

AC Line Conducted Emissions (Data List)

Test Mode: U-NII 2C & 802.11a & 5500 MHz

Results of Conducted Emission

DTNC

Date 2018-07-27

 Order No.
 Model No. SS1805
 Serial No.
 Test Condition

 Reference No.
 Power Supply 120V, 60Hz
 Temp/Humi. 25°C, 45%
 Operator

Memo 5.5GHZ

 LIMIT : FCC P15.207 QP
 FCC P15.207 AV

NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]			
1	0.22100	24.38	9.98	9.90	34.28	19.88	62.78	52.78	28.50	32.90	N
2	0.35255	11.96	4.24	9.90	21.86	14.14	58.90	48.90	37.04	34.76	N
3	0.54508	24.21	16.89	9.90	34.11	26.79	56.00	46.00	21.89	19.21	N
4	1.11320	26.40	10.49	9.93	36.33	20.42	56.00	46.00	19.67	25.58	N
5	2.44800	25.33	9.31	9.96	35.29	19.27	56.00	46.00	20.71	26.73	N
6	3.78680	24.13	8.28	10.01	34.14	18.29	56.00	46.00	21.86	27.71	N
7	5.12820	21.24	7.52	10.07	31.31	17.59	60.00	50.00	28.69	32.41	N
8	7.80080	19.19	6.37	10.07	29.26	16.44	60.00	50.00	30.74	33.56	N
9	16.05520	14.80	4.71	10.25	25.05	14.96	60.00	50.00	34.95	35.04	N
10	0.22055	19.69	6.43	9.90	29.59	16.33	62.80	52.80	33.21	36.47	L1
11	0.33647	10.14	2.57	9.90	20.04	12.47	59.29	49.29	39.25	36.82	L1
12	1.11520	22.11	7.11	9.93	32.04	17.04	56.00	46.00	23.96	28.96	L1
13	2.44920	21.18	6.50	9.96	31.14	16.46	56.00	46.00	24.86	29.54	L1
14	3.78640	20.43	4.48	10.01	30.44	14.49	56.00	46.00	25.56	31.51	L1
15	6.01560	17.25	4.88	10.06	27.31	14.94	60.00	50.00	32.69	35.06	L1
16	12.48740	15.61	6.09	10.14	25.75	16.23	60.00	50.00	34.25	33.77	L1

AC Line Conducted Emissions (Graph)

Test Mode: U-NII 3 & 802.11a & 5785 MHz

Results of Conducted Emission

DTNC

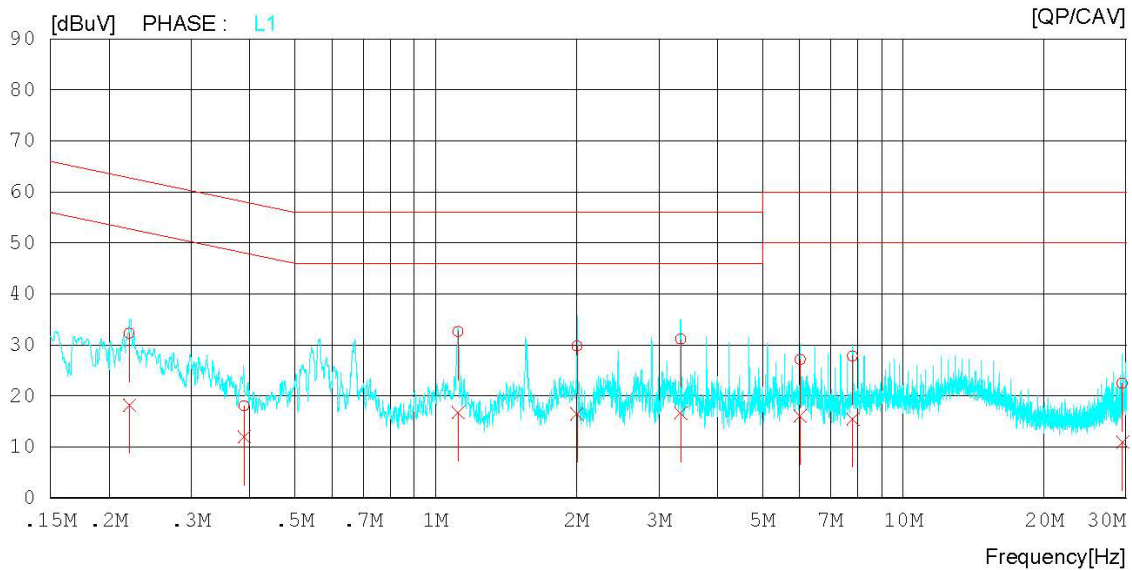
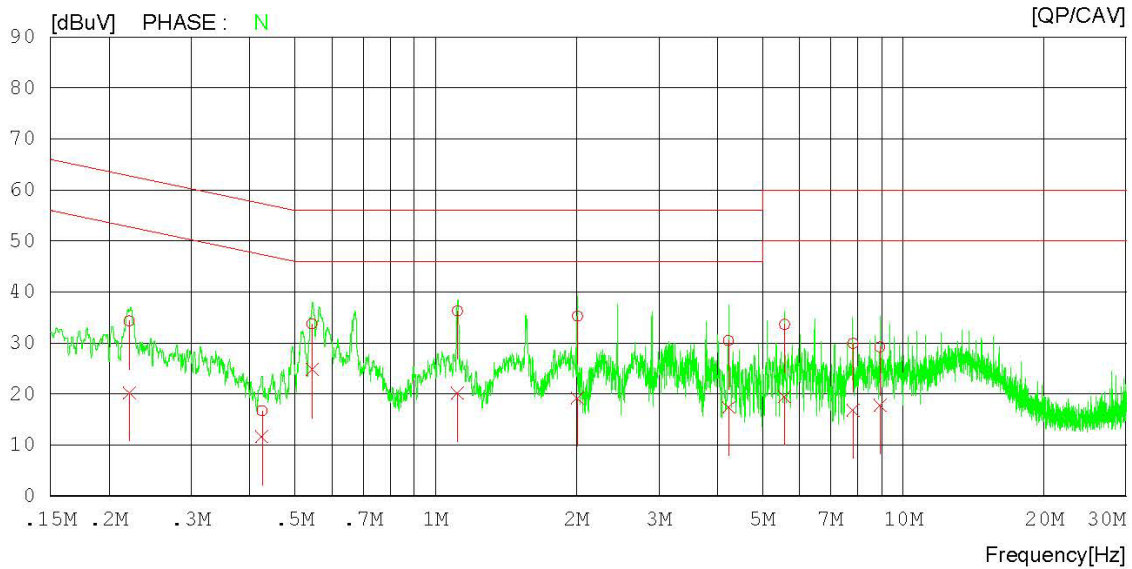
Date 2018-07-27

Order No.
Model No. SS1805
Serial No.
Test Condition

Reference No.
Power Supply 120V ,60Hz
Temp/Humi. 25°C , 45%
Operator

Memo 5.7GHZ

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (Data List)

Test Mode: U-NII 3 & 802.11a & 5785 MHz

Results of Conducted Emission

DTNC Date 2018-07-27

Order No.		Reference No.	
Model No.	SS1805	Power Supply	120V ,60Hz
Serial No.		Temp/Humi.	25°C , 45%
Test Condition		Operator	

Memo 5.7GHZ

LIMIT : FCC P15.207 QP
FCC P15.207 AV

NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]			
1	0.22138	24.42	10.33	9.90	34.32	20.23	62.77	52.77	28.45	32.54	N
2	0.42516	6.79	1.76	9.90	16.69	11.66	57.35	47.35	40.66	35.69	N
3	0.54478	23.89	14.91	9.90	33.79	24.81	56.00	46.00	22.21	21.19	N
4	1.11280	26.32	10.21	9.93	36.25	20.14	56.00	46.00	19.75	25.86	N
5	2.01000	25.33	9.28	9.94	35.27	19.22	56.00	46.00	20.73	26.78	N
6	4.23360	20.38	7.34	10.04	30.42	17.38	56.00	46.00	25.58	28.62	N
7	5.57340	23.56	9.38	10.06	33.62	19.44	60.00	50.00	26.38	30.56	N
8	7.80400	19.82	6.77	10.07	29.89	16.84	60.00	50.00	30.11	33.16	N
9	8.91820	19.05	7.64	10.13	29.18	17.77	60.00	50.00	30.82	32.23	N
10	0.22136	22.38	8.31	9.90	32.28	18.21	62.77	52.77	30.49	34.56	L1
11	0.38980	8.14	2.04	9.90	18.04	11.94	58.07	48.07	40.03	36.13	L1
12	1.11560	22.69	6.82	9.93	32.62	16.75	56.00	46.00	23.38	29.25	L1
13	2.00360	19.82	6.57	9.94	29.76	16.51	56.00	46.00	26.24	29.49	L1
14	3.34360	21.14	6.59	9.99	31.13	16.58	56.00	46.00	24.87	29.42	L1
15	6.01960	17.10	5.95	10.06	27.16	16.01	60.00	50.00	32.84	33.99	L1
16	7.80020	17.72	5.39	10.07	27.79	15.46	60.00	50.00	32.21	34.54	L1
17	29.42200	12.04	0.50	10.41	22.45	10.91	60.00	50.00	37.55	39.09	L1

9. LIST OF TEST EQUIPMENT

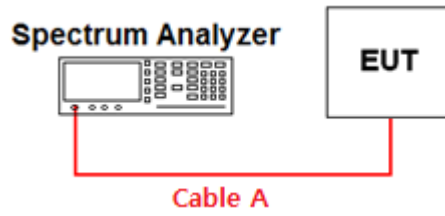
Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	17/12/28	18/12/28	MY50200816
Spectrum Analyzer	Agilent Technologies	N9020A	18/01/03	19/01/03	MY48011700
Spectrum Analyzer	Agilent Technologies	N9030A	18/07/09	19/07/09	MY53310140
Multimeter	FLUKE	17B	17/12/26	18/12/26	26030065WS
Signal Generator	Rohde Schwarz	SMBV100A	17/12/27	18/12/27	255571
Signal Generator	ANRITSU	MG3695C	18/02/12	19/02/12	173501
Thermohygrometer	BODYCOM	BJ5478	18/07/09	19/07/09	N/A
Thermohygrometer	BODYCOM	BJ5478	18/01/03	19/01/03	120612-1
Temp & Humi	SJ Science	SJ-TH-S50	18/07/06	19/07/06	U5542113
Loop Antenna	Schwarzbeck	FMZB1513	18/01/30	20/01/30	1513-128
Bilog Antenna	Schwarzbeck	VULB 9160	18/07/13	20/07/13	3359
Horn Antenna	ETS-Lindgren	3115	17/01/13	19/01/13	9202-3820
Horn Antenna	Schwarzbeck	BBHA 9120C	17/12/04	19/12/04	9120C-561
Horn Antenna	A.H.Systems Inc.	SAS-574	17/07/31	19/07/31	155
PreAmplifier	tsj	MLA-100K01-B01-26	18/02/19	19/02/19	1252741
PreAmplifier	tsj	MLA-0118-J01-45	18/02/08	19/02/08	17138
PreAmplifier	tsj	MLA-1840-J02-45	18/07/06	19/07/06	16966-10728
EMI Test Receiver	ROHDE&SCHWARZ	ESR7	18/02/13	19/02/13	101061
Attenuator	SMAJK	SMAJK-2-3	18/07/02	19/07/02	3
Attenuator	Aeroflex/Weinschel	56-3	17/12/27	18/12/27	Y2370
Attenuator	SRTechnology	F01-B0606-01	18/07/02	19/07/02	13092403
Attenuator	Hefei Shunze	SS5T2.92-10-40	17/12/27	18/12/27	16012202
Attenuator	SMAJK	SMAJK-50-10	18/07/04	19/07/04	15081903
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	18/07/02	19/07/02	8
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	18/07/02	19/07/02	3
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	18/07/02	19/07/02	1
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2495A	18/04/17	19/04/17	1306007
		MA2490A			1249001
EMI TEST RECEIVER	Rohde Schwarz	ESC17	18/02/12	19/02/12	100910
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	17/09/29	18/09/29	101333
LISN	SCHWARZBECK	NNLK 8121	18/03/20	19/03/20	06183
Cable	DT&C	CABLE	18/01/10	19/01/10	RF-55
Cable	DT&C	CABLE	18/03/26	19/03/26	RF-68
Cable	DT&C	CABLE	18/03/26	19/03/26	P-IN
Cable	DT&C	CABLE	18/03/26	19/03/26	RF-71
Cable	DT&C	CABLE	18/06/22	19/06/22	RF-82
Cable	Radiall	TESTPRO3	18/06/22	19/06/22	RF-74
Cable	Radiall	TESTPRO3	18/06/22	19/06/22	RF-66
Cable	HUBER+SUHNER	SUCOFLEX	17/12/22	18/12/22	C-1
Cable	HUBER+SUHNER	SUCOFLEX	17/12/22	18/12/22	C-2
Cable	HUBER+SUHNER	SUCOFLEX	17/12/22	18/12/22	C-3
Cable	HUBER+SUHNER	SUCOFLEX	17/12/22	18/12/22	C-4

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



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:

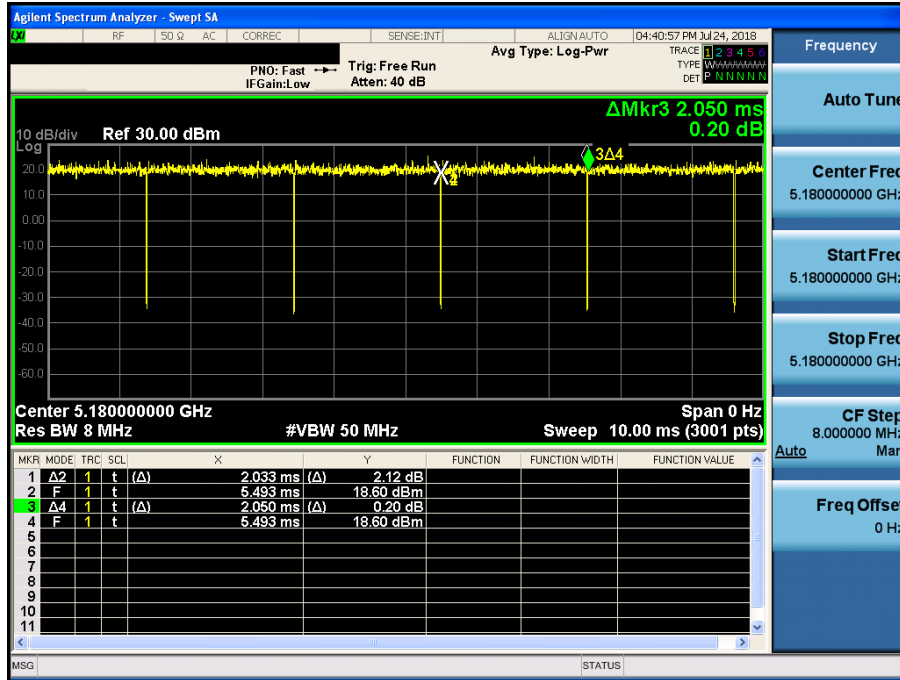
Duty cycle

Mode	Data Rate	Tested Frequency [MHz]	Maximum Achievable Duty Cycle (x) = On / (On+Off)			Duty Cycle Correction Factor [dB]	50/T [kHz]
			On Time [ms]	(On+Off) Time [ms]	x		
802.11a	6Mbps	5180	2.03	2.05	99.17	0.04	24.6
802.11n (HT20)	MCS0	5180	1.88	1.90	98.95	0.05	26.6
802.11n (HT40)	MCS0	5190	1.24	1.27	98.26	0.08	40.3
802.11ac (VHT80)	MCS0	5210	0.25	0.27	92.16	0.36	200.0

Single Transmit

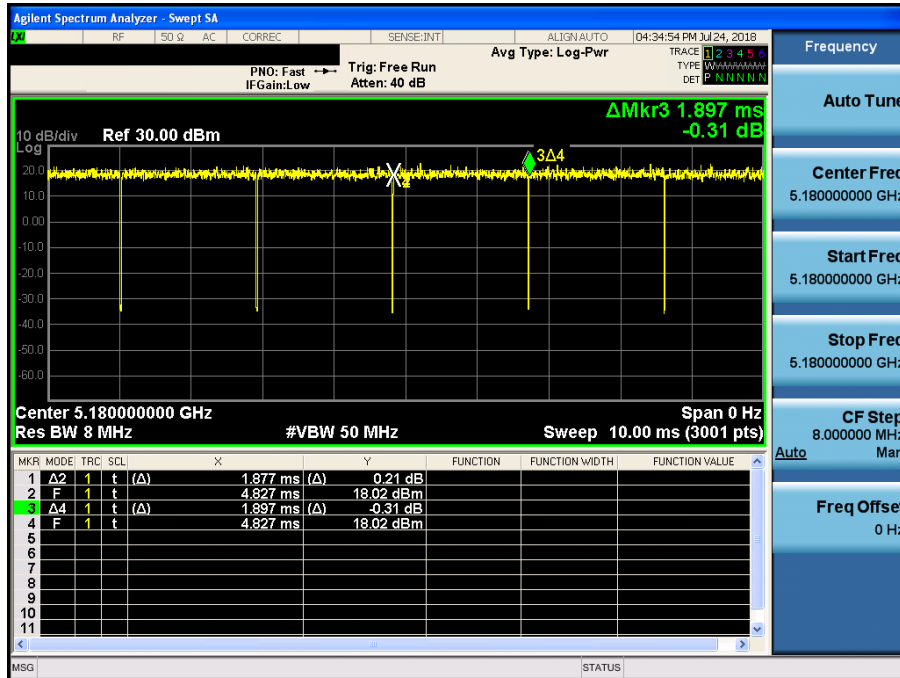
Duty Cycle

Test Mode: 802.11a & Ch.36



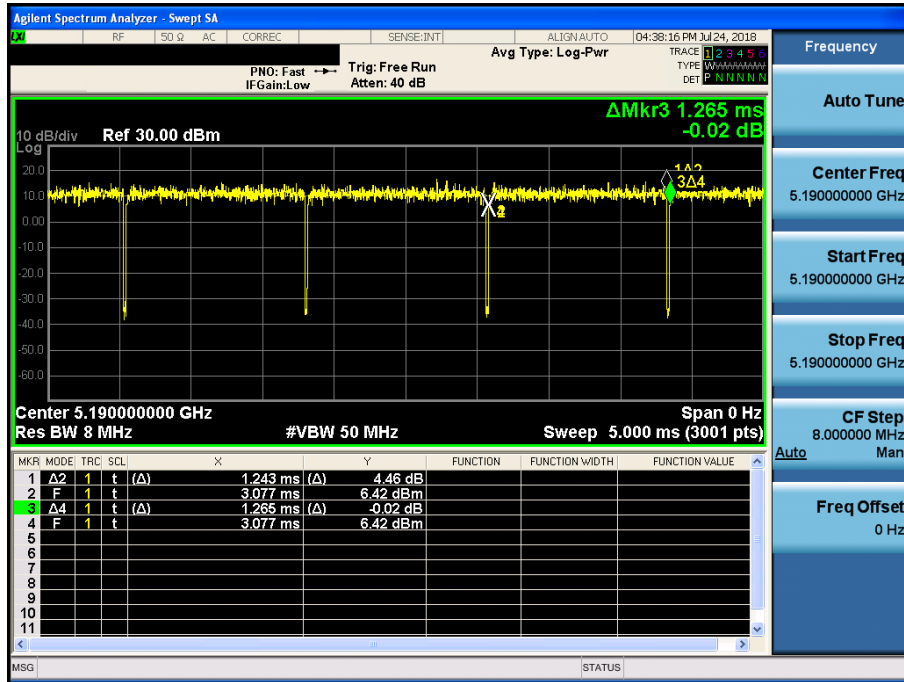
Duty Cycle

Test Mode: 802.11n(HT20) & Ch.36



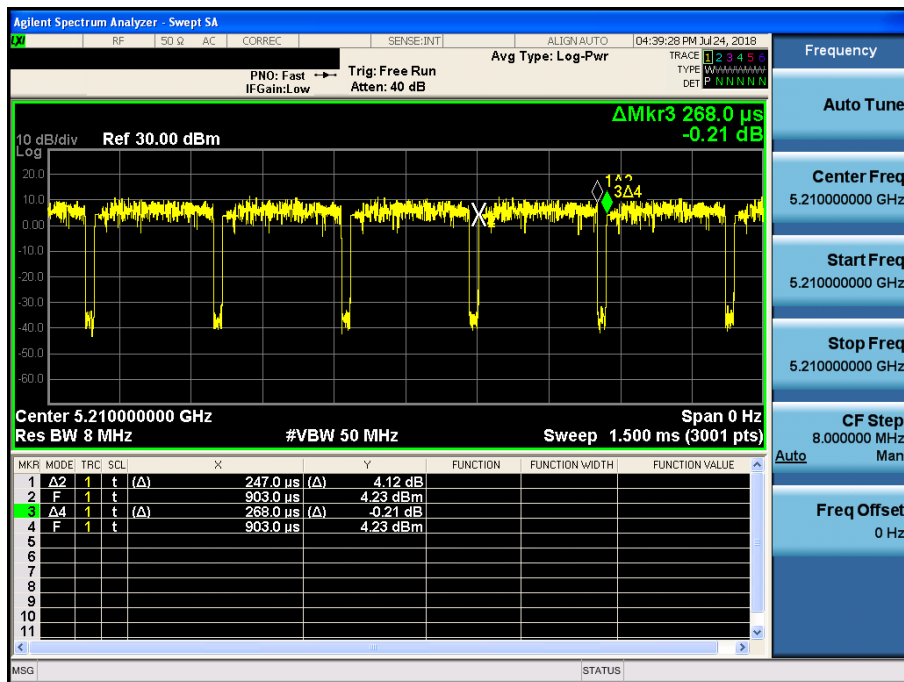
Duty Cycle

Test Mode: 802.11n(HT40) & Ch.38



Duty Cycle

Test Mode: 802.11ac(VHT80) & Ch.42

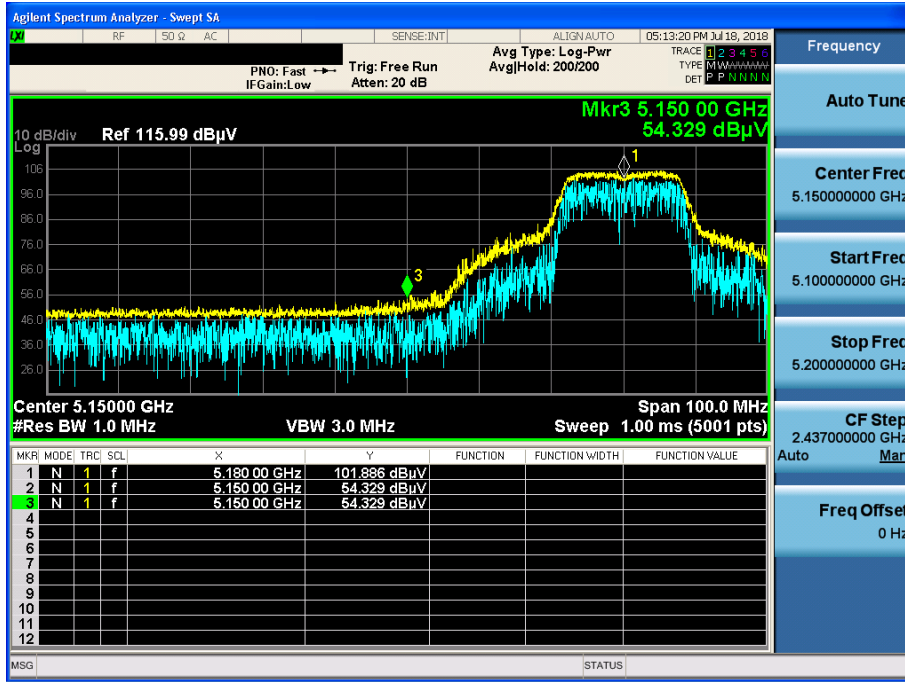


APPENDIX III

Unwanted Emissions (Radiated) Test Plot

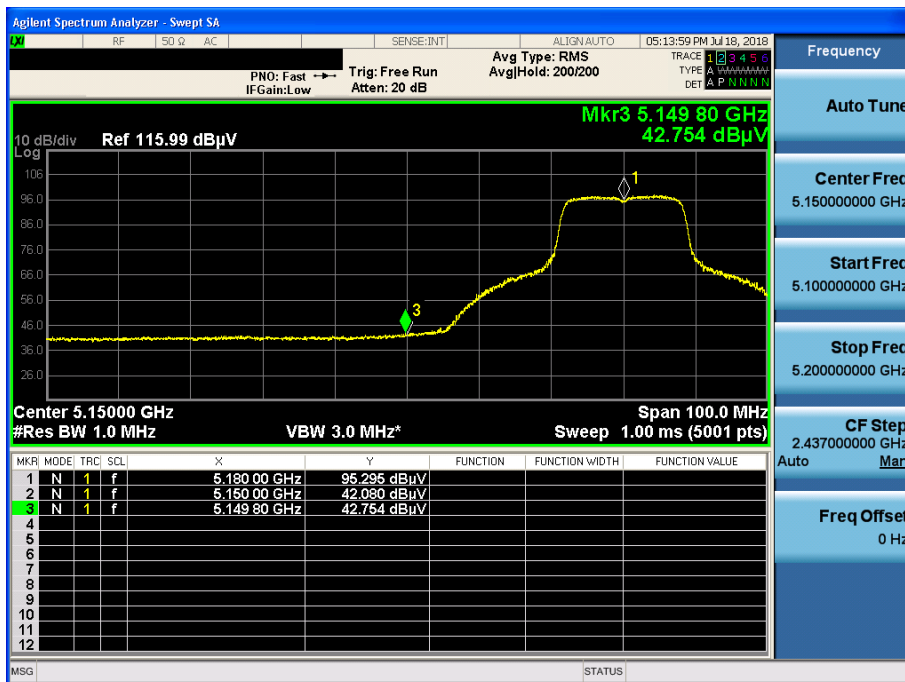
802.11a & U-NII 1 & Ch.36 & X axis & Hor

Detector Mode : PK



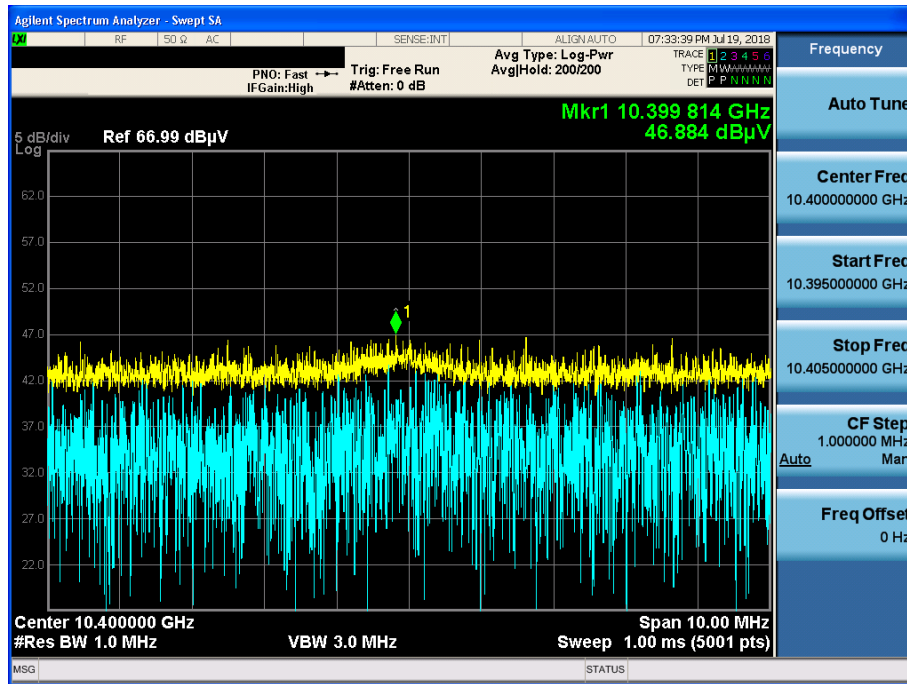
802.11a & U-NII 1 & Ch.36 & X axis & Hor

Detector Mode : AV



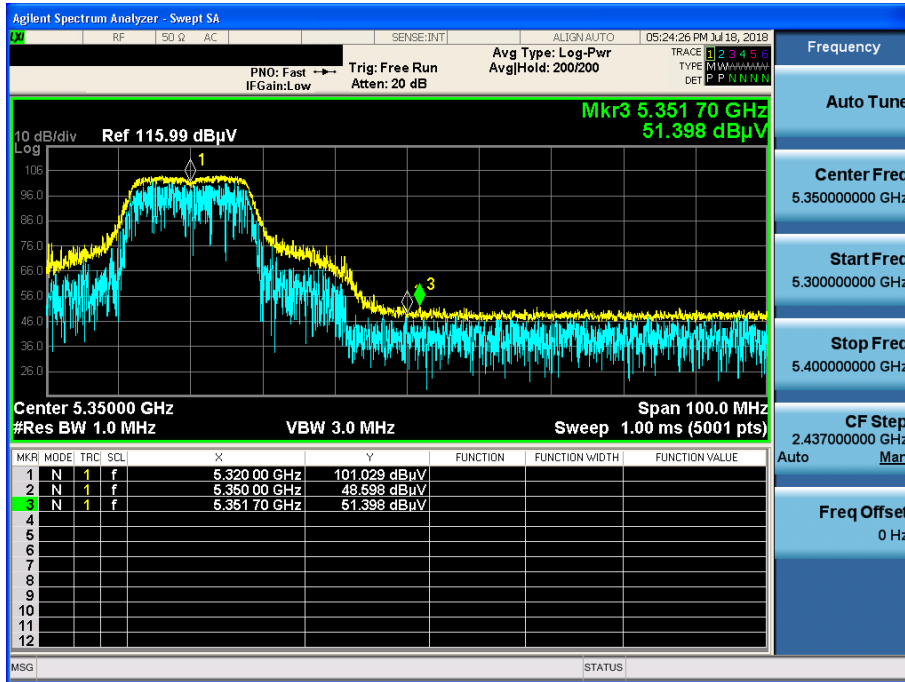
802.11a & U-NII 1 & Ch.40 & Z axis & Ver

Detector Mode : PK



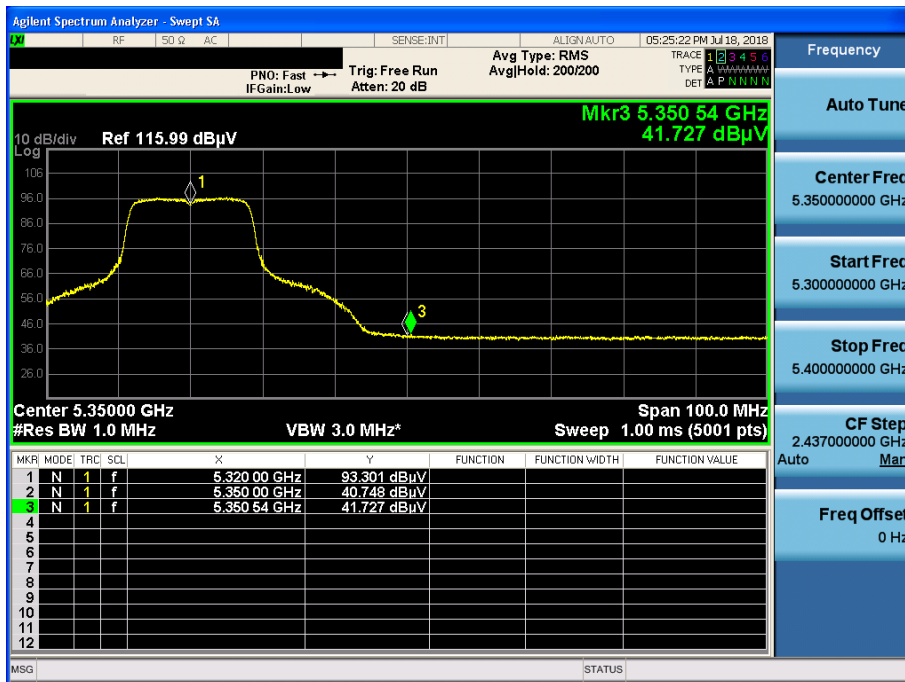
802.11a & U-NII 2A & Ch.64 & X axis & Hor

Detector Mode : PK



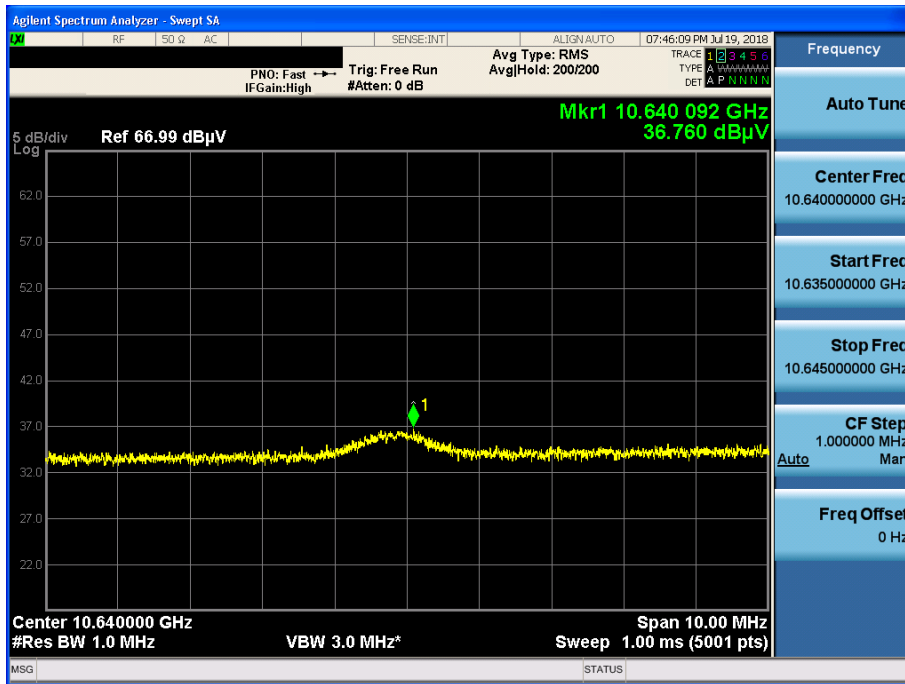
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Detector Mode : AV



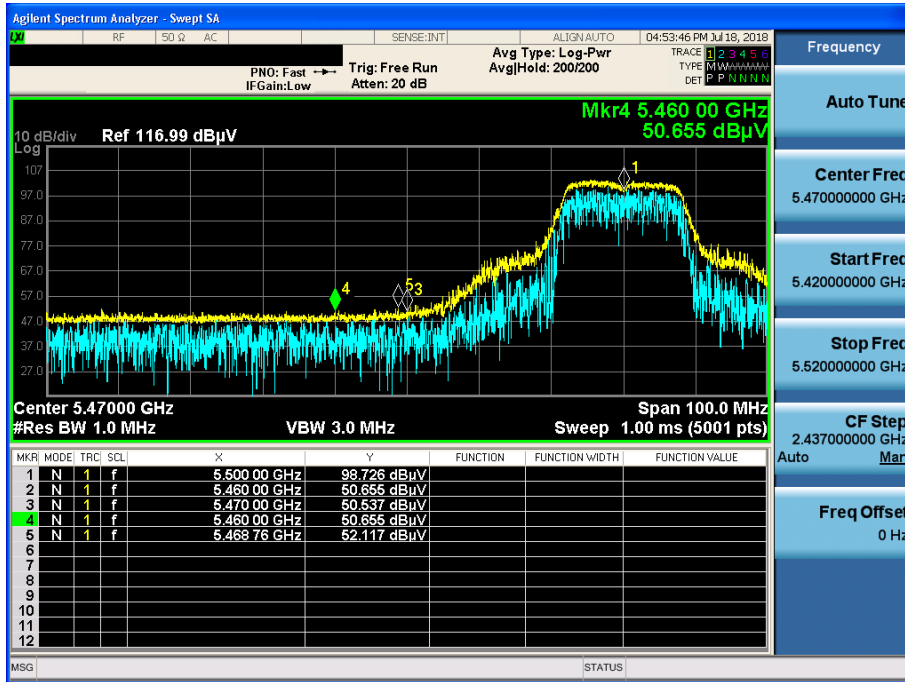
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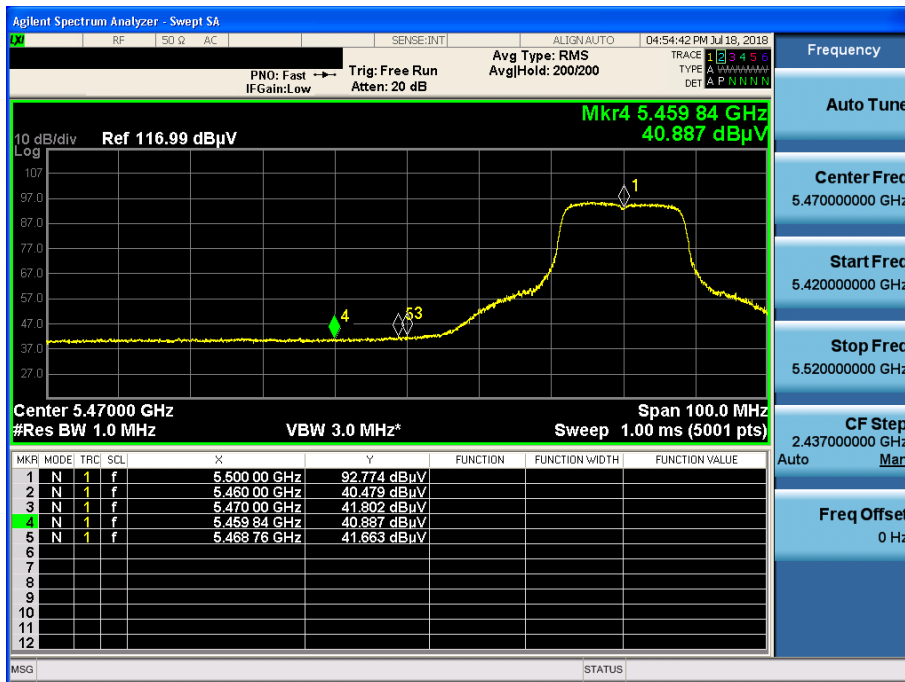
802.11a & U-NII 2C & Ch.100 & X axis & Hor

Detector Mode : PK



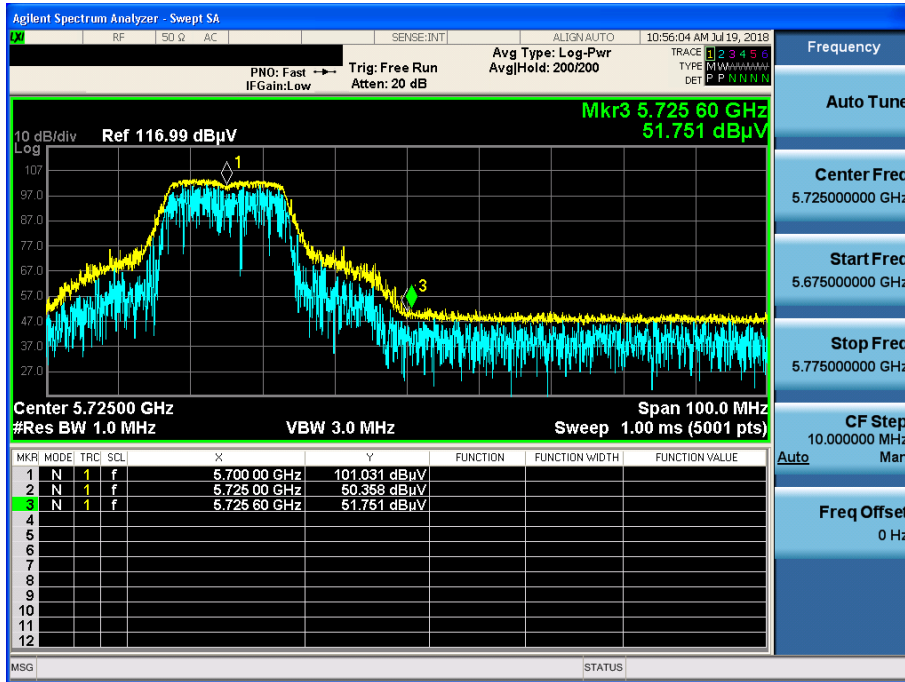
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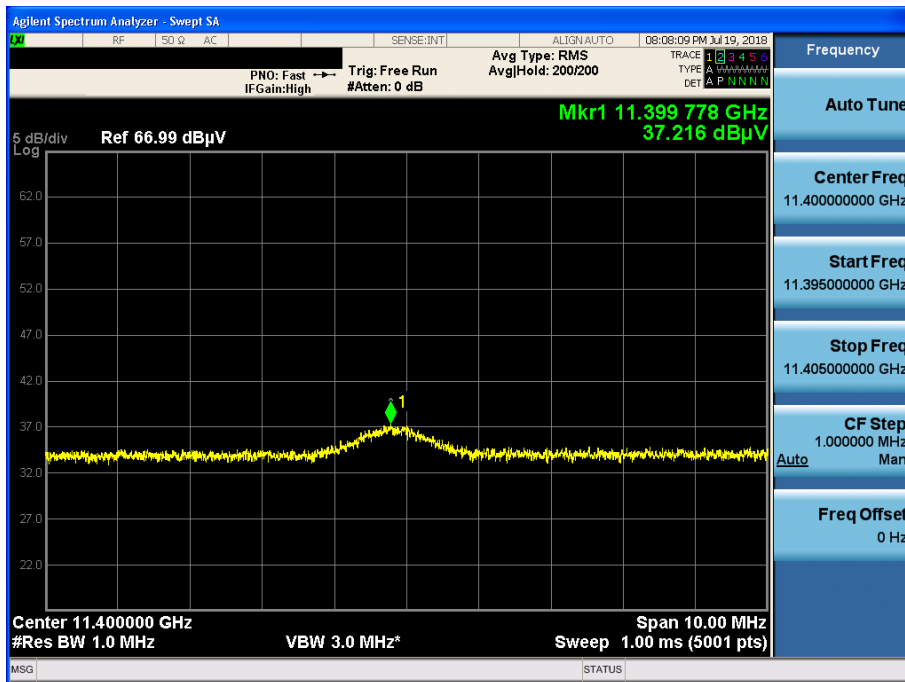
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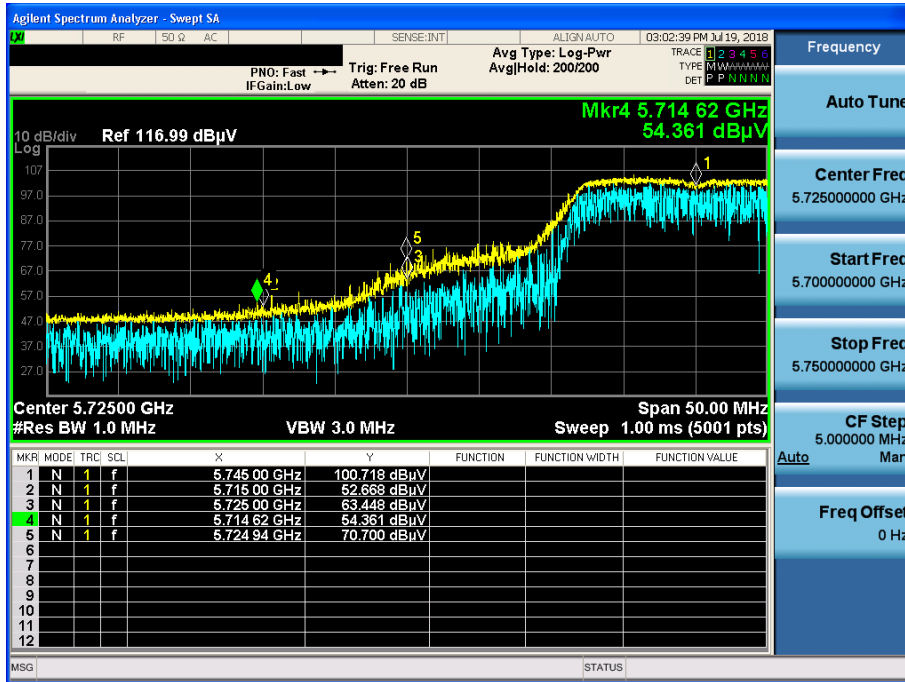
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Detector Mode : AV



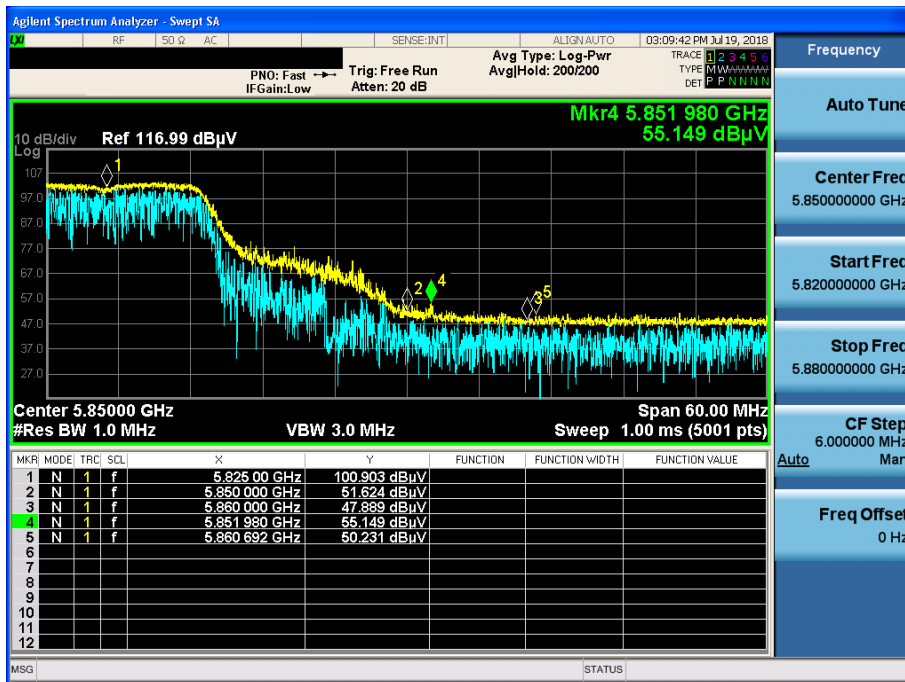
802.11a & U-NII 3 & Ch.149 & X axis & Hor

Detector Mode : PK



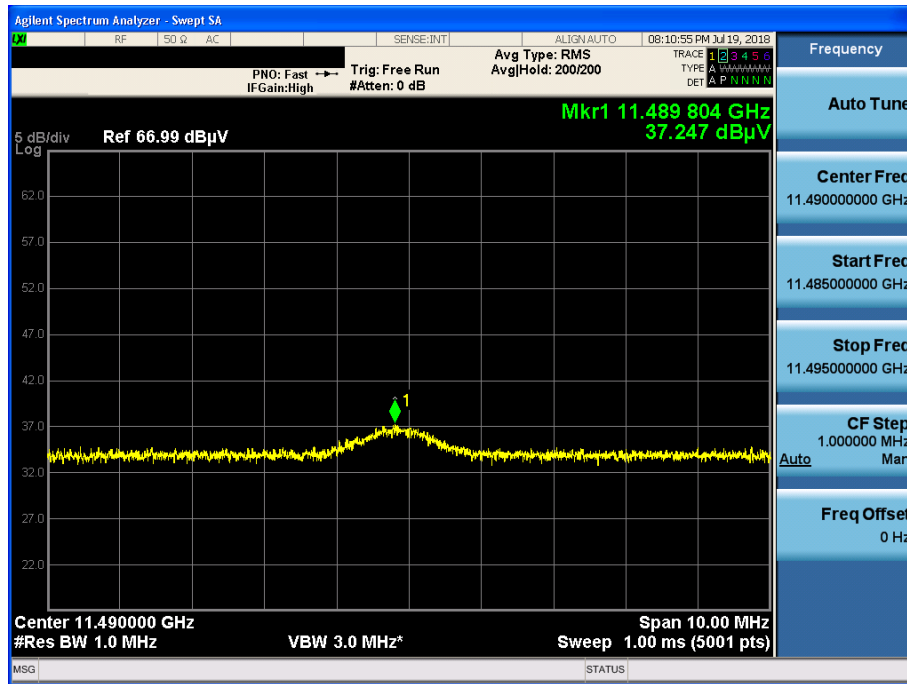
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Detector Mode : PK



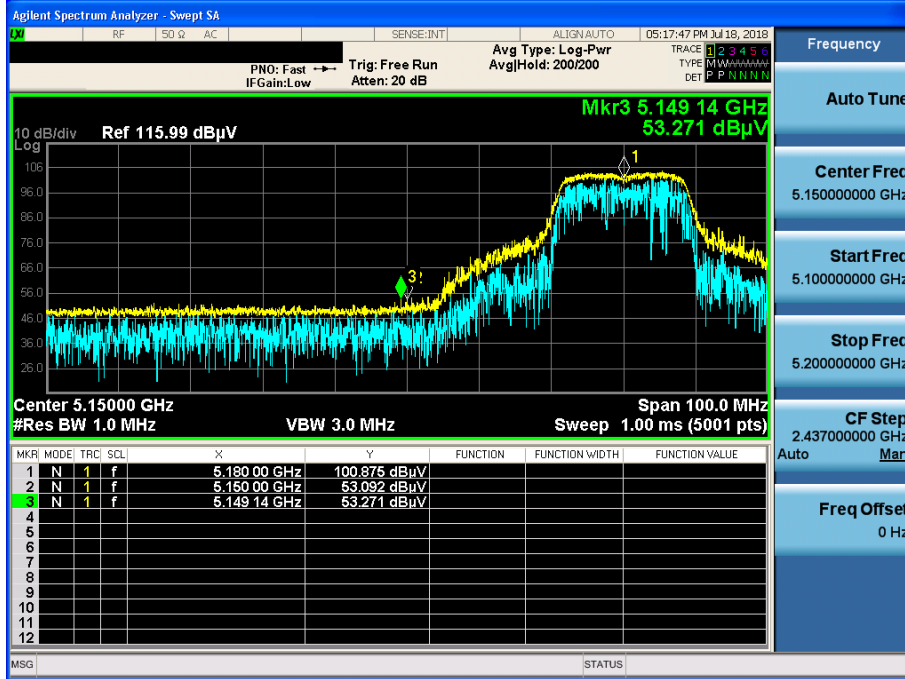
802.11a & U-NII 3 & Ch.149 & Z axis & Ver

Detector Mode : AV



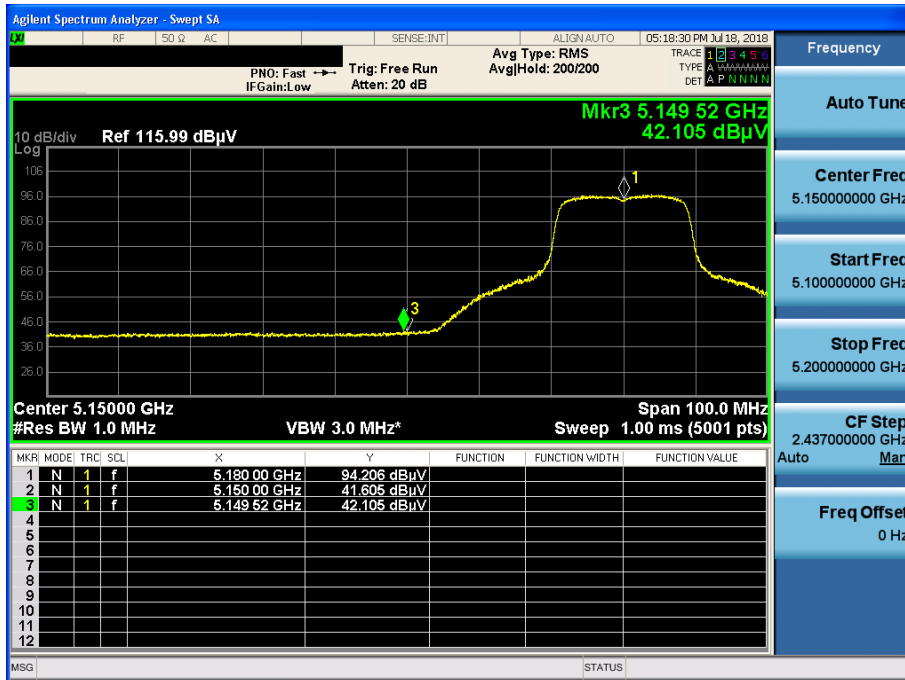
802.11n(HT20) & U-NII 1 & Ch.36 & X axis & Hor

Detector Mode : PK



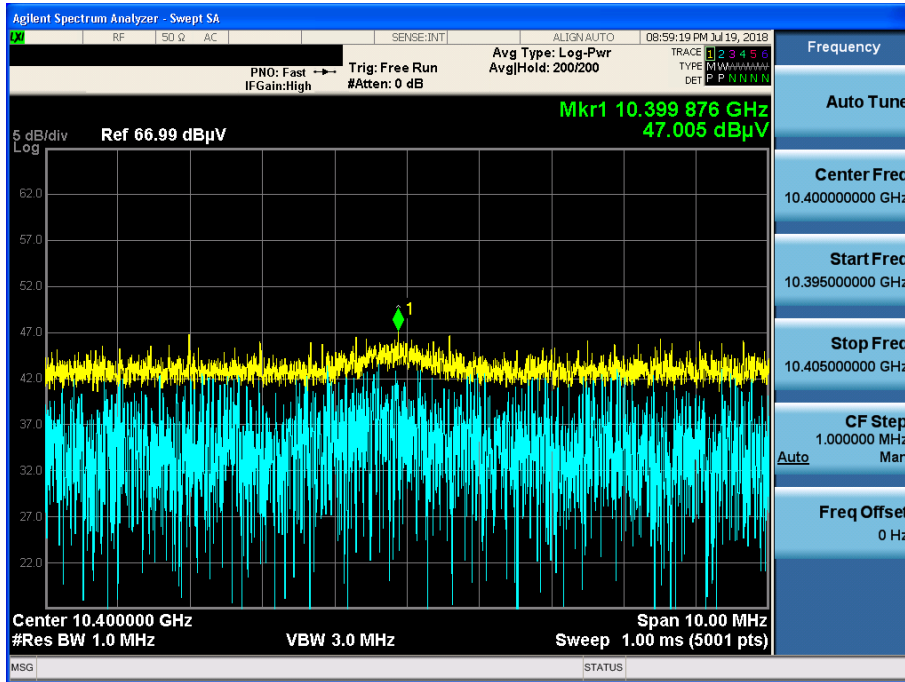
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Detector Mode : AV



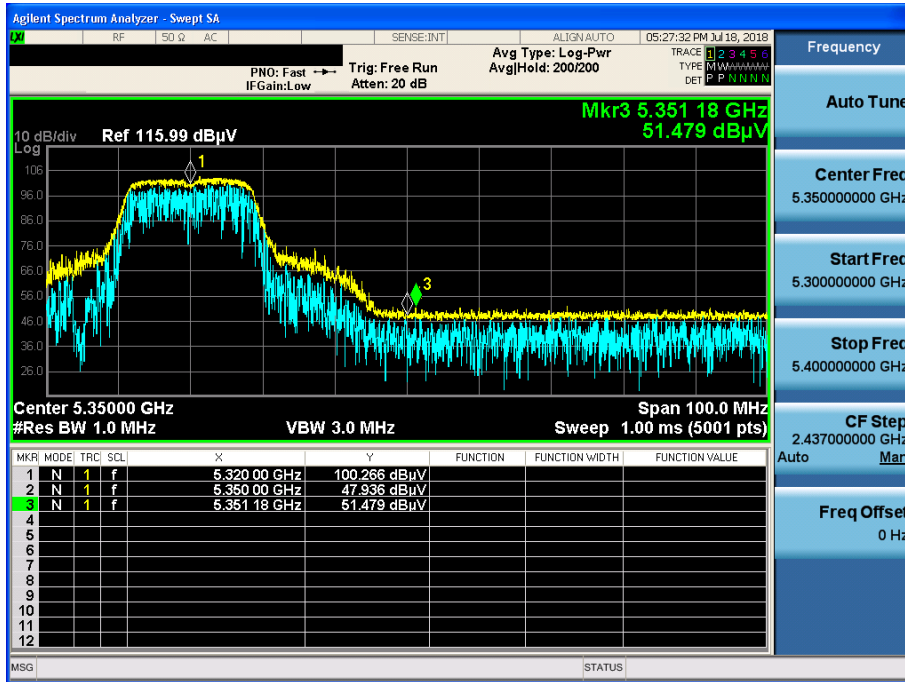
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Detector Mode : PK



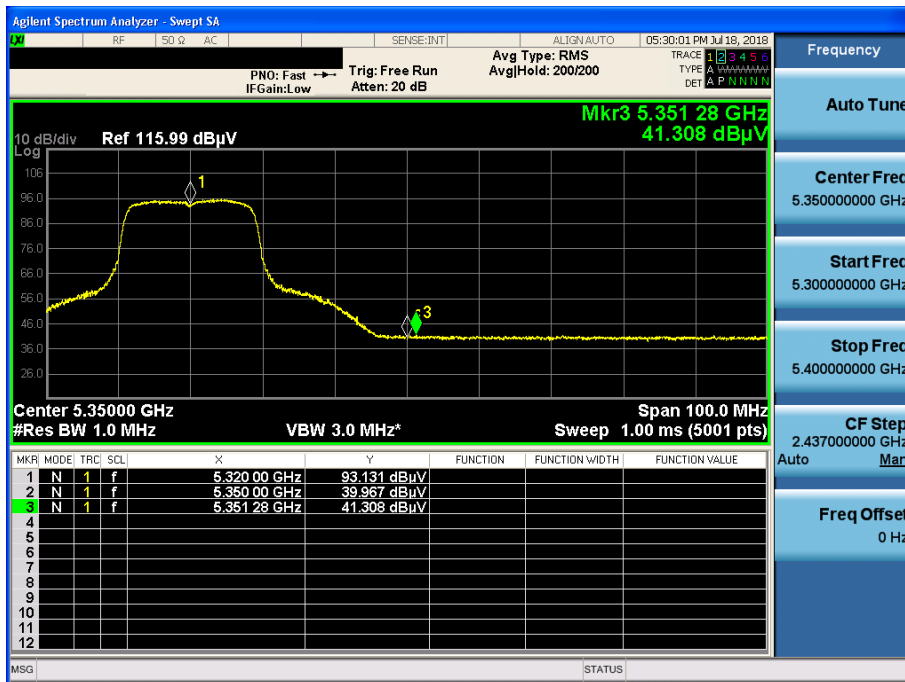
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Detector Mode : PK



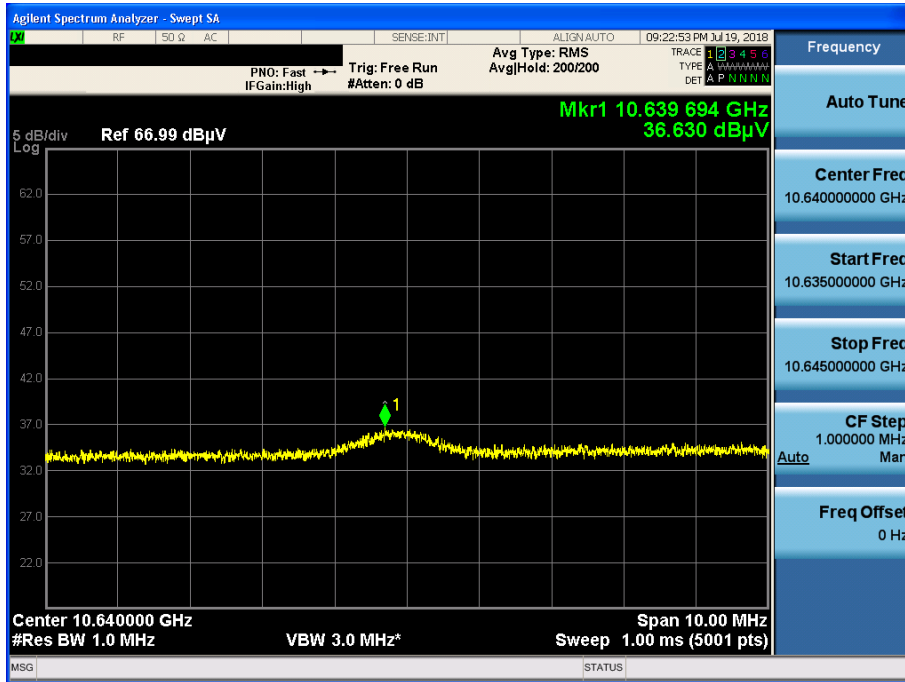
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Detector Mode : AV



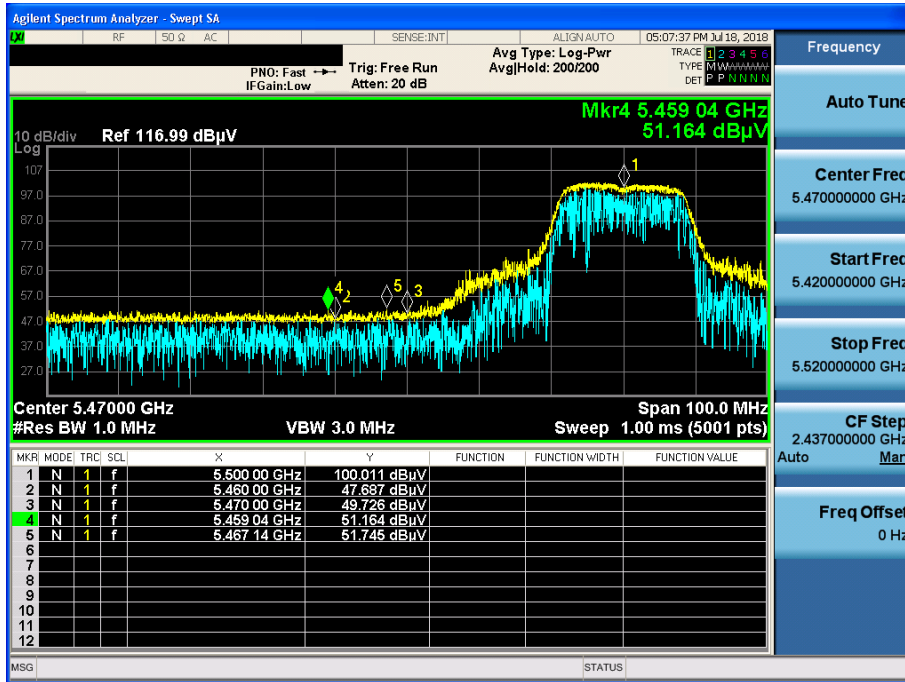
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Detector Mode : AV



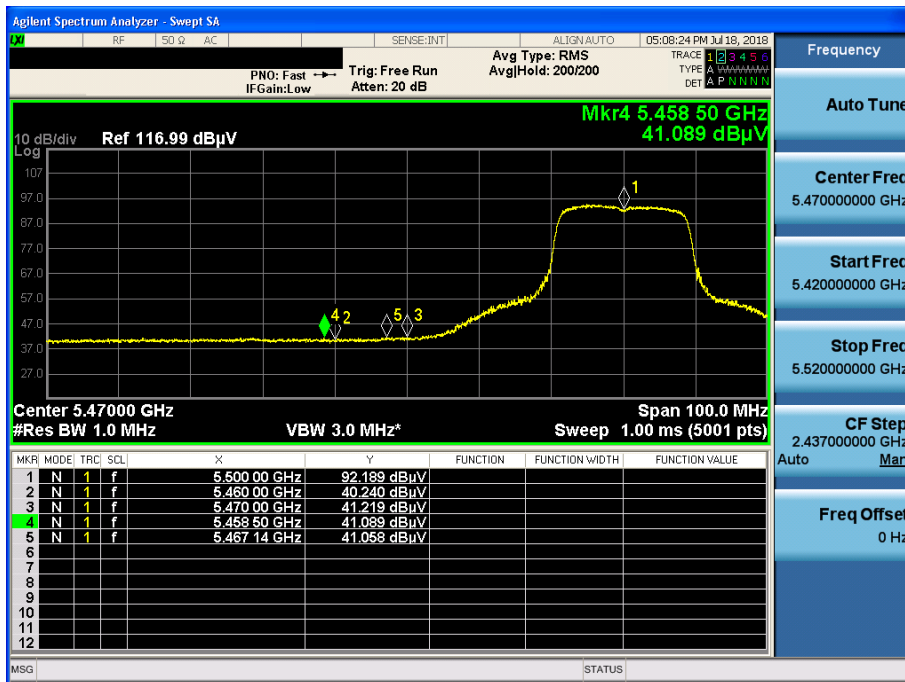
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Detector Mode : PK



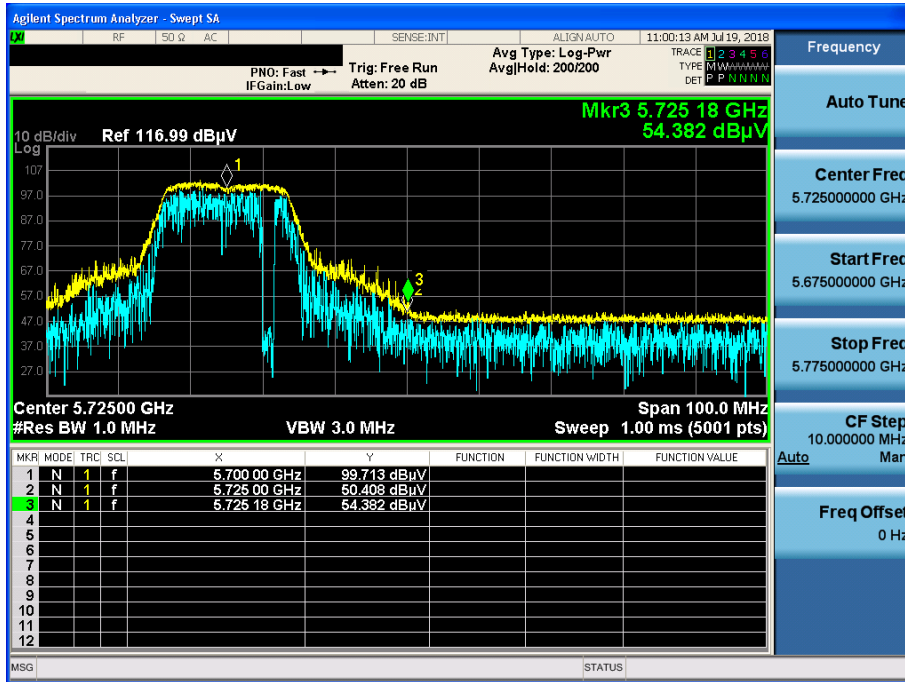
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Detector Mode : AV



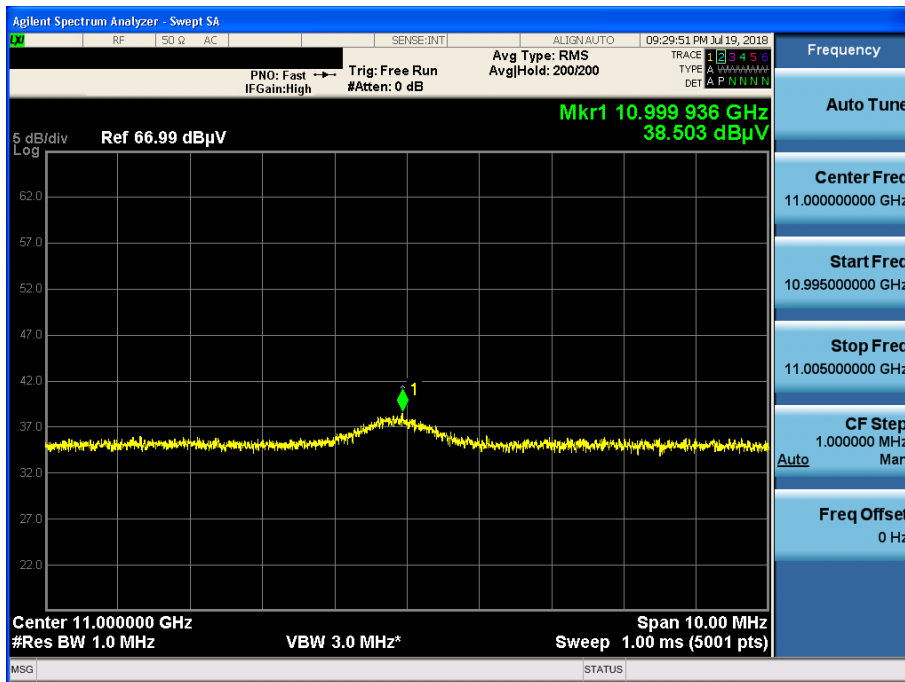
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Detector Mode : PK



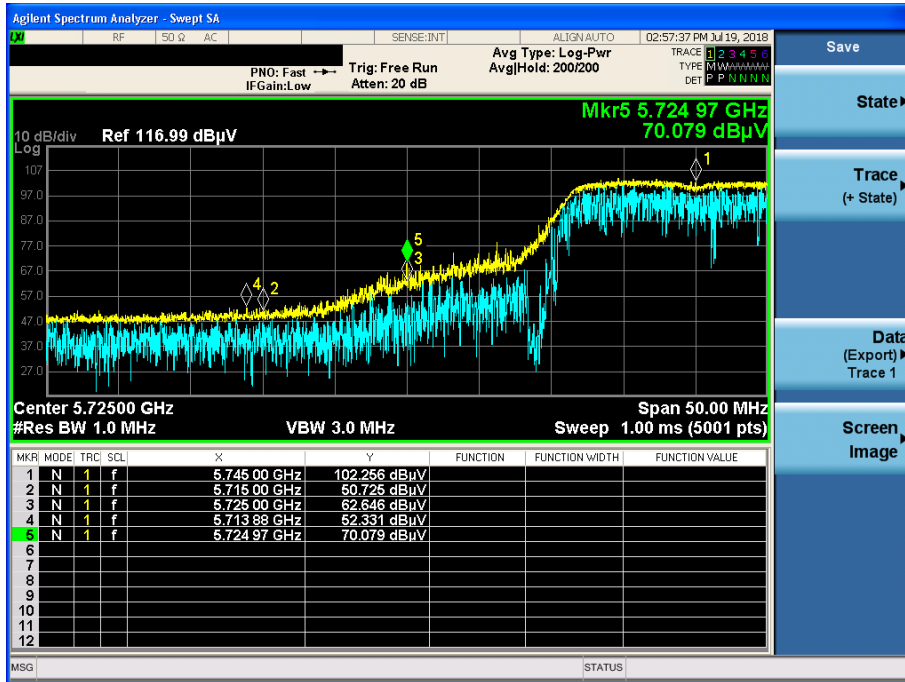
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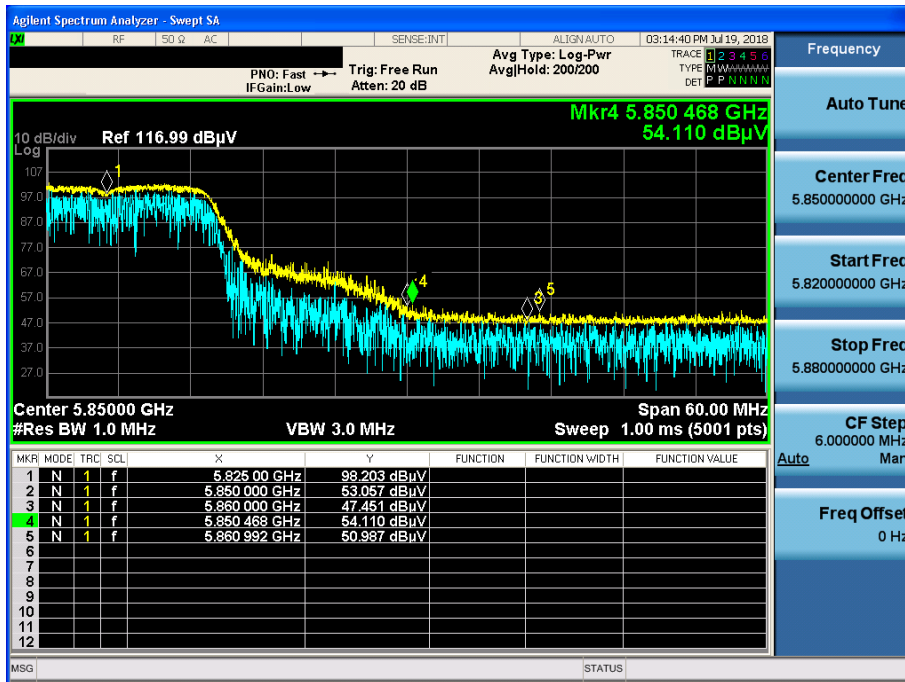
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Detector Mode : PK



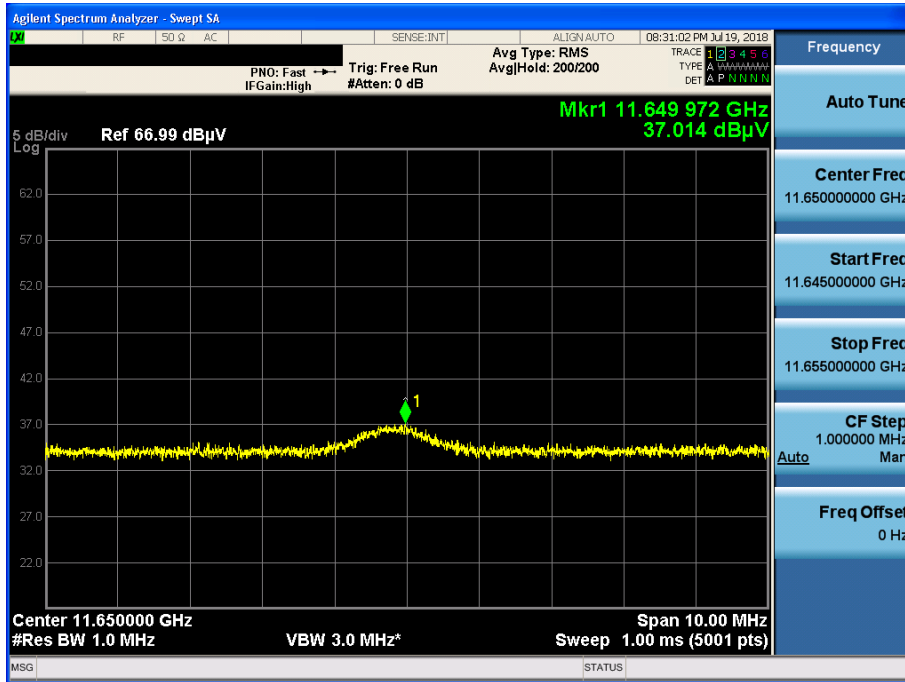
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Detector Mode : PK



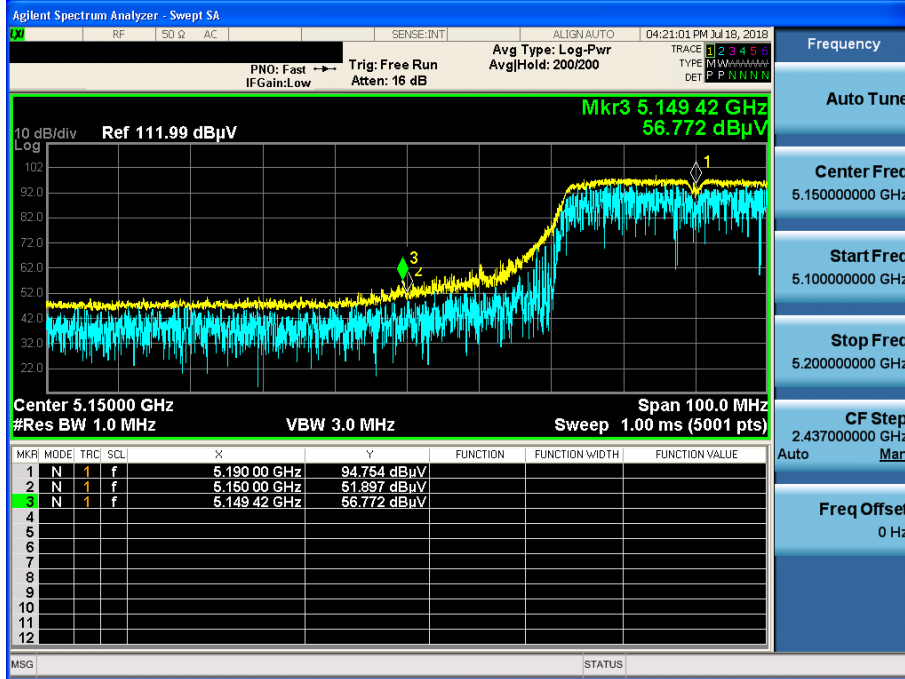
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Detector Mode : AV



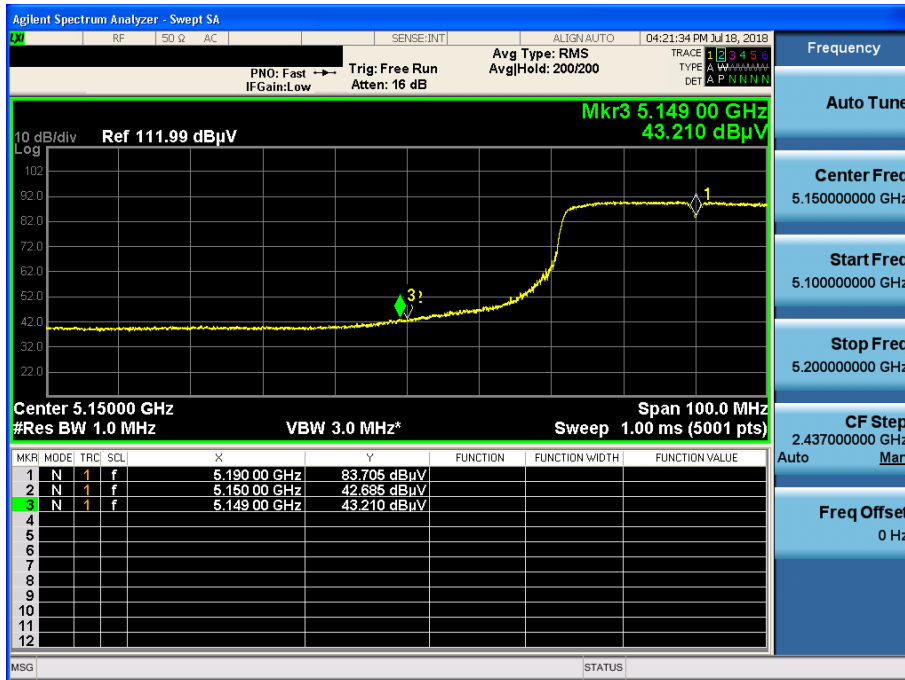
802.11n(HT40) & U-NII 1 & Ch.38 & X axis & Hor

Detector Mode : PK



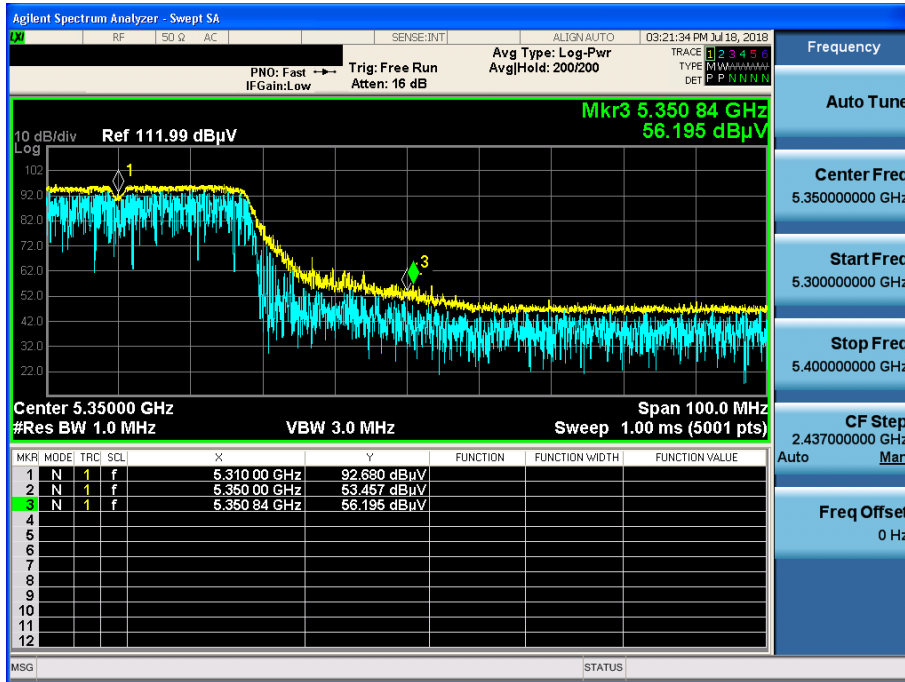
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Detector Mode : AV



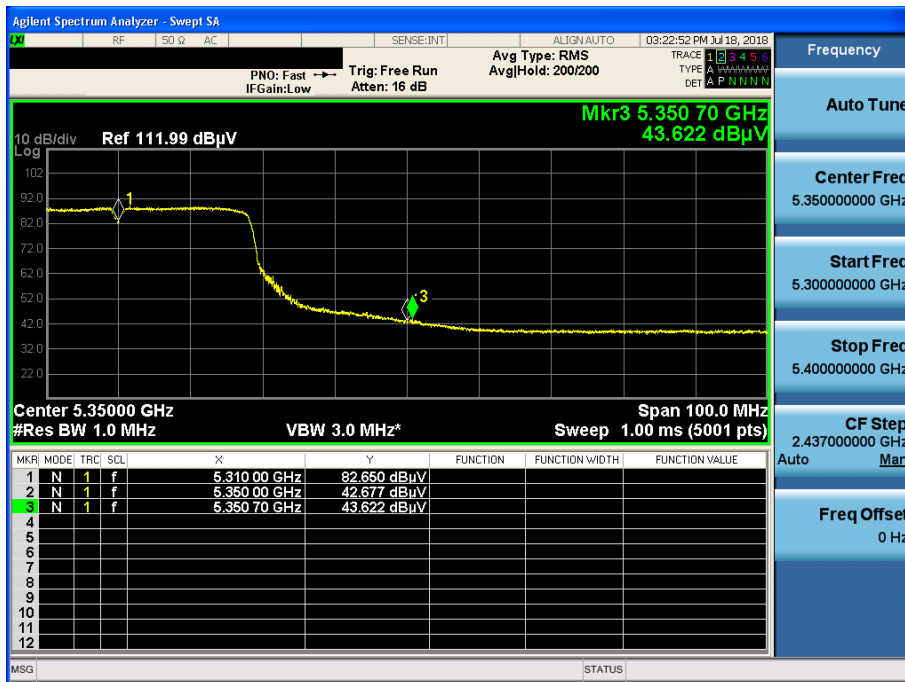
802.11n(HT40) & U-NII 2A & Ch.62 & X axis & Hor

Detector Mode : PK



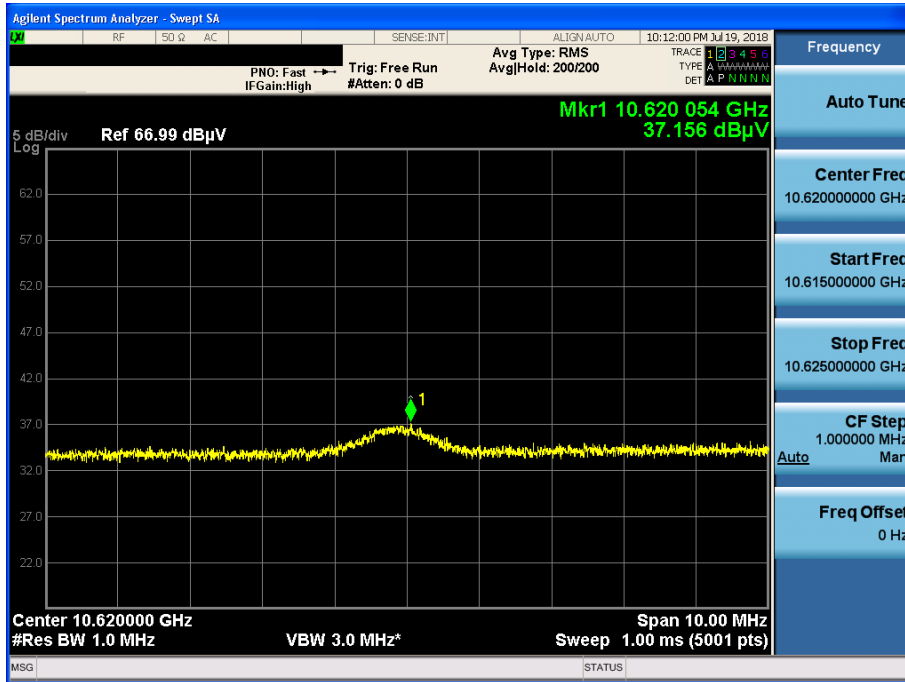
802.11n(HT40) & U-NII 2A & Ch.62 & X axis & Hor

Detector Mode : AV



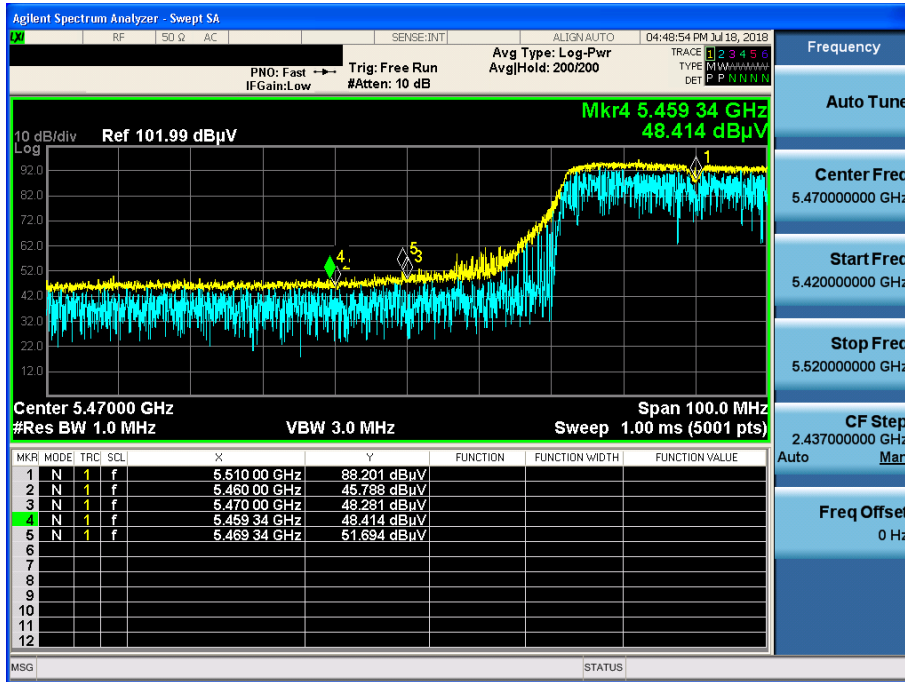
802.11n(HT40) & U-NII 2A & Ch.62 & Z axis & Ver

Detector Mode : AV



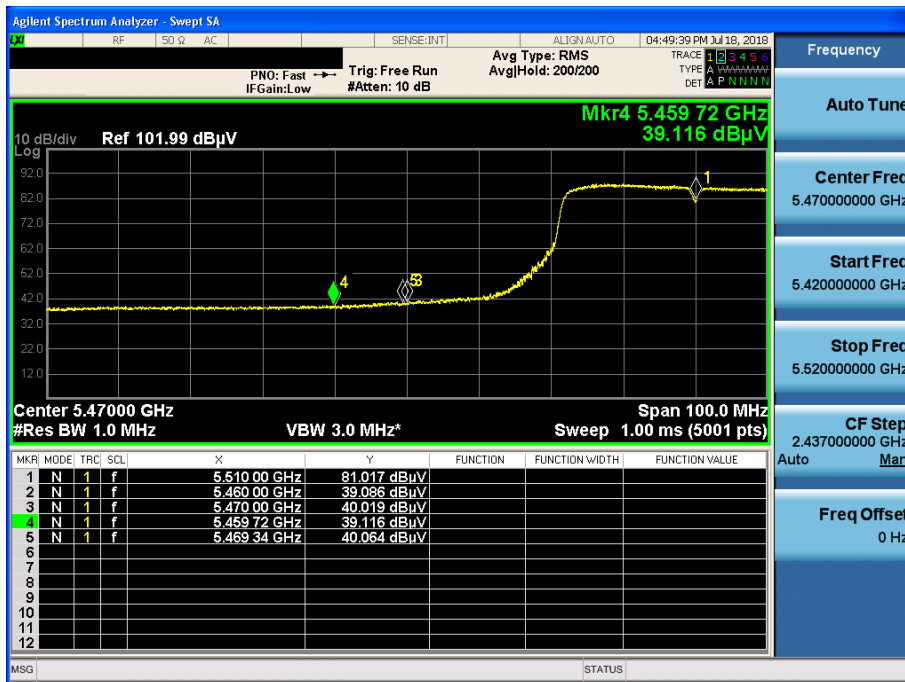
802.11n(HT40) & U-NII 2C & Ch.102 & X axis & Hor

Detector Mode : PK



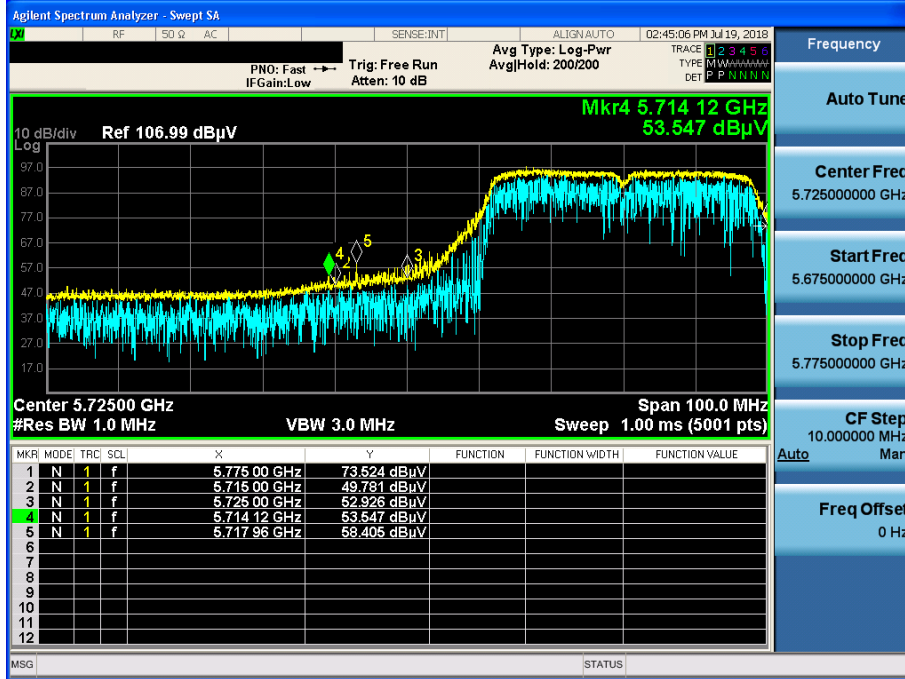
802.11n(HT40) & U-NII 2C & Ch.102 & X axis & Hor

Detector Mode : AV



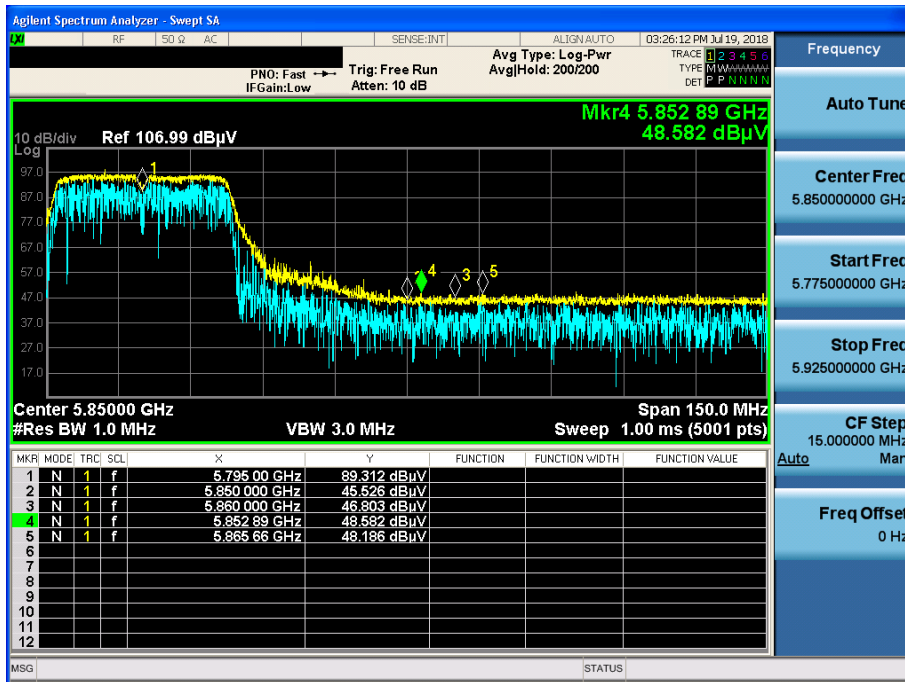
802.11n(HT40) & U-NII 3 & Ch.151 & X axis & Hor

Detector Mode : PK



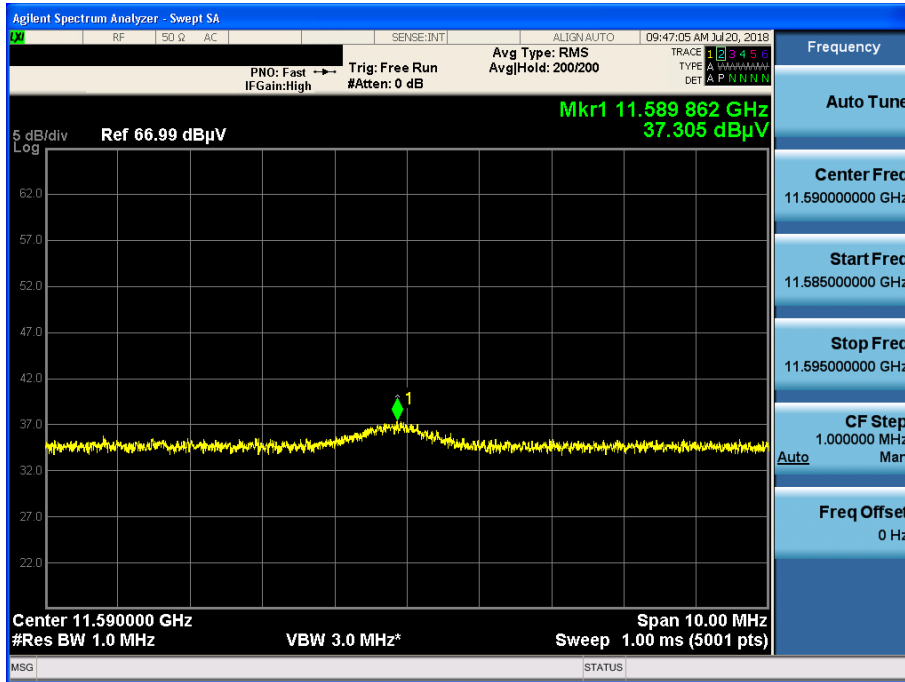
802.11n(HT40) & U-NII 3 & Ch.159 & X axis & Hor

Detector Mode : PK



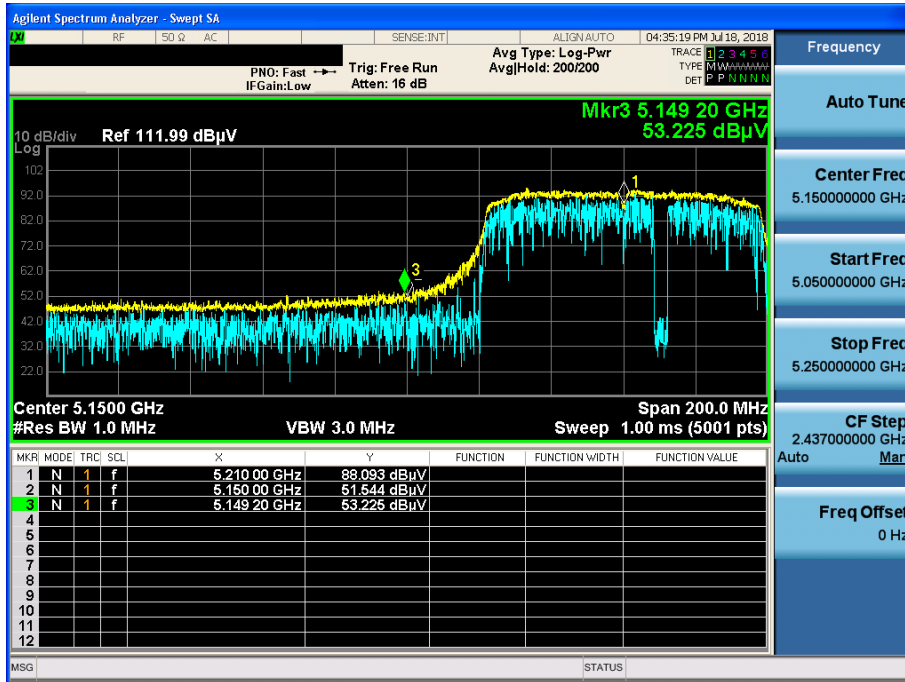
802.11n(HT40) & U-NII 3 & Ch.159 & Z axis & Ver

Detector Mode : AV



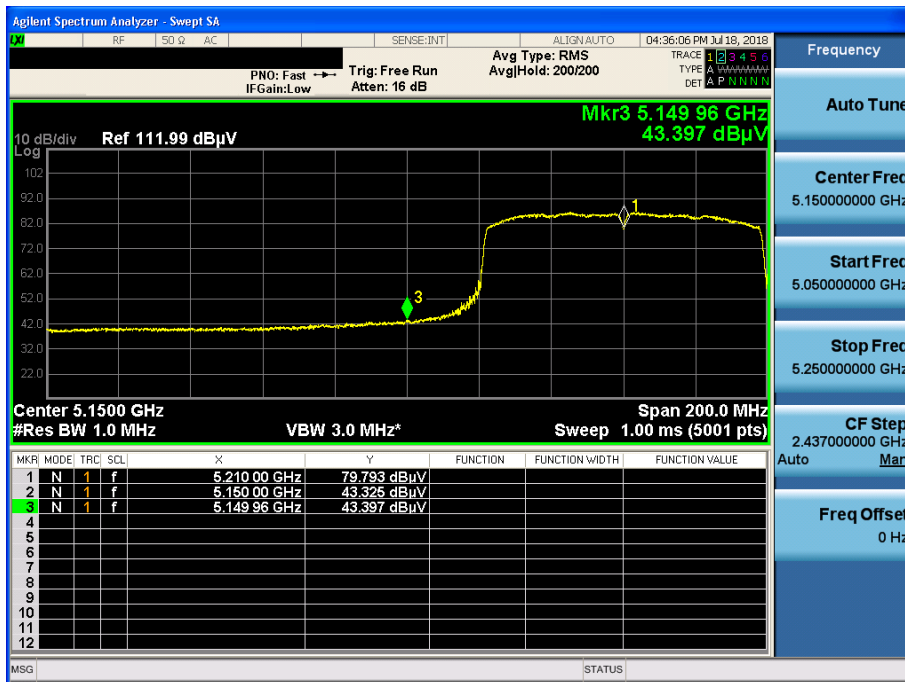
802.11ac(VHT80) & U-NII 1 & Ch.42 & X axis & Hor

Detector Mode : PK



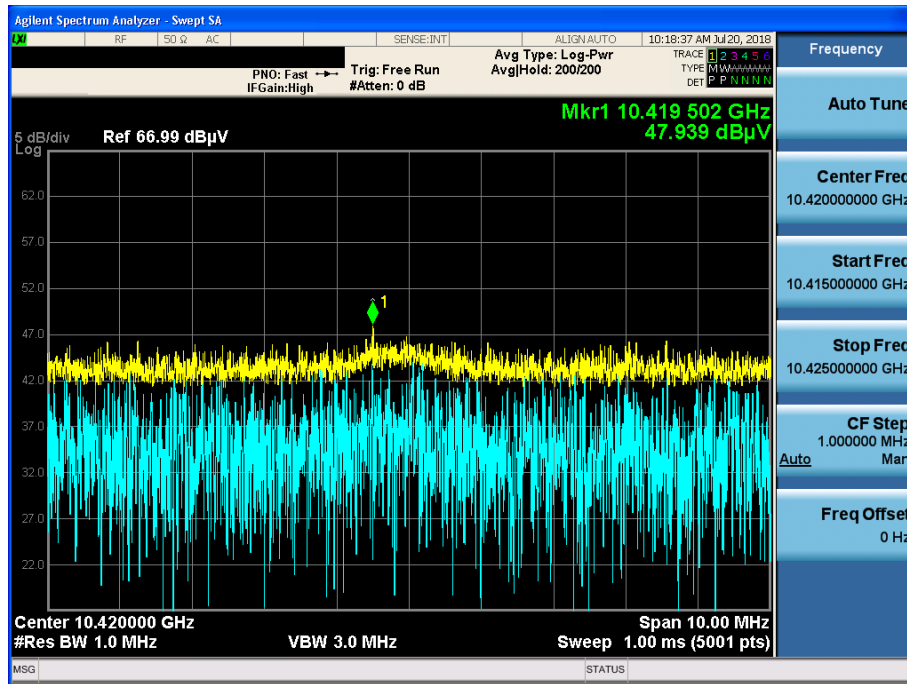
802.11ac(VHT80) & U-NII 1 & Ch.42 & X axis & Hor

Detector Mode : AV



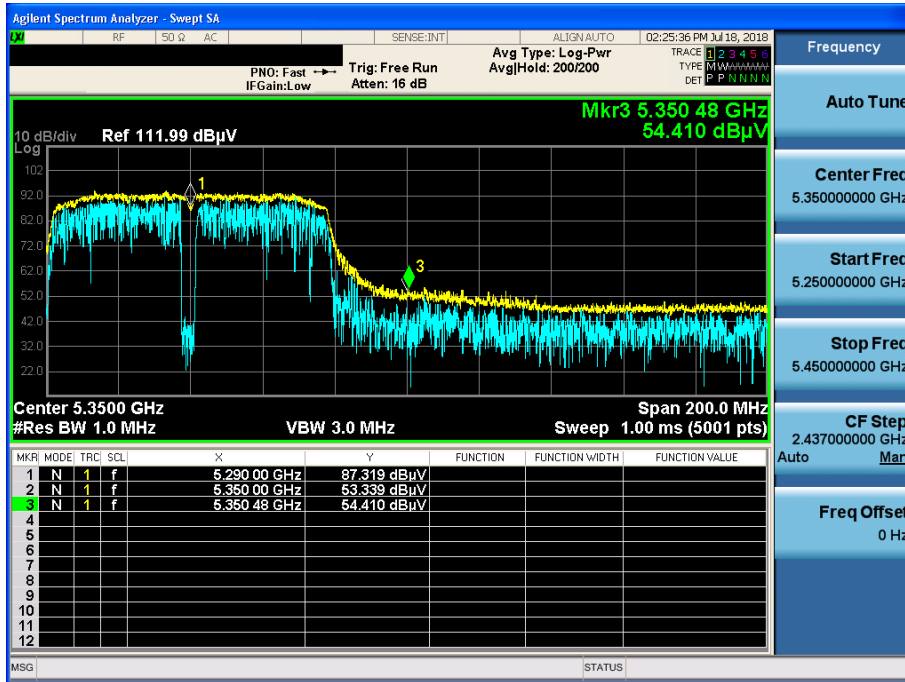
802.11ac(VHT80) & U-NII 1 & Ch.42 & Z axis & Ver

Detector Mode : PK



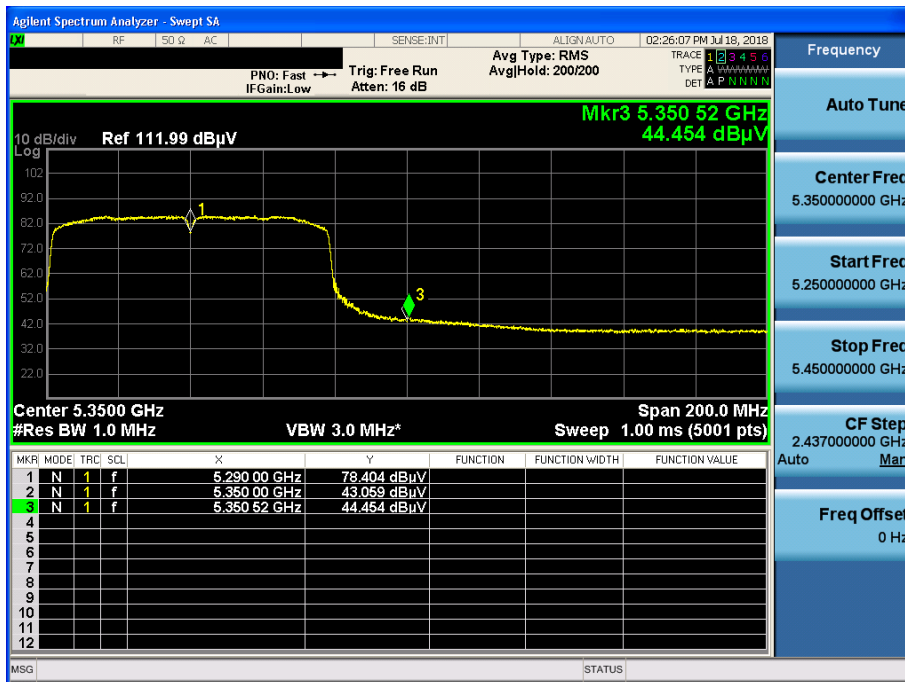
802.11ac(VHT80) & U-NII 2A & Ch.58 & X axis & Hor

Detector Mode : PK



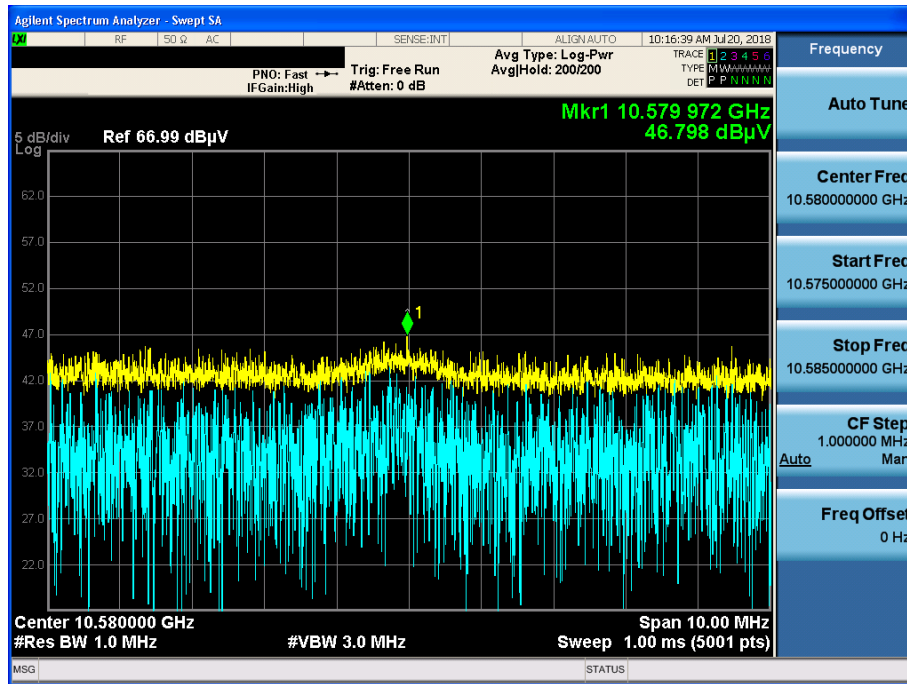
802.11ac(VHT80) & U-NII 2A & Ch.58 & X axis & Hor

Detector Mode : AV



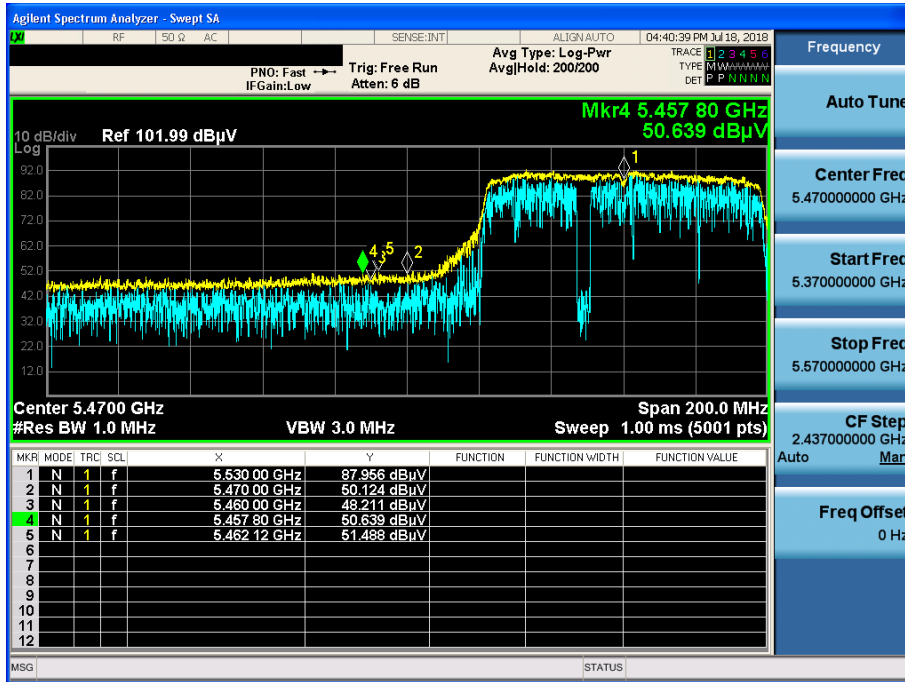
802.11ac(VHT80) & U-NII 2A & Ch.58 & Z axis & Ver

Detector Mode : PK



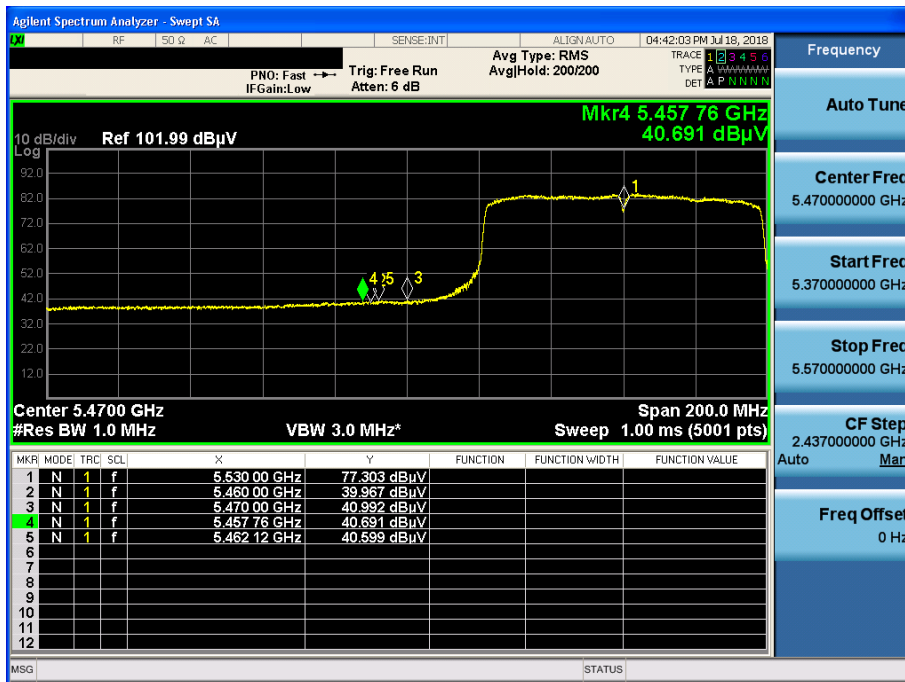
802.11ac(VHT80) & U-NII 2C & Ch.106 & X axis & Hor

Detector Mode : PK



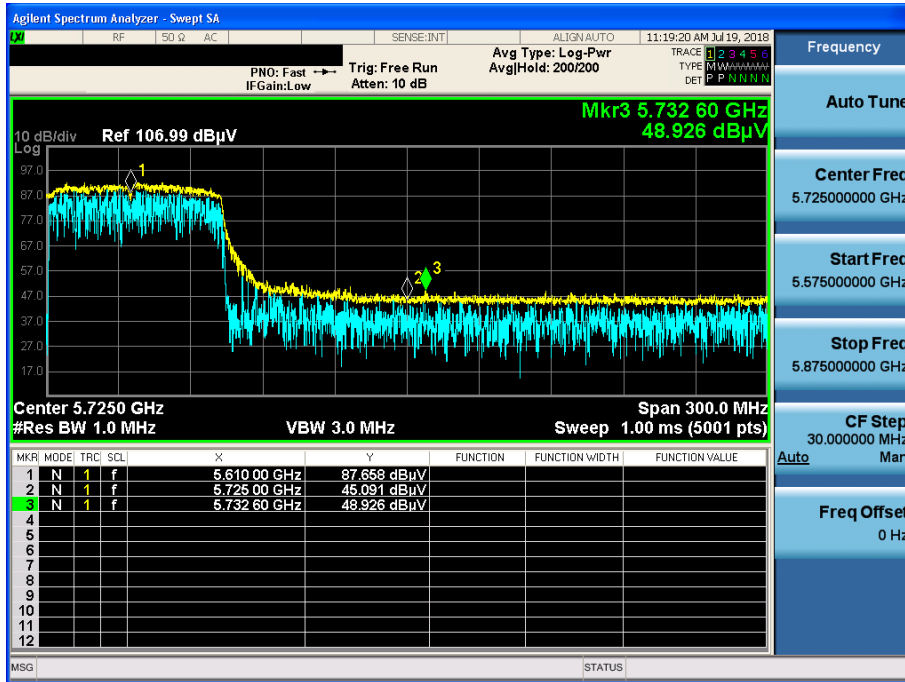
802.11ac(VHT80) & U-NII 2C & Ch.106 & X axis & Hor

Detector Mode : AV



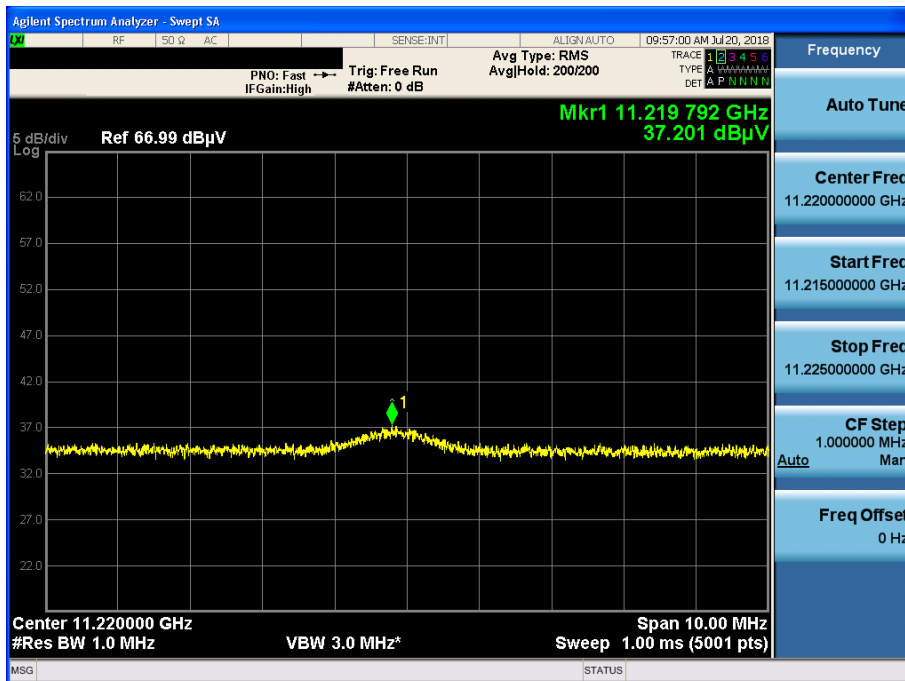
802.11ac(VHT80) & U-NII 2C & Ch.122 & X axis & Hor

Detector Mode : PK



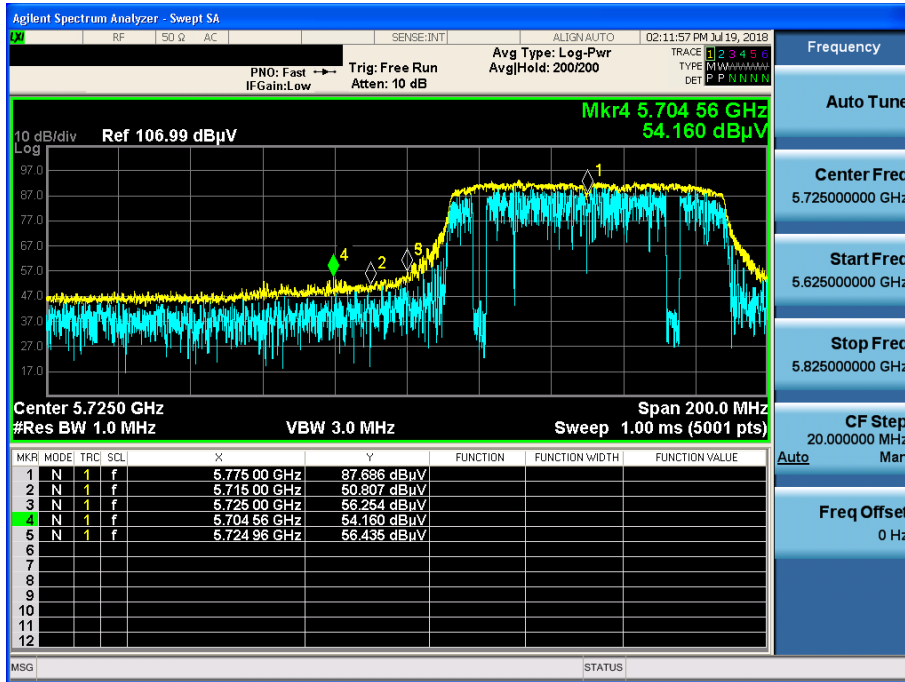
802.11ac(VHT80) & U-NII 2C & Ch.122 & Z axis & Ver

Detector Mode : AV



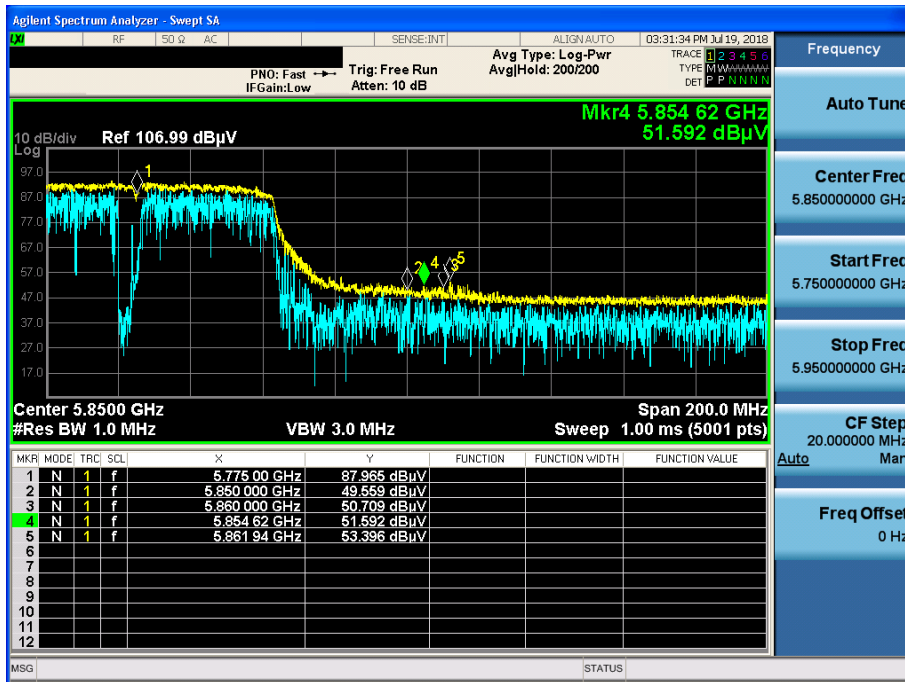
802.11ac(VHT80) & U-NII 3 & Ch.155 & X axis & Hor

Detector Mode : PK



802.11ac(VHT80) & U-NII 3 & Ch.155 & X axis & Hor

Detector Mode : PK



802.11ac(VHT80) & U-NII 3 & Ch.155 & Z axis & Ver

Detector Mode : AV

