

FCC - TEST REPORTReport Number : **68.950.24.1413.01** Date of Issue: **2025-03-28**Model : **P1**

Product Name : Art Projector

Applicant : SKRIVER INTERNATIONAL TRADLING LIMIED

Address : 19H MAXGRAND PLAZA NO 3 TAI YAU STREET SAN PO Kong
KL, Hong Kong, China

Manufacturer : SKRIVER INTERNATIONAL TRADLING LIMIED

Address : 19H MAXGRAND PLAZA NO 3 TAI YAU STREET SAN PO Kong
KL, Hong Kong, China

Factory : SKRIVER INTERNATIONAL TRADLING LIMIED

Address : 19H MAXGRAND PLAZA NO 3 TAI YAU STREET SAN PO Kong
KL, Hong Kong, ChinaTest Result : ☒ **Positive** ☐ **Negative**Total pages including
Appendices : **220**

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12 & 13, Zhiheng Wisdomland Business Park, Guankou Erlu,
Nantou, Nanshan District, Shenzhen, Guangdong, China

Telephone: +86 755 8828 6998

Fax: +86 755 8828 5299

FCC Registration No.: 514049

FCC Designation Number: CN5009

3 Description of the Equipment Under Test

Description of the Equipment Under Test

Product:	Art Projector
Model no.:	P1
Brand Name:	Caydo
FCC ID:	2BKPL-P1
Rating:	Powered by external adaptor: Adaptor Input: 100-240V~50/60Hz, 1.5A Max Output: 19V $\overline{\text{---}}$ 2.5A
RF Transmission Frequency:	5.180GHz~5.240GHz 5.260GHz~5.320GHz 5.500GHz~5.720GHz 5.745GHz~5.825GHz
Modulation:	802.11a: BPSK, QPSK, 16QAM, 64QAM 802.11n: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Antenna Type:	FPC antenna
Antenna 1	2.02dBi
Description of the EUT:	EUT is a Art Projector which support Bluetooth (BR+EDR+BLE), Wi-Fi operated at 2.4GHz and 5GHz. Only 5G Wi-Fi included in this report.

NOTE 1: The above EUT's information is declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart E, 10-1-2023 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart E - Unlicensed National Information Infrastructure Devices

Test Method:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

KDB 905462 D03 Client Without DFS New Rules v01r02

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

5 Summary of Test Results

Technical Requirements			
FCC Part 15 Subpart E			
Test Condition		Test Result	Test Site
§15.207	Conducted emission AC power port	Pass	Site 1
15.407(a)&15.407(e)	Emission bandwidth	Pass	Site 1
15.407(a)	Maximum Conducted Output Power	Pass	Site 1
15.407(a)	Maximum Power Spectral Density	Pass	Site 1
15.407(b)&15.209	Unwanted Emissions	Pass	Site 1
15.407(b)&15.209	Band edge compliance	Pass	Site 1
15.407(g)	Frequencies Stability	Pass	Site 1
15.407(h)	Dynamic Frequency Selection (DFS).	Pass	Site 1
§15.203	Antenna requirement	Pass See note 1	--

NOTE 1: The EUT operate as Clients Device without Radar Detection.

NOTE 2: The EUT uses a FPC antenna, which gain Ant = 2.02dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.

6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2BKPL-P1, complies with Section 15.205, 15.207, 15.209, 15.407 of the FCC Part 15, Subpart E rules.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: 2024-10-21

Testing Start Date: 2024-10-21

Testing End Date: 2025-03-24

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch –

Reviewed by:

Prepared by:

Tested by:

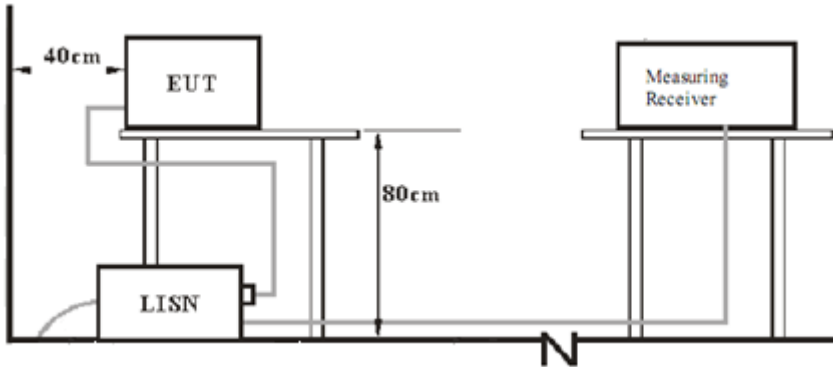

John Zhi
Project Manager


Hayden Hu
Project Engineer


Carry Cai
Test Engineer

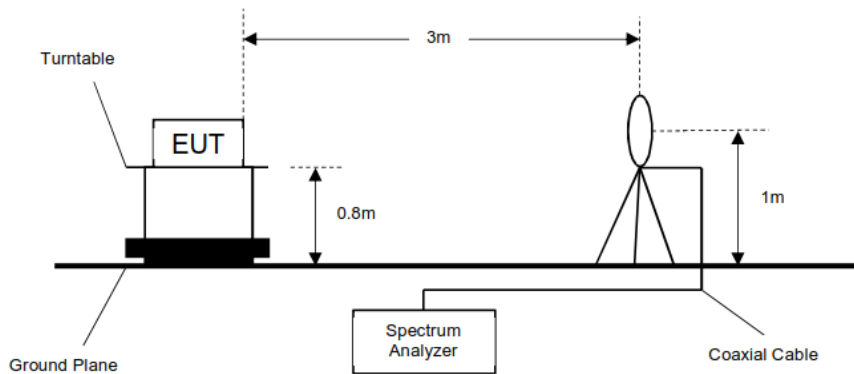
7 Test setups

7.1 AC Power Line Conducted Emission test setups

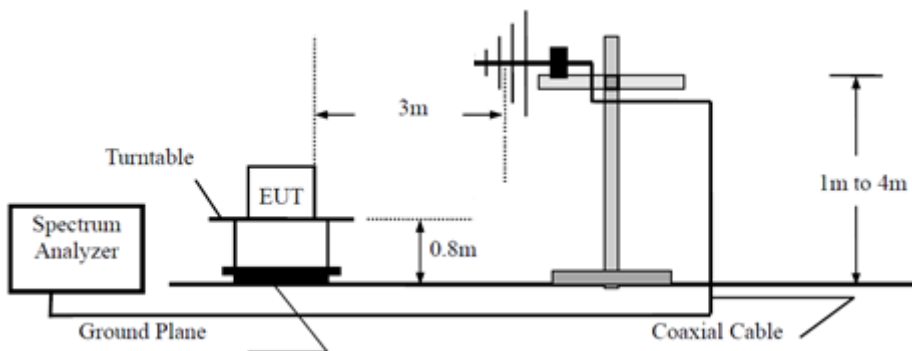


7.2 Radiated test setups

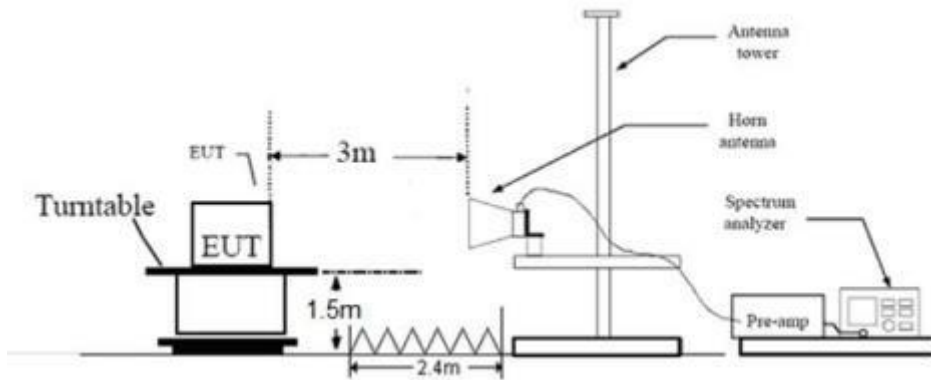
9kHz - 30MHz



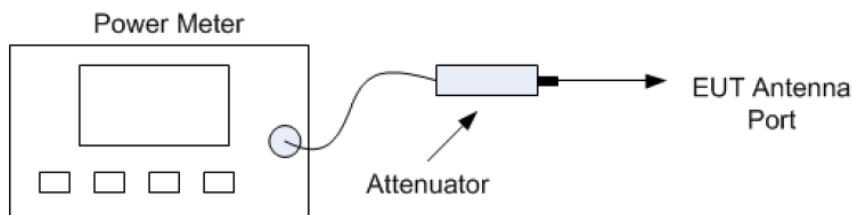
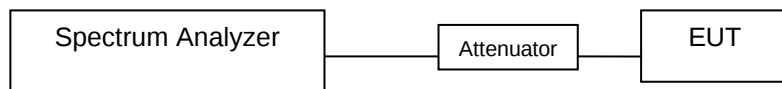
30MHz - 1GHz



Above 1GHz

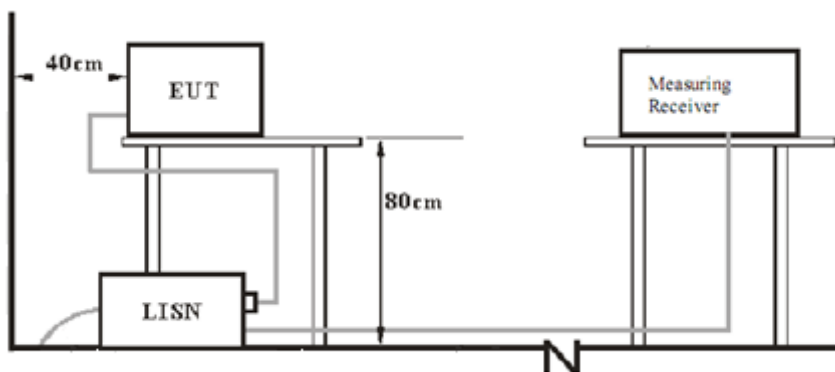


7.3 Conducted RF test setups



Power meter conducted test setup

7.4 AC Power Line Conducted Emission test setups



8. Systems Test Configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model No.	Remark
Computer	HP	TPN-CA16	L25298-002
Adaptor	Dong Guan City GangQi Electronic Co.,Ltd	GQ48-190250-AU	---
Serial port board	---	---	---
Router	ZTE	ZXHN F670	---

Cables Used During Test:

Cable	Length	Shielded/unshielded	With / without ferrite
---	---	---	---

In order to find the worst case condition, pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Band	Power Setting	Data Rate
802.11a	Default	6 Mbps
802.11n HT20	Default	MCS0(6.5Mbps)
802.11n HT40	Default	MCS0(13.5Mbps)
802.11ac HT20	Default	MCS0(6.5Mbps)
802.11ac HT40	Default	MCS0(13.5Mbps)
802.11ax HT20	Default	MCS0(16Mbps)
802.11ax HT40	Default	MCS0(32Mbps)

The system was configured to channel:

Test Mode	Channel (MHz)		
802.11a, 802.11n HT20 802.11ac VHT20	5G WIFI_U-NII-1		
	CH36 (5180MHz)	CH40 (5200MHz)	CH48 (5240MHz)
	5G WIFI_U-NII-2A		
	CH52 (5260MHz)	CH56 (5280MHz)	CH64 (5320MHz)
	5G WIFI_U-NII-2C		
	CH100 (5500MHz)	CH116 (5580MHz)	CH140 (5700MHz)
	CH144 (5720MHz)		
	5G WIFI_U-NII-3		
	CH149 (5745MHz)	CH157(5785MHz)	CH165 (5825MHz)

Test Mode	Channel (MHz)		
802.11n HT40 802.11ac VHT40	5G WIFI_U-NII-1		
	CH38(5190MHz)	CH46 (5230MHz)	
	5G WIFI_U-NII-2A		
	CH54(5270MHz)	CH62(5310MHz)	
	5G WIFI_U-NII-2C		
	CH102(5510MHz)	CH110(5550MHz)	CH134(5670MHz)
	CH 142 (5710MHz)		
	5G WIFI_U-NII-3		
	CH151(5755MHz)	CH159(5795MHz)	

9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. Both sides of AC line were checked for maximum conducted interference.
6. The frequency range from 150 kHz to 30 MHz was searched.
7. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

Limit

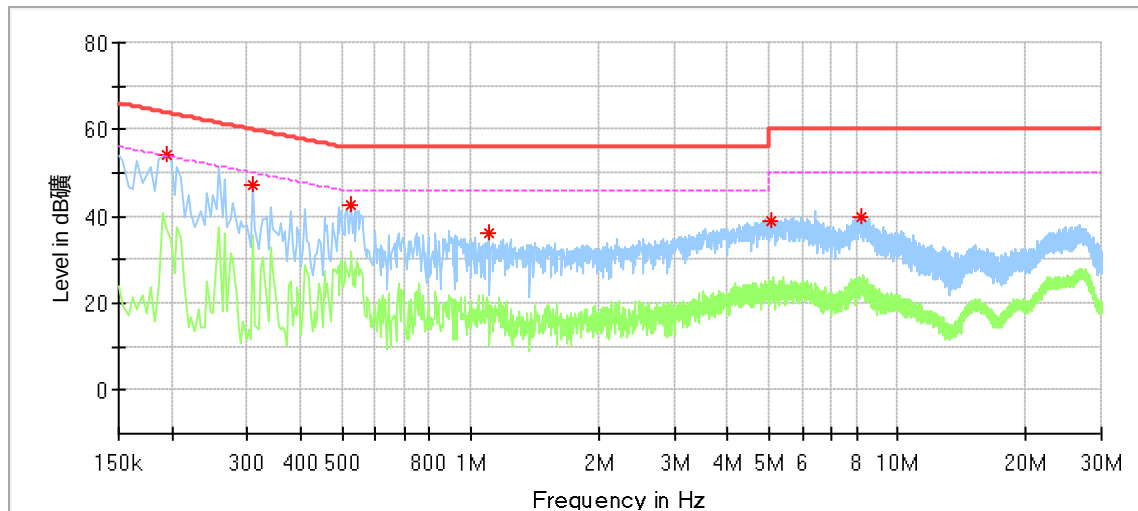
According to §15.207, conducted emissions limit as below:

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Remark: "*" Decreasing linearly with logarithm of the frequency

Conducted Emission

Product Type : Art Projector
 M/N : P1
 Operating Condition : Transmission
 Test Specification : Line
 Comment : AC 120V/60Hz



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.194000	54.23	---	63.86	9.63	L1	9.67
0.310000	47.15	---	59.97	12.82	L1	9.67
0.526000	42.63	---	56.00	13.37	L1	9.69
1.102000	36.02	---	56.00	19.98	L1	9.70
5.034000	38.73	---	60.00	21.27	L1	9.82
8.206000	39.90	---	60.00	20.10	L1	9.90

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---		---

Remark:

Max Peak/ Average=Reading Level + Correction Factor

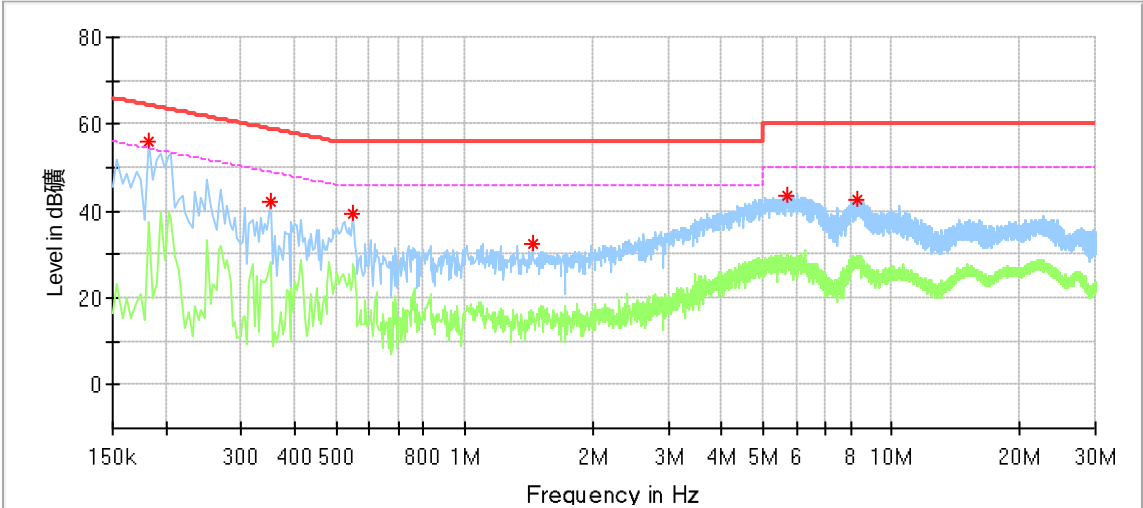
Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)



Conducted Emission

Product Type : Art Projector
M/N : P1
Operating Condition : Transmission
Test Specification : Power Line, Neutral
Comment : AC 120V/60Hz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.182000	56.12	---	64.39	8.27	N	9.67
0.350000	42.26	---	58.96	16.71	N	9.67
0.550000	39.48	---	56.00	16.52	N	9.68
1.442000	32.40	---	56.00	23.60	N	9.70
5.674000	43.50	---	60.00	16.50	N	9.82
8.266000	42.77	---	60.00	17.23	N	9.89

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---		---

Remark:
Max Peak/ Average=Reading Level + Correction Factor
Correction Factor=Cable Loss + LISN Factor
(The Reading Level is recorded by software which is not shown in the sheet)

9.2 Emission Bandwidth

The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.

1. Test Method of 26dB Bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Limit: No limit

2. Test Method of 6dB Bandwidth

1. Set center frequency to the nominal EUT channel center frequency
2. Set RBW = 100KHz
3. Set the video bandwidth (VBW) $\geq 3 \times$ RBW
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = Sweep = No faster than coupled (auto) time.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
9. Record the results in the test report.

Limit: $\geq 500\text{KHz}$

3. Test Method of 99% Bandwidth

1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 RBW
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Use the 99 % power bandwidth function of the instrument.
9. Record the results in the test report.

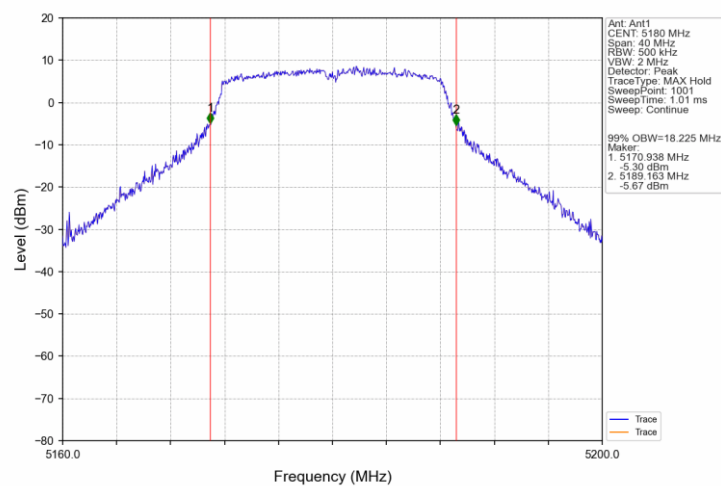
Limit: No limit

99% Bandwidth:

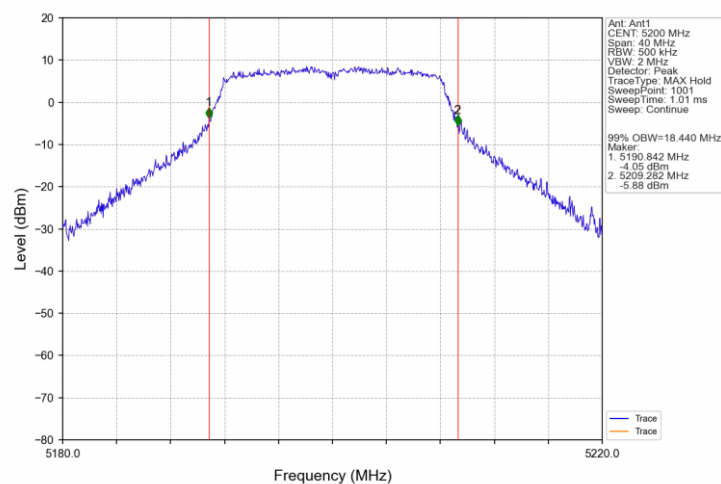
Mode	TX Type	Frequency (MHz)	RU	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
802.11a	SISO	5180	/	1	18.225	/	Pass
		5200	/	1	18.440	/	Pass
		5240	/	1	18.423	/	Pass
		5260	/	1	18.623	/	Pass
		5300	/	1	18.753	/	Pass
		5320	/	1	18.462	/	Pass
		5500	/	1	19.349	/	Pass
		5580	/	1	18.518	/	Pass
		5700	/	1	18.683	/	Pass
		5745	/	1	19.026	/	Pass
		5785	/	1	18.720	/	Pass
		5825	/	1	19.022	/	Pass
802.11n (HT20)	SISO	5720	/	1	18.805	/	Pass
		5180	/	1	19.222	/	Pass
		5200	/	1	19.475	/	Pass
		5240	/	1	19.519	/	Pass
		5260	/	1	19.475	/	Pass
		5300	/	1	19.508	/	Pass
		5320	/	1	19.510	/	Pass
		5500	/	1	20.266	/	Pass
		5580	/	1	19.867	/	Pass
		5700	/	1	19.692	/	Pass
		5745	/	1	19.816	/	Pass
		5785	/	1	19.535	/	Pass
802.11n (HT40)	SISO	5825	/	1	19.896	/	Pass
		5720	/	1	19.810	/	Pass
		5190	/	1	37.552	/	Pass
		5230	/	1	37.627	/	Pass
		5270	/	1	37.581	/	Pass
		5310	/	1	37.752	/	Pass
		5510	/	1	38.750	/	Pass
		5550	/	1	39.044	/	Pass
		5670	/	1	38.221	/	Pass
		5755	/	1	38.273	/	Pass
802.11ac (VHT20)	SISO	5795	/	1	38.080	/	Pass
		5710	/	1	38.190	/	Pass
		5180	/	1	19.215	/	Pass
		5200	/	1	19.434	/	Pass
		5240	/	1	19.405	/	Pass
		5260	/	1	19.153	/	Pass
		5300	/	1	19.554	/	Pass
		5320	/	1	19.416	/	Pass
		5500	/	1	20.097	/	Pass
		5580	/	1	19.910	/	Pass
		5700	/	1	19.730	/	Pass
		5745	/	1	19.855	/	Pass
802.11ac (VHT40)	SISO	5785	/	1	19.598	/	Pass
		5825	/	1	19.925	/	Pass
		5720	/	1	19.834	/	Pass
		5190	/	1	37.729	/	Pass
		5230	/	1	37.728	/	Pass
		5270	/	1	37.590	/	Pass
		5310	/	1	37.649	/	Pass
		5510	/	1	38.612	/	Pass
		5550	/	1	38.921	/	Pass
		5670	/	1	38.268	/	Pass
802.11ax	SISO	5755	/	1	38.253	/	Pass
		5795	/	1	38.120	/	Pass
		5710	/	1	38.385	/	Pass
802.11ax	SISO	5180	/	1	19.823	/	Pass

(HEW20)		5200	/	1	19.892	/	Pass
		5240	/	1	19.872	/	Pass
		5260	/	1	19.876	/	Pass
		5300	/	1	19.877	/	Pass
		5320	/	1	19.781	/	Pass
		5500	/	1	20.142	/	Pass
		5580	/	1	20.034	/	Pass
		5700	/	1	20.021	/	Pass
		5745	/	1	20.147	/	Pass
		5785	/	1	20.046	/	Pass
		5825	/	1	20.248	/	Pass
		5720	/	1	20.041	/	Pass
802.11ax (HEW40)	SISO	5190	/	1	38.586	/	Pass
		5230	/	1	38.653	/	Pass
		5270	/	1	38.461	/	Pass
		5310	/	1	38.685	/	Pass
		5510	/	1	39.245	/	Pass
		5550	/	1	39.398	/	Pass
		5670	/	1	38.954	/	Pass
		5755	/	1	39.084	/	Pass
		5795	/	1	38.983	/	Pass
		5710	/	1	39.102	/	Pass

802.11a_LCH_5180MHz_Ant1_NTNV

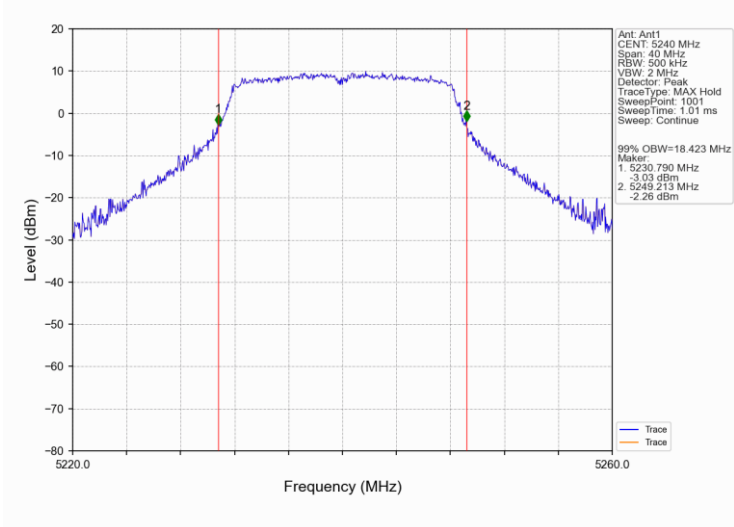


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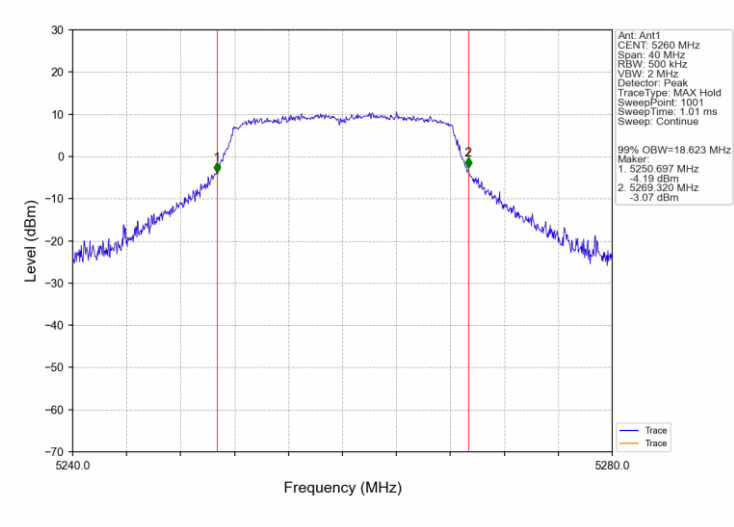




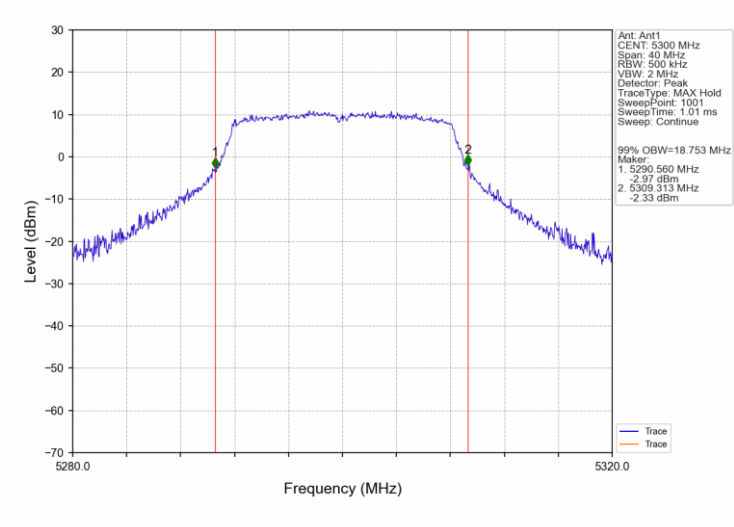
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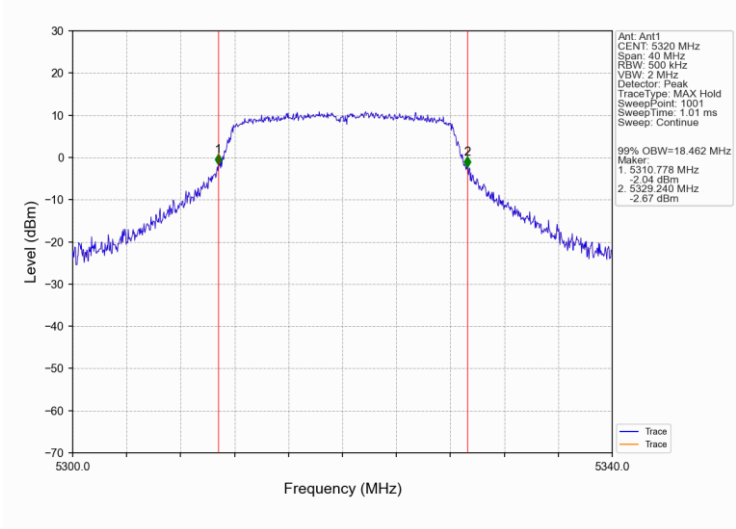


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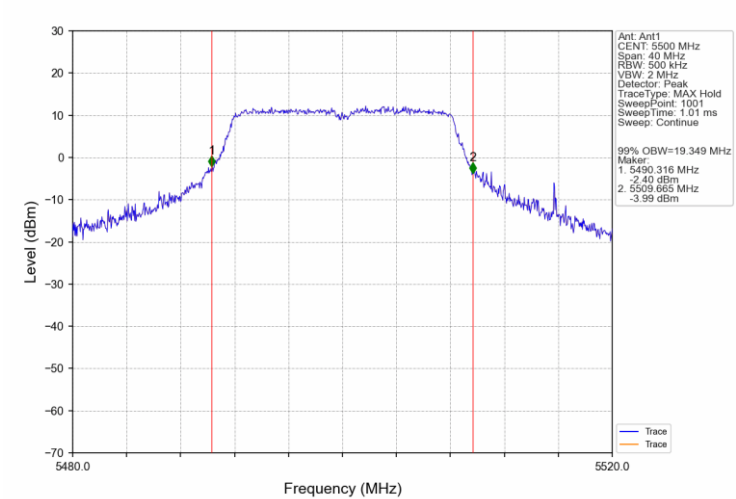




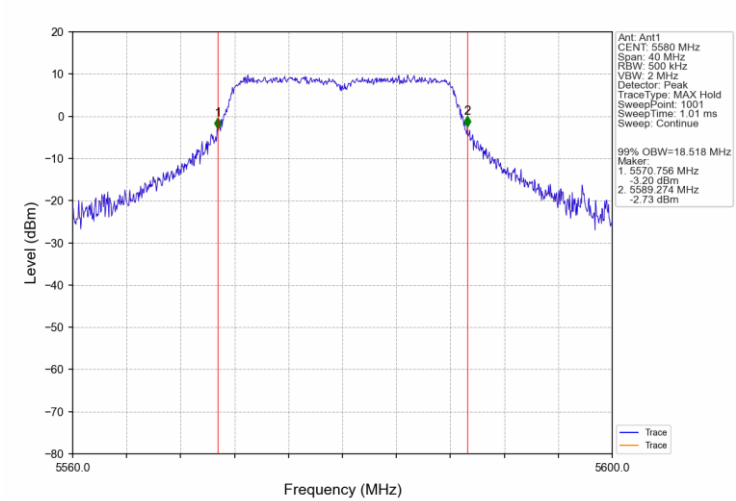
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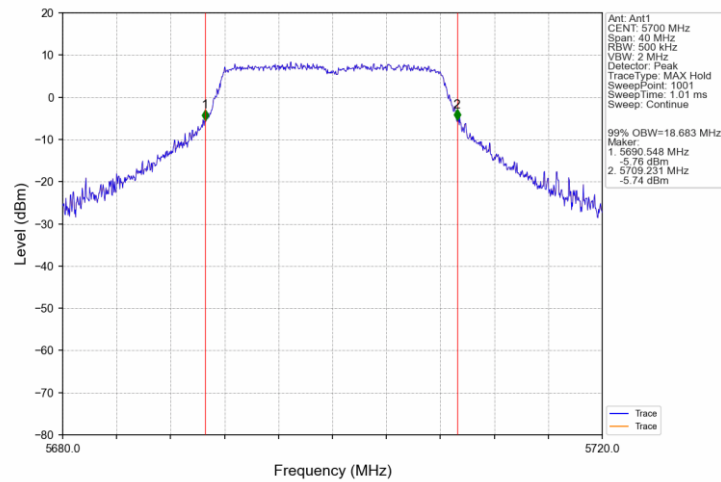
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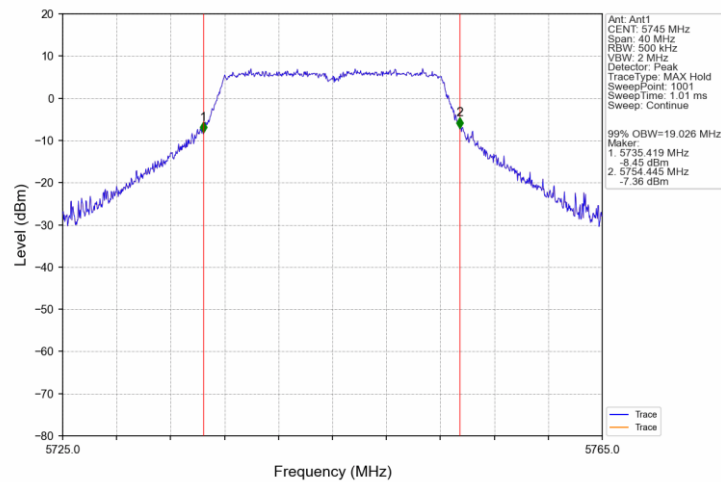
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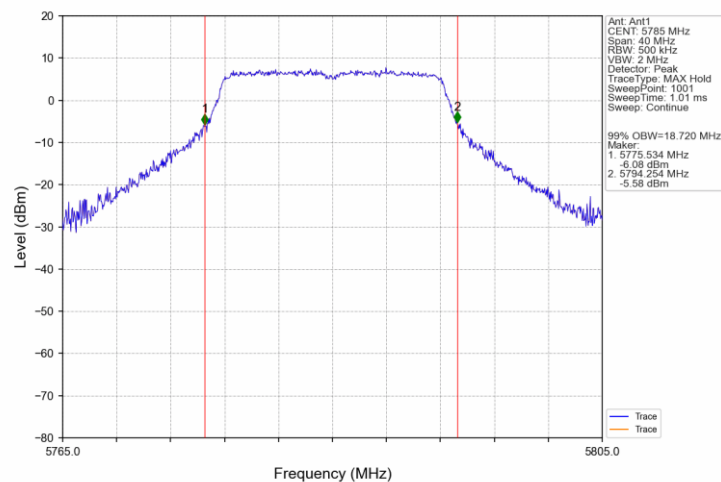
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802.11a_LCH_5745MHz_Ant1_NTNV

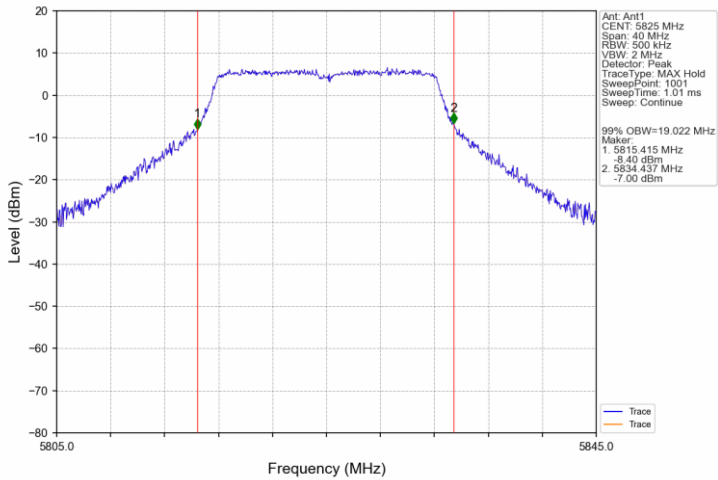


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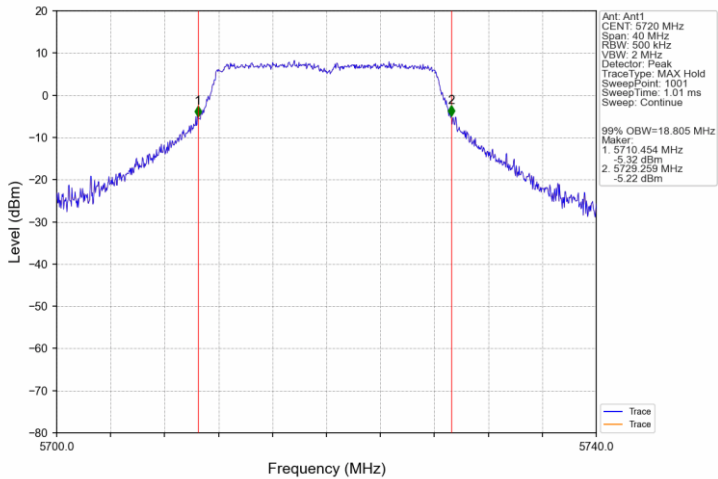




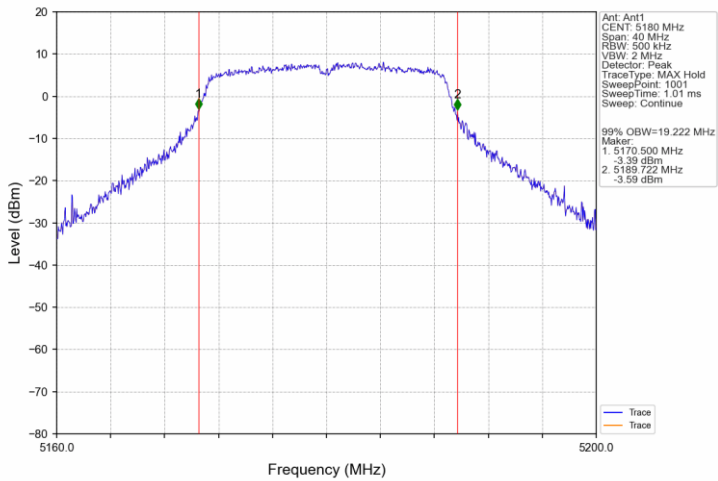
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802.11a_HCH_5720MHz_Ant1_NTNV

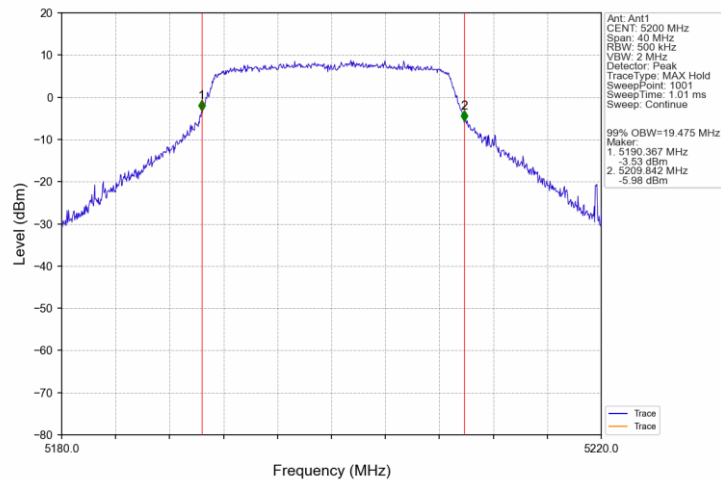


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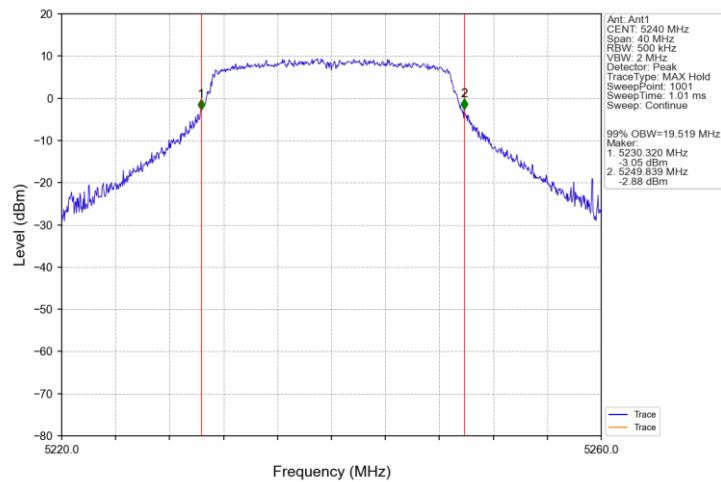




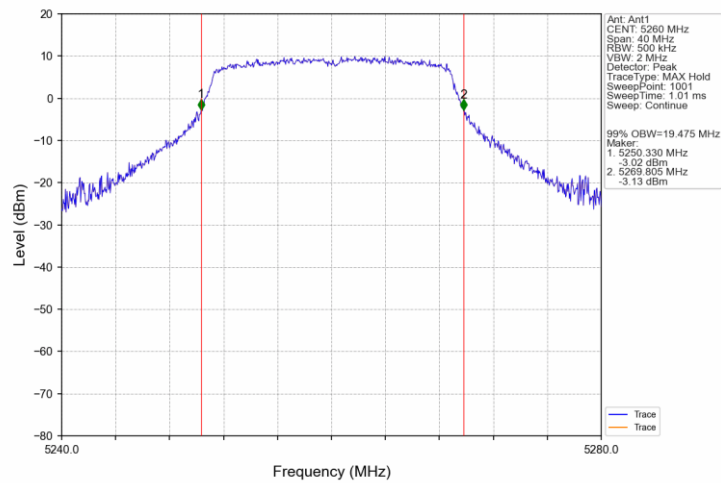
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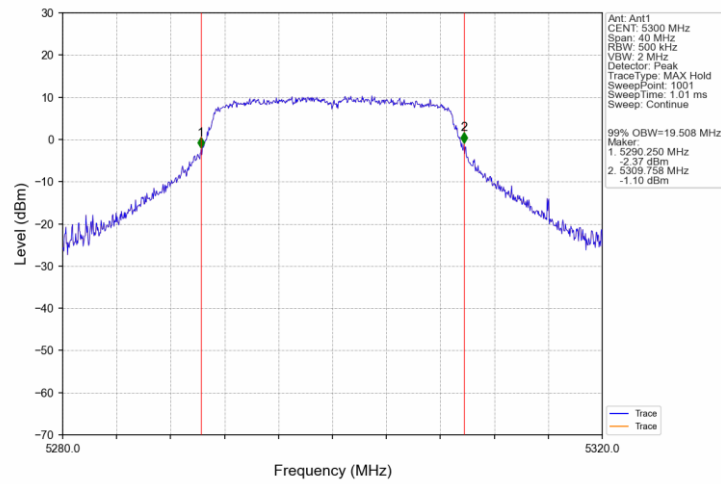
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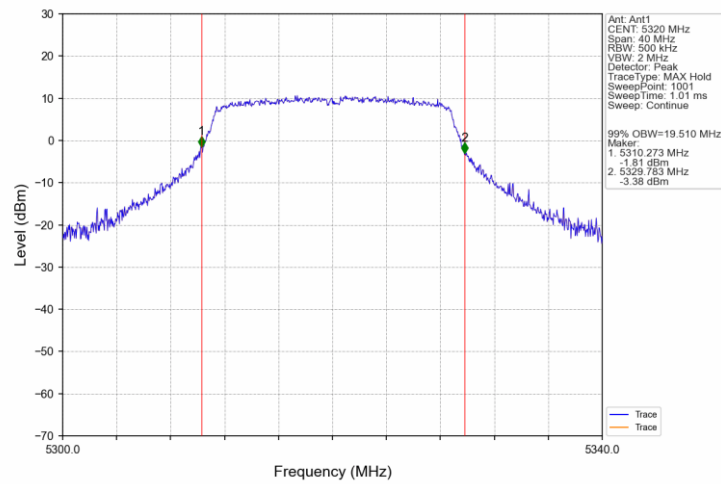
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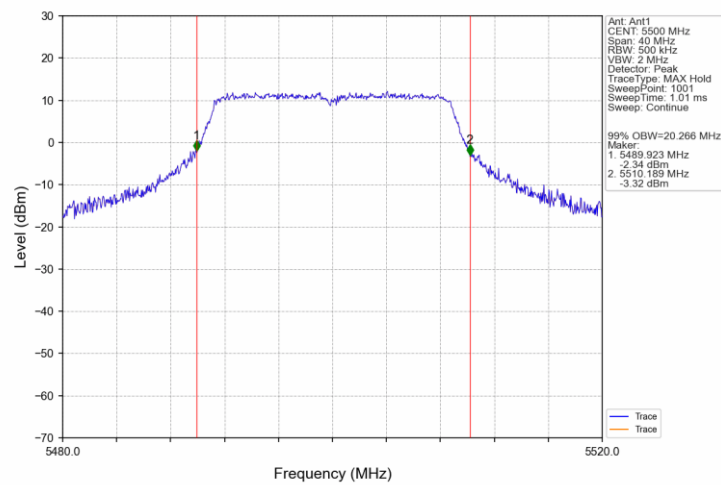
802.11n(HT20)_MCH_5300MHz_Ant1_NTNV



802.11n(HT20)_HCH_5320MHz_Ant1_NTNV

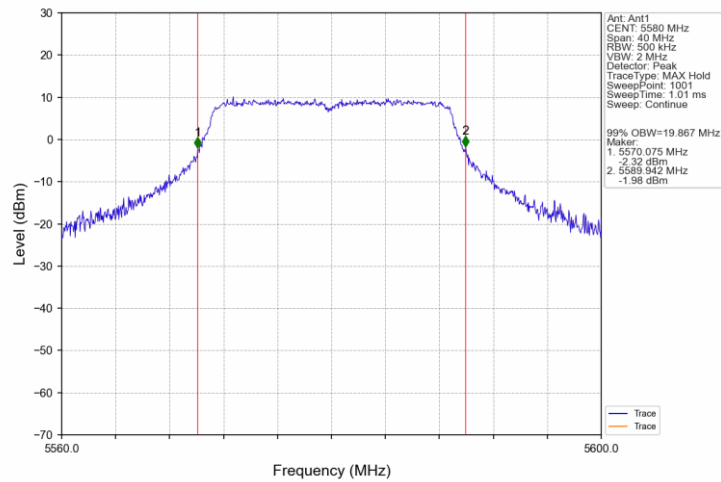


802.11n(HT20)_LCH_5500MHz_Ant1_NTNV

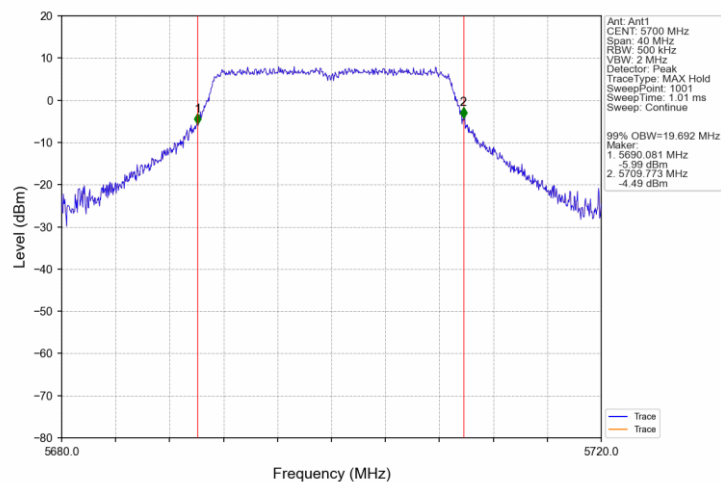




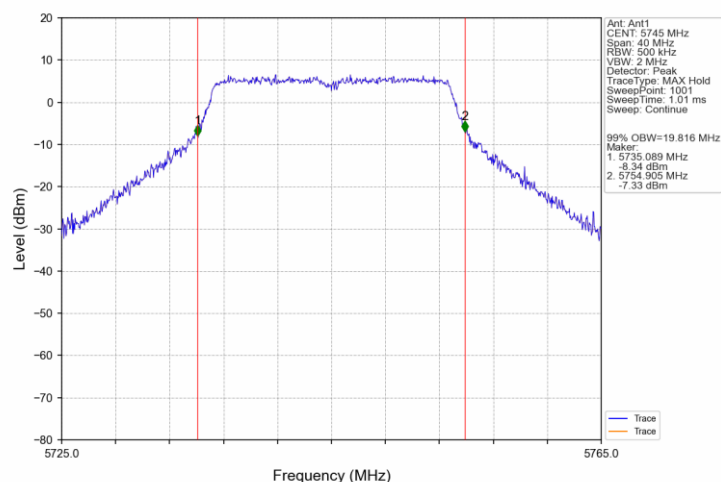
802.11n(HT20)_MCH_5580MHz_Ant1_NTNV



802.11n(HT20)_HCH_5700MHz_Ant1_NTNV

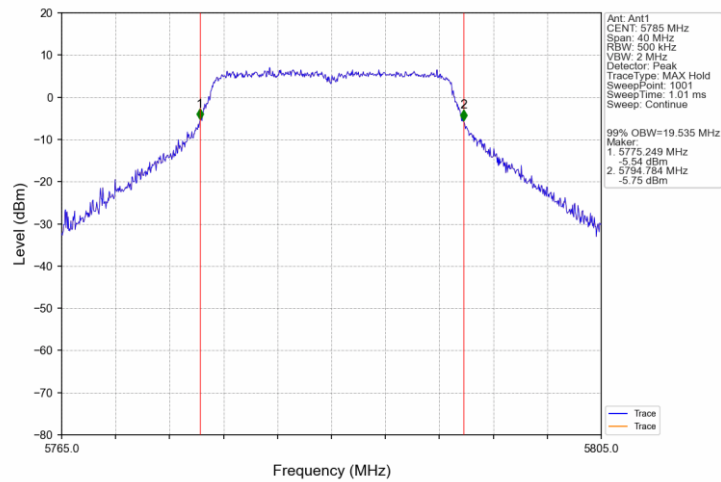


802.11n(HT20)_LCH_5745MHz_Ant1_NTNV

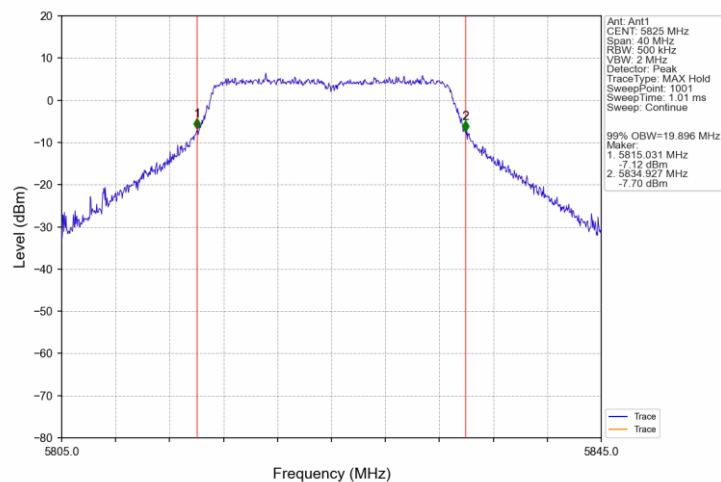




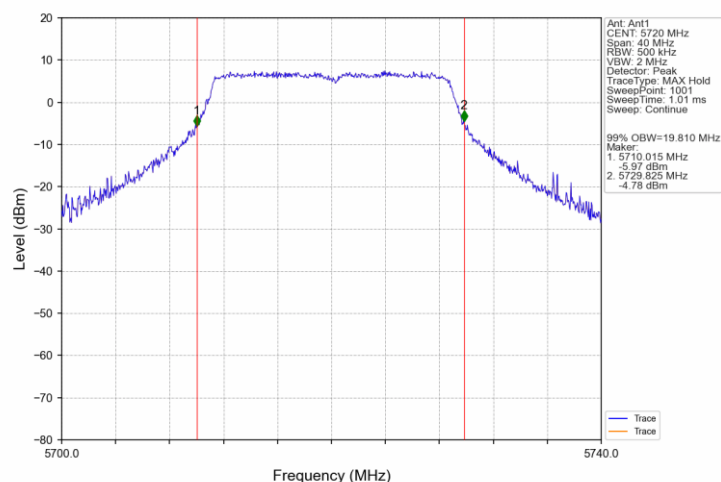
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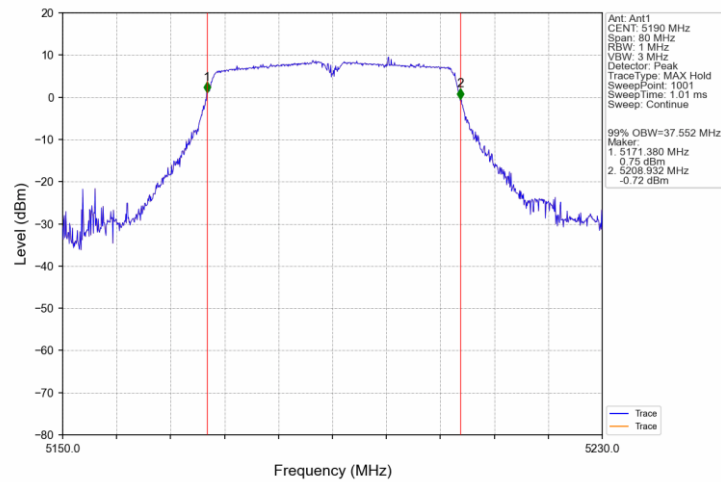
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



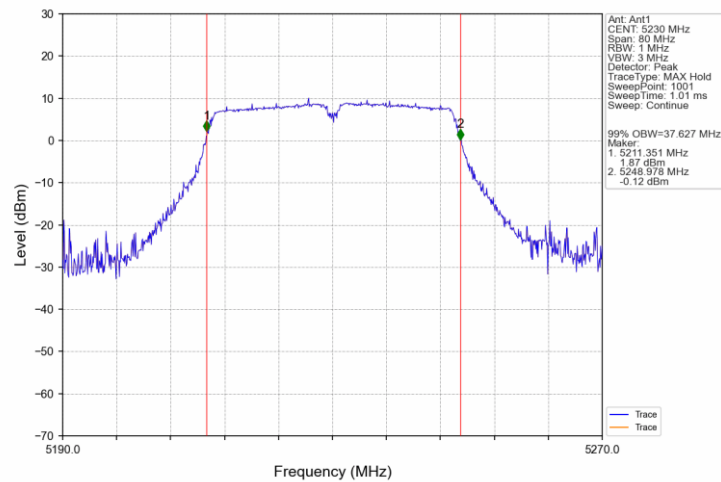
802.11n(HT20)_HCH_5720MHz_Ant1_NTNV



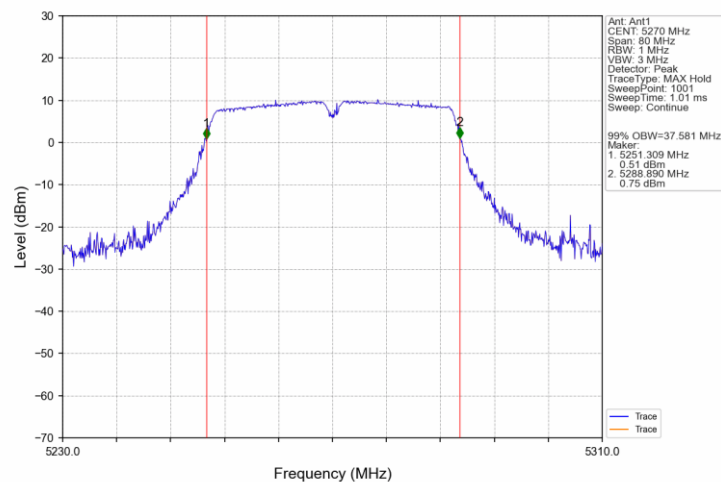
802.11n(HT40) LCH 5190MHz Ant1 NTN



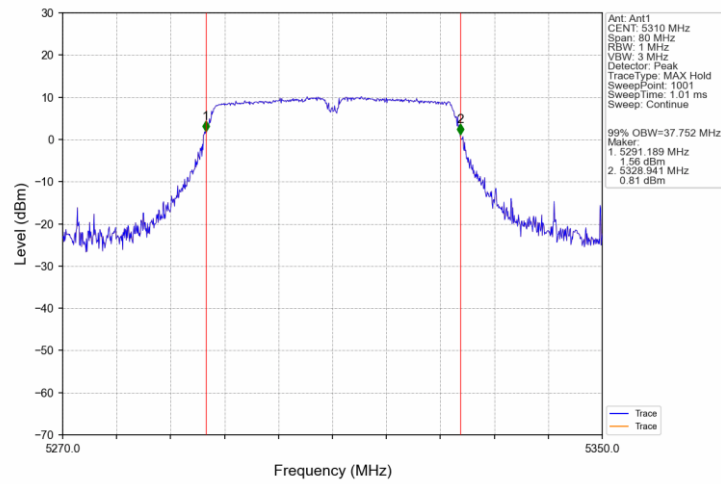
802.11n(HT40) HCH 5230MHz Ant1 NTN



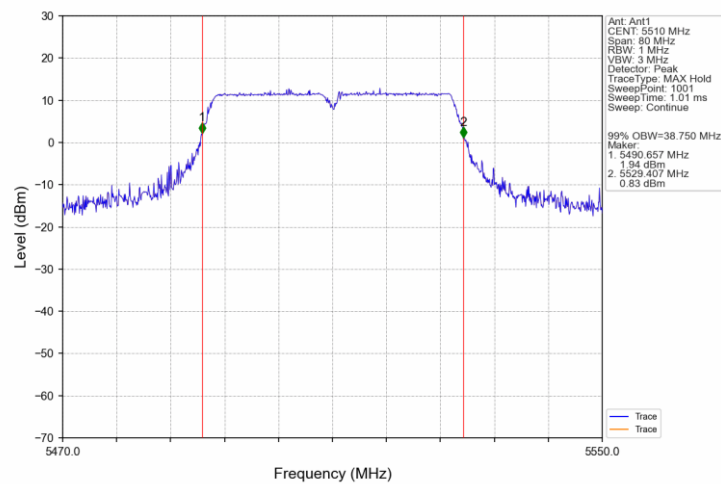
802.11n(HT40) LCH 5270MHz Ant1 NTN



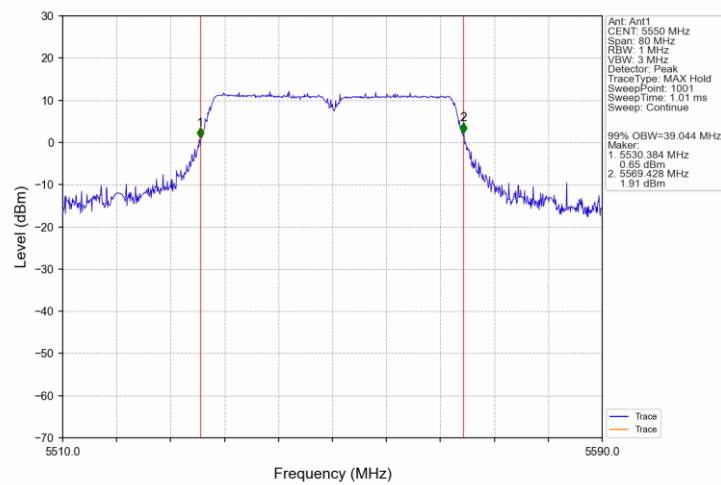
802.11n(HT40) HCH 5310MHz Ant1 NTN



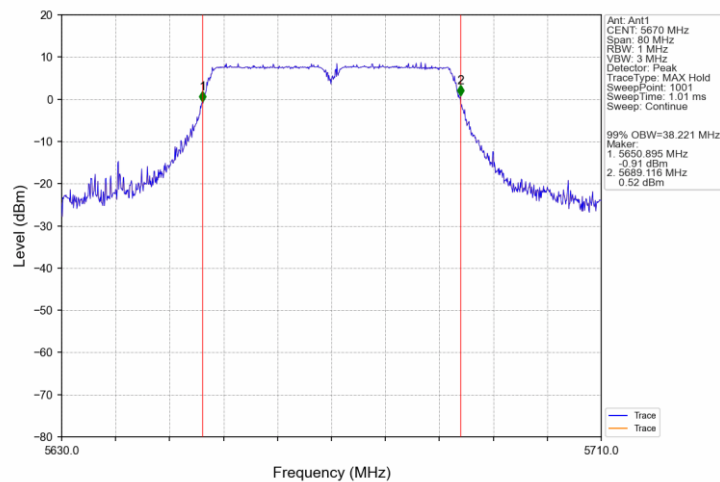
802.11n(HT40) LCH 5510MHz Ant1 NTN



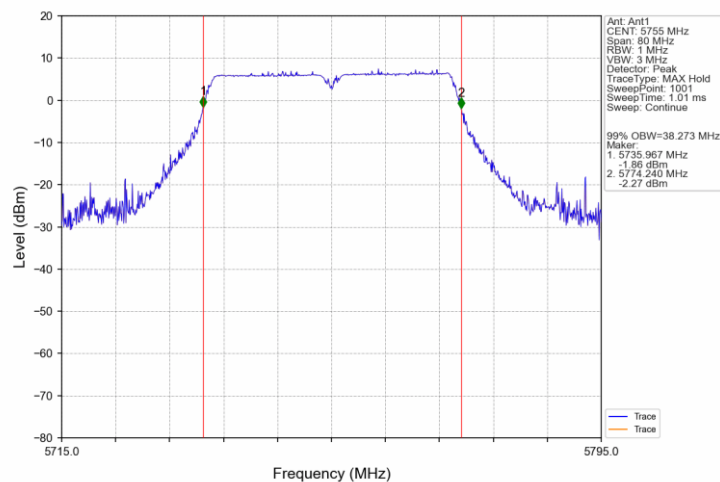
802.11n(HT40) MCH 5550MHz Ant1 NTN



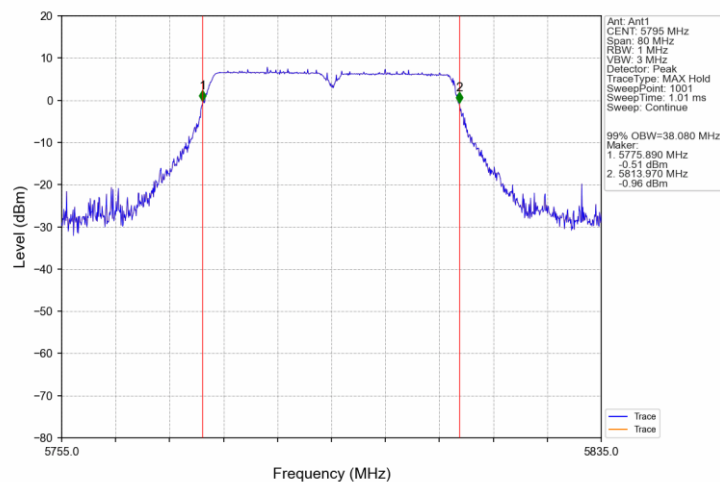
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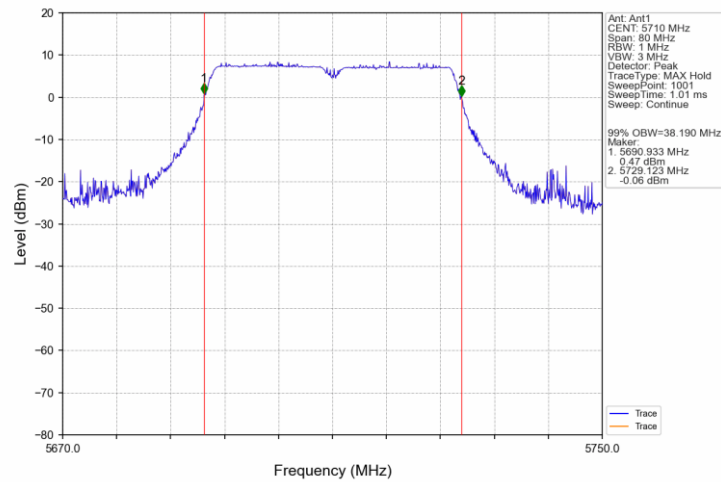
802.11n(HT40) LCH 5755MHz Ant1 NTN



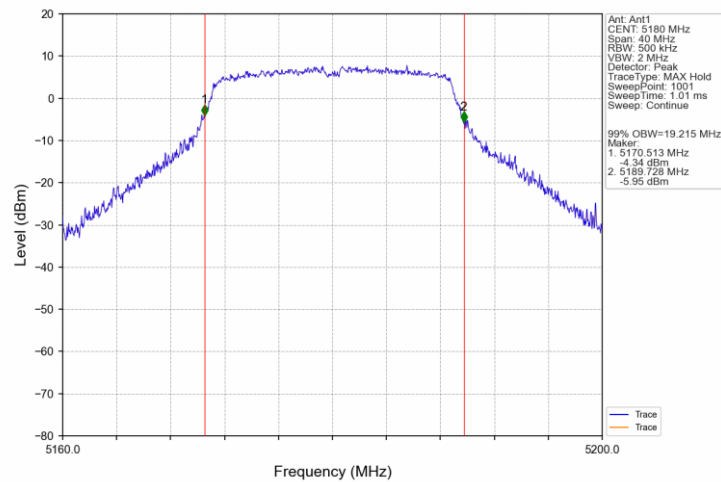
802.11n(HT40) HCH 5795MHz Ant1 NTN



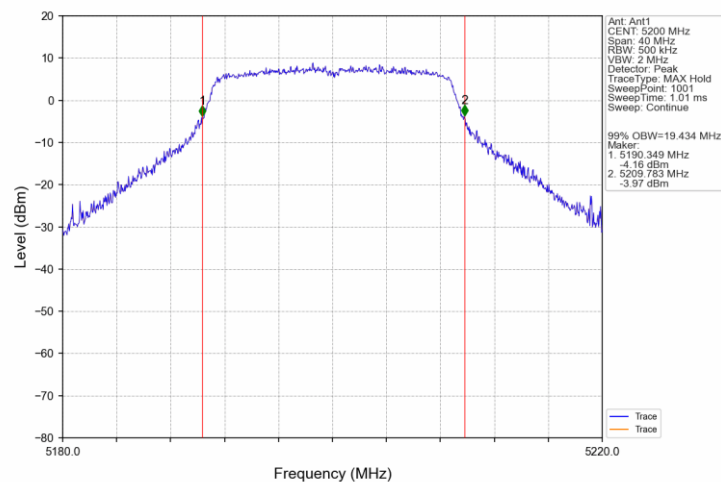
802.11n(HT40) HCH 5710MHz Ant1 NTN



802.11ac(VHT20) LCH 5180MHz Ant1 NTN

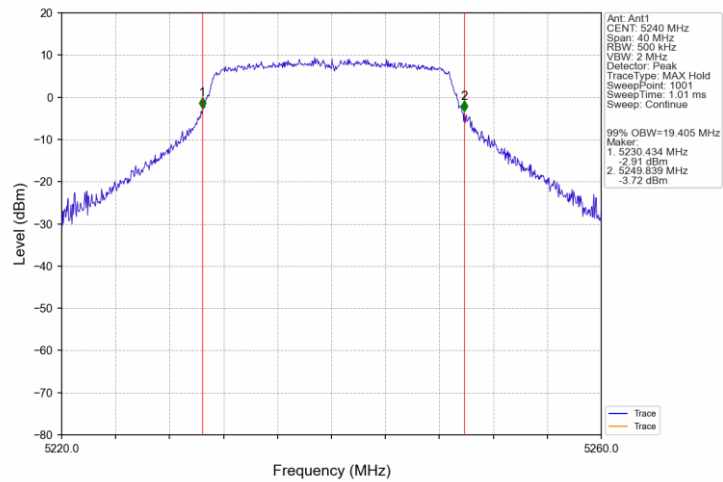


802.11ac(VHT20) MCH 5200MHz Ant1 NTN

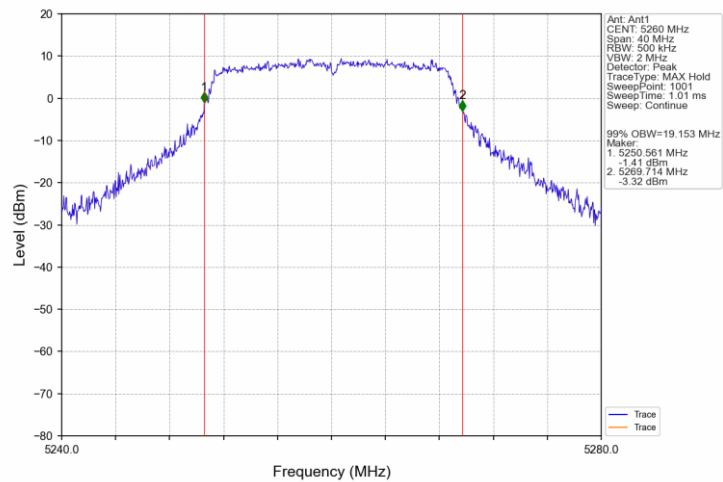




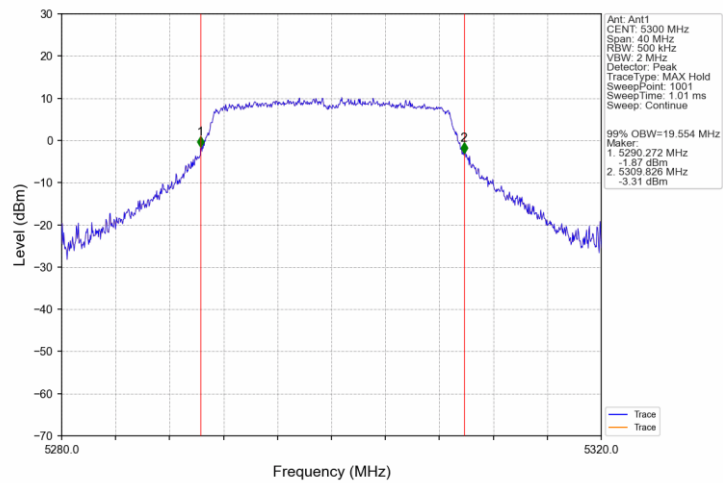
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



802.11ac(VHT20)_LCH_5260MHz_Ant1_NTNV

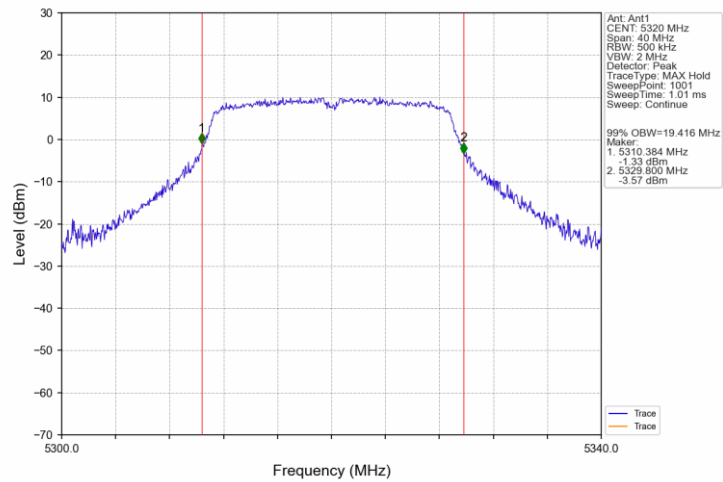


802.11ac(VHT20)_MCH_5300MHz_Ant1_NTNV

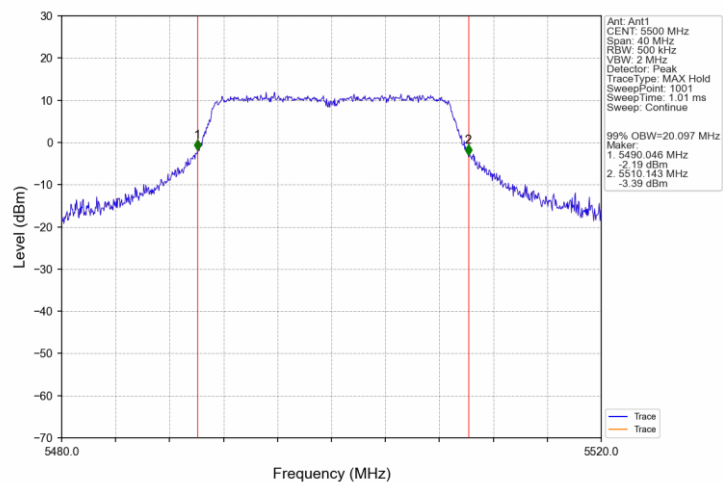




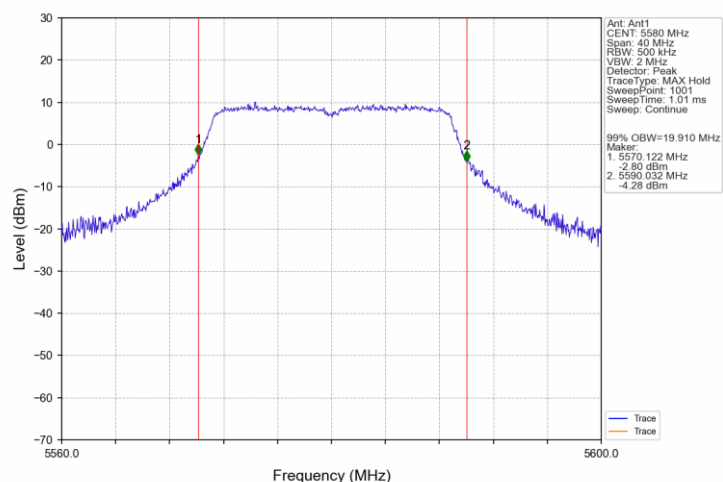
802.11ac(VHT20)_HCH_5320MHz_Ant1_NTNV



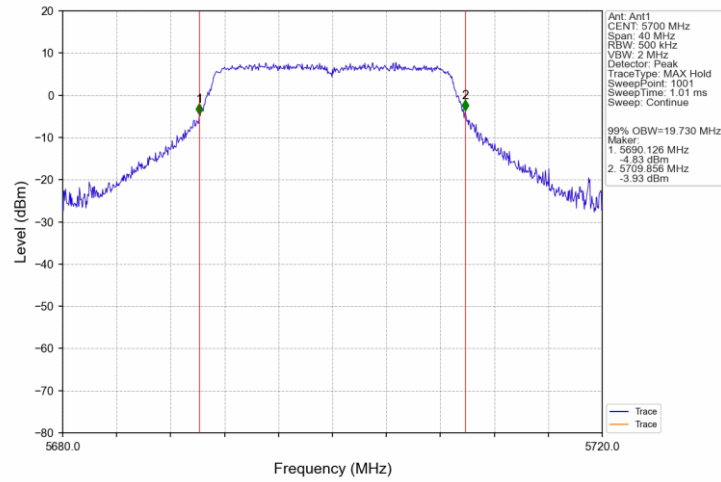
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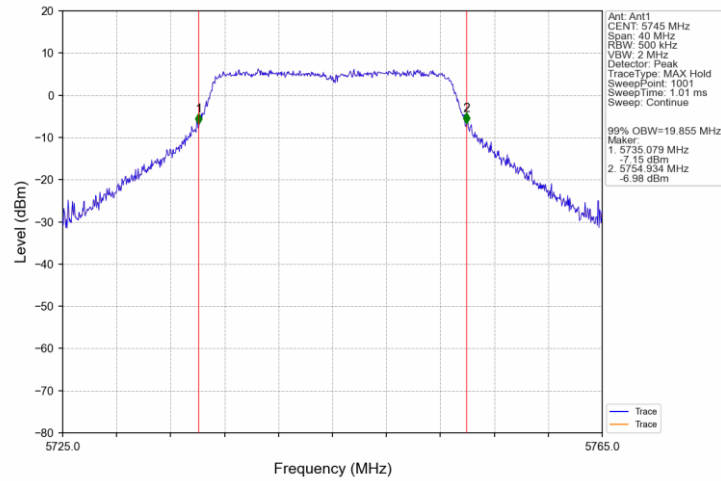
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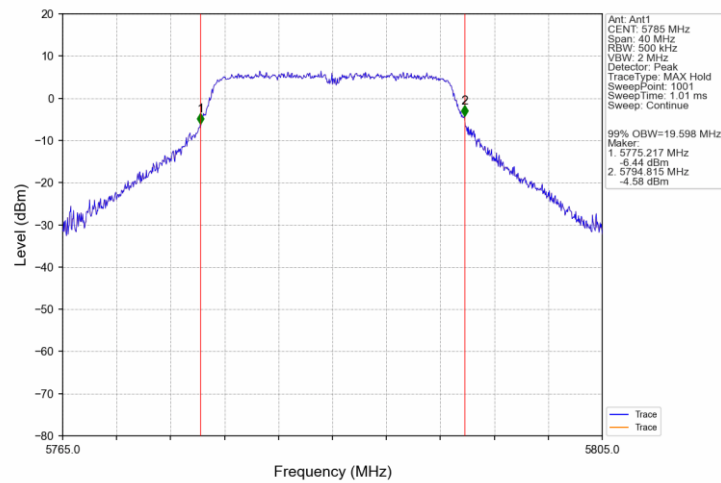
802.11ac(VHT20)_HCH_5700MHz_Ant1_NTNV



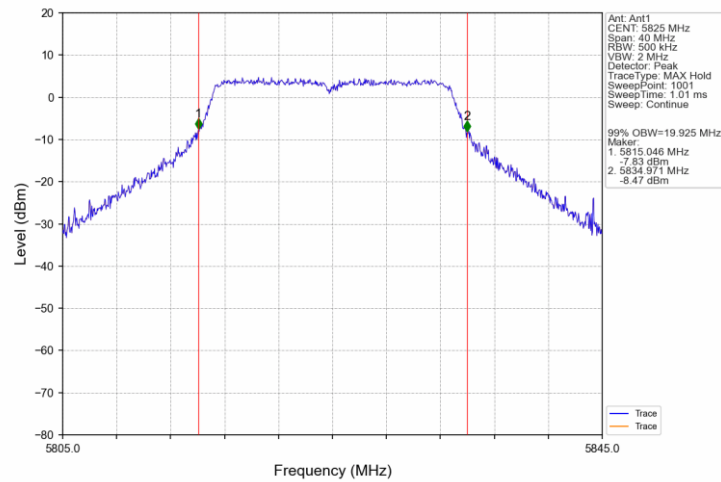
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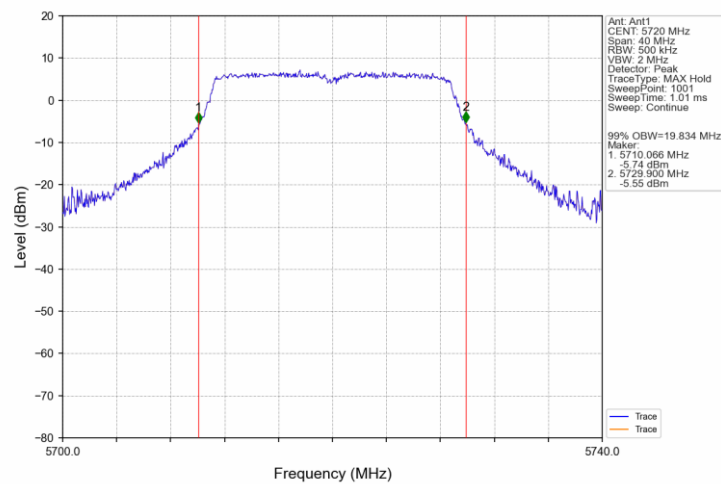
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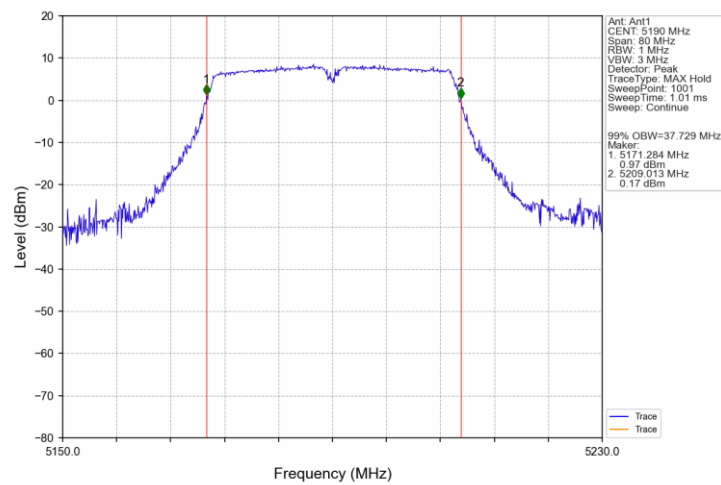
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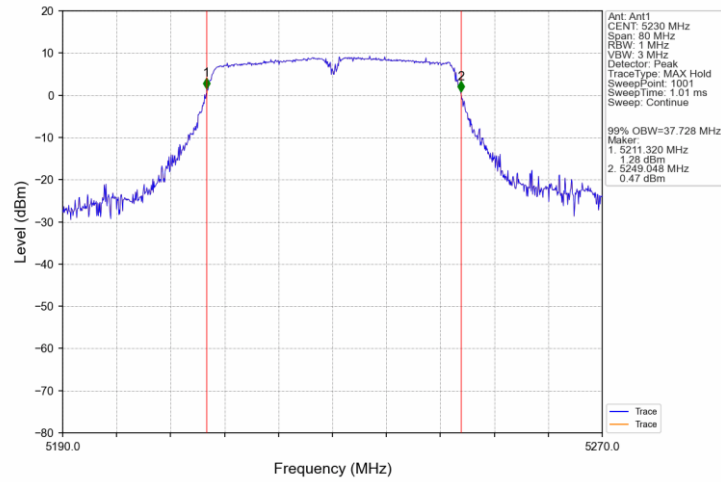
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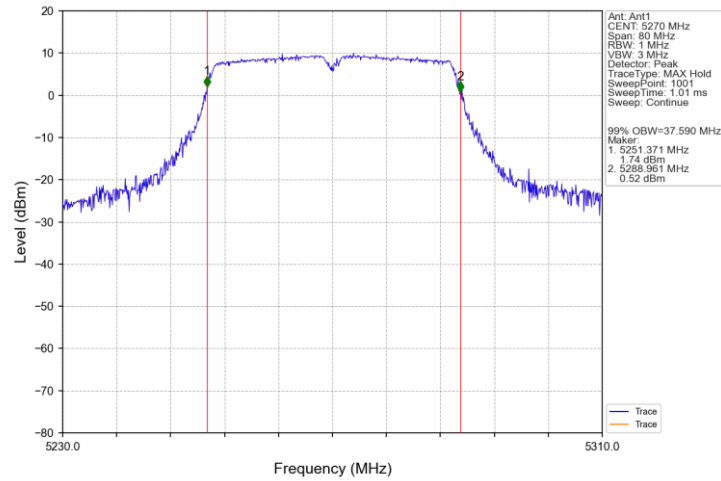
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



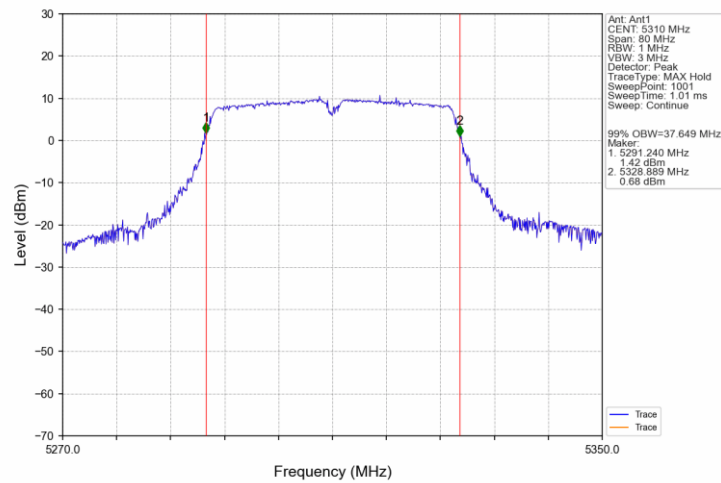
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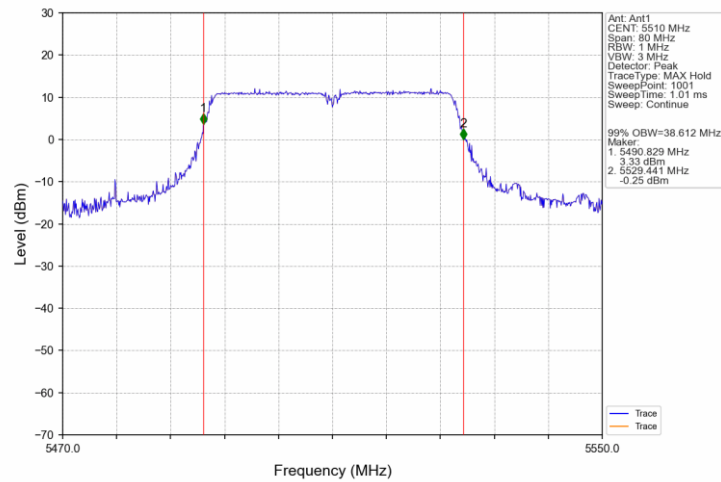
802.11ac(VHT40)_LCH_5270MHz_Ant1_NTNV



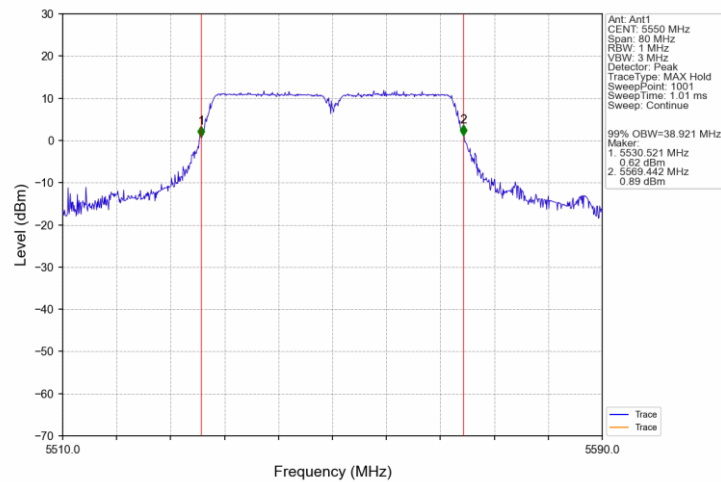
802.11ac(VHT40)_HCH_5310MHz_Ant1_NTNV



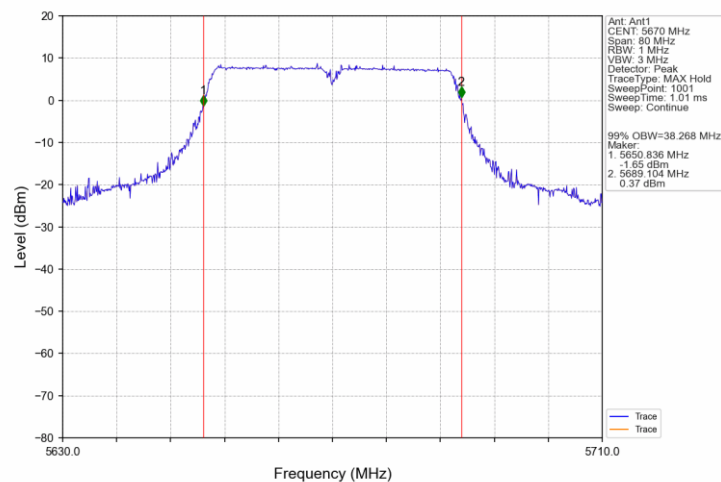
802.11ac(VHT40)_LCH_5510MHz_Ant1_NTNV



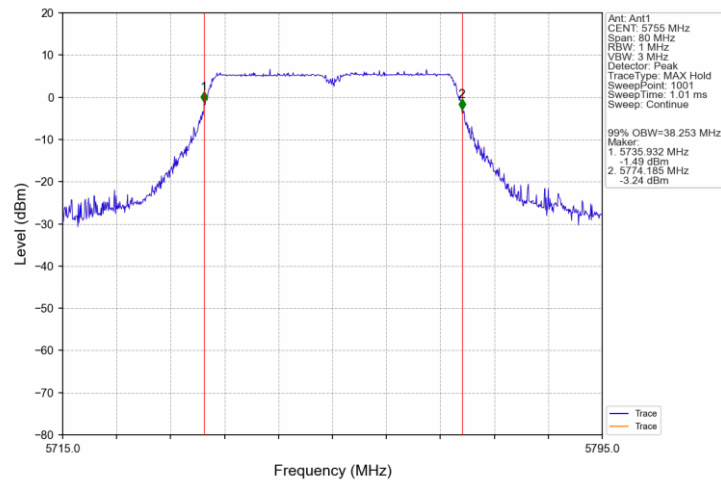
802.11ac(VHT40)_MCH_5550MHz_Ant1_NTNV



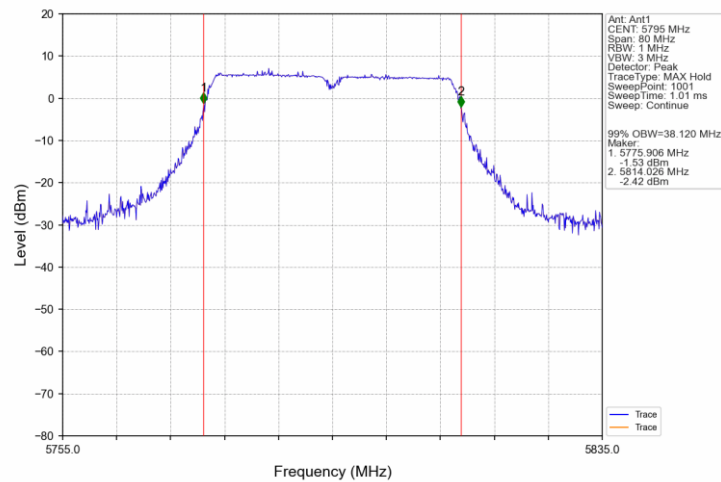
802.11ac(VHT40)_HCH_5670MHz_Ant1_NTNV



802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV



802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT40)_HCH_5710MHz_Ant1_NTNV

