



TEST REPORT

Application No.: GZCR2212001583TX
Applicant: Harman International Industries, Inc
Address of Applicant: 8500 Balboa Boulevard, Northridge, California 91329, United States
Manufacturer: Harman International Industries, Inc.
Address of Manufacturer: 8500 Balboa Boulevard, Northridge, California, 91329, United States
Equipment Under Test (EUT):
EUT Name: STUDIO MONITOR
Model No.: 4329P
Trade Mark: JBL
Standard(s) : 47 CFR Part 15, Subpart E 15.407
Date of Receipt: 2023-02-03
Date of Test: 2023-02-03
Date of Issue: 2023-02-07

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

Ricky Liu

Ricky Liu
Manager



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Guangzhou Branch Laboratory

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Revision Record			
Version	Report No.	Date	Remark
01		2023-02-07	Original

Authorized for issue by			
			
		Curry Wu/Project Engineer	
			
		Ricky Liu/Reviewer	

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart E 15.407	N/A	47 CFR Part 15, Subpart C 15.203	Pass
Transmission in the Absence of Data		N/A	47 CFR Part 15, Subpart C 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 & 15.407 b(6)	Pass
Duty Cycle		ANSI C63.10 (2013) Section 12.2	KDB 789033 D02 v02r01 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 C 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 C 15.407 (e)	Pass
Maximum Conducted output power		KDB 789033 D02 II E	47 CFR Part 15, Subpart C 15.407 (a)	Pass
Peak Power spectrum density		KDB 789033 D02 II F	47 CFR Part 15, Subpart C 15.407 (a)	Pass
Radiated Emissions (below 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & 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 & 15.407(b)	Pass
Frequency Stability		ANSI C63.10 (2013) Section 6.8	47 CFR Part 15, Subpart C 15.407 (g)	Pass
Channel Move Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass
Channel Closing Transmission Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass
Radiated Emissions (above 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & 15.407(b)	Pass

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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4 General Information

4.1 Details of E.U.T.

Power supply:	Main speaker: AC 100-240V, 50/60Hz Speaker: AC 100-240V, 50/60Hz 3.0V DC (1.5V x 2 "AAA" Size Batteries) for remote controller
Cable(s):	LAN cable:300cm shielded (Two magnetic rings) AC cable:170cm*2
Operation Frequency (20MHz):	U-NII-1: 5180-5240MHz; U-NII-2A: 5260-5320MHz; U-NII-2C: 5500-5700MHz; U-NII-3: 5745-5825MHz
Operation Frequency (40MHz):	U-NII-1: 5190-5230MHz; U-NII-2A: 5270-5310MHz; U-NII-2C: 5510-5670MHz; U-NII-3: 5755-5795MHz
Operation Frequency (80MHz):	U-NII-1: 5210MHz; U-NII-2A: 5290MHz; U-NII-2C: 5530-5610MHz; U-NII-3: 5775MHz
Modulation 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
DFS Function:	Slave without Radar detection
TPC Function:	Support TPC function
Antenna Type:	Integral Antenna
Antenna Gain:	Ant 1: 3.51dBi; Ant 2: 3.93dBi Directional gain: 6.73dBi
Remark:	Two antennas can simultaneous transmission

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	$\pm 2.76\text{dB}$
Duty Cycle	$\pm 0.37\%$
99% Bandwidth	$\pm 3\%$
26dB Emission bandwidth	$\pm 3\%$
Minimum 6 dB bandwidth (5.725-5.85 GHz band)	$\pm 3\%$
Maximum Conducted output power	$\pm 0.75\text{dB}$
Peak Power spectrum density	$\pm 2.84\text{dB}$
Radiated Emissions (below 1GHz)	$\pm 5.00\text{dB}$ (30MHz-1GHz; 3m); $\pm 4.38\text{dB}$ (30MHz-1GHz; 10m);
Radiated Emissions which fall in the restricted bands	$\pm 5.00\text{dB}$ (30MHz-1GHz; 3m); $\pm 5.12\text{dB}$ (1GHz-6GHz); $\pm 5.38\text{dB}$ (6GHz-18GHz); $\pm 5.61\text{dB}$ (18GHz-40GHz)
Frequency Stability	$\pm 7.25 \times 10^{-8}$
Radiated Emissions (above 1GHz)	$\pm 5.12\text{dB}$ (1GHz-6GHz); $\pm 5.38\text{dB}$ (6GHz-18GHz); $\pm 5.61\text{dB}$ (18GHz-40GHz)
Remark: The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Network	Rohde & Schwarz	ENV216	EMC0118	2022-12-16	2023-12-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2022-09-09	2023-09-08
Coaxial Cable	HangTianXing	2m	EMC0107	2022-08-24	2023-08-23
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A
EMI Test Receiver(9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2022-05-20	2023-05-19

Duty Cycle					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A

99% Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A

26dB Emission bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A



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Minimum 6 dB bandwidth (5.725-5.85 GHz band)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A

Maximum Conducted output power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A



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Peak Power spectrum density					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A

Radiated Emissions (below 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable	HangTianXing	N/A	EMC0542	2022-08-24	2023-08-23
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2022-02-22	2025-02-21
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2022-06-21	2023-06-20
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2022-04-06	2024-04-05
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2022-10-16	2025-10-15
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2022-05-20	2023-05-19

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver(20Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2022-12-16	2023-12-15
Chamber cable(Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23



Horn Antenna(1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-21	2025-09-20
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2022-12-16	2023-12-15
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
MXE EMI Receiver(10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2022-10-21	2023-10-20
EXA Signal Analyzer(10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Notch Filter (5150-5880)	Mico-Tronics	BRM50716	EMC2168	2022-07-29	2023-07-28
Horn Antenna(14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	EMC2172	2022-08-24	2023-08-23

Frequency Stability					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A



DFS test					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer(10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2022-03-03	2023-03-02
ESG Vector Signal Generator(250kHz-6GHz)	Keysight	E4438C	SEM006-03	2022-03-03	2023-03-02
EXG Analog Signal Generator(9kHz-3GHz)	Agilent Technologies	N5171B	SEM006-04	2022-06-21	2023-06-20
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2022-05-16	2023-05-15
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2022-05-16	2023-05-15
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2023-03-28
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A

Radiated Emissions (above 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable(Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna(1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-21	2025-09-20
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2022-12-16	2023-12-15
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2022-12-16	2023-12-15
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
EXA Signal Analyzer(10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Notch Filter (5150-5880)	Mico-Tronics	BRM50716	EMC2168	2022-07-29	2023-07-28
Horn Antenna(14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	EMC2172	2022-08-24	2023-08-23



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General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2022-06-24	2023-06-23
DMM	Fluke	73	EMC0007	2022-06-24	2023-06-23



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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

15.203 Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of 15.211, 15.213, 15.217, 15.219, 15.221, or 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the Ant 1: 3.51dBi; Ant 2: 3.93dBi; Directional Gain: 6.73dBi

Antenna location: Refer to Internal photo.

6.2 Transmission in the Absence of Data

6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.407 (c)

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 (AP72598V) 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 & 15.407 b(6)

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.1.2 Test Mode Description

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



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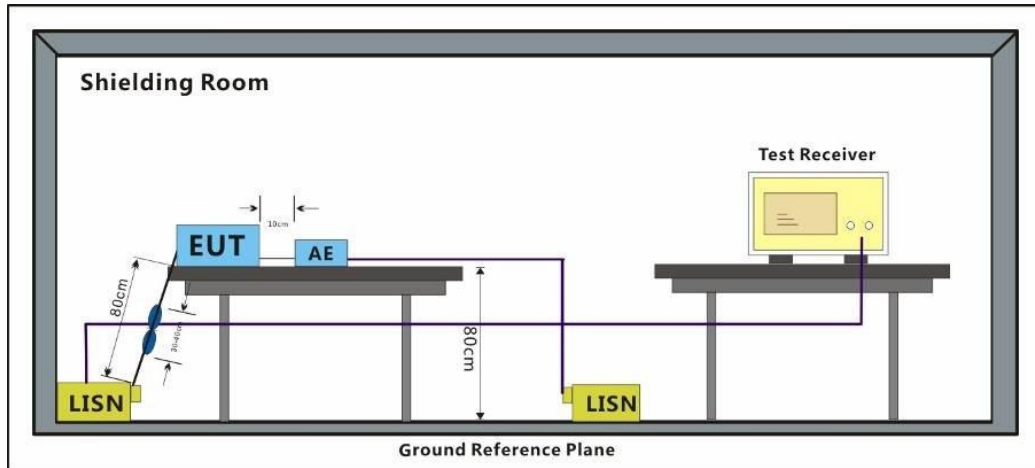
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Pre-scan 08

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

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

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

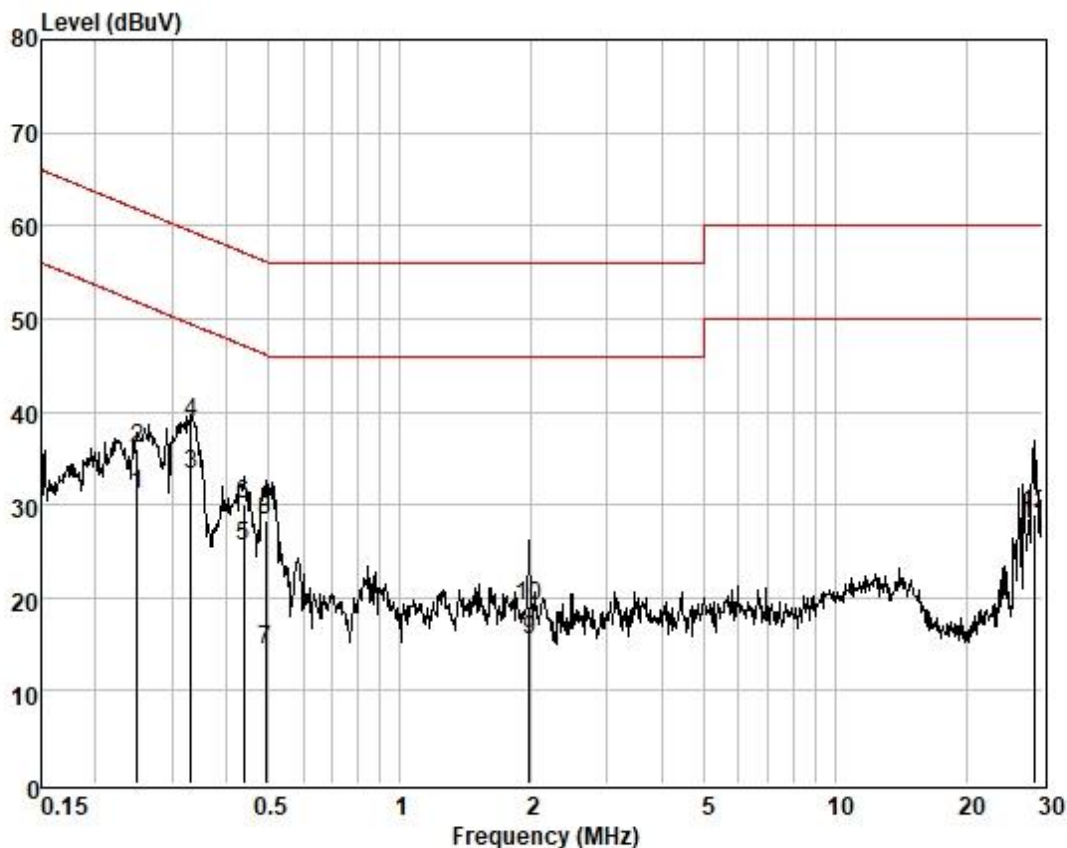
Remark: LISN=Read Level+ Cable Loss+ LISN Factor



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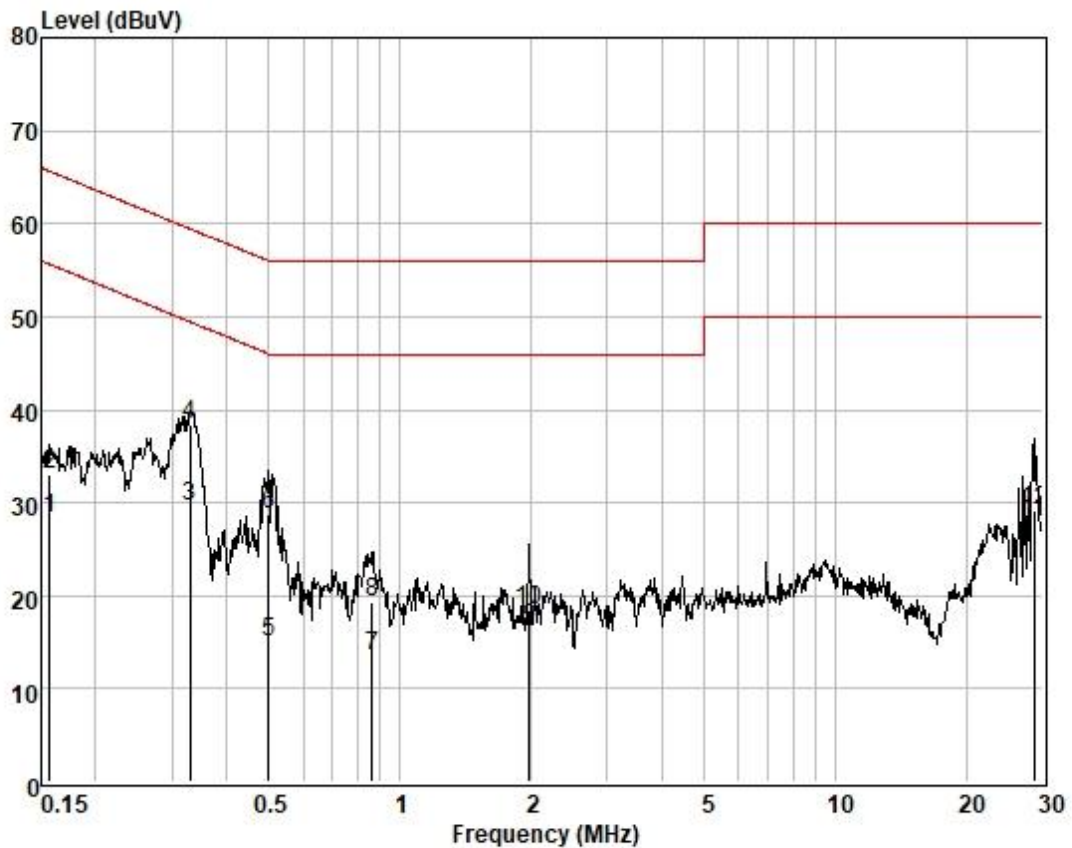
Test Mode: 05; Line: Live line



Condition: LINE
Mode : 5G WIFI
Model :
Power :

	Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.249	21.41	0.06	9.61	31.08	51.78	-20.70	Average
2	0.249	26.35	0.06	9.61	36.02	61.78	-25.76	QP
3	0.332	23.50	0.06	9.61	33.17	49.40	-16.23	Average
4	0.332	29.05	0.06	9.61	38.72	59.40	-20.68	QP
5	0.437	15.91	0.06	9.59	25.56	47.11	-21.55	Average
6	0.437	20.36	0.06	9.59	30.01	57.11	-27.10	QP
7	0.491	4.68	0.07	9.59	14.34	46.14	-31.80	Average
8	0.491	18.55	0.07	9.59	28.21	56.14	-27.93	QP
9	1.991	5.75	0.12	9.62	15.49	46.00	-30.51	Average
10	1.991	9.34	0.12	9.62	19.08	56.00	-36.92	QP
11	28.755	17.89	0.42	9.64	27.95	50.00	-22.05	Average
12	28.755	18.97	0.42	9.64	29.03	60.00	-30.97	QP

Test Mode: 05; Line: Neutral Line



Condition: NEUTRAL

Mode : 5G WIFI

Model :

Power :

	Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.156	18.68	0.06	9.62	28.36	55.65	-27.29	Average
2	0.156	23.35	0.06	9.62	33.03	65.65	-32.62	QP
3	0.330	19.99	0.06	9.61	29.66	49.44	-19.78	Average
4	0.330	28.63	0.06	9.61	38.30	59.44	-21.14	QP
5	0.499	5.37	0.07	9.60	15.04	46.01	-30.97	Average
6	0.499	19.14	0.07	9.60	28.81	56.01	-27.20	QP
7	0.866	3.78	0.07	9.61	13.46	46.00	-32.54	Average
8	0.866	9.71	0.07	9.61	19.39	56.00	-36.61	QP
9	1.991	6.76	0.12	9.61	16.49	46.00	-29.51	Average
10	1.991	8.69	0.12	9.61	18.42	56.00	-37.58	QP
11	28.755	17.50	0.42	9.92	27.84	50.00	-22.16	Average
12	28.755	18.74	0.42	9.92	29.08	60.00	-30.92	QP

7.2 Duty Cycle

Test Requirement

KDB 789033 D02 v02r01 II B 1

Test Method:

ANSI C63.10 (2013) Section 12.2

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C

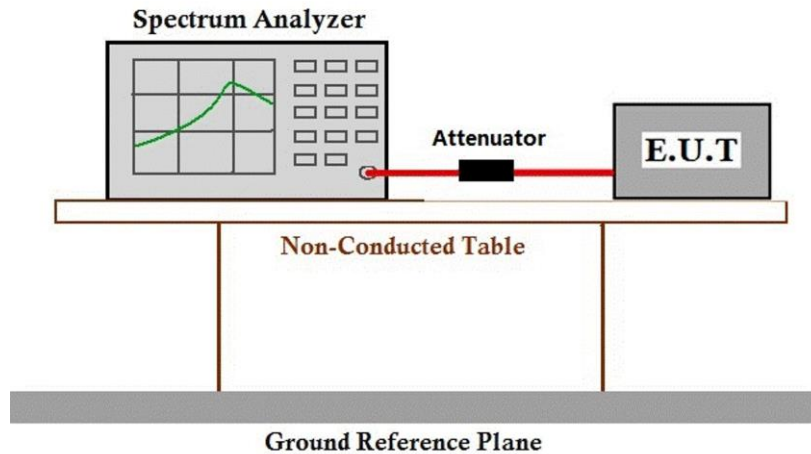
Humidity: 52 % RH

Atmospheric Pressure: 1003 mbar

7.2.2 Test Mode Description

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

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.3 99% Bandwidth

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

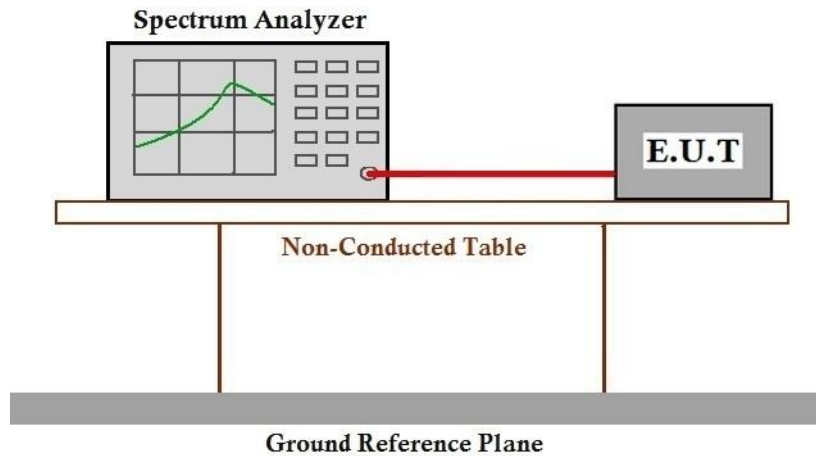
7.3.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.3.2 Test Mode Description

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

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.4 26dB Emission bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)
Test Method: KDB 789033 D02 II C 1

7.4.1 E.U.T. Operation

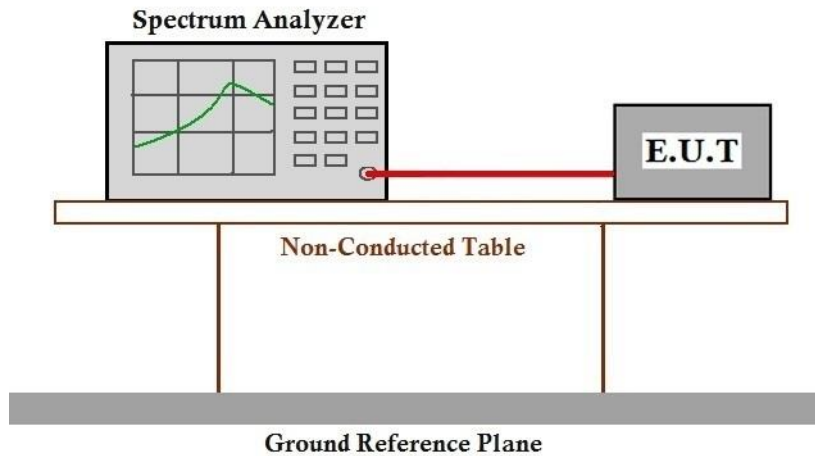
Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.4.2 Test Mode Description

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

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

Test Requirement 47 CFR Part 15, Subpart C 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:

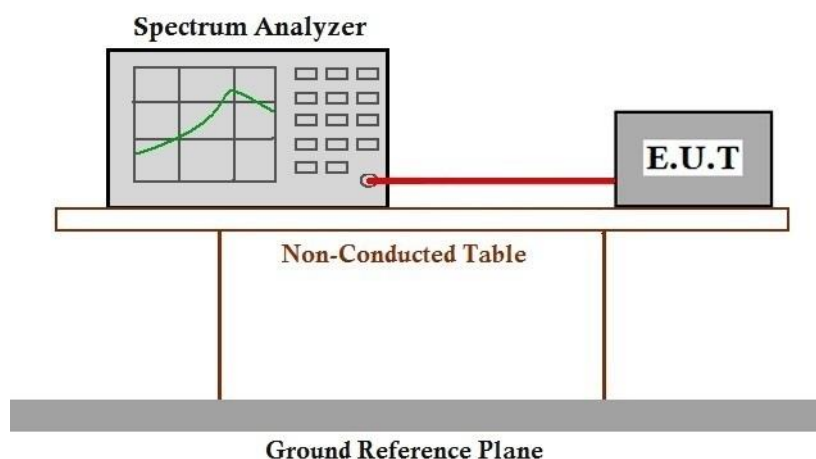
Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.5.2 Test Mode Description

Pre-scan / Mode
Final test Code Description

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

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.6 Maximum Conducted output power

Test Requirement 47 CFR Part 15, Subpart C 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:	* Where B is the 26dB emission bandwidth in MHz. The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.6.2 Test Mode Description

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

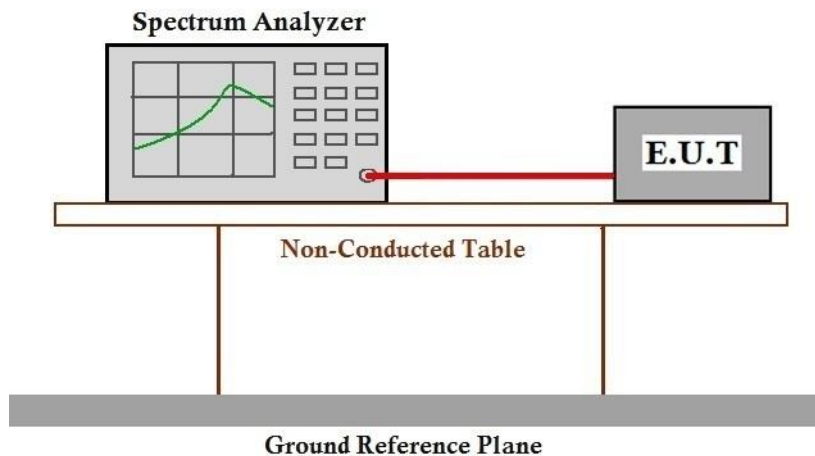


Final test 08

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). Only the data of worst case is recorded in the report.

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

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.7 Peak Power spectrum density

Test Requirement 47 CFR Part 15, Subpart C 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:	The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.

7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.7.2 Test Mode Description

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



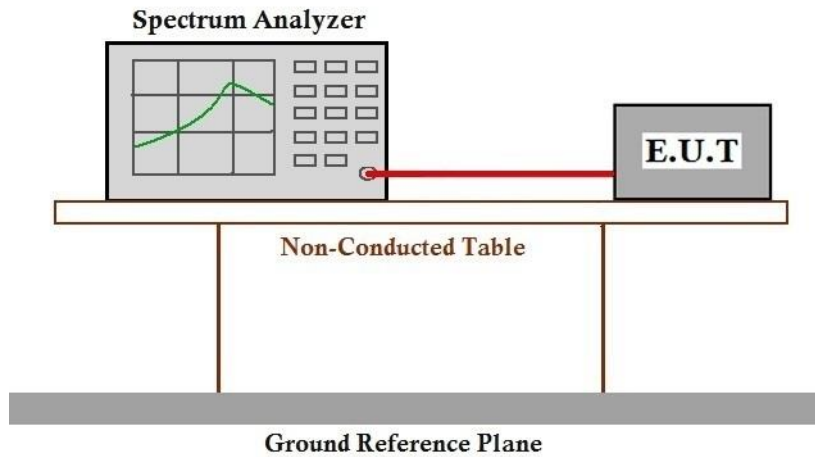
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Final test 08

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

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.8 Radiated Emissions (below 1GHz)

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

Test Method: KDB 789033 D02 II G

Measurement Distance: 10m

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.

7.8.1 E.U.T. Operation

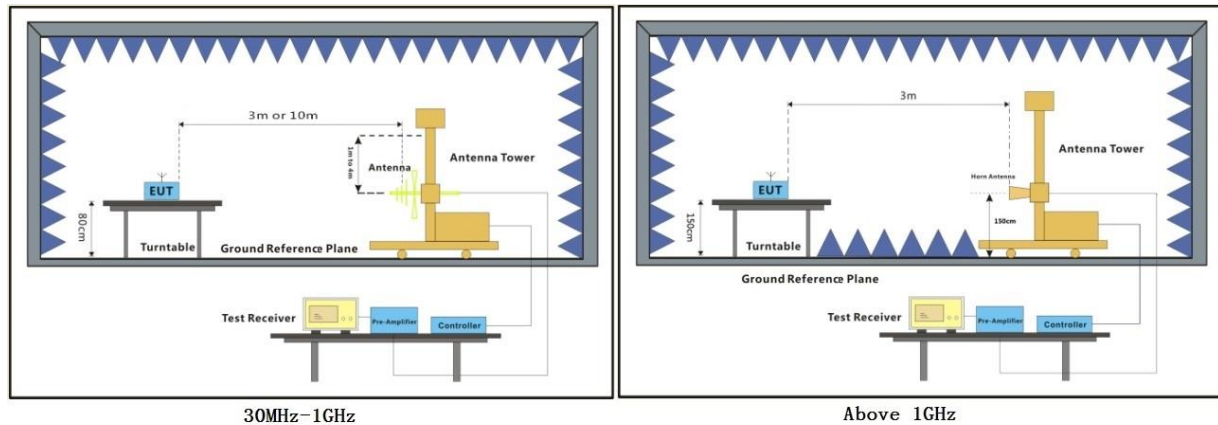
Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.8.2 Test Mode Description

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

7.8.3 Test Setup Diagram



7.8.4 Measurement Procedure and Data

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark:

- Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
- 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.
- Scan from 9kHz to 1GHz, 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.

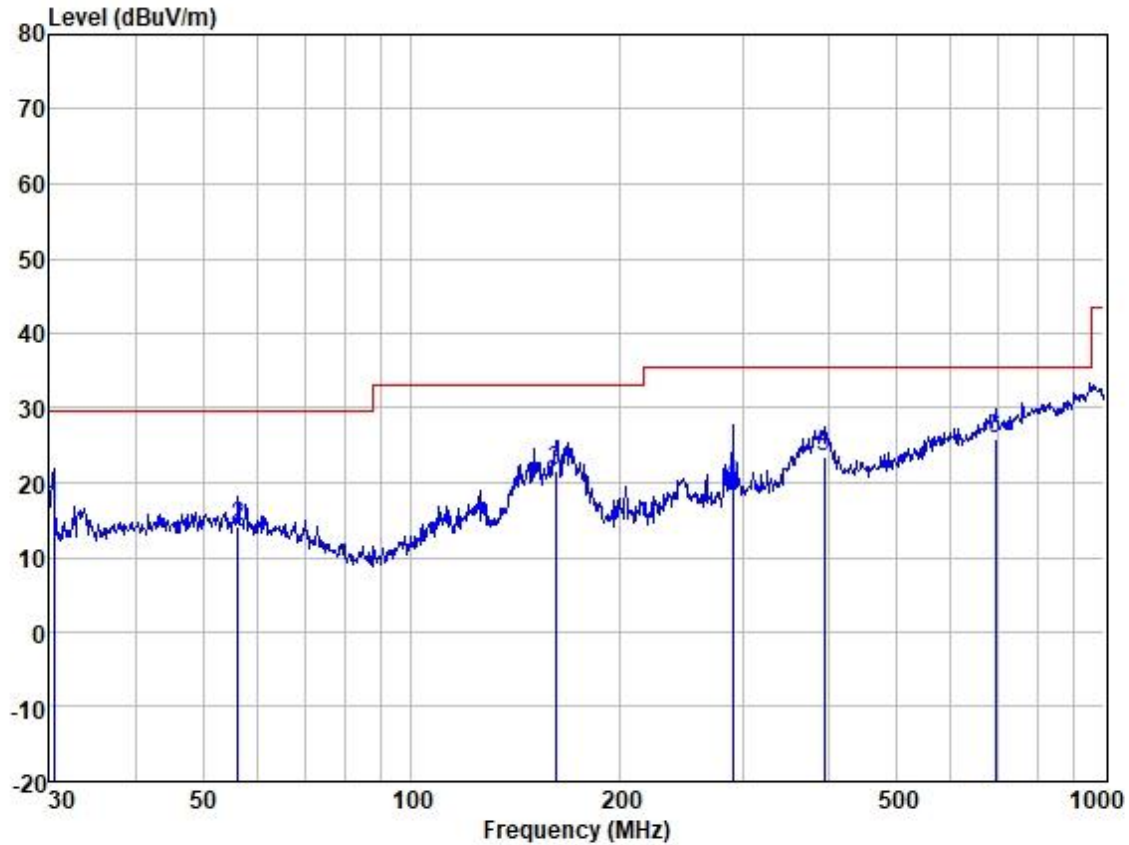


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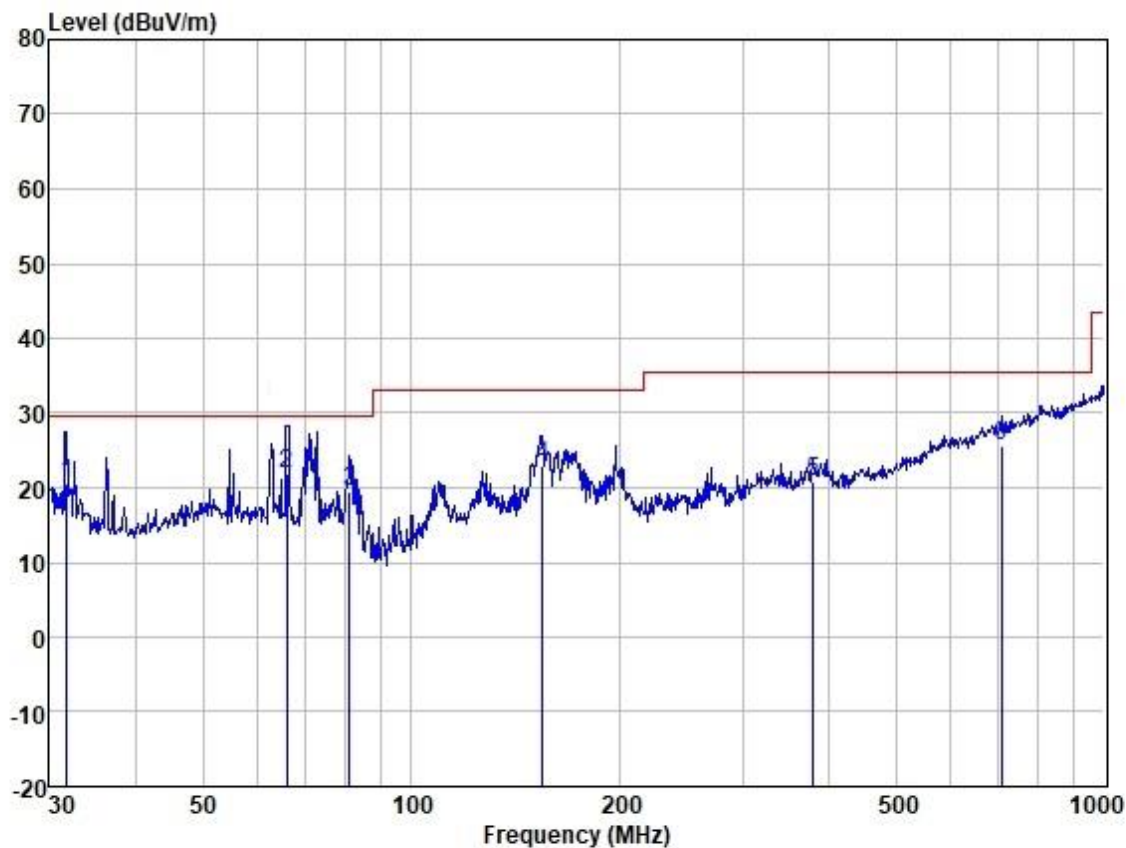
Test Mode: 05; Polarity: Horizontal; Modulation: 802.11ac; Bandwidth: 20MHz; Channel: middle



Site : SGS
Job :
Model :
Power :
Test Mode : 5G

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	30.424	30.59	12.94	1.02	27.66	16.89	29.54	-12.65	HORIZONTAL	QP
2	56.197	26.68	13.74	1.20	27.60	14.02	29.54	-15.52	HORIZONTAL	QP
3	161.474	33.11	13.56	2.34	27.35	21.66	33.06	-11.40	HORIZONTAL	QP
4	291.036	30.71	13.21	3.14	27.20	19.86	35.56	-15.70	HORIZONTAL	QP
5	393.472	32.02	15.44	3.91	27.98	23.39	35.56	-12.17	HORIZONTAL	QP
6	696.857	27.44	21.33	5.77	28.70	25.84	35.56	-9.72	HORIZONTAL	QP

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



Site : SGS
Job :
Model :
Power :
Test Mode : 5G

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	31.731	34.14	12.88	1.04	27.65	20.41	29.54	-9.13	VERTICAL	QP
2	66.034	35.77	12.41	1.36	27.60	21.94	29.54	-7.60	VERTICAL	QP
3	81.212	36.60	8.87	1.49	27.60	19.36	29.54	-10.18	VERTICAL	QP
4	154.279	34.47	13.59	2.28	27.37	22.97	33.06	-10.09	VERTICAL	QP
5	379.914	29.77	15.13	3.84	27.92	20.82	35.56	-14.74	VERTICAL	QP
6	709.182	27.20	21.24	5.80	28.69	25.55	35.56	-10.01	VERTICAL	QP

Frequency (MHz)	Level @ 10m (dBuV/m)	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Level @ 3m (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dB)	Ant. Polarization
30.424	16.89	6.99	23.30	27.35	40.00	-12.65	H
56.197	14.02	5.02	16.74	24.48	40.00	-15.52	H
161.474	21.66	12.11	40.35	32.12	43.50	-11.38	H
291.036	19.86	9.84	32.80	30.32	46.00	-15.68	H
393.472	23.39	14.77	49.25	33.85	46.00	-12.15	H
696.857	25.84	19.59	65.29	36.30	46.00	-9.70	H
31.731	20.41	10.48	34.94	30.87	40.00	-9.13	V
66.034	21.94	12.50	41.68	32.40	40.00	-7.60	V
81.212	19.36	9.29	30.97	29.82	40.00	-10.18	V
154.279	22.97	14.08	46.92	33.43	43.50	-10.07	V
379.914	20.82	10.99	36.63	31.28	46.00	-14.72	V
709.182	25.55	18.95	63.15	36.01	46.00	-9.99	V

7.9 Radiated Emissions which fall in the restricted bands

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

Test Method: KDB 789033 D02 II G

Measurement Distance: 3m

Limit:

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

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

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

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

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

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

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

7.9.1 E.U.T. Operation

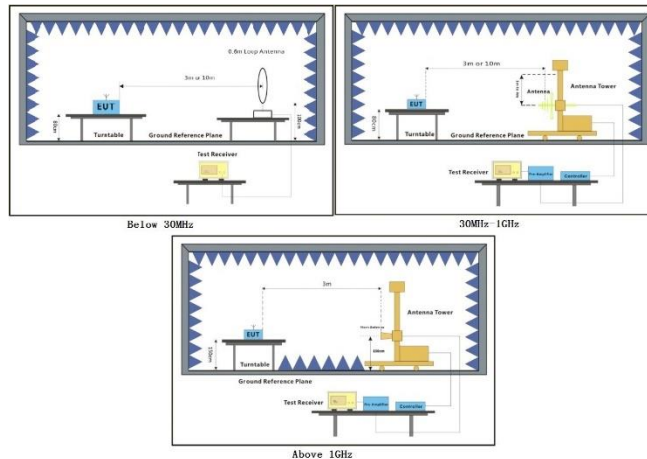
Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.9.2 Test Mode Description

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

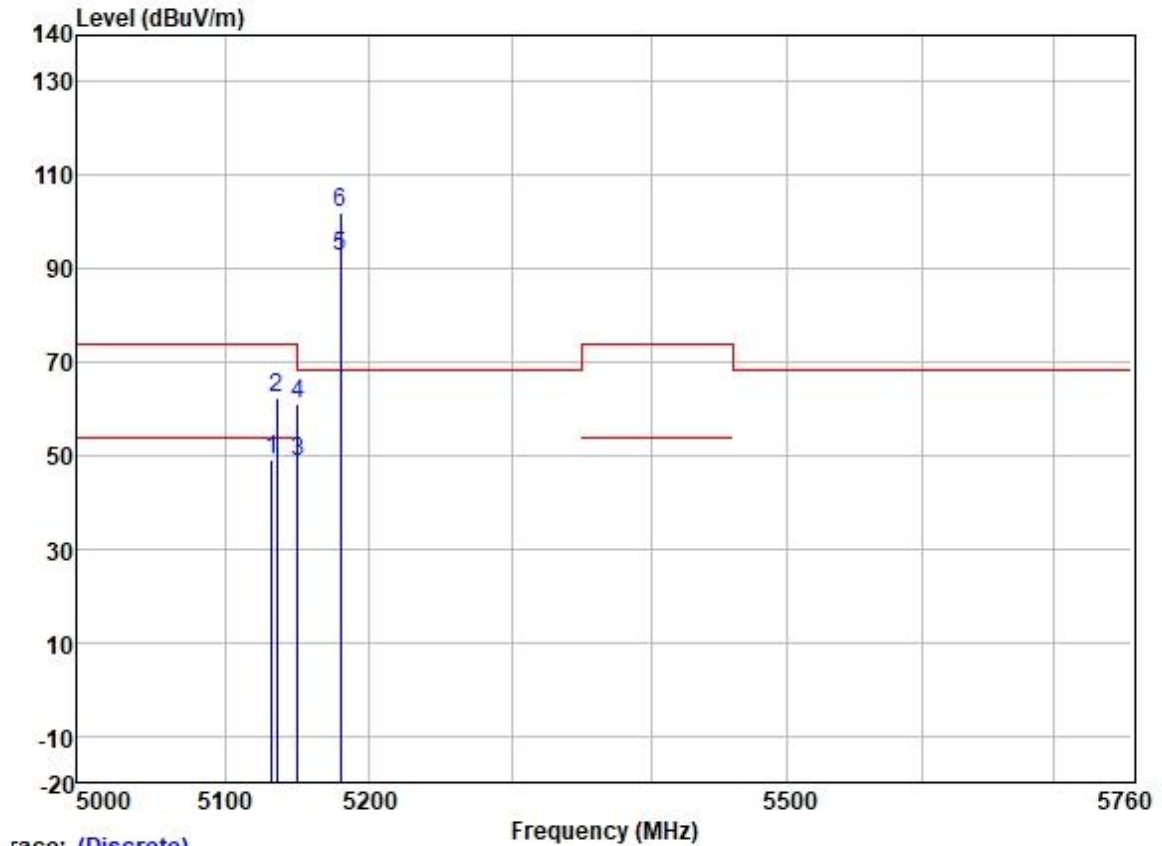
7.9.3 Test Setup Diagram



7.9.4 Measurement Procedure and Data

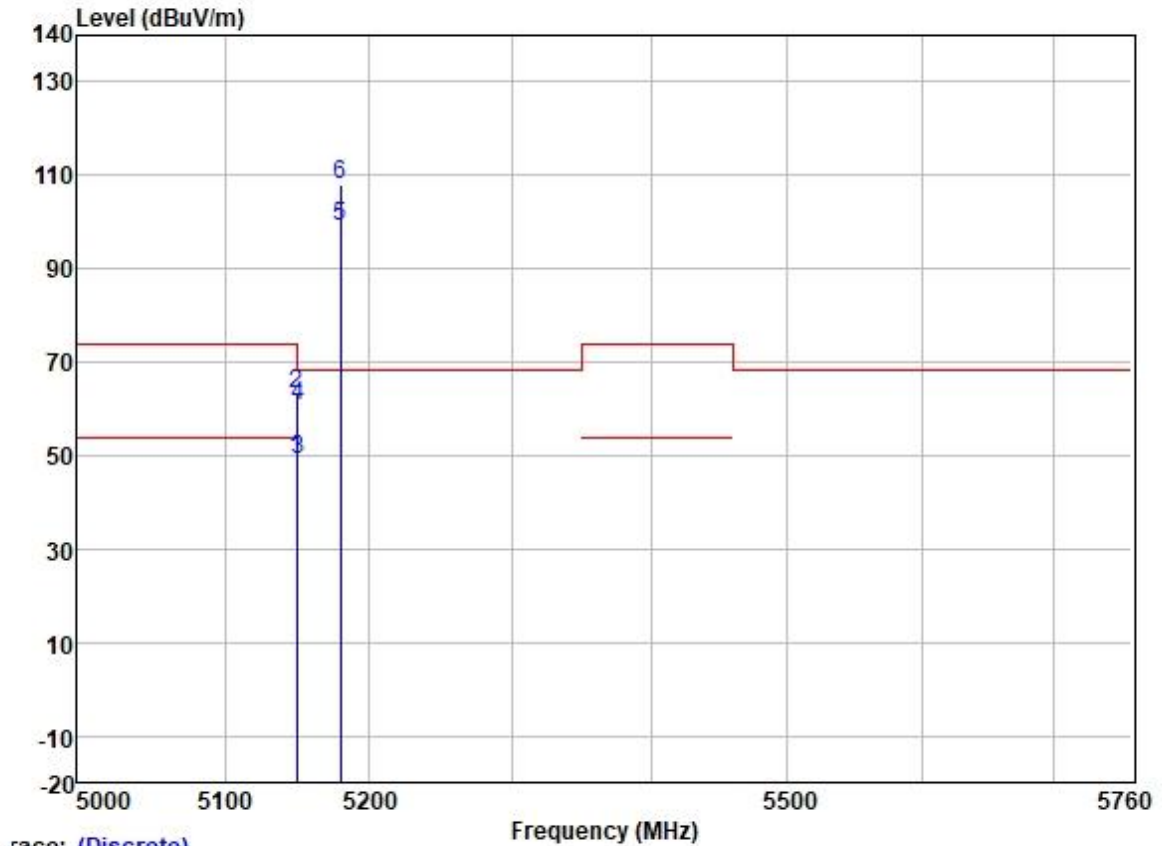
- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
 - For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
 - The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
 - The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
 - For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
 - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
 - If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
 - Test the EUT in the lowest channel, the middle channel, the Highest channel.
 - The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
 - Repeat above procedures until all frequencies measured was complete.
- Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

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



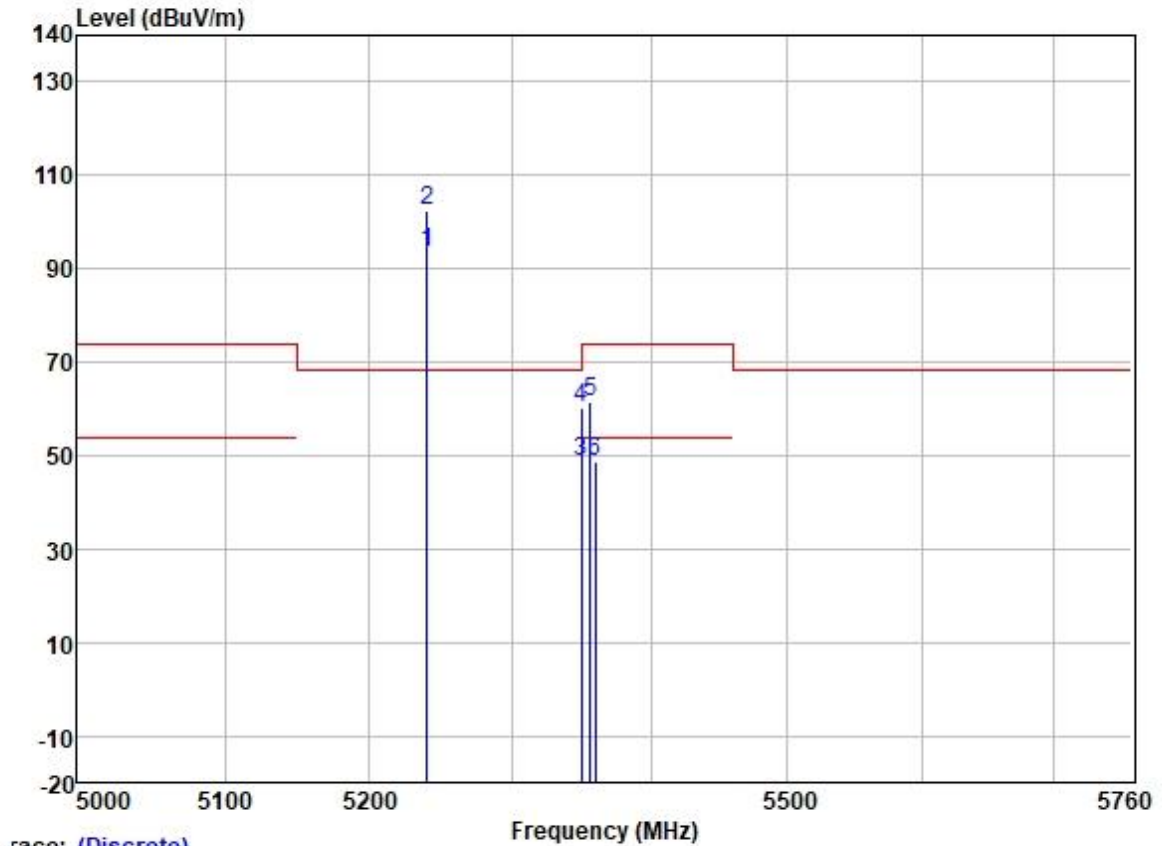
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5132.487	48.56	31.72	5.63	36.86	49.05	54.00	-4.95	HORIZONTAL	Average
2	5135.577	61.73	31.72	5.63	36.86	62.22	74.00	-11.78	HORIZONTAL	Peak
3	5149.980	48.33	31.72	5.62	36.86	48.81	54.00	-5.19	HORIZONTAL	Average
4	5149.980	60.50	31.72	5.62	36.86	60.98	74.00	-13.02	HORIZONTAL	Peak
5	5180.000	92.24	31.73	5.61	36.87	92.71	-----	-----	HORIZONTAL	Average
6 *	5180.000	101.61	31.73	5.61	36.87	102.08	68.20	33.88	HORIZONTAL	Peak

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



		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5149.458	48.85	31.72	5.62	36.86	49.33	54.00	-4.67	VERTICAL	Average
2	5149.458	62.72	31.72	5.62	36.86	63.20	74.00	-10.80	VERTICAL	Peak
3	5149.980	48.83	31.72	5.62	36.86	49.31	54.00	-4.69	VERTICAL	Average
4	5149.980	60.31	31.72	5.62	36.86	60.79	74.00	-13.21	VERTICAL	Peak
5	5180.000	98.57	31.73	5.61	36.87	99.04	-----	-----	VERTICAL	Average
6 *	5180.000	107.53	31.73	5.61	36.87	108.00	68.20	39.80	VERTICAL	Peak

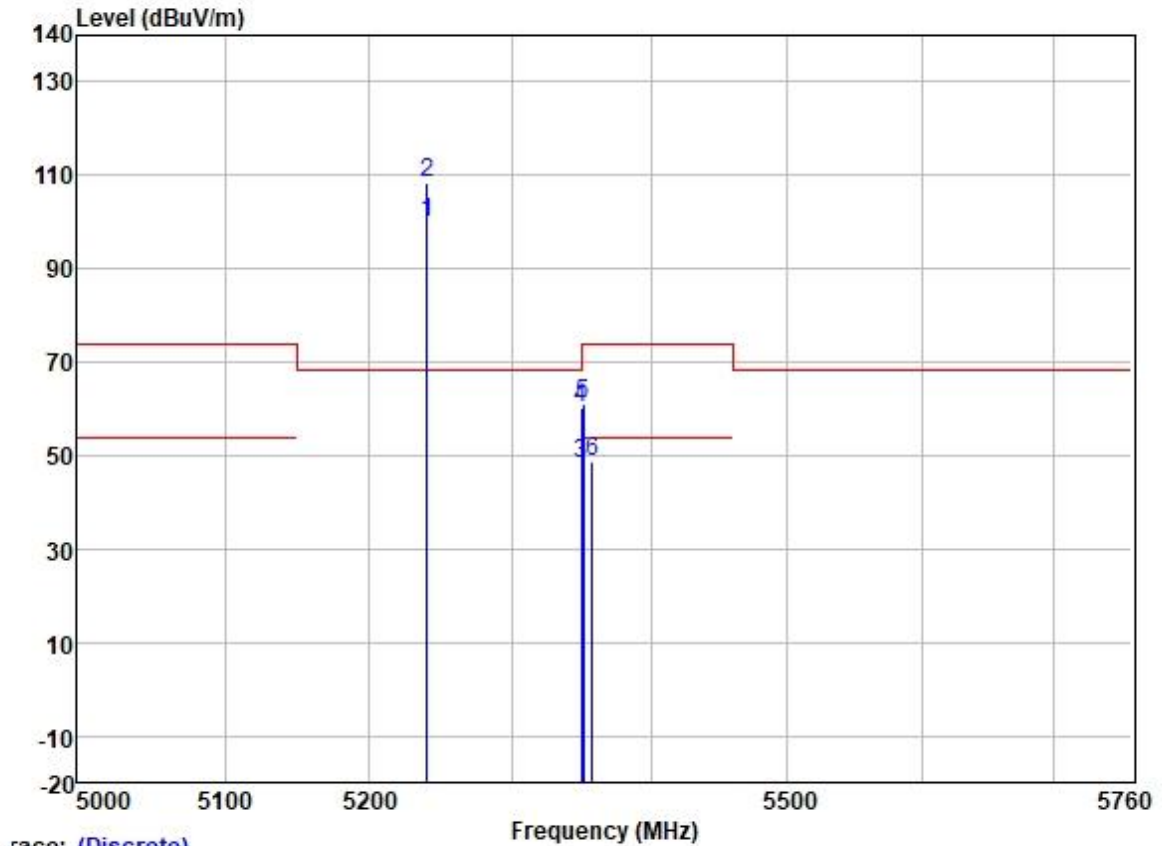
Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5240.000	92.90	31.75	5.74	36.87	93.52	-----	-----	HORIZONTAL Average
2 *	5240.000	101.77	31.75	5.74	36.87	102.39	68.20	34.19	HORIZONTAL Peak
3	5350.020	47.57	31.77	6.05	36.88	48.51	54.00	-5.49	HORIZONTAL Average
4	5350.020	59.36	31.77	6.05	36.88	60.30	74.00	-13.70	HORIZONTAL Peak
5	5355.888	60.67	31.78	6.03	36.88	61.60	74.00	-12.40	HORIZONTAL Peak
6	5359.574	47.61	31.78	6.03	36.88	48.54	54.00	-5.46	HORIZONTAL Average

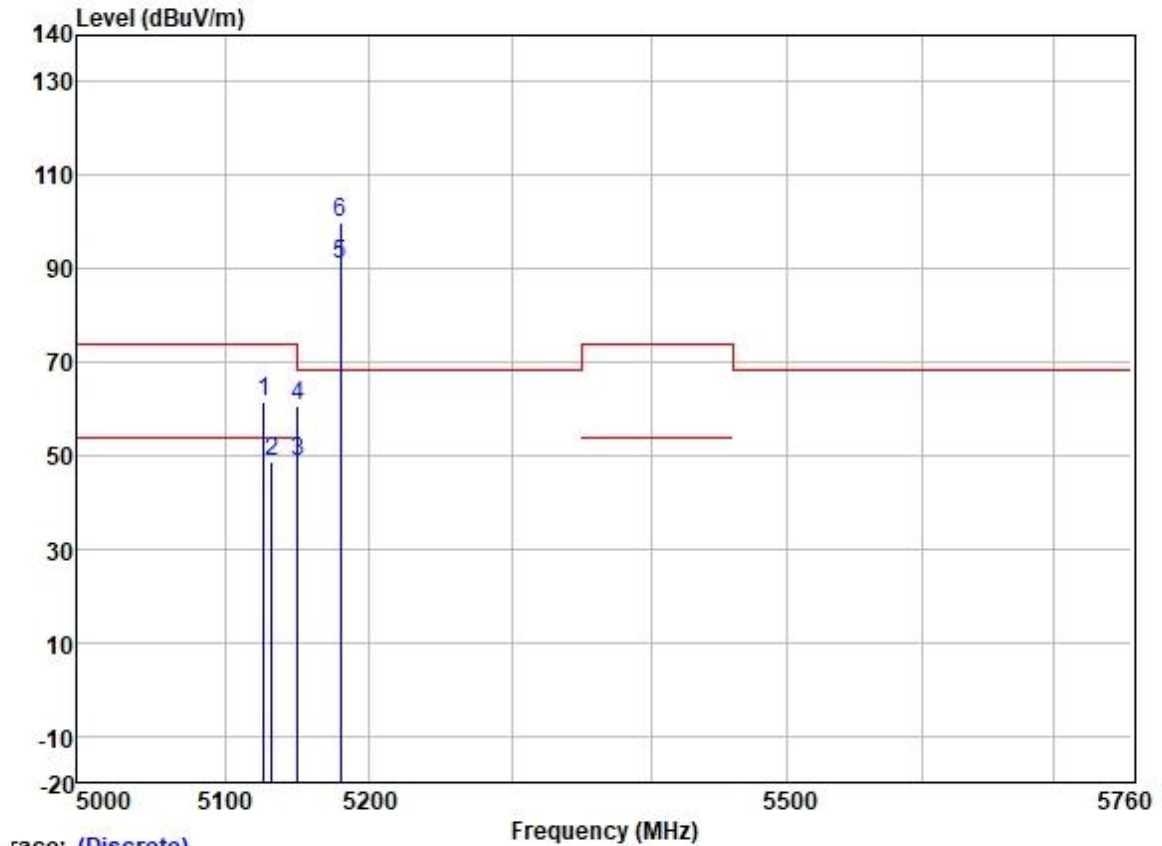
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Trace: (Discrete)

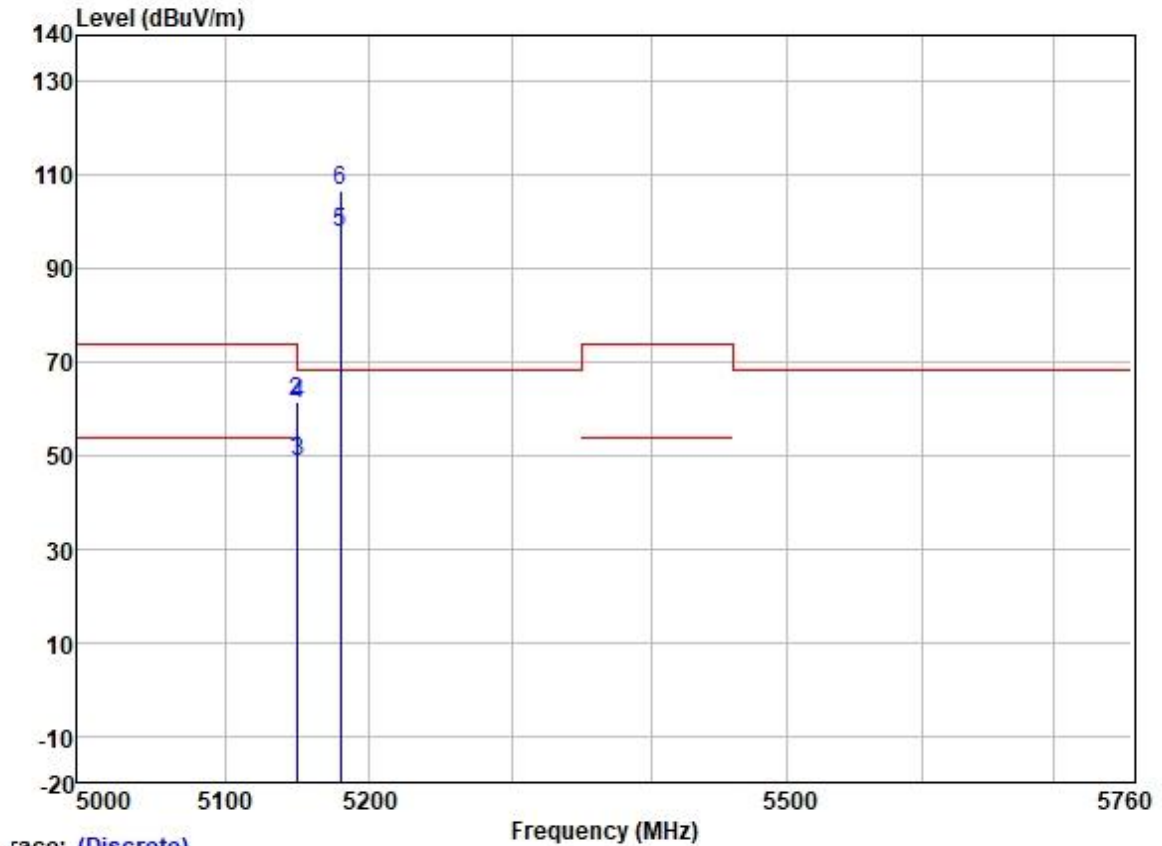
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5240.000	99.10	31.75	5.74	36.87	99.72	-----	VERTICAL	Average
2 *	5240.000	107.68	31.75	5.74	36.87	108.30	68.20	40.10 VERTICAL	Peak
3	5350.020	47.47	31.77	6.05	36.88	48.41	54.00	-5.59 VERTICAL	Average
4	5350.020	59.45	31.77	6.05	36.88	60.39	74.00	-13.61 VERTICAL	Peak
5	5351.495	60.23	31.77	6.05	36.88	61.17	74.00	-12.83 VERTICAL	Peak
6	5357.447	47.69	31.78	6.03	36.88	48.62	54.00	-5.38 VERTICAL	Average

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



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5126.709	60.97	31.72	5.64	36.86	61.47	74.00	-12.53	HORIZONTAL Peak
2	5132.088	48.39	31.72	5.63	36.86	48.88	54.00	-5.12	HORIZONTAL Average
3	5149.980	48.02	31.72	5.62	36.86	48.50	54.00	-5.50	HORIZONTAL Average
4	5149.980	60.14	31.72	5.62	36.86	60.62	74.00	-13.38	HORIZONTAL Peak
5	5180.000	90.53	31.73	5.61	36.87	91.00	-----	-----	HORIZONTAL Average
6 *	5180.000	99.51	31.73	5.61	36.87	99.98	68.20	31.78	HORIZONTAL Peak

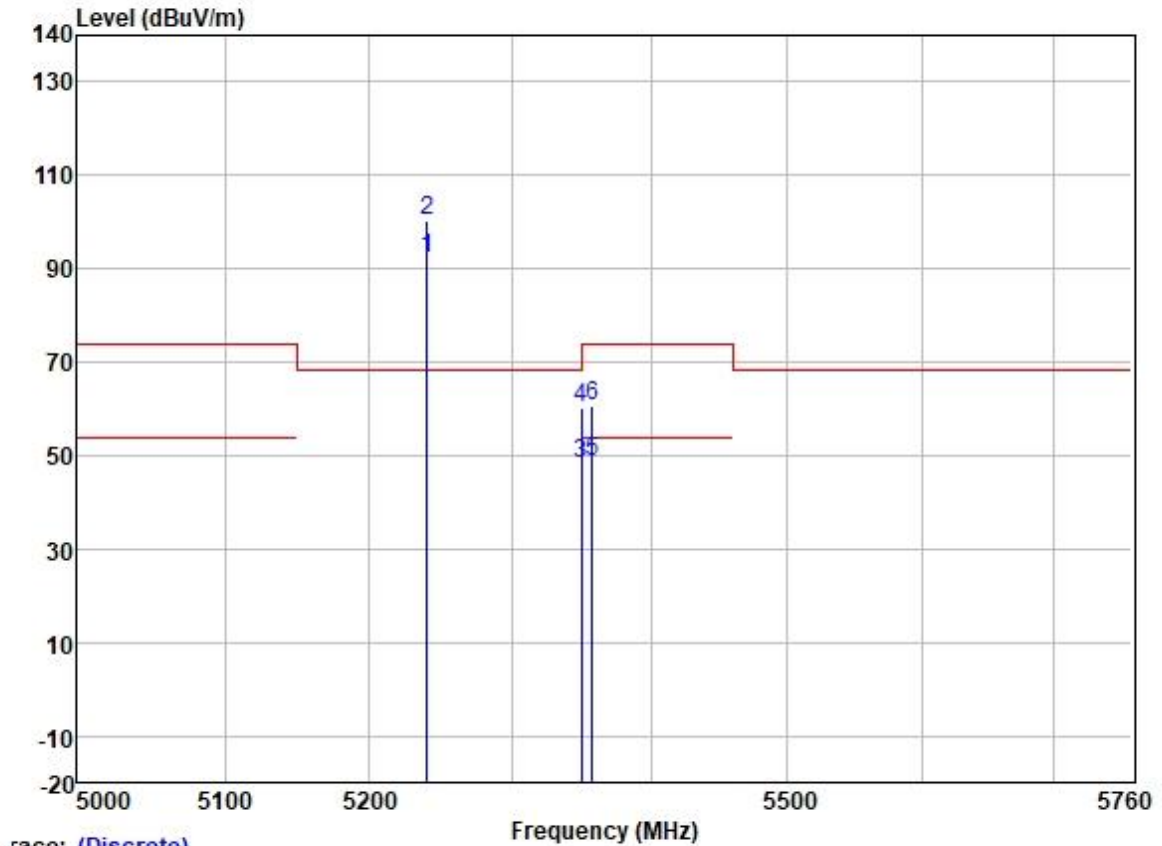
Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5149.257	48.51	31.72	5.62	36.86	48.99	54.00	-5.01	VERTICAL Average
2	5149.257	61.09	31.72	5.62	36.86	61.57	74.00	-12.43	VERTICAL Peak
3	5149.980	48.40	31.72	5.62	36.86	48.88	54.00	-5.12	VERTICAL Average
4	5149.980	60.47	31.72	5.62	36.86	60.95	74.00	-13.05	VERTICAL Peak
5	5180.000	97.28	31.73	5.61	36.87	97.75	-----	-----	VERTICAL Average
6 *	5180.000	106.24	31.73	5.61	36.87	106.71	68.20	38.51	VERTICAL Peak

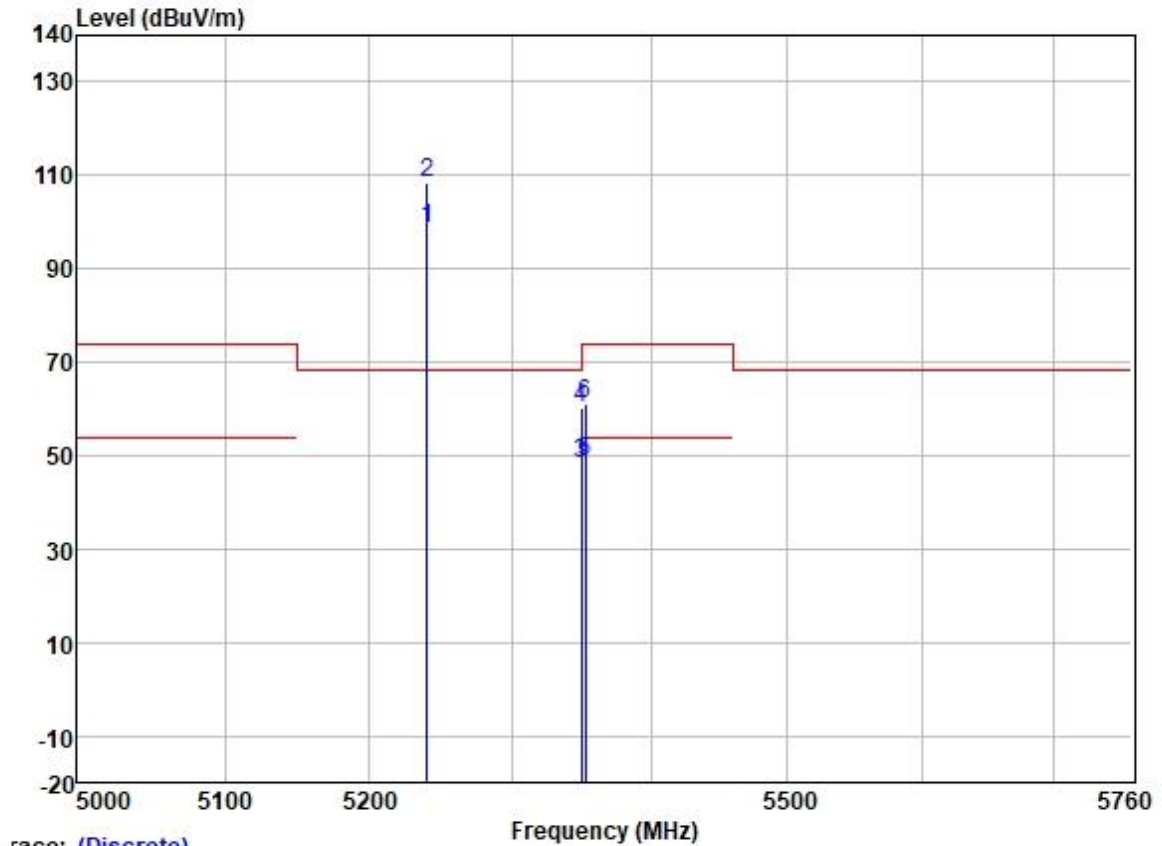
Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5240.000	91.43	31.75	5.74	36.87	92.05	-----	-----	HORIZONTAL Average
2 *	5240.000	99.50	31.75	5.74	36.87	100.12	68.20	31.92	HORIZONTAL Peak
3	5350.020	47.38	31.77	6.05	36.88	48.32	54.00	-5.68	HORIZONTAL Average
4	5350.020	59.20	31.77	6.05	36.88	60.14	74.00	-13.86	HORIZONTAL Peak
5	5357.305	47.61	31.78	6.03	36.88	48.54	54.00	-5.46	HORIZONTAL Average
6	5357.305	59.86	31.78	6.03	36.88	60.79	74.00	-13.21	HORIZONTAL Peak

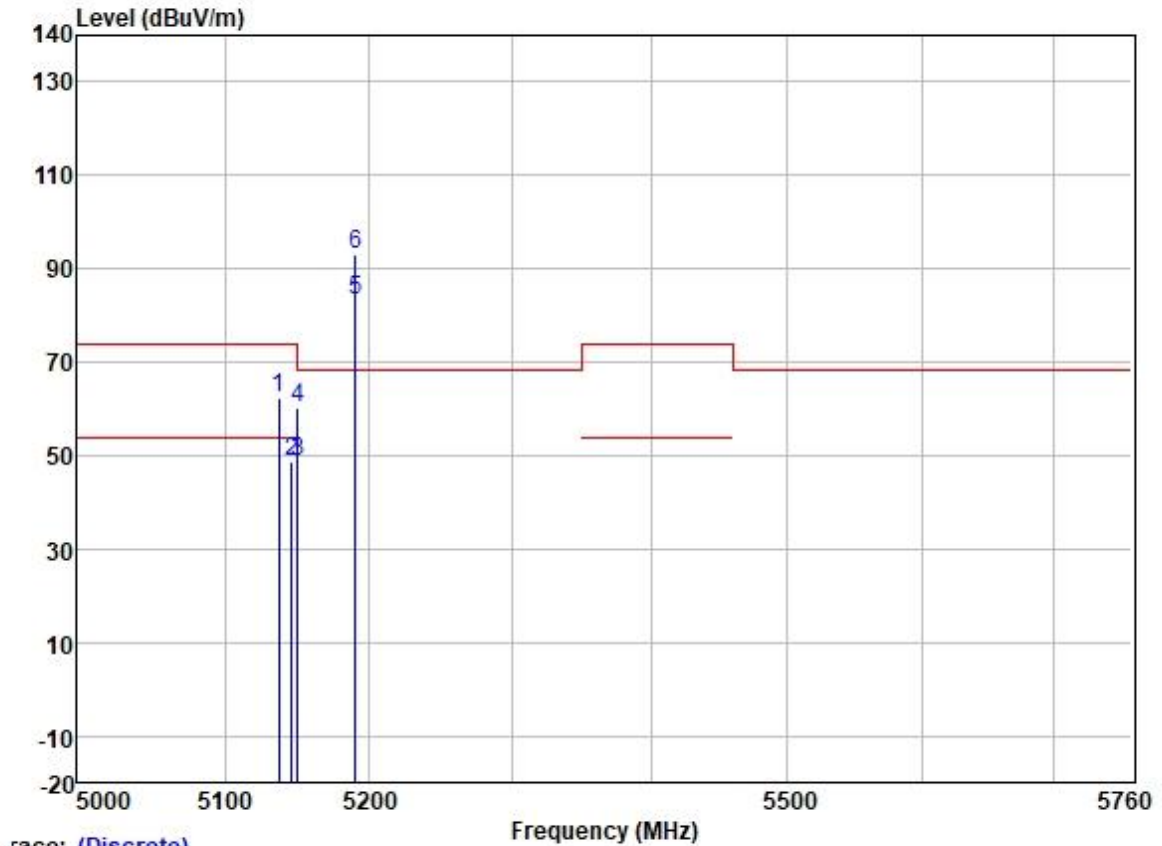
Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5240.000	97.98	31.75	5.74	36.87	98.60	-----	VERTICAL	Average
2 *	5240.000	107.62	31.75	5.74	36.87	108.24	68.20	40.04 VERTICAL	Peak
3	5350.020	47.40	31.77	6.05	36.88	48.34	54.00	-5.66 VERTICAL	Average
4	5350.020	59.13	31.77	6.05	36.88	60.07	74.00	-13.93 VERTICAL	Peak
5	5352.912	47.56	31.77	6.05	36.88	48.50	54.00	-5.50 VERTICAL	Average
6	5352.912	60.17	31.77	6.05	36.88	61.11	74.00	-12.89 VERTICAL	Peak

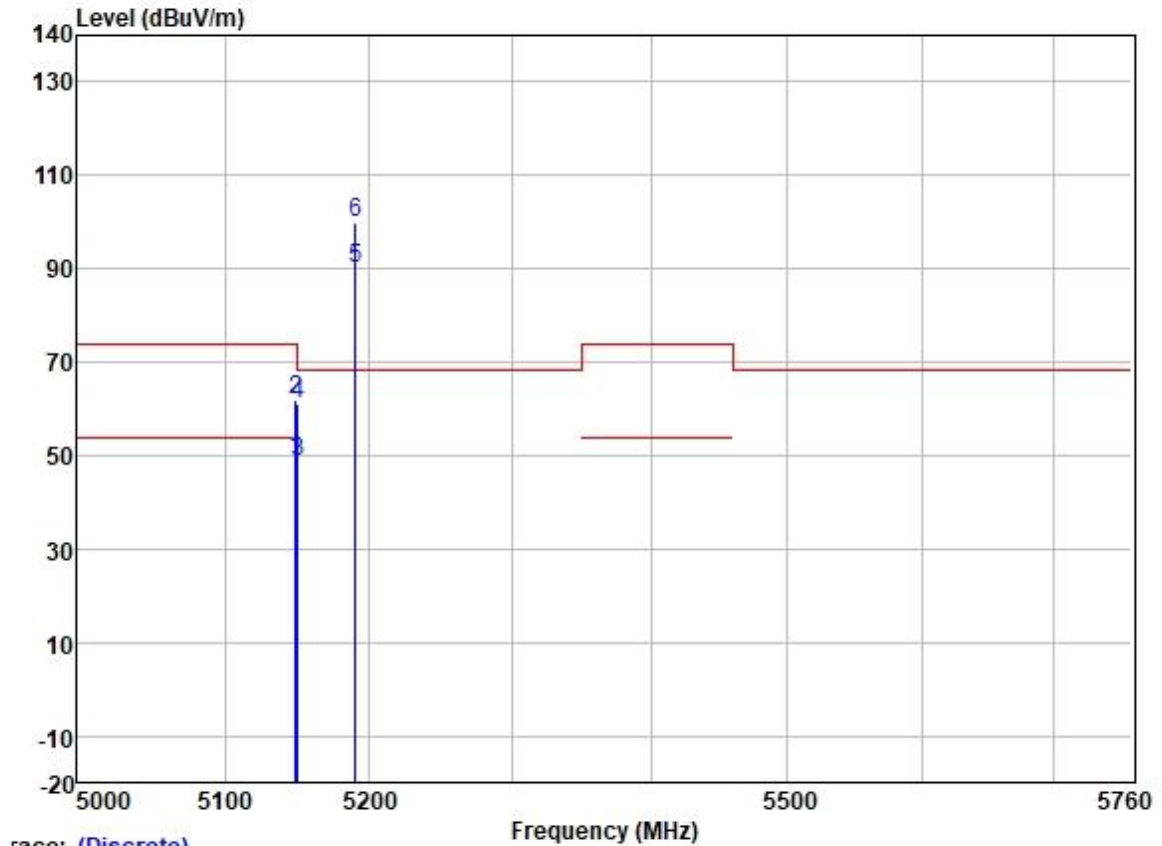
Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5137.141	61.96	31.72	5.63	36.86	62.45	74.00	-11.55	HORIZONTAL Peak
2	5146.229	48.41	31.72	5.62	36.86	48.89	54.00	-5.11	HORIZONTAL Average
3	5149.980	48.01	31.72	5.62	36.86	48.49	54.00	-5.51	HORIZONTAL Average
4	5149.980	59.91	31.72	5.62	36.86	60.39	74.00	-13.61	HORIZONTAL Peak
5	5190.000	82.94	31.73	5.60	36.87	83.40	-----	-----	HORIZONTAL Average
6 *	5190.000	92.50	31.73	5.60	36.87	92.96	68.20	24.76	HORIZONTAL Peak

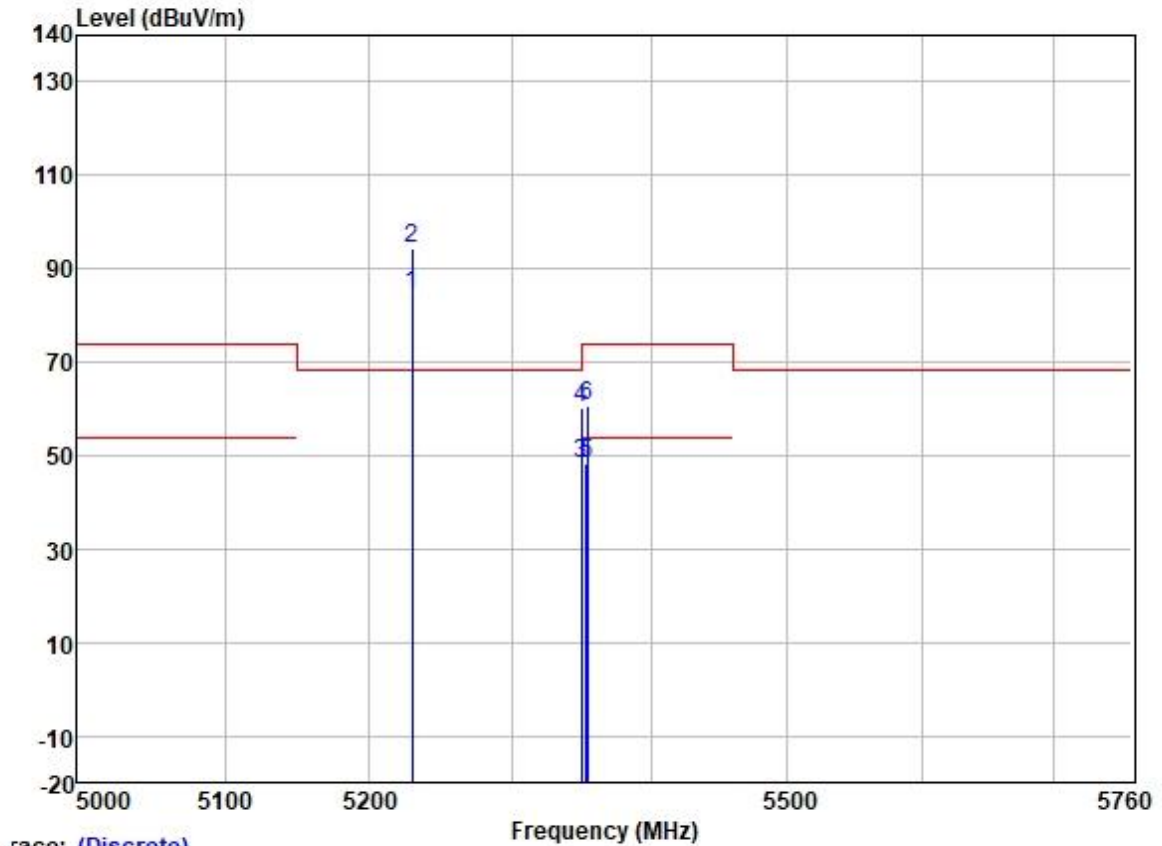
Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5148.503	48.47	31.72	5.62	36.86	48.95	54.00	-5.05	VERTICAL
2	5148.503	61.38	31.72	5.62	36.86	61.86	74.00	-12.14	VERTICAL
3	5149.980	48.28	31.72	5.62	36.86	48.76	54.00	-5.24	VERTICAL
4	5149.980	60.48	31.72	5.62	36.86	60.96	74.00	-13.04	VERTICAL
5	5190.000	89.72	31.73	5.60	36.87	90.18	-----	-----	VERTICAL
6 *	5190.000	99.60	31.73	5.60	36.87	100.06	68.20	31.86	VERTICAL

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



Trace: (Discrete)

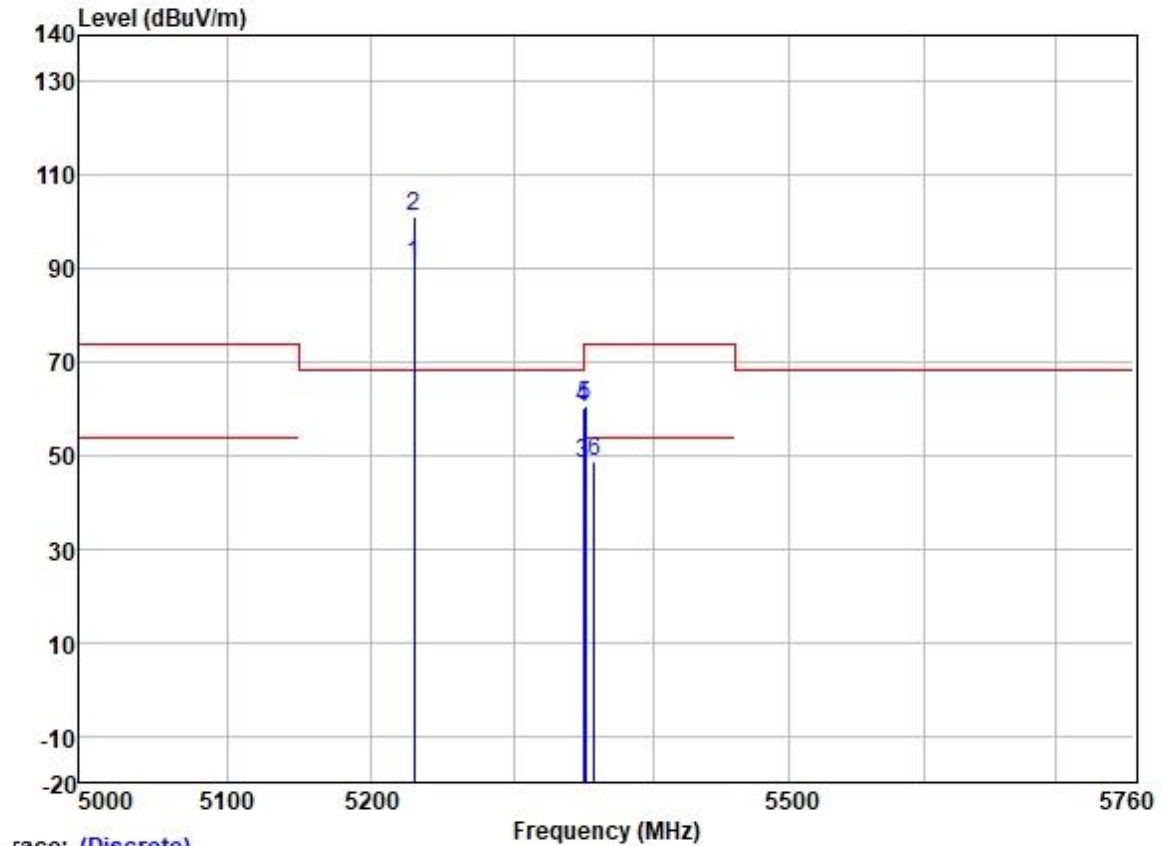
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5230.000	83.83	31.74	5.70	36.87	84.40	-----	-----	HORIZONTAL Average
2 *	5230.000	93.58	31.74	5.70	36.87	94.15	68.20	25.95	HORIZONTAL Peak
3	5350.020	47.22	31.77	6.05	36.88	48.16	54.00	-5.84	HORIZONTAL Average
4	5350.020	59.21	31.77	6.05	36.88	60.15	74.00	-13.85	HORIZONTAL Peak
5	5353.669	47.42	31.77	6.05	36.88	48.36	54.00	-5.64	HORIZONTAL Average
6	5354.318	59.66	31.78	6.03	36.88	60.59	74.00	-13.41	HORIZONTAL Peak



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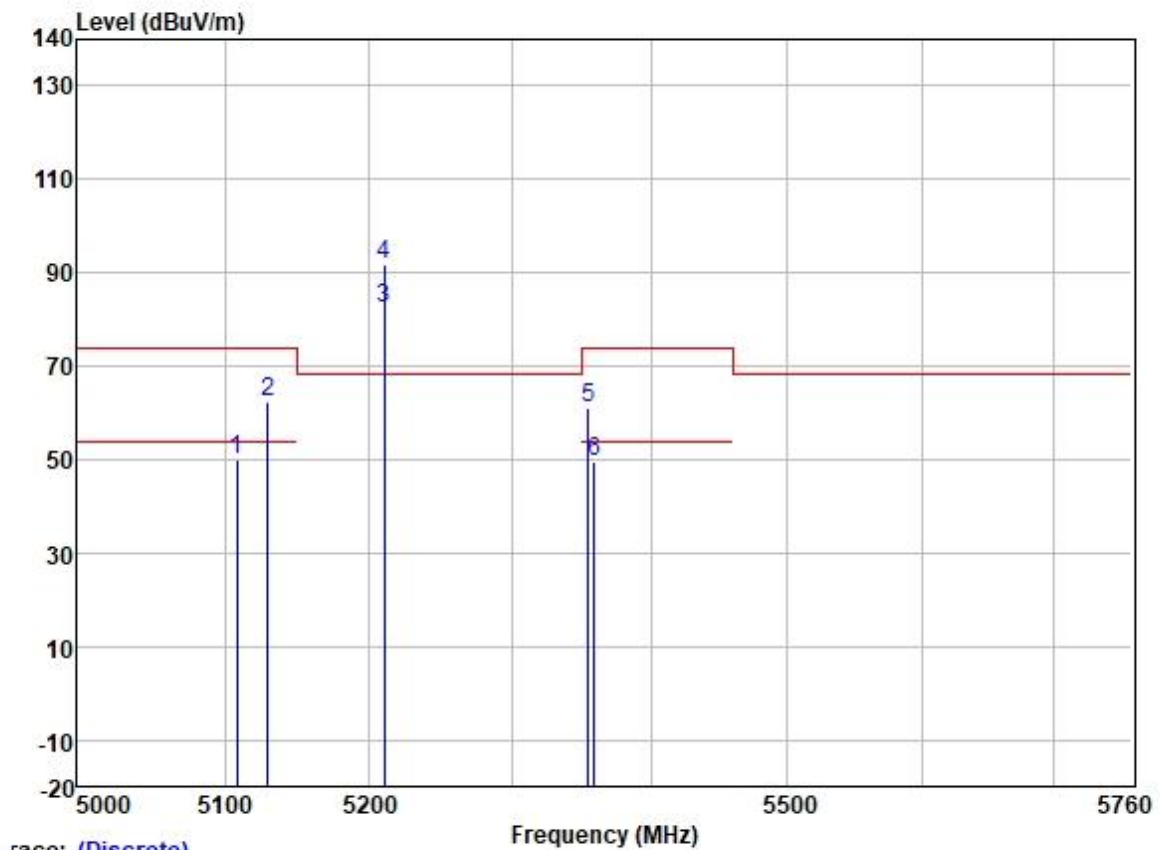
Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Trace: (Discrete)

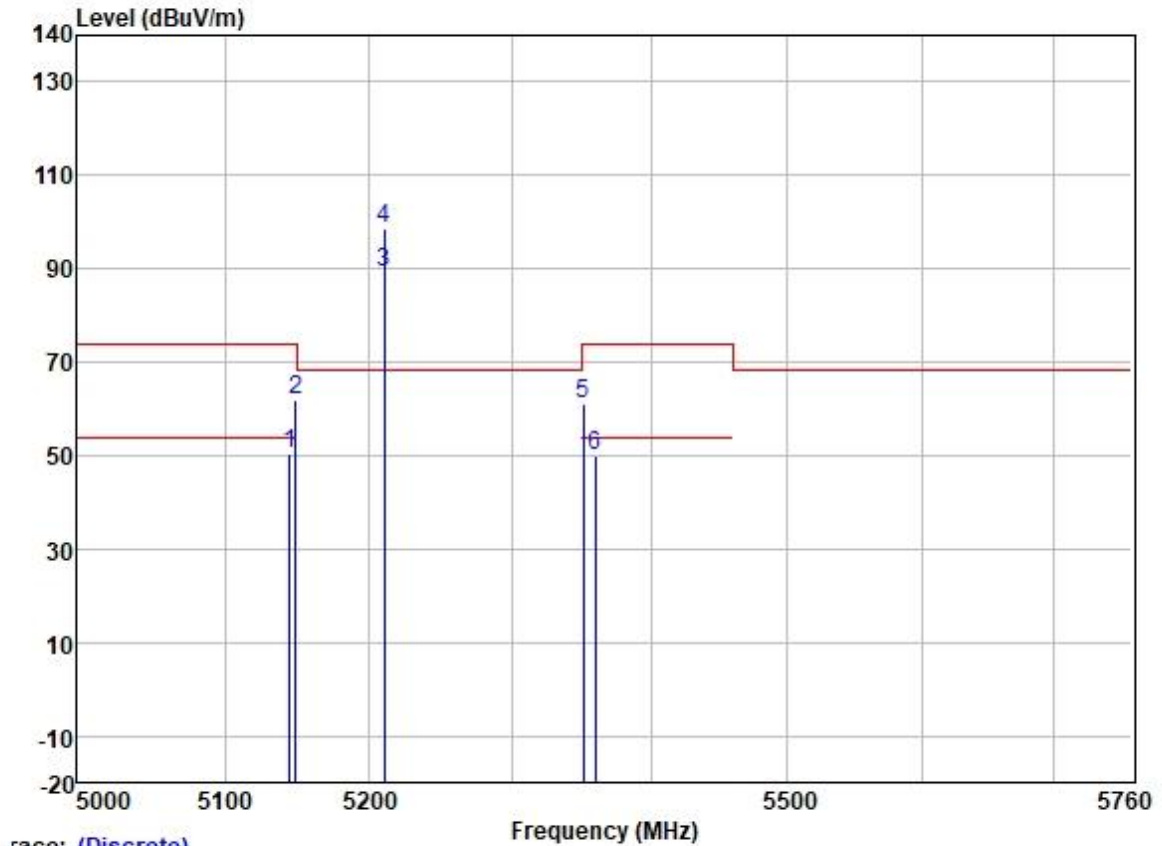
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5230.000	90.30	31.74	5.70	36.87	90.87	-----	VERTICAL	Average
2 *	5230.000	100.57	31.74	5.70	36.87	101.14	68.20	32.94 VERTICAL	Peak
3	5350.020	47.43	31.77	6.05	36.88	48.37	54.00	-5.63 VERTICAL	Average
4	5350.020	59.16	31.77	6.05	36.88	60.10	74.00	-13.90 VERTICAL	Peak
5	5351.073	59.80	31.77	6.05	36.88	60.74	74.00	-13.26 VERTICAL	Peak
6	5357.727	47.56	31.78	6.03	36.88	48.49	54.00	-5.51 VERTICAL	Average

Test Mode: 05; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5108.121	49.36	31.72	5.65	36.86	49.87	54.00	-4.13	HORIZONTAL Average
2	5129.246	61.66	31.72	5.63	36.86	62.15	74.00	-11.85	HORIZONTAL Peak
3	5210.000	82.06	31.74	5.65	36.87	82.58	-----	-----	HORIZONTAL Average
4 *	5210.000	91.45	31.74	5.65	36.87	91.97	68.20	23.77	HORIZONTAL Peak
5	5354.672	60.33	31.78	6.03	36.88	61.26	74.00	-12.74	HORIZONTAL Peak
6	5358.934	48.68	31.78	6.03	36.88	49.61	54.00	-4.39	HORIZONTAL Average

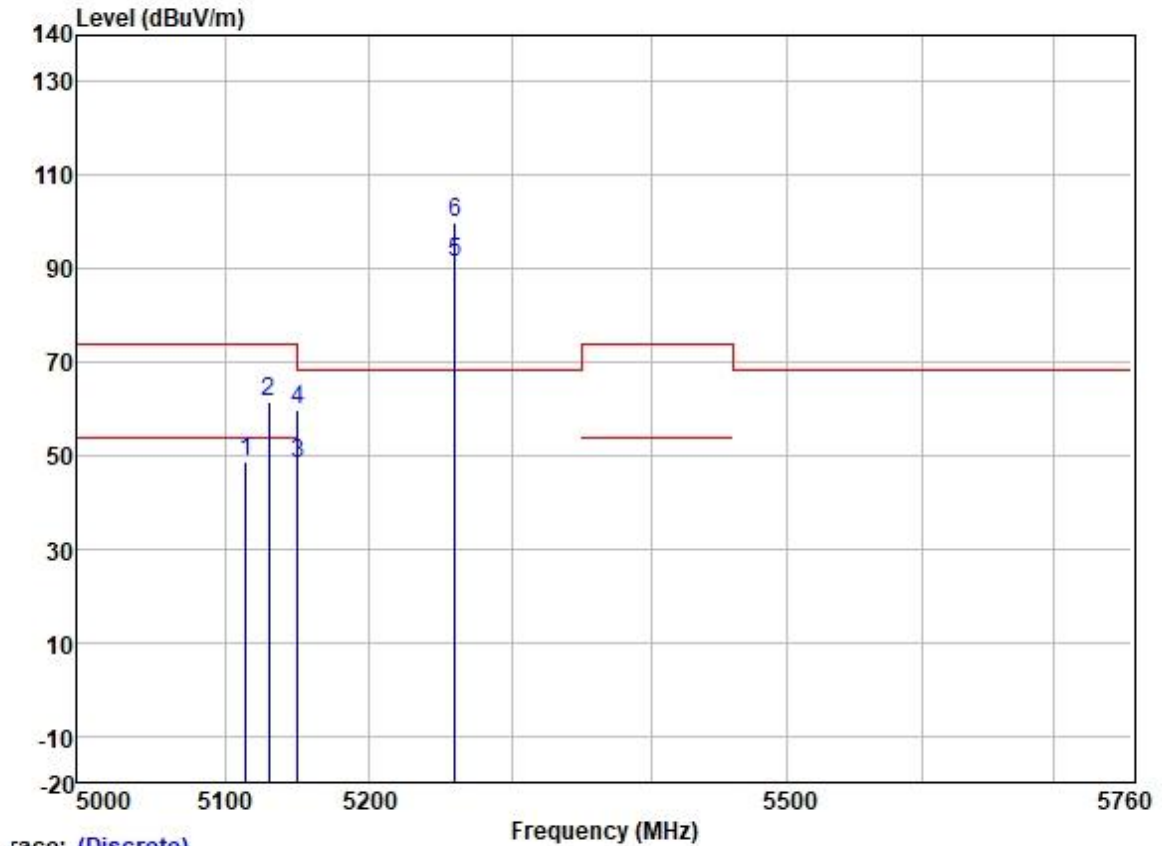
Test Mode: 05; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



Trace: (Discrete)

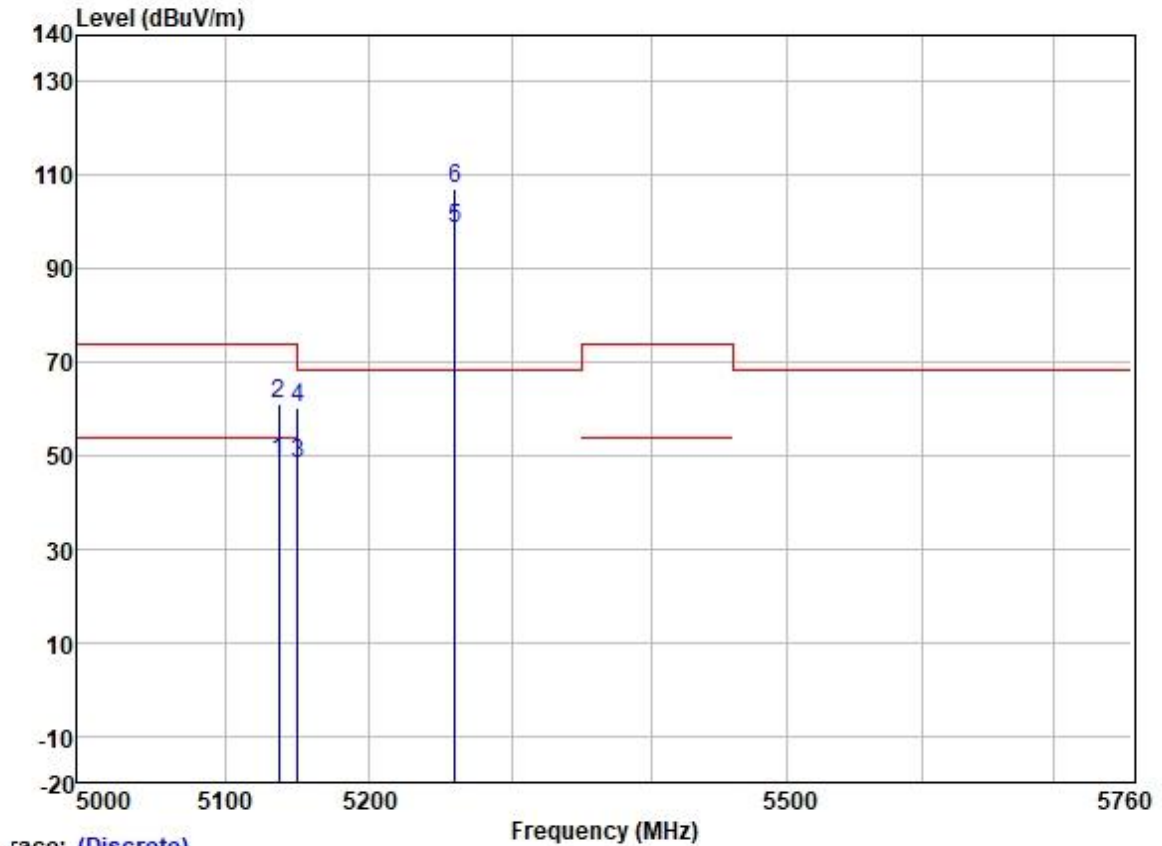
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5144.828	49.83	31.72	5.62	36.86	50.31	54.00	-3.69	VERTICAL
2	5148.667	61.39	31.72	5.62	36.86	61.87	74.00	-12.13	VERTICAL
3	5210.000	88.77	31.74	5.65	36.87	89.29	-----	-----	VERTICAL
4 *	5210.000	98.24	31.74	5.65	36.87	98.76	68.20	30.56	VERTICAL
5	5350.946	60.05	31.77	6.05	36.88	60.99	74.00	-13.01	VERTICAL
6	5359.467	48.85	31.78	6.03	36.88	49.78	54.00	-4.22	VERTICAL

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



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5114.171	48.22	31.72	5.64	36.86	48.72	54.00	-5.28	HORIZONTAL Average
2	5129.805	61.07	31.72	5.63	36.86	61.56	74.00	-12.44	HORIZONTAL Peak
3	5149.980	47.77	31.72	5.62	36.86	48.25	54.00	-5.75	HORIZONTAL Average
4	5149.980	59.30	31.72	5.62	36.86	59.78	74.00	-14.22	HORIZONTAL Peak
5	5260.000	90.53	31.75	5.77	36.87	91.18	-----	-----	HORIZONTAL Average
6 *	5260.000	99.35	31.75	5.77	36.87	100.00	68.20	31.80	HORIZONTAL Peak

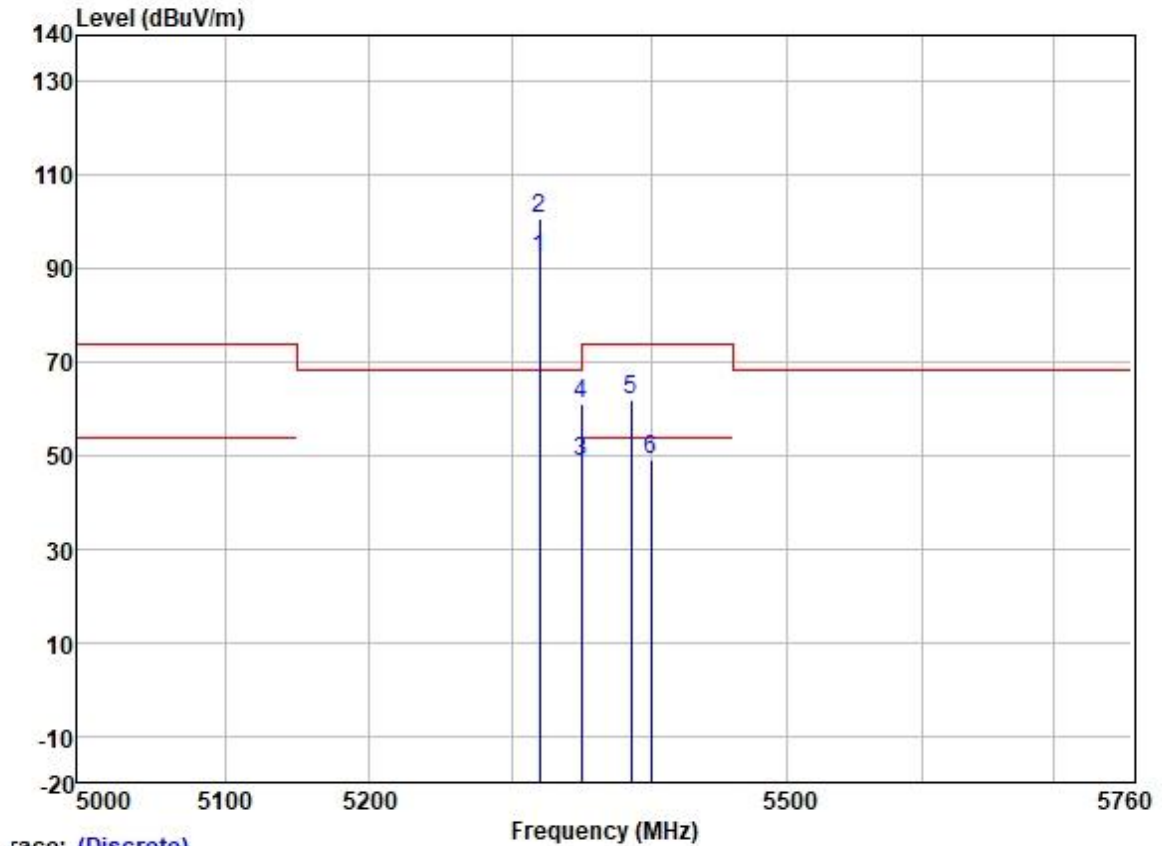
Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

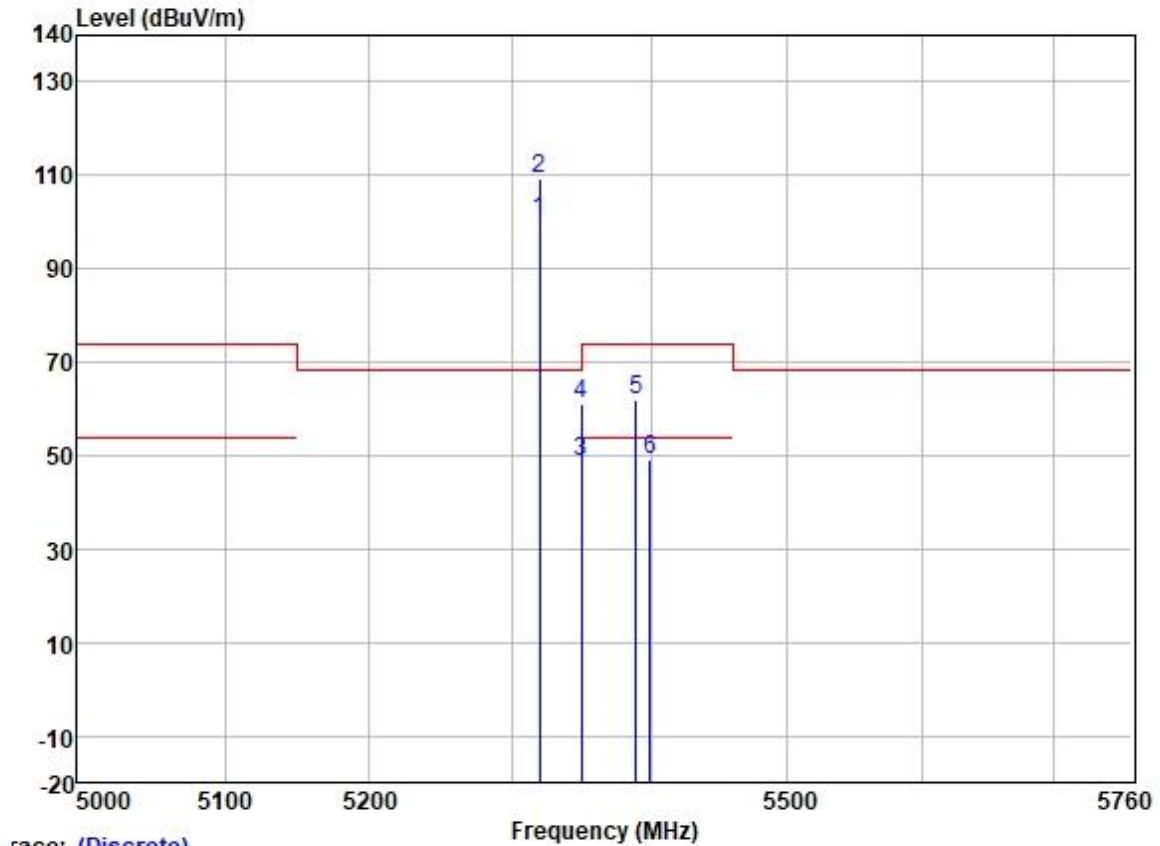
	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over		
	MHz	Level	Factor	Loss	Factor	dBuV/m	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5137.284	48.15	31.72	5.63	36.86	48.64	54.00	-5.36	VERTICAL	Average
2	5137.284	60.70	31.72	5.63	36.86	61.19	74.00	-12.81	VERTICAL	Peak
3	5149.980	47.78	31.72	5.62	36.86	48.26	54.00	-5.74	VERTICAL	Average
4	5149.980	59.86	31.72	5.62	36.86	60.34	74.00	-13.66	VERTICAL	Peak
5	5260.000	98.01	31.75	5.77	36.87	98.66	-----	-----	VERTICAL	Average
6 *	5260.000	106.52	31.75	5.77	36.87	107.17	68.20	38.97	VERTICAL	Peak

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



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5320.000	91.14	31.77	6.08	36.88	92.11	-----	-----	HORIZONTAL	Average
2 *	5320.000	99.58	31.77	6.08	36.88	100.55	68.20	32.35	HORIZONTAL	Peak
3	5350.020	47.63	31.77	6.05	36.88	48.57	54.00	-5.43	HORIZONTAL	Average
4	5350.020	60.04	31.77	6.05	36.88	60.98	74.00	-13.02	HORIZONTAL	Peak
5	5385.585	61.18	31.78	6.00	36.88	62.08	74.00	-11.92	HORIZONTAL	Peak
6	5400.000	48.26	31.78	6.00	36.88	49.16	54.00	-4.84	HORIZONTAL	Average

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



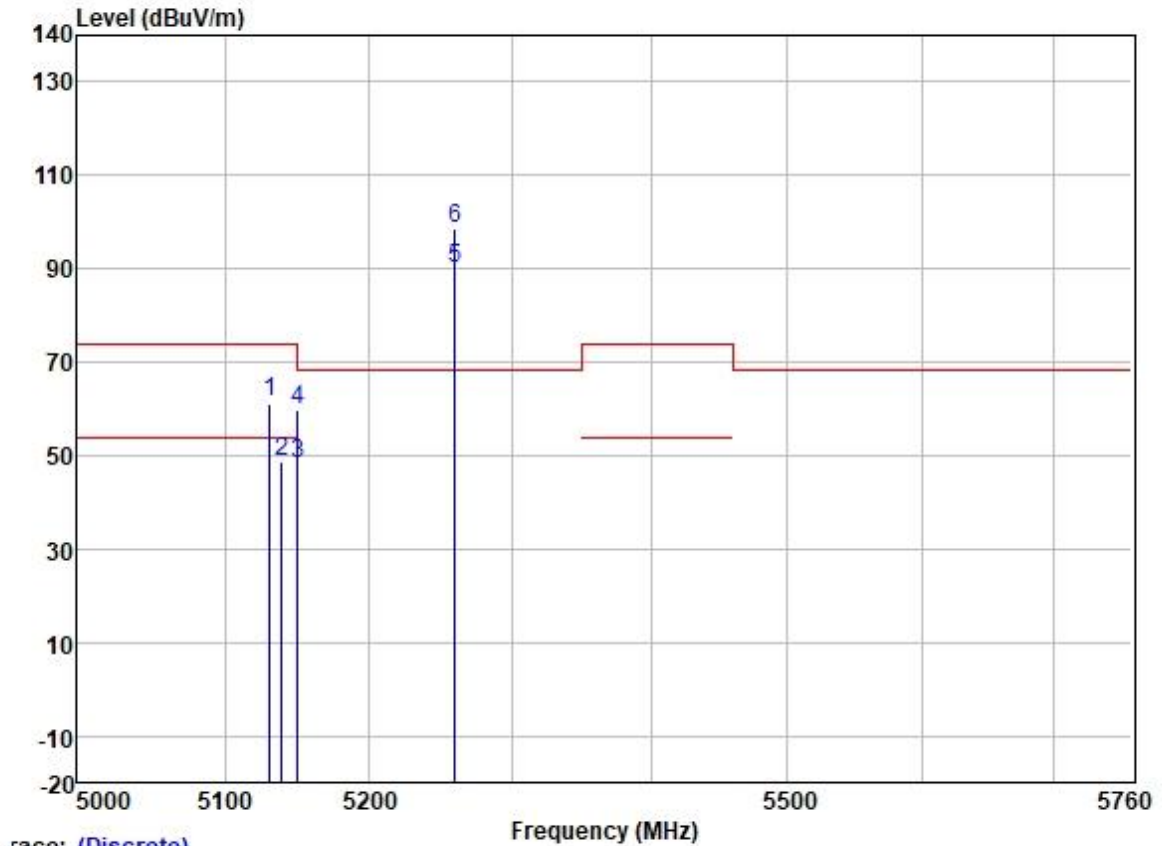
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5320.000	99.23	31.77	6.08	36.88	100.20	-----	-----	VERTICAL Average
2 *	5320.000	108.40	31.77	6.08	36.88	109.37	68.20	41.17	VERTICAL Peak
3	5350.020	47.94	31.77	6.05	36.88	48.88	54.00	-5.12	VERTICAL Average
4	5350.020	60.06	31.77	6.05	36.88	61.00	74.00	-13.00	VERTICAL Peak
5	5389.311	61.09	31.78	6.00	36.88	61.99	74.00	-12.01	VERTICAL Peak
6	5399.395	48.34	31.78	6.00	36.88	49.24	54.00	-4.76	VERTICAL Average



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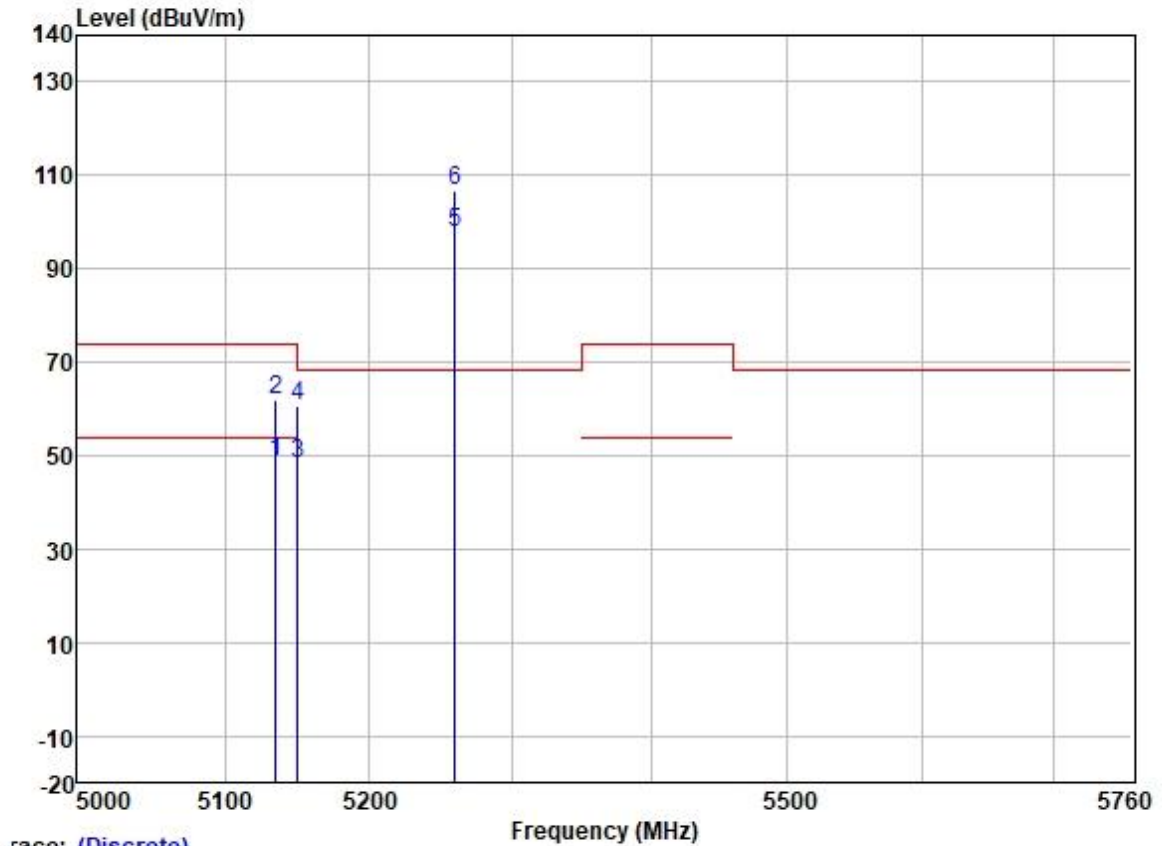
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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5130.873	60.79	31.72	5.63	36.86	61.28	74.00	-12.72	HORIZONTAL Peak
2	5139.244	48.17	31.72	5.63	36.86	48.66	54.00	-5.34	HORIZONTAL Average
3	5149.980	47.88	31.72	5.62	36.86	48.36	54.00	-5.64	HORIZONTAL Average
4	5149.980	59.29	31.72	5.62	36.86	59.77	74.00	-14.23	HORIZONTAL Peak
5	5260.000	89.34	31.75	5.77	36.87	89.99	-----	-----	HORIZONTAL Average
6 *	5260.000	97.81	31.75	5.77	36.87	98.46	68.20	30.26	HORIZONTAL Peak

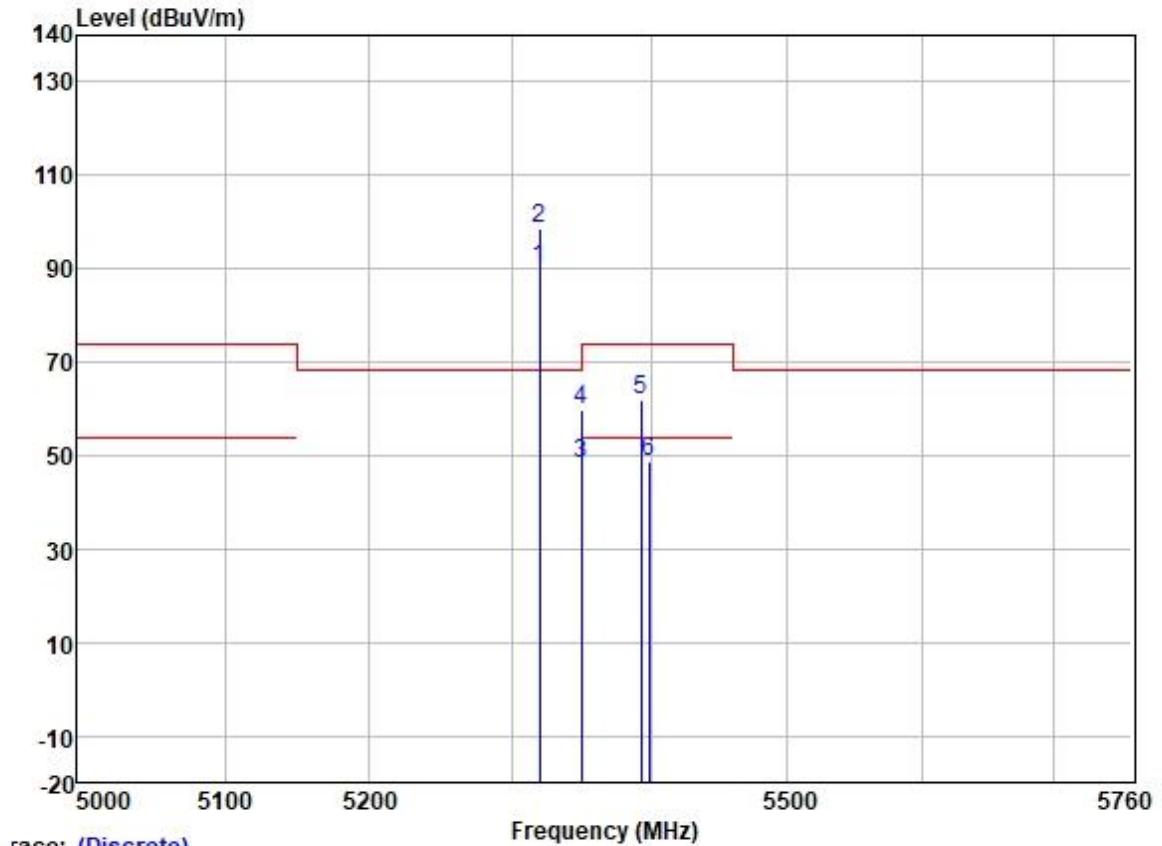
Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5134.790	48.08	31.72	5.63	36.86	48.57	54.00	-5.43	VERTICAL
2	5134.790	61.48	31.72	5.63	36.86	61.97	74.00	-12.03	VERTICAL
3	5149.980	47.91	31.72	5.62	36.86	48.39	54.00	-5.61	VERTICAL
4	5149.980	60.07	31.72	5.62	36.86	60.55	74.00	-13.45	VERTICAL
5	5260.000	97.13	31.75	5.77	36.87	97.78	-----	-----	VERTICAL
6 *	5260.000	105.94	31.75	5.77	36.87	106.59	68.20	38.39	VERTICAL

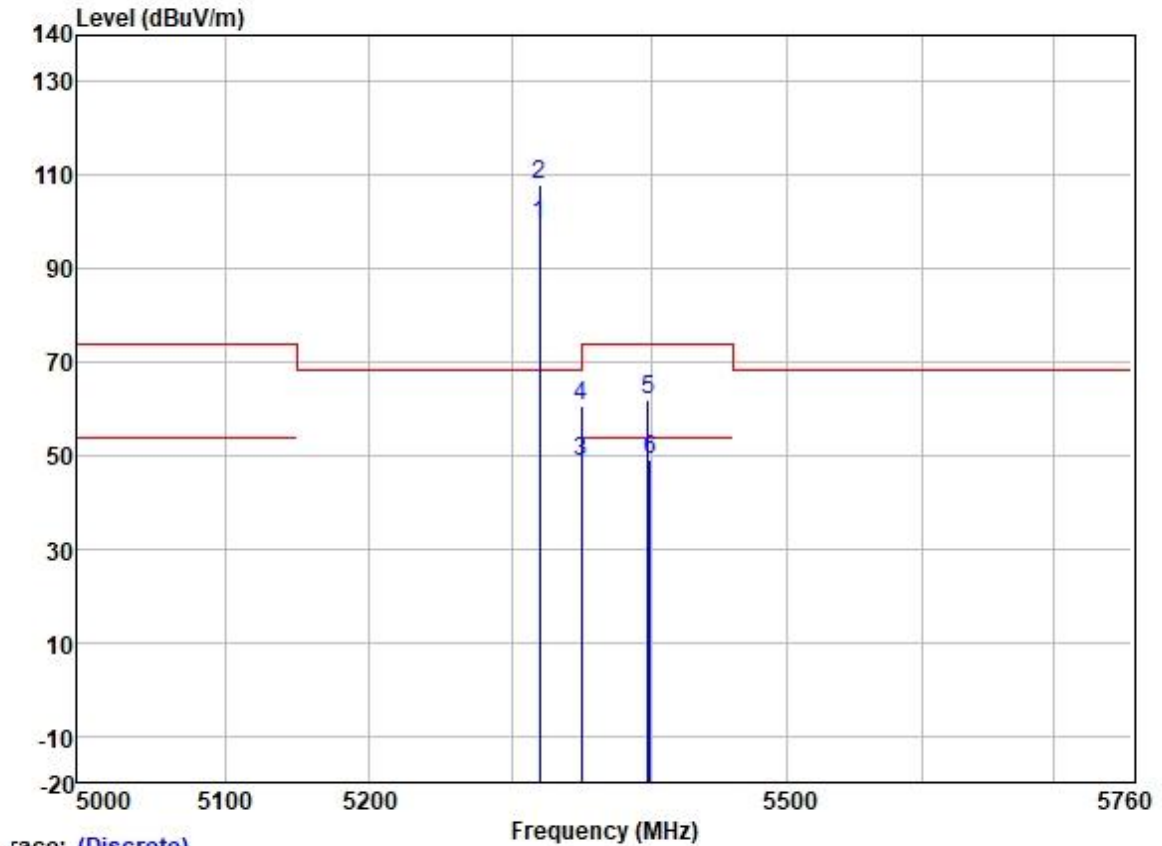
Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5320.000	88.93	31.77	6.08	36.88	89.90	-----	-----	HORIZONTAL	Average
2 *	5320.000	97.62	31.77	6.08	36.88	98.59	68.20	30.39	HORIZONTAL	Peak
3	5350.020	47.26	31.77	6.05	36.88	48.20	54.00	-5.80	HORIZONTAL	Average
4	5350.020	58.77	31.77	6.05	36.88	59.71	74.00	-14.29	HORIZONTAL	Peak
5	5392.536	61.21	31.78	6.00	36.88	62.11	74.00	-11.89	HORIZONTAL	Peak
6	5398.890	47.94	31.78	6.00	36.88	48.84	54.00	-5.16	HORIZONTAL	Average

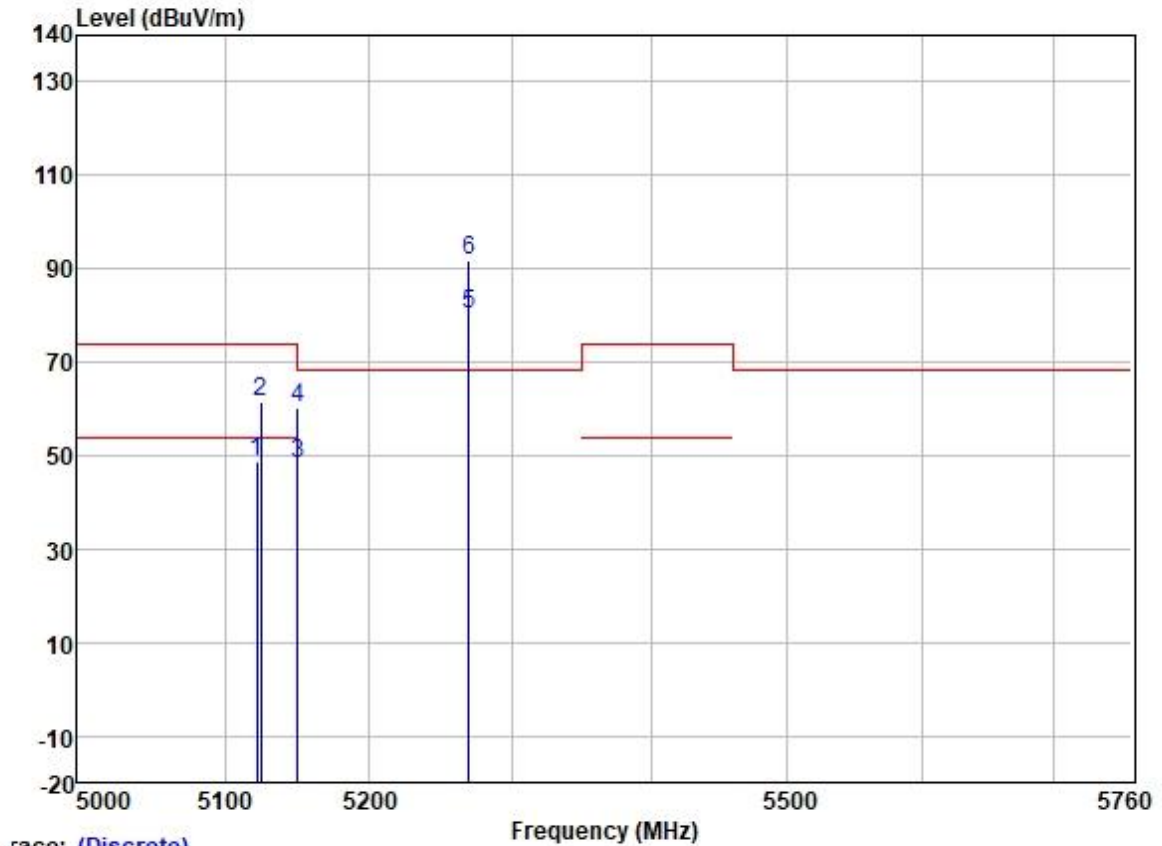
Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

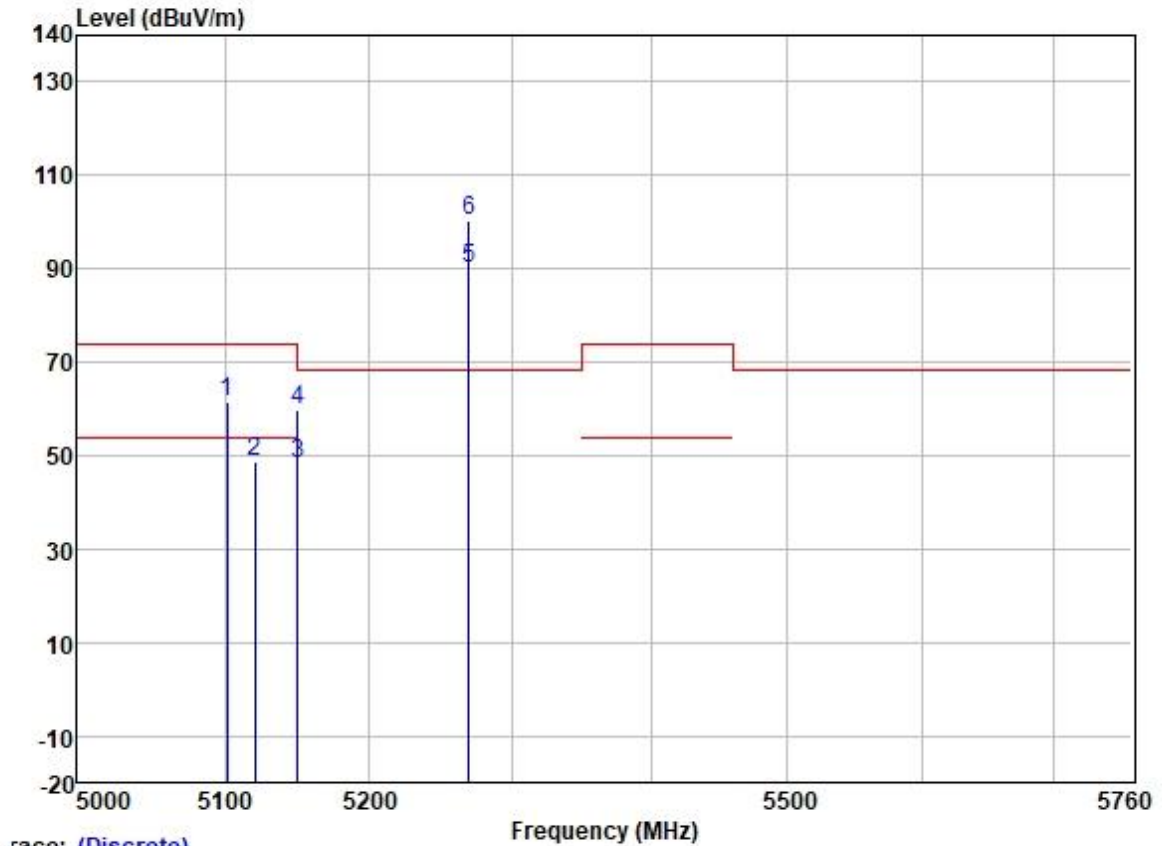
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dB		
1	5320.000	98.42	31.77	6.08	36.88	99.39	-----	VERTICAL	Average
2 *	5320.000	106.92	31.77	6.08	36.88	107.89	68.20	VERTICAL	Peak
3	5350.020	47.79	31.77	6.05	36.88	48.73	54.00	VERTICAL	Average
4	5350.020	59.51	31.77	6.05	36.88	60.45	74.00	VERTICAL	Peak
5	5398.083	61.12	31.78	6.00	36.88	62.02	74.00	VERTICAL	Peak
6	5398.991	48.03	31.78	6.00	36.88	48.93	54.00	VERTICAL	Average

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



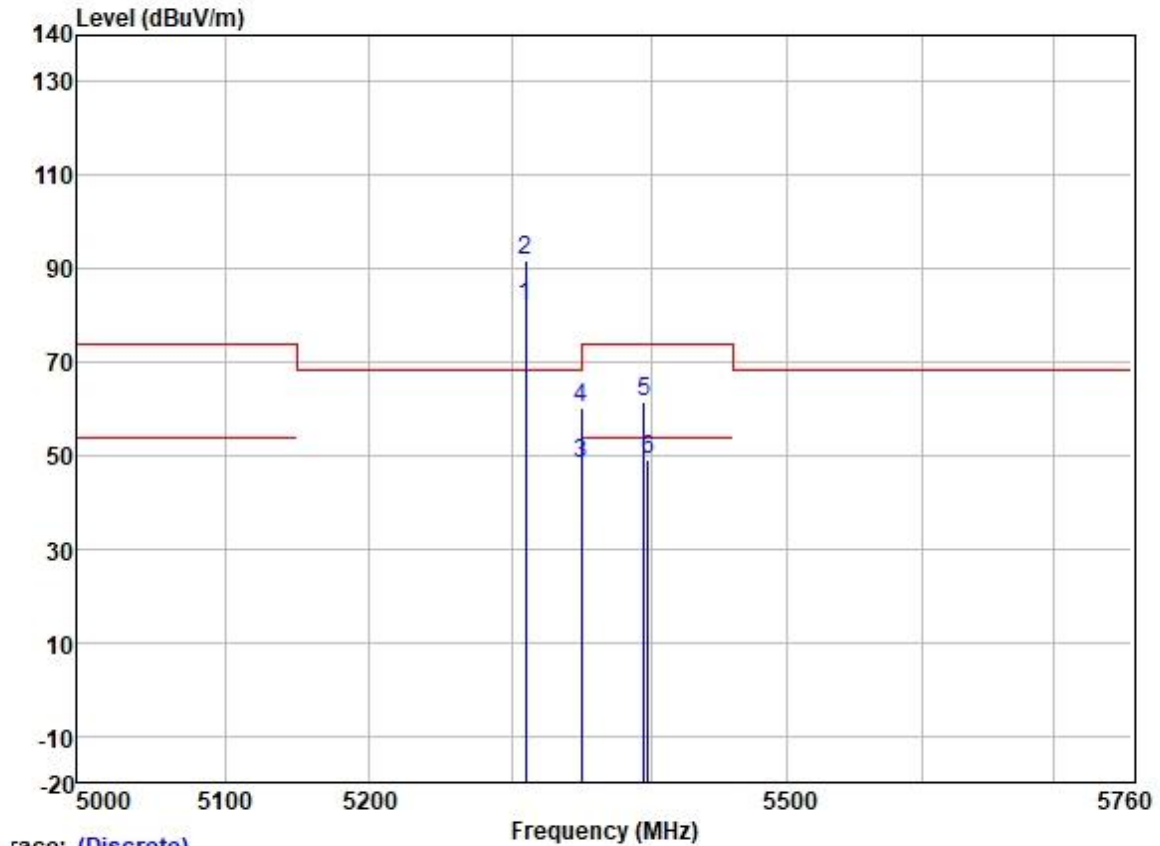
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5122.216	48.18	31.72	5.64	36.86	48.68	54.00	-5.32	HORIZONTAL	Average
2	5124.384	61.06	31.72	5.64	36.86	61.56	74.00	-12.44	HORIZONTAL	Peak
3	5149.980	47.70	31.72	5.62	36.86	48.18	54.00	-5.82	HORIZONTAL	Average
4	5149.980	59.91	31.72	5.62	36.86	60.39	74.00	-13.61	HORIZONTAL	Peak
5	5270.000	79.75	31.75	5.80	36.87	80.43	-----	-----	HORIZONTAL	Average
6 *	5270.000	91.23	31.75	5.80	36.87	91.91	68.20	23.71	HORIZONTAL	Peak

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



		Freq	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark	
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5101.766	60.84	31.72	5.65	36.86	61.35	74.00	-12.65	VERTICAL	Peak
2		5120.640	48.18	31.72	5.64	36.86	48.68	54.00	-5.32	VERTICAL	Average
3		5149.980	47.80	31.72	5.62	36.86	48.28	54.00	-5.72	VERTICAL	Average
4		5149.980	59.39	31.72	5.62	36.86	59.87	74.00	-14.13	VERTICAL	Peak
5		5270.000	89.47	31.75	5.80	36.87	90.15	-----	-----	VERTICAL	Average
6	*	5270.000	99.57	31.75	5.80	36.87	100.25	68.20	32.05	VERTICAL	Peak

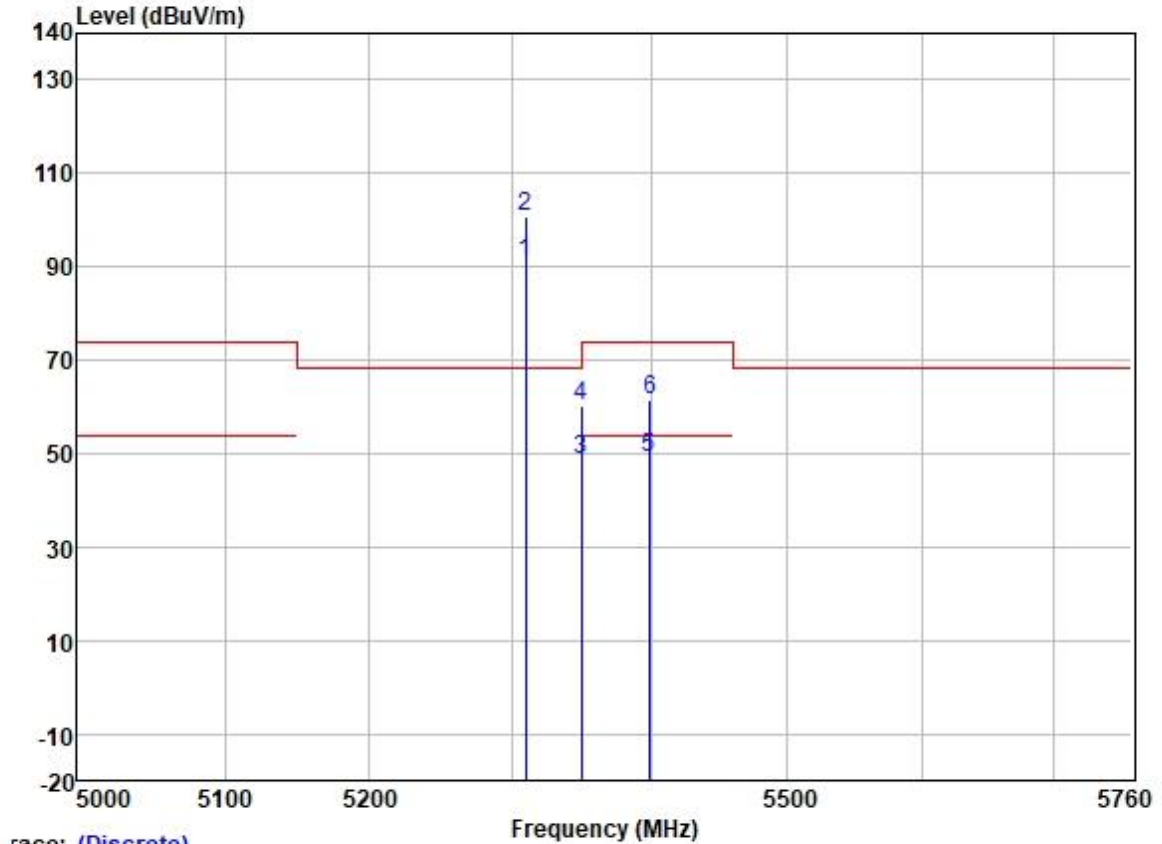
Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Trace: (Discrete)

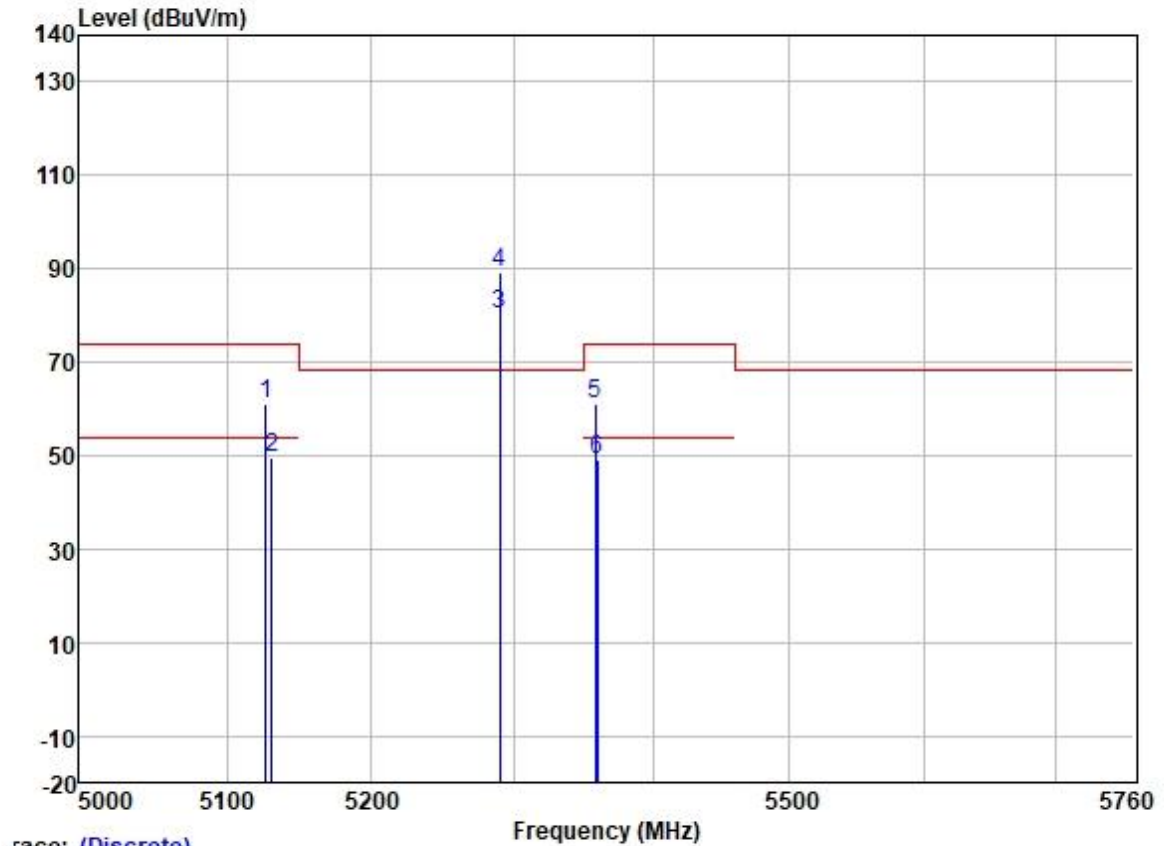
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5310.000	80.90	31.77	6.08	36.87	81.88	-----	-----	HORIZONTAL Average
2 *	5310.000	90.85	31.77	6.08	36.87	91.83	68.20	23.63	HORIZONTAL Peak
3	5350.020	47.29	31.77	6.05	36.88	48.23	54.00	-5.77	HORIZONTAL Average
4	5350.020	59.14	31.77	6.05	36.88	60.08	74.00	-13.92	HORIZONTAL Peak
5	5394.906	60.50	31.78	6.00	36.88	61.40	74.00	-12.60	HORIZONTAL Peak
6	5398.059	48.04	31.78	6.00	36.88	48.94	54.00	-5.06	HORIZONTAL Average

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



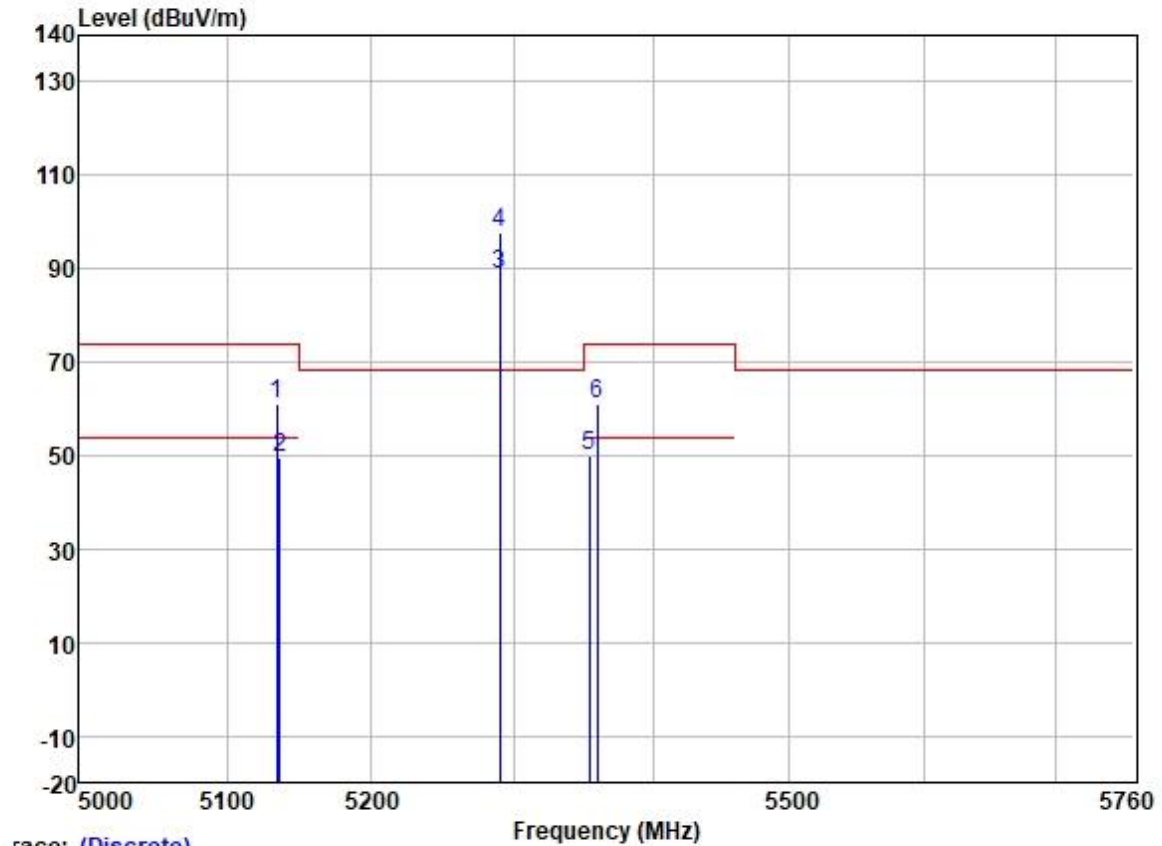
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5310.000	89.89	31.77	6.08	36.87	90.87	-----	-----	VERTICAL
2 *	5310.000	99.59	31.77	6.08	36.87	100.57	68.20	32.37	VERTICAL
3	5350.020	47.57	31.77	6.05	36.88	48.51	54.00	-5.49	VERTICAL
4	5350.020	59.23	31.77	6.05	36.88	60.17	74.00	-13.83	VERTICAL
5	5398.787	48.01	31.78	6.00	36.88	48.91	54.00	-5.09	VERTICAL
6	5399.393	60.56	31.78	6.00	36.88	61.46	74.00	-12.54	VERTICAL

Test Mode: 06; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



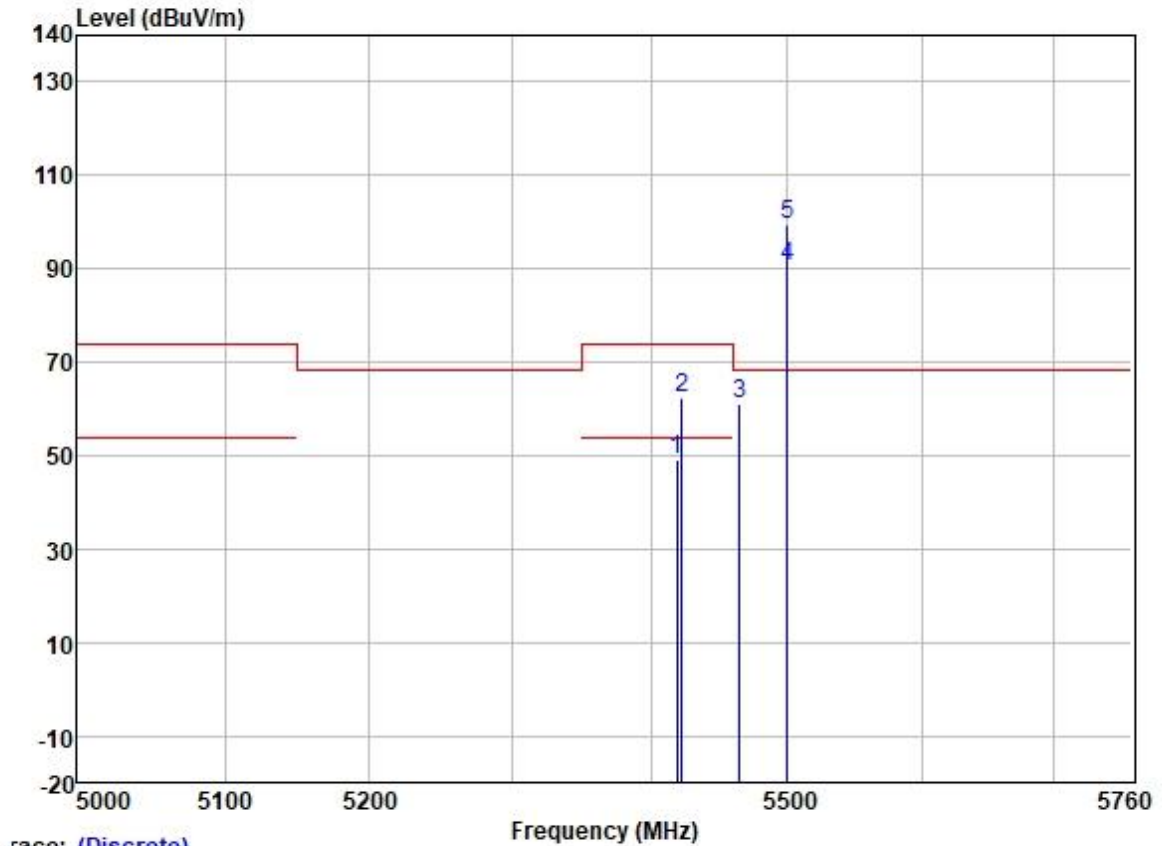
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5126.889	60.73	31.72	5.64	36.86	61.23	74.00	-12.77	HORIZONTAL Peak
2	5130.994	49.11	31.72	5.63	36.86	49.60	54.00	-4.40	HORIZONTAL Average
3	5290.000	79.27	31.76	6.00	36.87	80.16	-----	-----	HORIZONTAL Average
4 *	5290.000	88.20	31.76	6.00	36.87	89.09	68.20	20.89	HORIZONTAL Peak
5	5358.186	60.03	31.78	6.03	36.88	60.96	74.00	-13.04	HORIZONTAL Peak
6	5360.023	48.33	31.78	6.03	36.88	49.26	54.00	-4.74	HORIZONTAL Average

Test Mode: 06; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



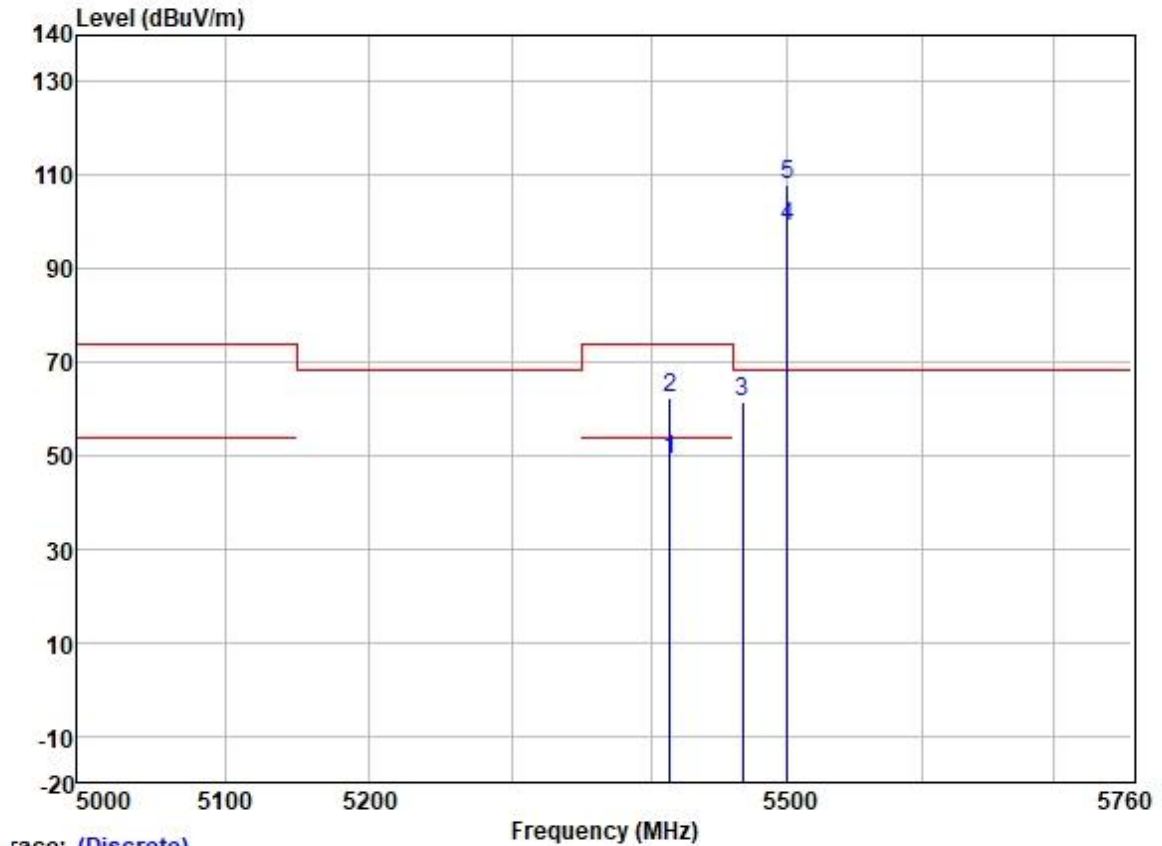
race: (Discrete)	Frequency (MHz)									
	Freq	ReadAntenna	Cable	Preamp		Limit	Over	Pol/Phase	Remark	
		Level	Factor	Loss	Factor	Level	Line			Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5133.927	60.78	31.72	5.63	36.86	61.27	74.00	-12.73	VERTICAL	Peak
2	5135.982	49.06	31.72	5.63	36.86	49.55	54.00	-4.45	VERTICAL	Average
3	5290.000	87.86	31.76	6.00	36.87	88.75	-----	-----	VERTICAL	Average
4 *	5290.000	96.77	31.76	6.00	36.87	97.66	68.20	29.46	VERTICAL	Peak
5	5353.899	49.10	31.77	6.05	36.88	50.04	54.00	-3.96	VERTICAL	Average
6	5359.411	60.26	31.78	6.03	36.88	61.19	74.00	-12.81	VERTICAL	Peak

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



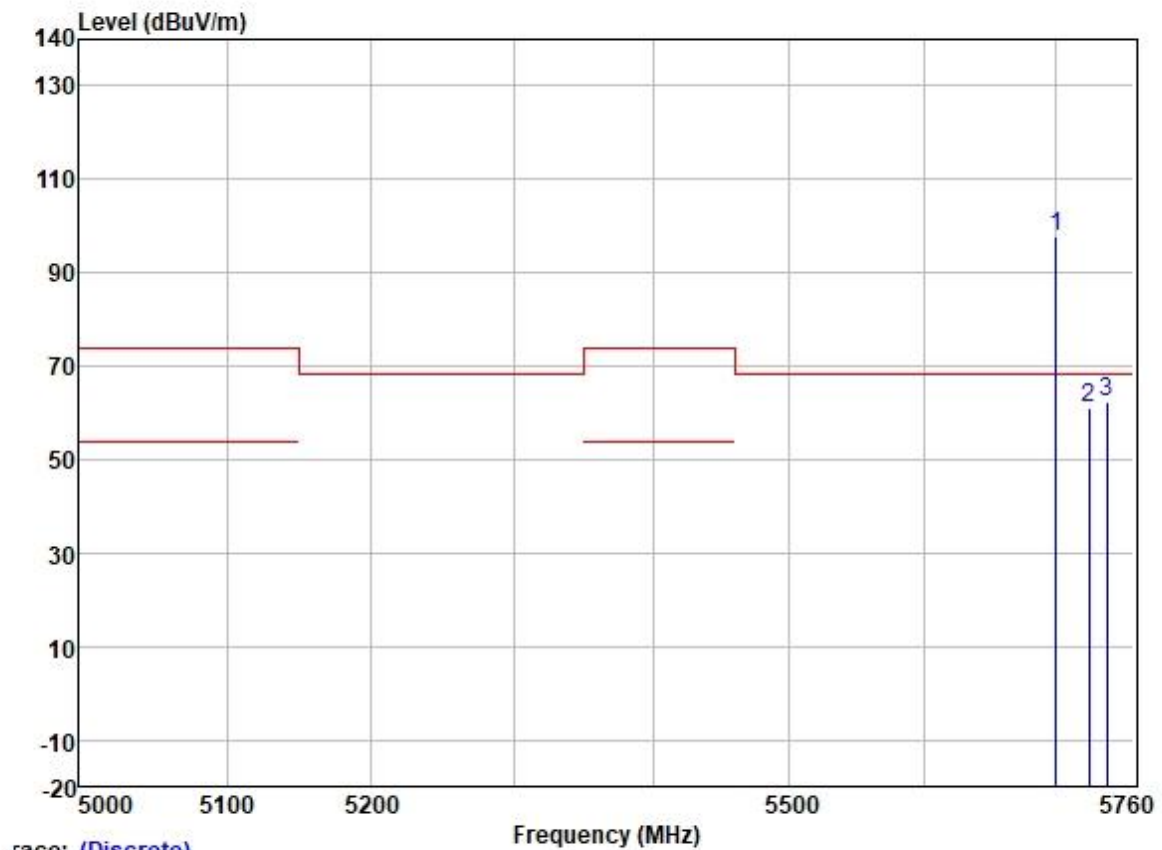
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5418.785	48.26	31.79	6.13	36.88	49.30	54.00	-4.70	HORIZONTAL Average
2	5422.479	61.33	31.79	6.13	36.88	62.37	74.00	-11.63	HORIZONTAL Peak
3	5464.472	60.03	31.80	6.31	36.88	61.26	68.20	-6.94	HORIZONTAL Peak
4	5500.000	89.02	31.80	6.40	36.88	90.34	-----	-----	HORIZONTAL Average
5 *	5500.000	98.04	31.80	6.40	36.88	99.36	68.20	31.16	HORIZONTAL Peak

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



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5413.428	48.29	31.79	6.06	36.88	49.26	54.00	-4.74	VERTICAL Average
2	5413.428	61.17	31.79	6.06	36.88	62.14	74.00	-11.86	VERTICAL Peak
3	5466.755	60.14	31.80	6.31	36.88	61.37	68.20	-6.83	VERTICAL Peak
4	5500.000	97.58	31.80	6.40	36.88	98.90	-----	-----	VERTICAL Average
5 *	5500.000	106.55	31.80	6.40	36.88	107.87	68.20	39.67	VERTICAL Peak

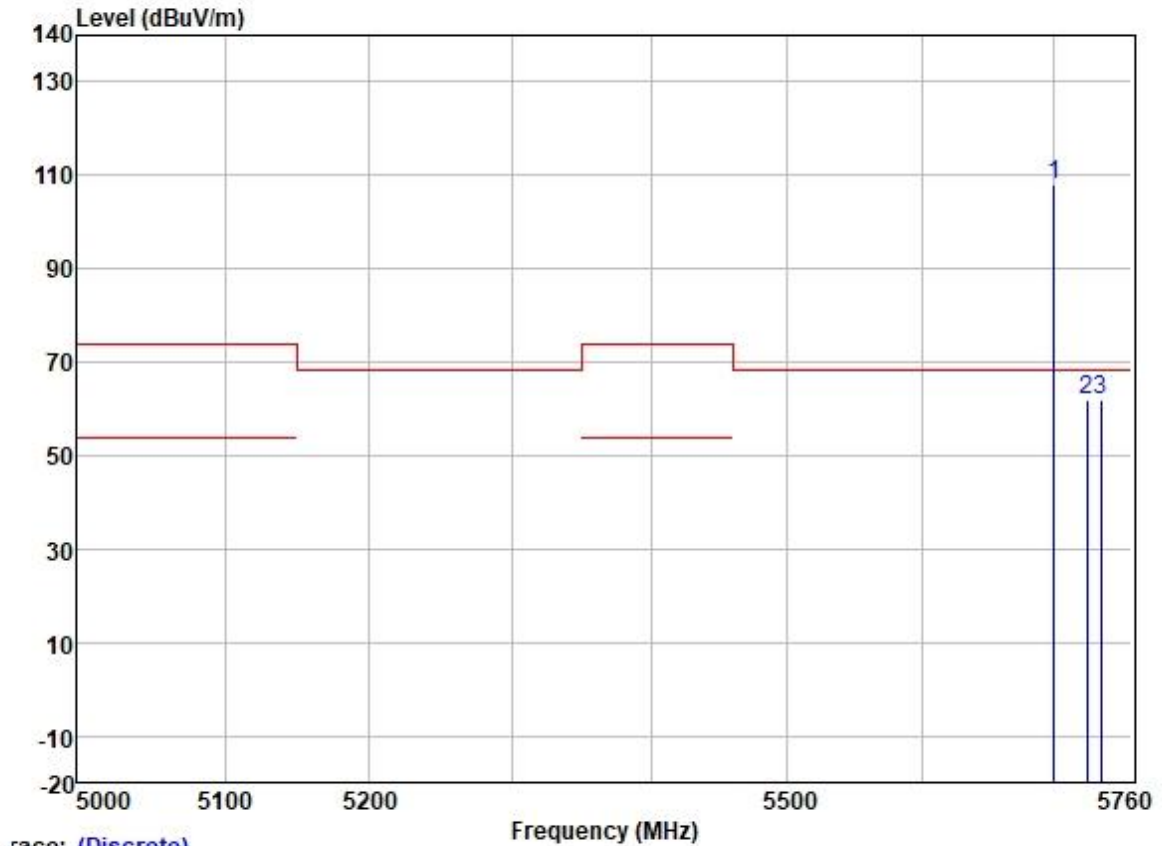
Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

		Read	Antenna	Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 *	5700.000	96.23	32.01	6.40	36.89	97.75	68.20	29.55	HORIZONTAL	Peak
2	5725.000	59.68	32.07	6.25	36.89	61.11	68.20	-7.09	HORIZONTAL	Peak
3	5738.588	60.74	32.07	6.25	36.89	62.17	68.20	-6.03	HORIZONTAL	Peak

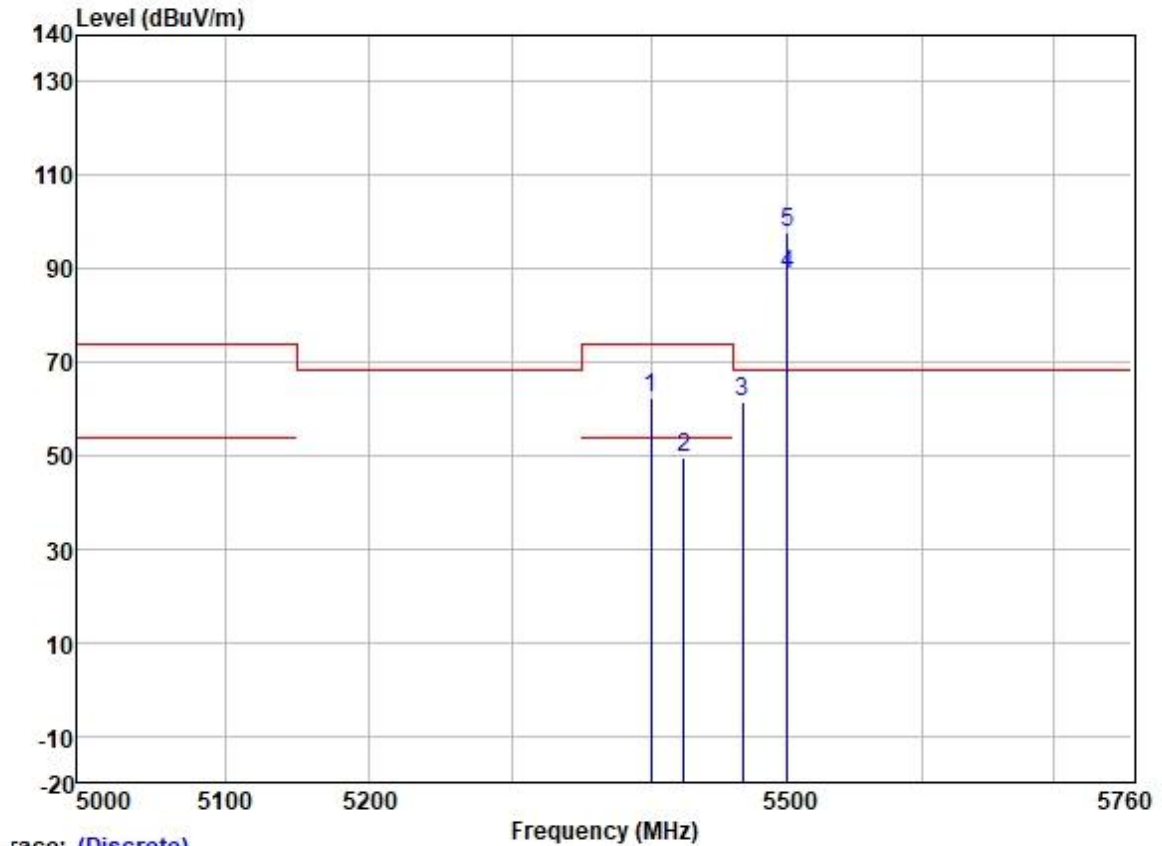
Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

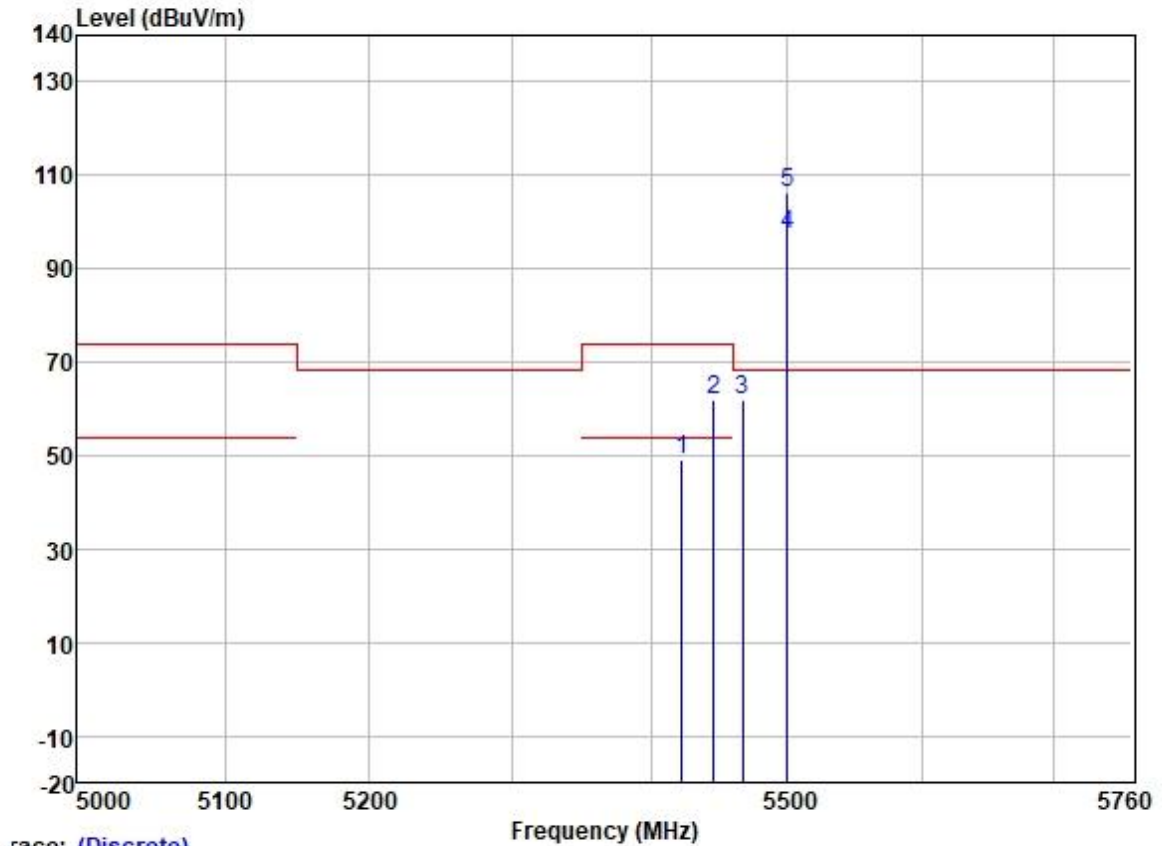
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	5700.000	106.43	32.01	6.40	36.89	107.95	68.20	39.75	VERTICAL Peak
2	5725.000	60.51	32.07	6.25	36.89	61.94	68.20	-6.26	VERTICAL Peak
3	5735.885	60.56	32.07	6.25	36.89	61.99	68.20	-6.21	VERTICAL Peak

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



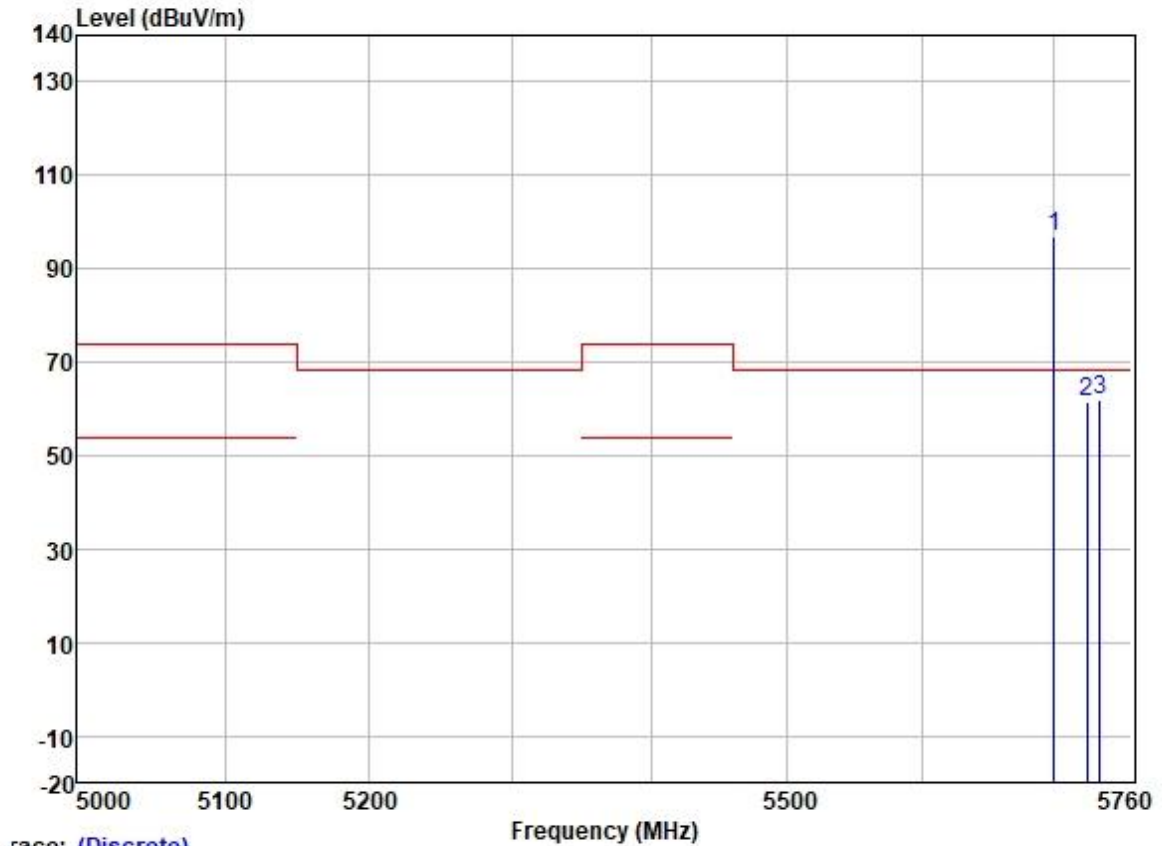
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5400.000	61.56	31.78	6.00	36.88	62.46	74.00	-11.54	HORIZONTAL	Peak
2	5423.670	48.33	31.79	6.13	36.88	49.37	54.00	-4.63	HORIZONTAL	Average
3	5466.875	60.42	31.80	6.31	36.88	61.65	68.20	-6.55	HORIZONTAL	Peak
4	5500.000	87.49	31.80	6.40	36.88	88.81	-----	-----	HORIZONTAL	Average
5 *	5500.000	96.48	31.80	6.40	36.88	97.80	68.20	29.60	HORIZONTAL	Peak

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



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5422.479	48.28	31.79	6.13	36.88	49.32	54.00	-4.68	VERTICAL
2	5445.888	60.84	31.79	6.20	36.88	61.95	74.00	-12.05	VERTICAL
3	5466.515	60.54	31.80	6.31	36.88	61.77	68.20	-6.43	VERTICAL
4	5500.000	96.09	31.80	6.40	36.88	97.41	-----	-----	VERTICAL
5 *	5500.000	104.84	31.80	6.40	36.88	106.16	68.20	37.96	VERTICAL

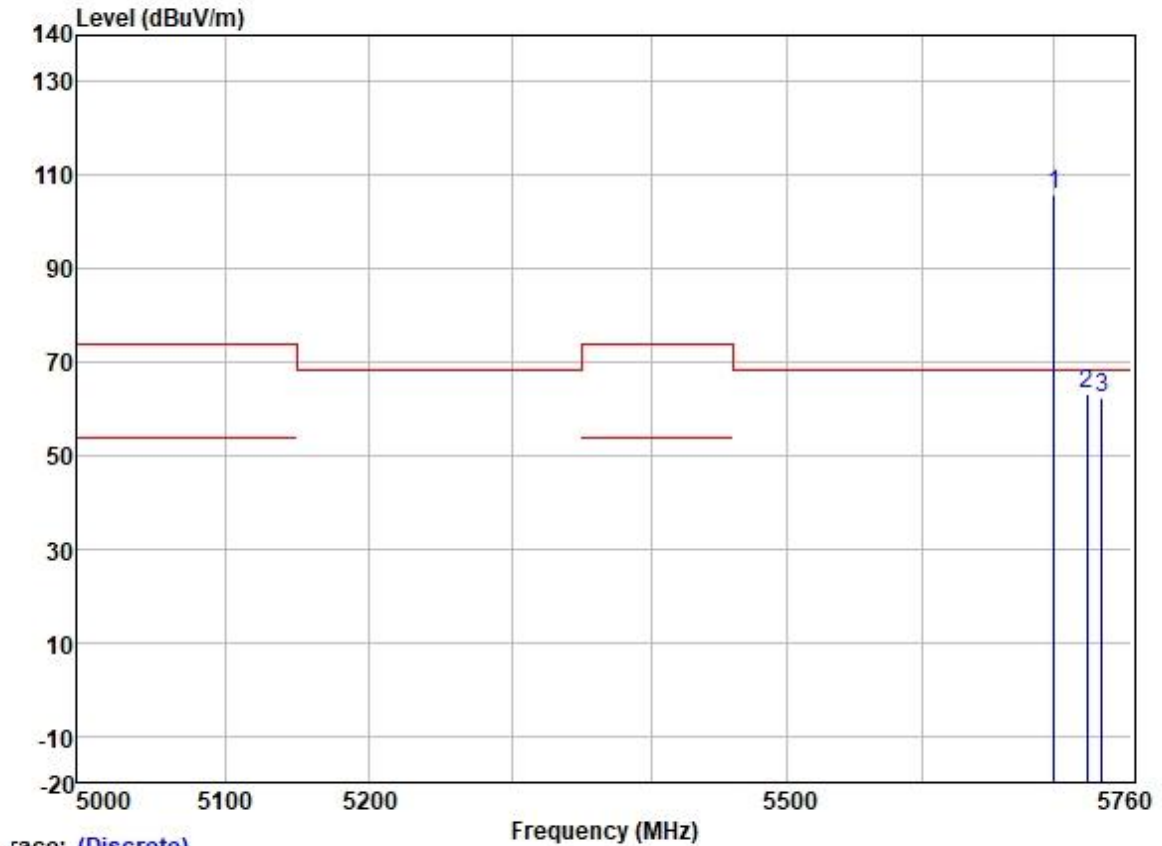
Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 *	5700.000	95.50	32.01	6.40	36.89	97.02	68.20	28.82	HORIZONTAL	Peak
2	5725.000	59.86	32.07	6.25	36.89	61.29	68.20	-6.91	HORIZONTAL	Peak
3	5735.384	60.51	32.07	6.25	36.89	61.94	68.20	-6.26	HORIZONTAL	Peak

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

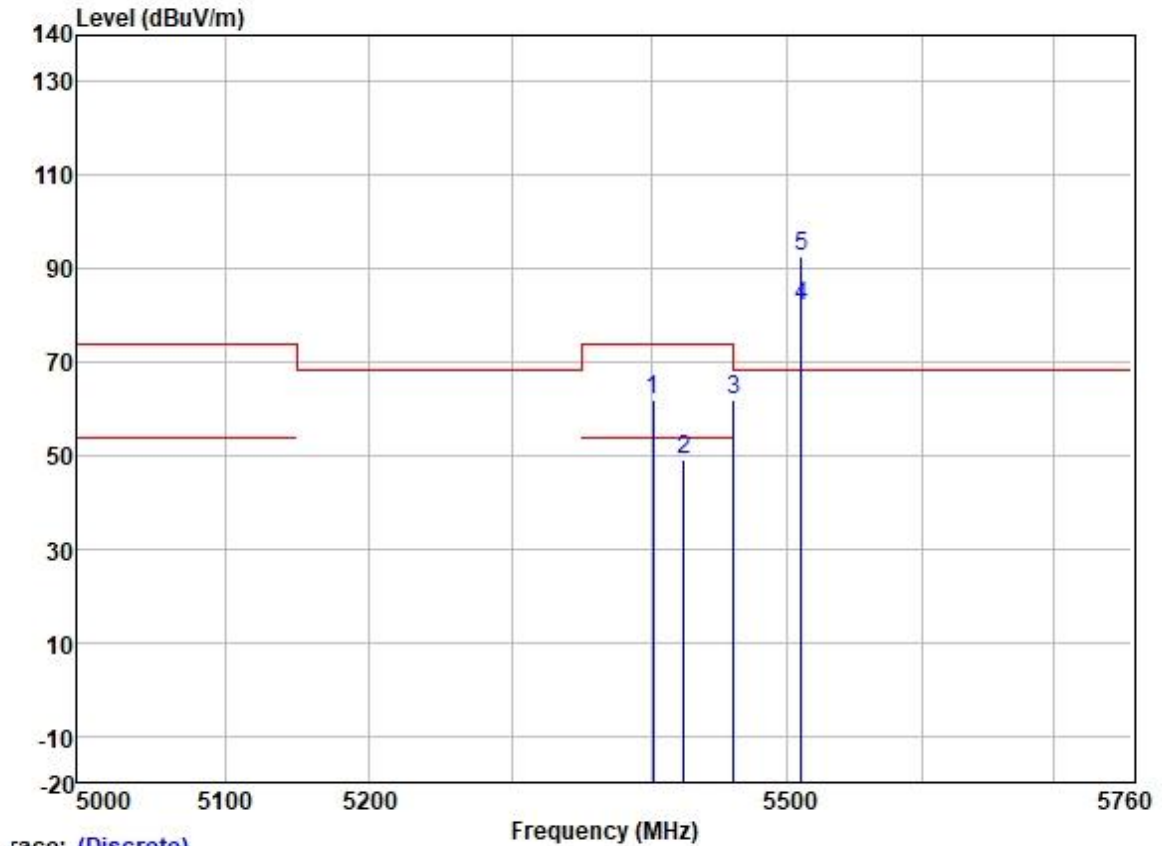


Trace: (Discrete)

		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 *	5700.000	104.15	32.01	6.40	36.89	105.67	68.20	37.47	VERTICAL	Peak
2	5725.000	61.58	32.07	6.25	36.89	63.01	68.20	-5.19	VERTICAL	Peak
3	5736.886	60.73	32.07	6.25	36.89	62.16	68.20	-6.04	VERTICAL	Peak

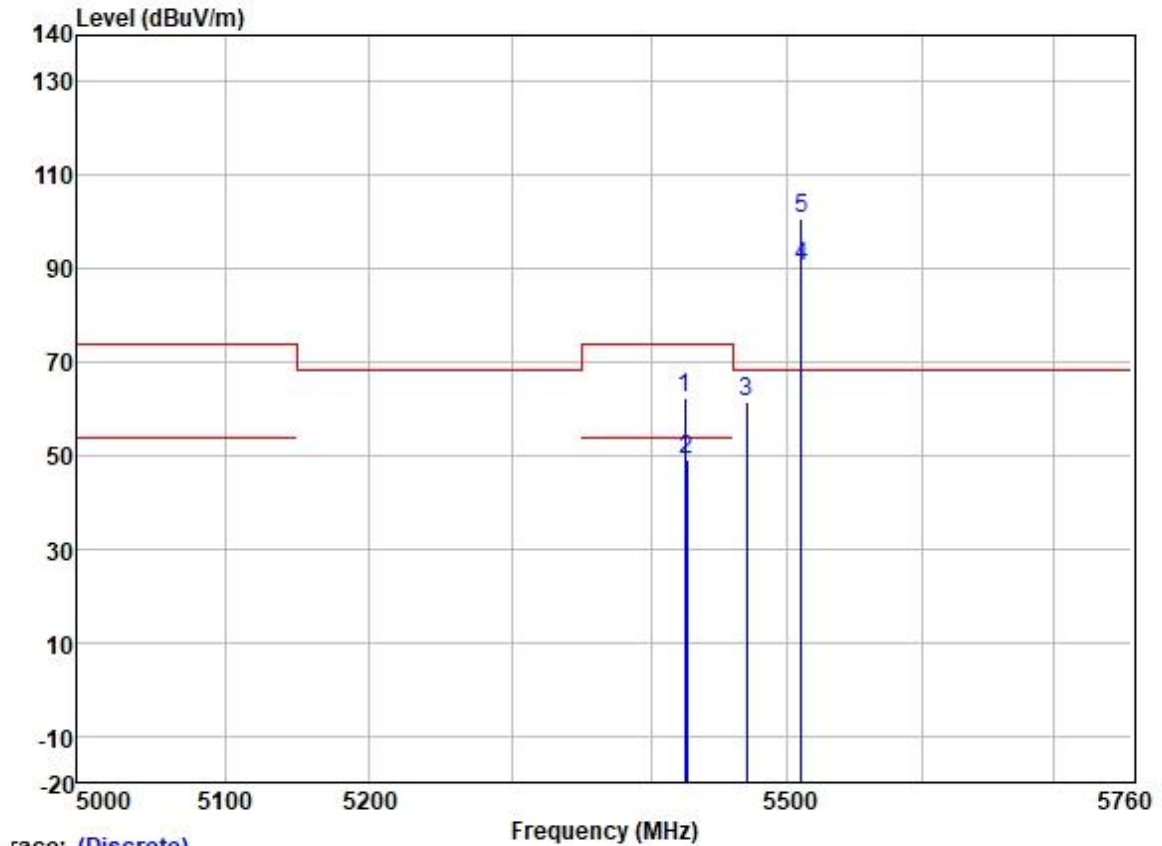


Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



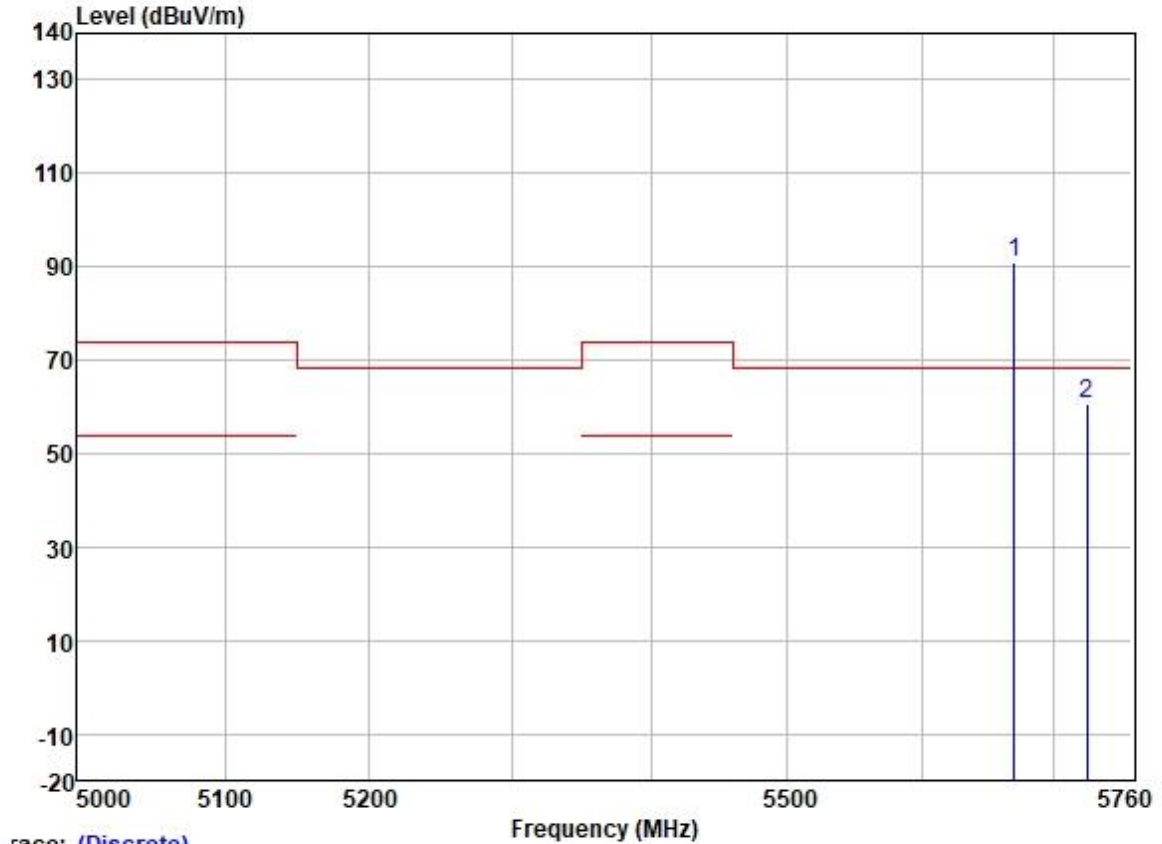
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5401.659	61.15	31.79	6.06	36.88	62.12	74.00	-11.88	HORIZONTAL	Peak
2	5423.964	48.23	31.79	6.13	36.88	49.27	54.00	-4.73	HORIZONTAL	Average
3	5460.180	60.62	31.79	6.26	36.88	61.79	68.20	-6.41	HORIZONTAL	Peak
4	5510.000	80.79	31.80	6.40	36.88	82.11	-----	-----	HORIZONTAL	Average
5 *	5510.000	91.43	31.80	6.40	36.88	92.75	68.20	24.55	HORIZONTAL	Peak

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



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5424.242	61.41	31.79	6.13	36.88	62.45	74.00	-11.55	VERTICAL Peak
2	5425.770	48.27	31.79	6.13	36.88	49.31	54.00	-4.69	VERTICAL Average
3	5469.692	60.27	31.80	6.31	36.88	61.50	68.20	-6.70	VERTICAL Peak
4	5510.000	89.30	31.80	6.40	36.88	90.62	-----	-----	VERTICAL Average
5 *	5510.000	99.31	31.80	6.40	36.88	100.63	68.20	32.43	VERTICAL Peak

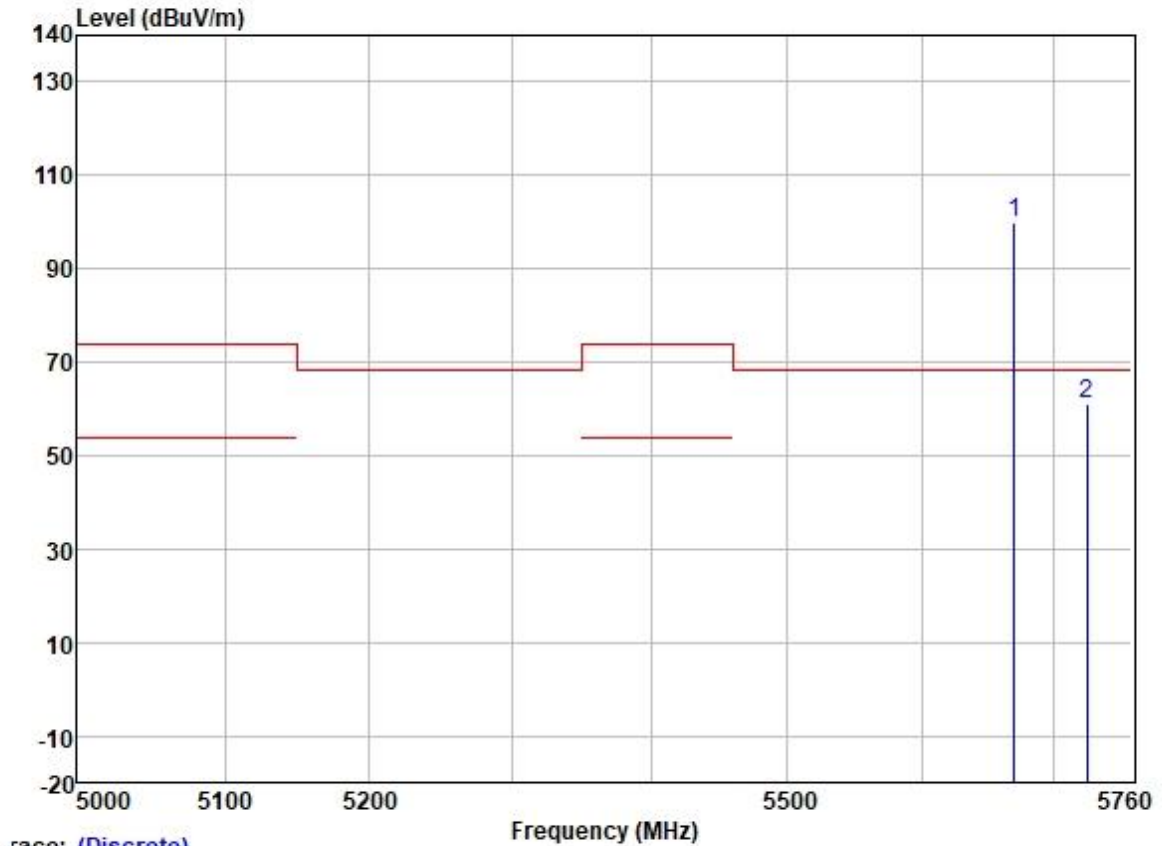
Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Trace: (Discrete)

	Read	Antenna	Cable	Preamp	Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 *	5670.000	89.29	31.97	6.37	36.89	90.74	68.20	22.54	HORIZONTAL Peak
2	5725.000	59.28	32.07	6.25	36.89	60.71	68.20	-7.49	HORIZONTAL Peak

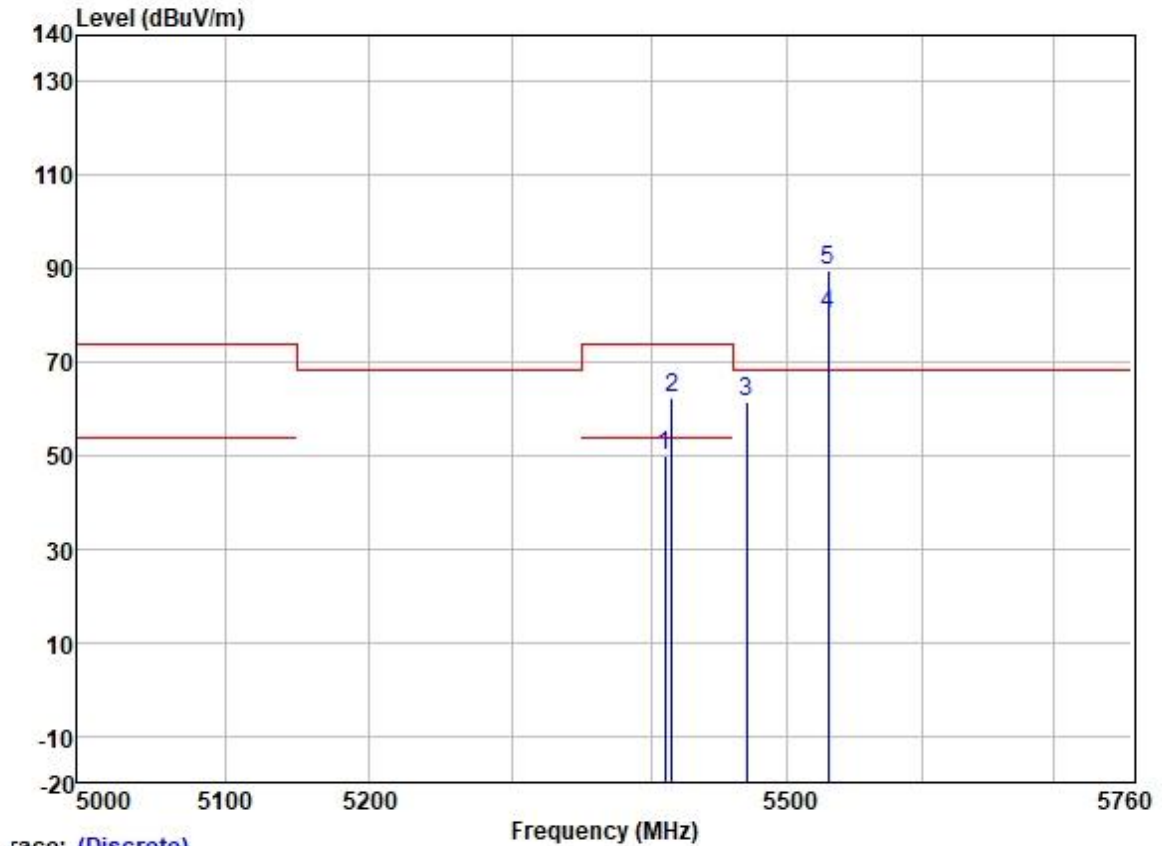
Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Trace: (Discrete)

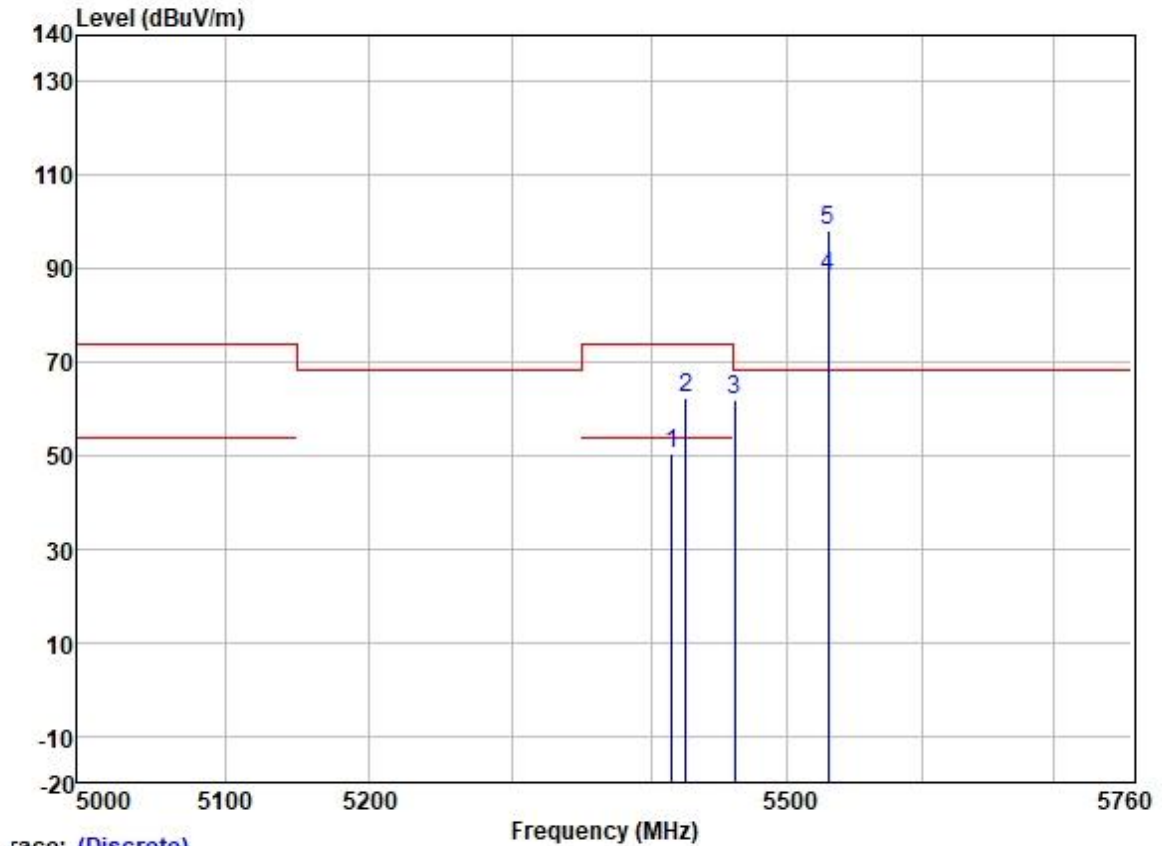
	Freq	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	5670.000	98.63	31.97	6.37	36.89	100.08	68.20	31.88	VERTICAL Peak
2	5725.000	59.53	32.07	6.25	36.89	60.96	68.20	-7.24	VERTICAL Peak

Test Mode: 07; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



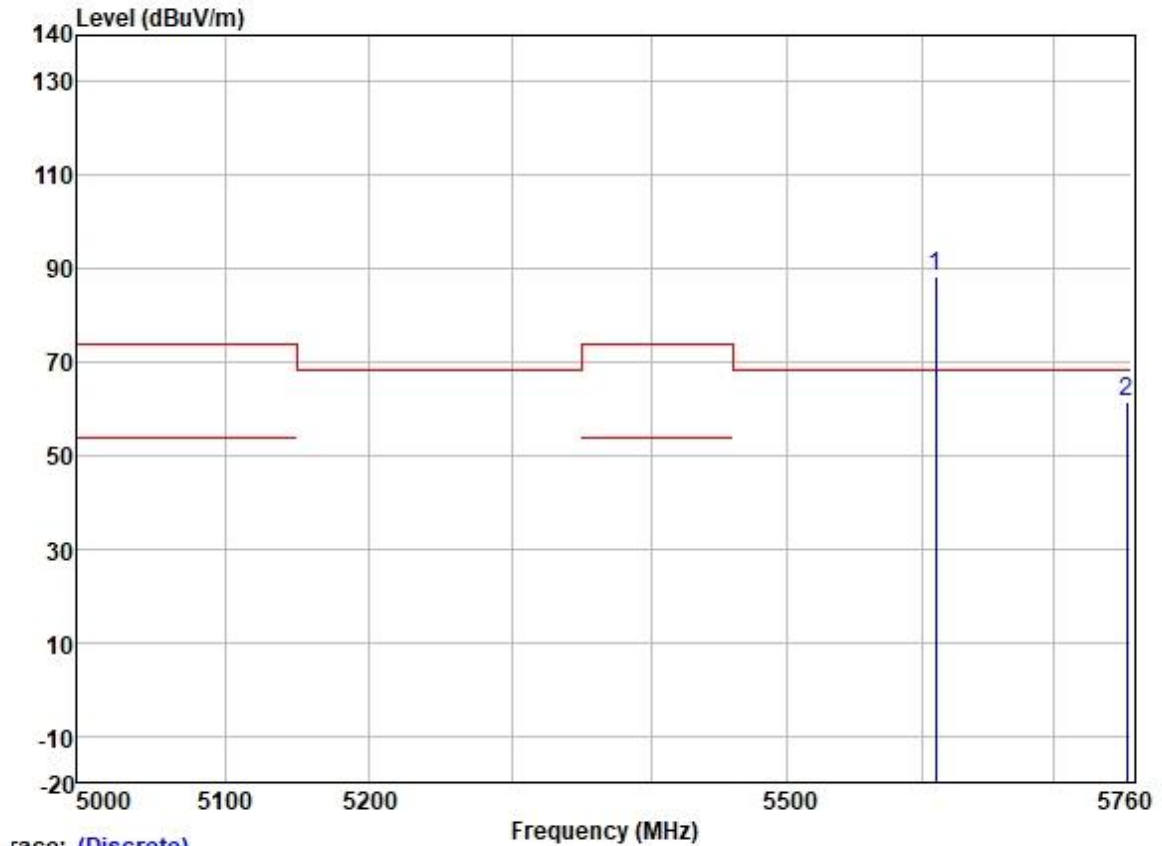
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5409.748	49.19	31.79	6.06	36.88	50.16	54.00	-3.84	HORIZONTAL Average
2	5415.071	61.28	31.79	6.06	36.88	62.25	74.00	-11.75	HORIZONTAL Peak
3	5469.319	60.40	31.80	6.31	36.88	61.63	68.20	-6.57	HORIZONTAL Peak
4	5530.000	78.77	31.83	6.37	36.89	80.08	-----	-----	HORIZONTAL Average
5 *	5530.000	88.51	31.83	6.37	36.89	89.82	68.20	21.62	HORIZONTAL Peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5415.427	49.28	31.79	6.06	36.88	50.25	54.00	-3.75	VERTICAL Average
2	5425.380	61.38	31.79	6.13	36.88	62.42	74.00	-11.58	VERTICAL Peak
3	5460.539	60.60	31.79	6.26	36.88	61.77	68.20	-6.43	VERTICAL Peak
4	5530.000	87.12	31.83	6.37	36.89	88.43	-----	-----	VERTICAL Average
5 *	5530.000	97.00	31.83	6.37	36.89	98.31	68.20	30.11	VERTICAL Peak

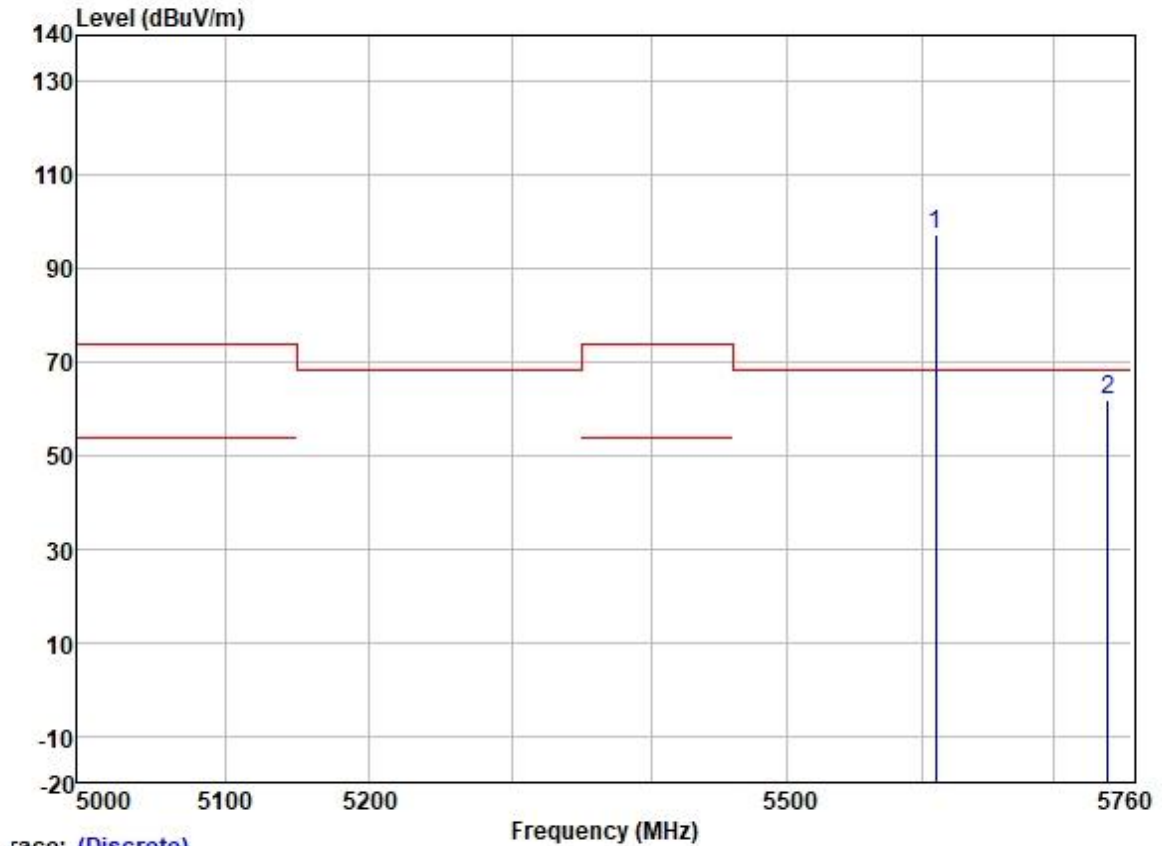
Test Mode: 07; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:High



Trace: (Discrete)

		Read	Antenna	Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	* 5610.000	87.04	31.91	6.32	36.89	88.38	68.20	20.18	HORIZONTAL	Peak
2	5756.134	60.15	32.13	6.15	36.89	61.54	68.20	-6.66	HORIZONTAL	Peak

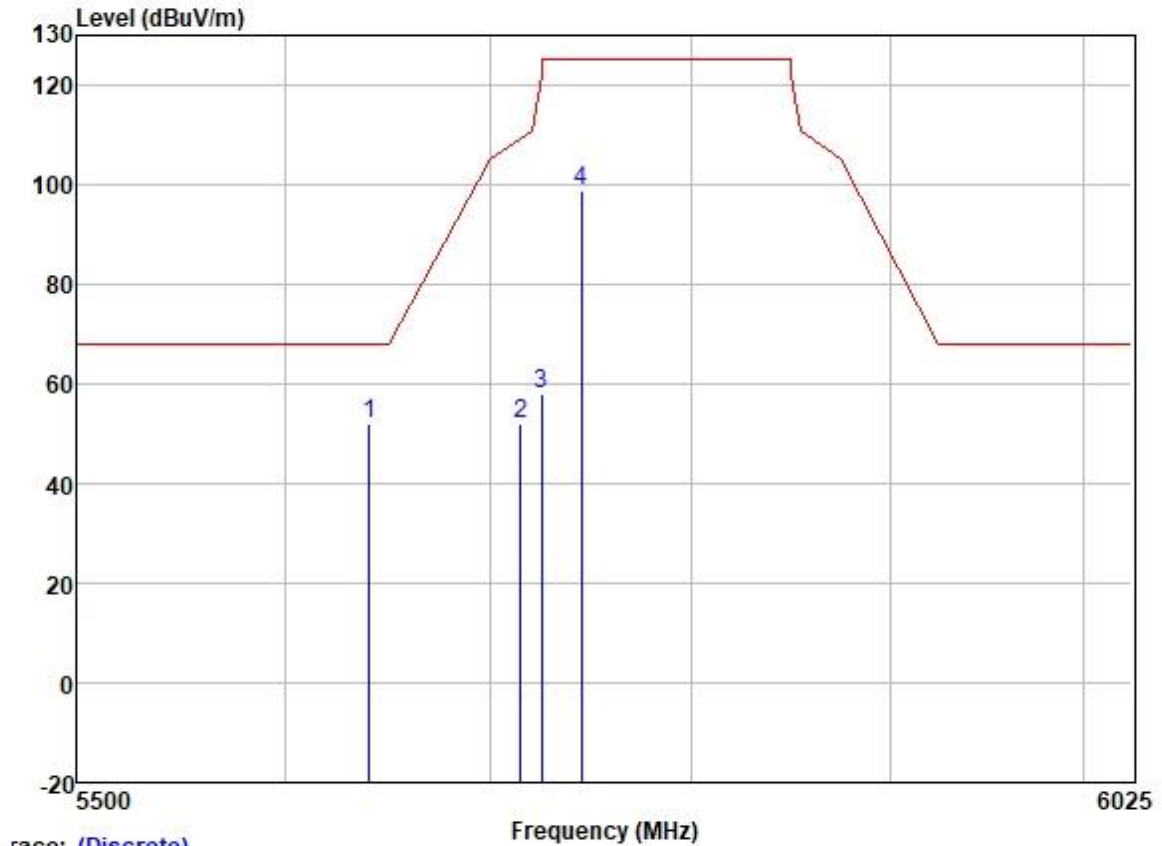
Test Mode: 07; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:High



Trace: (Discrete)

		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 *	5610.000	95.99	31.91	6.32	36.89	97.33	68.20	29.13	VERTICAL	Peak
2	5741.506	60.67	32.10	6.20	36.89	62.08	68.20	-6.12	VERTICAL	Peak

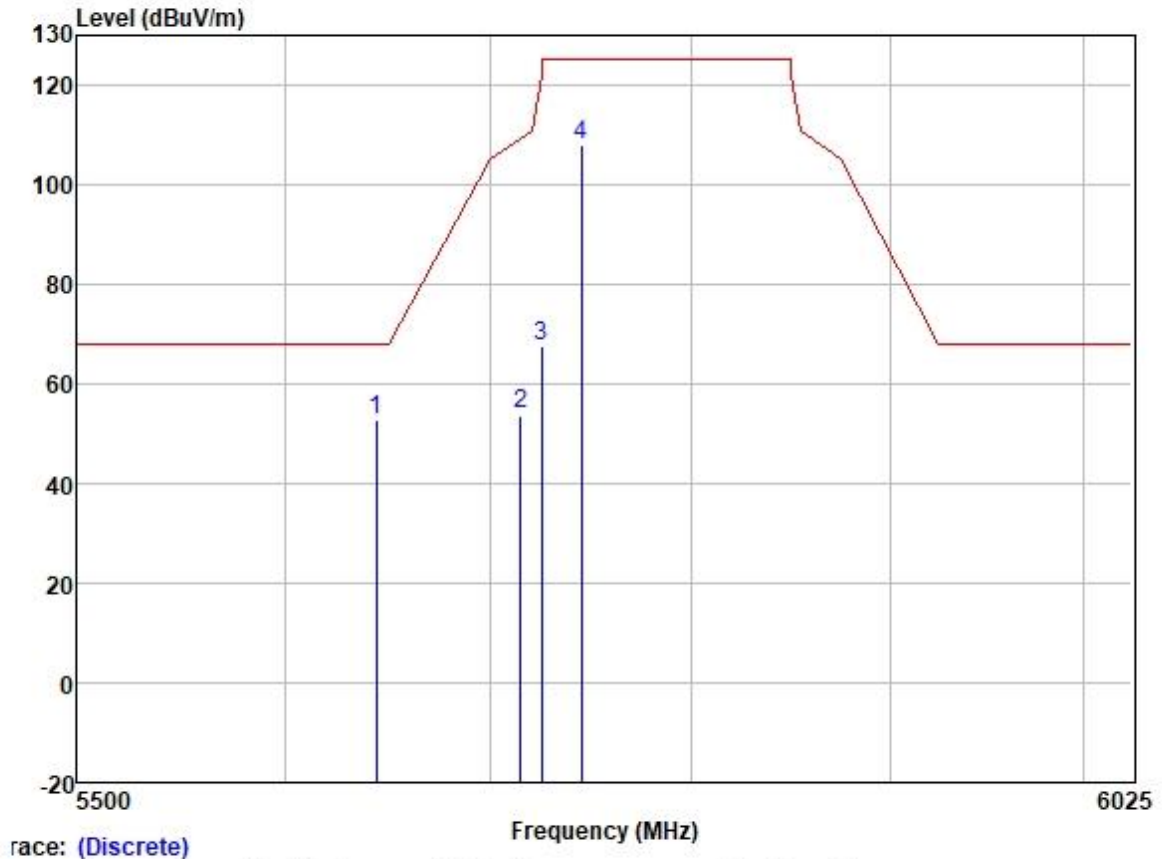
Test Mode: 08; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

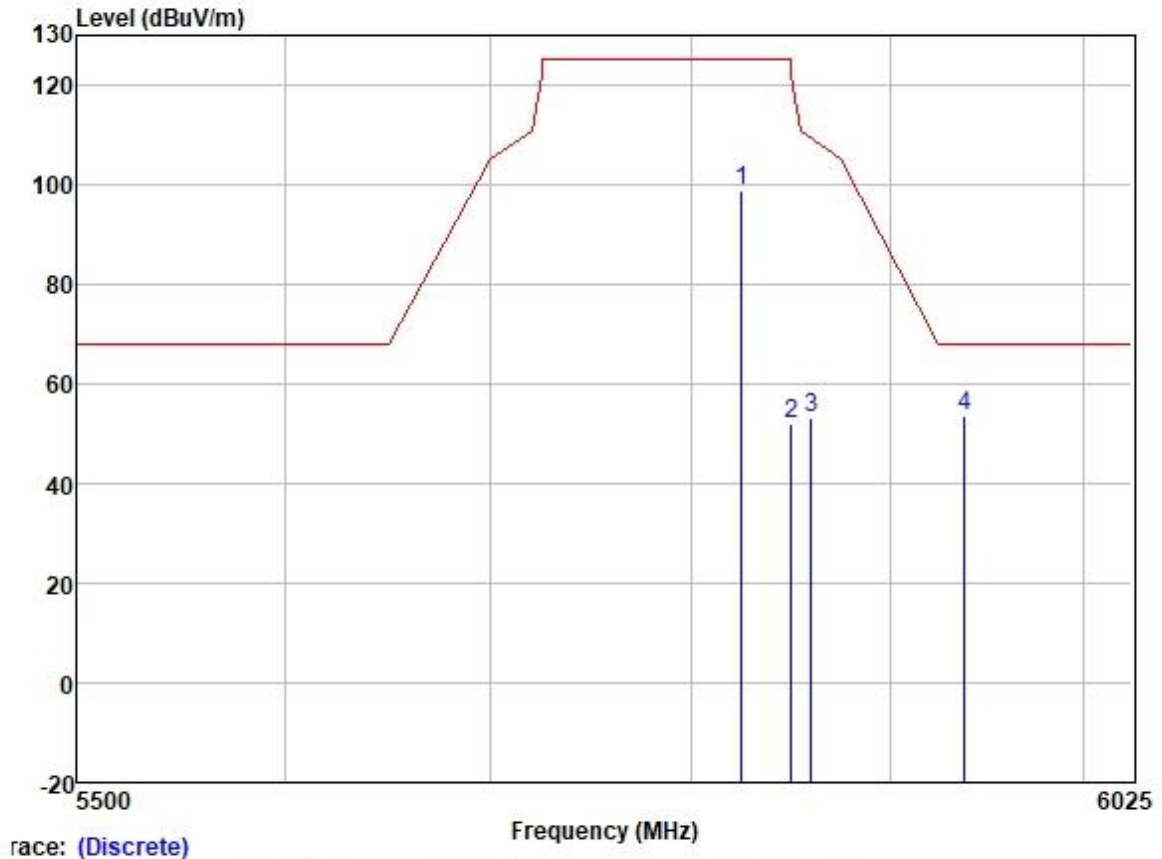
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5640.415	50.46	31.95	6.35	36.89	51.87	68.20	-16.33	HORIZONTAL	Peak
2	5715.000	50.58	32.04	6.33	36.89	52.06	109.40	-57.34	HORIZONTAL	Peak
3	5725.000	56.61	32.07	6.25	36.89	58.04	122.20	-64.16	HORIZONTAL	Peak
4	5745.000	97.58	32.10	6.20	36.89	98.99	125.20	-26.21	HORIZONTAL	Peak

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



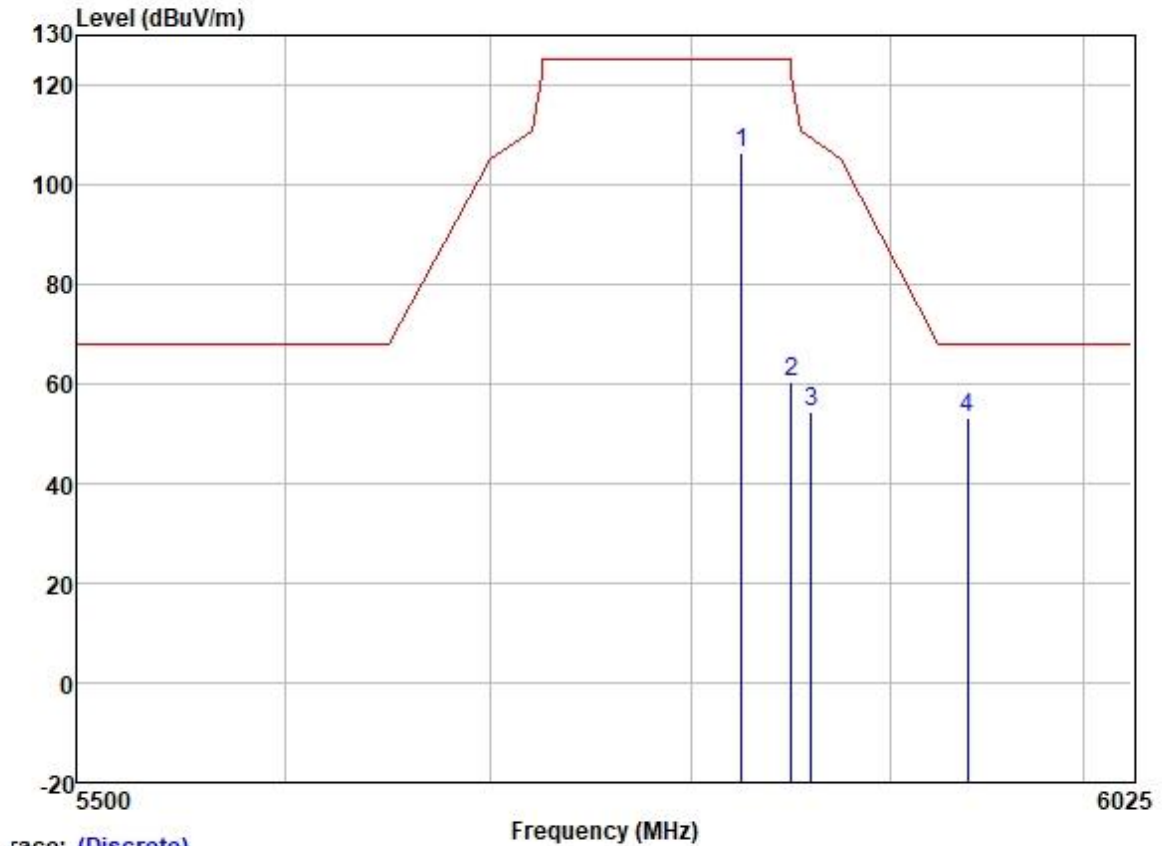
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5644.150	51.31	31.95	6.35	36.89	52.72	68.20	-15.48	VERTICAL	Peak
2	5715.000	52.32	32.04	6.33	36.89	53.80	109.40	-55.60	VERTICAL	Peak
3	5725.000	66.06	32.07	6.25	36.89	67.49	122.20	-54.71	VERTICAL	Peak
4	5745.000	106.51	32.10	6.20	36.89	107.92	125.20	-17.28	VERTICAL	Peak

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



		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	97.57	32.23	6.04	36.90	98.94	125.20	-26.26	HORIZONTAL	Peak
2	5850.000	50.82	32.25	6.00	36.90	52.17	122.20	-70.03	HORIZONTAL	Peak
3	5860.000	51.96	32.27	5.96	36.90	53.29	109.40	-56.11	HORIZONTAL	Peak
4	5938.250	51.97	32.34	6.00	36.90	53.41	68.20	-14.79	HORIZONTAL	Peak

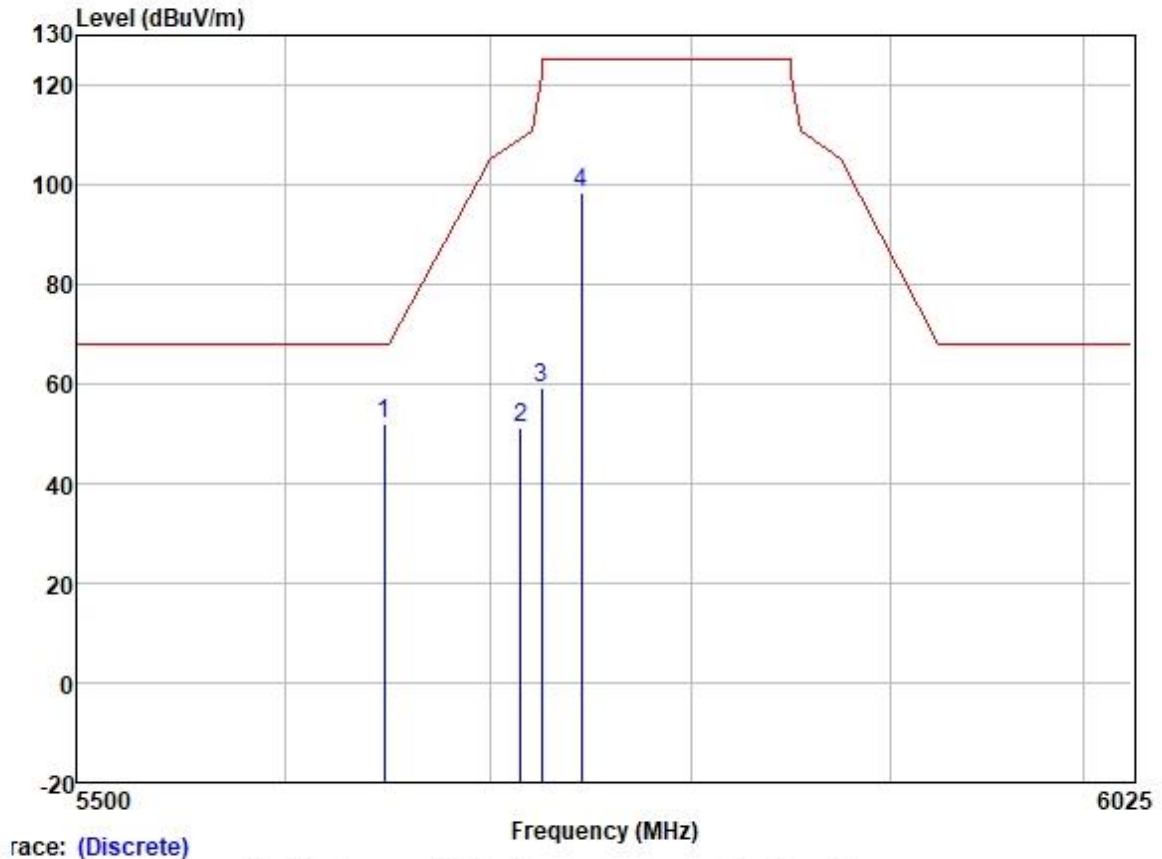
Test Mode: 08; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

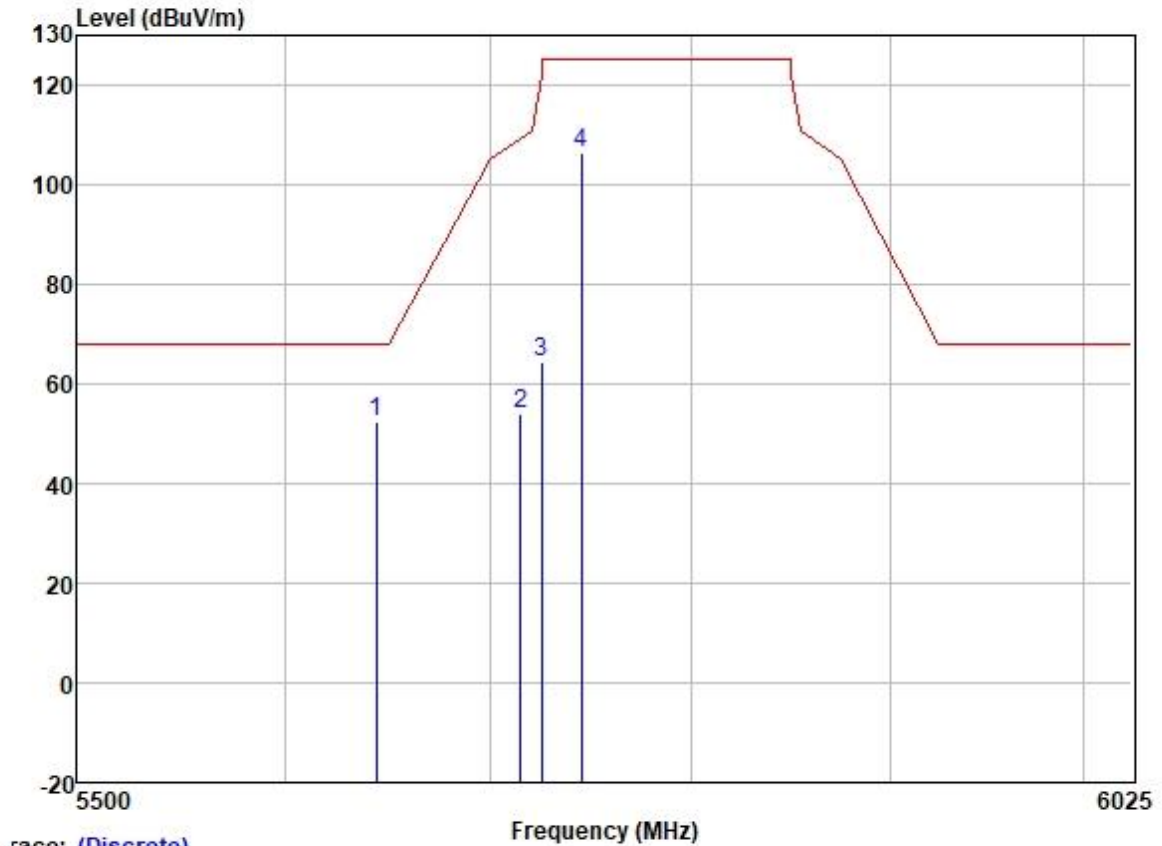
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	105.04	32.23	6.04	36.90	106.41	125.20	-18.79	VERTICAL	Peak
2	5850.000	59.17	32.25	6.00	36.90	60.52	122.20	-61.68	VERTICAL	Peak
3	5860.000	52.95	32.27	5.96	36.90	54.28	109.40	-55.12	VERTICAL	Peak
4	5939.663	51.91	32.34	6.00	36.90	53.35	68.20	-14.85	VERTICAL	Peak

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



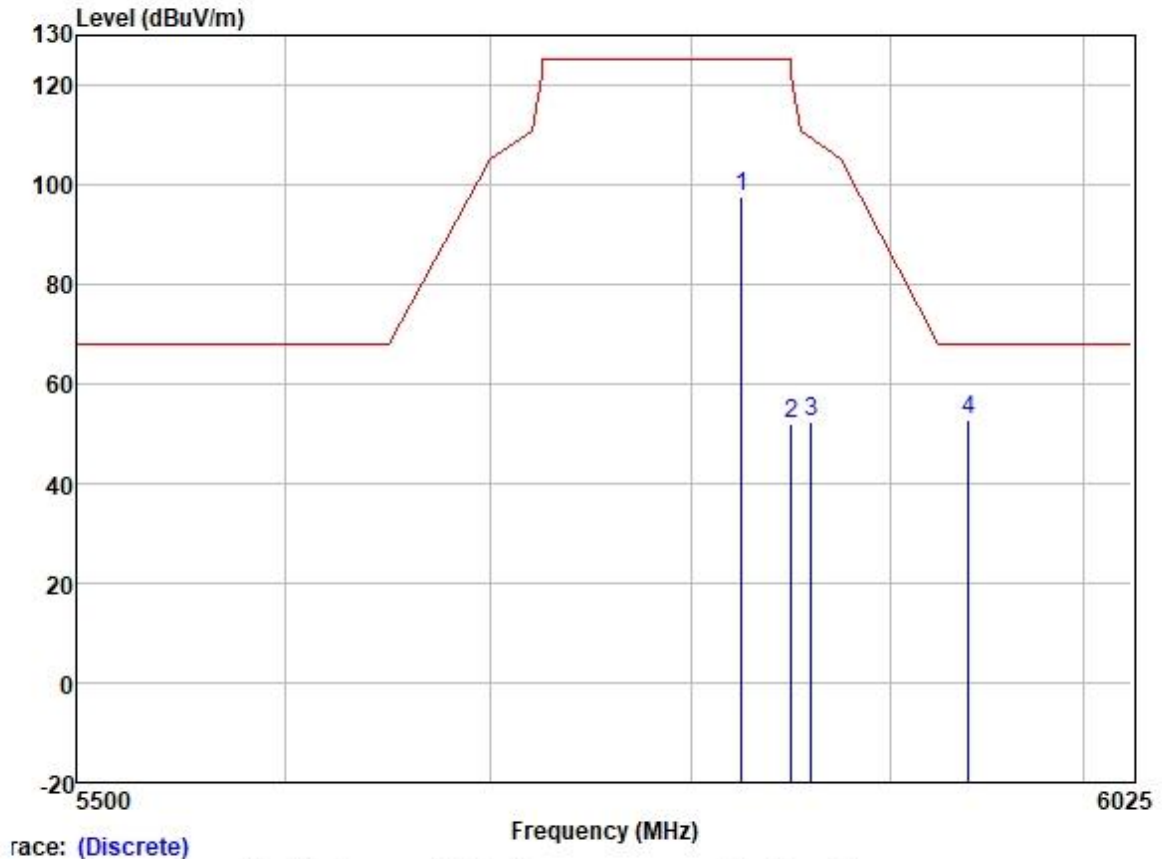
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5648.026	50.45	31.95	6.35	36.89	51.86	68.20	-16.34	HORIZONTAL	Peak
2	5715.000	49.80	32.04	6.33	36.89	51.28	109.40	-58.12	HORIZONTAL	Peak
3	5725.000	57.89	32.07	6.25	36.89	59.32	122.20	-62.88	HORIZONTAL	Peak
4	5745.000	96.89	32.10	6.20	36.89	98.30	125.20	-26.90	HORIZONTAL	Peak

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



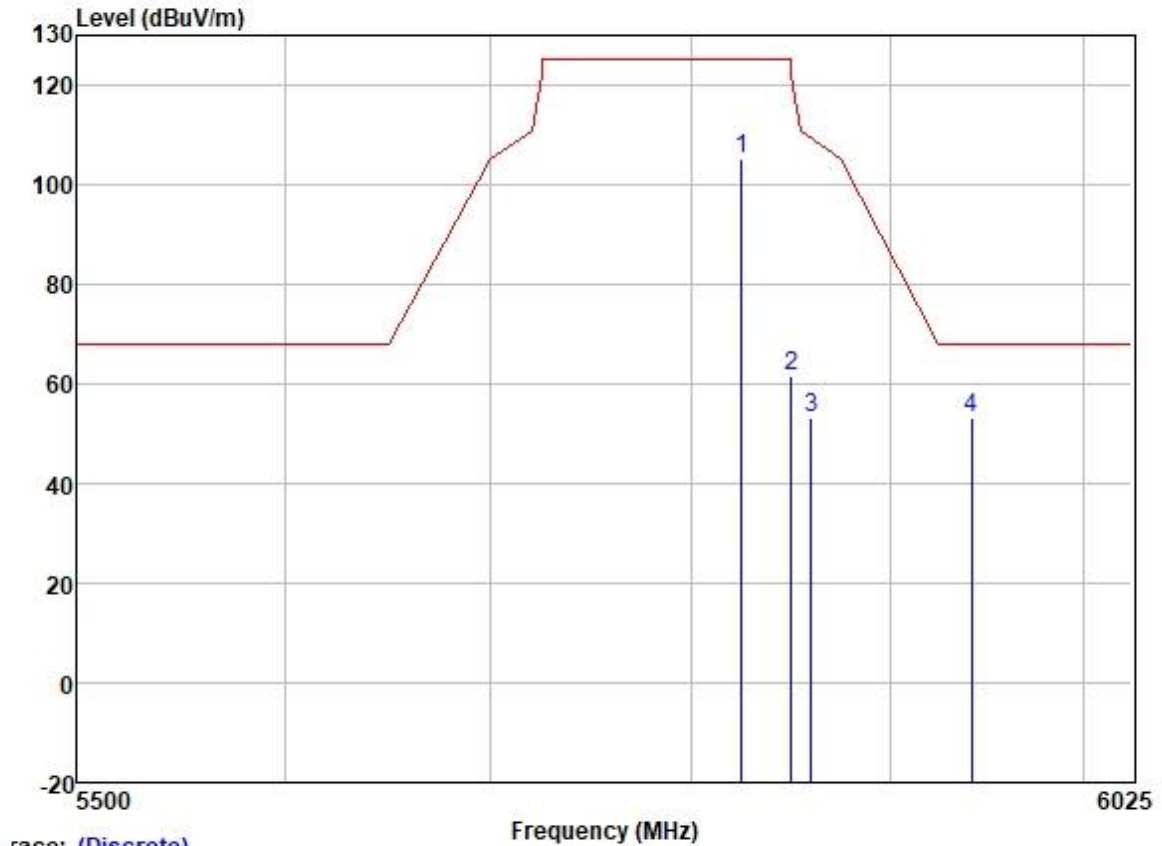
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5644.150	50.99	31.95	6.35	36.89	52.40	68.20	-15.80	VERTICAL	Peak
2	5715.000	52.71	32.04	6.33	36.89	54.19	109.40	-55.21	VERTICAL	Peak
3	5725.000	63.15	32.07	6.25	36.89	64.58	122.20	-57.62	VERTICAL	Peak
4	5745.000	104.89	32.10	6.20	36.89	106.30	125.20	-18.90	VERTICAL	Peak

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



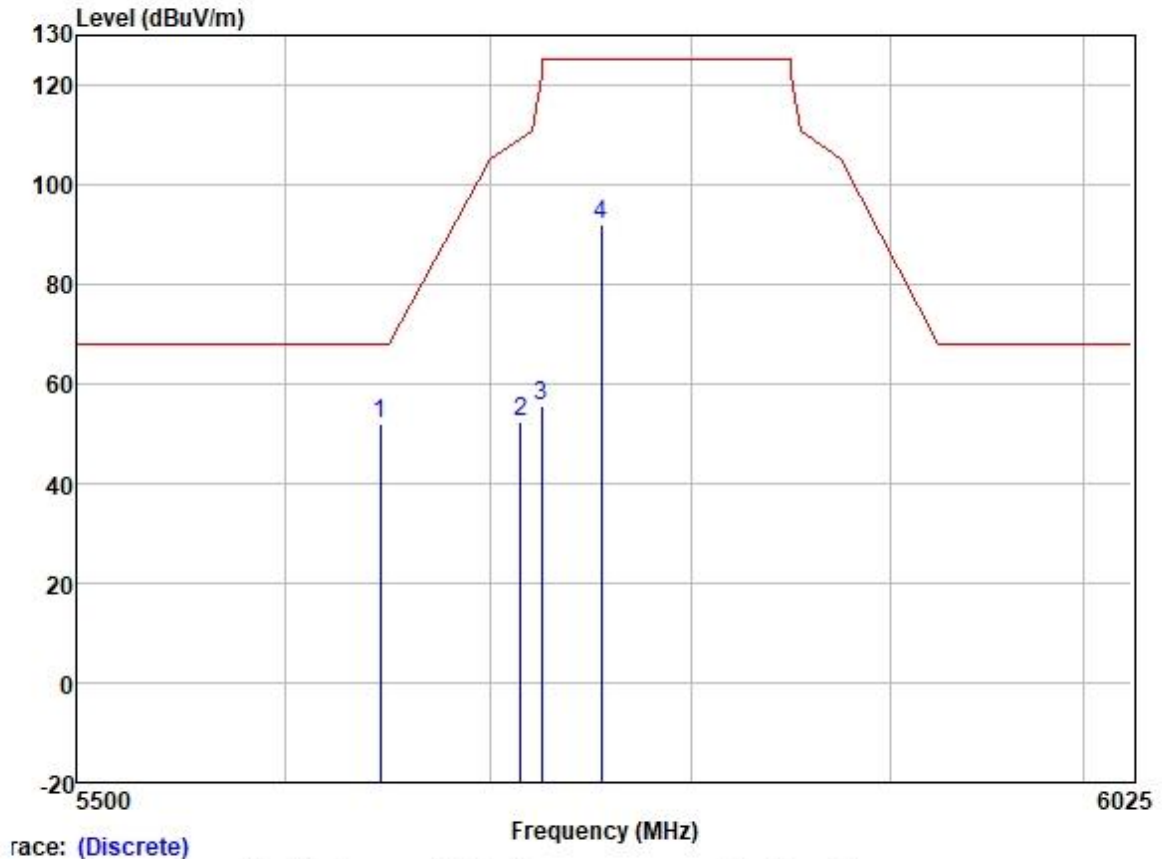
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	96.40	32.23	6.04	36.90	97.77	125.20	-27.43	HORIZONTAL	Peak
2	5850.000	50.69	32.25	6.00	36.90	52.04	122.20	-70.16	HORIZONTAL	Peak
3	5860.000	50.93	32.27	5.96	36.90	52.26	109.40	-57.14	HORIZONTAL	Peak
4	5940.290	51.49	32.34	6.00	36.90	52.93	68.20	-15.27	HORIZONTAL	Peak

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



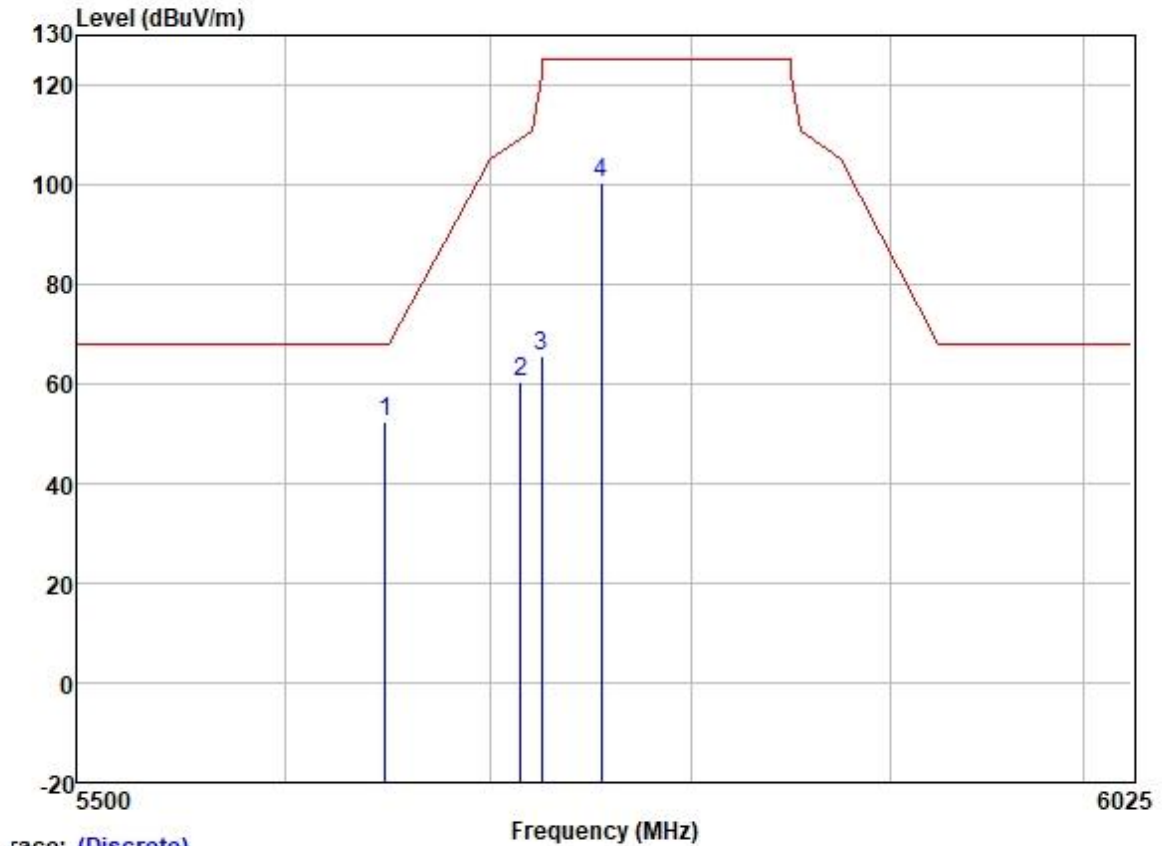
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	103.95	32.23	6.04	36.90	105.32	125.20	-19.88	VERTICAL	Peak
2	5850.000	60.29	32.25	6.00	36.90	61.64	122.20	-60.56	VERTICAL	Peak
3	5860.000	51.94	32.27	5.96	36.90	53.27	109.40	-56.13	VERTICAL	Peak
4	5942.017	51.77	32.36	6.05	36.90	53.28	68.20	-14.92	VERTICAL	Peak

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



		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5646.120	50.55	31.95	6.35	36.89	51.96	68.20	-16.24	HORIZONTAL	Peak
2	5715.000	51.10	32.04	6.33	36.89	52.58	109.40	-56.82	HORIZONTAL	Peak
3	5725.000	54.09	32.07	6.25	36.89	55.52	122.20	-66.68	HORIZONTAL	Peak
4	5755.000	90.41	32.10	6.20	36.89	91.82	125.20	-33.38	HORIZONTAL	Peak

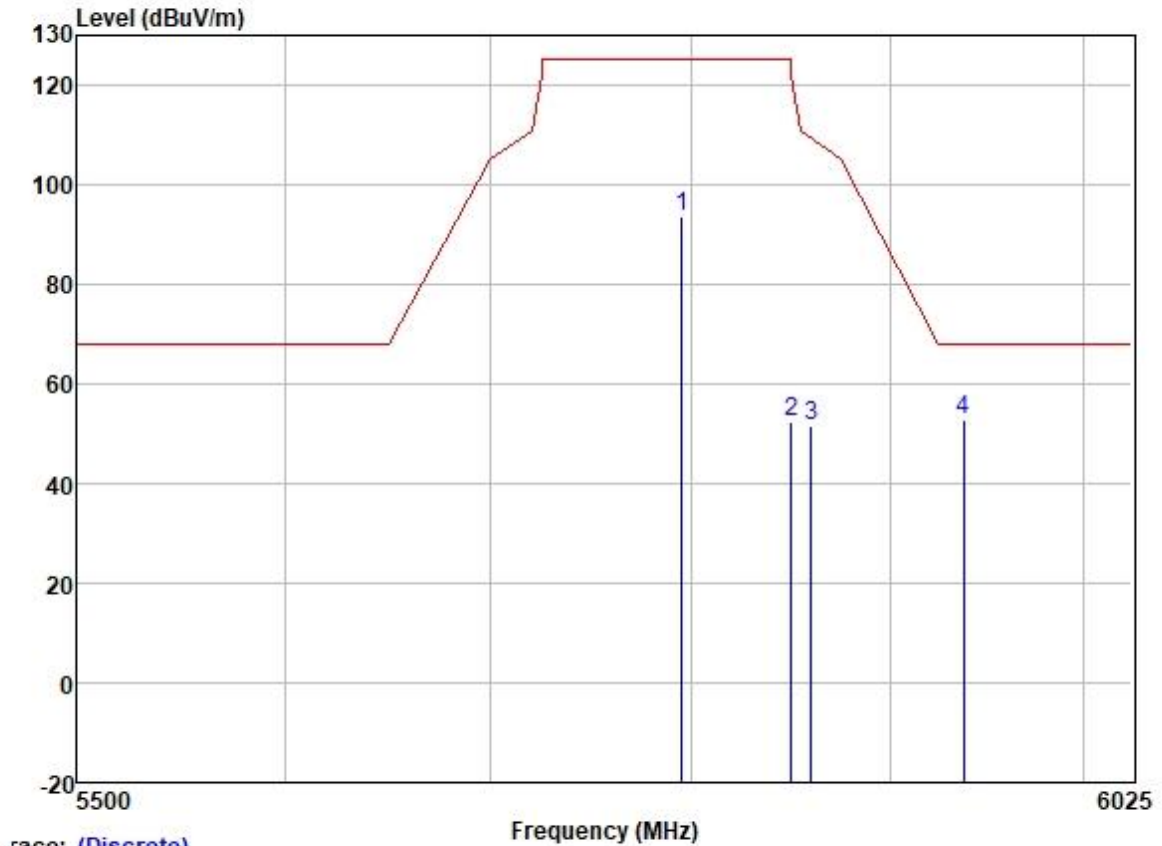
Test Mode: 08; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Trace: (Discrete)

		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5648.416	51.10	31.95	6.35	36.89	52.51	68.20	-15.69	VERTICAL	Peak
2	5715.000	59.08	32.04	6.33	36.89	60.56	109.40	-48.84	VERTICAL	Peak
3	5725.000	64.21	32.07	6.25	36.89	65.64	122.20	-56.56	VERTICAL	Peak
4	5755.000	98.90	32.10	6.20	36.89	100.31	125.20	-24.89	VERTICAL	Peak

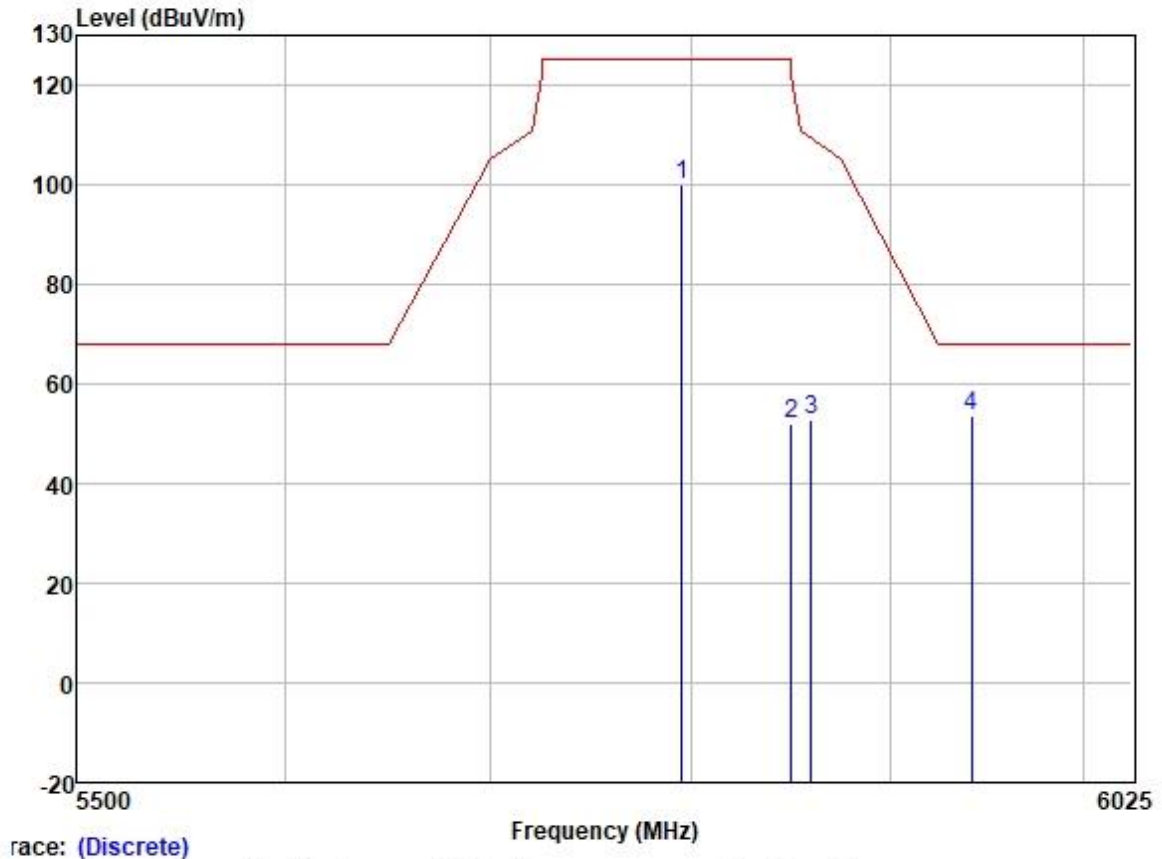
Test Mode: 08; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Trace: (Discrete)

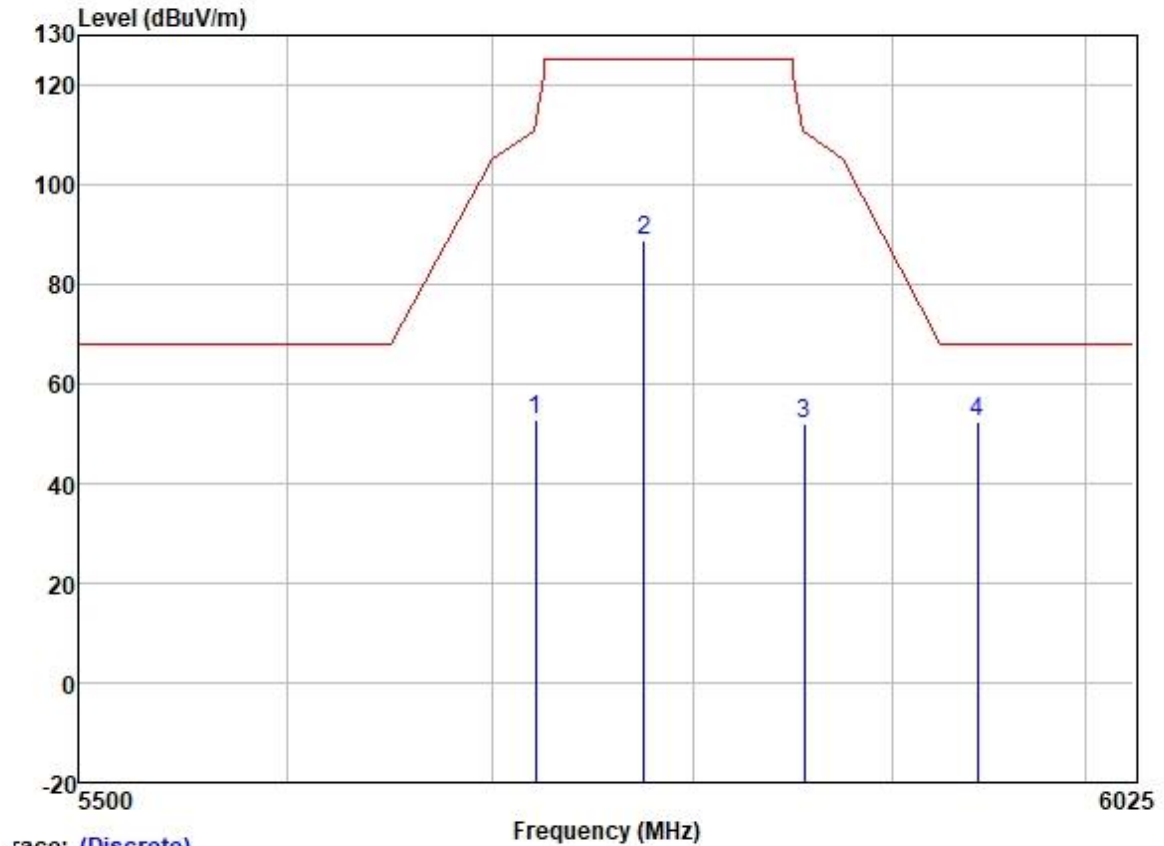
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5795.000	92.10	32.19	6.10	36.89	93.50	125.20	-31.70	HORIZONTAL	Peak
2	5850.000	50.95	32.25	6.00	36.90	52.30	122.20	-69.90	HORIZONTAL	Peak
3	5860.000	50.44	32.27	5.96	36.90	51.77	109.40	-57.63	HORIZONTAL	Peak
4	5937.681	51.31	32.34	6.00	36.90	52.75	68.20	-15.45	HORIZONTAL	Peak

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



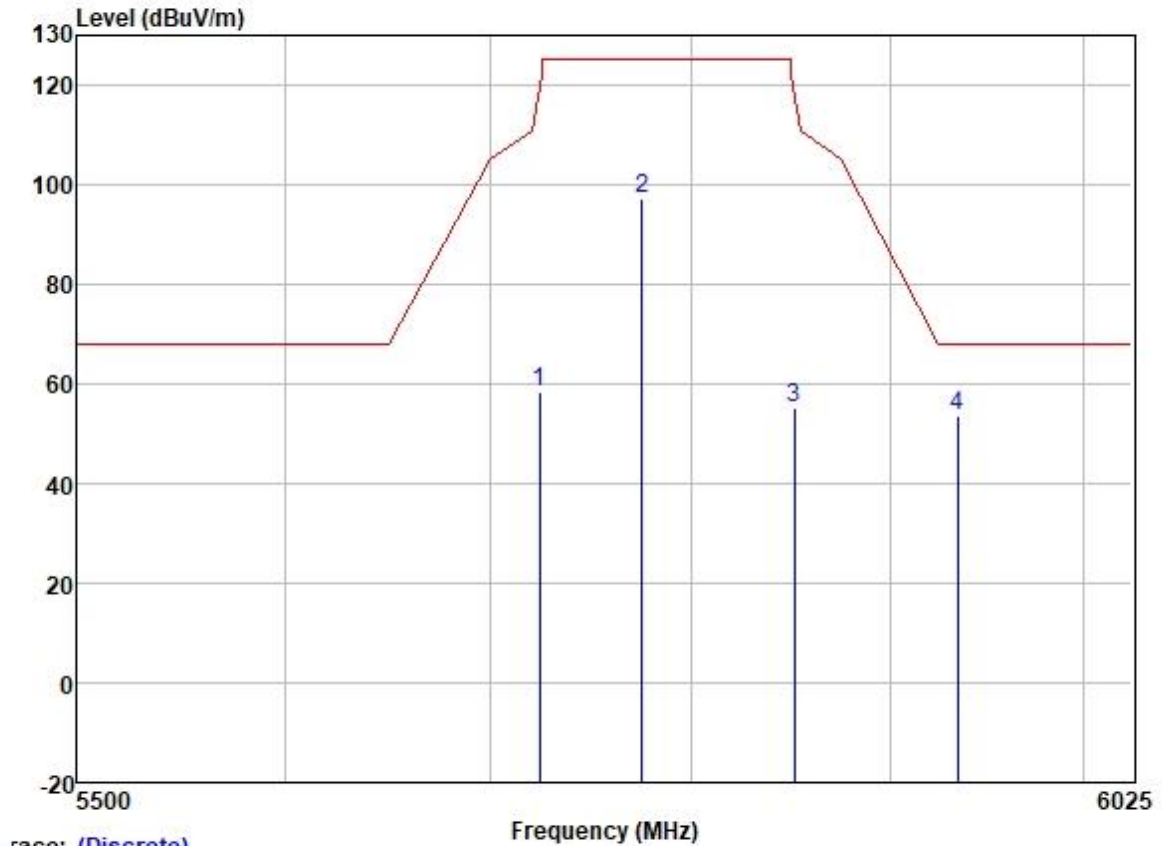
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5795.000	98.70	32.19	6.10	36.89	100.10	125.20	-25.10	VERTICAL	Peak
2	5850.000	50.68	32.25	6.00	36.90	52.03	122.20	-70.17	VERTICAL	Peak
3	5860.000	51.66	32.27	5.96	36.90	52.99	109.40	-56.41	VERTICAL	Peak
4	5942.152	51.97	32.36	6.05	36.90	53.48	68.20	-14.72	VERTICAL	Peak

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



		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5721.376	51.46	32.04	6.33	36.89	52.94	113.94	-61.00	HORIZONTAL	Peak
2	5775.000	87.62	32.16	6.10	36.89	88.99	125.20	-36.21	HORIZONTAL	Peak
3	5855.507	50.80	32.25	6.00	36.90	52.15	110.66	-58.51	HORIZONTAL	Peak
4	5943.748	50.94	32.36	6.05	36.90	52.45	68.20	-15.75	HORIZONTAL	Peak

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



Trace: (Discrete)

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5724.390	56.81	32.07	6.25	36.89	58.24	120.81	-62.57	VERTICAL	Peak
2	5775.000	95.71	32.16	6.10	36.89	97.08	125.20	-28.12	VERTICAL	Peak
3	5851.808	53.72	32.25	6.00	36.90	55.07	118.08	-63.01	VERTICAL	Peak
4	5934.677	52.15	32.34	6.00	36.90	53.59	68.20	-14.61	VERTICAL	Peak

7.10 Frequency Stability

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

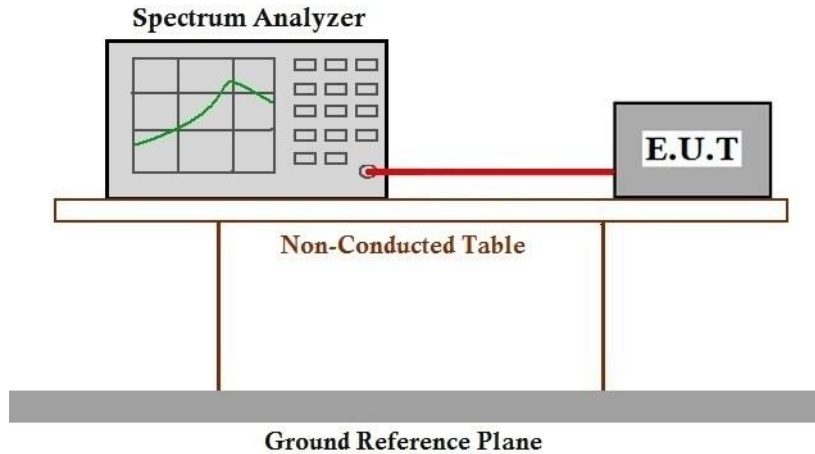
7.10.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.10.2 Test Mode Description

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

7.10.3 Test Setup Diagram



7.10.4 Measurement Procedure and Data

The applicant declares that the emissions are maintained within the band of operation under all conditions of normal operation as specified in the user's manual and meets Section 15.407(g) requirements.

7.11 Channel Move Time

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

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

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

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

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

7.11.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

7.11.2 Test Mode Description

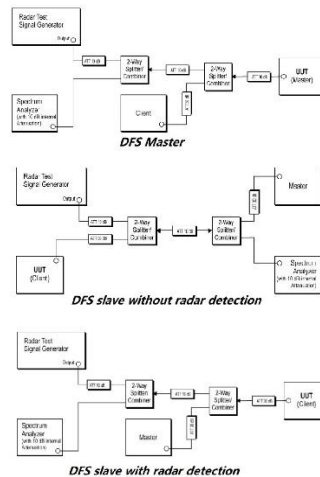
Pre-scan / Final test	Mode Code	Description
Final test	09	Normal operating_Keep the EUT communication with the companion device.



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7.11.3 Test Setup Diagram



7.11.4 Measurement Procedure and Data

- 1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
- 2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.
- 3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
- 4) EUT will associate with the master at channel. The file "iperf.exe" specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.
- 5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
- 6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.
- 7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: $Dwell (0.3ms) = S (12000ms) / B (4000)$; where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: $C (ms) = N \times Dwell (0.3ms)$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.
- 8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details



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7.12 Channel Closing Transmission Time

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

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

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

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

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



7.12.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C

Humidity: 52 % RH

Atmospheric Pressure: 1003 mbar

7.12.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	Normal operating_Keep the EUT communication with the companion device.

7.12.3 Test Setup Diagram

