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Tel: +82-31-339-9970 Fax: +82-31-624-9501
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Test Report No.: CTK-2015-00914
Date: 2015-07-07



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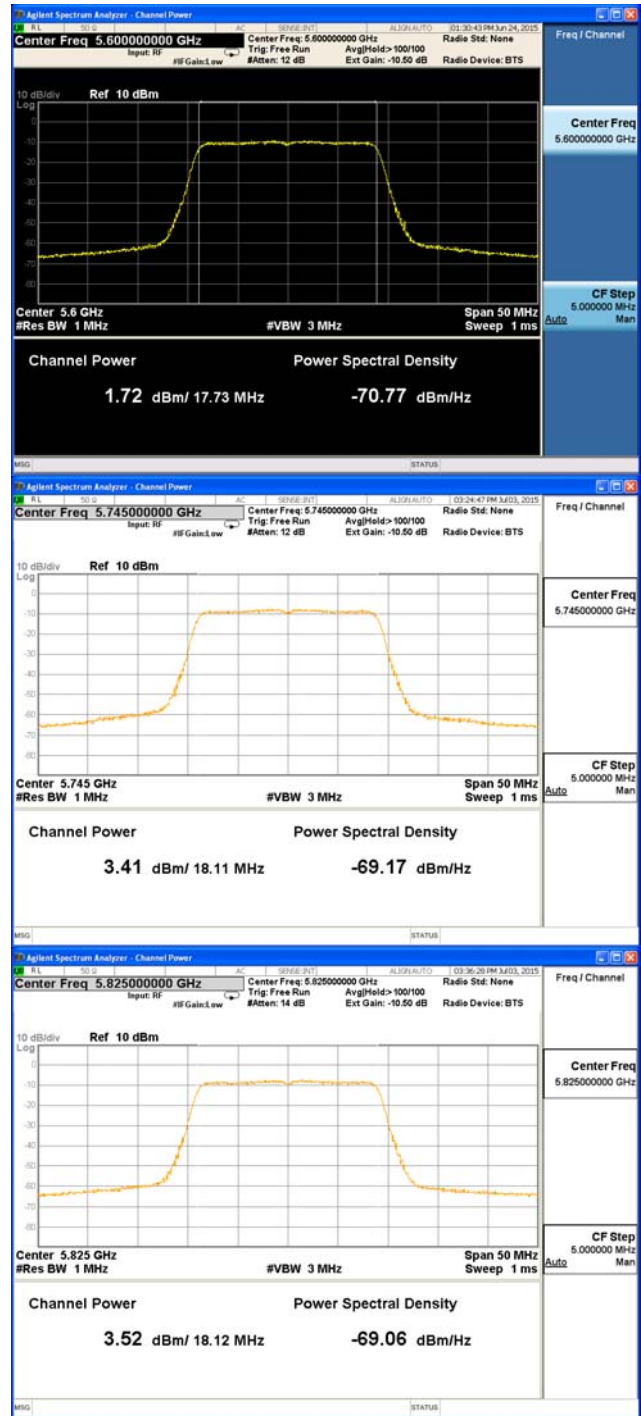
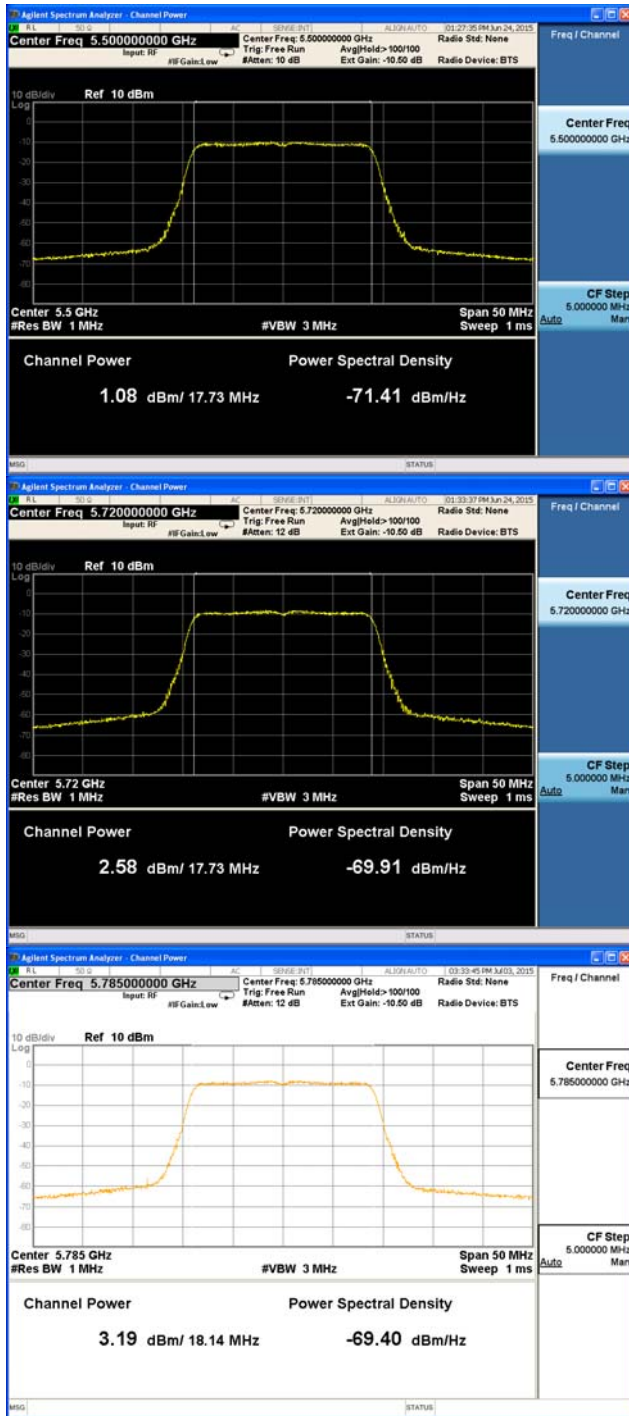
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Ant : A2_802.11ac_VHT20 (2)



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Ant : A3_802.11ac_VHT20 (1)



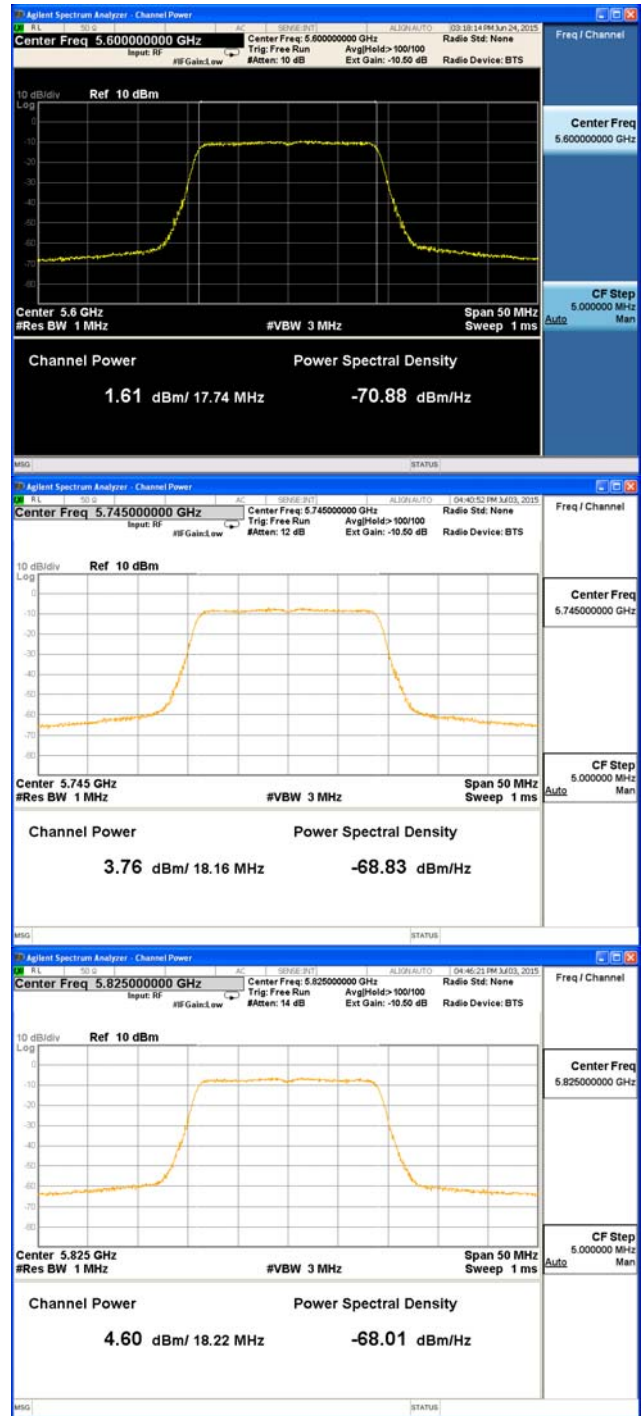
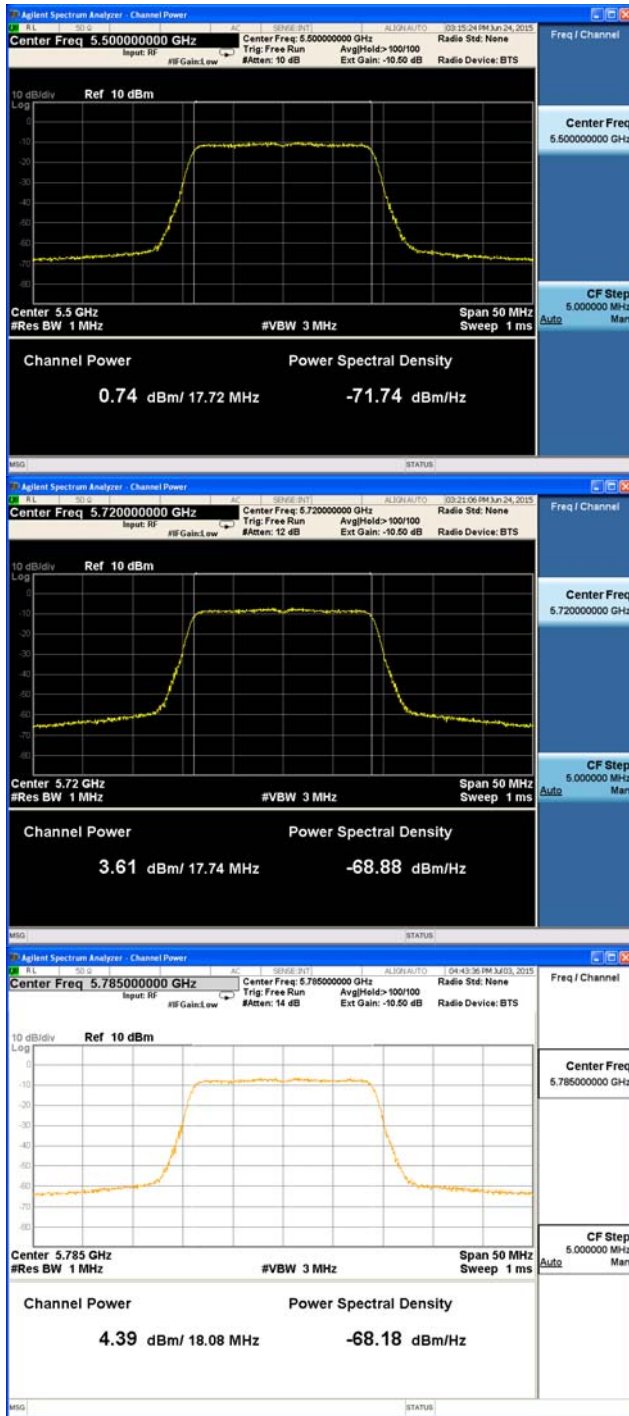
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Ant : A3_802.11ac_VHT20 (2)



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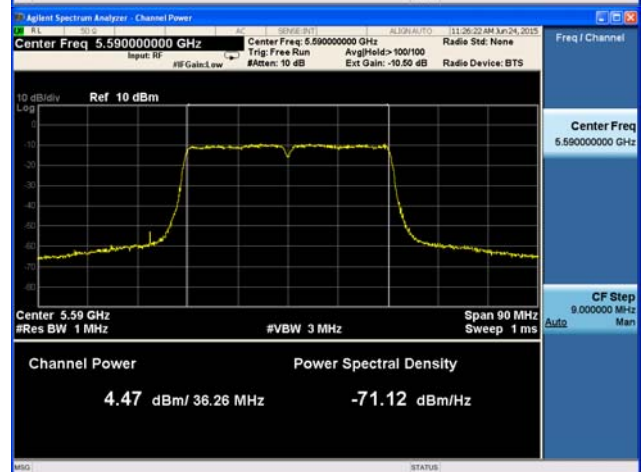
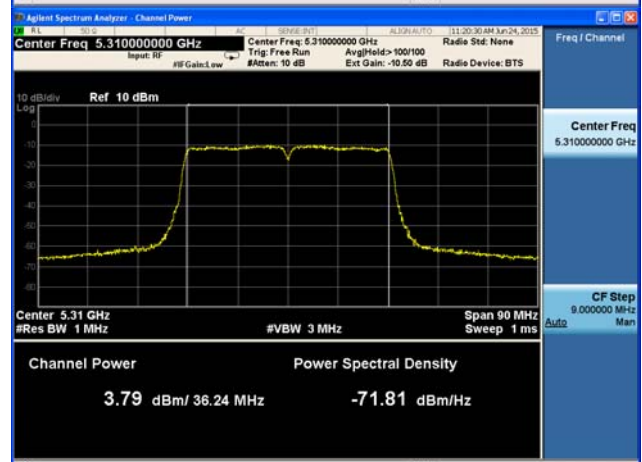
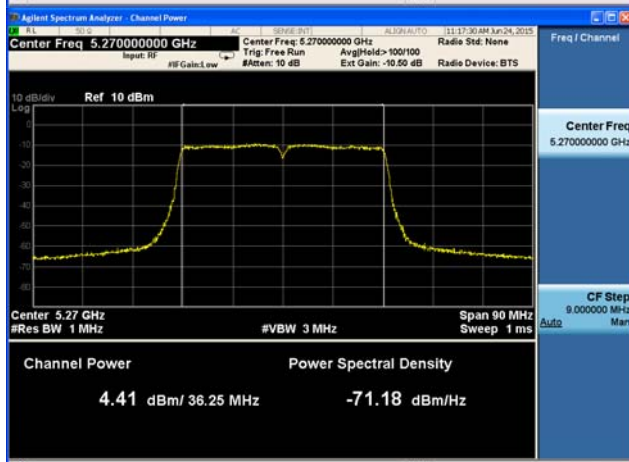
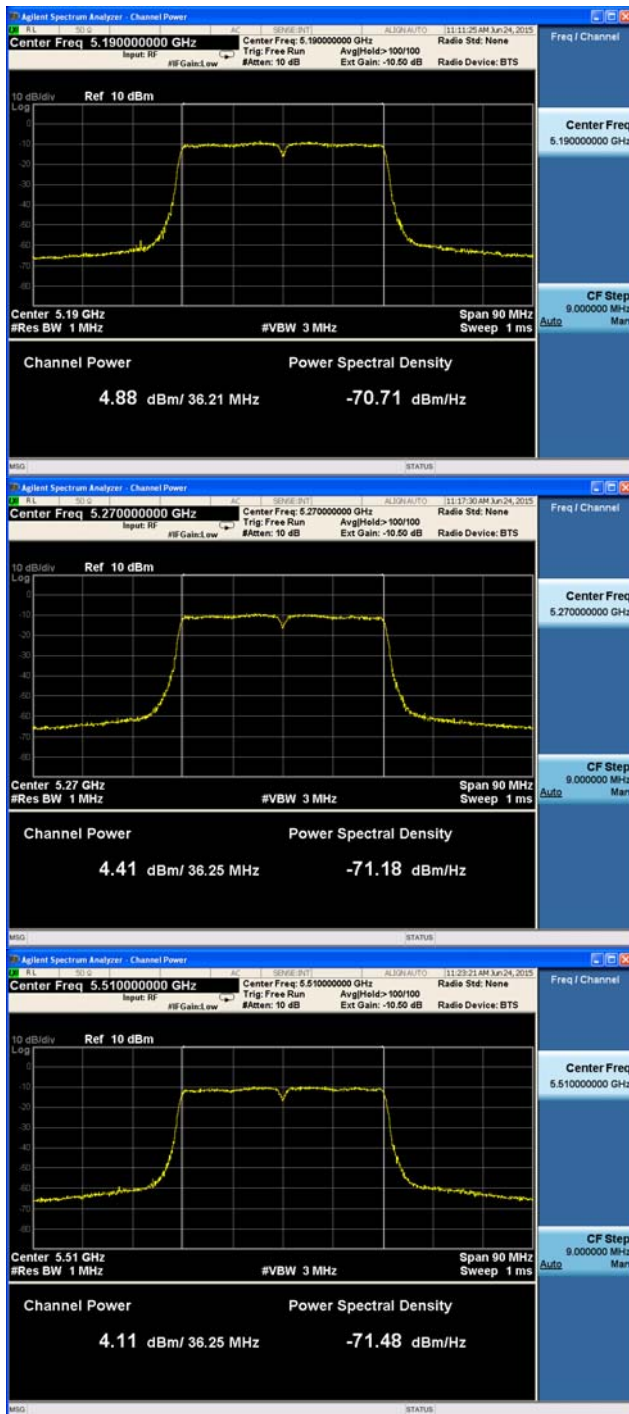
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Ant : A1_802.11ac_VHT40 (1)



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Ant : A1_802.11ac_VHT40 (2)



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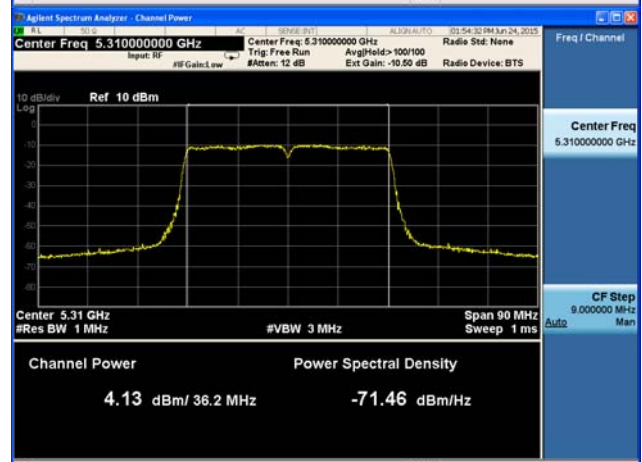
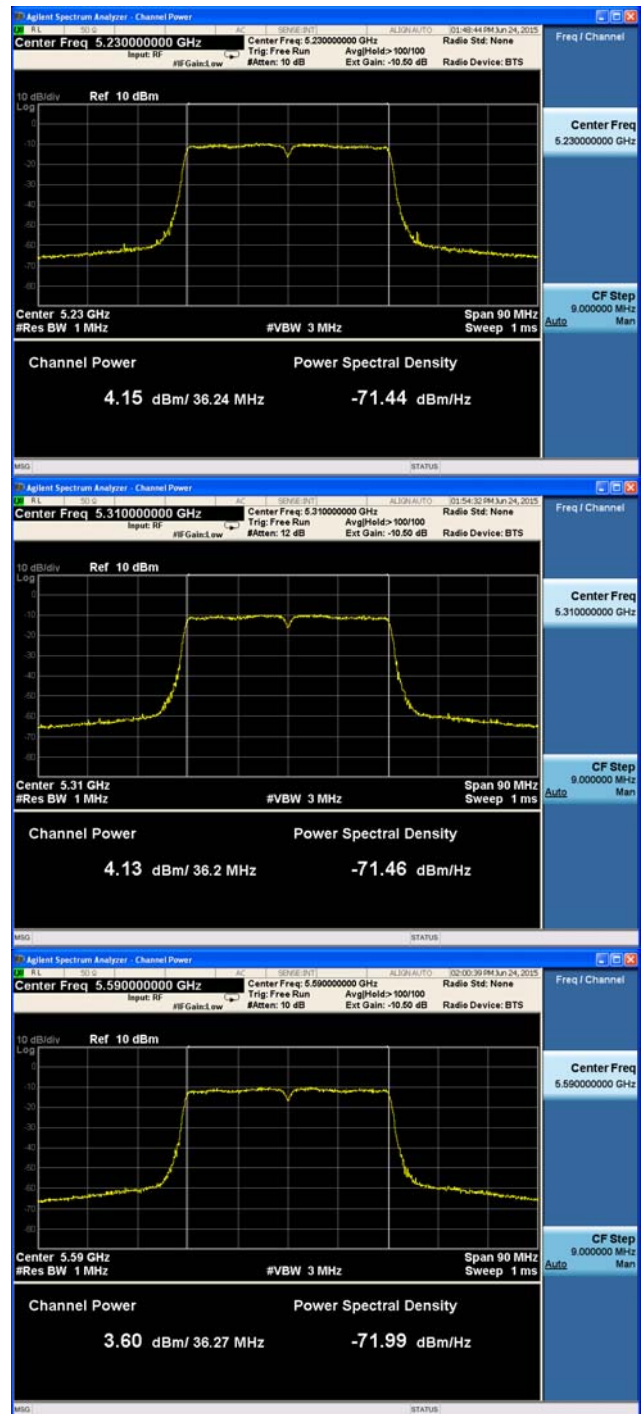
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Ant : A2_802.11ac_VHT40 (1)



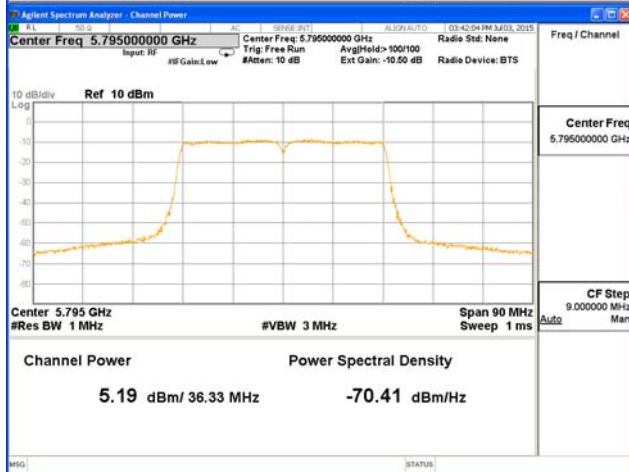
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Ant : A2_802.11ac_VHT40 (2)



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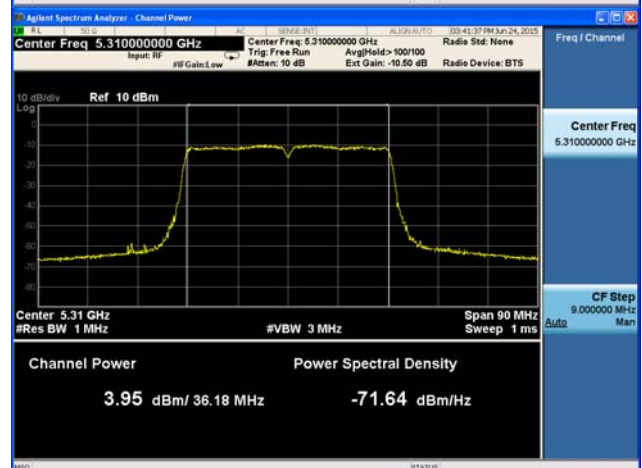
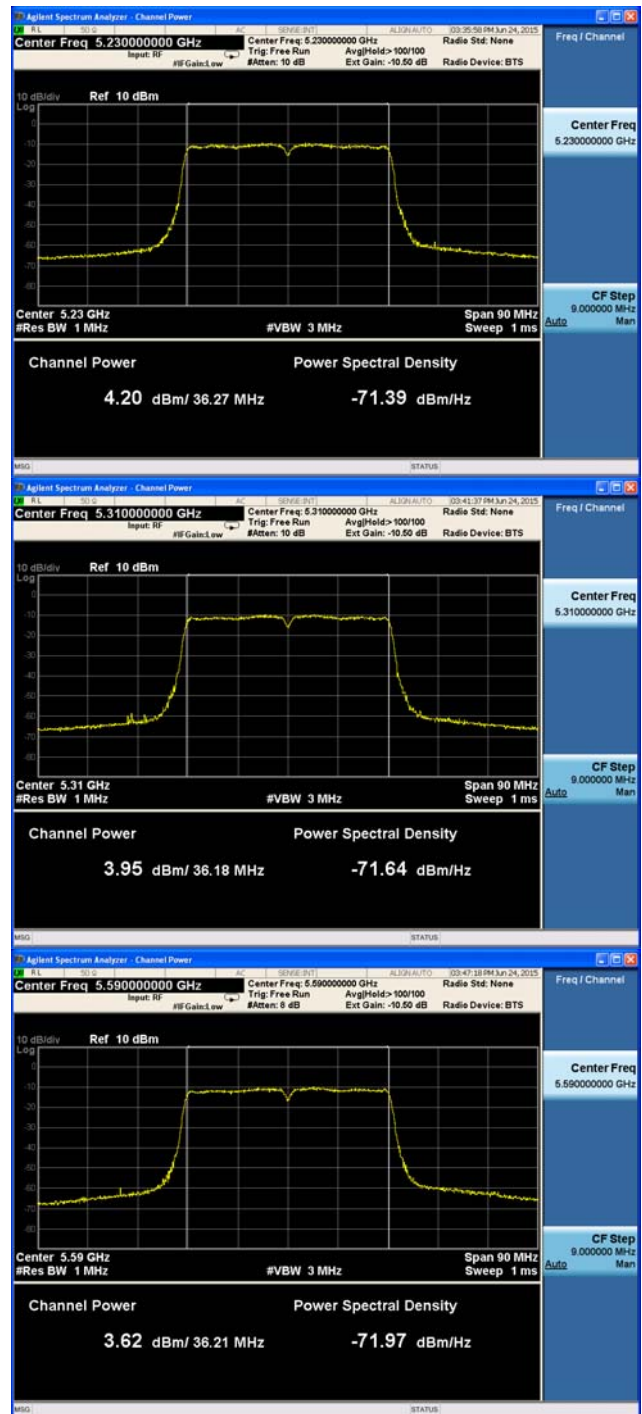
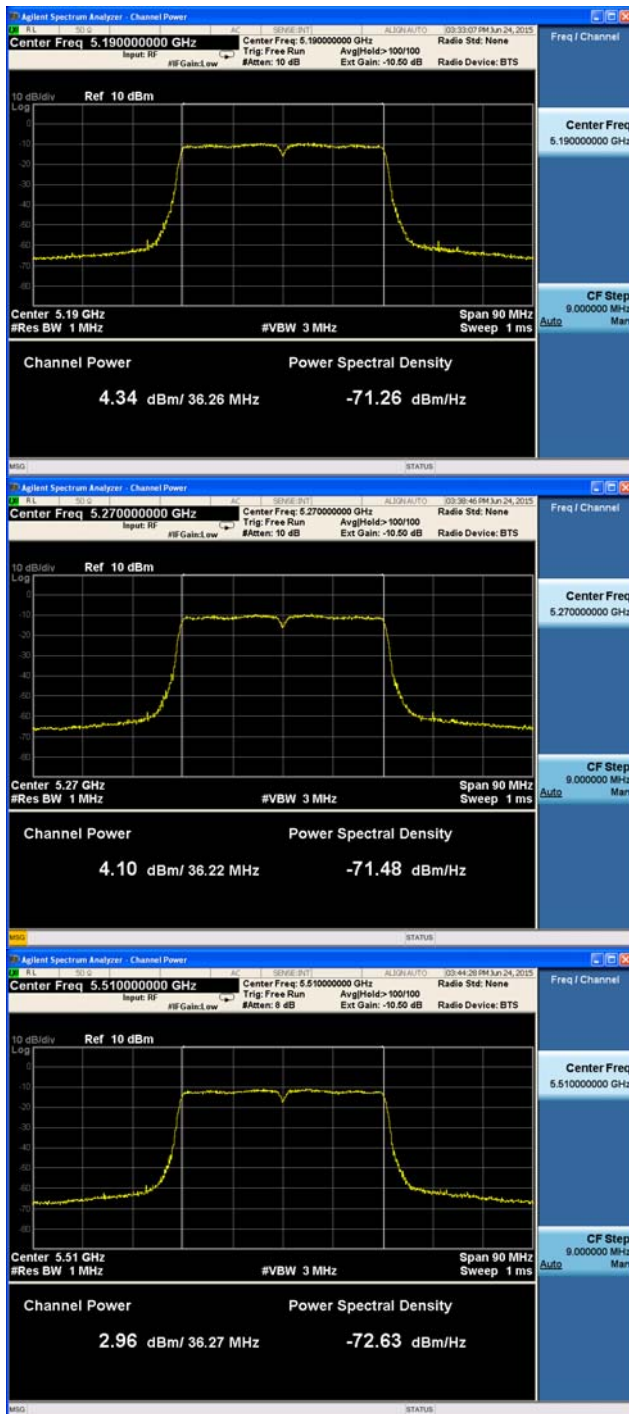
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Ant : A3_802.11ac_VHT40 (1)



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Ant : A3_802.11ac_VHT40 (2)



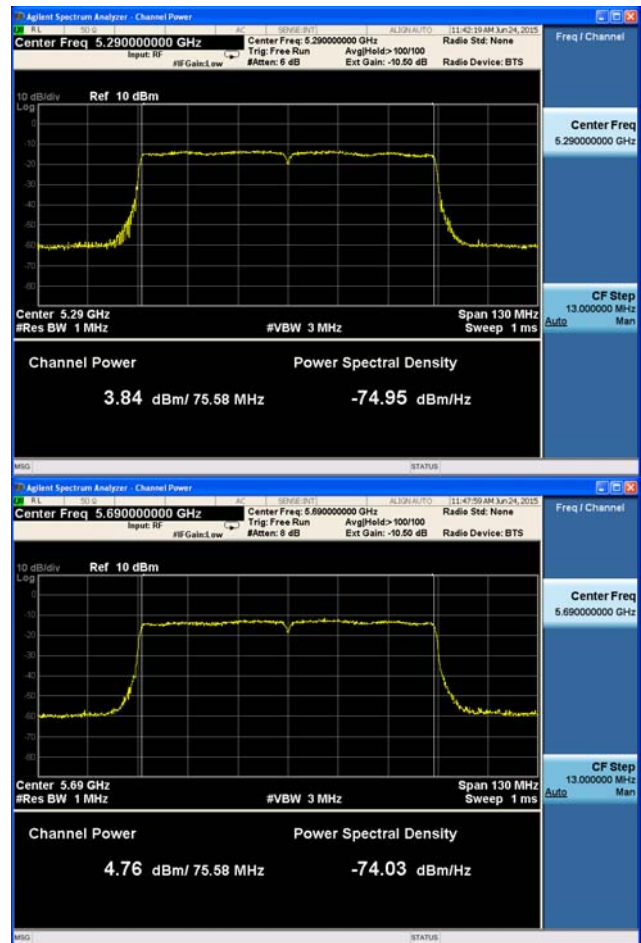
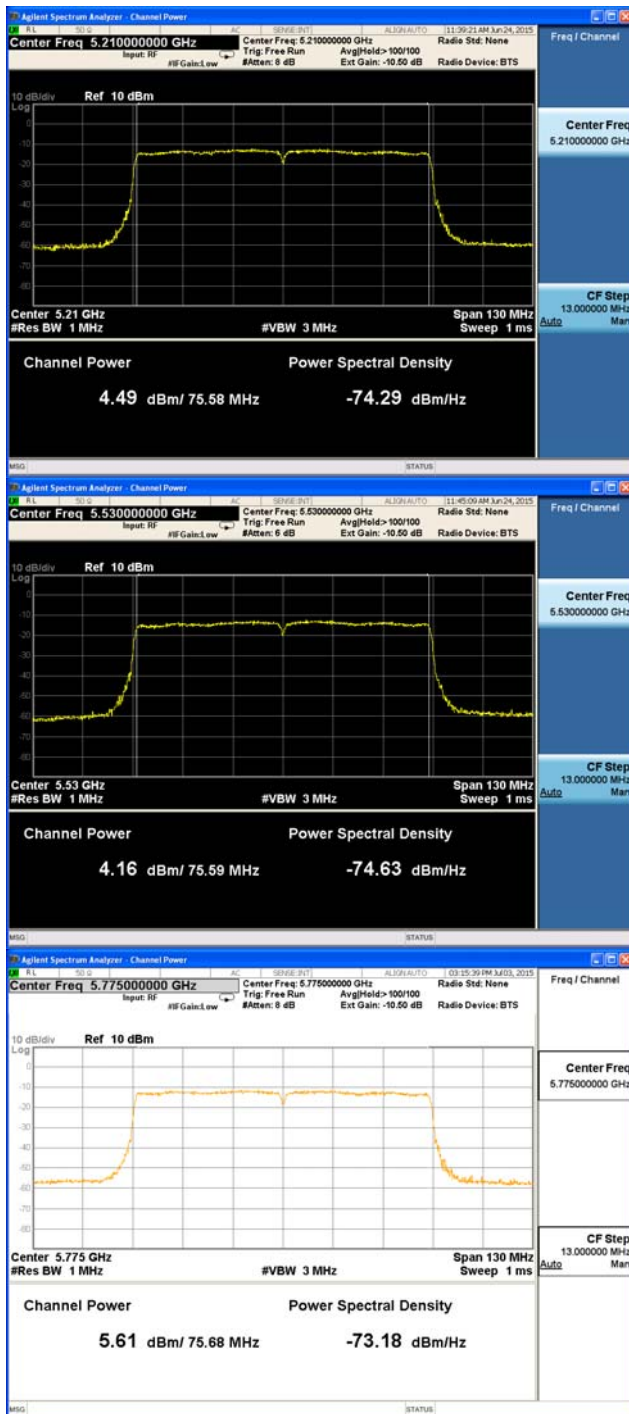
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Ant : A1_802.11ac_VHT80



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Ant : A2_802.11ac_VHT80



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Ant : A3_802.11ac_VHT80

2.1.5 Power Spectral Density

Procedure:

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The spectrum analyzer is set to:

RBW = 1 MHz, 500 KHz (UNII 3)

VBW = 3 MHz, 1.5 MHz (UNII 3)

Trace = average at least 100

Sweep = auto

Detector function = RMS

Limit

[Dipole ANT]

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
					FCC, IC
SISO	UNII 1	802.11a/n/ac	ANT1, ANT2, ANT3	8.0	8
	UNII 2A				9
	UNII 2C				9
	UNII 3				28/500KHz
MIMO (2Tx)	UNII 1		ANT1 + ANT2	11.01	4.99
	UNII 2A				5.99
	UNII 2C				5.99
	UNII 3				24.99/500KHz
MIMO (3Tx)	UNII 1		ANT1 + ANT2+ ANT3	12.77	3.23
	UNII 2A				4.23
	UNII 2C				4.23
	UNII 3				23.23/500KHz

[Patch ANT]

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
					FCC, IC
SISO	UNII 1	802.11a/n/ac	ANT1, ANT2, ANT3	13.138	2.86
	UNII 2A				3.86
	UNII 2C				3.86
	UNII 3				22.86/500KHz
MIMO (2Tx)	UNII 1		ANT1 + ANT2	16.148	-0.15
	UNII 2A				0.85
	UNII 2C				0.85
	UNII 3				19.85/500KHz
MIMO (3Tx)	UNII 1		ANT1 + ANT2+ ANT3	17.909	-1.91
	UNII 2A				-0.91
	UNII 2C				-0.91
	UNII 3				18.09/500KHz

Test Results

Ant : A1

	Measured Power Density (dBm)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5180 MHz	-7.82	-7.85	-7.43
5200 MHz	-7.83	-7.32	-7.26
5240 MHz	-8.06	-8.12	-7.78
5260 MHz	-8.23	-8.24	-7.66
5300 MHz	-8.77	-8.75	-8.44
5320 MHz	-9.07	-8.84	-8.63
5500 MHz	-8.93	-8.87	-8.92
5600 MHz	-8.27	-8.22	-8.23
5720 MHz	-7.51	-7.39	-7.54
5745 MHz	-9.05	-9.37	-9.39
5785 MHz	-10.09	-9.98	-10.35
5825 MHz	-10.20	-10.72	-10.48
Measurement uncertainty	± 3 dB		

Ant : A2

	Measured Power Density (dBm)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5180 MHz	-8.22	-7.85	-8.00
5200 MHz	-8.47	-8.41	-8.33
5240 MHz	-9.00	-8.90	-8.90
5260 MHz	-9.20	-9.30	-8.98
5300 MHz	-8.92	-8.75	-8.99
5320 MHz	-8.78	-9.20	-8.92
5500 MHz	-9.69	-9.61	-9.73
5600 MHz	-9.09	-8.83	-8.90
5720 MHz	-8.11	-7.99	-8.38
5745 MHz	-10.14	-10.40	-10.03
5785 MHz	-10.62	-10.56	-10.64
5825 MHz	-10.24	-10.06	-10.31
Measurement uncertainty	± 3 dB		

Ant : A3

	Measured Power Density (dBm)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5180 MHz	-8.41	-8.55	-8.18
5200 MHz	-8.56	-8.68	-8.49
5240 MHz	-8.77	-8.68	-8.47
5260 MHz	-8.78	-8.60	-8.67
5300 MHz	-9.06	-9.12	-9.03
5320 MHz	-8.89	-8.81	-8.87
5500 MHz	-10.04	-9.92	-10.02
5600 MHz	-8.79	-8.57	-9.14
5720 MHz	-7.08	-7.04	-7.05
5745 MHz	-10.00	-10.10	-9.95
5785 MHz	-9.21	-9.49	-9.50
5825 MHz	-9.27	-9.22	-9.07
Measurement uncertainty	± 3 dB		

Ant : A1 + A2

	Measured Power Density (dBm)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5180 MHz	-5.01	-4.84	-4.70
5200 MHz	-5.13	-4.82	-4.75
5240 MHz	-5.49	-5.48	-5.29
5260 MHz	-5.68	-5.73	-5.26
5300 MHz	-5.83	-5.74	-5.70
5320 MHz	-5.91	-6.01	-5.76
5500 MHz	-6.28	-6.21	-6.30
5600 MHz	-5.65	-5.50	-5.54
5720 MHz	-4.79	-4.67	-4.93
5745 MHz	-6.55	-6.84	-6.69
5785 MHz	-7.34	-7.25	-7.48
5825 MHz	-7.21	-7.37	-7.38
Measurement uncertainty	± 3 dB		

Ant : A1 + A2 + A3

	Measured Power Density (dBm)		
Mode	802.11a	802.11n_HT20	802.11ac_VHT20
Frequency			
5180 MHz	-3.37	-3.30	-3.09
5200 MHz	-3.50	-3.32	-3.22
5240 MHz	-3.82	-3.78	-3.59
5260 MHz	-3.95	-3.92	-3.63
5300 MHz	-4.14	-4.10	-4.04
5320 MHz	-4.14	-4.18	-4.03
5500 MHz	-4.76	-4.67	-4.76
5600 MHz	-3.93	-3.76	-3.97
5720 MHz	-2.78	-2.68	-2.85
5745 MHz	-4.93	-5.16	-5.01
5785 MHz	-5.16	-5.22	-5.36
5825 MHz	-5.11	-5.19	-5.14
Measurement uncertainty	± 3 dB		

Ant : A1

	Measured Power Density (dBm)	
Mode	802.11n__HT40	802.11ac__VHT40
Frequency		
5190 MHz	-8.81	-8.52
5230 MHz	-8.71	-9.09
5270 MHz	-9.29	-8.97
5310 MHz	-9.80	-9.92
5510 MHz	-9.66	-9.77
5590 MHz	-9.32	-9.10
5710 MHz	-8.40	-8.34
5755 MHz	-10.65	-10.67
5795 MHz	-11.08	-11.21
Measurement uncertainty	± 3 dB	

Ant : A2

	Measured Power Density (dBm)	
Mode	802.11n__HT40	802.11ac__VHT40
Frequency		
5190 MHz	-8.91	-8.80
5230 MHz	-9.68	-9.59
5270 MHz	-9.71	-9.71
5310 MHz	-9.55	-9.55
5510 MHz	-10.38	-10.43
5590 MHz	-9.89	-10.04
5710 MHz	-9.11	-8.91
5755 MHz	-11.66	-11.59
5795 MHz	-11.57	-11.63
Measurement uncertainty	± 3 dB	

Ant : A3

	Measured Power Density (dBm)	
Mode	802.11n__HT40	802.11ac__VHT40
Frequency		
5190 MHz	-9.25	-9.27
5230 MHz	-9.55	-9.42
5270 MHz	-9.57	-9.38
5310 MHz	-9.51	-9.62
5510 MHz	-10.60	-10.77
5590 MHz	-10.18	-9.77
5710 MHz	-8.07	-8.03
5755 MHz	-10.88	-10.83
5795 MHz	-10.32	-10.33
Measurement uncertainty	± 3 dB	

Ant : A1 + A2

	Measured Power Density (dBm)	
Mode	802.11n__HT40	802.11ac__VHT40
Frequency		
5190 MHz	-5.85	-5.65
5230 MHz	-6.16	-6.32
5270 MHz	-6.48	-6.31
5310 MHz	-6.66	-6.72
5510 MHz	-6.99	-7.08
5590 MHz	-6.59	-6.53
5710 MHz	-5.73	-5.61
5755 MHz	-8.12	-8.10
5795 MHz	-8.31	-8.40
Measurement uncertainty	± 3 dB	

Ant : A1 + A2 + A3

	Measured Power Density (dBm)	
Mode	802.11n__HT40	802.11ac__VHT40
Frequency		
5190 MHz	-4.21	-4.08
5230 MHz	-4.52	-4.59
5270 MHz	-4.75	-4.57
5310 MHz	-4.85	-4.92
5510 MHz	-5.42	-5.53
5590 MHz	-5.01	-4.85
5710 MHz	-3.73	-3.64
5755 MHz	-6.27	-6.24
5795 MHz	-6.19	-6.25
Measurement uncertainty	± 3 dB	

Ant : A1, A2, A3

	Measured Power Density (dBm)		
Mode	Ant : A1	Ant : A2	Ant : A3
Frequency	802.11ac__VHT80	802.11ac__VHT80	802.11ac__VHT80
5210 MHz	-12.53	-12.82	-12.88
5290 MHz	-13.23	-13.26	-13.32
5530 MHz	-12.58	-13.75	-14.08
5690 MHz	-12.11	-12.86	-11.94
5775 MHz	-11.40	-11.92	-10.93
Measurement uncertainty	± 3 dB		

Ant : A1 + A2

	Measured Power Density (dBm)
Mode	Ant : A1_802.11ac__VHT80
Frequency	
5210 MHz	-9.66
5290 MHz	-10.23
5530 MHz	-10.12
5690 MHz	-9.46
5775 MHz	-8.64
Measurement uncertainty	± 3 dB

Ant : A1 + A2 + A3

	Measured Power Density (dBm)
Mode	Ant : A1_802.11ac__VHT80
Frequency	
5210 MHz	-7.97
5290 MHz	-8.50
5530 MHz	-8.65
5690 MHz	-7.51
5775 MHz	-6.63
Measurement uncertainty	± 3 dB

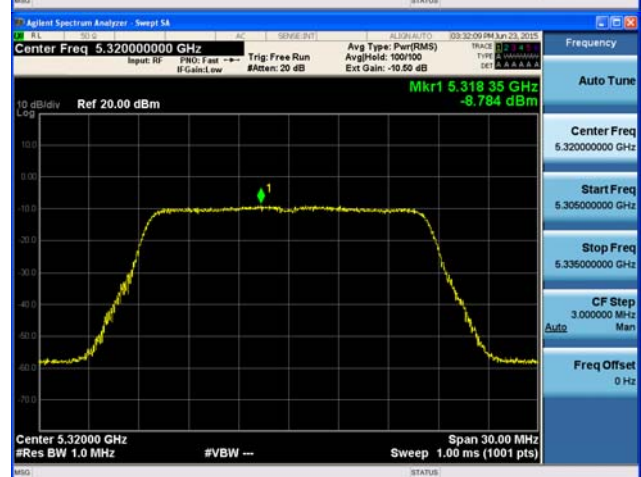
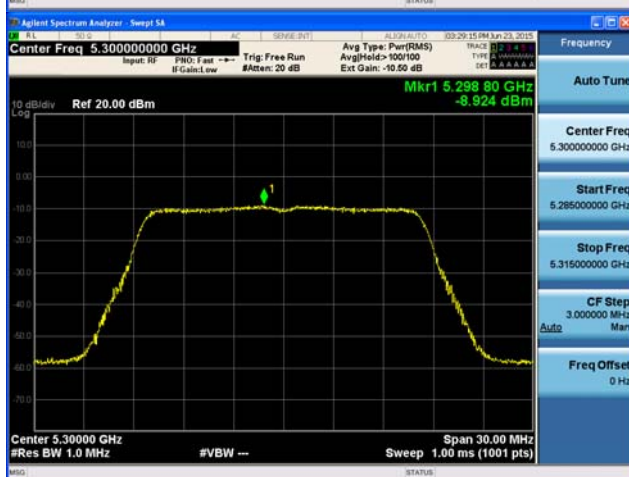
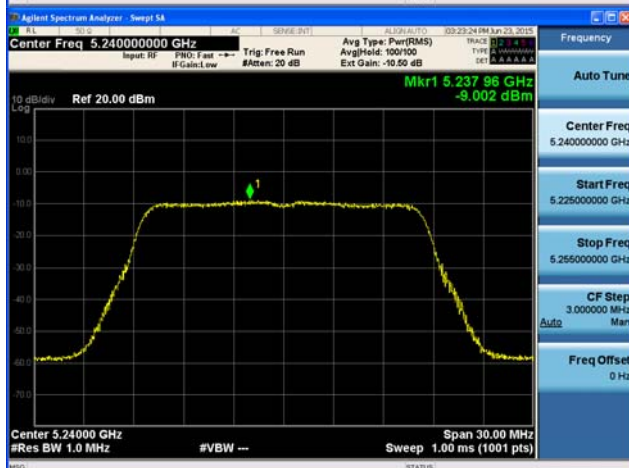
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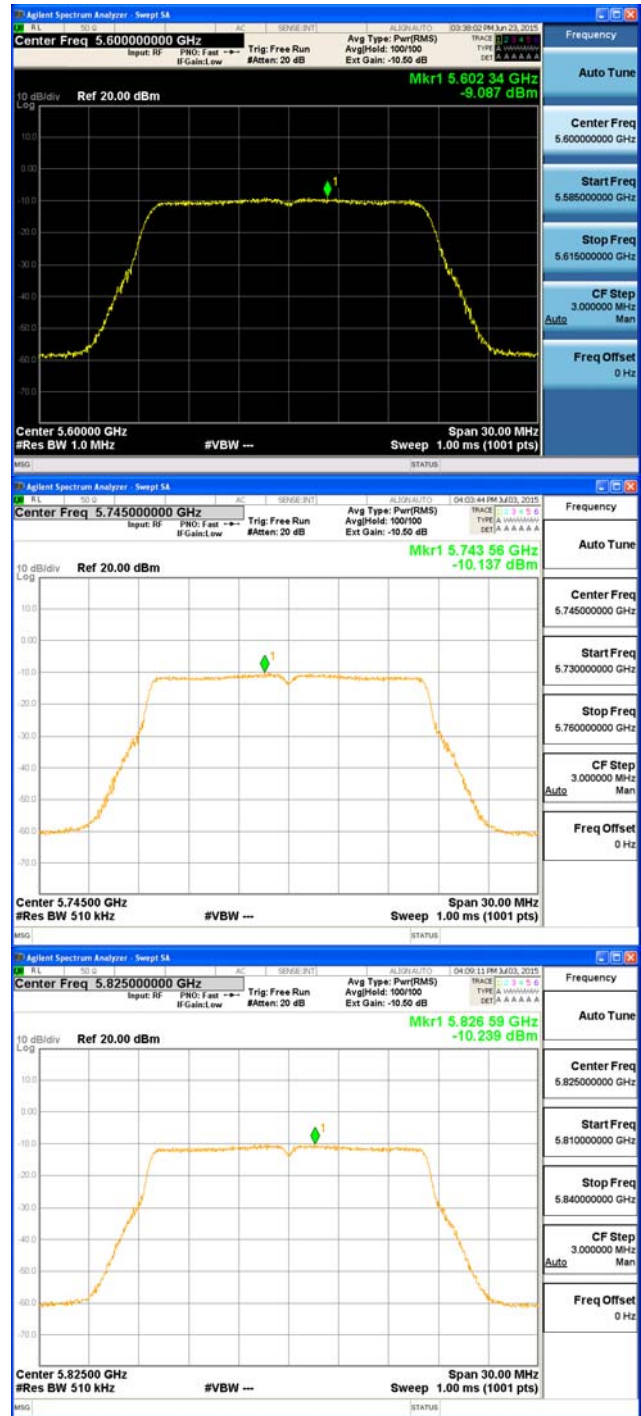
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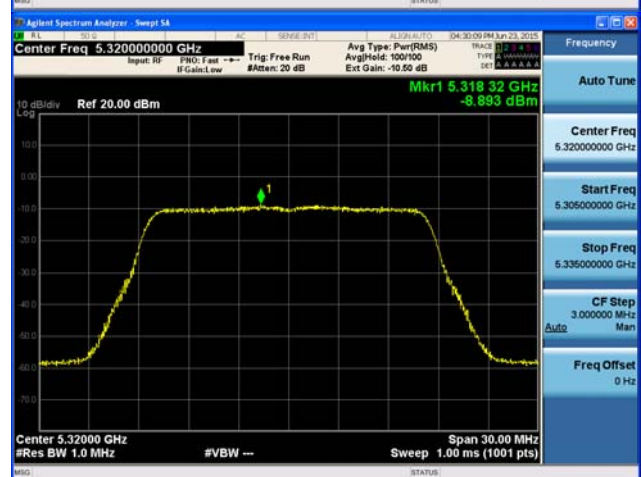
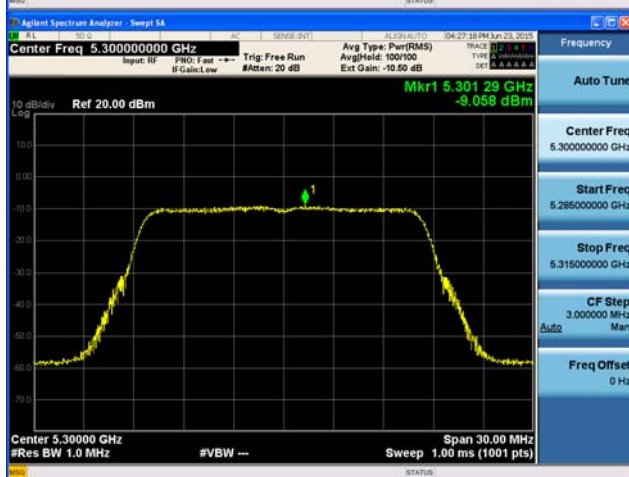
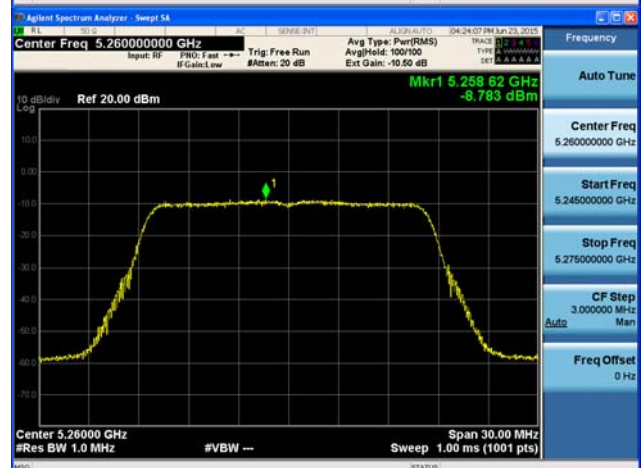
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Ant : A2_802.11a (1)



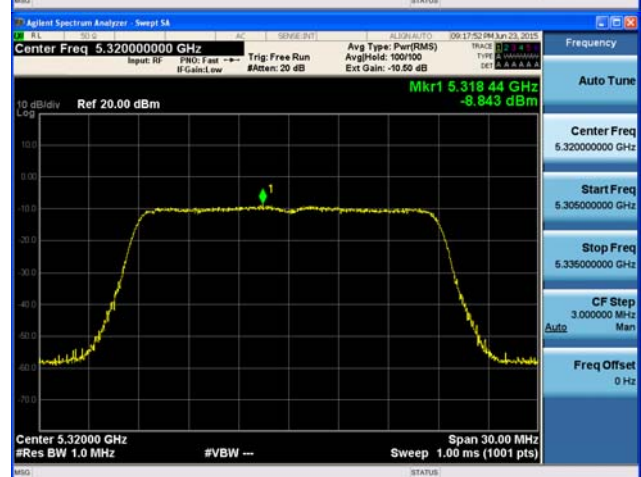
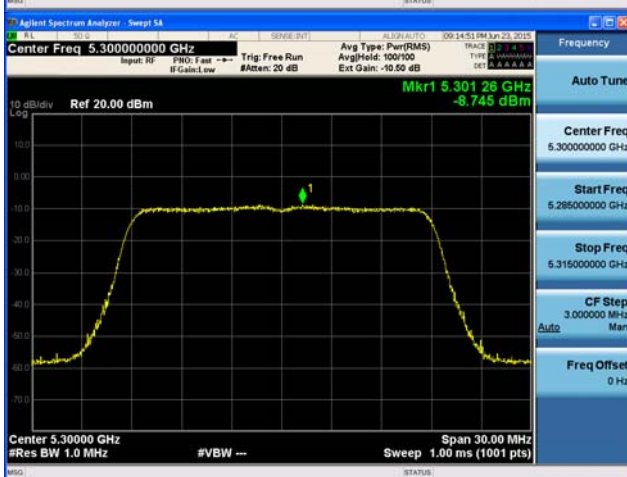
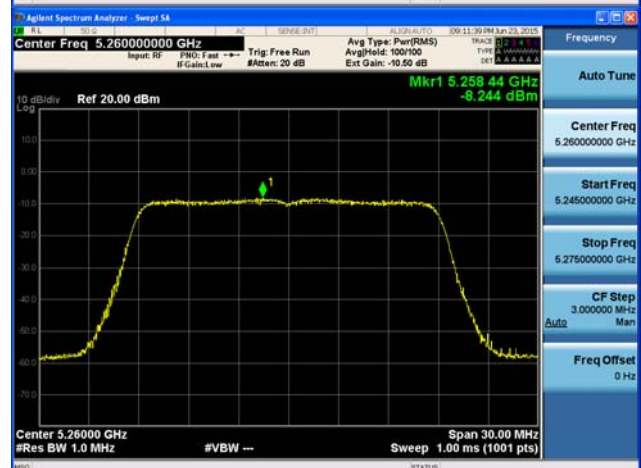
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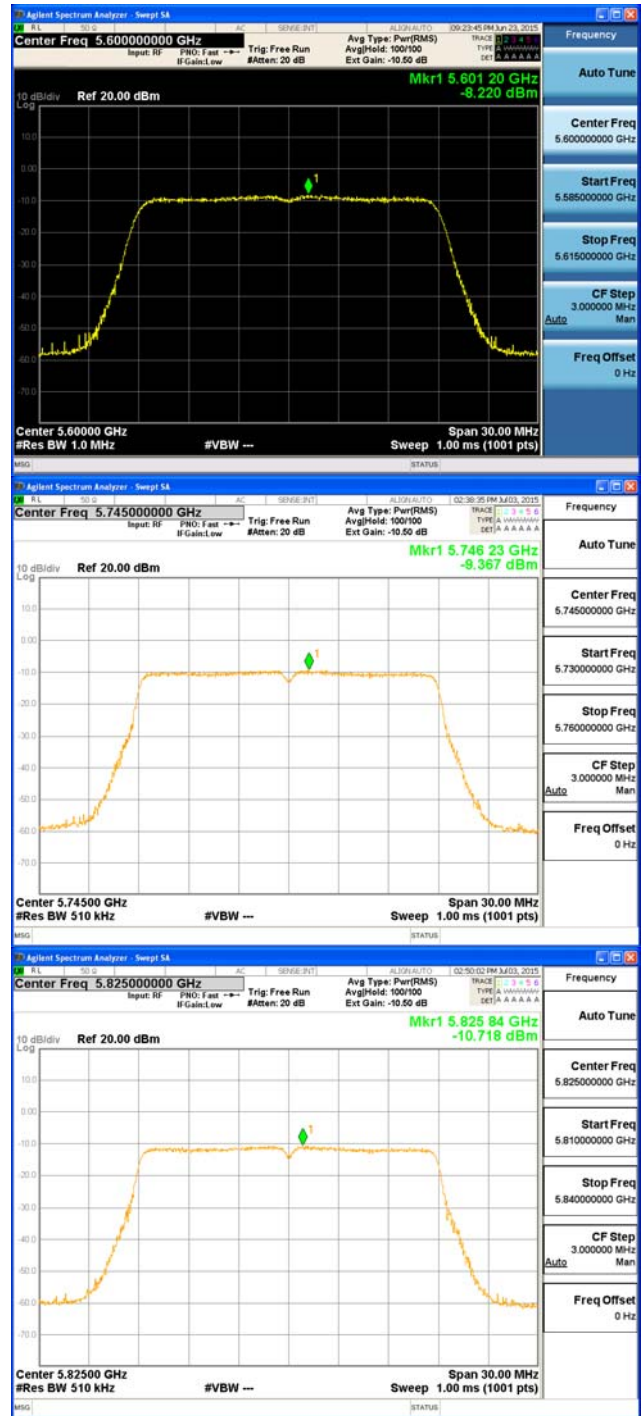
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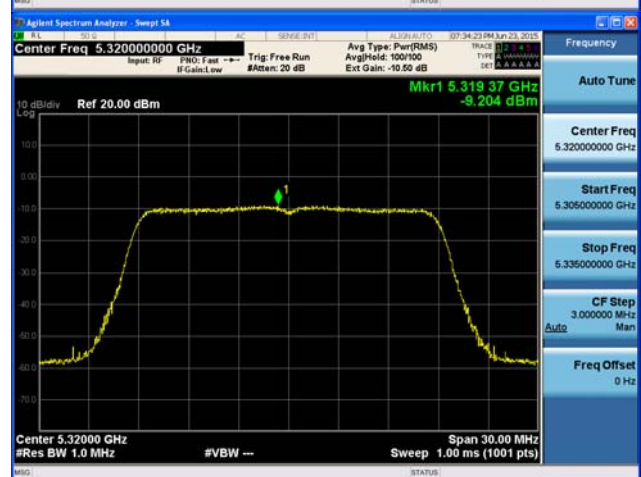
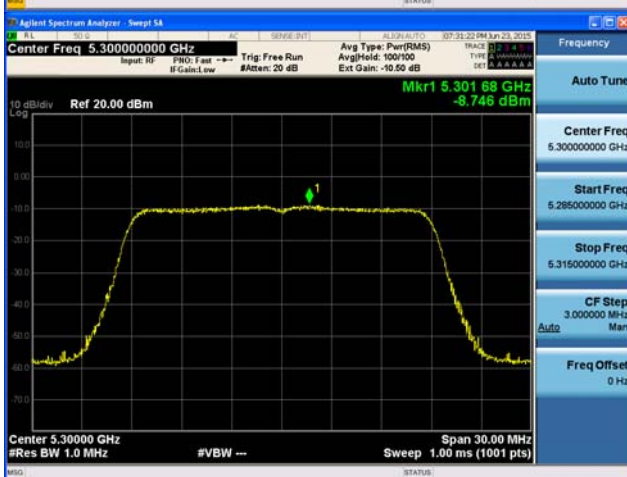
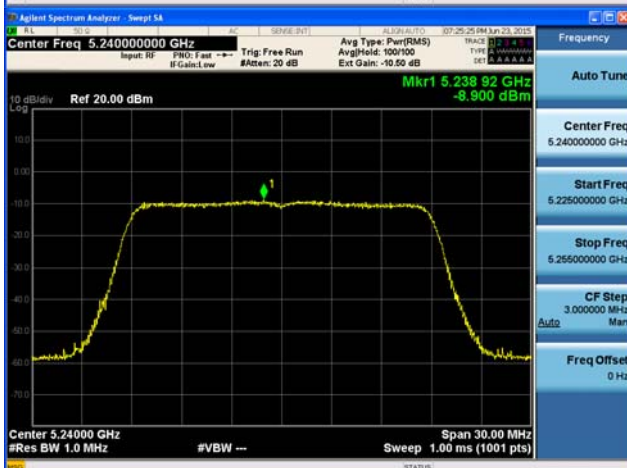
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Ant : A1_802.11n_HT20 (1)



Ant : A1_802.11n_HT20 (2)

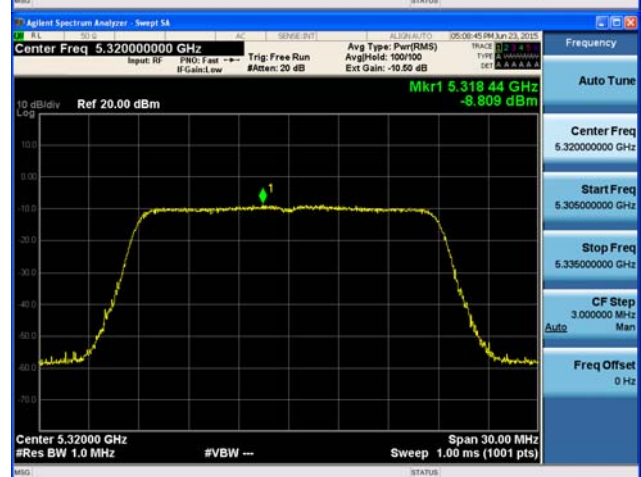
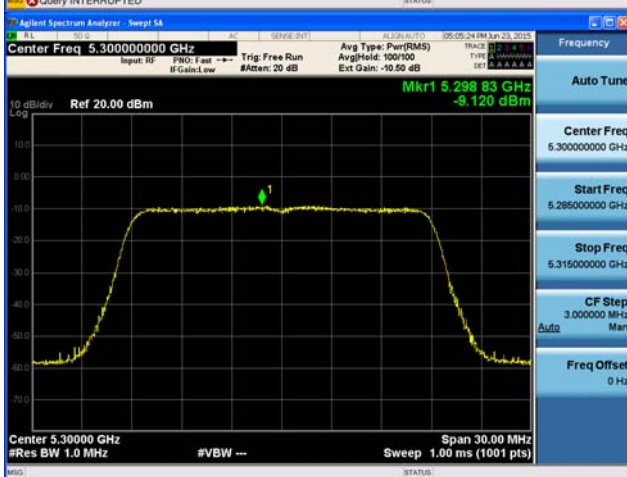
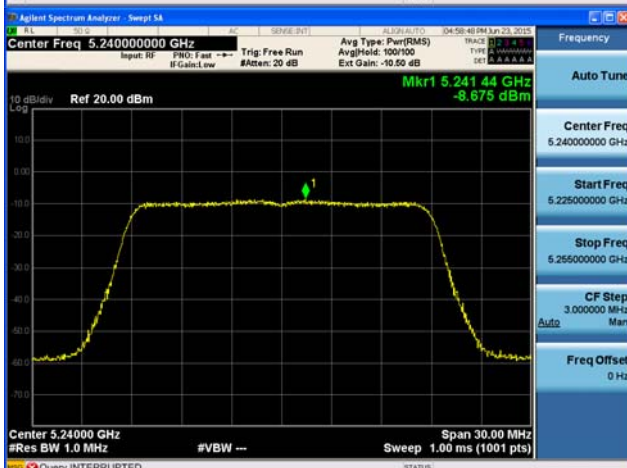


Ant : A2_802.11n_HT20 (1)

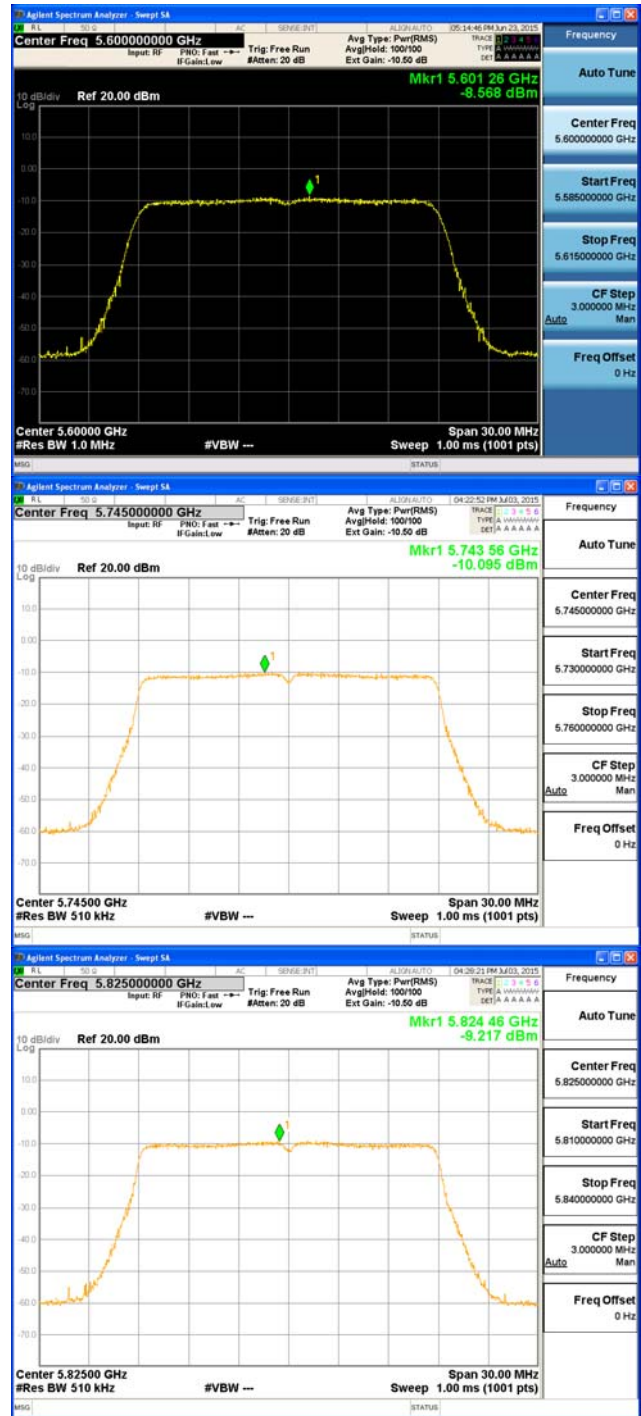
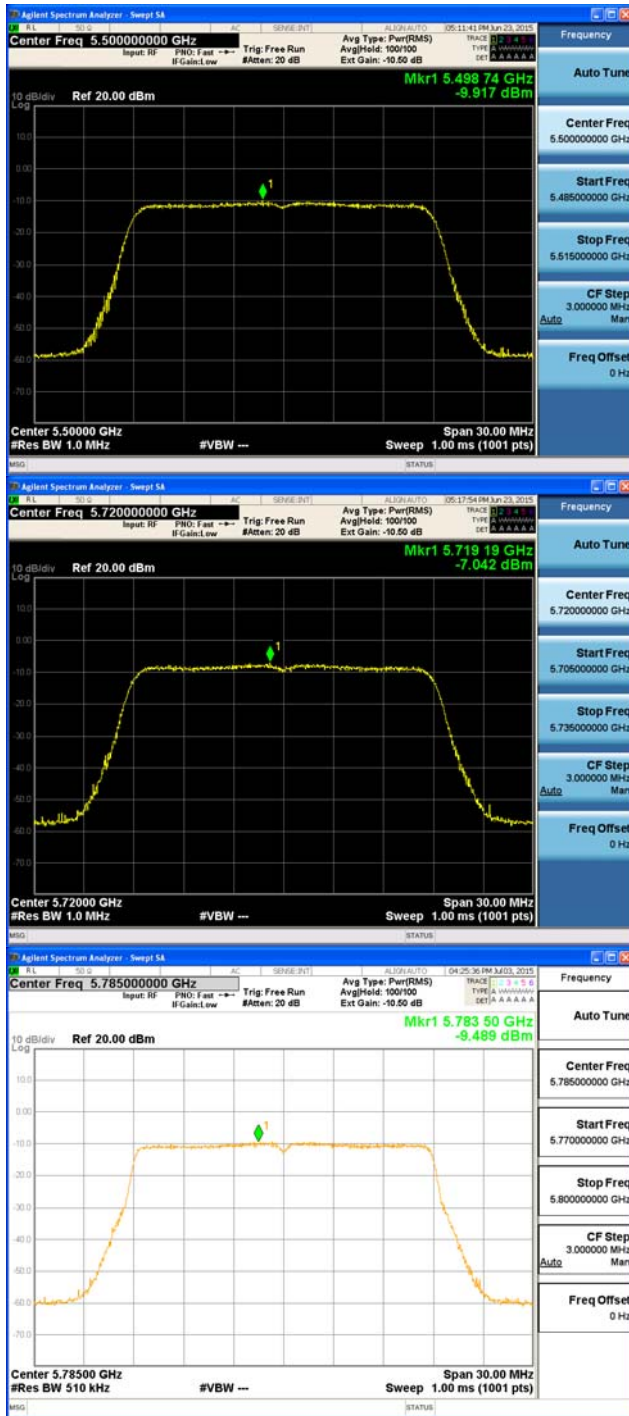


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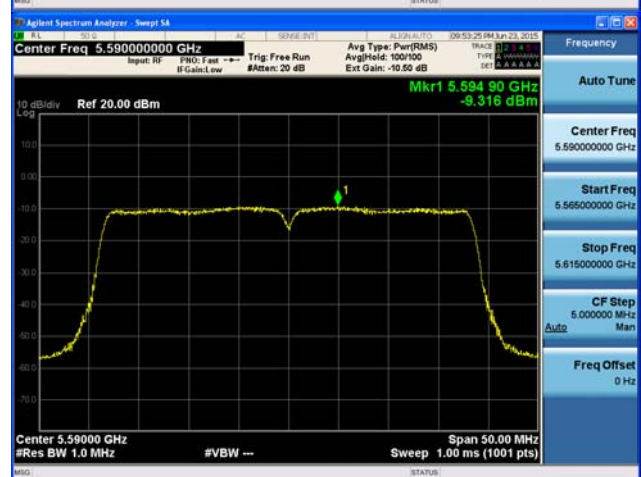
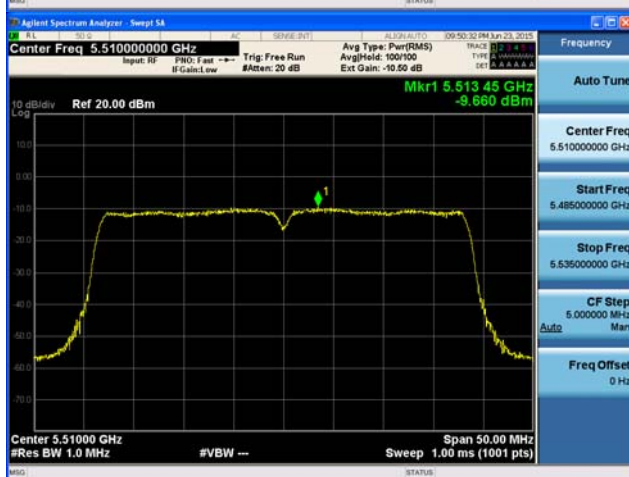




Ant : A3_802.11n_HT20 (1)



Ant : A3_802.11n_HT20 (2)



Ant : A1_802.11n_HT40 (1)



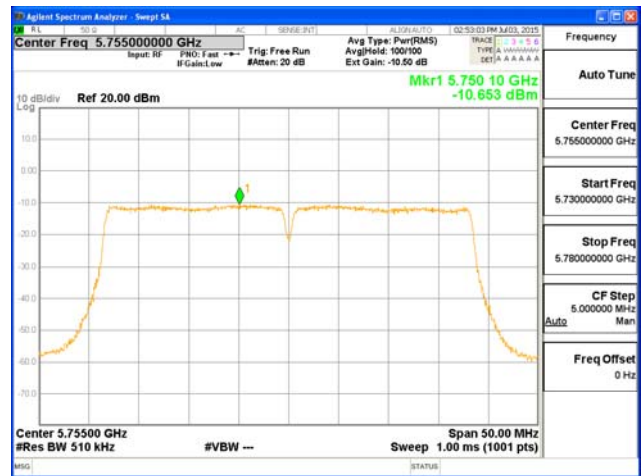
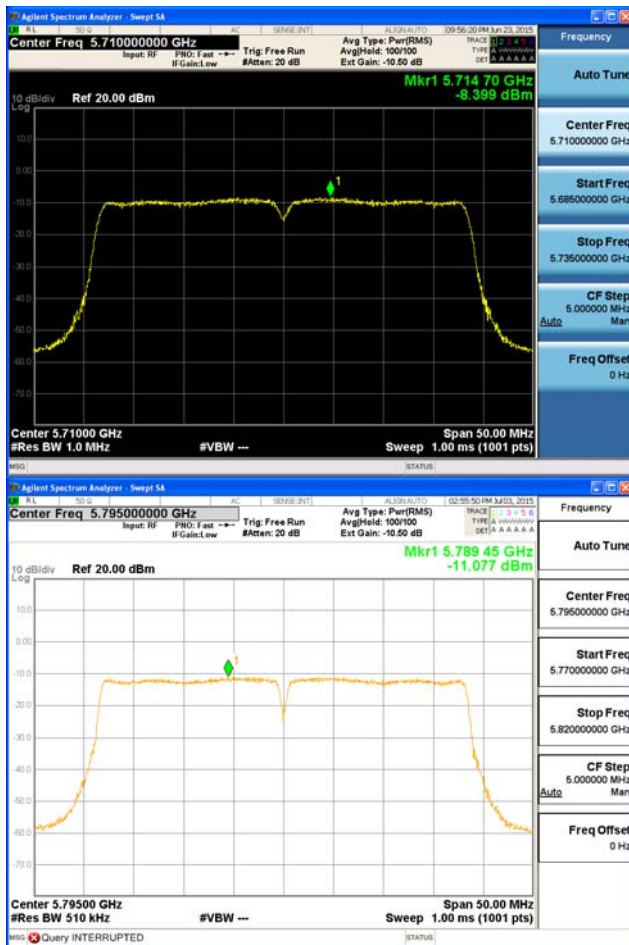
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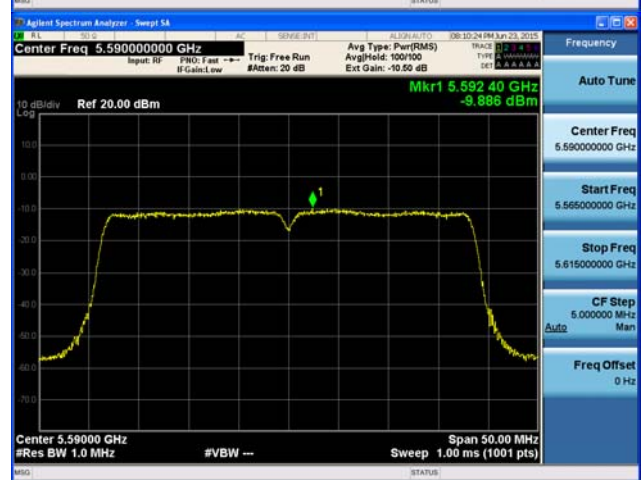
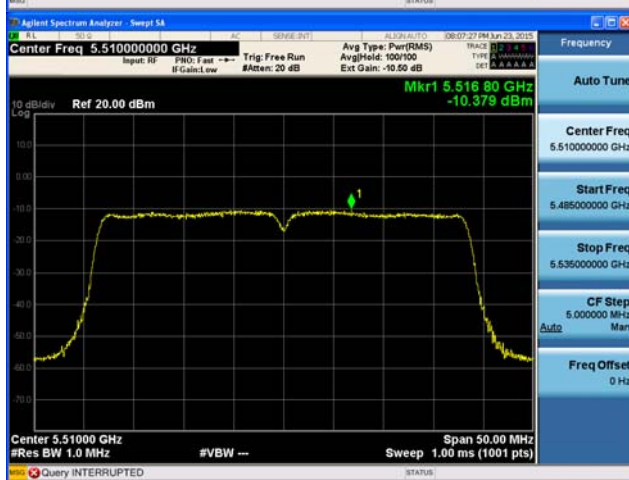
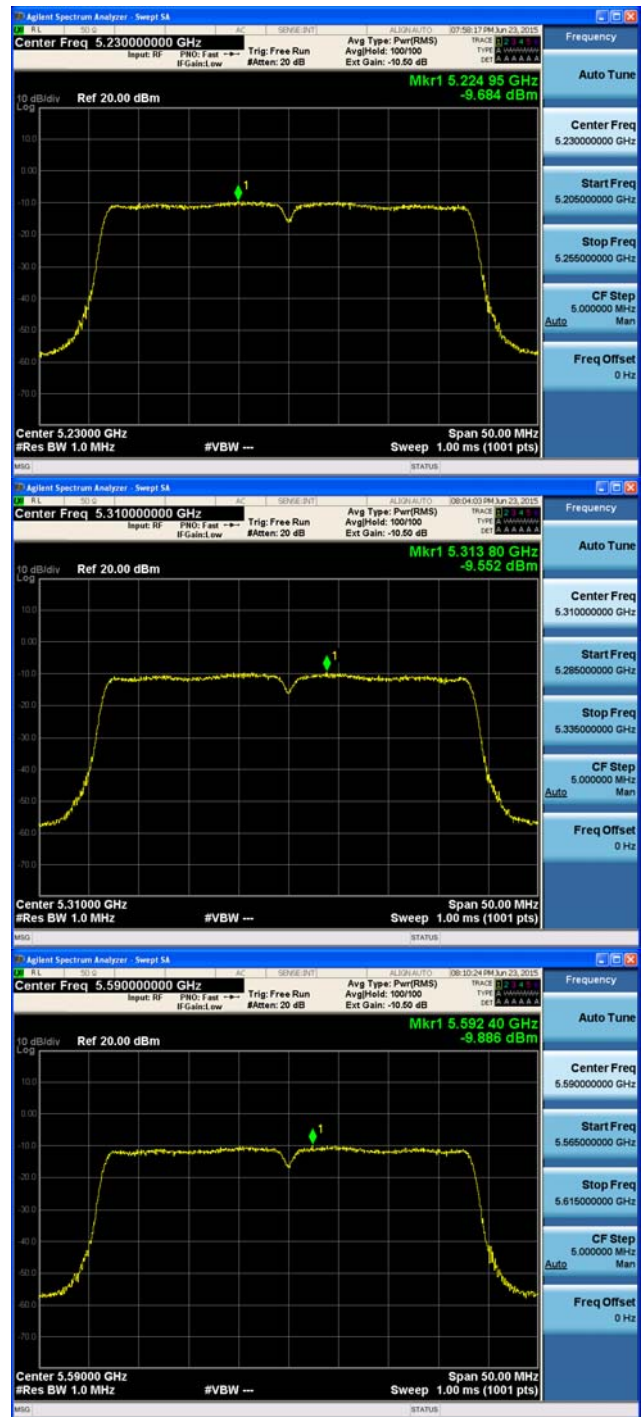
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Ant : A1_802.11n_HT40 (2)



Ant : A2_802.11n_HT40 (1)



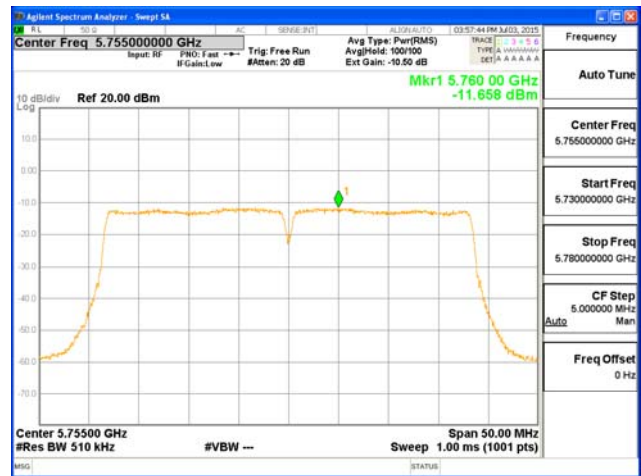
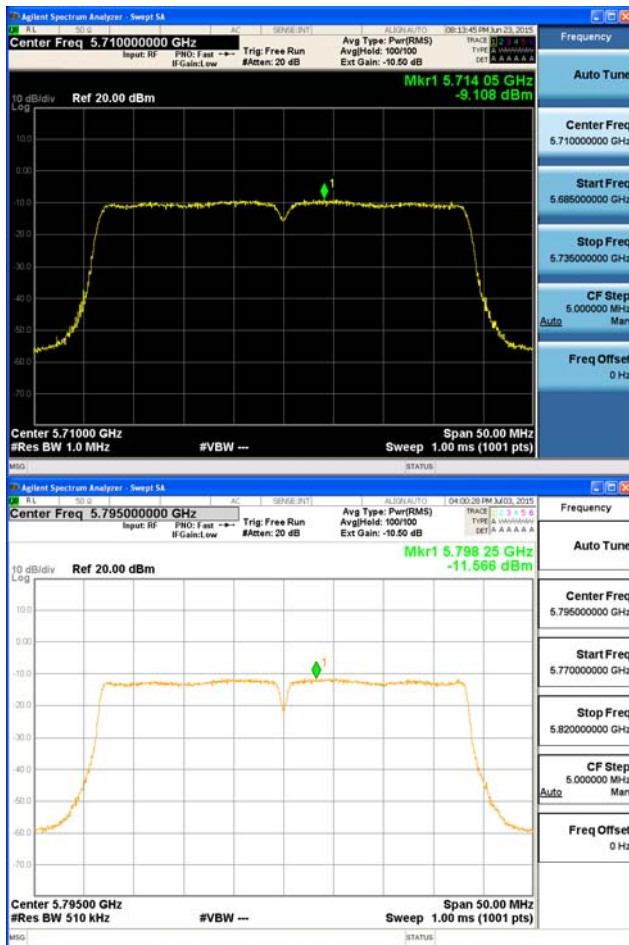
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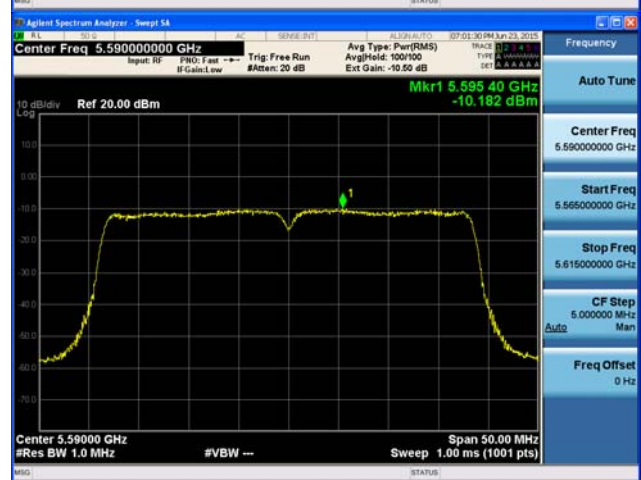
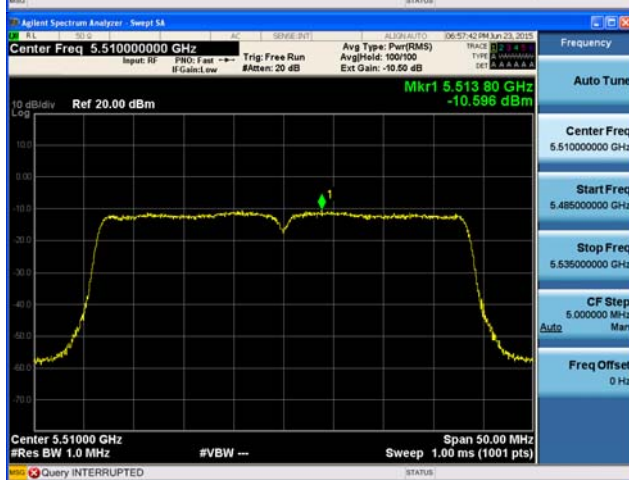
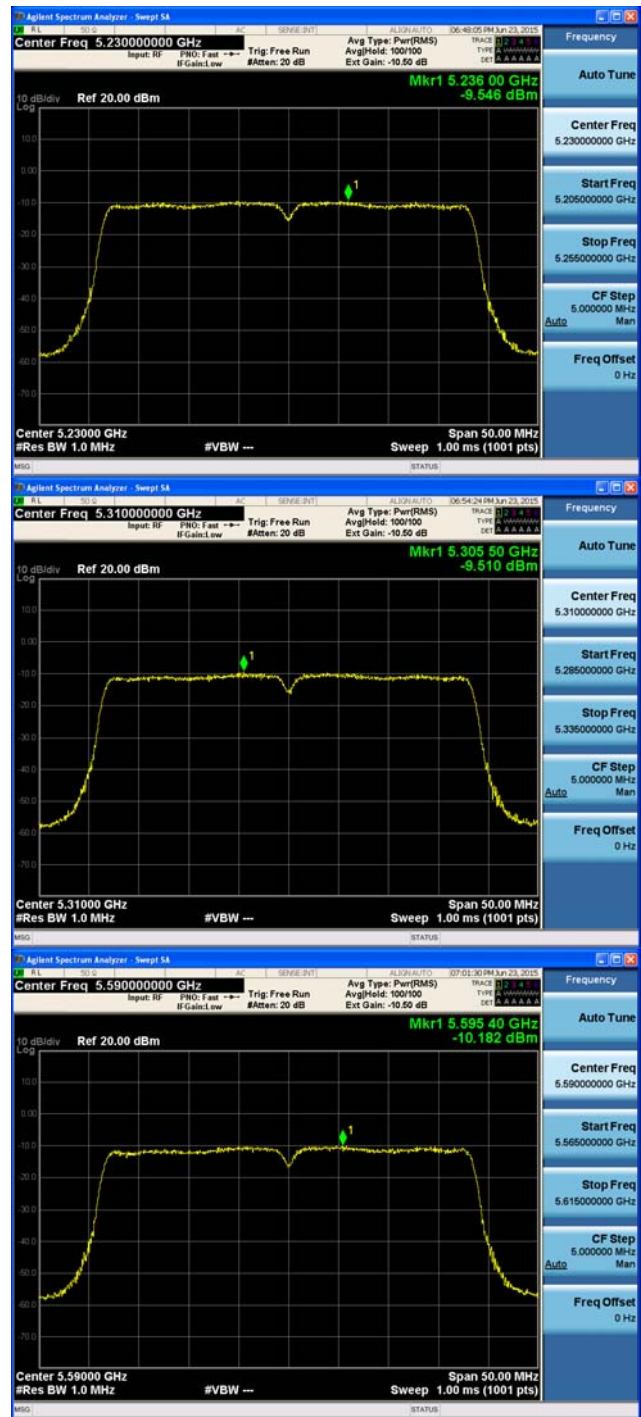
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Ant : A2_802.11n_HT40 (2)



Ant : A3_802.11n_HT40 (1)



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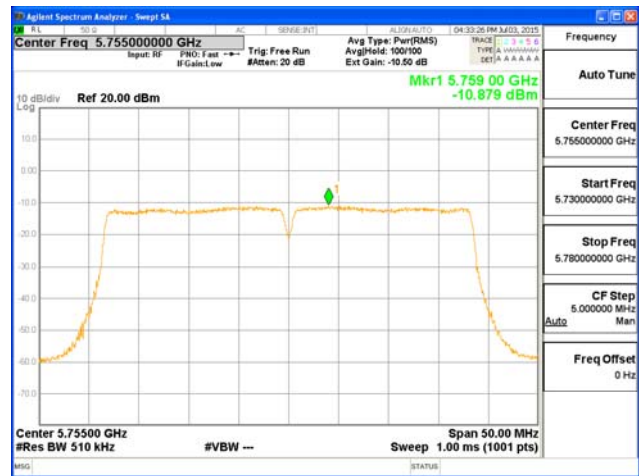
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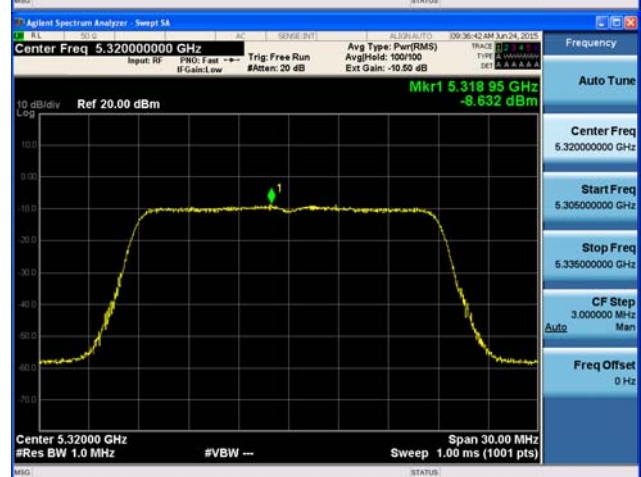
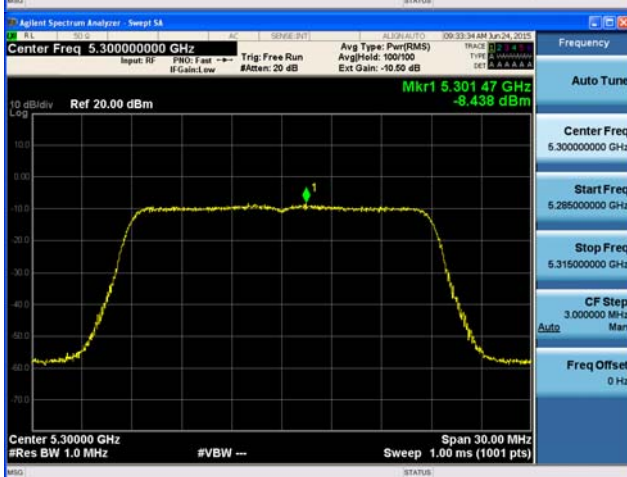
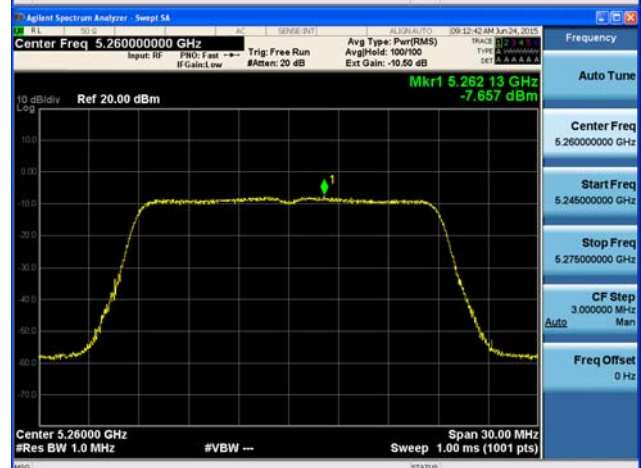
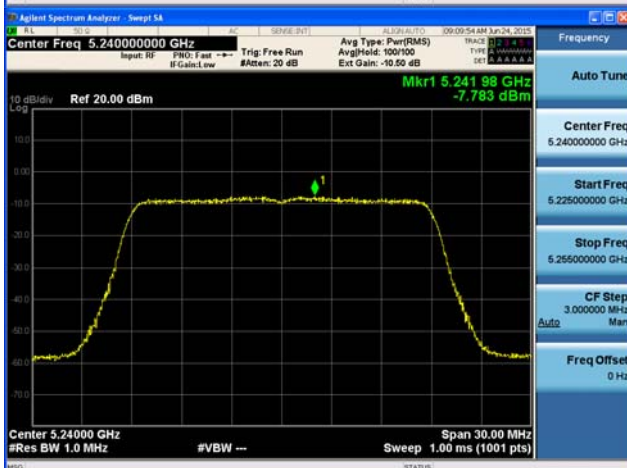
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Ant : A3_802.11n_HT40 (2)



Ant : A1_802.11ac_VHT20 (1)



Ant : A1_802.11ac_VHT20 (2)