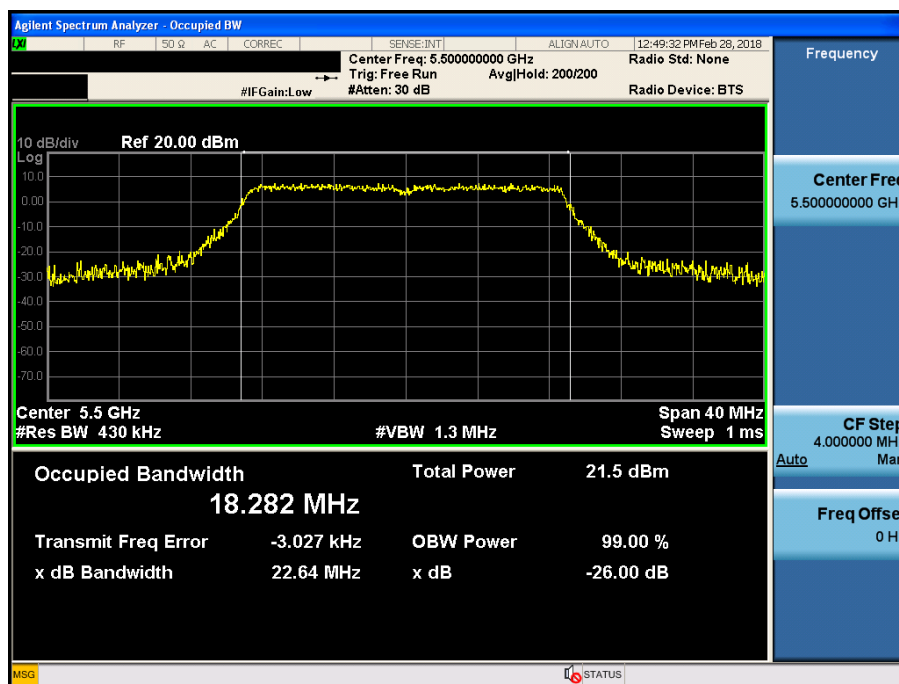## Occupied Bandwidth 99%   Test Mode: 802.11n(HT20)   &   Ch.100
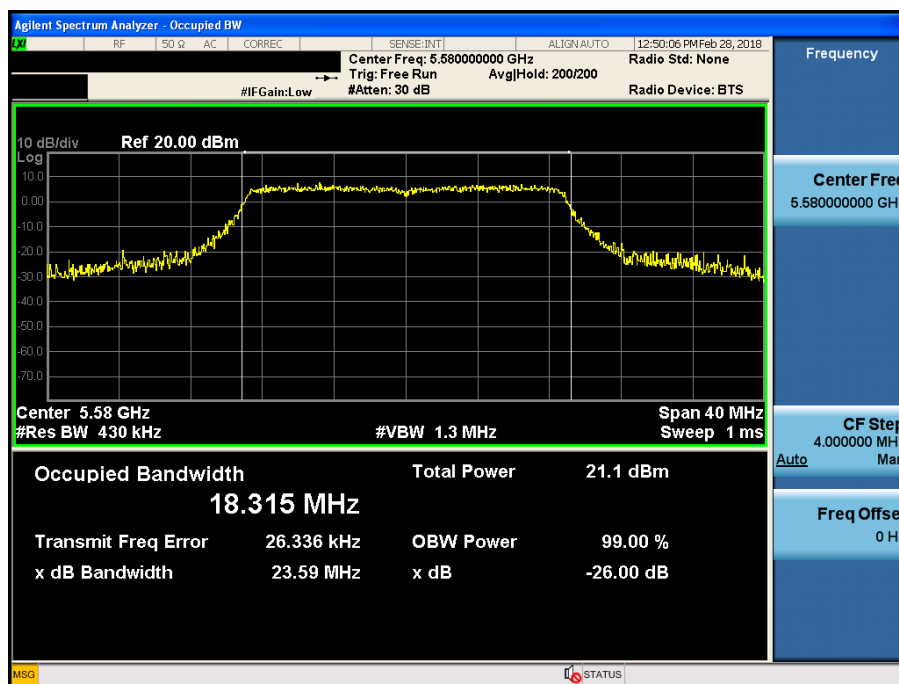

Occupied Bandwidth 99%   Test Mode: 802.11n(HT20)   &   Ch.116

Occupied Bandwidth 99%   Test Mode: 802.11n(HT20) & Ch.140

Occupied Bandwidth 99%   Test Mode: 802.11n(HT20) & Ch.149
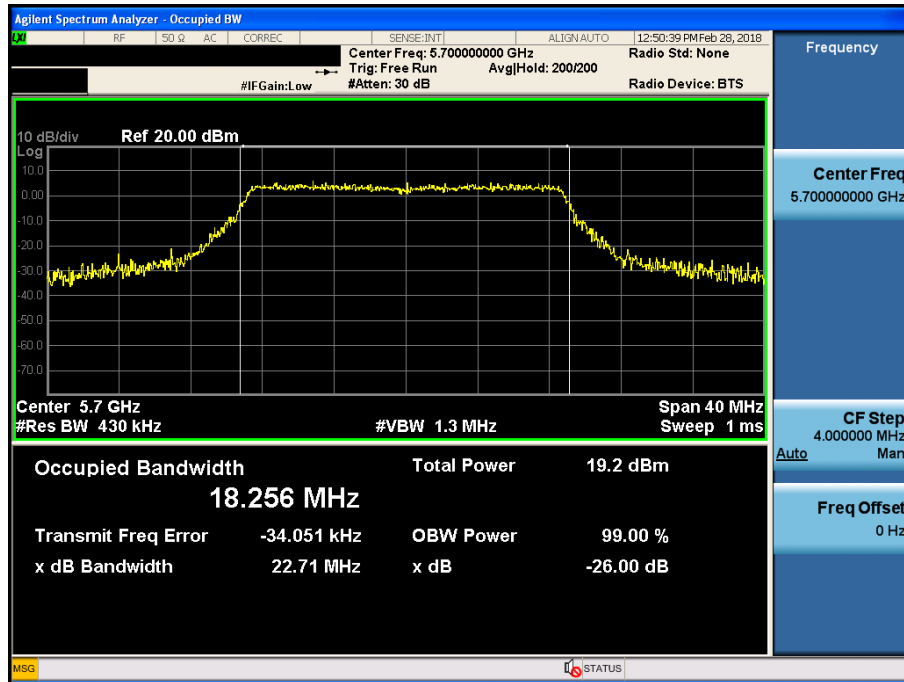

Occupied Bandwidth 99%   Test Mode: 802.11n(HT20) & Ch.157

Occupied Bandwidth 99% Test Mode: 802.11n(HT20) & Ch.165

Dt&C

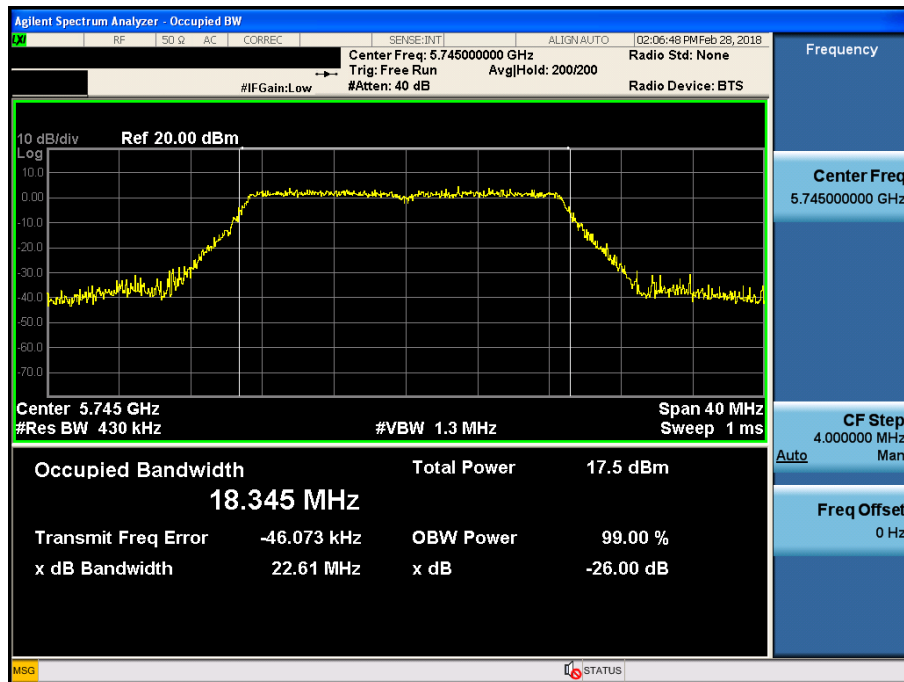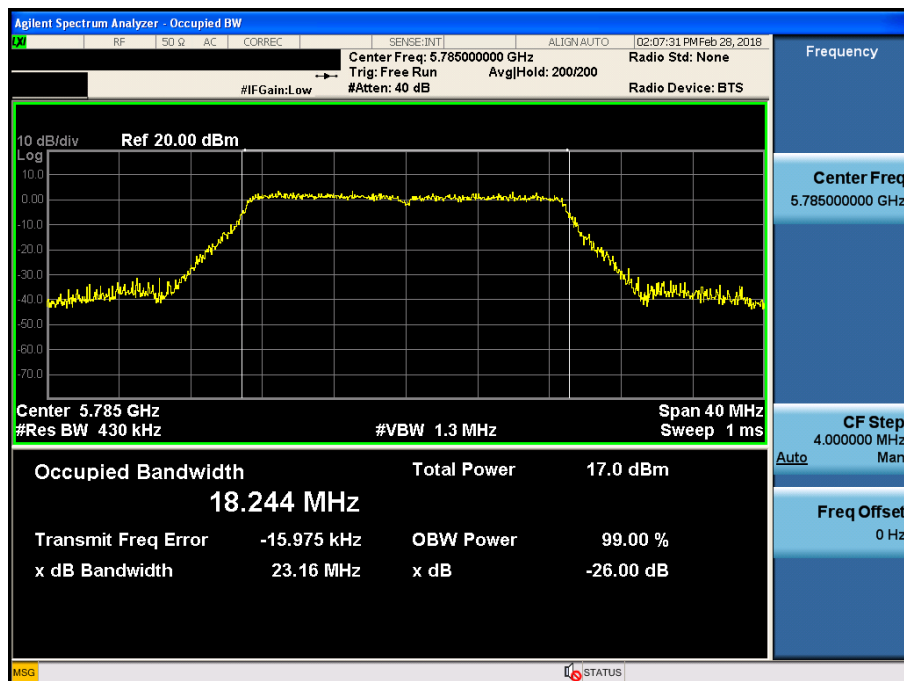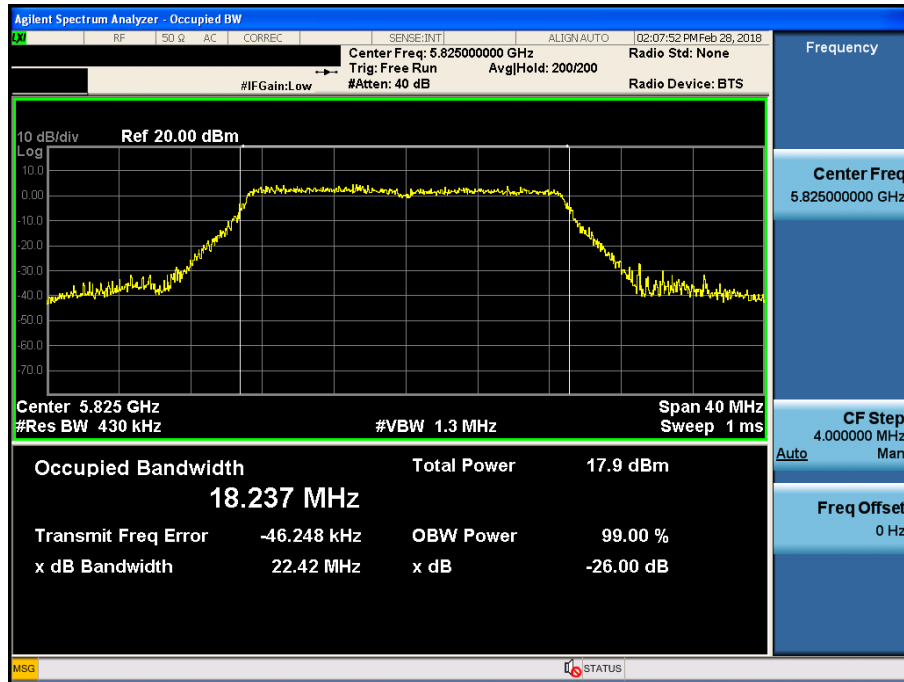## Occupied Bandwidth 99%   Test Mode: 802.11n(HT40) & Ch.38

Occupied Bandwidth 99%   Test Mode: 802.11n(HT40) & Ch.46

Occupied Bandwidth 99%   Test Mode: 802.11n(HT40) & Ch.54

Occupied Bandwidth 99%   Test Mode: 802.11n(HT40) & Ch.62

Occupied Bandwidth 99%   Test Mode: 802.11n(HT40)   &   Ch.102

Occupied Bandwidth 99%   Test Mode: 802.11n(HT40)   &   Ch.110

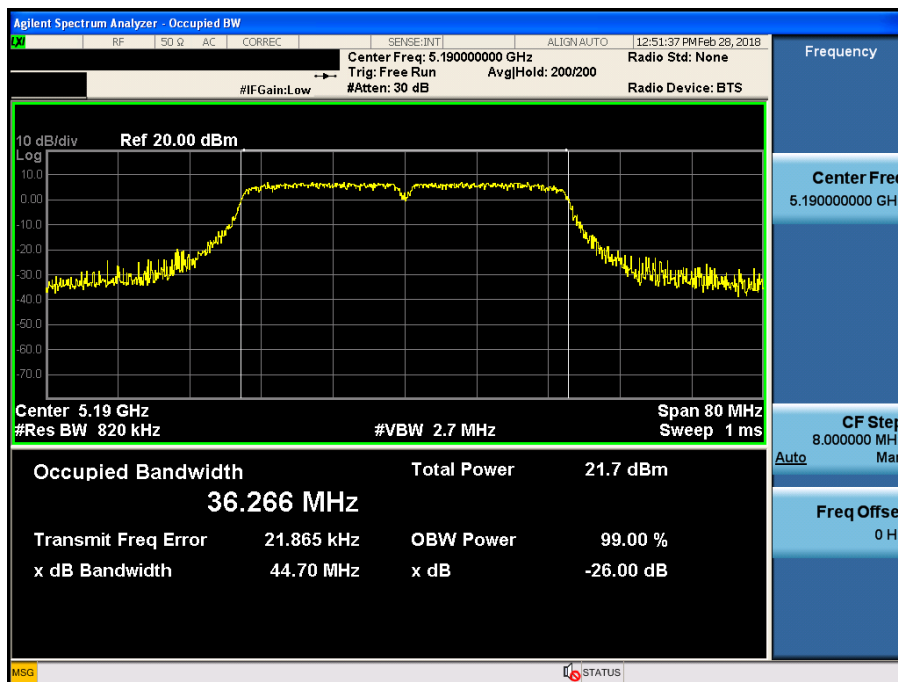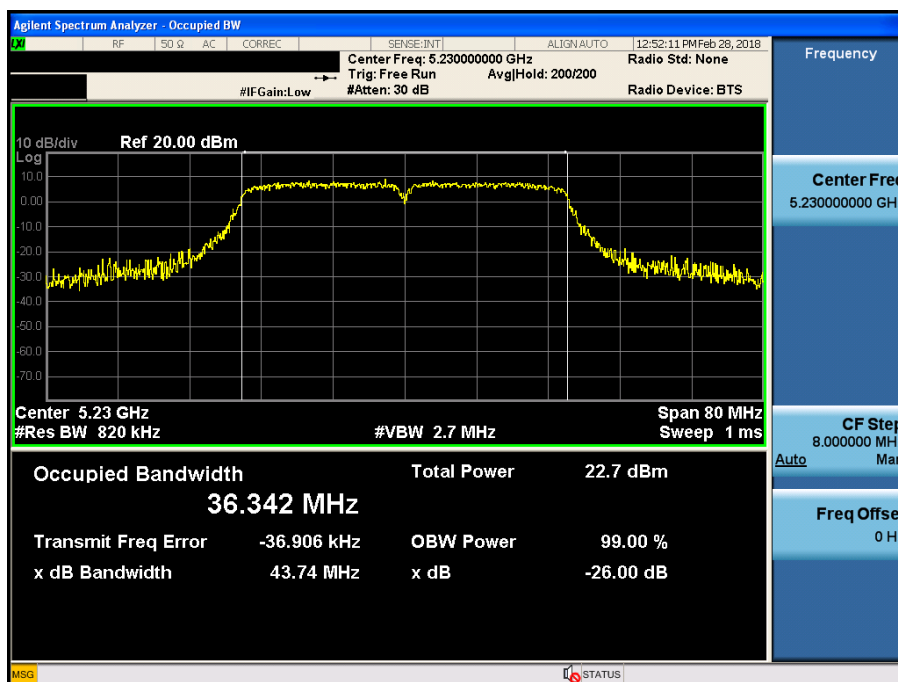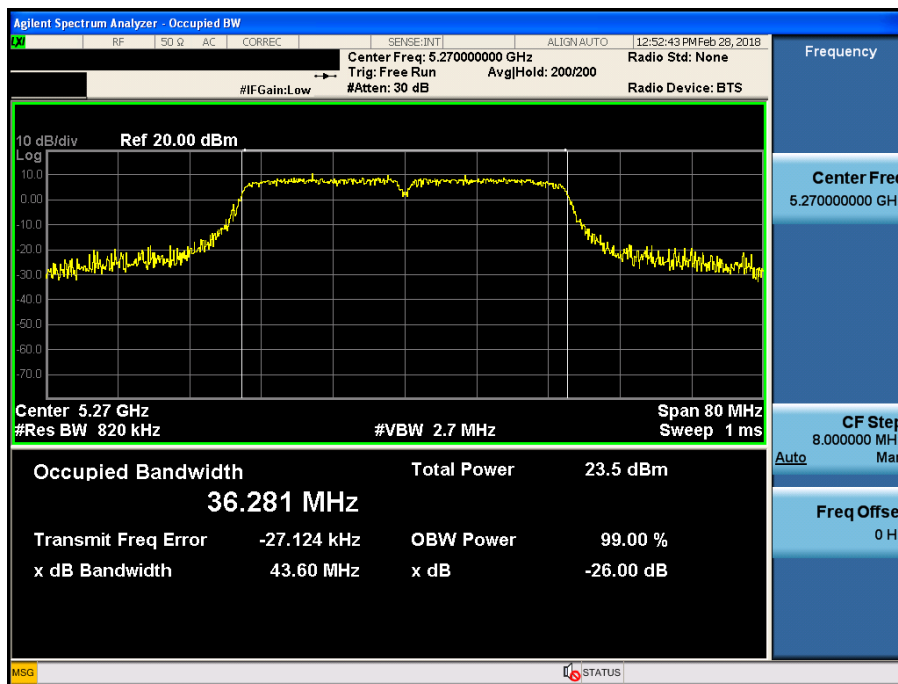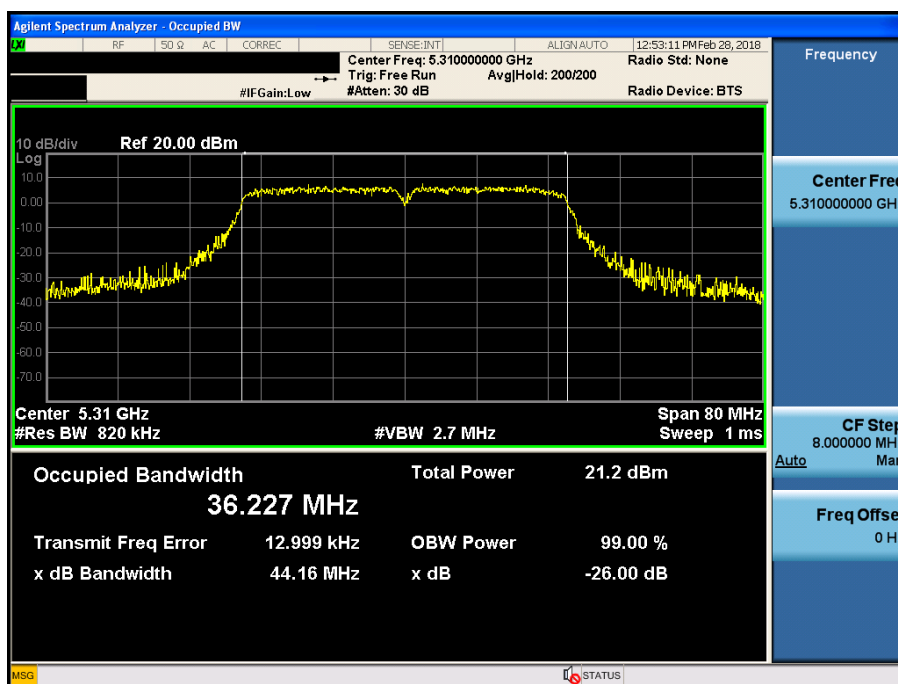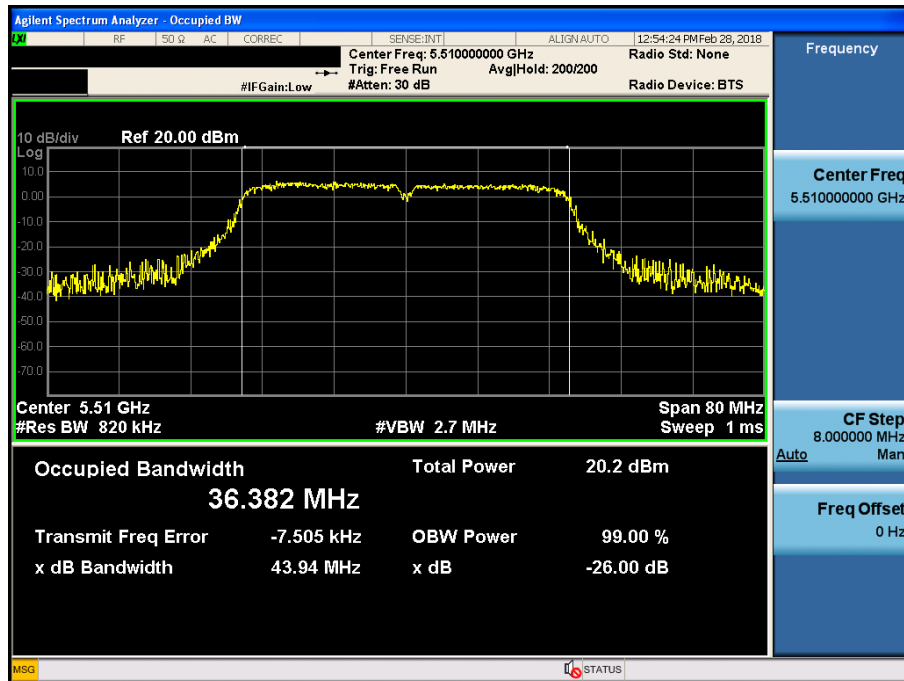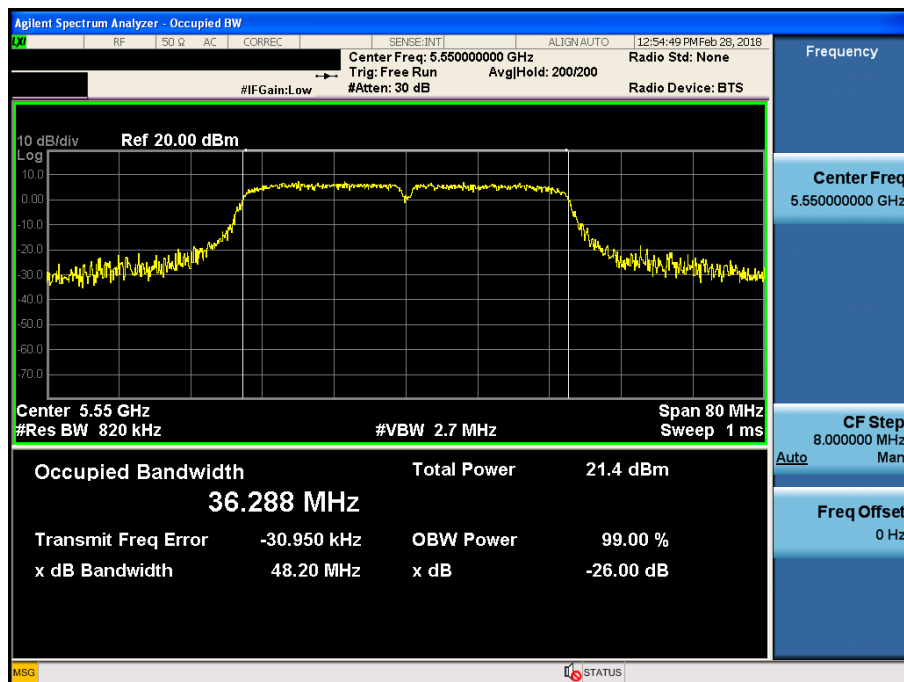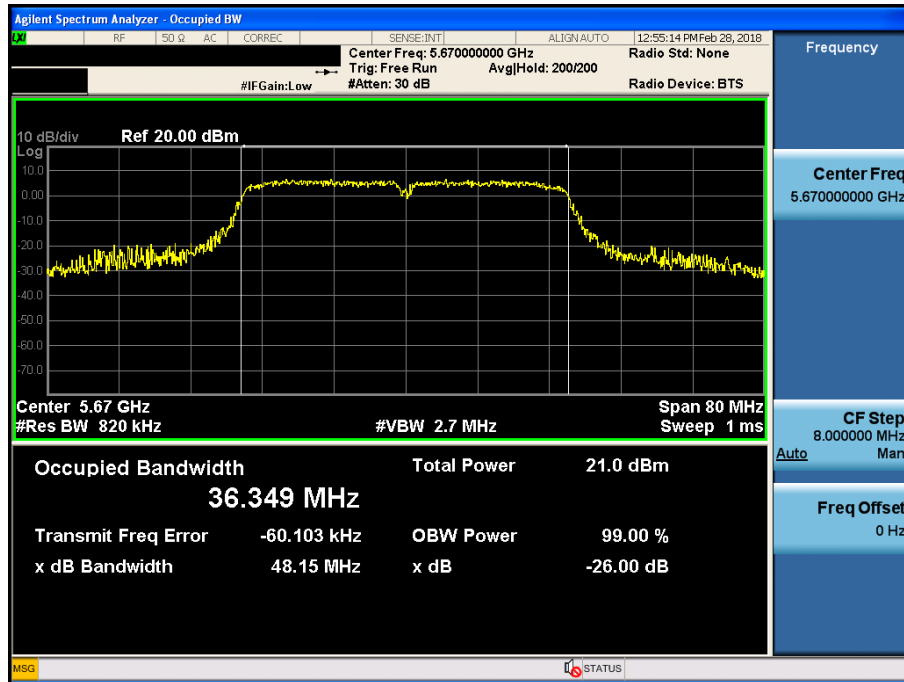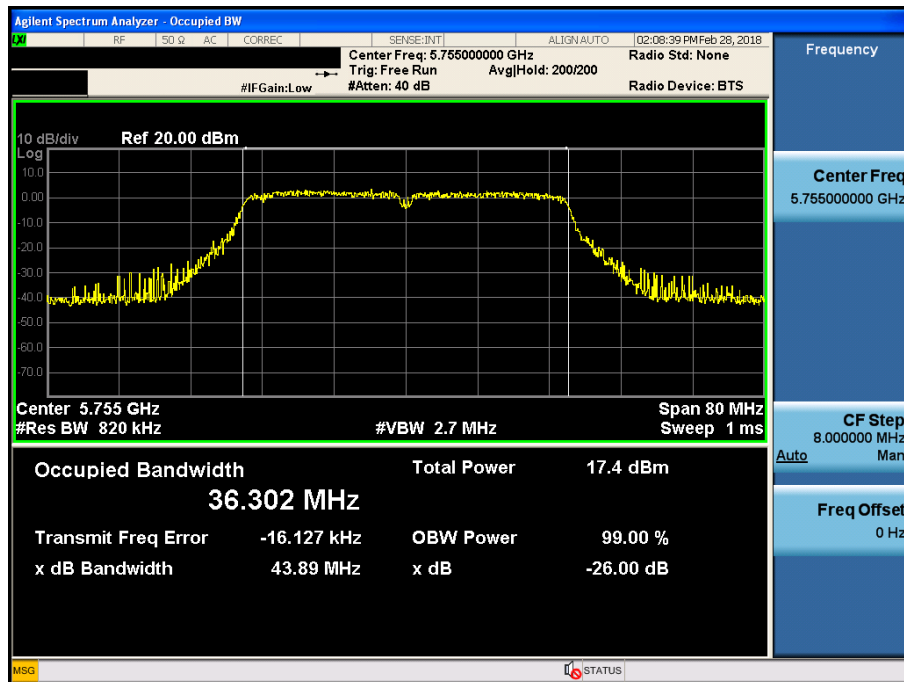## Occupied Bandwidth 99%   Test Mode: 802.11n(HT40)   &   Ch.134
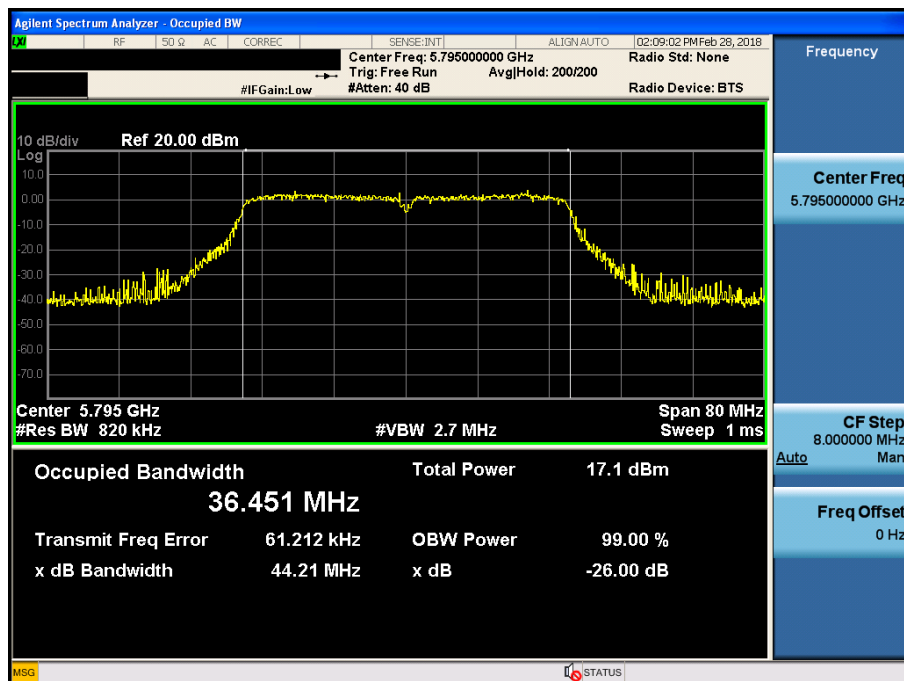
Occupied Bandwidth 99%   Test Mode: 802.11n(HT40)   &   Ch.151

Occupied Bandwidth 99%   Test Mode: 802.11n(HT40)   &   Ch.159

8. 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	17/07/12	18/07/12	MY46471601
Spectrum Analyzer	Agilent Technologies	N9020A	17/09/05	18/09/05	MY46471251
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	MY42110550
Signal Generator	Rohde Schwarz	SMBV100A	17/12/27	18/12/27	255571
Signal Generator	Rohde Schwarz	SMF100A	17/12/27	18/12/27	102341
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
Loop Antenna	ETS	6502	17/07/08	19/07/08	203480
BILOG ANTENNA	Schwarzbeck	VULB 9160	16/08/05	18/08/05	9160-3362
Horn Antenna	ETS-LINDGREN	3117	16/05/03	18/05/03	00140394
Horn Antenna	A.H.Systems Inc.	SAS-574	17/07/31	19/07/31	155
PreAmplifier	Agilent	8449B	17/09/05	18/09/05	3008A02108
PreAmplifier	TSJ	MLA-010K01-B01-27	17/03/06	18/03/06	1844539
			18/03/05	19/03/05	
PreAmplifier	A.H.Systems Inc.	PAM-1840VH	17/09/17	18/09/17	163
EMI Test Receiver	Rohde Schwarz	ESR7	17/02/16	18/02/16	101061
			18/02/13	19/02/13	
High-pass filter	Wainwright	WHNX6-6320-8000-26500-40CC	17/09/05	18/09/05	1
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A MA2411B	17/12/27	18/12/27	1338004 1306053
Attenuator	SMAJK	SMAJK-50-10	17/09/06	18/09/06	2-50-10
EMI TEST RECEIVER	Rohde Schwarz	ESCI7	17/02/16	18/02/16	100910
			18/02/12	19/02/12	
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	17/09/29	18/09/29	101333
LISN	SCHWARZBECK	NNLK 8121	17/04/03 18/03/20	18/04/03 19/03/20	06183
CABLE	DTNC	CABLE	NA	NA	RF-61
CABLE	DTNC	CABLE	NA	NA	RF-82
CABLE	DTNC	CABLE	NA	NA	C-016-4
CABLE	DTNC	CABLE	NA	NA	RF-81
CABLE	Radiall	TESTPRO3	NA	NA	RF-74
CABLE	HUBER+SUHNER	SUCOFLEX103	NA	NA	RF-75
CABLE	Radiall	TESTPRO3	NA	NA	RF-66

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

APPENDIX I

Conducted Test set up Diagram

▪ **Conducted Measurement**
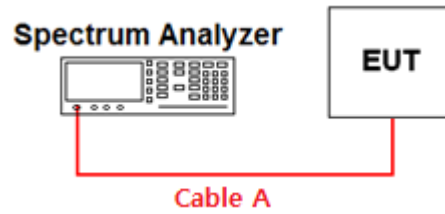
APPENDIX II

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 ≥ EBW if possible; otherwise, set RBW to the largest available value.
3. Set VBW ≥ 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 ≤ 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:**

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+OffTime [ms]	x		
802.11a	6Mbps	5180	1.36	1.56	0.87	0.60	36.76
802.11n (HT20)	MCS0	5180	1.27	1.47	0.86	0.64	39.37
802.11n (HT40)	MCS0	5190	0.63	0.83	0.76	1.20	79.37

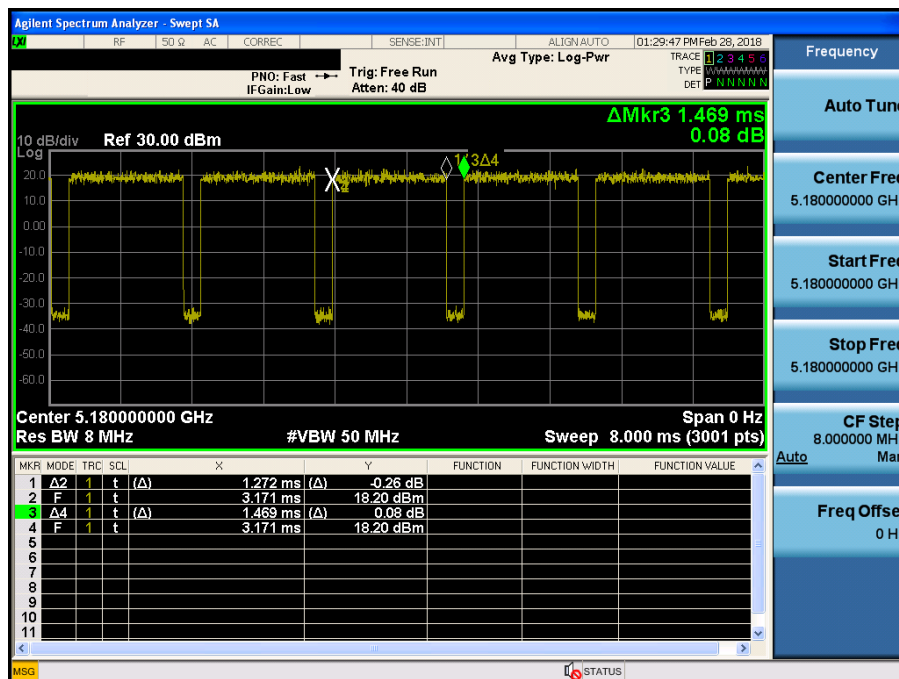**Duty Cycle** Test Mode: 802.11a & Ch.36
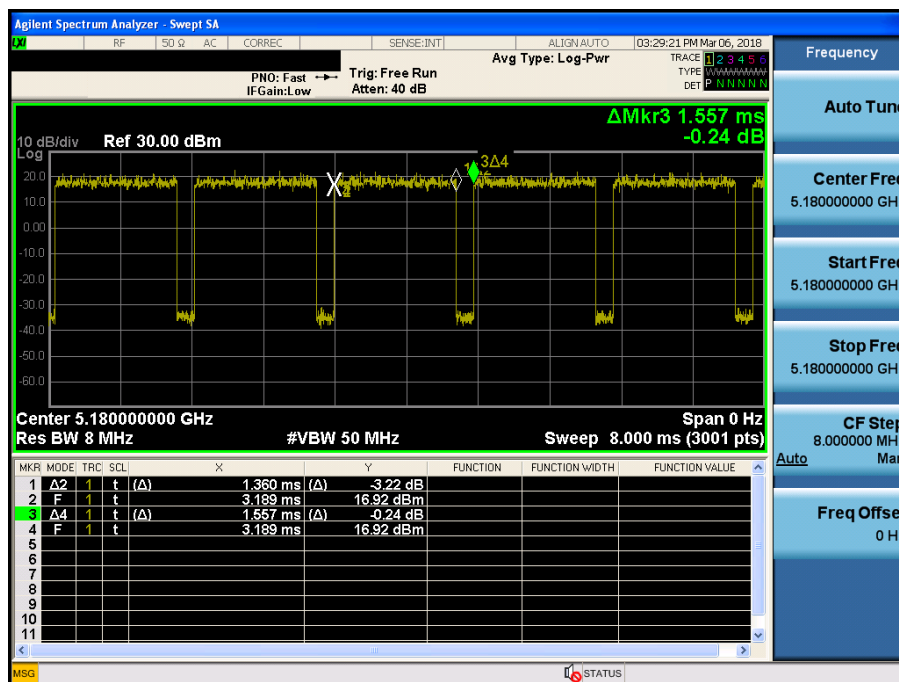
Duty Cycle Test Mode: 802.11n(HT20) & Ch.36

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

APPENDIX III

Unwanted Emissions (Radiated) Test Plot
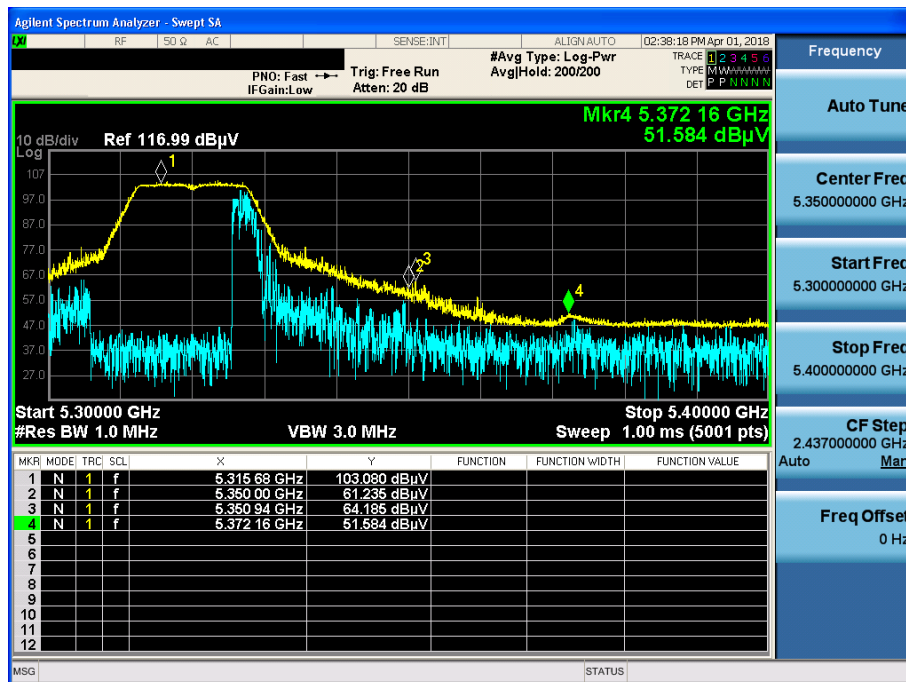
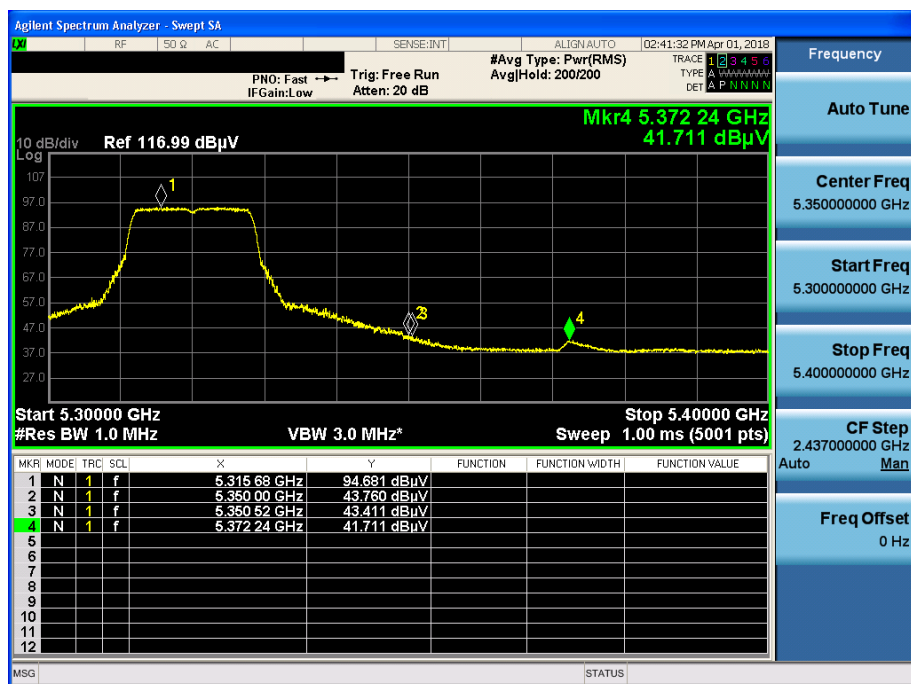**802.11a   &   U-NII 1   &   Ch.36   &   Y axis   &   Hor**   **Detector Mode : PK**

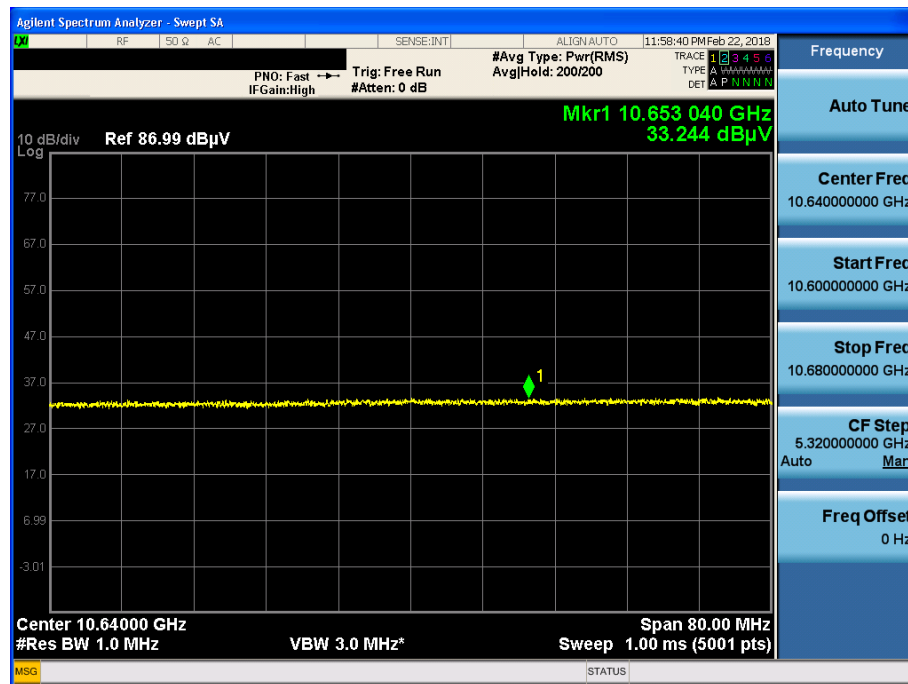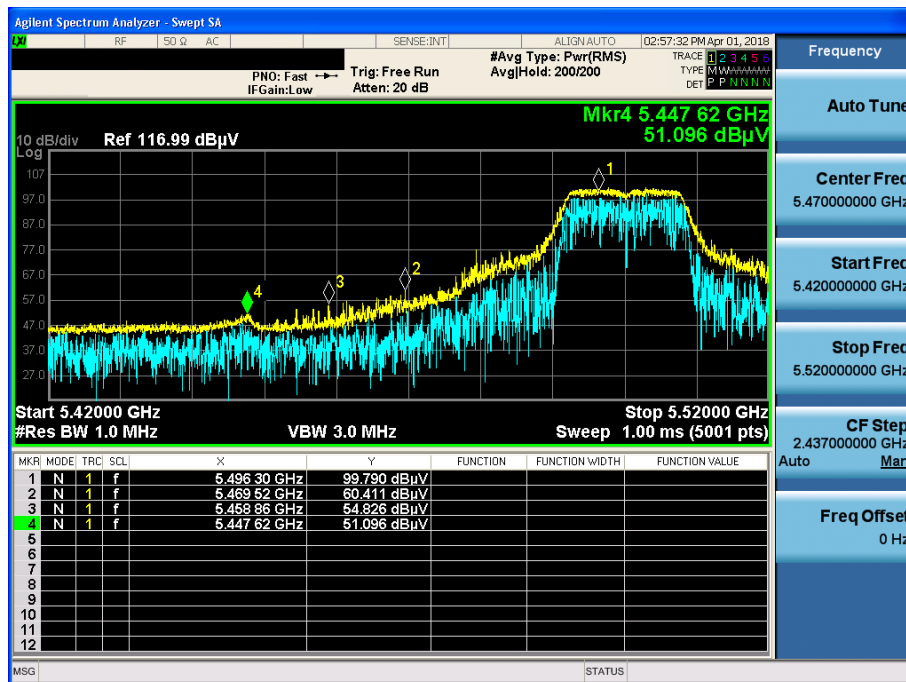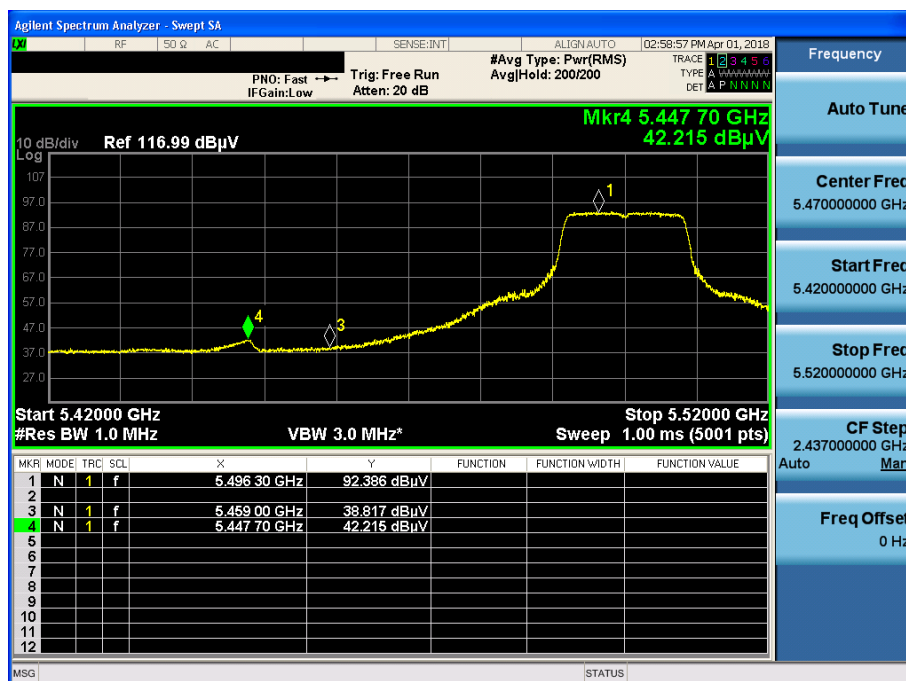**802.11a   &   U-NII 1   &   Ch.36   &   Y axis   &   Hor**   **Detector Mode : AV**
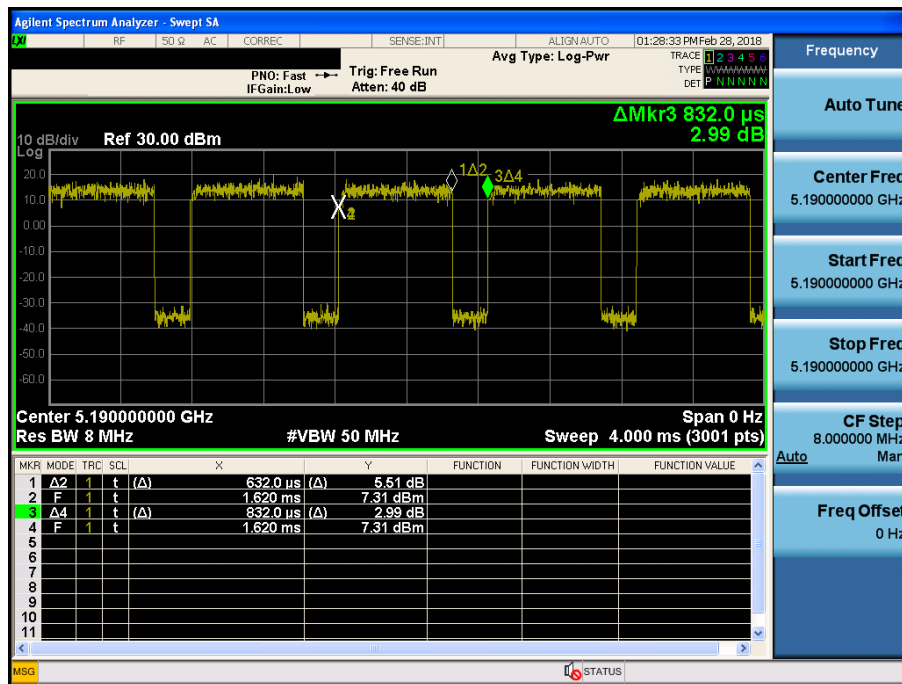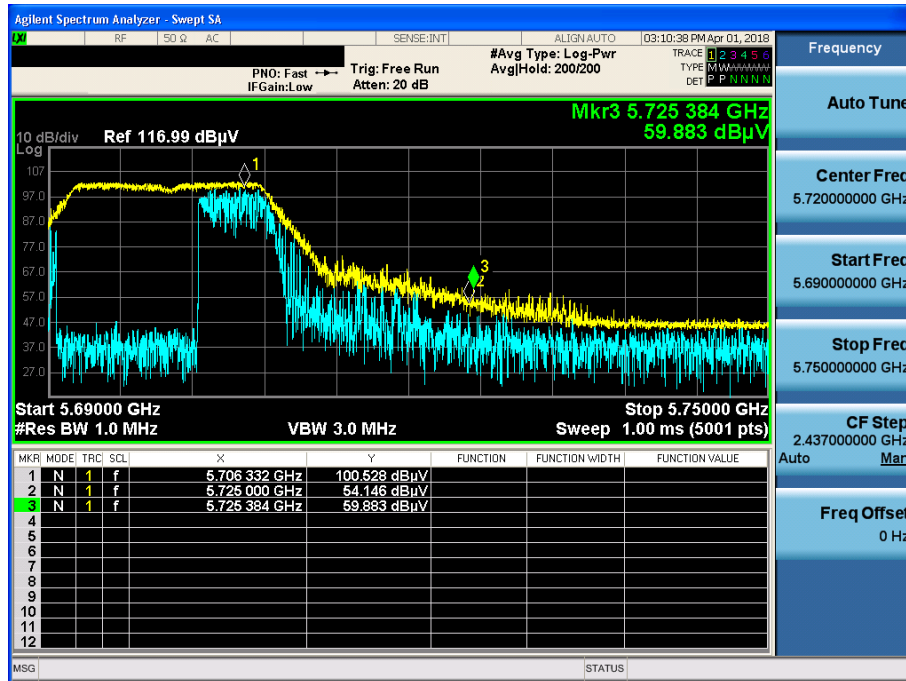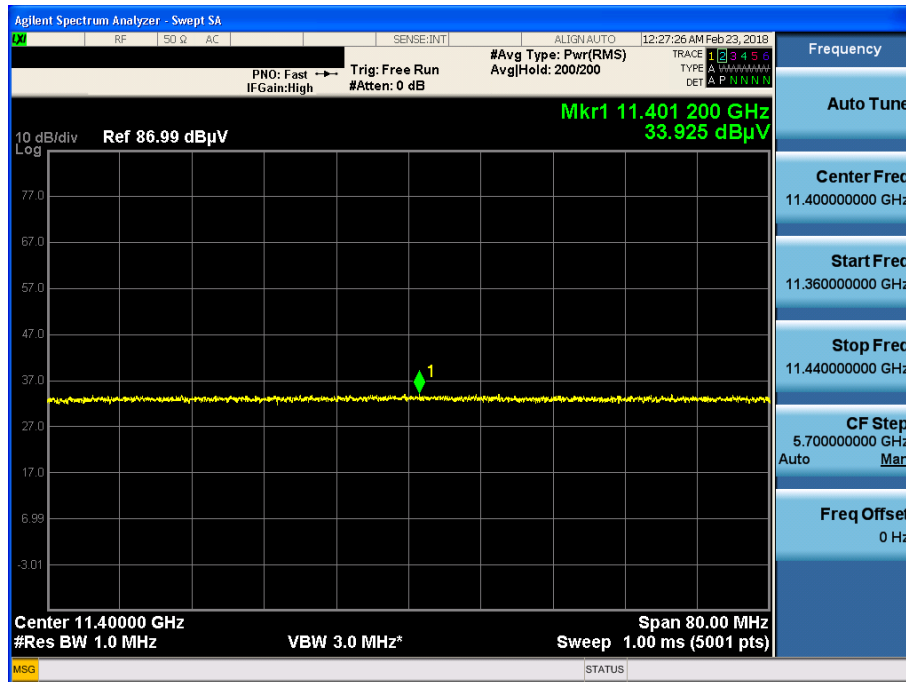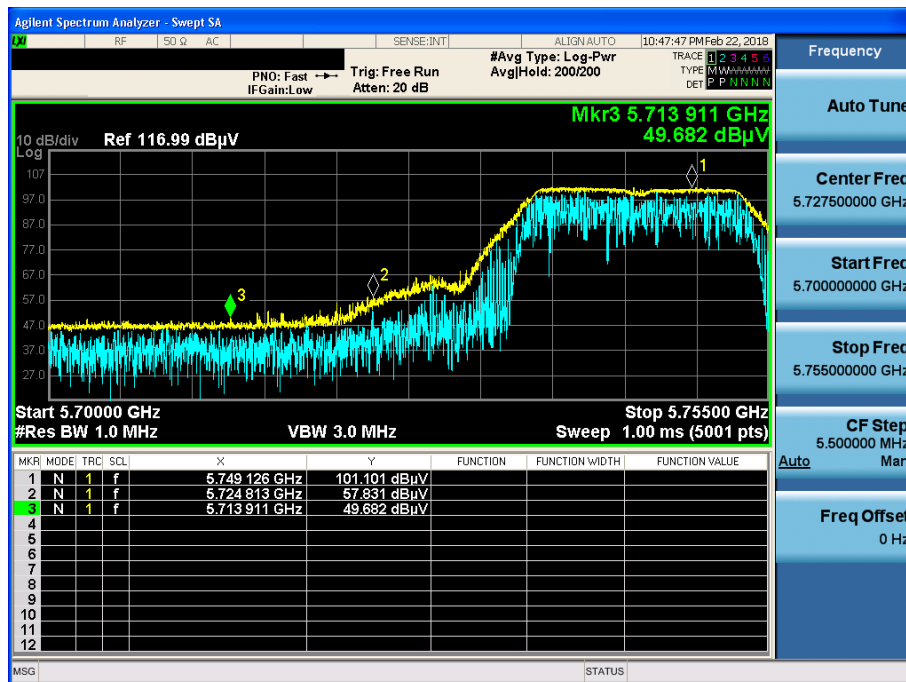
802.11a & U-NII 1 & Ch.48 & X axis & Hor   **Detector Mode : PK**

Dt&C
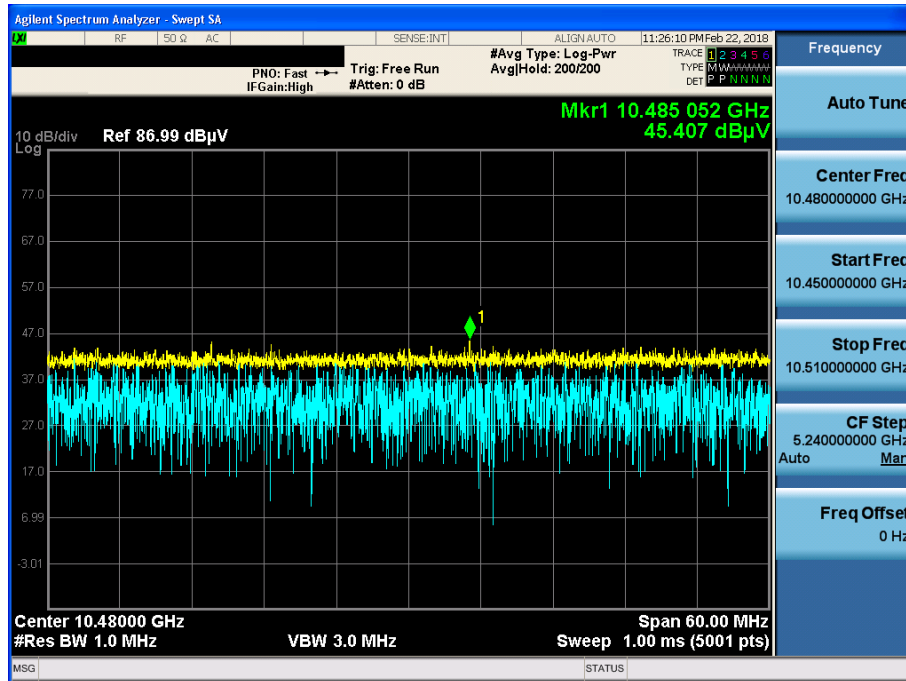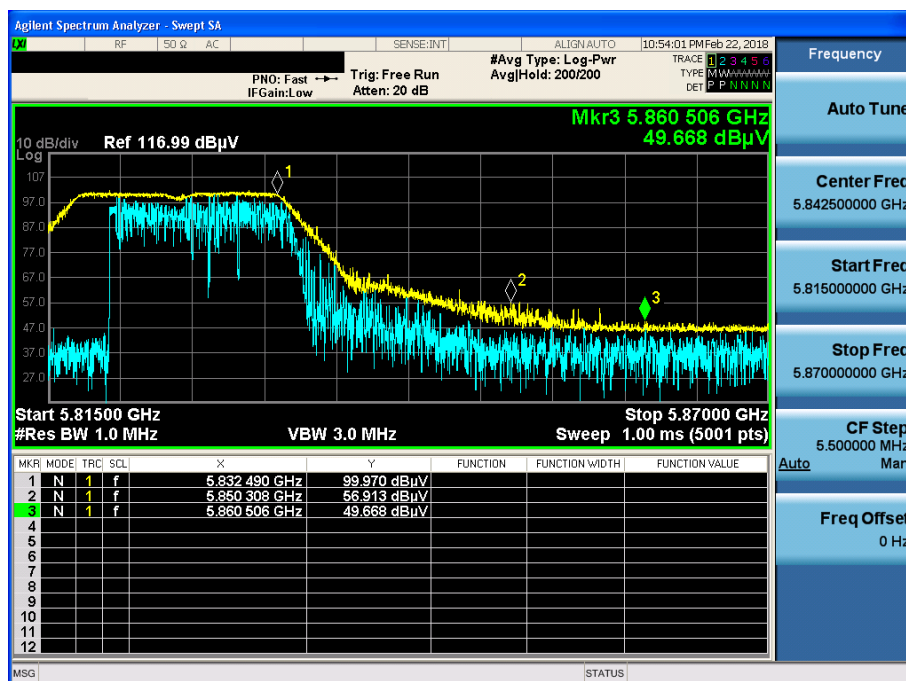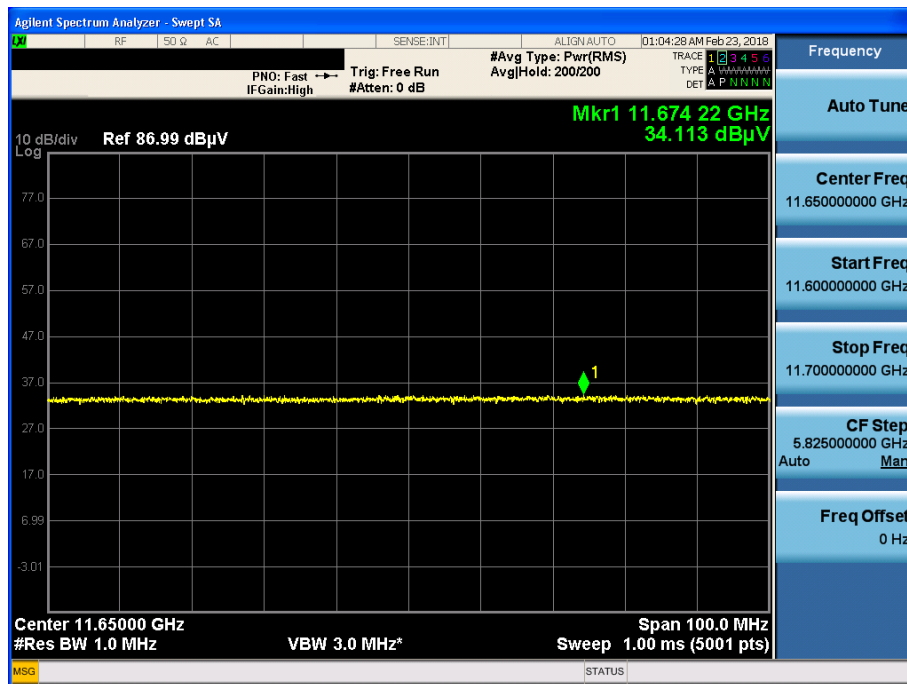
802.11a   &   U-NII 2A   &   Ch.64   &   Y axis   &   Hor   Detector Mode : PK

802.11a   &   U-NII 2A   &   Ch.64   &   Y axis   &   Hor   Detector Mode : AV

802.11a & U-NII 2A & Ch.64 & X axis & Hor **Detector Mode : AV**

802.11a & U-NII 2C & Ch.100 & Z axis & Hor   **Detector Mode : PK**

802.11a & U-NII 2C & Ch.100 & Z axis & Hor   **Detector Mode : AV**

802.11a & U-NII 2C & Ch.140 & Y axis & Hor   **Detector Mode : PK**

802.11a & U-NII 2C & Ch.140 & X 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**
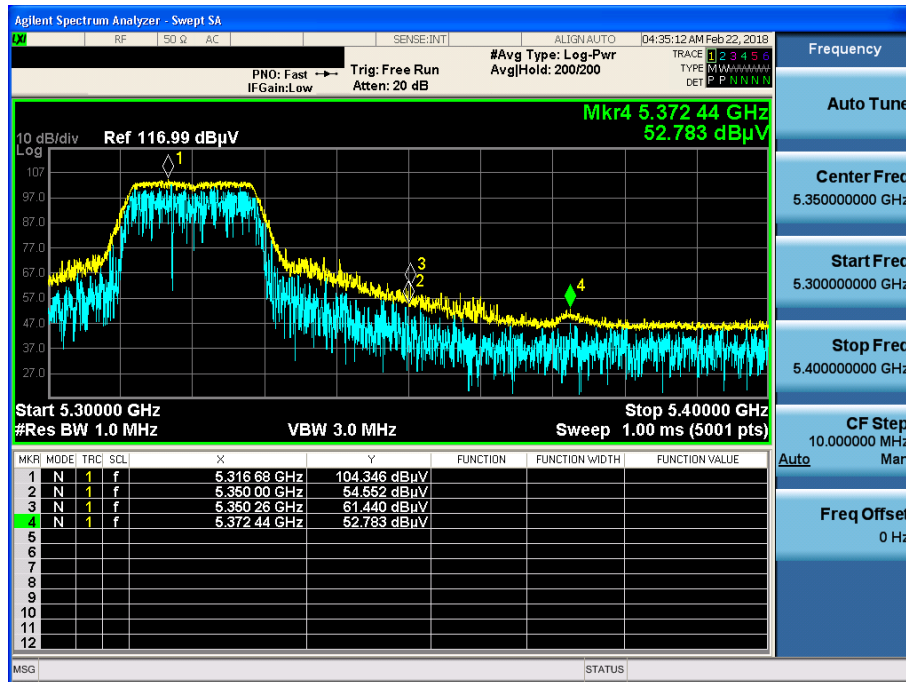
802.11a & U-NII 3 & Ch.165 & Y axis & Hor   **Detector Mode : AV**

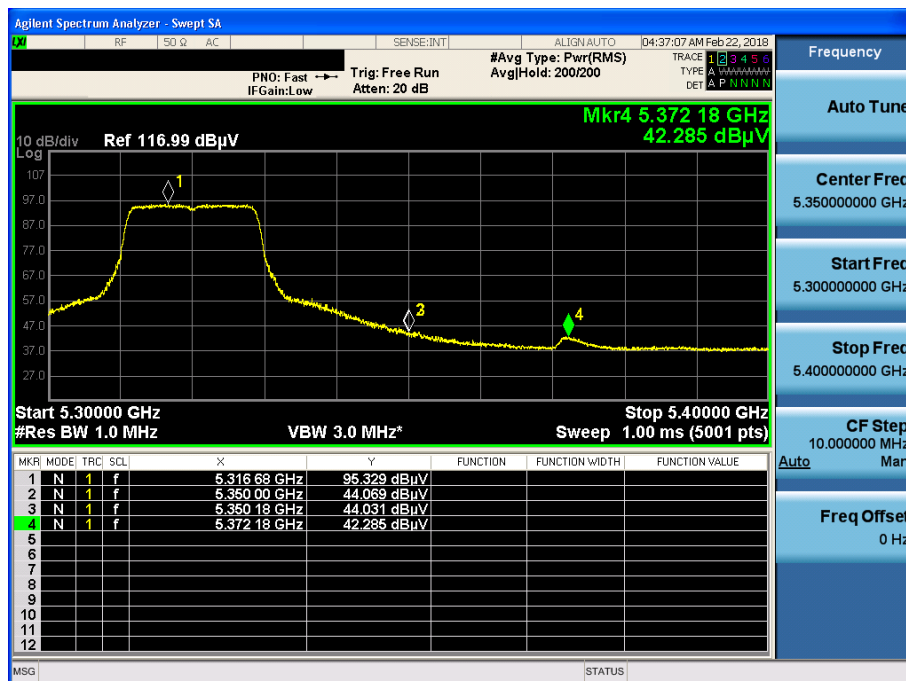**802.11n(HT20)   &   U-NII 1   &   Ch.36   &   Y axis   &   Hor   Detector Mode : PK**

802.11n(HT20)   &   U-NII 1   &   Ch.36   &   Y axis   &   Hor   Detector Mode : AV

802.11n(HT20) & U-NII 1 & Ch.48 & Z axis & Hor   **Detector Mode : PK**
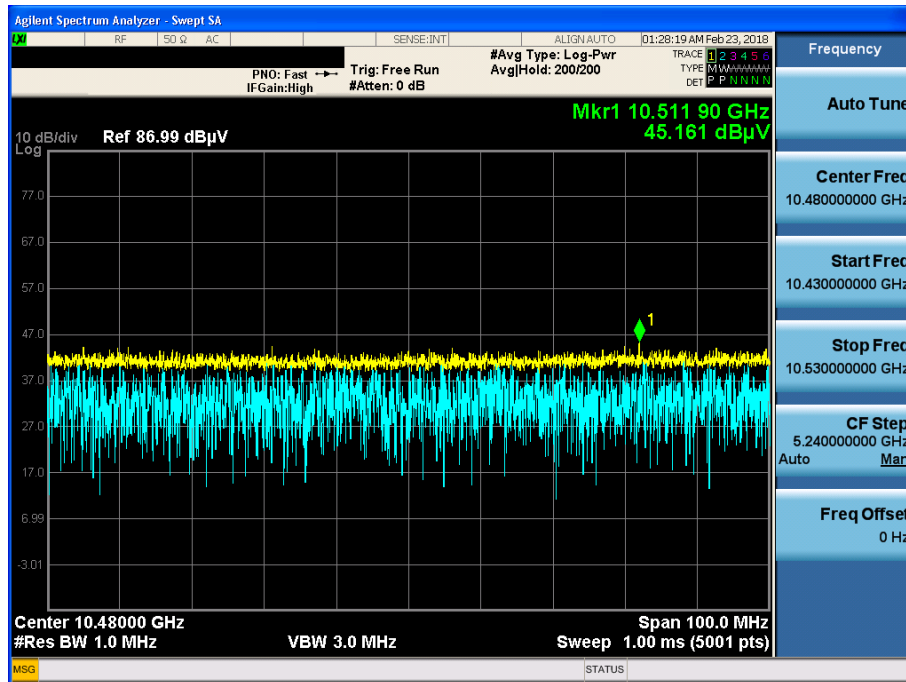
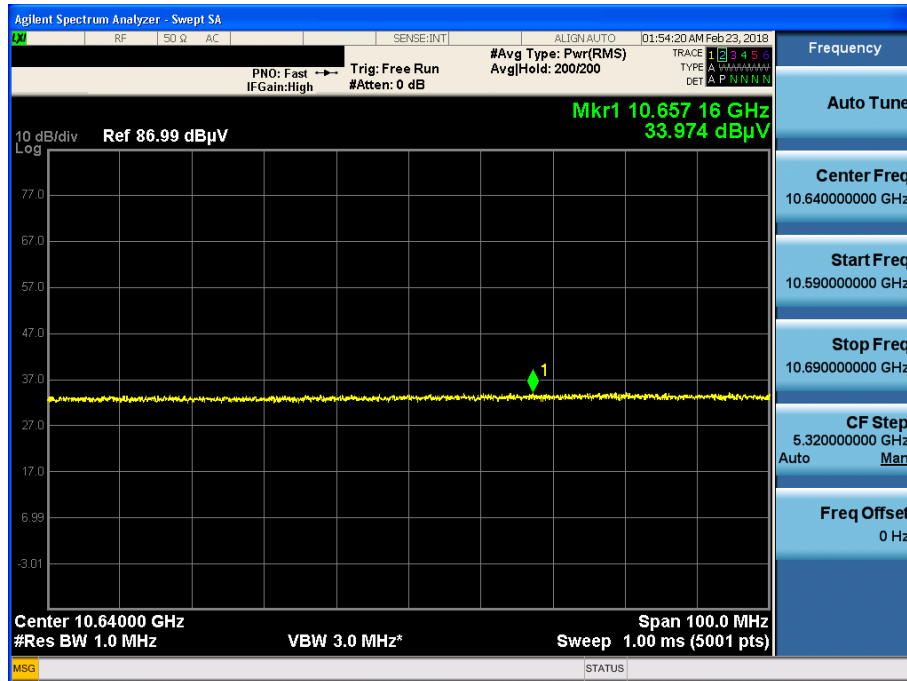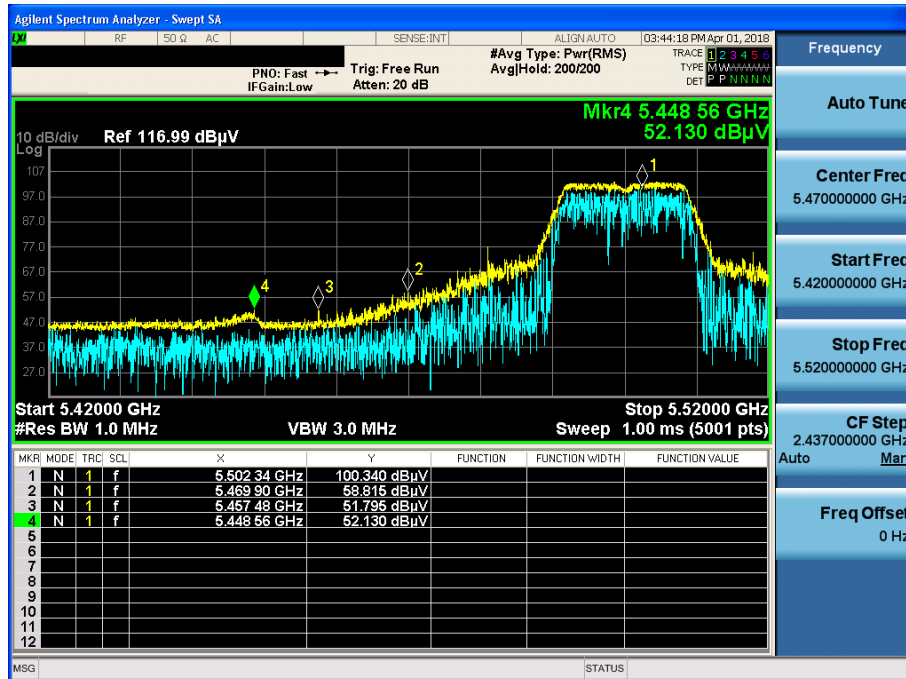**802.11n(HT20) & U-NII 2A & Ch.64 & Y axis & Hor   Detector Mode : PK**

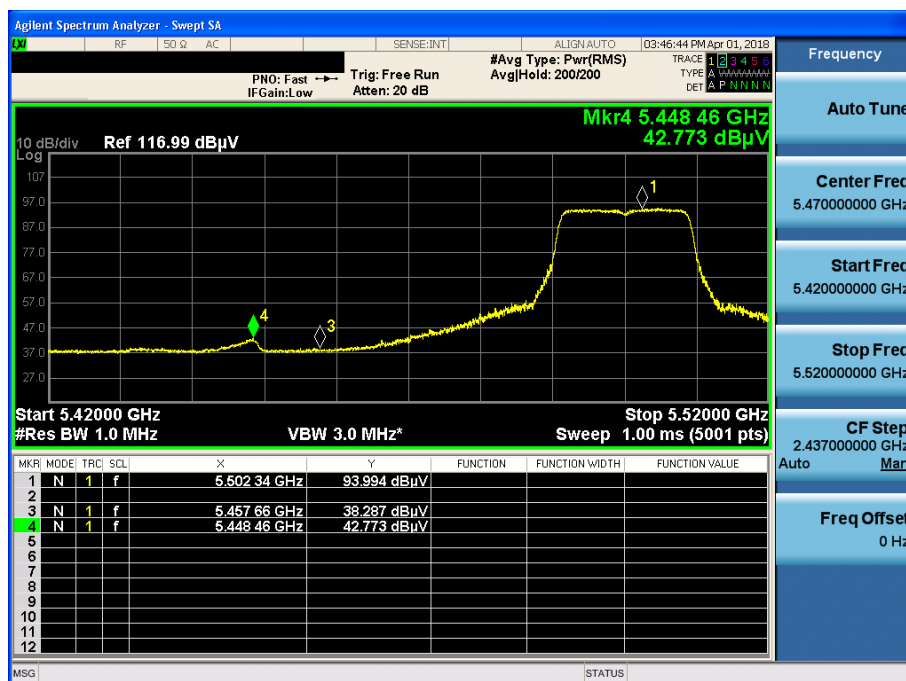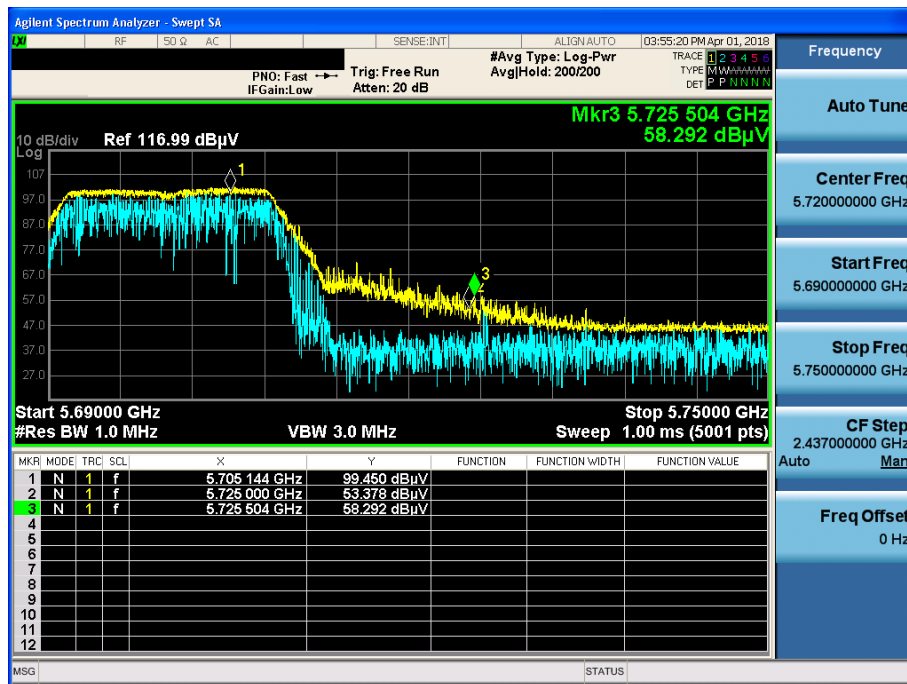**802.11n(HT20) & U-NII 2A & Ch.64 & Y axis & Hor   Detector Mode : AV**

802.11n(HT20)   &   U-NII 2A   &   Ch.64   &   Z axis   &   Hor   **Detector Mode : AV**

802.11n(HT20) & U-NII 2C & Ch.100 & Y axis & Hor   Detector Mode : PK

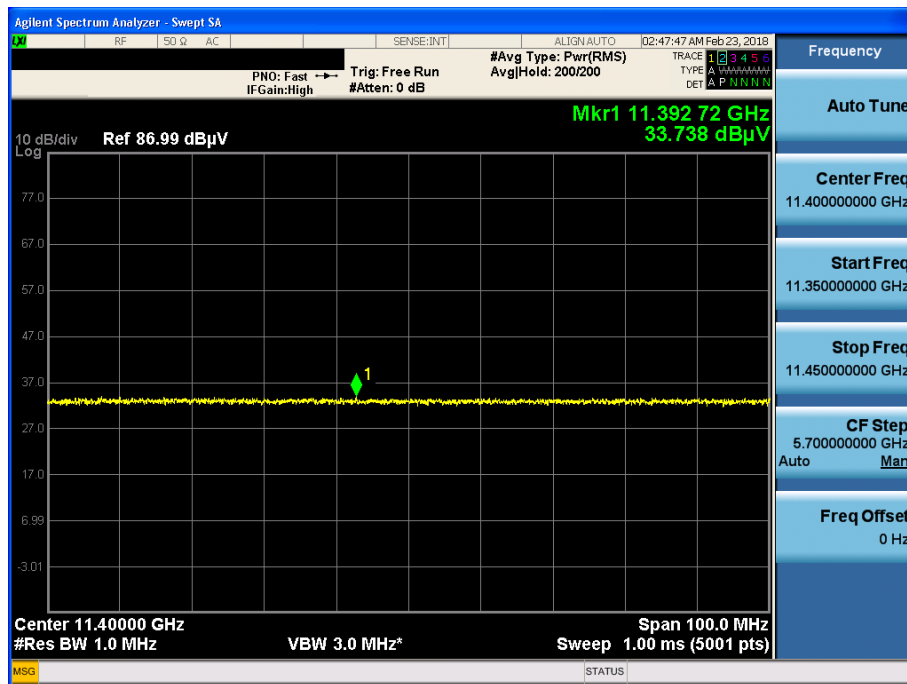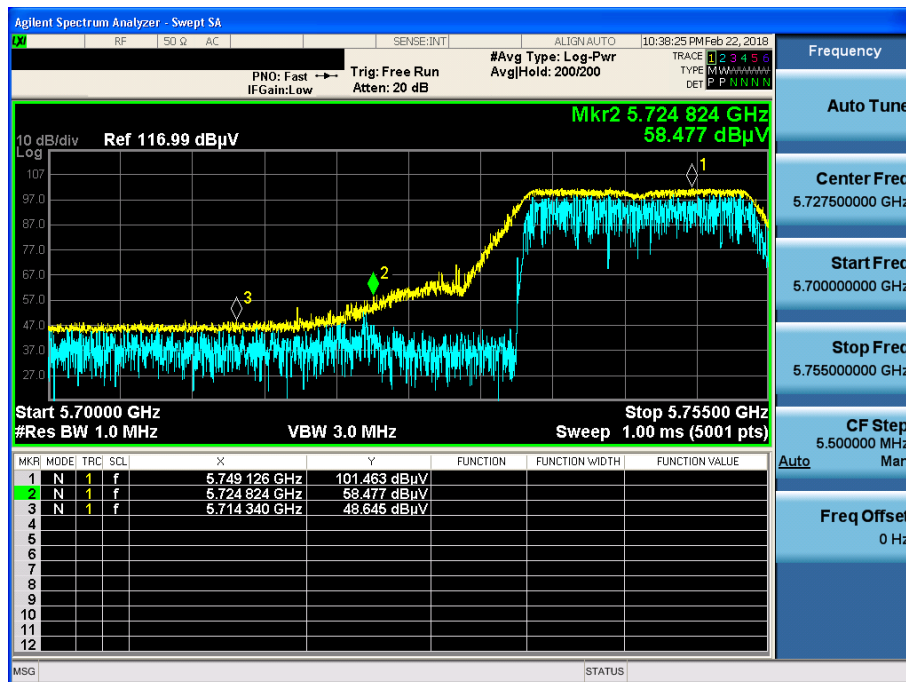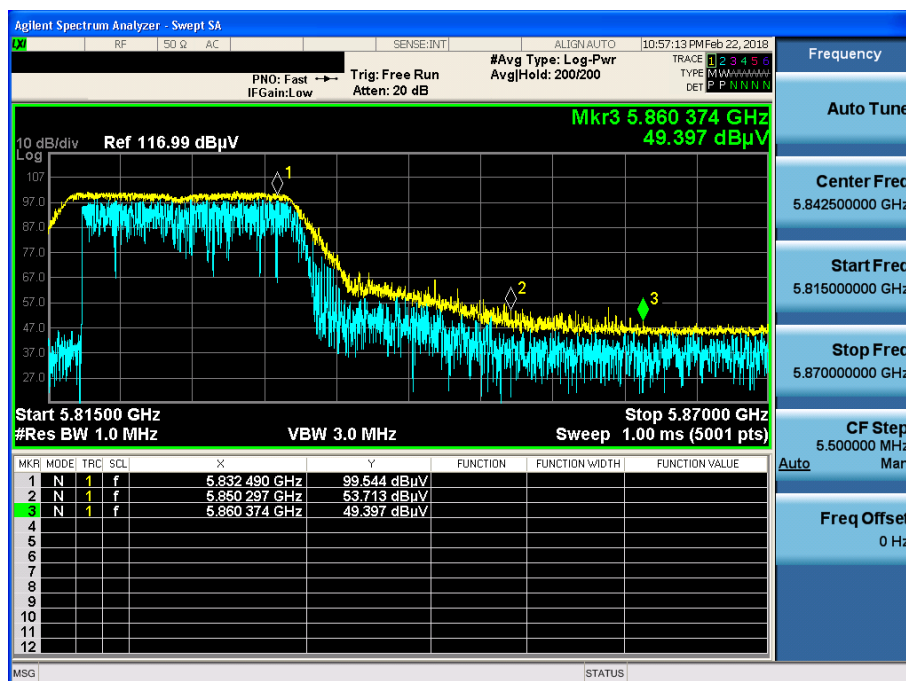**802.11n(HT20) & U-NII 2C & Ch.100 & Y axis & Hor   Detector Mode : AV**

802.11n(HT20) & U-NII 2C & Ch.140 & Y axis & Hor **Detector Mode : PK**

802.11n(HT20)   &   U-NII 2C   &   Ch.140   &   Z axis   &   Ver   **Detector Mode : AV**

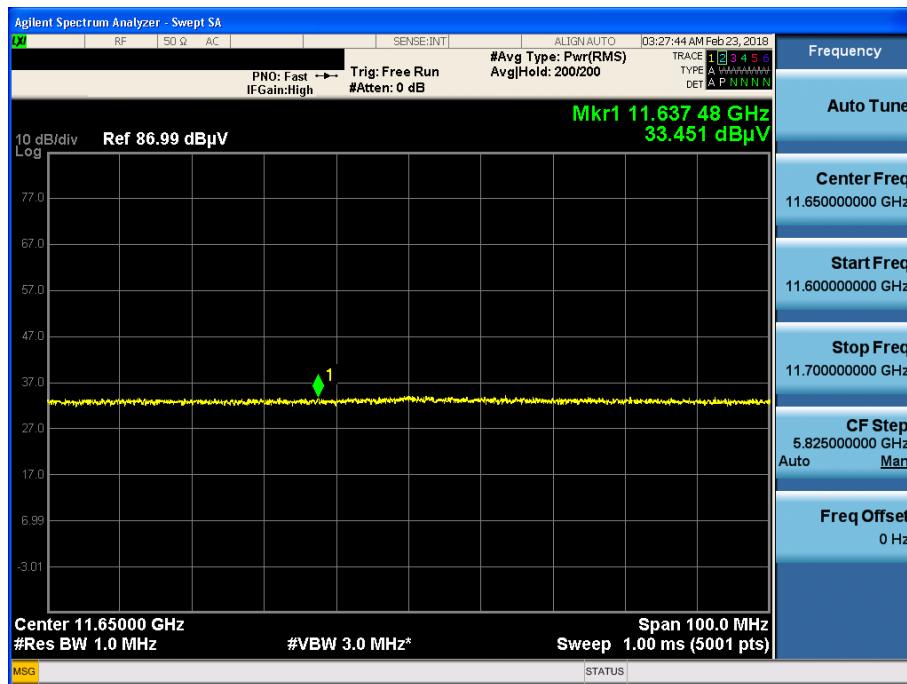**802.11n(HT20) & U-NII 3 & Ch.149 & Y axis & Hor**   **Detector Mode : PK**

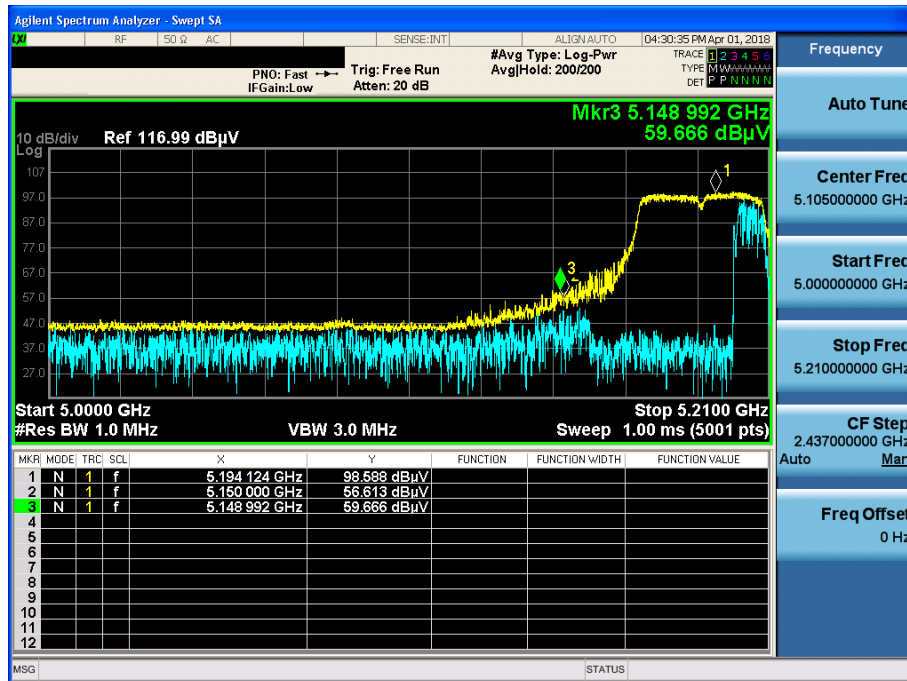**802.11n(HT20) & U-NII 3 & Ch.165 & Y axis & Hor**   **Detector Mode : PK**

802.11n(HT20) & U-NII 3 & Ch.165 & X axis & Ver   **Detector Mode : AV**
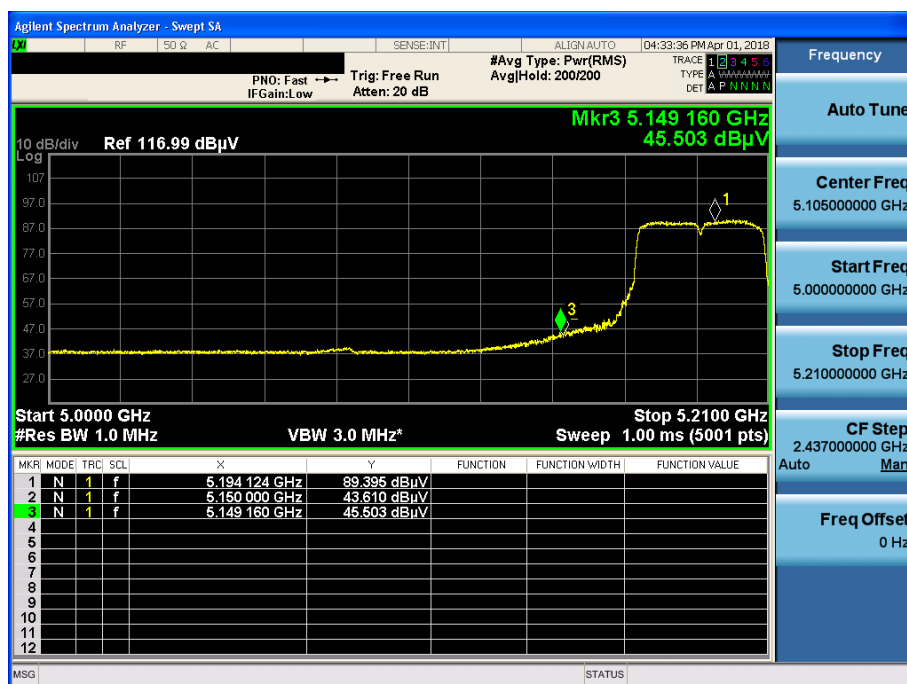
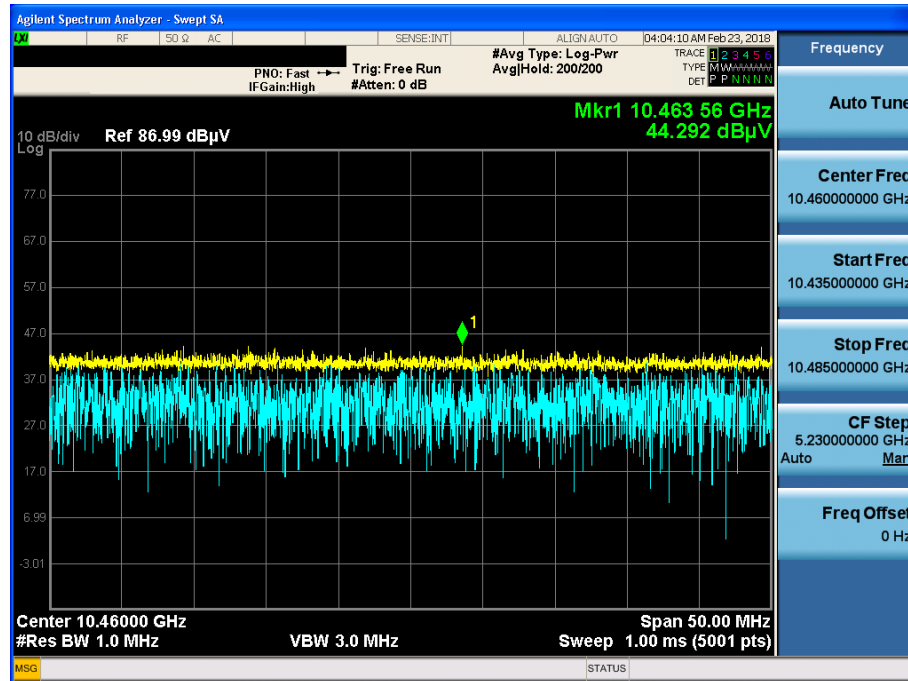**802.11n(HT40) & U-NII 1 & Ch.38 & Y axis & Hor**   **Detector Mode : PK**

802.11n(HT40) & U-NII 1 & Ch.38 & Y axis & Hor   **Detector Mode : AV**

802.11n(HT40) & U-NII 1 & Ch.46 & Y axis & Hor   **Detector Mode : PK**

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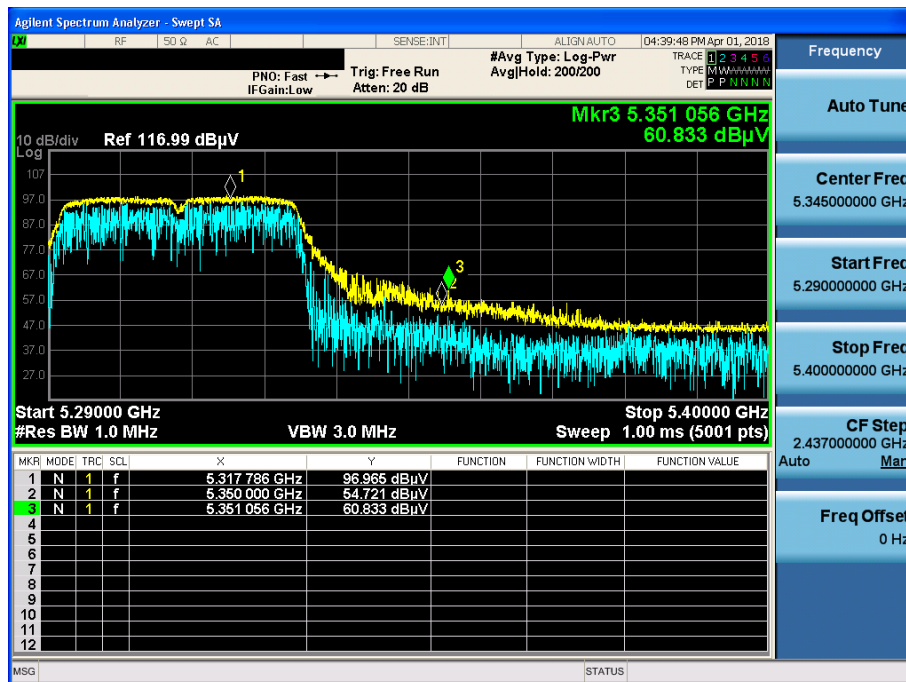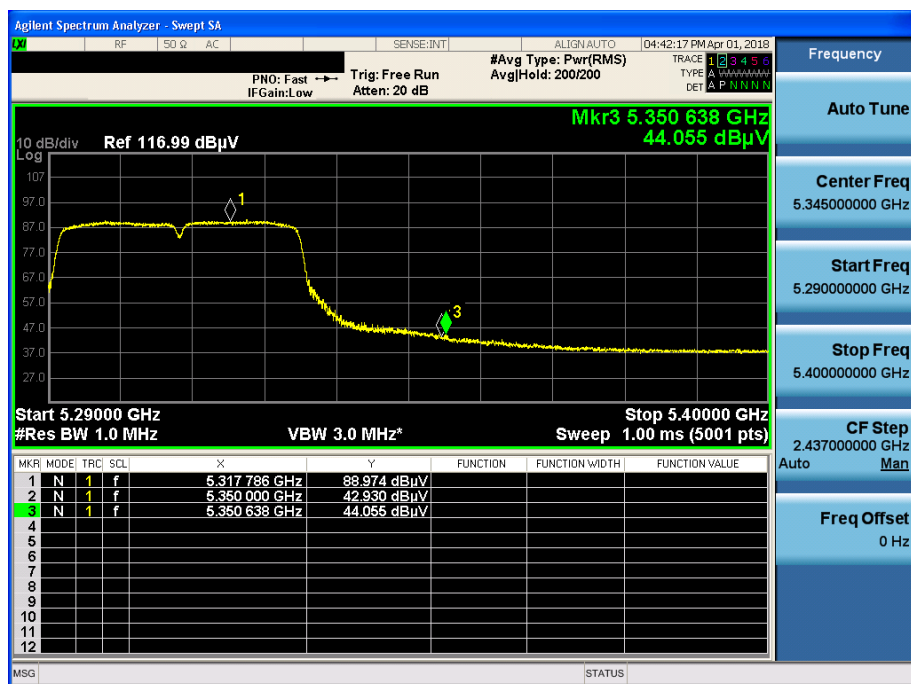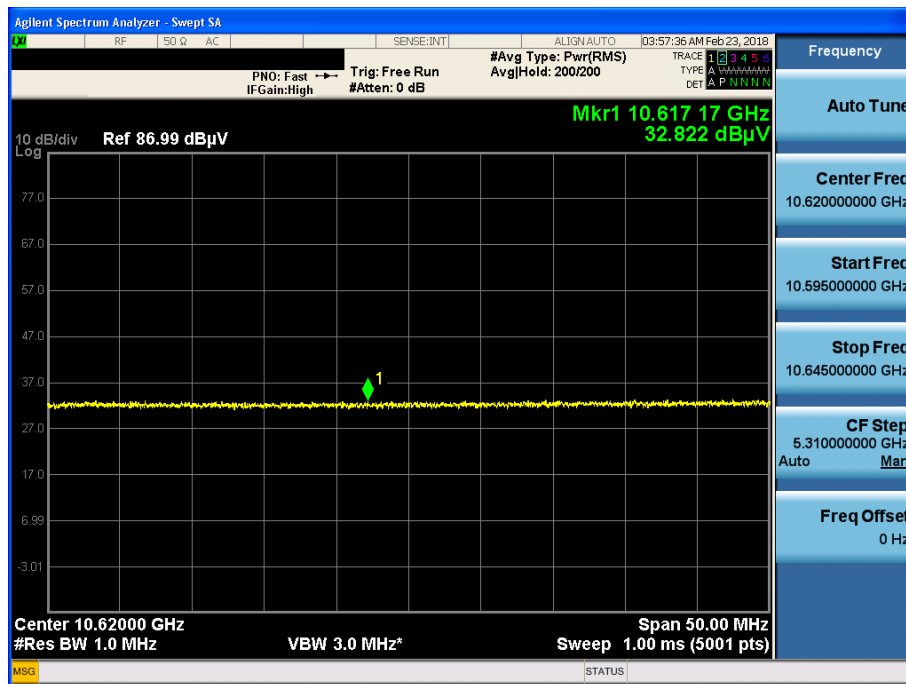

802.11n(HT40) & U-NII 2A & Ch.62 & Y axis & Hor   Detector Mode : AV

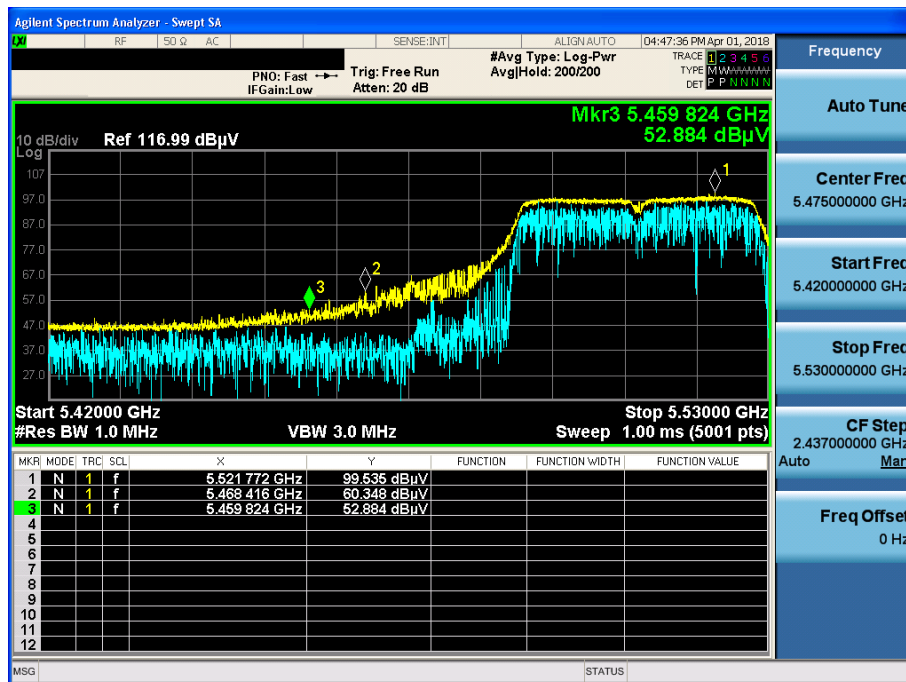**802.11n(HT40) & U-NII 2A & Ch.62 & Y axis & Hor   Detector Mode : AV**
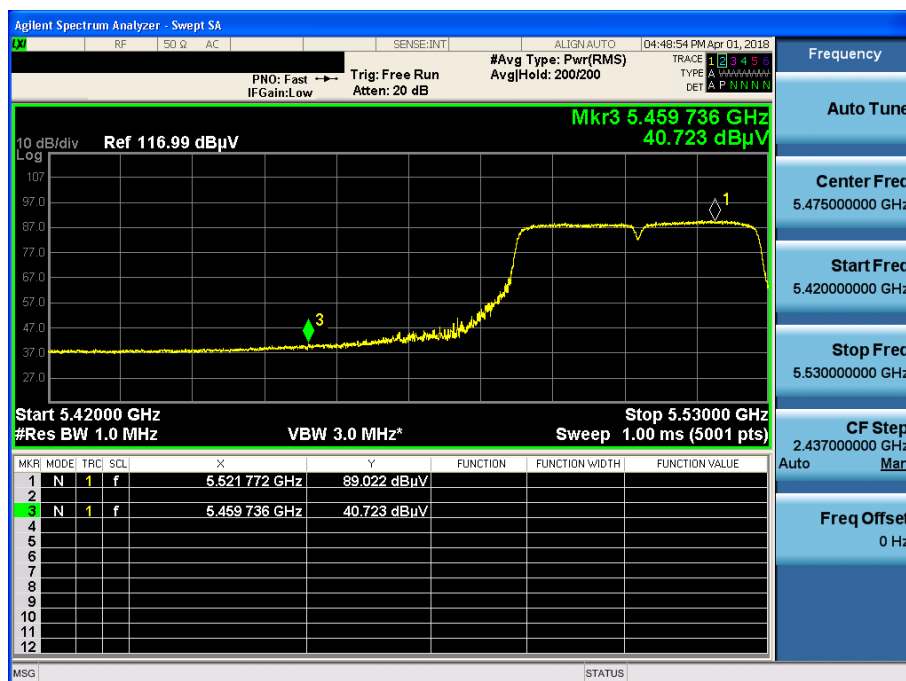
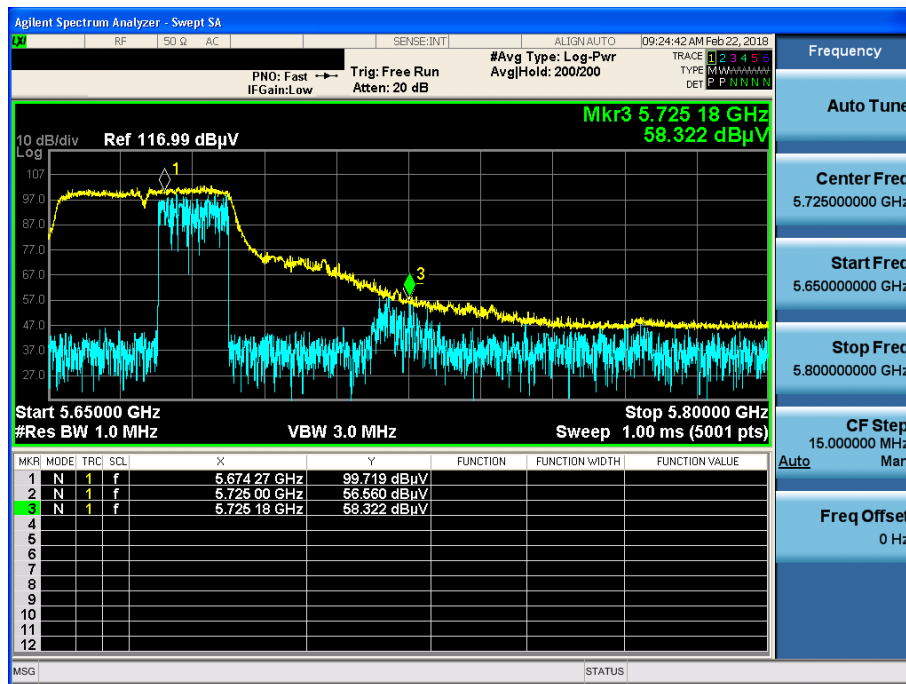**802.11n(HT40)   &   U-NII 2C   &   Ch.102   &   Y axis   &   Hor   Detector Mode : PK**

802.11n(HT40)   &   U-NII 2C   &   Ch.102   &   Y axis   &   Hor   Detector Mode : AV
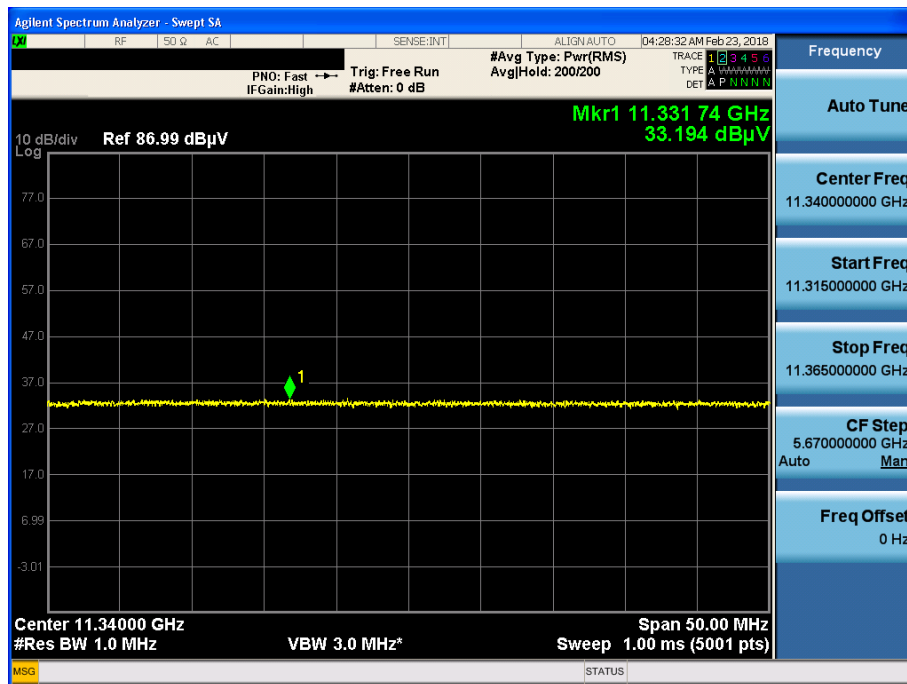
802.11n(HT40) & U-NII 2C & Ch.134 & Y axis & Hor   Detector Mode : PK

802.11n(HT40) & U-NII 2C & Ch.134 & 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 & Hor   **Detector Mode : AV**