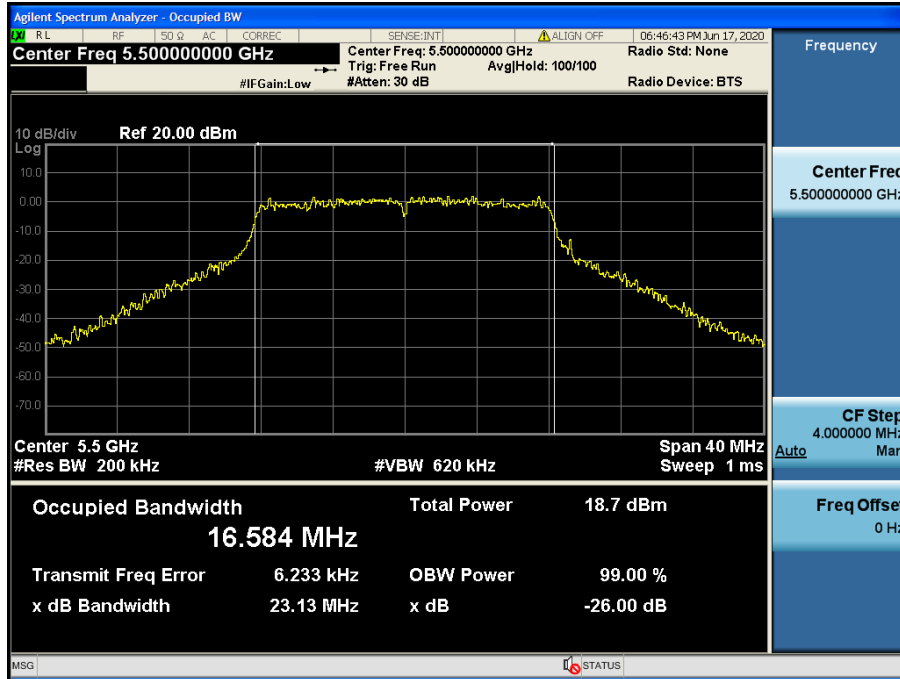


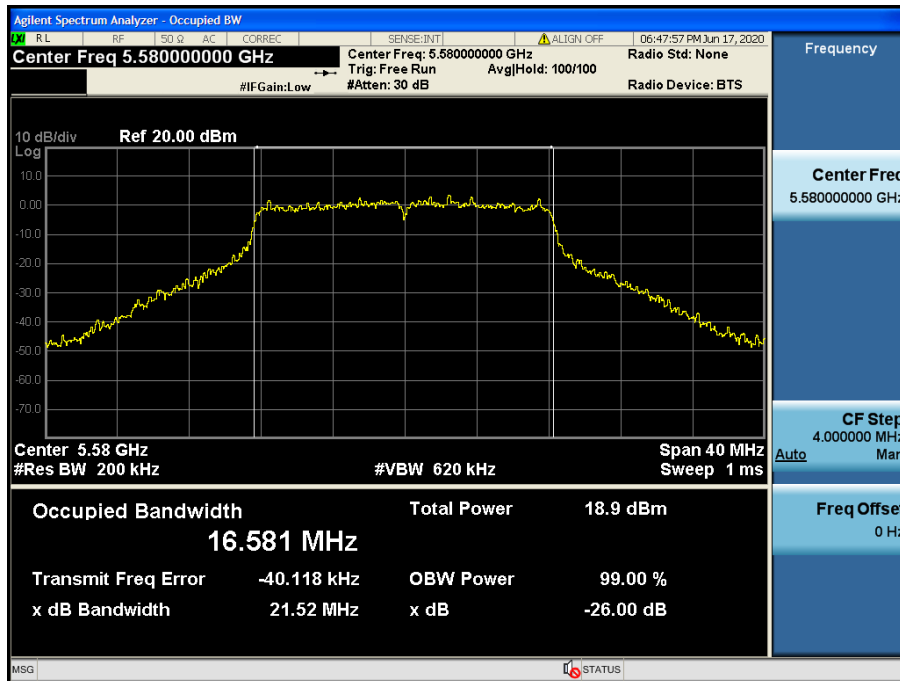
Occupied Bandwidth 99 %

Test Mode: 802.11a & ANT 2 & Ch.100



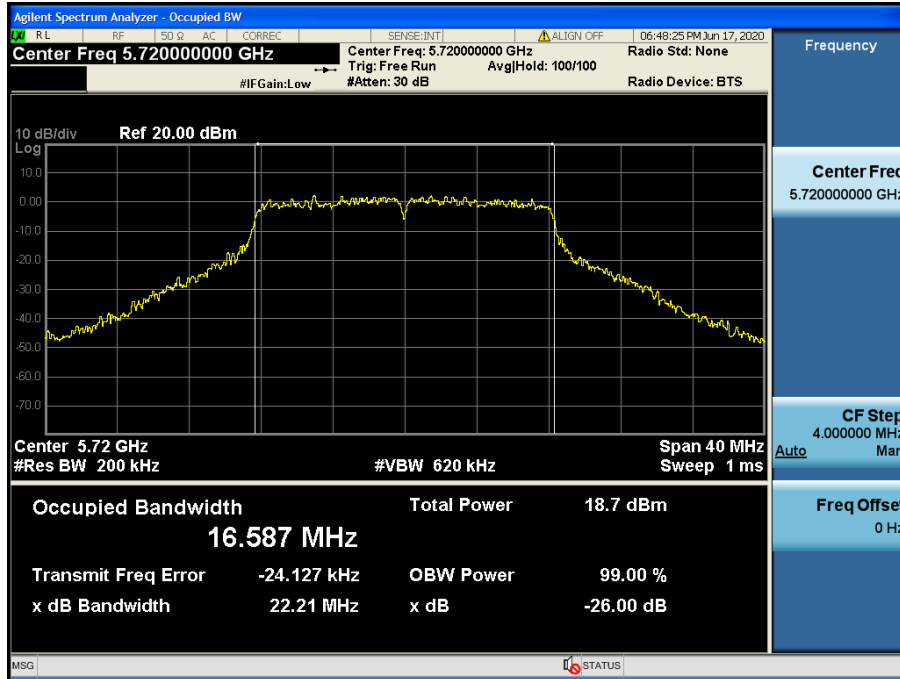
Occupied Bandwidth 99 %

Test Mode: 802.11a & ANT 2 & Ch.120



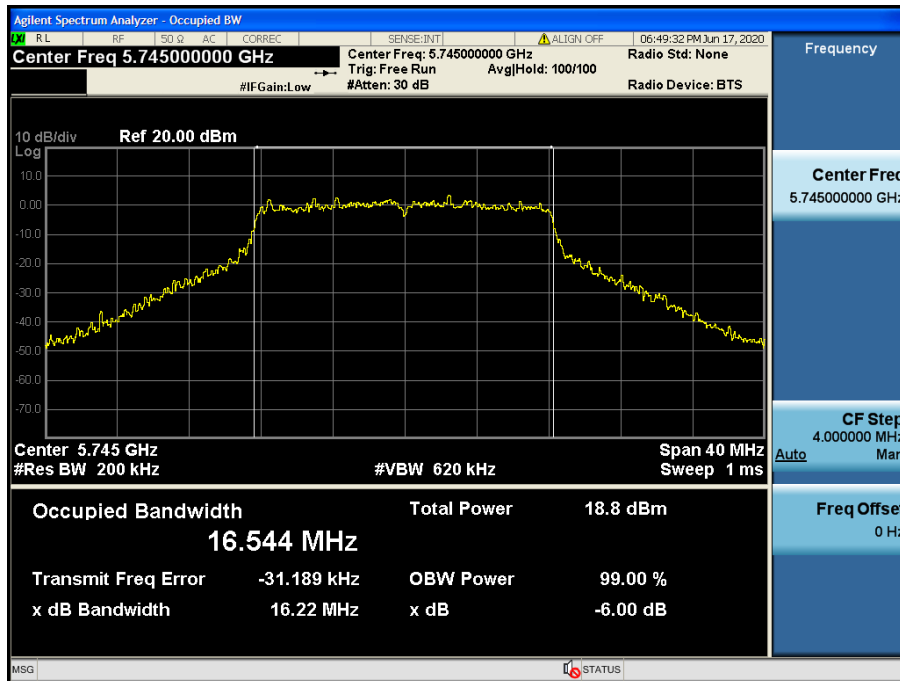
Occupied Bandwidth 99 %

Test Mode: 802.11a & ANT 2 & Ch.144



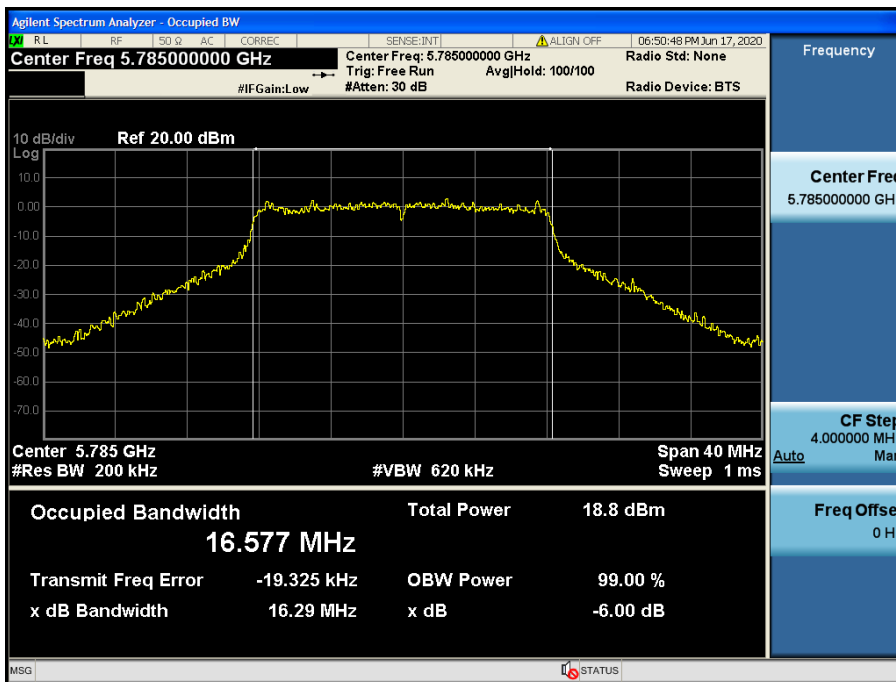
Occupied Bandwidth 99 %

Test Mode: 802.11a & ANT 2 & Ch.149



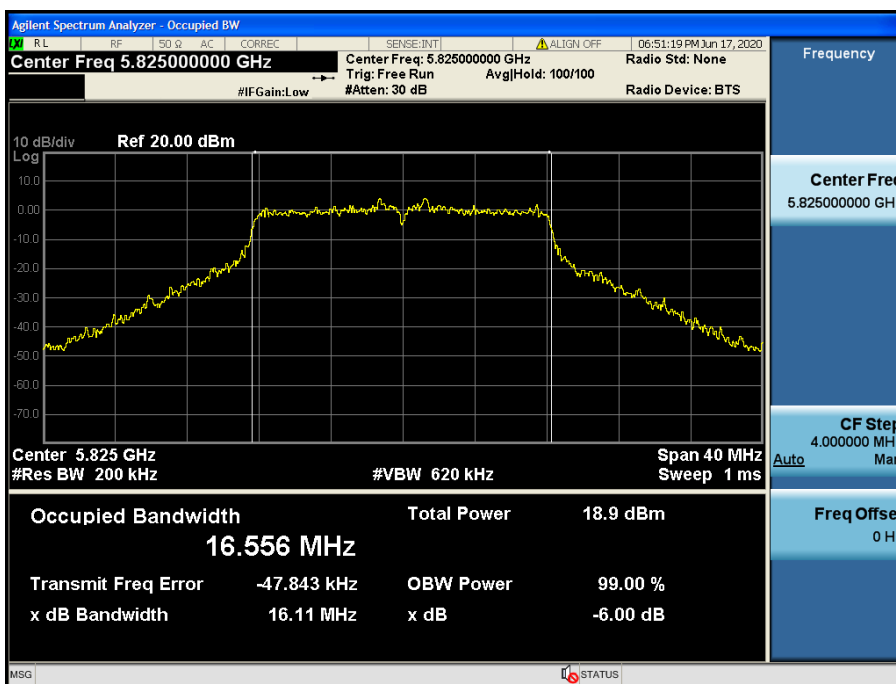
Occupied Bandwidth 99 %

Test Mode: 802.11a & ANT 2 & Ch.157



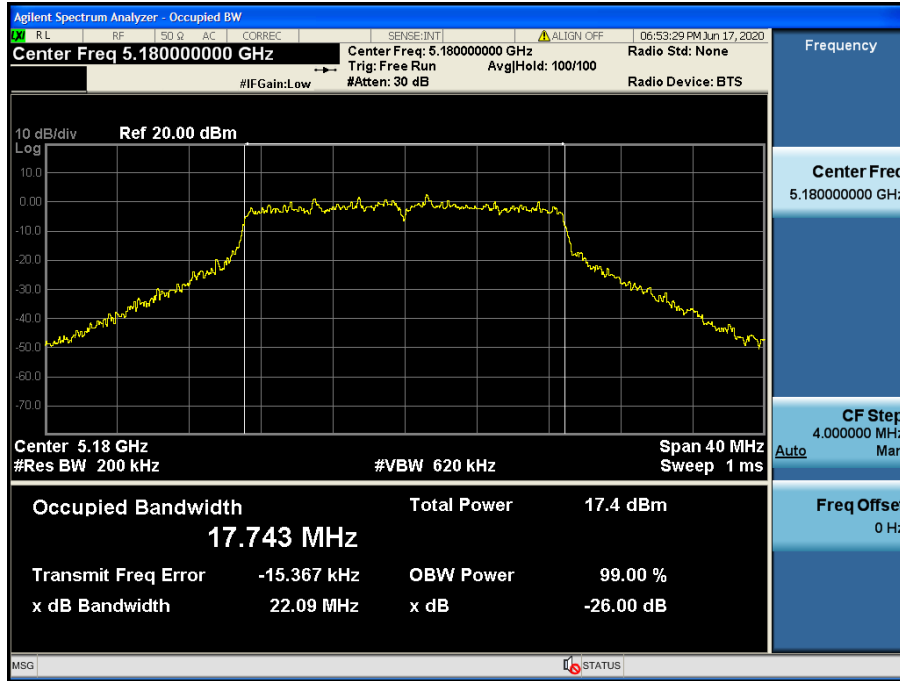
Occupied Bandwidth 99 %

Test Mode: 802.11a & ANT 2 & Ch.165



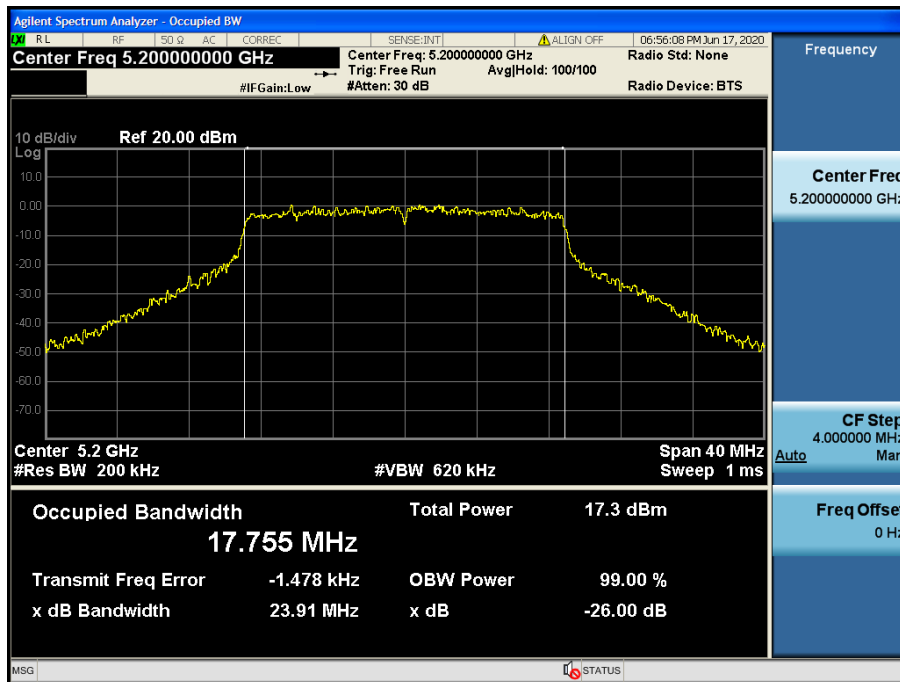
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.36



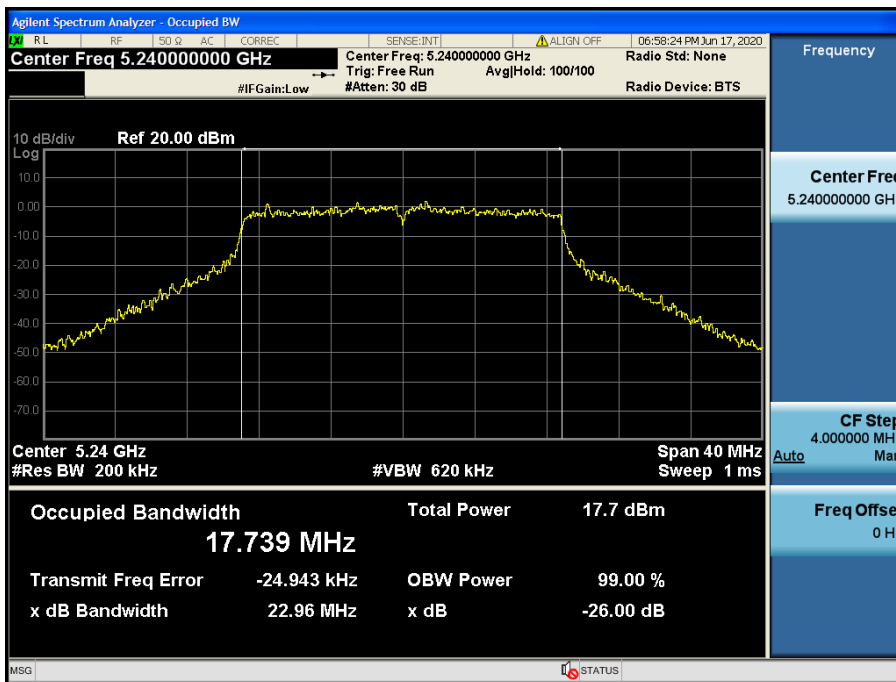
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.40



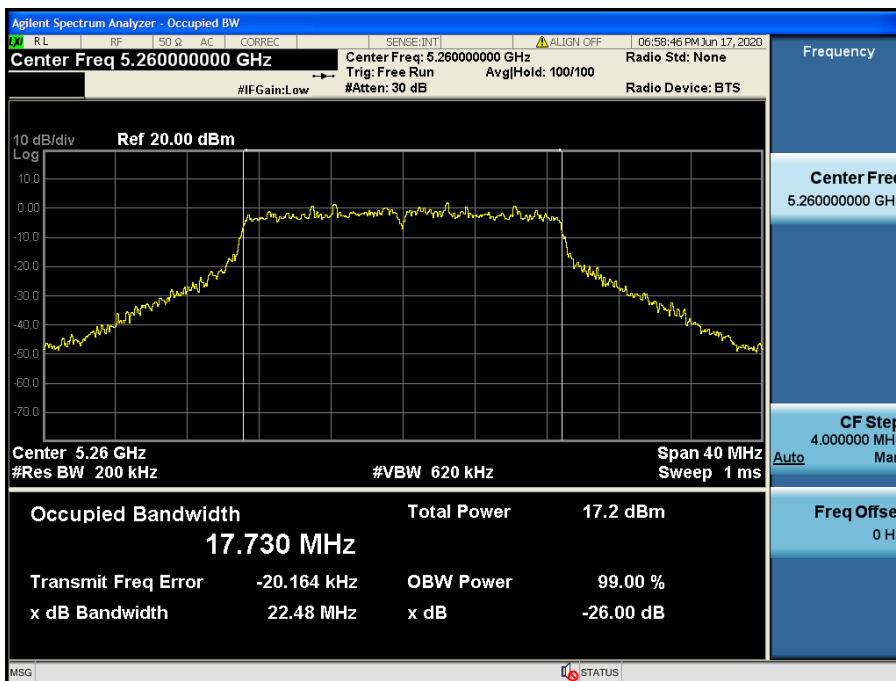
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.48



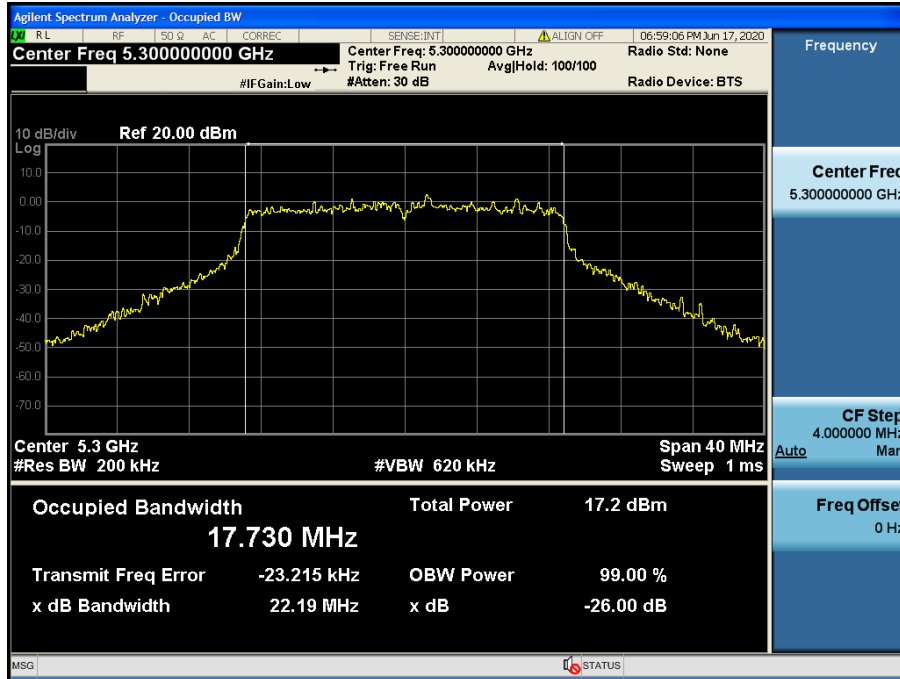
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.52



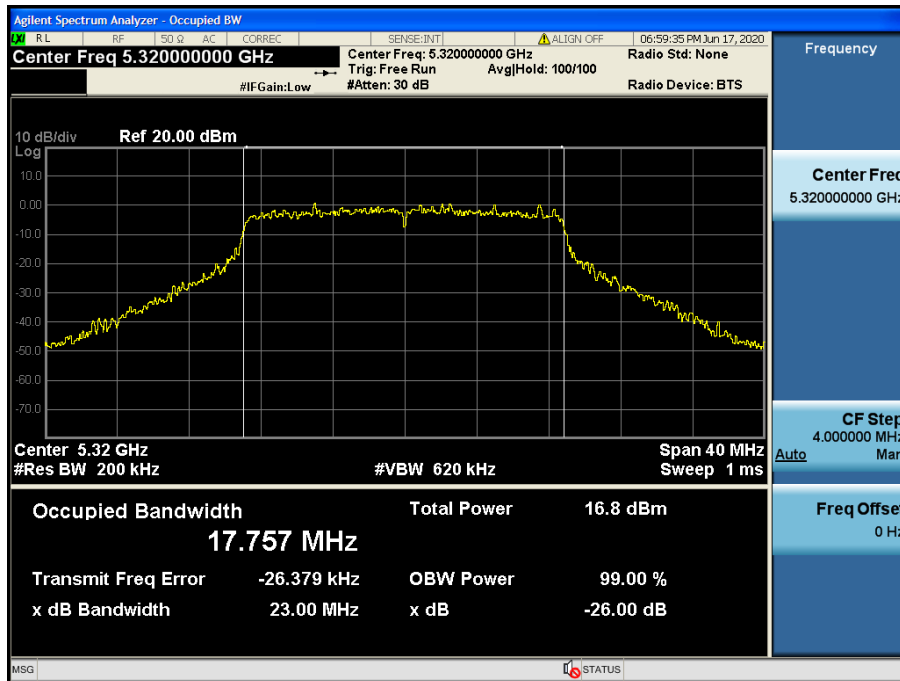
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.60



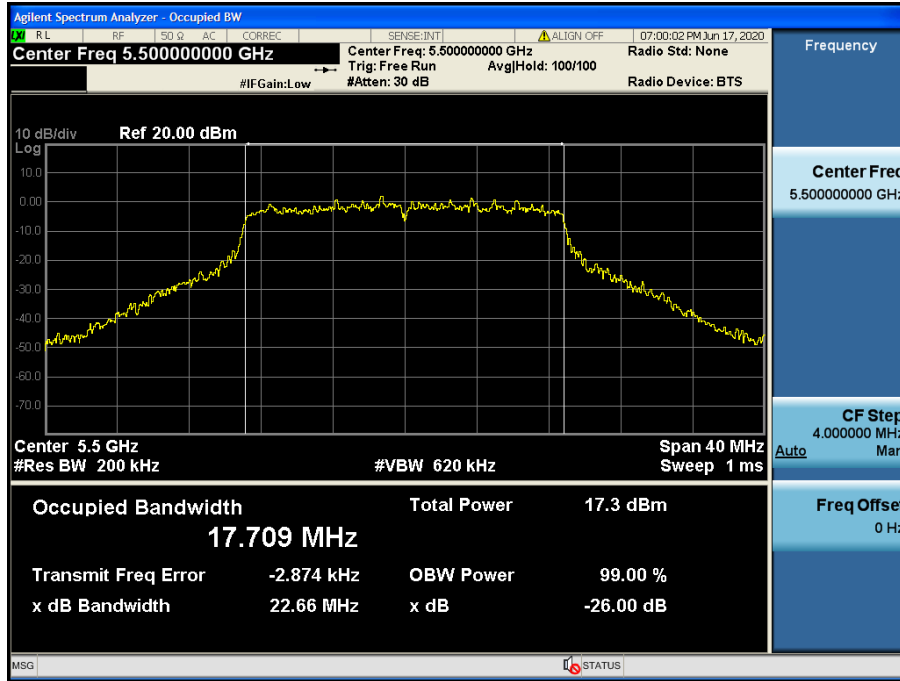
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.64



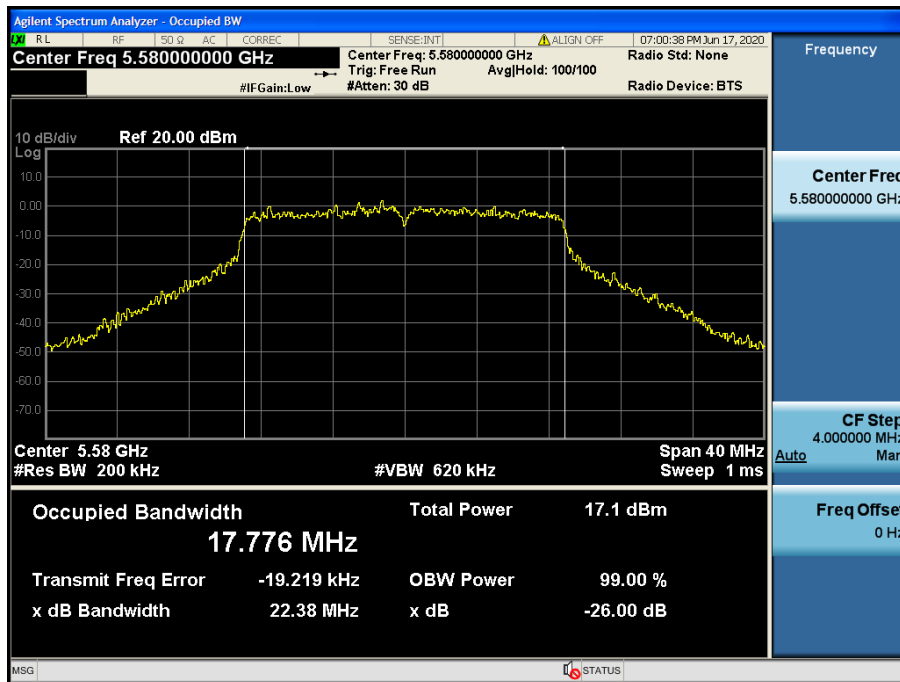
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.100



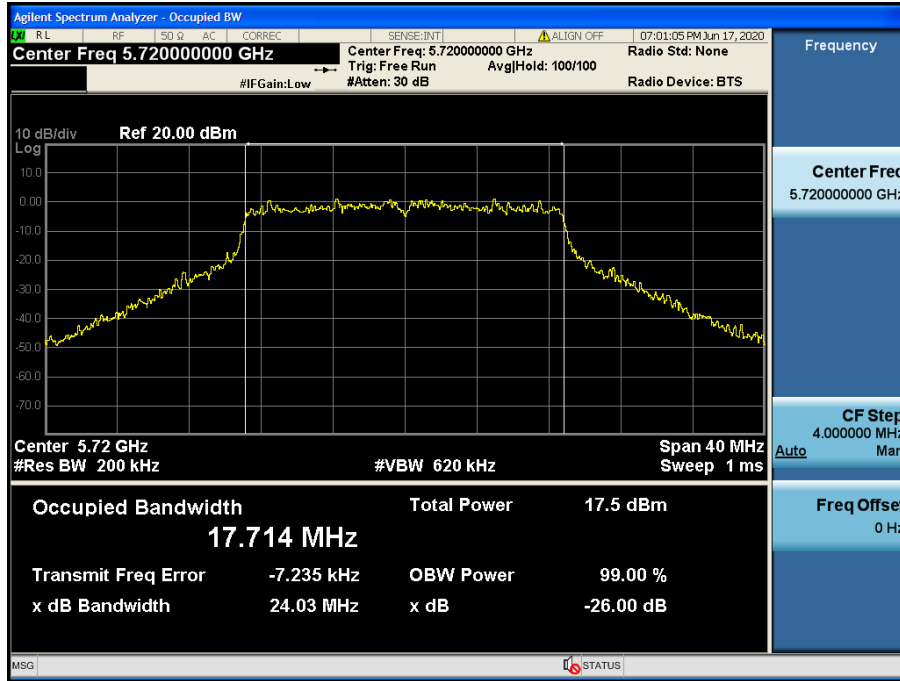
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.120



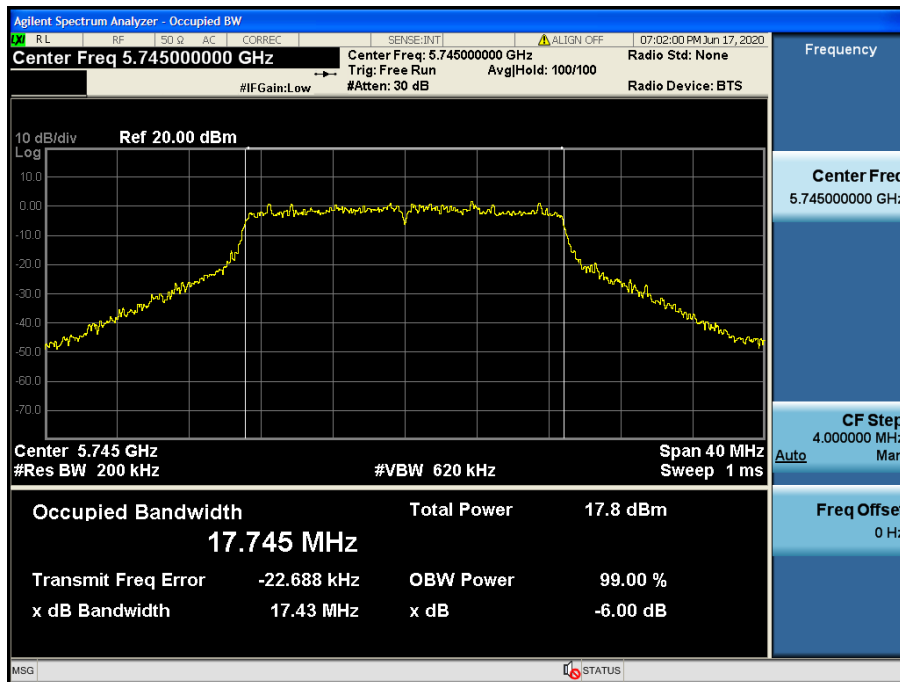
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.144



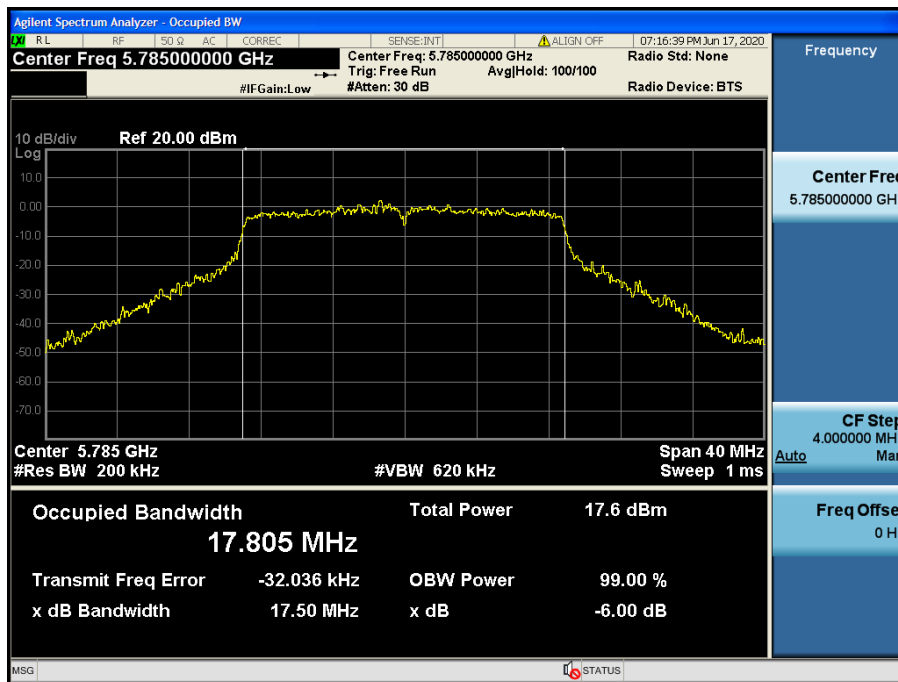
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.149



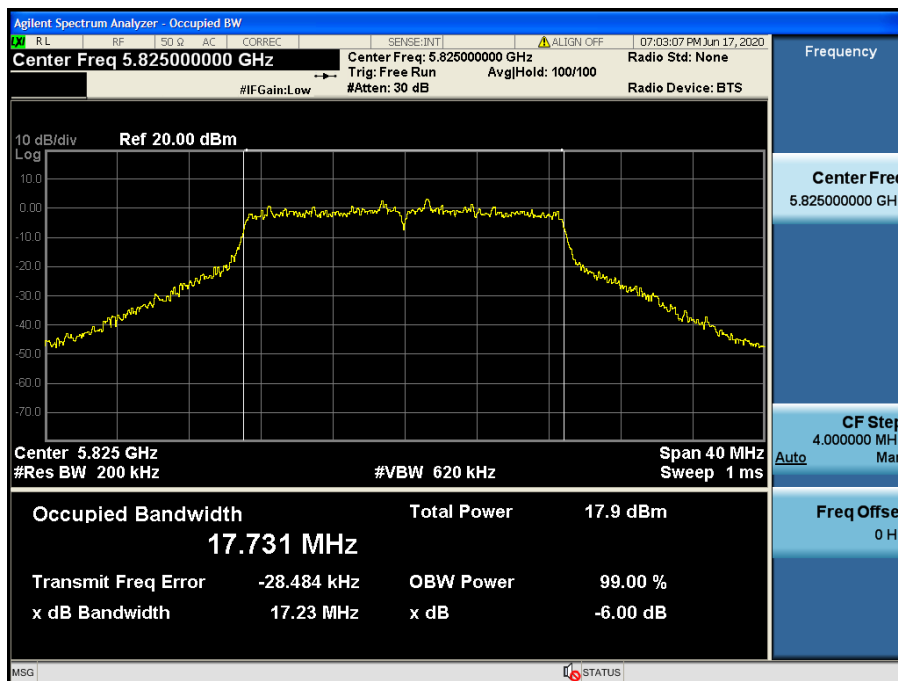
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.157



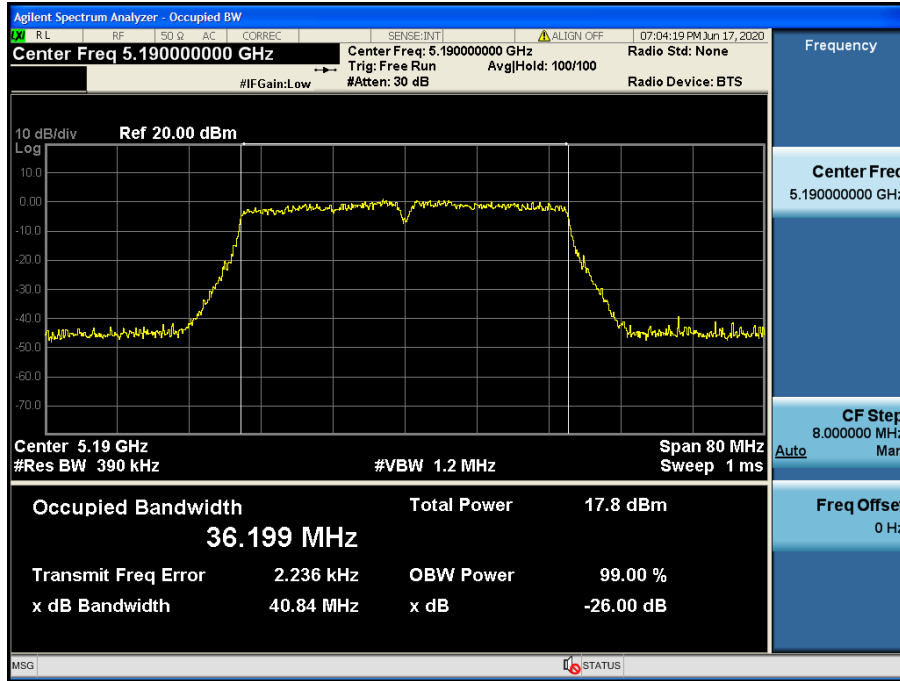
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT20 & ANT 2 & Ch.165



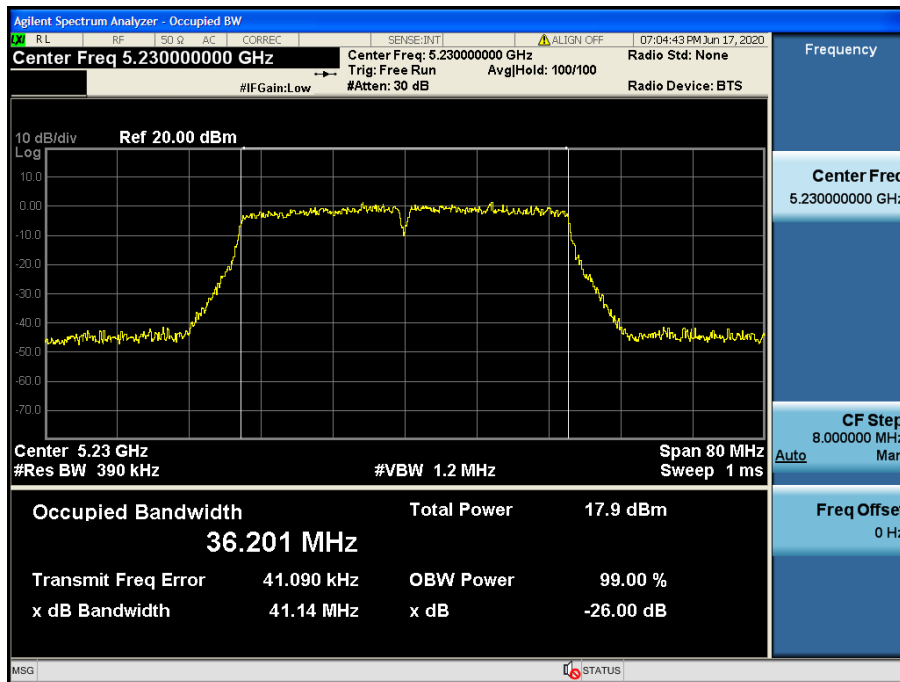
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.38



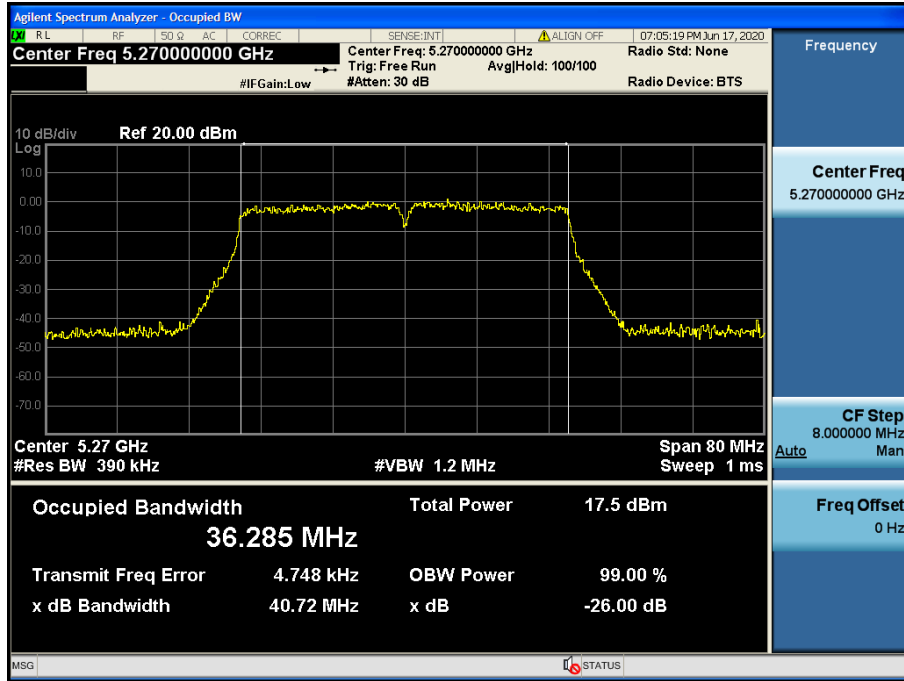
Occupied Bandwidth 99 %

Test Mode: : 802.11n HT40 & ANT 2 & Ch.46



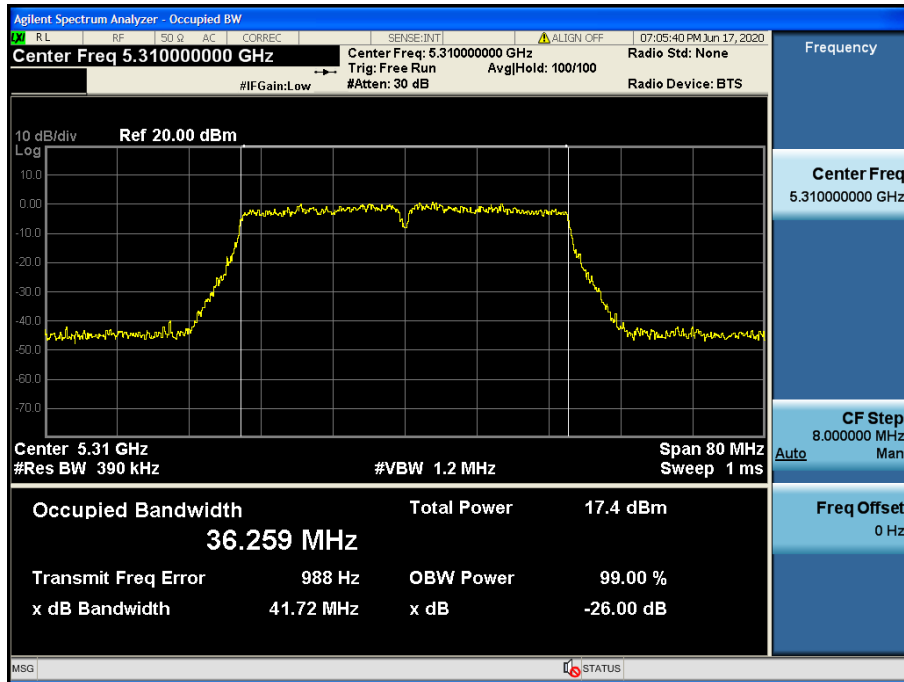
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.54



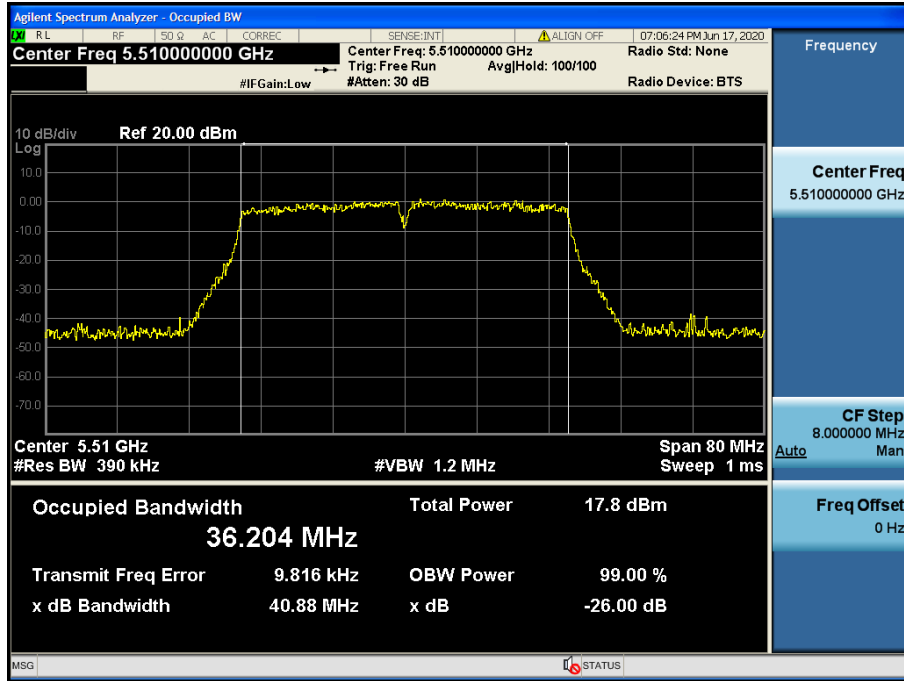
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.62



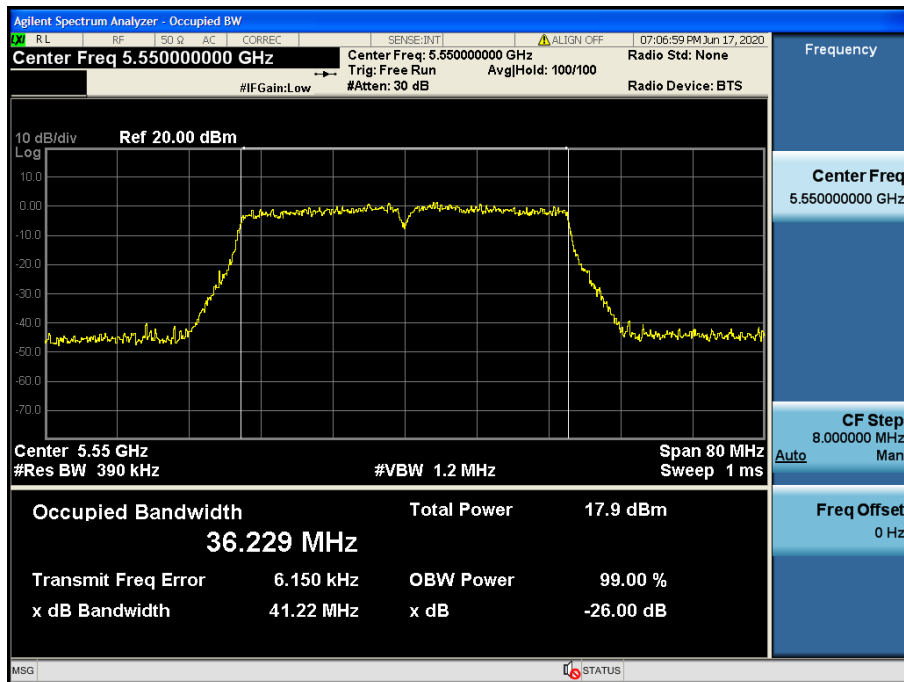
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.102



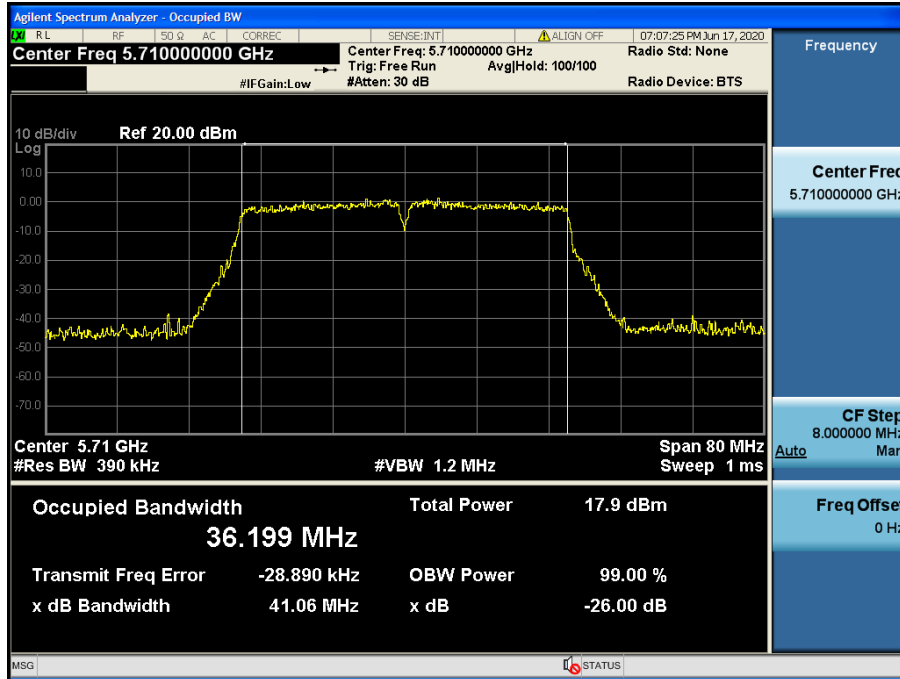
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.118



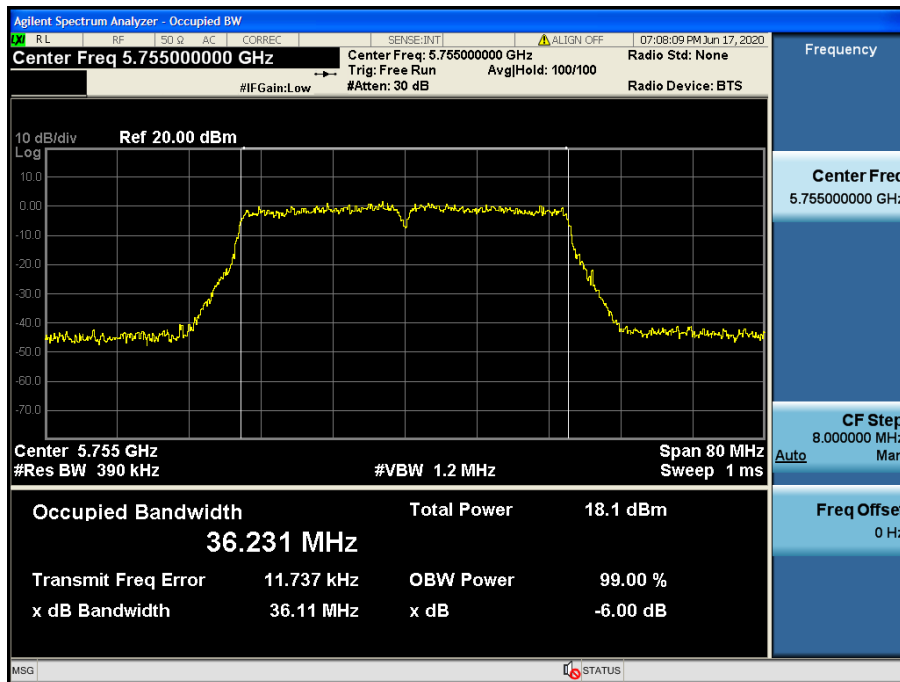
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.142



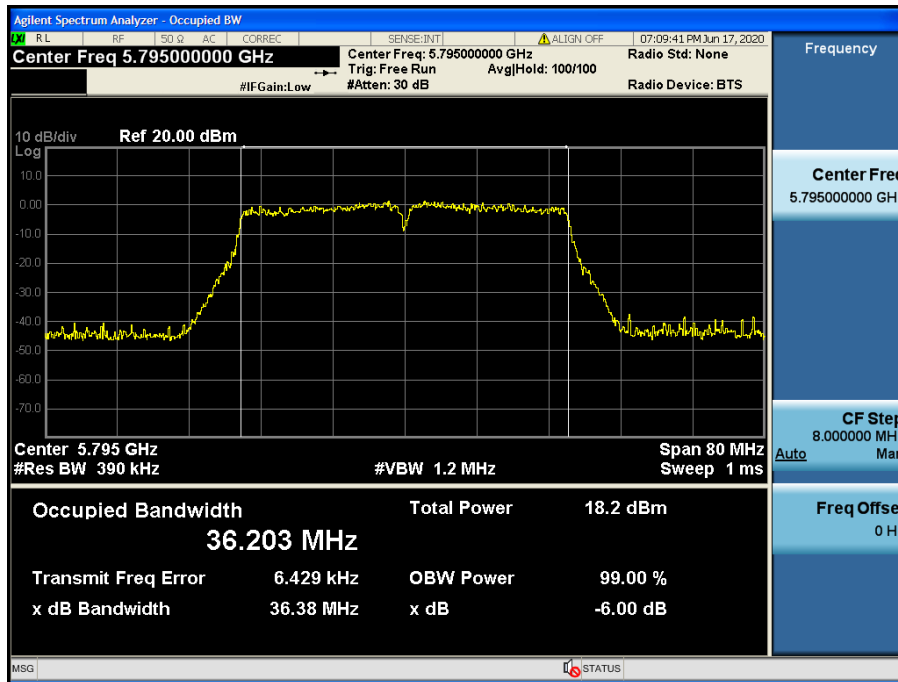
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.151



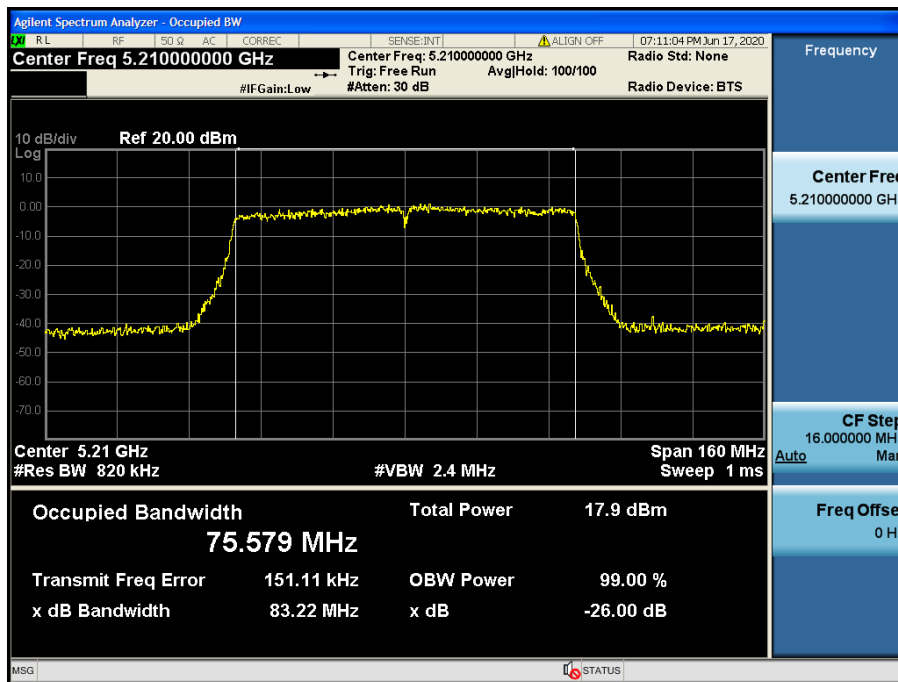
Occupied Bandwidth 99 %

Test Mode: 802.11n HT40 & ANT 2 & Ch.159



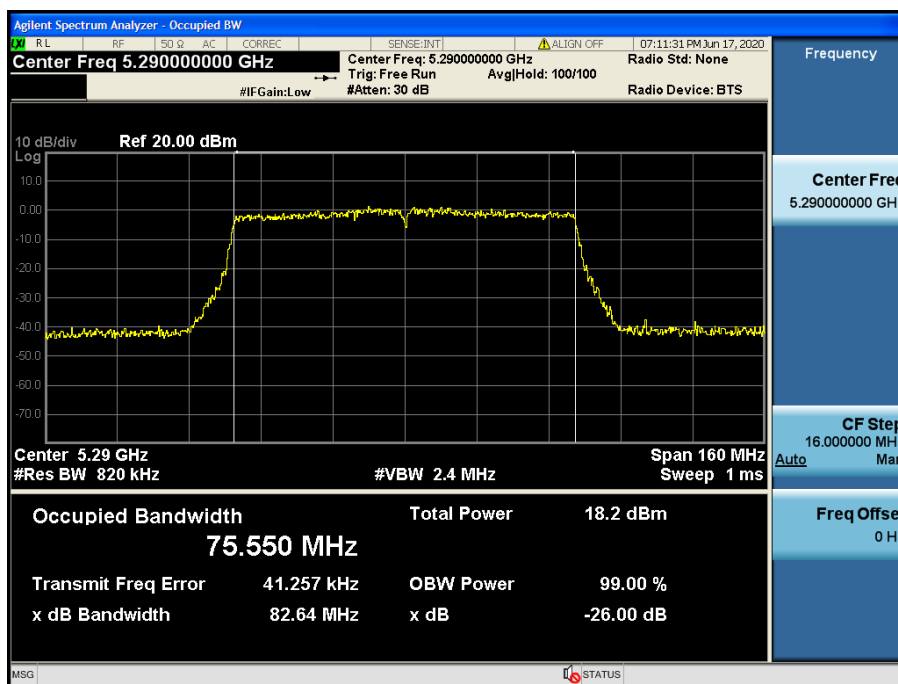
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT80 & ANT 2 & Ch.42



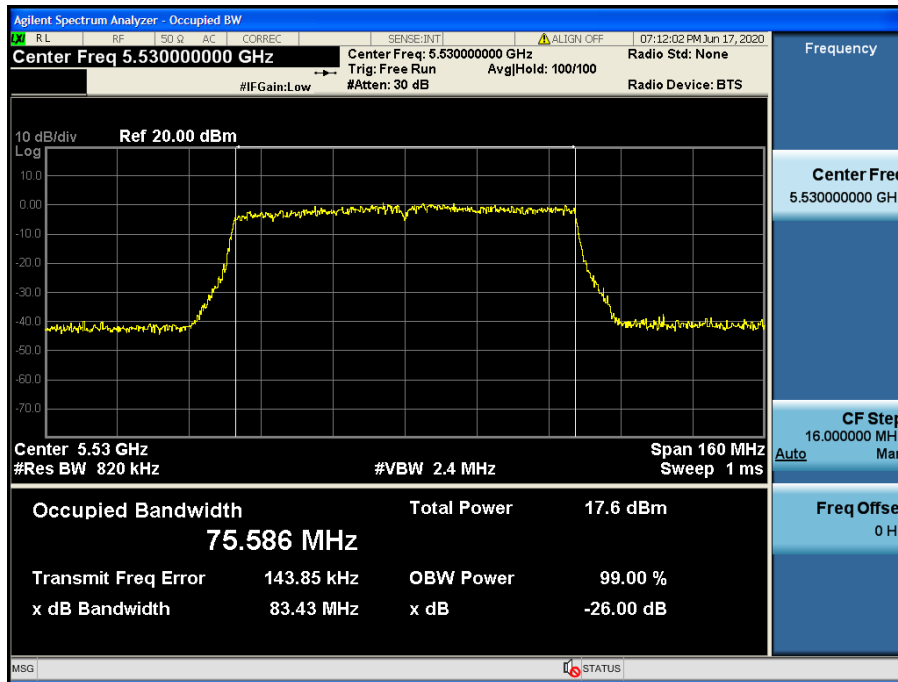
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT80 & ANT 2 & Ch.58



Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT80 & ANT 2 & Ch.106

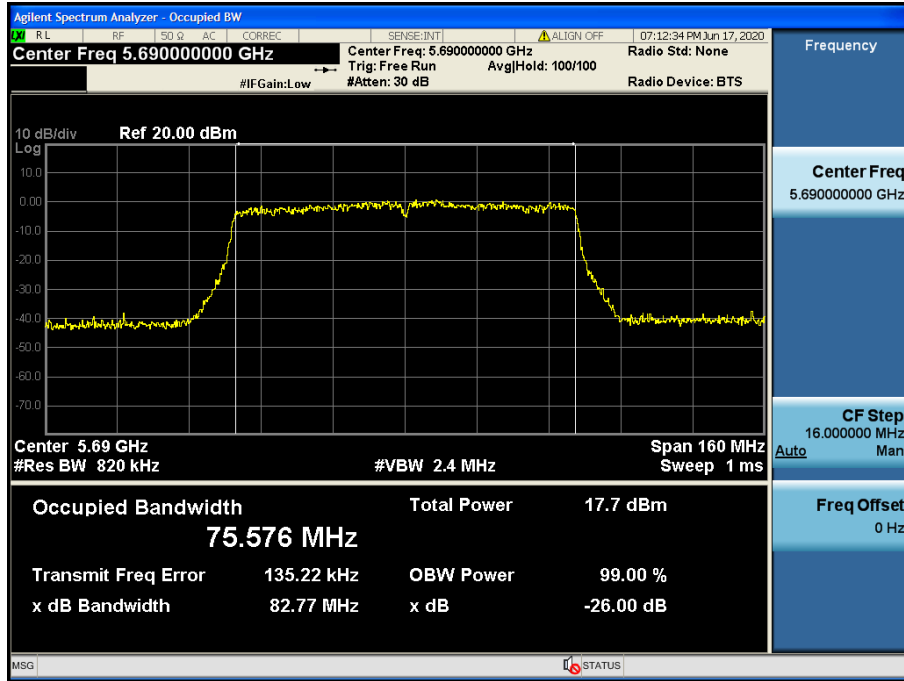


Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT80 & ANT 2 & Ch.122

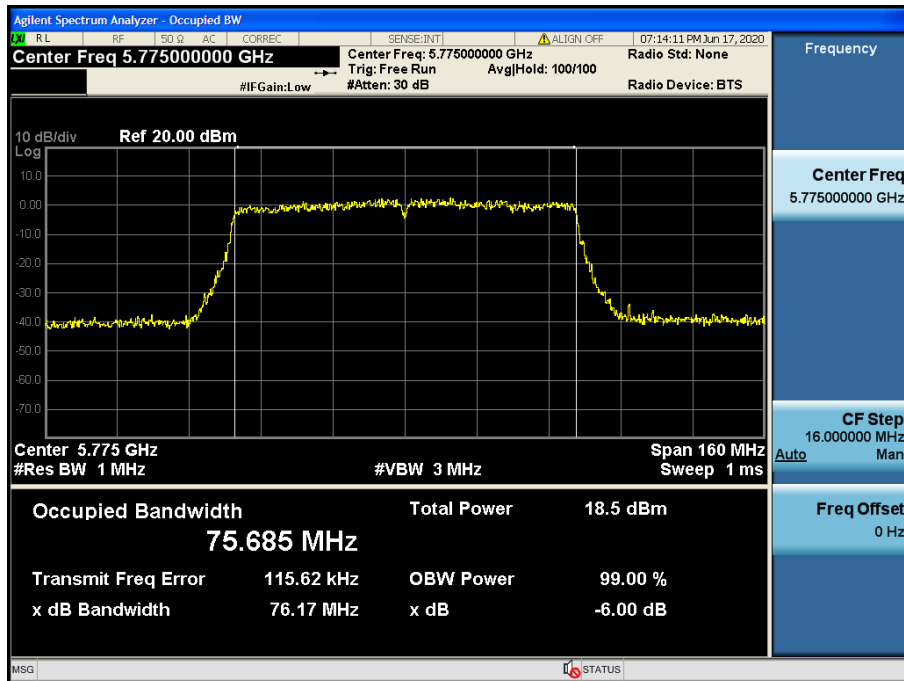
Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT80 & ANT 2 & Ch.138



Occupied Bandwidth 99 %

Test Mode: 802.11ac VHT80 & ANT 2 & Ch.155



9. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	19/12/16	20/12/16	MY50410357
Spectrum Analyzer	Agilent Technologies	N9020A	19/12/16	20/12/16	MY48011700
Spectrum Analyzer	Agilent Technologies	N9020A	19/06/16	20/12/16	MY48010133
Spectrum Analyzer	Agilent Technologies	N9030A	19/12/16	20/12/16	MY53310140
DC Power Supply	Agilent Technologies	66332A	19/06/25	20/06/25	MY43000211
			20/06/24	21/06/24	
Multimeter	FLUKE	17B	19/12/16	20/12/16	26030065WS
Signal Generator	Rohde Schwarz	SMBV100A	19/12/16	20/12/16	255571
Signal Generator	ANRITSU	MG3695C	19/12/16	20/12/16	173501
Thermohygrometer	BODYCOM	BJ5478	19/12/18	20/12/18	120612-1
Thermohygrometer	BODYCOM	BJ5478	19/12/18	20/12/18	120612-2
Thermohygrometer	BODYCOM	BJ5478	19/07/03	20/07/03	N/A
Loop Antenna	ETS-Lindgren	6502	19/09/18	21/09/18	00226186
BILOG ANTENNA	Schwarzbeck	VULB 9160	19/04/23	21/04/23	9160-3362
Horn Antenna	ETS-Lindgren	3115	20/01/30	22/01/30	6419
Horn Antenna	Schwarzbeck	BBHA 9120C	19/12/04	21/12/04	9120C-561
Horn Antenna	A.H.Systems Inc.	SAS-574	19/07/03	21/07/03	155
PreAmplifier	tsj	MLA-0118-B01-40	19/12/16	20/12/16	1852267
PreAmplifier	tsj	MLA-1840-J02-45	19/06/27	20/06/27	16966-10728
			20/06/24	21/06/24	
PreAmplifier	H.P	8447D	19/12/16	20/12/16	2944A07774
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	19/06/26	20/06/26	8
			20/06/24	21/06/24	
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	19/06/26	20/06/26	1
			20/06/24	21/06/24	
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	19/06/27	20/06/27	3
			20/06/24	21/06/24	
Attenuator	Hefei Shunze	SS5T2.92-10-40	19/06/27	20/06/27	16012202
			20/06/24	21/06/24	
Attenuator	SRTechnology	F01-B0606-01	19/06/27	20/06/27	13092403
			20/06/24	21/06/24	
Attenuator	Aeroflex/Weinschel	20515	19/06/27	20/06/27	Y2370
			20/06/24	21/06/24	
Attenuator	SMAJK	SMAJK-2-3	19/06/27	20/06/27	2
			20/06/24	21/06/24	
Attenuator	SMAJK	SMAJK-50-10	19/08/07	20/08/07	15081901
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2488B MA2491A	20/01/02	21/01/02	0910025 0845333
EMI Receiver	ROHDE&SCHWARZ	ESW44	19/07/30	20/07/30	101645
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	19/09/17	20/09/17	101333
LISN	SCHWARZBECK	NSLK 8128 RC	19/11/04	20/11/04	8128 RC-387
Cable	Junkosha	MWX241	20/01/13	21/01/13	G-04
Cable	Junkosha	MWX241	20/01/13	21/01/13	G-07
Cable	DT&C	Cable	20/01/13	21/01/13	G-13
Cable	DT&C	Cable	20/01/13	21/01/13	G-14
Cable	HUBER+SUHNER	SUCOFLEX 104	20/01/13	21/01/13	G-15
Cable	Radiall	TESTPRO3	20/01/16	21/01/16	M-01
Cable	Junkosha	MWX315	20/01/16	21/01/16	M-05
Cable	Junkosha	MWX221	20/01/16	21/01/16	M-06
Cable	Radiall	TESTPRO3	20/01/16	21/01/16	RF-82
Test Software	tsj	Raidated Emission Measurement	NA	NA	Version 2.00.0177
Test Software	tsj	Noise Terminal Measurement	NA	NA	Version 2.00.0170

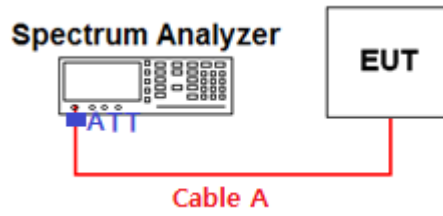
Note 1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017

Note 2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

APPENDIX I

Conducted Test set up Diagram

- Conducted Measurement



APPENDIX II

Duty Cycle Information

■ Test Procedure

Duty Cycle [X = On Time / (On + Off time)] is measured using Measurement Procedure of **KDB789033 D02v02r01**

1. Set the center frequency of the spectrum analyzer to the center frequency of the transmission.
2. Set RBW \geq EBW if possible; otherwise, set RBW to the largest available value.
3. Set VBW \geq RBW. Set detector = peak.
4. Note : The zero-span measurement method shall not be used unless both **RBW and VBW are $> 50 / T$** , where T is defined in section II.B.1.a), and **the number of sweep points across duration T exceeds 100**. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7$ microseconds.)

T : The minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

($T =$ **On time** of the above table since the EUT operates with above fixed Duty Cycle and it is the minimum On time)

■ Test Results:

Duty cycle

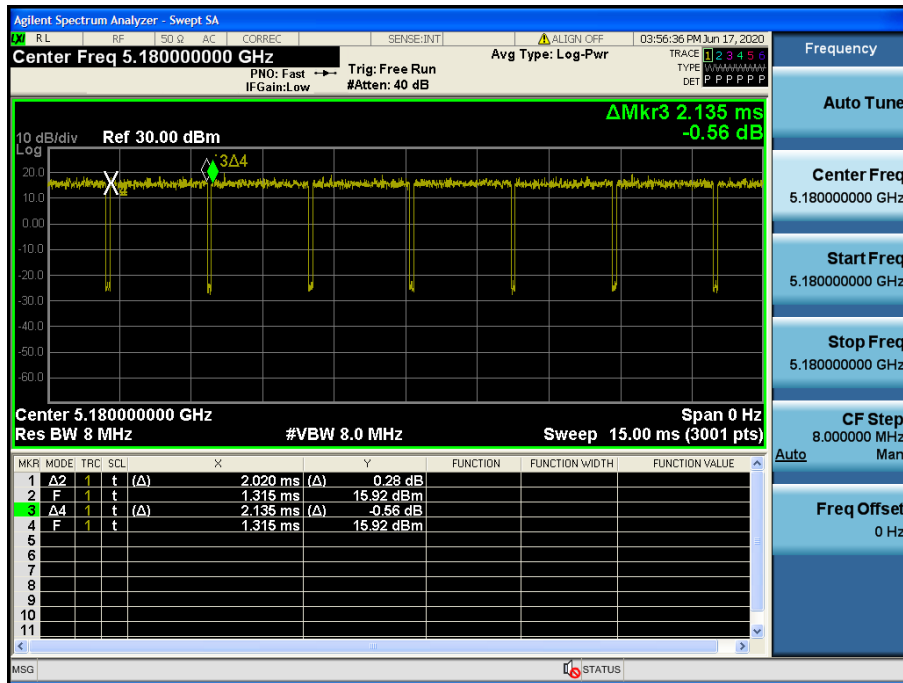
Mode	Data Rate	Tested Frequency [MHz]	Maximum Achievable Duty Cycle (x) = On / (On+Off)			DCCF= $10 \log(1/x)$ [dB]	50/T [kHz]
			T=On Time [ms]	(On+Off) Time [ms]	x		
802.11a	6Mbps	5 180	2.020	2.135	0.946 1	0.24	24.75
802.11ac (VHT20)	MCS0	5 180	1.890	1.995	0.947 4	0.23	26.46
802.11n (HT40)	MCS0	5 190	0.925	1.016	0.910 1	0.41	54.07
802.11ac (VHT80)	MCS0	5 210	0.455	0.543	0.837 8	0.77	109.96

Test Plot:

Single Transmit

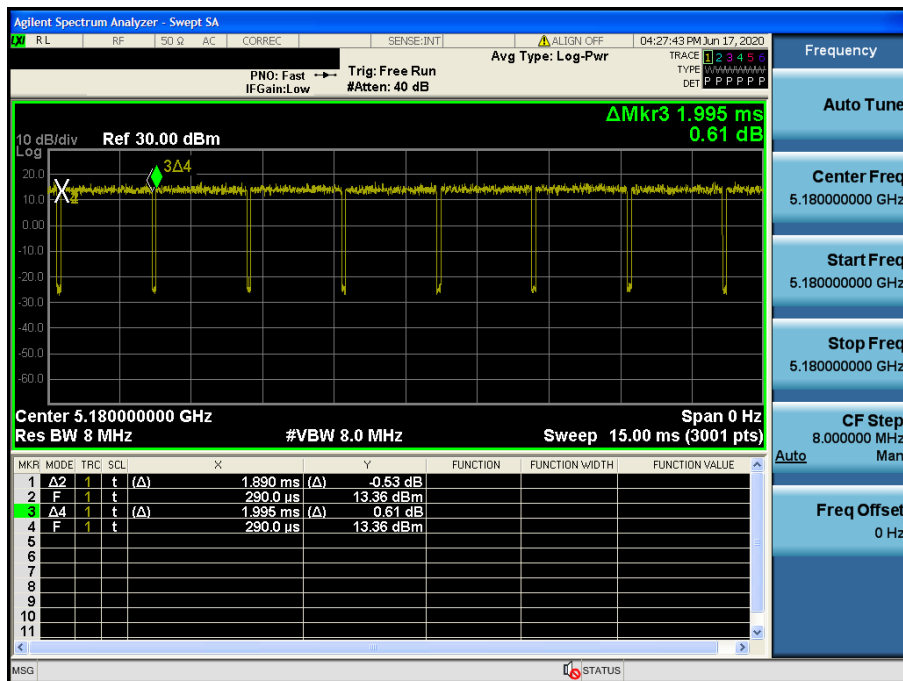
Duty Cycle

Test Mode: 802.11a & Ch.36



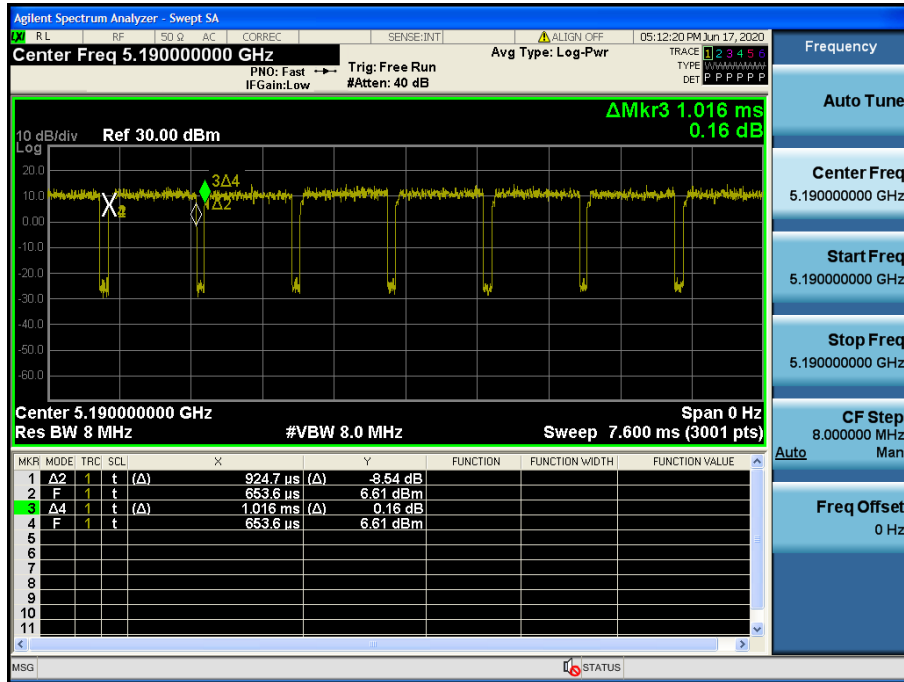
Duty Cycle

Test Mode: 802.11ac VHT20 & Ch.36



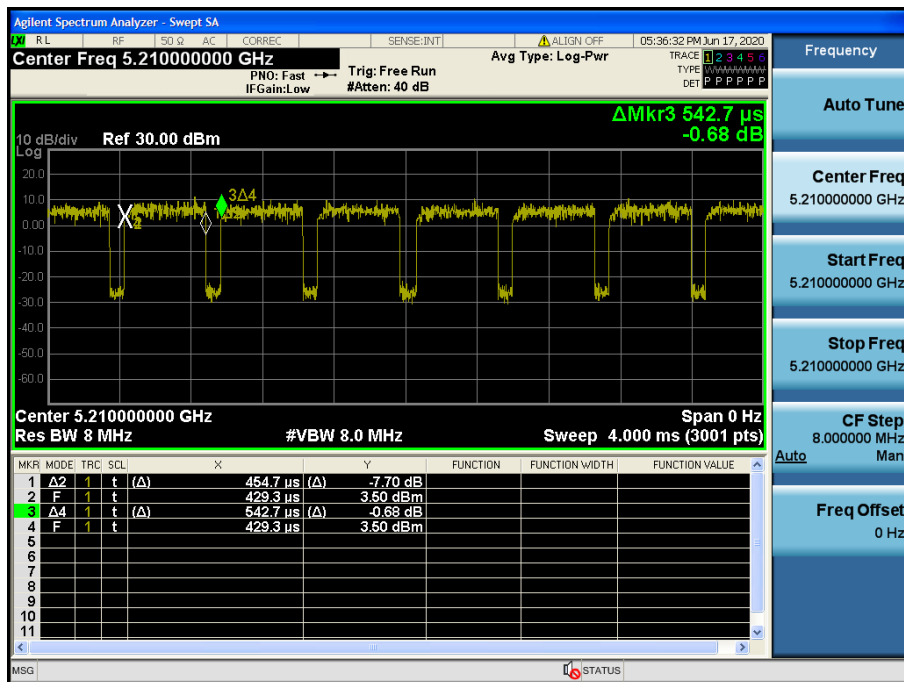
Duty Cycle

Test Mode: 802.11n HT40 & Ch.38



Duty Cycle

Test Mode: 802.11ac VHT80 & Ch.42

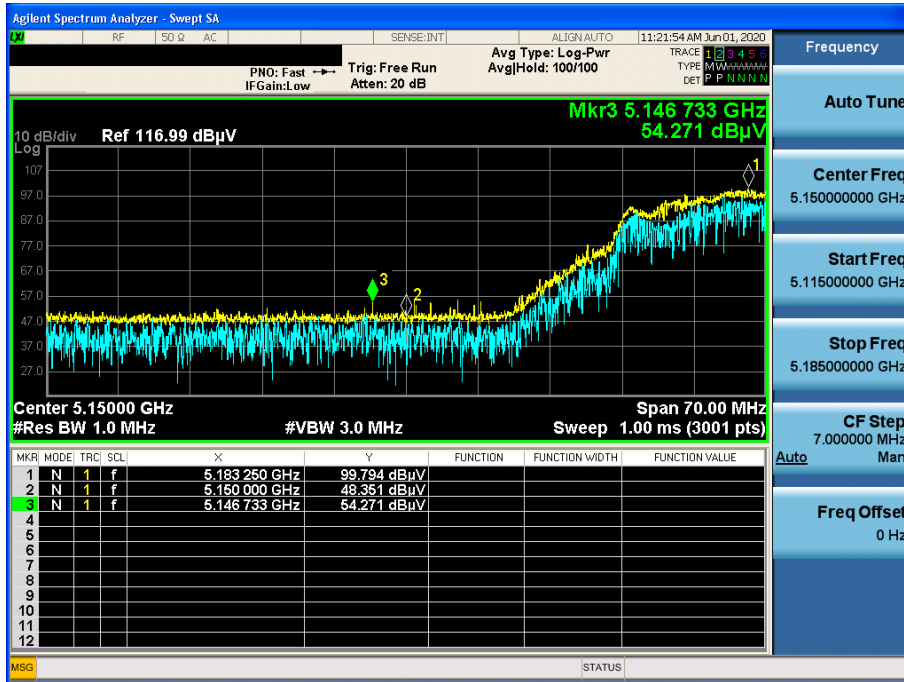


APPENDIX III

Unwanted Emissions (Radiated) Test Plot:

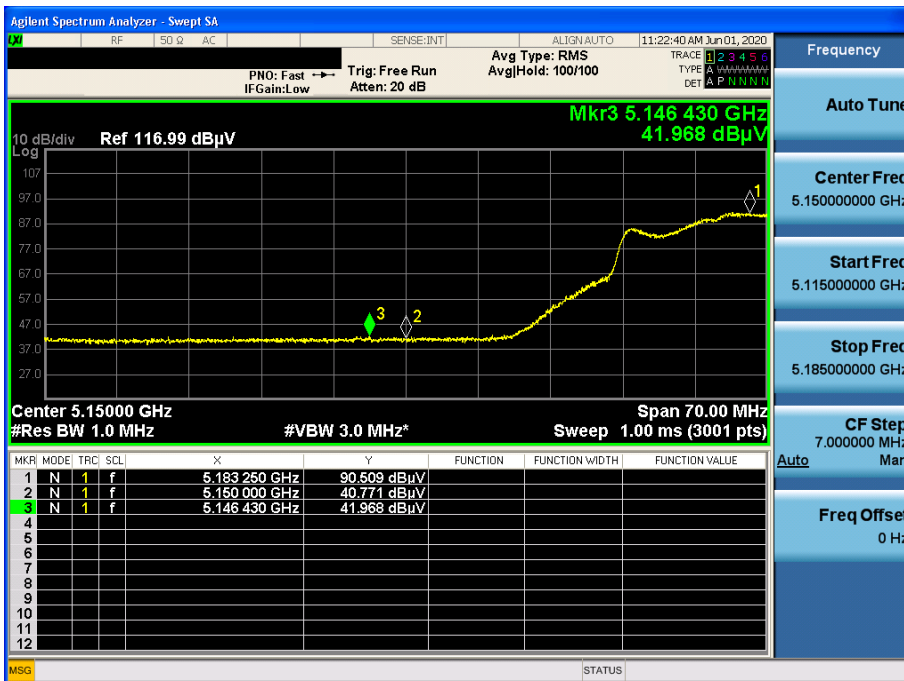
802.11a & U-NII 1 & Ch.36 & Y axis & Hor

Detector Mode : PK



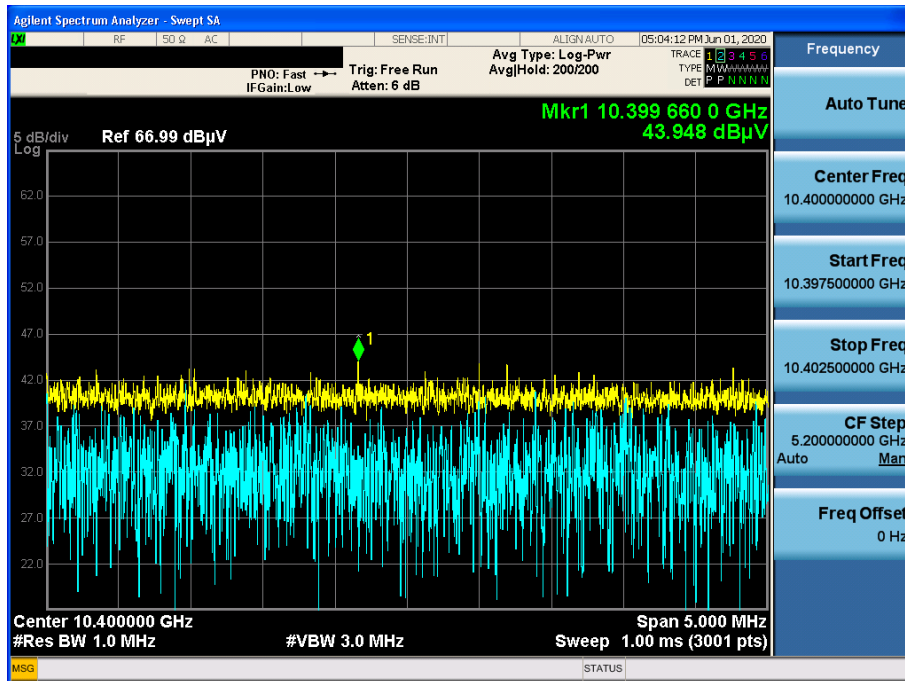
802.11a & U-NII 1 & Ch.36 & Y axis & Hor

Detector Mode : AV



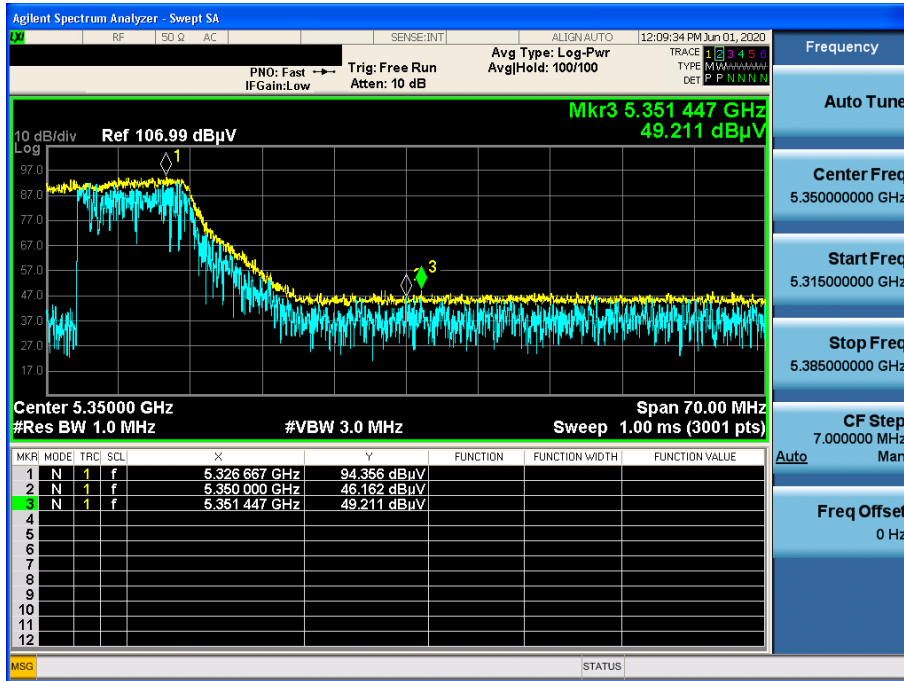
802.11a & U-NII 1 & Ch.40 & Y axis & Ver

Detector Mode : PK



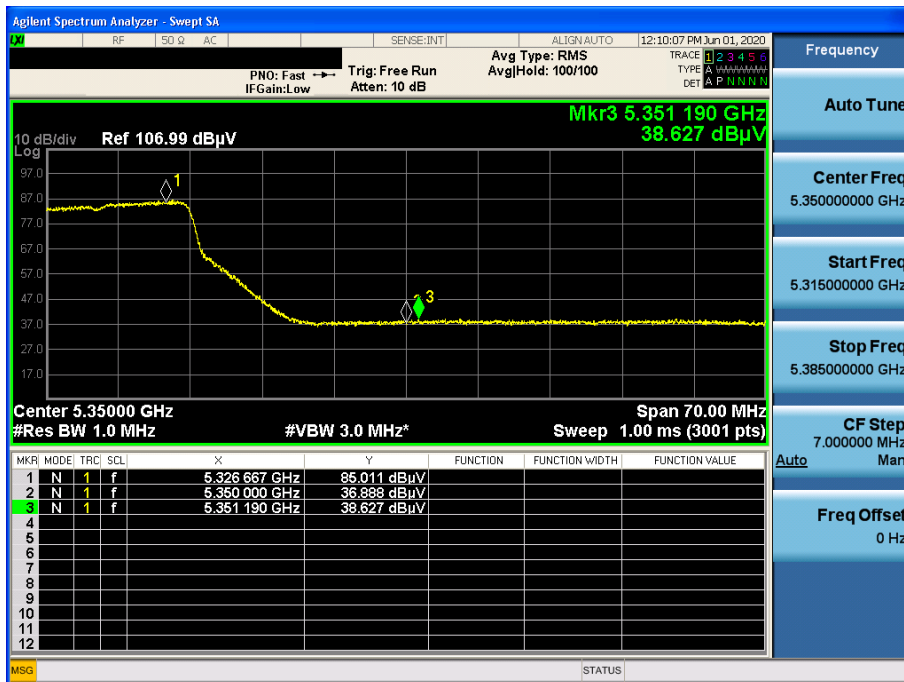
802.11a & U-NII 2A & Ch.64 & Y axis & Hor

Detector Mode : PK



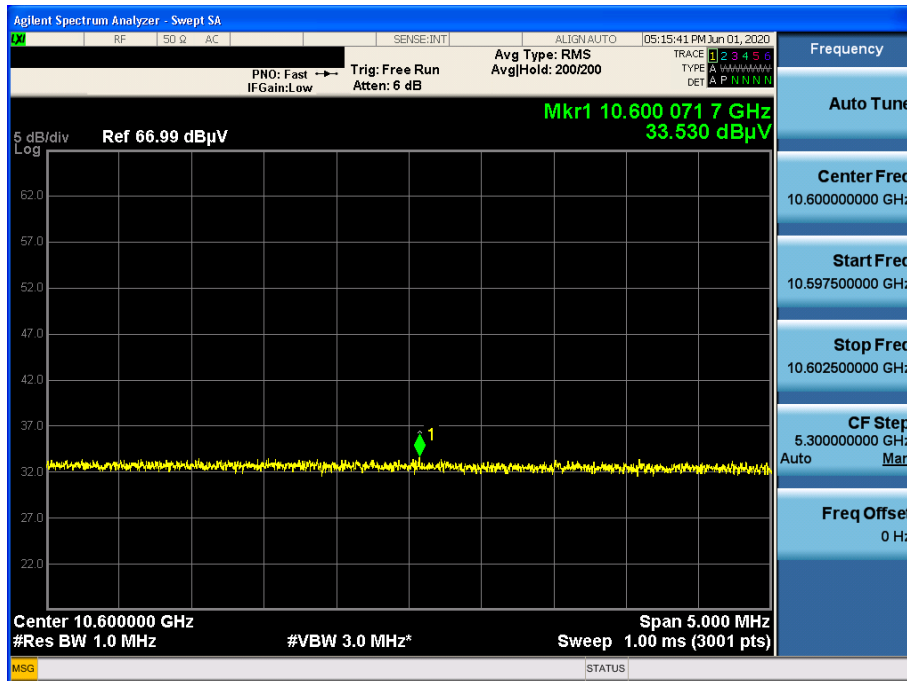
802.11a & U-NII 2A & Ch.64 & Y axis & Hor

Detector Mode : AV



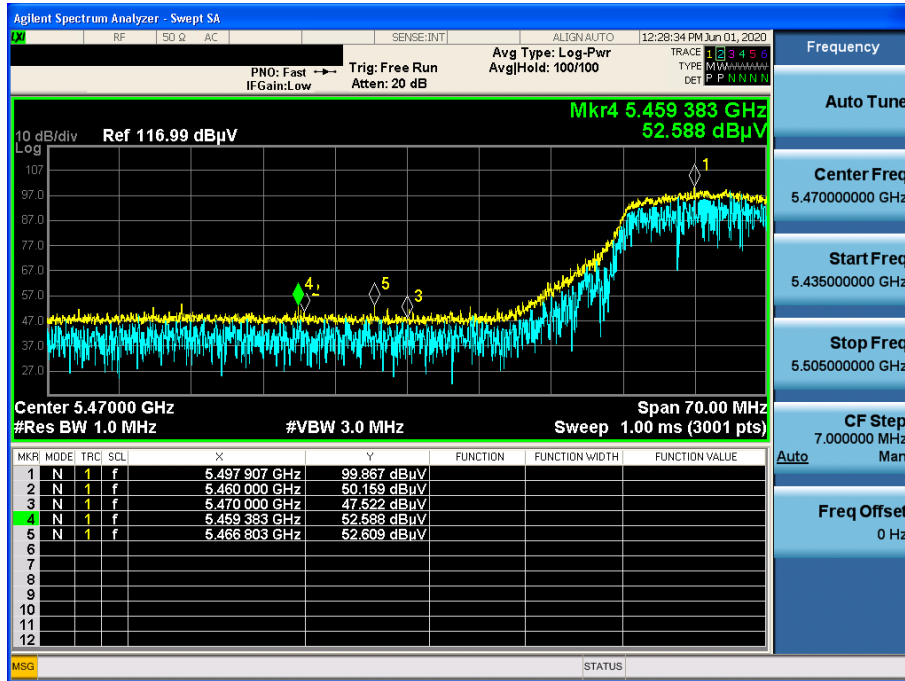
802.11a & U-NII 2A & Ch.60 & Y axis & Ver

Detector Mode : AV



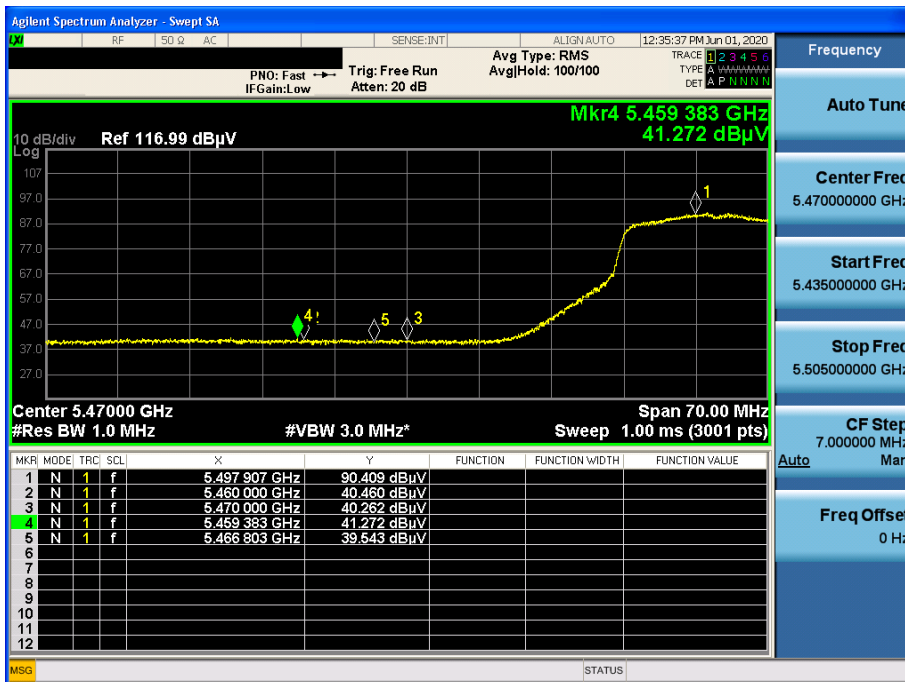
802.11a & U-NII 2C & Ch.100 & Y axis & Hor

Detector Mode : PK



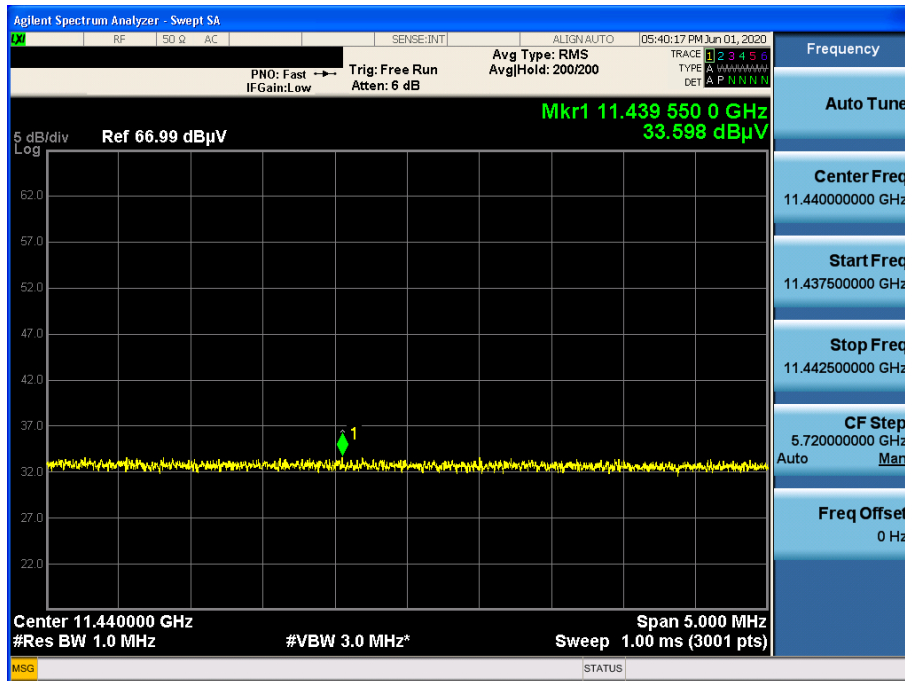
802.11a & U-NII 2C & Ch.100 & Y axis & Hor

Detector Mode : AV



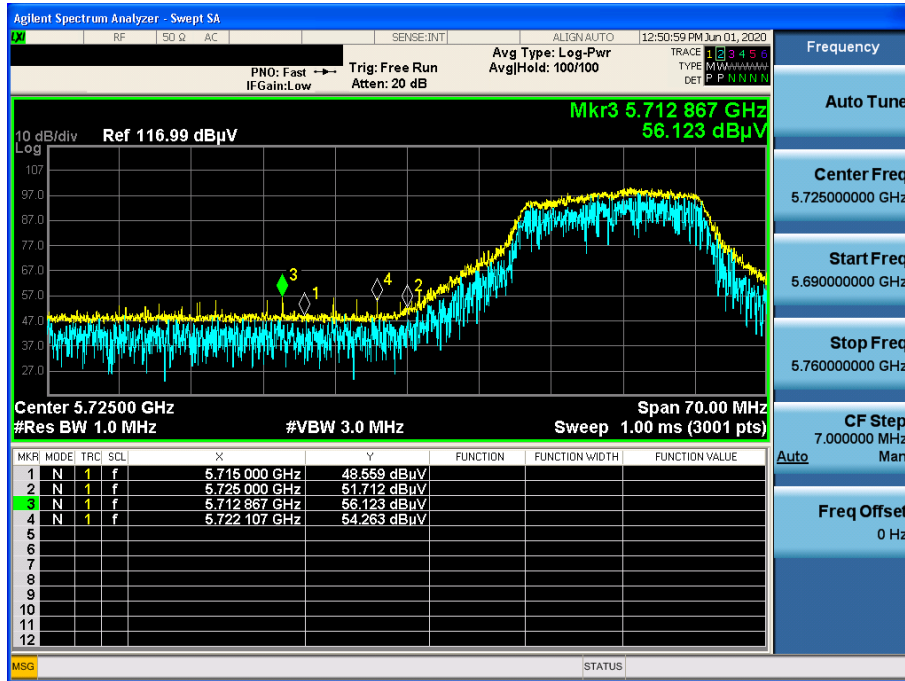
802.11a & U-NII 2C & Ch.144 & Y axis & Ver

Detector Mode : AV



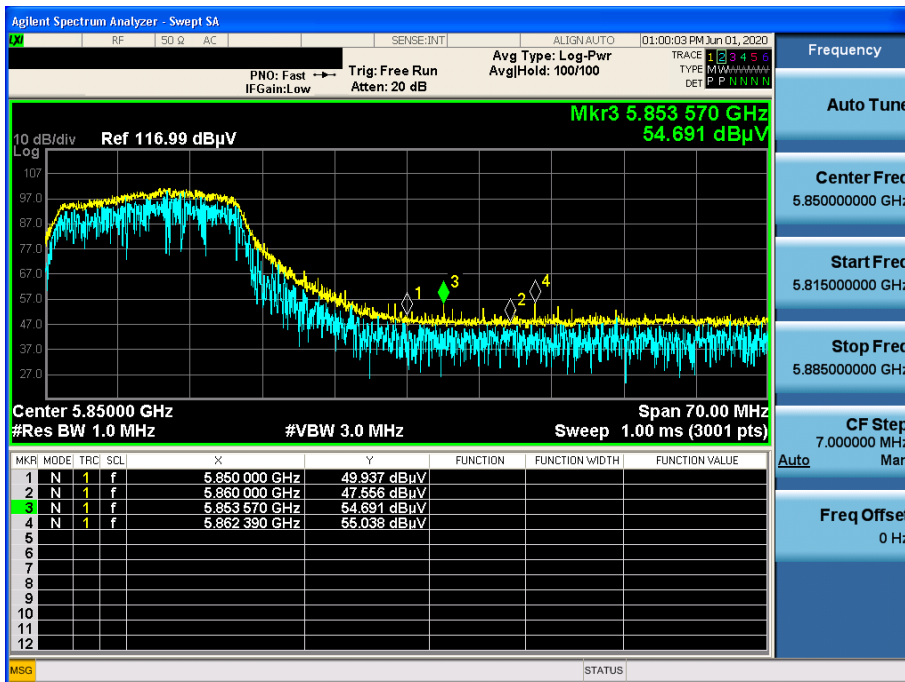
802.11a & U-NII 3 & Ch.149 & Y axis & Hor

Detector Mode : PK



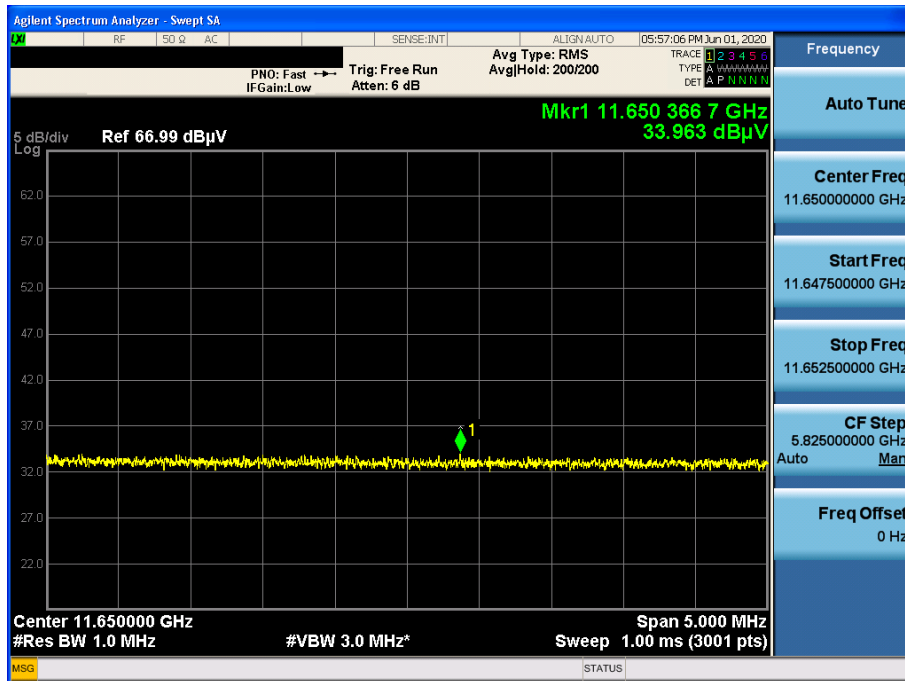
802.11a & U-NII 3 & Ch.165 & Y axis & Hor

Detector Mode : PK



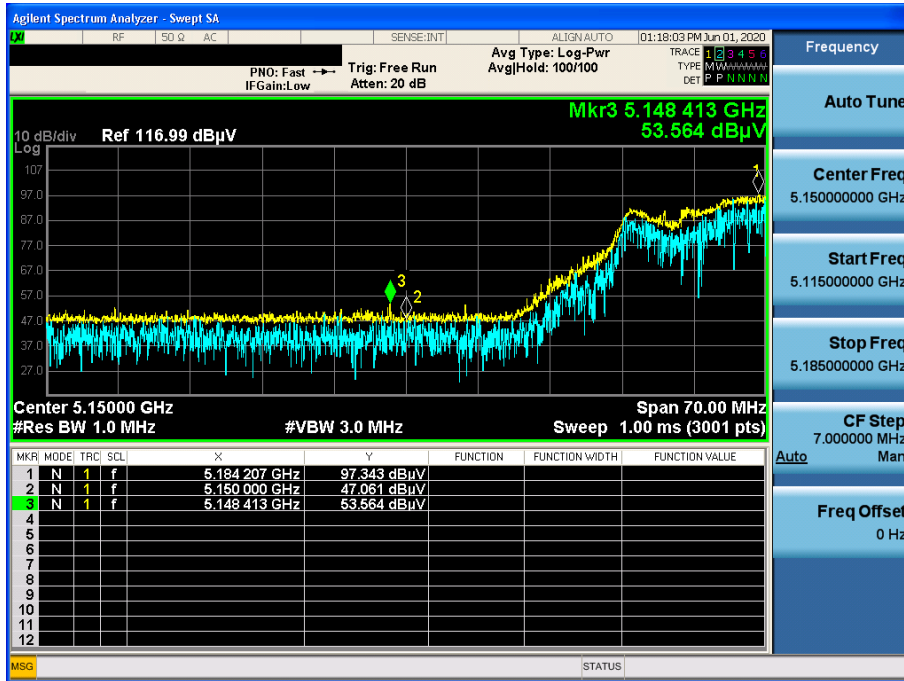
802.11a & U-NII 3 & Ch.165 & Y axis & Ver

Detector Mode : AV



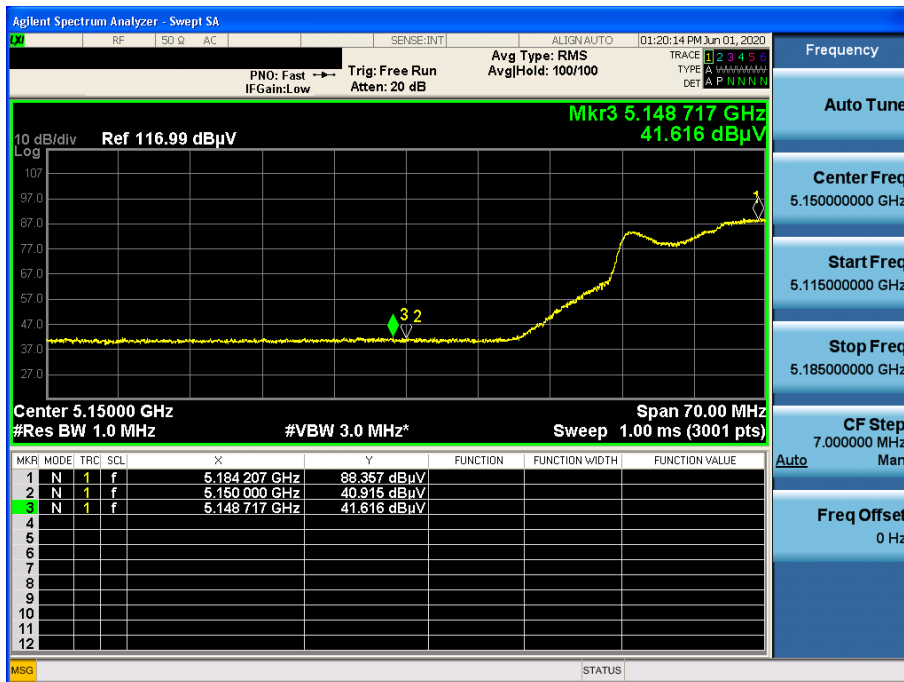
802.11ac(VHT20) & U-NII 1 & Ch.36 & Y axis & Hor

Detector Mode : PK



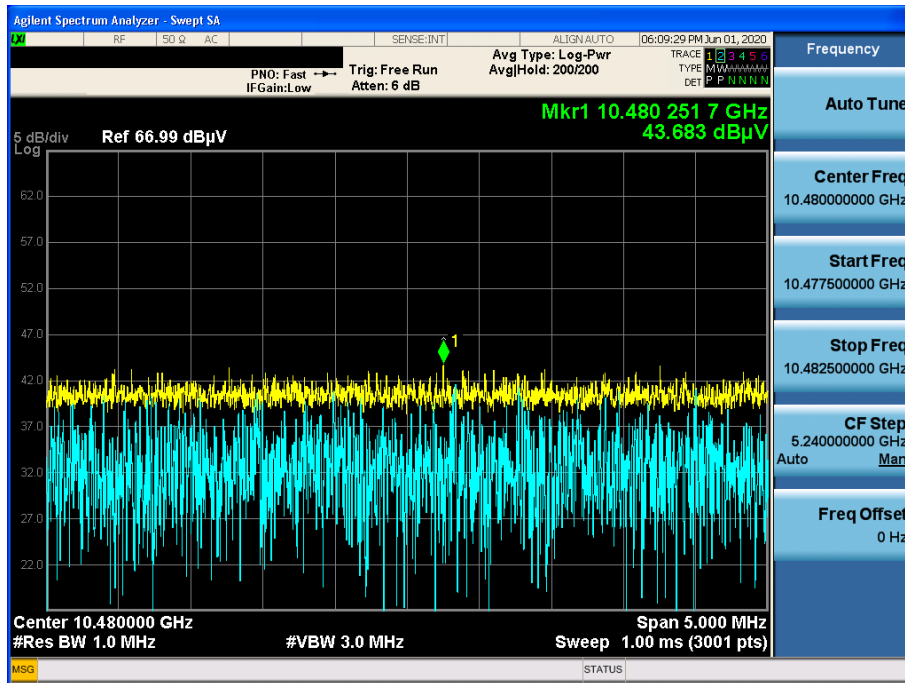
802.11ac(VHT20) & U-NII 1 & Ch.36 & Y axis & Hor

Detector Mode : AV



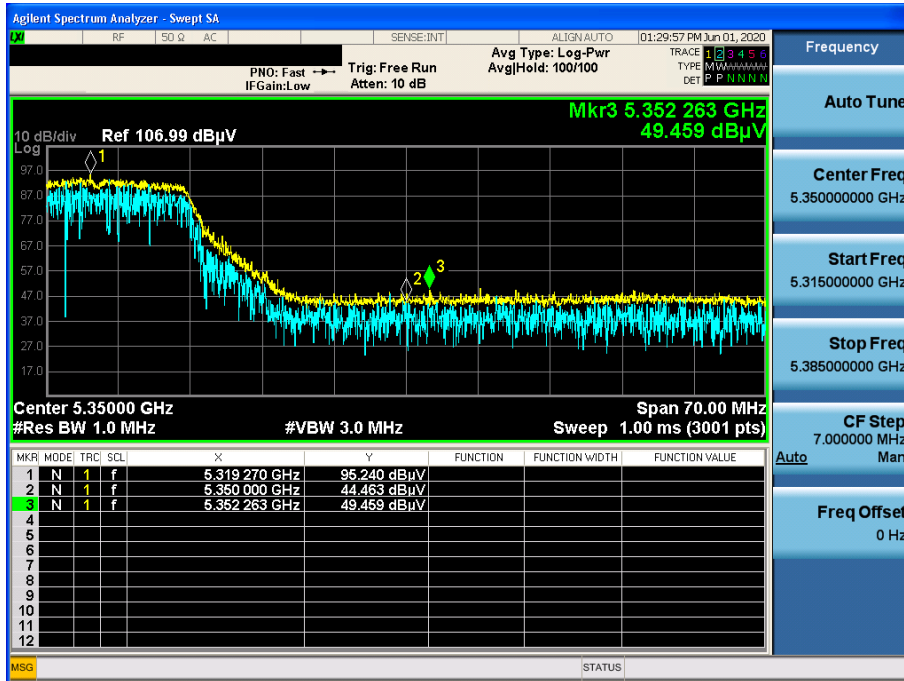
802.11ac(VHT20) & U-NII 1 & Ch.48 & Y axis & Ver

Detector Mode : PK



802.11ac(VHT20) & U-NII 2A & Ch.64 & Y axis & Hor

Detector Mode : PK



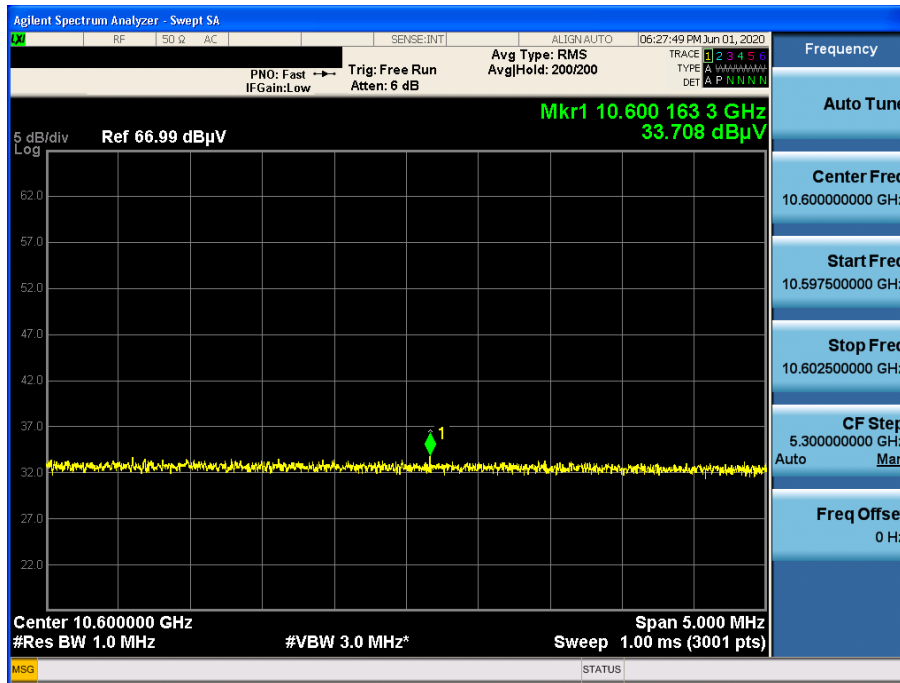
802.11ac(VHT20) & U-NII 2A & Ch.64 & Y axis & Hor

Detector Mode : AV



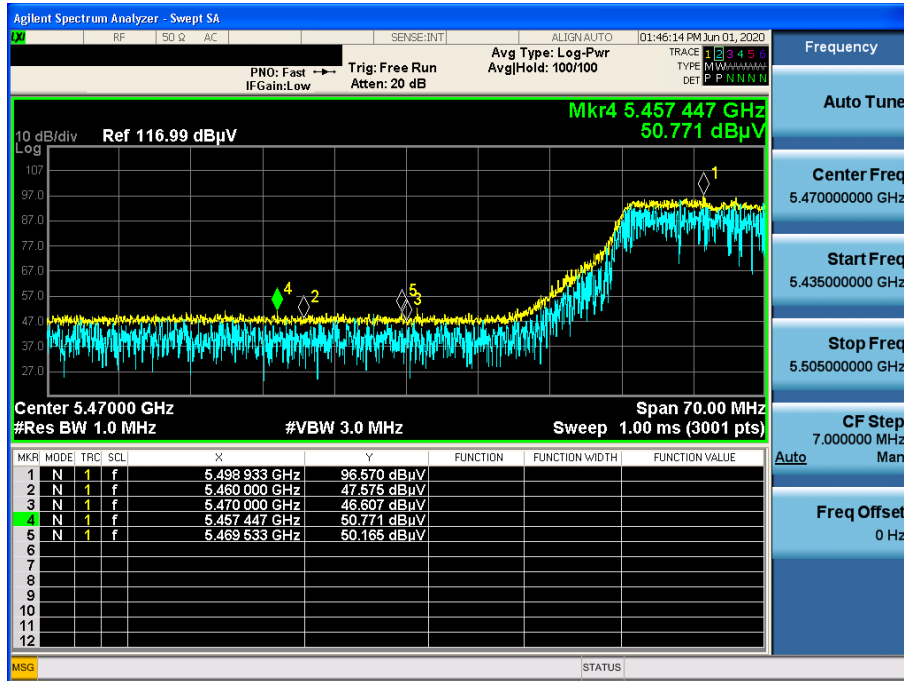
802.11ac(VHT20) & U-NII 2A & Ch.60 & Y axis & Ver

Detector Mode : AV



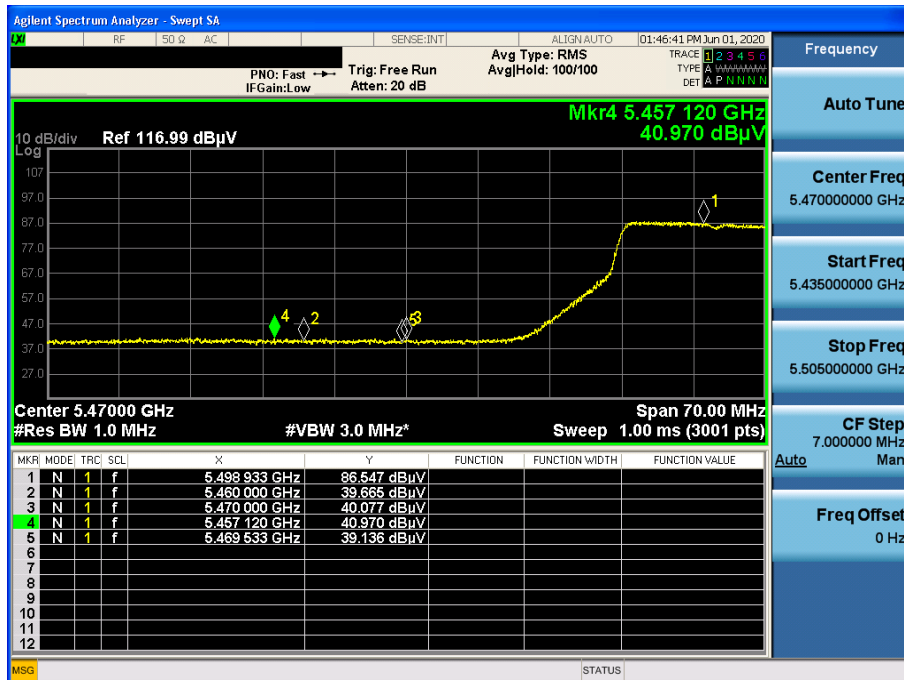
802.11ac(VHT20) & U-NII 2C & Ch.100 & Y axis & Hor

Detector Mode : PK



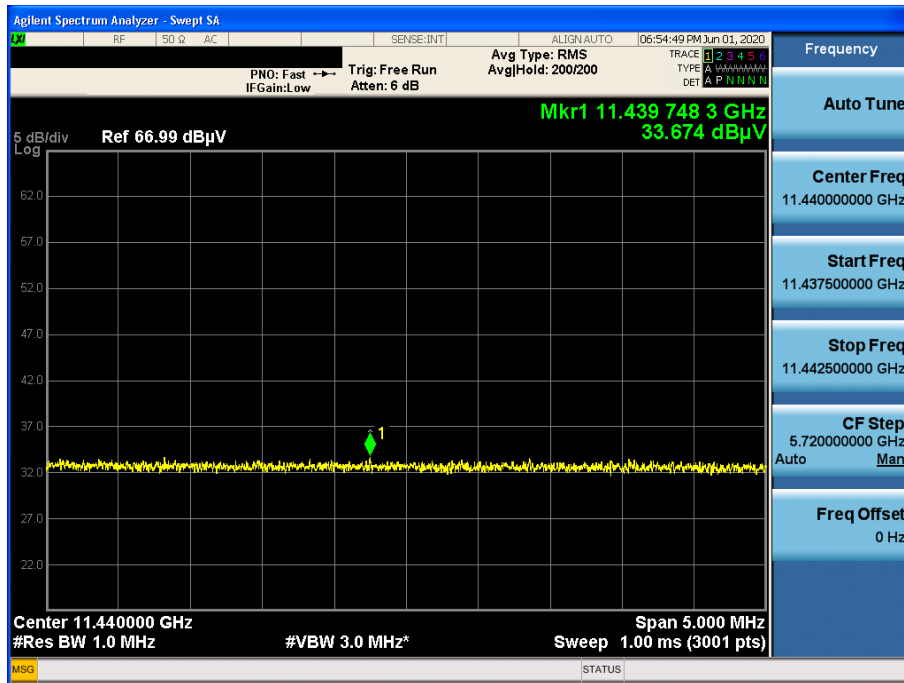
802.11ac(VHT20) & U-NII 2C & Ch.100 & Y axis & Hor

Detector Mode : AV



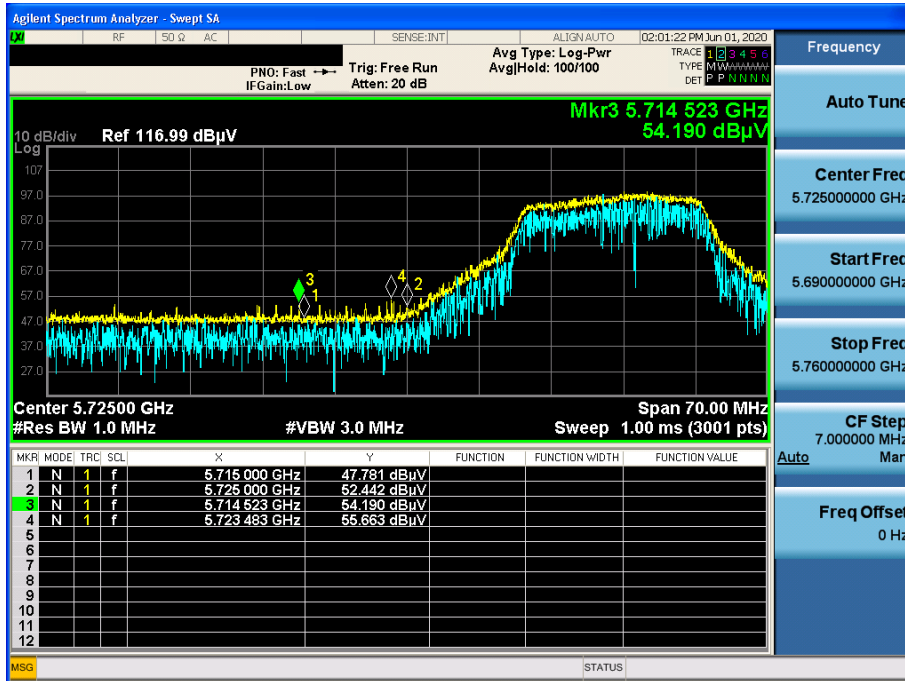
802.11ac(VHT20) & U-NII 2C & Ch.144 & Y axis & Ver

Detector Mode : AV



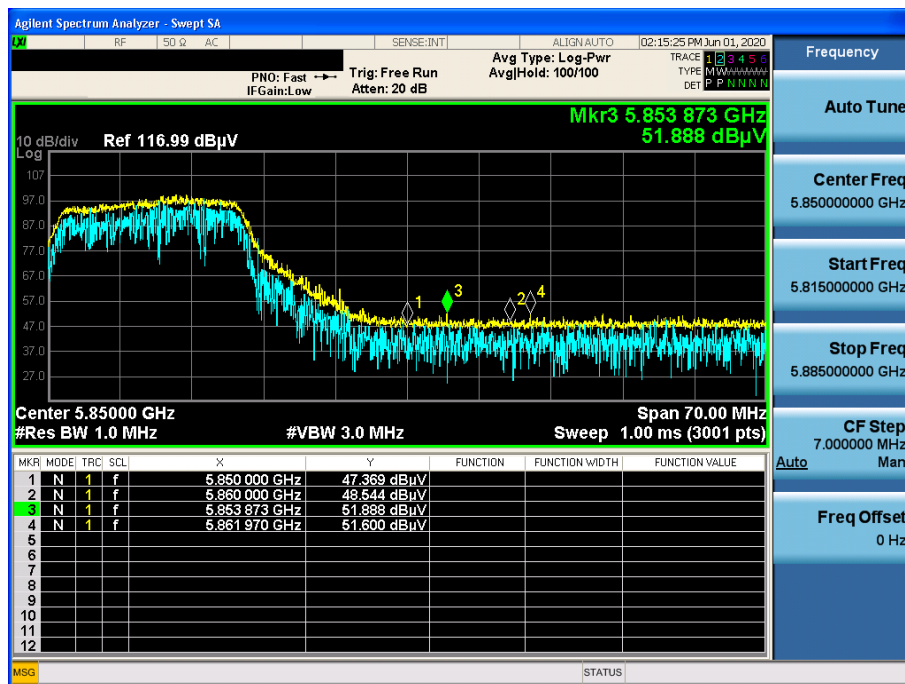
802.11ac(VHT20) & U-NII 3 & Ch.149 & Y axis & Hor

Detector Mode : PK



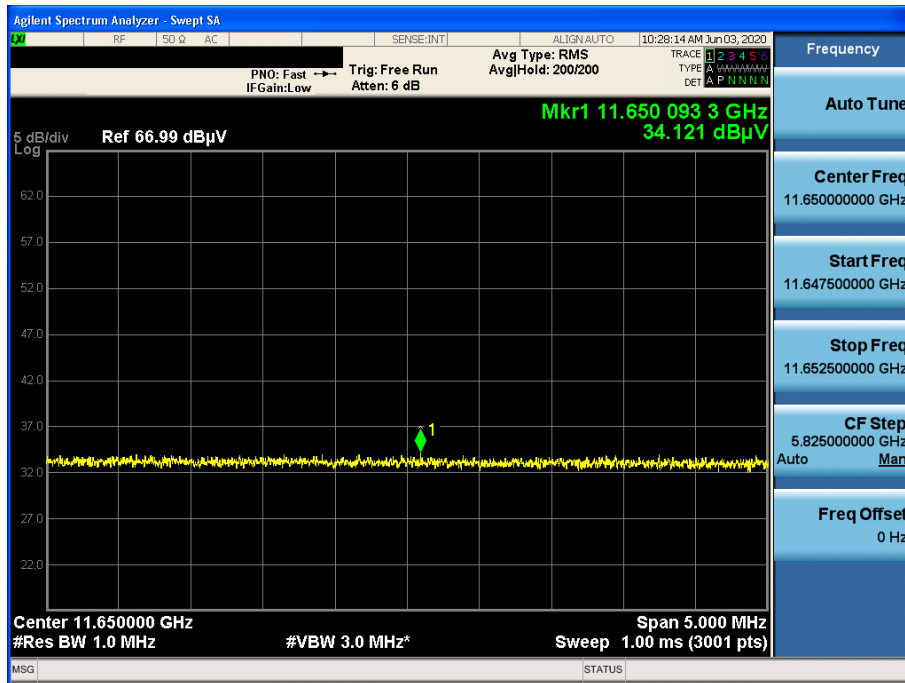
802.11ac(VHT20) & U-NII 3 & Ch.165 & Y axis & Hor

Detector Mode : PK



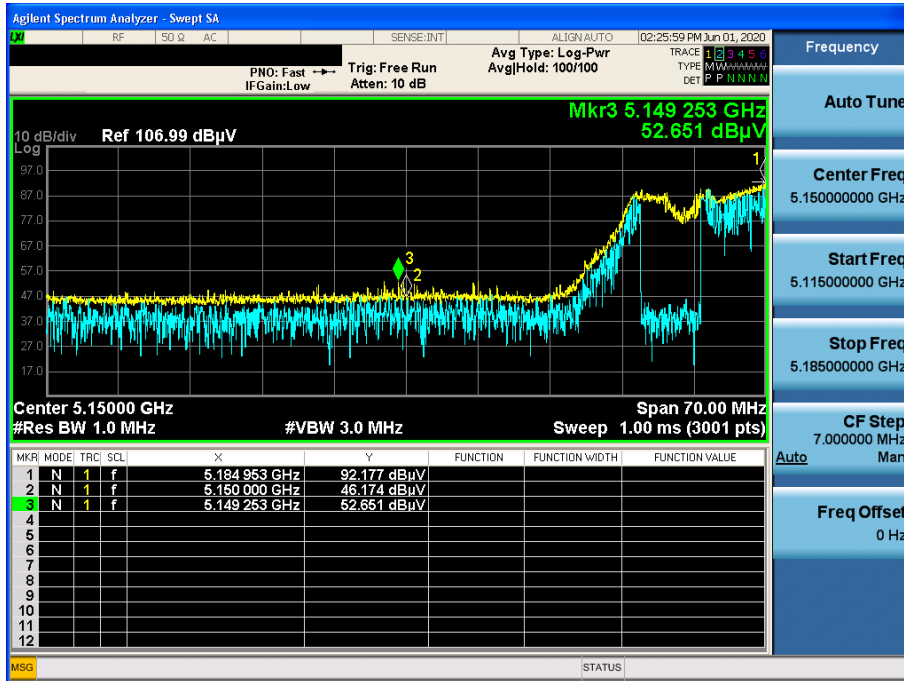
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Detector Mode : AV



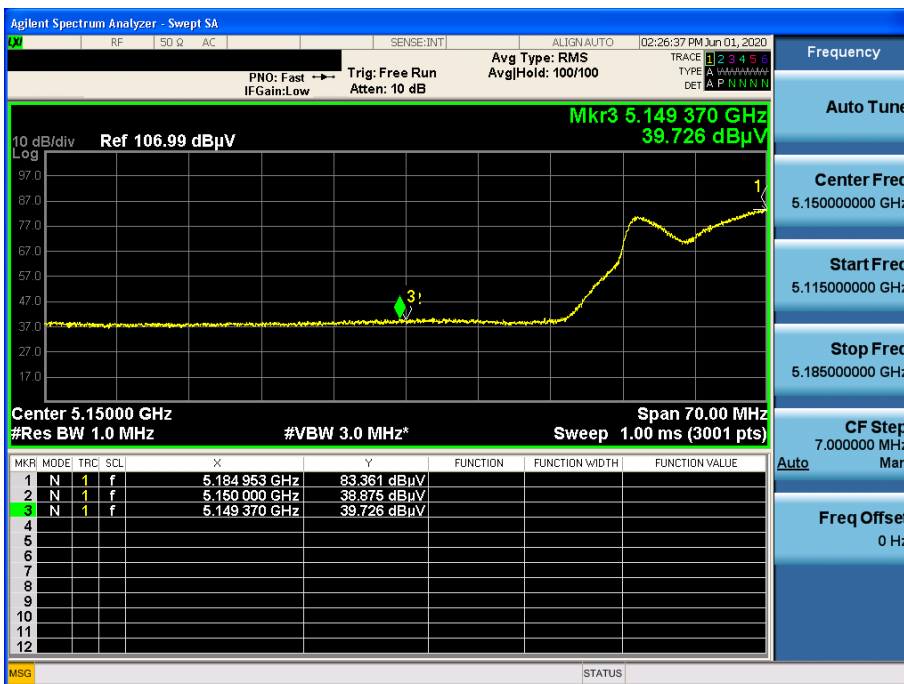
802.11n(HT40) & U-NII 1 & Ch.38 & Y axis & Hor

Detector Mode : PK



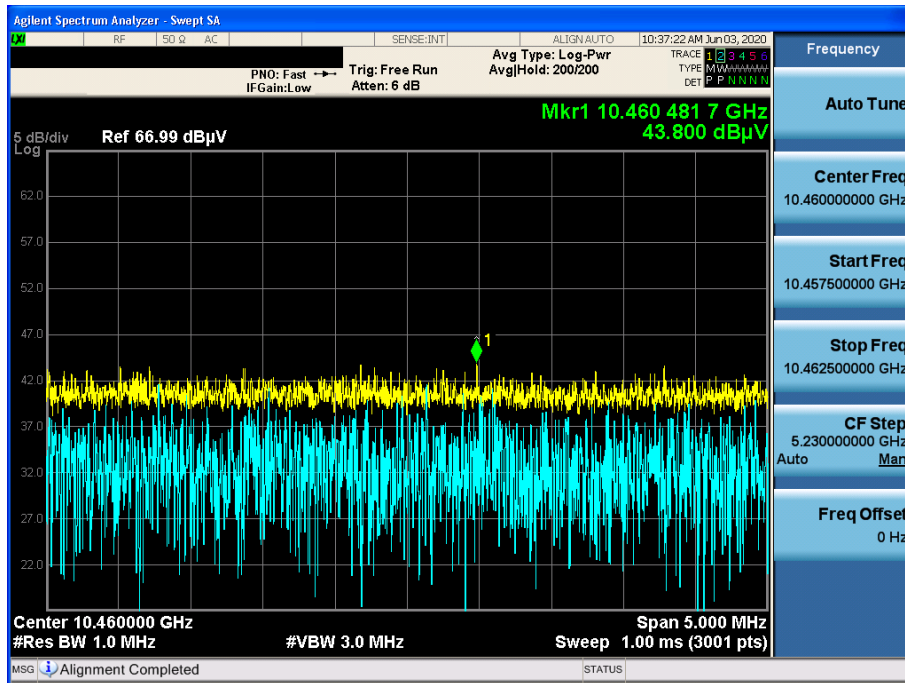
802.11n(HT40) & U-NII 1 & Ch.38 & Y axis & Hor

Detector Mode : AV



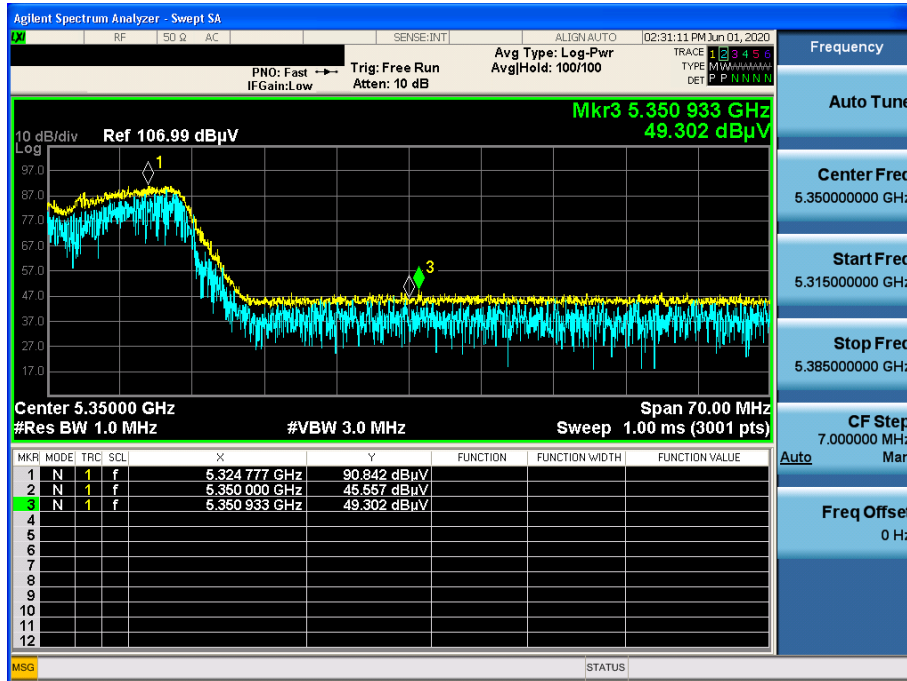
802.11ac(VHT40) & U-NII 1 & Ch.46 & Y axis & Ver

Detector Mode : PK



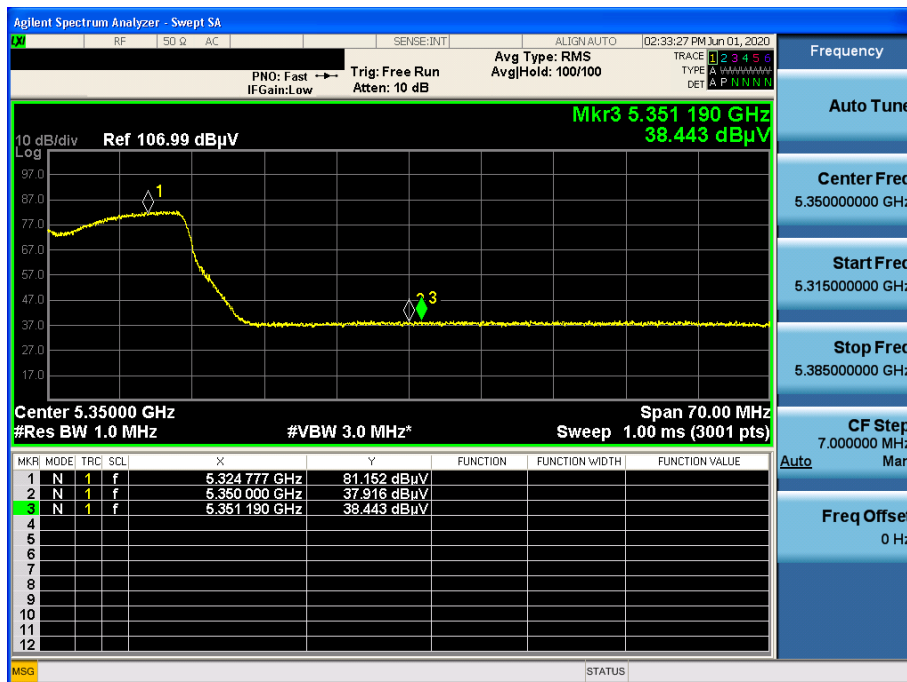
802.11n(HT40) & U-NII 2A & Ch.62 & Y axis & Hor

Detector Mode : PK



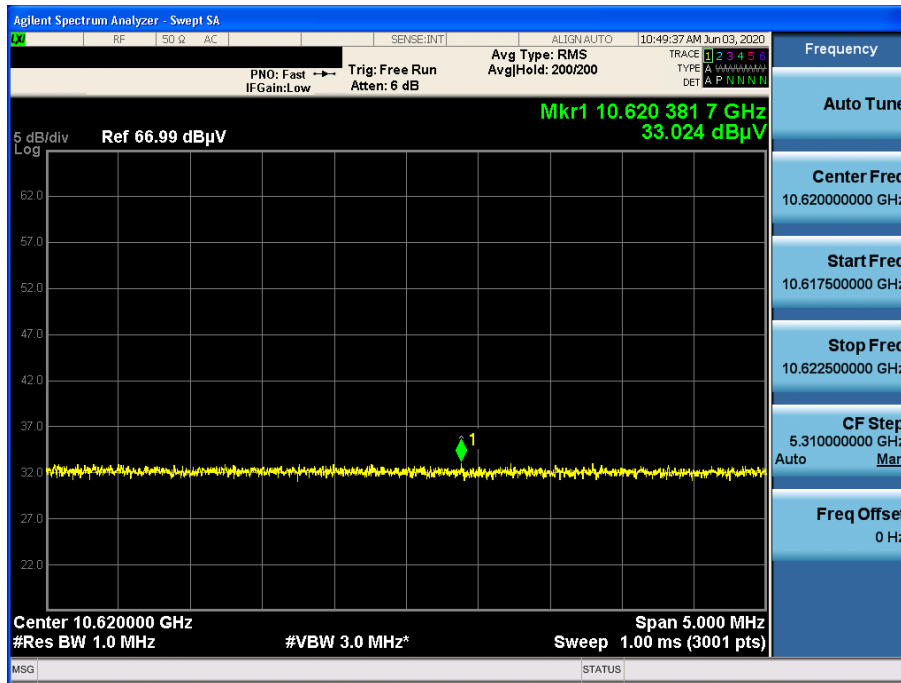
802.11n(HT40) & U-NII 2A & Ch.62 & Y axis & Hor

Detector Mode : AV



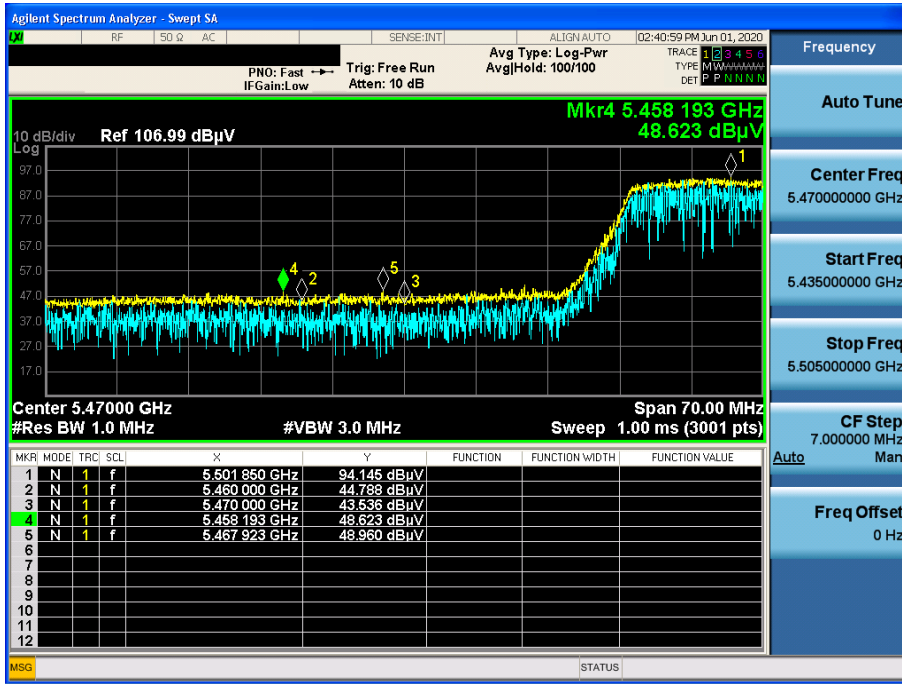
802.11n(HT40) & U-NII 2A & Ch.62 & Y axis & Ver

Detector Mode : AV



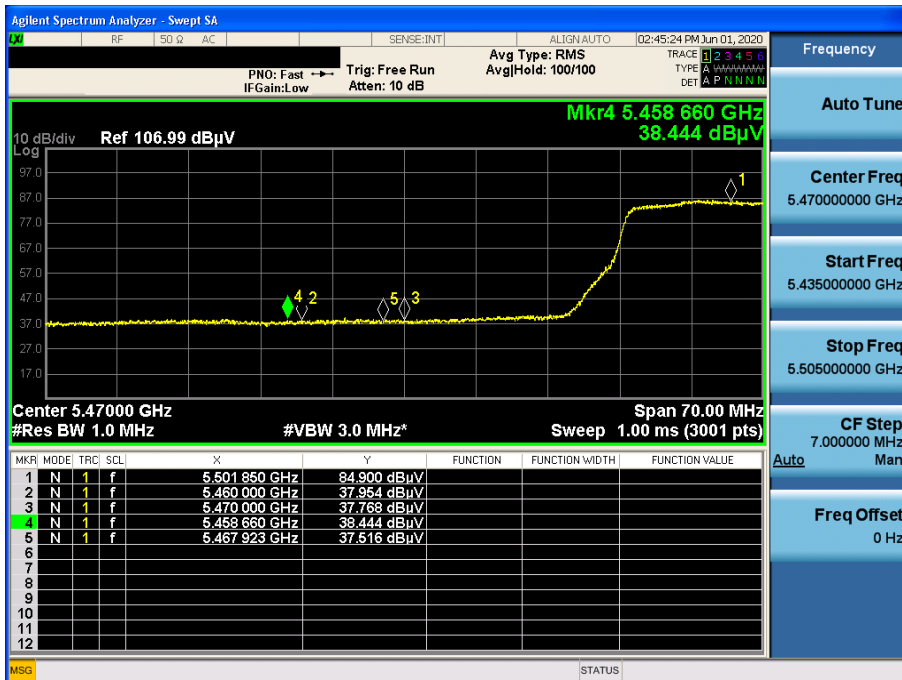
802.11n(HT40) & U-NII 2C & Ch.102 & Y axis & Hor

Detector Mode : PK



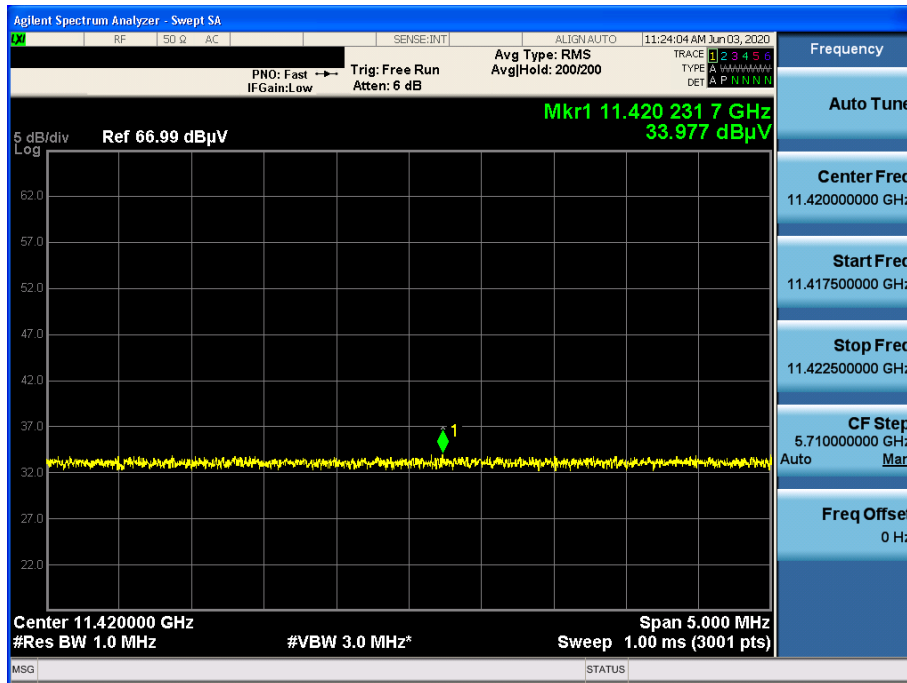
802.11n(HT40) & U-NII 2C & Ch.102 & Y axis & Hor

Detector Mode : AV



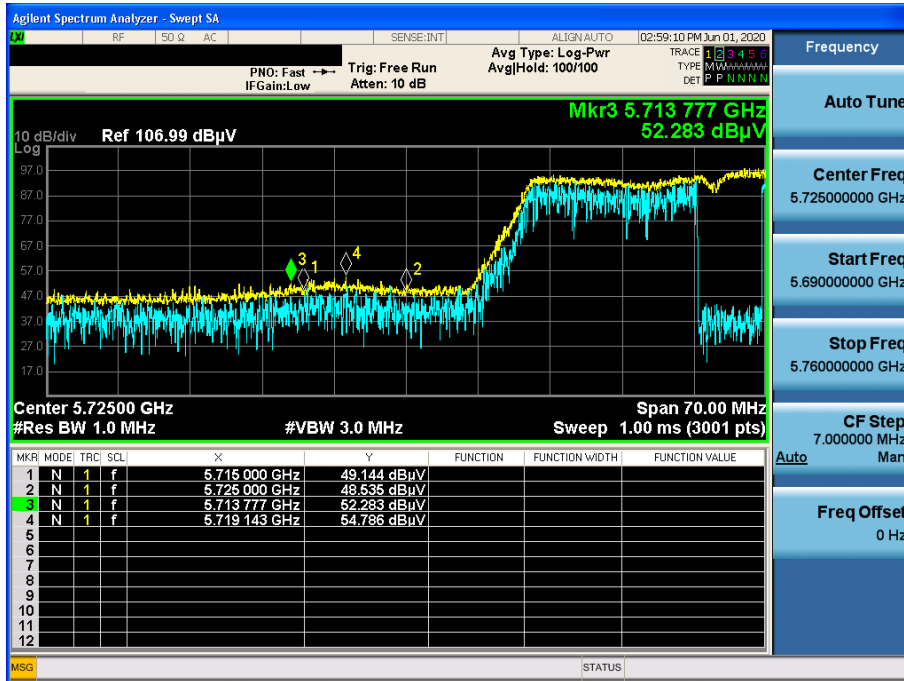
802.11n(HT40) & U-NII 2C & Ch.142 & Y axis & Ver

Detector Mode : AV



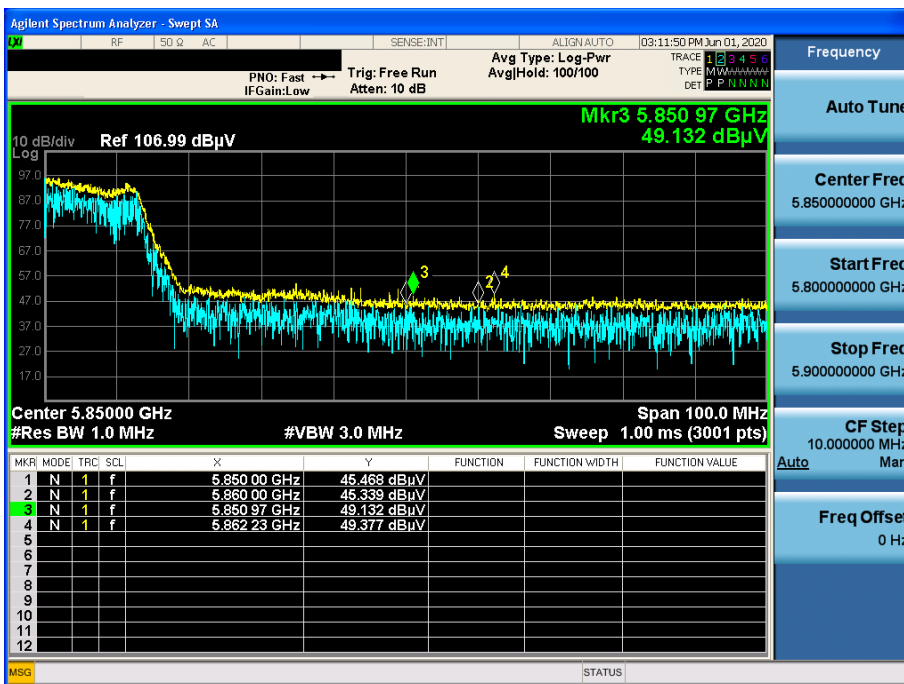
802.11n(HT40) & U-NII 3 & Ch.151 & Y axis & Hor

Detector Mode : PK



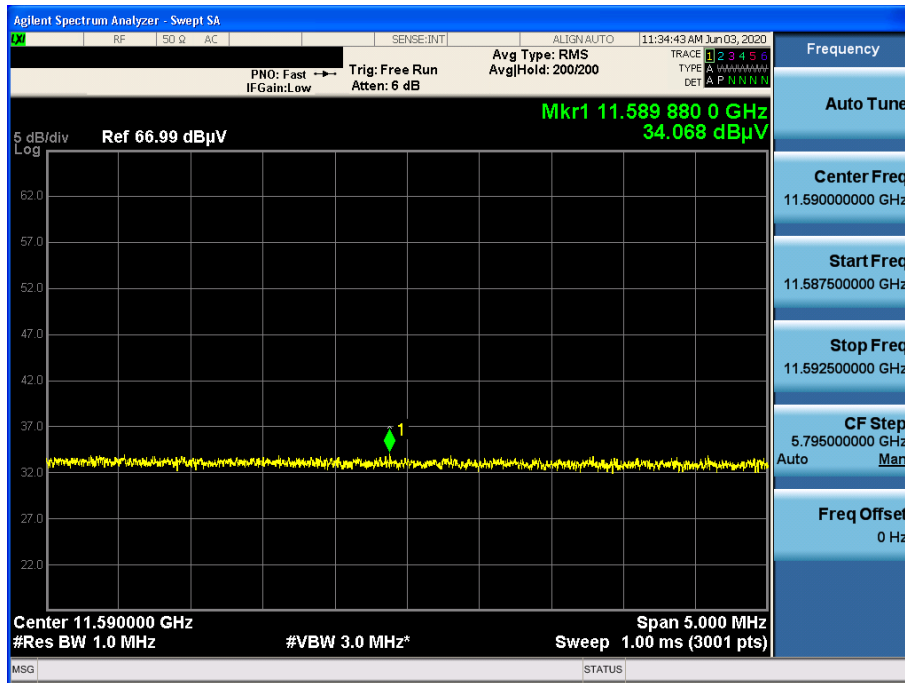
802.11n(HT40) & U-NII 3 & Ch.159 & Y axis & Hor

Detector Mode : PK



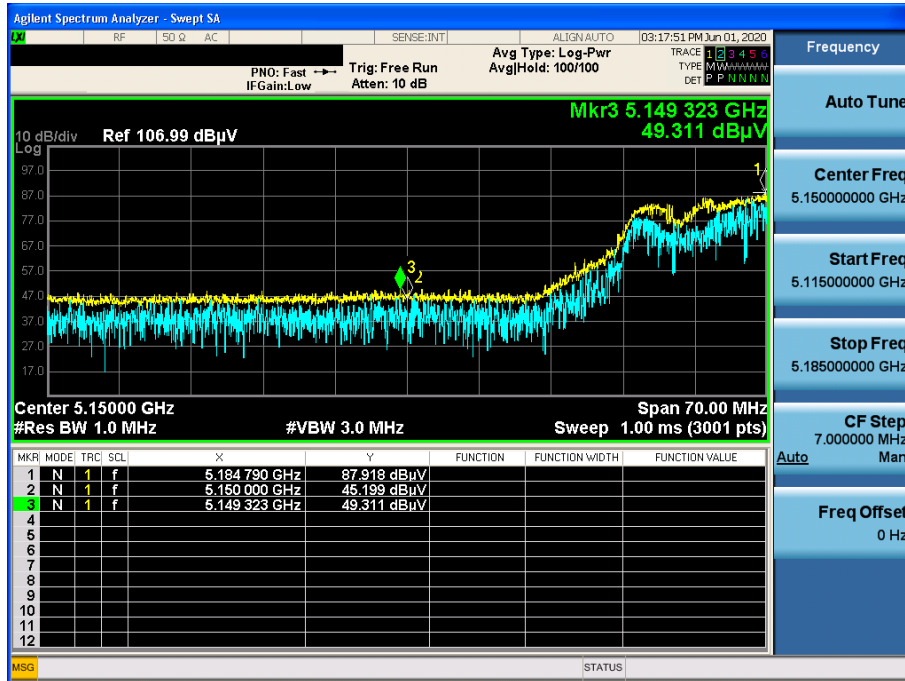
802.11n(HT40) & U-NII 3 & Ch.159 & Y axis & Ver

Detector Mode : AV



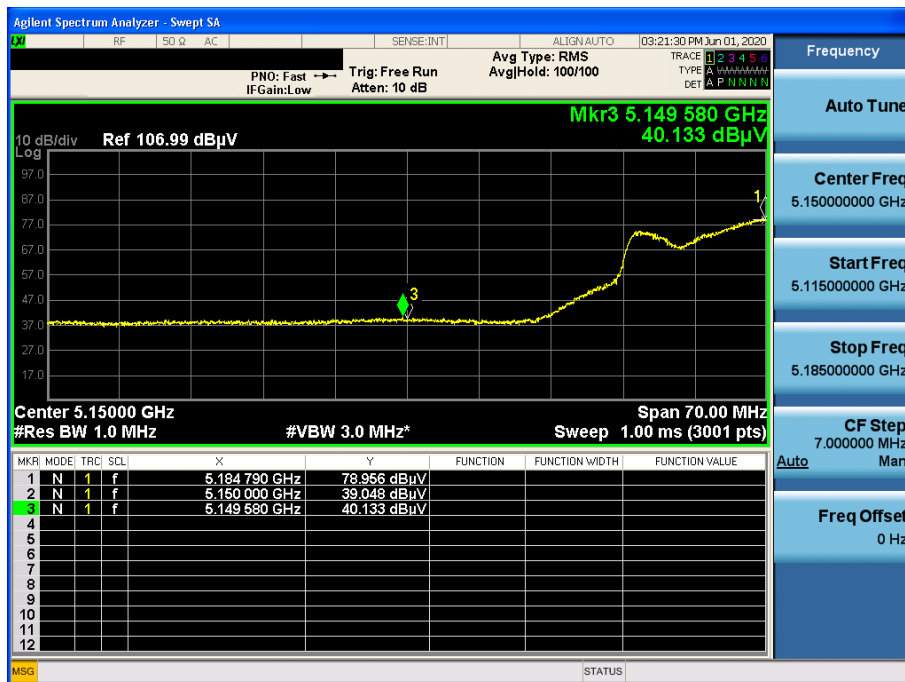
802.11ac(VHT80) & U-NII 1 & Ch.42 & Y axis & Hor

Detector Mode : PK



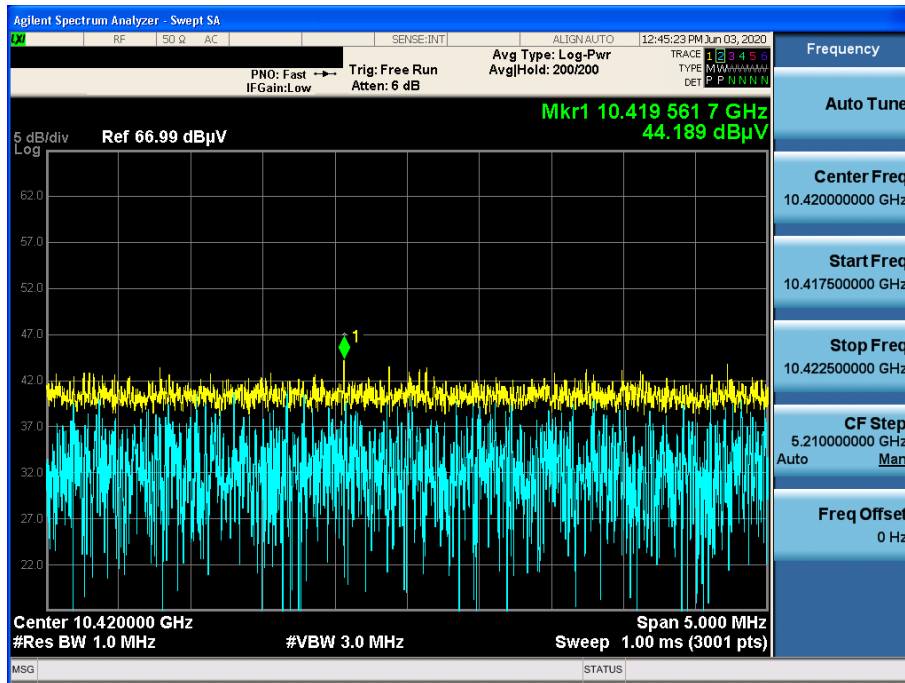
802.11ac(VHT80) & U-NII 1 & Ch.42 & Y axis & Hor

Detector Mode : AV



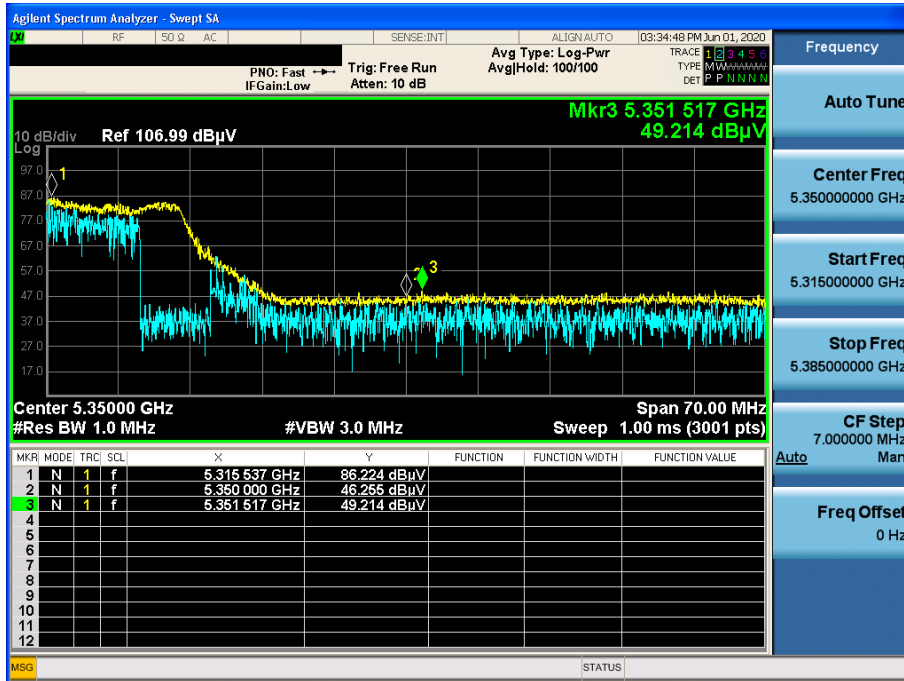
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Detector Mode : PK



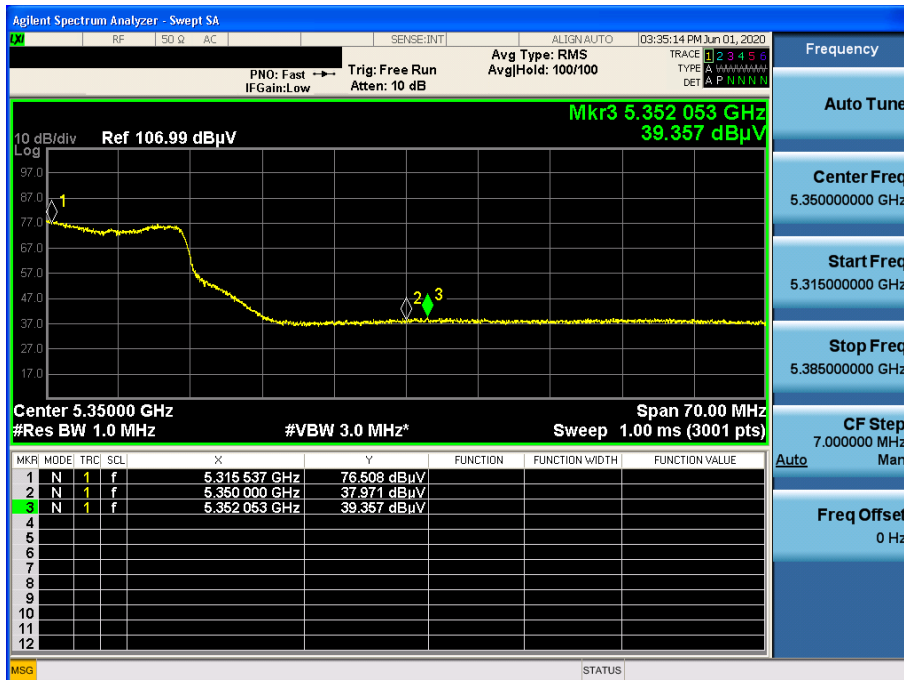
802.11ac(VHT80) & U-NII 3 & Ch.58 & Y axis & Hor

Detector Mode : PK



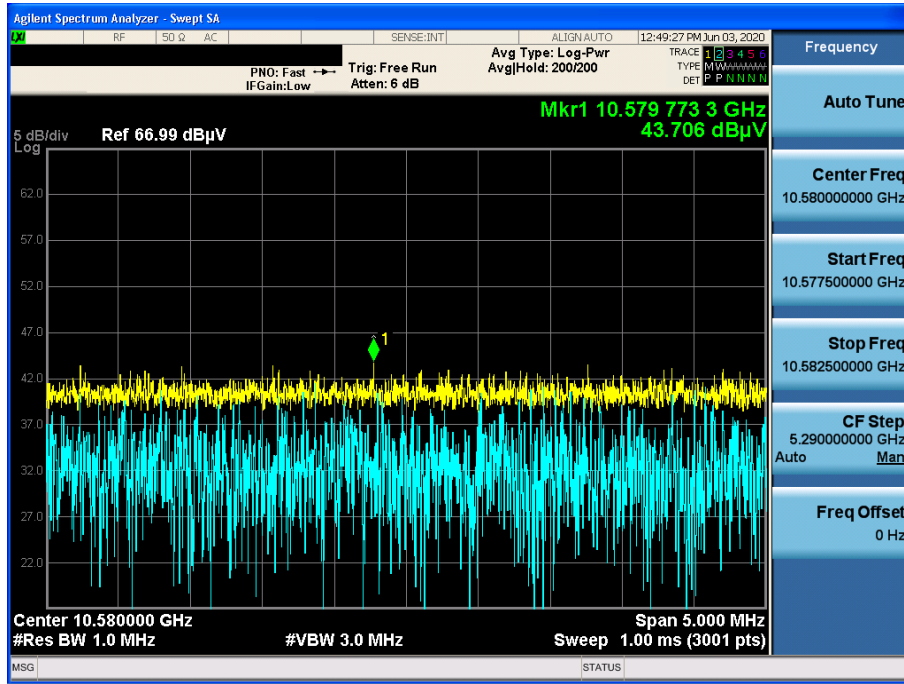
802.11ac(VHT80) & U-NII 3 & Ch.58 & Y axis & Hor

Detector Mode : PK



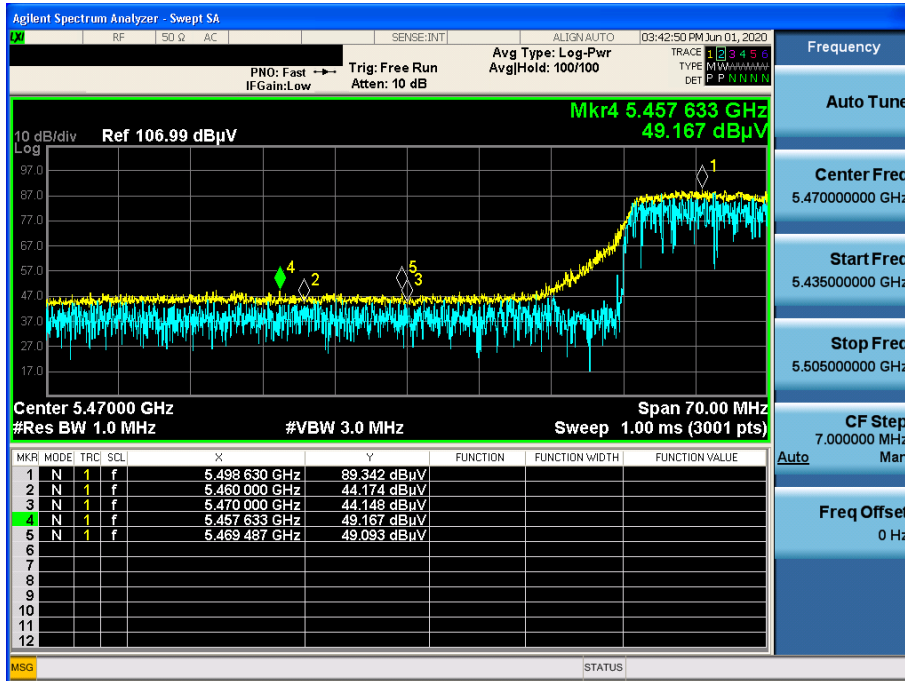
802.11ac(VHT80) & U-NII 3 & Ch.58 & Y axis & Ver

Detector Mode : PK



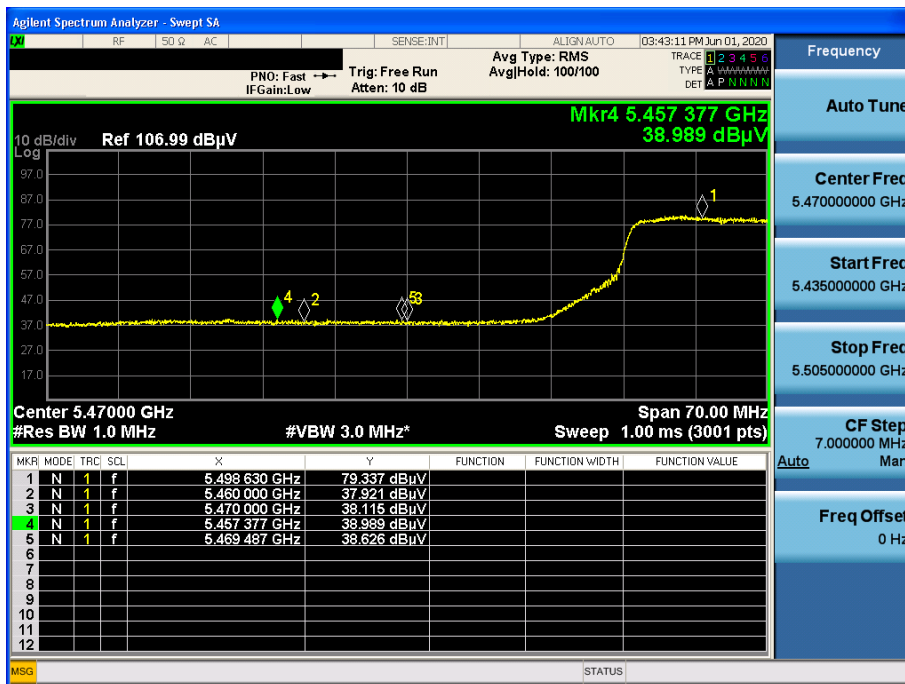
802.11ac(VHT80) & U-NII 2A & Ch.106 & Y axis & Hor

Detector Mode : PK



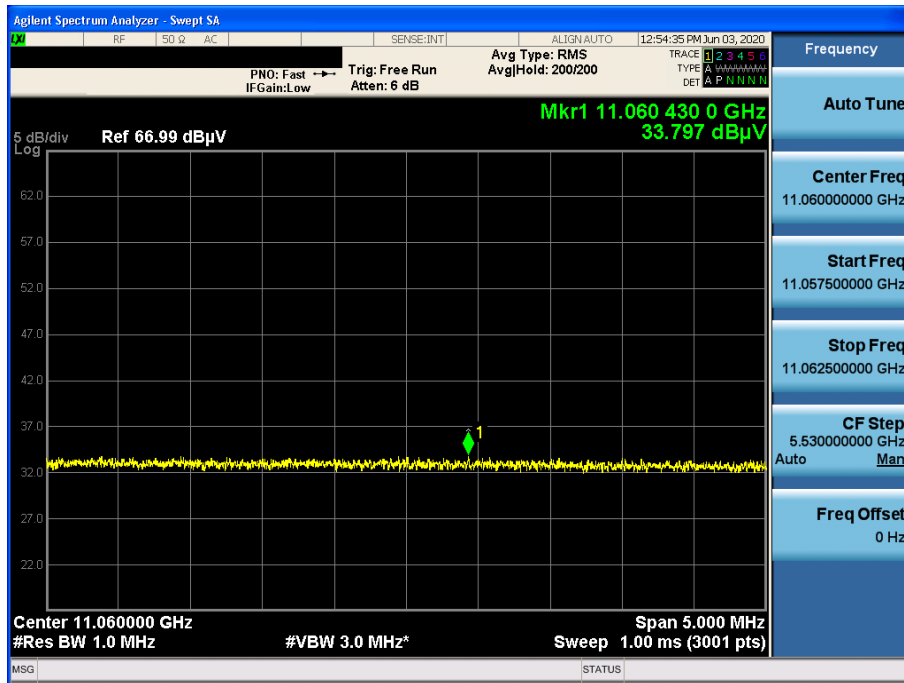
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Detector Mode : AV



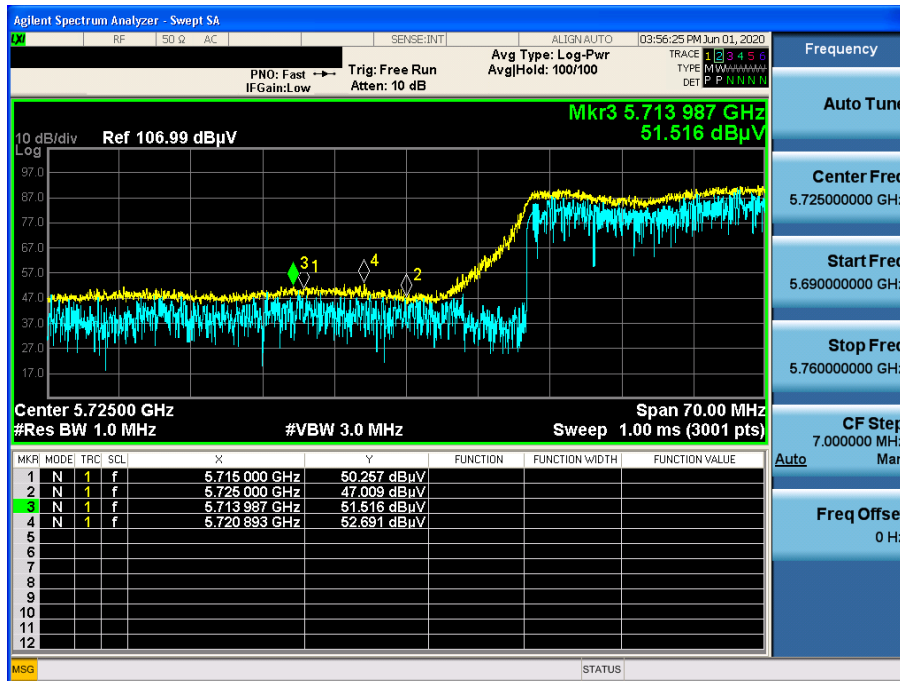
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Detector Mode : AV



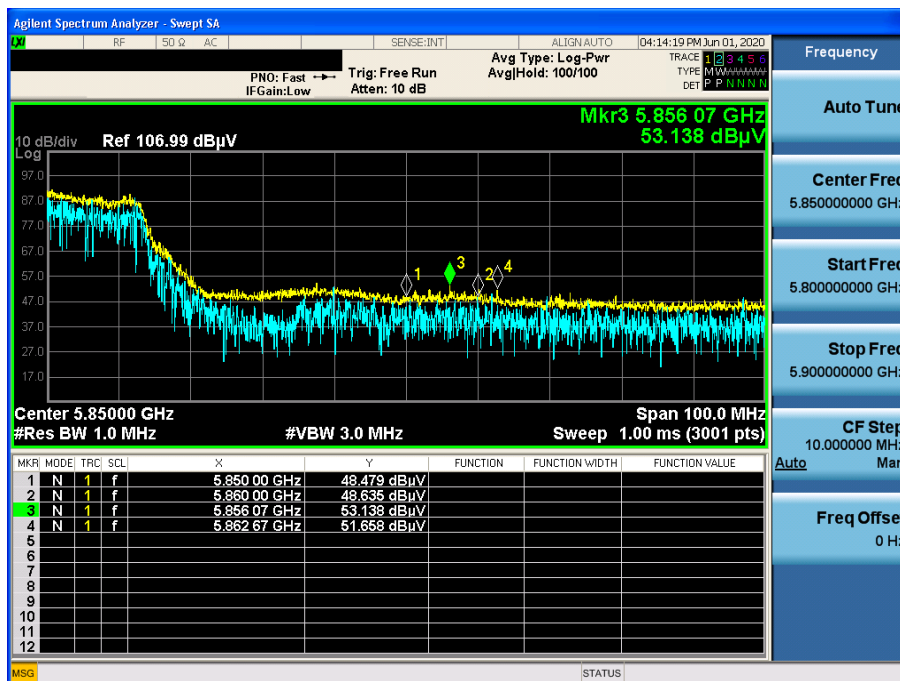
802.11ac(VHT80) & U-NII 2C & Ch.155 & Y axis & Hor

Detector Mode : PK



802.11ac(VHT80) & U-NII 2C & Ch.155 & Y axis & Hor

Detector Mode : PK



802.11ac(VHT80) & U-NII 2C & Ch.155 & Y axis & Ver

Detector Mode : AV

