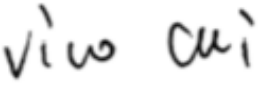
TEST REPORT

Application No.:	GZCR2206000776AT
Applicant:	DSEA A/S
Address of Applicant:	Kongebakken 9,DK-2765 Smørum, Denmark
Manufacturer:	DSEA A/S
Address of Manufacturer:	Kongebakken 9,DK-2765 Smørum, Denmark
Factory:	Dongguan Tai Sing Audio Technology Ltd.
Address of Factory:	No.12, Niujiokeng Road, Dongcheng Street, Dongguan City, Guangdong Province, China
Equipment Under Test (EUT):	
EUT Name:	EXPAND Vision 5
Model No.:	DSWBT1
Trade Mark:	EPOS
Standard(s) :	47 CFR Part 15, Subpart E 15.407
Date of Receipt:	2022-06-17
Date of Test:	2022-08-15 to 2022-10-20
Date of Issue:	2022-12-01
Test Result:	**Pass***

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

Kobe Jian
EMC Laboratory Manager

Revision Record			
Version	**Report No.**	**Date**	**Remark**
01	GZCR220600077605	2022-12-01	Original

Authorized for issue by				
		 **Kevin Zhang/Project Engineer**		
		 **Vico Cui/Reviewer**		

2 Test Summary

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

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart E 15.407	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)	Pass
Duty Cycle		KDB 789033 II B 1	KDB 789033 D02 II B 1	Pass
99% Bandwidth		KDB 789033 II D	N/A	Pass
26dB Emission bandwidth		KDB 789033 D02 II C 1	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Minimum 6 dB bandwidth (5.725-5.85 GHz band)		KDB 789033 D02 II C 2	47 CFR Part 15, Subpart E 15.407 (e)	Pass
Maximum Conducted output power		KDB 789033 D02 II E	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Peak Power spectrum density		KDB 789033 D02 II F	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Radiated Emissions (Above 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions which fall in the restricted bands		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass**
Frequency Stability		ANSI C63.10 (2013) Section 6.8	47 CFR Part 15, Subpart E 15.407 (g)	Pass
Transmitter Power Control		KDB 789033 D02 II E	47 CFR Part 15, Subpart E 15.407 (h)(1)	Pass
Radiated Emissions (Below 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass

Note:

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

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

**: The EUT passed the Radiated Emissions which fall in the restricted bands test after modifications.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	DC 12 V powered by AC/DC adapter as below: Model: EA1024PR Input: AC 100-240 V, 50-60 Hz, 1.0 A Output: DC 12 V, 3.0 A, 36.0 W
Cable(s):	For main unit: DC input ports; HDIM ports*2 with 1 pc HDIM cables (Shielded, 1.8m with 2 pcs of Ferret in both sides) Type C ports; TF card ports; LAN ports For AC/DC adapter: AC plug; DC output cables (Unshielded, 2.2 m with 2 pcs of Ferrite in both sides)
Test Voltage:	AC 120 V, 60 Hz
Operation Frequency / Number of channels (20MHz):	U-NII-1: 5180-5240MHz (4 Channels); U-NII-2A: 5260-5320MHz (4 Channels); U-NII-2C: 5500-5700MHz (11 Channels); U-NII-3: 5745-5825MHz (5 Channels)
Operation Frequency / Number of channels (40MHz):	U-NII-1: 5190-5230MHz (2 Channels); U-NII-2A: 5270-5310MHz (2 Channels); U-NII-2C: 5510-5670MHz (5 Channels); U-NII-3: 5755-5795MHz (2 Channels)
Operation Frequency / Number of channels (80MHz):	U-NII-1: 5210MHz (1 Channel); U-NII-2A: 5290MHz (1 Channel); U-NII-2C: 5530-5610MHz (2 Channels); U-NII-3: 5775MHz (1 Channels)
Modulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Spacing:	802.11a/n(HT20)/ac(HT20): 20MHz; 802.11n(HT40)/ac(HT40): 40MHz; 802.11ac(HT80): 80MHz
DFS Function:	Slave without Radar detection
TPC Function:	Without TPC function
Antenna Type:	Integral Antenna
Antenna Number:	2
Antenna Gain:	Antenna 1: 2.68 dBi and Antenna 2: 2.68 dBi(Refer to Remark)
Remark:	Two antennas can simultaneous transmission

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
USB Cable (1.0m length)	/	/	/
Note Book Computer	LENOVO	ThinkPad T490	PF1D1MVJ

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 (Above 1GHz)	±5.12 dB (1GHz-6 GHz); ±5.38 dB (6GHz-18GHz); ±5.61(18GHz-40GHz)
Radiated Emissions which fall in the restricted bands	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m);± 5.12dB (1GHz-6GHz);± 5.38dB (6GHz-18GHz);± 5.61dB (18GHz-40GHz)
Frequency Stability	± 7.25 x 10^{-8}
Transmitter Power Control	± 0.75dB
Radiated Emissions (Below 1GHz)	±5.00dB (3m); ±4.38dB (10m)

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:

- **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

The EUT passed the Radiated Emissions which fall in the restricted bands test after modifications.

5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Coaxial Cable	HangTianXing	2m	EMC0107	2022-08-24	2023-08-23
Two-Line V-Network	Rohde & Schwarz	ENV216	EMC0118	2021-12-23	2022-12-22
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2022-10-16	2025-10-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2022-09-09	2023-09-08
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2022-05-20	2023-05-19
Test Software E3r	Audix	Ver.6.11812	GZE100-77	N/A	N/A

Duty Cycle					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
Test Software	TST	V2.0	GZE100-78	N/A	N/A

99% Bandwidth					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
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**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
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**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
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**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
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**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
Test Software	TST	V2.0	GZE100-78	N/A	N/A

Radiated Emissions (Above 1GHz)					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-12-17	2022-12-16
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-21	2025-09-20
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
Notch Filter (5150-5880)	Mico-Tronics	BRM50716	EMC2168	2022-07-29	2023-07-28
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Radiated Emissions which fall in the restricted bands					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-12-17	2022-12-16
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-21	2025-09-20
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Frequency Stability					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
Test Software	TST	V2.0	GZE100-78	N/A	N/A
Temperature Chamber	GZ GongWen Co.Ltd.	GDJW-100	EMC0039	2022-07-04	2023-07-03

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

Transmitter Power Control					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-02	2023-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2022-09-08	2023-09-07
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2022-08-24	2023-08-23
Test Software	TST	V2.0	GZE100-78	N/A	N/A

Radiated Emissions (Below 1GHz)					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2022-10-16	2025-10-15
Chamber cable	HangTianXing	N/A	EMC0542	2022-08-24	2023-08-23
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
EMI Test Receiver (1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2022-05-20	2023-05-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Trilog Broadband Antenna (25MHz-1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	EMC2174	2022-06-19	2025-06-18

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.EUT Antenna:The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the Antenna 1: 2.68 dBi; Antenna 2: 2.68 dBi; the directional gain is: 5.68 dBi.Antenna location: Refer to internal photo.

6.2 Transmission in the Absence of Data

6.2.1 Test Requirement:

47 CFR Part 15, Subpart E 15.407 (c)

6.2.2 Conclusion

Standard Requirement:The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals.Applicants shall include in their application for equipment authorization a description of how this requirement is met.EUT Details:WIFI chip support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.

7 Radio Spectrum Matter Test Results

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

Test Requirement 47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)

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

Limit:

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

7.1.1 E.U.T. Operation

Operating Environment:

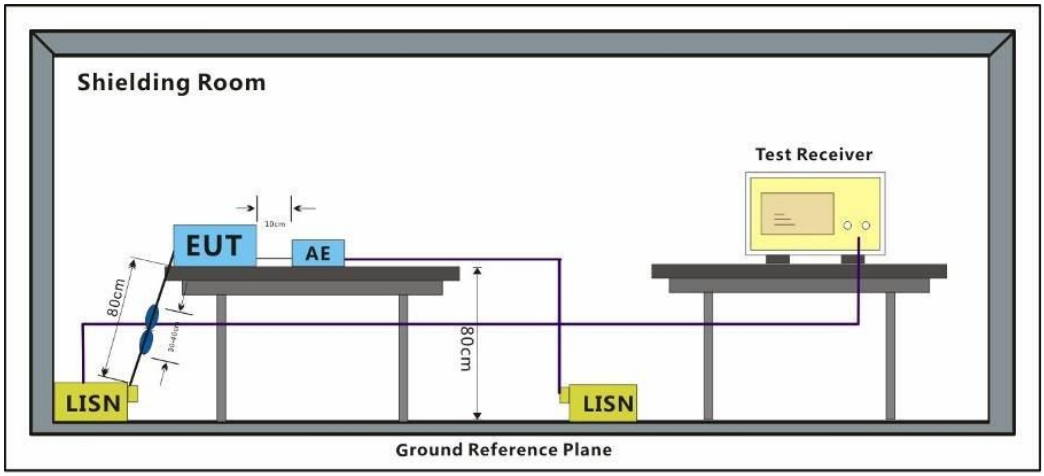
Temperature: 23.6 °C Humidity: 52.4 % RH Atmospheric Pressure: 1006 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Pre-scan	05	TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Pre-scan	06	TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

		802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Pre-scan	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

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

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

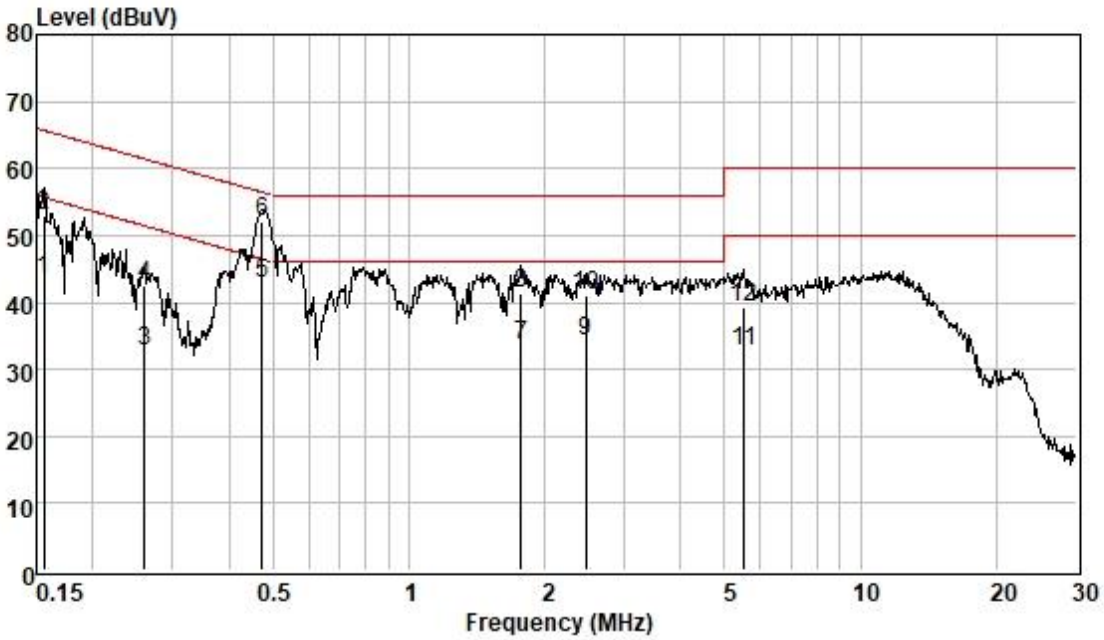
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

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

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

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

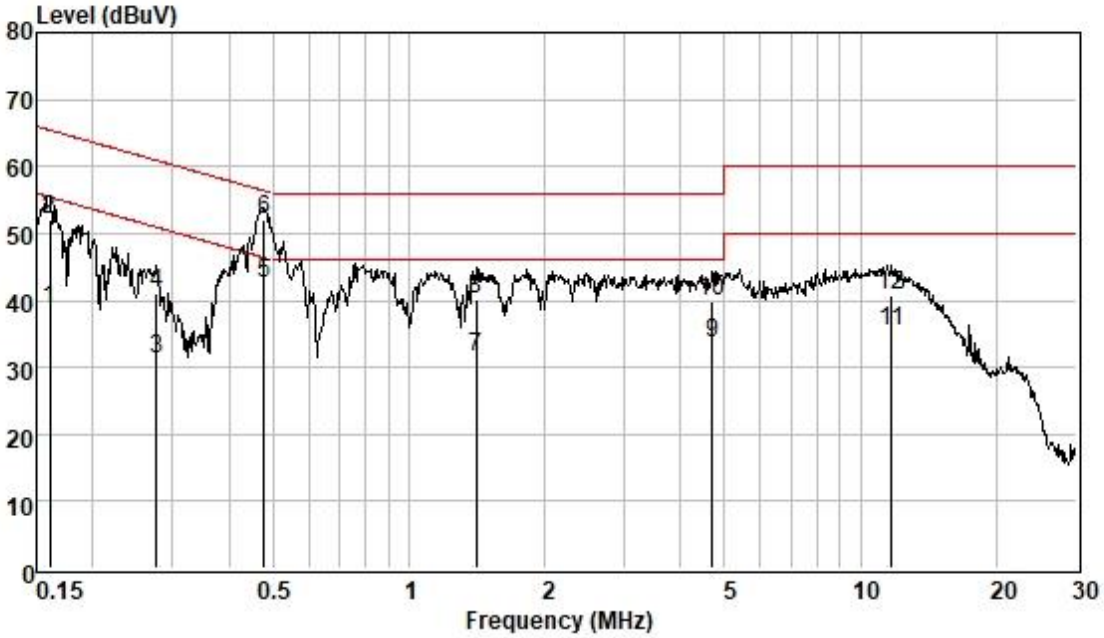
Test Mode: 04; Line: Live line



Pol :LINE
Mode :
Model :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.156	33.68	0.06	9.54	43.28	55.69	-12.41	Average
2	0.156	43.26	0.06	9.54	52.86	65.69	-12.83	QP
3	0.260	22.95	0.06	9.57	32.58	51.42	-18.84	Average
4	0.260	32.97	0.06	9.57	42.60	61.42	-18.82	QP
5	0.474	33.04	0.07	9.59	42.70	46.45	-3.75	Average
6	0.474	42.27	0.07	9.59	51.93	56.45	-4.52	QP
7	1.772	24.02	0.11	9.60	33.73	46.00	-12.27	Average
8	1.772	31.50	0.11	9.60	41.21	56.00	-14.79	QP
9	2.461	24.47	0.13	9.60	34.20	46.00	-11.80	Average
10	2.461	31.28	0.13	9.60	41.01	56.00	-14.99	QP
11	5.535	22.94	0.19	9.69	32.82	50.00	-17.18	Average
12	5.535	29.31	0.19	9.69	39.19	60.00	-20.81	QP

Test Mode: 04; Line: Neutral Line



Pol :NEUTRAL
Mode :
Model :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.161	29.06	0.06	9.54	38.66	55.43	-16.77	Average
2	0.161	42.30	0.06	9.54	51.90	65.43	-13.53	QP
3	0.276	21.57	0.06	9.57	31.20	50.94	-19.74	Average
4	0.276	31.54	0.06	9.57	41.17	60.94	-19.77	QP
5	0.479	32.85	0.07	9.58	42.50	46.36	-3.86	Average
6	0.479	42.37	0.07	9.58	52.02	56.36	-4.34	QP
7	1.411	21.78	0.09	9.59	31.46	46.00	-14.54	Average
8	1.411	30.44	0.09	9.59	40.12	56.00	-15.88	QP
9	4.696	23.81	0.18	9.65	33.64	46.00	-12.36	Average
10	4.696	30.01	0.18	9.65	39.84	56.00	-16.16	QP
11	11.683	25.45	0.26	9.81	35.52	50.00	-14.48	Average
12	11.683	30.80	0.26	9.81	40.87	60.00	-19.13	QP

7.2 Duty Cycle

Test Requirement KDB 789033 D02 II B 1

Test Method: KDB 789033 II B 1

7.2.1 E.U.T. Operation

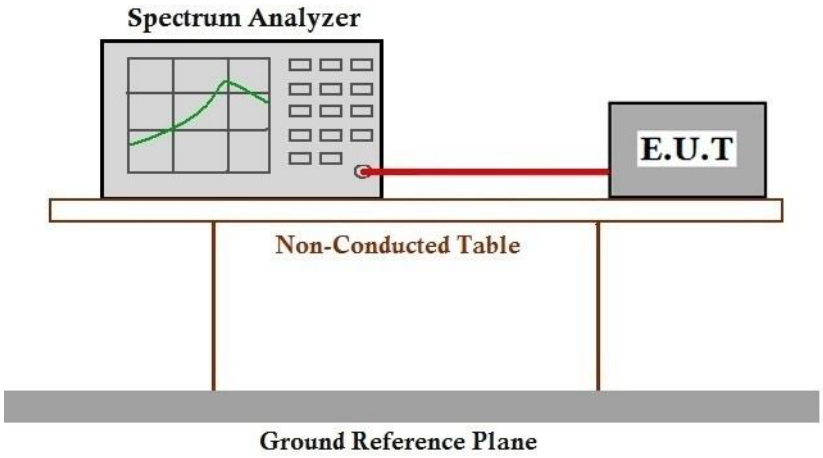
Operating Environment:

Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	05	TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.3 99% Bandwidth

Test Requirement N/A

Test Method: KDB 789033 II D

7.3.1 E.U.T. Operation

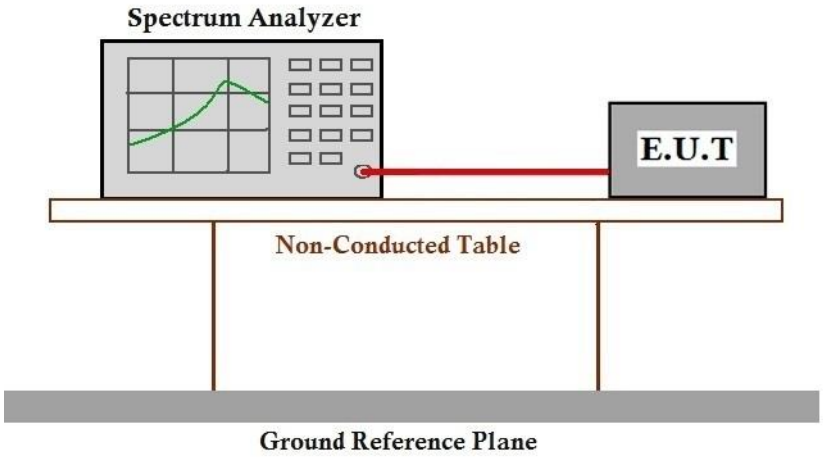
Operating Environment:

Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	05	TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.4 26dB Emission bandwidth

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

Test Method: KDB 789033 D02 II C 1

7.4.1 E.U.T. Operation

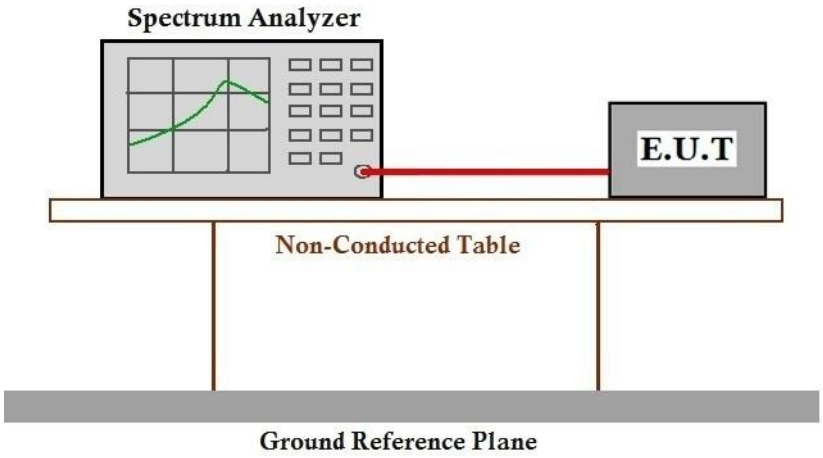
Operating Environment:

Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	05	TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details

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

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

Test Method: KDB 789033 D02 II C 2

Limit:

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

7.5.1 E.U.T. Operation

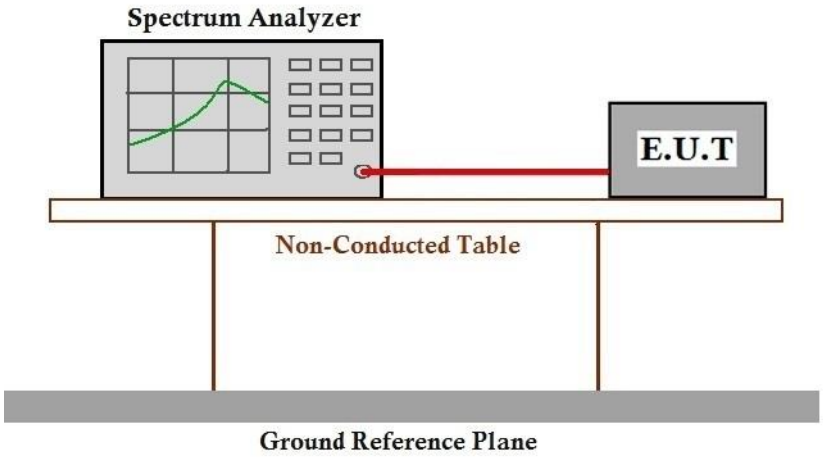
Operating Environment:

Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



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 E 15.407 (a)

Test Method: KDB 789033 D02 II E

Limit:

Frequency band(MHz)	Limit
5150-5250	≤1W(30dBm) for master device
	≤250mW(24dBm) for client device
5250-5350	≤250mW(24dBm) for client device or 11dBm+10logB*
5470-5725	≤250mW(24dBm) for client device or 11dBm+10logB*
5725-5850	≤1W(30dBm)
Remark:	* 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

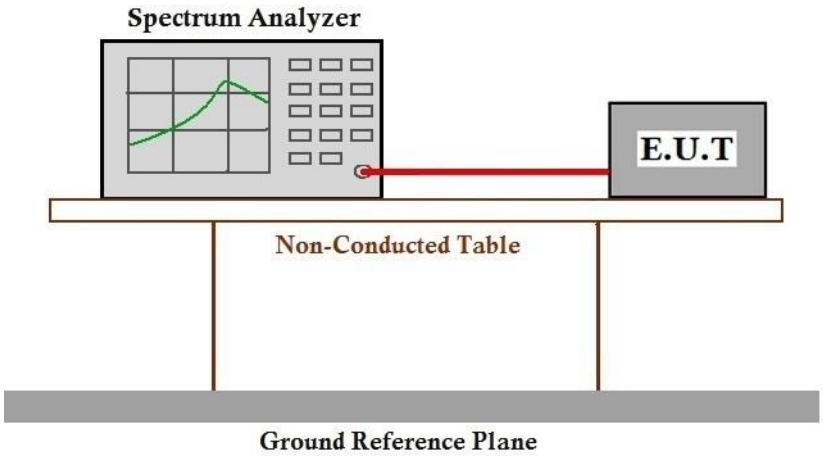
Operating Environment:

Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	05	TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

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

Please Refer to Appendix for Details

7.7 Peak Power spectrum density

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

Test Method: KDB 789033 D02 II F

Limit:

Frequency band(MHz)	Limit
5150-5250	≤17dBm in 1MHz for master device
	≤11dBm in 1MHz for client device
5250-5350	≤11dBm in 1MHz for client device
5470-5725	≤11dBm in 1MHz for client device
5725-5850	≤30dBm in 500 kHz
Remark:	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

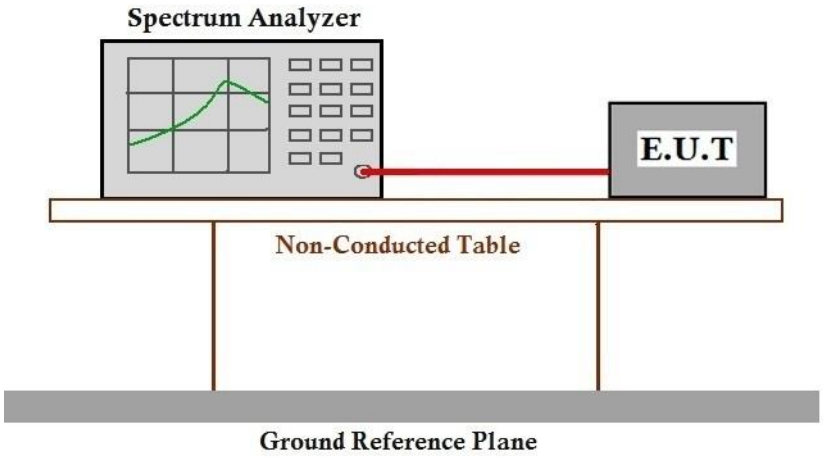
Operating Environment:

Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	05	TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.8 Radiated Emissions (Above 1GHz)

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

Test Method: KDB 789033 D02 II G

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1GHz	500	3

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

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

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

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

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

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

7.8.1 E.U.T. Operation

Operating Environment:

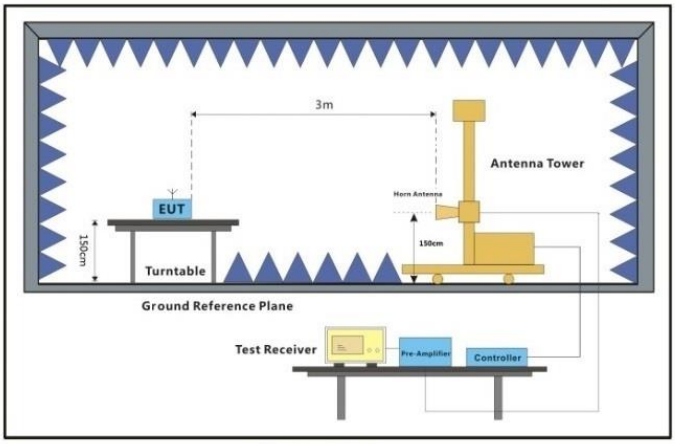
Temperature: 24.3 °C Humidity: 55.6 % RH Atmospheric Pressure: 1015 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	05	TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a;

		data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	06	TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types.All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram



Above 1GHz

7.8.4 Measurement Procedure and Data

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

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

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

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

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

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

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

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

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

Remark:

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

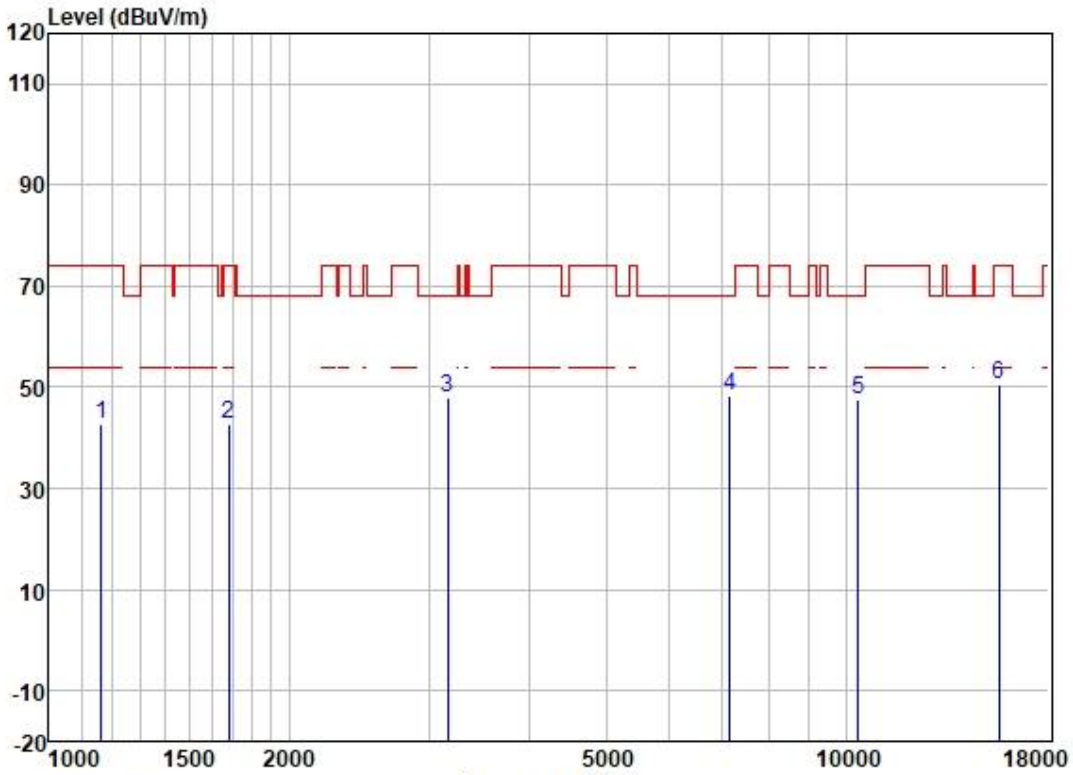
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

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

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

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

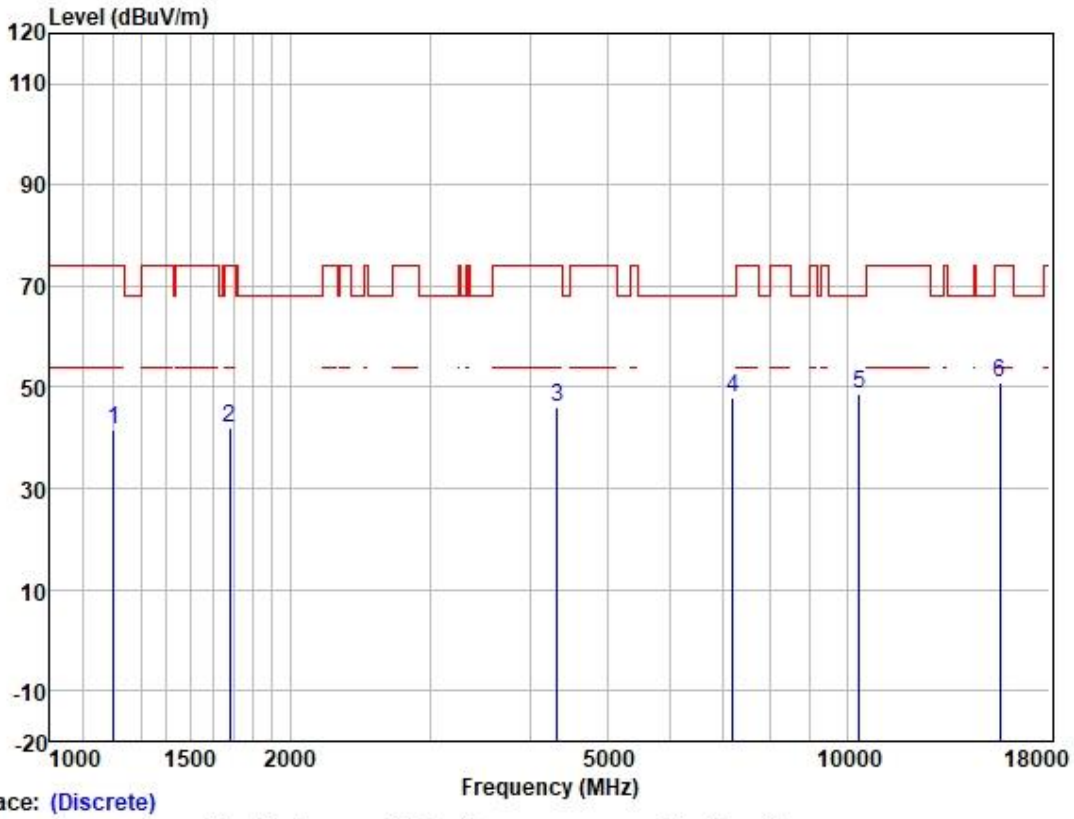
Test Mode: 04; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1162.182	52.10	25.78	2.56	37.65	42.79	74.00	-31.21	VERTICAL	peak
2	1682.477	51.35	25.28	3.25	37.33	42.55	74.00	-31.45	VERTICAL	peak
3	3168.500	50.51	29.86	4.31	36.80	47.88	68.20	-20.32	VERTICAL	peak
4	7158.806	42.15	36.61	6.37	36.76	48.37	68.20	-19.83	VERTICAL	peak
5	10360.000	39.80	38.72	6.35	37.16	47.71	68.20	-20.49	VERTICAL	peak
6	15540.000	39.27	38.91	8.42	36.20	50.40	74.00	-23.60	VERTICAL	peak

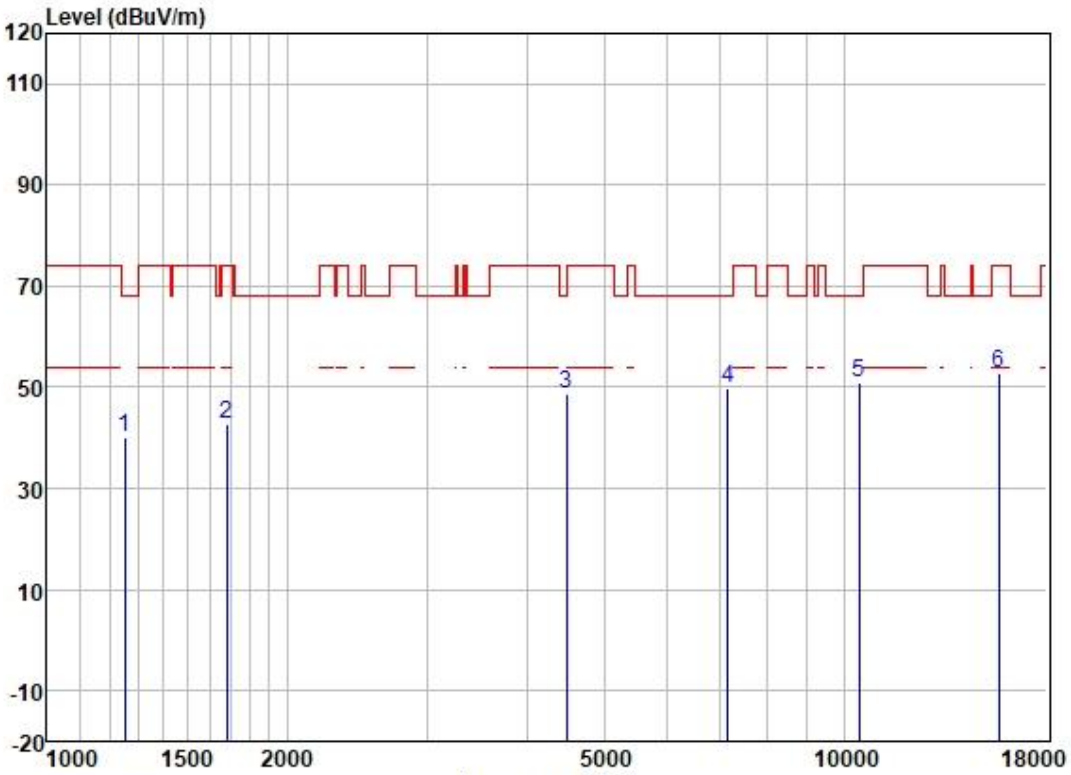
Test Mode: 04; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1203.199	50.87	25.90	2.58	37.63	41.72	74.00	-32.28	HORIZONTAL	peak
2	1682.477	50.77	25.28	3.25	37.33	41.97	74.00	-32.03	HORIZONTAL	peak
3	4329.354	45.83	31.64	5.31	36.61	46.17	74.00	-27.83	HORIZONTAL	peak
4	7200.309	41.83	36.71	6.36	36.77	48.13	68.20	-20.07	HORIZONTAL	peak
5	10360.000	40.90	38.72	6.35	37.16	48.81	68.20	-19.39	HORIZONTAL	peak
6	15540.000	39.69	38.91	8.42	36.20	50.82	74.00	-23.18	HORIZONTAL	peak

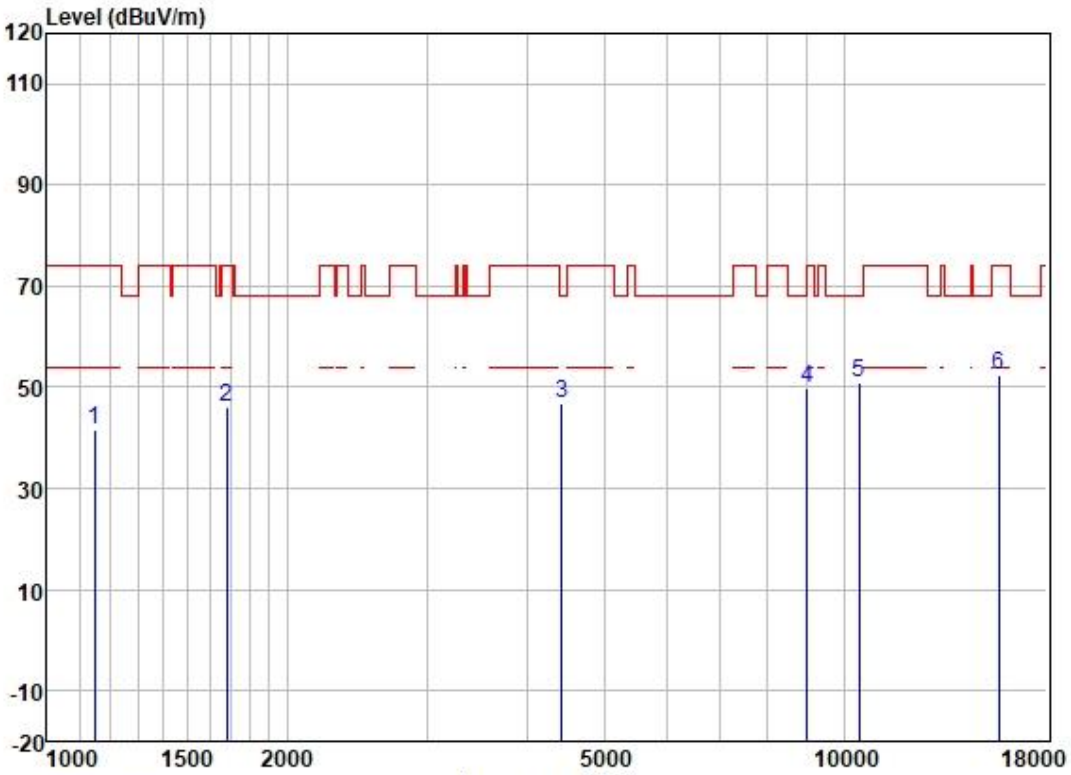
Test Mode: 04; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



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	1252.885	49.11	25.96	2.62	37.61	40.08	68.20	-28.12	HORIZONTAL	peak
2	1682.477	51.52	25.28	3.25	37.33	42.72	74.00	-31.28	HORIZONTAL	peak
3	4482.150	48.34	31.77	5.34	36.62	48.83	68.20	-19.37	HORIZONTAL	peak
4	7158.806	43.71	36.61	6.37	36.76	49.93	68.20	-18.27	HORIZONTAL	peak
5	10440.000	43.25	38.70	6.31	37.15	51.11	68.20	-17.09	HORIZONTAL	peak
6	15660.000	42.20	38.71	8.16	36.26	52.81	74.00	-21.19	HORIZONTAL	peak

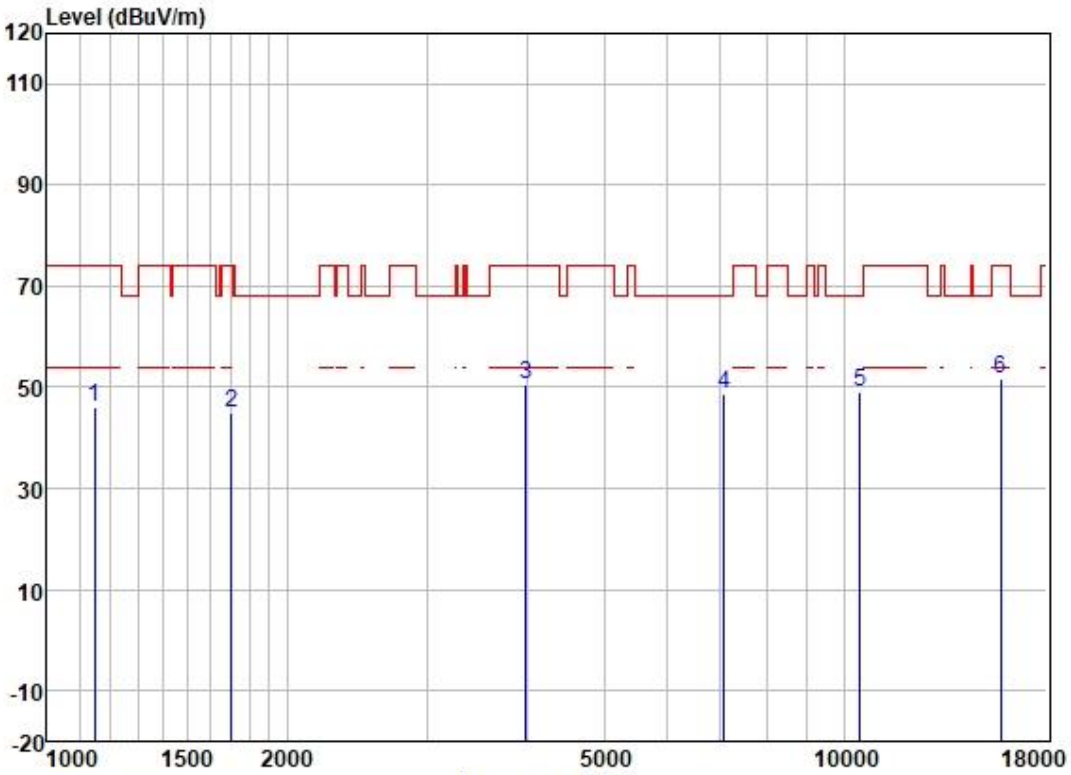
Test Mode: 04; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



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	1148.823	51.12	25.70	2.55	37.65	41.72	74.00	-32.28	VERTICAL	peak
2	1682.477	54.85	25.28	3.25	37.33	46.05	74.00	-27.95	VERTICAL	peak
3	4430.628	46.27	31.77	5.36	36.61	46.79	68.20	-21.41	VERTICAL	peak
4	8995.123	41.67	38.03	7.09	37.00	49.79	68.20	-18.41	VERTICAL	peak
5	10440.000	43.09	38.70	6.31	37.15	50.95	68.20	-17.25	VERTICAL	peak
6	15660.000	41.88	38.71	8.16	36.26	52.49	74.00	-21.51	VERTICAL	peak

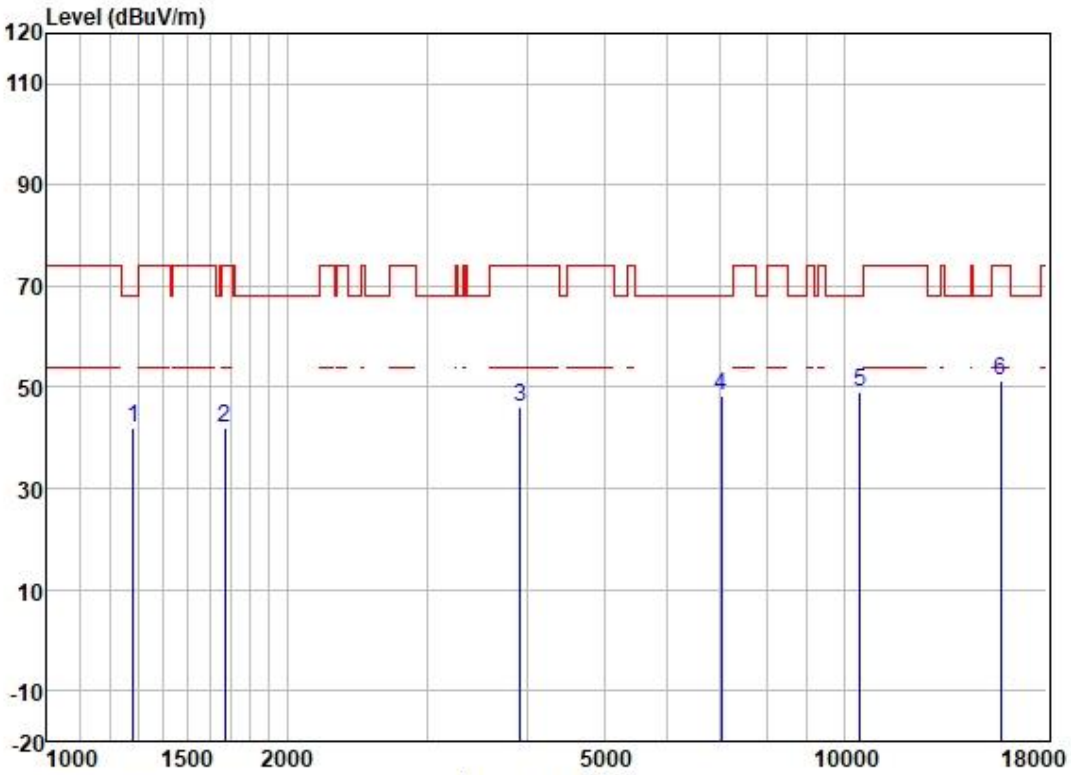
Test Mode: 04; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



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	1148.823	55.56	25.70	2.55	37.65	46.16	74.00	-27.84	VERTICAL	peak
2	1702.042	53.51	25.25	3.36	37.31	44.81	74.00	-29.19	VERTICAL	peak
3	3992.781	50.99	31.07	5.25	36.60	50.71	74.00	-23.29	VERTICAL	peak
4	7076.516	42.76	36.29	6.39	36.76	48.68	68.20	-19.52	VERTICAL	peak
5	10480.000	41.28	38.71	6.29	37.14	49.14	68.20	-19.06	VERTICAL	peak
6	15720.000	41.12	38.67	8.06	36.29	51.56	74.00	-22.44	VERTICAL	peak

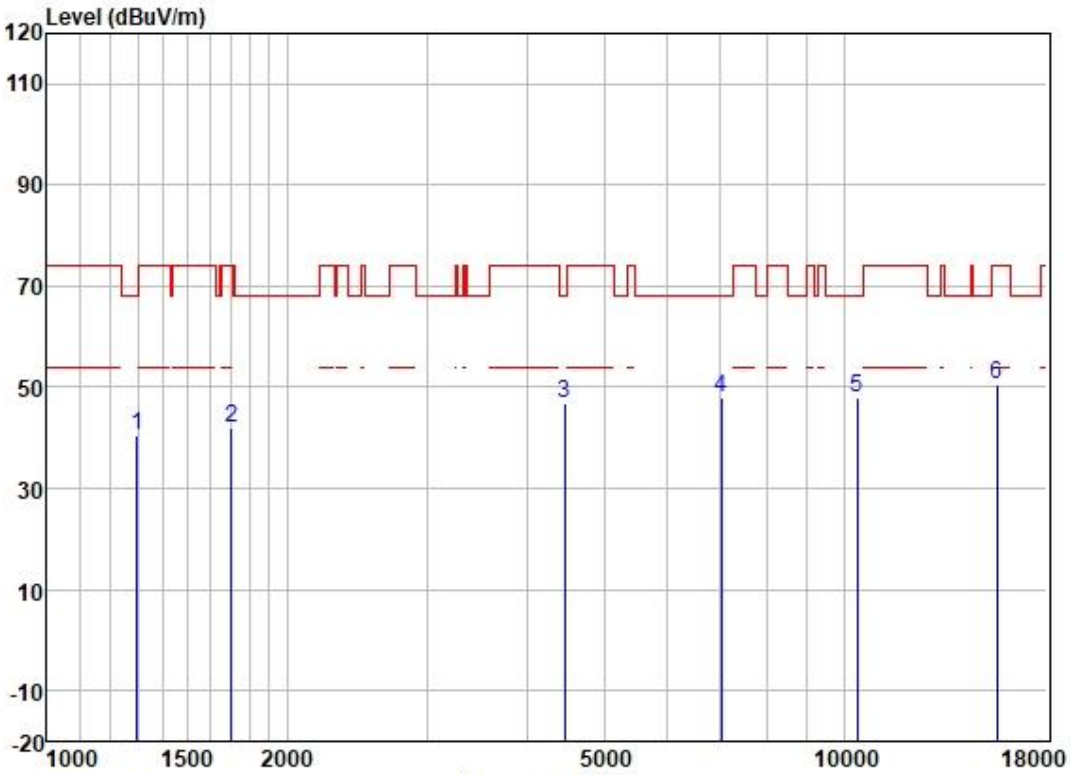
Test Mode: 04; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



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	1282.193	50.82	25.99	2.65	37.60	41.86	68.20	-26.34	HORIZONTAL	peak
2	1672.779	50.85	25.30	3.21	37.34	42.02	74.00	-31.98	HORIZONTAL	peak
3	3924.135	46.69	31.01	5.02	36.61	46.11	74.00	-27.89	HORIZONTAL	peak
4	7015.420	42.78	36.03	6.41	36.75	48.47	68.20	-19.73	HORIZONTAL	peak
5	10480.000	41.08	38.71	6.29	37.14	48.94	68.20	-19.26	HORIZONTAL	peak
6	15720.000	40.82	38.67	8.06	36.29	51.26	74.00	-22.74	HORIZONTAL	peak

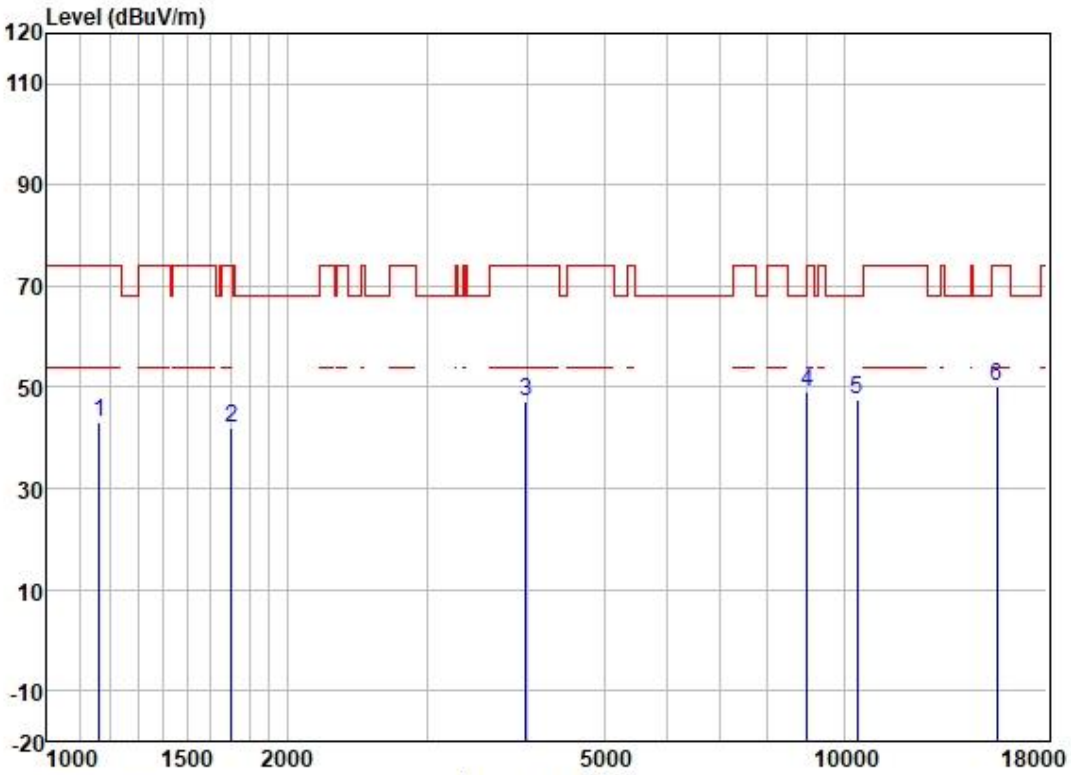
Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



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	1297.103	49.58	26.00	2.67	37.58	40.67	68.20	-27.53	HORIZONTAL	peak
2	1702.042	50.72	25.25	3.36	37.31	42.02	74.00	-31.98	HORIZONTAL	peak
3	4456.315	46.19	31.77	5.35	36.61	46.70	68.20	-21.50	HORIZONTAL	peak
4	7015.420	42.43	36.03	6.41	36.75	48.12	68.20	-20.08	HORIZONTAL	peak
5	10380.000	40.03	38.68	6.33	37.15	47.89	68.20	-20.31	HORIZONTAL	peak
6	15570.000	39.60	38.80	8.34	36.21	50.53	74.00	-23.47	HORIZONTAL	peak

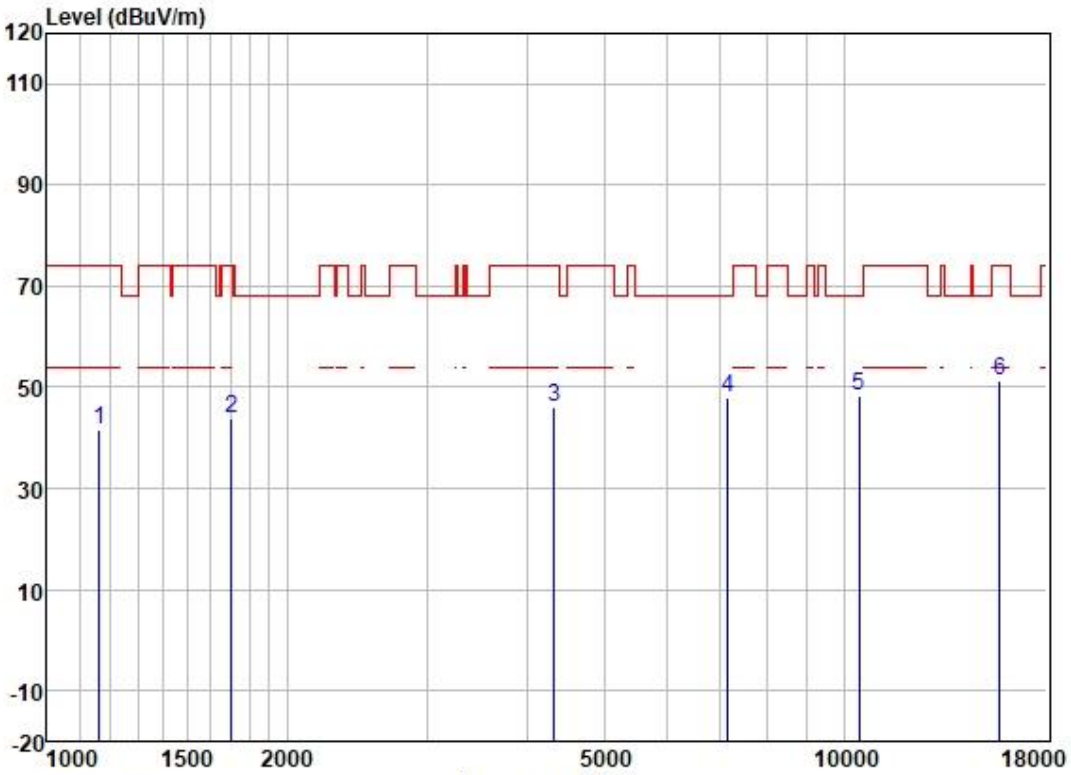
Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



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	1162.182	52.44	25.78	2.56	37.65	43.13	74.00	-30.87	VERTICAL	peak
2	1702.042	50.51	25.25	3.36	37.31	41.81	74.00	-32.19	VERTICAL	peak
3	3992.781	47.51	31.07	5.25	36.60	47.23	74.00	-26.77	VERTICAL	peak
4	8995.123	41.00	38.03	7.09	37.00	49.12	68.20	-19.08	VERTICAL	peak
5	10380.000	39.59	38.68	6.33	37.15	47.45	68.20	-20.75	VERTICAL	peak
6	15570.000	39.38	38.80	8.34	36.21	50.31	74.00	-23.69	VERTICAL	peak

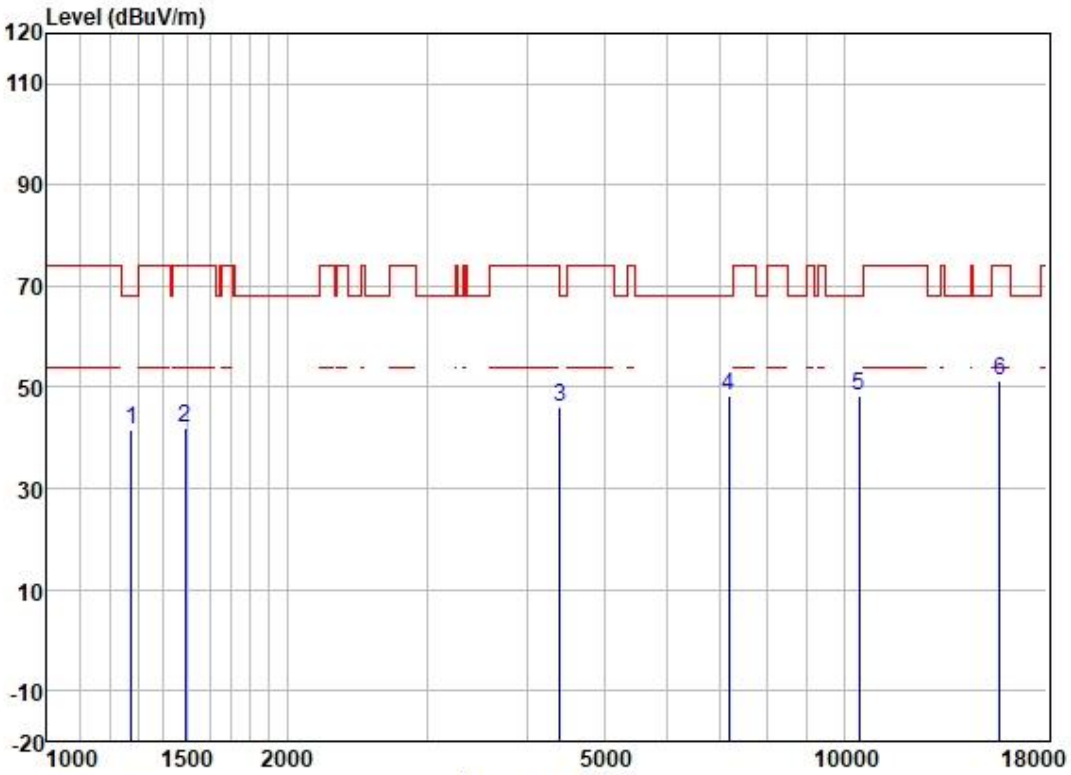
Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



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	1162.182	51.03	25.78	2.56	37.65	41.72	74.00	-32.28	VERTICAL	peak
2	1702.042	52.39	25.25	3.36	37.31	43.69	74.00	-30.31	VERTICAL	peak
3	4329.354	45.86	31.64	5.31	36.61	46.20	74.00	-27.80	VERTICAL	peak
4	7158.806	41.58	36.61	6.37	36.76	47.80	68.20	-20.40	VERTICAL	peak
5	10460.000	40.55	38.70	6.31	37.14	48.42	68.20	-19.78	VERTICAL	peak
6	15690.000	40.57	38.71	8.16	36.28	51.16	74.00	-22.84	VERTICAL	peak

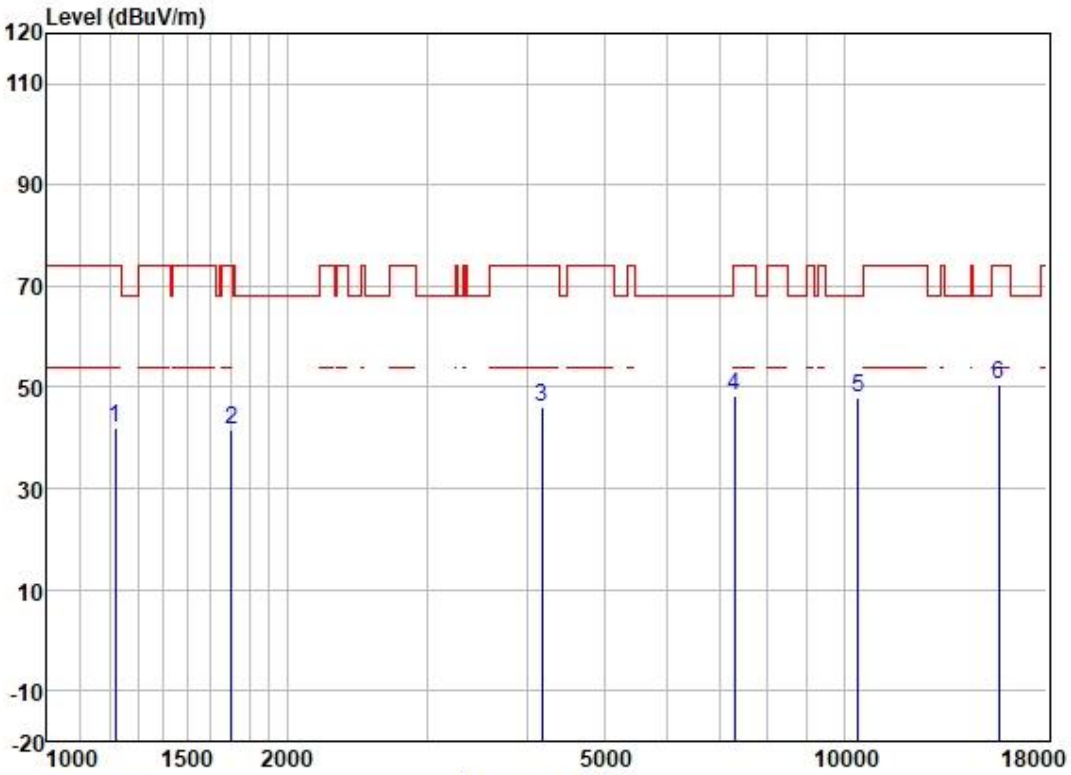
Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



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	1274.802	50.74	25.98	2.64	37.60	41.76	68.20	-26.44	HORIZONTAL	peak
2	1490.142	50.85	25.57	2.87	37.47	41.82	74.00	-32.18	HORIZONTAL	peak
3	4405.090	45.42	31.77	5.37	36.61	45.95	68.20	-22.25	HORIZONTAL	peak
4	7179.527	41.94	36.66	6.37	36.76	48.21	68.20	-19.99	HORIZONTAL	peak
5	10460.000	40.55	38.70	6.31	37.14	48.42	68.20	-19.78	HORIZONTAL	peak
6	15690.000	40.80	38.71	8.16	36.28	51.39	74.00	-22.61	HORIZONTAL	peak

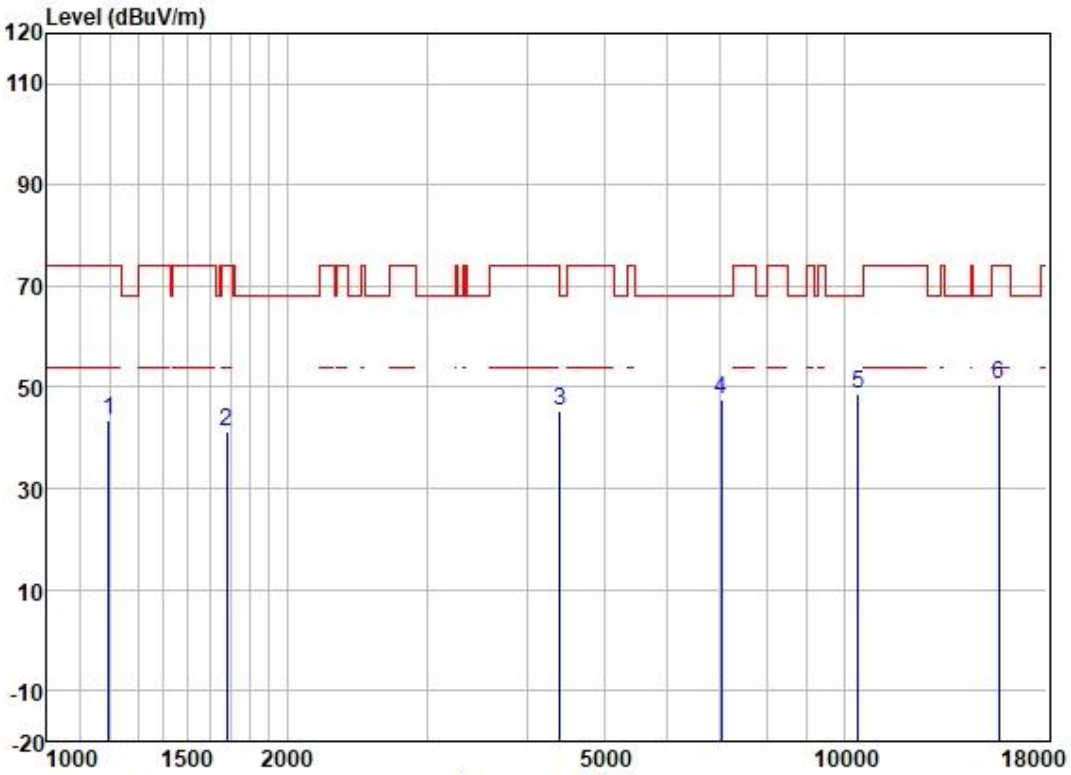
Test Mode: 04; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



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	1217.190	50.97	25.91	2.59	37.62	41.85	74.00	-32.15	HORIZONTAL	peak
2	1702.042	50.37	25.25	3.36	37.31	41.67	74.00	-32.33	HORIZONTAL	peak
3	4181.768	46.17	31.27	5.22	36.60	46.06	74.00	-27.94	HORIZONTAL	peak
4	7284.038	41.94	36.69	6.33	36.77	48.19	74.00	-25.81	HORIZONTAL	peak
5	10420.000	40.10	38.69	6.32	37.15	47.96	68.20	-20.24	HORIZONTAL	peak
6	15630.000	39.66	38.76	8.26	36.25	50.43	74.00	-23.57	HORIZONTAL	peak

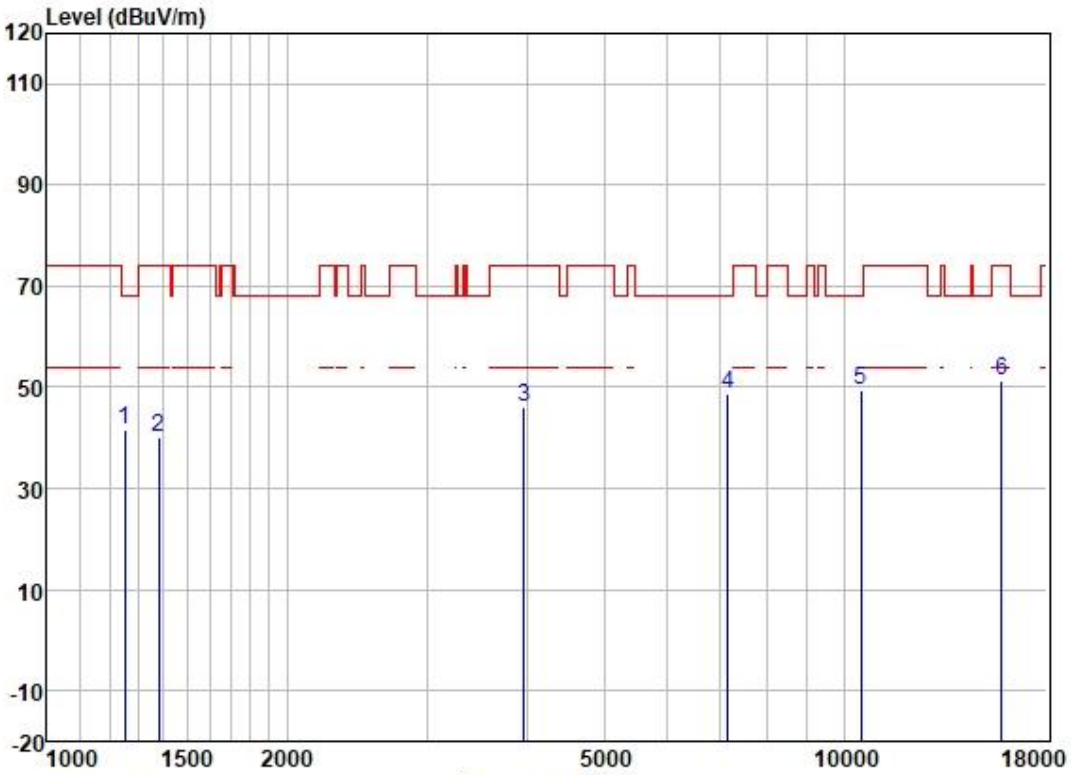
Test Mode: 04; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



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	52.71	25.89	2.58	37.63	43.55	74.00	-30.45	VERTICAL	peak
2	1682.477	50.01	25.28	3.25	37.33	41.21	74.00	-32.79	VERTICAL	peak
3	4405.090	44.98	31.77	5.37	36.61	45.51	68.20	-22.69	VERTICAL	peak
4	7015.420	41.76	36.03	6.41	36.75	47.45	68.20	-20.75	VERTICAL	peak
5	10420.000	40.77	38.69	6.32	37.15	48.63	68.20	-19.57	VERTICAL	peak
6	15630.000	39.62	38.76	8.26	36.25	50.39	74.00	-23.61	VERTICAL	peak

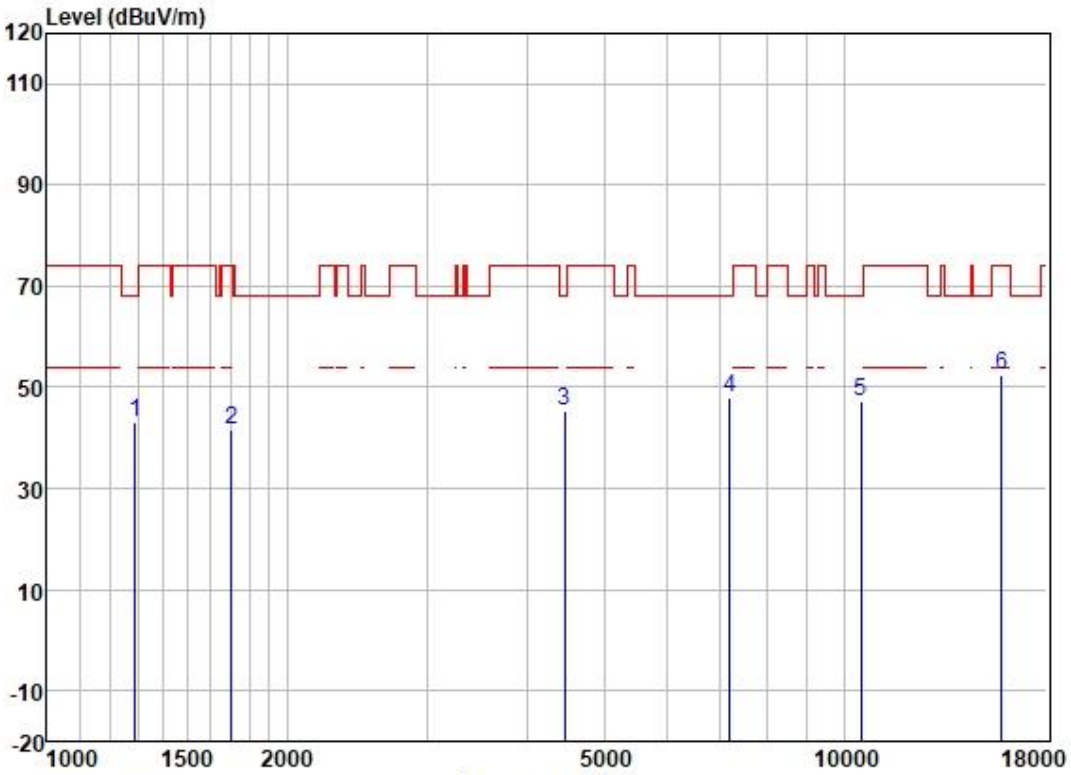
Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1252.885	50.54	25.96	2.62	37.61	41.51	68.20	-26.69	VERTICAL	peak
2	1382.262	48.95	25.77	2.76	37.54	39.94	74.00	-34.06	VERTICAL	peak
3	3969.767	46.53	31.05	5.18	36.61	46.15	74.00	-27.85	VERTICAL	peak
4	7158.806	42.42	36.61	6.37	36.76	48.64	68.20	-19.56	VERTICAL	peak
5	10520.000	41.44	38.72	6.28	37.13	49.31	68.20	-18.89	VERTICAL	peak
6	15780.000	41.03	38.70	7.95	36.32	51.36	74.00	-22.64	VERTICAL	peak

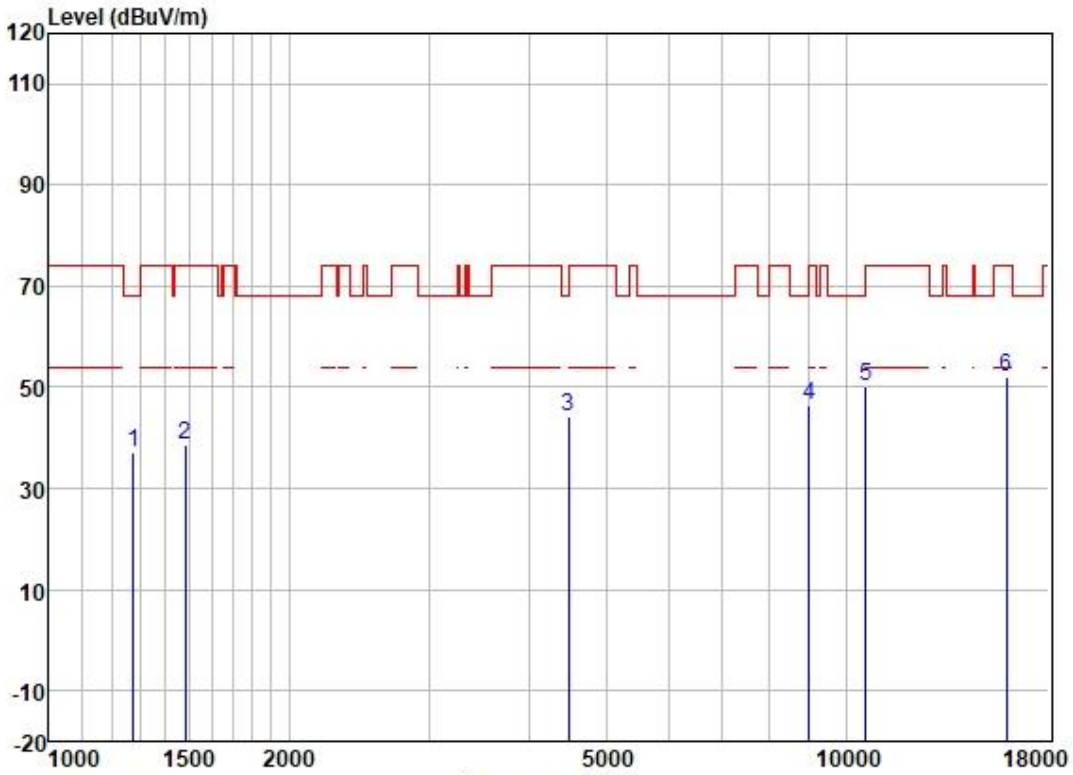
Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1289.627	52.10	25.99	2.66	37.60	43.15	68.20	-25.05	HORIZONTAL	peak
2	1702.042	50.28	25.25	3.36	37.31	41.58	74.00	-32.42	HORIZONTAL	peak
3	4456.315	44.75	31.77	5.35	36.61	45.26	68.20	-22.94	HORIZONTAL	peak
4	7200.309	41.72	36.71	6.36	36.77	48.02	68.20	-20.18	HORIZONTAL	peak
5	10520.000	39.29	38.72	6.28	37.13	47.16	68.20	-21.04	HORIZONTAL	peak
6	15780.000	41.95	38.70	7.95	36.32	52.28	74.00	-21.72	HORIZONTAL	peak

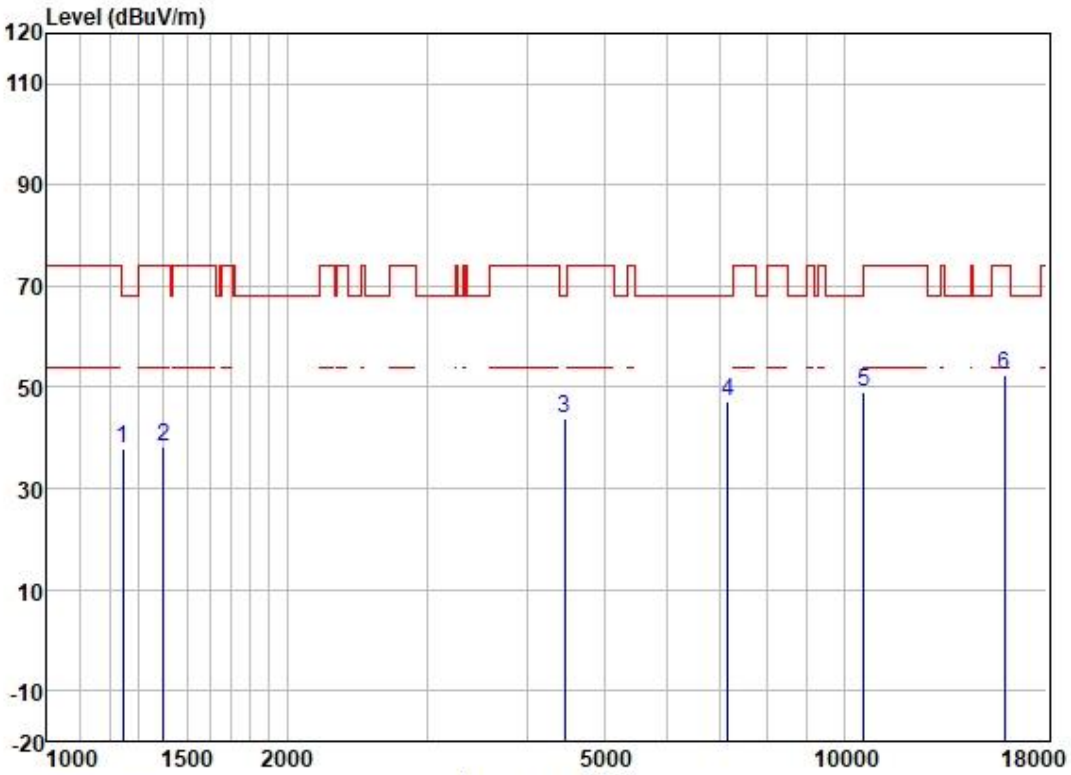
Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



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	1274.802	47.76	25.12	2.48	38.33	37.03	68.20	-31.17	VERTICAL	peak
2	1481.553	48.36	25.48	2.77	38.13	38.48	74.00	-35.52	VERTICAL	peak
3	4482.150	45.14	30.78	4.99	36.81	44.10	68.20	-24.10	VERTICAL	peak
4	8995.123	39.02	37.40	7.56	37.50	46.48	68.20	-21.72	VERTICAL	peak
5	10600.000	40.48	39.59	7.46	37.34	50.19	68.20	-18.01	VERTICAL	peak
6	15900.000	39.05	38.44	9.86	35.40	51.95	74.00	-22.05	VERTICAL	peak

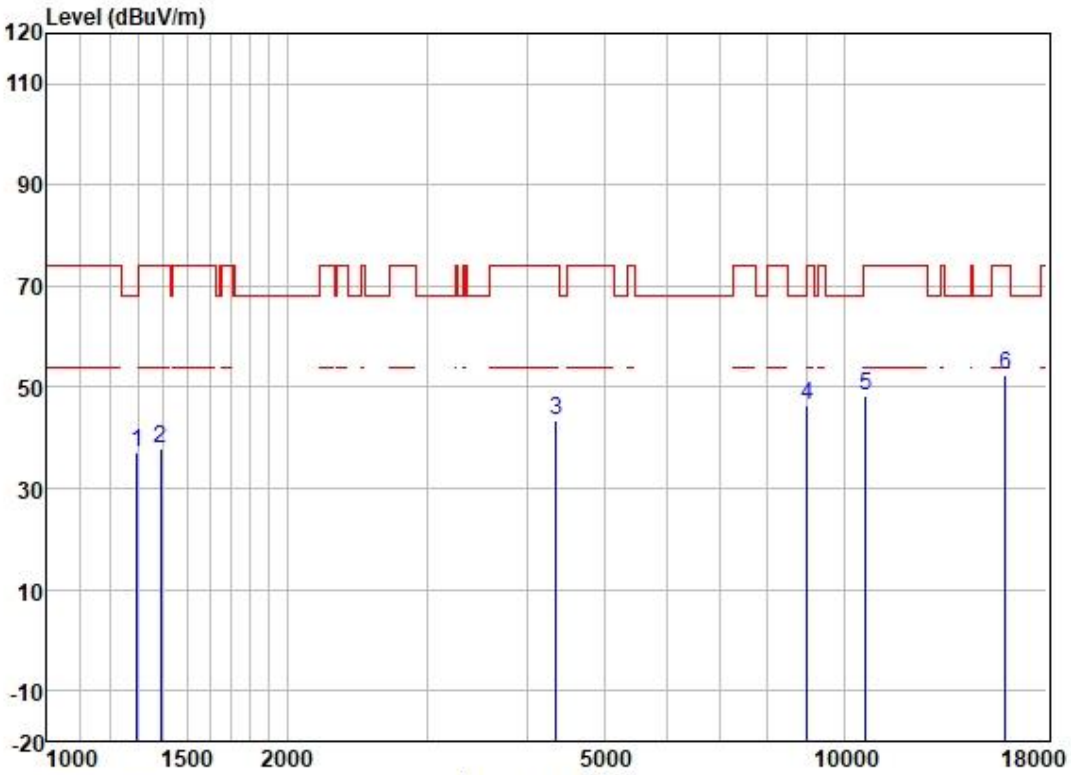
Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



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	1245.663	48.98	25.00	2.33	38.35	37.96	68.20	-30.24	HORIZONTAL	peak
2	1398.336	48.37	25.39	2.60	38.22	38.14	74.00	-35.86	HORIZONTAL	peak
3	4456.315	45.10	30.75	4.88	36.81	43.92	68.20	-24.28	HORIZONTAL	peak
4	7158.806	43.21	35.40	5.94	37.35	47.20	68.20	-21.00	HORIZONTAL	peak
5	10600.000	39.46	39.59	7.46	37.34	49.17	68.20	-19.03	HORIZONTAL	peak
6	15900.000	39.69	38.44	9.86	35.40	52.59	74.00	-21.41	HORIZONTAL	peak

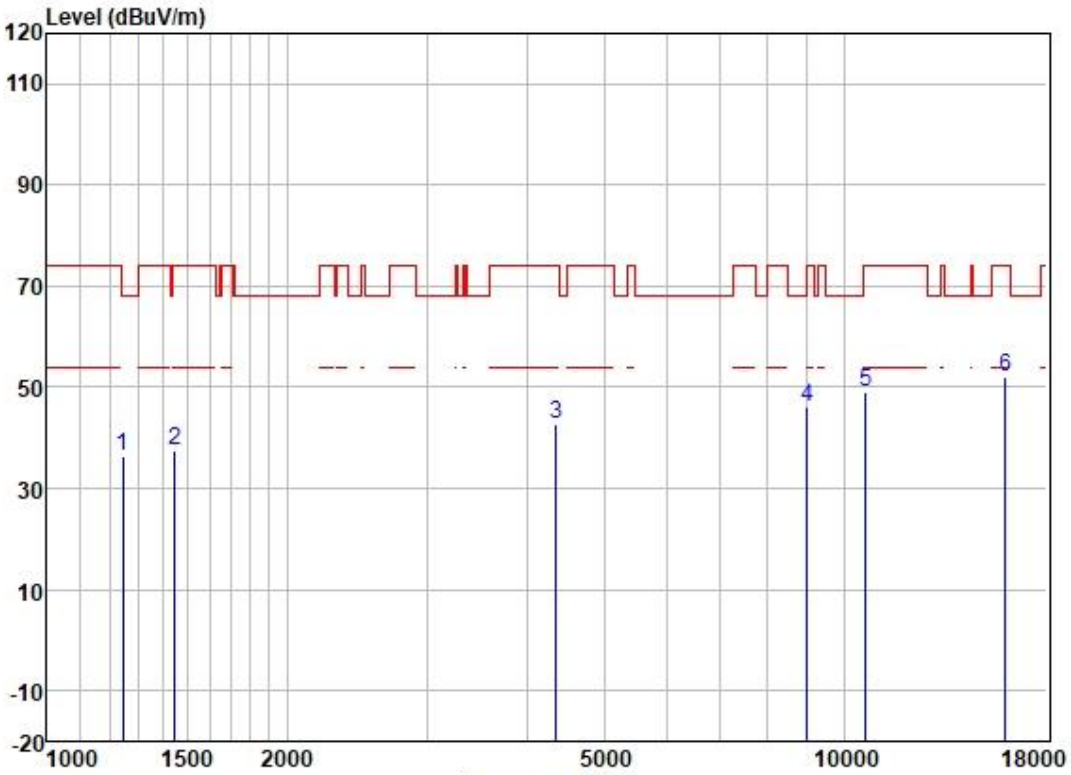
Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



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	1297.103	47.83	25.19	2.58	38.31	37.29	68.20	-30.91	VERTICAL	peak
2	1390.276	48.12	25.38	2.60	38.22	37.88	74.00	-36.12	VERTICAL	peak
3	4354.454	44.85	30.59	4.68	36.81	43.31	74.00	-30.69	VERTICAL	peak
4	8995.123	38.82	37.40	7.56	37.50	46.28	68.20	-21.92	VERTICAL	peak
5	10640.000	38.69	39.63	7.48	37.33	48.47	74.00	-25.53	VERTICAL	peak
6	15960.000	39.59	38.37	9.85	35.40	52.41	74.00	-21.59	VERTICAL	peak

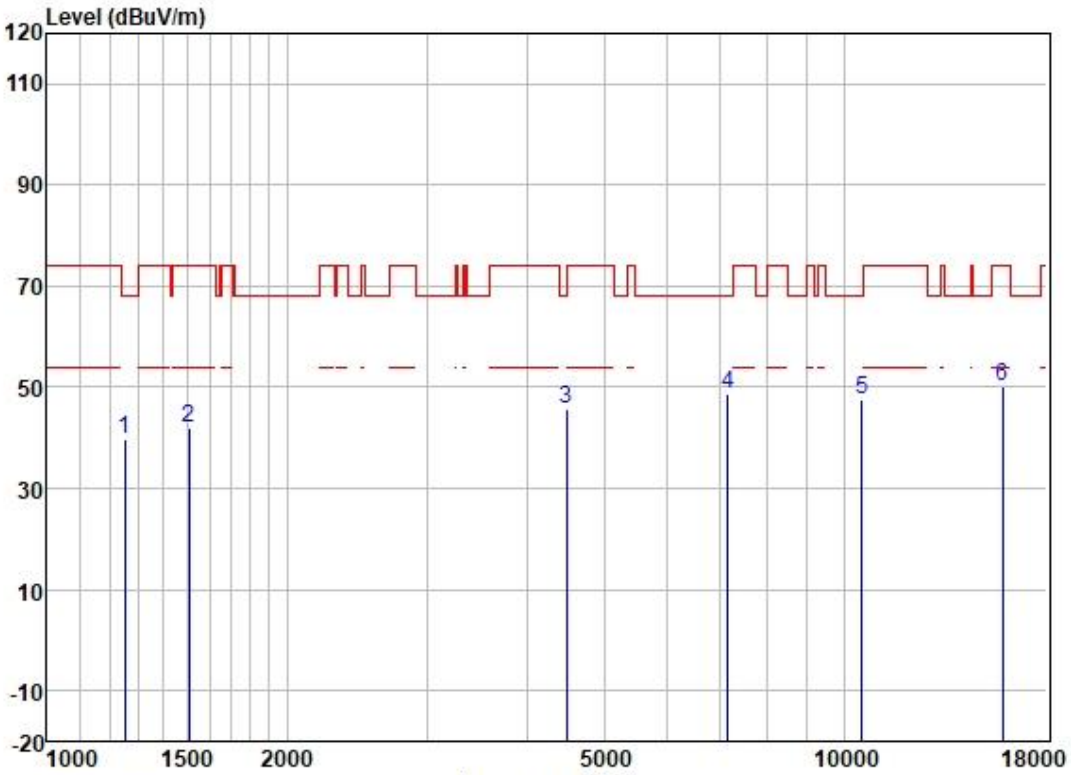
Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



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	1245.663	47.58	25.00	2.33	38.35	36.56	68.20	-31.64	HORIZONTAL	peak
2	1447.688	47.46	25.45	2.70	38.17	37.44	74.00	-36.56	HORIZONTAL	peak
3	4354.454	44.16	30.59	4.68	36.81	42.62	74.00	-31.38	HORIZONTAL	peak
4	8995.123	38.53	37.40	7.56	37.50	45.99	68.20	-22.21	HORIZONTAL	peak
5	10640.000	39.32	39.63	7.48	37.33	49.10	74.00	-24.90	HORIZONTAL	peak
6	15960.000	39.13	38.37	9.85	35.40	51.95	74.00	-22.05	HORIZONTAL	peak

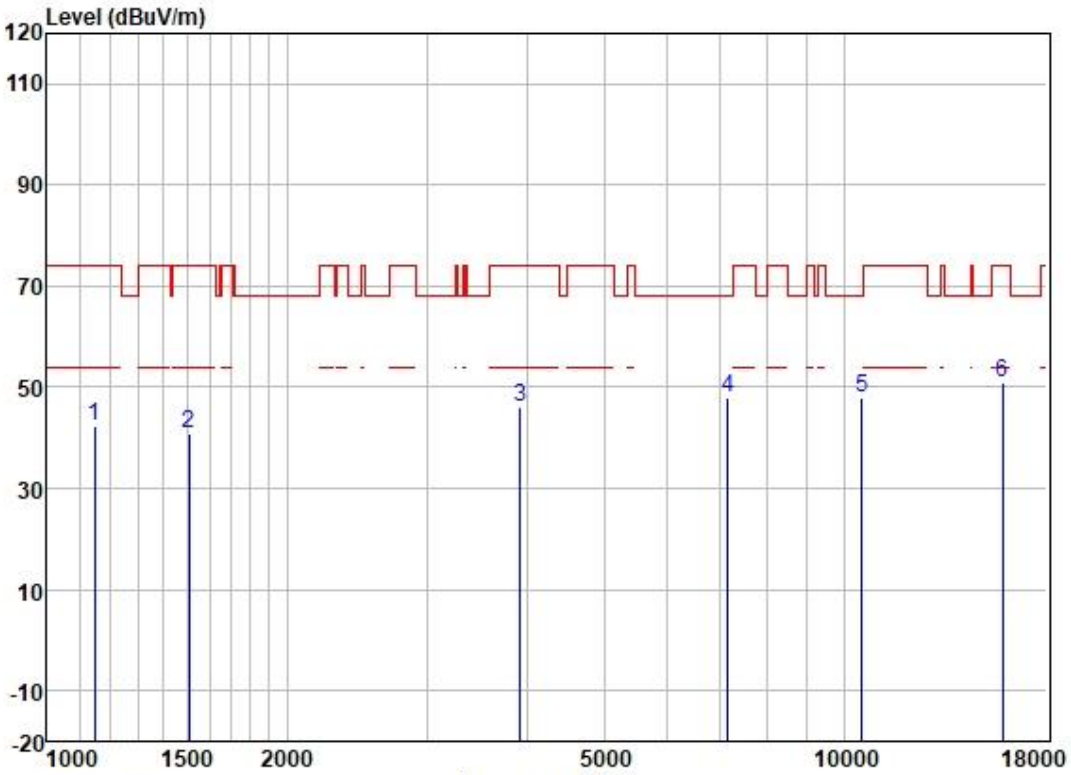
Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



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	1252.885	48.67	25.96	2.62	37.61	39.64	68.20	-28.56	HORIZONTAL	peak
2	1507.470	51.05	25.55	2.91	37.45	42.06	74.00	-31.94	HORIZONTAL	peak
3	4482.150	45.12	31.77	5.34	36.62	45.61	68.20	-22.59	HORIZONTAL	peak
4	7158.806	42.44	36.61	6.37	36.76	48.66	68.20	-19.54	HORIZONTAL	peak
5	10540.000	39.46	38.78	6.33	37.13	47.44	68.20	-20.76	HORIZONTAL	peak
6	15810.000	40.03	38.73	7.82	36.33	50.25	74.00	-23.75	HORIZONTAL	peak

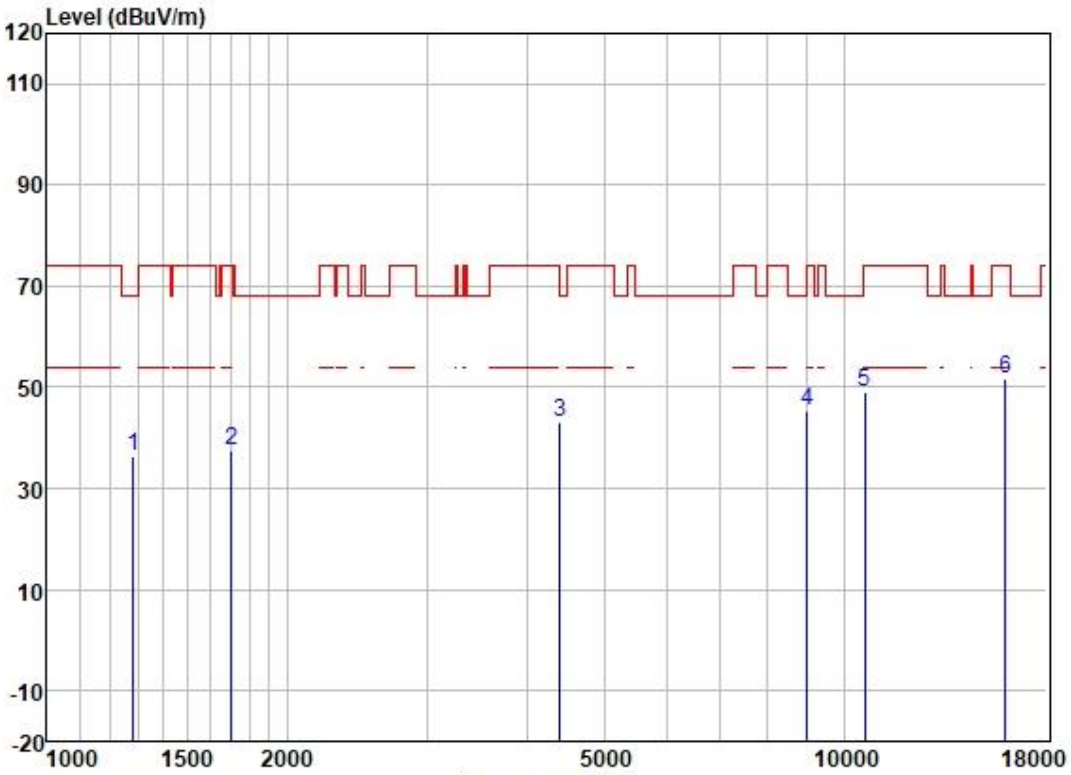
Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



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	1148.823	51.70	25.70	2.55	37.65	42.30	74.00	-31.70	VERTICAL	peak
2	1507.470	49.82	25.55	2.91	37.45	40.83	74.00	-33.17	VERTICAL	peak
3	3924.135	46.48	31.01	5.02	36.61	45.90	74.00	-28.10	VERTICAL	peak
4	7158.806	41.79	36.61	6.37	36.76	48.01	68.20	-20.19	VERTICAL	peak
5	10540.000	40.04	38.78	6.33	37.13	48.02	68.20	-20.18	VERTICAL	peak
6	15810.000	40.72	38.73	7.82	36.33	50.94	74.00	-23.06	VERTICAL	peak

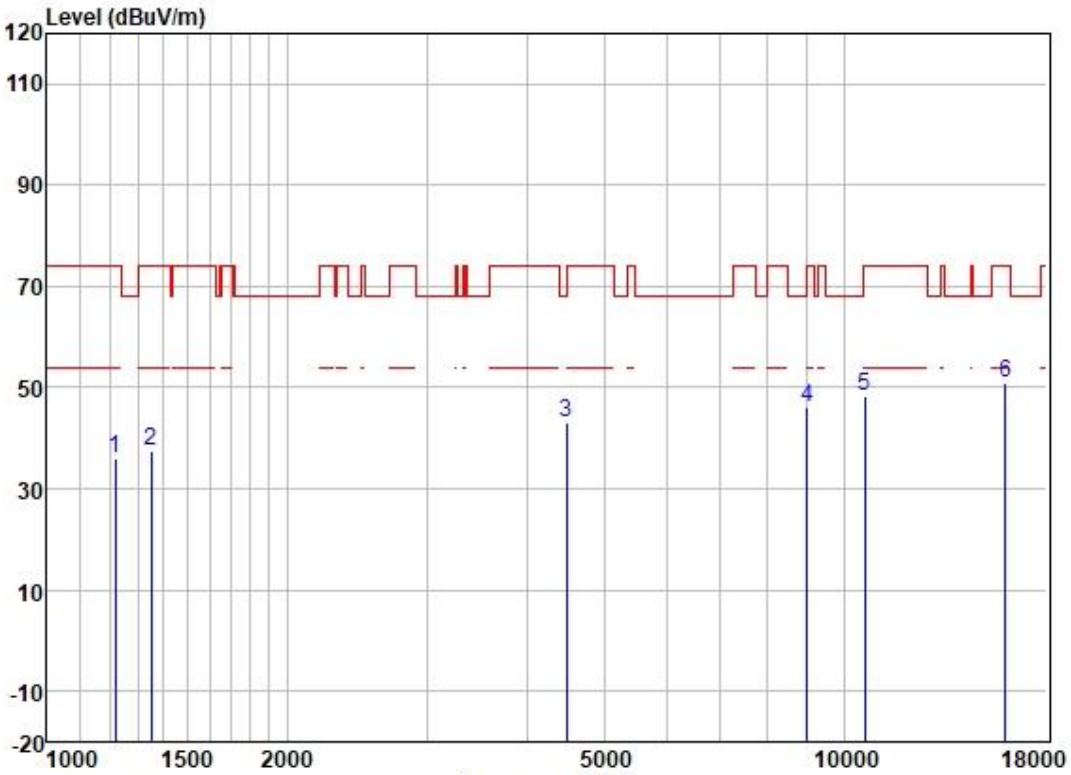
Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



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	1282.193	46.91	25.15	2.52	38.33	36.25	68.20	-31.95	VERTICAL	peak
2	1702.042	47.04	25.72	2.80	37.89	37.67	74.00	-36.33	VERTICAL	peak
3	4405.090	44.37	30.68	4.70	36.81	42.94	68.20	-25.26	VERTICAL	peak
4	8995.123	37.84	37.40	7.56	37.50	45.30	68.20	-22.90	VERTICAL	peak
5	10620.000	39.18	39.59	7.46	37.34	48.89	74.00	-25.11	VERTICAL	peak
6	15930.000	38.96	38.37	9.85	35.40	51.78	74.00	-22.22	VERTICAL	peak

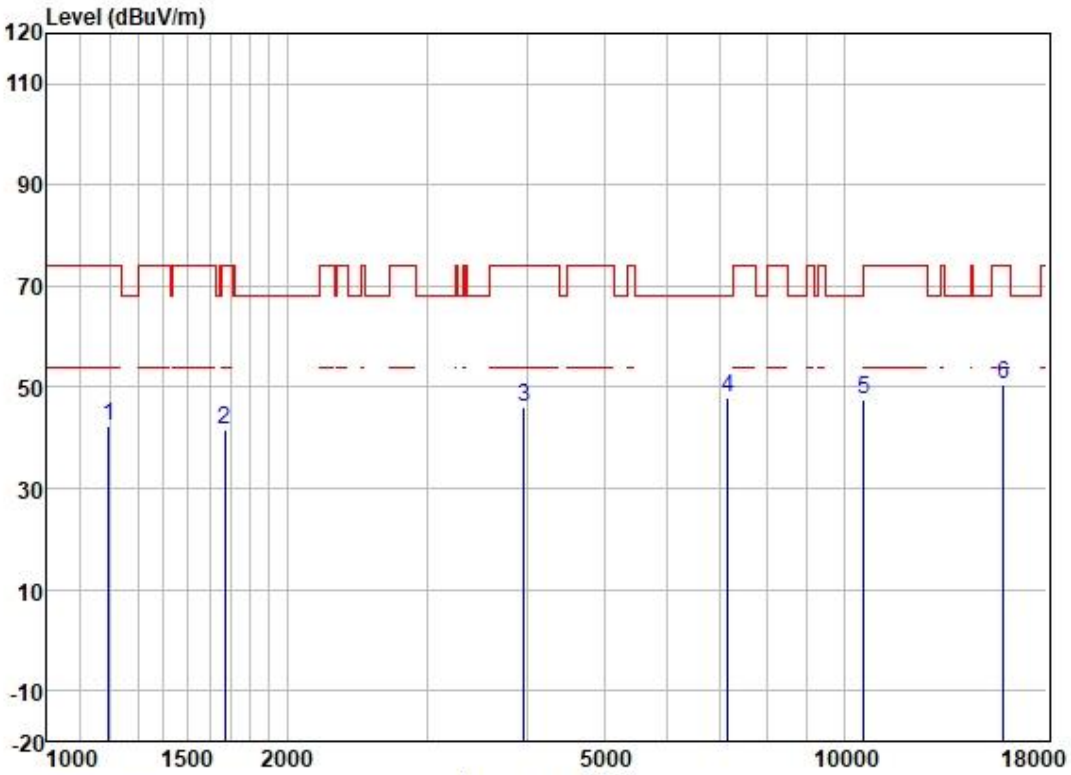
Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



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	1217.190	47.18	24.79	2.32	38.37	35.92	74.00	-38.08	HORIZONTAL	peak
2	1350.667	48.02	25.31	2.60	38.27	37.66	74.00	-36.34	HORIZONTAL	peak
3	4482.150	43.95	30.78	4.99	36.81	42.91	68.20	-25.29	HORIZONTAL	peak
4	8995.123	38.56	37.40	7.56	37.50	46.02	68.20	-22.18	HORIZONTAL	peak
5	10620.000	38.62	39.59	7.46	37.34	48.33	74.00	-25.67	HORIZONTAL	peak
6	15930.000	38.20	38.37	9.85	35.40	51.02	74.00	-22.98	HORIZONTAL	peak

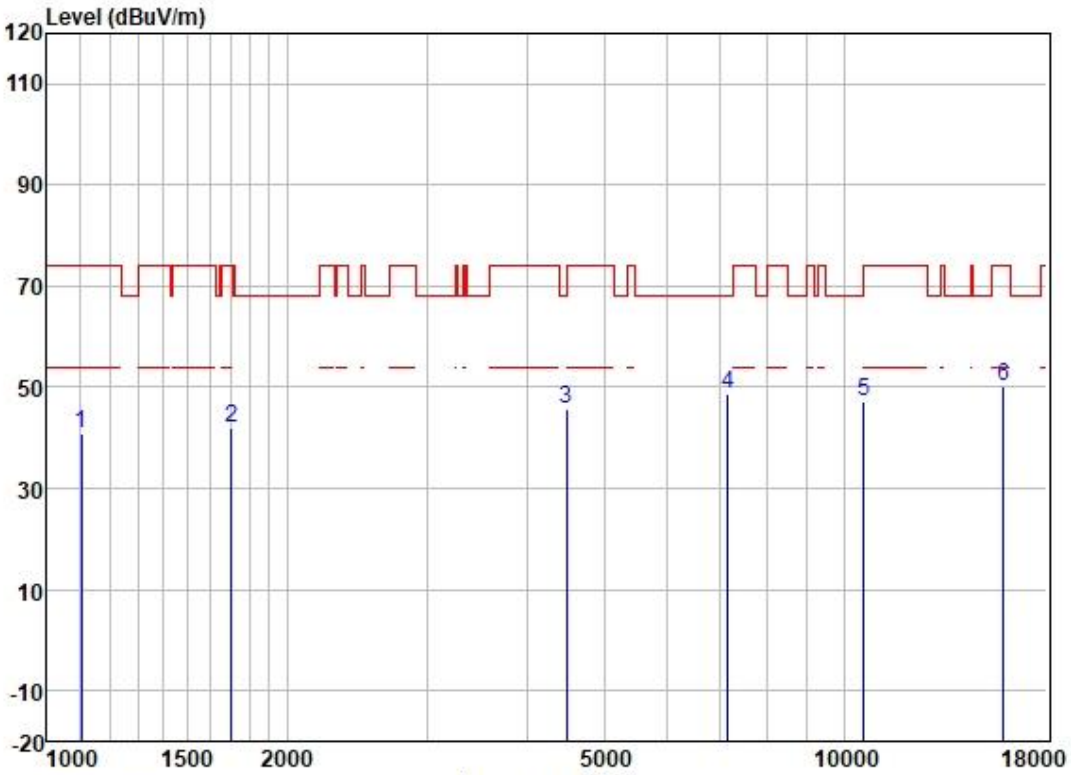
Test Mode: 05; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



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	51.50	25.89	2.58	37.63	42.34	74.00	-31.66	VERTICAL	peak
2	1672.779	50.57	25.30	3.21	37.34	41.74	74.00	-32.26	VERTICAL	peak
3	3969.767	46.40	31.05	5.18	36.61	46.02	74.00	-27.98	VERTICAL	peak
4	7158.806	41.63	36.61	6.37	36.76	47.85	68.20	-20.35	VERTICAL	peak
5	10580.000	39.27	38.85	6.39	37.12	47.39	68.20	-20.81	VERTICAL	peak
6	15870.000	40.35	38.73	7.70	36.35	50.43	74.00	-23.57	VERTICAL	peak

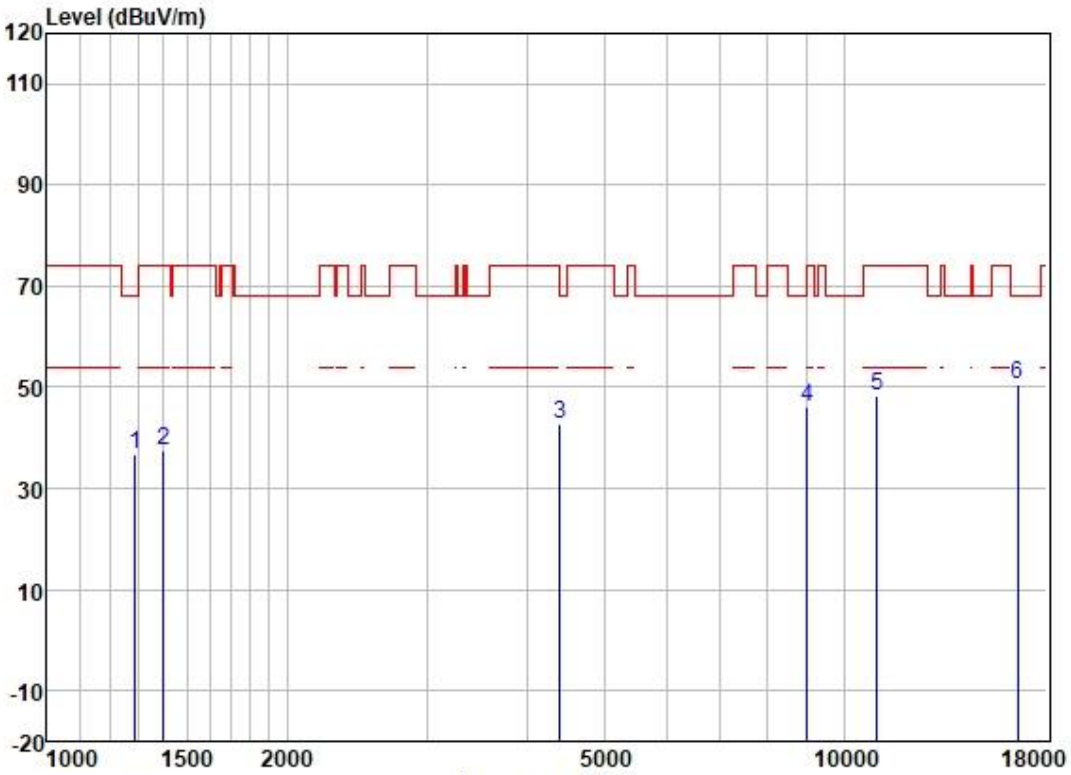
Test Mode: 05; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



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	1103.264	50.44	25.52	2.50	37.67	40.79	74.00	-33.21	HORIZONTAL	peak
2	1702.042	50.49	25.25	3.36	37.31	41.79	74.00	-32.21	HORIZONTAL	peak
3	4482.150	45.38	31.77	5.34	36.62	45.87	68.20	-22.33	HORIZONTAL	peak
4	7158.806	42.33	36.61	6.37	36.76	48.55	68.20	-19.65	HORIZONTAL	peak
5	10580.000	39.01	38.85	6.39	37.12	47.13	68.20	-21.07	HORIZONTAL	peak
6	15870.000	40.27	38.73	7.70	36.35	50.35	74.00	-23.65	HORIZONTAL	peak

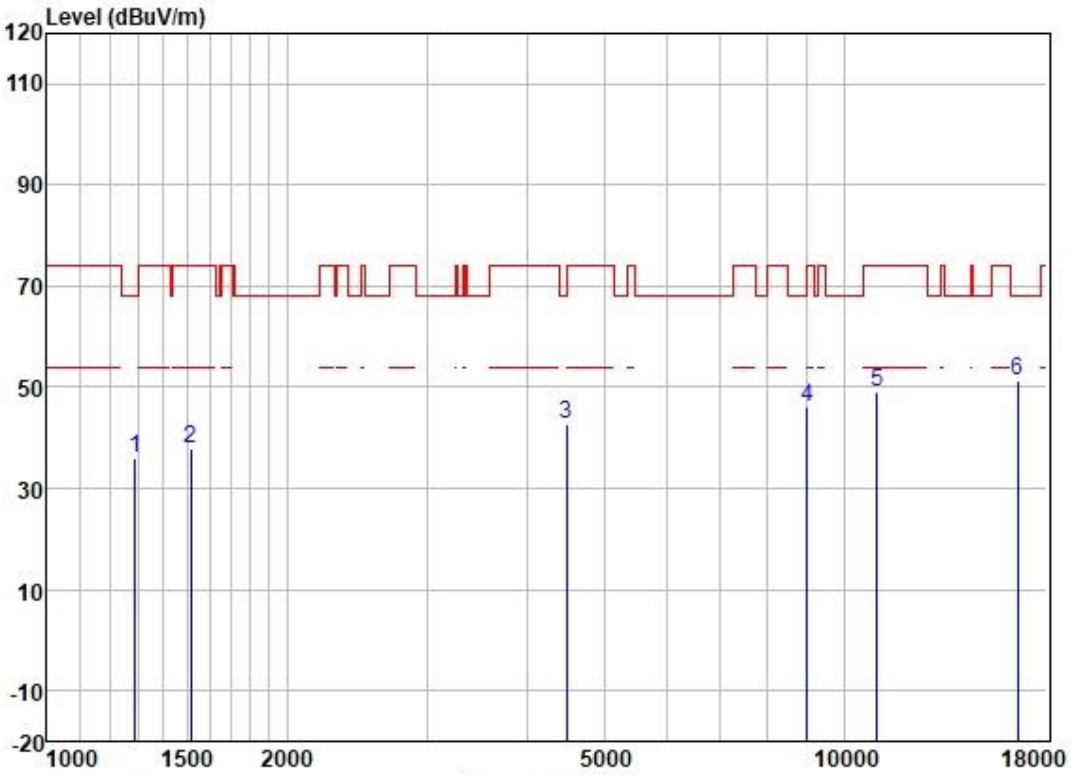
Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1289.627	47.49	25.17	2.55	38.31	36.90	68.20	-31.30	VERTICAL	peak
2	1398.336	47.62	25.39	2.60	38.22	37.39	74.00	-36.61	VERTICAL	peak
3	4405.090	44.15	30.68	4.70	36.81	42.72	68.20	-25.48	VERTICAL	peak
4	8995.123	38.60	37.40	7.56	37.50	46.06	68.20	-22.14	VERTICAL	peak
5	11000.000	37.78	40.10	7.71	37.25	48.34	74.00	-25.66	VERTICAL	peak
6	16500.000	36.76	39.60	9.44	35.38	50.42	68.20	-17.78	VERTICAL	peak

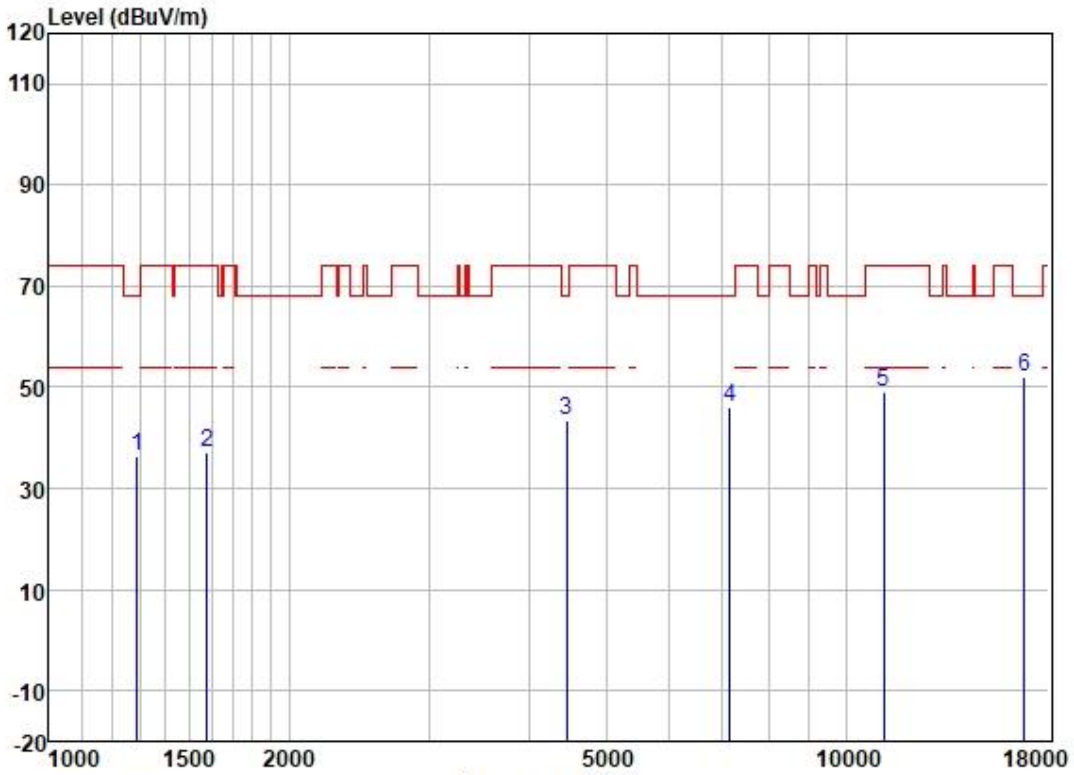
Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1289.627	46.56	25.17	2.55	38.31	35.97	68.20	-32.23	HORIZONTAL	peak
2	1516.210	47.65	25.51	2.80	38.07	37.89	74.00	-36.11	HORIZONTAL	peak
3	4482.150	43.74	30.78	4.99	36.81	42.70	68.20	-25.50	HORIZONTAL	peak
4	8995.123	38.50	37.40	7.56	37.50	45.96	68.20	-22.24	HORIZONTAL	peak
5	11000.000	38.41	40.10	7.71	37.25	48.97	74.00	-25.03	HORIZONTAL	peak
6	16500.000	37.53	39.60	9.44	35.38	51.19	68.20	-17.01	HORIZONTAL	peak

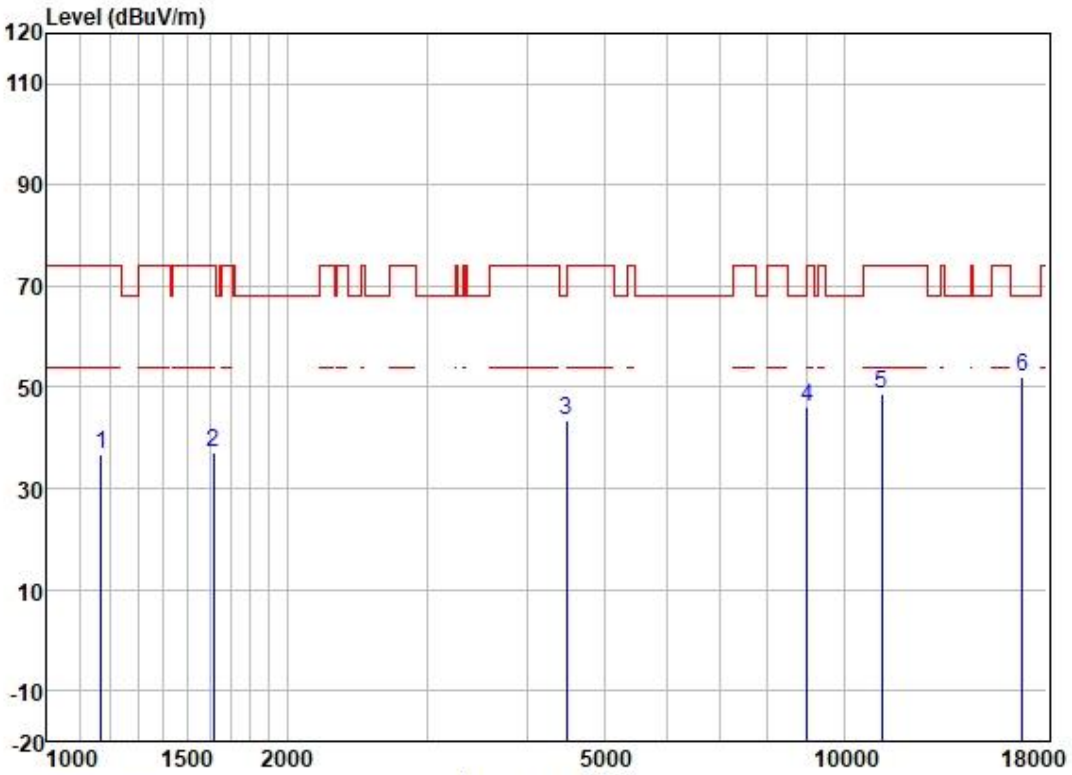
Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



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	1289.627	47.13	25.17	2.55	38.31	36.54	68.20	-31.66	VERTICAL	peak
2	1578.822	46.94	25.56	2.80	38.00	37.30	74.00	-36.70	VERTICAL	peak
3	4456.315	44.50	30.75	4.88	36.81	43.32	68.20	-24.88	VERTICAL	peak
4	7158.806	41.91	35.40	5.94	37.35	45.90	68.20	-22.30	VERTICAL	peak
5	11160.000	38.16	40.04	7.90	37.21	48.89	74.00	-25.11	VERTICAL	peak
6	16740.000	37.53	40.49	9.41	35.37	52.06	68.20	-16.14	VERTICAL	peak

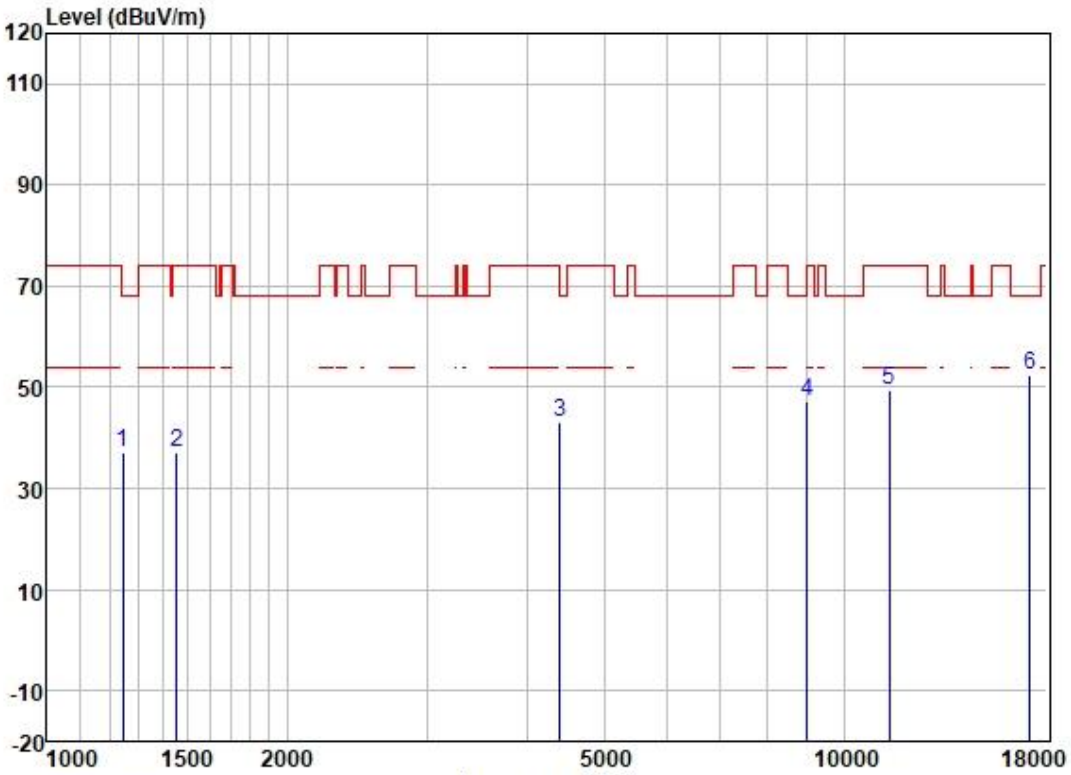
Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



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	1168.920	48.23	24.55	2.39	38.40	36.77	74.00	-37.23	HORIZONTAL	peak
2	1615.754	46.68	25.60	2.80	37.95	37.13	74.00	-36.87	HORIZONTAL	peak
3	4482.150	44.61	30.78	4.99	36.81	43.57	68.20	-24.63	HORIZONTAL	peak
4	8995.123	38.71	37.40	7.56	37.50	46.17	68.20	-22.03	HORIZONTAL	peak
5	11160.000	37.95	40.04	7.90	37.21	48.68	74.00	-25.32	HORIZONTAL	peak
6	16740.000	37.39	40.49	9.41	35.37	51.92	68.20	-16.28	HORIZONTAL	peak

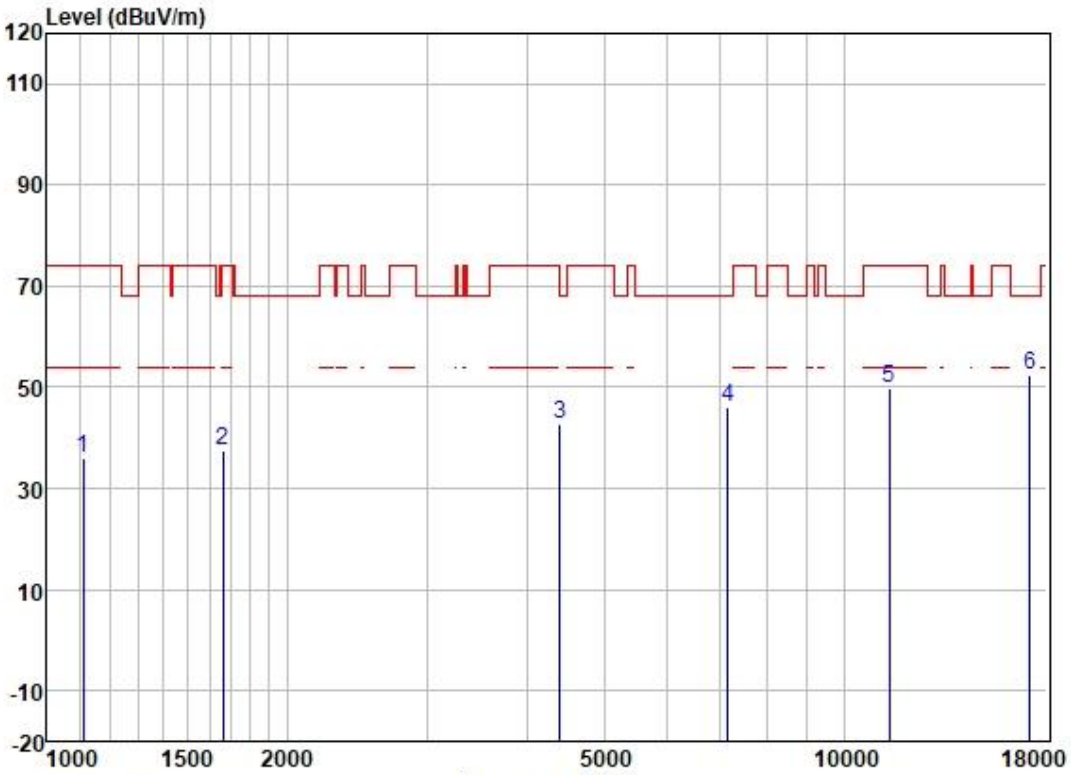
Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



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	1245.663	48.25	25.00	2.33	38.35	37.23	68.20	-30.97	VERTICAL	peak
2	1456.081	47.15	25.46	2.72	38.17	37.16	74.00	-36.84	VERTICAL	peak
3	4405.090	44.67	30.68	4.70	36.81	43.24	68.20	-24.96	VERTICAL	peak
4	8995.123	39.59	37.40	7.56	37.50	47.05	68.20	-21.15	VERTICAL	peak
5	11400.000	38.21	39.94	8.28	37.16	49.27	74.00	-24.73	VERTICAL	peak
6	17100.000	35.79	42.32	9.63	35.34	52.40	68.20	-15.80	VERTICAL	peak

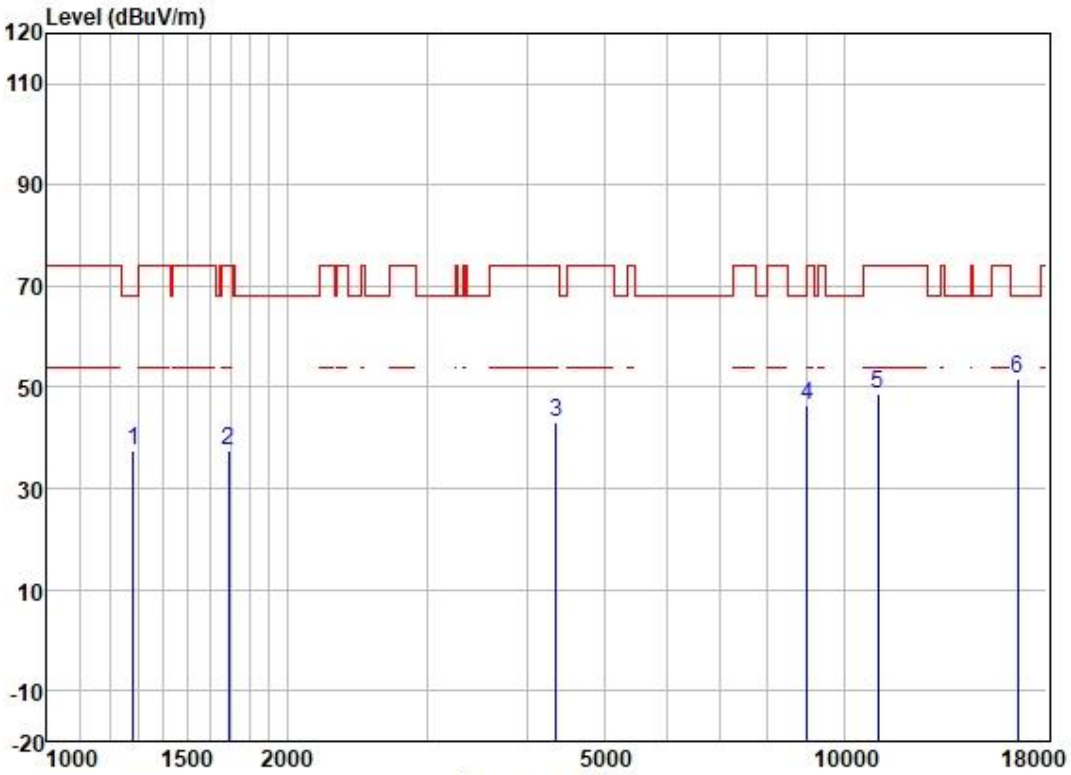
Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



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	1109.660	47.68	24.39	2.27	38.45	35.89	74.00	-38.11	HORIZONTAL	peak
2	1663.137	46.97	25.65	2.80	37.91	37.51	74.00	-36.49	HORIZONTAL	peak
3	4405.090	44.33	30.68	4.70	36.81	42.90	68.20	-25.30	HORIZONTAL	peak
4	7158.806	42.13	35.40	5.94	37.35	46.12	68.20	-22.08	HORIZONTAL	peak
5	11400.000	38.66	39.94	8.28	37.16	49.72	74.00	-24.28	HORIZONTAL	peak
6	17100.000	35.92	42.32	9.63	35.34	52.53	68.20	-15.67	HORIZONTAL	peak

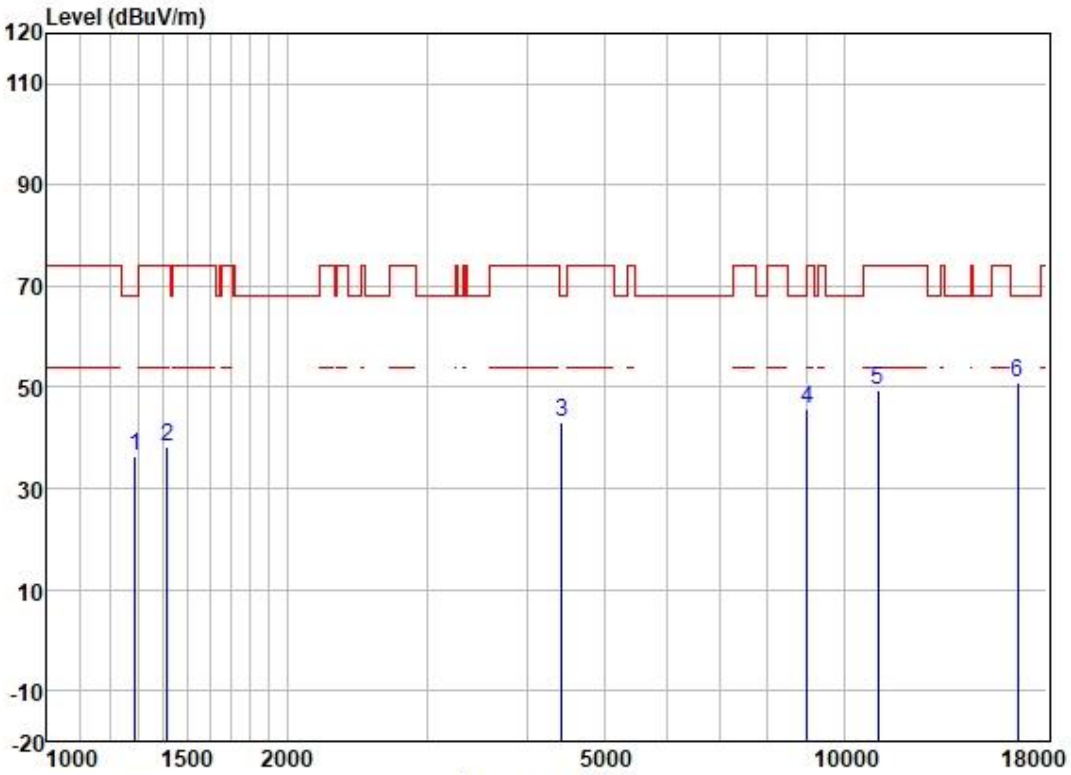
Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



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	48.05	25.15	2.52	38.33	37.39	68.20	-30.81	VERTICAL	peak
2	1692.231	46.90	25.70	2.80	37.89	37.51	74.00	-36.49	VERTICAL	peak
3	4354.454	44.62	30.59	4.68	36.81	43.08	74.00	-30.92	VERTICAL	peak
4	8995.123	38.83	37.40	7.56	37.50	46.29	68.20	-21.91	VERTICAL	peak
5	11020.000	38.15	40.10	7.71	37.24	48.72	74.00	-25.28	VERTICAL	peak
6	16530.000	37.85	39.76	9.44	35.38	51.67	68.20	-16.53	VERTICAL	peak

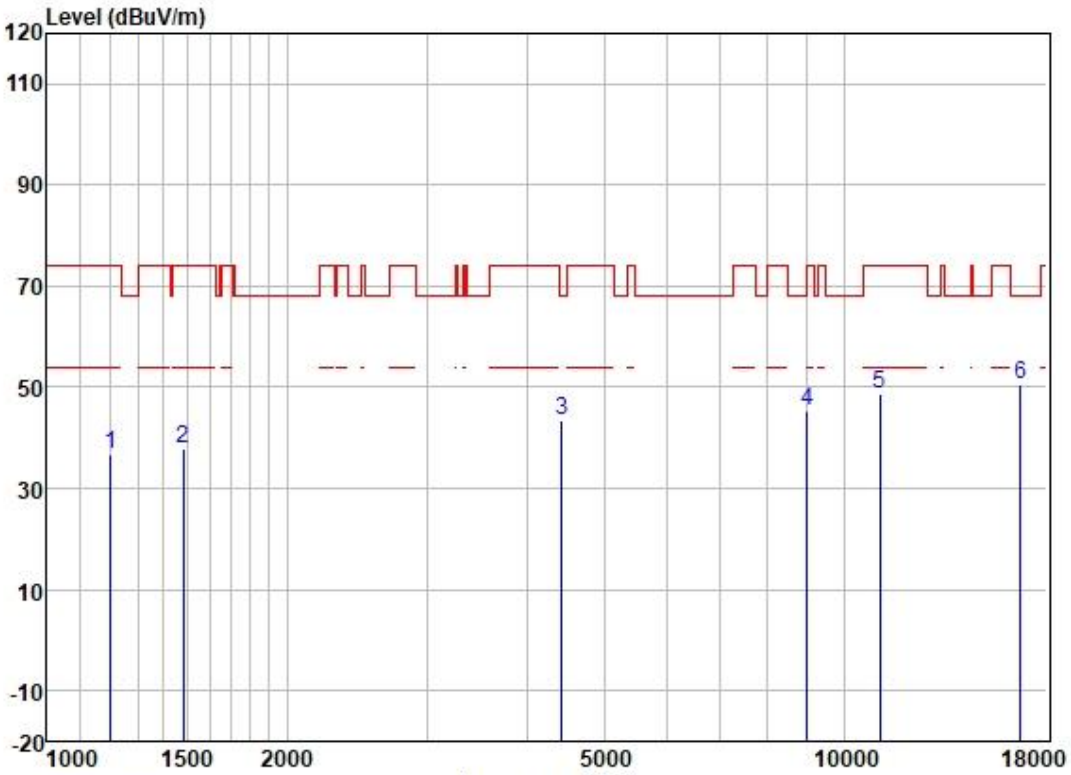
Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



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	1289.627	46.88	25.17	2.55	38.31	36.29	68.20	-31.91	HORIZONTAL	peak
2	1414.597	48.30	25.41	2.63	38.20	38.14	74.00	-35.86	HORIZONTAL	peak
3	4430.628	44.43	30.72	4.78	36.81	43.12	68.20	-25.08	HORIZONTAL	peak
4	8995.123	38.27	37.40	7.56	37.50	45.73	68.20	-22.47	HORIZONTAL	peak
5	11020.000	38.95	40.10	7.71	37.24	49.52	74.00	-24.48	HORIZONTAL	peak
6	16530.000	37.09	39.76	9.44	35.38	50.91	68.20	-17.29	HORIZONTAL	peak

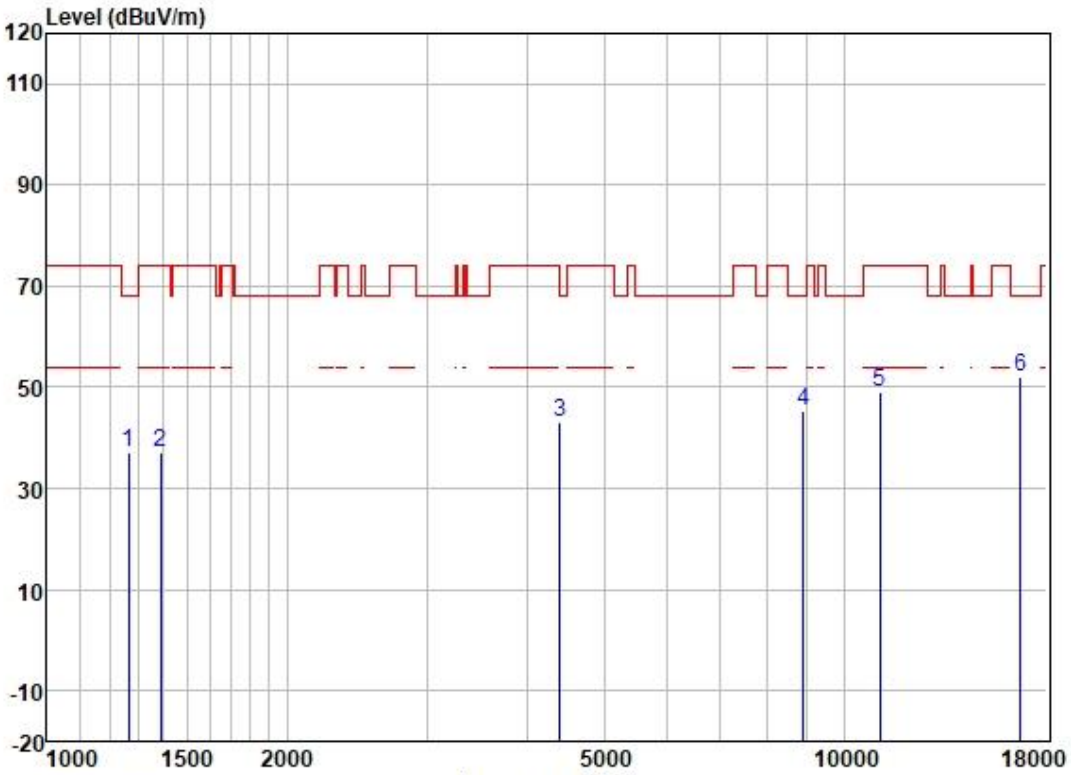
Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



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	1203.199	48.02	24.70	2.34	38.39	36.67	74.00	-37.33	VERTICAL	peak
2	1481.553	47.61	25.48	2.77	38.13	37.73	74.00	-36.27	VERTICAL	peak
3	4430.628	44.72	30.72	4.78	36.81	43.41	68.20	-24.79	VERTICAL	peak
4	8995.123	37.96	37.40	7.56	37.50	45.42	68.20	-22.78	VERTICAL	peak
5	11100.000	38.14	40.07	7.82	37.22	48.81	74.00	-25.19	VERTICAL	peak
6	16650.000	36.41	40.10	9.43	35.38	50.56	68.20	-17.64	VERTICAL	peak

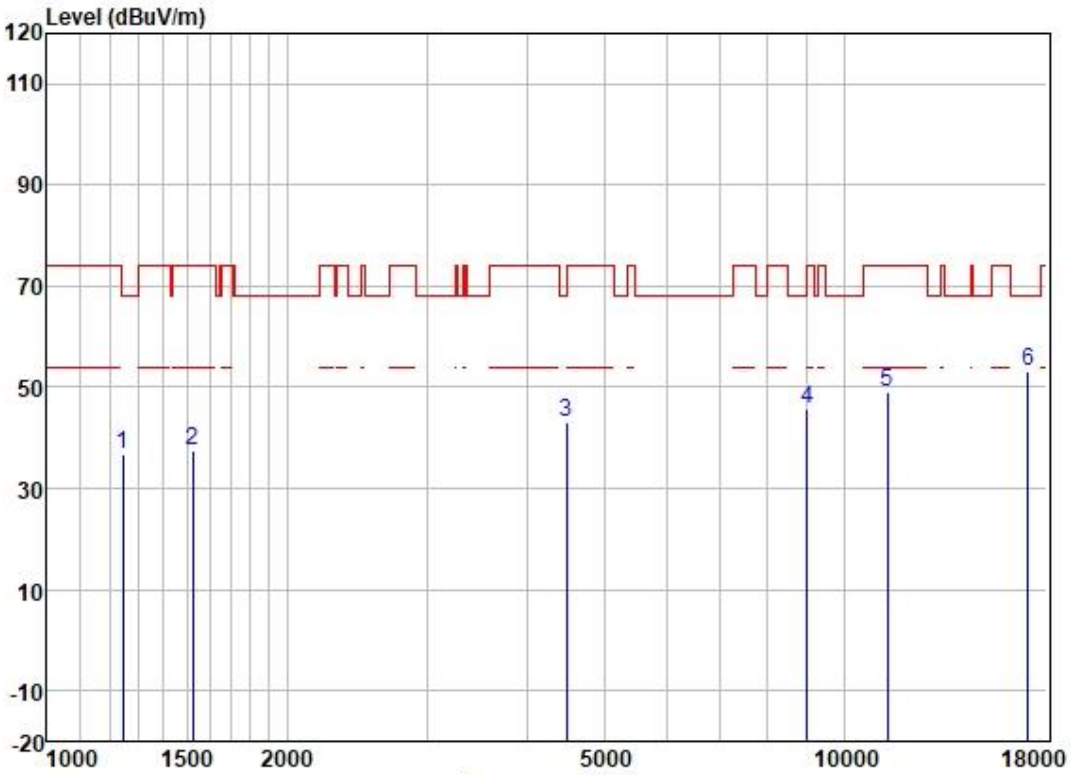
Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



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	1267.454	48.07	25.10	2.44	38.33	37.28	68.20	-30.92	HORIZONTAL	peak
2	1390.276	47.38	25.38	2.60	38.22	37.14	74.00	-36.86	HORIZONTAL	peak
3	4405.090	44.37	30.68	4.70	36.81	42.94	68.20	-25.26	HORIZONTAL	peak
4	8891.725	38.05	37.37	7.42	37.52	45.32	68.20	-22.88	HORIZONTAL	peak
5	11100.000	38.33	40.07	7.82	37.22	49.00	74.00	-25.00	HORIZONTAL	peak
6	16650.000	37.74	40.10	9.43	35.38	51.89	68.20	-16.31	HORIZONTAL	peak

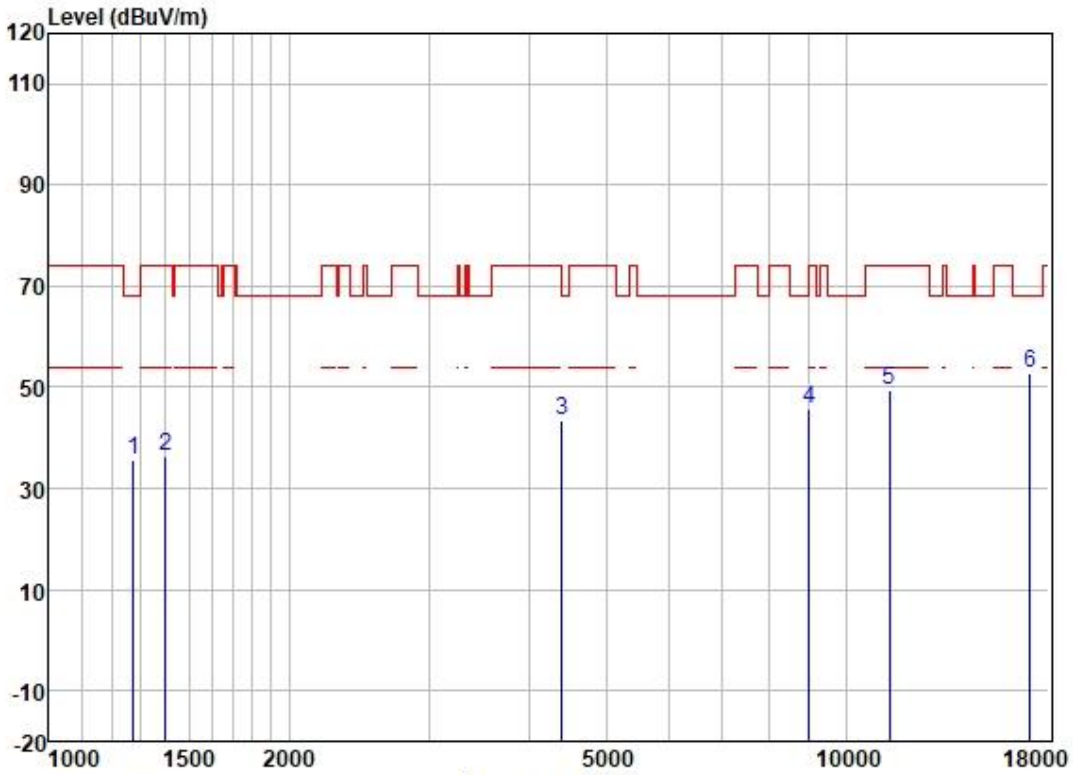
Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



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	1245.663	47.76	25.00	2.33	38.35	36.74	68.20	-31.46	VERTICAL	peak
2	1525.000	47.26	25.52	2.80	38.07	37.51	74.00	-36.49	VERTICAL	peak
3	4482.150	43.98	30.78	4.99	36.81	42.94	68.20	-25.26	VERTICAL	peak
4	8995.123	38.23	37.40	7.56	37.50	45.69	68.20	-22.51	VERTICAL	peak
5	11340.000	37.93	39.97	8.18	37.17	48.91	74.00	-25.09	VERTICAL	peak
6	17010.000	37.44	41.75	9.39	35.35	53.23	68.20	-14.97	VERTICAL	peak

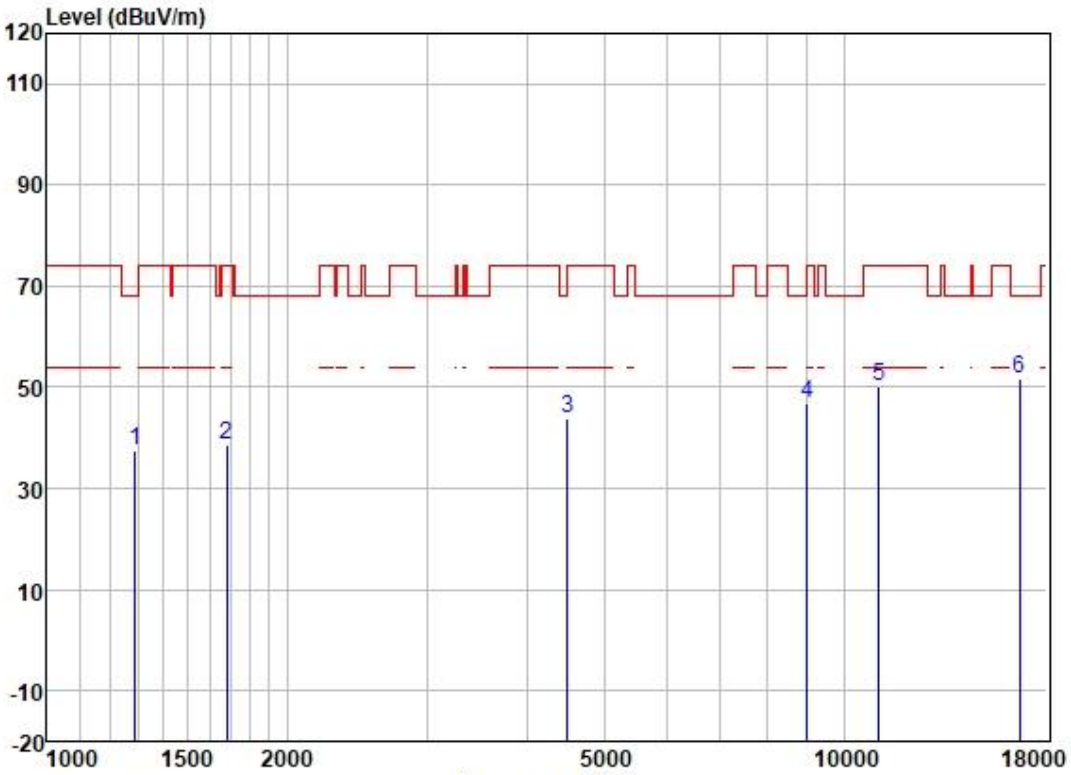
Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



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	1274.802	46.50	25.12	2.48	38.33	35.77	68.20	-32.43	HORIZONTAL	peak
2	1398.336	46.61	25.39	2.60	38.22	36.38	74.00	-37.62	HORIZONTAL	peak
3	4405.090	45.06	30.68	4.70	36.81	43.63	68.20	-24.57	HORIZONTAL	peak
4	8995.123	38.17	37.40	7.56	37.50	45.63	68.20	-22.57	HORIZONTAL	peak
5	11340.000	38.41	39.97	8.18	37.17	49.39	74.00	-24.61	HORIZONTAL	peak
6	17010.000	36.85	41.75	9.39	35.35	52.64	68.20	-15.56	HORIZONTAL	peak

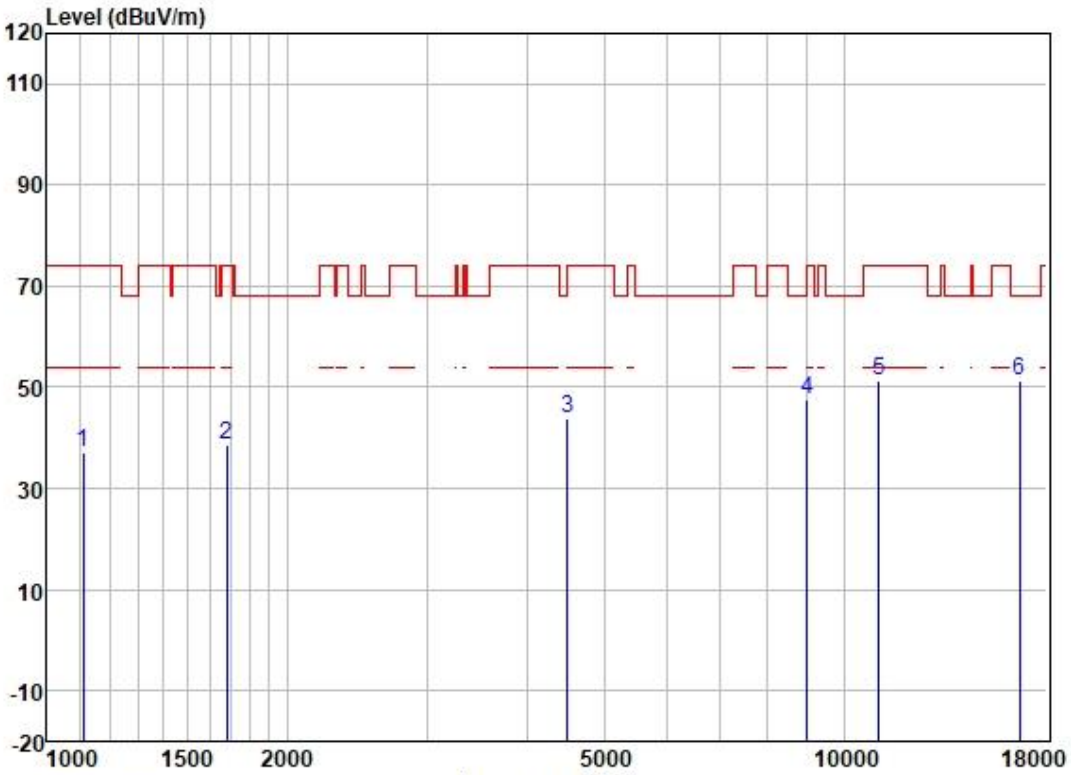
Test Mode: 06; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



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	1289.627	47.81	25.17	2.55	38.04	37.49	68.20	-30.71	VERTICAL	peak
2	1682.477	47.53	25.68	2.80	37.48	38.53	74.00	-35.47	VERTICAL	peak
3	4495.125	44.49	30.80	5.05	36.60	43.74	68.20	-24.46	VERTICAL	peak
4	8995.123	38.92	37.40	7.56	37.05	46.83	68.20	-21.37	VERTICAL	peak
5	11060.000	38.82	40.09	7.74	36.63	50.02	74.00	-23.98	VERTICAL	peak
6	16590.000	38.41	39.93	9.43	36.22	51.55	68.20	-16.65	VERTICAL	peak

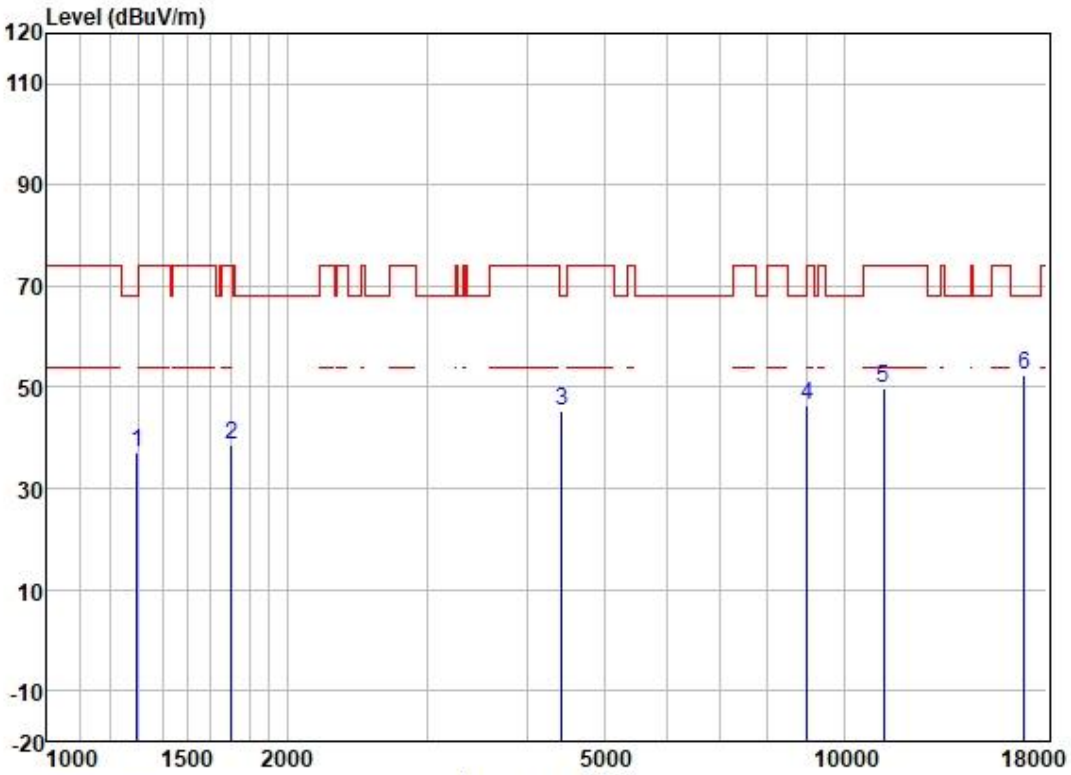
Test Mode: 06; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



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	1109.660	48.60	24.39	2.27	38.23	37.03	74.00	-36.97	HORIZONTAL	peak
2	1682.477	47.54	25.68	2.80	37.48	38.54	74.00	-35.46	HORIZONTAL	peak
3	4495.125	44.72	30.80	5.05	36.60	43.97	68.20	-24.23	HORIZONTAL	peak
4	8995.123	39.62	37.40	7.56	37.05	47.53	68.20	-20.67	HORIZONTAL	peak
5	11060.000	40.20	40.09	7.74	36.63	51.40	74.00	-22.60	HORIZONTAL	peak
6	16590.000	38.04	39.93	9.43	36.22	51.18	68.20	-17.02	HORIZONTAL	peak

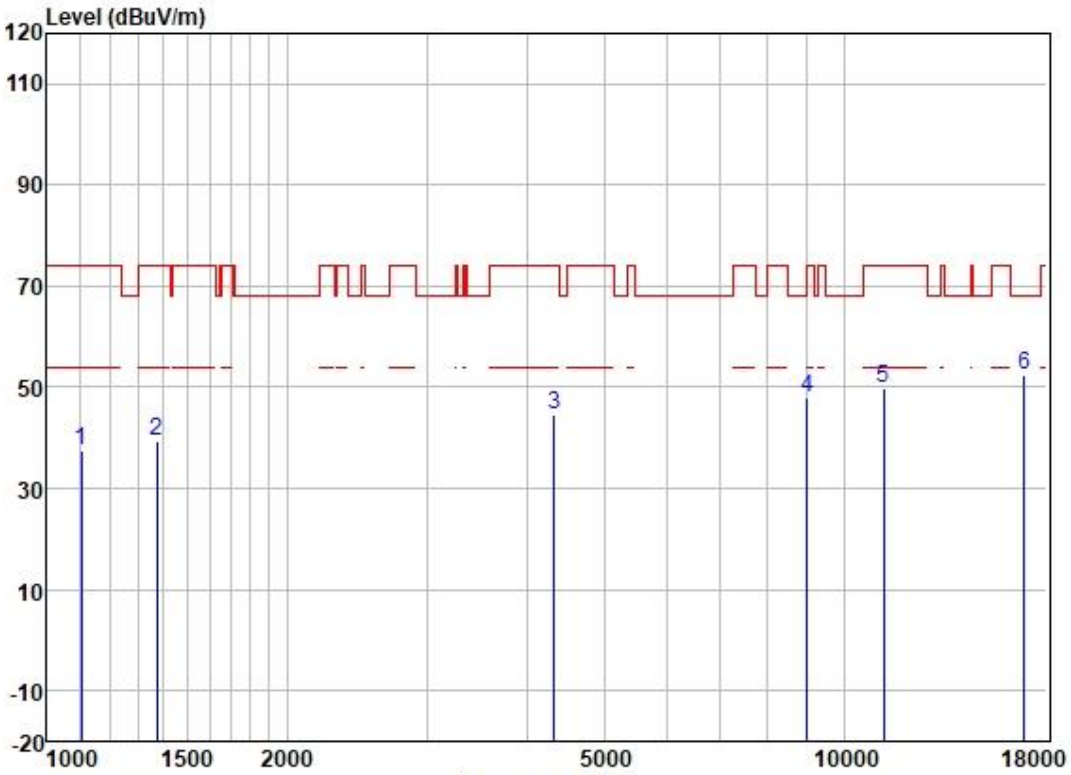
Test Mode: 06; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:High



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	1297.103	47.48	25.19	2.58	38.04	37.21	68.20	-30.99	VERTICAL	peak
2	1702.042	47.42	25.72	2.80	37.46	38.48	74.00	-35.52	VERTICAL	peak
3	4430.628	46.34	30.72	4.78	36.62	45.22	68.20	-22.98	VERTICAL	peak
4	8995.123	38.62	37.40	7.56	37.05	46.53	68.20	-21.67	VERTICAL	peak
5	11220.000	38.31	40.03	7.95	36.59	49.70	74.00	-24.30	VERTICAL	peak
6	16830.000	38.09	40.94	9.40	36.17	52.26	68.20	-15.94	VERTICAL	peak

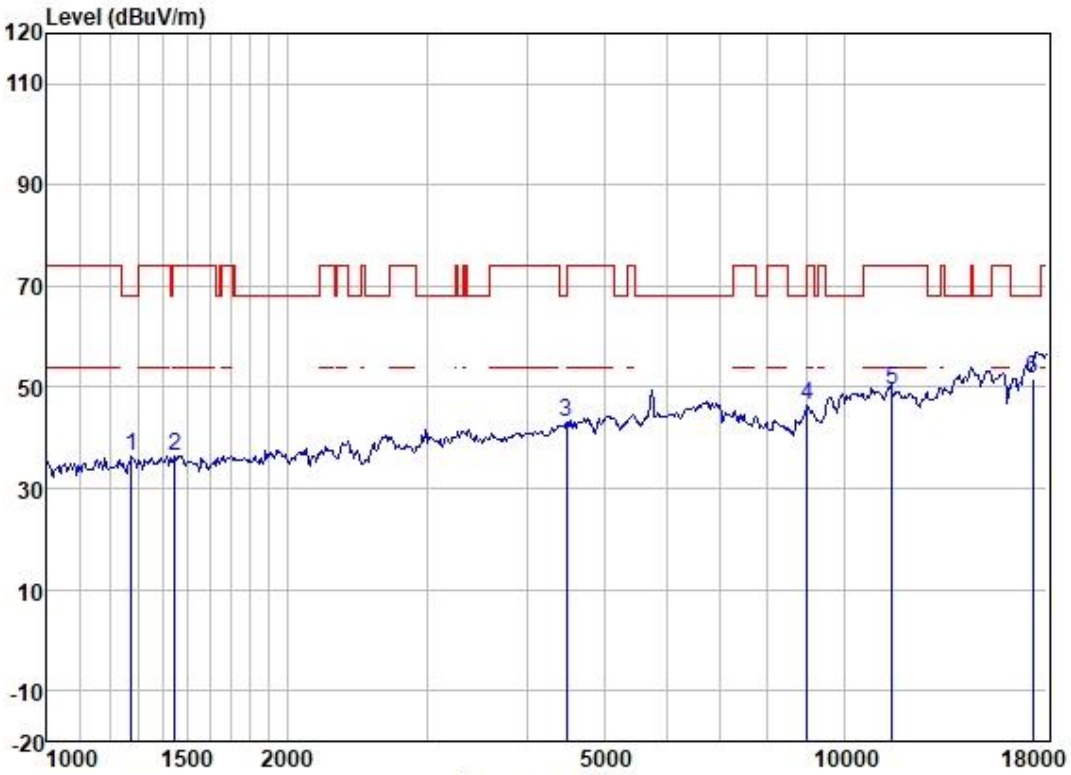
Test Mode: 06; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:High



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	1103.264	48.88	24.37	2.29	38.23	37.31	74.00	-36.69	HORIZONTAL	peak
2	1374.295	49.43	25.35	2.60	37.95	39.43	74.00	-34.57	HORIZONTAL	peak
3	4329.354	46.17	30.54	4.67	36.64	44.74	74.00	-29.26	HORIZONTAL	peak
4	8995.123	40.00	37.40	7.56	37.05	47.91	68.20	-20.29	HORIZONTAL	peak
5	11220.000	38.50	40.03	7.95	36.59	49.89	74.00	-24.11	HORIZONTAL	peak
6	16830.000	38.37	40.94	9.40	36.17	52.54	68.20	-15.66	HORIZONTAL	peak

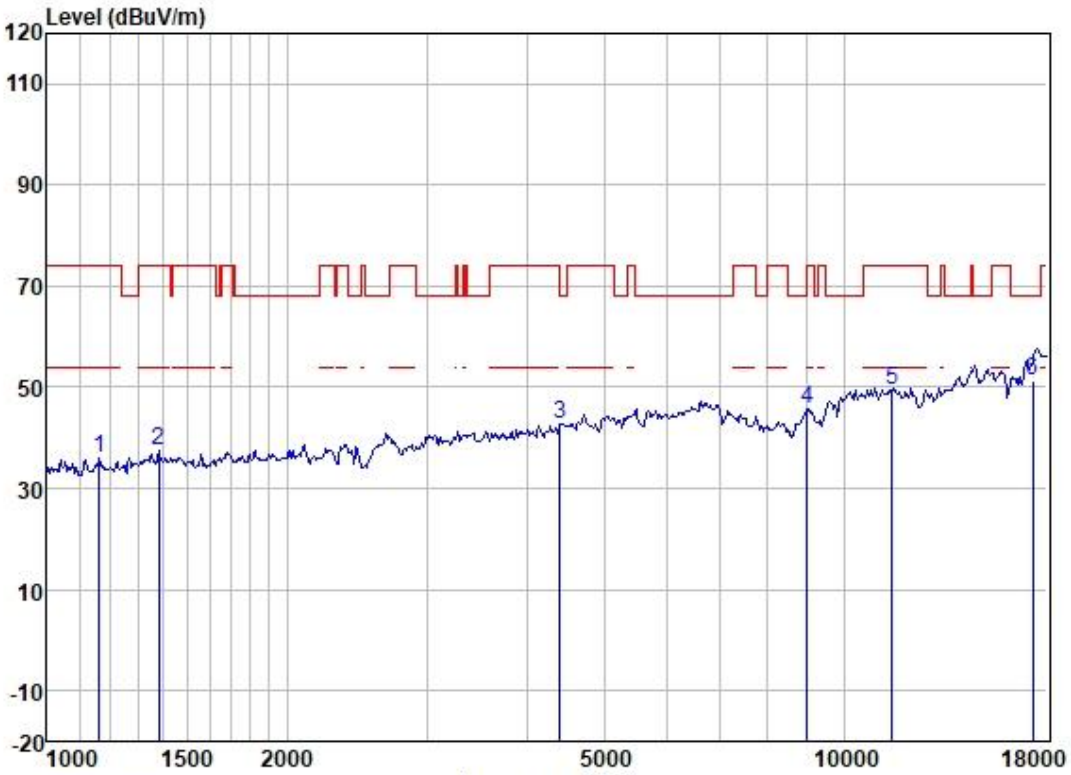
Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1274.802	46.89	25.12	2.48	38.07	36.42	68.20	-31.78	VERTICAL	peak
2	1447.688	46.17	25.45	2.70	37.84	36.48	74.00	-37.52	VERTICAL	peak
3	4482.150	43.78	30.78	4.99	36.61	42.94	68.20	-25.26	VERTICAL	peak
4	8995.123	38.38	37.40	7.56	37.05	46.29	68.20	-21.91	VERTICAL	peak
5	11490.000	37.70	39.90	8.41	36.55	49.46	74.00	-24.54	VERTICAL	peak
6	17235.000	34.64	43.01	10.08	36.02	51.71	68.20	-16.49	VERTICAL	peak

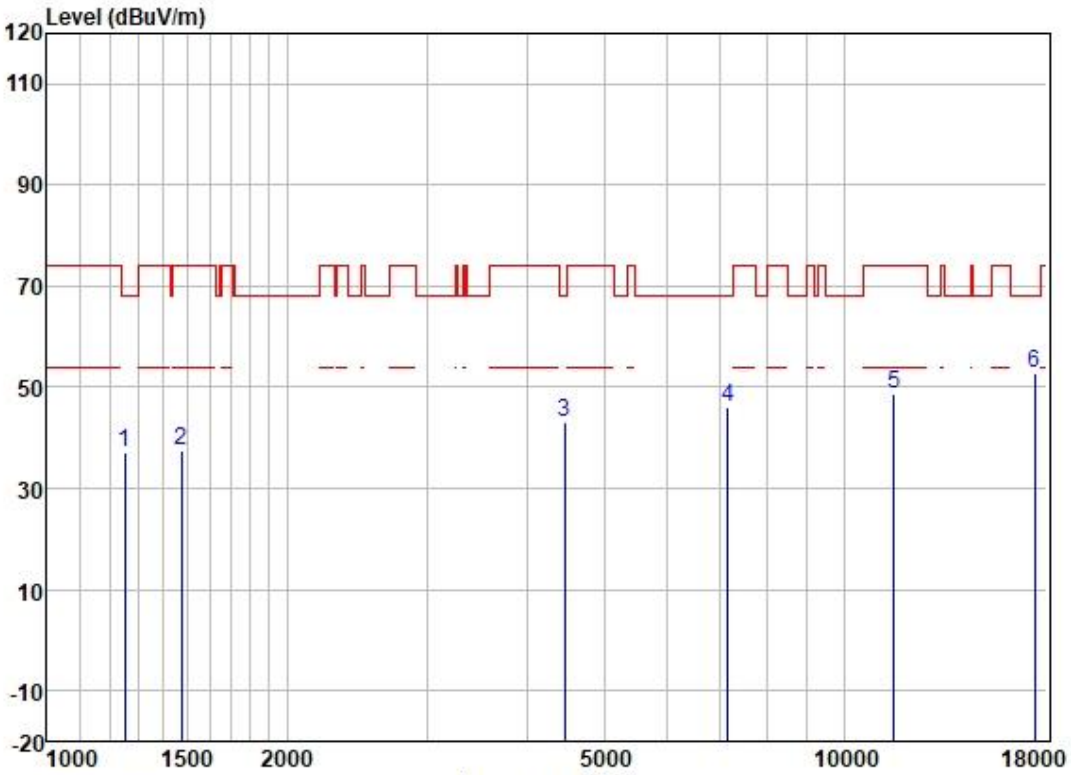
Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



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	1162.182	47.17	24.53	2.40	38.19	35.91	74.00	-38.09	HORIZONTAL	peak
2	1382.262	47.54	25.37	2.60	37.95	37.56	74.00	-36.44	HORIZONTAL	peak
3	4405.090	44.01	30.68	4.70	36.63	42.76	68.20	-25.44	HORIZONTAL	peak
4	8995.123	37.93	37.40	7.56	37.05	45.84	68.20	-22.36	HORIZONTAL	peak
5	11490.000	37.53	39.90	8.41	36.55	49.29	74.00	-24.71	HORIZONTAL	peak
6	17235.000	34.38	43.01	10.08	36.02	51.45	68.20	-16.75	HORIZONTAL	peak

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



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	1252.885	47.95	25.03	2.36	38.35	36.99	68.20	-31.21	VERTICAL	peak
2	1473.013	47.25	25.48	2.76	38.13	37.36	74.00	-36.64	VERTICAL	peak
3	4456.315	44.10	30.75	4.88	36.81	42.92	68.20	-25.28	VERTICAL	peak
4	7158.806	41.99	35.40	5.94	37.35	45.98	68.20	-22.22	VERTICAL	peak
5	11570.000	37.85	39.78	8.38	37.14	48.87	74.00	-25.13	VERTICAL	peak
6	17355.000	34.22	43.40	10.39	35.32	52.69	68.20	-15.51	VERTICAL	peak