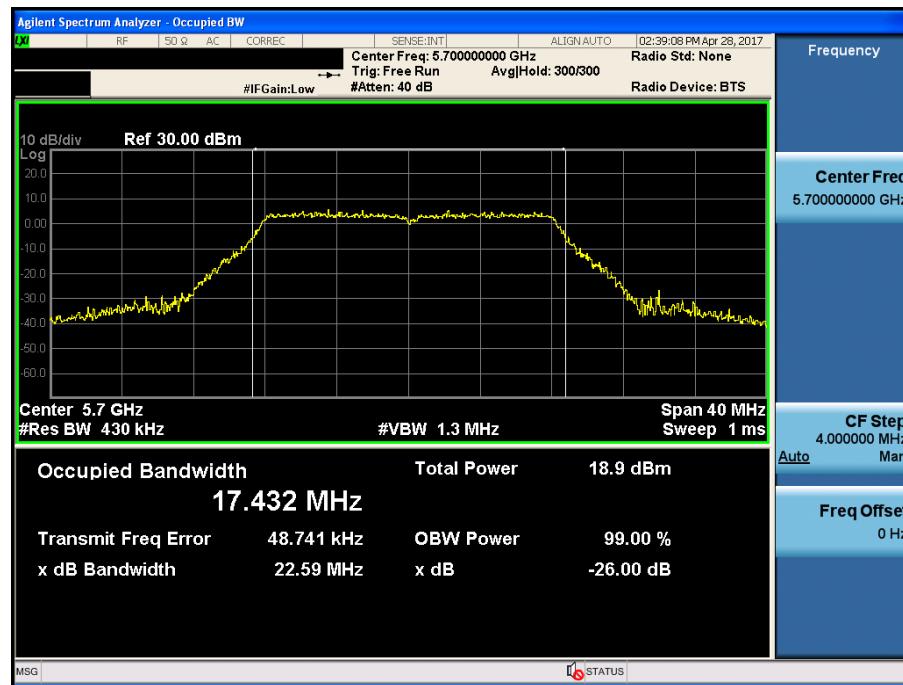


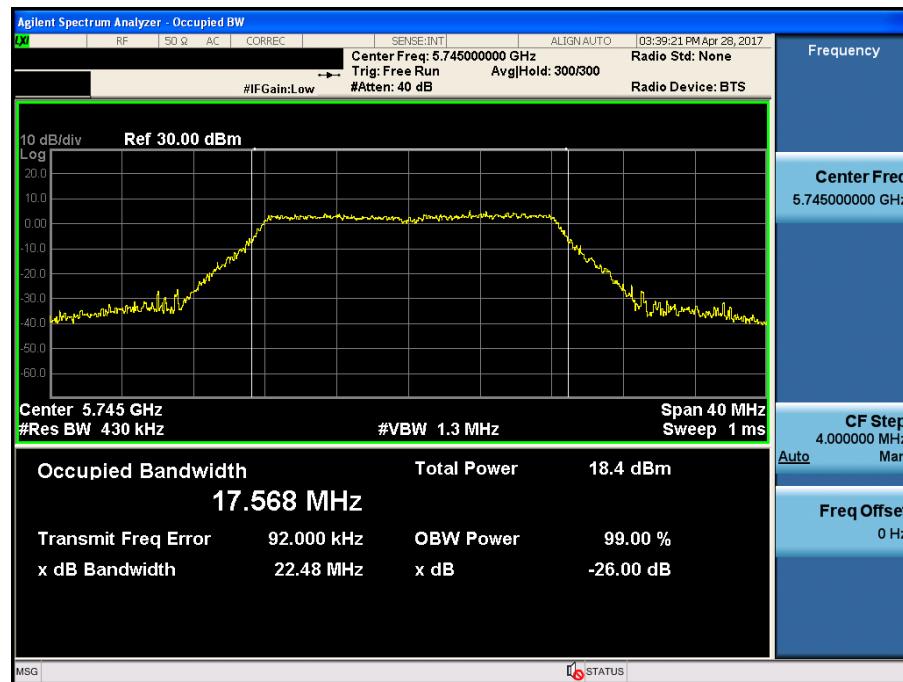
**Occupied Bandwidth 99%**

Test Mode: 802.11a &amp; Ch.140

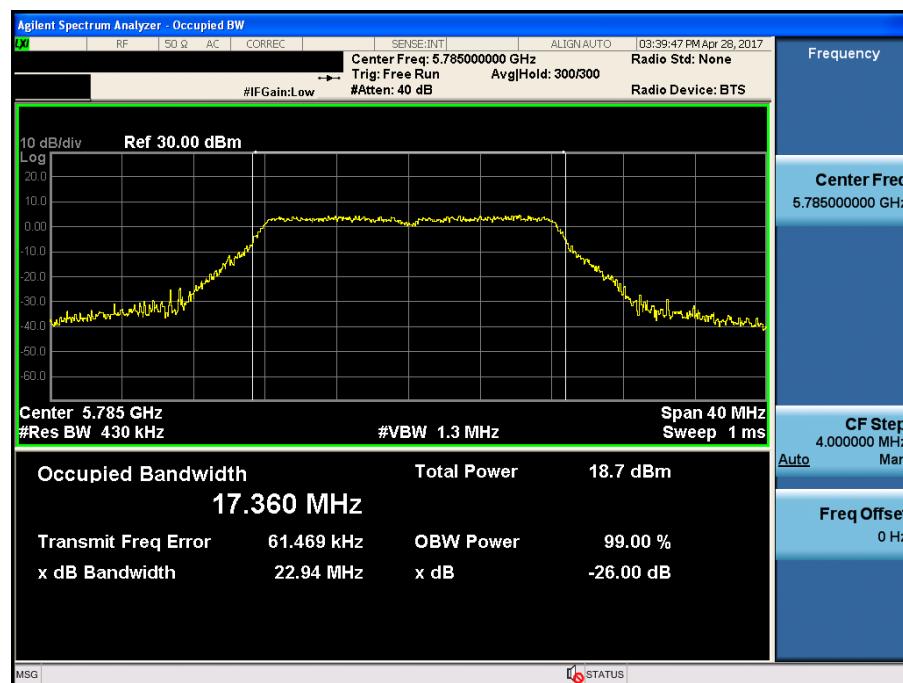


**Occupied Bandwidth 99%**

Test Mode: 802.11a &amp; Ch.149

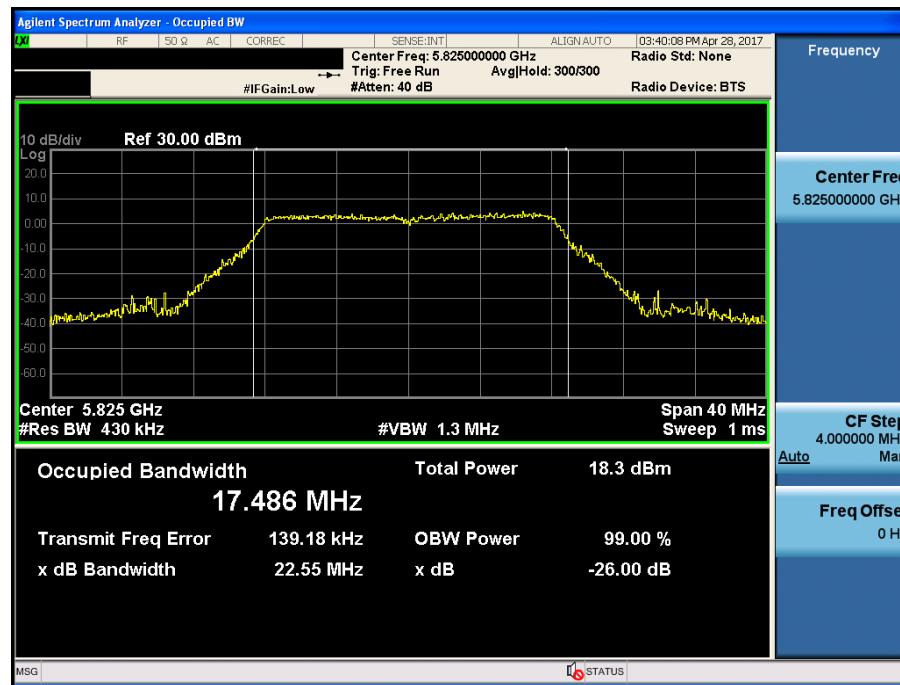
**Occupied Bandwidth 99%**

Test Mode: 802.11a &amp; Ch.157



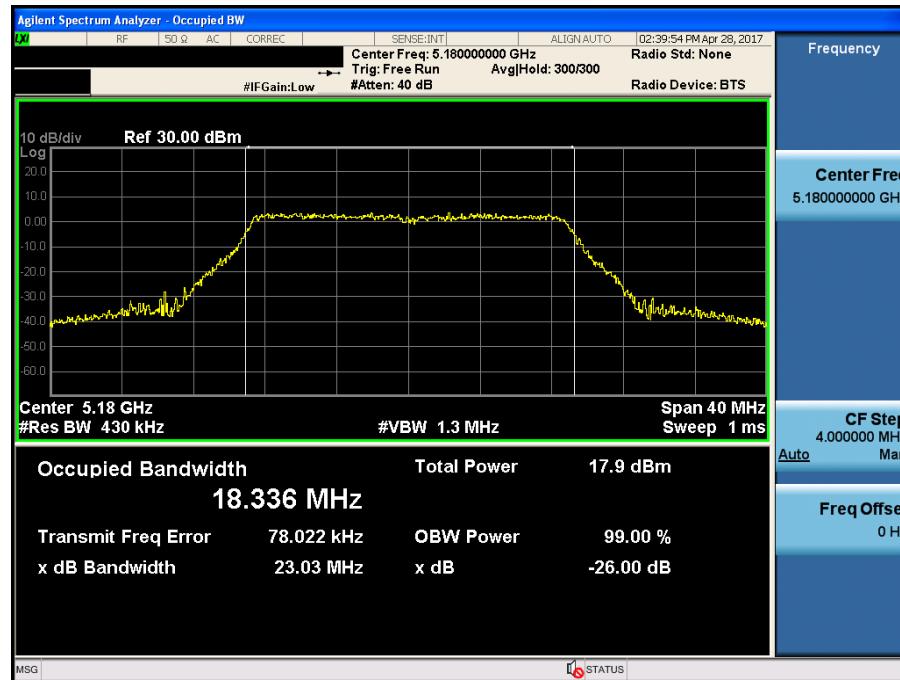
**Occupied Bandwidth 99%**

Test Mode: 802.11a &amp; Ch.165



**Occupied Bandwidth 99%**

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


**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.40



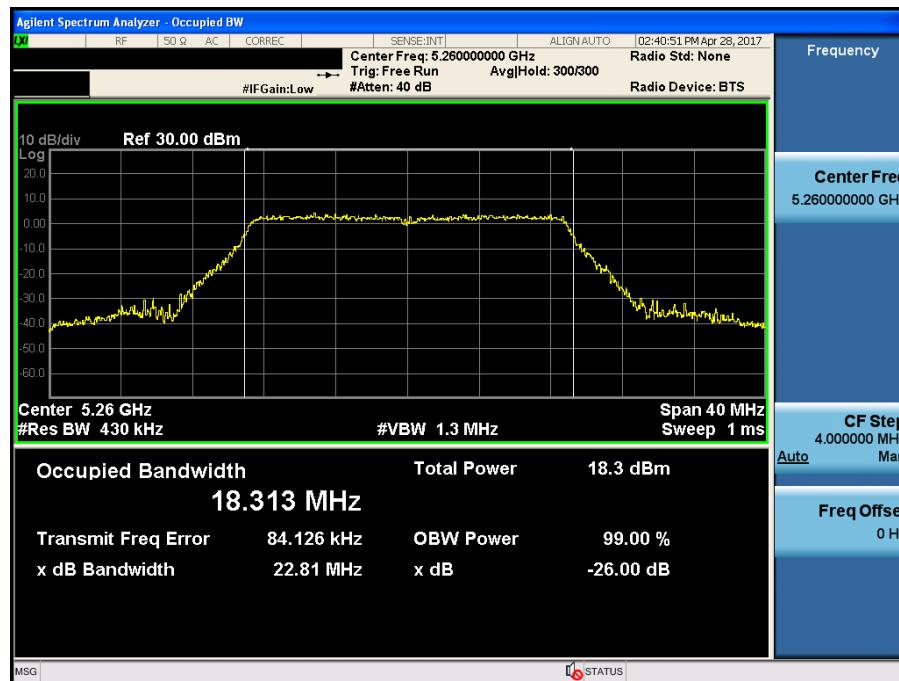
**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.48



**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.52

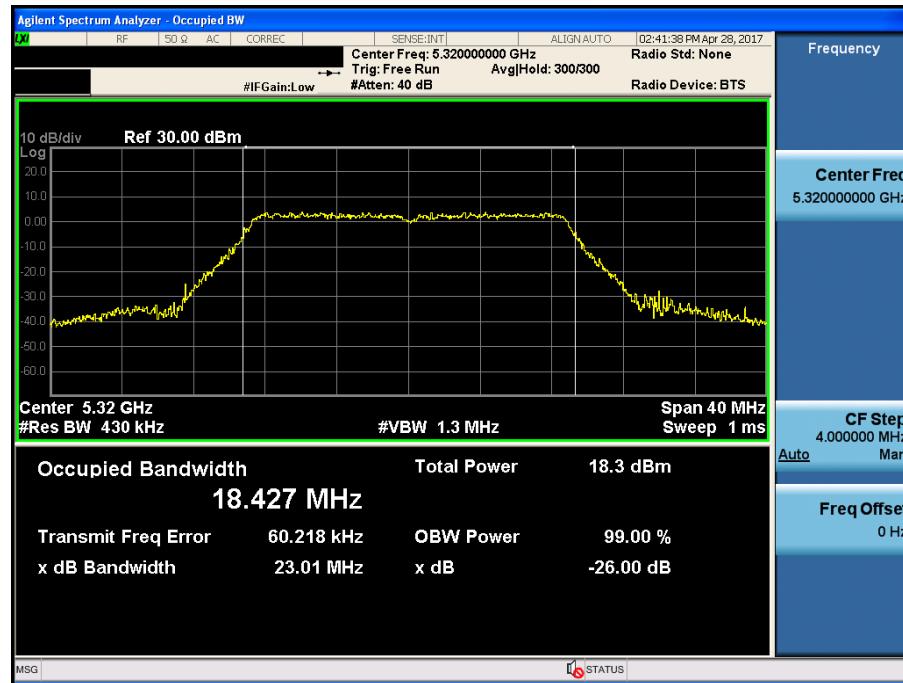

**Occupied Bandwidth 99%**

Test Mode: 802.11n HT20 &amp; Ch.60



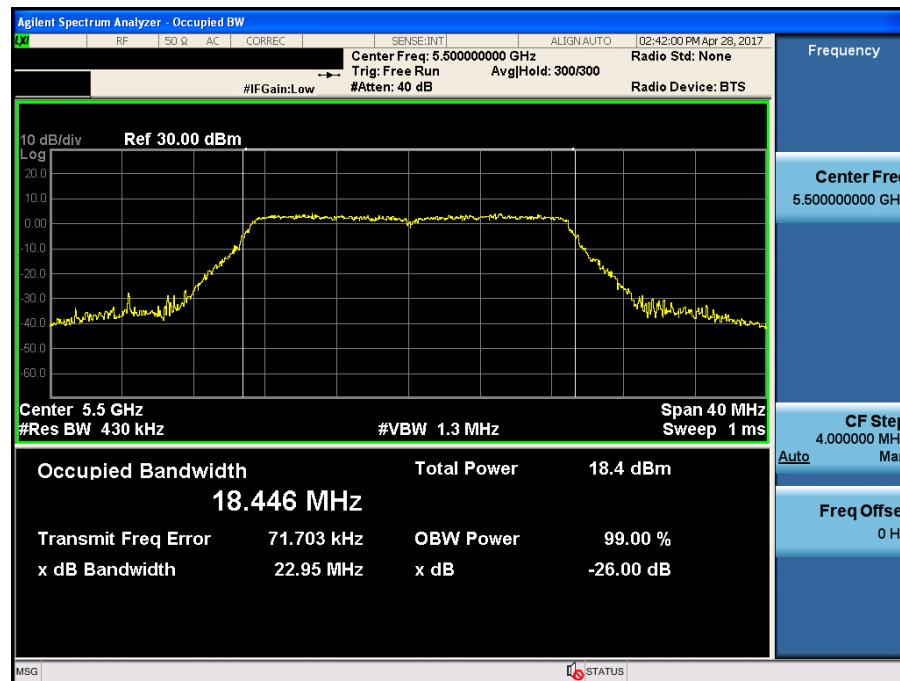
**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.64

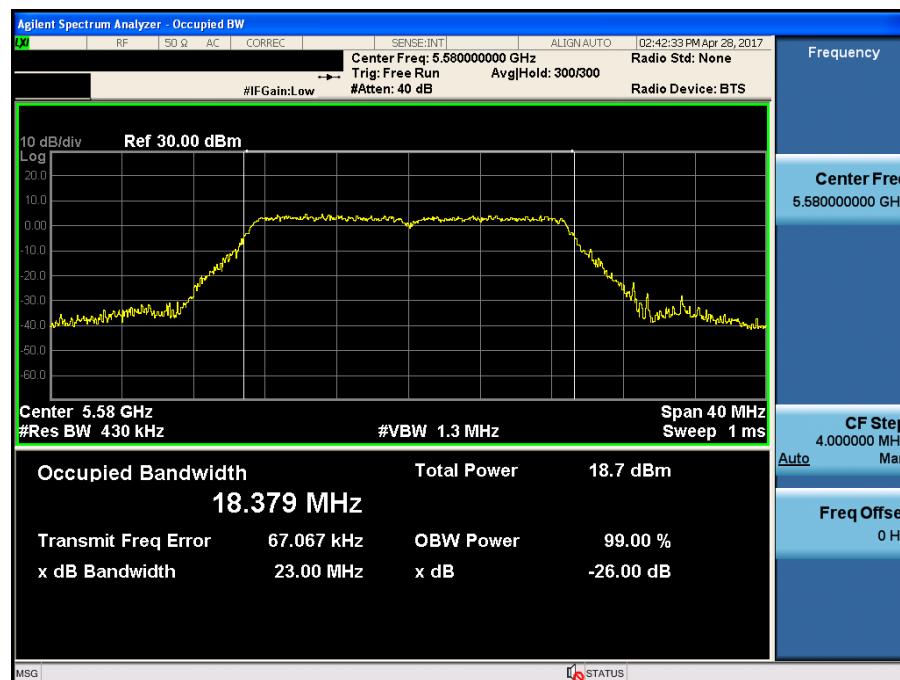


**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.100

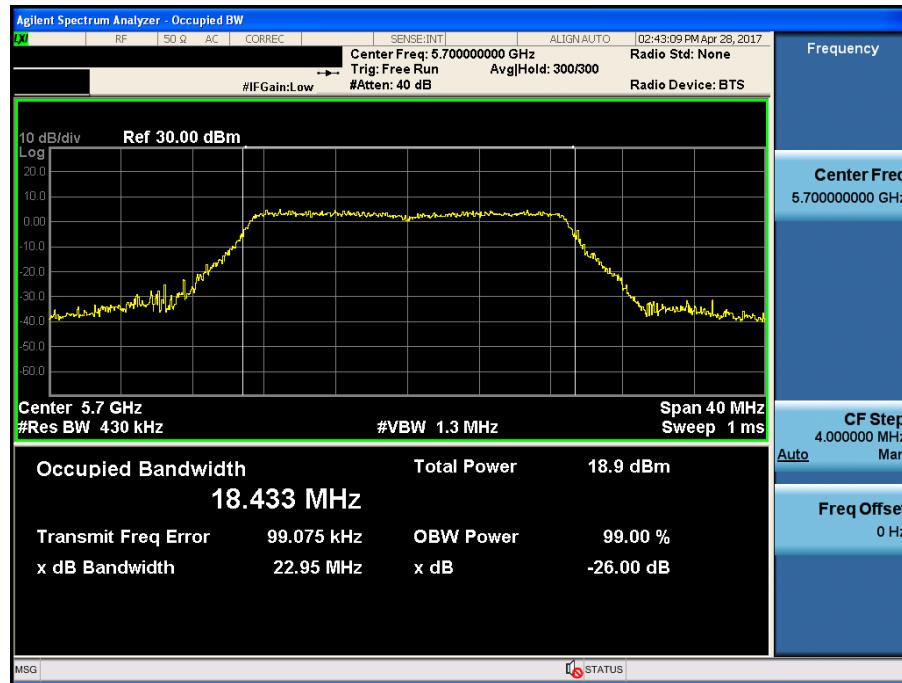

**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.116



**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.140



**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.149

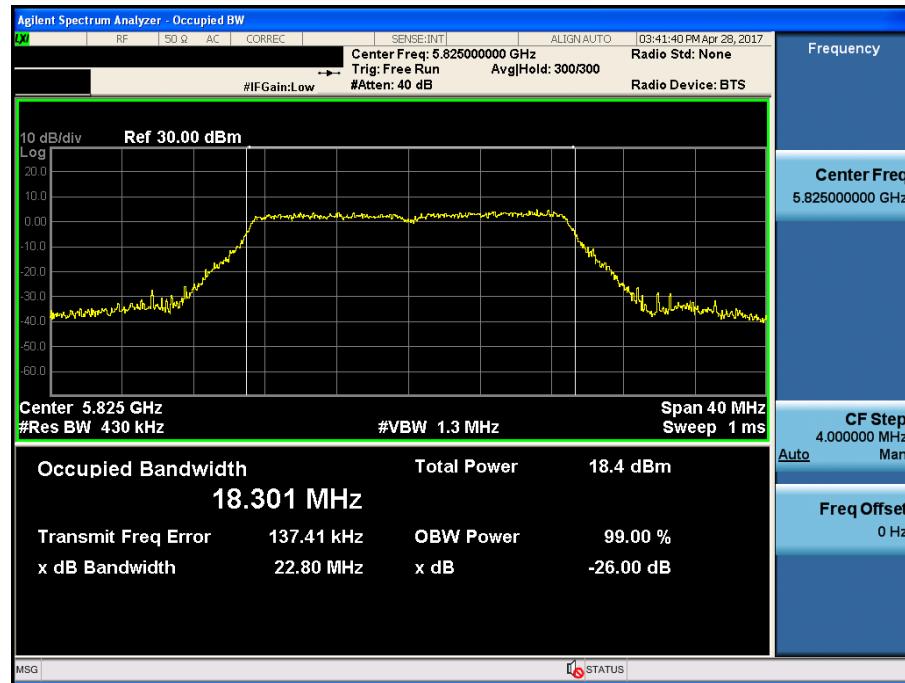
**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.157



**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT20) &amp; Ch.165

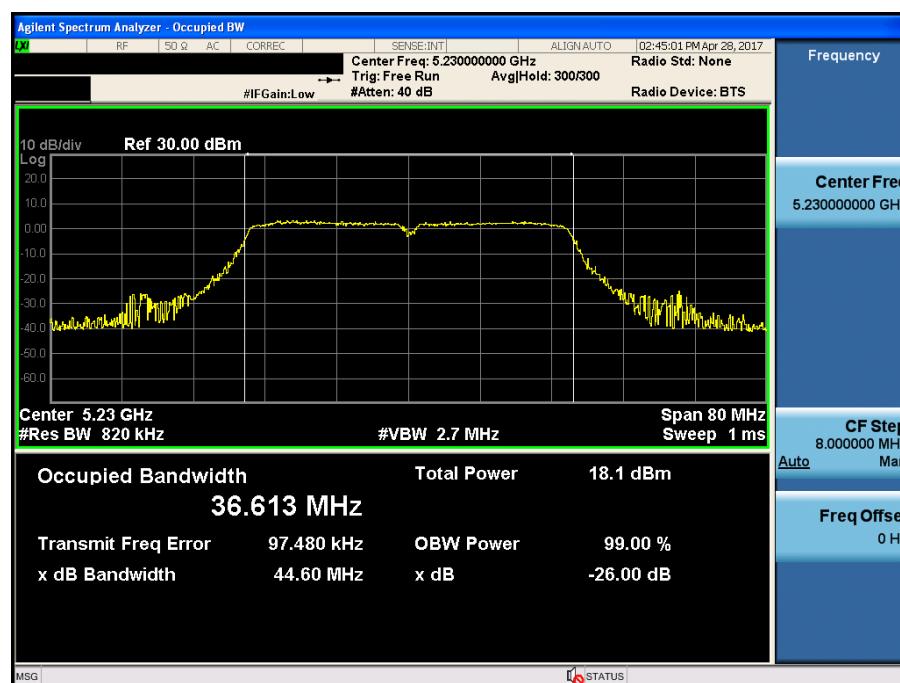


**Occupied Bandwidth 99%**

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

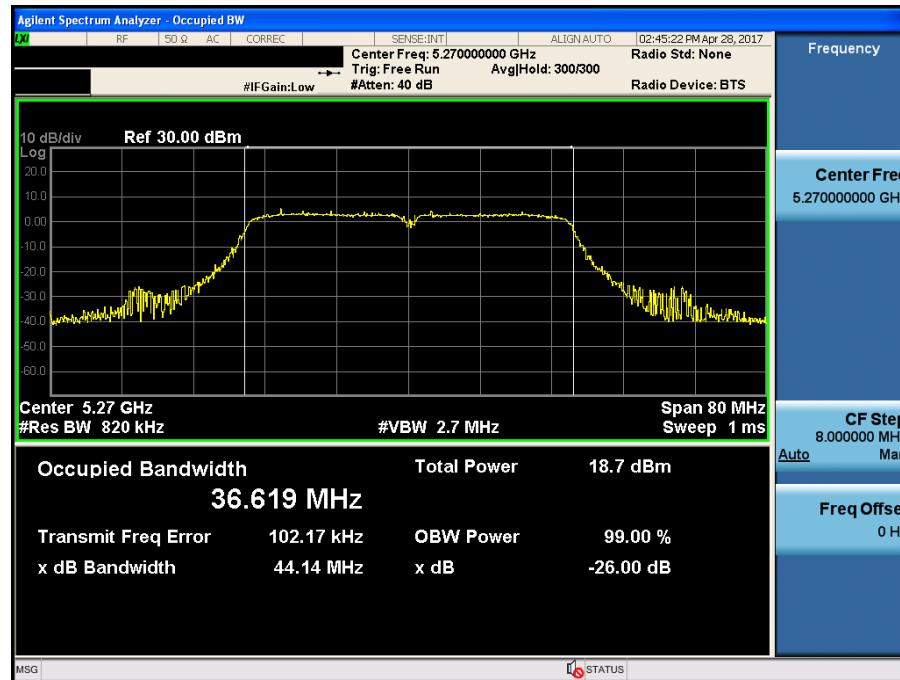
**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.46

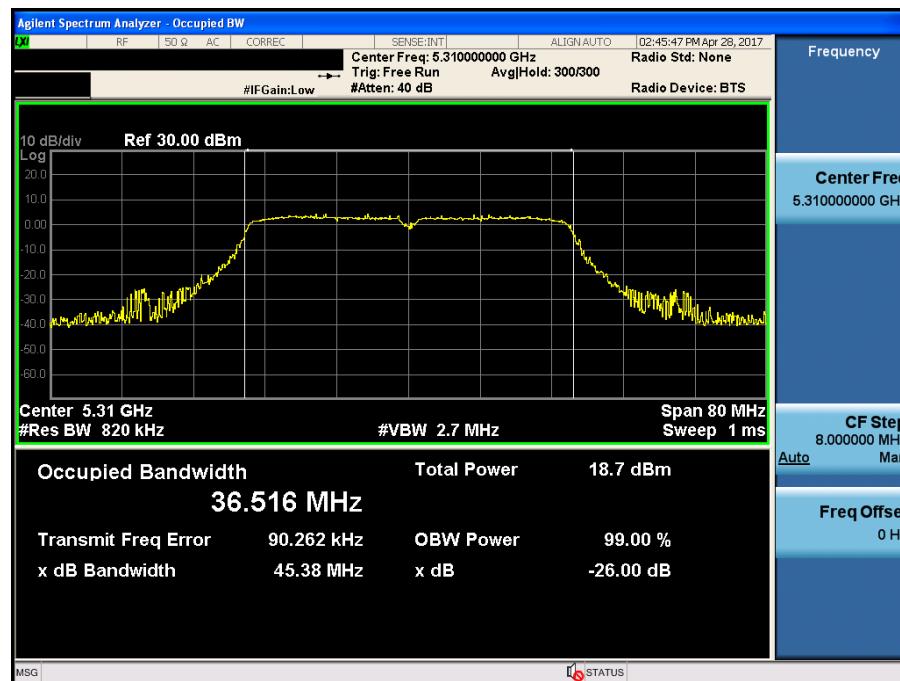


**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.54

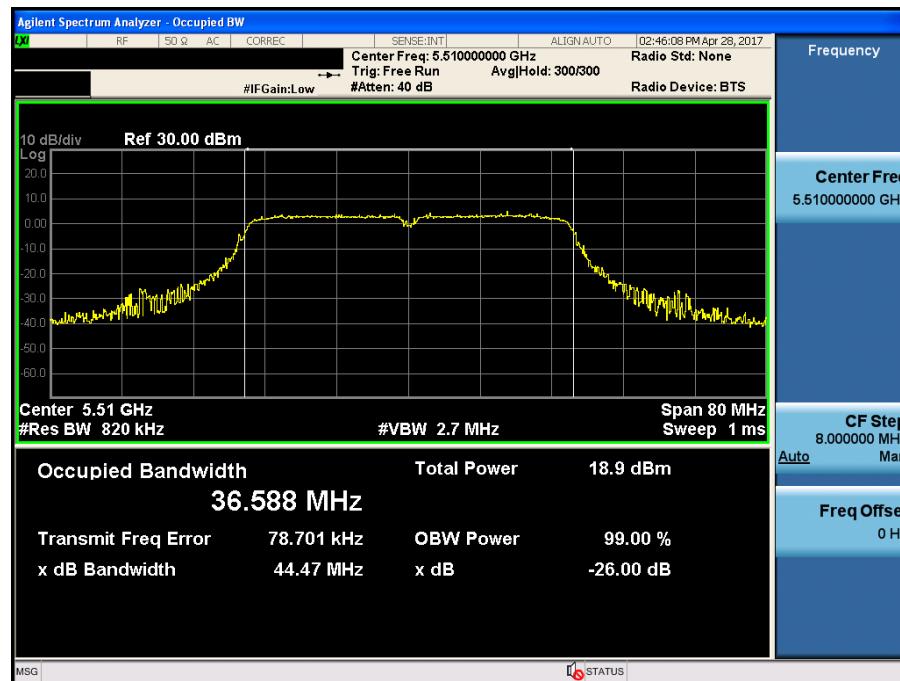
**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.62

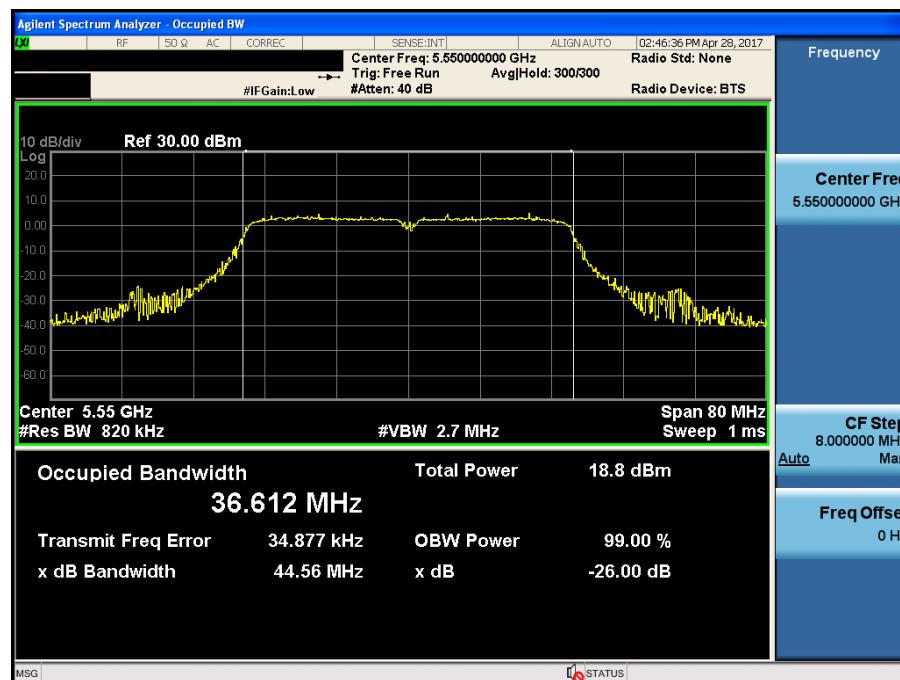


**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.102

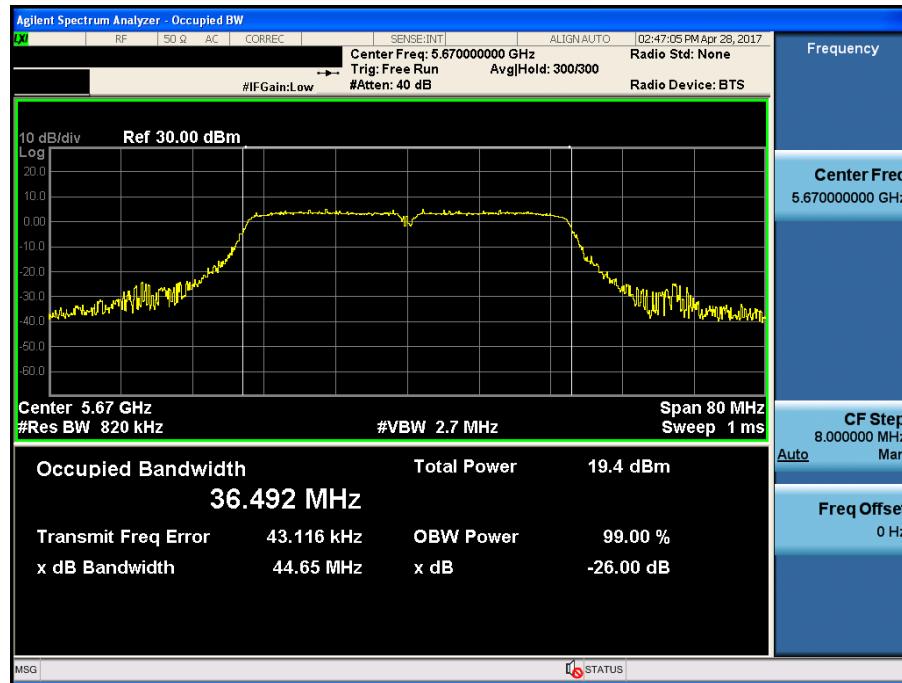
**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.110



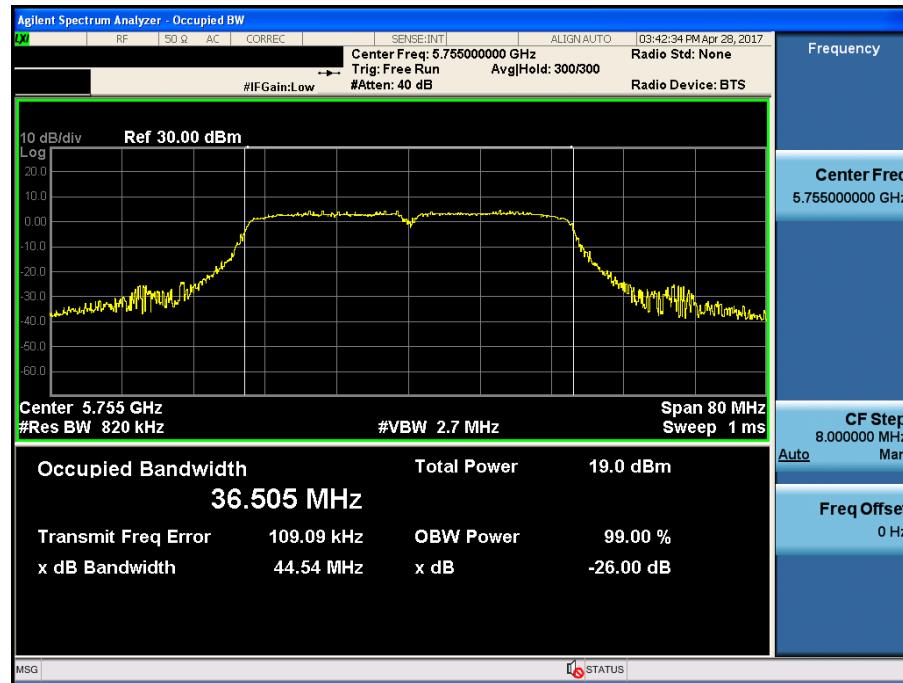
**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.134

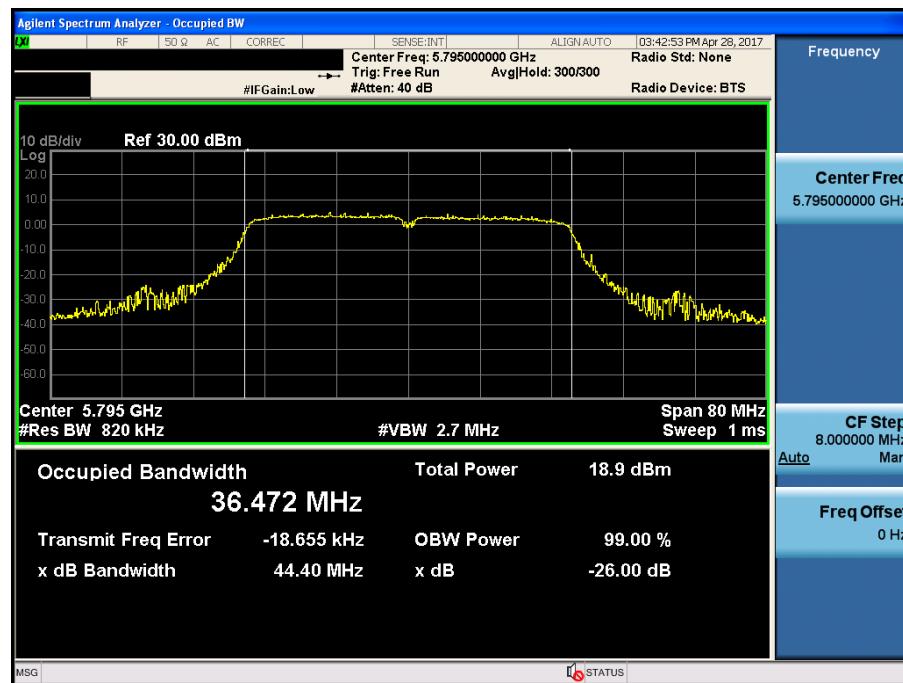


**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.151


**Occupied Bandwidth 99%**

Test Mode: 802.11n(HT40) &amp; Ch.159



## 8. LIST OF TEST EQUIPMENT

Original test(Date of Test : 2017.04.03 ~ 2017.07.03)

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	16/08/18	17/08/18	MY46471601
Spectrum Analyzer	Agilent Technologies	N9020A	16/10/11	17/10/11	MY46471251
Spectrum Analyzer	Agilent Technologies	N9030A	16/10/18	17/10/18	MY53310140
Multimeter	FLUKE	17B	17/04/12	18/04/12	26030065WS
DC Power Supply	Agilent Technologies	66332A	17/01/11	18/01/11	US37473831
Signal Generator	Rohde Schwarz	SMBV100A	17/01/04	18/01/04	255571
Signal Generator	Rohde Schwarz	SMF100A	16/06/23	17/06/23	102341
Thermohygrometer	HCT	HCT-1	16/09/09	17/09/09	NONE
Loop Antenna	Schwarzbeck	FMZB1513	16/04/22	18/04/22	1513-128
Bilog Antenna	Schwarzbeck	VULB 9160	16/05/13	18/05/13	3358
Horn Antenna	ETS-LINDGREN	3117	16/05/03	18/05/03	00140394
Horn Antenna	A.H.Systems Inc.	SAS-574	15/09/03	17/09/03	155
PreAmplifier	Agilent	8449B	17/01/11	18/01/11	3008A00370
PreAmplifier	TSJ	MLA-010K01-B01-27	17/03/06	18/03/06	1844539
PreAmplifier	A.H.Systems Inc.	PAM-1840VH	16/12/04	17/12/04	163
EMI Test Receiver	Rohde Schwarz	ESR7	17/02/16	18/02/16	101061
EMI TEST RECEIVER	R&S	ESCI	17/02/26	18/02/16	100364
Highpass Filter	Wainwright Instruments	WHNX6-6320-8000-26500-40CC	16/09/13	17/09/13	1
Temp & Humi Test Chamber	SJ Science	TEMI850-10	17/01/25	18/01/25	SJ-TH-S50-120203
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2495A MA2490A	16/10/19	17/10/19	1338003 1249304
50W 10dB ATT	SMAJK	SMAJK-50-10	16/10/18	17/10/18	2-50-10
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	17/01/03	18/01/03	101334
SINGLE-PHASE MASTER	NF	4420	16/09/08	17/09/08	3049354420023
Artificial Mains Network	Narda S.T.S. / PMM	PMM L2-16B	16/06/22	17/06/22	000WX20305

**Spot check test(Date of Test: 2019.02.07 ~ 2019.02.10)**

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	18/07/09	19/07/09	MY46471251
Spectrum Analyzer	Agilent Technologies	N9030A	18/07/09	19/07/09	MY53310140
Thermohygrometer	BODYCOM	BJ5478	18/12/27	19/12/27	120612-2
Signal Generator	Rohde Schwarz	SMBV100A	18/12/19	19/12/19	255571
Signal Generator	ANRITSU	SMF100A	18/06/07	19/06/07	102341
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 ANT	ETS	3117	18/05/10	20/05/10	00140394
HORN ANT	A.H.Systems	SAS-574	17/07/31	19/07/31	155
PreAmplifier	H.P	8447D	18/12/18	19/12/18	2944A07774
PreAmplifier	Agilent	8449B	18/07/05	19/07/05	3008A02108
PreAmplifier	tsj	MLA-1840-J02-45	18/07/06	19/07/06	16966-10728
High-pass filter	Wainwright	WHKX12-2580-3000-18000-80SS	18/07/05	19/07/05	3
High-pass filter	Wainwright	WHNX8.5/26.5G-6SS	18/07/03	19/07/03	1
Cable	DTNC	Cable	18/07/06	19/07/06	M-01
Cable	DTNC	Cable	18/07/06	19/07/06	M-02
Cable	Junkosha	MWX315	18/11/19	19/11/19	M-05
Cable	Junkosha	MWX221	18/11/19	19/11/19	M-06
Cable	Junkosha	MWX241	18/06/25	19/06/25	G-04
Cable	Junkosha	MWX241	18/06/25	19/06/25	G-07

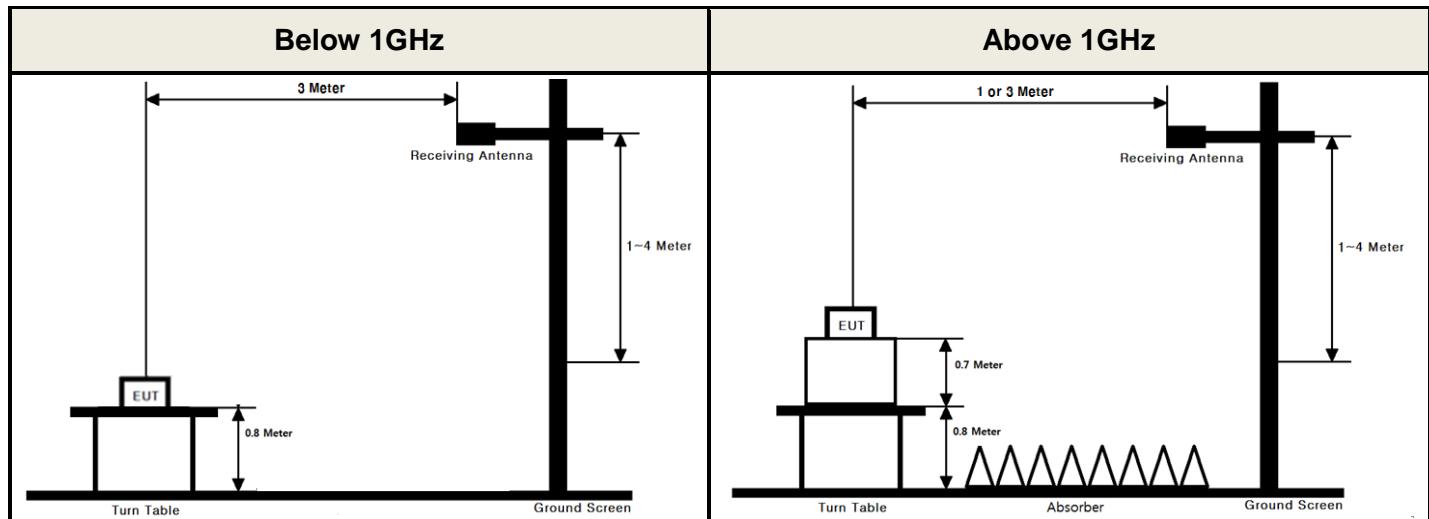
Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

Note2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

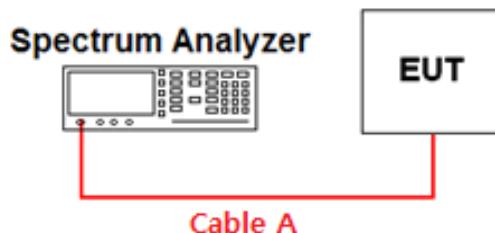
## APPENDIX I

### Test set up diagrams

- Radiated Measurement



- 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.

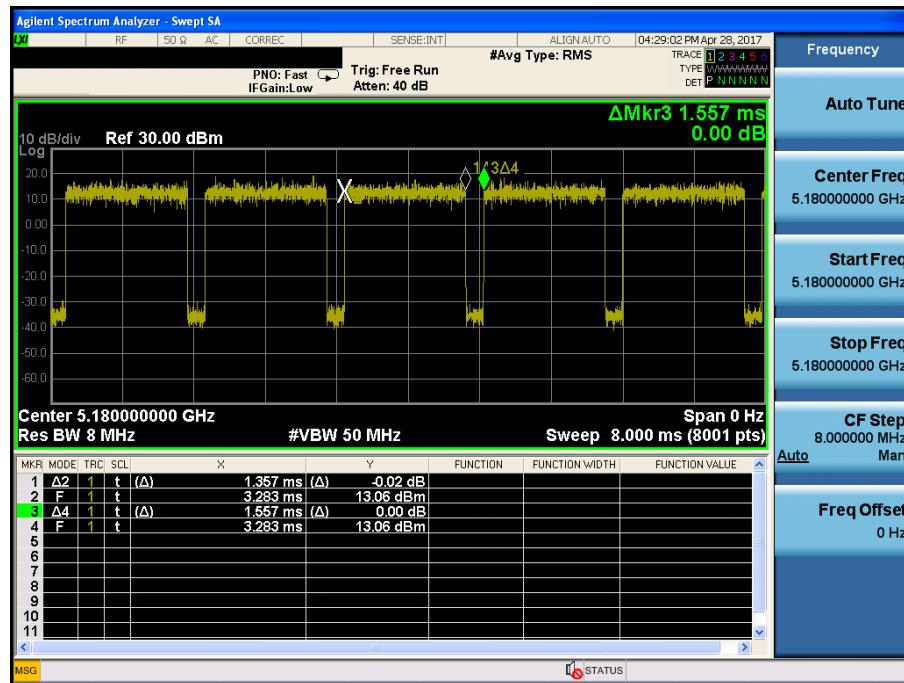
(**T = On time** of the above table since the EUT operates with above fixed Duty Cycle and it is the minimum On time)

#### ■ Test Results:

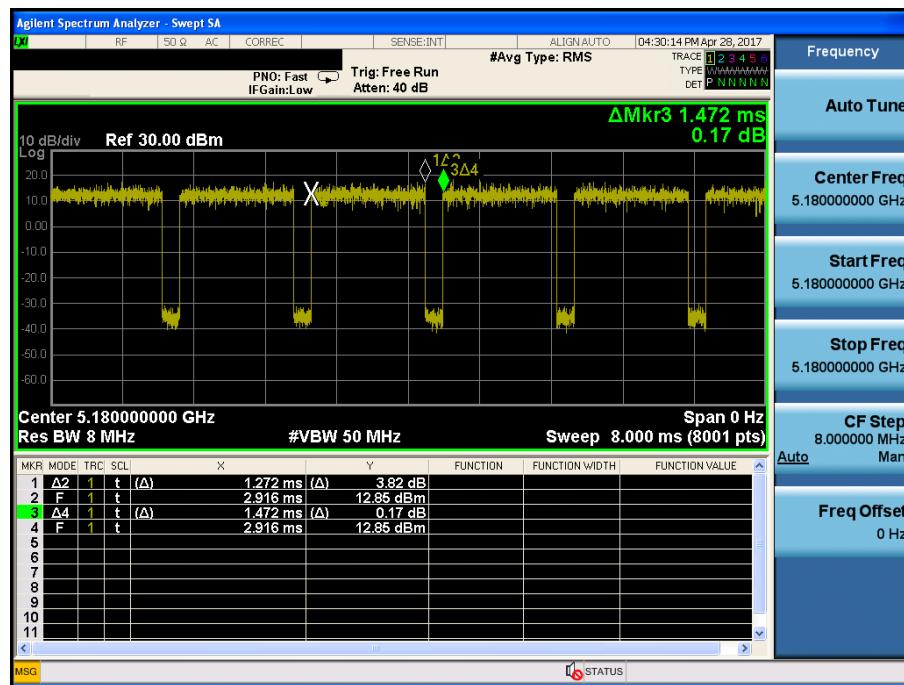
Mode	Channel	Tested Frequency [MHz]	Maximum Achievable Duty Cycle (x) = On / (On+Off)			Duty Cycle Correction Factor [dB]	1/T [Hz]
			On Time [ms]	On+OffTime [ms]	x		
802.11a	36	5180	1.357	1.557	0.87	0.61	736.92
802.11n (HT20)	36	5180	1.272	1.472	0.86	0.66	786.17
802.11n (HT40)	38	5190	0.631	0.831	0.75	1.25	1584.79

**Duty Cycle**

Test Mode: 802.11a &amp; Ch.36

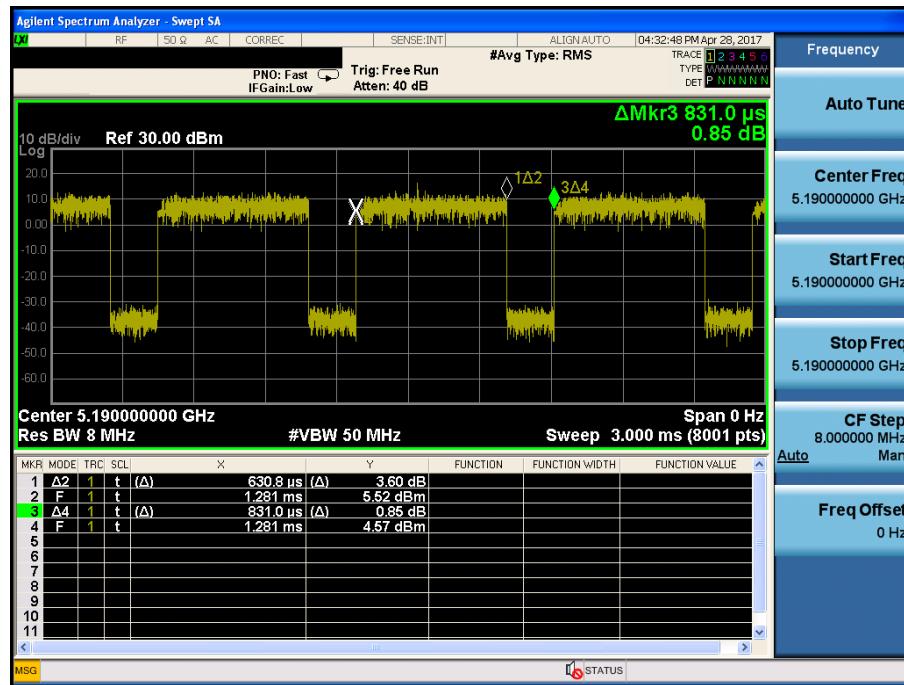

**Duty Cycle**

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



**Duty Cycle**

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

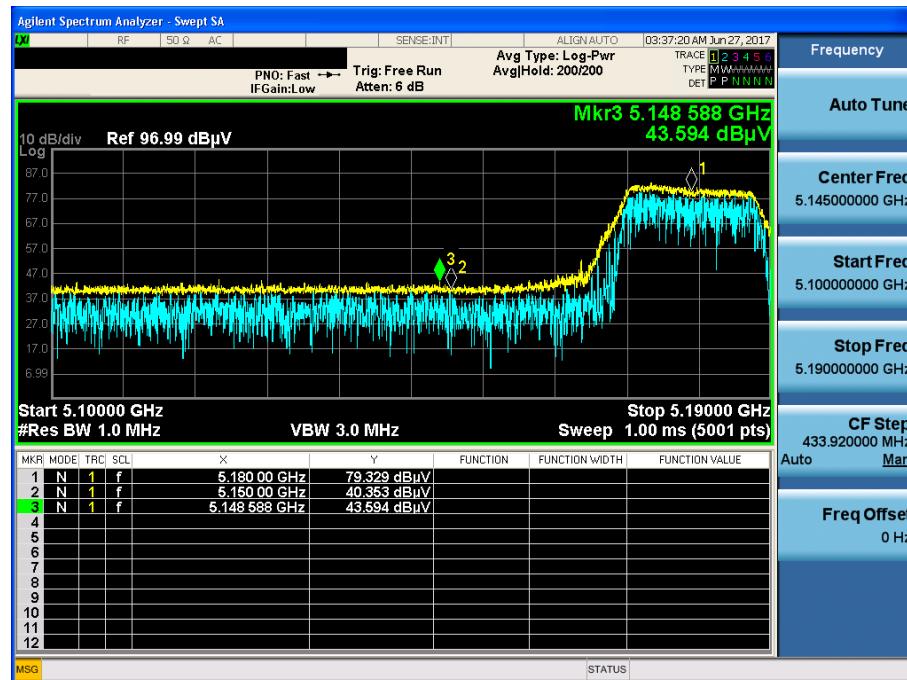


## APPENDIX III

### Unwanted Emissions (Radiated) Test Plot

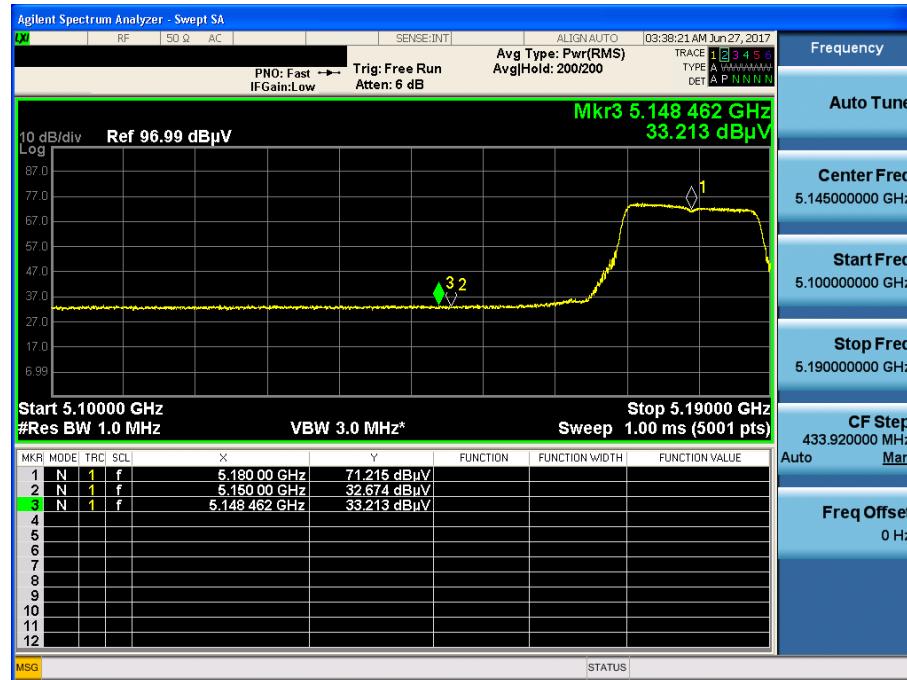
802.11a & U-NII 1 & Ch.36 & X axis & Hor

Detector Mode : PK



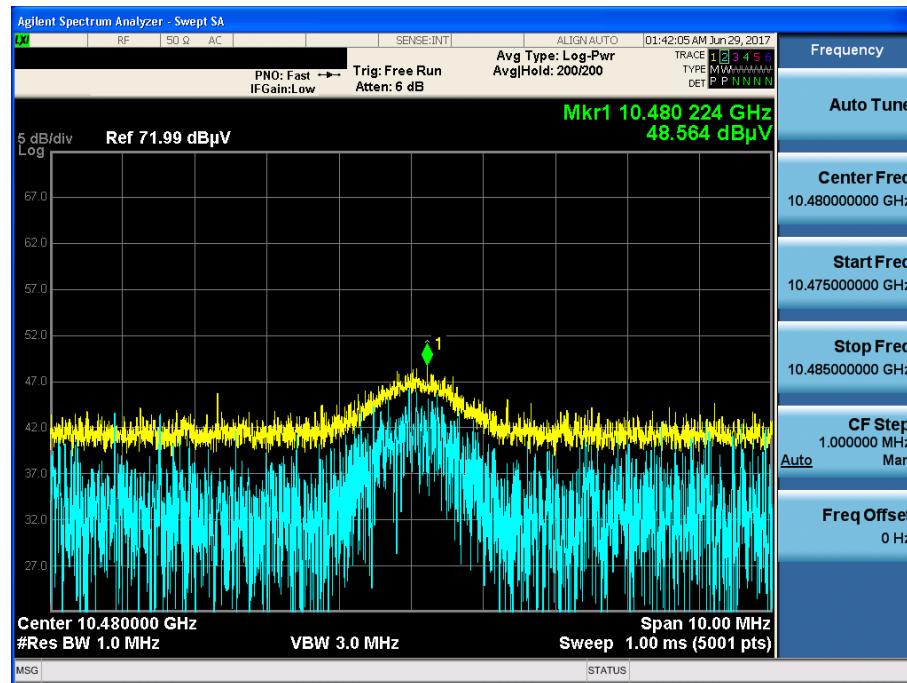
802.11a & U-NII 1 & Ch.36 & X axis & Hor

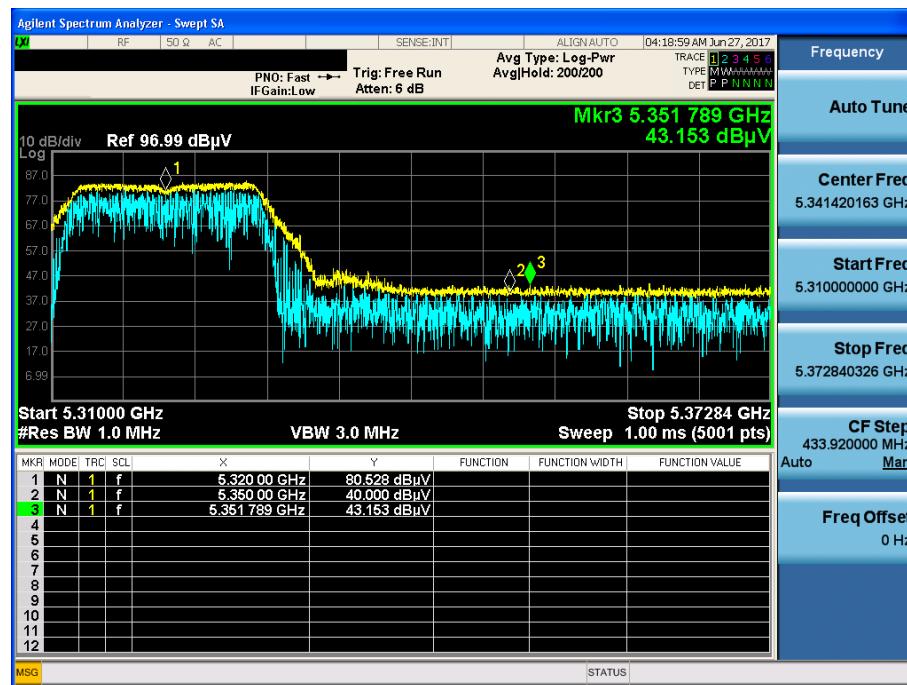
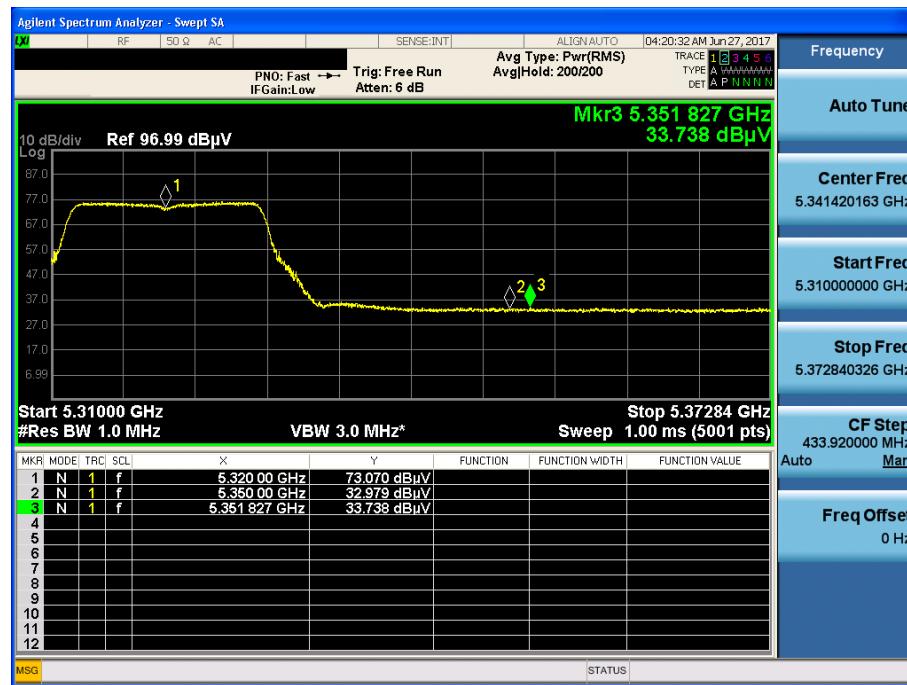
Detector Mode : AV



802.11a &amp; U-NII 1 &amp; Ch.48 &amp; Z axis &amp; Ver

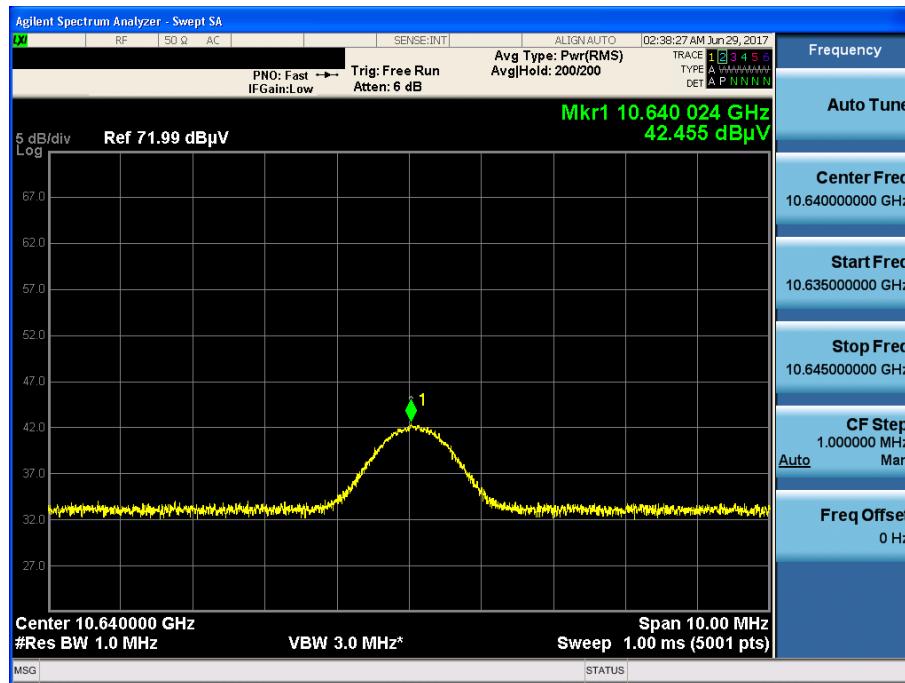
Detector Mode : PK

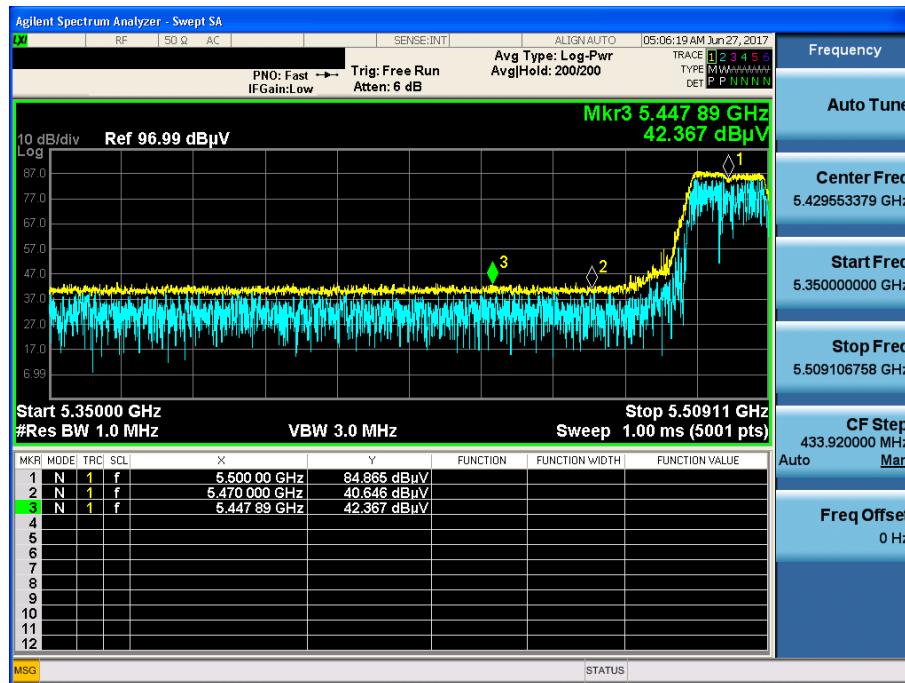
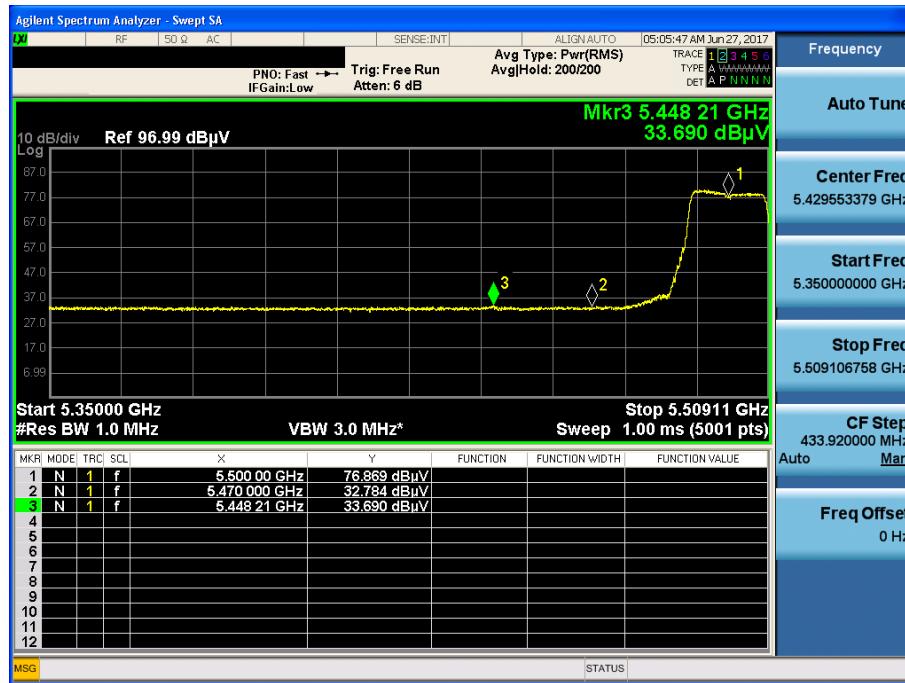


**802.11a & U-NII 2A & Ch.64 & X axis & Ver**
**Detector Mode : PK**

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


802.11a &amp; U-NII 2A &amp; Ch.64 &amp; Z axis &amp; Ver

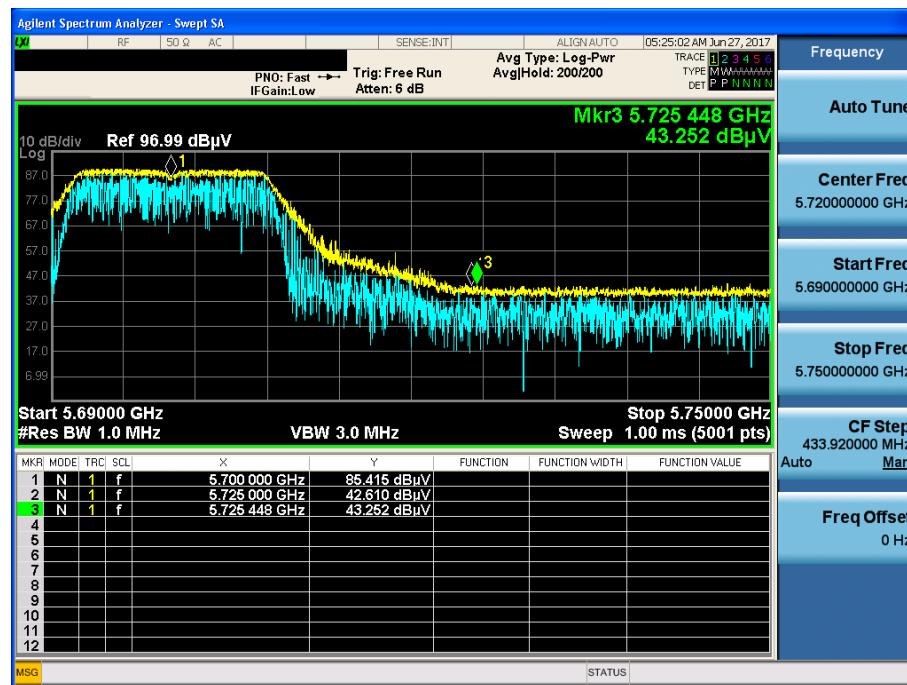
Detector Mode : AV



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

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


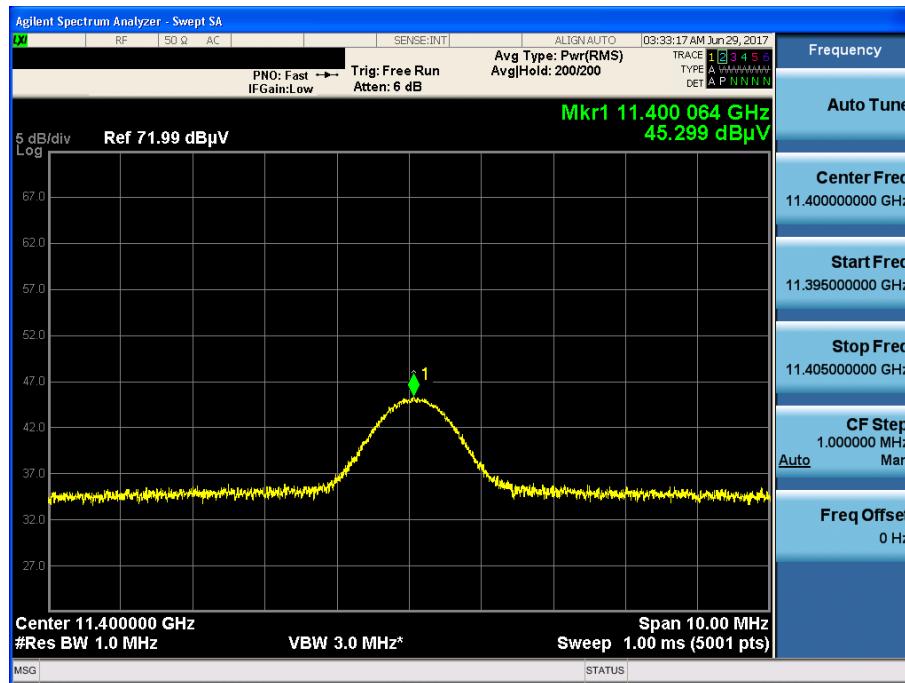
802.11a &amp; U-NII 2C &amp; Ch.140 &amp; X axis &amp; Ver

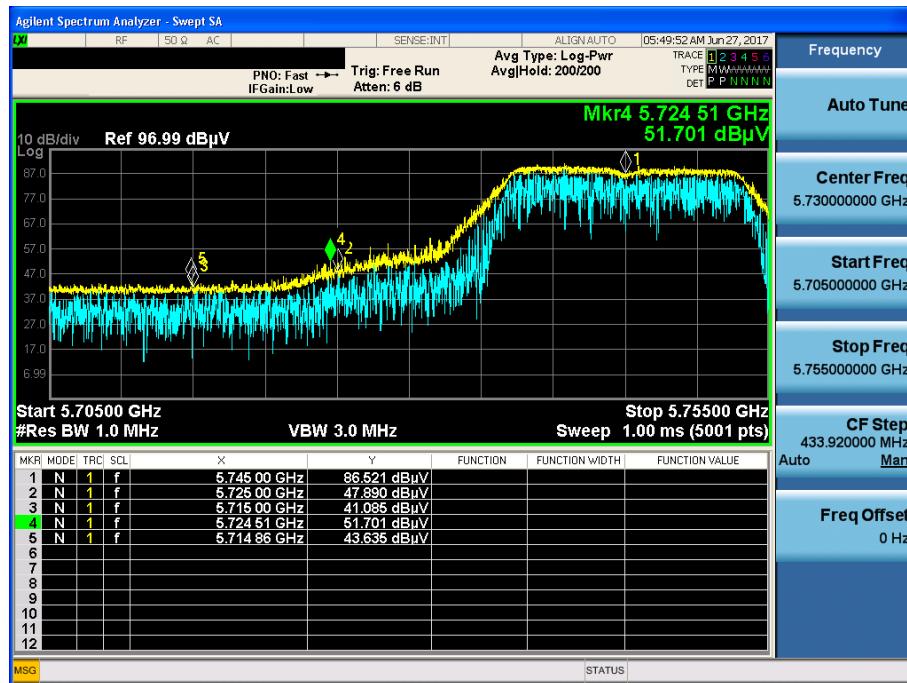
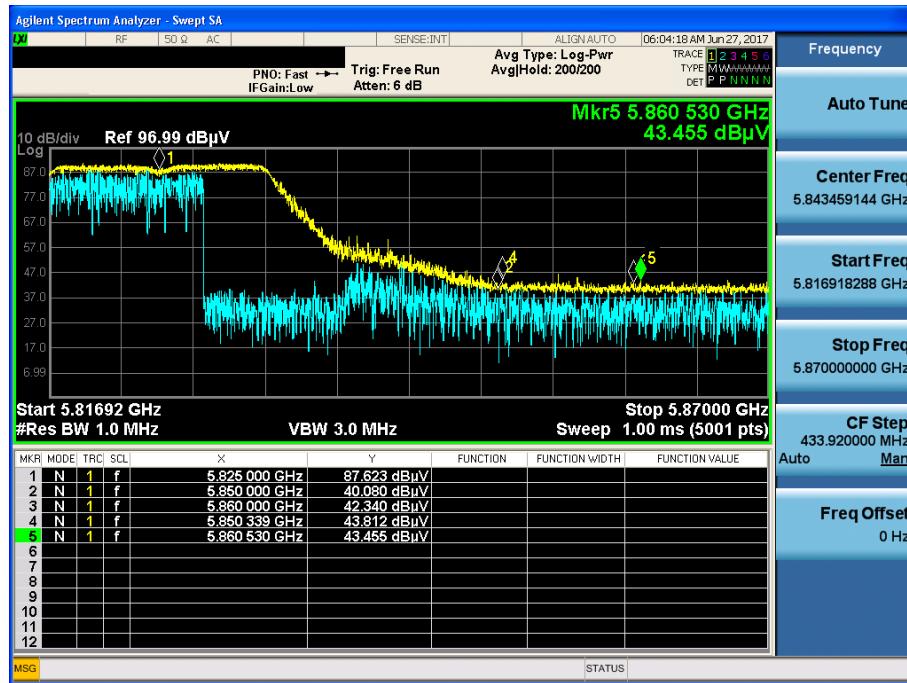
Detector Mode : PK



802.11a &amp; U-NII 2C &amp; Ch.140 &amp; Z axis &amp; Ver

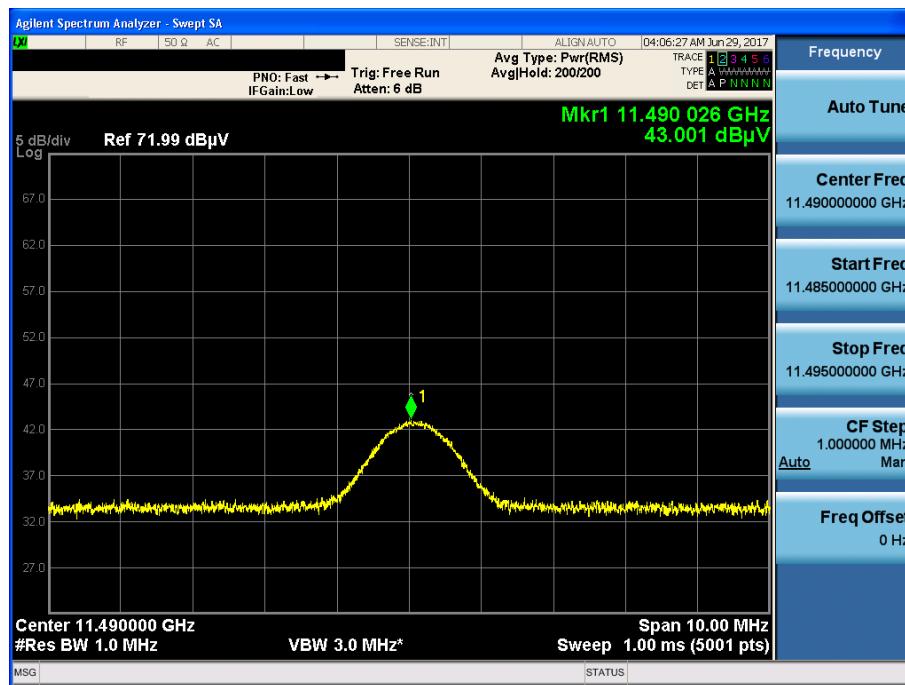
Detector Mode : PK

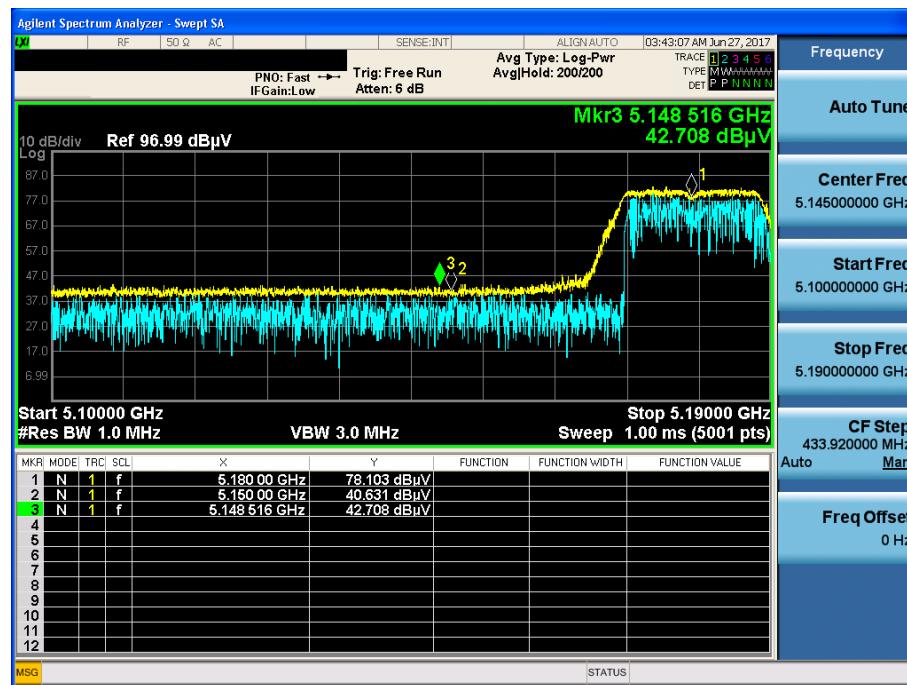
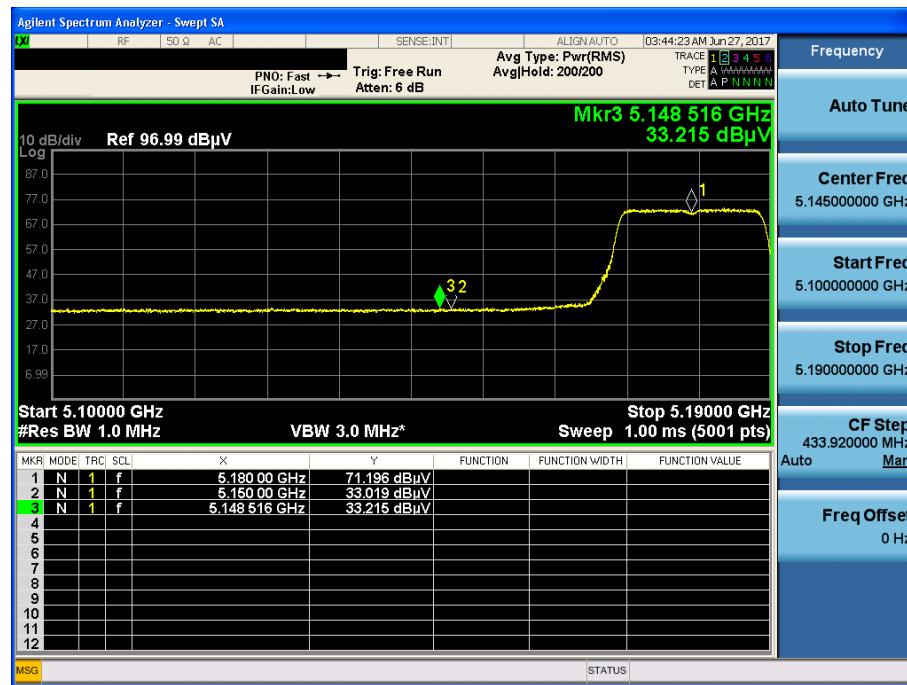


**802.11a & U-NII 3 & Ch.149 & Z axis & Ver**
**Detector Mode : PK**

**802.11a & U-NII 3 & Ch.165 & Z axis & Ver**
**Detector Mode : PK**


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

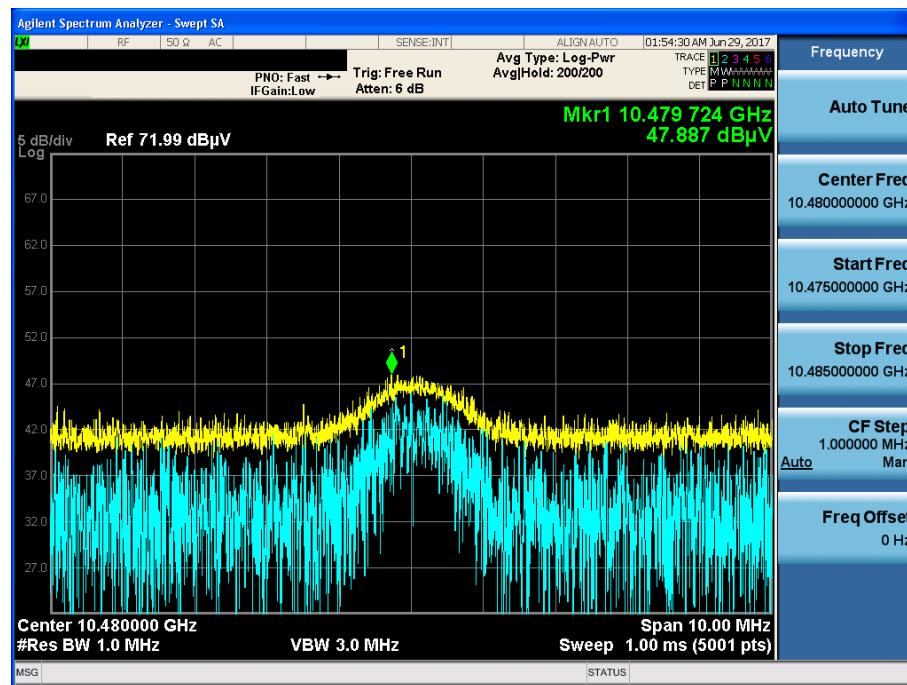
Detector Mode : AV

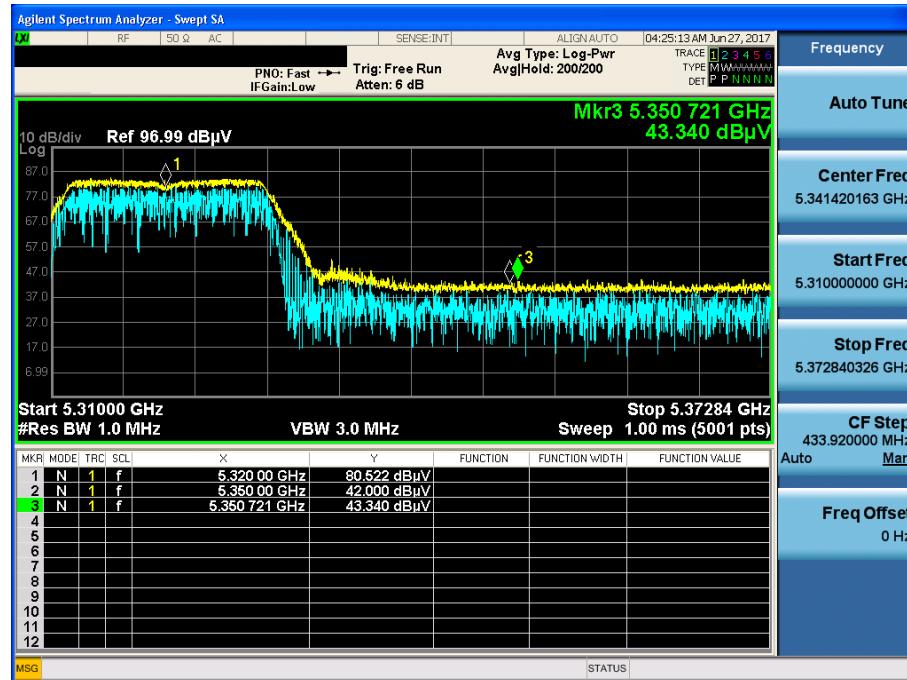


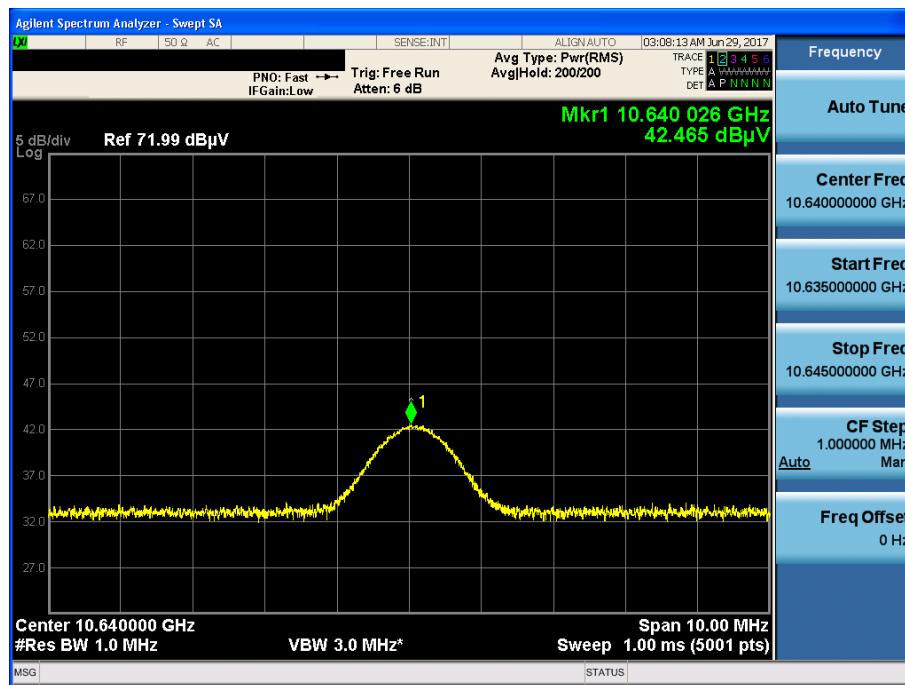
**802.11n(HT20) & U-NII 1 & Ch.36 & X axis & Hor**
**Detector Mode : PK**

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


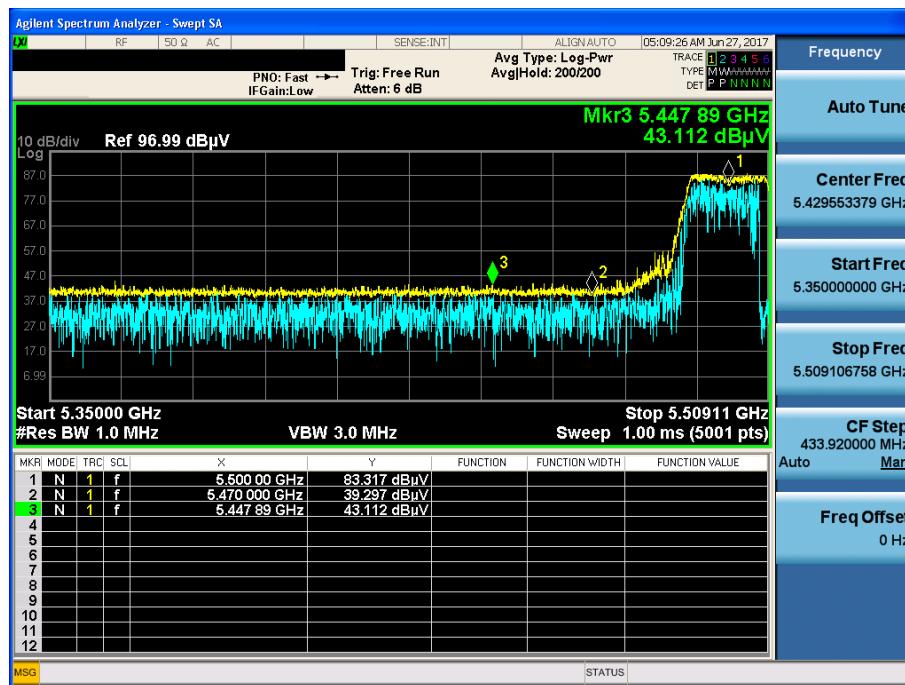
802.11n(HT20) &amp; U-NII 1 &amp; Ch.48 &amp; Z axis &amp; Ver

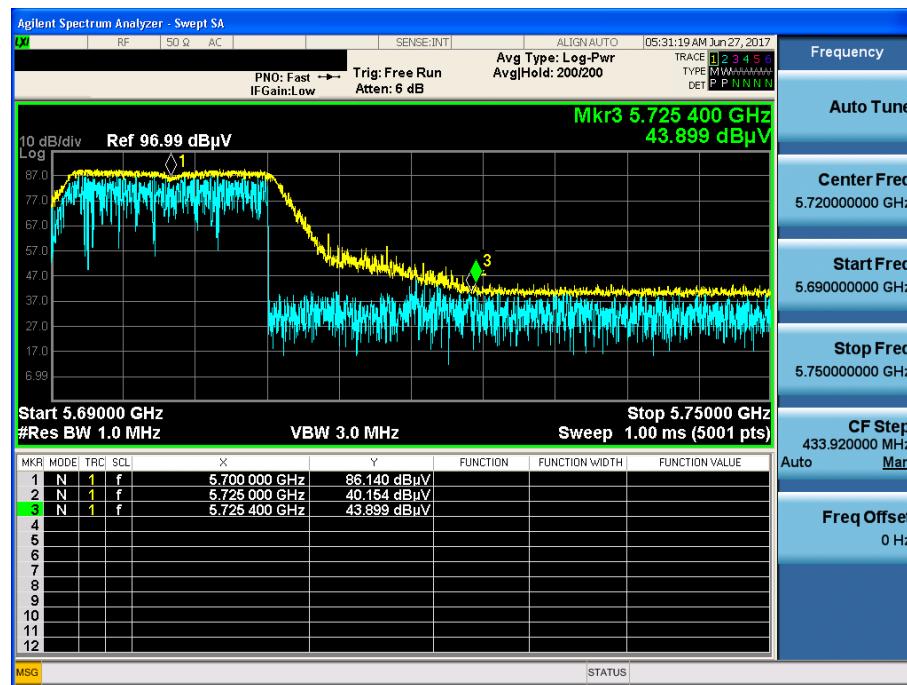
Detector Mode : PK



**802.11n(HT20) & U-NII 2A & Ch.64 & X axis & Ver**
**Detector Mode : PK**

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

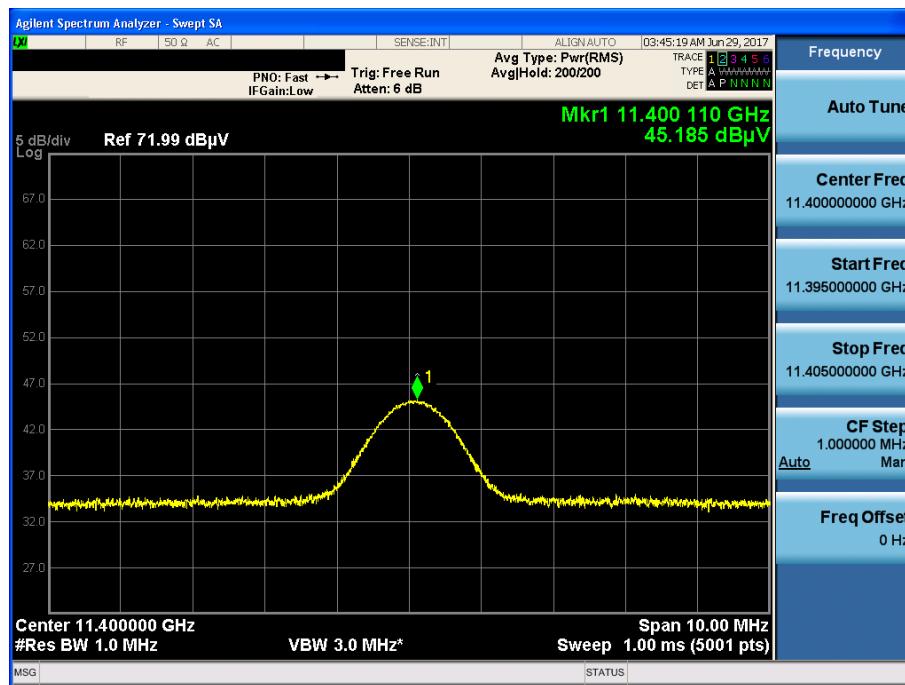

**802.11n(HT20) & U-NII 2A & Ch.64 & Z axis & Ver**
**Detector Mode : AV**


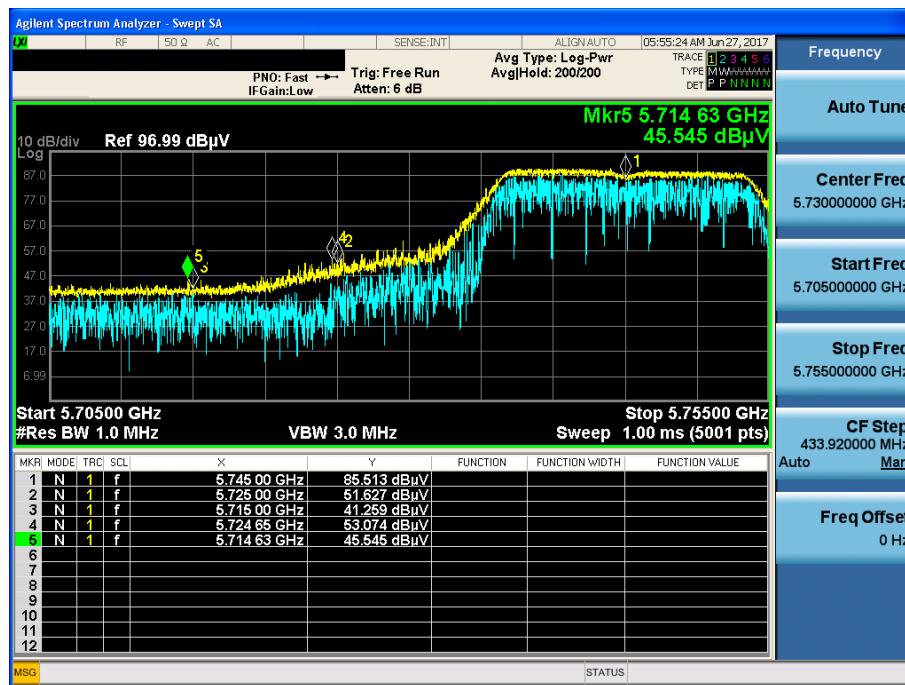
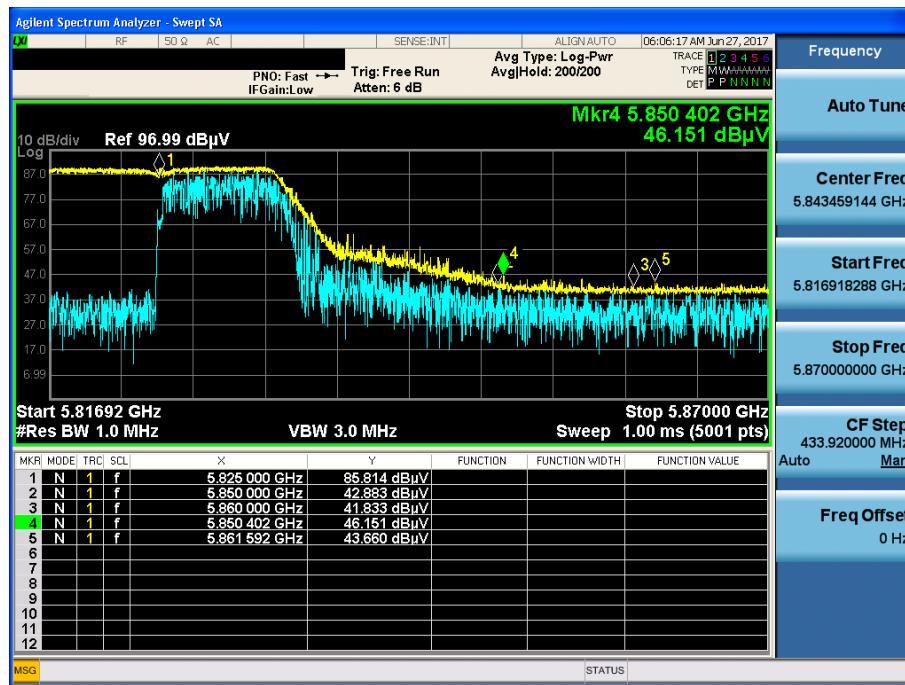
**802.11n(HT20) & U-NII 2C & Ch.100 & X axis & Ver**
**Detector Mode : PK**

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


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


802.11n(HT20) &amp; U-NII 2C &amp; Ch.140 &amp; Z axis &amp; Ver

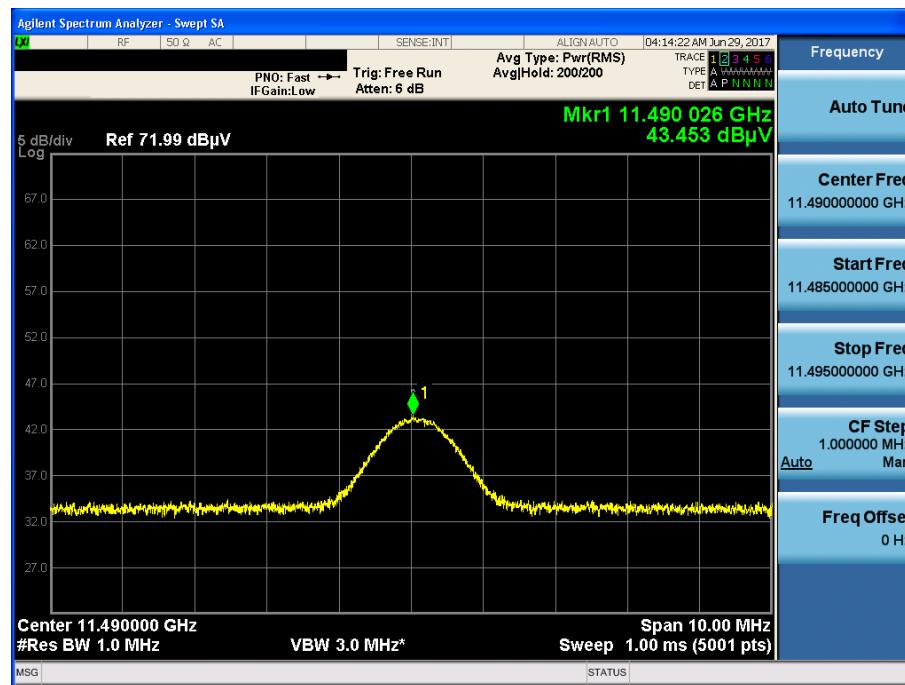
Detector Mode : AV

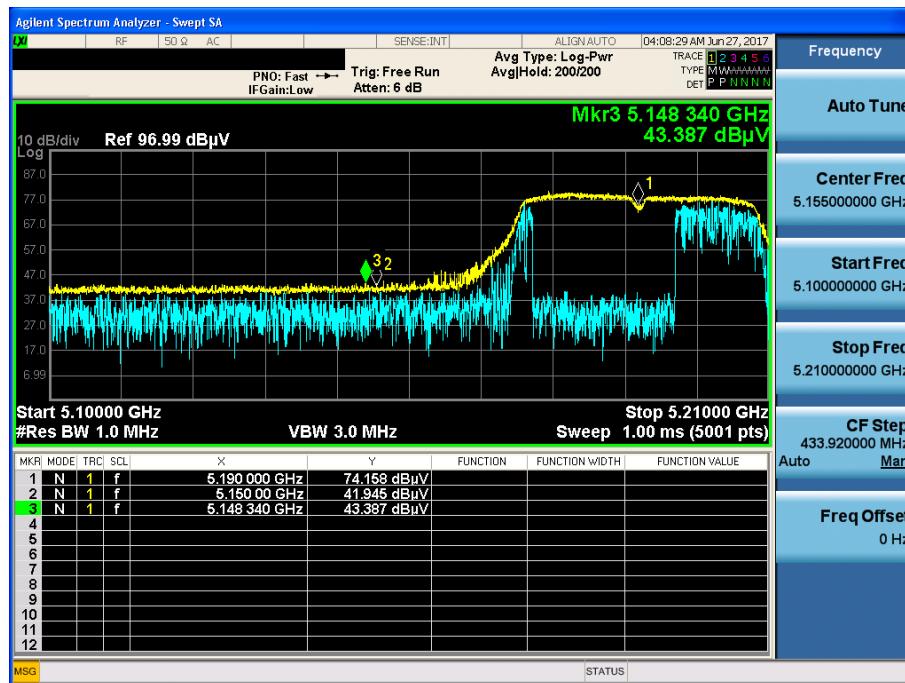
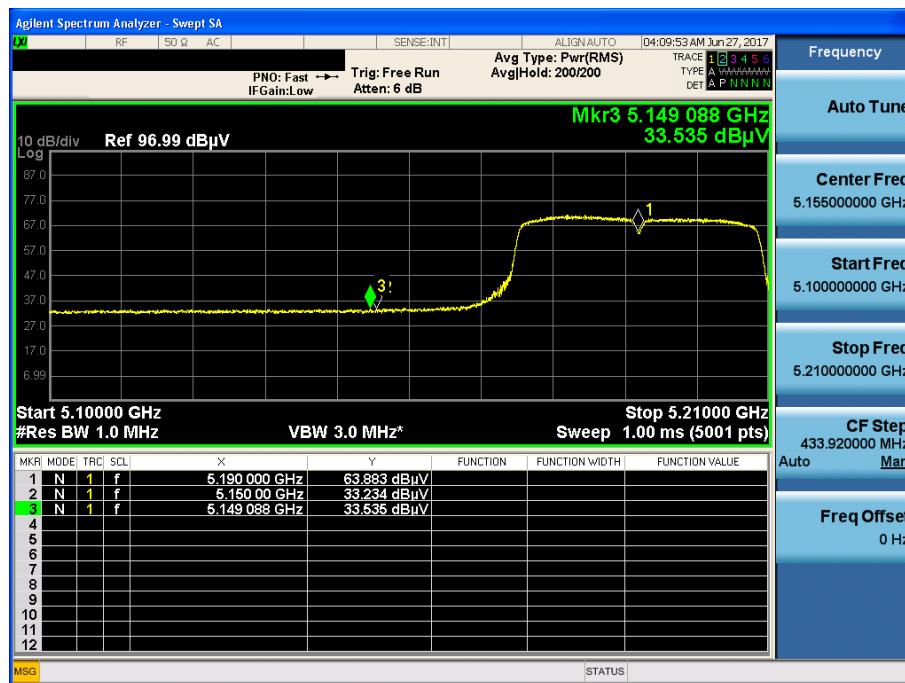


**802.11n(HT20) & U-NII 3 & Ch.149 & Z axis & Ver**
**Detector Mode : PK**

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


802.11n(HT20) &amp; U-NII 3 &amp; Ch.149 &amp; Z axis &amp; Ver

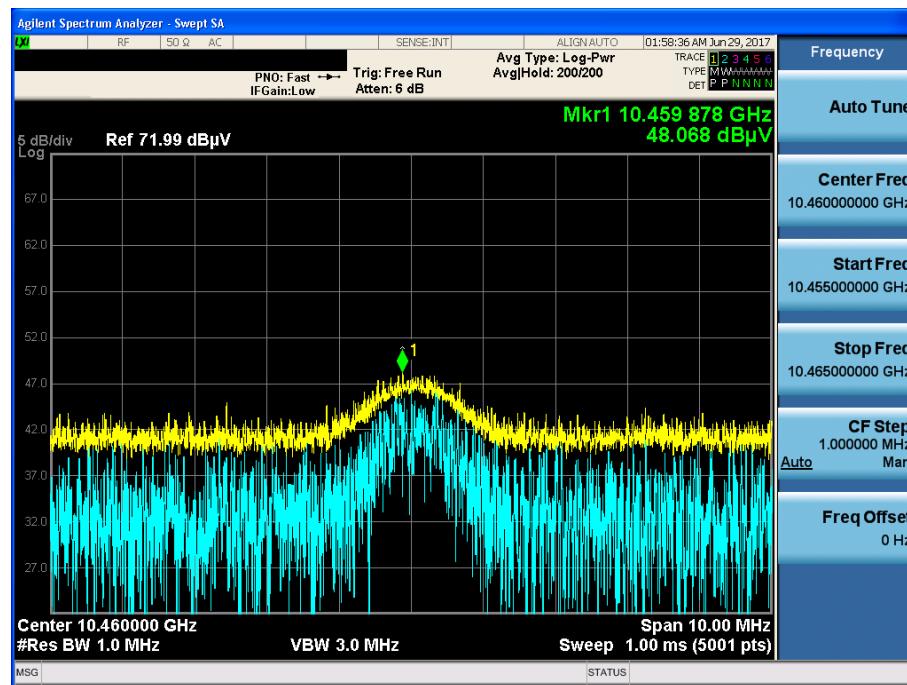
Detector Mode : AV

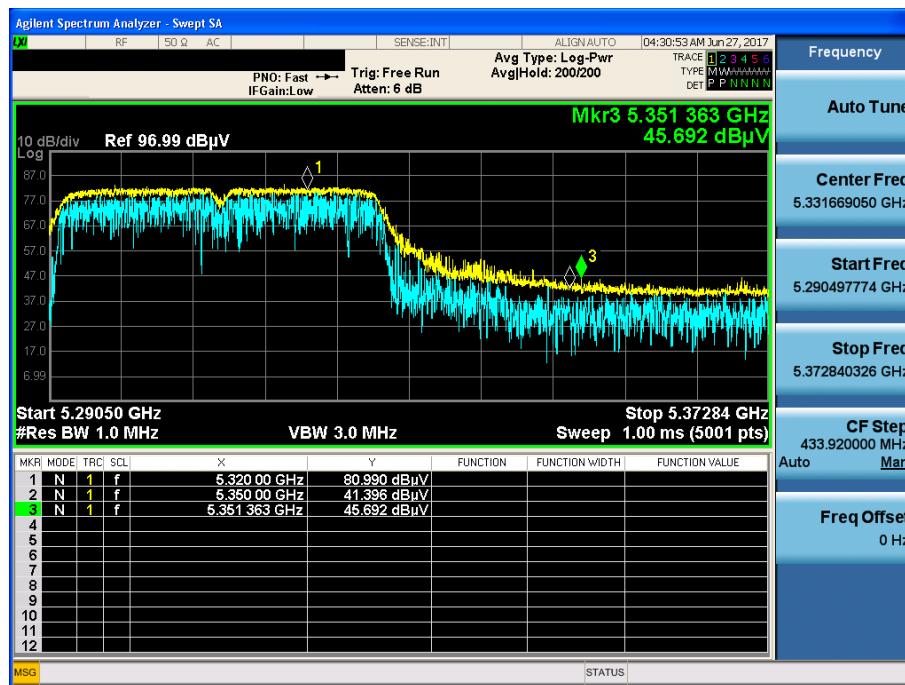


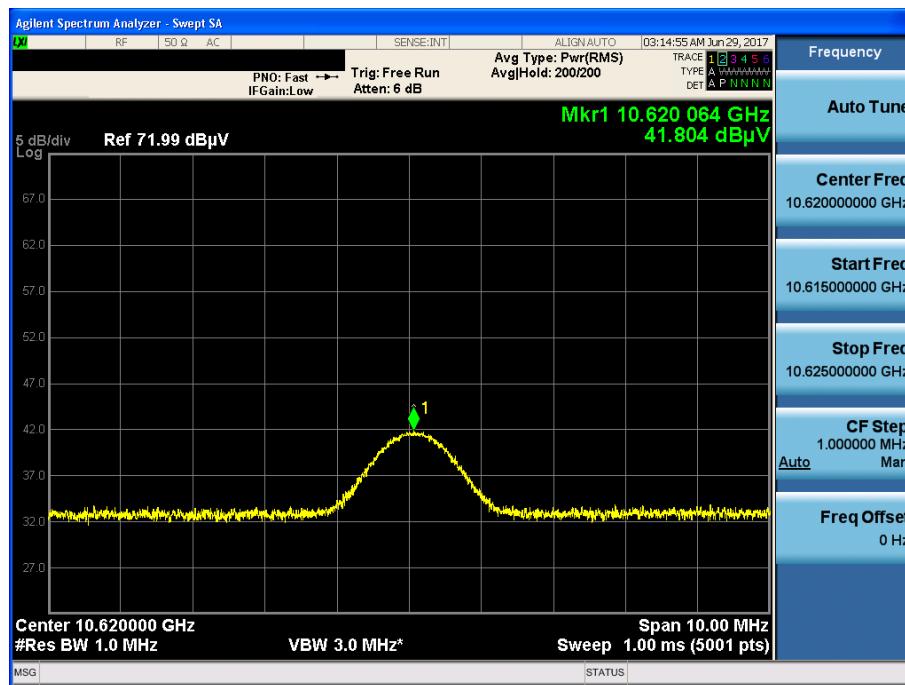
**802.11n(HT40) & U-NII 1 & Ch.38 & X axis & Hor**
**Detector Mode : PK**

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


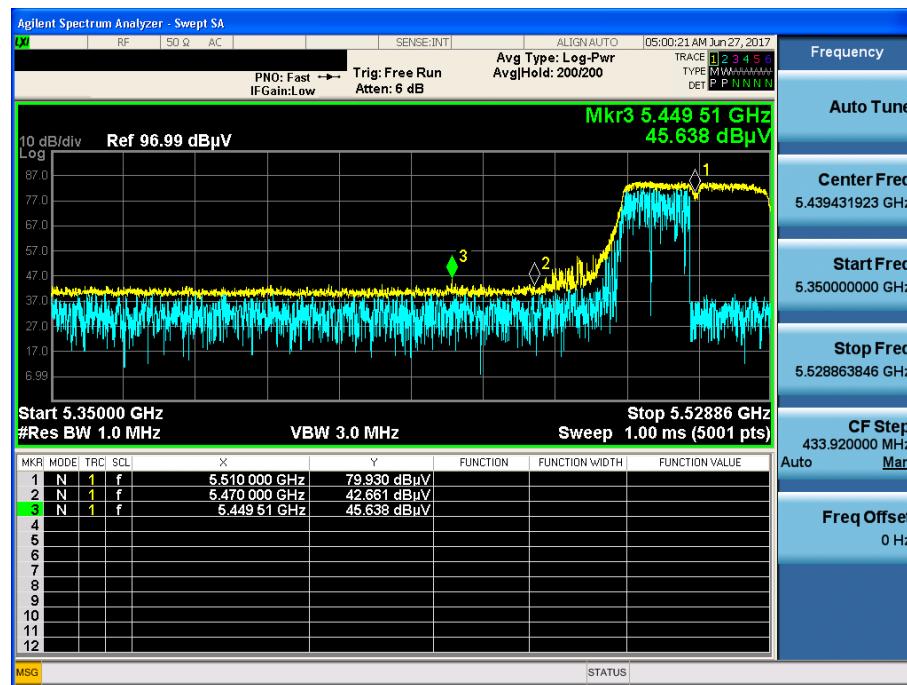
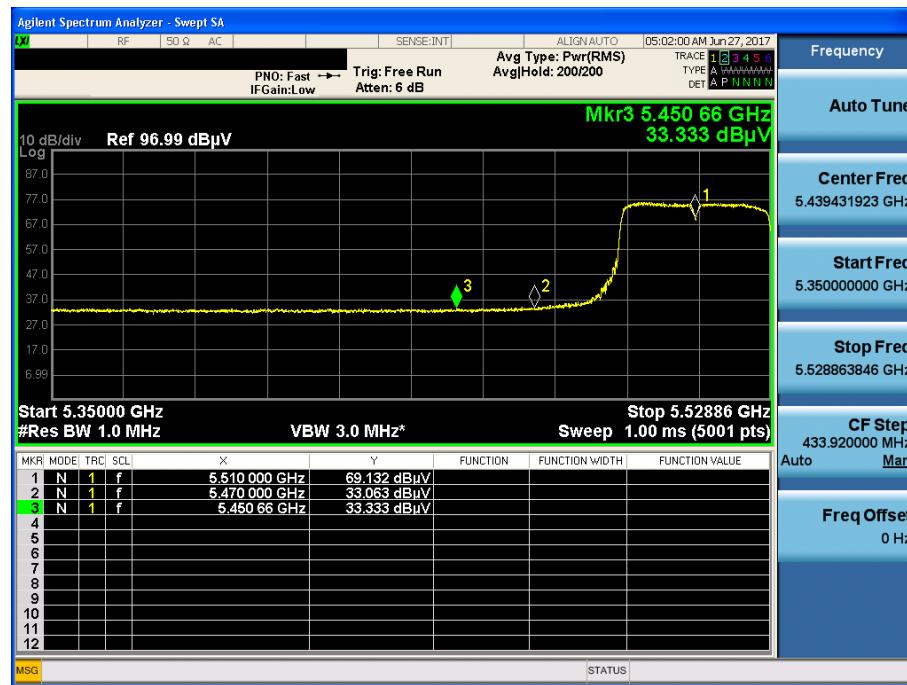
802.11n(HT40) &amp; U-NII 1 &amp; Ch.46 &amp; Z axis &amp; Ver

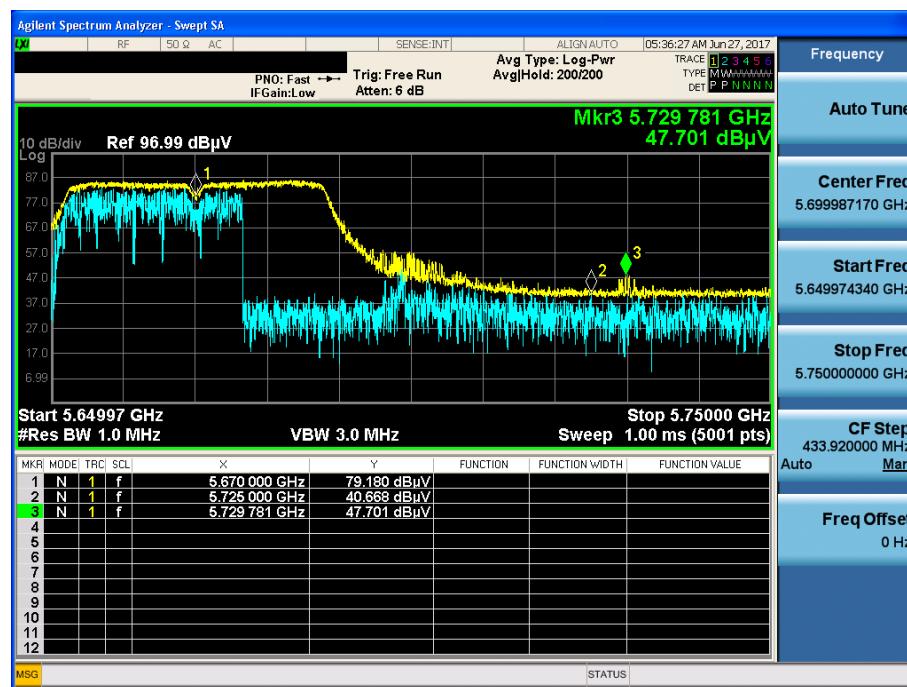
Detector Mode : PK



**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**

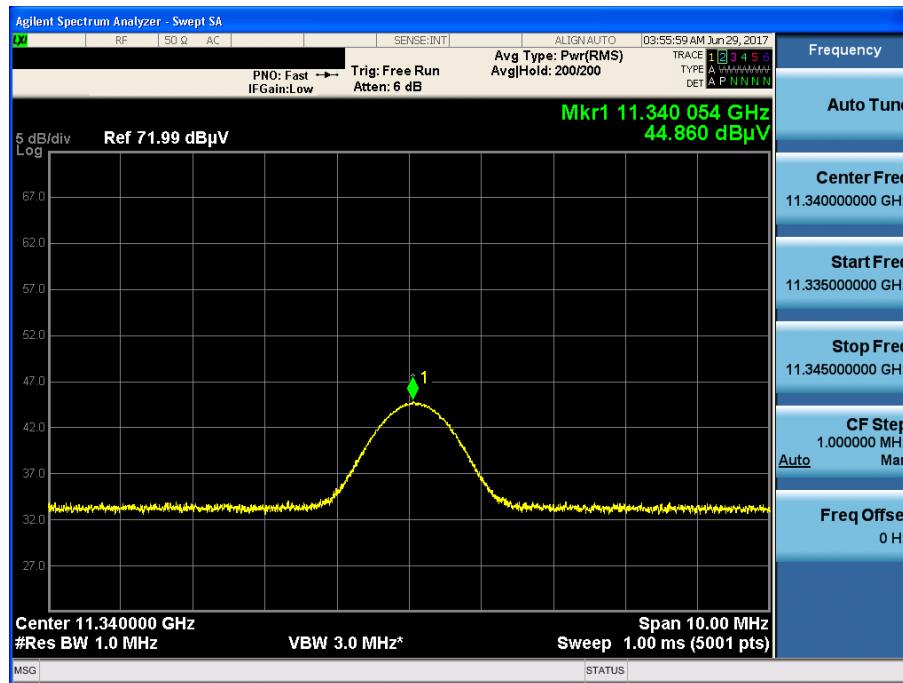

**802.11n(HT40) & U-NII 2A & Ch.62 & Z axis & Ver**
**Detector Mode : AV**


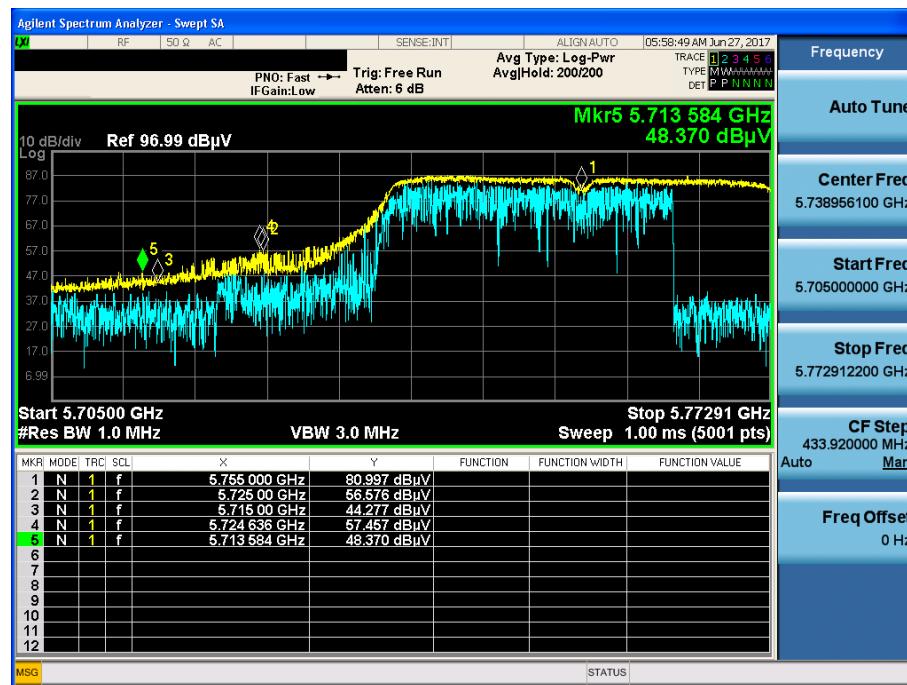
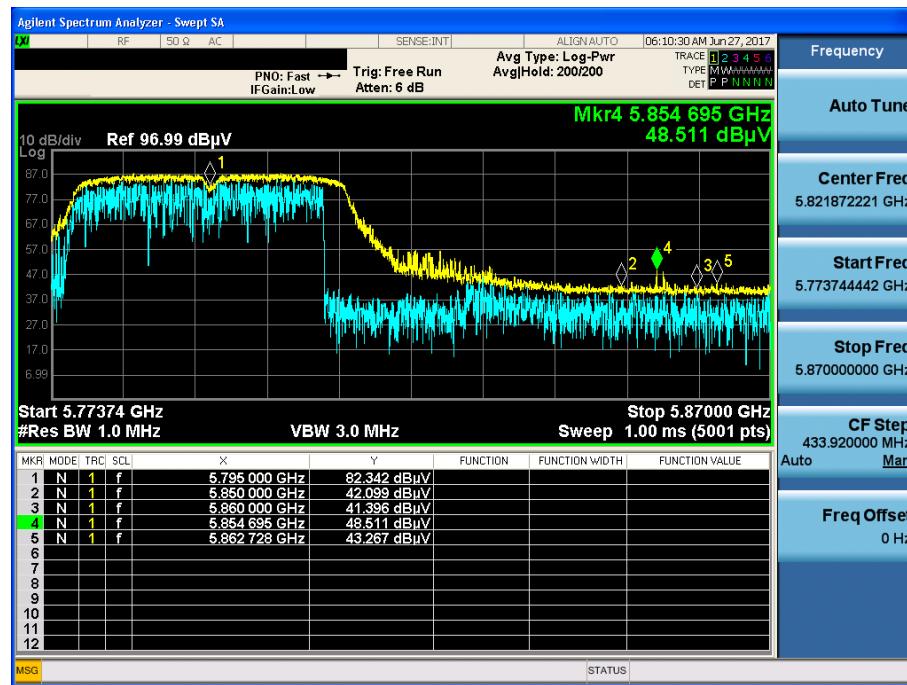
**802.11n(HT40) & U-NII 2C & Ch.102 & X axis & Hor**
**Detector Mode : PK**

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


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


802.11n(HT40) &amp; U-NII 2C &amp; Ch.134 &amp; Z axis &amp; Ver

Detector Mode : AV



**802.11n(HT40) & U-NII 3 & Ch.151 & Z axis & Ver**
**Detector Mode : PK**

**802.11n(HT40) & U-NII 3 & Ch.159 & Z axis & Ver**
**Detector Mode : PK**


802.11n(HT40) &amp; U-NII 3 &amp; Ch.151 &amp; Z axis &amp; Ver

Detector Mode : AV

