



TEST REPORT

Application No.: GZCR2201000012AT
Applicant: Harman International Industries, Incorporated
Address of Applicant: 8500 Balboa Blvd, Northridge, CA 91329, UNITED STATES
Manufacturer: Harman International Industries, Incorporated
Address of Manufacturer: 8500 Balboa Blvd, Northridge, CA 91329, UNITED STATES
Factory: Guoguang Electric Co., Ltd.
Address of Factory: No.8 Jinghu Road, Xinya Street, Huadu Reg, Guangzhou, China
Equipment Under Test (EUT):
EUT Name: WIRELESS SPEAKER
Model No.: L75ms
Trade Mark: JBL
Standard(s) : 47 CFR Part 15, Subpart E 15.407
Date of Receipt: 2022-01-06
Date of Test: 2022-03-02 to 2022-05-07
Date of Issue: 2022-05-09

Test Result:

Pass*

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

Kobe Jian

Kobe Jian
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch EMC Laboratory

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Revision Record			
Version	Report No.	Date	Remark
01	GZCR220100001205	2022-05-09	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		KDB 789033 II B 1	KDB 789033 D02 II B 1	Pass
99% Bandwidth		KDB 789033 II D	N/A	Pass
26dB Emission bandwidth		KDB 789033 D02 II C 1	47 CFR Part 15, Subpart 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 (Above 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
Non-occupancy period		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	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 (Below 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.



3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents	4
4 General Information.....	6
4.1 Details of E.U.T.	6
4.2 Description of Support Units	6
4.3 Measurement Uncertainty	7
4.4 Test Location.....	7
4.5 Test Facility	8
4.6 Deviation from Standards.....	8
4.7 Abnormalities from Standard Conditions	8
5 Equipment List.....	9
6 Radio Spectrum Technical Requirement	13
6.1 Antenna Requirement	13
6.1.1 Test Requirement:	13
6.1.2 Conclusion	13
6.2 Transmission in the Absence of Data	14
6.2.1 Test Requirement:	14
6.2.2 Conclusion	14
7 Radio Spectrum Matter Test Results	15
7.1 Conducted Emissions at AC Power Line (150kHz-30MHz).....	15
7.1.1 E.U.T. Operation	15
7.1.2 Test Mode Description	15
7.1.3 Test Setup Diagram.....	16
7.1.4 Measurement Procedure and Data.....	16
7.2 Duty Cycle	19
7.2.1 E.U.T. Operation	19
7.2.2 Test Mode Description	19
7.2.3 Test Setup Diagram.....	20
7.2.4 Measurement Procedure and Data.....	20
7.3 99% Bandwidth	21
7.3.1 E.U.T. Operation	21
7.3.2 Test Mode Description	21
7.3.3 Test Setup Diagram.....	22
7.3.4 Measurement Procedure and Data.....	22
7.4 26dB Emission bandwidth	23
7.4.1 E.U.T. Operation	23
7.4.2 Test Mode Description	23
7.4.3 Test Setup Diagram.....	24
7.4.4 Measurement Procedure and Data.....	24
7.5 Minimum 6 dB bandwidth (5.725-5.85 GHz band)	25
7.5.1 E.U.T. Operation	25



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7.5.2	Test Mode Description	25
7.5.3	Test Setup Diagram	25
7.5.4	Measurement Procedure and Data	25
7.6	Maximum Conducted output power	26
7.6.1	E.U.T. Operation	26
7.6.2	Test Mode Description	26
7.6.3	Test Setup Diagram	27
7.6.4	Measurement Procedure and Data	27
7.7	Peak Power spectrum density	28
7.7.1	E.U.T. Operation	28
7.7.2	Test Mode Description	28
7.7.3	Test Setup Diagram	29
7.7.4	Measurement Procedure and Data	29
7.8	Radiated Emissions (Above 1GHz)	30
7.8.1	E.U.T. Operation	30
7.8.2	Test Mode Description	30
7.8.3	Test Setup Diagram	31
7.8.4	Measurement Procedure and Data	32
7.9	Radiated Emissions which fall in the restricted bands	85
7.9.1	E.U.T. Operation	85
7.9.2	Test Mode Description	86
7.9.3	Test Setup Diagram	87
7.9.4	Measurement Procedure and Data	87
7.10	Frequency Stability	130
7.10.1	Measurement Procedure and Data	130
7.11	Radiated Emissions (Below 1GHz)	131
7.11.1	E.U.T. Operation	131
7.11.2	Test Mode Description	131
7.11.3	Test Setup Diagram	132
7.11.4	Measurement Procedure and Data	133
8	Test Setup Photo	136
9	EUT Constructional Details (EUT Photos)	137
10	Appendix	138
10.1	Appendix A1: Emission Bandwidth	138
10.1.1	Test Result	138
10.1.2	Test Graphs	141
10.2	Appendix A2: Occupied channel bandwidth	200
10.2.1	Test Result	200
10.2.2	Test Graphs	203
10.3	Appendix A3: Min emission bandwidth	262
10.3.1	Test Result	262
10.3.2	Test Graphs	263
10.4	Appendix B: Maximum conducted output power	277
10.4.1	Test Result	277
10.5	Appendix C: Maximum power spectral density	279
10.5.1	Test Result	279
10.5.2	Test Graphs	281
10.6	Appendix D: Duty Cycle	340
10.6.1	Test Result	340
10.6.2	Test Graphs	343



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4 General Information

4.1 Details of E.U.T.

Power supply:	AC 100-240V 50/60Hz DC 3V for remote controller
Cable(s):	About 1.2m x 2 wires unscreened AC mains cable
Test Voltage:	AC 120 V, 60 Hz
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:	Without TPC function
Antenna Type:	Integral Antenna ANT1:7dBi
Antenna Gain:	ANT2:7dBi 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)	± 2.76dB
Duty Cycle	± 0.37%
99% Bandwidth	± 3%
26dB Emission bandwidth	± 3%
Minimum 6 dB bandwidth (5.725-5.85 GHz band)	± 3%
Maximum Conducted output power	± 0.75dB
Peak Power spectrum density	± 2.84dB
Frequency Stability	± 7.25 x 10-8
Radiated Emissions which fall in the restricted bands	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m);± 5.12dB (1GHz-6GHz);± 5.38dB (6GHz-18GHz); ± 5.61dB (18GHz-40GHz)
Radiated Emissions (Below 1GHz)	±5.00dB (3m); ±4.38dB (10m)
Radiated Emissions (Above 1GHz)	± 5.12dB (1GHz-6GHz);± 5.38dB (6GHz-18GHz); ± 5.61dB (18GHz-40GHz)

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.



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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.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **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.

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
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2019-10-20	2022-10-19
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2021-09-24	2022-09-23
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2021-06-01	2022-05-31
Test Software E3r	Audix	Ver.6.11812	GZE100-77	N/A	N/A

Duty Cycle					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-02	2023-11-01
EXA Signal Analyzer	Agilent Technologies	N9010A	EMC2222	2021-06-22	2022-06-21
Power Meter (U2021XA_Ch1)	Agilent Technologies	U2021XA_Ch1	SEM009-01	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch4)	Agilent Technologies	U2021XA_Ch4	SEM009-04	2021-05-19	2022-05-18
Test Software JS1120-3	JS Tonscend	V2.6	GZE100-69	N/A	N/A

99% Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-02	2023-11-01
EXA Signal Analyzer	Agilent Technologies	N9010A	EMC2222	2021-06-22	2022-06-21
Power Meter (U2021XA_Ch1)	Agilent Technologies	U2021XA_Ch1	SEM009-01	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch4)	Agilent Technologies	U2021XA_Ch4	SEM009-04	2021-05-19	2022-05-18
Test Software JS1120-3	JS Tonscend	V2.6	GZE100-69	N/A	N/A



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26dB Emission bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-02	2023-11-01
EXA Signal Analyzer	Agilent Technologies	N9010A	EMC2222	2021-06-22	2022-06-21
Power Meter (U2021XA_Ch1)	Agilent Technologies	U2021XA_Ch1	SEM009-01	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch4)	Agilent Technologies	U2021XA_Ch4	SEM009-04	2021-05-19	2022-05-18
Test Software JS1120-3	JS Tonscend	V2.6	GZE100-69	N/A	N/A

Minimum 6 dB bandwidth (5.725-5.85 GHz band)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-02	2023-11-01
EXA Signal Analyzer	Agilent Technologies	N9010A	EMC2222	2021-06-22	2022-06-21
Power Meter (U2021XA_Ch1)	Agilent Technologies	U2021XA_Ch1	SEM009-01	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch4)	Agilent Technologies	U2021XA_Ch4	SEM009-04	2021-05-19	2022-05-18
Test Software JS1120-3	JS Tonscend	V2.6	GZE100-69	N/A	N/A

Maximum Conducted output power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-02	2023-11-01
EXA Signal Analyzer	Agilent Technologies	N9010A	EMC2222	2021-06-22	2022-06-21
Power Meter (U2021XA_Ch1)	Agilent Technologies	U2021XA_Ch1	SEM009-01	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch4)	Agilent Technologies	U2021XA_Ch4	SEM009-04	2021-05-19	2022-05-18
Test Software JS1120-3	JS Tonscend	V2.6	GZE100-69	N/A	N/A



Peak Power spectrum density					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-02	2023-11-01
EXA Signal Analyzer	Agilent Technologies	N9010A	EMC2222	2021-06-22	2022-06-21
Power Meter (U2021XA_Ch1)	Agilent Technologies	U2021XA_Ch1	SEM009-01	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch2	SEM009-02	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch3)	Agilent Technologies	U2021XA_Ch3	SEM009-03	2021-05-19	2022-05-18
Power Meter (U2021XA_Ch4)	Agilent Technologies	U2021XA_Ch4	SEM009-04	2021-05-19	2022-05-18
Test Software JS1120-3	JS Tonscend	V2.6	GZE100-69	N/A	N/A

Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-12-17	2022-12-16
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2020-09-09	2022-09-08
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2019-09-25	2022-09-24
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
Notch Filter (5150-5880)	Mico-Tronics	BRM50716	EMC2168	2021-07-29	2022-07-28
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-12-17	2022-12-16
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2020-09-09	2022-09-08
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2019-09-25	2022-09-24
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Radiated Emissions (Below 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Amplifier (9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2022-04-06	2024-04-05
EMI Test Receiver (1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Trilog Broadband Antenna (25MHz-1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	EMC2174	2019-08-08	2022-08-07

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2021-07-05	2022-07-05



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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:

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

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the Antenna 1: 7dBi; Antenna 2: 7dBi;

Directional gain=Gant + 10 log(Nant) =10.01dBi

Please refer to internal photos..

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 signaling 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: RF chip (AP6398SV) support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.

7 Radio Spectrum Matter Test Results

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

Test Requirement 47 CFR Part 15, Subpart C 15.207 & 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: 23.8 °C Humidity: 52.6 % RH Atmospheric Pressure: 1020 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT 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	09	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	10	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.



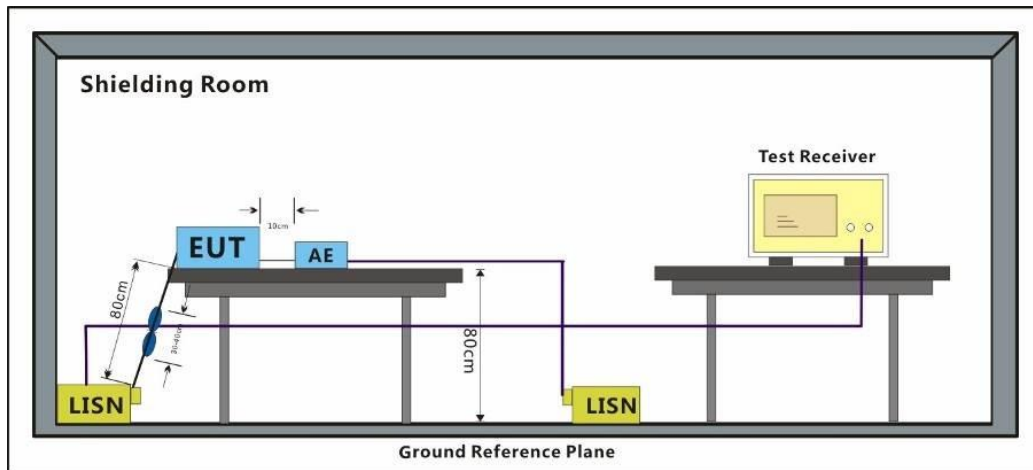
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Pre-scan 11

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

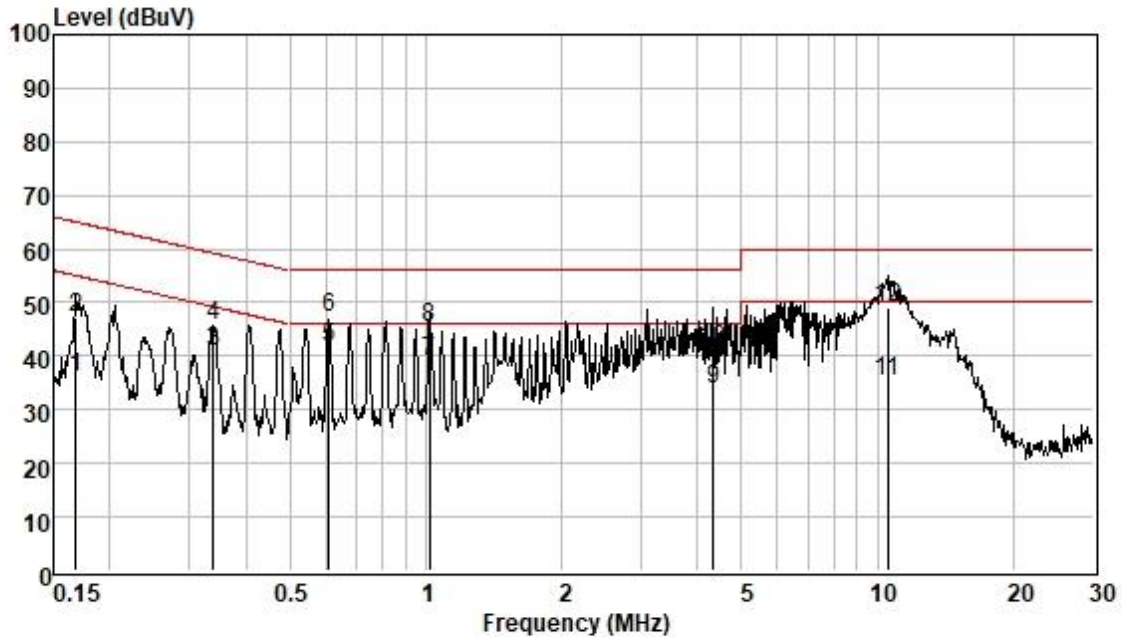


7.1.4 Measurement Procedure and Data

- 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.

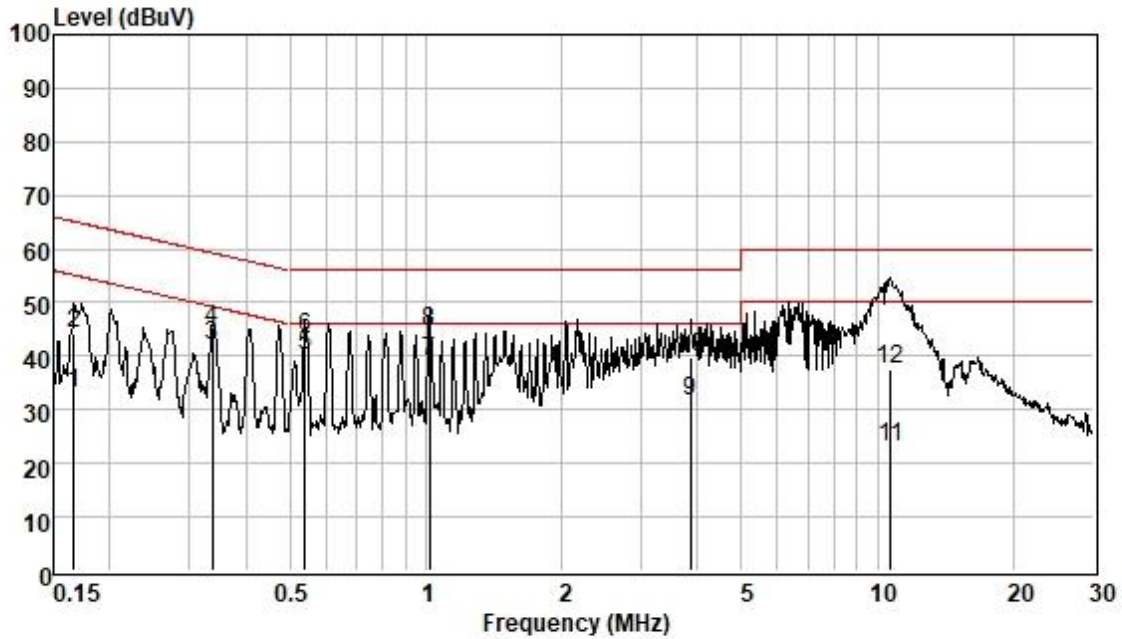
Remark: Level=Read Level+ Cable Loss+ LISN Factor

Test Mode: 08; Line: Live line

Pol : LINE
Mode :
Model :

	Freque	Read	Cable	LISN	Measured	Limit	Over	Remark
	nc	Level	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.169	26.52	0.06	9.55	36.13	55.03	-18.90	Average
2	0.169	37.56	0.06	9.55	47.17	65.03	-17.86	QP
3	0.339	31.28	0.06	9.58	40.92	49.22	-8.30	Average
4	0.339	36.10	0.06	9.58	45.74	59.22	-13.48	QP
5	0.611	31.80	0.07	9.59	41.46	46.00	-4.54	Average
6	0.611	37.40	0.07	9.59	47.06	56.00	-8.94	QP
7	1.021	29.39	0.07	9.60	39.06	46.00	-6.94	Average
8	1.021	35.71	0.07	9.60	45.38	56.00	-10.62	QP
9	4.338	24.04	0.17	9.65	33.86	46.00	-12.14	Average
10	4.338	31.49	0.17	9.65	41.31	56.00	-14.69	QP
11	10.508	25.19	0.24	9.78	35.21	50.00	-14.79	Average
12	10.508	38.90	0.24	9.78	48.92	60.00	-11.08	QP

Test Mode: 08; Line: Neutral Line



Pol : NEUTRAL
Mode :
Model :

	Freque	Read	Cable	LISN	Measured	Limit	Over	Remark
	nc	Level	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.167	23.43	0.06	9.54	33.03	55.12	-22.09	Average
2	0.167	34.79	0.06	9.54	44.39	65.12	-20.73	QP
3	0.337	32.45	0.06	9.57	42.08	49.27	-7.19	Average
4	0.337	35.39	0.06	9.57	45.02	59.27	-14.25	QP
5	0.541	30.39	0.07	9.58	40.04	46.00	-5.96	Average
6	0.541	33.93	0.07	9.58	43.58	56.00	-12.42	QP
7	1.021	29.30	0.07	9.59	38.96	46.00	-7.04	Average
8	1.021	35.04	0.07	9.59	44.70	56.00	-11.30	QP
9	3.860	21.73	0.16	9.63	31.52	46.00	-14.48	Average
10	3.860	29.82	0.16	9.63	39.61	56.00	-16.39	QP
11	10.676	13.09	0.24	9.79	23.12	50.00	-26.88	Average
12	10.676	27.33	0.24	9.79	37.36	60.00	-22.64	QP



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7.2 Duty Cycle

Test Requirement KDB 789033 D02 II B 1
Test Method: KDB 789033 II B 1

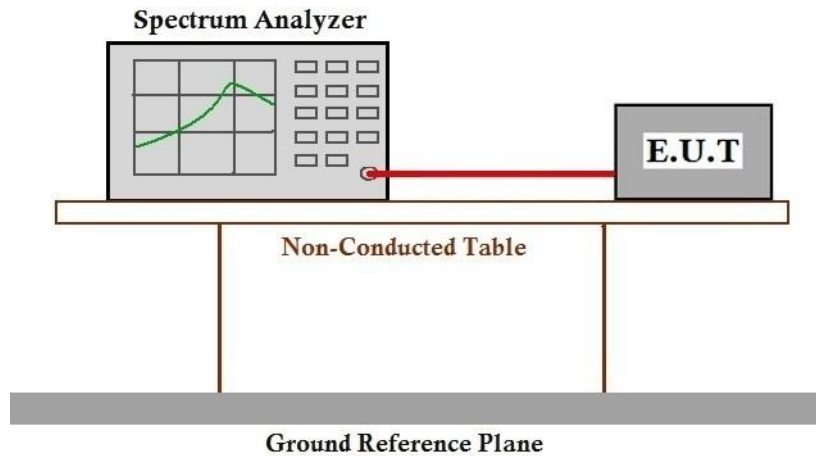
7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 23.4 °C Humidity: 48.3 % RH Atmospheric Pressure: 1005 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT 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	09	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	10	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	11	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

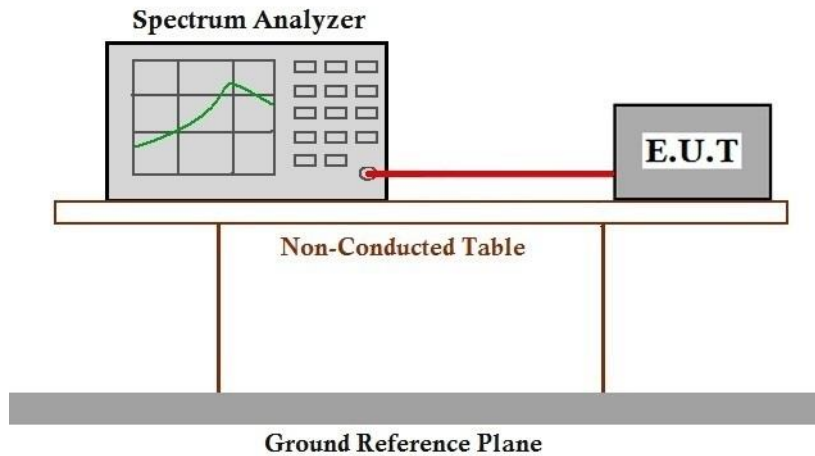
Operating Environment:
Temperature: 23.4 °C Humidity: 48.3 % RH Atmospheric Pressure: 1005 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT 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	09	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	10	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	11	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

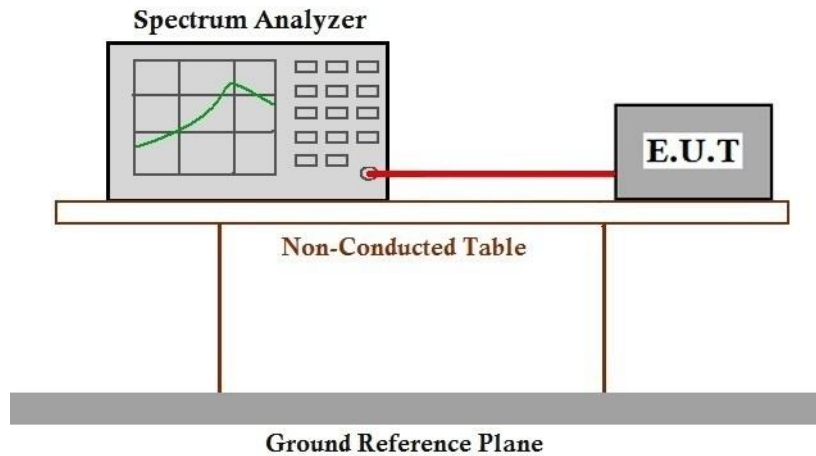
7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 23.4 °C Humidity: 48.3 % RH Atmospheric Pressure: 1005 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT 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	09	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	10	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	11	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: 23.4 °C

Humidity: 48.3 % RH

Atmospheric Pressure: 1005 mbar

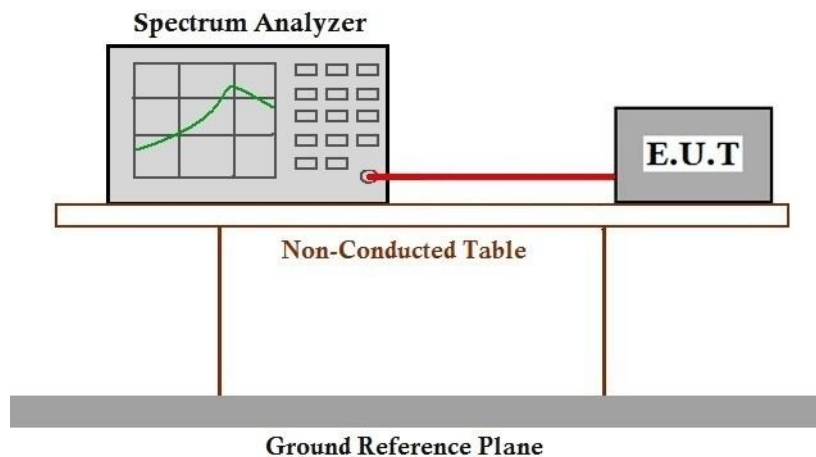
7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
--------------------------	--------------	-------------

Final test	11	
------------	----	--

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: 23.4 °C

Humidity: 48.3 % RH

Atmospheric Pressure: 1005 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT 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	09	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	10	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.



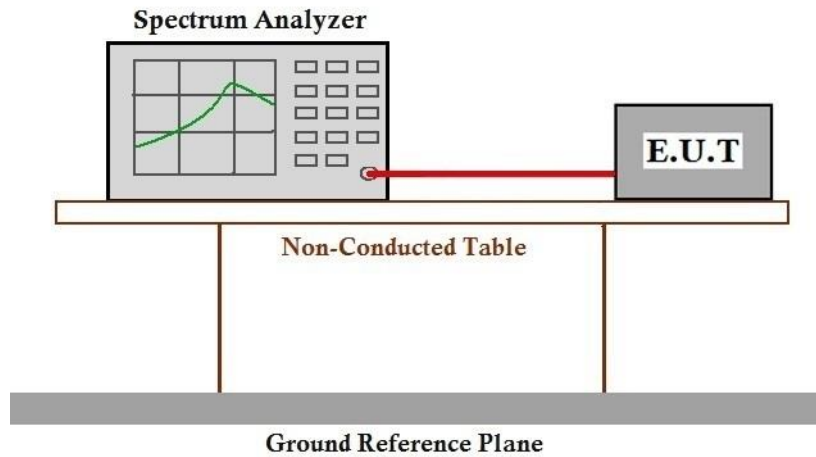
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Final test 11

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: 23.4 °C

Humidity: 48.3 % RH

Atmospheric Pressure: 1005 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT 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	09	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	10	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.



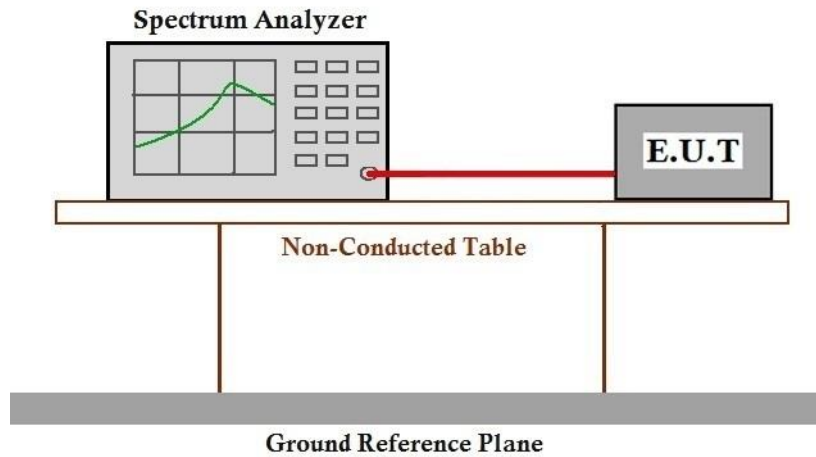
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Final test 11

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 (Above 1GHz)

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

Test Method: KDB 789033 D02 II G

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1GHz	500	3
*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (4) For transmitters operating in the 5.725-5.85 GHz band: (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 23.4 °C Humidity: 67.9 % RH Atmospheric Pressure: 1008 mbar

7.8.2 Test Mode Description

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

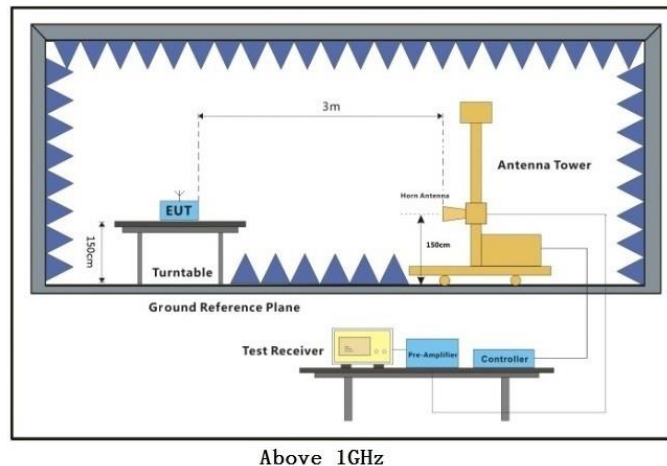


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- Final test 09 TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 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 10 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 11 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

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

Remark:

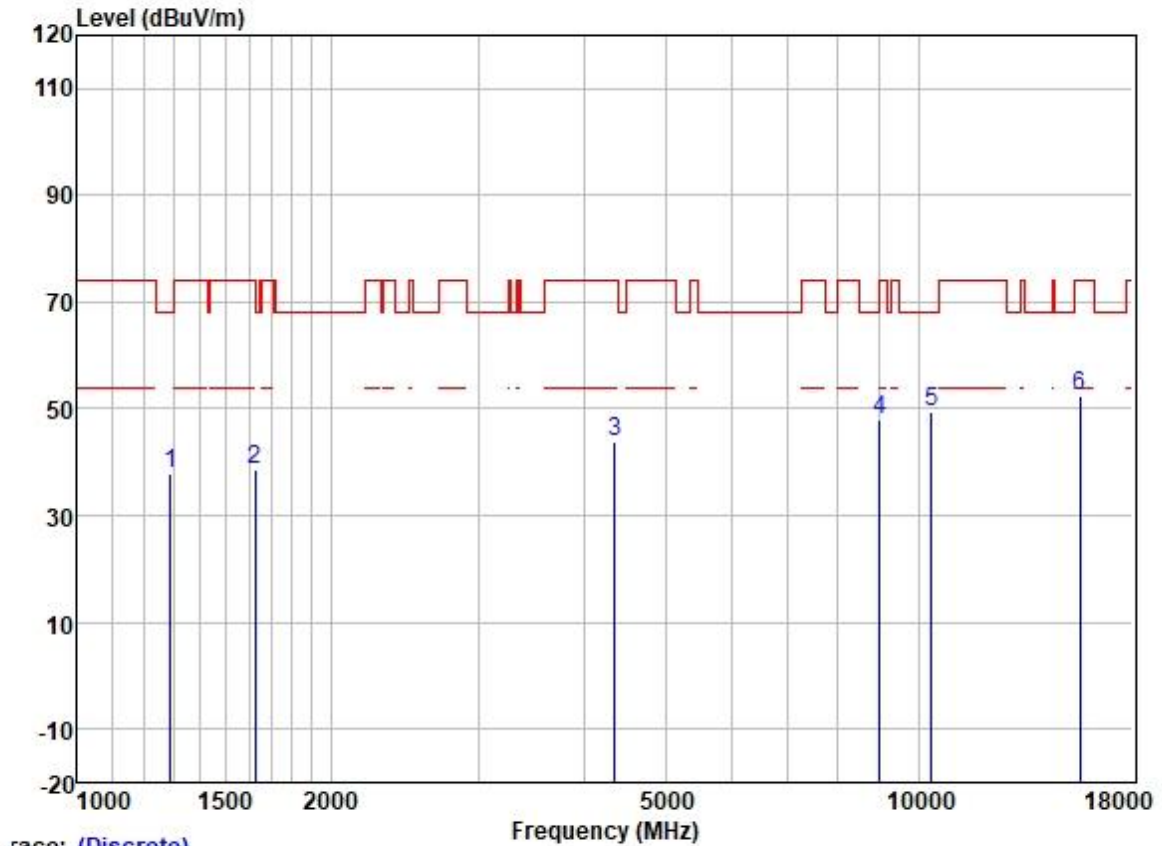
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



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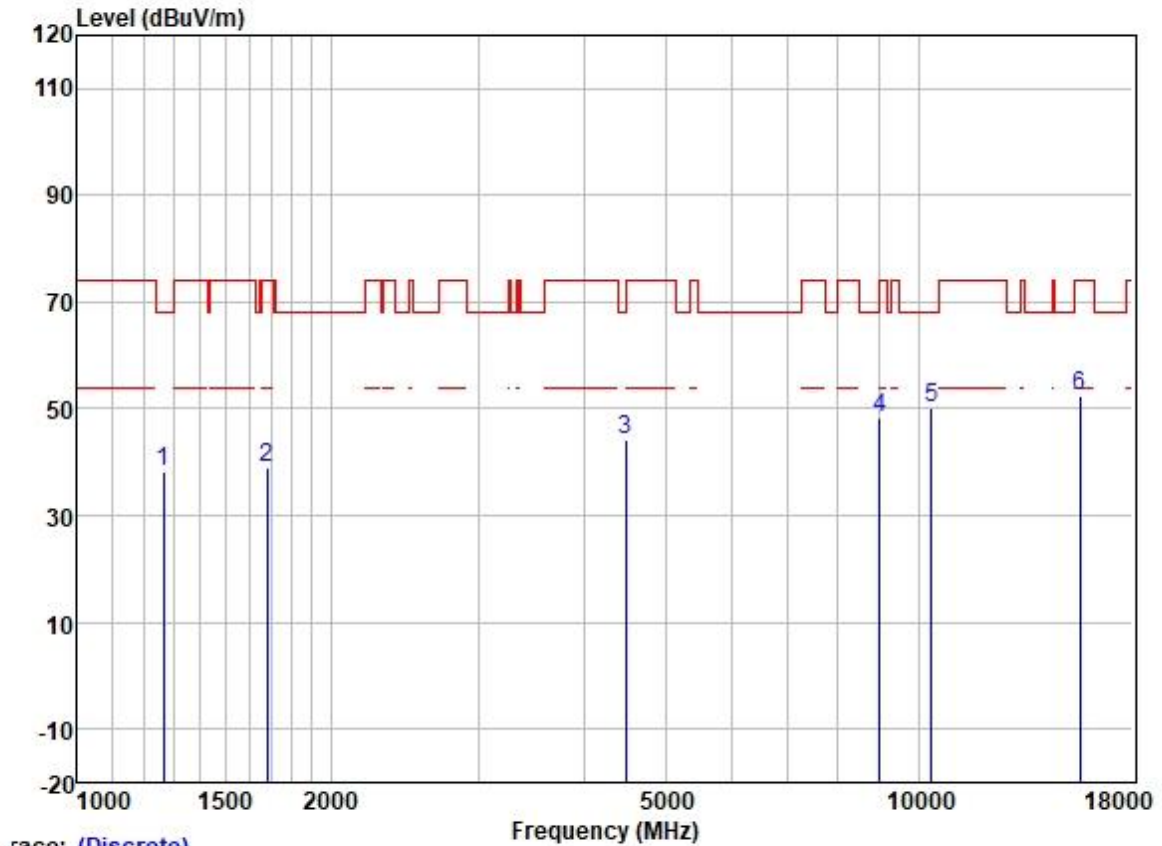
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Trace: (Discrete)

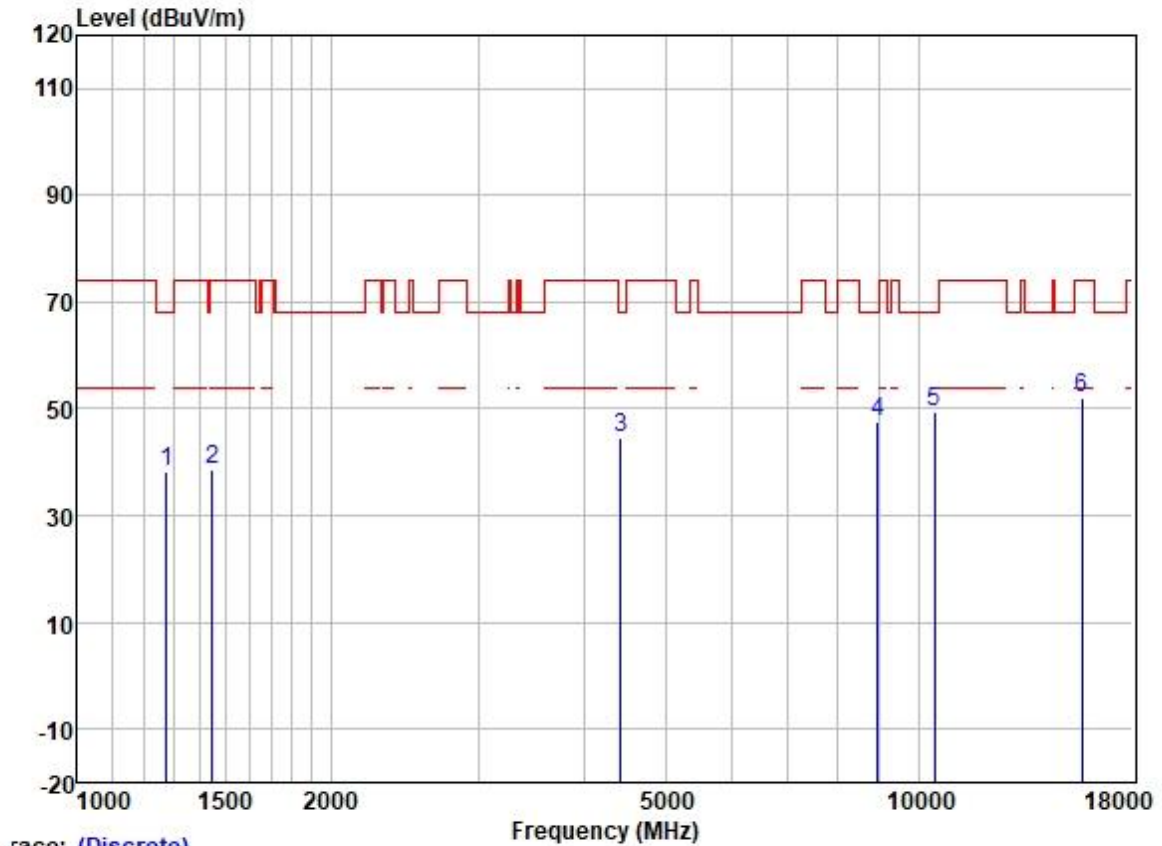
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	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1289.627	48.18	25.17	2.55	38.04	37.86	68.20	-30.34	VERTICAL peak
2	1625.121	47.91	25.61	2.80	37.55	38.77	74.00	-35.23	VERTICAL peak
3	4354.454	45.12	30.59	4.68	36.64	43.75	74.00	-30.25	VERTICAL peak
4	8995.123	40.03	37.40	7.56	37.05	47.94	68.20	-20.26	VERTICAL peak
5	10360.000	39.82	39.28	7.29	36.77	49.62	68.20	-18.58	VERTICAL peak
6	15540.000	39.73	39.05	9.88	36.15	52.51	74.00	-21.49	VERTICAL peak

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



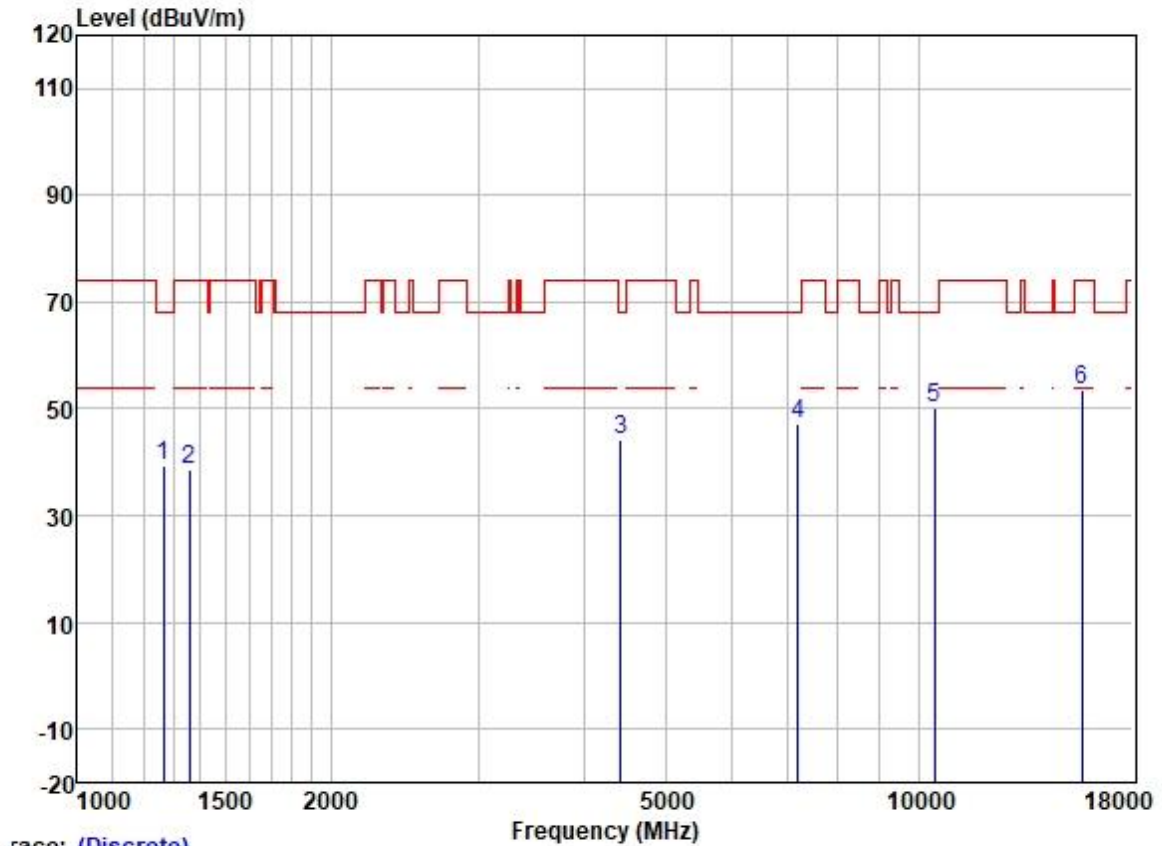
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	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1267.454	48.61	25.10	2.44	38.07	38.08	68.20	-30.12	HORIZONTAL peak
2	1682.477	48.14	25.68	2.80	37.48	39.14	74.00	-34.86	HORIZONTAL peak
3	4482.150	45.15	30.78	4.99	36.61	44.31	68.20	-23.89	HORIZONTAL peak
4	8995.123	40.23	37.40	7.56	37.05	48.14	68.20	-20.06	HORIZONTAL peak
5	10360.000	40.45	39.28	7.29	36.77	50.25	68.20	-17.95	HORIZONTAL peak
6	15540.000	39.77	39.05	9.88	36.15	52.55	74.00	-21.45	HORIZONTAL peak

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



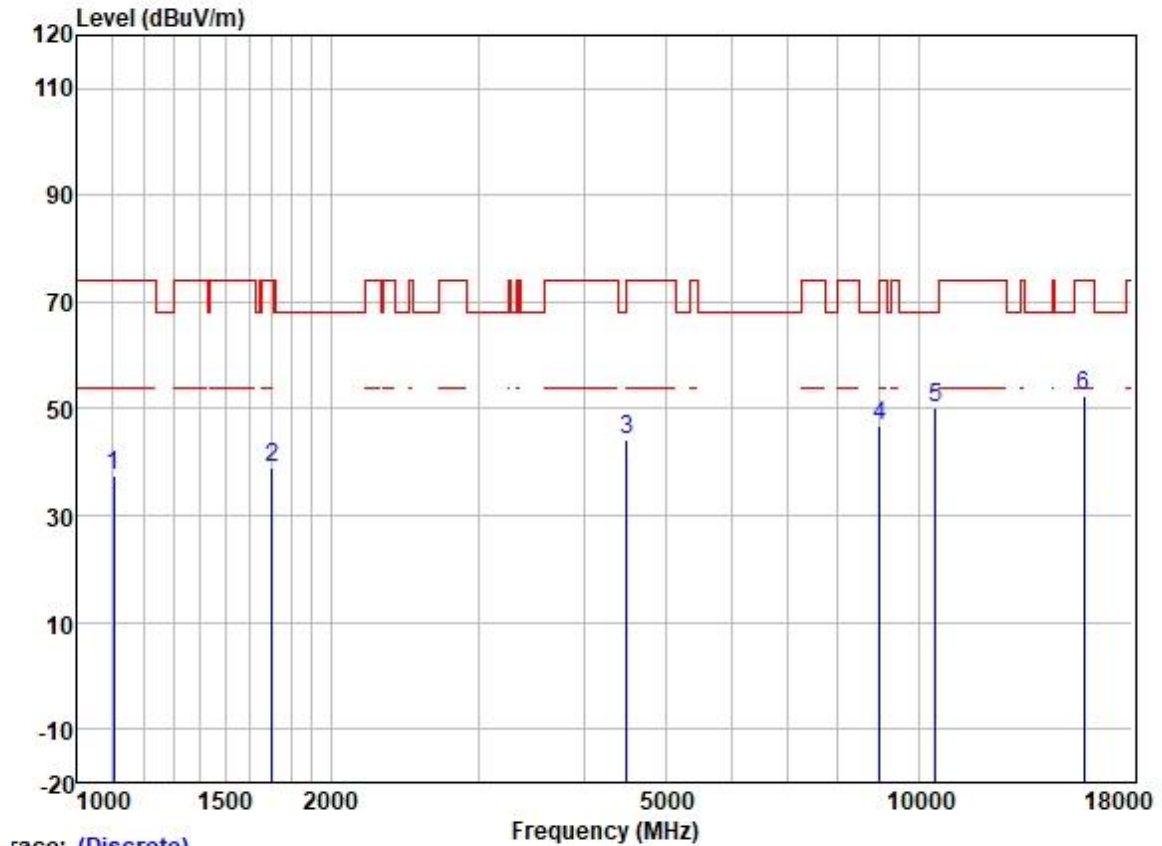
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	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	48.65	25.12	2.48	38.07	38.18	68.20	-30.02	VERTICAL peak
2	1447.688	48.22	25.45	2.70	37.84	38.53	74.00	-35.47	VERTICAL peak
3	4430.628	45.53	30.72	4.78	36.62	44.41	68.20	-23.79	VERTICAL peak
4	8943.274	39.61	37.38	7.49	37.08	47.40	68.20	-20.80	VERTICAL peak
5	10440.000	39.55	39.42	7.37	36.76	49.58	68.20	-18.62	VERTICAL peak
6	15660.000	39.60	38.86	9.87	36.19	52.14	74.00	-21.86	VERTICAL peak

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



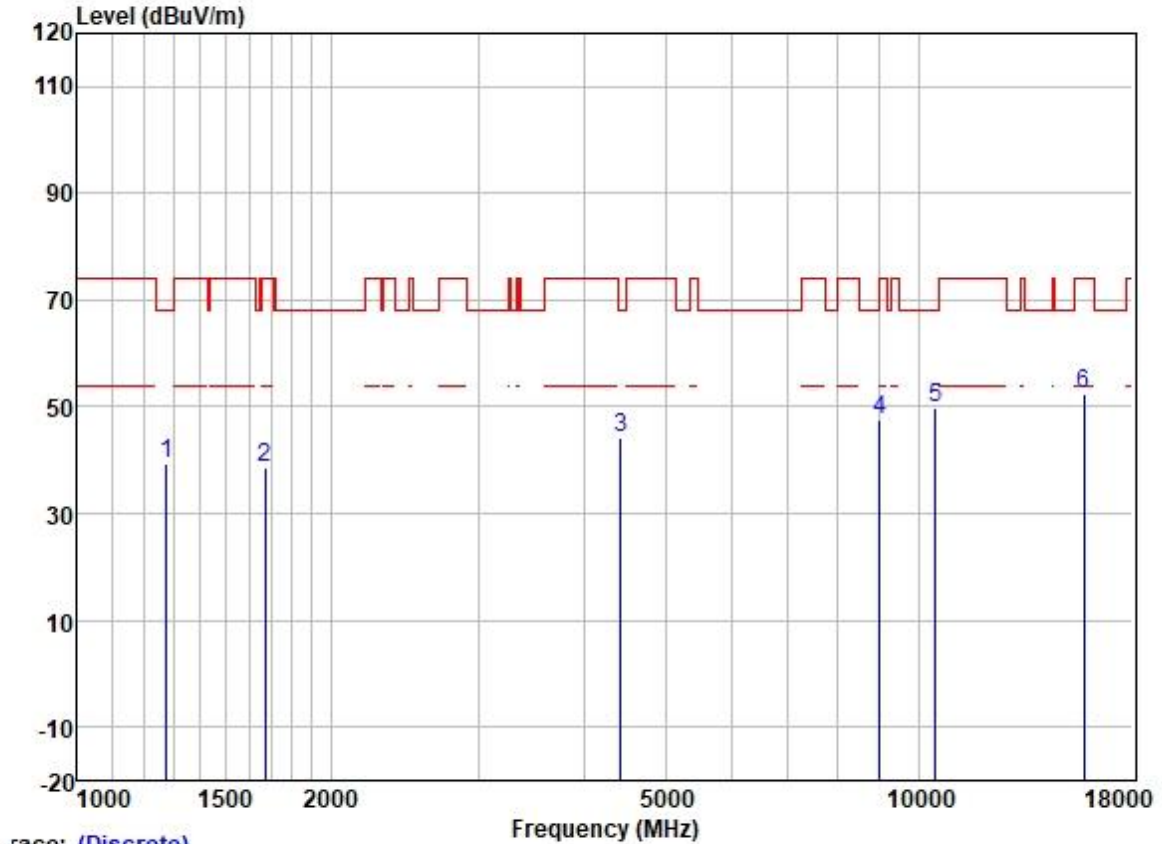
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	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1267.454	49.82	25.10	2.44	38.07	39.29	68.20	-28.91	HORIZONTAL	peak
2	1358.498	48.59	25.33	2.60	37.99	38.53	74.00	-35.47	HORIZONTAL	peak
3	4430.628	45.40	30.72	4.78	36.62	44.28	68.20	-23.92	HORIZONTAL	peak
4	7200.309	42.73	35.54	5.98	36.92	47.33	68.20	-20.87	HORIZONTAL	peak
5	10440.000	40.13	39.42	7.37	36.76	50.16	68.20	-18.04	HORIZONTAL	peak
6	15660.000	40.87	38.86	9.87	36.19	53.41	74.00	-20.59	HORIZONTAL	peak

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



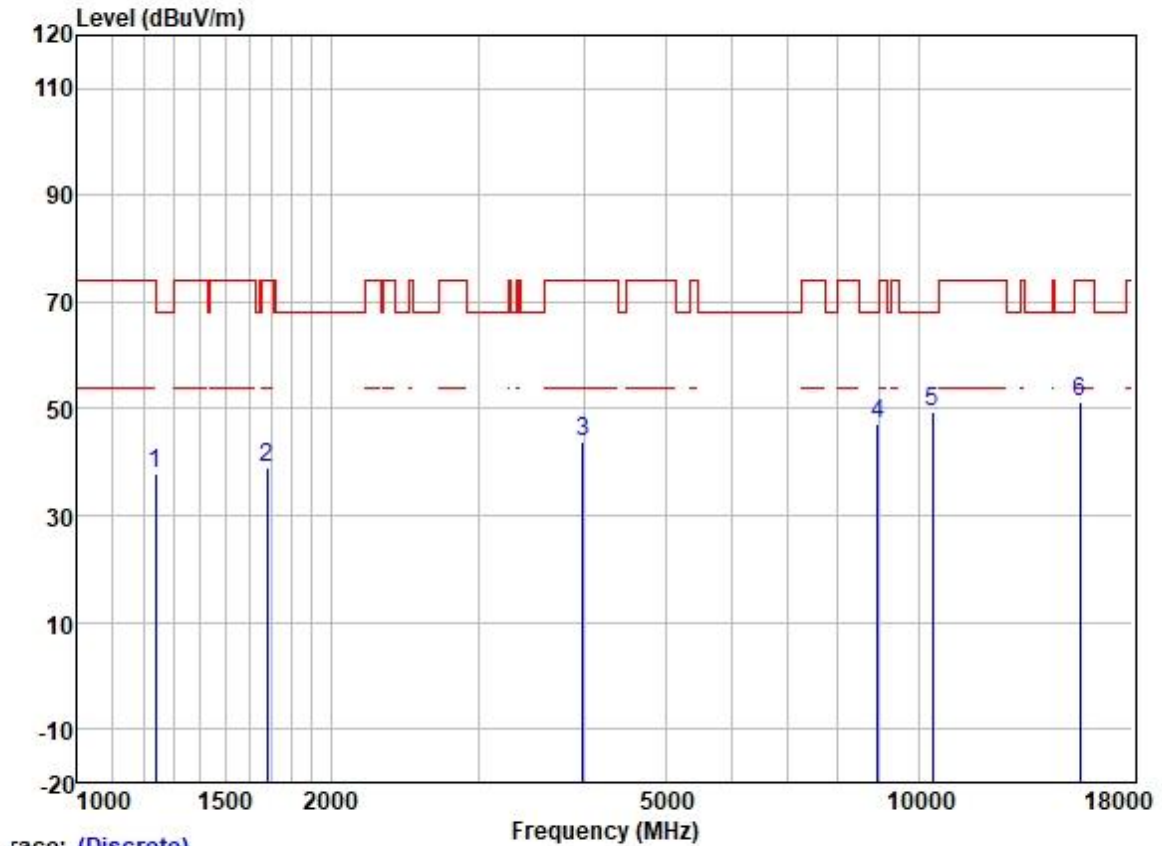
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1103.264	48.94	24.37	2.29	38.23	37.37	74.00	-36.63	VERTICAL	peak
2	1702.042	47.76	25.72	2.80	37.46	38.82	74.00	-35.18	VERTICAL	peak
3	4495.125	44.80	30.80	5.05	36.60	44.05	68.20	-24.15	VERTICAL	peak
4	8995.123	38.88	37.40	7.56	37.05	46.79	68.20	-21.41	VERTICAL	peak
5	10480.000	40.26	39.46	7.40	36.76	50.36	68.20	-17.84	VERTICAL	peak
6	15720.000	40.05	38.78	9.87	36.22	52.48	74.00	-21.52	VERTICAL	peak

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



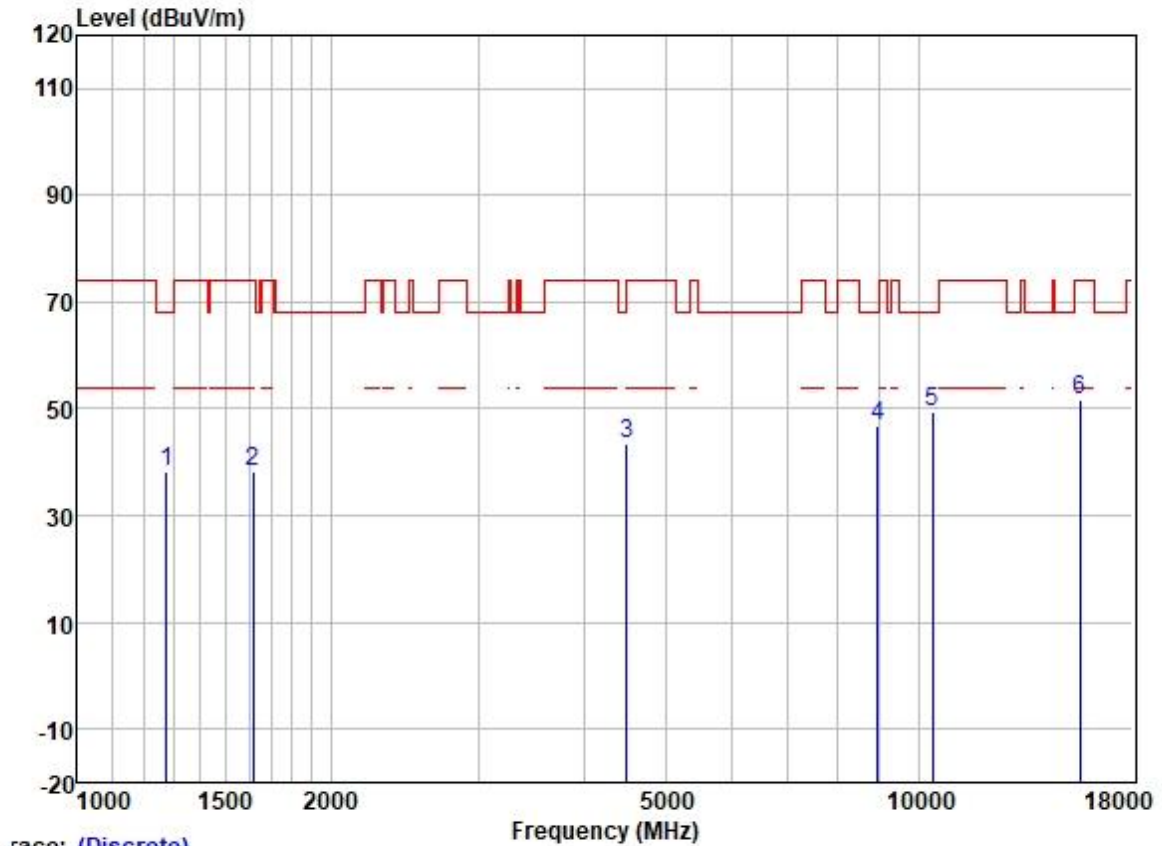
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	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	49.90	25.12	2.48	38.07	39.43	68.20	-28.77	HORIZONTAL peak
2	1672.779	47.70	25.67	2.80	37.48	38.69	74.00	-35.31	HORIZONTAL peak
3	4430.628	45.42	30.72	4.78	36.62	44.30	68.20	-23.90	HORIZONTAL peak
4	8995.123	39.72	37.40	7.56	37.05	47.63	68.20	-20.57	HORIZONTAL peak
5	10480.000	39.54	39.46	7.40	36.76	49.64	68.20	-18.56	HORIZONTAL peak
6	15720.000	40.12	38.78	9.87	36.22	52.55	74.00	-21.45	HORIZONTAL peak

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



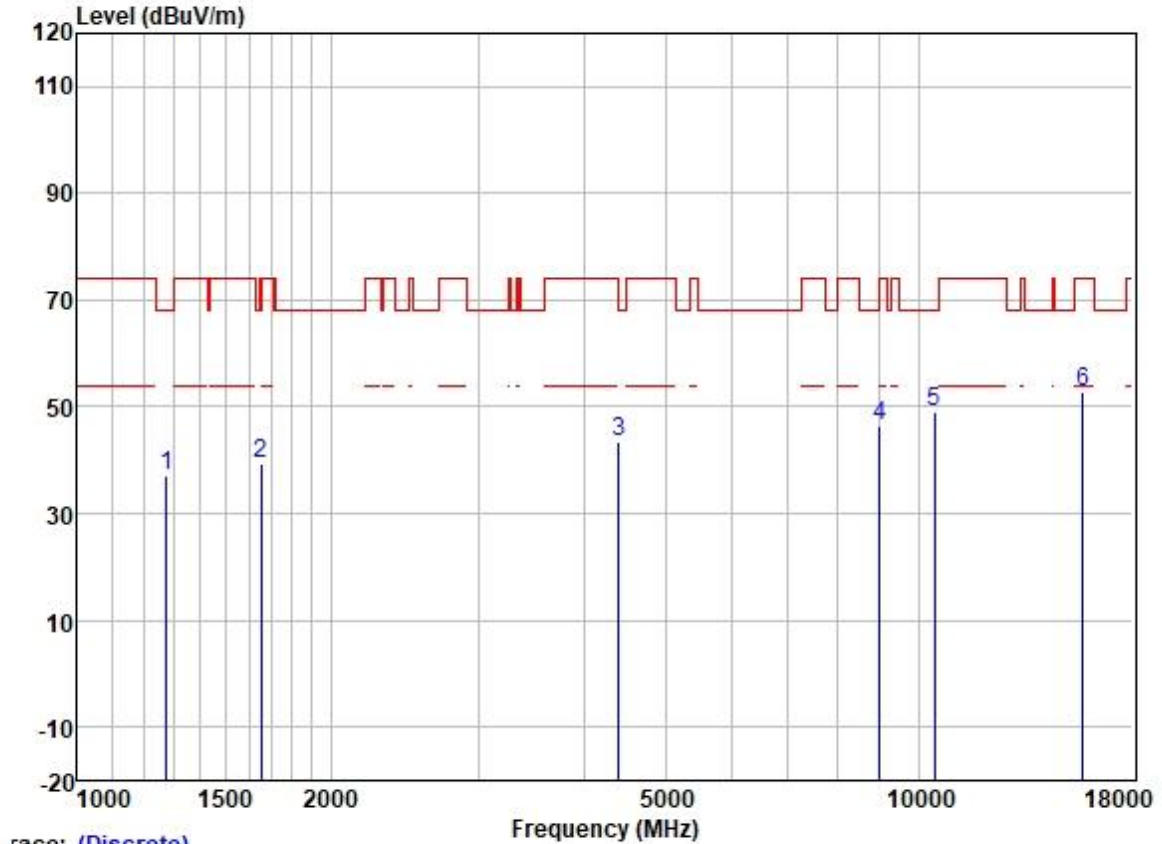
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1238.483	48.74	24.96	2.30	38.10	37.90	74.00	-36.10	VERTICAL	peak
2	1682.477	47.94	25.68	2.80	37.48	38.94	74.00	-35.06	VERTICAL	peak
3	3992.781	46.03	29.79	4.60	36.70	43.72	74.00	-30.28	VERTICAL	peak
4	8943.274	39.28	37.38	7.49	37.08	47.07	68.20	-21.13	VERTICAL	peak
5	10380.000	39.43	39.33	7.32	36.77	49.31	68.20	-18.89	VERTICAL	peak
6	15570.000	38.66	38.99	9.88	36.16	51.37	74.00	-22.63	VERTICAL	peak

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



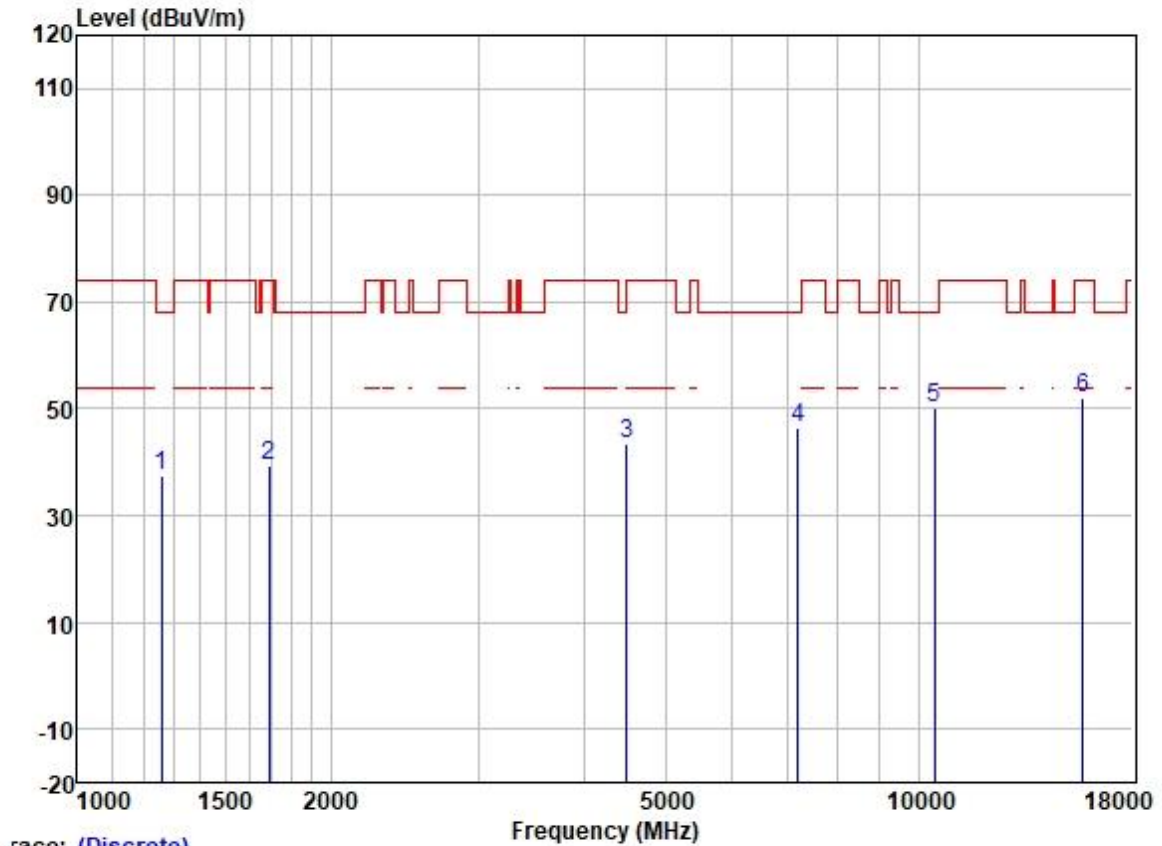
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	48.60	25.12	2.48	38.07	38.13	68.20	-30.07	HORIZONTAL peak
2	1615.754	47.37	25.60	2.80	37.55	38.22	74.00	-35.78	HORIZONTAL peak
3	4495.125	44.22	30.80	5.05	36.60	43.47	68.20	-24.73	HORIZONTAL peak
4	8943.274	39.00	37.38	7.49	37.08	46.79	68.20	-21.41	HORIZONTAL peak
5	10380.000	39.38	39.33	7.32	36.77	49.26	68.20	-18.94	HORIZONTAL peak
6	15570.000	38.90	38.99	9.88	36.16	51.61	74.00	-22.39	HORIZONTAL peak

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



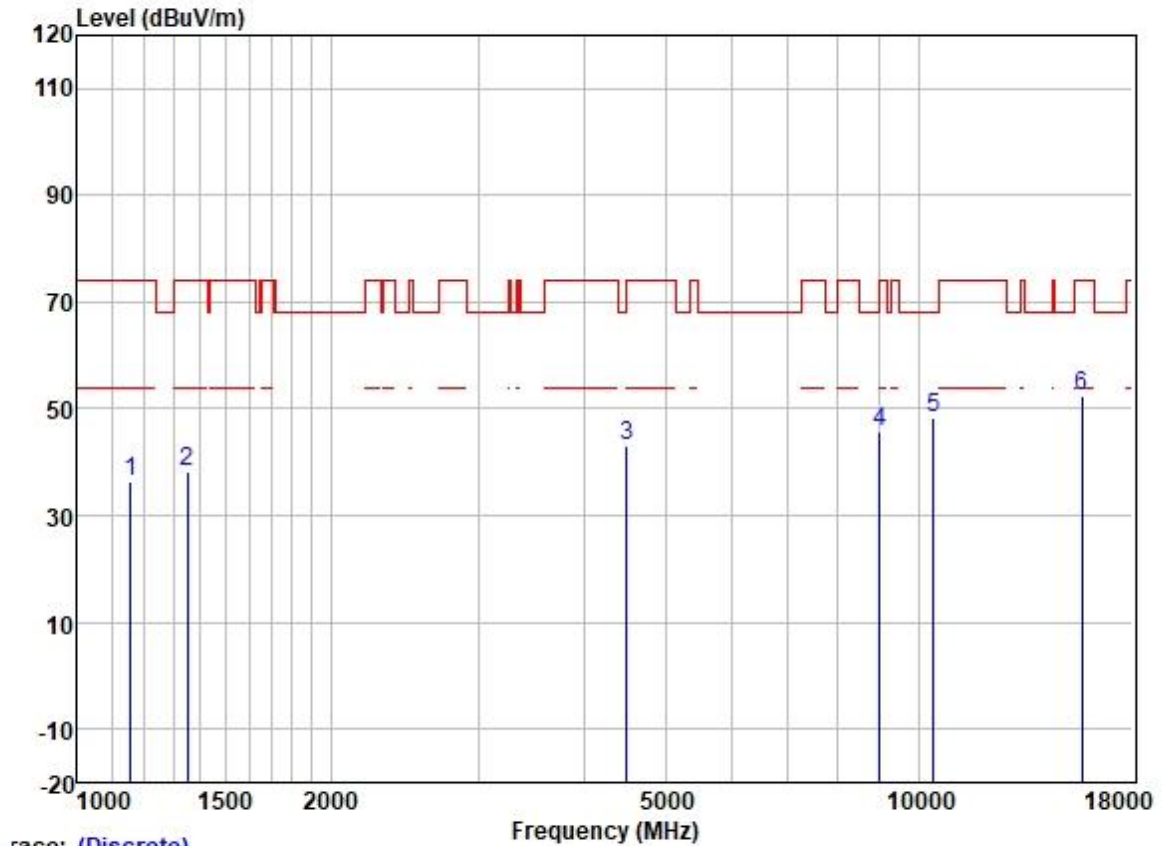
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	47.76	25.12	2.48	38.07	37.29	68.20	-30.91	VERTICAL peak
2	1653.550	48.57	25.64	2.80	37.51	39.50	68.20	-28.70	VERTICAL peak
3	4405.090	44.55	30.68	4.70	36.63	43.30	68.20	-24.90	VERTICAL peak
4	8995.123	38.70	37.40	7.56	37.05	46.61	68.20	-21.59	VERTICAL peak
5	10460.000	39.22	39.42	7.37	36.76	49.25	68.20	-18.95	VERTICAL peak
6	15690.000	40.34	38.86	9.87	36.21	52.86	74.00	-21.14	VERTICAL peak

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



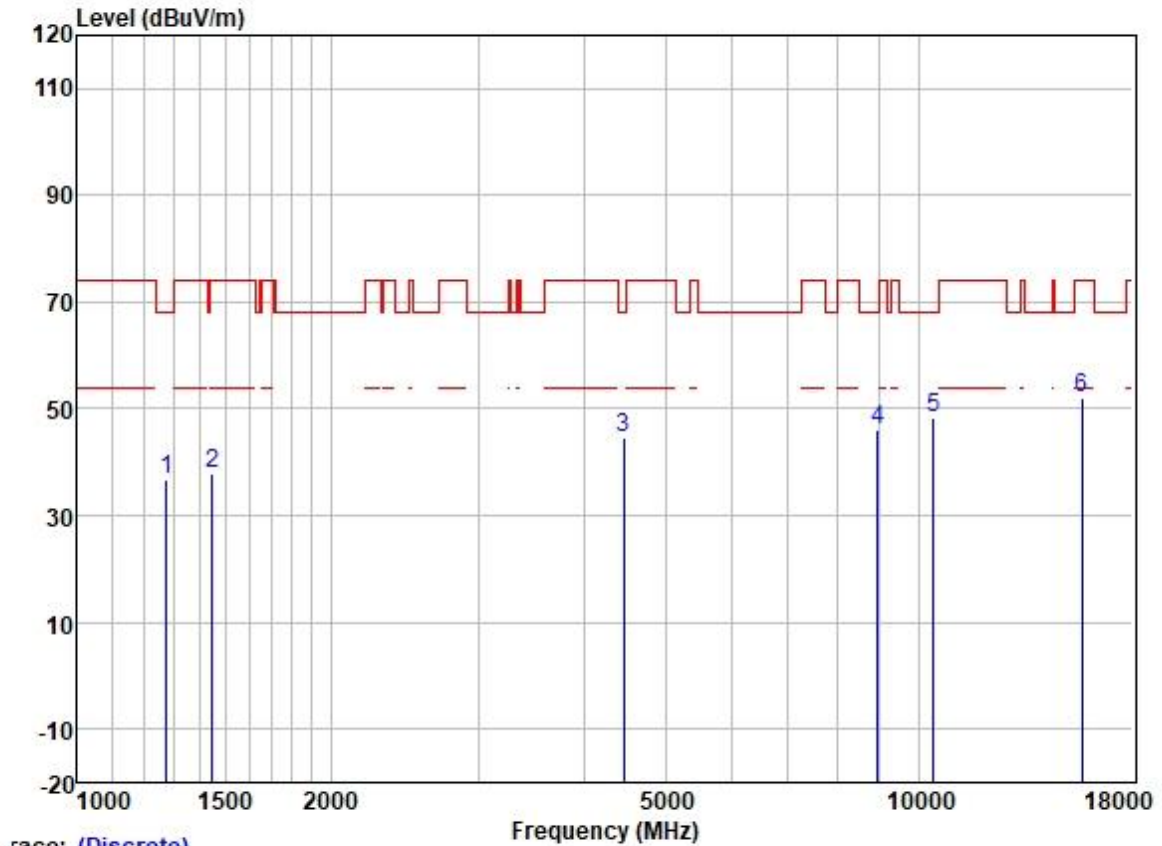
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Level	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1260.149	48.07	25.07	2.40	38.10	37.44	68.20	-30.76	HORIZONTAL peak
2	1692.231	48.21	25.70	2.80	37.46	39.25	74.00	-34.75	HORIZONTAL peak
3	4495.125	44.40	30.80	5.05	36.60	43.65	68.20	-24.55	HORIZONTAL peak
4	7200.309	42.00	35.54	5.98	36.92	46.60	68.20	-21.60	HORIZONTAL peak
5	10460.000	40.06	39.42	7.37	36.76	50.09	68.20	-18.11	HORIZONTAL peak
6	15690.000	39.59	38.86	9.87	36.21	52.11	74.00	-21.89	HORIZONTAL peak

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



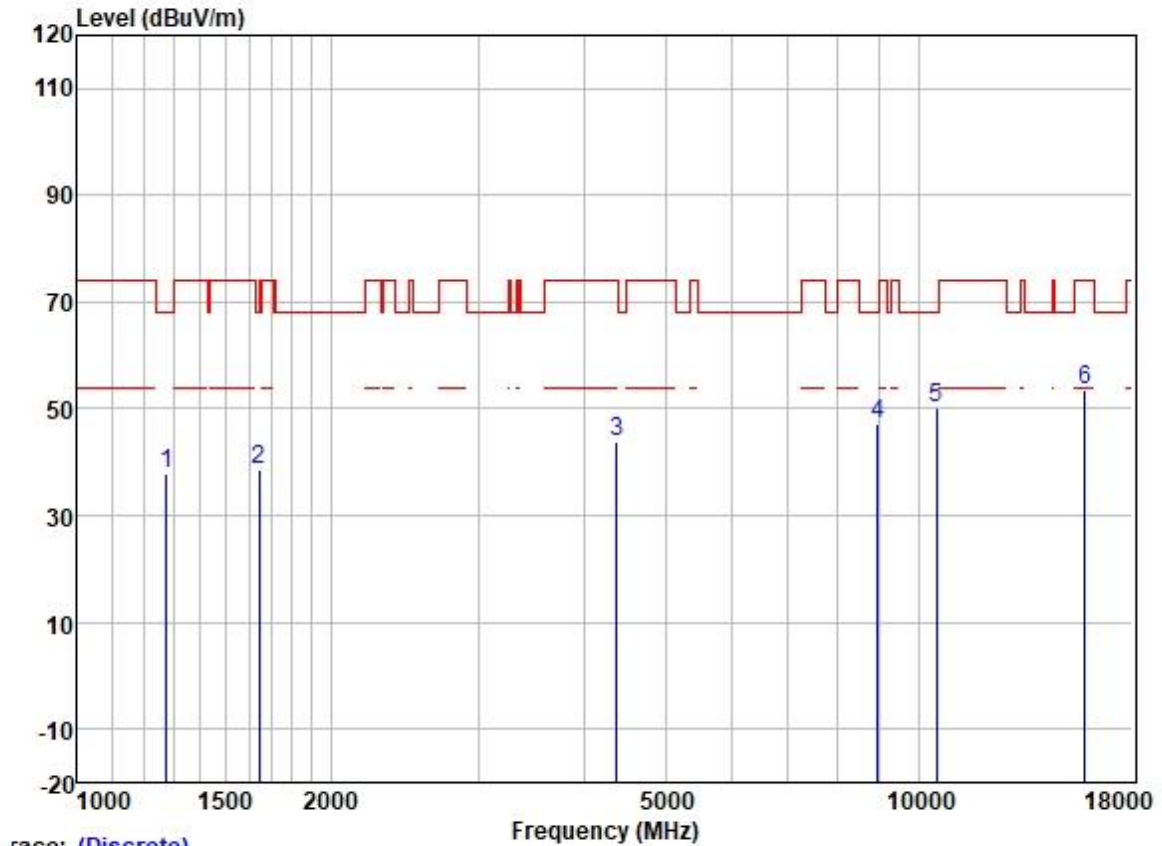
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1155.483	47.65	24.51	2.38	38.19	36.35	74.00	-37.65	VERTICAL peak
2	1350.667	48.26	25.31	2.60	37.99	38.18	74.00	-35.82	VERTICAL peak
3	4495.125	43.99	30.80	5.05	36.60	43.24	68.20	-24.96	VERTICAL peak
4	8995.123	37.91	37.40	7.56	37.05	45.82	68.20	-22.38	VERTICAL peak
5	10420.000	38.46	39.38	7.35	36.76	48.43	68.20	-19.77	VERTICAL peak
6	15630.000	39.65	38.92	9.87	36.18	52.26	74.00	-21.74	VERTICAL peak

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



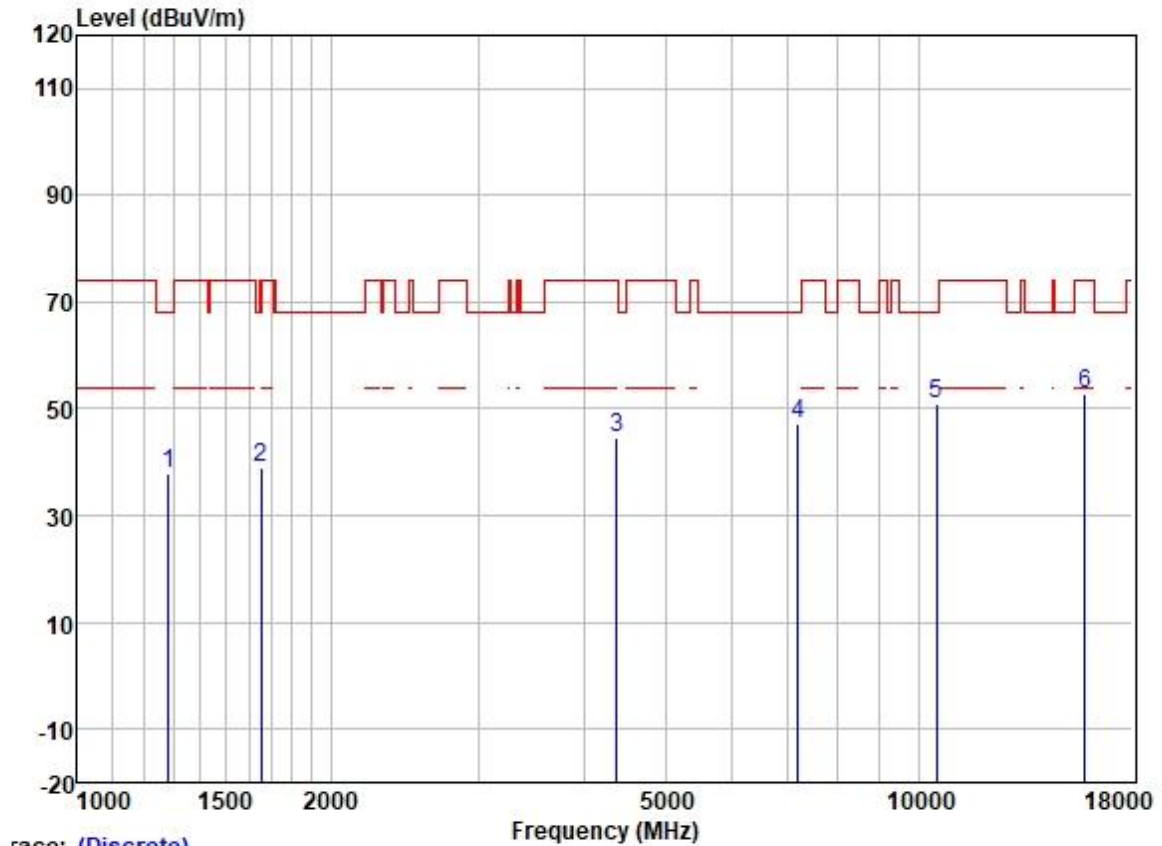
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1274.802	47.04	25.12	2.48	38.07	36.57	68.20	-31.63	HORIZONTAL	peak
2	1447.688	47.69	25.45	2.70	37.84	38.00	74.00	-36.00	HORIZONTAL	peak
3	4456.315	45.56	30.75	4.88	36.62	44.57	68.20	-23.63	HORIZONTAL	peak
4	8943.274	38.37	37.38	7.49	37.08	46.16	68.20	-22.04	HORIZONTAL	peak
5	10420.000	38.32	39.38	7.35	36.76	48.29	68.20	-19.91	HORIZONTAL	peak
6	15630.000	39.52	38.92	9.87	36.18	52.13	74.00	-21.87	HORIZONTAL	peak

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



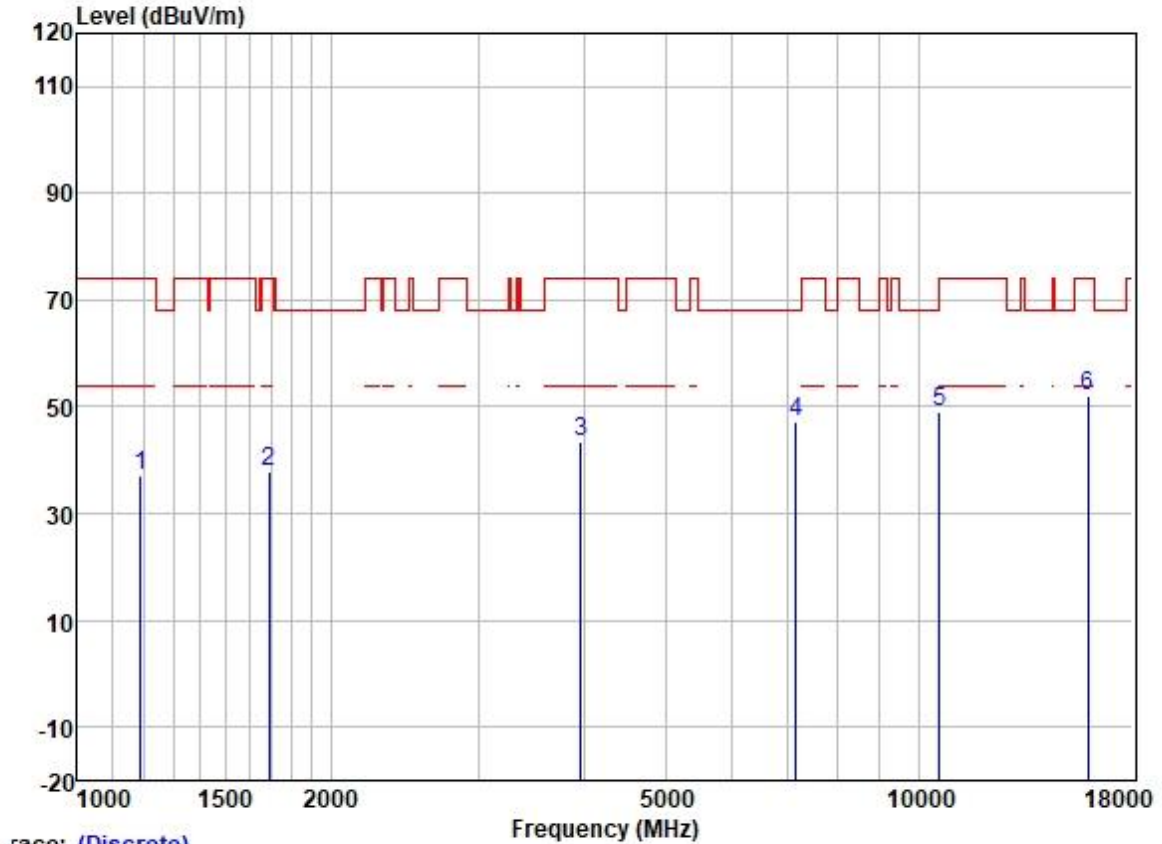
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1274.802	48.30	25.12	2.48	38.07	37.83	68.20	-30.37	VERTICAL	peak
2	1644.019	47.70	25.63	2.80	37.51	38.62	68.20	-29.58	VERTICAL	peak
3	4379.699	45.02	30.64	4.69	36.63	43.72	74.00	-30.28	VERTICAL	peak
4	8943.274	39.37	37.38	7.49	37.08	47.16	68.20	-21.04	VERTICAL	peak
5	10520.000	39.85	39.50	7.42	36.75	50.02	68.20	-18.18	VERTICAL	peak
6	15780.000	41.29	38.70	9.86	36.23	53.62	74.00	-20.38	VERTICAL	peak

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



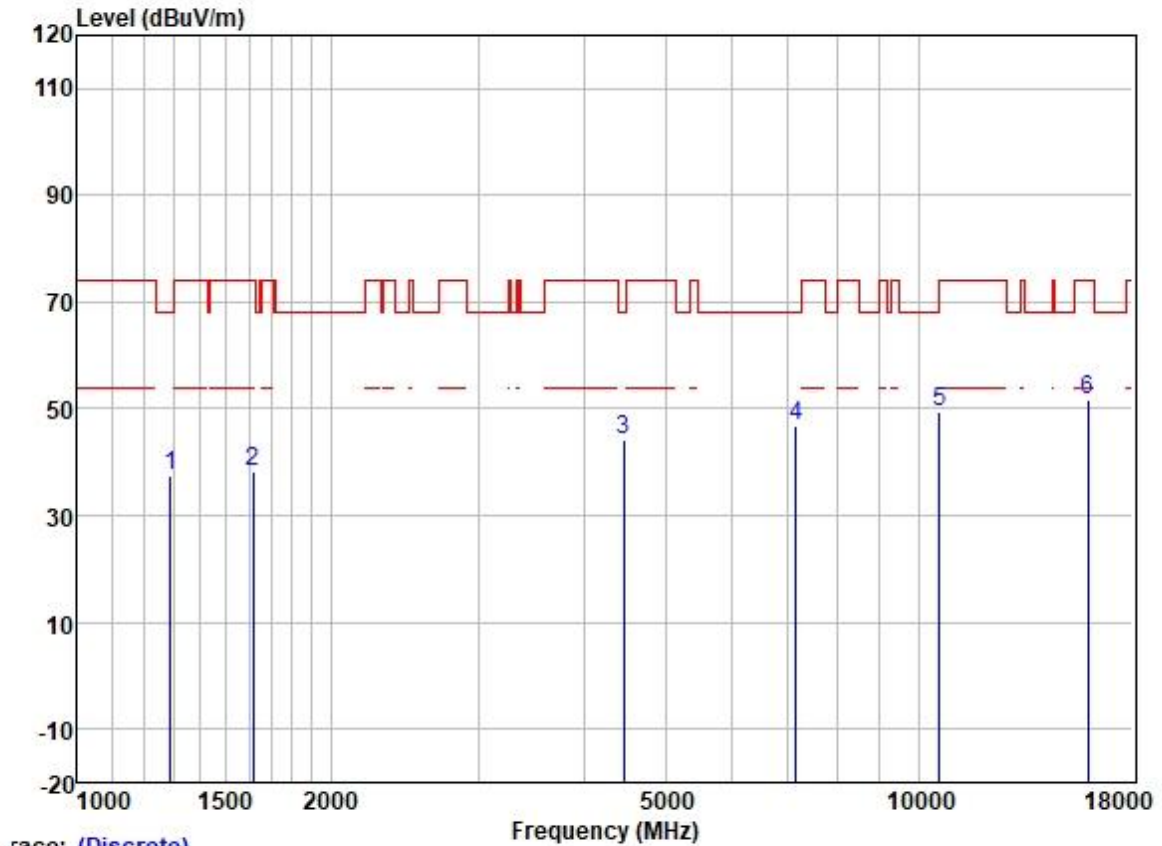
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1282.193	48.43	25.15	2.52	38.07	38.03	68.20	-30.17	HORIZONTAL peak
2	1653.550	47.99	25.64	2.80	37.51	38.92	68.20	-29.28	HORIZONTAL peak
3	4379.699	45.72	30.64	4.69	36.63	44.42	74.00	-29.58	HORIZONTAL peak
4	7200.309	42.54	35.54	5.98	36.92	47.14	68.20	-21.06	HORIZONTAL peak
5	10520.000	40.91	39.50	7.42	36.75	51.08	68.20	-17.12	HORIZONTAL peak
6	15780.000	40.36	38.70	9.86	36.23	52.69	74.00	-21.31	HORIZONTAL peak

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



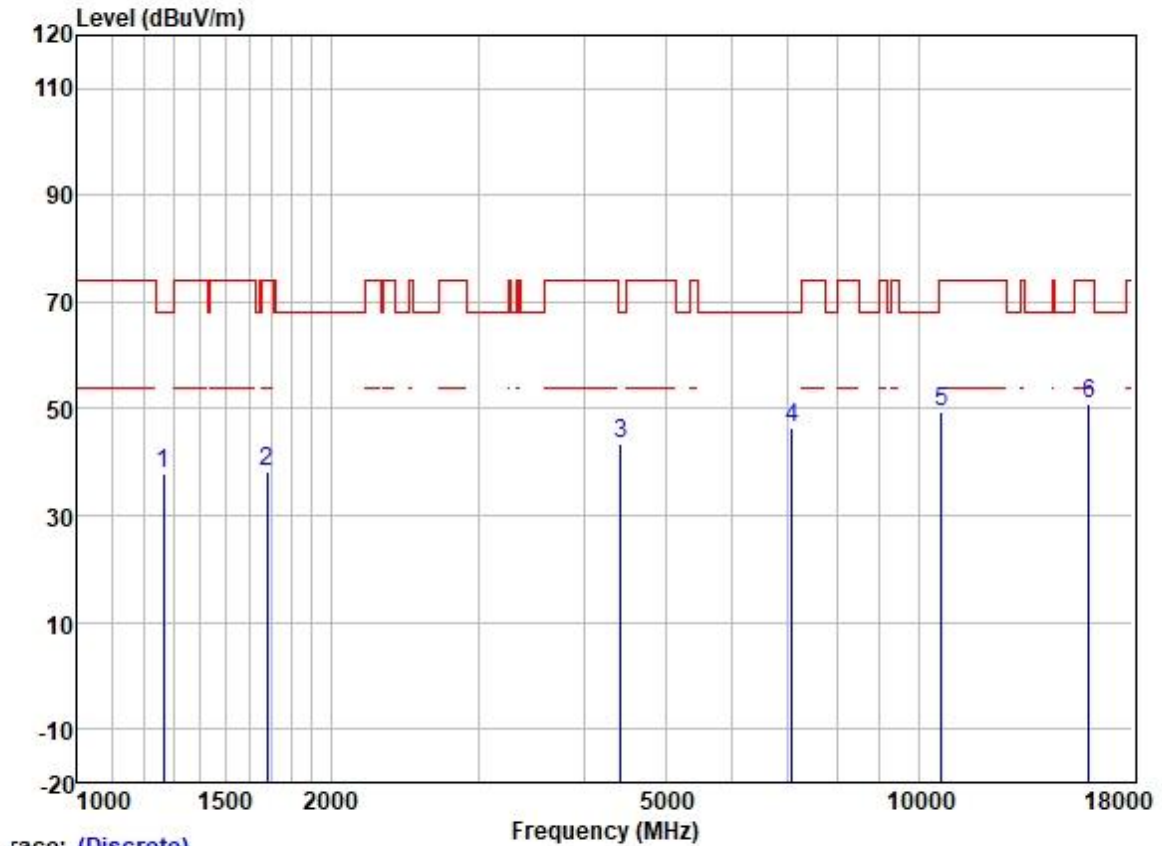
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1189.368	48.27	24.63	2.36	38.14	37.12	74.00	-36.88	VERTICAL peak
2	1692.231	47.01	25.70	2.80	37.46	38.05	74.00	-35.95	VERTICAL peak
3	3969.767	45.94	29.77	4.60	36.70	43.61	74.00	-30.39	VERTICAL peak
4	7158.806	42.80	35.40	5.94	36.88	47.26	68.20	-20.94	VERTICAL peak
5	10600.000	38.69	39.59	7.46	36.74	49.00	68.20	-19.20	VERTICAL peak
6	15900.000	40.02	38.44	9.86	36.27	52.05	74.00	-21.95	VERTICAL peak

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



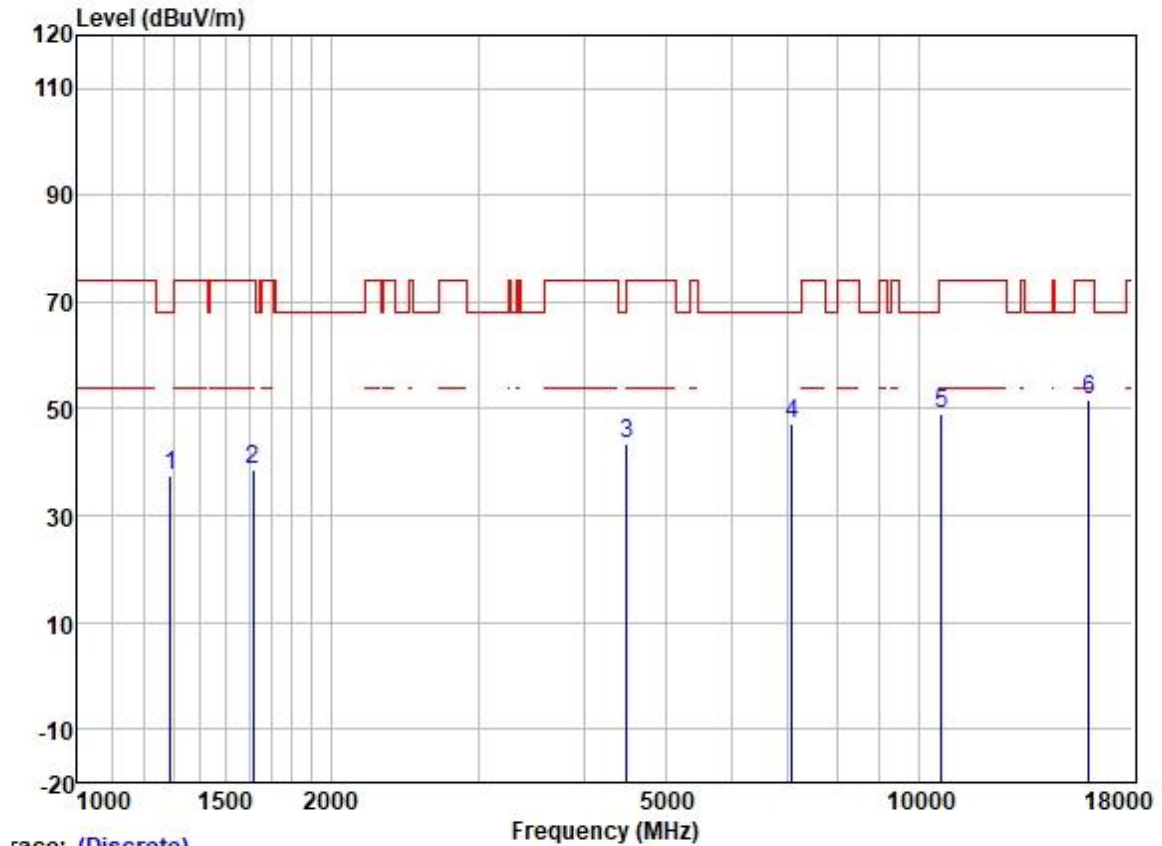
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1289.627	47.66	25.17	2.55	38.04	37.34	68.20	-30.86	HORIZONTAL peak
2	1615.754	47.23	25.60	2.80	37.55	38.08	74.00	-35.92	HORIZONTAL peak
3	4456.315	45.04	30.75	4.88	36.62	44.05	68.20	-24.15	HORIZONTAL peak
4	7158.806	42.30	35.40	5.94	36.88	46.76	68.20	-21.44	HORIZONTAL peak
5	10600.000	39.05	39.59	7.46	36.74	49.36	68.20	-18.84	HORIZONTAL peak
6	15900.000	39.64	38.44	9.86	36.27	51.67	74.00	-22.33	HORIZONTAL peak

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



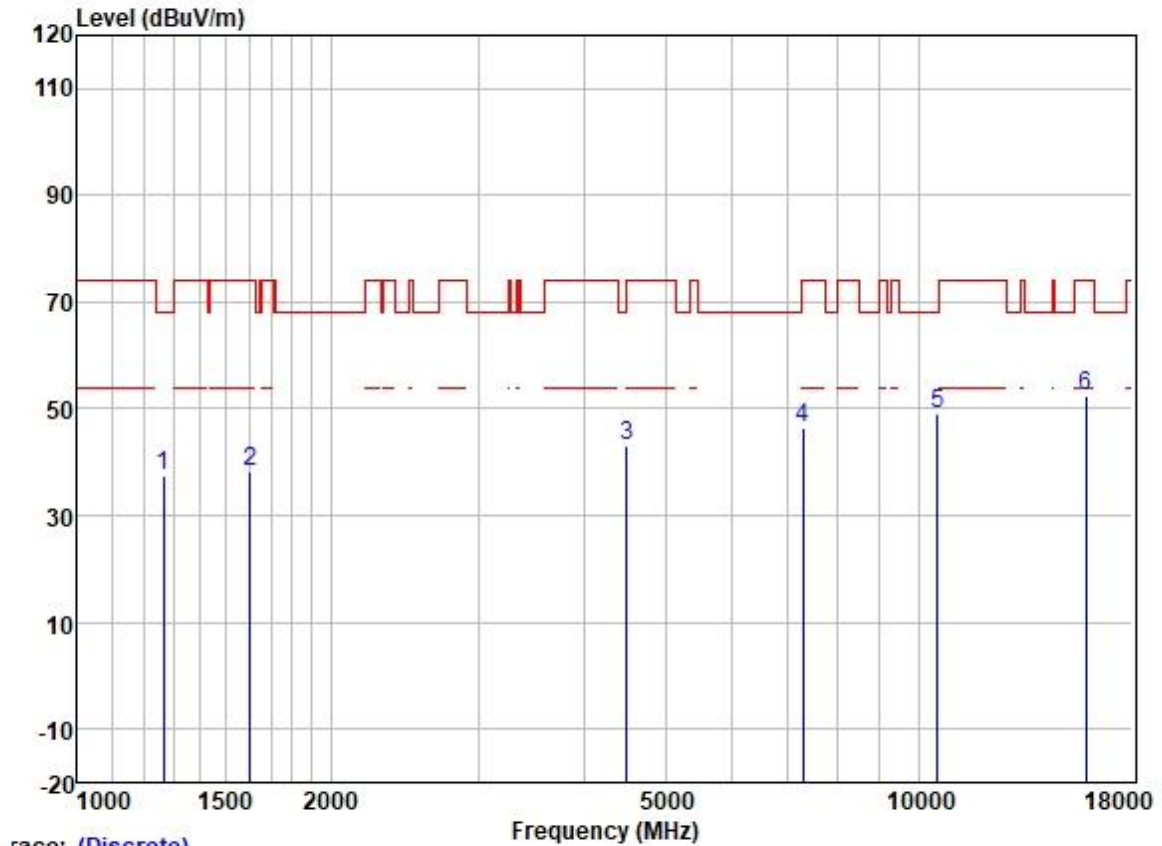
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1267.454	48.44	25.10	2.44	38.07	37.91	68.20	-30.29	VERTICAL	peak
2	1682.477	47.33	25.68	2.80	37.48	38.33	74.00	-35.67	VERTICAL	peak
3	4430.628	44.63	30.72	4.78	36.62	43.51	68.20	-24.69	VERTICAL	peak
4	7076.516	42.26	35.18	5.87	36.80	46.51	68.20	-21.69	VERTICAL	peak
5	10640.000	39.03	39.63	7.48	36.73	49.41	74.00	-24.59	VERTICAL	peak
6	15960.000	39.01	38.37	9.85	36.29	50.94	74.00	-23.06	VERTICAL	peak

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



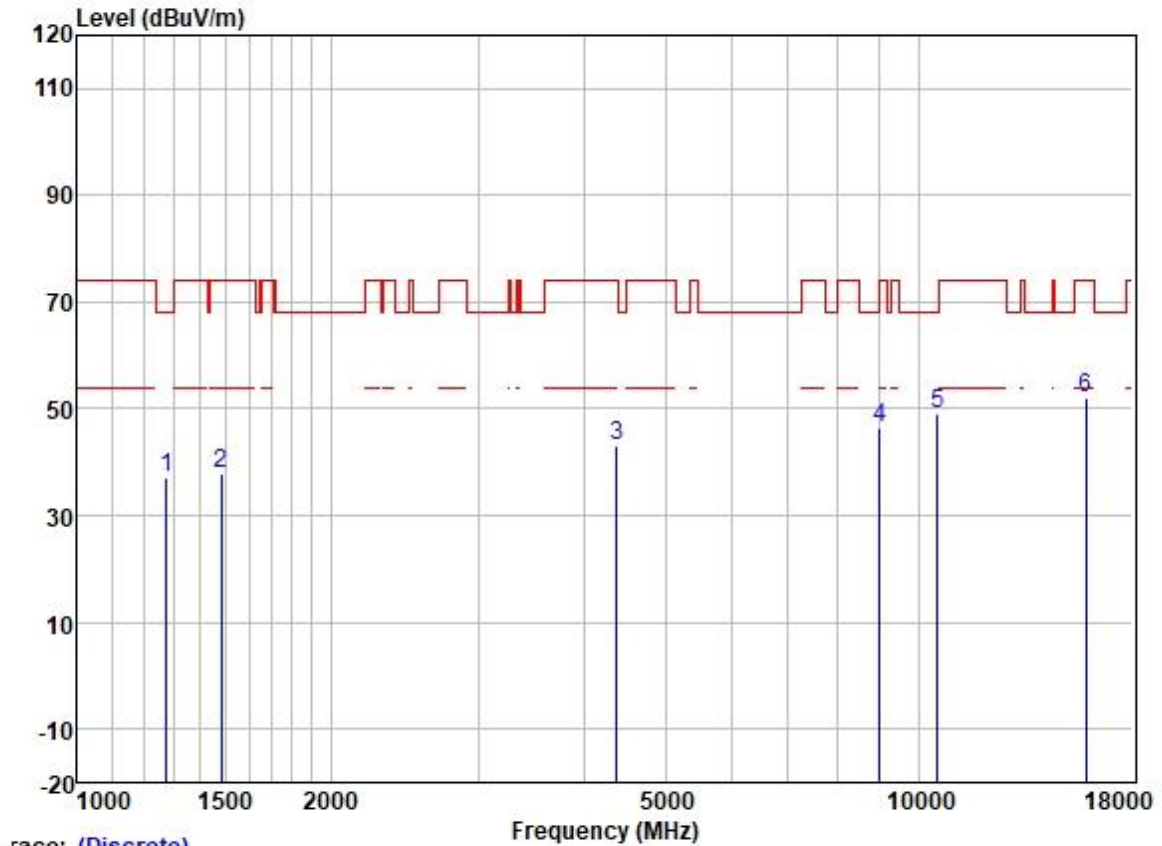
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1289.627	47.67	25.17	2.55	38.04	37.35	68.20	-30.85	HORIZONTAL peak
2	1615.754	47.71	25.60	2.80	37.55	38.56	74.00	-35.44	HORIZONTAL peak
3	4495.125	44.34	30.80	5.05	36.60	43.59	68.20	-24.61	HORIZONTAL peak
4	7076.516	42.91	35.18	5.87	36.80	47.16	68.20	-21.04	HORIZONTAL peak
5	10640.000	38.52	39.63	7.48	36.73	48.90	74.00	-25.10	HORIZONTAL peak
6	15960.000	39.81	38.37	9.85	36.29	51.74	74.00	-22.26	HORIZONTAL peak

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



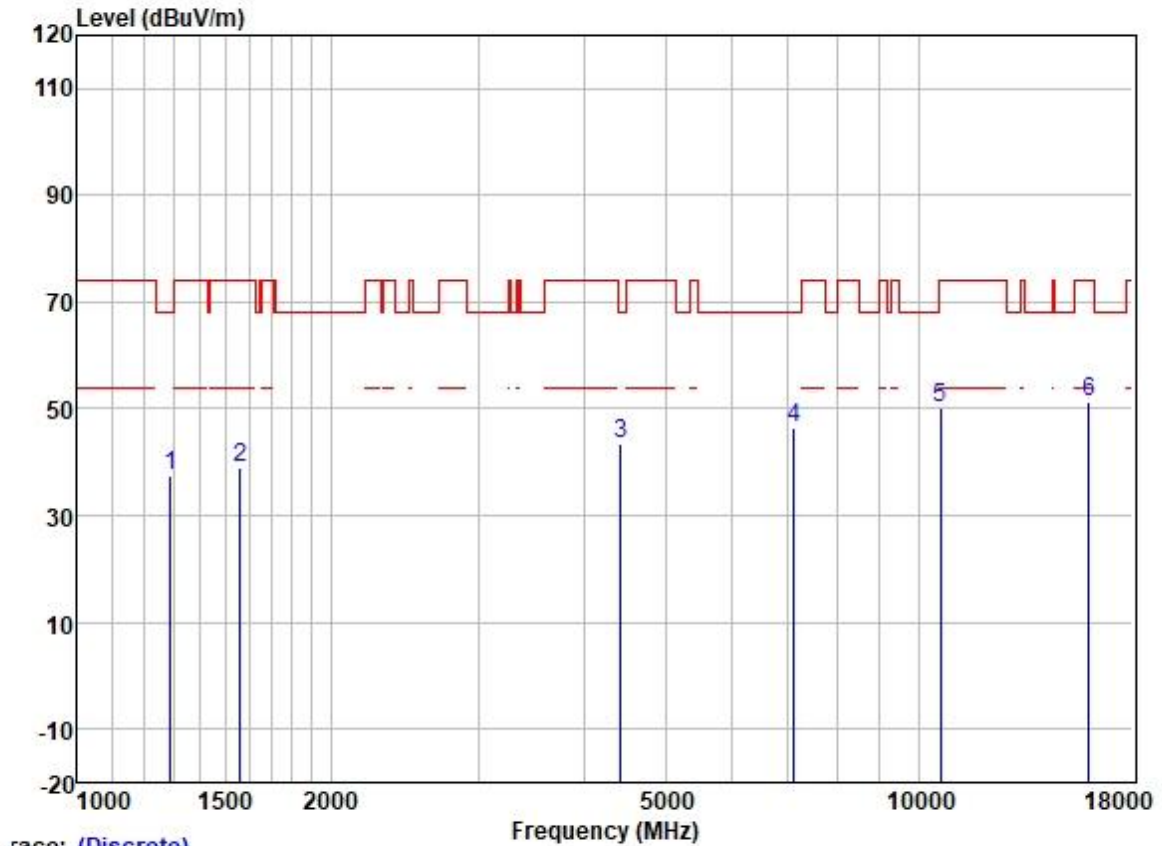
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1267.454	47.88	25.10	2.44	38.07	37.35	68.20	-30.85	VERTICAL	peak
2	1606.441	47.35	25.59	2.80	37.58	38.16	74.00	-35.84	VERTICAL	peak
3	4495.125	43.94	30.80	5.05	36.60	43.19	68.20	-25.01	VERTICAL	peak
4	7284.038	41.33	35.86	6.09	36.98	46.30	74.00	-27.70	VERTICAL	peak
5	10540.000	38.79	39.53	7.43	36.75	49.00	68.20	-19.20	VERTICAL	peak
6	15810.000	40.36	38.61	9.86	36.24	52.59	74.00	-21.41	VERTICAL	peak

Test Mode: 09; Polarity: Horizontal; 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	1274.802	47.74	25.12	2.48	38.07	37.27	68.20	-30.93	HORIZONTAL peak
2	1481.553	47.57	25.48	2.77	37.80	38.02	74.00	-35.98	HORIZONTAL peak
3	4379.699	44.46	30.64	4.69	36.63	43.16	74.00	-30.84	HORIZONTAL peak
4	8995.123	38.38	37.40	7.56	37.05	46.29	68.20	-21.91	HORIZONTAL peak
5	10540.000	38.91	39.53	7.43	36.75	49.12	68.20	-19.08	HORIZONTAL peak
6	15810.000	40.00	38.61	9.86	36.24	52.23	74.00	-21.77	HORIZONTAL peak

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



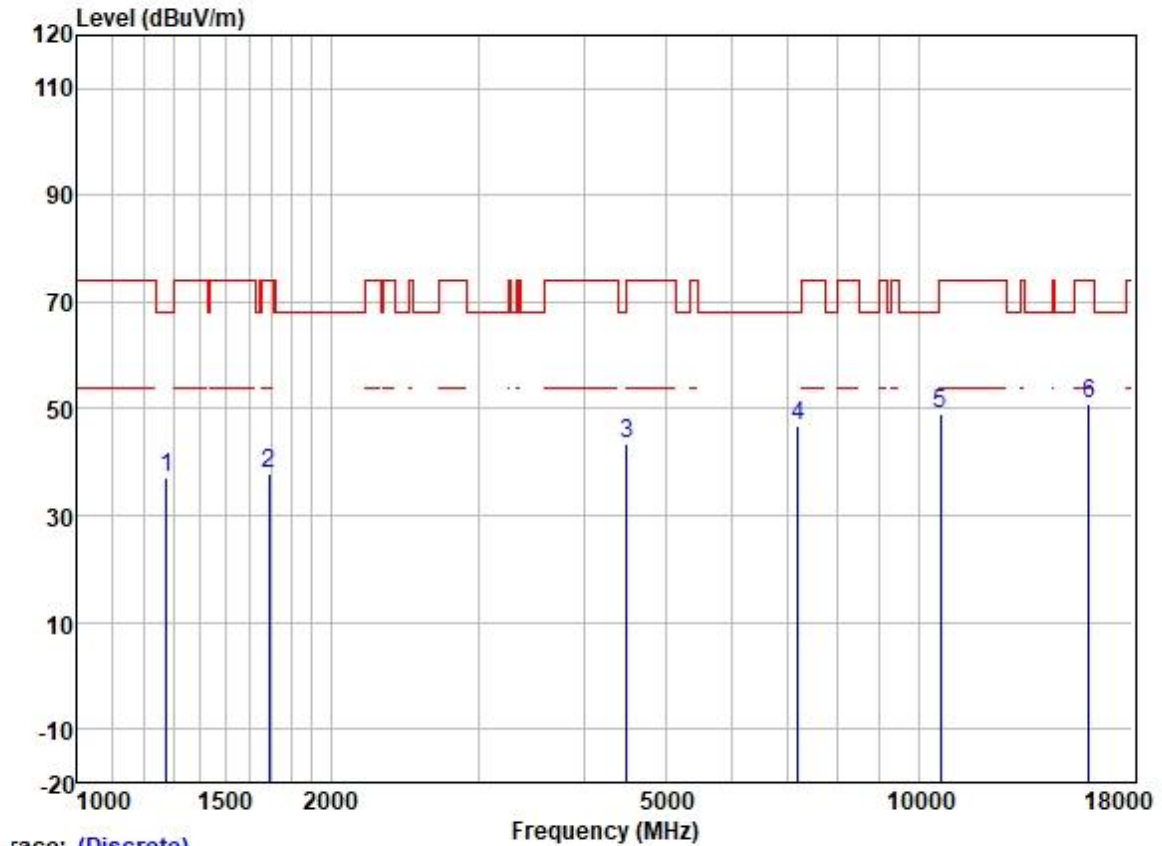
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1289.627	47.70	25.17	2.55	38.04	37.38	68.20	-30.82	VERTICAL peak
2	1560.673	48.36	25.54	2.80	37.66	39.04	74.00	-34.96	VERTICAL peak
3	4430.628	44.69	30.72	4.78	36.62	43.57	68.20	-24.63	VERTICAL peak
4	7117.542	41.97	35.28	5.90	36.85	46.30	68.20	-21.90	VERTICAL peak
5	10620.000	39.89	39.59	7.46	36.74	50.20	74.00	-23.80	VERTICAL peak
6	15930.000	39.46	38.37	9.85	36.28	51.40	74.00	-22.60	VERTICAL peak



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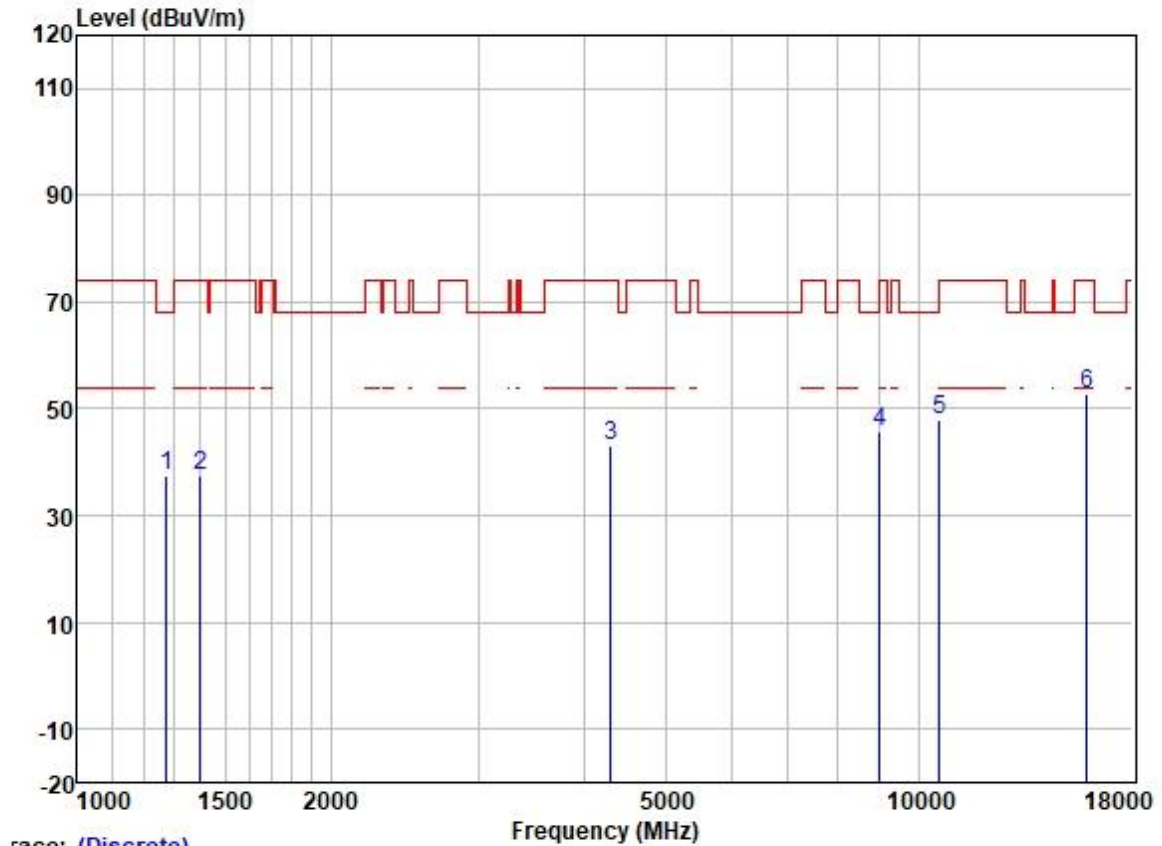
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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



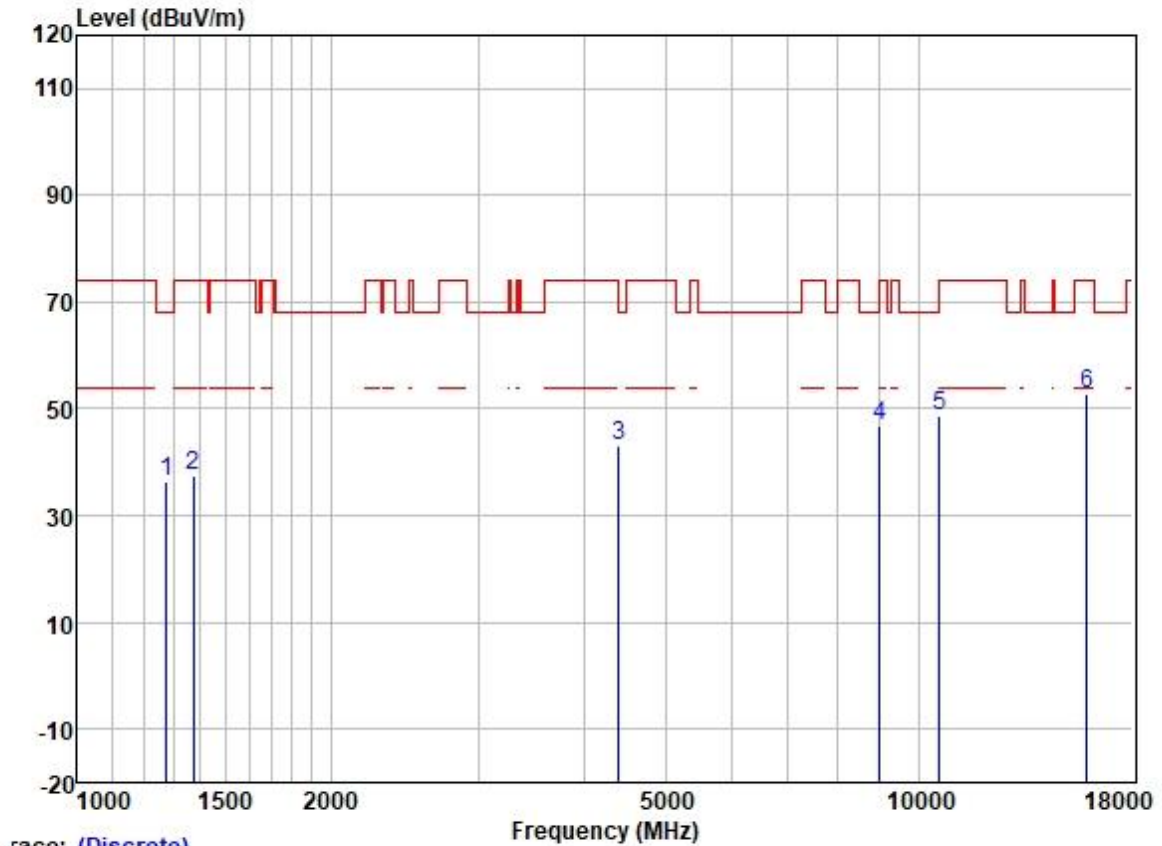
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1274.802	47.47	25.12	2.48	38.07	37.00	68.20	-31.20	HORIZONTAL	peak
2	1692.231	46.70	25.70	2.80	37.46	37.74	74.00	-36.26	HORIZONTAL	peak
3	4495.125	44.10	30.80	5.05	36.60	43.35	68.20	-24.85	HORIZONTAL	peak
4	7200.309	42.29	35.54	5.98	36.92	46.89	68.20	-21.31	HORIZONTAL	peak
5	10620.000	38.88	39.59	7.46	36.74	49.19	74.00	-24.81	HORIZONTAL	peak
6	15930.000	39.10	38.37	9.85	36.28	51.04	74.00	-22.96	HORIZONTAL	peak

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



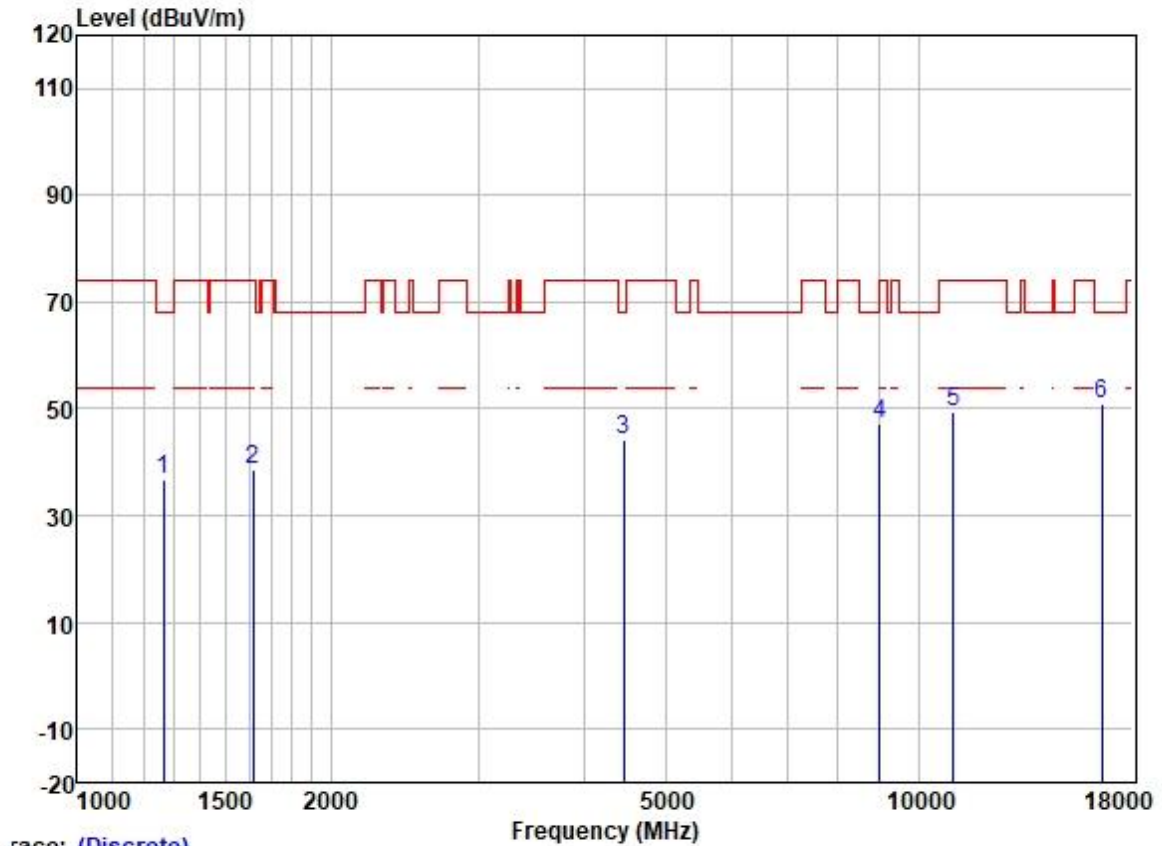
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	48.04	25.12	2.48	38.07	37.57	68.20	-30.63	VERTICAL peak
2	1398.336	47.35	25.39	2.60	37.92	37.42	74.00	-36.58	VERTICAL peak
3	4304.400	44.77	30.48	4.65	36.65	43.25	74.00	-30.75	VERTICAL peak
4	8995.123	37.73	37.40	7.56	37.05	45.64	68.20	-22.56	VERTICAL peak
5	10580.000	37.56	39.56	7.45	36.74	47.83	68.20	-20.37	VERTICAL peak
6	15870.000	40.80	38.52	9.86	36.26	52.92	74.00	-21.08	VERTICAL peak

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



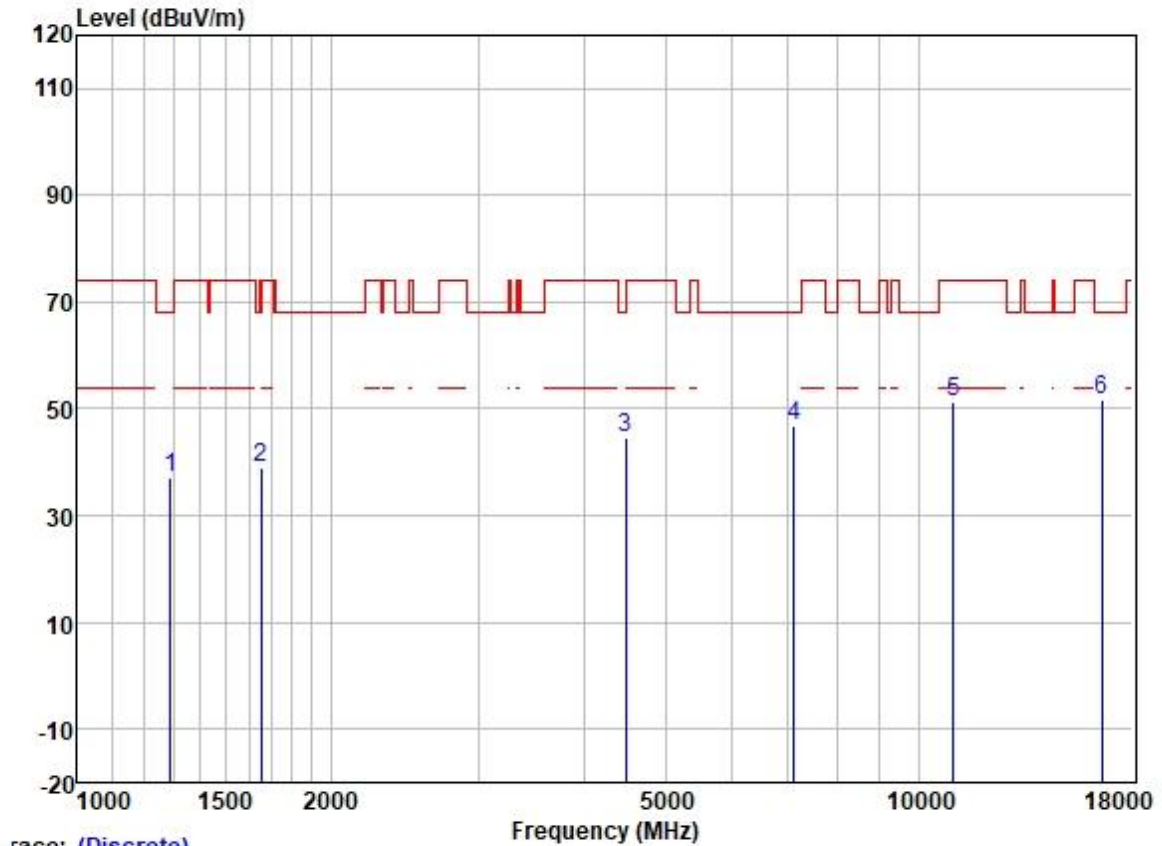
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	46.85	25.12	2.48	38.07	36.38	68.20	-31.82	HORIZONTAL peak
2	1374.295	47.58	25.35	2.60	37.95	37.58	74.00	-36.42	HORIZONTAL peak
3	4405.090	44.21	30.68	4.70	36.63	42.96	68.20	-25.24	HORIZONTAL peak
4	8995.123	38.81	37.40	7.56	37.05	46.72	68.20	-21.48	HORIZONTAL peak
5	10580.000	38.41	39.56	7.45	36.74	48.68	68.20	-19.52	HORIZONTAL peak
6	15870.000	40.57	38.52	9.86	36.26	52.69	74.00	-21.31	HORIZONTAL peak

Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



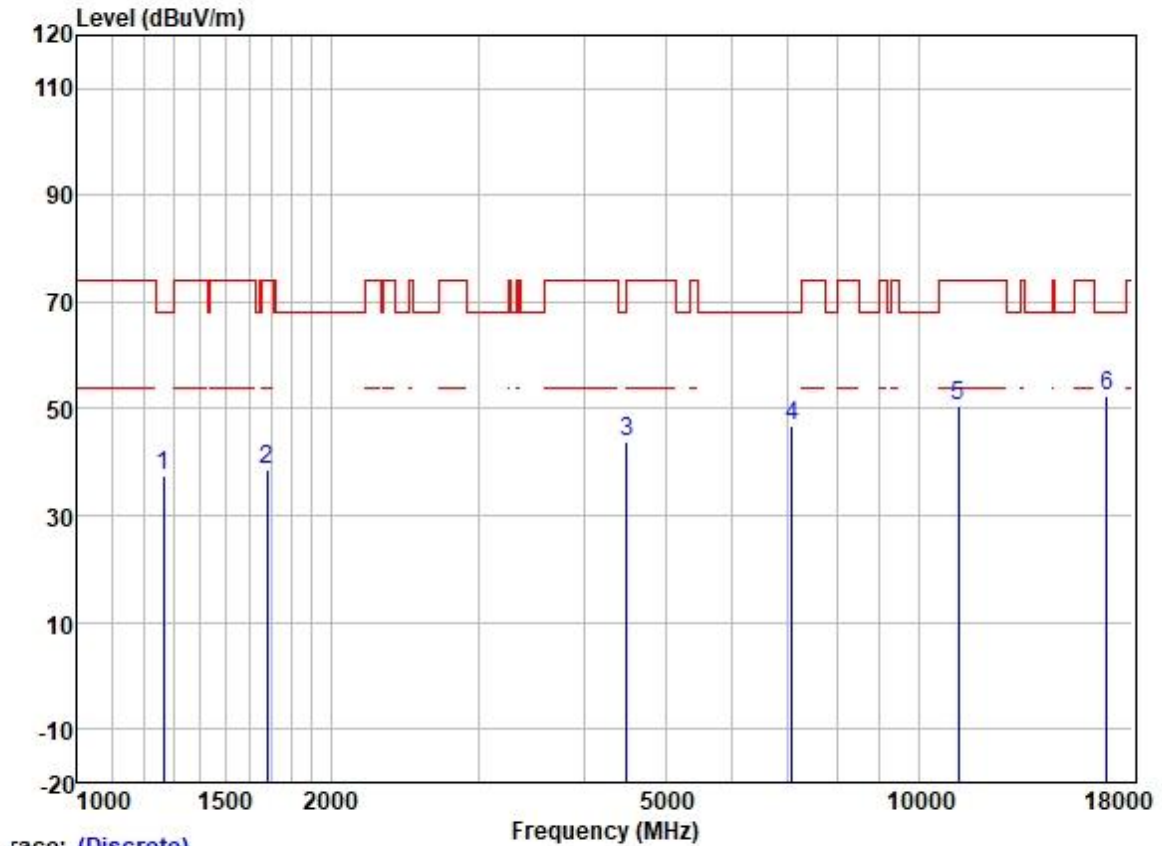
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1267.454	47.37	25.10	2.44	38.07	36.84	68.20	-31.36	VERTICAL peak
2	1615.754	47.87	25.60	2.80	37.55	38.72	74.00	-35.28	VERTICAL peak
3	4456.315	45.12	30.75	4.88	36.62	44.13	68.20	-24.07	VERTICAL peak
4	8995.123	39.20	37.40	7.56	37.05	47.11	68.20	-21.09	VERTICAL peak
5	11000.000	38.31	40.10	7.71	36.65	49.47	74.00	-24.53	VERTICAL peak
6	16500.000	38.10	39.60	9.44	36.24	50.90	68.20	-17.30	VERTICAL peak

Test Mode: 10; 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	1289.627	47.55	25.17	2.55	38.04	37.23	68.20	-30.97	HORIZONTAL	peak
2	1653.550	47.95	25.64	2.80	37.51	38.88	68.20	-29.32	HORIZONTAL	peak
3	4482.150	45.35	30.78	4.99	36.61	44.51	68.20	-23.69	HORIZONTAL	peak
4	7117.542	42.31	35.28	5.90	36.85	46.64	68.20	-21.56	HORIZONTAL	peak
5	11000.000	40.06	40.10	7.71	36.65	51.22	74.00	-22.78	HORIZONTAL	peak
6	16500.000	38.91	39.60	9.44	36.24	51.71	68.20	-16.49	HORIZONTAL	peak

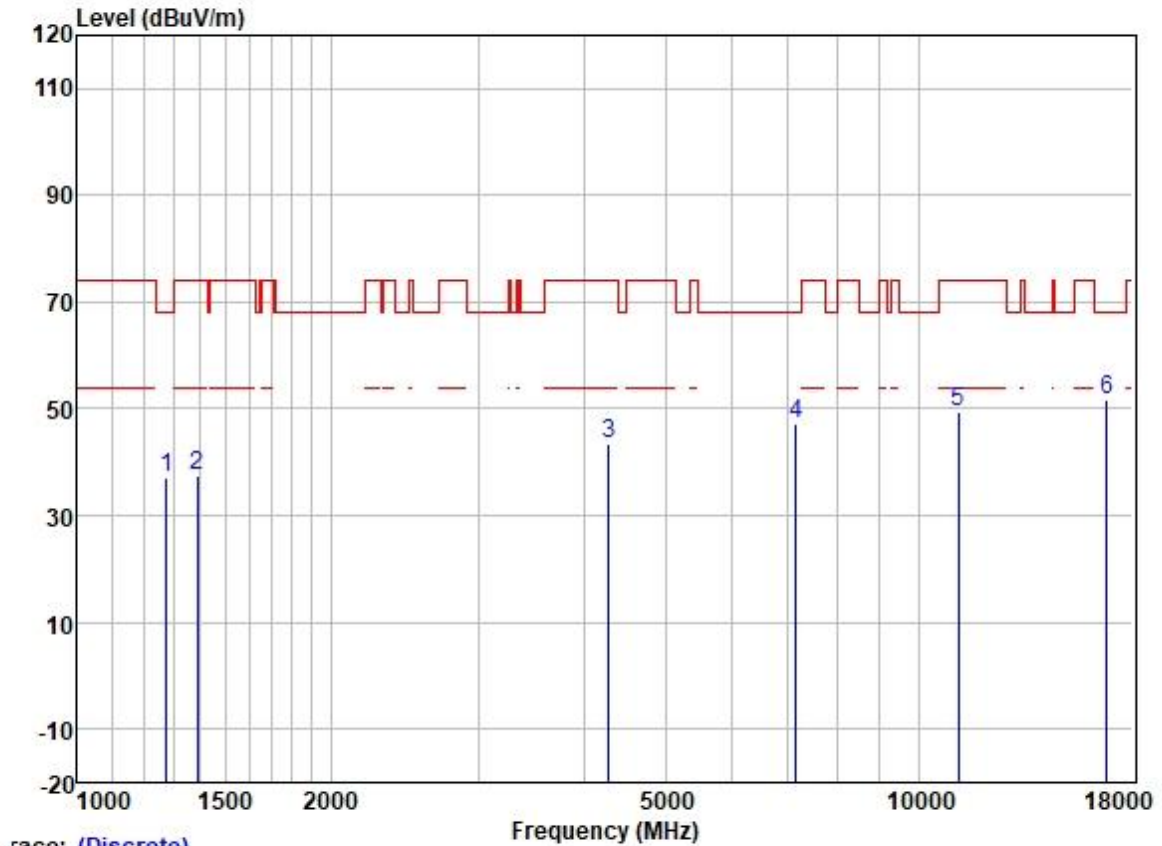
Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



Trace: (Discrete)

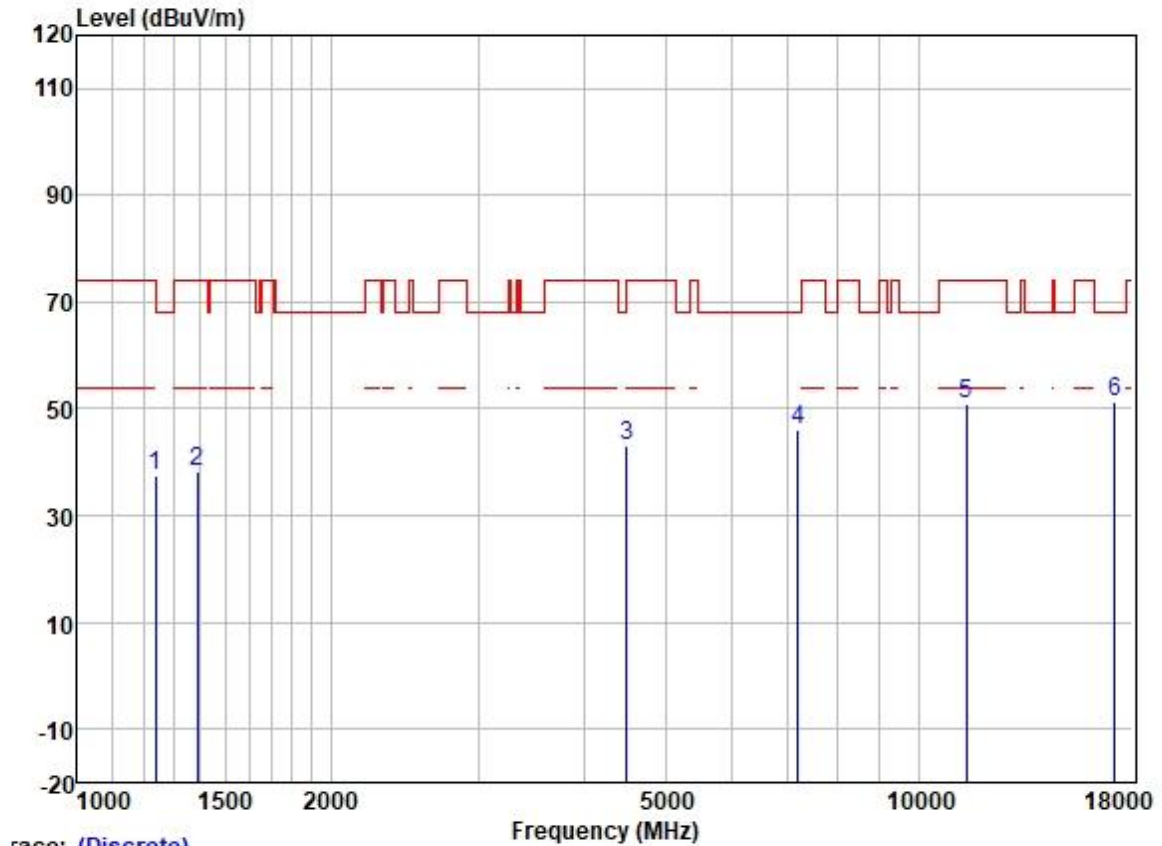
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Level	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1267.454	48.04	25.10	2.44	38.07	37.51	68.20	-30.69	VERTICAL peak
2	1682.477	47.61	25.68	2.80	37.48	38.61	74.00	-35.39	VERTICAL peak
3	4495.125	44.63	30.80	5.05	36.60	43.88	68.20	-24.32	VERTICAL peak
4	7076.516	42.52	35.18	5.87	36.80	46.77	68.20	-21.43	VERTICAL peak
5	11160.000	39.13	40.04	7.90	36.61	50.46	74.00	-23.54	VERTICAL peak
6	16740.000	38.62	40.49	9.41	36.19	52.33	68.20	-15.87	VERTICAL peak

Test Mode: 10; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; 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	1274.802	47.41	25.12	2.48	38.07	36.94	68.20	-31.26	HORIZONTAL peak
2	1390.276	47.38	25.38	2.60	37.92	37.44	74.00	-36.56	HORIZONTAL peak
3	4279.589	45.05	30.42	4.63	36.65	43.45	74.00	-30.55	HORIZONTAL peak
4	7158.806	42.73	35.40	5.94	36.88	47.19	68.20	-21.01	HORIZONTAL peak
5	11160.000	38.09	40.04	7.90	36.61	49.42	74.00	-24.58	HORIZONTAL peak
6	16740.000	38.11	40.49	9.41	36.19	51.82	68.20	-16.38	HORIZONTAL peak

Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

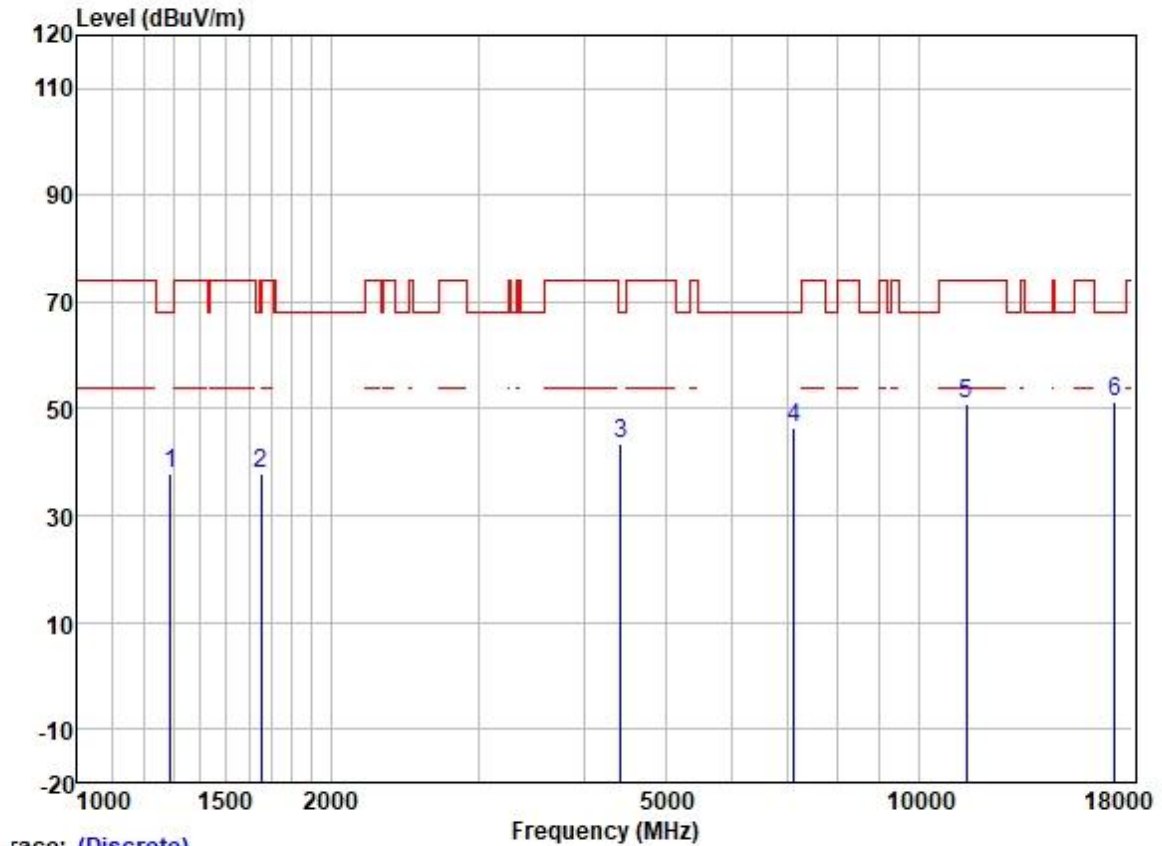
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1238.483	48.37	24.96	2.30	38.10	37.53	74.00	-36.47	VERTICAL peak
2	1390.276	48.26	25.38	2.60	37.92	38.32	74.00	-35.68	VERTICAL peak
3	4495.125	43.81	30.80	5.05	36.60	43.06	68.20	-25.14	VERTICAL peak
4	7200.309	41.51	35.54	5.98	36.92	46.11	68.20	-22.09	VERTICAL peak
5	11400.000	39.23	39.94	8.28	36.56	50.89	74.00	-23.11	VERTICAL peak
6	17100.000	35.53	42.32	9.63	36.06	51.42	68.20	-16.78	VERTICAL peak



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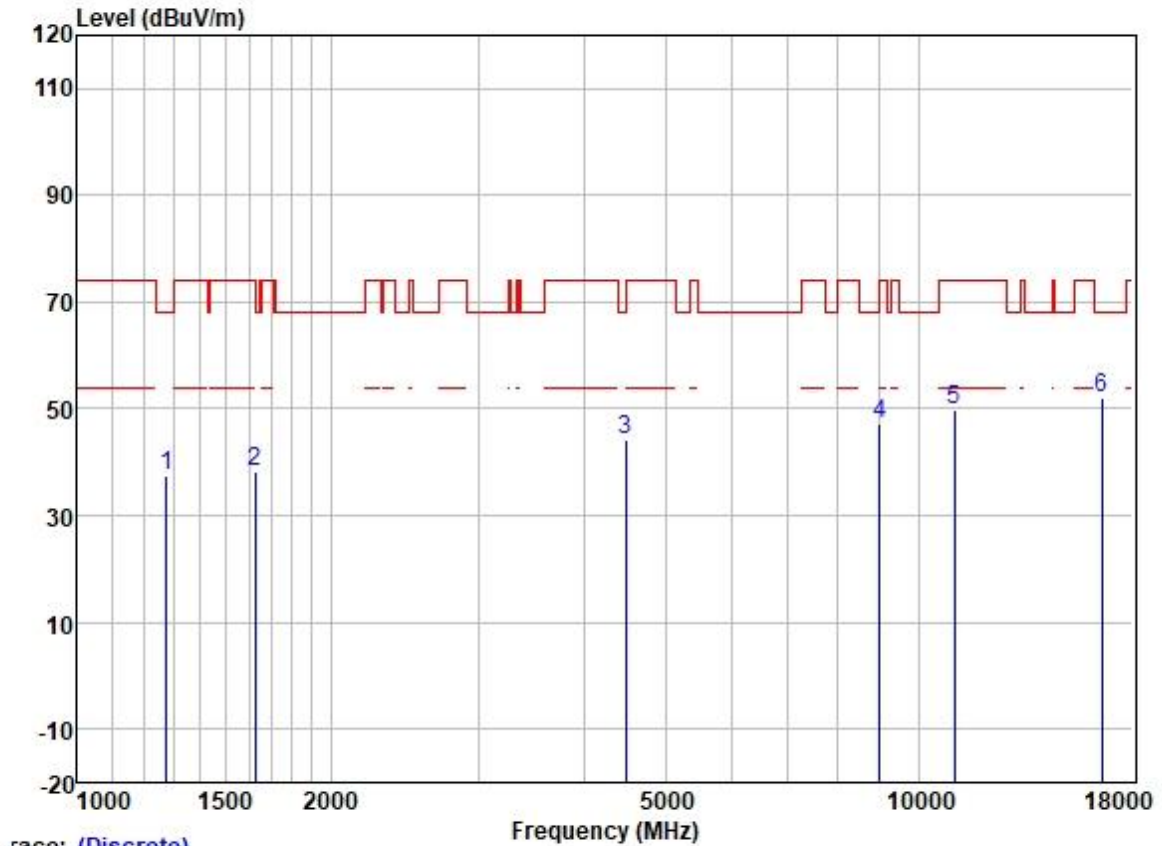
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Test Mode: 10; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



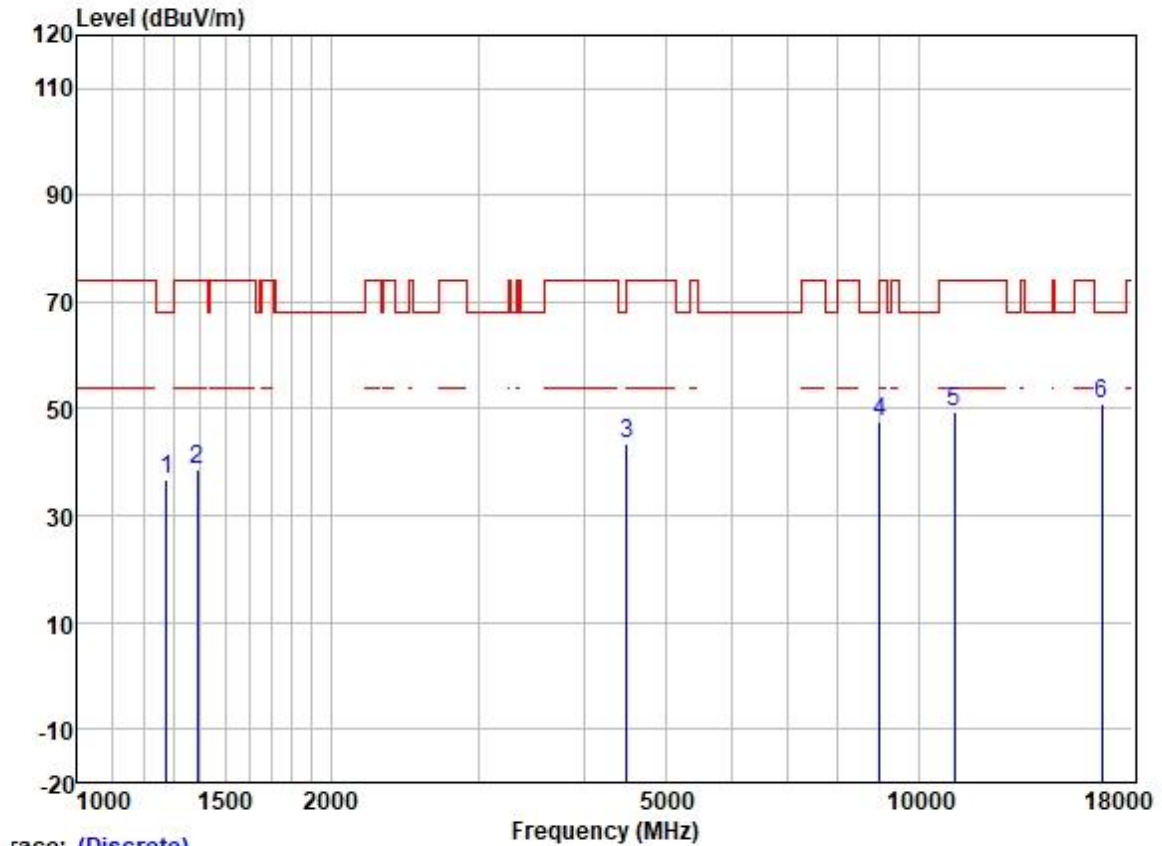
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1289.627	48.05	25.17	2.55	38.04	37.73	68.20	-30.47	HORIZONTAL peak
2	1653.550	46.99	25.64	2.80	37.51	37.92	68.20	-30.28	HORIZONTAL peak
3	4430.628	44.55	30.72	4.78	36.62	43.43	68.20	-24.77	HORIZONTAL peak
4	7117.542	42.07	35.28	5.90	36.85	46.40	68.20	-21.80	HORIZONTAL peak
5	11400.000	39.15	39.94	8.28	36.56	50.81	74.00	-23.19	HORIZONTAL peak
6	17100.000	35.51	42.32	9.63	36.06	51.40	68.20	-16.80	HORIZONTAL peak

Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



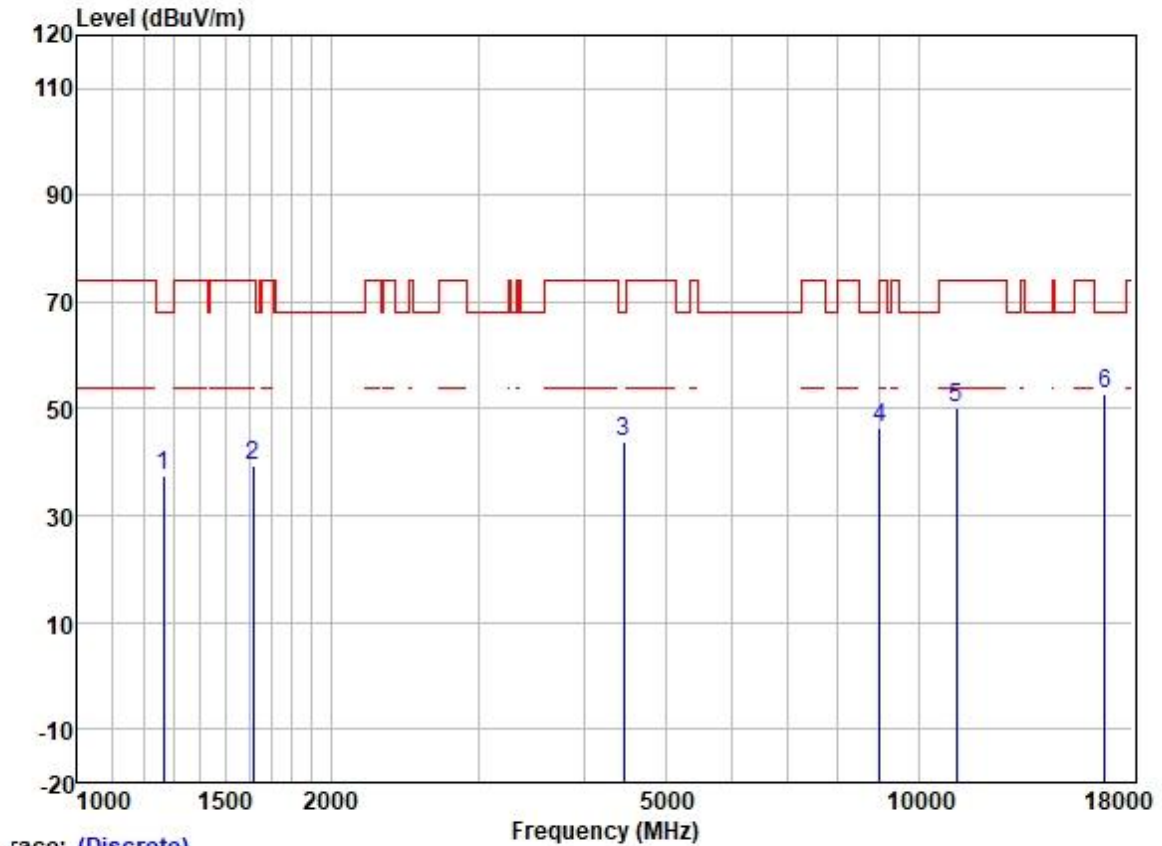
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1274.802	47.97	25.12	2.48	38.07	37.50	68.20	-30.70	VERTICAL	peak
2	1625.121	47.23	25.61	2.80	37.55	38.09	74.00	-35.91	VERTICAL	peak
3	4482.150	44.94	30.78	4.99	36.61	44.10	68.20	-24.10	VERTICAL	peak
4	8995.123	39.41	37.40	7.56	37.05	47.32	68.20	-20.88	VERTICAL	peak
5	11020.000	38.54	40.10	7.71	36.64	49.71	74.00	-24.29	VERTICAL	peak
6	16530.000	39.13	39.76	9.44	36.23	52.10	68.20	-16.10	VERTICAL	peak

Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



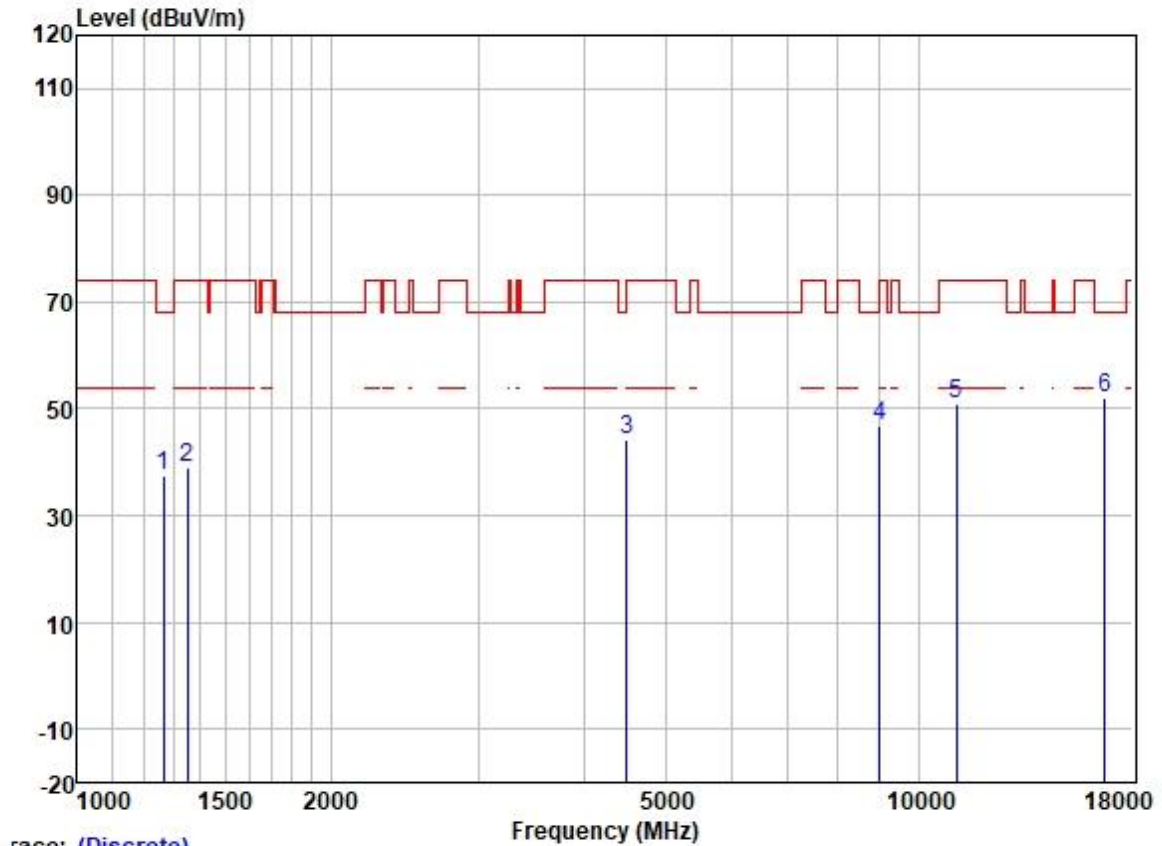
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	47.38	25.12	2.48	38.07	36.91	68.20	-31.29	HORIZONTAL peak
2	1390.276	48.47	25.38	2.60	37.92	38.53	74.00	-35.47	HORIZONTAL peak
3	4495.125	44.40	30.80	5.05	36.60	43.65	68.20	-24.55	HORIZONTAL peak
4	8995.123	39.71	37.40	7.56	37.05	47.62	68.20	-20.58	HORIZONTAL peak
5	11020.000	38.38	40.10	7.71	36.64	49.55	74.00	-24.45	HORIZONTAL peak
6	16530.000	38.11	39.76	9.44	36.23	51.08	68.20	-17.12	HORIZONTAL peak

Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



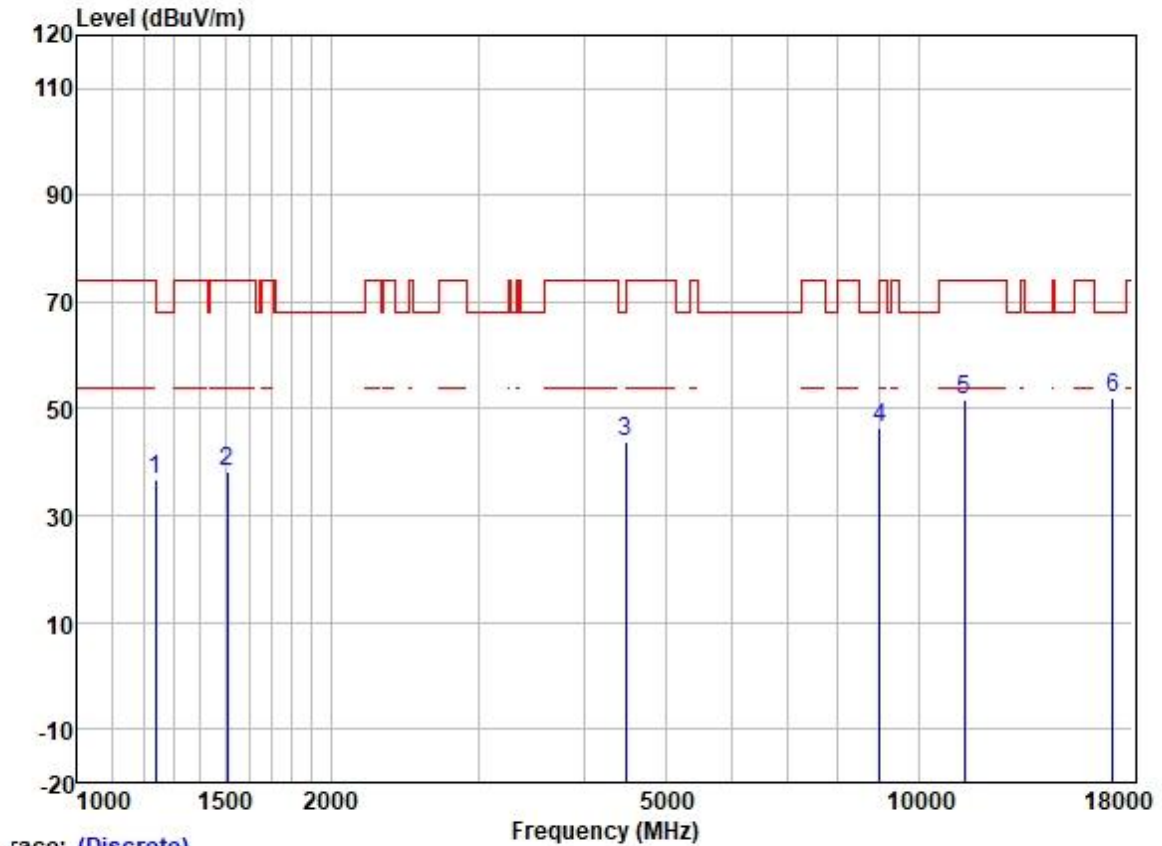
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1267.454	47.97	25.10	2.44	38.07	37.44	68.20	-30.76	VERTICAL peak
2	1615.754	48.58	25.60	2.80	37.55	39.43	74.00	-34.57	VERTICAL peak
3	4456.315	44.71	30.75	4.88	36.62	43.72	68.20	-24.48	VERTICAL peak
4	8995.123	38.59	37.40	7.56	37.05	46.50	68.20	-21.70	VERTICAL peak
5	11100.000	38.81	40.07	7.82	36.62	50.08	74.00	-23.92	VERTICAL peak
6	16650.000	39.59	40.10	9.43	36.21	52.91	68.20	-15.29	VERTICAL peak

Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



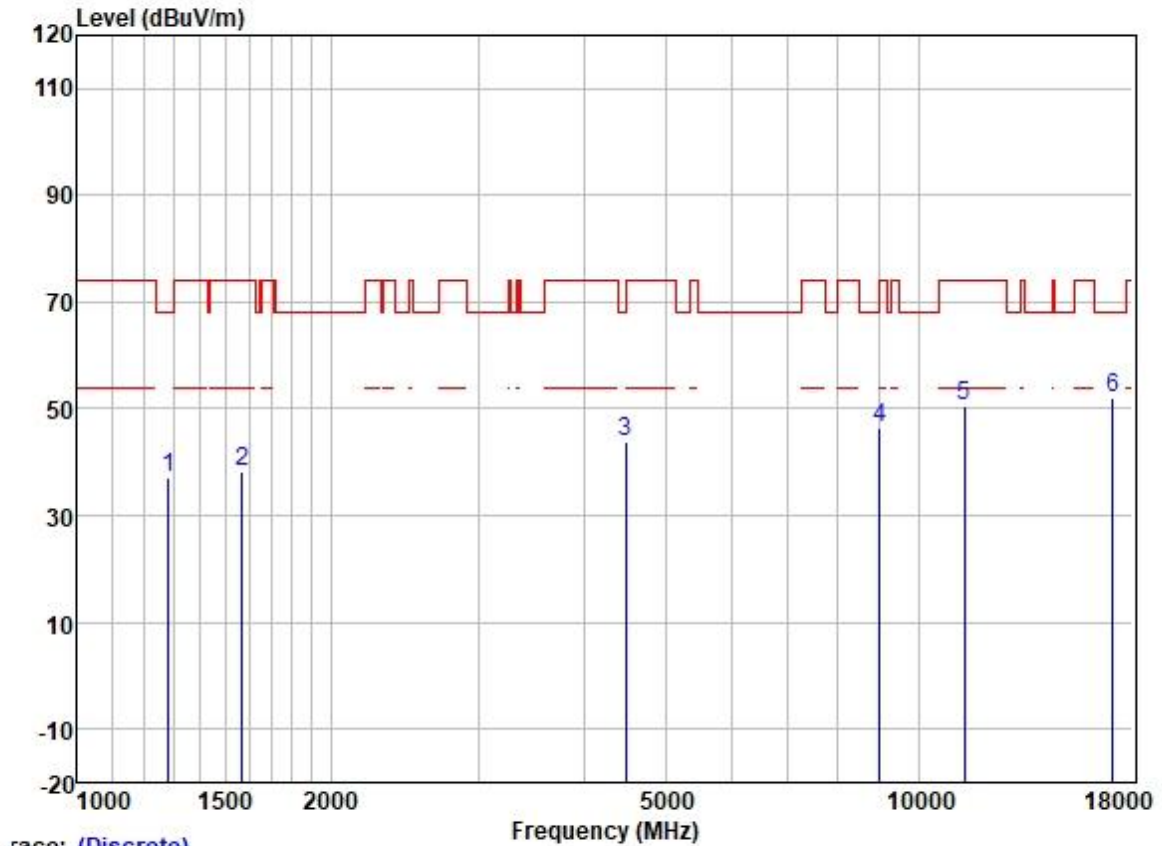
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1267.454	48.08	25.10	2.44	38.07	37.55	68.20	-30.65	HORIZONTAL	peak
2	1350.667	48.94	25.31	2.60	37.99	38.86	74.00	-35.14	HORIZONTAL	peak
3	4495.125	45.02	30.80	5.05	36.60	44.27	68.20	-23.93	HORIZONTAL	peak
4	8995.123	38.97	37.40	7.56	37.05	46.88	68.20	-21.32	HORIZONTAL	peak
5	11100.000	39.56	40.07	7.82	36.62	50.83	74.00	-23.17	HORIZONTAL	peak
6	16650.000	38.84	40.10	9.43	36.21	52.16	68.20	-16.04	HORIZONTAL	peak

Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



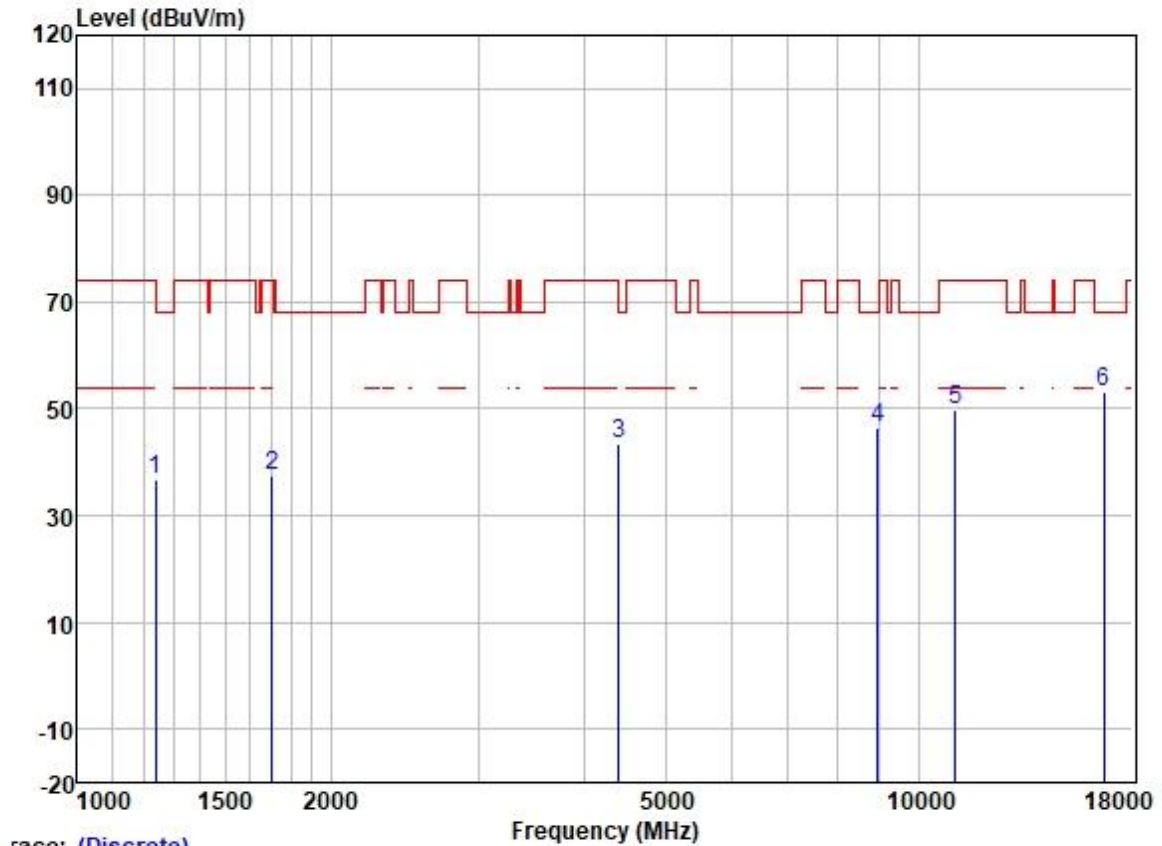
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1238.483	47.62	24.96	2.30	38.10	36.78	74.00	-37.22	VERTICAL	peak
2	1507.470	47.60	25.51	2.80	37.75	38.16	74.00	-35.84	VERTICAL	peak
3	4482.150	44.59	30.78	4.99	36.61	43.75	68.20	-24.45	VERTICAL	peak
4	8995.123	38.48	37.40	7.56	37.05	46.39	68.20	-21.81	VERTICAL	peak
5	11340.000	40.03	39.97	8.18	36.57	51.61	74.00	-22.39	VERTICAL	peak
6	17010.000	37.13	41.75	9.39	36.10	52.17	68.20	-16.03	VERTICAL	peak

Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



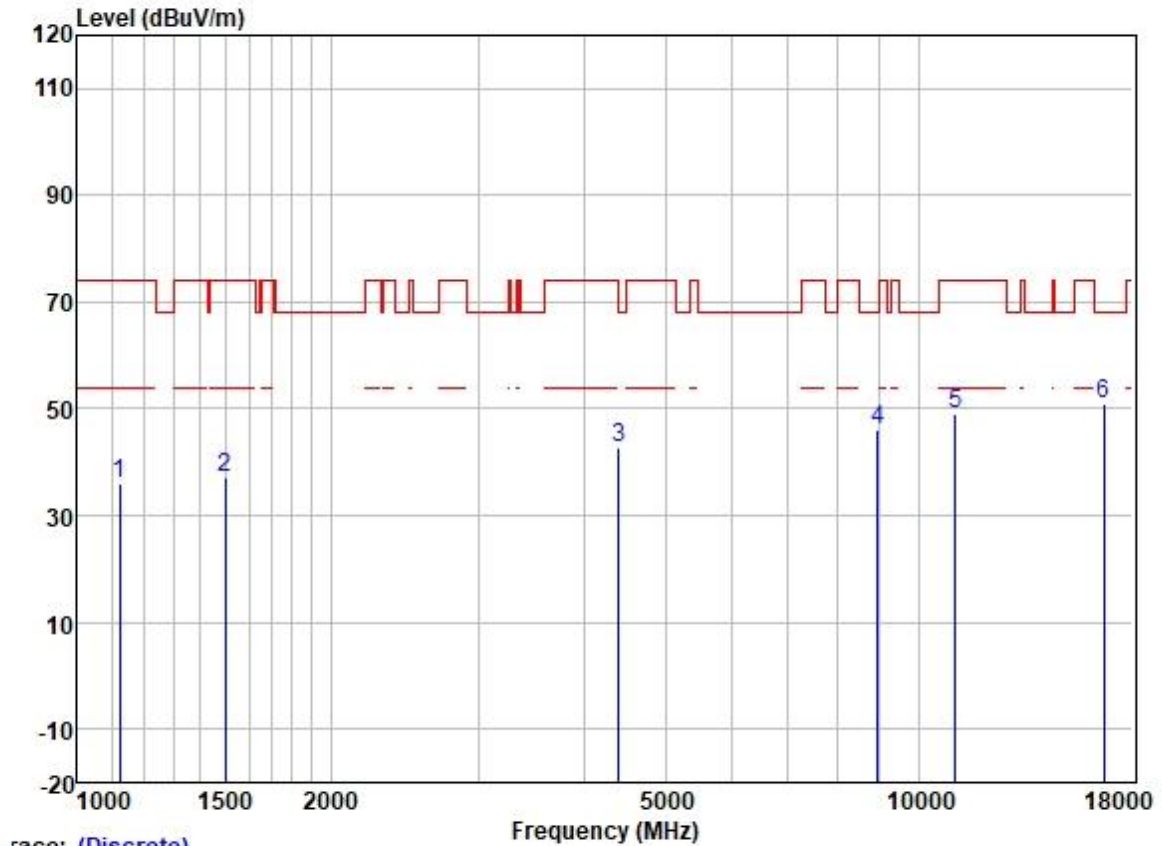
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1282.193	47.43	25.15	2.52	38.07	37.03	68.20	-31.17	HORIZONTAL	peak
2	1569.721	47.37	25.55	2.80	37.62	38.10	74.00	-35.90	HORIZONTAL	peak
3	4482.150	44.71	30.78	4.99	36.61	43.87	68.20	-24.33	HORIZONTAL	peak
4	8995.123	38.47	37.40	7.56	37.05	46.38	68.20	-21.82	HORIZONTAL	peak
5	11340.000	39.15	39.97	8.18	36.57	50.73	74.00	-23.27	HORIZONTAL	peak
6	17010.000	36.95	41.75	9.39	36.10	51.99	68.20	-16.21	HORIZONTAL	peak

Test Mode: 10; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



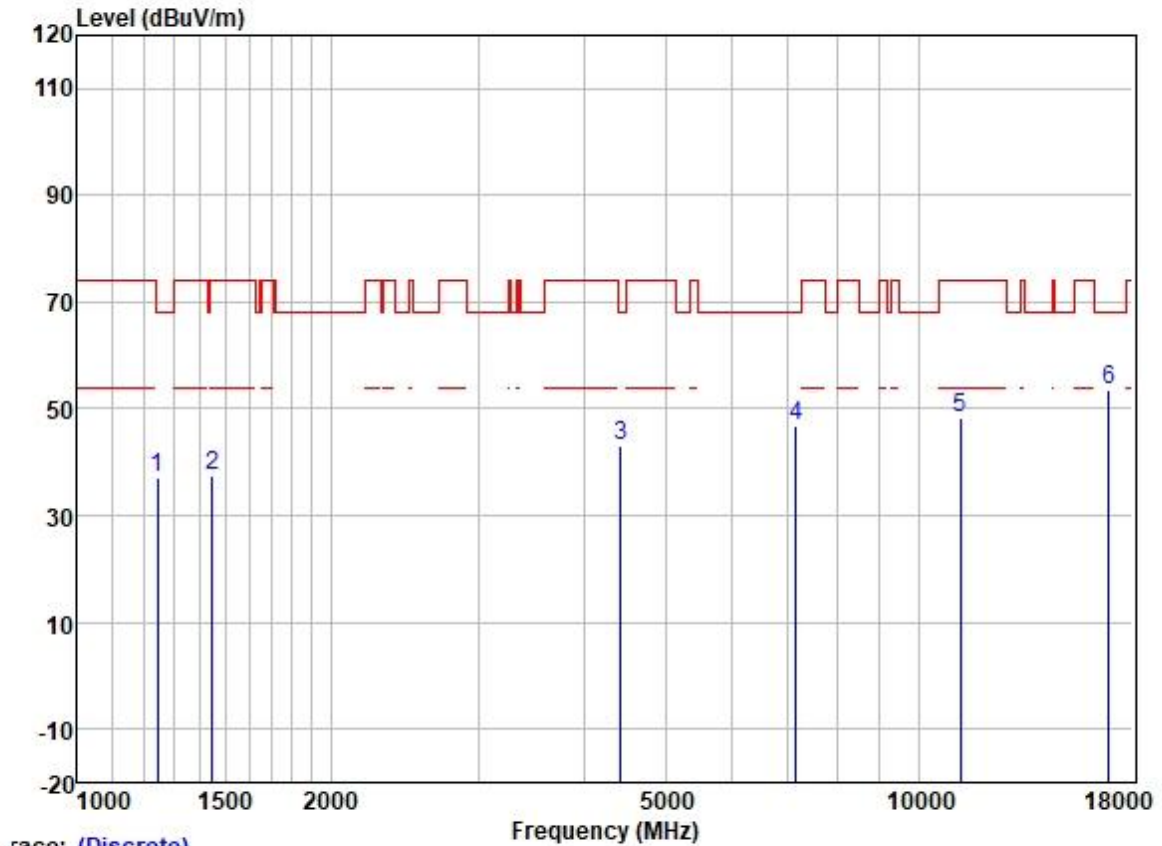
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1238.483	47.62	24.96	2.30	38.10	36.78	74.00	-37.22	VERTICAL	peak
2	1702.042	46.48	25.72	2.80	37.46	37.54	74.00	-36.46	VERTICAL	peak
3	4405.090	44.78	30.68	4.70	36.63	43.53	68.20	-24.67	VERTICAL	peak
4	8943.274	38.51	37.38	7.49	37.08	46.30	68.20	-21.90	VERTICAL	peak
5	11060.000	38.66	40.09	7.74	36.63	49.86	74.00	-24.14	VERTICAL	peak
6	16590.000	39.89	39.93	9.43	36.22	53.03	68.20	-15.17	VERTICAL	peak

Test Mode: 10; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; 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	1122.563	47.70	24.42	2.22	38.21	36.13	74.00	-37.87	HORIZONTAL	peak
2	1498.781	46.67	25.50	2.80	37.75	37.22	74.00	-36.78	HORIZONTAL	peak
3	4405.090	44.04	30.68	4.70	36.63	42.79	68.20	-25.41	HORIZONTAL	peak
4	8943.274	38.30	37.38	7.49	37.08	46.09	68.20	-22.11	HORIZONTAL	peak
5	11060.000	37.81	40.09	7.74	36.63	49.01	74.00	-24.99	HORIZONTAL	peak
6	16590.000	37.97	39.93	9.43	36.22	51.11	68.20	-17.09	HORIZONTAL	peak

Test Mode: 10; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:High



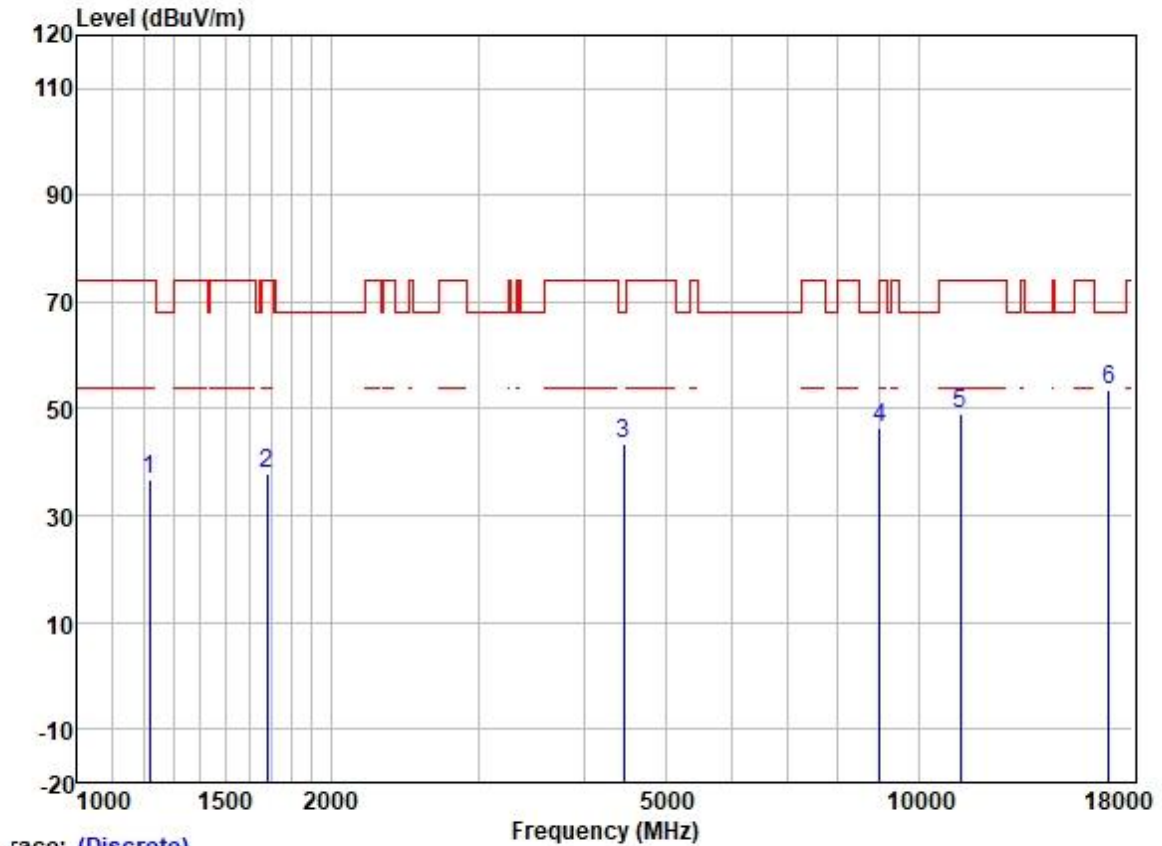
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	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1245.663	47.76	25.00	2.33	38.10	36.99	68.20	-31.21	VERTICAL peak
2	1447.688	47.13	25.45	2.70	37.84	37.44	74.00	-36.56	VERTICAL peak
3	4430.628	44.31	30.72	4.78	36.62	43.19	68.20	-25.01	VERTICAL peak
4	7158.806	42.38	35.40	5.94	36.88	46.84	68.20	-21.36	VERTICAL peak
5	11220.000	37.12	40.03	7.95	36.59	48.51	74.00	-25.49	VERTICAL peak
6	16830.000	39.49	40.94	9.40	36.17	53.66	68.20	-14.54	VERTICAL peak



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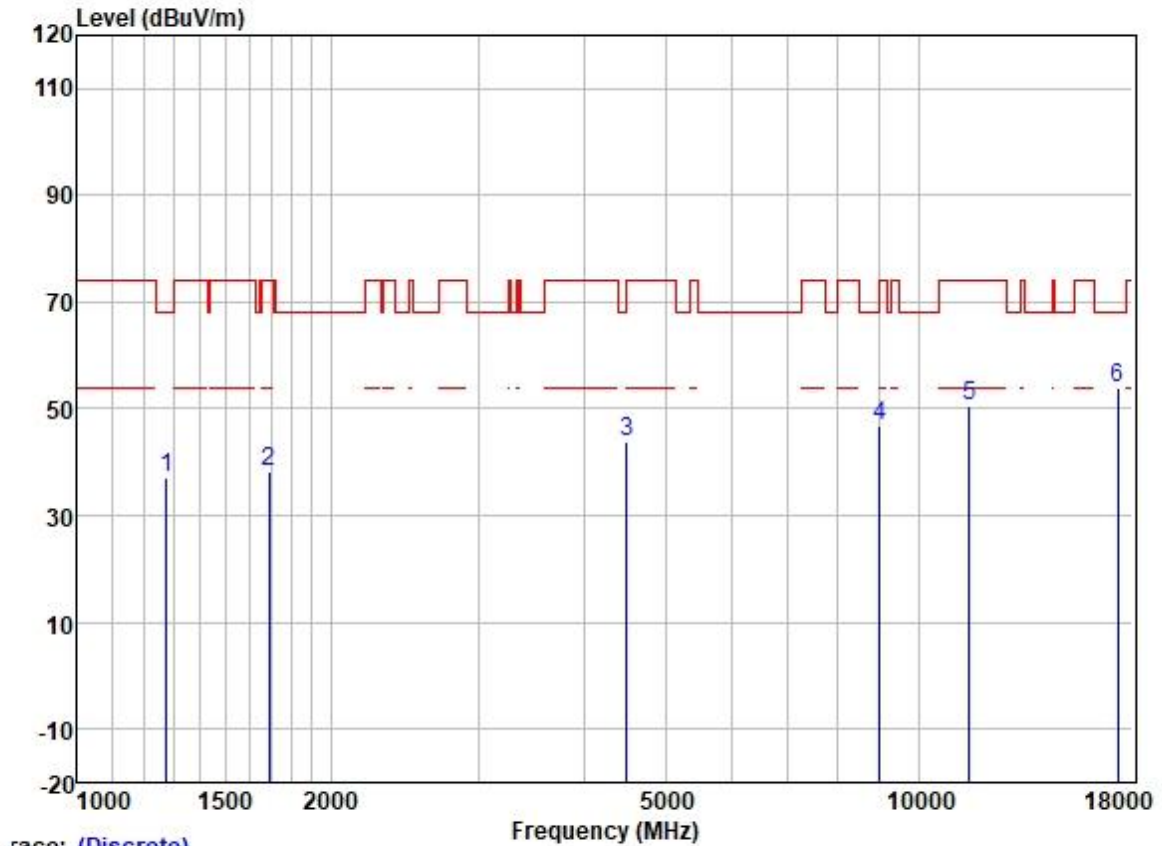
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Test Mode: 10; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:High



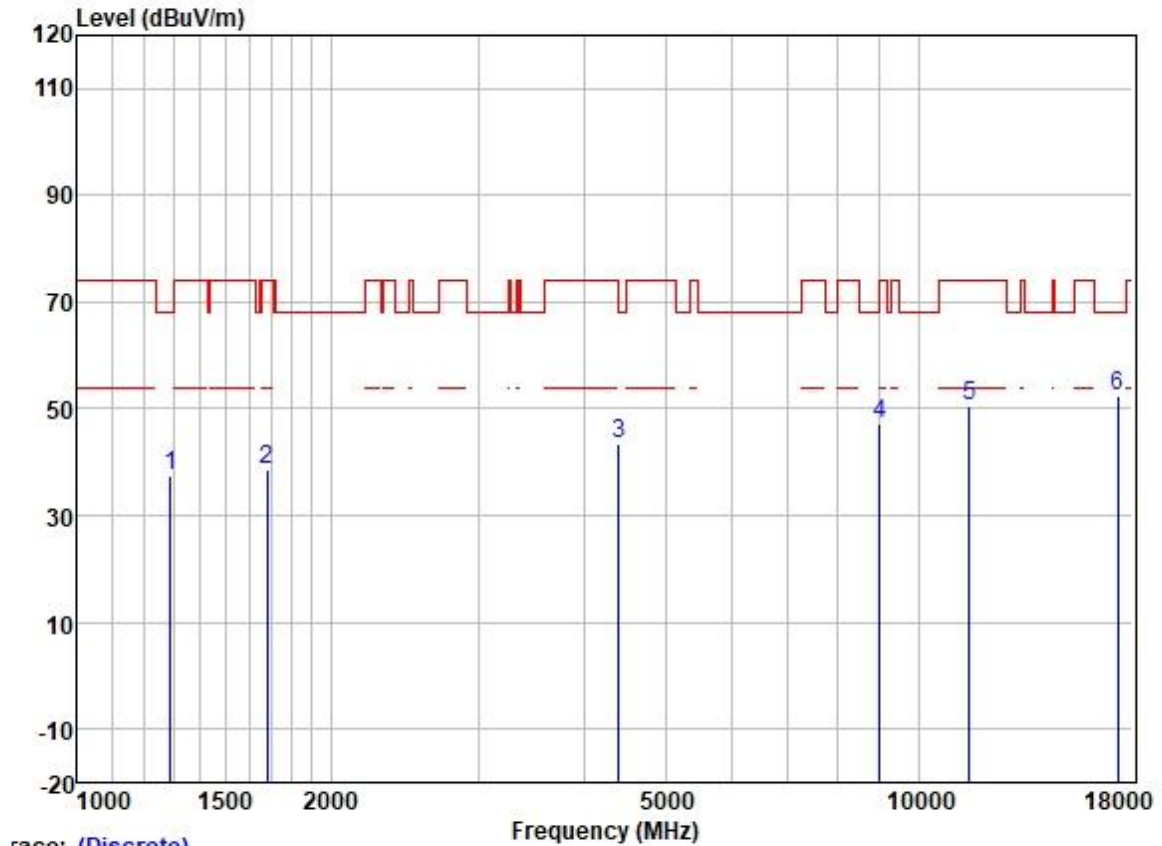
		ReadAntenna	Cable	Preamp		Limit	Over			
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1217.190	47.88	24.79	2.32	38.12	36.87	74.00	-37.13	HORIZONTAL	peak
2	1682.477	46.89	25.68	2.80	37.48	37.89	74.00	-36.11	HORIZONTAL	peak
3	4456.315	44.35	30.75	4.88	36.62	43.36	68.20	-24.84	HORIZONTAL	peak
4	8995.123	38.66	37.40	7.56	37.05	46.57	68.20	-21.63	HORIZONTAL	peak
5	11220.000	37.64	40.03	7.95	36.59	49.03	74.00	-24.97	HORIZONTAL	peak
6	16830.000	39.37	40.94	9.40	36.17	53.54	68.20	-14.66	HORIZONTAL	peak

Test Mode: 11; Polarity: Vertical; Modulation:802.11a; 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	1274.802	47.63	25.12	2.48	38.07	37.16	68.20	-31.04	VERTICAL	peak
2	1692.231	47.20	25.70	2.80	37.46	38.24	74.00	-35.76	VERTICAL	peak
3	4495.125	44.41	30.80	5.05	36.60	43.66	68.20	-24.54	VERTICAL	peak
4	8995.123	38.90	37.40	7.56	37.05	46.81	68.20	-21.39	VERTICAL	peak
5	11490.000	38.71	39.90	8.41	36.55	50.47	74.00	-23.53	VERTICAL	peak
6	17235.000	36.85	43.01	10.08	36.02	53.92	68.20	-14.28	VERTICAL	peak

Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



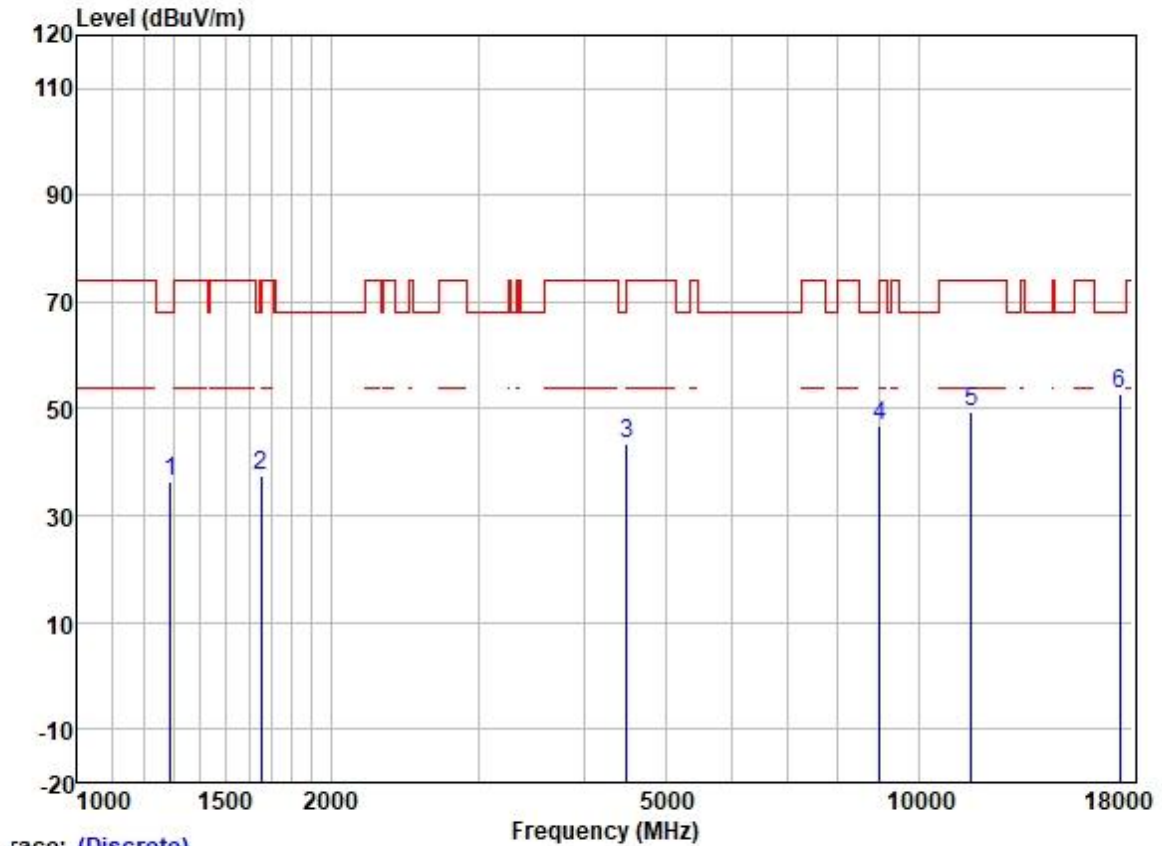
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1289.627	47.70	25.17	2.55	38.04	37.38	68.20	-30.82	HORIZONTAL peak
2	1682.477	47.75	25.68	2.80	37.48	38.75	74.00	-35.25	HORIZONTAL peak
3	4405.090	44.88	30.68	4.70	36.63	43.63	68.20	-24.57	HORIZONTAL peak
4	8995.123	39.22	37.40	7.56	37.05	47.13	68.20	-21.07	HORIZONTAL peak
5	11490.000	38.88	39.90	8.41	36.55	50.64	74.00	-23.36	HORIZONTAL peak
6	17235.000	35.17	43.01	10.08	36.02	52.24	68.20	-15.96	HORIZONTAL peak



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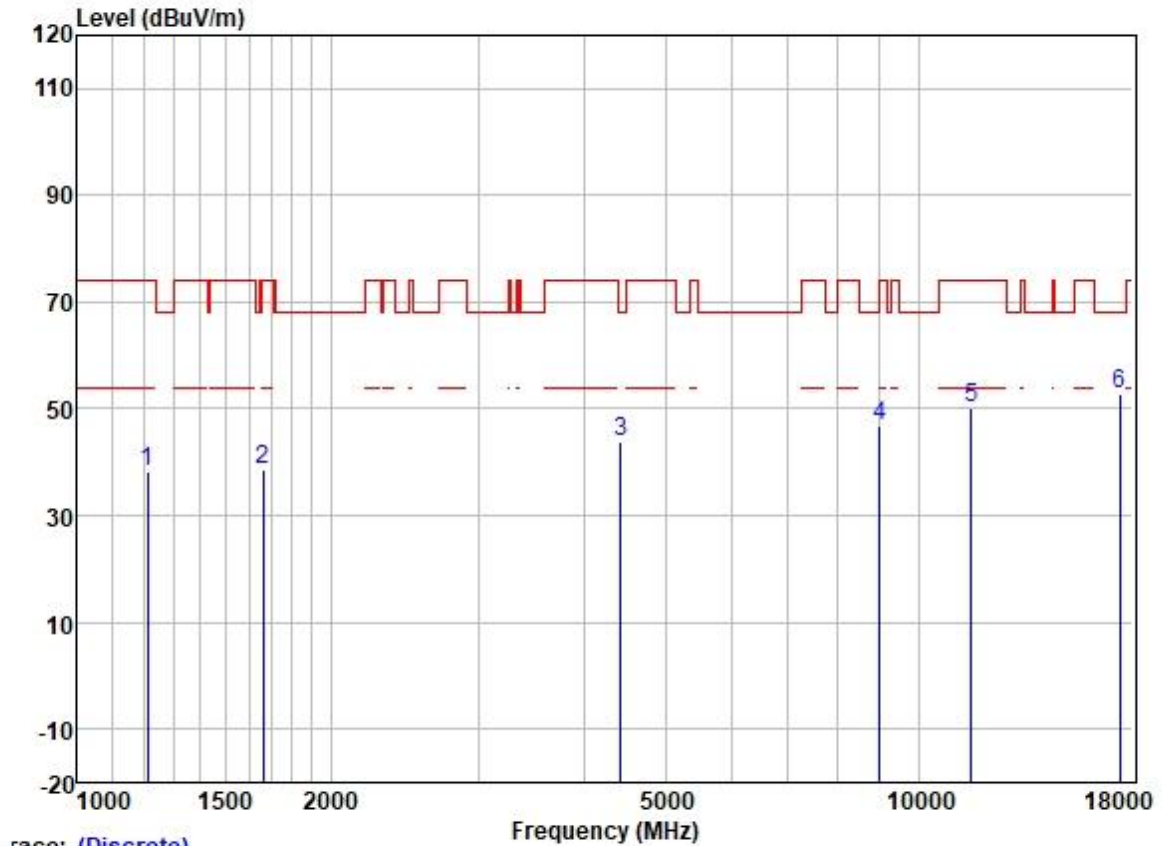
Test Mode: 11; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



Trace: (Discrete)

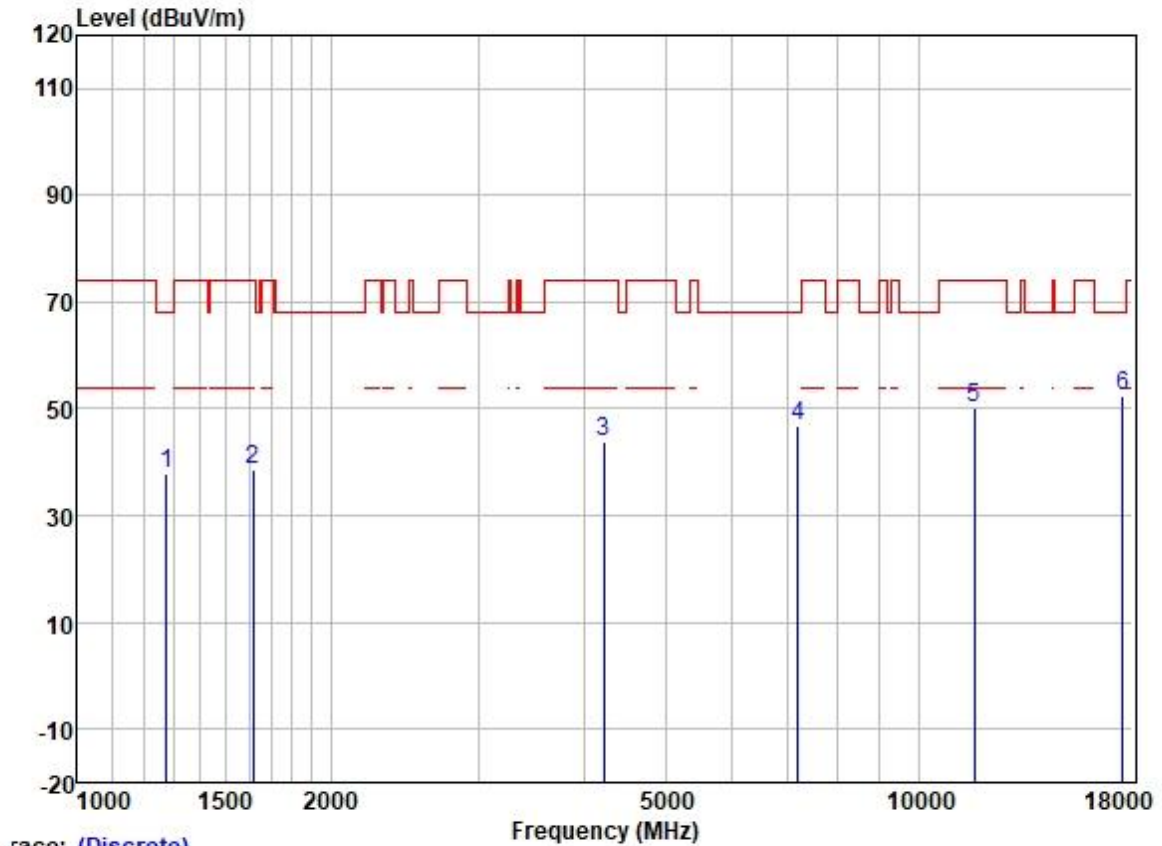
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1289.627	46.85	25.17	2.55	38.04	36.53	68.20	-31.67	VERTICAL	peak
2	1653.550	46.43	25.64	2.80	37.51	37.36	68.20	-30.84	VERTICAL	peak
3	4495.125	44.27	30.80	5.05	36.60	43.52	68.20	-24.68	VERTICAL	peak
4	8995.123	38.76	37.40	7.56	37.05	46.67	68.20	-21.53	VERTICAL	peak
5	11570.000	37.79	39.78	8.38	36.54	49.41	74.00	-24.59	VERTICAL	peak
6	17355.000	35.15	43.40	10.39	35.99	52.95	68.20	-15.25	VERTICAL	peak

Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; 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	1210.174	49.47	24.74	2.33	38.14	38.40	74.00	-35.60	HORIZONTAL	peak
2	1663.137	47.59	25.65	2.80	37.48	38.56	74.00	-35.44	HORIZONTAL	peak
3	4430.628	44.79	30.72	4.78	36.62	43.67	68.20	-24.53	HORIZONTAL	peak
4	8995.123	38.73	37.40	7.56	37.05	46.64	68.20	-21.56	HORIZONTAL	peak
5	11570.000	38.53	39.78	8.38	36.54	50.15	74.00	-23.85	HORIZONTAL	peak
6	17355.000	34.87	43.40	10.39	35.99	52.67	68.20	-15.53	HORIZONTAL	peak

Test Mode: 11; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



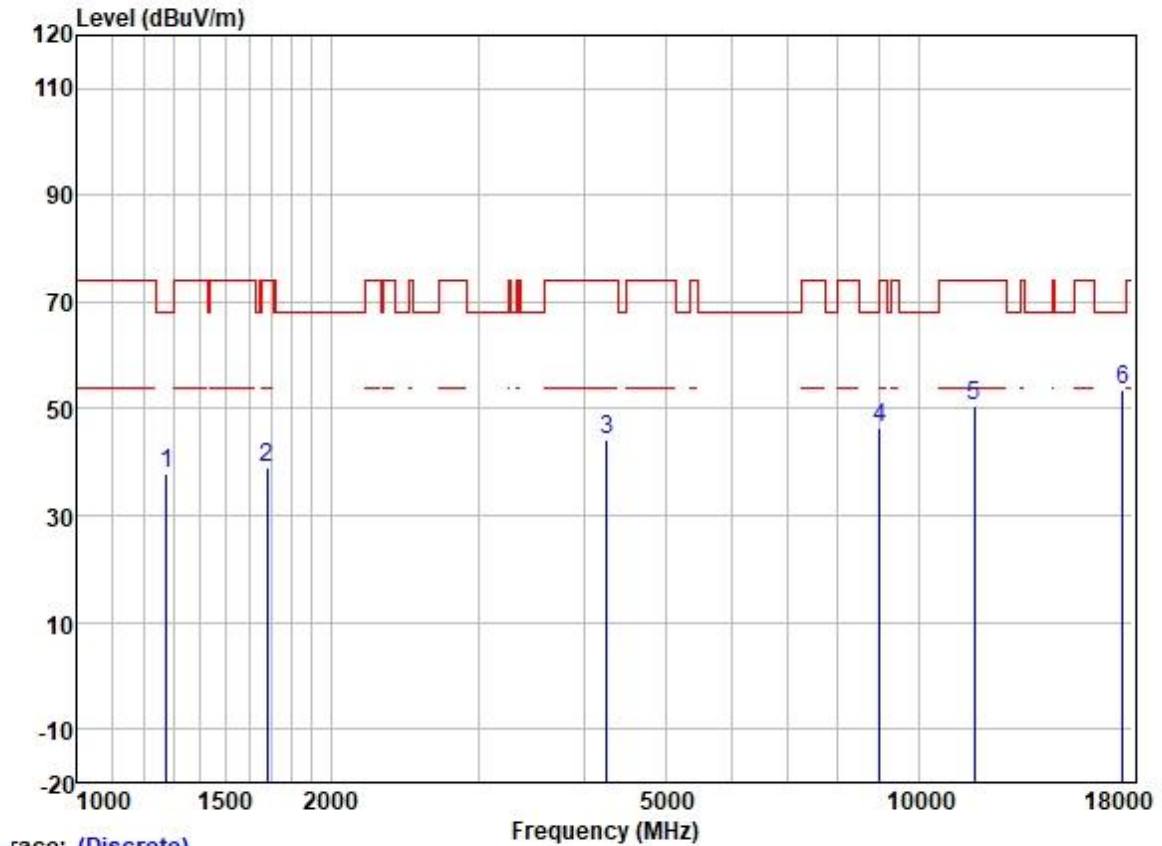
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	48.44	25.12	2.48	38.07	37.97	68.20	-30.23	VERTICAL peak
2	1615.754	47.60	25.60	2.80	37.55	38.45	74.00	-35.55	VERTICAL peak
3	4230.396	45.70	30.26	4.61	36.66	43.91	74.00	-30.09	VERTICAL peak
4	7200.309	42.35	35.54	5.98	36.92	46.95	68.20	-21.25	VERTICAL peak
5	11650.000	38.80	39.65	8.35	36.53	50.27	74.00	-23.73	VERTICAL peak
6	17475.000	33.67	43.90	10.77	35.97	52.37	68.20	-15.83	VERTICAL peak



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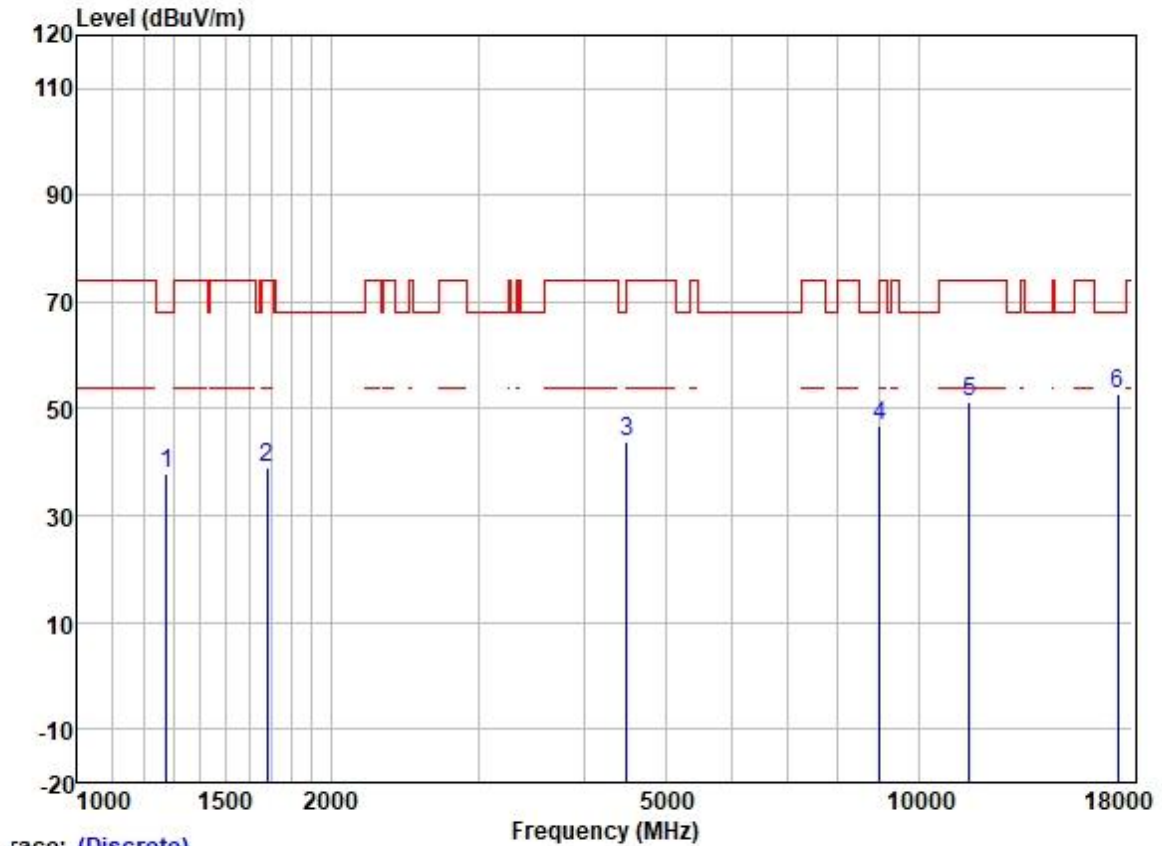
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Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



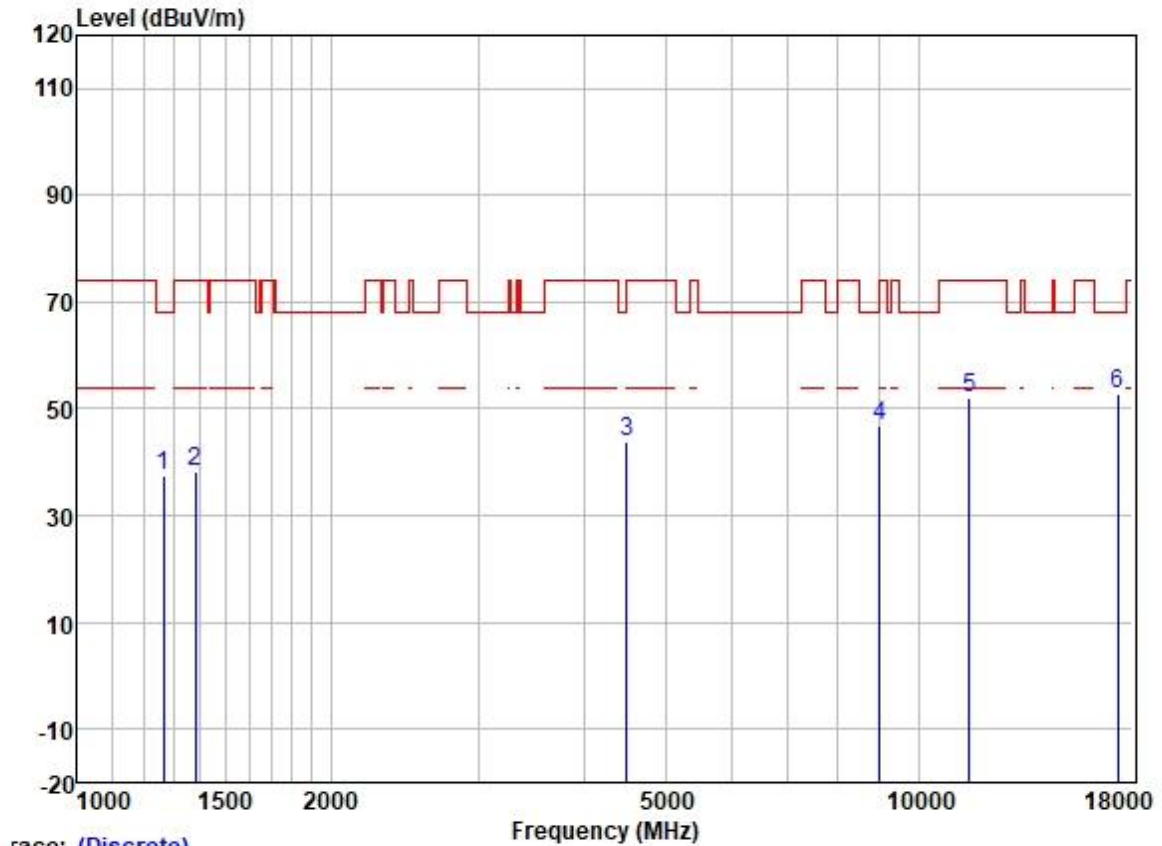
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	48.26	25.12	2.48	38.07	37.79	68.20	-30.41	HORIZONTAL peak
2	1682.477	48.14	25.68	2.80	37.48	39.14	74.00	-34.86	HORIZONTAL peak
3	4254.921	45.93	30.34	4.62	36.66	44.23	74.00	-29.77	HORIZONTAL peak
4	8995.123	38.63	37.40	7.56	37.05	46.54	68.20	-21.66	HORIZONTAL peak
5	11650.000	39.20	39.65	8.35	36.53	50.67	74.00	-23.33	HORIZONTAL peak
6	17475.000	34.69	43.90	10.77	35.97	53.39	68.20	-14.81	HORIZONTAL peak

Test Mode: 11; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



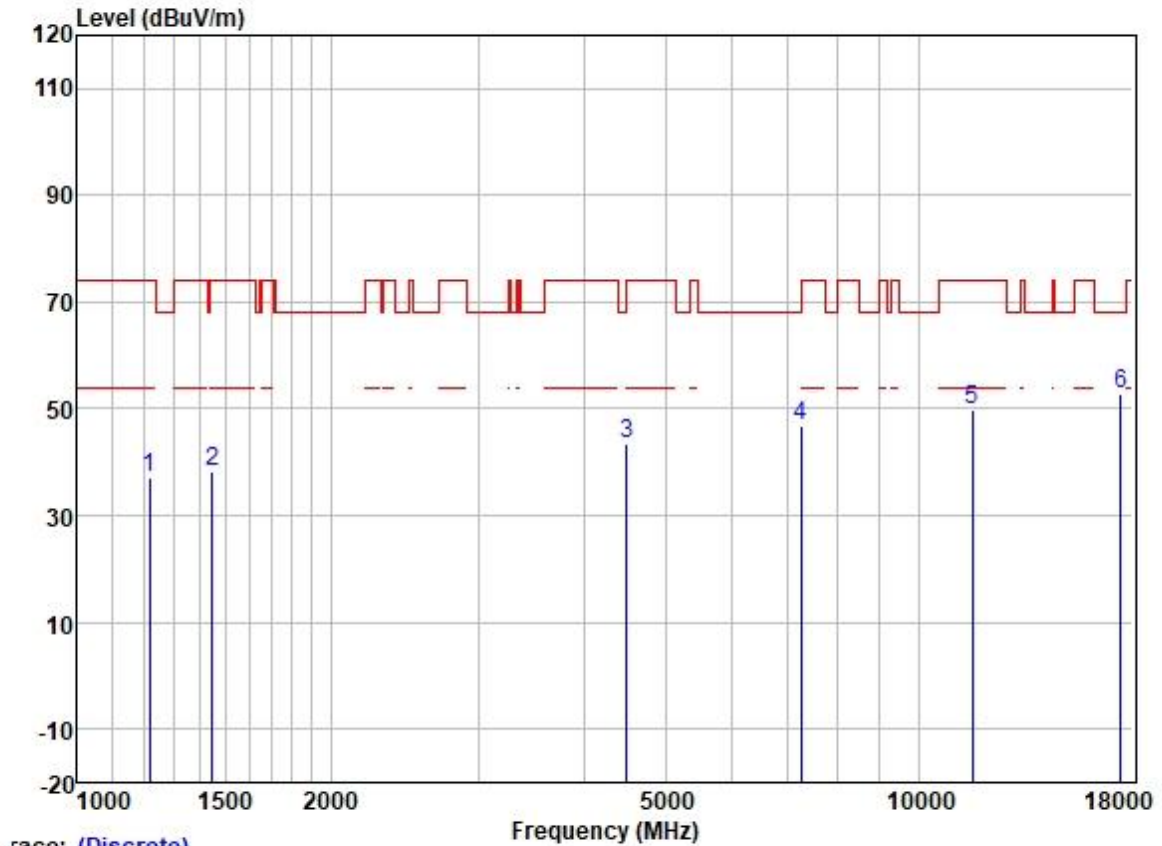
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1274.802	48.42	25.12	2.48	38.07	37.95	68.20	-30.25	VERTICAL peak
2	1682.477	47.86	25.68	2.80	37.48	38.86	74.00	-35.14	VERTICAL peak
3	4495.125	44.63	30.80	5.05	36.60	43.88	68.20	-24.32	VERTICAL peak
4	8995.123	38.90	37.40	7.56	37.05	46.81	68.20	-21.39	VERTICAL peak
5	11510.000	39.62	39.90	8.41	36.55	51.38	74.00	-22.62	VERTICAL peak
6	17265.000	35.22	43.21	10.24	36.01	52.66	68.20	-15.54	VERTICAL peak

Test Mode: 11; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



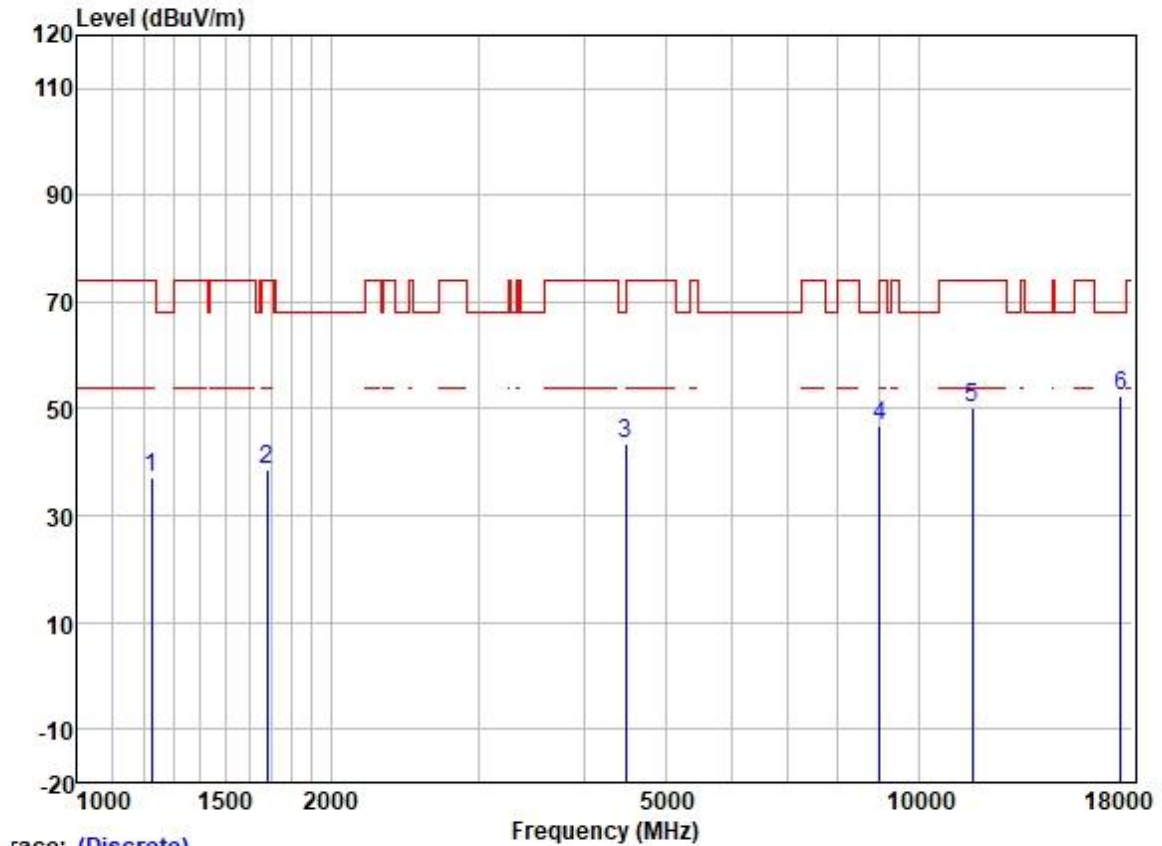
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1267.454	48.08	25.10	2.44	38.07	37.55	68.20	-30.65	HORIZONTAL	peak
2	1382.262	48.16	25.37	2.60	37.95	38.18	74.00	-35.82	HORIZONTAL	peak
3	4495.125	44.56	30.80	5.05	36.60	43.81	68.20	-24.39	HORIZONTAL	peak
4	8995.123	39.00	37.40	7.56	37.05	46.91	68.20	-21.29	HORIZONTAL	peak
5	11510.000	40.16	39.90	8.41	36.55	51.92	74.00	-22.08	HORIZONTAL	peak
6	17265.000	35.45	43.21	10.24	36.01	52.89	68.20	-15.31	HORIZONTAL	peak

Test Mode: 11; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



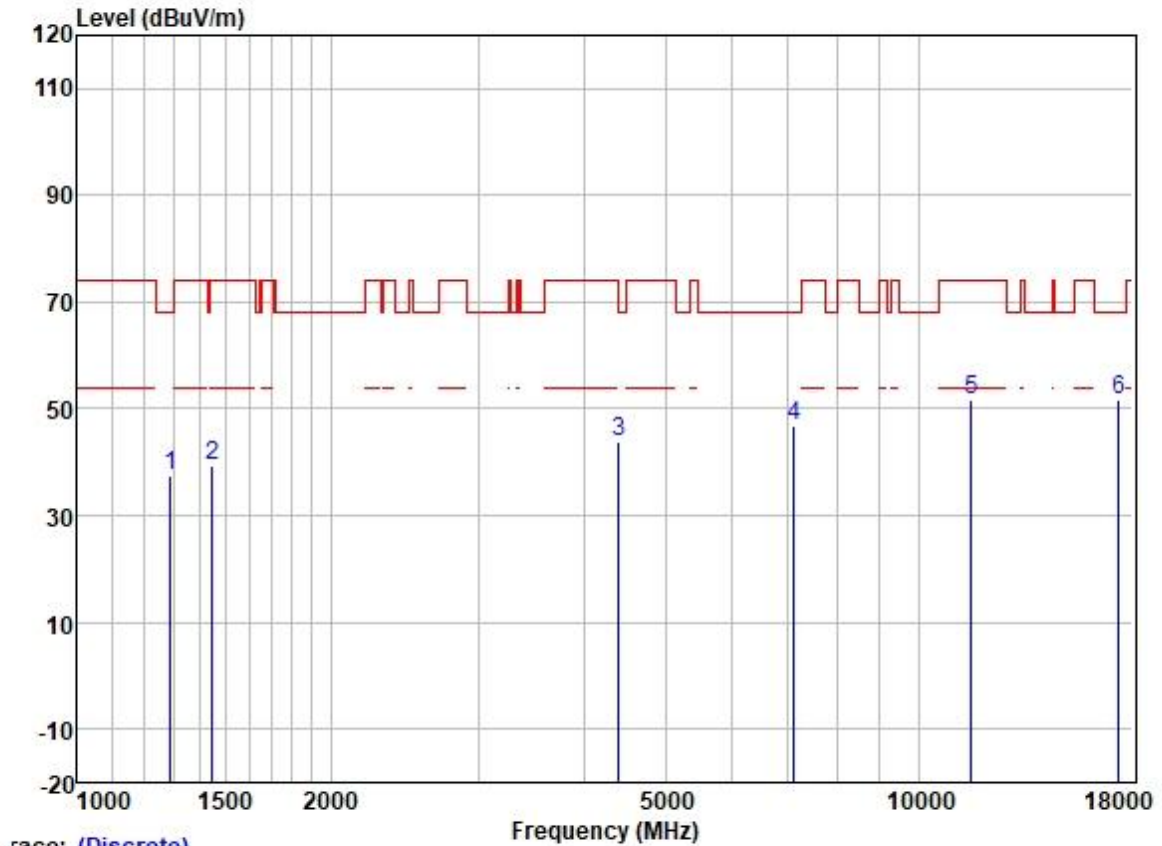
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1217.190	48.10	24.79	2.32	38.12	37.09	74.00	-36.91	VERTICAL	peak
2	1447.688	47.98	25.45	2.70	37.84	38.29	74.00	-35.71	VERTICAL	peak
3	4495.125	44.27	30.80	5.05	36.60	43.52	68.20	-24.68	VERTICAL	peak
4	7242.052	42.20	35.70	6.03	36.96	46.97	68.20	-21.23	VERTICAL	peak
5	11590.000	38.39	39.72	8.37	36.54	49.94	74.00	-24.06	VERTICAL	peak
6	17385.000	34.77	43.57	10.53	35.99	52.88	68.20	-15.32	VERTICAL	peak

Test Mode: 11; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



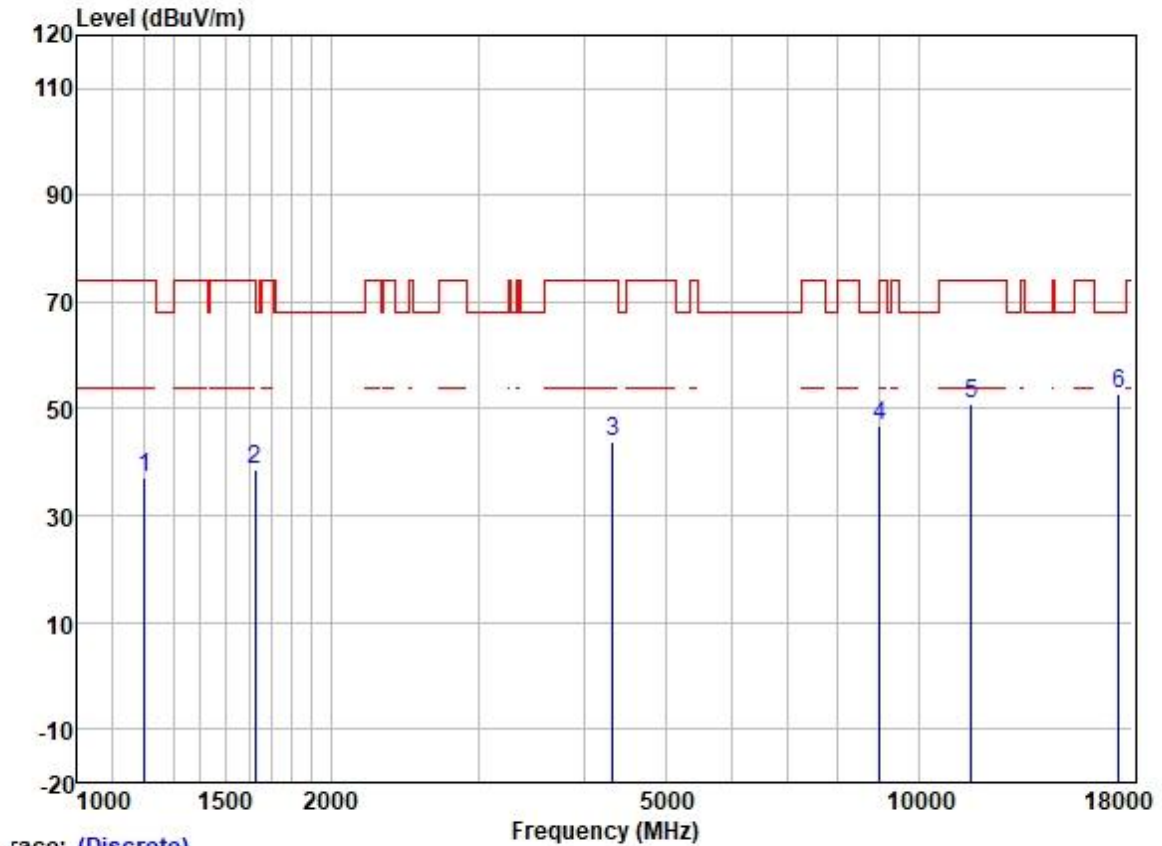
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1224.247	48.03	24.85	2.31	38.12	37.07	74.00	-36.93	HORIZONTAL	peak
2	1682.477	47.70	25.68	2.80	37.48	38.70	74.00	-35.30	HORIZONTAL	peak
3	4482.150	44.16	30.78	4.99	36.61	43.32	68.20	-24.88	HORIZONTAL	peak
4	8995.123	39.07	37.40	7.56	37.05	46.98	68.20	-21.22	HORIZONTAL	peak
5	11590.000	38.75	39.72	8.37	36.54	50.30	74.00	-23.70	HORIZONTAL	peak
6	17385.000	34.44	43.57	10.53	35.99	52.55	68.20	-15.65	HORIZONTAL	peak

Test Mode: 11; 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	1289.627	47.80	25.17	2.55	38.04	37.48	68.20	-30.72	VERTICAL peak
2	1447.688	49.04	25.45	2.70	37.84	39.35	74.00	-34.65	VERTICAL peak
3	4405.090	45.19	30.68	4.70	36.63	43.94	68.20	-24.26	VERTICAL peak
4	7117.542	42.58	35.28	5.90	36.85	46.91	68.20	-21.29	VERTICAL peak
5	11550.000	39.83	39.84	8.40	36.54	51.53	74.00	-22.47	VERTICAL peak
6	17325.000	33.78	43.40	10.39	36.00	51.57	68.20	-16.63	VERTICAL peak

Test Mode: 11; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



		ReadAntenna		Cable	Preamp		Limit	Over	Pol/Phase	Remark
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1203.199	48.29	24.70	2.34	38.14	37.19	74.00	-36.81	HORIZONTAL	peak
2	1625.121	47.70	25.61	2.80	37.55	38.56	74.00	-35.44	HORIZONTAL	peak
3	4329.354	45.17	30.54	4.67	36.64	43.74	74.00	-30.26	HORIZONTAL	peak
4	8995.123	39.09	37.40	7.56	37.05	47.00	68.20	-21.20	HORIZONTAL	peak
5	11550.000	39.10	39.84	8.40	36.54	50.80	74.00	-23.20	HORIZONTAL	peak
6	17325.000	35.05	43.40	10.39	36.00	52.84	68.20	-15.36	HORIZONTAL	peak

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

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: 23.4 °C

Humidity: 67.9 % RH

Atmospheric Pressure: 1008 mbar



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中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

7.9.2 Test Mode Description

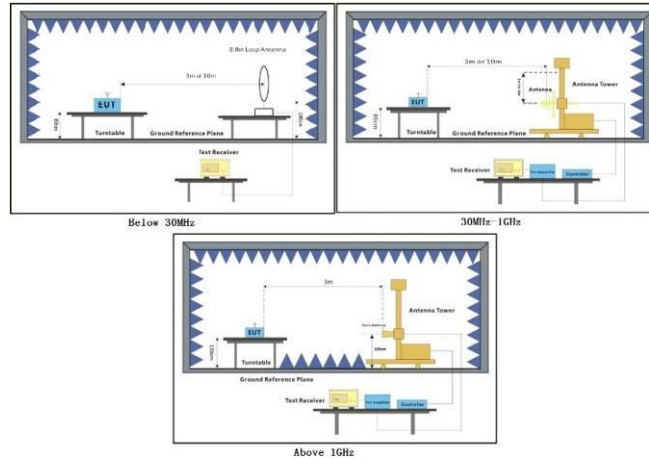
Pre-scan / Final test	Mode Code	Description
Final test	08	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst 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	09	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	10	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	11	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.



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7.9.3 Test Setup Diagram

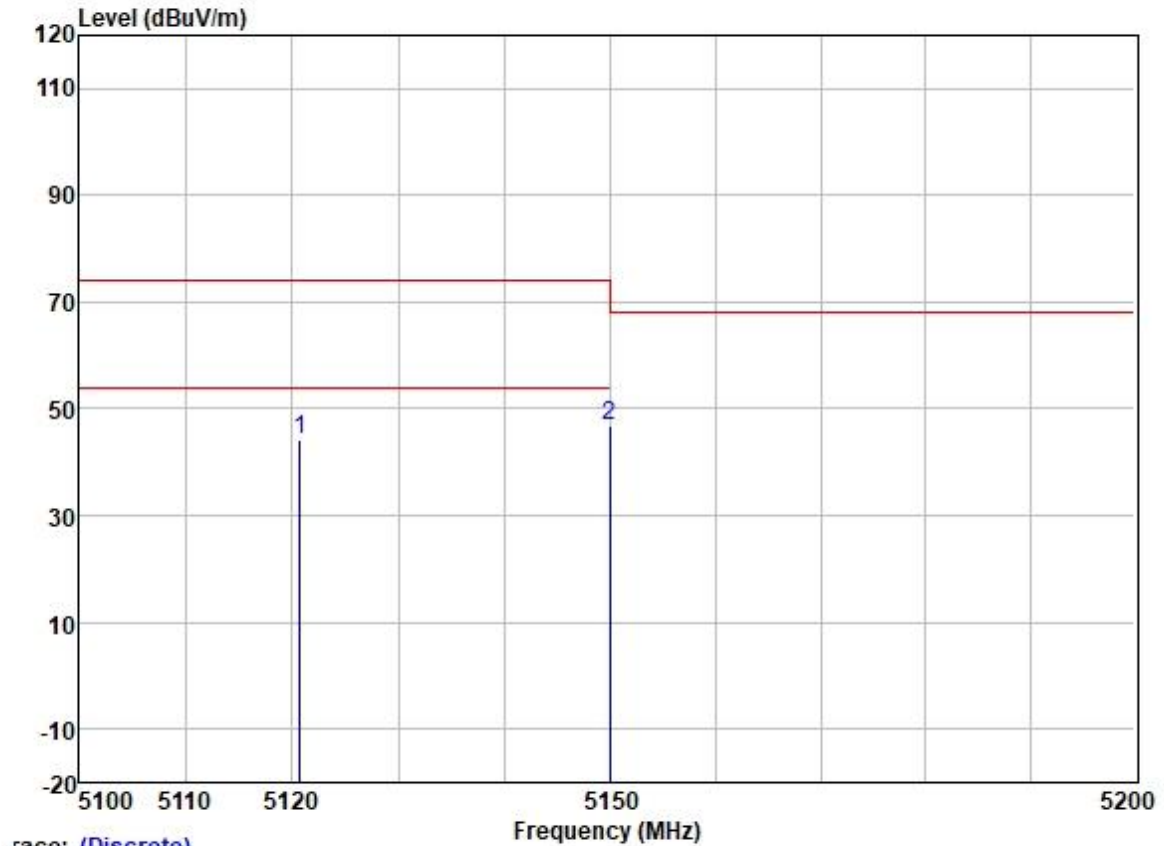


7.9.4 Measurement Procedure and Data

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

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

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



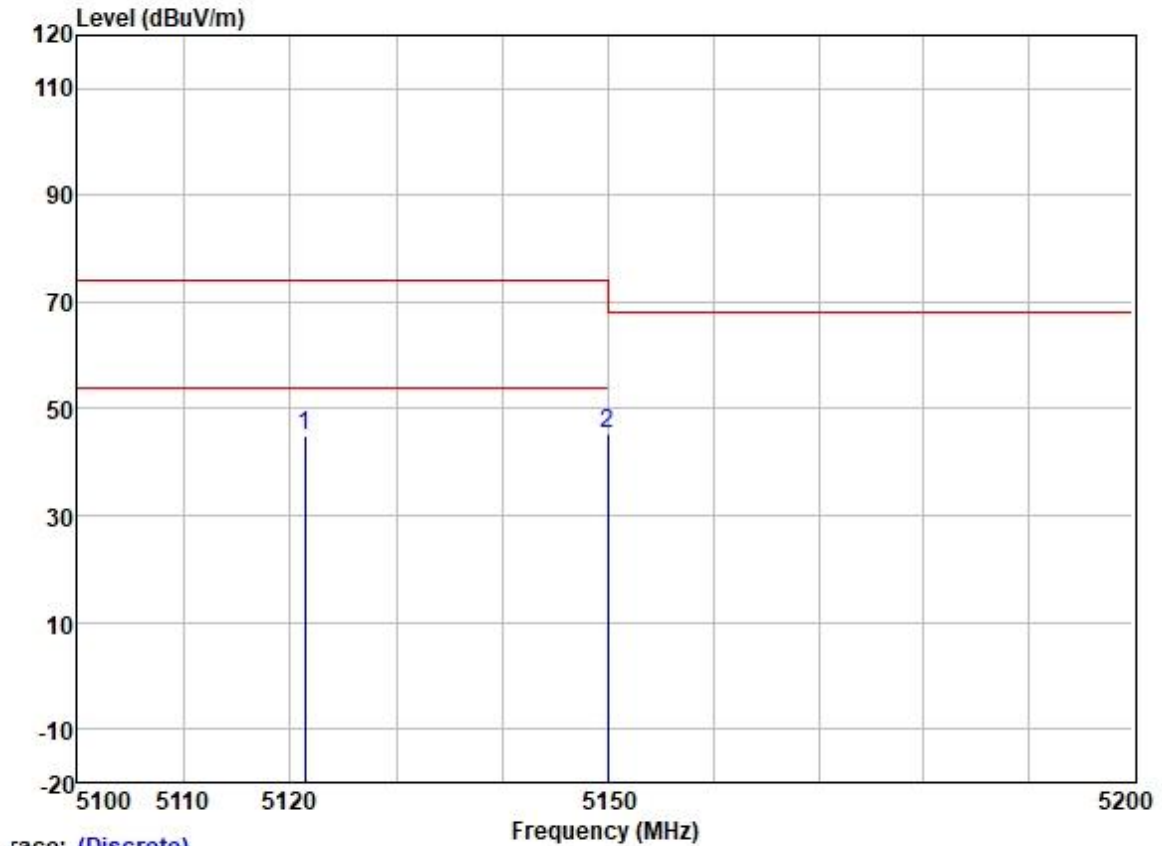
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5120.740	43.29	31.72	5.64	36.32	44.33	74.00	-29.67	VERTICAL Peak
2	5150.000	45.83	31.72	5.62	36.31	46.86	68.20	-21.34	VERTICAL Peak



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



Trace: (Discrete)

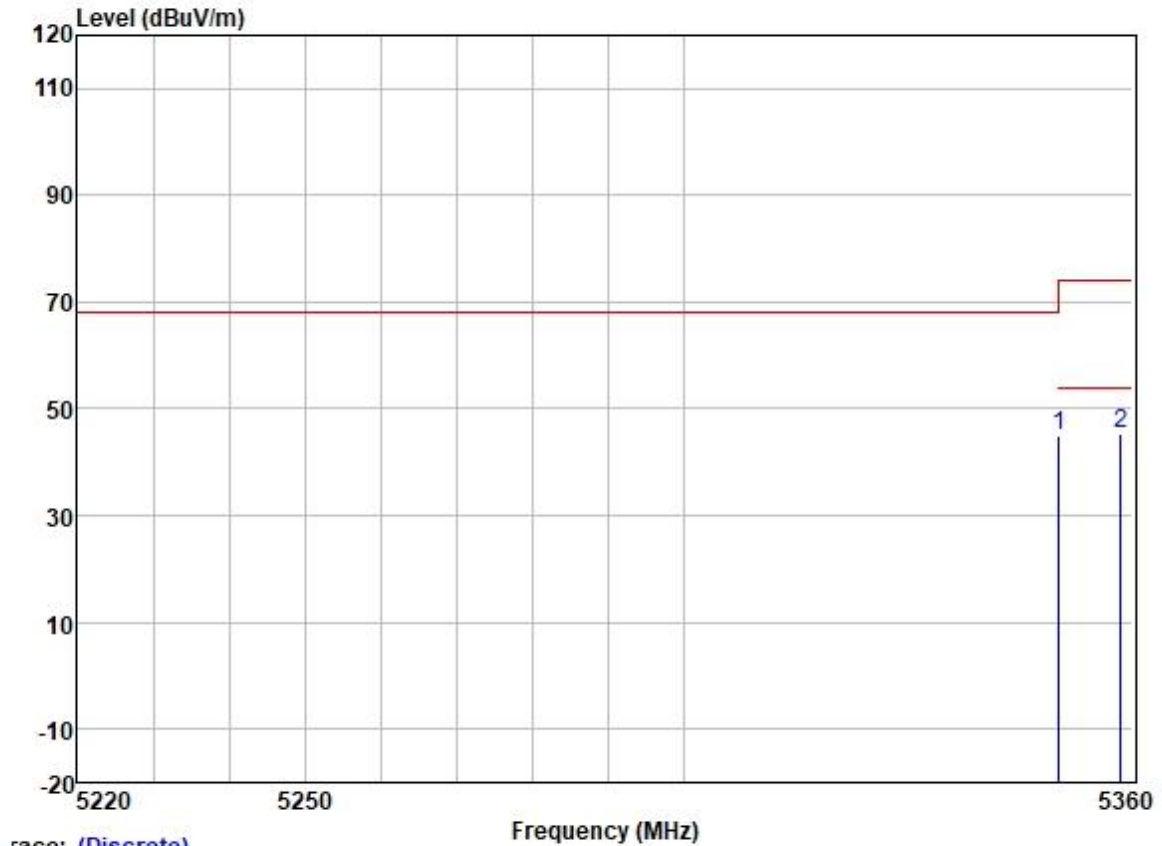
	Freq	Read	Antenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5121.436	43.75	31.72	5.64	36.32	44.79	74.00	-29.21	HORIZONTAL Peak
2	5150.000	44.46	31.72	5.62	36.31	45.49	68.20	-22.71	HORIZONTAL Peak



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



Trace: (Discrete)

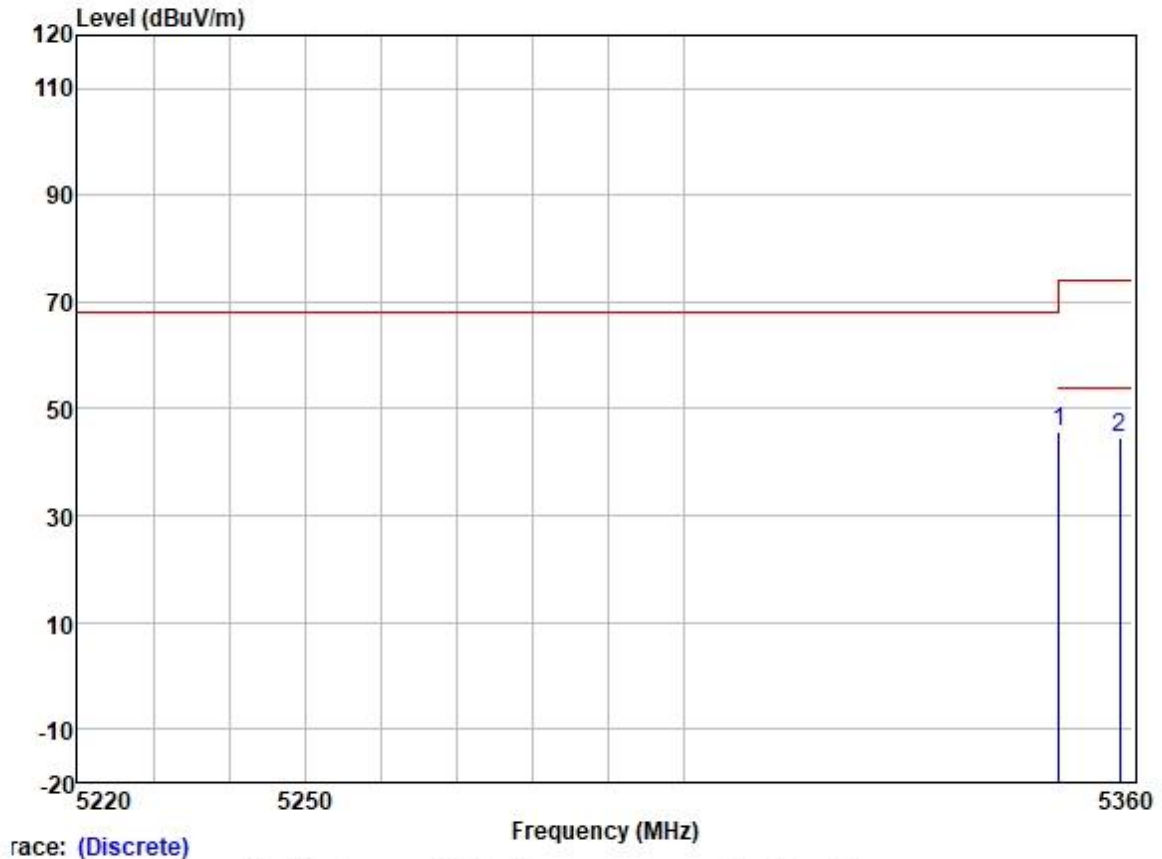
		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5350.000	43.47	31.77	6.05	36.24	45.05	68.20	-23.15	VERTICAL	Peak
2	5358.298	43.74	31.78	6.03	36.24	45.31	74.00	-28.69	VERTICAL	Peak



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



	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5350.000	44.08	31.77	6.05	36.24	45.66	68.20	-22.54	HORIZONTAL Peak
2	5358.156	43.09	31.78	6.03	36.24	44.66	74.00	-29.34	HORIZONTAL Peak