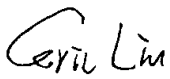
TEST REPORT

Application No.:	KSCR2307001252AT
FCC ID:	2AYGT-C200
Applicant:	IRay Technology Co., Ltd.
Address of Applicant:	11 GUIYANG STREET,YANTAI ECONOMY AND TECHNOLOGY DEVELOPMENT DISTRICT,YANTAI Shandong, P.R.CHINA
Manufacturer:	IRay Technology Co., Ltd.
Address of Manufacturer:	11 GUIYANG STREET,YANTAI ECONOMY AND TECHNOLOGY DEVELOPMENT DISTRICT,YANTAI Shandong, P.R.CHINA
Factory:	IRay Technology Co., Ltd.
Address of Factory:	11 GUIYANG STREET,YANTAI ECONOMY AND TECHNOLOGY DEVELOPMENT DISTRICT,YANTAI Shandong, P.R.CHINA
Equipment Under Test (EUT):	
EUT Name:	C Series Handheld Thermal Imaging Camera
Model No.:	C200 Pro+, CabcXXXXX (a,b,c=0~9,X=A~Z or blank or +) ♣
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	InfiRay
Standard(s) :	47 CFR Part 15, Subpart E 15.407
Date of Receipt:	2023-07-19
Date of Test:	2023-09-13 to 2023-09-19
Date of Issue:	2023-09-26
Test Result:	**Pass***

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

Revision Record			
Version	**Description**	***Date***	***Remark***
00	Original	2023-09-26	/

Authorized for issue by:				
Tested By				
		Eric_Liu/Project Engineer		
Approved By				
		Terry Hou /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	Customer Declaration
Transmission in the Absence of Data		N/A	47 CFR Part 15, Subpart E 15.407 (c)	Customer Declaration

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
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 (Below 1GHz)		KDB 789033 D02 II G	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	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
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

There are series models mentioned in this report, and they are the identical in electrical and electronic characters. Only the model C200 Pro+ was tested since their differences were the model number.

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.6V by Battery Rated voltage: 3.6V Rated capacity: 5000mAh
Operation Frequency/Number of channels (20MHz):	U-NII-1: 5180-5240MHz (4 Channels); U-NII-2A: 5260-5320MHz (4 Channels)
Operation Frequency/Number of channels/(40MHz):	U-NII-1: 5190-5230MHz (2 Channels); U-NII-2A: 5270-5310MHz (2 Channels)
Operation Frequency/Number of channels (80MHz):	U-NII-1: 5210MHz (1 Channel); U-NII-2A: 5290MHz (1 Channels)
Modulation Type:	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/ac 20: 20MHz; 802.11n/ac 40: 40MHz; 802.11ac 80: 80MHz
DFS Function:	Slave without Radar detection
TPC Function:	Without TPC function
Antenna Type:	FPC Antenna
Antenna Gain:	2.5dBi (Provided by the manufacturer)

4.2 Power level setting using in test:

Channel	802.11a	802.11n(HT20)	802.11ac(VHT20)
	Ant 1	Ant 1	Ant 1
36	56	55	54
40	54	54	53
48	54	52	53
52	53	52	52
60	53	52	52
64	52	52	52

Channel	802.11n(HT40)	802.11ac(VHT40)
	Ant 1	Ant 1
38	52	52
46	52	52
54	50	52
62	50	50

Channel	802.11ac(VHT80)
	Ant 1
42	50
58	50

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	LENOVO	K27	EB24537645
AC Adapter	HONOTO	/	/

4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%
Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

4.5 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

4.6 Test Facility

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

• A2LA

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

• FCC

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

• ISED

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

• VCCI

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

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals (150kHz-30MHz)						
1	EMI Test Receive	R&S	ESCI	KS301101	02/03/2023	02/02/2024
2	LISN	R&S	ENV216	KS301197	01/17/2023	01/16/2024
3	LISN	Schwarzbeck	NNLK 8129	KS301091	01/17/2023	01/16/2024
4	Pulse Limiter	R&S	ESH3-Z2	KUS1902E001	01/17/2023	01/16/2024
5	CE test Cable	Thermax	/	CZ301102	01/17/2023	01/16/2024
6	Test Software	ESE	E3	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/24/2023	08/23/2024
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/24/2023	08/23/2024
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	02/03/2023	02/02/2024
4	Signal Generator	R&S	SMBV100B	KSEM032	03/16/2023	03/15/2024
5	Signal Generator	R&S	SMW200A	KSEM020-1	08/24/2023	08/23/2024
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/24/2023	08/23/2024
7	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/24/2023	08/23/2024
8	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/16/2023	03/15/2024
9	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/24/2023	08/23/2024
10	Switcher	CCSRF	FY562	KUS2001M001-3	08/24/2023	08/23/2024
11	AC Power Source	EXTECH	6605	KS301178	N.C.R	N.C.R
12	DC Power Supply	Aglient	E3632A	KS301180	N.C.R	N.C.R
13	Conducted Test Cable	Thermax	RF01-RF04	CZ301111-CZ301120	02/03/2023	02/02/2024
14	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/24/2023	08/23/2024
15	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	03/22/2023	03/21/2024
16	Software	BST	TST-PASS	/	N/A	N/A
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/24/2023	08/23/2024
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	03/16/2023	03/15/2024
3	Signal Generator	Agilent	E8257C	KS301066	08/24/2023	08/23/2024
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	03/18/2023	03/17/2025
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2023	06/28/2025
6	Bilog Antenna	SCHWARZBECK	VULB9160	CZ301016	04/13/2021	04/12/2024
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	08/24/2023	08/23/2024
8	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	KS301186	02/21/2023	02/20/2024
9	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	02/26/2023	02/25/2024
10	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/17/2023	01/16/2024
11	Amplifier(18~40GHz)	COM-POWER	PAM-840A	KUS1710E001	01/21/2023	01/20/2024
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	08/24/2023	08/23/2024

13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	03/22/2023	03/21/2024
14	Software	ESE	E3	/	N/A	N/A

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:

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

EUT Antenna:

The antenna is FPC Antenna and no consideration of replacement. The best case gain of the antenna is 2.5dBi.

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

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.		

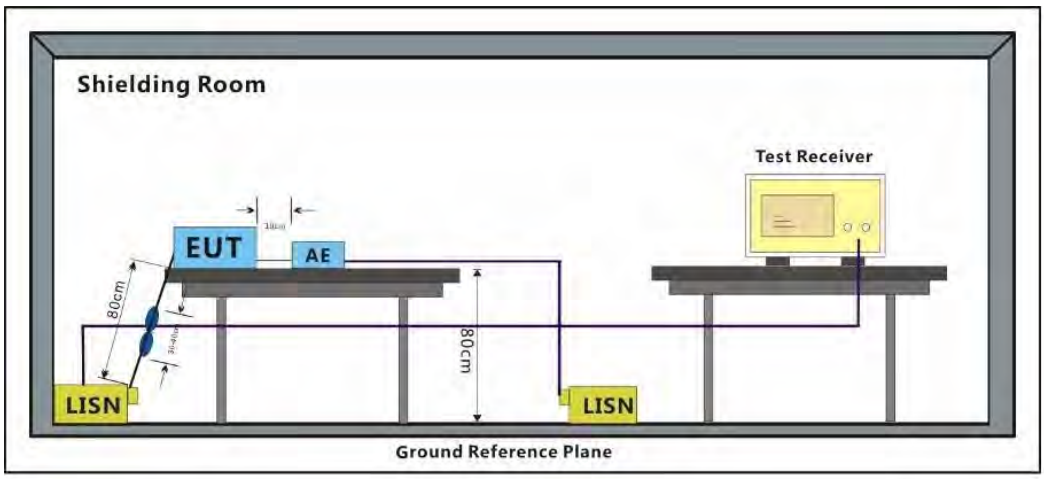
7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 24.9 °C Humidity: 48.6 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Pre-scan	01	TX mode charging (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/ac 20/40/80, 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.

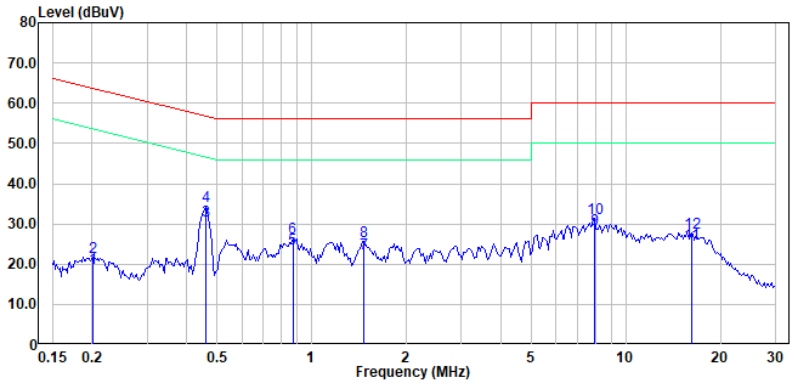
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

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: 00; Line: Live line

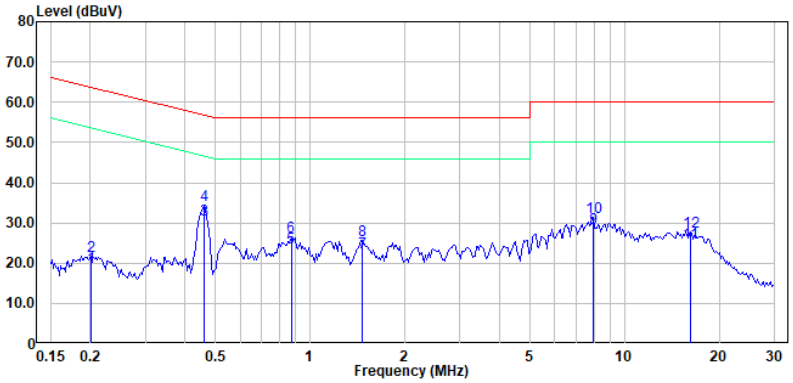


Antenna Polarity :Neutral

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	0.20	9.32	9.55	0.00	0.00	18.87	53.54	-34.67	Average
2	0.20	12.17	9.55	0.00	0.00	21.72	63.54	-41.82	QP
3	0.46	21.30	9.57	0.00	0.00	30.87	46.67	-15.80	Average
4	0.46	24.93	9.57	0.00	0.00	34.50	56.67	-22.17	QP
5	0.87	14.18	9.58	0.00	0.00	23.76	46.00	-22.24	Average
6	0.87	16.84	9.58	0.00	0.00	26.42	56.00	-29.58	QP
7	1.46	13.09	9.58	0.00	0.00	22.67	46.00	-23.33	Average
8	1.46	16.03	9.58	0.00	0.00	25.61	56.00	-30.39	QP
9	7.98	19.03	9.73	0.00	0.00	28.76	50.00	-21.24	Average
10	7.98	21.65	9.73	0.00	0.00	31.38	60.00	-28.62	QP
11	16.23	15.18	9.80	0.00	0.00	24.98	50.00	-25.02	Average
12	16.23	17.93	9.80	0.00	0.00	27.73	60.00	-32.27	QP

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Line: Neutral



Antenna Polarity :Neutral

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	0.20	9.32	9.55	0.00	0.00	18.87	53.54	-34.67	Average
2	0.20	12.17	9.55	0.00	0.00	21.72	63.54	-41.82	QP
3	0.46	21.30	9.57	0.00	0.00	30.87	46.67	-15.80	Average
4	0.46	24.93	9.57	0.00	0.00	34.50	56.67	-22.17	QP
5	0.87	14.18	9.58	0.00	0.00	23.76	46.00	-22.24	Average
6	0.87	16.84	9.58	0.00	0.00	26.42	56.00	-29.58	QP
7	1.46	13.09	9.58	0.00	0.00	22.67	46.00	-23.33	Average
8	1.46	16.03	9.58	0.00	0.00	25.61	56.00	-30.39	QP
9	7.98	19.03	9.73	0.00	0.00	28.76	50.00	-21.24	Average
10	7.98	21.65	9.73	0.00	0.00	31.38	60.00	-28.62	QP
11	16.23	15.18	9.80	0.00	0.00	24.98	50.00	-25.02	Average
12	16.23	17.93	9.80	0.00	0.00	27.73	60.00	-32.27	QP

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

7.2 Duty Cycle

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

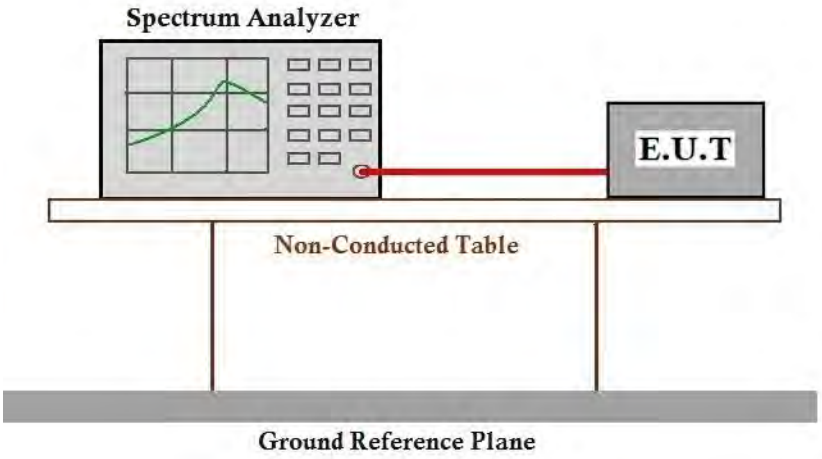
7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 24.9 °C Humidity: 48.5 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, 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

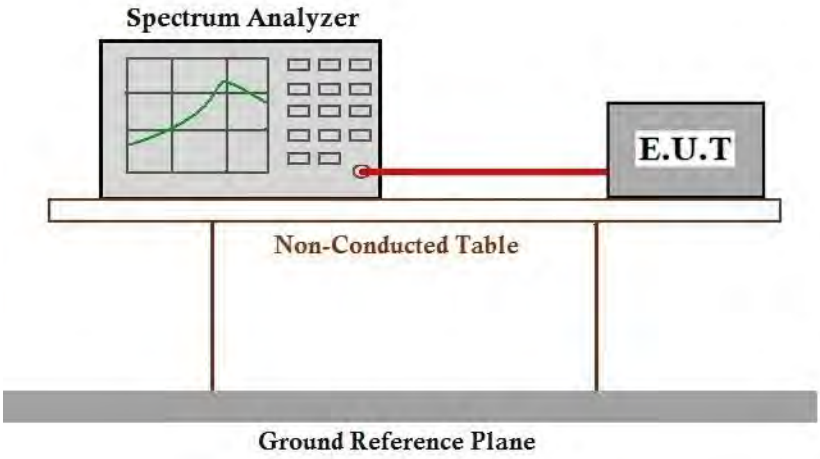
7.3.1 E.U.T. Operation

Operating Environment:
Temperature: 24.9 °C Humidity: 48.4 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, 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

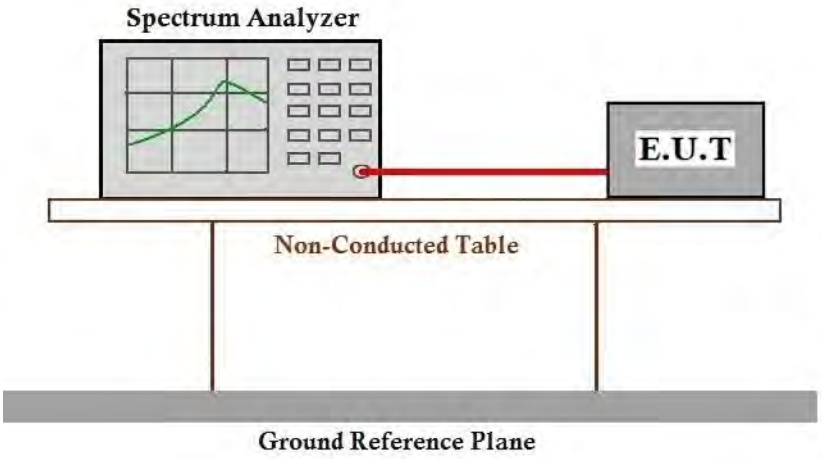
7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 24.9 °C Humidity: 48.4 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, 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 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) or 11dBm+10logB*
5470-5725	≤250mW(24dBm) 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.

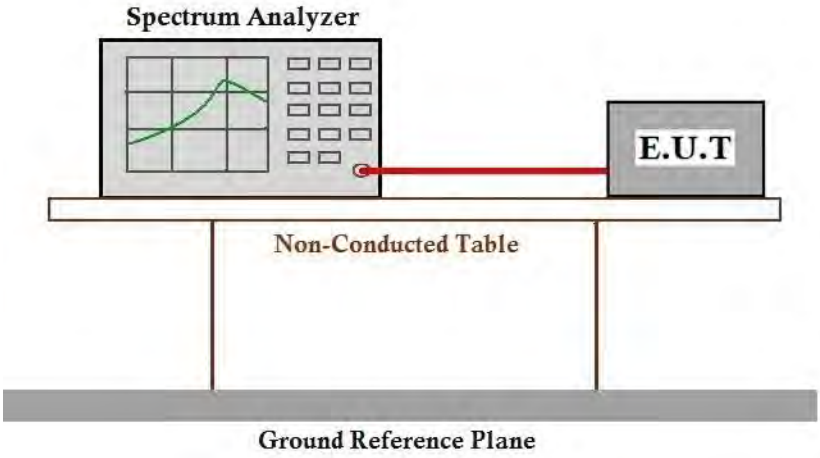
7.5.1 E.U.T. Operation

Operating Environment:
Temperature: 24.9 °C Humidity: 48.4 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



7.5.4 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

7.6 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.

7.6.1 E.U.T. Operation

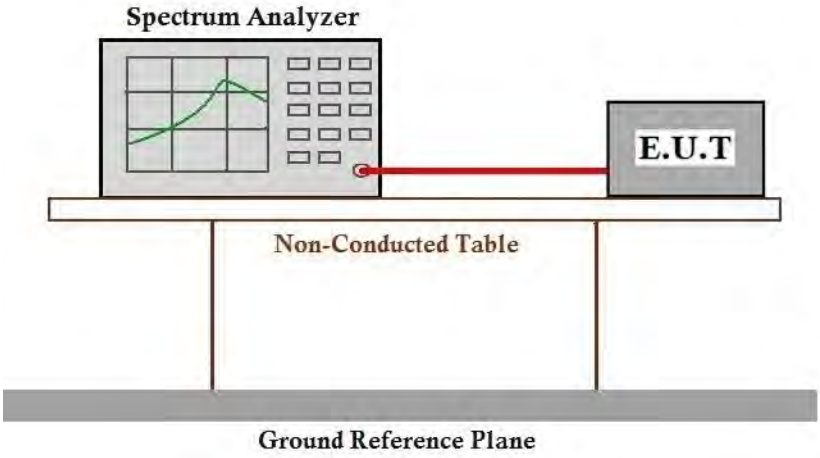
Operating Environment:

Temperature: 24.9 °C Humidity: 48.4 % RH Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.7 Radiated Emissions (Below 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: KDB 789033 D02 II G

Limit:

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

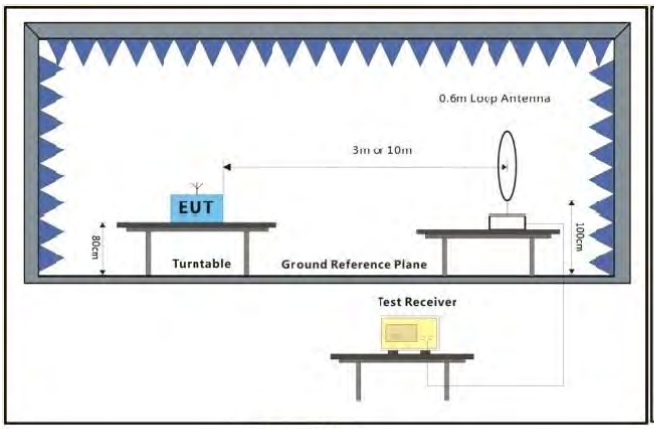
7.7.1 E.U.T. Operation

Operating Environment:
Temperature: 25.5 °C Humidity: 46.3 % RH Atmospheric Pressure: 1010 mbar

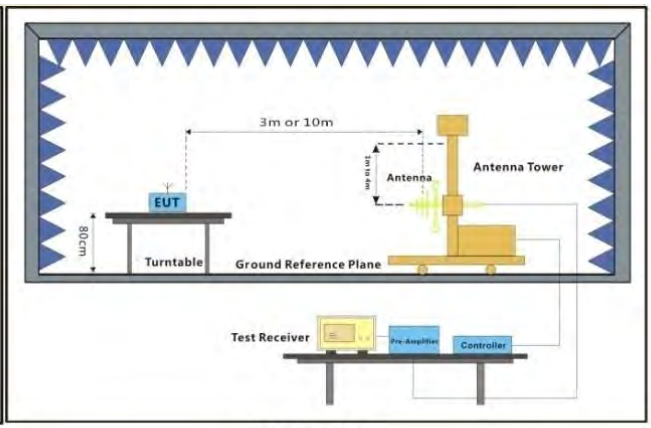
7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Pre-scan	01	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.

7.7.3 Test Setup Diagram



Below 30MHz



30MHz-1GHz

7.7.4 Measurement Procedure and Data

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

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

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

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

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

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

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

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

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

Remark:

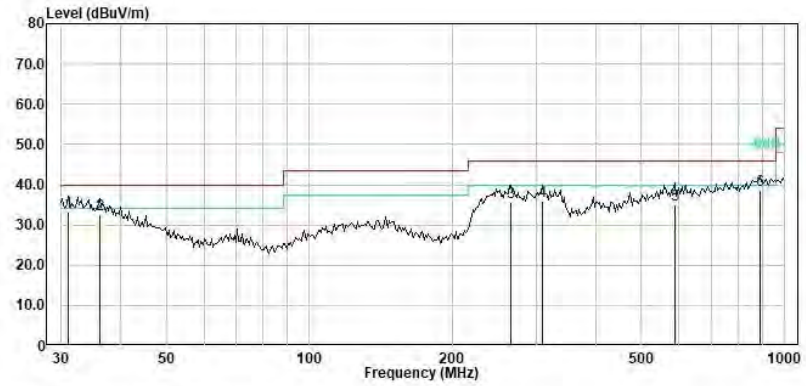
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

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

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

4. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

Test Mode: 00; Polarity: Horizontal

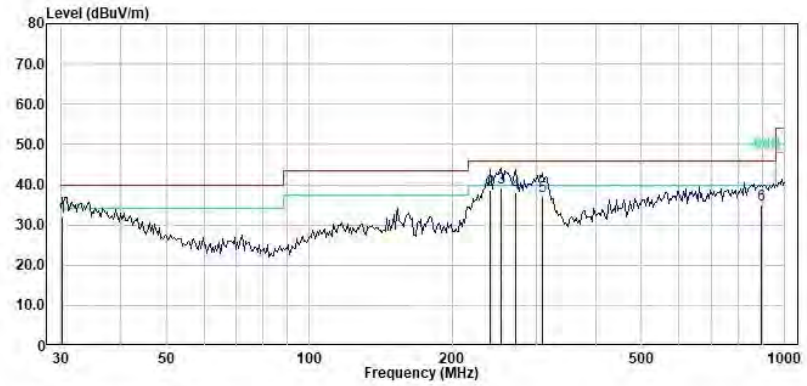


Antenna Polarity :Horizontal

No.	Freq (MHz)	Read level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	31.07	8.03	24.89	0.23	33.15	40.00	-6.85	QP
2	36.25	8.78	23.64	0.33	32.75	40.00	-7.25	QP
3	265.68	14.77	19.65	1.27	35.69	46.00	-10.31	QP
4	310.00	14.93	19.55	1.34	35.82	46.00	-10.18	QP
5	586.84	8.12	24.72	2.29	35.13	46.00	-10.87	QP
6	887.61	9.35	27.02	2.37	38.74	46.00	-7.26	QP

Notes: Emission Level = Read Level +Antenna Factor + Cable loss

Test Mode: 00; Polarity: Vertical



Antenna Polarity :Vertical

No.	Freq (MHz)	Read level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	30.21	6.89	25.01	0.21	32.11	40.00	-7.89	QP
2	240.83	19.84	17.61	1.22	38.67	46.00	-7.33	QP
3	252.95	19.33	18.75	1.25	39.33	46.00	-6.67	QP
4	271.33	17.75	19.05	1.28	38.08	46.00	-7.92	QP
5	310.00	16.24	19.55	1.34	37.13	46.00	-8.87	QP
6	893.86	5.54	27.13	2.41	35.08	46.00	-10.92	QP

Notes: Emission Level = Read Level +Antenna Factor + Cable loss

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

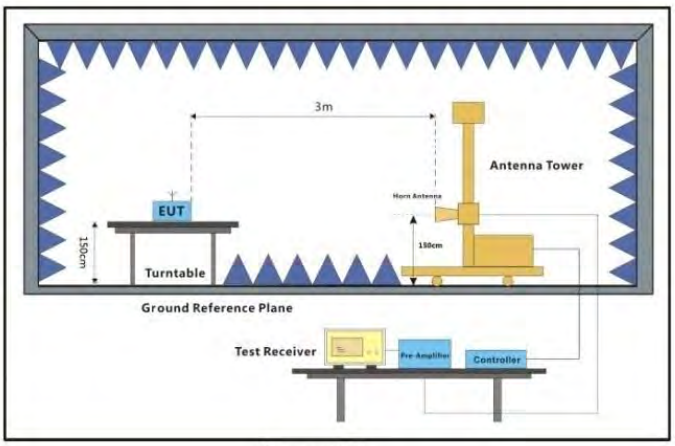
Operating Environment:

Temperature: 25.5 °C Humidity: 46.3 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, 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

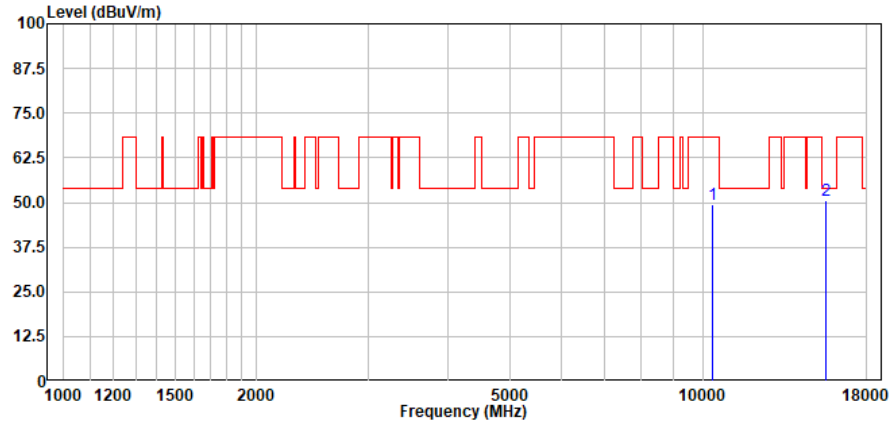
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit 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: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

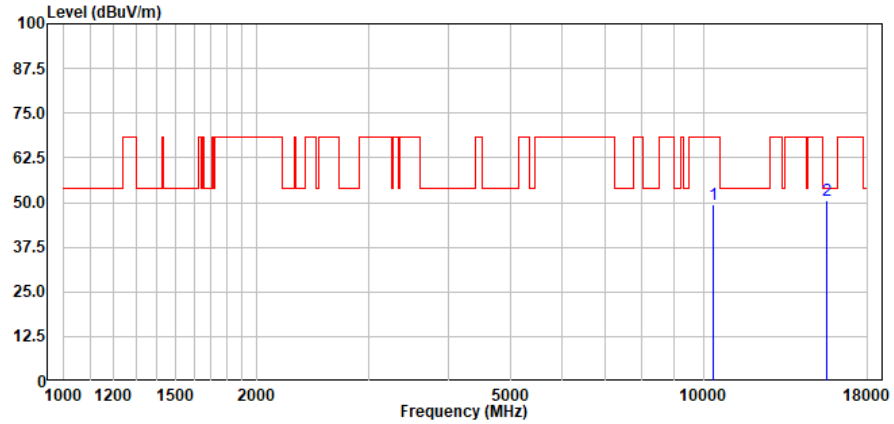


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10360.00	49.55	37.51	7.99	45.72	49.33	68.30	-18.97	Peak
	15540.00	45.71	39.91	9.96	45.03	50.55	54.00	-3.45	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

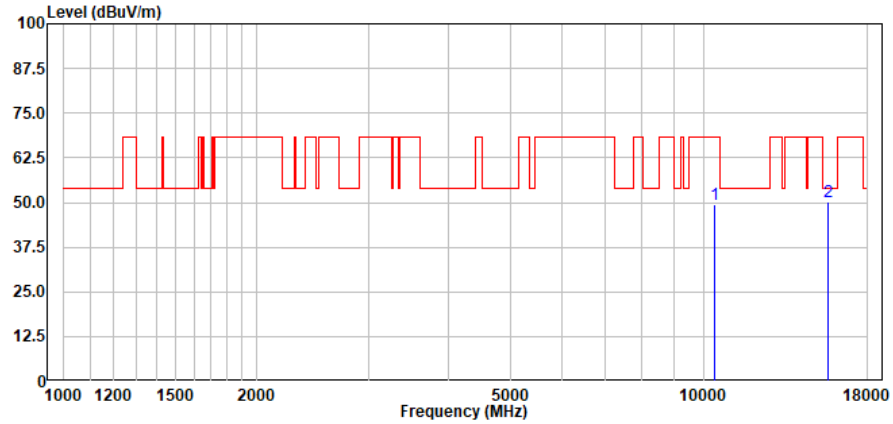


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10360.00	49.53	37.51	7.99	45.72	49.31	68.30	-18.99	Peak
	15540.00	45.62	39.91	9.96	45.03	50.46	54.00	-3.54	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

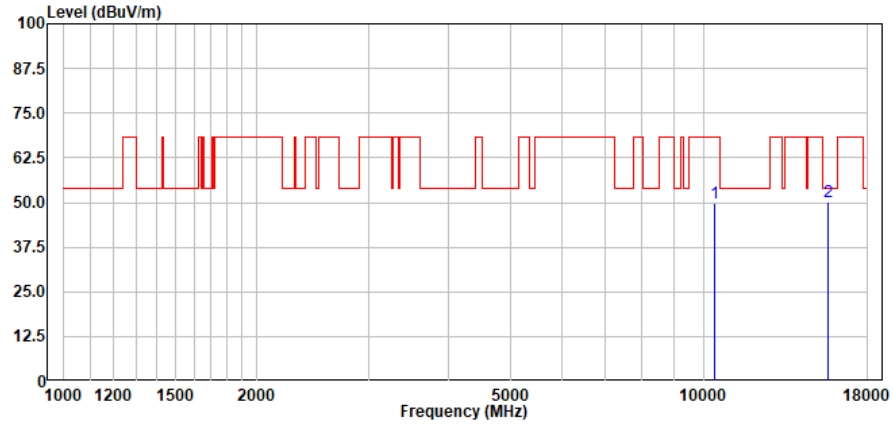


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10400.00	49.49	37.63	8.00	45.69	49.43	68.30	-18.87	Peak
	15600.00	45.41	39.93	9.98	45.00	50.32	54.00	-3.68	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

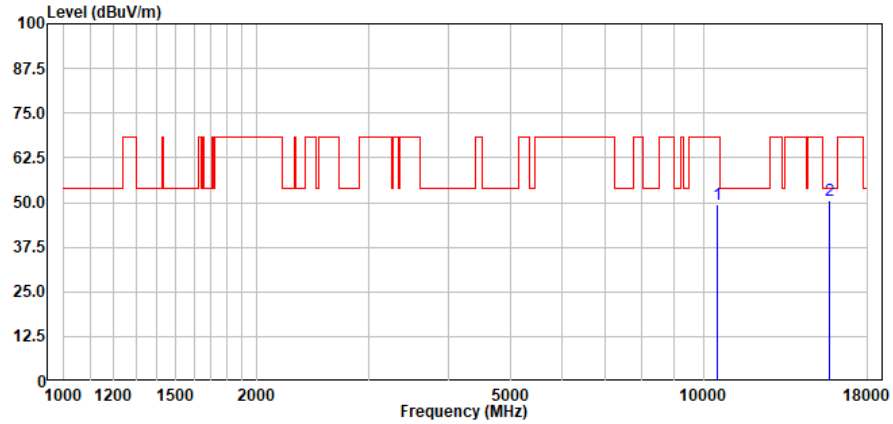


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10400.00	49.81	37.63	8.00	45.69	49.75	68.30	-18.55	Peak
	15600.00	45.24	39.93	9.98	45.00	50.15	54.00	-3.85	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

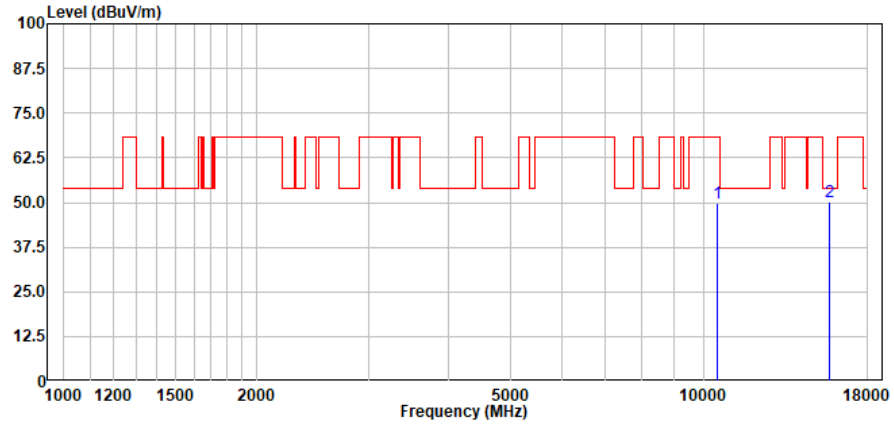


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10480.00	49.43	37.68	8.02	45.63	49.50	68.30	-18.80	Peak
	15720.00	45.39	40.09	10.02	44.95	50.55	54.00	-3.45	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

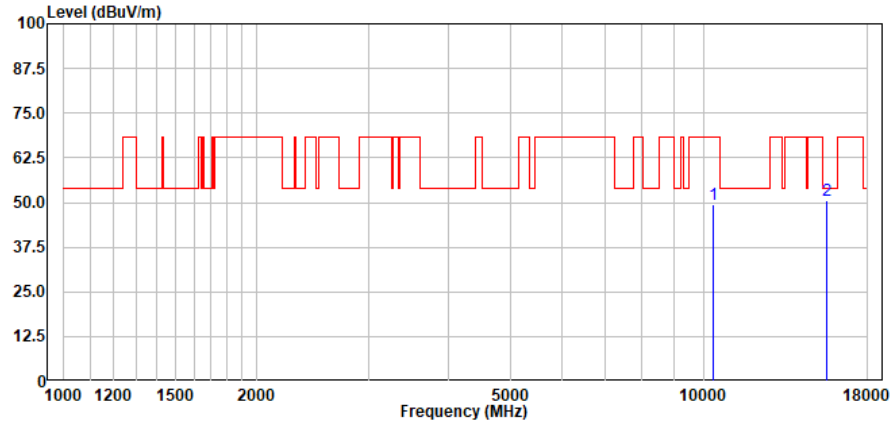


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10480.00	49.62	37.68	8.02	45.63	49.69	68.30	-18.61	Peak
	15720.00	45.16	40.09	10.02	44.95	50.32	54.00	-3.68	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

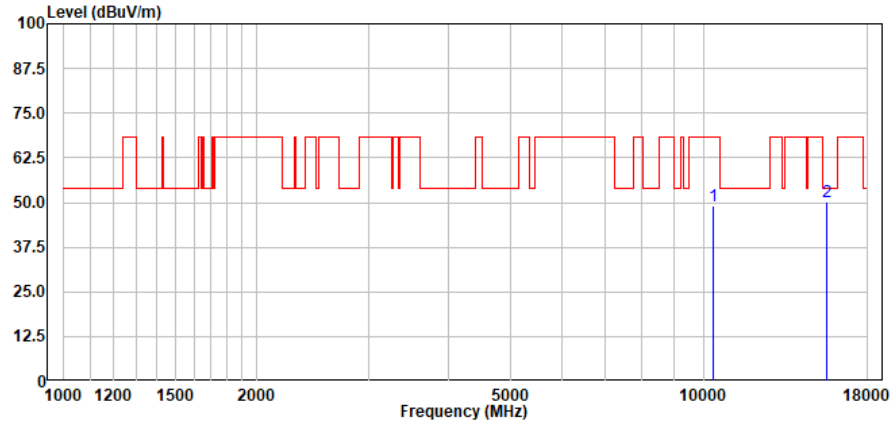


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10360.00	49.78	37.51	7.99	45.72	49.56	68.30	-18.74	Peak
	15540.00	45.54	39.91	9.96	45.03	50.38	54.00	-3.62	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

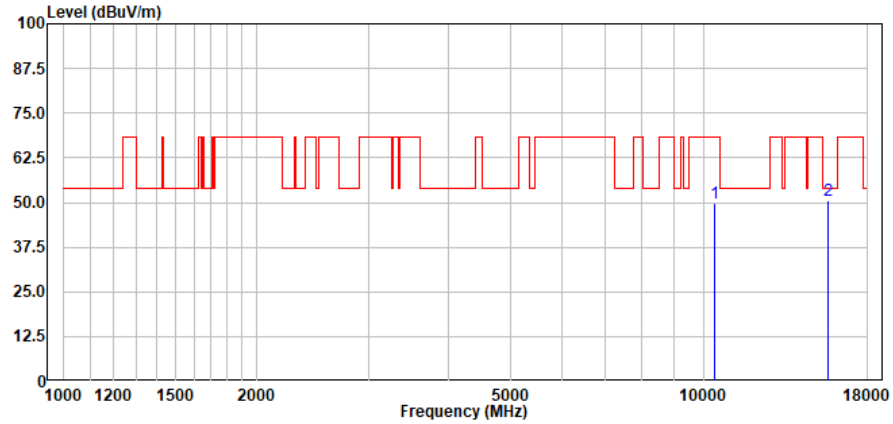


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10360.00	49.31	37.51	7.99	45.72	49.09	68.30	-19.21	Peak
	15540.00	45.20	39.91	9.96	45.03	50.04	54.00	-3.96	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

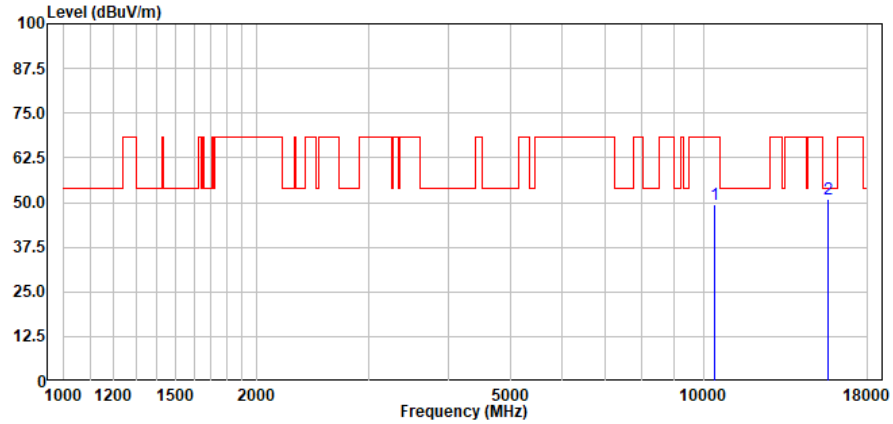


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10400.00	49.73	37.63	8.00	45.69	49.67	68.30	-18.63	Peak
	15600.00	45.49	39.93	9.98	45.00	50.40	54.00	-3.60	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

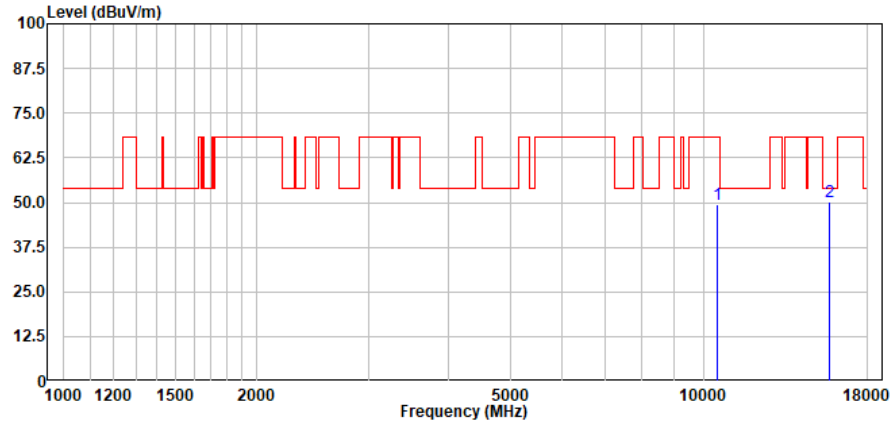


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10400.00	49.33	37.63	8.00	45.69	49.27	68.30	-19.03	Peak
	15600.00	45.97	39.93	9.98	45.00	50.88	54.00	-3.12	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

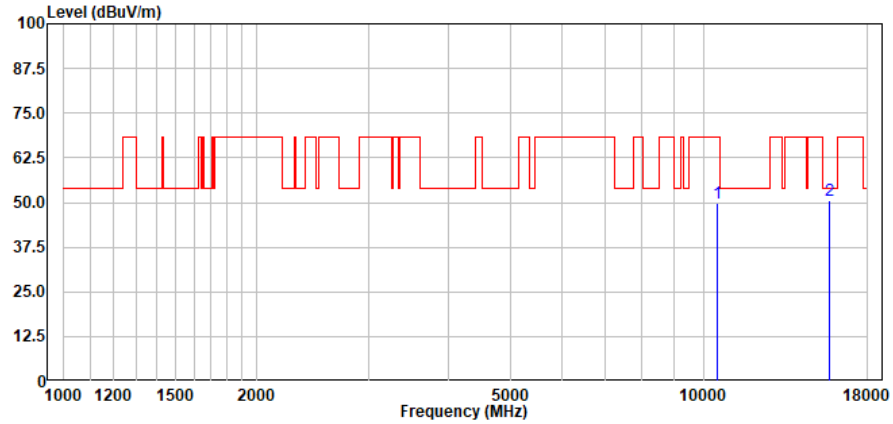


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10480.00	49.48	37.68	8.02	45.63	49.55	68.30	-18.75	Peak
	15720.00	45.00	40.09	10.02	44.95	50.16	54.00	-3.84	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

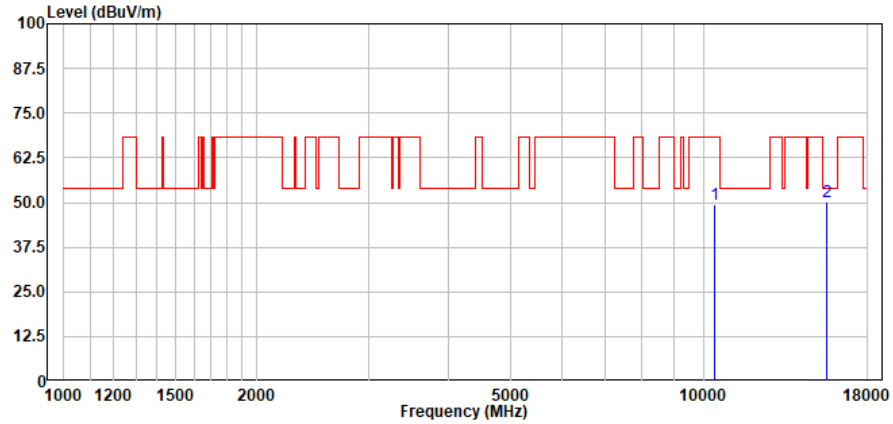


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10480.00	49.64	37.68	8.02	45.63	49.71	68.30	-18.59	Peak
	15720.00	45.29	40.09	10.02	44.95	50.45	54.00	-3.55	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

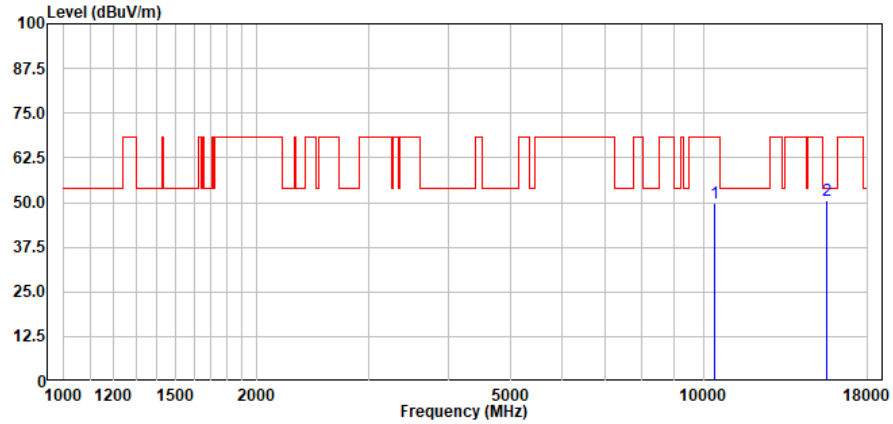


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10380.00	49.41	37.57	8.00	45.71	49.27	68.30	-19.03	Peak
	15570.00	45.35	39.92	9.97	45.02	50.22	54.00	-3.78	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

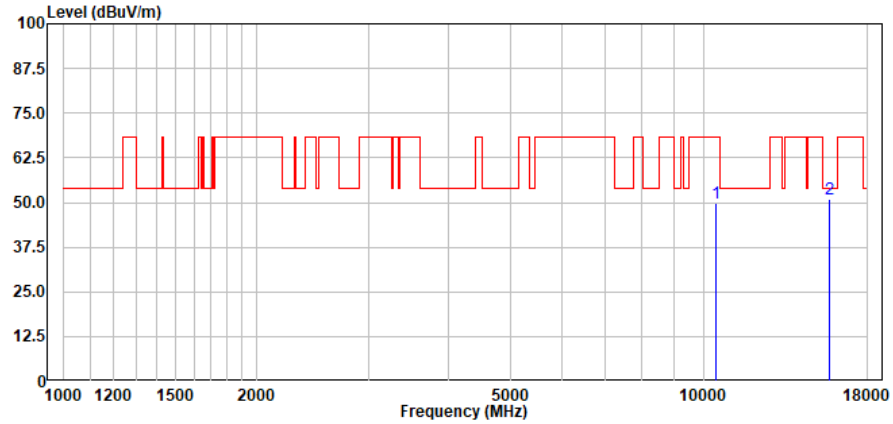


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10380.00	50.10	37.57	8.00	45.71	49.96	68.30	-18.34	Peak
	15570.00	45.88	39.92	9.97	45.02	50.75	54.00	-3.25	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

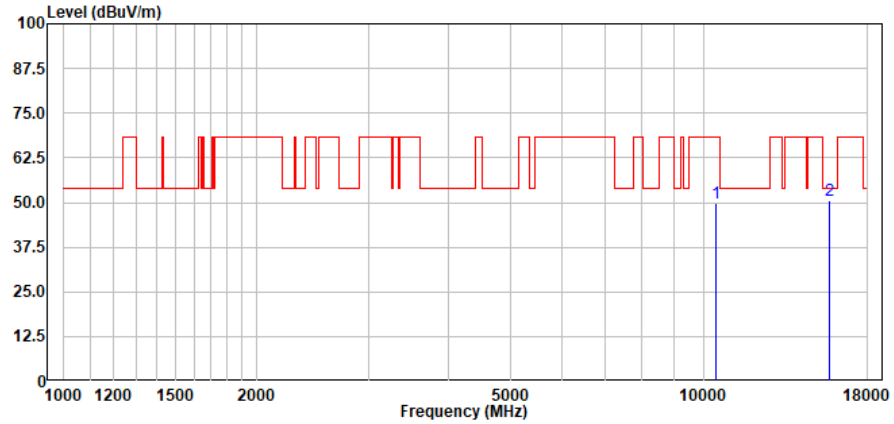


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10460.00	49.61	37.67	8.02	45.65	49.65	68.30	-18.65	Peak
	15690.00	45.80	40.08	10.01	44.96	50.93	54.00	-3.07	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

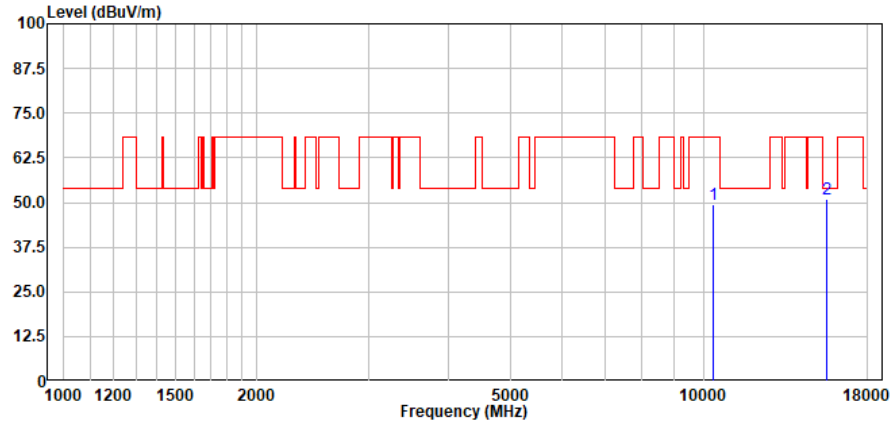


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10460.00	49.81	37.67	8.02	45.65	49.85	68.30	-18.45	Peak
	15690.00	45.49	40.08	10.01	44.96	50.62	54.00	-3.38	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

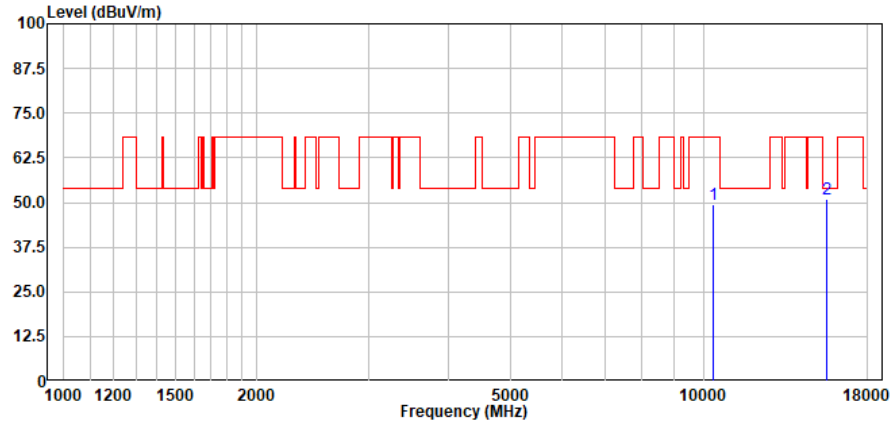


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10360.00	49.78	37.51	7.99	45.72	49.56	68.30	-18.74	Peak
	15540.00	46.03	39.91	9.96	45.03	50.87	54.00	-3.13	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

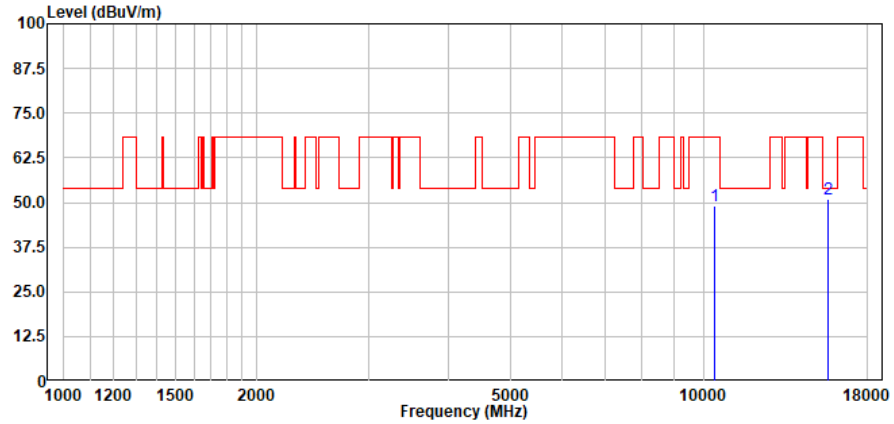


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10360.00	49.50	37.51	7.99	45.72	49.28	68.30	-19.02	Peak
	15540.00	46.11	39.91	9.96	45.03	50.95	54.00	-3.05	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:middle

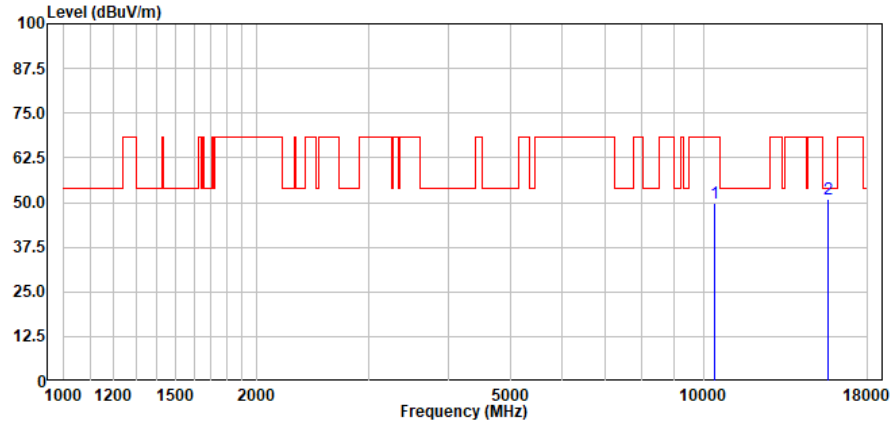


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10400.00	49.15	37.63	8.00	45.69	49.09	68.30	-19.21	Peak
	15600.00	45.97	39.93	9.98	45.00	50.88	54.00	-3.12	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:middle

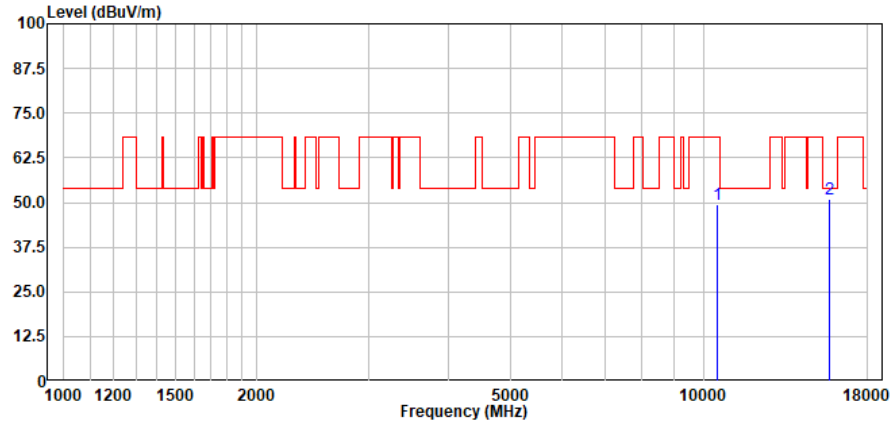


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10400.00	49.88	37.63	8.00	45.69	49.82	68.30	-18.48	Peak
	15600.00	46.08	39.93	9.98	45.00	50.99	54.00	-3.01	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

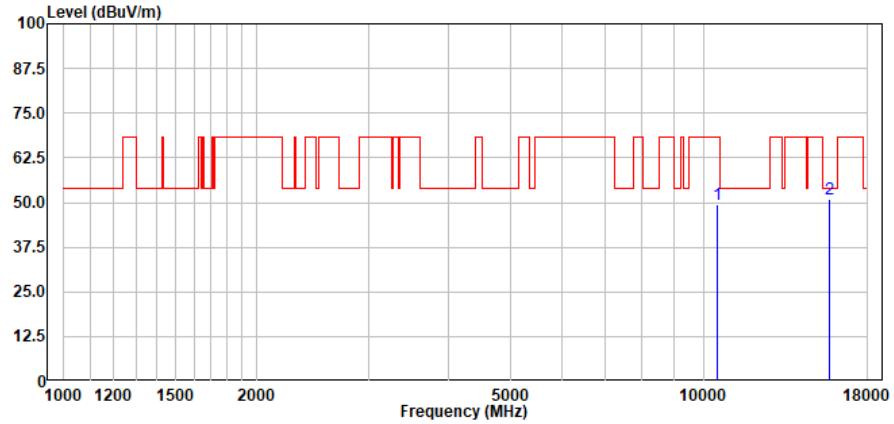


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10480.00	49.26	37.68	8.02	45.63	49.33	68.30	-18.97	Peak
	15720.00	45.78	40.09	10.02	44.95	50.94	54.00	-3.06	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

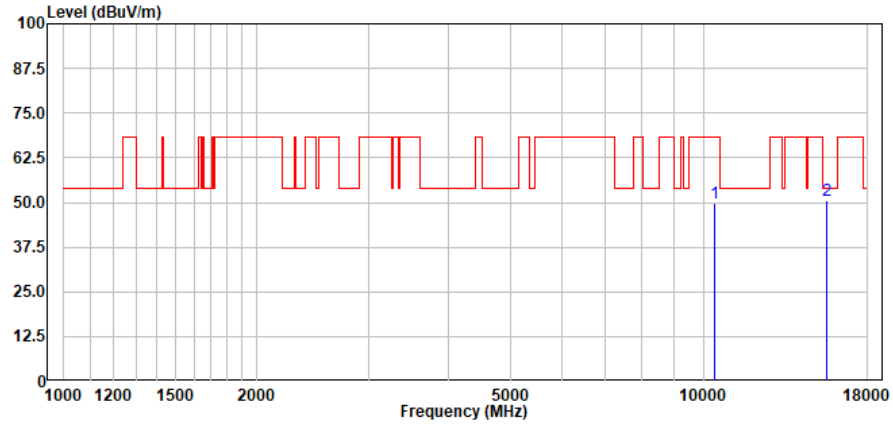


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10480.00	49.26	37.68	8.02	45.63	49.33	68.30	-18.97	Peak
	15720.00	45.67	40.09	10.02	44.95	50.83	54.00	-3.17	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

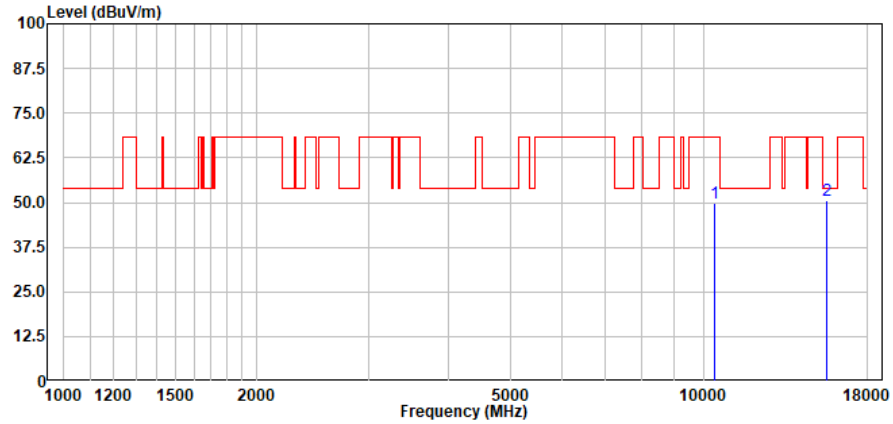


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10380.00	50.02	37.57	8.00	45.71	49.88	68.30	-18.42	Peak
	15570.00	45.51	39.92	9.97	45.02	50.38	54.00	-3.62	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

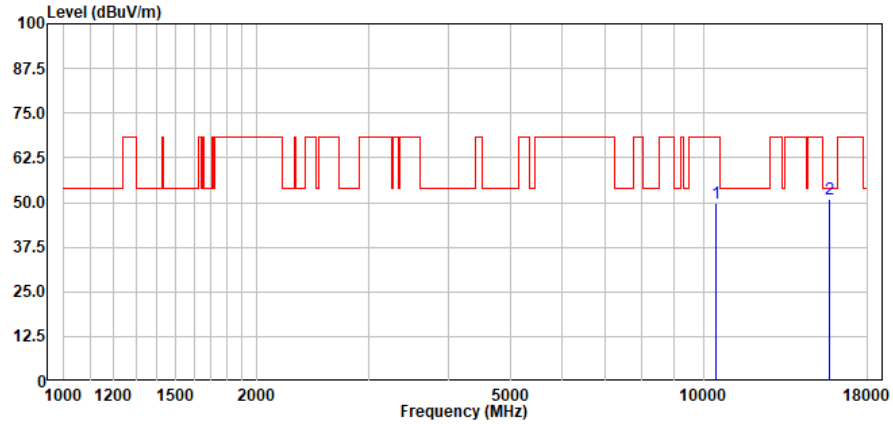


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10380.00	49.86	37.57	8.00	45.71	49.72	68.30	-18.58	Peak
	15570.00	45.74	39.92	9.97	45.02	50.61	54.00	-3.39	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

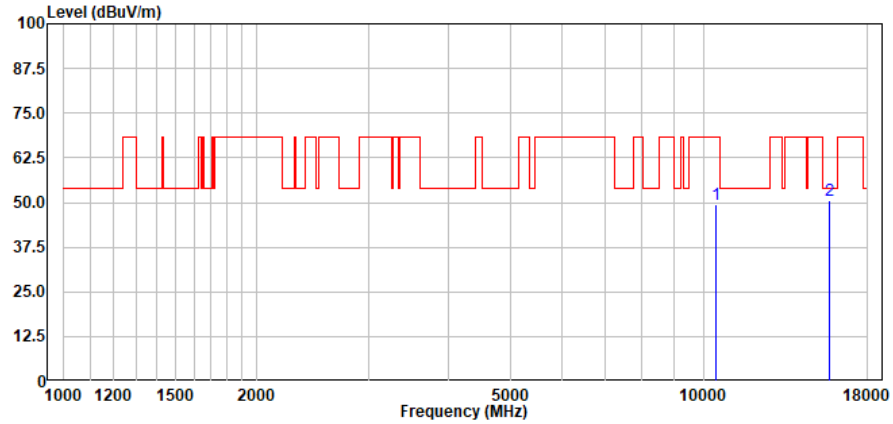


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10460.00	49.78	37.67	8.02	45.65	49.82	68.30	-18.48	Peak
	15690.00	45.75	40.08	10.01	44.96	50.88	54.00	-3.12	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

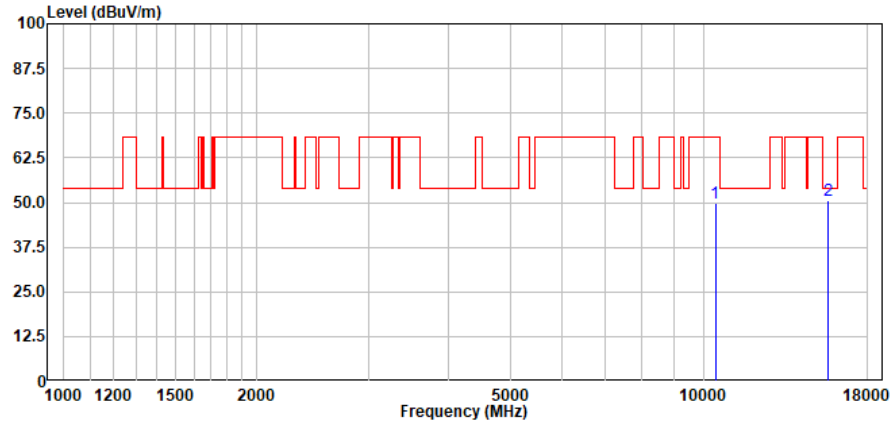


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10460.00	49.25	37.67	8.02	45.65	49.29	68.30	-19.01	Peak
	15690.00	45.34	40.08	10.01	44.96	50.47	54.00	-3.53	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low

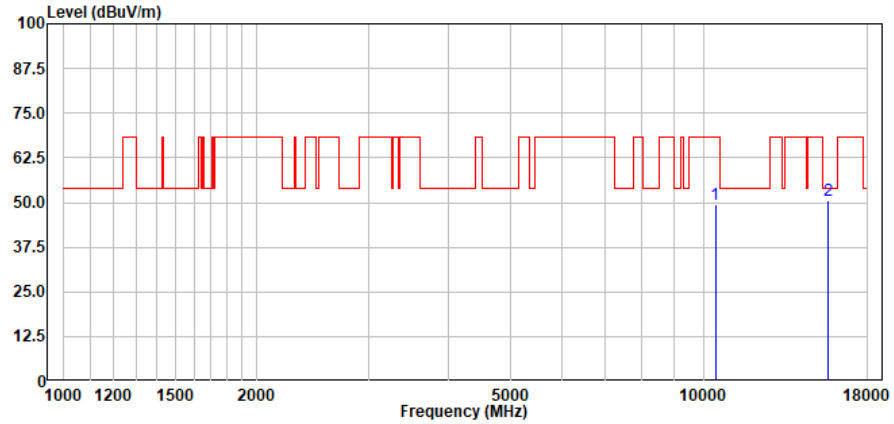


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10420.00	49.70	37.64	8.01	45.68	49.67	68.30	-18.63	Peak
	15630.00	45.52	39.98	9.99	44.99	50.50	54.00	-3.50	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low

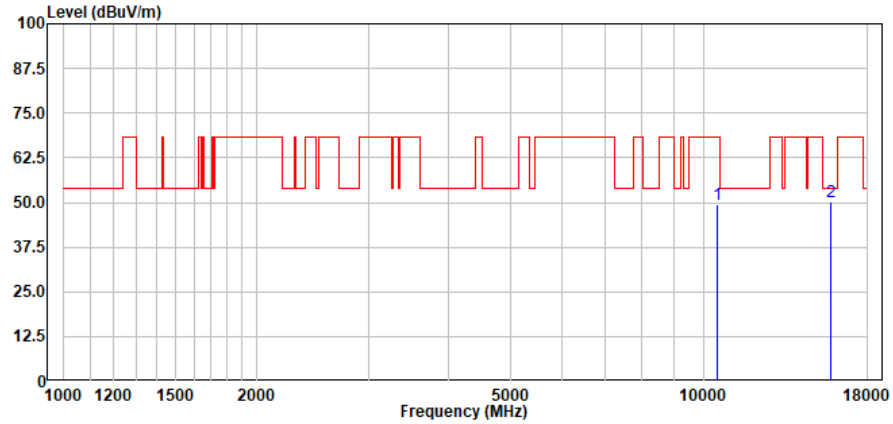


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10420.00	49.39	37.64	8.01	45.68	49.36	68.30	-18.94	Peak
	15630.00	45.70	39.98	9.99	44.99	50.68	54.00	-3.32	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

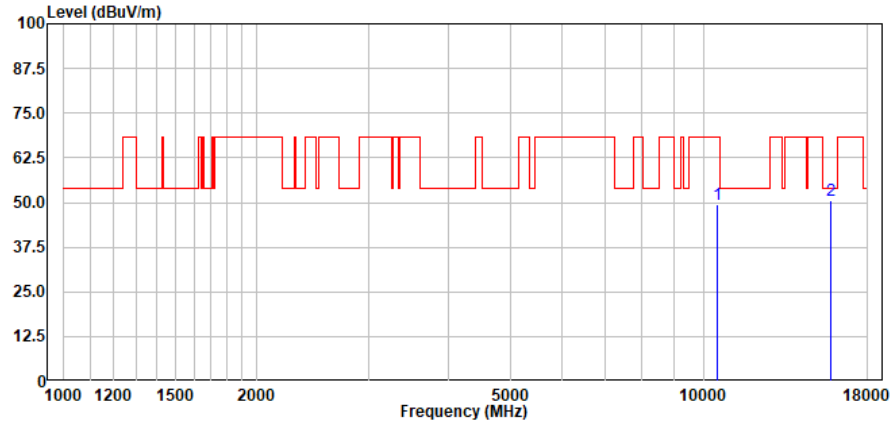


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10520.00	49.43	37.70	8.03	45.67	49.49	68.30	-18.81	Peak
	15780.00	45.01	40.05	10.03	44.92	50.17	54.00	-3.83	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

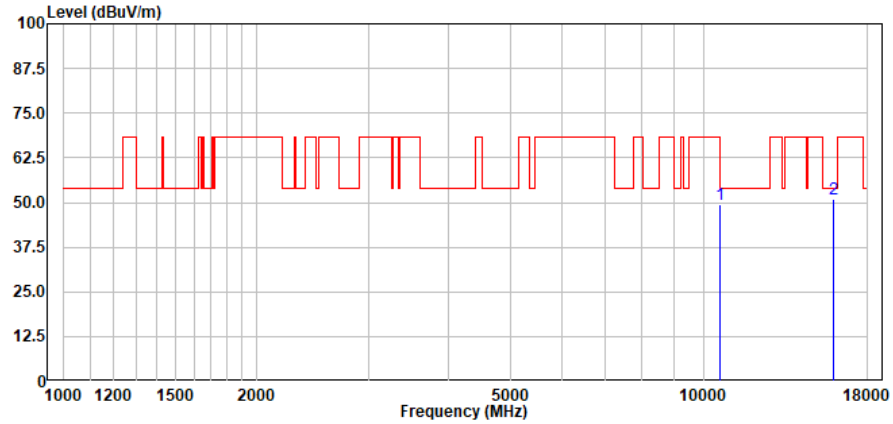


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10520.00	49.20	37.70	8.03	45.67	49.26	68.30	-19.04	Peak
	15780.00	45.55	40.05	10.03	44.92	50.71	54.00	-3.29	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

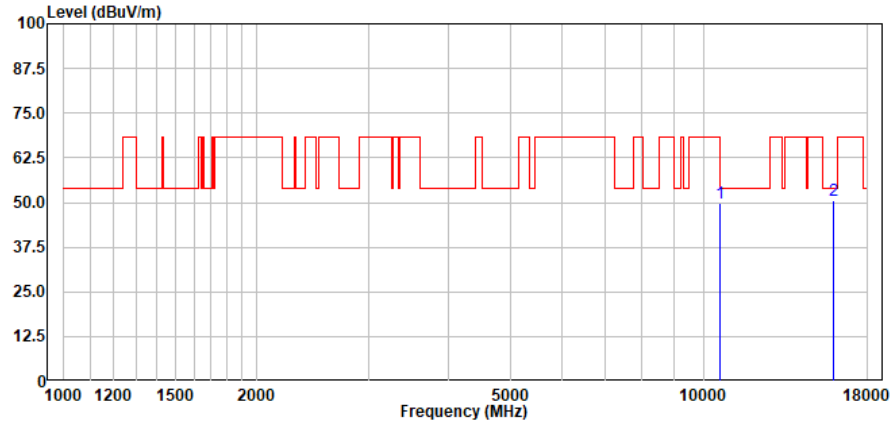


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10600.00	49.57	37.74	8.06	45.86	49.51	54.00	-4.49	Peak
	15900.00	45.61	40.13	10.07	44.87	50.94	54.00	-3.06	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

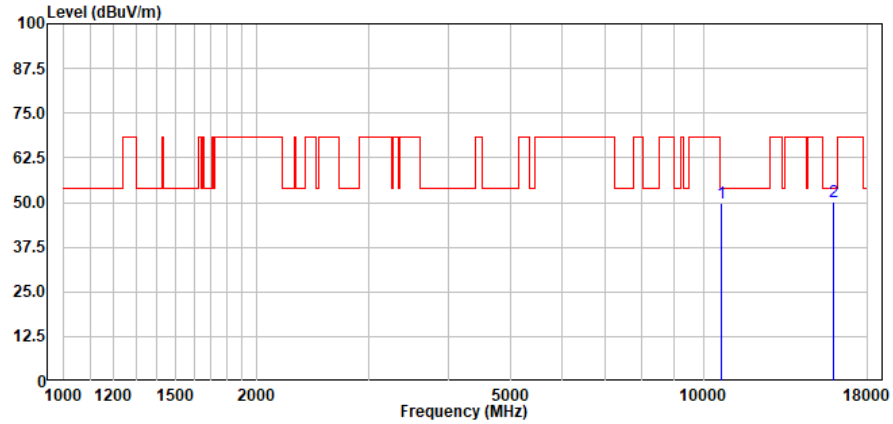


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10600.00	49.97	37.74	8.06	45.86	49.91	54.00	-4.09	Peak
	15900.00	45.10	40.13	10.07	44.87	50.43	54.00	-3.57	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

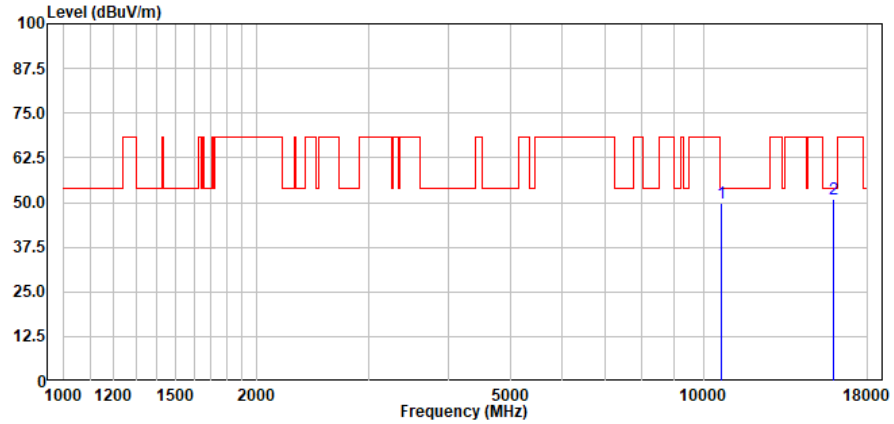


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10640.00	50.07	37.75	8.07	45.95	49.94	54.00	-4.06	Peak
	15960.00	44.79	40.11	10.09	44.84	50.15	54.00	-3.85	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

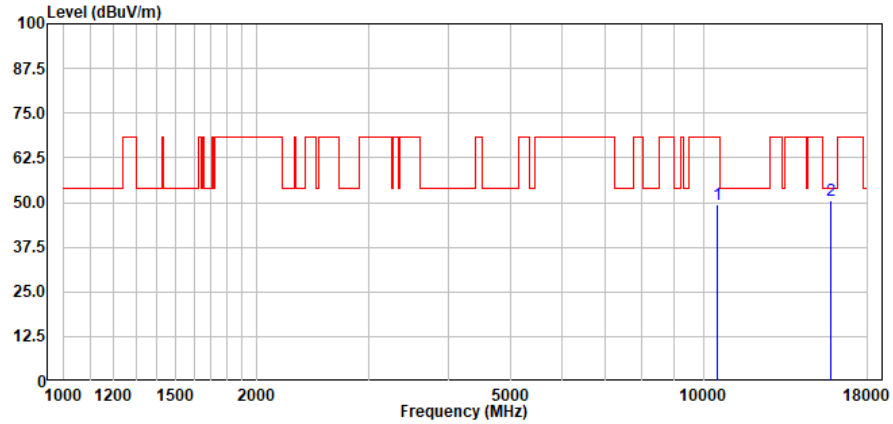


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10640.00	49.92	37.75	8.07	45.95	49.79	54.00	-4.21	Peak
	15960.00	45.55	40.11	10.09	44.84	50.91	54.00	-3.09	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

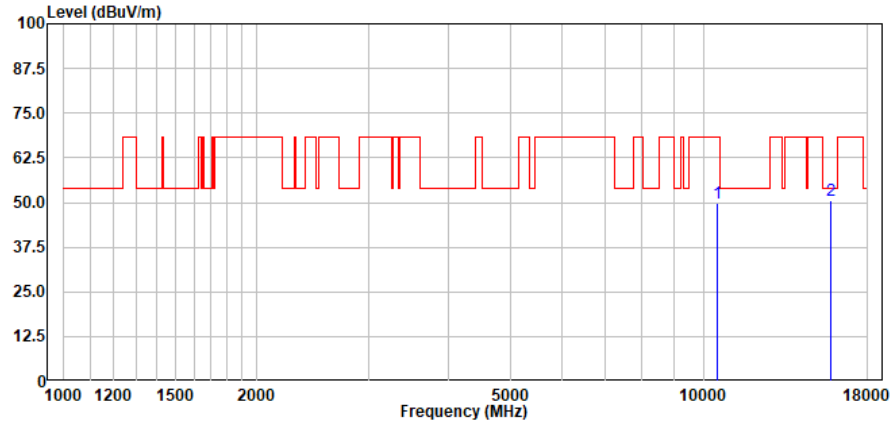


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10520.00	49.34	37.70	8.03	45.67	49.40	68.30	-18.90	Peak
	15780.00	45.39	40.05	10.03	44.92	50.55	54.00	-3.45	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

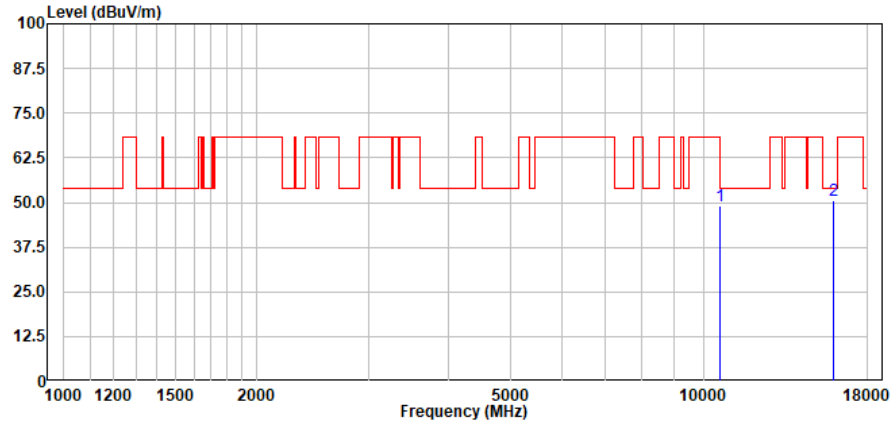


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10520.00	49.92	37.70	8.03	45.67	49.98	68.30	-18.32	Peak
	15780.00	45.52	40.05	10.03	44.92	50.68	54.00	-3.32	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

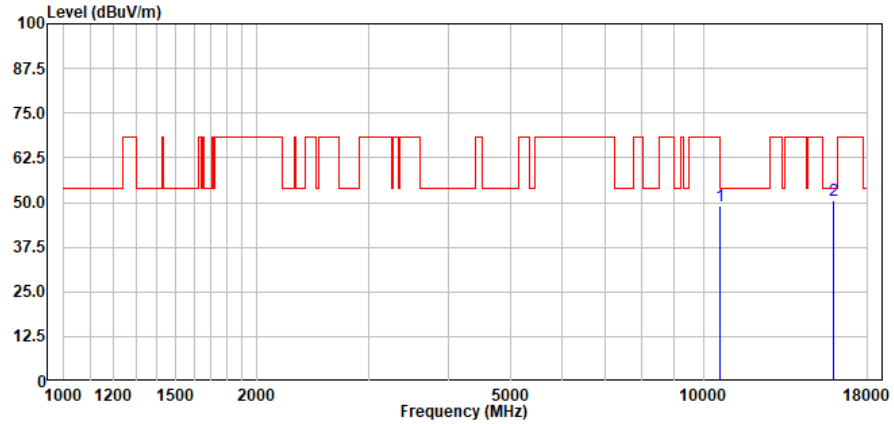


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10600.00	49.10	37.74	8.06	45.86	49.04	54.00	-4.96	Peak
	15900.00	45.34	40.13	10.07	44.87	50.67	54.00	-3.33	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

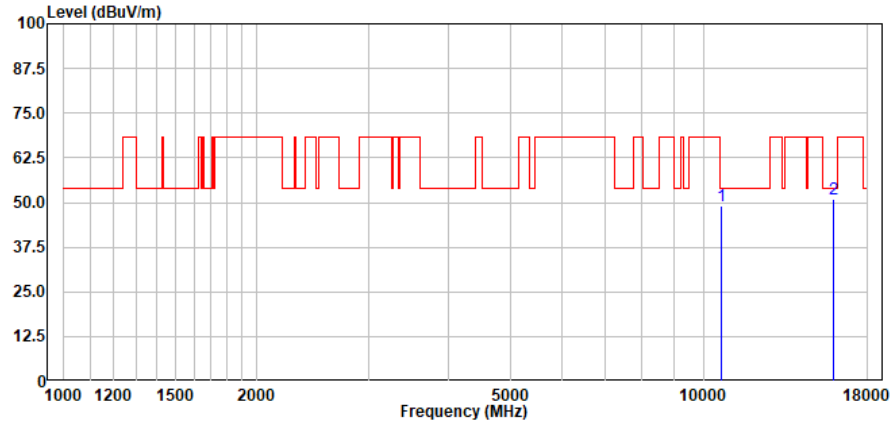


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10600.00	49.21	37.74	8.06	45.86	49.15	54.00	-4.85	Peak
	15900.00	45.21	40.13	10.07	44.87	50.54	54.00	-3.46	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

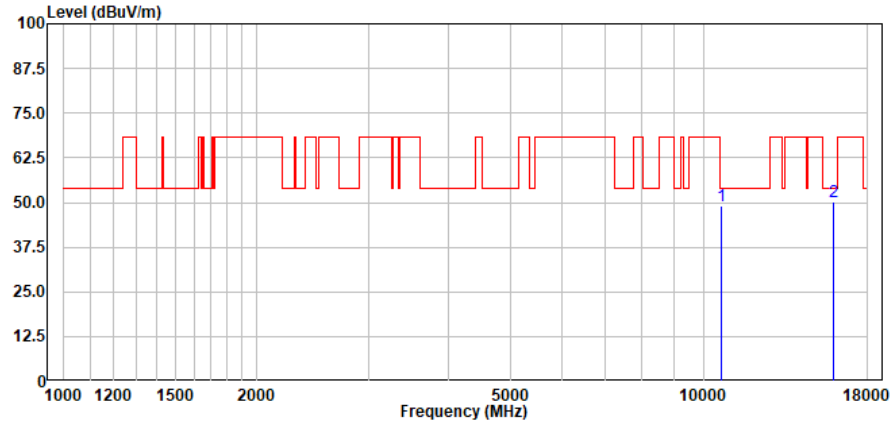


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10640.00	49.28	37.75	8.07	45.95	49.15	54.00	-4.85	Peak
	15960.00	45.57	40.11	10.09	44.84	50.93	54.00	-3.07	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

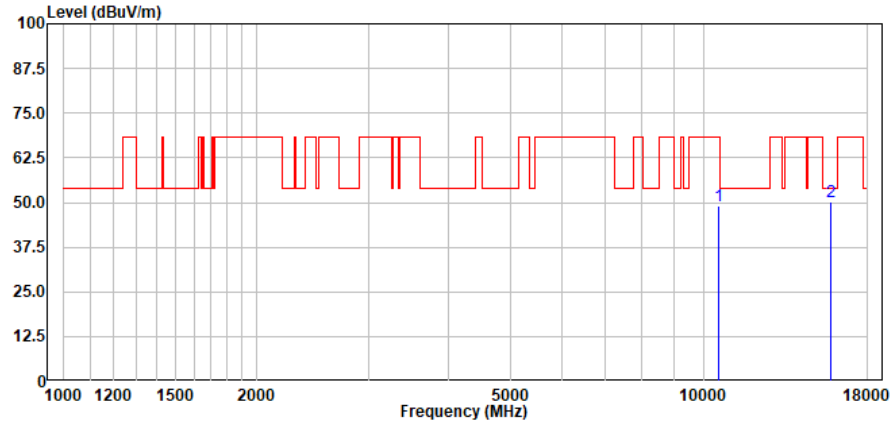


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10640.00	49.31	37.75	8.07	45.95	49.18	54.00	-4.82	Peak
	15960.00	44.76	40.11	10.09	44.84	50.12	54.00	-3.88	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

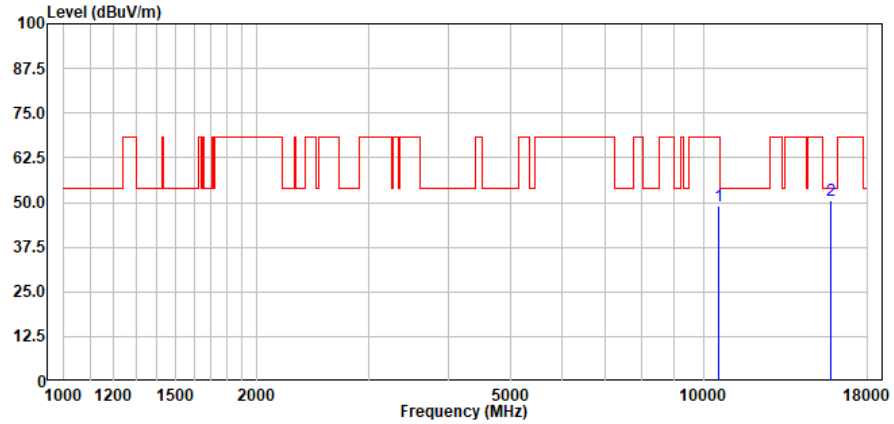


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10540.00	49.15	37.71	8.04	45.72	49.18	68.30	-19.12	Peak
	15810.00	45.18	40.05	10.04	44.91	50.36	54.00	-3.64	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

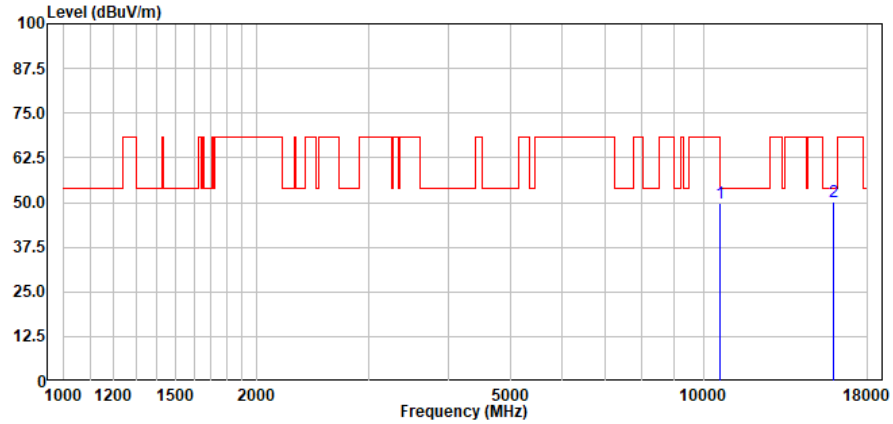


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10540.00	49.07	37.71	8.04	45.72	49.10	68.30	-19.20	Peak
	15810.00	45.21	40.05	10.04	44.91	50.39	54.00	-3.61	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

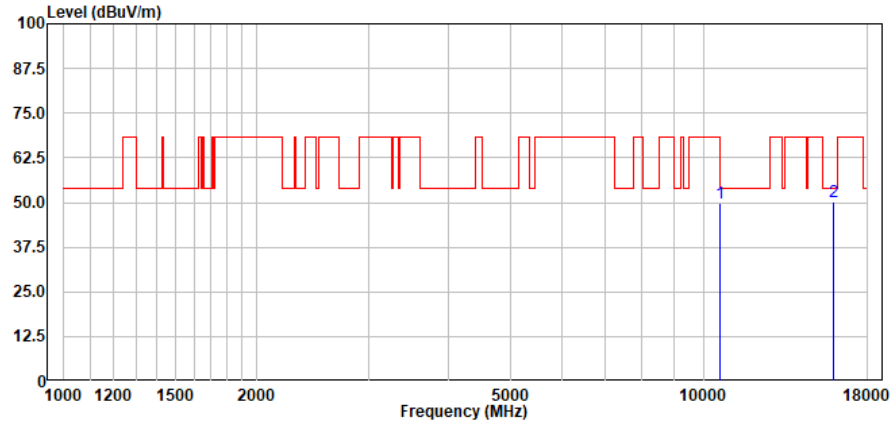


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10620.00	49.77	37.75	8.06	45.91	49.67	54.00	-4.33	Peak
	15930.00	44.70	40.12	10.08	44.85	50.05	54.00	-3.95	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

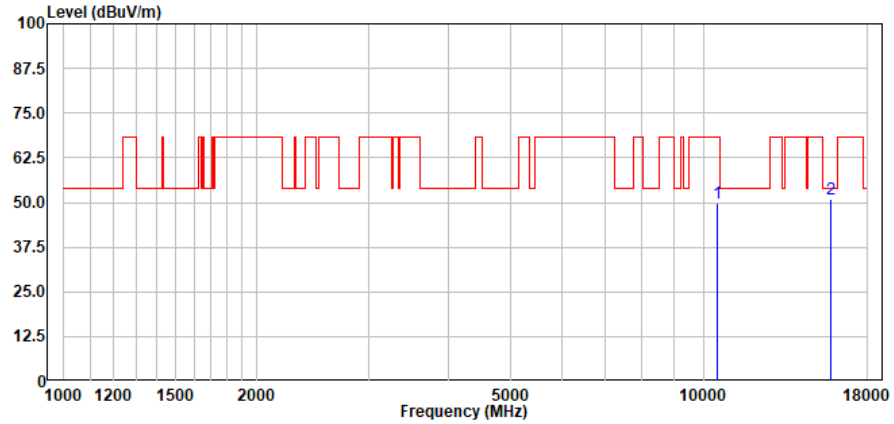


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10620.00	49.79	37.75	8.06	45.91	49.69	54.00	-4.31	Peak
	15930.00	44.67	40.12	10.08	44.85	50.02	54.00	-3.98	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

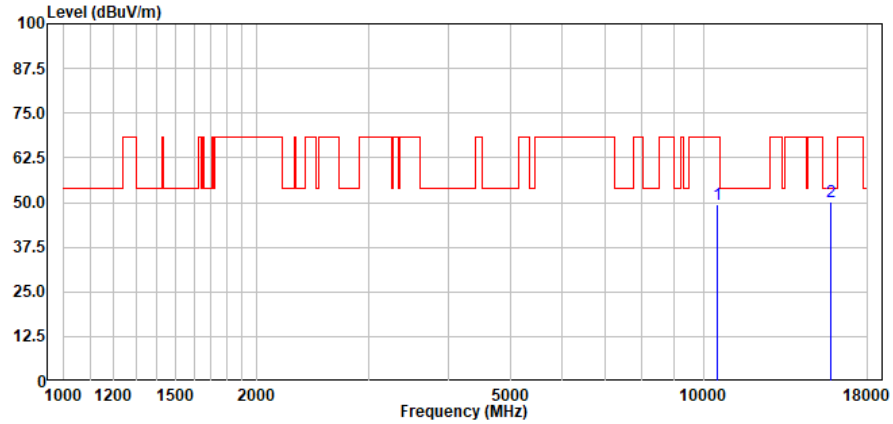


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10520.00	49.78	37.70	8.03	45.67	49.84	68.30	-18.46	Peak
	15780.00	45.68	40.05	10.03	44.92	50.84	54.00	-3.16	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

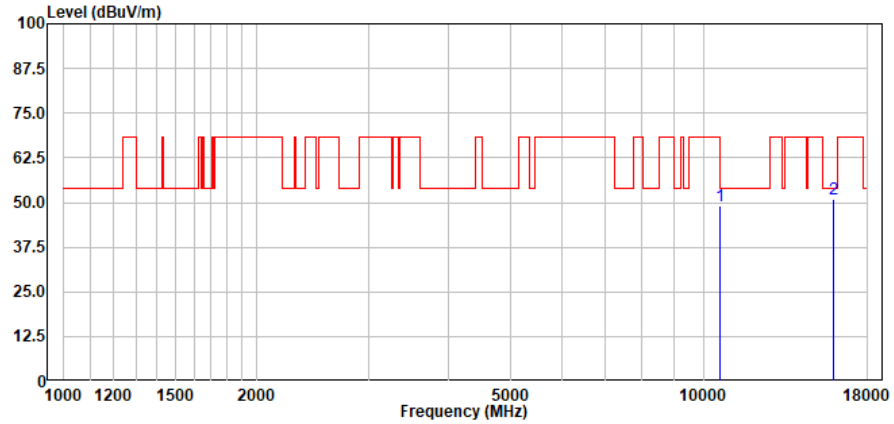


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10520.00	49.53	37.70	8.03	45.67	49.59	68.30	-18.71	Peak
	15780.00	45.03	40.05	10.03	44.92	50.19	54.00	-3.81	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:middle

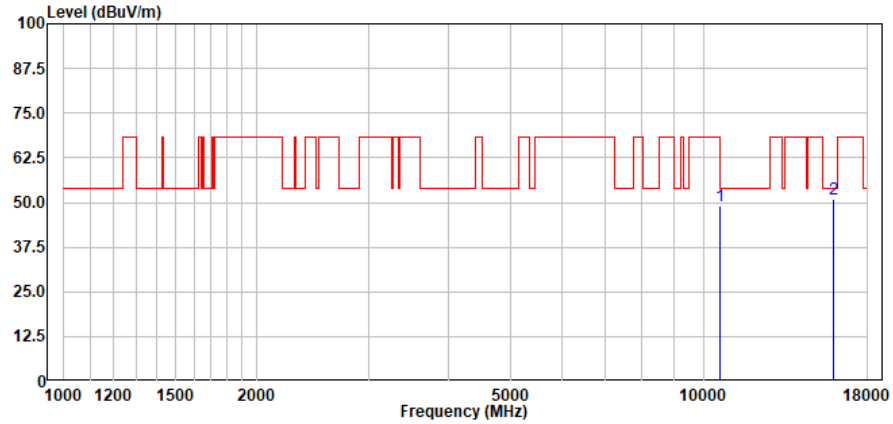


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10600.00	49.16	37.74	8.06	45.86	49.10	54.00	-4.90	Peak
	15900.00	45.43	40.13	10.07	44.87	50.76	54.00	-3.24	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:middle

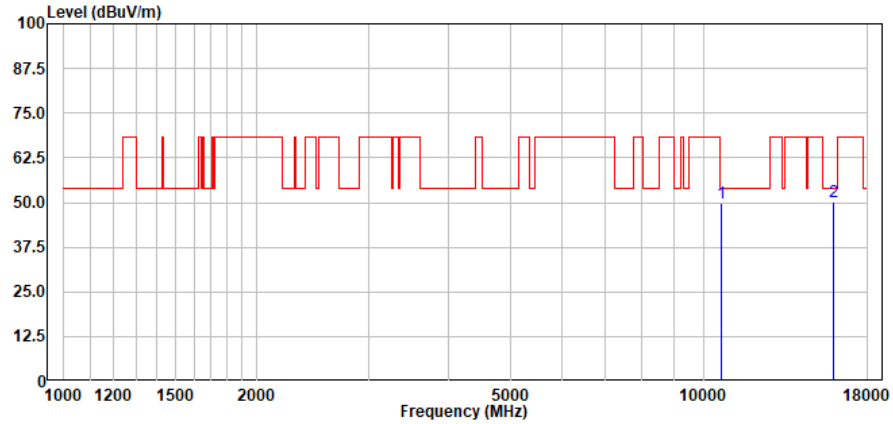


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10600.00	49.09	37.74	8.06	45.86	49.03	54.00	-4.97	Peak
	15900.00	45.61	40.13	10.07	44.87	50.94	54.00	-3.06	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

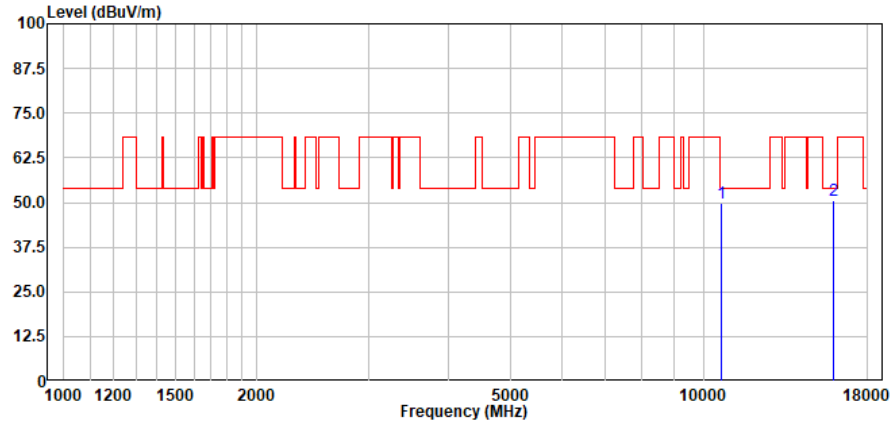


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10640.00	49.79	37.75	8.07	45.95	49.66	54.00	-4.34	Peak
	15960.00	44.94	40.11	10.09	44.84	50.30	54.00	-3.70	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

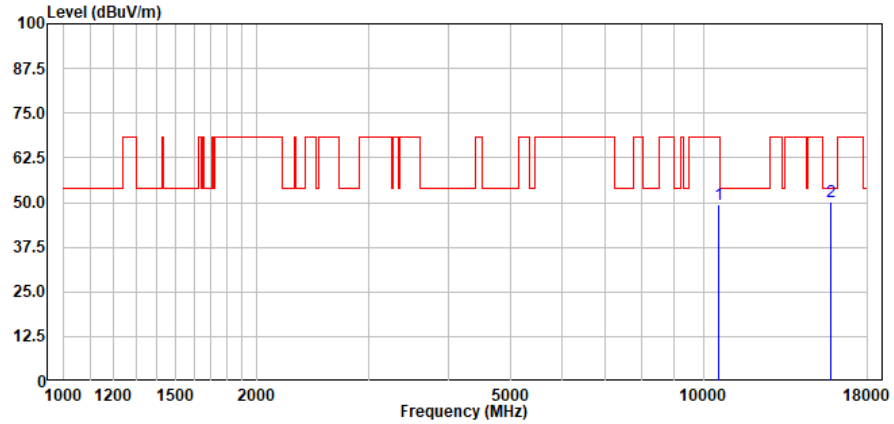


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10640.00	49.95	37.75	8.07	45.95	49.82	54.00	-4.18	Peak
	15960.00	45.20	40.11	10.09	44.84	50.56	54.00	-3.44	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

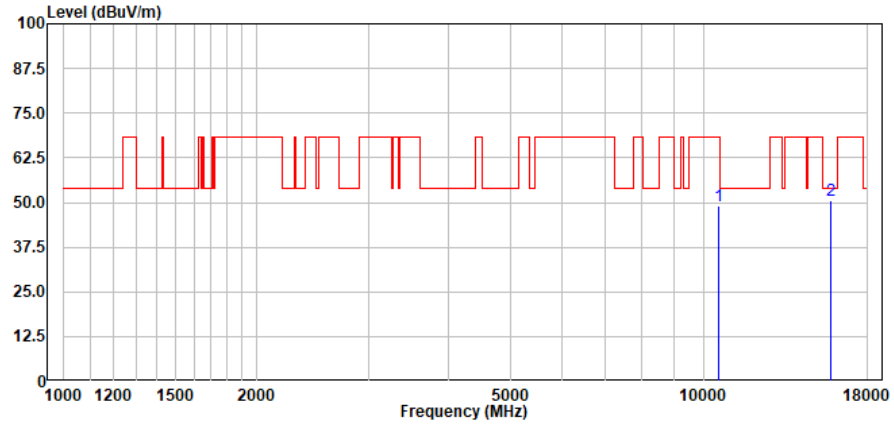


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10540.00	49.31	37.71	8.04	45.72	49.34	68.30	-18.96	Peak
	15810.00	45.18	40.05	10.04	44.91	50.36	54.00	-3.64	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

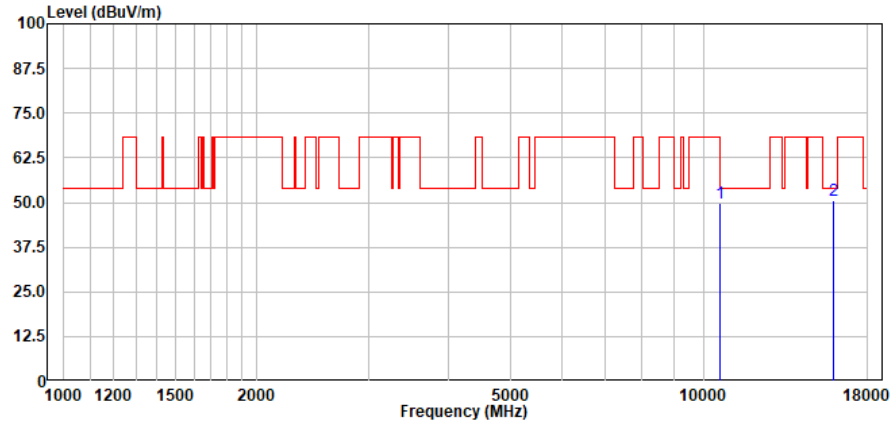


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10540.00	49.06	37.71	8.04	45.72	49.09	68.30	-19.21	Peak
	15810.00	45.42	40.05	10.04	44.91	50.60	54.00	-3.40	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

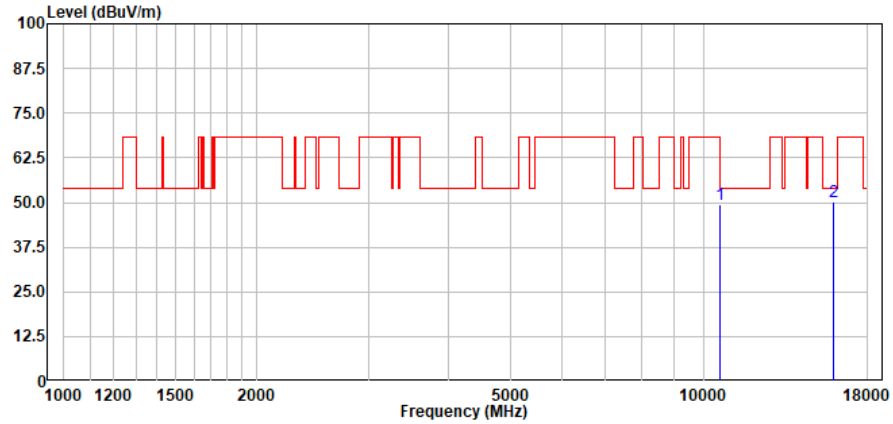


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10620.00	50.08	37.75	8.06	45.91	49.98	54.00	-4.02	Peak
	15930.00	45.06	40.12	10.08	44.85	50.41	54.00	-3.59	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

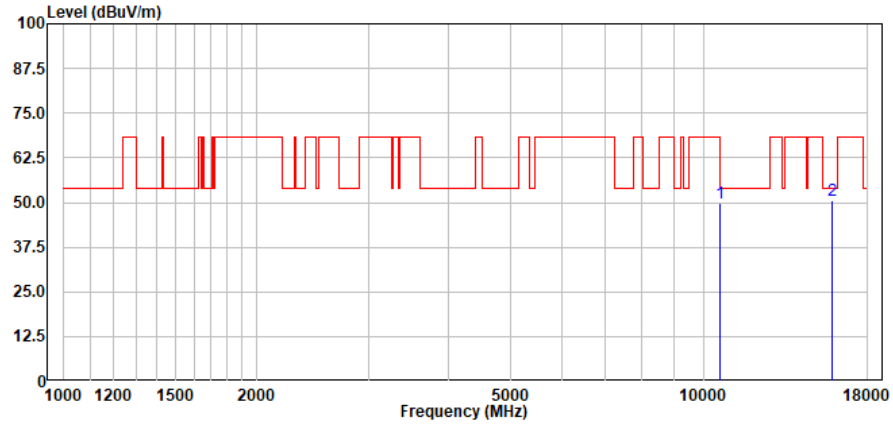


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10620.00	49.69	37.75	8.06	45.91	49.59	54.00	-4.41	Peak
	15930.00	44.99	40.12	10.08	44.85	50.34	54.00	-3.66	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low

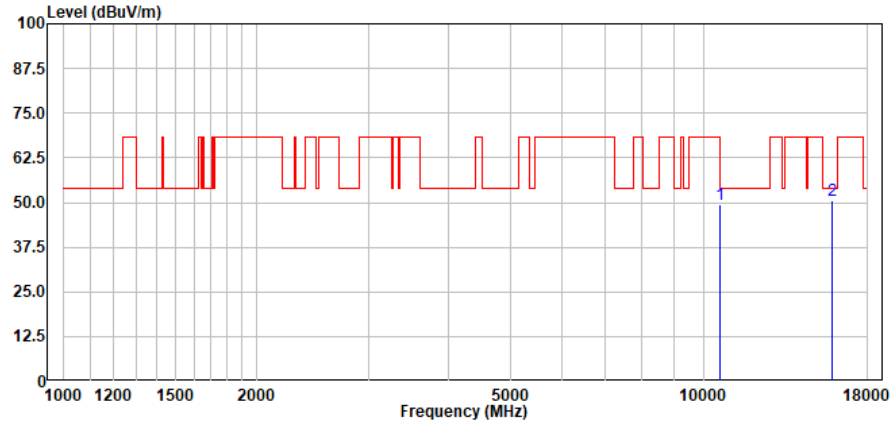


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10580.00	49.78	37.73	8.05	45.81	49.75	68.30	-18.55	Peak
	15870.00	45.36	40.10	10.06	44.88	50.64	54.00	-3.36	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	10580.00	49.43	37.73	8.05	45.81	49.40	68.30	-18.90	Peak
	15870.00	45.44	40.10	10.06	44.88	50.72	54.00	-3.28	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

7.9 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: KDB 789033 D02 II G

Limit:

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

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

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

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

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

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

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

7.9.1 E.U.T. Operation

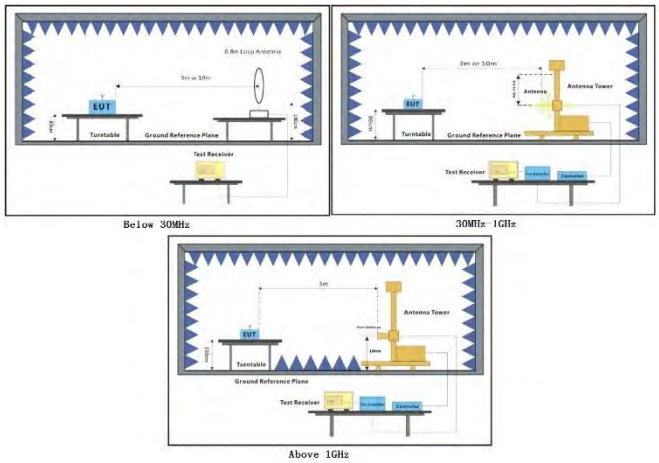
Operating Environment:
Temperature: 25.5 °C Humidity: 46.3 % RH Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram



7.9.4 Measurement Procedure and Data

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

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

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

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

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

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

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

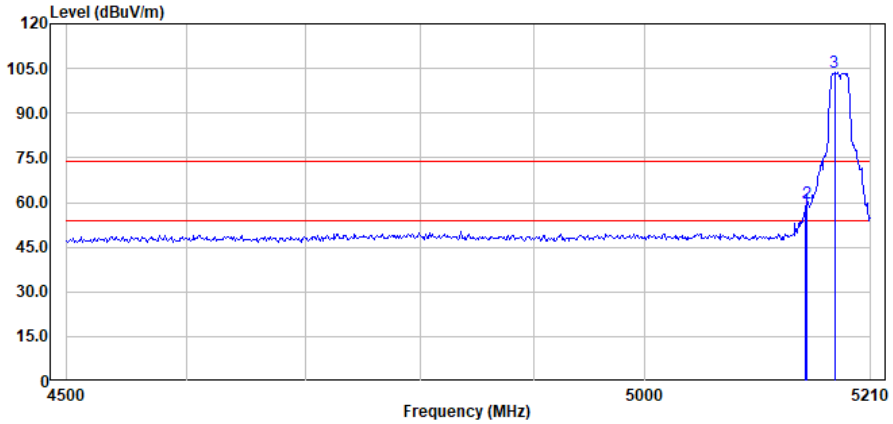
h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

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

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

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

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

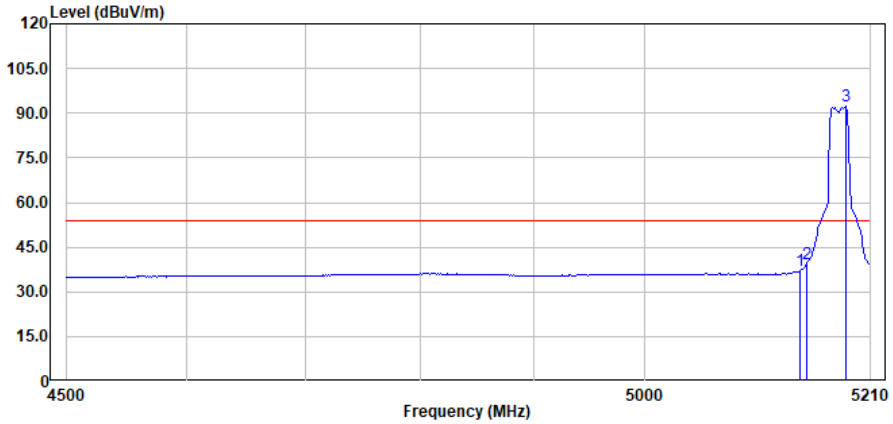


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5148.30	65.65	34.32	5.56	47.87	57.66	74.00	-16.34	Peak
	5150.00	67.97	34.33	5.56	47.87	59.99	74.00	-14.01	Peak
	5176.04	111.63	34.43	5.58	47.84	103.80	74.00	29.80	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

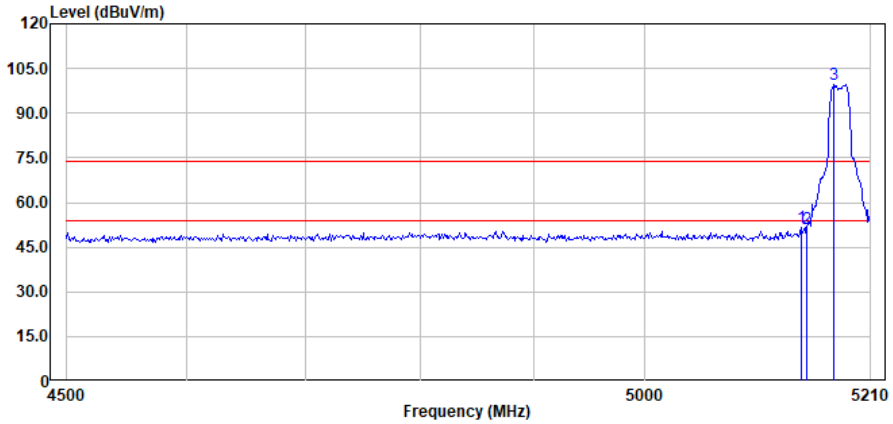


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5144.15	45.24	34.31	5.56	47.86	37.25	54.00	-16.75	Average
	5150.00	47.55	34.33	5.56	47.87	39.57	54.00	-14.43	Average
	5186.33	100.22	34.47	5.58	47.83	92.44	54.00	38.44	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

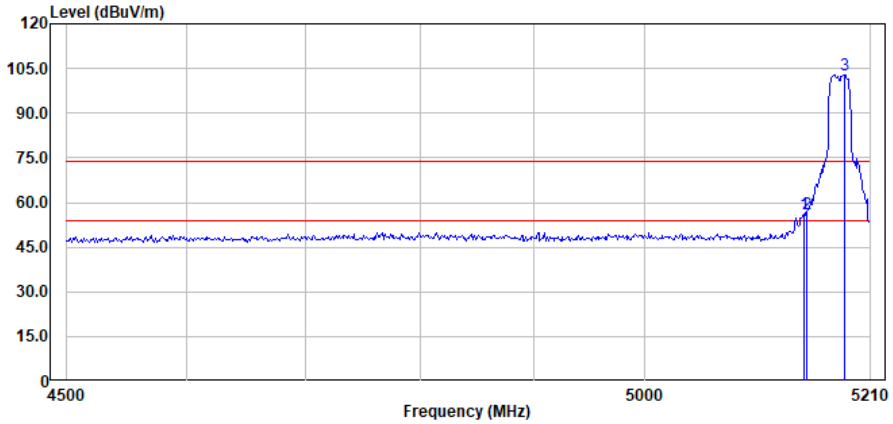


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5145.17	59.80	34.31	5.56	47.86	51.81	74.00	-22.19	Peak
	5150.00	59.02	34.33	5.56	47.87	51.04	74.00	-22.96	Peak
	5175.02	107.67	34.43	5.58	47.84	99.84	74.00	25.84	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

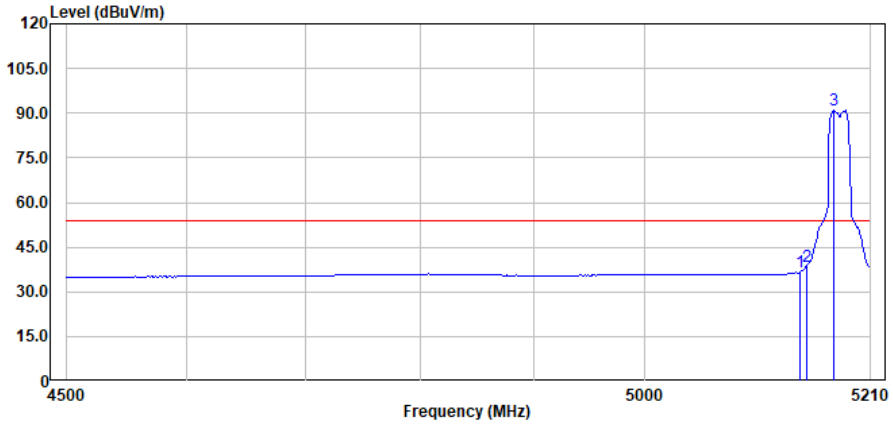


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5147.23	63.96	34.32	5.56	47.87	55.97	74.00	-18.03	Peak
	5150.00	63.92	34.33	5.56	47.87	55.94	74.00	-18.06	Peak
	5185.30	110.71	34.46	5.58	47.83	102.92	74.00	28.92	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

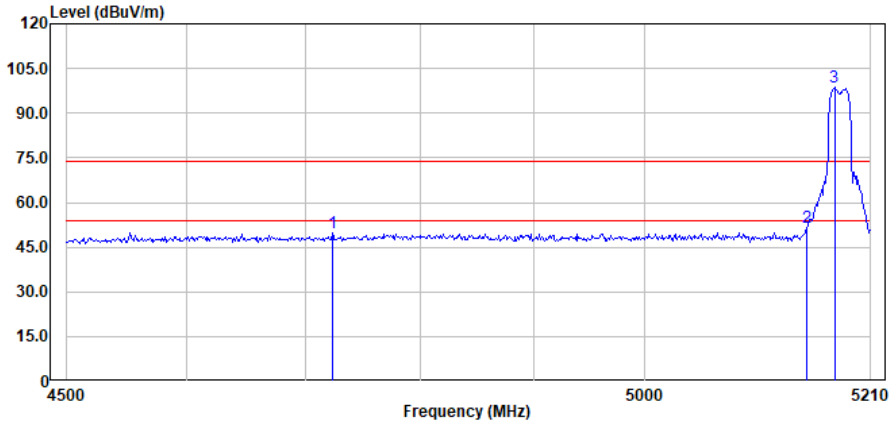


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5144.15	44.74	34.31	5.56	47.86	36.75	54.00	-17.25	Average
	5150.00	46.63	34.33	5.56	47.87	38.65	54.00	-15.35	Average
	5175.02	99.04	34.43	5.58	47.84	91.21	54.00	37.21	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

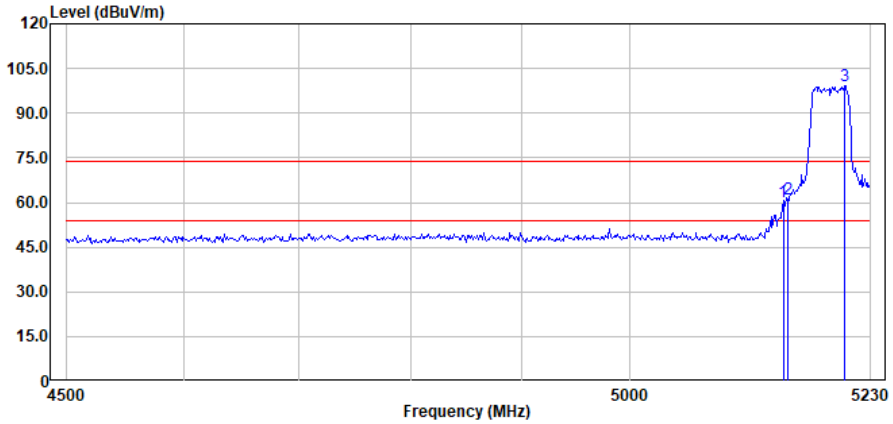


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4723.29	58.64	33.81	5.38	47.86	49.97	74.00	-24.03	Peak
	5150.00	59.72	34.33	5.56	47.87	51.74	74.00	-22.26	Peak
	5176.04	106.72	34.43	5.58	47.84	98.89	74.00	24.89	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

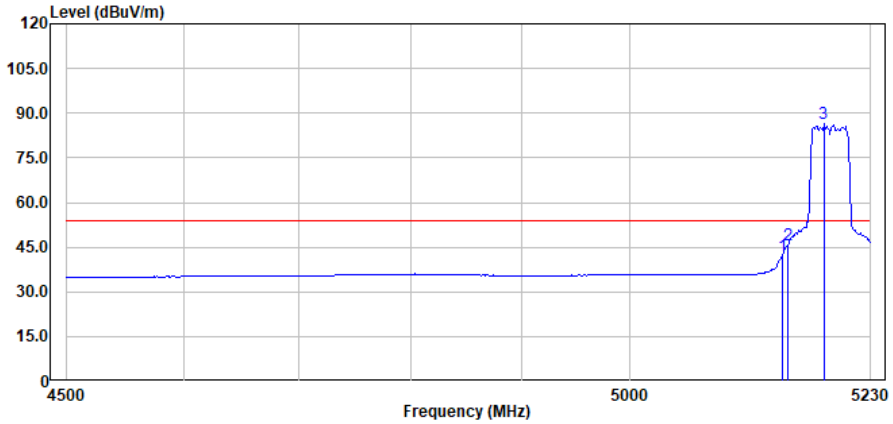


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5145.36	68.16	34.31	5.56	47.86	60.17	74.00	-13.83	Peak
	5150.00	68.99	34.33	5.56	47.87	61.01	74.00	-12.99	Peak
	5204.61	106.95	34.52	5.60	47.81	99.26	74.00	25.26	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

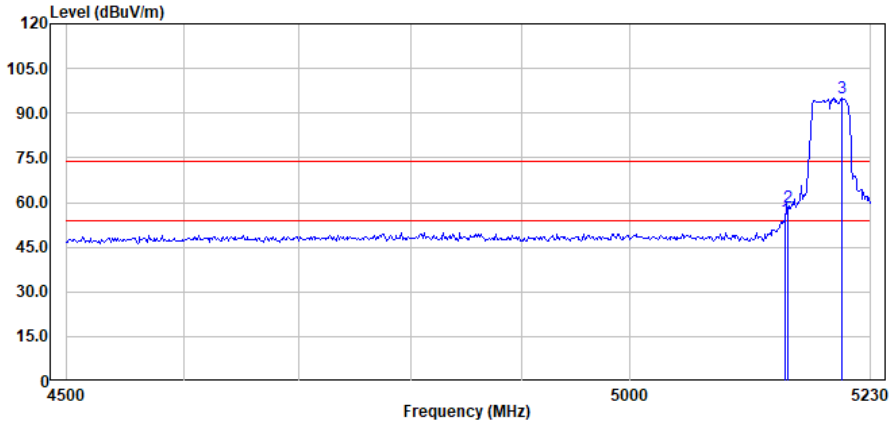


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5144.30	50.12	34.31	5.56	47.86	42.13	54.00	-11.87	Average
	5150.00	53.89	34.33	5.56	47.87	45.91	54.00	-8.09	Average
	5184.51	94.08	34.46	5.58	47.83	86.29	54.00	32.29	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

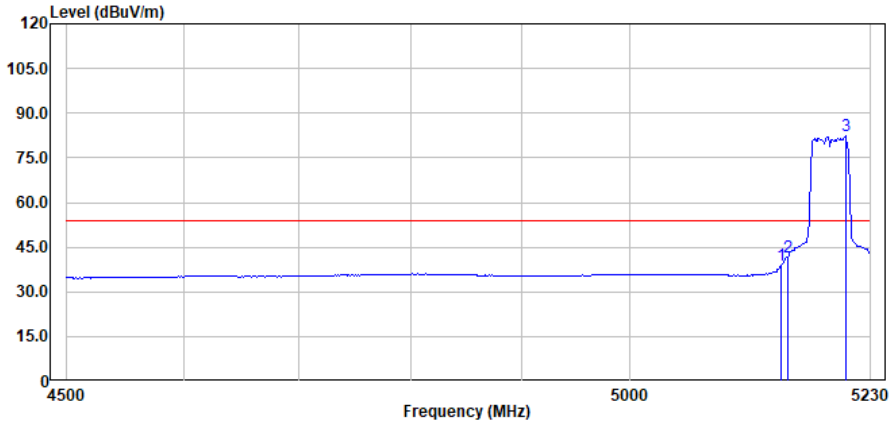


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5147.60	62.53	34.32	5.56	47.87	54.54	74.00	-19.46	Peak
	5150.00	66.45	34.33	5.56	47.87	58.47	74.00	-15.53	Peak
	5202.49	102.77	34.52	5.59	47.81	95.07	74.00	21.07	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

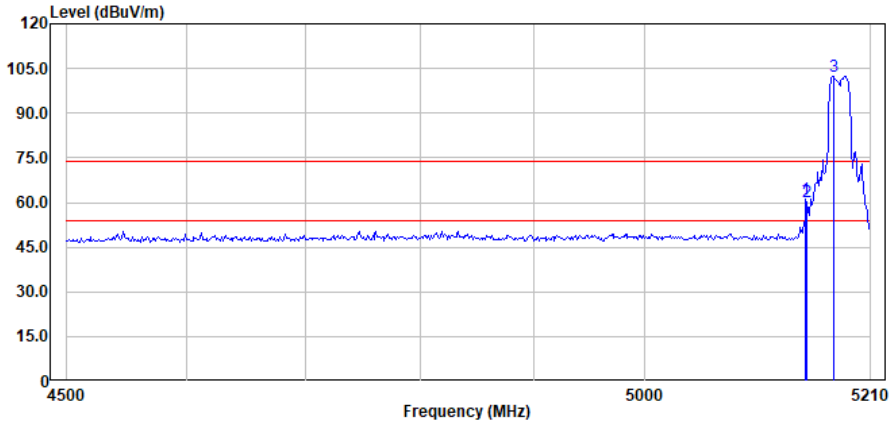


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5143.25	46.90	34.30	5.56	47.86	38.90	54.00	-15.10	Average
	5150.00	49.54	34.33	5.56	47.87	41.56	54.00	-12.44	Average
	5205.67	90.09	34.52	5.60	47.81	82.40	54.00	28.40	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

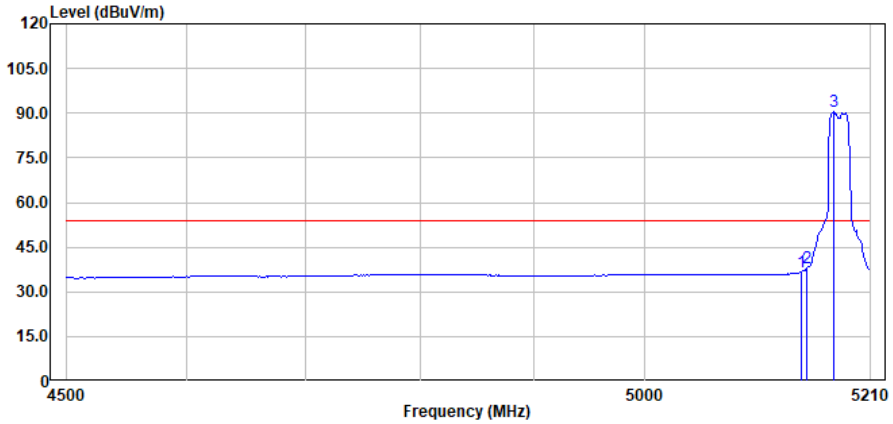


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5149.29	68.94	34.33	5.56	47.87	60.96	74.00	-13.04	Peak
	5150.00	68.19	34.33	5.56	47.87	60.21	74.00	-13.79	Peak
	5175.02	110.17	34.43	5.58	47.84	102.34	74.00	28.34	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

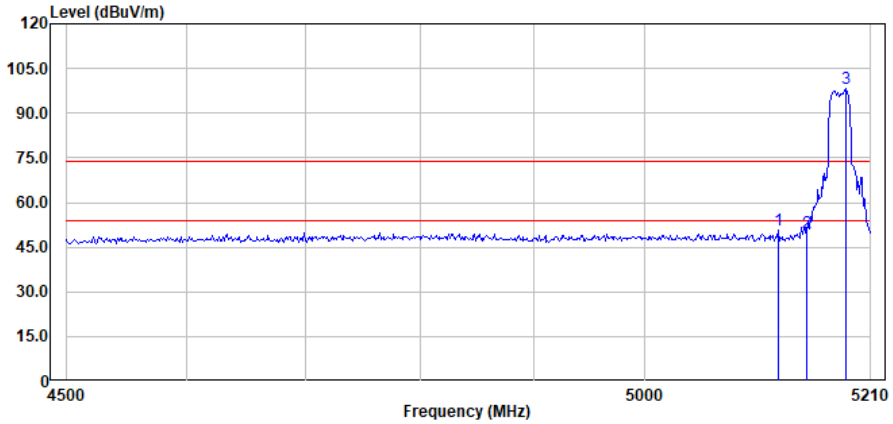


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5145.17	44.66	34.31	5.56	47.86	36.67	54.00	-17.33	Average
	5150.00	45.86	34.33	5.56	47.87	37.88	54.00	-16.12	Average
	5175.02	98.34	34.43	5.58	47.84	90.51	54.00	36.51	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

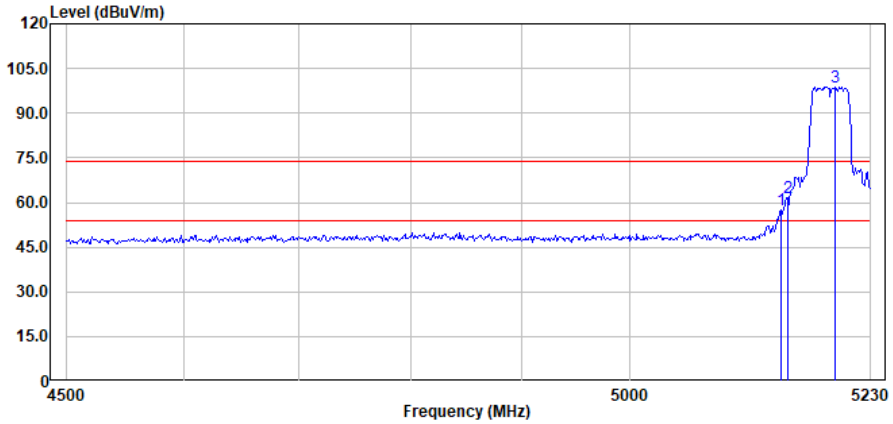


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5123.57	58.74	34.23	5.54	47.84	50.67	74.00	-23.33	Peak
	5150.00	57.67	34.33	5.56	47.87	49.69	74.00	-24.31	Peak
	5187.36	105.84	34.47	5.58	47.83	98.06	74.00	24.06	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

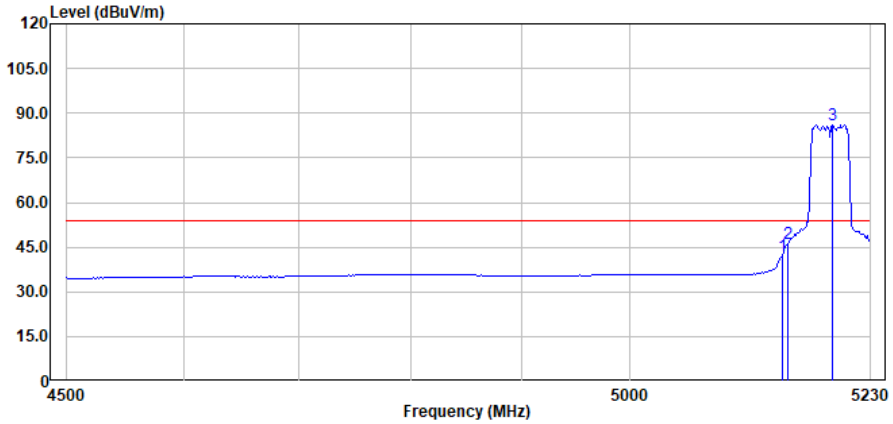


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5143.25	65.43	34.30	5.56	47.86	57.43	74.00	-16.57	Peak
	5150.00	69.48	34.33	5.56	47.87	61.50	74.00	-12.50	Peak
	5196.15	106.57	34.51	5.59	47.82	98.85	74.00	24.85	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

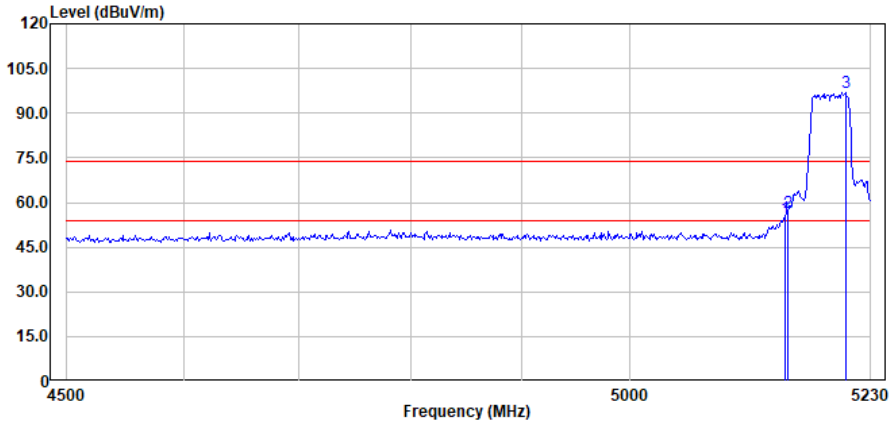


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5144.30	50.16	34.31	5.56	47.86	42.17	54.00	-11.83	Average
	5150.00	54.23	34.33	5.56	47.87	46.25	54.00	-7.75	Average
	5192.97	93.89	34.49	5.59	47.82	86.15	54.00	32.15	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

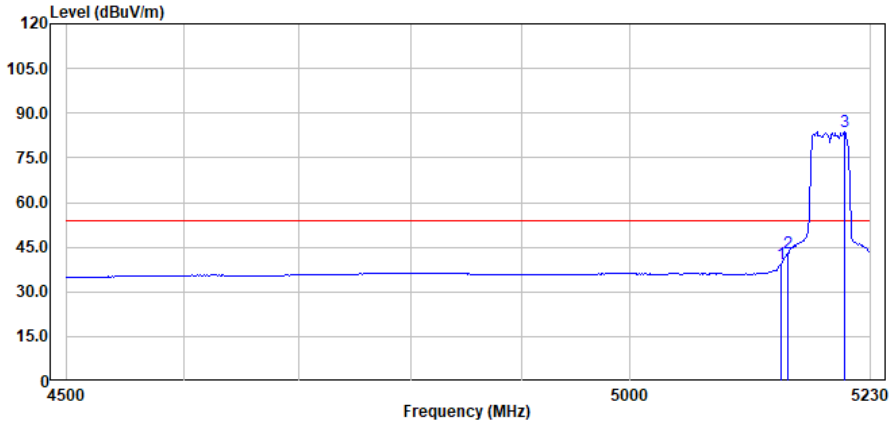


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5147.48	62.76	34.32	5.56	47.87	54.77	74.00	-19.23	Peak
	5150.00	64.70	34.33	5.56	47.87	56.72	74.00	-17.28	Peak
	5205.67	104.63	34.52	5.60	47.81	96.94	74.00	22.94	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low

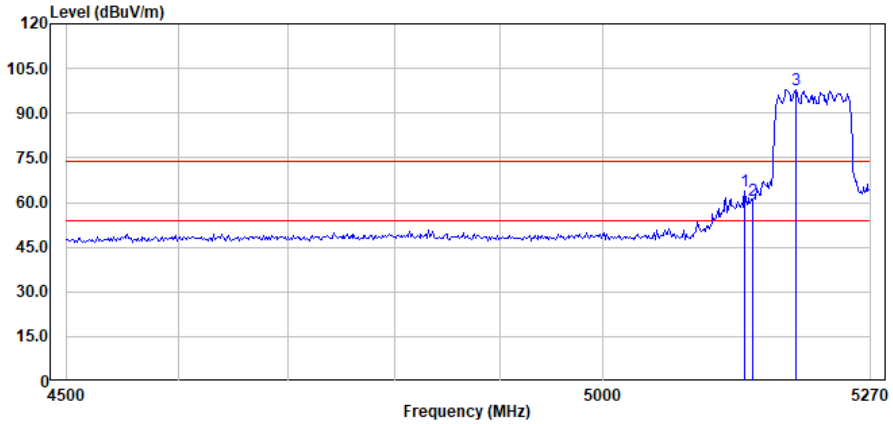


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5143.25	47.37	34.30	5.56	47.86	39.37	54.00	-14.63	Average
	5150.00	50.91	34.33	5.56	47.87	42.93	54.00	-11.07	Average
	5204.61	91.66	34.52	5.60	47.81	83.97	54.00	29.97	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low

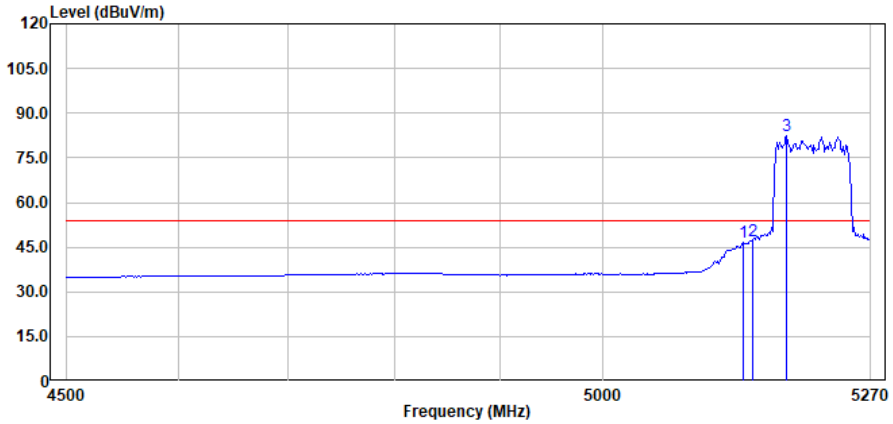


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5141.67	71.75	34.30	5.56	47.86	63.75	74.00	-10.25	Peak
	5150.00	68.55	34.33	5.56	47.87	60.57	74.00	-13.43	Peak
	5194.12	105.51	34.50	5.59	47.82	97.78	74.00	23.78	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low

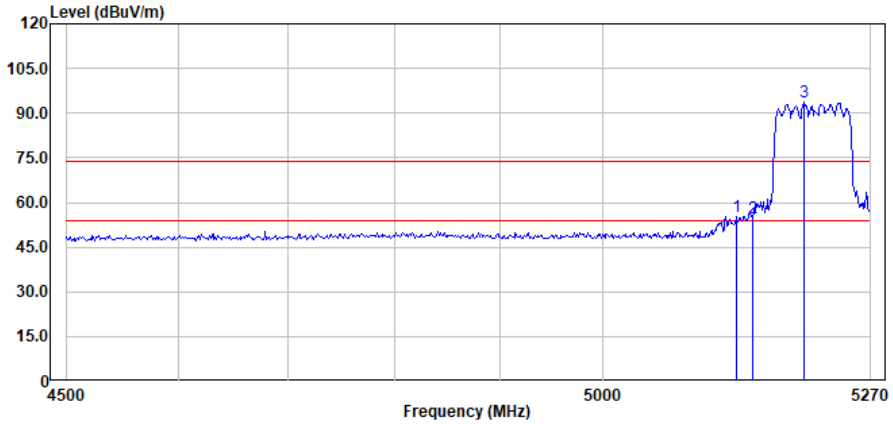


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5140.55	54.45	34.29	5.55	47.86	46.43	54.00	-7.57	Average
	5150.00	55.03	34.33	5.56	47.87	47.05	54.00	-6.95	Average
	5184.07	90.41	34.46	5.58	47.83	82.62	54.00	28.62	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low

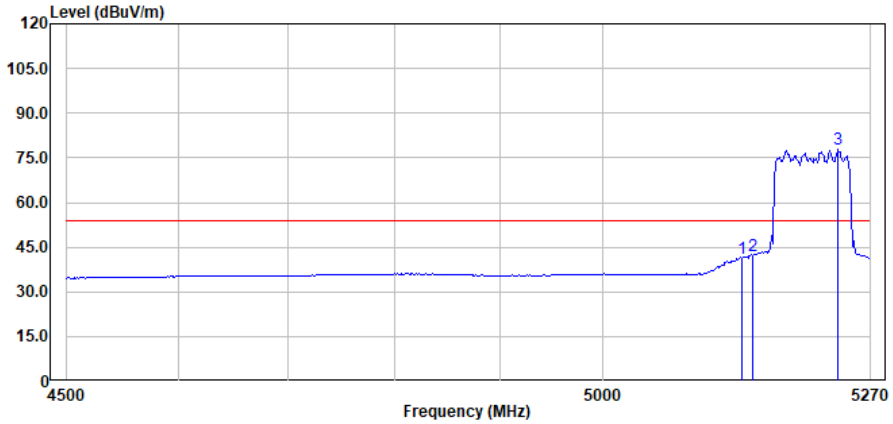


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5132.74	63.28	34.26	5.55	47.85	55.24	74.00	-18.76	Peak
	5150.00	62.91	34.33	5.56	47.87	54.93	74.00	-19.07	Peak
	5201.93	101.52	34.52	5.59	47.81	93.82	74.00	19.82	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low

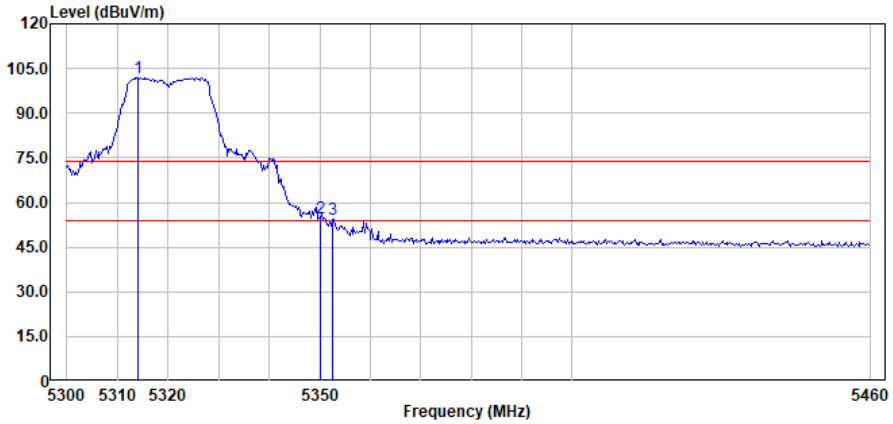


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5138.32	49.42	34.29	5.55	47.86	41.40	54.00	-12.60	Average
	5150.00	50.22	34.33	5.56	47.87	42.24	54.00	-11.76	Average
	5236.52	85.43	34.52	5.62	47.77	77.80	54.00	23.80	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

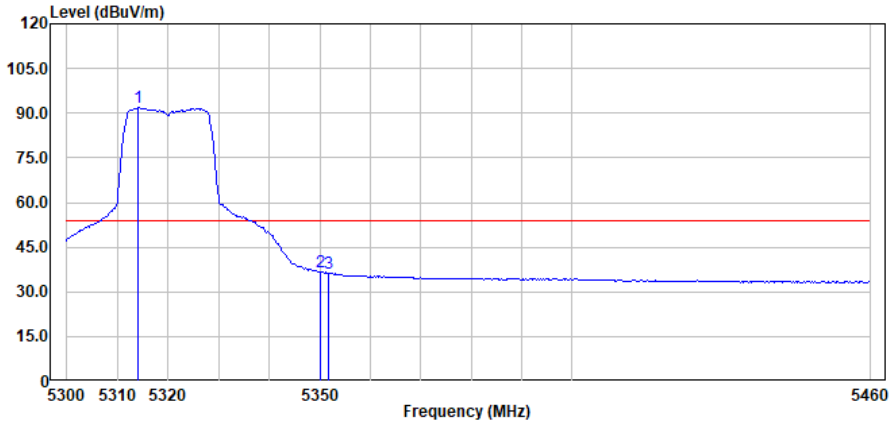


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5314.15	109.44	34.48	5.66	47.54	102.04	74.00	28.04	Peak
	5350.00	62.10	34.41	5.69	47.42	54.78	74.00	-19.22	Peak
	5352.41	61.58	34.41	5.69	47.42	54.26	74.00	-19.74	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

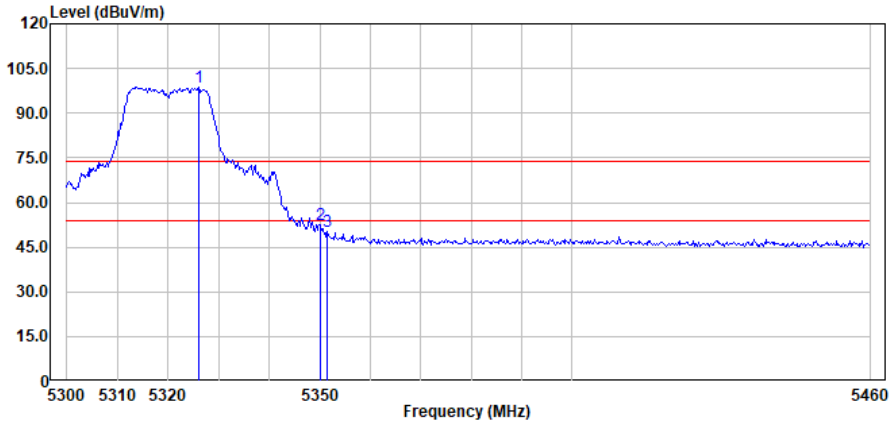


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5314.15	99.17	34.48	5.66	47.54	91.77	54.00	37.77	Average
	5350.00	44.03	34.41	5.69	47.42	36.71	54.00	-17.29	Average
	5351.71	43.43	34.41	5.69	47.42	36.11	54.00	-17.89	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

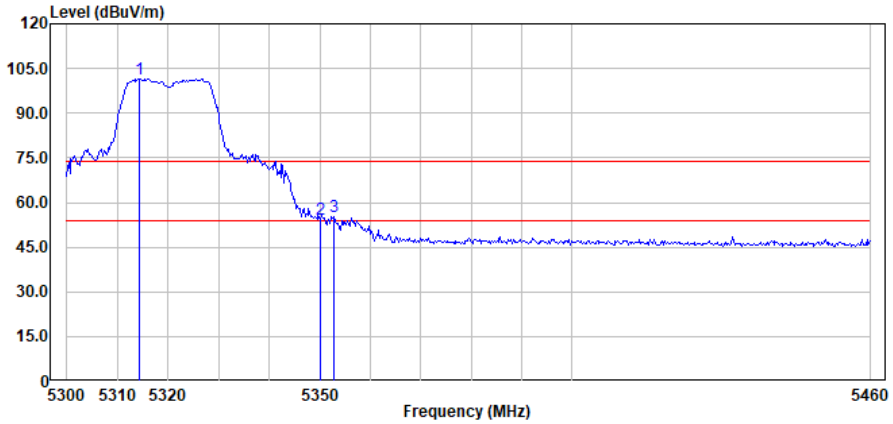


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5325.97	105.99	34.46	5.67	47.50	98.62	74.00	24.62	Peak
	5350.00	59.80	34.41	5.69	47.42	52.48	74.00	-21.52	Peak
	5351.48	57.46	34.41	5.69	47.42	50.14	74.00	-23.86	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

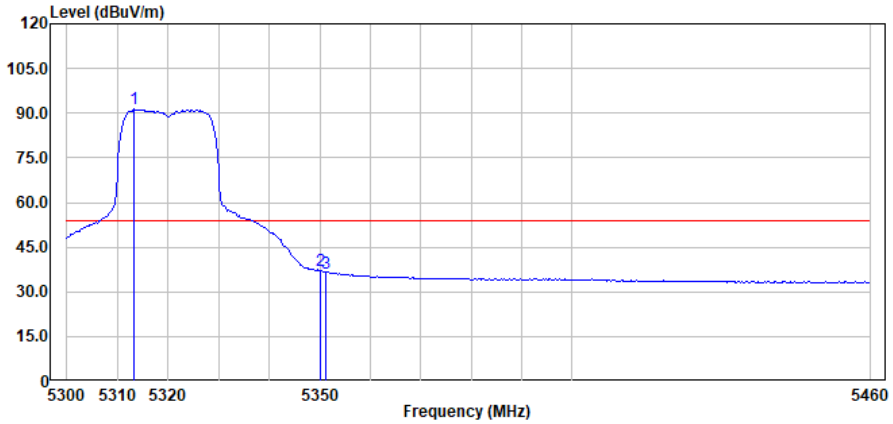


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5314.38	108.95	34.48	5.66	47.54	101.55	74.00	27.55	Peak
	5350.00	61.47	34.41	5.69	47.42	54.15	74.00	-19.85	Peak
	5352.64	62.80	34.40	5.69	47.42	55.47	74.00	-18.53	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

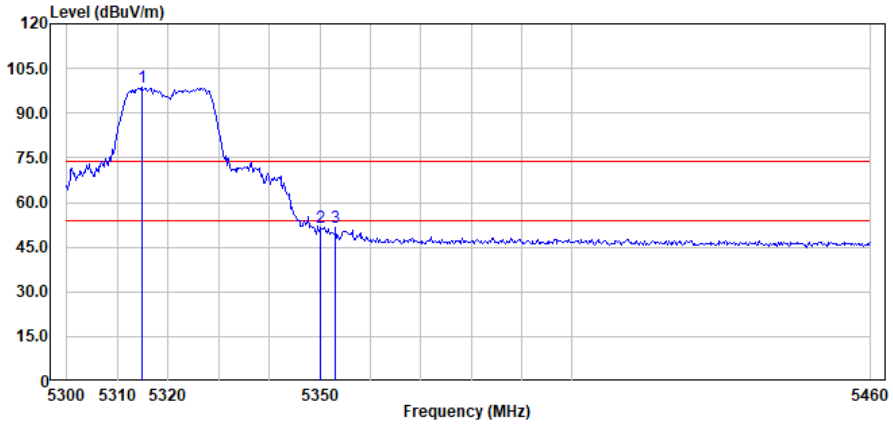


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5313.22	98.68	34.48	5.66	47.55	91.27	54.00	37.27	Average
	5350.00	44.35	34.41	5.69	47.42	37.03	54.00	-16.97	Average
	5351.25	43.73	34.41	5.69	47.42	36.41	54.00	-17.59	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

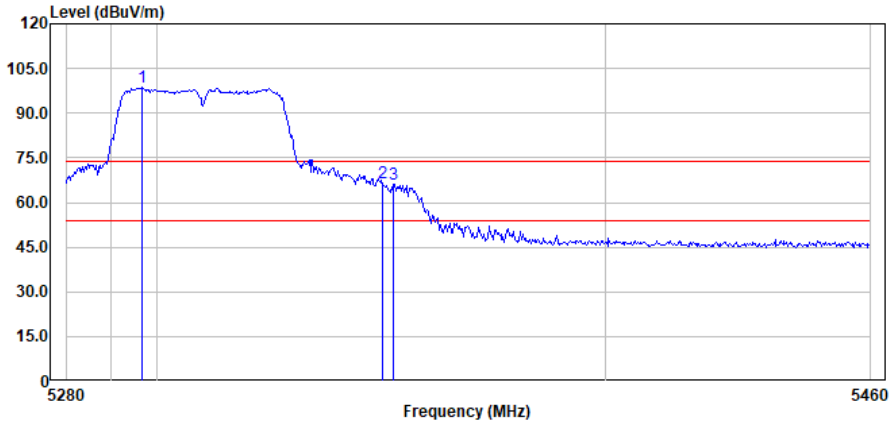


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5314.84	105.89	34.48	5.66	47.54	98.49	74.00	24.49	Peak
	5350.00	59.13	34.41	5.69	47.42	51.81	74.00	-22.19	Peak
	5353.10	58.93	34.40	5.69	47.42	51.60	74.00	-22.40	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

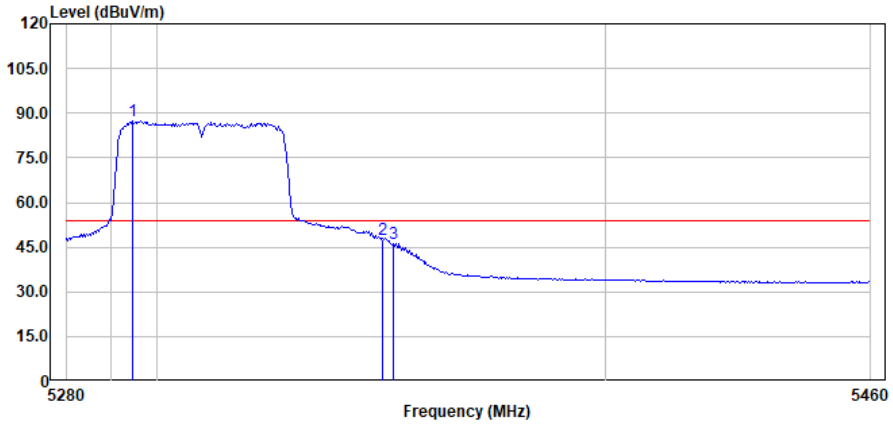


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5296.70	106.01	34.51	5.65	47.60	98.57	74.00	24.57	Peak
	5350.00	73.94	34.41	5.69	47.42	66.62	74.00	-7.38	Peak
	5352.52	73.31	34.40	5.69	47.42	65.98	74.00	-8.02	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

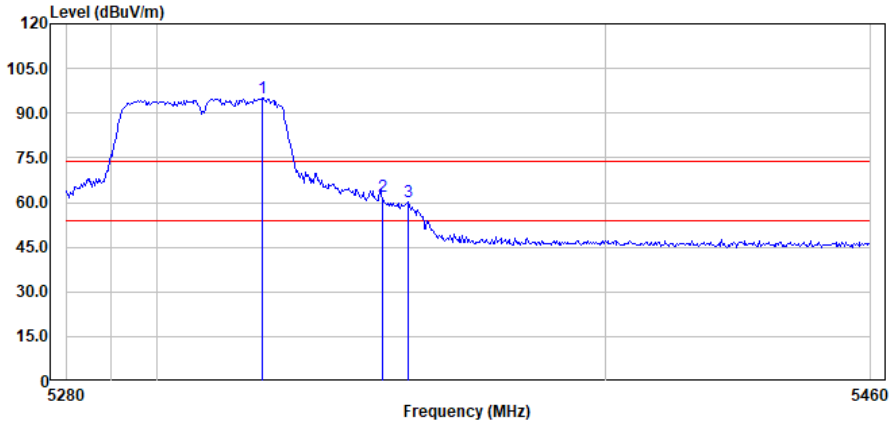


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5294.61	94.69	34.51	5.65	47.61	87.24	54.00	33.24	Average
	5350.00	55.09	34.41	5.69	47.42	47.77	54.00	-6.23	Average
	5352.52	53.68	34.40	5.69	47.42	46.35	54.00	-7.65	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

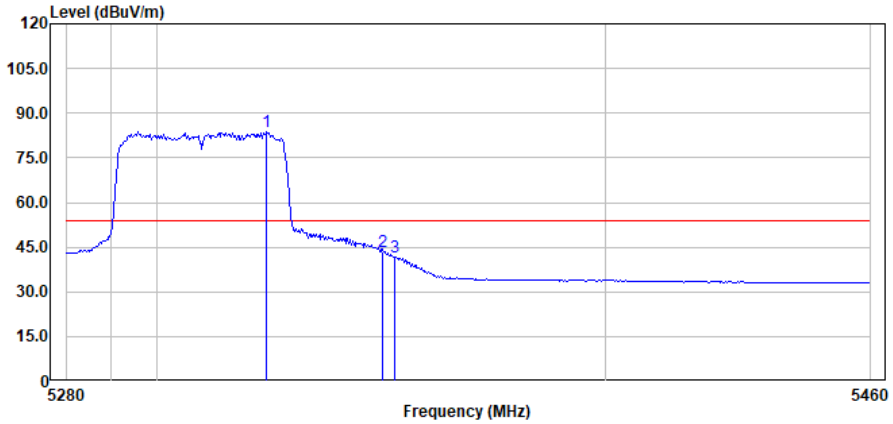


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5323.30	102.53	34.46	5.67	47.51	95.15	74.00	21.15	Peak
	5350.00	69.42	34.41	5.69	47.42	62.10	74.00	-11.90	Peak
	5355.91	67.45	34.40	5.69	47.42	60.12	74.00	-13.88	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

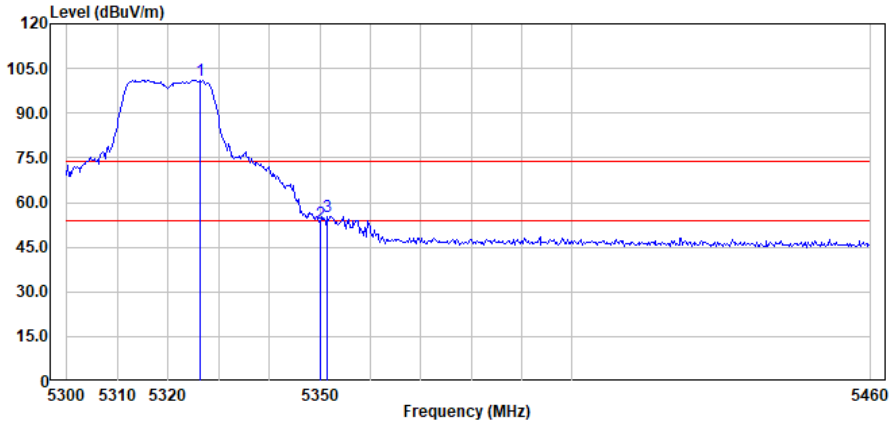


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5324.35	91.30	34.46	5.67	47.51	83.92	54.00	29.92	Average
	5350.00	50.68	34.41	5.69	47.42	43.36	54.00	-10.64	Average
	5352.78	49.02	34.40	5.69	47.42	41.69	54.00	-12.31	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

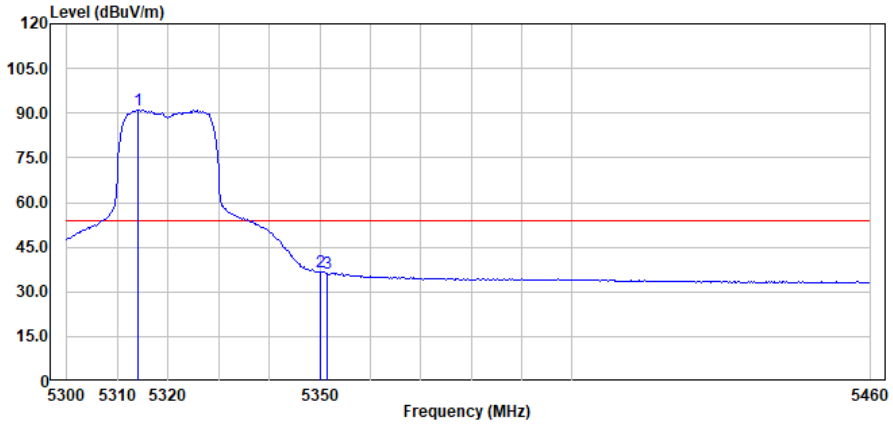


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5326.20	108.55	34.46	5.67	47.50	101.18	74.00	27.18	Peak
	5350.00	60.22	34.41	5.69	47.42	52.90	74.00	-21.10	Peak
	5351.48	62.74	34.41	5.69	47.42	55.42	74.00	-18.58	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

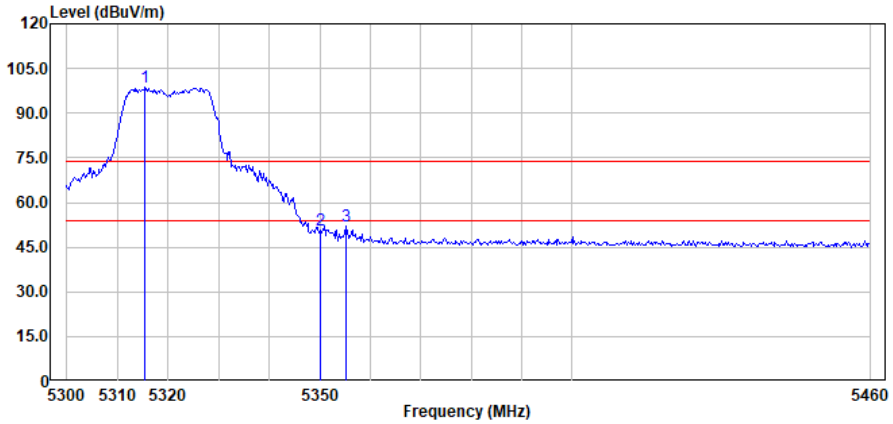


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	5314.15	98.48	34.48	5.66	47.54	91.08	54.00	37.08	Average
2	5350.00	43.81	34.41	5.69	47.42	36.49	54.00	-17.51	Average
3	5351.48	43.62	34.41	5.69	47.42	36.30	54.00	-17.70	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

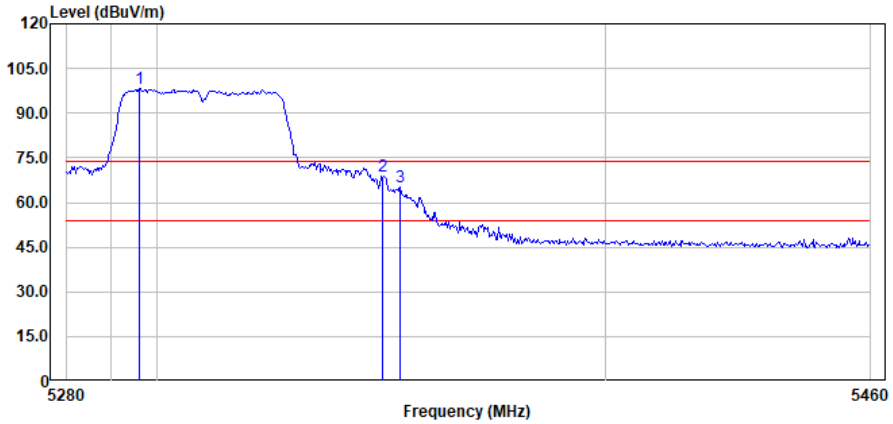


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5315.54	106.07	34.48	5.67	47.54	98.68	74.00	24.68	Peak
	5350.00	58.04	34.41	5.69	47.42	50.72	74.00	-23.28	Peak
	5355.19	59.38	34.40	5.69	47.42	52.05	74.00	-21.95	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

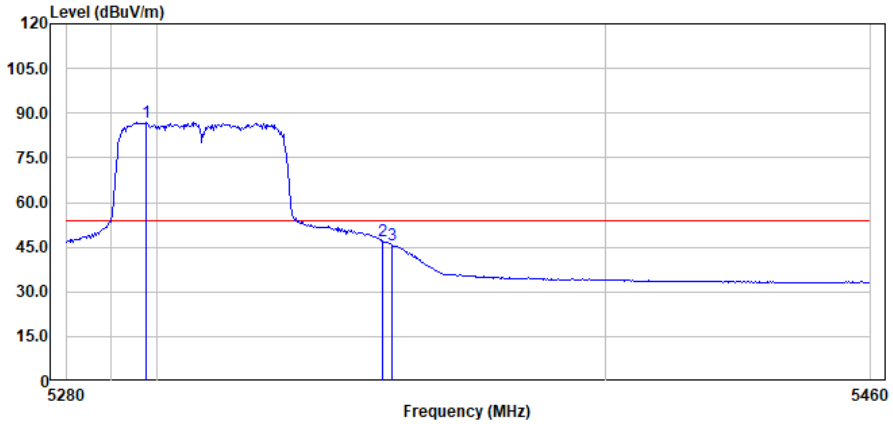


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5296.17	105.58	34.51	5.65	47.60	98.14	74.00	24.14	Peak
	5350.00	76.29	34.41	5.69	47.42	68.97	74.00	-5.03	Peak
	5354.09	72.32	34.40	5.69	47.42	64.99	74.00	-9.01	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

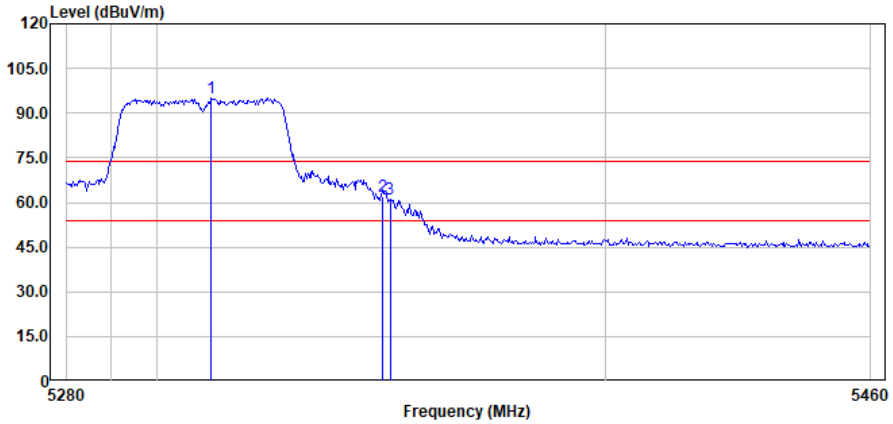


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5297.74	94.52	34.51	5.65	47.60	87.08	54.00	33.08	Average
	5350.00	54.36	34.41	5.69	47.42	47.04	54.00	-6.96	Average
	5352.26	53.18	34.41	5.69	47.42	45.86	54.00	-8.14	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

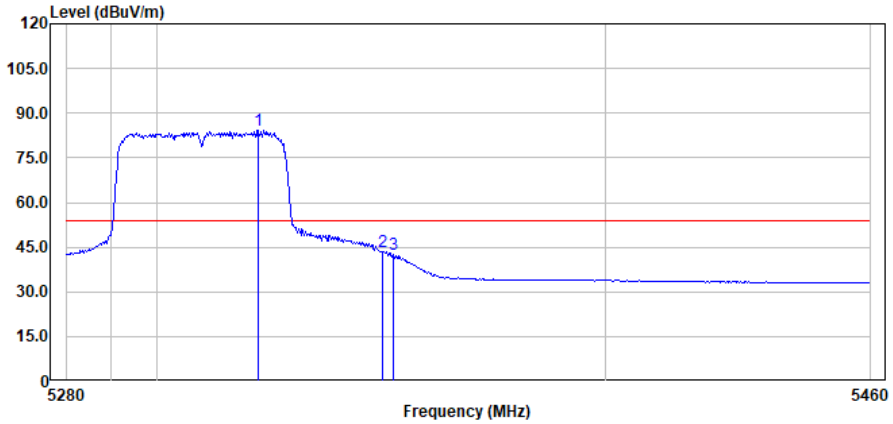


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5312.09	102.42	34.49	5.66	47.55	95.02	74.00	21.02	Peak
	5350.00	69.24	34.41	5.69	47.42	61.92	74.00	-12.08	Peak
	5351.74	68.42	34.41	5.69	47.42	61.10	74.00	-12.90	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High

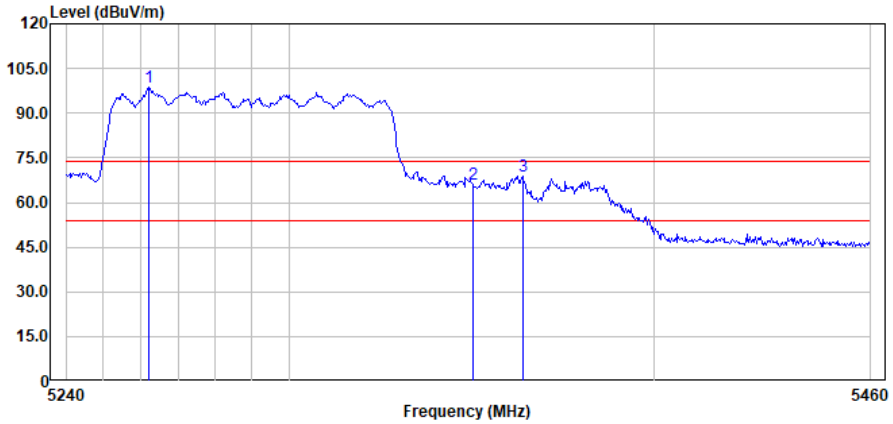


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5322.52	91.59	34.46	5.67	47.51	84.21	54.00	30.21	Average
	5350.00	50.64	34.41	5.69	47.42	43.32	54.00	-10.68	Average
	5352.52	49.71	34.40	5.69	47.42	42.38	54.00	-11.62	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:High

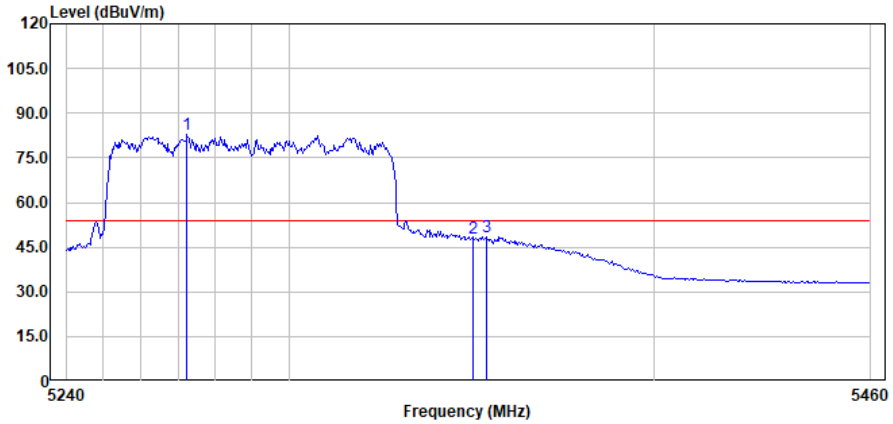


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5262.32	106.32	34.51	5.63	47.72	98.74	74.00	24.74	Peak
	5350.00	73.51	34.41	5.69	47.42	66.19	74.00	-7.81	Peak
	5363.71	76.20	34.38	5.70	47.43	68.85	74.00	-5.15	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:High

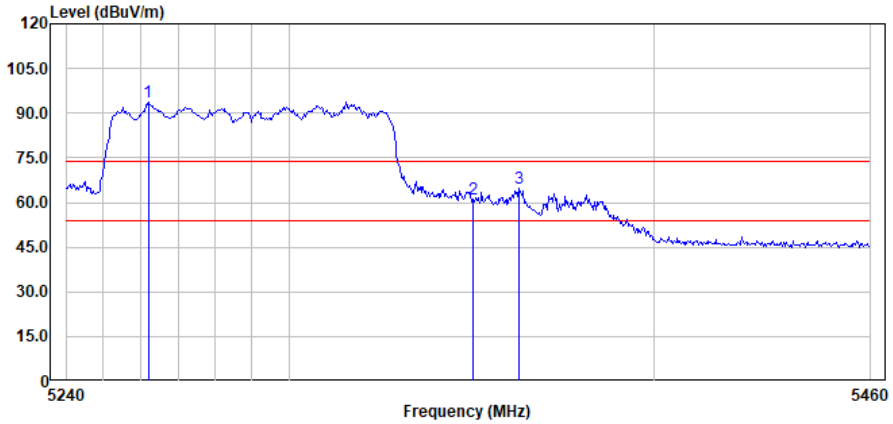


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5272.52	90.46	34.51	5.64	47.68	82.93	54.00	28.93	Average
	5350.00	55.27	34.41	5.69	47.42	47.95	54.00	-6.05	Average
	5353.83	56.00	34.40	5.69	47.42	48.67	54.00	-5.33	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:High

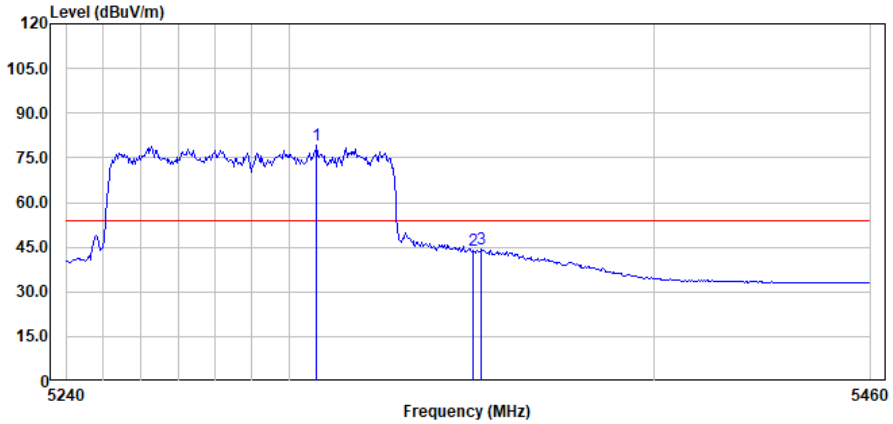


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5262.00	101.51	34.51	5.63	47.72	93.93	74.00	19.93	Peak
	5350.00	68.44	34.41	5.69	47.42	61.12	74.00	-12.88	Peak
	5362.75	72.01	34.38	5.70	47.43	64.66	74.00	-9.34	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:High



Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5307.59	86.80	34.49	5.66	47.56	79.39	54.00	25.39	Average
	5350.00	51.34	34.41	5.69	47.42	44.02	54.00	-9.98	Average
	5352.55	51.76	34.40	5.69	47.42	44.43	54.00	-9.57	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

7.10 Frequency Stability

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

7.10.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

7.10.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.
Final test	01	TX mode charging (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/ac 20/40/80, Only the data of worst case is recorded in the report.

7.10.3 Measurement Procedure and Data

Please Refer to Appendix for Details

7.11 Non-occupancy period

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

Limit:

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

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

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

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

7.11.1 E.U.T. Operation

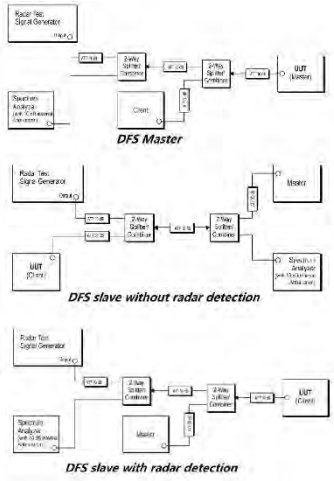
Operating Environment:

Temperature: 24.9 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

7.11.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	Normal working

7.11.3 Test Setup Diagram



7.11.4 Measurement Procedure and Data

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details

7.12 Channel Move Time

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

Limit:

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

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

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

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

7.12.1 E.U.T. Operation

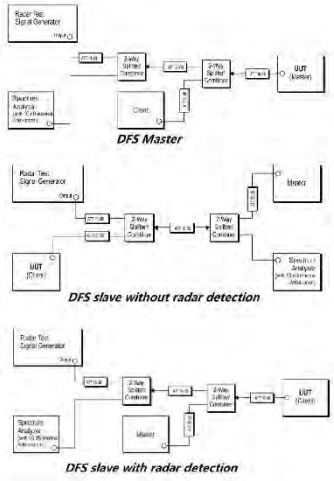
Operating Environment:

Temperature: 24.9 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

7.12.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	Normal working

7.12.3 Test Setup Diagram



7.12.4 Measurement Procedure and Data

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details

7.13 Channel Closing Transmission Time

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

Limit:

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

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

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

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

7.13.1 E.U.T. Operation

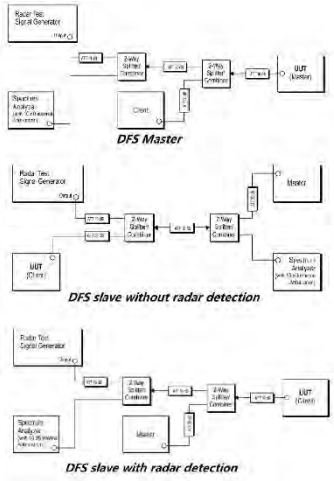
Operating Environment:

Temperature: 24.9 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

7.13.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	Normal working

7.13.3 Test Setup Diagram



7.13.4 Measurement Procedure and Data

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2307001252AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2307001252AT

10 Appendix

1. Duty Cycle

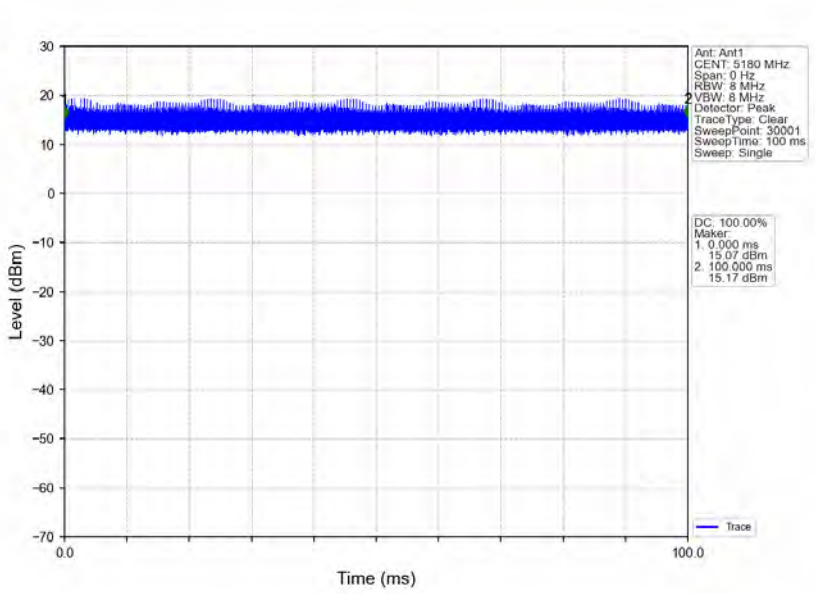
1.1 Ant1

1.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	100.000	100.000	100.00	0.00	0.00
		5200	100.000	100.000	100.00	0.00	0.00
		5240	100.000	100.000	100.00	0.00	0.00
		5260	100.000	100.000	100.00	0.00	0.00
		5300	100.000	100.000	100.00	0.00	0.00
		5320	100.000	100.000	100.00	0.00	0.00
802.11n (HT20)	SISO	5180	100.000	100.000	100.00	0.00	0.00
		5200	100.000	100.000	100.00	0.00	0.00
		5240	100.000	100.000	100.00	0.00	0.00
		5260	100.000	100.000	100.00	0.00	0.00
		5300	100.000	100.000	100.00	0.00	0.00
		5320	100.000	100.000	100.00	0.00	0.00
802.11n (HT40)	SISO	5190	100.000	100.000	100.00	0.00	0.00
		5230	100.000	100.000	100.00	0.00	0.00
		5270	100.000	100.000	100.00	0.00	0.00
		5310	100.000	100.000	100.00	0.00	0.00
802.11ac (VHT20)	SISO	5180	100.000	100.000	100.00	0.00	0.00
		5200	100.000	100.000	100.00	0.00	0.00
		5240	100.000	100.000	100.00	0.00	0.00
		5260	100.000	100.000	100.00	0.00	0.00
		5300	100.000	100.000	100.00	0.00	0.00
		5320	100.000	100.000	100.00	0.00	0.00
802.11ac (VHT40)	SISO	5190	100.000	100.000	100.00	0.00	0.00
		5230	100.000	100.000	100.00	0.00	0.00
		5270	100.000	100.000	100.00	0.00	0.00
		5310	100.000	100.000	100.00	0.00	0.00
802.11ac (VHT80)	SISO	5210	100.000	100.000	100.00	0.00	0.00
		5290	100.000	100.000	100.00	0.00	0.00

1.1.2 Test Graph

802.11a_LCH_5180MHz_Ant1_NTNV



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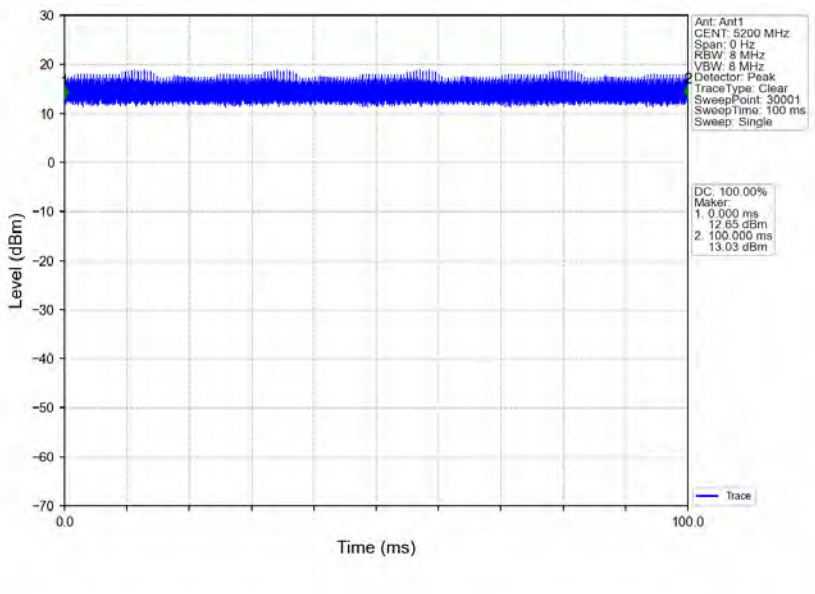

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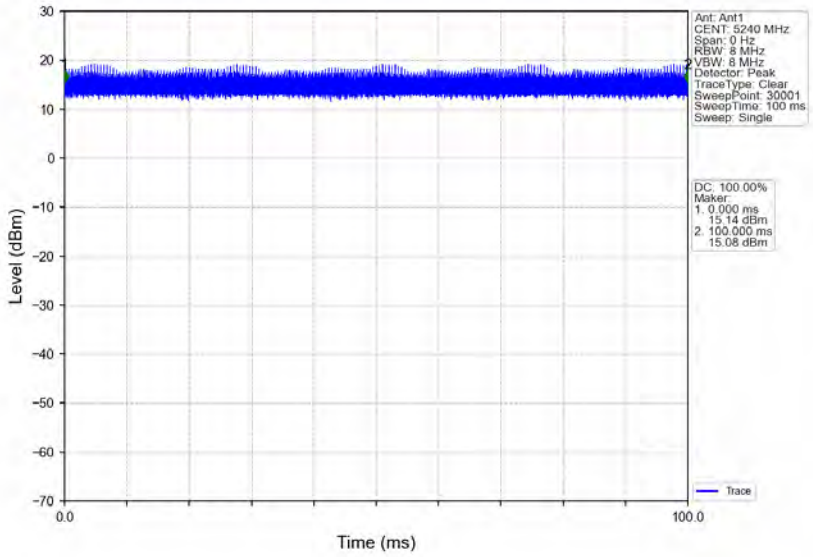

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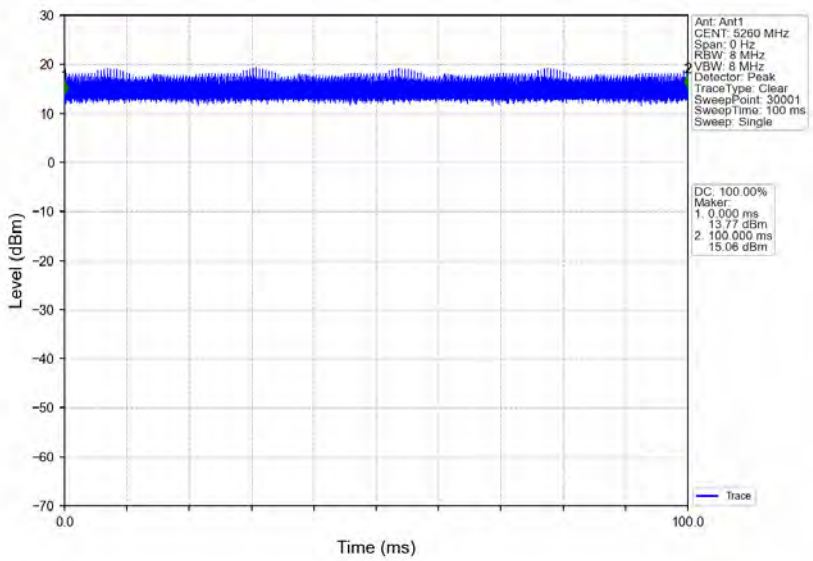

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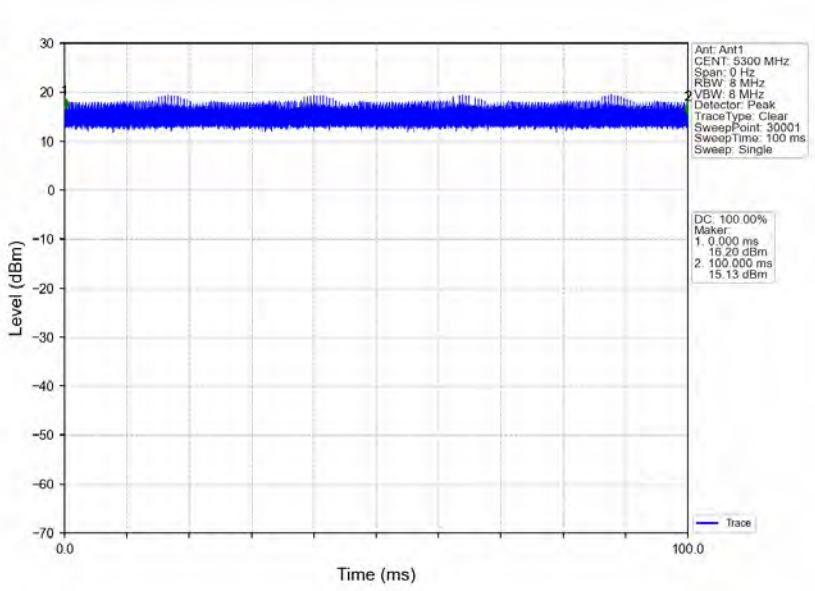

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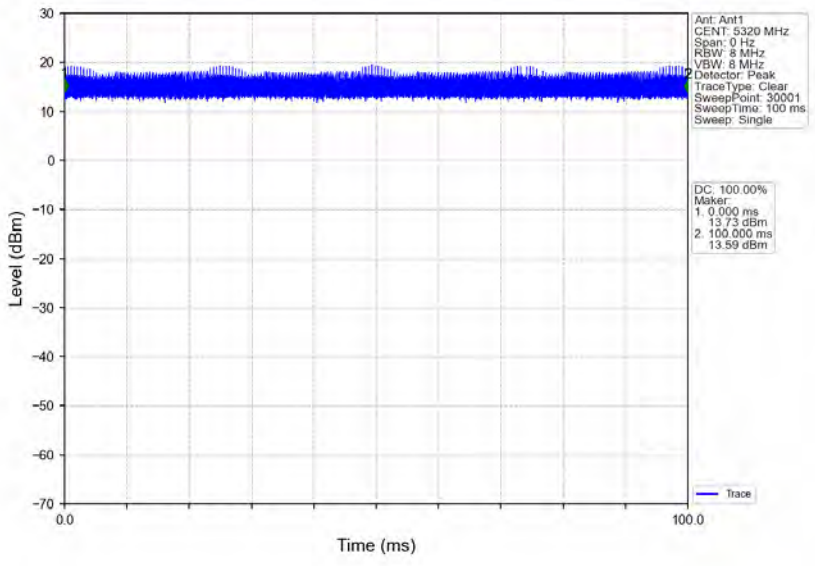

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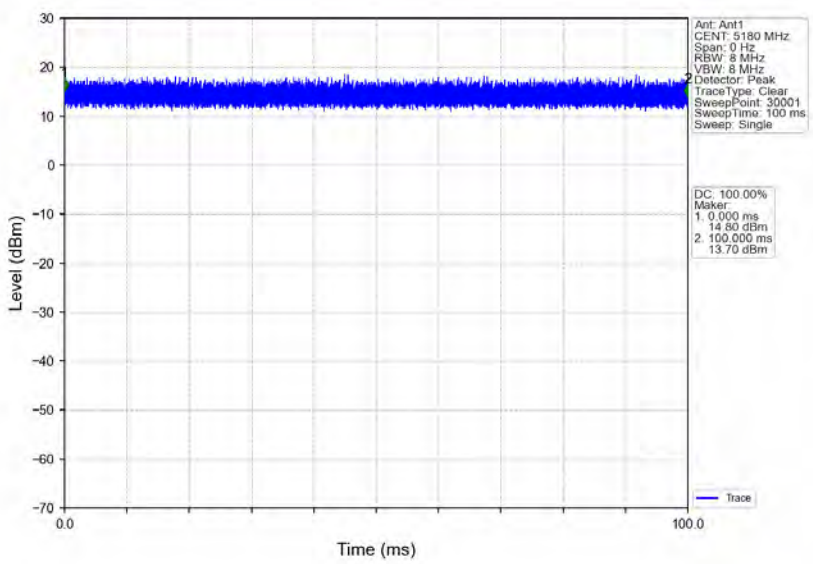

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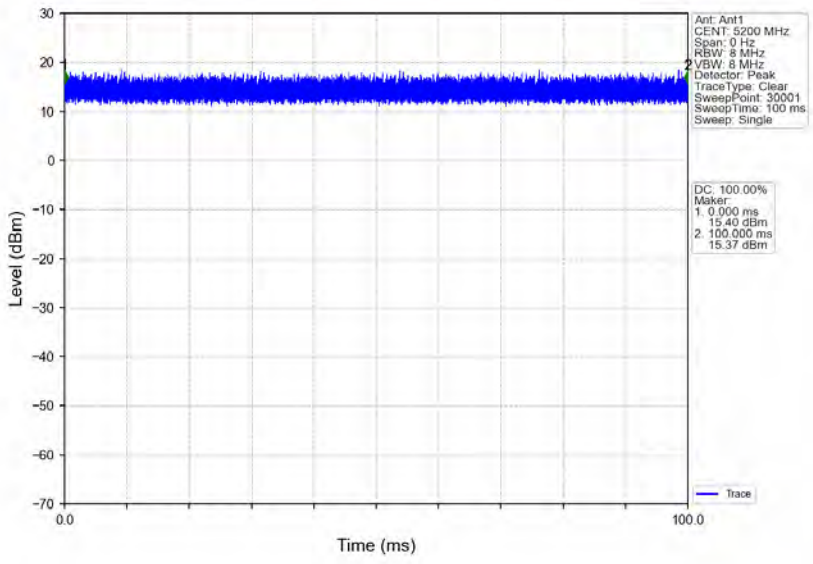

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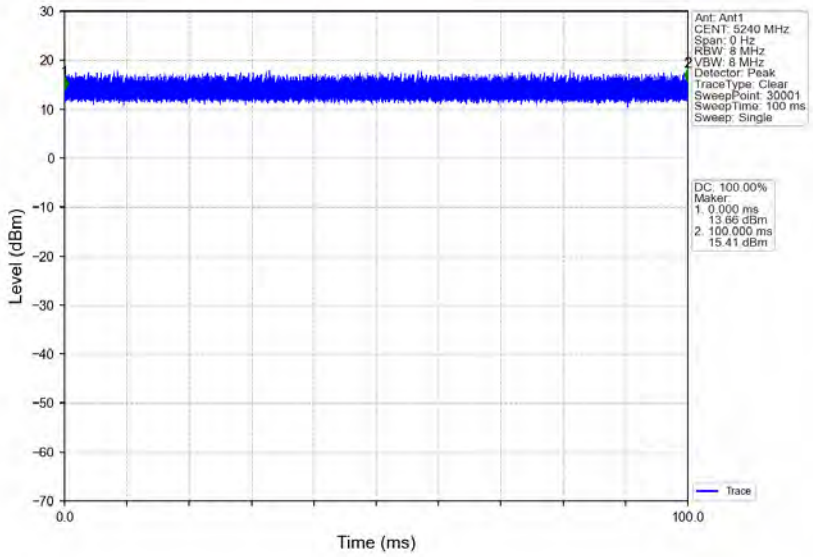

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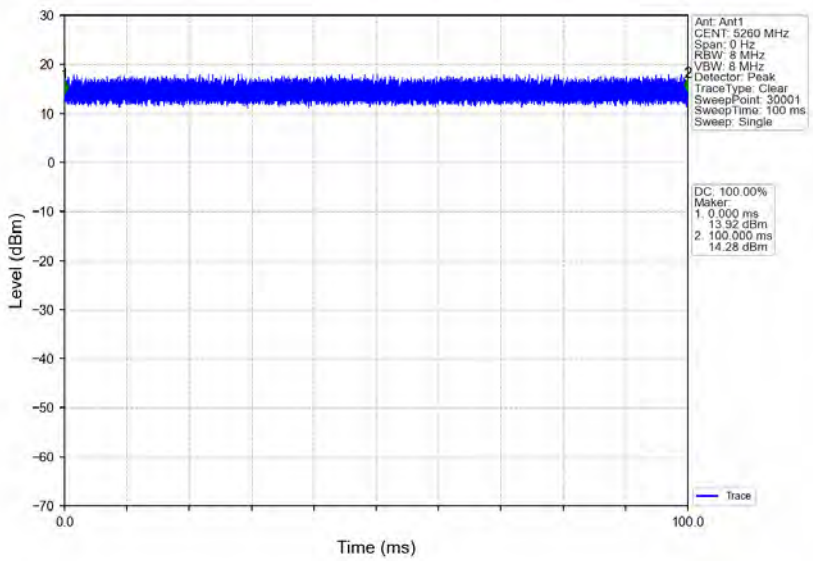

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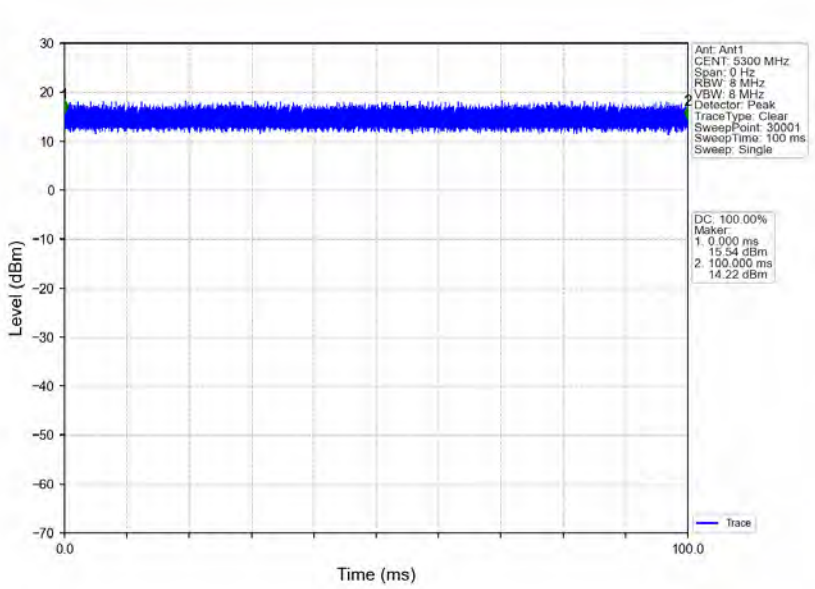

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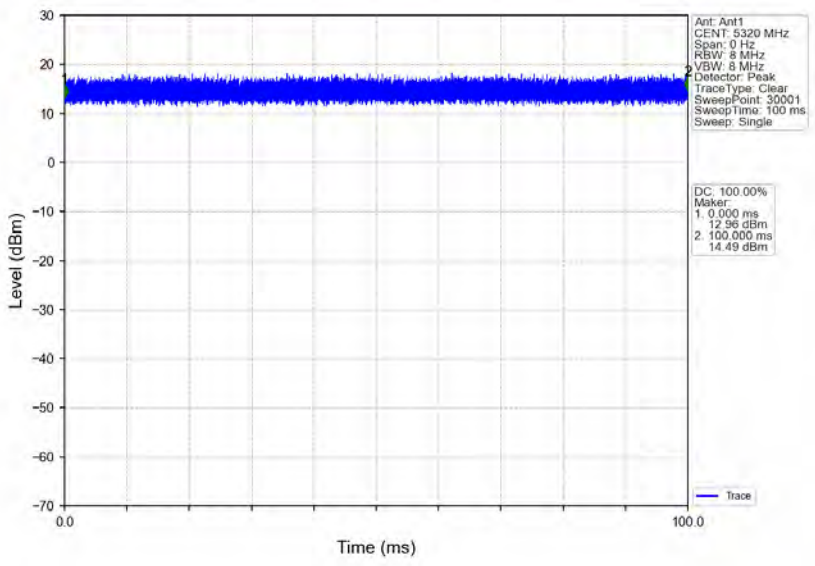

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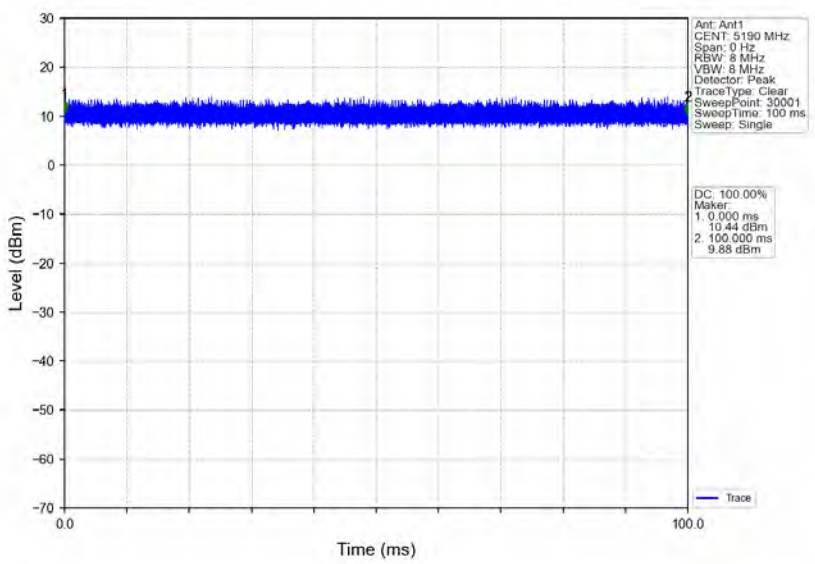

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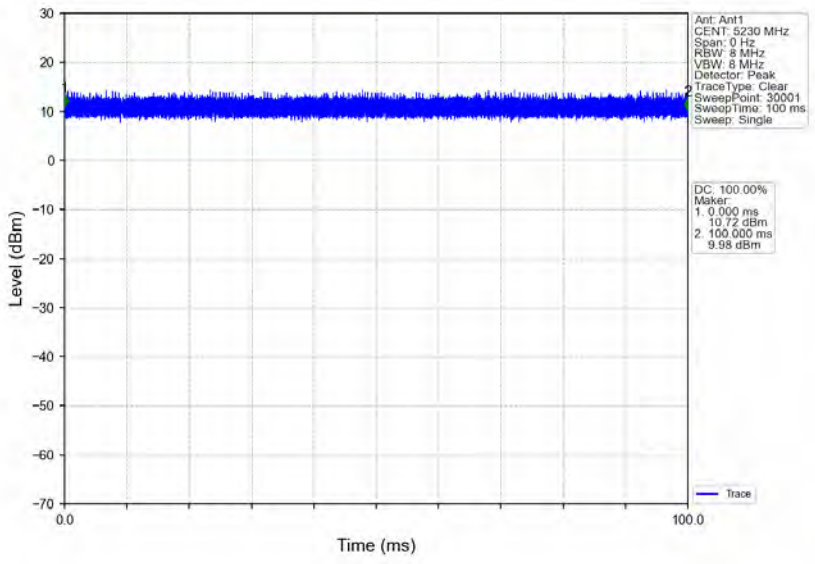

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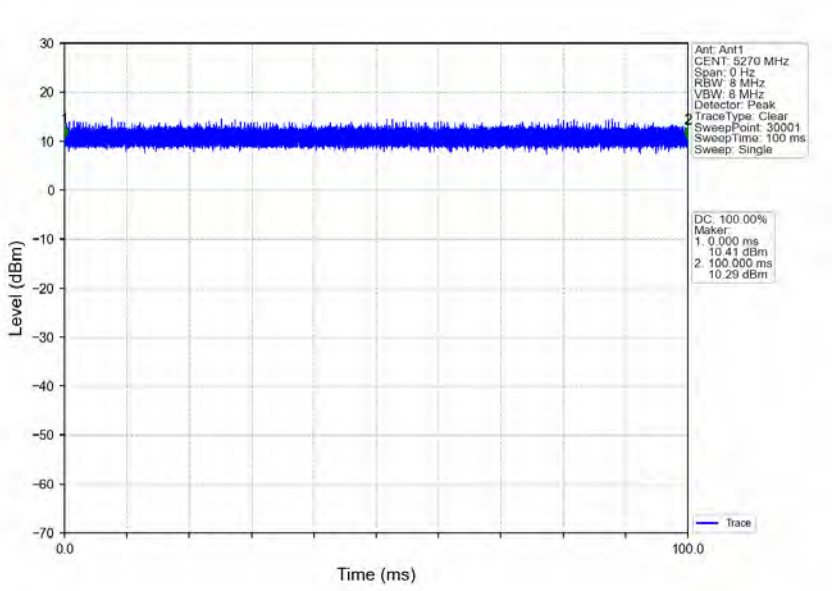
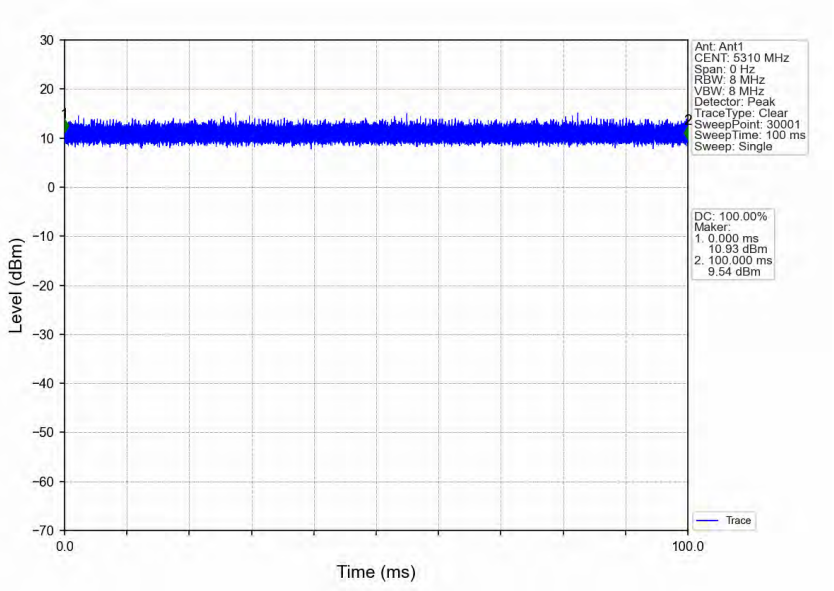
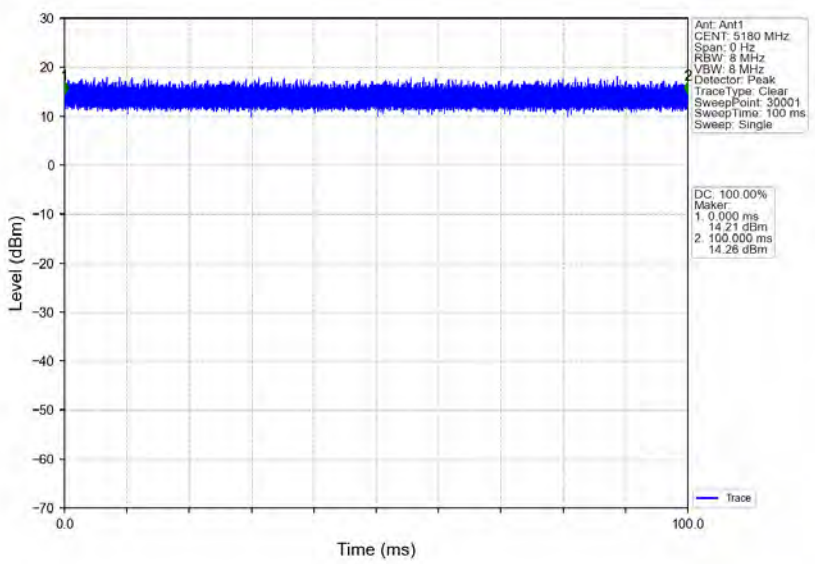


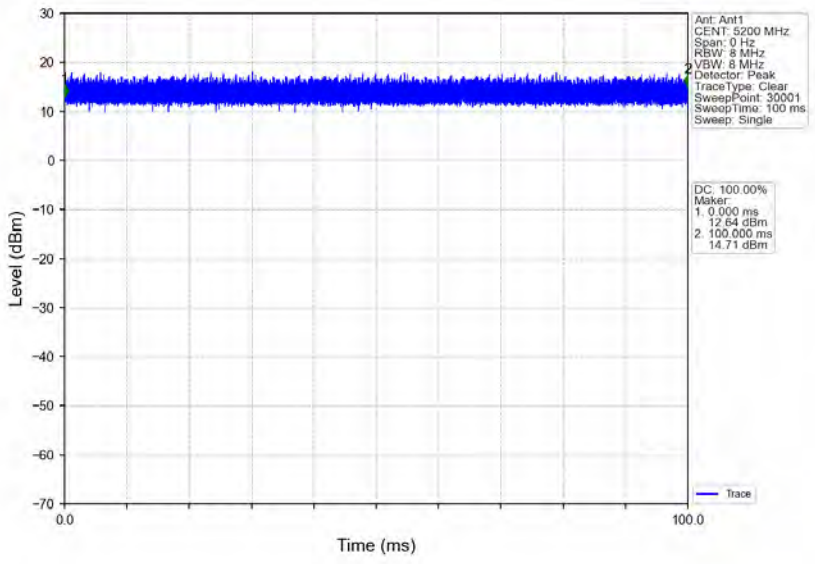
802.11n(HT40)_HCH_5310MHz_Ant1_NTNV



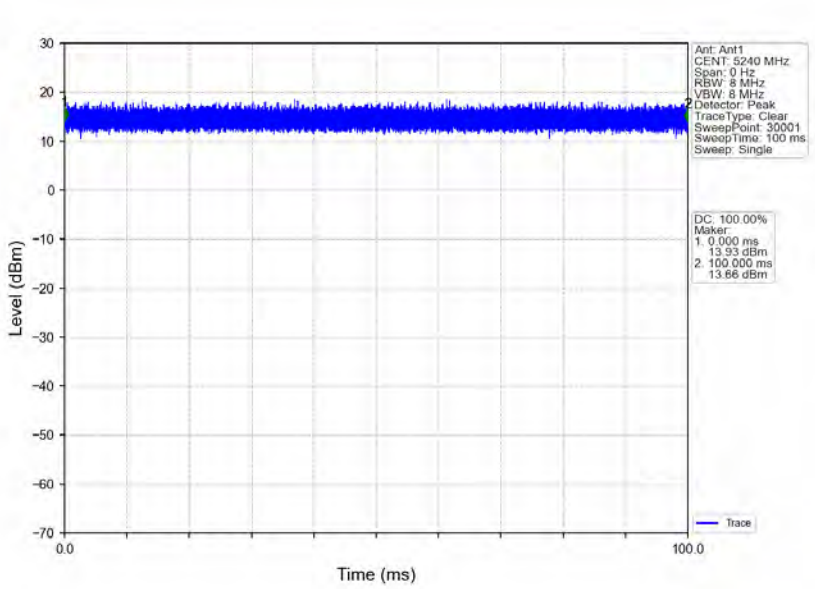
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



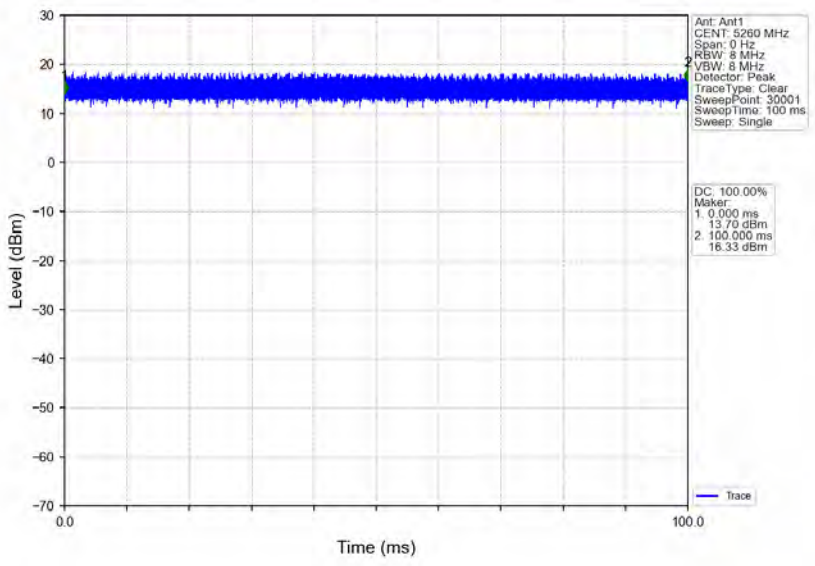
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



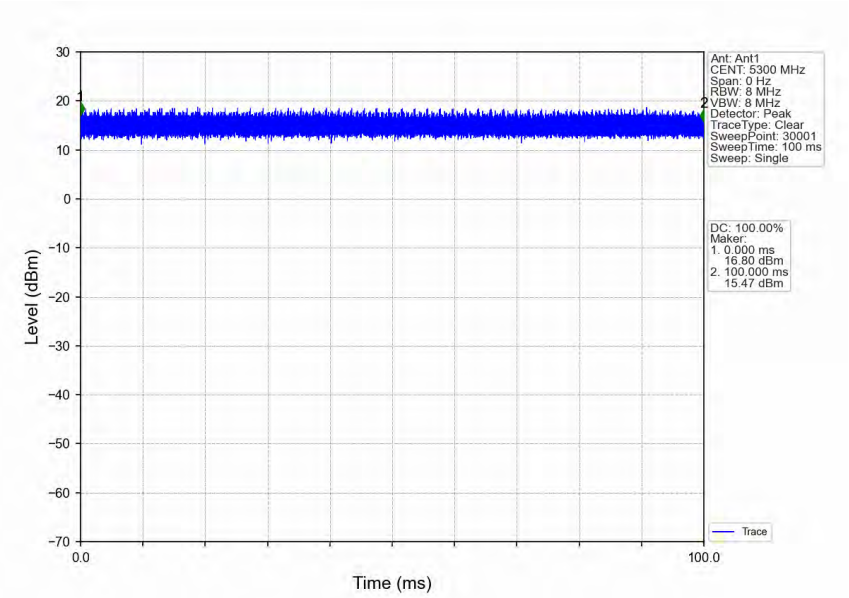
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



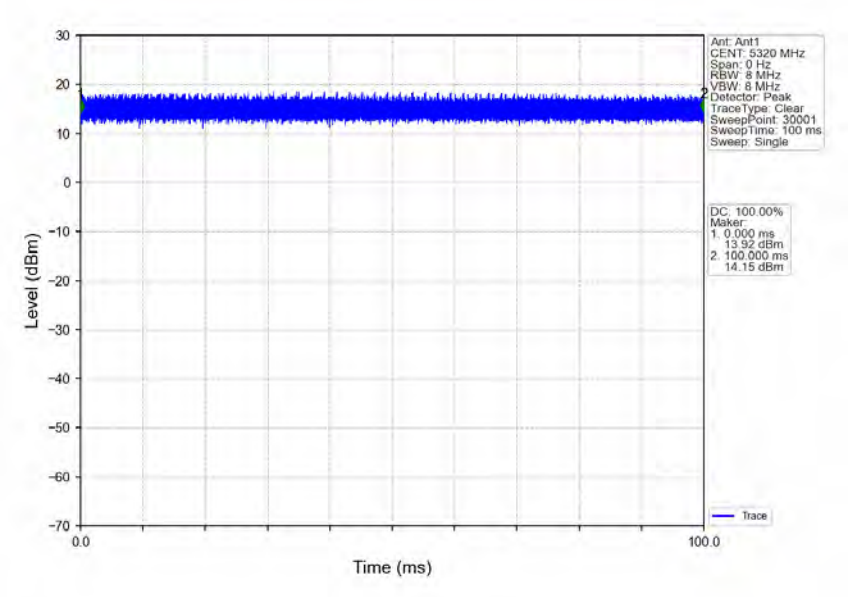
802.11ac(VHT20)_LCH_5260MHz_Ant1_NTNV



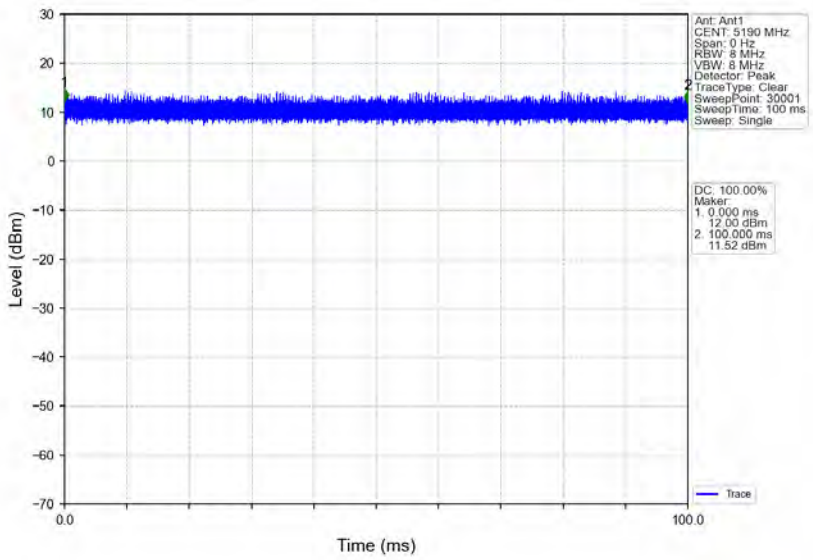
802.11ac(VHT20)_MCH_5300MHz_Ant1_NTNV



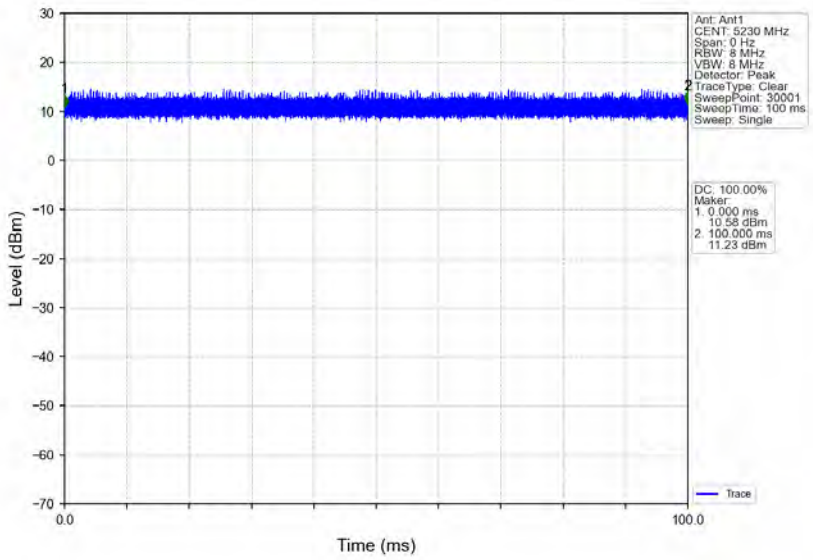
802.11ac(VHT20)_HCH_5320MHz_Ant1_NTNV



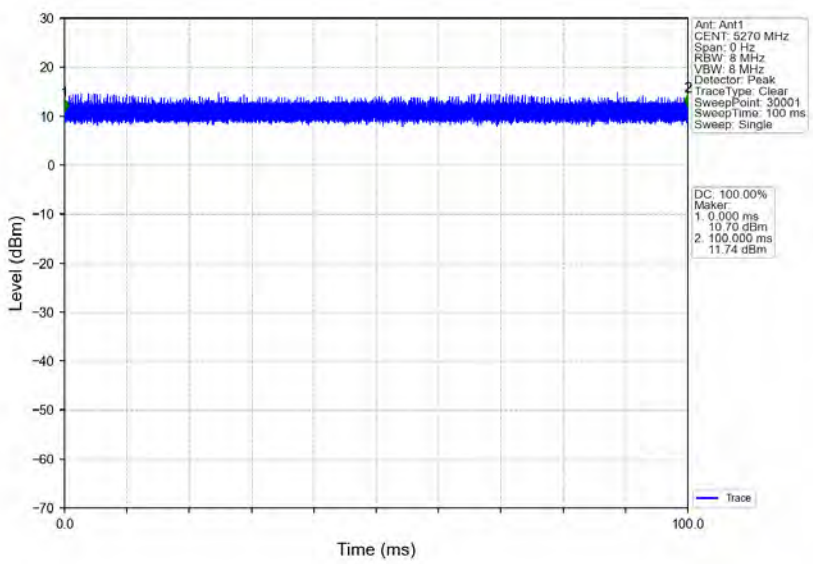
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



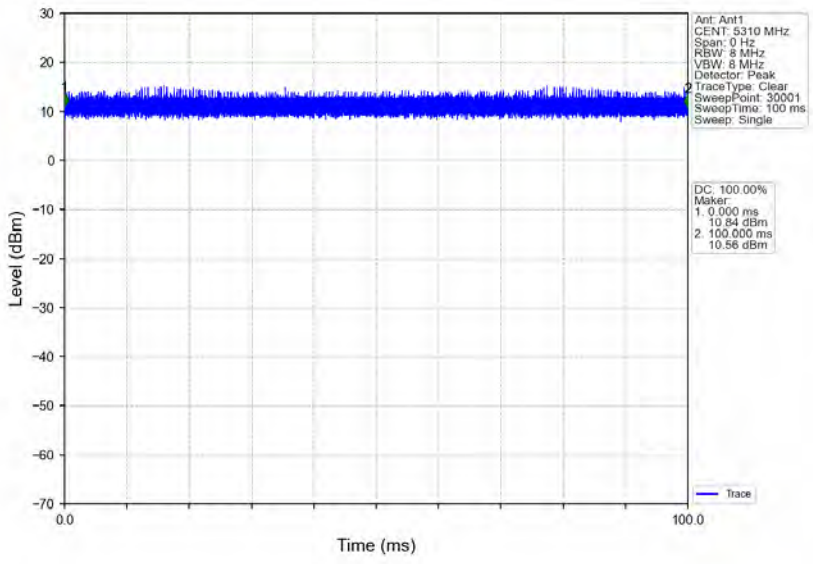
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



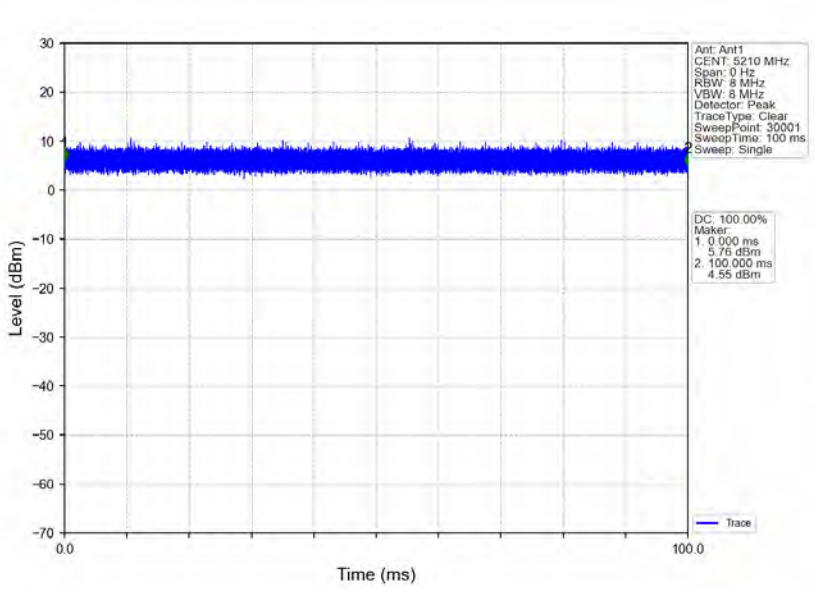
802.11ac(VHT40)_LCH_5270MHz_Ant1_NTNV



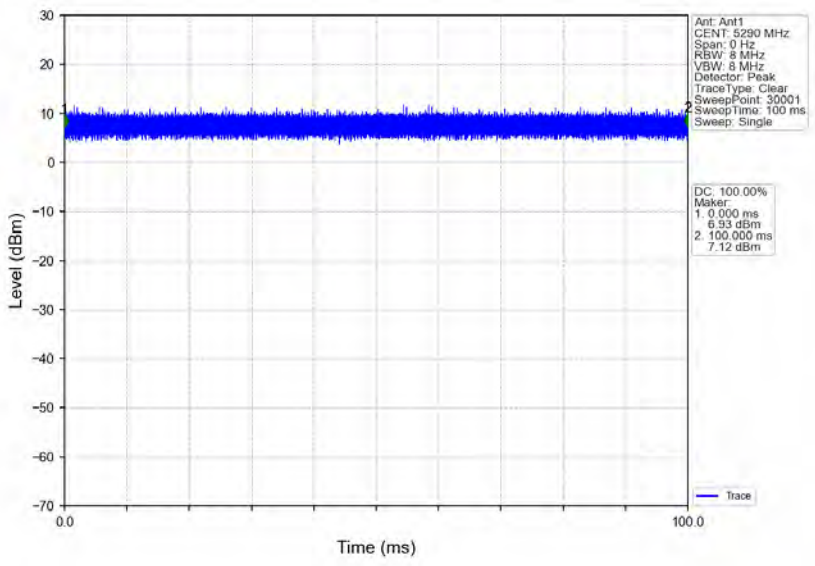
802.11ac(VHT40)_HCH_5310MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5290MHz_Ant1_NTNV



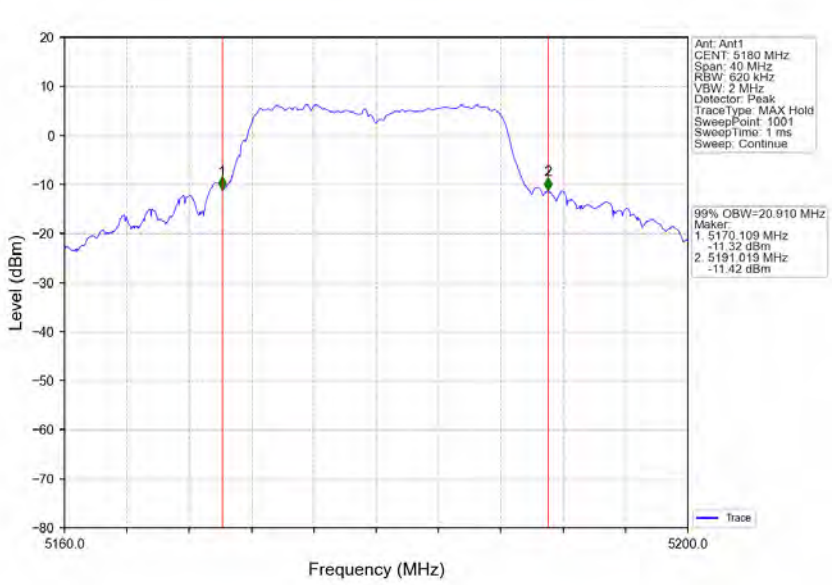
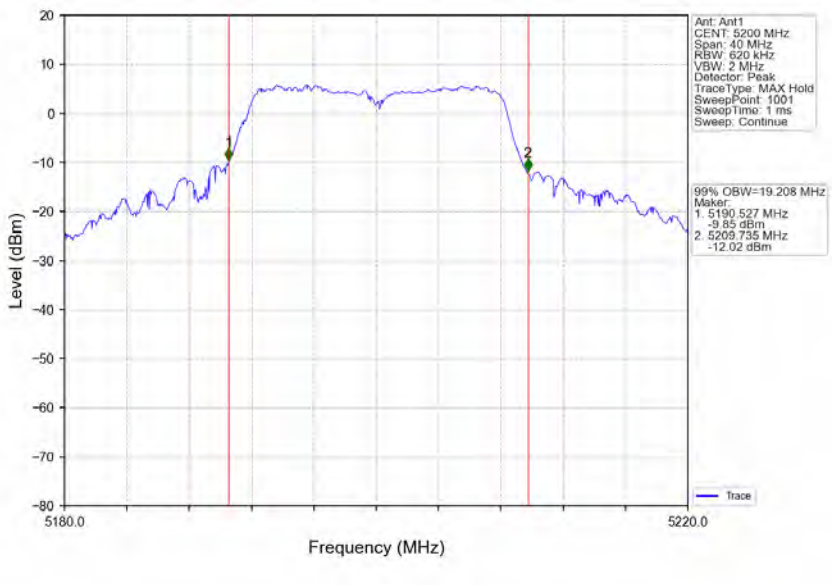
2. Bandwidth

2.1 OBW

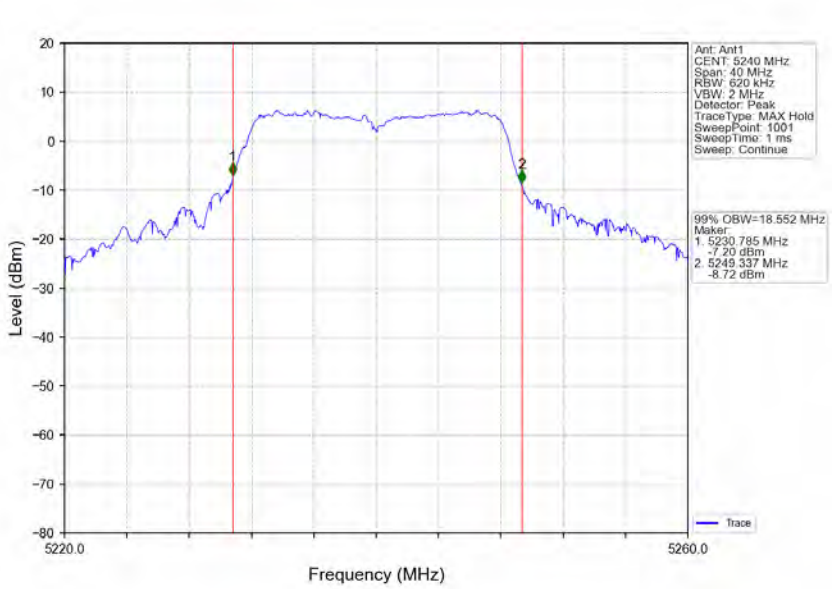
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	1	20.910	Pass
		5200	1	19.208	Pass
		5240	1	18.552	Pass
		5260	1	17.947	Pass
		5300	1	17.688	Pass
		5320	1	17.593	Pass
802.11n (HT20)	SISO	5180	1	19.798	Pass
		5200	1	19.321	Pass
		5240	1	18.759	Pass
		5260	1	18.605	Pass
		5300	1	18.453	Pass
		5320	1	18.381	Pass
802.11n (HT40)	SISO	5190	1	37.370	Pass
		5230	1	37.600	Pass
		5270	1	36.975	Pass
		5310	1	36.804	Pass
802.11ac (VHT20)	SISO	5180	1	19.334	Pass
		5200	1	19.010	Pass
		5240	1	18.926	Pass
		5260	1	18.804	Pass
		5300	1	18.502	Pass
		5320	1	18.426	Pass
802.11ac (VHT40)	SISO	5190	1	37.320	Pass
		5230	1	37.663	Pass
		5270	1	37.057	Pass
		5310	1	36.885	Pass
802.11ac (VHT80)	SISO	5210	1	76.943	Pass
		5290	1	76.310	Pass

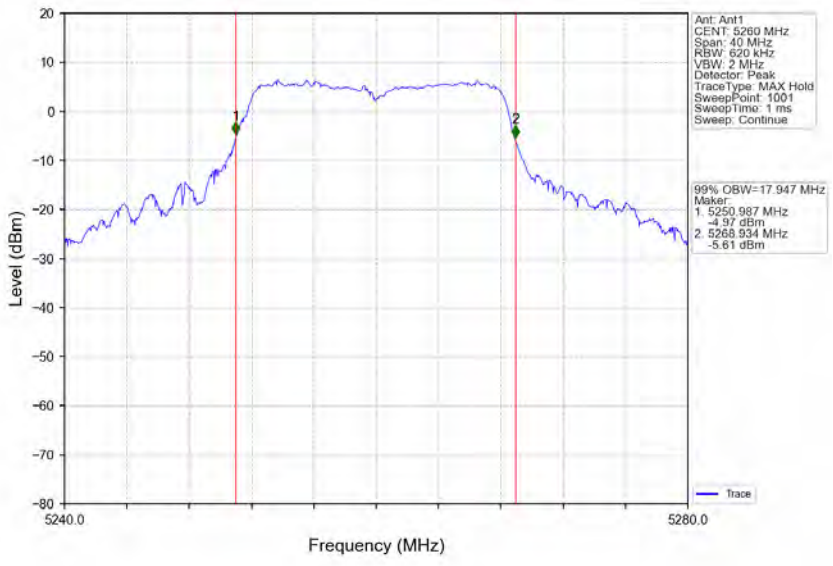
2.1.2 Test Graph

802.11a_LCH_5180MHz_Ant1_NTNV

802.11a_MCH_5200MHz_Ant1_NTNV


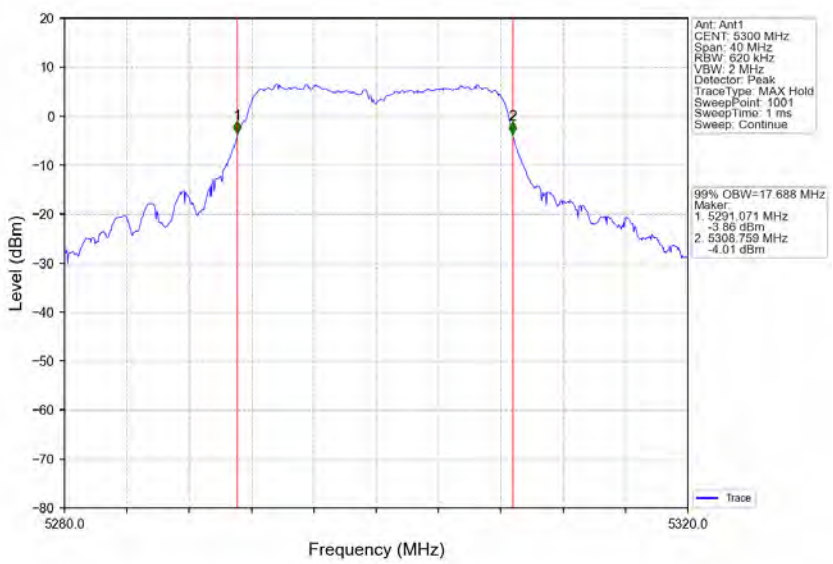
802.11a_HCH_5240MHz_Ant1_NTNV



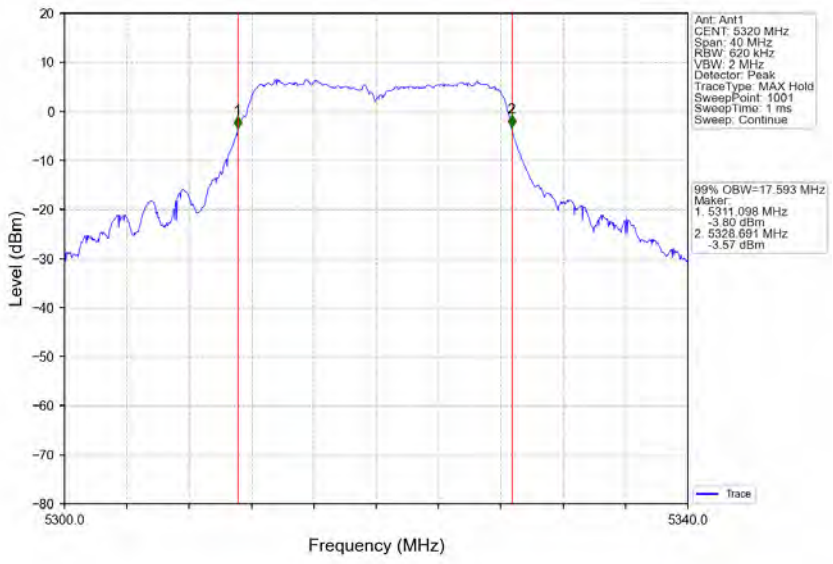
802.11a_LCH_5260MHz_Ant1_NTNV



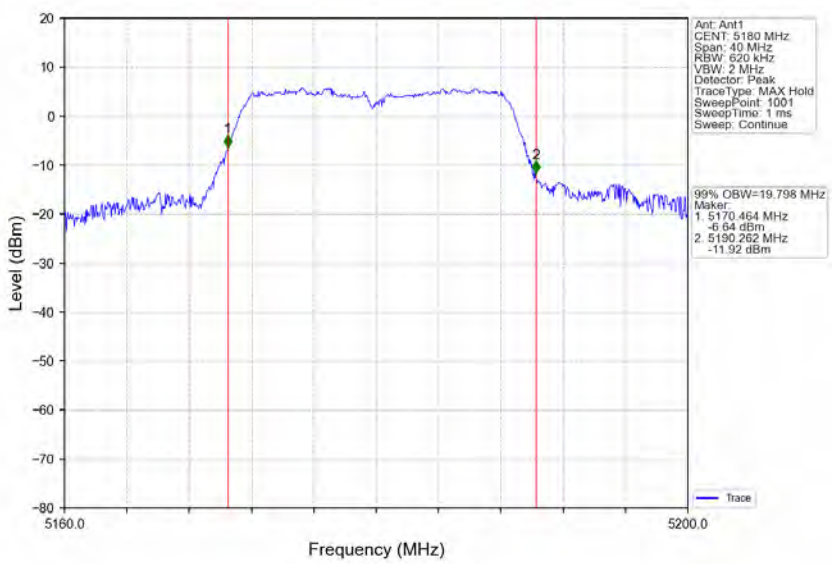
802.11a_MCH_5300MHz_Ant1_NTNV



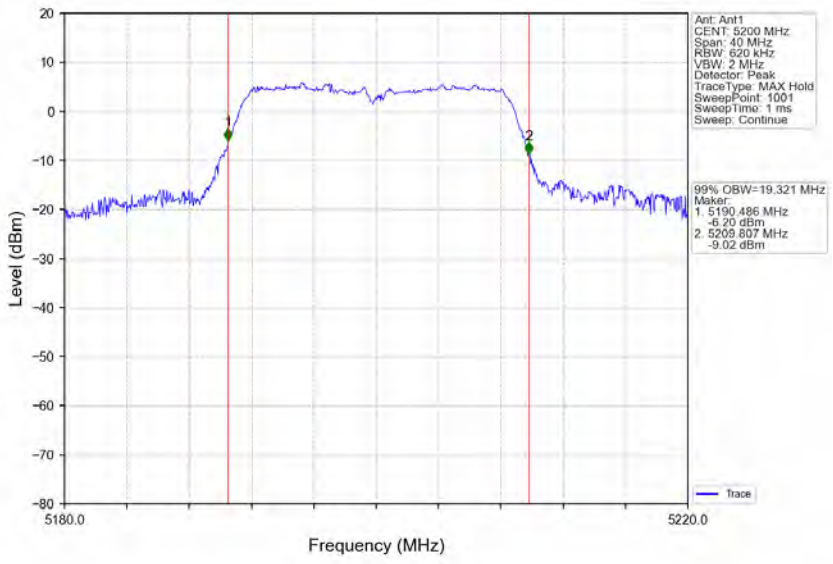
802.11a_HCH_5320MHz_Ant1_NTNV



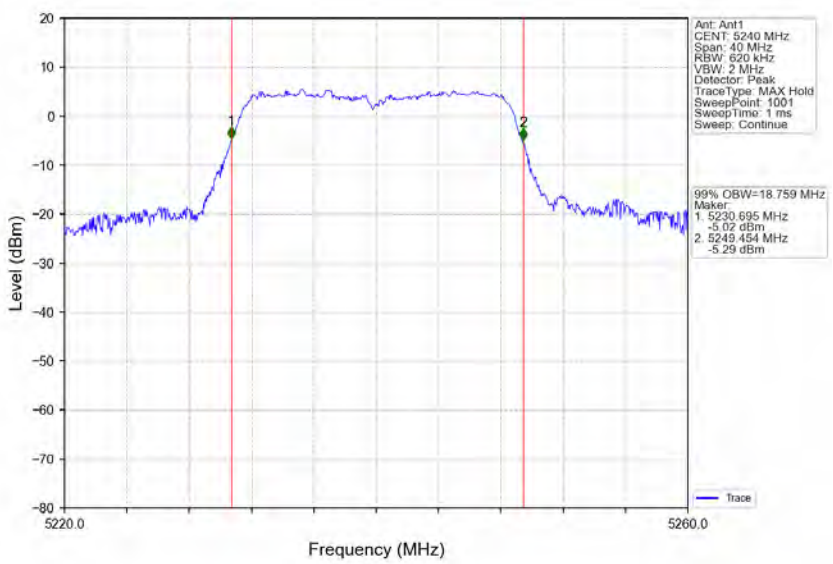
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



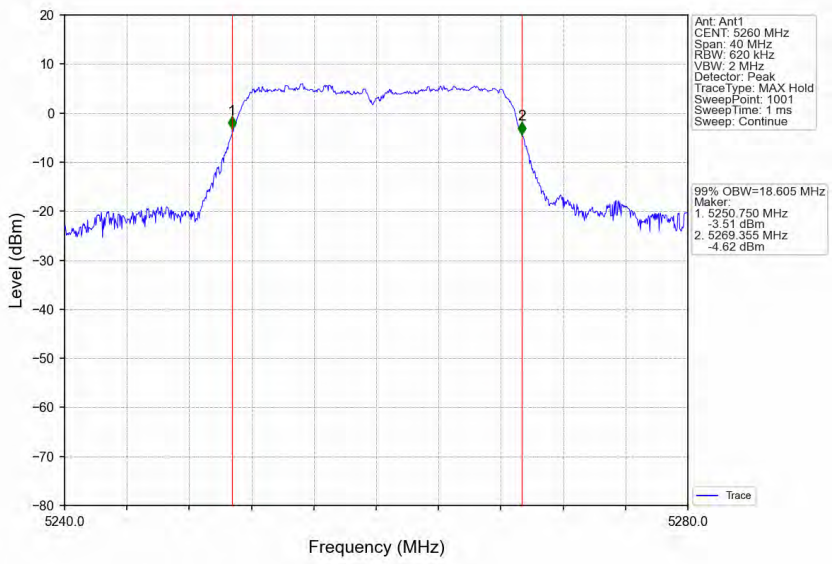
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



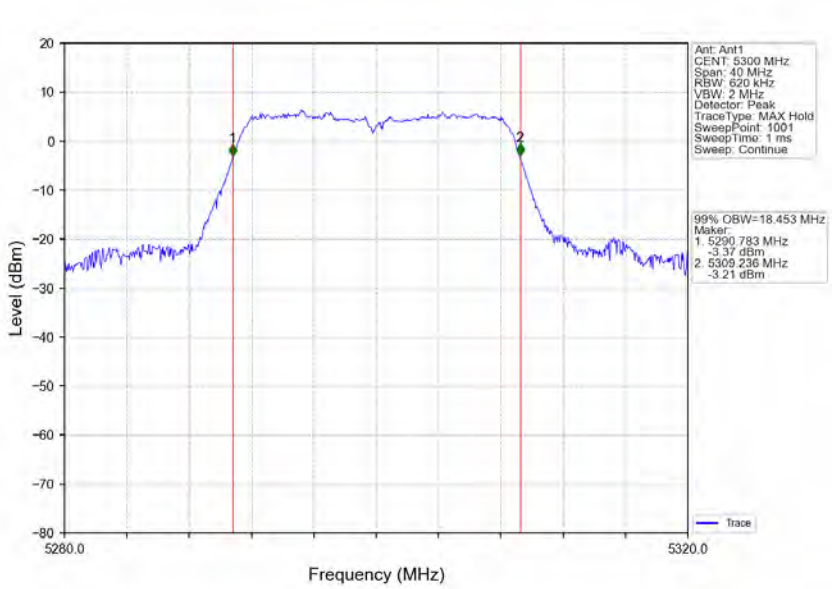
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



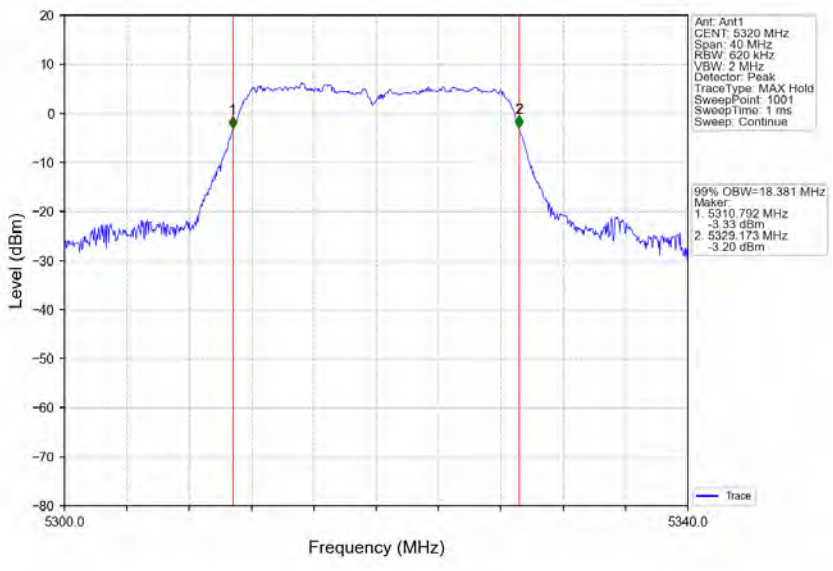
802.11n(HT20)_LCH_5260MHz_Ant1_NTNV



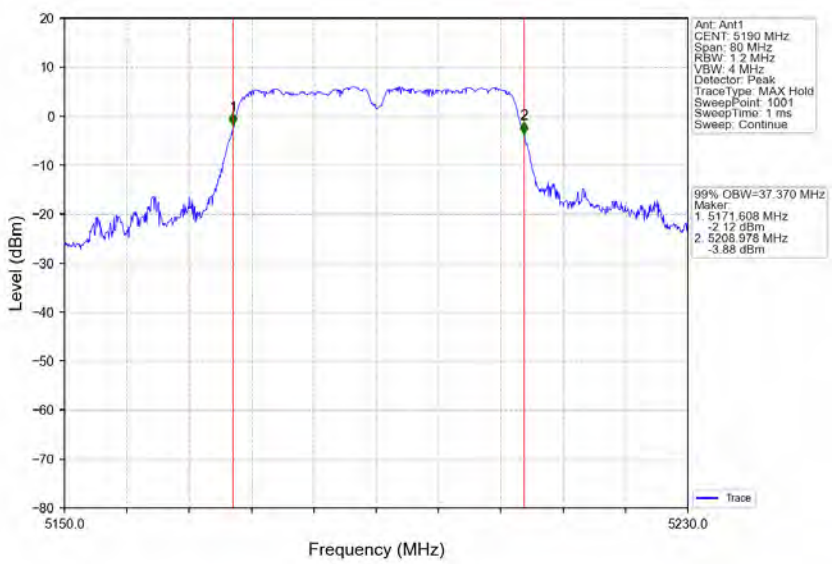
802.11n(HT20)_MCH_5300MHz_Ant1_NTNV



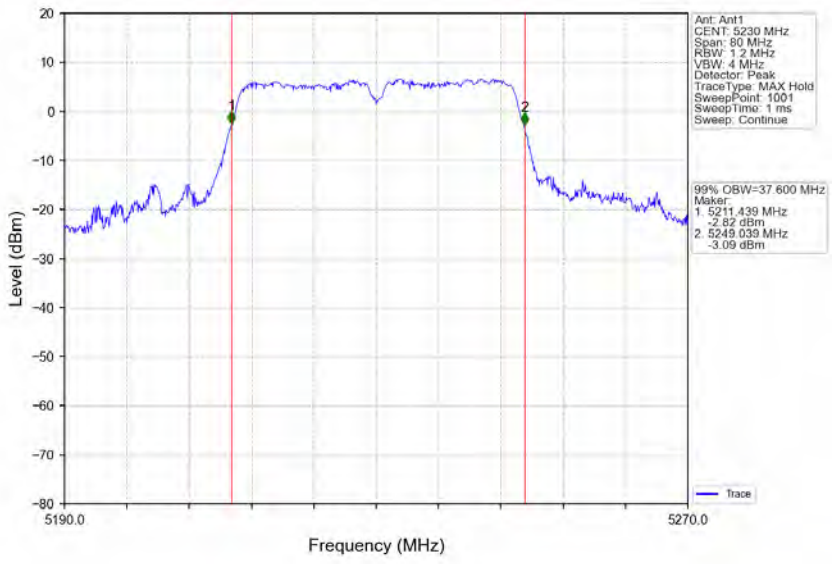
802.11n(HT20)_HCH_5320MHz_Ant1_NTNV



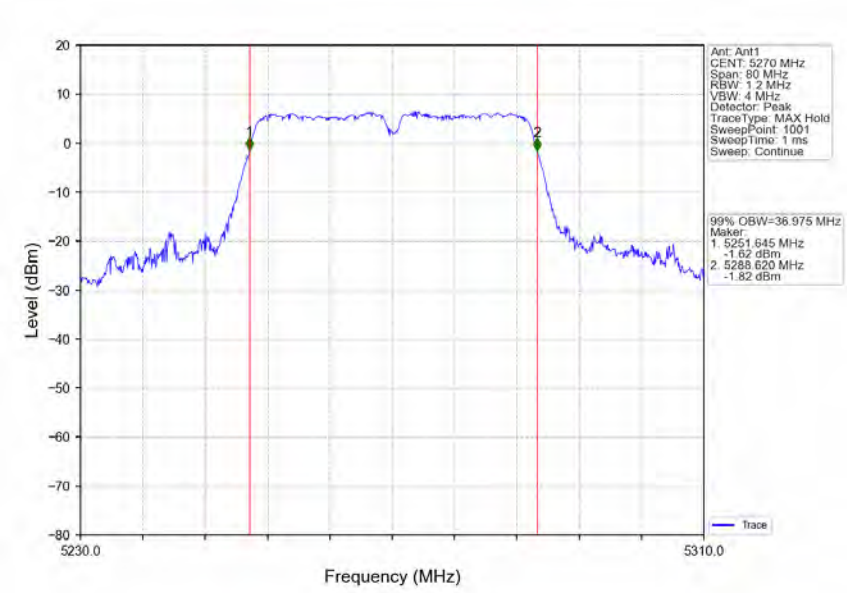
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



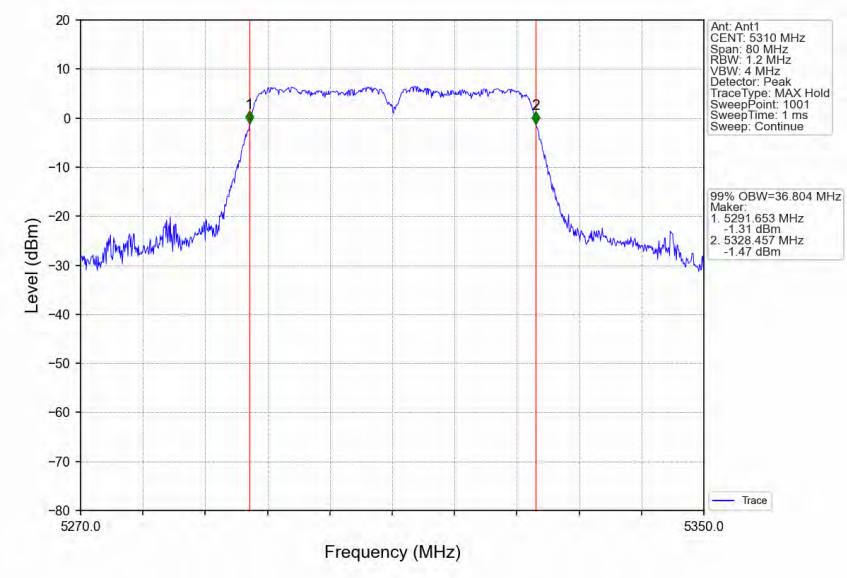
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



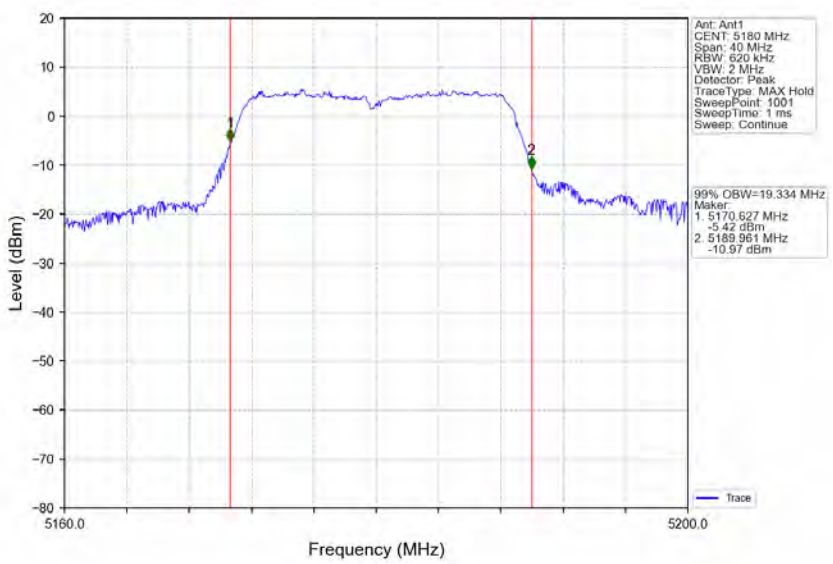
802.11n(HT40)_LCH_5270MHz_Ant1_NTNV



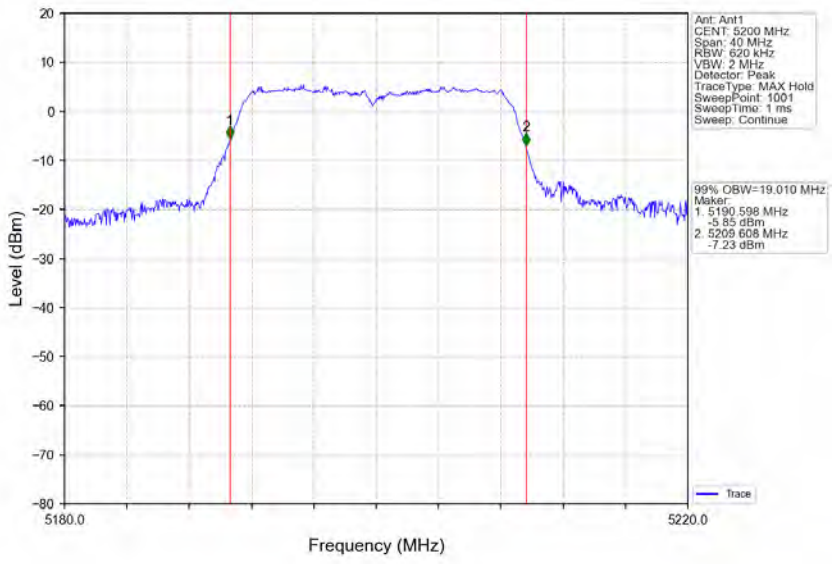
802.11n(HT40)_HCH_5310MHz_Ant1_NTNV



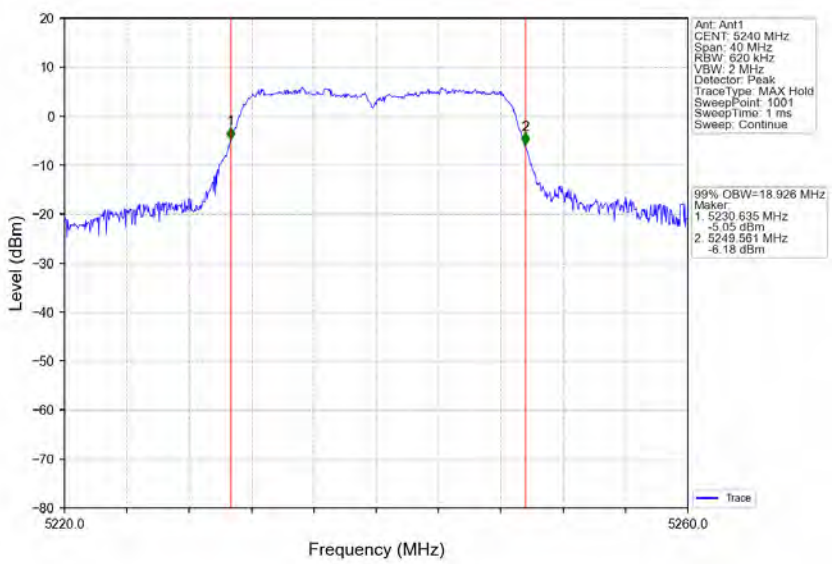
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



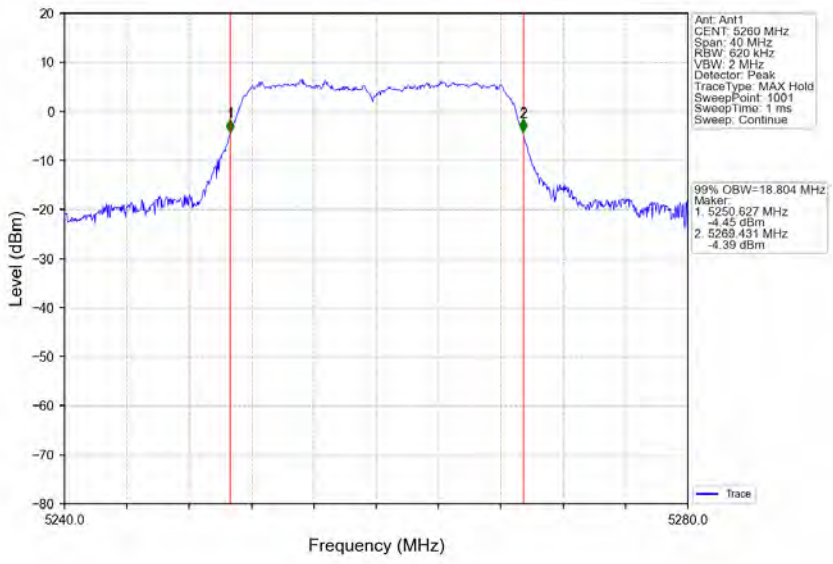
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



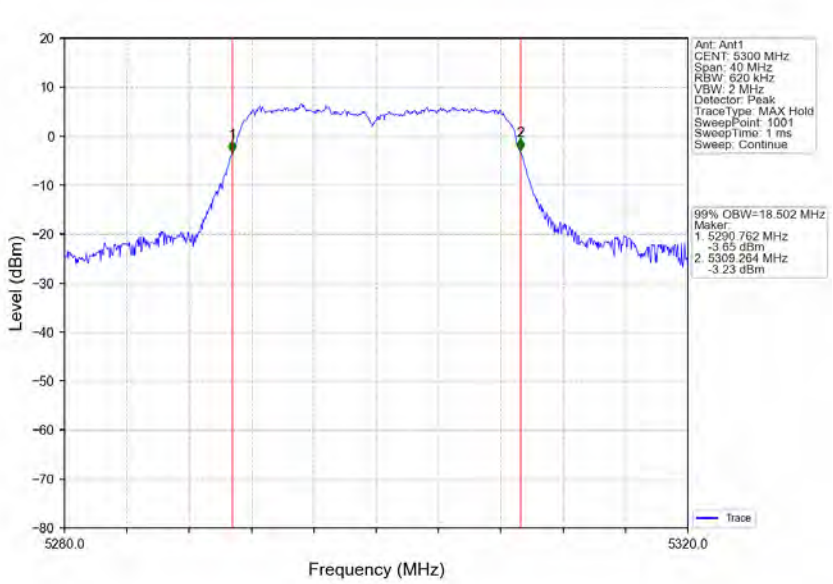
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



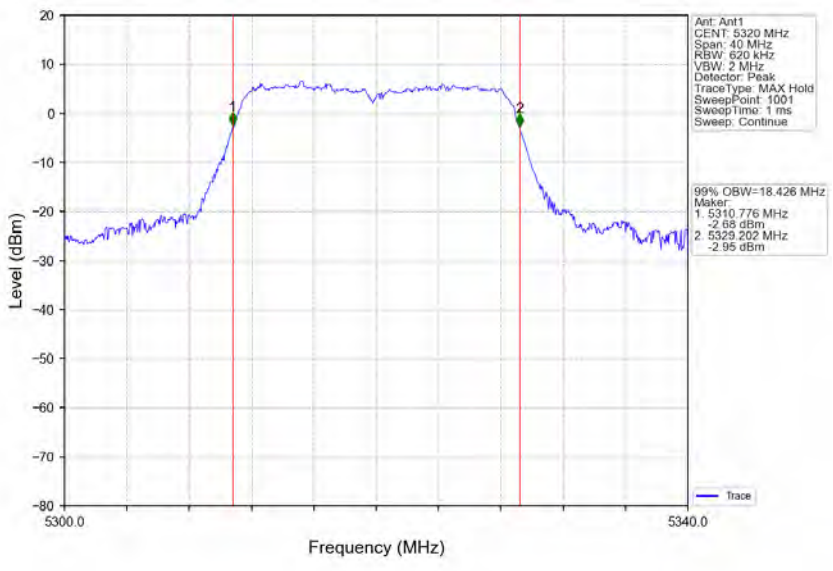
802.11ac(VHT20)_LCH_5260MHz_Ant1_NTNV



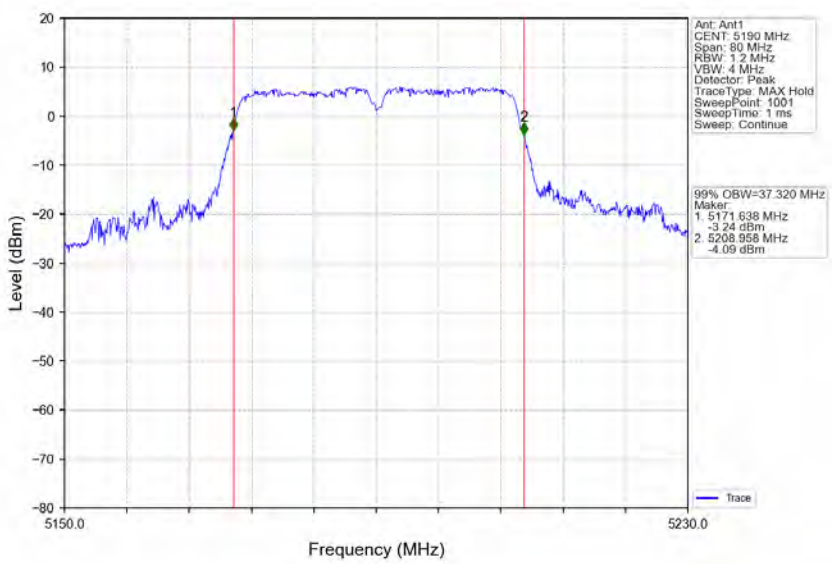
802.11ac(VHT20)_MCH_5300MHz_Ant1_NTNV



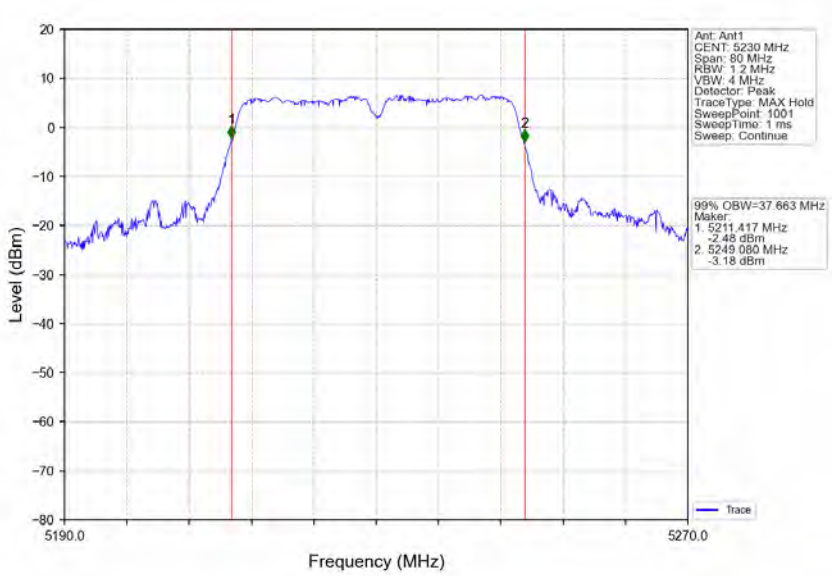
802.11ac(VHT20)_HCH_5320MHz_Ant1_NTNV



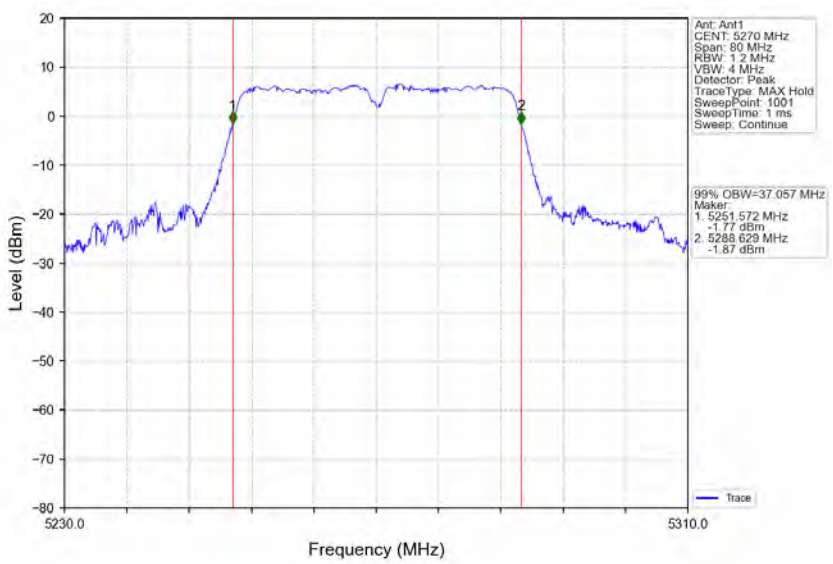
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



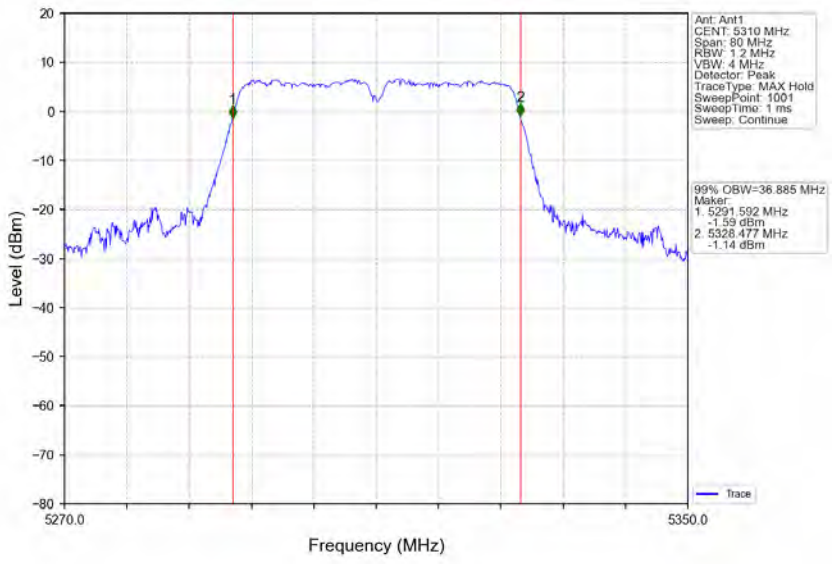
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



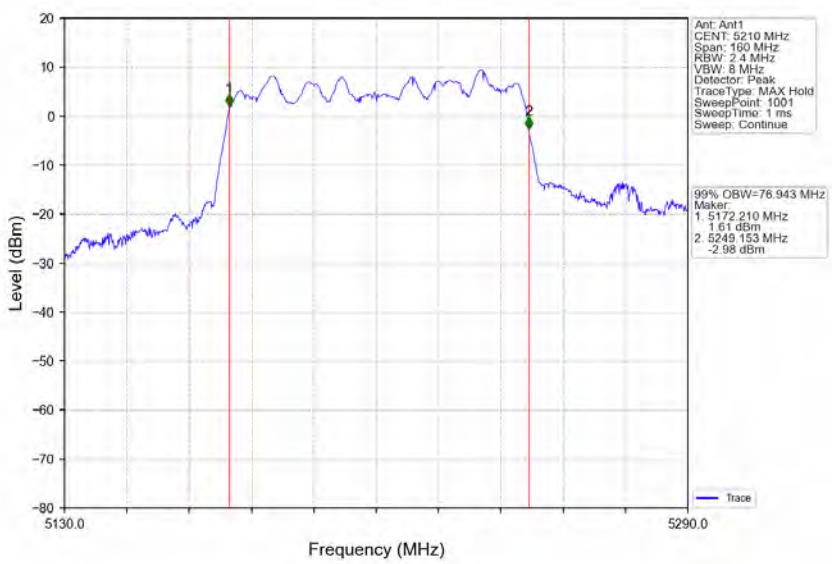
802.11ac(VHT40)_LCH_5270MHz_Ant1_NTNV



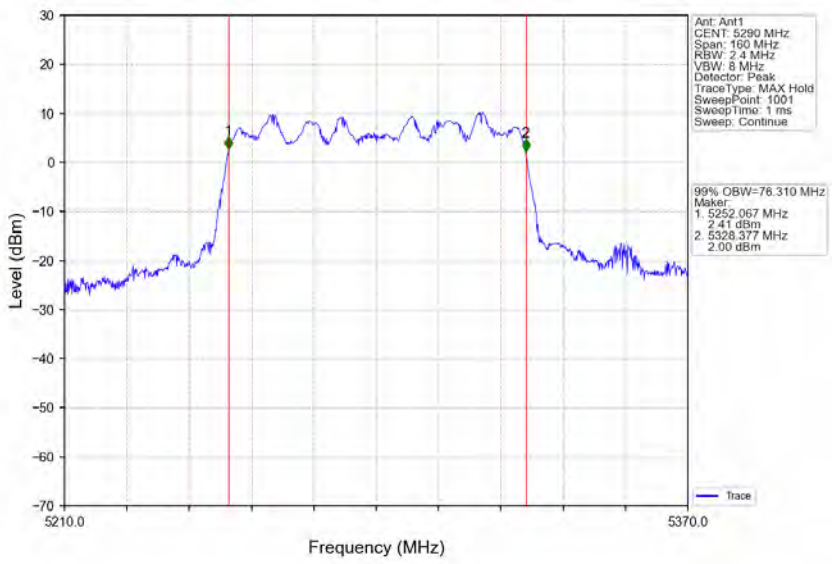
802.11ac(VHT40)_HCH_5310MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5290MHz_Ant1_NTNV

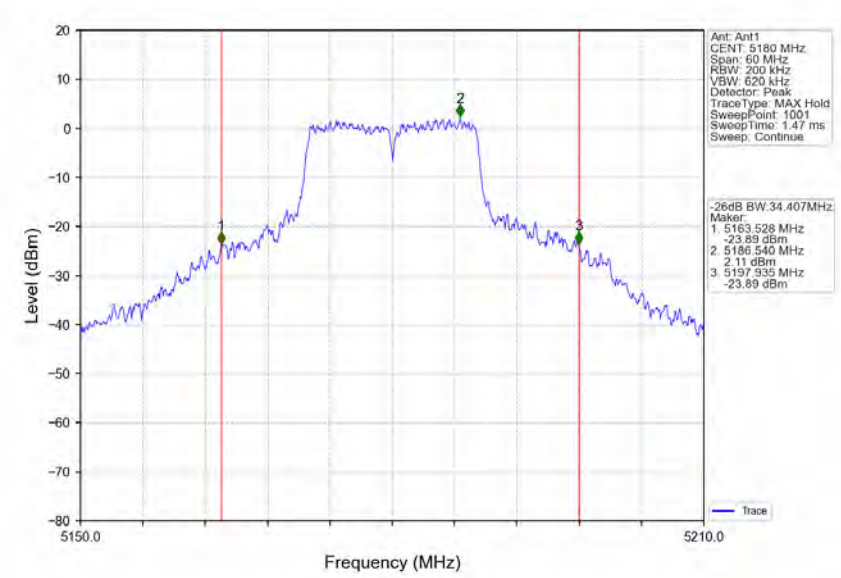
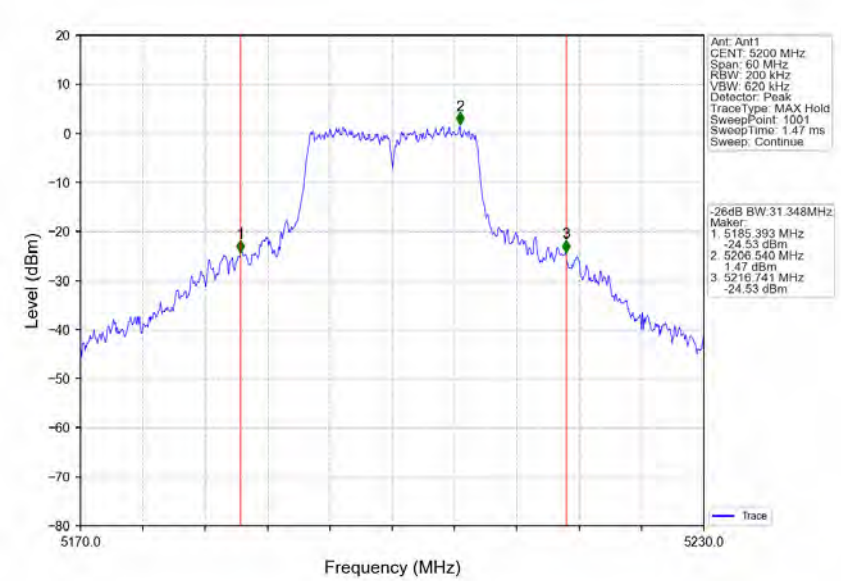


2.2 26dB BW

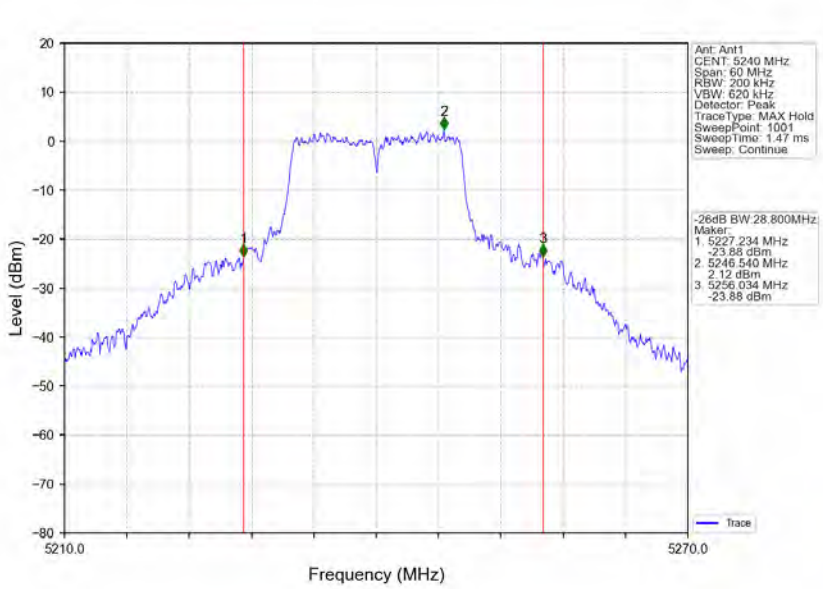
2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	1	34.407	Pass
		5200	1	31.348	Pass
		5240	1	28.800	Pass
		5260	1	26.523	Pass
		5300	1	24.972	Pass
		5320	1	22.033	Pass
802.11n (HT20)	SISO	5180	1	34.278	Pass
		5200	1	30.769	Pass
		5240	1	28.809	Pass
		5260	1	24.797	Pass
		5300	1	21.717	Pass
		5320	1	21.687	Pass
802.11n (HT40)	SISO	5190	1	65.094	Pass
		5230	1	67.707	Pass
		5270	1	51.046	Pass
		5310	1	42.041	Pass
802.11ac (VHT20)	SISO	5180	1	30.493	Pass
		5200	1	29.162	Pass
		5240	1	29.577	Pass
		5260	1	28.813	Pass
		5300	1	21.763	Pass
		5320	1	21.740	Pass
802.11ac (VHT40)	SISO	5190	1	65.261	Pass
		5230	1	67.913	Pass
		5270	1	51.220	Pass
		5310	1	42.051	Pass
802.11ac (VHT80)	SISO	5210	1	107.123	Pass
		5290	1	83.031	Pass

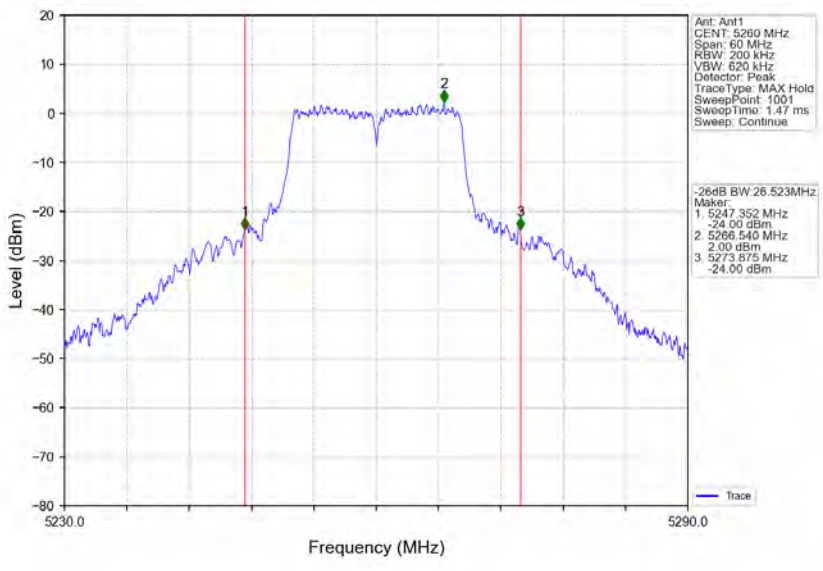
2.2.2 Test Graph

802.11a_LCH_5180MHz_Ant1_NTNV

802.11a_MCH_5200MHz_Ant1_NTNV


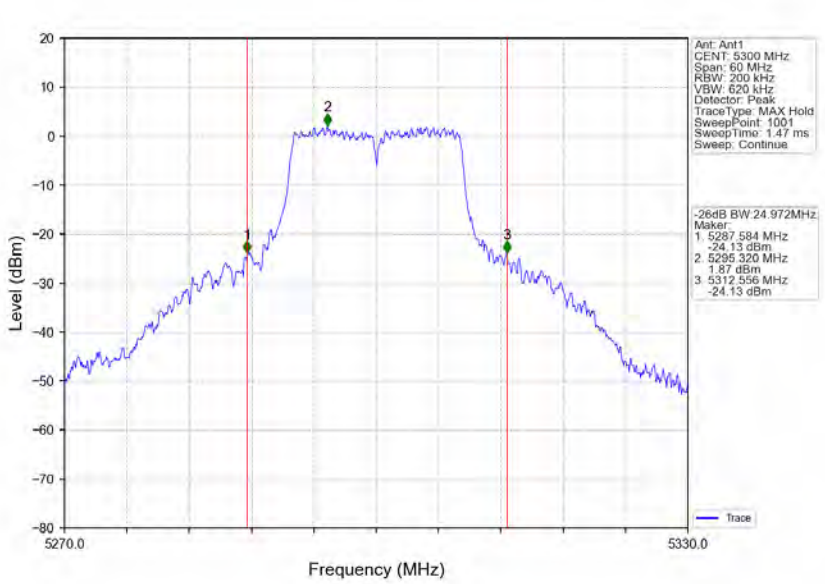
802.11a_HCH_5240MHz_Ant1_NTNV



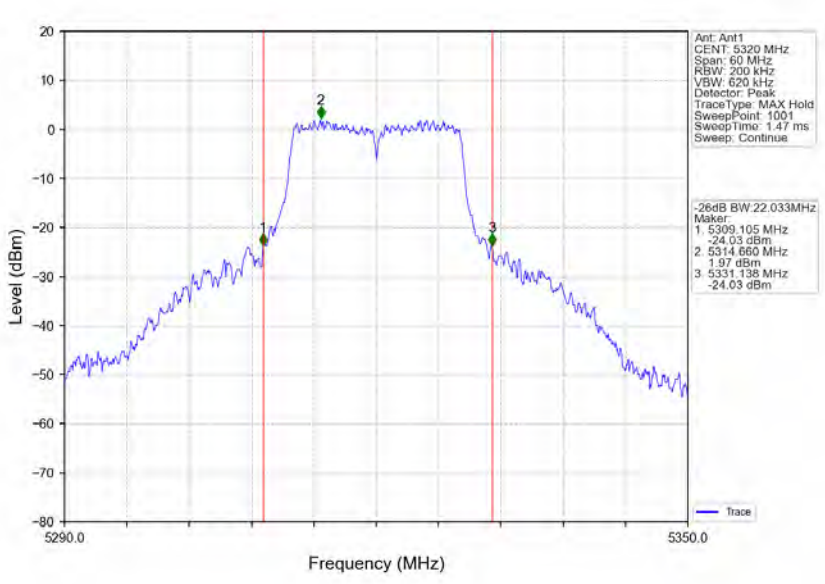
802.11a_LCH_5260MHz_Ant1_NTNV



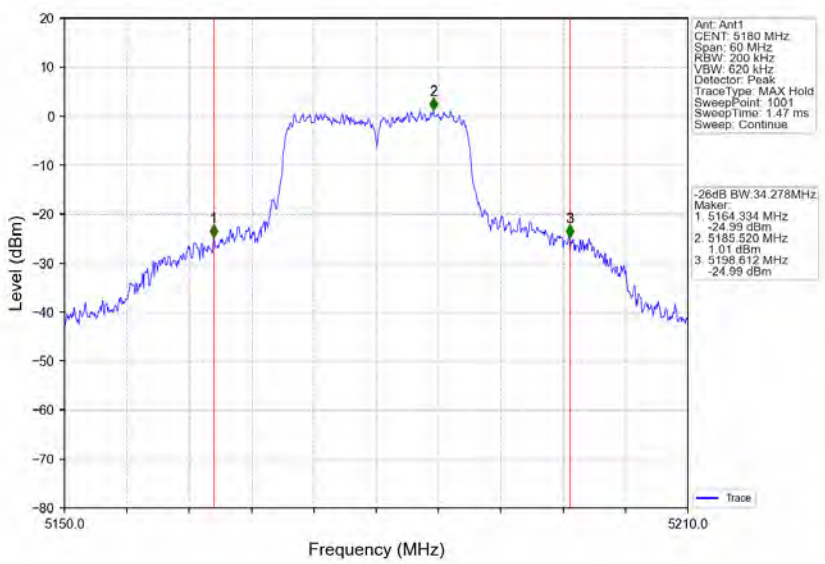
802.11a_MCH_5300MHz_Ant1_NTNV



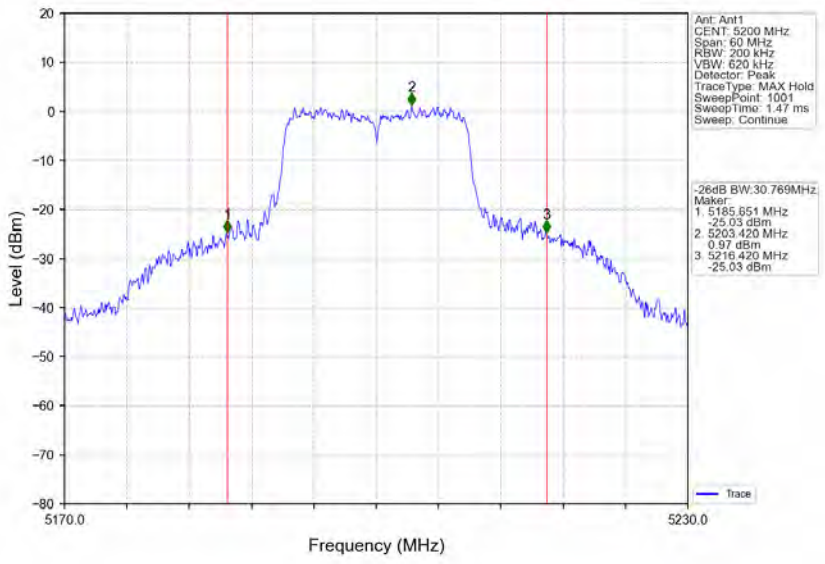
802.11a_HCH_5320MHz_Ant1_NTNV



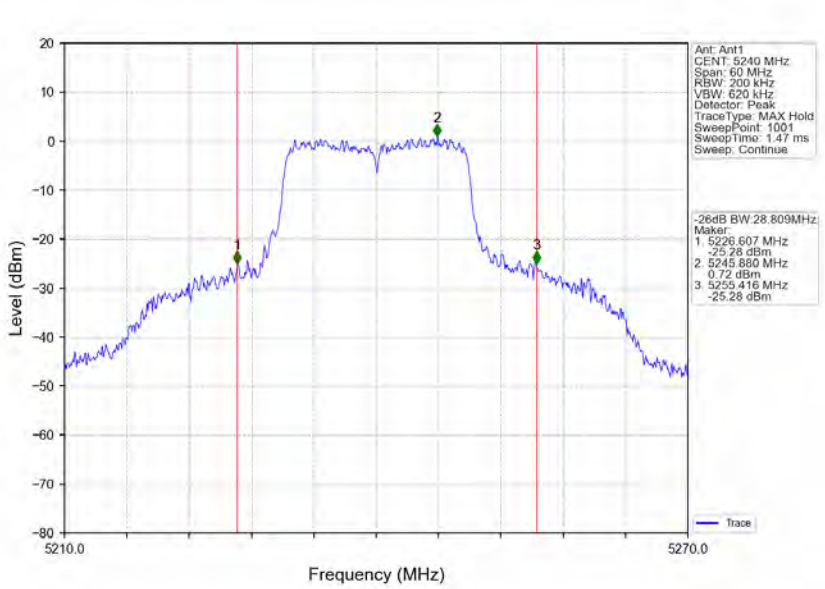
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



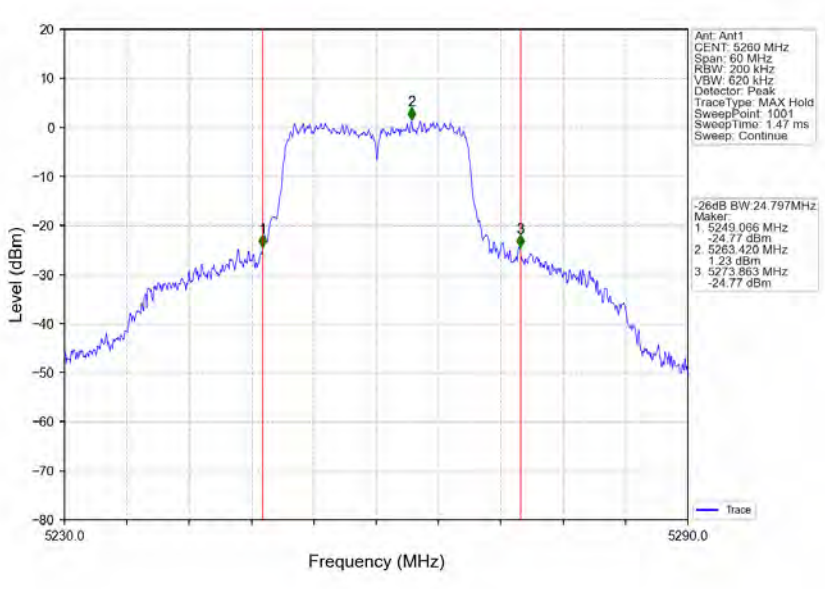
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



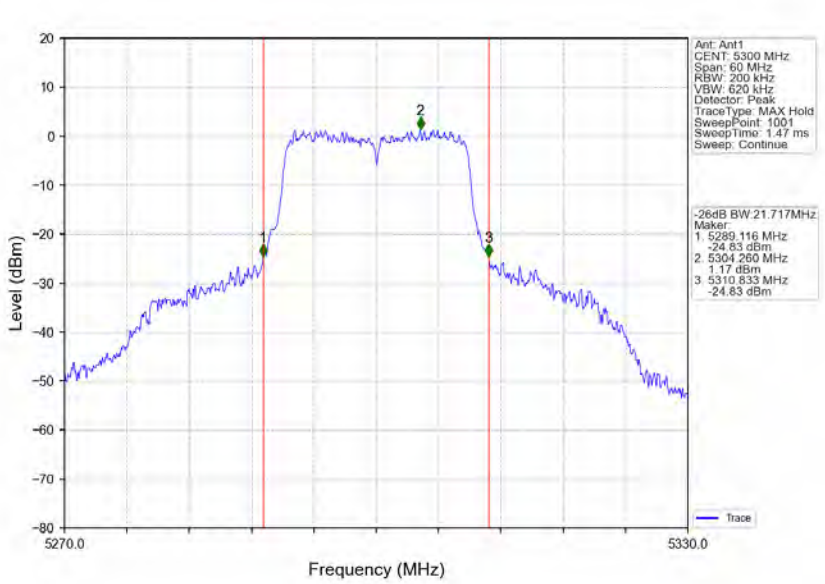
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



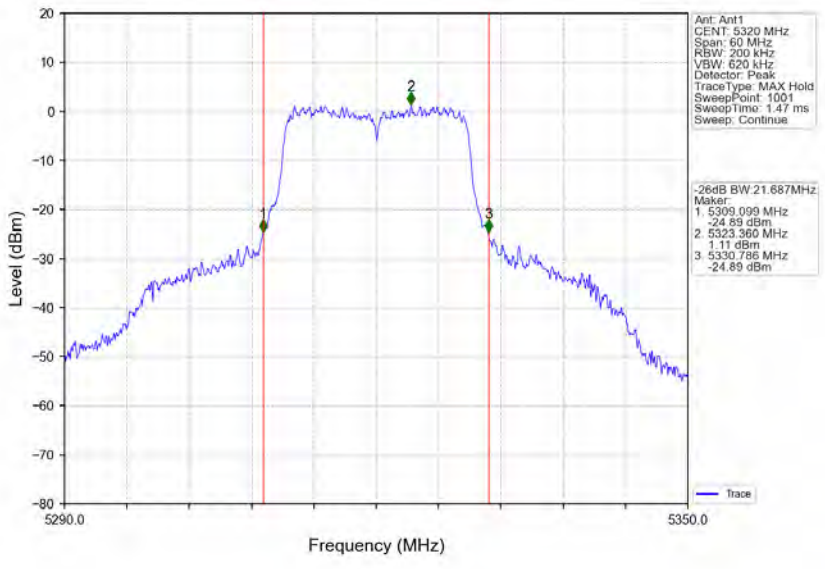
802.11n(HT20)_LCH_5260MHz_Ant1_NTNV



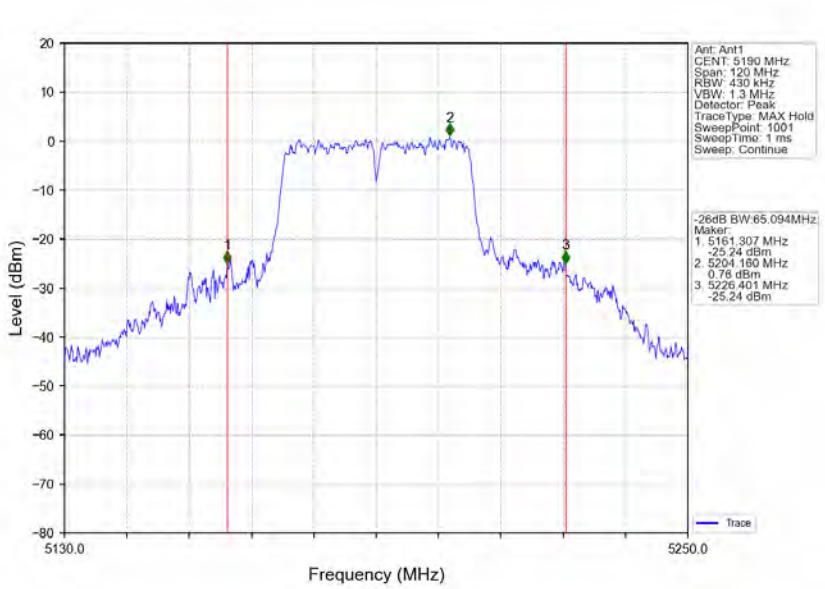
802.11n(HT20)_MCH_5300MHz_Ant1_NTNV



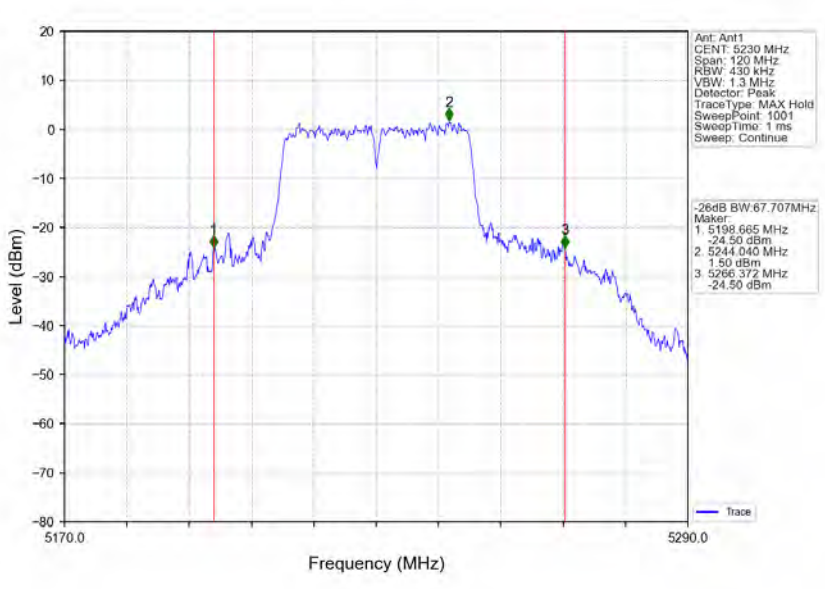
802.11n(HT20)_HCH_5320MHz_Ant1_NTNV



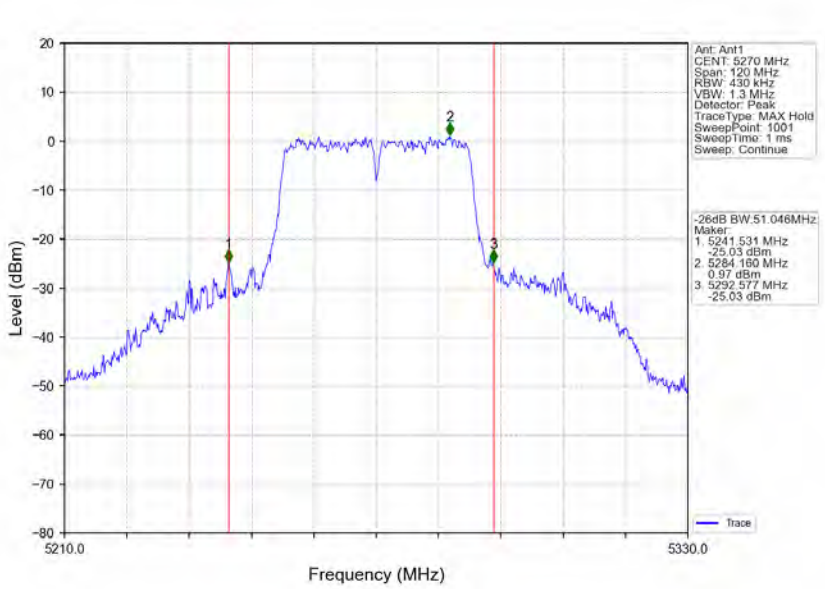
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



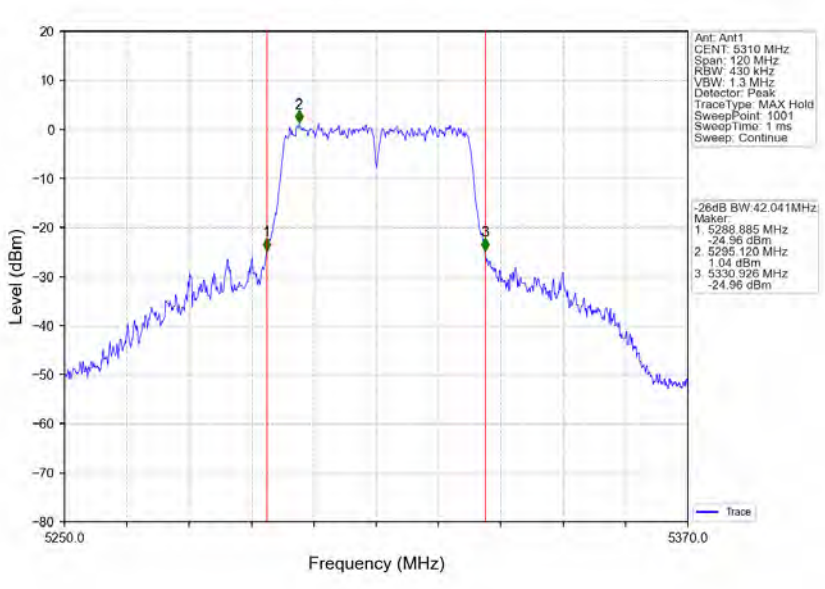
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



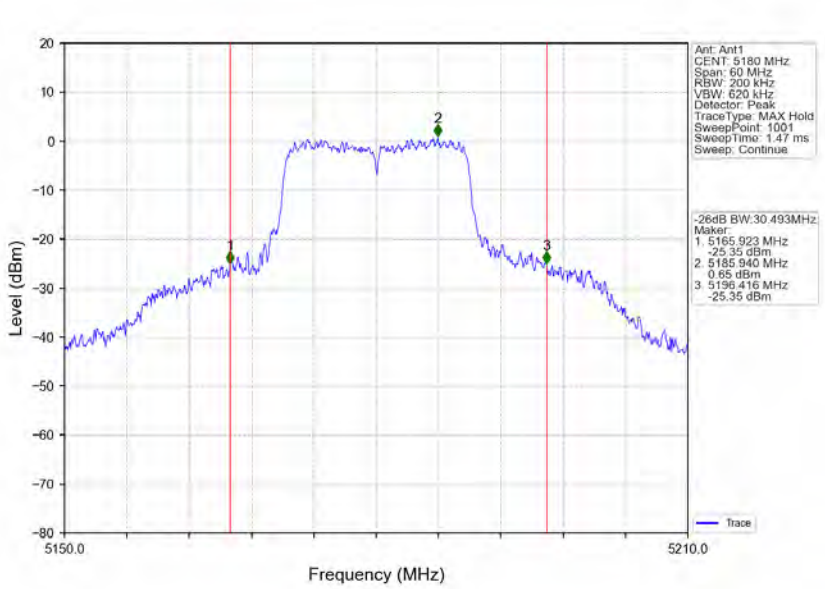
802.11n(HT40)_LCH_5270MHz_Ant1_NTNV



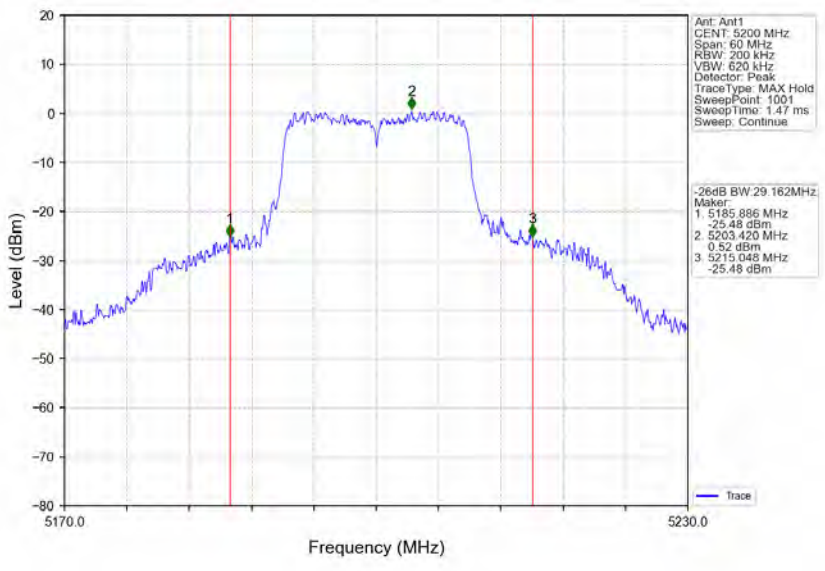
802.11n(HT40)_HCH_5310MHz_Ant1_NTNV



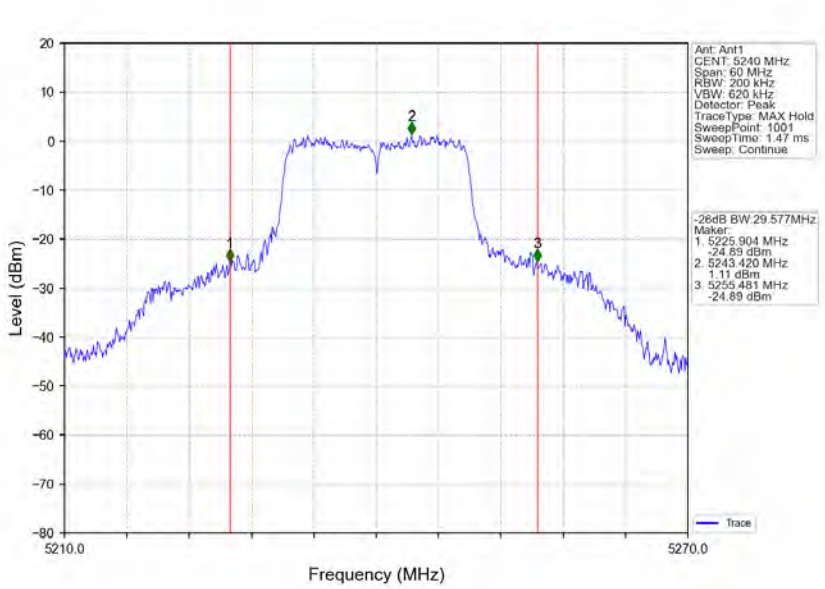
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



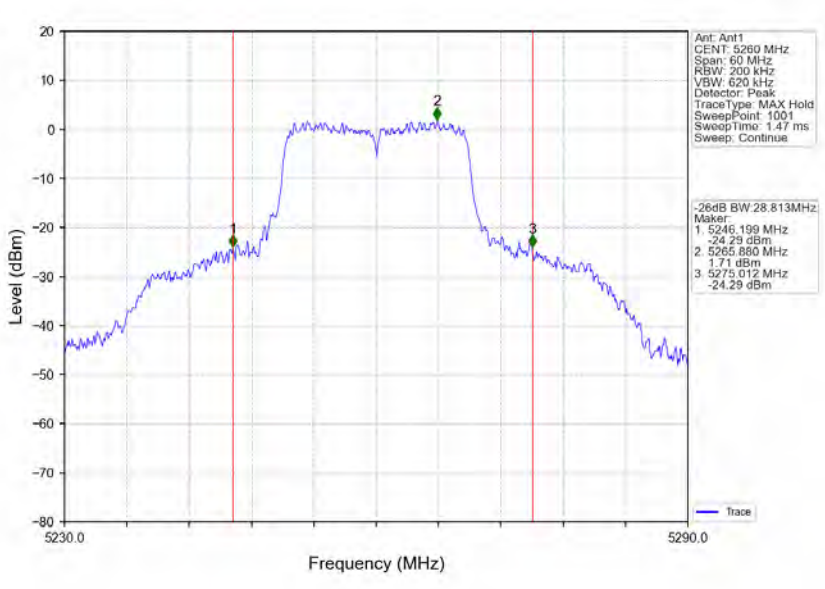
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



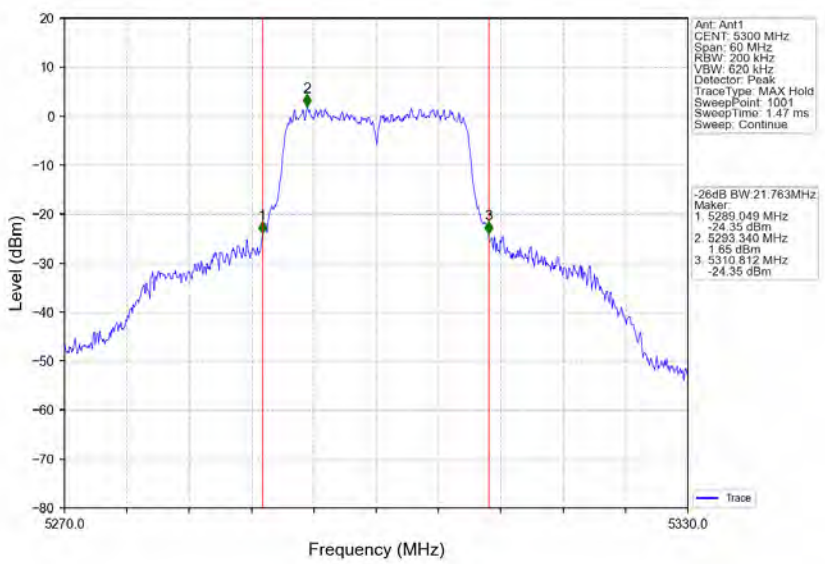
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



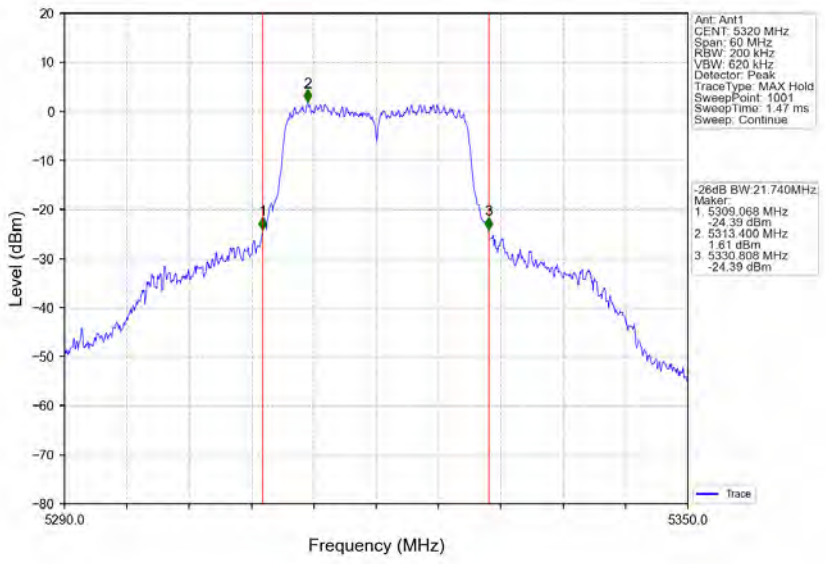
802.11ac(VHT20)_LCH_5260MHz_Ant1_NTNV



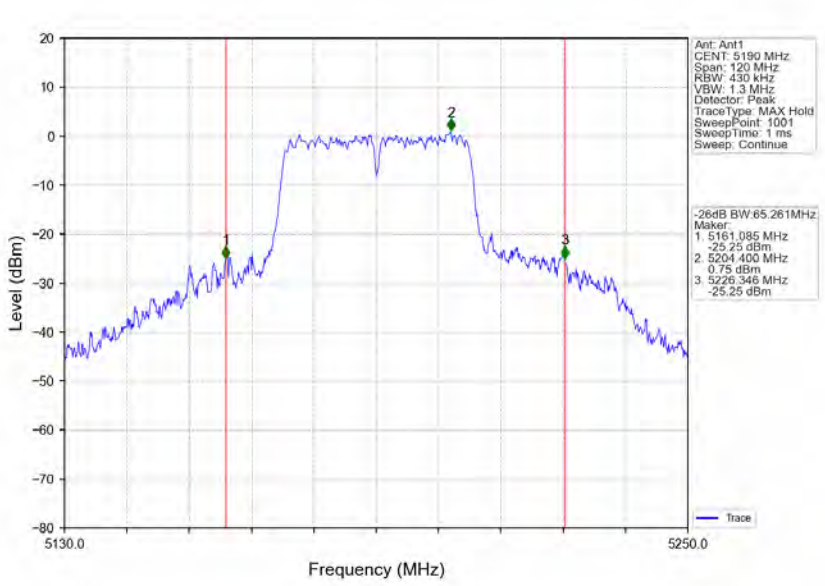
802.11ac(VHT20)_MCH_5300MHz_Ant1_NTNV



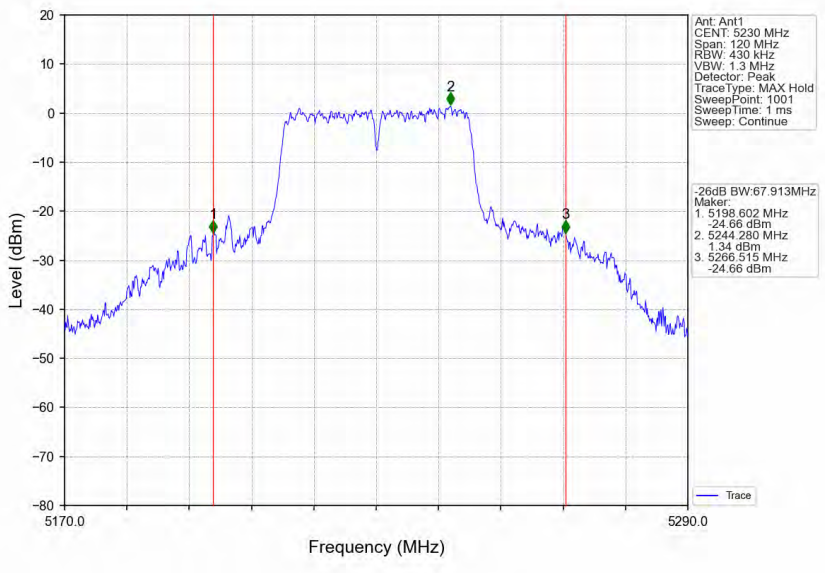
802.11ac(VHT20)_HCH_5320MHz_Ant1_NTNV



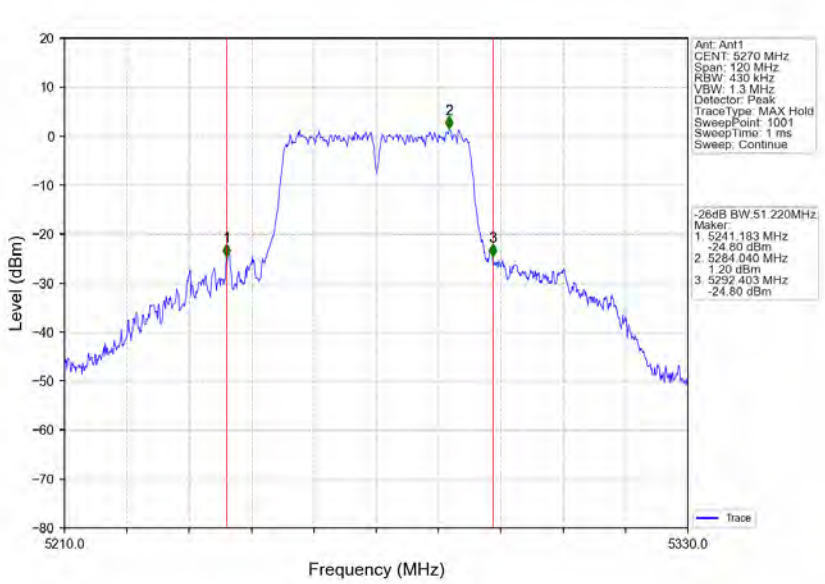
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



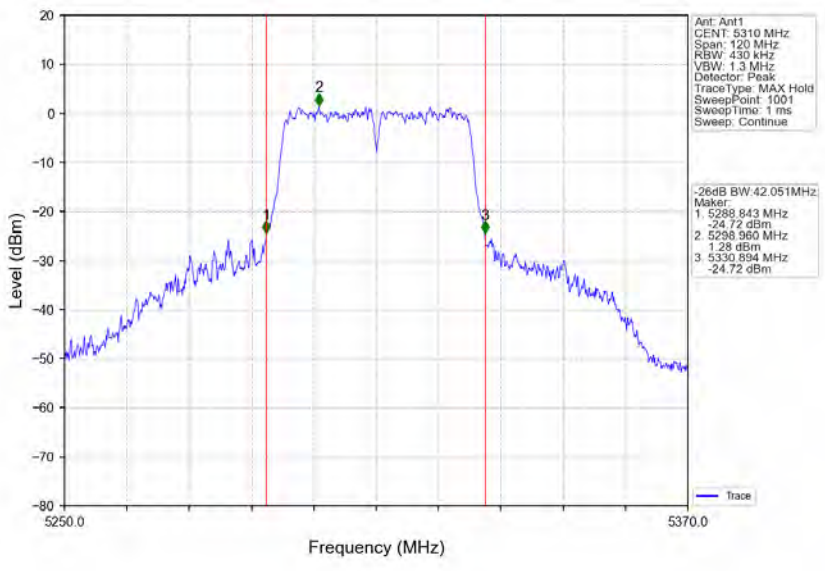
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



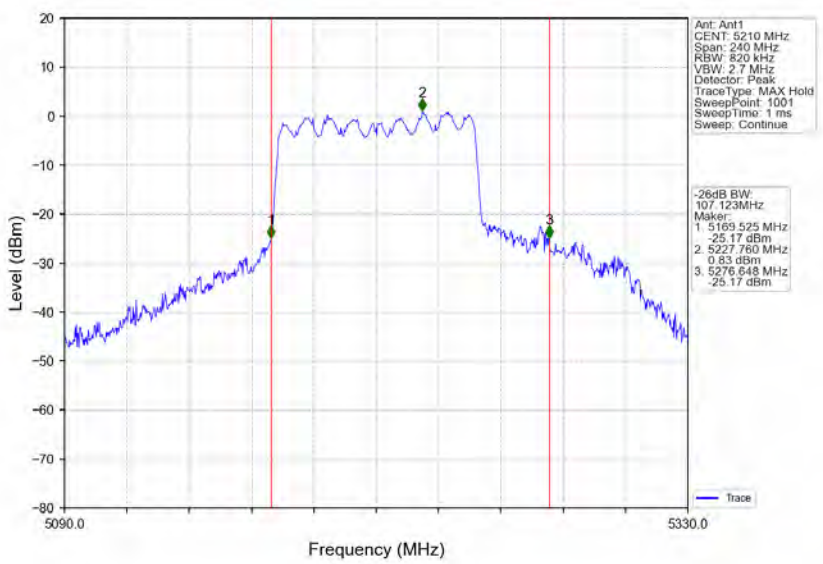
802.11ac(VHT40)_LCH_5270MHz_Ant1_NTNV



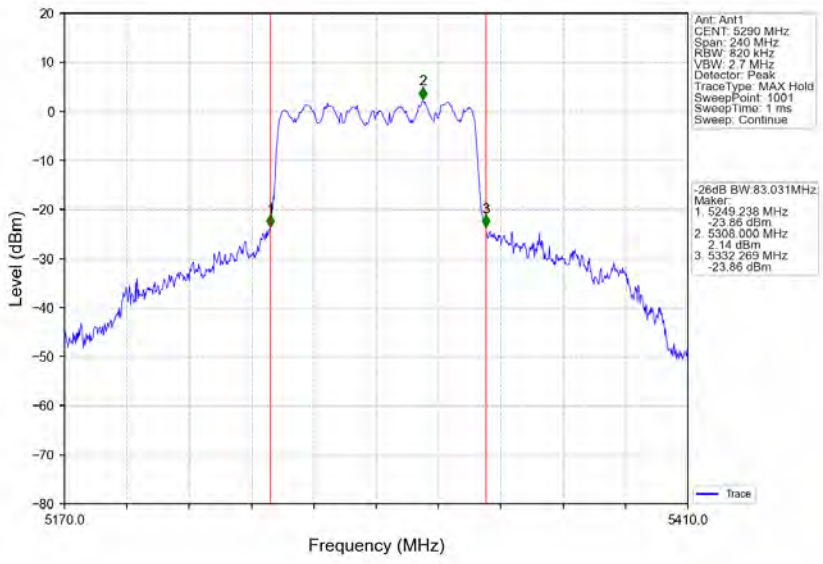
802.11ac(VHT40)_HCH_5310MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5290MHz_Ant1_NTNV



3. Maximum Conducted Output Power

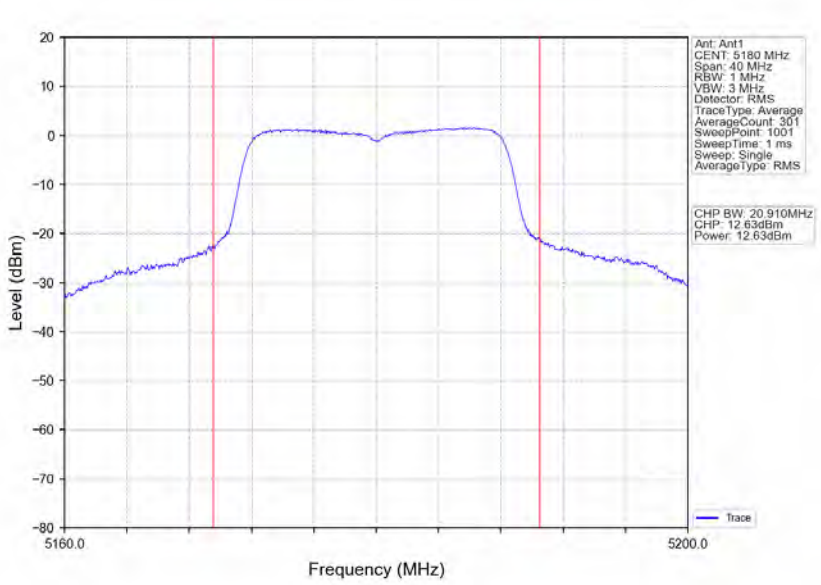
3.1 Power

3.1.1 Test Result

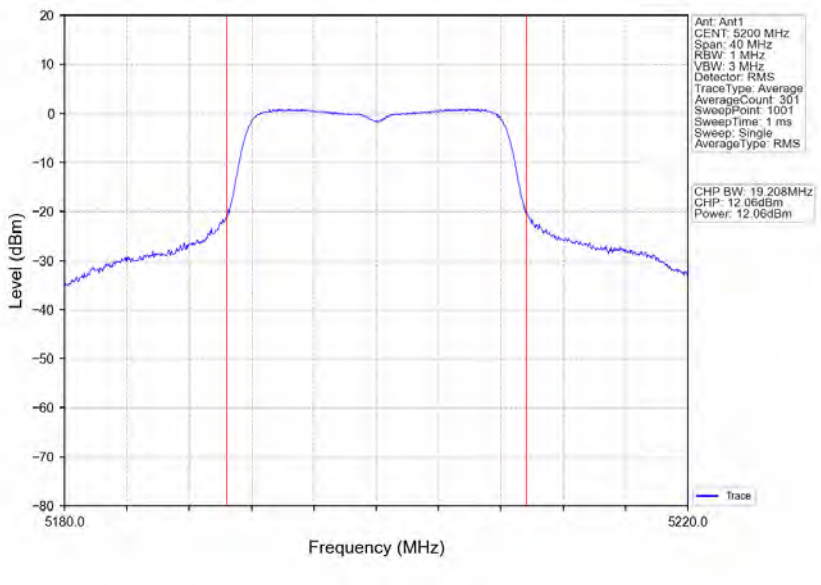
Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11a	SISO	5180	12.63	<=23.98	Pass
		5200	12.06	<=23.98	Pass
		5240	12.58	<=23.98	Pass
		5260	12.52	<=23.98	Pass
		5300	12.69	<=23.98	Pass
		5320	12.61	<=23.98	Pass
802.11n (HT20)	SISO	5180	12.10	<=23.98	Pass
		5200	11.98	<=23.98	Pass
		5240	11.67	<=23.98	Pass
		5260	12.08	<=23.98	Pass
		5300	12.26	<=23.98	Pass
		5320	12.11	<=23.98	Pass
802.11n (HT40)	SISO	5190	11.14	<=23.98	Pass
		5230	11.72	<=23.98	Pass
		5270	11.55	<=23.98	Pass
		5310	11.61	<=23.98	Pass
802.11ac (VHT20)	SISO	5180	11.64	<=23.98	Pass
		5200	11.53	<=23.98	Pass
		5240	12.09	<=23.98	Pass
		5260	12.50	<=23.98	Pass
		5300	12.52	<=23.98	Pass
		5320	12.39	<=23.98	Pass
802.11ac (VHT40)	SISO	5190	11.12	<=23.98	Pass
		5230	11.72	<=23.98	Pass
		5270	11.63	<=23.98	Pass
		5310	11.76	<=23.98	Pass
802.11ac (VHT80)	SISO	5210	10.46	<=23.98	Pass
		5290	11.69	<=23.98	Pass
Note1: Antenna Gain: Ant1: 2.50dBi;					

3.1.2 Test Graph

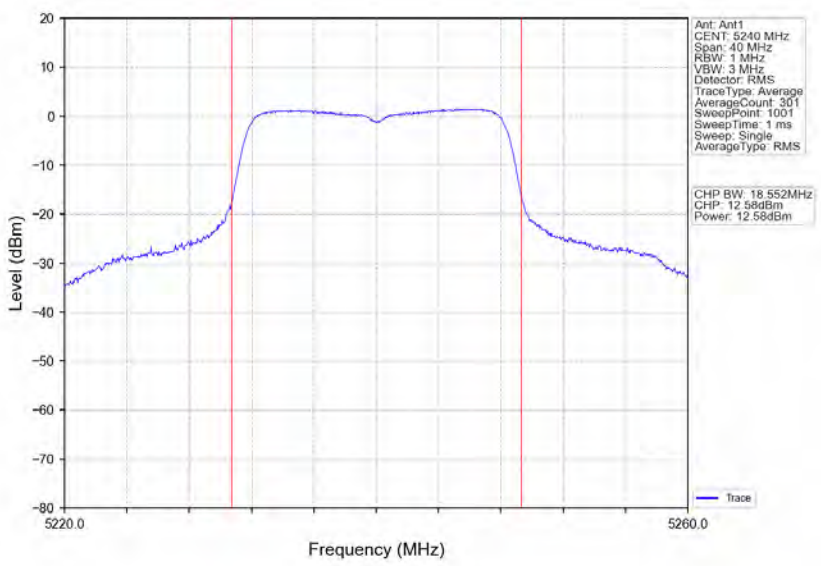
802.11a_LCH_5180MHz_Ant1_NTNV



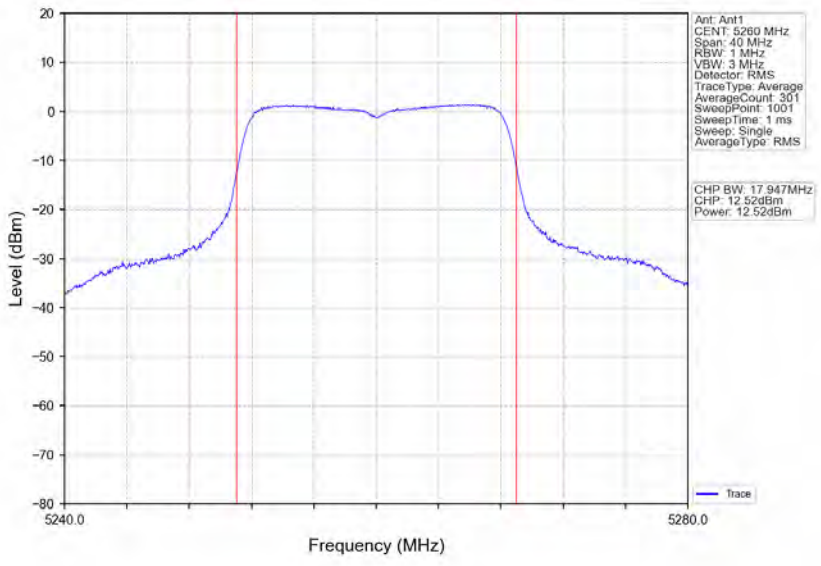
802.11a_MCH_5200MHz_Ant1_NTNV



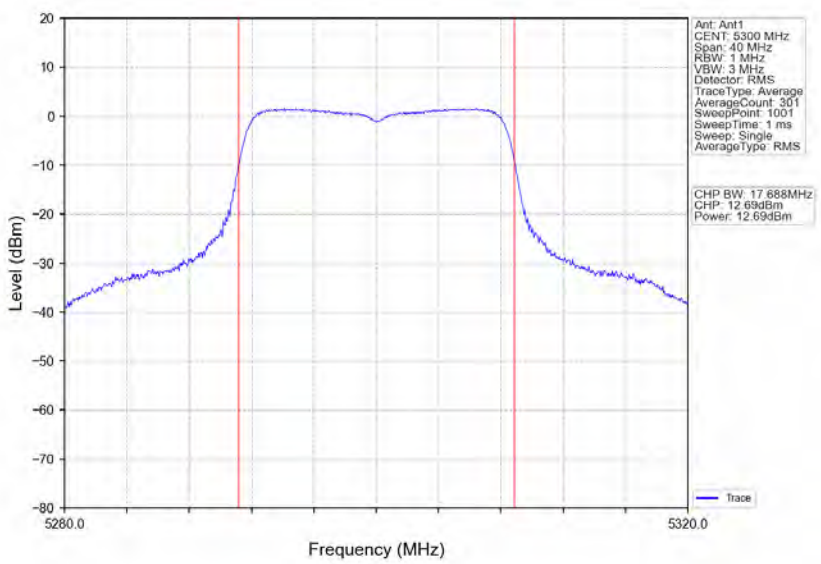
802.11a_HCH_5240MHz_Ant1_NTNV



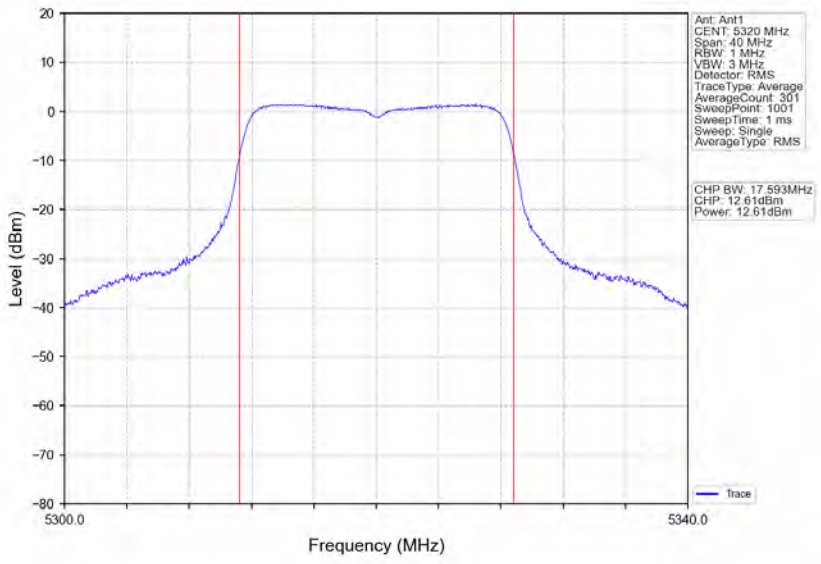
802.11a_LCH_5260MHz_Ant1_NTNV



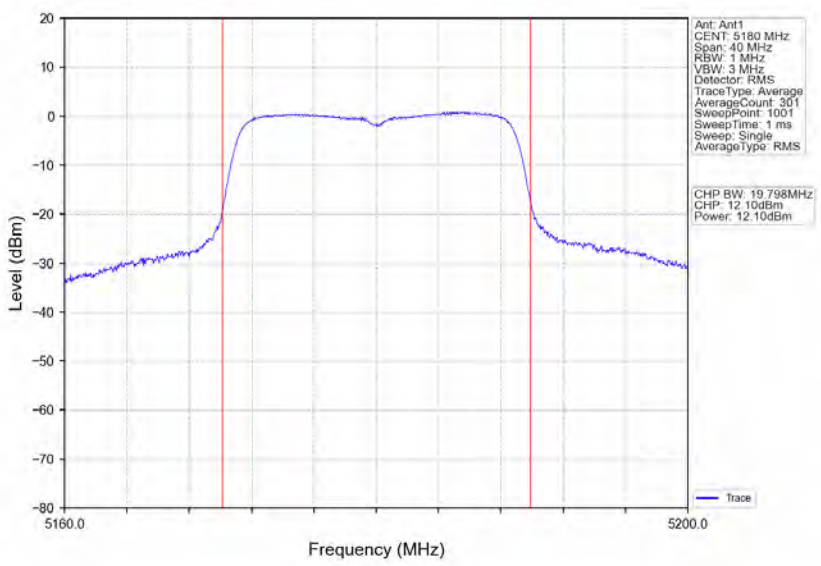
802.11a_MCH_5300MHz_Ant1_NTNV



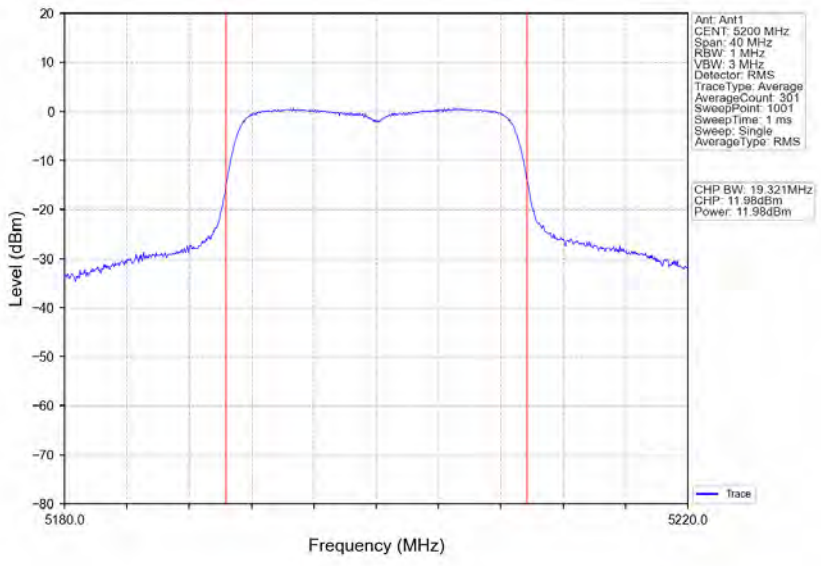
802.11a_HCH_5320MHz_Ant1_NTNV



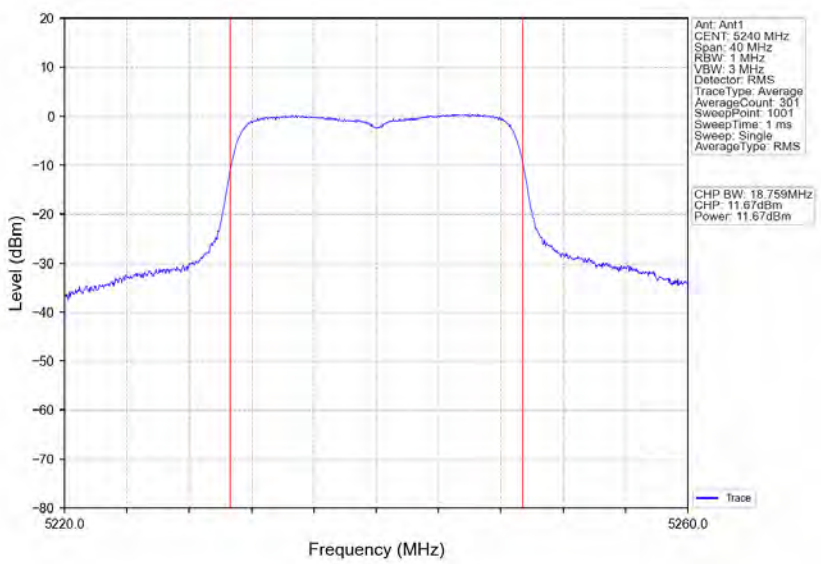
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



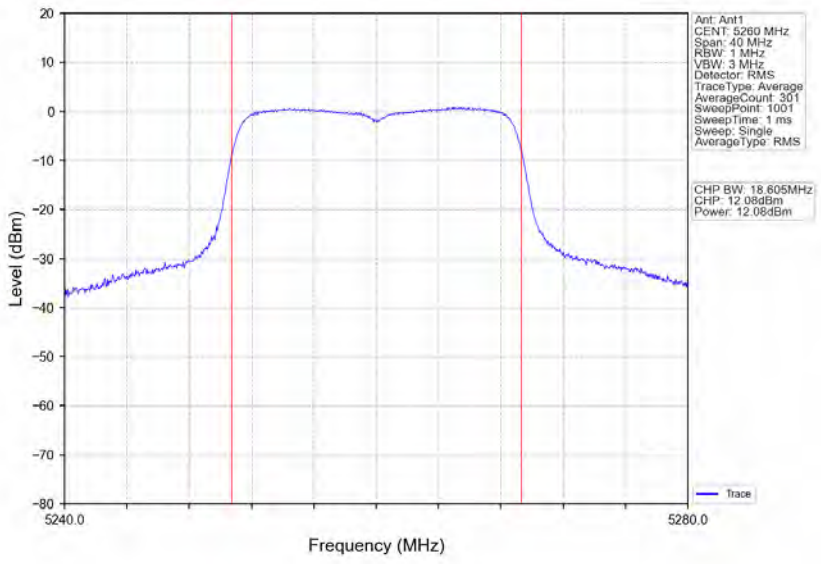
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



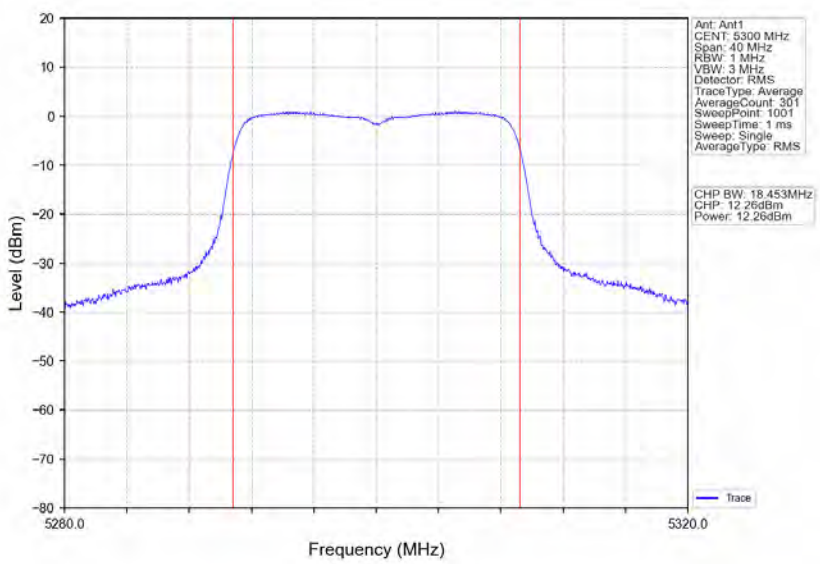
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



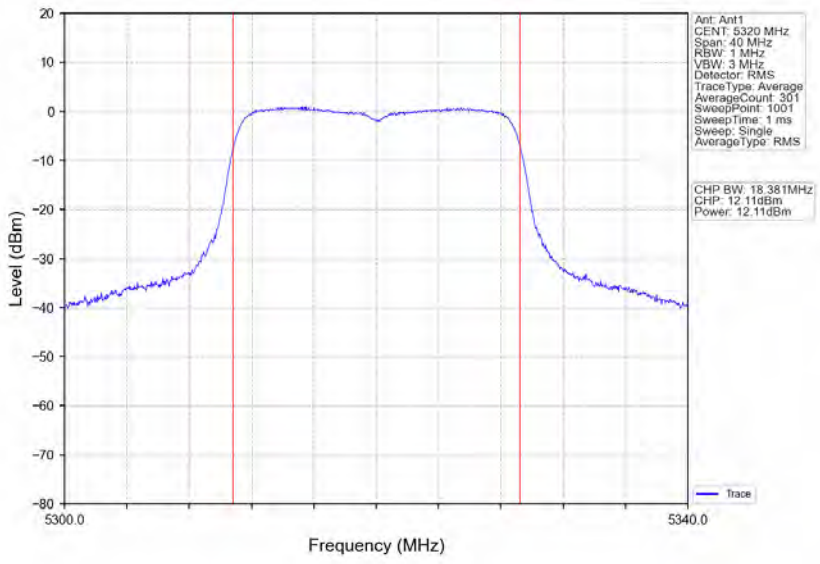
802.11n(HT20)_LCH_5260MHz_Ant1_NTNV



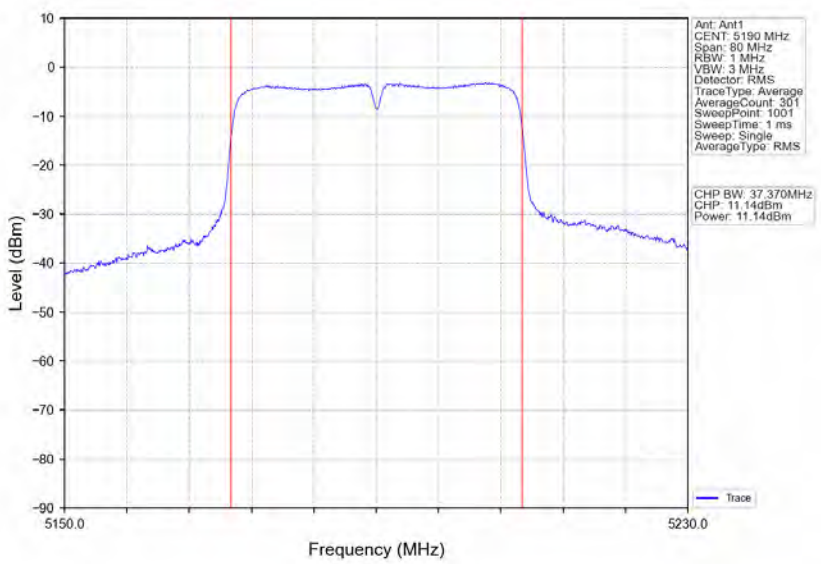
802.11n(HT20)_MCH_5300MHz_Ant1_NTNV



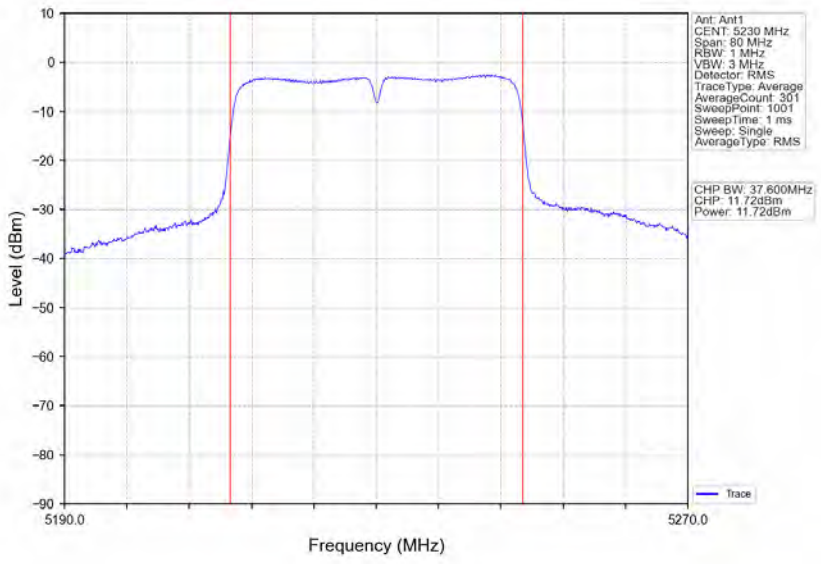
802.11n(HT20)_HCH_5320MHz_Ant1_NTNV



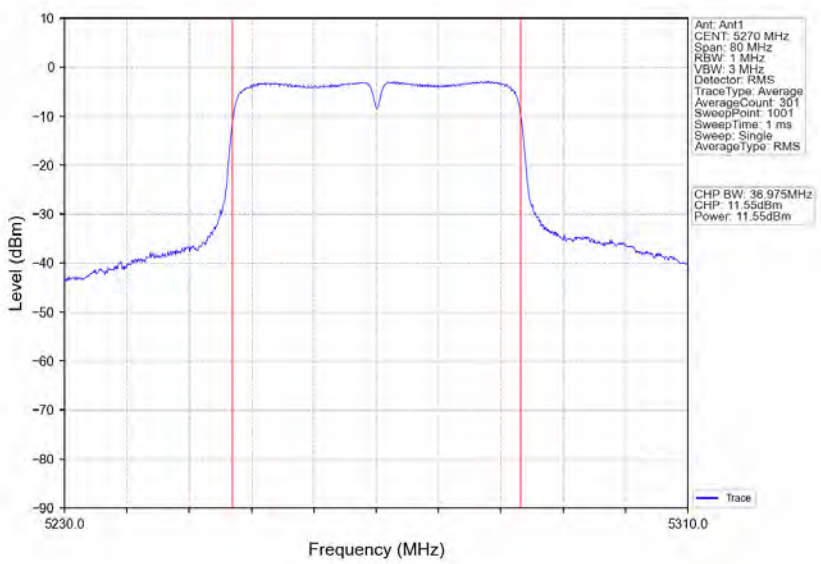
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



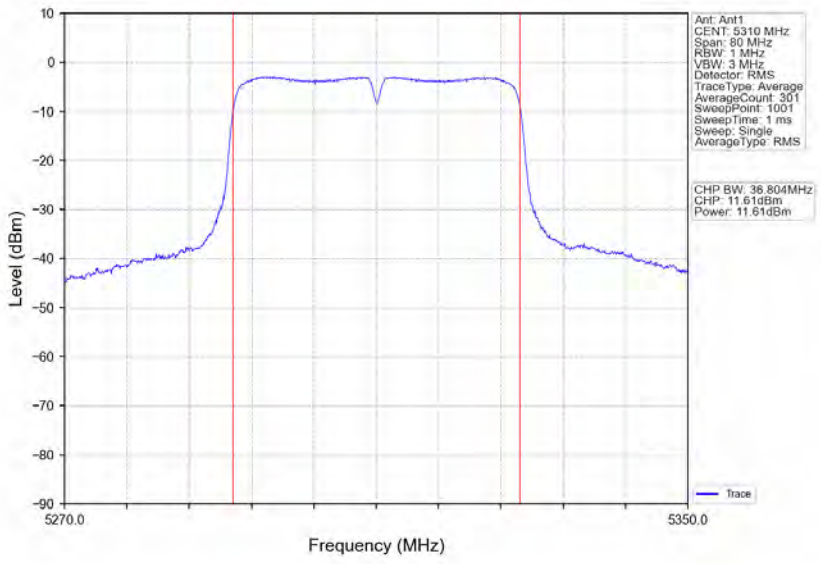
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



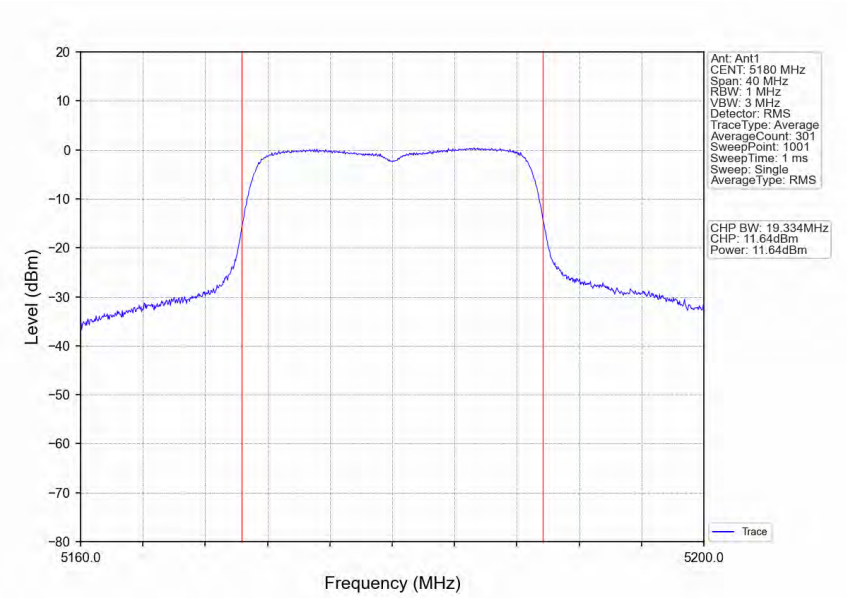
802.11n(HT40)_LCH_5270MHz_Ant1_NTNV



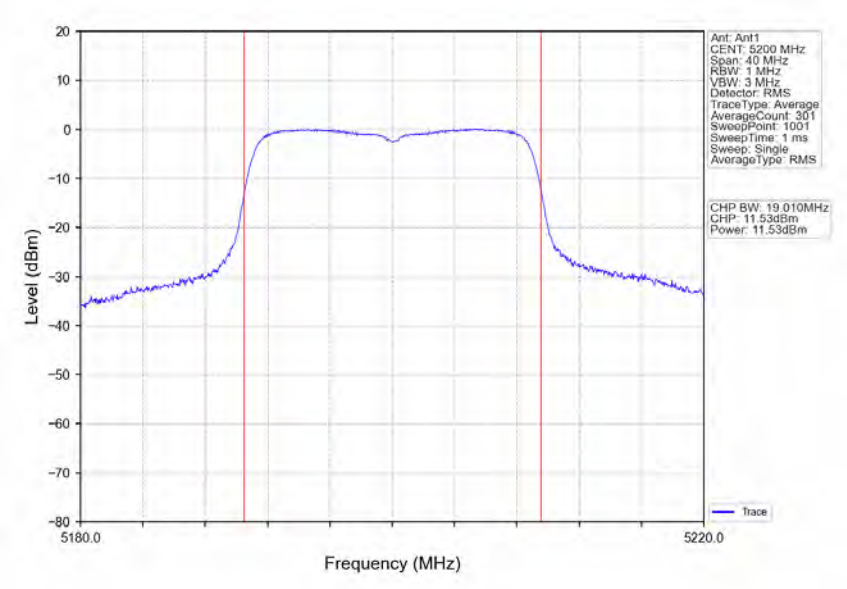
802.11n(HT40)_HCH_5310MHz_Ant1_NTNV



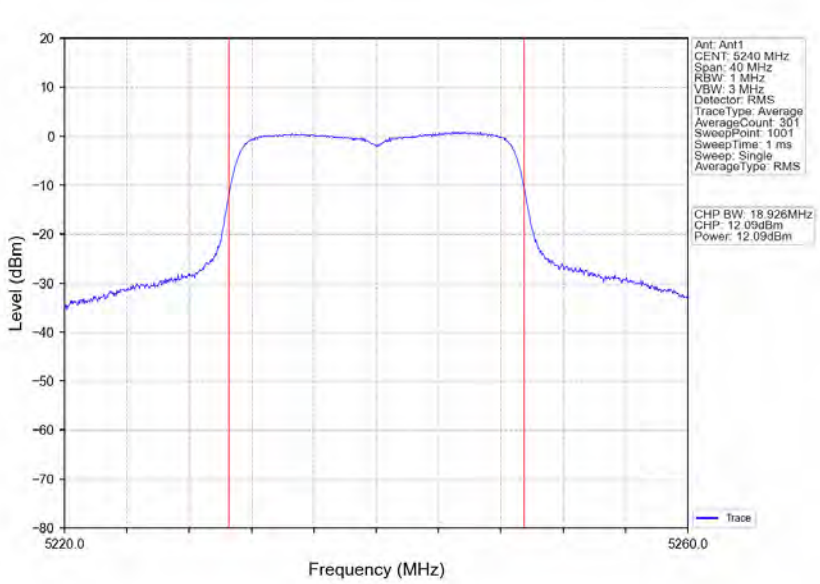
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



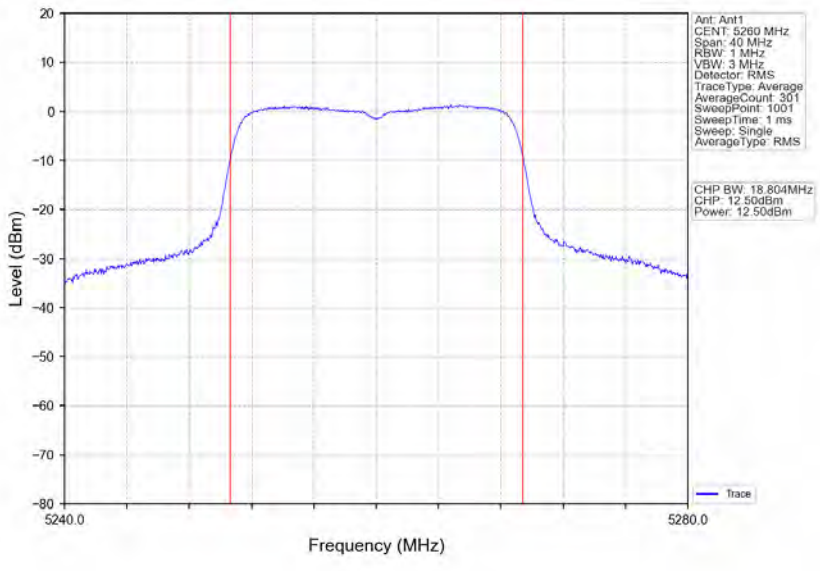
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



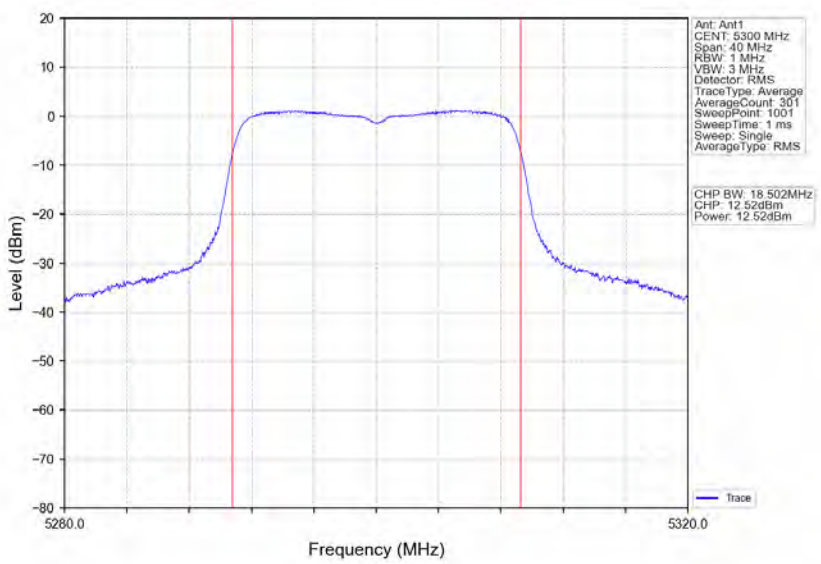
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



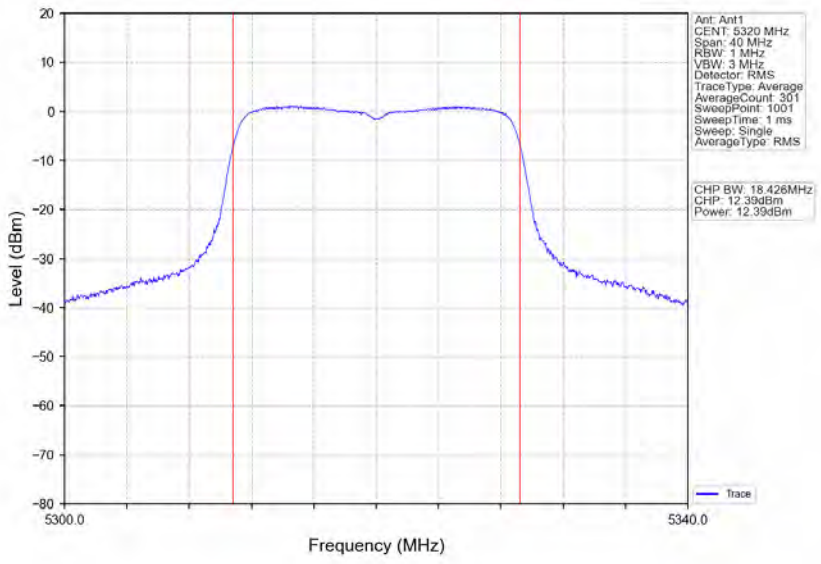
802.11ac(VHT20)_LCH_5260MHz_Ant1_NTNV



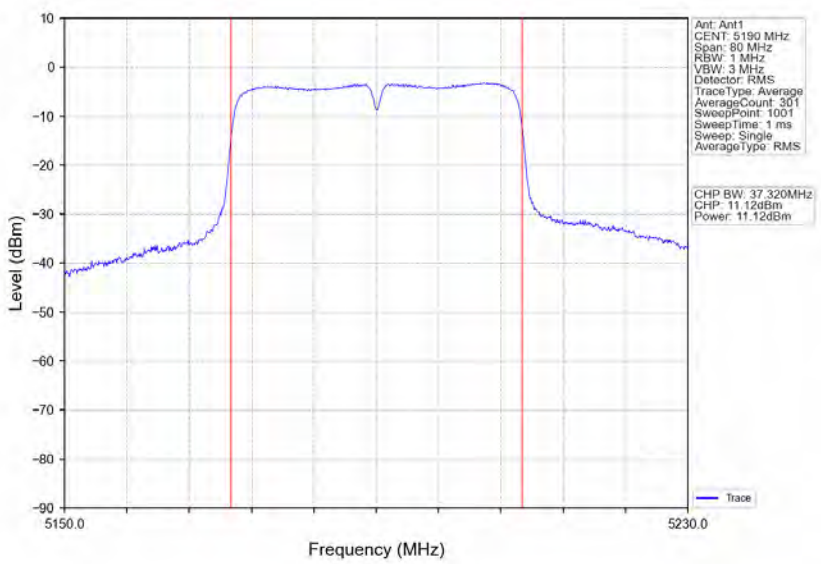
802.11ac(VHT20)_MCH_5300MHz_Ant1_NTNV



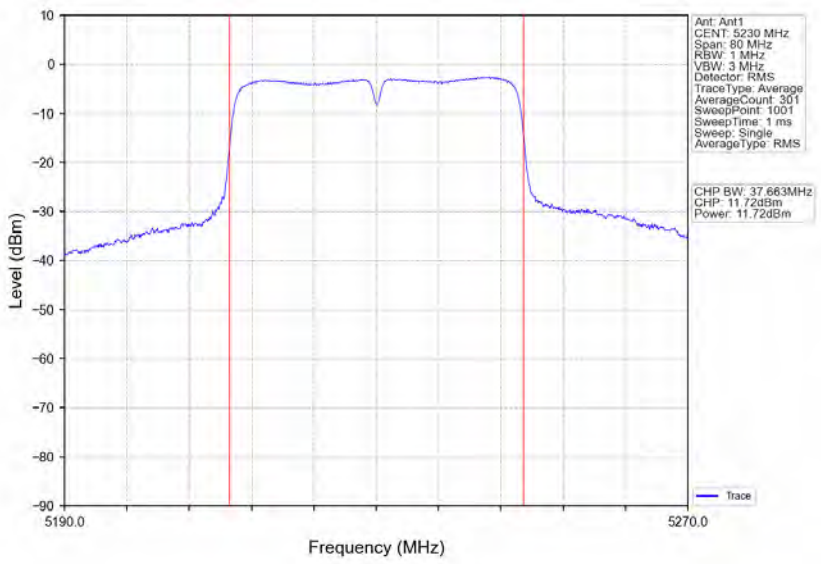
802.11ac(VHT20)_HCH_5320MHz_Ant1_NTNV



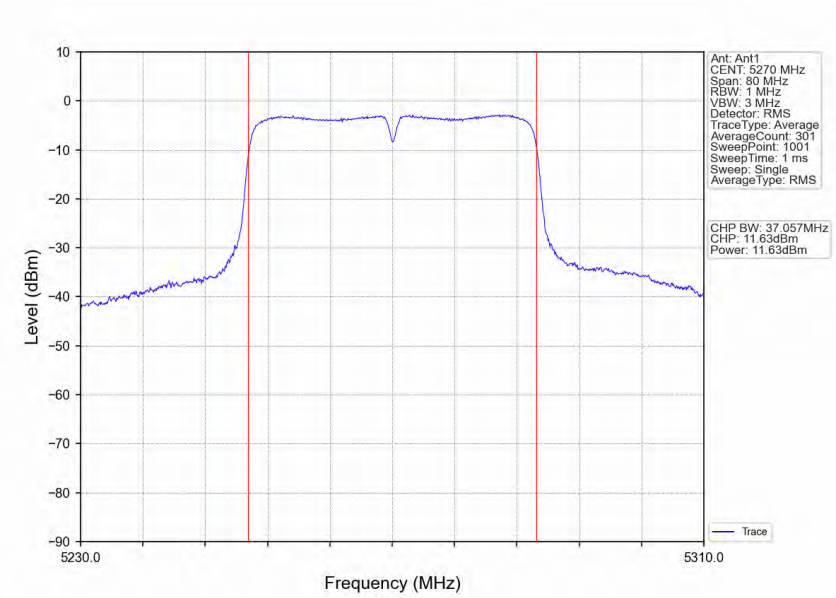
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



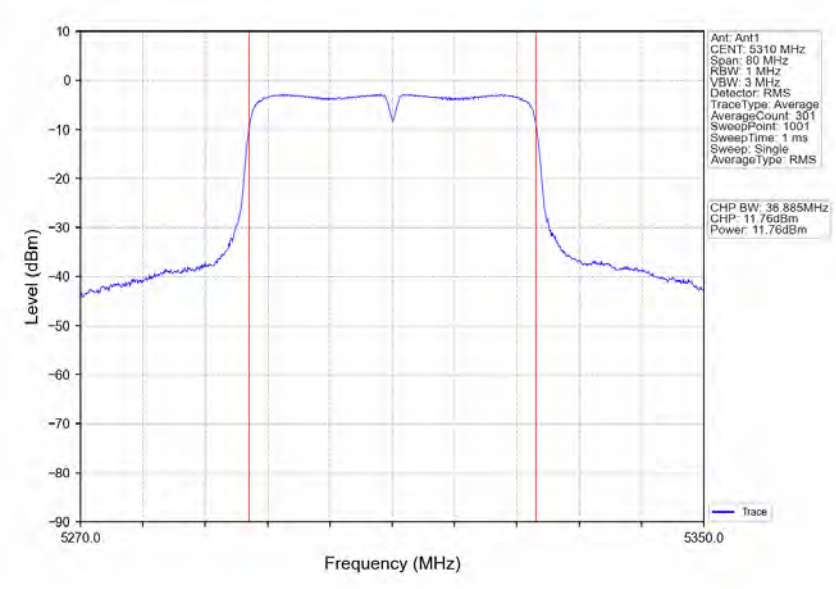
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



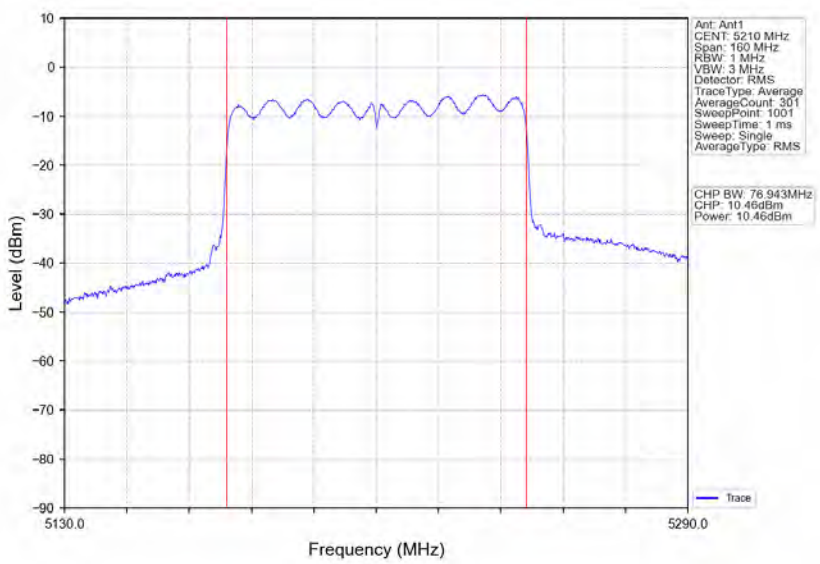
802.11ac(VHT40)_LCH_5270MHz_Ant1_NTNV



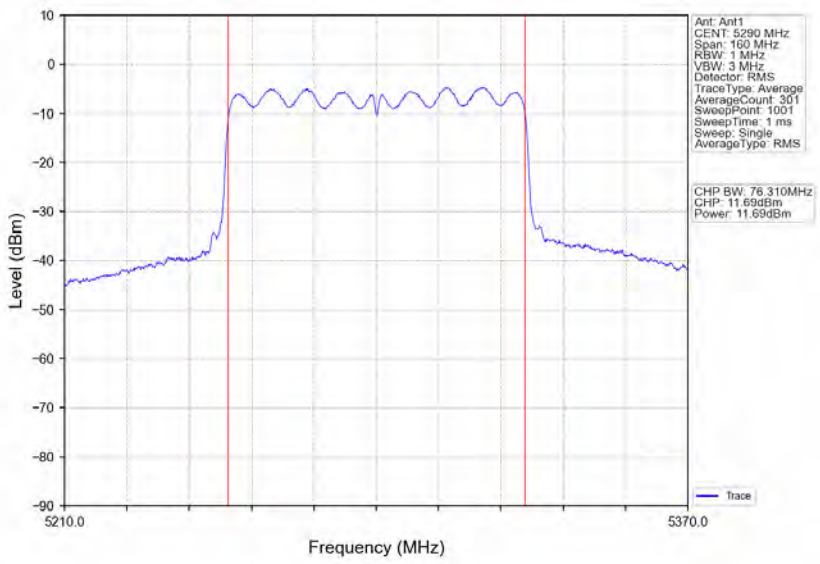
802.11ac(VHT40)_HCH_5310MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5290MHz_Ant1_NTNV



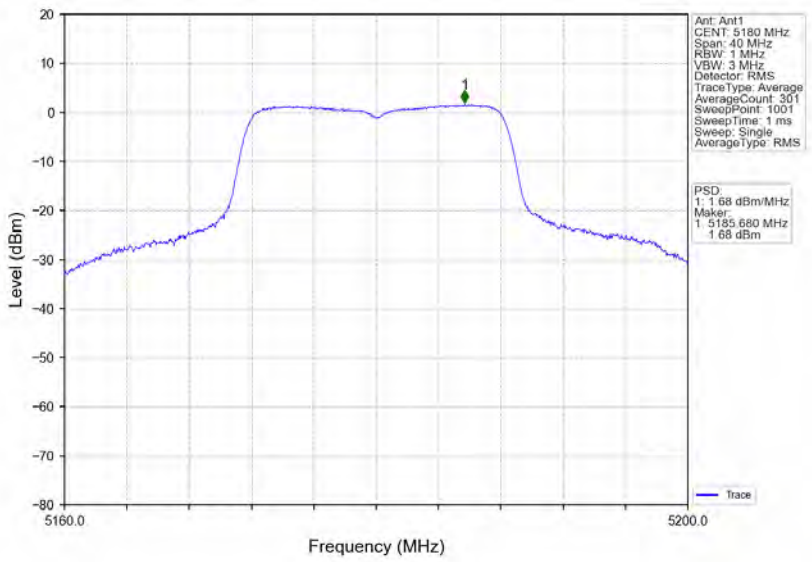
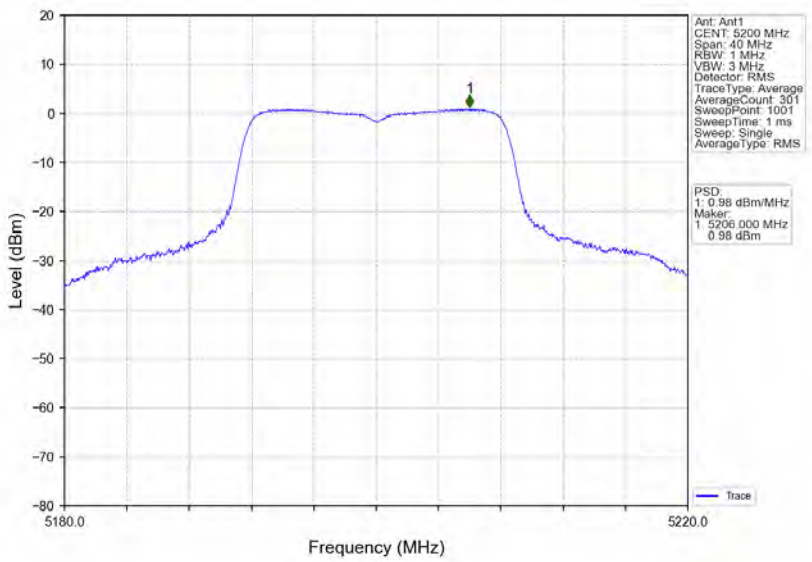
4. Maximum Power Spectral Density

4.1 PSD

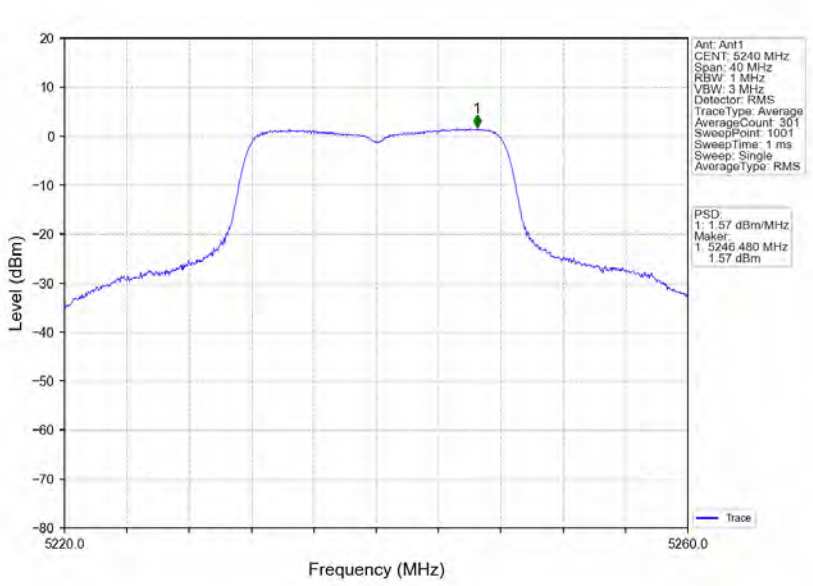
4.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/MHz)		Verdict
			ANT1	Limit	
802.11a	SISO	5180	1.68	<=11	Pass
		5200	0.98	<=11	Pass
		5240	1.57	<=11	Pass
		5260	1.52	<=11	Pass
		5300	1.66	<=11	Pass
		5320	1.55	<=11	Pass
802.11n (HT20)	SISO	5180	0.91	<=11	Pass
		5200	0.73	<=11	Pass
		5240	0.41	<=11	Pass
		5260	0.81	<=11	Pass
		5300	1.05	<=11	Pass
		5320	0.79	<=11	Pass
802.11n (HT40)	SISO	5190	-3.06	<=11	Pass
		5230	-2.42	<=11	Pass
		5270	-2.85	<=11	Pass
		5310	-2.90	<=11	Pass
802.11ac (VHT20)	SISO	5180	0.62	<=11	Pass
		5200	0.22	<=11	Pass
		5240	0.96	<=11	Pass
		5260	1.19	<=11	Pass
		5300	1.22	<=11	Pass
		5320	1.07	<=11	Pass
802.11ac (VHT40)	SISO	5190	-3.16	<=11	Pass
		5230	-2.48	<=11	Pass
		5270	-2.76	<=11	Pass
		5310	-2.70	<=11	Pass
802.11ac (VHT80)	SISO	5210	-5.58	<=11	Pass
		5290	-4.66	<=11	Pass
Note1: Antenna Gain: Ant1: 2.50dBi;					

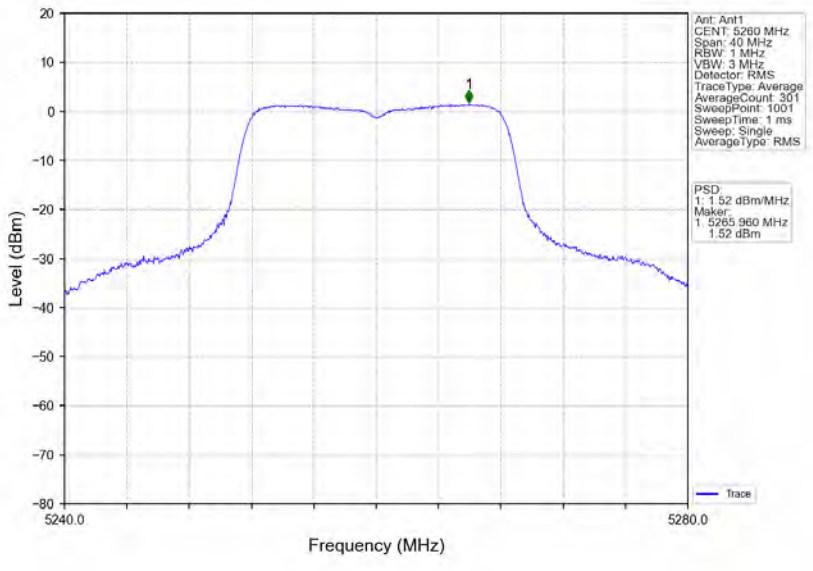
4.1.2 Test Graph

802.11a_LCH_5180MHz_Ant1_NTNV

802.11a_MCH_5200MHz_Ant1_NTNV


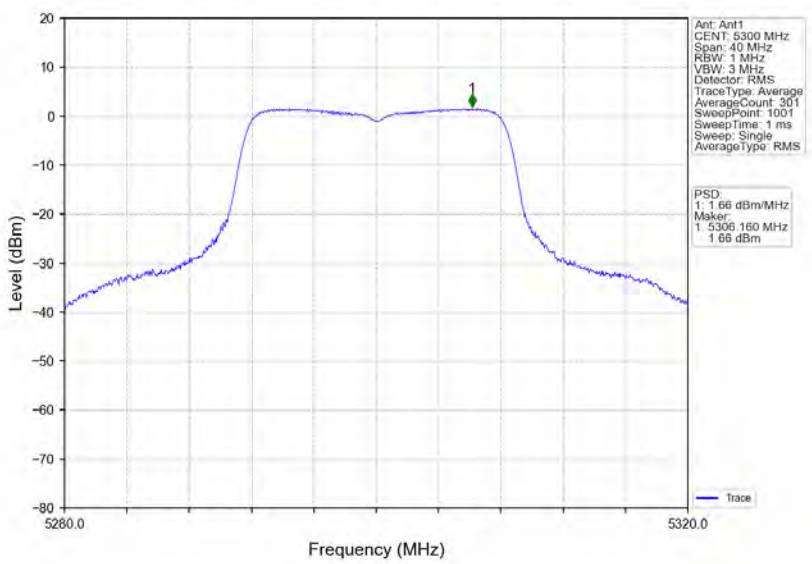
802.11a_HCH_5240MHz_Ant1_NTNV



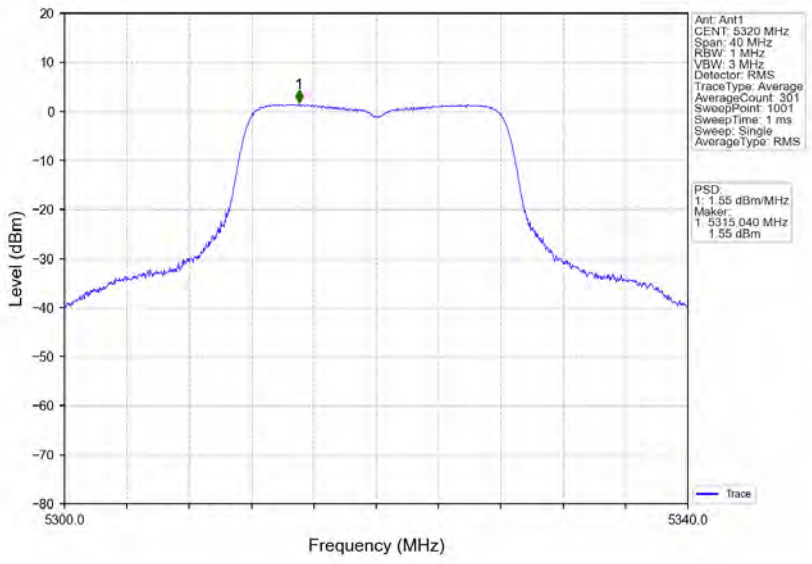
802.11a_LCH_5260MHz_Ant1_NTNV



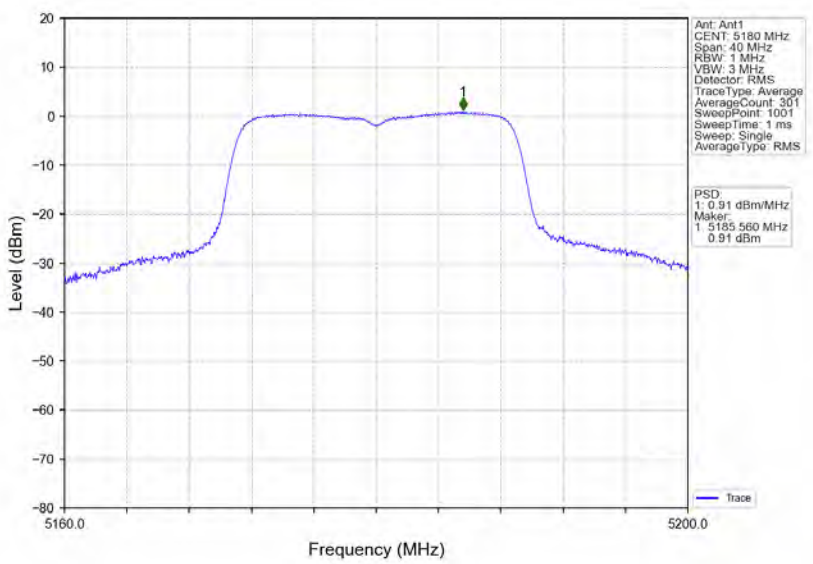
802.11a_MCH_5300MHz_Ant1_NTNV



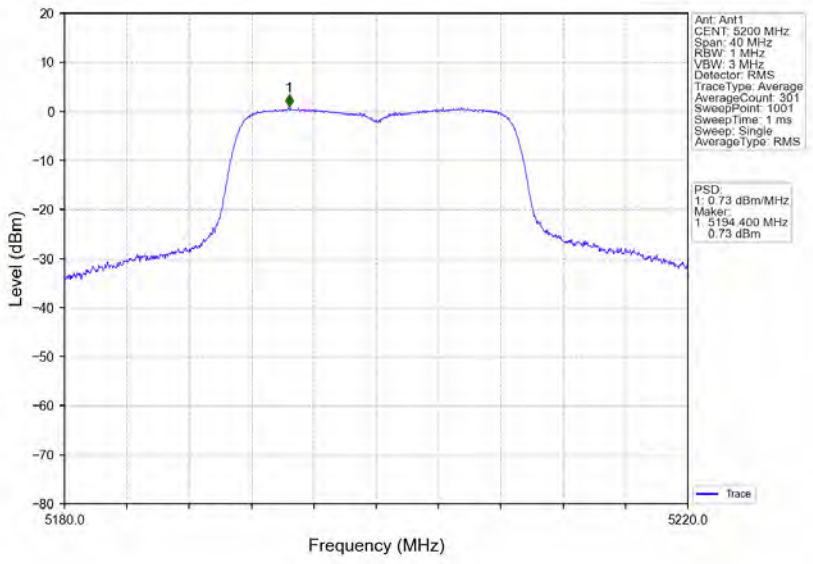
802.11a_HCH_5320MHz_Ant1_NTNV



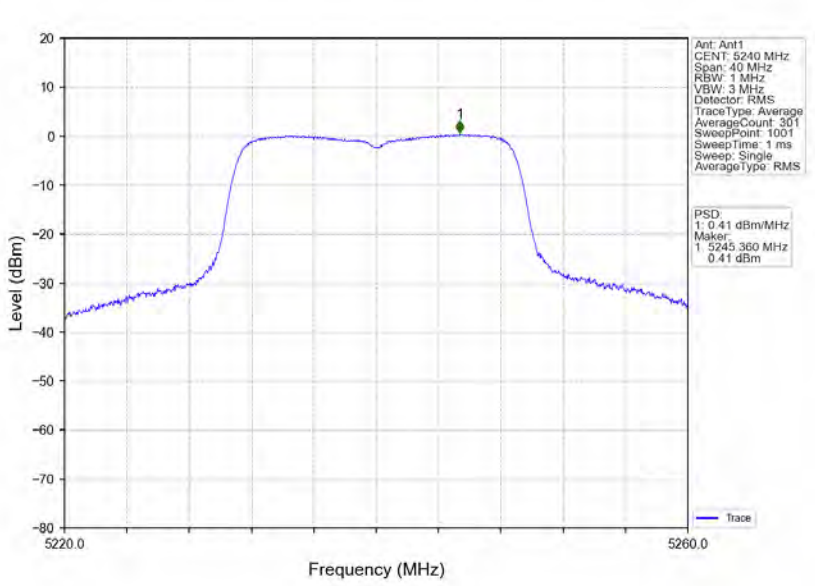
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



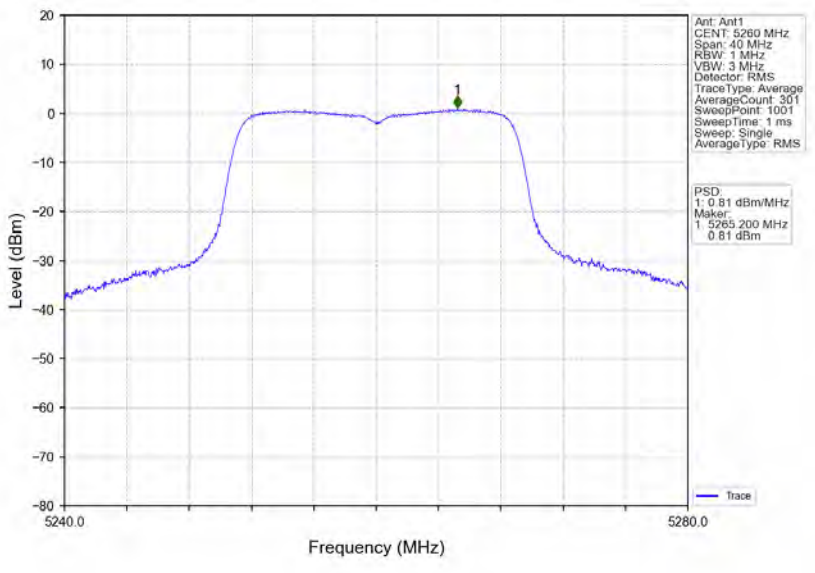
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



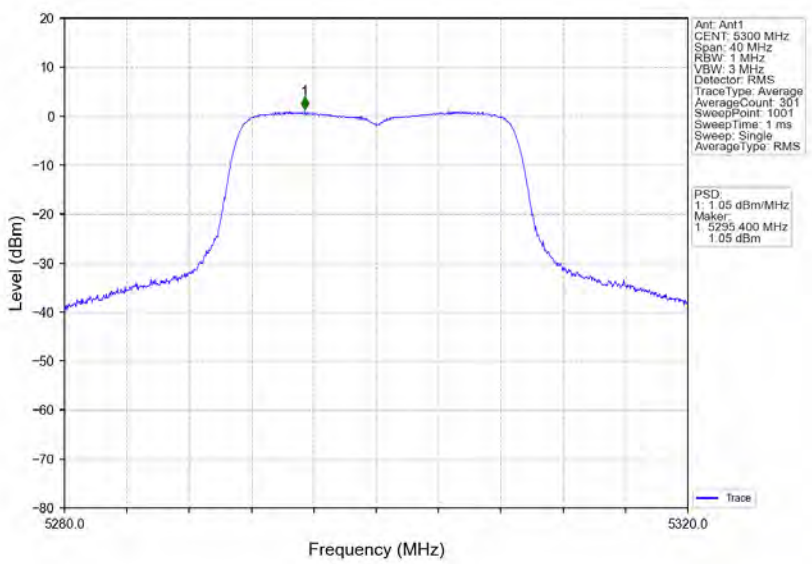
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



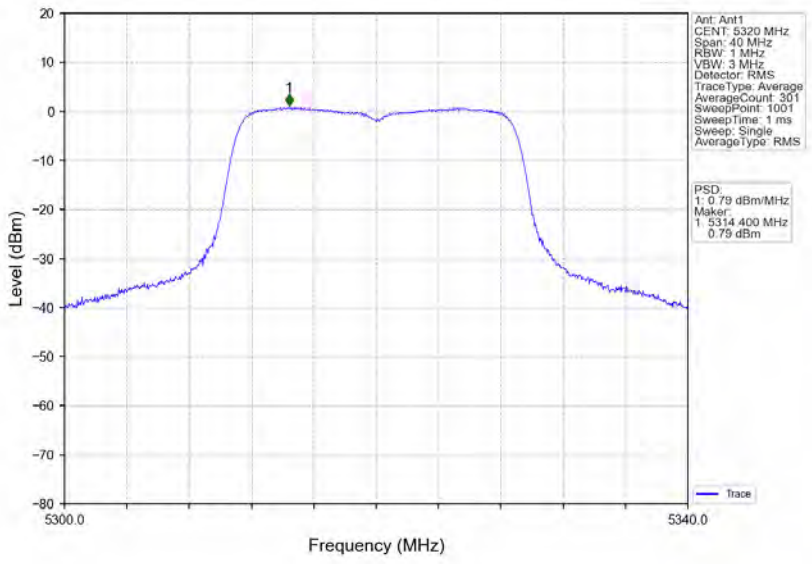
802.11n(HT20)_LCH_5260MHz_Ant1_NTNV



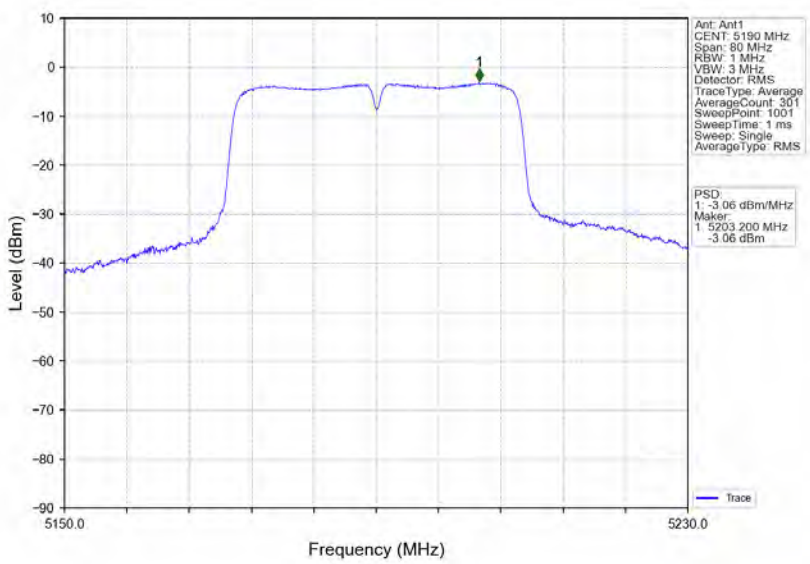
802.11n(HT20)_MCH_5300MHz_Ant1_NTNV



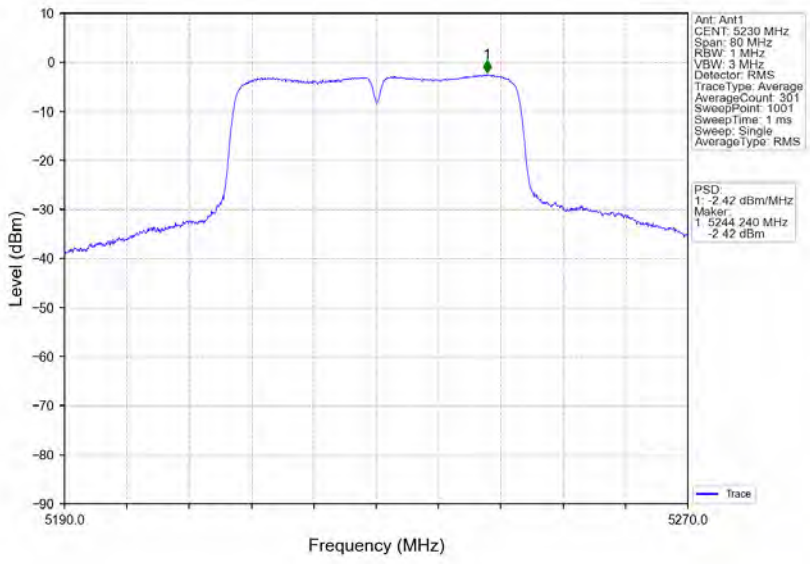
802.11n(HT20)_HCH_5320MHz_Ant1_NTNV



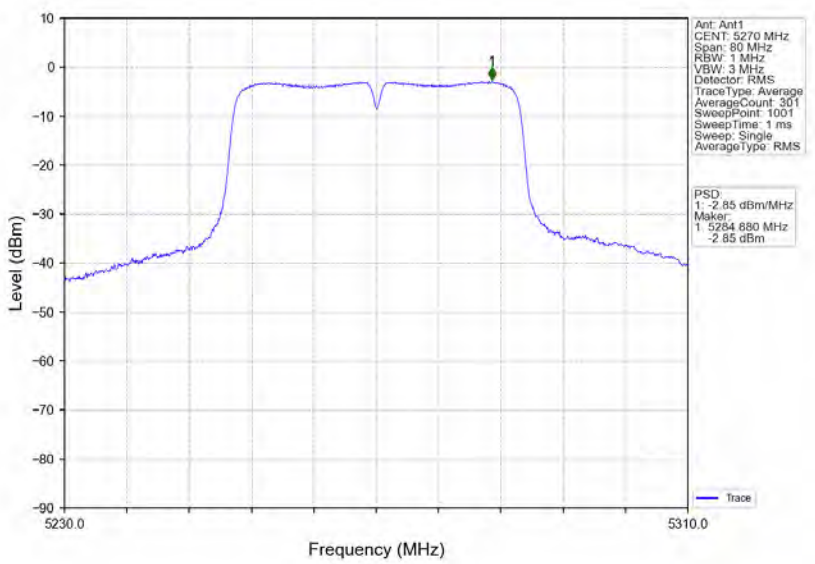
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



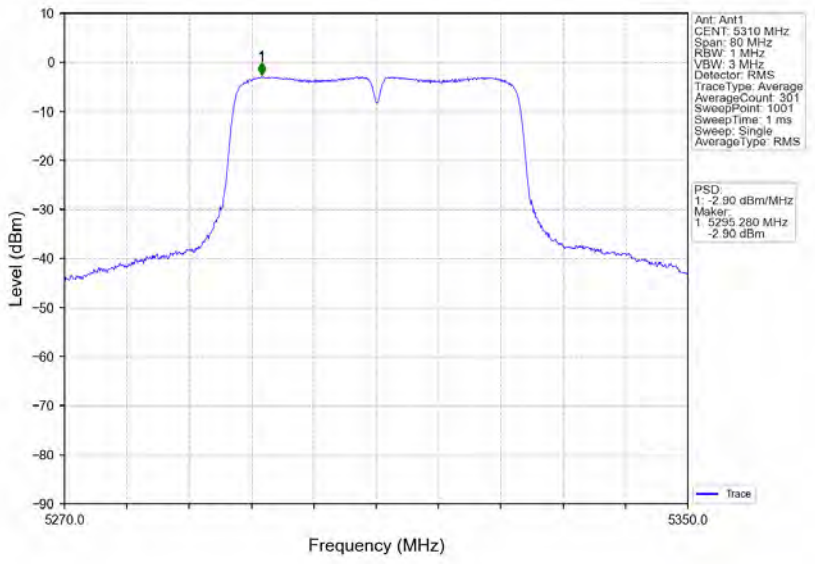
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



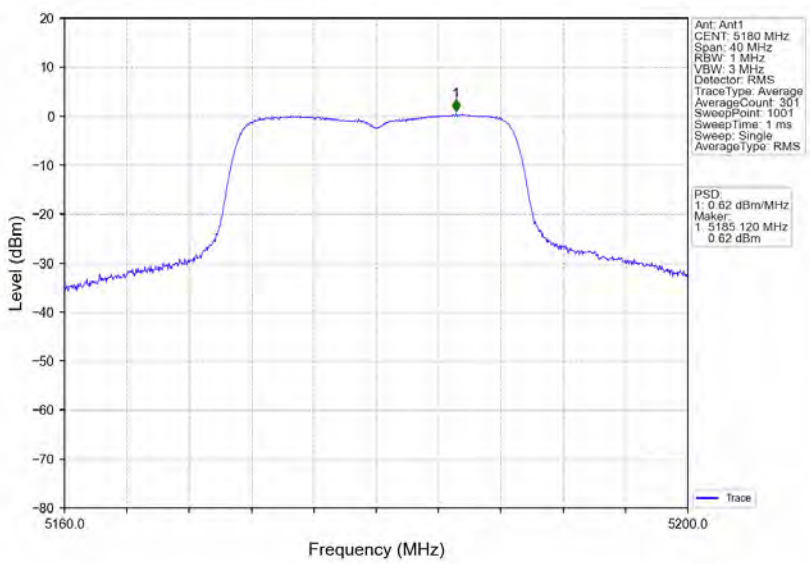
802.11n(HT40)_LCH_5270MHz_Ant1_NTNV



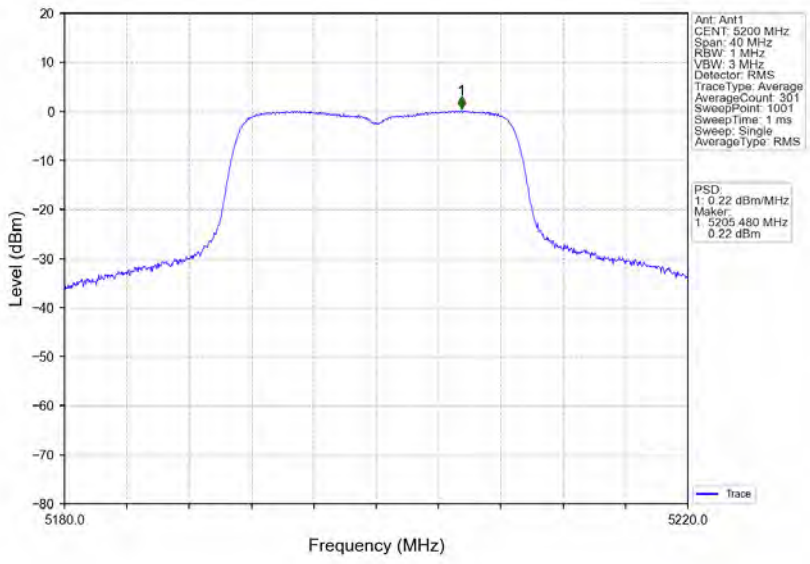
802.11n(HT40)_HCH_5310MHz_Ant1_NTNV



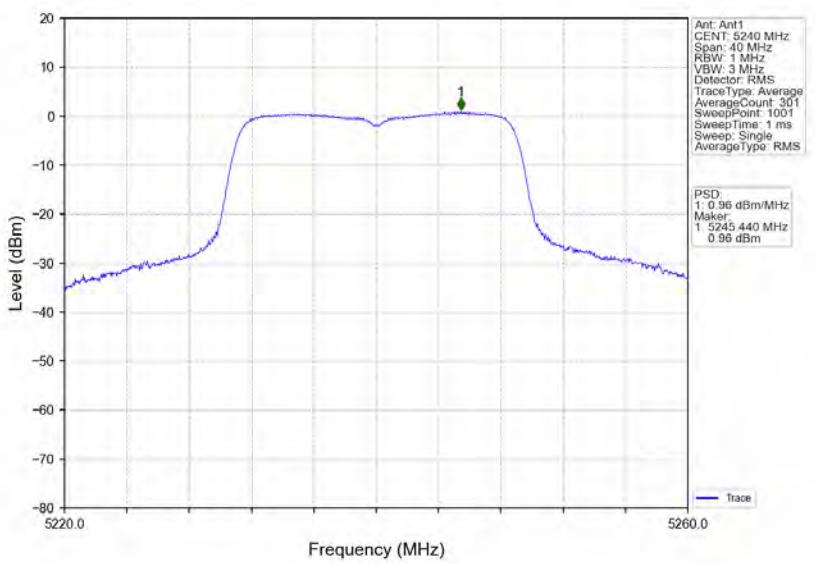
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



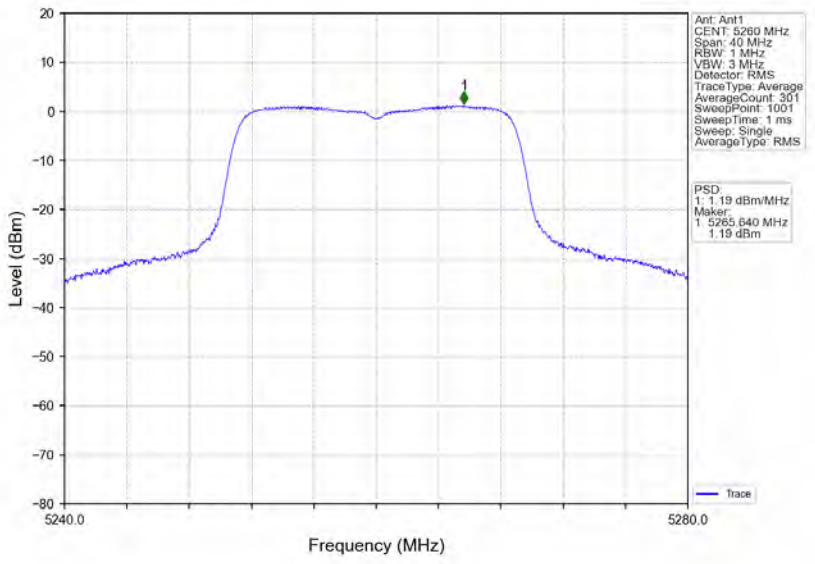
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



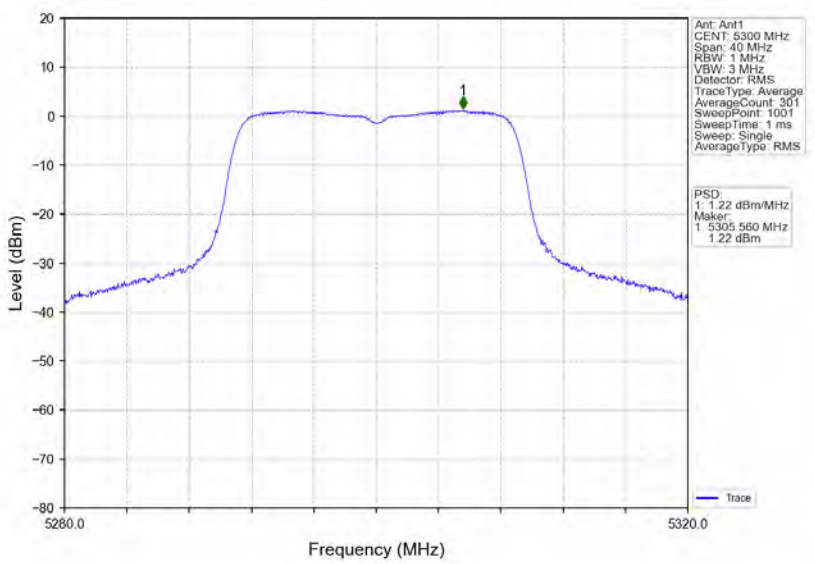
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



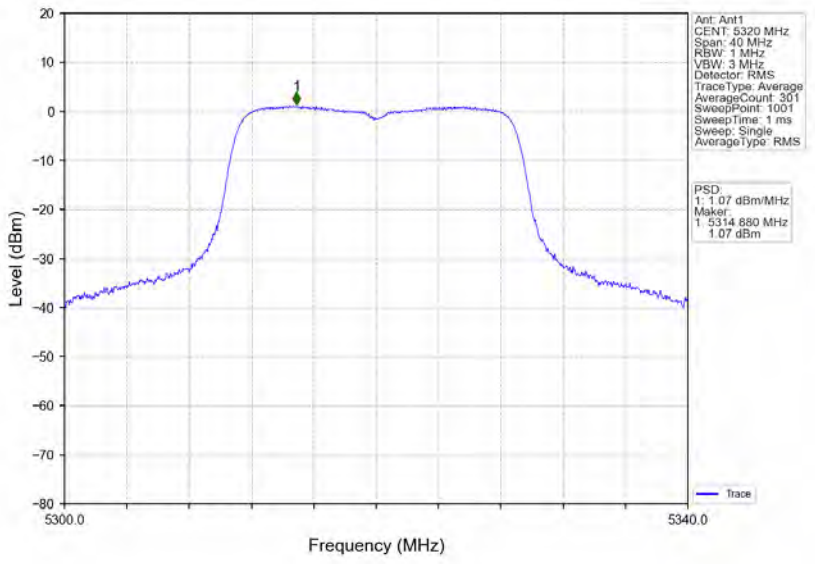
802.11ac(VHT20)_LCH_5260MHz_Ant1_NTNV



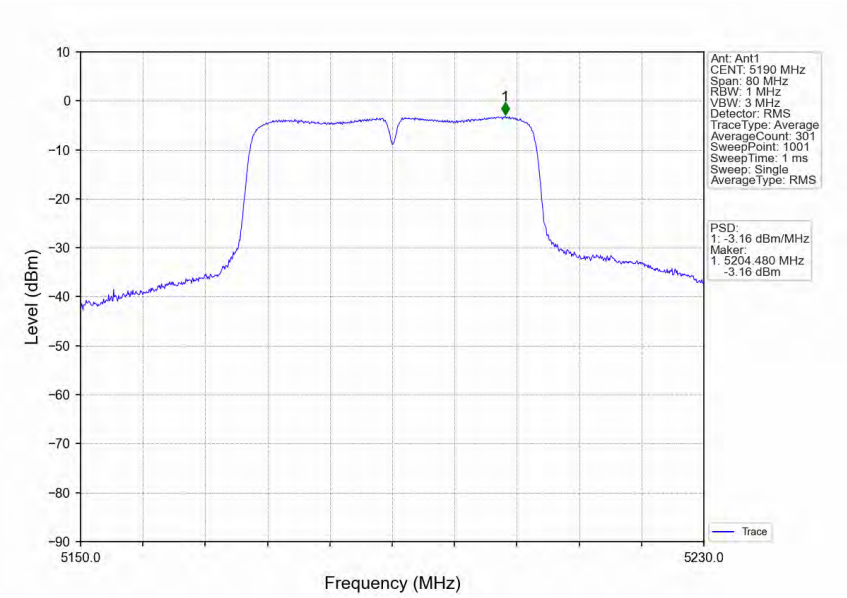
802.11ac(VHT20)_MCH_5300MHz_Ant1_NTNV



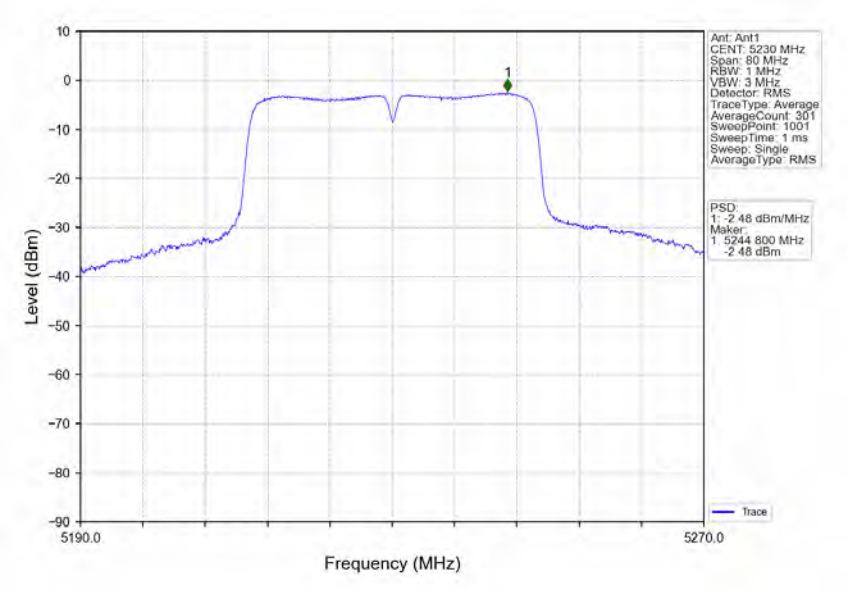
802.11ac(VHT20)_HCH_5320MHz_Ant1_NTNV



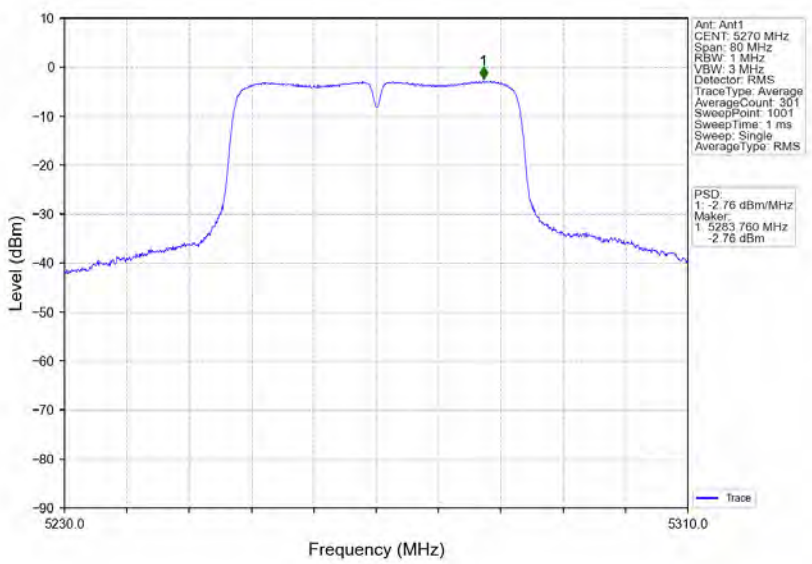
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



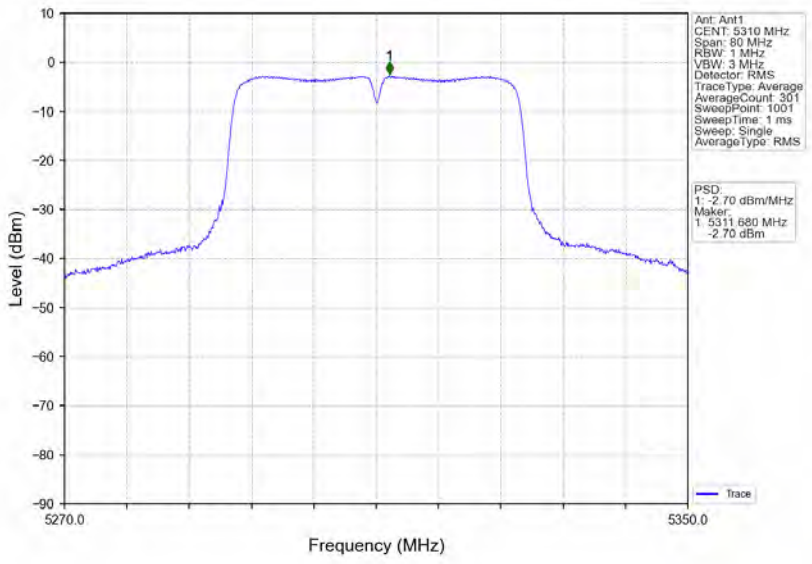
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



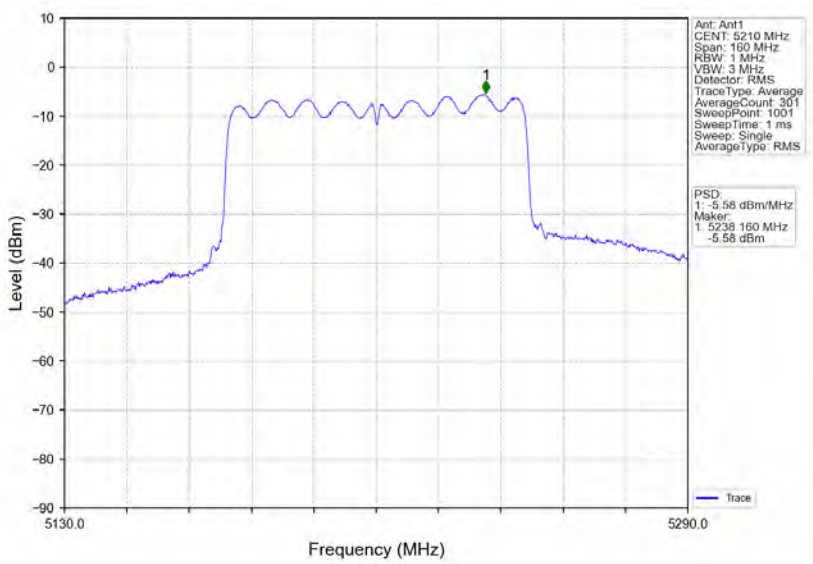
802.11ac(VHT40)_LCH_5270MHz_Ant1_NTNV



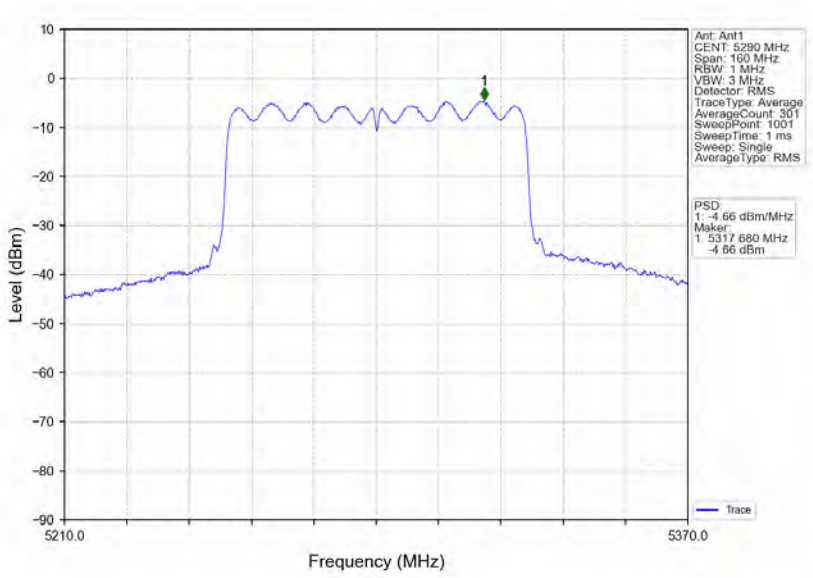
802.11ac(VHT40)_HCH_5310MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5290MHz_Ant1_NTNV



5. Frequency Stability

5.1 Ant1

5.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
802.11a	SISO	5180	20	102	5180.020	5150 to 5250	Pass
				120	5180.040	5150 to 5250	Pass
				138	5180.000	5150 to 5250	Pass
			-30	120	5180.060	5150 to 5250	Pass
			-20	120	5180.020	5150 to 5250	Pass
			-10	120	5180.040	5150 to 5250	Pass
			0	120	5180.040	5150 to 5250	Pass
			10	120	5180.020	5150 to 5250	Pass
			30	120	5180.040	5150 to 5250	Pass
			40	120	5180.040	5150 to 5250	Pass
			50	120	5179.980	5150 to 5250	Pass
		5200	20	102	5200.060	5150 to 5250	Pass
				120	5200.000	5150 to 5250	Pass
				138	5200.040	5150 to 5250	Pass
			-30	120	5200.020	5150 to 5250	Pass
			-20	120	5200.020	5150 to 5250	Pass
			-10	120	5200.040	5150 to 5250	Pass
			0	120	5200.000	5150 to 5250	Pass
			10	120	5200.040	5150 to 5250	Pass
			30	120	5200.020	5150 to 5250	Pass
			40	120	5200.020	5150 to 5250	Pass
			50	120	5200.020	5150 to 5250	Pass
		5240	20	102	5240.040	5150 to 5250	Pass
				120	5240.020	5150 to 5250	Pass
				138	5240.080	5150 to 5250	Pass
			-30	120	5240.020	5150 to 5250	Pass
			-20	120	5240.020	5150 to 5250	Pass
			-10	120	5240.040	5150 to 5250	Pass
			0	120	5240.020	5150 to 5250	Pass
			10	120	5240.020	5150 to 5250	Pass
			30	120	5240.040	5150 to 5250	Pass
			40	120	5240.000	5150 to 5250	Pass
			50	120	5240.040	5150 to 5250	Pass
		5260	20	102	5260.020	5250 to 5350	Pass
				120	5260.060	5250 to 5350	Pass
				138	5260.040	5250 to 5350	Pass
			-30	120	5260.020	5250 to 5350	Pass
			-20	120	5260.020	5250 to 5350	Pass

			-10	120	5260.060	5250 to 5350	Pass
			0	120	5260.000	5250 to 5350	Pass
			10	120	5260.060	5250 to 5350	Pass
			30	120	5260.000	5250 to 5350	Pass
			40	120	5260.020	5250 to 5350	Pass
			50	120	5260.080	5250 to 5350	Pass
		5300	20	102	5300.040	5250 to 5350	Pass
				120	5300.020	5250 to 5350	Pass
				138	5300.020	5250 to 5350	Pass
			-30	120	5300.020	5250 to 5350	Pass
			-20	120	5300.020	5250 to 5350	Pass
			-10	120	5300.000	5250 to 5350	Pass
			0	120	5300.020	5250 to 5350	Pass
			10	120	5300.020	5250 to 5350	Pass
			30	120	5300.020	5250 to 5350	Pass
			40	120	5300.020	5250 to 5350	Pass
			50	120	5300.020	5250 to 5350	Pass
		5320	20	102	5320.000	5250 to 5350	Pass
				120	5320.000	5250 to 5350	Pass
				138	5320.020	5250 to 5350	Pass
			-30	120	5320.000	5250 to 5350	Pass
			-20	120	5320.040	5250 to 5350	Pass
			-10	120	5320.020	5250 to 5350	Pass
			0	120	5320.020	5250 to 5350	Pass
			10	120	5320.000	5250 to 5350	Pass
			30	120	5320.000	5250 to 5350	Pass
			40	120	5320.020	5250 to 5350	Pass
			50	120	5320.000	5250 to 5350	Pass
802.11n (HT20)	SISO	5180	20	102	5180.100	5150 to 5250	Pass
				120	5180.040	5150 to 5250	Pass
				138	5180.040	5150 to 5250	Pass
			-30	120	5180.080	5150 to 5250	Pass
			-20	120	5180.080	5150 to 5250	Pass
			-10	120	5180.060	5150 to 5250	Pass
			0	120	5180.040	5150 to 5250	Pass
			10	120	5180.040	5150 to 5250	Pass
			30	120	5180.040	5150 to 5250	Pass
			40	120	5180.080	5150 to 5250	Pass
			50	120	5180.060	5150 to 5250	Pass
		5200	20	102	5200.020	5150 to 5250	Pass
				120	5200.060	5150 to 5250	Pass
				138	5200.080	5150 to 5250	Pass
			-30	120	5199.980	5150 to 5250	Pass
			-20	120	5200.020	5150 to 5250	Pass

			-10	120	5200.040	5150 to 5250	Pass
			0	120	5200.060	5150 to 5250	Pass
			10	120	5200.060	5150 to 5250	Pass
			30	120	5200.080	5150 to 5250	Pass
			40	120	5200.080	5150 to 5250	Pass
			50	120	5200.040	5150 to 5250	Pass
		5240	20	102	5240.080	5150 to 5250	Pass
				120	5240.080	5150 to 5250	Pass
				138	5240.060	5150 to 5250	Pass
			-30	120	5240.040	5150 to 5250	Pass
			-20	120	5240.040	5150 to 5250	Pass
			-10	120	5240.060	5150 to 5250	Pass
			0	120	5240.040	5150 to 5250	Pass
			10	120	5240.060	5150 to 5250	Pass
			30	120	5240.040	5150 to 5250	Pass
			40	120	5240.080	5150 to 5250	Pass
			50	120	5240.040	5150 to 5250	Pass
		5260	20	102	5260.040	5250 to 5350	Pass
				120	5260.060	5250 to 5350	Pass
				138	5260.040	5250 to 5350	Pass
			-30	120	5260.000	5250 to 5350	Pass
			-20	120	5260.040	5250 to 5350	Pass
			-10	120	5260.040	5250 to 5350	Pass
			0	120	5260.040	5250 to 5350	Pass
			10	120	5260.040	5250 to 5350	Pass
			30	120	5260.060	5250 to 5350	Pass
			40	120	5260.040	5250 to 5350	Pass
			50	120	5260.040	5250 to 5350	Pass
		5300	20	102	5300.020	5250 to 5350	Pass
				120	5300.020	5250 to 5350	Pass
				138	5300.040	5250 to 5350	Pass
			-30	120	5300.020	5250 to 5350	Pass
			-20	120	5300.040	5250 to 5350	Pass
			-10	120	5300.020	5250 to 5350	Pass
			0	120	5300.040	5250 to 5350	Pass
			10	120	5300.060	5250 to 5350	Pass
			30	120	5300.060	5250 to 5350	Pass
			40	120	5300.060	5250 to 5350	Pass
			50	120	5300.060	5250 to 5350	Pass
		5320	20	102	5320.000	5250 to 5350	Pass
				120	5320.020	5250 to 5350	Pass
				138	5320.020	5250 to 5350	Pass
			-30	120	5320.040	5250 to 5350	Pass
			-20	120	5320.080	5250 to 5350	Pass

			-10	120	5320.020	5250 to 5350	Pass
			0	120	5320.020	5250 to 5350	Pass
			10	120	5320.020	5250 to 5350	Pass
			30	120	5320.040	5250 to 5350	Pass
			40	120	5320.040	5250 to 5350	Pass
			50	120	5320.000	5250 to 5350	Pass
802.11n (HT40)	SISO	5190	20	102	5190.160	5150 to 5250	Pass
				120	5190.200	5150 to 5250	Pass
				138	5190.160	5150 to 5250	Pass
			-30	120	5190.160	5150 to 5250	Pass
			-20	120	5190.200	5150 to 5250	Pass
			-10	120	5190.200	5150 to 5250	Pass
			0	120	5190.200	5150 to 5250	Pass
			10	120	5190.160	5150 to 5250	Pass
			30	120	5190.200	5150 to 5250	Pass
			40	120	5190.200	5150 to 5250	Pass
			50	120	5190.200	5150 to 5250	Pass
		5230	20	102	5230.200	5150 to 5250	Pass
				120	5230.160	5150 to 5250	Pass
				138	5230.160	5150 to 5250	Pass
			-30	120	5230.120	5150 to 5250	Pass
			-20	120	5230.160	5150 to 5250	Pass
			-10	120	5230.200	5150 to 5250	Pass
			0	120	5230.240	5150 to 5250	Pass
			10	120	5230.160	5150 to 5250	Pass
			30	120	5230.200	5150 to 5250	Pass
			40	120	5230.200	5150 to 5250	Pass
			50	120	5230.160	5150 to 5250	Pass
		5270	20	102	5270.120	5250 to 5350	Pass
				120	5270.120	5250 to 5350	Pass
				138	5270.080	5250 to 5350	Pass
			-30	120	5270.120	5250 to 5350	Pass
			-20	120	5270.160	5250 to 5350	Pass
			-10	120	5270.160	5250 to 5350	Pass
			0	120	5270.120	5250 to 5350	Pass
			10	120	5270.160	5250 to 5350	Pass
			30	120	5270.120	5250 to 5350	Pass
			40	120	5270.120	5250 to 5350	Pass
			50	120	5270.120	5250 to 5350	Pass
		5310	20	102	5310.120	5250 to 5350	Pass
				120	5310.120	5250 to 5350	Pass
				138	5310.120	5250 to 5350	Pass
			-30	120	5310.120	5250 to 5350	Pass
			-20	120	5310.080	5250 to 5350	Pass

			-10	120	5310.120	5250 to 5350	Pass
			0	120	5310.120	5250 to 5350	Pass
			10	120	5310.160	5250 to 5350	Pass
			30	120	5310.080	5250 to 5350	Pass
			40	120	5310.120	5250 to 5350	Pass
			50	120	5310.120	5250 to 5350	Pass
802.11ac (VHT20)	SISO	5180	20	102	5180.040	5150 to 5250	Pass
				120	5180.060	5150 to 5250	Pass
				138	5180.040	5150 to 5250	Pass
			-30	120	5180.080	5150 to 5250	Pass
			-20	120	5180.060	5150 to 5250	Pass
			-10	120	5180.080	5150 to 5250	Pass
			0	120	5180.080	5150 to 5250	Pass
			10	120	5180.060	5150 to 5250	Pass
			30	120	5180.060	5150 to 5250	Pass
			40	120	5180.040	5150 to 5250	Pass
			50	120	5180.080	5150 to 5250	Pass
		5200	20	102	5200.060	5150 to 5250	Pass
				120	5200.040	5150 to 5250	Pass
				138	5200.040	5150 to 5250	Pass
			-30	120	5200.080	5150 to 5250	Pass
			-20	120	5200.020	5150 to 5250	Pass
			-10	120	5200.060	5150 to 5250	Pass
			0	120	5200.040	5150 to 5250	Pass
			10	120	5200.060	5150 to 5250	Pass
			30	120	5200.060	5150 to 5250	Pass
			40	120	5200.060	5150 to 5250	Pass
			50	120	5200.040	5150 to 5250	Pass
		5240	20	102	5240.100	5150 to 5250	Pass
				120	5240.080	5150 to 5250	Pass
				138	5240.080	5150 to 5250	Pass
			-30	120	5240.060	5150 to 5250	Pass
			-20	120	5240.060	5150 to 5250	Pass
			-10	120	5240.040	5150 to 5250	Pass
			0	120	5240.040	5150 to 5250	Pass
			10	120	5240.100	5150 to 5250	Pass
			30	120	5240.060	5150 to 5250	Pass
			40	120	5240.100	5150 to 5250	Pass
			50	120	5240.060	5150 to 5250	Pass
		5260	20	102	5260.020	5250 to 5350	Pass
				120	5260.060	5250 to 5350	Pass
				138	5260.040	5250 to 5350	Pass
			-30	120	5260.040	5250 to 5350	Pass
			-20	120	5260.040	5250 to 5350	Pass

			-10	120	5260.040	5250 to 5350	Pass
			0	120	5260.040	5250 to 5350	Pass
			10	120	5260.040	5250 to 5350	Pass
			30	120	5260.060	5250 to 5350	Pass
			40	120	5260.080	5250 to 5350	Pass
			50	120	5260.040	5250 to 5350	Pass
		5300	20	102	5300.040	5250 to 5350	Pass
				120	5300.020	5250 to 5350	Pass
				138	5300.060	5250 to 5350	Pass
			-30	120	5300.020	5250 to 5350	Pass
			-20	120	5300.020	5250 to 5350	Pass
			-10	120	5300.060	5250 to 5350	Pass
			0	120	5300.040	5250 to 5350	Pass
			10	120	5300.000	5250 to 5350	Pass
			30	120	5300.040	5250 to 5350	Pass
			40	120	5300.020	5250 to 5350	Pass
			50	120	5300.020	5250 to 5350	Pass
		5320	20	102	5320.040	5250 to 5350	Pass
				120	5320.020	5250 to 5350	Pass
				138	5320.040	5250 to 5350	Pass
			-30	120	5320.040	5250 to 5350	Pass
			-20	120	5320.040	5250 to 5350	Pass
			-10	120	5320.020	5250 to 5350	Pass
			0	120	5320.040	5250 to 5350	Pass
			10	120	5320.020	5250 to 5350	Pass
			30	120	5320.020	5250 to 5350	Pass
			40	120	5320.040	5250 to 5350	Pass
			50	120	5320.000	5250 to 5350	Pass
802.11ac (VHT40)	SISO	5190	20	102	5190.160	5150 to 5250	Pass
				120	5190.160	5150 to 5250	Pass
				138	5190.200	5150 to 5250	Pass
			-30	120	5190.160	5150 to 5250	Pass
			-20	120	5190.120	5150 to 5250	Pass
			-10	120	5190.200	5150 to 5250	Pass
			0	120	5190.200	5150 to 5250	Pass
			10	120	5190.160	5150 to 5250	Pass
			30	120	5190.200	5150 to 5250	Pass
			40	120	5190.160	5150 to 5250	Pass
			50	120	5190.160	5150 to 5250	Pass
		5230	20	102	5230.200	5150 to 5250	Pass
				120	5230.200	5150 to 5250	Pass
				138	5230.160	5150 to 5250	Pass
			-30	120	5230.200	5150 to 5250	Pass
			-20	120	5230.200	5150 to 5250	Pass

			-10	120	5230.160	5150 to 5250	Pass
			0	120	5230.160	5150 to 5250	Pass
			10	120	5230.200	5150 to 5250	Pass
			30	120	5230.200	5150 to 5250	Pass
			40	120	5230.200	5150 to 5250	Pass
			50	120	5230.160	5150 to 5250	Pass
		5270	20	102	5270.120	5250 to 5350	Pass
				120	5270.120	5250 to 5350	Pass
				138	5270.120	5250 to 5350	Pass
			-30	120	5270.160	5250 to 5350	Pass
			-20	120	5270.120	5250 to 5350	Pass
			-10	120	5270.120	5250 to 5350	Pass
			0	120	5270.160	5250 to 5350	Pass
			10	120	5270.160	5250 to 5350	Pass
			30	120	5270.200	5250 to 5350	Pass
			40	120	5270.160	5250 to 5350	Pass
			50	120	5270.160	5250 to 5350	Pass
		5310	20	102	5310.120	5250 to 5350	Pass
				120	5310.120	5250 to 5350	Pass
				138	5310.120	5250 to 5350	Pass
			-30	120	5310.080	5250 to 5350	Pass
			-20	120	5310.080	5250 to 5350	Pass
			-10	120	5310.120	5250 to 5350	Pass
			0	120	5310.120	5250 to 5350	Pass
			10	120	5310.120	5250 to 5350	Pass
			30	120	5310.080	5250 to 5350	Pass
			40	120	5310.120	5250 to 5350	Pass
			50	120	5310.120	5250 to 5350	Pass
802.11ac (VHT80)	SISO	5210	20	102	5210.150	5150 to 5250	Pass
				120	5210.150	5150 to 5250	Pass
				138	5210.150	5150 to 5250	Pass
			-30	120	5210.150	5150 to 5250	Pass
			-20	120	5210.150	5150 to 5250	Pass
			-10	120	5210.150	5150 to 5250	Pass
			0	120	5210.150	5150 to 5250	Pass
			10	120	5210.150	5150 to 5250	Pass
			30	120	5210.150	5150 to 5250	Pass
			40	120	5210.150	5150 to 5250	Pass
			50	120	5210.225	5150 to 5250	Pass
		5290	20	102	5290.075	5250 to 5350	Pass
				120	5290.075	5250 to 5350	Pass
				138	5290.075	5250 to 5350	Pass
			-30	120	5290.075	5250 to 5350	Pass
			-20	120	5290.075	5250 to 5350	Pass

			-10	120	5290.075	5250 to 5350	Pass
			0	120	5290.075	5250 to 5350	Pass
			10	120	5290.075	5250 to 5350	Pass
			30	120	5290.075	5250 to 5350	Pass
			40	120	5290.075	5250 to 5350	Pass
			50	120	5290.075	5250 to 5350	Pass

1. Signal Calibration

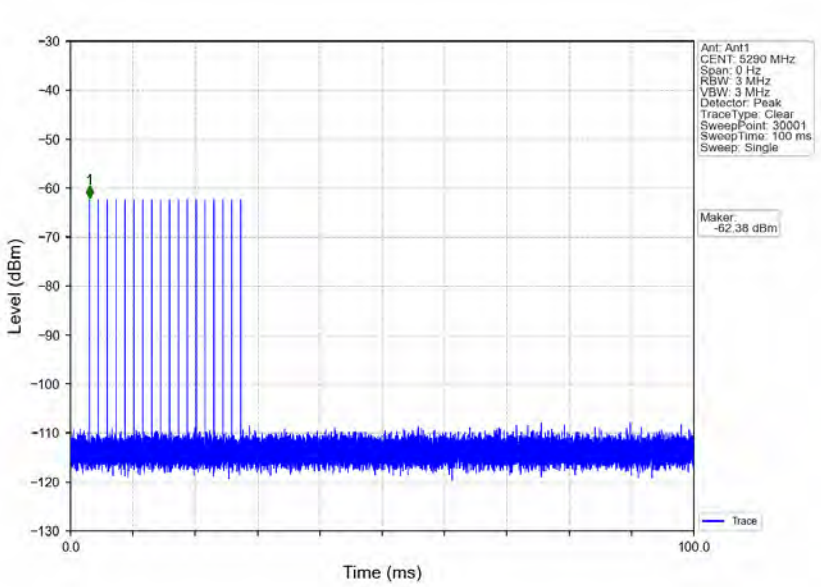
1.1 SC

1.1.1 Test Result

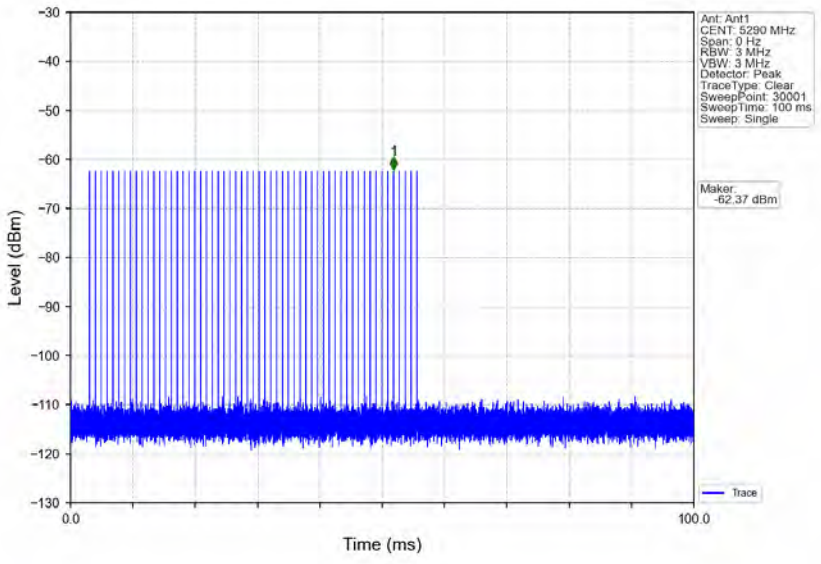
Band: 2A							
Mode	Bandwidth (MHz)	Frequency (MHz)	Radar Signal		Signal Calibration		Verdict
			Type	Trial Id	Result	Limit	
802.11ac (VHT80)	80	5290	0	0	Refer To Test Graph		Pass
			1	0	Refer To Test Graph		Pass
			2	0	Refer To Test Graph		Pass
			3	0	Refer To Test Graph		Pass
			4	0	Refer To Test Graph		Pass
			5	0	Refer To Test Graph		Pass
			6	0	Refer To Test Graph		Pass

1.1.2 Test Graph

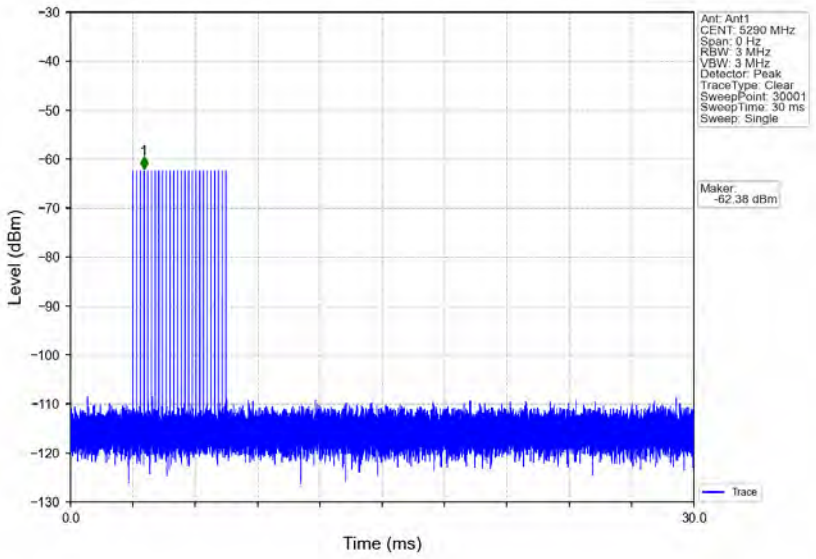
Signal Calibration_802.11ac(VHT80)_2A_5290MHz_RadarType0_Trial0



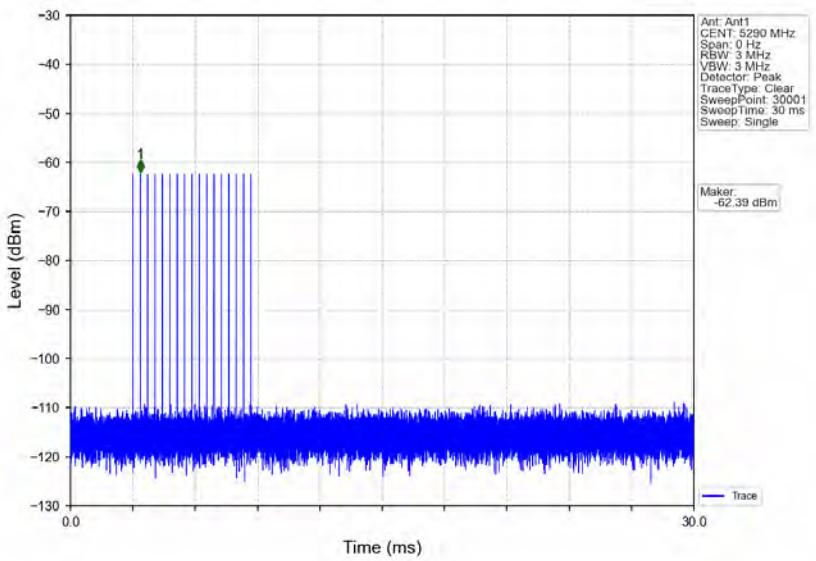
Signal Calibration_802.11ac(VHT80)_2A_5290MHz_RadarType1_Trial0



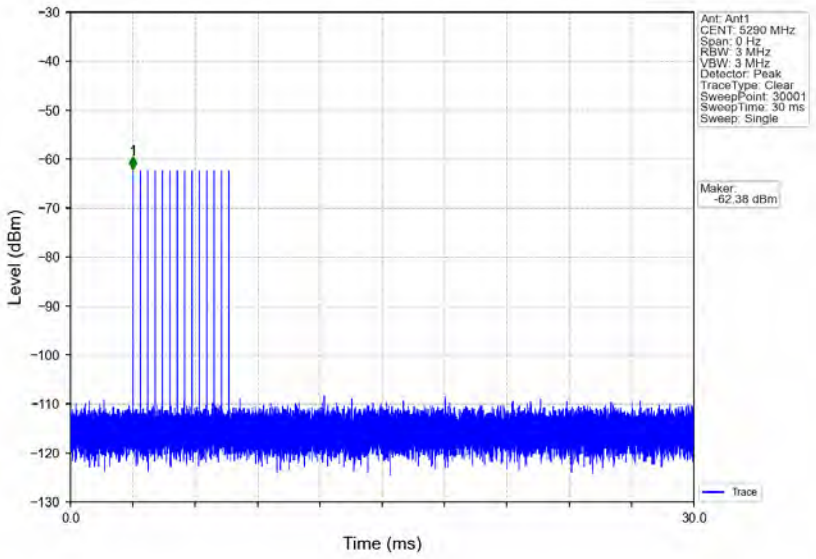
Signal Calibration_802.11ac(VHT80)_2A_5290MHz_RadarType2_Trial0



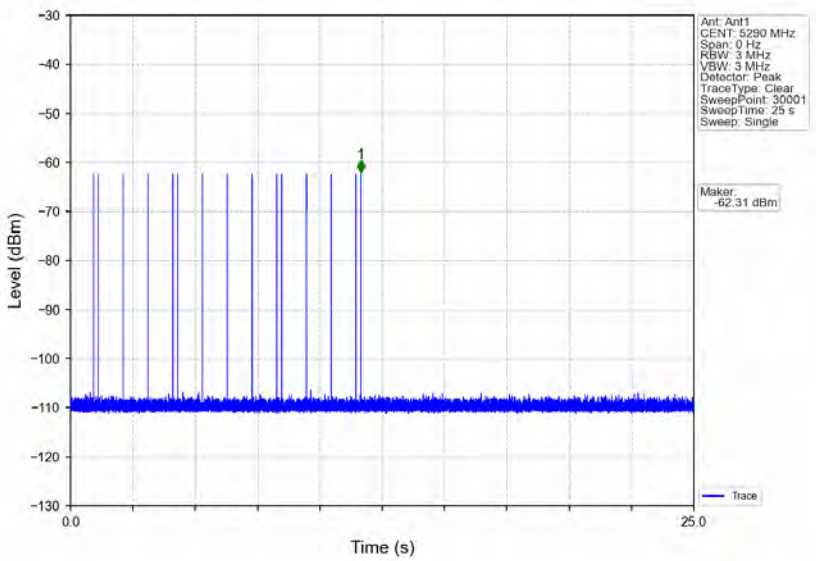
Signal Calibration_802.11ac(VHT80)_2A_5290MHz_RadarType3_Trial0



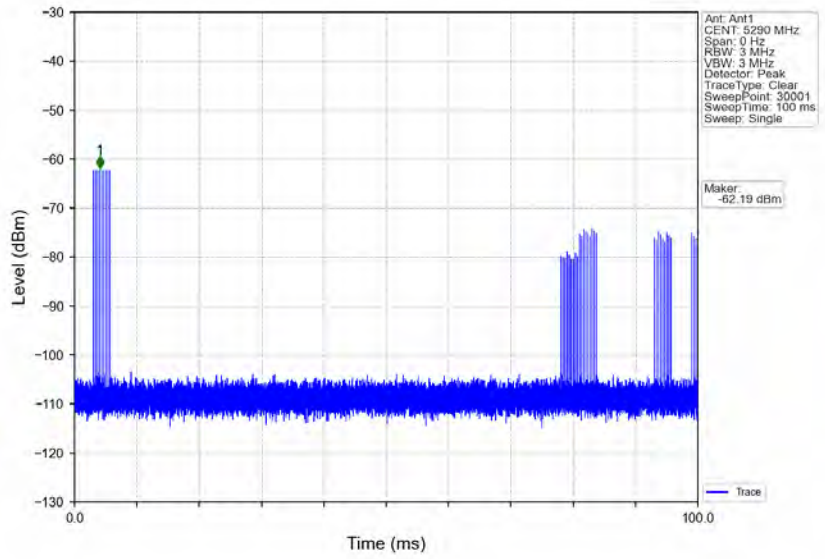
Signal Calibration_802.11ac(VHT80)_2A_5290MHz_RadarType4_Trial0



Signal Calibration_802.11ac(VHT80)_2A_5290MHz_RadarType5_Trial0



Signal Calibration_802.11ac(VHT80)_2A_5290MHz_RadarType6_Trial0



2. Channel Loading (Payload)

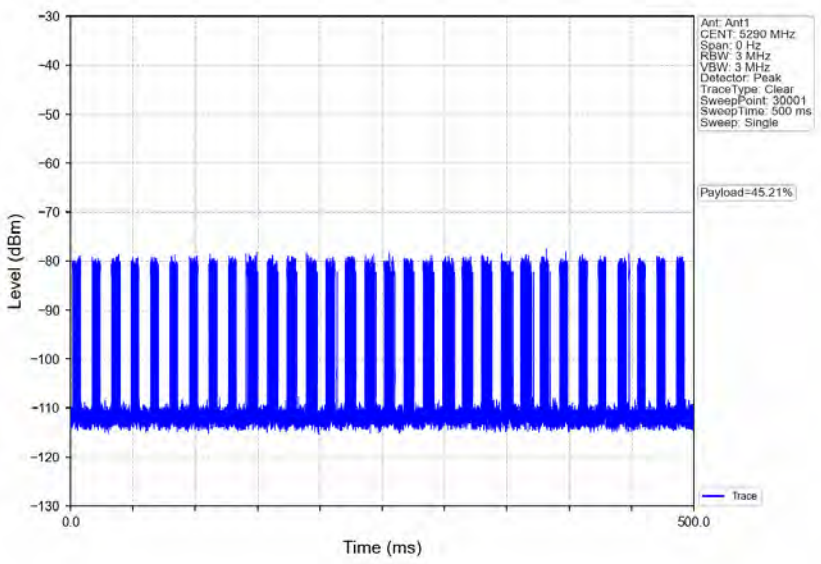
2.1 Payload

2.1.1 Test Result

Band: 2A					
Mode	Bandwidth (MHz)	Frequency (MHz)	Channel Loading (Payload) (%)		Verdict
			Result	Limit	
802.11ac (VHT80)	80	5290	45.21	>=17	Pass

2.1.2 Test Graph

Channel Loading (Payload)_802.11ac(VHT80)_2A_5290MHz



3. Channel Move Time and Closing Transmission Time

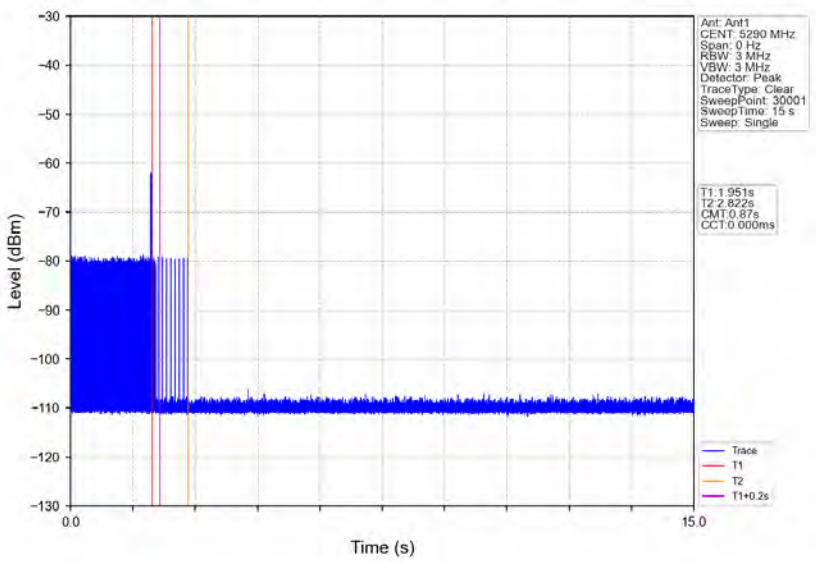
3.1 CMT_CTT

3.1.1 Test Result

Band: 2A					
Mode	Bandwidth (MHz)	Frequency (MHz)	Channel Move Time and Closing Transmission Time		Verdict
			Result	Limit	
802.11ac (VHT80)	80	5290	Refer To Test Graph		Pass

3.1.2 Test Graph

Channel Move Time and Closing Transmission Time_802.11ac(VHT80)_2A_5290MHz



- End of the Report -