

TEST REPORT For FCC

FCC Standards : FCC 47CFR part 15 subpart E
Industry Canada Standards :RSS-210 Issue 8 & RSS-GEN Issue 4

Test Report No. : CTK-2015-00676
Date of Issue : 2015-06-08
FCC ID : A3LWEA403E
Certification Number IC : 649E-WEA403E
Model/Type No. : WEA403e
Kind of Product : WLAN Access Point
Applicant : Samsung Electronics Co., Ltd.
Applicant Address : 129, Samsung-ro Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea, 443-742
Manufacturer : Samsung Electronics Co., Ltd.
Manufacturer Address : 129, Samsung-ro Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea, 443-742
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Received Date : 2015-03-10
Test period : Start : 2015-05-20 End : 2015-06-08

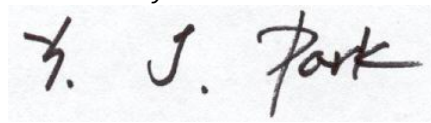
The test results presented in this report relate only to the object tested.

Tested by



Won-Jae, Hwang
Test Engineer
Date: 2015-06-08

Reviewed by



Young-Joon, Park
Technical Manager
Date: 2015-06-08

REPORT REVISION HISTORY

Date	Revision	Page No
2015-06-08	Issued (CTK-2015-00676)	All

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1.0 General Product Description

Equipment model name	WEA403e							
Serial number	Prototype							
EUT condition	Pre-production, not damaged							
Frequency Range	UNII 1 : 5180 MHz – 5240 MHz (20 MHz_BW) 5190 MHz – 5230 MHz (40 MHz_BW) 5210 MHz (80 MHz_BW) UNII 2A : 5260 MHz – 5320 MHz (20 MHz_BW) 5270 MHz – 5310 MHz (40 MHz_BW) 5290 MHz (80 MHz_BW) UNII 2C : 5500 MHz – 5720 MHz (20 MHz_BW) 5510 MHz – 5710 MHz (40 MHz_BW) 5530 MHz – 5690 MHz (80 MHz_BW) UNII 3 : 5745 MHz – 5825 MHz (20 MHz_BW) 5755 MHz – 5795 MHz (40 MHz_BW) 5775 MHz (80 MHz)							
RF output power :								
Band	Mode	Channel Bandwidth (MHz)	Frequency Range (MHz)	ANT1 (SISO)	ANT2 (SISO)	ANT3 (SISO)	ANT1+2 (MIMO)	ANT1+2+3 (MIMO)
				RF output power (dBm)				
UNII 1	802.11a	20	5180 – 5240	8.99	9.05	9.58	12.03	13.99
	802.11n	20	5180 - 5240	8.71	7.90	7.03	11.07	12.37
	802.11n	40	5190 – 5230	8.75	7.92	7.05	11.37	12.73
	802.11ac	20	5180 – 5240	8.57	7.92	7.13	11.27	12.68
	802.11ac	40	5190 – 5230	8.91	7.93	7.00	11.46	12.79
	802.11ac	80	5210	8.92	7.73	6.91	11.38	12.70
UNII 2A	802.11a	20	5260 – 5320	8.64	8.62	8.98	11.64	13.52
	802.11n	20	5260 – 5320	8.63	7.92	7.84	11.25	12.83
	802.11n	40	5270 – 5310	8.58	8.21	7.83	11.39	12.97
	802.11ac	20	5260 – 5320	8.58	7.93	7.79	11.28	12.79
	802.11ac	40	5270 – 5310	8.77	8.07	8.01	11.42	13.00
	802.11ac	80	5290	8.63	8.08	7.88	11.37	12.97
UNII 2C	802.11a	20	5500 – 5720	8.92	8.69	9.44	11.82	13.80
	802.11n	20	5500 – 5720	8.84	8.26	8.14	11.57	13.20
	802.11n	40	5510 – 5710	8.44	8.36	8.12	11.41	13.08
	802.11ac	20	5500 – 5720	8.79	8.21	8.31	11.52	13.22
	802.11ac	40	5510 – 5710	8.55	8.33	8.03	11.45	13.08
	802.11ac	80	5530 – 5690	8.70	8.20	8.26	11.45	13.15
UNII 3	802.11a	20	5745 – 5825	8.45	8.30	9.21	11.38	13.37
	802.11n	20	5745 – 5825	8.58	8.07	8.09	11.34	13.02
	802.11n	40	5755 - 5795	8.79	8.07	8.14	11.46	13.12
	802.11ac	20	5745 – 5825	8.67	7.94	7.97	11.33	12.92
	802.11ac	40	5755 – 5795	8.80	7.99	7.94	11.42	13.03
	802.11ac	80	5775	8.58	7.73	7.82	11.19	12.83

Transfer Rate	802.11a : 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n : up to 600 Mbps 802.11ac : up to 867 Mbps
Type of Modulation	OFDM
Power Source	DC 48 V(Adaptor,PoE)
Duty Cycle	802.11a : 98.4 % 802.11n_HT20 : 98.3 % 802.11n_HT40 : 98.9 % 802.11ac_VHT20 : 98.3 % 802.11ac_VHT40 : 98.9 % 802.11ac_VHT80 : 97.8 %
Antenna Type	- Dipole antenna - Patch antenna
Antenna Gain*	1. WDS-ANTD2D : 2 dBi @2.4GHz, 4 dBi @5GHz (Dipole) 2. WDS-ANTD4D : 4 dBi @2.4GHz, 5.5 dBi @5GHz (Dipole) 3. WDS-ANTP63 : 6.5 dBi @2.4GHz, 7 dBi @5GHz (Patch)

* This EUT is supported the two Dipole antenna. Worst case is WDS-ANTD4D. So the worst data of WDS-ANTD4D and Patch antenna are shown.

* Test mode

The worst-case data rates are determined to be as follows for each mode.

802.11a mode, 6 Mb/s, OFDM Modulation.

802.11n and 802.11ac mode, MCS 0, OFDM Modulation.

1.1 Tested Frequency

802.11a, 802.11n_HT20, 802.11ac_VHT20

Frequency (MHz)	LOW	MID	HIGH
UNII 1	5180	5200	5240
UNII 2A	5260	5300	5320
UNII 2C	5500	5600	5720
UNII 3	5745	5785	5825

802.11n_HT40, 802.11ac_VHT40

Frequency (MHz)	LOW	MID	HIGH
UNII 1	5190	-	5230
UNII 2A	5270	-	5310
UNII 2C	5510	5590	5710
UNII 3	5755	-	5795

802.11ac_VHT80

Frequency (MHz)	LOW	MID	HIGH
UNII 1	5210	-	-
UNII 2A	5290	-	-
UNII 2C	5530	-	5690
UNII 3	5775	-	-

1.2 Device Modifications

The following modifications were necessary for compliance:

Not applicable

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	DELL INC.	Inspiron 6400	-
Switching Adapter	DDongguang Lite Power 2nd Plant	LA65NS0-00	-
PoE Switch	NETGEAR INC	GS110TP	200CC8412556
AC/DC ADAPTER	BAO HUI SCIENCE & TECHNOLOGY CO., LTD.	AD8190LF	-

1.4 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.5 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 m & 10 m SAC and Conducted Test Site to perform FCC Part 15/18 measurements	 805871
JAPAN	VCCI	3 m & 10 m SAC and Conducted Test Site	 R-948, C-986, T-1843
KOREA	MSIP	EMI (Electromagnetic Interference / Emission) EMS (Electromagnetic Susceptibility / Immunity)	 No. 51, KR0025
International	KOLAS	EMC	

2 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.407(e)	6 dB Bandwidth	> 500 kHz	Conducted	C
15.407(a)	26 dB Bandwidth and 99% Bandwidth	NA		C
15.407(a)(1)	Conducted Output Power	< 1 W (5150 – 5250 MHz) < 250 mW (5250 – 5350 MHz) < 250 mW (5470 – 5725 MHz) < 1 W (5725 – 5850 MHz)		C
15.407(a)(1)	Power Spectral Density	< 17 dBm/MHz (5150 – 5250 MHz) < 11 dBm/MHz (5250 – 5350 MHz) < 11 dBm/MHz (5470 – 5725 MHz) < 30 dBm/500KHz (5725 – 5850 MHz)		C
15.407(g)	Frequency Stability	NA		C
15.407 (b)	Undesirable emission	< -27 dBm/MHz EIRP (5150 – 5250 MHz, 5250 – 5350 MHz, 5470 – 5725 MHz) < -17 dBm/MHz EIRP (5715 – 5725 MHz, 5850 – 5860 MHz) < -27 dBm/MHz EIRP outside (5715 - 5850 MHz)	Radiated	C
15.205, 15.407 (b)(1),(5),(6)	Radiated Spurious Emission	15.209(a)		C
15.207	AC Conducted Emissions	15.207(a)	Line Conducted	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:

- FCC Part 15.407, ANSI C63.10-2013

The tests were performed according to the method of measurements prescribed in

KDB No.789033

2.1 Technical Characteristic Test

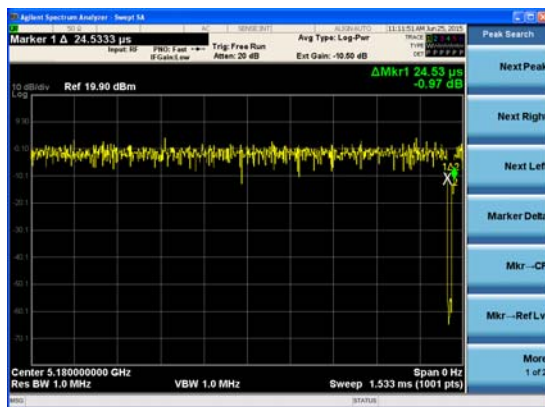
2.1.1 ON Time, Duty Cycle

Procedure:

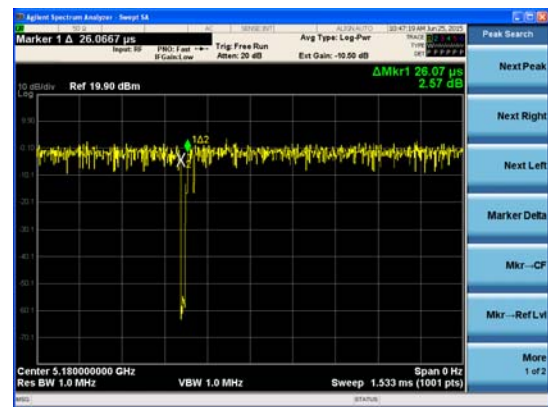
KDB 789033 Zero-Span Spectrum Analyzer Method.

Measurement Data:

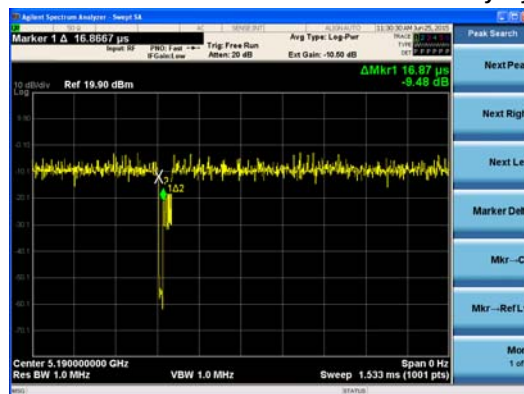
	ON Time (ms)	Period (ms)	TX OFF (ms)	Duty Cycle (linear)	Duty Cycle (%)
11a	1.508	1.533	0.025	0.984	98.4
11n_HT20	1.507	1.533	0.026	0.983	98.3
11n_HT40	1.516	1.533	0.017	0.989	98.9
11ac_VHT20	1.507	1.533	0.026	0.983	98.3
11ac_VHT40	1.516	1.533	0.017	0.989	98.9
11ac_VHT80	1.499	1.533	0.034	0.978	97.8



Duty Cycle_802.11a



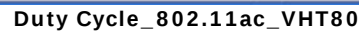
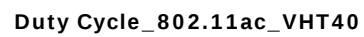
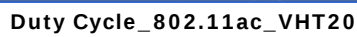
Duty Cycle_802.11n_HT20



Duty Cycle_802.11n_HT40



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2.1.2 6 dB Bandwidth

Procedure:

The bandwidth at 6 dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz

Span = 1.5 time > RBW

VBW = 300 kHz

Sweep = auto

Trace = max hold

Detector function = peak

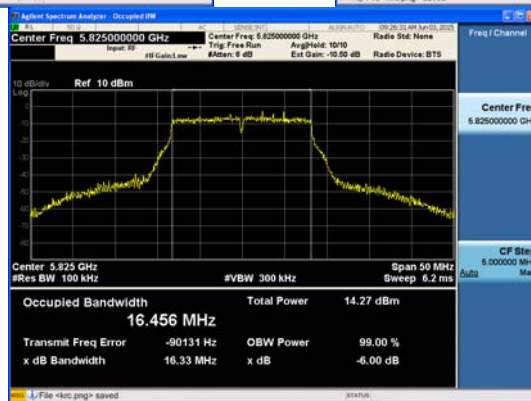
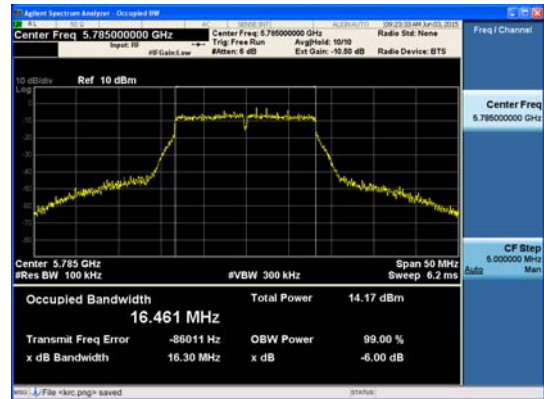
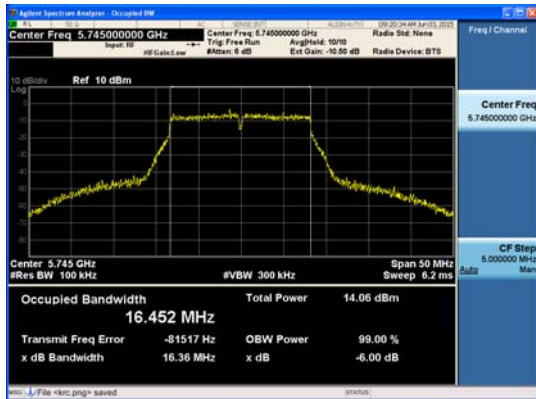
Measurement Data:

Ant : A1

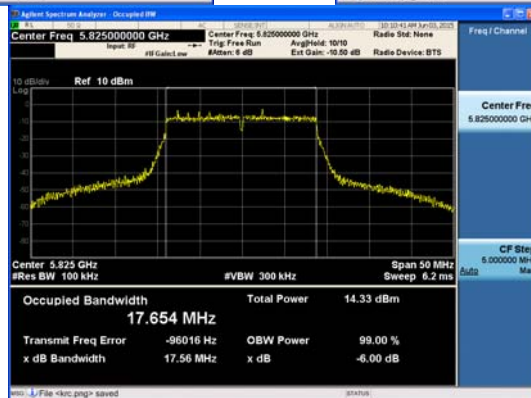
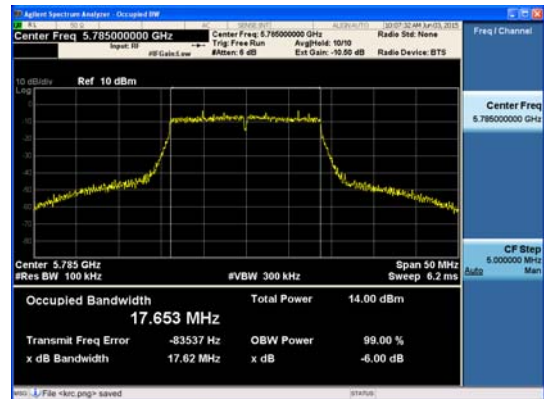
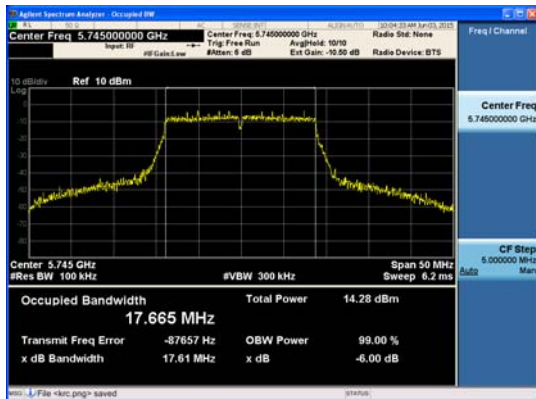
	6 dB Bandwidth (MHz)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5745 MHz	16.36	17.61	17.60
5785 MHz	16.30	17.62	17.58
5825 MHz	16.33	17.56	17.60
Measurement uncertainty	± 3 dB		

	6 dB Bandwidth (MHz)	
Mode	802.11n_HT40	802.11ac_VHT40
Frequency		
5755 MHz	36.42	36.35
5795 MHz	36.37	36.37
Measurement uncertainty	± 3 dB	

	6 dB Bandwidth (MHz)
Mode	802.11ac_VHT80
Frequency	
5775 MHz	76.29
Measurement uncertainty	± 3 dB



Ant : A1_802.11a



Ant : A1_802.11n_HT20



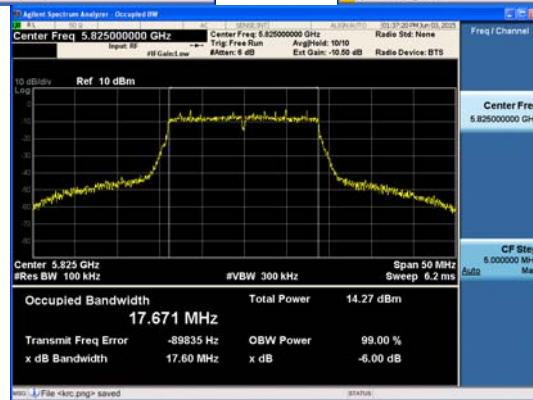
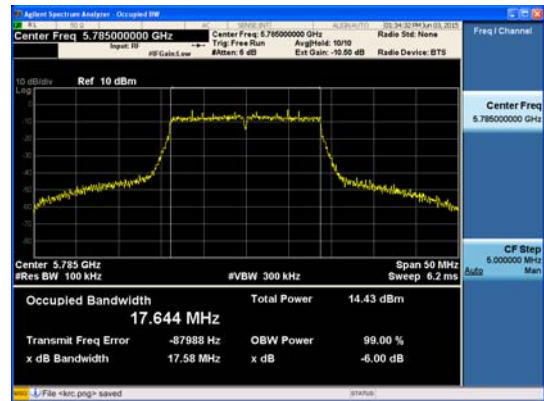
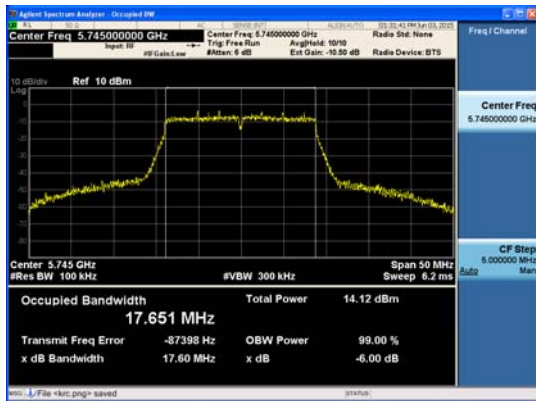
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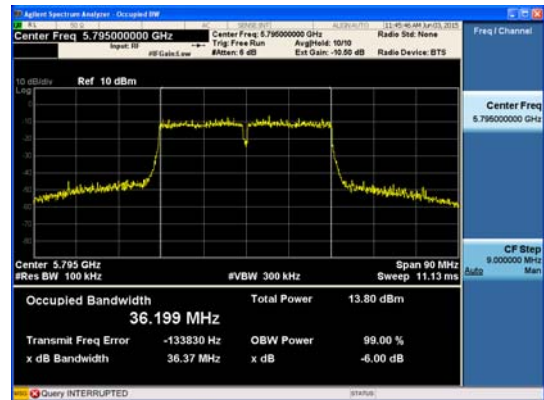
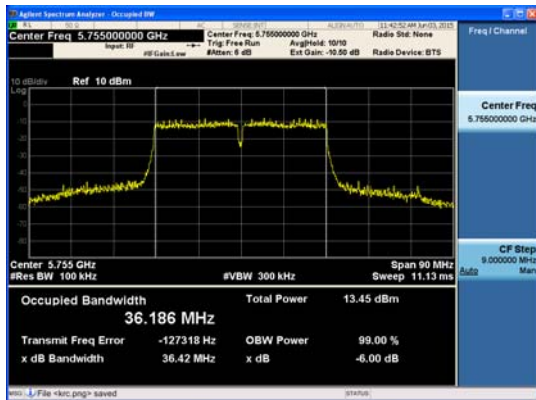
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Ant : A1_802.11ac_VHT20



Ant : A1_802.11n_HT40



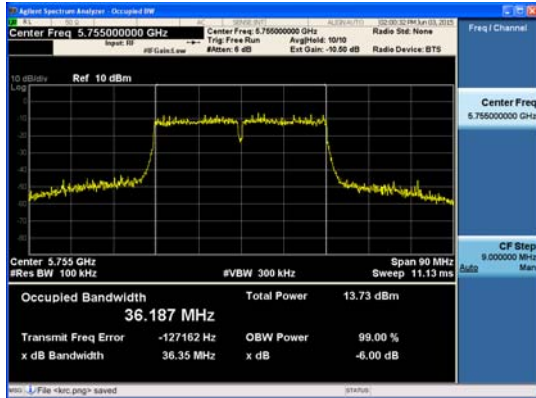
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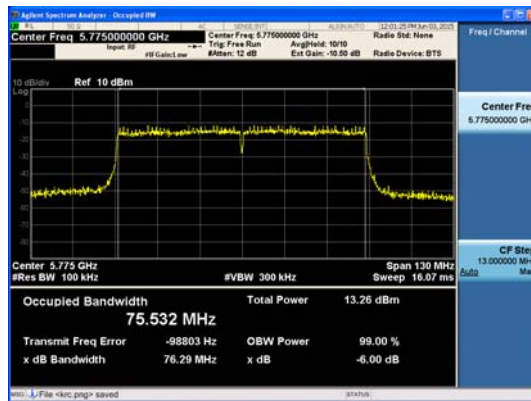
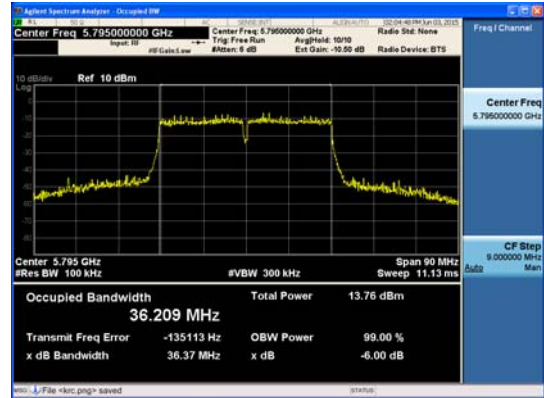
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Ant : A1_802.11ac_HT40



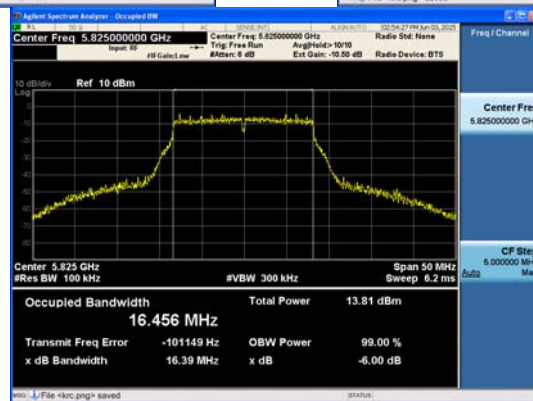
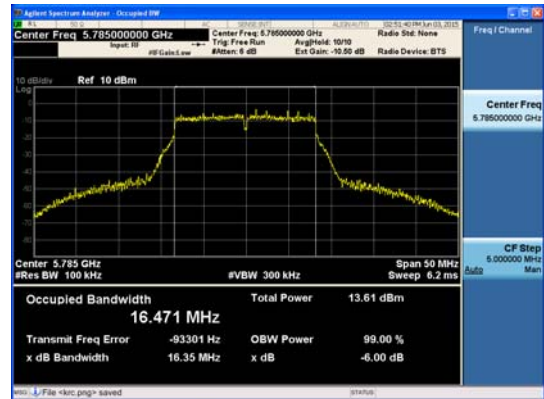
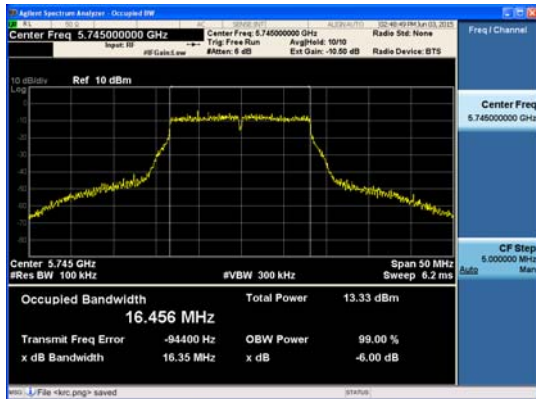
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Ant : A2

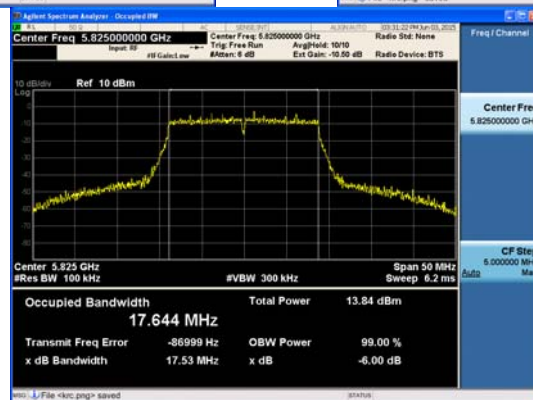
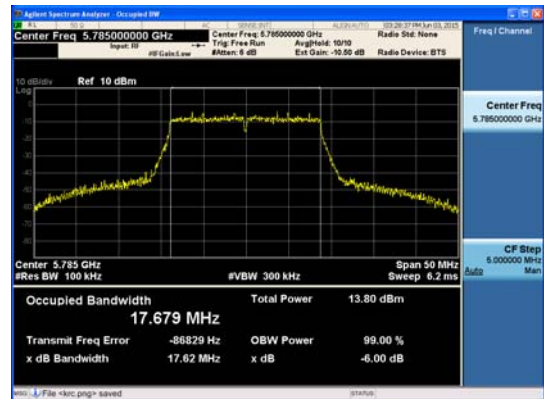
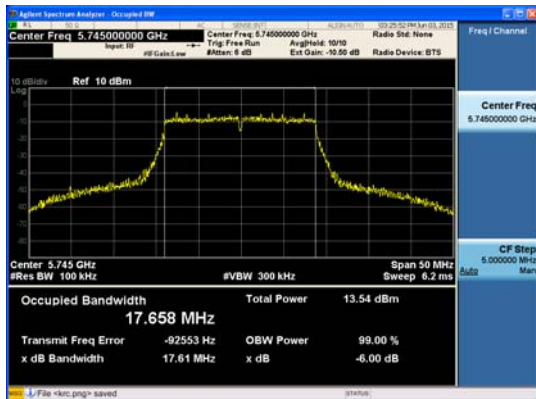
	6 dB Bandwidth (MHz)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5745 MHz	16.35	17.61	17.63
5785 MHz	16.35	17.62	17.60
5825 MHz	16.39	17.53	17.53
Measurement uncertainty	± 3 dB		

	6 dB Bandwidth (MHz)	
Mode	802.11n_HT40	802.11ac_VHT40
Frequency		
5755 MHz	36.36	36.36
5795 MHz	36.39	36.37
Measurement uncertainty	± 3 dB	

	6 dB Bandwidth (MHz)
Mode	802.11ac_VHT80
Frequency	
5775 MHz	76.25
Measurement uncertainty	± 3 dB



Ant : A2_802.11a



Ant : A2_802.11n_HT20



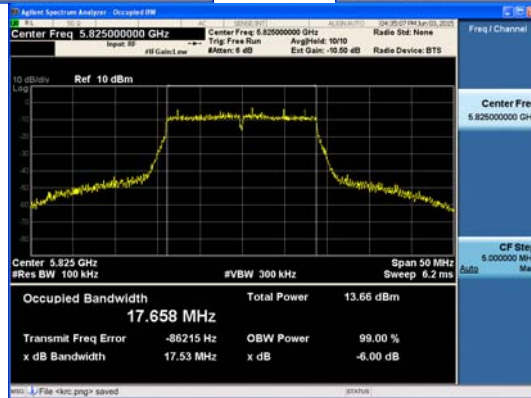
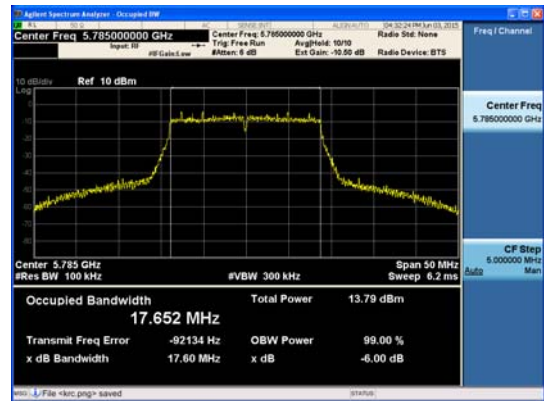
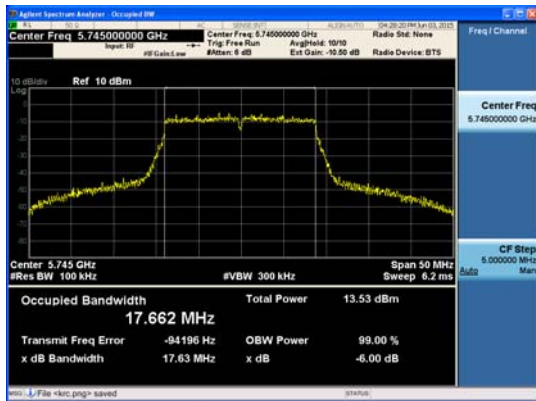
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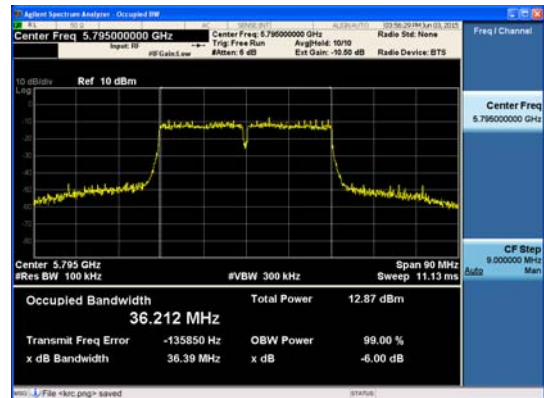
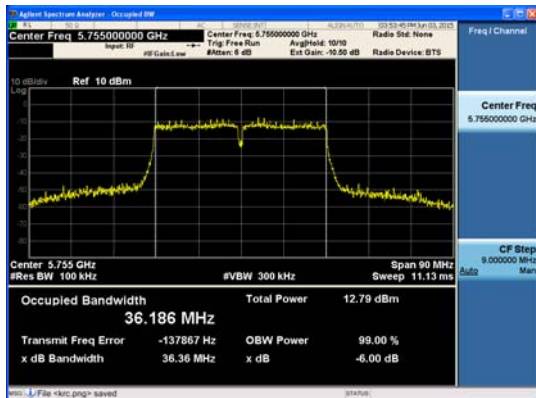
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Ant : A2_802.11ac_VHT20



Ant : A2_802.11n_HT40



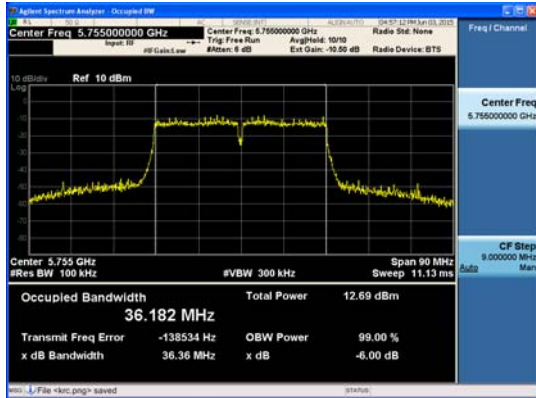
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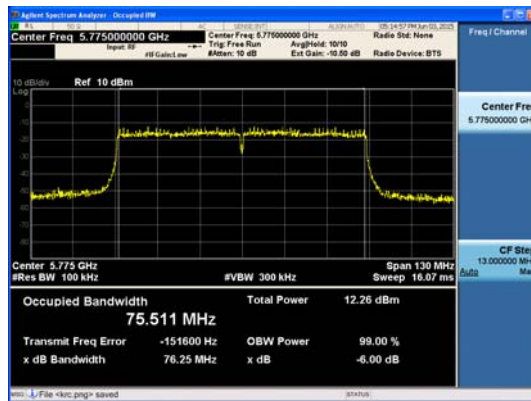
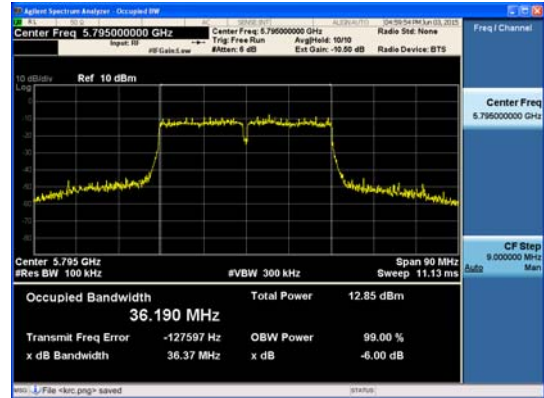
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Ant : A2_802.11ac_HT40



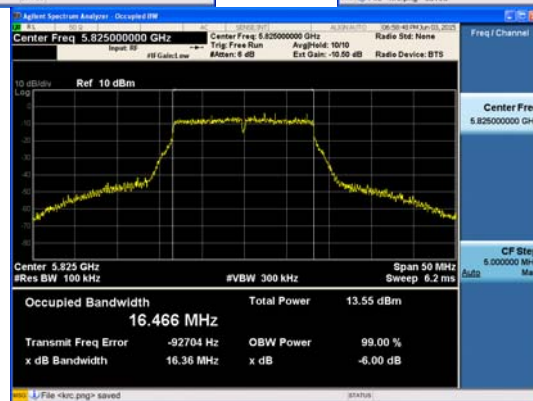
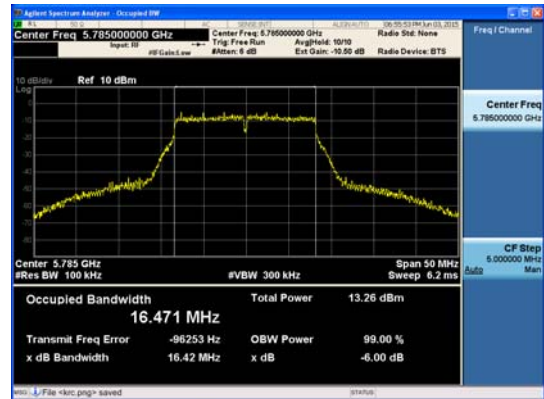
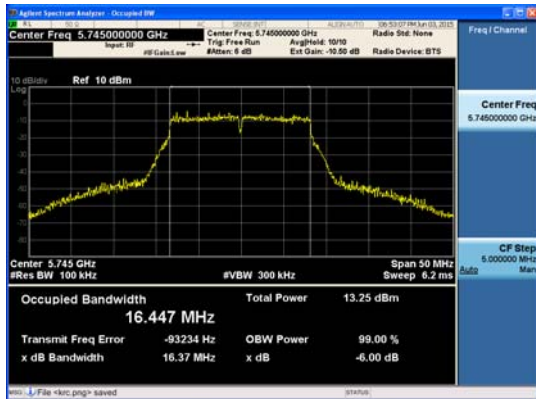
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Ant : A3

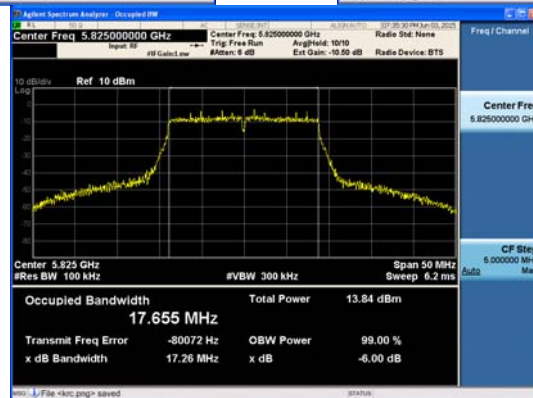
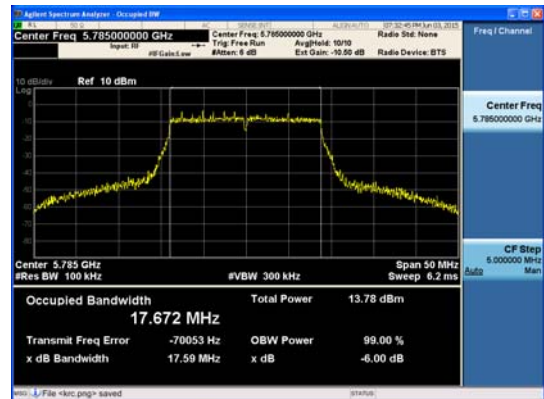
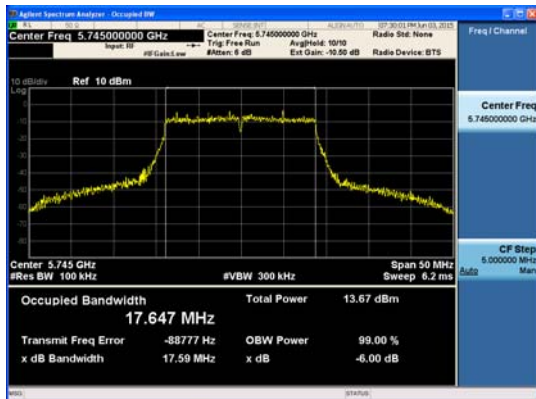
	6 dB Bandwidth (MHz)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5745 MHz	16.37	17.59	17.57
5785 MHz	16.42	17.59	17.65
5825 MHz	16.36	17.26	17.60
Measurement uncertainty	± 3 dB		

	6 dB Bandwidth (MHz)	
Mode	802.11n_HT40	802.11ac_VHT40
Frequency		
5755 MHz	36.37	36.39
5795 MHz	36.39	36.35
Measurement uncertainty	± 3 dB	

	6 dB Bandwidth (MHz)
Mode	802.11ac_VHT80
Frequency	
5775 MHz	75.95
Measurement uncertainty	± 3 dB



Ant : A3_802.11a



Ant : A3_802.11n_HT20



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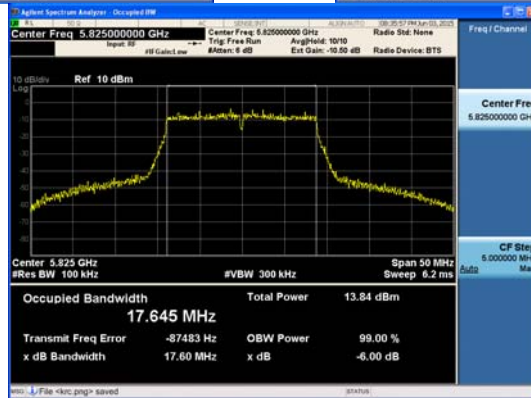
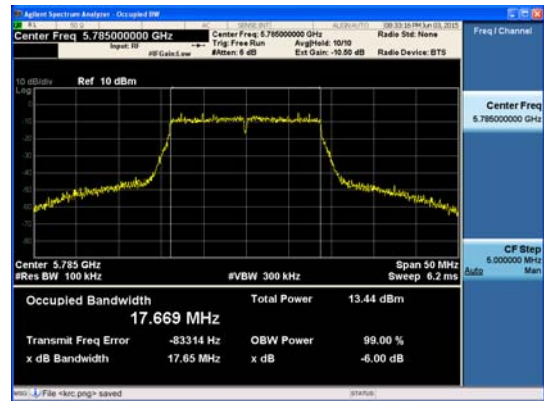
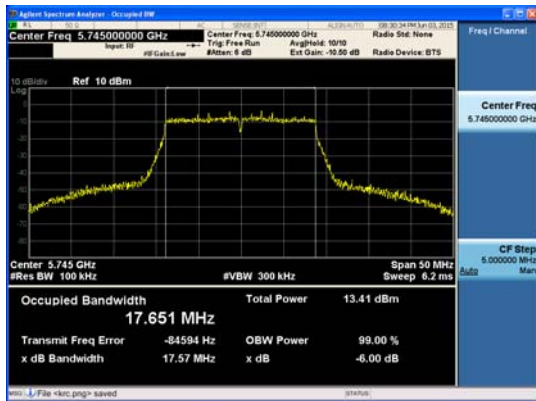
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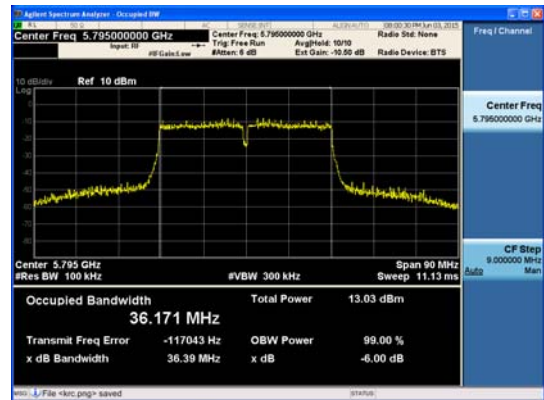
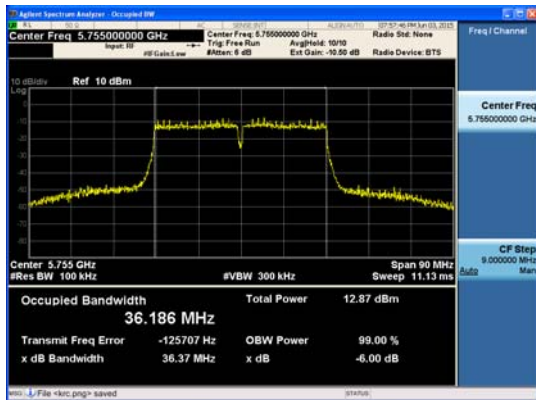
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Ant : A3_802.11ac_VHT20



Ant : A3_802.11n_HT40



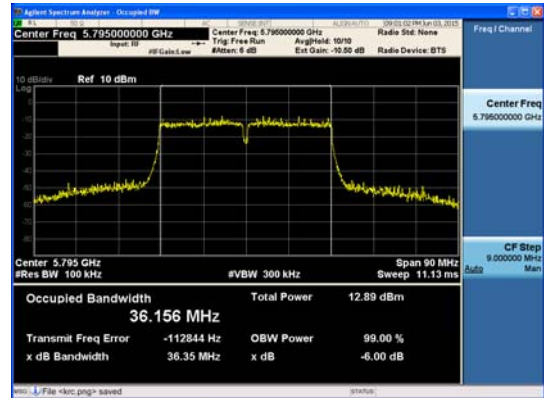
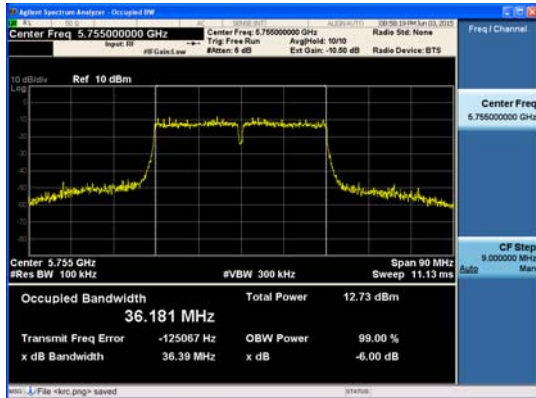
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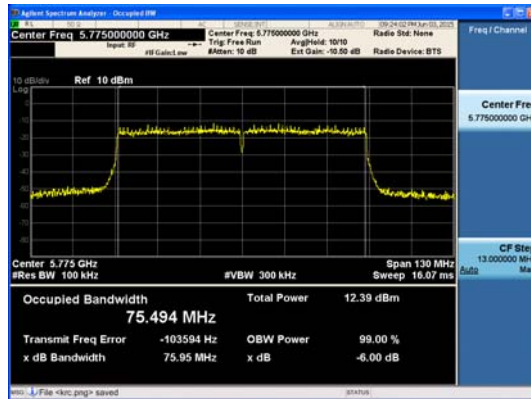
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Ant : A3_802.11ac_HT40



Ant : A3_802.11ac_VHT80

Ant : M1

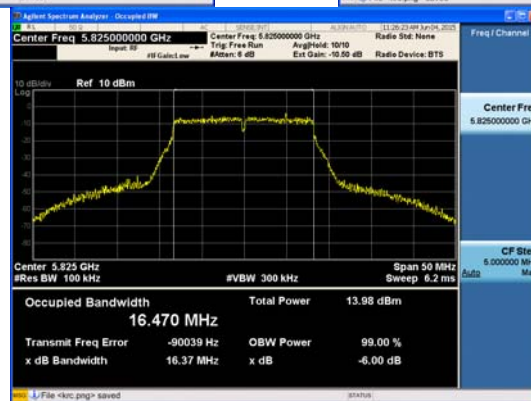
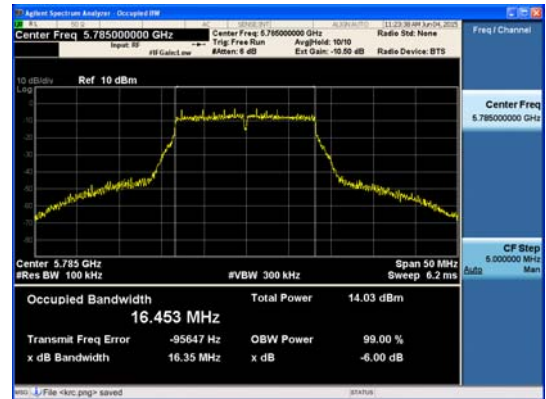
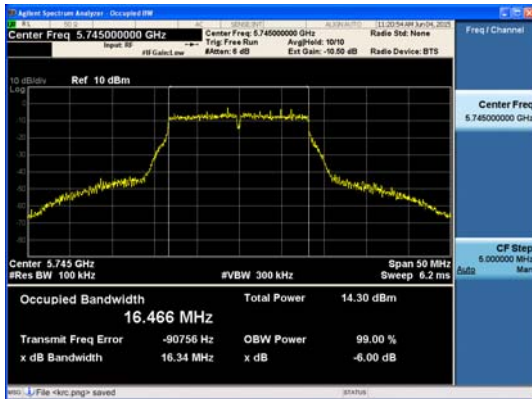
	6 dB Bandwidth (MHz)
Mode	802.11a
Frequency	
5745 MHz	16.34
5785 MHz	16.35
5825 MHz	16.37
Measurement uncertainty	± 3 dB

Ant : M2

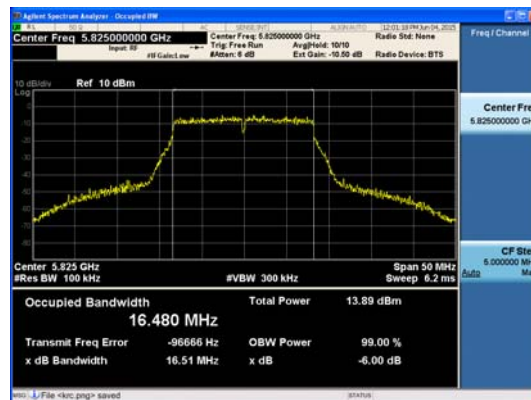
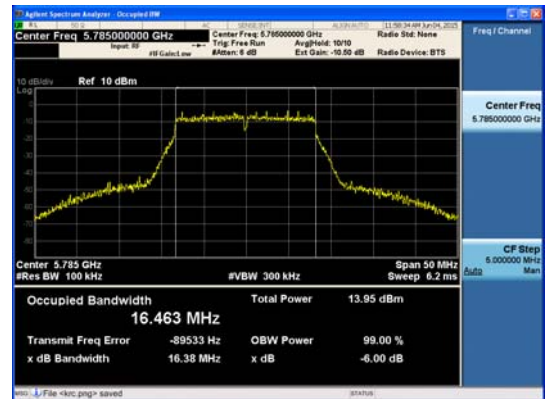
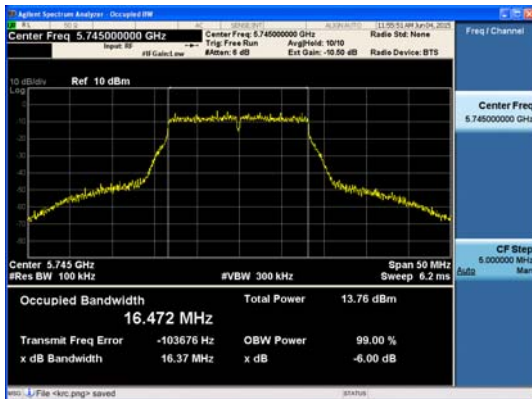
	6 dB Bandwidth (MHz)
Mode	802.11a
Frequency	
5745 MHz	16.37
5785 MHz	16.38
5825 MHz	16.51
Measurement uncertainty	± 3 dB

Ant : M3

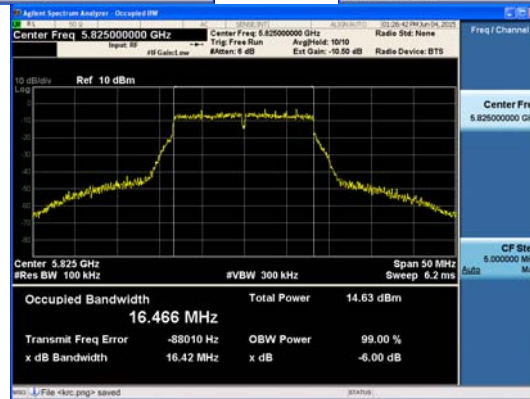
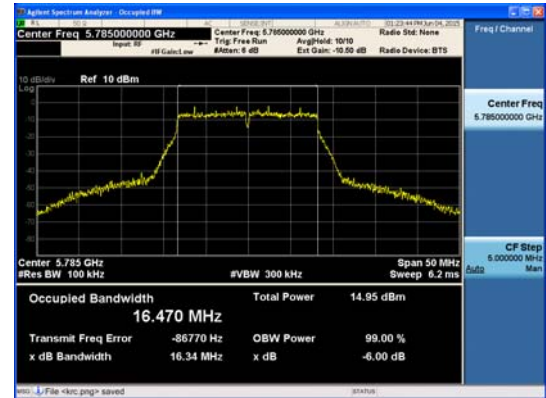
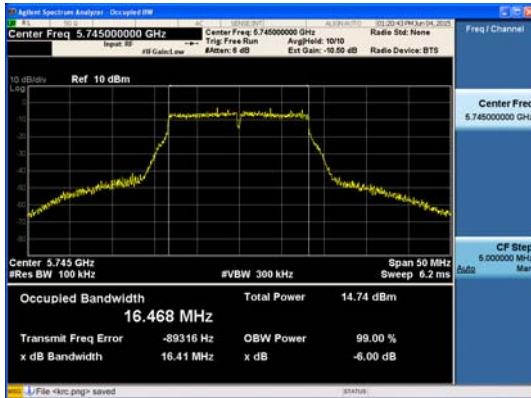
	6 dB Bandwidth (MHz)
Mode	802.11a
Frequency	
5745 MHz	16.41
5785 MHz	16.34
5825 MHz	16.42
Measurement uncertainty	± 3 dB



Ant : M1_802.11a



Ant : M2_802.11a



Ant : M3_802.11a

2.1.3 26 dB Bandwidth and 99 % Bandwidth

Procedure:

The bandwidth at 26 dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 26 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 26 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = approximately 1 % of the emission bandwidth Span = 1.5 time > RBW

VBW = VBW > RBW

Sweep = auto

Trace = max hold

Detector function = peak

Measurement Data:

Ant : A1

Mode	26 dB Bandwidth and 99% Bandwidth (MHz)					
	802.11a		802.11n_HT20		802.11ac_VHT20	
Frequency	26 dB	99%	26 dB	99%	26 dB	99%
5180 MHz	21.33	17.66	22.05	18.61	21.57	18.58
5200 MHz	21.38	17.73	21.96	18.56	21.81	18.52
5240 MHz	21.41	17.72	21.70	18.53	21.62	18.60
5260 MHz	21.31	17.74	21.70	18.60	21.62	18.51
5300 MHz	21.30	17.76	21.77	18.65	21.71	18.58
5320 MHz	21.27	17.71	21.78	18.58	21.44	18.59
5500 MHz	21.29	17.80	22.09	18.66	21.54	18.57
5600 MHz	21.32	17.72	21.93	18.62	21.69	18.64
5720 MHz	21.28	17.79	21.94	18.62	21.61	18.58
5745 MHz	20.59	17.25	21.13	18.21	21.00	18.18
5785 MHz	20.66	17.22	21.11	18.23	20.95	18.10
5825 MHz	20.66	17.18	21.01	18.16	21.09	18.22
Measurement uncertainty	± 3 dB					



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	26 dB Bandwidth and 99% Bandwidth (MHz)			
Mode	802.11n_HT40		802.11ac_VHT40	
Frequency	26 dB	99 %	26 dB	99 %
5190 MHz	40.66	36.72	40.42	36.64
5230 MHz	40.44	36.69	40.63	36.63
5270 MHz	40.35	36.65	40.52	36.70
5310 MHz	40.91	36.60	40.61	36.64
5510 MHz	40.68	36.69	40.86	36.67
5590 MHz	40.72	36.65	40.56	36.67
5710 MHz	40.34	36.68	40.62	36.69
5755 MHz	39.86	36.31	39.92	36.33
5795 MHz	39.96	36.38	39.83	36.31
Measurement uncertainty	± 3 dB			

	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11ac_VHT80	
Frequency	26 dB	99 %
5210 MHz	81.69	75.81
5290 MHz	82.46	75.81
5530 MHz	81.91	75.93
5690 MHz	82.50	75.89
5775 MHz	81.48	75.71
Measurement uncertainty	± 3 dB	

Ant : A2

	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11a		802.11n_HT20		802.11ac_VHT20	
Frequency	26 dB	99%	26 dB	99%	26 dB	99%
5180 MHz	21.29	17.71	21.44	18.62	21.53	18.69
5200 MHz	21.25	17.75	21.67	18.63	21.34	18.58
5240 MHz	21.25	17.71	21.77	18.55	21.59	18.66
5260 MHz	21.25	17.75	21.53	18.62	21.92	18.56
5300 MHz	21.30	17.74	22.01	18.61	21.52	18.61
5320 MHz	21.35	17.74	21.66	18.64	21.72	18.56
5500 MHz	21.34	17.79	21.84	18.58	21.48	18.64
5600 MHz	21.44	17.77	21.88	18.67	21.82	18.60
5720 MHz	21.45	17.82	22.07	18.67	21.75	18.60
5745 MHz	20.77	17.17	20.97	18.14	21.02	18.24
5785 MHz	20.64	17.21	20.99	18.15	20.96	18.15
5825 MHz	20.70	17.22	20.92	18.13	21.13	18.15
Measurement uncertainty	± 3 dB					

	26 dB Bandwidth and 99% Bandwidth (MHz)			
Mode	802.11n_HT40		802.11ac_VHT40	
Frequency	26 dB	99 %	26 dB	99 %
5190 MHz	40.70	36.61	40.43	36.61
5230 MHz	40.34	36.64	40.53	36.60
5270 MHz	40.58	36.65	40.43	36.70
5310 MHz	40.45	36.62	40.36	36.68
5510 MHz	40.32	36.64	40.59	36.66
5590 MHz	40.52	36.72	40.44	36.70
5710 MHz	40.43	36.65	40.44	36.67
5755 MHz	39.86	36.33	39.94	36.29
5795 MHz	39.91	36.32	36.69	36.28
Measurement uncertainty	± 3 dB			



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	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11ac_VHT80	
Frequency	26 dB	99 %
5210 MHz	81.83	75.78
5290 MHz	82.47	75.83
5530 MHz	82.29	75.86
5690 MHz	82.51	75.85
5775 MHz	82.03	75.67
Measurement uncertainty	± 3 dB	

Ant : A3

	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11a		802.11n_HT20		802.11ac_VHT20	
Frequency	26 dB	99%	26 dB	99%	26 dB	99%
5180 MHz	21.30	17.76	21.61	18.67	21.57	18.58
5200 MHz	21.31	17.85	22.27	18.63	21.66	18.60
5240 MHz	21.34	17.75	22.30	18.63	21.69	18.68
5260 MHz	21.51	17.91	22.30	18.72	21.61	18.64
5300 MHz	21.36	17.72	21.75	18.71	21.65	18.61
5320 MHz	21.15	17.81	22.08	18.70	21.77	18.56
5500 MHz	21.35	17.76	21.85	18.70	21.75	18.68
5600 MHz	21.27	17.76	22.18	18.61	21.68	18.70
5720 MHz	21.34	17.80	21.86	18.69	21.79	18.60
5745 MHz	20.90	17.27	20.94	18.17	21.10	18.22
5785 MHz	20.77	17.28	21.17	18.16	21.19	18.18
5825 MHz	20.81	17.27	20.95	18.18	21.12	18.14
Measurement uncertainty	± 3 dB					



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	26 dB Bandwidth and 99% Bandwidth (MHz)			
Mode	802.11n_HT40		802.11ac_VHT40	
Frequency	26 dB	99 %	26 dB	99 %
5190 MHz	40.66	36.63	40.42	36.64
5230 MHz	40.24	36.63	40.38	36.58
5270 MHz	40.37	36.68	40.54	36.67
5310 MHz	40.36	36.64	40.67	36.70
5510 MHz	40.55	36.66	40.50	36.64
5590 MHz	40.47	36.67	40.69	36.68
5710 MHz	40.63	36.65	40.75	36.65
5755 MHz	39.82	36.34	39.85	36.36
5795 MHz	39.93	36.35	39.65	36.32
Measurement uncertainty	± 3 dB			

	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11ac_VHT80	
Frequency	26 dB	99 %
5210 MHz	82.16	75.82
5290 MHz	82.33	75.83
5530 MHz	82.17	75.90
5690 MHz	82.38	75.92
5775 MHz	82.12	75.74
Measurement uncertainty	± 3 dB	

Ant : M1

	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11a	
Frequency	26 dB	99%
5180 MHz	21.41	17.78
5200 MHz	21.25	17.76
5240 MHz	21.27	17.71
5260 MHz	21.25	17.70
5300 MHz	21.23	17.75
5320 MHz	21.30	17.77
5500 MHz	21.31	17.84
5600 MHz	21.24	17.84
5720 MHz	21.13	17.73
5745 MHz	20.60	17.18
5785 MHz	20.66	17.19
5825 MHz	20.69	17.22
Measurement uncertainty	± 3 dB	

Ant : M2

	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11a	
Frequency	26 dB	99%
5180 MHz	21.32	17.81
5200 MHz	21.24	17.82
5240 MHz	21.39	17.76
5260 MHz	21.29	17.86
5300 MHz	21.42	17.82
5320 MHz	21.15	17.71
5500 MHz	21.36	17.77
5600 MHz	21.41	17.80
5720 MHz	21.40	17.83
5745 MHz	20.64	17.23
5785 MHz	20.56	17.15
5825 MHz	20.66	17.21
Measurement uncertainty	± 3 dB	

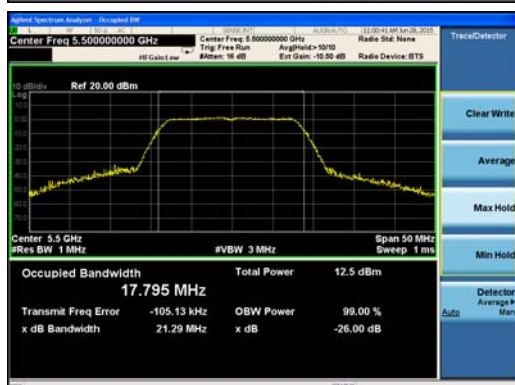
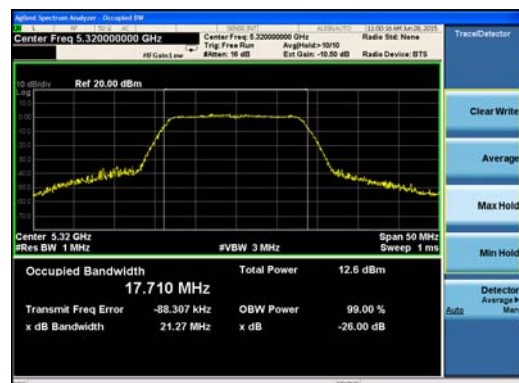
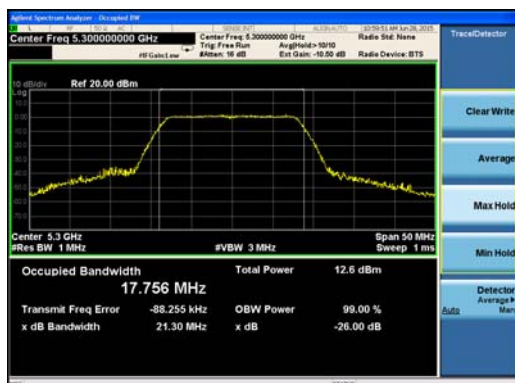
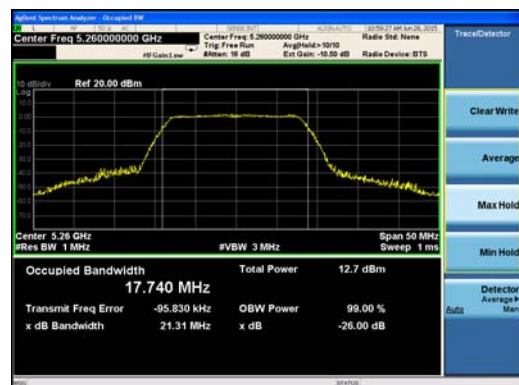
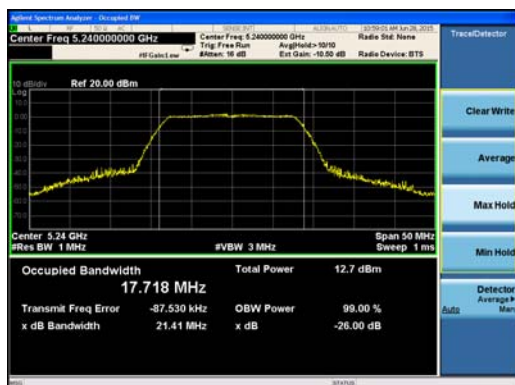
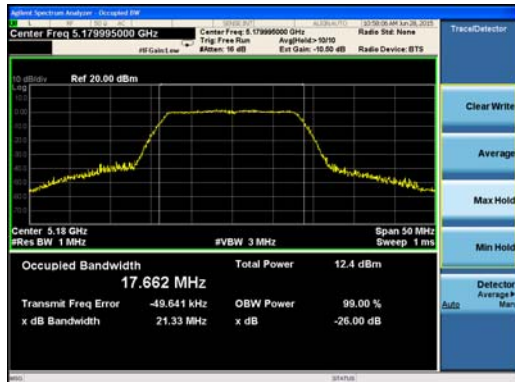
Ant : M3

	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11a	
Frequency	26 dB	99%
5180 MHz	21.28	17.83
5200 MHz	21.40	17.82
5240 MHz	21.31	17.71
5260 MHz	21.30	17.74
5300 MHz	21.28	17.77
5320 MHz	21.34	17.85
5500 MHz	21.35	17.80
5600 MHz	21.39	17.91
5720 MHz	21.46	17.85
5745 MHz	20.73	17.18
5785 MHz	20.73	17.18
5825 MHz	20.71	17.24
Measurement uncertainty	± 3 dB	

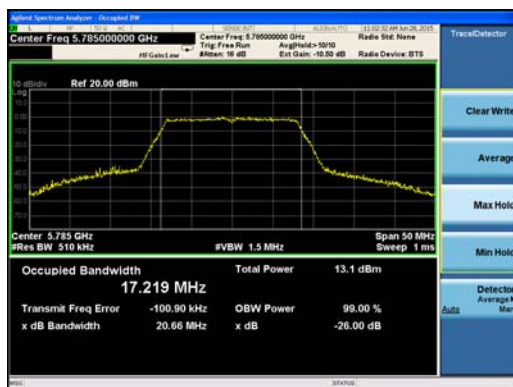
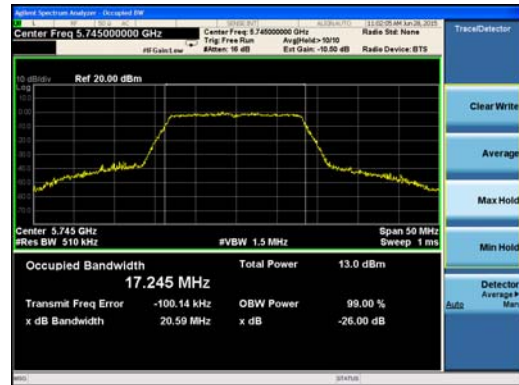
Minimum Standard:

6 dB Bandwidth > 500kHz

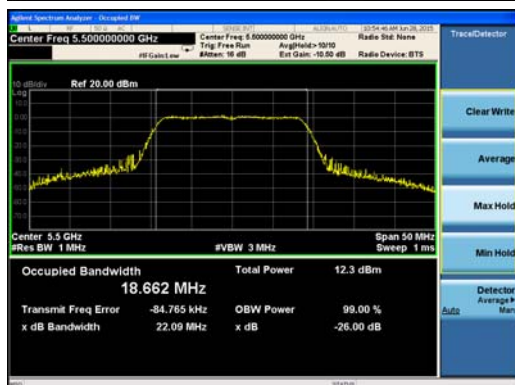
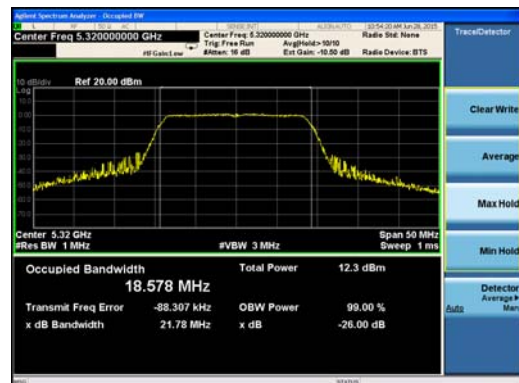
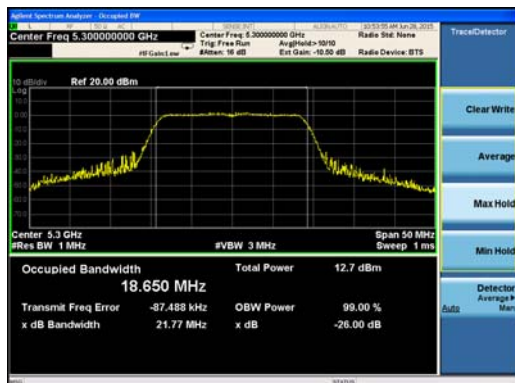
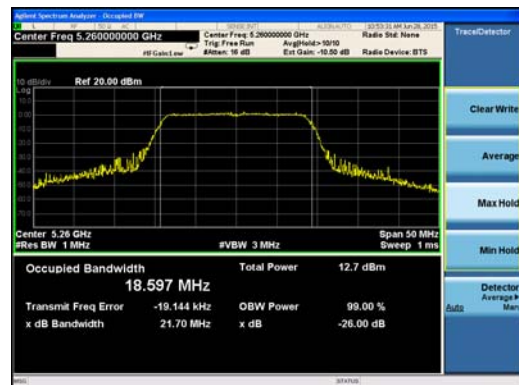
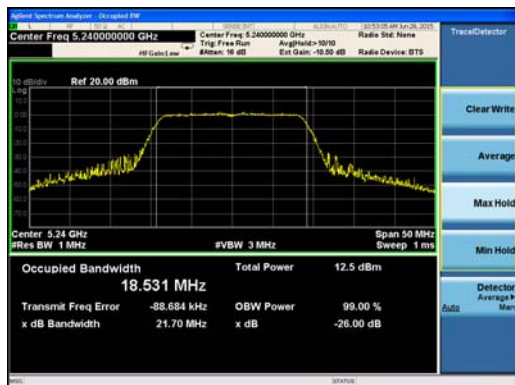
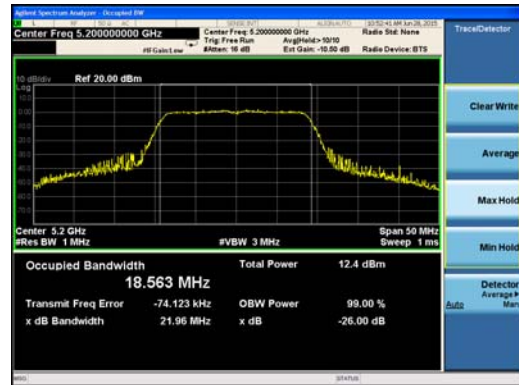
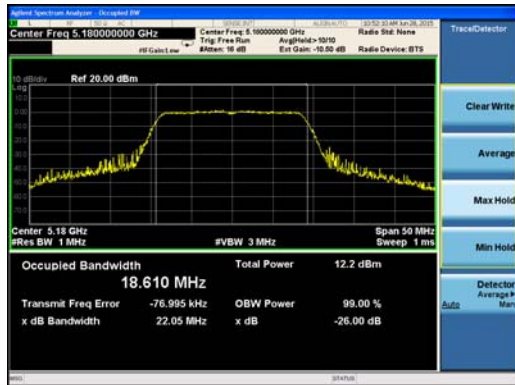
See next pages for actual measured spectrum plots.



Ant : A1_802.11a (1)



Ant : A1_802.11a (2)



Ant : A1_802.11n_HT20 (1)



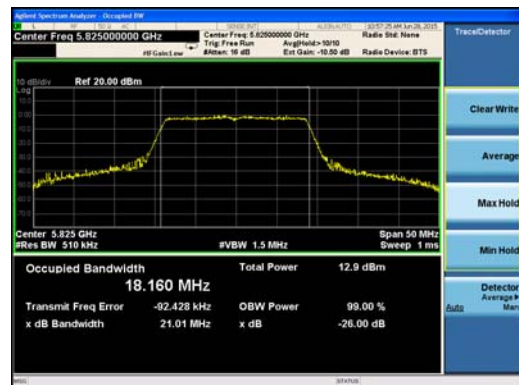
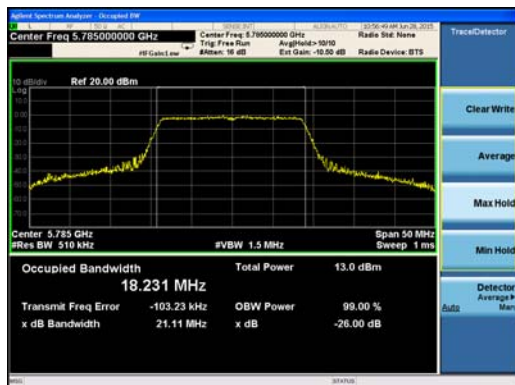
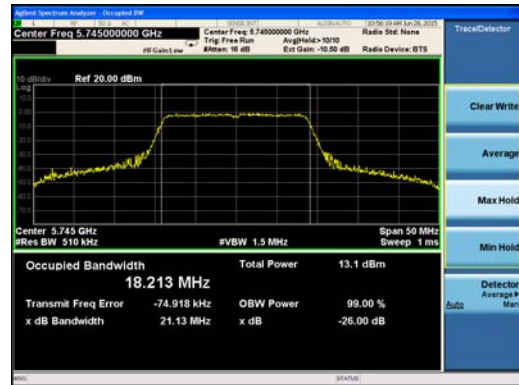
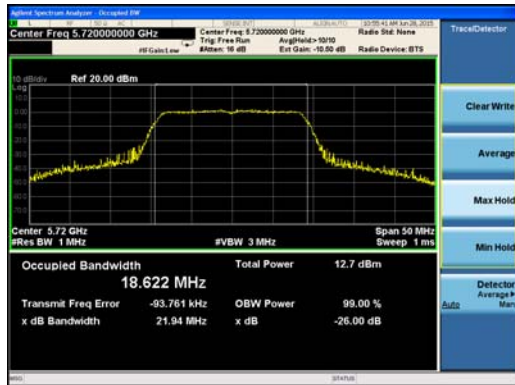
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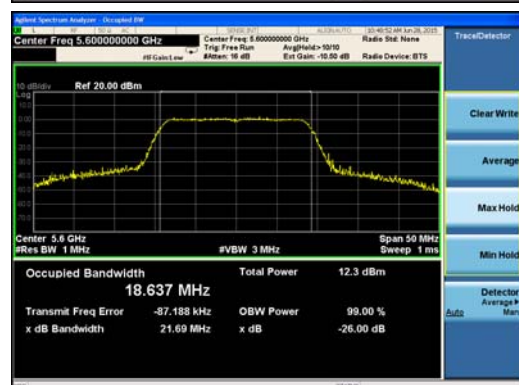
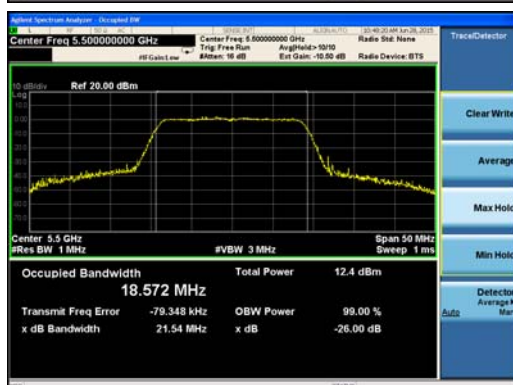
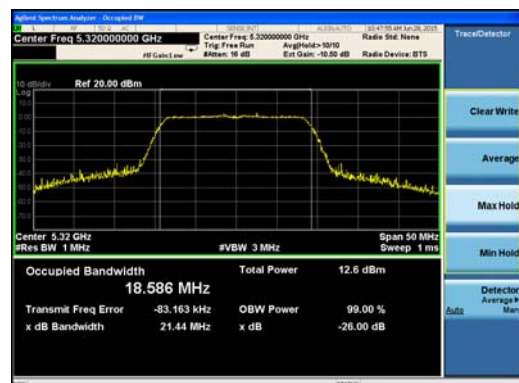
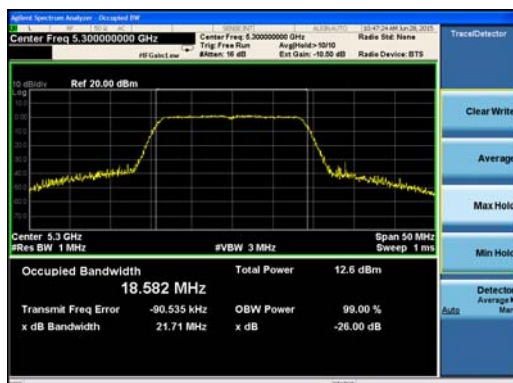
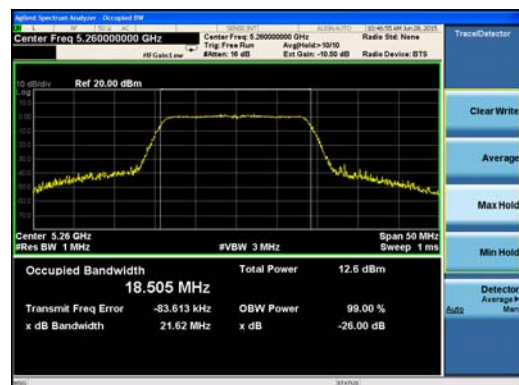
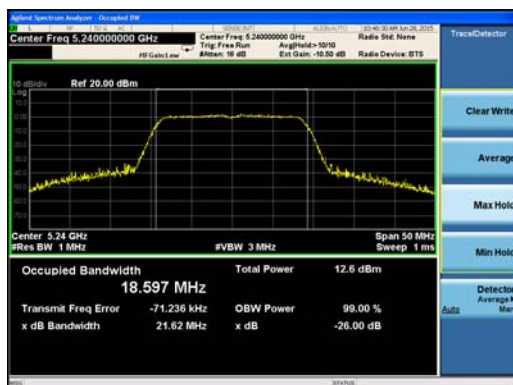
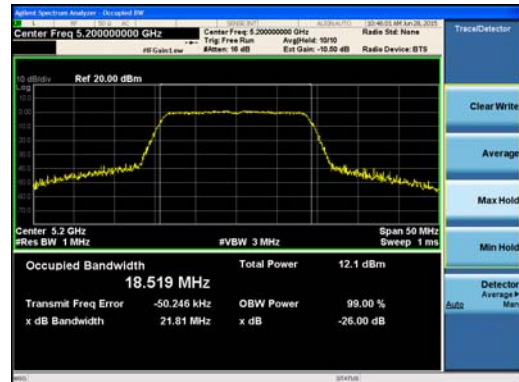
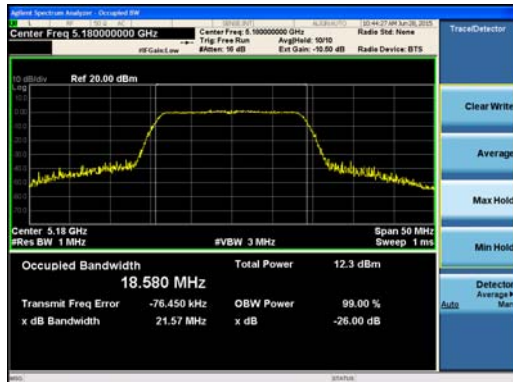
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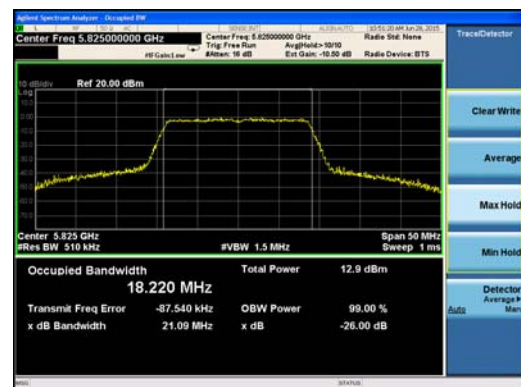
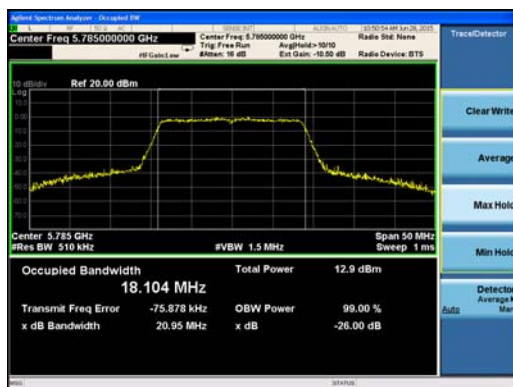
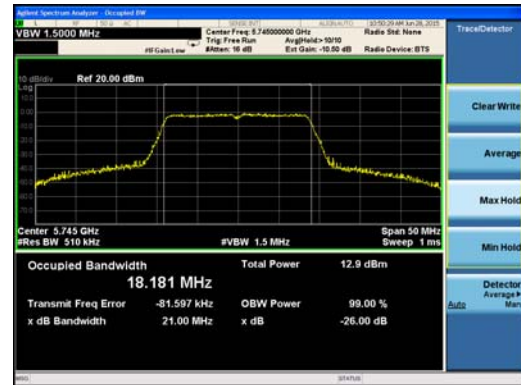
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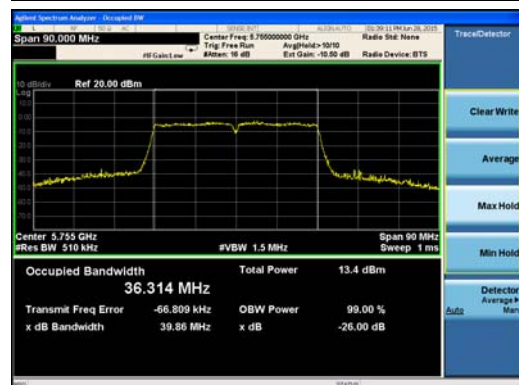
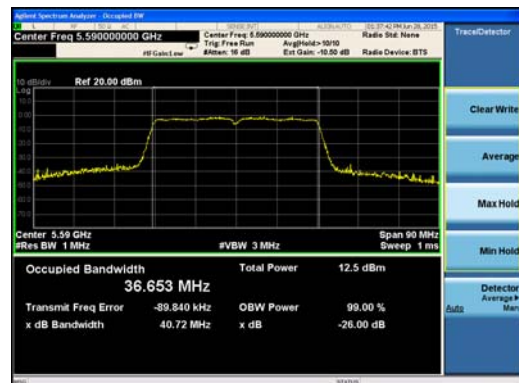
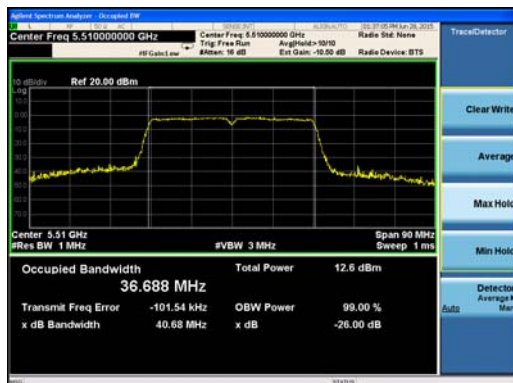
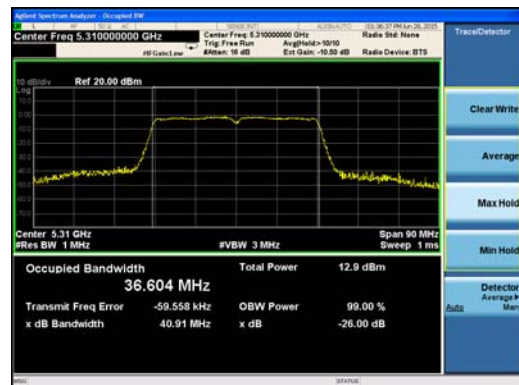
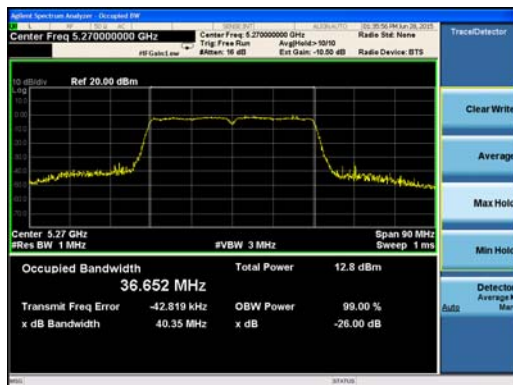
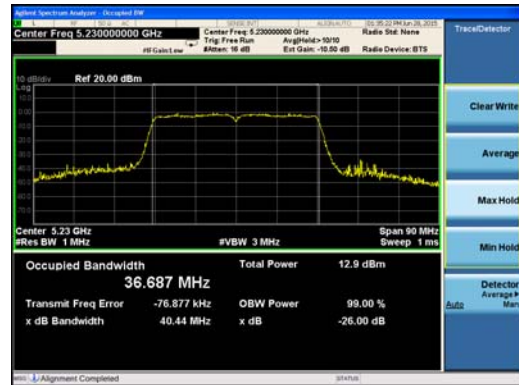
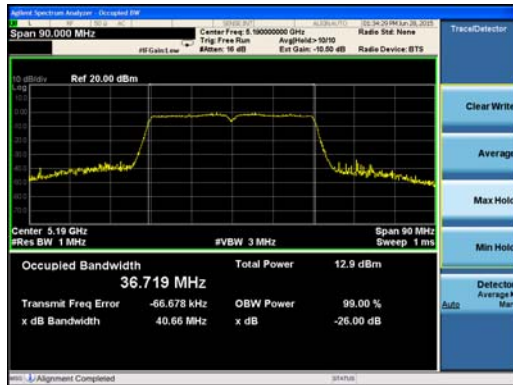
Ant : A1_802.11n_HT20 (2)



Ant : A1_802.11ac_VHT20 (1)



Ant : A1_802.11ac_VHT20 (2)



Ant : A1_802.11n_HT40 (1)



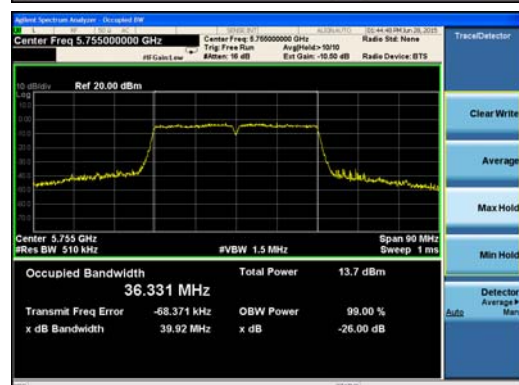
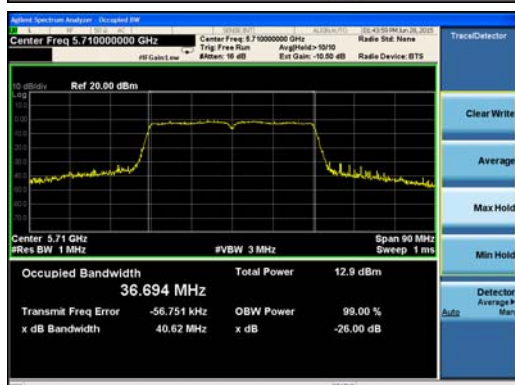
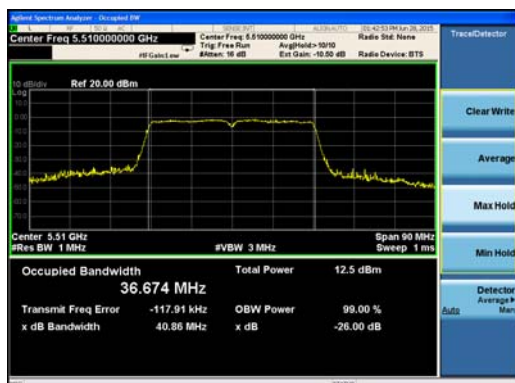
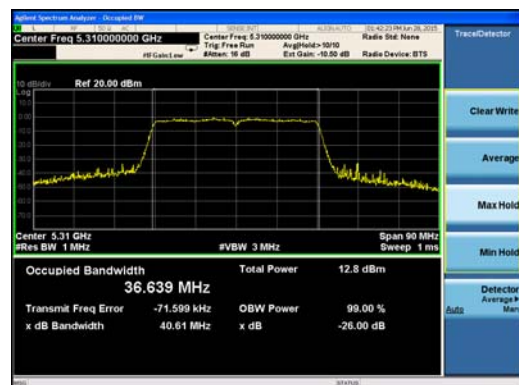
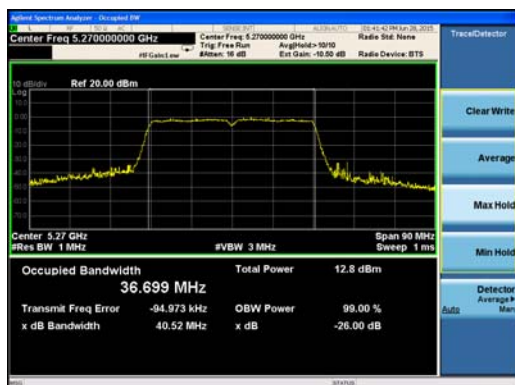
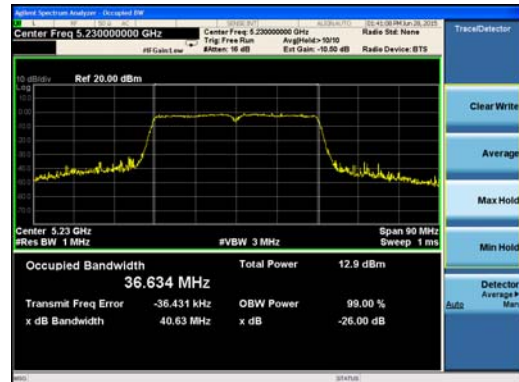
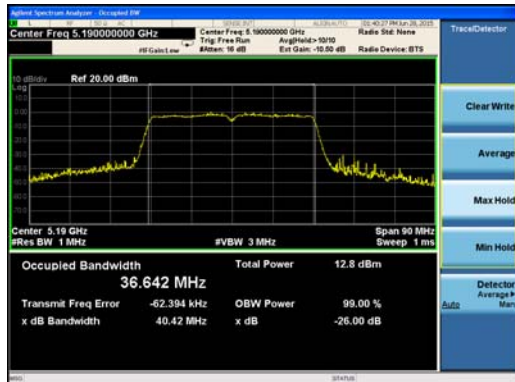
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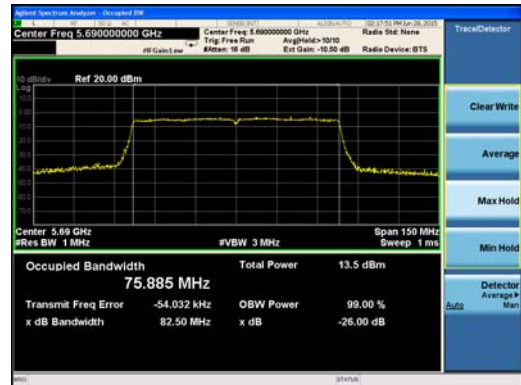
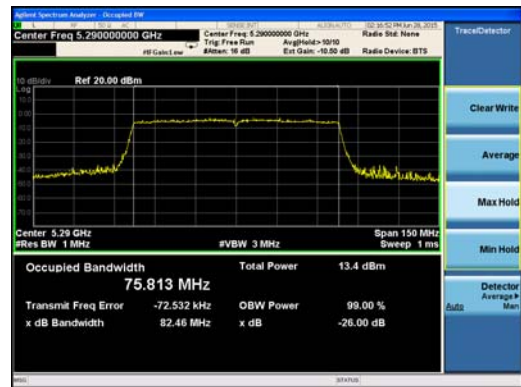
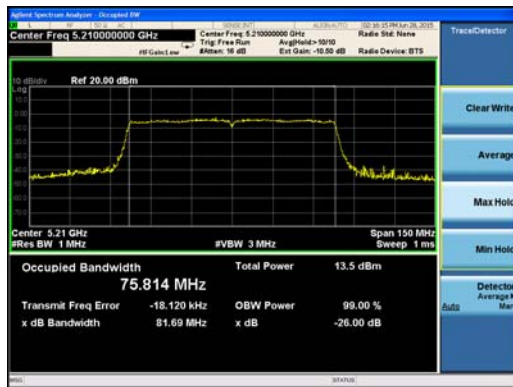
Ant : A1_802.11n_HT40 (2)



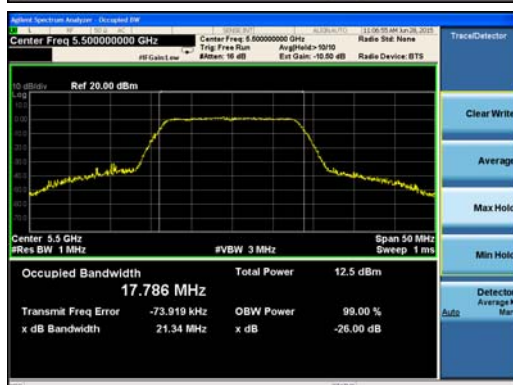
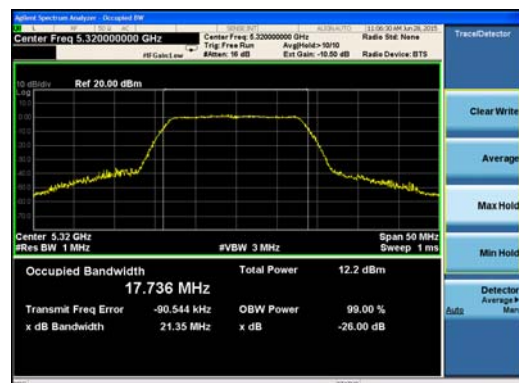
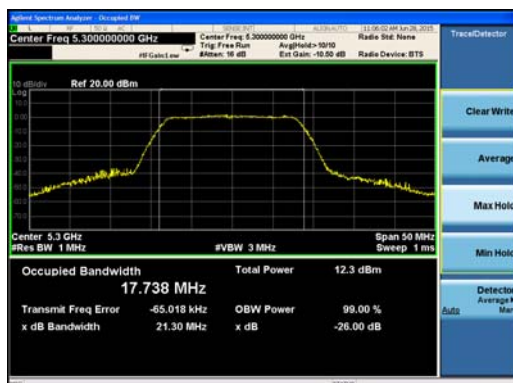
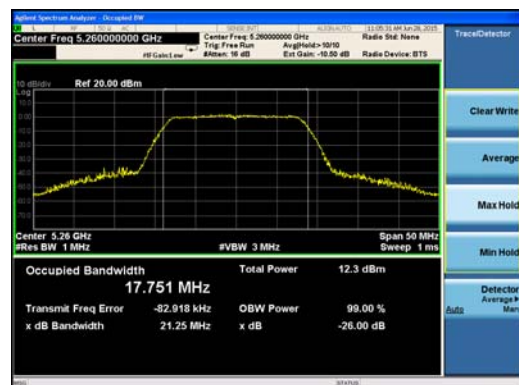
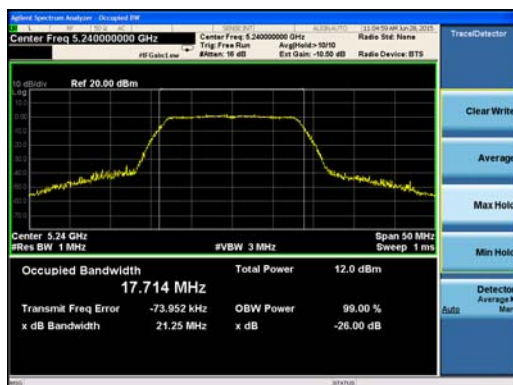
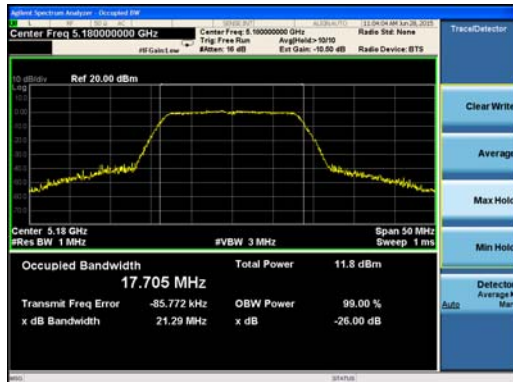
Ant : A1_802.11ac_VHT40 (1)



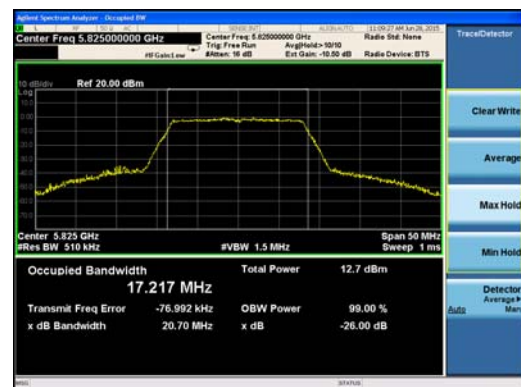
Ant : A1_802.11ac_VHT40 (2)



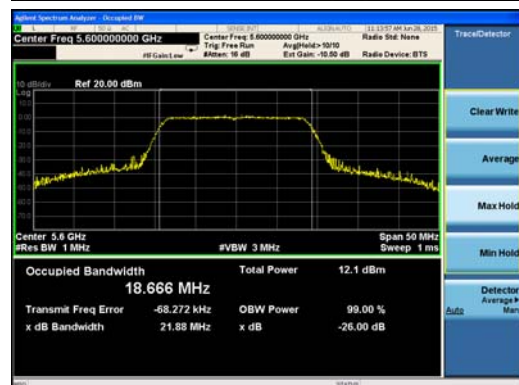
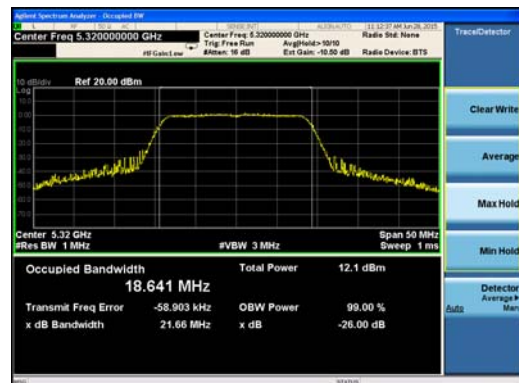
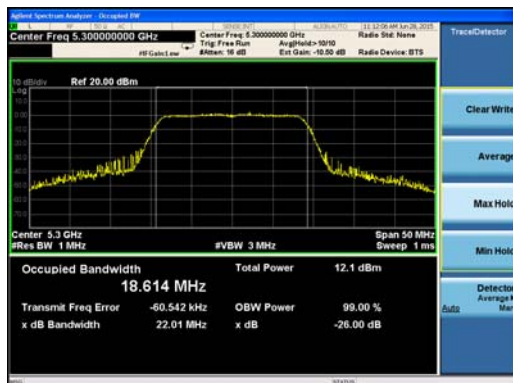
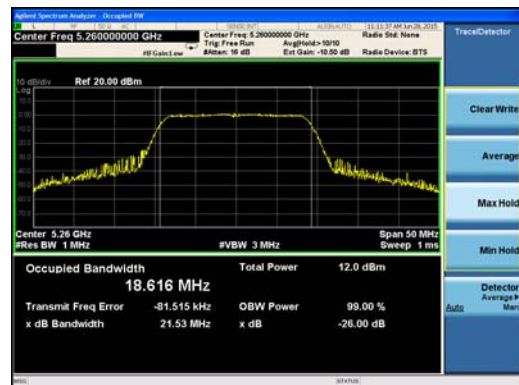
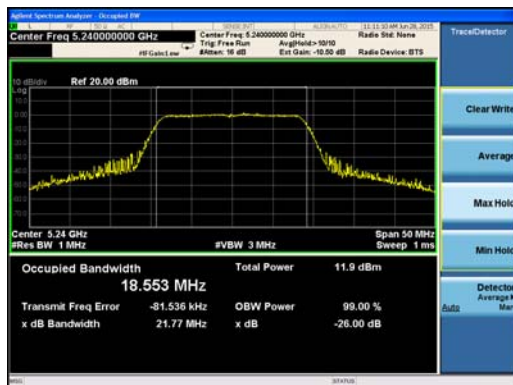
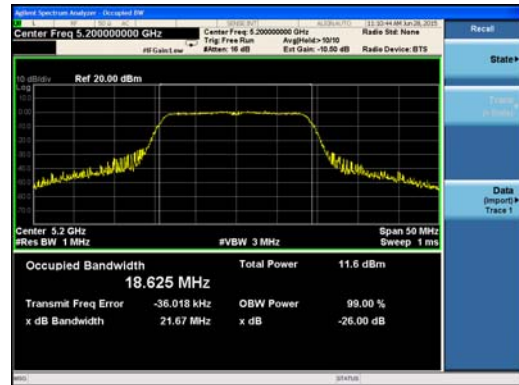
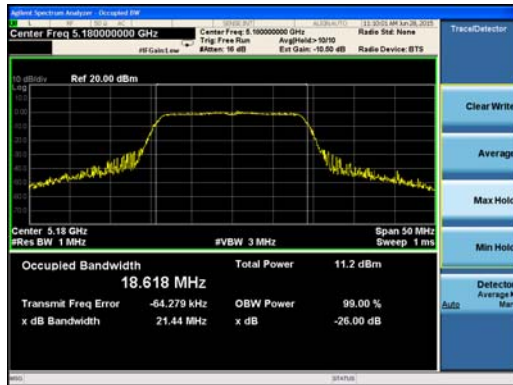
Ant : A1_802.11ac_VHT80



Ant : A2_802.11a (1)



Ant : A2_802.11a (2)



Ant : A2_802.11n_HT20 (1)



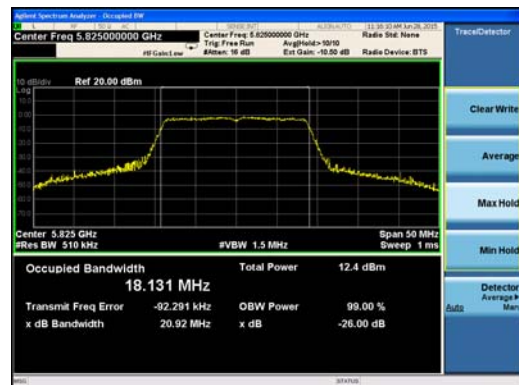
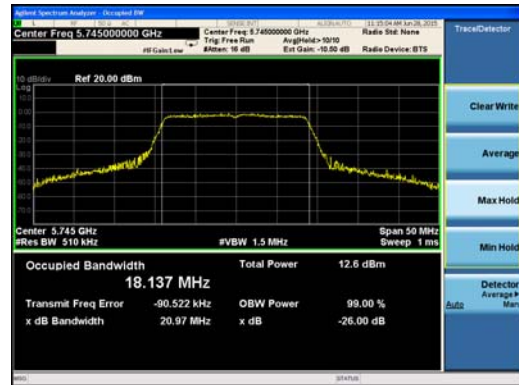
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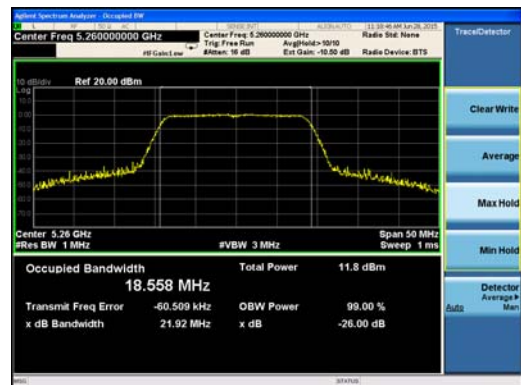
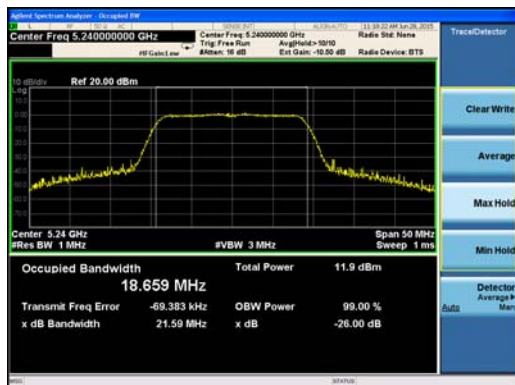
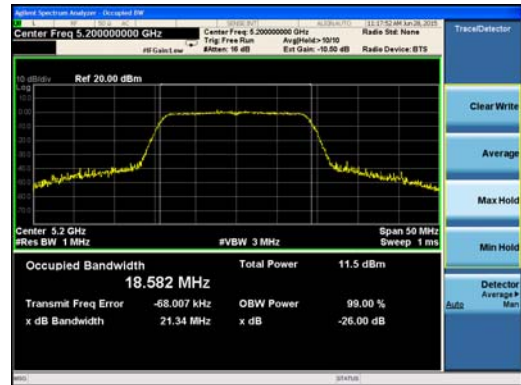
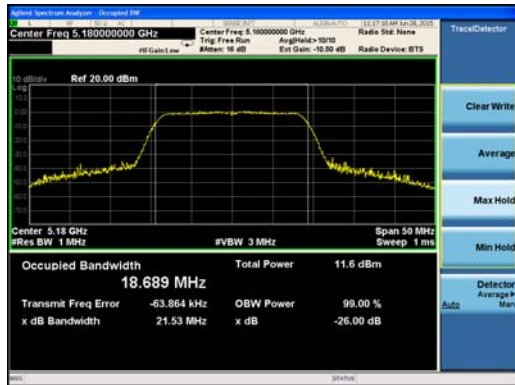
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Ant : A2_802.11n_HT20 (2)



Ant : A2_802.11ac_VHT20 (1)



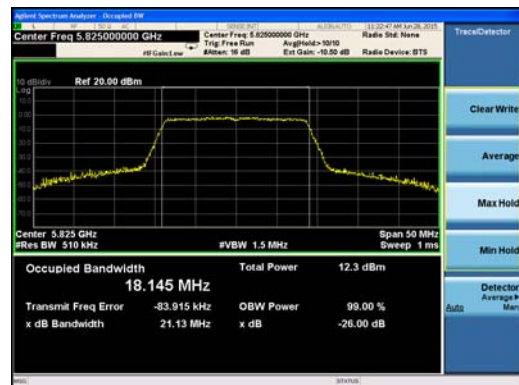
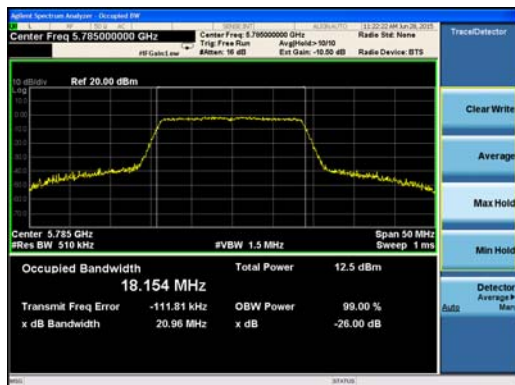
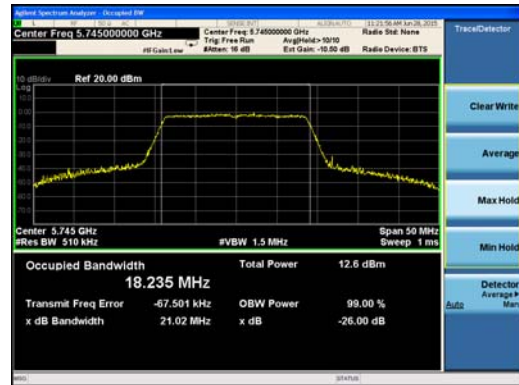
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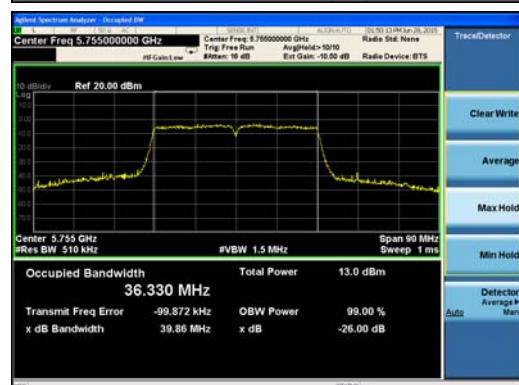
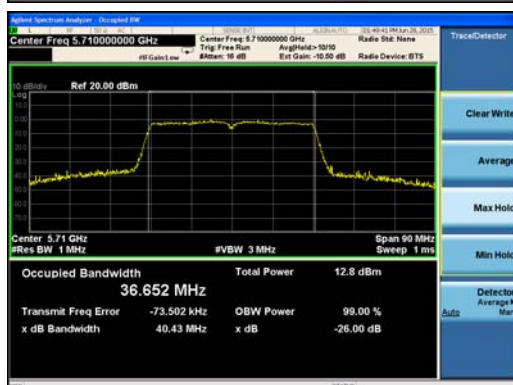
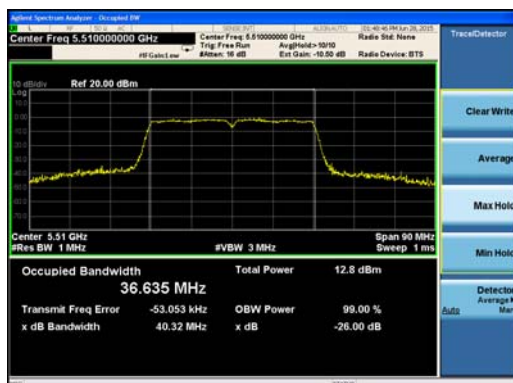
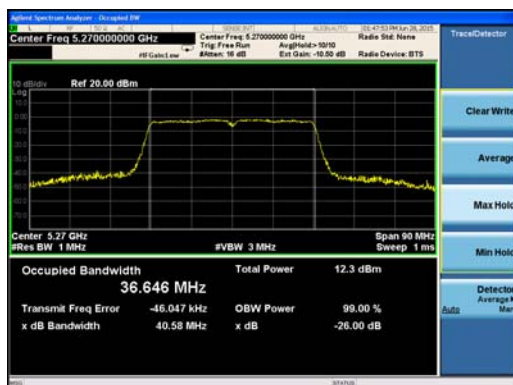
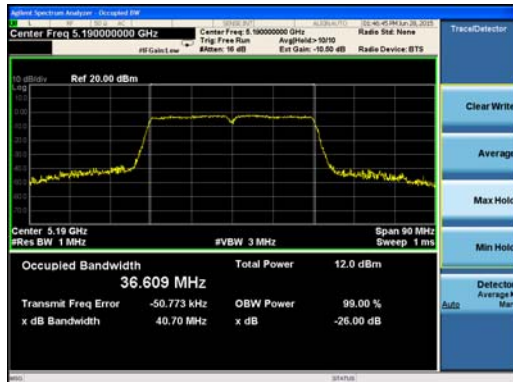
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Ant : A2_802.11ac_VHT20 (2)



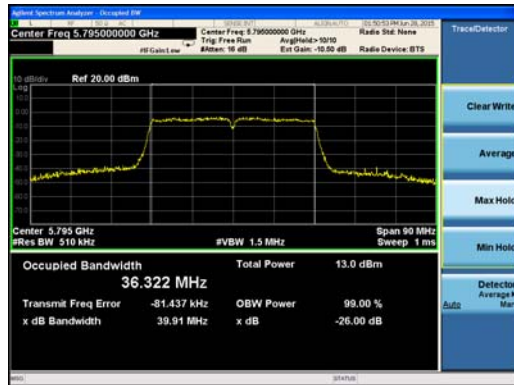
Ant : A2_802.11n_HT40 (1)



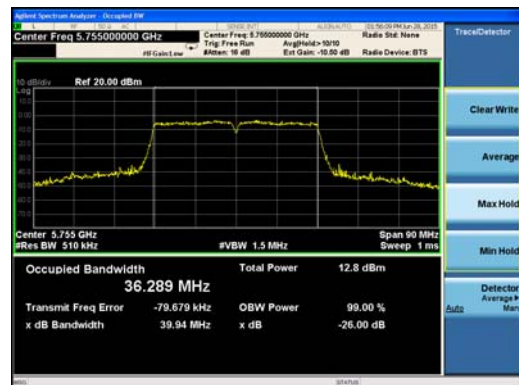
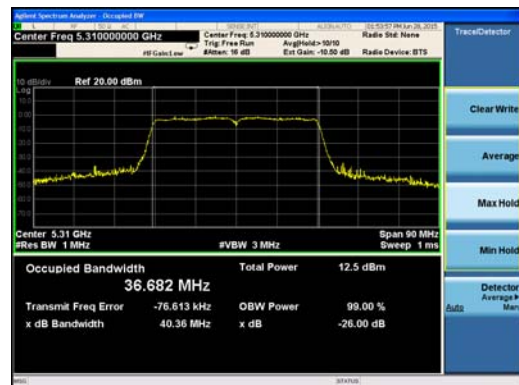
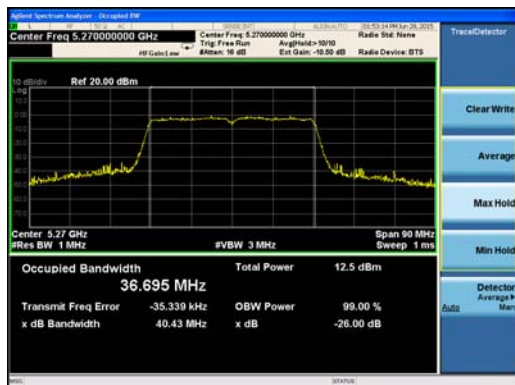
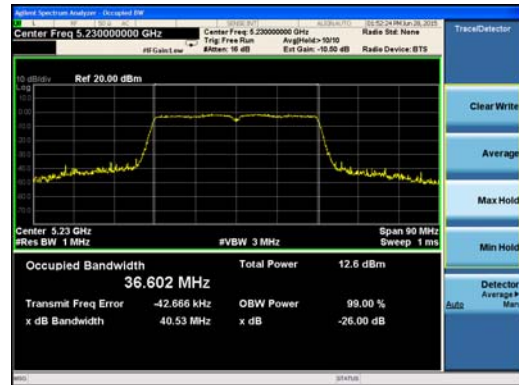
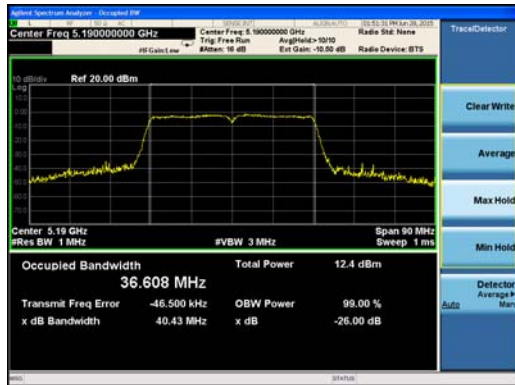
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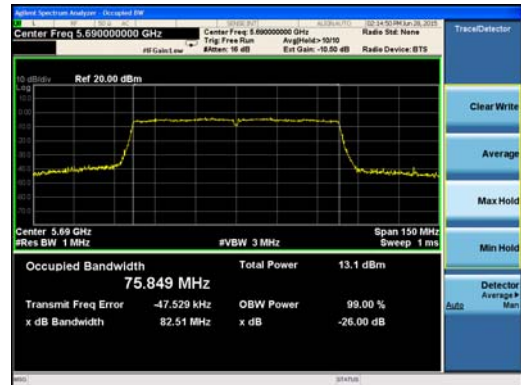
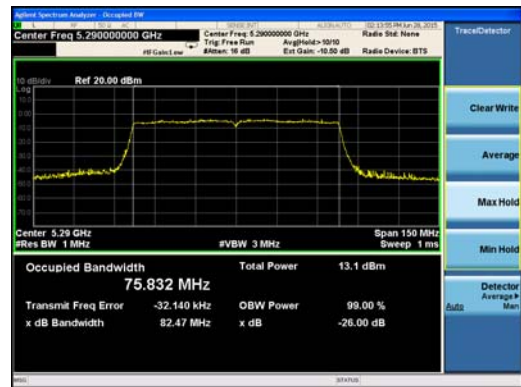
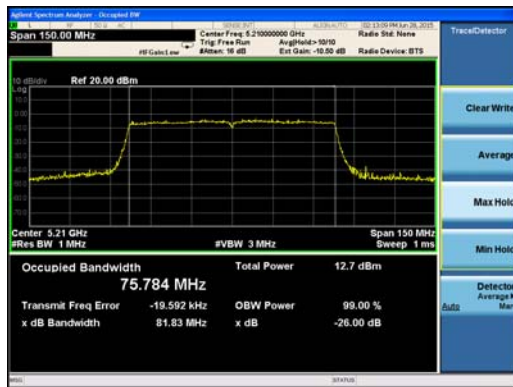
Ant : A2_802.11n_HT40 (2)



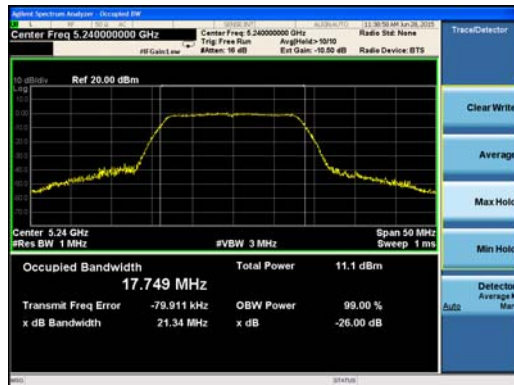
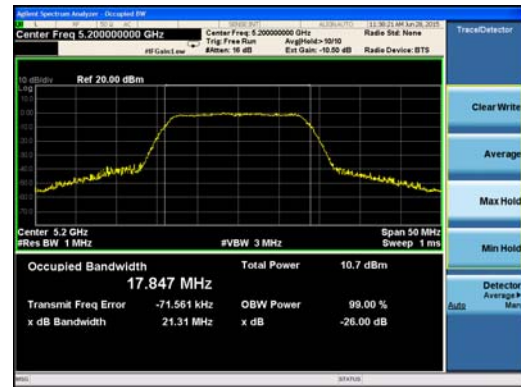
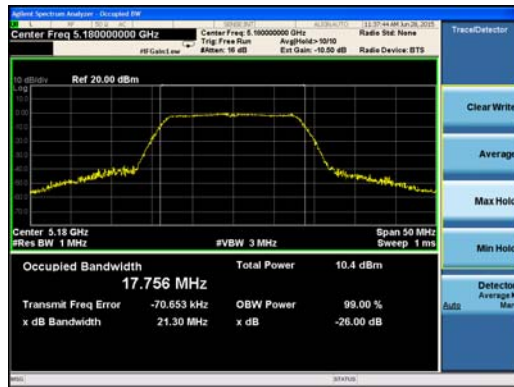
Ant : A2_802.11ac_VHT40 (1)



Ant : A2_802.11ac_VHT40 (2)



Ant : A2_802.11ac_VHT80



Ant : A3_802.11a (1)



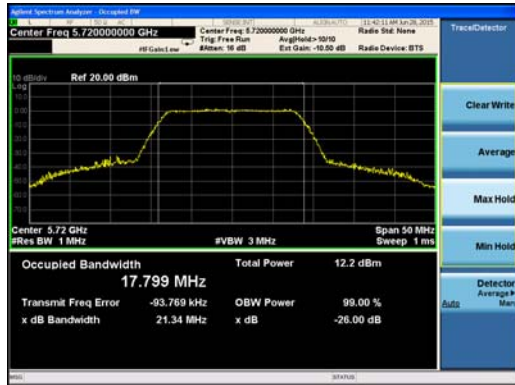
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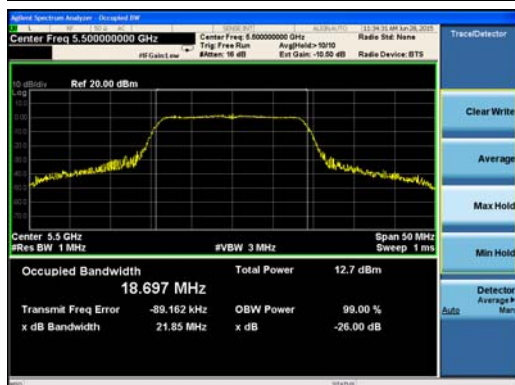
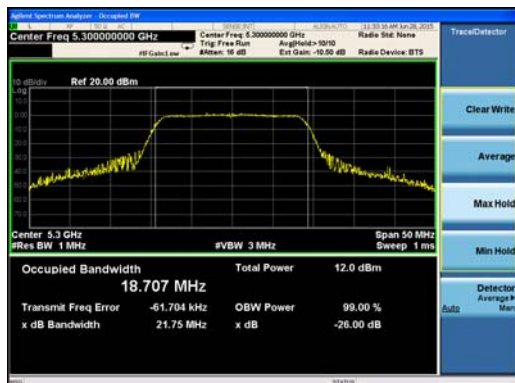
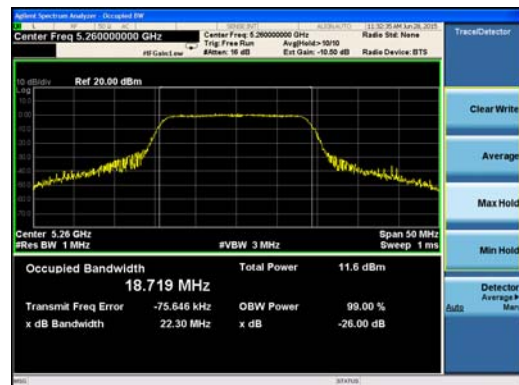
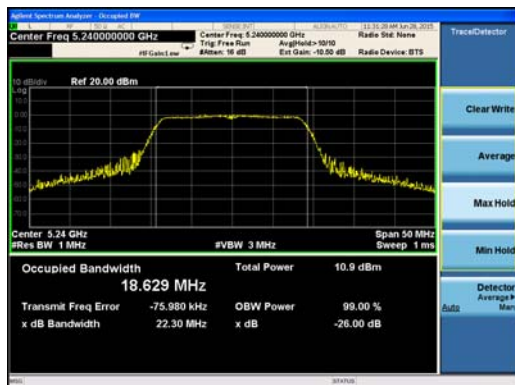
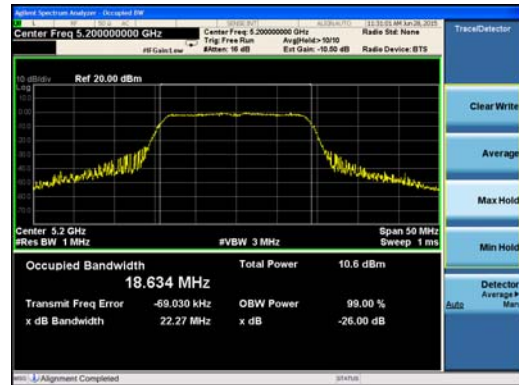
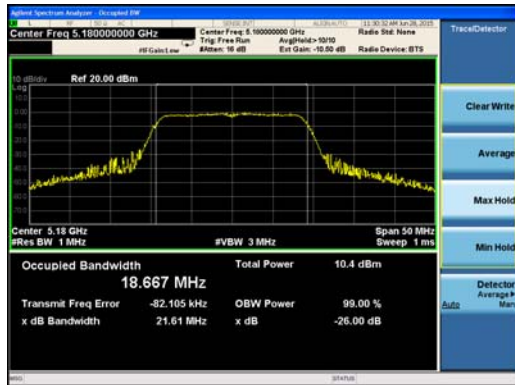
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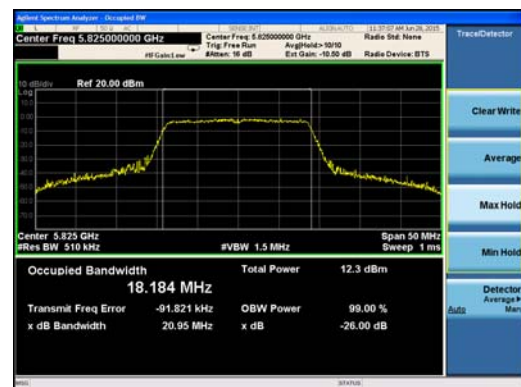
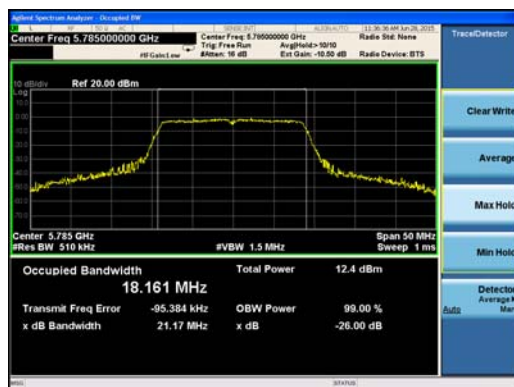
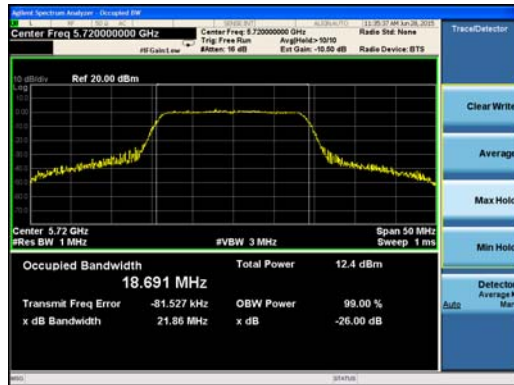
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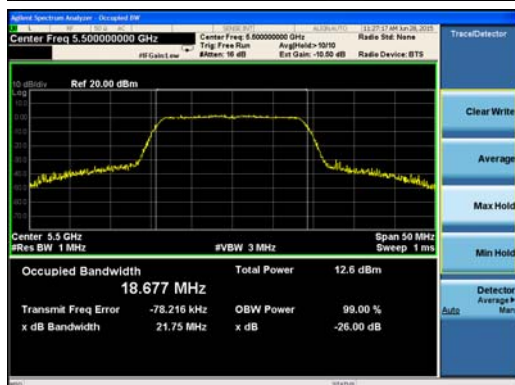
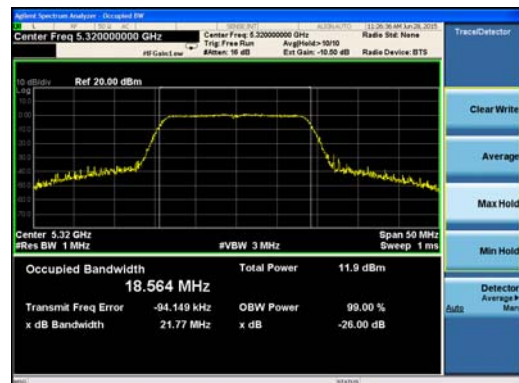
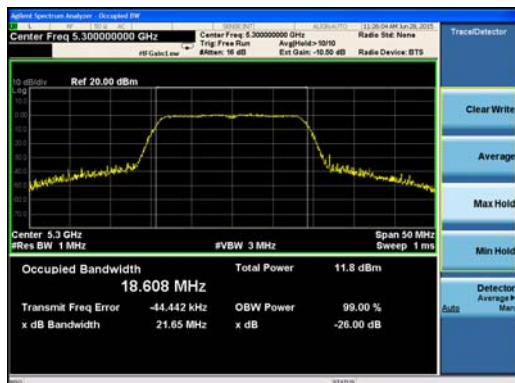
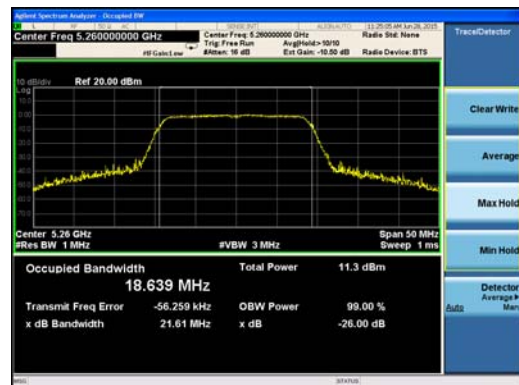
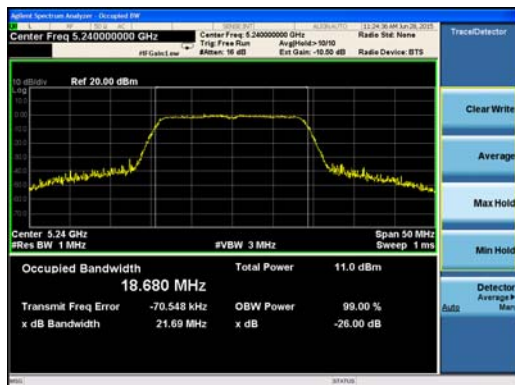
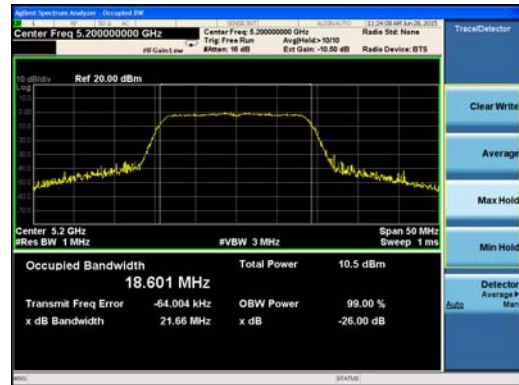
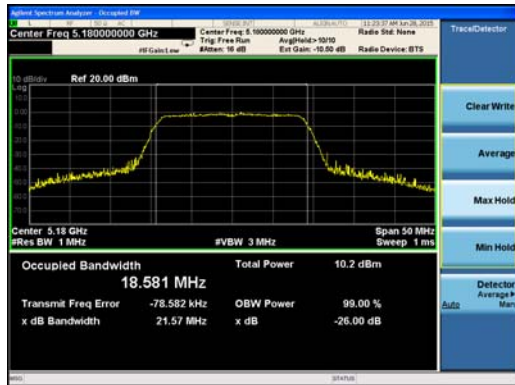
Ant : A3_802.11a (2)



Ant : A3_802.11n_HT20 (1)



Ant : A3_802.11n_HT20 (2)



Ant : A3_802.11ac_VHT20 (1)



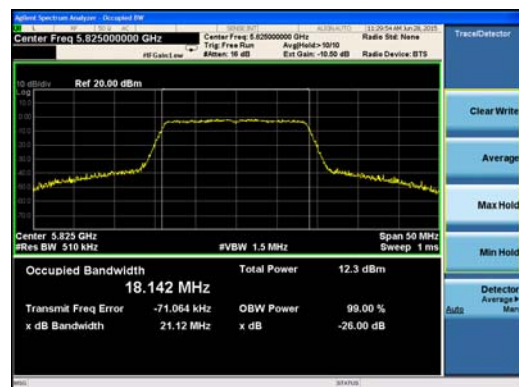
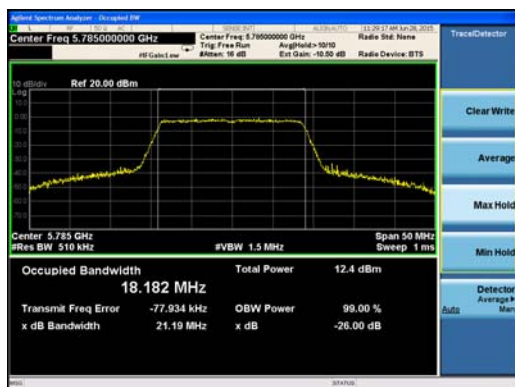
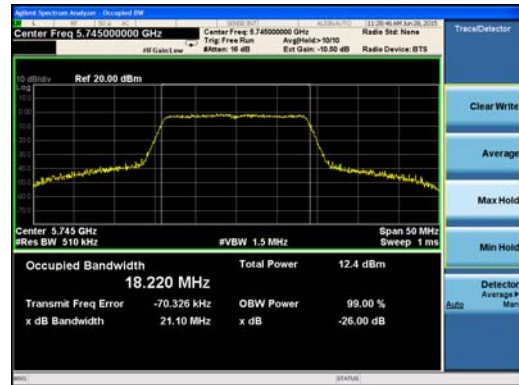
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Ant : A3_802.11ac_VHT20 (2)