

AC Line Conducted Emissions (Data List)

Test Mode: U-NII 2A & 802.11a & 5260 MHz

Results of Conducted Emission

DTNC

Date 2018-04-27

Order No. DTNC1802-01423
Model No. RT101
Serial No.
Test Condition 5.3GHz

Reference No.
Power Supply
Temp/Humi. 23/42
Operator I.H.BAE

Memo

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]	QP [dBuV]	CAV [dBuV]	
1	0.25940	14.74	6.83	9.95	24.69	16.78	61.45	51.45	36.76	34.67	N
2	0.46978	21.53	17.32	9.98	31.51	27.30	56.52	46.52	25.01	19.22	N
3	0.53566	29.26	25.14	9.98	39.24	35.12	56.00	46.00	16.76	10.88	N
4	2.44520	16.01	10.02	10.05	26.06	20.07	56.00	46.00	29.94	25.93	N
5	5.61680	19.48	14.16	10.10	29.58	24.26	60.00	50.00	30.42	25.74	N
6	6.61020	17.20	11.81	10.13	27.33	21.94	60.00	50.00	32.67	28.06	N
7	0.15981	19.90	7.89	9.98	29.88	17.87	65.47	55.47	35.59	37.60	L1
8	0.23618	16.28	4.48	9.95	26.23	14.43	62.23	52.23	36.00	37.80	L1
9	0.54033	22.23	11.75	9.98	32.21	21.73	56.00	46.00	23.79	24.27	L1
10	2.03940	10.06	2.21	10.04	20.10	12.25	56.00	46.00	35.90	33.75	L1
11	6.38640	10.36	2.04	10.12	20.48	12.16	60.00	50.00	39.52	37.84	L1
12	18.47480	11.02	3.74	10.36	21.38	14.10	60.00	50.00	38.62	35.90	L1

AC Line Conducted Emissions (Graph)

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

Results of Conducted Emission

DTNC

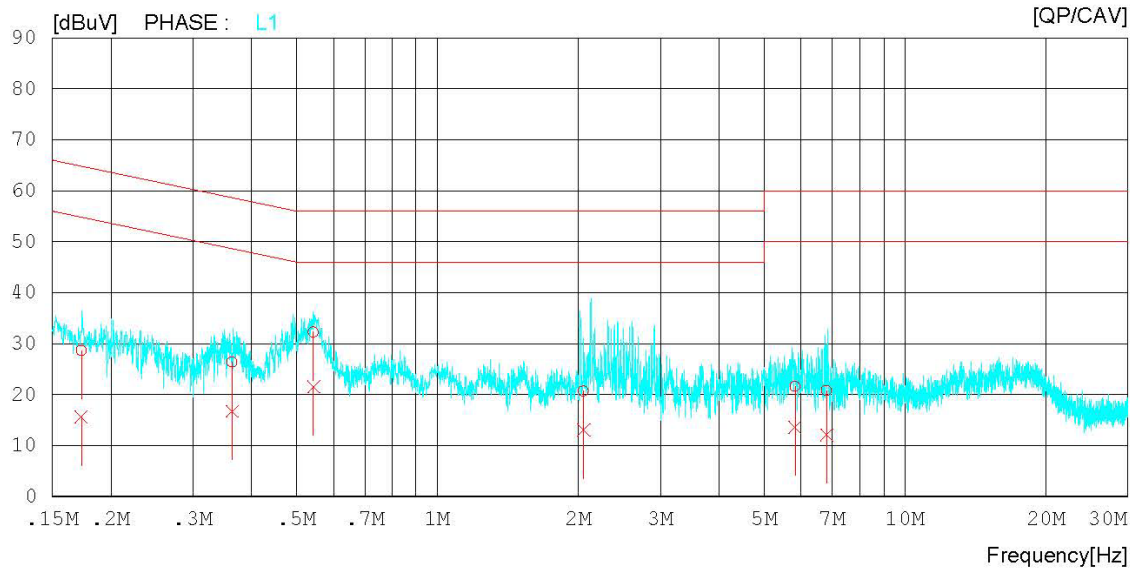
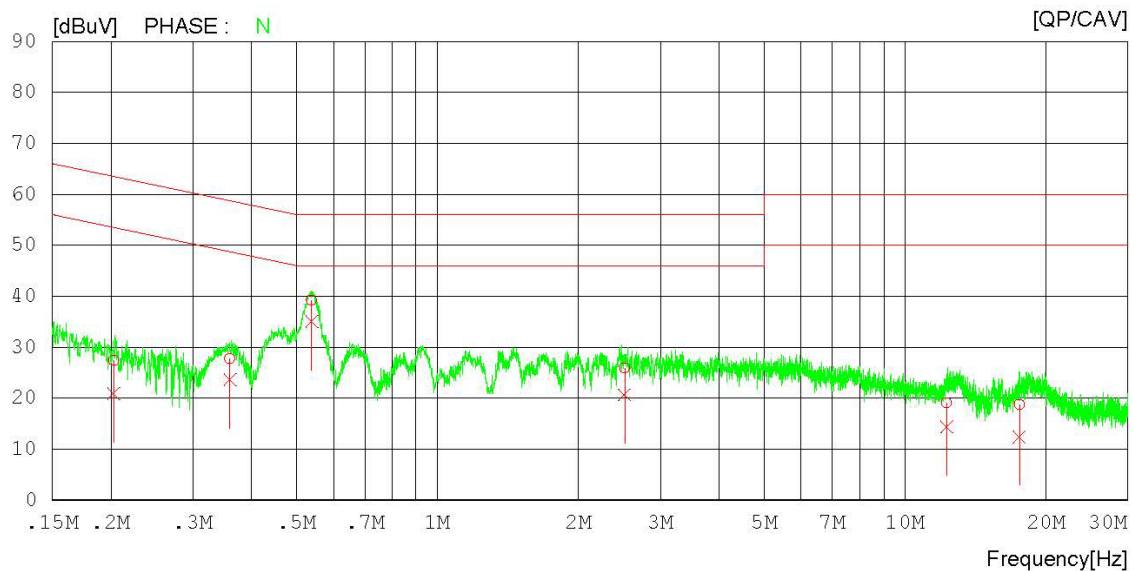
Date 2018-04-27

Order No. DTNC1802-01423
Model No. RT101
Serial No.
Test Condition 5.5GHz

Reference No.
Power Supply
Temp/Humi. 23/42
Operator I.H.BAE

Memo

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



AC Line Conducted Emissions (Data List)

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

Results of Conducted Emission

DTNC

Date 2018-04-27

Order No. DTNC1802-01423
Model No. RT101
Serial No.
Test Condition 5.5GHz

Reference No.
Power Supply
Temp/Humi. 23/42
Operator I.H.BAE

Memo

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]	QP [dBuV]	CAV [dBuV]	
1	0.20284	17.45	10.93	9.94	27.39	20.87	63.49	53.49	36.10	32.62	N
2	0.35973	17.78	13.61	9.97	27.75	23.58	58.73	48.73	30.98	25.15	N
3	0.53800	29.29	25.11	9.98	39.27	35.09	56.00	46.00	16.73	10.91	N
4	2.51160	15.81	10.63	10.05	25.86	20.68	56.00	46.00	30.14	25.32	N
5	12.27020	8.87	4.14	10.24	19.11	14.38	60.00	50.00	40.89	35.62	N
6	17.56200	8.42	2.03	10.36	18.78	12.39	60.00	50.00	41.22	37.61	N
7	0.17278	18.61	5.65	9.97	28.58	15.62	64.83	54.83	36.25	39.21	L1
8	0.36409	16.31	6.67	9.97	26.28	16.64	58.63	48.63	32.35	31.99	L1
9	0.54294	22.25	11.48	9.98	32.23	21.46	56.00	46.00	23.77	24.54	L1
10	2.05480	10.65	2.90	10.04	20.69	12.94	56.00	46.00	35.31	33.06	L1
11	5.81740	11.40	3.46	10.10	21.50	13.56	60.00	50.00	38.50	36.44	L1
12	6.80000	10.63	1.93	10.13	20.76	12.06	60.00	50.00	39.24	37.94	L1

AC Line Conducted Emissions (Graph)

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

Results of Conducted Emission

DTNC

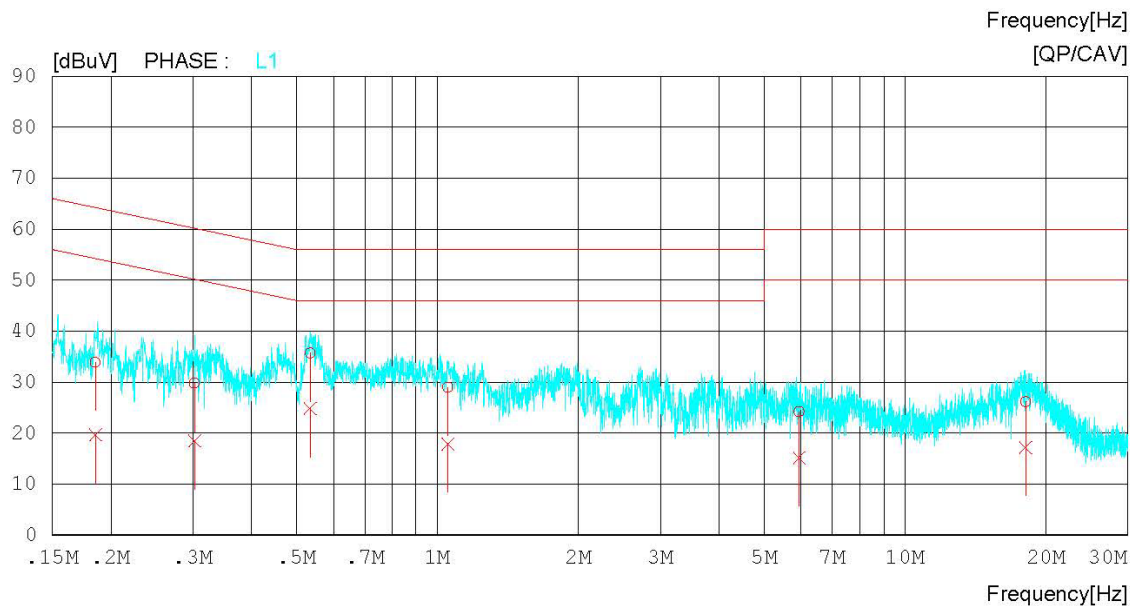
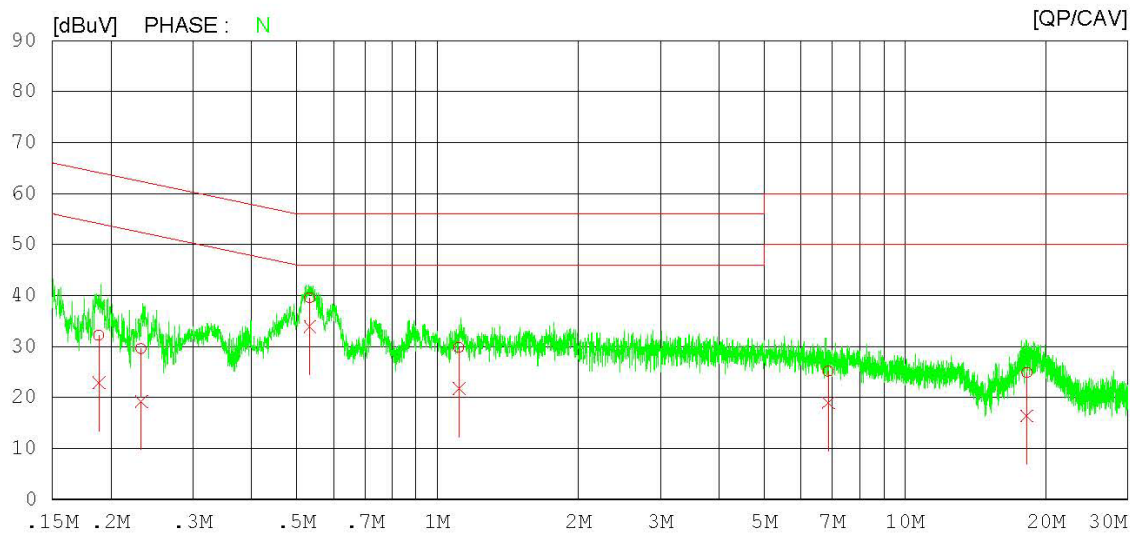
Date 2018-04-27

Order No. DTNC1802-01423
Model No. RT101
Serial No.
Test Condition 5.7GHz

Reference No.
Power Supply
Temp/Humi. 23/42
Operator I.H.BAE

Memo

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 2018-04-27

Order No. DTNC1802-01423
Model No. RT101
Serial No.
Test Condition 5.7GHz

Reference No.
Power Supply
Temp/Humi. 23/42
Operator I.H.BAE

Memo

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]	QP [dBuV]	CAV [dBuV]	
1	0.18878	22.16	12.90	9.95	32.11	22.85	64.09	54.09	31.98	31.24	N
2	0.23249	19.55	9.27	9.95	29.50	19.22	62.36	52.36	32.86	33.14	N
3	0.53315	29.61	23.94	9.99	39.60	33.93	56.00	46.00	16.40	12.07	N
4	1.11220	19.75	11.80	10.00	29.75	21.80	56.00	46.00	26.25	24.20	N
5	6.85980	15.00	8.84	10.14	25.14	18.98	60.00	50.00	34.86	31.02	N
6	18.24080	14.54	6.00	10.36	24.90	16.36	60.00	50.00	35.10	33.64	N
7	0.18537	23.91	9.75	9.95	33.86	19.70	64.24	54.24	30.38	34.54	L1
8	0.30224	19.75	8.42	9.96	29.71	18.38	60.18	50.18	30.47	31.80	L1
9	0.53423	25.71	14.85	9.98	35.69	24.83	56.00	46.00	20.31	21.17	L1
10	1.05320	19.01	7.90	9.99	29.00	17.89	56.00	46.00	27.00	28.11	L1
11	5.93760	14.02	5.06	10.11	24.13	15.17	60.00	50.00	35.87	34.83	L1
12	18.12760	15.70	6.77	10.36	26.06	17.13	60.00	50.00	33.94	32.87	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	17/09/06	18/09/06	MY50200834
Spectrum Analyzer	Agilent Technologies	N9020A	18/01/03	19/01/03	MY48011700
Spectrum Analyzer	Agilent Technologies	N9030A	17/09/07	18/09/07	MY53310140
Multimeter	FLUKE	17B	17/12/26	18/12/26	26030065WS
DC Power Supply	Agilent	66332A	17/09/05	18/09/05	US37473422
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	17/09/11	18/09/11	N/A
Thermohygrometer	BODYCOM	BJ5478	18/01/03	19/01/03	120612-2
Temp & Humi Test Chamber	SJ Science	SJ-TH-S50	17/12/28	18/12/28	SJ-TH-S50-120203
50W 10dB ATT	SMAJK	SMAJK-50-10	17/09/06	18/09/06	2-50-10
Loop Antenna	Schwarzbeck	FMZB1513	18/01/30	20/01/30	1513-128
BILOG ANTENNA	Schwarzbeck	VULB 9160	16/08/05	18/08/05	9160-3362
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	H.P	8447D	17/12/26	18/12/26	2944A07774
PreAmplifier	tsj	MLA-0118-J01-45	18/02/08	19/02/08	17138
PreAmplifier	tsj	MLA-1840-J02-45	17/10/26	18/10/26	16966-10728
Attenuator	SMAJK	SMAJK-2-3	17/09/06	18/09/06	3
Attenuator	Aeroflex/Weinschel	56-3	17/12/27	18/12/27	Y2370
Attenuator	SRTechnology	F01-B0606-01	17/09/07	18/09/07	13092403
Attenuator	Hefei Shunze	SS5T2.92-10-40	17/12/27	18/12/27	16012202
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	17/12/26	18/12/26	3
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	17/09/05	18/09/05	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	17/09/06	18/09/06	1
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A MA2411B	17/12/27	18/12/27	1338004 1306053
EMI Test Receiver	Rohde Schwarz	ESR7	18/02/13	19/02/13	101061
EMI Test Receiver	Rohde Schwarz	ESCI7	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	DTNC	CABLE	17/06/22	18/06/22	C-016-4
CABLE	DTNC	CABLE	17/06/22	18/06/22	RF-81
CABLE	DTNC	CABLE	17/06/22	18/06/22	RF-74
CABLE	DTNC	CABLE	17/06/22	18/06/22	RF-82
CABLE	DTNC	CABLE	18/02/21	19/02/21	RF-56
CABLE	DTNC	CABLE	18/03/26	19/03/26	RF-68
CABLE	DTNC	CABLE	18/03/26	19/03/26	P-IN
CABLE	DTNC	CABLE	18/03/26	19/03/26	RF-71
CABLE	DTNC	CABLE	17/06/22	18/06/22	RF-66
CABLE	DTNC	CABLE	17/06/22	18/06/22	RF-75

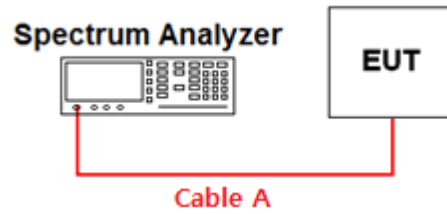
Note: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017

Note: 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 [$X = \text{On Time} / (\text{On} + \text{Off time})$] 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.

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

■ Test Results:

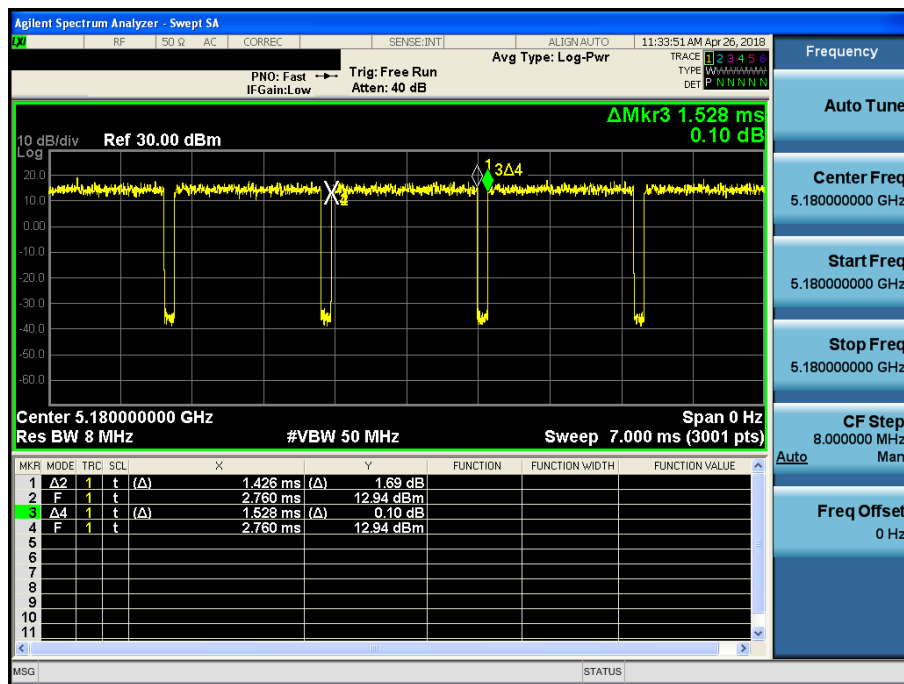
Duty cycle

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	1.43	1.53	93.32	0.31	35.06
802.11n (HT20)	MCS0	5180	1.34	1.44	92.85	0.33	37.40
802.11n (HT40)	MCS0	5190	0.66	0.77	86.68	0.63	75.30

Single Transmit

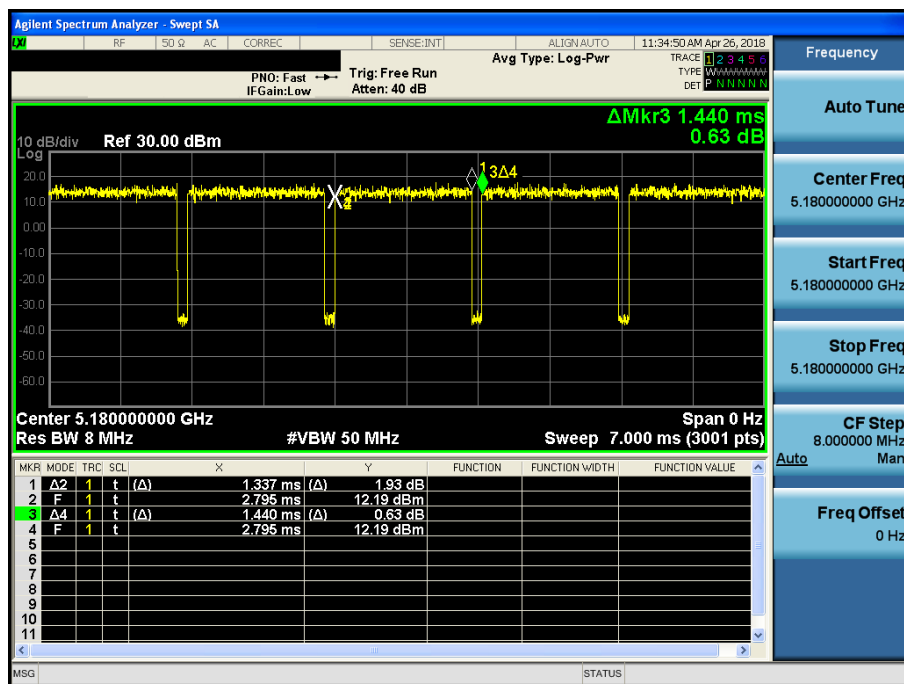
Duty Cycle

Test Mode: 802.11a & Ch.36



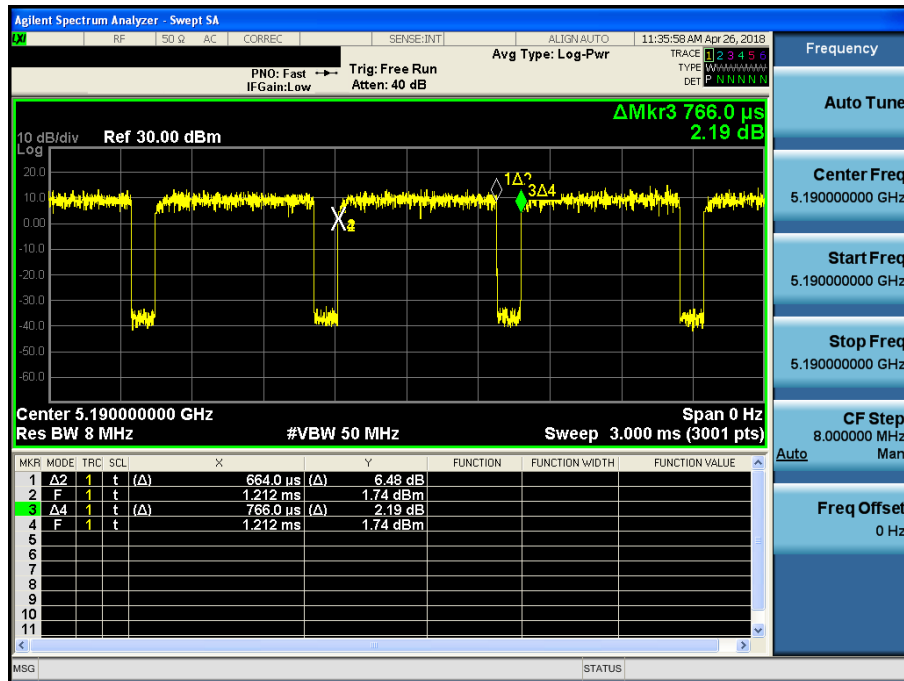
Duty Cycle

Test Mode: 802.11n HT20 & Ch.36



Duty Cycle

Test Mode: 802.11n HT40 & Ch.38

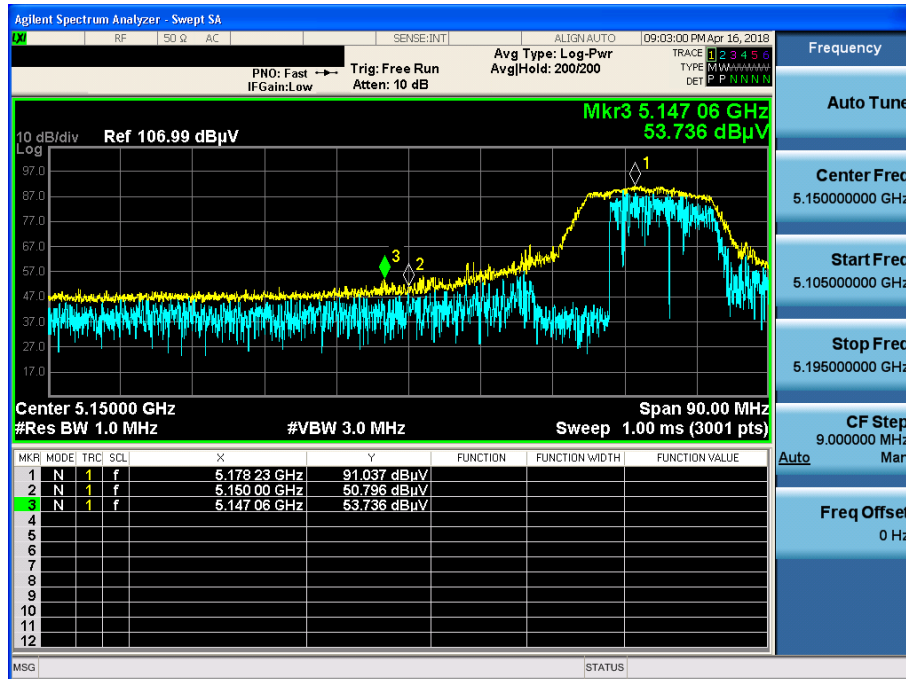


APPENDIX III

Unwanted Emissions (Radiated) Test Plot

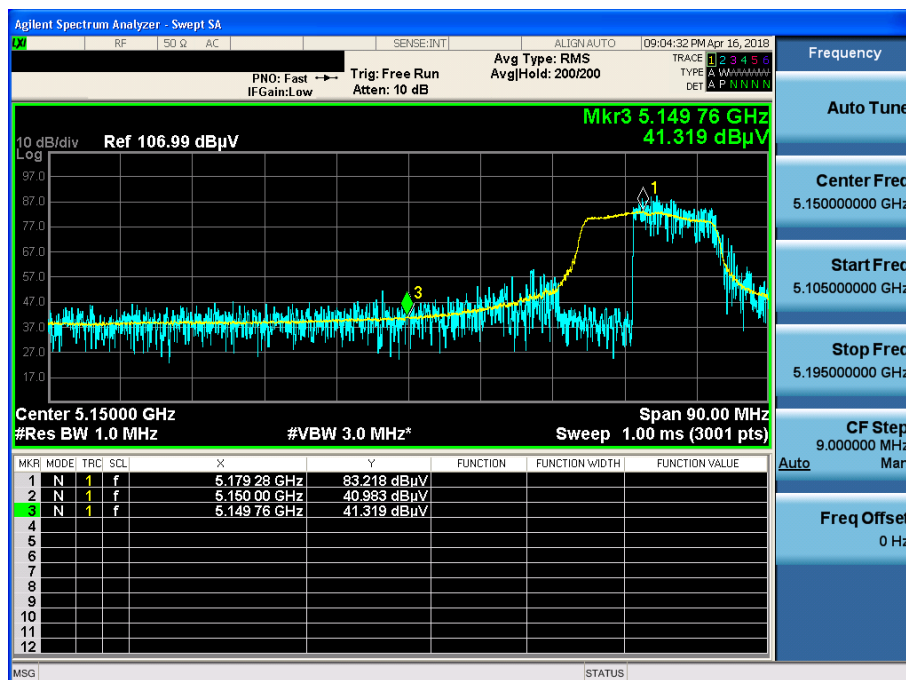
802.11a & U-NII 1 & Ch.36 & Z axis & Ver

Detector Mode : PK

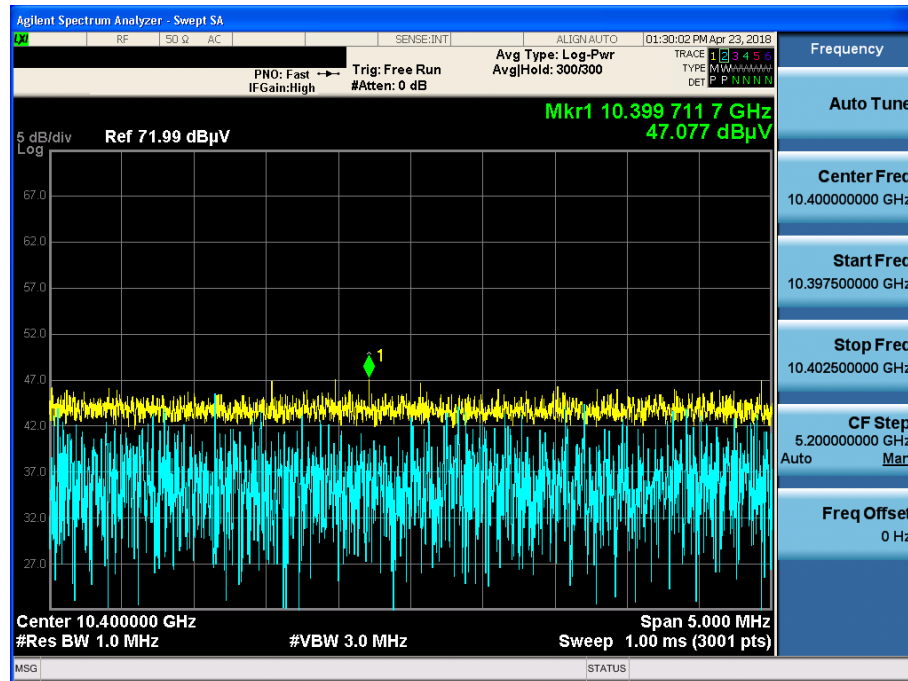


802.11a & U-NII 1 & Ch.36 & Z axis & Ver

Detector Mode : AV

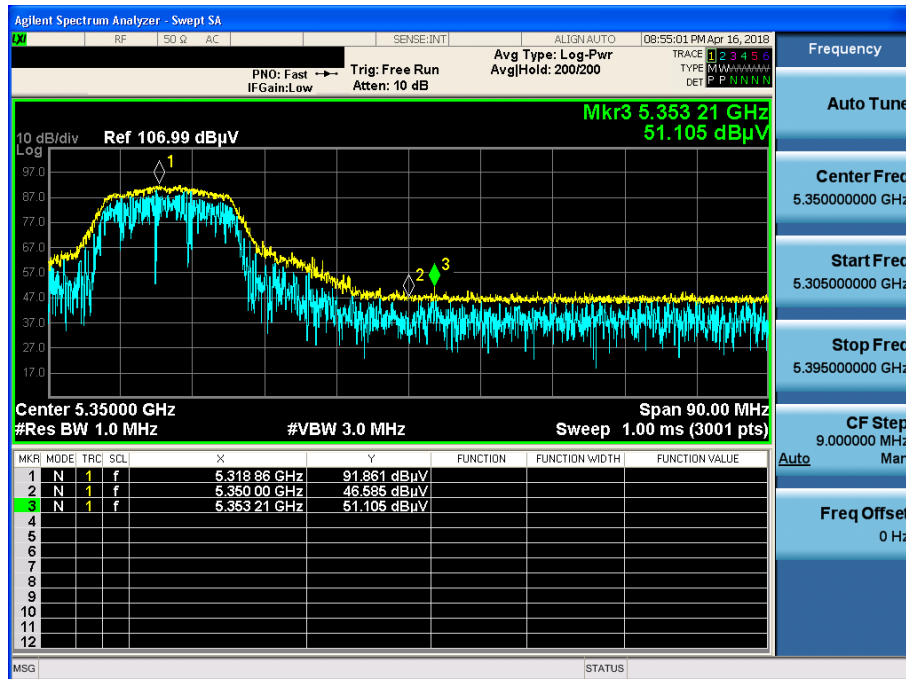


Detector Mode : PK



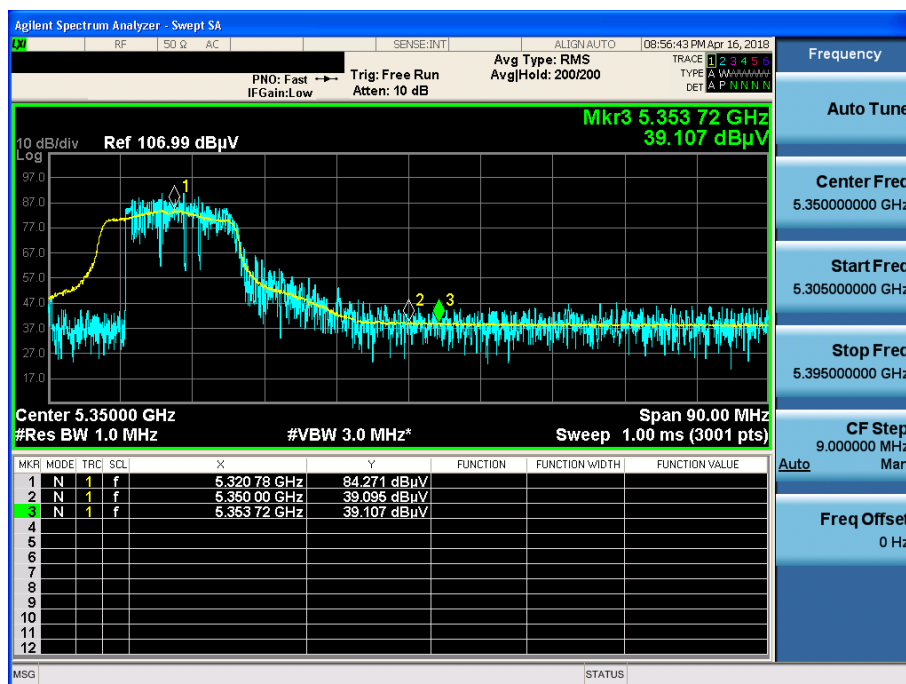
802.11a & U-NII 2A & Ch.64 & Z axis & Hor

Detector Mode : PK



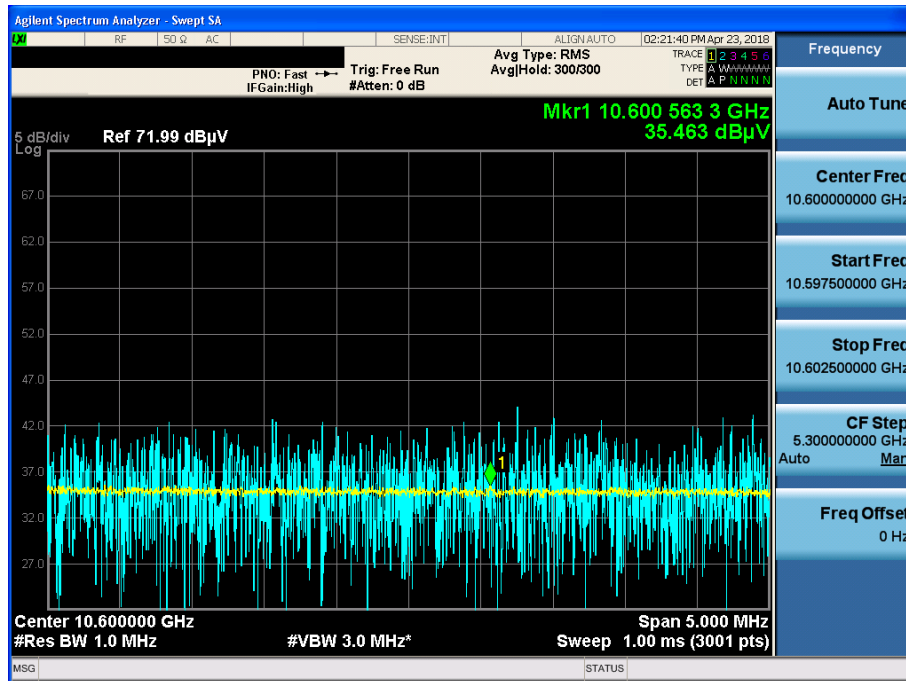
802.11a & U-NII 2A & Ch.64 & Z axis & Hor

Detector Mode : AV



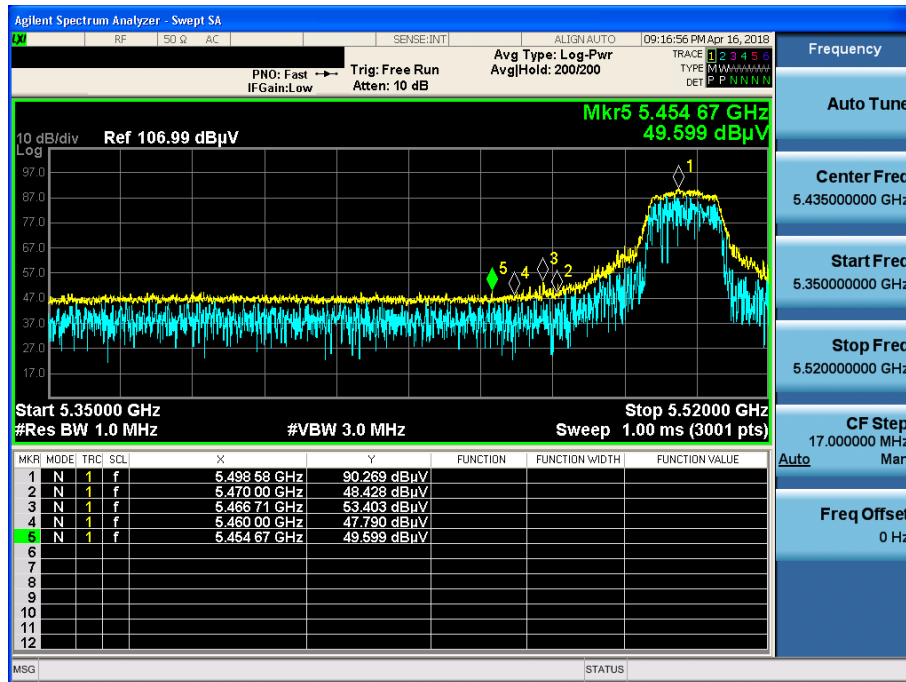
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Detector Mode : AV



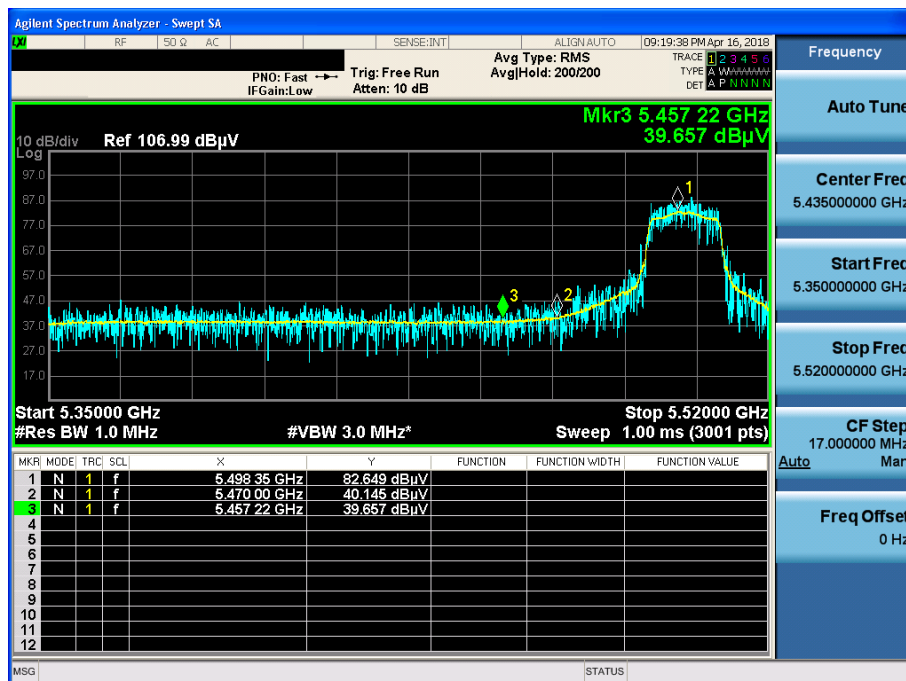
802.11a & U-NII 2C & Ch.100 & X axis & Hor

Detector Mode : PK



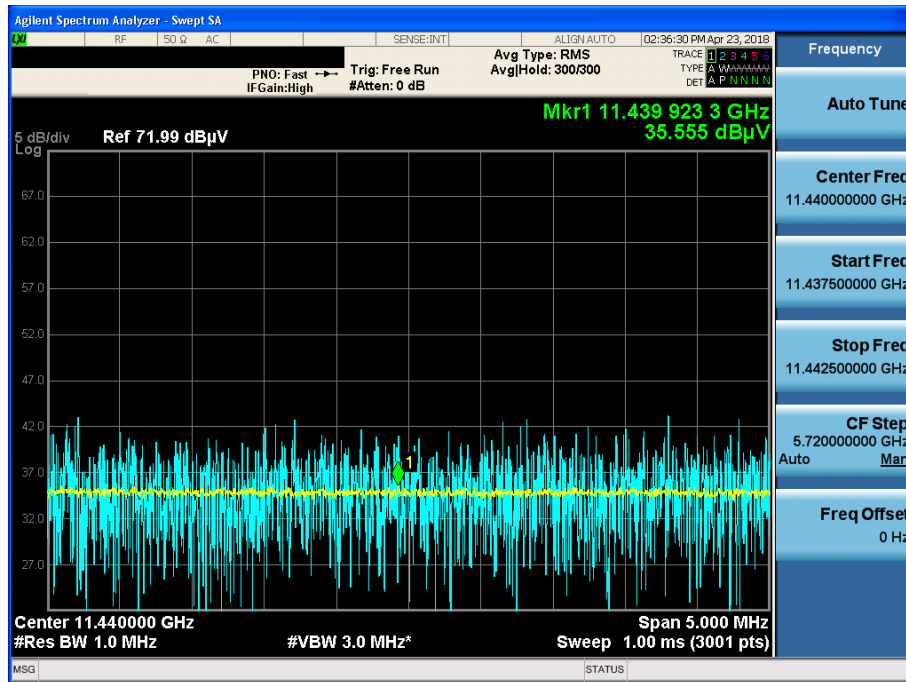
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Detector Mode : AV



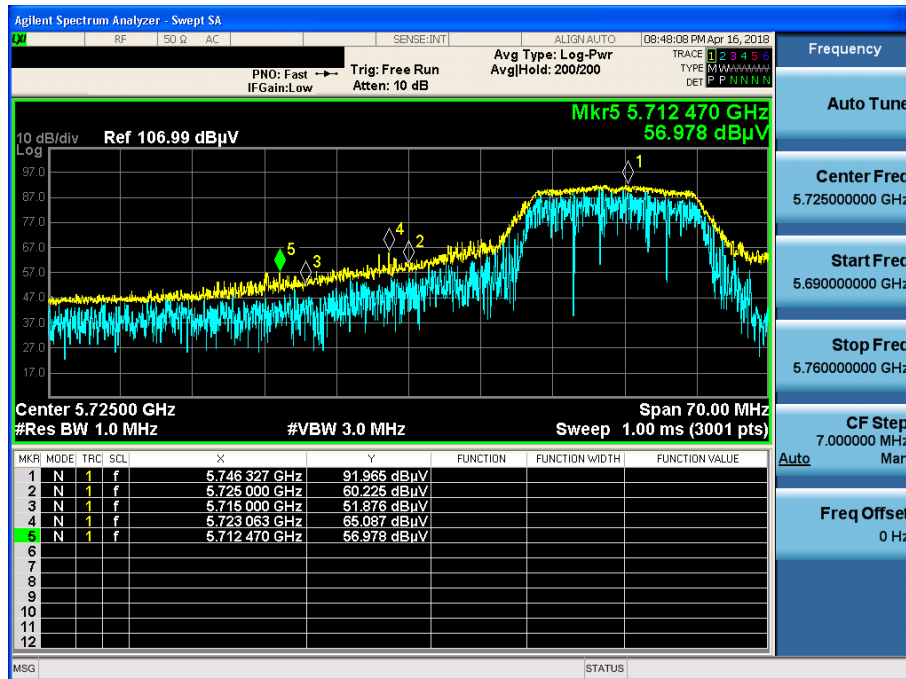
802.11a & U-NII 2C & Ch.144 & Z axis & Hor

Detector Mode : AV



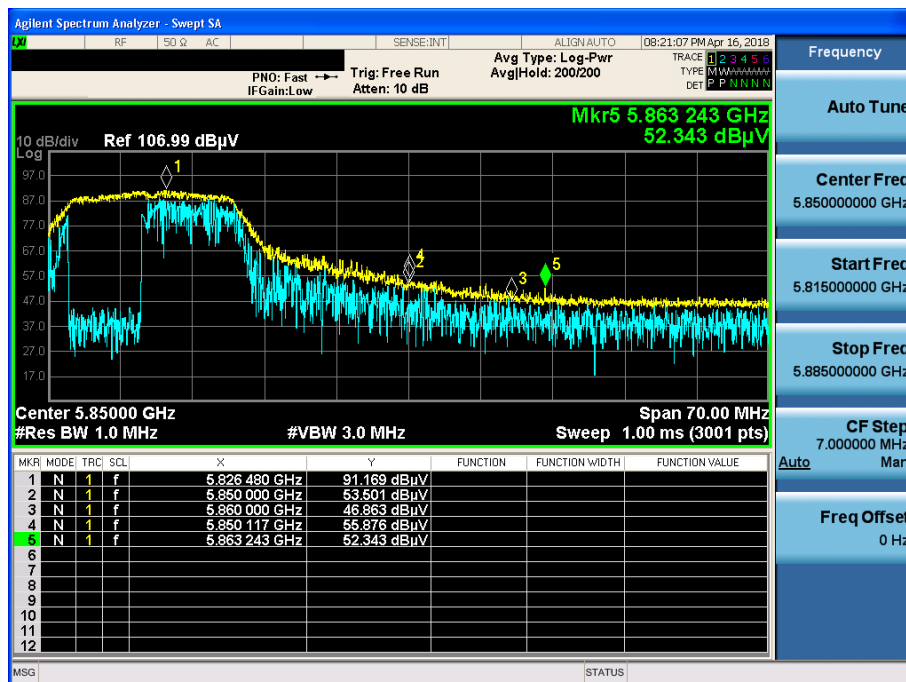
802.11a & U-NII 3 & Ch.149 & Z axis & Hor

Detector Mode : PK



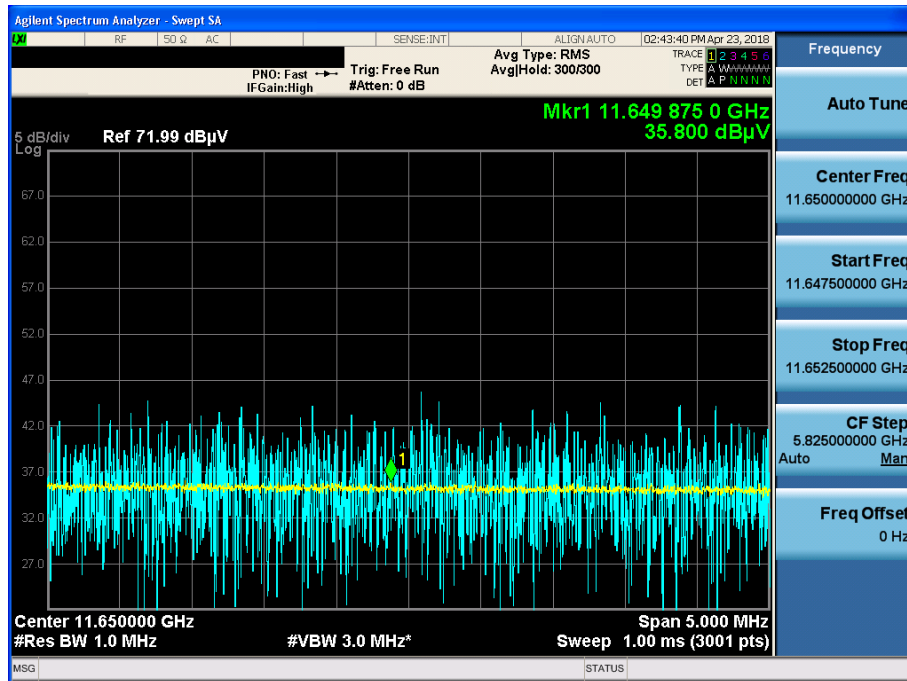
802.11a & U-NII 3 & Ch.165 & Z axis & Hor

Detector Mode : PK



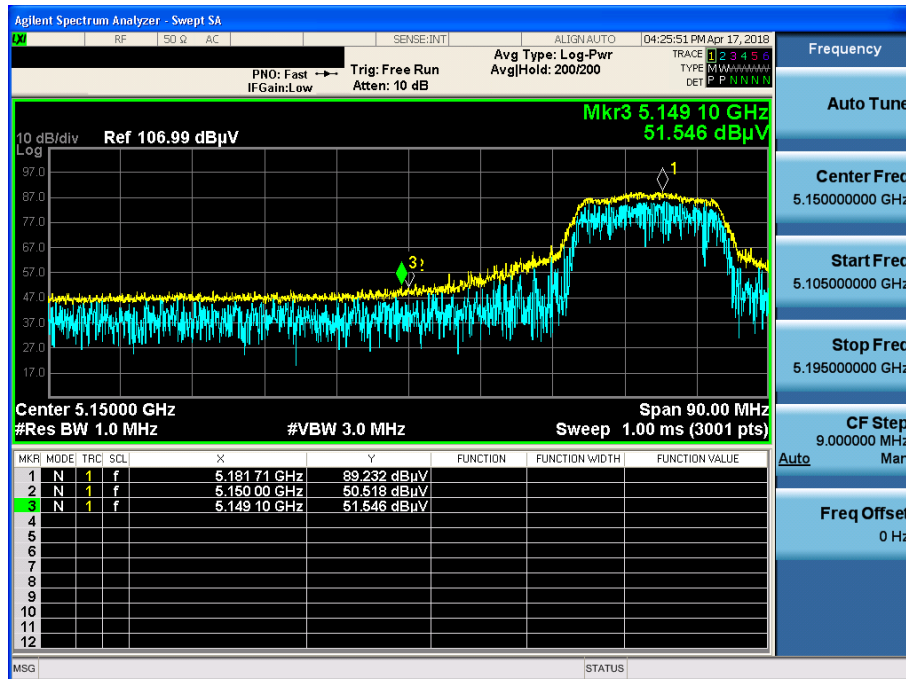
802.11a & U-NII 3 & Ch.165 & Z axis & Hor

Detector Mode : AV



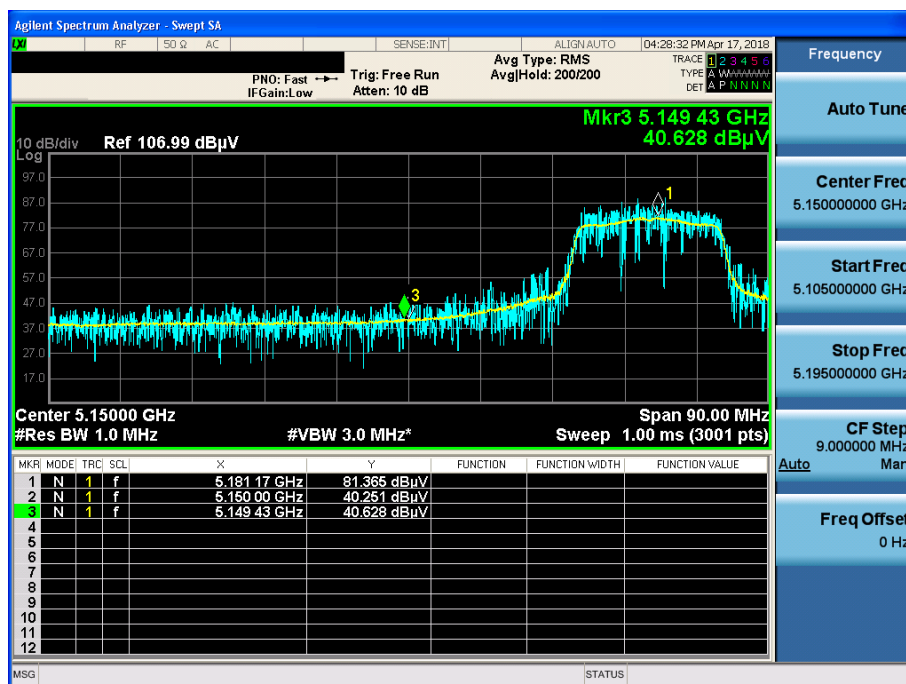
802.11n(HT20) & U-NII 1 & Ch.36 & Y axis & Ver

Detector Mode : PK



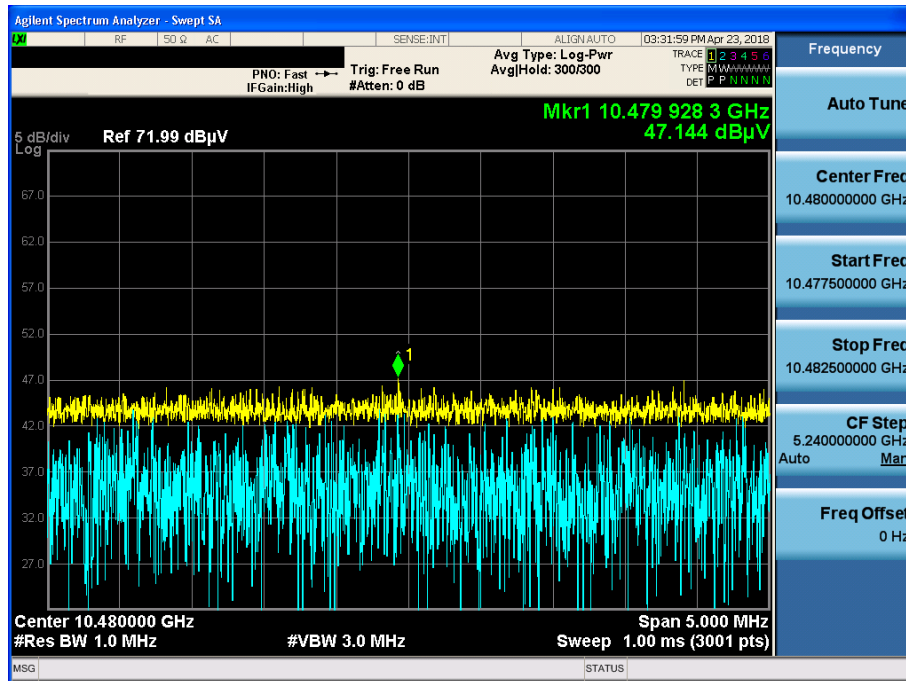
802.11n(HT20) & U-NII 1 & Ch.36 & Y axis & Ver

Detector Mode : AV



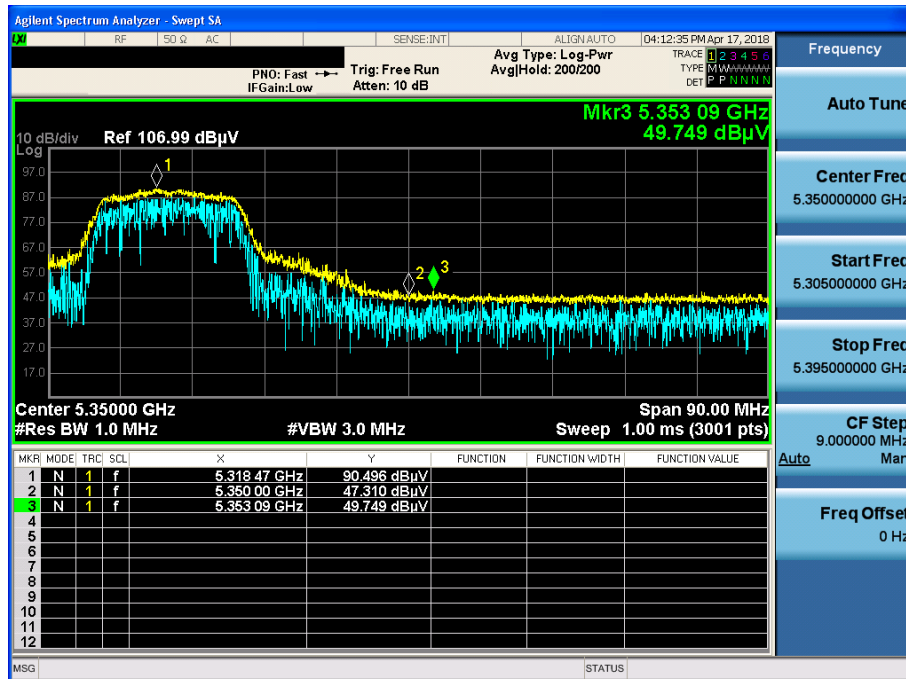
802.11n(HT20) & U-NII 1 & Ch.48 & Y axis & Ver

Detector Mode : PK



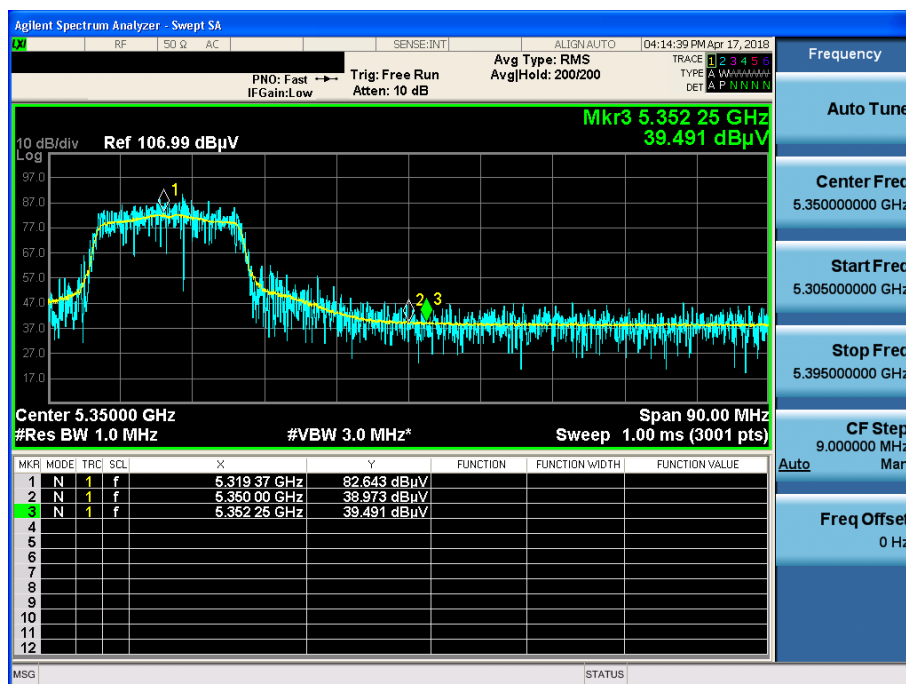
802.11n(HT20) & U-NII 2A & Ch.64 & X axis & Hor

Detector Mode : PK

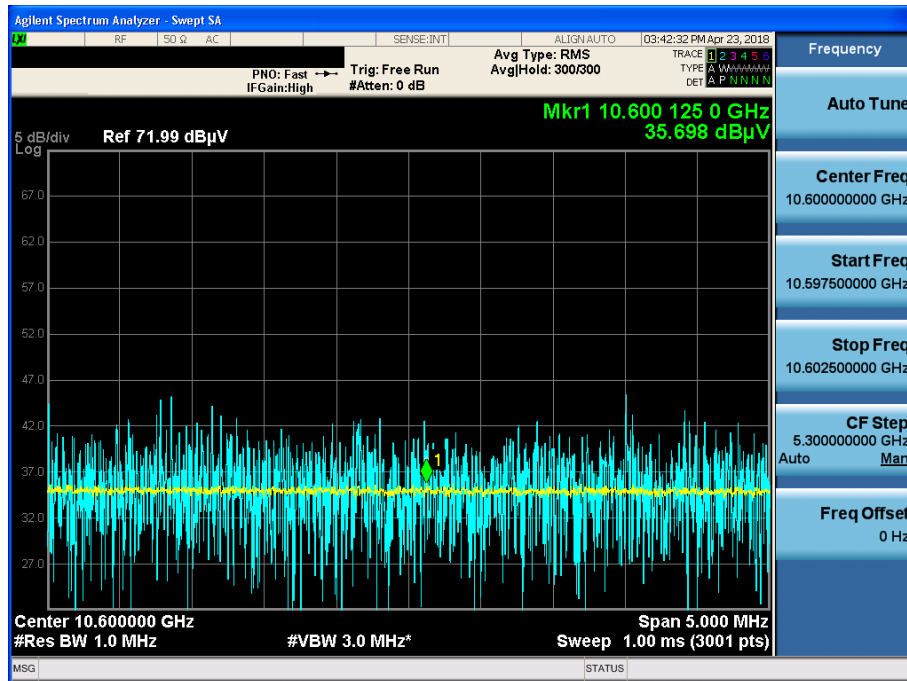


802.11n(HT20) & U-NII 2A & Ch.64 & X axis & Hor

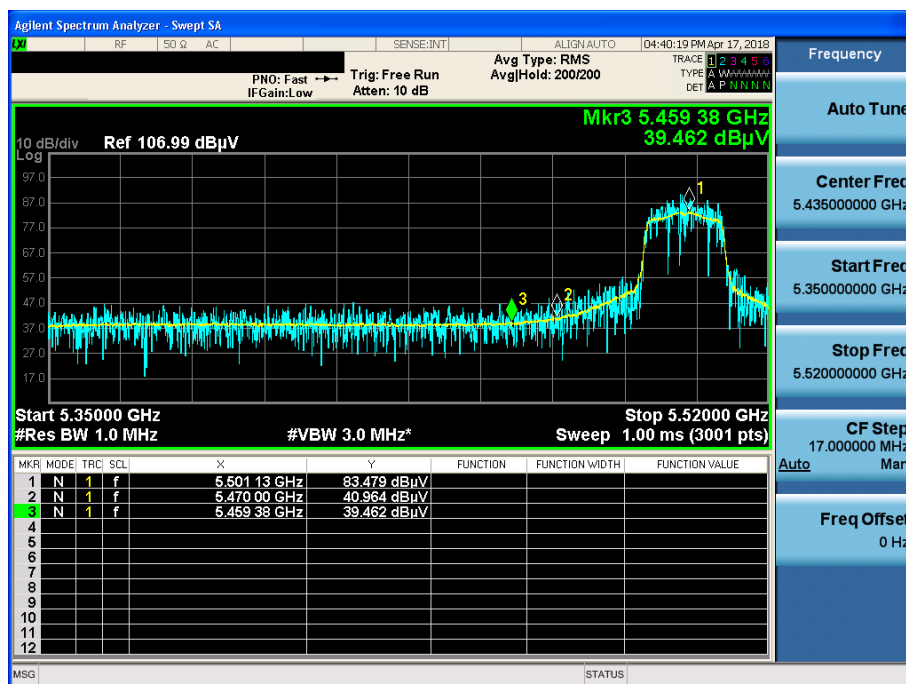
Detector Mode : AV



Detector Mode : AV

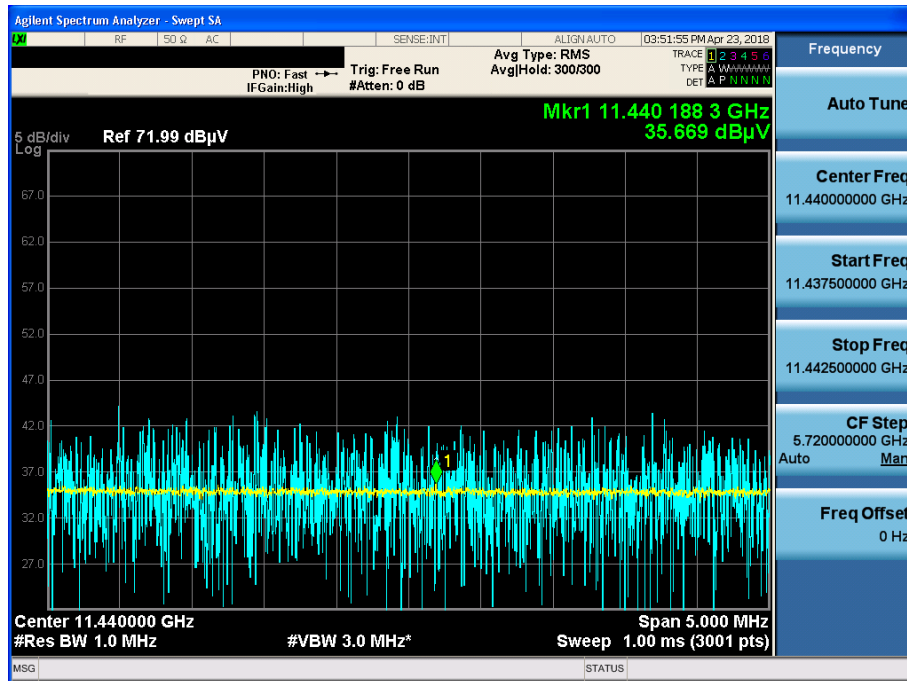


Detector Mode : PK



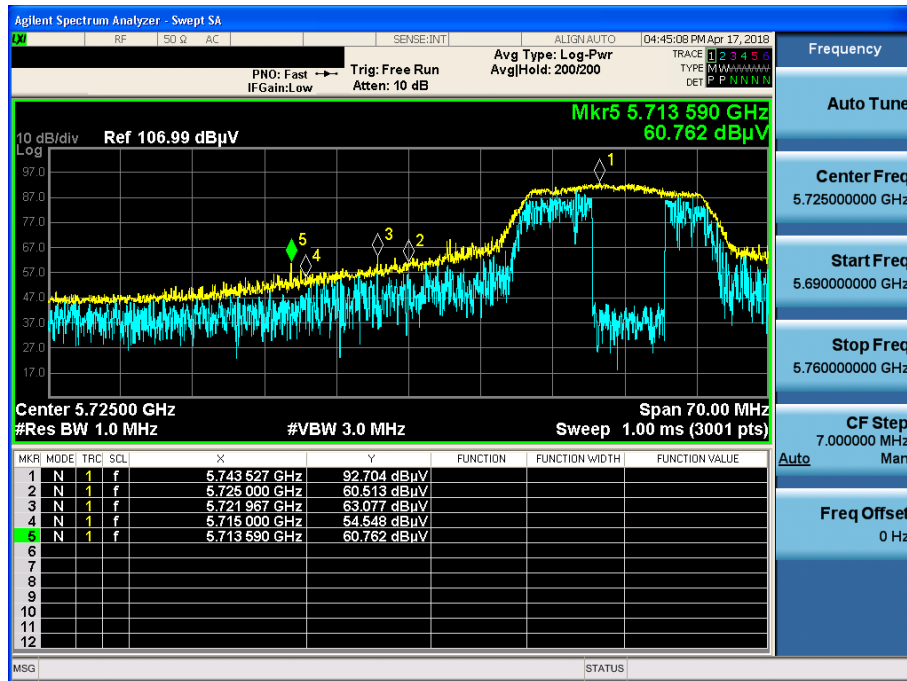
802.11n(HT20) & U-NII 2C & Ch.144 & Y axis & Ver

Detector Mode : AV



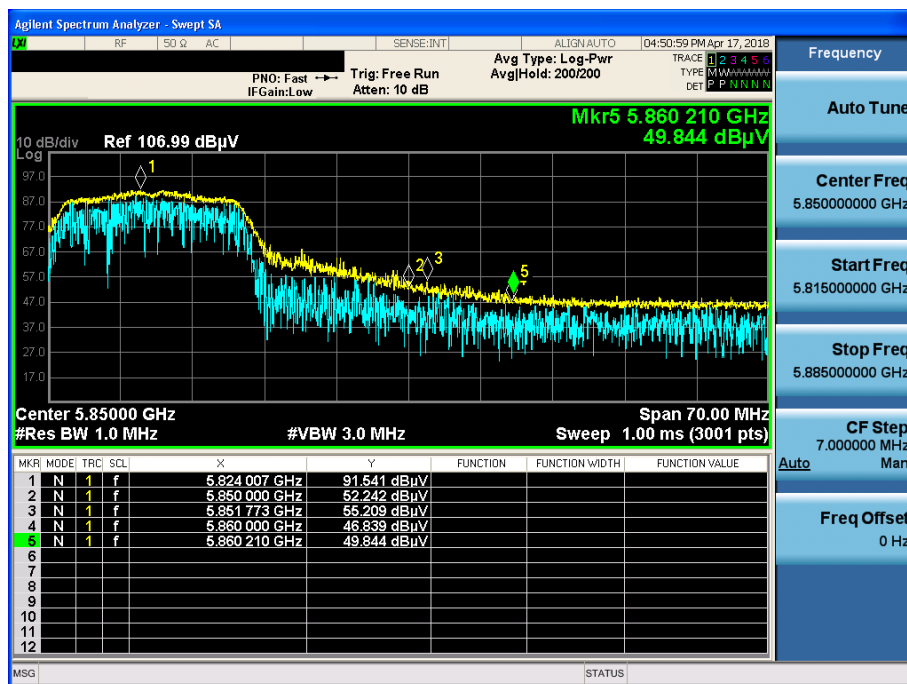
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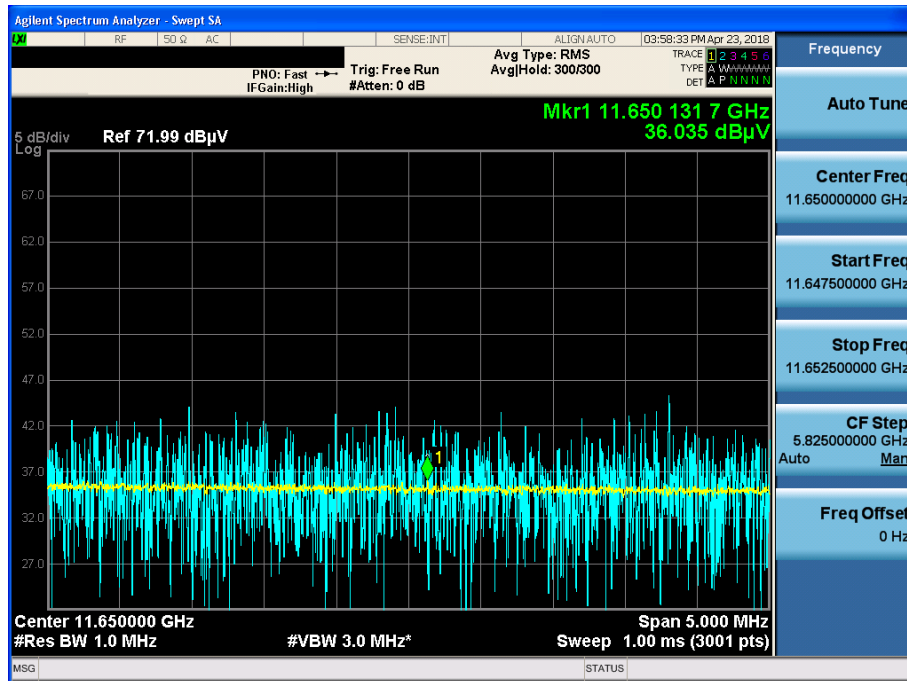


802.11n(HT20) & U-NII 3 & Ch.165 & Y axis & Ver

Detector Mode : PK

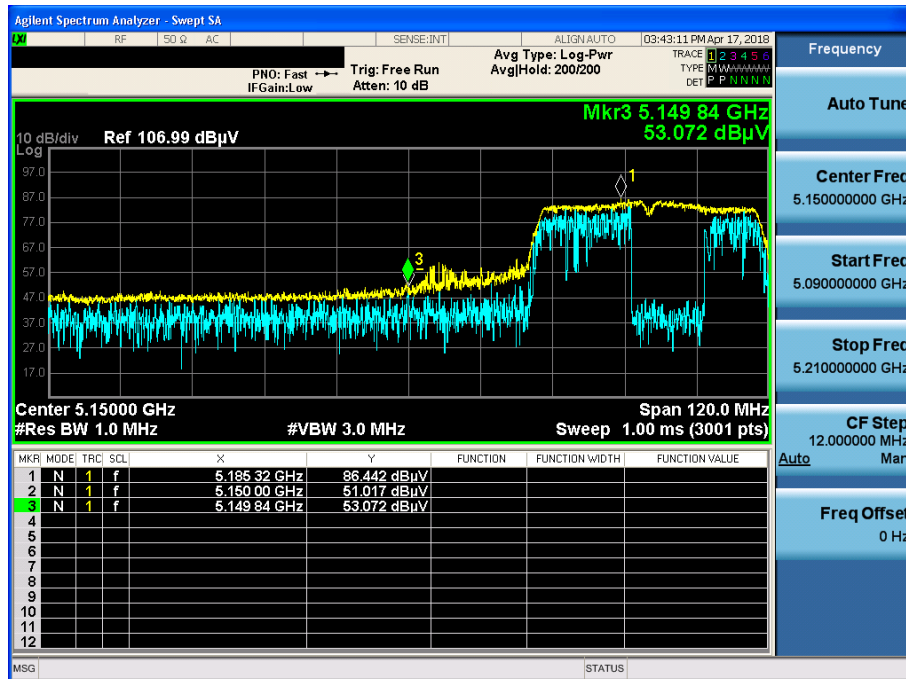


Detector Mode : AV



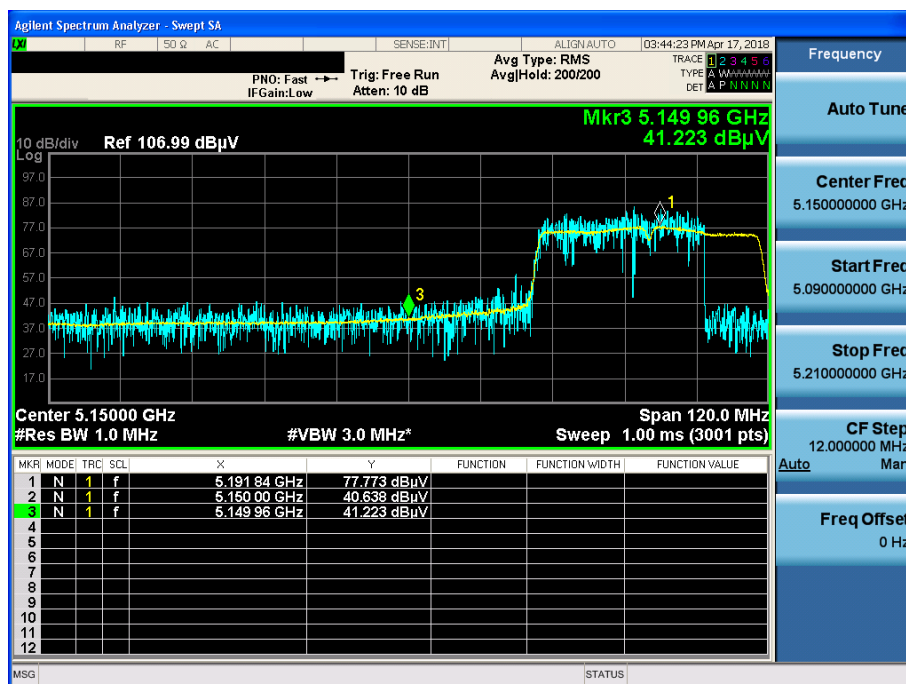
802.11n(HT40) & U-NII 1 & Ch.38 & Y axis & Ver

Detector Mode : PK

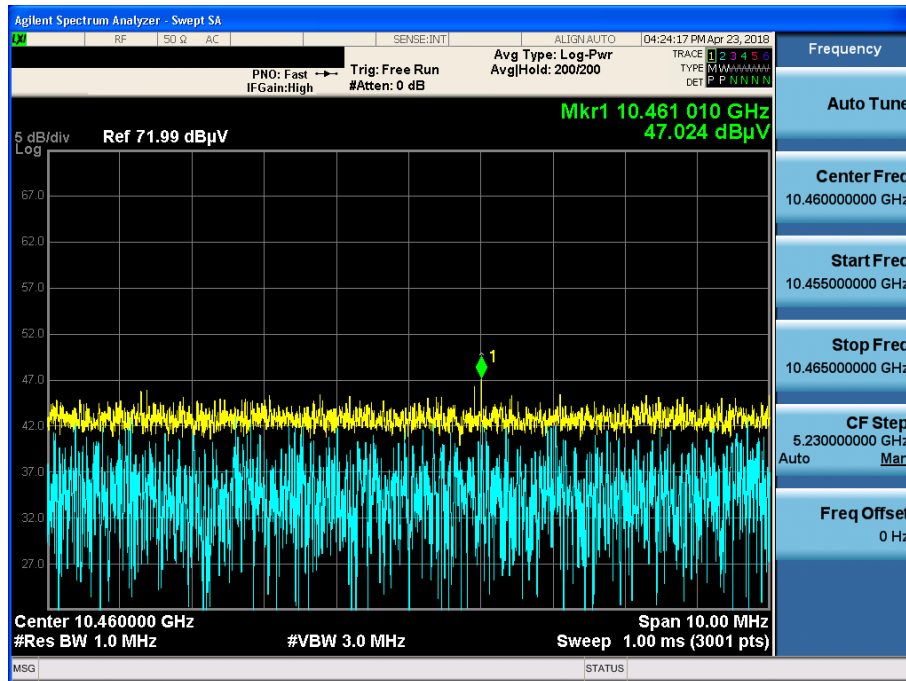


802.11n(HT40) & U-NII 1 & Ch.38 & Y axis & Ver

Detector Mode : AV

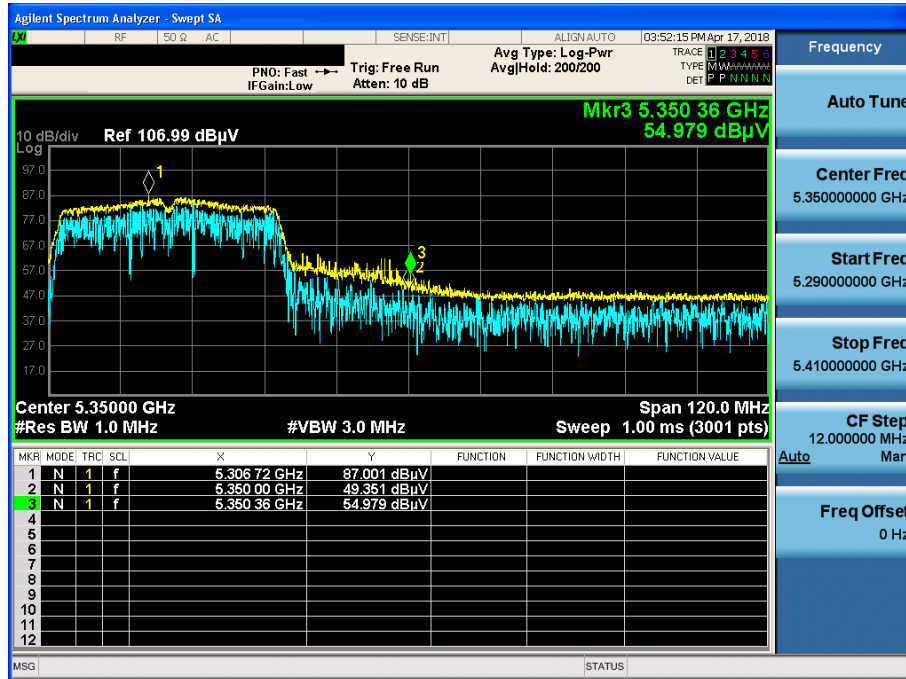


Detector Mode : PK



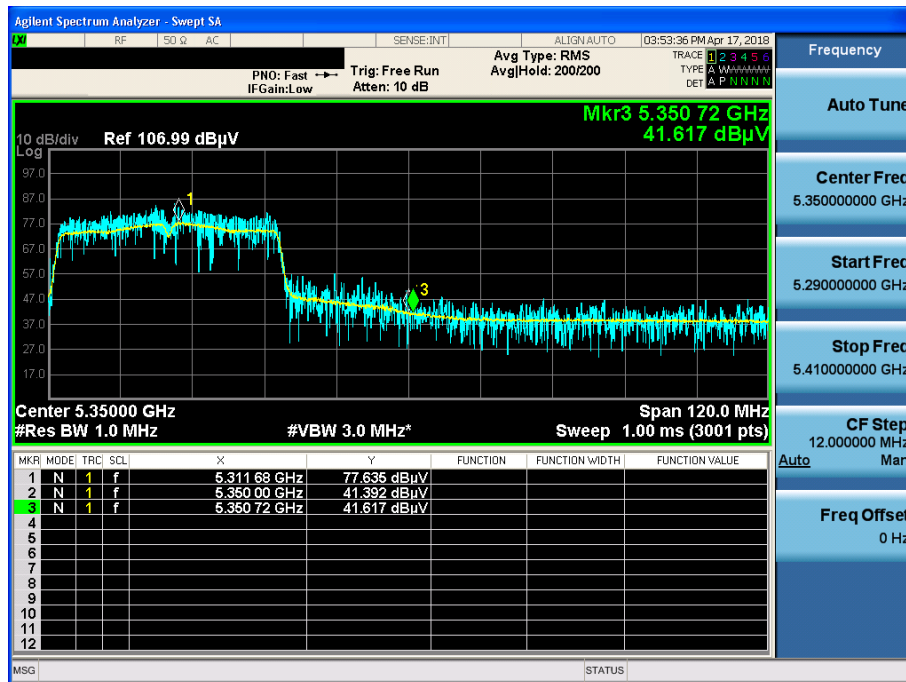
802.11n(HT40) & U-NII 2A & Ch.62 & X axis & Hor

Detector Mode : PK



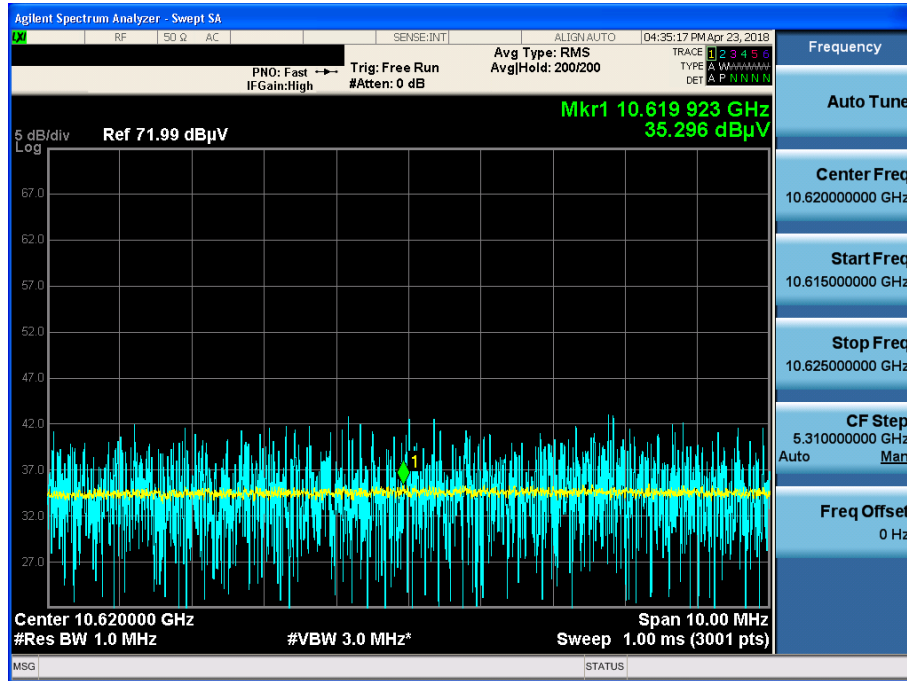
802.11n(HT40) & U-NII 2A & Ch.62 & X axis & Hor

Detector Mode : AV



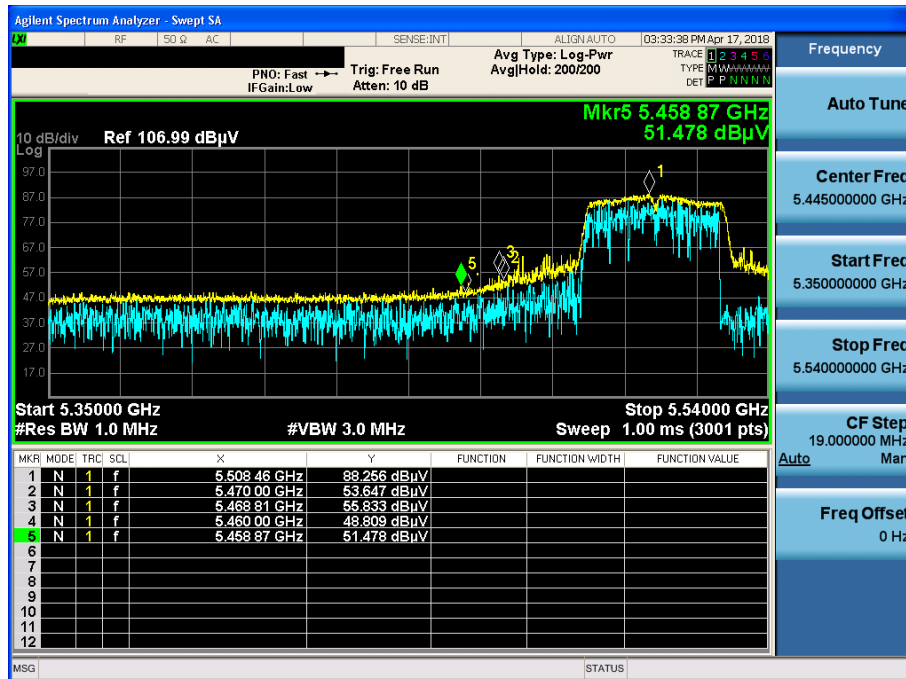
802.11n(HT40) & U-NII 2A & Ch.62 & Y axis & Ver

Detector Mode : AV



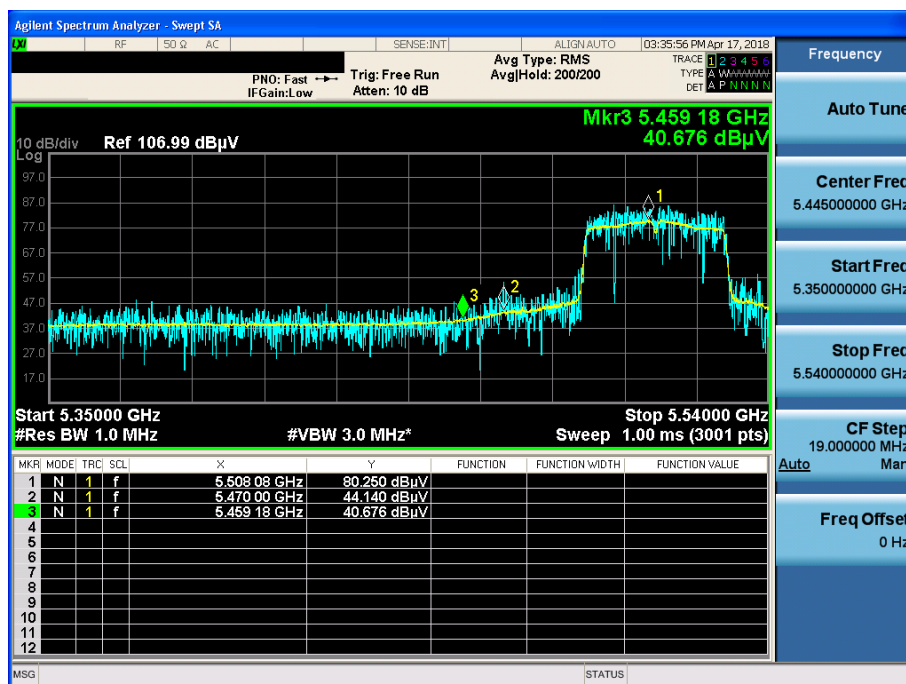
802.11n(HT40) & U-NII 2C & Ch.102 & Y axis & Ver

Detector Mode : PK



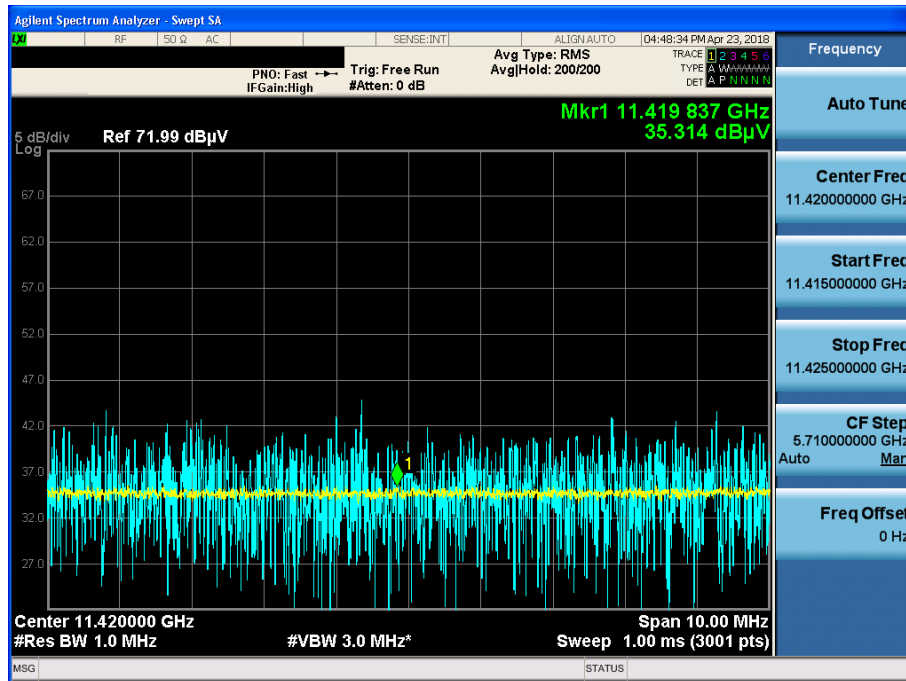
802.11n(HT40) & U-NII 2C & Ch.102 & Y axis & Ver

Detector Mode : AV



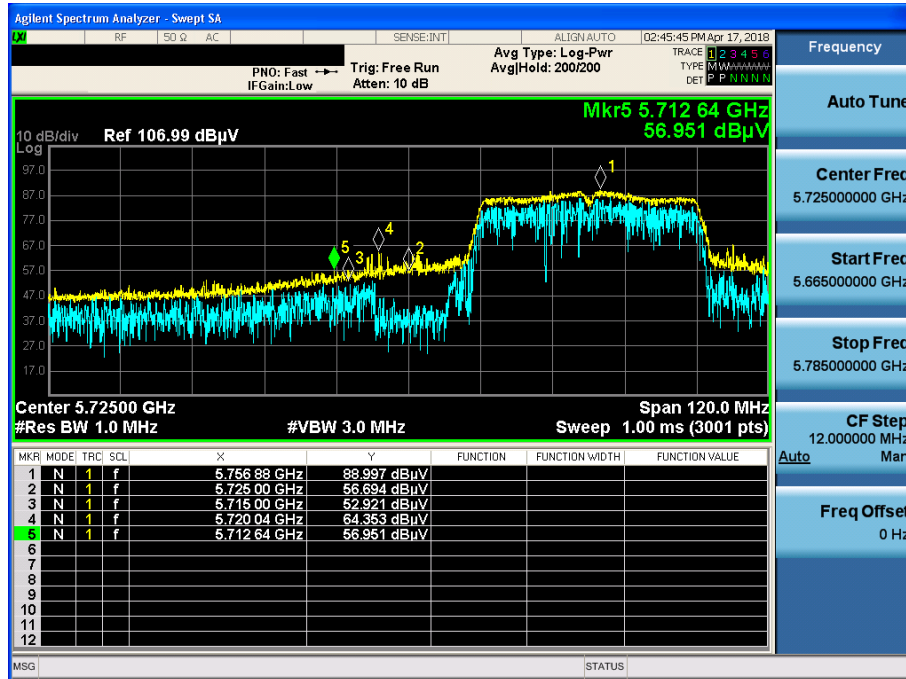
802.11n(HT40) & U-NII 2C & Ch.142 & Y axis & Ver

Detector Mode : AV



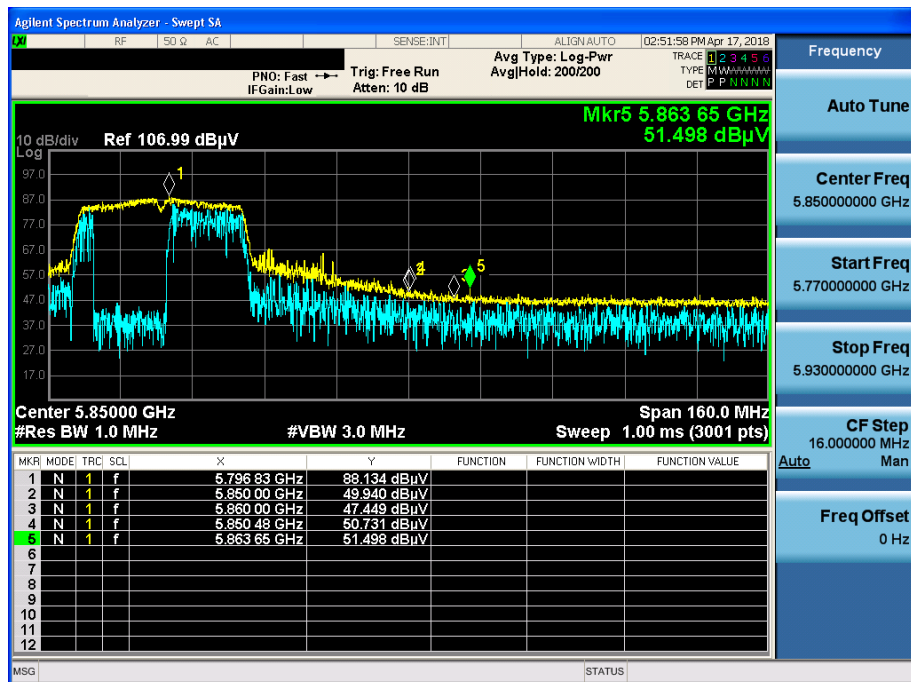
802.11n(HT40) & U-NII 3 & Ch.151 & Y axis & Ver

Detector Mode : PK



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

Detector Mode : PK



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

Detector Mode : AV

