



Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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TEST REPORT

Application No.: KSCR2208001570AT
FCC ID: 2ADTD-3399DSD5B86
IC: 20199-3399DSD5B86
Applicant: Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Applicant: No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Manufacturer: Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Manufacturer: No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Factory: 1. Hangzhou Hikvision Technology Co., Ltd.
2. Hangzhou Hikvision Electronics Co., Ltd.
3. Chongqing Hikvision technology Co., Ltd.
Address of Factory: 1. No.700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang, 310052, China;
2. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 311500, China
3. NO.118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing, 401325, China.
Equipment Under Test (EUT):
EUT Name: Interactive Flat Panel
Model No.: Refer to page2
☞ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark: HIKVISION
Standard(s) : 47 CFR Part 15, Subpart E 15.407
RSS-247 Issue 2, February 2017
RSS-Gen Issue 5 Amendment 2 (February 2021)
Date of Receipt: 2022-08-31
Date of Test: 2022-09-01 to 2022-09-08
Date of Issue: 2022-09-12

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

Eric Lin
Laboratory Manager



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Model No.:

DS-D5A86RB/A;DS-D5A86RB/B;DS-D5A86RB/E; DS-D5A86RB/C; DS-D5A86RB/D; DS-D5A86RB/F; DS-D5A86RB/G; DS-D5A86RB/O; DS-D5A86RB/M;DS-D5A86RD/A;DS-D5A86RD/B;DS-D5A86RD/C;DS-D5A86RD/D;DS-D5A86RD/E;DS-D5A86RO/A;DS-D5A86RO/B;DS-D5A86RO/C;DS-D5A86RO/D;DS-D5A86RO/E;DS-D5A86RG/A;DS-D5A86RG/B;DS-D5A86RG/C;DS-D5A86RG/D;DS-D5A86RG/E;
DS-D5A86RM/A;DS-D5A86RM/B;DS-D5A86RM/C;DS-D5A86RM/D;DS-D5A86RM/E;
DS-D5B86RB/C; DS-D5B86RB/D; DS-D5B86RB/A;DS-D5B86RB/B;DS-D5B86RB/E; DS-D5B86RB/F; DS-D5B86RB/G; DS-D5B86RB/O; DS-D5B86RB/M;DS-D5B86RD/A;DS-D5B86RD/B;DS-D5B86RD/C;DS-D5B86RD/D;DS-D5B86RD/E;DS-D5B86RO/A;DS-D5B86RO/B;DS-D5B86RO/C;DS-D5B86RO/D;DS-D5B86RO/E;DS-D5B86RG/A;DS-D5B86RG/B;DS-D5B86RG/C;DS-D5B86RG/D;DS-D5B86RG/E;
DS-D5B86RM/A;DS-D5B86RM/B;DS-D5B86RM/C;DS-D5B86RM/D;DS-D5B86RM/E;DS-D5B86RB/A Pro;DS-D5B86RB/B Pro;DS-D5B86RB/C Pro;DS-D5B86RB/D Pro;DS-D5B86RB/E Pro;
DS-D5B86RD/A Pro;DS-D5B86RD/B Pro;DS-D5B86RD/C Pro;DS-D5B86RD/D Pro;DS-D5B86RD/E Pro;
DS-D5B86RO/A Pro;DS-D5B86RO/B Pro;DS-D5B86RO/C Pro;DS-D5B86RO/D Pro;DS-D5B86RO/E Pro;
DS-D5B86RG/A Pro;DS-D5B86RG/B Pro;DS-D5B86RG/C Pro;DS-D5B86RG/D Pro;DS-D5B86RG/E Pro;
DS-D5B86RM/A Pro;DS-D5B86RM/B Pro;DS-D5B86RM/C Pro;DS-D5B86RM/D Pro;DS-D5B86RM/E Pro;
DS-D5B86RB/ZC;DS-D5B86RD/ZC;DS-D5B86XX/ZC;DS-D5C86RB/A;DS-D5C86RB/B;DS-D5C86RB/C;DS-D5C86RB/D;DS-D5C86RB/E;DS-D5C86RD/A;DS-D5C86RD/B;DS-D5C86RD/C;DS-D5C86RD/D;DS-D5C86RD/E;DS-D5C86RO/A;DS-D5C86RO/B;DS-D5C86RO/C;DS-D5C86RO/D;DS-D5C86RO/E;
DS-D5C86RG/A;DS-D5C86RG/B;DS-D5C86RG/C;DS-D5C86RG/D;DS-D5C86RG/E;DS-D5C86RM/A;DS-D5C86RM/B;DS-D5C86RM/C;DS-D5C86RM/D;DS-D5C86RM/E;DS-D5C86RB/A Pro;DS-D5C86RB/B Pro;DS-D5C86RB/C Pro;DS-D5C86RB/D Pro;DS-D5C86RB/E Pro;DS-D5C86RD/A Pro;DS-D5C86RD/B Pro;DS-D5C86RD/C Pro;DS-D5C86RD/D Pro;DS-D5C86RD/E Pro;DS-D5C86RO/A Pro;DS-D5C86RO/B Pro;DS-D5C86RO/C Pro;DS-D5C86RO/D Pro;DS-D5C86RO/E Pro;DS-D5C86RG/A Pro;DS-D5C86RG/B Pro;DS-D5C86RG/C Pro;DS-D5C86RG/D Pro;DS-D5C86RG/E Pro;DS-D5C86RM/A Pro;DS-D5C86RM/B Pro;DS-D5C86RM/C Pro;DS-D5C86RM/D Pro;DS-D5C86RM/E Pro;DS-D5C86RB/ZC;DS-D5C86RD/ZC;DS-D5C86XX/ZC;DS-D5C86FD/AO;DS-D5C86FD/AP;DS-D5C86FB/AO;DS-D5C86FB/AP;DS-D5C86FD/A;DS-D5C86FB/B;DS-D5C86FB/BO;DS-D5C86FB/BP;DS-D5C86FB/BO;DS-D5C86FB/BP;DS-D5C86FD/B;DS-D5C86FB/B;DS-D5D86RB/A;DS-D5D86RB/B;DS-D5D86RB/C;DS-D5D86RB/D;DS-D5D86RB/E;
DS-D5D86RD/A;DS-D5D86RD/B;DS-D5D86RD/C;DS-D5D86RD/D;DS-D5D86RD/E;
DS-D5D86RO/A;DS-D5D86RO/B;DS-D5D86RO/C;DS-D5D86RO/D;DS-D5D86RO/E;
DS-D5D86RG/A;DS-D5D86RG/B;DS-D5D86RG/C;DS-D5D86RG/D;DS-D5D86RG/E;
DS-D5D86RM/A;DS-D5D86RM/B;DS-D5D86RM/C;DS-D5D86RM/D;DS-D5D86RM/E;
DS-D5D86RB/A Pro;DS-D5D86RB/B Pro;DS-D5D86RB/C Pro;DS-D5D86RB/D Pro;DS-D5D86RB/E Pro;
DS-D5D86RD/A Pro;DS-D5D86RD/B Pro;DS-D5D86RD/C Pro;DS-D5D86RD/D Pro;DS-D5D86RD/E Pro;
DS-D5D86RO/A Pro;DS-D5D86RO/B Pro;DS-D5D86RO/C Pro;DS-D5D86RO/D Pro;DS-D5D86RO/E Pro;
DS-D5D86RG/A Pro;DS-D5D86RG/B Pro;DS-D5D86RG/C Pro;DS-D5D86RG/D Pro;DS-D5D86RG/E Pro;
DS-D5D86RM/A Pro;DS-D5D86RM/B Pro;DS-D5D86RM/C Pro;DS-D5D86RM/D Pro;DS-D5D86RM/E Pro;
DS-D5D86RB/ZC;DS-D5D86RD/ZC;DS-D5D86XX/ZC;DS-D5D86FD/AO;DS-D5D86FD/AP;DS-D5D86FB/AO;DS-D5D86FB/AP;DS-D5D86FD/A;DS-D5D86FB/B;DS-D5D86FB/BO;DS-D5D86FB/BP;DS-D5D86FD/B;DS-D5D86FB/B;DS-D5X86TH/P;DS-D5X86TL/P; DS-D5X86TM/P; DS-D5X86TH/P(B);DS-D5X86TL/P(B);DS-D5X86TM/P(B);DS-D5X86TH/P(C);DS-D5X86TL/P(C);DS-D5X86TM/P(C);DS-D5X86XX/X;DS-D5X86XX/XX;DS-D5XXXXXX/X;DS-D5XXXXXX/XX
("X"stand for A-Z, 0-9 or blank)

For IC Model No.: DS-D5B86RB/C;DS-D5B86RB/D



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Report No.: KSCR220800157006

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Revision Record			
Version	Description	Date	Remark
00	Original	2022-09-12	/

Authorized for issue by:				
		Damon Zhou		
		Damon_Zhou/Project Engineer		
		Eric Lin		
		Eric Lin /Reviewer		



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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
Duty Cycle		KDB 789033 II B 1	KDB 789033 D02 II B 1	Pass
99% Bandwidth		KDB 789033 II D	N/A	Pass
26dB Emission bandwidth		KDB 789033 D02 II C 1	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Minimum 6 dB bandwidth (5.725-5.85 GHz band)		KDB 789033 D02 II C 2	47 CFR Part 15, Subpart E 15.407 (e)	Pass
Maximum Conducted output power		KDB 789033 D02 II E	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Peak Power spectrum density		KDB 789033 D02 II F	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Radiated Emissions (Above 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions which fall in the restricted bands		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Frequency Stability		ANSI C63.10 (2013) Section 6.8	47 CFR Part 15, Subpart E 15.407 (g)	Pass
Radiated Emissions (Below 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
99% Bandwidth	RSS-247 Issue 2, February 2017	ANSI C63.10 Section 6.9.3	RSS-Gen Section 6.7	Pass

Declaration of EUT Family Grouping:

Note: There are series models mentioned in this report, and they are the identical in electrical and electronic characters. Only the model DS-D5B86RB/D with RF module WCB1R2001 was tested since their differences were the model number and appearance.



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4 General Information

4.1 Details of E.U.T.

Power supply:	100-240V~,50/60Hz,5.0A
Test Voltage:	AC120V/60Hz
Operation Frequency (20MHz):	U-NII-1: 5180-5240MHz; U-NII-3: 5745-5825MHz
Operation Frequency (40MHz):	U-NII-1: 5190-5230MHz; U-NII-3: 5755-5795MHz
Operation Frequency (80MHz):	U-NII-1: 5210MHz; U-NII-3: 5775MHz
Moudulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Spacing:	802.11a/n(HT20)/ac(HT20): 20MHz; 802.11n(HT40)/ac(HT40): 40MHz; 802.11ac(HT80): 80MHz
Antenna Type:	Ant 3: PCB Antenna Ant 4: PCB Antenna
Antenna Gain:	For U-NII-1: Ant 3:2.5dBi(Provided by the manufacturer) Ant 4:1.62dBi(Provided by the manufacturer) Directional gain:5.09dBi. For U-NII-3: Ant 3:2.46dBi(Provided by the manufacturer) Ant 4:2.55dBi(Provided by the manufacturer) Directional gain:5.51dBi.
S/N:	K26536274
Firmware Version:	V2.3.1



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4.2 Power level setting using in test:

Channel	802.11a		802.11n(HT20)		802.11ac(VHT20)	
	ANT 3	ANT 4	ANT 3	ANT 4	ANT 3	ANT 4
36	16	16	13	13	13	13
40	16	16	13	13	13	13
48	16	16	13	13	13	13
149	16	16	13	13	13	13
157	16	16	13	13	13	13
165	16	16	13	13	13	13
Channel	802.11n(HT40)		802.11ac(VHT40)			
	ANT 3	ANT 4	ANT 3	ANT 4		
38	13	13	13	13		
46	13	13	13	13		
151	13	13	13	13		
159	13	13	13	13		
Channel	802.11ac(VHT80)					
	ANT 3	ANT 4				
42	13	13				
155	14	14				

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)



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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.



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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).

4.6 Test Facility

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

• CNAS

Compliance Certification Services (Kunshan) Inc. is accredited by the China National Accreditation Service for Conformity Assessment (CNAS). Registration No. CNAS L4354

• A2LA

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

• FCC

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

• ISED

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

• VCCI

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

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None



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5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals (150kHz-30MHz)						
1	EMI Test Receive	R&S	ESCI	KS301101	01/22/2022	01/21/2023
2	LISN	R&S	ENV216	KS301197	01/22/2022	01/21/2023
3	LISN	Schwarzbeck	NNLK 8129	KS301091	01/22/2022	01/21/2023
4	Pulse Limiter	R&S	ESH3-Z2	KUS1902E001	01/22/2022	01/21/2023
5	CE test Cable	Thermax	/	CZ301102	11/14/2021	11/13/2022
6	Test Software	Farad	EZ-EMC	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/22/2022	08/21/2023
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/22/2022	08/21/2023
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	01/22/2022	01/21/2023
4	Signal Generator	R&S	SMW200A	KSEM020-1	08/22/2022	08/21/2023
5	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/22/2022	08/21/2023
6	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/22/2022	08/21/2023
7	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	04/01/2022	03/31/2023
8	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/22/2022	08/21/2023
9	Switcher	CCSRF	FY562	KUS2001M001-3	08/22/2022	08/21/2023
10	AC Power Source	EXTECH	6605	KS301178	N.C.R	N.C.R
11	DC Power Supply	Aglient	E3632A	KS301180	N.C.R	N.C.R
12	Conducted Test Cable	Thermax	RF01-RF04	CZ301111-CZ301120	01/16/2022	01/15/2023
13	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	04/01/2021	03/31/2023
14	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	04/14/2022	04/13/2023
15	Software	BST	TST-PASS	/	N/A	N/A
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/22/2022	08/21/2023
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	04/01/2022	03/31/2023
3	Signal Generator	Agilent	E8257C	KS301066	08/22/2022	08/21/2023
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	04/13/2021	04/12/2023
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2021	06/28/2023
6	Bilog Antenna	SCHWARZBECK	VULB9160	CZ301016	04/13/2021	04/12/2024
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	04/02/2022	04/01/2024
8	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	KS301186	02/22/2021	02/21/2023
9	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	03/17/2022	03/16/2023
10	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/22/2022	01/21/2023
11	Amplifier(18~40GHz)	COM-POWER	PAM-840A	KUS1710E001	01/22/2022	01/21/2023
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	11/14/2021	11/13/2022
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	01/04/2022	31/03/2023
14	Software	Faratronic	EZ-EMC-v 3A1	/	N/A	N/A



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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

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 antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna 3 and antenna 4 is PCB antenna, and all no consideration of replacement. The best case gain of antenna 3 is 2.5dBi for U-NII-1, 2.46dBi for U-NII-3 and antenna 4 is 1.62dBi for U-NII-1, 2.55dBi for U-NII-3.

Antenna location: Refer to internal photo.



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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

6.2.2 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.



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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(dB μ V)	
	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: 24.3 °C

Humidity: 41.6 % RH

Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



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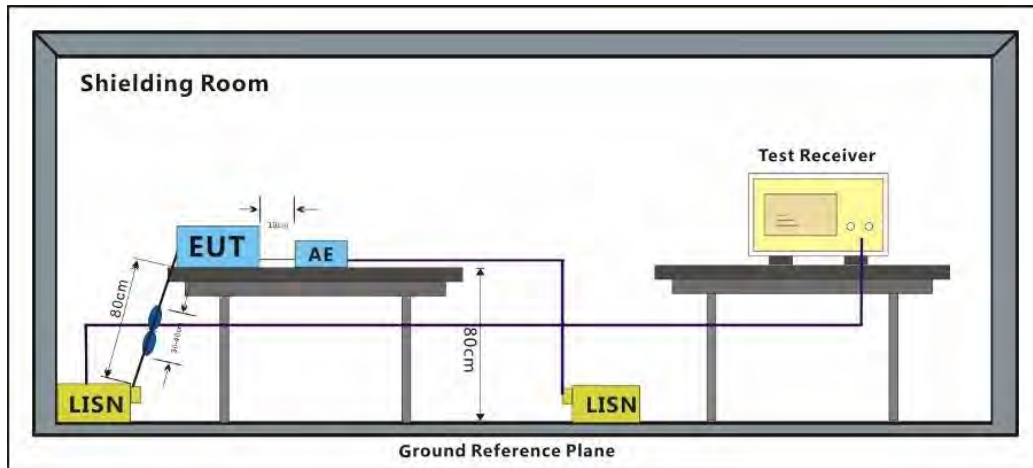
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7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

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

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



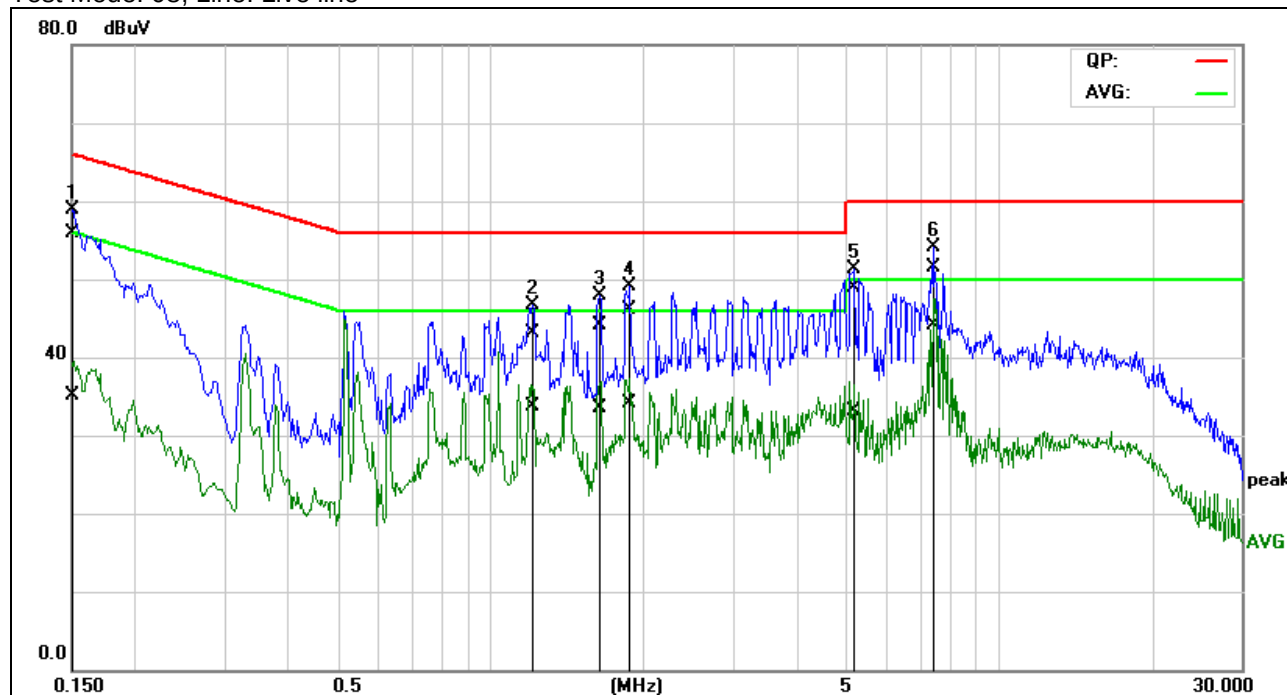
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Test Mode: 08; Line: Live line



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1500	36.44	15.55	19.48	55.92	35.03	66.00	56.00	-10.08	-20.97	Pass
2	1.2098	23.47	14.06	19.61	43.08	33.67	56.00	46.00	-12.92	-12.33	Pass
3	1.6363	24.45	13.89	19.63	44.08	33.52	56.00	46.00	-11.92	-12.48	Pass
4	1.8779	26.49	14.54	19.64	46.13	34.18	56.00	46.00	-9.87	-11.82	Pass
5	5.1937	29.15	13.20	19.81	48.96	33.01	60.00	50.00	-11.04	-16.99	Pass
6*	7.4071	31.51	24.07	19.96	51.47	44.03	60.00	50.00	-8.53	-5.97	Pass



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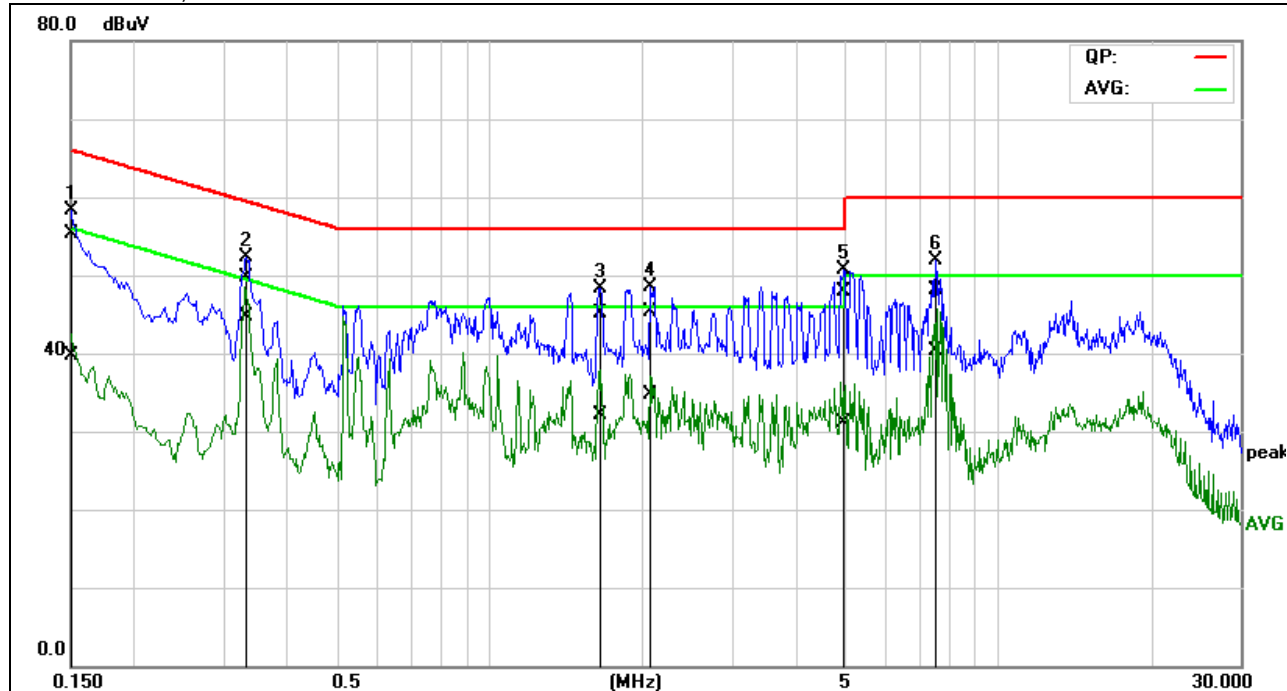
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Test Mode: 08; Line: Neutral Line



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1500	35.80	20.20	19.48	55.28	39.68	65.99	56.00	-10.71	-16.32	Pass
2*	0.3321	30.10	25.21	19.51	49.61	44.72	59.40	49.40	-9.79	-4.68	Pass
3	1.6535	25.44	12.44	19.63	45.07	32.07	56.00	46.00	-10.93	-13.93	Pass
4	2.0660	25.63	15.03	19.65	45.28	34.68	56.00	46.00	-10.72	-11.32	Pass
5	4.9782	28.01	11.28	19.80	47.81	31.08	56.00	46.00	-8.19	-14.92	Pass
6	7.5258	28.19	20.34	19.97	48.16	40.31	60.00	50.00	-11.84	-9.69	Pass



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7.2 Duty Cycle

Test Requirement KDB 789033 D02 II B 1

Test Method: KDB 789033 II B 1

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °C Humidity: 41.6 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



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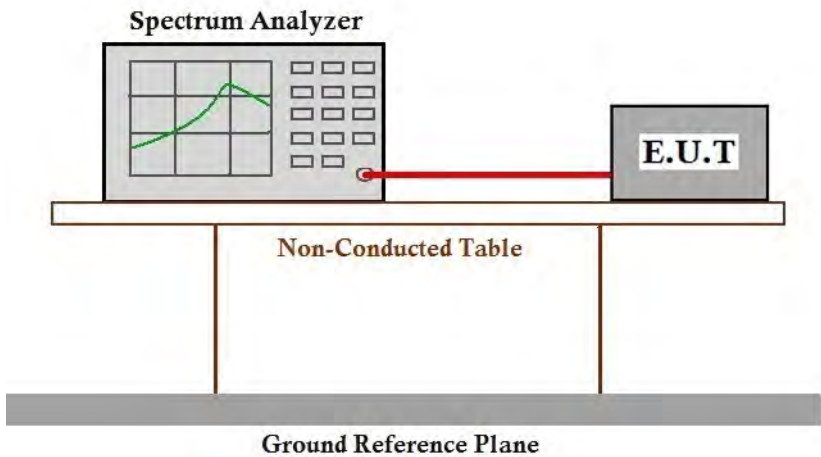
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7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

Please Refer to Appendix



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7.3 99% Bandwidth

Test Requirement: N/A
Test Method: KDB 789033 II D

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °C Humidity: 41.6 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



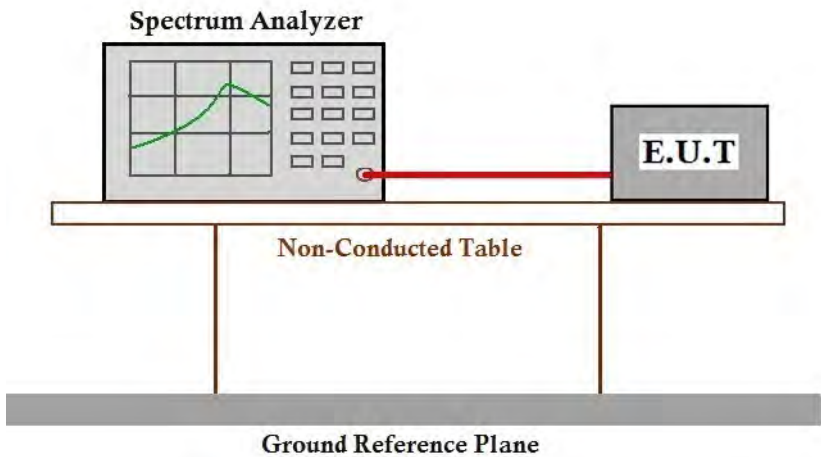
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7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

Please Refer to Appendix



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7.4 26dB Emission bandwidth

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)

Test Method: KDB 789033 D02 II C 1

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °C

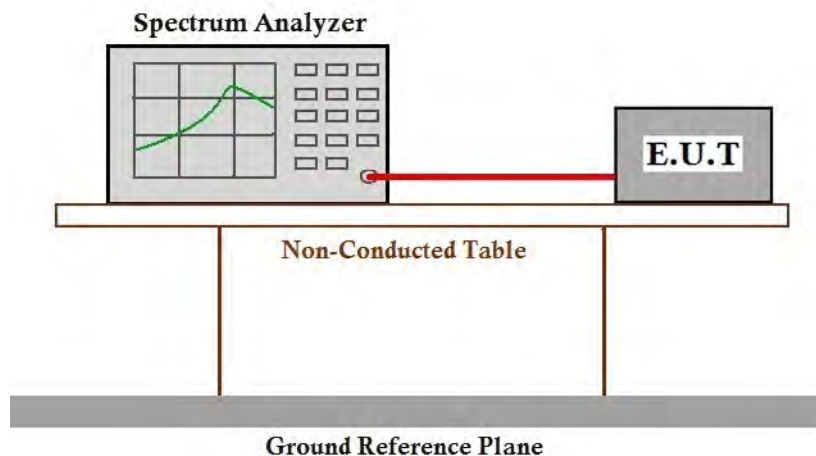
Humidity: 41.5 % RH

Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Please Refer to Appendix



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

Test Requirement 47 CFR Part 15, Subpart E 15.407 (e)

Test Method: KDB 789033 D02 II C 2

Limit:

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

7.5.1 E.U.T. Operation

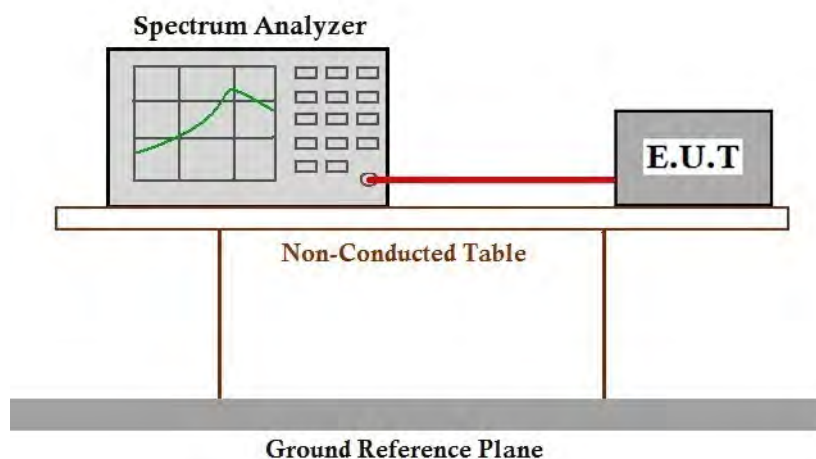
Operating Environment:

Temperature: 24.3 °C Humidity: 41.5 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



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7.5.4 Measurement Procedure and Data

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7.6 Maximum Conducted output power

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)

Test Method: KDB 789033 D02 II E

Limit:

Frequency band(MHz)	Limit
5150-5250	≤1W(30dBm) for master device
	≤250mW(24dBm) for client device
5250-5350	≤250mW(24dBm) for client device or 11dBm+10logB*
5470-5725	≤250mW(24dBm) for client device or 11dBm+10logB*
5725-5850	≤1W(30dBm)
Remark:	1, * 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. 2, For IC 5150MHz to 5250MHz limit is EIRP ≤200mW(23.01dBm)

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °C

Humidity: 41.5 % RH

Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



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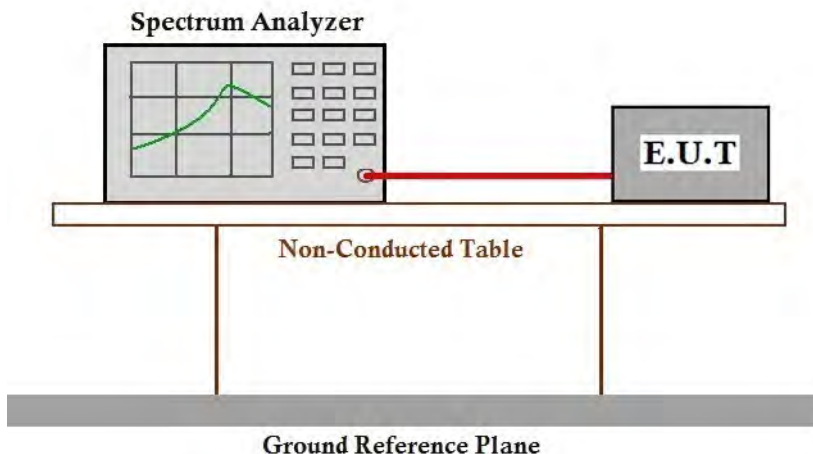
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7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

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

Please Refer to Appendix



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7.7 Peak Power spectrum density

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)

Test Method: KDB 789033 D02 II F

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:	1. The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. 2. For IC 5150MHz to 5250MHz limit is EIRP PSD ≤ 10dBm/MHz.

7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °C

Humidity: 41.5 % RH

Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



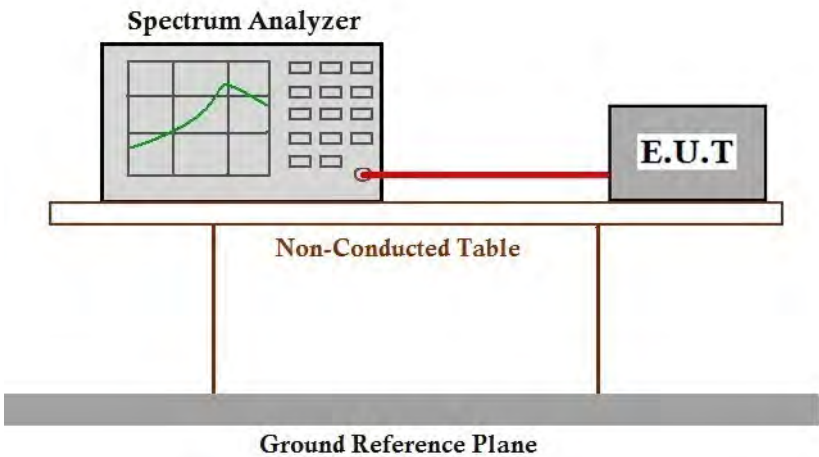
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7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix



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7.8 Radiated Emissions (Above 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)

Test Method: KDB 789033 D02 II G

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1GHz	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.		

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C

Humidity: 57.8 % RH

Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



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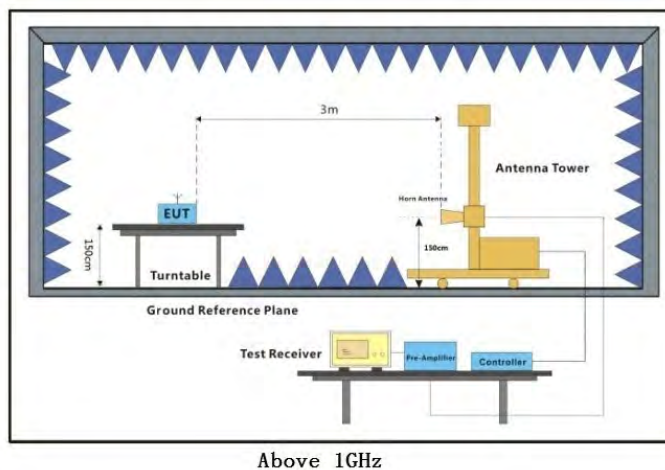
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Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
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7.8.3 Test Setup Diagram



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



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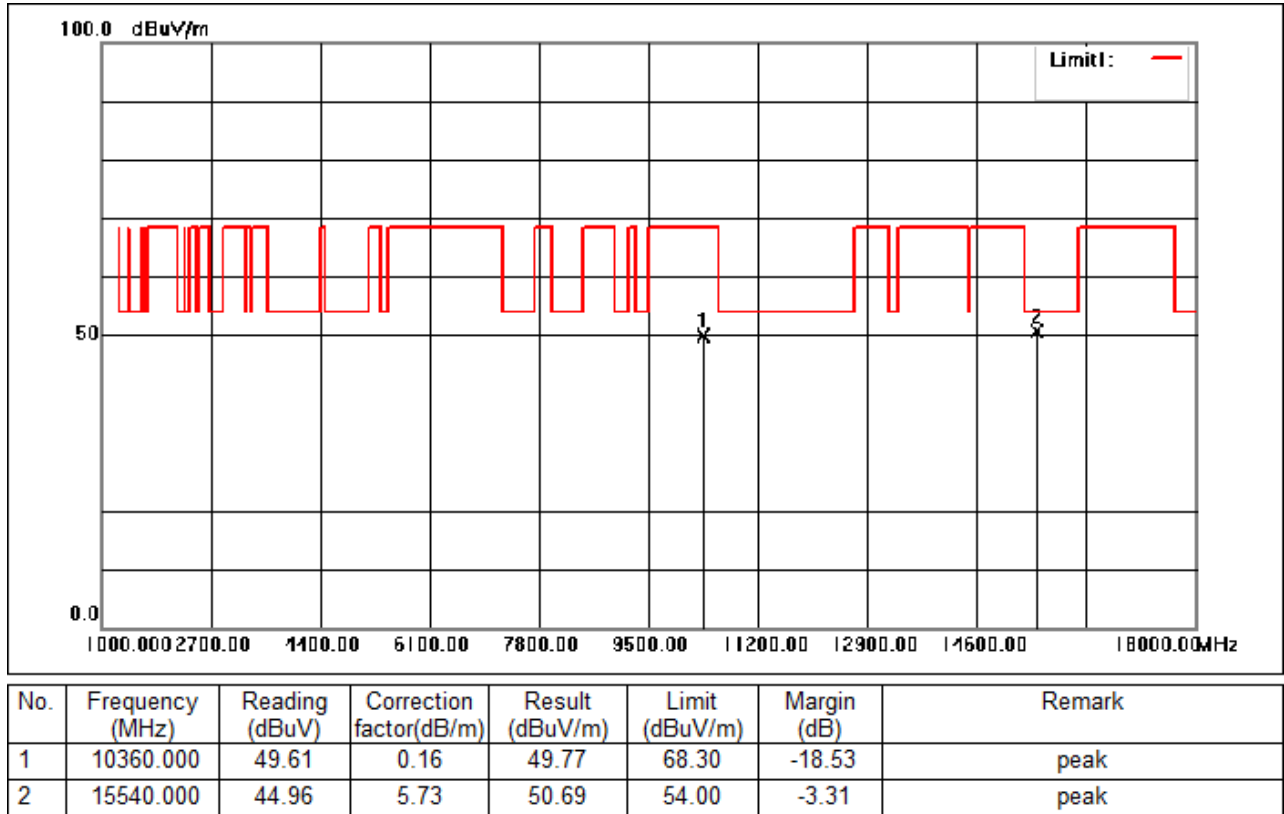
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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11a; Bandwidth: 20MHz; Channel: Low



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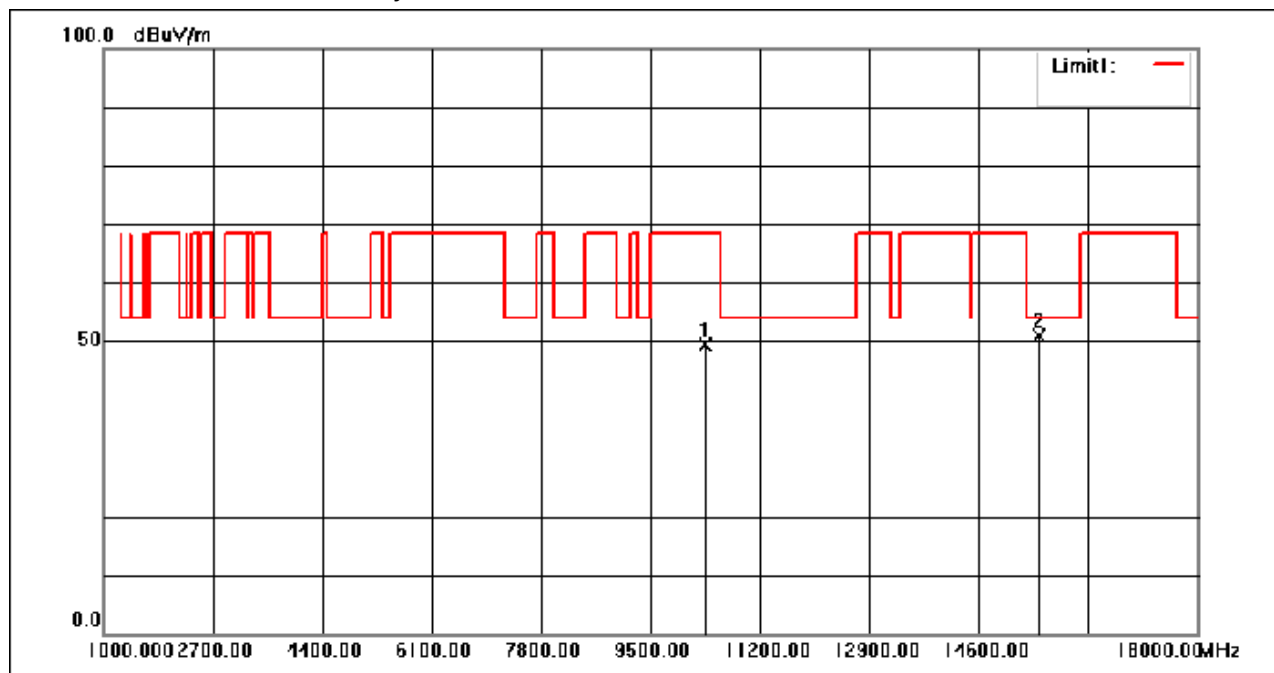
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Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	49.13	0.16	49.29	68.30	-19.01	peak
2	15540.000	45.13	5.73	50.86	54.00	-3.14	peak



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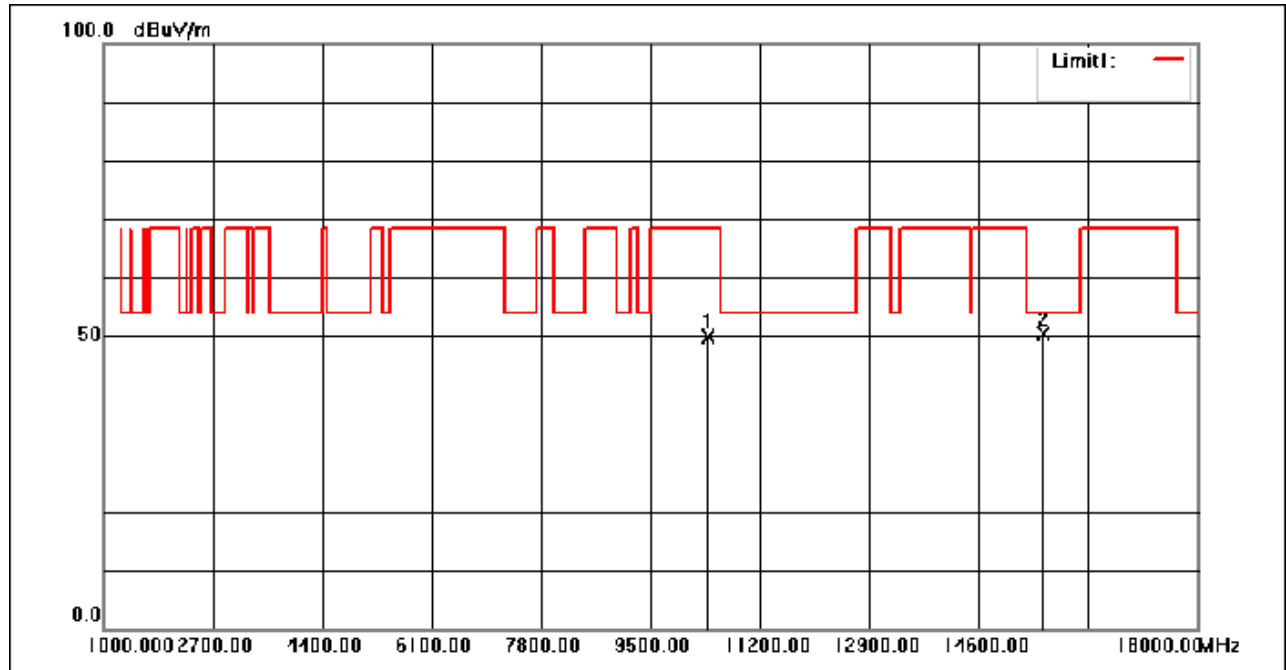
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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11a; Bandwidth: 20MHz; Channel: middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	49.60	0.24	49.84	68.30	-18.46	peak
2	15600.000	44.55	5.85	50.40	54.00	-3.60	peak



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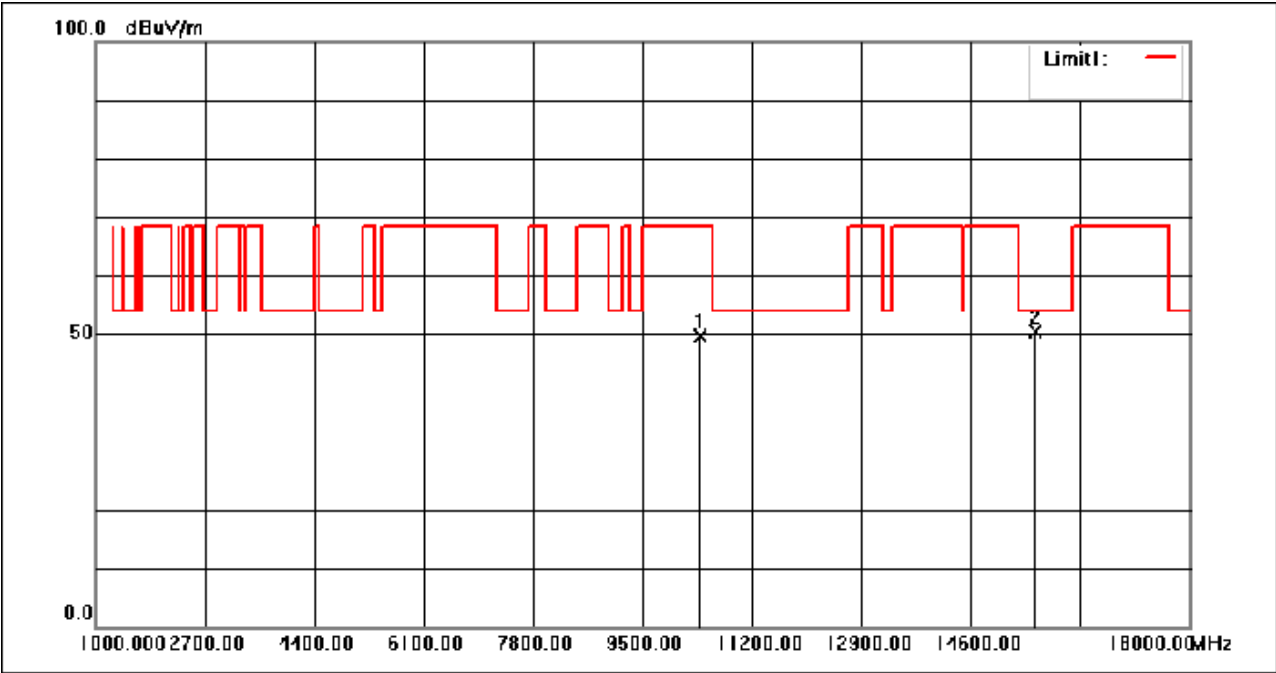
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Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	49.40	0.24	49.64	68.30	-18.66	peak
2	15600.000	44.53	5.85	50.38	54.00	-3.62	peak



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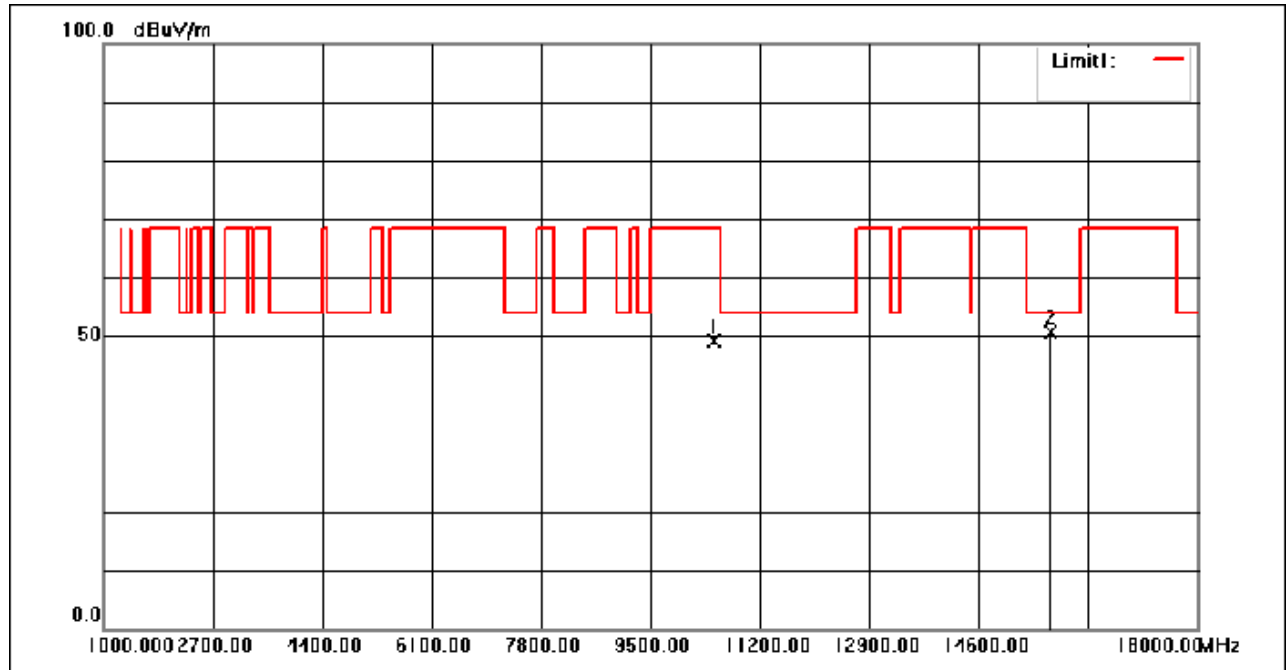
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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11a; Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	48.62	0.40	49.02	68.30	-19.28	peak
2	15720.000	44.52	6.10	50.62	54.00	-3.38	peak



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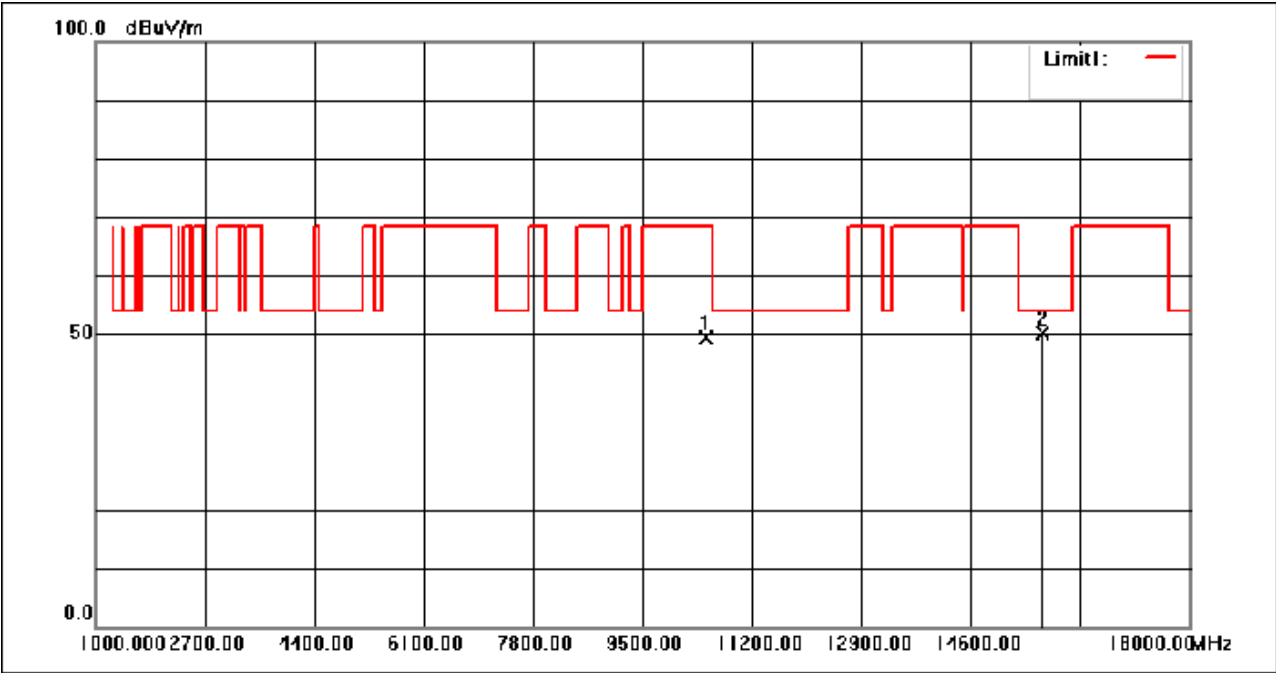
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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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	10480.000	48.91	0.40	49.31	68.30	-18.99	peak
2	15720.000	44.03	6.10	50.13	54.00	-3.87	peak



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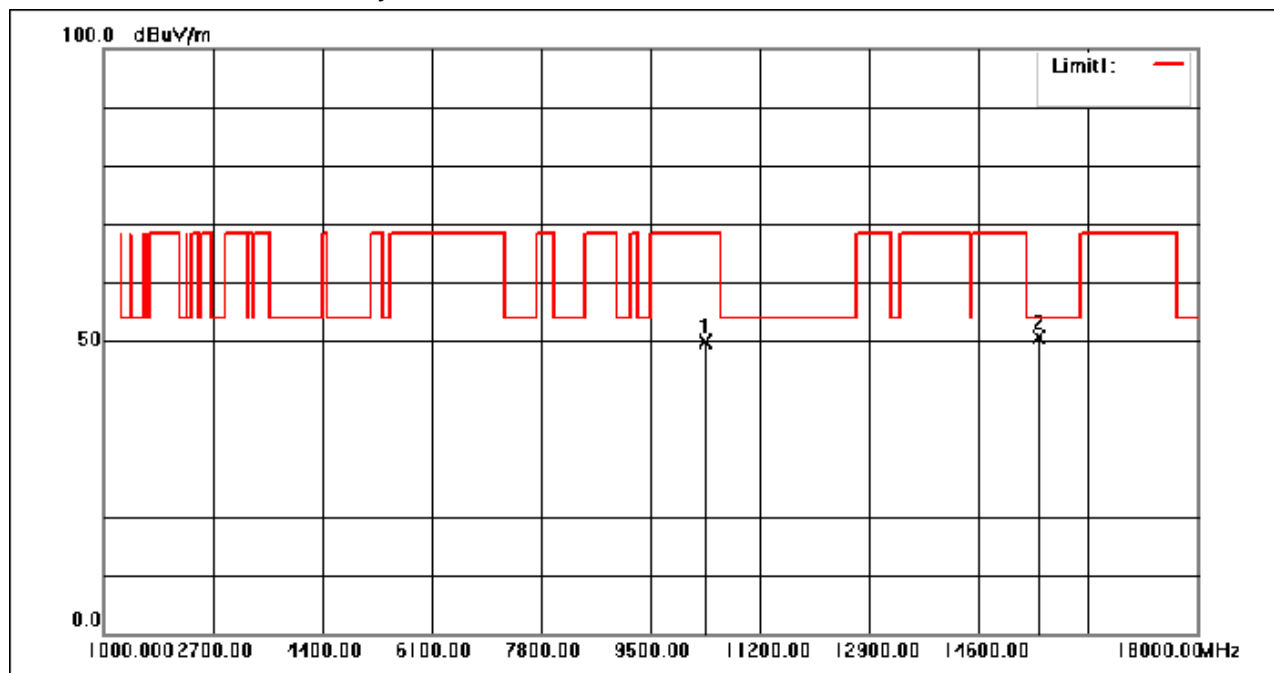
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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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	10360.000	49.73	0.16	49.89	68.30	-18.41	peak
2	15540.000	44.91	5.73	50.64	54.00	-3.36	peak



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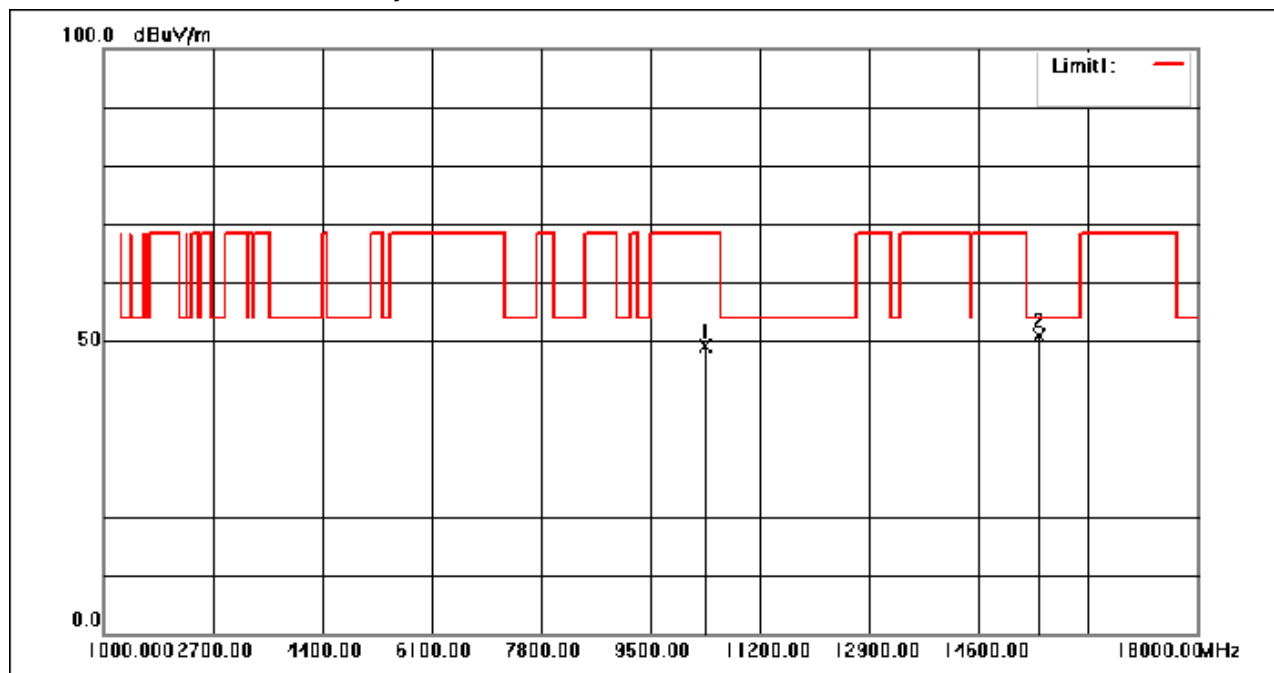
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Compliance Certification Services (Kunshan) Inc.

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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	10360.000	48.94	0.16	49.10	68.30	-19.20	peak
2	15540.000	45.11	5.73	50.84	54.00	-3.16	peak



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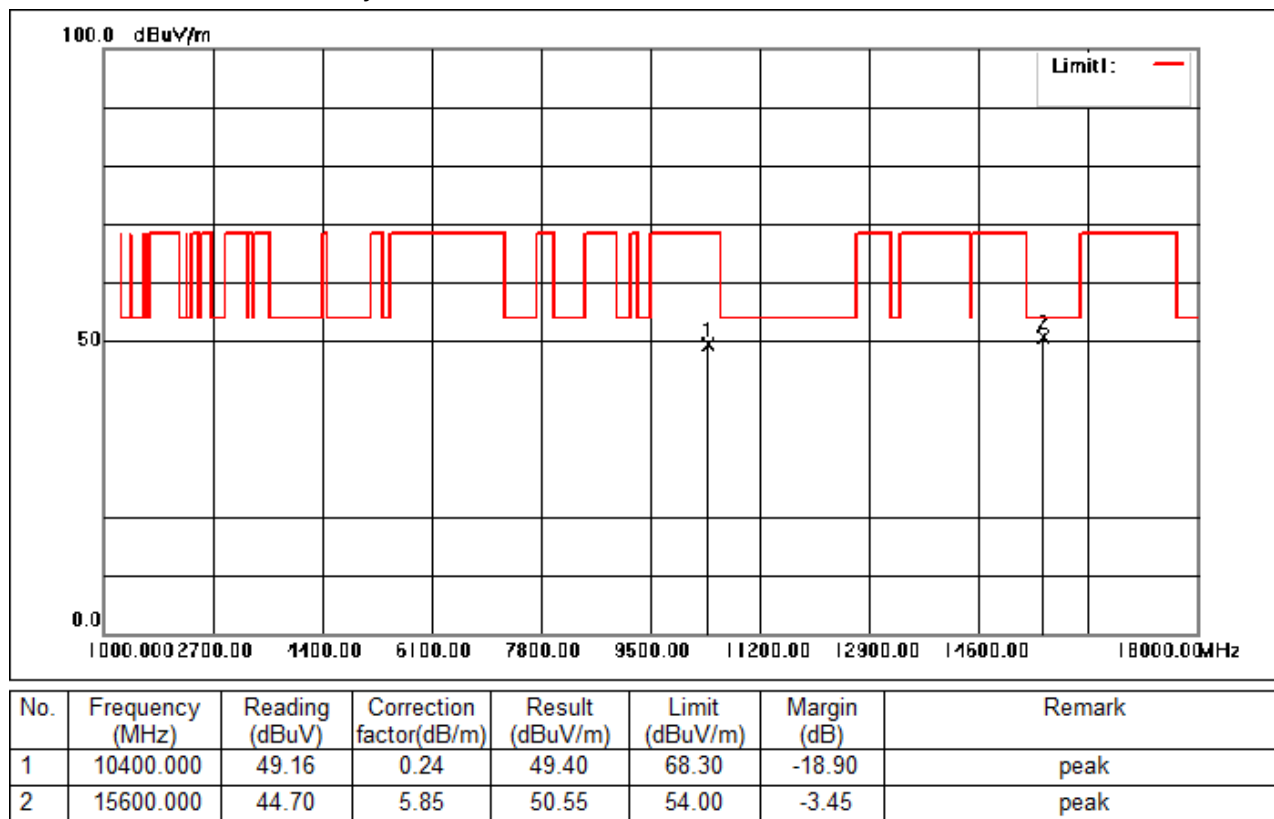
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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 20MHz; Channel: middle



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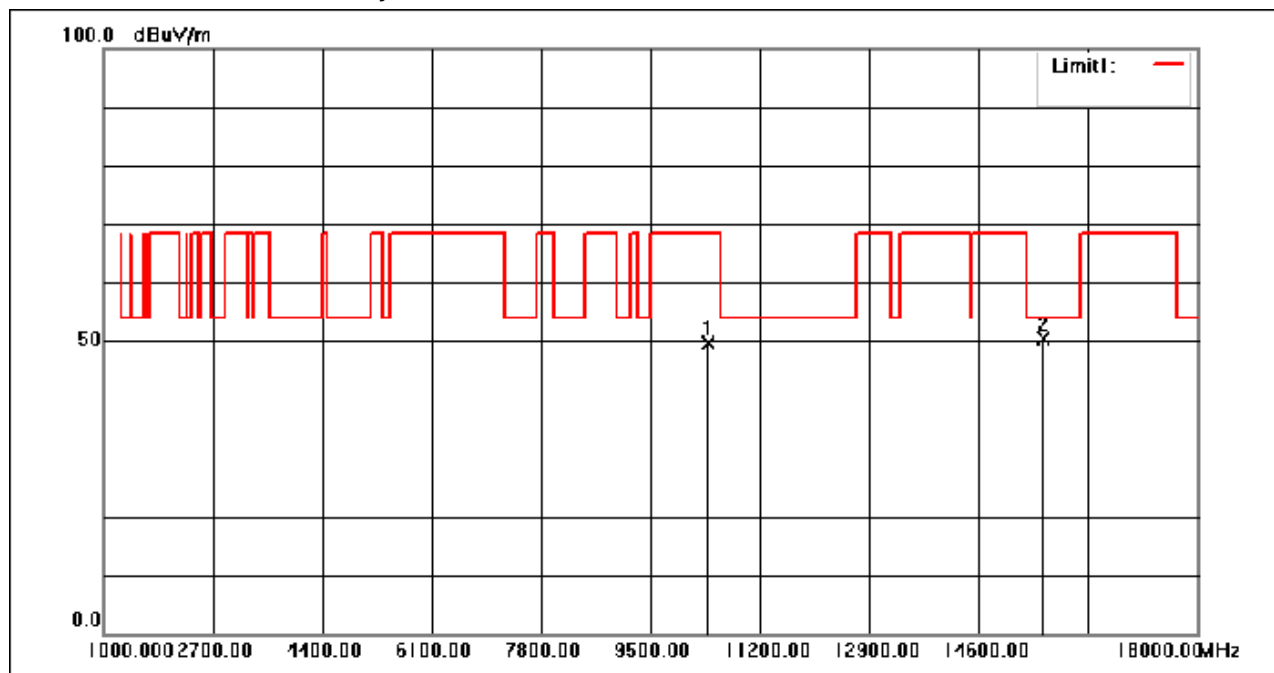
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Compliance Certification Services (Kunshan) Inc.

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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	10400.000	49.38	0.24	49.62	68.30	-18.68	peak
2	15600.000	44.47	5.85	50.32	54.00	-3.68	peak



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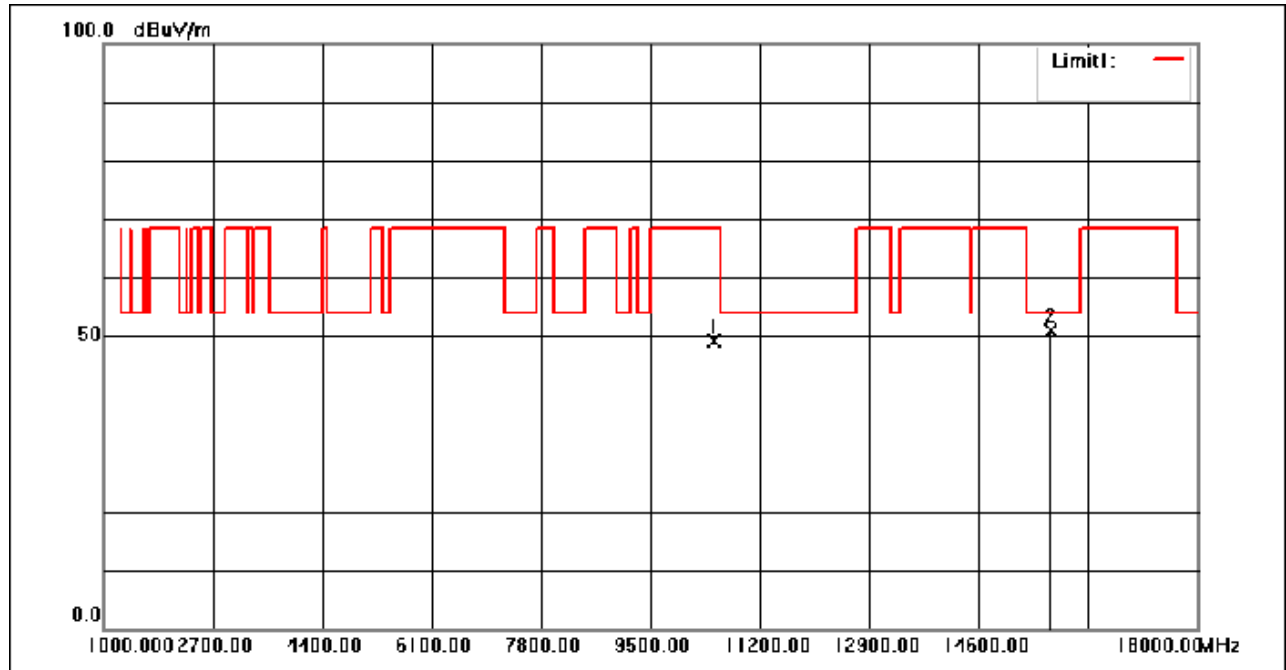
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Compliance Certification Services (Kunshan) Inc.

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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	10480.000	48.78	0.40	49.18	68.30	-19.12	peak
2	15720.000	44.81	6.10	50.91	54.00	-3.09	peak



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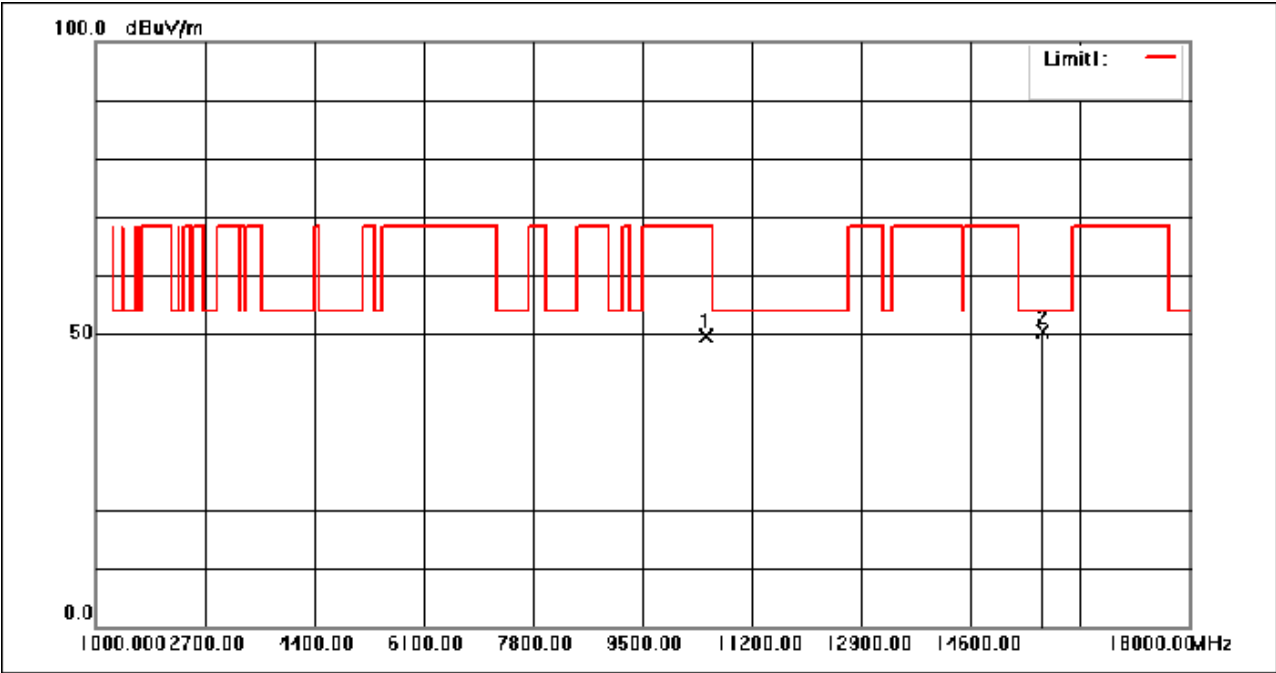
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Compliance Certification Services (Kunshan) Inc.

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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	10480.000	49.23	0.40	49.63	68.30	-18.67	peak
2	15720.000	44.23	6.10	50.33	54.00	-3.67	peak



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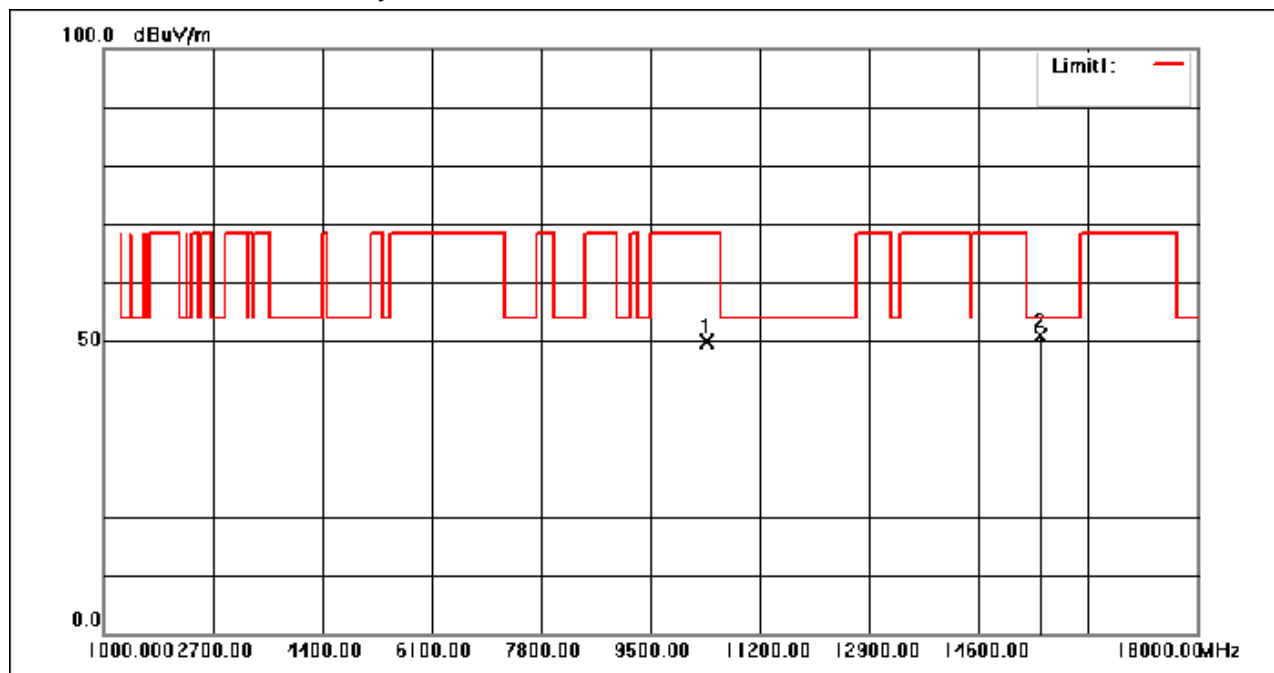
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Compliance Certification Services (Kunshan) Inc.

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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	10380.000	49.67	0.20	49.87	68.30	-18.43	peak
2	15570.000	45.15	5.79	50.94	54.00	-3.06	peak



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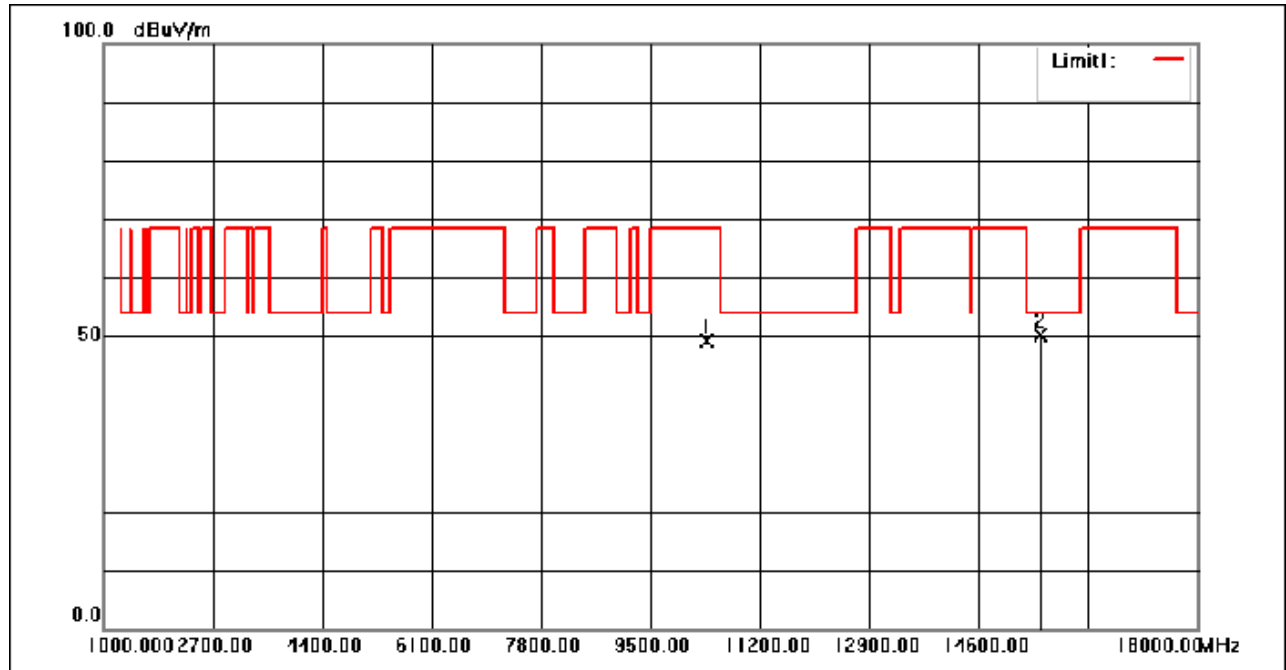
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Compliance Certification Services (Kunshan) Inc.

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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	10380.000	49.00	0.20	49.20	68.30	-19.10	peak
2	15570.000	44.46	5.79	50.25	54.00	-3.75	peak



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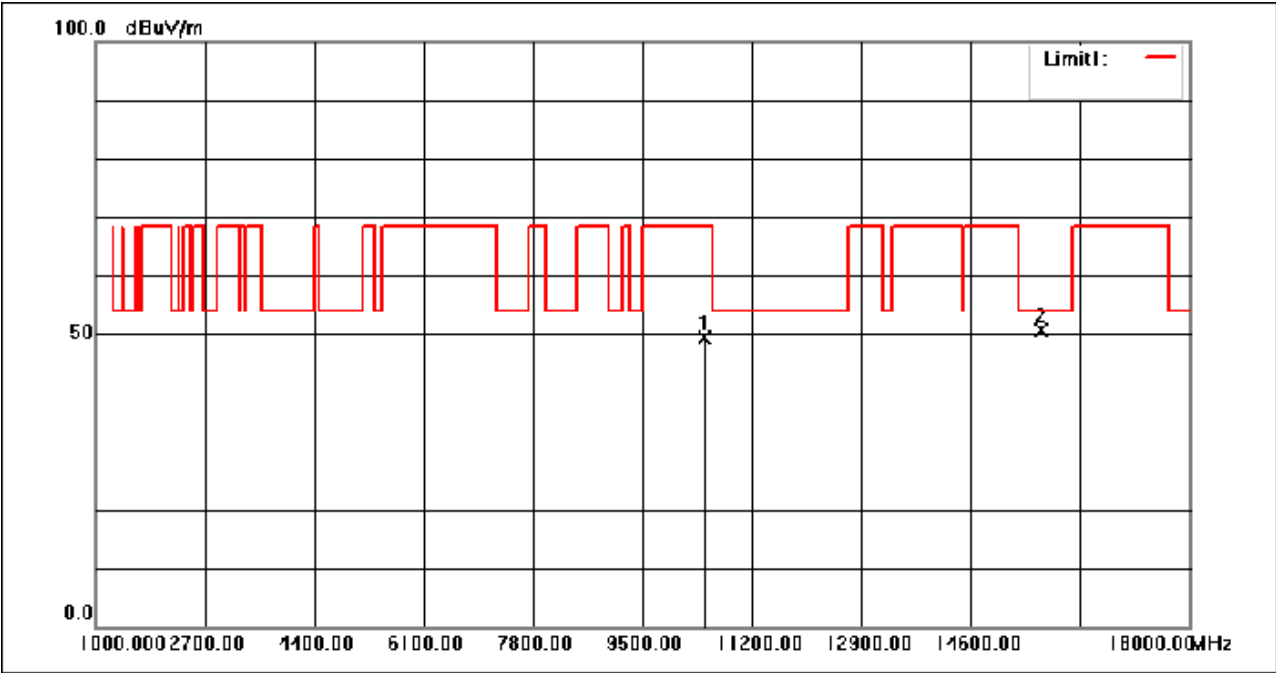
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Compliance Certification Services (Kunshan) Inc.

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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	10460.000	49.13	0.36	49.49	68.30	-18.81	peak
2	15690.000	44.63	6.04	50.67	54.00	-3.33	peak



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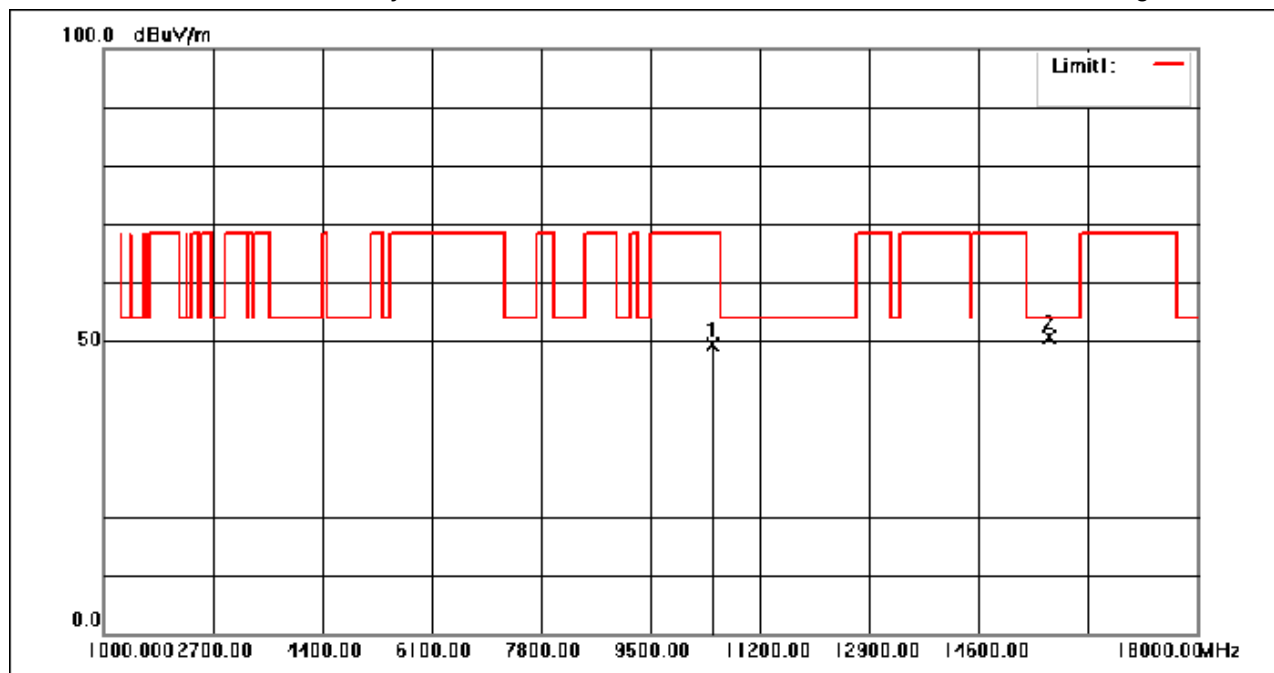
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Compliance Certification Services (Kunshan) Inc.

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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	10460.000	49.02	0.36	49.38	68.30	-18.92	peak
2	15690.000	44.50	6.04	50.54	54.00	-3.46	peak



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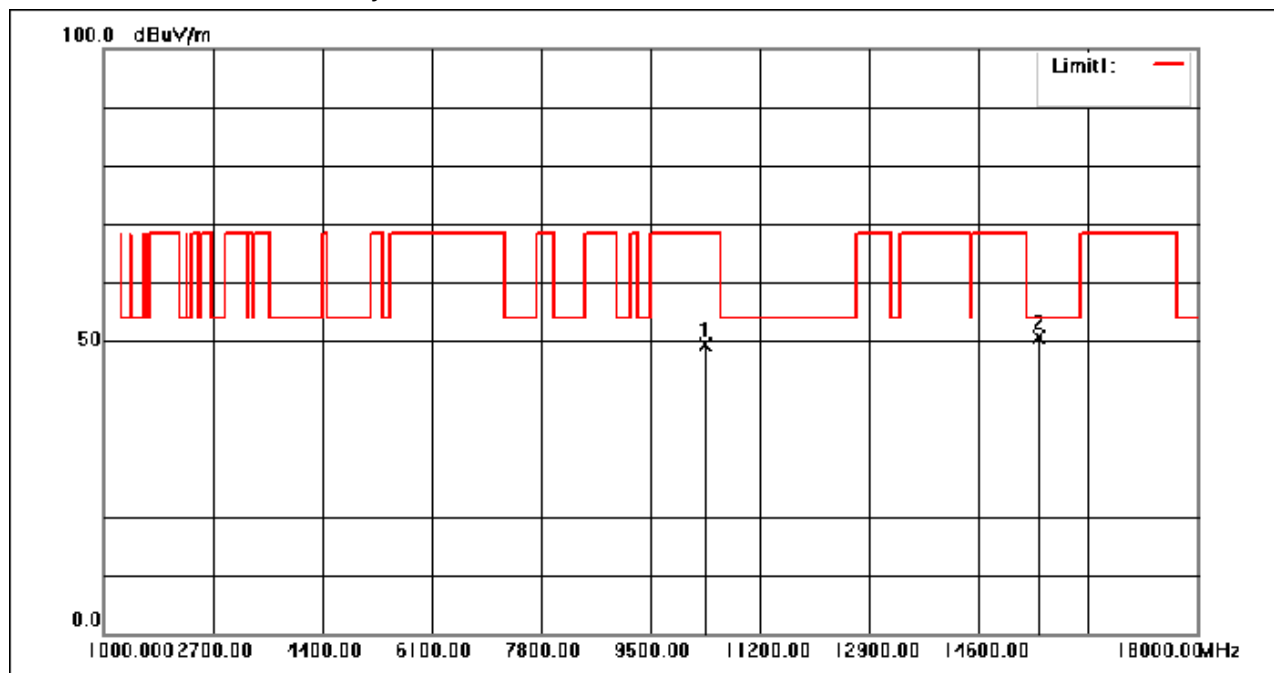
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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	49.26	0.16	49.42	68.30	-18.88	peak
2	15540.000	44.85	5.73	50.58	54.00	-3.42	peak



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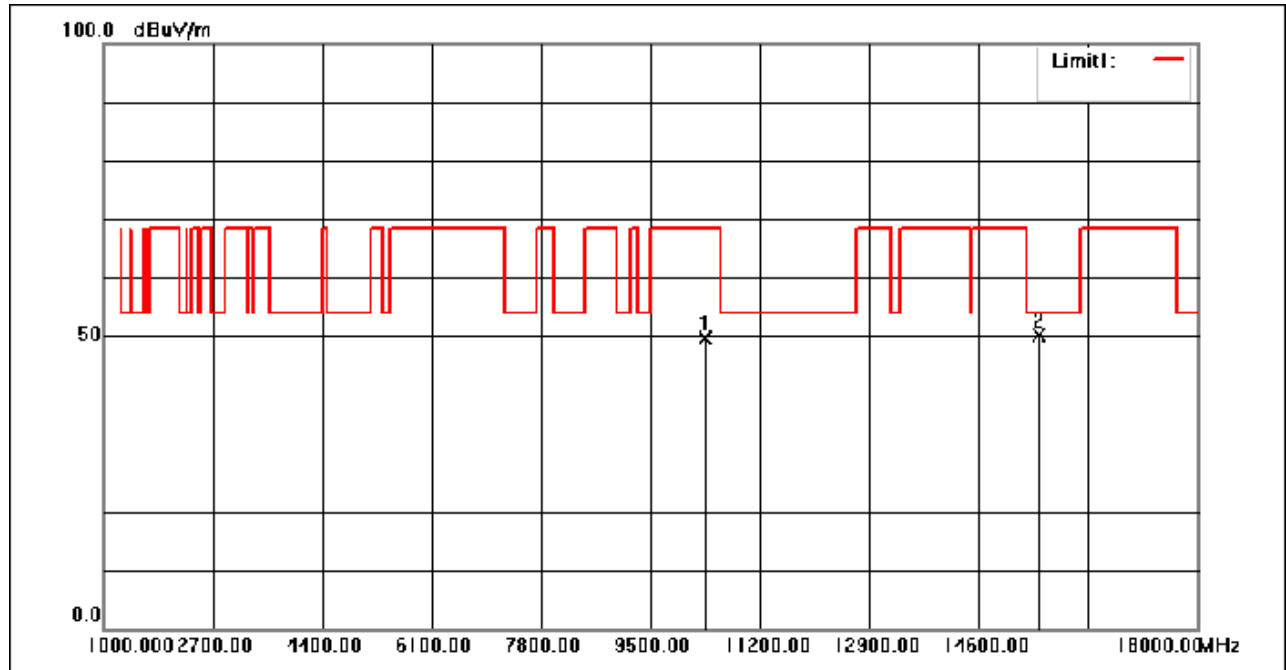
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	49.51	0.16	49.67	68.30	-18.63	peak
2	15540.000	44.33	5.73	50.06	54.00	-3.94	peak



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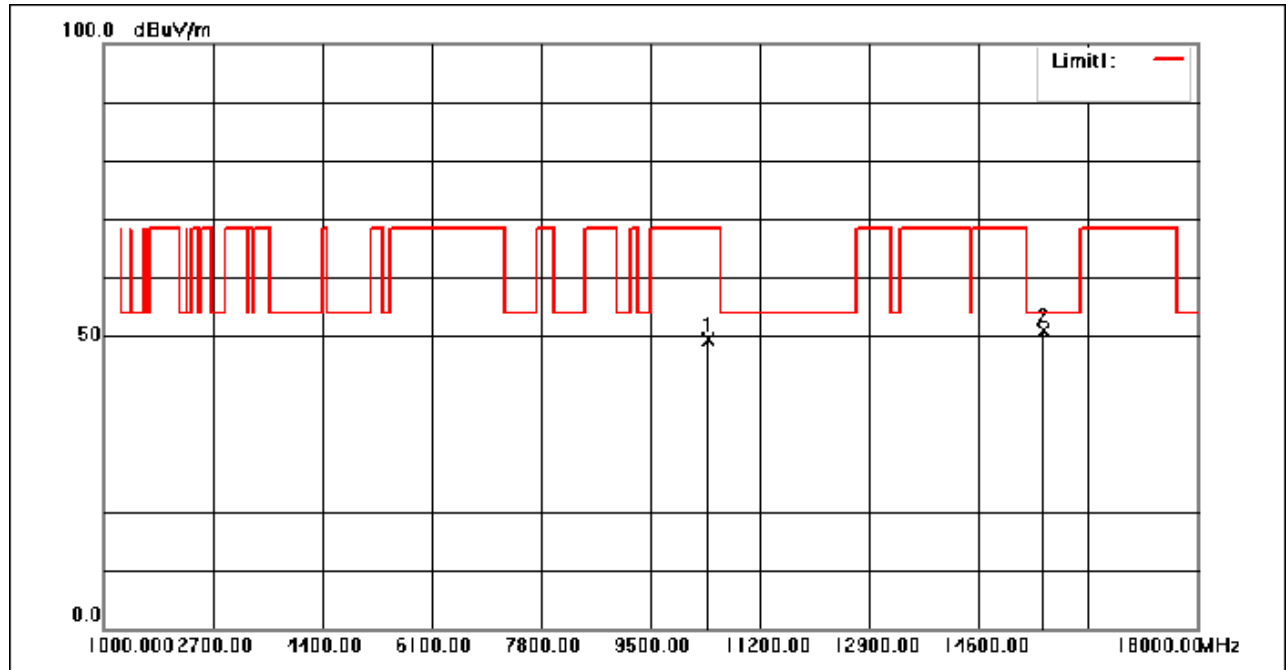
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	49.07	0.24	49.31	68.30	-18.99	peak
2	15600.000	44.97	5.85	50.82	54.00	-3.18	peak



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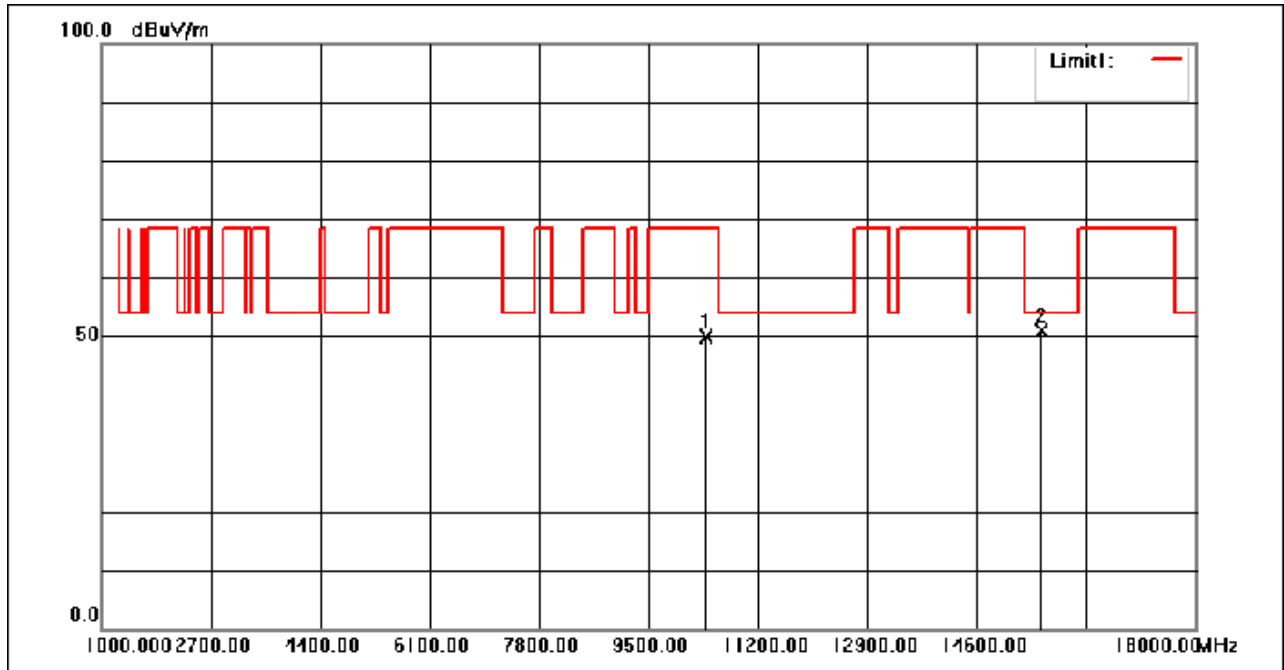
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	49.55	0.24	49.79	68.30	-18.51	peak
2	15600.000	44.99	5.85	50.84	54.00	-3.16	peak



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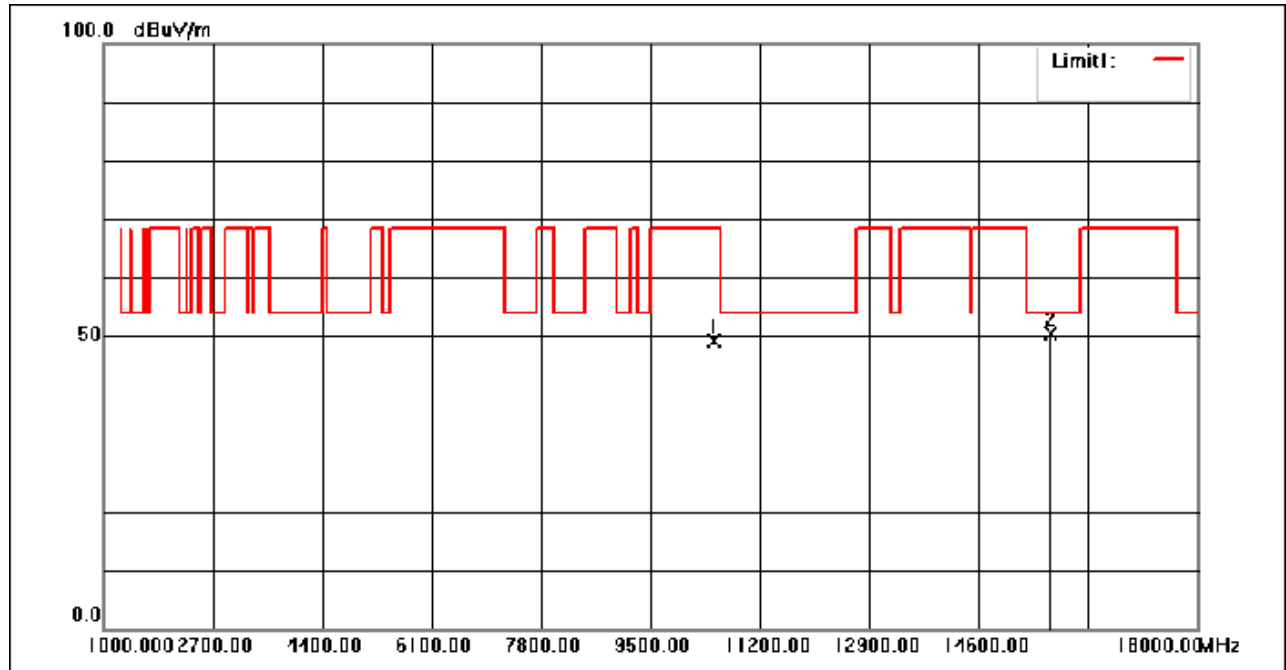
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	48.63	0.40	49.03	68.30	-19.27	peak
2	15720.000	44.29	6.10	50.39	54.00	-3.61	peak



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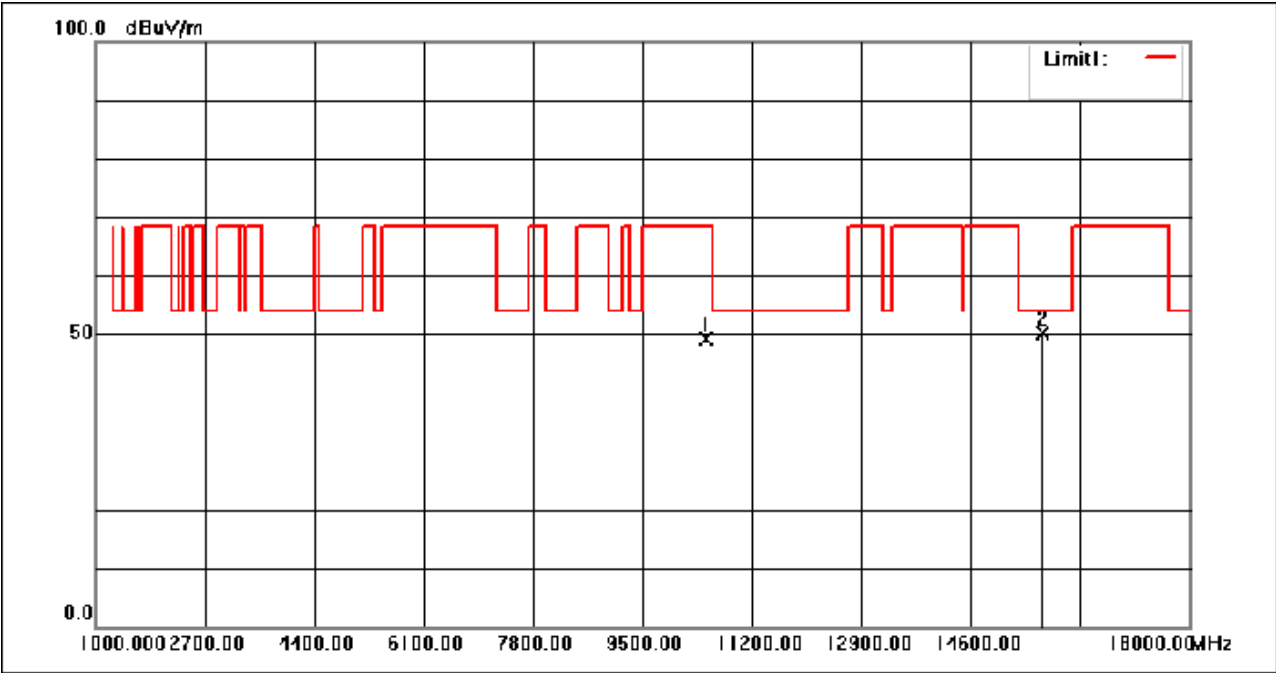
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	48.73	0.40	49.13	68.30	-19.17	peak
2	15720.000	43.91	6.10	50.01	54.00	-3.99	peak



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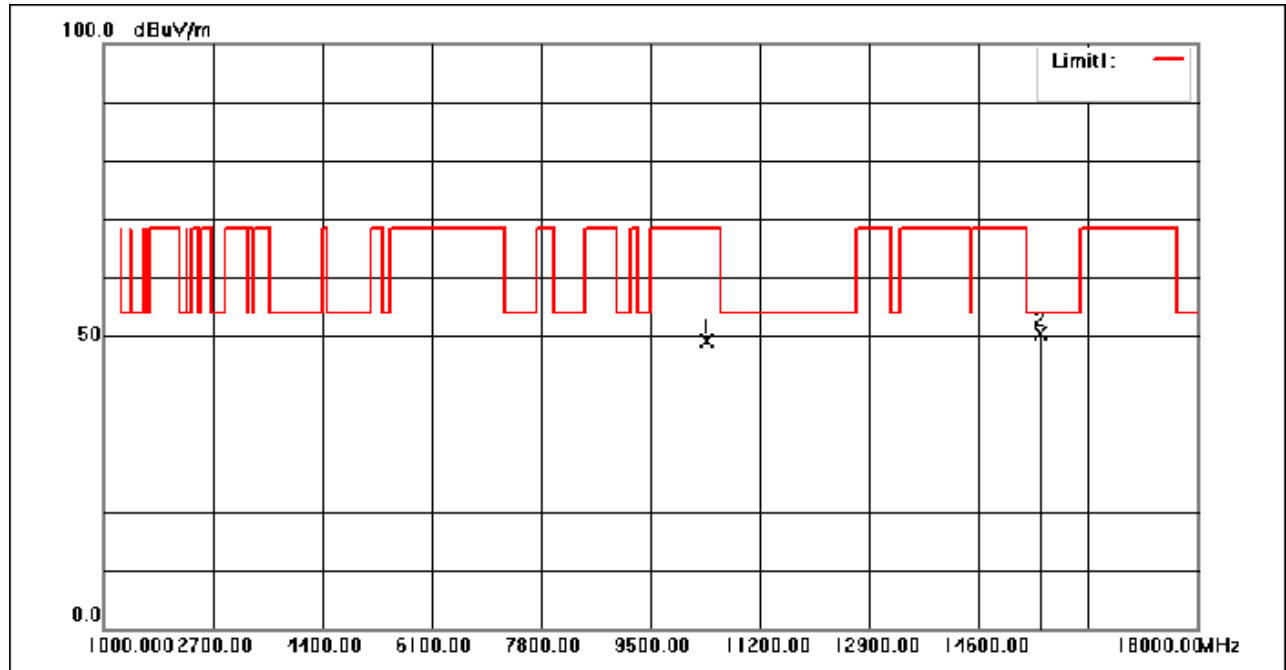
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Compliance Certification Services (Kunshan) Inc.

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	48.98	0.20	49.18	68.30	-19.12	peak
2	15570.000	44.54	5.79	50.33	54.00	-3.67	peak



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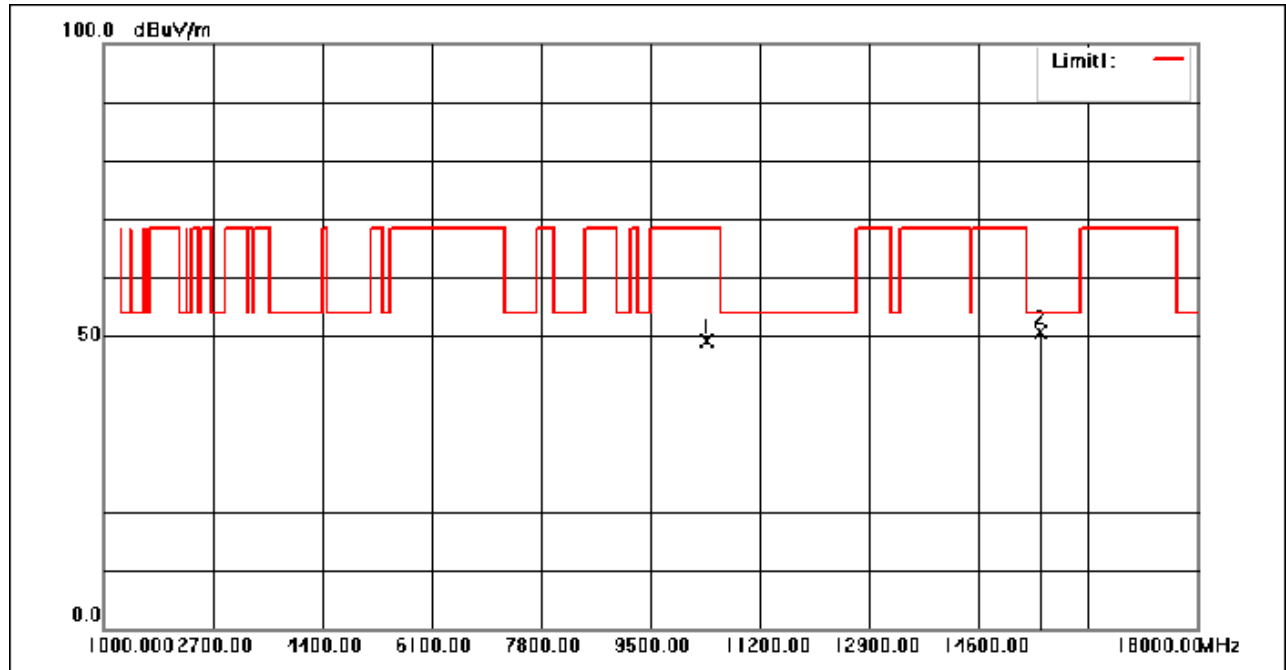
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Compliance Certification Services (Kunshan) Inc.

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	49.02	0.20	49.22	68.30	-19.08	peak
2	15570.000	44.78	5.79	50.57	54.00	-3.43	peak



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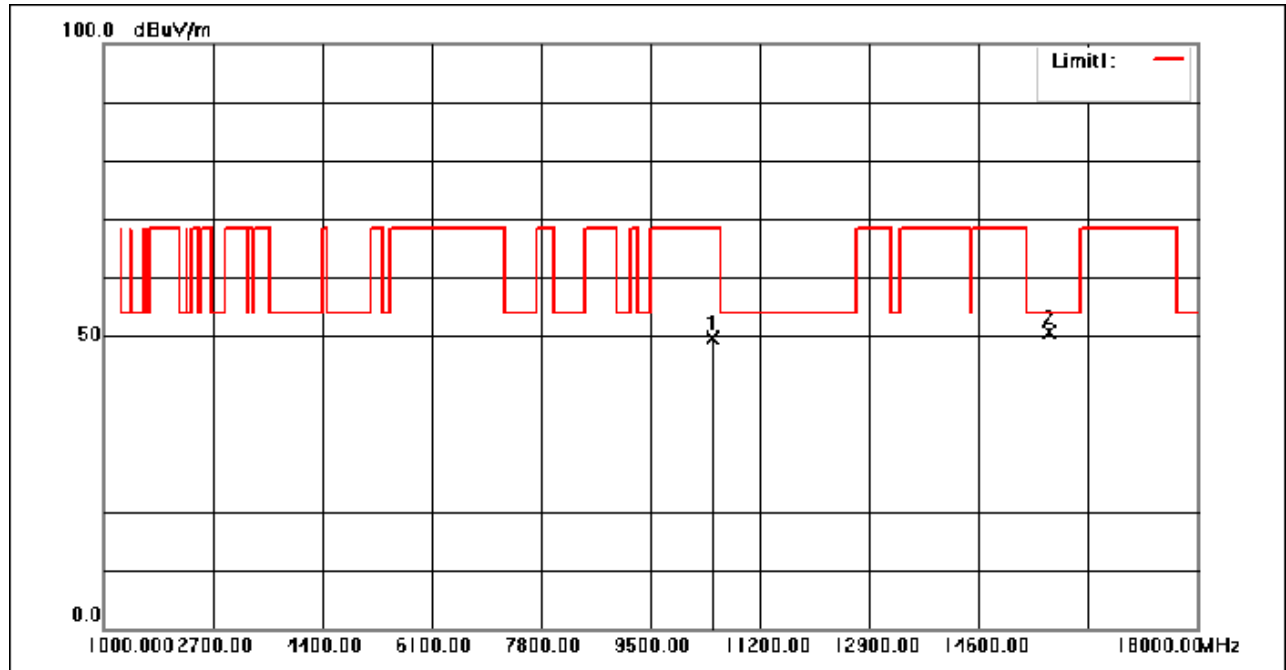
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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	49.21	0.36	49.57	68.30	-18.73	peak
2	15690.000	44.61	6.04	50.65	54.00	-3.35	peak



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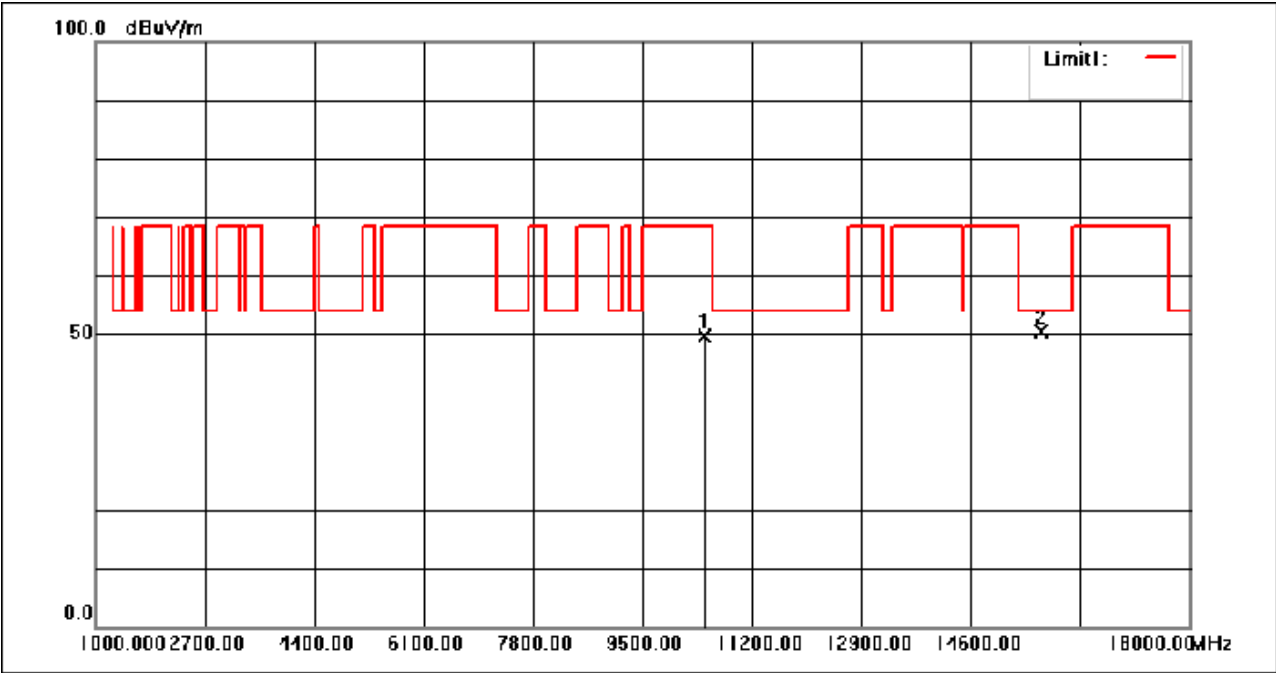
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Test Mode: 08; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	49.25	0.36	49.61	68.30	-18.69	peak
2	15690.000	44.40	6.04	50.44	54.00	-3.56	peak



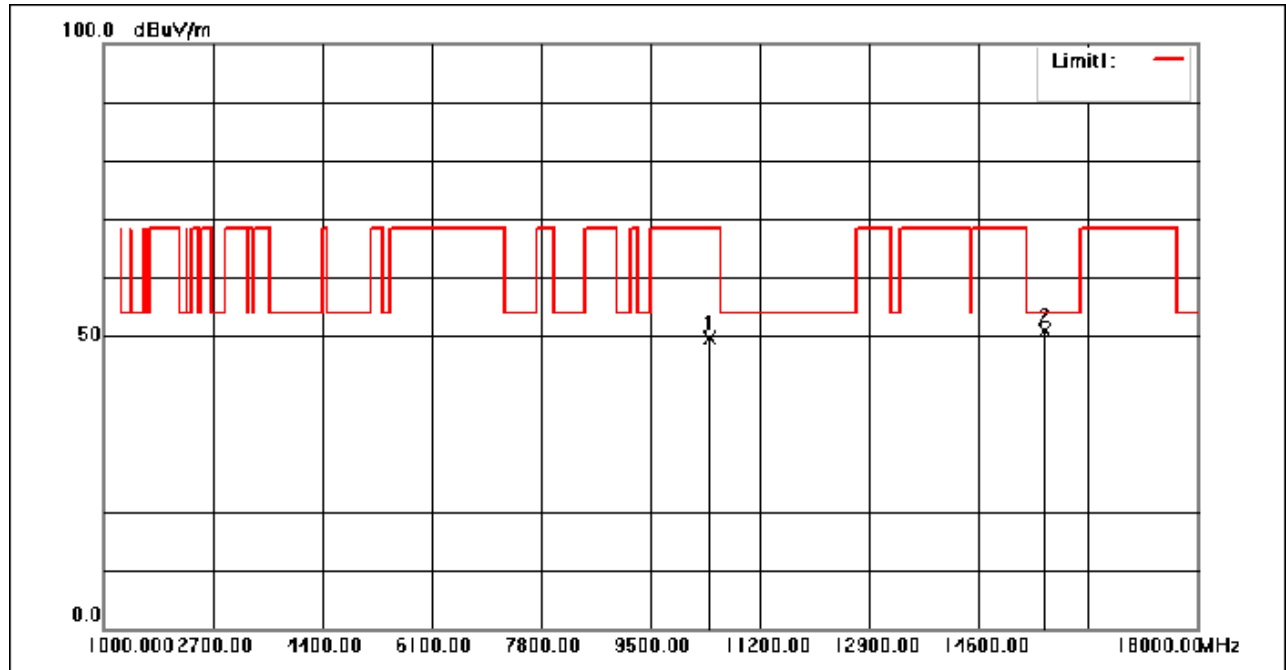
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 80MHz; Channel: middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10420.000	49.30	0.28	49.58	68.30	-18.72	peak
2	15630.000	44.98	5.92	50.90	54.00	-3.10	peak



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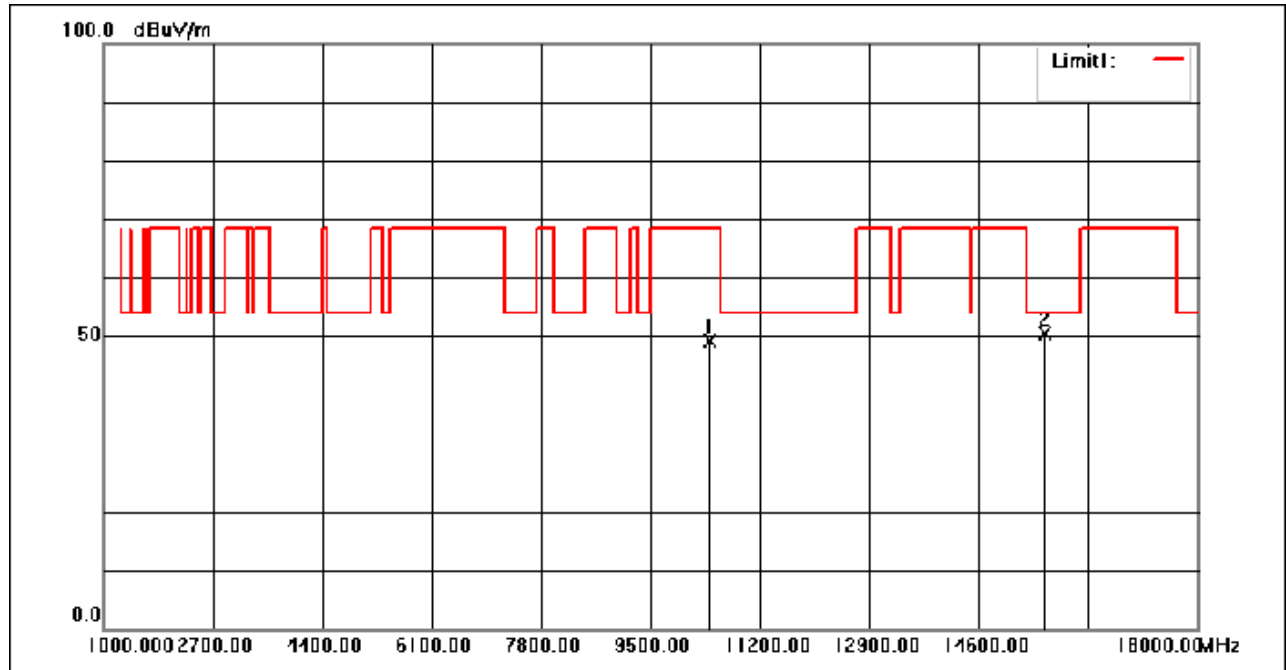
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Test Mode: 08; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10420.000	48.87	0.28	49.15	68.30	-19.15	peak
2	15630.000	44.52	5.92	50.44	54.00	-3.56	peak



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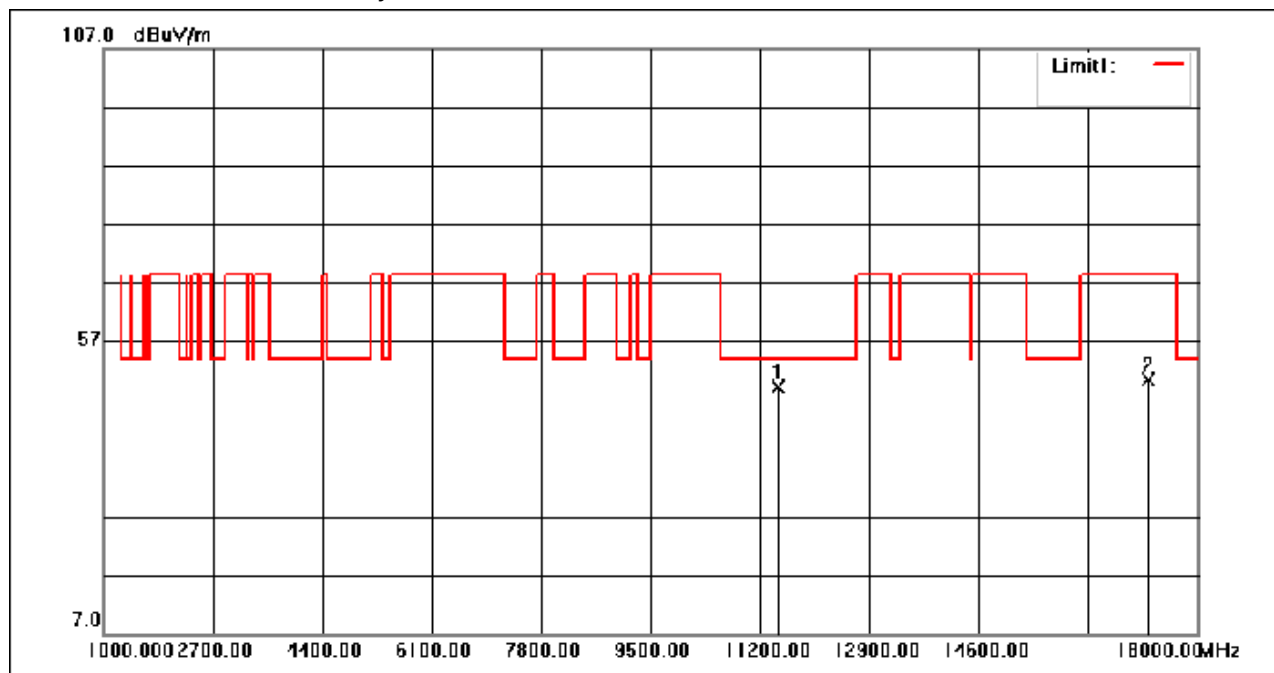
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

Page: 60 of 290

Test Mode: 09; 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	11490.000	48.18	0.94	49.12	54.00	-4.88	peak
2	17235.000	41.21	9.05	50.26	68.30	-18.04	peak



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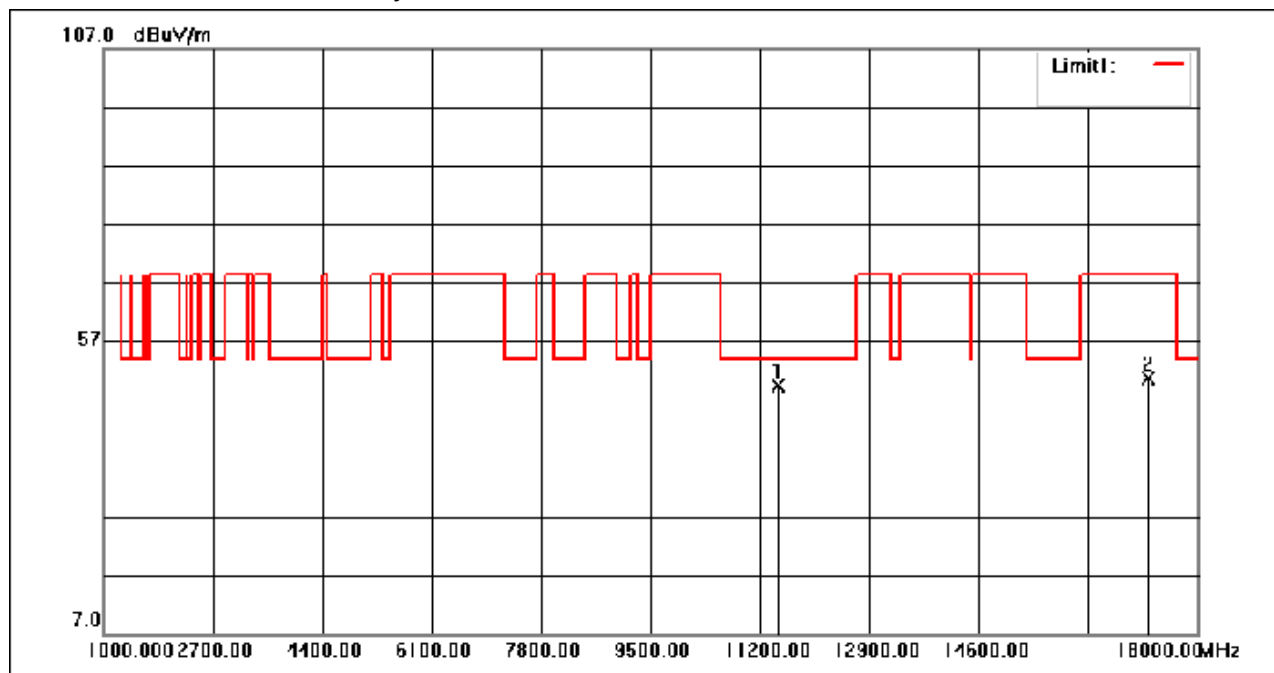
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11490.000	48.46	0.94	49.40	54.00	-4.60	peak
2	17235.000	41.59	9.05	50.64	68.30	-17.66	peak



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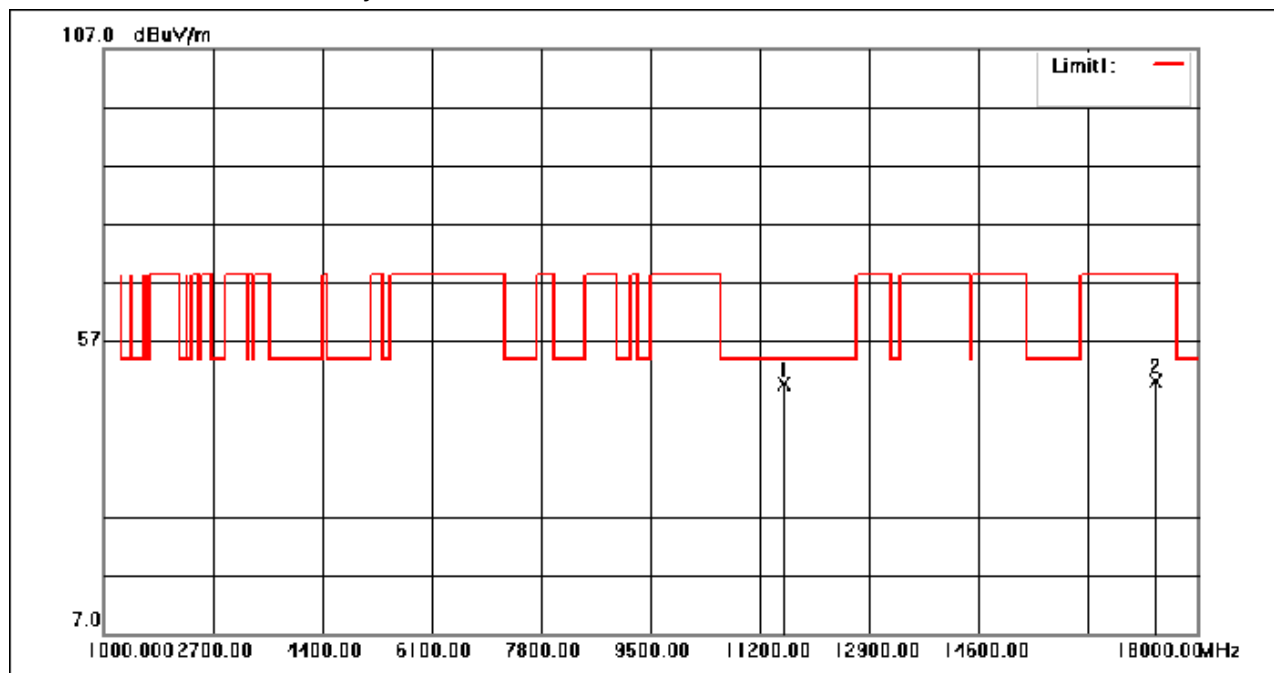
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11570.000	48.49	1.18	49.67	54.00	-4.33	peak
2	17355.000	41.20	8.98	50.18	68.30	-18.12	peak



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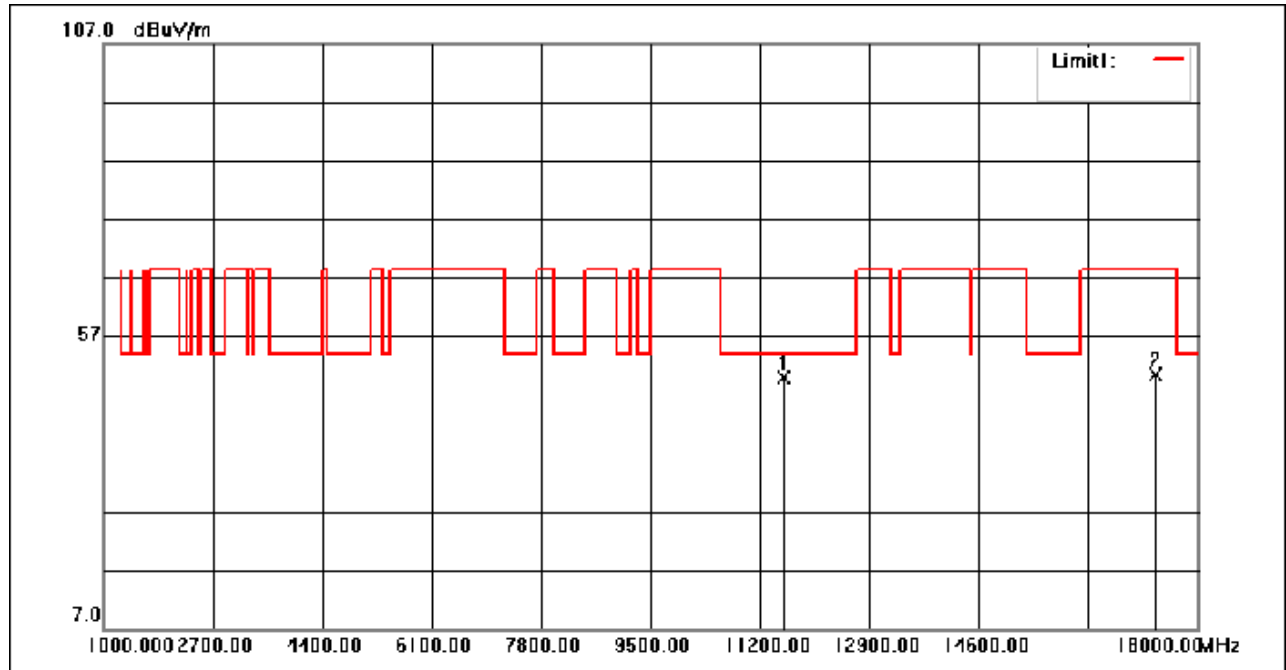
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11570.000	48.59	1.18	49.77	54.00	-4.23	peak
2	17355.000	41.47	8.98	50.45	68.30	-17.85	peak



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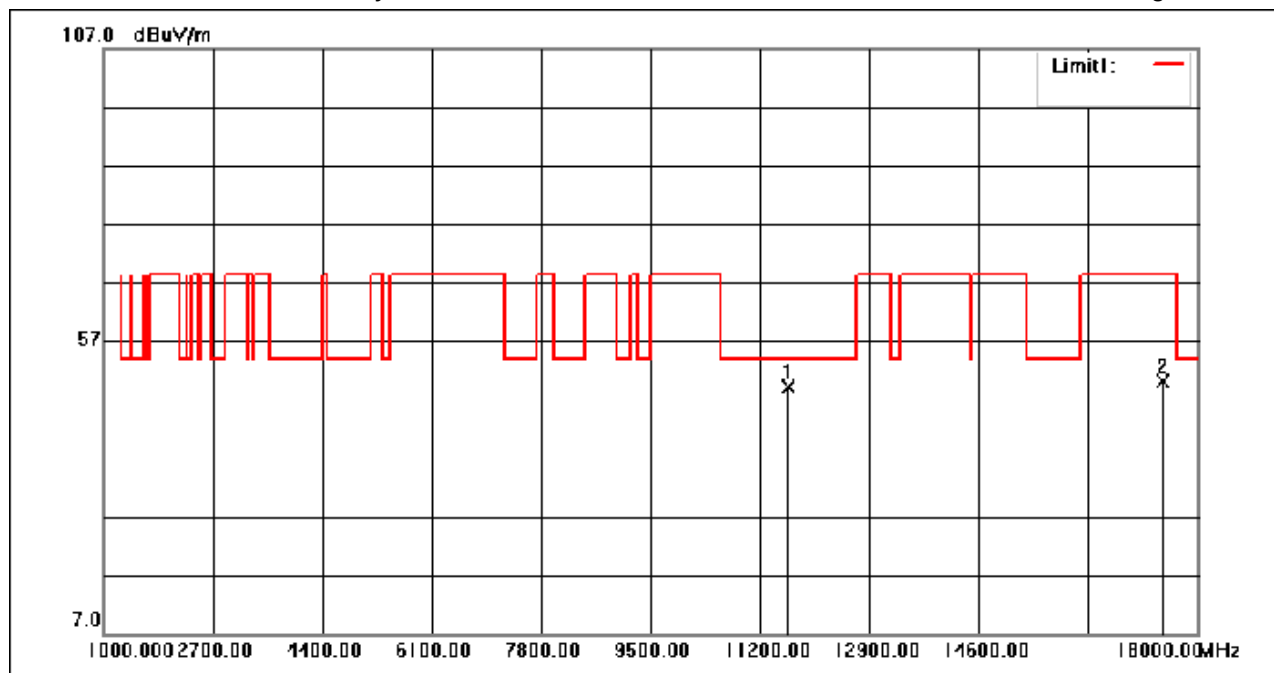
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11650.000	47.77	1.45	49.22	54.00	-4.78	peak
2	17475.000	41.29	8.90	50.19	68.30	-18.11	peak



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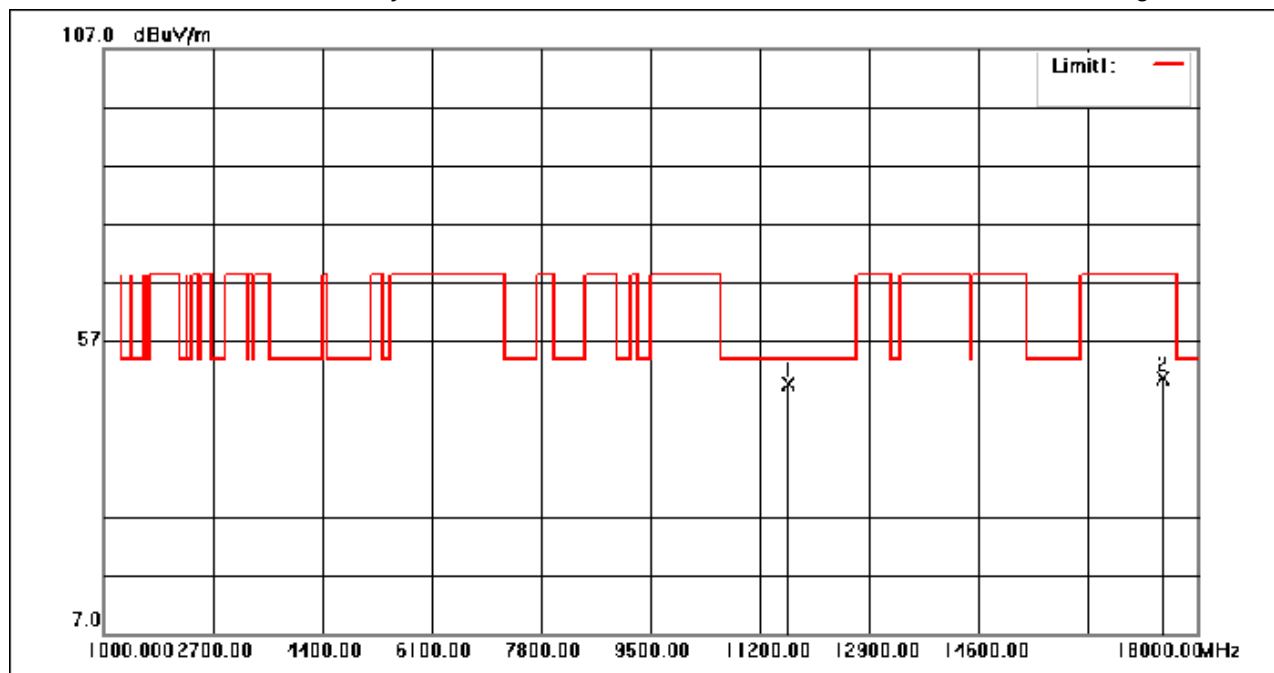
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11650.000	48.22	1.45	49.67	54.00	-4.33	peak
2	17475.000	41.83	8.90	50.73	68.30	-17.57	peak



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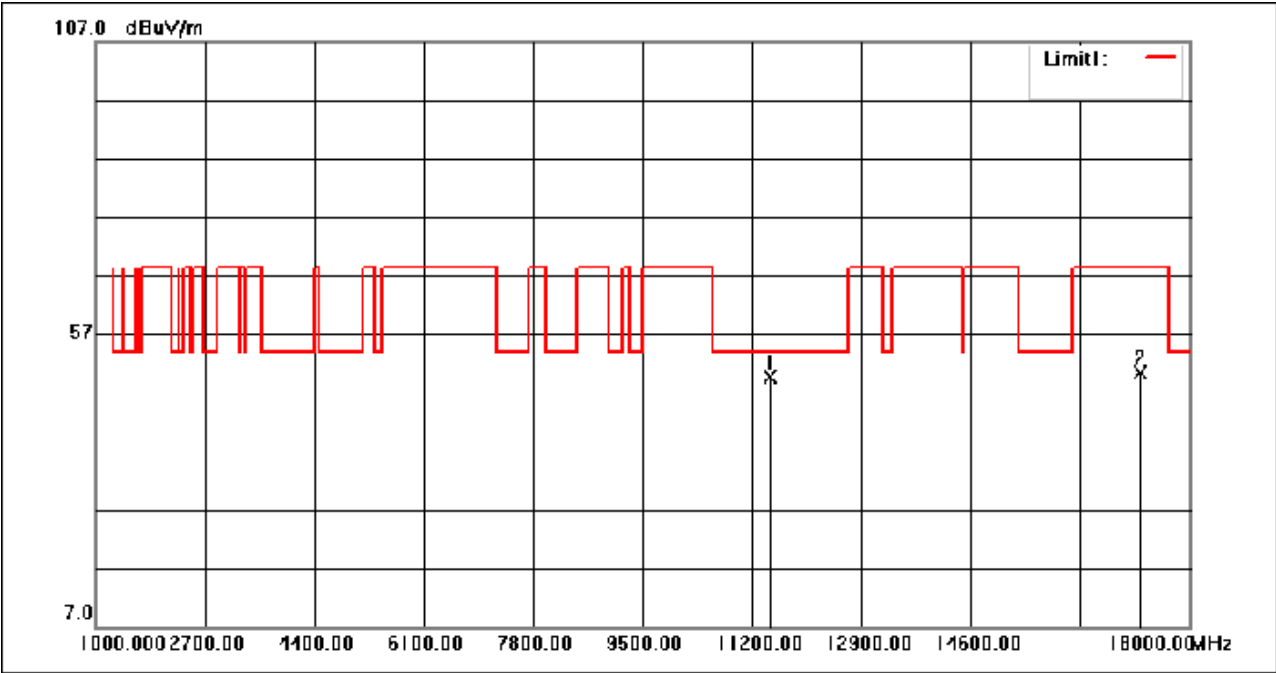
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11490.000	48.66	0.94	49.60	54.00	-4.40	peak
2	17235.000	41.41	9.05	50.46	68.30	-17.84	peak



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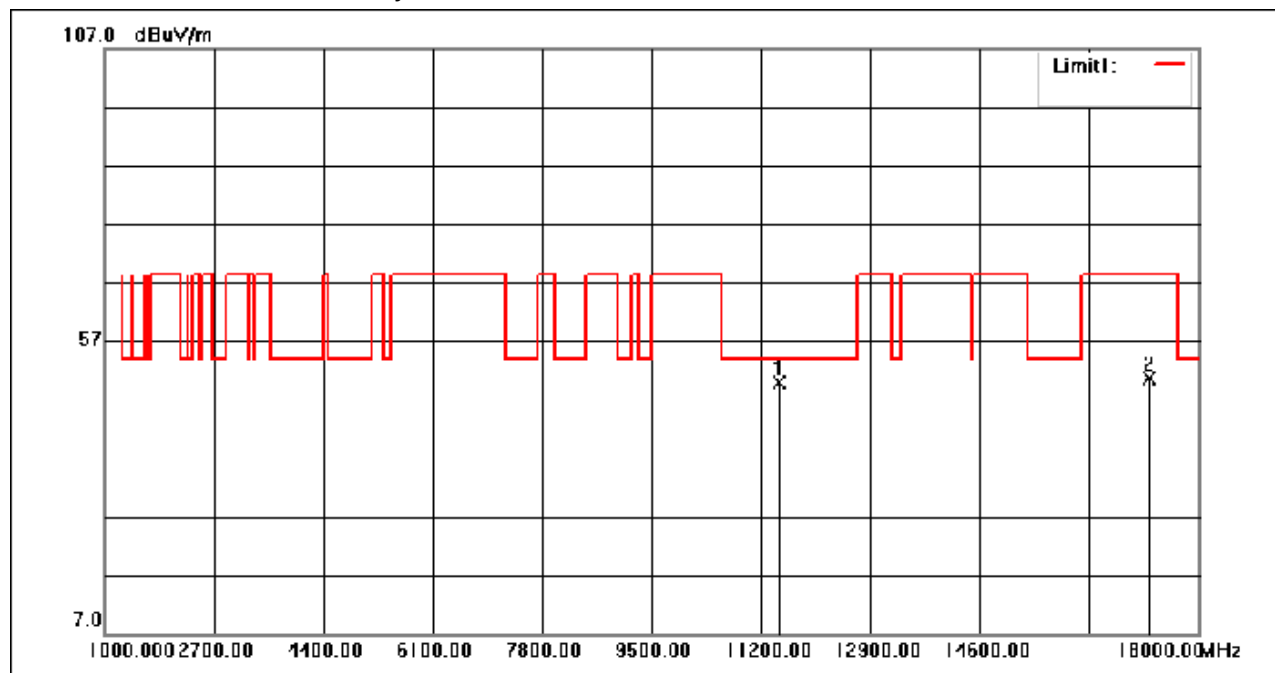
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11490.000	49.02	0.94	49.96	54.00	-4.04	peak
2	17235.000	41.60	9.05	50.65	68.30	-17.65	peak



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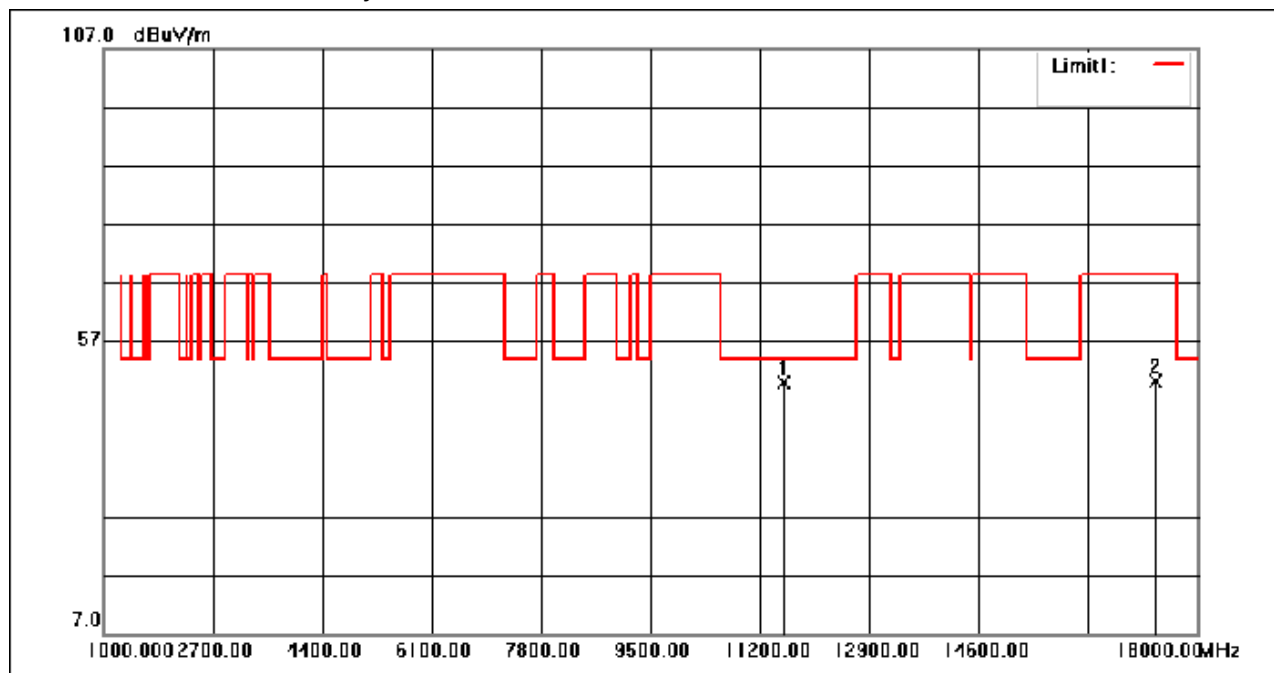
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11570.000	48.68	1.18	49.86	54.00	-4.14	peak
2	17355.000	41.20	8.98	50.18	68.30	-18.12	peak



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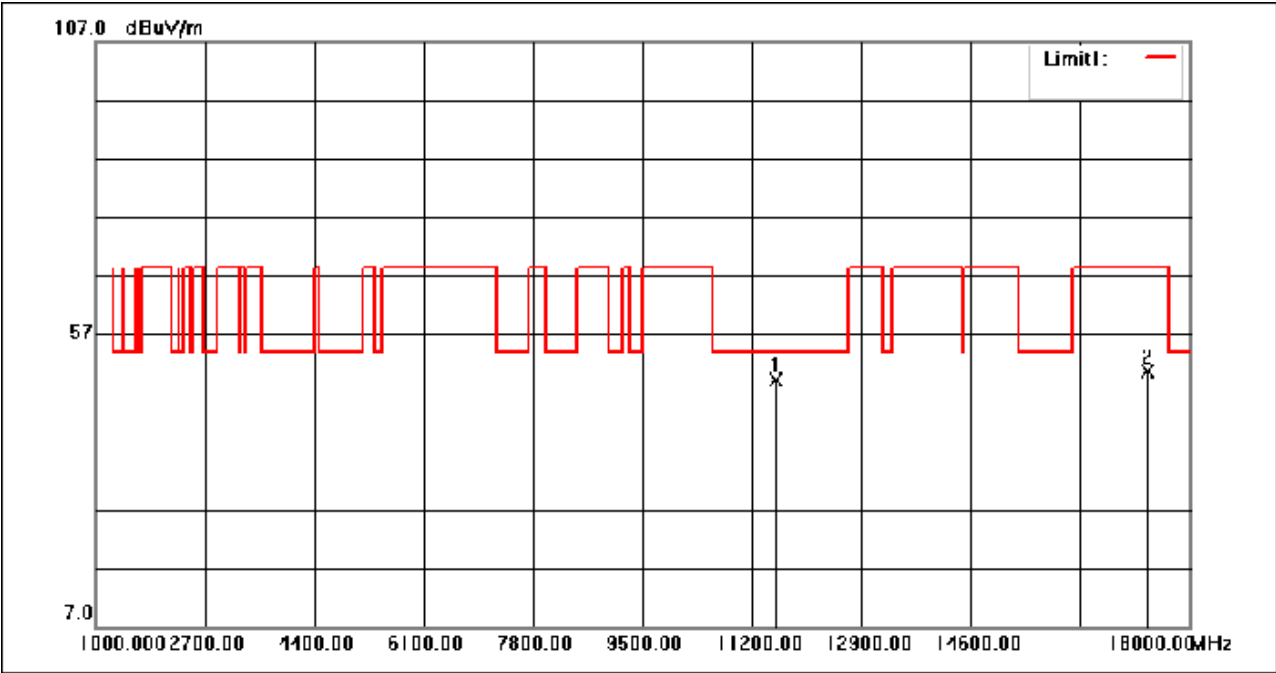
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Test Mode: 09; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	47.94	1.18	49.12	54.00	-4.88	peak
2	17355.000	41.69	8.98	50.67	68.30	-17.63	peak



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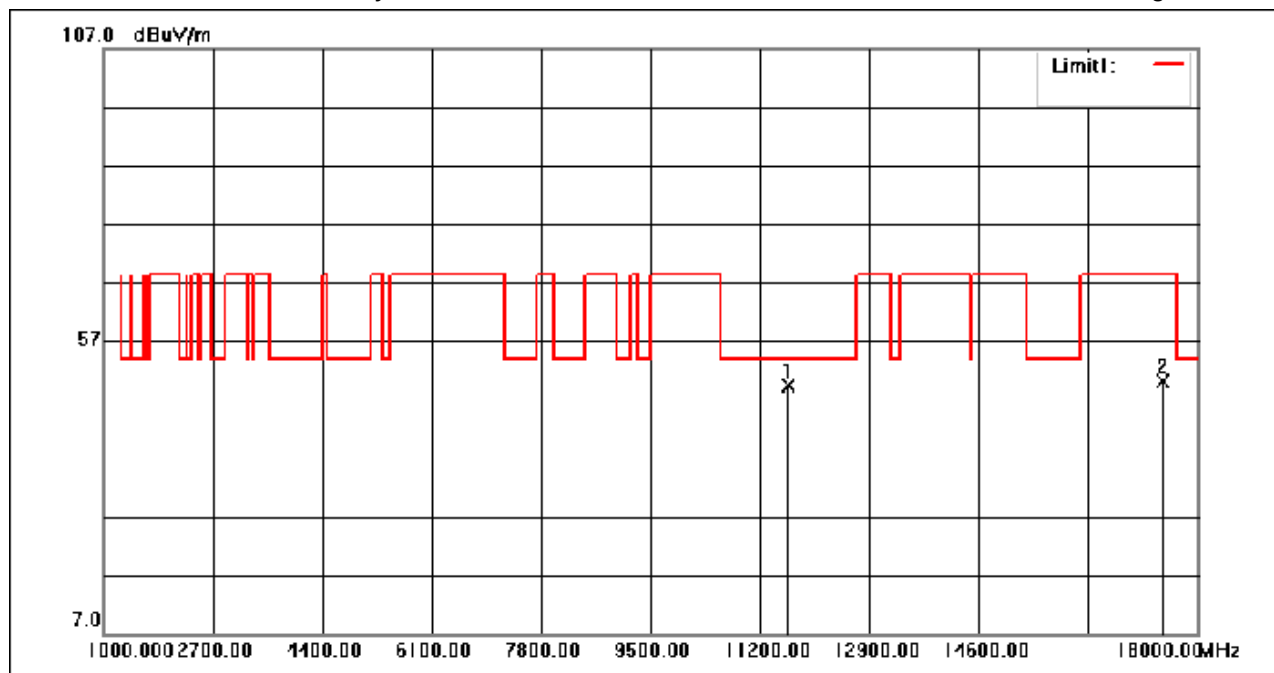
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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	48.00	1.45	49.45	54.00	-4.55	peak
2	17475.000	41.32	8.90	50.22	68.30	-18.08	peak



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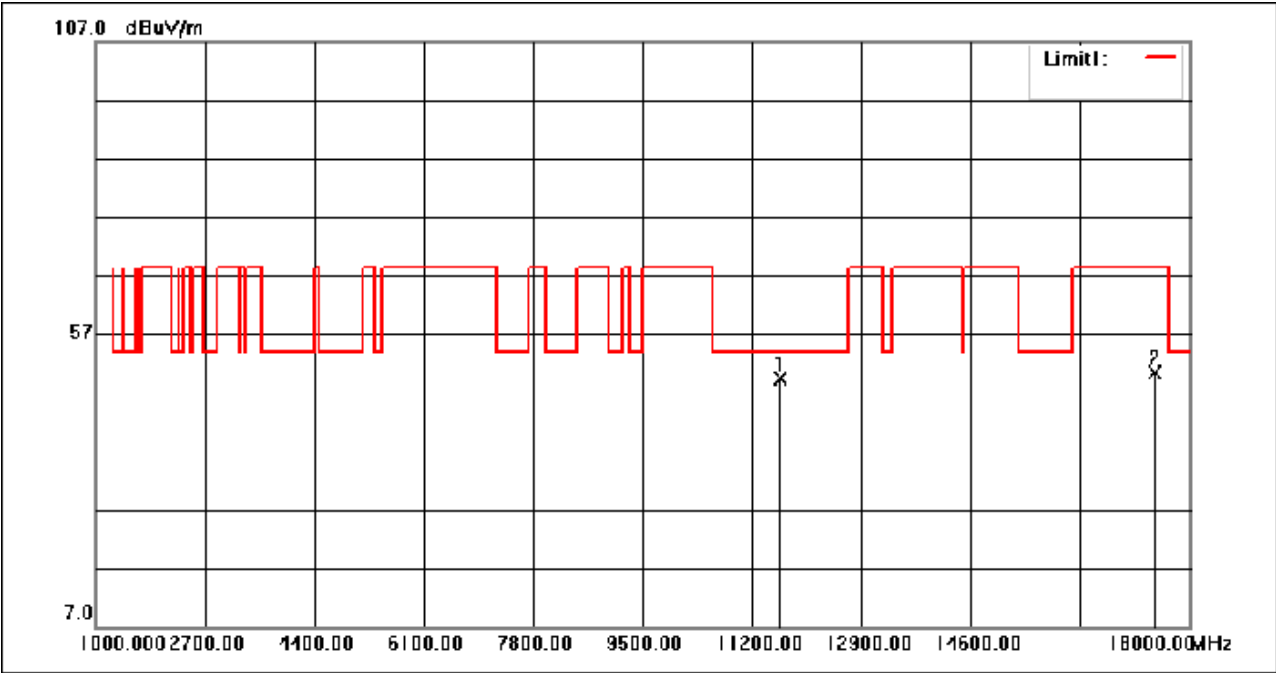
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Test Mode: 09; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	47.97	1.45	49.42	54.00	-4.58	peak
2	17475.000	41.42	8.90	50.32	68.30	-17.98	peak



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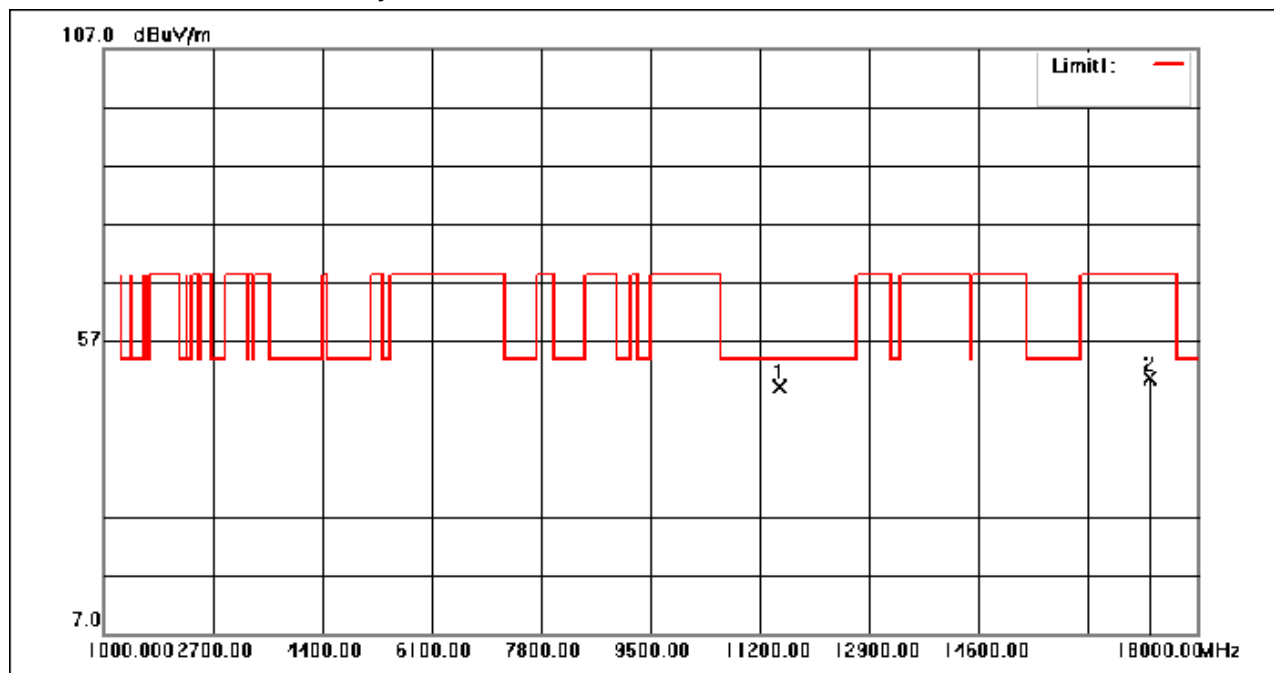
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

Page: 72 of 290

Test Mode: 09; 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	11510.000	48.13	0.99	49.12	54.00	-4.88	peak
2	17265.000	41.54	9.03	50.57	68.30	-17.73	peak



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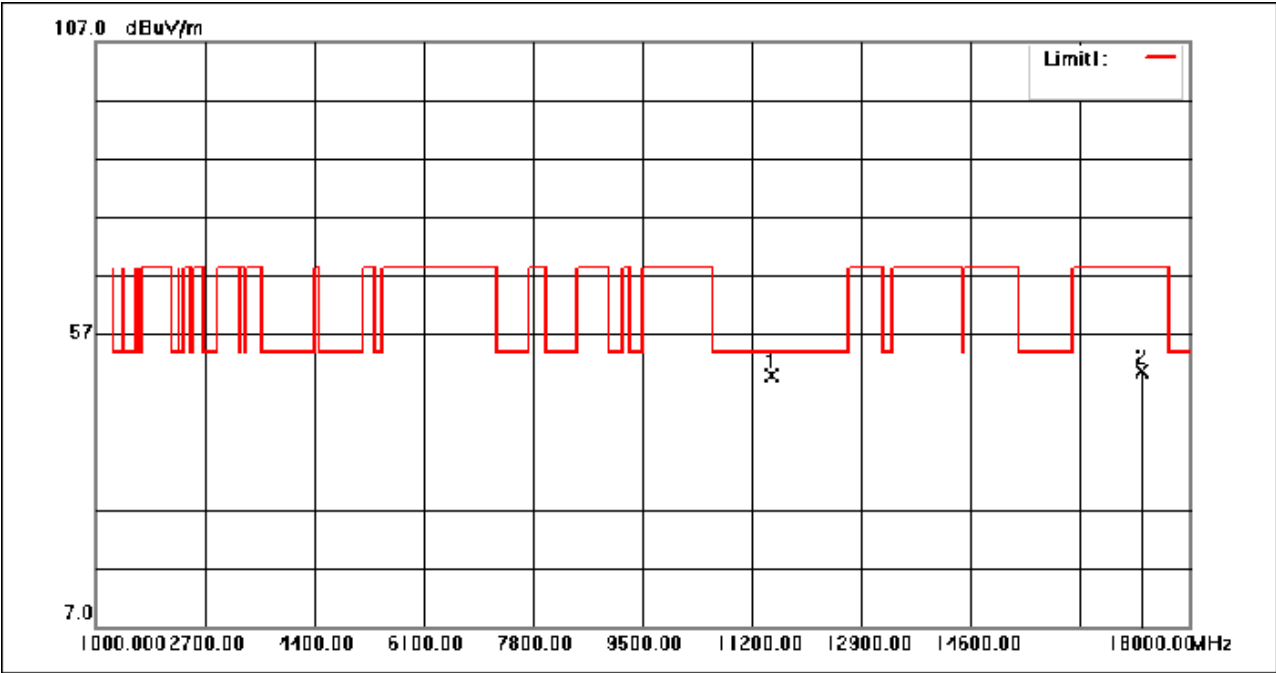
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	11510.000	48.91	0.99	49.90	54.00	-4.10	peak
2	17265.000	41.70	9.03	50.73	68.30	-17.57	peak



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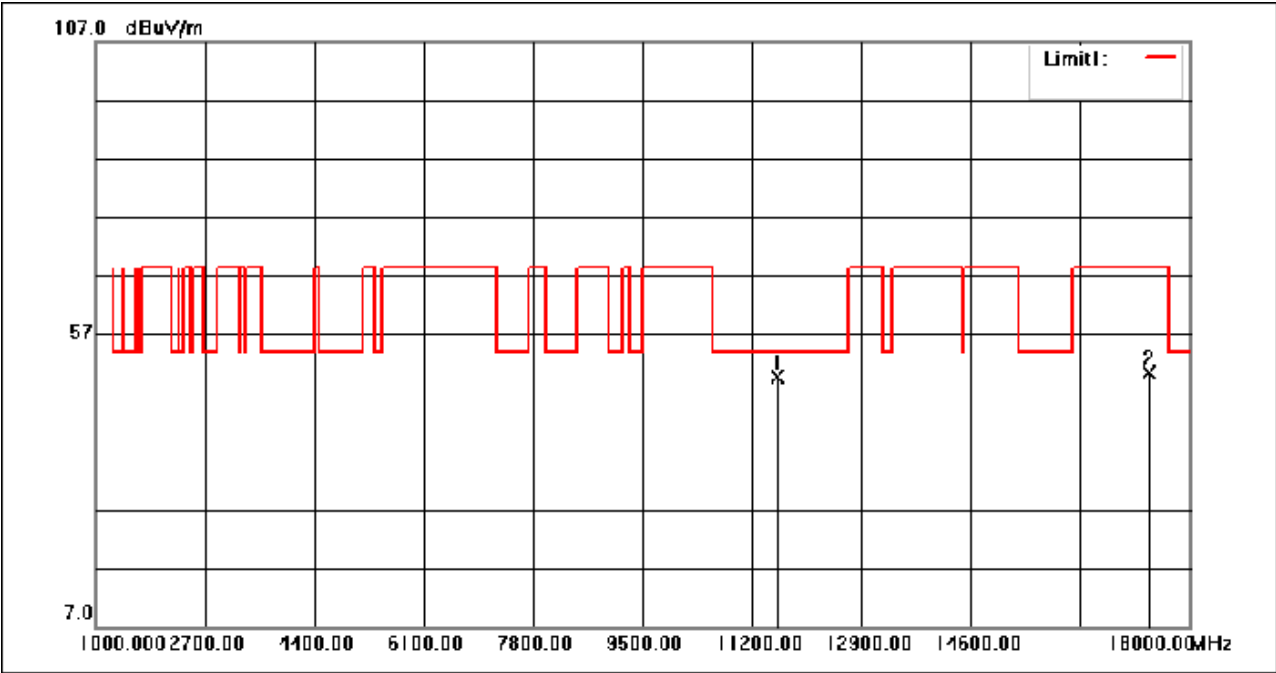
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 09; 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	11590.000	48.37	1.25	49.62	54.00	-4.38	peak
2	17385.000	41.46	8.96	50.42	68.30	-17.88	peak



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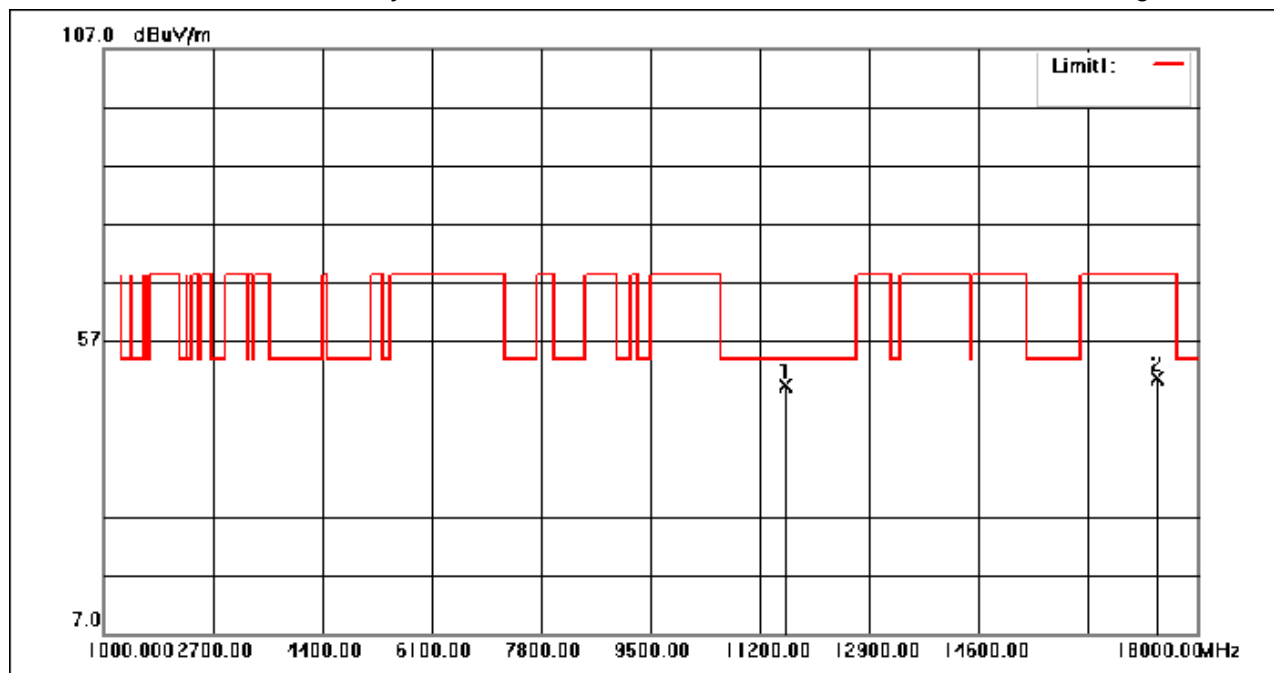
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 09; 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	11590.000	48.12	1.25	49.37	54.00	-4.63	peak
2	17385.000	41.55	8.96	50.51	68.30	-17.79	peak



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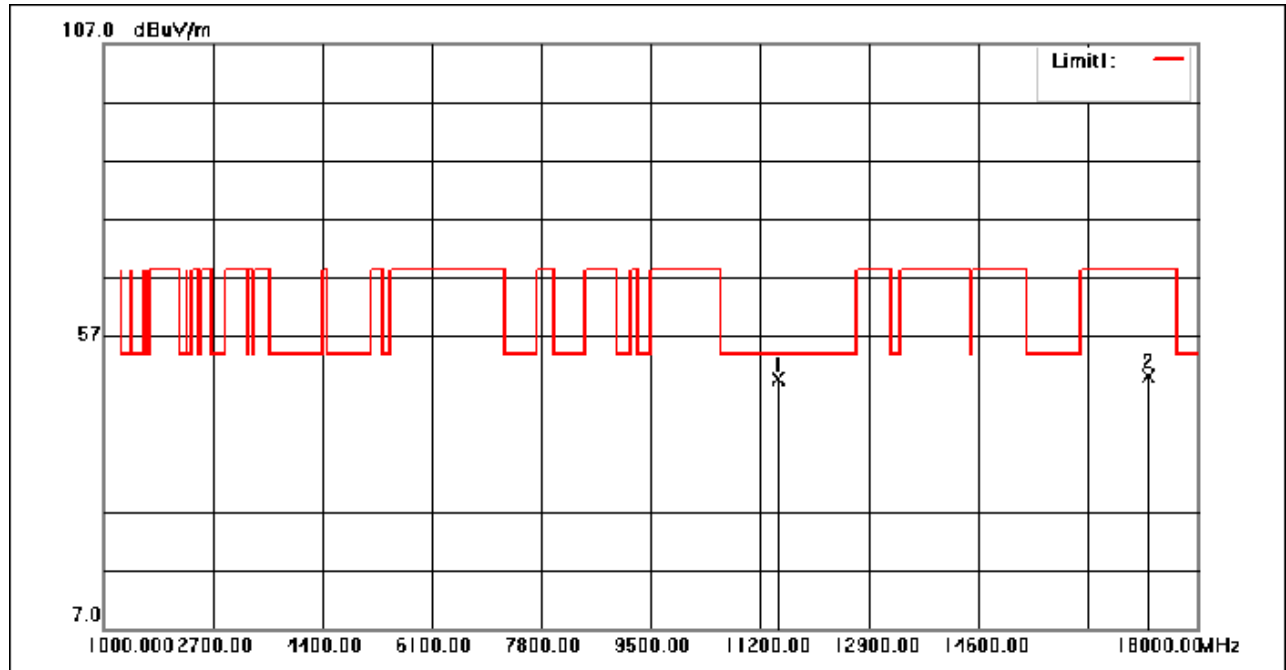
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	48.62	0.94	49.56	54.00	-4.44	peak
2	17235.000	41.07	9.05	50.12	68.30	-18.18	peak



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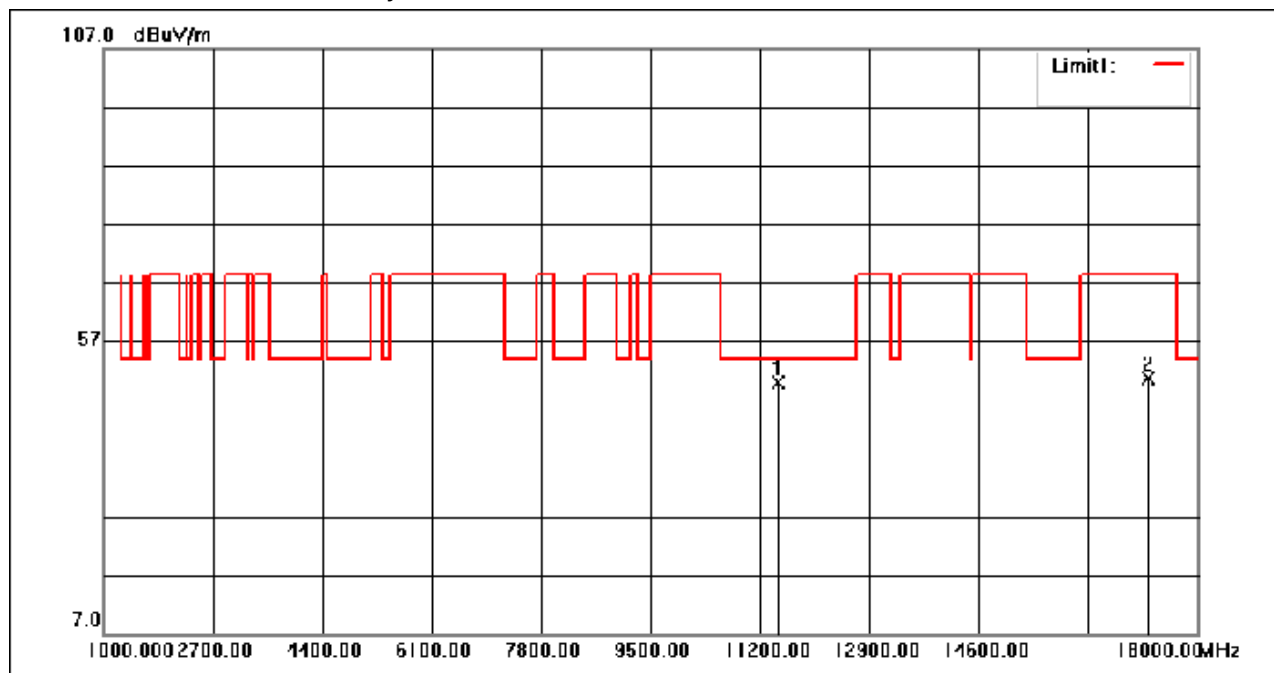
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	48.95	0.94	49.89	54.00	-4.11	peak
2	17235.000	41.60	9.05	50.65	68.30	-17.65	peak



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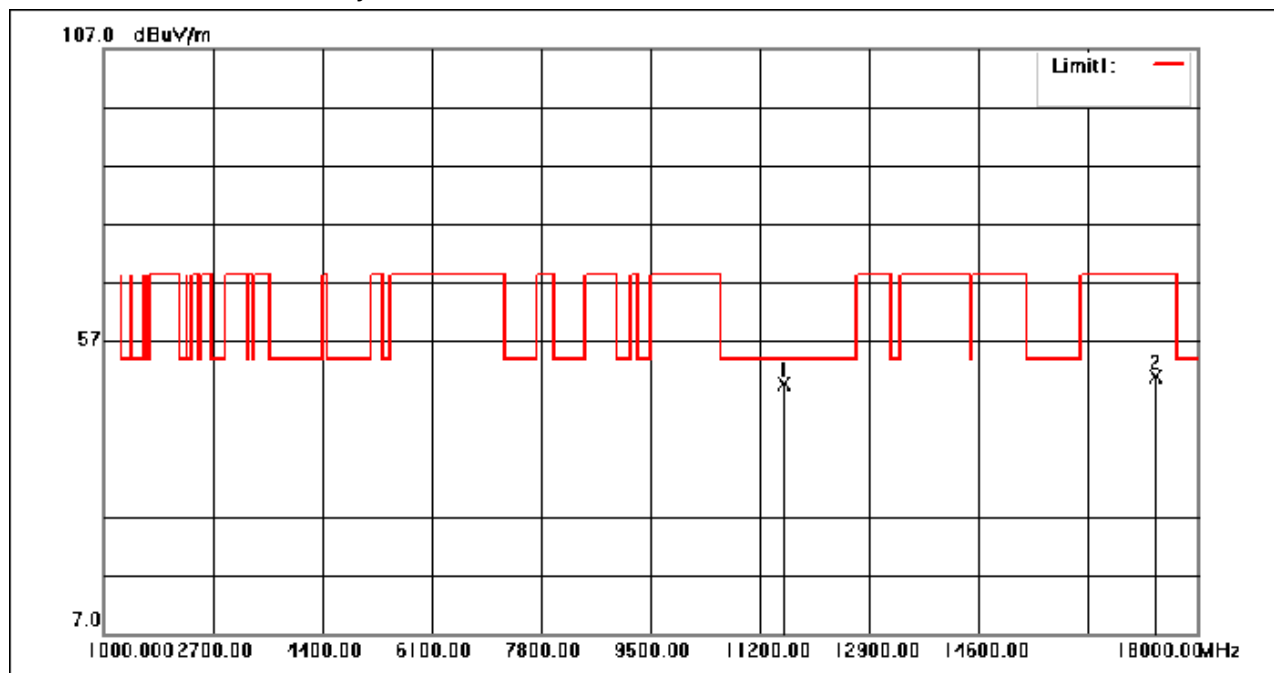
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	48.51	1.18	49.69	54.00	-4.31	peak
2	17355.000	42.00	8.98	50.98	68.30	-17.32	peak



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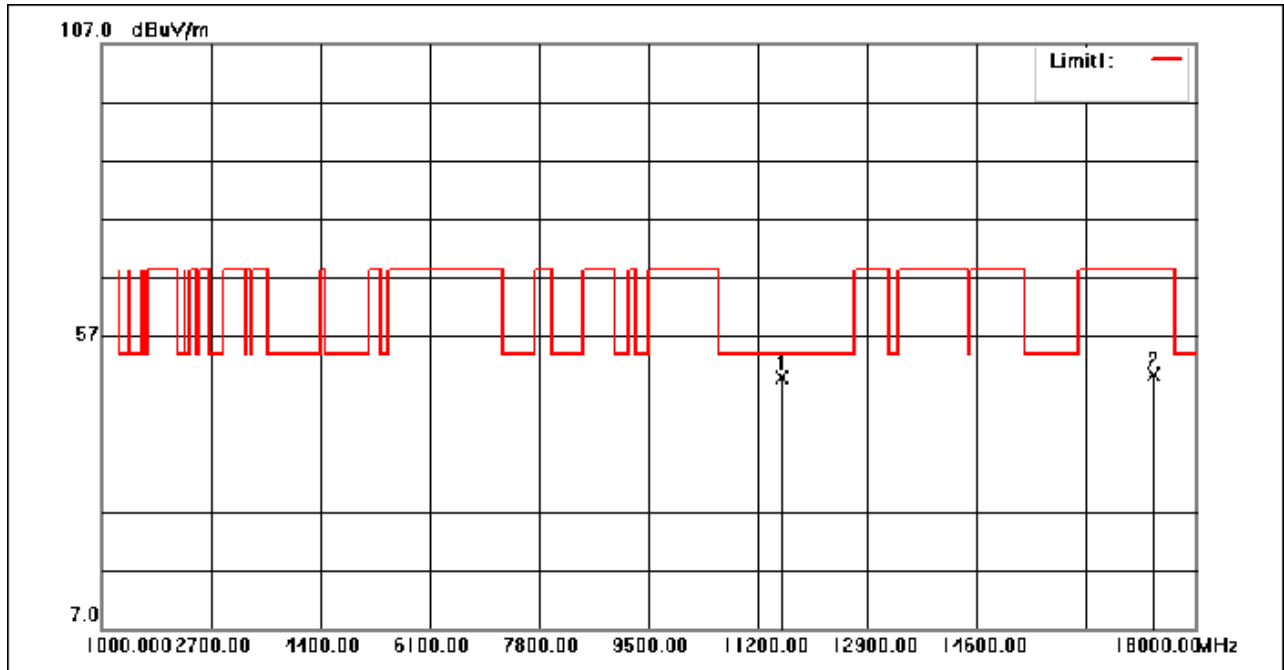
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	48.76	1.18	49.94	54.00	-4.06	peak
2	17355.000	41.52	8.98	50.50	68.30	-17.80	peak



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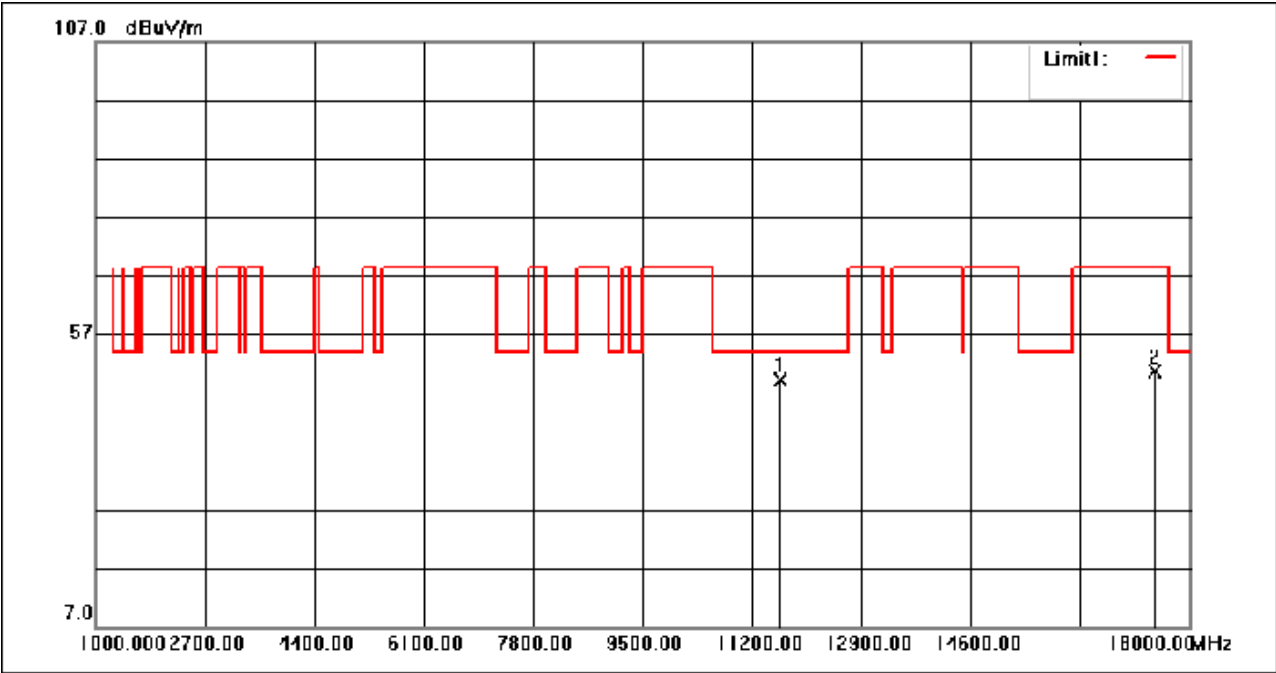
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	47.63	1.45	49.08	54.00	-4.92	peak
2	17475.000	41.70	8.90	50.60	68.30	-17.70	peak



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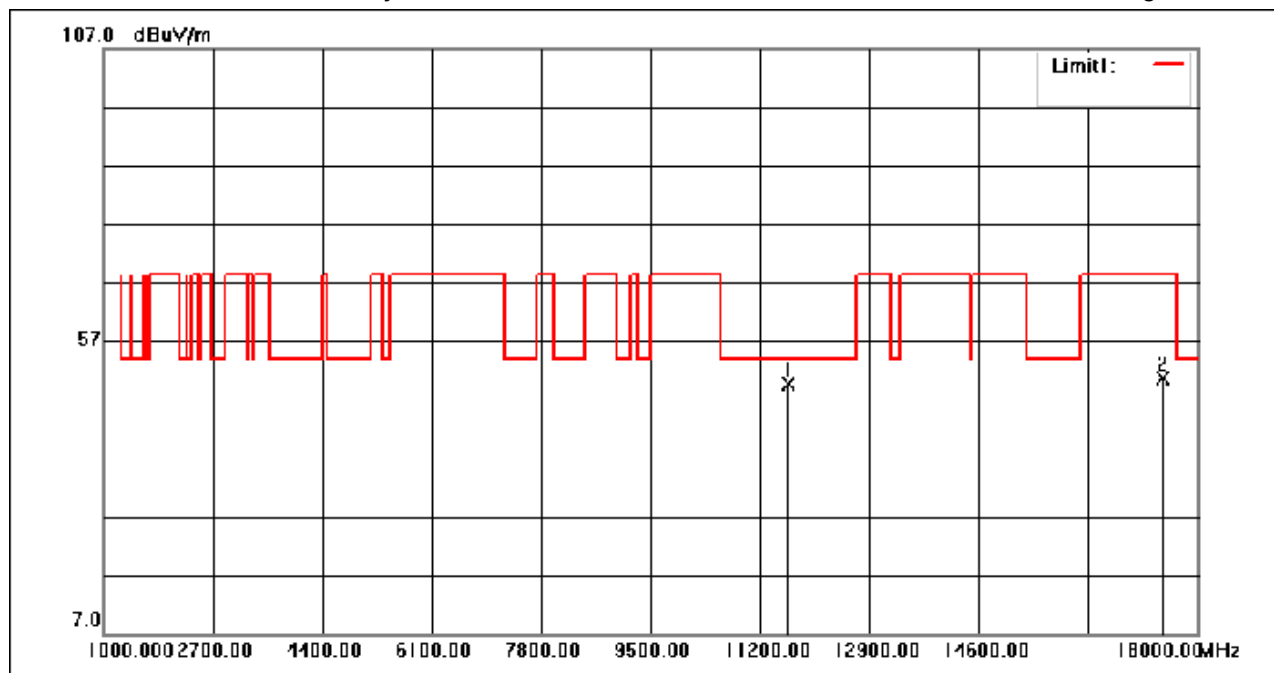
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Test Mode: 09; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	48.23	1.45	49.68	54.00	-4.32	peak
2	17475.000	41.73	8.90	50.63	68.30	-17.67	peak



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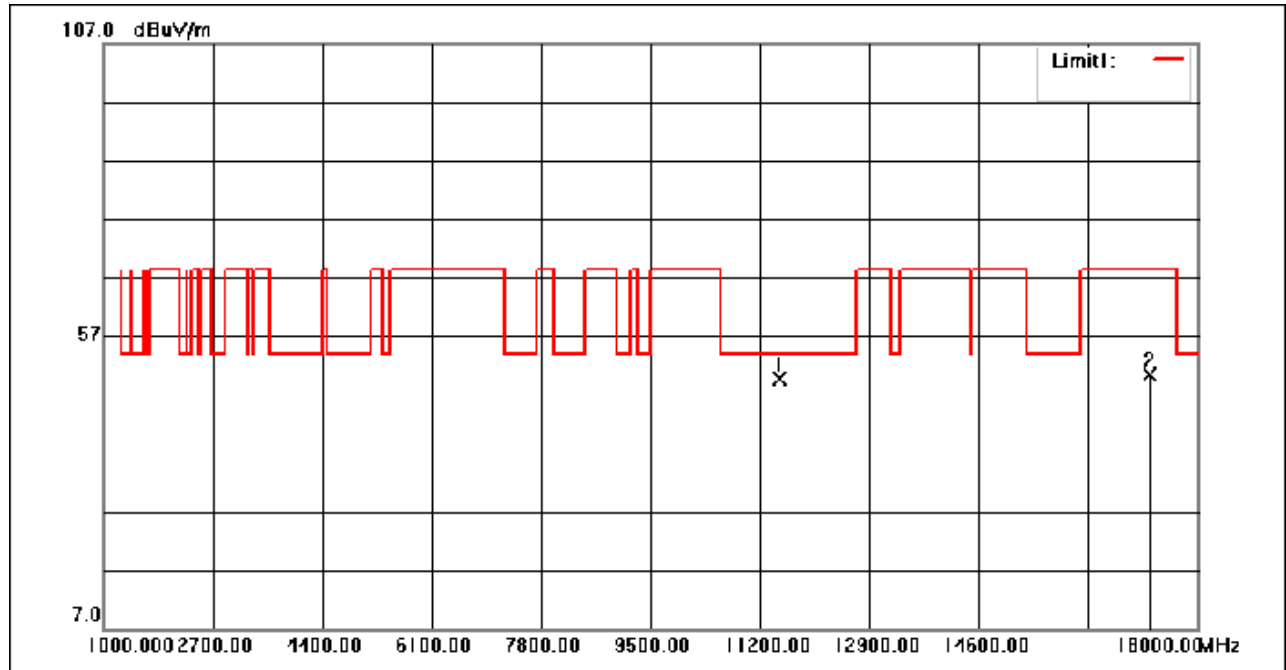
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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	48.75	0.99	49.74	54.00	-4.26	peak
2	17265.000	41.23	9.03	50.26	68.30	-18.04	peak



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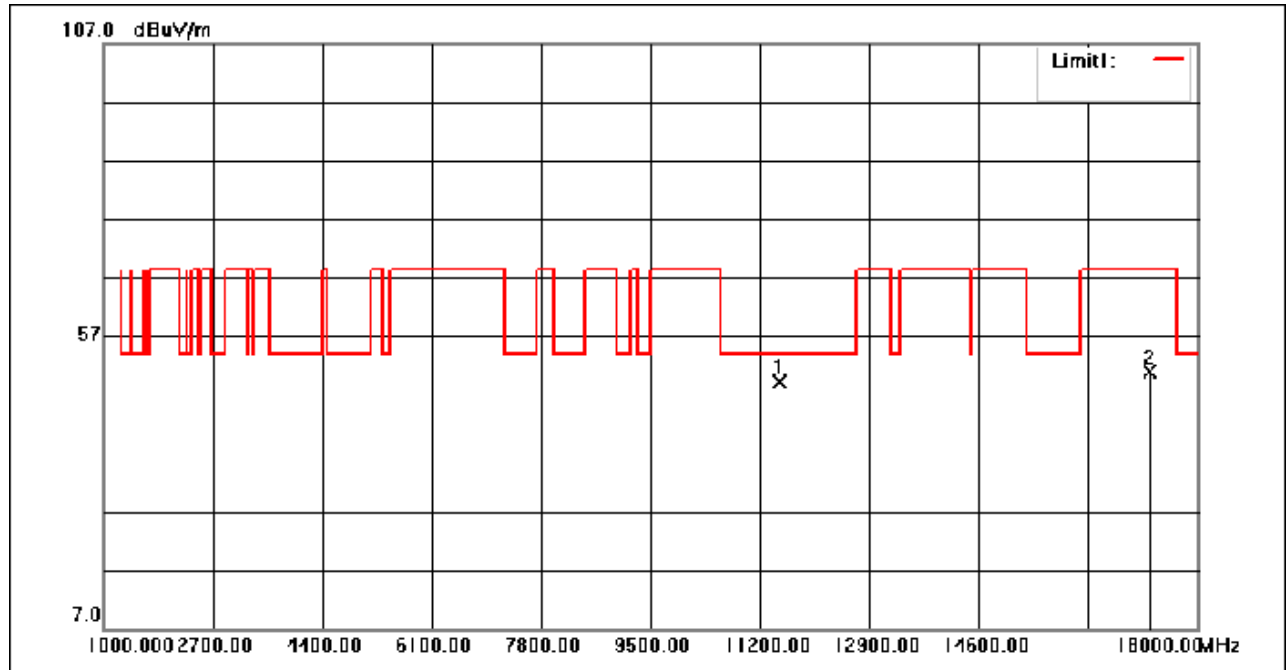
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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	48.20	0.99	49.19	54.00	-4.81	peak
2	17265.000	41.86	9.03	50.89	68.30	-17.41	peak



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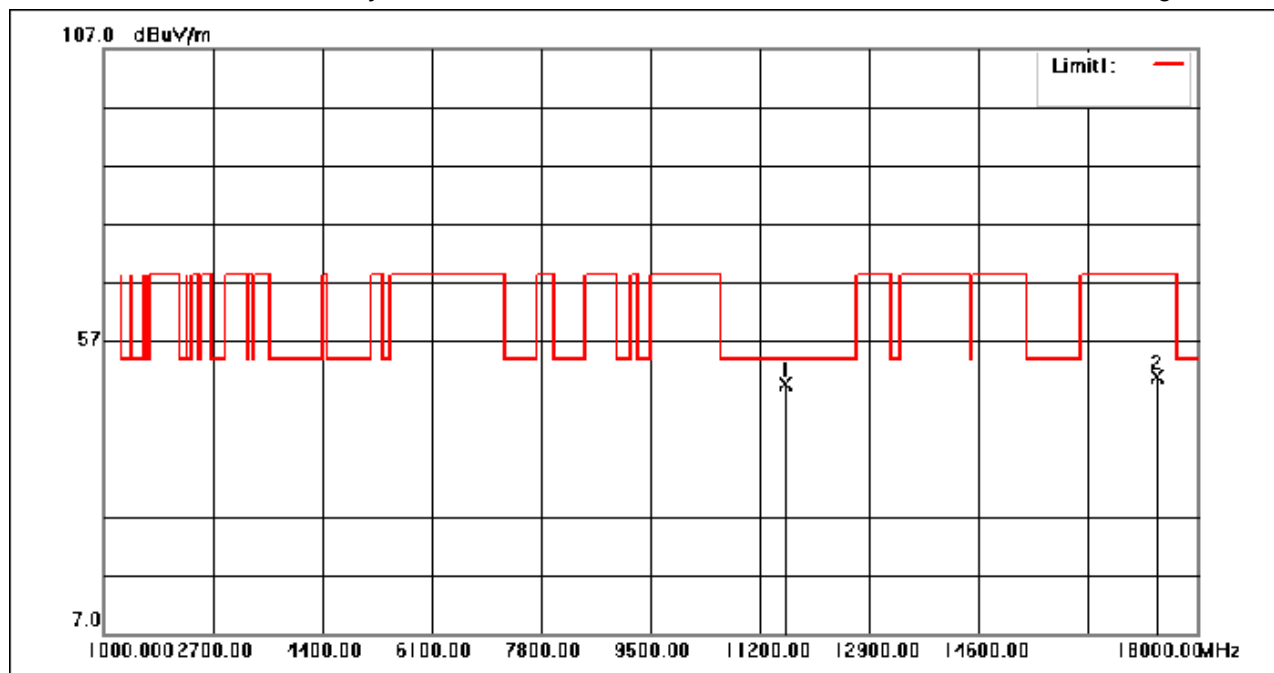
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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	48.37	1.25	49.62	54.00	-4.38	peak
2	17385.000	41.96	8.96	50.92	68.30	-17.38	peak



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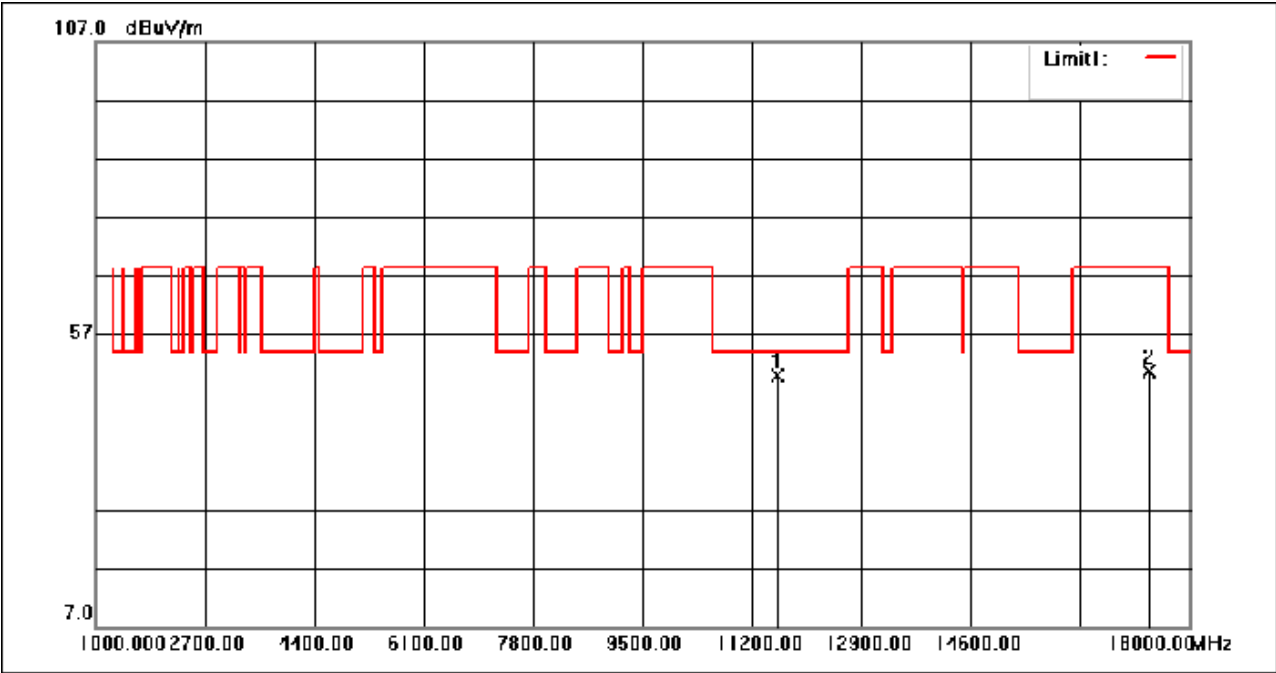
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Test Mode: 09; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	48.59	1.25	49.84	54.00	-4.16	peak
2	17385.000	41.74	8.96	50.70	68.30	-17.60	peak



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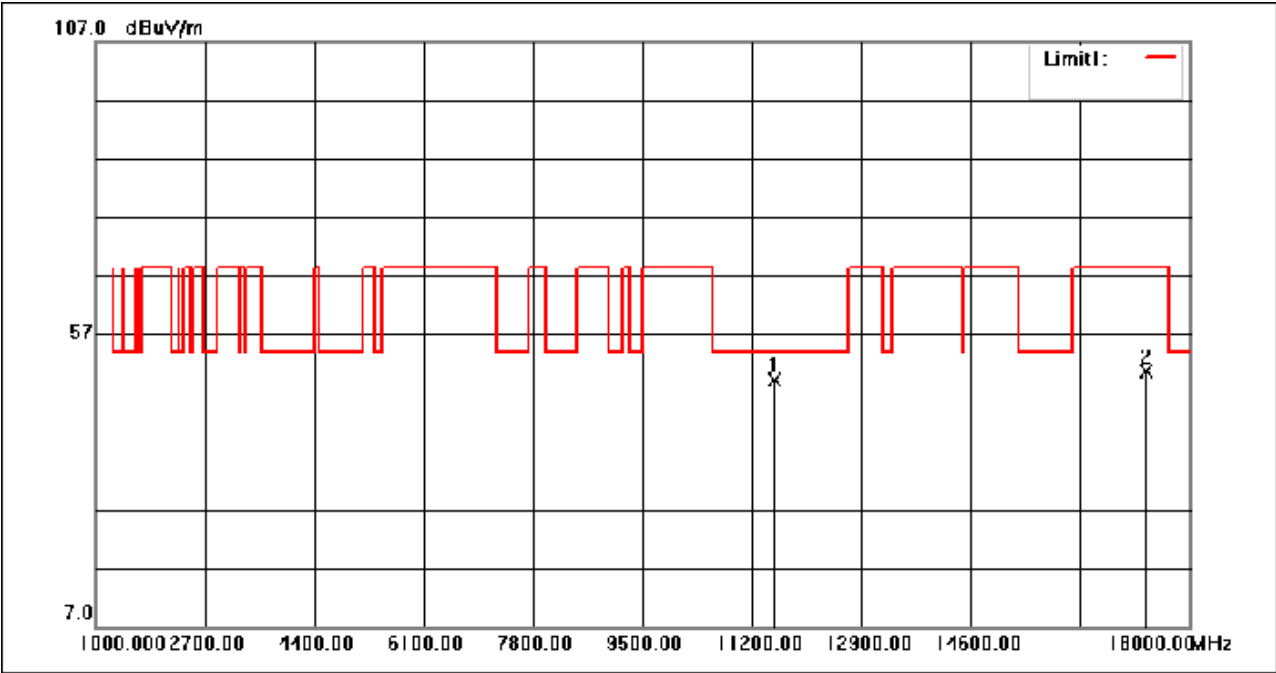
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Test Mode: 09; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	47.90	1.12	49.02	54.00	-4.98	peak
2	17325.000	41.74	8.99	50.73	68.30	-17.57	peak



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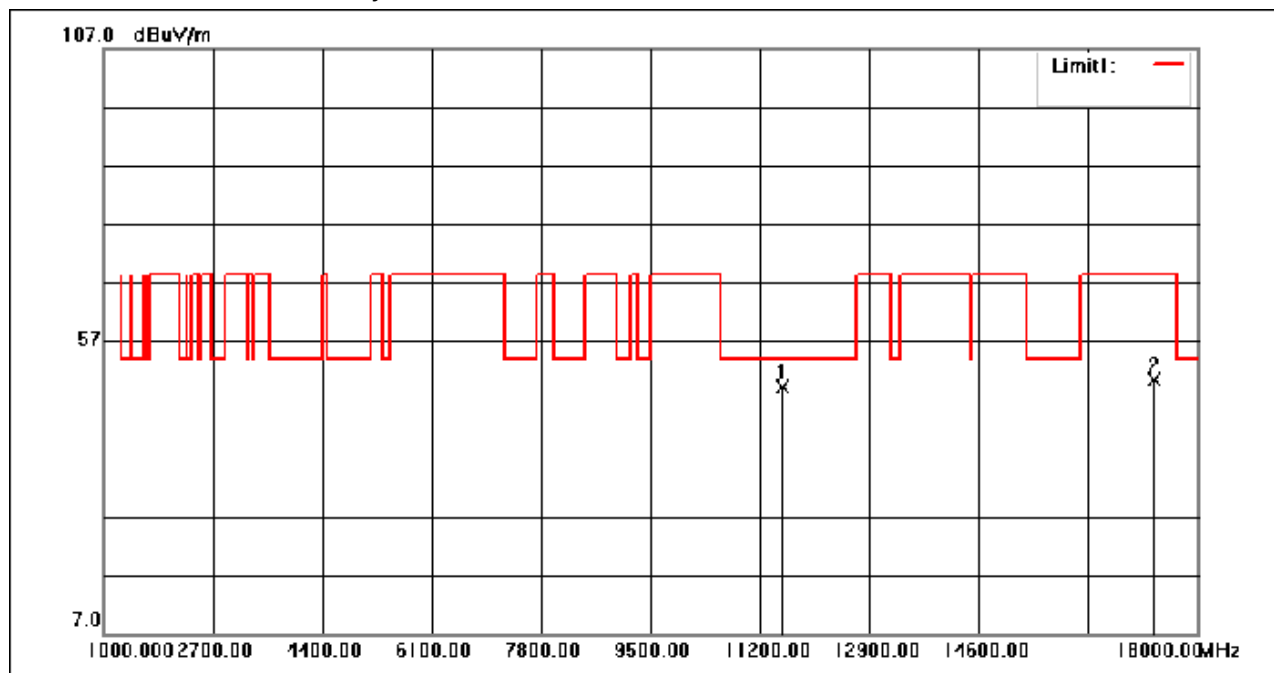
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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 80MHz; Channel: middle



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	48.07	1.12	49.19	54.00	-4.81	peak
2	17325.000	41.44	8.99	50.43	68.30	-17.87	peak



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7.9 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: KDB 789033 D02 II G

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.

7.9.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 57.8 % RH Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode



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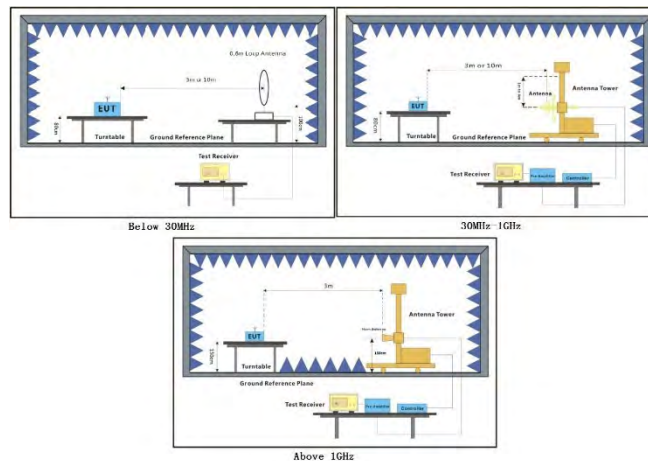
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		with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram



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7.9.4 Measurement Procedure and Data

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



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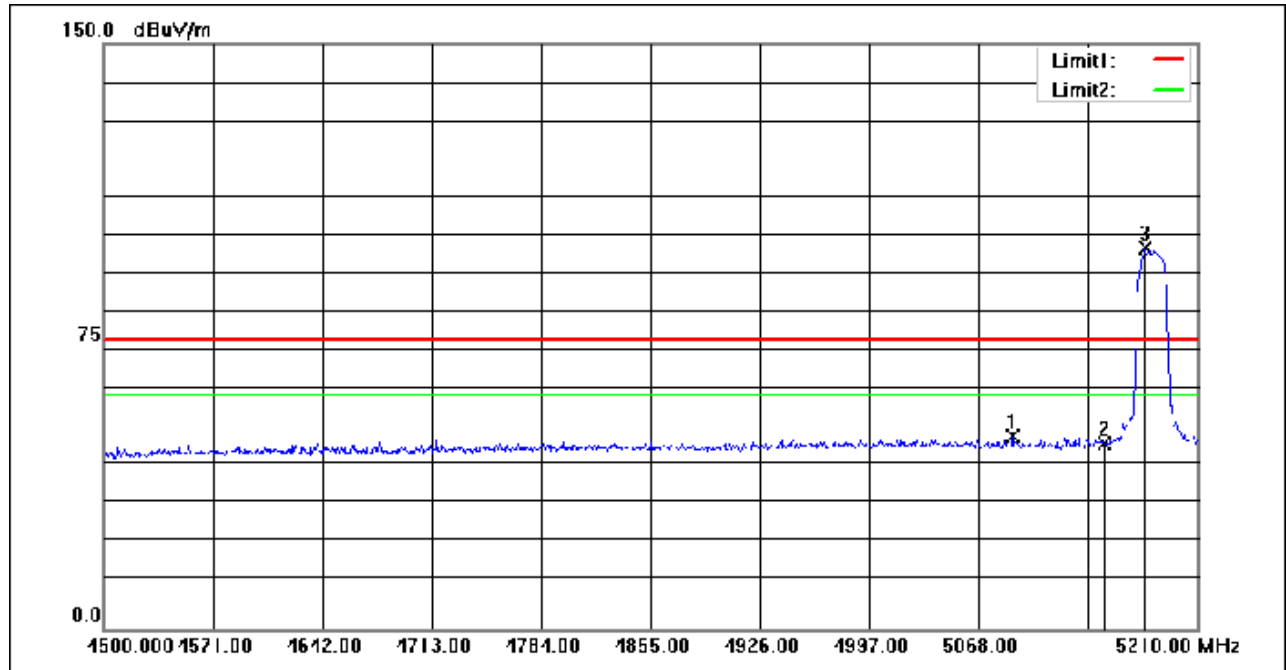
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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11a; Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5090.010	59.98	-10.63	49.35	74.00	-24.65	peak
2	5150.000	58.18	-10.64	47.54	74.00	-26.46	peak
3	5175.920	108.24	-10.64	97.60	74.00	23.60	peak



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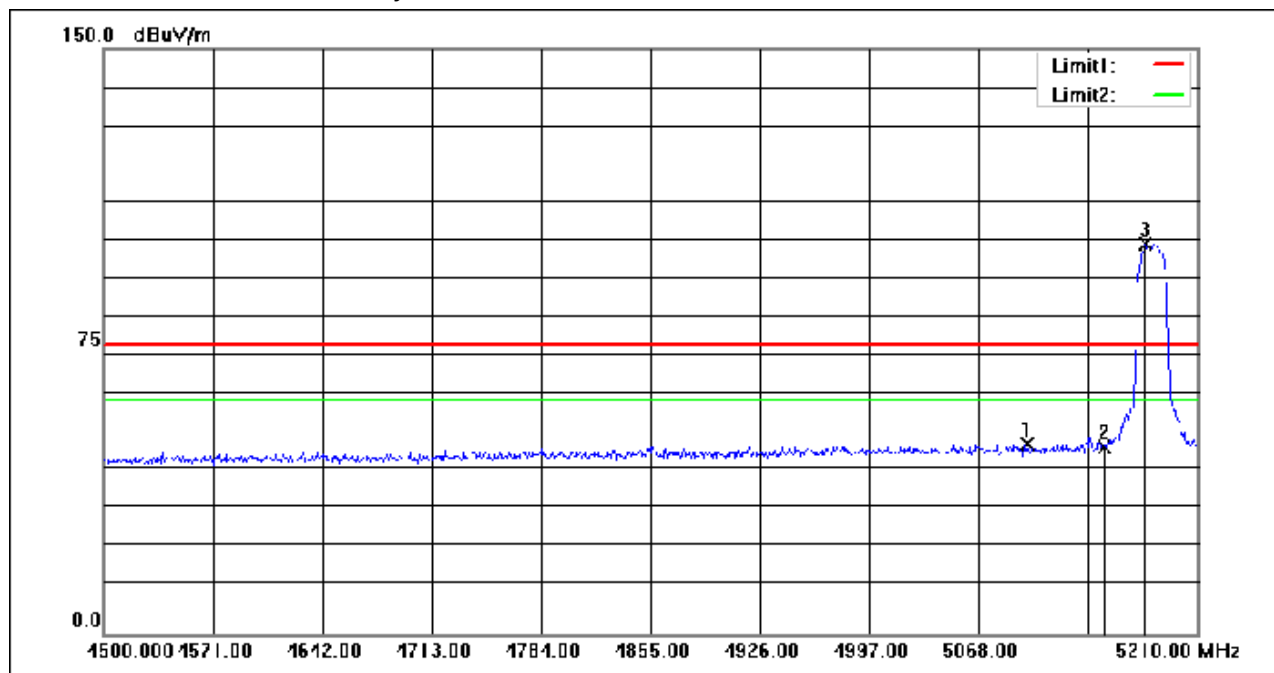
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Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5099.950	59.10	-10.63	48.47	74.00	-25.53	peak
2	5150.000	58.53	-10.64	47.89	74.00	-26.11	peak
3	5176.630	110.55	-10.64	99.91	74.00	25.91	peak



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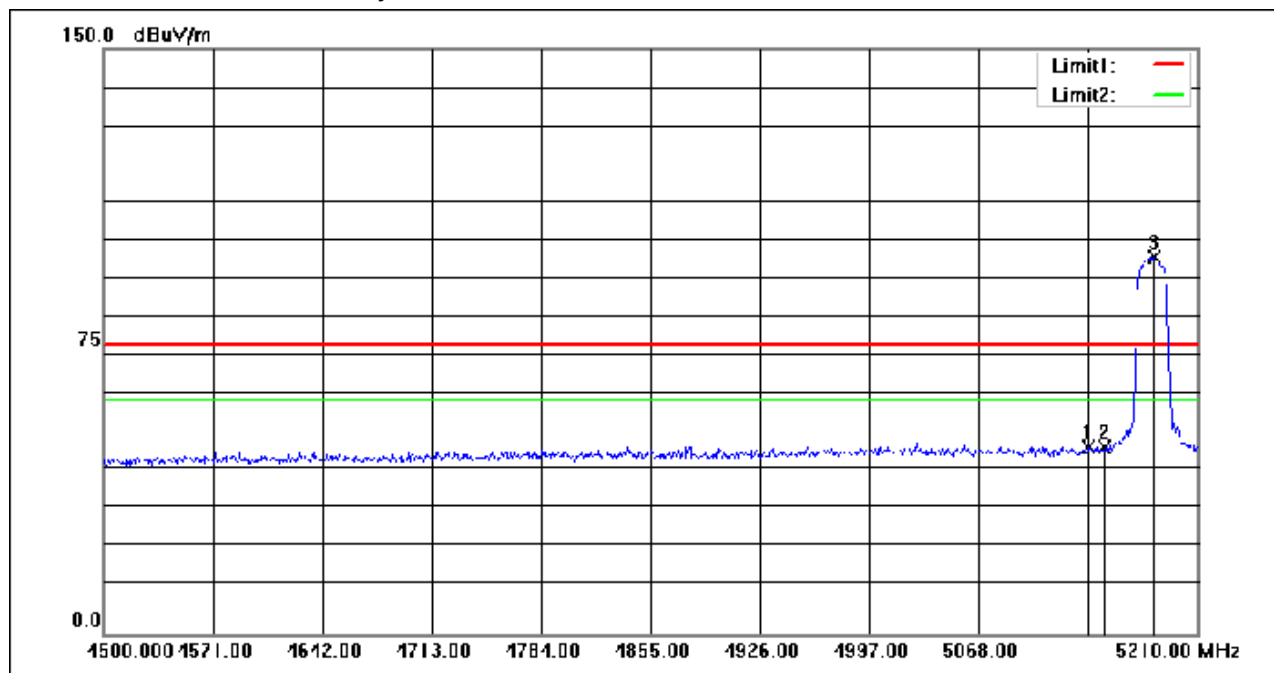
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Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5139.710	58.57	-10.64	47.93	74.00	-26.07	peak
2	5150.000	58.28	-10.64	47.64	74.00	-26.36	peak
3	5181.600	107.17	-10.64	96.53	74.00	22.53	peak



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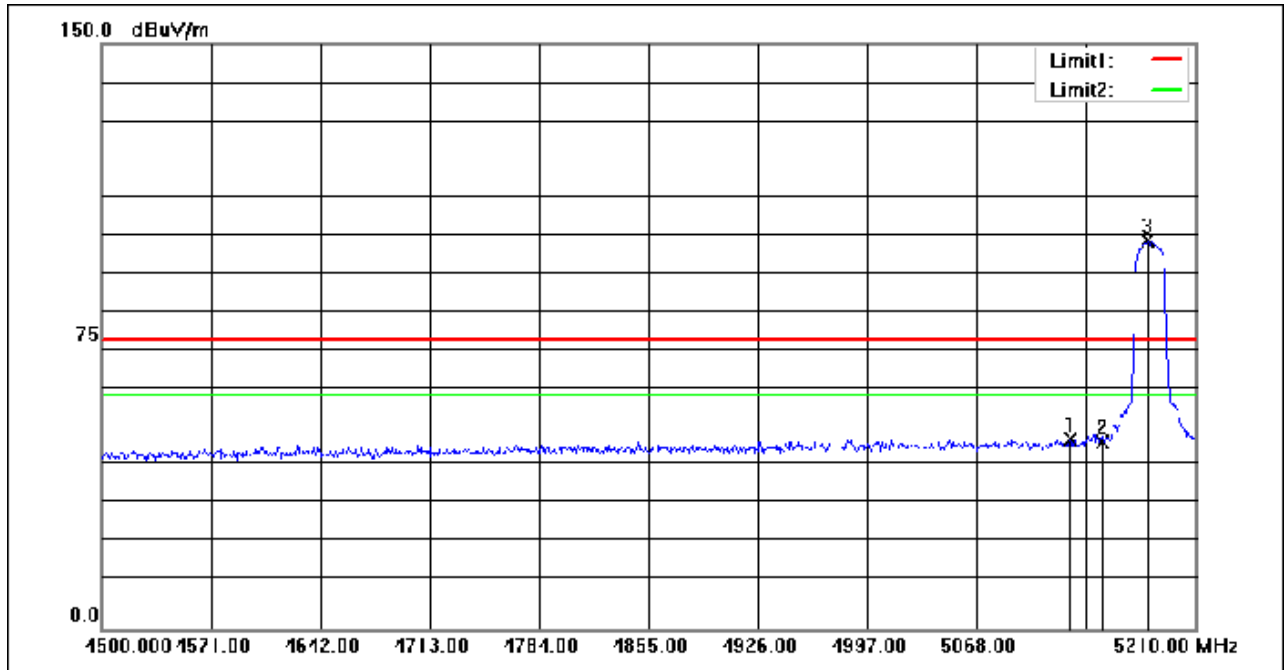
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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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	5129.060	59.30	-10.64	48.66	74.00	-25.34	peak
2	5150.000	58.48	-10.64	47.84	74.00	-26.16	peak
3	5179.470	110.19	-10.64	99.55	74.00	25.55	peak



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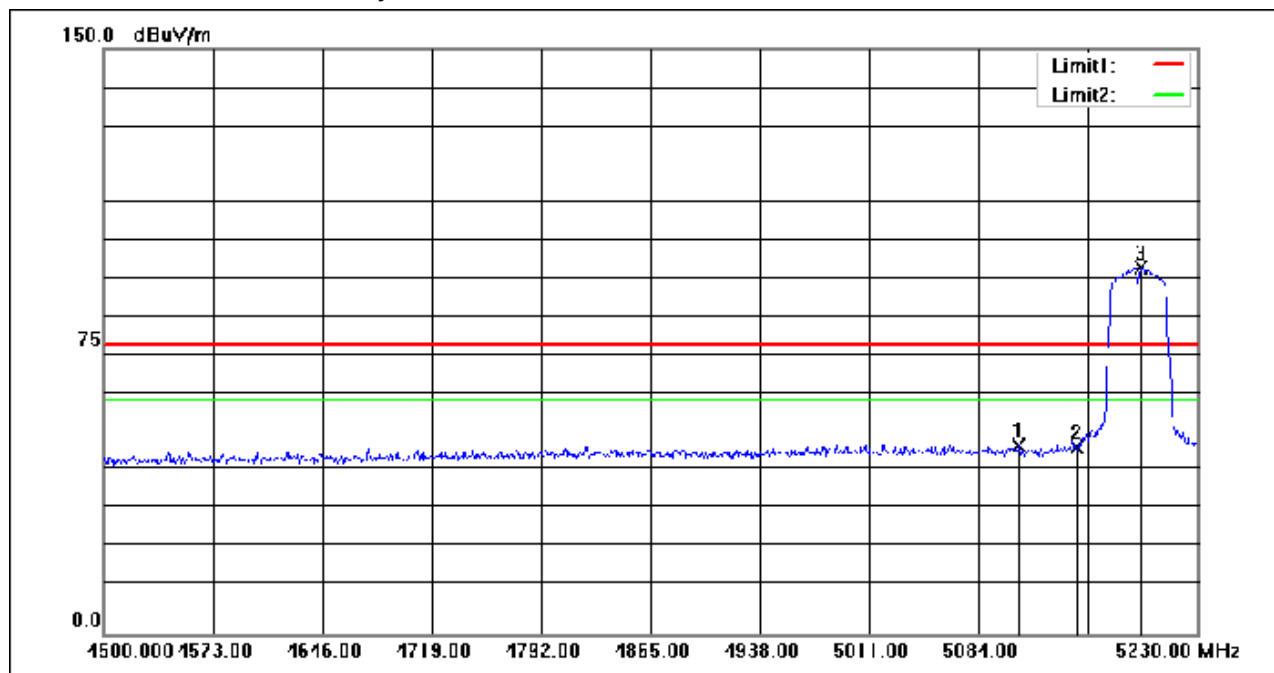
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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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	5111.010	58.77	-10.63	48.14	74.00	-25.86	peak
2	5150.000	58.45	-10.64	47.81	74.00	-26.19	peak
3	5192.770	104.45	-10.65	93.80	74.00	19.80	peak



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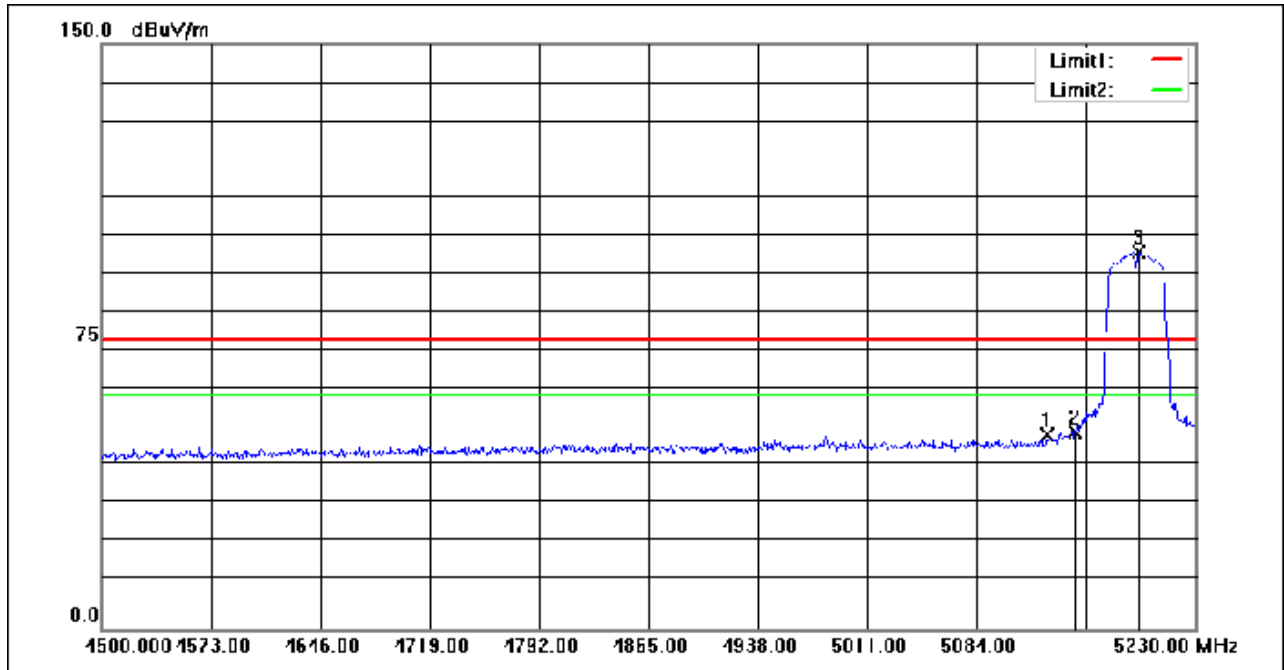
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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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	5130.720	60.24	-10.64	49.60	74.00	-24.40	peak
2	5150.000	60.96	-10.64	50.32	74.00	-23.68	peak
3	5192.770	107.36	-10.65	96.71	74.00	22.71	peak



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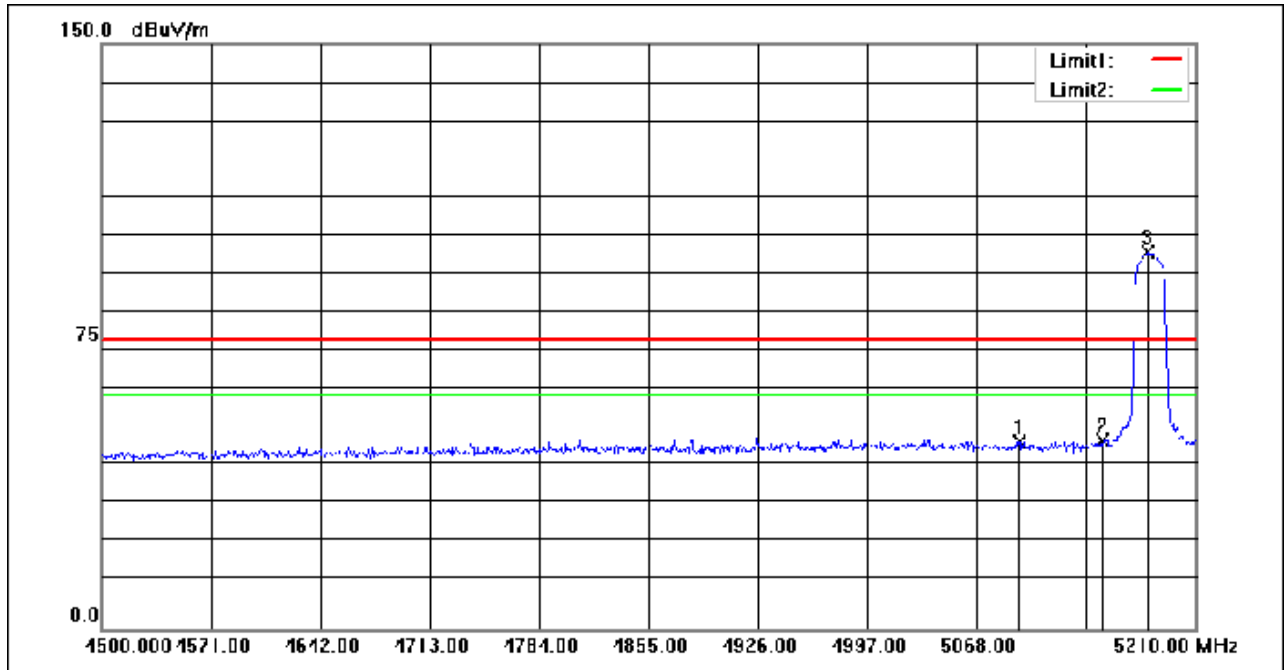
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11ac; 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	58.53	-10.63	47.90	74.00	-26.10	peak
2	5150.000	58.79	-10.64	48.15	74.00	-25.85	peak
3	5179.470	107.14	-10.64	96.50	74.00	22.50	peak



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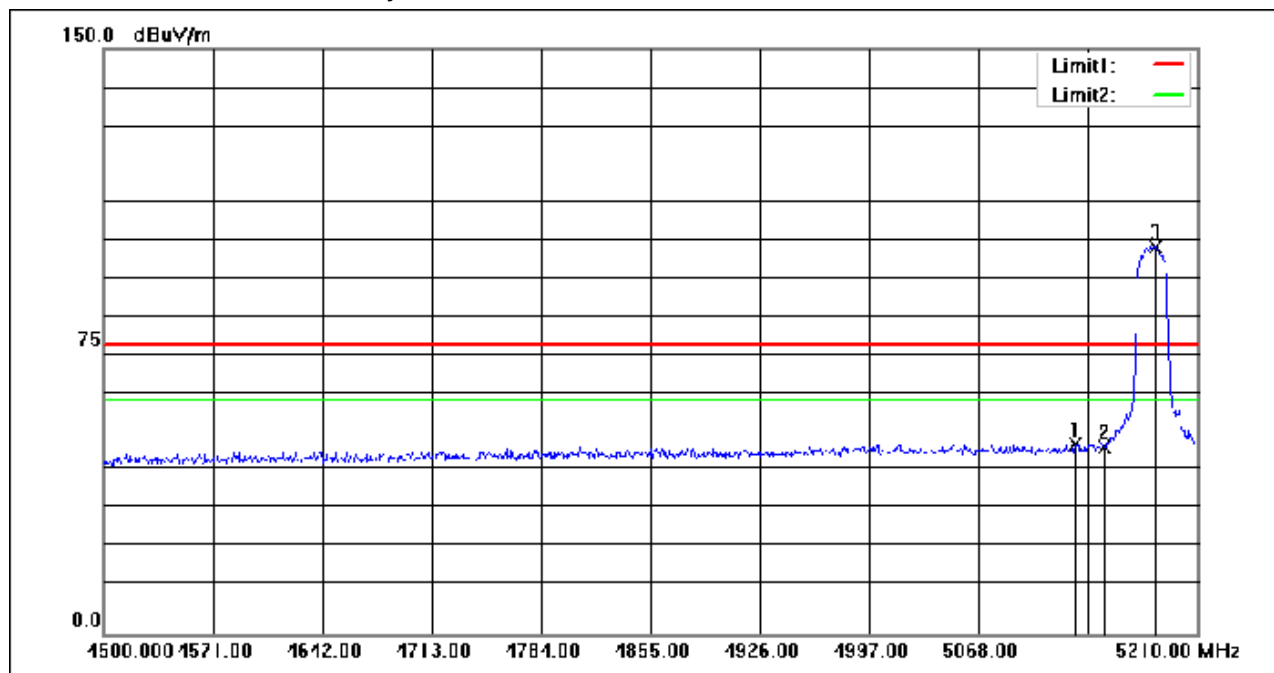
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5130.480	59.10	-10.64	48.46	74.00	-25.54	peak
2	5150.000	58.52	-10.64	47.88	74.00	-26.12	peak
3	5183.020	109.92	-10.64	99.28	74.00	25.28	peak



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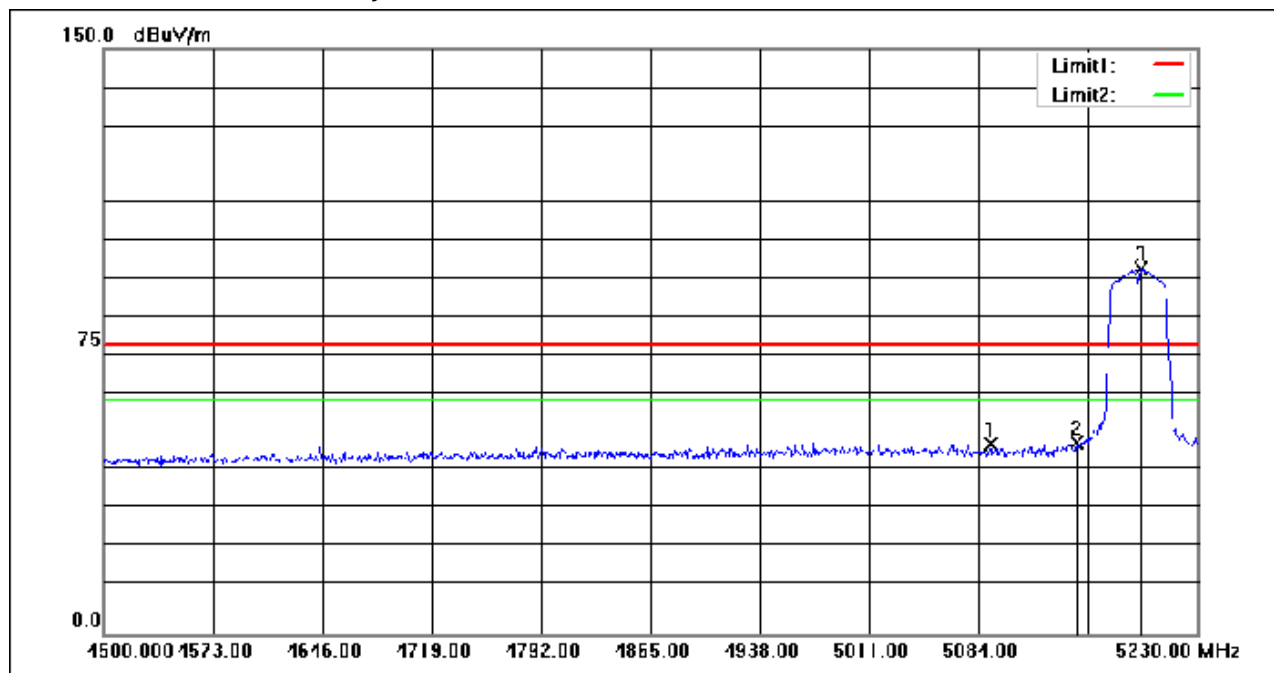
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5092.030	59.11	-10.63	48.48	74.00	-25.52	peak
2	5150.000	59.48	-10.64	48.84	74.00	-25.16	peak
3	5192.770	104.11	-10.65	93.46	74.00	19.46	peak



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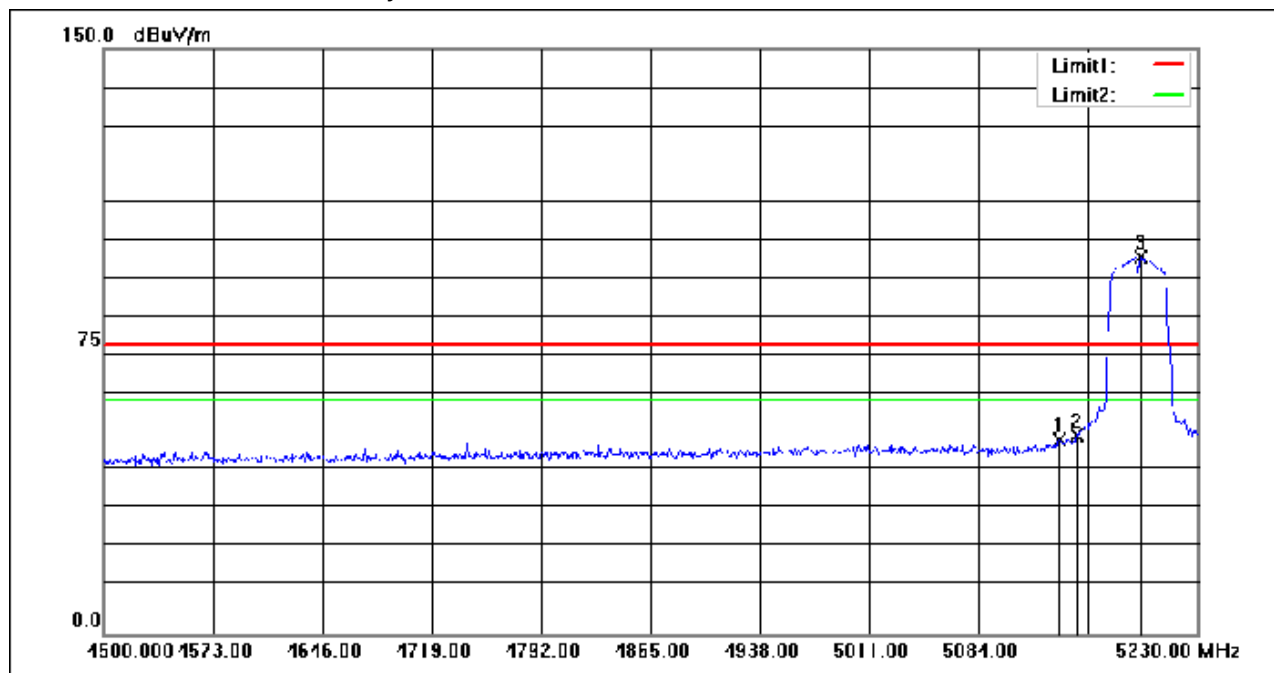
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5138.020	60.18	-10.64	49.54	74.00	-24.46	peak
2	5150.000	61.45	-10.64	50.81	74.00	-23.19	peak
3	5192.770	107.26	-10.65	96.61	74.00	22.61	peak



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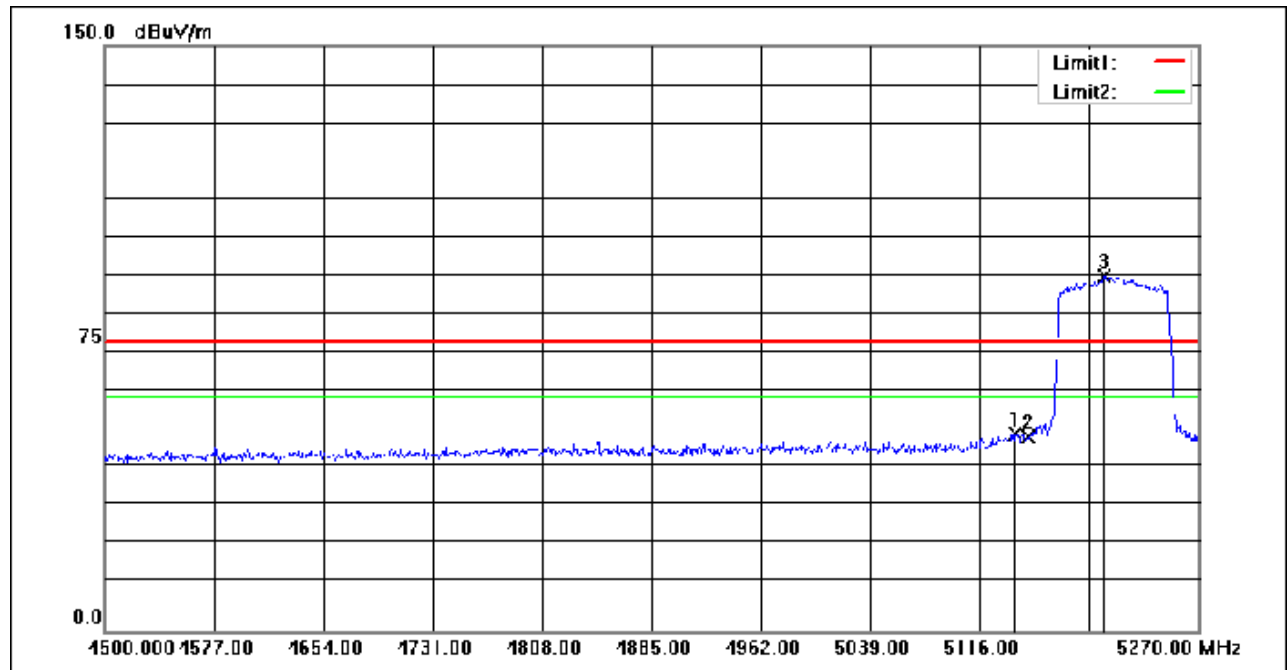
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 08; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 80MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5141.410	61.05	-10.64	50.41	74.00	-23.59	peak
2	5150.000	60.43	-10.64	49.79	74.00	-24.21	peak
3	5203.780	101.44	-10.63	90.81	74.00	16.81	peak



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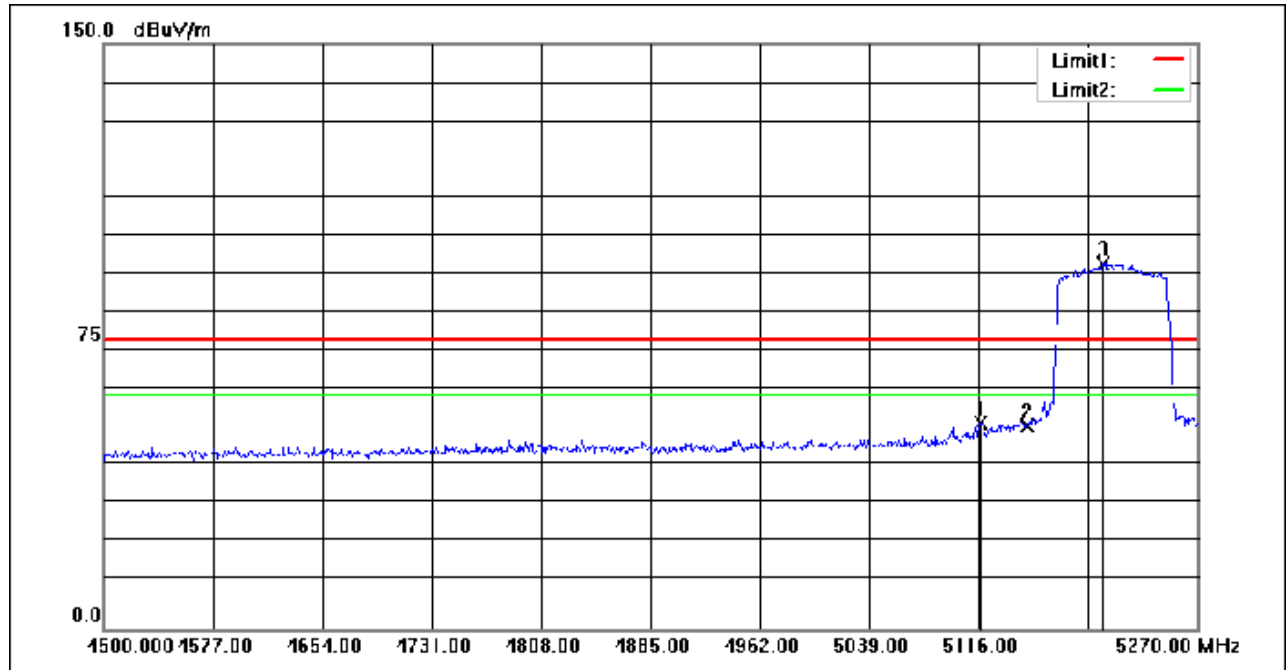
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 08; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 80MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5117.540	63.38	-10.63	52.75	74.00	-21.25	peak
2	5150.000	62.73	-10.64	52.09	74.00	-21.91	peak
3	5203.780	104.34	-10.63	93.71	74.00	19.71	peak



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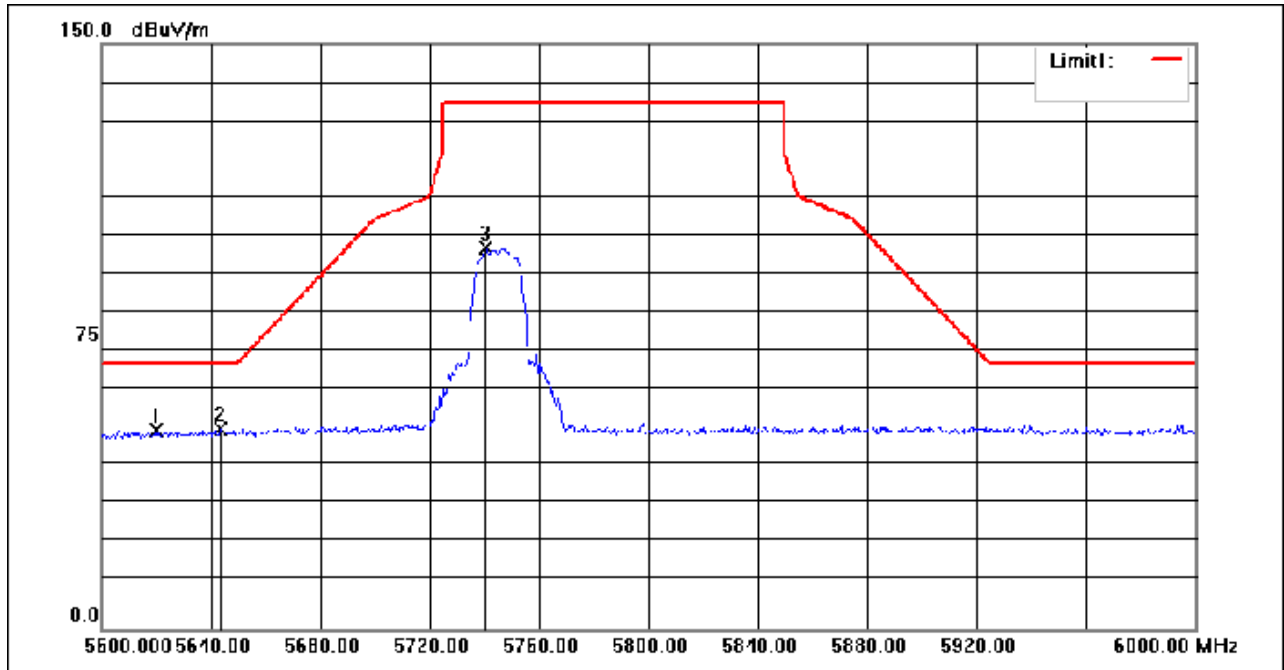
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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11a; Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5620.000	60.27	-9.27	51.00	68.20	-17.20	peak
2	5643.600	60.27	-9.19	51.08	68.20	-17.12	peak
3	5740.400	106.45	-8.88	97.57	135.00	-37.43	peak



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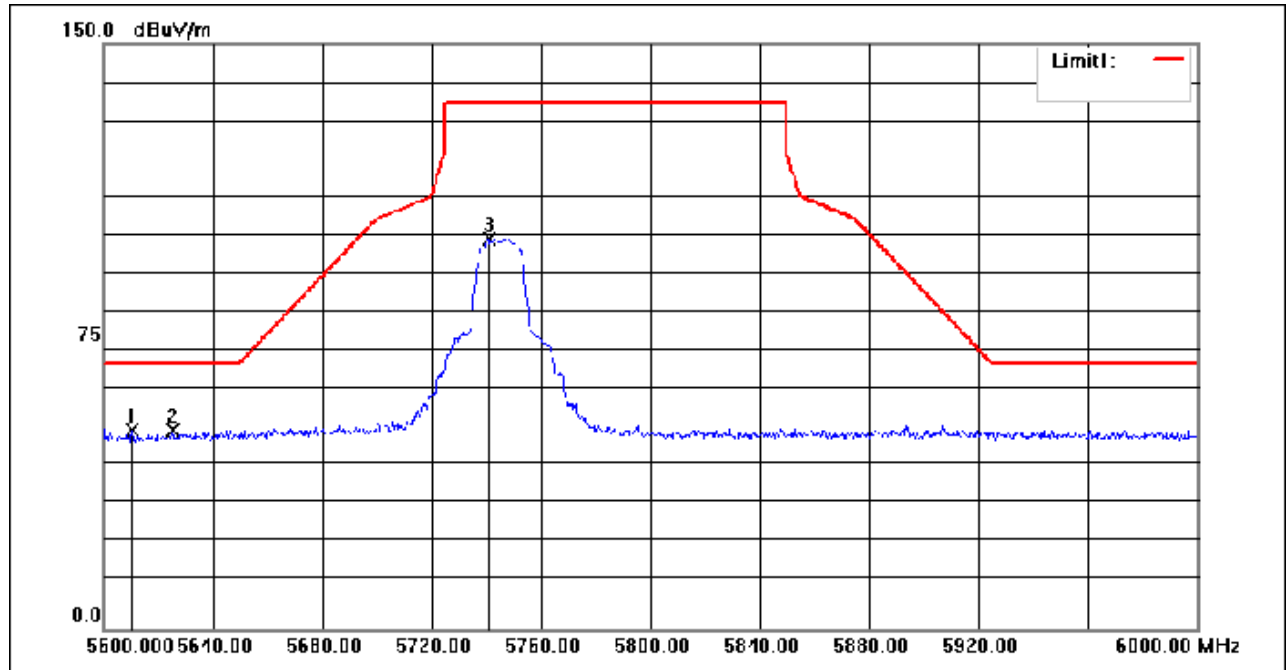
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 09; 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	5610.400	60.14	-9.30	50.84	68.20	-17.36	peak
2	5625.200	60.17	-9.25	50.92	68.20	-17.28	peak
3	5740.800	108.97	-8.88	100.09	135.00	-34.91	peak



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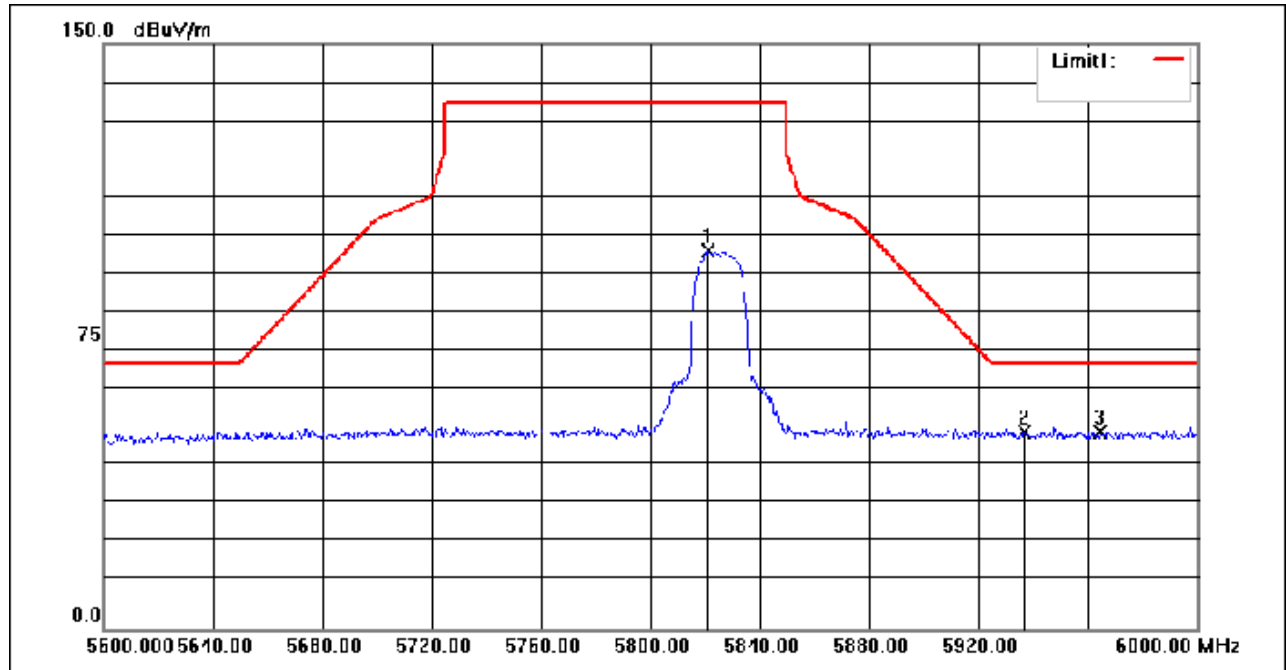
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

Page: 105 of 290

Test Mode: 09; 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	5820.800	105.64	-8.60	97.04	135.00	-37.96	peak
2	5936.800	58.61	-8.08	50.53	68.20	-17.67	peak
3	5964.400	58.38	-7.95	50.43	68.20	-17.77	peak



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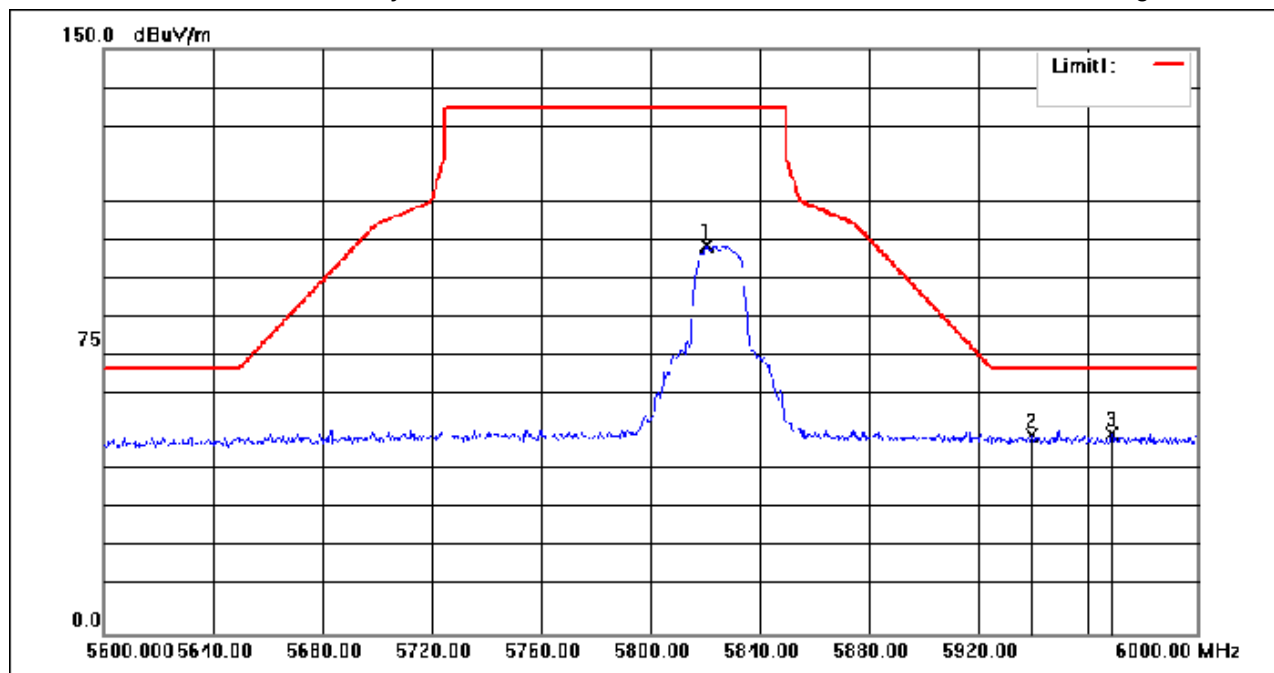
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

Page: 106 of 290

Test Mode: 09; 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	5820.400	108.06	-8.60	99.46	135.00	-35.54	peak
2	5939.600	58.86	-8.07	50.79	68.20	-17.41	peak
3	5968.800	59.03	-7.94	51.09	68.20	-17.11	peak



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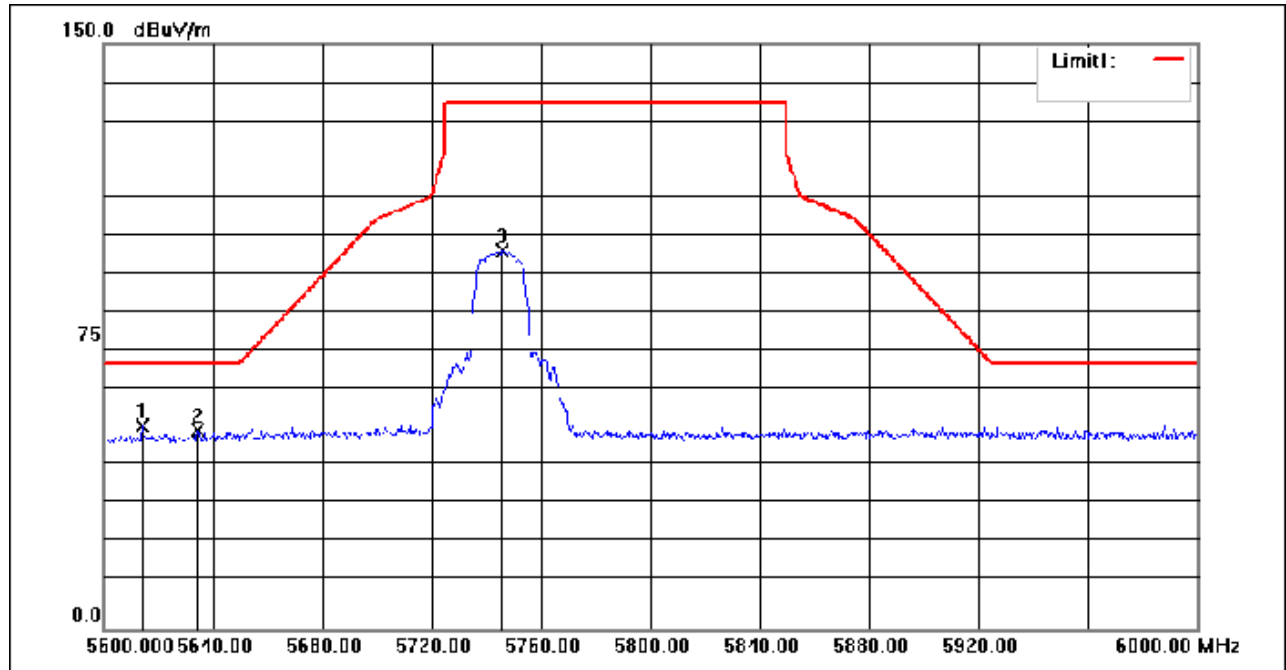
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	5614.000	61.07	-9.29	51.78	68.20	-16.42	peak
2	5634.400	59.87	-9.22	50.65	68.20	-17.55	peak
3	5746.000	105.78	-8.87	96.91	135.00	-38.09	peak



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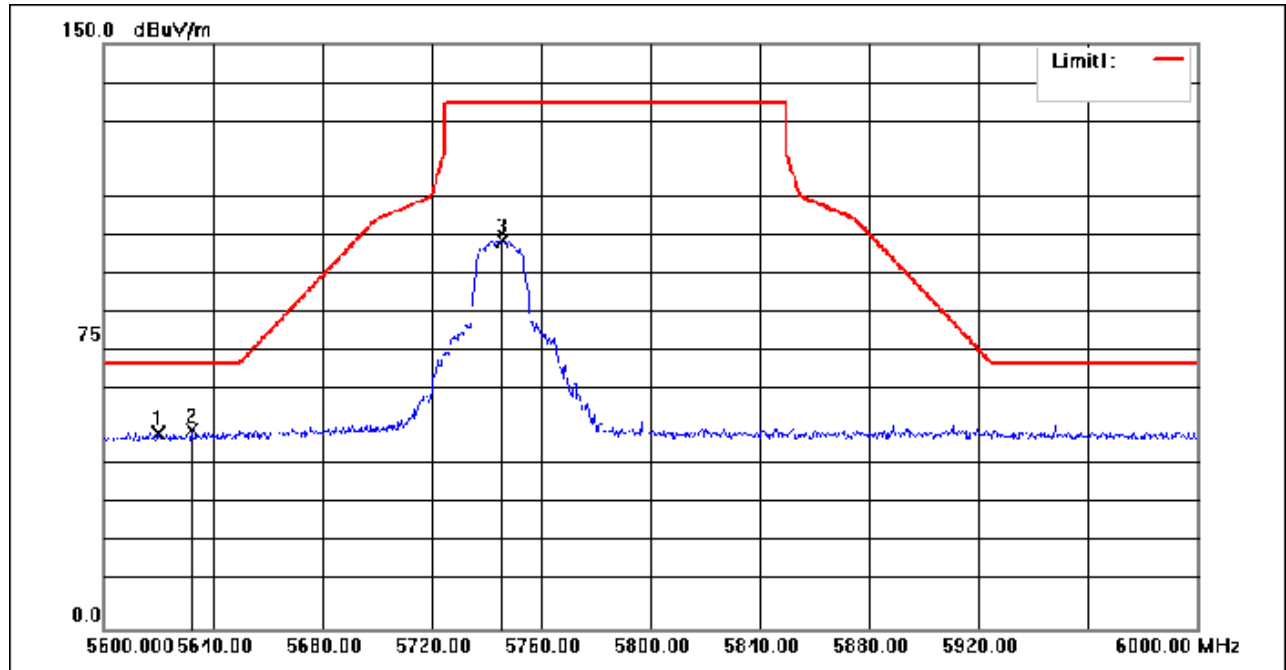
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	5620.000	59.45	-9.27	50.18	68.20	-18.02	peak
2	5632.000	59.89	-9.23	50.66	68.20	-17.54	peak
3	5746.000	108.60	-8.87	99.73	135.00	-35.27	peak



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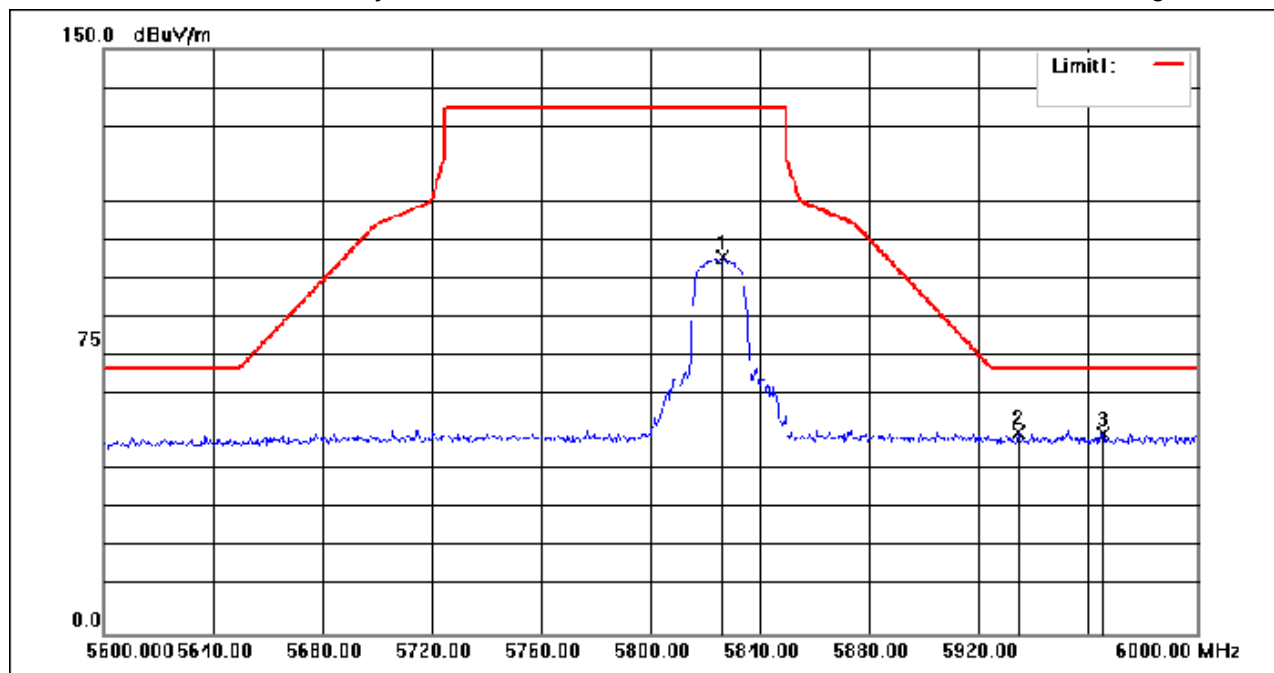
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	104.97	-8.57	96.40	135.00	-38.60	peak
2	5934.800	59.48	-8.09	51.39	68.20	-16.81	peak
3	5965.600	59.06	-7.96	51.10	68.20	-17.10	peak



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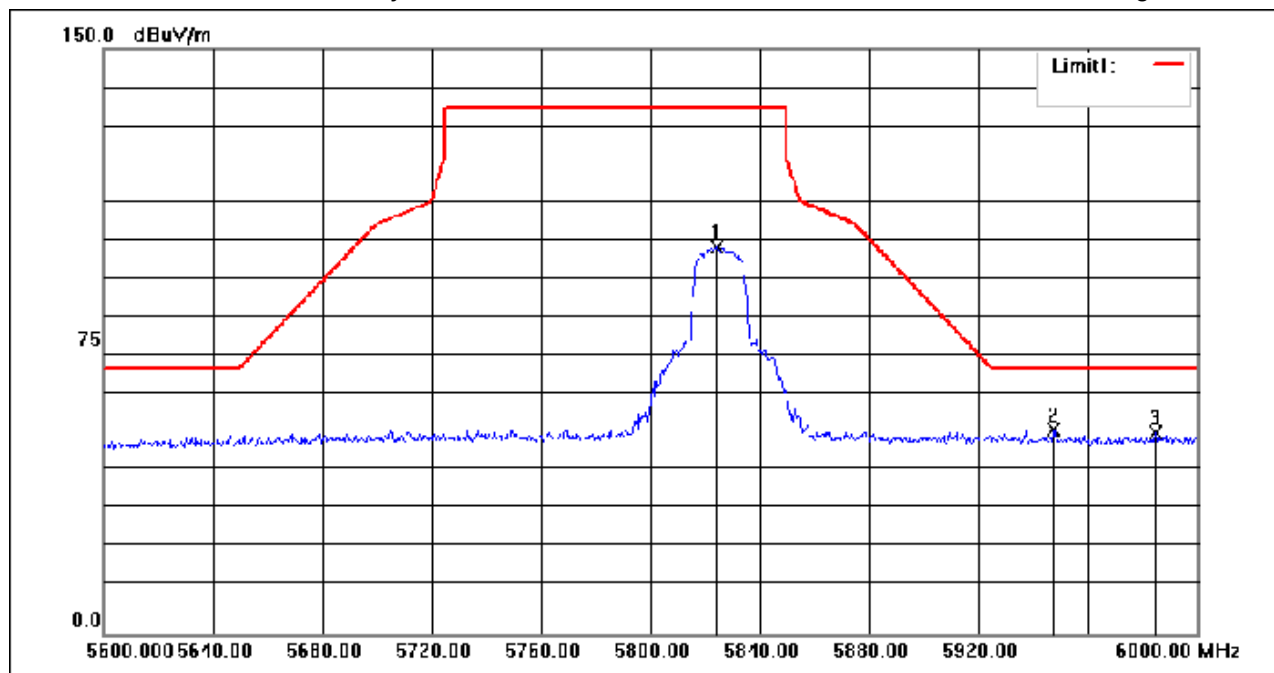
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	5824.000	107.63	-8.58	99.05	135.00	-35.95	peak
2	5947.600	60.35	-8.03	52.32	68.20	-15.88	peak
3	5984.800	59.45	-7.87	51.58	68.20	-16.62	peak



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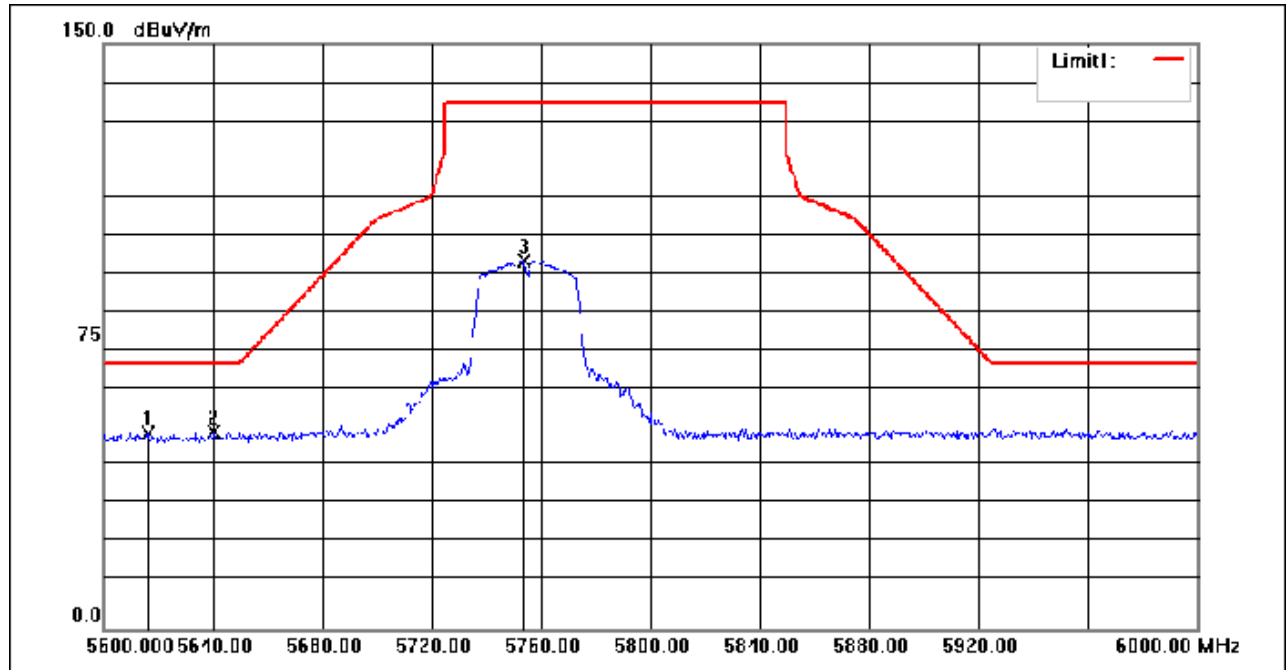
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	5616.000	59.30	-9.28	50.02	68.20	-18.18	peak
2	5640.400	59.50	-9.20	50.30	68.20	-17.90	peak
3	5753.600	103.31	-8.84	94.47	135.00	-40.53	peak



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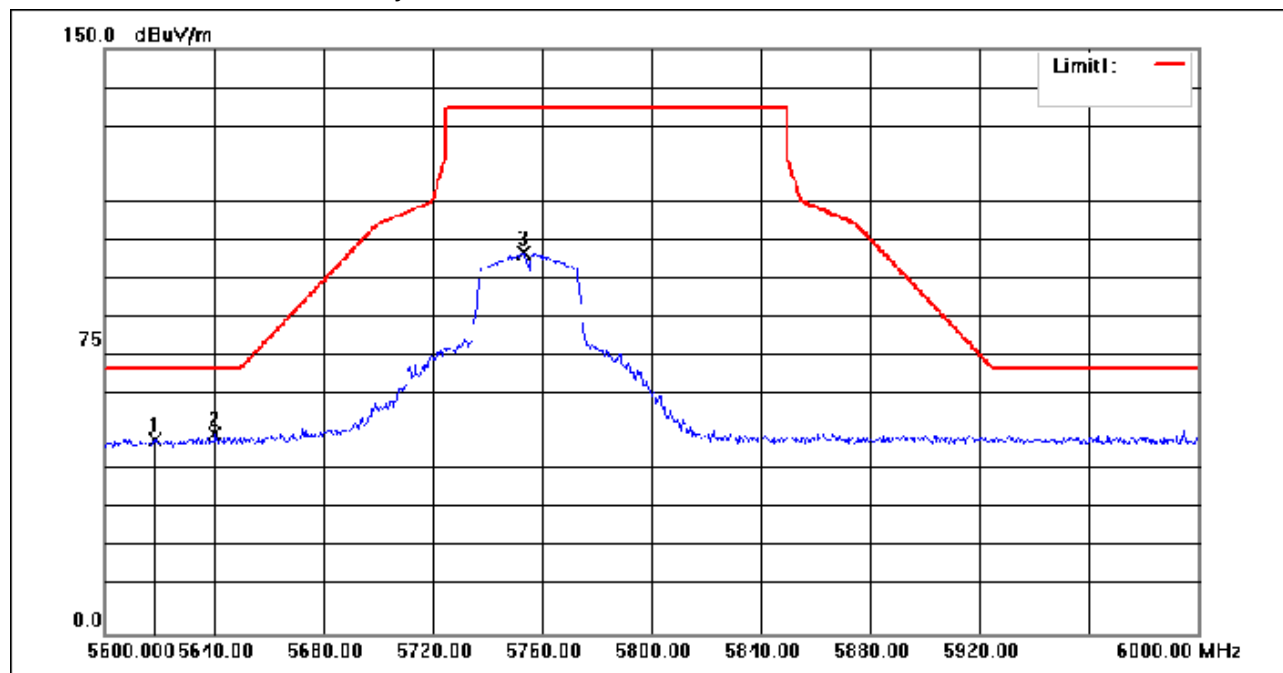
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	5618.400	58.90	-9.27	49.63	68.20	-18.57	peak
2	5640.400	60.43	-9.20	51.23	68.20	-16.97	peak
3	5753.200	106.41	-8.84	97.57	135.00	-37.43	peak



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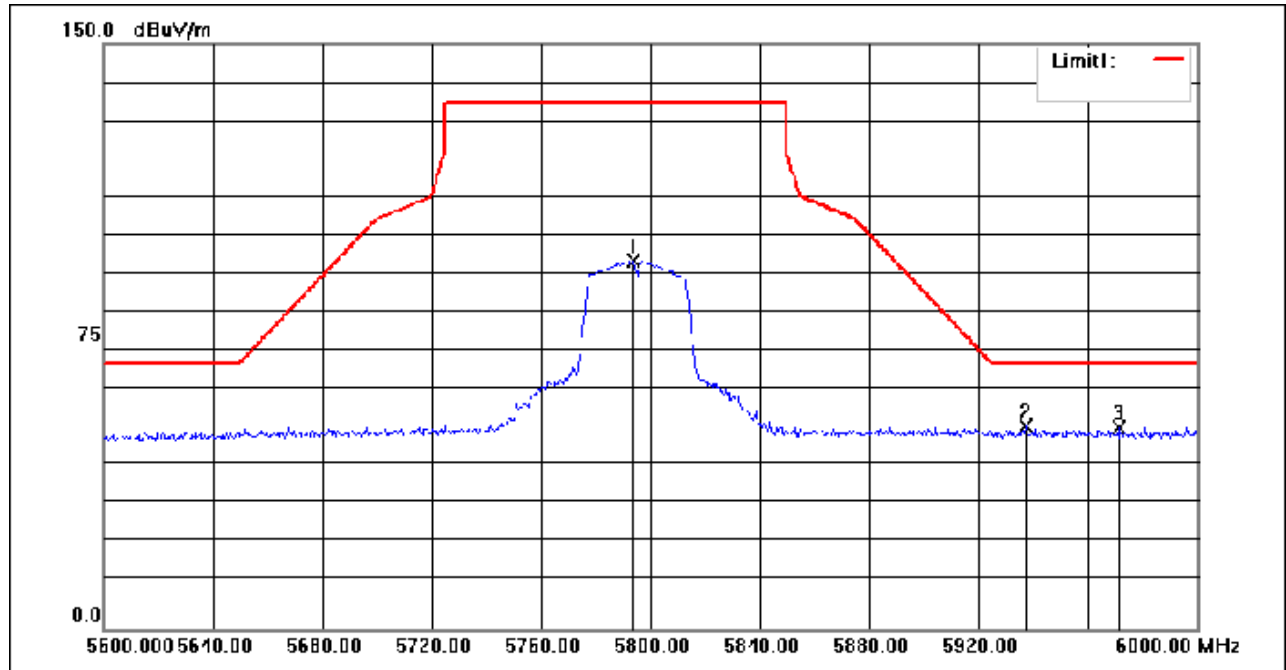
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; 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	5793.600	103.02	-8.71	94.31	135.00	-40.69	peak
2	5937.200	60.00	-8.08	51.92	68.20	-16.28	peak
3	5971.600	59.49	-7.93	51.56	68.20	-16.64	peak



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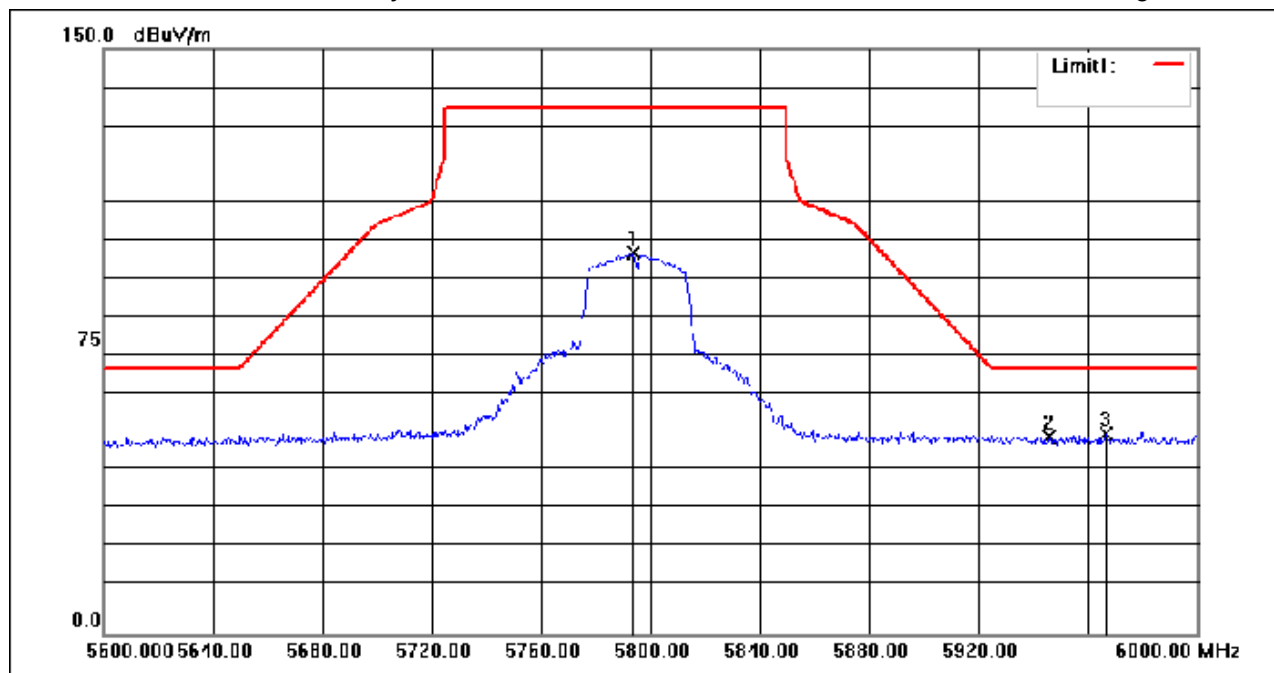
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 09; 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	5793.600	106.24	-8.71	97.53	135.00	-37.47	peak
2	5946.000	58.59	-8.04	50.55	68.20	-17.65	peak
3	5966.800	59.28	-7.95	51.33	68.20	-16.87	peak



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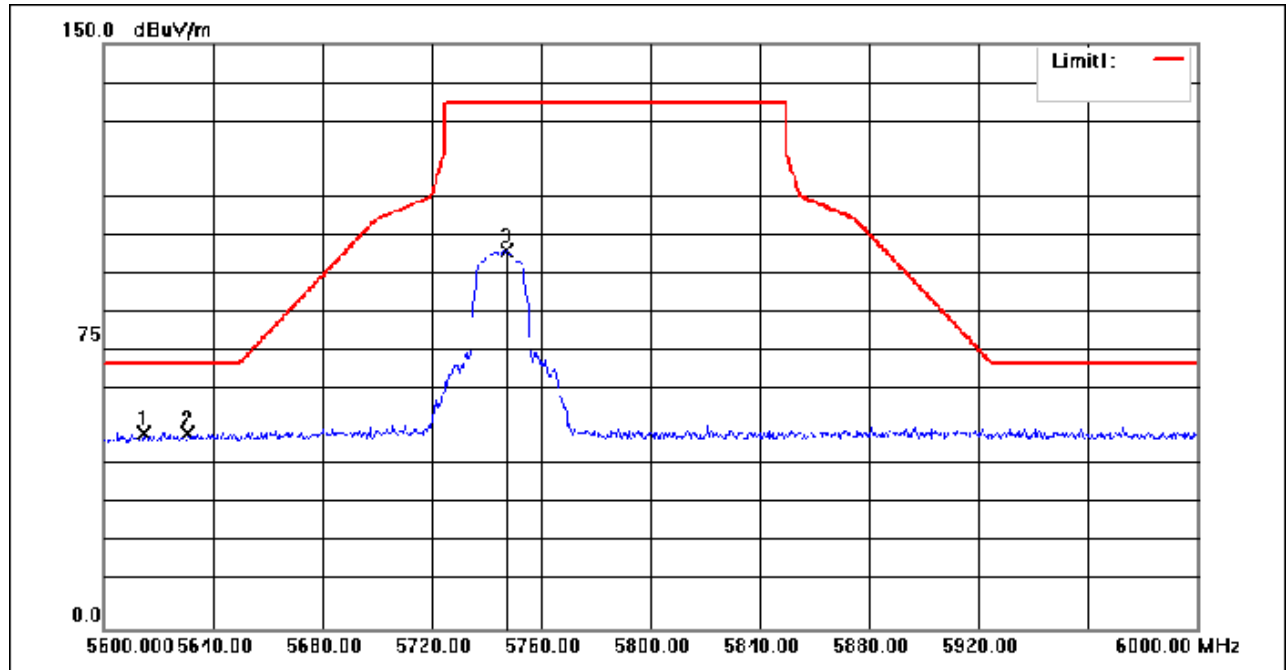
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5614.400	59.17	-9.28	49.89	68.20	-18.31	peak
2	5630.800	59.14	-9.23	49.91	68.20	-18.29	peak
3	5747.600	105.81	-8.86	96.95	135.00	-38.05	peak



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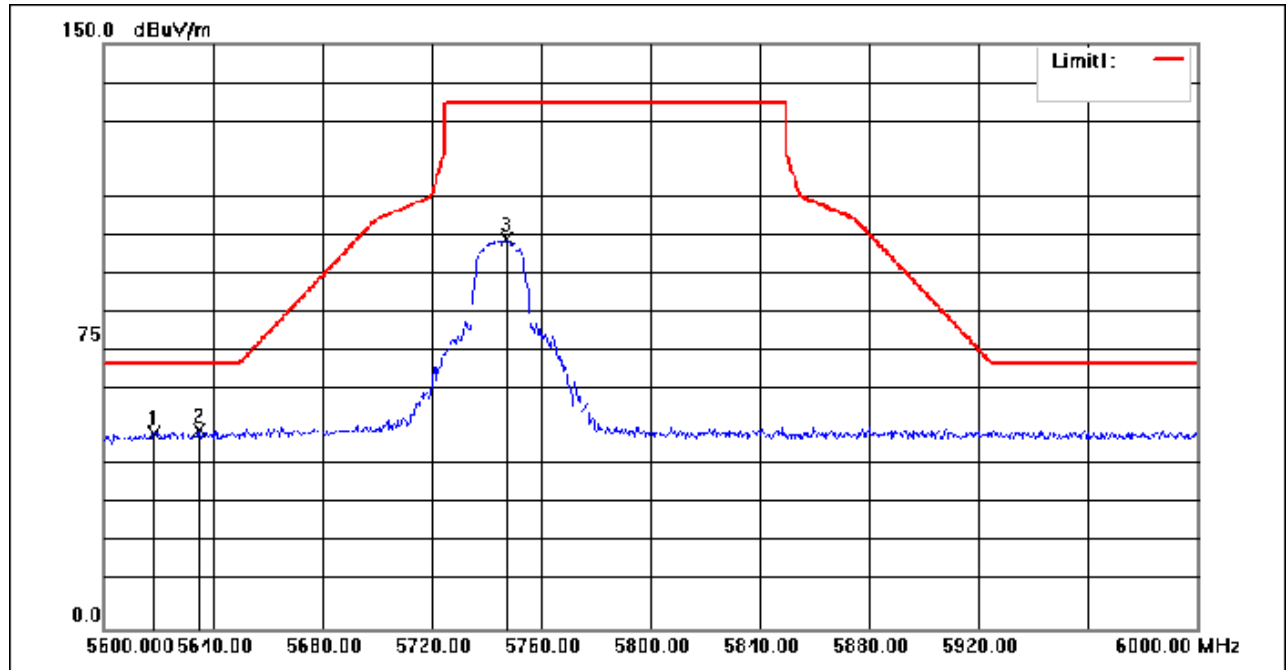
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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5618.400	59.32	-9.27	50.05	68.20	-18.15	peak
2	5634.800	59.91	-9.22	50.69	68.20	-17.51	peak
3	5747.600	108.66	-8.86	99.80	135.00	-35.20	peak



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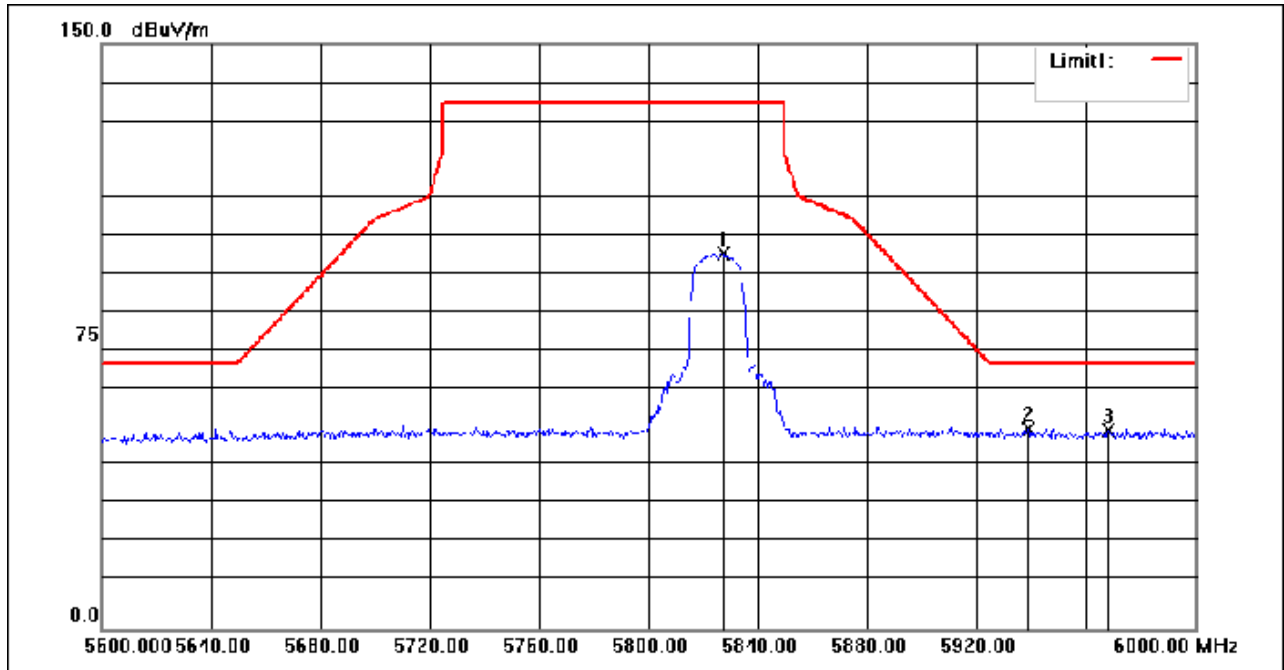
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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5827.600	104.77	-8.57	96.20	135.00	-38.80	peak
2	5938.800	59.12	-8.08	51.04	68.20	-17.16	peak
3	5968.000	58.64	-7.94	50.70	68.20	-17.50	peak



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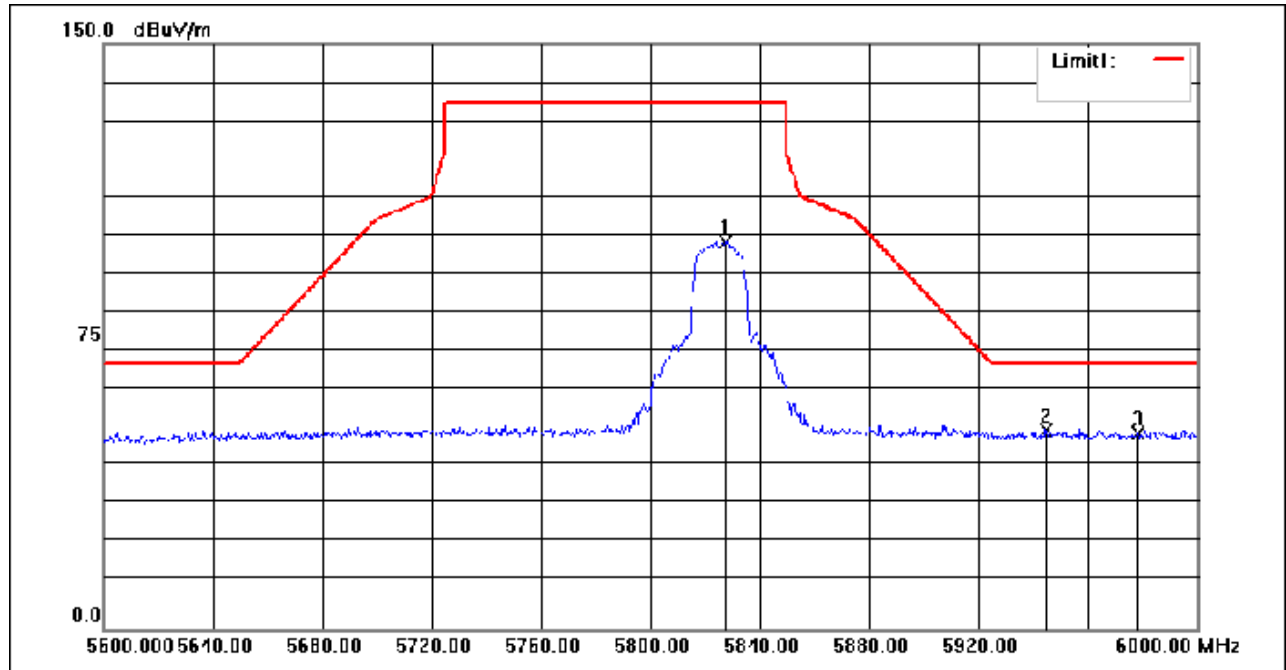
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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5827.600	107.72	-8.57	99.15	135.00	-35.85	peak
2	5944.800	58.82	-8.05	50.77	68.20	-17.43	peak
3	5978.400	58.11	-7.90	50.21	68.20	-17.99	peak



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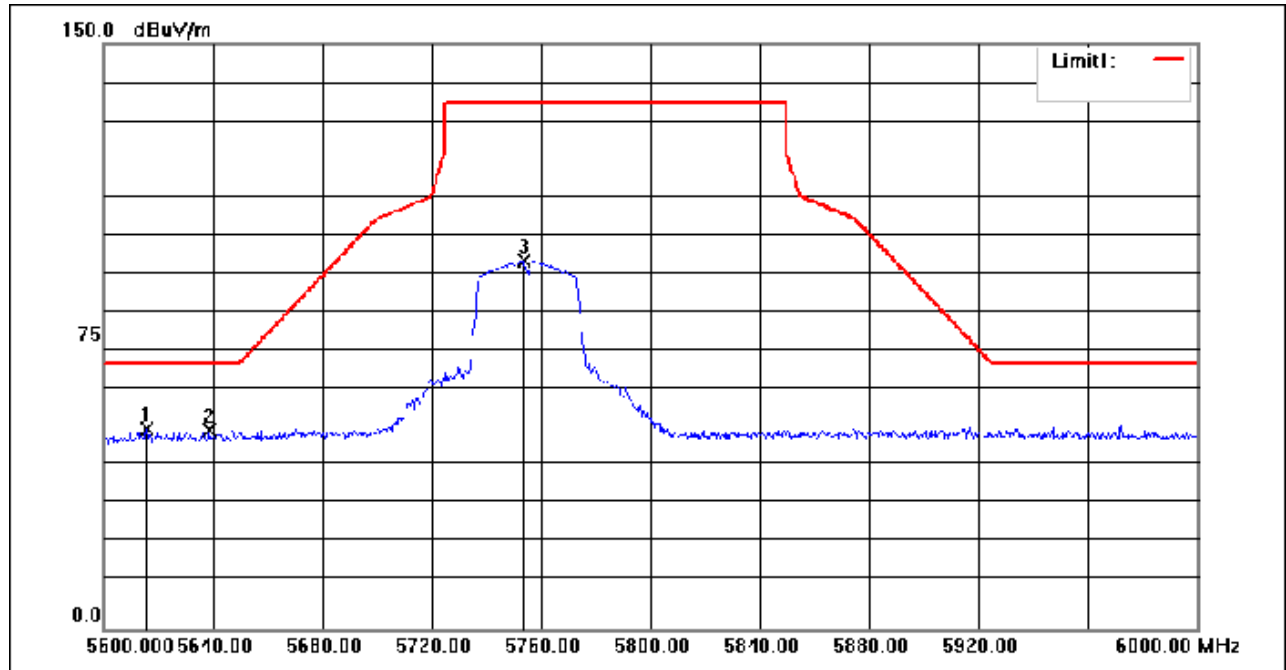
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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5615.600	60.56	-9.28	51.28	68.20	-16.92	peak
2	5638.400	60.03	-9.21	50.82	68.20	-17.38	peak
3	5753.600	103.27	-8.84	94.43	135.00	-40.57	peak



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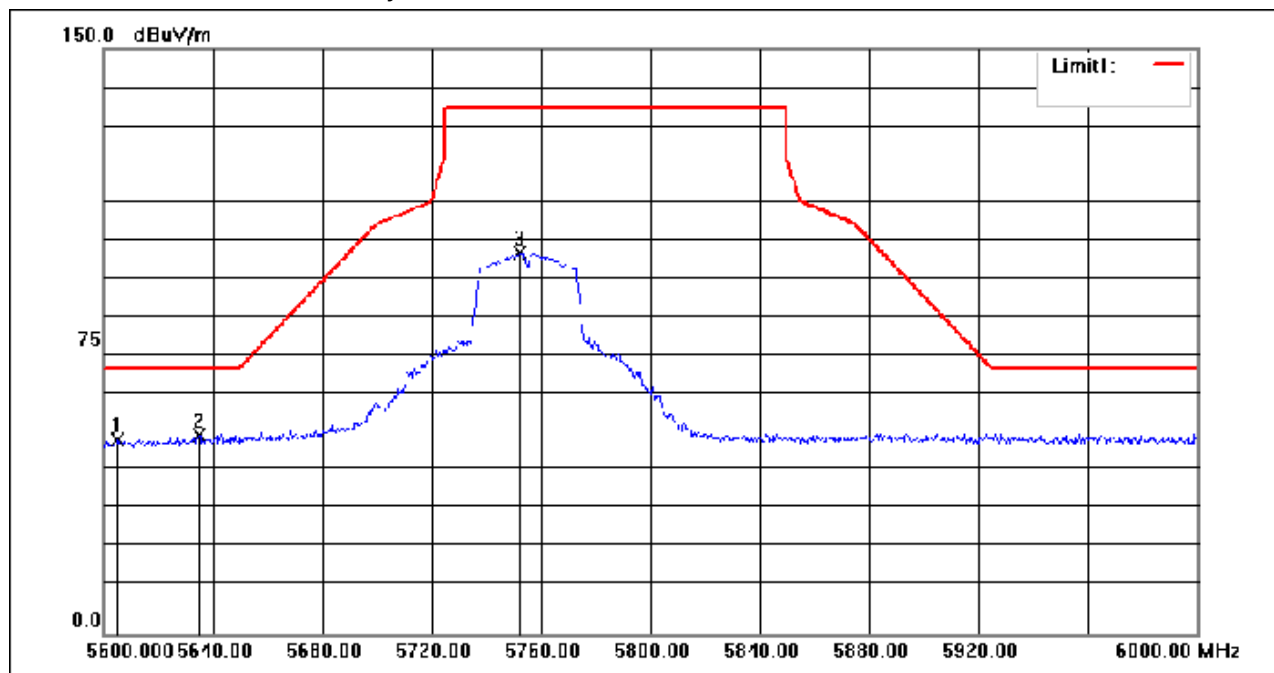
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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 40MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5605.200	58.96	-9.31	49.65	68.20	-18.55	peak
2	5634.800	60.02	-9.22	50.80	68.20	-17.40	peak
3	5752.400	106.45	-8.84	97.61	135.00	-37.39	peak



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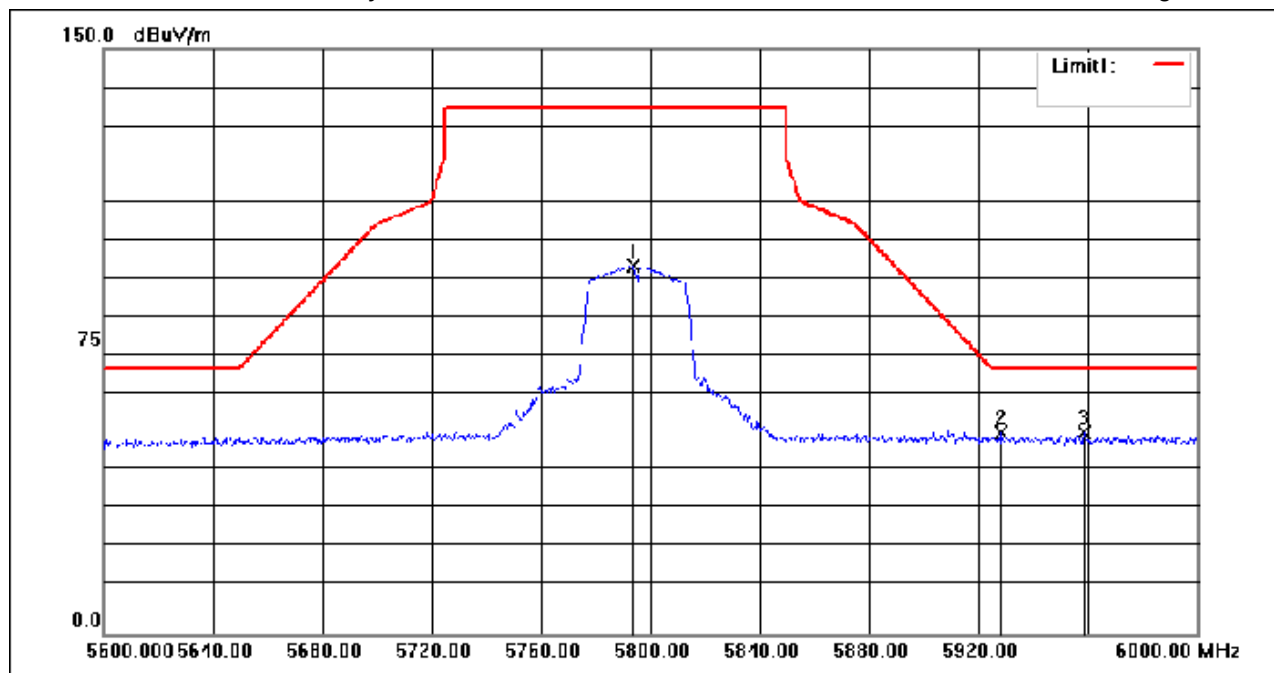
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Compliance Certification Services (Kunshan) Inc.

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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 40MHz; Channel: High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5793.600	102.99	-8.71	94.28	135.00	-40.72	peak
2	5928.400	59.60	-8.12	51.48	68.20	-16.72	peak
3	5958.400	59.47	-7.98	51.49	68.20	-16.71	peak



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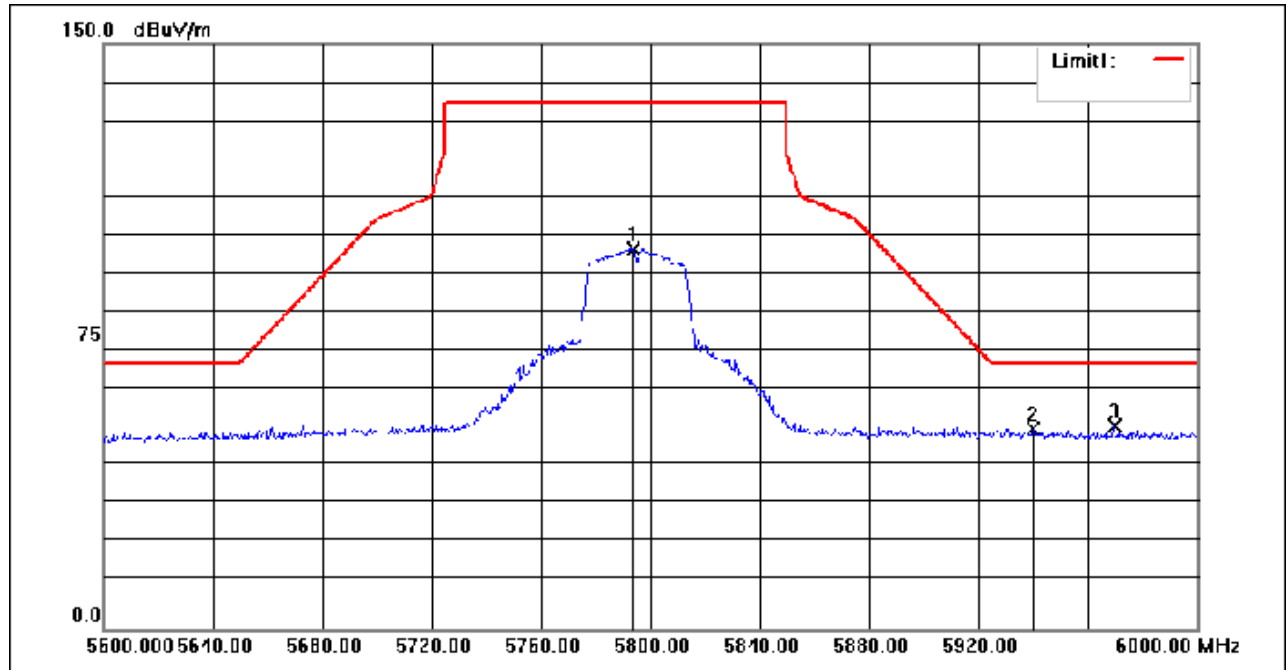
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Test Mode: 09; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5793.600	106.04	-8.71	97.33	135.00	-37.67	peak
2	5940.000	59.12	-8.07	51.05	68.20	-17.15	peak
3	5969.600	59.92	-7.93	51.99	68.20	-16.21	peak



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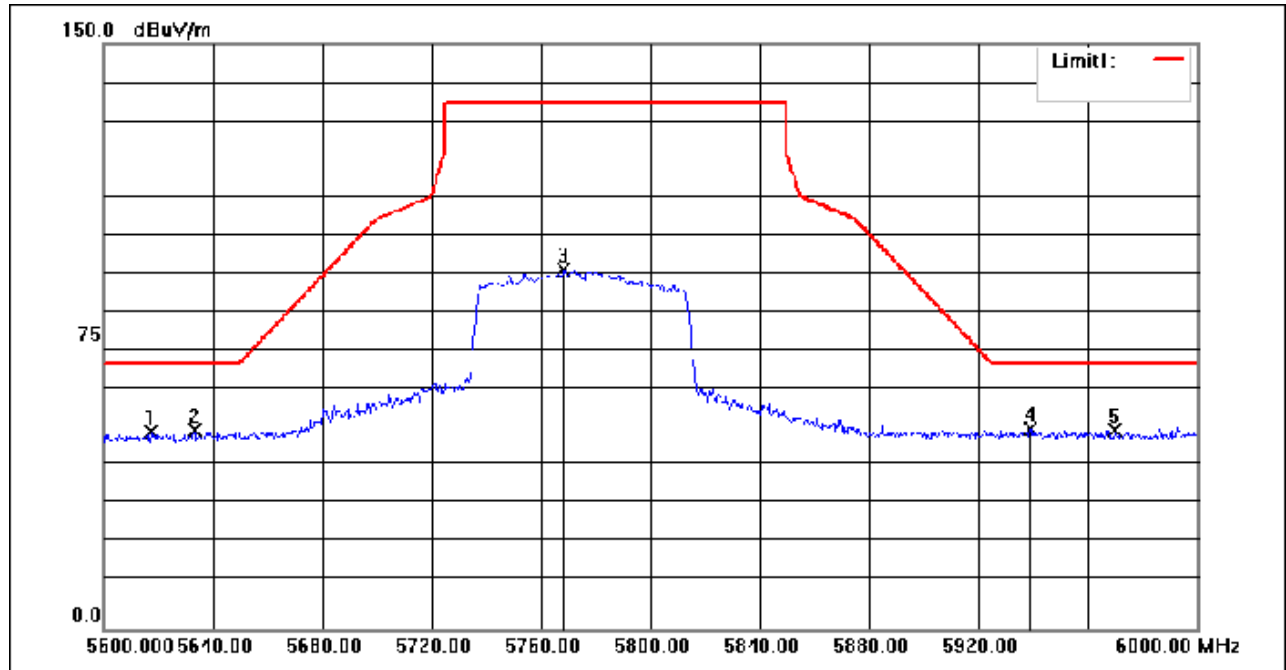
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Report No.: KSCR220800157006

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Test Mode: 09; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 80MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5617.200	59.66	-9.27	50.39	68.20	-17.81	peak
2	5633.200	60.11	-9.23	50.88	68.20	-17.32	peak
3	5768.400	100.73	-8.79	91.94	135.00	-43.06	peak
4	5938.800	59.20	-8.08	51.12	68.20	-17.08	peak
5	5970.000	58.82	-7.93	50.89	68.20	-17.31	peak



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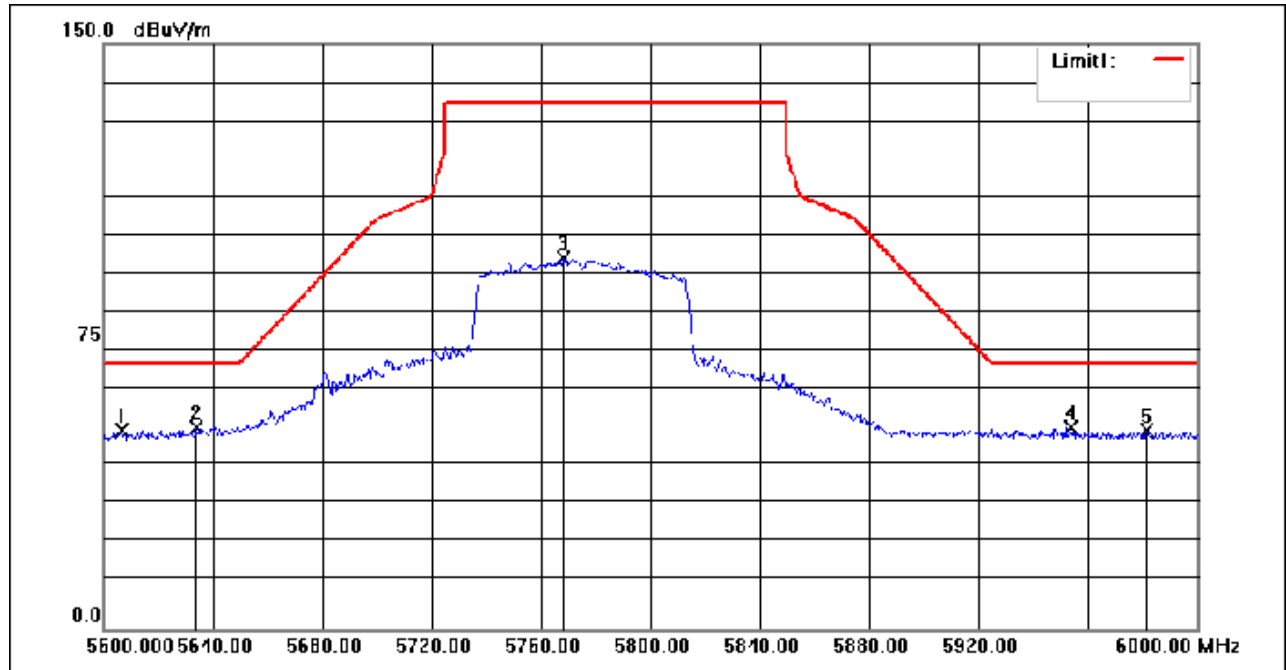
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Test Mode: 09; Polarity: Vertical; Modulation: 802.11ac; Bandwidth: 80MHz; Channel: Low



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5606.800	60.29	-9.31	50.98	68.20	-17.22	peak
2	5634.000	60.67	-9.22	51.45	68.20	-16.75	peak
3	5768.400	103.76	-8.79	94.97	135.00	-40.03	peak
4	5954.000	59.61	-8.00	51.61	68.20	-16.59	peak
5	5981.600	58.63	-7.89	50.74	68.20	-17.46	peak



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7.10 Frequency Stability

Test Requirement 47 CFR Part 15, Subpart E 15.407 (g)

Test Method: ANSI C63.10 (2013) Section 6.8

7.10.1 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °C Humidity: 41.4 % RH Atmospheric Pressure: 1010 mbar

7.10.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.10.3 Measurement Procedure and Data

Please Refer to Appendix



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7.11 Radiated Emissions (Below 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)

Test Method: KDB 789033 D02 II G

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

7.11.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

7.11.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



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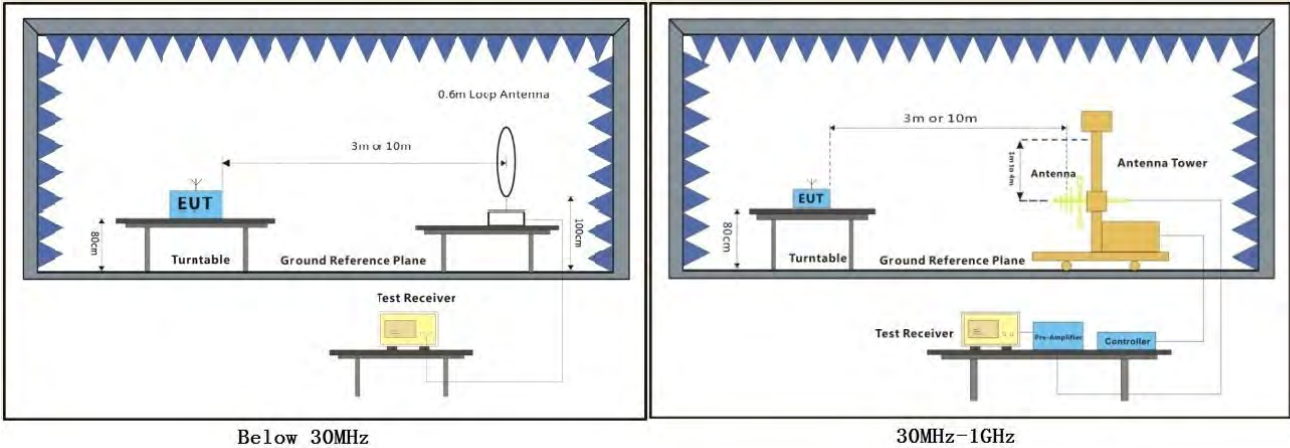
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7.11.3 Test Setup Diagram



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7.11.4 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.
5. This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 3 operation for a modulation and MIMO antenna operation for n/ac modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.



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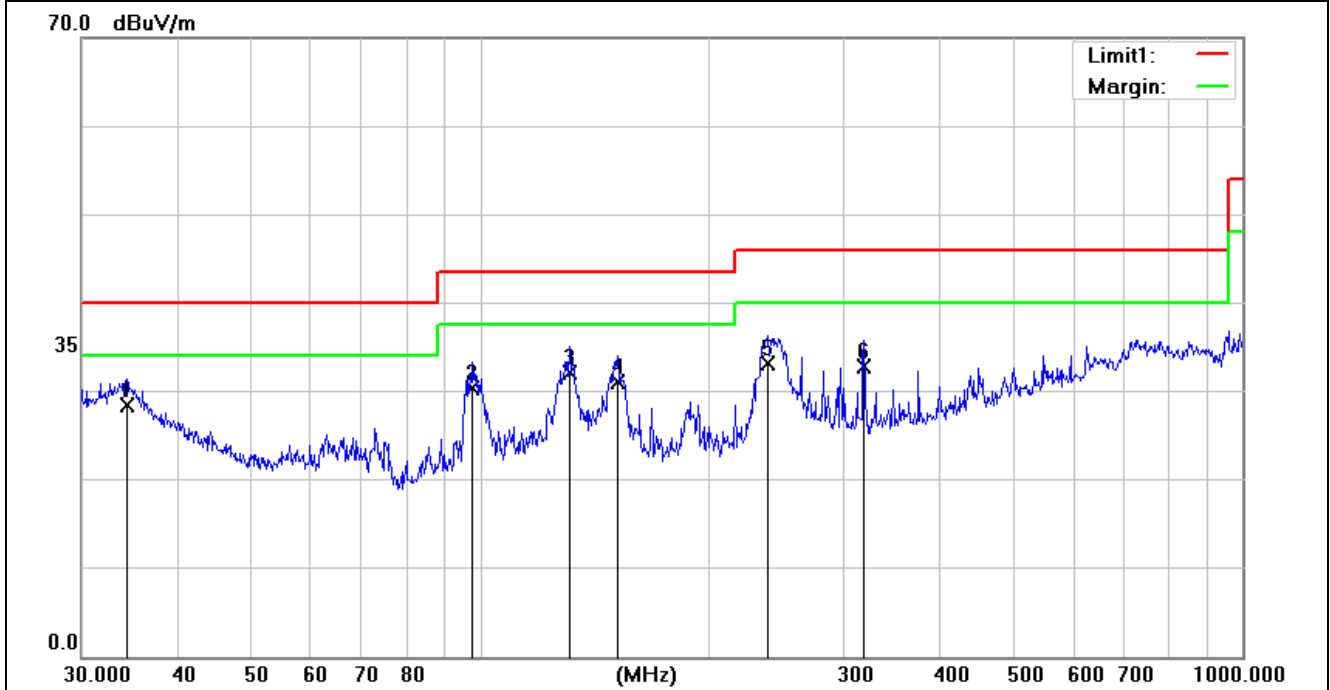
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Test Mode: 08; Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	34.3962	3.60	24.80	28.40	40.00	-11.60	100	324	QP
2	97.7981	13.72	16.65	30.37	43.50	-13.13	200	212	QP
3	130.8370	12.79	19.35	32.14	43.50	-11.36	100	274	QP
4	151.5971	13.21	17.79	31.00	43.50	-12.50	300	309	QP
5	238.3102	14.79	18.46	33.25	46.00	-12.75	100	85	QP
6	318.8170	11.69	21.08	32.77	46.00	-13.23	100	209	QP



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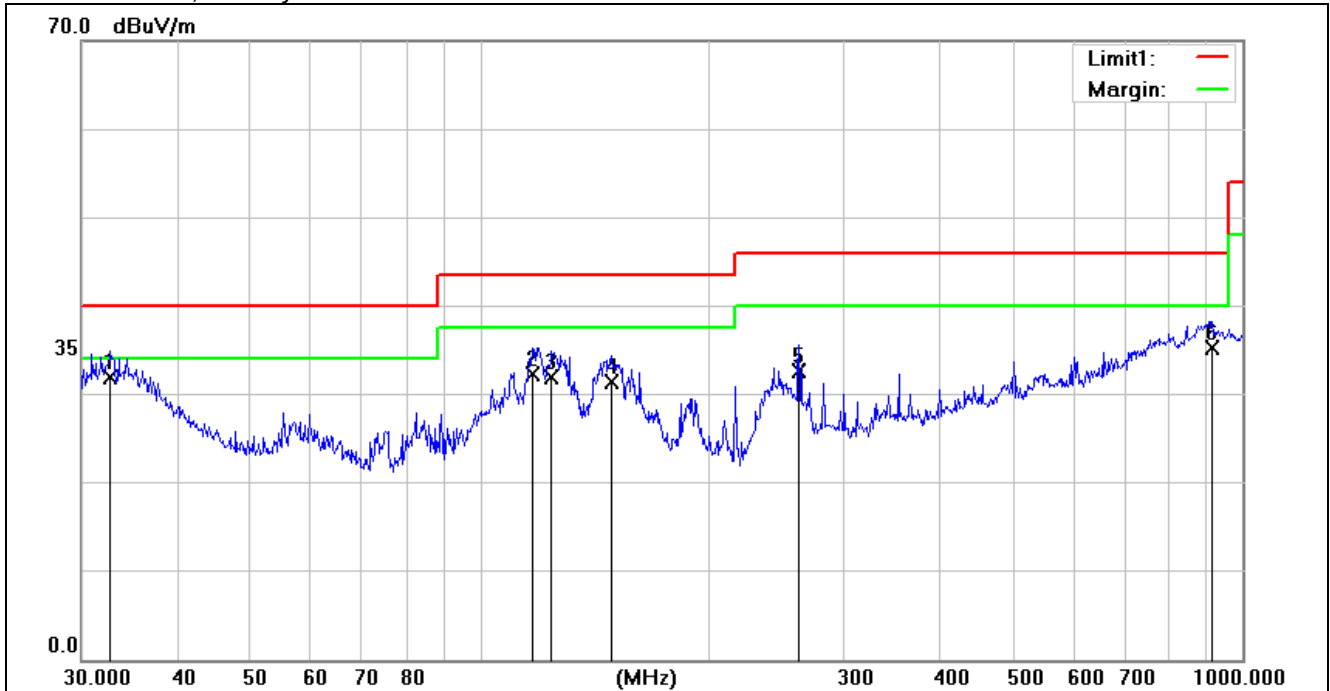
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Test Mode: 08; Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	32.7486	6.84	25.06	31.90	40.00	-8.10	100	51	QP
2	117.3602	13.07	19.23	32.30	43.50	-11.20	200	361	QP
3	124.1330	12.43	19.44	31.87	43.50	-11.63	200	326	QP
4	148.4410	13.56	17.88	31.44	43.50	-12.06	100	248	QP
5	261.9753	11.63	21.04	32.67	46.00	-13.33	400	227	QP
6	912.8620	32.78	2.50	35.28	46.00	-10.72	100	15	QP



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7.12 99% Bandwidth

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

7.12.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % 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-1)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	09	TX mode (U-NII-3)_Keep the EUT (WCB1R2001) in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



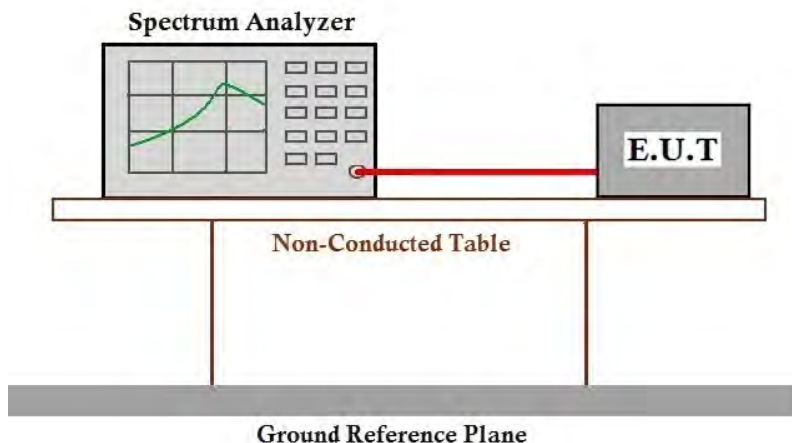
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7.12.3 Test Setup Diagram



7.12.4 Measurement Procedure and Data

Please Refer to Appendix



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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2208001570AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2208001570AT



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