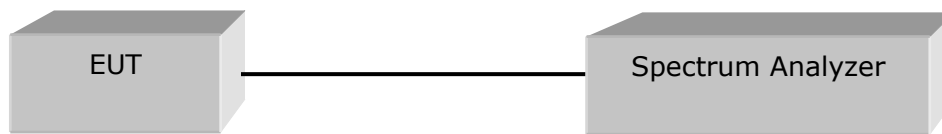


4.3 OUTPUT POWER

Test Procedures

Maximum Conducted Output Power(KDB 789033, Method SA-1, Method SA-2)
Multiple Transmitter Output (KDB 662911 D01, D02)

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 1 MHz
- b) VBW $\geq 3 \times$ RBW
- c) Sweep time = auto
- d) Detector = power averaging (rms)
- e) Trace mode = Average at least 100
- f) Duty cycle factor = $10\log(1/x)$

Test mode	Duty Cycle Factor (dB)
802.11a	0.11
802.11n_HT20	0.00
802.11n_HT40	0.10
802.11ac_VHT20	0.00
802.11ac_VHT40	0.09
802.11ac_VHT80	0.24



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Limit

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	UNII 1	802.11a/n/ac	ANT0	3.49	30.00
			ANT1	4.53	30.00
			ANT2	3.90	30.00
			ANT3	3.78	30.00
	UNII 3		ANT0	3.49	30.00
			ANT1	4.53	30.00
			ANT2	3.90	30.00
			ANT3	3.78	30.00
MIMO (2Tx)	UNII 1	802.11a/n/ac	ANT0 + ANT1	7.04	28.96
	UNII 3				
MIMO (3Tx)	UNII 1	802.11a/n/ac	ANT0 + ANT1 + ANT2	8.76	27.24
	UNII 3				
MIMO (4Tx)	UNII 1	802.11a/n/ac	ANT0 + ANT1 + ANT2 + ANT3	9.95	26.05
	UNII 3				



Test Data

ANTO

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	14.66	0.11	14.77	30.00	15.23
	5 200	15.30	0.11	15.41	30.00	14.59
	5 240	16.72	0.11	16.83	30.00	13.17
	5 745	16.93	0.11	17.04	30.00	12.96
	5 785	17.05	0.11	17.16	30.00	12.84
	5 825	17.73	0.11	17.84	30.00	12.16
802.11n _HT20	5 180	14.45	0.00	14.45	30.00	15.55
	5 200	15.08	0.00	15.08	30.00	14.92
	5 240	16.48	0.00	16.48	30.00	13.52
	5 745	16.77	0.00	16.77	30.00	13.23
	5 785	16.93	0.00	16.93	30.00	13.07
	5 825	17.50	0.00	17.50	30.00	12.50
802.11ac _VHT20	5 180	14.44	0.00	14.44	30.00	15.56
	5 200	15.11	0.00	15.11	30.00	14.89
	5 240	16.49	0.00	16.49	30.00	13.51
	5 745	16.81	0.00	16.81	30.00	13.19
	5 785	17.04	0.00	17.04	30.00	12.96
	5 825	17.54	0.00	17.54	30.00	12.46
802.11n _HT40	5 190	12.17	0.10	12.27	30.00	17.73
	5 230	13.48	0.10	13.58	30.00	16.42
	5 755	17.55	0.10	17.65	30.00	12.35
	5 795	17.92	0.10	18.02	30.00	11.98
802.11ac _VHT40	5 190	12.68	0.09	12.77	30.00	17.23
	5 230	13.91	0.09	14.00	30.00	16.00
	5 755	17.53	0.09	17.62	30.00	12.38
	5 795	17.89	0.09	17.98	30.00	12.02
802.11ac _VHT80	5 210	10.40	0.24	10.64	30.00	19.36
	5 775	17.75	0.24	17.99	30.00	12.01
Measurement uncertainty		± 1.5 dB				



ANT1

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	14.59	0.11	14.70	30.00	15.30
	5 200	15.00	0.11	15.11	30.00	14.89
	5 240	16.16	0.11	16.27	30.00	13.73
	5 745	17.09	0.11	17.20	30.00	12.80
	5 785	16.80	0.11	16.91	30.00	13.09
	5 825	16.62	0.11	16.73	30.00	13.27
802.11n _HT20	5 180	14.82	0.00	14.82	30.00	15.18
	5 200	15.31	0.00	15.31	30.00	14.69
	5 240	16.50	0.00	16.50	30.00	13.50
	5 745	16.83	0.00	16.83	30.00	13.17
	5 785	16.61	0.00	16.61	30.00	13.39
	5 825	16.40	0.00	16.40	30.00	13.60
802.11ac _VHT20	5 180	14.86	0.00	14.86	30.00	15.14
	5 200	15.31	0.00	15.31	30.00	14.69
	5 240	16.55	0.00	16.55	30.00	13.45
	5 745	16.88	0.00	16.88	30.00	13.12
	5 785	16.67	0.00	16.67	30.00	13.33
	5 825	16.40	0.00	16.40	30.00	13.60
802.11n _HT40	5 190	11.16	0.10	11.26	30.00	18.74
	5 230	12.31	0.10	12.41	30.00	17.59
	5 755	17.61	0.10	17.71	30.00	12.29
	5 795	17.27	0.10	17.37	30.00	12.63
802.11ac _VHT40	5 190	11.64	0.09	11.73	30.00	18.27
	5 230	12.74	0.09	12.83	30.00	17.17
	5 755	17.55	0.09	17.64	30.00	12.36
	5 795	17.32	0.09	17.41	30.00	12.59
802.11ac _VHT80	5 210	9.57	0.24	9.81	30.00	20.19
	5 775	17.55	0.24	17.79	30.00	12.21
Measurement uncertainty		± 1.5 dB				



ANT2

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	15.23	0.11	15.34	30.00	14.66
	5 200	15.60	0.11	15.71	30.00	14.29
	5 240	16.65	0.11	16.76	30.00	13.24
	5 745	17.83	0.11	17.94	30.00	12.06
	5 785	17.15	0.11	17.26	30.00	12.74
	5 825	17.01	0.11	17.12	30.00	12.88
802.11n _HT20	5 180	15.53	0.00	15.53	30.00	14.47
	5 200	15.85	0.00	15.85	30.00	14.15
	5 240	16.95	0.00	16.95	30.00	13.05
	5 745	17.50	0.00	17.50	30.00	12.50
	5 785	17.12	0.00	17.12	30.00	12.88
	5 825	16.85	0.00	16.85	30.00	13.15
802.11ac _VHT20	5 180	15.56	0.00	15.56	30.00	14.44
	5 200	15.88	0.00	15.88	30.00	14.12
	5 240	16.98	0.00	16.98	30.00	13.02
	5 745	17.57	0.00	17.57	30.00	12.43
	5 785	17.14	0.00	17.14	30.00	12.86
	5 825	16.77	0.00	16.77	30.00	13.23
802.11n _HT40	5 190	11.89	0.10	11.99	30.00	18.01
	5 230	12.77	0.10	12.87	30.00	17.13
	5 755	18.33	0.10	18.43	30.00	11.57
	5 795	17.81	0.10	17.91	30.00	12.09
802.11ac _VHT40	5 190	12.46	0.09	12.55	30.00	17.45
	5 230	13.32	0.09	13.41	30.00	16.59
	5 755	18.36	0.09	18.45	30.00	11.55
	5 795	17.82	0.09	17.91	30.00	12.09
802.11ac _VHT80	5 210	10.13	0.24	10.37	30.00	19.63
	5 775	18.03	0.24	18.27	30.00	11.73
Measurement uncertainty		± 1.5 dB				



ANT3

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	14.44	0.11	14.55	30.00	15.45
	5 200	15.14	0.11	15.25	30.00	14.75
	5 240	16.52	0.11	16.63	30.00	13.37
	5 745	17.26	0.11	17.37	30.00	12.63
	5 785	17.10	0.11	17.21	30.00	12.79
	5 825	17.58	0.11	17.69	30.00	12.31
802.11n _HT20	5 180	14.74	0.00	14.74	30.00	15.26
	5 200	15.40	0.00	15.40	30.00	14.60
	5 240	16.85	0.00	16.85	30.00	13.15
	5 745	16.93	0.00	16.93	30.00	13.07
	5 785	16.98	0.00	16.98	30.00	13.02
	5 825	17.50	0.00	17.50	30.00	12.50
802.11ac _VHT20	5 180	14.73	0.00	14.73	30.00	15.27
	5 200	15.43	0.00	15.43	30.00	14.57
	5 240	16.82	0.00	16.82	30.00	13.18
	5 745	16.95	0.00	16.95	30.00	13.05
	5 785	16.99	0.00	16.99	30.00	13.01
	5 825	17.45	0.00	17.45	30.00	12.55
802.11n _HT40	5 190	12.26	0.10	12.36	30.00	17.64
	5 230	13.69	0.10	13.79	30.00	16.21
	5 755	17.69	0.10	17.79	30.00	12.21
	5 795	17.79	0.10	17.89	30.00	12.11
802.11ac _VHT40	5 190	12.72	0.09	12.81	30.00	17.19
	5 230	14.22	0.09	14.31	30.00	15.69
	5 755	17.79	0.09	17.88	30.00	12.12
	5 795	17.73	0.09	17.82	30.00	12.18
802.11ac _VHT80	5 210	10.60	0.24	10.84	30.00	19.16
	5 775	17.76	0.24	18.00	30.00	12.00
Measurement uncertainty		± 1.5 dB				

ANTO + ANT1

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	17.64	0.11	17.75	28.96	11.21
	5 200	18.16	0.11	18.27	28.96	10.69
	5 240	19.46	0.11	19.57	28.96	9.39
	5 745	20.02	0.11	20.13	28.96	8.83
	5 785	19.94	0.11	20.05	28.96	8.91
	5 825	20.22	0.11	20.33	28.96	8.63
802.11n _HT20	5 180	17.65	0.00	17.65	28.96	11.31
	5 200	18.21	0.00	18.21	28.96	10.75
	5 240	19.50	0.00	19.50	28.96	9.46
	5 745	19.81	0.00	19.81	28.96	9.15
	5 785	19.78	0.00	19.78	28.96	9.18
	5 825	20.00	0.00	20.00	28.96	8.96
802.11ac _VHT20	5 180	17.67	0.00	17.67	28.96	11.29
	5 200	18.22	0.00	18.22	28.96	10.74
	5 240	19.53	0.00	19.53	28.96	9.43
	5 745	19.86	0.00	19.86	28.96	9.10
	5 785	19.87	0.00	19.87	28.96	9.09
	5 825	20.02	0.00	20.02	28.96	8.94
802.11n _HT40	5 190	14.70	0.10	14.80	28.96	14.16
	5 230	15.94	0.10	16.04	28.96	12.92
	5 755	20.59	0.10	20.69	28.96	8.27
	5 795	20.62	0.10	20.72	28.96	8.24
802.11ac _VHT40	5 190	15.20	0.09	15.29	28.96	13.67
	5 230	16.37	0.09	16.46	28.96	12.50
	5 755	20.55	0.09	20.64	28.96	8.32
	5 795	20.62	0.09	20.71	28.96	8.25
802.11ac _VHT80	5 210	13.02	0.24	13.26	28.96	15.70
	5 775	20.66	0.24	20.90	28.96	8.06
Measurement uncertainty		± 1.5 dB				



ANTO + ANT1 + ANT2

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	19.61	0.11	19.72	27.24	7.52
	5 200	20.08	0.11	20.19	27.24	7.05
	5 240	21.29	0.11	21.40	27.24	5.84
	5 745	22.07	0.11	22.18	27.24	5.06
	5 785	21.77	0.11	21.88	27.24	5.36
	5 825	21.92	0.11	22.03	27.24	5.21
802.11n _HT20	5 180	19.73	0.00	19.73	27.24	7.51
	5 200	20.20	0.00	20.20	27.24	7.04
	5 240	21.42	0.00	21.42	27.24	5.82
	5 745	21.82	0.00	21.82	27.24	5.42
	5 785	21.66	0.00	21.66	27.24	5.58
	5 825	21.71	0.00	21.71	27.24	5.53
802.11ac _VHT20	5 180	19.75	0.00	19.75	27.24	7.49
	5 200	20.22	0.00	20.22	27.24	7.02
	5 240	21.45	0.00	21.45	27.24	5.79
	5 745	21.87	0.00	21.87	27.24	5.37
	5 785	21.73	0.00	21.73	27.24	5.51
	5 825	21.70	0.00	21.70	27.24	5.54
802.11n _HT40	5 190	16.53	0.10	16.63	27.24	10.61
	5 230	17.65	0.10	17.75	27.24	9.49
	5 755	22.62	0.10	22.72	27.24	4.52
	5 795	22.45	0.10	22.55	27.24	4.69
802.11ac _VHT40	5 190	17.05	0.09	17.14	27.24	10.10
	5 230	18.12	0.09	18.21	27.24	9.03
	5 755	22.60	0.09	22.69	27.24	4.55
	5 795	22.46	0.09	22.55	27.24	4.69
802.11ac _VHT80	5 210	14.82	0.24	15.06	27.24	12.18
	5 775	22.55	0.24	22.79	27.24	4.45
Measurement uncertainty		± 1.5 dB				



ANTO + ANT1 + ANT2 + ANT3

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	20.76	0.11	20.87	26.05	5.18
	5 200	21.29	0.11	21.40	26.05	4.65
	5 240	22.54	0.11	22.65	26.05	3.40
	5 745	23.31	0.11	23.42	26.05	2.63
	5 785	23.05	0.11	23.16	26.05	2.89
	5 825	23.28	0.11	23.39	26.05	2.66
802.11n _HT20	5 180	20.92	0.00	20.92	26.05	5.13
	5 200	21.44	0.00	21.44	26.05	4.61
	5 240	22.72	0.00	22.72	26.05	3.33
	5 745	23.04	0.00	23.04	26.05	3.01
	5 785	22.93	0.00	22.93	26.05	3.12
	5 825	23.11	0.00	23.11	26.05	2.94
802.11ac _VHT20	5 180	20.94	0.00	20.94	26.05	5.11
	5 200	21.46	0.00	21.46	26.05	4.59
	5 240	22.74	0.00	22.74	26.05	3.31
	5 745	23.08	0.00	23.08	26.05	2.97
	5 785	22.98	0.00	22.98	26.05	3.07
	5 825	23.09	0.00	23.09	26.05	2.96
802.11n _HT40	5 190	17.91	0.10	18.01	26.05	8.04
	5 230	19.12	0.10	19.22	26.05	6.83
	5 755	23.83	0.10	23.93	26.05	2.12
	5 795	23.73	0.10	23.83	26.05	2.22
802.11ac _VHT40	5 190	18.42	0.09	18.51	26.05	7.54
	5 230	19.60	0.09	19.69	26.05	6.36
	5 755	23.84	0.09	23.93	26.05	2.12
	5 795	23.72	0.09	23.81	26.05	2.24
802.11ac _VHT80	5 210	16.21	0.24	16.45	26.05	9.60
	5 775	23.80	0.24	24.04	26.05	2.01

See next pages for actual measured spectrum plots.



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ANTO_802.11a_UNII-1

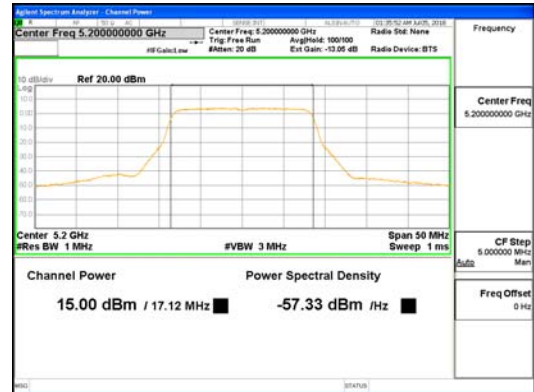


ANTO_802.11a_UNII-3



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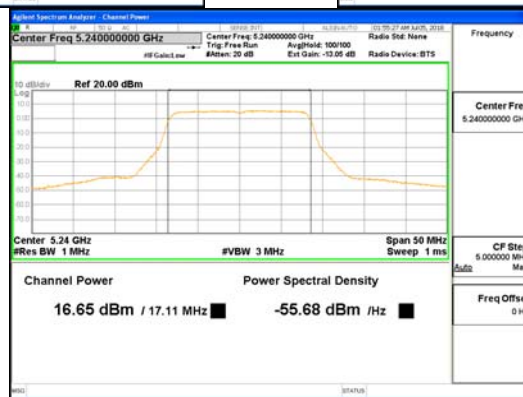
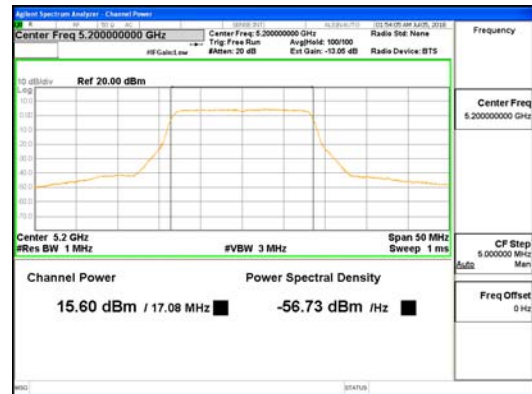


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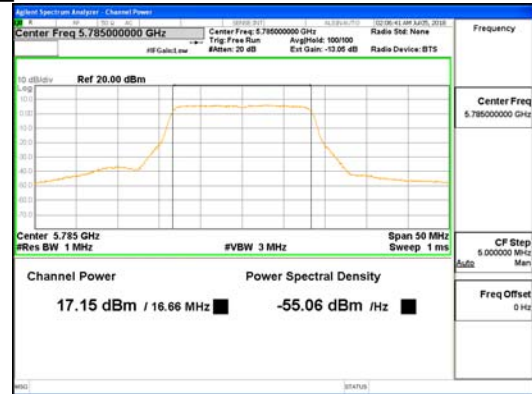
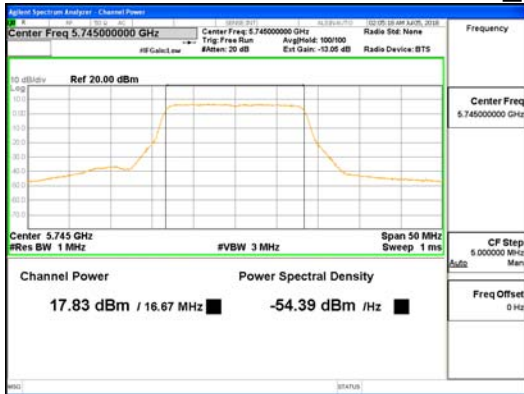


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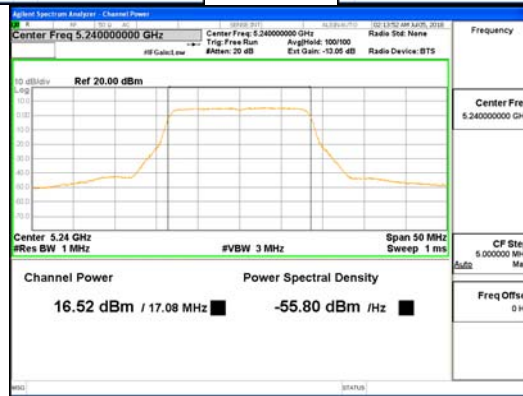
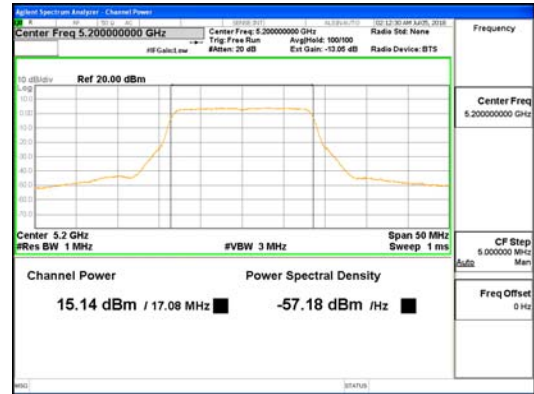
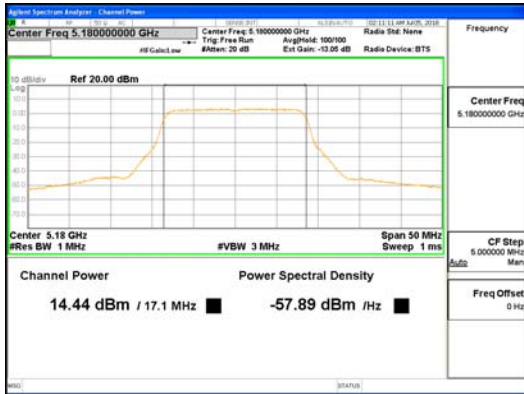


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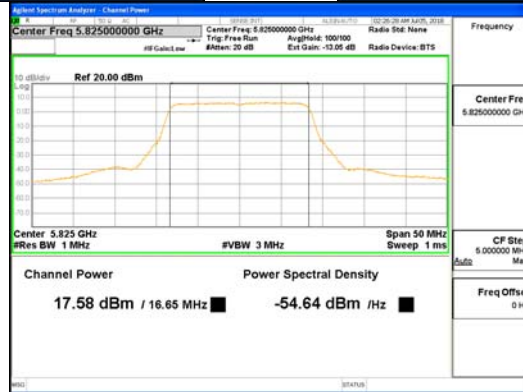


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ANT3_802.11a_UNII-1



ANT3_802.11a_UNII-3



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ANTO_802.11n_HT20_UNII-1

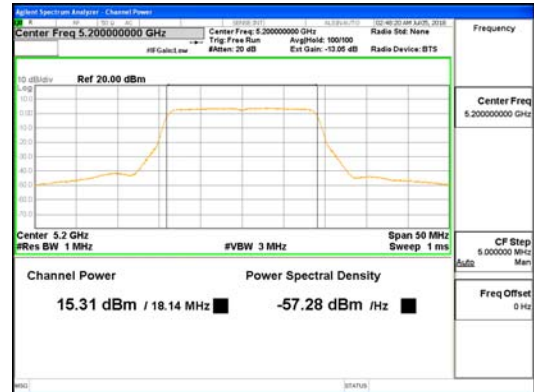


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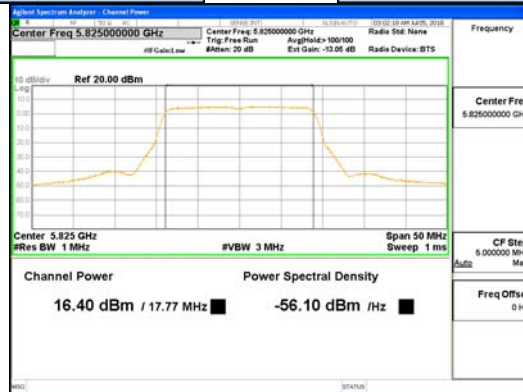


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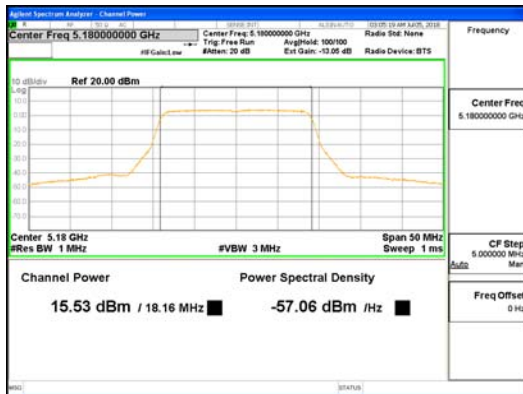


ANT1_802.11n_HT20_UNII-3



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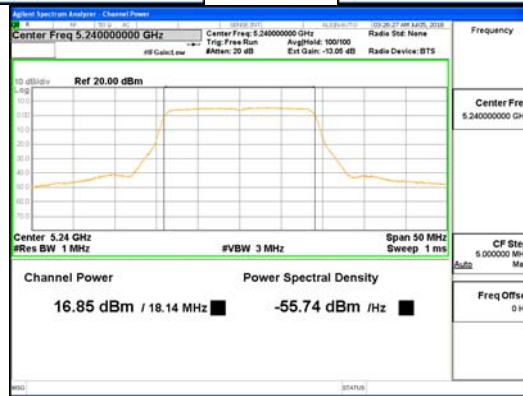
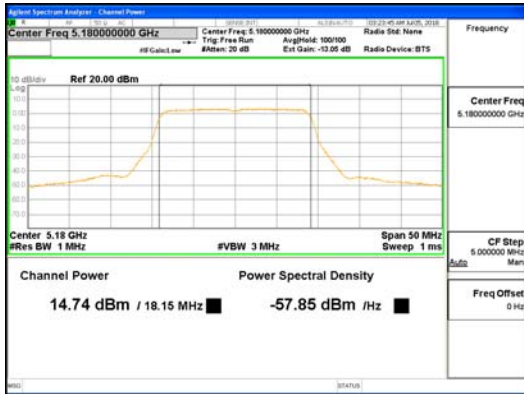


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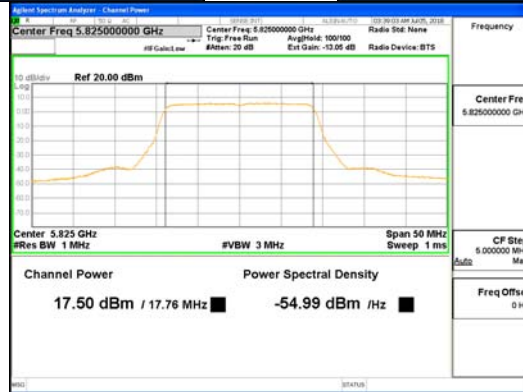
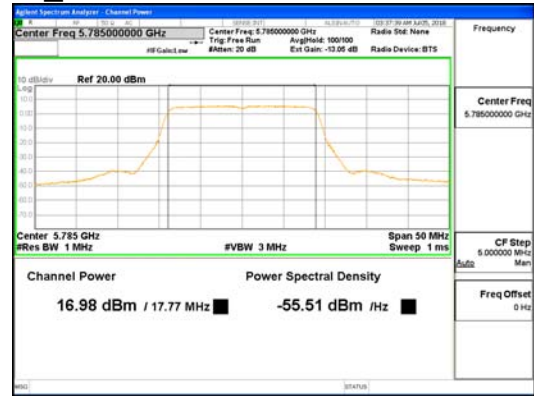
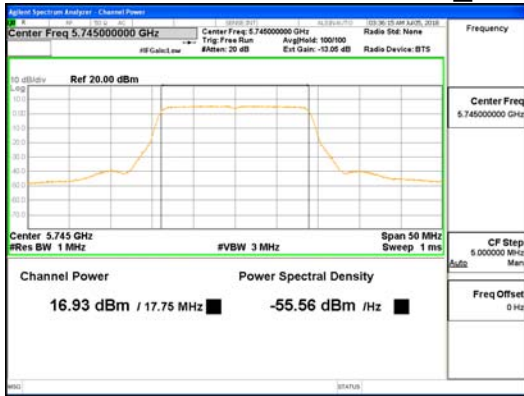


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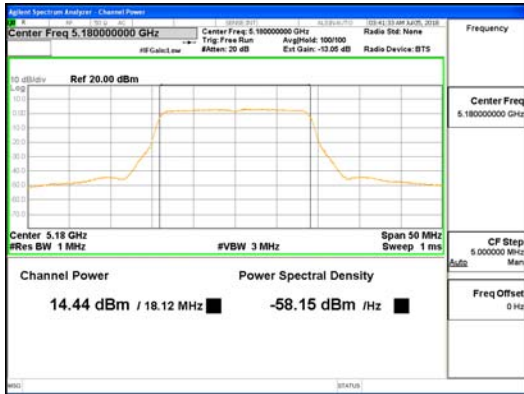


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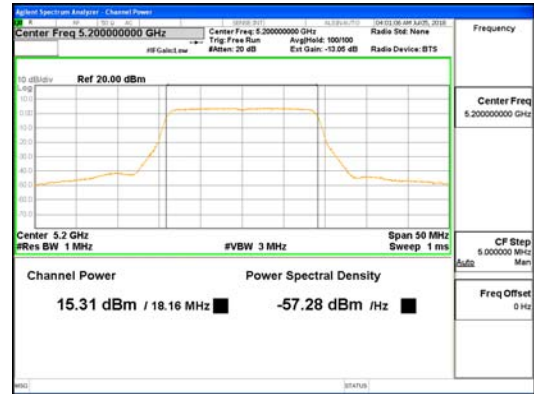
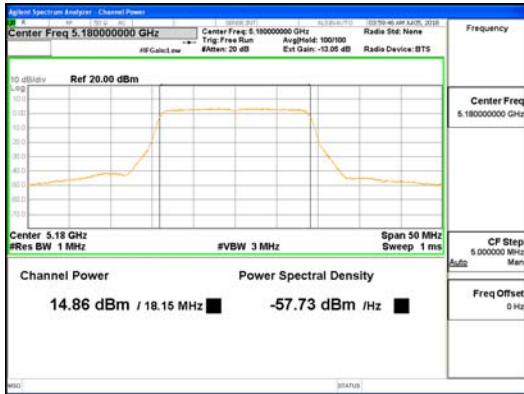


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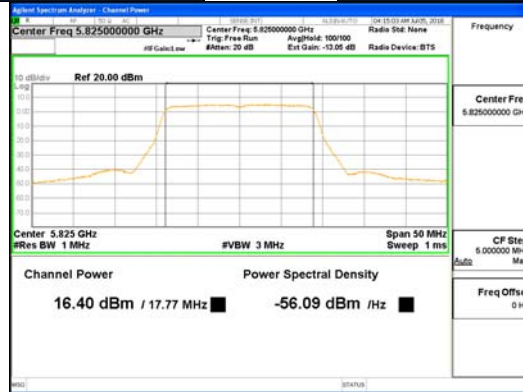
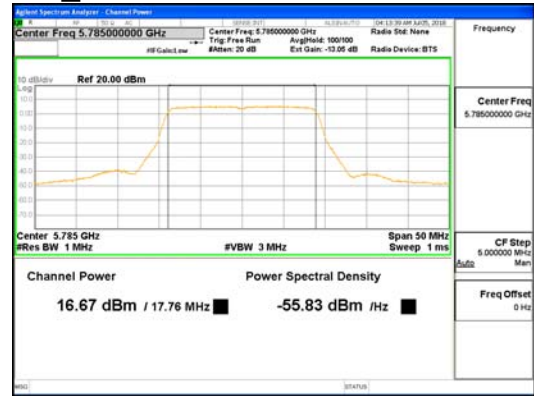


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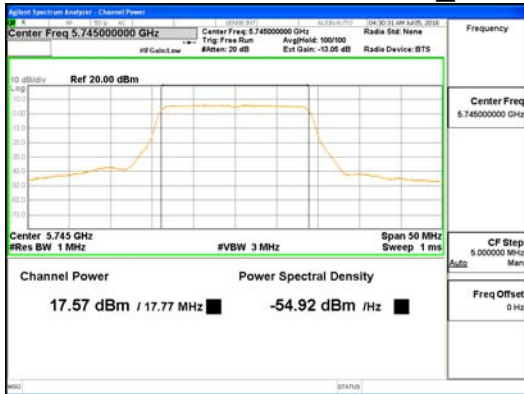


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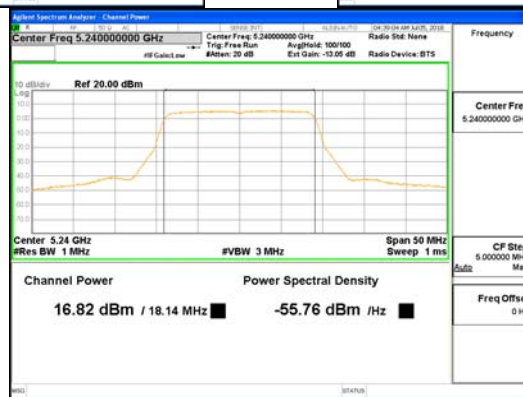
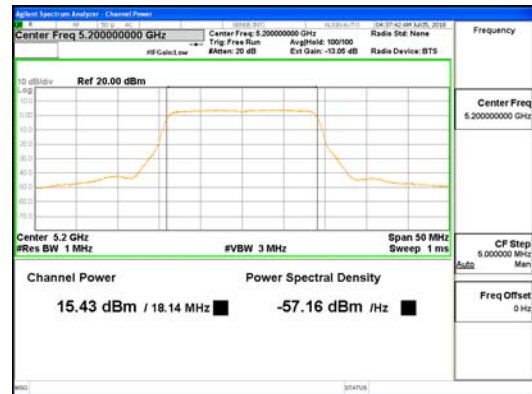


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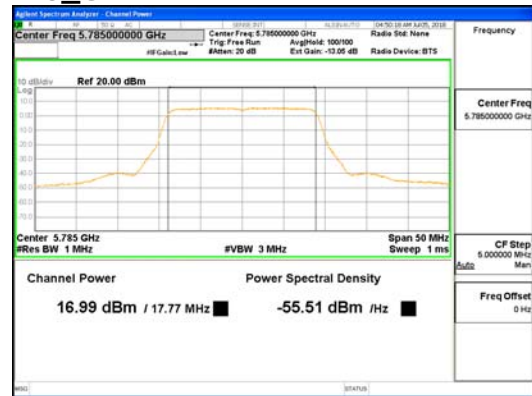


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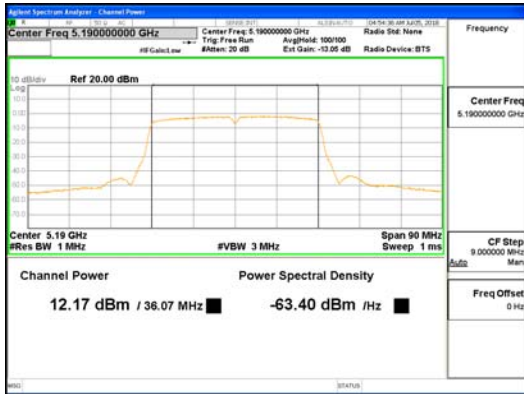


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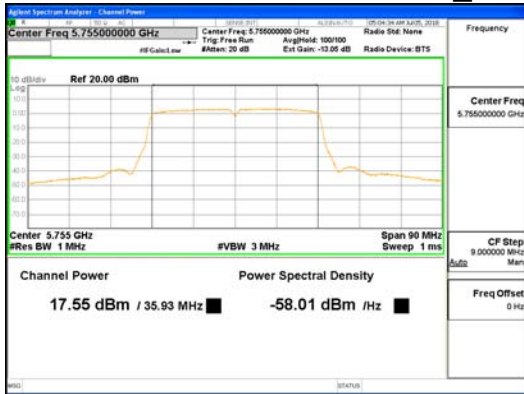
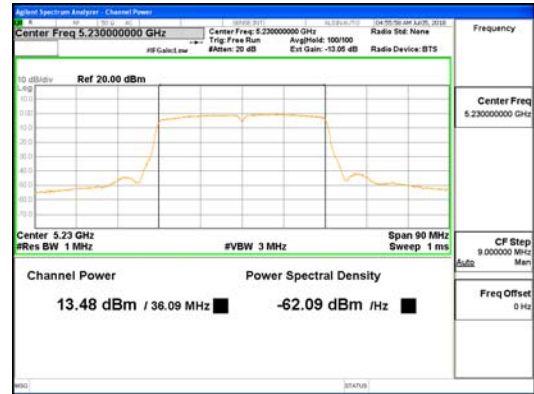


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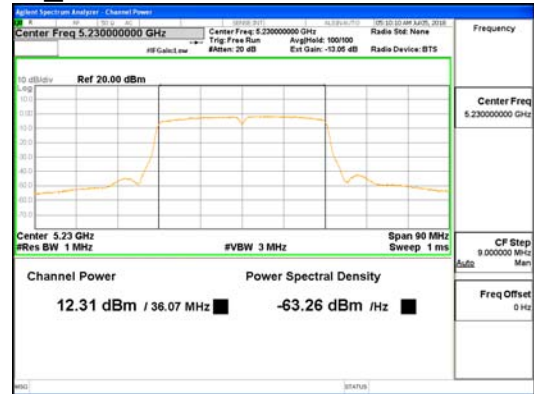
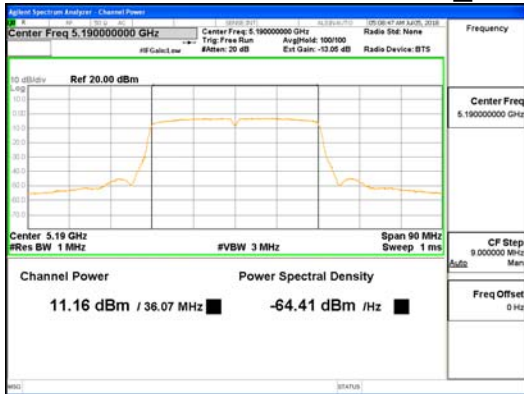
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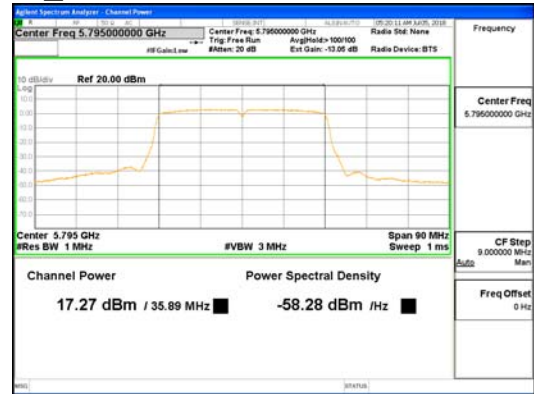
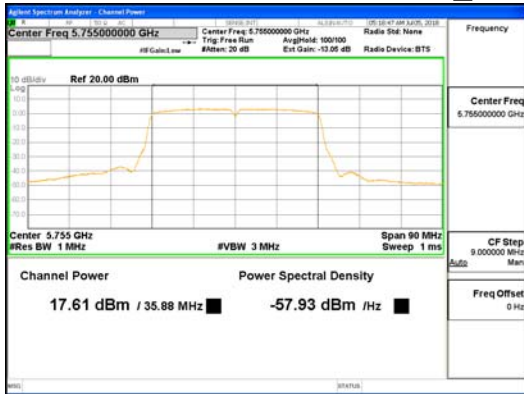
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ANTO_802.11n_HT40_UNII-3



ANT1_802.11n_HT40_UNII-1



ANT1_802.11n_HT40_UNII-3

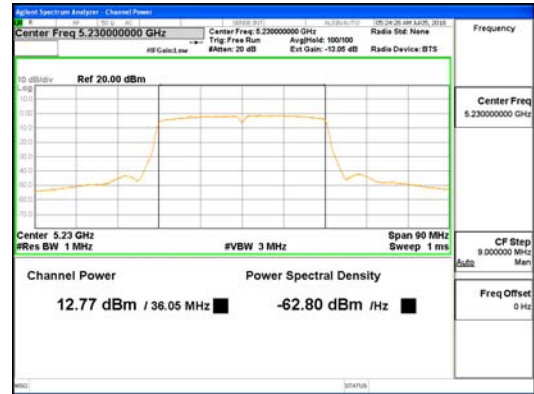


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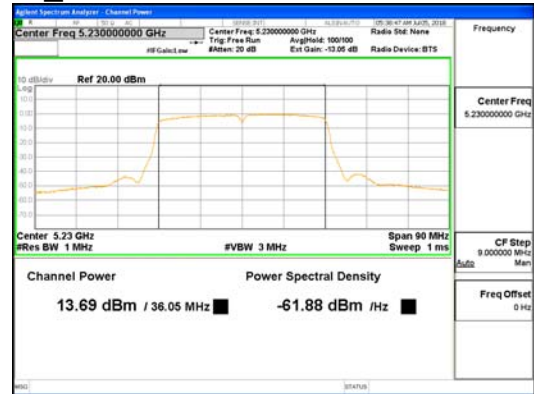
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ANT2_802.11n_HT40_UNII-3



ANT3_802.11n_HT40_UNII-1

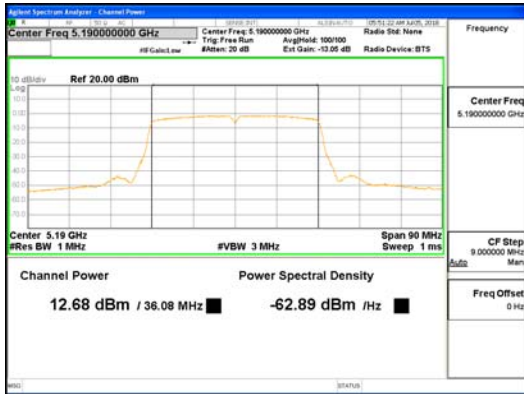


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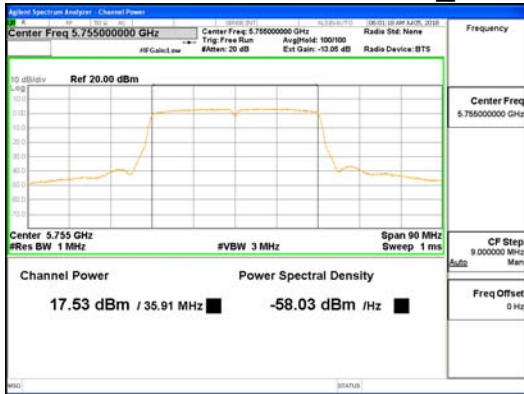
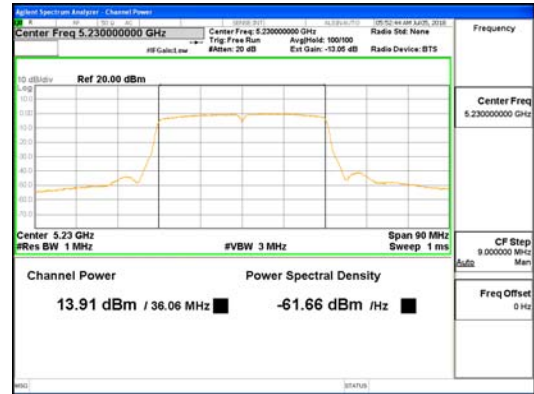


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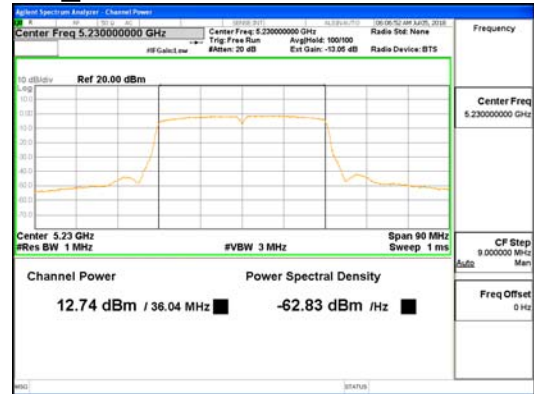
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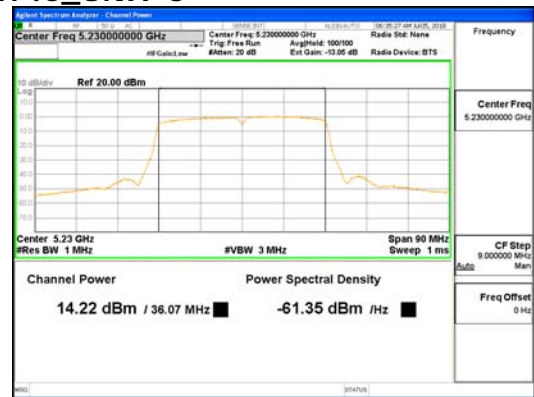




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ANT2_802.11ac_VHT40_UNII-3



ANT3_802.11ac_VHT40_UNII-1



ANT3_802.11ac_VHT40_UNII-3



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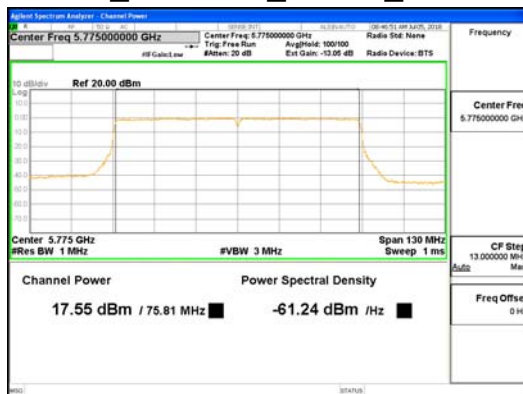
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ANT1_802.11ac_VHT80_UNII-1



ANT1_802.11ac_VHT80_UNII-3



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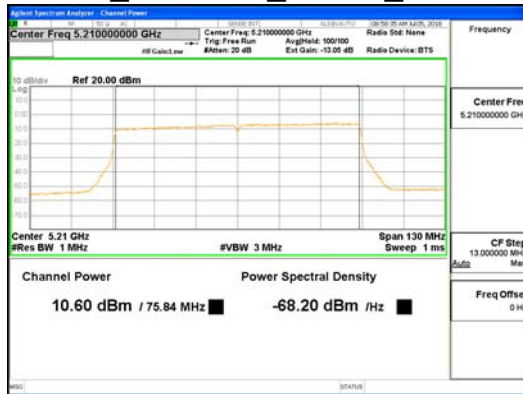
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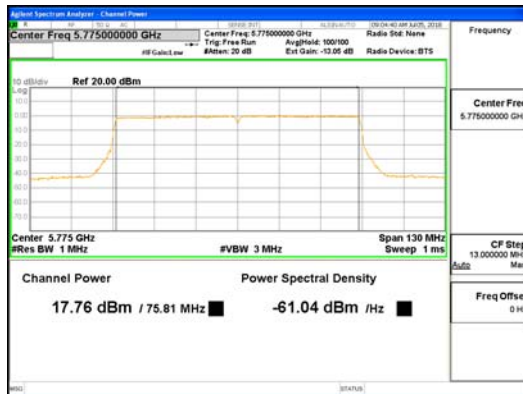
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ANT2_802.11ac_VHT80_UNII-3



ANT3_802.11ac_VHT80_UNII-1



ANT3_802.11ac_VHT80_UNII-3



4.4 Power Spectral Density

Test Procedures

Maximum Power Spectral Density (KDB 789033, Method SA-2)
Multiple Transmitter Output (KDB 662911 D01, D02)

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.

Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 1 MHz, 500 KHz (UNII 3)
- b) VBW = 3 MHz, 1.5 MHz (UNII 3)
- c) Sweep time = auto
- d) Detector = power averaging (rms)
- e) Trace mode = Average at least 100
- f) Duty cycle factor = $10\log(1/x)$

Test mode	Duty Cycle Factor (dB)
802.11a	0.11
802.11n_HT20	0.00
802.11n_HT40	0.10
802.11ac_VHT20	0.00
802.11ac_VHT40	0.09
802.11ac_VHT80	0.24



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Limit

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	UNII 1	802.11a/n/ac	ANT0	3.49	17.00
			ANT1	4.53	
			ANT2	3.90	
			ANT3	3.78	
	UNII 3		ANT0	3.49	30.00
			ANT1	4.53	
			ANT2	3.90	
			ANT3	3.78	
MIMO (2Tx)	UNII 1	802.11a/n/ac	ANT0 + ANT1	7.04	15.96
	UNII 3			28.96	
MIMO (3Tx)	UNII 1	802.11a/n/ac	ANT0 + ANT1 + ANT2	8.76	14.24
	UNII 3				27.24
MIMO (4Tx)	UNII 1	802.11a/n/ac	ANT0 + ANT1 + ANT2 + ANT3	9.95	13.05
	UNII 3				26.05



Test Data

ANTO

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	3.64	0.11	3.75	17.00	13.25
	5 200	4.26	0.11	4.37	17.00	12.63
	5 240	5.64	0.11	5.75	17.00	11.25
	5 745	3.16	0.11	3.27	30.00	26.73
	5 785	3.35	0.11	3.46	30.00	26.54
	5 825	3.8	0.11	3.91	30.00	26.09
802.11n _HT20	5 180	3.3	0.00	3.30	17.00	13.70
	5 200	3.73	0.00	3.73	17.00	13.27
	5 240	5.17	0.00	5.17	17.00	11.83
	5 745	2.47	0.00	2.47	30.00	27.53
	5 785	2.86	0.00	2.86	30.00	27.14
	5 825	3.62	0.00	3.62	30.00	26.38
802.11ac _VHT20	5 180	3.36	0.00	3.36	17.00	13.64
	5 200	3.72	0.00	3.72	17.00	13.28
	5 240	5.24	0.00	5.24	17.00	11.76
	5 745	2.65	0.00	2.65	30.00	27.35
	5 785	2.98	0.00	2.98	30.00	27.02
	5 825	3.44	0.00	3.44	30.00	26.56
802.11n _HT40	5 190	-1.93	0.10	-1.83	17.00	18.83
	5 230	-0.53	0.10	-0.43	17.00	17.43
	5 755	0.75	0.10	0.85	30.00	29.15
	5 795	0.88	0.10	0.98	30.00	29.02
802.11ac _VHT40	5 190	-1.38	0.09	-1.29	17.00	18.29
	5 230	-0.1	0.09	-0.01	17.00	17.01
	5 755	0.44	0.09	0.53	30.00	29.47
	5 795	1.07	0.09	1.16	30.00	28.84
802.11ac _VHT80	5 210	-6.37	0.24	-6.13	17.00	23.13
	5 775	-2.61	0.24	-2.37	30.00	32.37
Measurement uncertainty		± 1.5 dB				



ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	3.58	0.11	3.69	17.00	13.31
	5 200	3.98	0.11	4.09	17.00	12.91
	5 240	4.98	0.11	5.09	17.00	11.91
	5 745	3.14	0.11	3.25	30.00	26.75
	5 785	2.98	0.11	3.09	30.00	26.91
	5 825	2.83	0.11	2.94	30.00	27.06
802.11n _HT20	5 180	3.51	0.00	3.51	17.00	13.49
	5 200	4.02	0.00	4.02	17.00	12.98
	5 240	5.34	0.00	5.34	17.00	11.66
	5 745	2.66	0.00	2.66	30.00	27.34
	5 785	2.29	0.00	2.29	30.00	27.71
	5 825	2.32	0.00	2.32	30.00	27.68
802.11ac _VHT20	5 180	3.54	0.00	3.54	17.00	13.46
	5 200	4.07	0.00	4.07	17.00	12.93
	5 240	5.15	0.00	5.15	17.00	11.85
	5 745	2.74	0.00	2.74	30.00	27.26
	5 785	2.46	0.00	2.46	30.00	27.54
	5 825	2.05	0.00	2.05	30.00	27.95
802.11n _HT40	5 190	-2.73	0.10	-2.63	17.00	19.63
	5 230	-1.66	0.10	-1.56	17.00	18.56
	5 755	0.54	0.10	0.64	30.00	29.36
	5 795	0.35	0.10	0.45	30.00	29.55
802.11ac _VHT40	5 190	-2.47	0.09	-2.38	17.00	19.38
	5 230	-1.14	0.09	-1.05	17.00	18.05
	5 755	0.54	0.09	0.63	30.00	29.37
	5 795	0.45	0.09	0.54	30.00	29.46
802.11ac _VHT80	5 210	-7.53	0.24	-7.29	17.00	24.29
	5 775	-3.03	0.24	-2.79	30.00	32.79
Measurement uncertainty		± 1.5 dB				



ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	4.22	0.11	4.33	17.00	12.67
	5 200	4.68	0.11	4.79	17.00	12.21
	5 240	5.58	0.11	5.69	17.00	11.31
	5 745	3.86	0.11	3.97	30.00	26.03
	5 785	3.23	0.11	3.34	30.00	26.66
	5 825	3.09	0.11	3.20	30.00	26.80
802.11n _HT20	5 180	4.26	0.00	4.26	17.00	12.74
	5 200	4.43	0.00	4.43	17.00	12.57
	5 240	5.58	0.00	5.58	17.00	11.42
	5 745	3.28	0.00	3.28	30.00	26.72
	5 785	2.79	0.00	2.79	30.00	27.21
	5 825	2.7	0.00	2.70	30.00	27.30
802.11ac _VHT20	5 180	4.31	0.00	4.31	17.00	12.69
	5 200	4.54	0.00	4.54	17.00	12.46
	5 240	5.68	0.00	5.68	17.00	11.32
	5 745	3.43	0.00	3.43	30.00	26.57
	5 785	2.79	0.00	2.79	30.00	27.21
	5 825	2.72	0.00	2.72	30.00	27.28
802.11n _HT40	5 190	-2.34	0.10	-2.24	17.00	19.24
	5 230	-1.26	0.10	-1.16	17.00	18.16
	5 755	1.15	0.10	1.25	30.00	28.75
	5 795	0.86	0.10	0.96	30.00	29.04
802.11ac _VHT40	5 190	-1.6	0.09	-1.51	17.00	18.51
	5 230	-0.71	0.09	-0.62	17.00	17.62
	5 755	1.23	0.09	1.32	30.00	28.68
	5 795	1.12	0.09	1.21	30.00	28.79
802.11ac _VHT80	5 210	-7.14	0.24	-6.90	17.00	23.90
	5 775	-2.03	0.24	-1.79	30.00	31.79
Measurement uncertainty		± 1.5 dB				



ANT3

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	3.43	0.11	3.54	17.00	13.46
	5 200	3.94	0.11	4.05	17.00	12.95
	5 240	5.74	0.11	5.85	17.00	11.15
	5 745	3.29	0.11	3.40	30.00	26.60
	5 785	3.02	0.11	3.13	30.00	26.87
	5 825	3.82	0.11	3.93	30.00	26.07
802.11n _HT20	5 180	3.58	0.00	3.58	17.00	13.42
	5 200	4.05	0.00	4.05	17.00	12.95
	5 240	5.74	0.00	5.74	17.00	11.26
	5 745	2.68	0.00	2.68	30.00	27.32
	5 785	2.85	0.00	2.85	30.00	27.15
	5 825	3.34	0.00	3.34	30.00	26.66
802.11ac _VHT20	5 180	3.52	0.00	3.52	17.00	13.48
	5 200	4.26	0.00	4.26	17.00	12.74
	5 240	5.45	0.00	5.45	17.00	11.55
	5 745	2.83	0.00	2.83	30.00	27.17
	5 785	2.90	0.00	2.90	30.00	27.10
	5 825	3.37	0.00	3.37	30.00	26.63
802.11n _HT40	5 190	-1.79	0.10	-1.69	17.00	18.69
	5 230	-0.01	0.10	0.09	17.00	16.91
	5 755	0.72	0.10	0.82	30.00	29.18
	5 795	0.85	0.10	0.95	30.00	29.05
802.11ac _VHT40	5 190	-1.14	0.09	-1.05	17.00	18.05
	5 230	0.12	0.09	0.21	17.00	16.79
	5 755	0.69	0.09	0.78	30.00	29.22
	5 795	1.04	0.09	1.13	30.00	28.87
802.11ac _VHT80	5 210	-6.18	0.24	-5.94	17.00	22.94
	5 775	-2.77	0.24	-2.53	30.00	32.53
Measurement uncertainty		± 1.5 dB				

ANTO + ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	6.62	0.11	6.73	15.96	9.23
	5 200	7.13	0.11	7.24	15.96	8.72
	5 240	8.33	0.11	8.44	15.96	7.52
	5 745	6.16	0.11	6.27	28.96	22.69
	5 785	6.18	0.11	6.29	28.96	22.67
	5 825	6.35	0.11	6.46	28.96	22.50
802.11n _HT20	5 180	6.42	0.00	6.42	15.96	9.54
	5 200	6.89	0.00	6.89	15.96	9.07
	5 240	8.27	0.00	8.27	15.96	7.69
	5 745	5.58	0.00	5.58	28.96	23.38
	5 785	5.59	0.00	5.59	28.96	23.37
	5 825	6.03	0.00	6.03	28.96	22.93
802.11ac _VHT20	5 180	6.46	0.00	6.46	15.96	9.50
	5 200	6.91	0.00	6.91	15.96	9.05
	5 240	8.21	0.00	8.21	15.96	7.75
	5 745	5.71	0.00	5.71	28.96	23.25
	5 785	5.74	0.00	5.74	28.96	23.22
	5 825	5.81	0.00	5.81	28.96	23.15
802.11n _HT40	5 190	0.70	0.10	0.80	15.96	15.16
	5 230	1.95	0.10	2.05	15.96	13.91
	5 755	3.66	0.10	3.76	28.96	25.20
	5 795	3.63	0.10	3.73	28.96	25.23
802.11ac _VHT40	5 190	1.12	0.09	1.21	15.96	14.75
	5 230	2.42	0.09	2.51	15.96	13.45
	5 755	3.50	0.09	3.59	28.96	25.37
	5 795	3.78	0.09	3.87	28.96	25.09
802.11ac _VHT80	5 210	-3.90	0.24	-3.66	15.96	19.62
	5 775	0.20	0.24	0.44	28.96	28.52
Measurement uncertainty		± 1.5 dB				



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ANTO + ANT1 + ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	8.59	0.11	8.70	14.24	5.54
	5 200	9.09	0.11	9.20	14.24	5.04
	5 240	10.18	0.11	10.29	14.24	3.95
	5 745	8.17	0.11	8.28	27.24	18.96
	5 785	7.96	0.11	8.07	27.24	19.17
	5 825	8.03	0.11	8.14	27.24	19.10
802.11n _HT20	5 180	8.48	0.00	8.48	14.24	5.76
	5 200	8.84	0.00	8.84	14.24	5.40
	5 240	10.14	0.00	10.14	14.24	4.10
	5 745	7.59	0.00	7.59	27.24	19.65
	5 785	7.43	0.00	7.43	27.24	19.81
	5 825	7.69	0.00	7.69	27.24	19.55
802.11ac _VHT20	5 180	8.53	0.00	8.53	14.24	5.71
	5 200	8.89	0.00	8.89	14.24	5.35
	5 240	10.13	0.00	10.13	14.24	4.11
	5 745	7.73	0.00	7.73	27.24	19.51
	5 785	7.52	0.00	7.52	27.24	19.72
	5 825	7.54	0.00	7.54	27.24	19.70
802.11n _HT40	5 190	2.45	0.10	2.55	14.24	11.69
	5 230	3.65	0.10	3.75	14.24	10.49
	5 755	5.59	0.10	5.69	27.24	21.55
	5 795	5.47	0.10	5.57	27.24	21.67
802.11ac _VHT40	5 190	2.98	0.09	3.07	14.24	11.17
	5 230	4.14	0.09	4.23	14.24	10.01
	5 755	5.52	0.09	5.61	27.24	21.63
	5 795	5.66	0.09	5.75	27.24	21.49
802.11ac _VHT80	5 210	-2.22	0.24	-1.98	14.24	16.22
	5 775	2.23	0.24	2.47	27.24	24.77
Measurement uncertainty		± 1.5 dB				

ANTO + ANT1 + ANT2 + ANT3

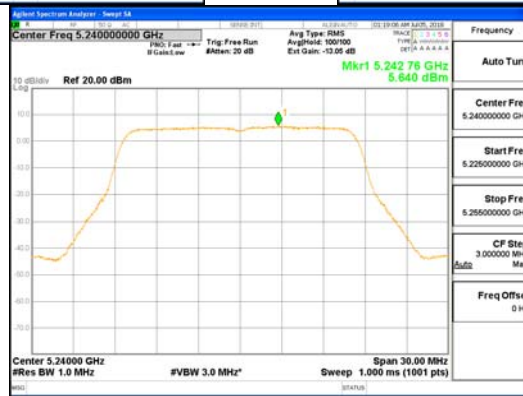
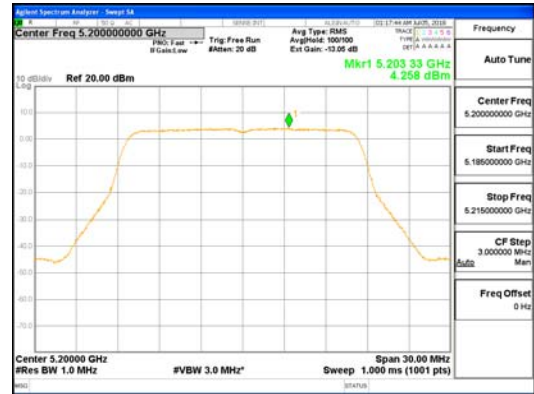
Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	9.75	0.11	9.86	13.05	3.19
	5 200	10.25	0.11	10.36	13.05	2.69
	5 240	11.52	0.11	11.63	13.05	1.42
	5 745	9.39	0.11	9.50	26.05	16.55
	5 785	9.17	0.11	9.28	26.05	16.77
	5 825	9.43	0.11	9.54	26.05	16.51
802.11n _HT20	5 180	9.70	0.00	9.70	13.05	3.35
	5 200	10.09	0.00	10.09	13.05	2.96
	5 240	11.48	0.00	11.48	13.05	1.57
	5 745	8.80	0.00	8.80	26.05	17.25
	5 785	8.72	0.00	8.72	26.05	17.33
	5 825	9.05	0.00	9.05	26.05	17.00
802.11ac _VHT20	5 180	9.72	0.00	9.72	13.05	3.33
	5 200	10.18	0.00	10.18	13.05	2.87
	5 240	11.41	0.00	11.41	13.05	1.64
	5 745	8.94	0.00	8.94	26.05	17.11
	5 785	8.81	0.00	8.81	26.05	17.24
	5 825	8.95	0.00	8.95	26.05	17.10
802.11n _HT40	5 190	3.84	0.10	3.94	13.05	9.11
	5 230	5.20	0.10	5.30	13.05	7.75
	5 755	6.82	0.10	6.92	26.05	19.13
	5 795	6.76	0.10	6.86	26.05	19.19
802.11ac _VHT40	5 190	4.40	0.09	4.49	13.05	8.56
	5 230	5.59	0.09	5.68	13.05	7.37
	5 755	6.76	0.09	6.85	26.05	19.20
	5 795	6.95	0.09	7.04	26.05	19.01
802.11ac _VHT80	5 210	-0.75	0.24	-0.51	13.05	13.56
	5 775	3.43	0.24	3.67	26.05	22.38
Measurement uncertainty		± 1.5 dB				

See next pages for actual measured spectrum plots.

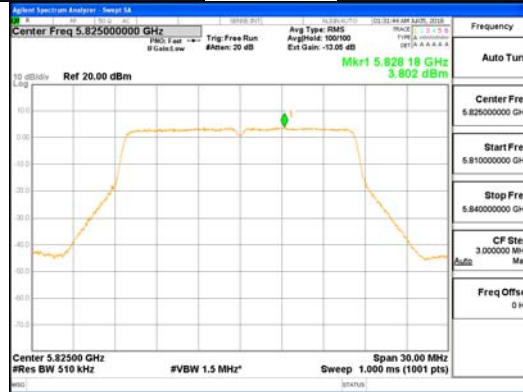
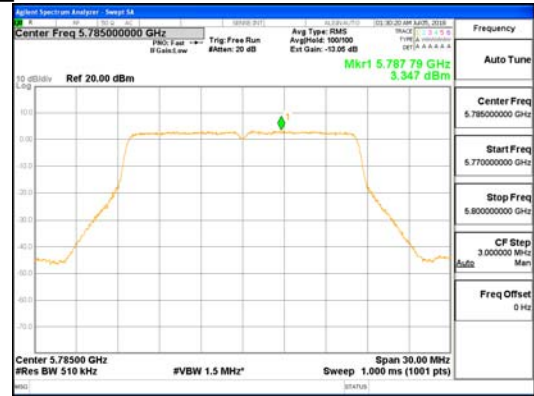
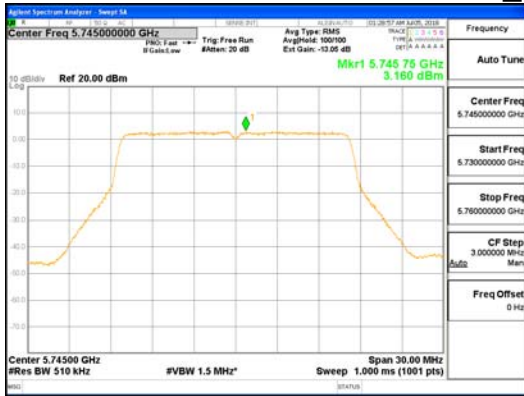


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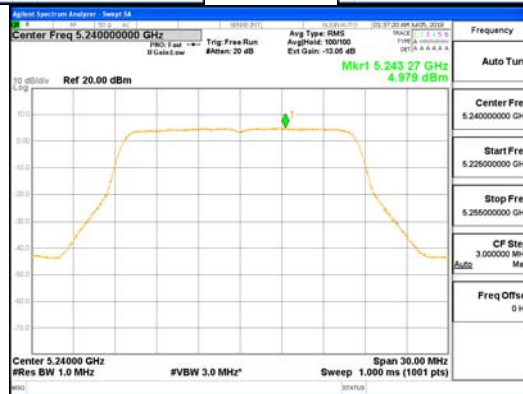
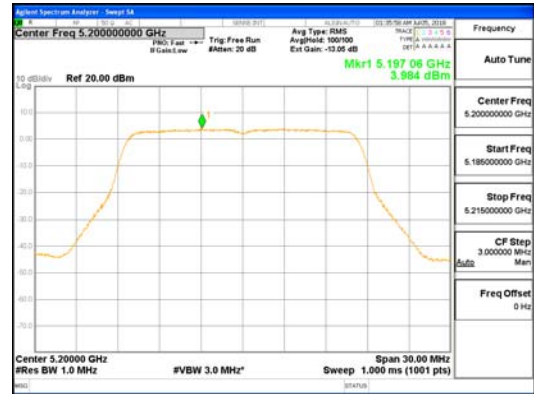
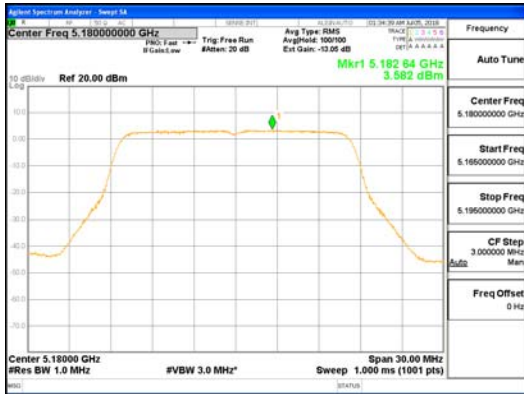


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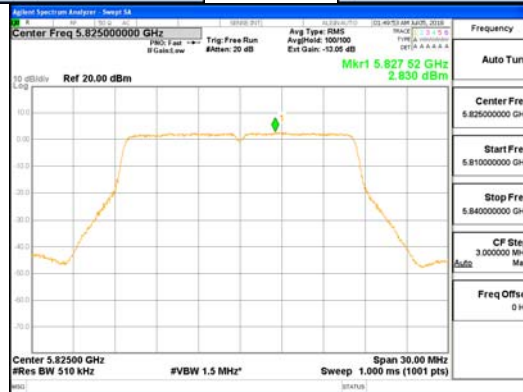
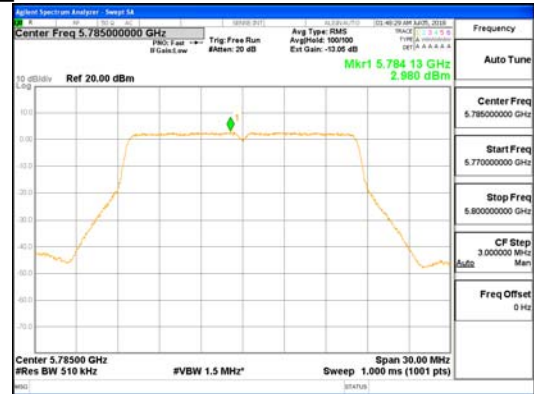


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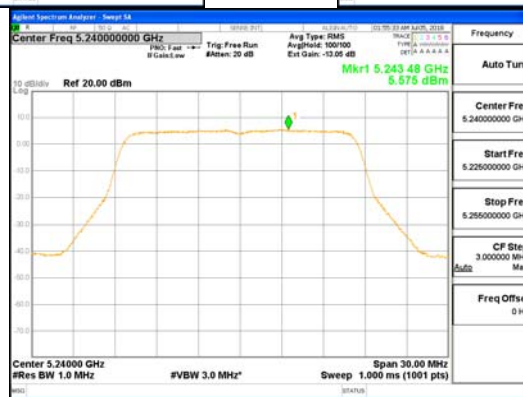
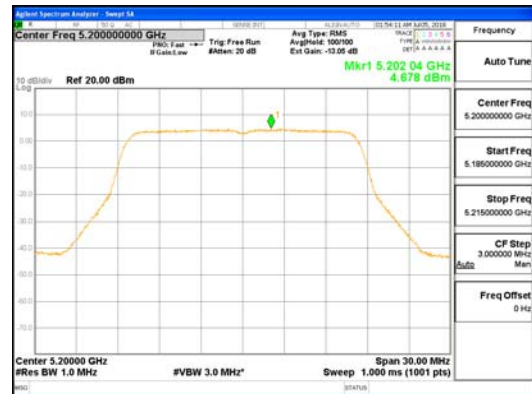
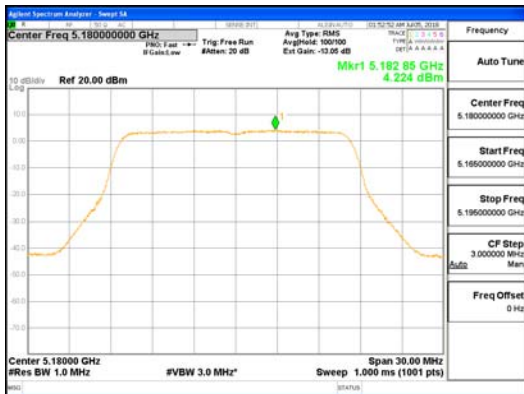
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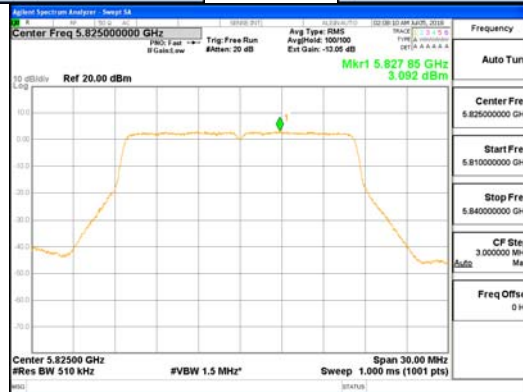
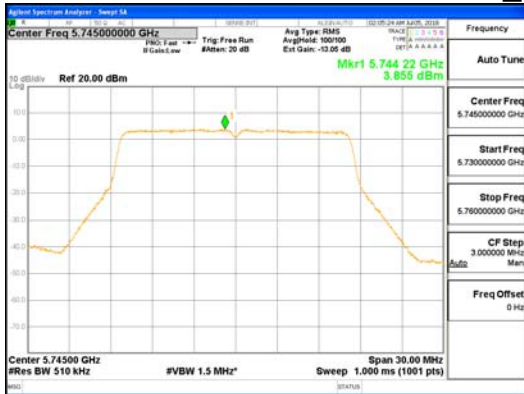
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ANT1_802.11a_UNII-3



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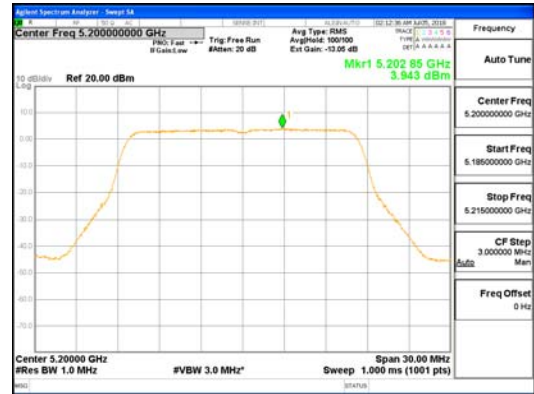
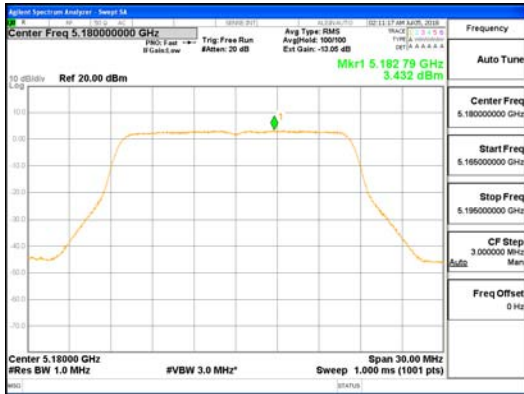


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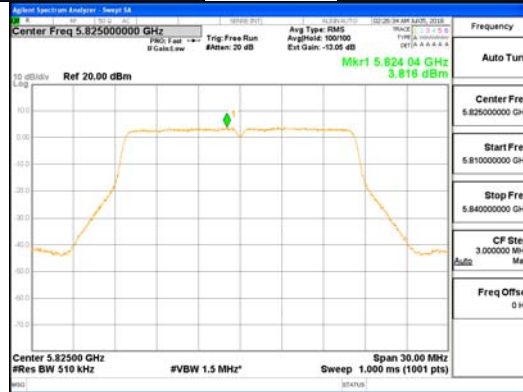
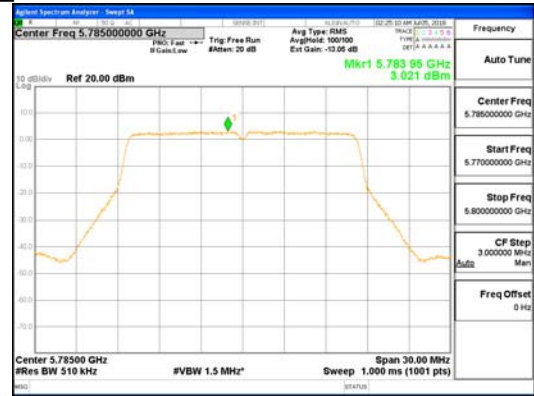


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ANT3_802.11a_UNII-1

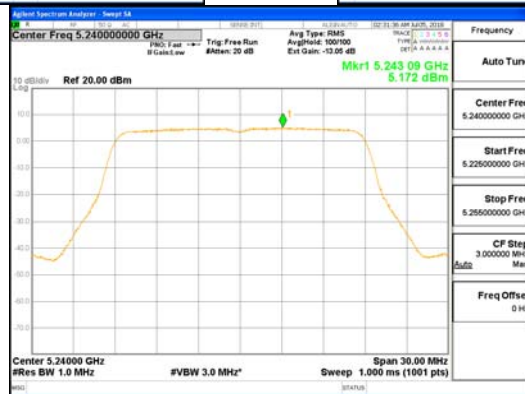
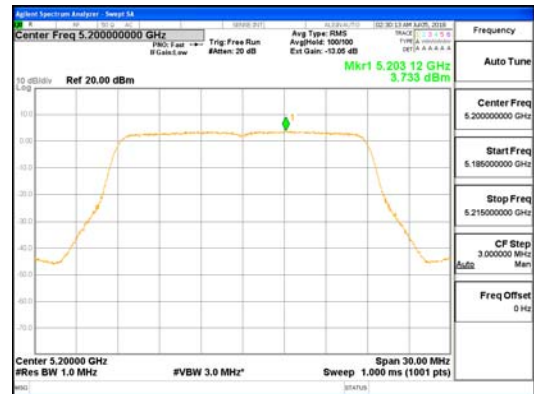
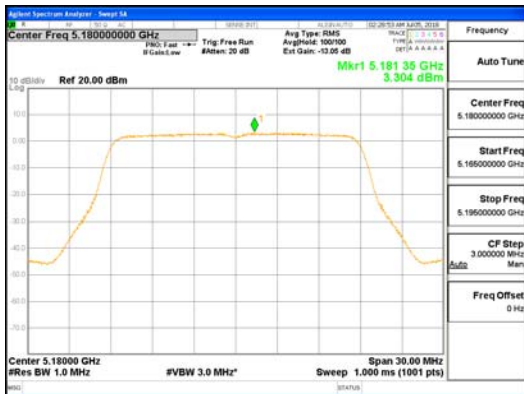


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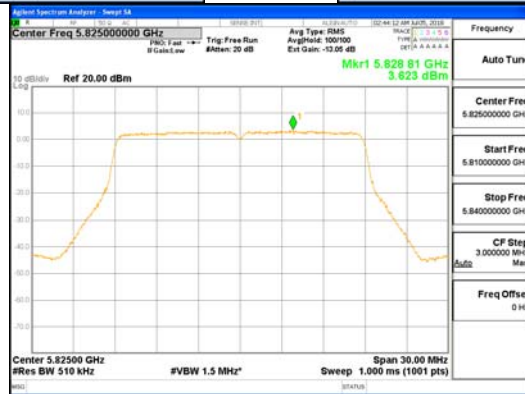
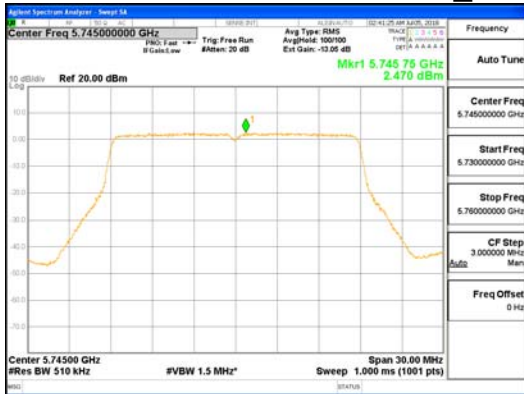


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ANTO_802.11n_HT20_UNII-1

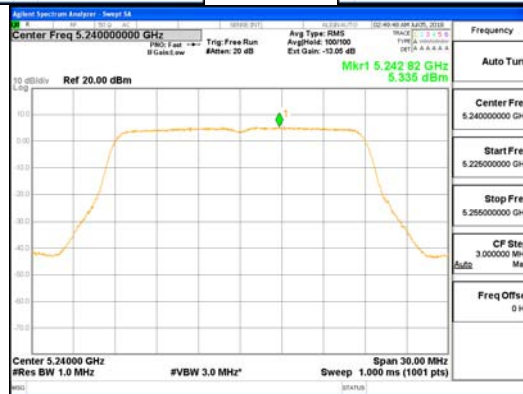
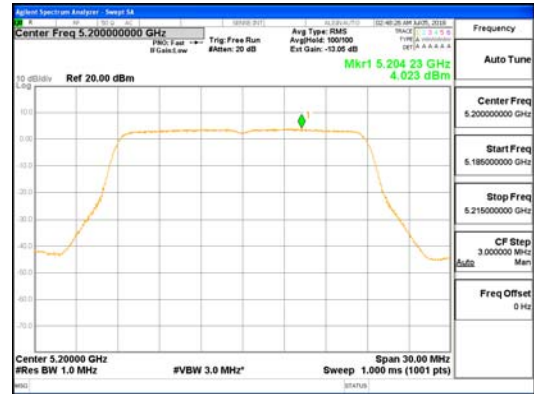
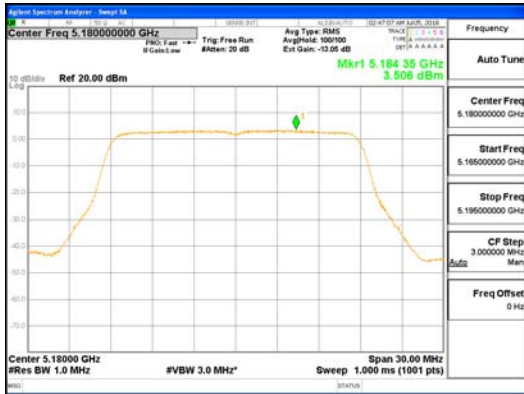


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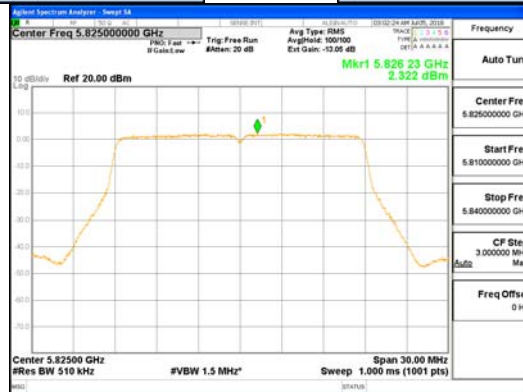
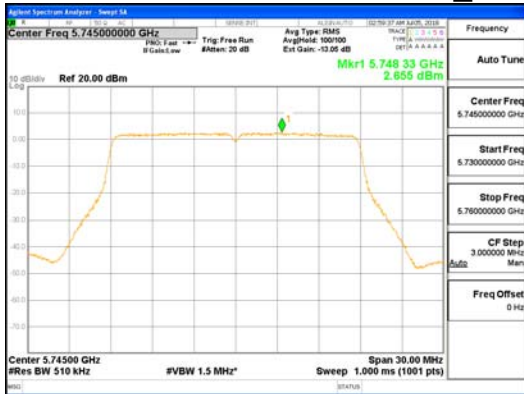


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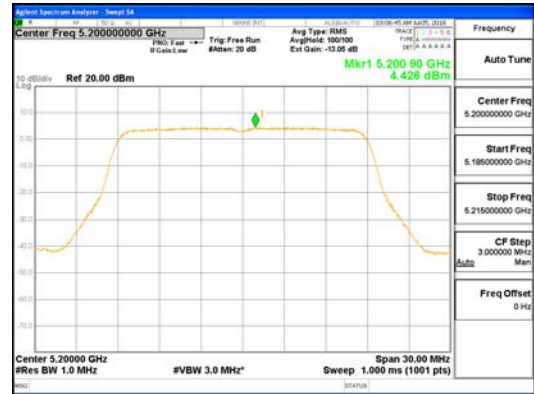
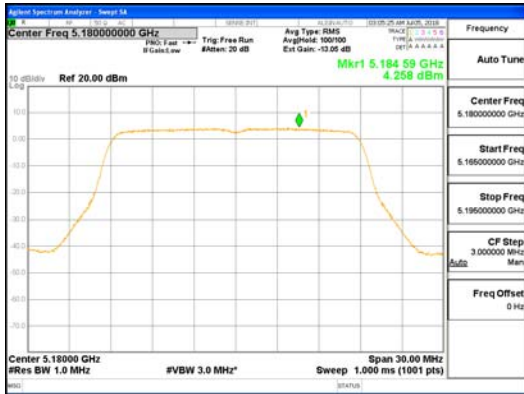


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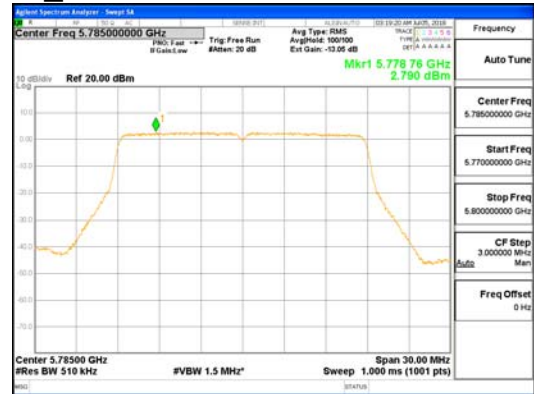
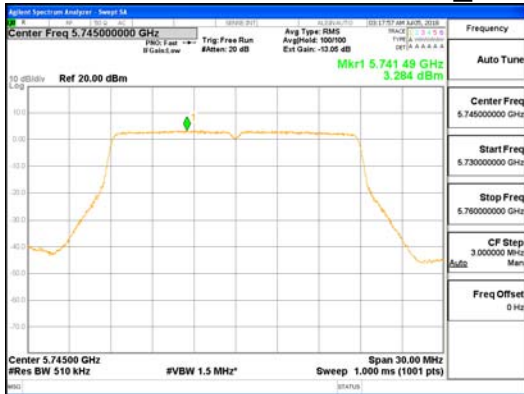


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ANT2_802.11n_HT20_UNII-1

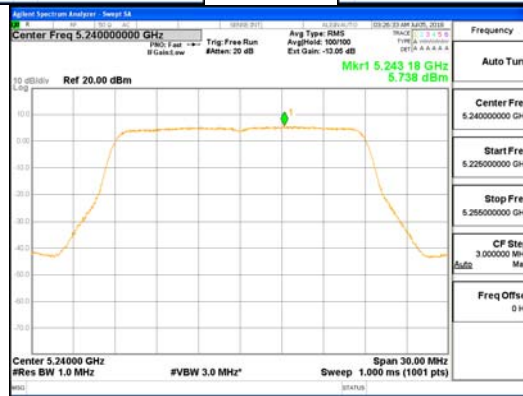
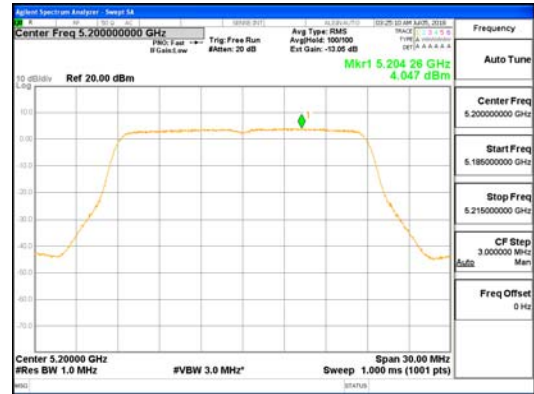


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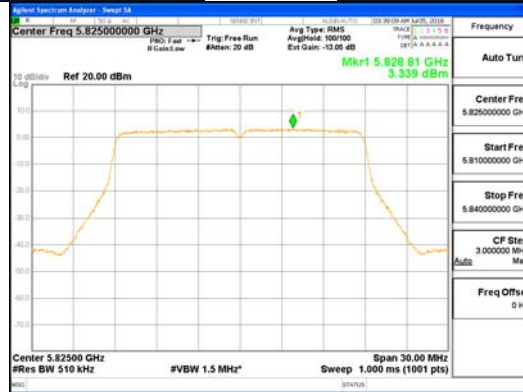
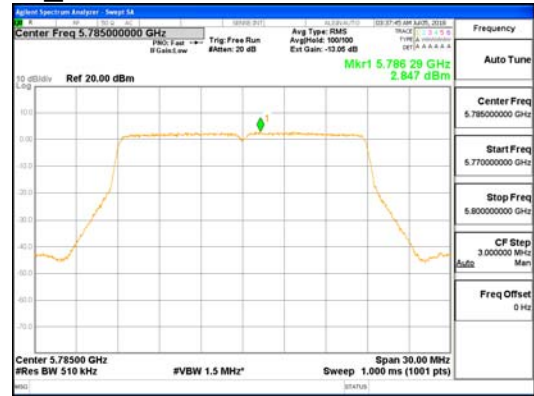
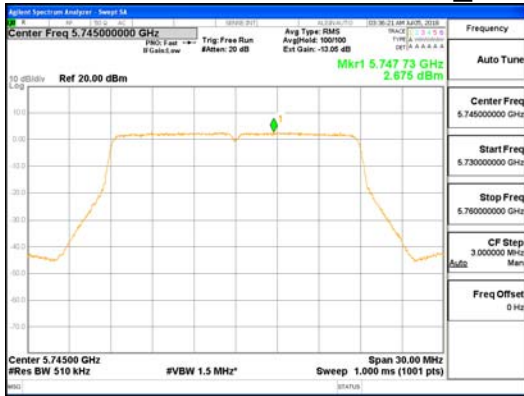


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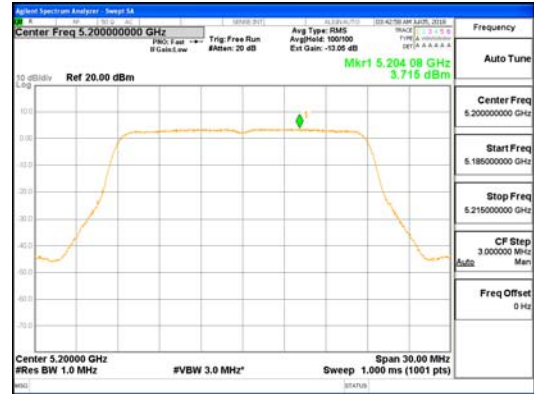
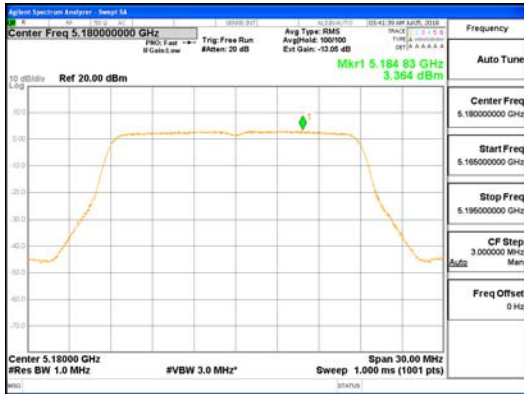


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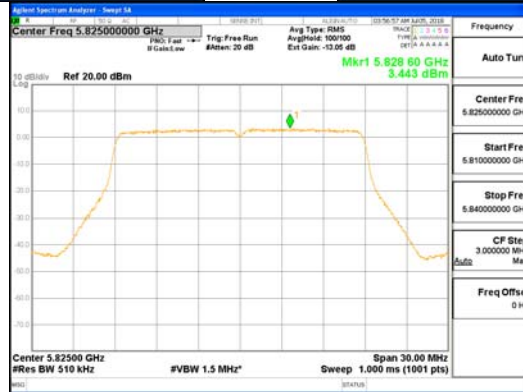
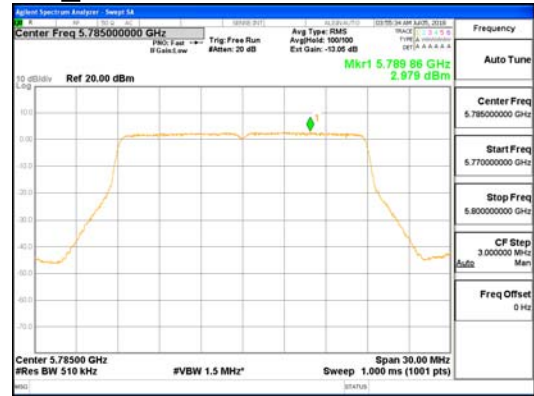
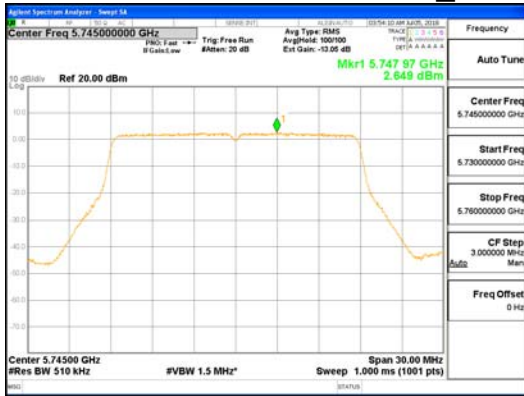


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ANTO_802.11ac_VHT20_UNII-1

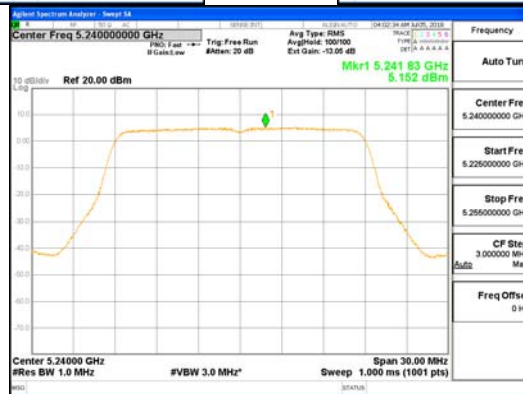
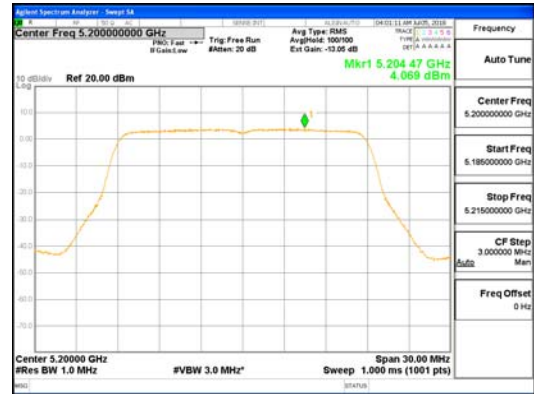
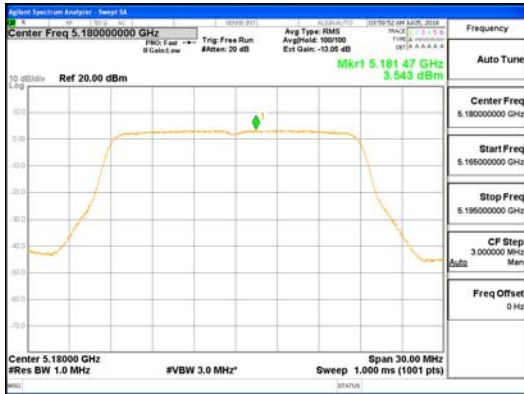


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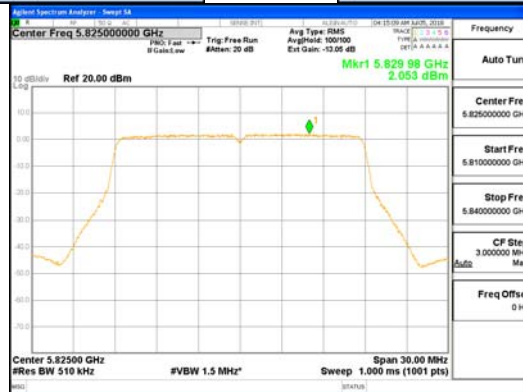
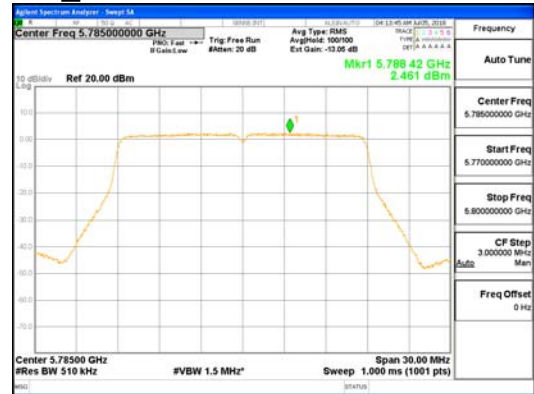
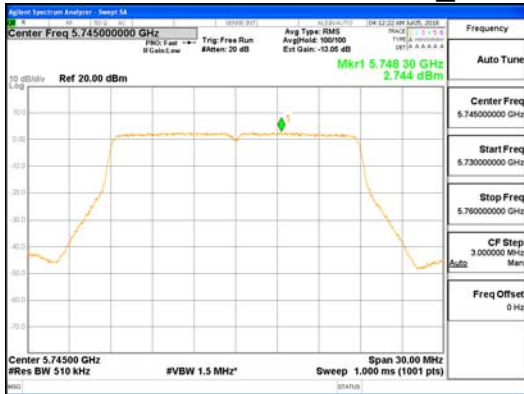


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ANT1_802.11ac_VHT20_UNII-1

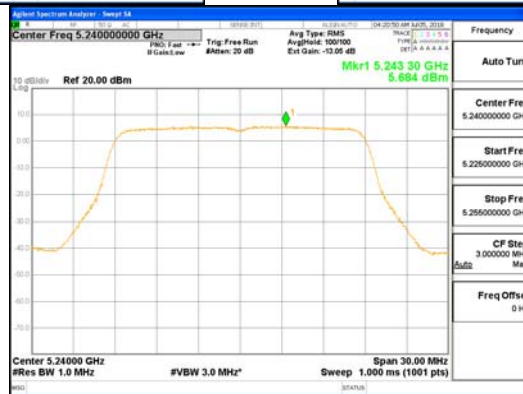
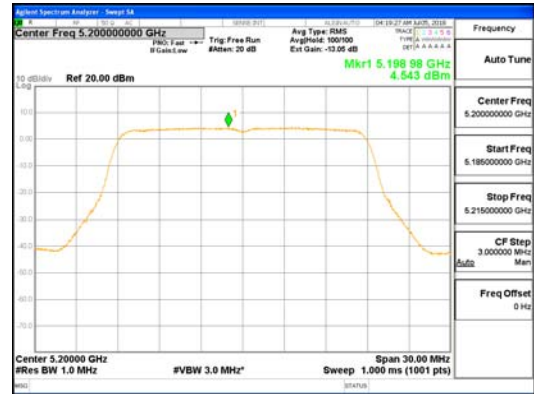
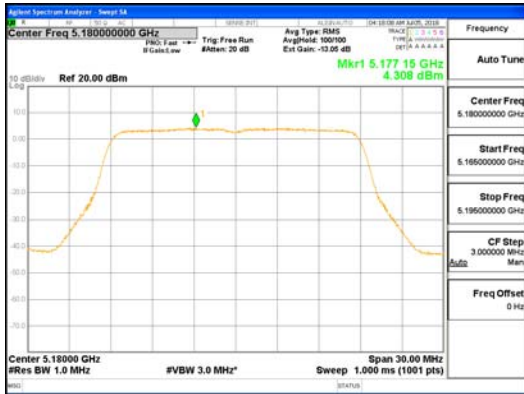


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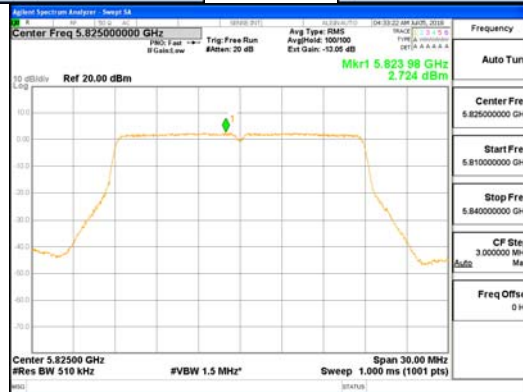
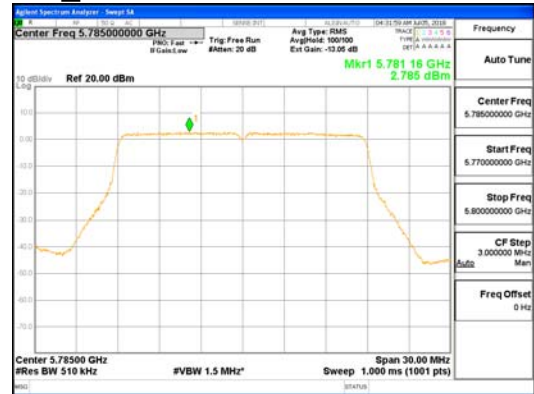
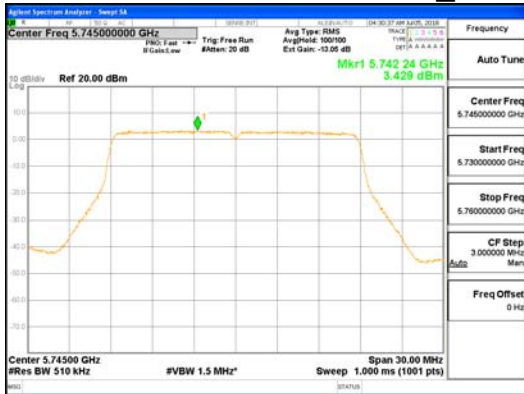


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ANT2_802.11ac_VHT20_UNII-1

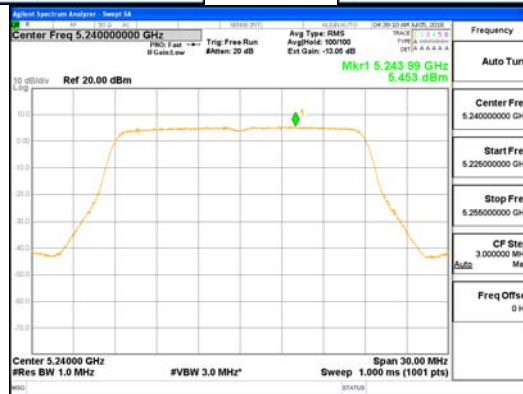
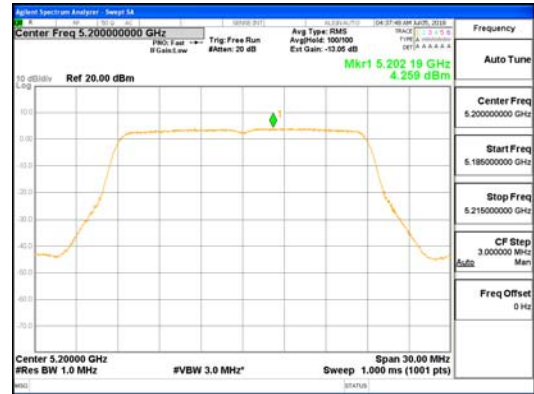
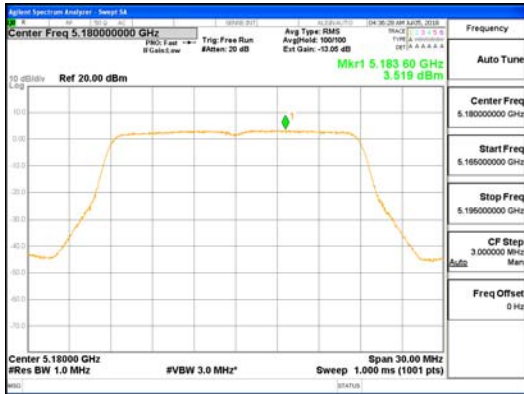


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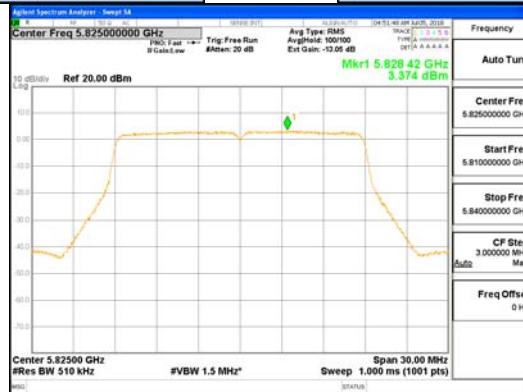
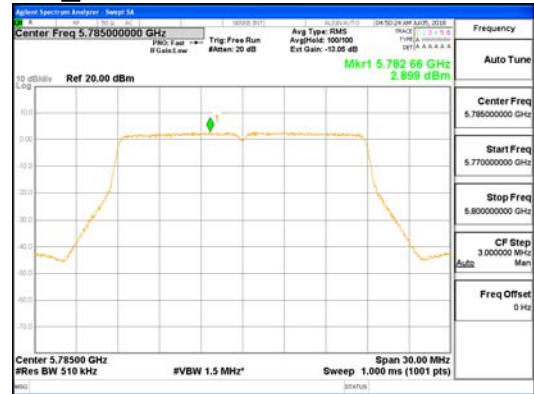


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ANT3_802.11ac_VHT20_UNII-1



ANT3_802.11ac_VHT20_UNII-3

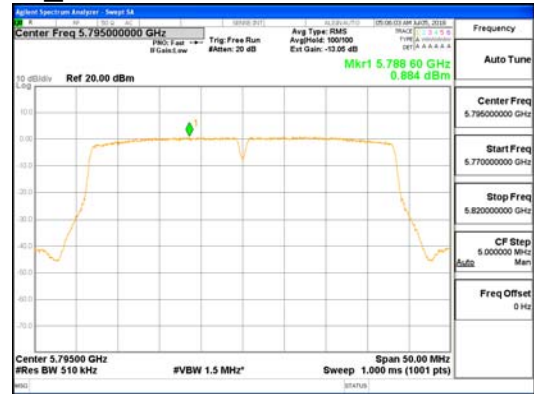
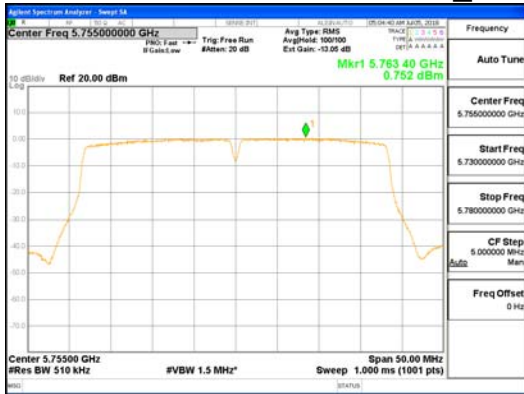
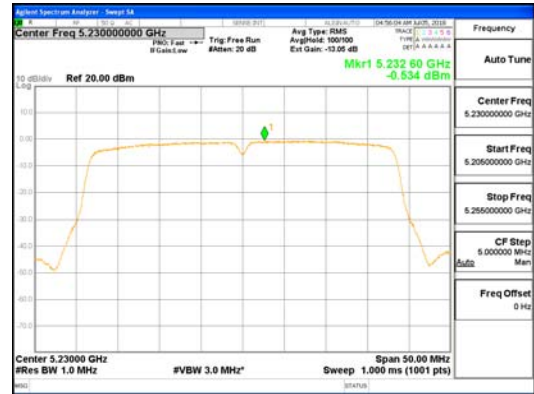


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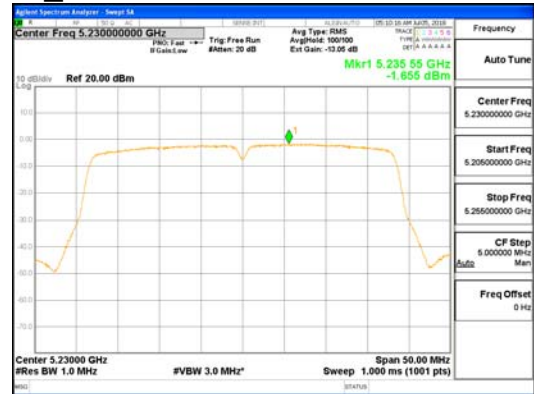
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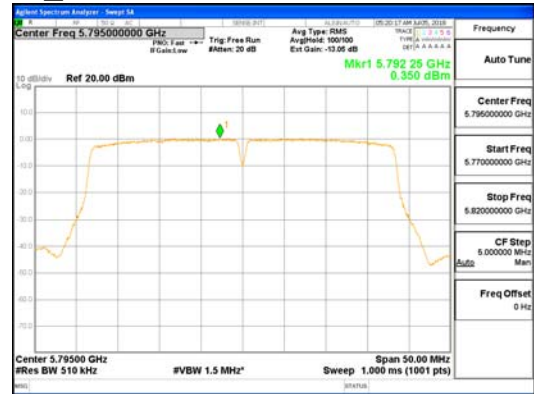
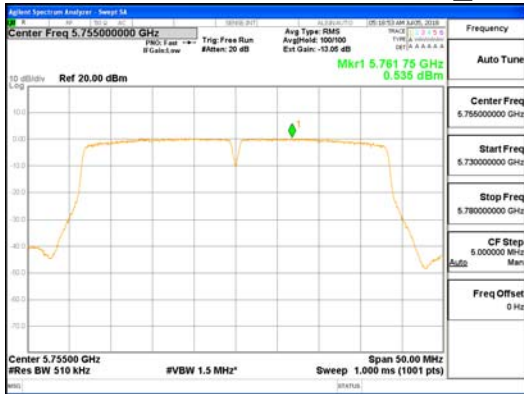
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ANTO_802.11n_HT40_UNII-3



ANT1_802.11n_HT40_UNII-1

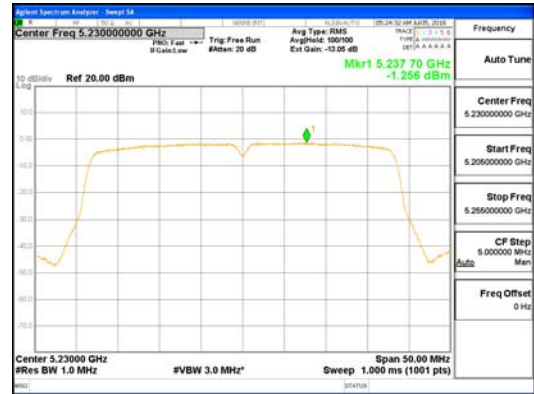


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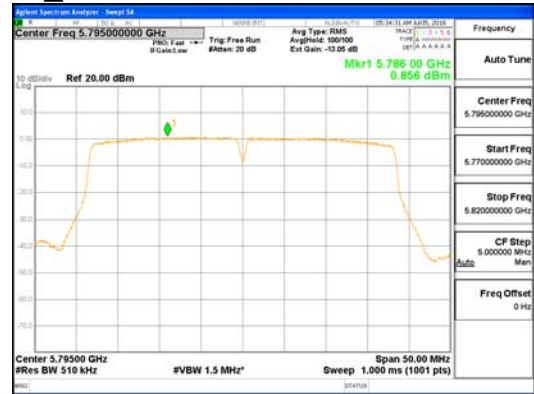
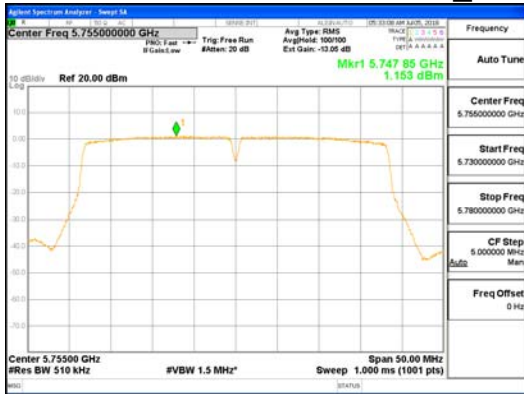


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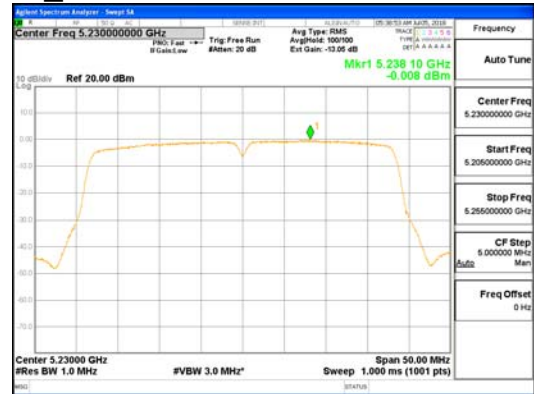
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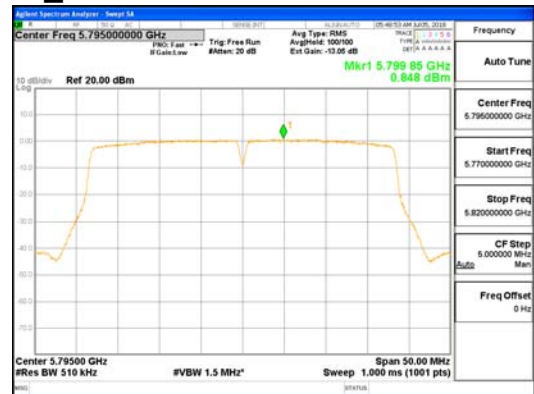
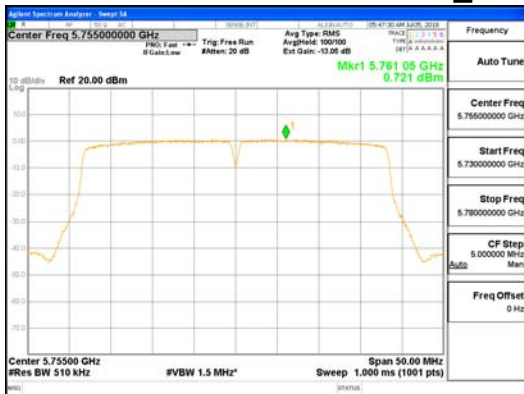
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ANT2_802.11n_HT40_UNII-3



ANT3_802.11n_HT40_UNII-1

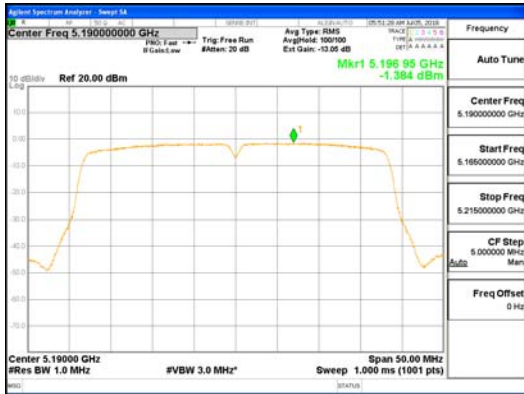


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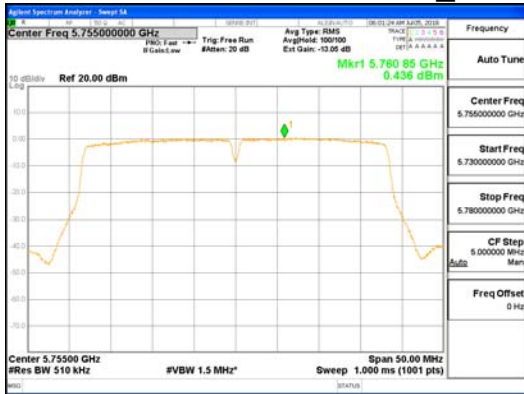
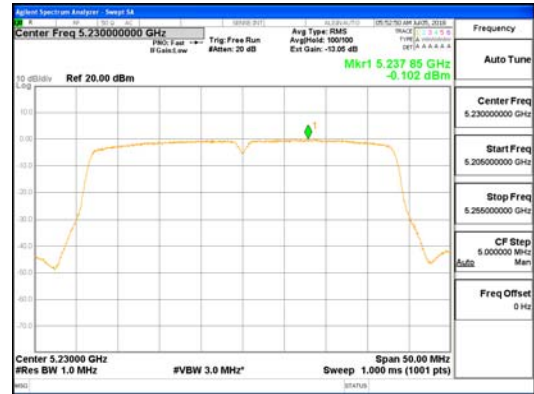


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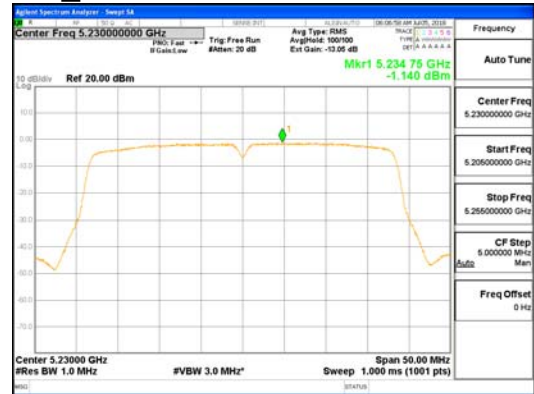
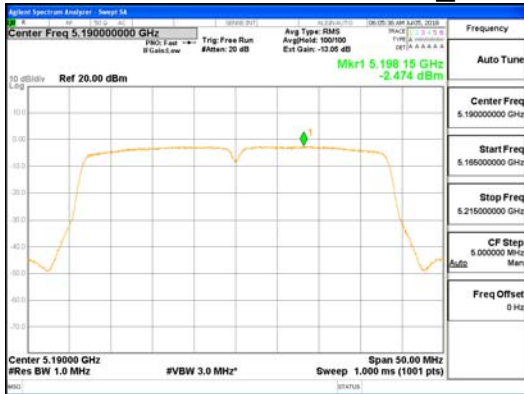
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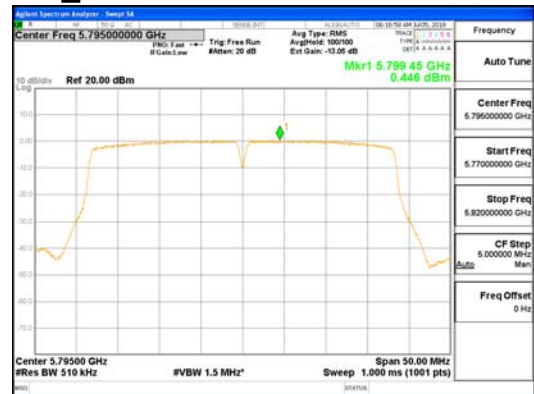
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ANTO_802.11ac_VHT40_UNII-3



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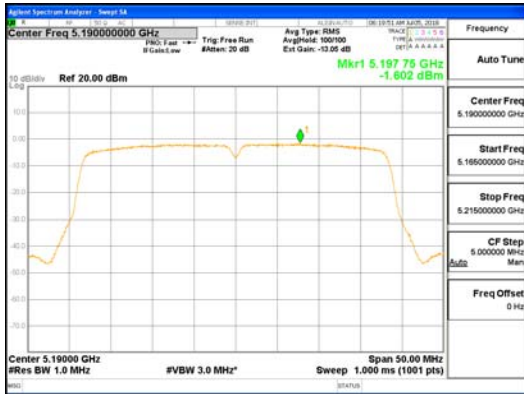


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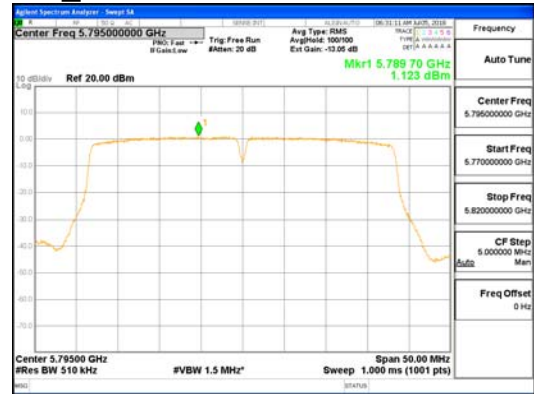
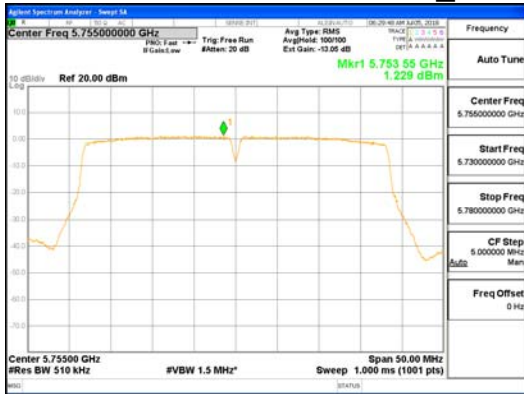
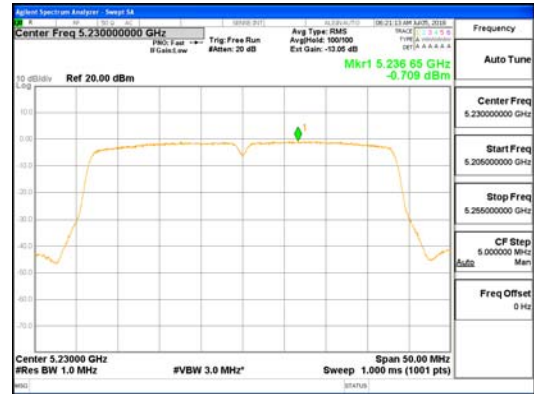


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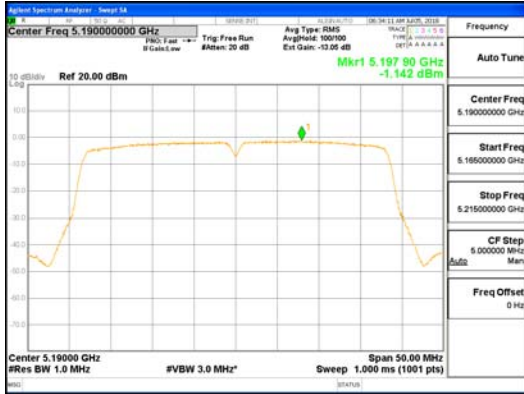
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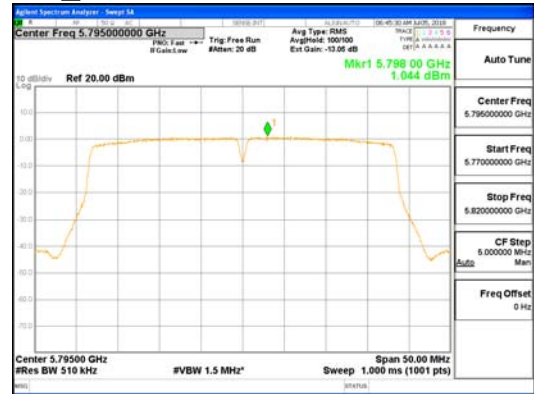
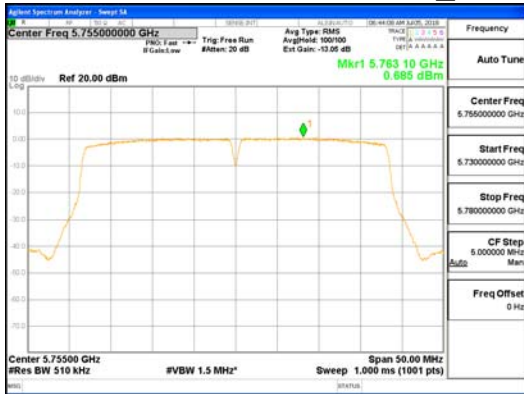
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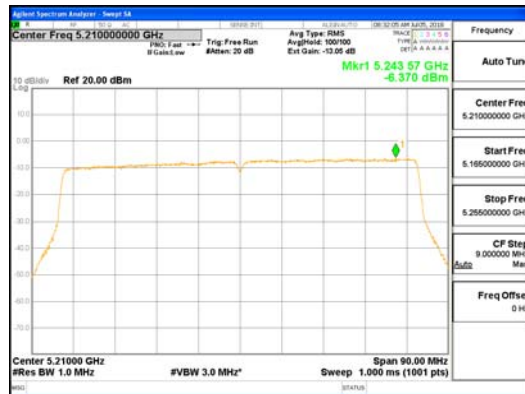


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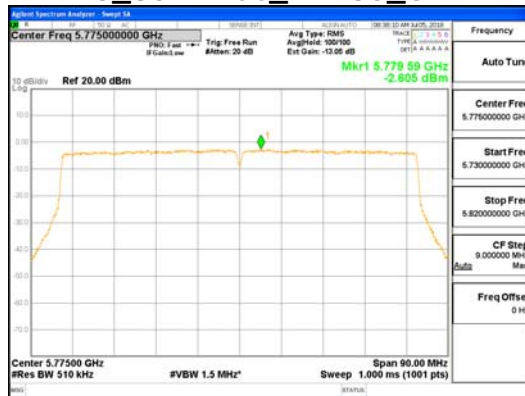


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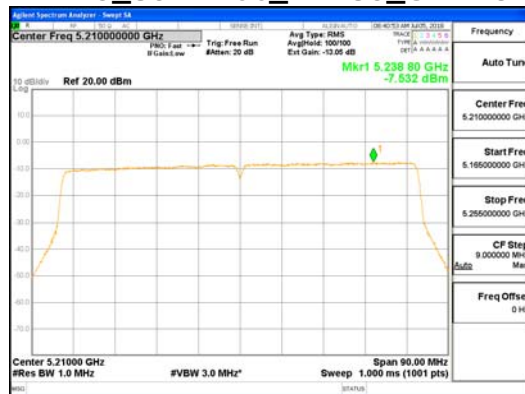
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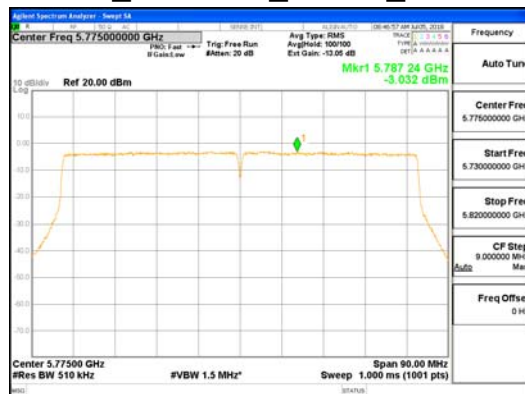
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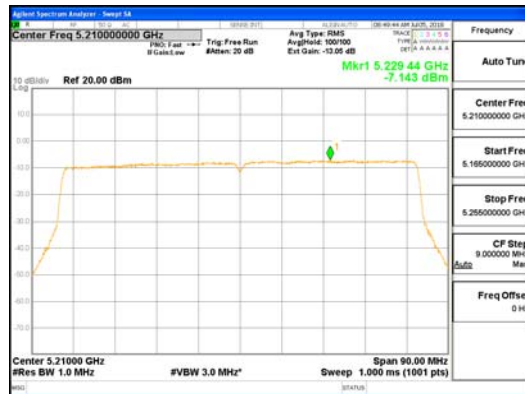


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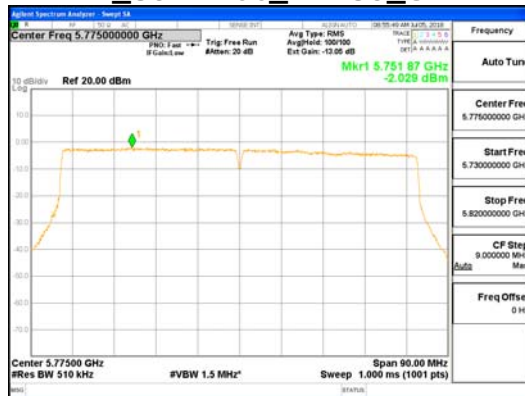


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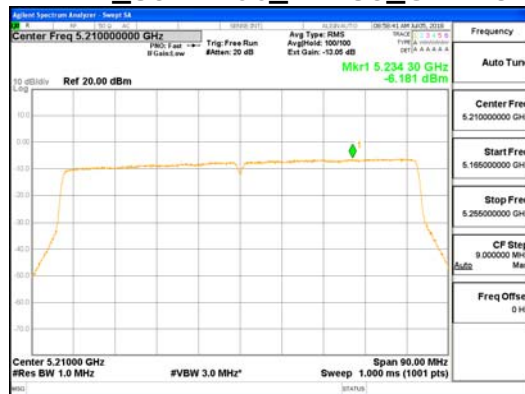
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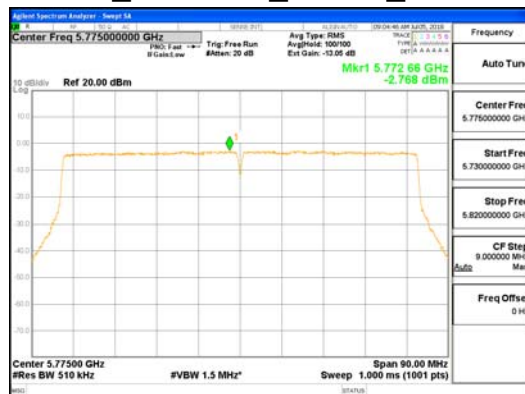
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