EMC-TRF-01 Rev 1.0

Report No.: GZCR221100155603
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FCC ID: YFK-1526788DA

TEST REPORT

Application No.:	GZCR2211001556AT
Applicant:	ACCO Brands USA LLC
Address of Applicant:	4 Corporate Dr. Lake Zurich IL 60047 United States
Manufacturer:	ACCO Brands USA LLC
Address of Manufacturer:	4 Corporate Dr. Lake Zurich IL 60047 United States
Factory:	Dashine Electronics Co., Ltd
Address of Factory:	No.53, Guangtian Road, Yanchuan community, Yanluo street, Bao'an District, ShenZhen, China
Equipment Under Test (EUT):	
EUT Name:	MOGA Ultra Wireless Controller
Model No.:	1526788-01
Trade Mark:	PowerA
Standard(s) :	47 CFR Part 15, Subpart E 15.407
Date of Receipt:	2022-11-16
Date of Test:	2022-11-17 to 2022-12-20
Date of Issue:	2022-12-23
Test Result:	**Pass***

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

Ricky Liu
Manager

Revision Record			
Version	**Report No.**	**Date**	**Remark**
01		2022-12-23	Original

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

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2 Test Summary

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

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart E 15.407	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207 & 15.407 b(6)	Pass
Duty Cycle		ANSI C63.10 (2013) Section 12.2	KDB 789033 D02 v02r01 II B 1	Pass
99% Bandwidth		KDB 789033 II D	N/A	Pass
26dB Emission bandwidth		KDB 789033 D02 II C 1	47 CFR Part 15, Subpart C 15.407 (a)	Pass
Minimum 6 dB bandwidth (5.725-5.85 GHz band)		KDB 789033 D02 II C 2	47 CFR Part 15, Subpart C 15.407 (e)	Pass
Maximum Conducted output power		KDB 789033 D02 II E	47 CFR Part 15, Subpart C 15.407 (a)	Pass
Peak Power spectrum density		KDB 789033 D02 II F	47 CFR Part 15, Subpart C 15.407 (a)	Pass
Radiated Emissions which fall in the restricted bands		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & 15.407(b)	Pass
Radiated Emissions (below 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & 15.407(b)	Pass
Radiated Emissions (above 1GHz)		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

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

4 General Information

4.1 Details of E.U.T.

Power supply:	Powered by rechargeable battery
	Battery information:
	Model: PL 674257
	Rated voltage: 3.7V
	Capacity: 2000mAh 7.4Wh
Cable(s):	USB Cable: 300cm shielded*1
Operation Frequency (20MHz):	U-NII-1: 5180-5240MHz
	U-NII-2A: 5260-5320MHz
	U-NII-2C: 5500-5700MHz
	U-NII-3: 5745-5825MHz
Modulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)
	802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing:	802.11a/n(HT20): 20MHz
Channel number (20MHz):	U-NII-1: 4
	U-NII-2A: 4
	U-NII-2C: 11
	U-NII-3: 5
DFS Function:	Slave without Radar detection
TPC Function:	Without TPC function
Antenna Type:	PCB Antenna
Antenna Gain:	U-NII-1: 3.09dBi; U-NII-2A: 2.61dBi; U-NII-2C: 2.14dBi; U-NII-3: 2.3dBi

4.2 Description of Support Units

Description	Manufacturer	Model No.	Test item
AC/DC Adapter	Apple	A1401	Conducted Emissions at AC Power Line (150kHz-30MHz), Radiated Emissions (below 1GHz)
AC/DC Adapter	Xiaomi	MDY-12-ES	Radiated Emissions which fall in the restricted bands, Radiated Emissions (above 1GHz)
Router	ASUS	RP-AC51	Non-occupancy period, Channel Move Time, Channel Closing Transmission Time

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
Radiated Emissions which fall in the restricted bands	±5.00dB (30MHz-1GHz; 3m); ± 5.12dB (1GHz-6GHz); ± 5.38dB (6GHz-18GHz); ± 5.61dB (18GHz-40GHz)
Radiated Emissions (below 1GHz)	±5.00dB (30MHz-1GHz; 3m); ±4.38dB (30MHz-1GHz; 10m);
Radiated Emissions (above 1GHz)	± 5.12dB (1GHz-6GHz); ± 5.38dB (6GHz-18GHz); ± 5.61dB (18GHz-40GHz)
Frequency Stability	± 7.25 x 10-8
Remark: The U_{lab} (lab Uncertainty) is less than U_{cispr} (CISPR Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	

4.4 Test Location

All tests were performed at:

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

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

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

No tests were sub-contracted.

4.5 Test Facility

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

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

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

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

- **ACMA**

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

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

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

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

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

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

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

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

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

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

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

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

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5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Network	Rohde & Schwarz	ENV216	EMC0118	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2022-09-09	2023-09-08
Coaxial Cable	HangTianXing	2m	EMC0107	2022-08-24	2023-08-23
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A
EMI Test Receiver(9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2022-05-20	2023-05-19

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

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

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

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

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

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

Radiated Emissions which fall in the restricted bands					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI Test Receiver(20Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
Chamber cable(Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna(1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-21	2025-09-20
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
MXE EMI Receiver(10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2022-10-21	2023-10-20
EXA Signal Analyzer(10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Notch Filter (5150-5880)	Mico-Tronics	BRM50716	EMC2168	2022-07-29	2023-07-28

Horn Antenna(14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	EMC2172	2022-08-24	2023-08-23

Radiated Spurious Emissions (Below 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver(10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
Chamber cable	HangTianXing	N/A	EMC0542	2022-08-24	2023-08-23
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2022-02-22	2025-02-21
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2022-06-21	2023-06-20
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2022-04-06	2024-04-05
High Pass Filter (915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2022-10-16	2025-10-15
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2022-05-20	2023-05-19

Radiated Spurious Emissions (Above 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver(20Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
Chamber cable(Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna(1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-21	2025-09-20
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2021-12-17	2022-12-16
				2022-12-16	2023-12-15
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
MXE EMI Receiver(10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2022-10-21	2023-10-20
EXA Signal Analyzer(10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Notch Filter (5150-5880)	Mico-Tronics	BRM50716	EMC2168	2022-07-29	2023-07-28
Horn Antenna(14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	EMC2172	2022-08-24	2023-08-23

Frequency Stability					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EXA Signal Analzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2022-09-08	2023-09-07
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A
Temperature Chamber	GZ GongWen Co.Ltd.	GDJW-100	EMC0039	2022-07-03	2023-07-02

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

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

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

15.203 Requirement:

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

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is U-NII-1: 3.09dBi; U-NII-2A: 2.61dBi; U-NII-2C: 2.14dBi; U-NII-3: 2.3dBi.

Antenna location: Refer to internal photo.

6.2 Transmission in the Absence of Data

6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.407 (c)

6.2.2 Conclusion

Standard Requirement:

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

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

EUT Details:

WIFI chip 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

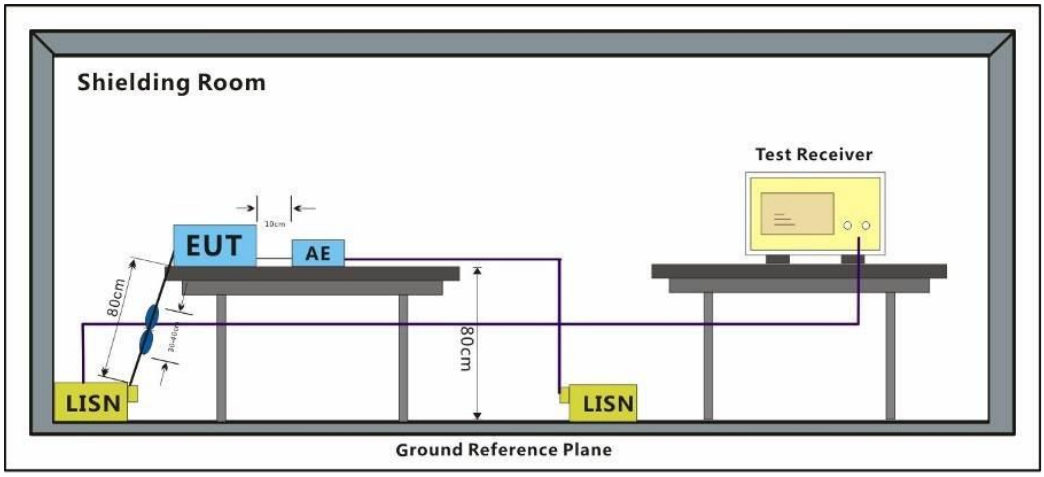
Operating Environment:

Temperature: 23.1 °C Humidity: 53.6 % RH Atmospheric Pressure: 1003 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	10	Charge + TX mode (Band 1)_Keep the EUT in charging and 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).
Final test	11	Charge + TX mode (Band 2A)_Keep the EUT in charging and 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).
Pre-scan	12	Charge + TX mode (Band 2C)_Keep the EUT in charging and 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).
Pre-scan	13	Charge + TX mode (Band 3)_Keep the EUT in charging and 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).
Pre-scan	14	Normal operating_Keep the EUT communication with the companion device.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

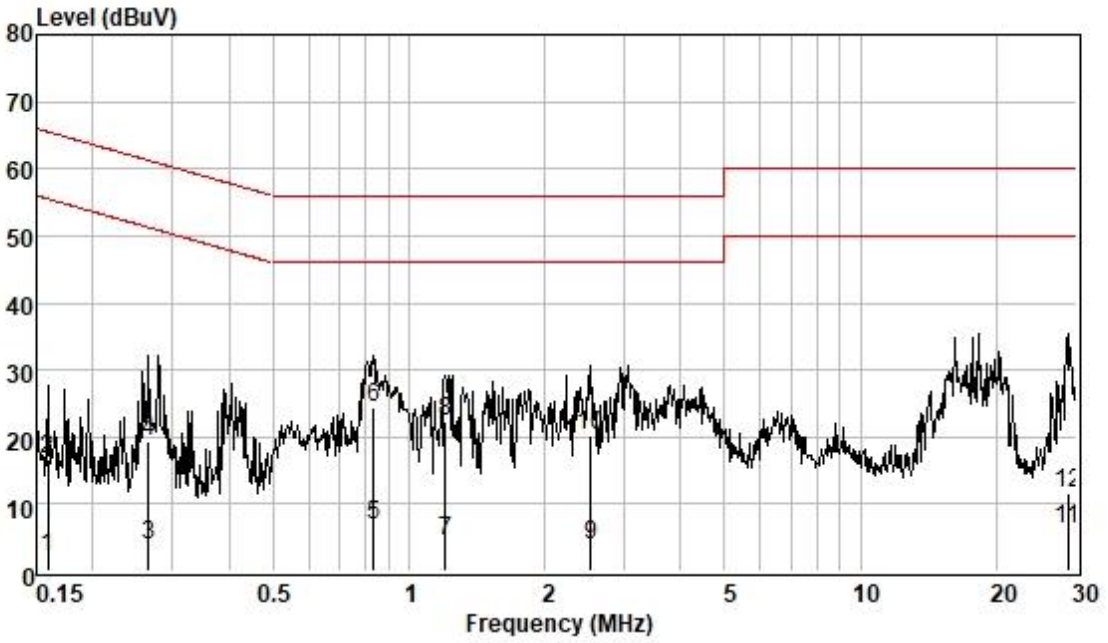
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

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

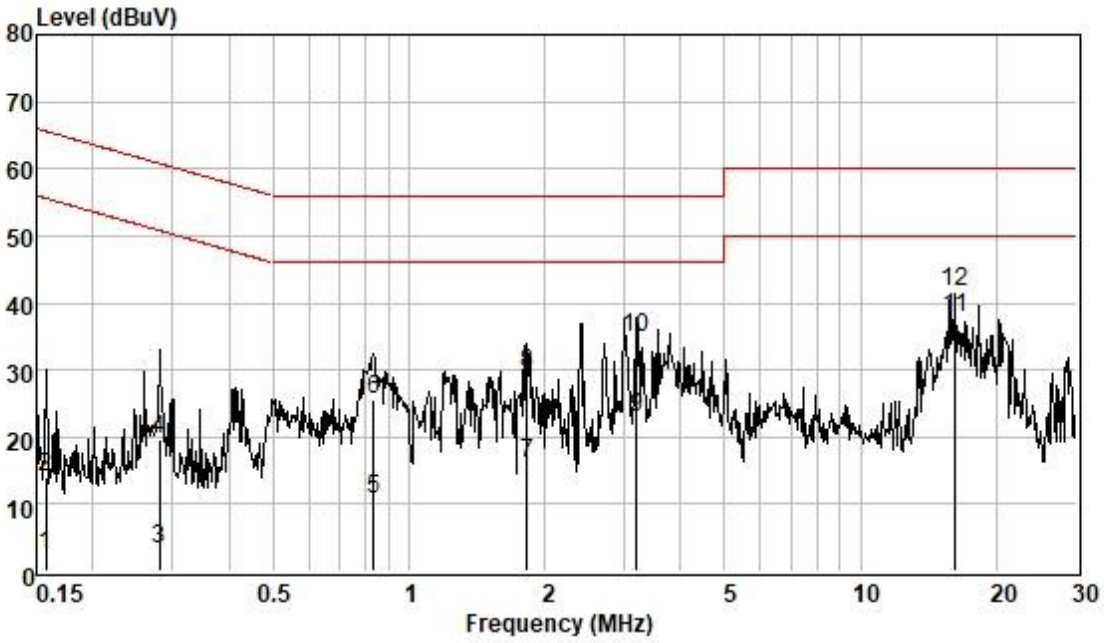
Test Mode: 11; Line: Live line



Pol :LINE
Mode :11
Model :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.159	-7.67	0.06	9.61	2.00	55.52	-53.52	Average
2	0.159	6.86	0.06	9.61	16.53	65.52	-48.99	QP
3	0.266	-5.92	0.06	9.61	3.75	51.25	-47.50	Average
4	0.266	9.66	0.06	9.61	19.33	61.25	-41.92	QP
5	0.835	-2.72	0.07	9.61	6.96	46.00	-39.04	Average
6	0.835	14.69	0.07	9.61	24.37	56.00	-31.63	QP
7	1.203	-5.19	0.08	9.60	4.49	46.00	-41.51	Average
8	1.203	12.54	0.08	9.60	22.22	56.00	-33.78	QP
9	2.527	-5.96	0.13	9.62	3.79	46.00	-42.21	Average
10	2.527	10.43	0.13	9.62	20.18	56.00	-35.82	QP
11	28.755	-3.77	0.42	9.64	6.29	50.00	-43.71	Average
12	28.755	1.57	0.42	9.64	11.63	60.00	-48.37	QP

Test Mode: 11; Line: Neutral Line



Pol :NEUTRAL
Mode :11
Model :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.157	-7.25	0.06	9.62	2.43	55.60	-53.17	Average
2	0.157	4.44	0.06	9.62	14.12	65.60	-51.48	QP
3	0.280	-6.38	0.06	9.59	3.27	50.81	-47.54	Average
4	0.280	9.94	0.06	9.59	19.59	60.81	-41.22	QP
5	0.835	1.02	0.07	9.61	10.70	46.00	-35.30	Average
6	0.835	15.86	0.07	9.61	25.54	56.00	-30.46	QP
7	1.829	6.35	0.11	9.61	16.07	46.00	-29.93	Average
8	1.829	19.59	0.11	9.61	29.31	56.00	-26.69	QP
9	3.190	13.25	0.15	9.63	23.03	46.00	-22.97	Average
10	3.190	25.09	0.15	9.63	34.87	56.00	-21.13	QP
11	16.226	27.54	0.31	9.81	37.66	50.00	-12.34	Average
12	16.226	31.46	0.31	9.81	41.58	60.00	-18.42	QP

7.2 Duty Cycle

Test Requirement KDB 789033 D02 v02r01 II B 1

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

7.2.1 E.U.T. Operation

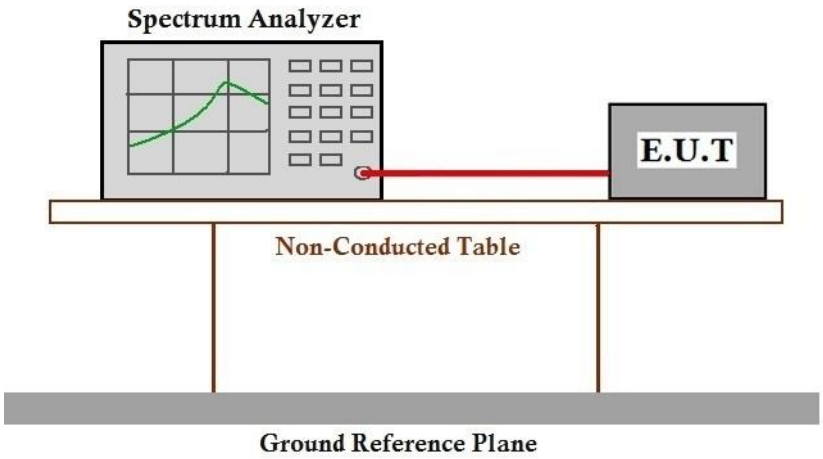
Operating Environment:

Temperature: 22.8 °C Humidity: 53.5 % RH Atmospheric Pressure: 1003 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode (Band 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).
Final test	07	TX mode (Band 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).
Final test	08	TX mode (Band 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).
Final test	09	TX mode (Band 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).

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

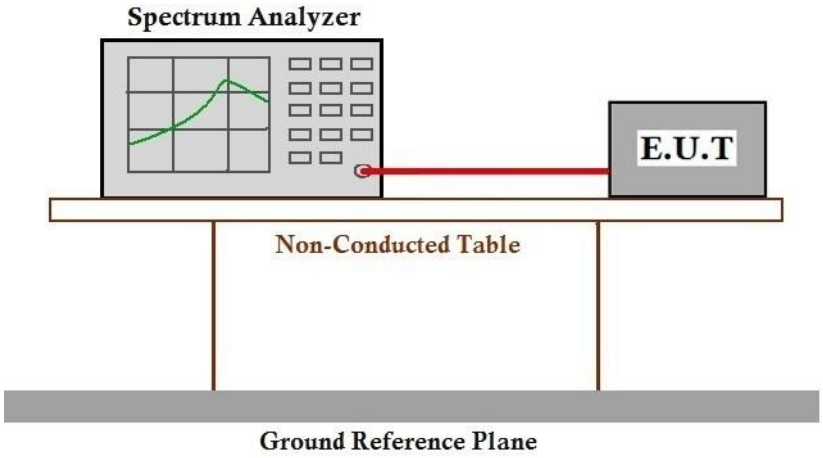
Operating Environment:

Temperature: 22.8 °C Humidity: 53.5 % RH Atmospheric Pressure: 1003 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode (Band 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).
Final test	07	TX mode (Band 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).
Final test	08	TX mode (Band 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).
Final test	09	TX mode (Band 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).

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

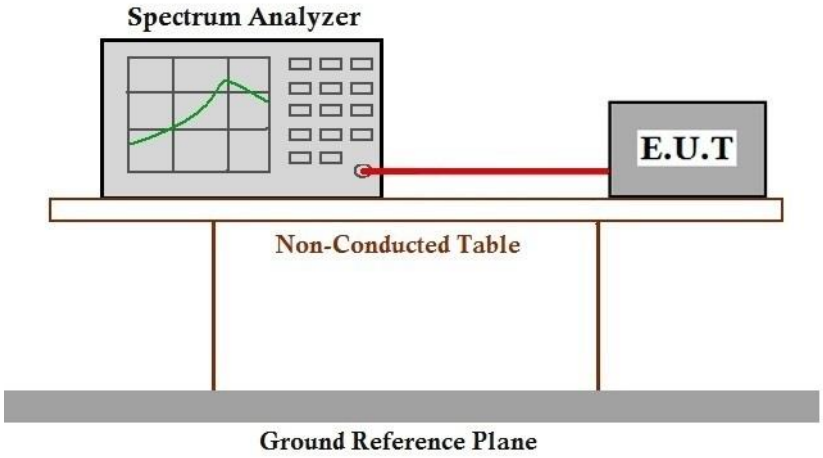
Operating Environment:

Temperature: 22.8 °C Humidity: 53.5 % RH Atmospheric Pressure: 1003 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode (Band 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).

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

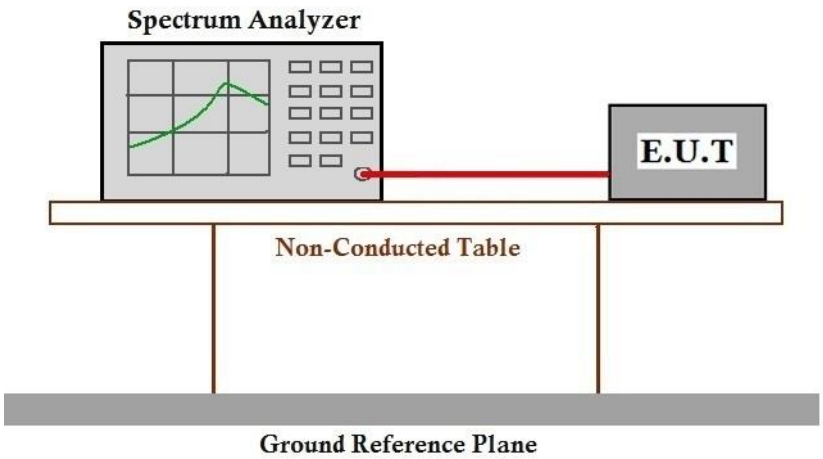
Operating Environment:

Temperature: 22.8 °C Humidity: 53.5 % RH Atmospheric Pressure: 1003 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (Band 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).

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

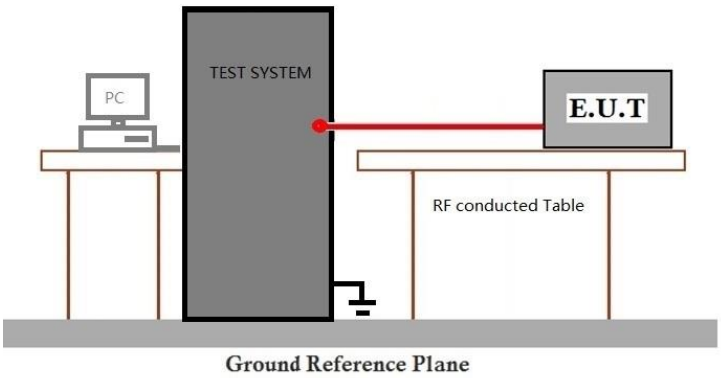
Operating Environment:

Temperature: 22.8 °C Humidity: 53.5 % RH Atmospheric Pressure: 1003 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode (Band 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).
Final test	07	TX mode (Band 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).
Final test	08	TX mode (Band 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).
Final test	09	TX mode (Band 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).

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

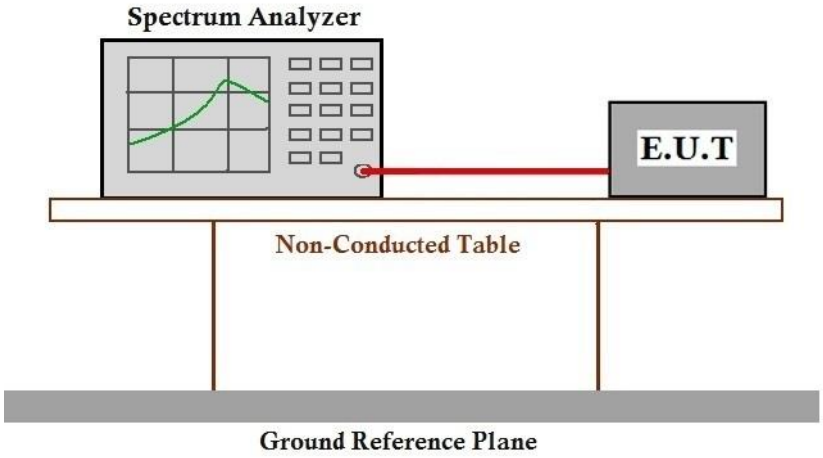
Operating Environment:

Temperature: 22.8 °C Humidity: 53.5 % RH Atmospheric Pressure: 1003 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode (Band 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).
Final test	07	TX mode (Band 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).
Final test	08	TX mode (Band 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).
Final test	09	TX mode (Band 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).

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.8 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.407(b)
Test Method: KDB 789033 D02 II G
Measurement Distance: 3m
Limit:

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

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

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

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

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

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

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

7.8.1 E.U.T. Operation

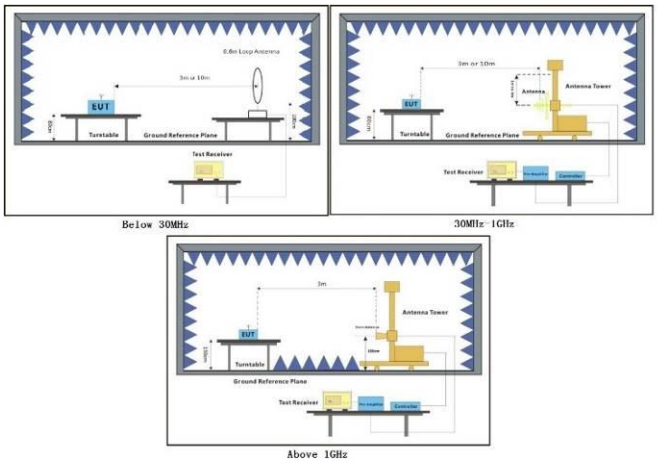
Operating Environment:

Temperature: 24.2 °C Humidity: 55.4 % RH Atmospheric Pressure: 1003 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	06	TX mode (Band 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).
Pre-scan	07	TX mode (Band 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).
Pre-scan	08	TX mode (Band 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).
Pre-scan	09	TX mode (Band 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).
Final test	10	Charge + TX mode (Band 1)_Keep the EUT in charging and 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).
Final test	11	Charge + TX mode (Band 2A)_Keep the EUT in charging and 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).
Final test	12	Charge + TX mode (Band 2C)_Keep the EUT in charging and 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).
Final test	13	Charge + TX mode (Band 3)_Keep the EUT in charging and 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).

7.8.3 Test Setup Diagram



7.8.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

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

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

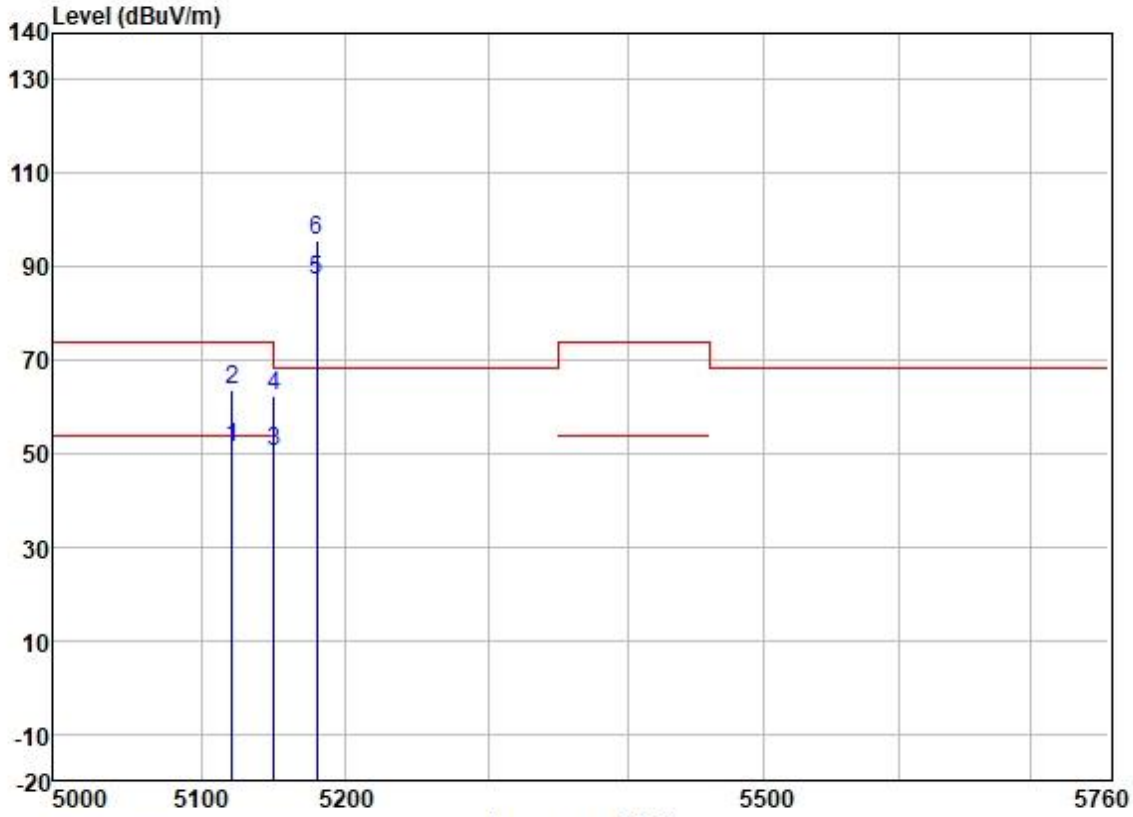
h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

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

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

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

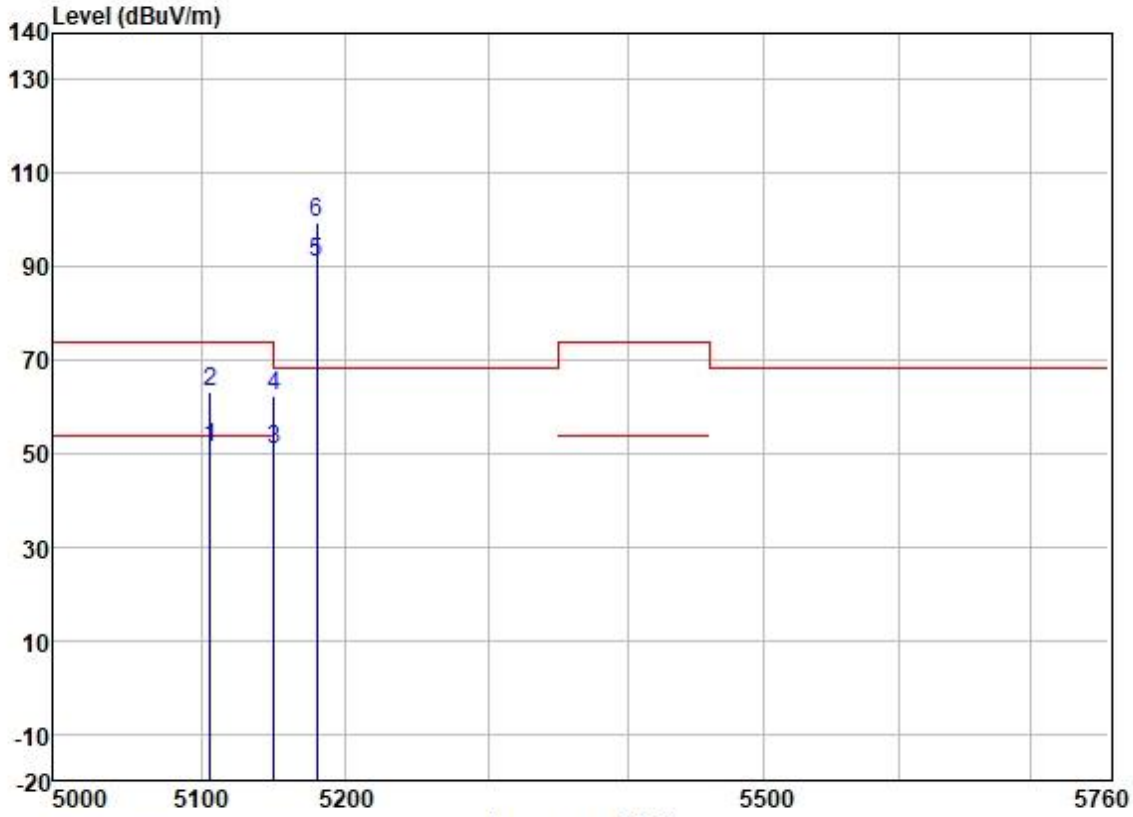
Test Mode: 10; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5121.535	50.71	31.72	5.64	36.86	51.21	54.00	-2.79	HORIZONTAL	Average
2		5121.535	63.14	31.72	5.64	36.86	63.64	74.00	-10.36	HORIZONTAL	Peak
3		5149.980	50.07	31.72	5.62	36.86	50.55	54.00	-3.45	HORIZONTAL	Average
4		5149.980	61.76	31.72	5.62	36.86	62.24	74.00	-11.76	HORIZONTAL	Peak
5		5180.000	86.56	31.73	5.61	36.87	87.03	------	------	HORIZONTAL	Average
6	*	5180.000	95.25	31.73	5.61	36.87	95.72	68.20	27.52	HORIZONTAL	Peak

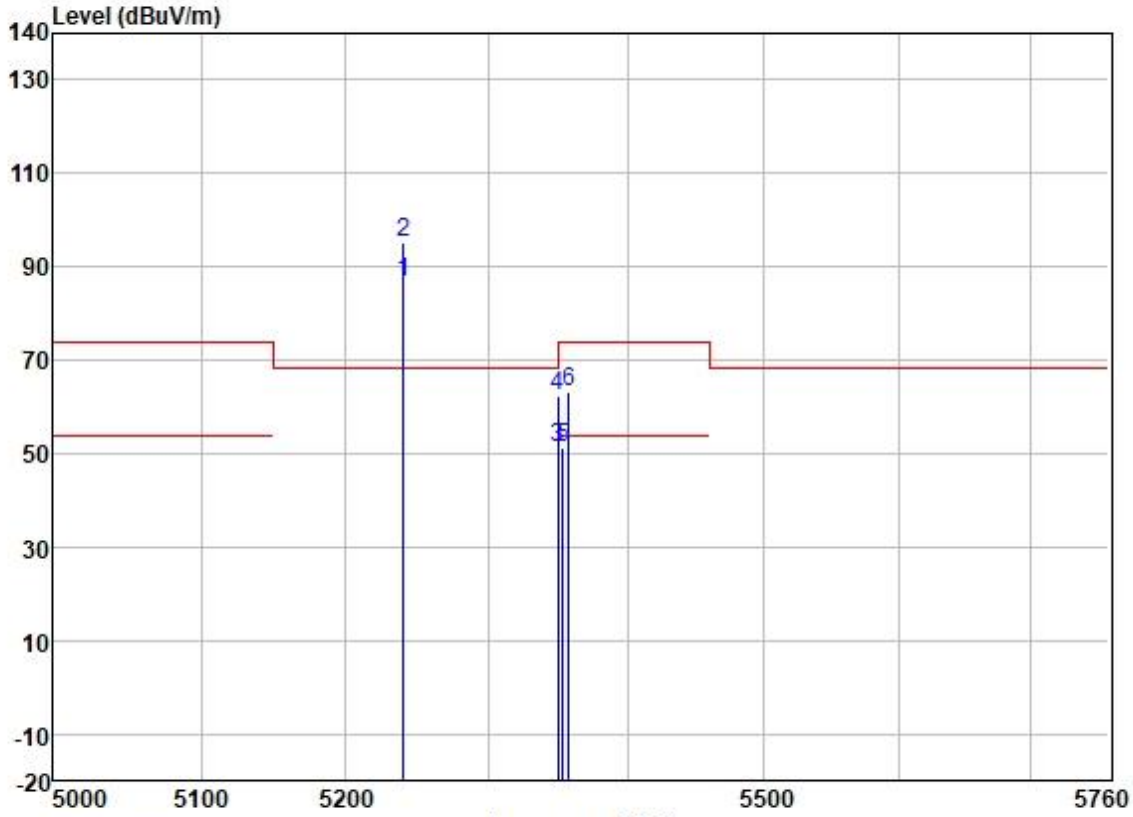
Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5106.044	50.88	31.72	5.65	36.86	51.39	54.00	-2.61	VERTICAL	Average
2		5106.044	62.77	31.72	5.65	36.86	63.28	74.00	-10.72	VERTICAL	Peak
3		5149.980	50.17	31.72	5.62	36.86	50.65	54.00	-3.35	VERTICAL	Average
4		5149.980	61.76	31.72	5.62	36.86	62.24	74.00	-11.76	VERTICAL	Peak
5		5180.000	90.37	31.73	5.61	36.87	90.84	------	------	VERTICAL	Average
6	*	5180.000	98.79	31.73	5.61	36.87	99.26	68.20	31.06	VERTICAL	Peak

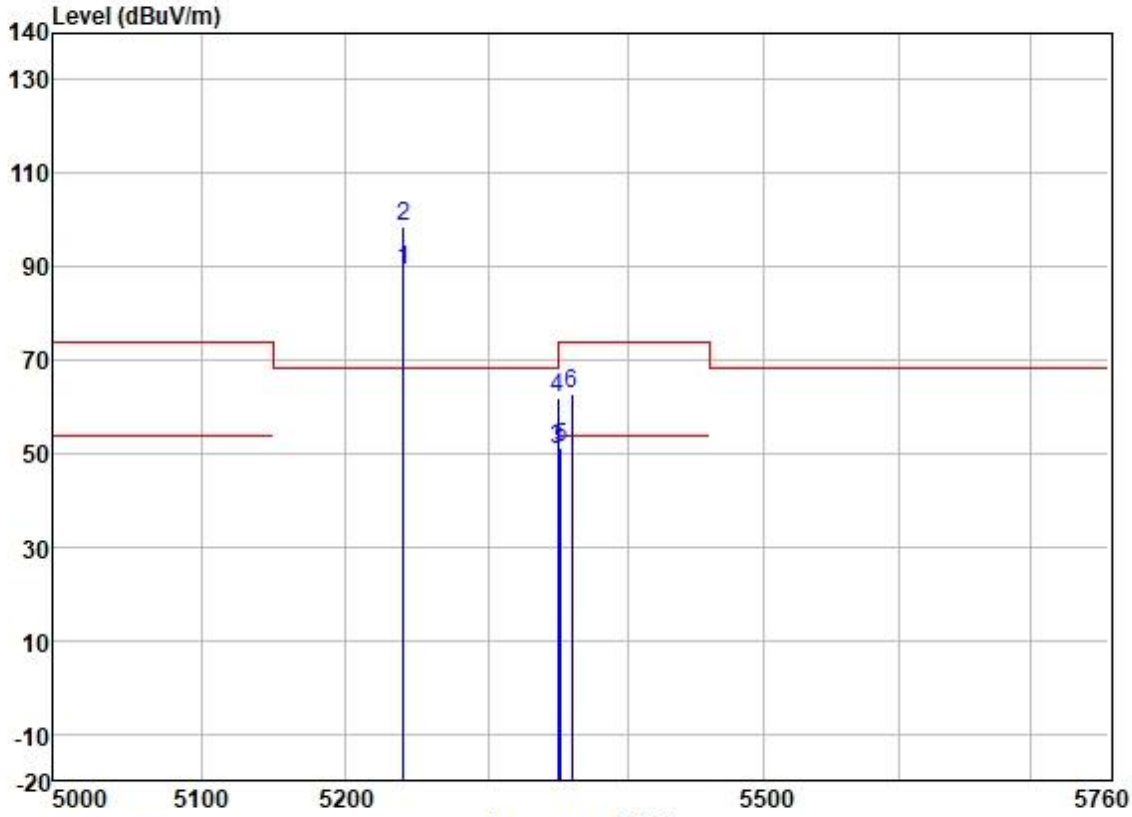
Test Mode: 10; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5240.000	85.94	31.75	5.74	36.87	86.56	------	------	HORIZONTAL	Average
2	*	5240.000	94.75	31.75	5.74	36.87	95.37	68.20	27.17	HORIZONTAL	Peak
3		5350.020	50.26	31.77	6.05	36.88	51.20	54.00	-2.80	HORIZONTAL	Average
4		5350.020	61.26	31.77	6.05	36.88	62.20	74.00	-11.80	HORIZONTAL	Peak
5		5353.337	50.12	31.77	6.05	36.88	51.06	54.00	-2.94	HORIZONTAL	Average
6		5357.589	62.36	31.78	6.03	36.88	63.29	74.00	-10.71	HORIZONTAL	Peak

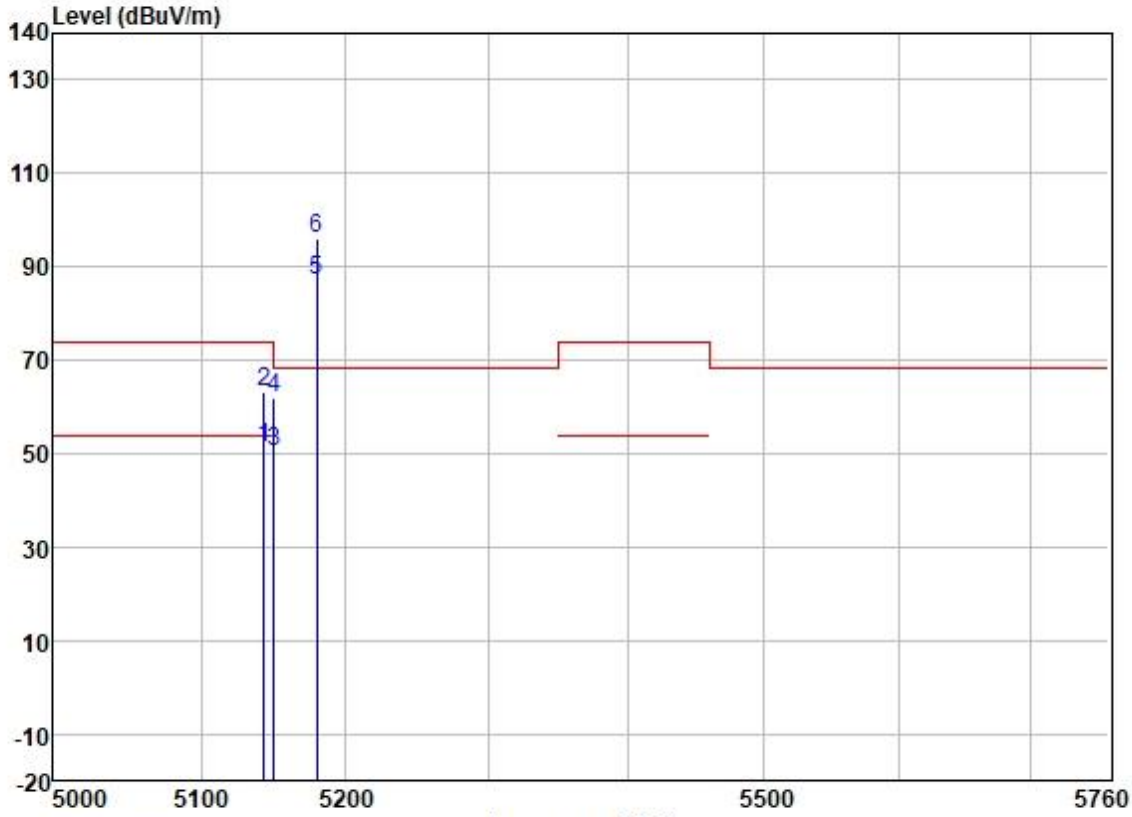
Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5240.000	88.79	31.75	5.74	36.87	89.41	------	------	VERTICAL	Average
2 *	5240.000	97.99	31.75	5.74	36.87	98.61	68.20	30.41	VERTICAL	Peak
3	5350.020	49.87	31.77	6.05	36.88	50.81	54.00	-3.19	VERTICAL	Average
4	5350.020	61.17	31.77	6.05	36.88	62.11	74.00	-11.89	VERTICAL	Peak
5	5352.203	50.22	31.77	6.05	36.88	51.16	54.00	-2.84	VERTICAL	Average
6	5359.574	61.88	31.78	6.03	36.88	62.81	74.00	-11.19	VERTICAL	Peak

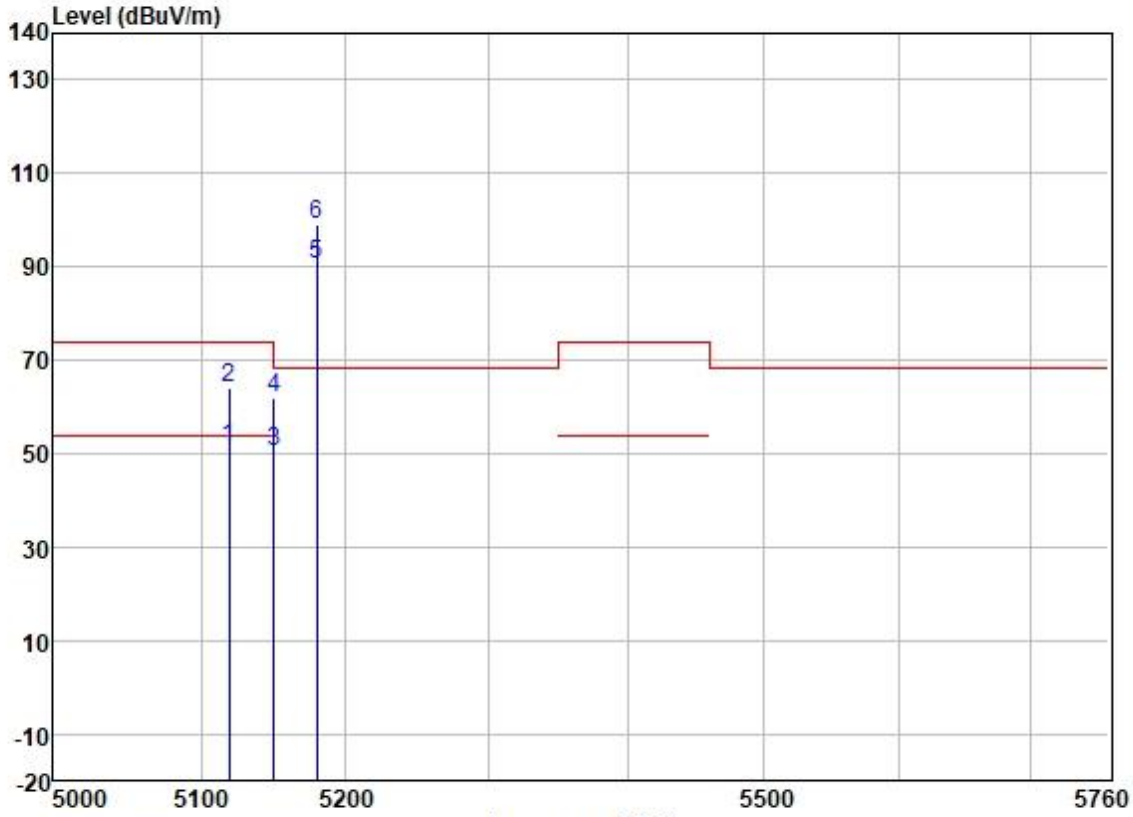
Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5143.461	50.70	31.72	5.62	36.86	51.18	54.00	-2.82	HORIZONTAL	Average
2		5143.461	62.66	31.72	5.62	36.86	63.14	74.00	-10.86	HORIZONTAL	Peak
3		5149.980	50.03	31.72	5.62	36.86	50.51	54.00	-3.49	HORIZONTAL	Average
4		5149.980	61.42	31.72	5.62	36.86	61.90	74.00	-12.10	HORIZONTAL	Peak
5		5180.000	86.41	31.73	5.61	36.87	86.88	------	------	HORIZONTAL	Average
6	*	5180.000	95.41	31.73	5.61	36.87	95.88	68.20	27.68	HORIZONTAL	Peak

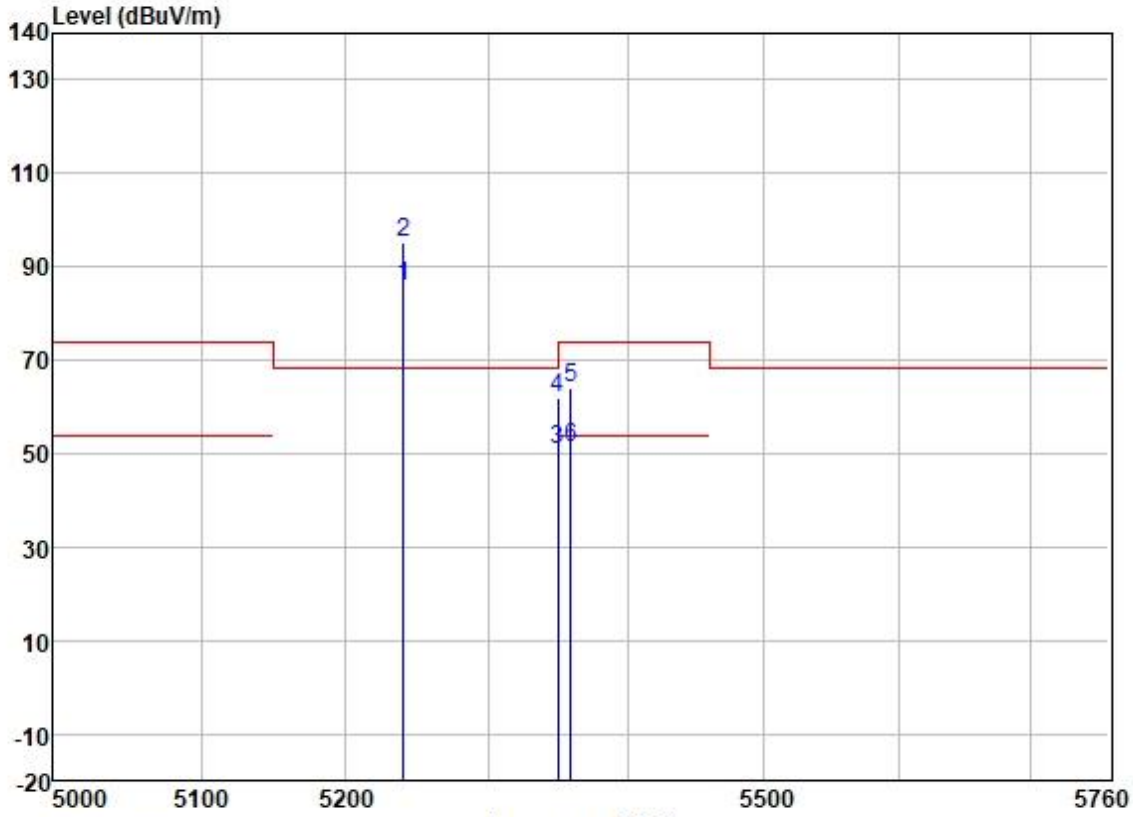
Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5119.348	50.59	31.72	5.64	36.86	51.09	54.00	-2.91	VERTICAL	Average
2		5119.348	63.57	31.72	5.64	36.86	64.07	74.00	-9.93	VERTICAL	Peak
3		5149.980	50.09	31.72	5.62	36.86	50.57	54.00	-3.43	VERTICAL	Average
4		5149.980	61.49	31.72	5.62	36.86	61.97	74.00	-12.03	VERTICAL	Peak
5		5180.000	90.14	31.73	5.61	36.87	90.61	------	------	VERTICAL	Average
6	*	5180.000	98.47	31.73	5.61	36.87	98.94	68.20	30.74	VERTICAL	Peak

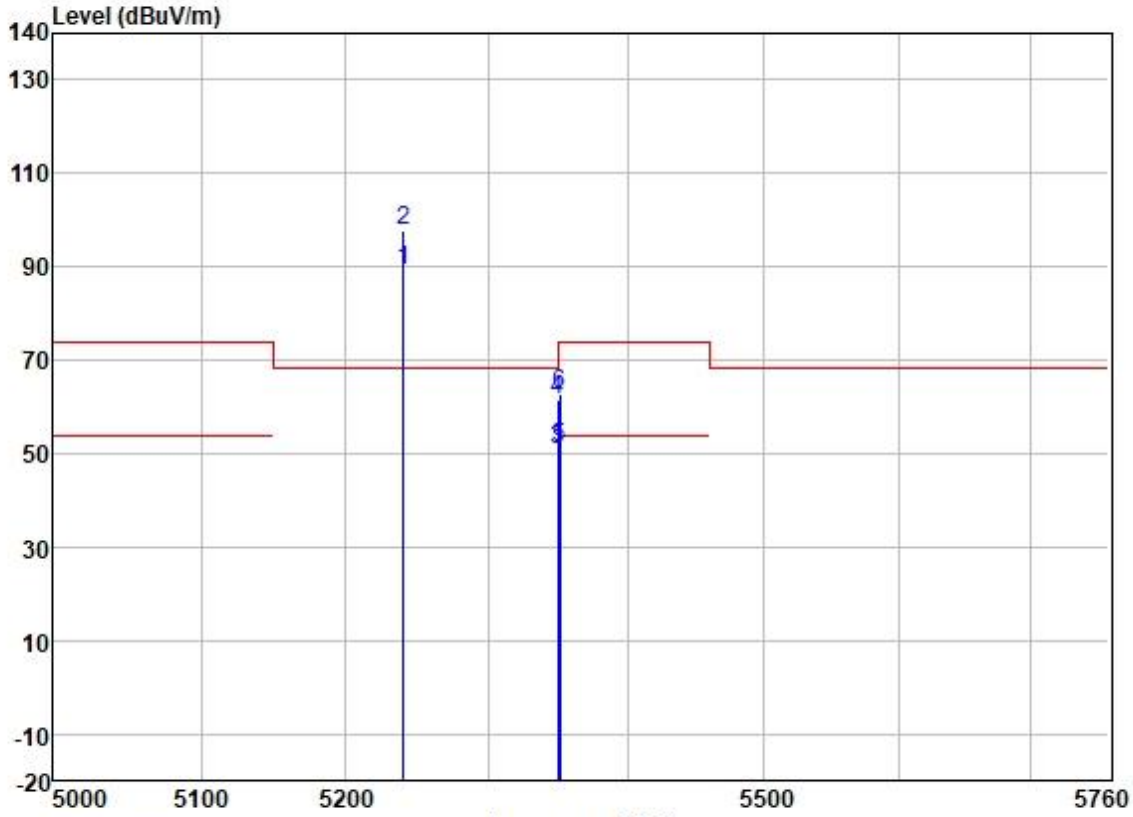
Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5240.000	85.38	31.75	5.74	36.87	86.00	------	------	HORIZONTAL	Average
2	*	5240.000	94.40	31.75	5.74	36.87	95.02	68.20	26.82	HORIZONTAL	Peak
3		5350.020	49.94	31.77	6.05	36.88	50.88	54.00	-3.12	HORIZONTAL	Average
4		5350.020	60.92	31.77	6.05	36.88	61.86	74.00	-12.14	HORIZONTAL	Peak
5		5358.865	62.96	31.78	6.03	36.88	63.89	74.00	-10.11	HORIZONTAL	Peak
6		5359.007	50.19	31.78	6.03	36.88	51.12	54.00	-2.88	HORIZONTAL	Average

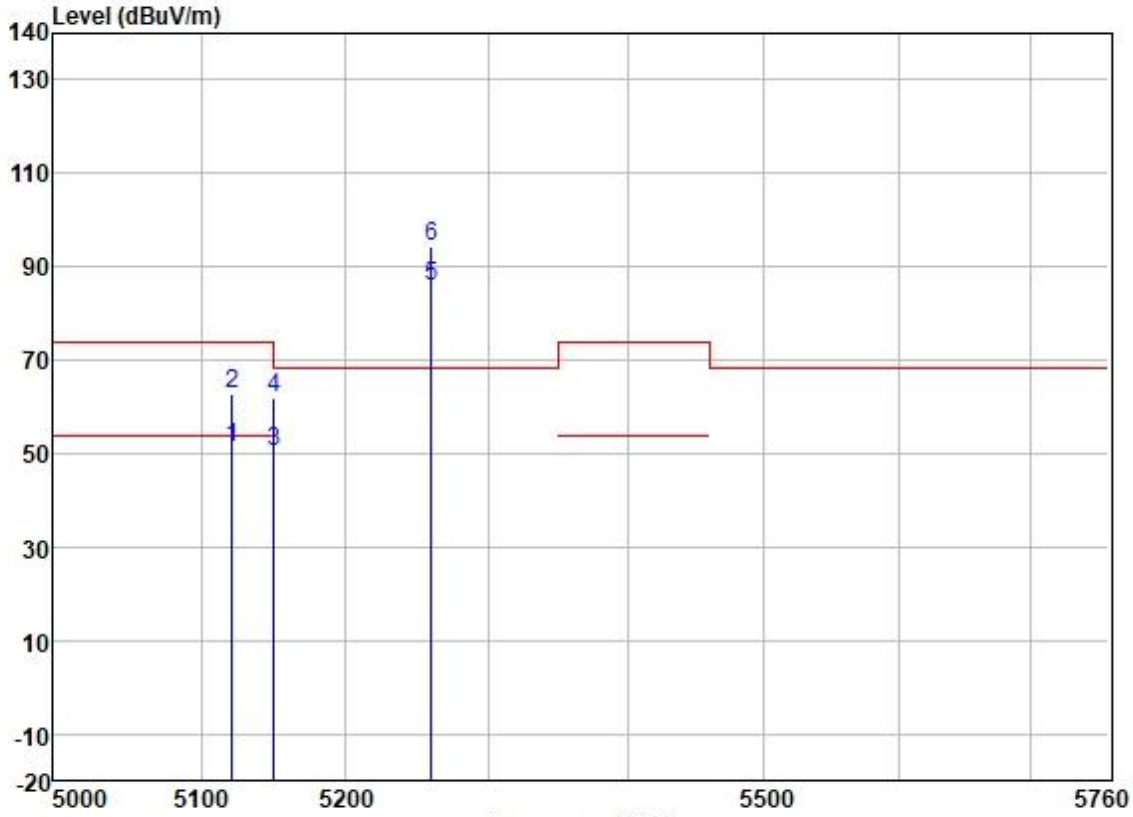
Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5240.000	88.52	31.75	5.74	36.87	89.14	------	------	VERTICAL	Average
2	*	5240.000	97.22	31.75	5.74	36.87	97.84	68.20	29.64	VERTICAL	Peak
3		5350.020	49.69	31.77	6.05	36.88	50.63	54.00	-3.37	VERTICAL	Average
4		5350.020	60.71	31.77	6.05	36.88	61.65	74.00	-12.35	VERTICAL	Peak
5		5350.646	50.20	31.77	6.05	36.88	51.14	54.00	-2.86	VERTICAL	Average
6		5351.495	62.03	31.77	6.05	36.88	62.97	74.00	-11.03	VERTICAL	Peak

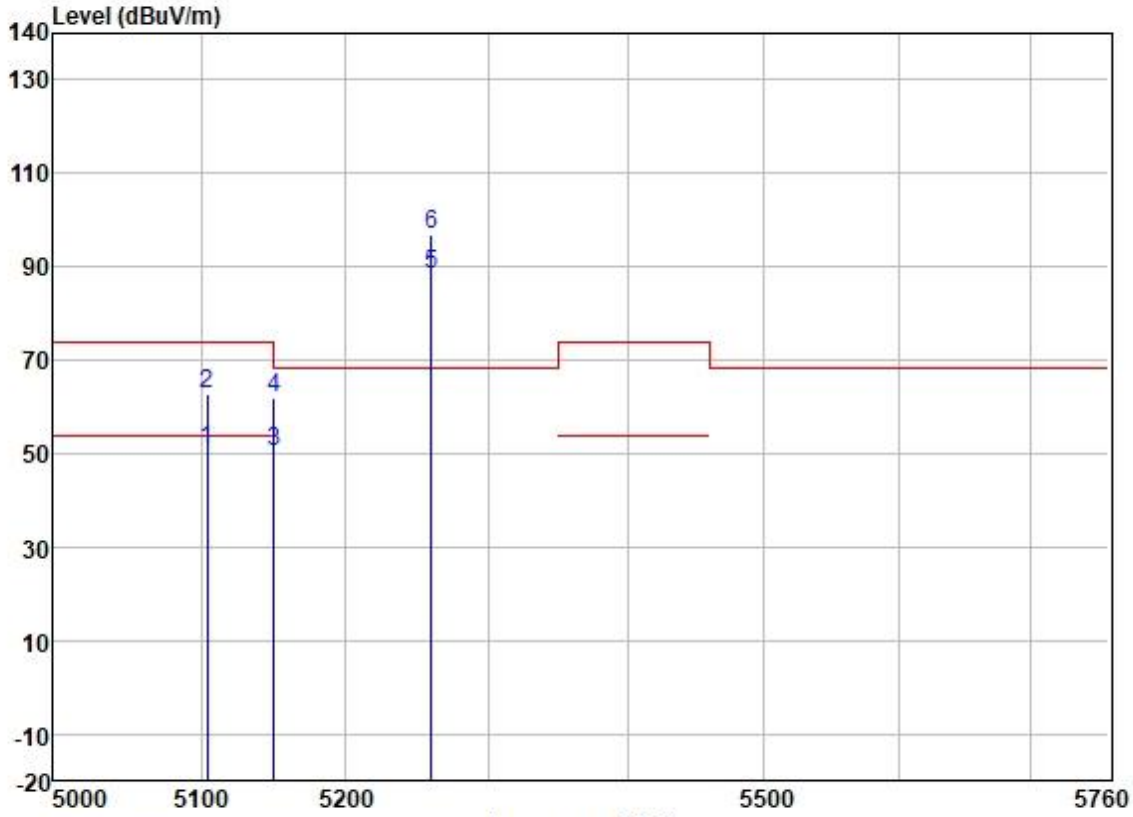
Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5121.094	50.55	31.72	5.64	36.86	51.05	54.00	-2.95	HORIZONTAL	Average
2		5121.094	62.41	31.72	5.64	36.86	62.91	74.00	-11.09	HORIZONTAL	Peak
3		5149.980	50.00	31.72	5.62	36.86	50.48	54.00	-3.52	HORIZONTAL	Average
4		5149.980	61.60	31.72	5.62	36.86	62.08	74.00	-11.92	HORIZONTAL	Peak
5		5260.000	85.00	31.75	5.77	36.87	85.65	------	------	HORIZONTAL	Average
6	*	5260.000	93.88	31.75	5.77	36.87	94.53	68.20	26.33	HORIZONTAL	Peak

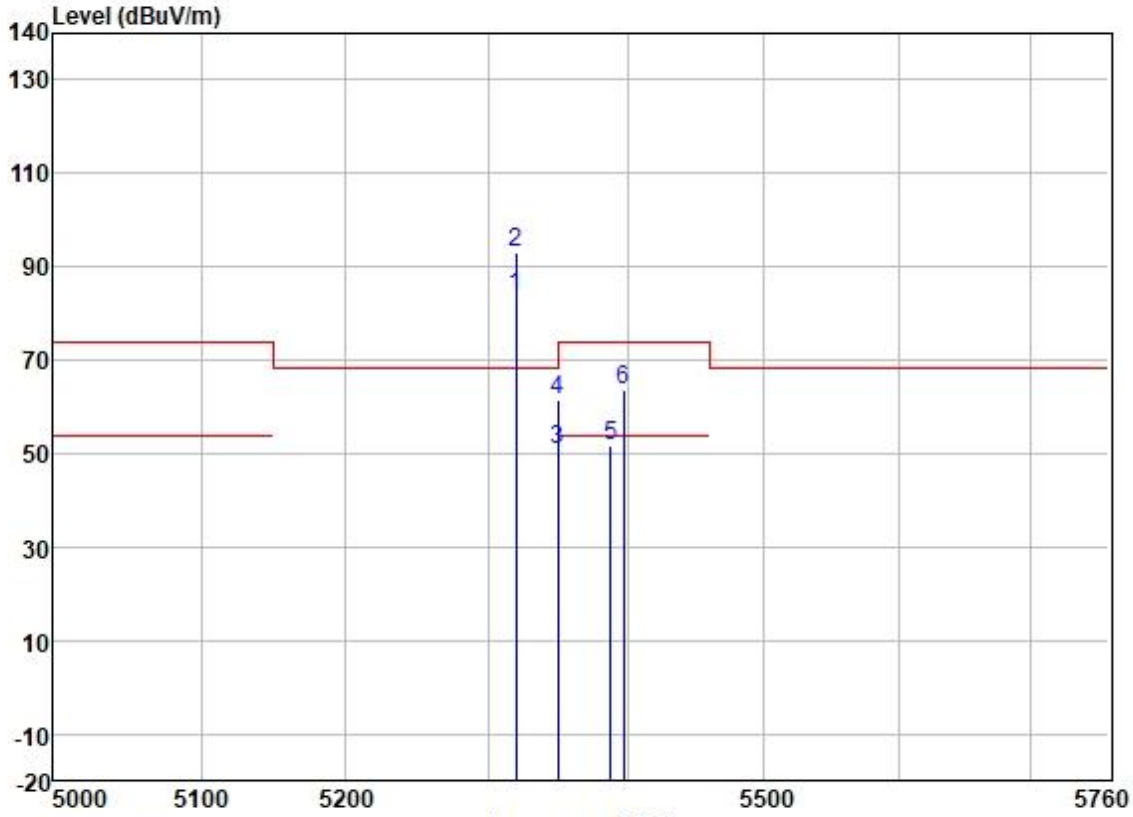
Test Mode: 11; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5104.424	50.51	31.72	5.65	36.86	51.02	54.00	-2.98	VERTICAL	Average
2	5104.424	62.40	31.72	5.65	36.86	62.91	74.00	-11.09	VERTICAL	Peak
3	5149.980	49.98	31.72	5.62	36.86	50.46	54.00	-3.54	VERTICAL	Average
4	5149.980	61.49	31.72	5.62	36.86	61.97	74.00	-12.03	VERTICAL	Peak
5	5260.000	87.64	31.75	5.77	36.87	88.29	------	------	VERTICAL	Average
6 *	5260.000	96.42	31.75	5.77	36.87	97.07	68.20	28.87	VERTICAL	Peak

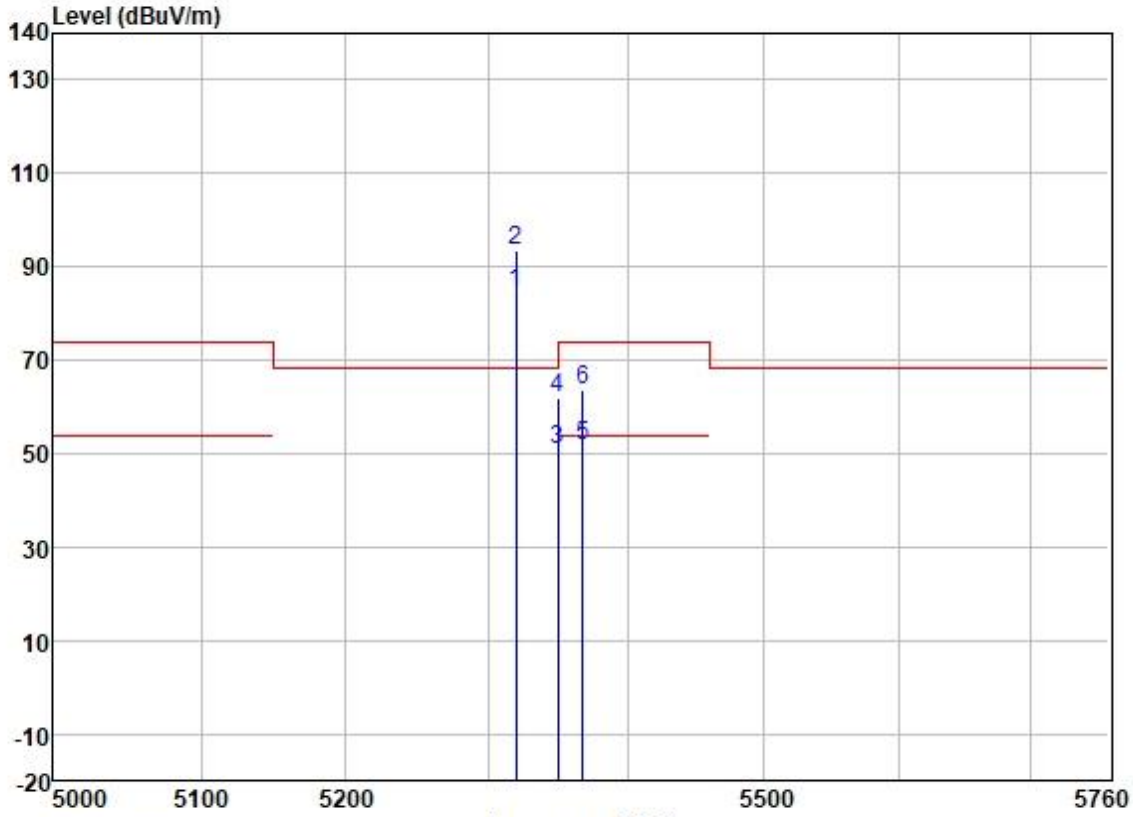
Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5320.000	82.62	31.77	6.08	36.88	83.59	------	------	HORIZONTAL	Average
2	*	5320.000	91.99	31.77	6.08	36.88	92.96	68.20	24.76	HORIZONTAL	Peak
3		5350.020	49.82	31.77	6.05	36.88	50.76	54.00	-3.24	HORIZONTAL	Average
4		5350.020	60.56	31.77	6.05	36.88	61.50	74.00	-12.50	HORIZONTAL	Peak
5		5387.800	50.87	31.78	6.00	36.88	51.77	54.00	-2.23	HORIZONTAL	Average
6		5397.174	62.73	31.78	6.00	36.88	63.63	74.00	-10.37	HORIZONTAL	Peak

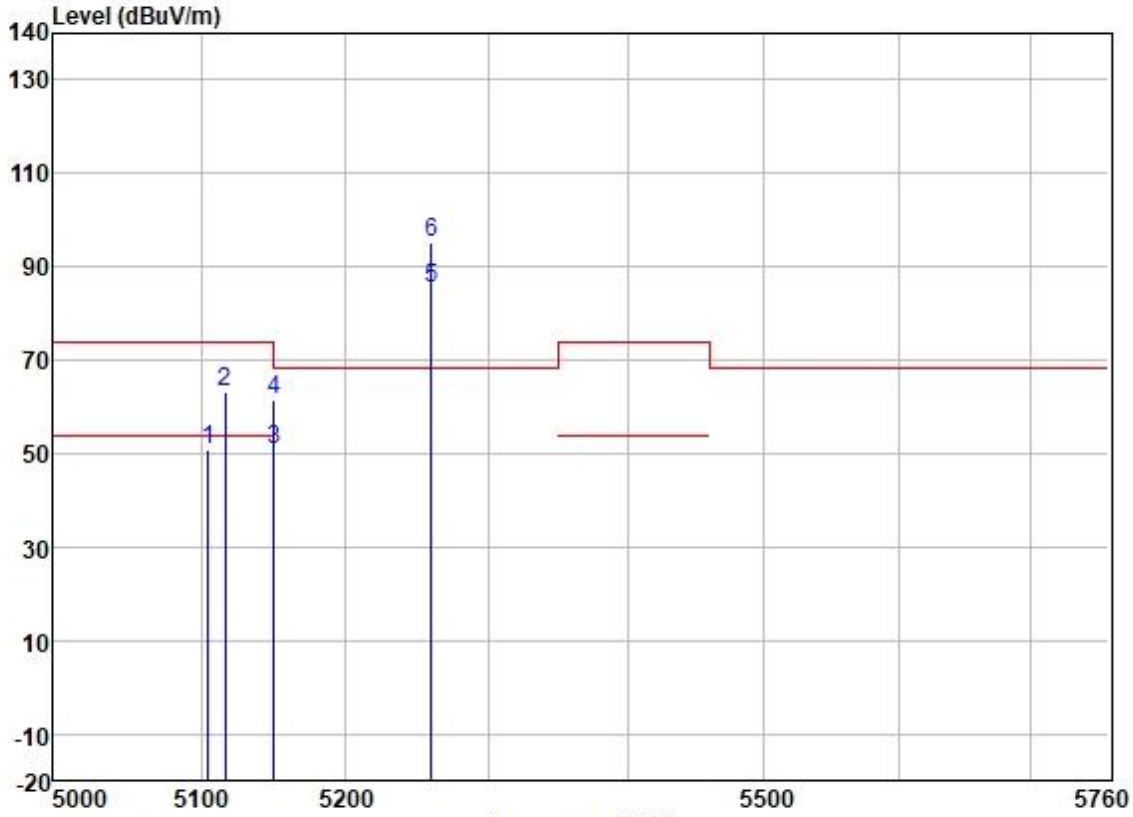
Test Mode: 11; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5320.000	83.56	31.77	6.08	36.88	84.53	------	------	VERTICAL	Average
2	*	5320.000	92.68	31.77	6.08	36.88	93.65	68.20	25.45	VERTICAL	Peak
3		5350.020	49.85	31.77	6.05	36.88	50.79	54.00	-3.21	VERTICAL	Average
4		5350.020	61.06	31.77	6.05	36.88	62.00	74.00	-12.00	VERTICAL	Peak
5		5367.897	50.58	31.78	6.03	36.88	51.51	54.00	-2.49	VERTICAL	Average
6		5367.897	62.78	31.78	6.03	36.88	63.71	74.00	-10.29	VERTICAL	Peak

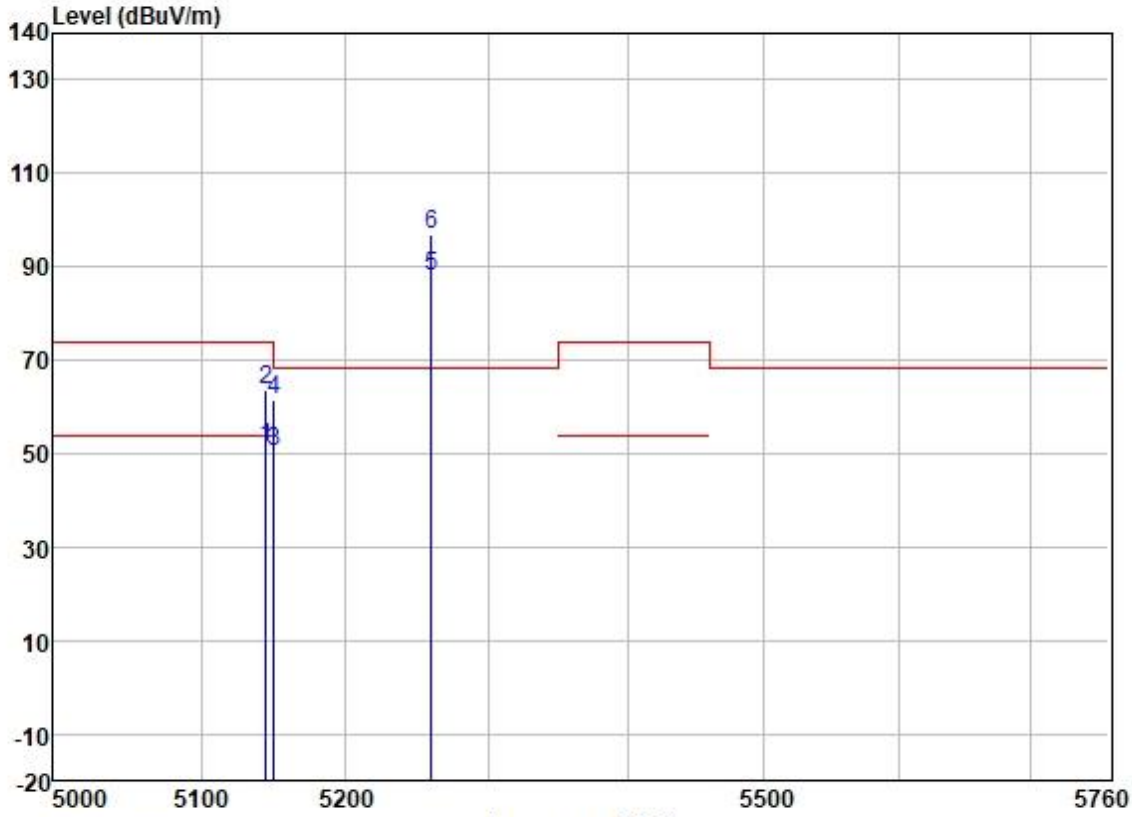
Test Mode: 11; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5104.956	50.49	31.72	5.65	36.86	51.00	54.00	-3.00	HORIZONTAL	Average
2		5116.655	62.67	31.72	5.64	36.86	63.17	74.00	-10.83	HORIZONTAL	Peak
3		5149.980	50.42	31.72	5.62	36.86	50.90	54.00	-3.10	HORIZONTAL	Average
4		5149.980	61.04	31.72	5.62	36.86	61.52	74.00	-12.48	HORIZONTAL	Peak
5		5260.000	84.66	31.75	5.77	36.87	85.31	------	------	HORIZONTAL	Average
6	*	5260.000	94.41	31.75	5.77	36.87	95.06	68.20	26.86	HORIZONTAL	Peak

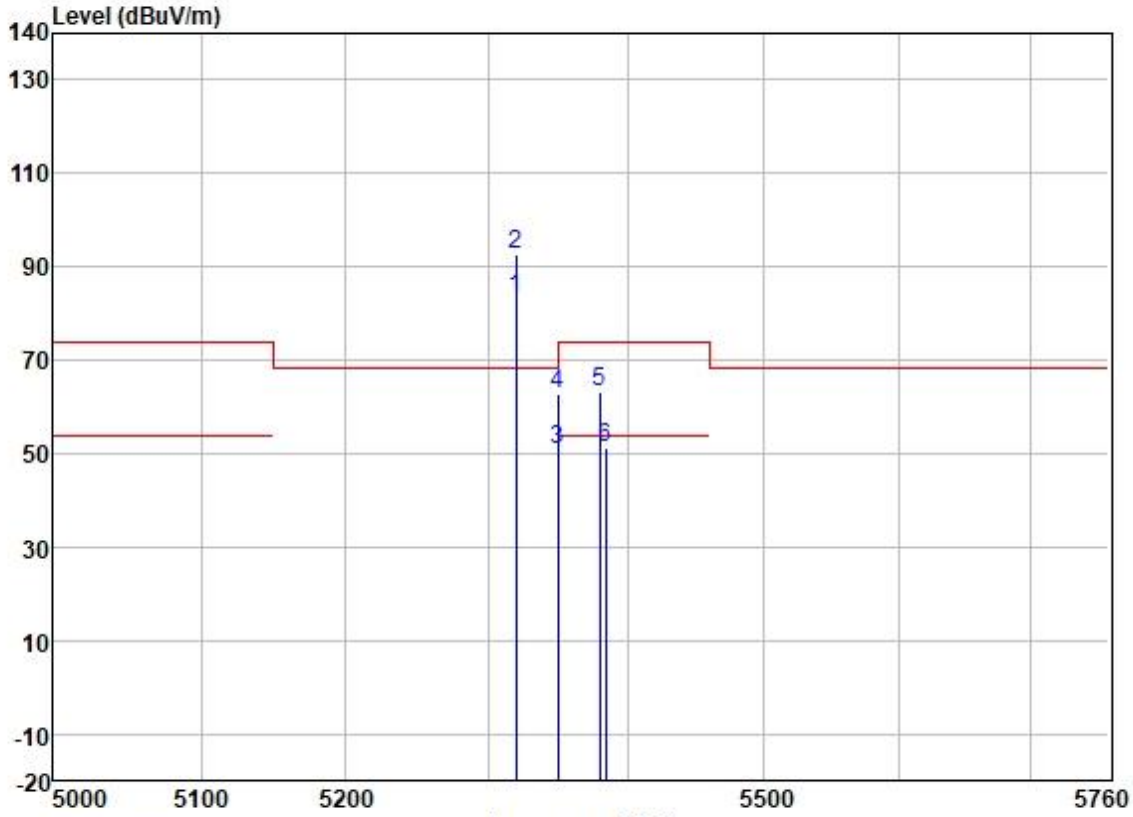
Test Mode: 11; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5144.595	50.70	31.72	5.62	36.86	51.18	54.00	-2.82	VERTICAL	Average
2		5144.595	63.09	31.72	5.62	36.86	63.57	74.00	-10.43	VERTICAL	Peak
3		5149.980	49.83	31.72	5.62	36.86	50.31	54.00	-3.69	VERTICAL	Average
4		5149.980	61.06	31.72	5.62	36.86	61.54	74.00	-12.46	VERTICAL	Peak
5		5260.000	87.23	31.75	5.77	36.87	87.88	------	------	VERTICAL	Average
6	*	5260.000	96.15	31.75	5.77	36.87	96.80	68.20	28.60	VERTICAL	Peak

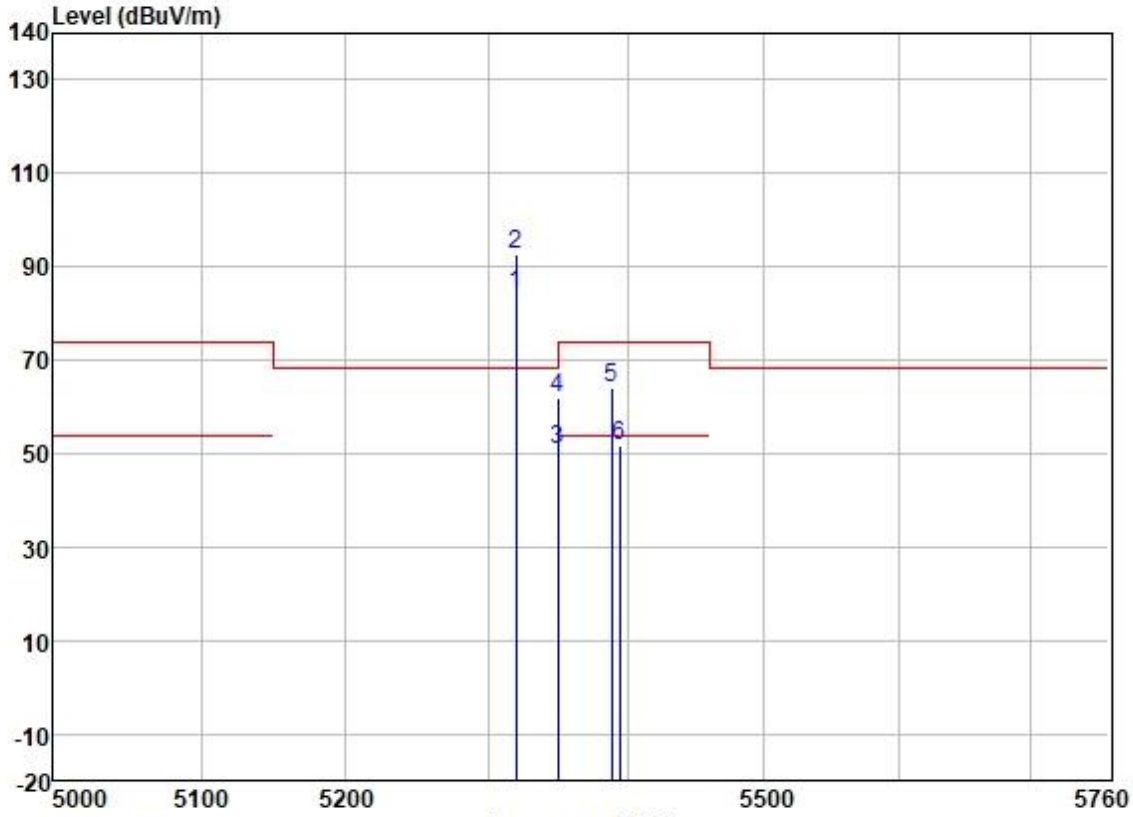
Test Mode: 11; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5320.000	82.41	31.77	6.08	36.88	83.38	------	------	HORIZONTAL	Average
2	*	5320.000	91.65	31.77	6.08	36.88	92.62	68.20	24.42	HORIZONTAL	Peak
3		5350.020	49.86	31.77	6.05	36.88	50.80	54.00	-3.20	HORIZONTAL	Average
4		5350.020	61.94	31.77	6.05	36.88	62.88	74.00	-11.12	HORIZONTAL	Peak
5		5380.152	62.42	31.78	6.02	36.88	63.34	74.00	-10.66	HORIZONTAL	Peak
6		5384.377	50.50	31.78	6.02	36.88	51.42	54.00	-2.58	HORIZONTAL	Average

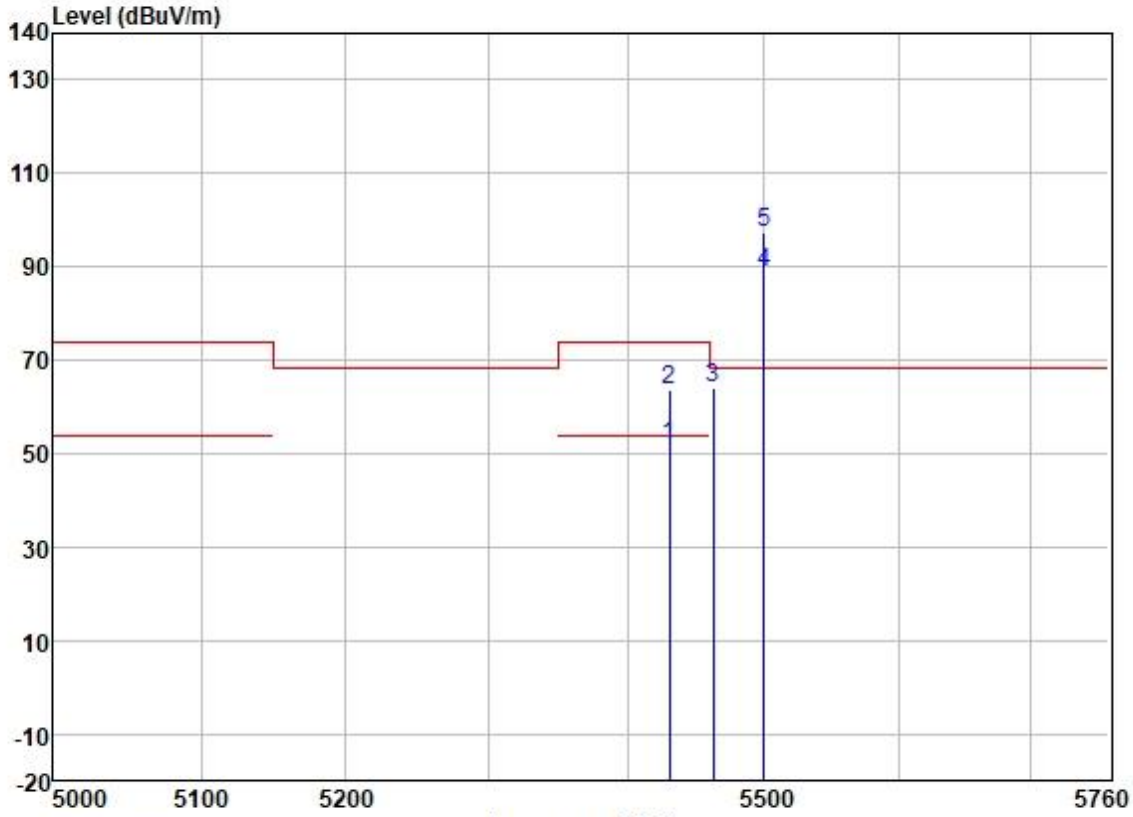
Test Mode: 11; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1		5320.000	83.22	31.77	6.08	36.88	84.19	------	------	VERTICAL	Average
2	*	5320.000	91.88	31.77	6.08	36.88	92.85	68.20	24.65	VERTICAL	Peak
3		5350.020	49.83	31.77	6.05	36.88	50.77	54.00	-3.23	VERTICAL	Average
4		5350.020	61.01	31.77	6.05	36.88	61.95	74.00	-12.05	VERTICAL	Peak
5		5388.808	63.23	31.78	6.00	36.88	64.13	74.00	-9.87	VERTICAL	Peak
6		5393.947	50.84	31.78	6.00	36.88	51.74	54.00	-2.26	VERTICAL	Average

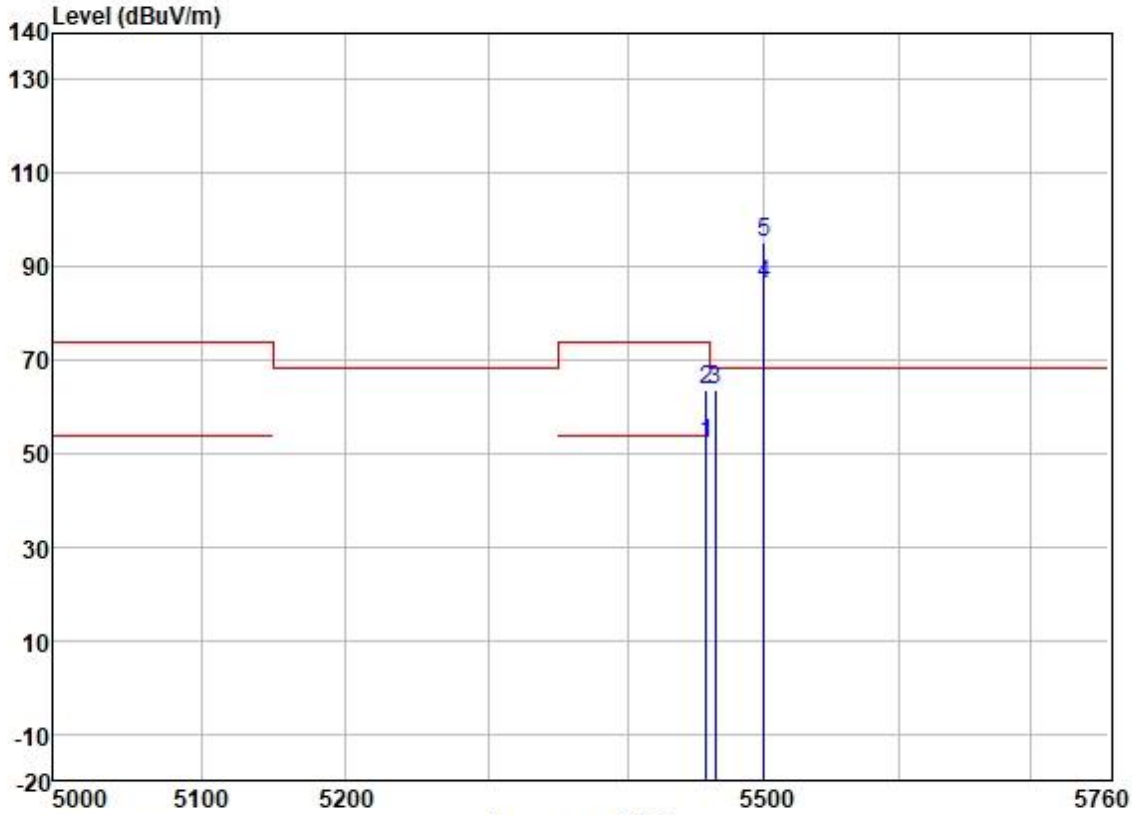
Test Mode: 12; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5430.589	50.75	31.79	6.13	36.88	51.79	54.00	-2.21	HORIZONTAL	Average
2	5430.589	62.59	31.79	6.13	36.88	63.63	74.00	-10.37	HORIZONTAL	Peak
3	5462.431	62.87	31.79	6.26	36.88	64.04	68.20	-4.16	HORIZONTAL	Peak
4	5500.000	87.28	31.80	6.40	36.88	88.60	------	------	HORIZONTAL	Average
5 *	5500.000	96.13	31.80	6.40	36.88	97.45	68.20	29.25	HORIZONTAL	Peak

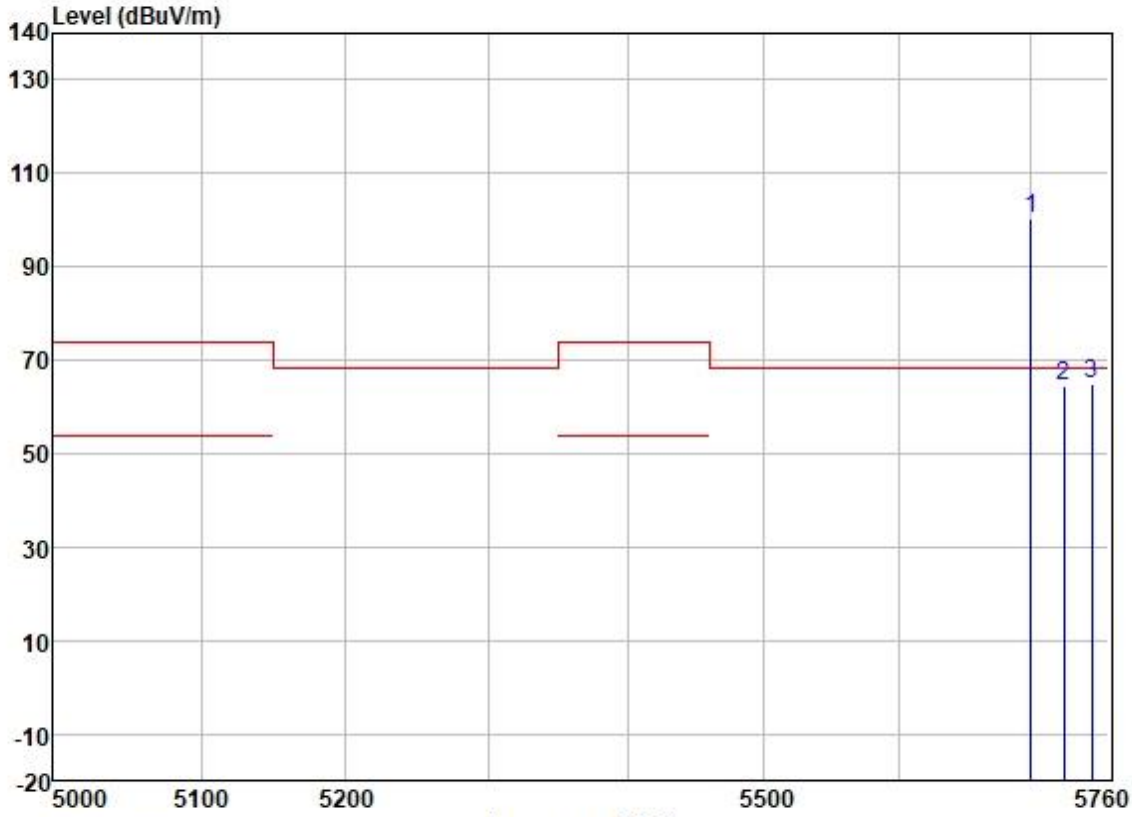
Test Mode: 12; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5457.511	50.76	31.79	6.26	36.88	51.93	54.00	-2.07	VERTICAL	Average
2	5457.511	62.48	31.79	6.26	36.88	63.65	74.00	-10.35	VERTICAL	Peak
3	5463.992	62.32	31.80	6.31	36.88	63.55	68.20	-4.65	VERTICAL	Peak
4	5500.000	85.04	31.80	6.40	36.88	86.36	------	------	VERTICAL	Average
5 *	5500.000	93.91	31.80	6.40	36.88	95.23	68.20	27.03	VERTICAL	Peak

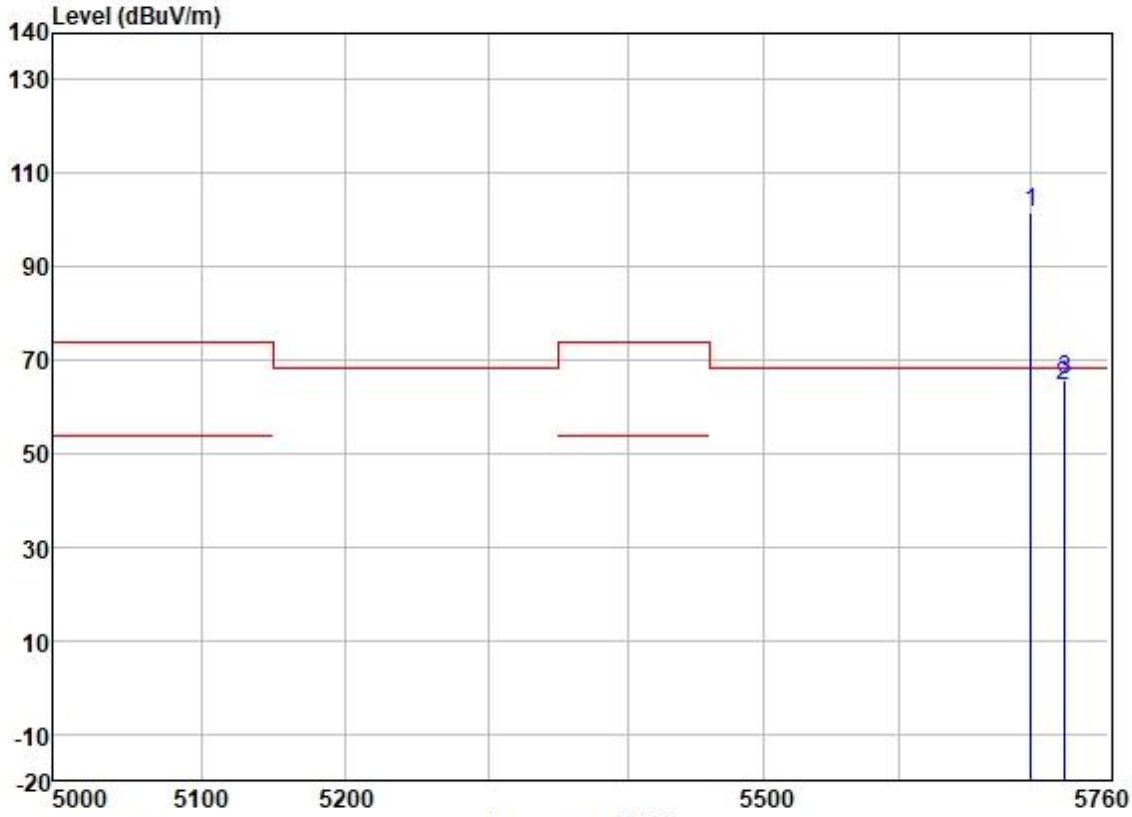
Test Mode: 12; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	*	5700.000	98.83	32.01	6.40	36.89	100.35	68.20	32.15	HORIZONTAL	Peak
2		5725.000	62.92	32.07	6.25	36.89	64.35	68.20	-3.85	HORIZONTAL	Peak
3		5746.506	63.51	32.10	6.20	36.89	64.92	68.20	-3.28	HORIZONTAL	Peak

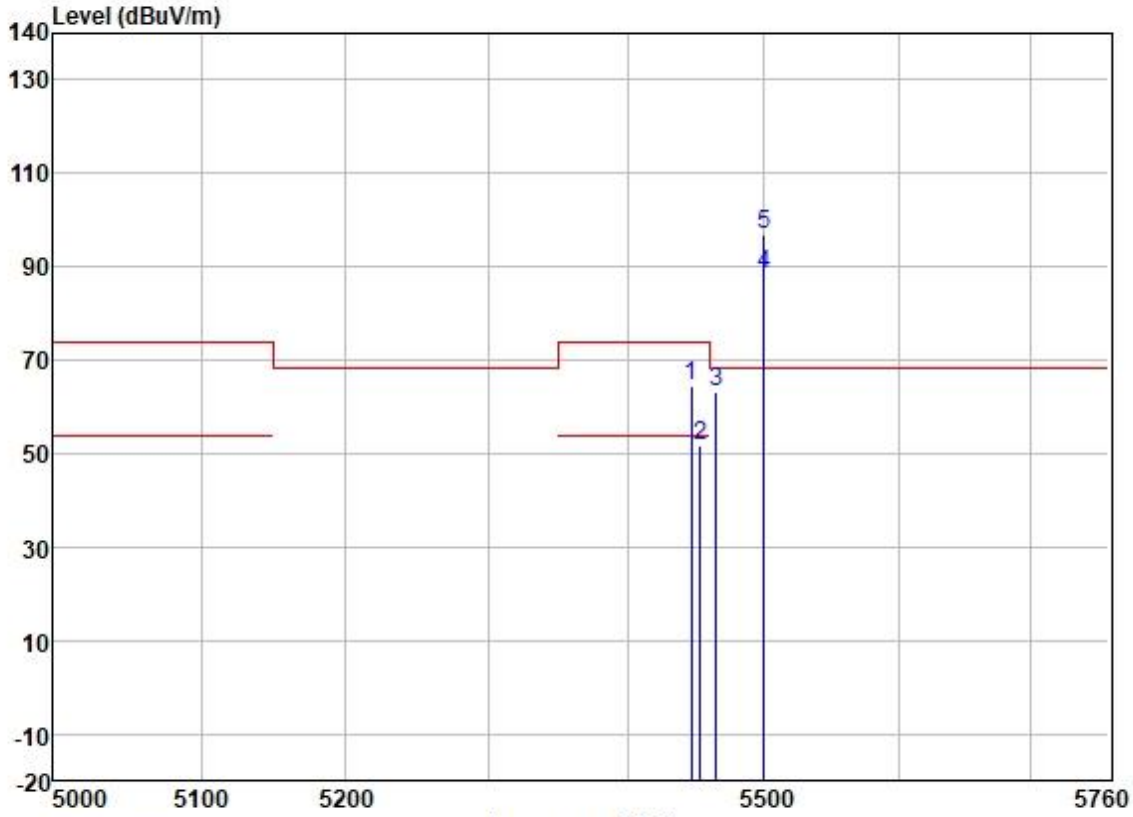
Test Mode: 12; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	*	5700.000	99.96	32.01	6.40	36.89	101.48	68.20	33.28	VERTICAL	Peak
2		5725.000	63.25	32.07	6.25	36.89	64.68	68.20	-3.52	VERTICAL	Peak
3		5726.083	64.27	32.07	6.25	36.89	65.70	68.20	-2.50	VERTICAL	Peak

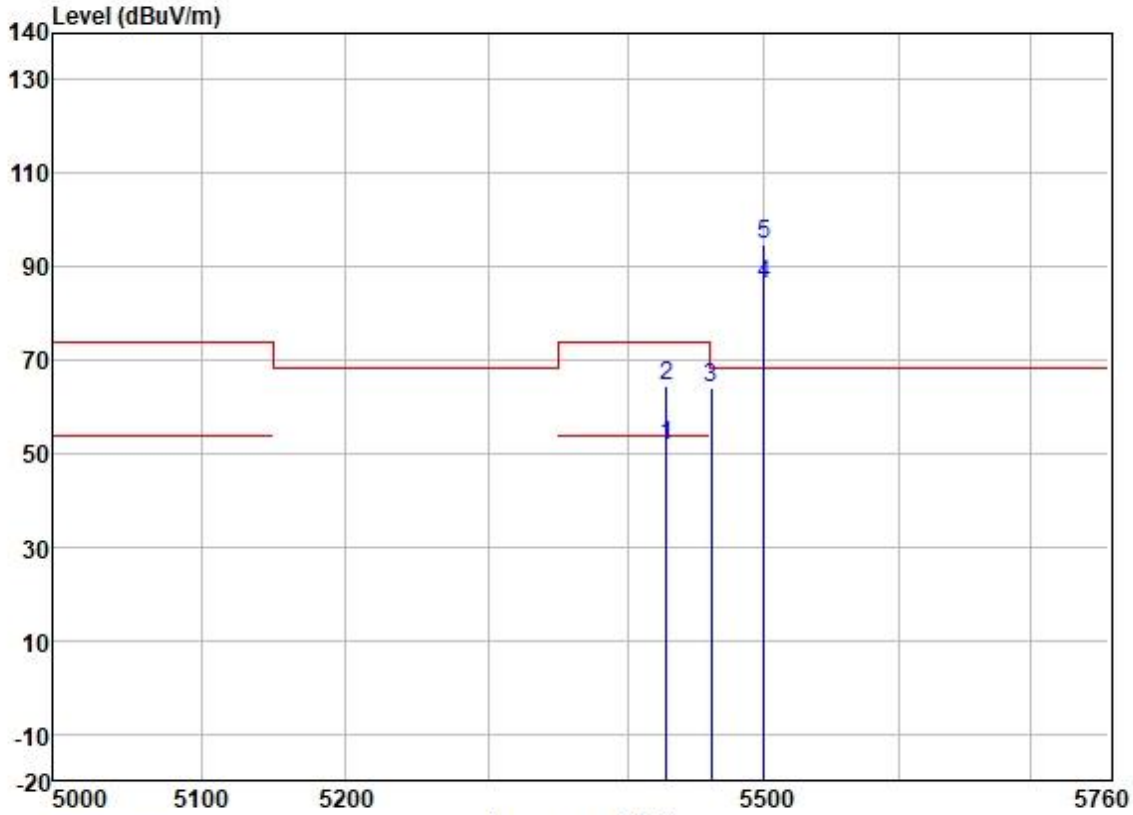
Test Mode: 12; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5446.367	63.24	31.79	6.20	36.88	64.35	74.00	-9.65	HORIZONTAL	Peak
2	5452.955	50.55	31.79	6.26	36.88	51.72	54.00	-2.28	HORIZONTAL	Average
3	5464.232	61.93	31.80	6.31	36.88	63.16	68.20	-5.04	HORIZONTAL	Peak
4	5500.000	86.89	31.80	6.40	36.88	88.21	------	------	HORIZONTAL	Average
5 *	5500.000	95.72	31.80	6.40	36.88	97.04	68.20	28.84	HORIZONTAL	Peak

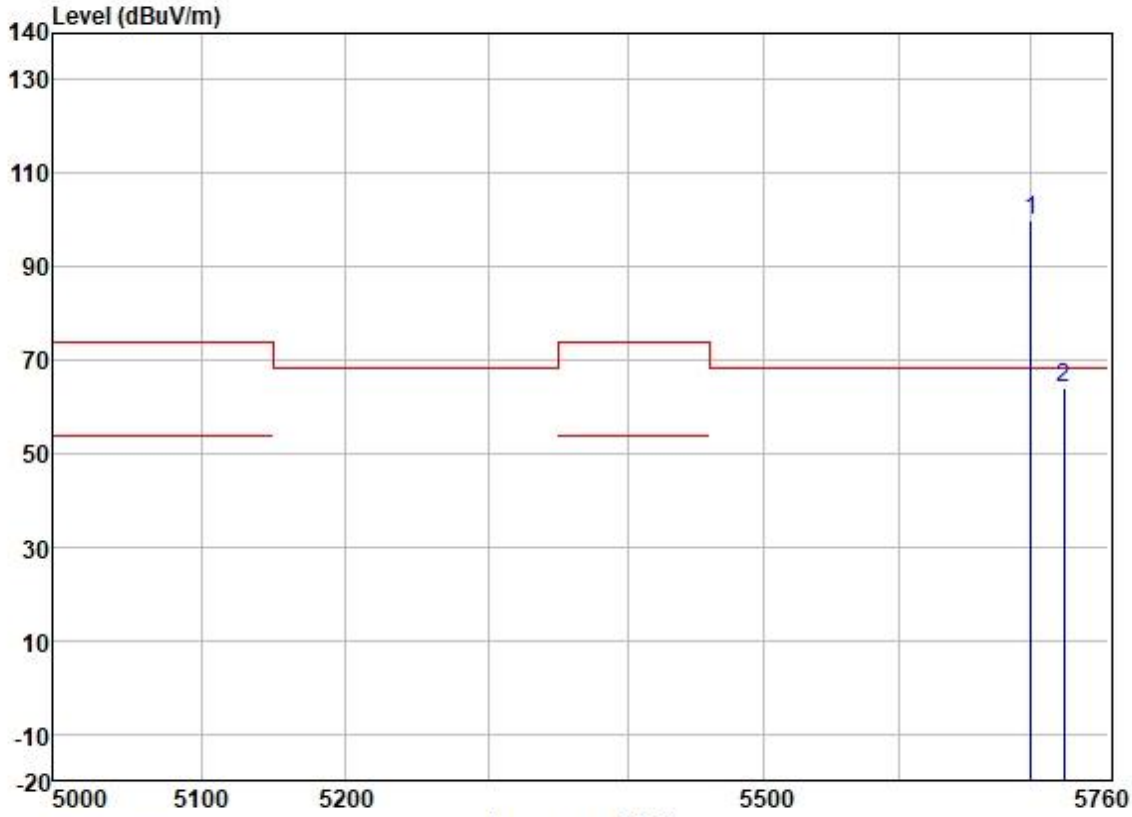
Test Mode: 12; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5428.440	50.72	31.79	6.13	36.88	51.76	54.00	-2.24	VERTICAL	Average
2	5428.440	63.44	31.79	6.13	36.88	64.48	74.00	-9.52	VERTICAL	Peak
3	5461.230	62.73	31.79	6.26	36.88	63.90	68.20	-4.30	VERTICAL	Peak
4	5500.000	84.71	31.80	6.40	36.88	86.03	------	------	VERTICAL	Average
5 *	5500.000	93.43	31.80	6.40	36.88	94.75	68.20	26.55	VERTICAL	Peak

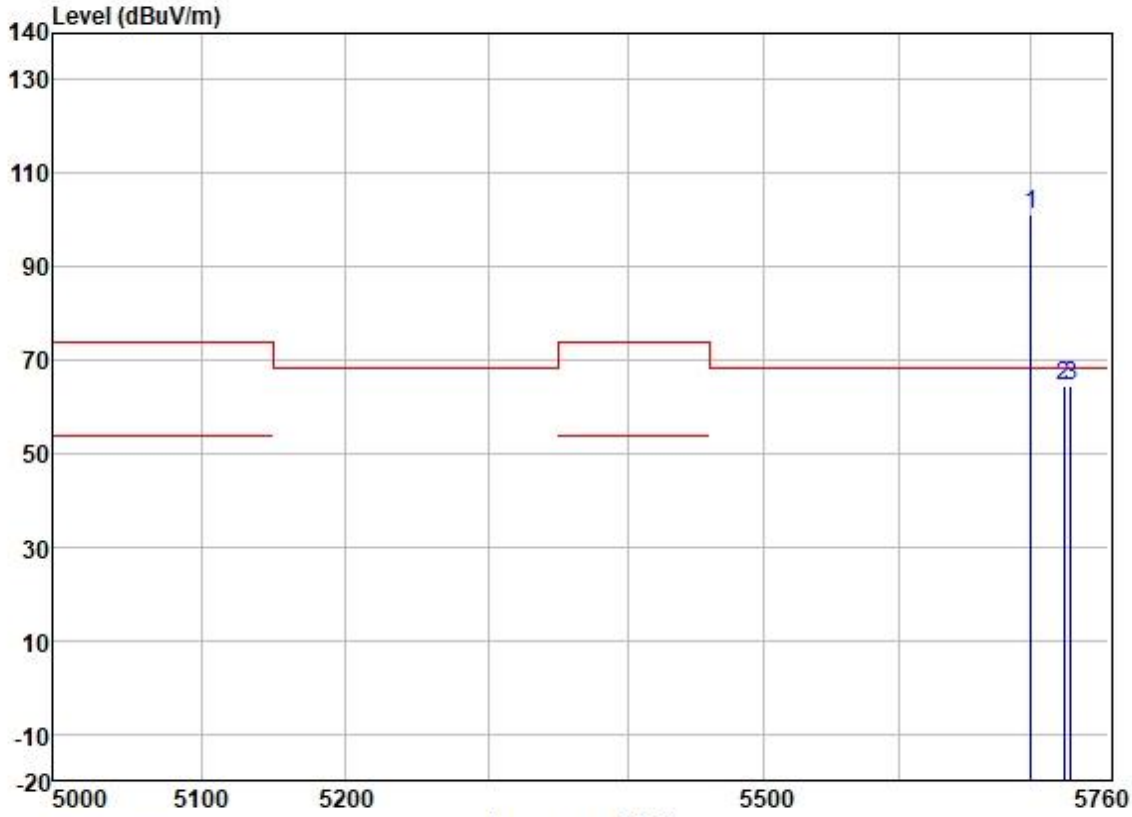
Test Mode: 12; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 *	5700.000	98.52	32.01	6.40	36.89	100.04	68.20	31.84	HORIZONTAL	Peak
2	5725.000	62.48	32.07	6.25	36.89	63.91	68.20	-4.29	HORIZONTAL	Peak

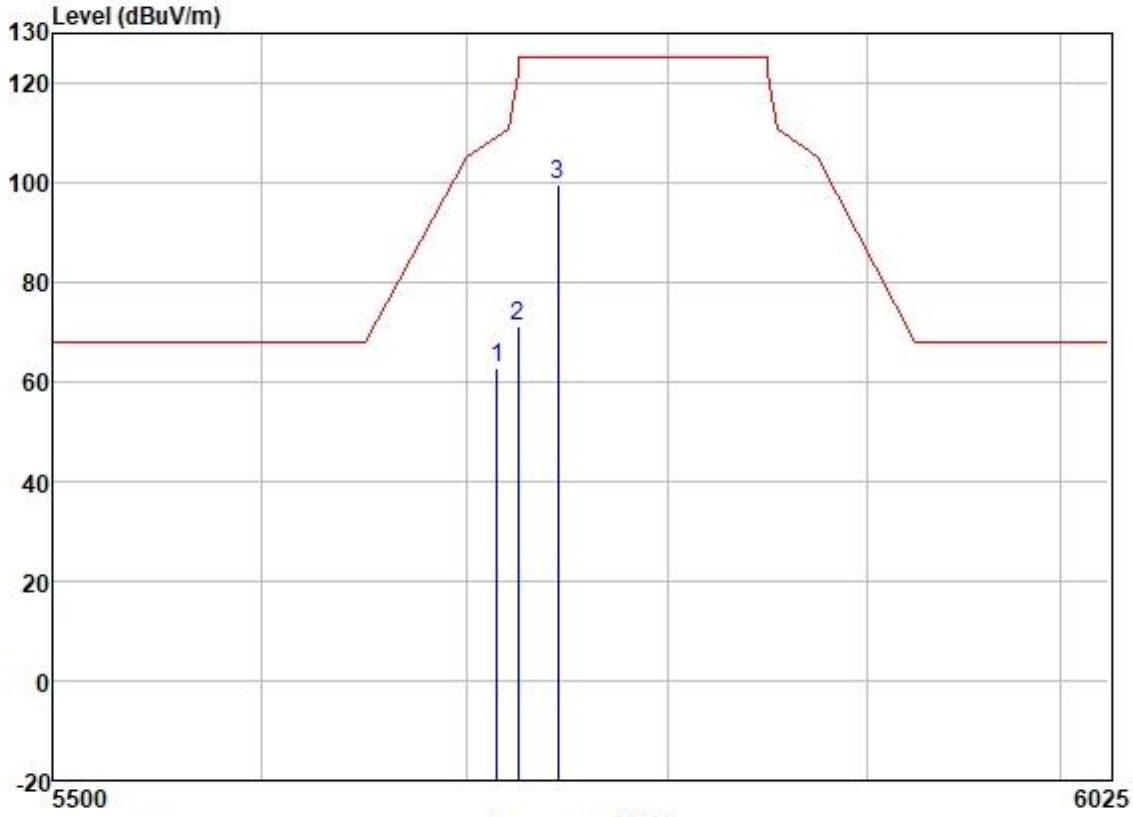
Test Mode: 12; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	*	5700.000	99.70	32.01	6.40	36.89	101.22	68.20	33.02	VERTICAL	Peak
2		5725.000	62.99	32.07	6.25	36.89	64.42	68.20	-3.78	VERTICAL	Peak
3		5730.282	63.03	32.07	6.25	36.89	64.46	68.20	-3.74	VERTICAL	Peak

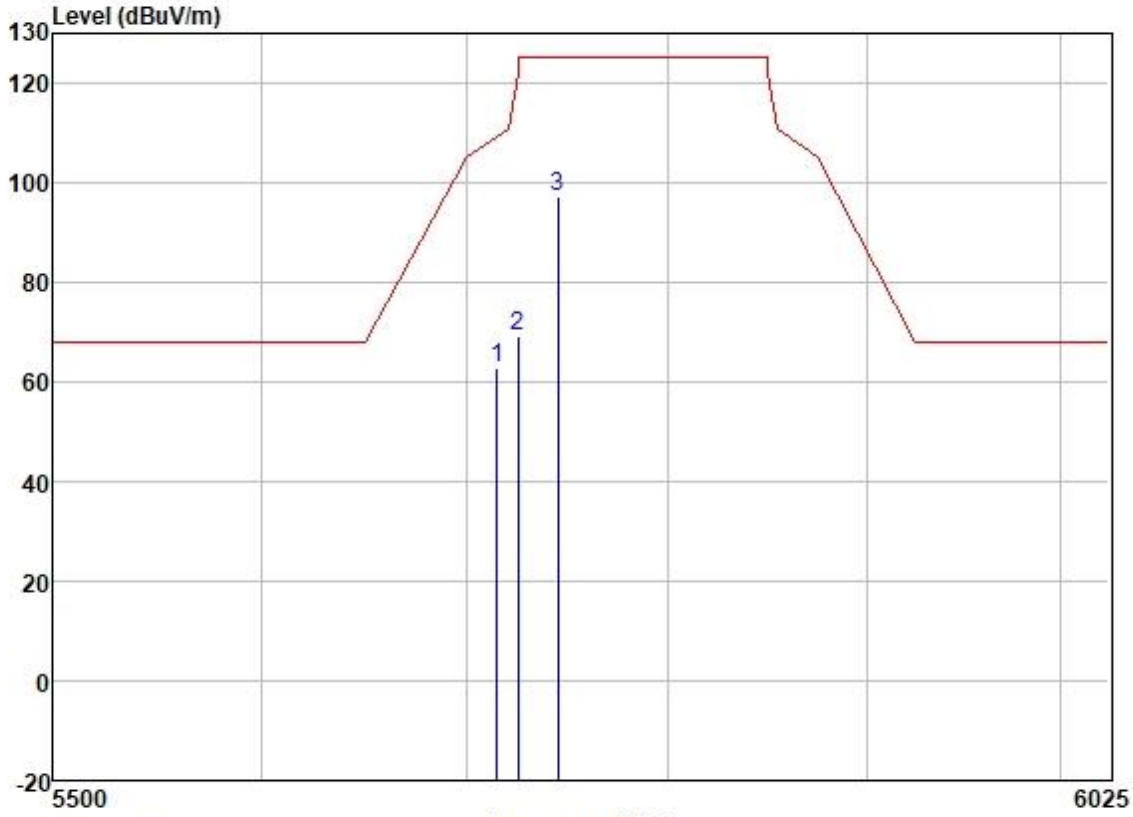
Test Mode: 13; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5715.000	61.27	32.04	6.33	36.89	62.75	109.40	-46.65	HORIZONTAL	Peak
2	5725.000	69.76	32.07	6.25	36.89	71.19	122.20	-51.01	HORIZONTAL	Peak
3	5745.000	98.18	32.10	6.20	36.89	99.59	125.20	-25.61	HORIZONTAL	Peak

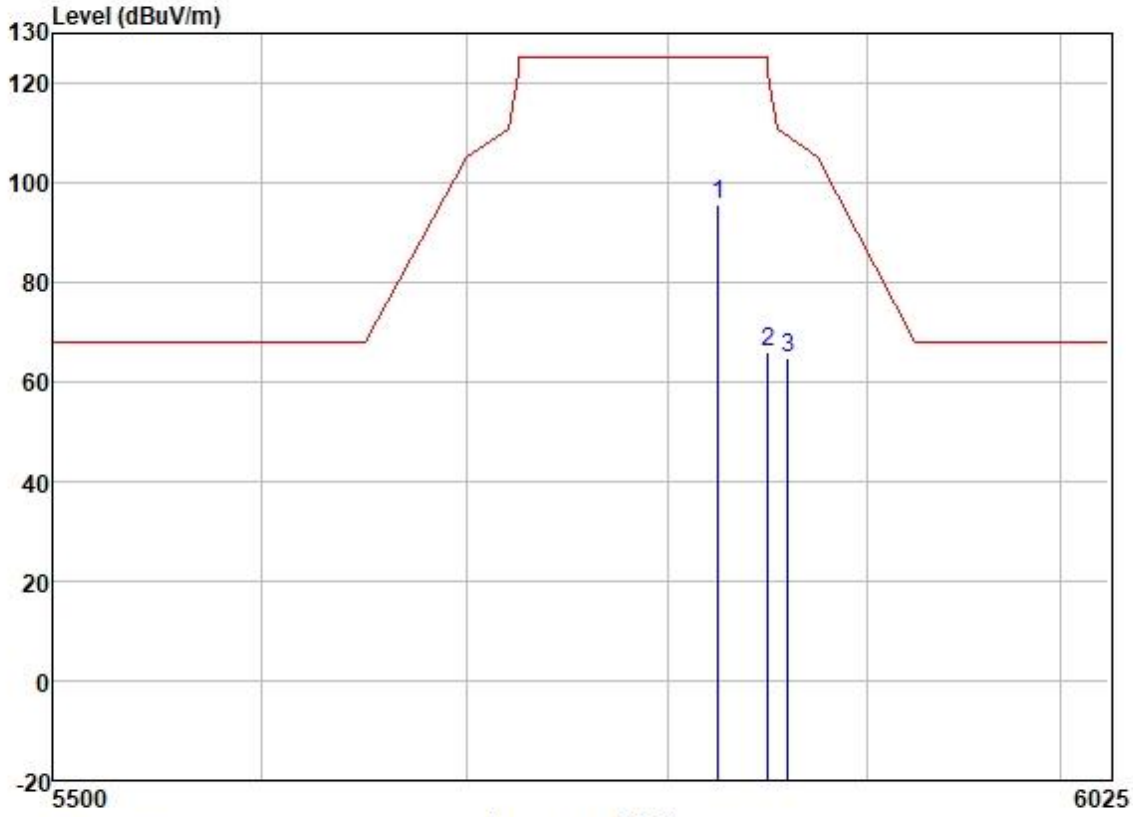
Test Mode: 13; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5715.000	61.27	32.04	6.33	36.89	62.75	109.40	-46.65	VERTICAL	Peak
2	5725.000	67.82	32.07	6.25	36.89	69.25	122.20	-52.95	VERTICAL	Peak
3	5745.000	95.95	32.10	6.20	36.89	97.36	125.20	-27.84	VERTICAL	Peak

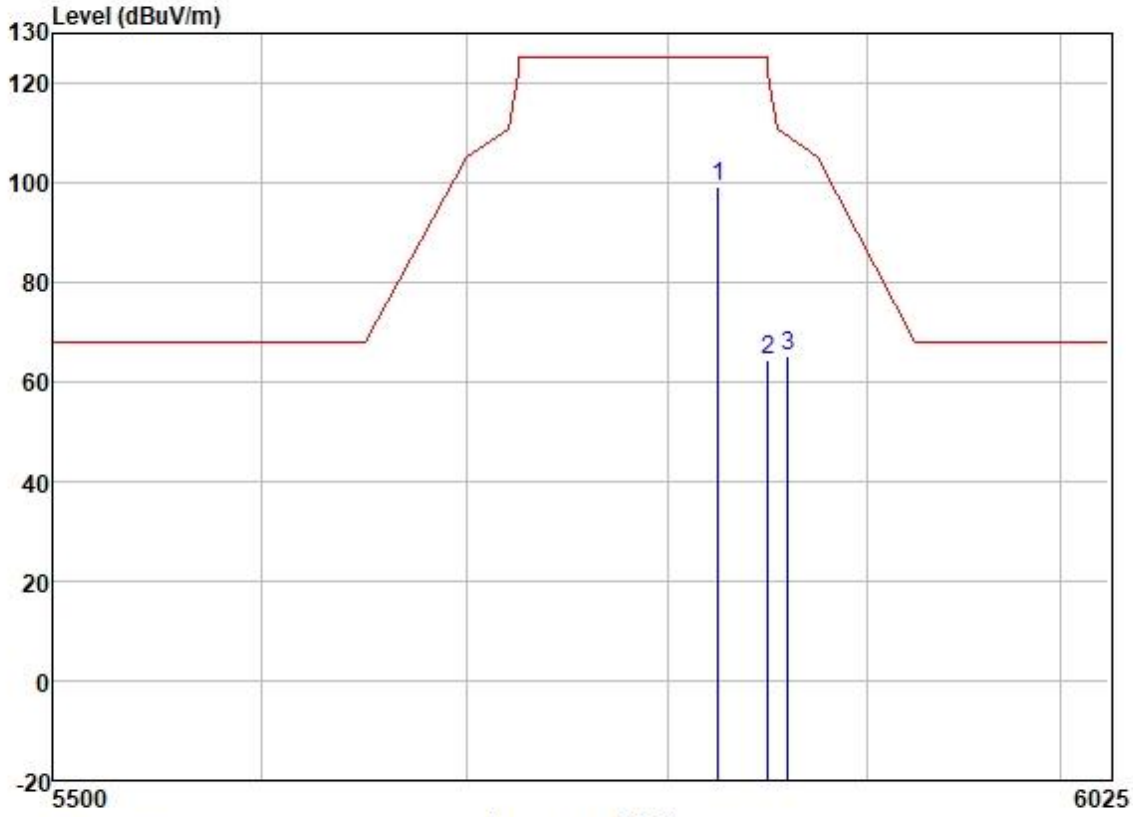
Test Mode: 13; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	94.18	32.23	6.04	36.90	95.55	125.20	-29.65	HORIZONTAL	Peak
2	5850.000	64.60	32.25	6.00	36.90	65.95	122.20	-56.25	HORIZONTAL	Peak
3	5860.000	63.48	32.27	5.96	36.90	64.81	109.40	-44.59	HORIZONTAL	Peak

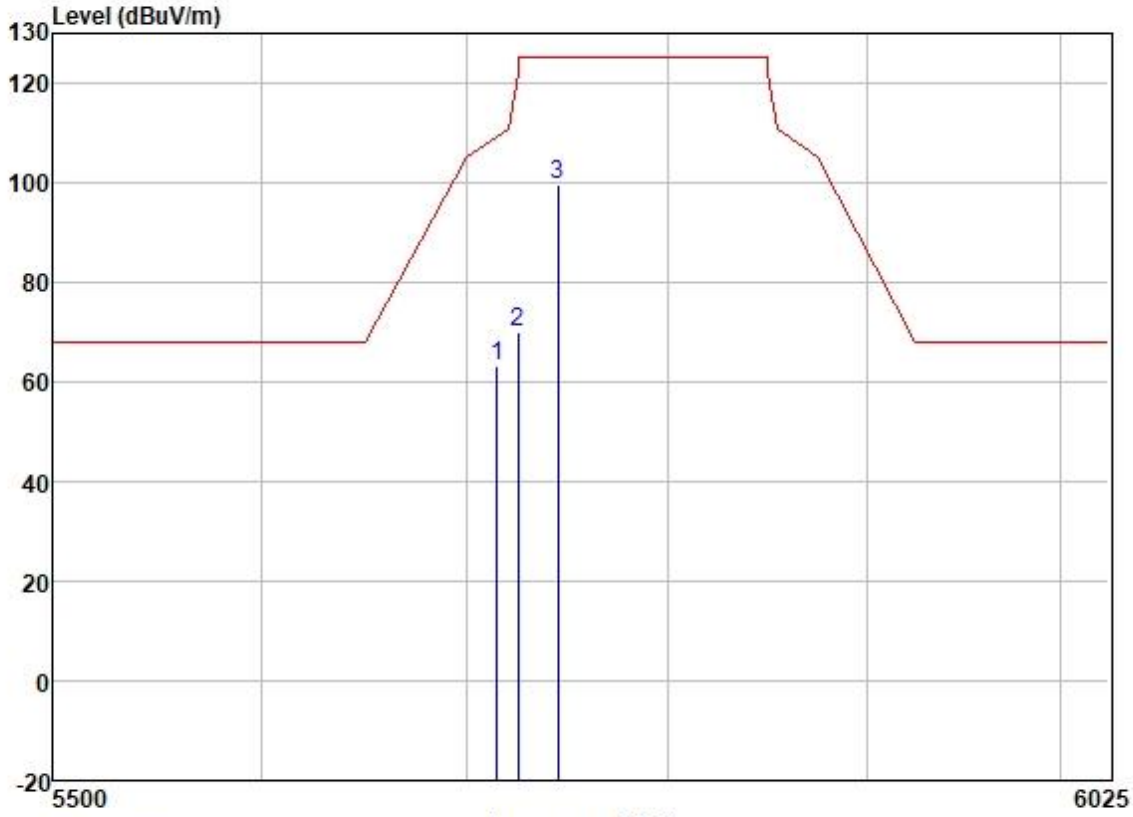
Test Mode: 13; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	97.80	32.23	6.04	36.90	99.17	125.20	-26.03	VERTICAL	Peak
2	5850.000	63.08	32.25	6.00	36.90	64.43	122.20	-57.77	VERTICAL	Peak
3	5860.000	63.71	32.27	5.96	36.90	65.04	109.40	-44.36	VERTICAL	Peak

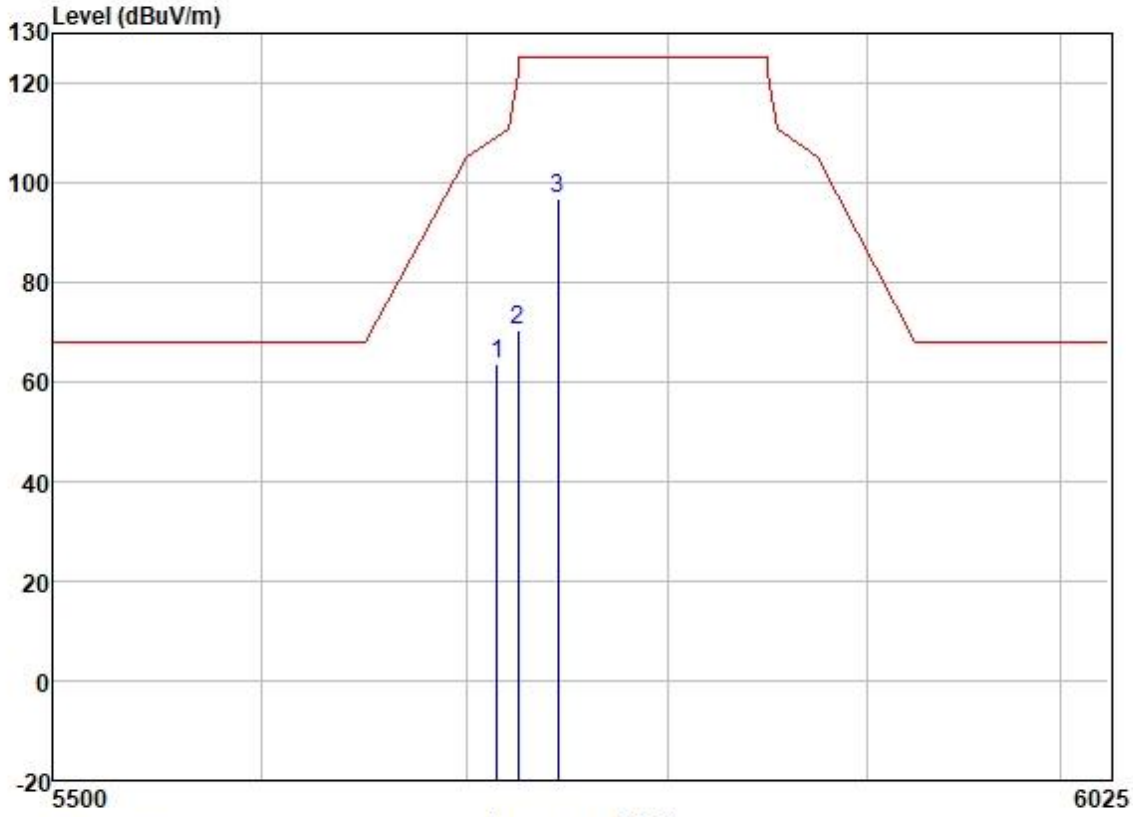
Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5715.000	61.83	32.04	6.33	36.89	63.31	109.40	-46.09	HORIZONTAL	Peak
2	5725.000	68.48	32.07	6.25	36.89	69.91	122.20	-52.29	HORIZONTAL	Peak
3	5745.000	98.01	32.10	6.20	36.89	99.42	125.20	-25.78	HORIZONTAL	Peak

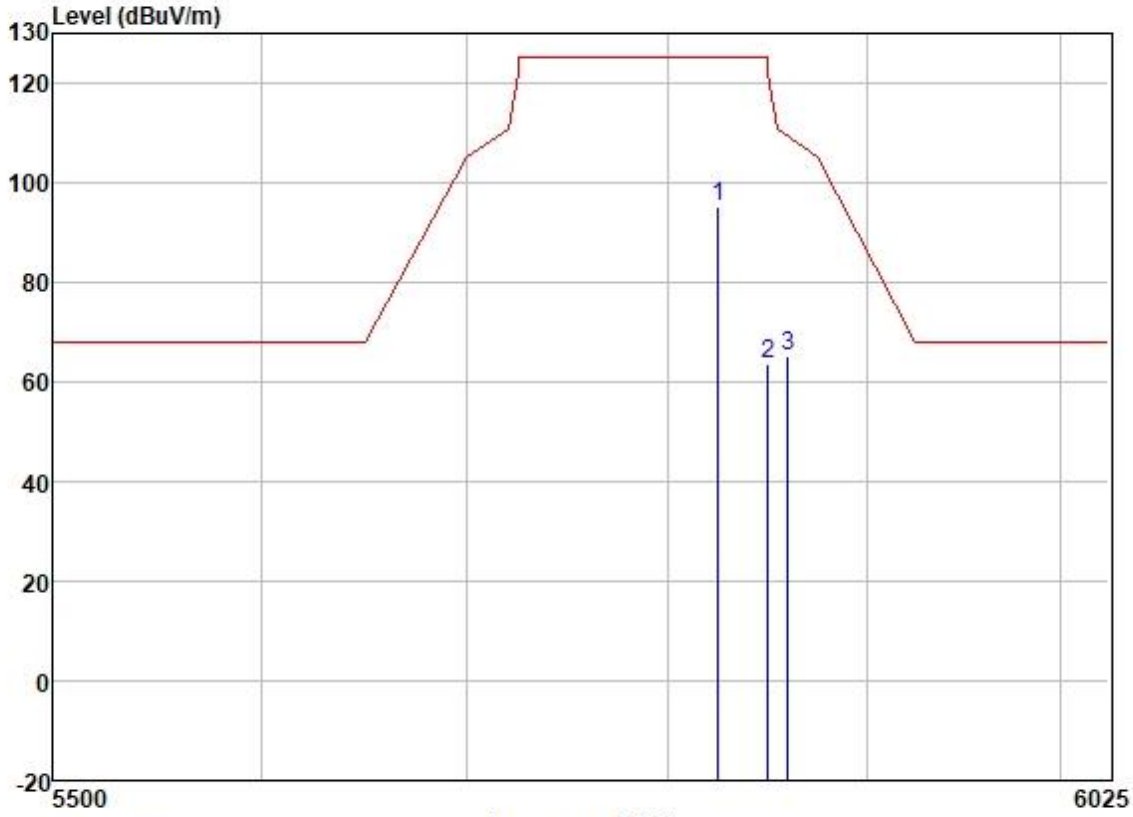
Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5715.000	62.29	32.04	6.33	36.89	63.77	109.40	-45.63	VERTICAL	Peak
2	5725.000	68.84	32.07	6.25	36.89	70.27	122.20	-51.93	VERTICAL	Peak
3	5745.000	95.49	32.10	6.20	36.89	96.90	125.20	-28.30	VERTICAL	Peak

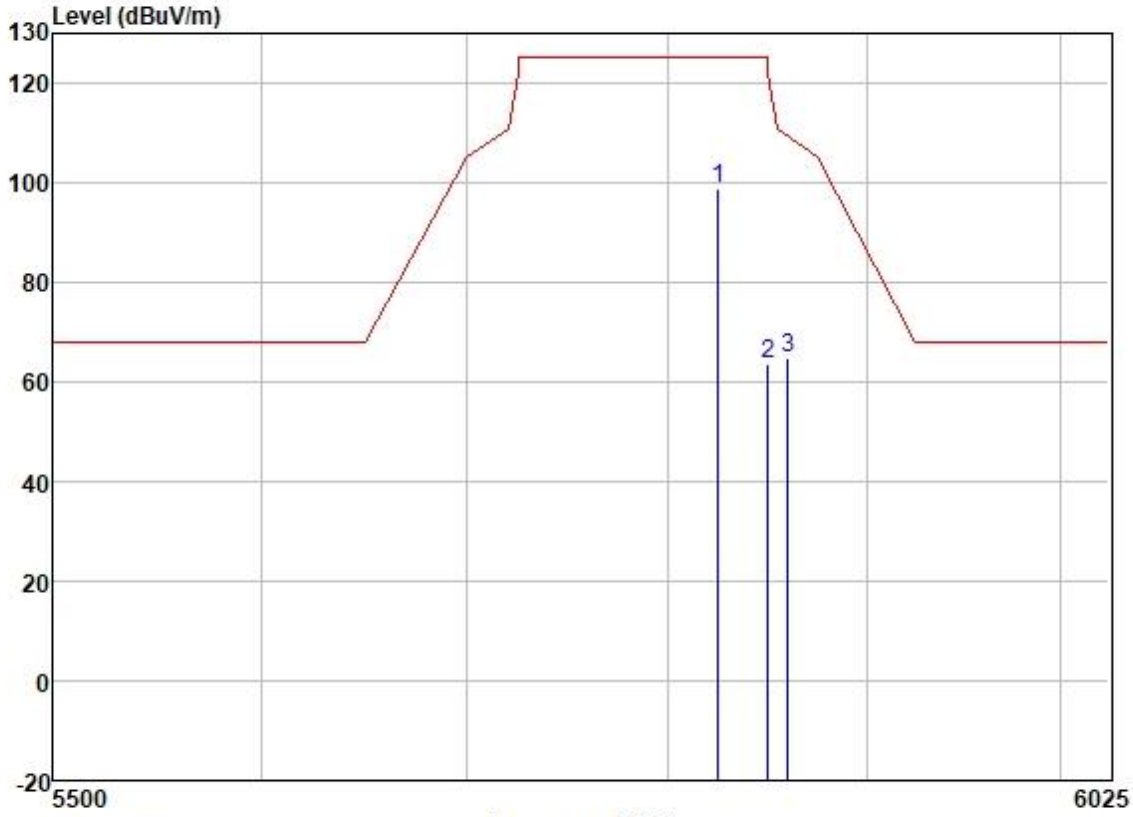
Test Mode: 13; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	93.80	32.23	6.04	36.90	95.17	125.20	-30.03	HORIZONTAL	Peak
2	5850.000	62.13	32.25	6.00	36.90	63.48	122.20	-58.72	HORIZONTAL	Peak
3	5860.000	63.75	32.27	5.96	36.90	65.08	109.40	-44.32	HORIZONTAL	Peak

Test Mode: 13; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	5825.000	97.30	32.23	6.04	36.90	98.67	125.20	-26.53	VERTICAL	Peak
2	5850.000	62.41	32.25	6.00	36.90	63.76	122.20	-58.44	VERTICAL	Peak
3	5860.000	63.28	32.27	5.96	36.90	64.61	109.40	-44.79	VERTICAL	Peak

7.9 Radiated Emissions (below 1GHz)

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

Test Method: KDB 789033 D02 II G

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

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

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

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

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

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

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

7.9.1 E.U.T. Operation

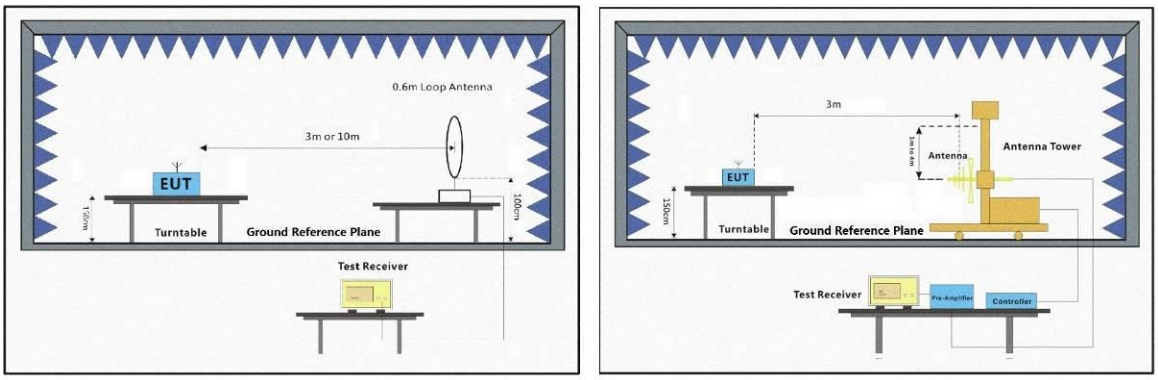
Operating Environment:

Temperature: 22.5 °C Humidity: 52.8 % RH Atmospheric Pressure: 1003 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	06	TX mode (Band 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).
Pre-scan	07	TX mode (Band 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).
Pre-scan	08	TX mode (Band 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).
Pre-scan	09	TX mode (Band 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).
Pre-scan	10	Charge + TX mode (Band 1)_Keep the EUT in charging and 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).
Final test	11	Charge + TX mode (Band 2A)_Keep the EUT in charging and 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).
Pre-scan	12	Charge + TX mode (Band 2C)_Keep the EUT in charging and 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).
Pre-scan	13	Charge + TX mode (Band 3)_Keep the EUT in charging and 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).

7.9.3 Test Setup Diagram



7.9.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

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

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-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.

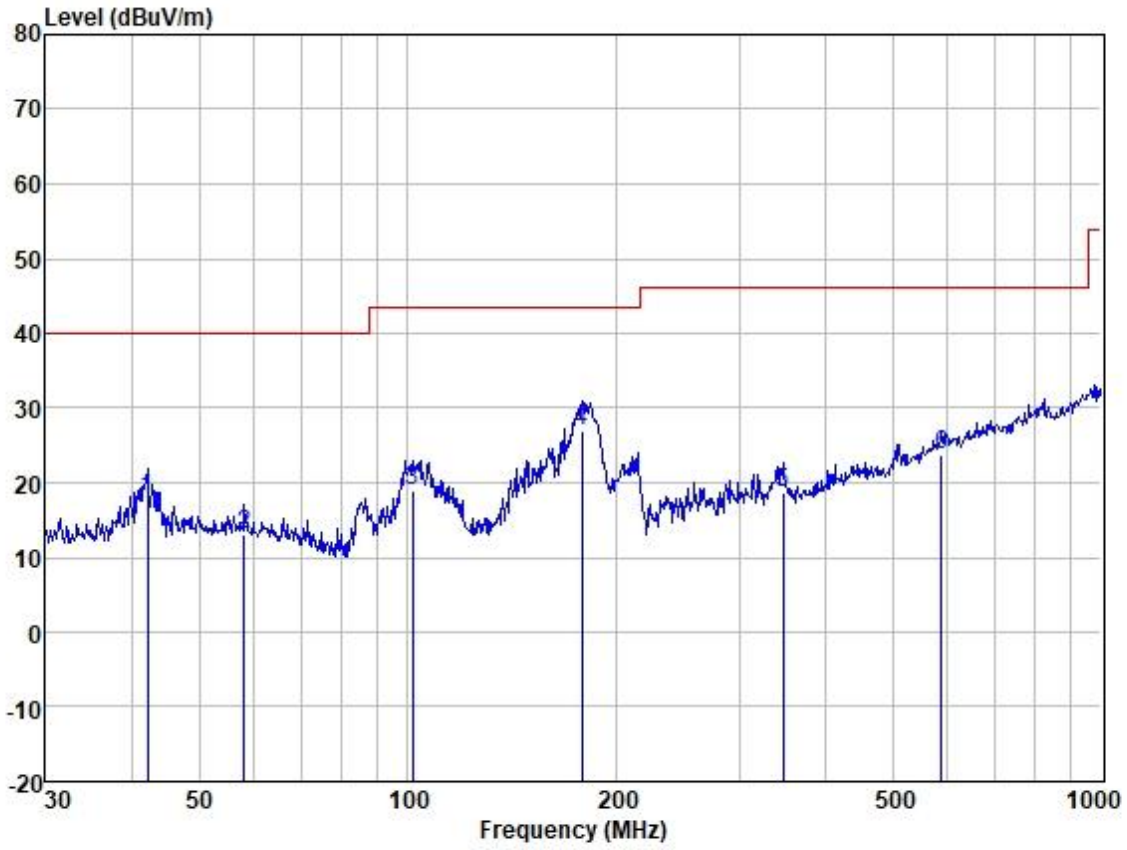
Remark:

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

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

3. Scan from 9kHz to 1GHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

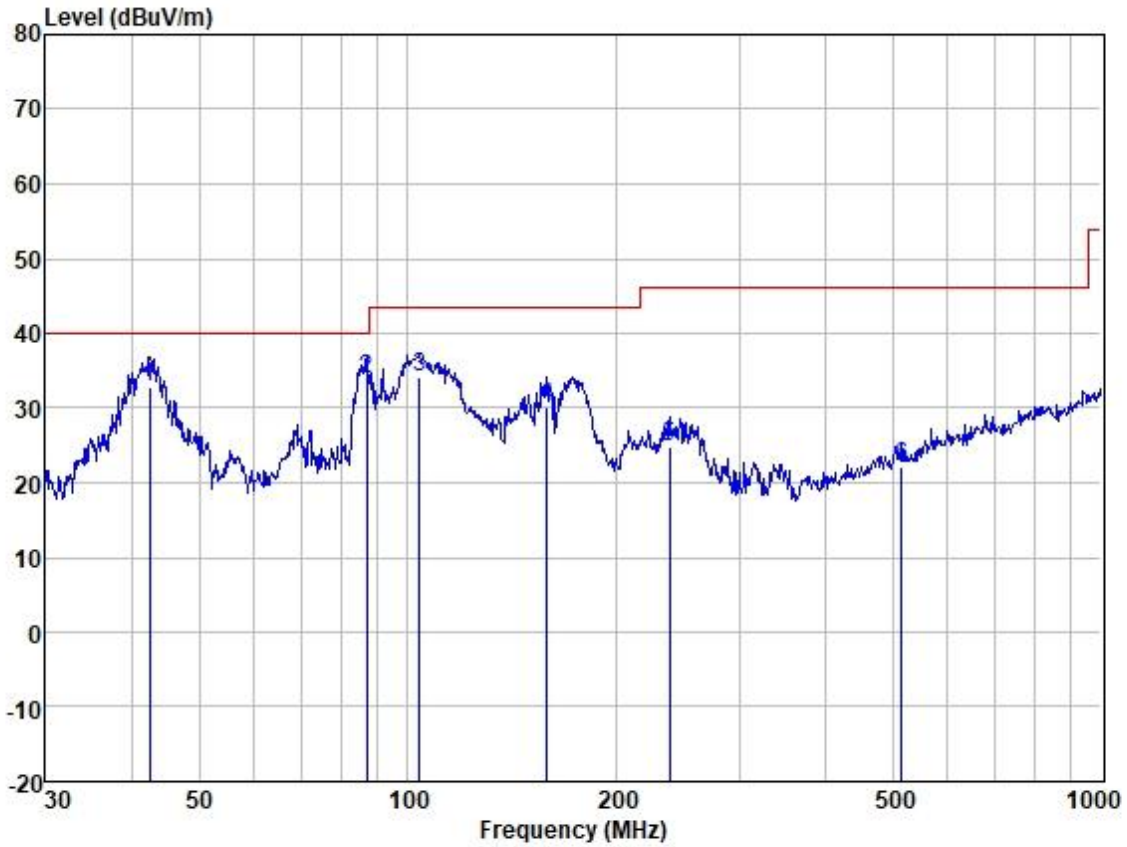
Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Site : SGS
Job :
Model :
Power :
Test Mode : 11

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	42.154	30.74	13.75	1.10	27.61	17.98	40.00	-22.02	HORIZONTAL	QP
2	57.999	25.86	13.56	1.22	27.60	13.04	40.00	-26.96	HORIZONTAL	QP
3	101.644	35.60	9.27	1.70	27.60	18.97	43.52	-24.55	HORIZONTAL	QP
4	178.133	39.05	12.65	2.44	27.32	26.82	43.52	-16.70	HORIZONTAL	QP
5	348.027	28.23	14.39	3.59	27.62	18.59	46.02	-27.43	HORIZONTAL	QP
6	588.905	27.75	19.76	4.92	28.79	23.64	46.02	-22.38	HORIZONTAL	QP

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



Site : SGS
Job :
Model :
Power :
Test Mode : 11

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	42.451	45.54	13.75	1.10	27.61	32.78	40.00	-7.22	VERTICAL	QP
2	87.112	52.03	7.98	1.56	27.60	33.97	40.00	-6.03	VERTICAL	QP
3	103.806	50.54	9.56	1.71	27.59	34.22	43.52	-9.30	VERTICAL	QP
4	158.668	41.62	13.67	2.32	27.36	30.25	43.52	-13.27	VERTICAL	QP
5	238.310	37.61	11.53	2.84	27.26	24.72	46.02	-21.30	VERTICAL	QP
6	515.437	28.01	18.34	4.50	28.62	22.23	46.02	-23.79	VERTICAL	QP

7.10 Radiated Emissions (above 1GHz)

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

Test Method: KDB 789033 D02 II G

Measurement Distance: 3m

Limit:

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

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

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

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

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

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

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

7.10.1 E.U.T. Operation

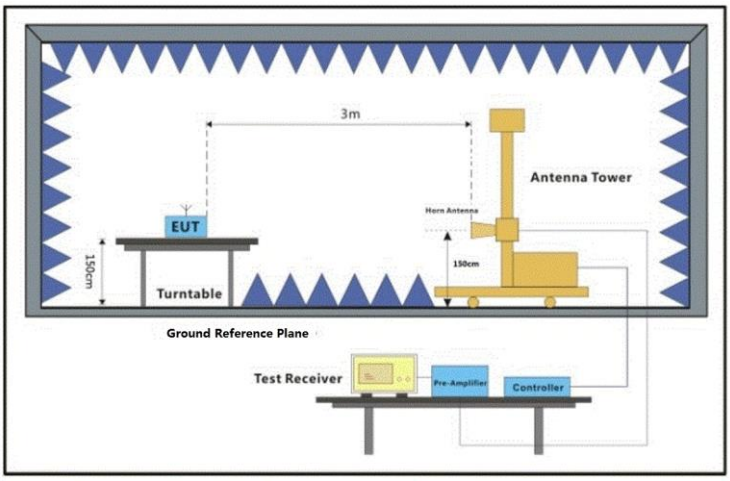
Operating Environment:

Temperature: 24.2 °C Humidity: 55.4 % RH Atmospheric Pressure: 1003 mbar

7.10.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	06	TX mode (Band 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).
Pre-scan	07	TX mode (Band 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).
Pre-scan	08	TX mode (Band 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).
Pre-scan	09	TX mode (Band 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).
Final test	10	Charge + TX mode (Band 1)_Keep the EUT in charging and 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).
Final test	11	Charge + TX mode (Band 2A)_Keep the EUT in charging and 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).
Final test	12	Charge + TX mode (Band 2C)_Keep the EUT in charging and 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).
Final test	13	Charge + TX mode (Band 3)_Keep the EUT in charging and 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).

7.10.3 Test Setup Diagram



7.10.4 Measurement Procedure and Data

a. 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 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters 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, quasi-peak or average method as specified and then reported in a data sheet.

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

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

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

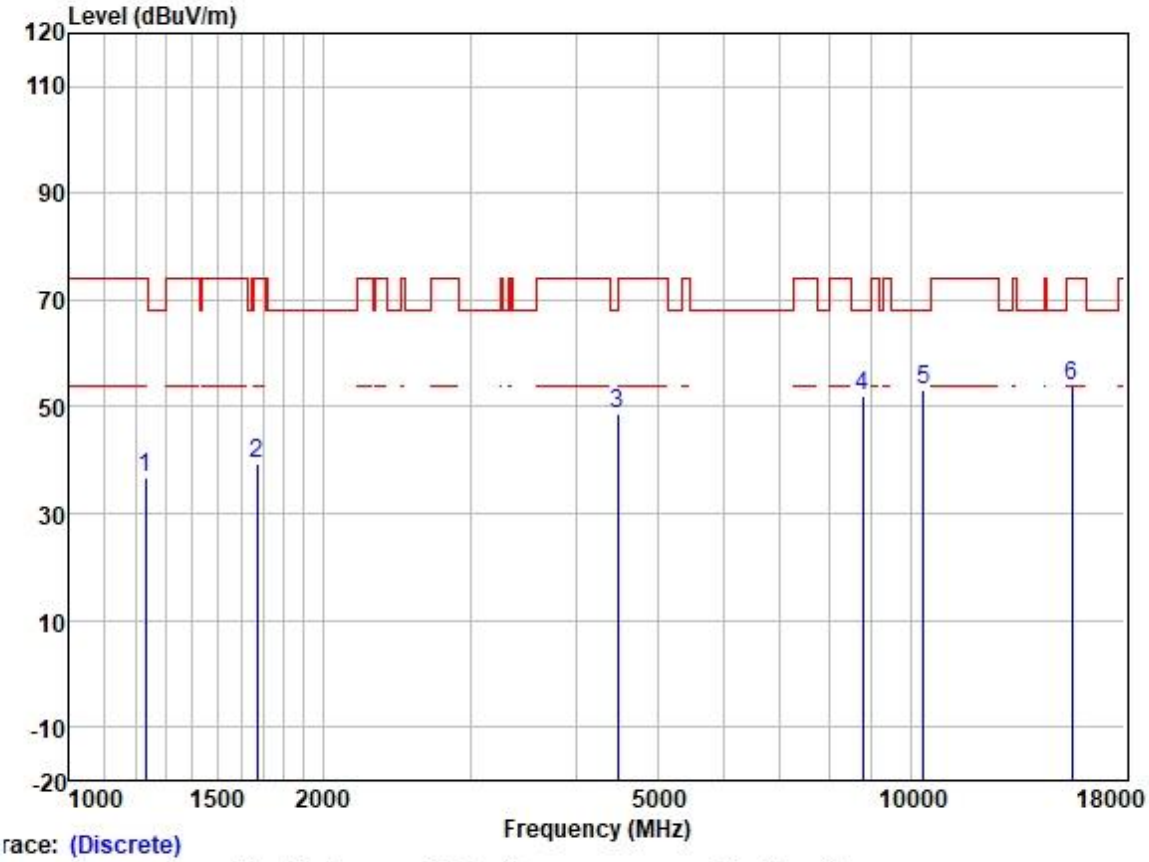
Remark:

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

2. Scan from 1GHz to 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.

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

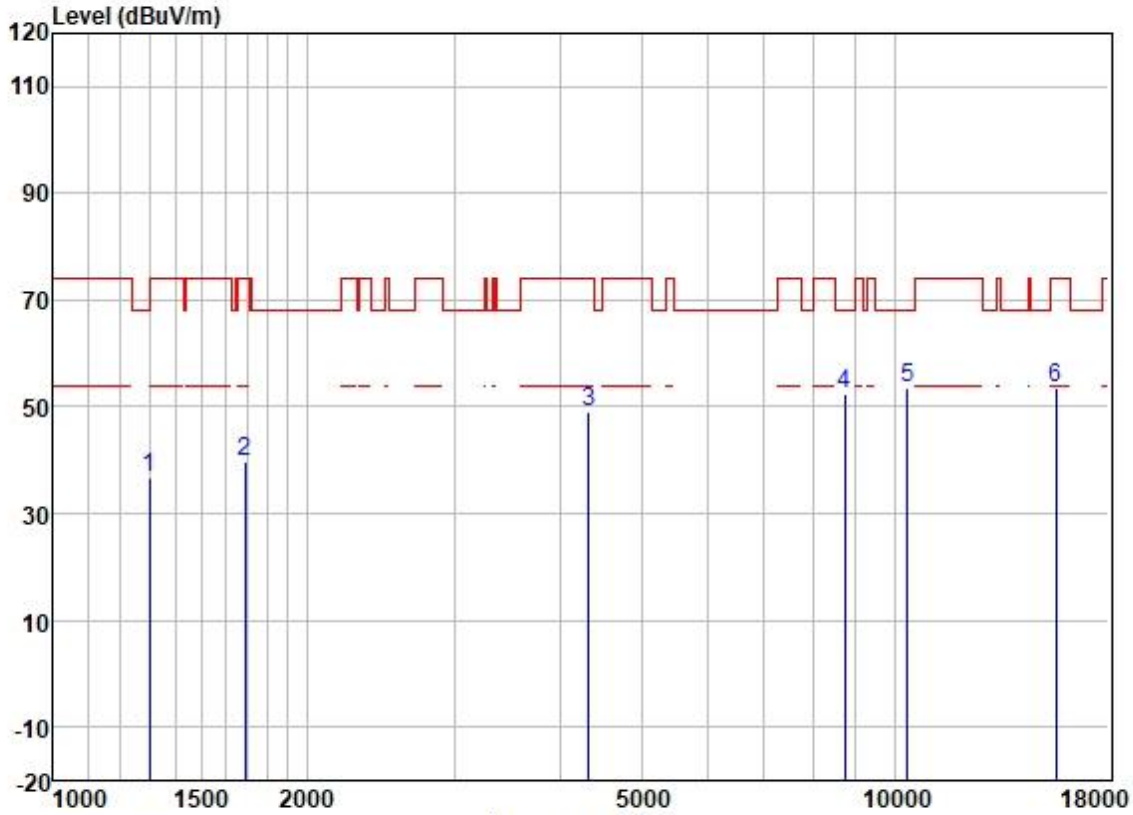
Test Mode: 10; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1231.345	47.85	24.91	2.31	38.37	36.70	74.00	-37.30	HORIZONTAL	Peak
2	1672.779	48.80	25.67	2.80	37.91	39.36	74.00	-34.64	HORIZONTAL	Peak
3	4482.150	49.78	30.78	4.99	36.81	48.74	68.20	-19.46	HORIZONTAL	Peak
4	8764.146	45.08	37.32	7.19	37.54	52.05	68.20	-16.15	HORIZONTAL	Peak
5	10360.000	44.12	39.28	7.29	37.37	53.32	68.20	-14.88	HORIZONTAL	Peak
6	15540.000	40.24	39.05	9.88	35.39	53.78	74.00	-20.22	HORIZONTAL	Peak

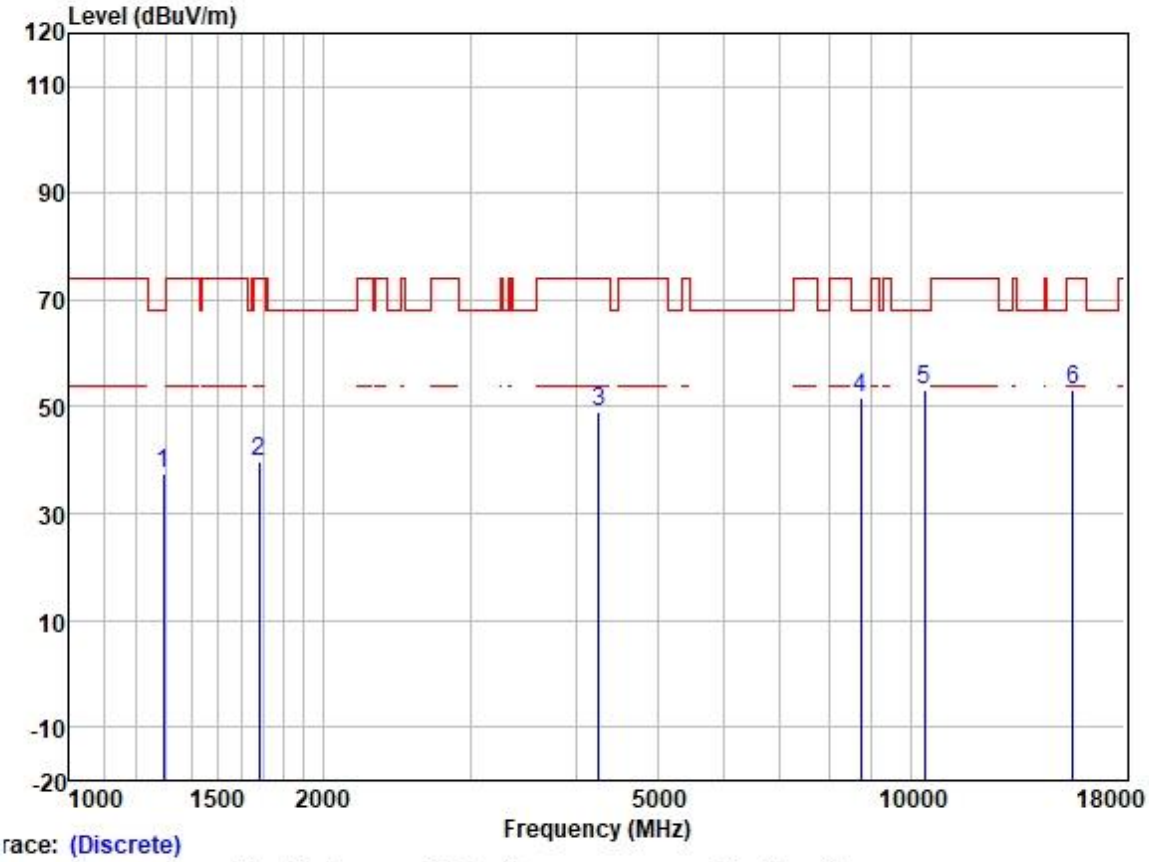
Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1300.858	47.26	25.20	2.60	38.31	36.75	74.00	-37.25	VERTICAL	Peak
2	1692.231	49.21	25.70	2.80	37.89	39.82	74.00	-34.18	VERTICAL	Peak
3	4329.354	50.65	30.54	4.67	36.81	49.05	74.00	-24.95	VERTICAL	Peak
4	8738.852	45.71	37.31	7.13	37.54	52.61	68.20	-15.59	VERTICAL	Peak
5	10360.000	44.25	39.28	7.29	37.37	53.45	68.20	-14.75	VERTICAL	Peak
6	15540.000	40.05	39.05	9.88	35.39	53.59	74.00	-20.41	VERTICAL	Peak

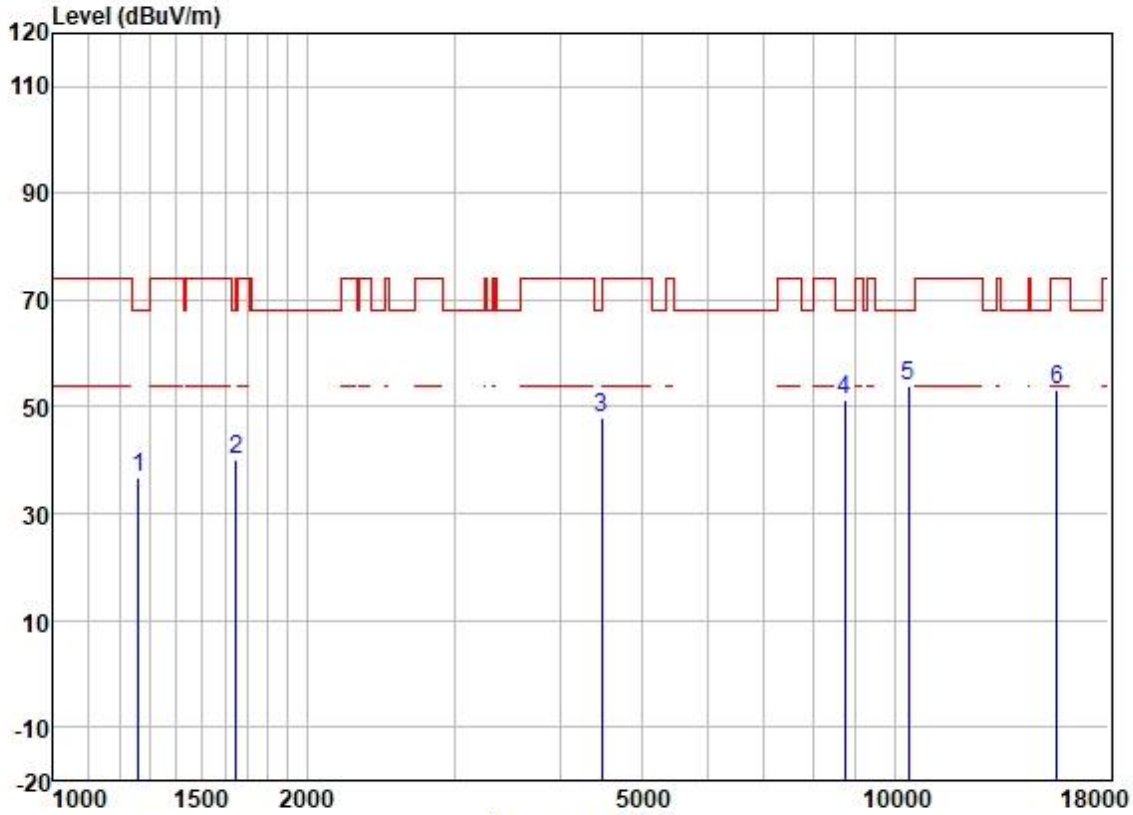
Test Mode: 10; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1293.359	47.92	25.18	2.57	38.31	37.36	68.20	-30.84	HORIZONTAL	Peak
2	1682.477	49.20	25.68	2.80	37.91	39.77	74.00	-34.23	HORIZONTAL	Peak
3	4254.921	51.04	30.34	4.62	36.81	49.19	74.00	-24.81	HORIZONTAL	Peak
4	8738.852	44.86	37.31	7.13	37.54	51.76	68.20	-16.44	HORIZONTAL	Peak
5	10400.000	43.76	39.33	7.32	37.36	53.05	68.20	-15.15	HORIZONTAL	Peak
6	15600.000	39.73	38.99	9.88	35.39	53.21	74.00	-20.79	HORIZONTAL	Peak

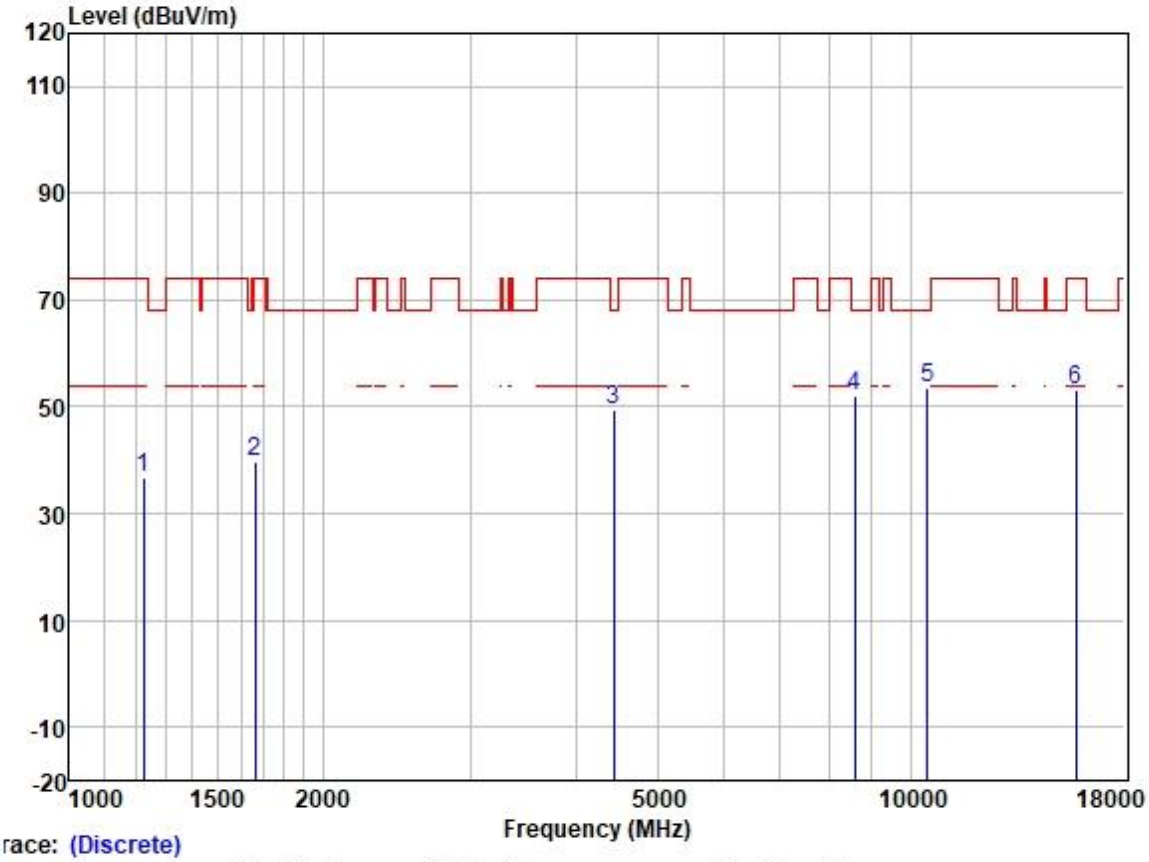
Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1263.796	47.57	25.08	2.42	38.33	36.74	68.20	-31.46	VERTICAL	Peak
2	1648.778	49.52	25.63	2.80	37.93	40.02	68.20	-28.18	VERTICAL	Peak
3	4482.150	49.17	30.78	4.99	36.81	48.13	68.20	-20.07	VERTICAL	Peak
4	8738.852	44.59	37.31	7.13	37.54	51.49	68.20	-16.71	VERTICAL	Peak
5	10400.000	44.48	39.33	7.32	37.36	53.77	68.20	-14.43	VERTICAL	Peak
6	15600.000	39.80	38.99	9.88	35.39	53.28	74.00	-20.72	VERTICAL	Peak

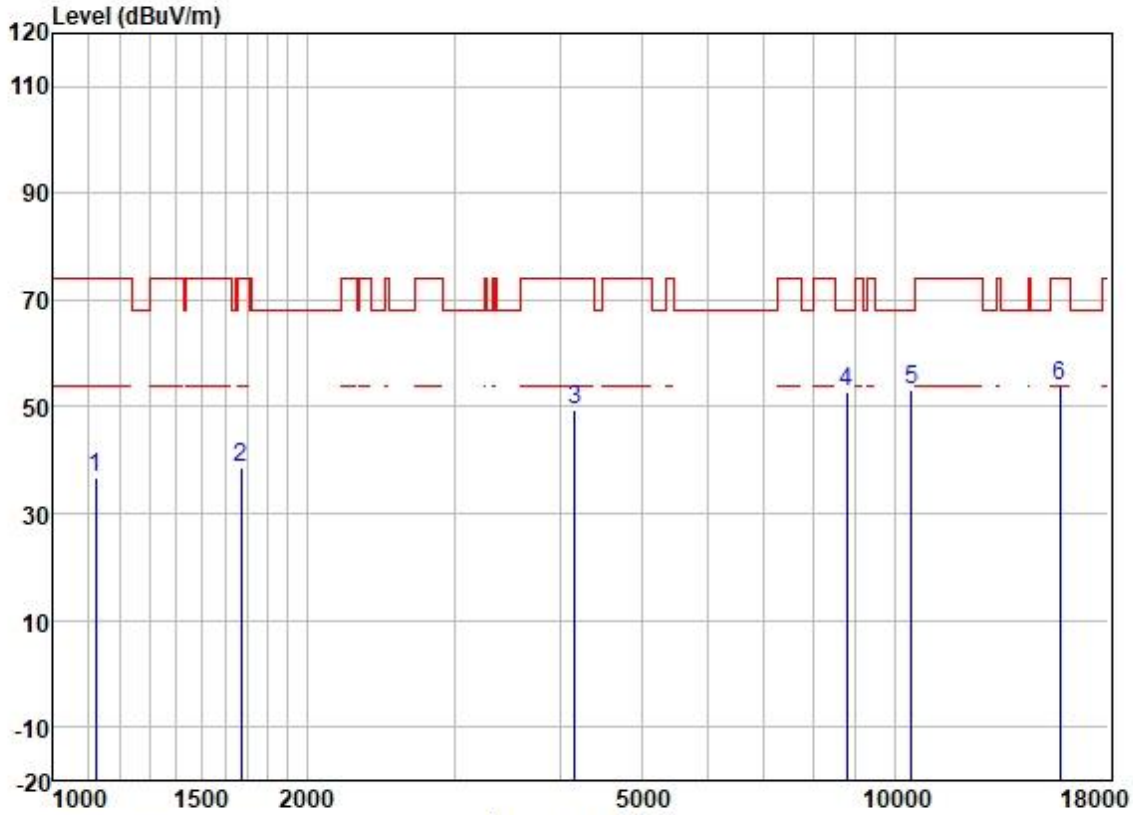
Test Mode: 10; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1224.247	48.11	24.85	2.31	38.37	36.90	74.00	-37.10	HORIZONTAL	Peak
2	1663.137	49.33	25.65	2.80	37.91	39.87	74.00	-34.13	HORIZONTAL	Peak
3	4443.453	50.61	30.73	4.83	36.81	49.36	68.20	-18.84	HORIZONTAL	Peak
4	8588.607	45.60	37.23	6.84	37.56	52.11	68.20	-16.09	HORIZONTAL	Peak
5	10480.000	44.05	39.46	7.40	37.36	53.55	68.20	-14.65	HORIZONTAL	Peak
6	15720.000	39.95	38.78	9.87	35.39	53.21	74.00	-20.79	HORIZONTAL	Peak

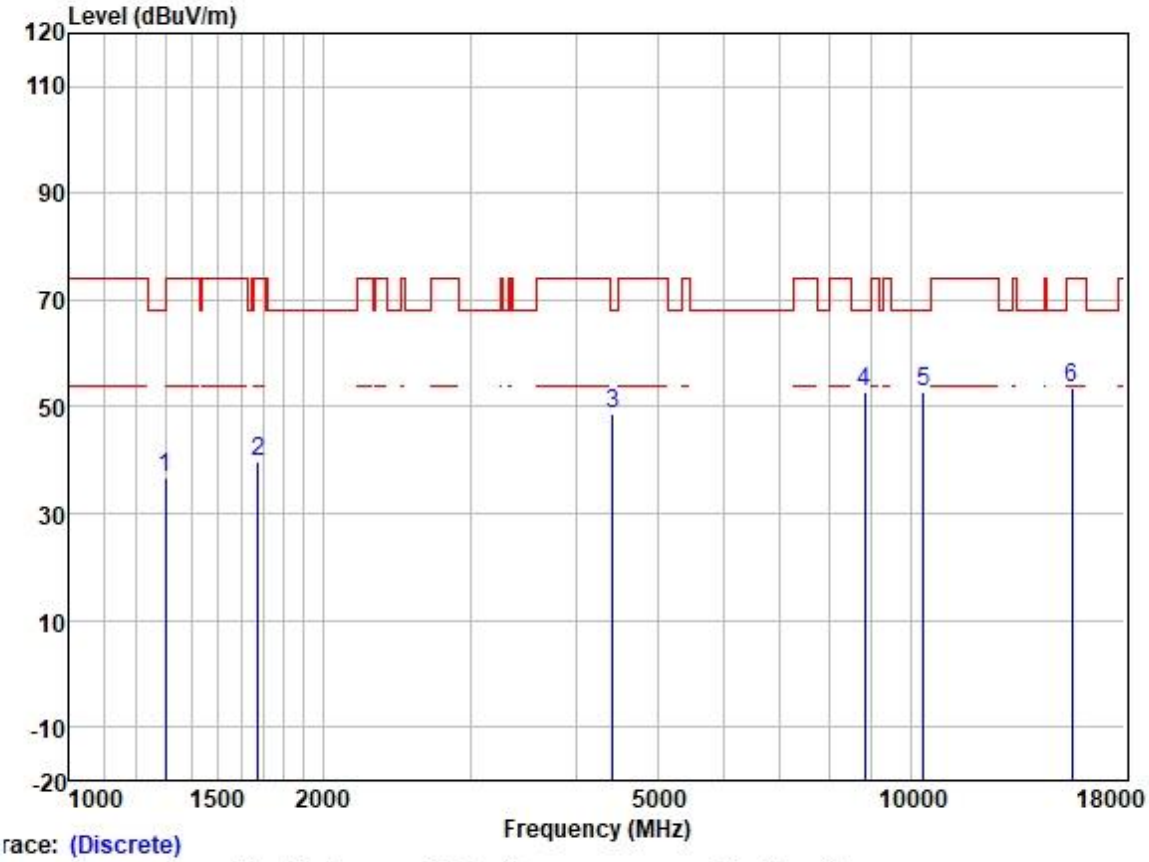
Test Mode: 10; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1122.563	48.63	24.42	2.22	38.43	36.84	74.00	-37.16	VERTICAL	Peak
2	1672.779	48.11	25.67	2.80	37.91	38.67	74.00	-35.33	VERTICAL	Peak
3	4169.698	51.49	30.09	4.60	36.80	49.38	74.00	-24.62	VERTICAL	Peak
4	8764.146	45.68	37.32	7.19	37.54	52.65	68.20	-15.55	VERTICAL	Peak
5	10480.000	43.77	39.46	7.40	37.36	53.27	68.20	-14.93	VERTICAL	Peak
6	15720.000	40.74	38.78	9.87	35.39	54.00	74.00	-20.00	VERTICAL	Peak

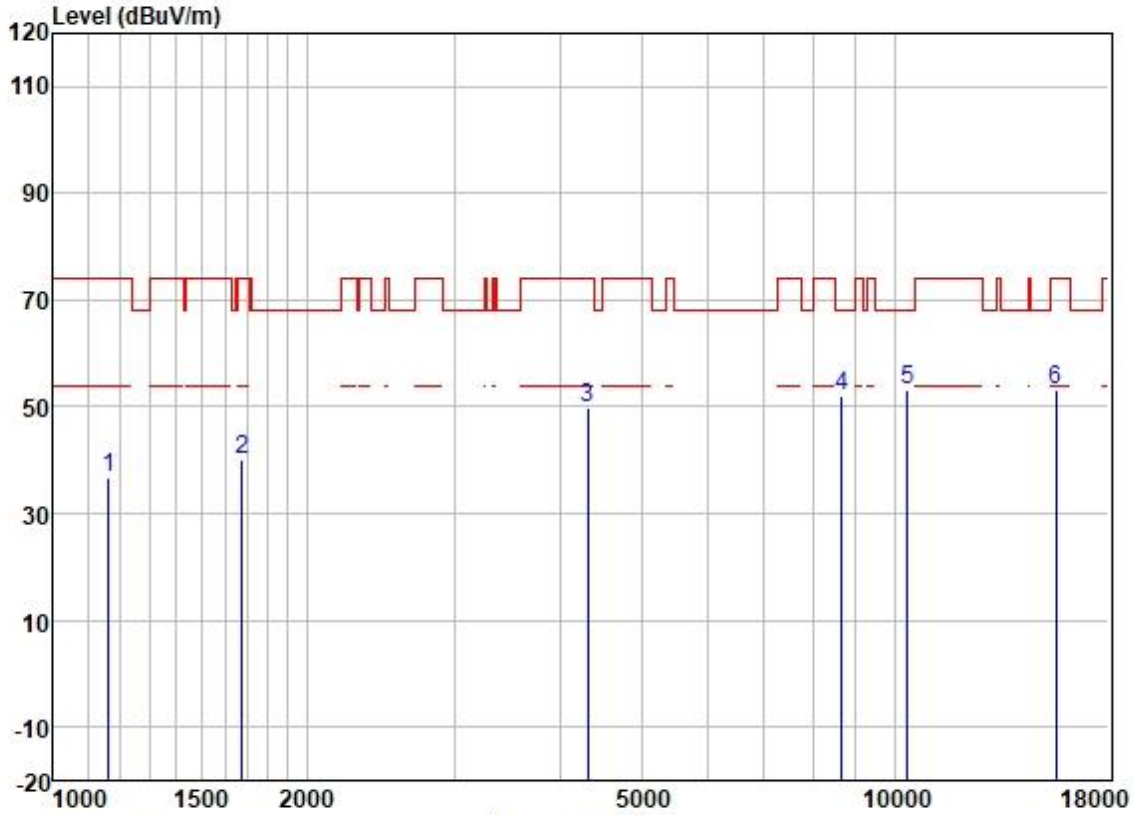
Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1300.858	47.20	25.20	2.60	38.31	36.69	74.00	-37.31	HORIZONTAL	Peak
2	1677.621	49.07	25.68	2.80	37.91	39.64	74.00	-34.36	HORIZONTAL	Peak
3	4430.628	50.04	30.72	4.78	36.81	48.73	68.20	-19.47	HORIZONTAL	Peak
4	8814.957	45.56	37.34	7.29	37.53	52.66	68.20	-15.54	HORIZONTAL	Peak
5	10360.000	43.77	39.28	7.29	37.37	52.97	68.20	-15.23	HORIZONTAL	Peak
6	15540.000	39.93	39.05	9.88	35.39	53.47	74.00	-20.53	HORIZONTAL	Peak

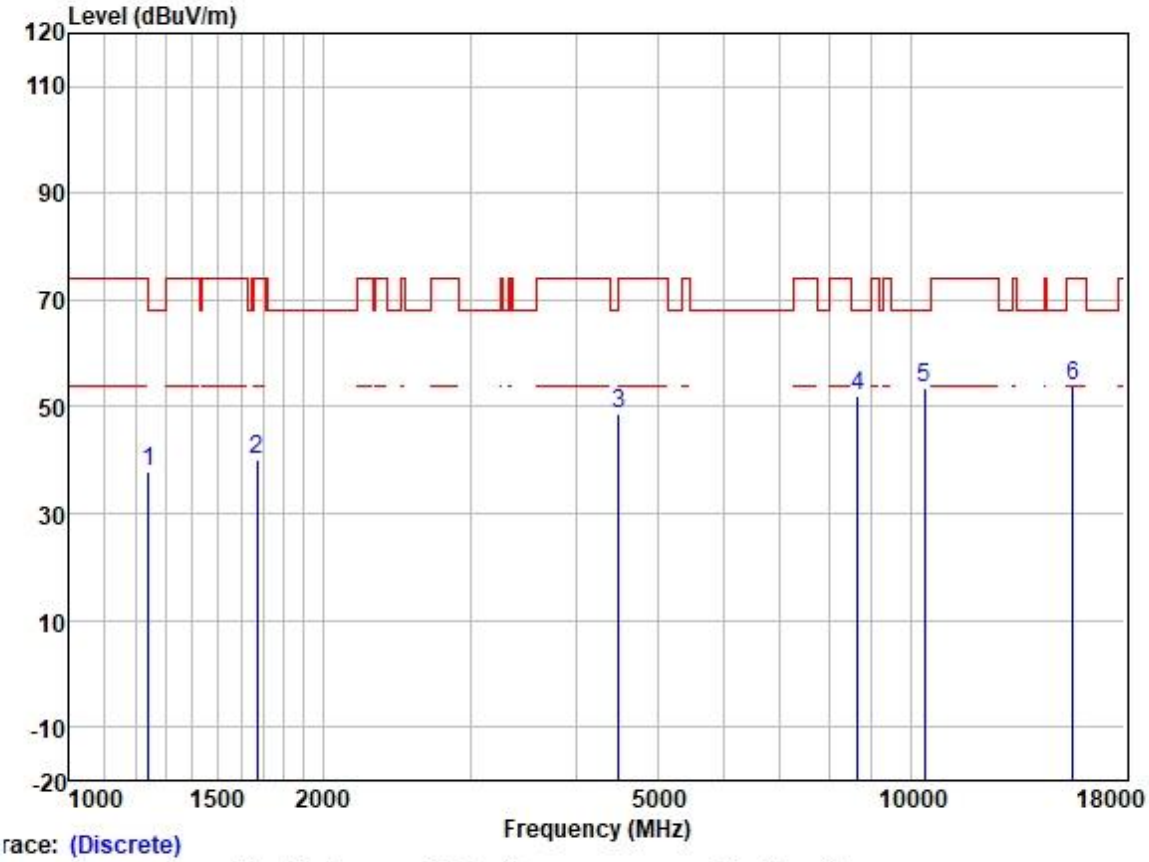
Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1162.182	48.40	24.53	2.40	38.42	36.91	74.00	-37.09	VERTICAL	Peak
2	1677.621	49.65	25.68	2.80	37.91	40.22	74.00	-33.78	VERTICAL	Peak
3	4316.859	51.49	30.51	4.66	36.81	49.85	74.00	-24.15	VERTICAL	Peak
4	8663.404	45.53	37.27	6.97	37.55	52.22	68.20	-15.98	VERTICAL	Peak
5	10360.000	44.07	39.28	7.29	37.37	53.27	68.20	-14.93	VERTICAL	Peak
6	15540.000	39.66	39.05	9.88	35.39	53.20	74.00	-20.80	VERTICAL	Peak

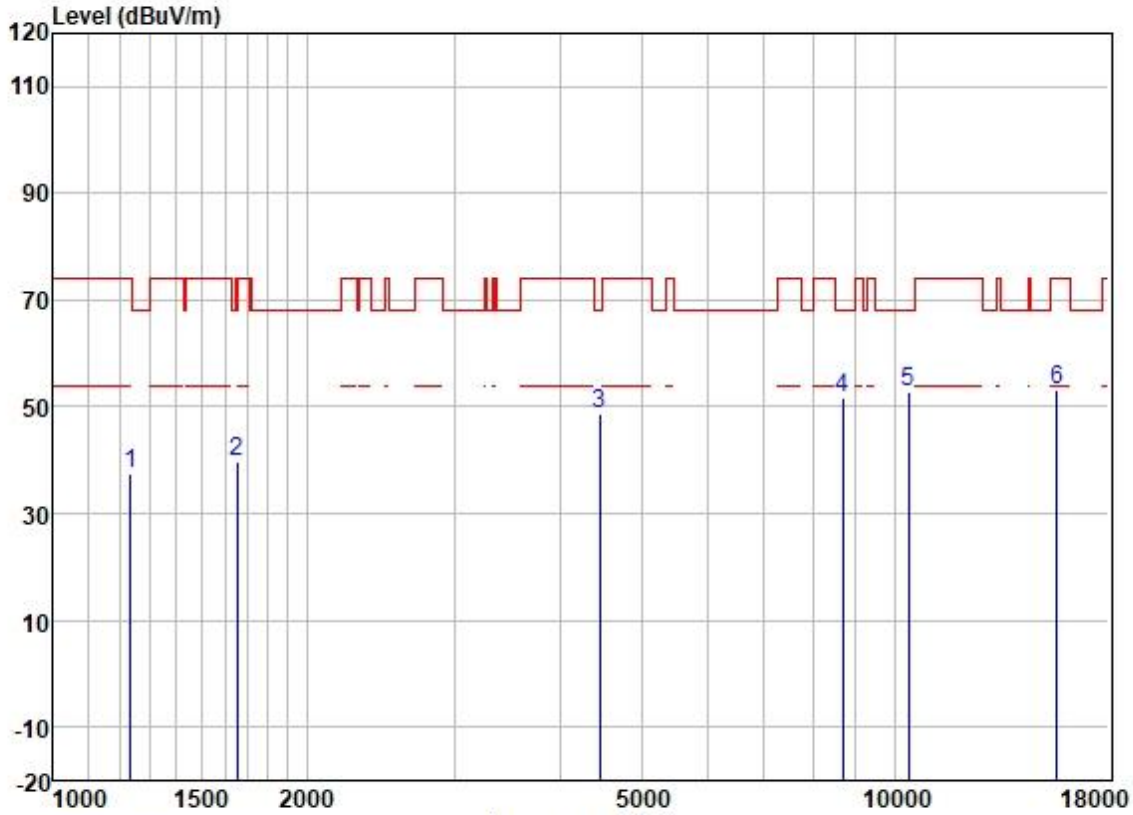
Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1242.068	49.05	24.98	2.31	38.35	37.99	68.20	-30.21	HORIZONTAL	Peak
2	1672.779	49.39	25.67	2.80	37.91	39.95	74.00	-34.05	HORIZONTAL	Peak
3	4495.125	49.53	30.80	5.05	36.82	48.56	68.20	-19.64	HORIZONTAL	Peak
4	8663.404	45.23	37.27	6.97	37.55	51.92	68.20	-16.28	HORIZONTAL	Peak
5	10400.000	44.10	39.33	7.32	37.36	53.39	68.20	-14.81	HORIZONTAL	Peak
6	15600.000	40.32	38.99	9.88	35.39	53.80	74.00	-20.20	HORIZONTAL	Peak

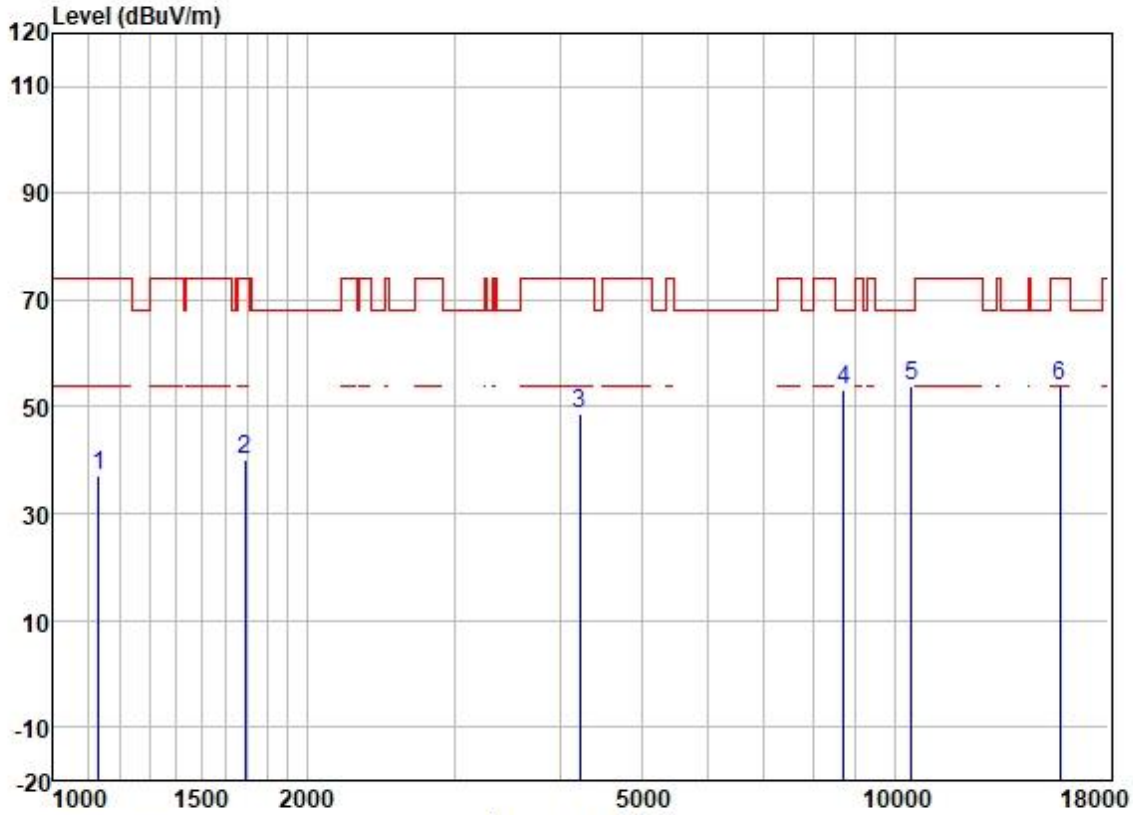
Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1234.909	48.64	24.93	2.30	38.37	37.50	74.00	-36.50	VERTICAL	Peak
2	1653.550	49.18	25.64	2.80	37.93	39.69	68.20	-28.51	VERTICAL	Peak
3	4456.315	49.74	30.75	4.88	36.81	48.56	68.20	-19.64	VERTICAL	Peak
4	8688.480	45.08	37.28	7.02	37.55	51.83	68.20	-16.37	VERTICAL	Peak
5	10400.000	43.53	39.33	7.32	37.36	52.82	68.20	-15.38	VERTICAL	Peak
6	15600.000	39.80	38.99	9.88	35.39	53.28	74.00	-20.72	VERTICAL	Peak

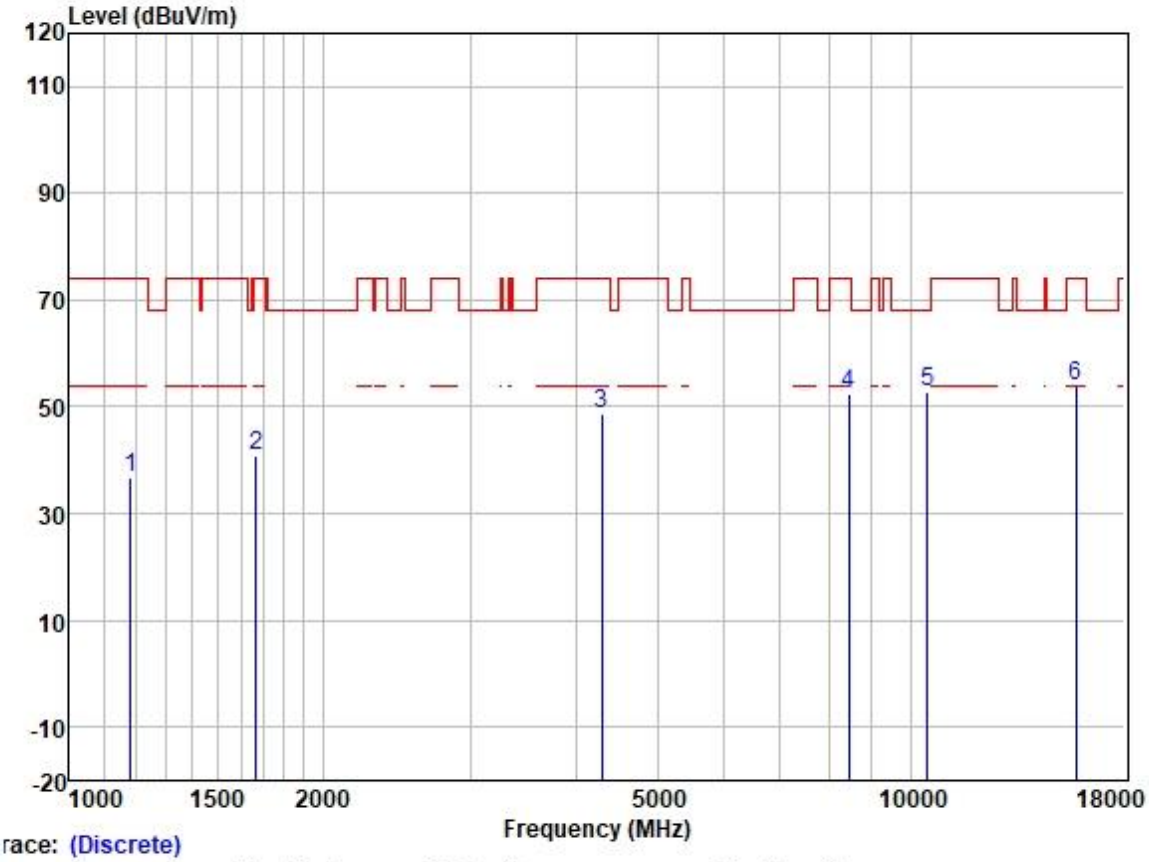
Test Mode: 10; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1132.340	48.73	24.44	2.22	38.43	36.96	74.00	-37.04	HORIZONTAL	Peak
2	1692.231	49.32	25.70	2.80	37.89	39.93	74.00	-34.07	HORIZONTAL	Peak
3	4230.396	50.53	30.26	4.61	36.81	48.59	74.00	-25.41	HORIZONTAL	Peak
4	8713.630	46.21	37.30	7.07	37.55	53.03	68.20	-15.17	HORIZONTAL	Peak
5	10480.000	44.33	39.46	7.40	37.36	53.83	68.20	-14.37	HORIZONTAL	Peak
6	15720.000	40.67	38.78	9.87	35.39	53.93	74.00	-20.07	HORIZONTAL	Peak

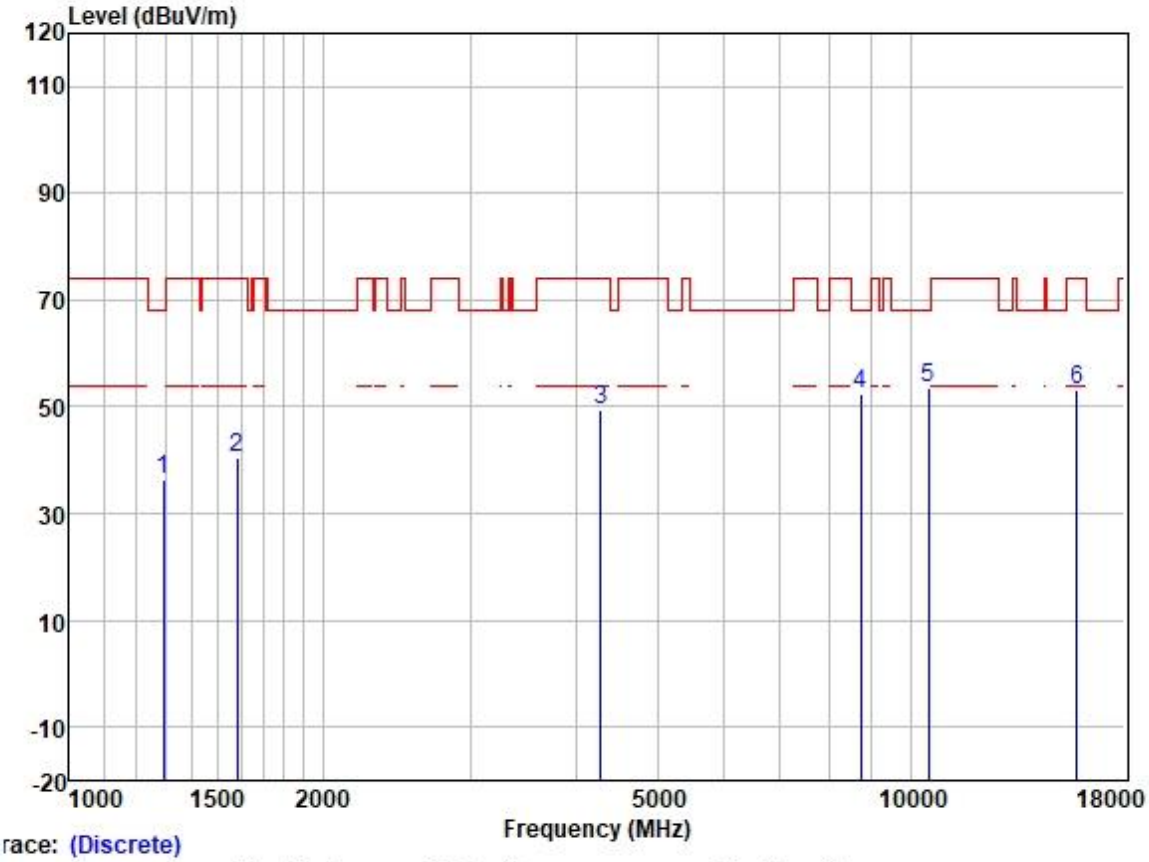
Test Mode: 10; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1182.513	48.25	24.60	2.37	38.40	36.82	74.00	-37.18	VERTICAL	Peak
2	1667.951	50.15	25.66	2.80	37.91	40.70	74.00	-33.30	VERTICAL	Peak
3	4291.977	50.27	30.45	4.64	36.81	48.55	74.00	-25.45	VERTICAL	Peak
4	8440.945	46.07	37.11	6.66	37.57	52.27	74.00	-21.73	VERTICAL	Peak
5	10480.000	43.29	39.46	7.40	37.36	52.79	68.20	-15.41	VERTICAL	Peak
6	15720.000	40.62	38.78	9.87	35.39	53.88	74.00	-20.12	VERTICAL	Peak

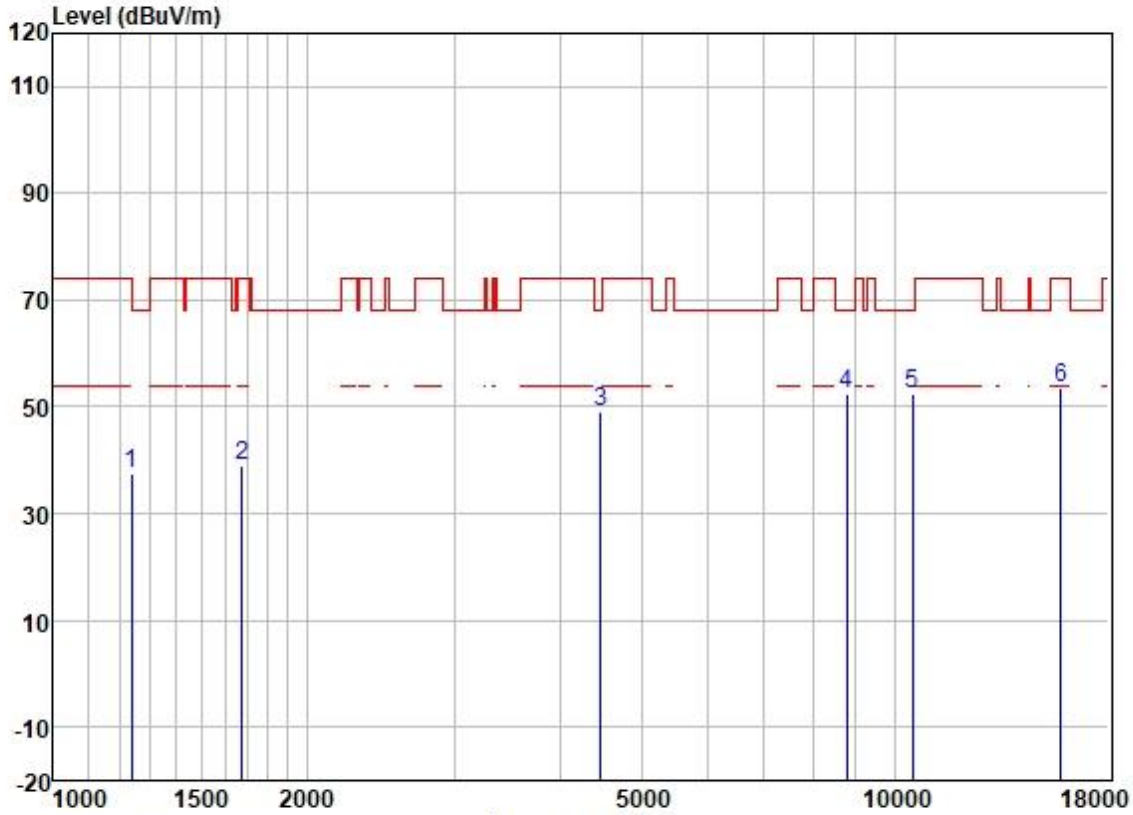
Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1293.359	47.09	25.18	2.57	38.31	36.53	68.20	-31.67	HORIZONTAL	Peak
2	1583.392	50.30	25.56	2.80	38.00	40.66	74.00	-33.34	HORIZONTAL	Peak
3	4279.589	51.35	30.42	4.63	36.81	49.59	74.00	-24.41	HORIZONTAL	Peak
4	8738.852	45.37	37.31	7.13	37.54	52.27	68.20	-15.93	HORIZONTAL	Peak
5	10520.000	43.89	39.50	7.42	37.35	53.46	68.20	-14.74	HORIZONTAL	Peak
6	15780.000	39.87	38.70	9.86	35.39	53.04	74.00	-20.96	HORIZONTAL	Peak

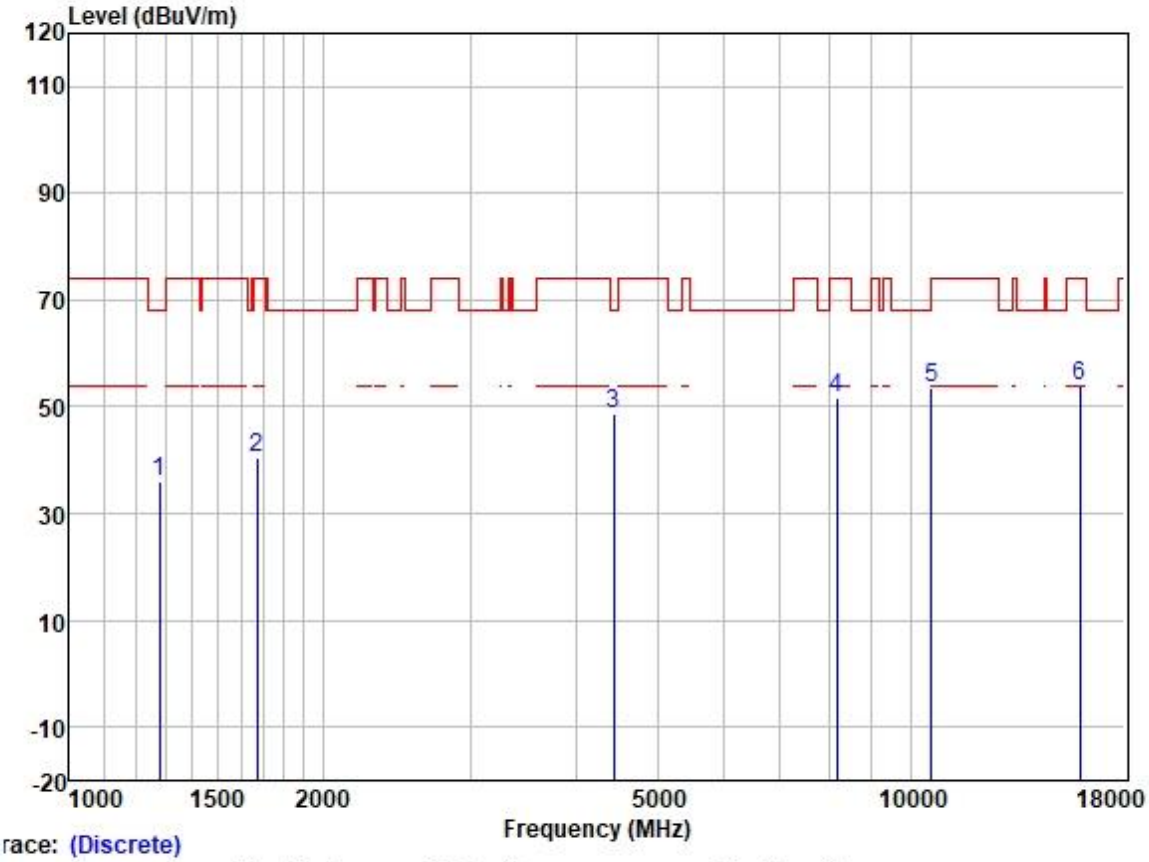
Test Mode: 11; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1238.483	48.44	24.96	2.30	38.35	37.35	74.00	-36.65	VERTICAL	Peak
2	1677.621	48.58	25.68	2.80	37.91	39.15	74.00	-34.85	VERTICAL	Peak
3	4469.214	50.03	30.77	4.93	36.81	48.92	68.20	-19.28	VERTICAL	Peak
4	8764.146	45.38	37.32	7.19	37.54	52.35	68.20	-15.85	VERTICAL	Peak
5	10520.000	43.02	39.50	7.42	37.35	52.59	68.20	-15.61	VERTICAL	Peak
6	15780.000	40.19	38.70	9.86	35.39	53.36	74.00	-20.64	VERTICAL	Peak

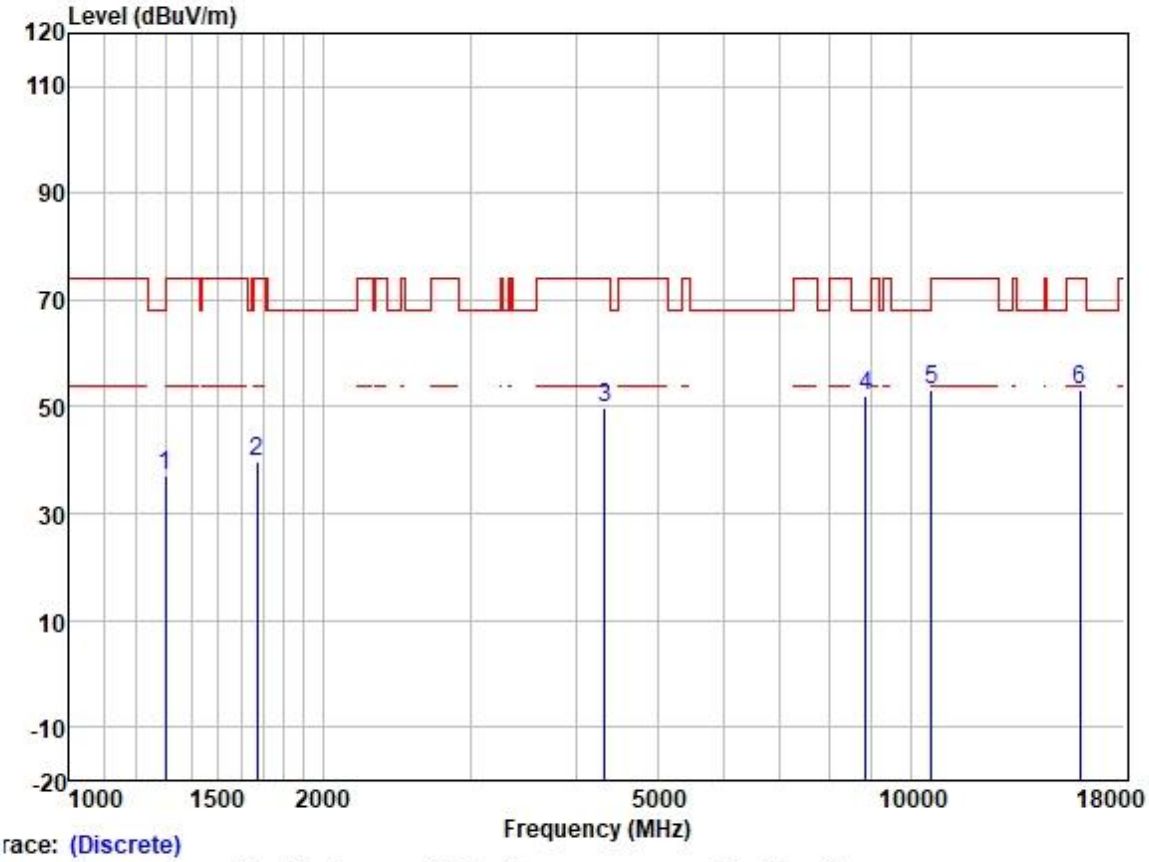
Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1278.492	46.56	25.14	2.50	38.33	35.87	68.20	-32.33	HORIZONTAL	Peak
2	1672.779	49.76	25.67	2.80	37.91	40.32	74.00	-33.68	HORIZONTAL	Peak
3	4443.453	49.77	30.73	4.83	36.81	48.52	68.20	-19.68	HORIZONTAL	Peak
4	8176.795	45.99	36.97	6.33	37.59	51.70	74.00	-22.30	HORIZONTAL	Peak
5	10600.000	43.88	39.59	7.46	37.34	53.59	68.20	-14.61	HORIZONTAL	Peak
6	15900.000	40.99	38.44	9.86	35.40	53.89	74.00	-20.11	HORIZONTAL	Peak

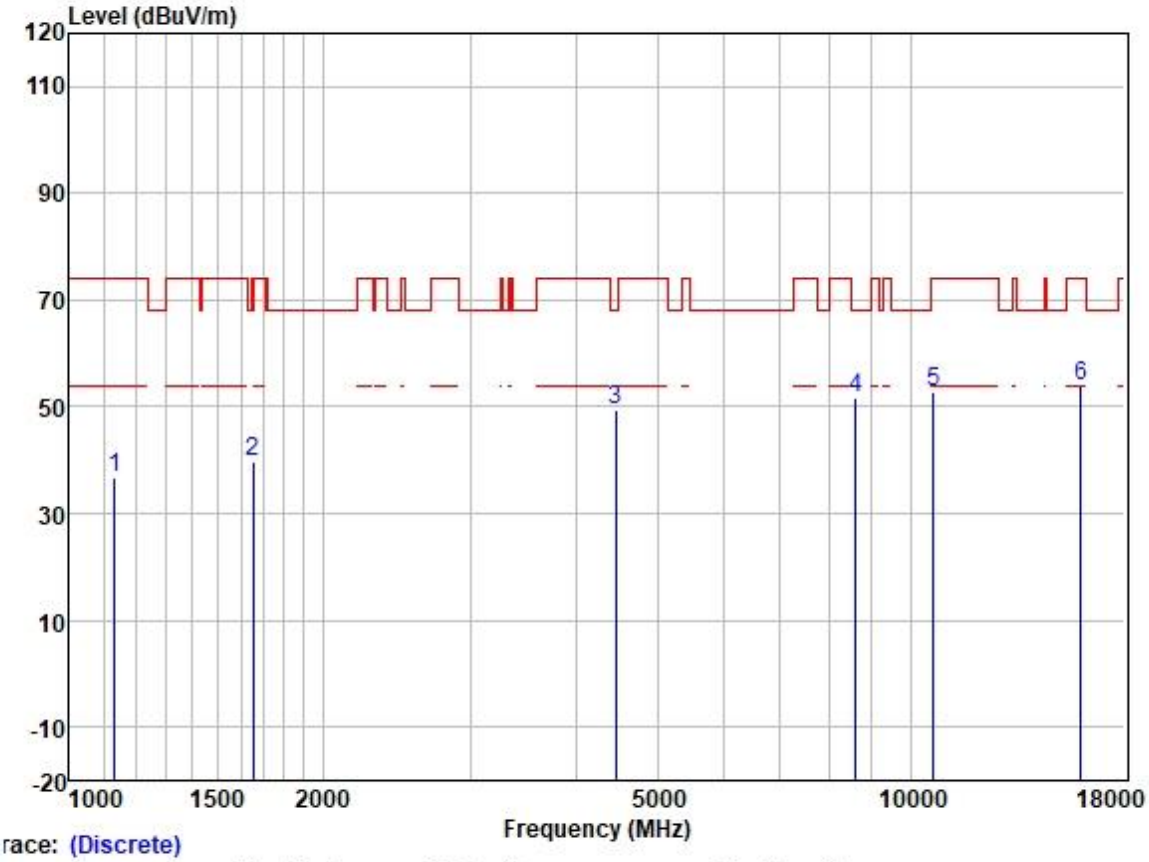
Test Mode: 11; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1300.858	47.74	25.20	2.60	38.31	37.23	74.00	-36.77	VERTICAL	Peak
2	1672.779	48.99	25.67	2.80	37.91	39.55	74.00	-34.45	VERTICAL	Peak
3	4329.354	51.51	30.54	4.67	36.81	49.91	74.00	-24.09	VERTICAL	Peak
4	8840.473	44.89	37.35	7.34	37.53	52.05	68.20	-16.15	VERTICAL	Peak
5	10600.000	43.46	39.59	7.46	37.34	53.17	68.20	-15.03	VERTICAL	Peak
6	15900.000	40.24	38.44	9.86	35.40	53.14	74.00	-20.86	VERTICAL	Peak

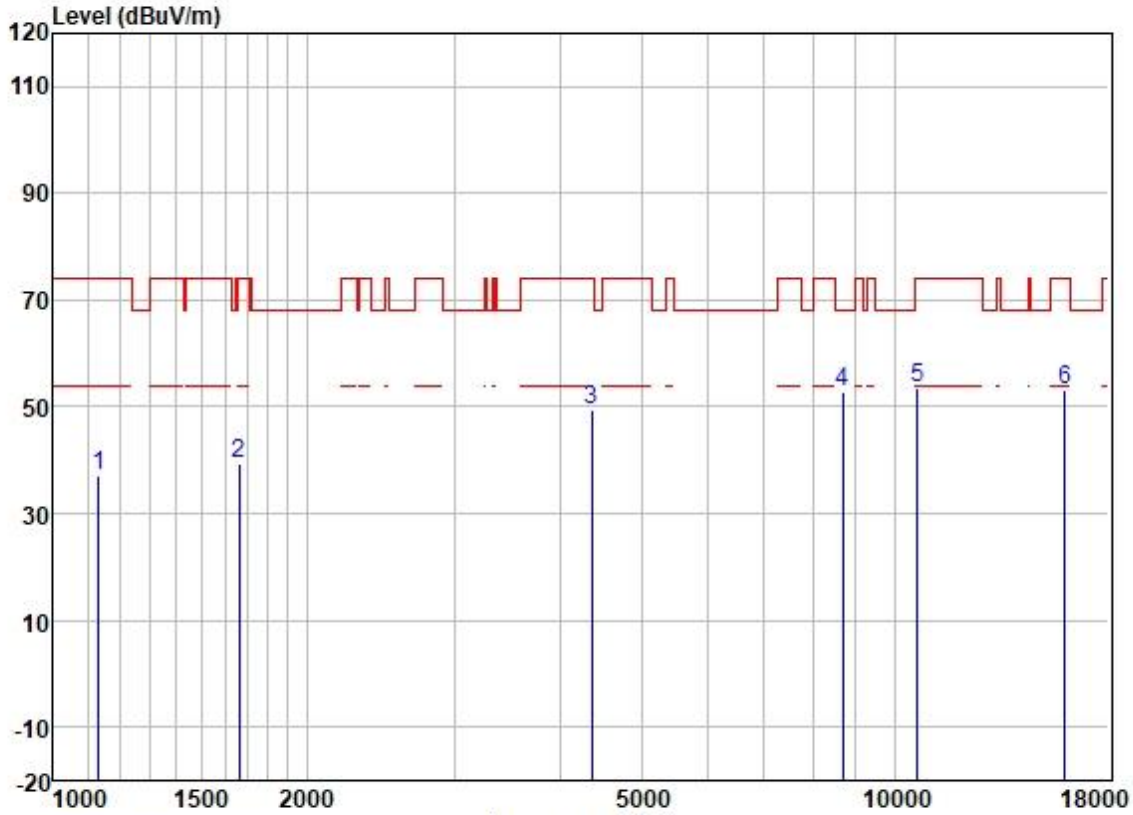
Test Mode: 11; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1132.340	48.61	24.44	2.22	38.43	36.84	74.00	-37.16	HORIZONTAL	Peak
2	1653.550	49.11	25.64	2.80	37.93	39.62	68.20	-28.58	HORIZONTAL	Peak
3	4456.315	50.70	30.75	4.88	36.81	49.52	68.20	-18.68	HORIZONTAL	Peak
4	8613.468	45.23	37.24	6.88	37.56	51.79	68.20	-16.41	HORIZONTAL	Peak
5	10640.000	43.13	39.63	7.48	37.33	52.91	74.00	-21.09	HORIZONTAL	Peak
6	15960.000	41.08	38.37	9.85	35.40	53.90	74.00	-20.10	HORIZONTAL	Peak

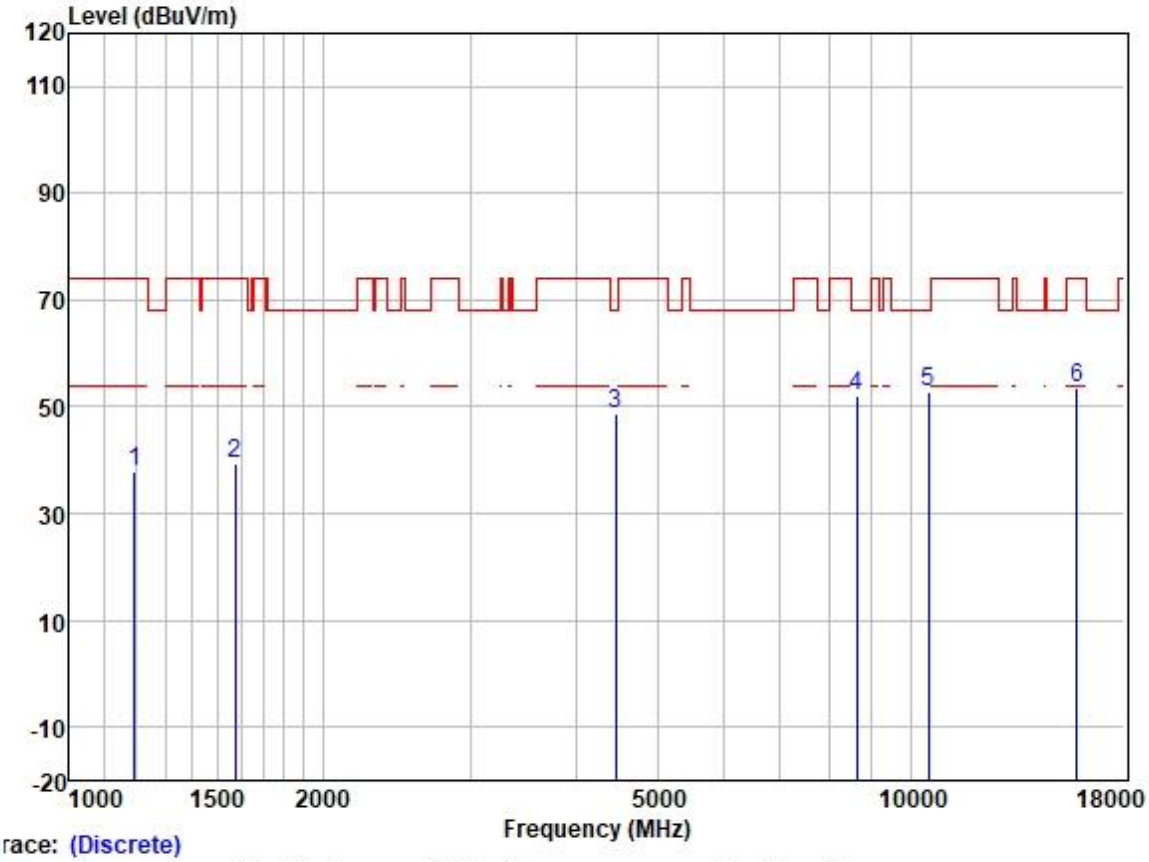
Test Mode: 11; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1132.340	48.92	24.44	2.22	38.43	37.15	74.00	-36.85	VERTICAL	Peak
2	1663.137	48.97	25.65	2.80	37.91	39.51	74.00	-34.49	VERTICAL	Peak
3	4367.058	50.94	30.62	4.68	36.81	49.43	74.00	-24.57	VERTICAL	Peak
4	8688.480	45.87	37.28	7.02	37.55	52.62	68.20	-15.58	VERTICAL	Peak
5	10640.000	43.74	39.63	7.48	37.33	53.52	74.00	-20.48	VERTICAL	Peak
6	15960.000	40.26	38.37	9.85	35.40	53.08	74.00	-20.92	VERTICAL	Peak

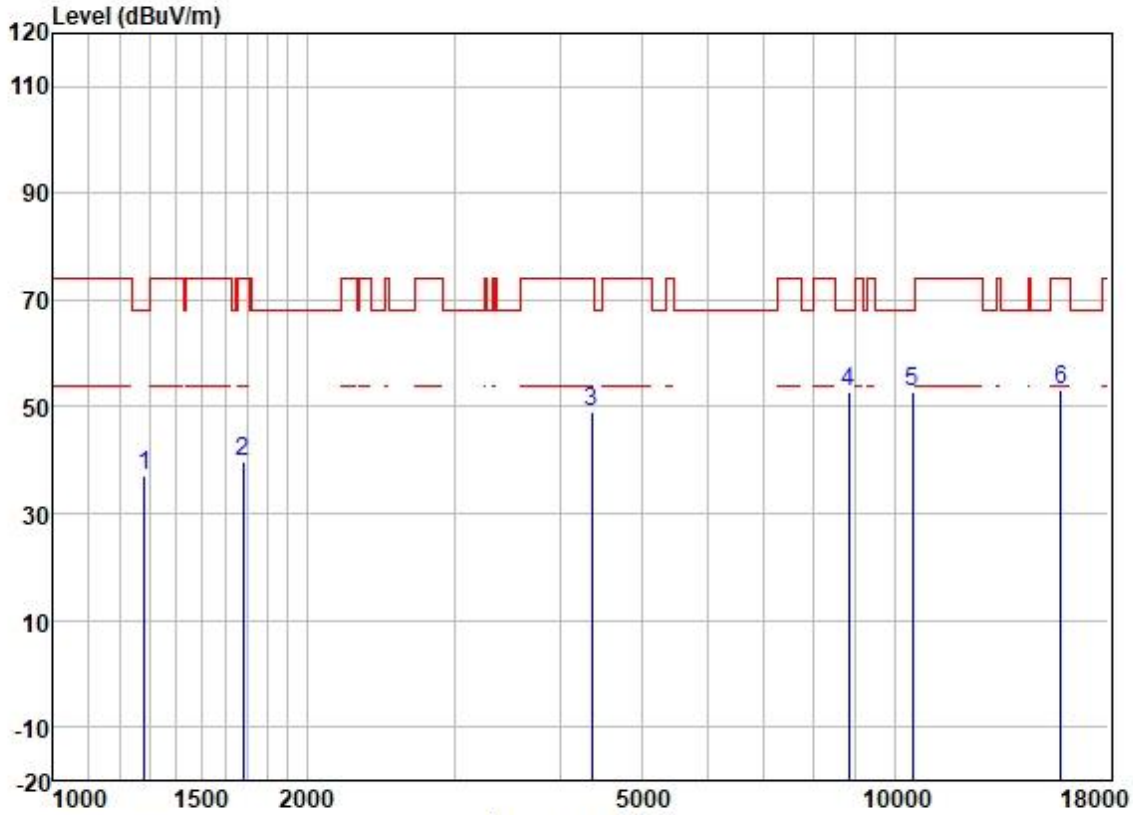
Test Mode: 11; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1196.264	49.11	24.67	2.35	38.39	37.74	74.00	-36.26	HORIZONTAL	Peak
2	1574.265	48.90	25.56	2.80	38.00	39.26	74.00	-34.74	HORIZONTAL	Peak
3	4456.315	49.94	30.75	4.88	36.81	48.76	68.20	-19.44	HORIZONTAL	Peak
4	8638.399	45.49	37.26	6.92	37.55	52.12	68.20	-16.08	HORIZONTAL	Peak
5	10520.000	43.18	39.50	7.42	37.35	52.75	68.20	-15.45	HORIZONTAL	Peak
6	15780.000	40.24	38.70	9.86	35.39	53.41	74.00	-20.59	HORIZONTAL	Peak

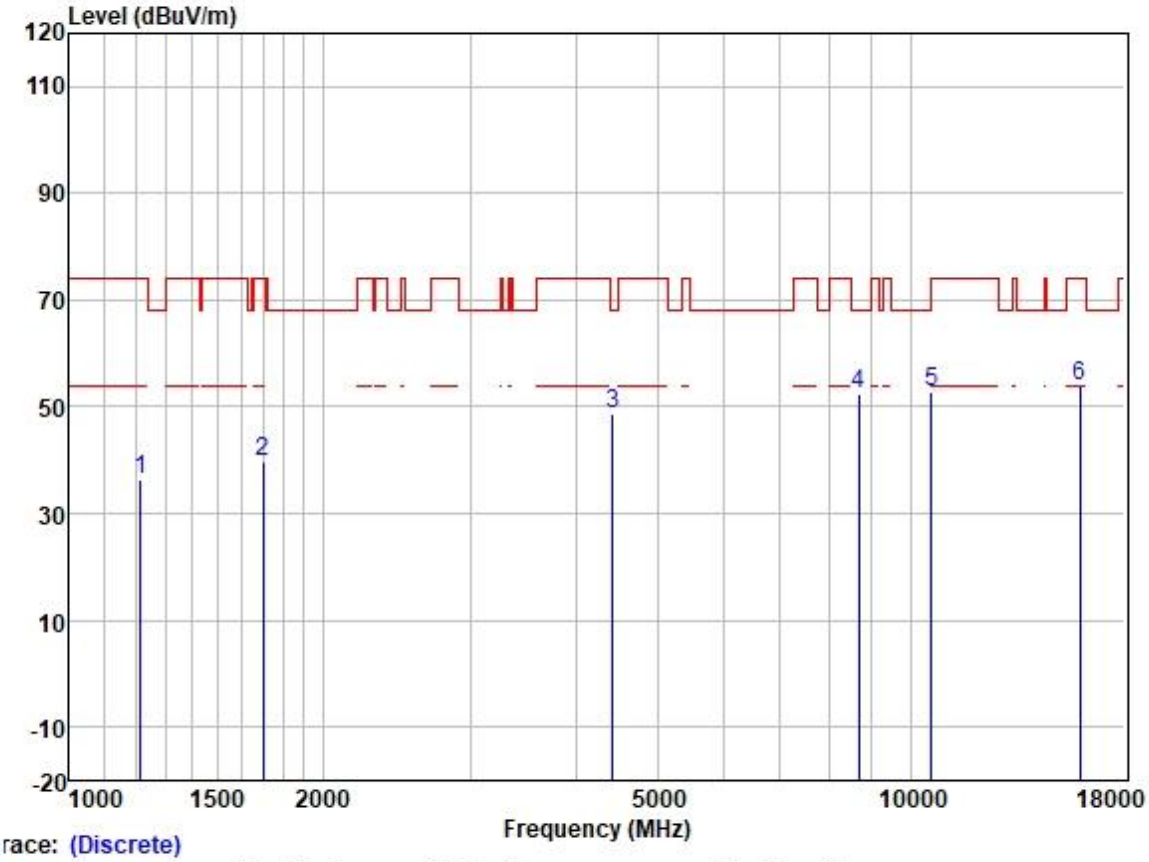
Test Mode: 11; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1282.193	47.87	25.15	2.52	38.33	37.21	68.20	-30.99	VERTICAL	Peak
2	1682.477	49.08	25.68	2.80	37.91	39.65	74.00	-34.35	VERTICAL	Peak
3	4367.058	50.63	30.62	4.68	36.81	49.12	74.00	-24.88	VERTICAL	Peak
4	8814.957	45.61	37.34	7.29	37.53	52.71	68.20	-15.49	VERTICAL	Peak
5	10520.000	43.25	39.50	7.42	37.35	52.82	68.20	-15.38	VERTICAL	Peak
6	15780.000	40.04	38.70	9.86	35.39	53.21	74.00	-20.79	VERTICAL	Peak

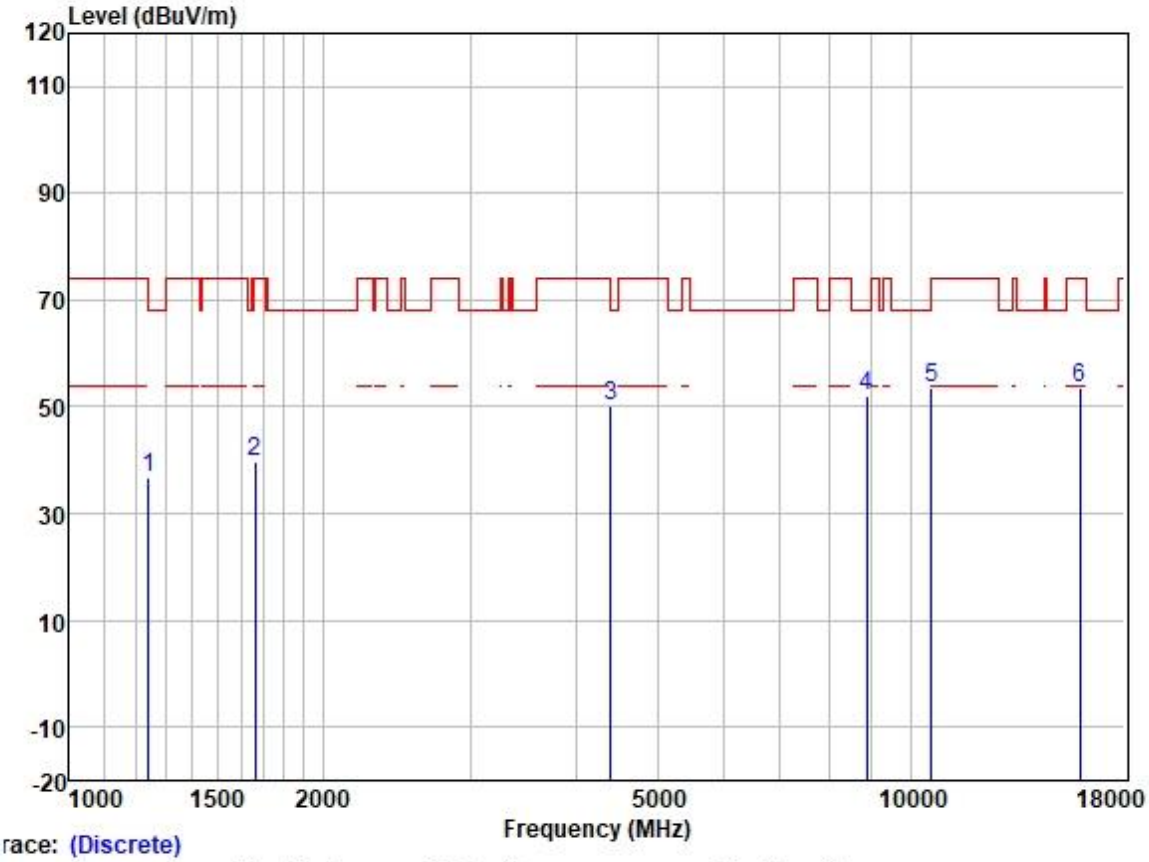
Test Mode: 11; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1213.677	47.80	24.77	2.32	38.37	36.52	74.00	-37.48	HORIZONTAL	Peak
2	1697.129	49.20	25.71	2.80	37.89	39.82	74.00	-34.18	HORIZONTAL	Peak
3	4430.628	49.84	30.72	4.78	36.81	48.53	68.20	-19.67	HORIZONTAL	Peak
4	8688.480	45.61	37.28	7.02	37.55	52.36	68.20	-15.84	HORIZONTAL	Peak
5	10600.000	43.26	39.59	7.46	37.34	52.97	68.20	-15.23	HORIZONTAL	Peak
6	15900.000	40.93	38.44	9.86	35.40	53.83	74.00	-20.17	HORIZONTAL	Peak

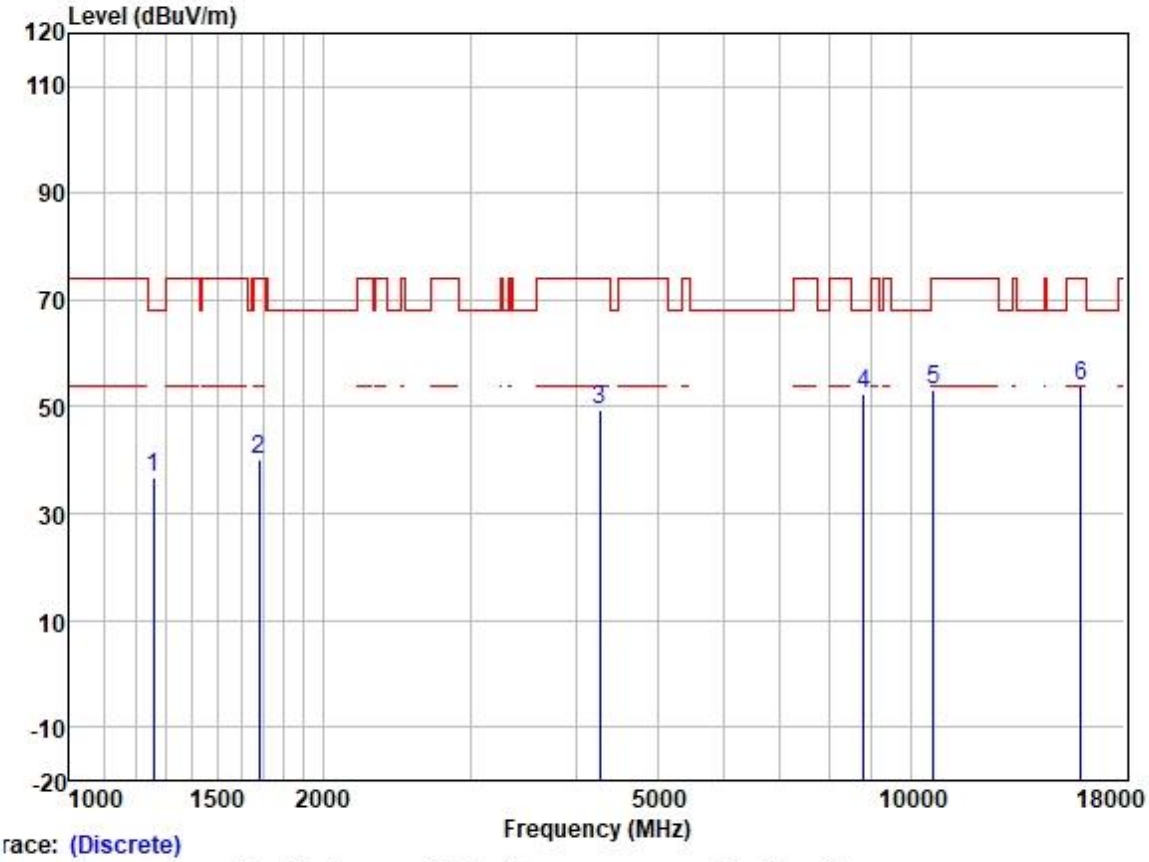
Test Mode: 11; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1242.068	47.68	24.98	2.31	38.35	36.62	68.20	-31.58	VERTICAL	Peak
2	1663.137	49.37	25.65	2.80	37.91	39.91	74.00	-34.09	VERTICAL	Peak
3	4405.090	51.71	30.68	4.70	36.81	50.28	68.20	-17.92	VERTICAL	Peak
4	8866.062	44.77	37.36	7.38	37.53	51.98	68.20	-16.22	VERTICAL	Peak
5	10600.000	43.93	39.59	7.46	37.34	53.64	68.20	-14.56	VERTICAL	Peak
6	15900.000	40.48	38.44	9.86	35.40	53.38	74.00	-20.62	VERTICAL	Peak

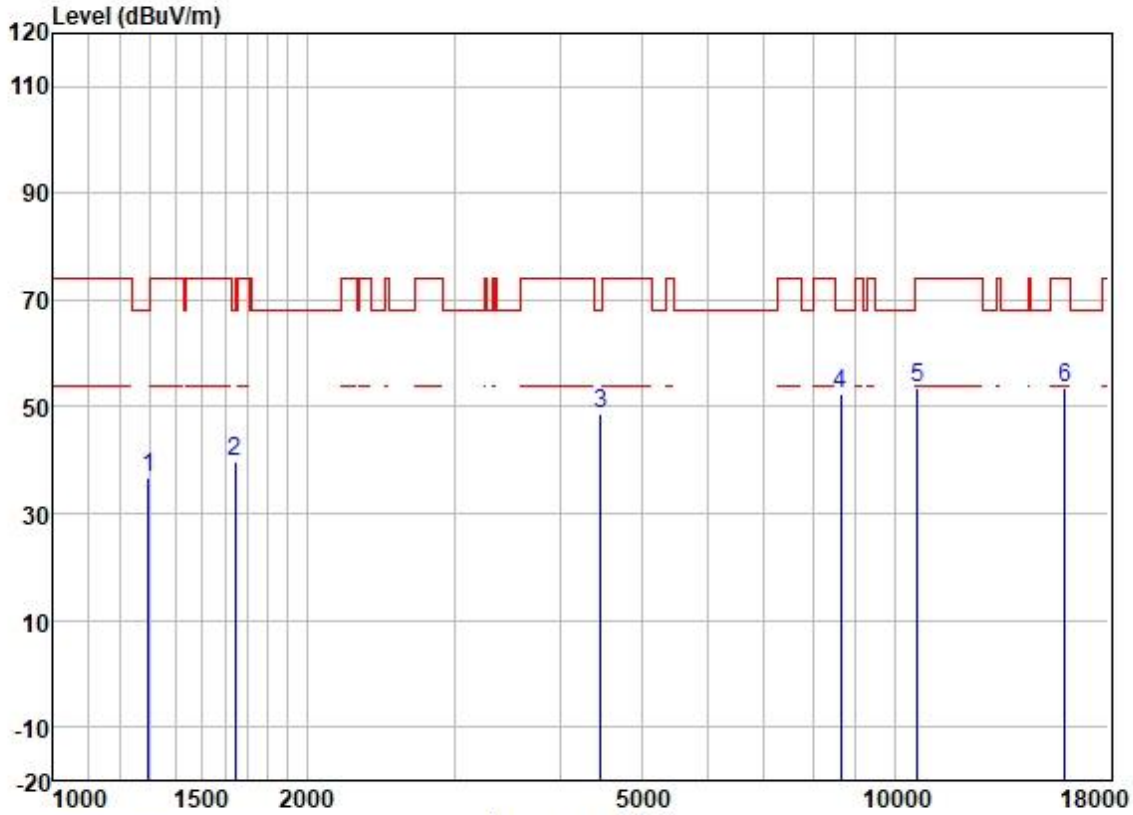
Test Mode: 11; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1260.149	47.65	25.07	2.40	38.35	36.77	68.20	-31.43	HORIZONTAL	Peak
2	1682.477	49.60	25.68	2.80	37.91	40.17	74.00	-33.83	HORIZONTAL	Peak
3	4267.237	51.22	30.38	4.63	36.81	49.42	74.00	-24.58	HORIZONTAL	Peak
4	8789.516	45.42	37.33	7.24	37.54	52.45	68.20	-15.75	HORIZONTAL	Peak
5	10640.000	43.35	39.63	7.48	37.33	53.13	74.00	-20.87	HORIZONTAL	Peak
6	15960.000	40.98	38.37	9.85	35.40	53.80	74.00	-20.20	HORIZONTAL	Peak

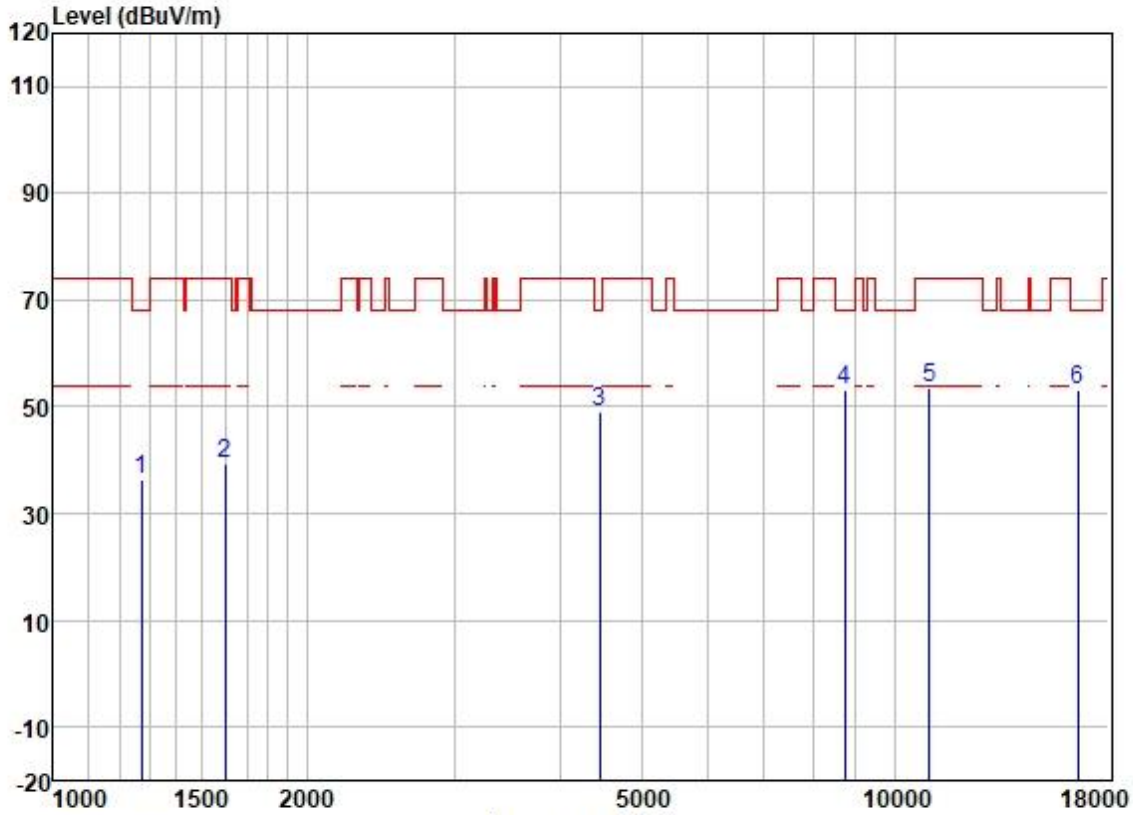
Test Mode: 11; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1297.103	47.15	25.19	2.58	38.31	36.61	68.20	-31.59	VERTICAL	Peak
2	1644.019	49.25	25.63	2.80	37.93	39.75	68.20	-28.45	VERTICAL	Peak
3	4469.214	49.80	30.77	4.93	36.81	48.69	68.20	-19.51	VERTICAL	Peak
4	8638.399	45.95	37.26	6.92	37.55	52.58	68.20	-15.62	VERTICAL	Peak
5	10640.000	43.63	39.63	7.48	37.33	53.41	74.00	-20.59	VERTICAL	Peak
6	15960.000	40.78	38.37	9.85	35.40	53.60	74.00	-20.40	VERTICAL	Peak

Test Mode: 12; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1271.123	47.10	25.11	2.46	38.33	36.34	68.20	-31.86	HORIZONTAL	Peak
2	1601.804	48.89	25.58	2.80	37.98	39.29	74.00	-34.71	HORIZONTAL	Peak
3	4456.315	50.16	30.75	4.88	36.81	48.98	68.20	-19.22	HORIZONTAL	Peak
4	8738.852	46.11	37.31	7.13	37.54	53.01	68.20	-15.19	HORIZONTAL	Peak
5	11000.000	42.81	40.10	7.71	37.25	53.37	74.00	-20.63	HORIZONTAL	Peak
6	16500.000	39.43	39.60	9.44	35.38	53.09	68.20	-15.11	HORIZONTAL	Peak