FCC - TEST REPORT

Report Number	:	**68.950.24.0555.01**	Date of Issue:	**2024-07-17**
Model	:	**Altos BrainSphere P1 F9**		
Product Type	:	All-in-One PCs		
Applicant	:	ALTOS COMPUTING INDIA PRIVATE LIMITED		
Address	:	6th Floor, No. 13, Embassy Heights, Magrath Road, Karnataka, Bengaluru, 560025, India		
Manufacturer	:	ALTOS COMPUTING INDIA PRIVATE LIMITED		
Address	:	6th Floor, No. 13, Embassy Heights, Magrath Road, Karnataka, Bengaluru, 560025, India		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	**99**		

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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 City, 518052, P. R. China
Telephone:	86 755 8828 6998
Fax:	86 755 828 5299
FCC Registration No.:	514049
FCC Designation No.:	CN5009

3 Description of the Equipment Under Test

Product:	All-in-One PCs
Model no.:	Altos BrainSphere P1 F9
FCC ID:	2BHDD-AQ67ALTOSP1F9
Rating:	19VDC, 7.9A (powered by adapter)
Accessories:	Adapter Model: HKA15019079-6C Input: 100-240VAC 50/60Hz, 2.0A, Output: 19VDC, 7.9A Manufacturer: Shenzhen Huntkey Electric Co., Ltd.
RF Transmission Frequency:	2412MHz-2462MHz for 802.11b/g/n20/n40/ax20/ax40
No. of Operated Channel:	11
Modulation:	802.11b: BPSK, QPSK, CCK, 802.11g/802.11n20/802.11n40: BPSK, QPSK, 16-QAM, 64-QAM 802.11ax20/802.11ax40: BPSK, QPSK, 16-QAM, 64-QAM/256-QAM/1024-QAM
Antenna Type:	Internal Antenna
Antenna Gain:	3.41dBi max for 2.4GHz Ant1 3.14dBi max for 2.4GHz Ant2 Note: Antenna 1 and Antenna 2 support MIMO mode, so directional gain value as below: Directional Gain=$10*\log[(10^{3.41/20}+10^{3.14/20})^2/2]=6.29$dBi
Description of the EUT:	The Equipment Under Test (EUT) is an All-in-One PCs supports Bluetooth Low Energy / Bluetooth BR+EDR/ Wi-Fi functions

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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2023 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10-2020.

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5 Summary of Test Results

Technical Requirements			
FCC Part 15 Subpart C			
Test Condition		Test Site	Test Result
§15.207	Conducted emission AC power port	Site 1	Pass
§15.247 (b) (3)	Conducted peak output power	Site 1	Pass
§15.247(a)(2)	6dB bandwidth and 99% Occupied Bandwidth	Site 1	Pass
§15.247(e)	Power spectral density	Site 1	Pass
§15.247(d)	Spurious RF conducted emissions	Site 1	Pass
§15.247(d)	Band edge	Site 1	Pass
§15.247(d) & §15.209 & §15.205	Spurious radiated emissions for transmitter	Site 1	Pass
§15.203	Antenna requirement	See note 2	Pass

Note 1: N/A=Not Applicable.
Note 2: The EUT uses an Internal Integrated Metal Antenna, which gain is 3.41dBi max for 2.4GHz Ant1, 3.14dBi max for 2.4GHz Ant2. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.

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6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2BHDD-AQ67ALTOSP1F9, complies with Section 15.207, 15.209, 15.205, 15.247 of the FCC Part 15, Subpart C.

The Model: Altos BrainSphere P1 F9 supports Bluetooth Low Energy/Bluetooth BR+EDR/Wi-Fi functions. The TX and RX range is 2402MHz-2480MHz for Bluetooth, 2412MHz – 2462MHz for 2.4GHz Wi-Fi, 5180MHz – 5320MHz, 5500MHz – 5700MHz, 5745MHz – 5825MHz for 5GHz Wi-Fi.

This report is for the 2.4GHz Wi-Fi part.

SUMMARY:

All tests according to the regulations cited on page 6 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

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

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

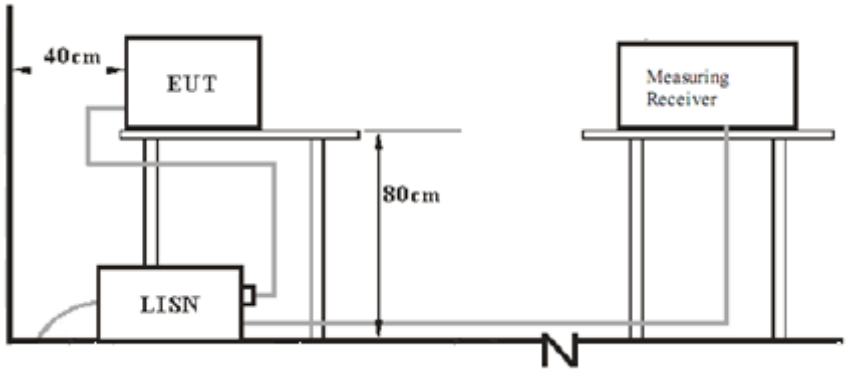
Sample Received Date:	2024-05-21
Testing Start Date:	2024-05-22
Testing End Date:	2024-06-24

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

Reviewed by:	Prepared by:	Tested by:
John Zhi	Joe Gu	Carry Cai
Project Manager	Project Engineer	Test Engineer

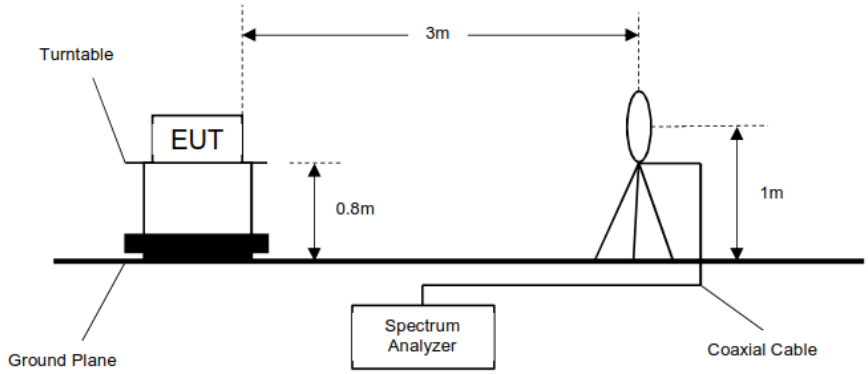
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

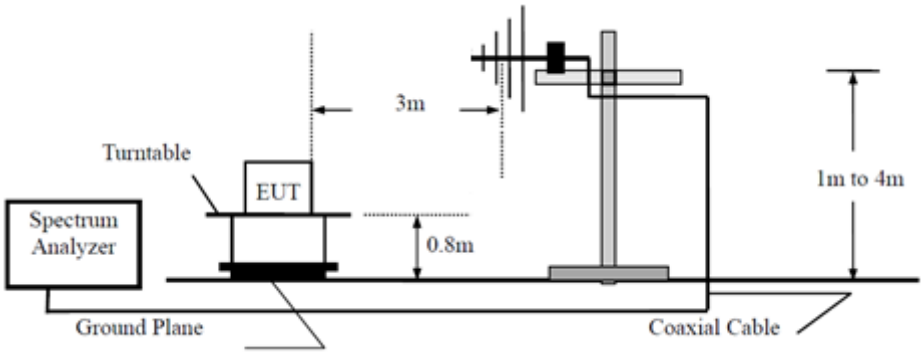


7.2 Radiated test setups

9kHz - 30MHz



30MHz - 1GHz



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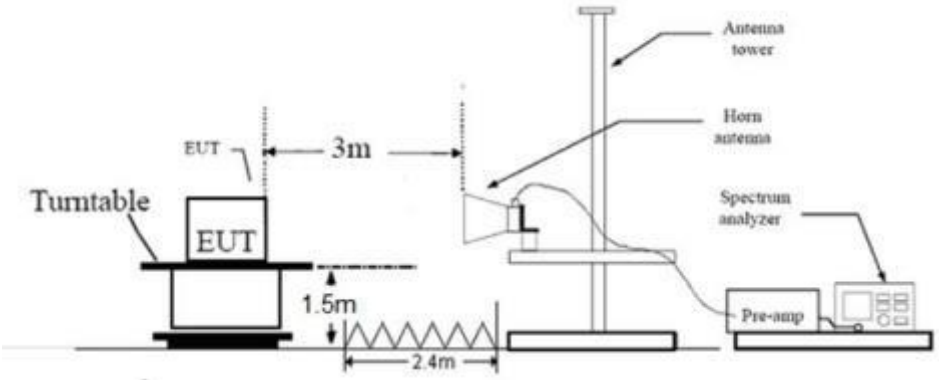
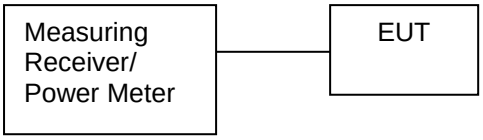
Above 1GHz



7.3 Conducted RF test setups



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8 Systems Test Configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model NO.	S/N
LAPTOP	LENOVO	T460S	---

Test Channel information:

Test Mode	**Channel (MHz)**		
802.11b	CH 1: 2412MHz	CH 6: 2437MHz	CH 11: 2462MHz
802.11g	CH 1: 2412MHz	CH 6: 2437MHz	CH 11: 2462MHz
802.11n20	CH 1: 2412MHz	CH 6: 2437MHz	CH 11: 2462MHz
802.11n40	CH 3: 2422MHz	CH 6: 2437MHz	CH 9: 2452MHz
802.11ax20	CH 1: 2412MHz	CH 6: 2437MHz	CH 11: 2462MHz
802.11ax40	CH 3: 2422MHz	CH 6: 2437MHz	CH 9: 2452MHz

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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

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

*Decreases with the logarithm of the frequency.

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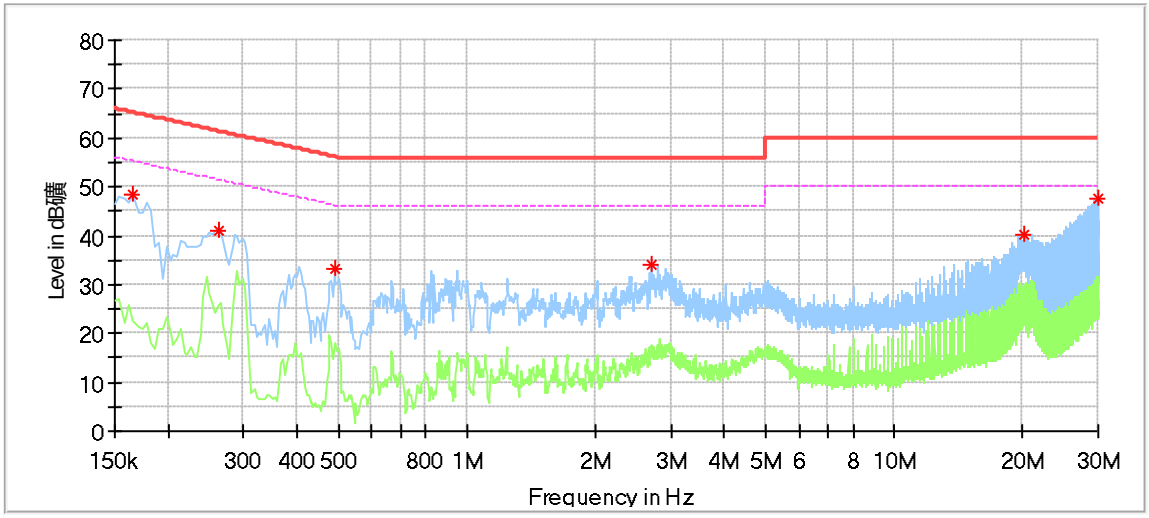
Conducted Emission

Product Type	:	All-in-One PCs
M/N	:	Altos BrainSphere P1 F9
Operating Condition	:	Transmitting
Test Specification	:	Line
Comment	:	AC 120V/60Hz



Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.166000	48.40	---	65.16	16.76	L1	9.54
0.262000	40.82	---	61.37	20.54	L1	9.56
0.490000	33.33	---	56.17	22.84	L1	9.59
2.698000	34.02	---	56.00	21.98	L1	9.64
20.082000	40.32	---	60.00	19.68	L1	10.01
29.918000	47.43	---	60.00	12.57	L1	10.03

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

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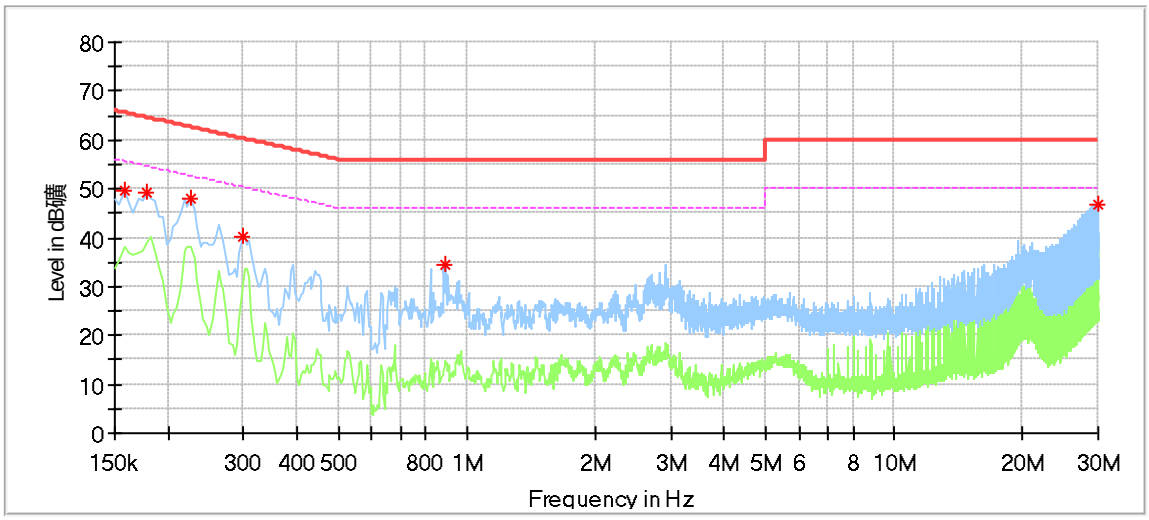
Conducted Emission

Product Type	:	All-in-One PCs
M/N	:	Altos BrainSphere P1 F9
Operating Condition	:	Transmitting
Test Specification	:	Neutral
Comment	:	AC 120V/60Hz



Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.158000	49.66	---	65.57	15.90	N	9.56
0.178000	49.24	---	64.58	15.34	N	9.57
0.226000	48.10	---	62.60	14.49	N	9.58
0.298000	40.40	---	60.30	19.90	N	9.60
0.894000	34.46	---	56.00	21.54	N	9.63
29.846000	46.97	---	60.00	13.03	N	9.88

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

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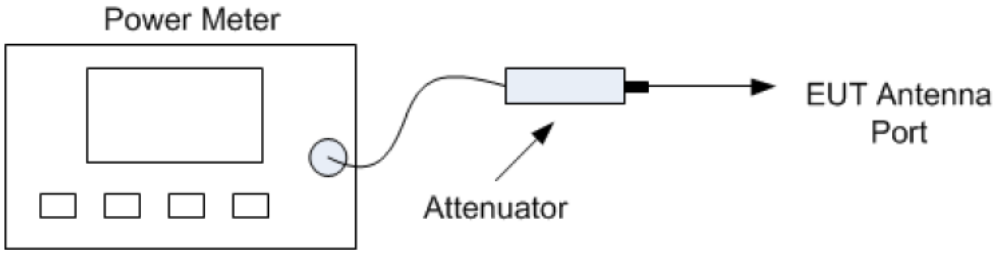
9.2 Conducted Output Power

Test Method

1) The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
4) Measure the peak power of the transmitter. This measurement is a peak over both the ON and OFF periods of the transmitter.



Power meter conducted test setup

Limits

According to §15.247 (b) (3), conducted output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

Note: The Antenna directional gain is 6.29 dBi. The limit is the above limits reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi, which is 30dBm – 0.1dB=29.9dBm

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Test result as below table

802.11b_SISO modulation Test Result

Frequency (MHz)	Ant 1	Ant 2	Result
	Conducted Power (dBm)	Conducted Power (dBm)	
Low channel 2412MHz	14.4	14.8	Pass
Middle channel 2437MHz	14.5	15.0	Pass
High channel 2462MHz	14.3	14.9	Pass

802.11g_ SISO modulation Test Result

Frequency (MHz)	Ant 1	Ant 2	Result
	Conducted Power (dBm)	Conducted Power (dBm)	
Low channel 2412MHz	13.7	14.1	Pass
Middle channel 2437MHz	13.9	14.5	Pass
High channel 2462MHz	13.8	14.4	Pass

802.11n20_MIMO modulation Test Result

Frequency (MHz)	Ant 1	Ant 2	Ant 1+ Ant 2	Result
	Conducted Power (dBm)	Conducted Power (dBm)	Conducted Power (dBm)	
Low channel 2412MHz	9.8	9.7	12.8	Pass
Middle channel 2437MHz	11.0	11.2	14.1	Pass
High channel 2462MHz	10.7	11.1	13.9	Pass

802.11n40_MIMO modulation Test Result

Frequency (MHz)	Ant 1	Ant 2	Ant 1+ Ant 2	Result
	Conducted Power (dBm)	Conducted Power (dBm)	Conducted Power (dBm)	
Low channel 2422MHz	11.3	11.6	14.5	Pass
Middle channel 2437MHz	11.3	11.7	14.5	Pass
High channel 2452MHz	11.2	11.6	14.4	Pass

802.11ax20_MIMO modulation Test Result

Frequency (MHz)	Ant 1	Ant 2	Ant 1+ Ant 2	Result
	Conducted Power (dBm)	Conducted Power (dBm)	Conducted Power (dBm)	
Low channel 2412MHz	9.7	9.6	12.7	Pass
Middle channel 2437MHz	10.8	11.0	13.9	Pass
High channel 2462MHz	10.6	10.9	13.8	Pass

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802.11ax40_MIMO modulation Test Result

Frequency (MHz)	Ant 1	Ant 2	Ant 1+ Ant 2	Result
	Conducted Power (dBm)	Conducted Power (dBm)	Conducted Power (dBm)	
Low channel 2422MHz	11.0	11.4	14.2	Pass
Middle channel 2437MHz	11.0	11.4	14.2	Pass
High channel 2452MHz	10.8	11.3	14.1	Pass

$Power^{SUM} = 10*Log(10^{\wedge(PowerANT1/10)} + 10^{\wedge(PowerANT2/10)})$

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9.3 6dB Bandwidth

Test Method for 6 dB Bandwidth

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set center frequency to the nominal EUT channel center frequency.
3. Set RBW =1% to 5% of the OBW, but not less than 100 kHz, VBW≥ 3 × RBW Detector = Peak. Trace mode = max hold. Sweep = auto Trace = max hold
4. 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.
5. Record the results in the test report.

Limit

Limit [kHz]
≥500

Test Method for 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. Set RBW = 1 % to 5 % of the OBW Set VBW ≥ 3 RBW Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize.
3. Use the 99 % power bandwidth function of the instrument.
4. Record the results in the test report.

Limit

Limit [kHz]

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6 dB Bandwidth

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	10.507	>=0.5	Pass
			2	10.514	>=0.5	Pass
		2437	1	10.511	>=0.5	Pass
			2	10.509	>=0.5	Pass
		2462	1	10.508	>=0.5	Pass
			2	10.502	>=0.5	Pass
802.11g	SISO	2412	1	16.271	>=0.5	Pass
			2	16.109	>=0.5	Pass
		2437	1	16.136	>=0.5	Pass
			2	16.096	>=0.5	Pass
		2462	1	16.093	>=0.5	Pass
			2	16.211	>=0.5	Pass
802.11n (HT20)	MIMO	2412	1	17.330	>=0.5	Pass
			2	17.232	>=0.5	Pass
		2437	1	17.243	>=0.5	Pass
			2	17.352	>=0.5	Pass
		2462	1	17.241	>=0.5	Pass
			2	17.272	>=0.5	Pass
802.11n (HT40)	MIMO	2422	1	35.539	>=0.5	Pass
			2	35.607	>=0.5	Pass
		2437	1	35.402	>=0.5	Pass
			2	35.579	>=0.5	Pass
		2452	1	35.425	>=0.5	Pass
			2	35.578	>=0.5	Pass
802.11ax (HEW20)	MIMO	2412	1	18.734	>=0.5	Pass
			2	18.636	>=0.5	Pass
		2437	1	18.777	>=0.5	Pass
			2	18.430	>=0.5	Pass
		2462	1	18.727	>=0.5	Pass
			2	18.641	>=0.5	Pass
802.11ax (HEW40)	MIMO	2422	1	36.863	>=0.5	Pass
			2	36.598	>=0.5	Pass
		2437	1	36.828	>=0.5	Pass
			2	36.790	>=0.5	Pass
		2452	1	36.994	>=0.5	Pass
			2	36.615	>=0.5	Pass

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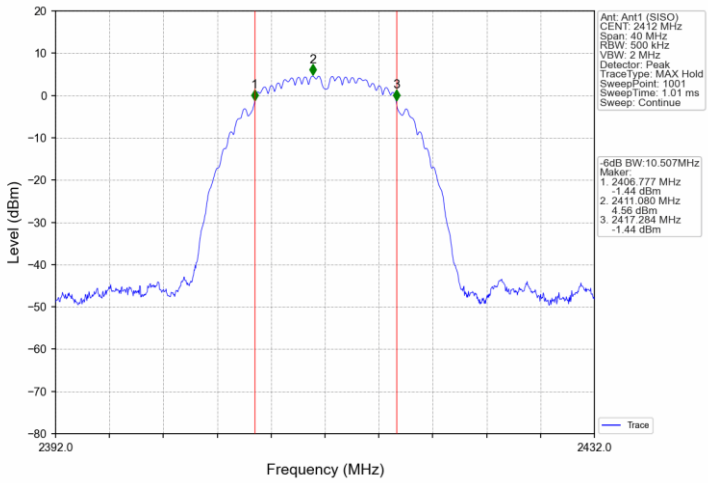
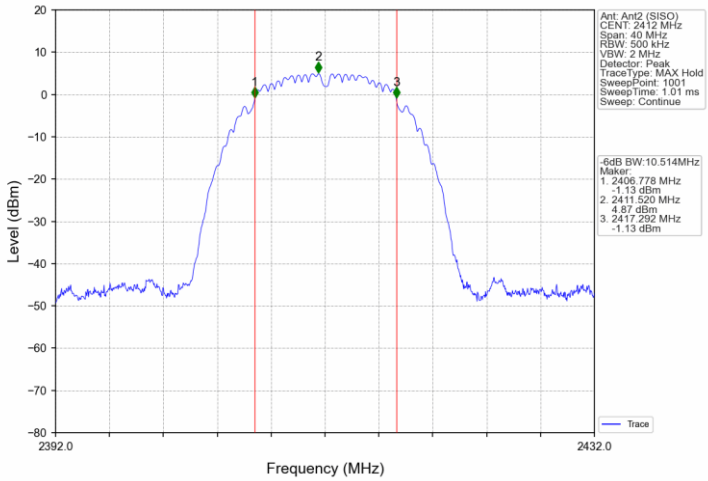
6 dB Bandwidth

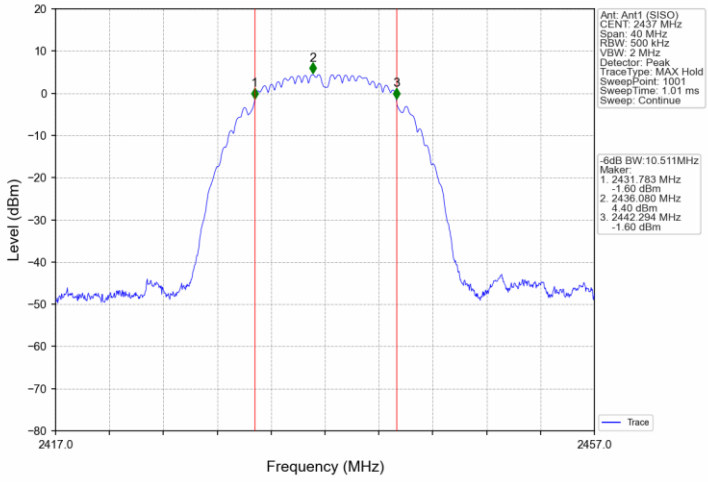
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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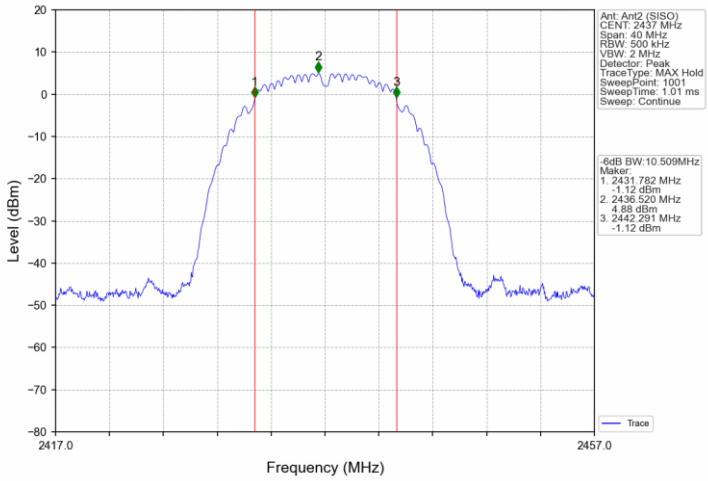
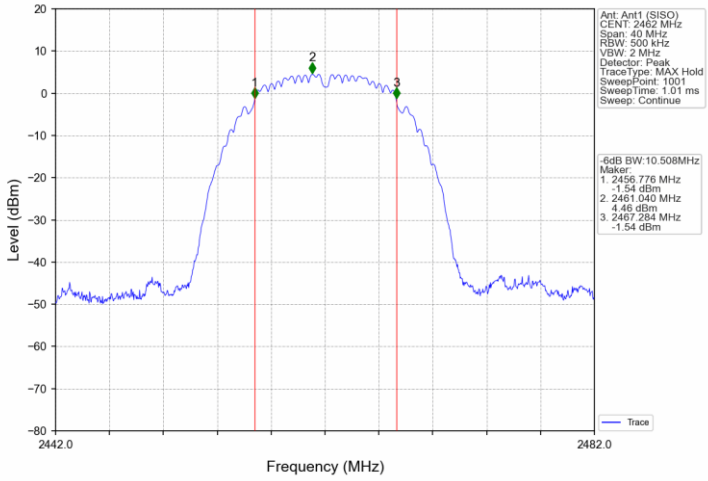
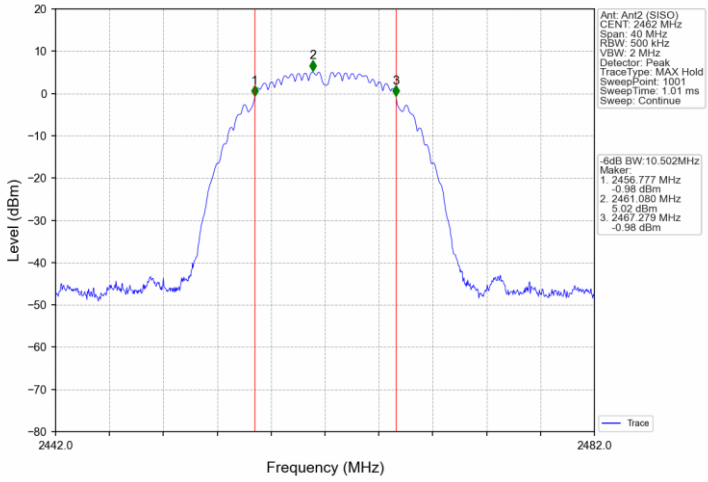
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



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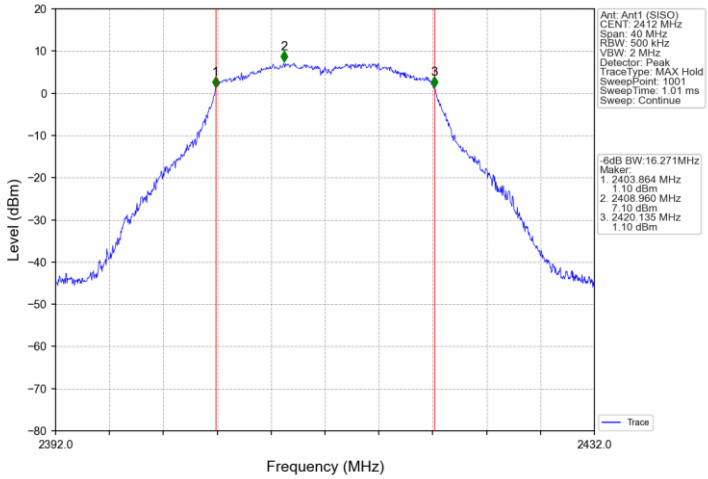
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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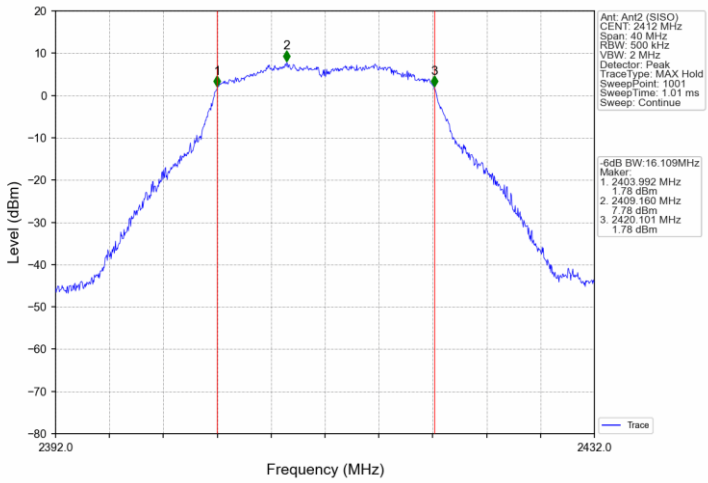
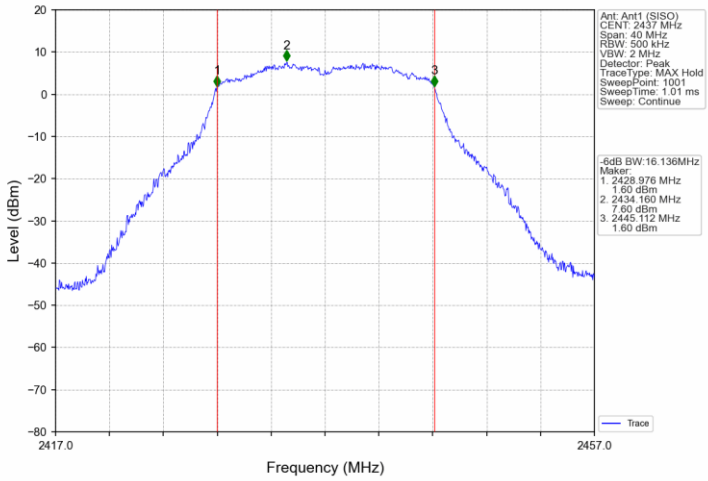


802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



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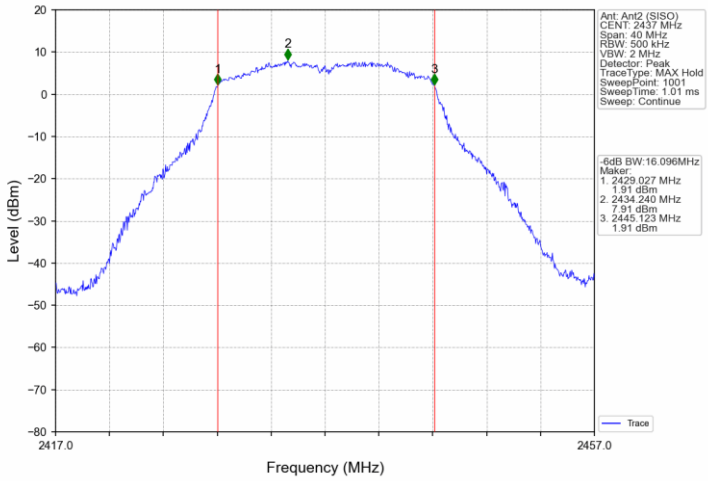

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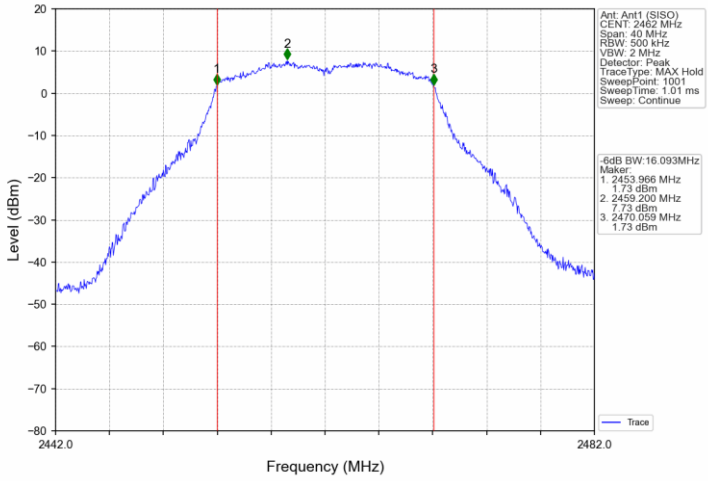
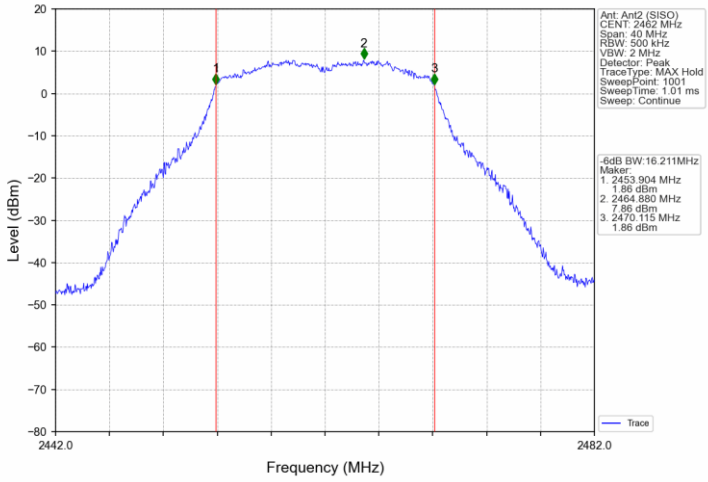


802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



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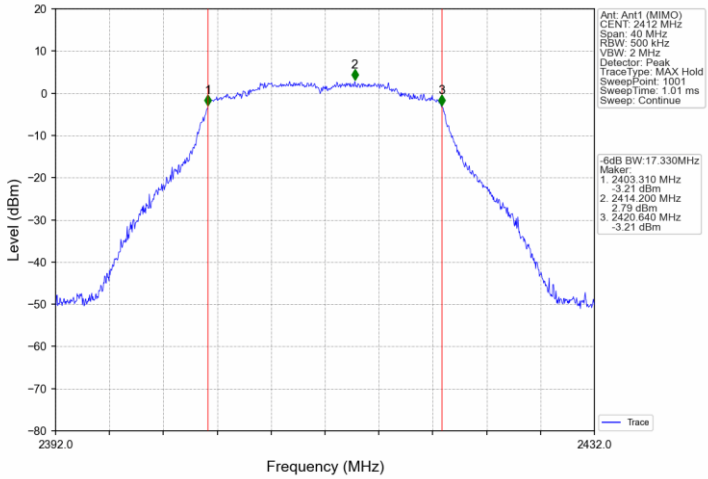
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



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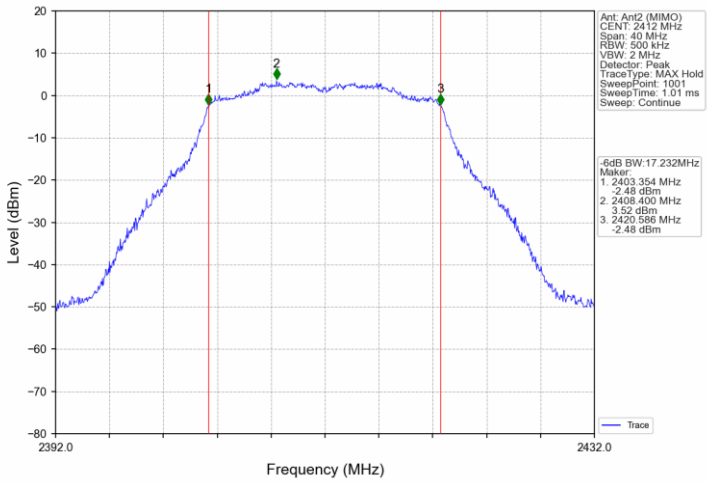

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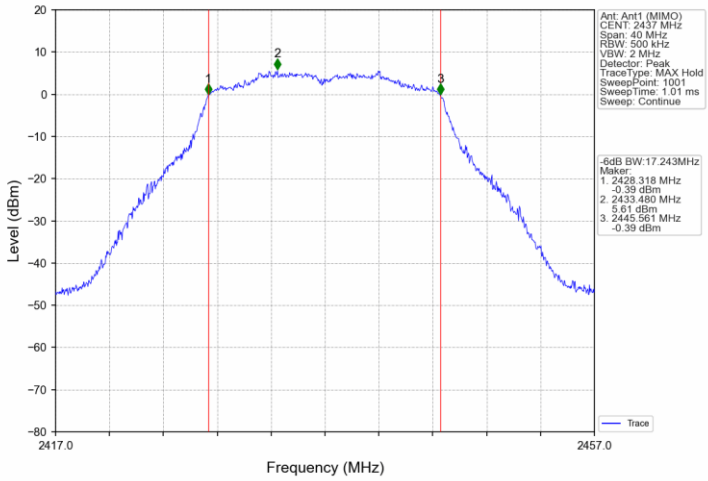

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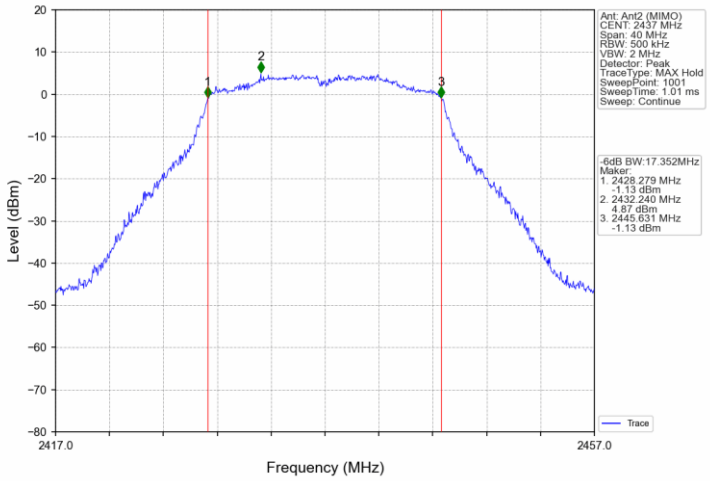
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



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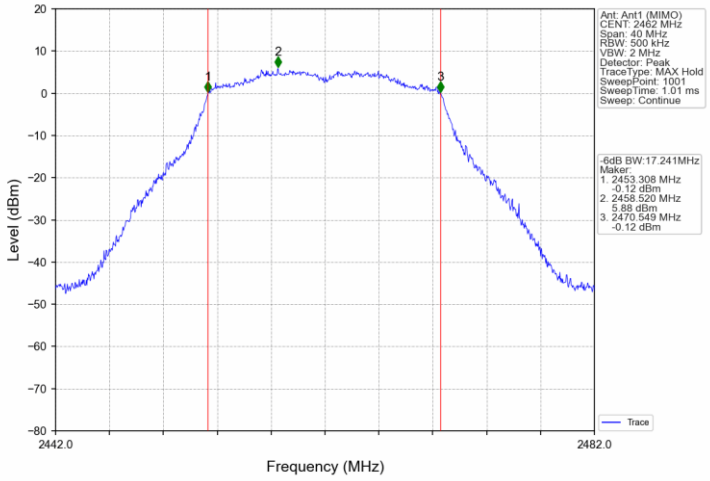
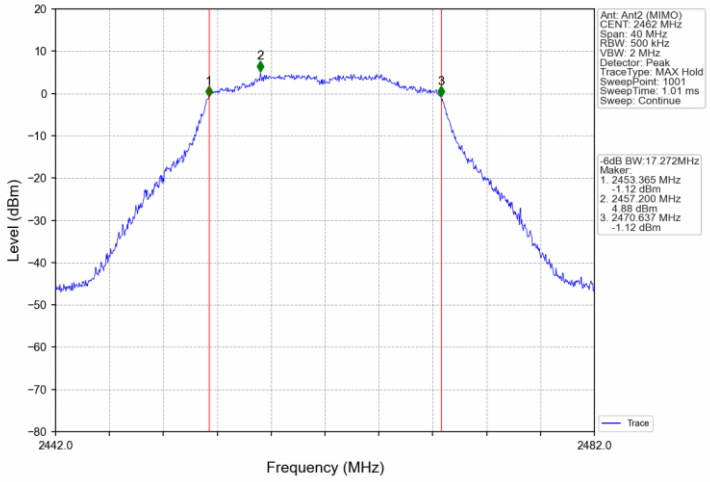


802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



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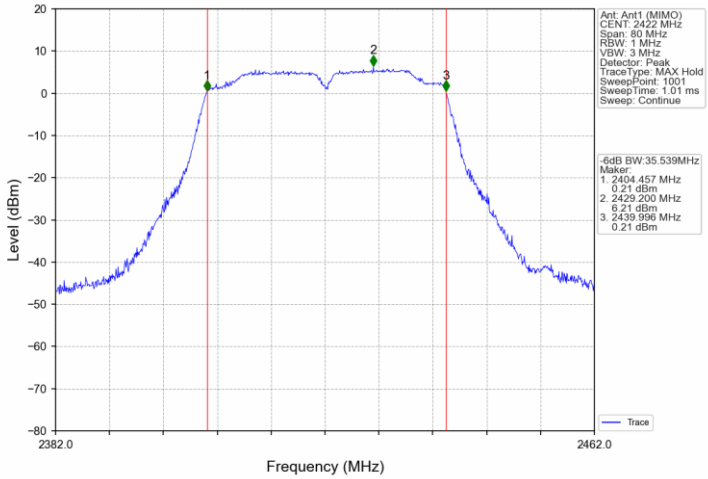
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



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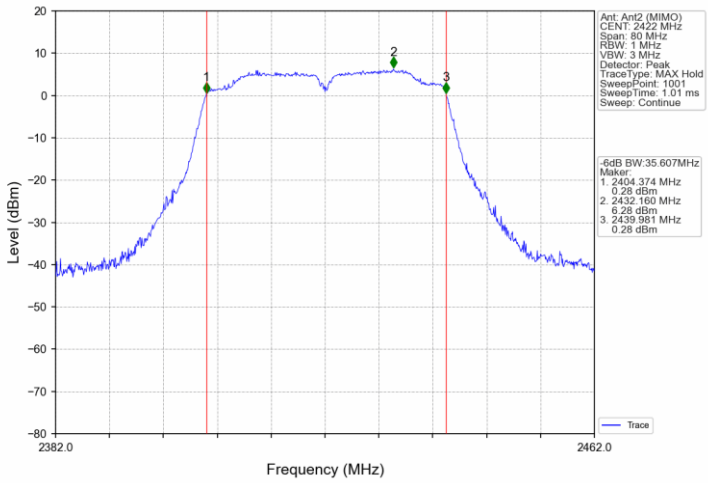
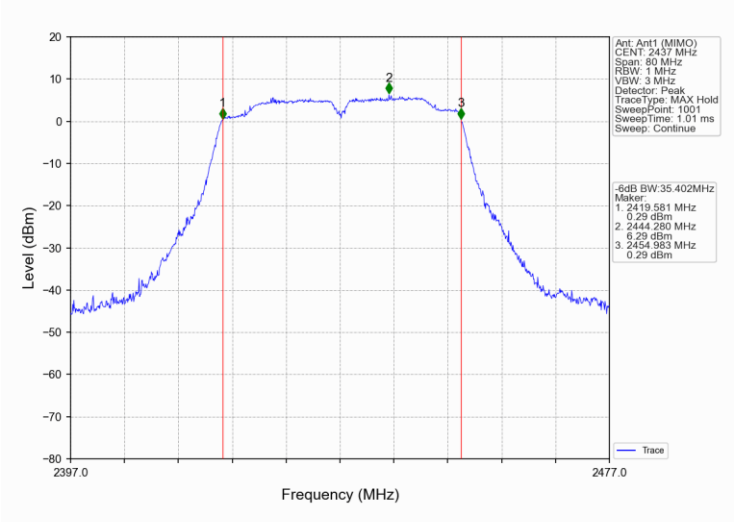


802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



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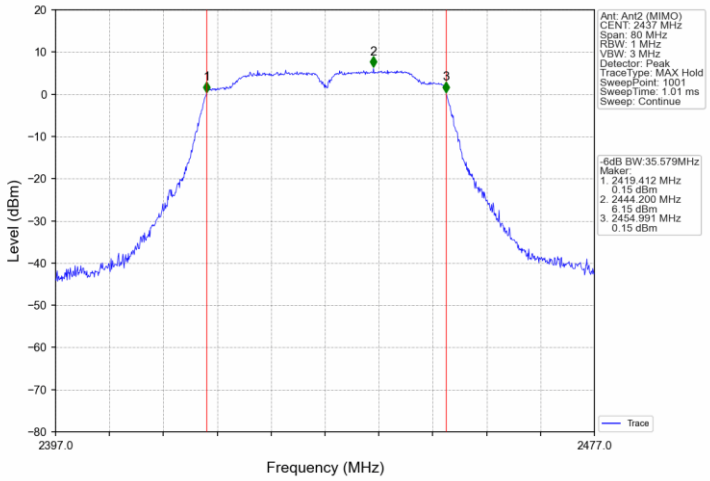
802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



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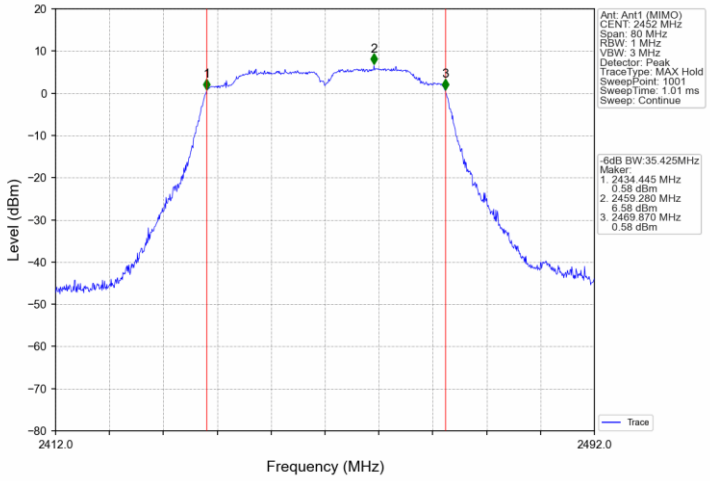
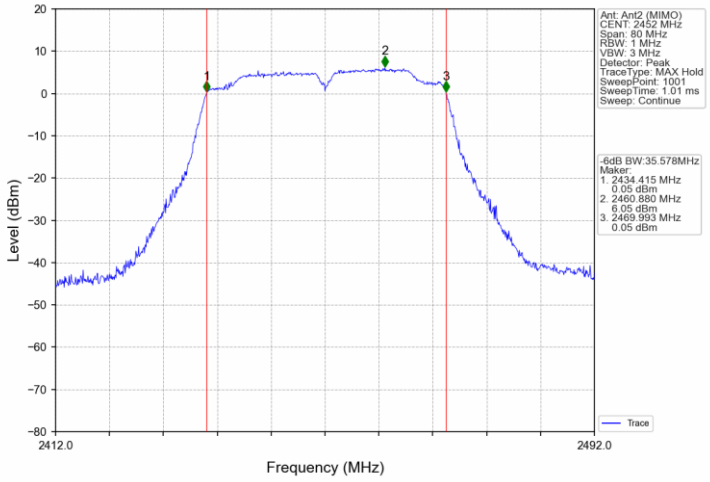


802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



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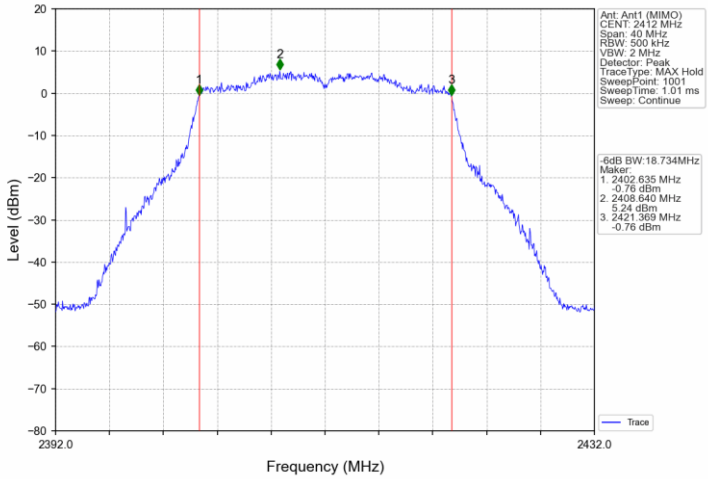
802.11ax(HEW20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



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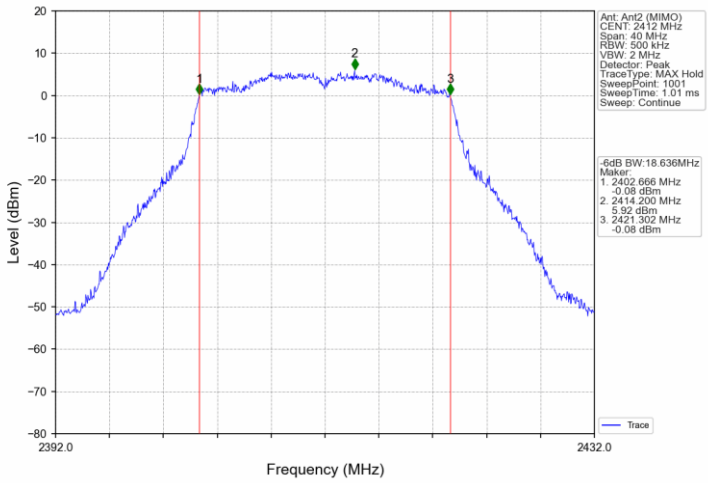
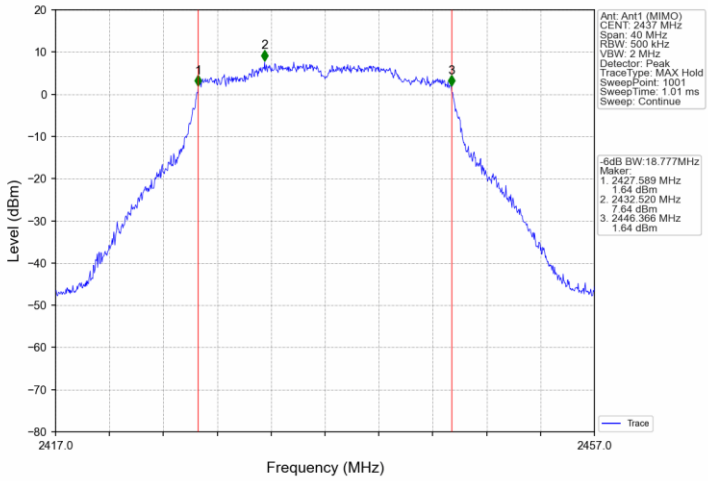


802.11ax(HEW20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



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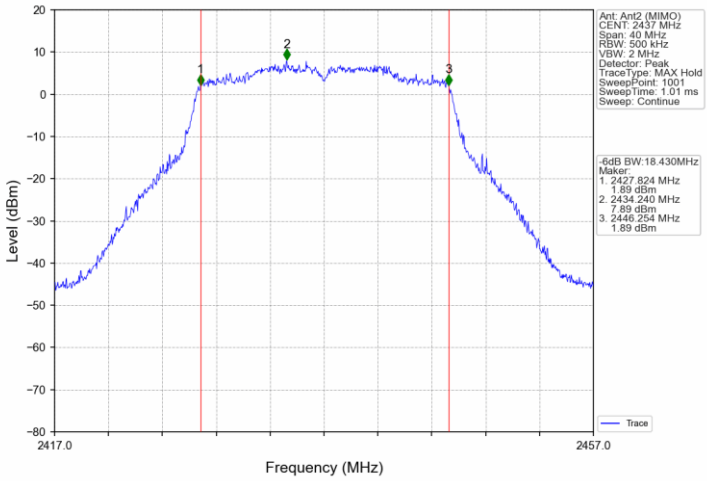
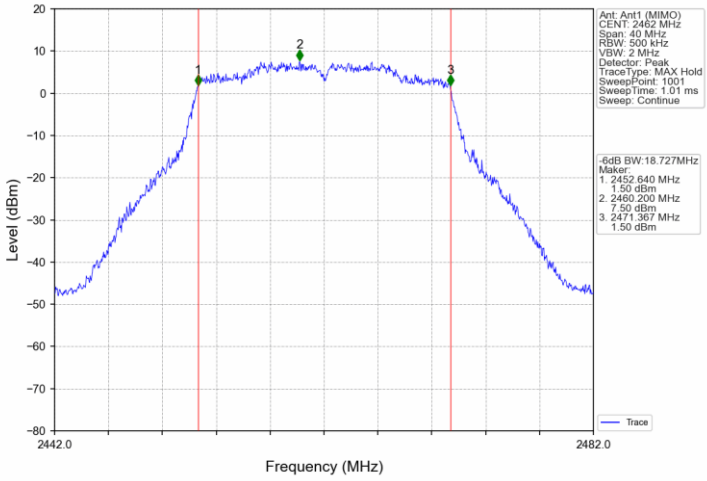
802.11ax(HEW20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11ax(HEW20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



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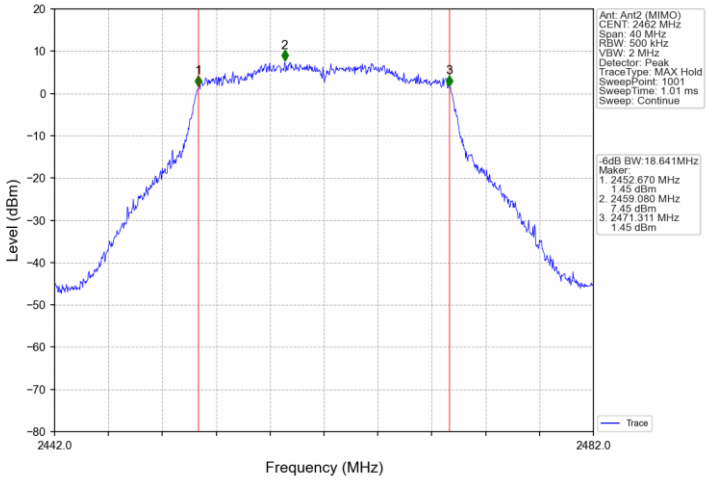

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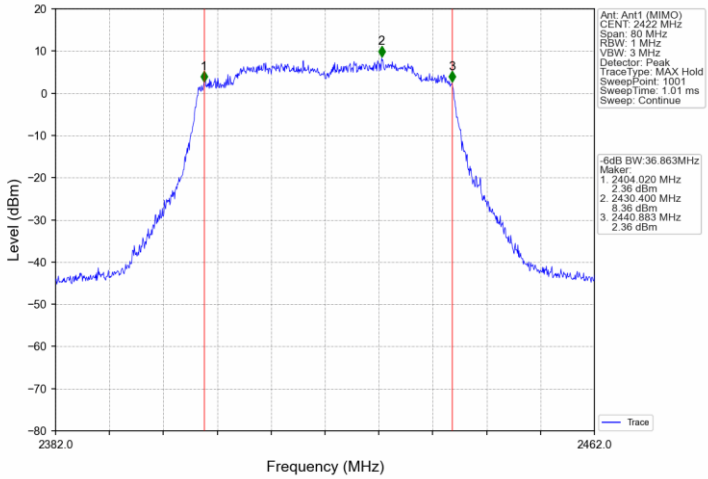
802.11ax(HEW40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



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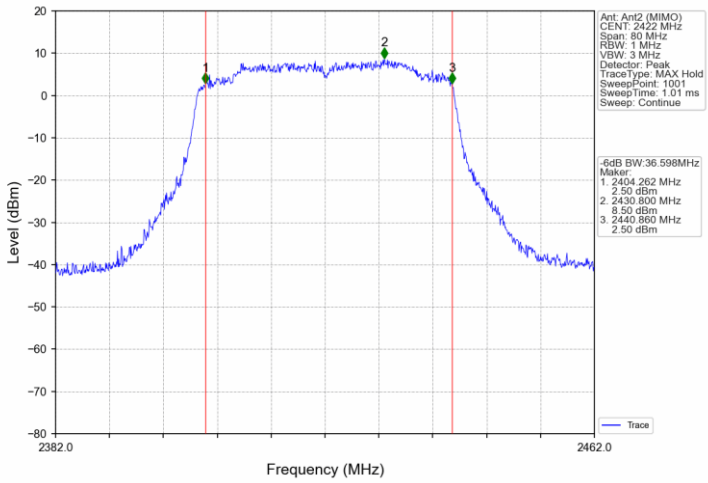

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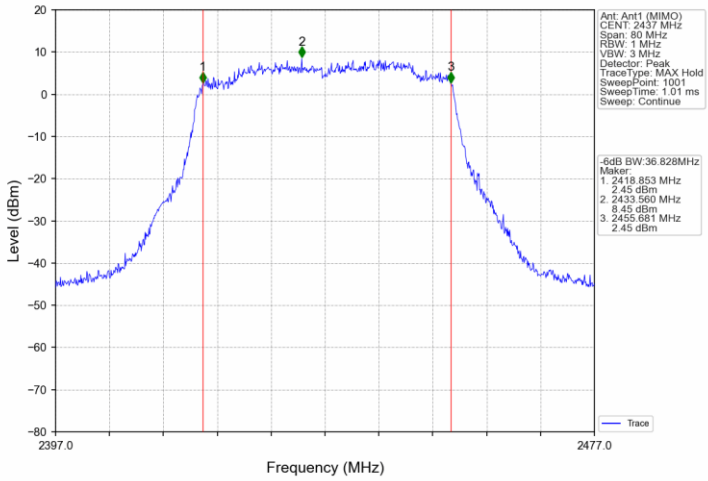

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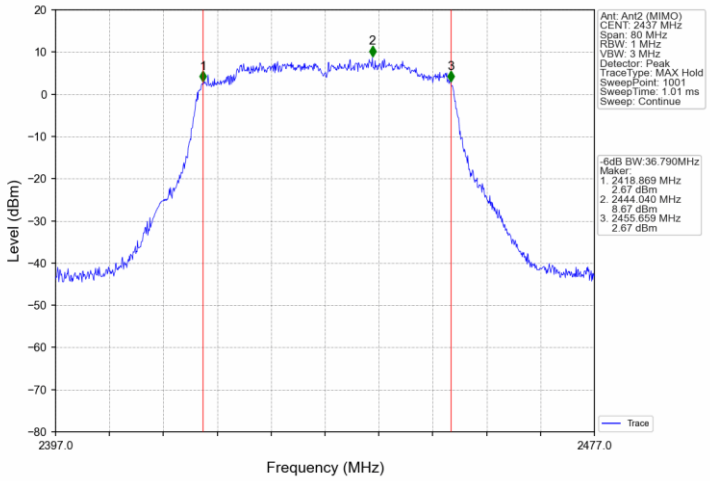
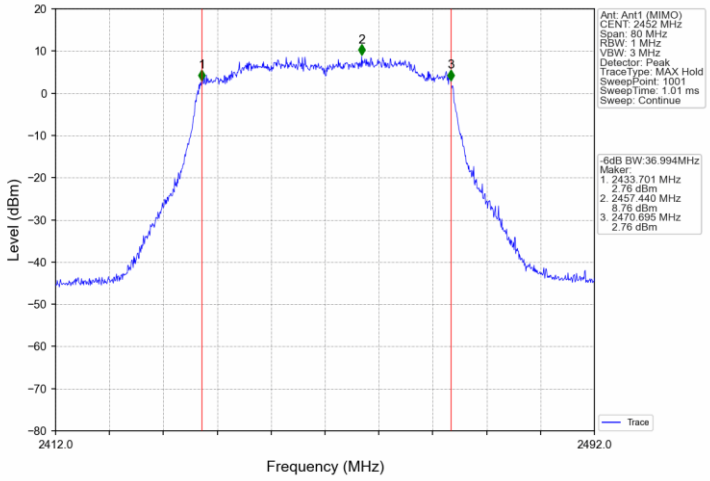
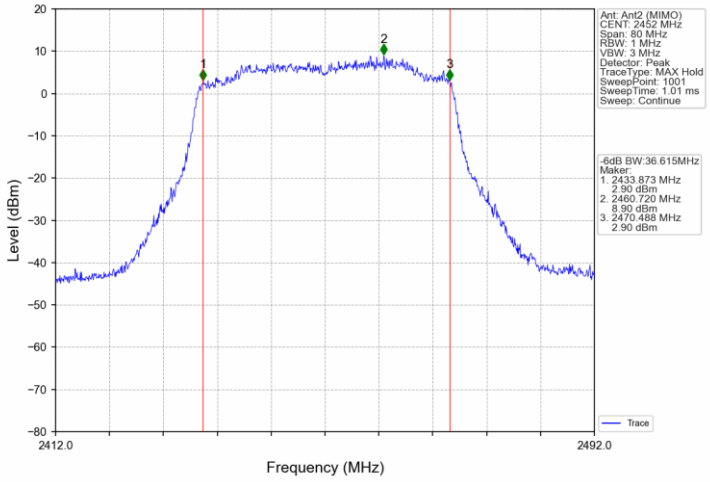
802.11ax(HEW40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



99% Bandwidth

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	13.421	/	Pass
			2	13.442	/	Pass
		2437	1	13.443	/	Pass
			2	13.434	/	Pass
		2462	1	13.454	/	Pass
			2	13.439	/	Pass
802.11g	SISO	2412	1	17.341	/	Pass
			2	17.389	/	Pass
		2437	1	17.325	/	Pass
			2	17.282	/	Pass
		2462	1	17.325	/	Pass
			2	17.260	/	Pass
802.11n (HT20)	MIMO	2412	1	18.369	/	Pass
			2	18.303	/	Pass
		2437	1	18.391	/	Pass
			2	18.445	/	Pass
		2462	1	18.368	/	Pass
			2	18.391	/	Pass
802.11n (HT40)	MIMO	2422	1	36.272	/	Pass
			2	36.288	/	Pass
		2437	1	36.331	/	Pass
			2	36.371	/	Pass
		2452	1	36.260	/	Pass
			2	36.265	/	Pass
802.11ax (HEW20)	MIMO	2412	1	19.110	/	Pass
			2	19.045	/	Pass
		2437	1	19.067	/	Pass
			2	19.085	/	Pass
		2462	1	19.098	/	Pass
			2	19.054	/	Pass
802.11ax (HEW40)	MIMO	2422	1	37.677	/	Pass
			2	37.648	/	Pass
		2437	1	37.716	/	Pass
			2	37.690	/	Pass
		2452	1	37.620	/	Pass
			2	37.579	/	Pass

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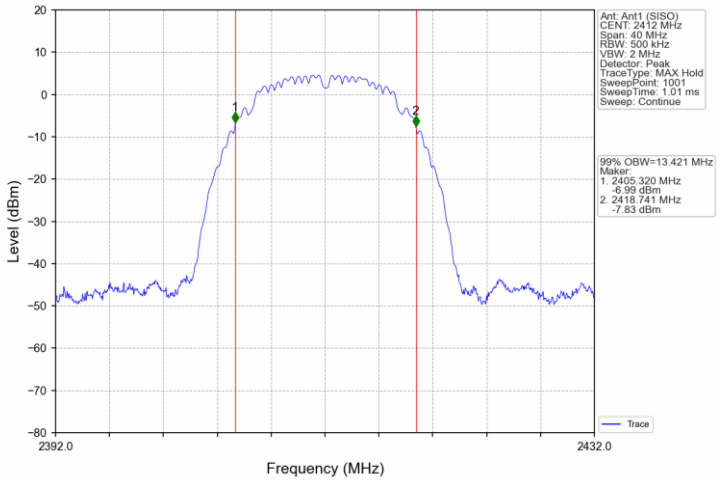
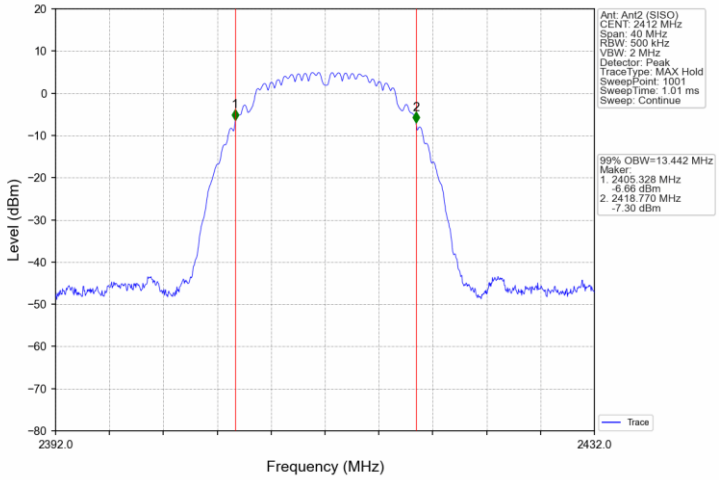
99% Bandwidth

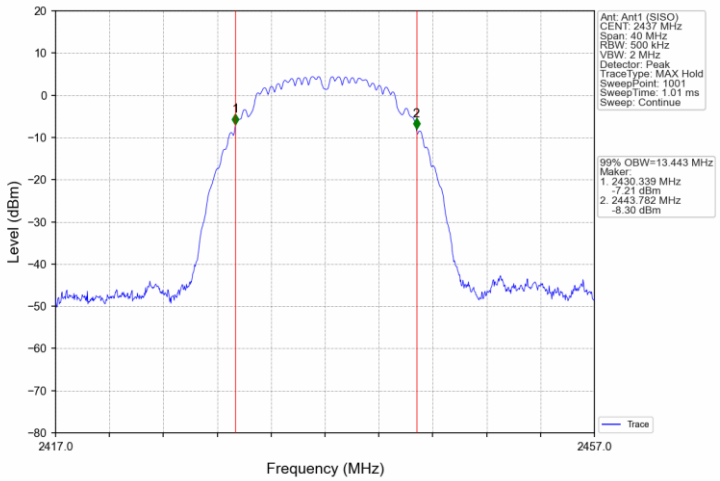
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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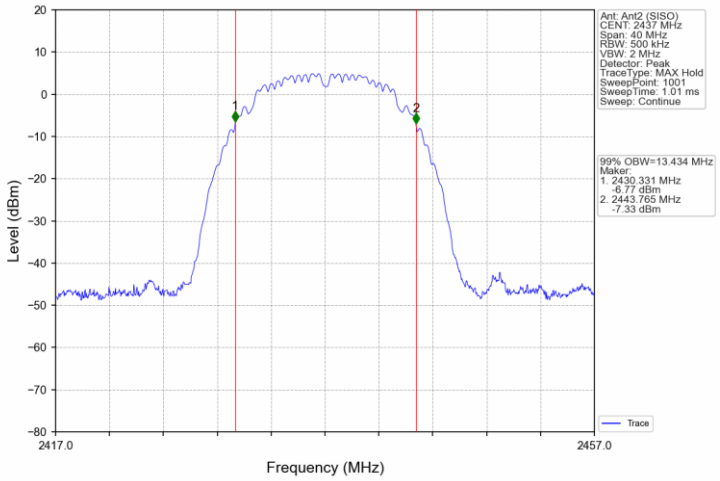
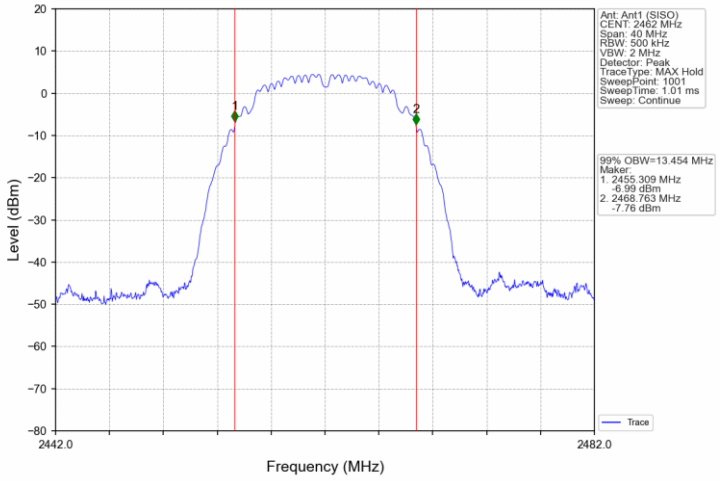
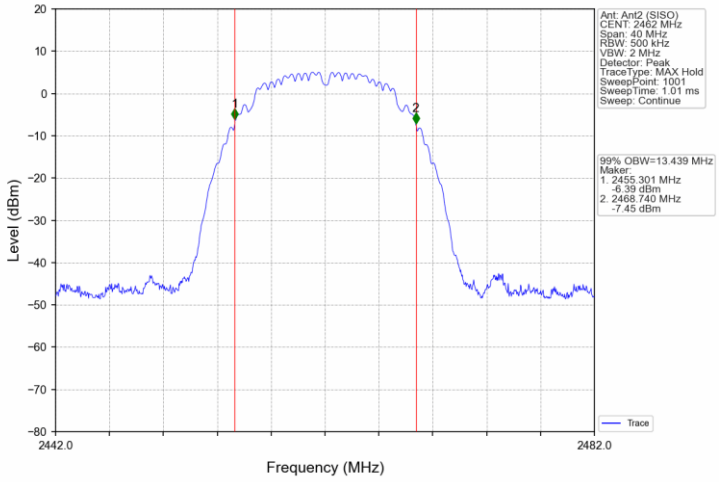
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



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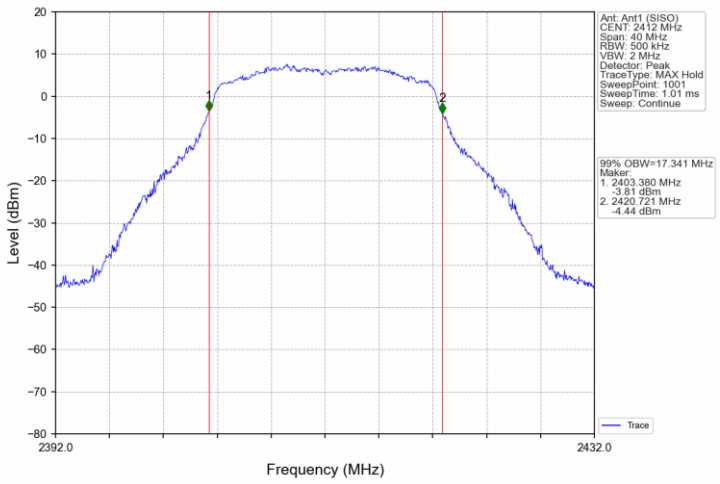
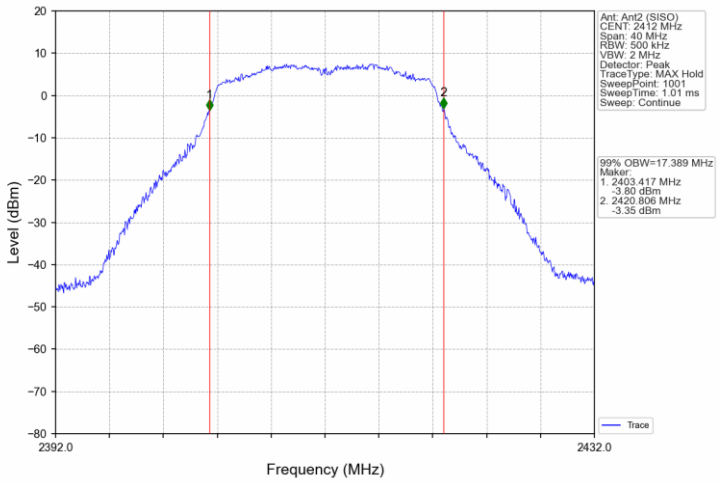
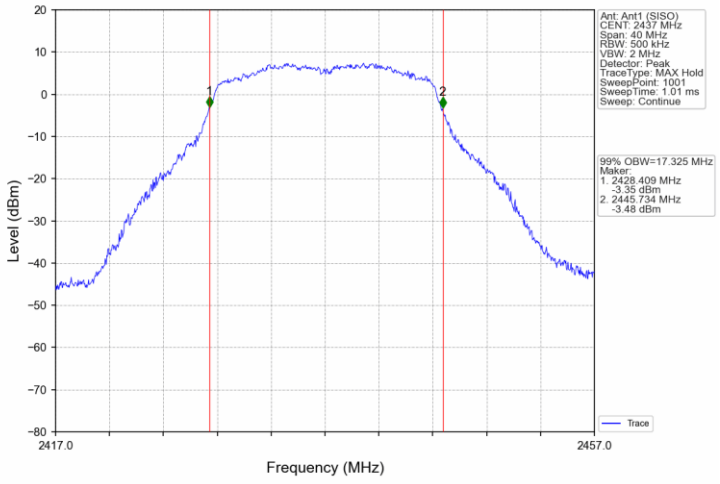
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



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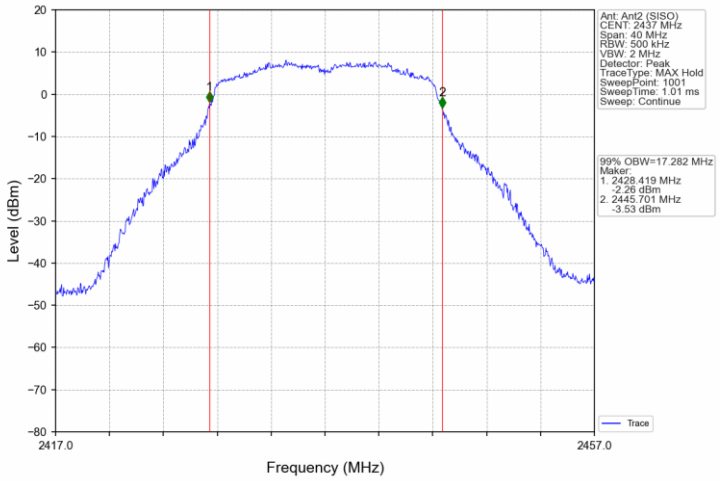
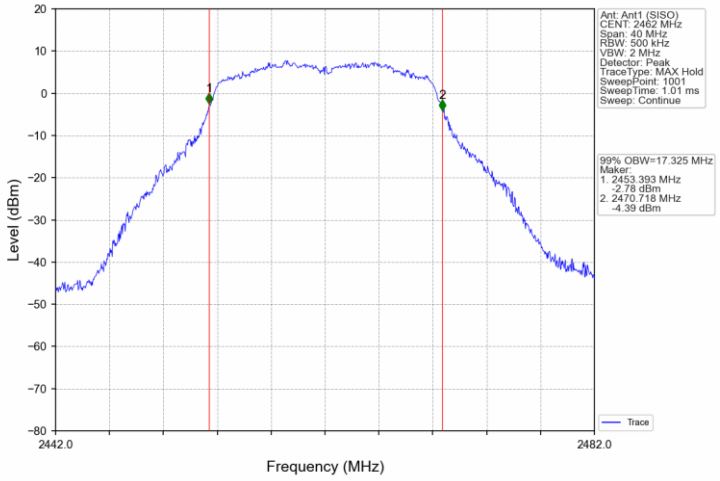
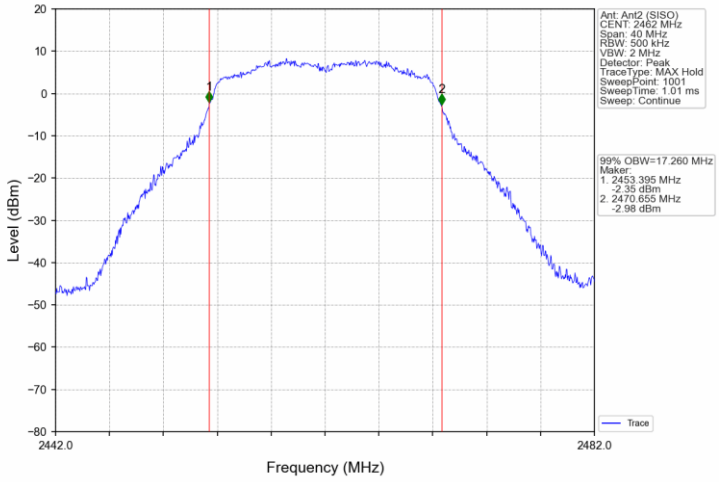
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



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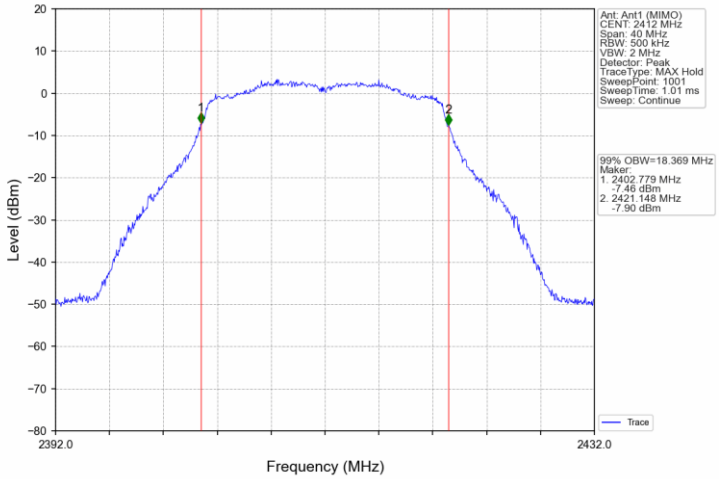
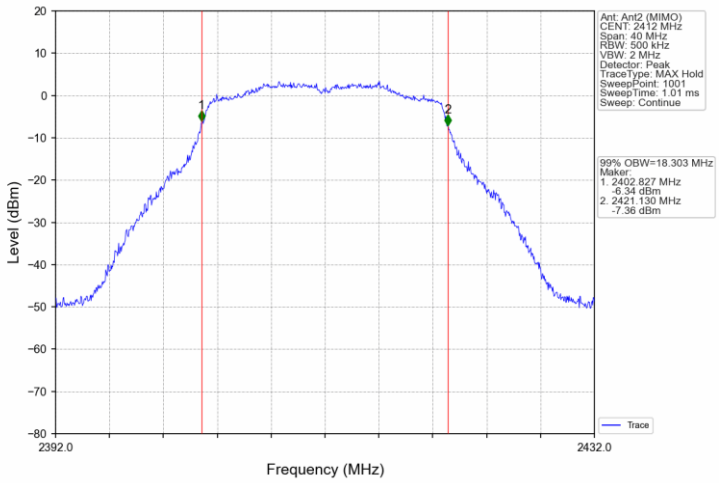
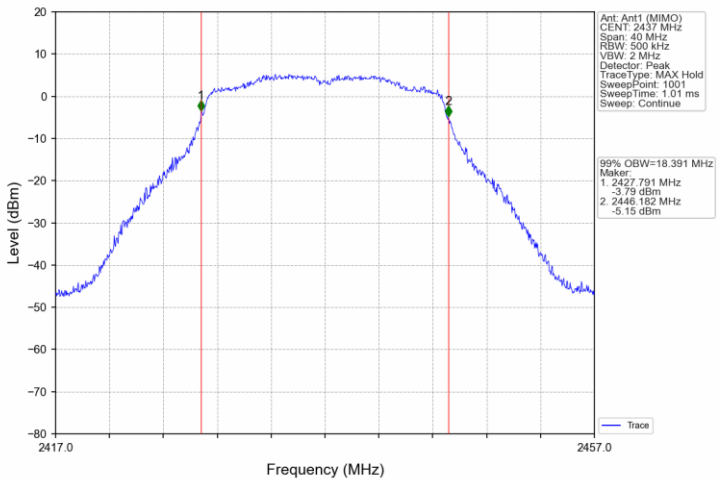
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



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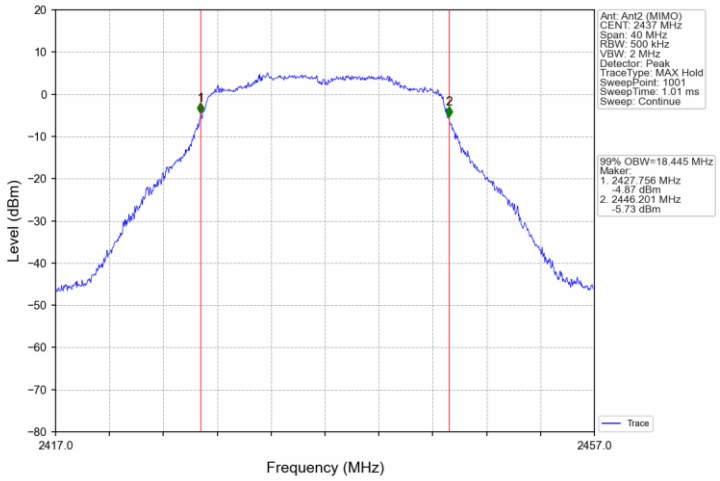
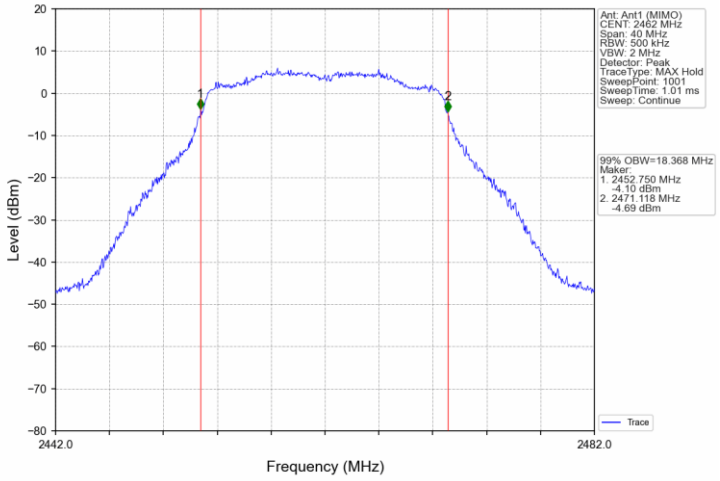
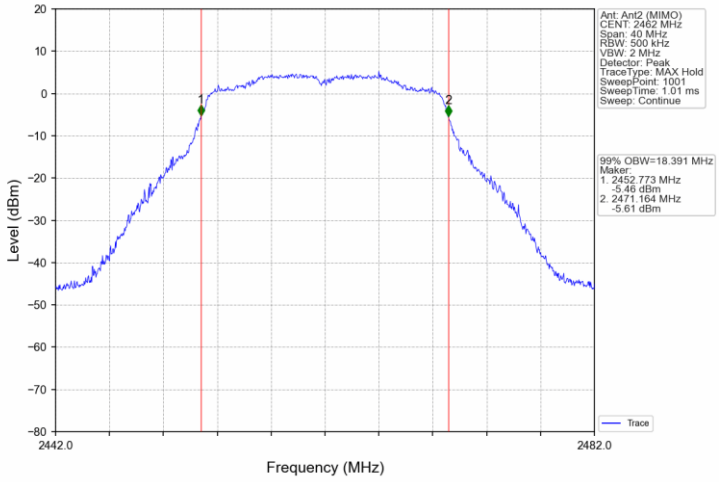
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



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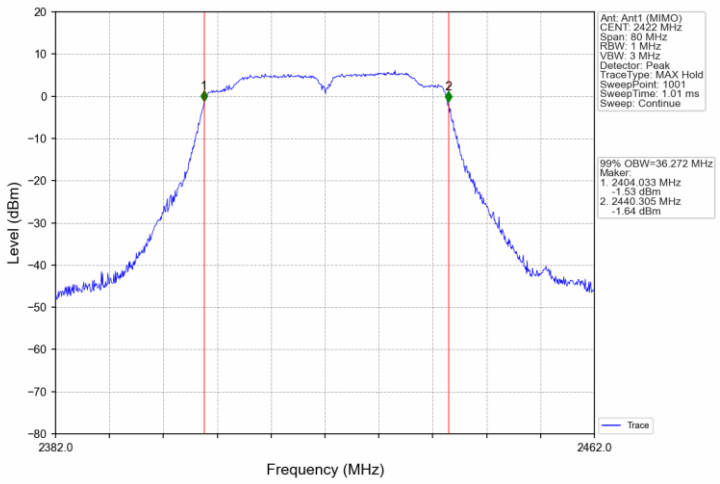
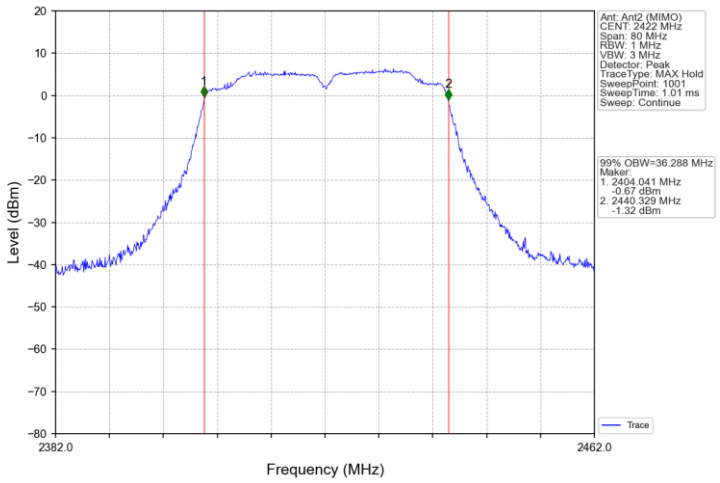
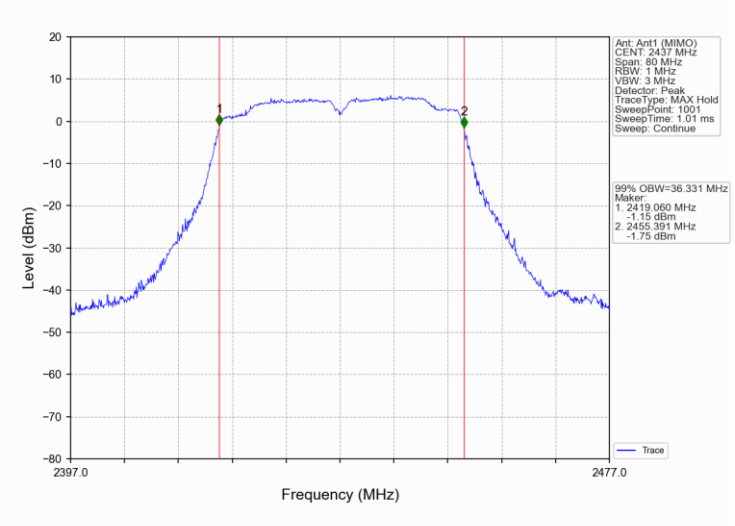
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



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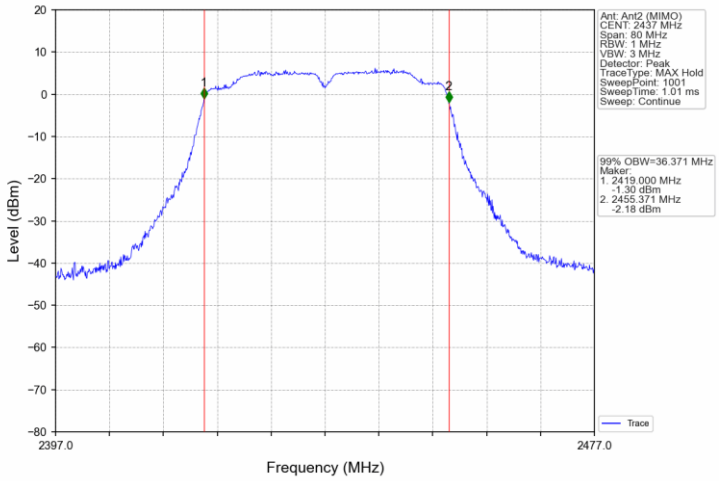
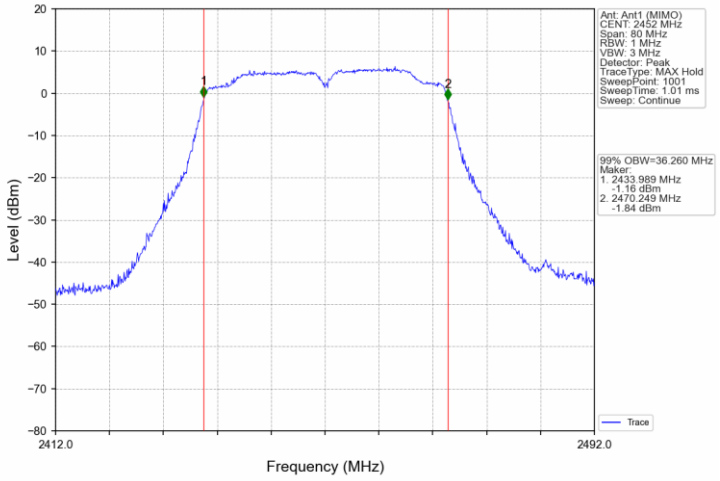
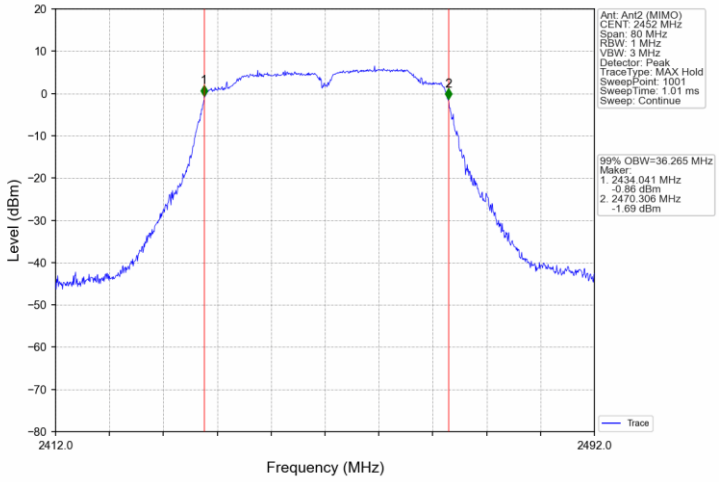
802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



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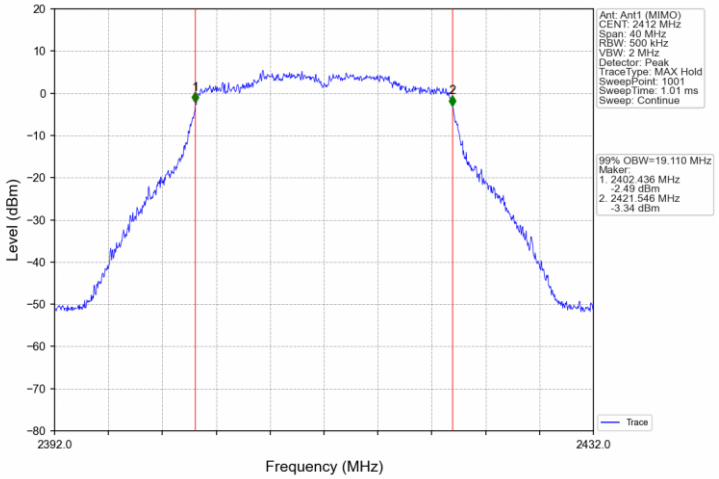
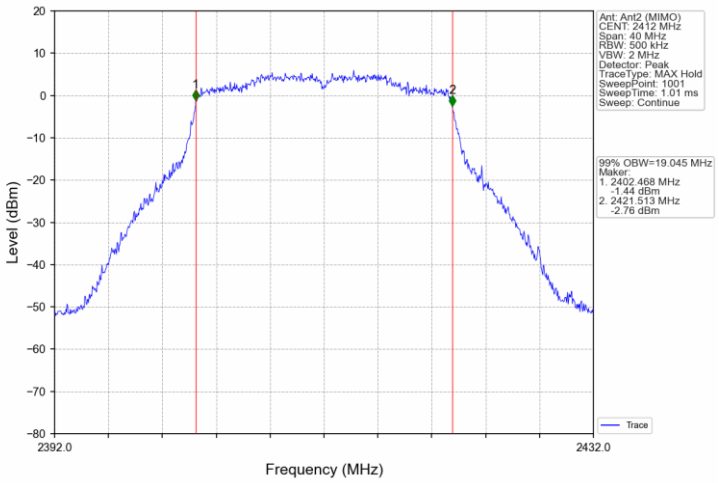
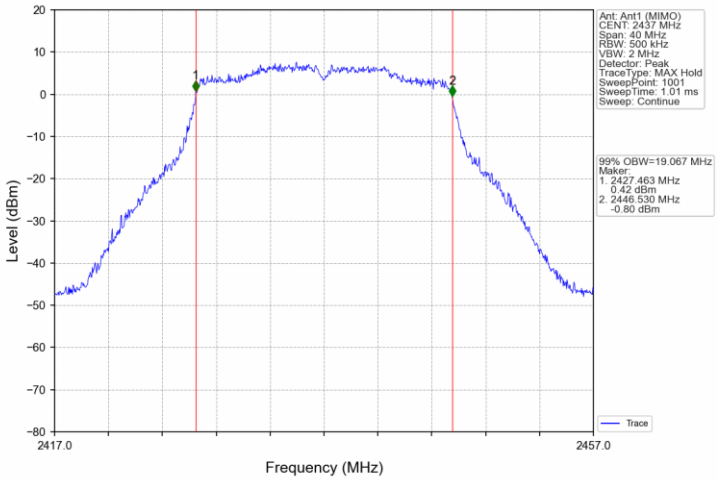
802.11ax(HEW20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11ax(HEW20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



802.11ax(HEW20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



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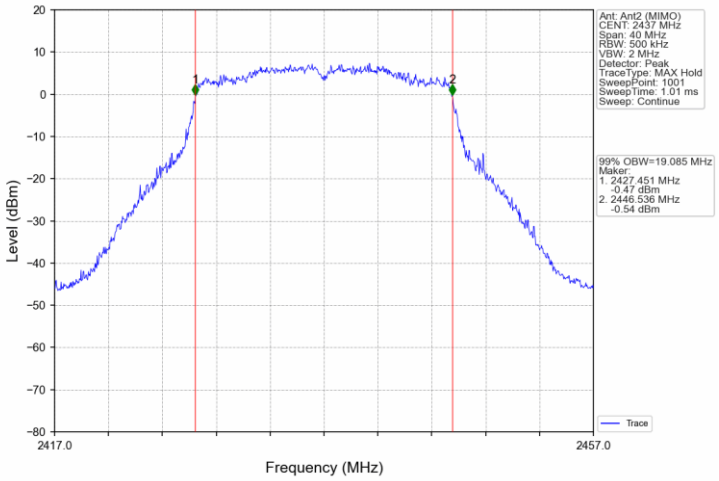
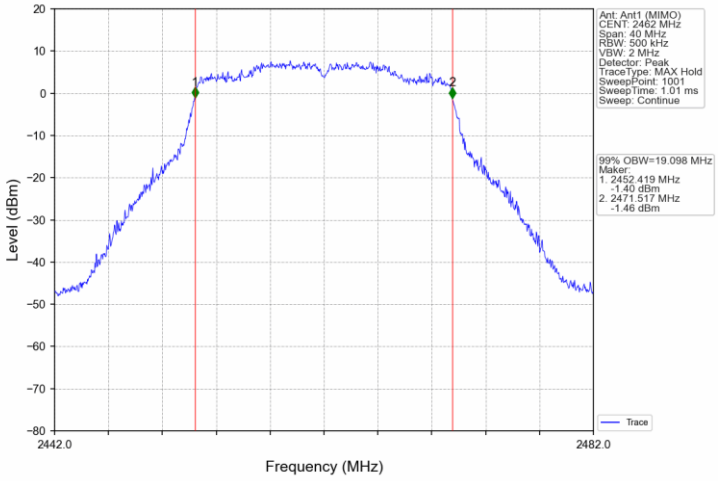
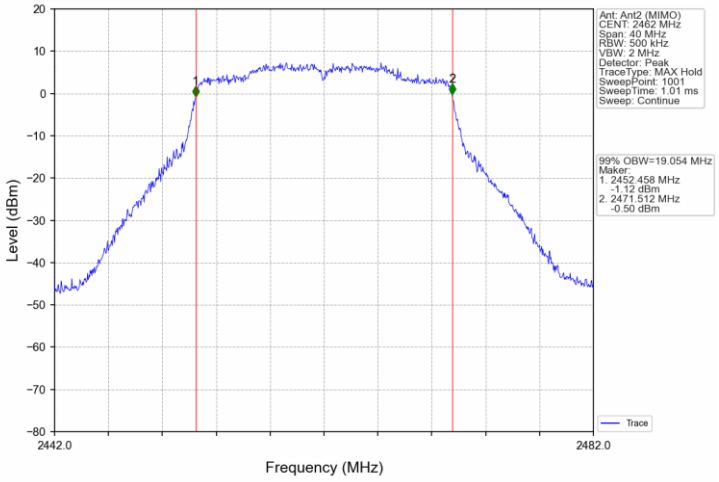
802.11ax(HEW20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11ax(HEW20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11ax(HEW20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



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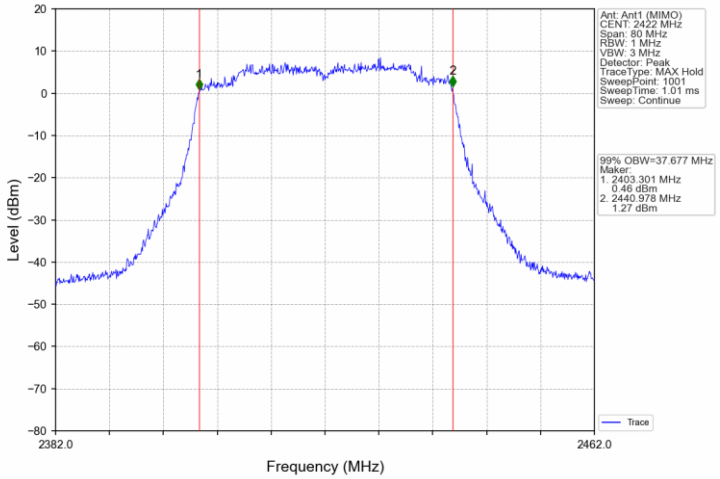
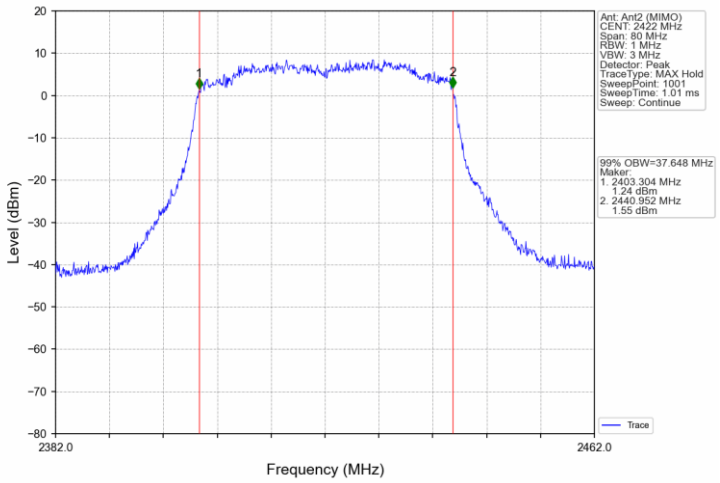
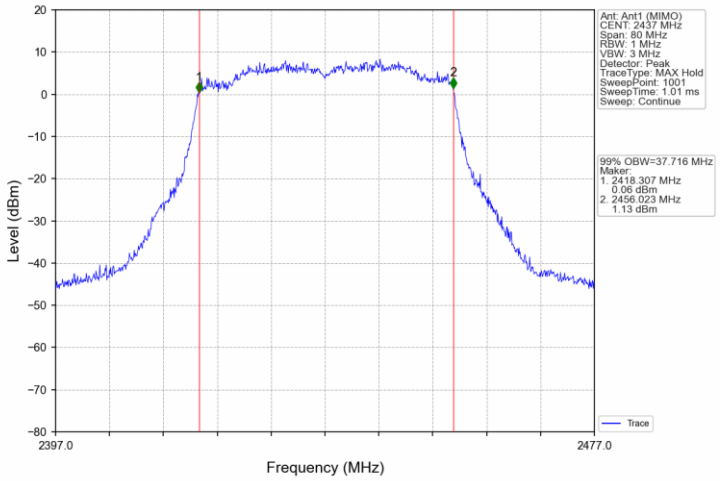
802.11ax(HEW40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



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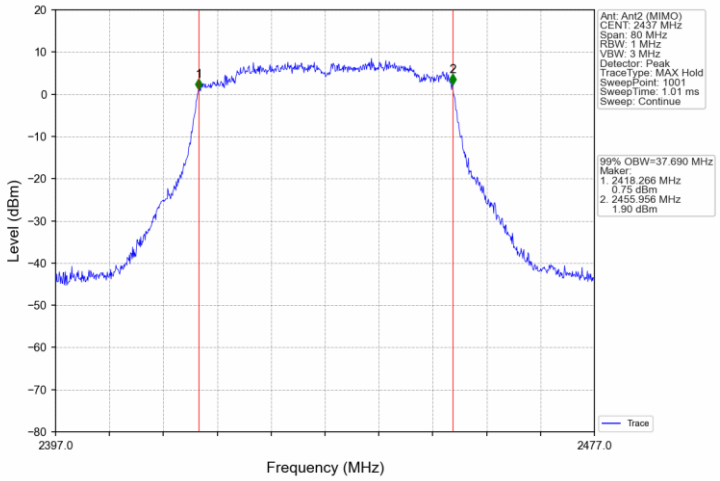
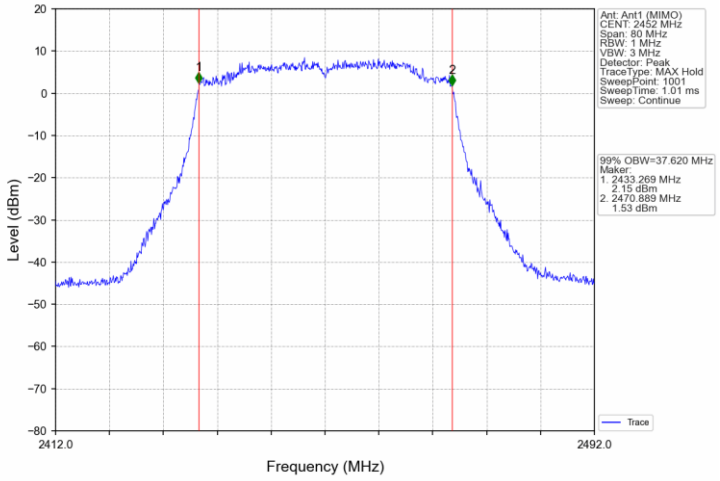
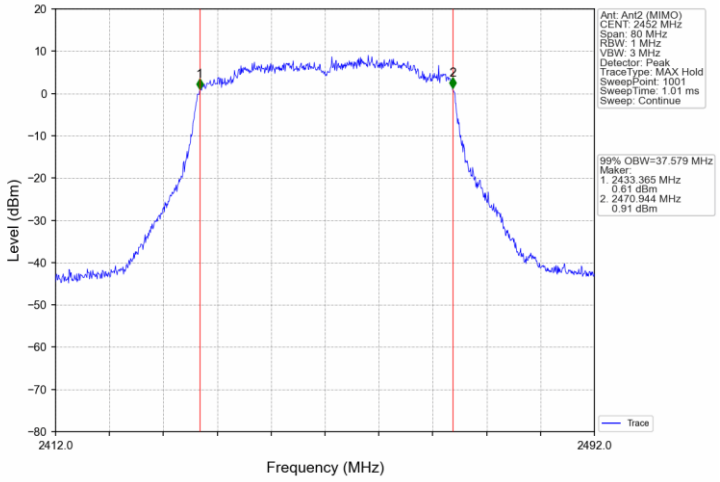
802.11ax(HEW40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



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9.4 Power Spectral Density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
4. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
5. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
6. Repeat above procedures until other frequencies measured were completed.

Limit

Limit [dBm/3KHz]
≤8

Note: The Antenna directional gain is 6.29 dBi. The limit is the above limits reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi, which is 8dBm – 0.1dB=7.9dBm

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Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)				Verdict
			ANT1	ANT2	MIMO	Limit	
802.11b	SISO	2412	-10.69	-9.53	/	<=7.9	Pass
		2437	-10.28	-9.70	/	<=7.9	Pass
		2462	-9.74	-10.09	/	<=7.9	Pass
802.11g	SISO	2412	-12.75	-11.68	/	<=7.9	Pass
		2437	-12.32	-12.52	/	<=7.9	Pass
		2462	-12.73	-11.73	/	<=7.9	Pass
802.11n (HT20)	MIMO	2412	-16.68	-16.56	-14.60	<=7.9	Pass
		2437	-13.45	-14.67	-11.55	<=7.9	Pass
		2462	-14.34	-13.71	-11.93	<=7.9	Pass
802.11n (HT40)	MIMO	2422	-17.38	-16.89	-14.89	<=7.9	Pass
		2437	-17.76	-16.99	-15.21	<=7.9	Pass
		2452	-15.42	-16.96	-14.03	<=7.9	Pass
802.11ax (HEW20)	MIMO	2412	-17.97	-16.52	-15.09	<=7.9	Pass
		2437	-15.51	-16.20	-13.55	<=7.9	Pass
		2462	-15.19	-13.85	-12.67	<=7.9	Pass
802.11ax (HEW40)	MIMO	2422	-17.75	-17.31	-15.91	<=7.9	Pass
		2437	-18.09	-17.93	-16.05	<=7.9	Pass
		2452	-17.58	-17.76	-15.96	<=7.9	Pass

$PSD^{SUM} = 10*Log(10^{\wedge(PSDANT1/10)} + 10^{\wedge(PSDANT2/10)})$

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