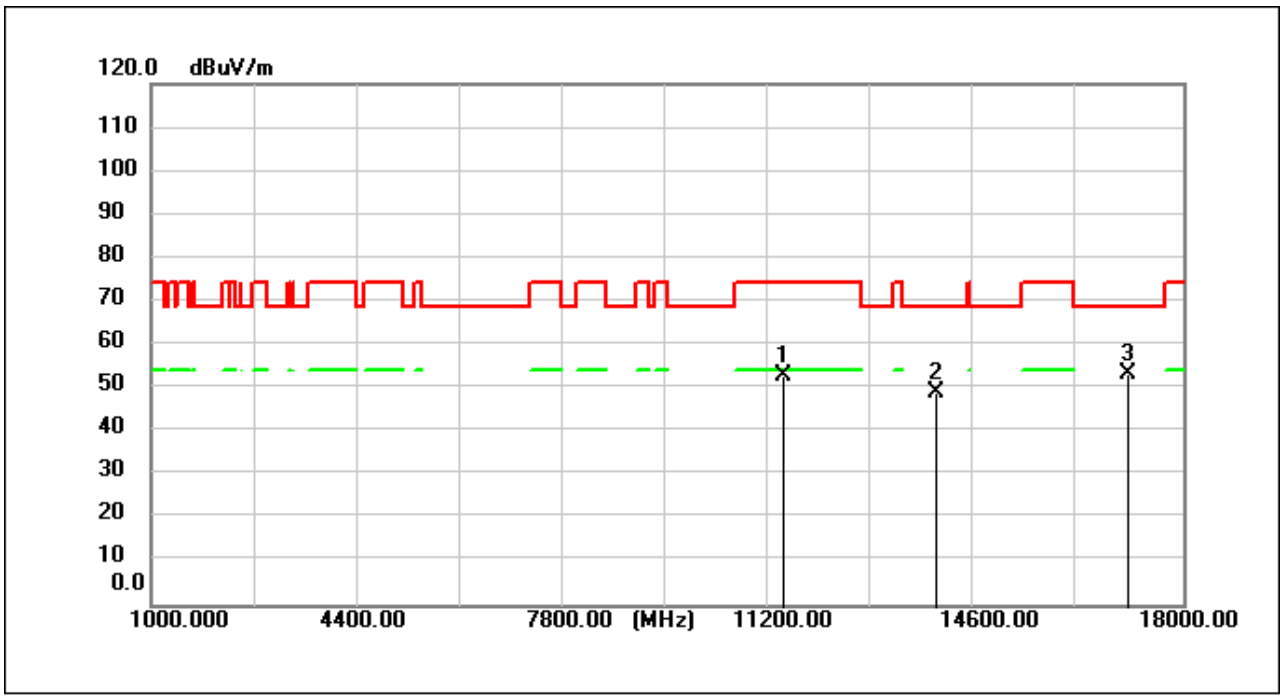
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9375.050	56.67	-6.84	49.83	74.00	-24.17	peak
2	11160.050	57.25	-6.43	50.82	74.00	-23.18	peak
3	16739.450	55.49	-2.13	53.36	68.30	-14.94	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



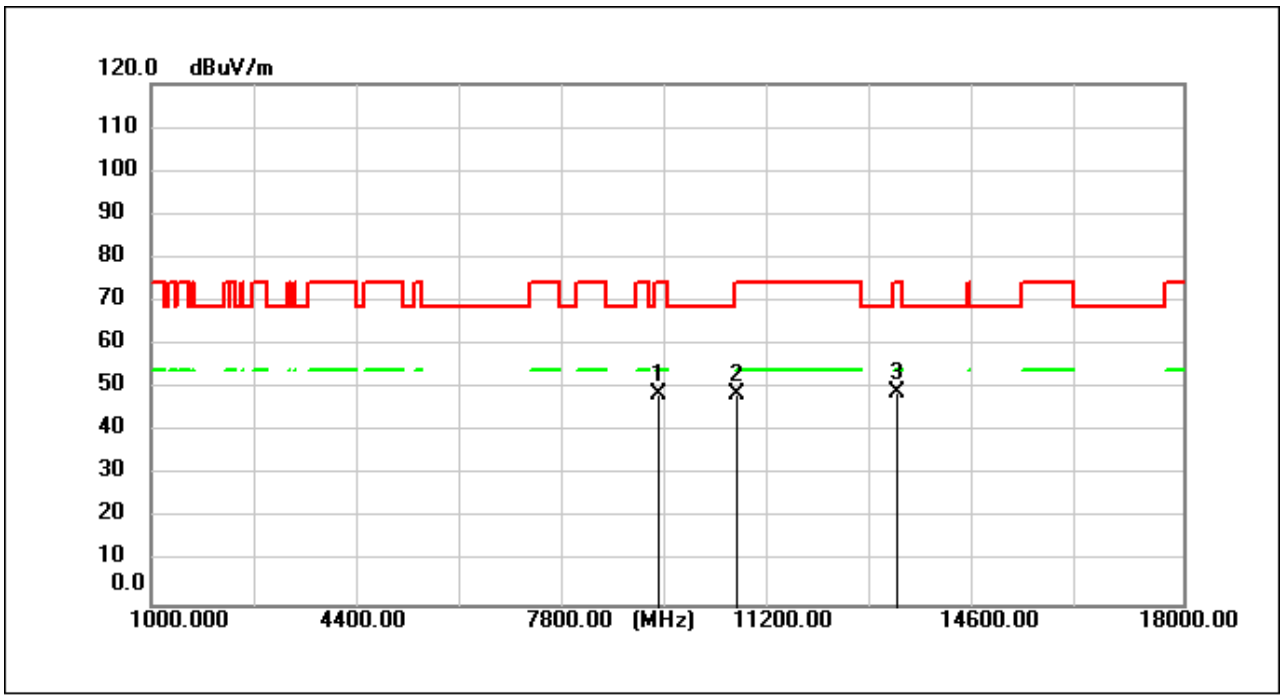
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9706.550	55.46	-6.00	49.46	68.30	-18.84	peak
2	14602.550	53.74	-5.11	48.63	68.30	-19.67	peak
3	16562.650	53.48	-2.35	51.13	68.30	-17.17	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



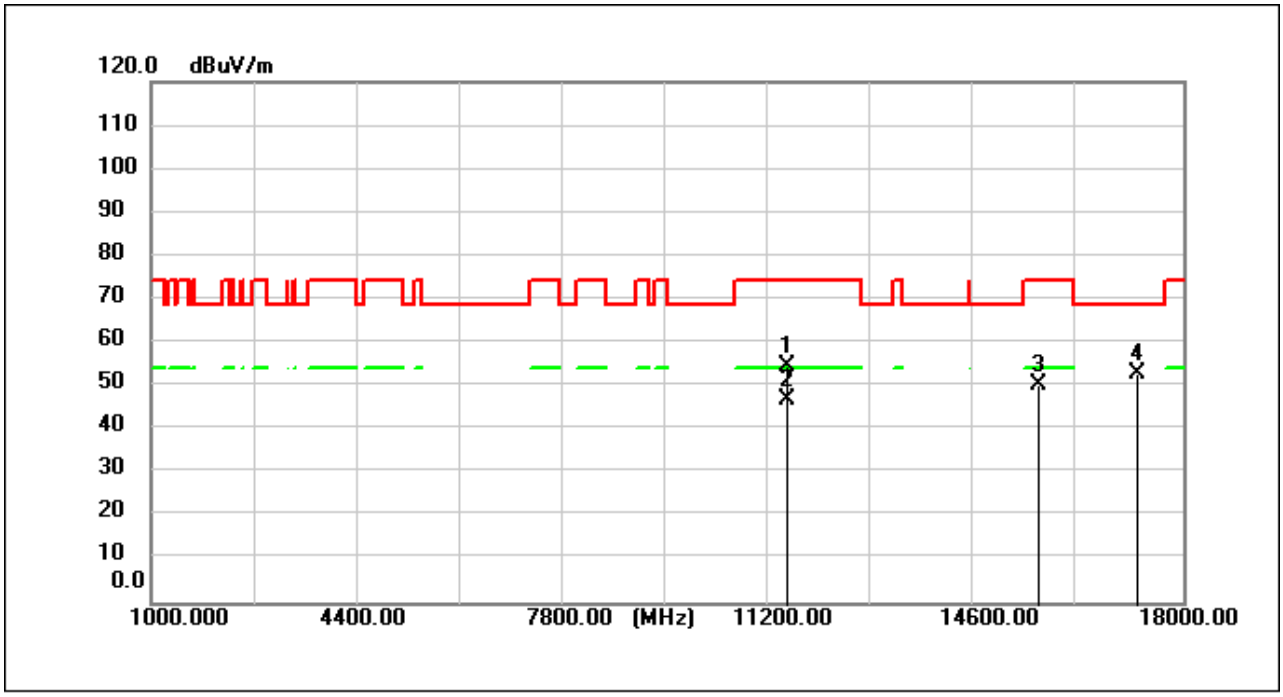
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11399.750	59.47	-6.45	53.02	74.00	-20.98	peak
2	13931.900	54.59	-5.32	49.27	68.30	-19.03	peak
3	17098.150	54.93	-1.71	53.22	68.30	-15.08	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



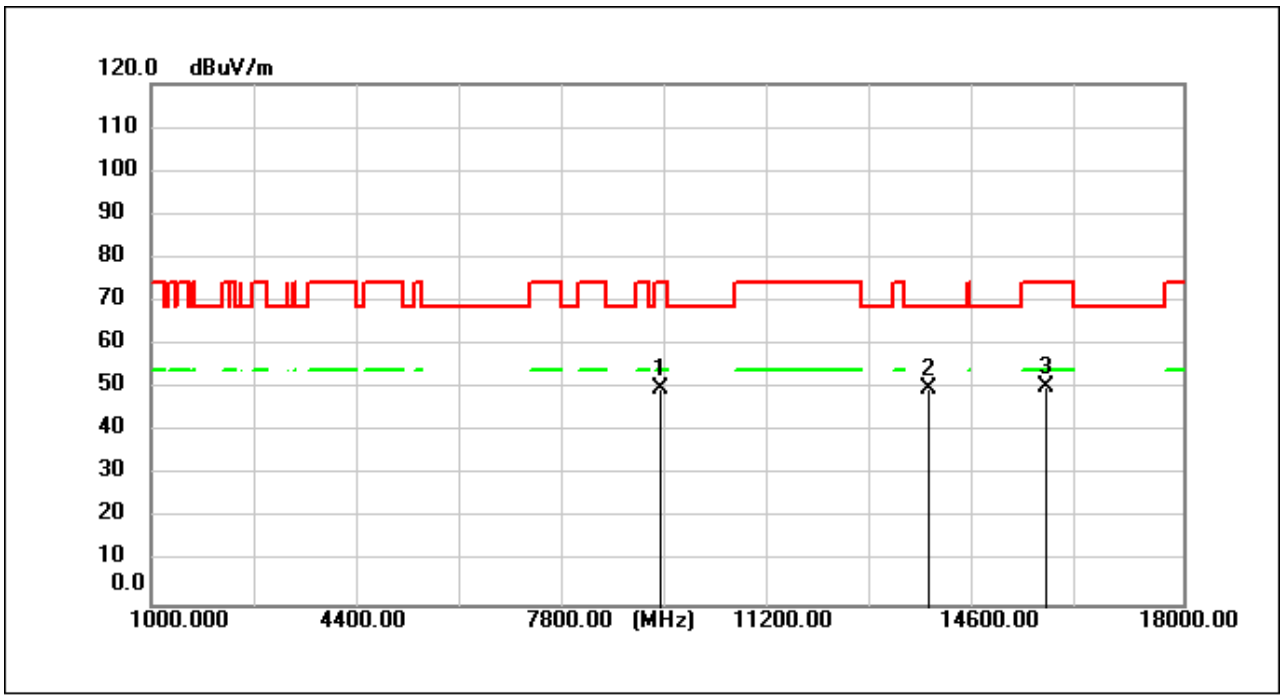
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9359.750	55.53	-6.88	48.65	74.00	-25.35	peak
2	10622.850	54.91	-6.09	48.82	74.00	-25.18	peak
3	13279.950	54.93	-5.66	49.27	74.00	-24.73	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



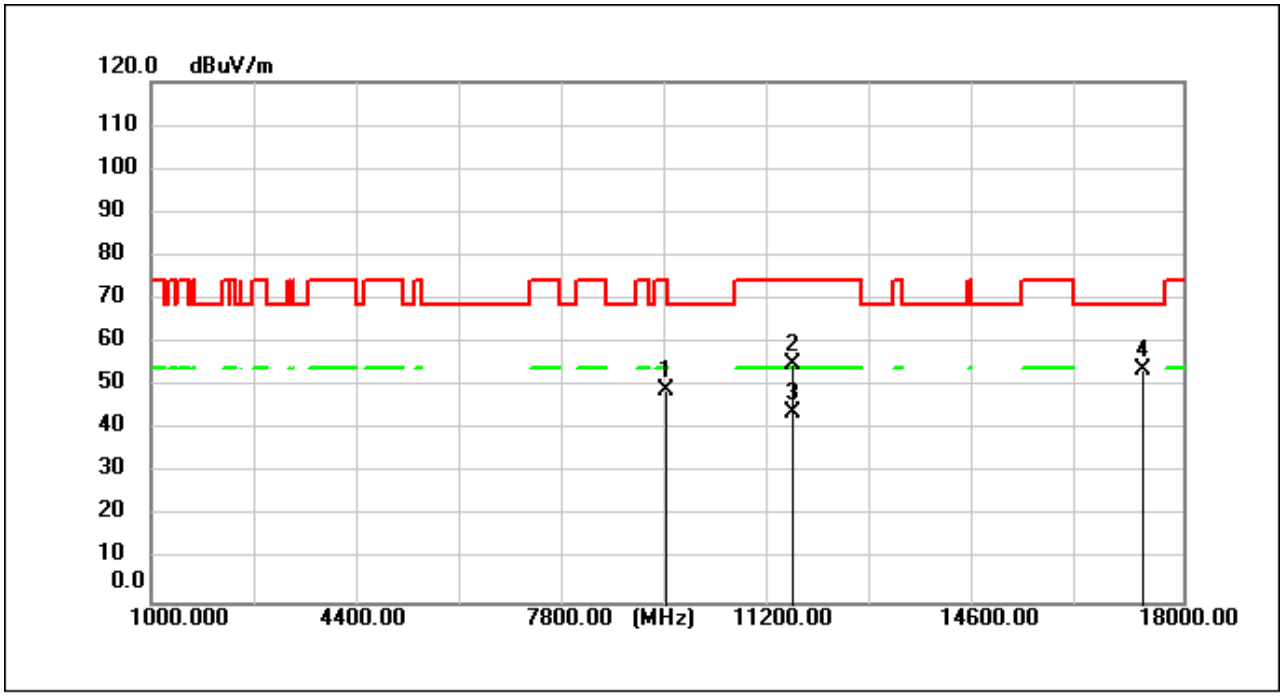
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11486.450	61.31	-6.46	54.85	74.00	-19.15	peak
2	11486.450	53.18	-6.46	46.72	54.00	-7.28	AVG
3	15613.200	54.06	-3.74	50.32	74.00	-23.68	peak
4	17238.400	54.71	-1.58	53.13	68.30	-15.17	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



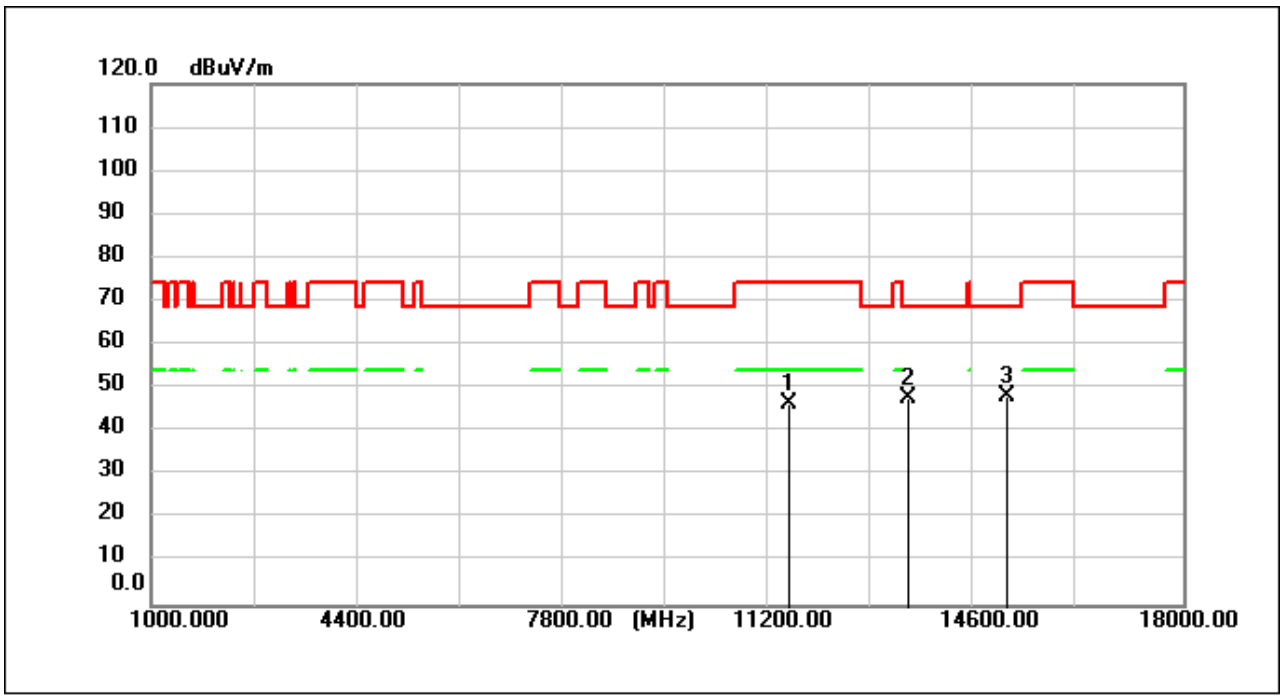
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9383.550	56.66	-6.82	49.84	74.00	-24.16	peak
2	13786.550	55.31	-5.40	49.91	68.30	-18.39	peak
3	15723.700	54.10	-3.56	50.54	74.00	-23.46	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



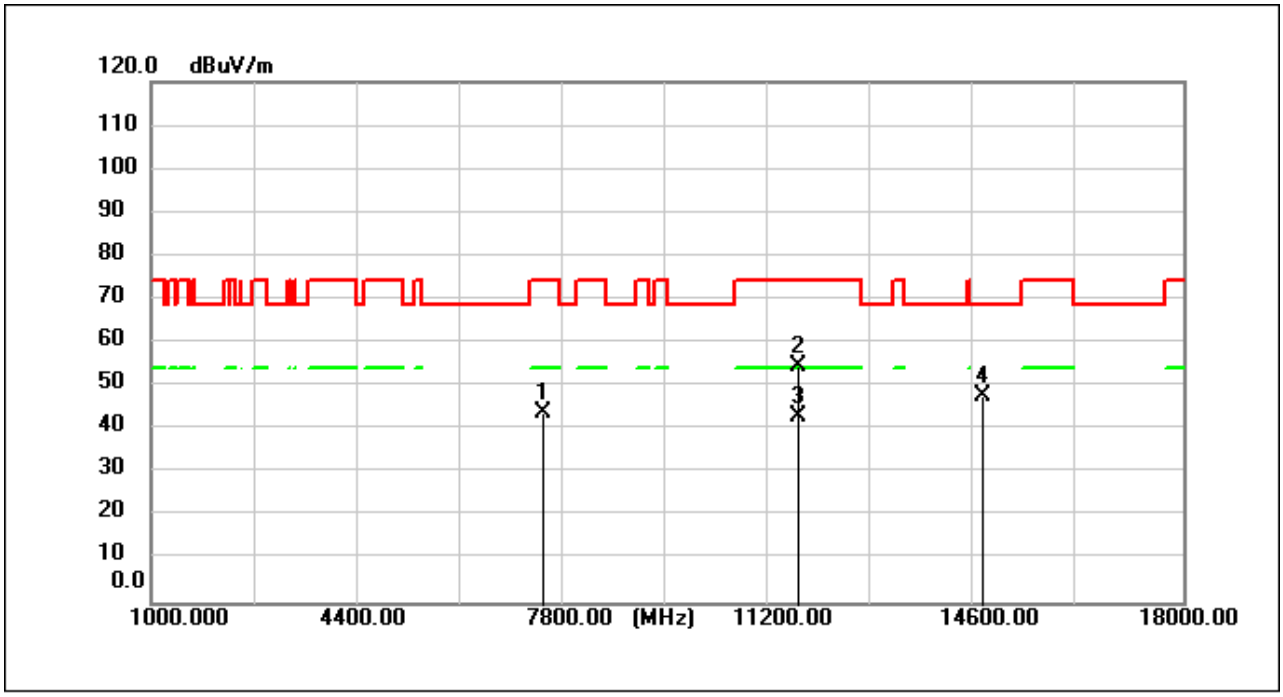
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9480.450	55.58	-6.57	49.01	74.00	-24.99	peak
2	11573.150	61.43	-6.46	54.97	74.00	-19.03	peak
3	11573.150	50.33	-6.46	43.87	54.00	-10.13	AVG
4	17353.150	55.17	-1.49	53.68	68.30	-14.62	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



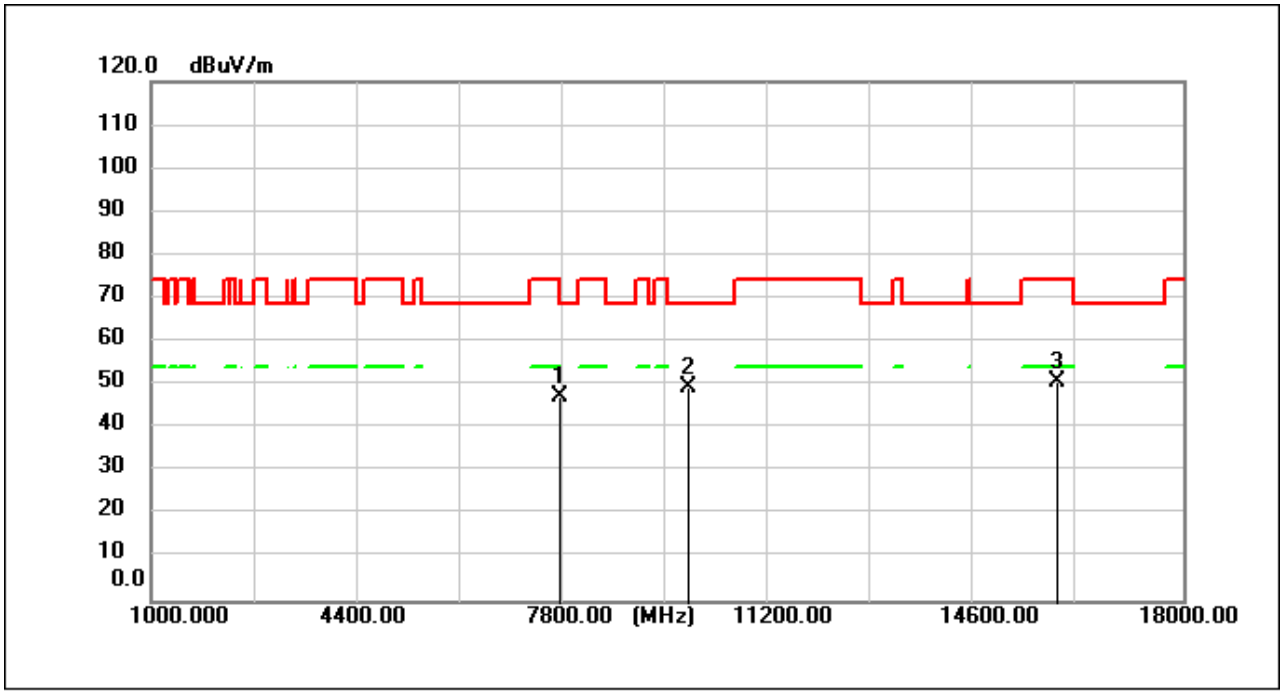
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11501.750	52.90	-6.45	46.45	74.00	-27.55	peak
2	13475.450	53.51	-5.55	47.96	68.30	-20.34	peak
3	15093.850	52.77	-4.60	48.17	68.30	-20.13	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



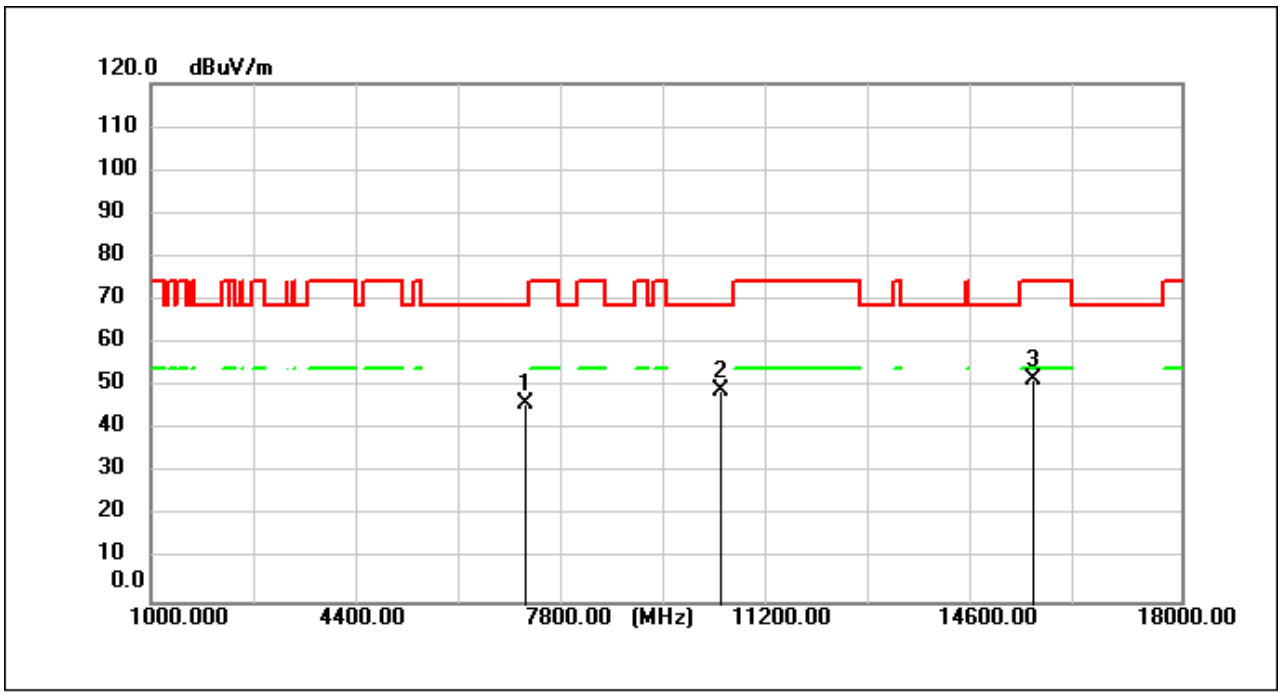
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7448.100	54.00	-9.94	44.06	74.00	-29.94	peak
2	11651.350	61.32	-6.47	54.85	74.00	-19.15	peak
3	11651.350	49.75	-6.47	43.28	54.00	-10.72	AVG
4	14694.350	52.87	-5.03	47.84	68.30	-20.46	peak

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



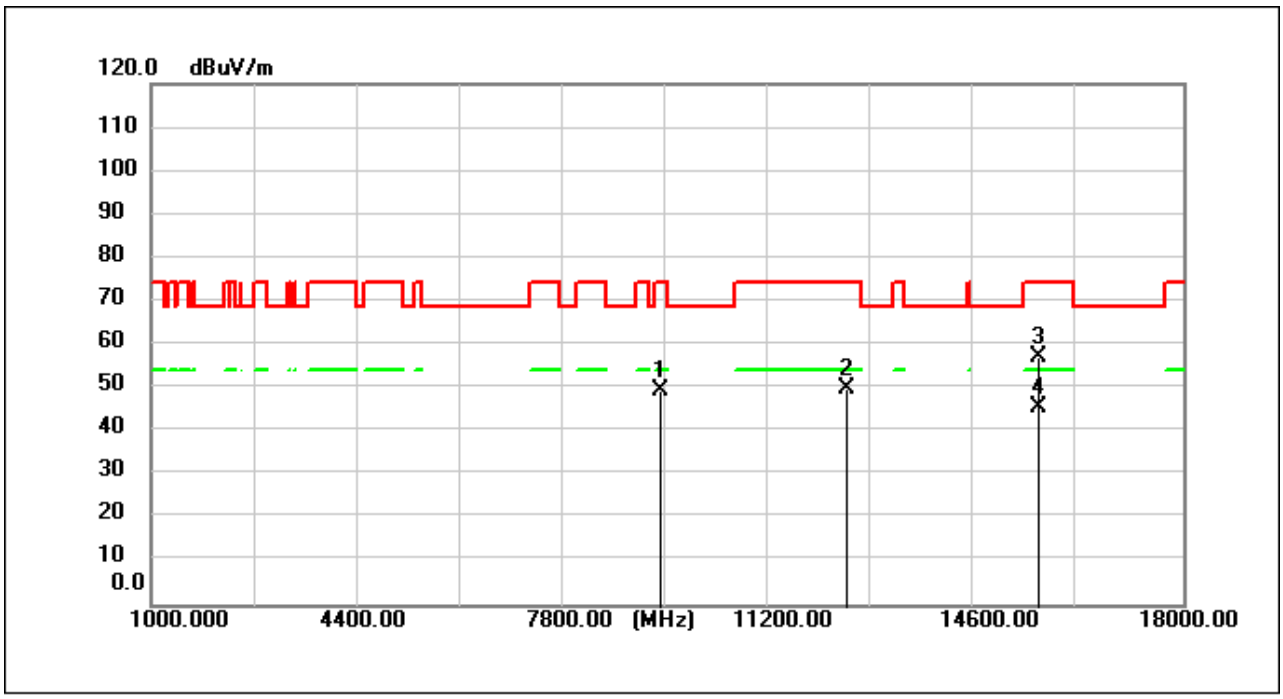
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7737.100	56.89	-9.60	47.29	74.00	-26.71	peak
2	9838.300	55.34	-5.67	49.67	68.30	-18.63	peak
3	15920.050	54.03	-3.21	50.82	74.00	-23.18	peak

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



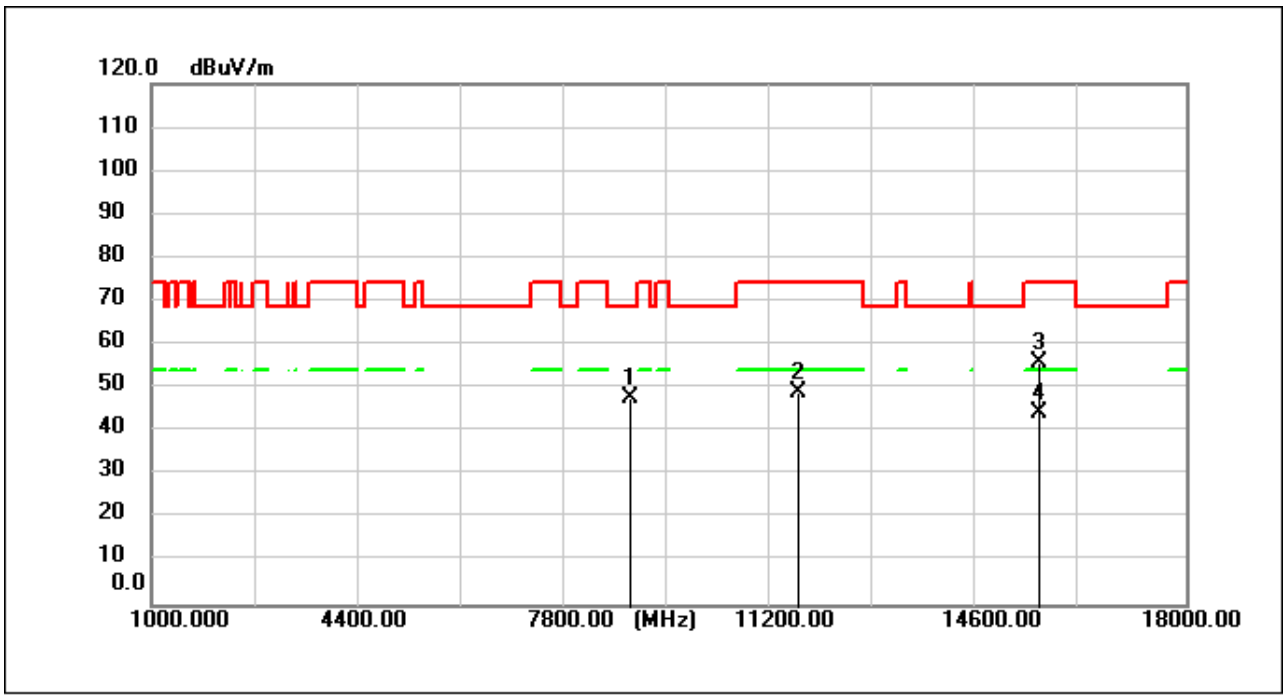
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7176.950	56.07	-10.05	46.02	68.30	-22.28	peak
2	10401.850	54.81	-5.92	48.89	68.30	-19.41	peak
3	15545.200	55.69	-3.85	51.84	74.00	-22.16	peak

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



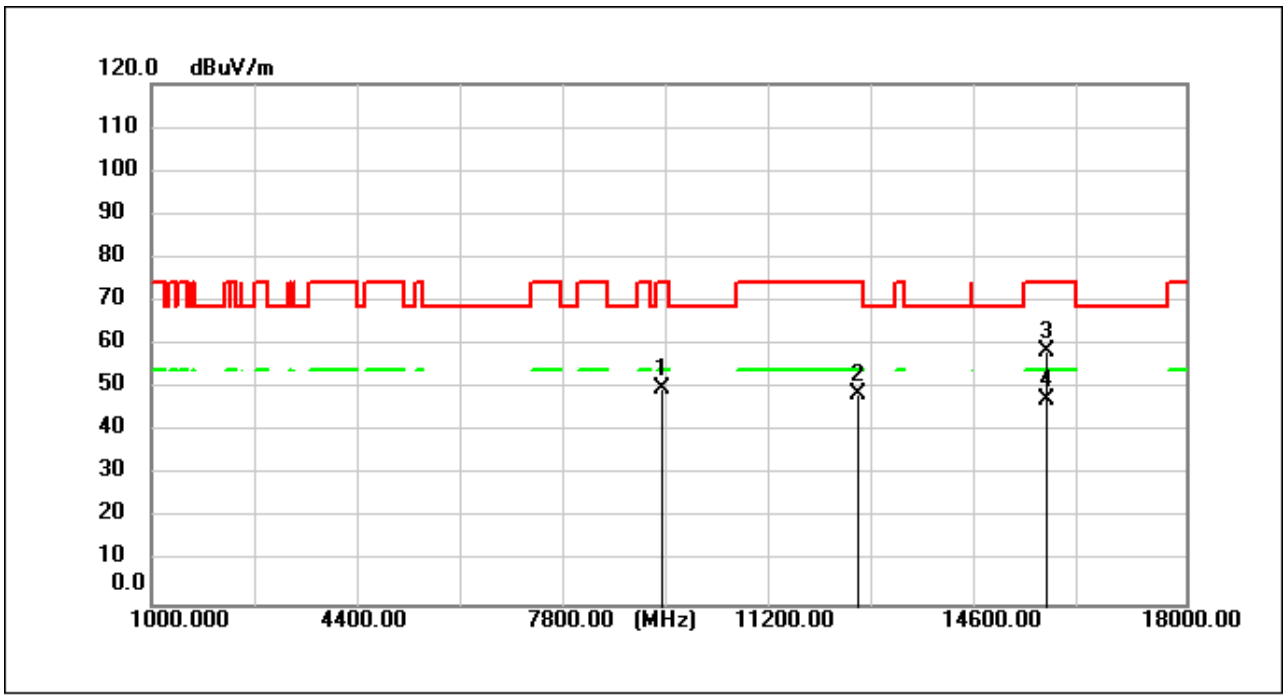
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9398.000	56.47	-6.79	49.68	74.00	-24.32	peak
2	12450.350	55.97	-6.18	49.79	74.00	-24.21	peak
3	15608.950	60.78	-3.75	57.03	74.00	-16.97	peak
4	15608.950	49.41	-3.75	45.66	54.00	-8.34	AVG

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



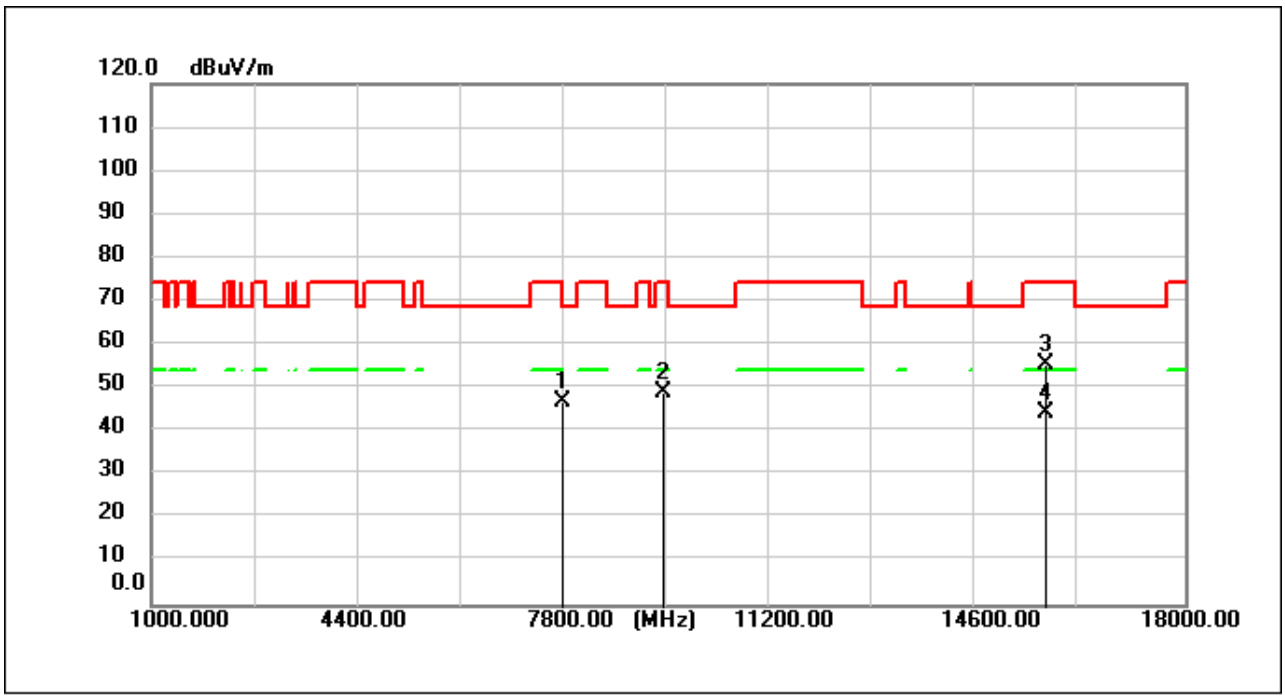
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8870.150	55.69	-8.00	47.69	68.30	-20.61	peak
2	11629.250	55.61	-6.46	49.15	74.00	-24.85	peak
3	15602.150	59.61	-3.76	55.85	74.00	-18.15	peak
4	15602.150	48.19	-3.76	44.43	54.00	-9.57	AVG

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



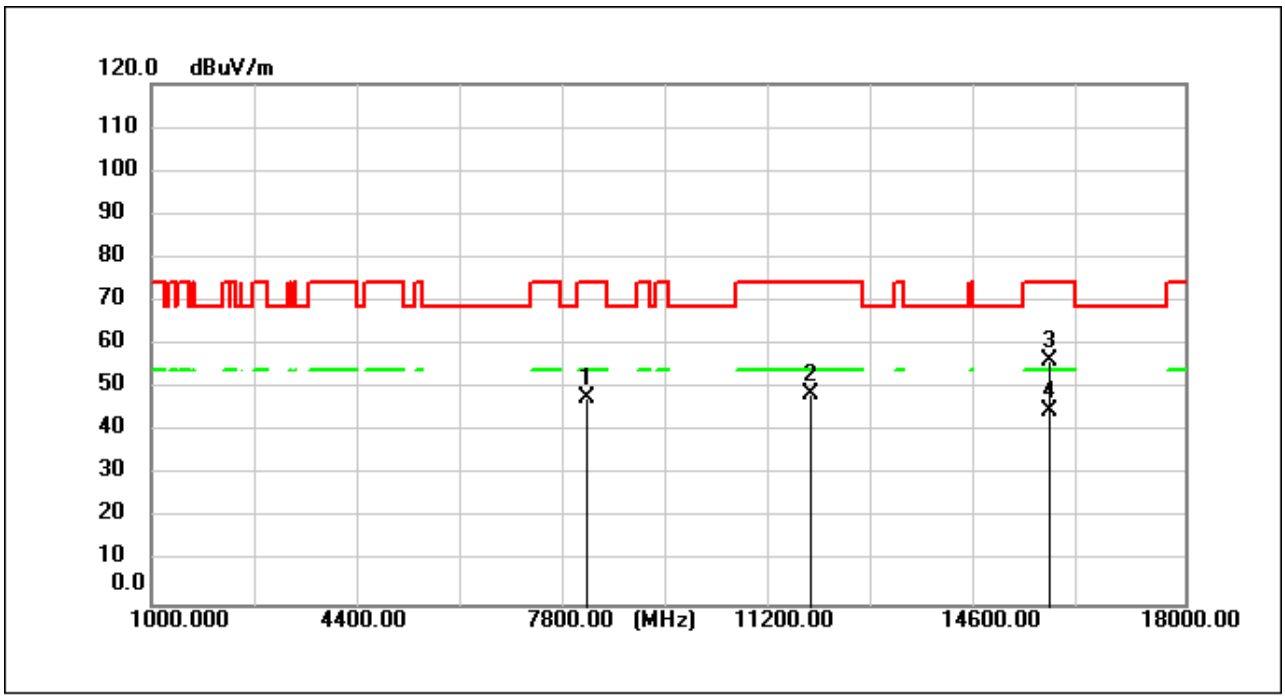
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9393.750	56.69	-6.80	49.89	74.00	-24.11	peak
2	12611.000	54.89	-6.09	48.80	74.00	-25.20	peak
3	15716.050	62.00	-3.57	58.43	74.00	-15.57	peak
4	15716.050	50.78	-3.57	47.21	54.00	-6.79	AVG

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



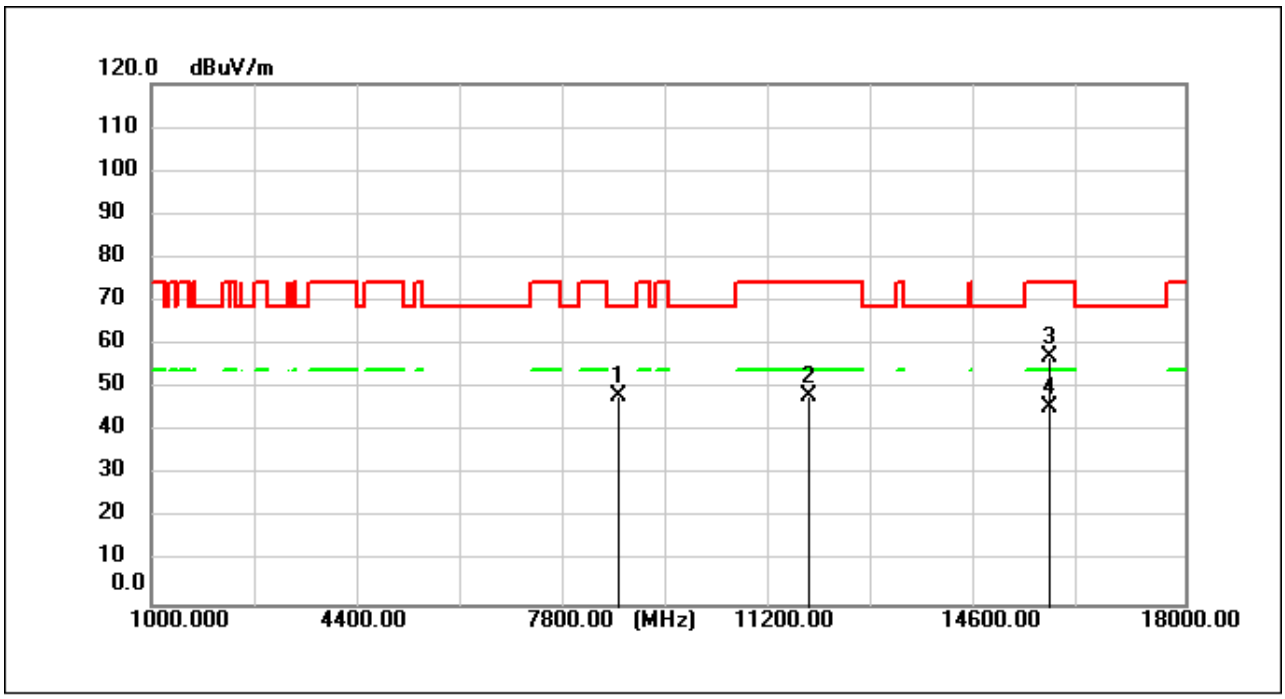
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7749.850	56.64	-9.59	47.05	74.00	-26.95	peak
2	9412.450	55.94	-6.75	49.19	74.00	-24.81	peak
3	15721.150	59.00	-3.56	55.44	74.00	-18.56	peak
4	15721.150	47.88	-3.56	44.32	54.00	-9.68	AVG

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



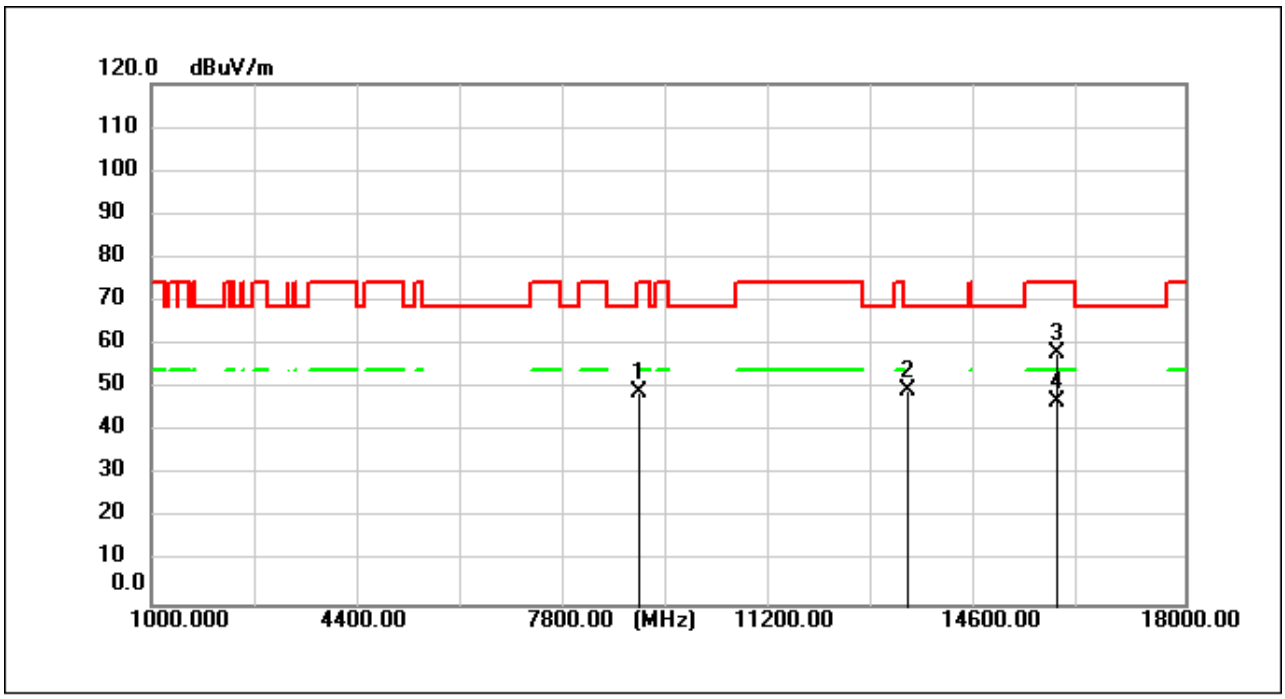
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8153.600	57.00	-9.05	47.95	74.00	-26.05	peak
2	11838.350	55.04	-6.47	48.57	74.00	-25.43	peak
3	15778.950	59.76	-3.46	56.30	74.00	-17.70	peak
4	15778.950	48.32	-3.46	44.86	54.00	-9.14	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



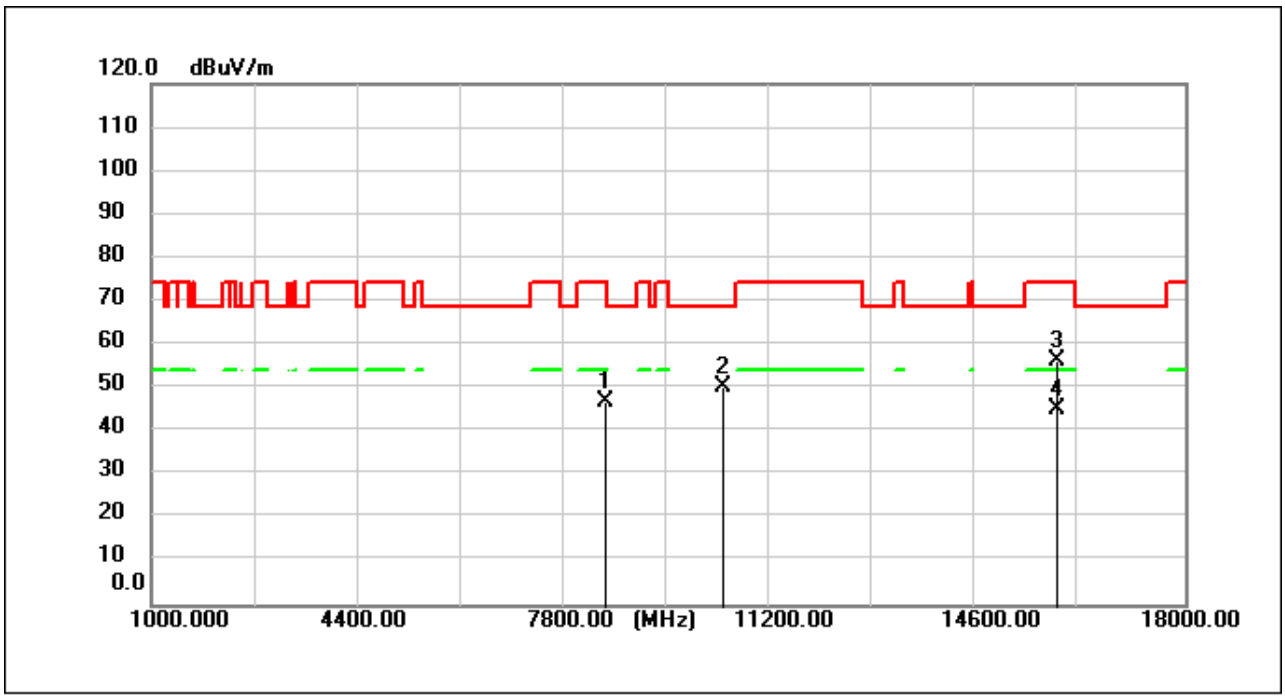
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8692.500	56.28	-8.26	48.02	68.30	-20.28	peak
2	11801.800	54.89	-6.48	48.41	74.00	-25.59	peak
3	15783.200	60.62	-3.46	57.16	74.00	-16.84	peak
4	15783.200	49.28	-3.46	45.82	54.00	-8.18	AVG

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



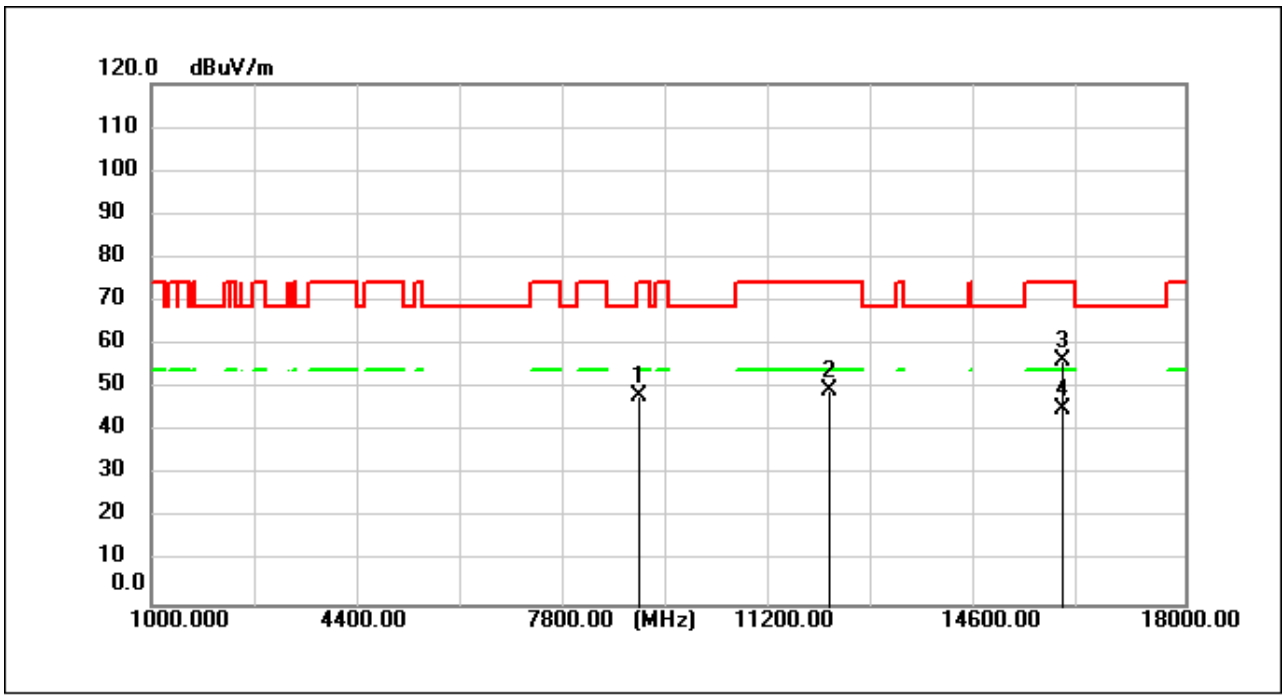
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9015.500	56.90	-7.75	49.15	74.00	-24.85	peak
2	13433.800	55.05	-5.58	49.47	68.30	-18.83	peak
3	15896.250	61.48	-3.26	58.22	74.00	-15.78	peak
4	15896.250	50.18	-3.26	46.92	54.00	-7.08	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



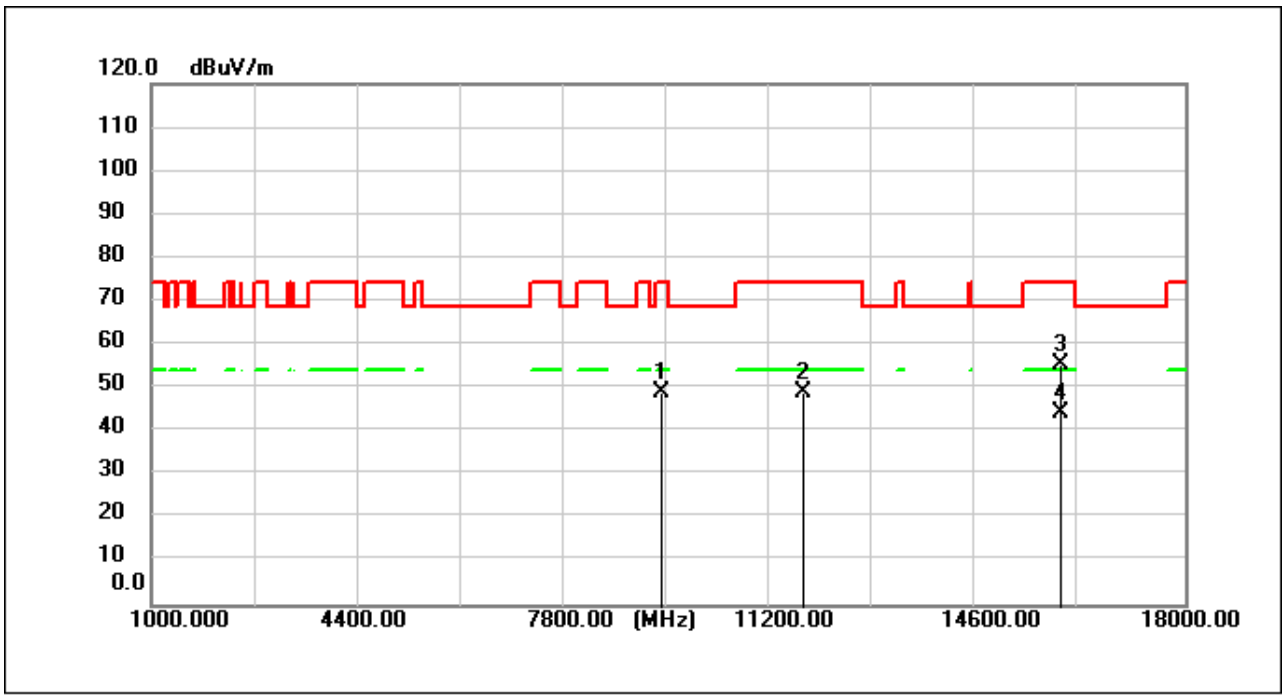
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8454.500	55.73	-8.62	47.11	74.00	-26.89	peak
2	10402.700	56.42	-5.92	50.50	68.30	-17.80	peak
3	15898.800	59.66	-3.25	56.41	74.00	-17.59	peak
4	15898.800	48.36	-3.25	45.11	54.00	-8.89	AVG

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



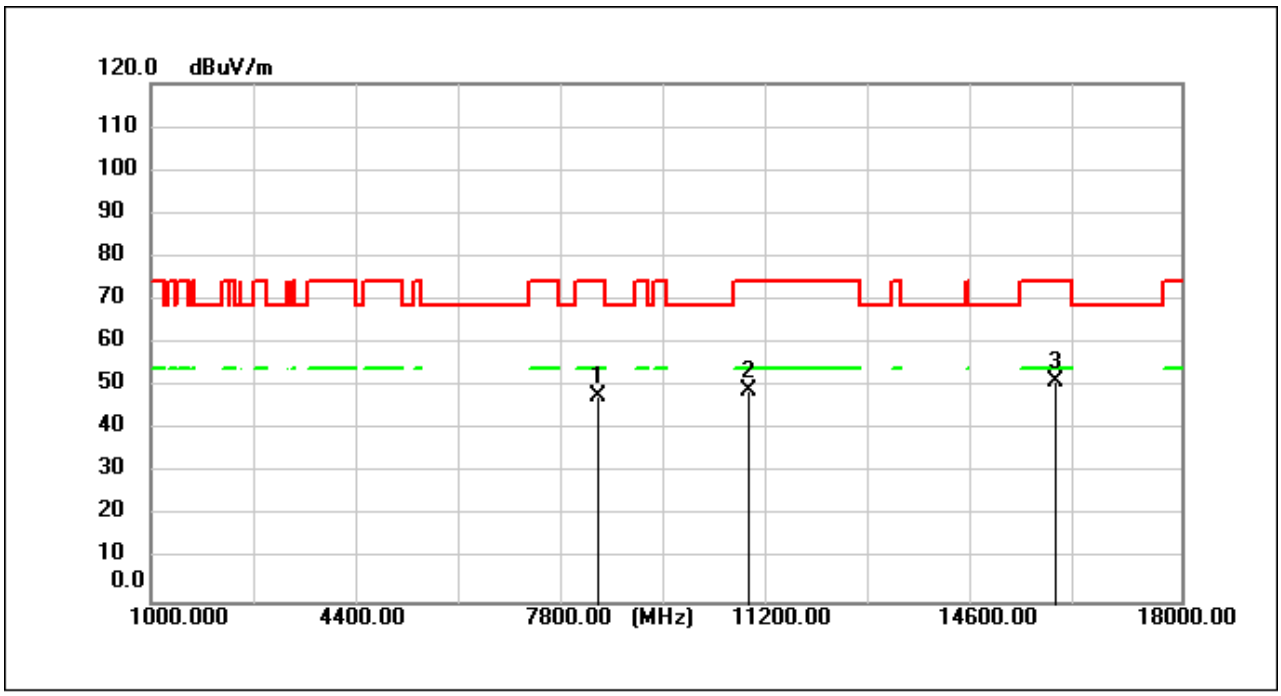
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9019.750	56.11	-7.74	48.37	74.00	-25.63	peak
2	12163.050	55.74	-6.33	49.41	74.00	-24.59	peak
3	15966.800	59.39	-3.12	56.27	74.00	-17.73	peak
4	15966.800	48.45	-3.12	45.33	54.00	-8.67	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



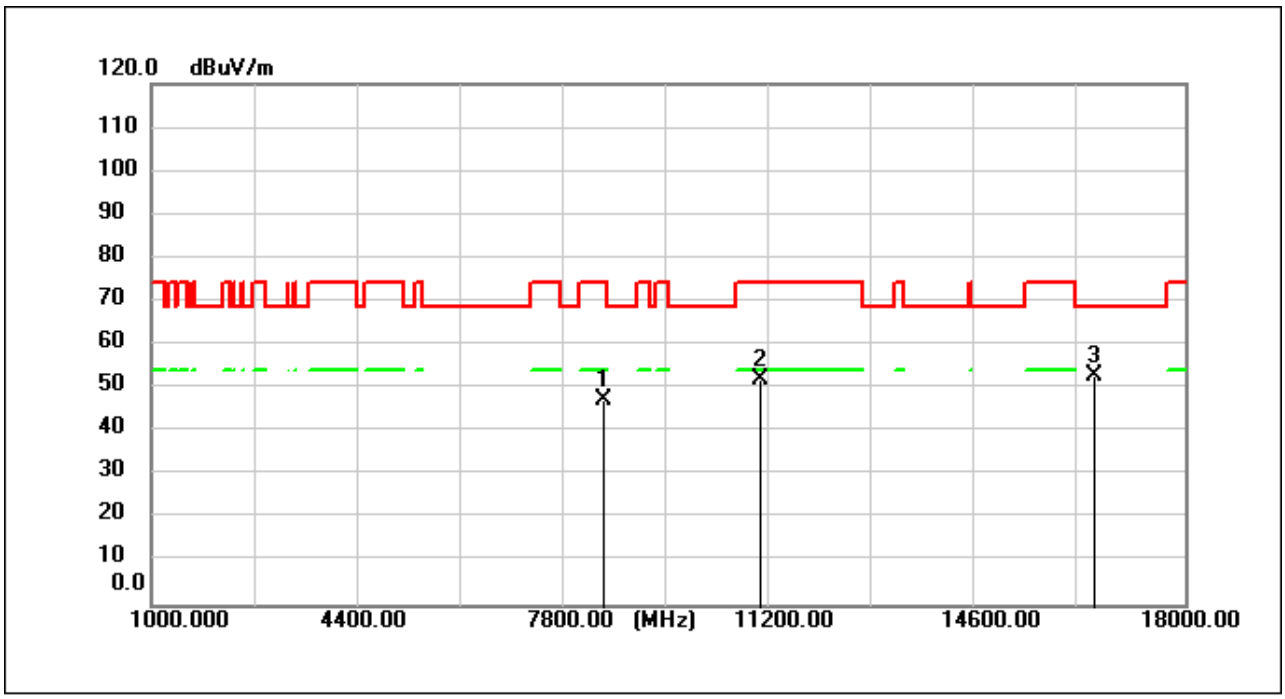
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9395.450	55.90	-6.79	49.11	74.00	-24.89	peak
2	11705.750	55.48	-6.47	49.01	74.00	-24.99	peak
3	15956.600	58.73	-3.14	55.59	74.00	-18.41	peak
4	15956.600	47.51	-3.14	44.37	54.00	-9.63	AVG

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



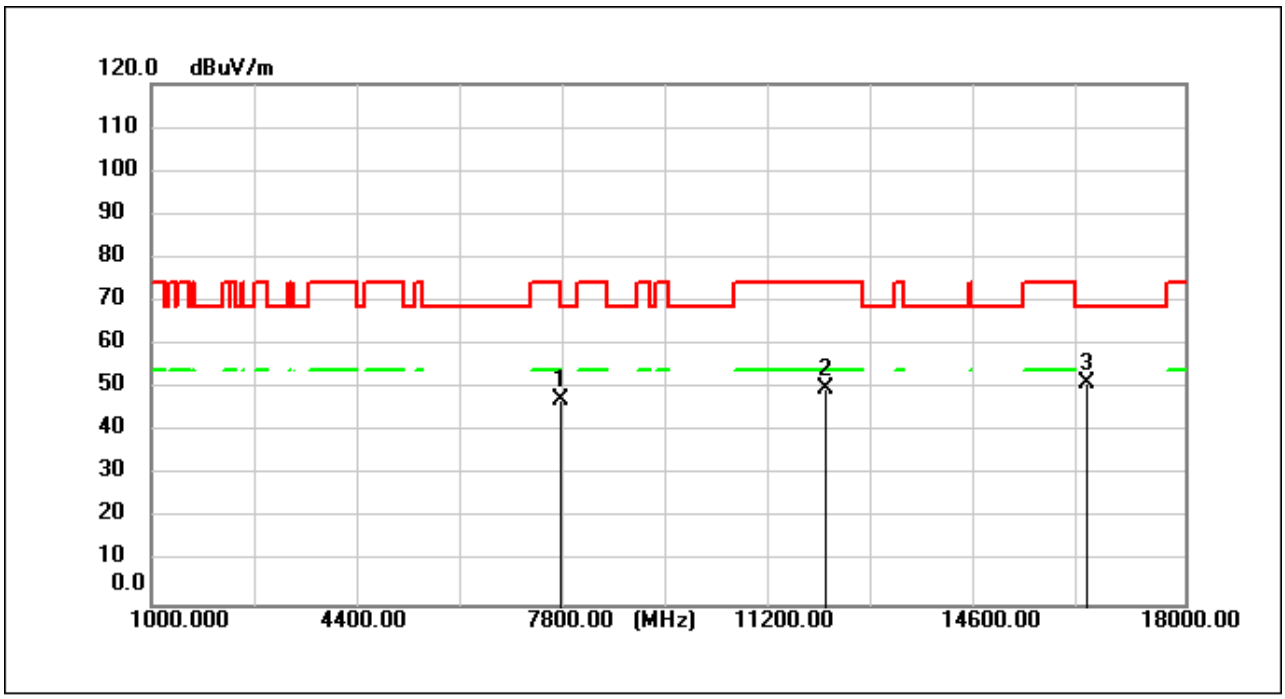
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8392.450	56.52	-8.71	47.81	74.00	-26.19	peak
2	10858.300	55.17	-6.29	48.88	74.00	-25.12	peak
3	15925.150	54.22	-3.20	51.02	74.00	-22.98	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



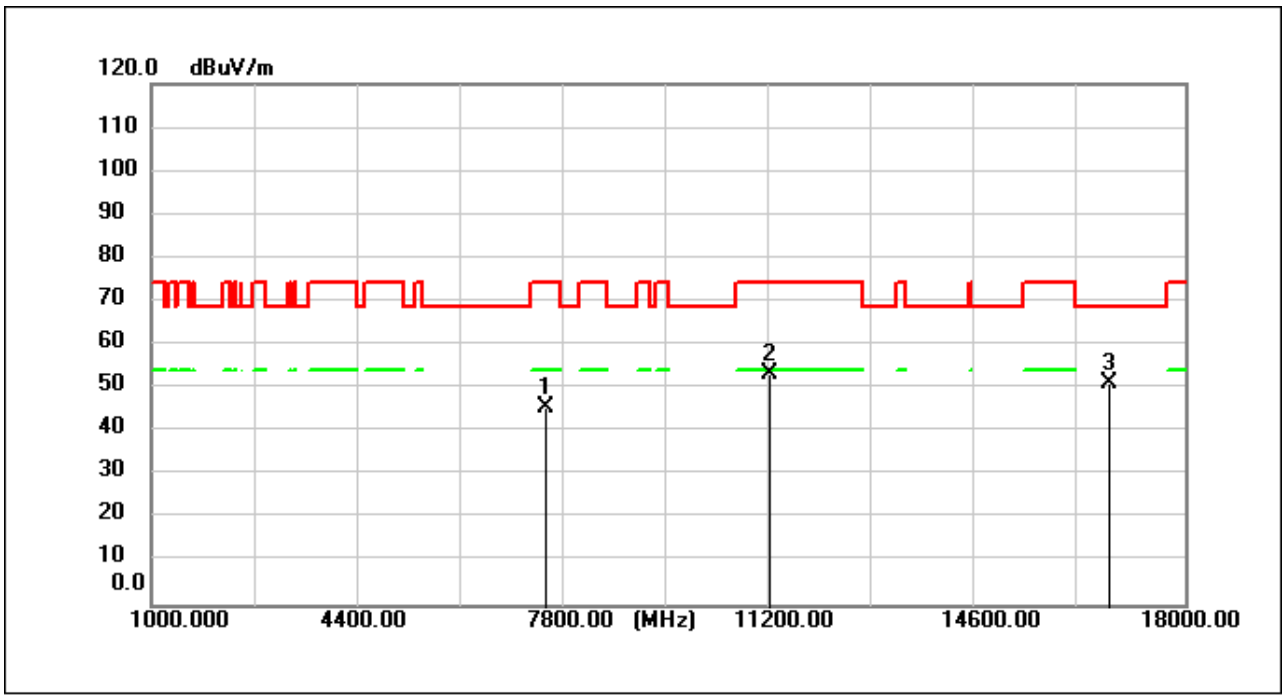
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8418.800	56.17	-8.66	47.51	74.00	-26.49	peak
2	11001.950	58.69	-6.42	52.27	74.00	-21.73	peak
3	16498.900	55.42	-2.43	52.99	68.30	-15.31	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



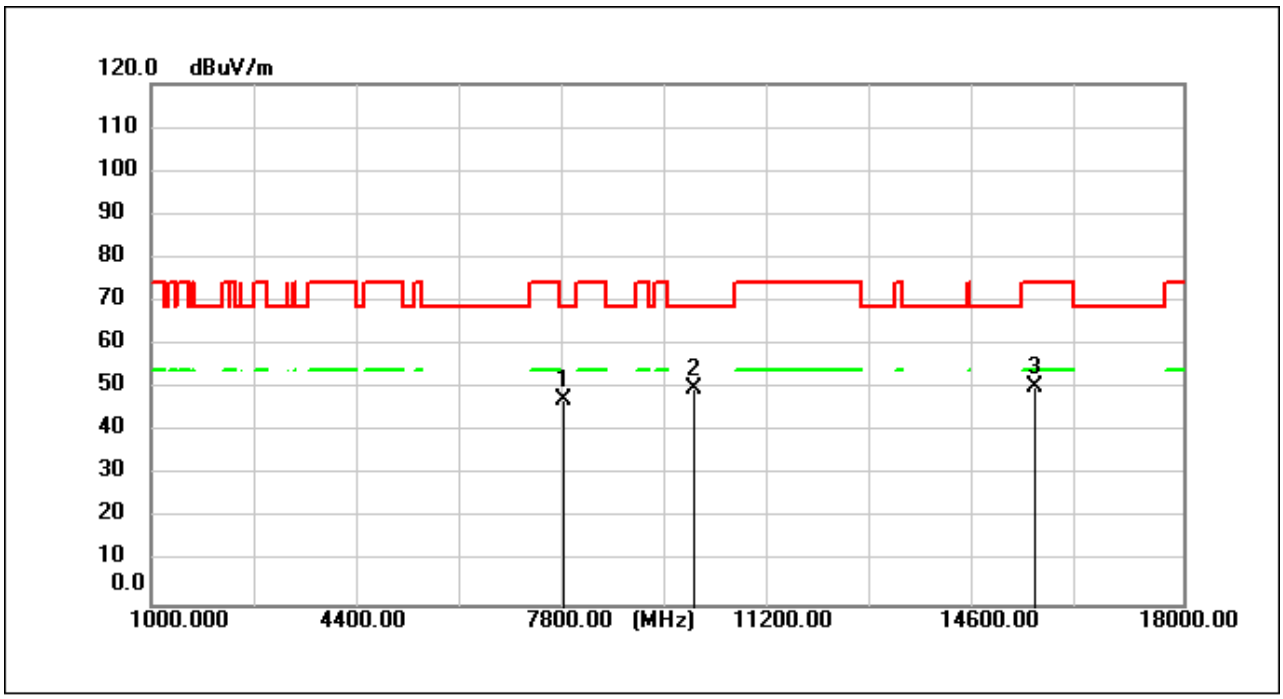
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7744.750	57.17	-9.60	47.57	74.00	-26.43	peak
2	12069.550	56.26	-6.38	49.88	74.00	-24.12	peak
3	16392.650	53.65	-2.56	51.09	68.30	-17.21	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



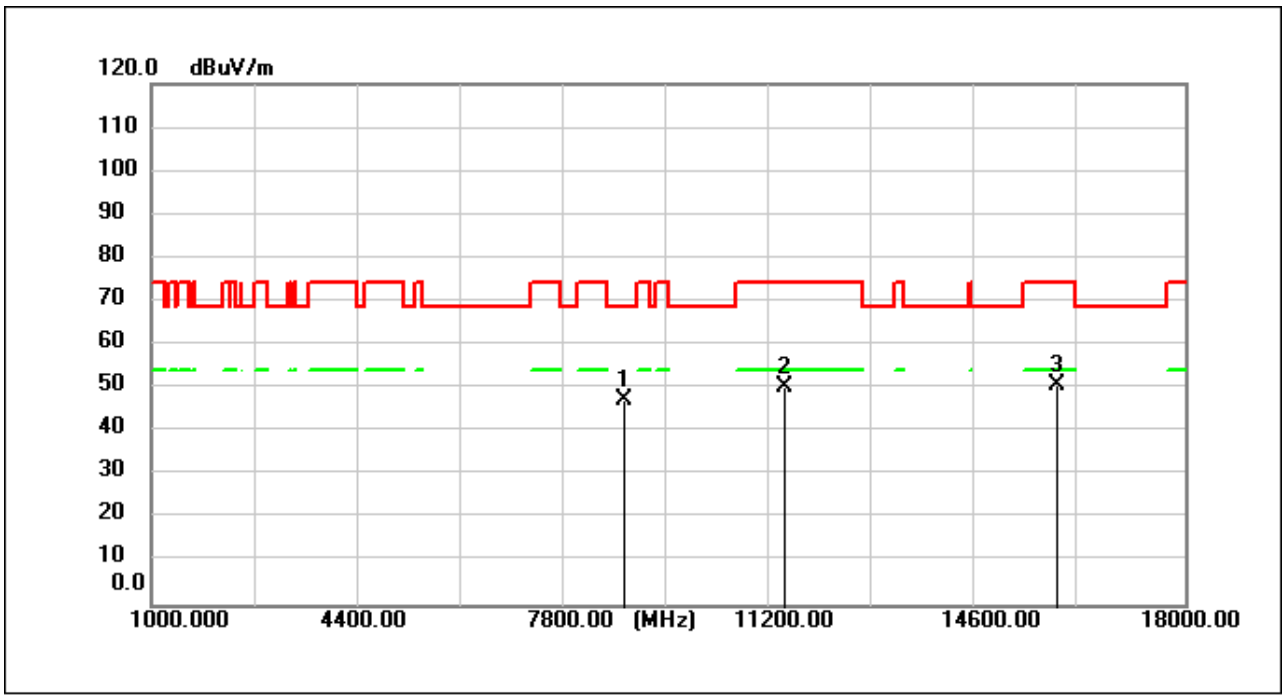
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7467.650	55.68	-9.91	45.77	74.00	-28.23	peak
2	11166.000	59.99	-6.43	53.56	74.00	-20.44	peak
3	16740.300	53.47	-2.12	51.35	68.30	-16.95	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



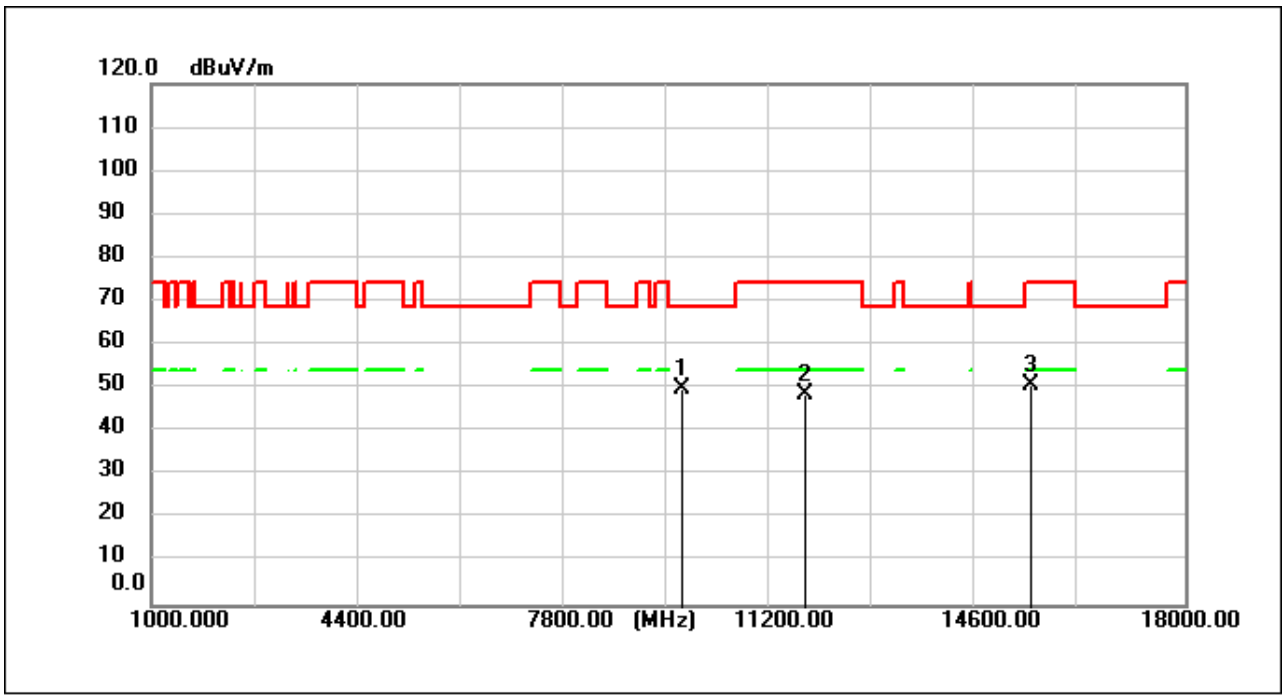
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7783.850	56.79	-9.55	47.24	68.30	-21.06	peak
2	9928.400	55.46	-5.61	49.85	68.30	-18.45	peak
3	15563.900	54.21	-3.82	50.39	74.00	-23.61	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



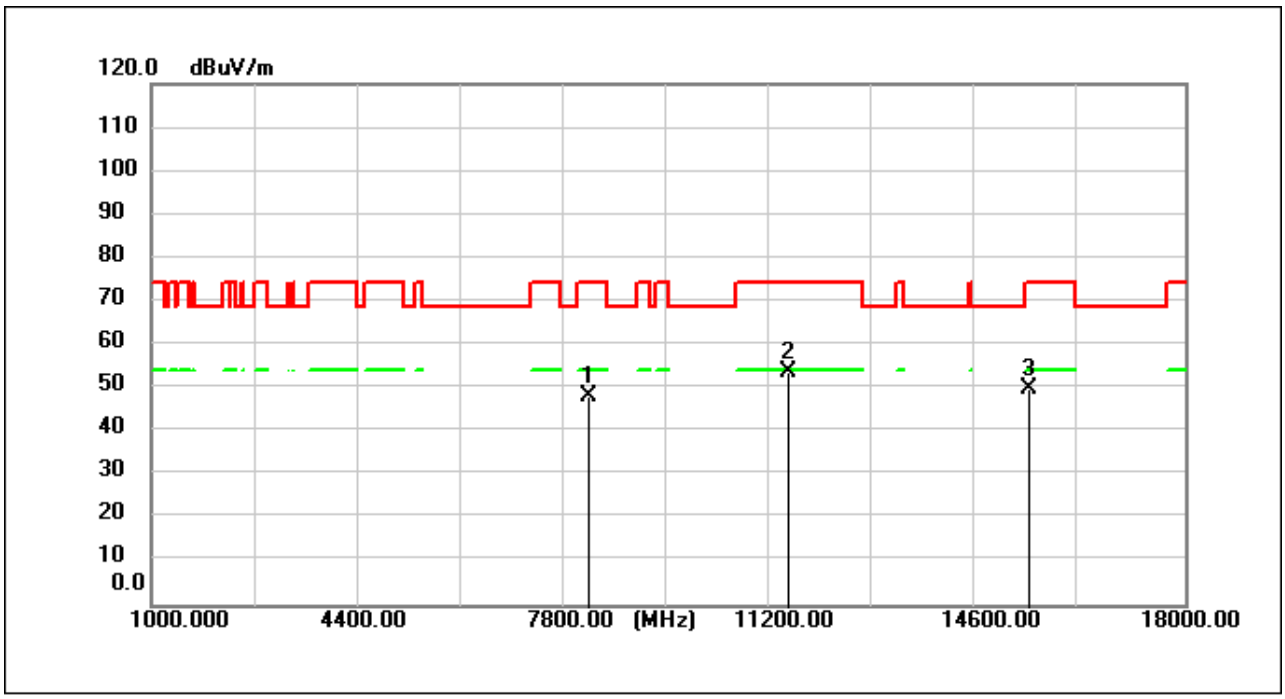
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8780.050	55.65	-8.14	47.51	68.30	-20.79	peak
2	11400.600	56.98	-6.45	50.53	74.00	-23.47	peak
3	15897.950	54.08	-3.25	50.83	74.00	-23.17	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



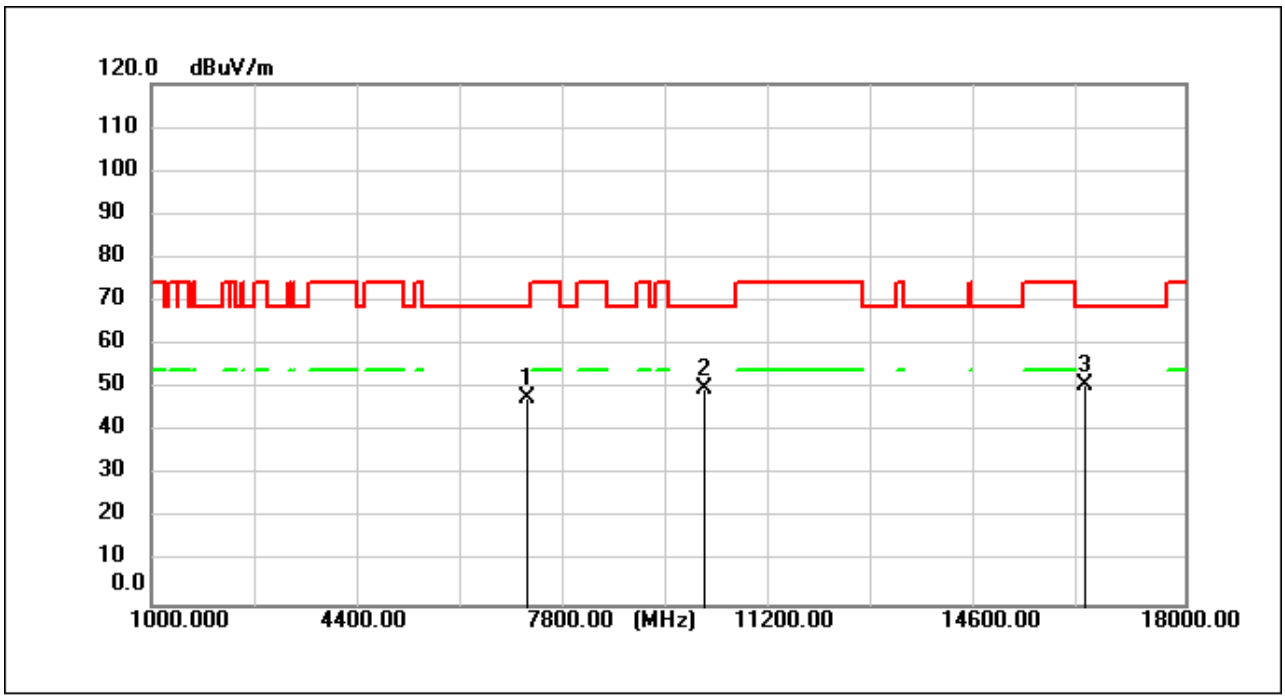
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9726.100	56.06	-5.95	50.11	68.30	-18.19	peak
2	11730.400	55.15	-6.47	48.68	74.00	-25.32	peak
3	15451.700	54.65	-4.01	50.64	74.00	-23.36	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



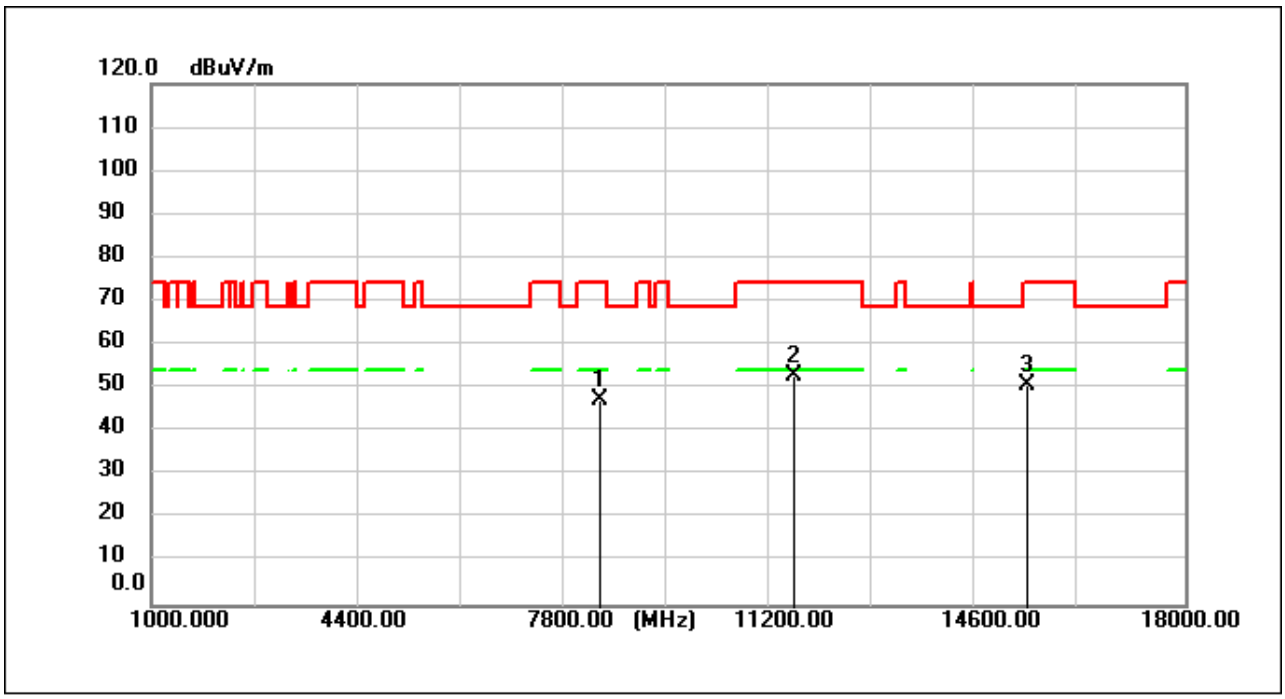
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8202.050	57.20	-8.99	48.21	74.00	-25.79	peak
2	11488.150	60.45	-6.46	53.99	74.00	-20.01	peak
3	15430.450	54.16	-4.04	50.12	74.00	-23.88	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



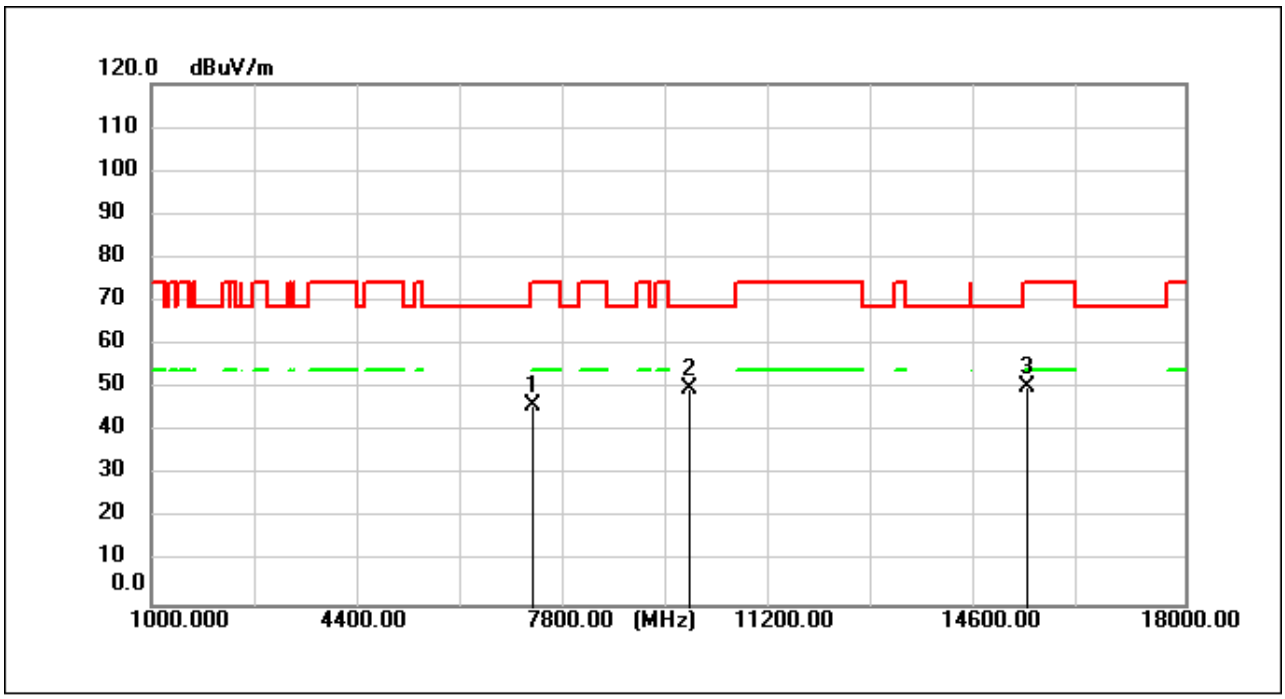
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7180.350	57.67	-10.05	47.62	68.30	-20.68	peak
2	10083.950	55.38	-5.65	49.73	68.30	-18.57	peak
3	16343.350	53.28	-2.62	50.66	68.30	-17.64	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



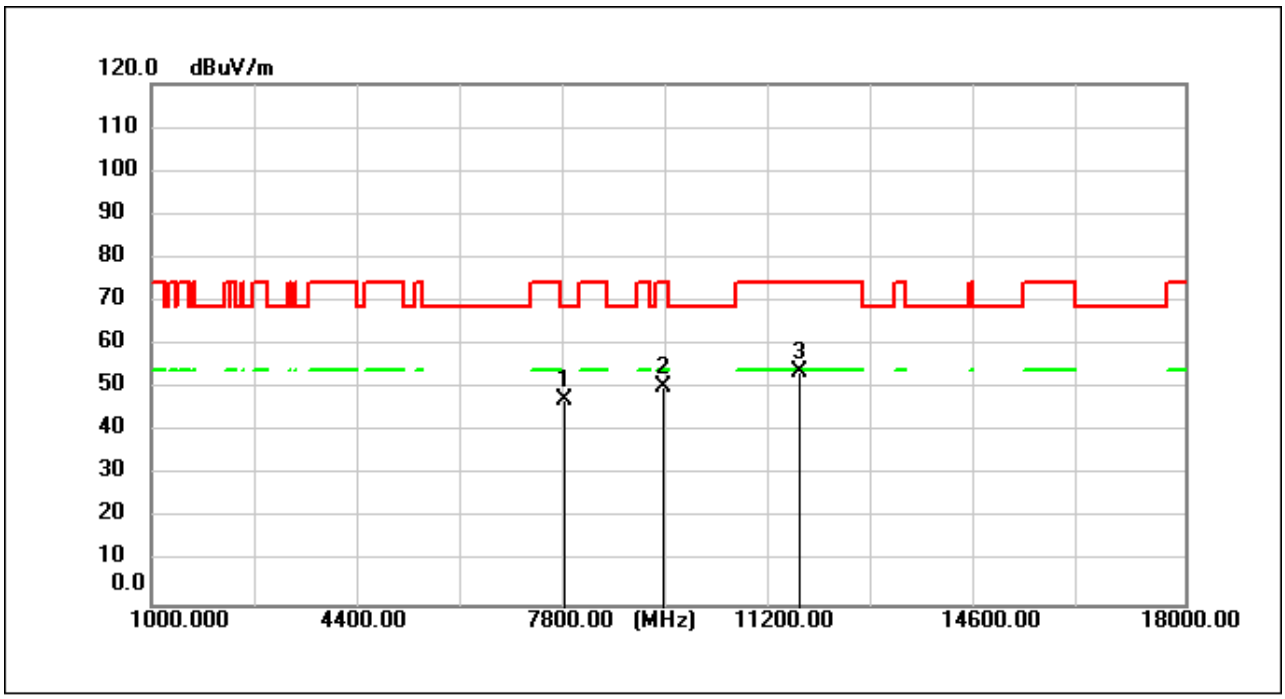
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8380.550	56.11	-8.72	47.39	74.00	-26.61	peak
2	11564.650	59.22	-6.46	52.76	74.00	-21.24	peak
3	15388.800	54.98	-4.11	50.87	74.00	-23.13	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



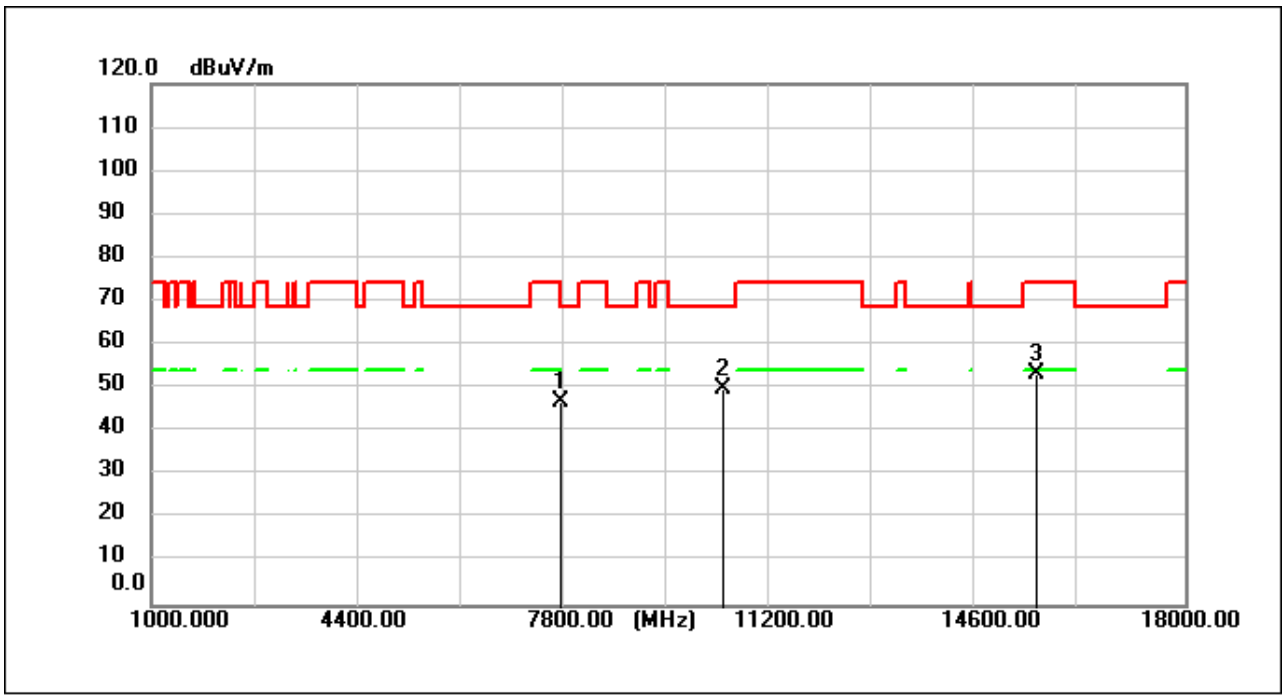
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7261.950	56.10	-10.03	46.07	74.00	-27.93	peak
2	9828.950	55.83	-5.69	50.14	68.30	-18.16	peak
3	15402.400	54.49	-4.09	50.40	74.00	-23.60	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



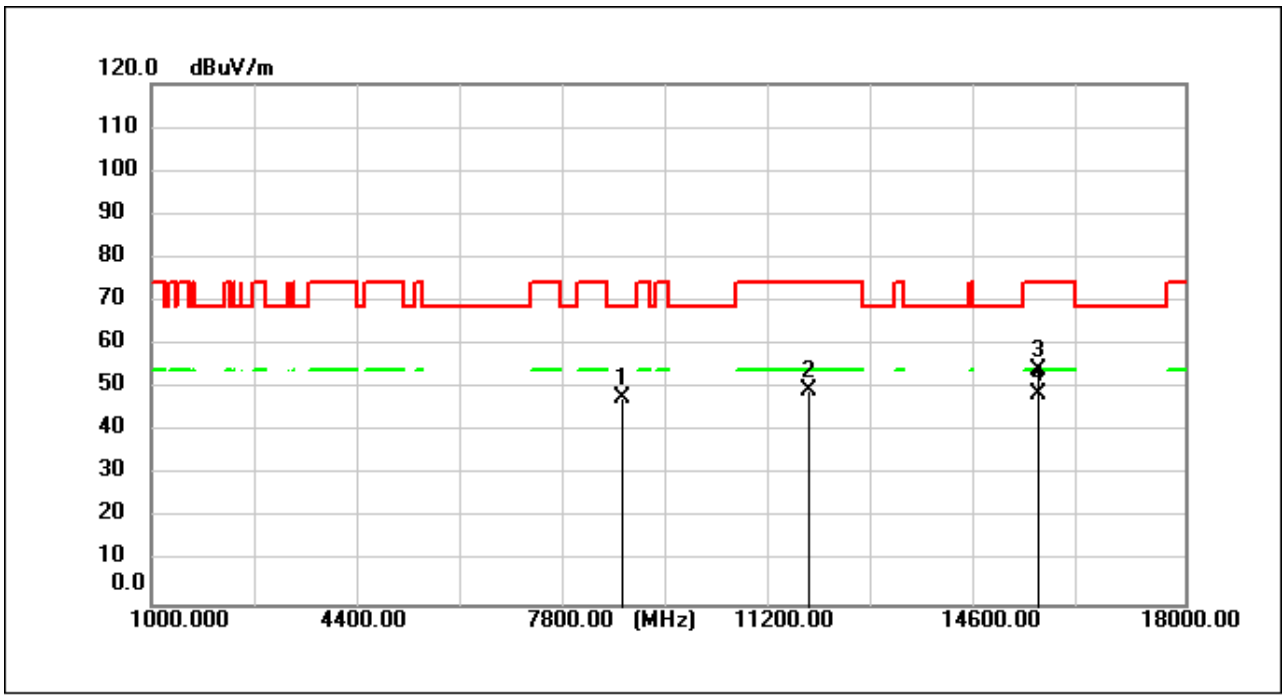
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7766.850	56.95	-9.56	47.39	68.30	-20.91	peak
2	9410.750	56.99	-6.75	50.24	74.00	-23.76	peak
3	11650.500	60.19	-6.47	53.72	74.00	-20.28	peak

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



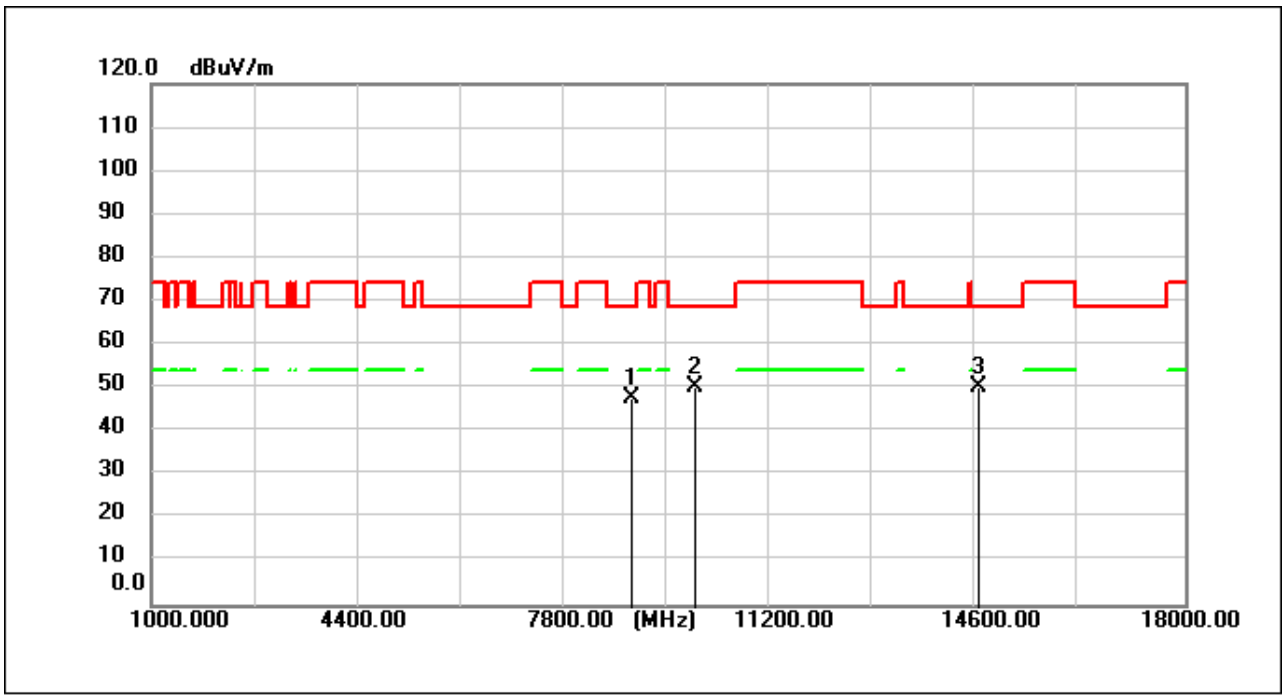
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7738.800	56.43	-9.60	46.83	74.00	-27.17	peak
2	10396.750	55.85	-5.91	49.94	68.30	-18.36	peak
3	15563.900	57.26	-3.82	53.44	74.00	-20.56	peak

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



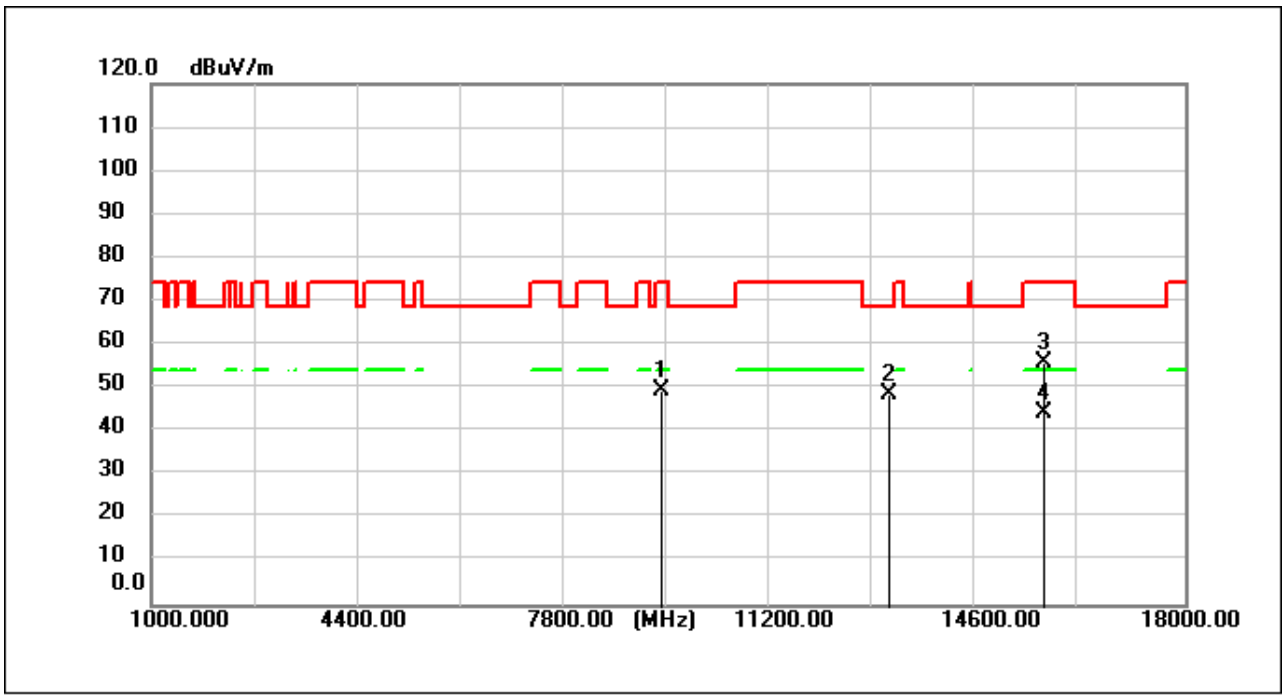
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8741.800	55.85	-8.20	47.65	68.30	-20.65	peak
2	11795.850	55.77	-6.48	49.29	74.00	-24.71	peak
3	15580.900	57.97	-3.80	54.17	74.00	-19.83	peak
4	15580.900	52.62	-3.80	48.82	54.00	-5.18	AVG

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



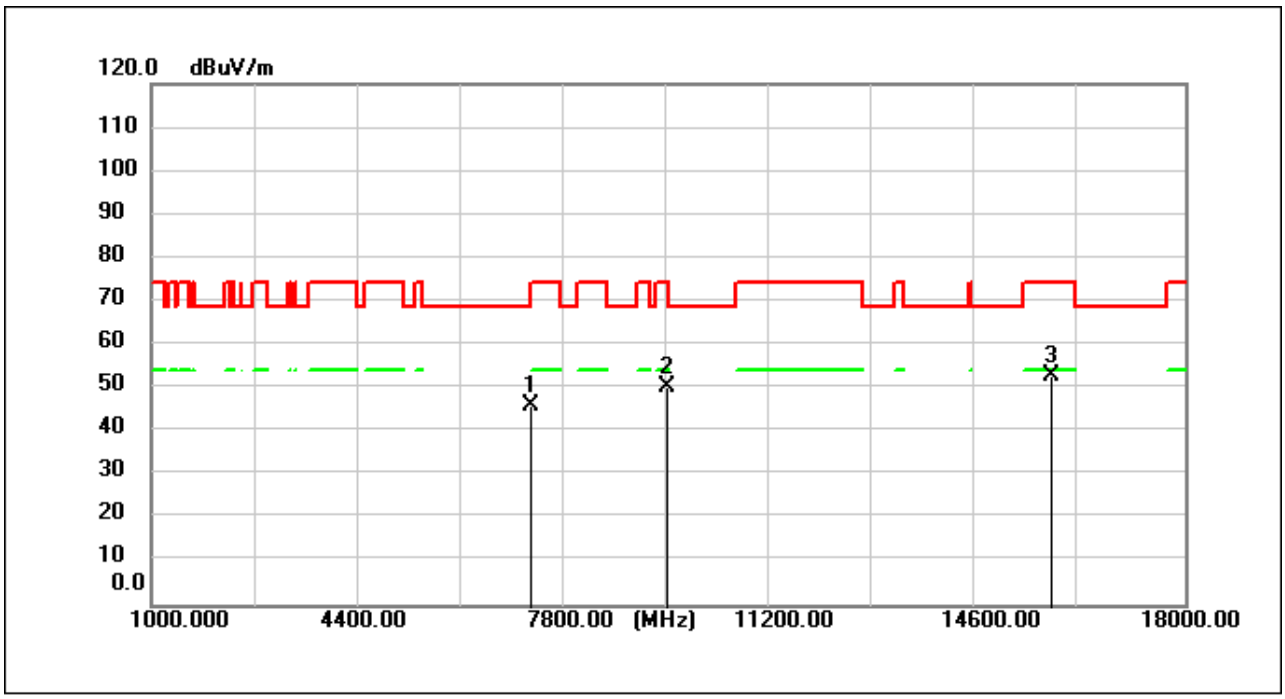
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8884.600	55.68	-7.98	47.70	68.30	-20.60	peak
2	9930.100	55.76	-5.61	50.15	68.30	-18.15	peak
3	14615.300	55.29	-5.11	50.18	68.30	-18.12	peak

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



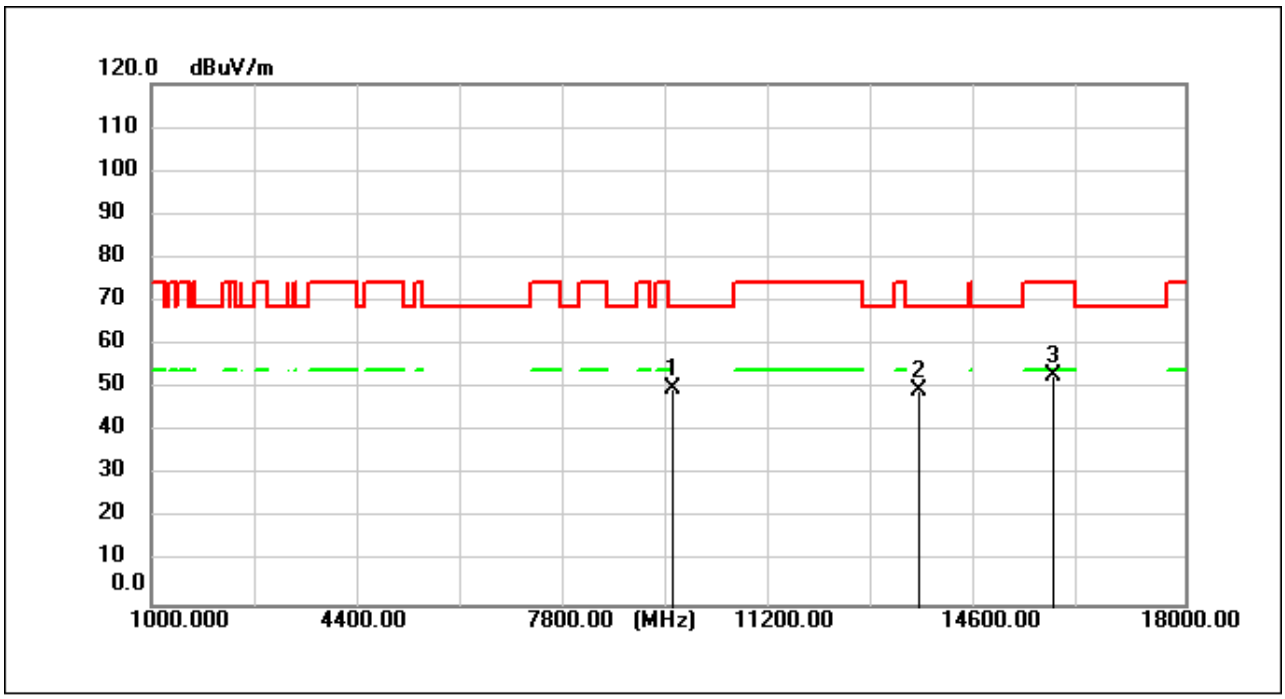
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9392.050	56.38	-6.80	49.58	74.00	-24.42	peak
2	13126.950	54.37	-5.73	48.64	68.30	-19.66	peak
3	15688.000	59.52	-3.61	55.91	74.00	-18.09	peak
4	15688.000	48.17	-3.61	44.56	54.00	-9.44	AVG

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



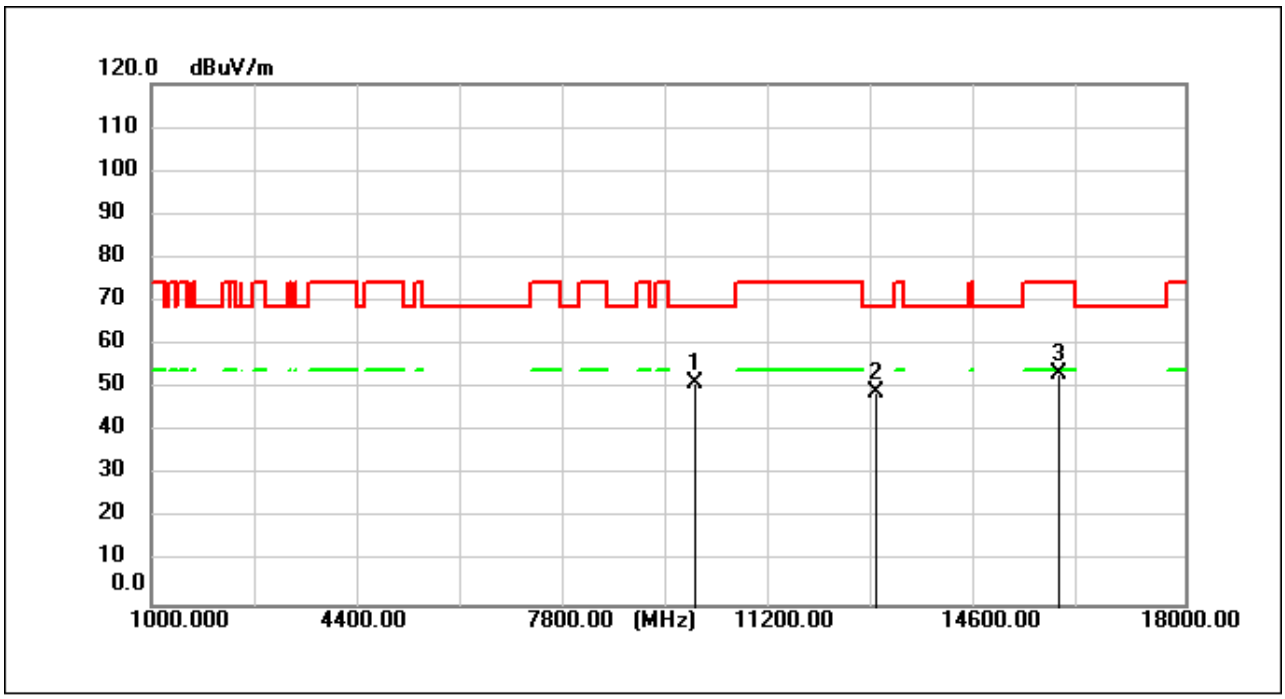
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7255.150	56.19	-10.02	46.17	74.00	-27.83	peak
2	9478.750	56.78	-6.58	50.20	74.00	-23.80	peak
3	15805.300	56.30	-3.42	52.88	74.00	-21.12	peak

Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



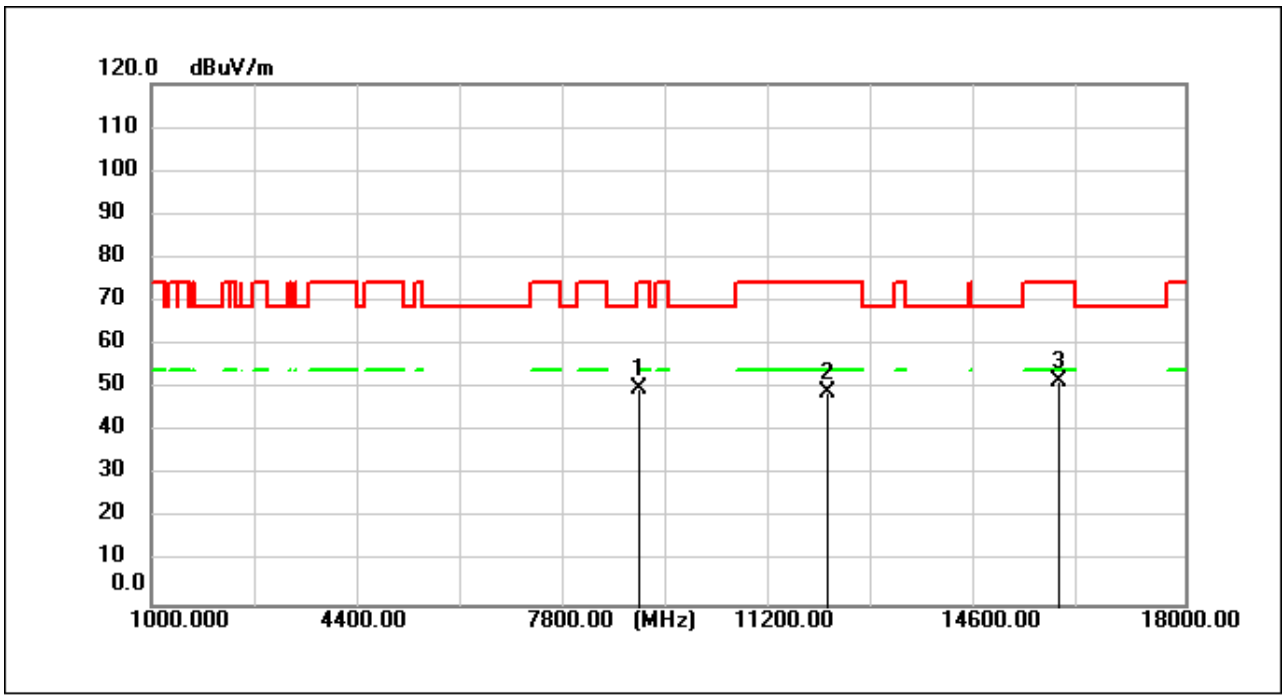
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9582.450	56.30	-6.32	49.98	68.30	-18.32	peak
2	13602.950	54.80	-5.49	49.31	68.30	-18.99	peak
3	15808.700	56.49	-3.42	53.07	74.00	-20.93	peak

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



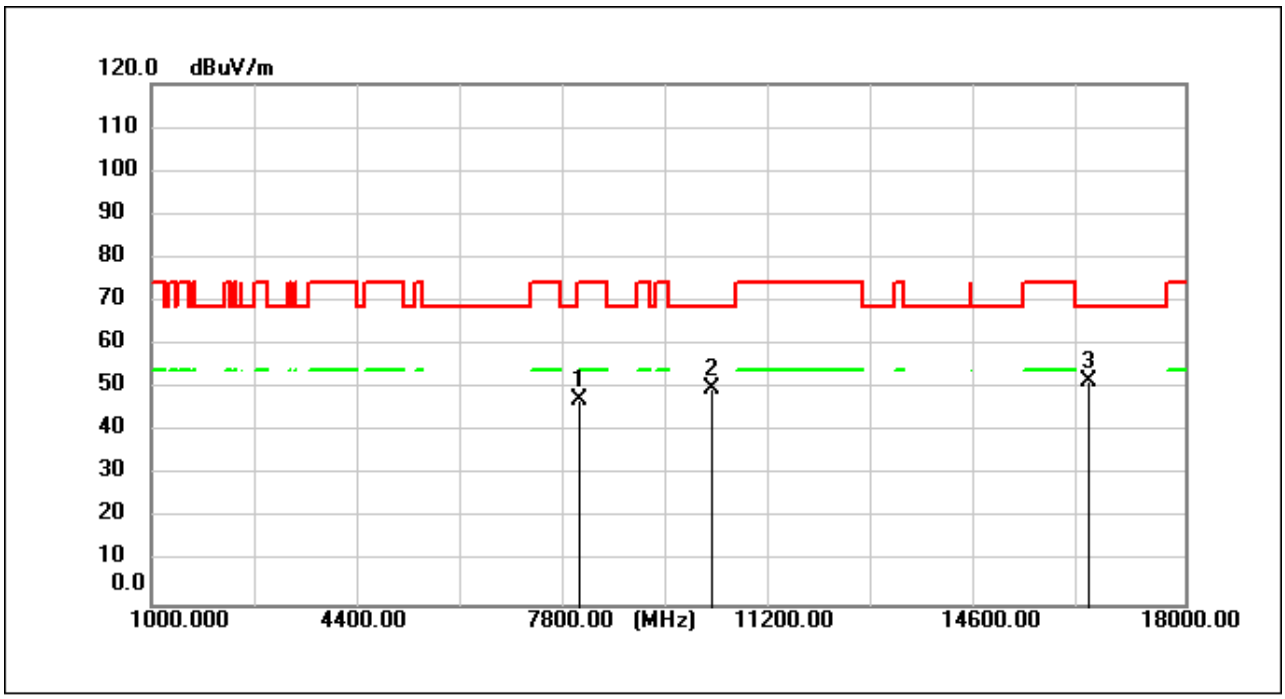
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9947.950	56.62	-5.60	51.02	68.30	-17.28	peak
2	12904.250	54.98	-5.94	49.04	68.30	-19.26	peak
3	15928.550	56.58	-3.19	53.39	74.00	-20.61	peak

Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



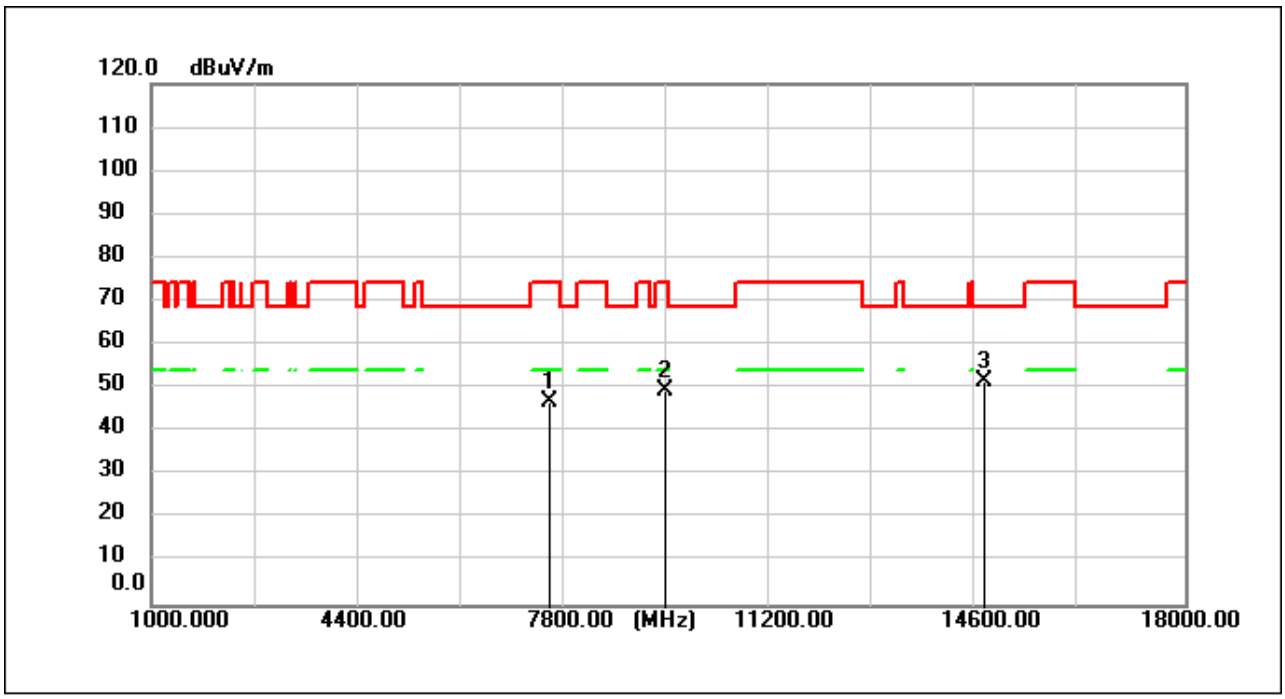
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9014.650	57.47	-7.75	49.72	74.00	-24.28	peak
2	12133.300	55.43	-6.35	49.08	74.00	-24.92	peak
3	15935.350	54.74	-3.18	51.56	74.00	-22.44	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



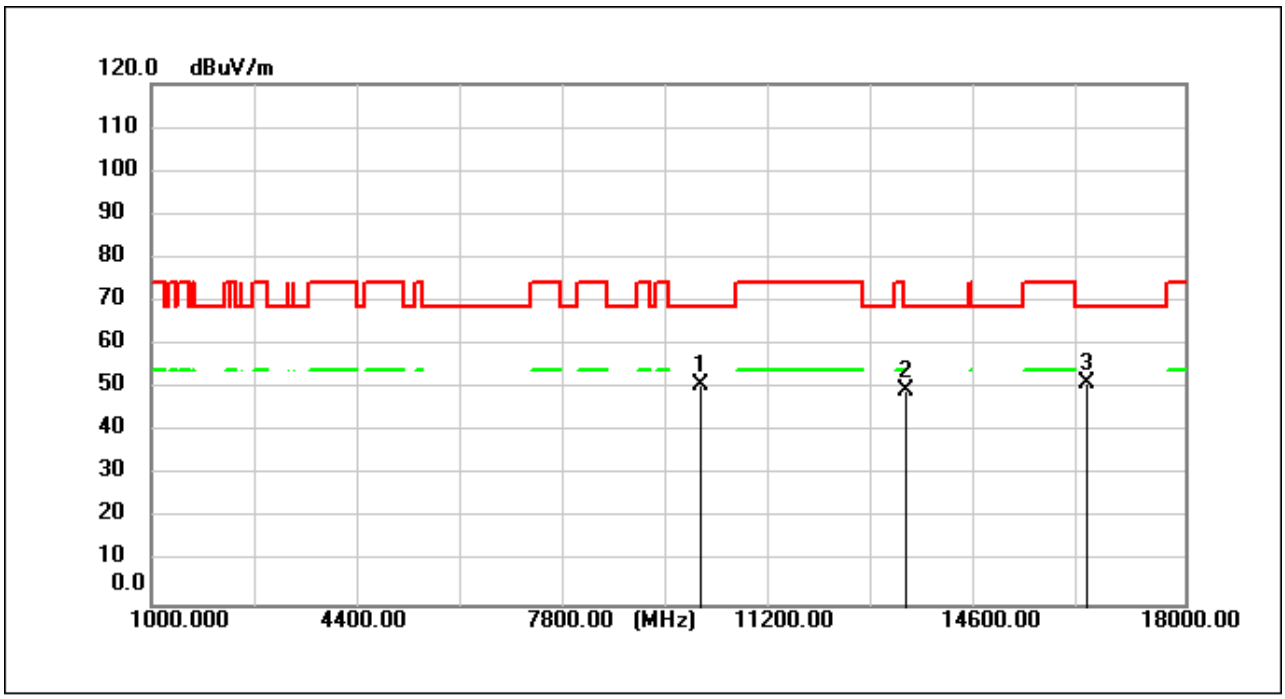
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8027.800	56.41	-9.26	47.15	74.00	-26.85	peak
2	10201.250	55.48	-5.74	49.74	68.30	-18.56	peak
3	16402.850	54.14	-2.55	51.59	68.30	-16.71	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



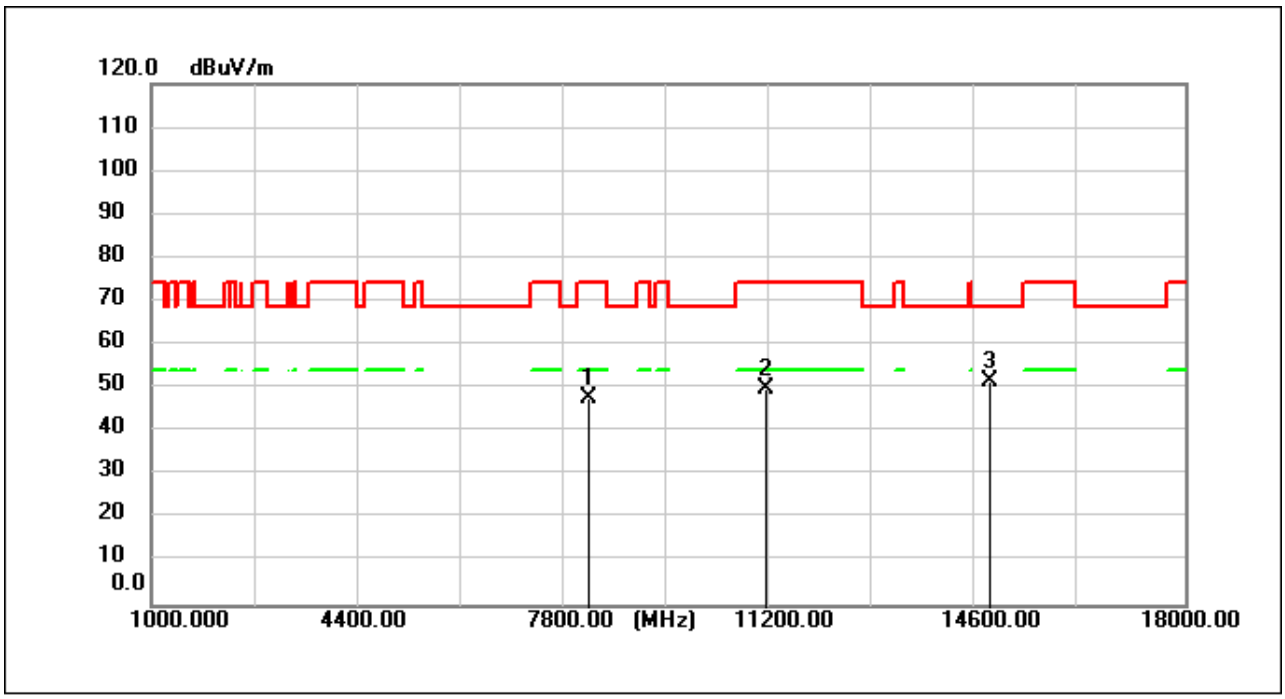
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7536.500	56.68	-9.83	46.85	74.00	-27.15	peak
2	9463.450	56.09	-6.62	49.47	74.00	-24.53	peak
3	14692.650	56.67	-5.03	51.64	68.30	-16.66	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



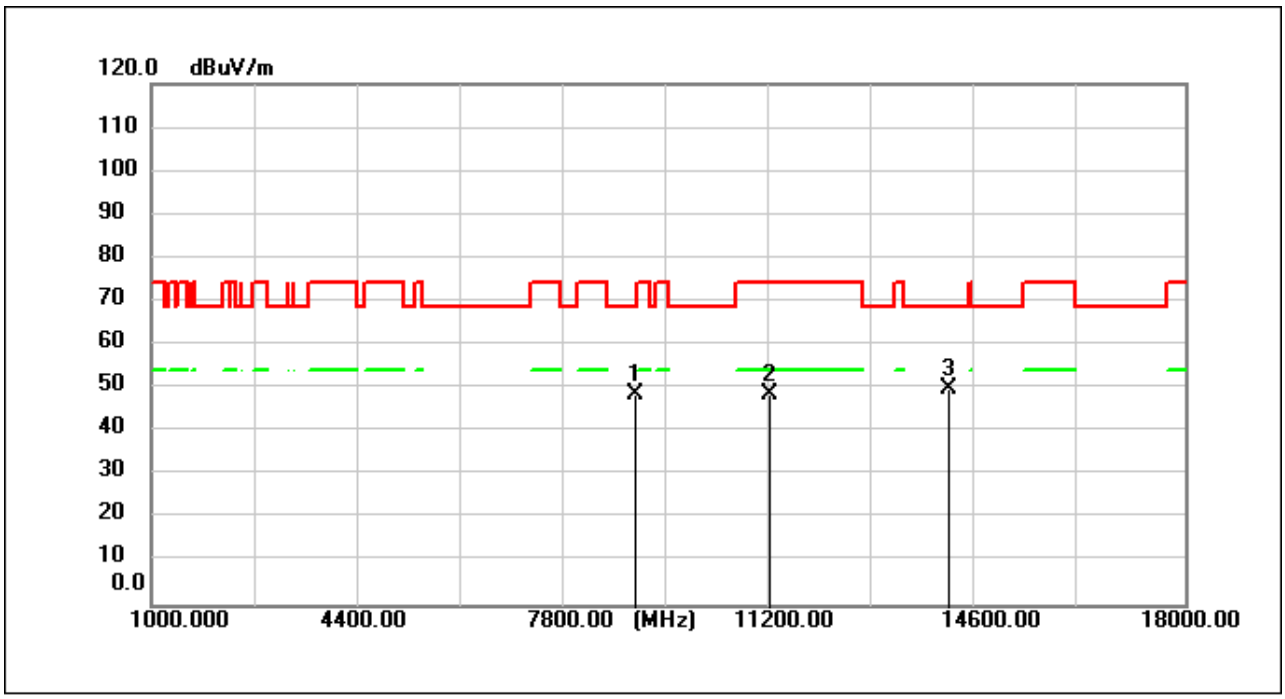
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10032.100	56.48	-5.60	50.88	68.30	-17.42	peak
2	13413.400	55.24	-5.58	49.66	68.30	-18.64	peak
3	16379.050	53.96	-2.58	51.38	68.30	-16.92	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



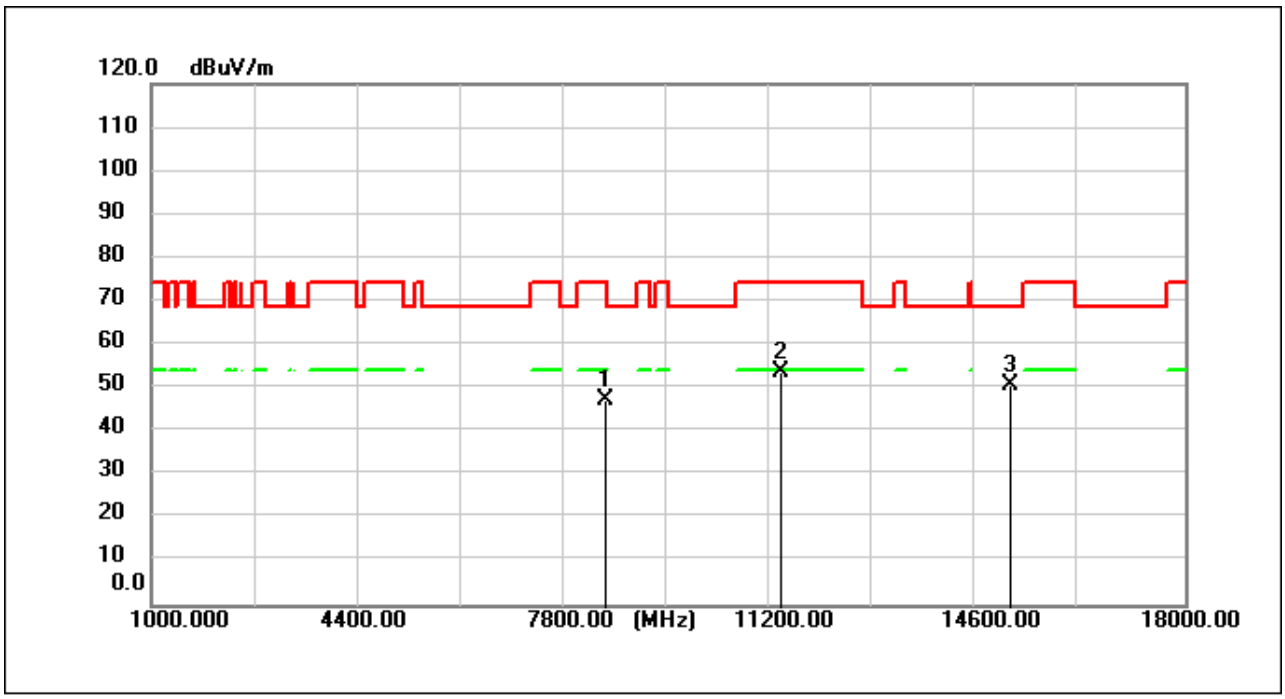
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8203.750	56.71	-8.98	47.73	74.00	-26.27	peak
2	11106.500	56.30	-6.43	49.87	74.00	-24.13	peak
3	14800.600	56.70	-4.94	51.76	68.30	-16.54	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



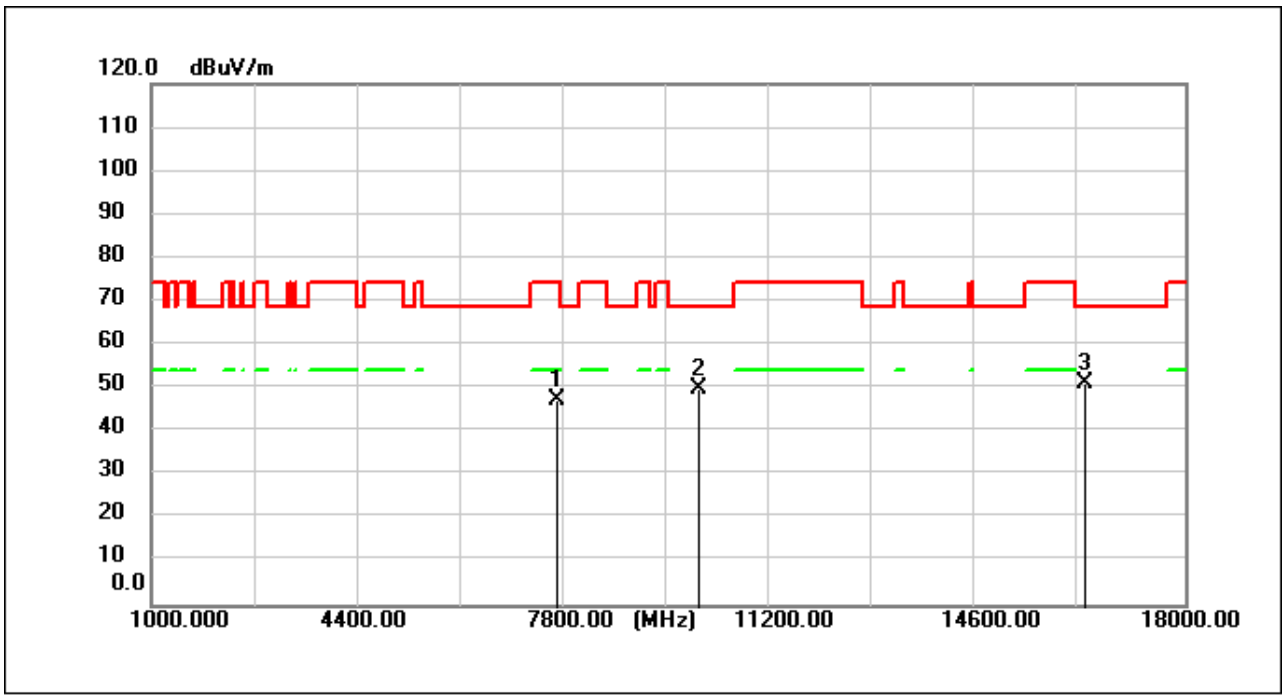
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8960.250	56.64	-7.87	48.77	68.30	-19.53	peak
2	11154.100	54.96	-6.43	48.53	74.00	-25.47	peak
3	14119.750	55.12	-5.29	49.83	68.30	-18.47	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



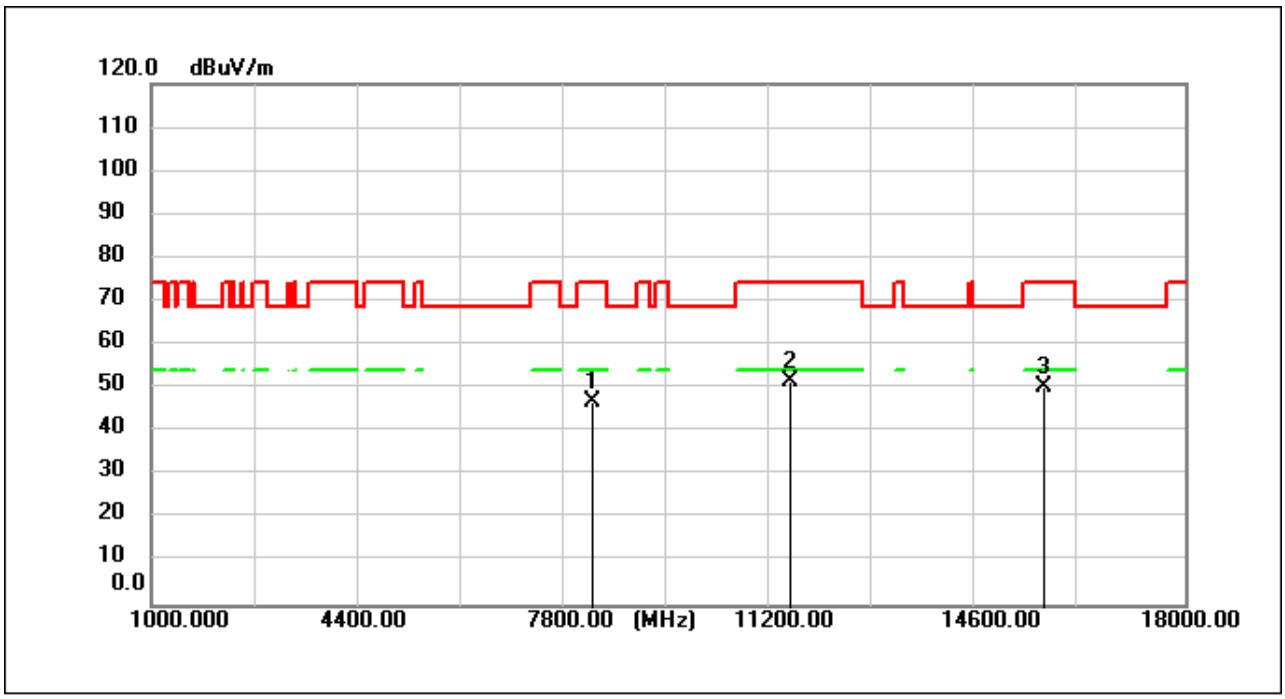
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8473.200	56.02	-8.59	47.43	74.00	-26.57	peak
2	11336.850	60.14	-6.45	53.69	74.00	-20.31	peak
3	15120.200	55.33	-4.56	50.77	68.30	-17.53	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



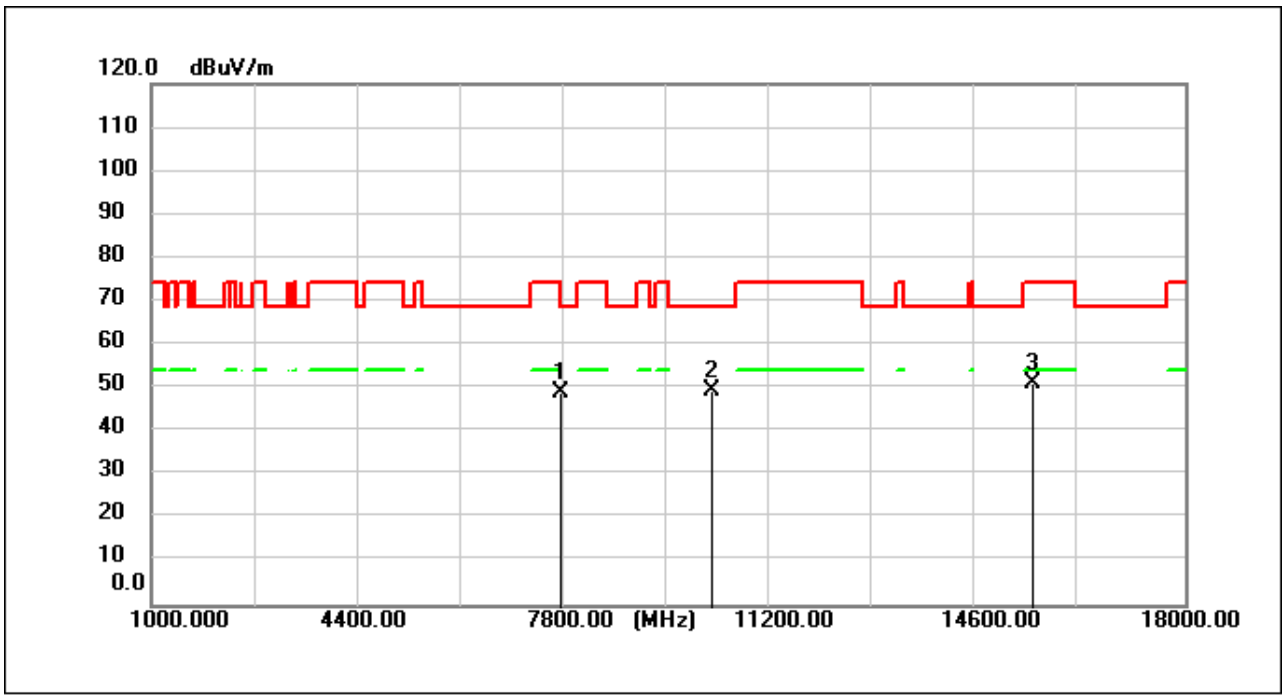
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7673.350	56.99	-9.68	47.31	74.00	-26.69	peak
2	9986.200	55.45	-5.59	49.86	68.30	-18.44	peak
3	16338.250	53.89	-2.63	51.26	68.30	-17.04	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



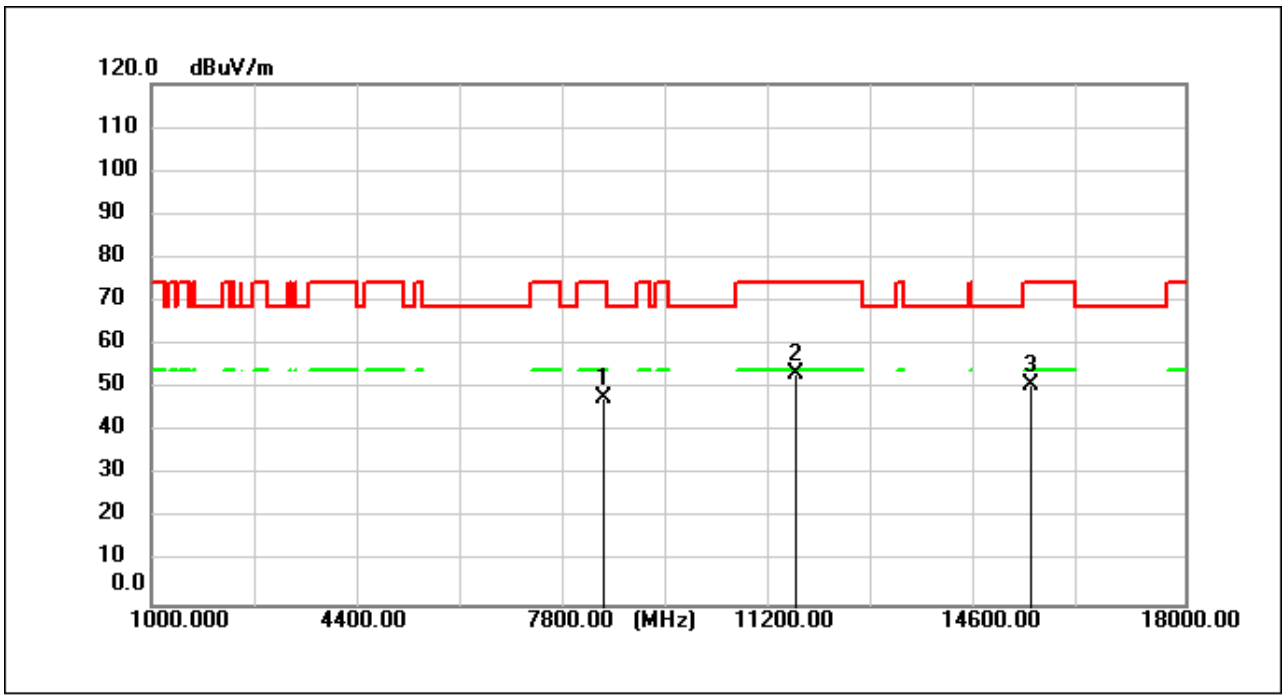
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8255.600	55.94	-8.90	47.04	74.00	-26.96	peak
2	11517.050	57.95	-6.45	51.50	74.00	-22.50	peak
3	15655.700	54.13	-3.66	50.47	74.00	-23.53	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7726.900	58.56	-9.62	48.94	74.00	-25.06	peak
2	10207.200	55.46	-5.75	49.71	68.30	-18.59	peak
3	15484.000	55.00	-3.95	51.05	74.00	-22.95	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8444.300	56.33	-8.63	47.70	74.00	-26.30	peak
2	11586.750	59.77	-6.46	53.31	74.00	-20.69	peak
3	15453.400	54.73	-4.00	50.73	74.00	-23.27	peak

7.5 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: ANSI C63.10 (2013) Section 6.10.5
Measurement Distance: 3M

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

*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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.

7.5.1 E.U.T. Operation

Operating Environment:

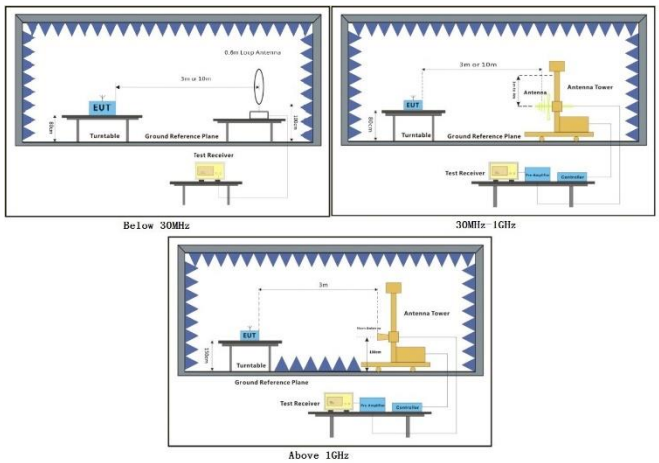
Temperature: 23.3 °C Humidity: 45.2 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only

		the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



7.5.4 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.

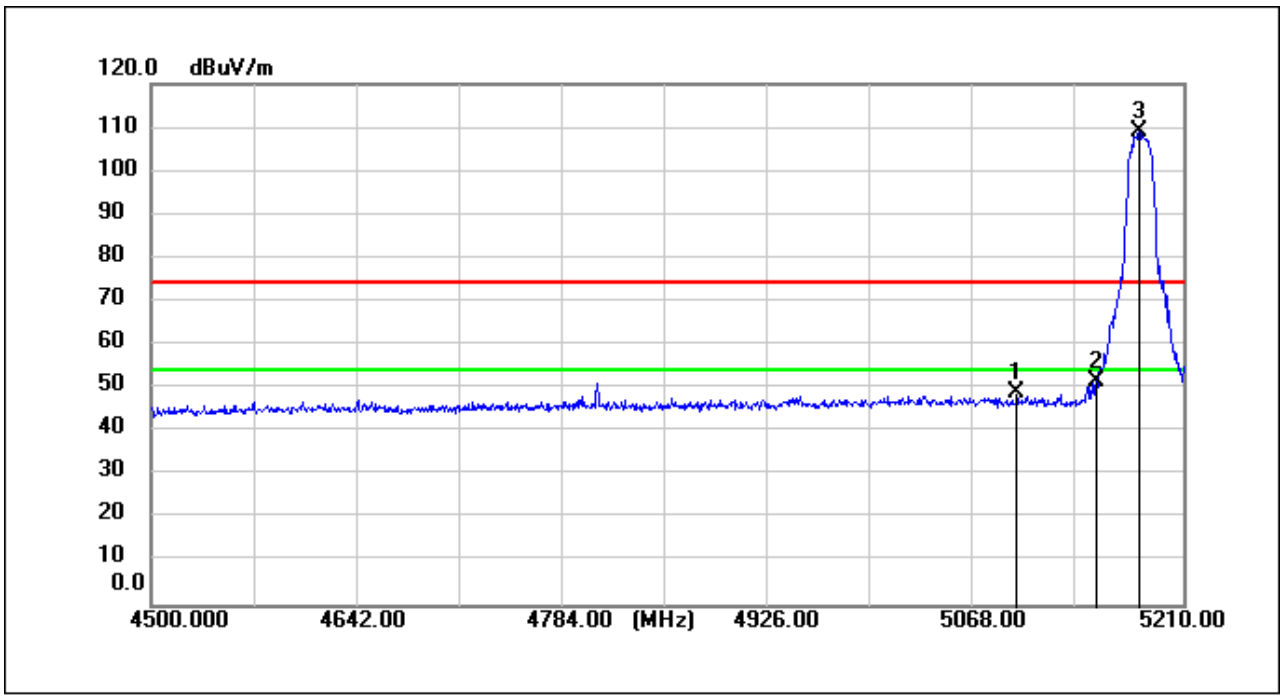
j. Repeat above procedures until all frequencies measured was complete.

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

Remark 2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

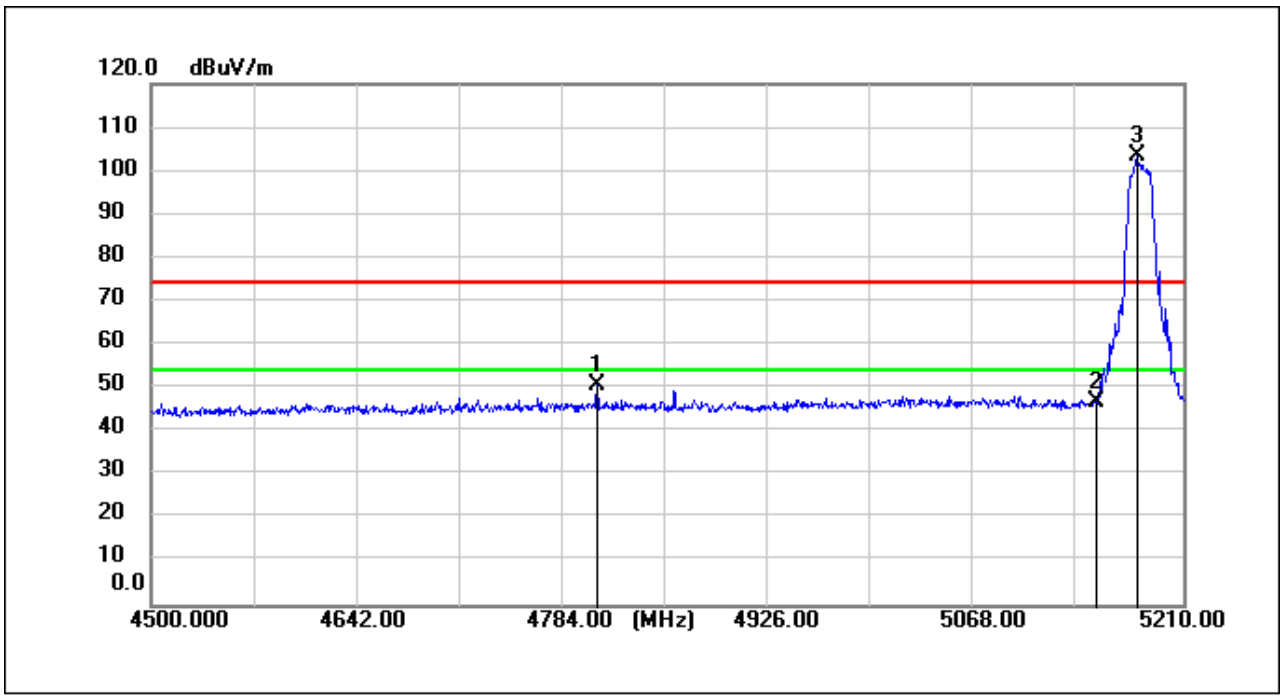
Remark 3. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geqslant$1/T (Duty cycle$<$98%) or 10Hz (Duty cycle$\geqslant$98%) for Average detection (AV) at frequency above 1GHz.

Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



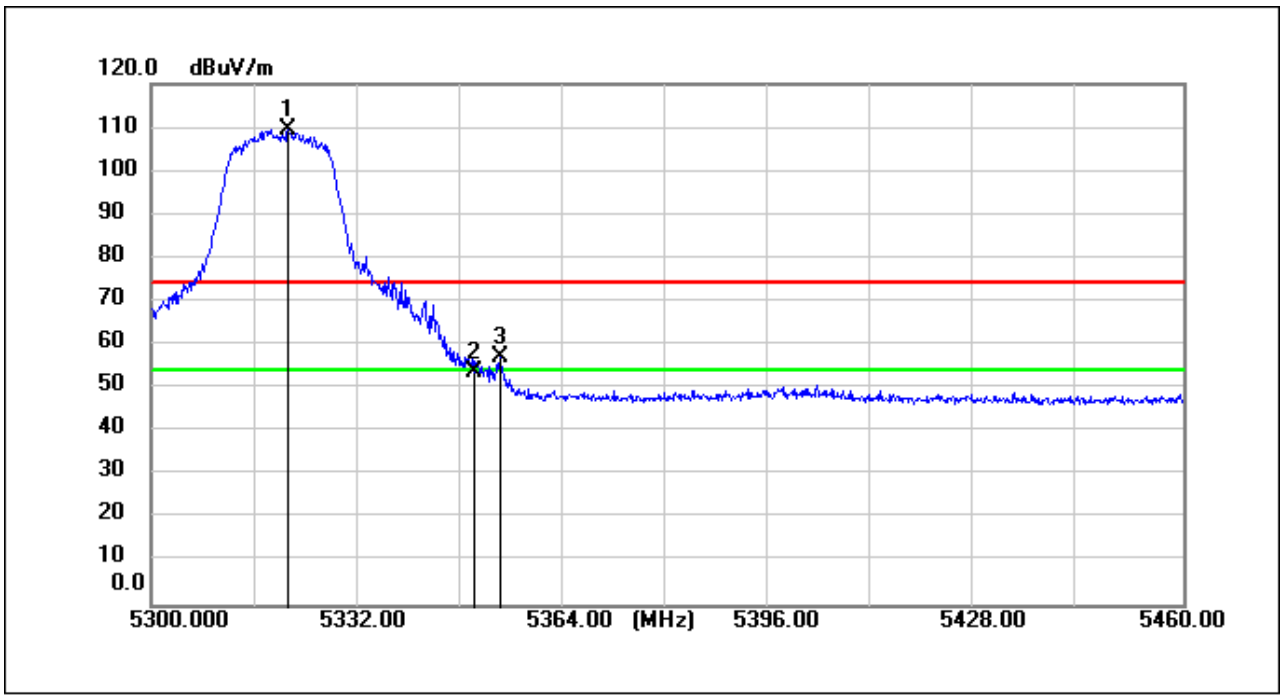
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5095.690	41.72	7.14	48.86	74.00	-25.14	peak
2	5150.000	44.38	7.12	51.50	74.00	-22.50	peak
3	5180.180	102.17	7.11	109.28	74.00	35.28	peak

Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



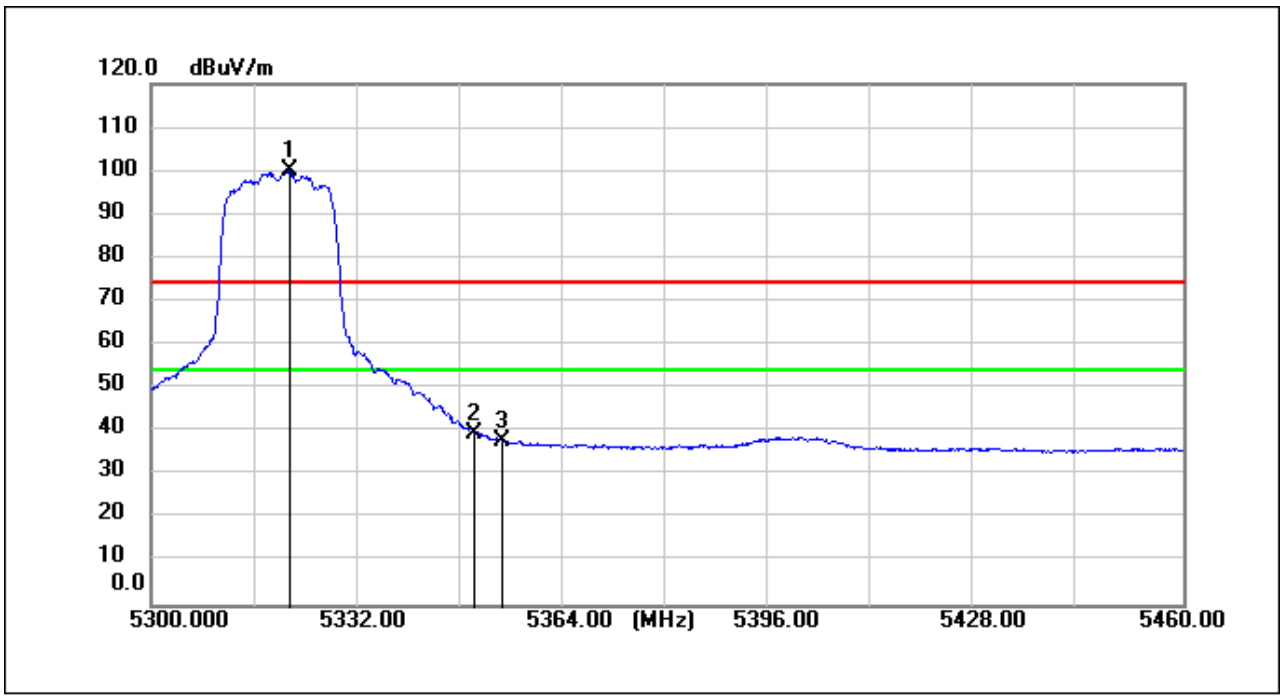
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4806.720	44.04	6.59	50.63	74.00	-23.37	peak
2	5150.000	39.61	7.12	46.73	74.00	-27.27	peak
3	5178.050	96.51	7.11	103.62	74.00	29.62	peak

Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



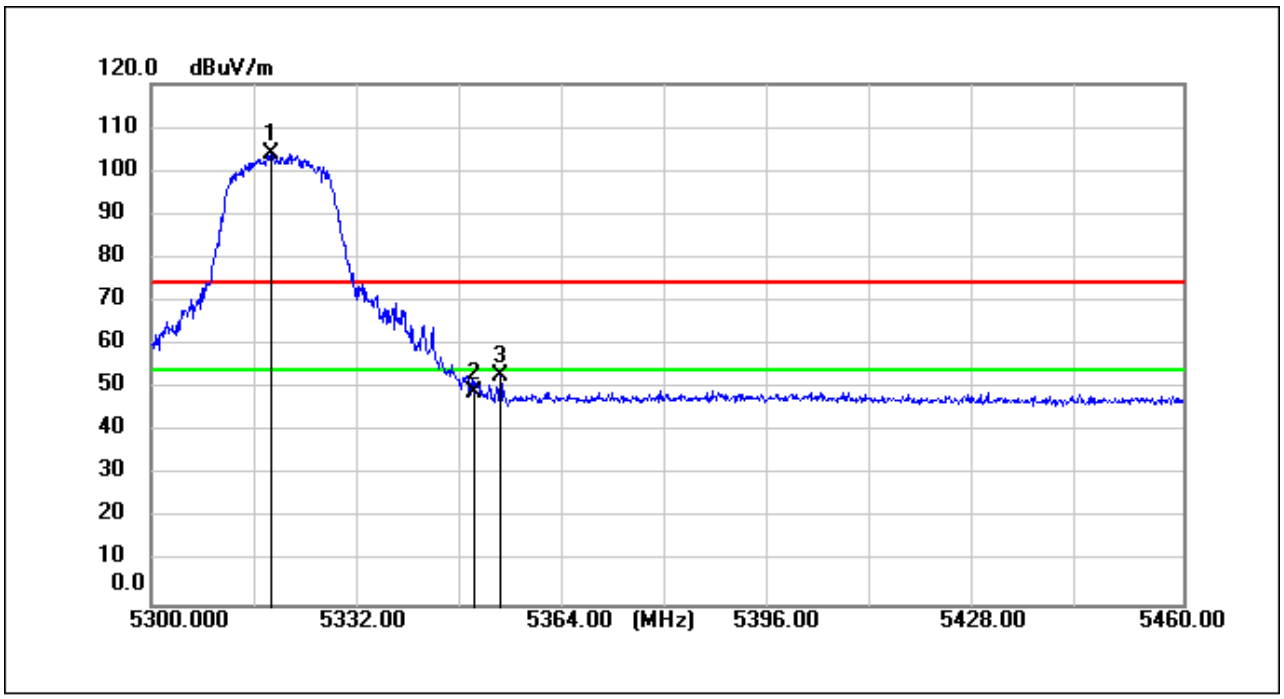
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5321.120	102.47	7.06	109.53	74.00	35.53	peak
2	5350.000	46.62	7.05	53.67	74.00	-20.33	peak
3	5354.080	50.18	7.05	57.23	74.00	-16.77	peak

Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



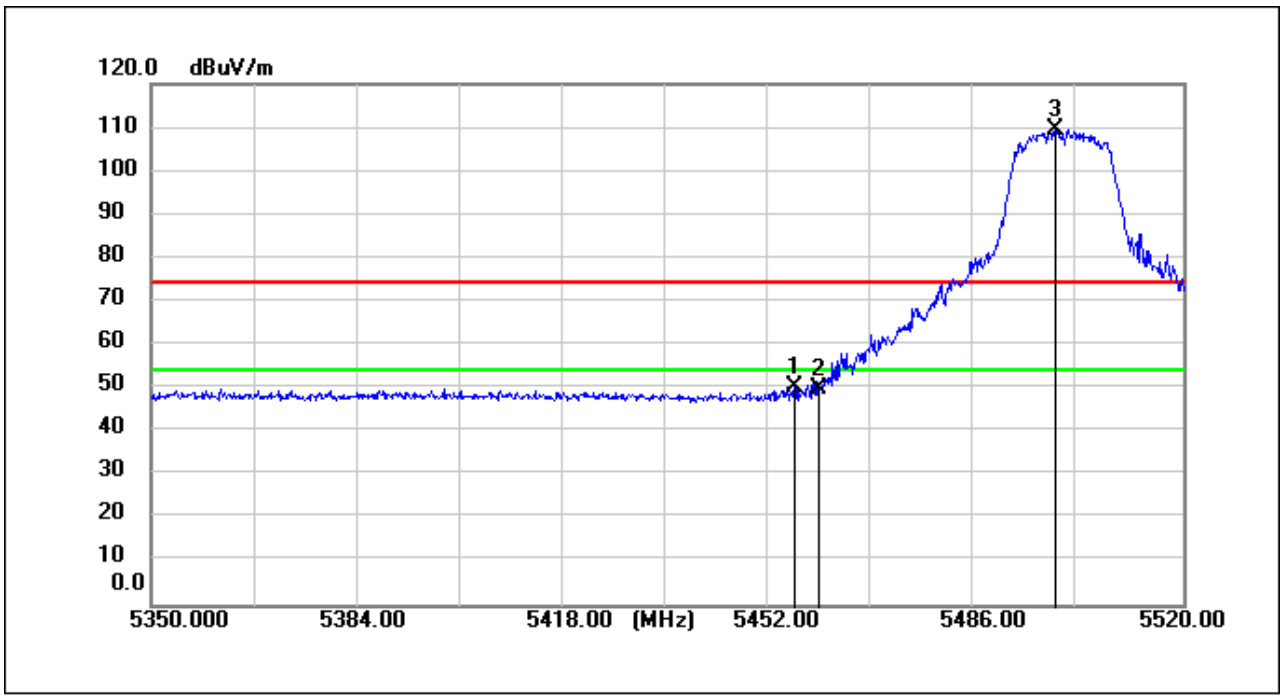
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5321.600	93.20	7.06	100.26	54.00	46.26	AVG
2	5350.000	32.57	7.05	39.62	54.00	-14.38	AVG
3	5354.400	31.02	7.05	38.07	54.00	-15.93	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



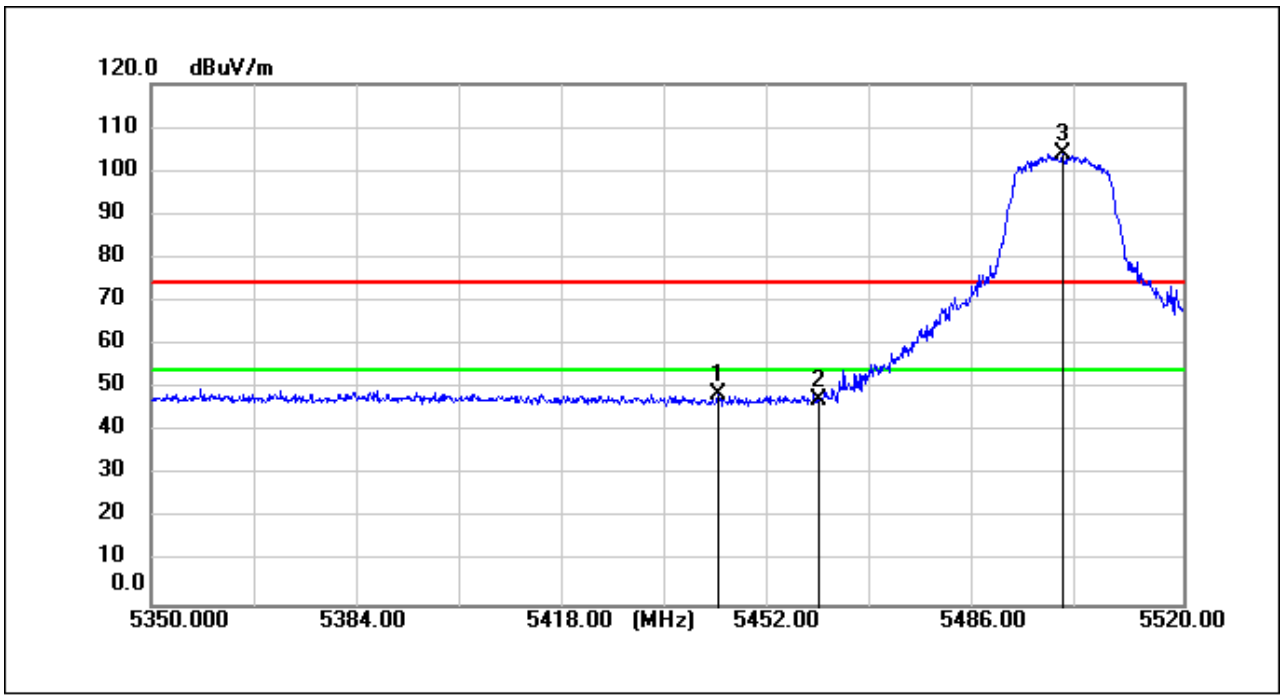
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5318.560	96.66	7.07	103.73	74.00	29.73	peak
2	5350.000	42.13	7.05	49.18	74.00	-24.82	peak
3	5354.080	46.00	7.05	53.05	74.00	-20.95	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



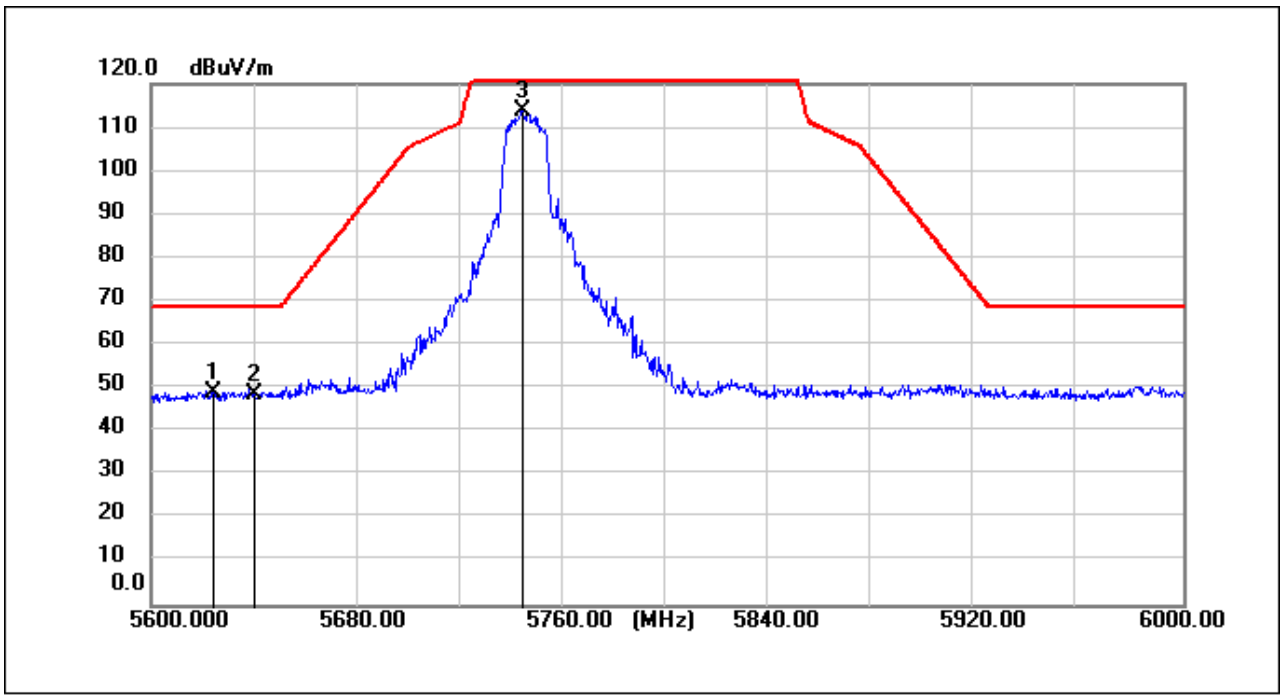
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5456.080	43.23	7.02	50.25	74.00	-23.75	peak
2	5460.000	43.00	7.01	50.01	74.00	-23.99	peak
3	5499.090	102.51	7.00	109.51	74.00	35.51	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



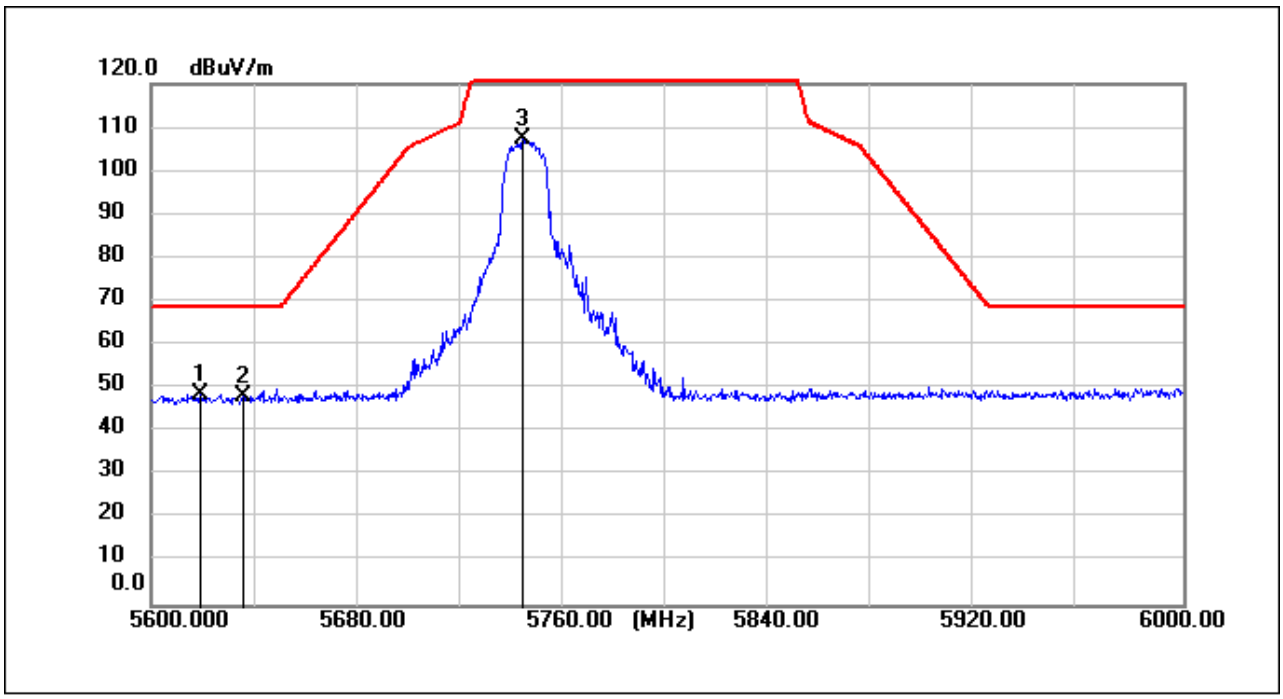
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5443.330	41.67	7.02	48.69	74.00	-25.31	peak
2	5460.000	40.52	7.01	47.53	74.00	-26.47	peak
3	5500.110	97.10	7.00	104.10	74.00	30.10	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



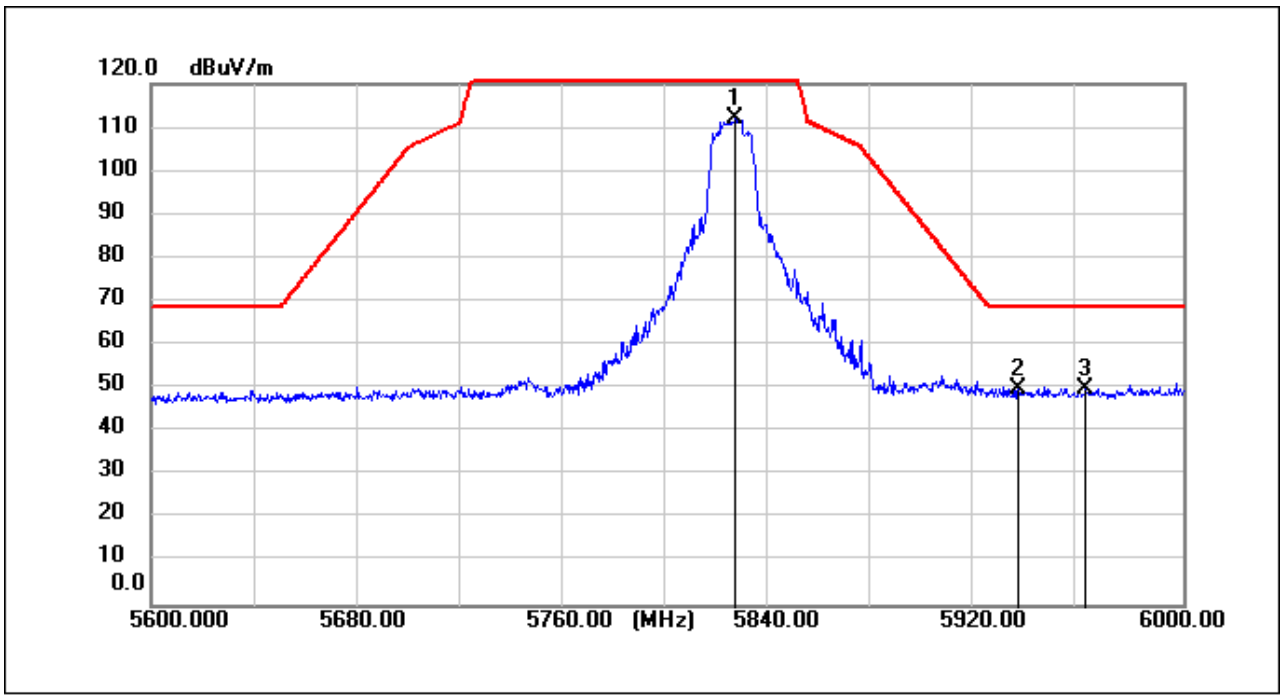
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5624.400	42.00	7.14	49.14	68.20	-19.06	peak
2	5640.400	41.63	7.18	48.81	68.20	-19.39	peak
3	5744.000	106.39	7.42	113.81	135.00	-21.19	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



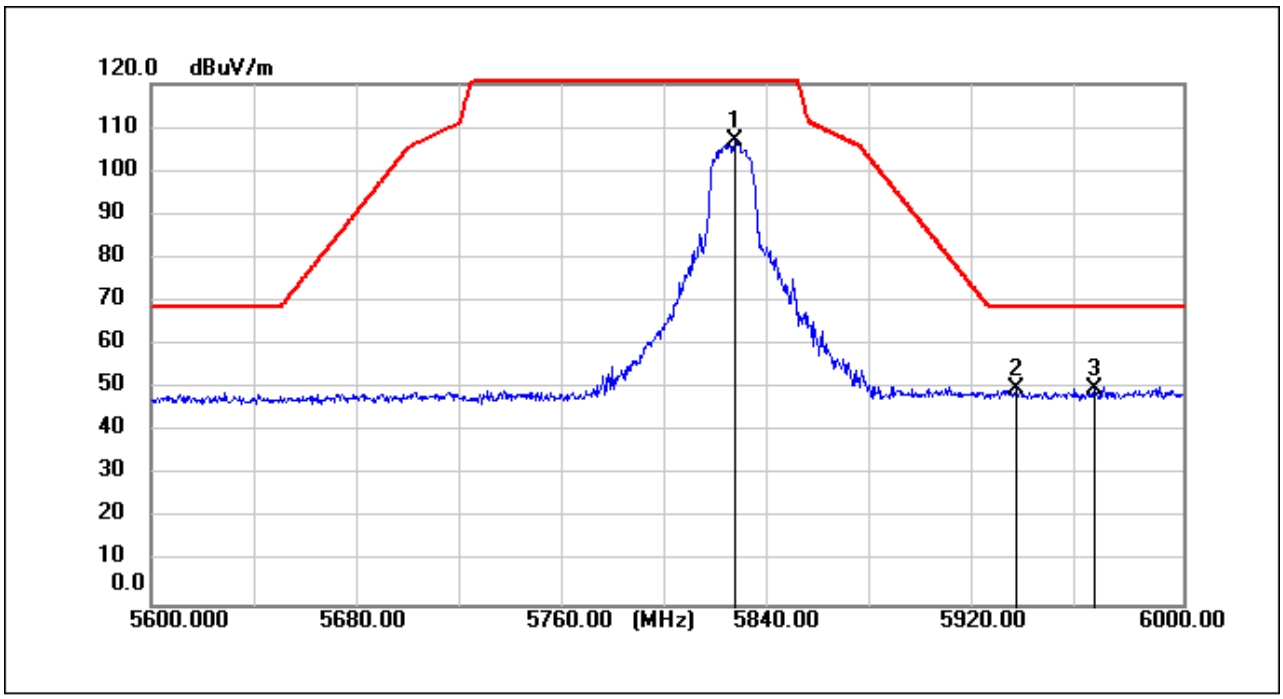
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5618.800	41.30	7.13	48.43	68.20	-19.77	peak
2	5636.000	40.89	7.16	48.05	68.20	-20.15	peak
3	5744.000	99.87	7.42	107.29	135.00	-27.71	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



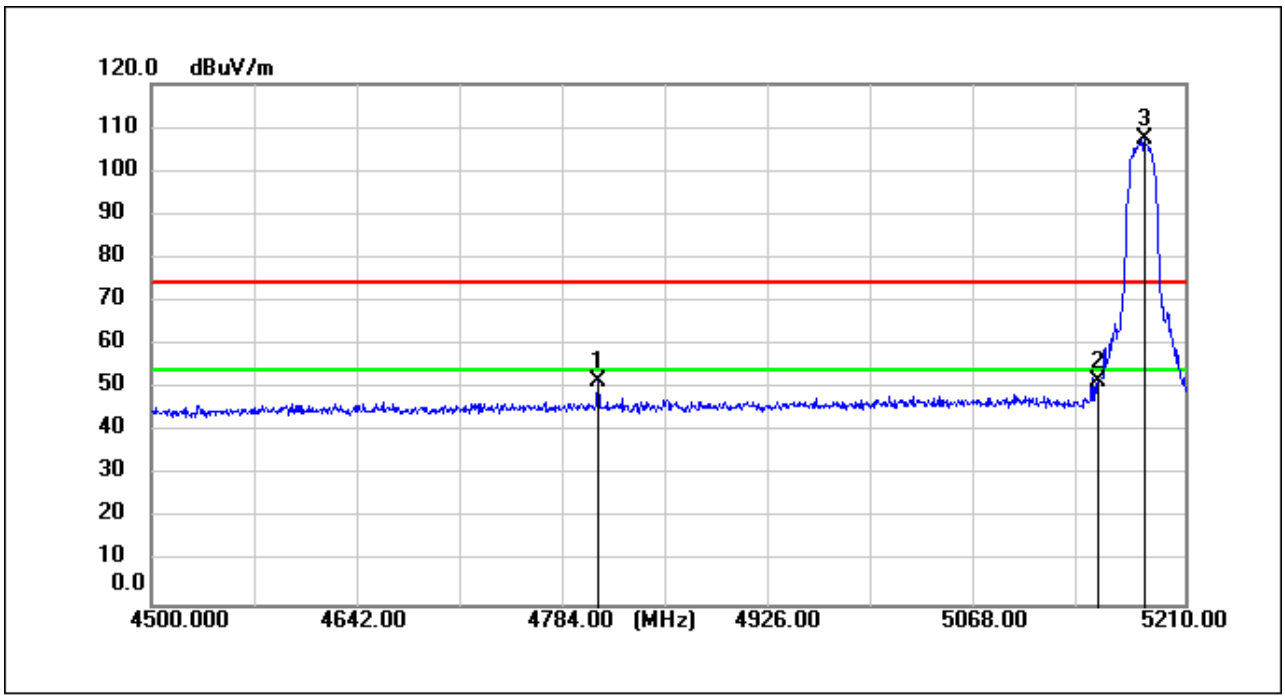
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5826.400	104.27	7.62	111.89	135.00	-23.11	peak
2	5936.400	42.17	7.87	50.04	68.20	-18.16	peak
3	5962.400	41.99	7.93	49.92	68.20	-18.28	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



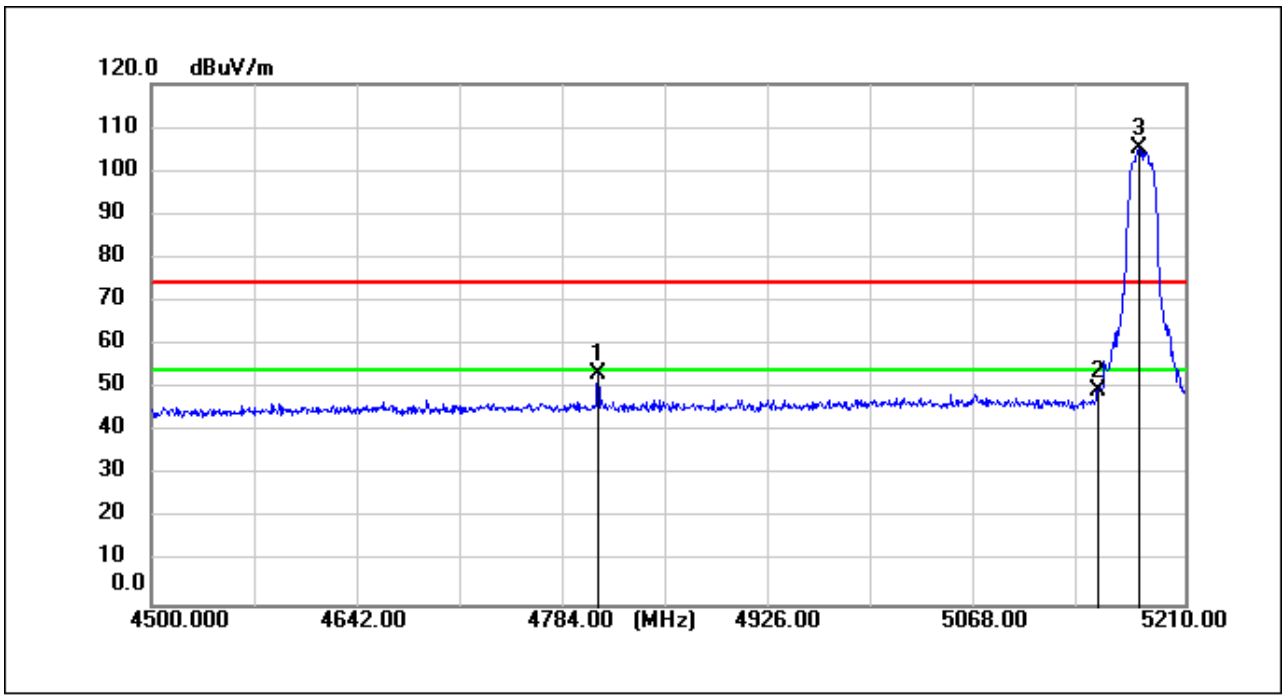
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5826.400	99.13	7.62	106.75	135.00	-28.25	peak
2	5935.200	41.93	7.86	49.79	68.20	-18.41	peak
3	5965.600	42.15	7.93	50.08	68.20	-18.12	peak

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



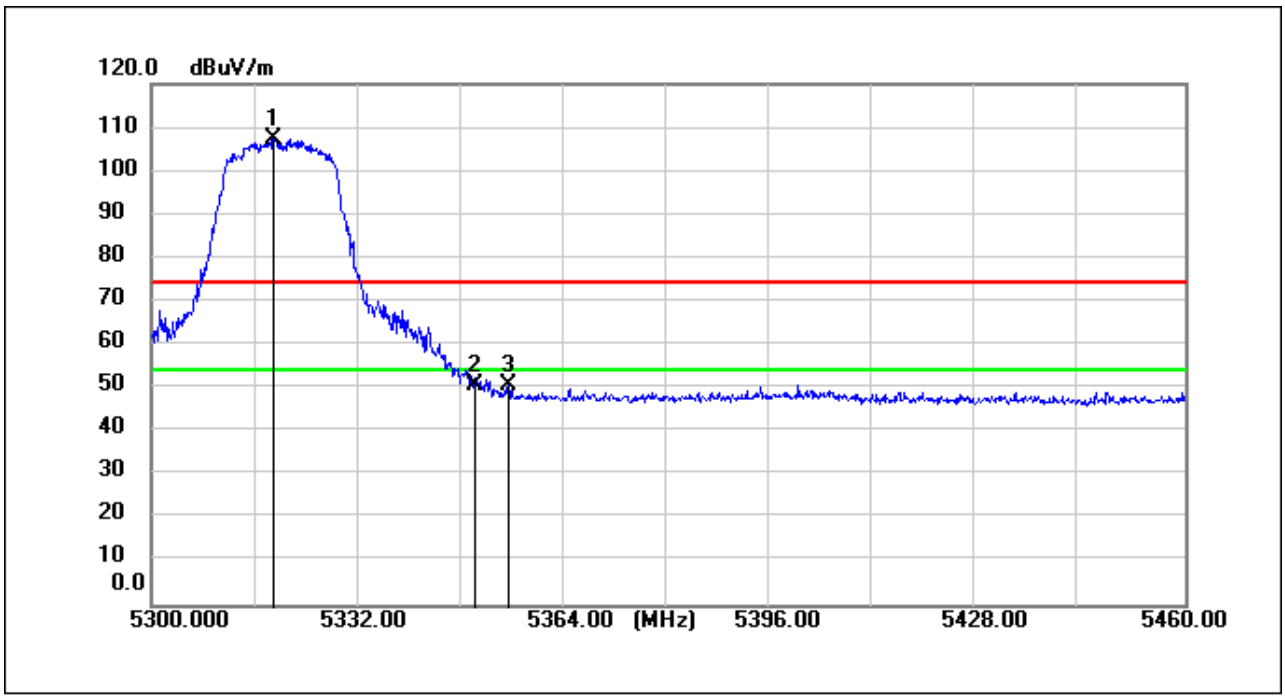
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4806.720	44.84	6.59	51.43	74.00	-22.57	peak
2	5150.000	44.43	7.12	51.55	74.00	-22.45	peak
3	5182.310	100.17	7.10	107.27	74.00	33.27	peak

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



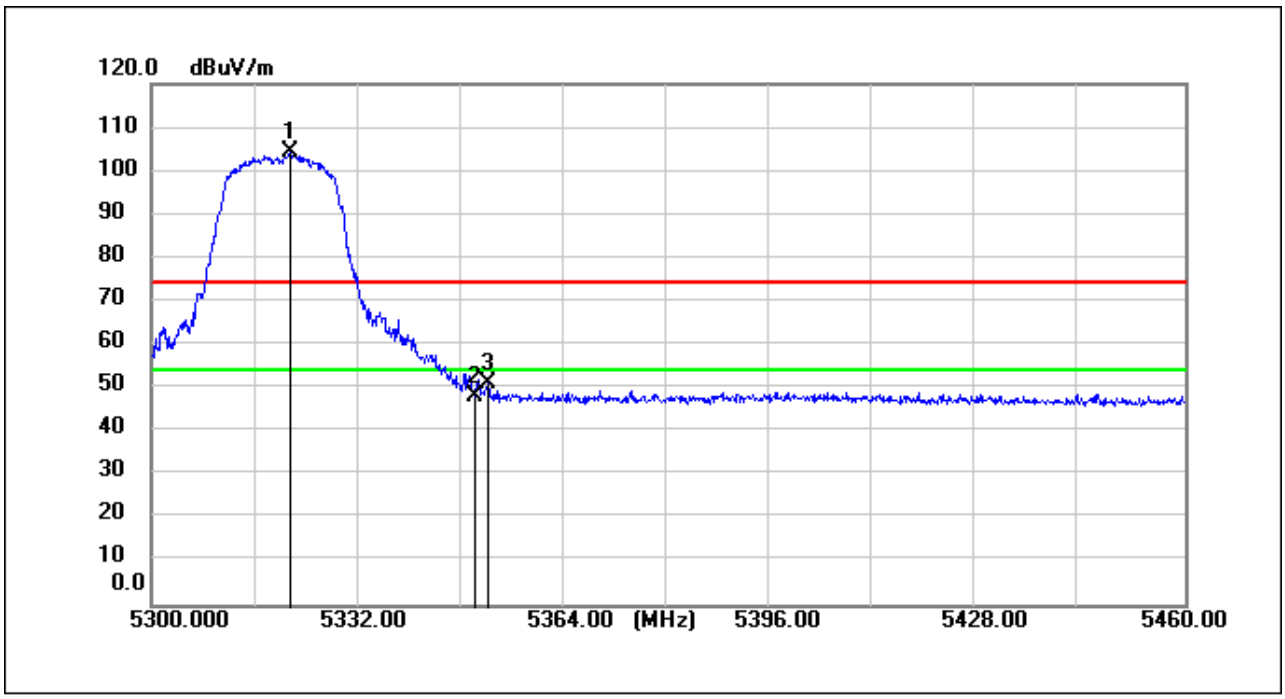
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4806.720	46.65	6.59	53.24	74.00	-20.76	peak
2	5150.000	42.44	7.12	49.56	74.00	-24.44	peak
3	5178.760	97.89	7.11	105.00	74.00	31.00	peak

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



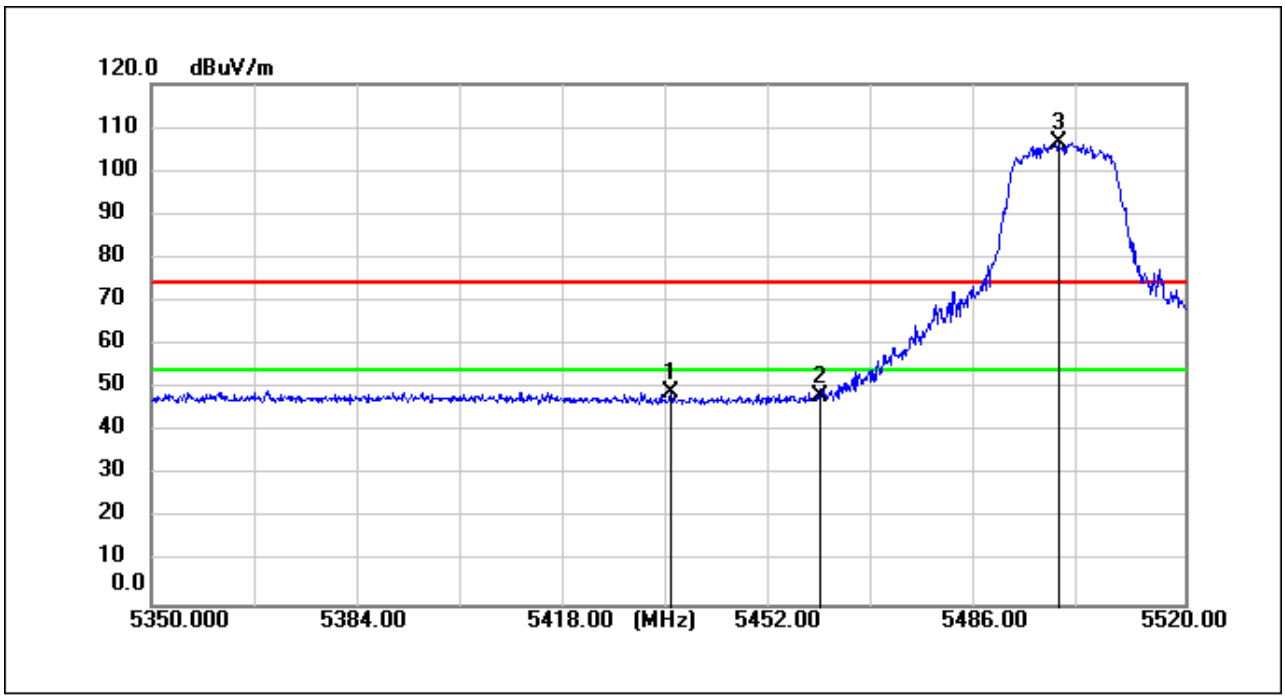
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5318.880	100.28	7.07	107.35	74.00	33.35	peak
2	5350.000	43.59	7.05	50.64	74.00	-23.36	peak
3	5355.360	43.53	7.05	50.58	74.00	-23.42	peak

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



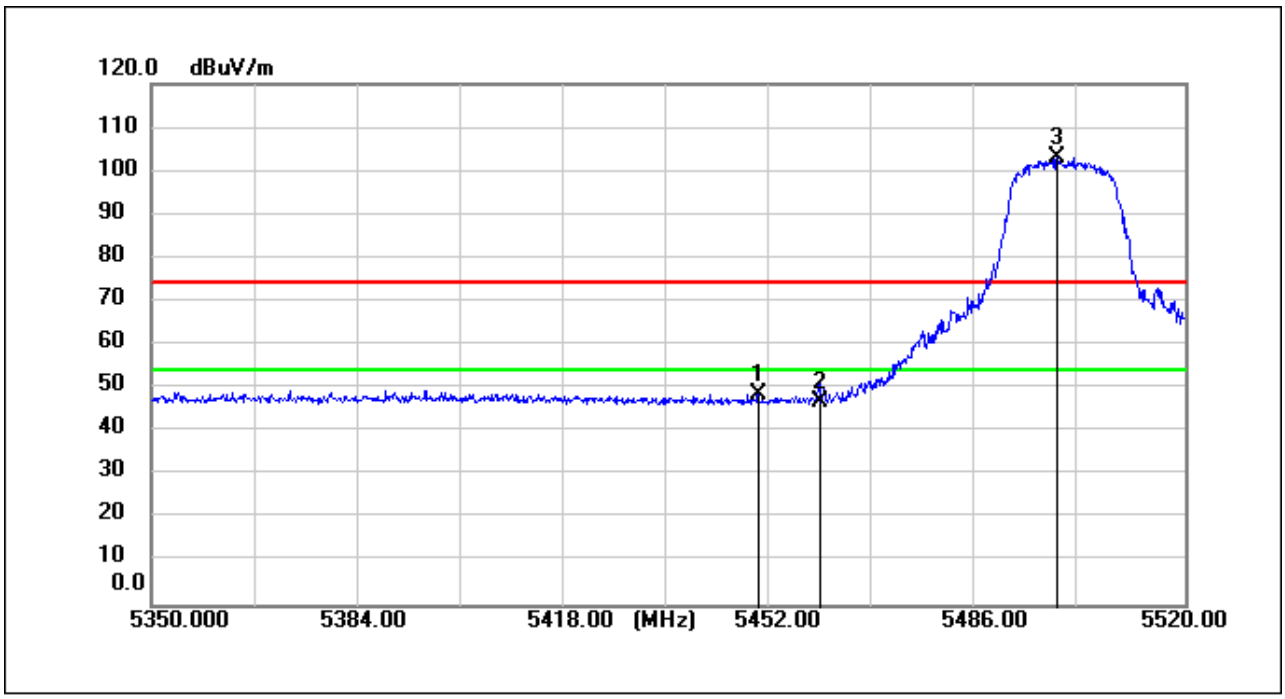
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5321.440	97.25	7.06	104.31	74.00	30.31	peak
2	5350.000	41.15	7.05	48.20	74.00	-25.80	peak
3	5352.000	43.98	7.05	51.03	74.00	-22.97	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



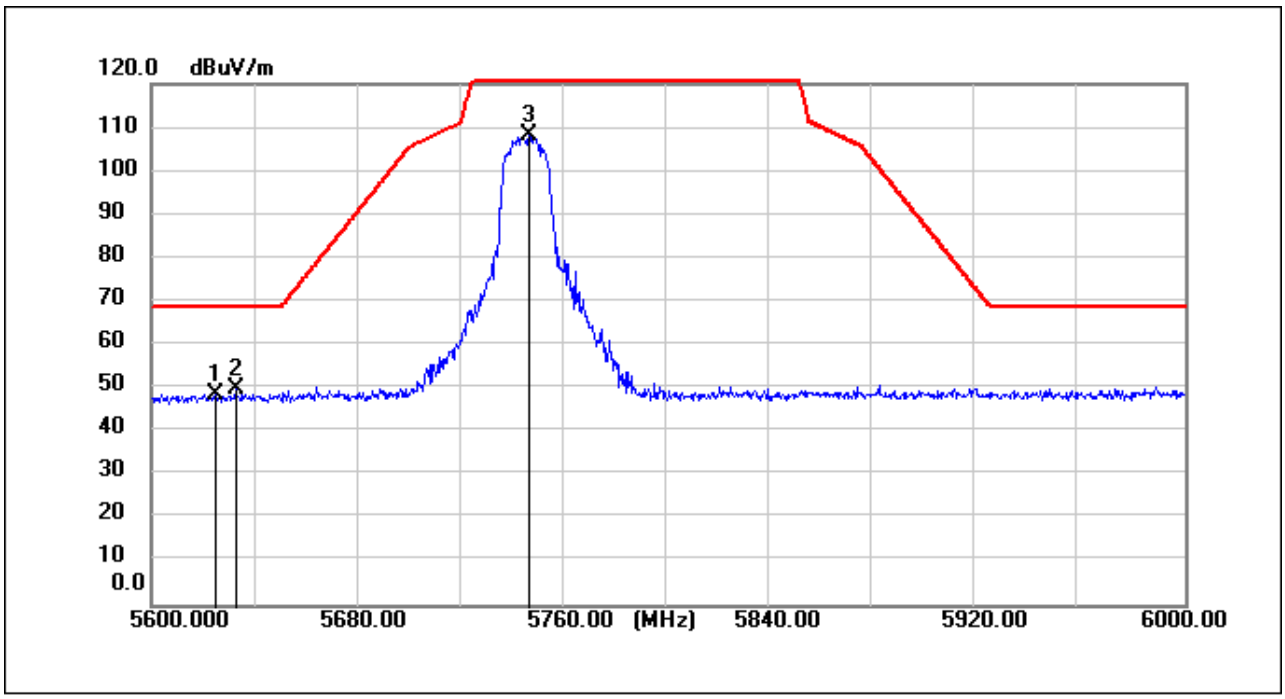
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5435.340	42.21	7.02	49.23	74.00	-24.77	peak
2	5460.000	41.34	7.01	48.35	74.00	-25.65	peak
3	5499.260	99.69	7.00	106.69	74.00	32.69	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



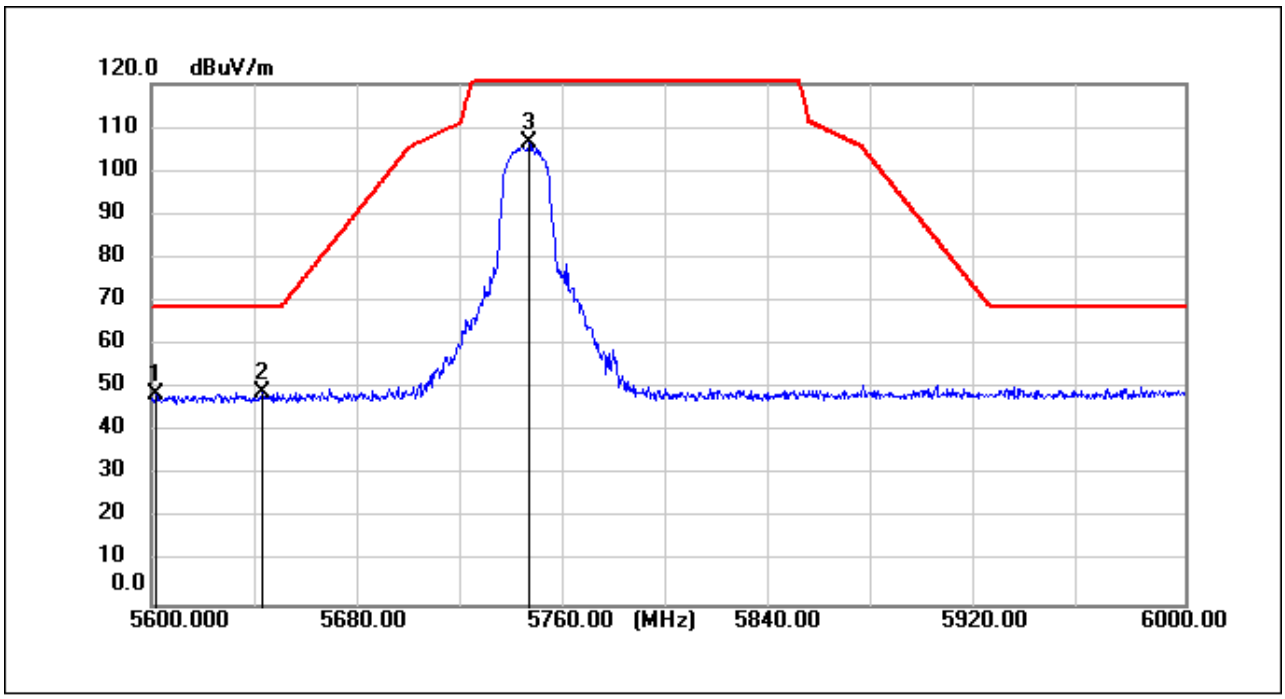
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5449.790	41.75	7.02	48.77	74.00	-25.23	peak
2	5460.000	40.06	7.01	47.07	74.00	-26.93	peak
3	5499.090	95.99	7.00	102.99	74.00	28.99	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



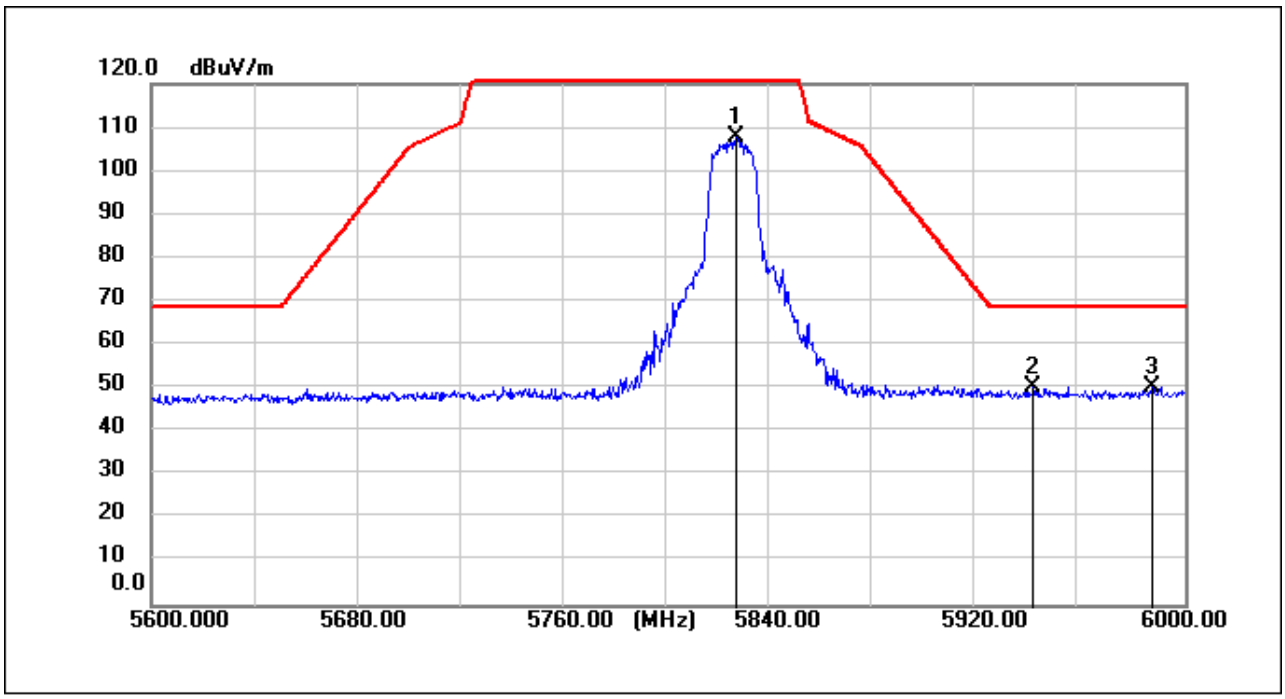
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5624.800	41.71	7.14	48.85	68.20	-19.35	peak
2	5632.800	42.58	7.16	49.74	68.20	-18.46	peak
3	5746.400	100.92	7.42	108.34	135.00	-26.66	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



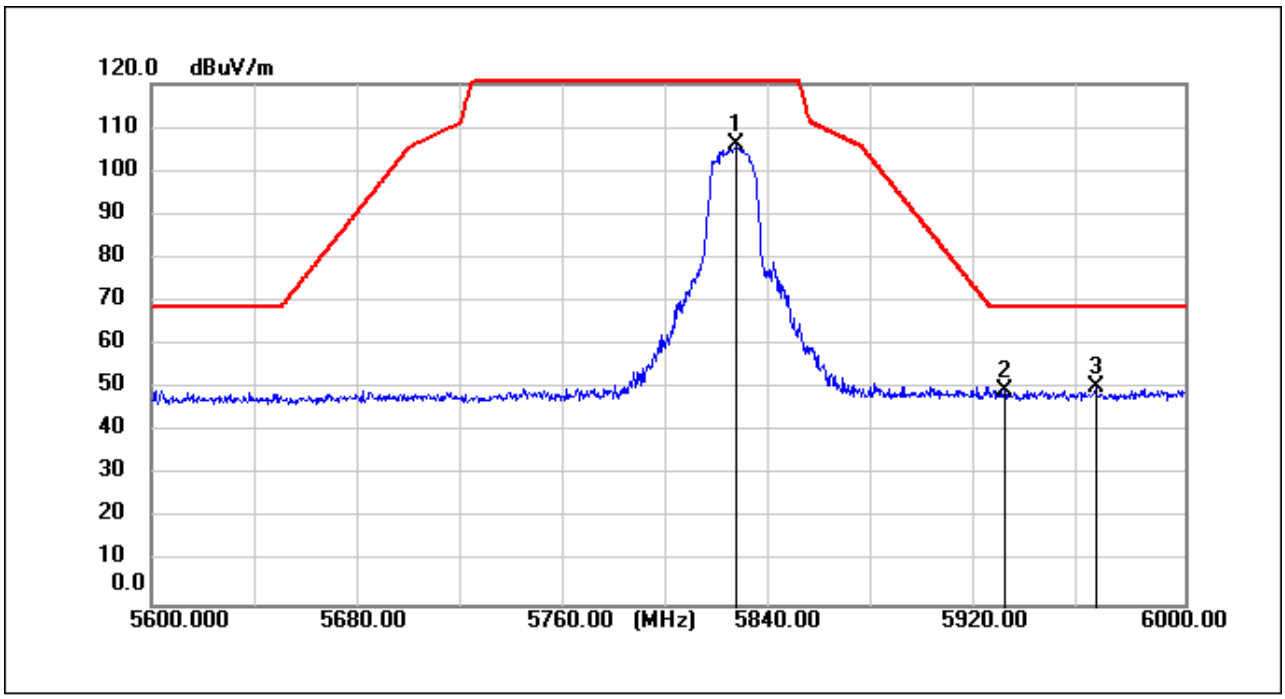
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5602.000	41.69	7.09	48.78	68.20	-19.42	peak
2	5643.200	41.81	7.18	48.99	68.20	-19.21	peak
3	5746.400	99.04	7.42	106.46	135.00	-28.54	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



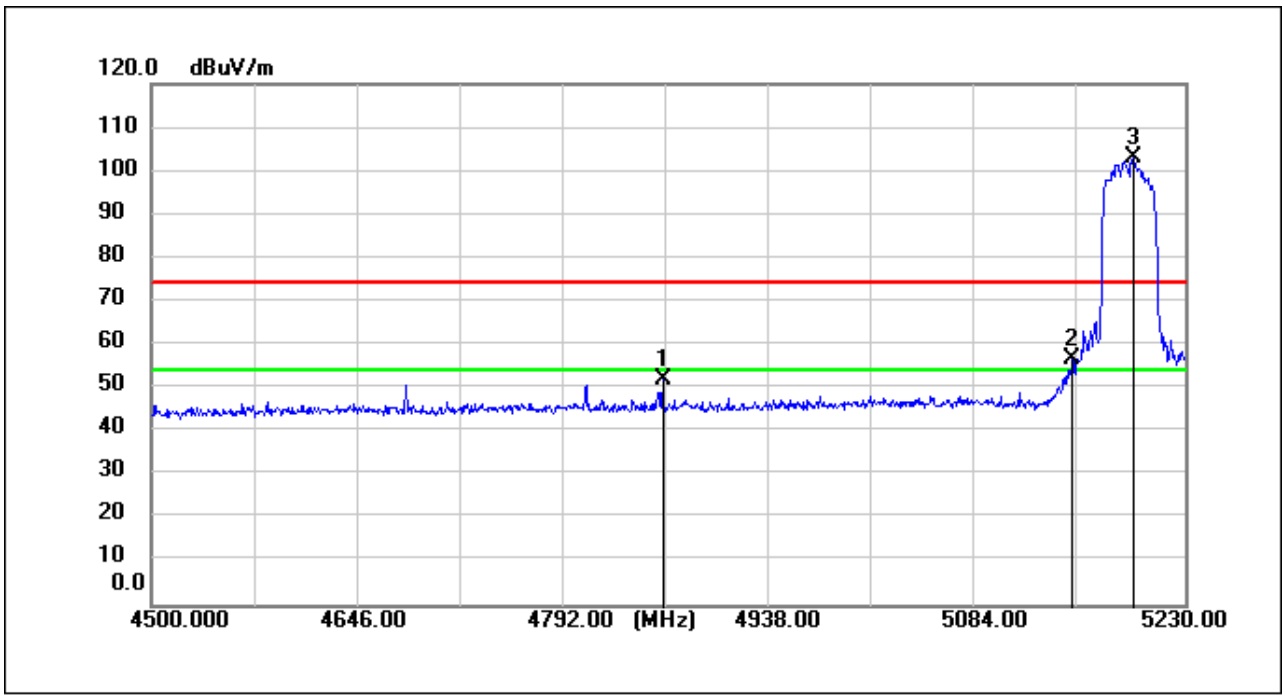
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5826.400	100.19	7.62	107.81	135.00	-27.19	peak
2	5941.200	42.27	7.89	50.16	68.20	-18.04	peak
3	5987.200	42.49	7.99	50.48	68.20	-17.72	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



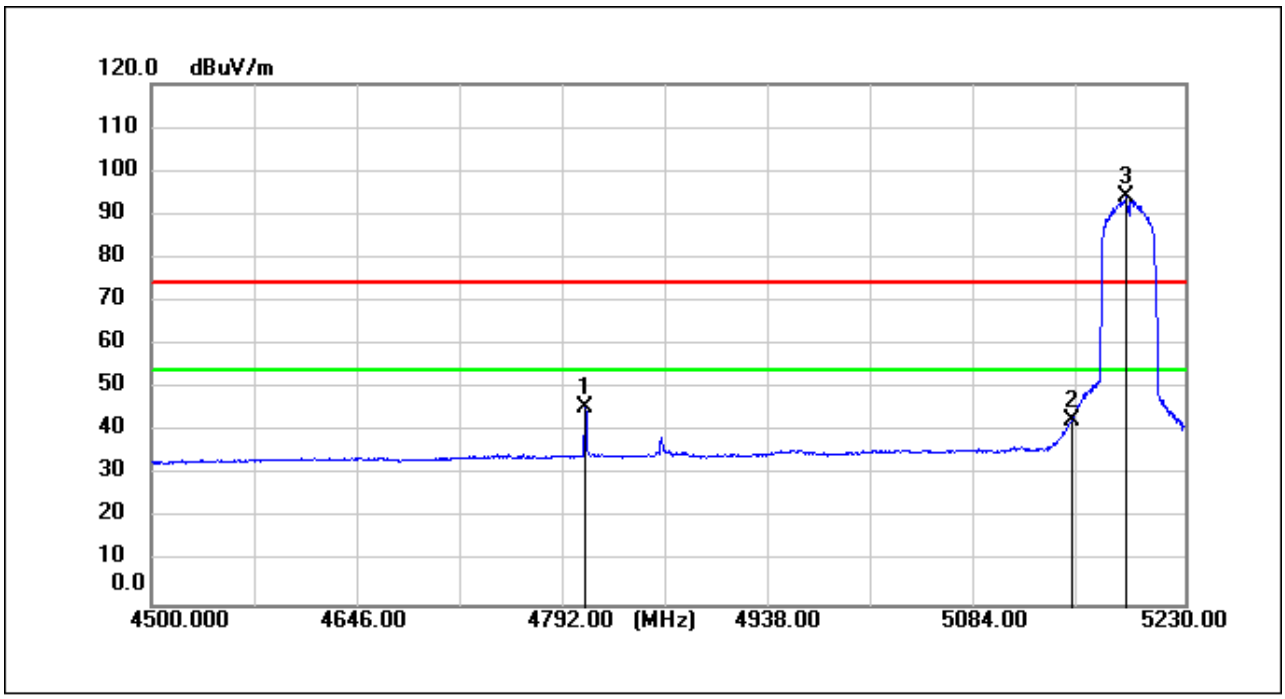
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5826.400	98.36	7.62	105.98	135.00	-29.02	peak
2	5930.400	41.61	7.86	49.47	68.20	-18.73	peak
3	5965.600	42.57	7.93	50.50	68.20	-17.70	peak

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



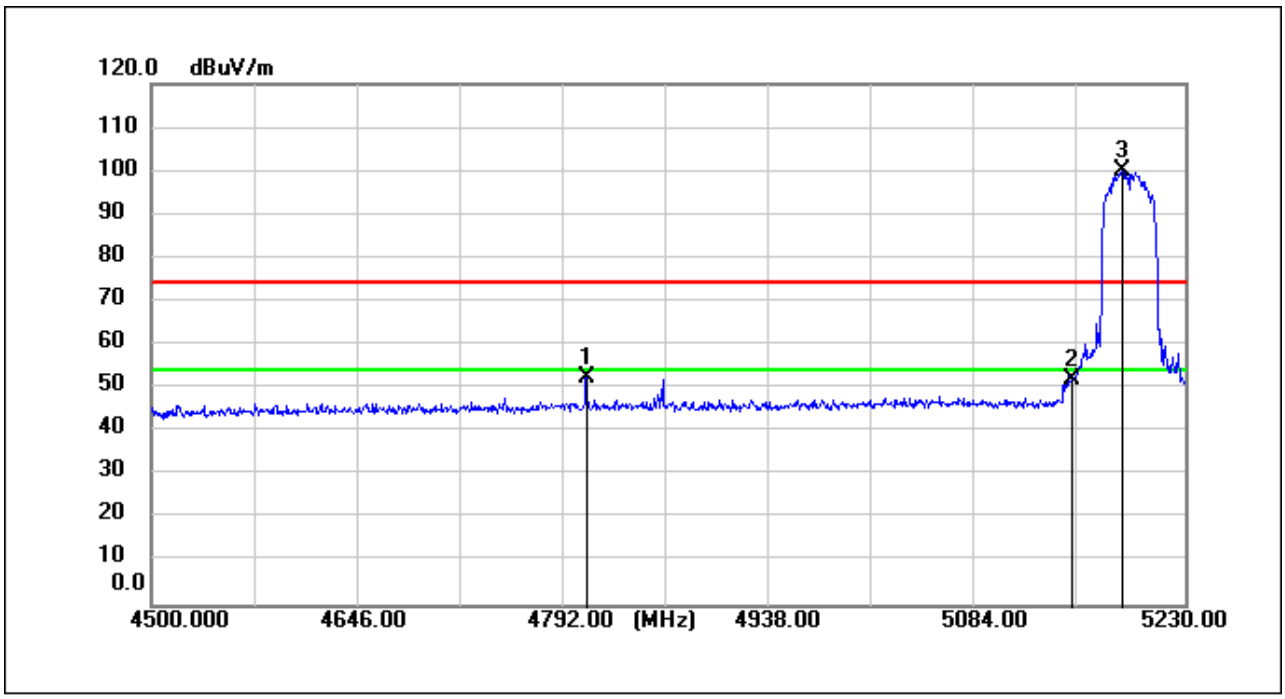
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4861.350	45.35	6.75	52.10	74.00	-21.90	peak
2	5150.000	49.83	7.12	56.95	74.00	-17.05	peak
3	5193.500	96.08	7.11	103.19	74.00	29.19	peak

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



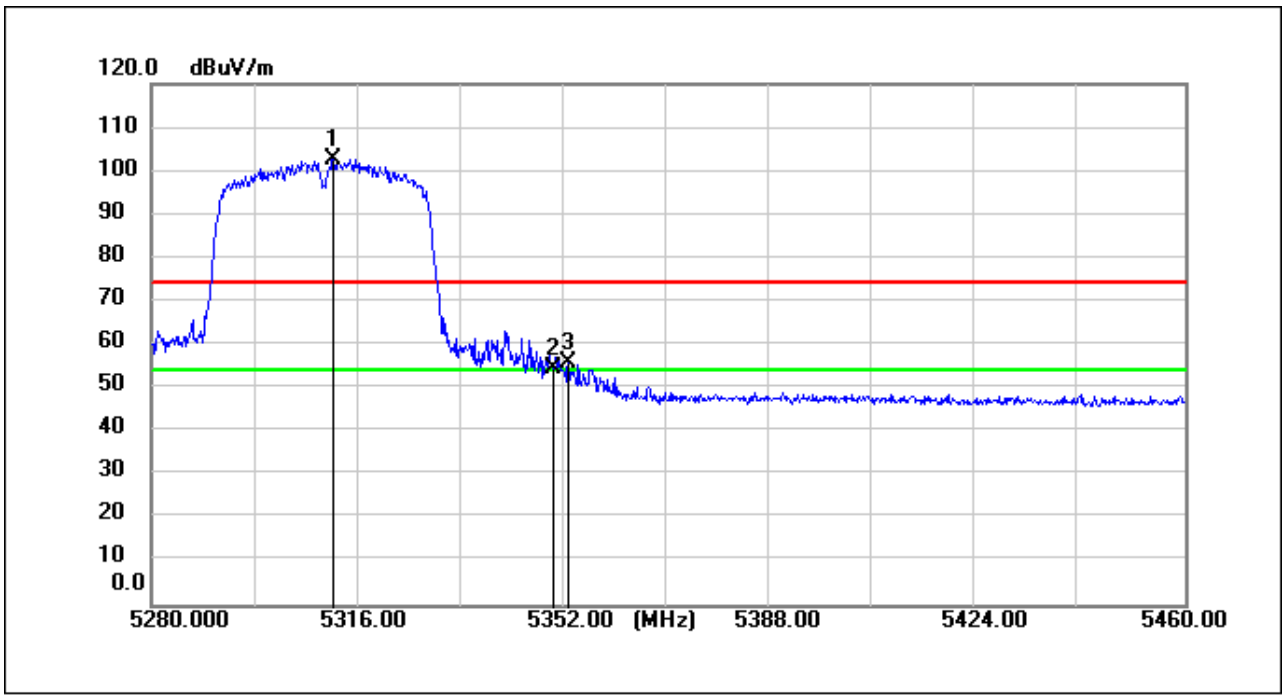
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4806.600	39.06	6.59	45.65	54.00	-8.35	AVG
2	5150.000	35.46	7.12	42.58	54.00	-11.42	AVG
3	5188.390	86.81	7.11	93.92	54.00	39.92	AVG

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



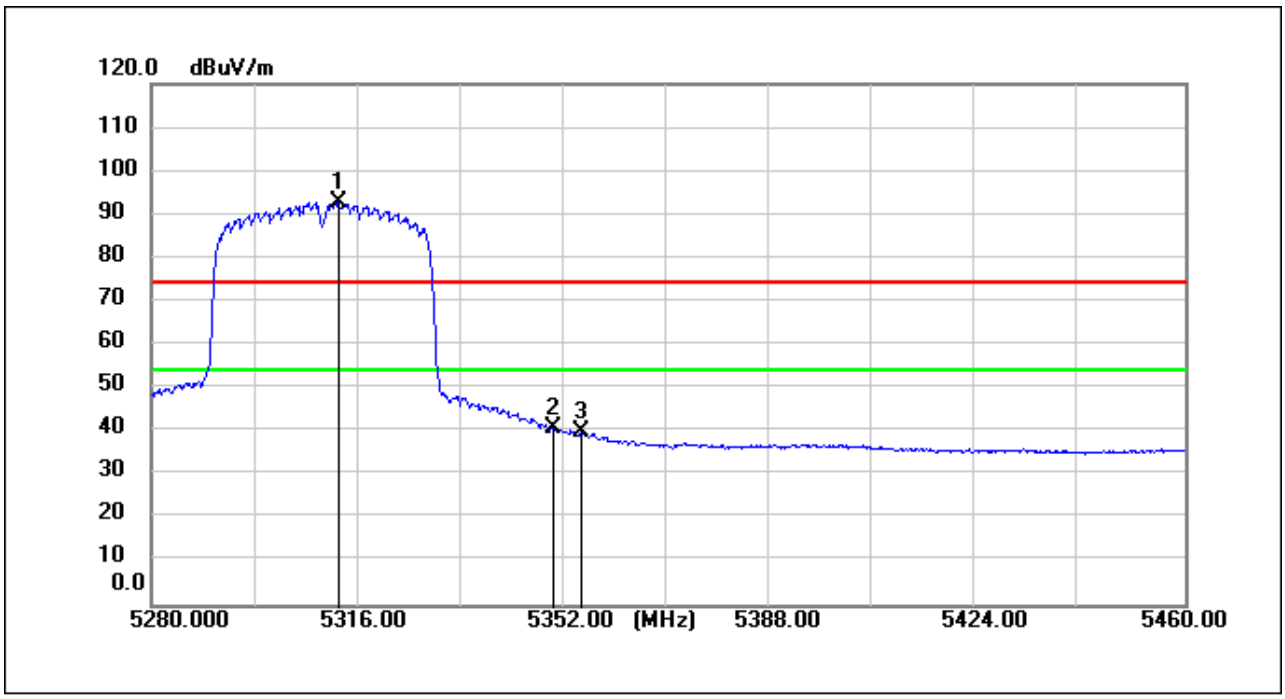
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4807.330	45.93	6.60	52.53	74.00	-21.47	peak
2	5150.000	45.13	7.12	52.25	74.00	-21.75	peak
3	5186.200	92.92	7.11	100.03	74.00	26.03	peak

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



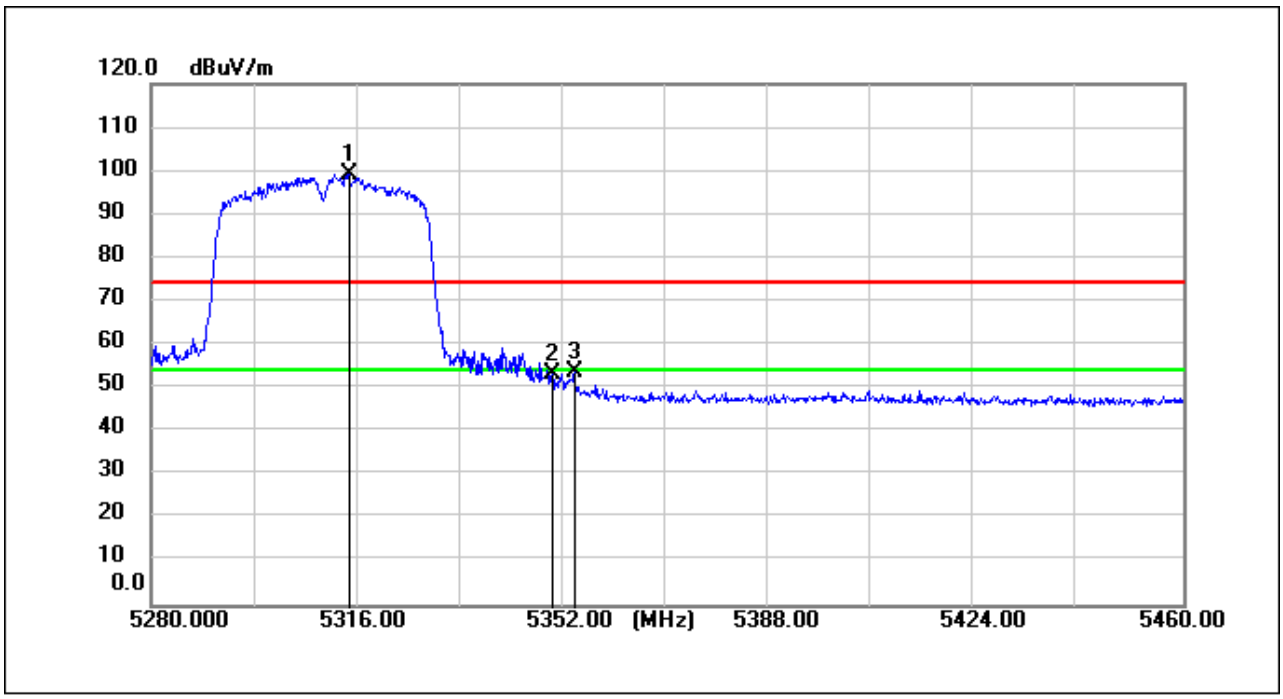
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5311.680	95.72	7.06	102.78	74.00	28.78	peak
2	5350.000	47.59	7.05	54.64	74.00	-19.36	peak
3	5352.720	49.05	7.05	56.10	74.00	-17.90	peak

Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



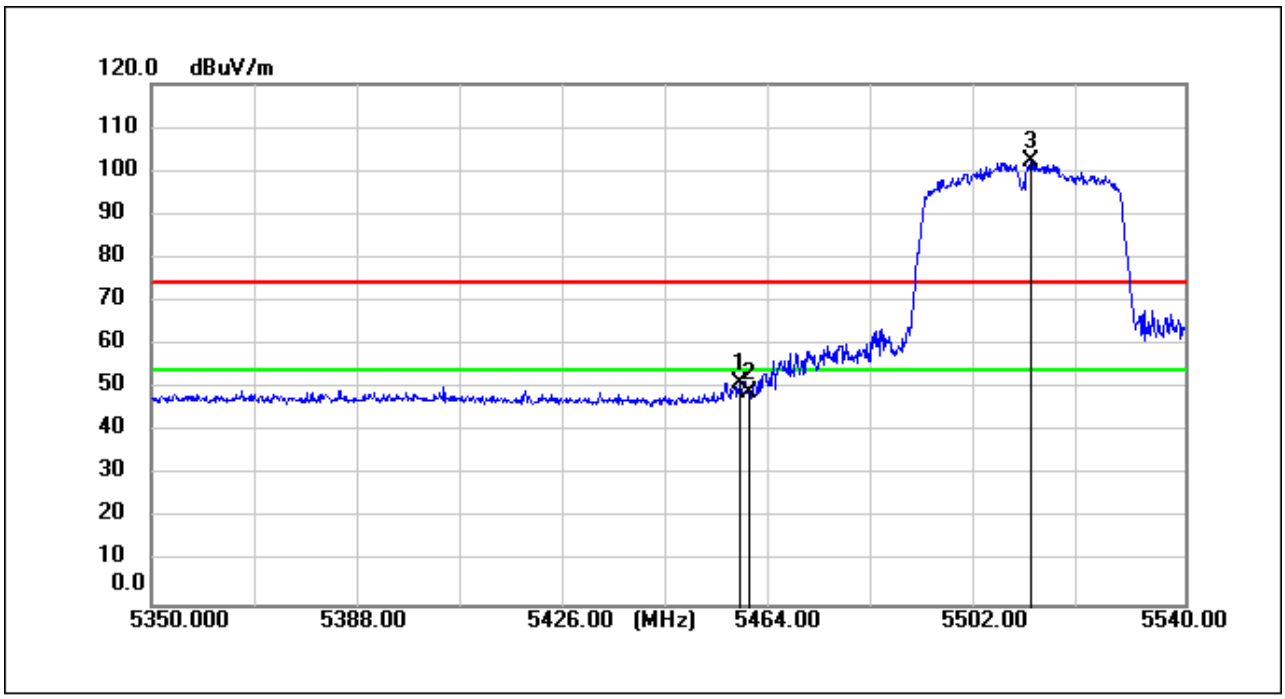
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5312.580	85.82	7.06	92.88	54.00	38.88	AVG
2	5350.000	33.83	7.05	40.88	54.00	-13.12	AVG
3	5354.880	32.89	7.05	39.94	54.00	-14.06	AVG

Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



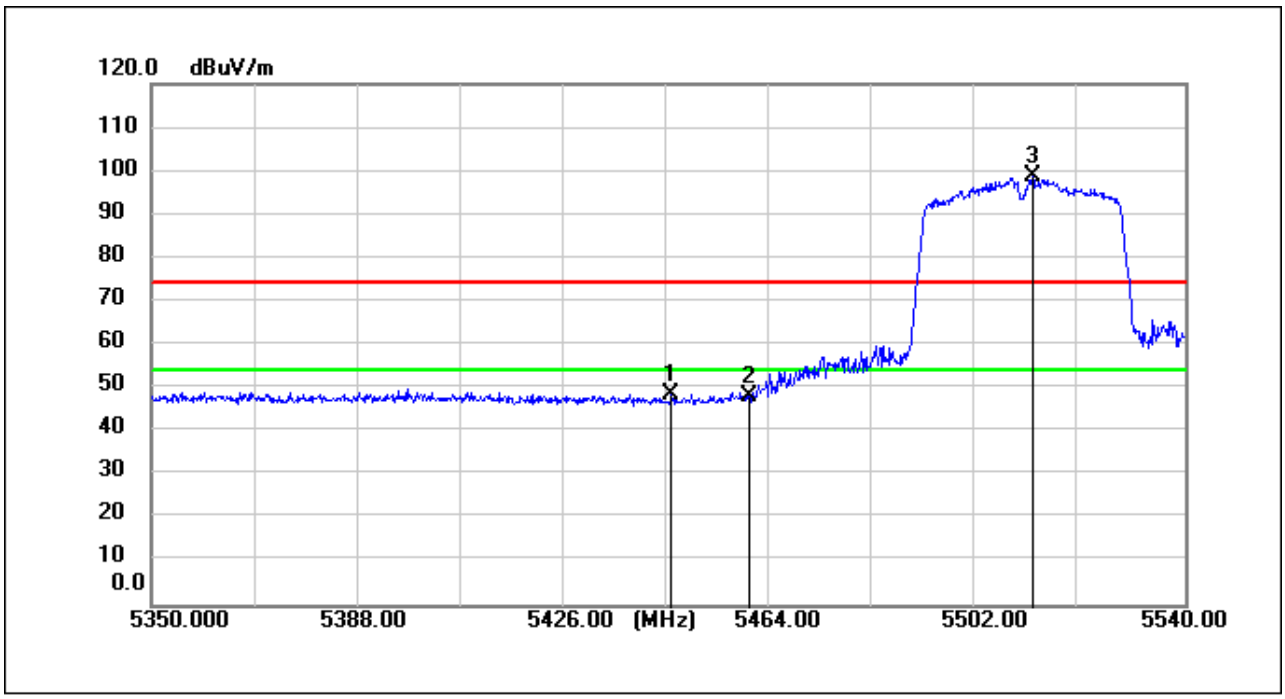
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5314.560	92.09	7.06	99.15	74.00	25.15	peak
2	5350.000	46.16	7.05	53.21	74.00	-20.79	peak
3	5353.800	46.75	7.05	53.80	74.00	-20.20	peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



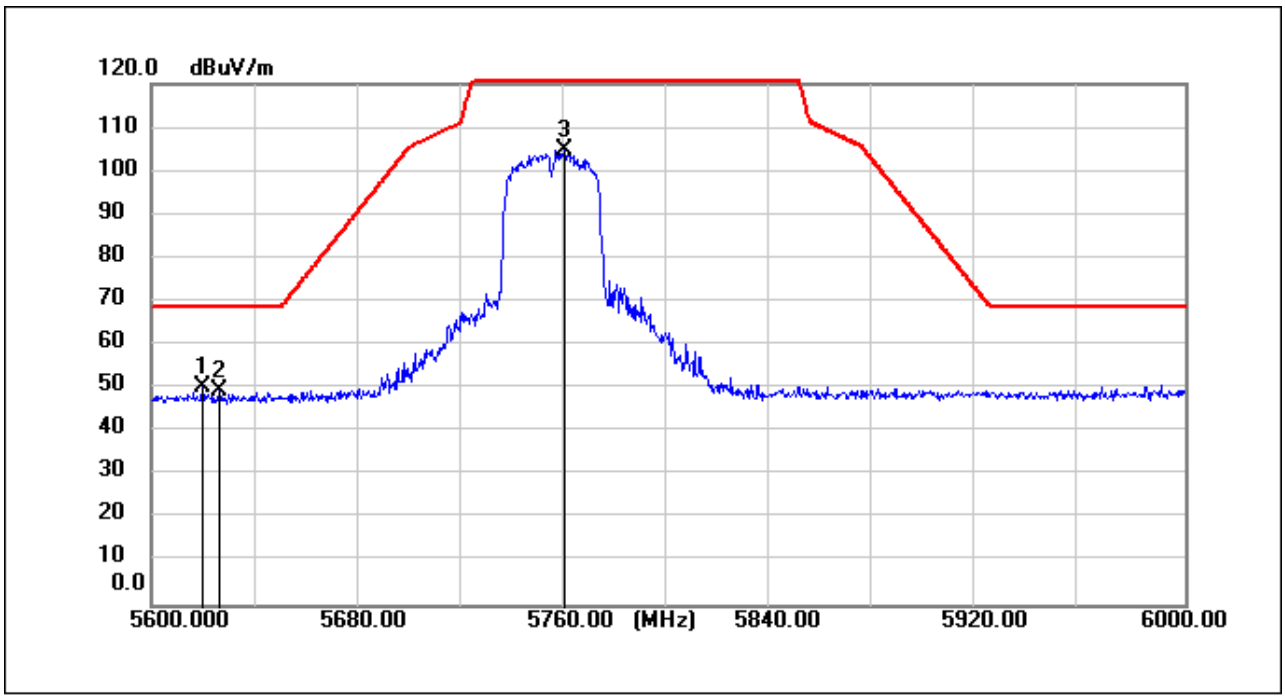
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5458.300	44.41	7.01	51.42	74.00	-22.58	peak
2	5460.000	42.18	7.01	49.19	74.00	-24.81	peak
3	5511.690	95.39	6.99	102.38	74.00	28.38	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



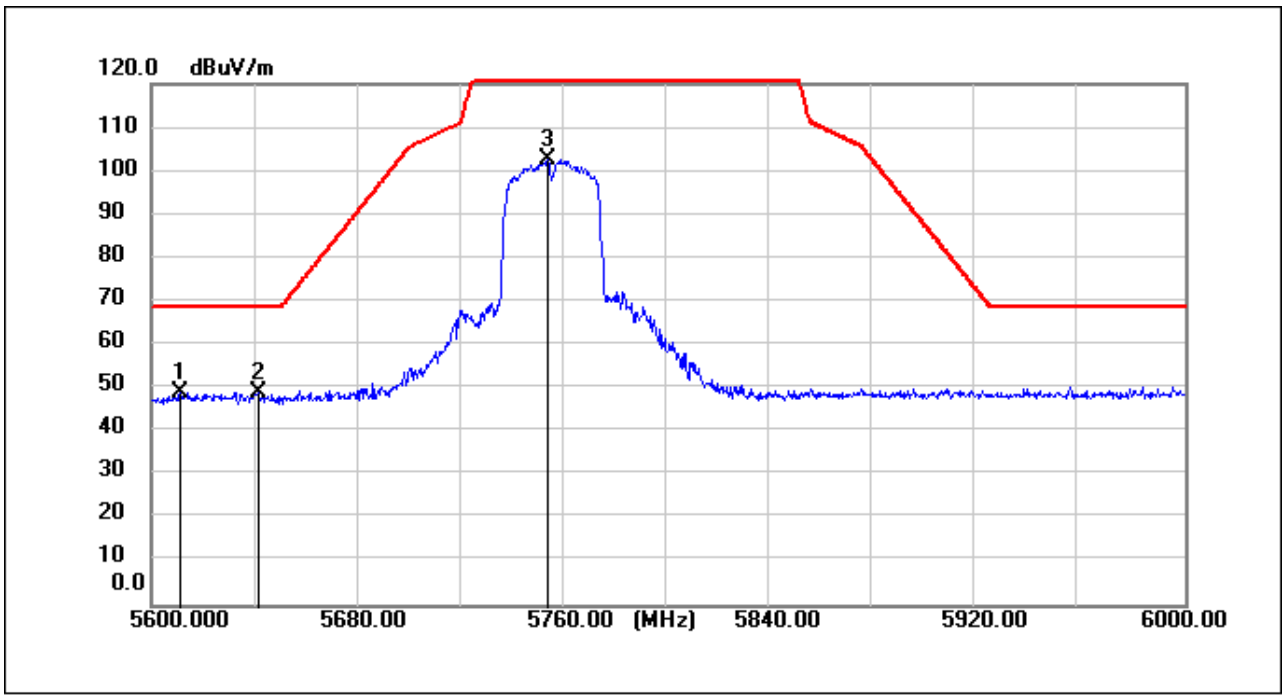
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5445.570	41.78	7.02	48.80	74.00	-25.20	peak
2	5460.000	41.28	7.01	48.29	74.00	-25.71	peak
3	5511.880	91.68	6.99	98.67	74.00	24.67	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



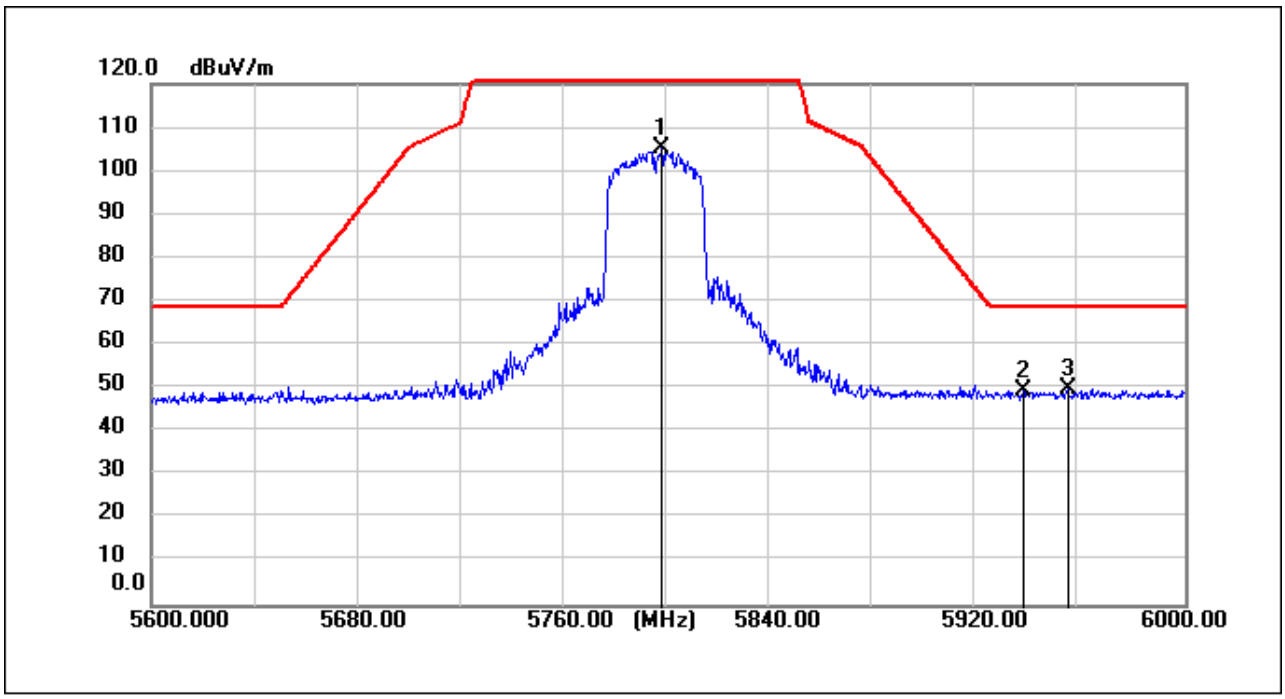
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5620.000	43.17	7.12	50.29	68.20	-17.91	peak
2	5626.000	42.29	7.14	49.43	68.20	-18.77	peak
3	5760.000	97.22	7.45	104.67	135.00	-30.33	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



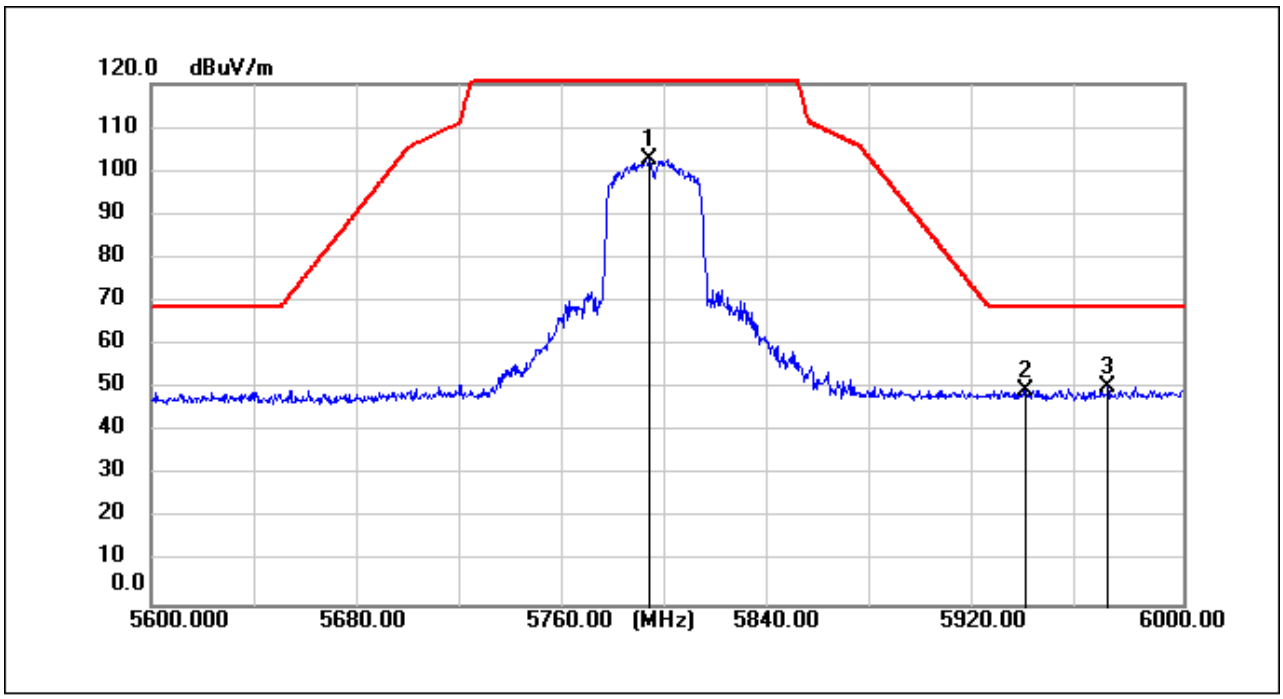
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5611.200	41.79	7.11	48.90	68.20	-19.30	peak
2	5641.200	42.05	7.18	49.23	68.20	-18.97	peak
3	5753.200	95.31	7.44	102.75	135.00	-32.25	peak

Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5797.600	97.63	7.54	105.17	135.00	-29.83	peak
2	5937.600	41.84	7.87	49.71	68.20	-18.49	peak
3	5954.800	42.09	7.92	50.01	68.20	-18.19	peak

Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5792.800	95.18	7.53	102.71	135.00	-32.29	peak
2	5939.200	41.83	7.88	49.71	68.20	-18.49	peak
3	5970.800	42.23	7.95	50.18	68.20	-18.02	peak

7.6 Channel Move Time

Test Requirement KDB 905462 D02 Section 5.1
Test Method: KDB 905462 D02 Section 7.8.3

Limit:

Test item	Limit	Applicability	
		Master Device or client with Radar Detection	Client without Radar Detection
Non-occupancy period	Minimum 30 minutes	Yes	Not required
Channel Availability Check Time	60 seconds	Yes	Not required
Channel Move Time	10 seconds See Note 1.	Yes	Yes
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.	Yes	Yes
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.	Yes	Not required

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

7.6.1 E.U.T. Operation

Operating Environment:

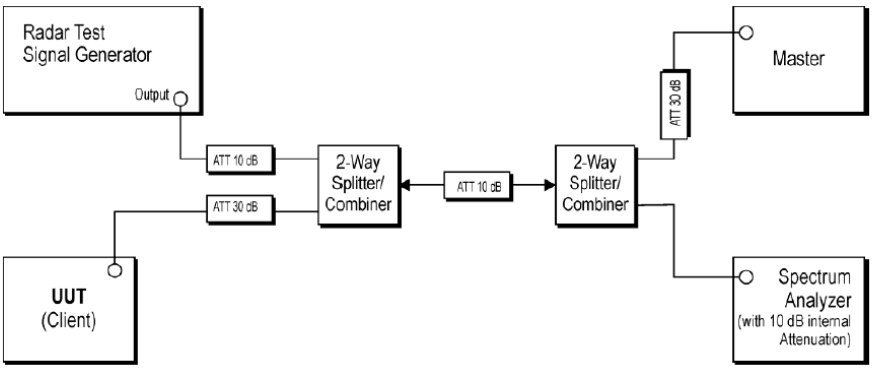
Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only

		the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details

7.7 Non-occupancy period

Test Requirement KDB 905462 D02 Section 5.1
Test Method: KDB 905462 D02 Section 7.8.3

Limit:

Test item	Limit	Applicability	
		Master Device or client with Radar Detection	Client without Radar Detection
Non-occupancy period	Minimum 30 minutes	Yes	Not required
Channel Availability Check Time	60 seconds	Yes	Not required
Channel Move Time	10 seconds See Note 1.	Yes	Yes
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.	Yes	Yes
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.	Yes	Not required

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

7.7.1 E.U.T. Operation

Operating Environment:

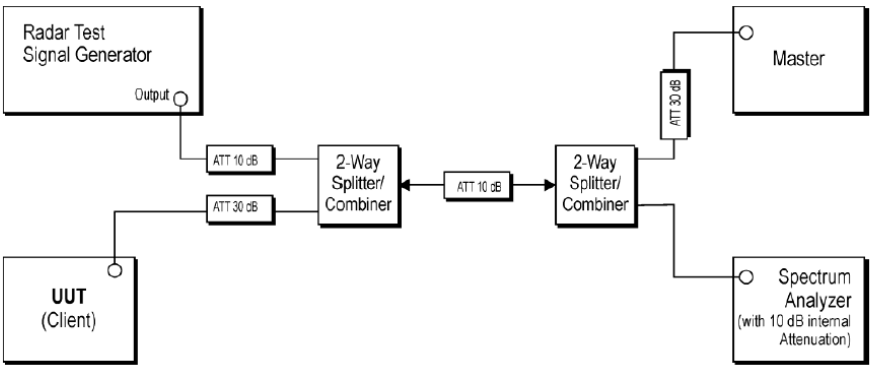
Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only

		the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details

7.8 Channel Closing Transmission Time

Test Requirement KDB 905462 D02 Section 5.1
Test Method: KDB 905462 D02 Section 7.8.3

Limit:

Test item	Limit	Applicability	
		Master Device or client with Radar Detection	Client without Radar Detection
Non-occupancy period	Minimum 30 minutes	Yes	Not required
Channel Availability Check Time	60 seconds	Yes	Not required
Channel Move Time	10 seconds See Note 1.	Yes	Yes
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.	Yes	Yes
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.	Yes	Not required

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

7.8.1 E.U.T. Operation

Operating Environment:

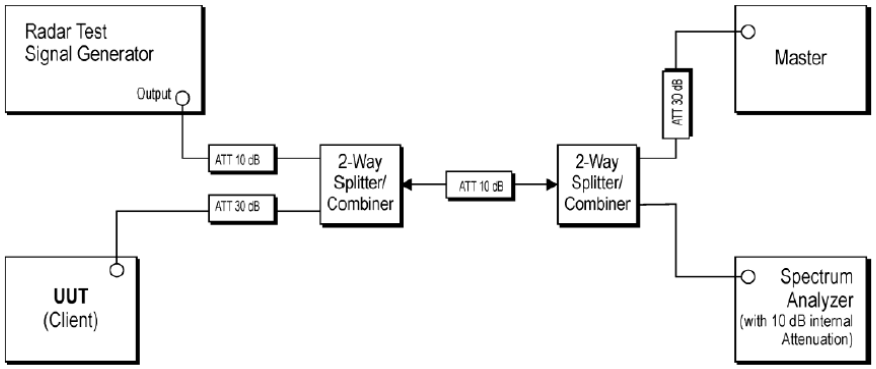
Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only

		the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram



7.8.4 Measurement Procedure and Data

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details

7.9 Duty Cycle

Test Requirement ANSI C63.10 (2013) Section 12.2

Test Method: ANSI C63.10 (2013) Section 12.2

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	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.9.3 Measurement Procedure and Data

Please Refer to Appendix for Details

7.10 99% Bandwidth

Test Requirement ANSI C63.10 (2013) Section 12.4.2
Test Method: ANSI C63.10 (2013) Section 12.4.2

7.10.1 E.U.T. Operation

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

7.10.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.10.3 Measurement Procedure and Data

Please Refer to Appendix for Details

7.11 26dB Emission bandwidth

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)
Test Method: ANSI C63.10 (2013) Section 12.4.1

7.11.1 E.U.T. Operation

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

7.11.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.11.3 Measurement Procedure and Data

Please Refer to Appendix for Details

7.12 Minimum 6 dB bandwidth (5.725-5.85 GHz band)

Test Requirement 47 CFR Part 15, Subpart E 15.407 (e)
Test Method: ANSI C63.10 (2013) Section 6.9.2

Limit:

Frequency band(MHz)	Limit
5725-5850	⩾500 kHz

7.12.1 E.U.T. Operation

Operating Environment:
Temperature: 20.5 °C Humidity: 50.8 % RH Atmospheric Pressure: 1010 mbar

7.12.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.12.3 Measurement Procedure and Data

Please Refer to Appendix for Details

7.13 Peak Power spectrum density

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)
Test Method: ANSI C63.10 (2013) Section 12.5

Limit:

Frequency band(MHz)	Limit
5150-5250	≤17dBm in 1MHz for master device
	≤11dBm in 1MHz for client device
5250-5350	≤11dBm in 1MHz for client device
5470-5725	≤11dBm in 1MHz for client device
5725-5850	≤30dBm in 500 kHz
Remark:	The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.

7.13.1 E.U.T. Operation

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

7.13.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.13.3 Measurement Procedure and Data

Please Refer to Appendix for Details

7.14 Frequency Stability

Test Requirement 47 CFR Part 15, Subpart E 15.407 (g)
Test Method: ANSI C63.10 (2013) Section 6.8

7.14.1 E.U.T. Operation

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

7.14.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.
Final test	08	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report.

7.14.3 Measurement Procedure and Data

Please Refer to Appendix for Details

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2502000154AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix_Photographs of EUT Constructional Details for KSCR2502000154AT

10 Appendix

1. Duty Cycle

1.1 Test Result

1.1.1 Ant1

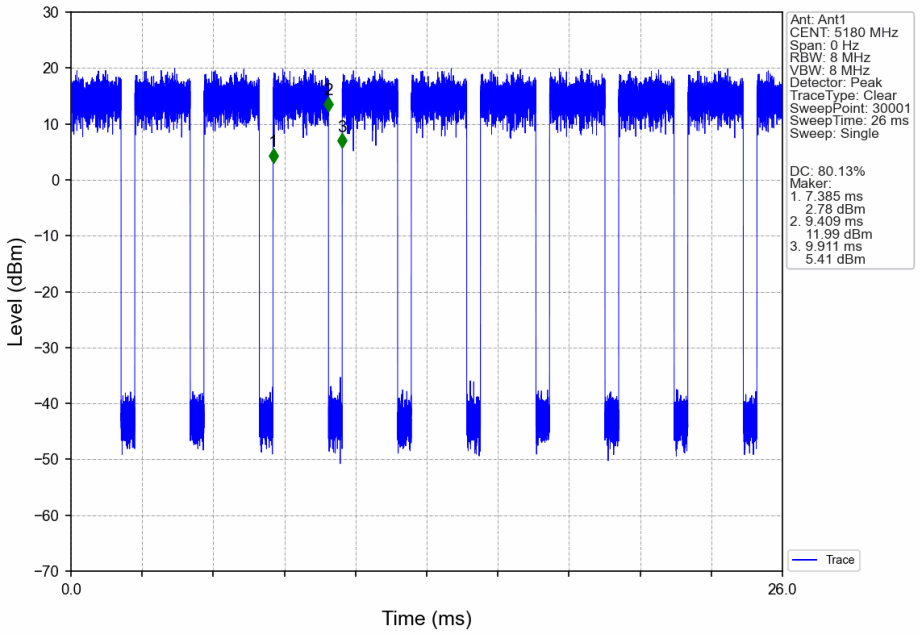
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	2.024	2.526	80.13	0.96	0.03
		5200	2.025	2.527	80.13	0.96	0.03
		5240	2.024	2.526	80.13	0.96	0.03
		5260	2.025	2.527	80.13	0.96	0.03
		5300	2.024	2.526	80.13	0.96	0.03
		5320	2.025	2.526	80.17	0.96	0.03
		5500	2.024	2.526	80.13	0.96	0.03
		5580	2.024	2.526	80.13	0.96	0.03
		5700	2.024	2.526	80.13	0.96	0.03
		5745	2.025	2.527	80.13	0.96	0.03
		5785	2.025	2.527	80.13	0.96	0.03
		5825	2.025	2.527	80.13	0.96	0.03
802.11n (HT20)	SISO	5180	1.889	2.391	79.00	1.02	0.03
		5200	1.888	2.390	79.00	1.02	0.03
		5240	1.888	2.390	79.00	1.02	0.04
		5260	1.889	2.391	79.00	1.02	0.03
		5300	1.888	2.390	79.00	1.02	0.04
		5320	1.889	2.390	79.04	1.02	0.03
		5500	1.889	2.391	79.00	1.02	0.03
		5580	1.889	2.391	79.00	1.02	0.04
		5700	1.889	2.391	79.00	1.02	0.03
		5745	1.889	2.391	79.00	1.02	0.03
		5785	1.888	2.390	79.00	1.02	0.03
		5825	1.888	2.390	79.00	1.02	0.03
802.11n (HT40)	SISO	5190	0.929	1.430	64.97	1.87	0.01
		5230	0.929	1.431	64.92	1.88	0.03
		5270	0.929	1.430	64.97	1.87	0.05
		5310	0.929	1.431	64.92	1.88	0.03
		5510	0.928	1.430	64.90	1.88	0.01

		5550	0.929	1.431	64.92	1.88	0.03
		5670	0.929	1.431	64.92	1.88	0.03
		5755	0.929	1.430	64.97	1.87	0.03
		5795	0.929	1.430	64.97	1.87	0.04

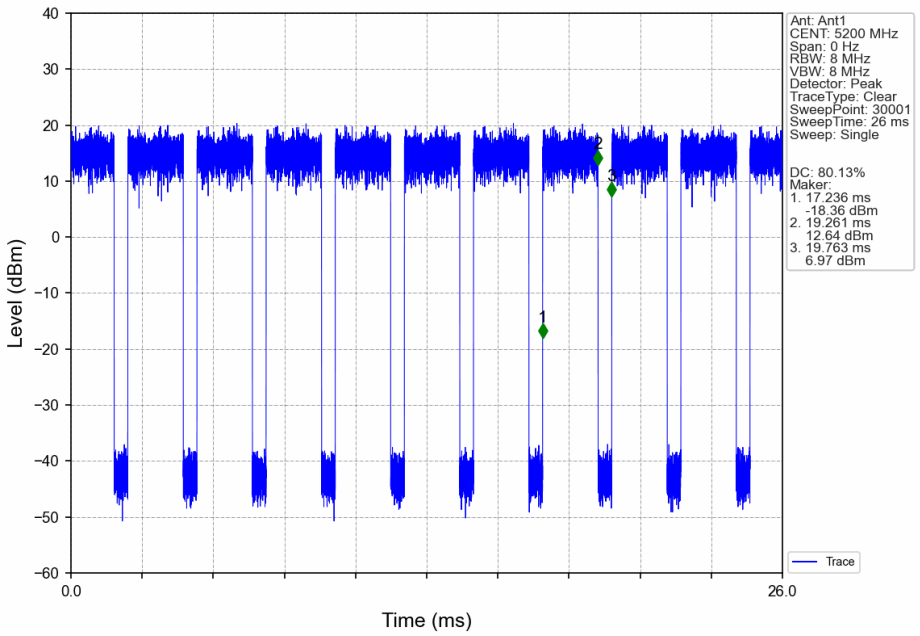
1.2 Test Graph

1.2.1 Ant1

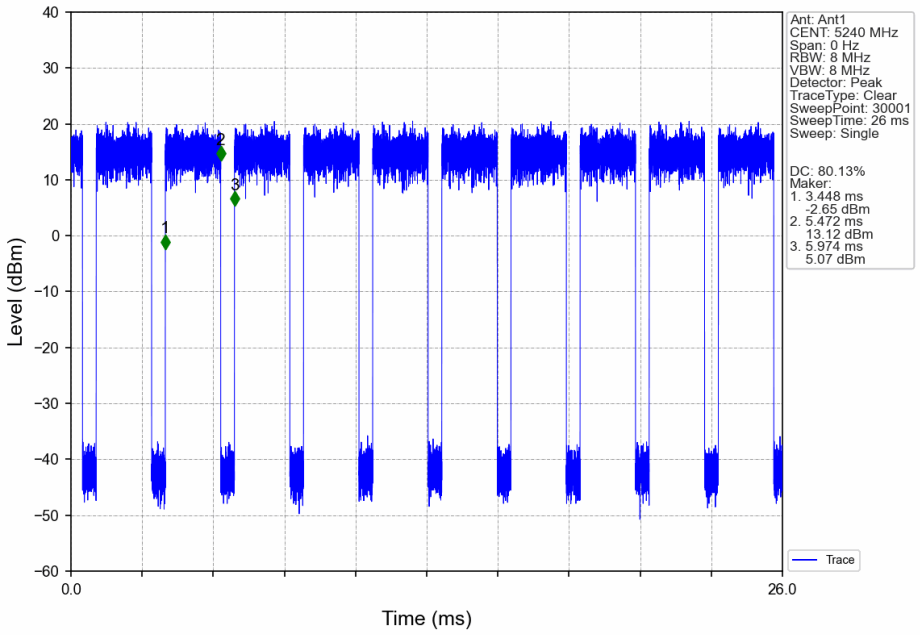
802.11a_LCH_5180MHz_Ant1_NTNV



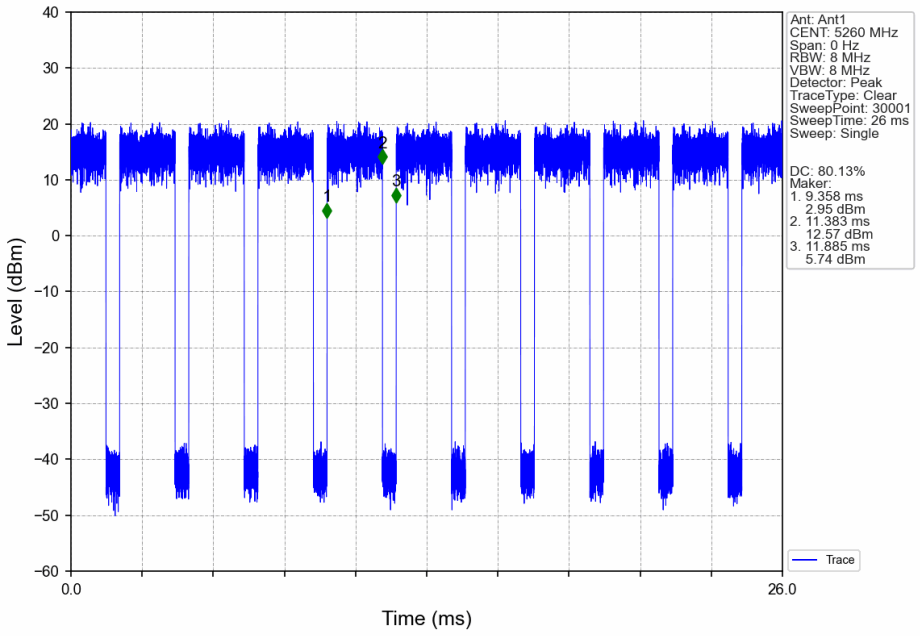
802.11a_MCH_5200MHz_Ant1_NTNV



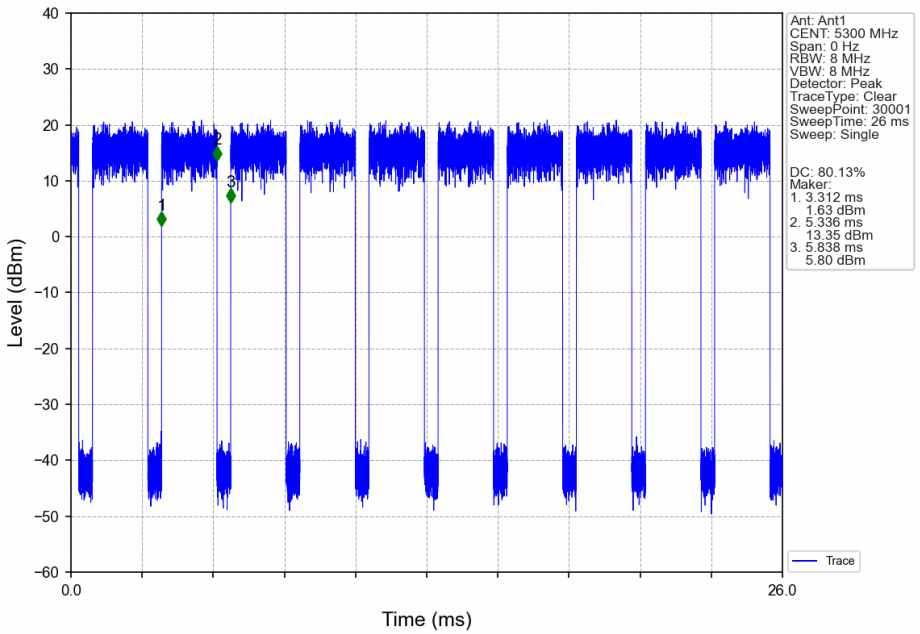
802.11a_HCH_5240MHz_Ant1_NTNV



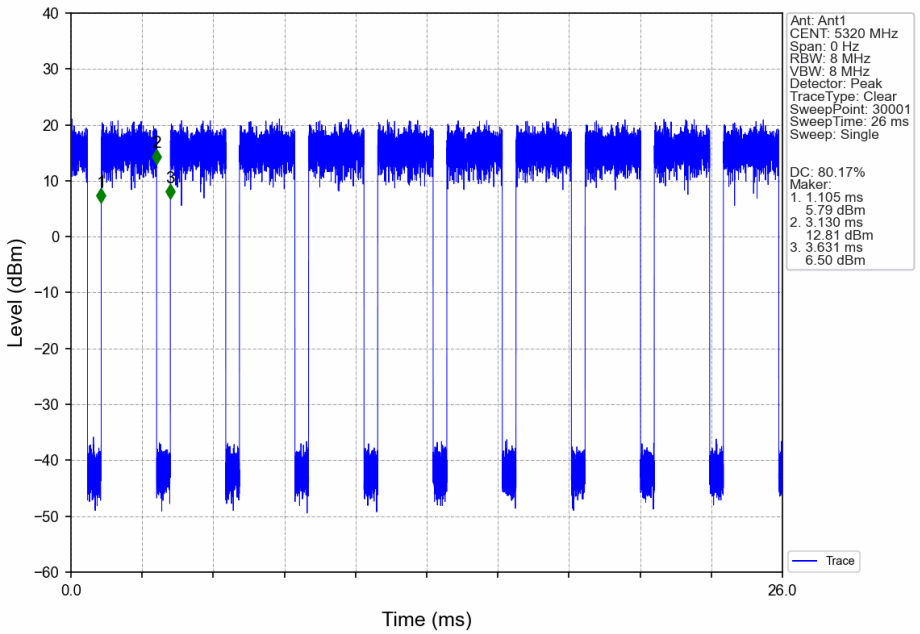
802.11a_LCH_5260MHz_Ant1_NTNV



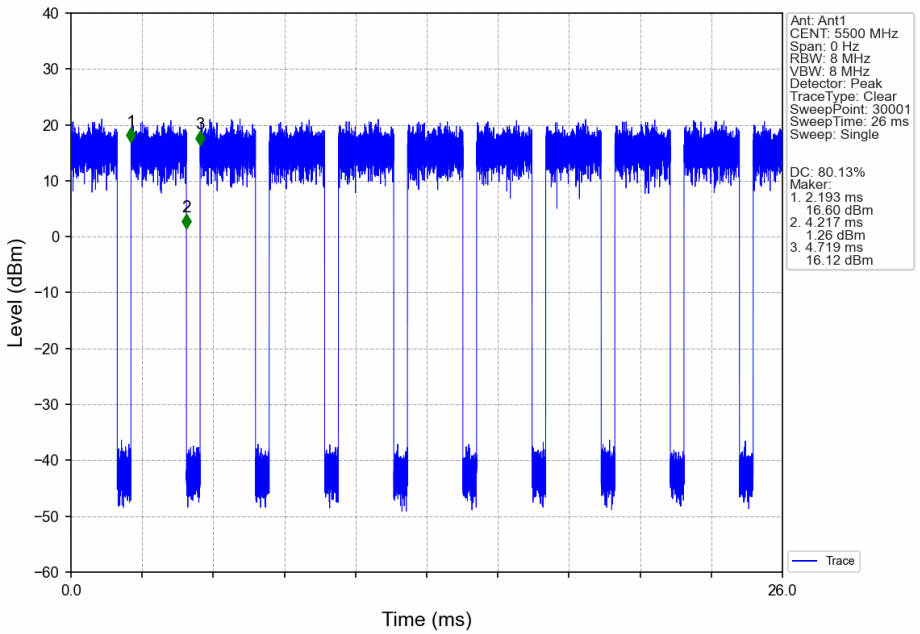
802.11a_MCH_5300MHz_Ant1_NTNV



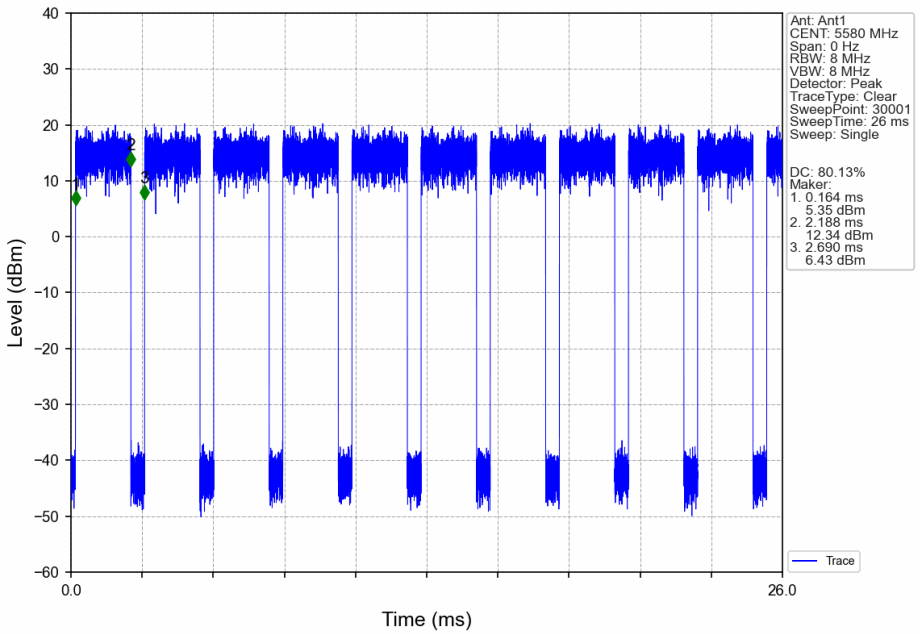
802.11a_HCH_5320MHz_Ant1_NTNV



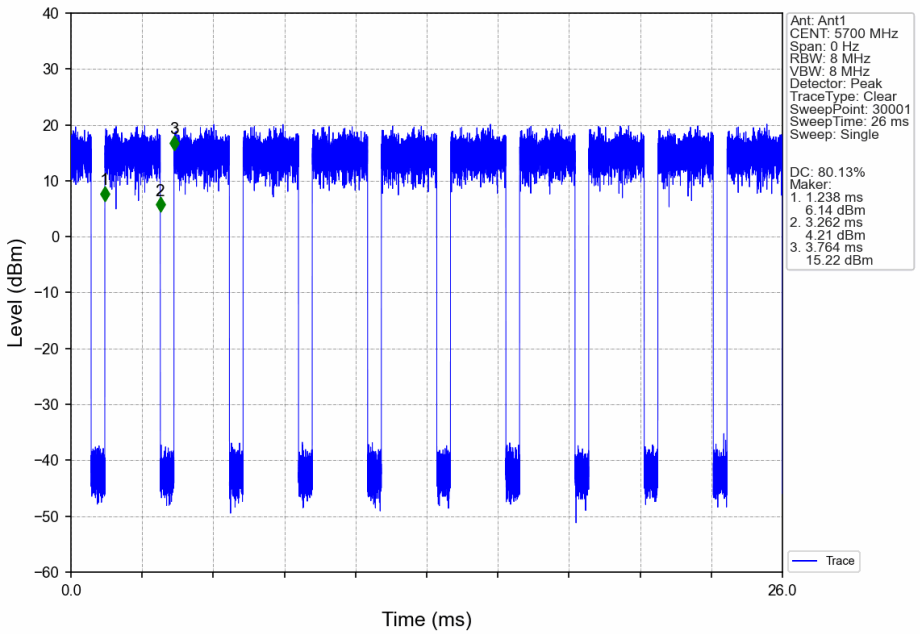
802.11a_LCH_5500MHz_Ant1_NTNV



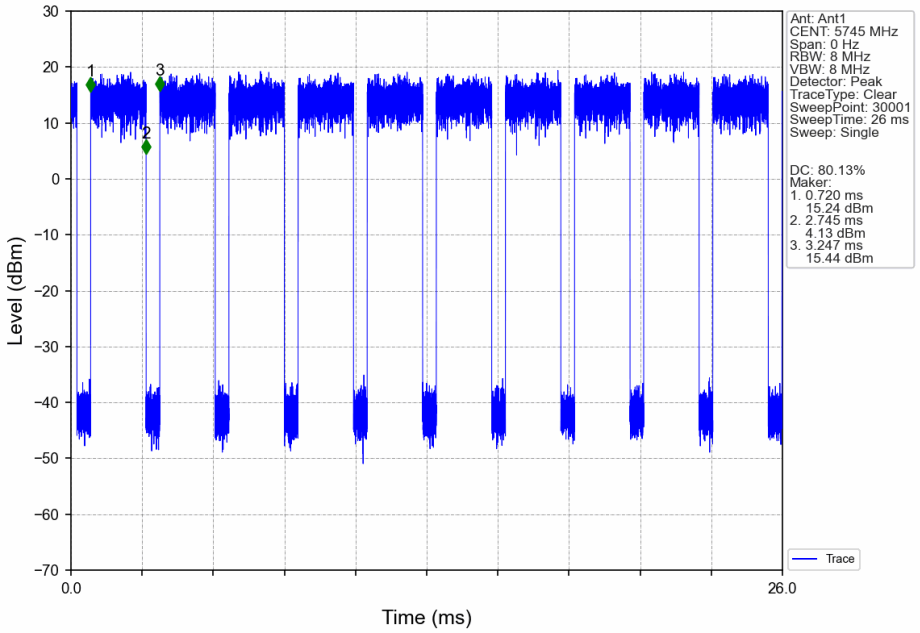
802.11a_MCH_5580MHz_Ant1_NTNV



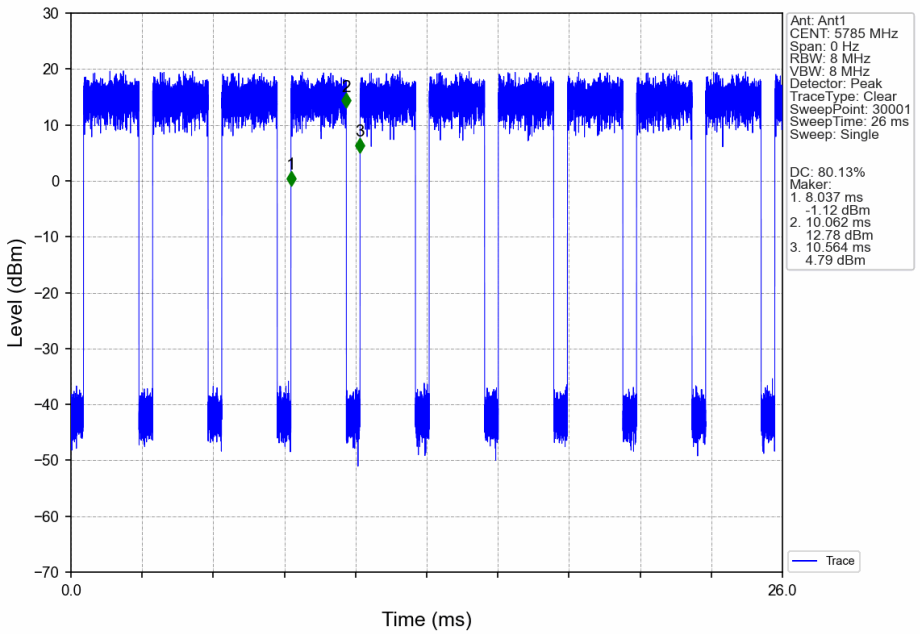
802.11a_HCH_5700MHz_Ant1_NTNV



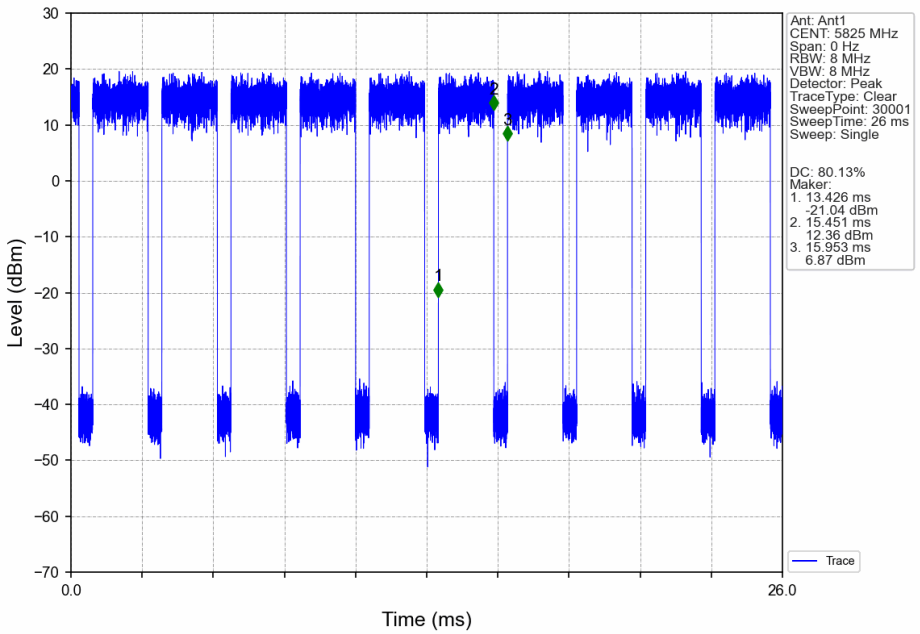
802.11a_LCH_5745MHz_Ant1_NTNV



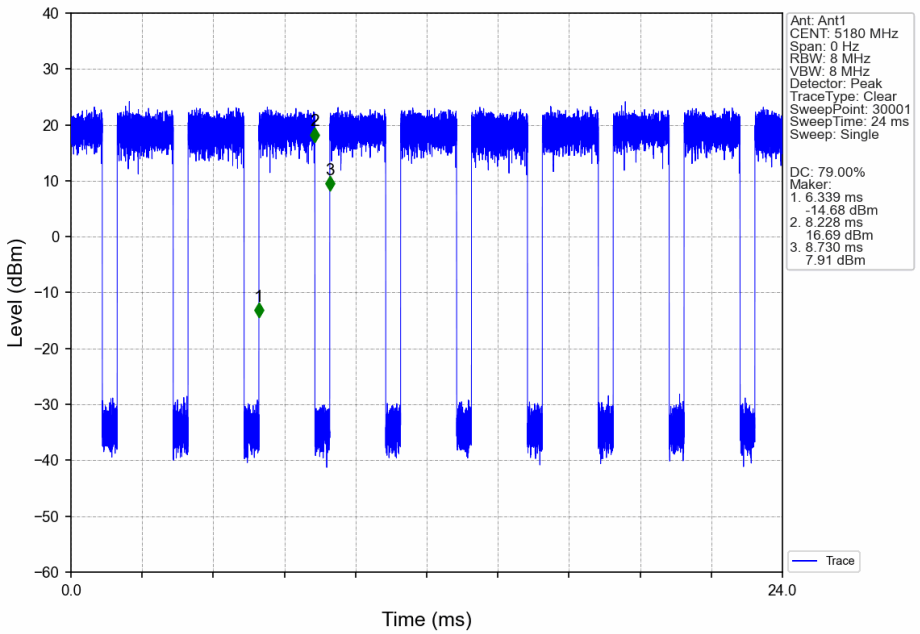
802.11a_MCH_5785MHz_Ant1_NTNV



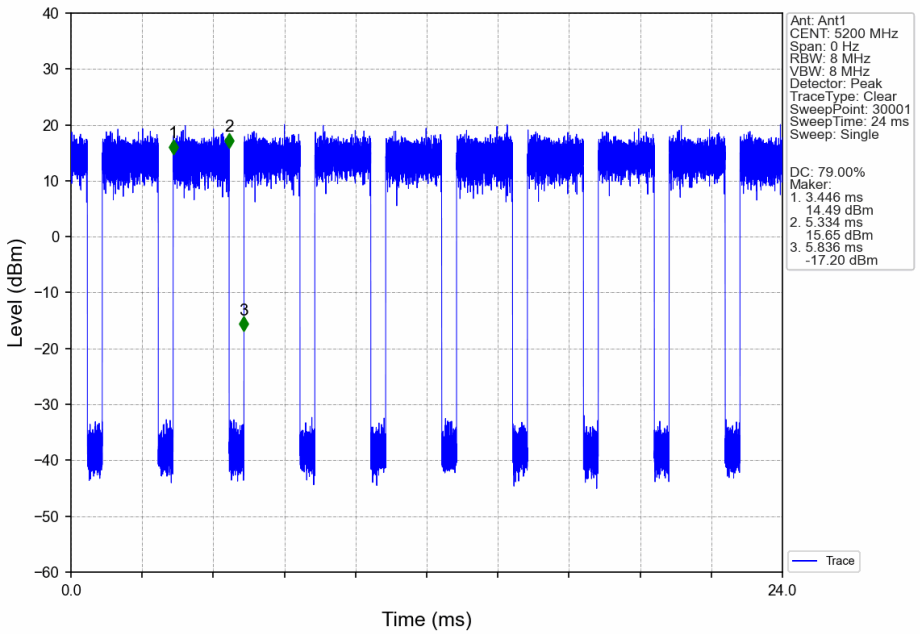
802.11a_HCH_5825MHz_Ant1_NTNV



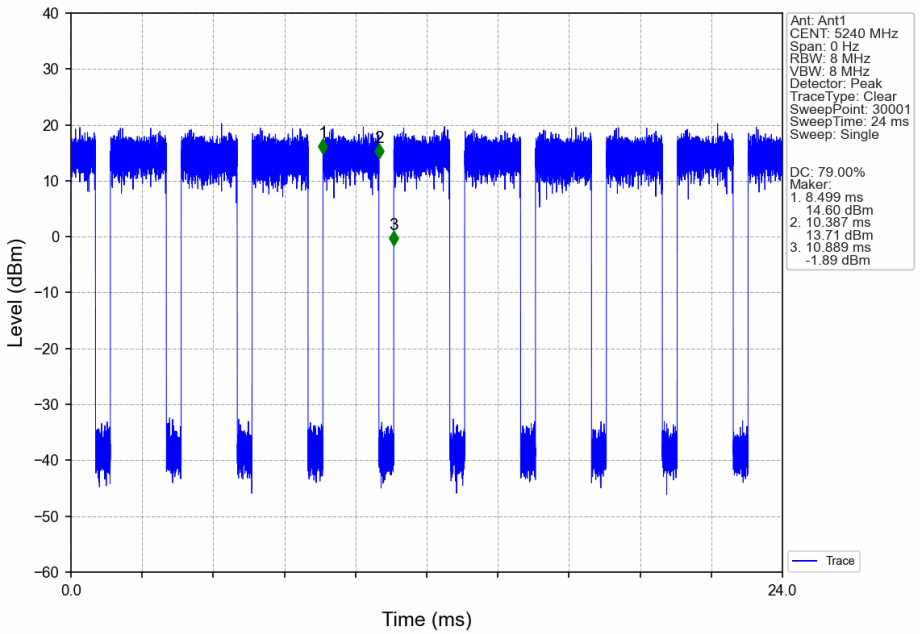
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



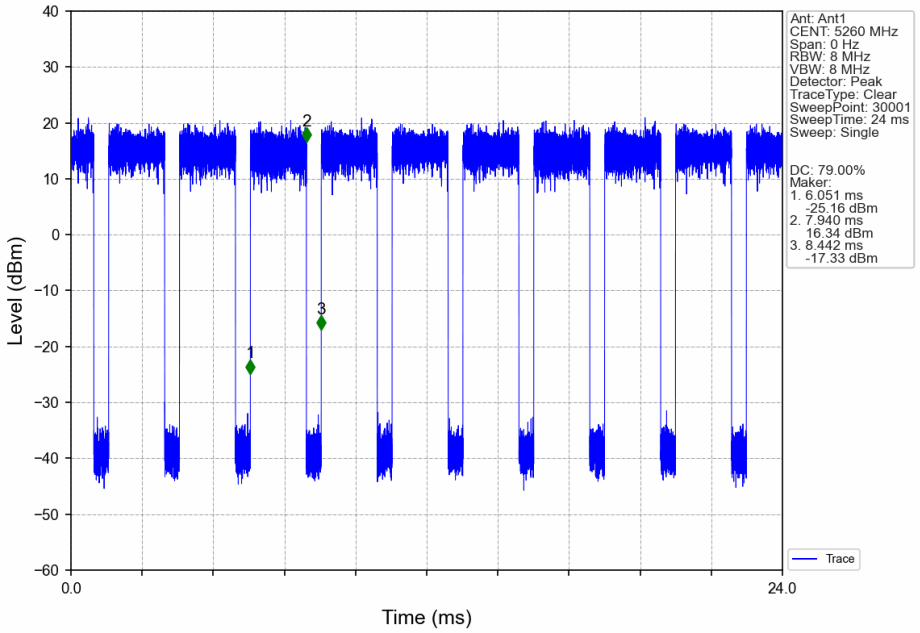
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



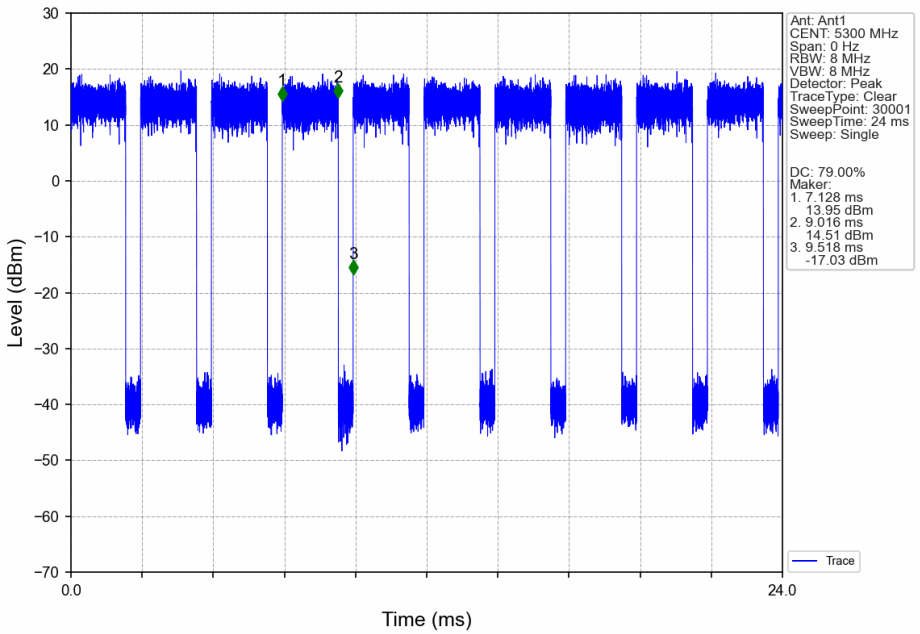
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



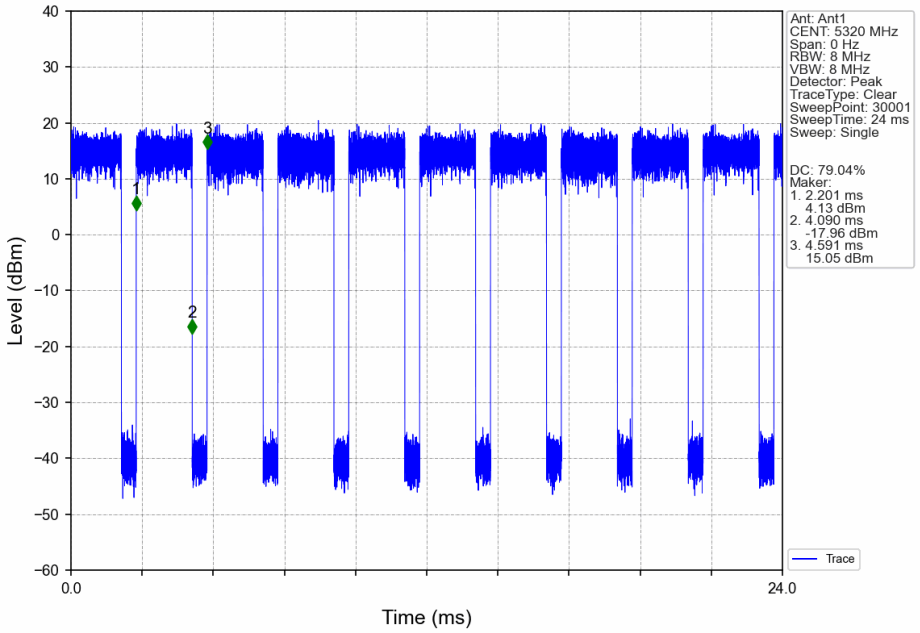
802.11n(HT20)_LCH_5260MHz_Ant1_NTNV



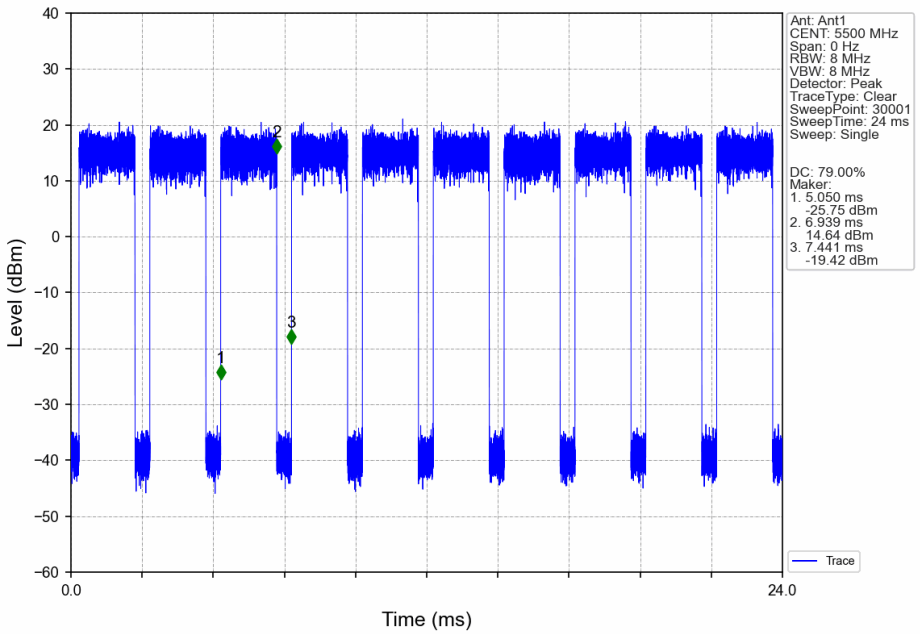
802.11n(HT20)_MCH_5300MHz_Ant1_NTNV



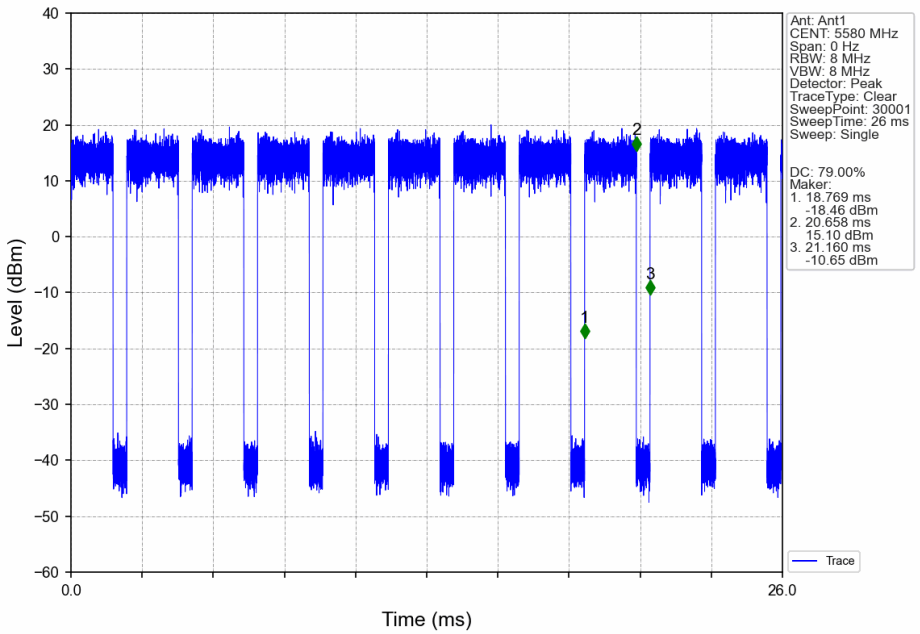
802.11n(HT20)_HCH_5320MHz_Ant1_NTNV



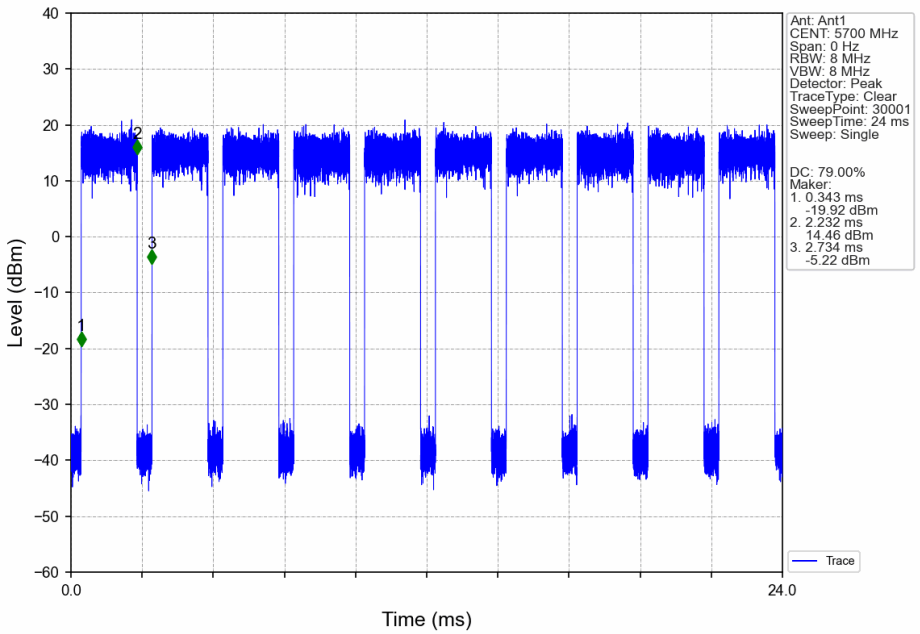
802.11n(HT20)_LCH_5500MHz_Ant1_NTNV



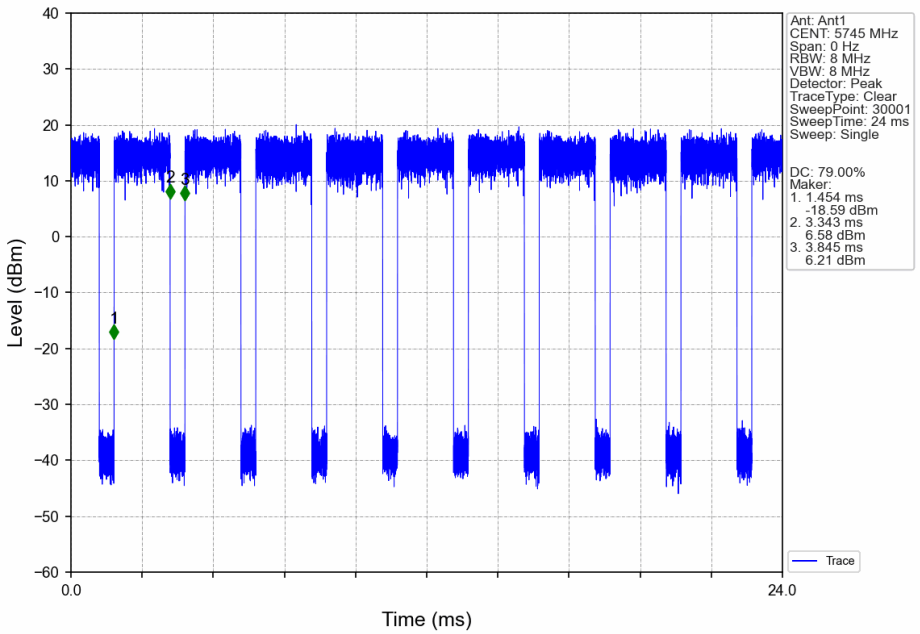
802.11n(HT20)_MCH_5580MHz_Ant1_NTNV



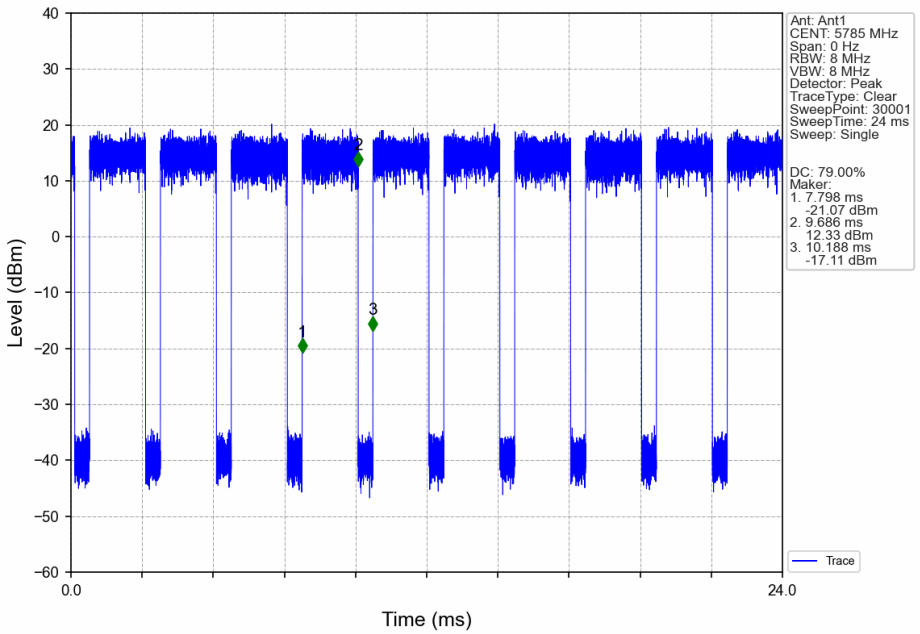
802.11n(HT20)_HCH_5700MHz_Ant1_NTNV



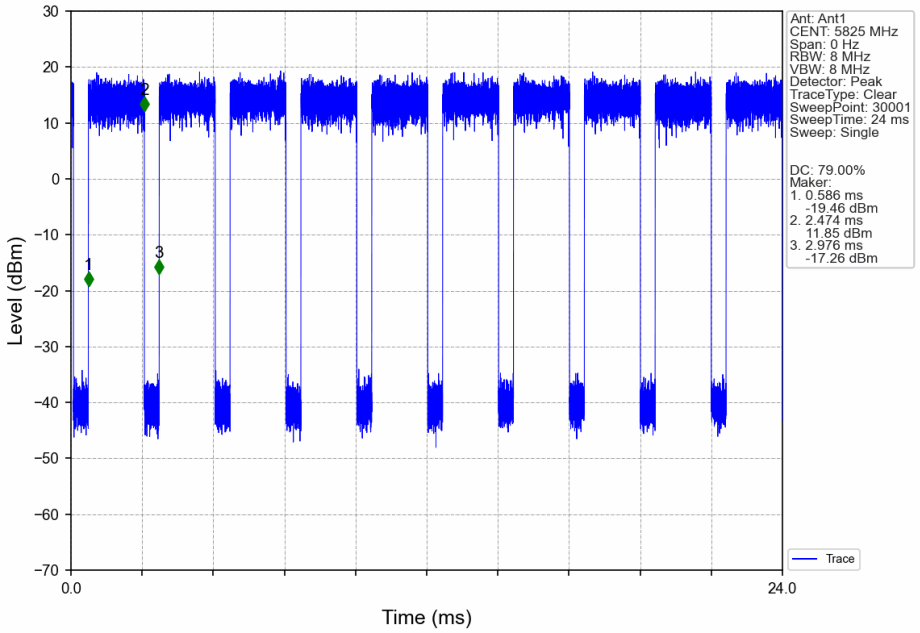
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



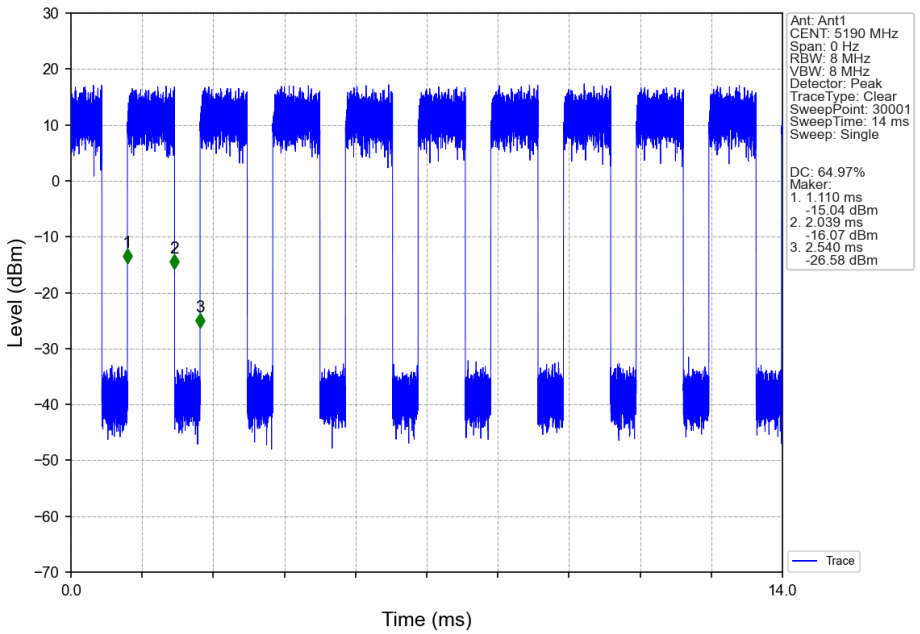
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



802.11n(HT40)_HCH_5230MHz_Ant1_NTNV