

TEST REPORT

Application No.: SZCR2411004305AT
Applicant: Wyze Labs, Inc.
Address of Applicant: 5808 Lake Washington Blvd NE Ste 300, Kirkland, Washington, 98033, United States
Manufacturer: Wyze Labs, Inc.
Address of Manufacturer: 5808 Lake Washington Blvd NE Ste 300, Kirkland, Washington, 98033, United States
Equipment Under Test (EUT):
EUT Name: Wyze Duo Cam Doorbell
Model No.: GW_DBD
Trade Mark: WYZE
FCC ID: 2AUIUGWDBD
Standard(s) : 47 CFR Part 15, Subpart E 15.407
Date of Receipt: 2024-11-18
Date of Test: 2024-11-27 to 2024-12-18
Date of Issue: 2024-12-23

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



Keny Xu
EMC Laboratory Manager



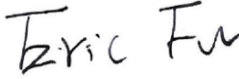
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024-12-23		Original

Authorized for issue by:				
				
		Charlie Dai/Project Engineer		
				
		Eric Fu/Reviewer		



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2 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Maximum Conducted output power	47 CFR Part 15, Subpart E 15.407	KDB 789033 D02 II E	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
Duty Cycle		KDB 789033 D02 II B 1	KDB 789033 D02 II B 1	Pass
99% Bandwidth		KDB 789033 D02 II D	N/A	Pass
26dB Emission bandwidth		KDB 789033 D02 II C 1	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
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 Closing Transmission Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass

Remark:

Model No.: GW_DBD

This test report (Ref. No.: SZCR241100430501) is only valid with the original test report (Ref. No.: SZCR240700290504).

According to the declaration from the applicant, the models in this report and models in original report were identical, the only difference lies in the addition of U-NII-2A and U-NII-2C frequency bands through software.

Considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report the section 2 items were fully retested on model and shown the data in this report, other tests please refer to original report SZCR240700290504.



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4 General Information

4.1 Details of E.U.T.

Power supply:	Input: AC 10-24V, 10W 50/60Hz Lithium-ion rechargeable battery (3.6V, 6200mAh)
Cable(s):	N/A
Operation Frequency/Number of channels (20MHz):	U-NII-2A: 5260-5320MHz (4 Channels); U-NII-2C: 5500-5720MHz (12 Channels)
Modulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing:	802.11a/n/ac 20: 20MHz
DFS Function:	Slave without Radar detection
TPC Function:	Support TPC function
Antenna Type:	FPC Antenna
Antenna Gain:	1.64dBi
Cable Loss (for RF conducted test):	1.2dB

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Transformer	Provided by the customer	N/A	N/A



4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Maximum Conducted output power	$\pm 0.75\text{dB}$
Radiated Emissions (Below 1GHz)	$\pm 6.0\text{dB}$ for 3m; $\pm 5.0\text{dB}$ for 10m
Radiated Emissions (Above 1GHz)	$\pm 4.6\text{dB}$ (1-18GHz); $\pm 4.8\text{dB}$ (18-40GHz)
Radiated Emissions which fall in the restricted bands	$\pm 6.0\text{dB}$ (below 1GHz); $\pm 4.6\text{dB}$ (above 1GHz);
Duty Cycle	$\pm 0.37\%$
99% Bandwidth	$\pm 3\%$
26dB Emission bandwidth	$\pm 3\%$
Peak Power spectrum density	$\pm 2.84\text{dB}$
Frequency Stability	$\pm 7.25 \times 10^{-8}$

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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4.4 Test Location

All tests were performed at:

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Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Maximum Conducted output power					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Power Sensor	TST PASS	TSPS2023R	SEM009-26	2024-03-27	2025-03-26
Power Sensor	KEYSIGHT	U2021XA	SEM009-16	2024-03-14	2025-03-13
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2024-08-14	2025-08-13
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2024-03-14	2025-03-13
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2024-09-14	2025-09-13
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2024-07-06	2025-07-05
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2024-03-27	2025-03-26
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2024-03-19	2025-03-18

Radiated Emissions (Below 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2024-03-14	2025-03-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05



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Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2024-05-11	2027-05-10
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2024-03-15	2025-03-14
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22
Microwave system amplifier	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2024-08-10	2025-08-09
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2024-03-15	2025-03-14

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2024-05-11	2027-05-10
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2024-03-15	2025-03-14
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22
Microwave system amplifier	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05



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Channel Closing Transmission Time					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	AUDIX	N/A	SEM001-08	2022-05-14	2025-05-13
EXA Signal Analyzer	KEYSIGHT	N9010A	SEM004-09	2024-03-27	2025-03-26
Signal Generator	KEYSIGHT	N5171B	SEM006-13	2024-03-14	2025-03-13
MXG Vector Signal Generator	KEYSIGHT	N5182A	SEM006-14	2024-03-14	2025-03-13
ESG Vector Signal Generator	KEYSIGHT	E4438C	SEM006-15	2024-08-15	2025-08-14
DC Power Supply	KEYSIGHT	E3642A	SEM011-07	2024-03-19	2025-03-18
Manual Step Attenuator	KEYSIGHT	8494B	SEM021-05	2024-03-27	2025-03-26
Manual Step Attenuator	KEYSIGHT	8496B	SEM021-06	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-26	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-27	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-28	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-29	2024-03-27	2025-03-26
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM028-01	2024-07-06	2025-07-05

Channel Move Time					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	AUDIX	N/A	SEM001-08	2022-05-14	2025-05-13
EXA Signal Analyzer	KEYSIGHT	N9010A	SEM004-09	2024-03-27	2025-03-26
Signal Generator	KEYSIGHT	N5171B	SEM006-13	2024-03-14	2025-03-13
MXG Vector Signal Generator	KEYSIGHT	N5182A	SEM006-14	2024-03-14	2025-03-13
ESG Vector Signal Generator	KEYSIGHT	E4438C	SEM006-15	2024-08-15	2025-08-14
DC Power Supply	KEYSIGHT	E3642A	SEM011-07	2024-03-19	2025-03-18
Manual Step Attenuator	KEYSIGHT	8494B	SEM021-05	2024-03-27	2025-03-26
Manual Step Attenuator	KEYSIGHT	8496B	SEM021-06	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-26	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-27	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-28	2024-03-27	2025-03-26
Power Sensor	TST PASS	TSPS2023R	SEM009-29	2024-03-27	2025-03-26
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM028-01	2024-07-06	2025-07-05



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General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17



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6 Radio Spectrum Matter Test Results

6.1 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.

6.1.1 E.U.T. Operation

Operating Environment:

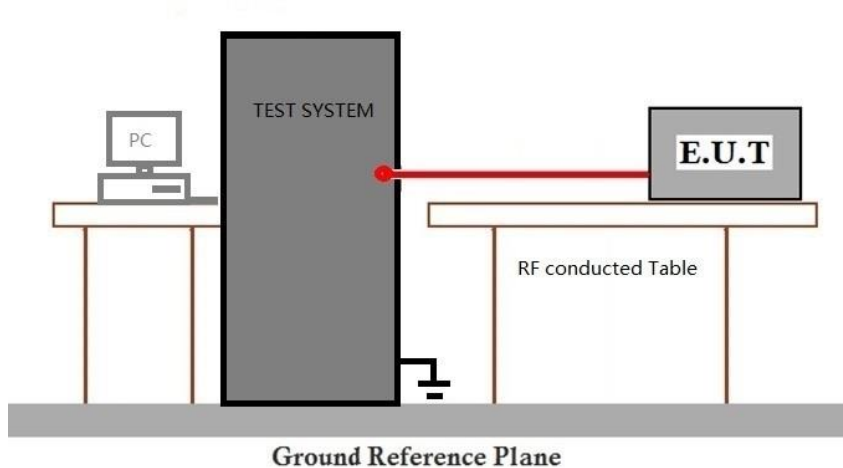
Temperature: 24.6 °C Humidity: 47.3 % RH Atmospheric Pressure: 1020 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.



6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

Please Refer to Appendix for Details



6.2 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

Measurement Distance: 3m

Limit:

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

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 20.2 °C

Humidity: 45.2 % RH

Atmospheric Pressure: 1020 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Pre-scan	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	03	Charge+TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Pre-scan	04	Charge+TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.



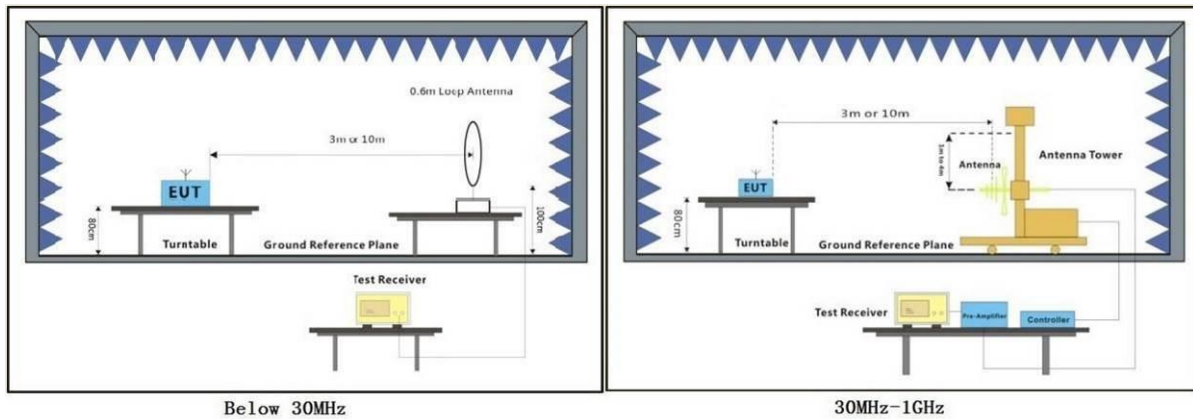
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6.2.3 Test Setup Diagram



Below 30MHz

30MHz-1GHz



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6.2.4 Measurement Procedure and Data

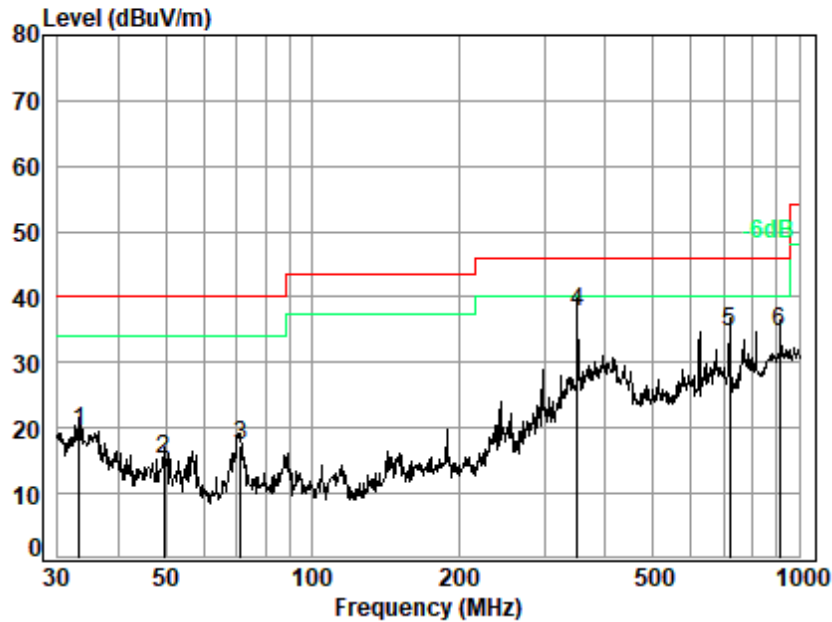
- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, 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: 03; Polarity: Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : 04305AT
Test Mode: 03

	Ant	Cable	Preamp	Read		Limit	Over	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	33.211	19.76	0.68	27.78	26.96	19.62	40.00	-20.38 QP
2	49.533	12.89	0.83	27.74	29.14	15.12	40.00	-24.88 QP
3	71.330	10.53	1.00	27.67	33.44	17.30	40.00	-22.70 QP
4 q	350.477	19.94	2.36	26.96	42.44	37.78	46.00	-8.22 QP
5	719.200	26.25	3.57	27.68	32.60	34.74	46.00	-11.26 QP
6	912.862	28.00	4.12	26.67	29.17	34.62	46.00	-11.38 QP



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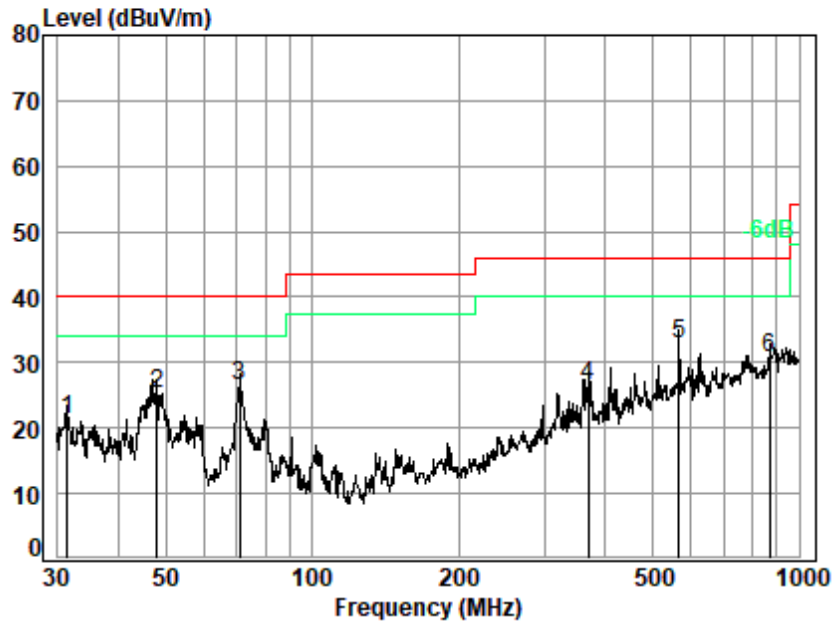
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR241100430501

Page: 19 of 171

Test Mode: 03; Polarity: Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : 04305AT
Test Mode: 03

	Ant	Cable	Preamp	Read		Limit	Over	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	31.399	20.55	0.66	27.79	27.95	21.37	40.00	-18.63 QP
2	47.994	13.30	0.81	27.74	38.99	25.36	40.00	-14.64 QP
3	70.832	10.56	1.00	27.67	42.48	26.37	40.00	-13.63 QP
4	368.112	20.38	2.43	27.03	30.81	26.59	46.00	-19.41 QP
5 q	566.622	23.48	3.10	27.83	34.11	32.86	46.00	-13.14 QP
6	869.130	27.65	4.01	26.99	26.11	30.78	46.00	-15.22 QP



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6.3 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

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1GHz	500	3
a. any emission outside the 5925-7125 MHz frequency band shall not exceed -27 dBm/MHz e.i.r.p. spectral density b. the e.i.r.p. spectral density of unwanted emissions falling into the 5925-7125 MHz frequency band shall be attenuated below the reference spectral density by: i. 20dB at 1MHz away from the channel edges. ii. a value, linearly interpolated in a dB scale, between 20 dB and 28 dB at frequencies between 1MHz outside of channel edges and 1 channel bandwidth away from the operating channel center, respectively iii. 28dB at 1 channel bandwidth away from the operating channel center iv. a value, linearly interpolated in a dB scale, between 28 dB and 40 dB at frequencies between 1 channel bandwidth away from the operating channel center and 1.5 times the channel bandwidth away from the operating channel center, respectively v. 40dB at 1.5 times the channel bandwidth away from the operating channel center vi. a minimum of 40 dB at frequencies that are further away than 1.5 times the channel bandwidth from the operating channel center.		

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 20.8 °C

Humidity: 61.2 % RH

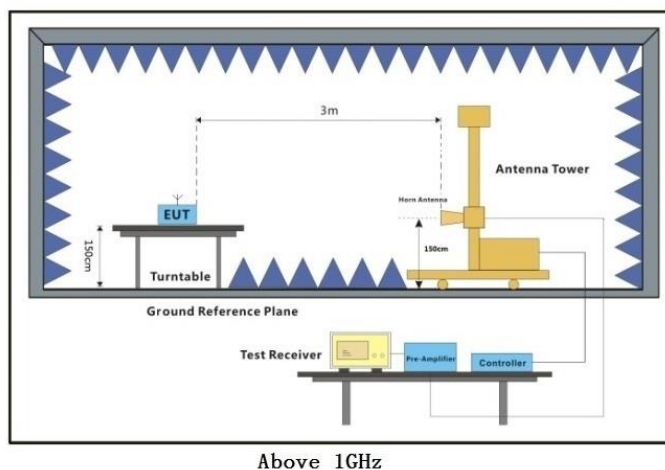
Atmospheric Pressure: 1020 mbar



6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Pre-scan	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	03	Charge+TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	04	Charge+TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.

6.3.3 Test Setup Diagram



6.3.4 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:

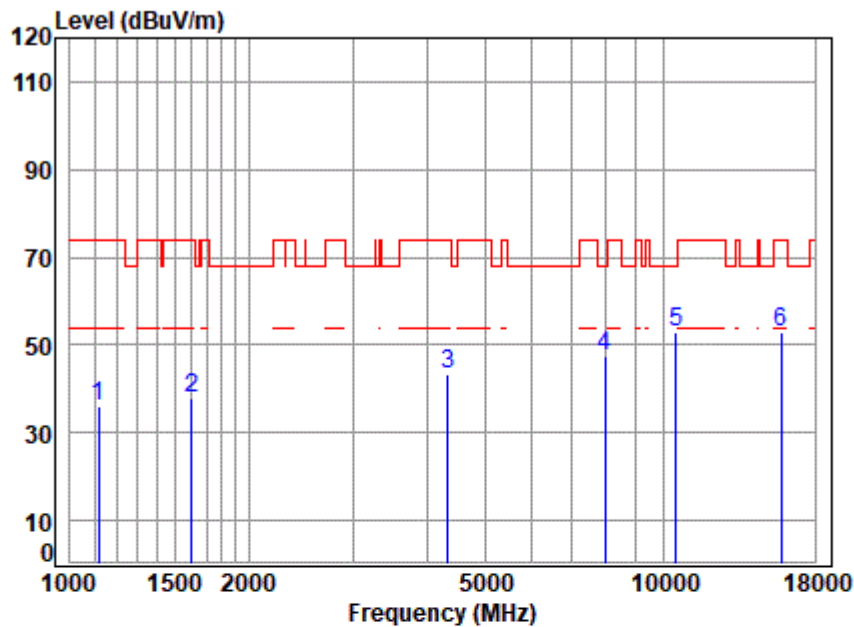
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from 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.
6. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
7. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



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Test Mode: 03; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

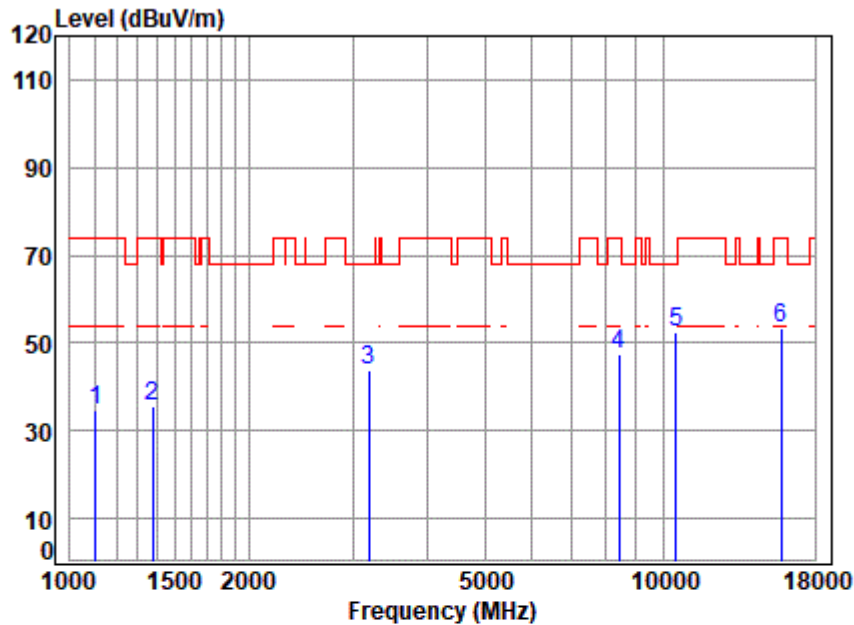


Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 04305AT/04306AT
 Mode : 5260 TX SE
 Note : 5G WIFI 11A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1116.093	3.57	23.76	54.65	63.46	36.14	74.00	-37.86	peak
2	1601.804	4.19	26.78	54.80	61.56	37.73	74.00	-36.27	peak
3	4329.354	7.05	34.23	54.26	56.44	43.46	74.00	-30.54	peak
4	7989.893	9.02	36.40	53.10	55.30	47.62	68.20	-20.58	peak
5	10520.000	11.37	37.30	53.09	57.19	52.77	68.20	-15.43	peak
6	15780.000	14.08	41.28	51.97	49.70	53.09	74.00	-20.91	peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Site : chamber
 Condition: 3m VERTICAL
 Job No : 04305AT/04306AT
 Mode : 5260 TX SE
 Note : 5G WIFI 11A

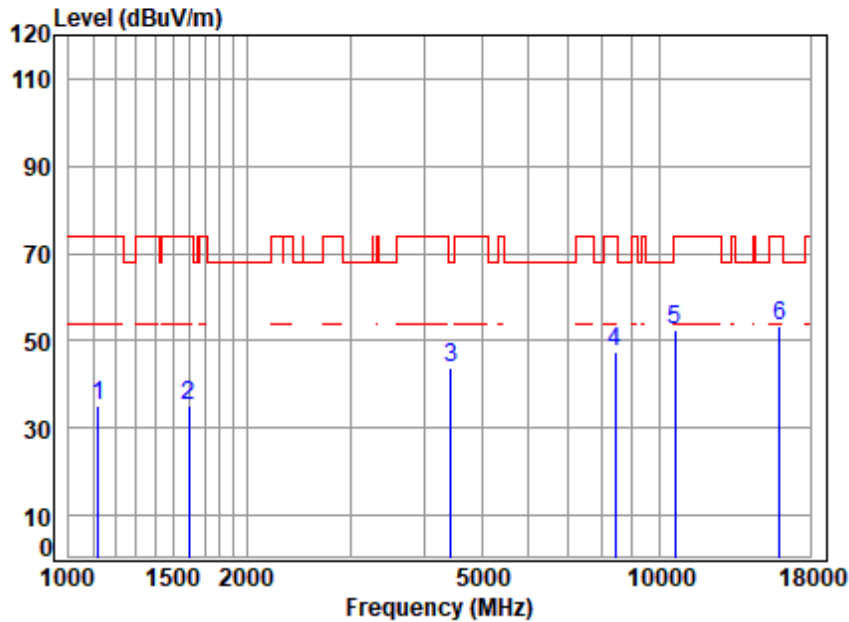
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1103.264	3.55	23.71	54.64	62.16	34.78	74.00	-39.22	peak
2	1378.273	3.90	24.56	54.74	61.68	35.40	74.00	-38.60	peak
3	3186.869	6.25	32.79	54.85	59.70	43.89	68.20	-24.31	peak
4	8416.584	9.45	36.67	53.32	54.60	47.40	74.00	-26.60	peak
5	10520.000	11.37	37.30	53.09	56.96	52.54	68.20	-15.66	peak
6	15780.000	14.08	41.28	51.97	49.97	53.36	74.00	-20.64	peak



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Test Mode: 03; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

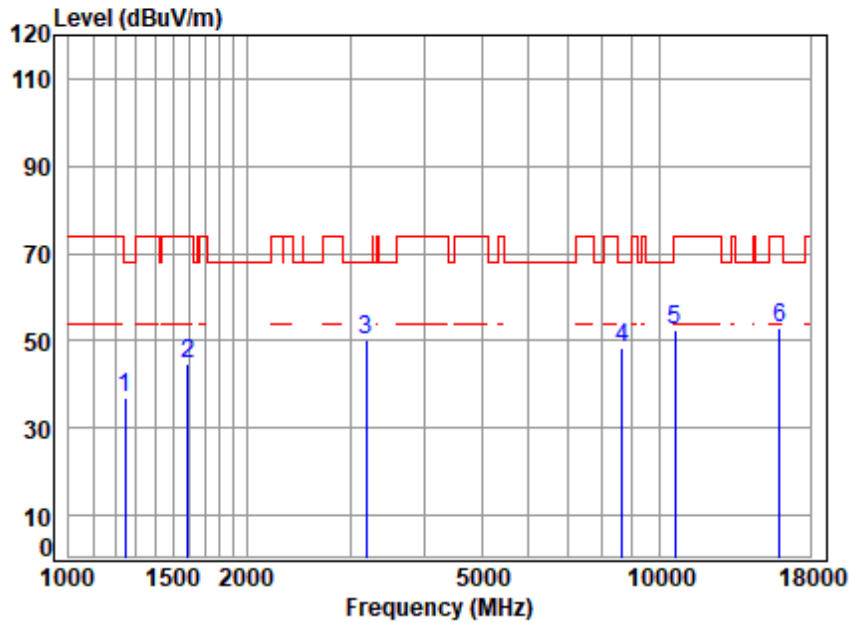


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 TX SE
Note : 5G WIFI 11A

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1122.563	3.58	23.79	54.65	62.58	35.30	74.00	-38.70	peak
2	1597.181	4.18	26.81	54.80	59.08	35.27	74.00	-38.73	peak
3	4430.628	7.17	34.43	54.25	56.43	43.78	68.20	-24.42	peak
4	8416.584	9.45	36.67	53.32	54.45	47.25	74.00	-26.75	peak
5	10640.000	11.45	37.22	53.07	56.91	52.51	74.00	-21.49	peak
6	p15960.000	14.30	41.52	51.83	49.34	53.33	74.00	-20.67	peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

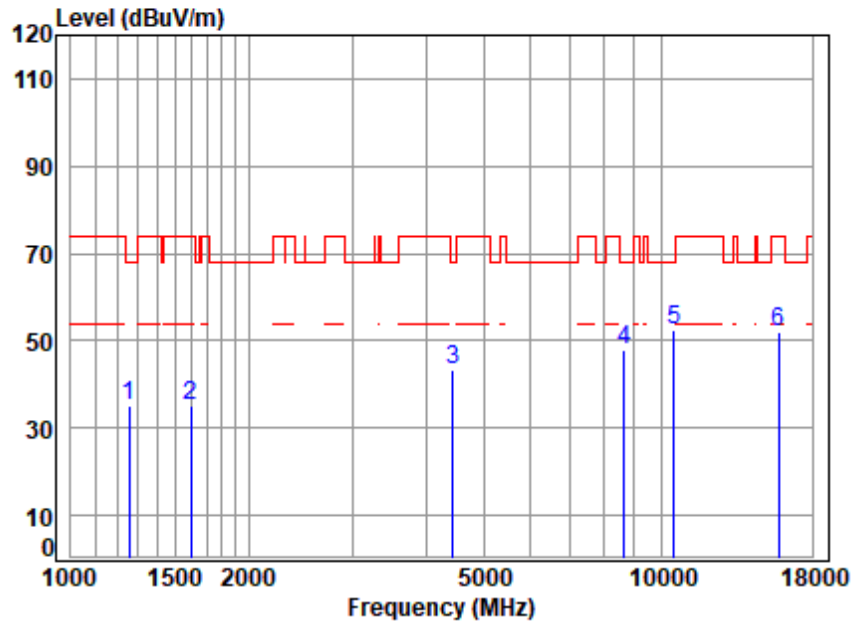


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5320 TX SE
Note : 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	1245.663	3.74	25.04	54.70	62.89	36.97	68.20	-31.23 peak
2	1592.571	4.18	26.83	54.80	68.60	44.81	74.00	-29.19 peak
3 p	3186.869	6.25	32.79	54.85	66.18	50.37	68.20	-17.83 peak
4	8663.404	9.66	36.90	53.44	55.04	48.16	68.20	-20.04 peak
5	10640.000	11.45	37.22	53.07	57.02	52.62	74.00	-21.38 peak
6	15960.000	14.30	41.52	51.83	48.96	52.95	74.00	-21.05 peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 04305AT/04306AT
 Mode : 5260 TX SE
 Note : 5G WIFI 11N20

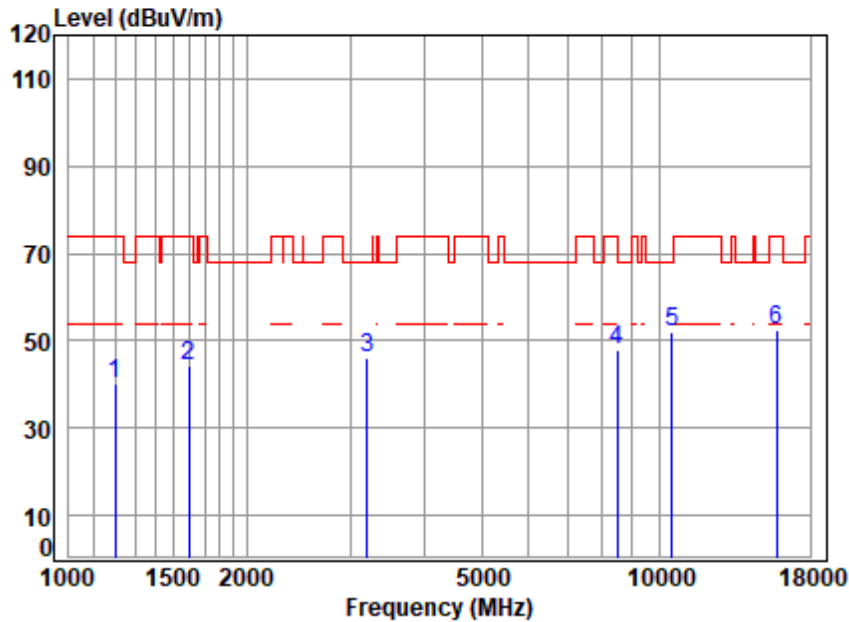
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1256.512	3.76	25.06	54.70	60.87	34.99	68.20	-33.21	peak
2	1597.181	4.18	26.81	54.80	58.72	34.91	74.00	-39.09	peak
3	4430.628	7.17	34.43	54.25	56.05	43.40	68.20	-24.80	peak
4	8663.404	9.66	36.90	53.44	54.89	48.01	68.20	-20.19	peak
5	10520.000	11.37	37.30	53.09	57.00	52.58	68.20	-15.62	peak
6	15780.000	14.08	41.28	51.97	48.55	51.94	74.00	-22.06	peak



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Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

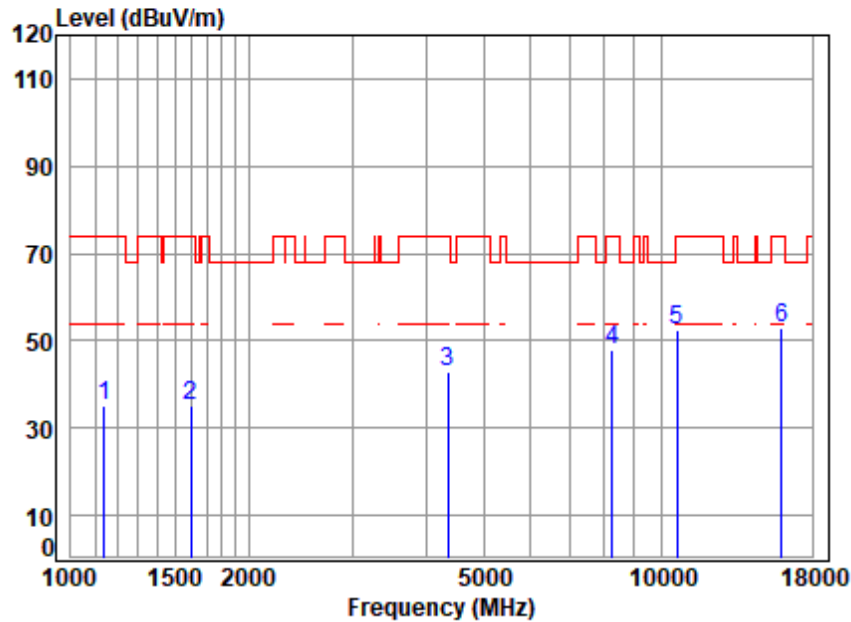


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 TX SE
Note : 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1199.726	3.68	24.40	54.68	66.93	40.33	74.00	-33.67	peak
2	1597.181	4.18	26.81	54.80	68.23	44.42	74.00	-29.58	peak
3	3196.094	6.25	32.87	54.85	61.78	46.05	68.20	-22.15	peak
4	8489.882	9.52	36.68	53.35	54.86	47.71	74.00	-26.29	peak
5	10520.000	11.37	37.30	53.09	56.44	52.02	68.20	-16.18	peak
6	15780.000	14.08	41.28	51.97	49.23	52.62	74.00	-21.38	peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

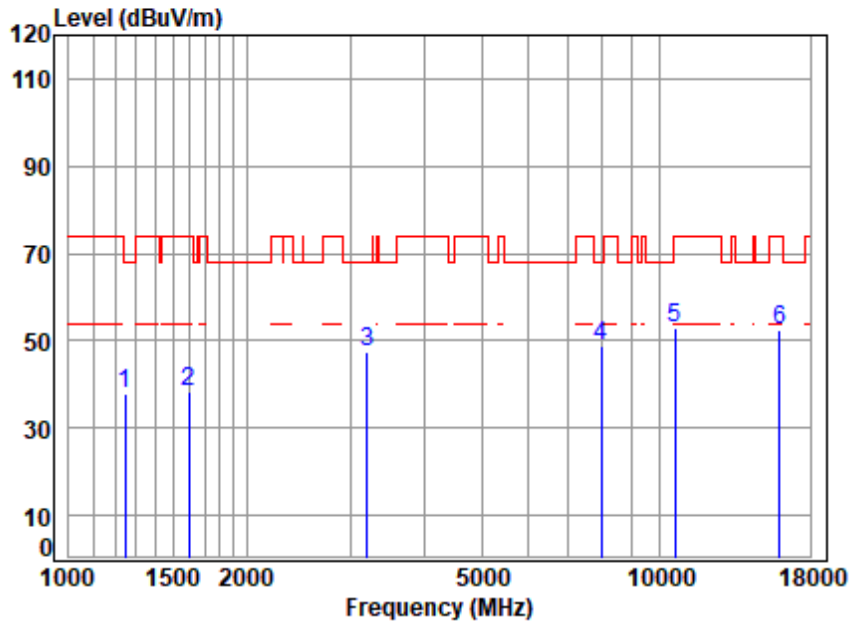


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 TX SE
Note : 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1138.904	3.60	23.86	54.66	62.18	34.98	74.00	-39.02	peak
2	1597.181	4.18	26.81	54.80	58.82	35.01	74.00	-38.99	peak
3	4354.454	7.08	34.44	54.26	55.66	42.92	74.00	-31.08	peak
4	8271.880	9.31	36.70	53.24	54.92	47.69	74.00	-26.31	peak
5	10640.000	11.45	37.22	53.07	56.97	52.57	74.00	-21.43	peak
6	p15960.000	14.30	41.52	51.83	48.74	52.73	74.00	-21.27	peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber
 Condition: 3m VERTICAL
 Job No : 04305AT/04306AT
 Mode : 5320 TX SE
 Note : 5G WIFI 11N20

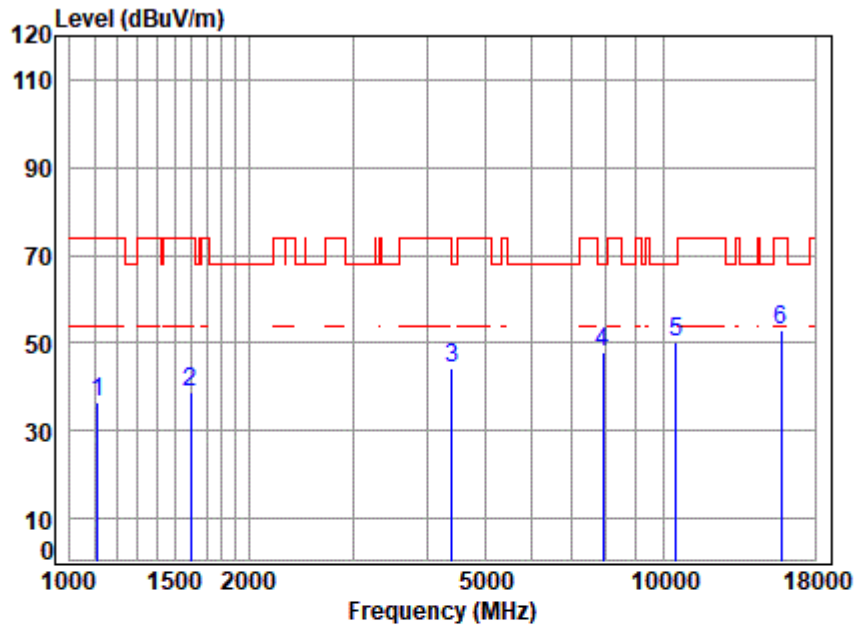
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1245.663	3.74	25.04	54.70	63.62	37.70	68.20	-30.50	peak
2	1597.181	4.18	26.81	54.80	62.24	38.43	74.00	-35.57	peak
3	3196.094	6.25	32.87	54.85	63.29	47.56	68.20	-20.64	peak
4	7989.893	9.02	36.40	53.10	56.41	48.73	68.20	-19.47	peak
5	10640.000	11.45	37.22	53.07	57.14	52.74	74.00	-21.26	peak
6	15960.000	14.30	41.52	51.83	48.47	52.46	74.00	-21.54	peak



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Test Mode: 03; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

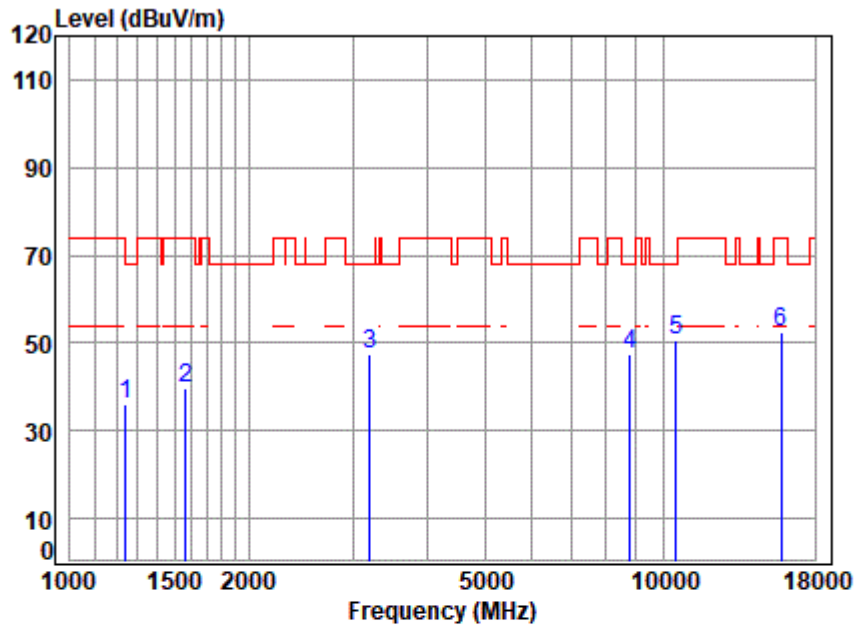


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5260 TX SE
Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1112.872	3.56	23.75	54.65	63.73	36.39	74.00	-37.61	peak
2	1597.181	4.18	26.81	54.80	62.82	39.01	74.00	-34.99	peak
3	4405.090	7.14	34.74	54.26	56.73	44.35	68.20	-23.85	peak
4	7920.911	8.93	36.46	53.11	55.61	47.89	68.20	-20.31	peak
5	10520.000	11.37	37.30	53.09	54.77	50.35	68.20	-17.85	peak
6	15780.000	14.08	41.28	51.97	49.59	52.98	74.00	-21.02	peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

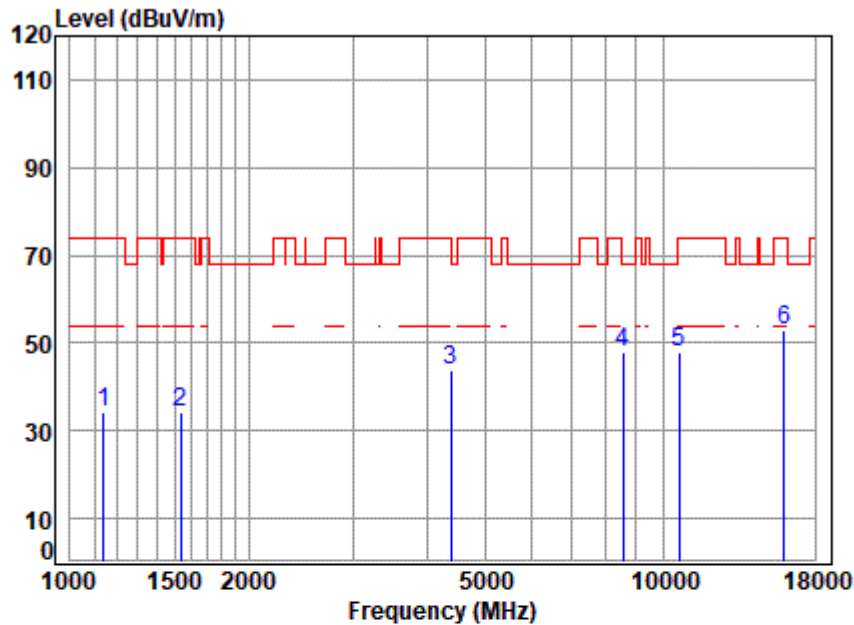


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 TX SE
Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1242.068	3.74	24.99	54.69	62.21	36.25	68.20	-31.95	peak
2	1565.191	4.14	26.94	54.79	63.63	39.92	74.00	-34.08	peak
3	3196.094	6.25	32.87	54.85	63.19	47.46	68.20	-20.74	peak
4	8789.516	9.76	37.06	53.50	54.32	47.64	68.20	-20.56	peak
5	p10520.000	11.37	37.30	53.09	55.14	50.72	68.20	-17.48	peak
6	15780.000	14.08	41.28	51.97	49.02	52.41	74.00	-21.59	peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

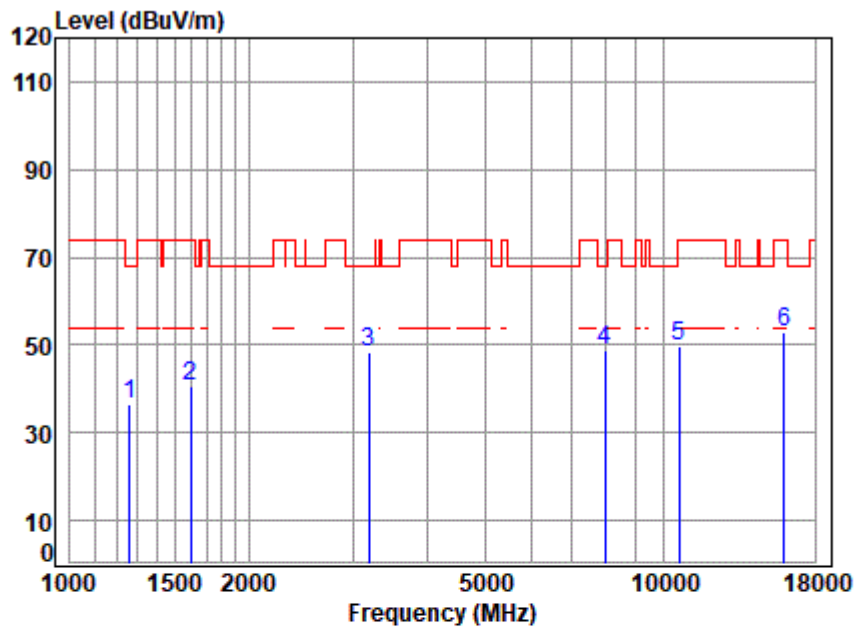


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 TX SE
Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1138.904	3.60	23.86	54.66	61.58	34.38	74.00	-39.62	peak
2	1533.841	4.09	26.94	54.79	58.11	34.35	74.00	-39.65	peak
3	4379.699	7.11	34.64	54.26	56.27	43.76	74.00	-30.24	peak
4 p	8563.818	9.58	36.83	53.39	54.98	48.00	68.20	-20.20	peak
5	10640.000	11.45	37.22	53.07	52.29	47.89	74.00	-26.11	peak
6	15960.000	14.30	41.52	51.83	48.92	52.91	74.00	-21.09	peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

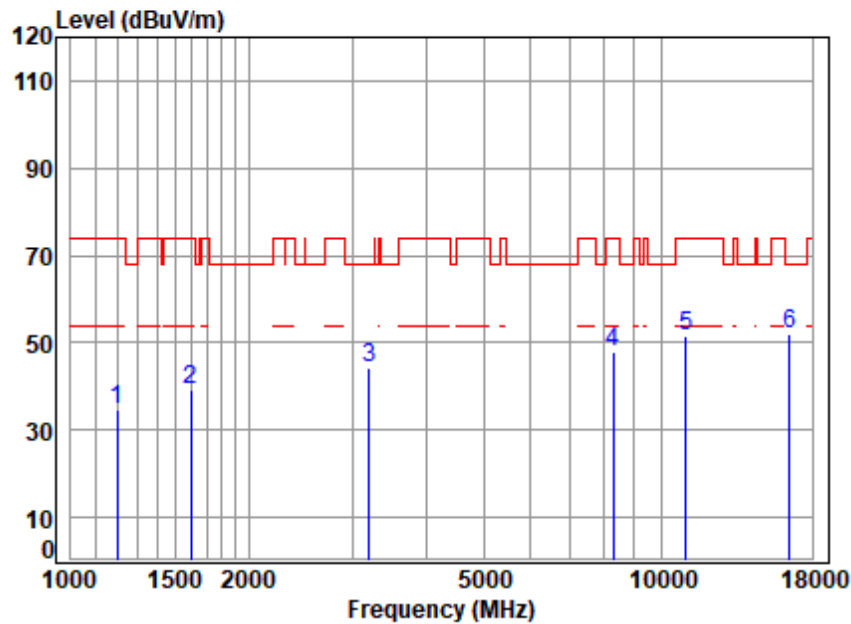


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5320 TX SE
Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1260.149	3.76	25.04	54.70	62.33	36.43	68.20	-31.77	peak
2	1597.181	4.18	26.81	54.80	64.61	40.80	74.00	-33.20	peak
3	3186.869	6.25	32.79	54.85	64.10	48.29	68.20	-19.91	peak
4 p	7966.832	8.99	36.40	53.10	56.53	48.82	68.20	-19.38	peak
5	10640.000	11.45	37.22	53.07	54.33	49.93	74.00	-24.07	peak
6	15960.000	14.30	41.52	51.83	49.13	53.12	74.00	-20.88	peak



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

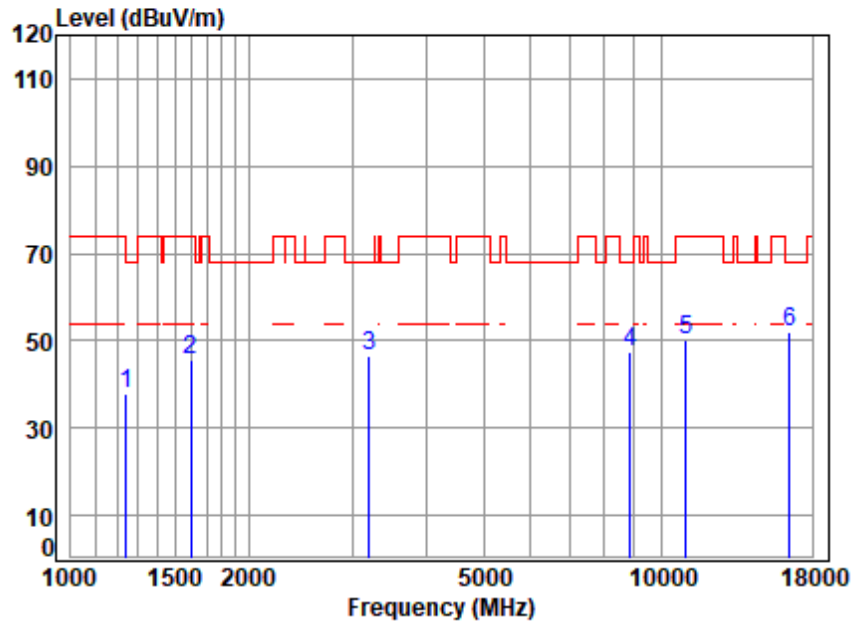


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 TX SE
Note : 5G WIFI 11A

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1199.726	3.68	24.40	54.68	61.31	34.71	74.00	-39.29	peak
2	1597.181	4.18	26.81	54.80	62.96	39.15	74.00	-34.85	peak
3	3196.094	6.25	32.87	54.85	59.96	44.23	68.20	-23.97	peak
4	8295.823	9.33	36.70	53.25	54.93	47.71	74.00	-26.29	peak
5	11000.000	11.68	37.50	53.00	55.55	51.73	74.00	-22.27	peak
6	p16500.000	13.99	42.10	52.36	48.17	51.90	68.20	-16.30	peak



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

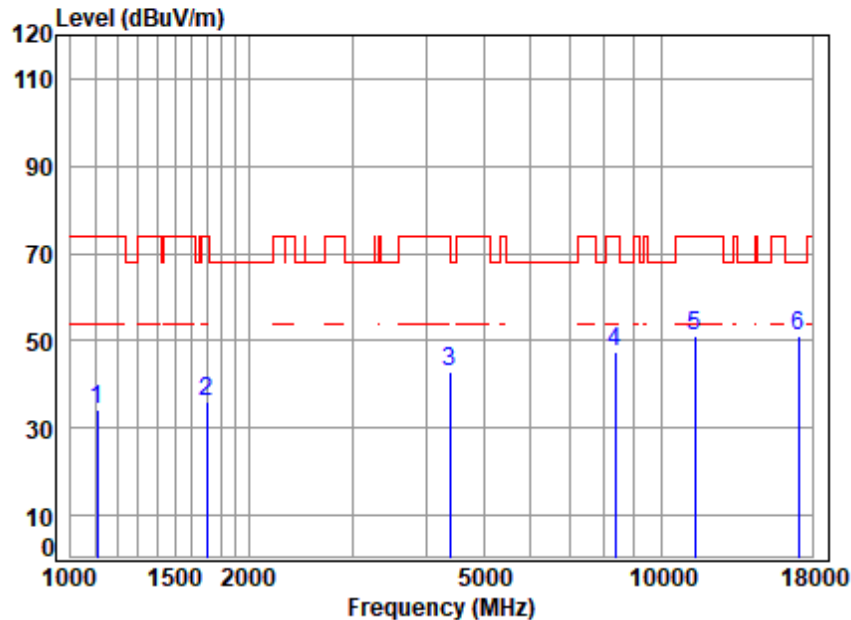


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 TX SE
Note : 5G WIFI 11A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1242.068	3.74	24.99	54.69	63.64	37.68	68.20	-30.52	peak
2	1597.181	4.18	26.81	54.80	69.66	45.85	74.00	-28.15	peak
3	3196.094	6.25	32.87	54.85	62.29	46.56	68.20	-21.64	peak
4	8840.473	9.80	37.18	53.52	53.92	47.38	68.20	-20.82	peak
5	11000.000	11.68	37.50	53.00	54.22	50.40	74.00	-23.60	peak
6	p16500.000	13.99	42.10	52.36	48.50	52.23	68.20	-15.97	peak



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

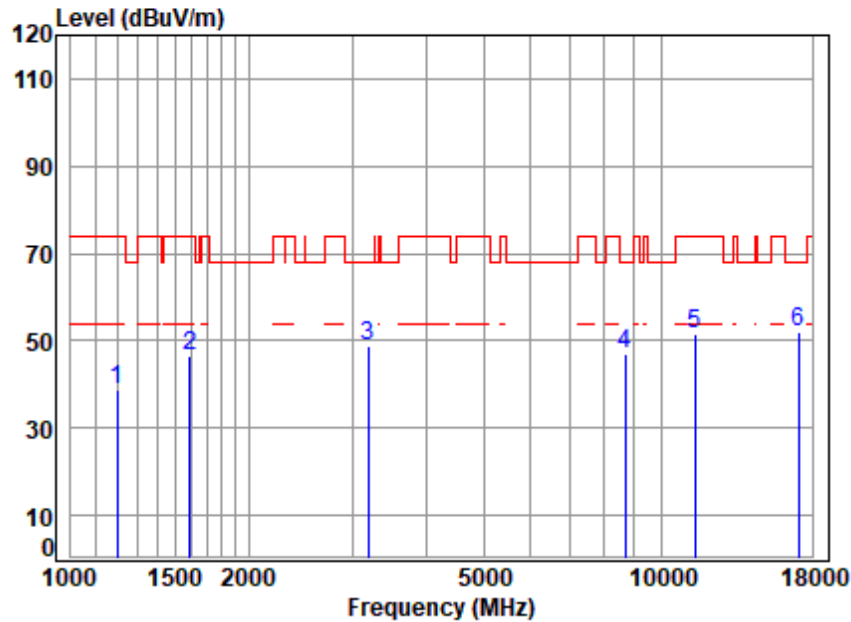


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5700 TX SE
Note : 5G WIFI 11A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1109.660	3.56	23.74	54.65	61.58	34.23	74.00	-39.77	peak
2	1702.042	4.33	26.22	54.83	60.49	36.21	74.00	-37.79	peak
3	4379.699	7.11	34.64	54.26	55.36	42.85	74.00	-31.15	peak
4	8343.918	9.38	36.70	53.28	54.81	47.61	74.00	-26.39	peak
5	11400.000	11.90	37.70	53.08	54.76	51.28	74.00	-22.72	peak
6	p17100.000	14.44	43.10	52.85	46.50	51.19	68.20	-17.01	peak



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

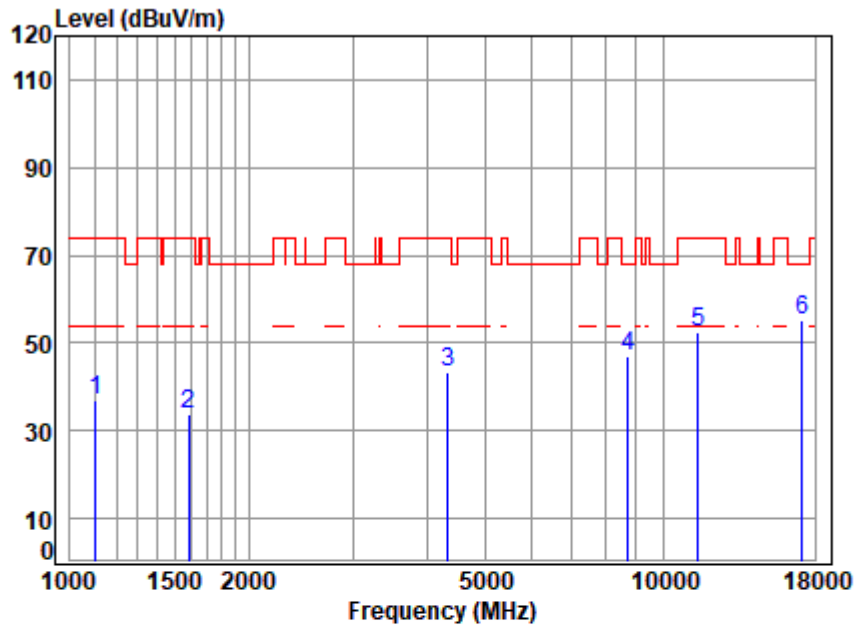


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5700 TX SE
Note : 5G WIFI 11A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1199.726	3.68	24.40	54.68	65.57	38.97	74.00	-35.03	peak
2	1592.571	4.18	26.83	54.80	70.28	46.49	74.00	-27.51	peak
3	3186.869	6.25	32.79	54.85	64.67	48.86	68.20	-19.34	peak
4	8688.480	9.68	36.90	53.45	53.99	47.12	68.20	-21.08	peak
5	11400.000	11.90	37.70	53.08	55.14	51.66	74.00	-22.34	peak
6	p17100.000	14.44	43.10	52.85	47.28	51.97	68.20	-16.23	peak



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

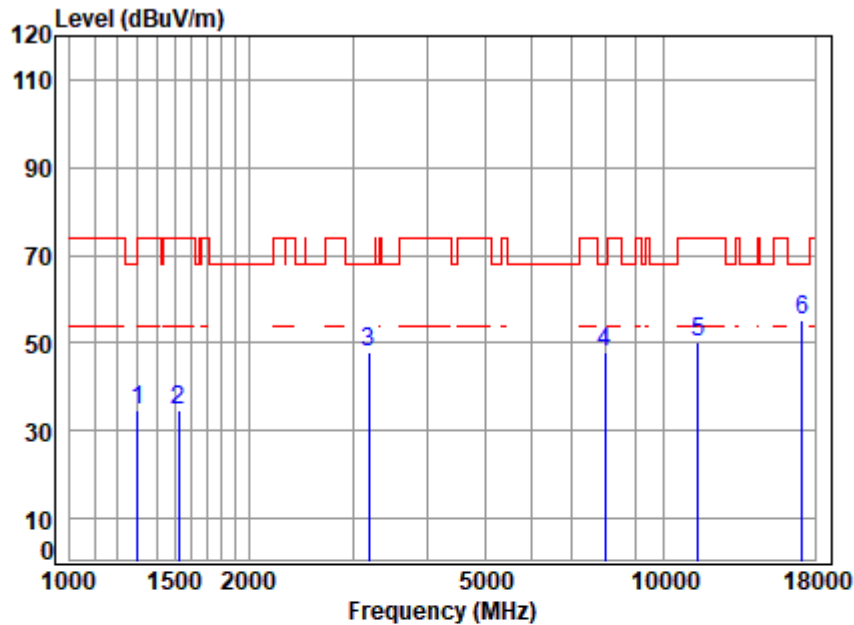


Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 04305AT/04306AT
 Mode : 5720 TX SE
 Note : 5G WIFI 11A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1103.264	3.55	23.71	54.64	64.33	36.95	74.00	-37.05	peak
2	1587.975	4.17	26.85	54.80	57.40	33.62	74.00	-40.38	peak
3	4341.886	7.07	34.34	54.26	56.28	43.43	74.00	-30.57	peak
4	8713.630	9.70	36.90	53.46	54.08	47.22	68.20	-20.98	peak
5	11440.000	11.92	37.74	53.09	56.03	52.60	74.00	-21.40	peak
6	17160.000	14.50	43.04	52.82	50.33	55.05	68.20	-13.15	peak



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

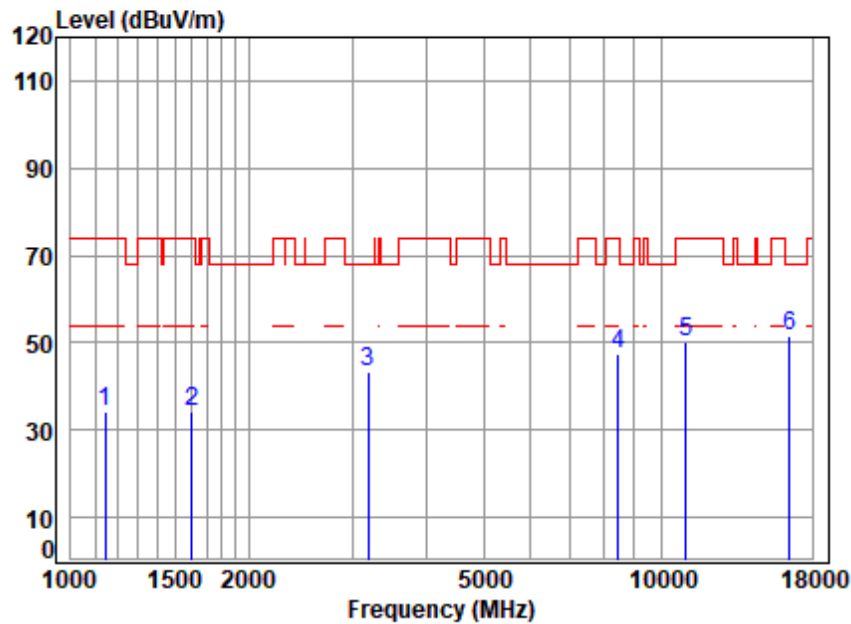


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5720 TX SE
Note : 5G WIFI 11A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1300.858	3.81	24.79	54.71	60.83	34.72	74.00	-39.28	peak
2	1525.000	4.08	26.90	54.78	58.28	34.48	74.00	-39.52	peak
3	3186.869	6.25	32.79	54.85	63.74	47.93	68.20	-20.27	peak
4	7989.893	9.02	36.40	53.10	55.68	48.00	68.20	-20.20	peak
5	11440.000	11.92	37.74	53.09	53.58	50.15	74.00	-23.85	peak
6	p17160.000	14.50	43.04	52.82	50.58	55.30	68.20	-12.90	peak



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

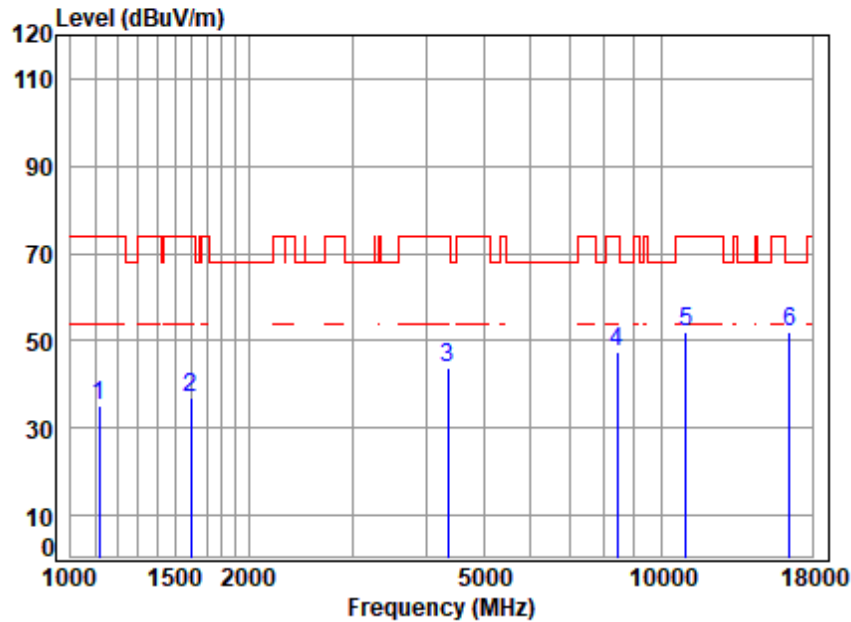


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 TX SE
Note : 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1142.201	3.60	23.87	54.66	61.25	34.06	74.00	-39.94	peak
2	1601.804	4.19	26.78	54.80	57.82	33.99	74.00	-40.01	peak
3	3186.869	6.25	32.79	54.85	59.28	43.47	68.20	-24.73	peak
4	8465.379	9.50	36.63	53.34	54.88	47.67	74.00	-26.33	peak
5	11000.000	11.68	37.50	53.00	54.05	50.23	74.00	-23.77	peak
6	p16500.000	13.99	42.10	52.36	47.84	51.57	68.20	-16.63	peak



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

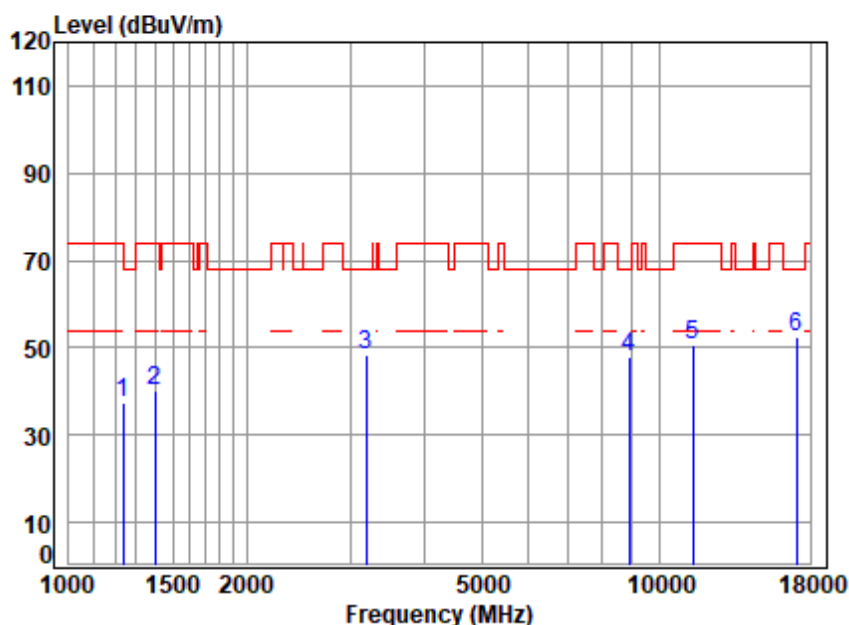


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 TX SE
Note : 5G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1116.093	3.57	23.76	54.65	62.39	35.07	74.00	-38.93	peak
2	1597.181	4.18	26.81	54.80	60.58	36.77	74.00	-37.23	peak
3	4354.454	7.08	34.44	54.26	56.61	43.87	74.00	-30.13	peak
4	8416.584	9.45	36.67	53.32	54.61	47.41	74.00	-26.59	peak
5	11000.000	11.68	37.50	53.00	55.68	51.86	74.00	-22.14	peak
6	p16500.000	13.99	42.10	52.36	48.10	51.83	68.20	-16.37	peak



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

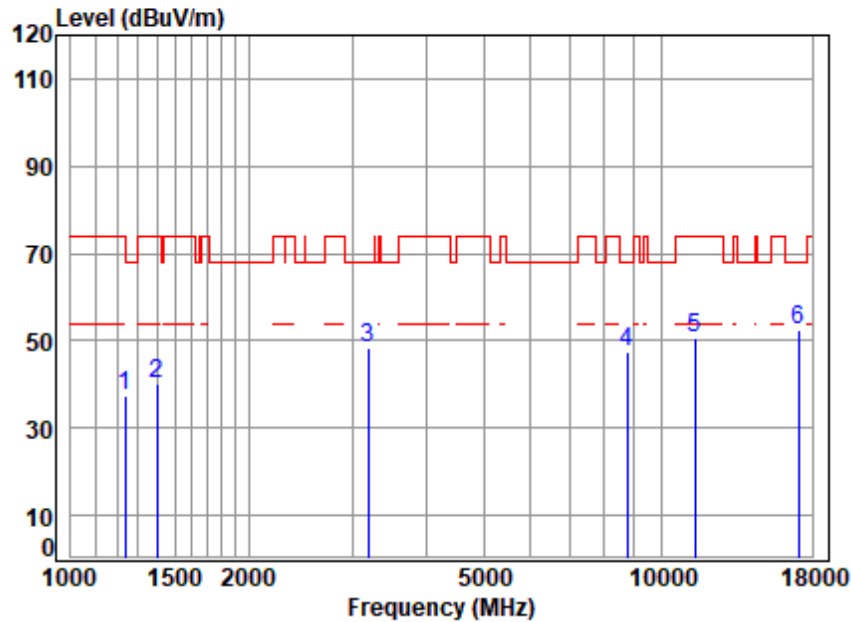


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5700 TX SE
Note : 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1238.483	3.73	24.94	54.69	63.41	37.39	74.00	-36.61	peak
2	1398.336	3.93	24.60	54.75	66.24	40.02	74.00	-33.98	peak
3	3186.869	6.25	32.79	54.85	64.05	48.24	68.20	-19.96	peak
4	8891.725	9.84	37.20	53.55	54.34	47.83	68.20	-20.37	peak
5	11400.000	11.90	37.70	53.08	54.25	50.77	74.00	-23.23	peak
6	p17100.000	14.44	43.10	52.85	47.81	52.50	68.20	-15.70	peak



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

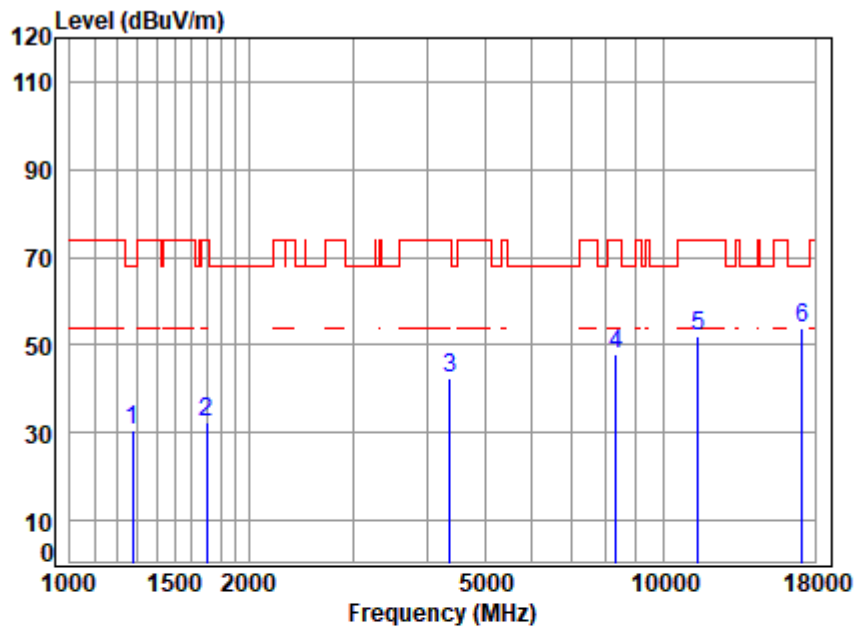


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5700 TX SE
Note : 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1238.483	3.73	24.94	54.69	63.41	37.39	74.00	-36.61	peak
2	1398.336	3.93	24.60	54.75	66.24	40.02	74.00	-33.98	peak
3	3186.869	6.25	32.79	54.85	64.05	48.24	68.20	-19.96	peak
4	8764.146	9.74	36.96	53.49	54.45	47.66	68.20	-20.54	peak
5	11400.000	11.90	37.70	53.08	53.96	50.48	74.00	-23.52	peak
6	p17100.000	14.44	43.10	52.85	47.81	52.50	68.20	-15.70	peak



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

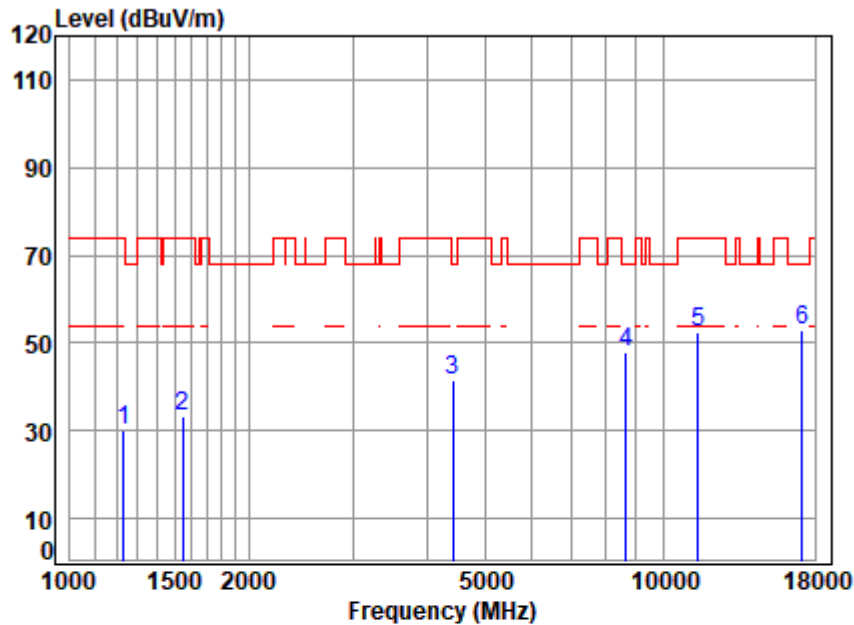


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5720 TX SE
Note : 5G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1274.802	3.78	24.95	54.71	56.63	30.65	68.20	-37.55	peak
2	1697.129	4.32	26.21	54.83	56.91	32.61	74.00	-41.39	peak
3	4367.058	7.10	34.54	54.26	55.02	42.40	74.00	-31.60	peak
4	8319.836	9.35	36.70	53.27	54.96	47.74	74.00	-26.26	peak
5	11440.000	11.92	37.74	53.09	55.60	52.17	74.00	-21.83	peak
6	17160.000	14.50	43.04	52.82	48.99	53.71	68.20	-14.49	peak



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

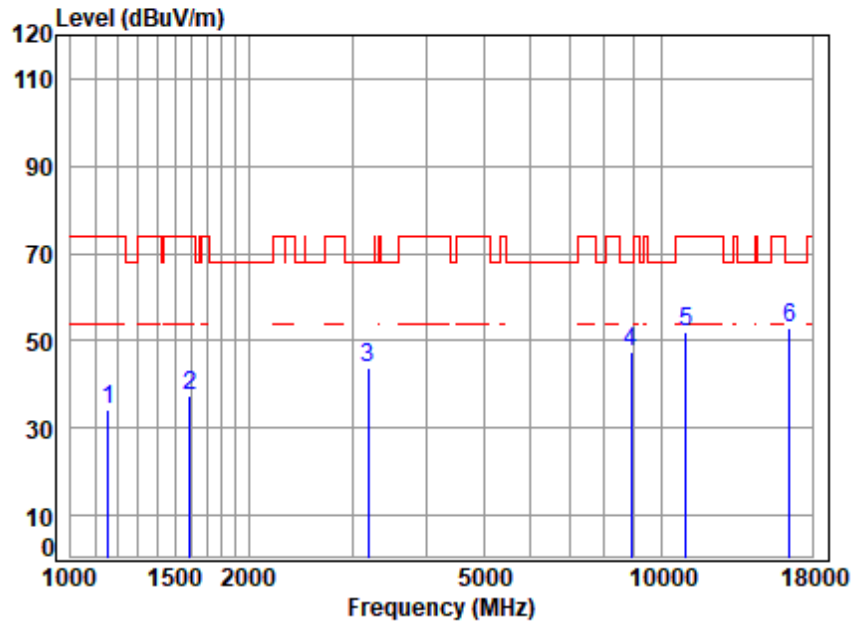


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5720 TX SE
Note : 5G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1231.345	3.72	24.84	54.69	56.44	30.31	74.00	-43.69	peak
2	1547.199	4.11	26.99	54.79	57.17	33.48	74.00	-40.52	peak
3	4417.841	7.16	34.59	54.26	54.16	41.65	68.20	-26.55	peak
4	8663.404	9.66	36.90	53.44	54.69	47.81	68.20	-20.39	peak
5	11440.000	11.92	37.74	53.09	55.83	52.40	74.00	-21.60	peak
6	17160.000	14.50	43.04	52.82	48.15	52.87	68.20	-15.33	peak



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

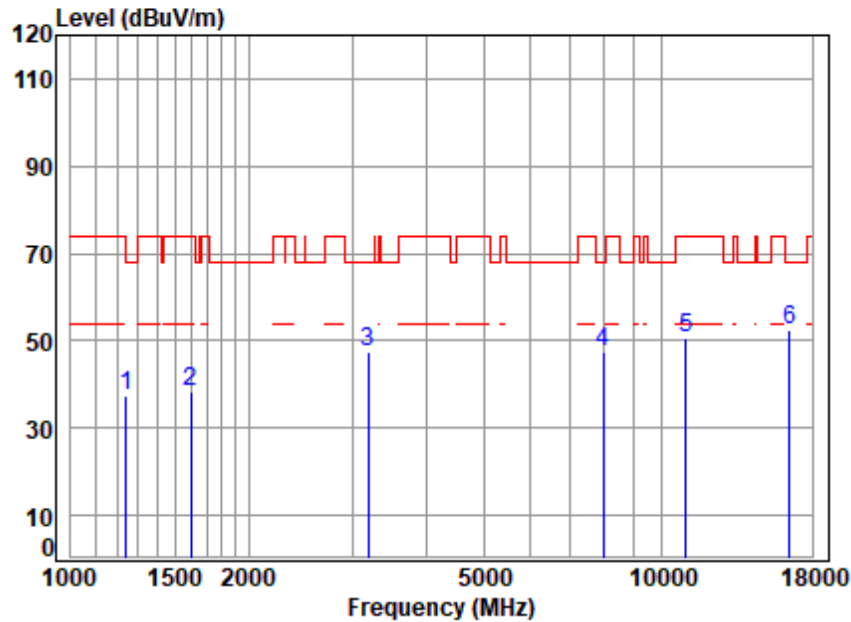


Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 04305AT/04306AT
 Mode : 5500 TX SE
 Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1158.828	3.63	23.99	54.66	61.45	34.41	74.00	-39.59	peak
2	1592.571	4.18	26.83	54.80	61.38	37.59	74.00	-36.41	peak
3	3186.869	6.25	32.79	54.85	59.80	43.99	68.20	-24.21	peak
4	8891.725	9.84	37.20	53.55	53.90	47.39	68.20	-20.81	peak
5	11000.000	11.68	37.50	53.00	55.80	51.98	74.00	-22.02	peak
6	16500.000	13.99	42.10	52.36	49.15	52.88	68.20	-15.32	peak



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

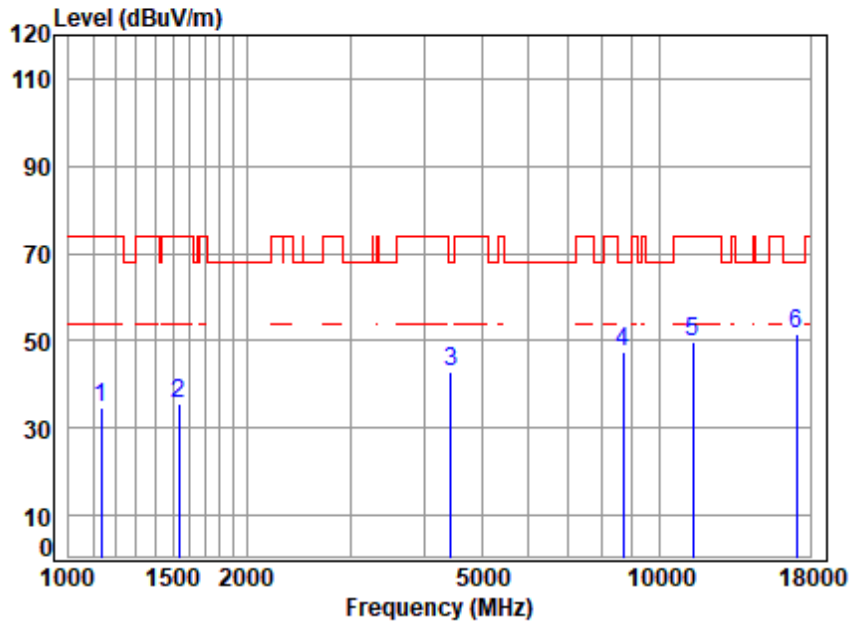


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 TX SE
Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1242.068	3.74	24.99	54.69	63.20	37.24	68.20	-30.96	peak
2	1597.181	4.18	26.81	54.80	62.10	38.29	74.00	-35.71	peak
3	3186.869	6.25	32.79	54.85	63.20	47.39	68.20	-20.81	peak
4	7966.832	8.99	36.40	53.10	55.31	47.60	68.20	-20.60	peak
5	11000.000	11.68	37.50	53.00	54.38	50.56	74.00	-23.44	peak
6	p16500.000	13.99	42.10	52.36	48.60	52.33	68.20	-15.87	peak



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

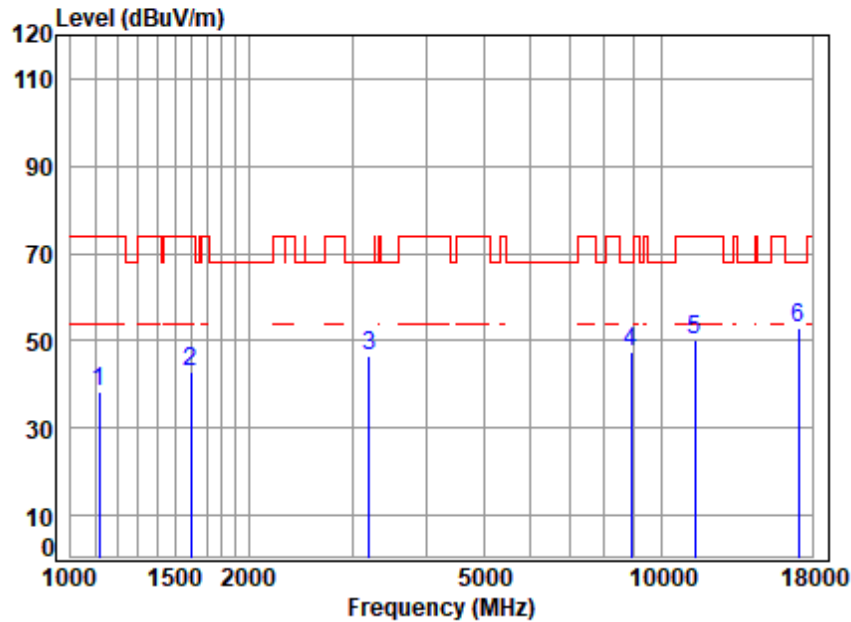


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5700 TX SE
Note : 5G WIFI 11AC20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1135.617	3.59	23.84	54.66	61.99	34.76	74.00	-39.24	peak
2	1533.841	4.09	26.94	54.79	59.40	35.64	74.00	-38.36	peak
3	4430.628	7.17	34.43	54.25	55.57	42.92	68.20	-25.28	peak
4	8688.480	9.68	36.90	53.45	54.54	47.67	68.20	-20.53	peak
5	11400.000	11.90	37.70	53.08	53.26	49.78	74.00	-24.22	peak
6	p17100.000	14.44	43.10	52.85	47.06	51.75	68.20	-16.45	peak



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

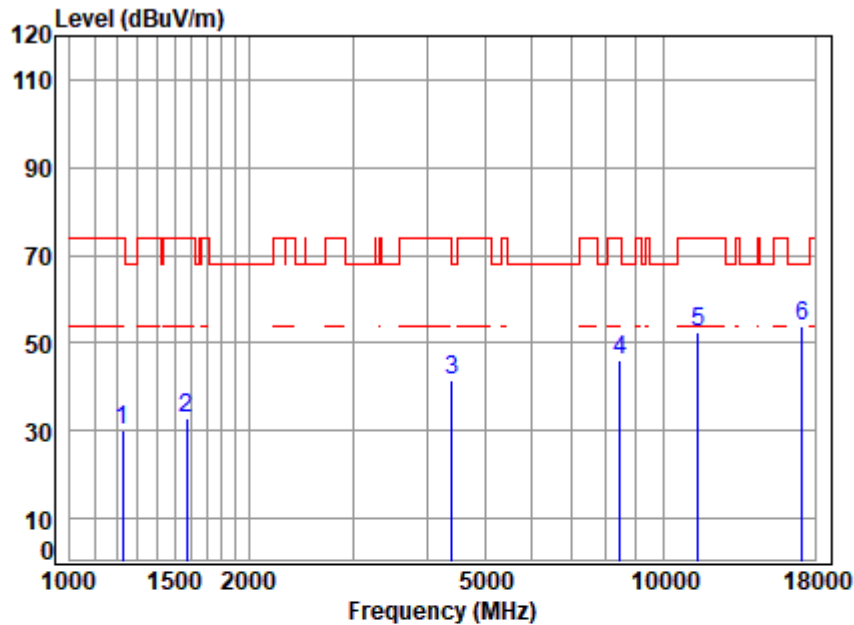


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5700 TX SE
Note : 5G WIFI 11AC20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1119.323	3.57	23.78	54.65	65.54	38.24	74.00	-35.76	peak
2	1597.181	4.18	26.81	54.80	66.53	42.72	74.00	-31.28	peak
3	3196.094	6.25	32.87	54.85	62.21	46.48	68.20	-21.72	peak
4	8891.725	9.84	37.20	53.55	54.16	47.65	68.20	-20.55	peak
5	11400.000	11.90	37.70	53.08	53.81	50.33	74.00	-23.67	peak
6	p17100.000	14.44	43.10	52.85	48.15	52.84	68.20	-15.36	peak



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

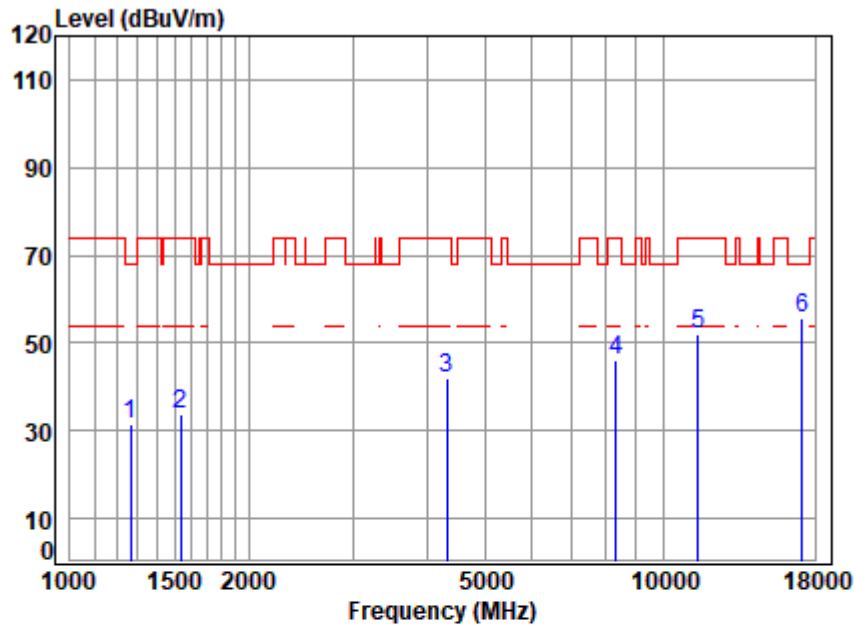


Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 04305AT/04306AT
 Mode : 5720 TX SE
 Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1227.791	3.72	24.79	54.69	56.33	30.15	74.00	-43.85	peak
2	1574.265	4.15	26.90	54.80	56.44	32.69	74.00	-41.31	peak
3	4405.090	7.14	34.74	54.26	54.11	41.73	68.20	-26.47	peak
4	8440.945	9.47	36.62	53.33	53.42	46.18	74.00	-27.82	peak
5	11440.000	11.92	37.74	53.09	55.71	52.28	74.00	-21.72	peak
6	17160.000	14.50	43.04	52.82	49.18	53.90	68.20	-14.30	peak



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



Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5720 TX SE
Note : 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1267.454	3.77	25.00	54.70	57.39	31.46	68.20	-36.74	peak
2	1538.281	4.10	26.95	54.79	57.33	33.59	74.00	-40.41	peak
3	4316.859	7.04	34.13	54.27	54.91	41.81	74.00	-32.19	peak
4	8319.836	9.35	36.70	53.27	53.22	46.00	74.00	-28.00	peak
5	11440.000	11.92	37.74	53.09	55.23	51.80	74.00	-22.20	peak
6	p17160.000	14.50	43.04	52.82	50.81	55.53	68.20	-12.67	peak



6.4 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

Measurement Distance: 3m

Limit:

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

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

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

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

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

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

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



6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 20.8 °C

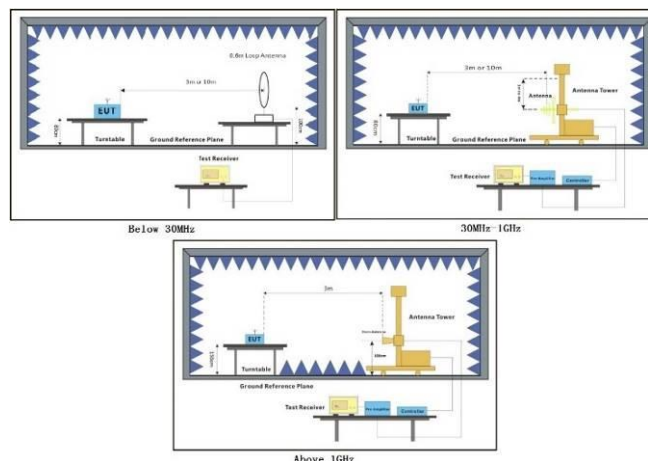
Humidity: 62.0 % RH

Atmospheric Pressure: 1020 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Pre-scan	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	03	Charge+TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	04	Charge+TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.

6.4.3 Test Setup Diagram



6.4.4 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.

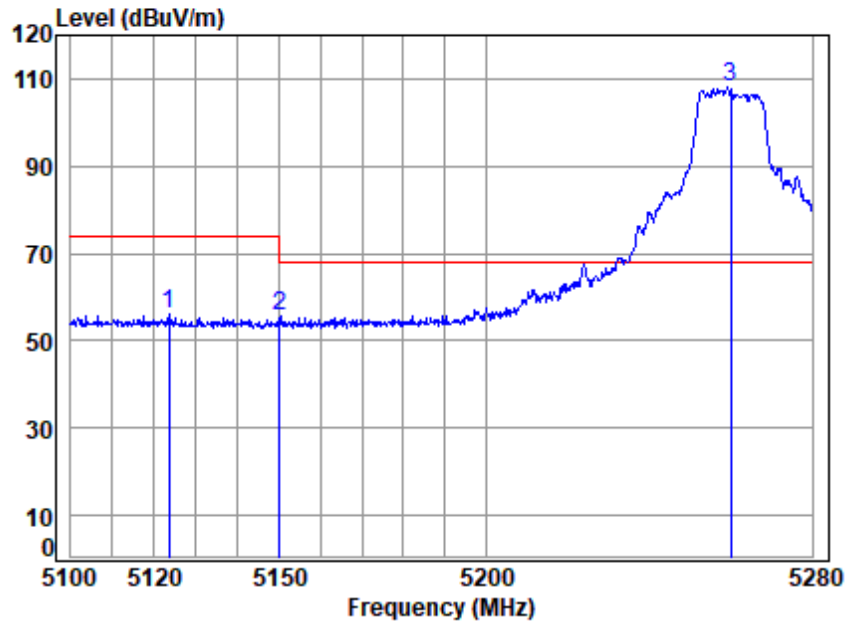
Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 3. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



Test Mode: 03; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

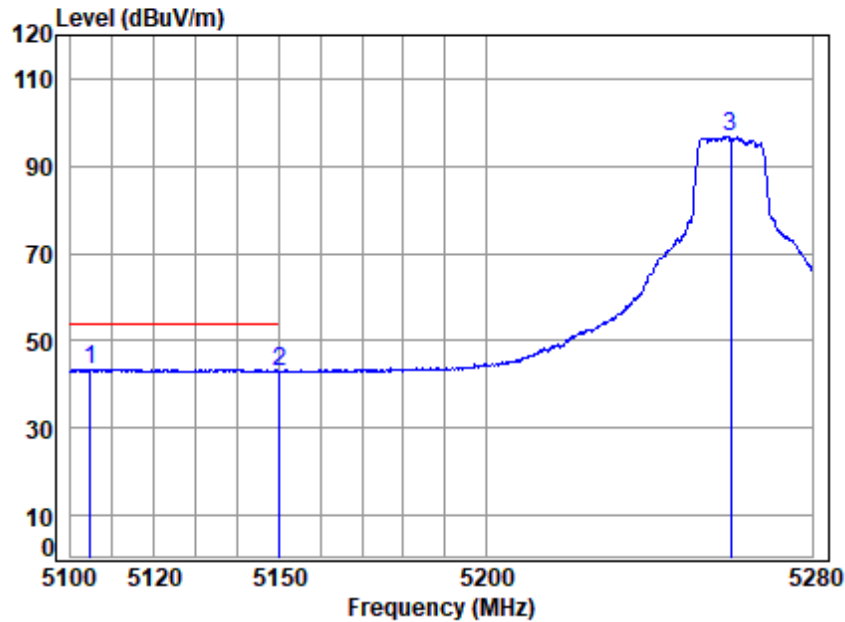


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5123.404	18.80	33.95	31.27	34.49	55.97	74.00	-18.03	peak
2	5149.980	18.83	33.90	31.28	34.17	55.62	74.00	-18.38	peak
3 p	5260.000	18.99	34.12	31.34	86.37	108.14	68.20	39.94	peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

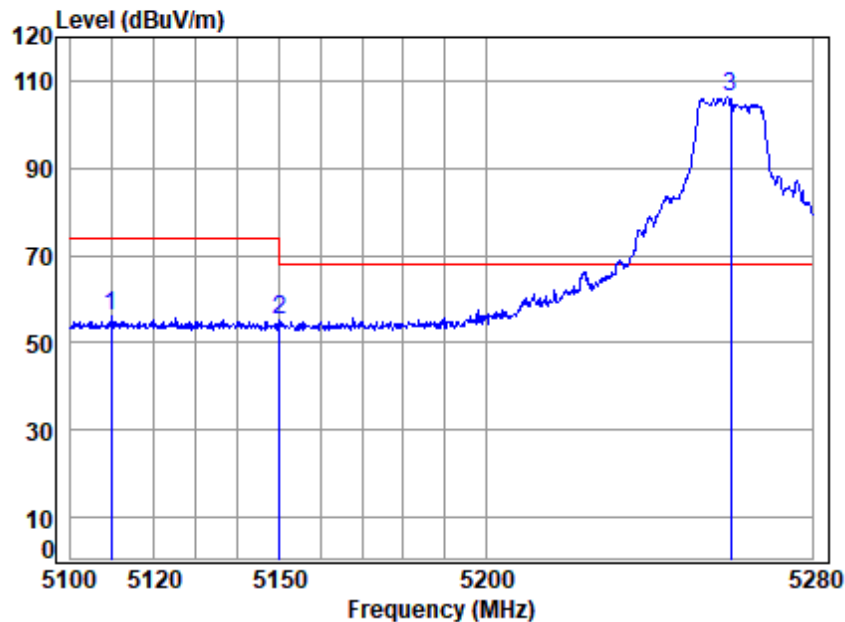


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5104.778	18.77	33.99	31.26	22.00	43.50	54.00	-10.50	Average
2 5149.980	18.83	33.90	31.28	21.58	43.03	54.00	-10.97	Average
3 5260.000	18.99	34.12	31.34	75.05	96.82	-----	-----	Average



Test Mode: 03; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

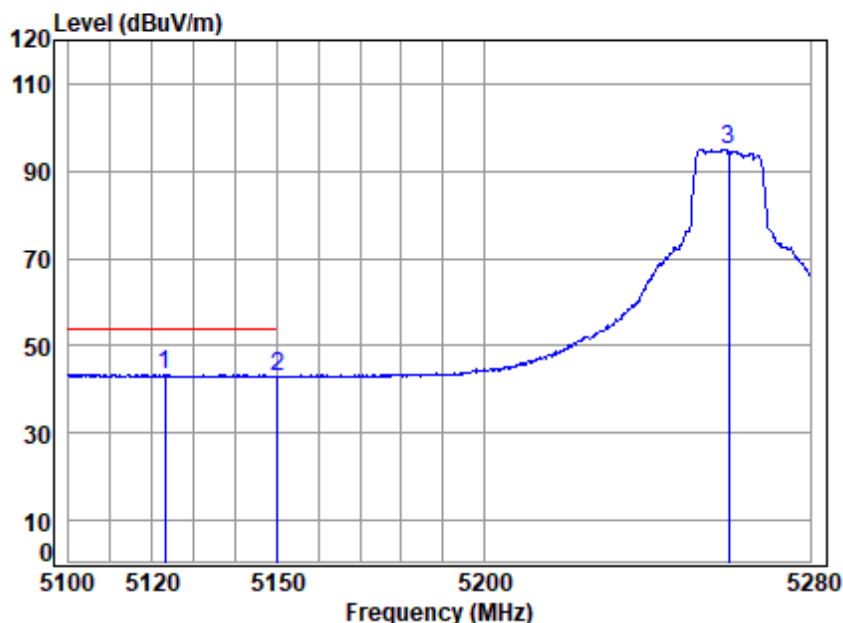


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5109.562	18.78	33.98	31.26	34.48	55.98	74.00	-18.02	Peak
2	5149.980	18.83	33.90	31.28	33.60	55.05	74.00	-18.95	Peak
3 p	5260.000	18.99	34.12	31.34	84.49	106.26	68.20	38.06	Peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

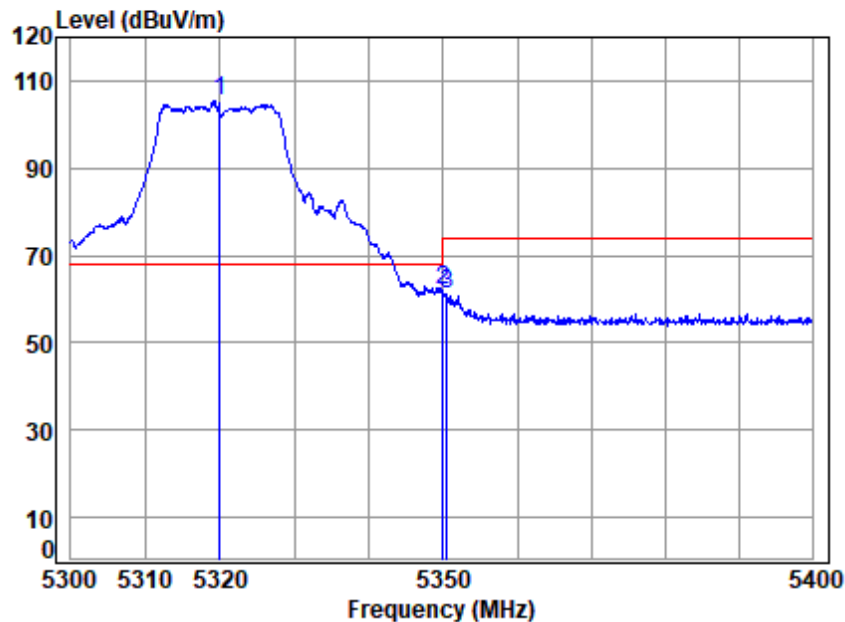


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5123.048	18.80	33.95	31.27	21.97	43.45	54.00	-10.55	Average
2 5149.980	18.83	33.90	31.28	21.60	43.05	54.00	-10.95	Average
3 5260.000	18.99	34.12	31.34	73.25	95.02	-----	-----	Average



Test Mode: 03; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

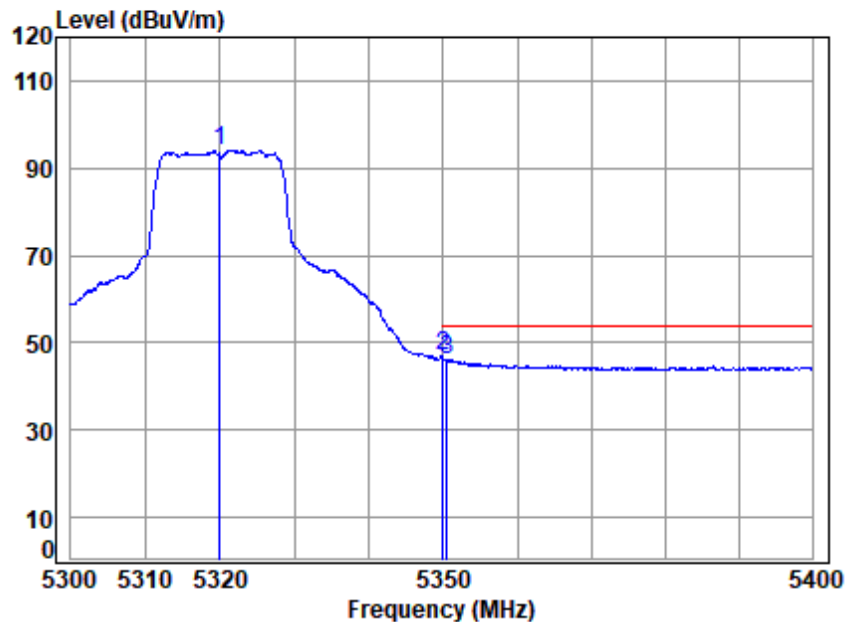


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5320.000	19.07	34.28	31.37	83.36	105.34	68.20	37.14	peak
2 5350.020	19.11	34.40	31.39	39.83	61.95	74.00	-12.05	peak
3 5350.566	19.11	34.40	31.39	39.23	61.35	74.00	-12.65	peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 04305AT/04306AT
 Mode : 5320 Band edge
 : 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5320.000	19.07	34.28	31.37	72.03	94.01	-----	----- Average
2 q	5350.020	19.11	34.40	31.39	24.71	46.83	54.00	-7.17 Average
3	5350.566	19.11	34.40	31.39	24.04	46.16	54.00	-7.84 Average



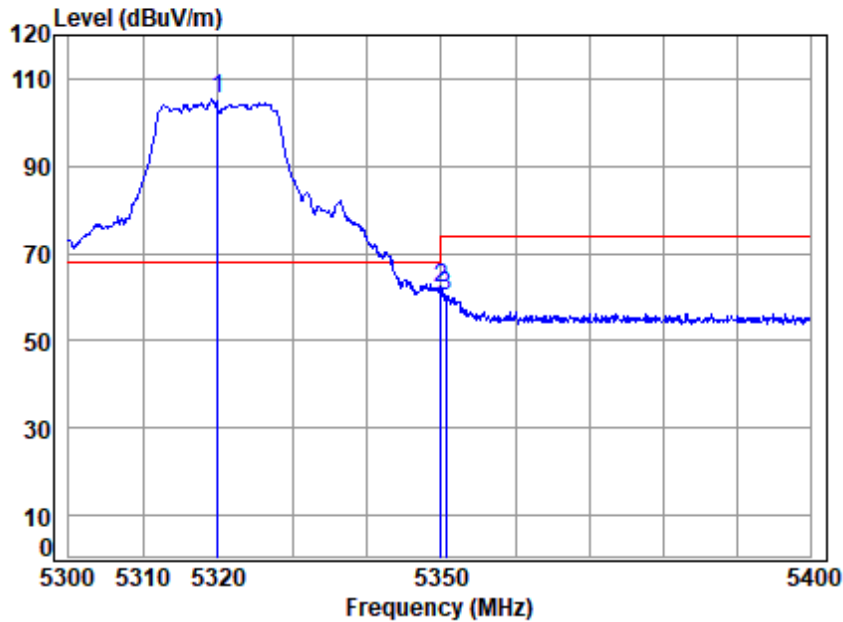
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Test Mode: 03; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Site : chamber
 Condition: 3m VERTICAL
 Job No : 04305AT/04306AT
 Mode : 5320 Band edge
 : 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5320.000	19.07	34.28	31.37	83.39	105.37	68.20	37.17	Peak
2 5350.020	19.11	34.40	31.39	40.12	62.24	74.00	-11.76	Peak
3 5350.667	19.11	34.40	31.39	38.11	60.23	74.00	-13.77	Peak



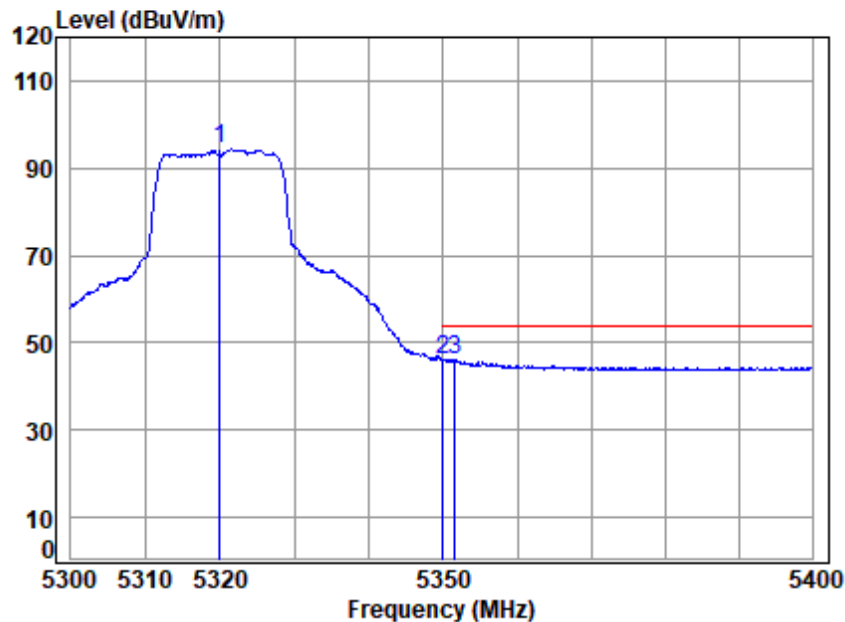
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Test Mode: 03; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11A

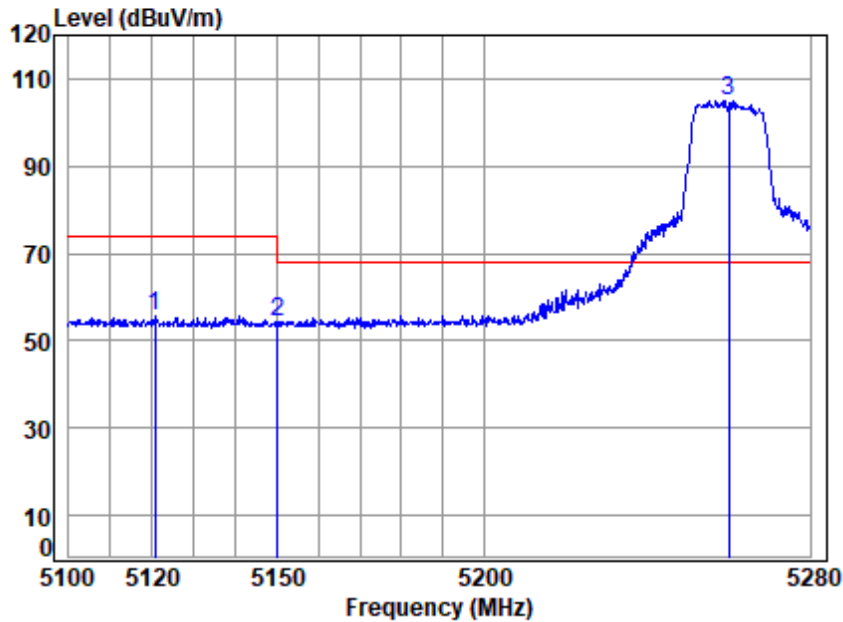
		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5320.000	19.07	34.28	31.37	72.30	94.28	-----	----- Average
2 q	5350.020	19.11	34.40	31.39	24.12	46.24	54.00	-7.76 Average
3	5351.566	19.11	34.41	31.39	24.00	46.13	54.00	-7.87 Average



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Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

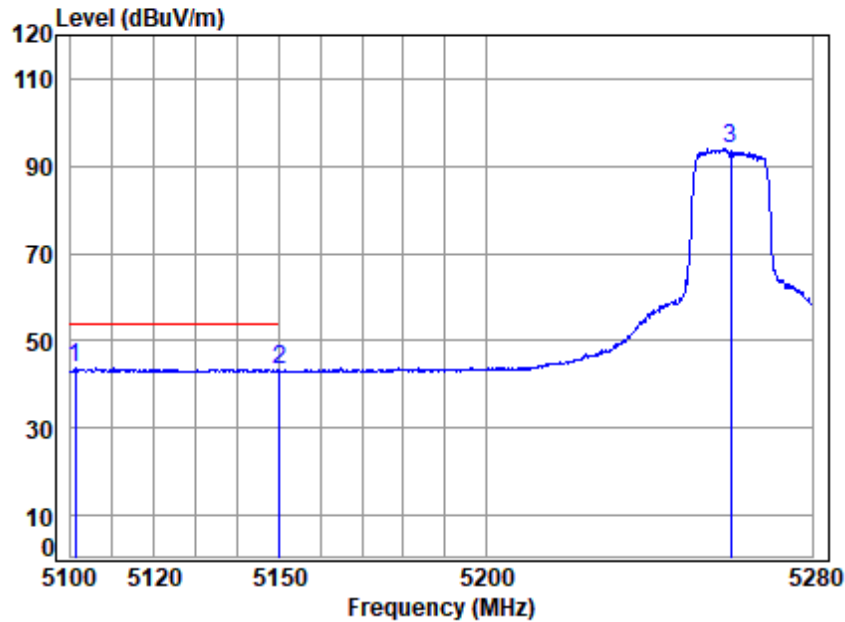


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5120.739	18.79	33.96	31.27	34.41	55.89	74.00	-18.11	peak
2	5149.980	18.83	33.90	31.28	32.89	54.34	74.00	-19.66	peak
3 p	5260.000	18.99	34.12	31.34	83.38	105.15	68.20	36.95	peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

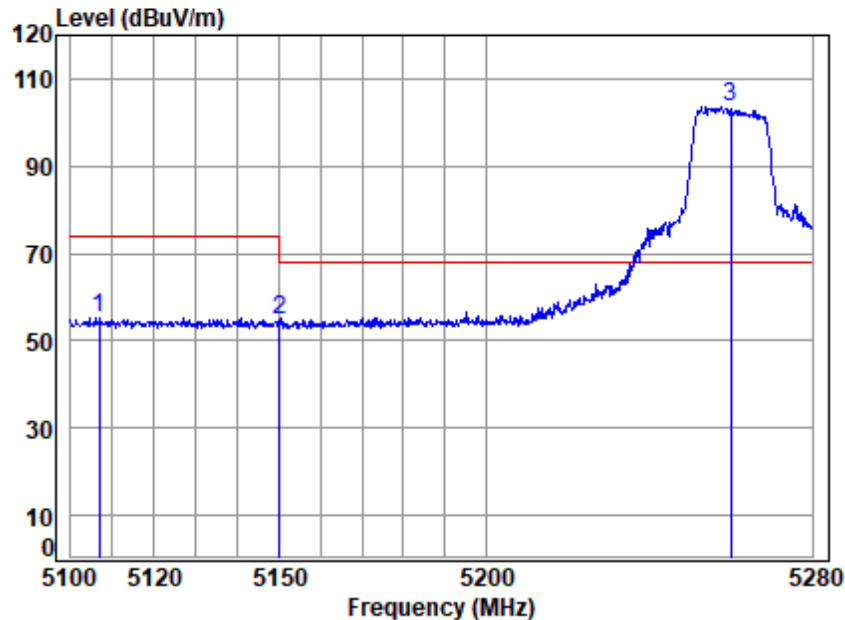


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5101.062	18.76	34.00	31.25	22.13	43.64	54.00	-10.36	Average
2 5149.980	18.83	33.90	31.28	21.67	43.12	54.00	-10.88	Average
3 5260.000	18.99	34.12	31.34	72.20	93.97	-----	-----	Average



Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

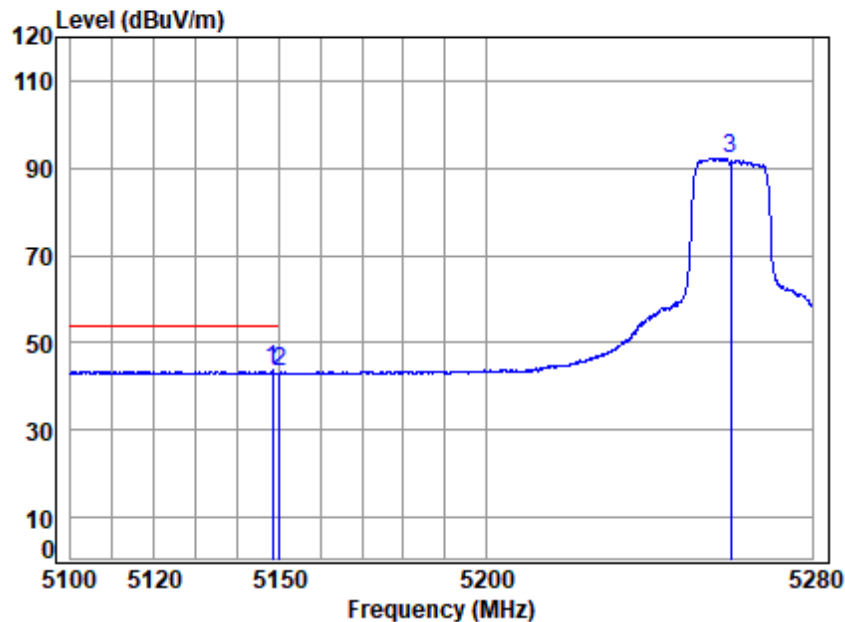


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5106.904	18.77	33.99	31.26	33.83	55.33	74.00	-18.67	Peak
2	5149.980	18.83	33.90	31.28	33.15	54.60	74.00	-19.40	Peak
3 p	5260.000	18.99	34.12	31.34	81.79	103.56	68.20	35.36	Peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

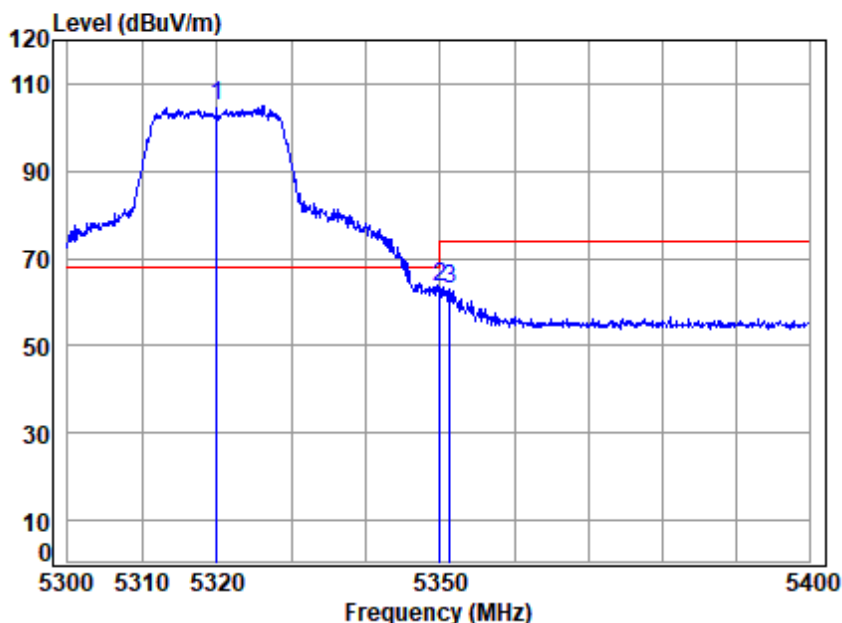


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5148.343	18.83	33.90	31.28	22.13	43.58	54.00	-10.42	Average
2 5149.980	18.83	33.90	31.28	21.69	43.14	54.00	-10.86	Average
3 5260.000	18.99	34.12	31.34	70.54	92.31	-----	-----	Average



Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11N20

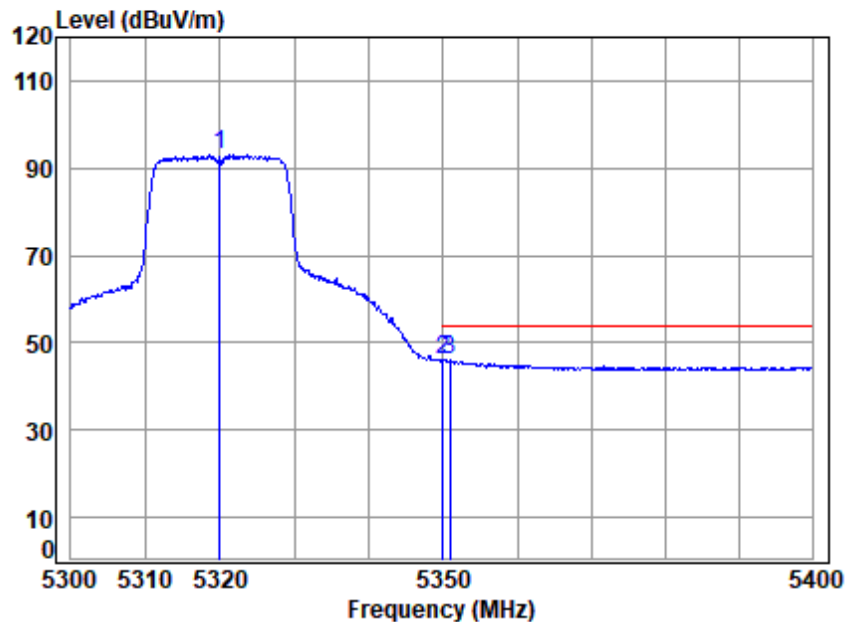
		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5320.000	19.07	34.28	31.37	83.01	104.99	68.20	36.79	peak
2 5350.020	19.11	34.40	31.39	41.26	63.38	74.00	-10.62	peak
3 5351.367	19.11	34.41	31.39	40.71	62.84	74.00	-11.16	peak



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Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

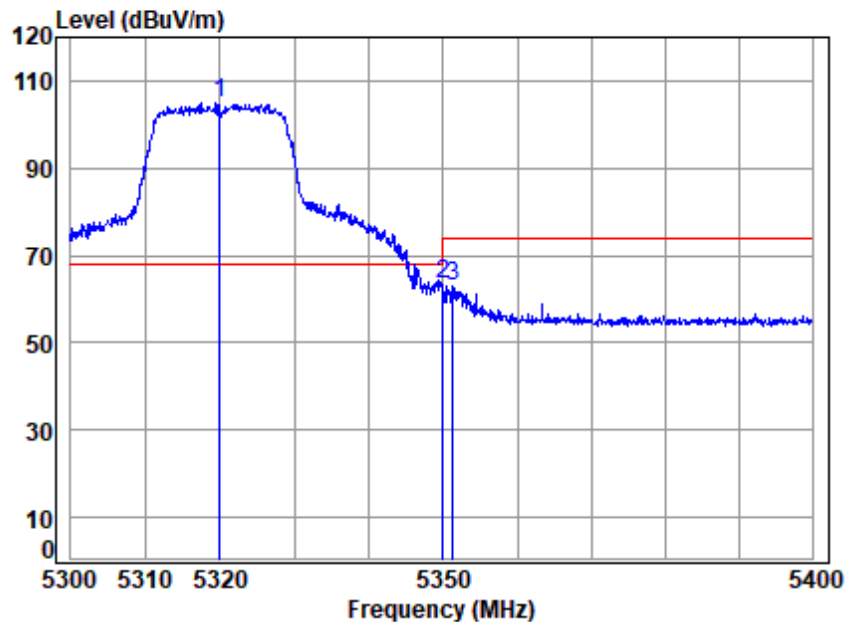


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5320.000	19.07	34.28	31.37	71.20	93.18	-----	----- Average
2 q	5350.020	19.11	34.40	31.39	24.13	46.25	54.00	-7.75 Average
3	5350.966	19.11	34.40	31.39	24.02	46.14	54.00	-7.86 Average



Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5320.000	19.07	34.28	31.37	82.97	104.95	68.20	36.75	Peak
2 5350.020	19.11	34.40	31.39	41.38	63.50	74.00	-10.50	Peak
3 5351.367	19.11	34.41	31.39	40.97	63.10	74.00	-10.90	Peak



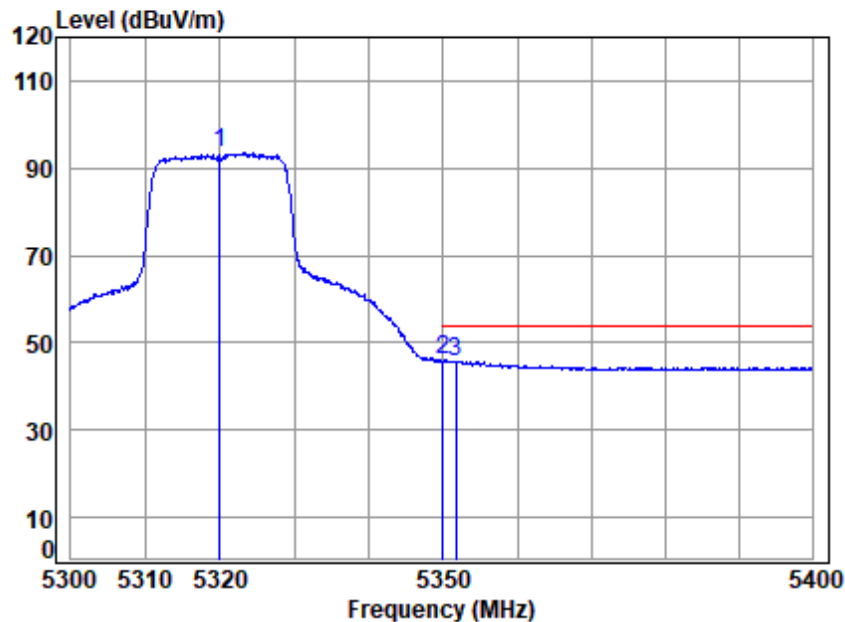
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Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

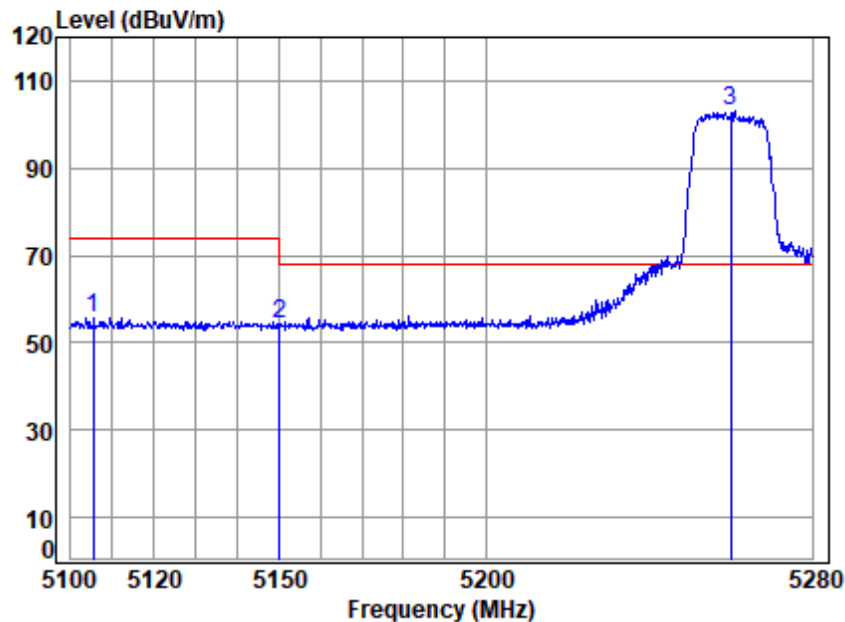


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 5320.000	19.07	34.28	31.37	71.44	93.42	-----	-----	Average
2 q 5350.020	19.11	34.40	31.39	23.85	45.97	54.00	-8.03	Average
3 5351.667	19.11	34.41	31.39	23.63	45.76	54.00	-8.24	Average



Test Mode: 03; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

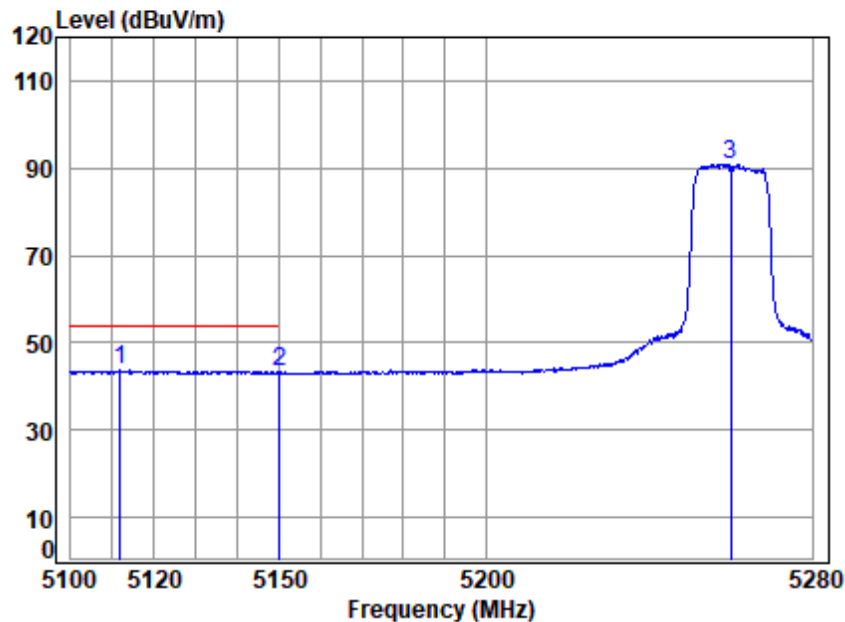


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5105.487	18.77	33.99	31.26	34.39	55.89	74.00	-18.11	peak
2	5149.980	18.83	33.90	31.28	32.83	54.28	74.00	-19.72	peak
3 p	5260.000	18.99	34.12	31.34	81.30	103.07	68.20	34.87	peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

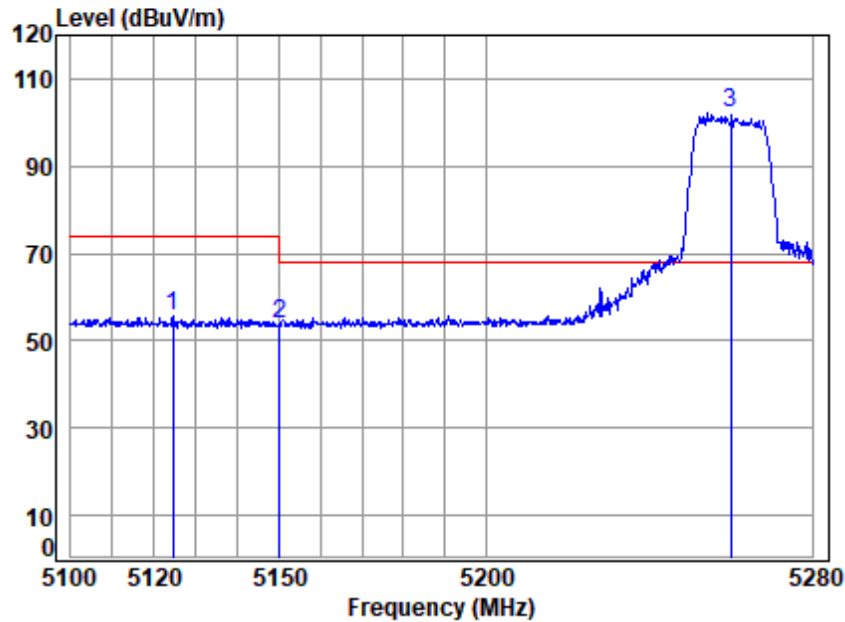


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5111.866	18.78	33.98	31.26	22.16	43.66	54.00	-10.34	Average
2 5149.980	18.83	33.90	31.28	21.82	43.27	54.00	-10.73	Average
3 5260.000	18.99	34.12	31.34	69.25	91.02	-----	-----	Average



Test Mode: 03; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

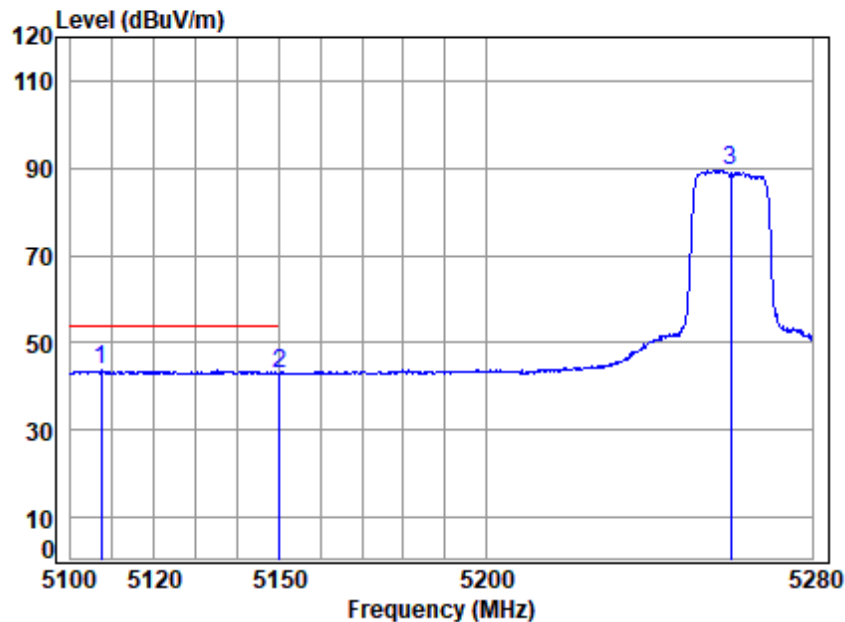


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5124.470	18.80	33.95	31.27	34.03	55.51	74.00	-18.49	Peak
2	5149.980	18.83	33.90	31.28	32.58	54.03	74.00	-19.97	Peak
3 p	5260.000	18.99	34.12	31.34	80.23	102.00	68.20	33.80	Peak



Test Mode: 03; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low

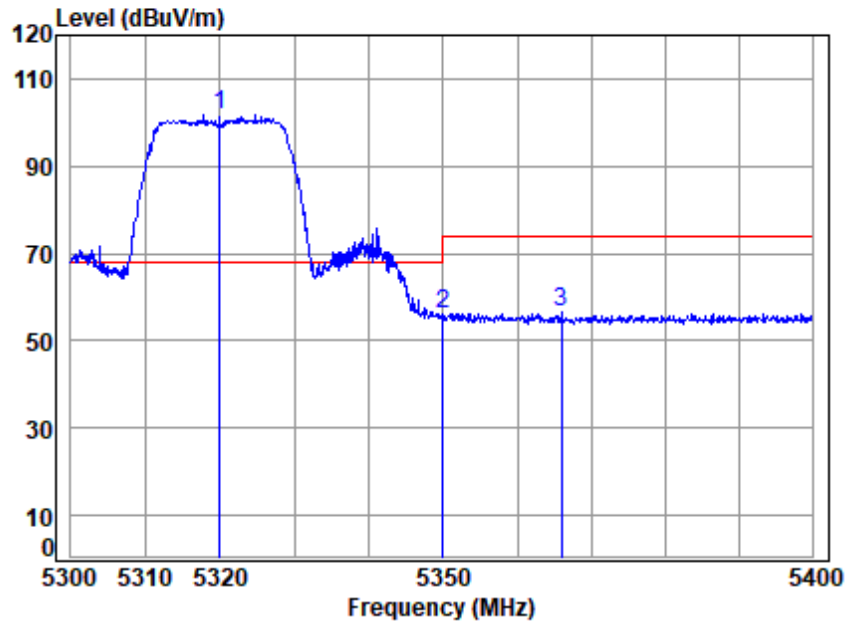


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5260 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5107.258	18.77	33.99	31.26	22.09	43.59	54.00	-10.41	Average
2 5149.980	18.83	33.90	31.28	21.62	43.07	54.00	-10.93	Average
3 5260.000	18.99	34.12	31.34	67.72	89.49	-----	-----	Average



Test Mode: 03; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

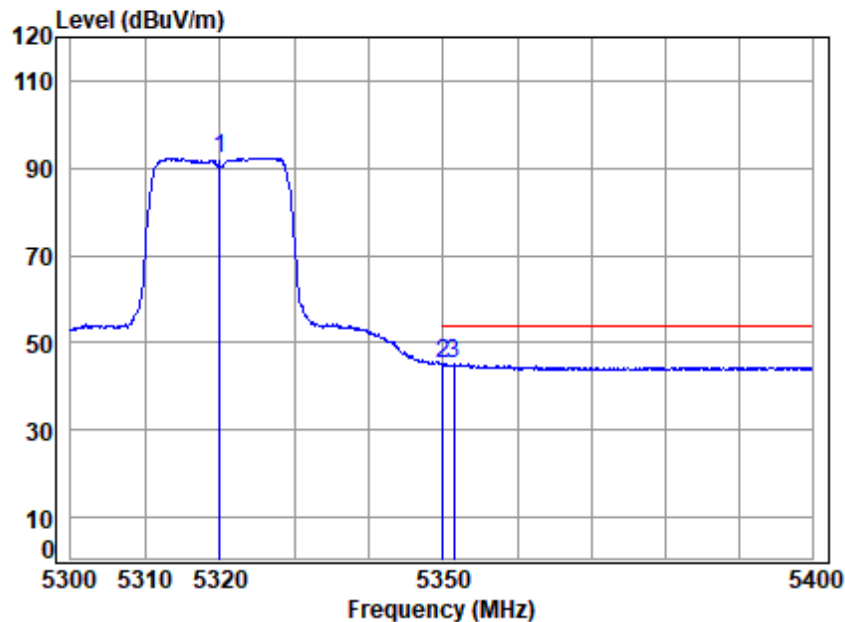


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5320.000	19.07	34.28	31.37	79.78	101.76	68.20	33.56	peak
2 5350.020	19.11	34.40	31.39	33.78	55.90	74.00	-18.10	peak
3 5365.991	19.13	34.46	31.39	34.16	56.36	74.00	-17.64	peak



Test Mode: 03; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High

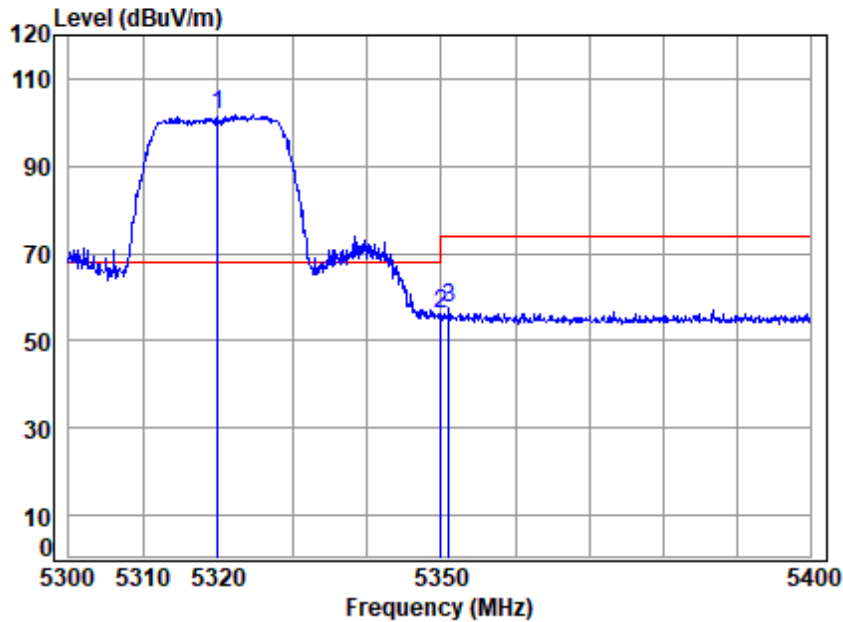


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5320.000	19.07	34.28	31.37	70.40	92.38	-----	----- Average
2	5350.020	19.11	34.40	31.39	22.94	45.06	54.00	-8.94 Average
3 q	5351.467	19.11	34.41	31.39	23.01	45.14	54.00	-8.86 Average



Test Mode: 03; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11AC20

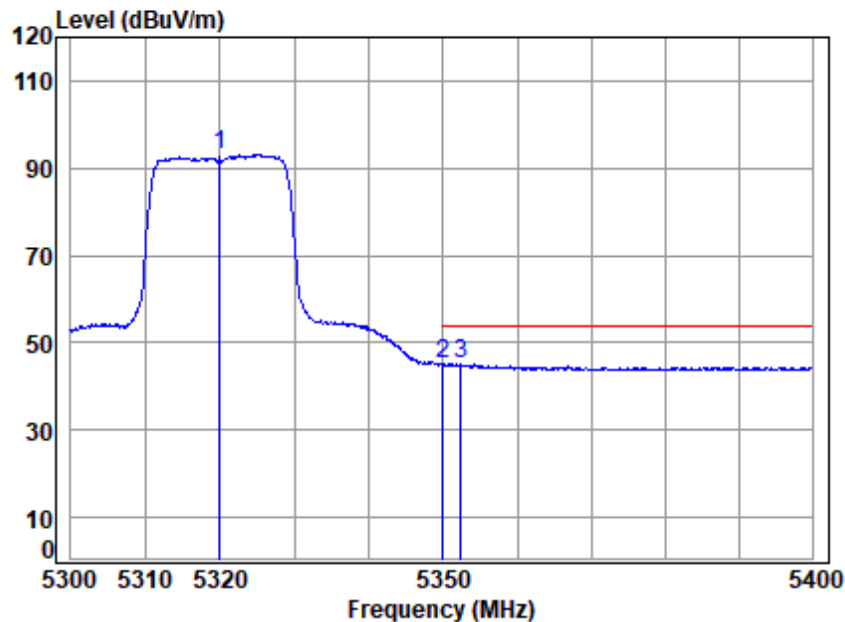
		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5320.000	19.07	34.28	31.37	79.73	101.71	68.20	33.51	Peak
2 5350.020	19.11	34.40	31.39	33.89	56.01	74.00	-17.99	Peak
3 5351.066	19.11	34.40	31.39	35.45	57.57	74.00	-16.43	Peak



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Test Mode: 03; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5320 Band edge
: 5G WIFI 11AC20

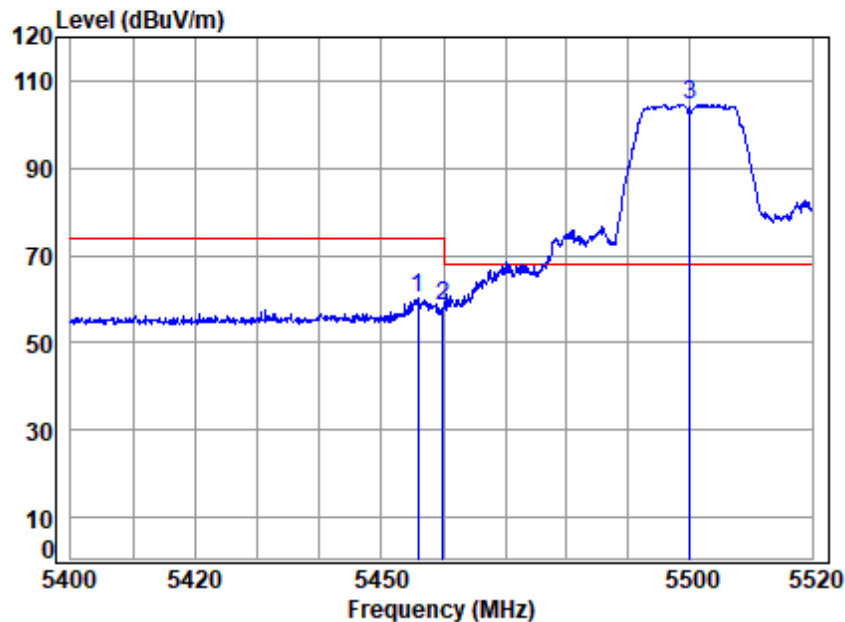
		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5320.000	19.07	34.28	31.37	71.22	93.20	-----	----- Average
2	5350.020	19.11	34.40	31.39	23.12	45.24	54.00	-8.76 Average
3 q	5352.367	19.11	34.41	31.39	23.12	45.25	54.00	-8.75 Average



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

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

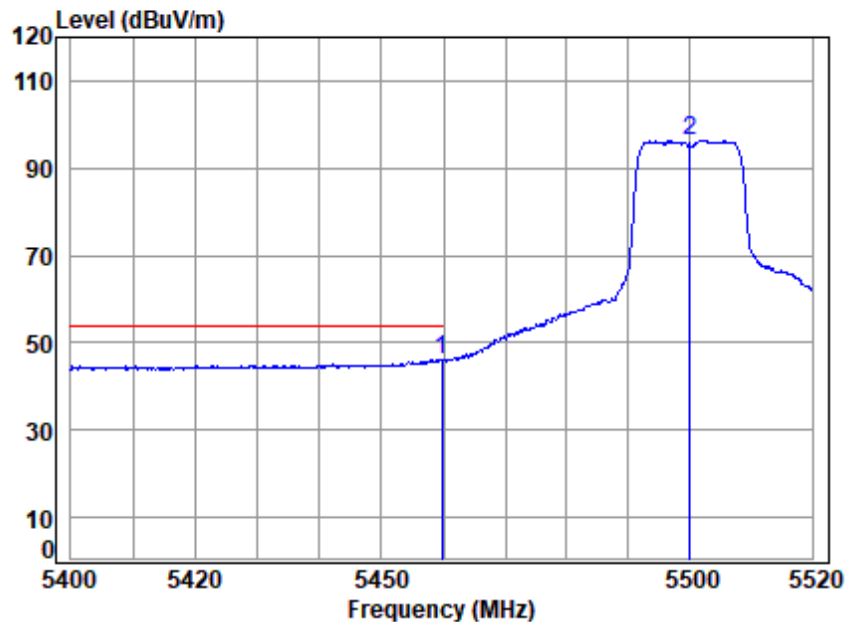


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5455.832	19.25	34.68	31.44	37.76	60.25	74.00	-13.75	peak
2	5459.980	19.26	34.66	31.44	36.11	58.59	74.00	-15.41	peak
3 p	5500.000	19.31	34.50	31.46	82.34	104.69	68.20	36.49	peak



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

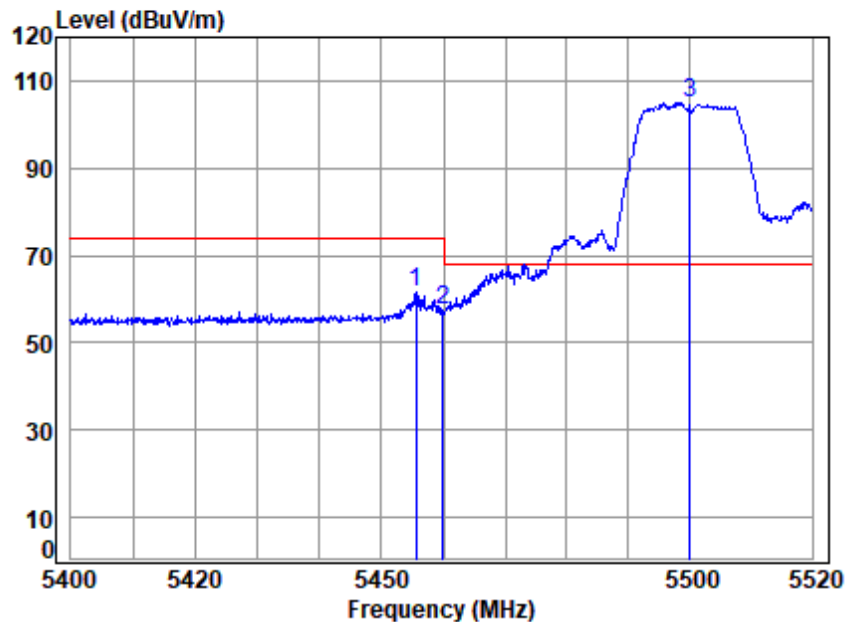


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5459.791	19.26	34.66	31.44	23.64	46.12	54.00	-7.88	Average
2 5500.000	19.31	34.50	31.46	74.03	96.38	-----	-----	Average



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

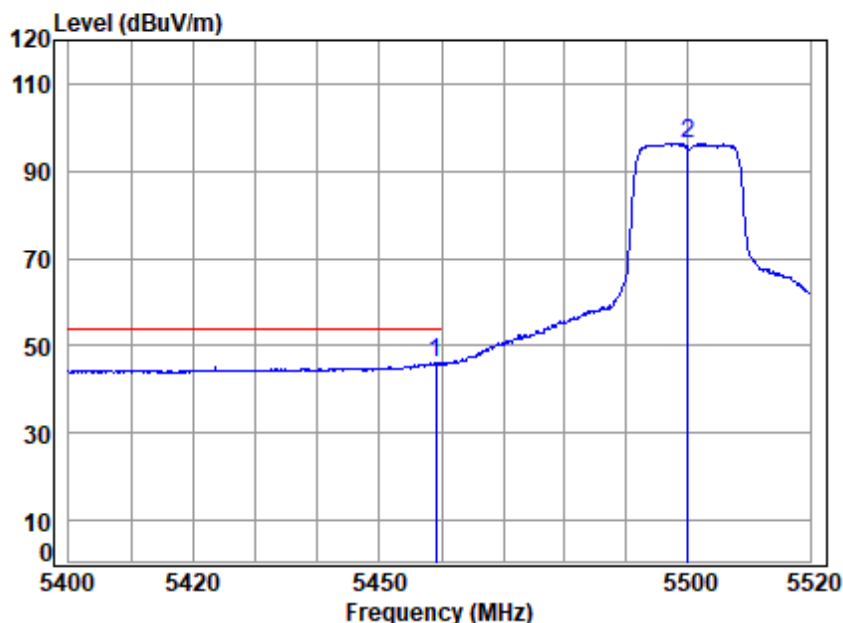


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5455.592	19.25	34.68	31.44	39.05	61.54	74.00	-12.46	Peak
2	5459.980	19.26	34.66	31.44	35.22	57.70	74.00	-16.30	peak
3 p	5500.000	19.31	34.50	31.46	82.60	104.95	68.20	36.75	Peak



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



Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11A

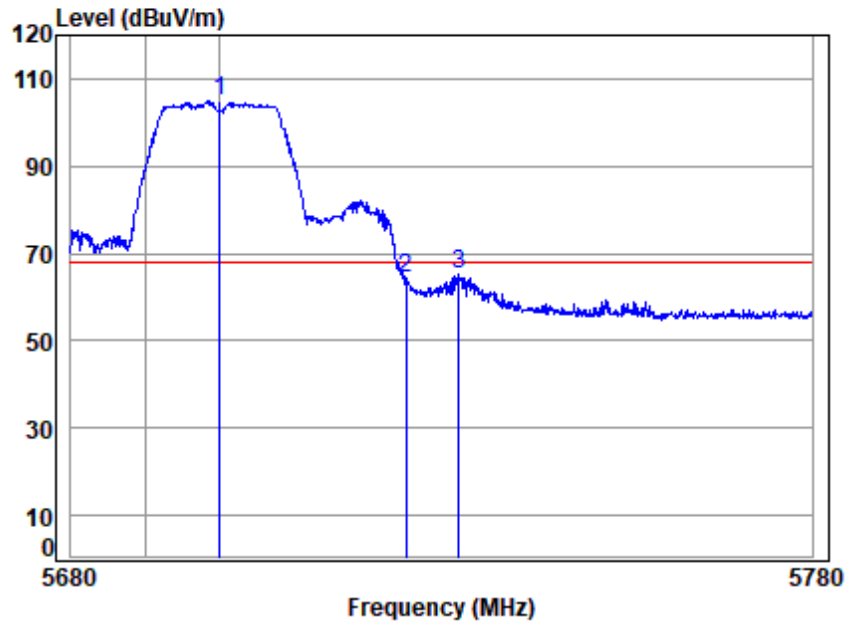
		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5459.070	19.26	34.66	31.44	23.70	46.18	54.00	-7.82	Average
2 5500.000	19.31	34.50	31.46	74.02	96.37	-----	-----	Average



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

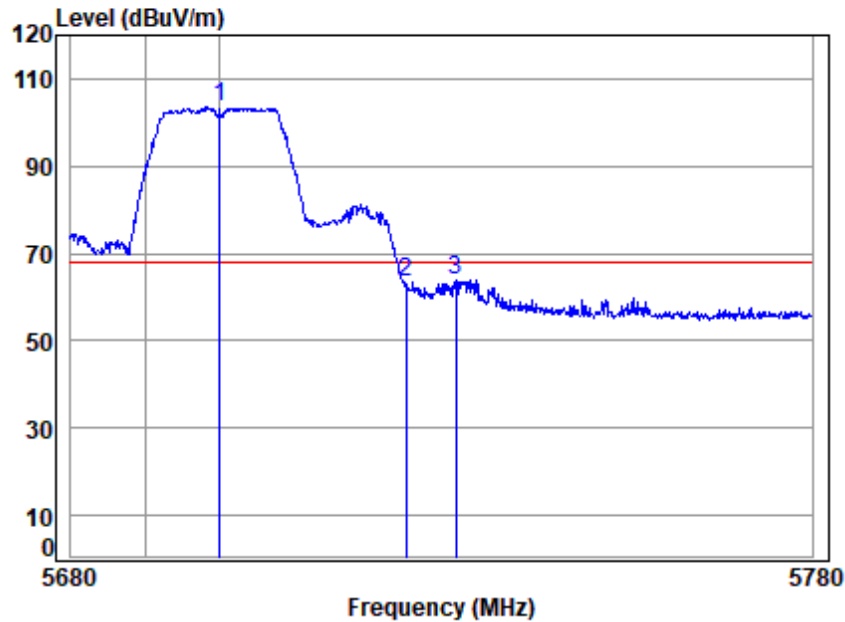


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5700 Band edge
: 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5700.000	19.44	34.30	31.56	82.84	105.02	68.20	36.82	peak
2 5725.000	19.46	34.25	31.57	42.40	64.54	68.20	-3.66	peak
3 5732.083	19.46	34.24	31.57	43.07	65.20	68.20	-3.00	peak



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

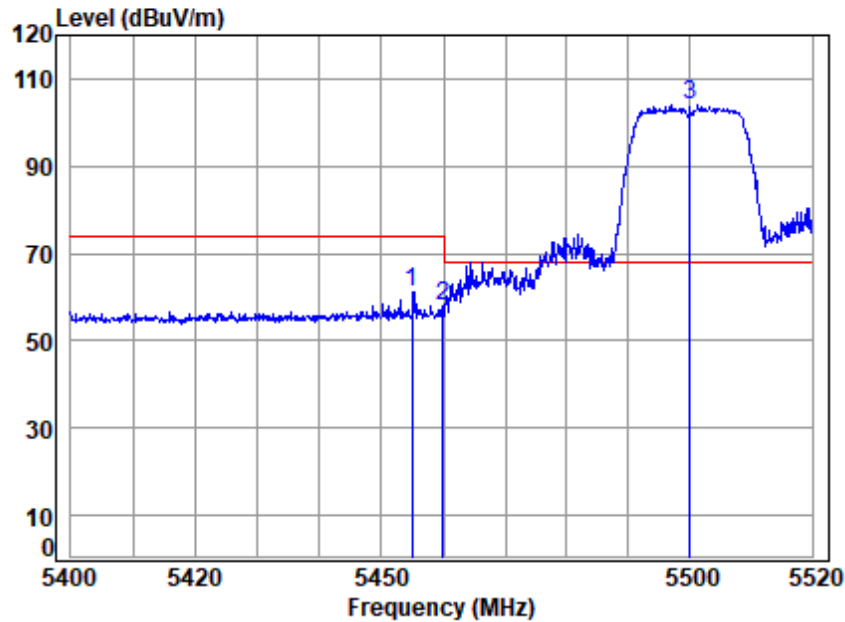


Site : chamber
 Condition: 3m VERTICAL
 Job No : 04305AT/04306AT
 Mode : 5700 Band edge
 : 5G WIFI 11A

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5700.000	19.44	34.30	31.56	81.41	103.59	68.20	35.39	Peak
2 5725.000	19.46	34.25	31.57	41.13	63.27	68.20	-4.93	Peak
3 5731.682	19.46	34.24	31.57	41.95	64.08	68.20	-4.12	Peak



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

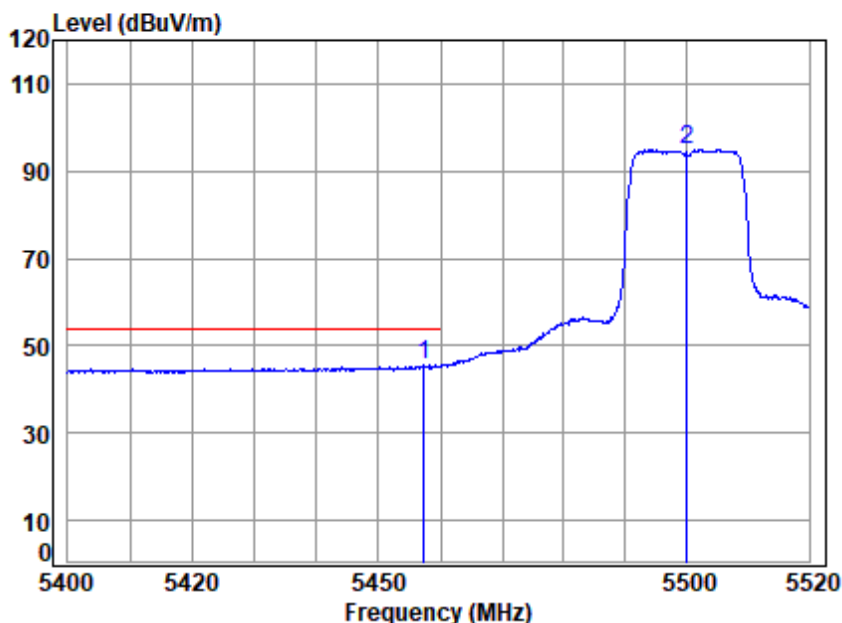


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5454.992	19.25	34.68	31.44	38.52	61.01	74.00	-12.99	peak
2	5459.980	19.26	34.66	31.44	35.57	58.05	74.00	-15.95	peak
3 p	5500.000	19.31	34.50	31.46	81.69	104.04	68.20	35.84	peak



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

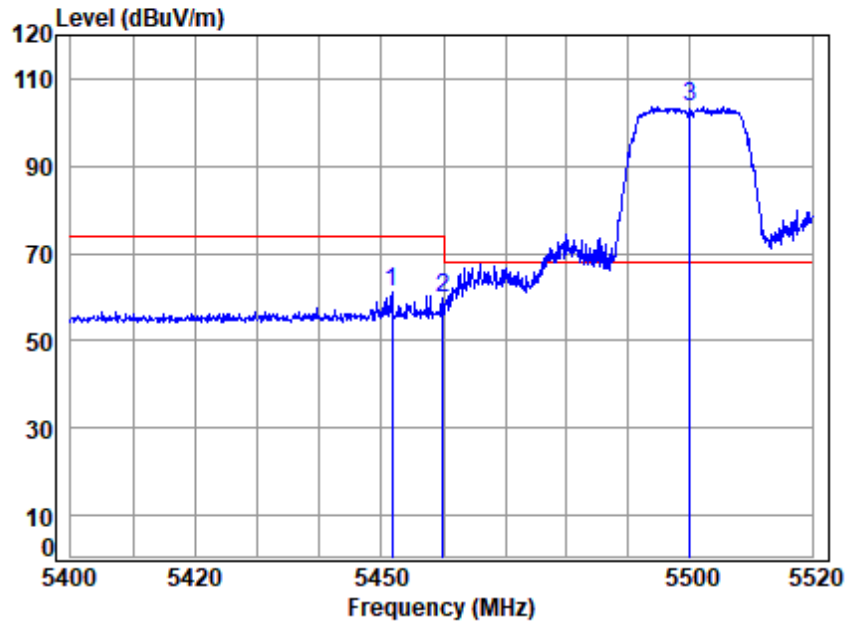


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5457.271	19.25	34.67	31.44	23.14	45.62	54.00	-8.38	Average
2 5500.000	19.31	34.50	31.46	72.49	94.84	-----	-----	Average



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

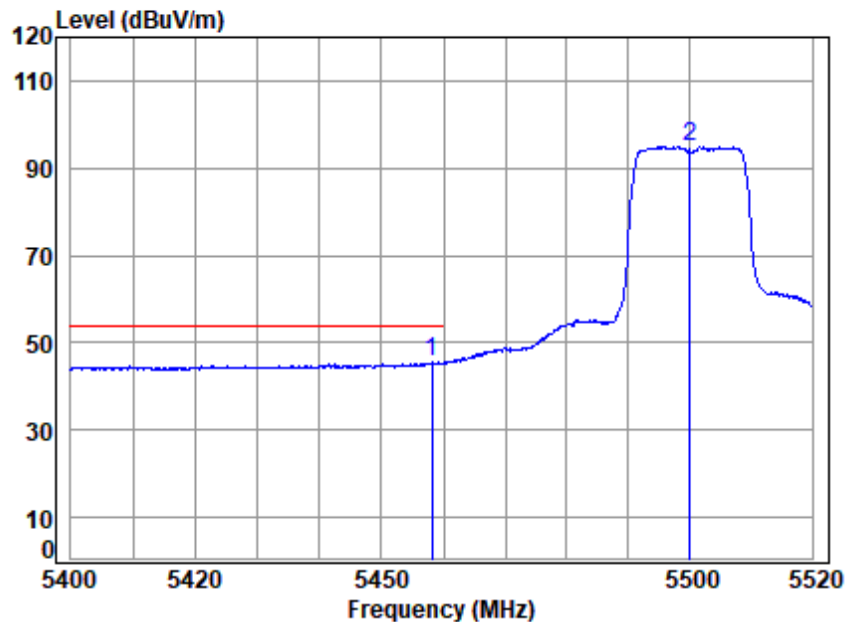


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5451.636	19.25	34.69	31.44	38.77	61.27	74.00	-12.73	Peak
2	5459.980	19.26	34.66	31.44	37.42	59.90	74.00	-14.10	peak
3 p	5500.000	19.31	34.50	31.46	81.23	103.58	68.20	35.38	Peak



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

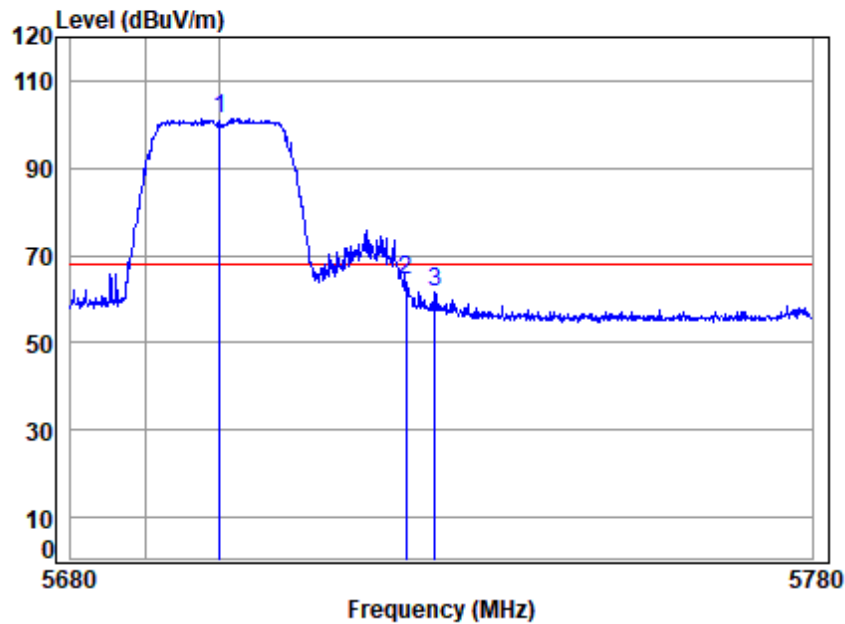


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 q 5458.110		19.25	34.67	31.44	23.04	45.52	54.00	-8.48 Average
2 5500.000		19.31	34.50	31.46	72.63	94.98	-----	----- Average



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

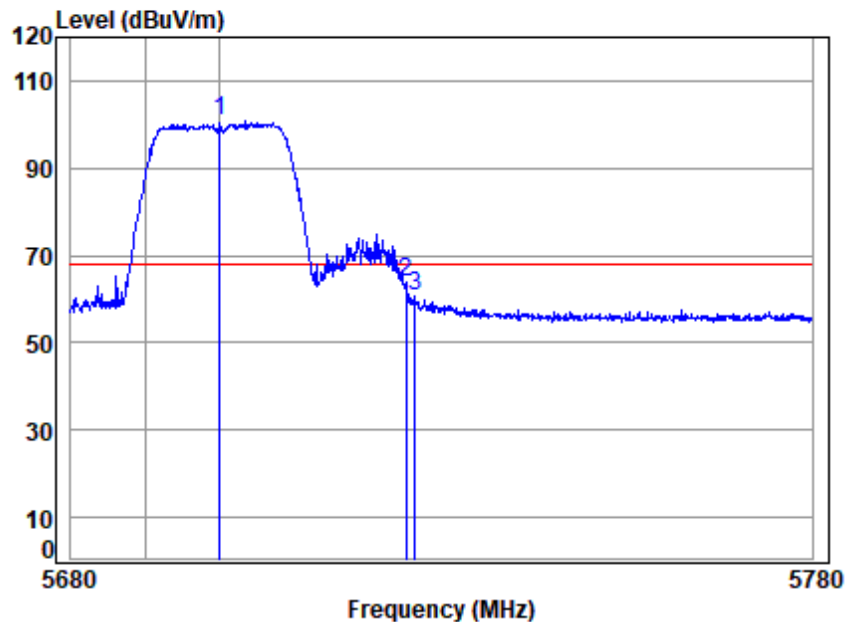


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5700 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5700.000	19.44	34.30	31.56	79.30	101.48	68.20	33.28	peak
2 5725.000	19.46	34.25	31.57	42.41	64.55	68.20	-3.65	peak
3 5728.882	19.46	34.24	31.57	39.69	61.82	68.20	-6.38	peak



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

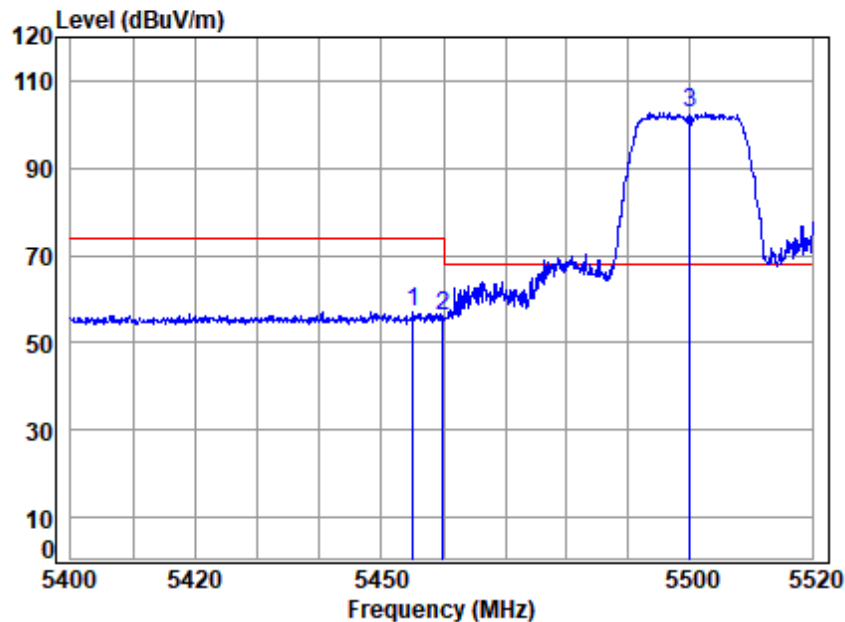


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5700 Band edge
: 5G WIFI 11N20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 p 5700.000		19.44	34.30	31.56	78.73	100.91	68.20	32.71 Peak
2 5725.000		19.46	34.25	31.57	41.96	64.10	68.20	-4.10 Peak
3 5726.283		19.46	34.25	31.57	38.33	60.47	68.20	-7.73 Peak



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

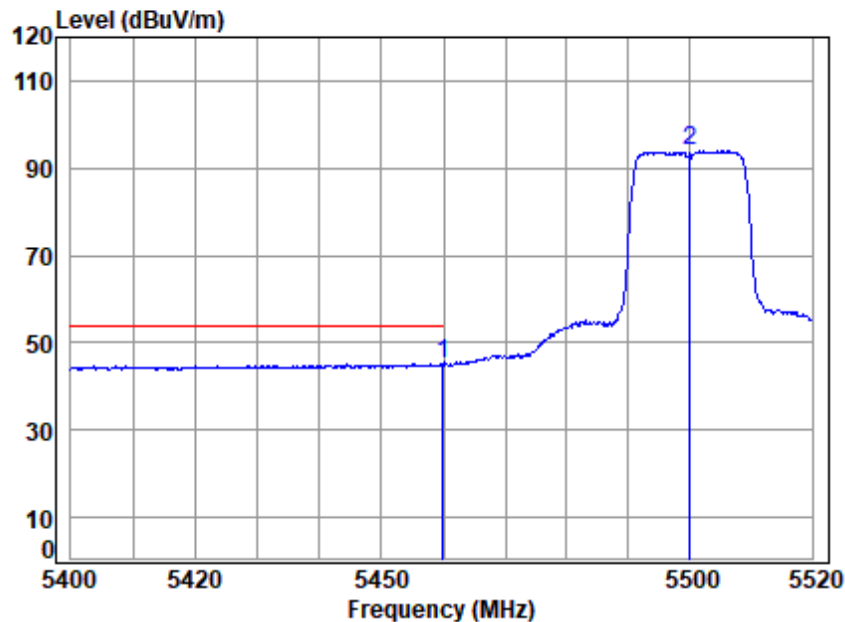


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5455.112	19.25	34.68	31.44	34.41	56.90	74.00	-17.10	peak
2	5459.980	19.26	34.66	31.44	33.50	55.98	74.00	-18.02	peak
3 p	5500.000	19.31	34.50	31.46	80.43	102.78	68.20	34.58	peak



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

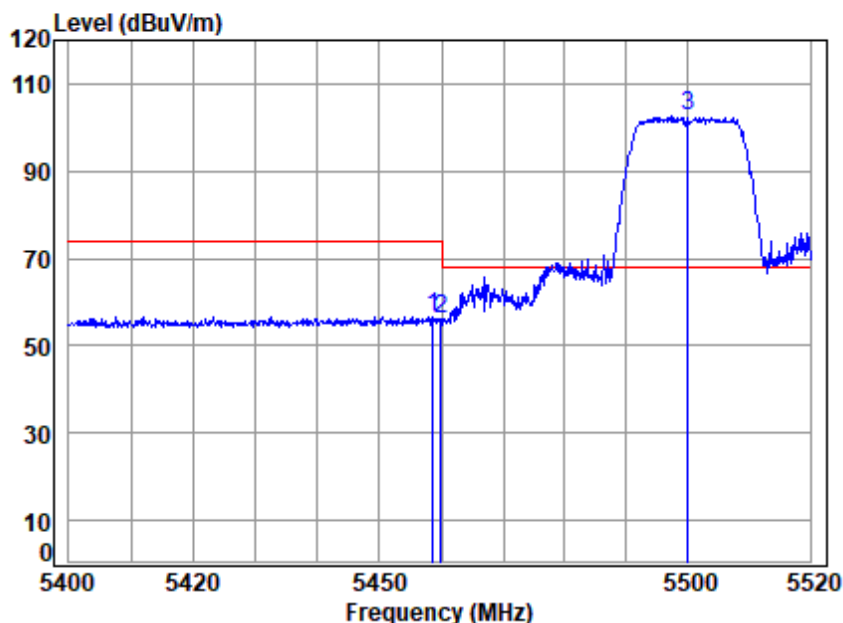


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5459.910	19.26	34.66	31.44	22.59	45.07	54.00	-8.93	Average
2 5500.000	19.31	34.50	31.46	71.70	94.05	-----	-----	Average



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

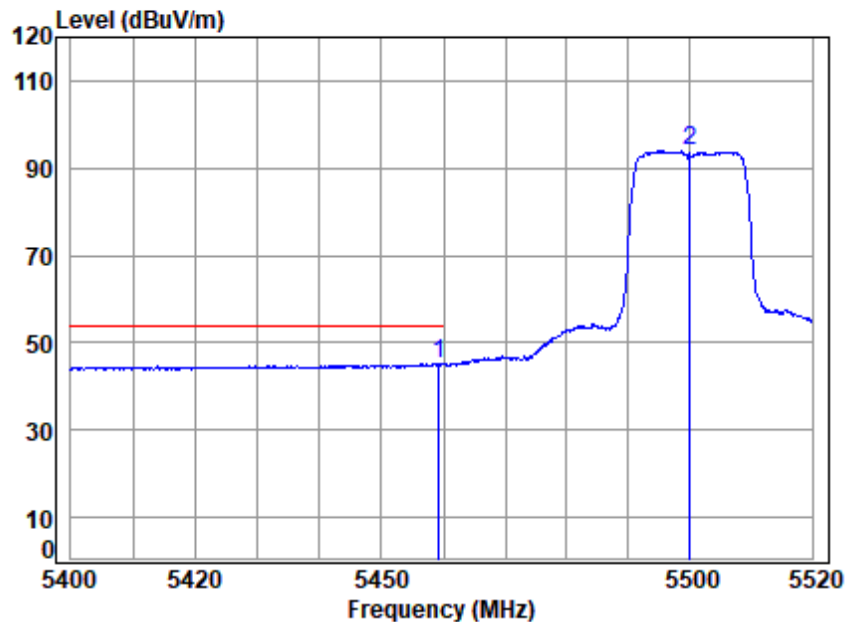


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5458.590	19.26	34.67	31.44	34.29	56.78	74.00	-17.22	Peak
2	5459.980	19.26	34.66	31.44	33.75	56.23	74.00	-17.77	peak
3 p	5500.000	19.31	34.50	31.46	80.18	102.53	68.20	34.33	Peak



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

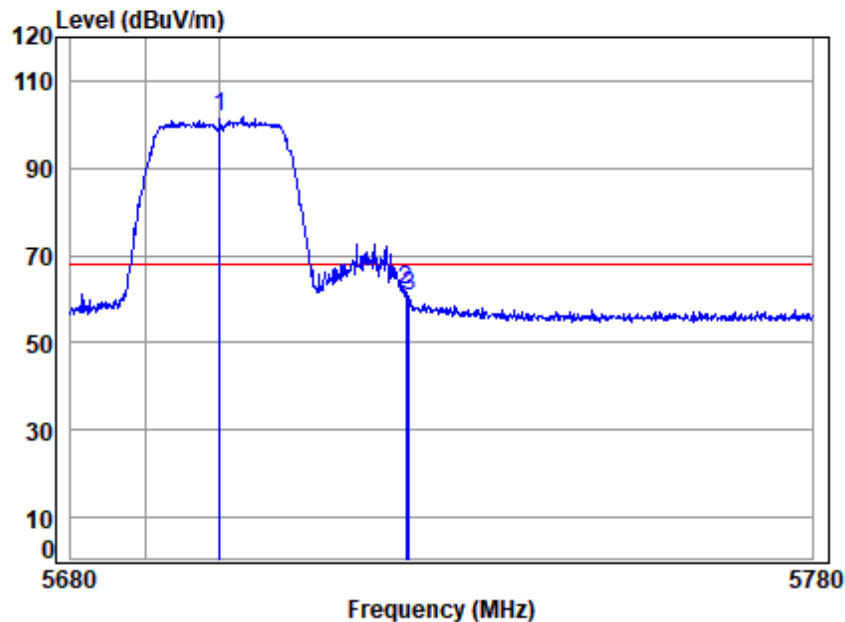


Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5500 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 q 5459.190	19.26	34.66	31.44	22.79	45.27	54.00	-8.73	Average
2 5500.000	19.31	34.50	31.46	71.56	93.91	-----	-----	Average



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

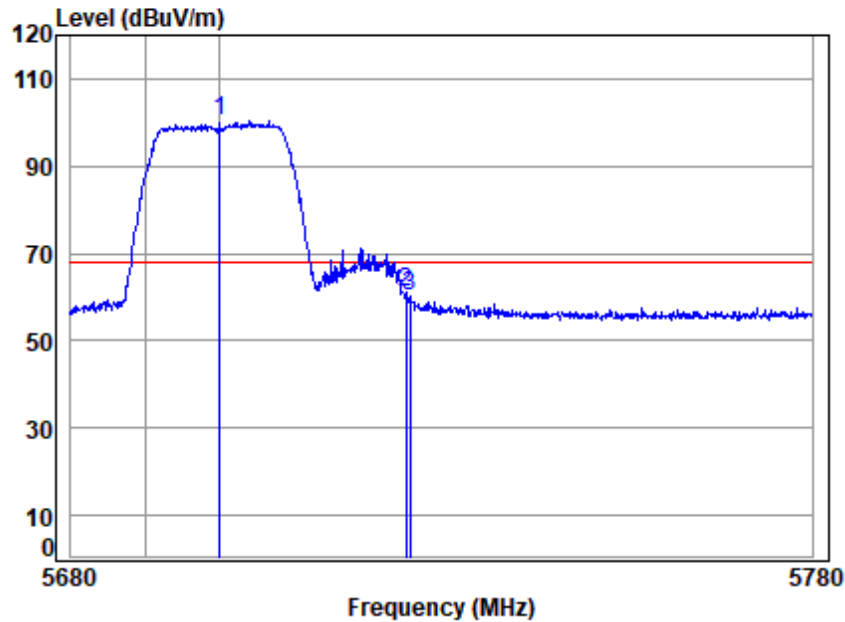


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04305AT/04306AT
Mode : 5700 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5700.000	19.44	34.30	31.56	79.49	101.67	68.20	33.47	peak
2 5725.000	19.46	34.25	31.57	40.04	62.18	68.20	-6.02	peak
3 5725.483	19.46	34.25	31.57	38.49	60.63	68.20	-7.57	peak



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



Site : chamber
Condition: 3m VERTICAL
Job No : 04305AT/04306AT
Mode : 5700 Band edge
: 5G WIFI 11AC20

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p 5700.000	19.44	34.30	31.56	78.31	100.49	68.20	32.29	Peak
2 5725.000	19.46	34.25	31.57	38.85	60.99	68.20	-7.21	Peak
3 5725.583	19.46	34.25	31.57	38.29	60.43	68.20	-7.77	Peak



6.5 Duty Cycle

Test Requirement KDB 789033 D02 II B 1

Test Method: KDB 789033 D02 II B 1

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C

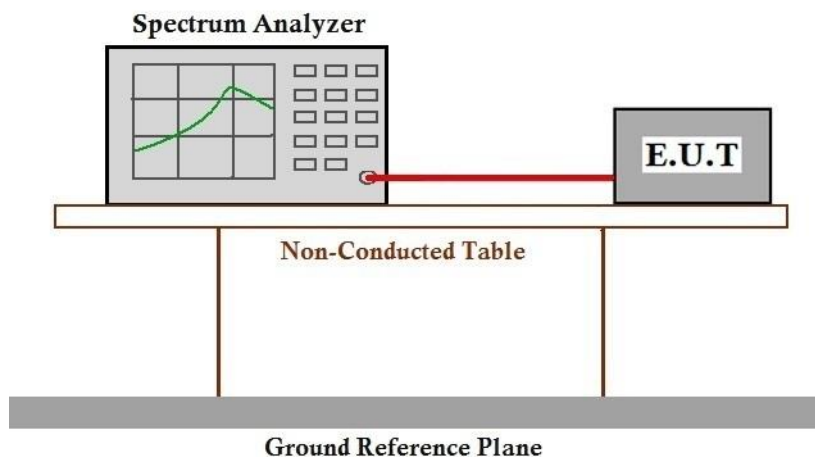
Humidity: 47.3 % RH

Atmospheric Pressure: 1020 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.

6.5.3 Test Setup Diagram



6.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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6.6 99% Bandwidth

Test Requirement N/A
Test Method: KDB 789033 D02 II D

6.6.1 E.U.T. Operation

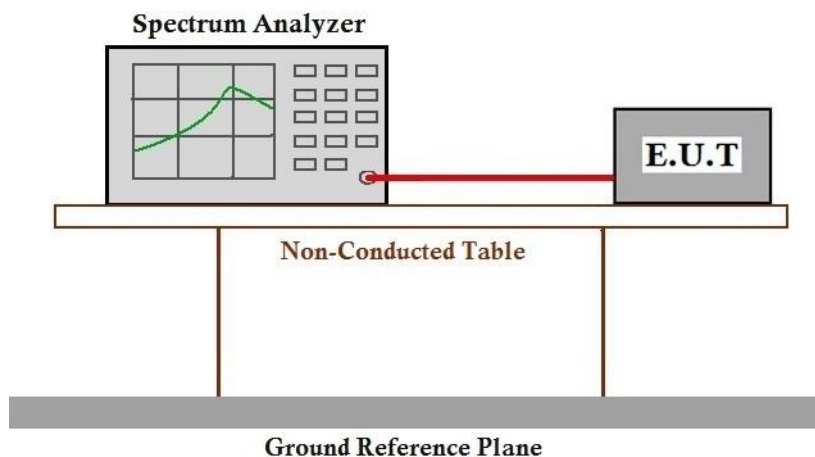
Operating Environment:

Temperature: 24.6 °C Humidity: 47.3 % RH Atmospheric Pressure: 1020 mbar

6.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.

6.6.3 Test Setup Diagram



6.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.7 26dB Emission bandwidth

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

Test Method: KDB 789033 D02 II C 1

6.7.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C

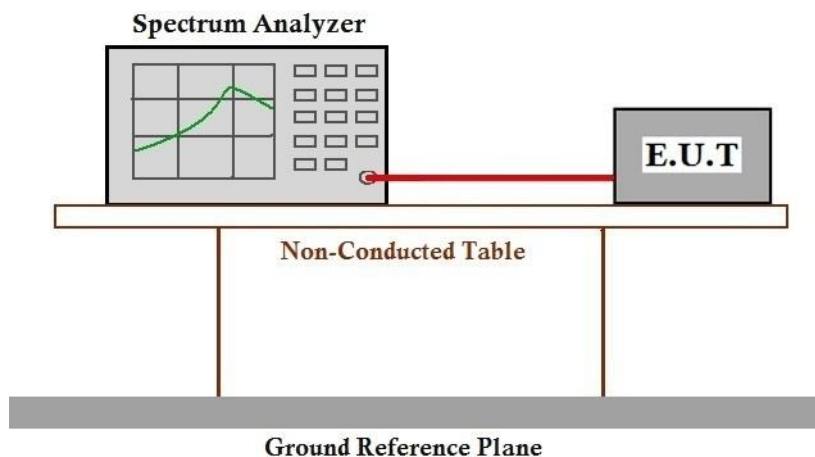
Humidity: 47.3 % RH

Atmospheric Pressure: 1020 mbar

6.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.

6.7.3 Test Setup Diagram



6.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details



6.8 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.

6.8.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C

Humidity: 47.3 % RH

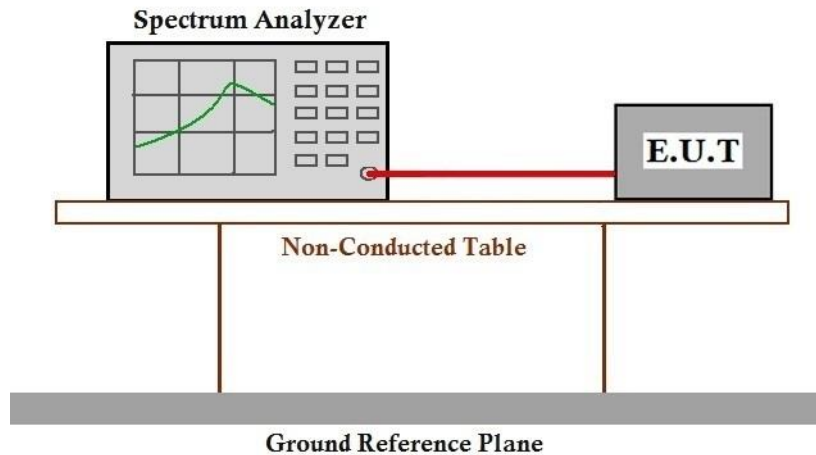
Atmospheric Pressure: 1020 mbar

6.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.



6.8.3 Test Setup Diagram



6.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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6.9 Frequency Stability

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

Test Method: ANSI C63.10 (2013) Section 6.8

6.9.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C

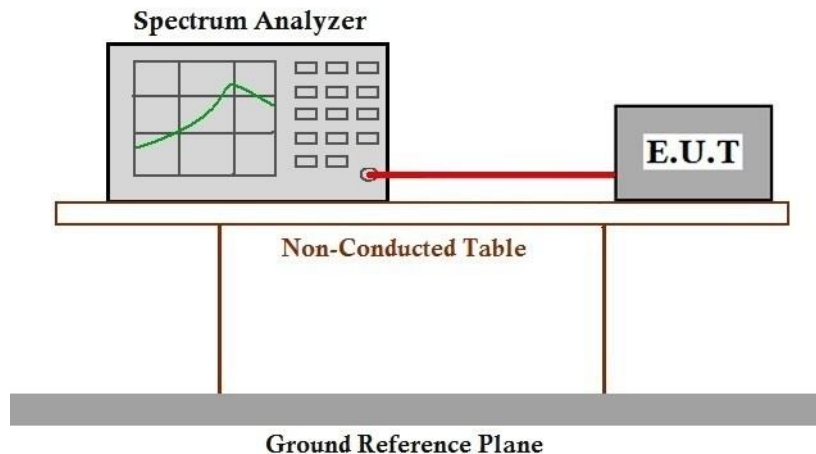
Humidity: 47.3 % RH

Atmospheric Pressure: 1020 mbar

6.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.
Final test	01	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n/ac 20, Only the data of worst case is recorded in the report.

6.9.3 Test Setup Diagram



6.9.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.10 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.

6.10.1 E.U.T. Operation

Operating Environment:

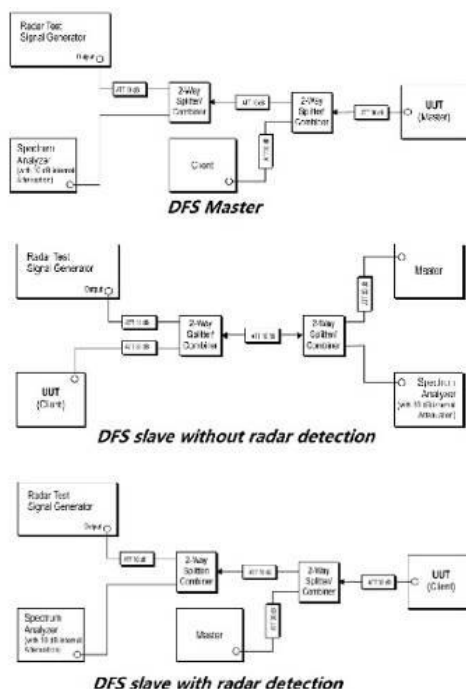
Temperature: 24.0 °C Humidity: 59.5 % RH Atmospheric Pressure: 1020 mbar



6.10.2 Test Mode Description

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

6.10.3 Test Setup Diagram



6.10.4 Measurement Procedure and Data

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

Please Refer to Appendix for Details



6.11 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.

6.11.1 E.U.T. Operation

Operating Environment:

Temperature: 24.0 °C Humidity: 59.5 % RH Atmospheric Pressure: 1020 mbar



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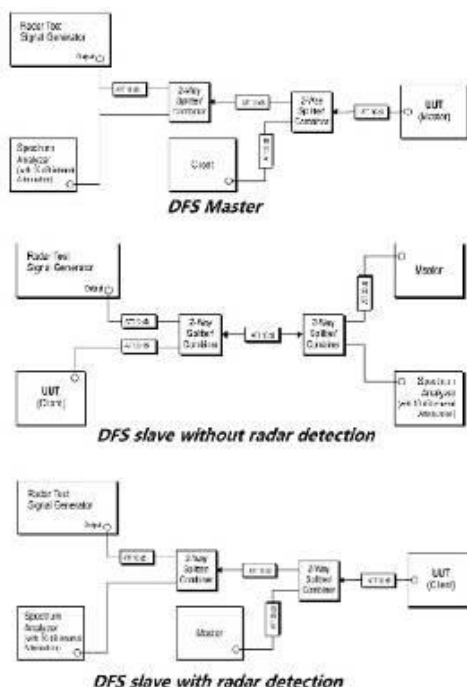
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6.11.2 Test Mode Description

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

6.11.3 Test Setup Diagram



6.11.4 Measurement Procedure and Data

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

Please Refer to Appendix for Details



7 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2411004305AT

8 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for SZCR2411004305AT



9 Appendix

1. Duty Cycle

1.1 Test Result

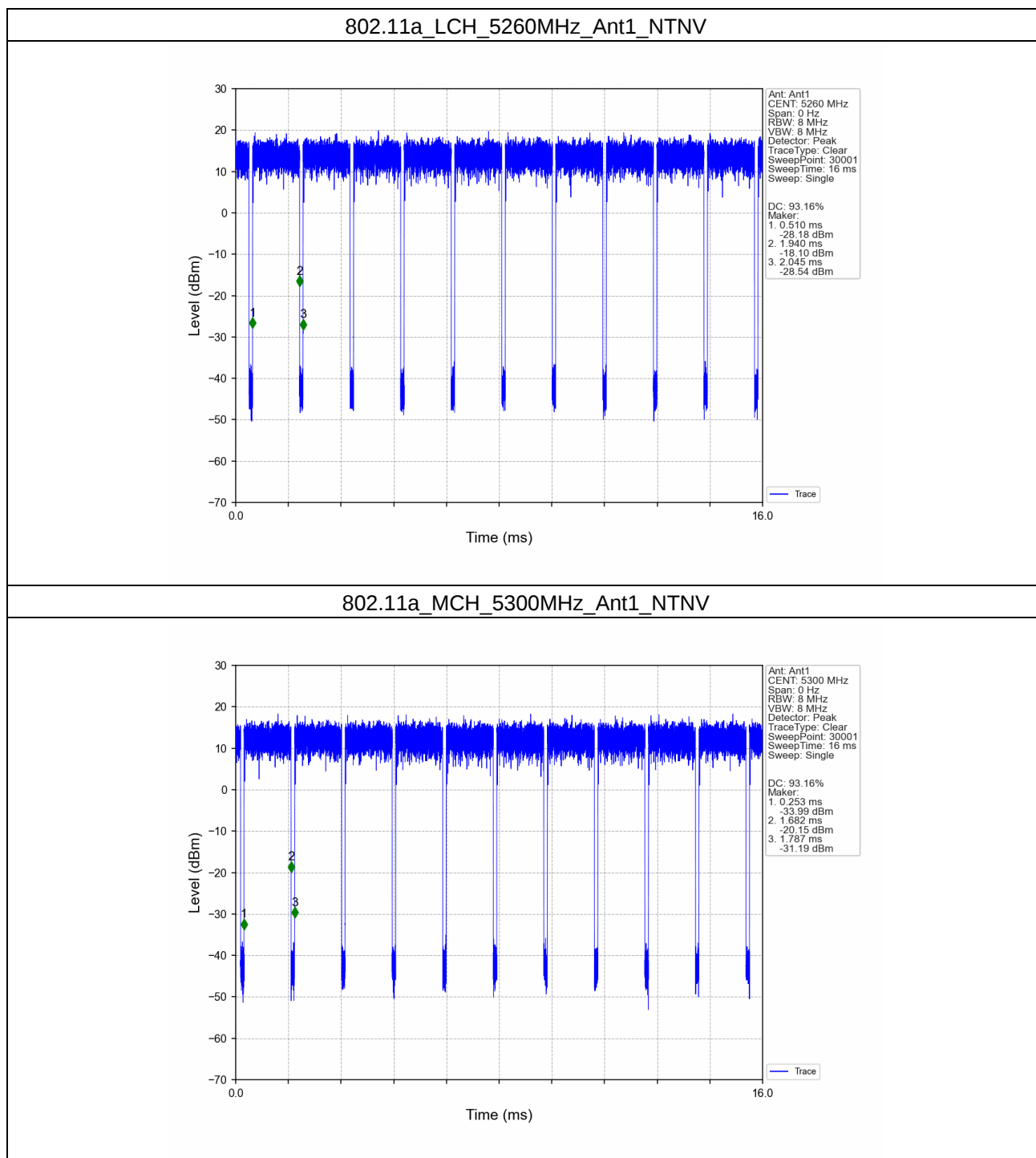
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5260	1.430	1.535	93.16	0.31	0.03
		5300	1.429	1.534	93.16	0.31	0.00
		5320	1.430	1.535	93.16	0.31	0.07
		5500	1.430	1.535	93.16	0.31	0.03
		5580	1.430	1.535	93.16	0.31	0.03
		5700	1.429	1.535	93.09	0.31	0.03
		5720	1.430	1.535	93.16	0.31	0.03
802.11n (HT20)	SISO	5260	1.341	1.448	92.61	0.33	0.03
		5300	1.341	1.447	92.67	0.33	0.03
		5320	1.341	1.447	92.67	0.33	0.03
		5500	1.341	1.448	92.61	0.33	0.04
		5580	1.342	1.448	92.68	0.33	0.03
		5700	1.341	1.448	92.61	0.33	0.03
		5720	1.342	1.447	92.74	0.33	0.03
802.11ac (VHT20)	SISO	5260	1.346	1.452	92.70	0.33	0.03
		5300	1.346	1.452	92.70	0.33	0.03
		5320	1.346	1.453	92.64	0.33	0.03
		5500	1.346	1.452	92.70	0.33	0.03
		5580	1.346	1.451	92.76	0.33	0.03
		5700	1.346	1.452	92.70	0.33	0.03
		5720	1.346	1.452	92.70	0.33	0.03

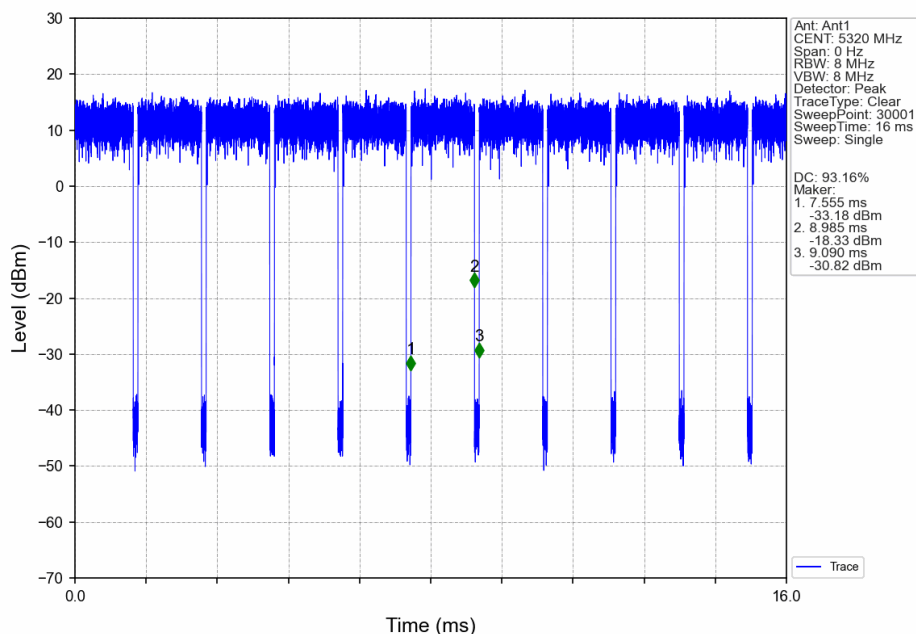


1.2 Test Graph

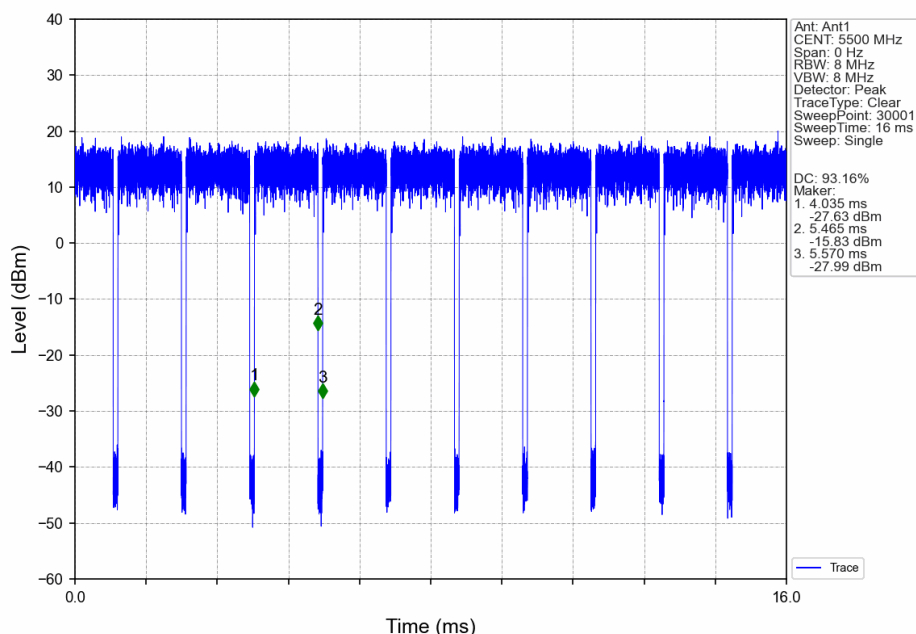
1.2.1 Ant1



802.11a_HCH_5320MHz_Ant1_NTNV



802.11a_LCH_5500MHz_Ant1_NTNV



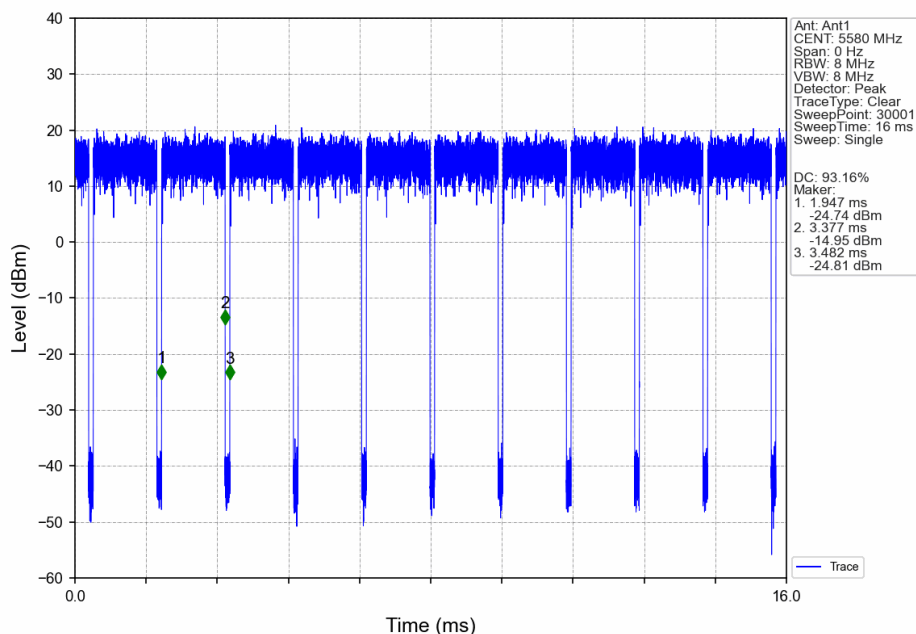
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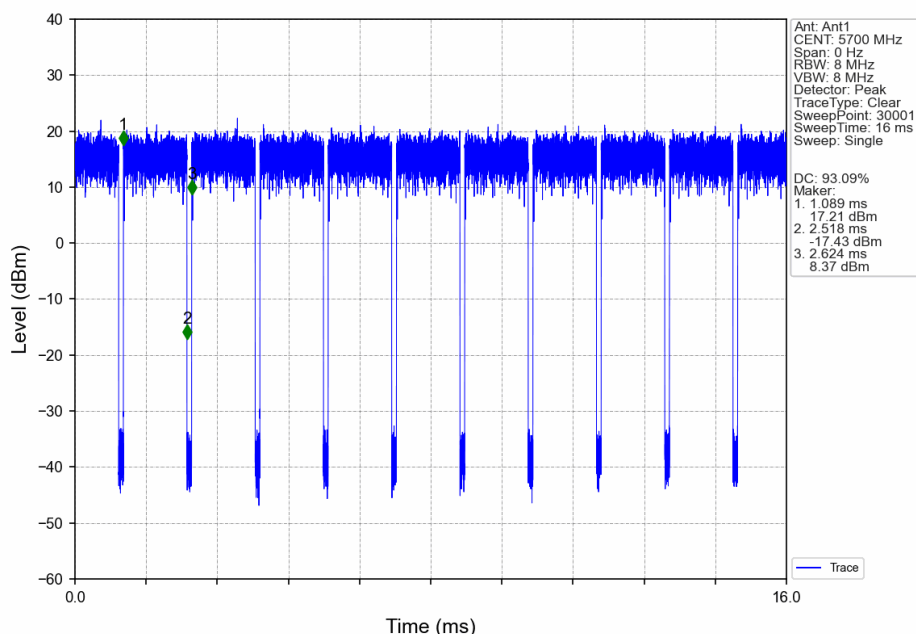
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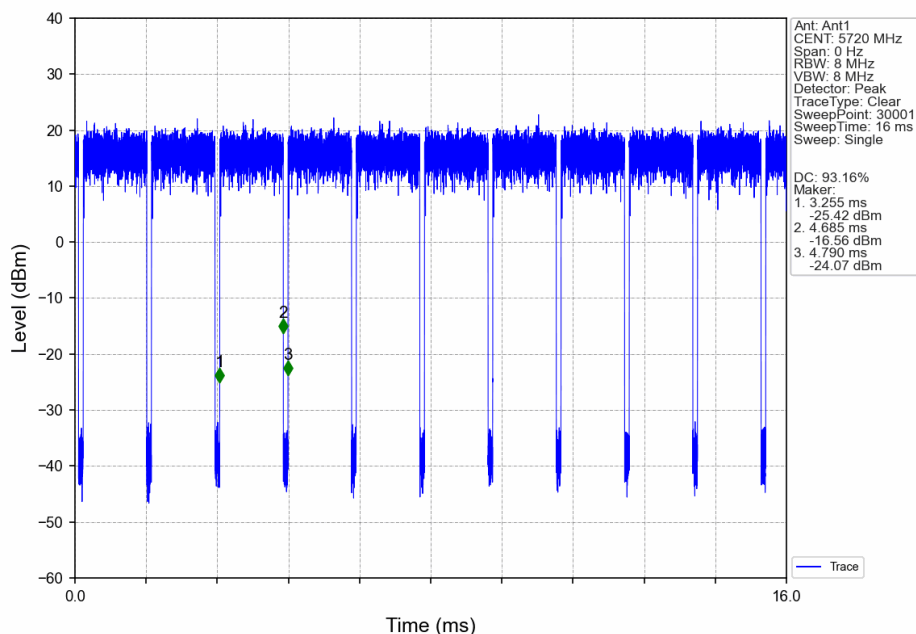
802.11a_MCH_5580MHz_Ant1_NTNV



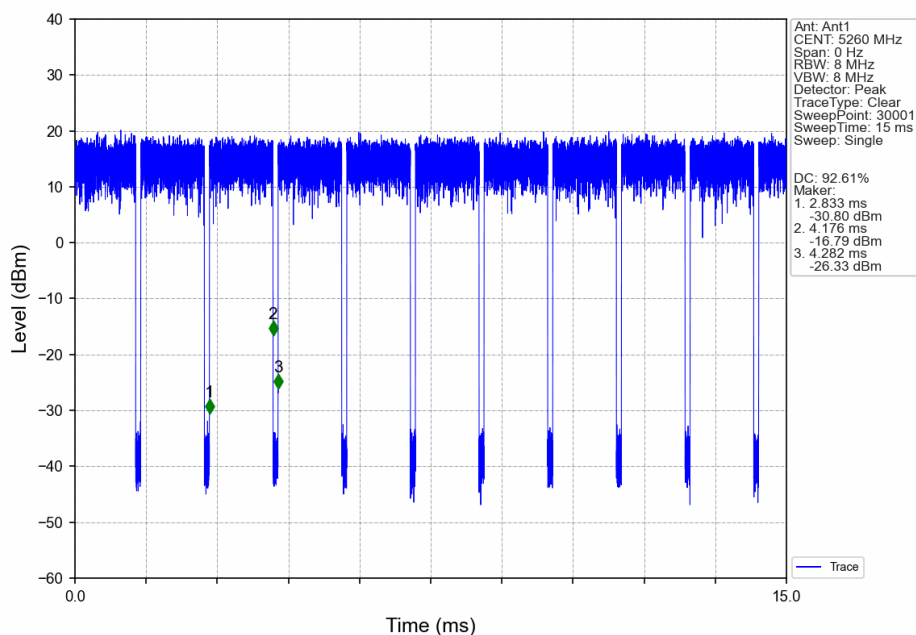
802.11a_HCH_5700MHz_Ant1_NTNV



802.11a_HCH_5720MHz_Ant1_NTNV



802.11n(HT20)_LCH_5260MHz_Ant1_NTNV



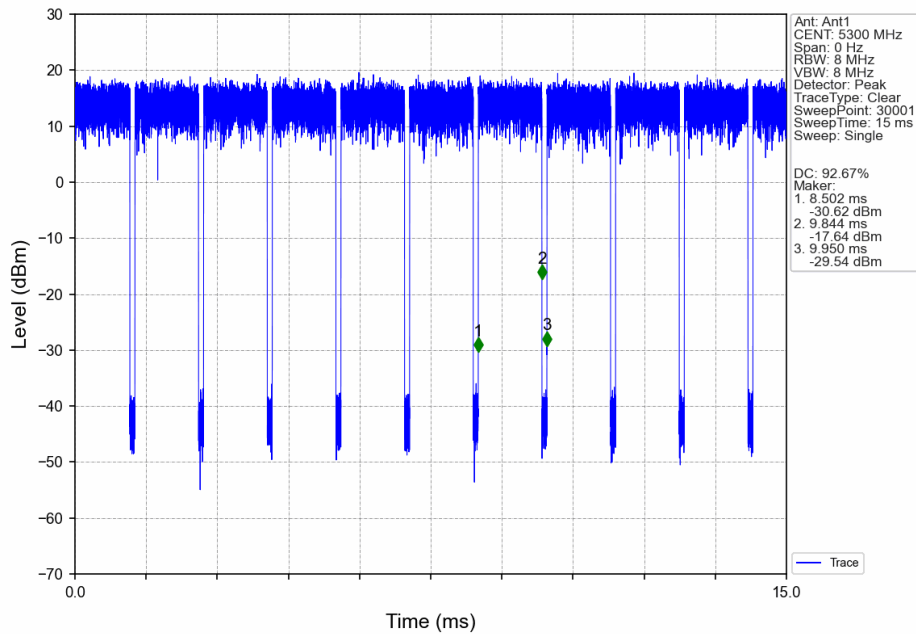
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802.11n(HT20)_MCH_5300MHz_Ant1_NTNV

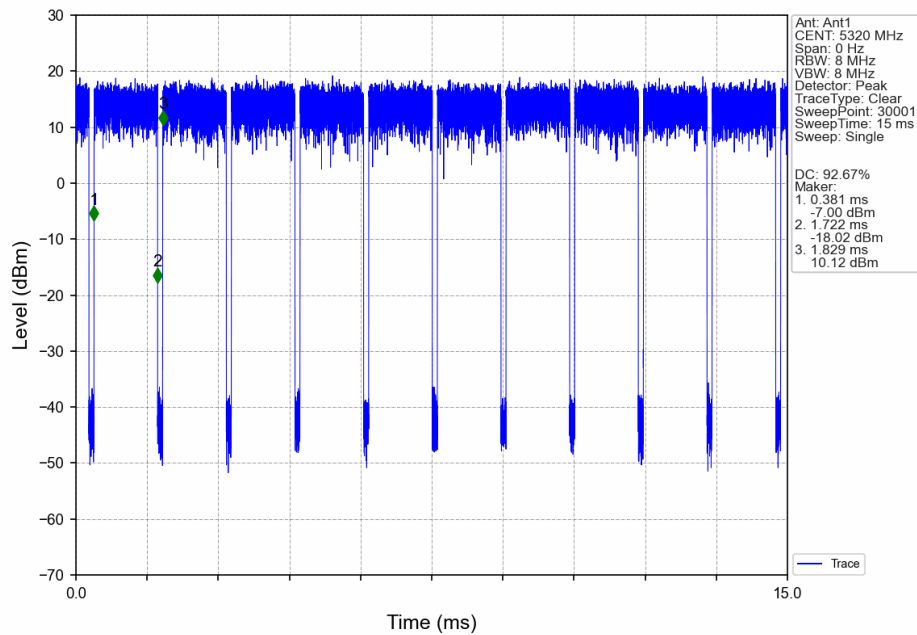


802.11n(HT20)_HCH_5320MHz_Ant1_NTNV

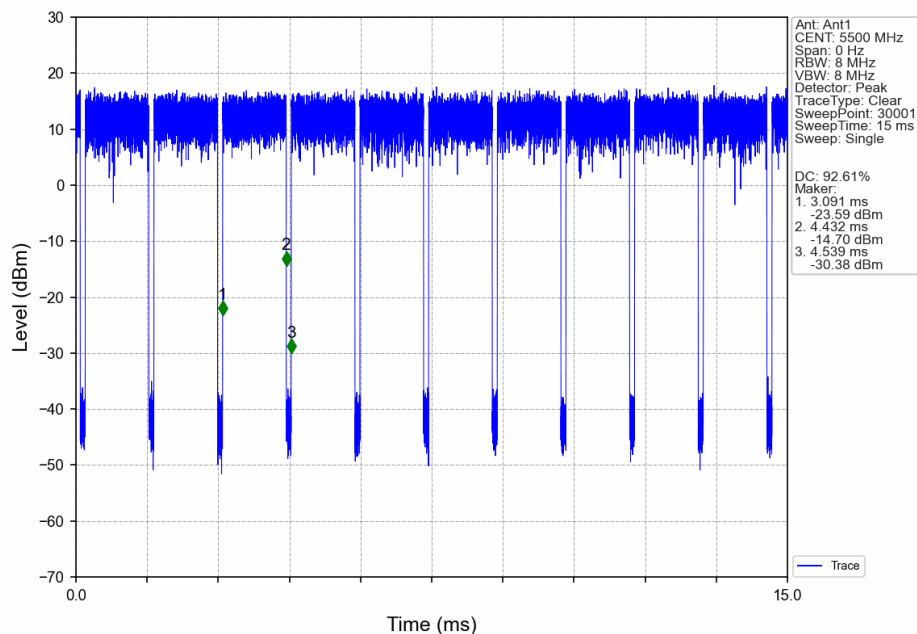


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802.11n(HT20)_LCH_5500MHz_Ant1_NTNV



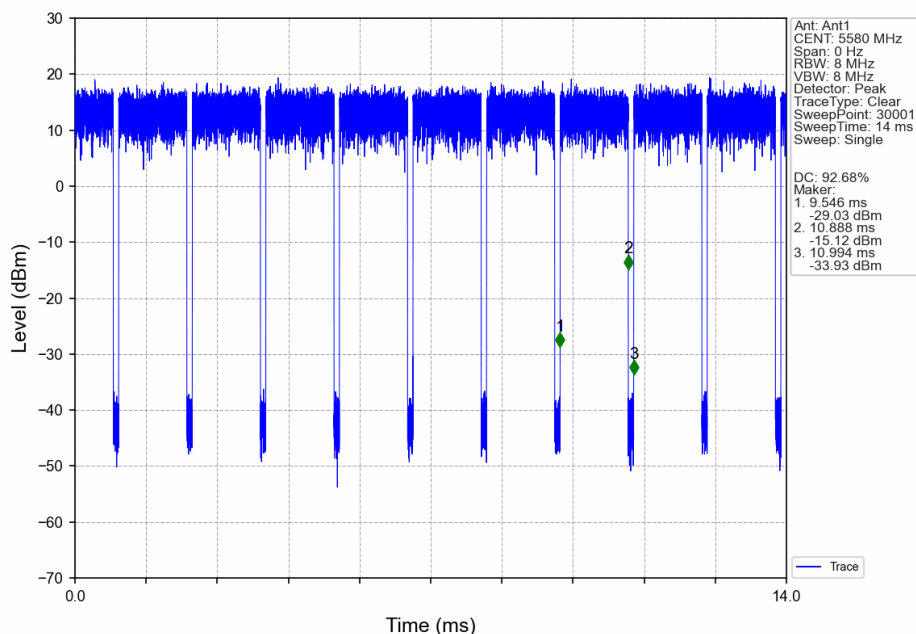
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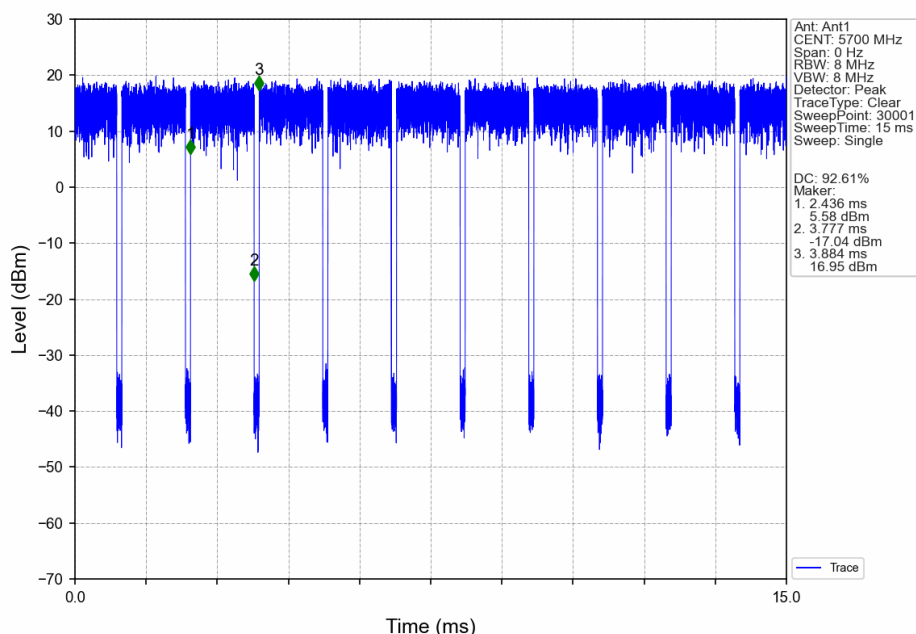
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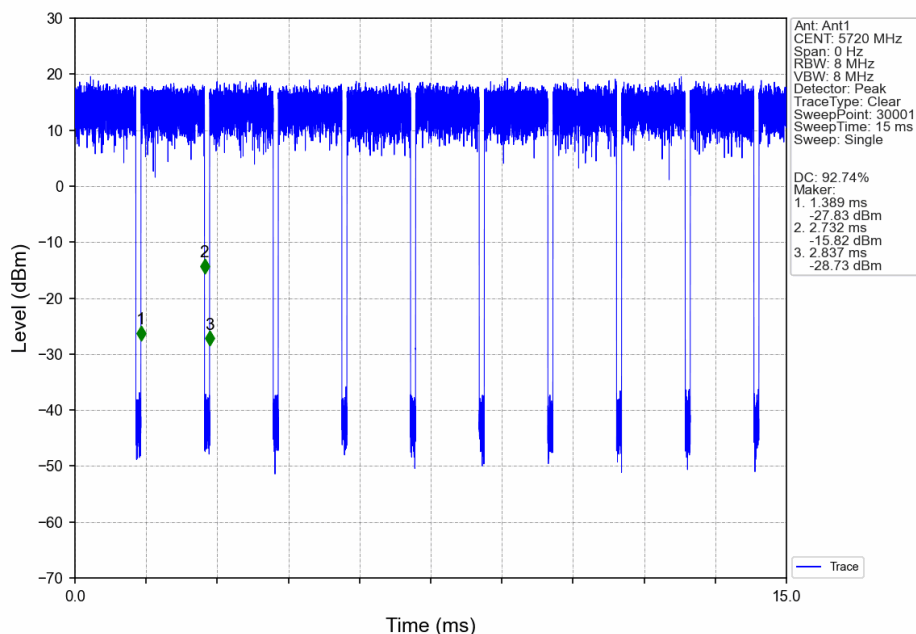
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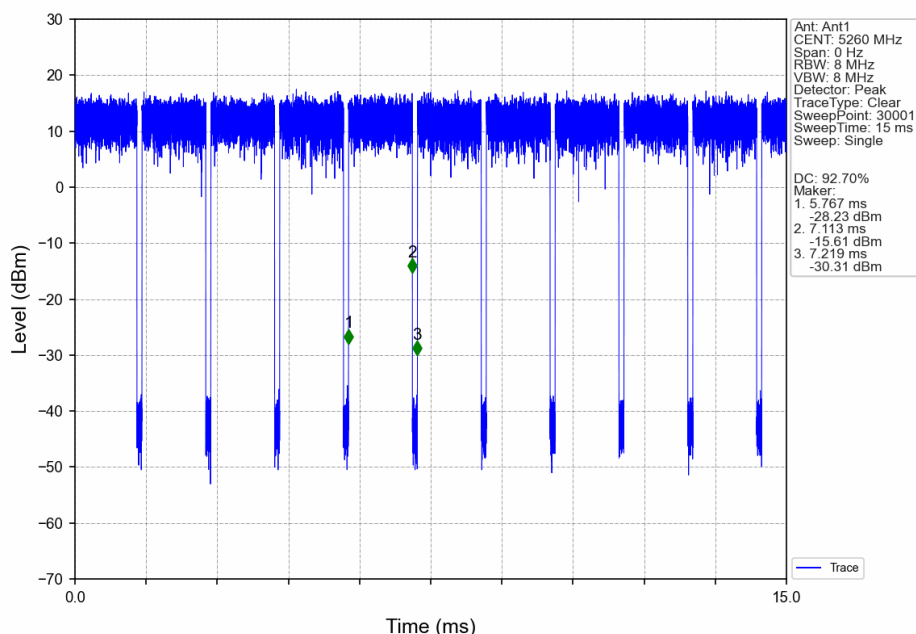
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802.11n(HT20)_HCH_5720MHz_Ant1_NTNV



802.11ac(VHT20)_LCH_5260MHz_Ant1_NTNV



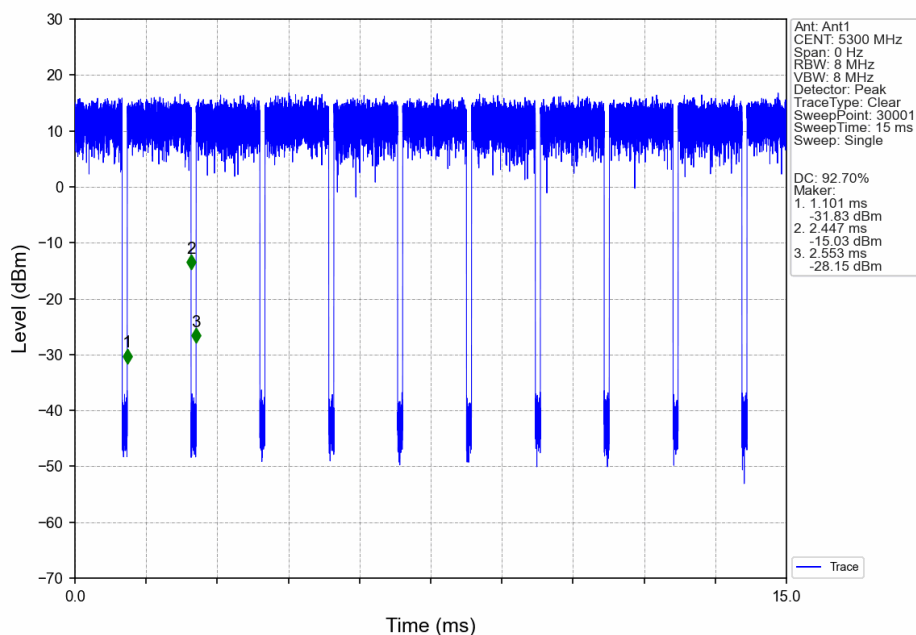
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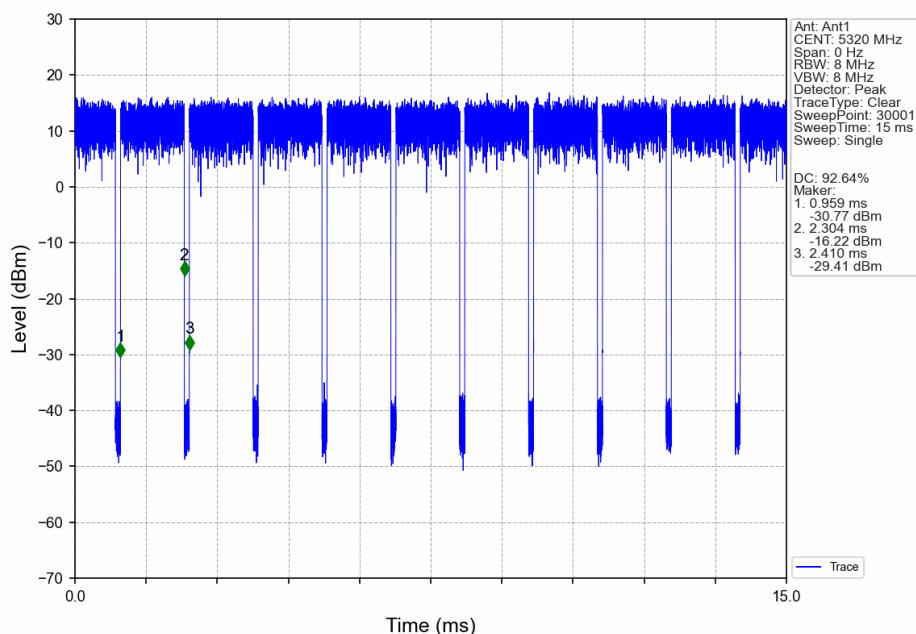
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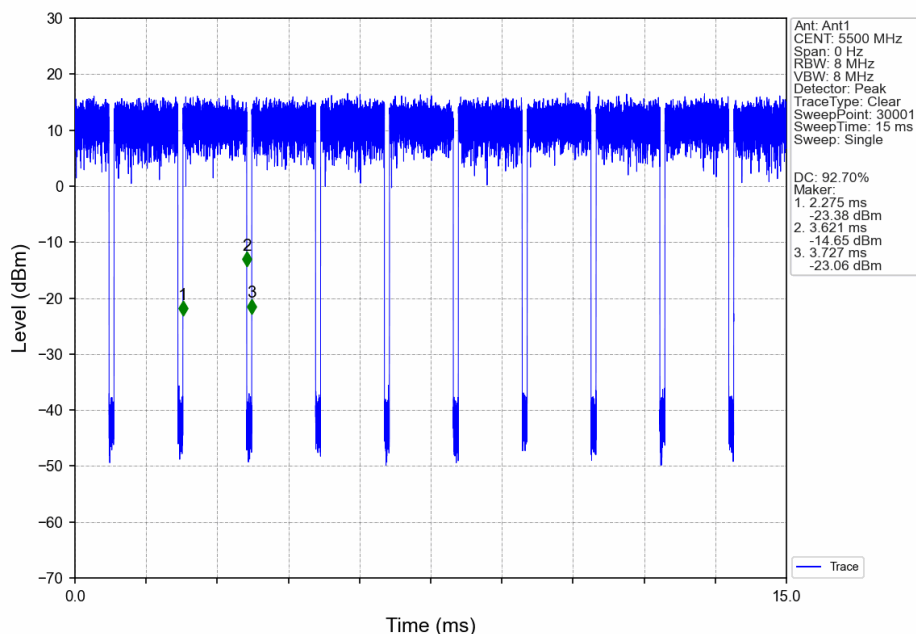
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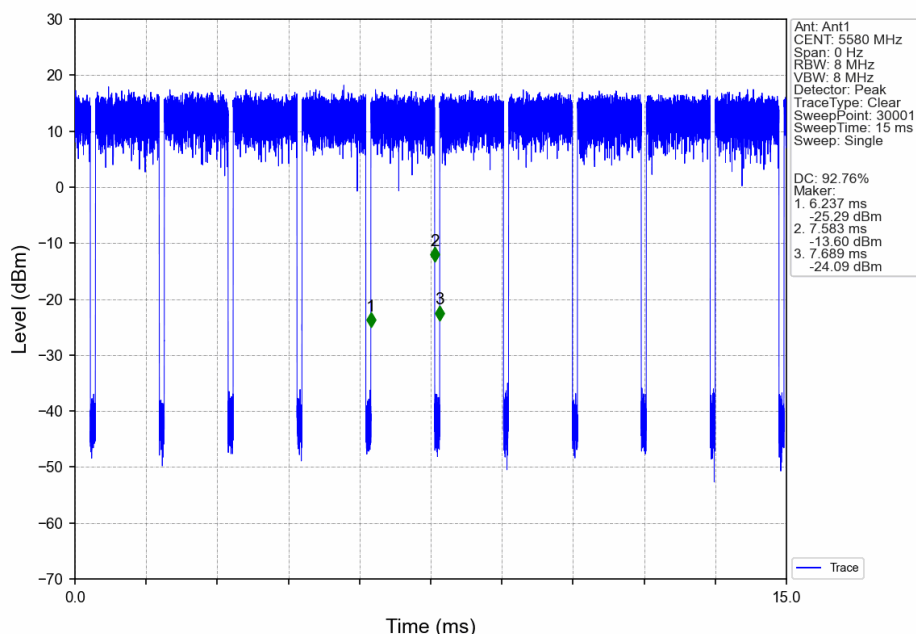
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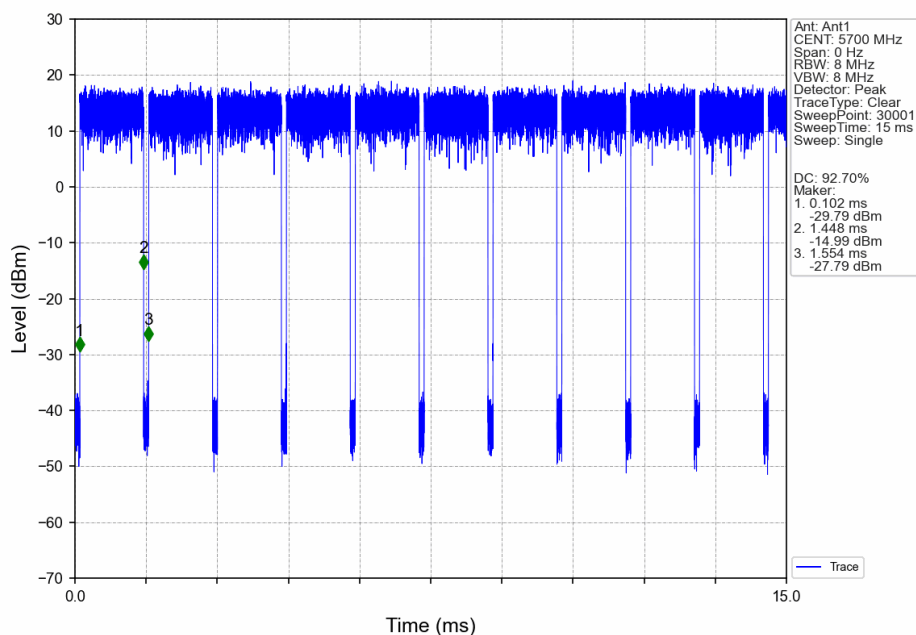
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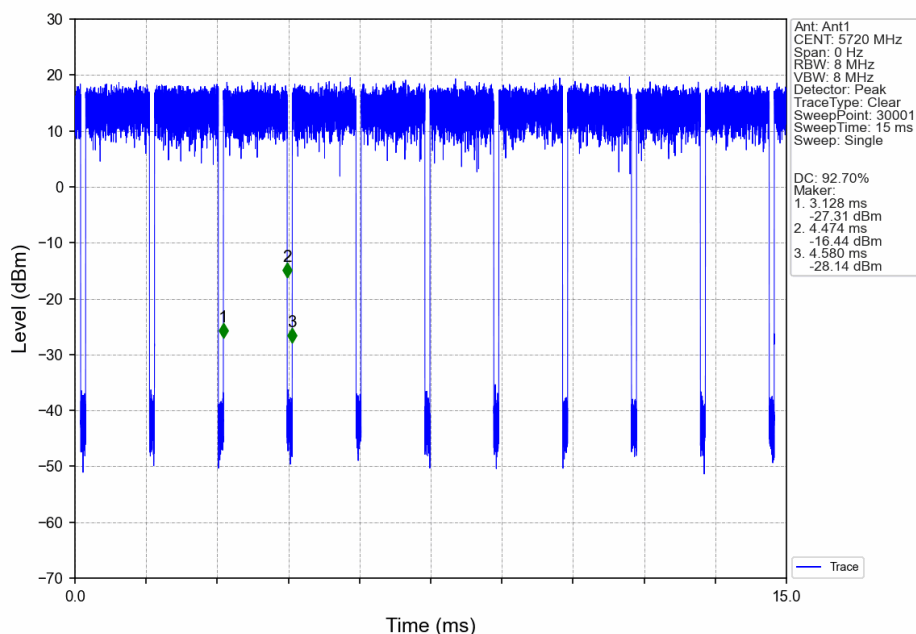
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802.11ac(VHT20)_HCH_5720MHz_Ant1_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5260	1	18.006	/	Pass
		5300	1	19.666	/	Pass
		5320	1	19.091	/	Pass
		5500	1	19.176	/	Pass
		5580	1	22.726	/	Pass
		5700	1	19.648	/	Pass
		5720	1	18.276	/	Pass
802.11n (HT20)	SISO	5260	1	18.971	/	Pass
		5300	1	18.948	/	Pass
		5320	1	18.897	/	Pass
		5500	1	18.899	/	Pass
		5580	1	19.017	/	Pass
		5700	1	19.019	/	Pass
		5720	1	18.898	/	Pass
802.11ac (VHT20)	SISO	5260	1	18.823	/	Pass
		5300	1	18.857	/	Pass
		5320	1	18.875	/	Pass
		5500	1	18.805	/	Pass
		5580	1	18.848	/	Pass
		5700	1	18.838	/	Pass
		5720	1	18.938	/	Pass



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2.1.2 26dB BW

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5260	1	21.207	/	Pass
		5300	1	34.573	/	Pass
		5320	1	30.705	/	Pass
		5500	1	30.012	/	Pass
		5580	1	40.940	/	Pass
		5700	1	31.928	/	Pass
		5720	1	24.957	/	Pass
802.11n (HT20)	SISO	5260	1	21.621	/	Pass
		5300	1	21.692	/	Pass
		5320	1	21.547	/	Pass
		5500	1	21.644	/	Pass
		5580	1	21.574	/	Pass
		5700	1	21.806	/	Pass
		5720	1	21.554	/	Pass
802.11ac (VHT20)	SISO	5260	1	21.513	/	Pass
		5300	1	21.453	/	Pass
		5320	1	21.661	/	Pass
		5500	1	21.537	/	Pass
		5580	1	21.586	/	Pass
		5700	1	21.651	/	Pass
		5720	1	21.638	/	Pass



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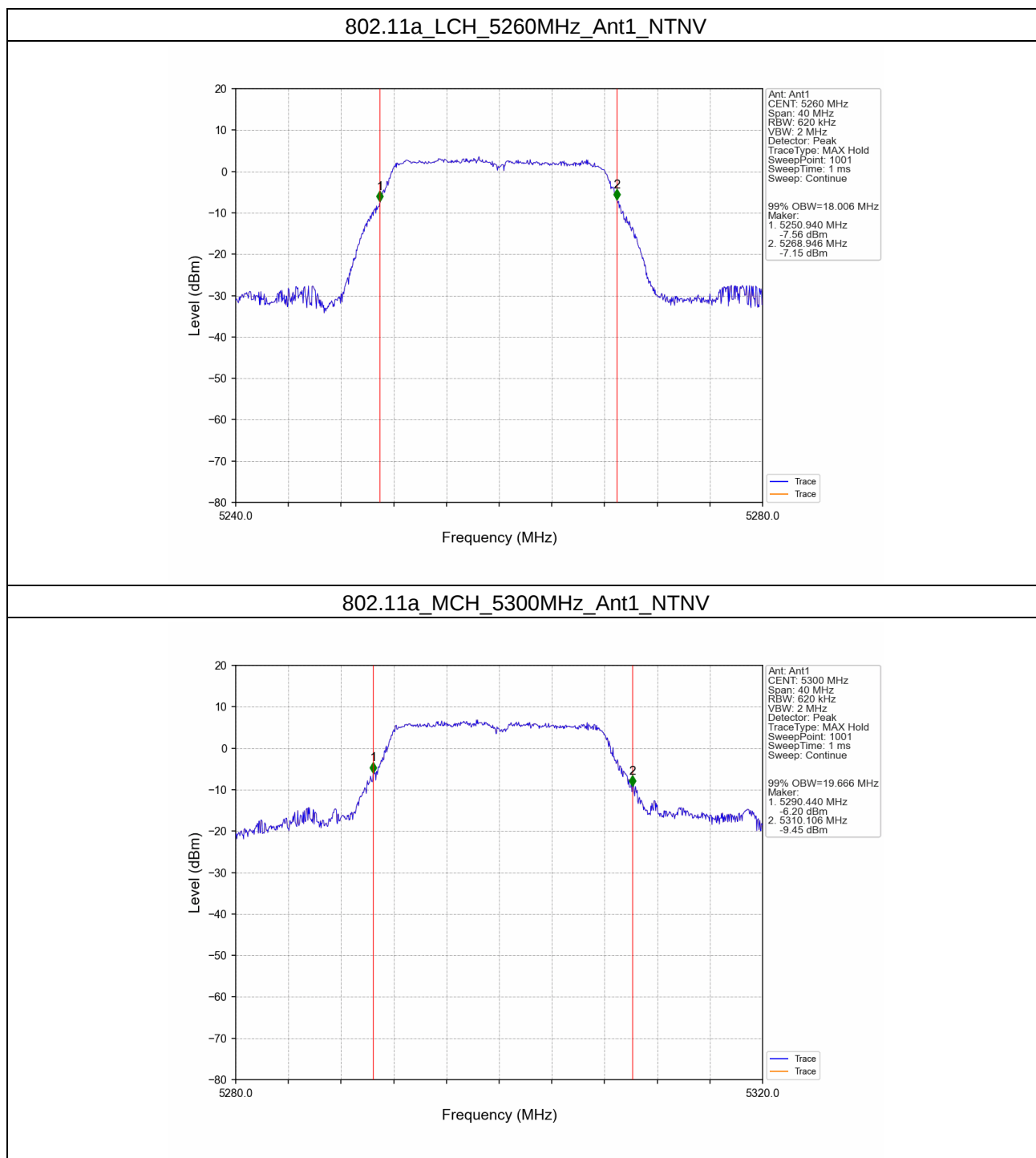
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2.2 Test Graph

2.2.1 OBW



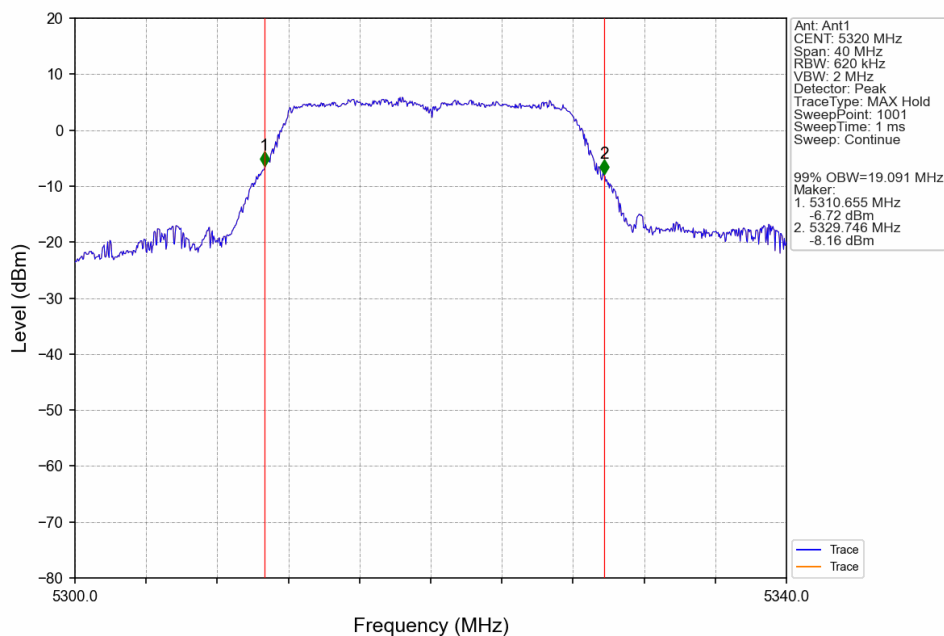
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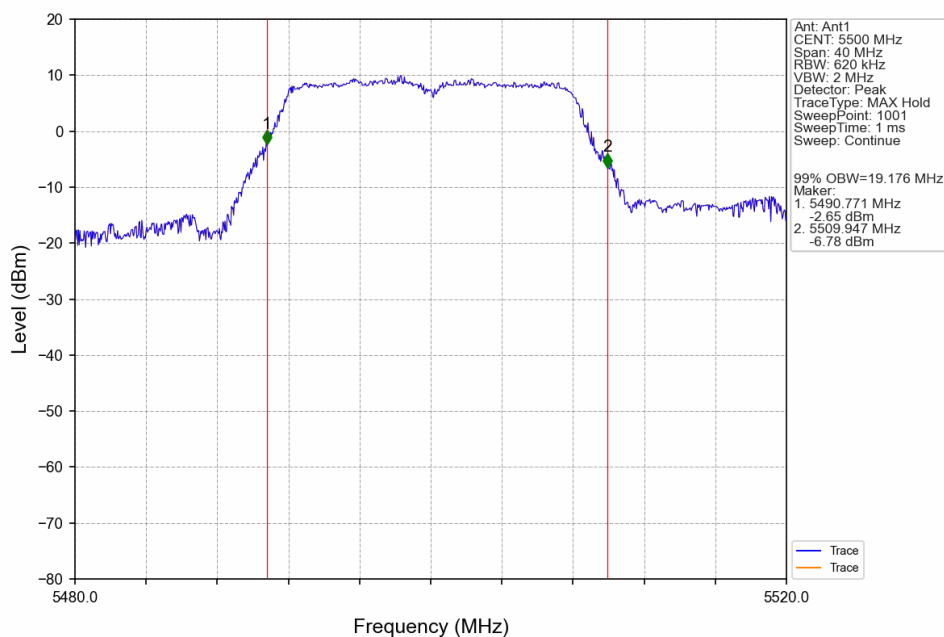
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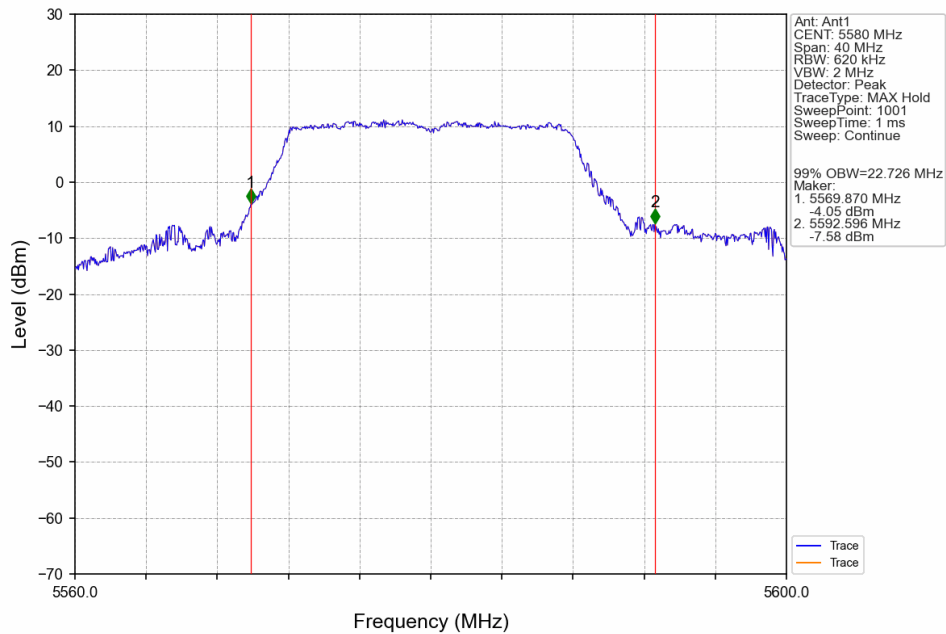
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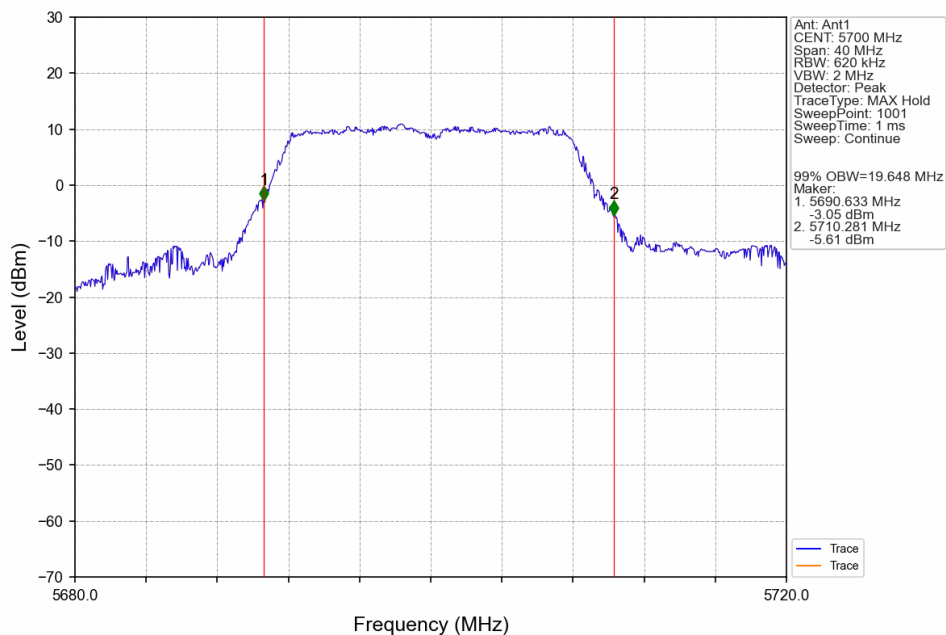
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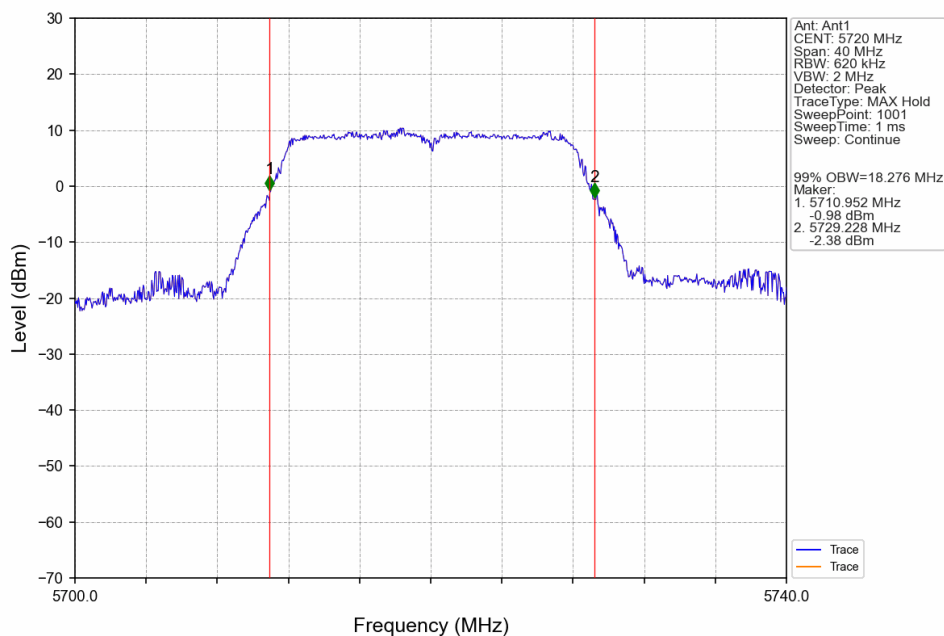
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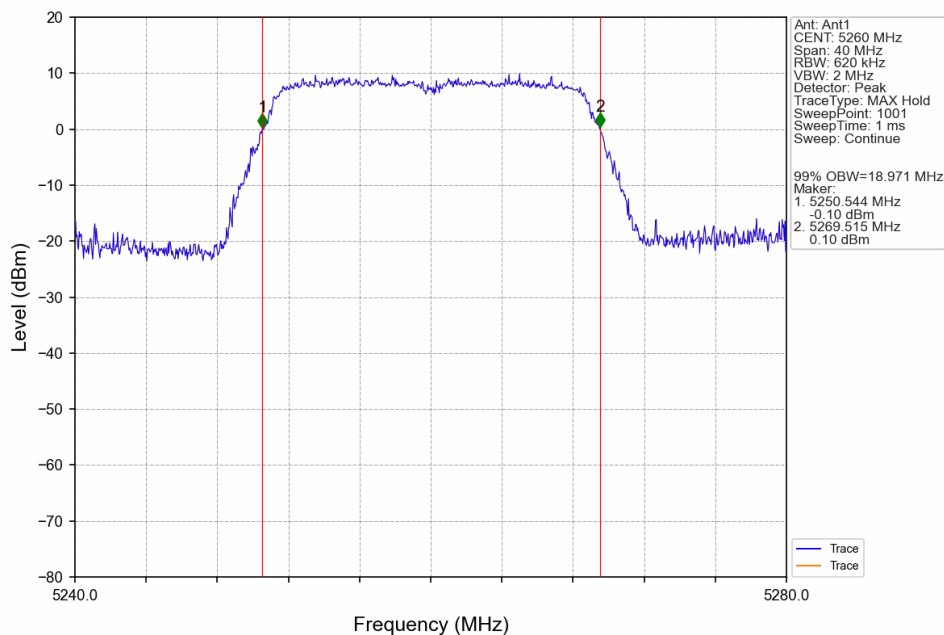
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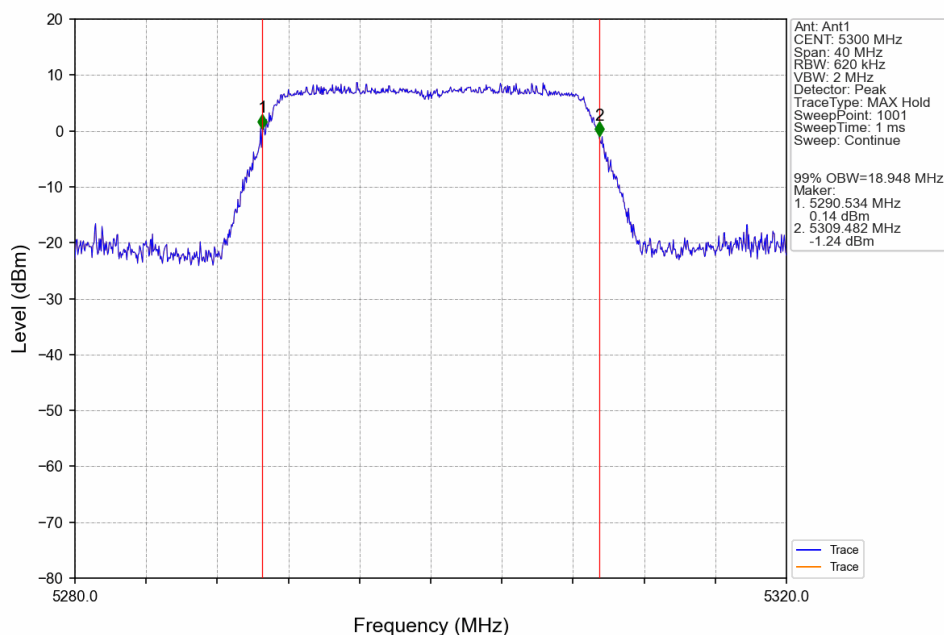
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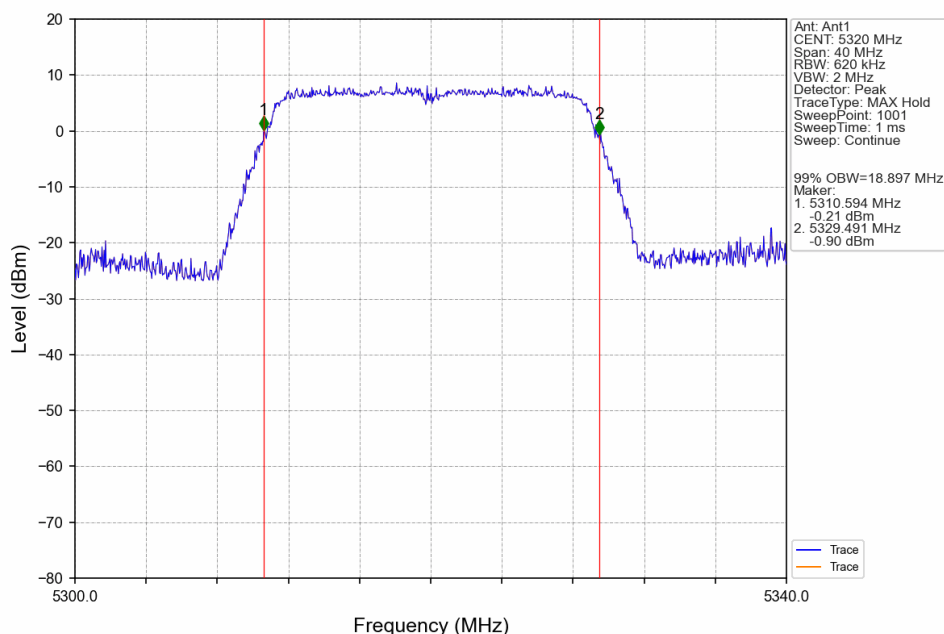
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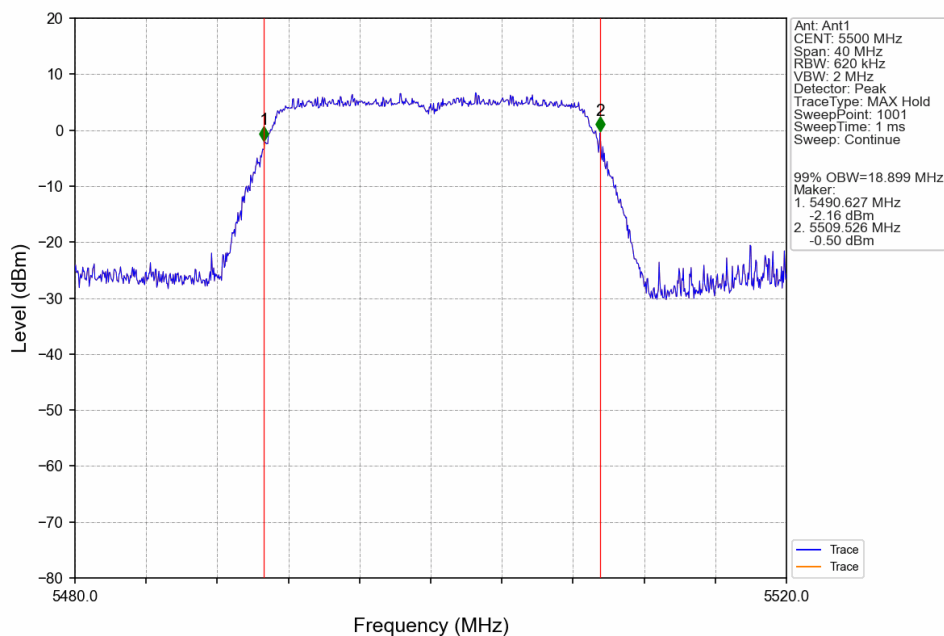
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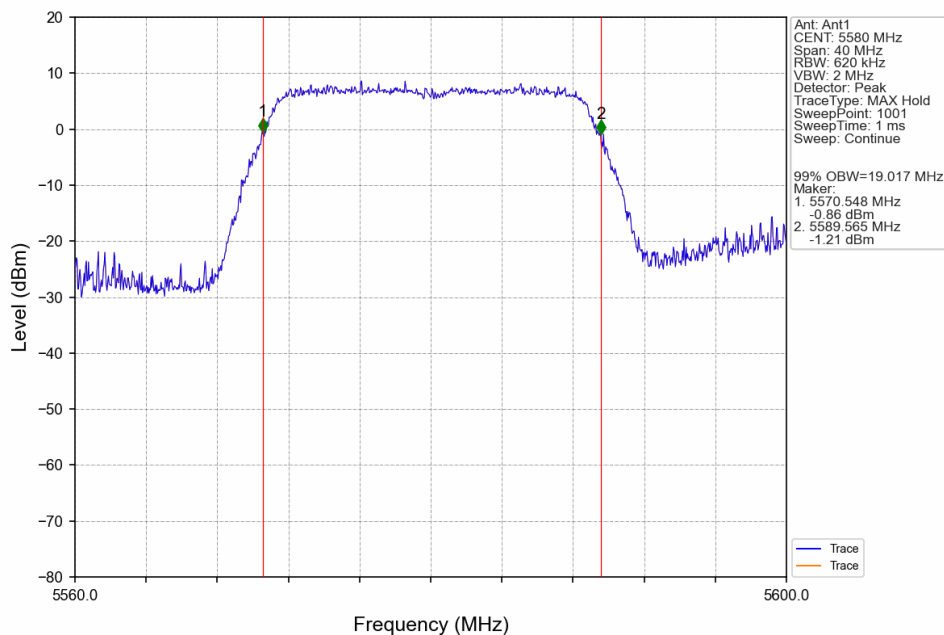
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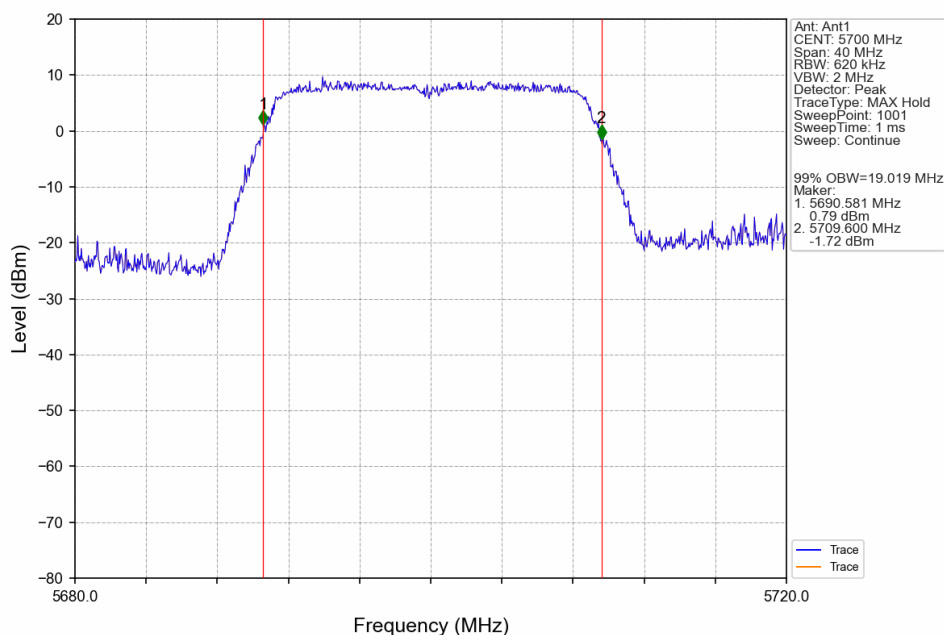
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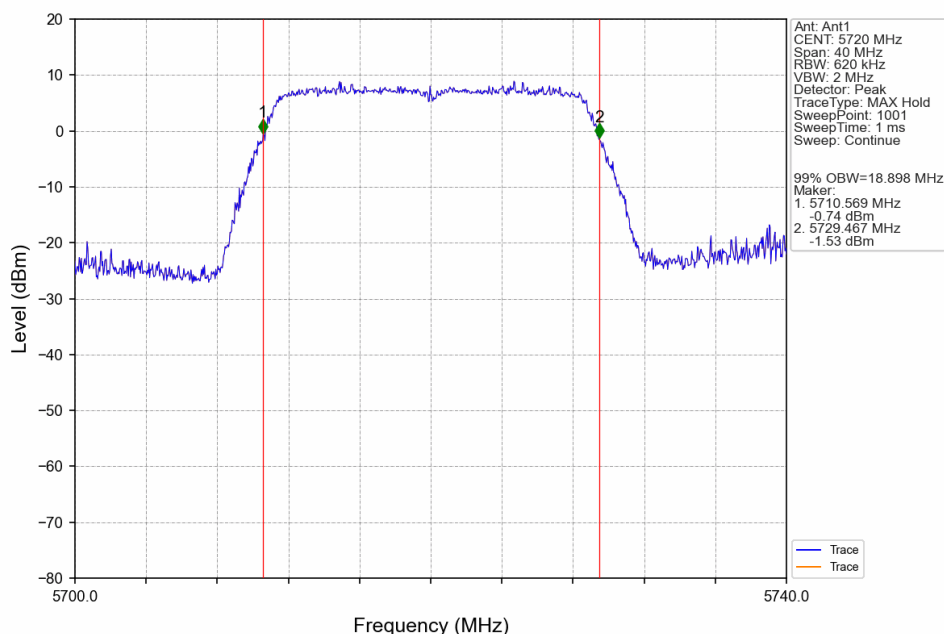
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