

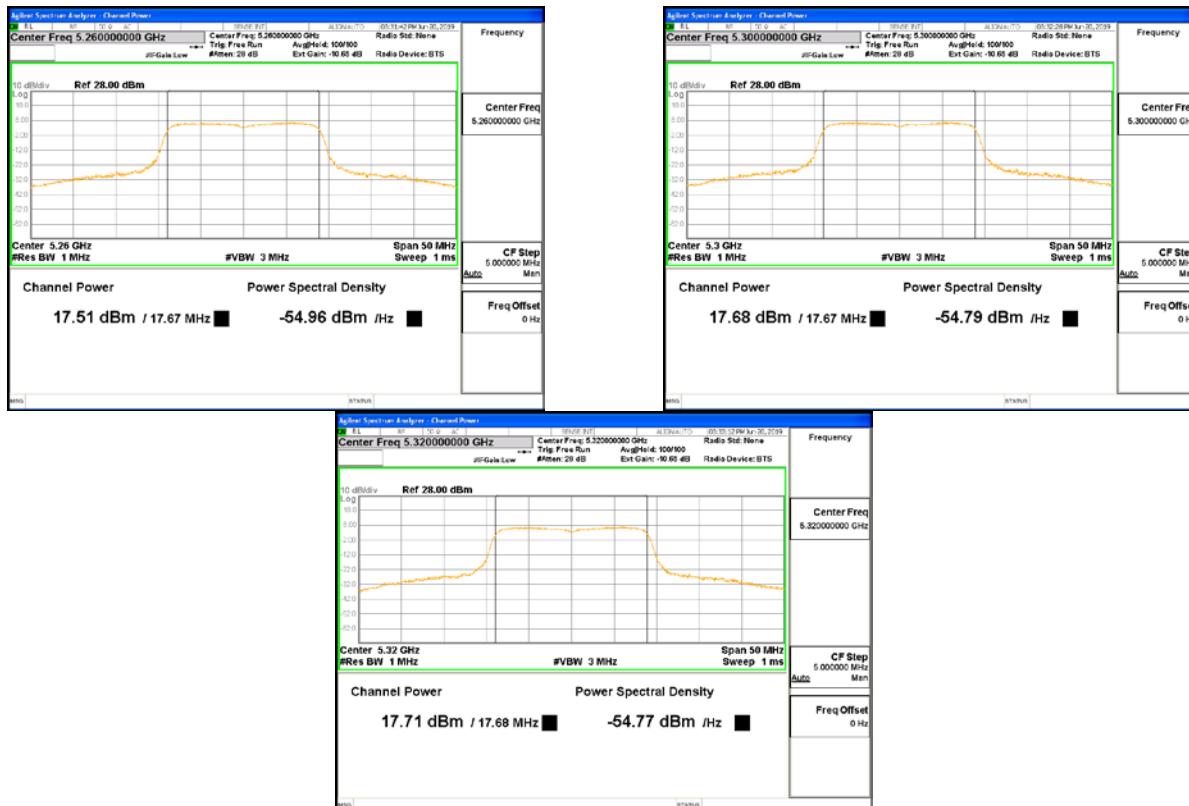


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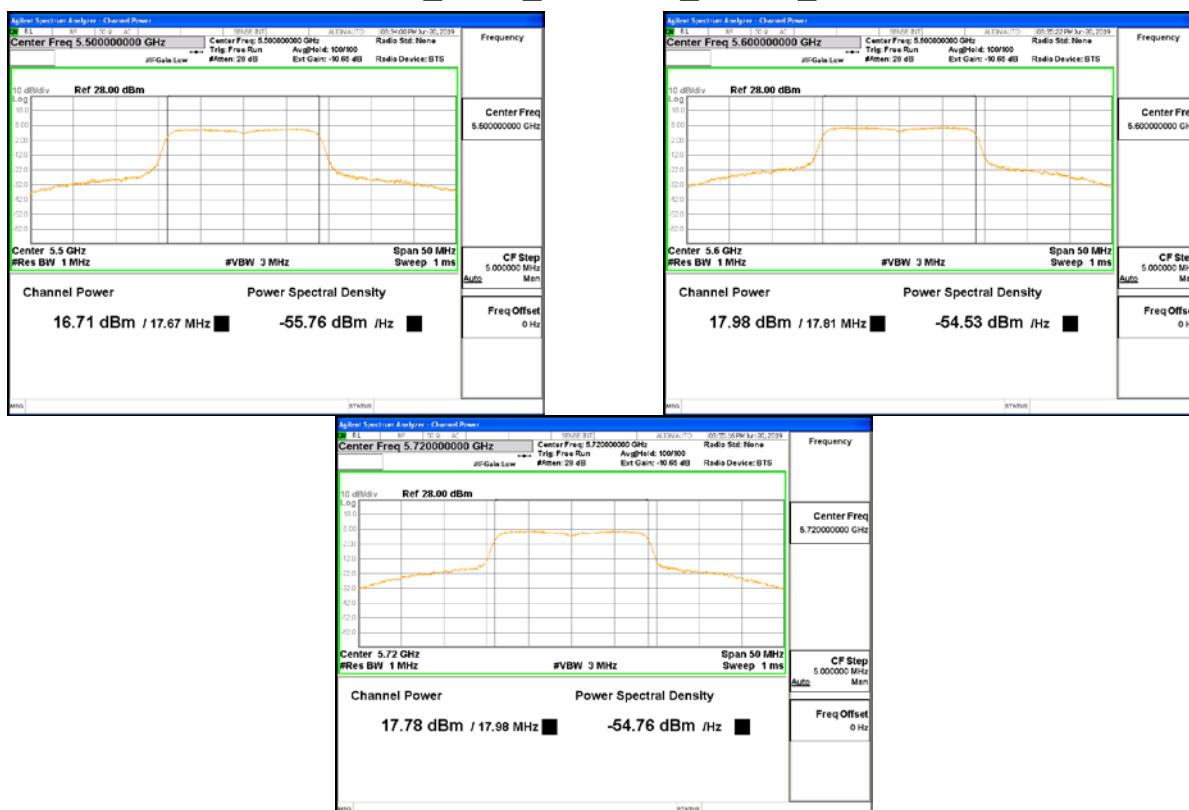
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SDM Mode\_ANT1\_802.11ac\_VHT20\_UNII 2A



SDM Mode\_ANT1\_802.11ac\_VHT20\_UNII 2C

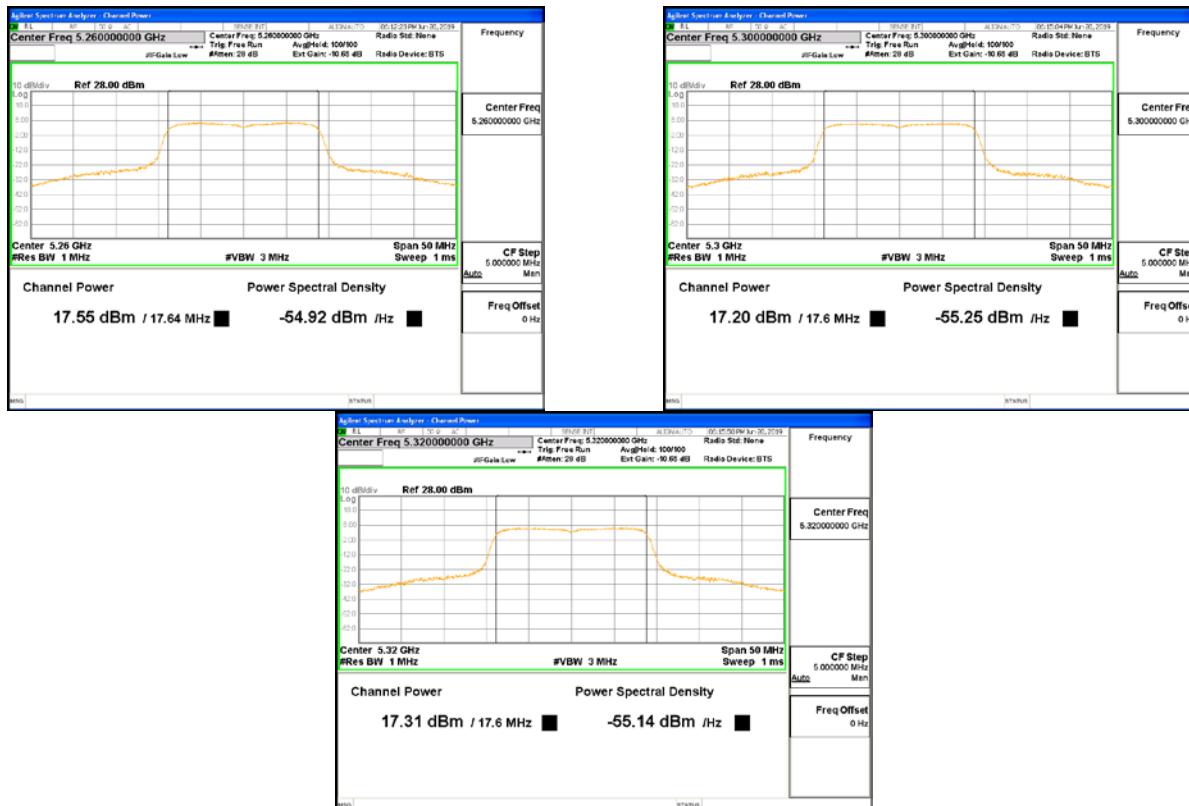


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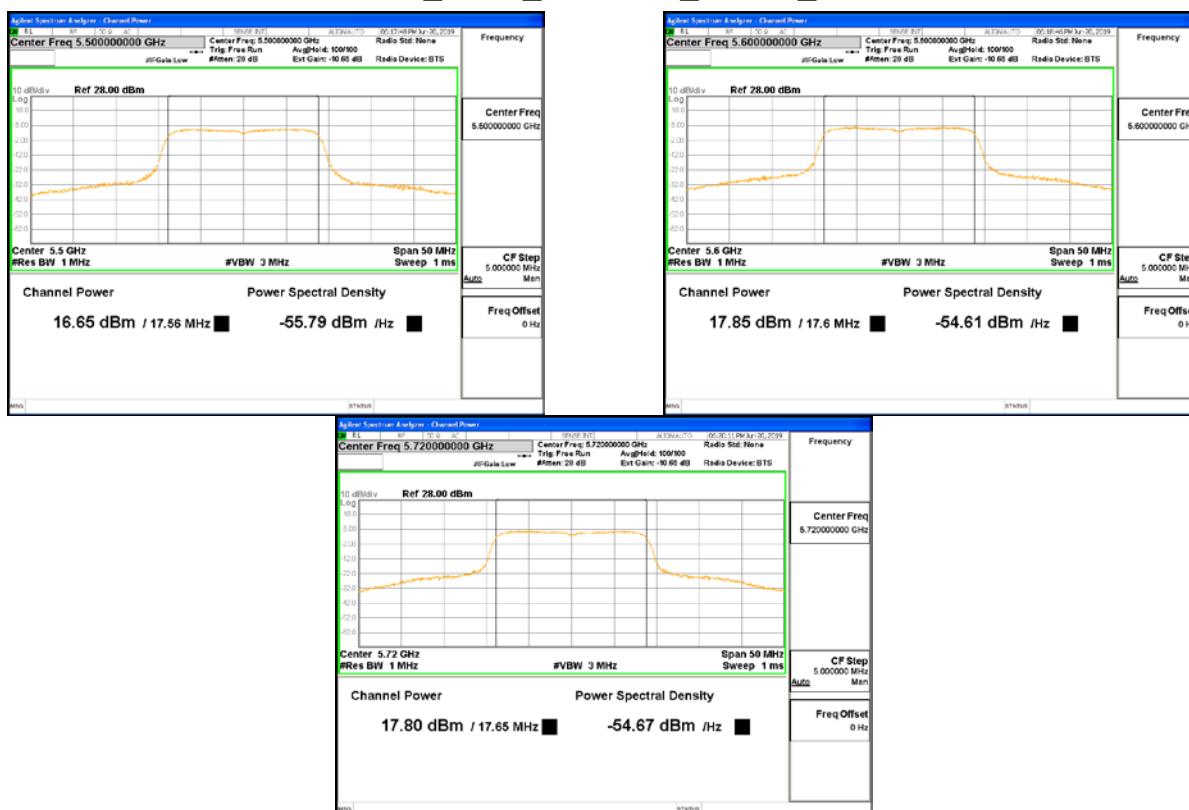
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SDM Mode\_ANT2\_802.11ac\_VHT20\_UNII 2A



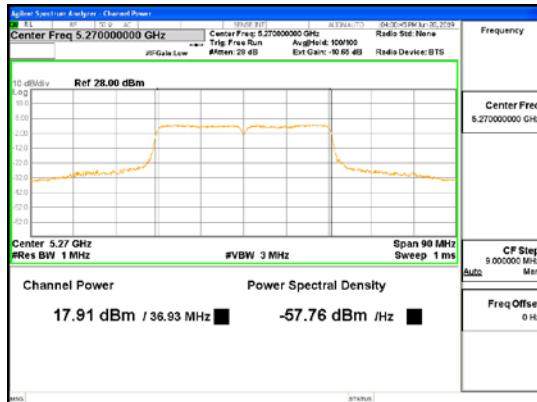
SDM Mode\_ANT2\_802.11ac\_VHT20\_UNII 2C



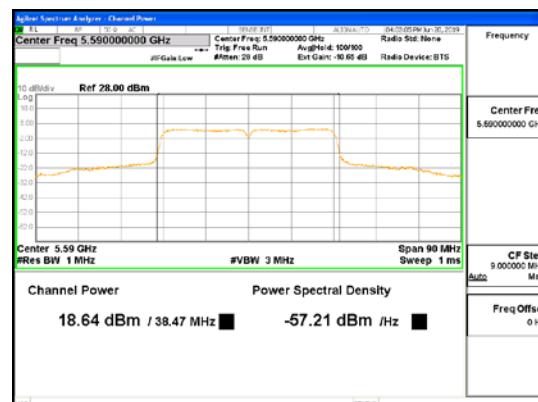
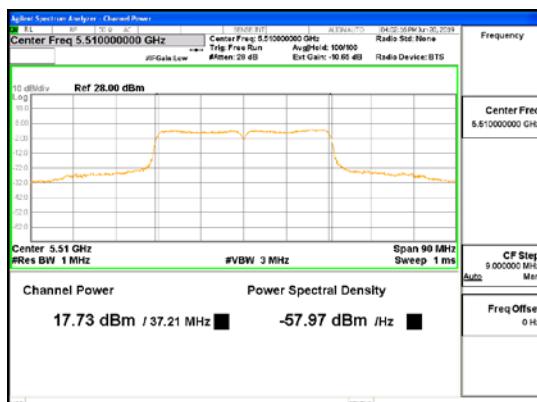
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### SDM Mode\_AN1\_802.11n\_HT40\_UNII 2A



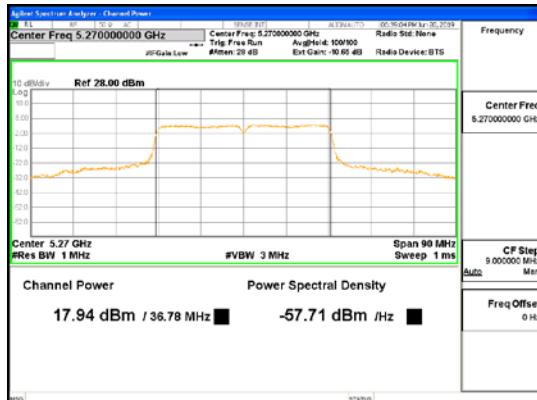
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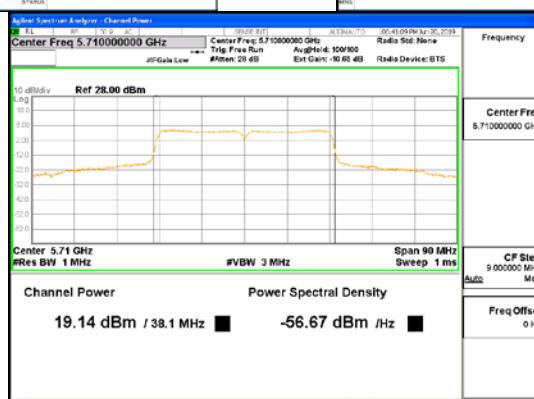
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### SDM Mode\_AN2\_802.11n\_HT40\_UNII\_2A



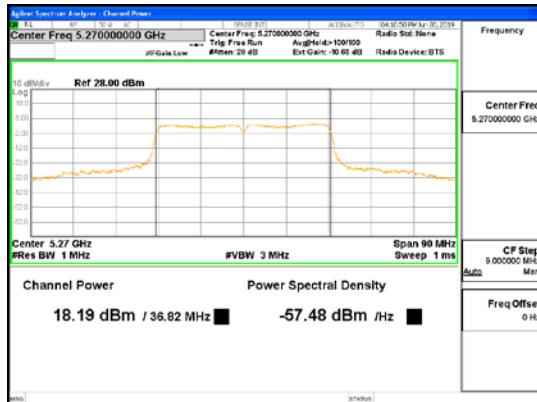
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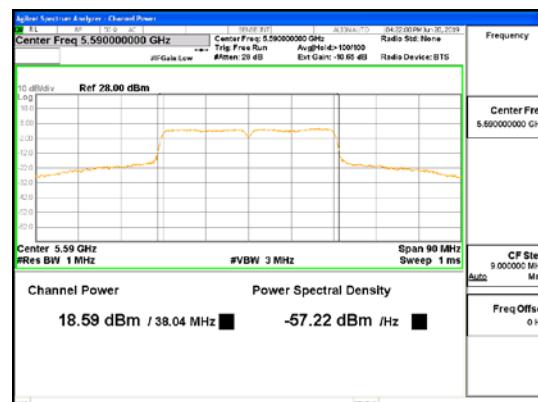
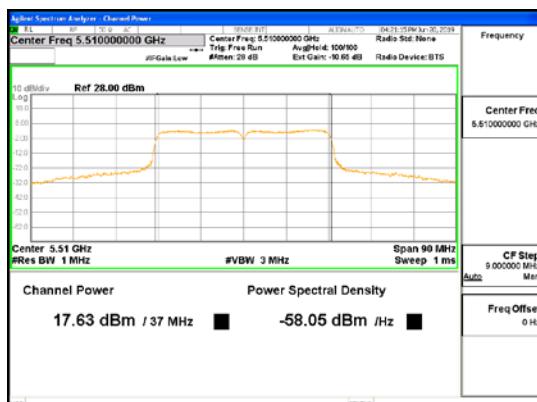
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### SDM Mode\_ANT1\_802.11ac\_VHT40\_UNII 2A



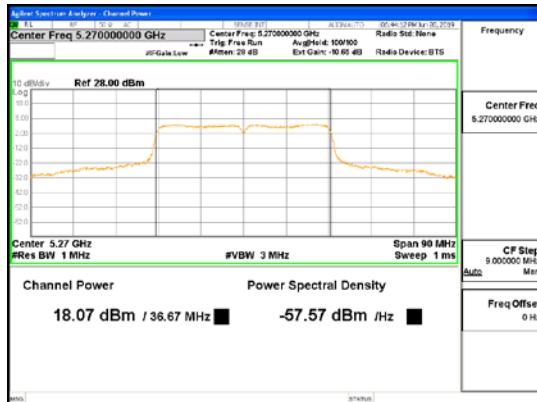
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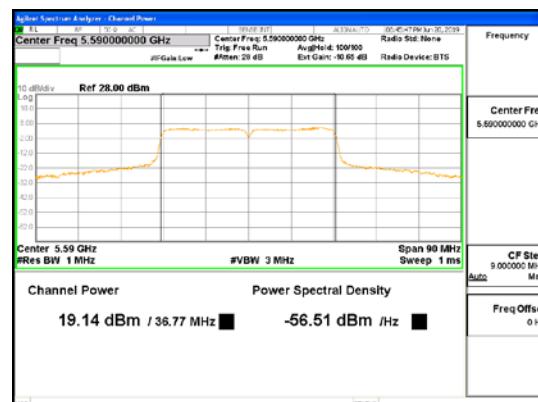
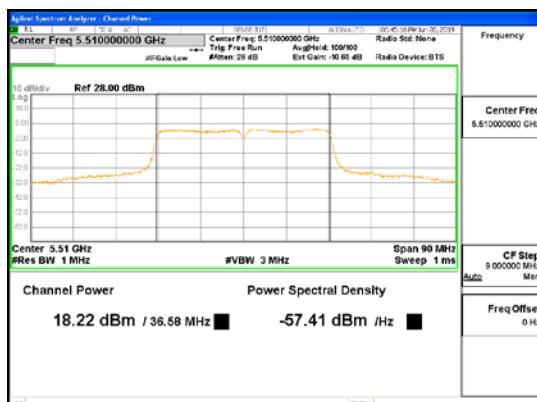
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### SDM Mode\_ANT2\_802.11ac\_VHT40\_UNII 2A



### SDM Mode\_ANT2\_802.11ac\_VHT40\_UNII 2C

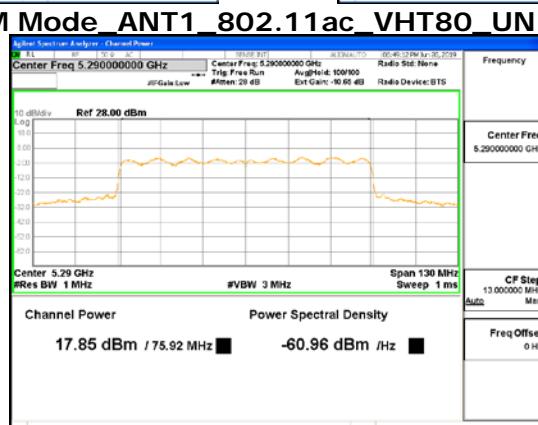
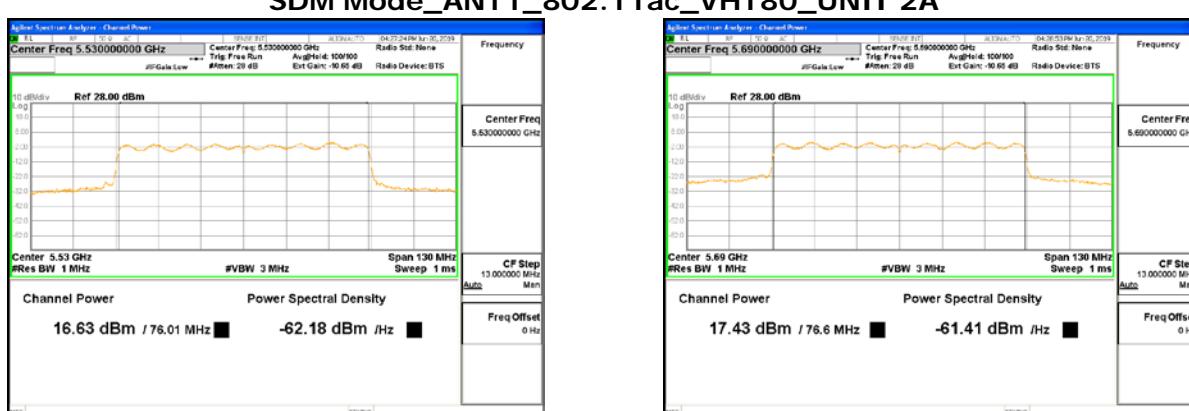
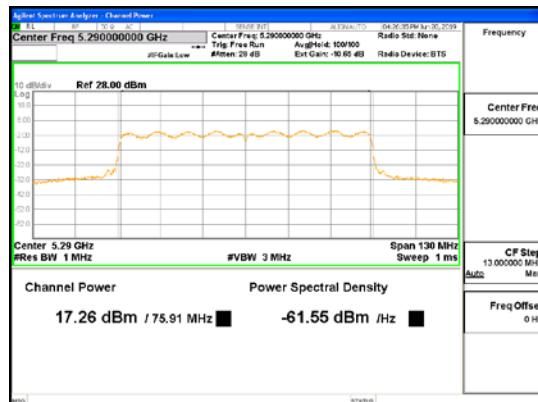


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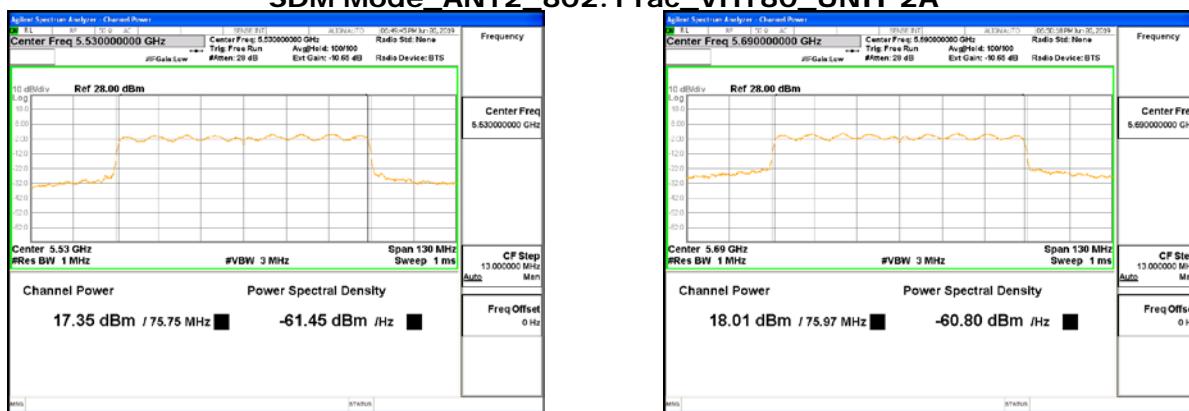
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SDM Mode\_ANT2\_802.11ac\_VHT80\_UNII 2A



SDM Mode\_ANT2\_802.11ac\_VHT80\_UNII 2C



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## 4.3 Power Spectral Density

### Test Procedures

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

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

<b>Test mode</b>		<b>Duty Cycle Factor (dB)</b>
CDD Mode	802.11a	0.16
	802.11n_HT20	0.17
	802.11n_HT40	0.33
	802.11ac_VHT20	0.17
	802.11ac_VHT40	0.33
	802.11ac_VHT80	0.63
SDM Mode	802.11n_HT20	0.32
	802.11n_HT40	0.60
	802.11ac_VHT20	0.32
	802.11ac_VHT40	0.71
	802.11ac_VHT80	1.25



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## Limit

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	UNII 2A	802.11a/n/ac	ANT1, ANT2	2.00	11.00
	UNII 2C				
MIMO (2Tx)	UNII 2A	802.11a/n/ac	ANT1 + ANT2	5.01	11.00
	UNII 2C				

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## Test Data

### CDD Mode\_ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	5.93	0.16	6.09	11.00	4.91
	5 300	6.15	0.16	6.31	11.00	4.69
	5 320	6.35	0.16	6.51	11.00	4.49
	5 500	5.10	0.16	5.26	11.00	5.74
	5 600	6.68	0.16	6.84	11.00	4.16
	5 720	6.68	0.16	6.84	11.00	4.16
802.11n _HT20	5 260	6.47	0.17	6.64	11.00	4.36
	5 300	6.38	0.17	6.55	11.00	4.45
	5 320	6.54	0.17	6.71	11.00	4.29
	5 500	5.75	0.17	5.92	11.00	5.08
	5 600	6.75	0.17	6.92	11.00	4.08
	5 720	6.70	0.17	6.87	11.00	4.13
802.11ac _VHT20	5 260	5.41	0.17	5.58	11.00	5.42
	5 300	6.33	0.17	6.50	11.00	4.50
	5 320	6.41	0.17	6.58	11.00	4.42
	5 500	5.52	0.17	5.69	11.00	5.31
	5 600	6.81	0.17	6.98	11.00	4.02
	5 720	6.90	0.17	7.07	11.00	3.93
802.11n _HT40	5 270	5.24	0.33	5.57	11.00	5.43
	5 310	5.54	0.33	5.87	11.00	5.13
	5 510	5.05	0.33	5.38	11.00	5.62
	5 590	5.83	0.33	6.16	11.00	4.84
	5 710	5.53	0.33	5.86	11.00	5.14
802.11ac _VHT40	5 270	5.23	0.33	5.56	11.00	5.44
	5 310	5.44	0.33	5.77	11.00	5.23
	5 510	5.19	0.33	5.52	11.00	5.48
	5 590	5.70	0.33	6.03	11.00	4.97
	5 710	5.47	0.33	5.80	11.00	5.20
802.11ac _VHT80	5 290	2.46	0.63	3.09	11.00	7.91
	5 530	1.92	0.63	2.55	11.00	8.45
	5 690	2.62	0.63	3.25	11.00	7.75
Measurement uncertainty		$\pm 1.5$ dB				

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### CDD Mode\_ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	5.52	0.16	5.68	11.00	5.32
	5 300	6.19	0.16	6.35	11.00	4.65
	5 320	6.47	0.16	6.63	11.00	4.37
	5 500	5.88	0.16	6.04	11.00	4.96
	5 600	7.03	0.16	7.19	11.00	3.81
	5 720	6.88	0.16	7.04	11.00	3.96
802.11n _HT20	5 260	5.51	0.17	5.68	11.00	5.32
	5 300	6.26	0.17	6.43	11.00	4.57
	5 320	6.35	0.17	6.52	11.00	4.48
	5 500	5.70	0.17	5.87	11.00	5.13
	5 600	7.03	0.17	7.20	11.00	3.80
	5 720	7.04	0.17	7.21	11.00	3.79
802.11ac _VHT20	5 260	5.54	0.17	5.71	11.00	5.29
	5 300	5.99	0.17	6.16	11.00	4.84
	5 320	6.26	0.17	6.43	11.00	4.57
	5 500	5.47	0.17	5.64	11.00	5.36
	5 600	7.16	0.17	7.33	11.00	3.67
	5 720	7.12	0.17	7.29	11.00	3.71
802.11n _HT40	5 270	4.00	0.33	4.33	11.00	6.67
	5 310	4.29	0.33	4.62	11.00	6.38
	5 510	4.26	0.33	4.59	11.00	6.41
	5 590	5.36	0.33	5.69	11.00	5.31
	5 710	5.13	0.33	5.46	11.00	5.54
802.11ac _VHT40	5 270	4.87	0.33	5.20	11.00	5.80
	5 310	5.27	0.33	5.60	11.00	5.40
	5 510	5.24	0.33	5.57	11.00	5.43
	5 590	5.85	0.33	6.18	11.00	4.82
	5 710	5.70	0.33	6.03	11.00	4.97
802.11ac _VHT80	5 290	2.03	0.63	2.66	11.00	8.34
	5 530	1.51	0.63	2.14	11.00	8.86
	5 690	2.27	0.63	2.90	11.00	8.10
Measurement uncertainty		$\pm 1.5$ dB				

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**CDD Mode\_ANT1+ANT2**

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	8.74	0.16	8.90	11.00	2.10
	5 300	9.18	0.16	9.34	11.00	1.66
	5 320	9.42	0.16	9.58	11.00	1.42
	5 500	8.52	0.16	8.68	11.00	2.32
	5 600	9.87	0.16	10.03	11.00	0.97
	5 720	9.79	0.16	9.95	11.00	1.05
802.11n _HT20	5 260	9.03	0.17	9.20	11.00	1.80
	5 300	9.33	0.17	9.50	11.00	1.50
	5 320	9.46	0.17	9.63	11.00	1.37
	5 500	8.74	0.17	8.91	11.00	2.09
	5 600	9.90	0.17	10.07	11.00	0.93
	5 720	9.88	0.17	10.05	11.00	0.95
802.11ac _VHT20	5 260	8.49	0.17	8.66	11.00	2.34
	5 300	9.17	0.17	9.34	11.00	1.66
	5 320	9.35	0.17	9.52	11.00	1.48
	5 500	8.51	0.17	8.68	11.00	2.32
	5 600	10.00	0.17	10.17	11.00	0.83
	5 720	10.02	0.17	10.19	11.00	0.81
802.11n _HT40	5 270	7.67	0.33	8.00	11.00	3.00
	5 310	7.97	0.33	8.30	11.00	2.70
	5 510	7.68	0.33	8.01	11.00	2.99
	5 590	8.61	0.33	8.94	11.00	2.06
	5 710	8.34	0.33	8.67	11.00	2.33
802.11ac _VHT40	5 270	8.06	0.33	8.39	11.00	2.61
	5 310	8.37	0.33	8.70	11.00	2.30
	5 510	8.23	0.33	8.56	11.00	2.44
	5 590	8.79	0.33	9.12	11.00	1.88
	5 710	8.60	0.33	8.93	11.00	2.07
802.11ac _VHT80	5 290	5.26	0.63	5.89	11.00	5.11
	5 530	4.73	0.63	5.36	11.00	5.64
	5 690	5.46	0.63	6.09	11.00	4.91
Measurement uncertainty		± 1.5 dB				

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### SDM Mode\_ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 260	6.81	0.32	7.13	11.00	3.87
	5 300	7.01	0.32	7.33	11.00	3.67
	5 320	6.70	0.32	7.02	11.00	3.98
	5 500	5.82	0.32	6.14	11.00	4.86
	5 600	6.91	0.32	7.23	11.00	3.77
	5 720	6.71	0.32	7.03	11.00	3.97
802.11ac _VHT20	5 260	6.30	0.32	6.62	11.00	4.38
	5 300	6.60	0.32	6.92	11.00	4.08
	5 320	6.52	0.32	6.84	11.00	4.16
	5 500	5.60	0.32	5.92	11.00	5.08
	5 600	6.82	0.32	7.14	11.00	3.86
	5 720	6.54	0.32	6.86	11.00	4.14
802.11n _HT40	5 270	3.69	0.60	4.29	11.00	6.71
	5 310	3.95	0.60	4.55	11.00	6.45
	5 510	3.65	0.60	4.25	11.00	6.75
	5 590	4.67	0.60	5.27	11.00	5.73
	5 710	4.61	0.60	5.21	11.00	5.79
802.11ac _VHT40	5 270	3.95	0.71	4.66	11.00	6.34
	5 310	3.93	0.71	4.64	11.00	6.36
	5 510	3.43	0.71	4.14	11.00	6.86
	5 590	4.71	0.71	5.42	11.00	5.58
	5 710	4.57	0.71	5.28	11.00	5.72
802.11ac _VHT80	5 290	0.98	1.25	2.23	11.00	8.77
	5 530	0.96	1.25	2.21	11.00	8.79
	5 690	1.41	1.25	2.66	11.00	8.34
Measurement uncertainty		$\pm 1.5$ dB				

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### SDM Mode\_ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 260	6.04	0.32	6.36	11.00	4.64
	5 300	6.24	0.32	6.56	11.00	4.44
	5 320	6.48	0.32	6.80	11.00	4.20
	5 500	5.71	0.32	6.03	11.00	4.97
	5 600	7.04	0.32	7.36	11.00	3.64
	5 720	6.65	0.32	6.97	11.00	4.03
802.11ac _VHT20	5 260	6.32	0.32	6.64	11.00	4.36
	5 300	6.11	0.32	6.43	11.00	4.57
	5 320	6.18	0.32	6.50	11.00	4.50
	5 500	5.83	0.32	6.15	11.00	4.85
	5 600	6.91	0.32	7.23	11.00	3.77
	5 720	6.67	0.32	6.99	11.00	4.01
802.11n _HT40	5 270	3.67	0.60	4.27	11.00	6.73
	5 310	4.05	0.60	4.65	11.00	6.35
	5 510	4.16	0.60	4.76	11.00	6.24
	5 590	5.09	0.60	5.69	11.00	5.31
	5 710	5.08	0.60	5.68	11.00	5.32
802.11ac _VHT40	5 270	3.94	0.71	4.65	11.00	6.35
	5 310	4.22	0.71	4.93	11.00	6.07
	5 510	4.27	0.71	4.98	11.00	6.02
	5 590	5.02	0.71	5.73	11.00	5.27
	5 710	5.20	0.71	5.91	11.00	5.09
802.11ac _VHT80	5 290	1.93	1.25	3.18	11.00	7.82
	5 530	1.73	1.25	2.98	11.00	8.02
	5 690	2.09	1.25	3.34	11.00	7.66
Measurement uncertainty		$\pm 1.5$ dB				

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### SDM Mode\_ANT1+ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 260	9.45	0.32	9.77	11.00	1.23
	5 300	9.65	0.32	9.97	11.00	1.03
	5 320	9.60	0.32	9.92	11.00	1.08
	5 500	8.78	0.32	9.10	11.00	1.90
	5 600	9.99	0.32	10.31	11.00	0.69
	5 720	9.69	0.32	10.01	11.00	0.99
802.11ac _VHT20	5 260	9.32	0.32	9.64	11.00	1.36
	5 300	9.37	0.32	9.69	11.00	1.31
	5 320	9.36	0.32	9.68	11.00	1.32
	5 500	8.73	0.32	9.05	11.00	1.95
	5 600	9.88	0.32	10.20	11.00	0.80
	5 720	9.62	0.32	9.94	11.00	1.06
802.11n _HT40	5 270	6.69	0.60	7.29	11.00	3.71
	5 310	7.01	0.60	7.61	11.00	3.39
	5 510	6.92	0.60	7.52	11.00	3.48
	5 590	7.90	0.60	8.50	11.00	2.50
	5 710	7.86	0.60	8.46	11.00	2.54
802.11ac _VHT40	5 270	6.96	0.71	7.67	11.00	3.33
	5 310	7.09	0.71	7.80	11.00	3.20
	5 510	6.88	0.71	7.59	11.00	3.41
	5 590	7.88	0.71	8.59	11.00	2.41
	5 710	7.91	0.71	8.62	11.00	2.38
802.11ac _VHT80	5 290	4.49	1.25	5.74	11.00	5.26
	5 530	4.37	1.25	5.62	11.00	5.38
	5 690	4.77	1.25	6.02	11.00	4.98
Measurement uncertainty		$\pm 1.5$ dB				

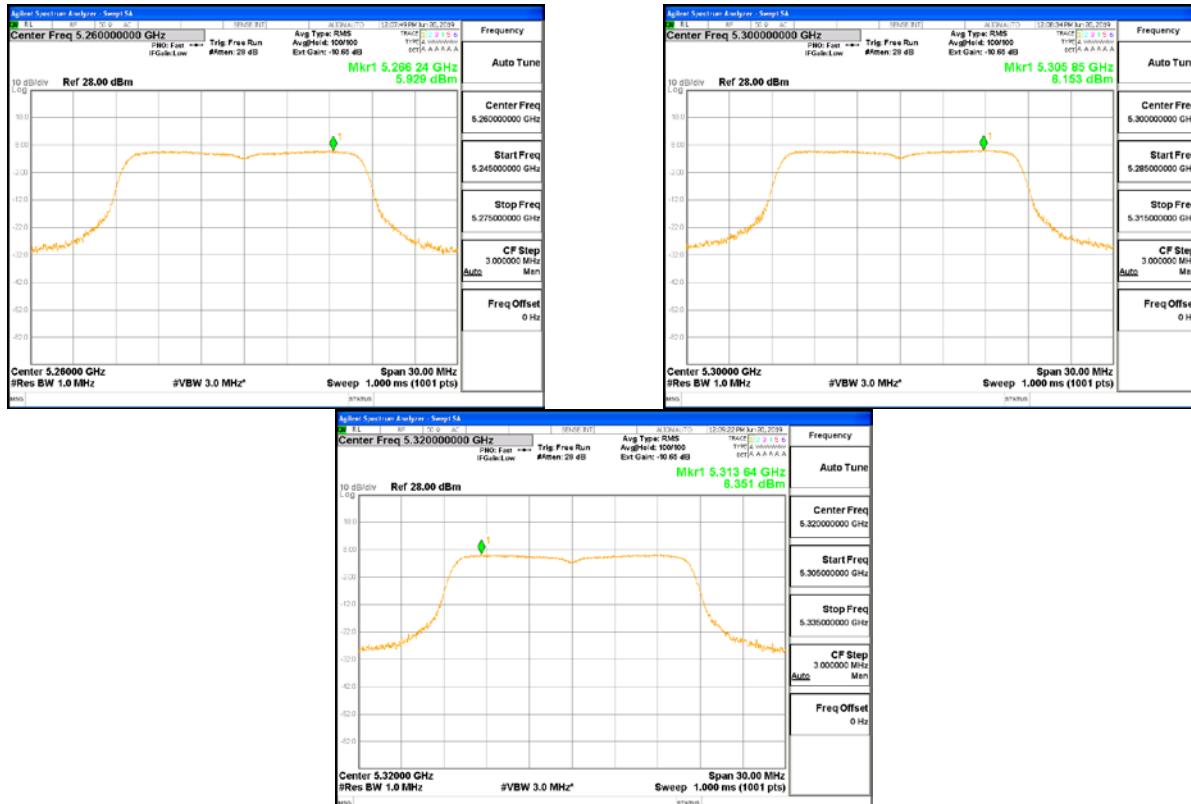
See next pages for actual measured spectrum plots.



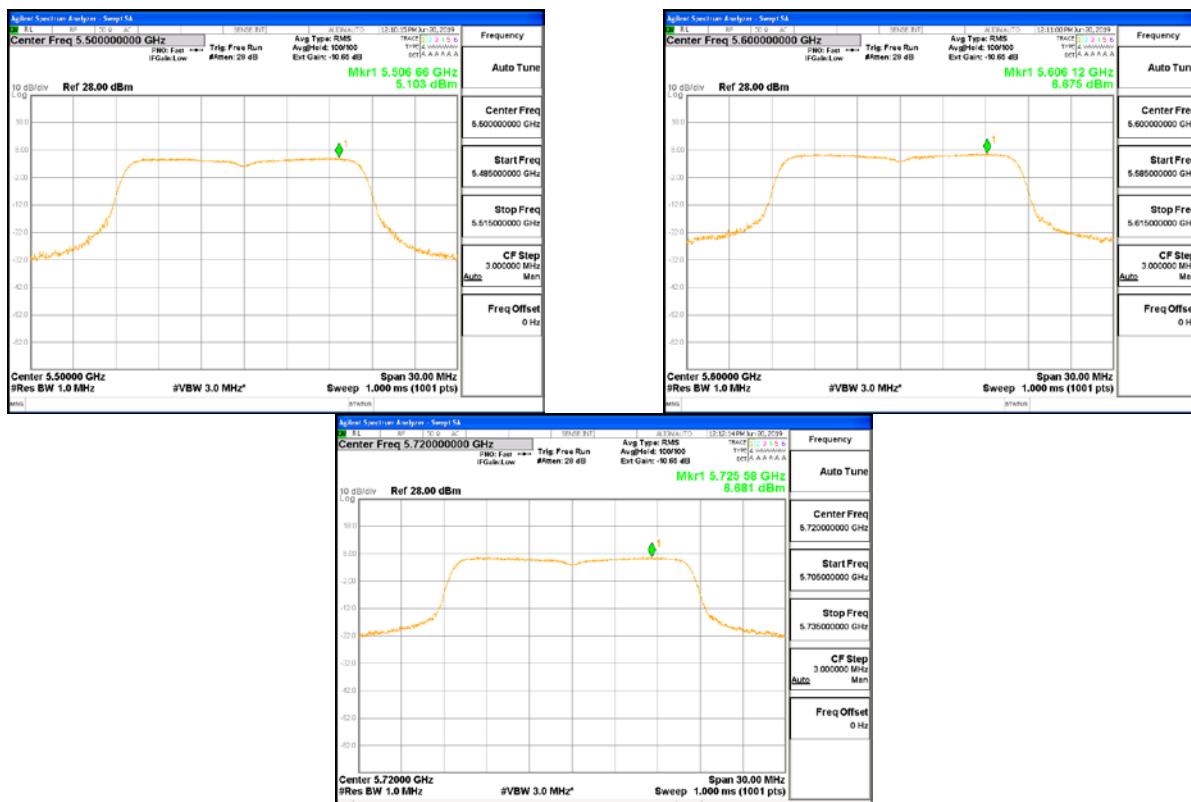
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### CDD Mode\_ANT1\_802.11a\_UNII 2A



### CDD Mode\_ANT1\_802.11a\_UNII 2C

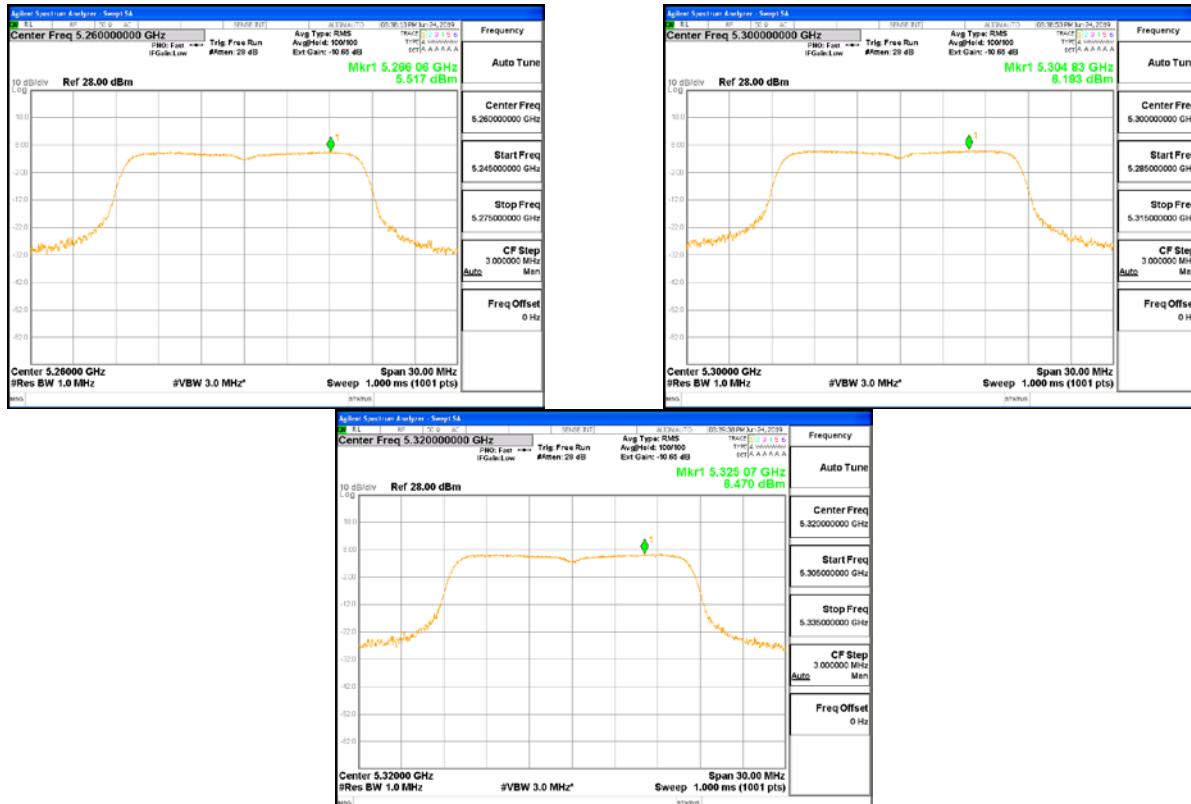


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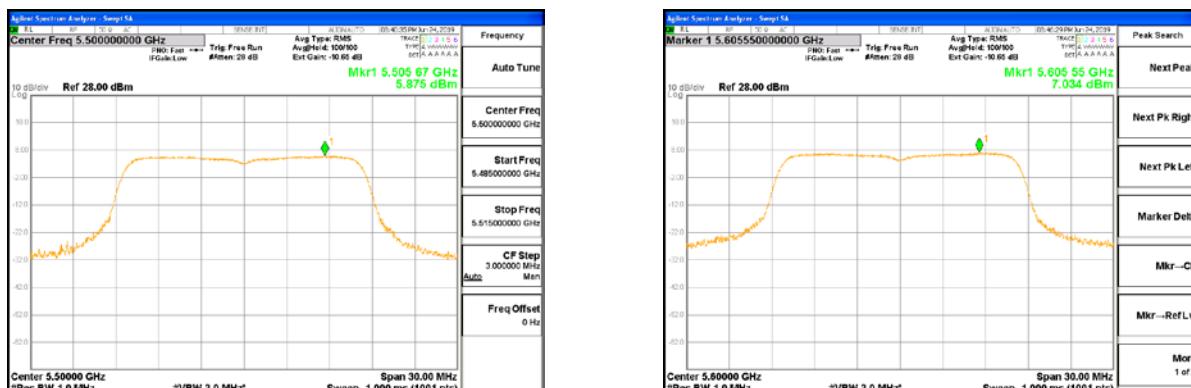
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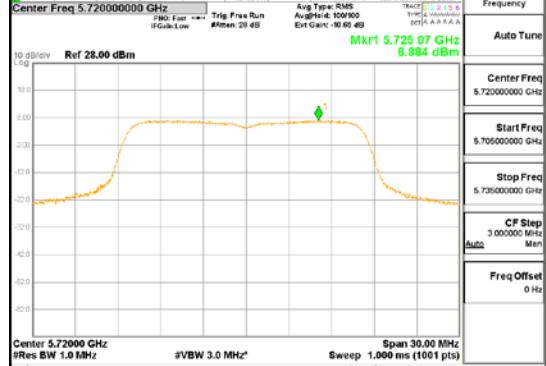
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### CDD Mode\_ANT2\_802.11a\_UNII 2A



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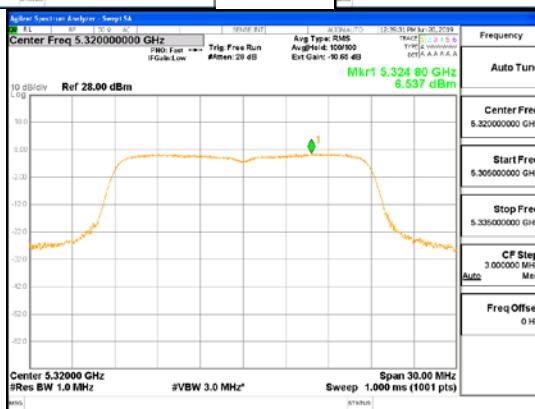
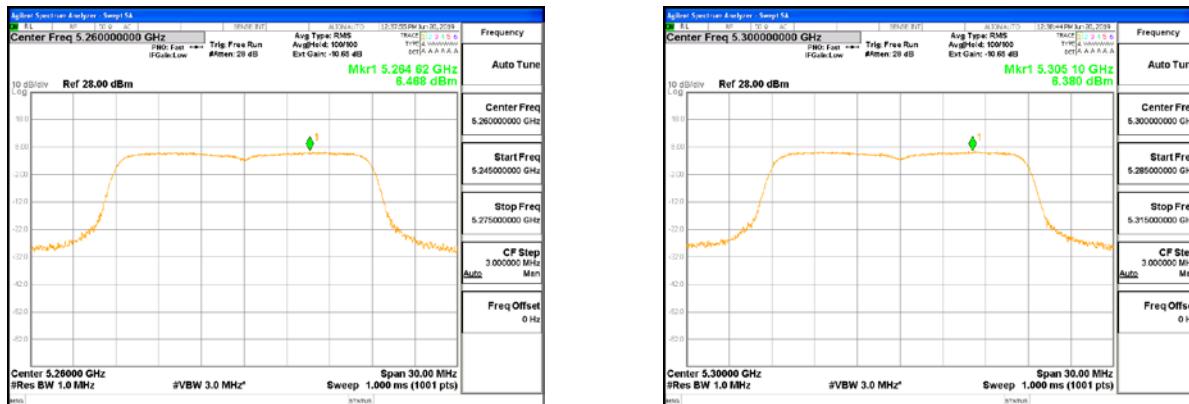
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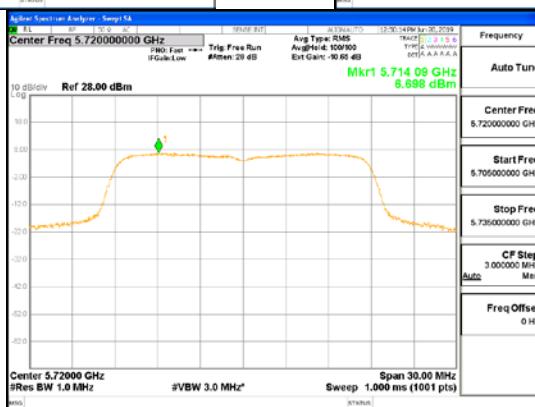
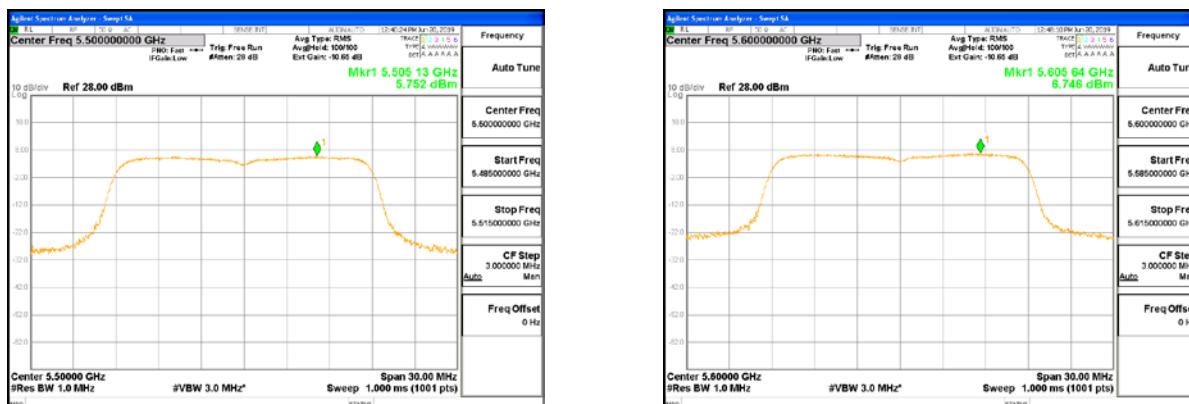
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## CDD Mode\_ANT1\_802.11n\_HT20\_UNII 2A



## CDD Mode\_ANT1\_802.11n\_HT20\_UNII 2C

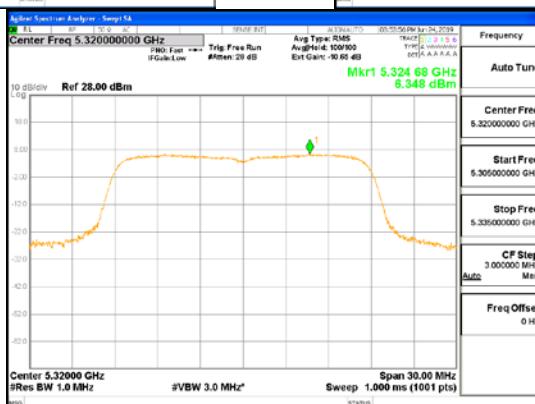
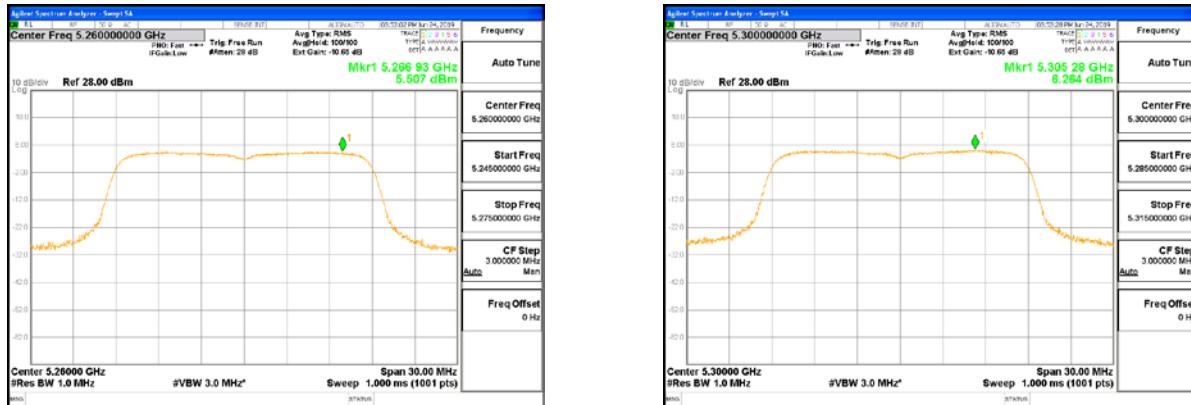


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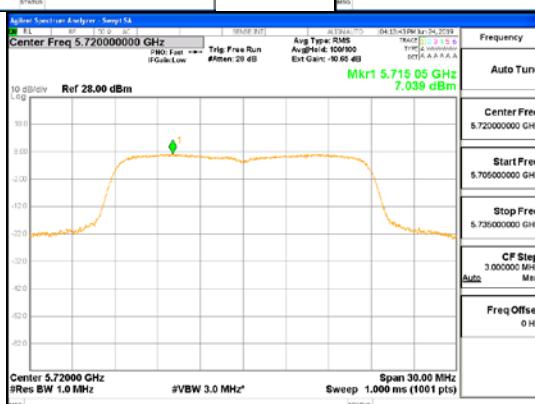
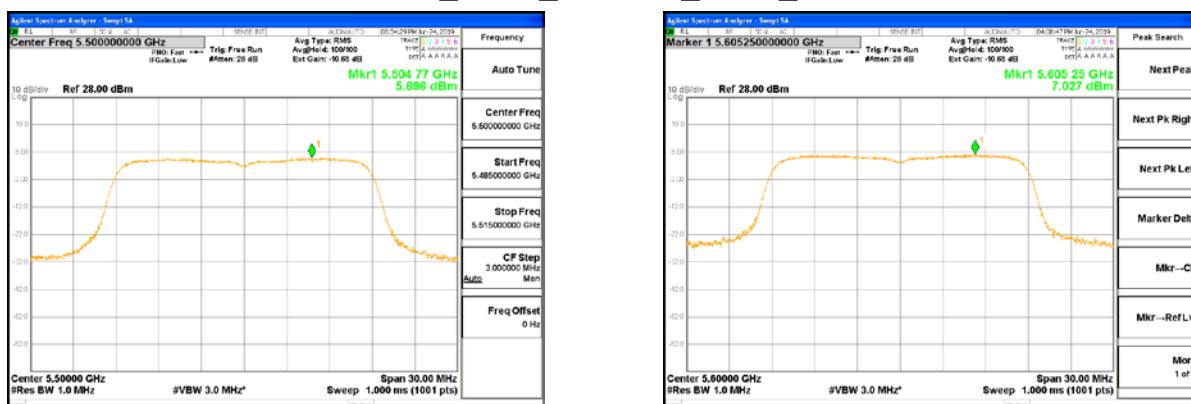
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CDD Mode\_ANT2\_802.11n\_HT20\_UNII 2A



CDD Mode\_ANT2\_802.11n\_HT20\_UNII 2C

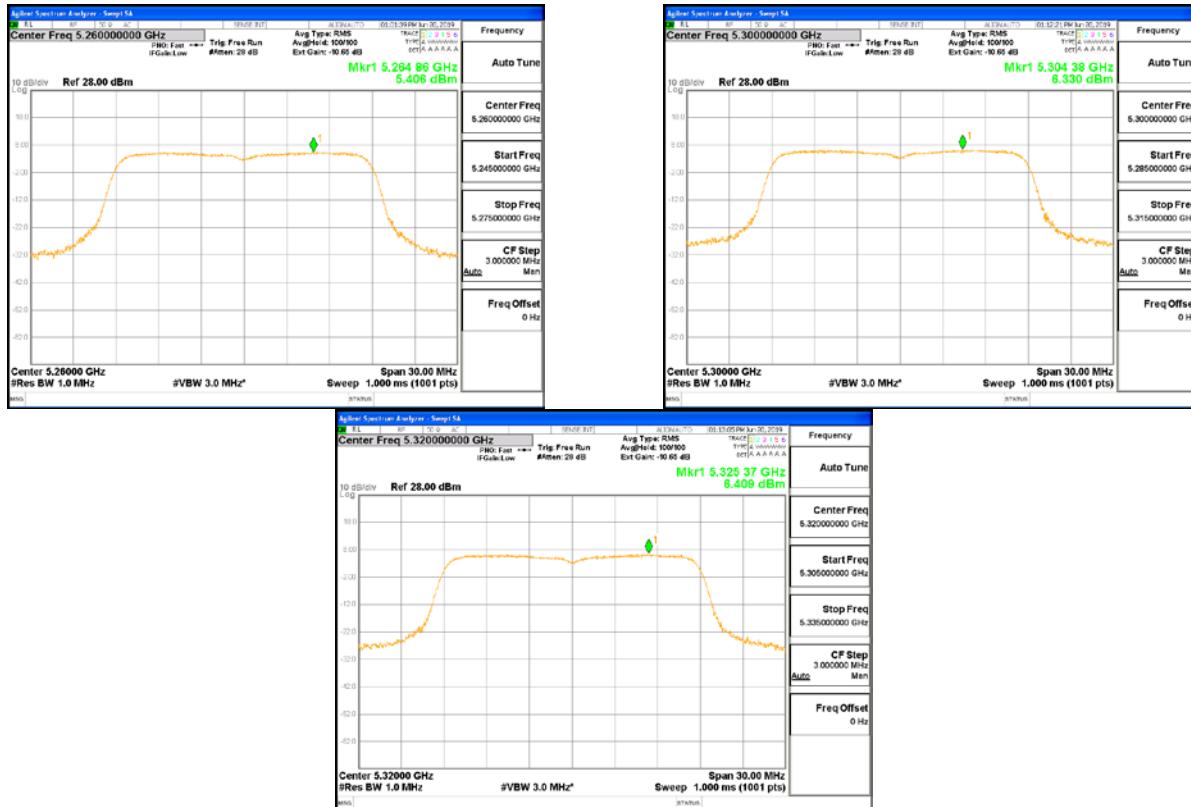


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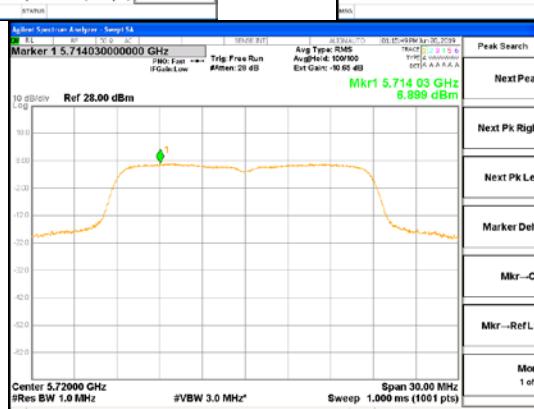
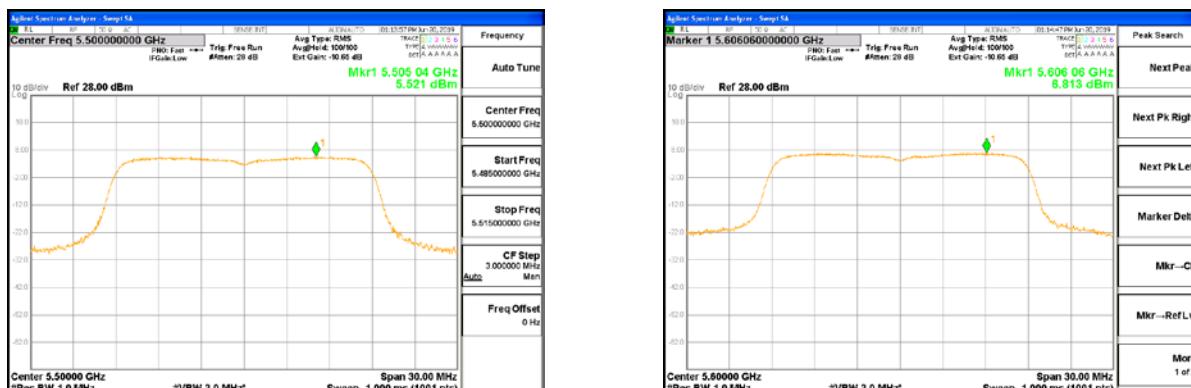
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### CDD Mode\_ANT1\_802.11ac\_VHT20\_UNII 2A



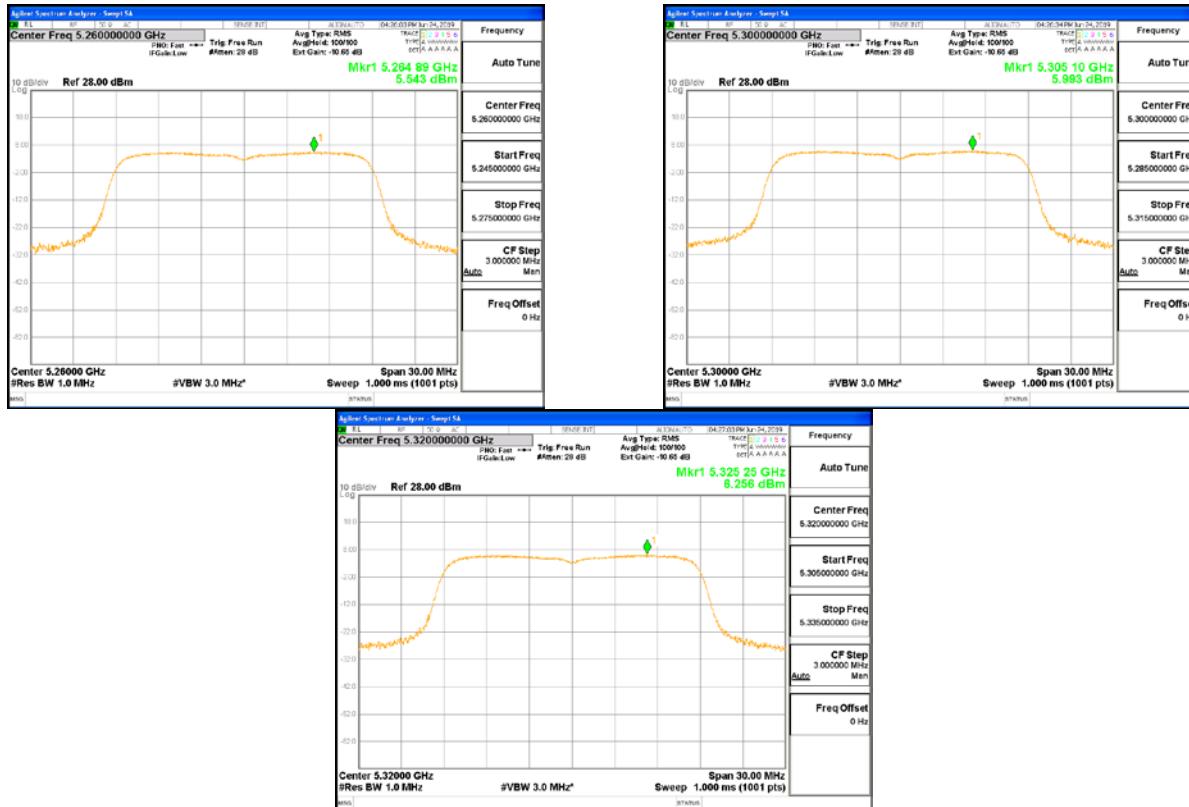
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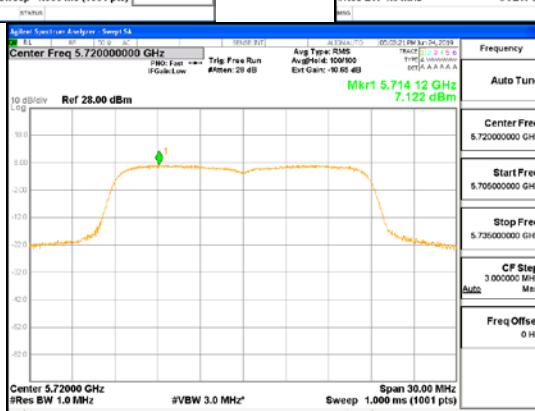
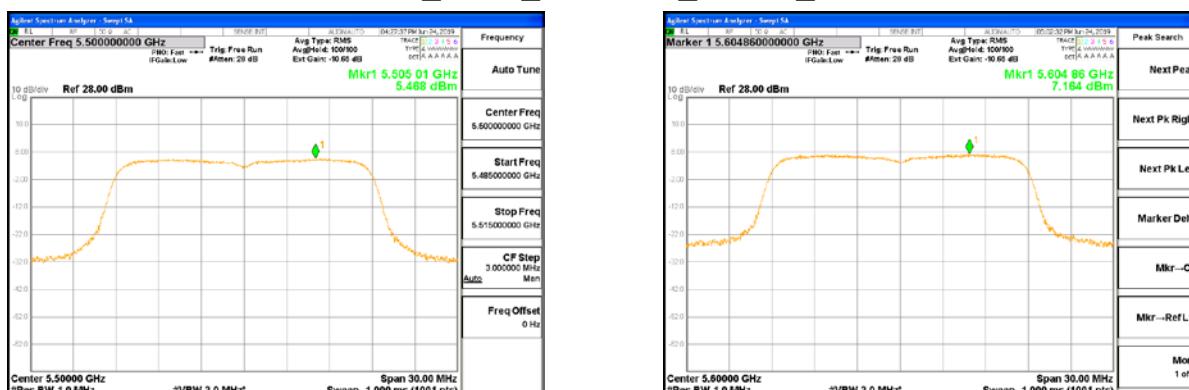
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### CDD Mode\_ANT2\_802.11ac\_VHT20\_UNII 2A



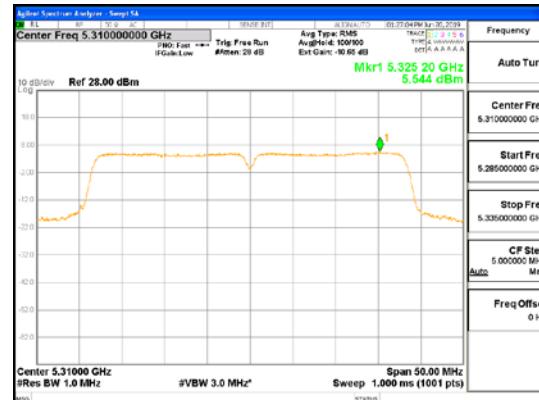
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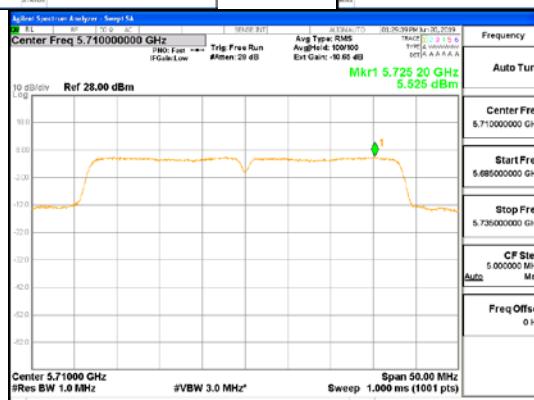
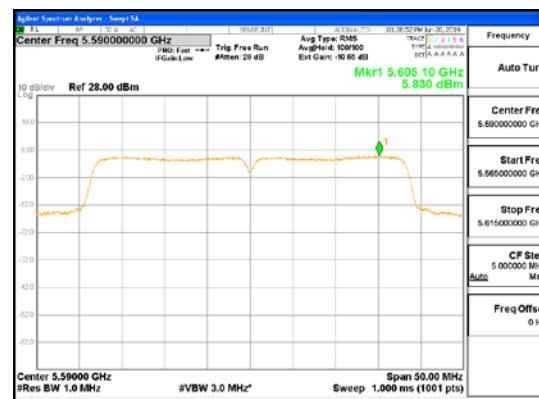
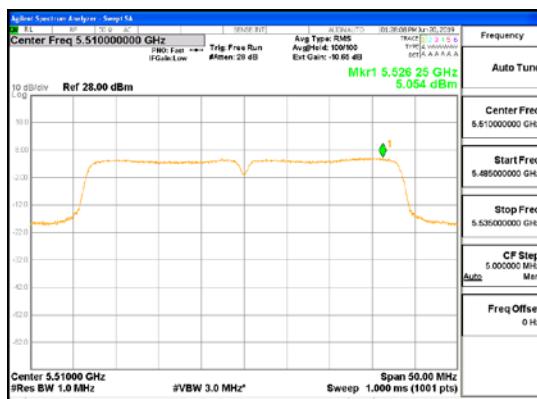
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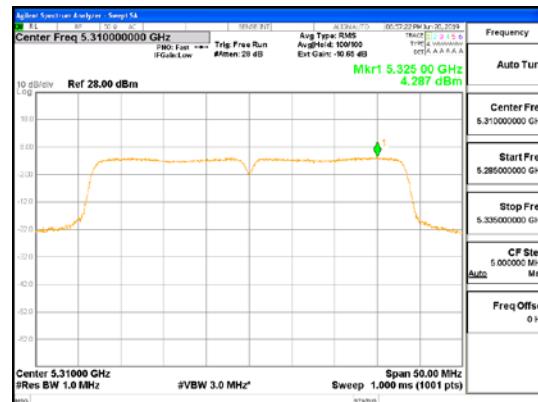
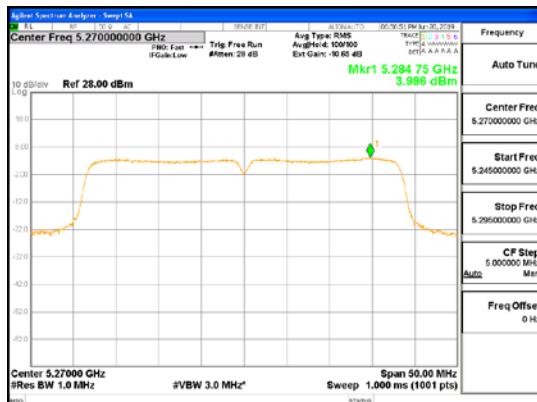
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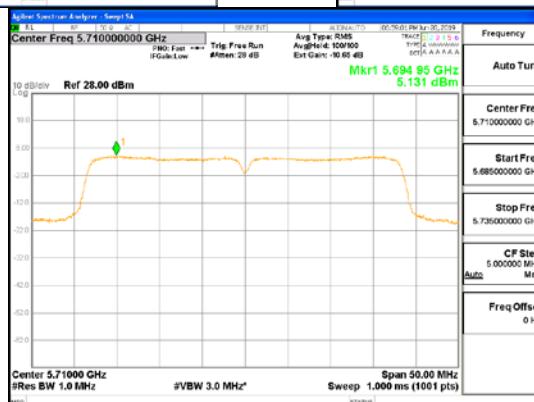
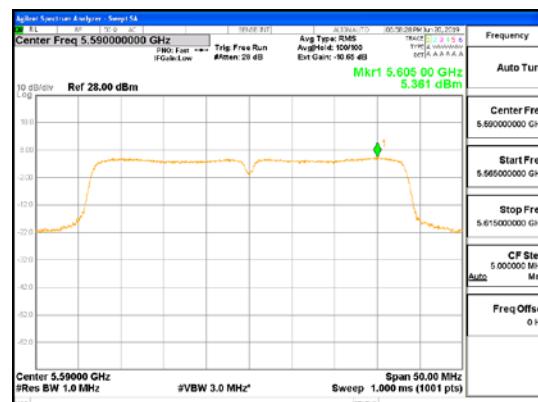
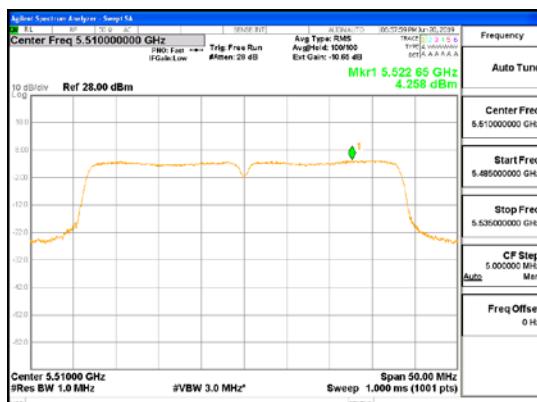
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### CDD Mode\_ANT2\_802.11n\_HT40\_UNII 2A



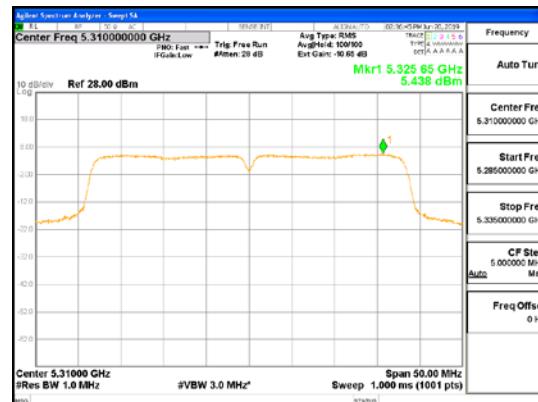
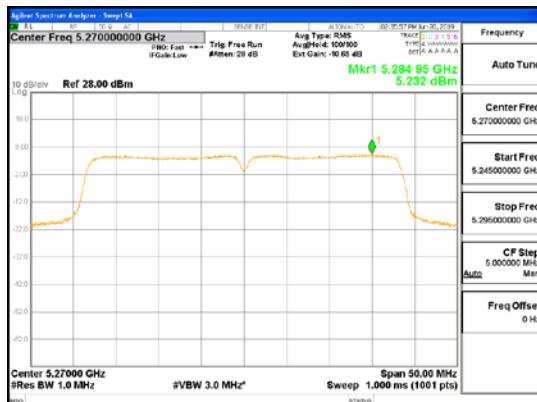
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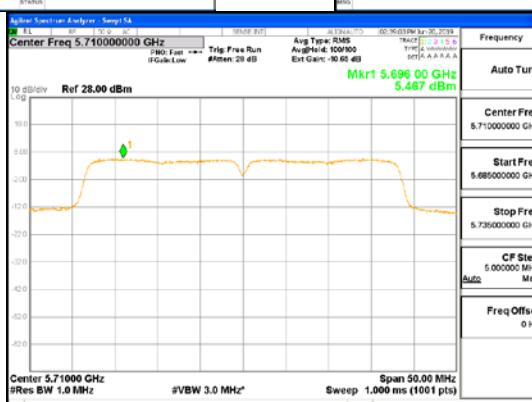
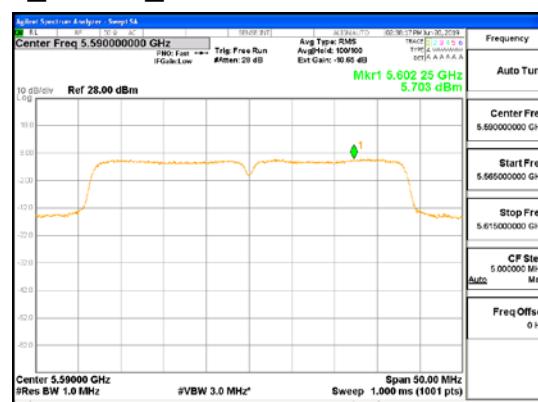
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### CDD Mode\_ANT1\_802.11ac\_VHT40\_UNII 2A



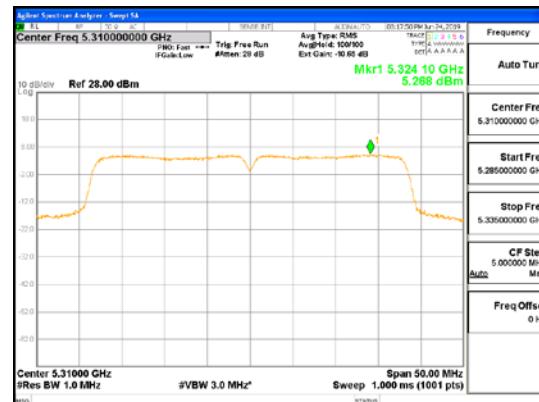
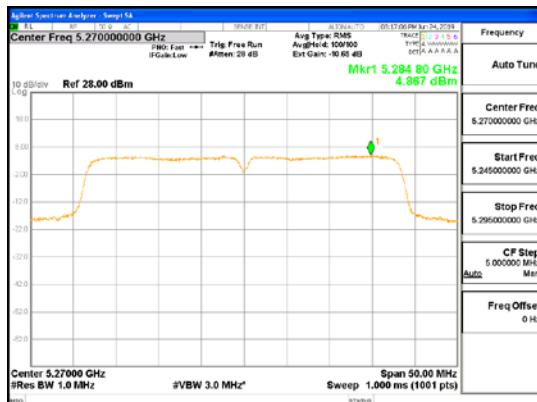
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### CDD Mode\_ANT2\_802.11ac\_VHT40\_UNII 2C

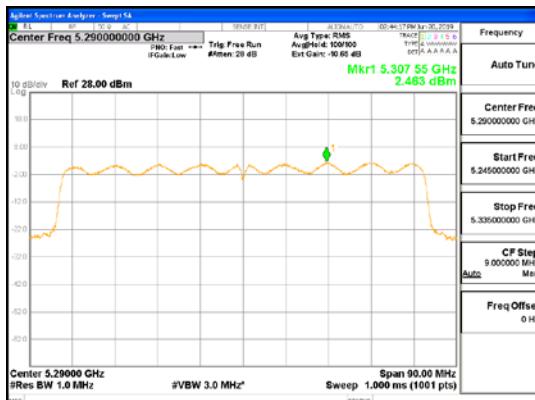


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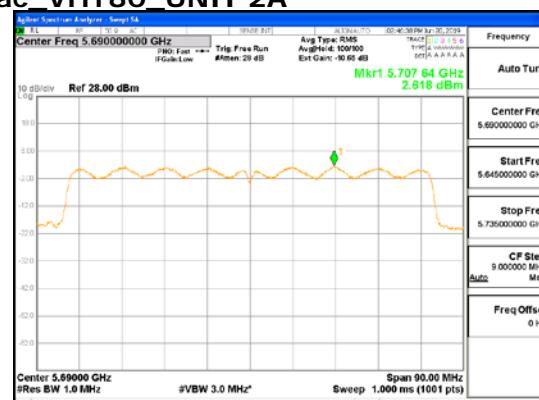
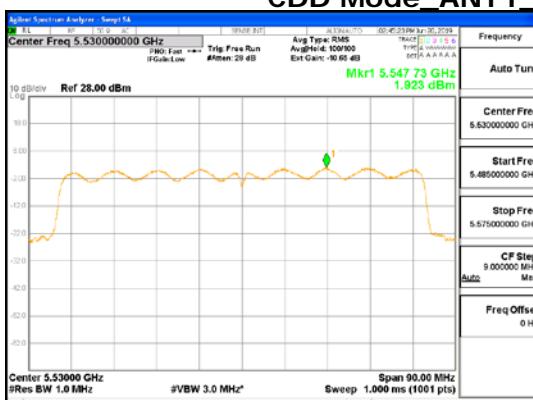
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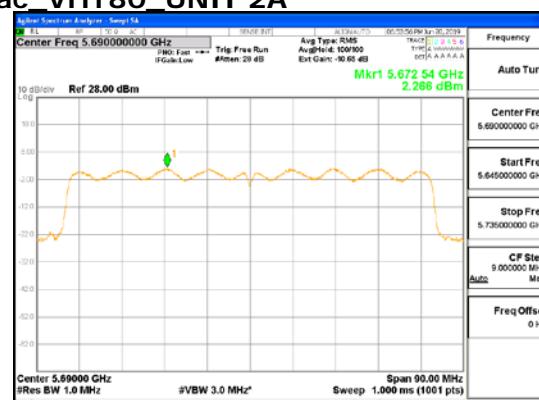
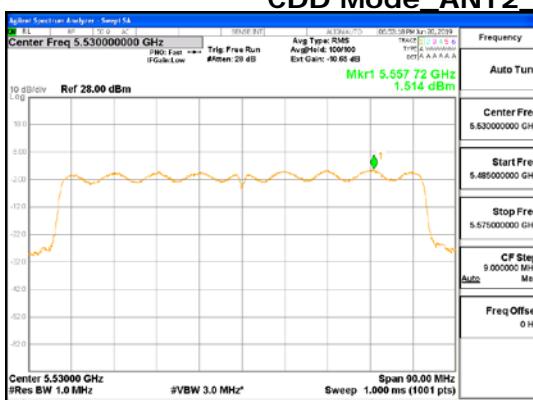
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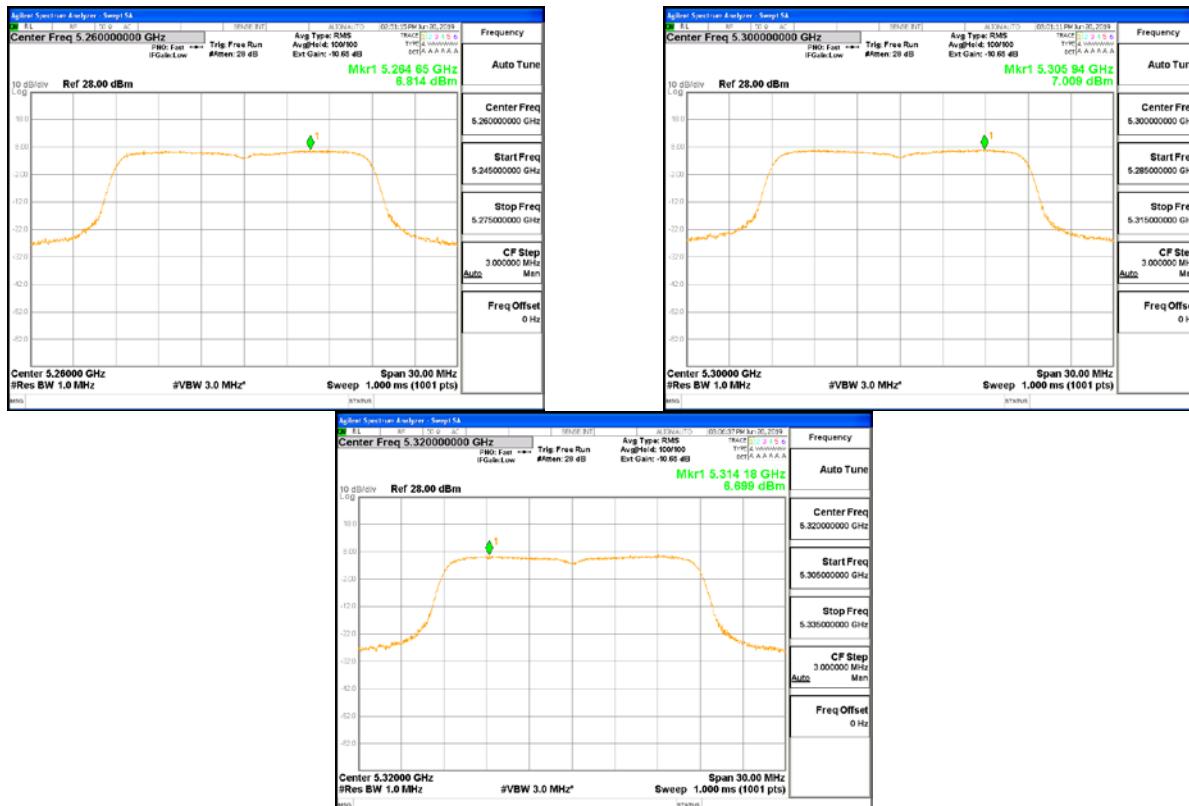
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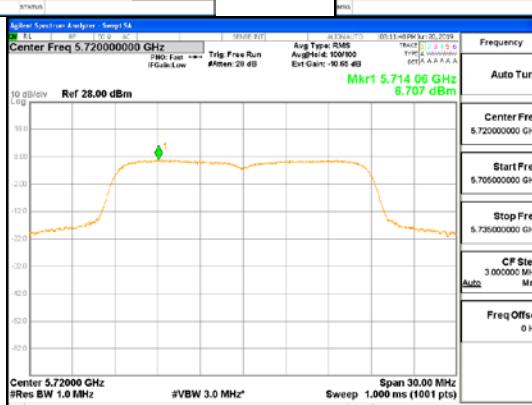
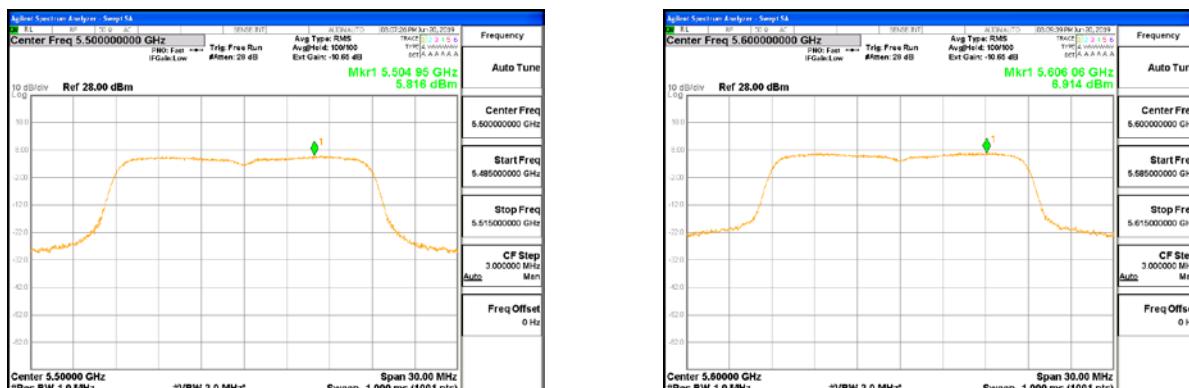
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### SDM Mode\_ANT1\_802.11n\_HT20\_UNII 2A



### SDM Mode\_ANT1\_802.11n\_HT20\_UNII 2C

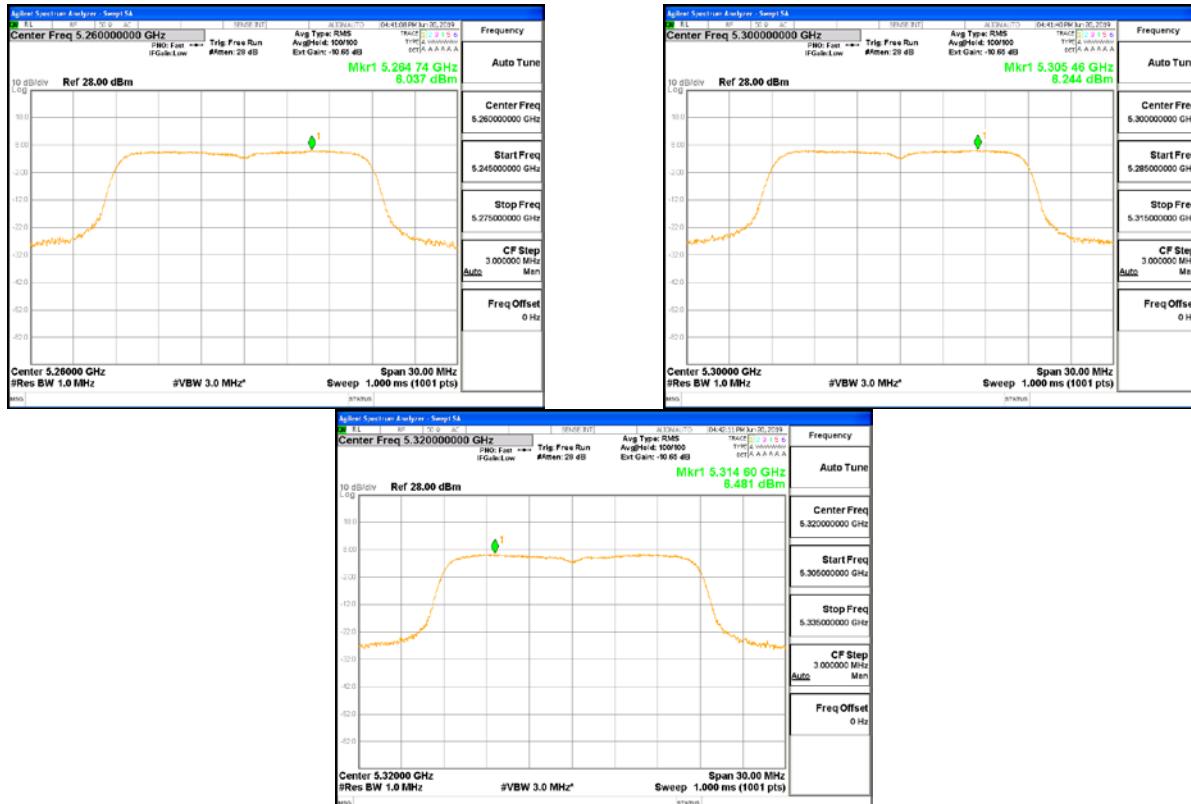


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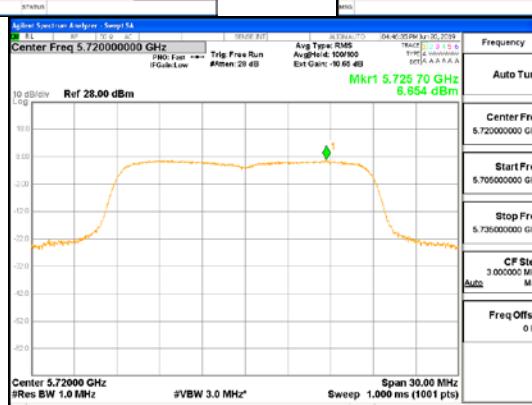
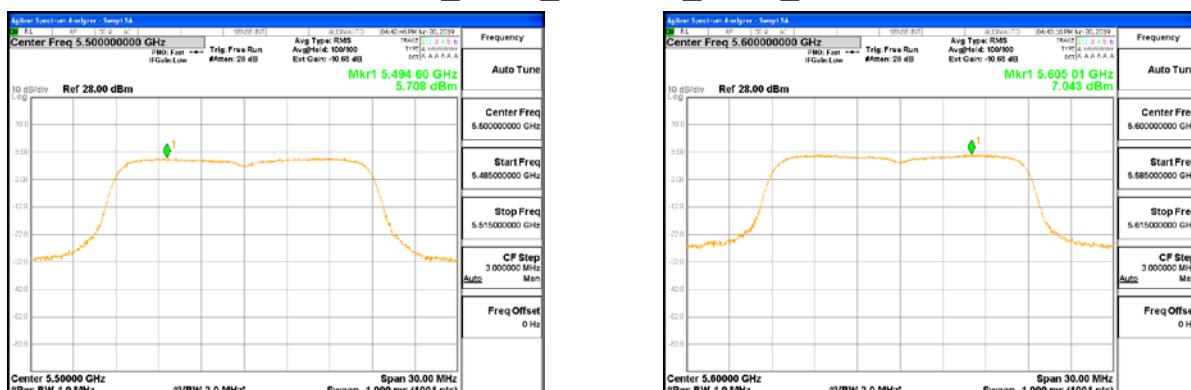
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### SDM Mode\_ANT2\_802.11n\_HT20\_UNII 2A



### SDM Mode\_ANT2\_802.11n\_HT20\_UNII 2C

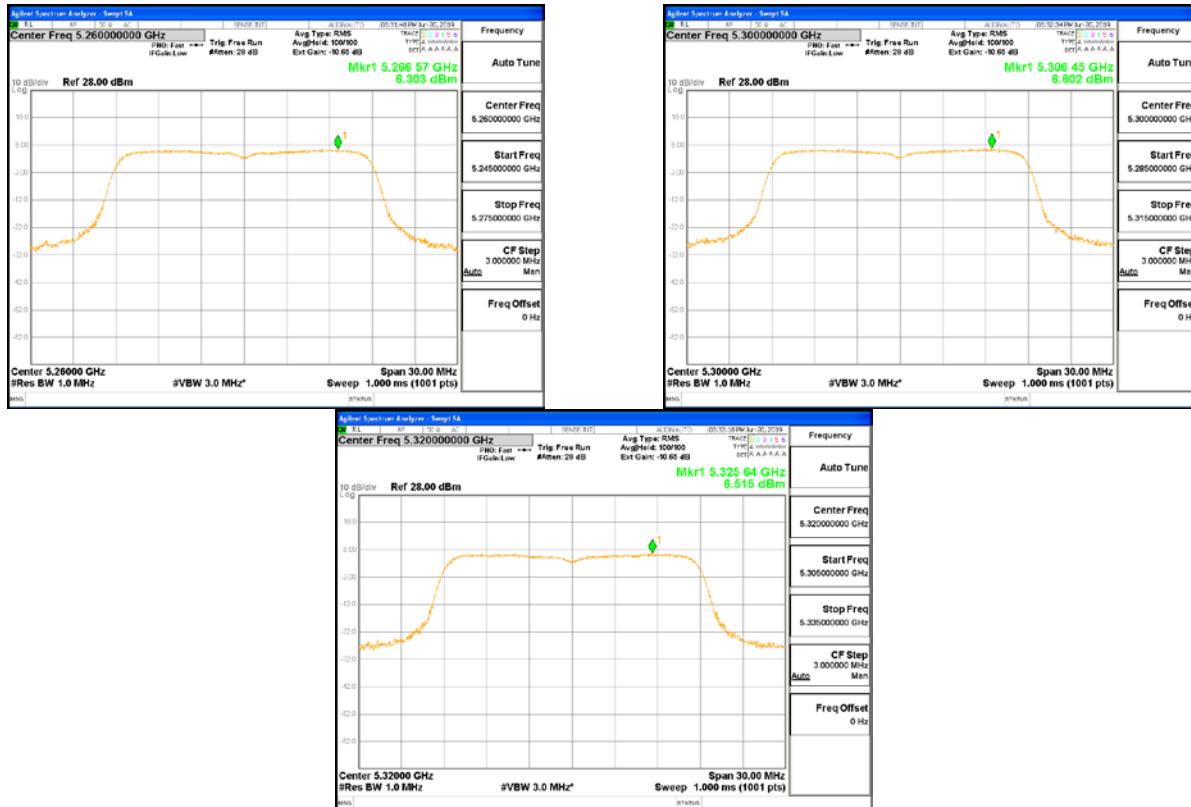


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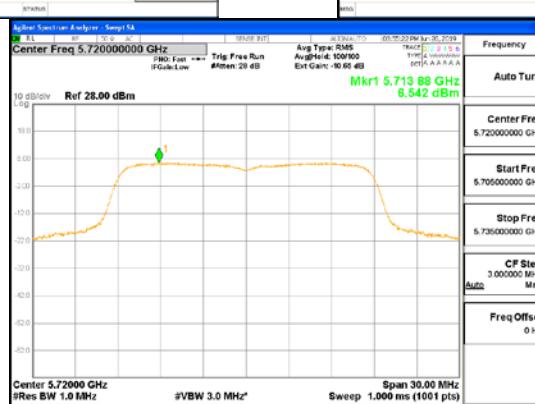
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### SDM Mode\_ANT1\_802.11ac\_VHT20\_UNII 2A



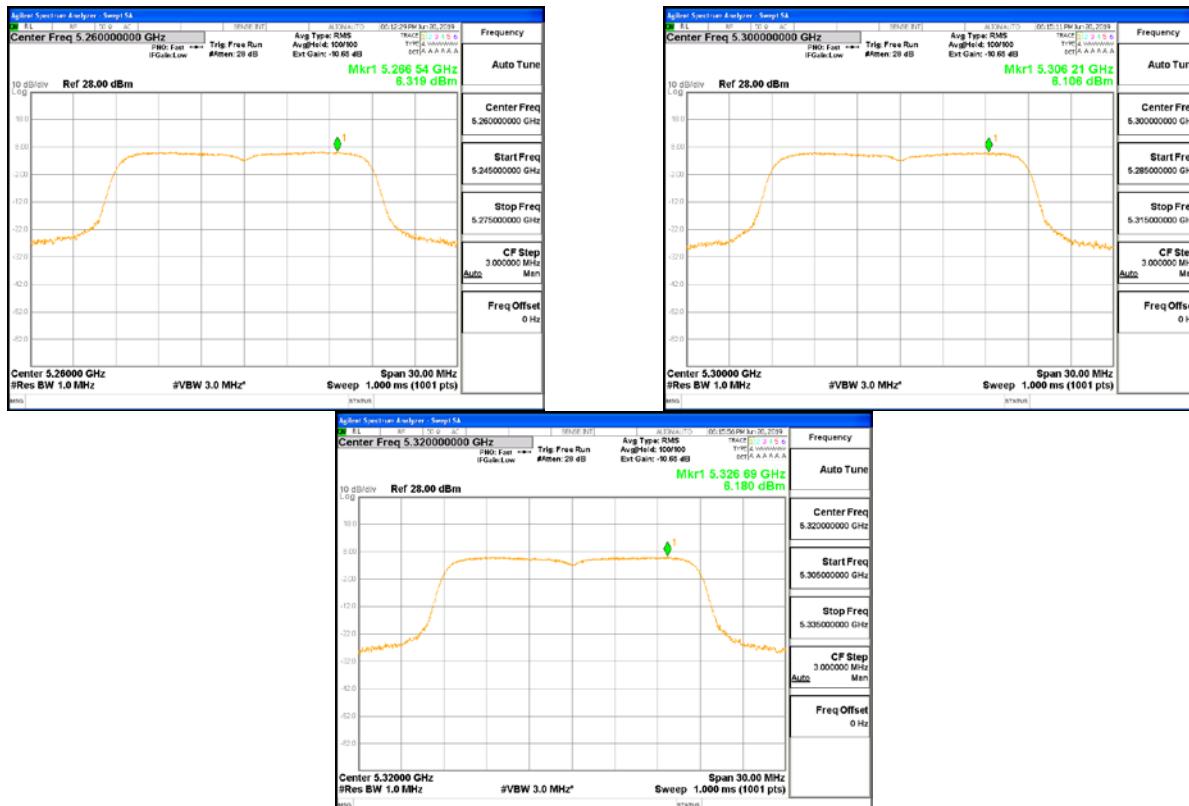
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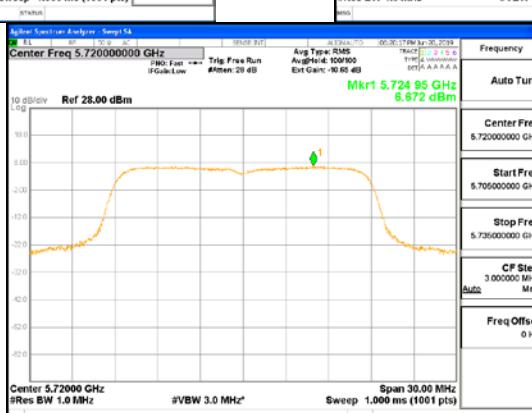
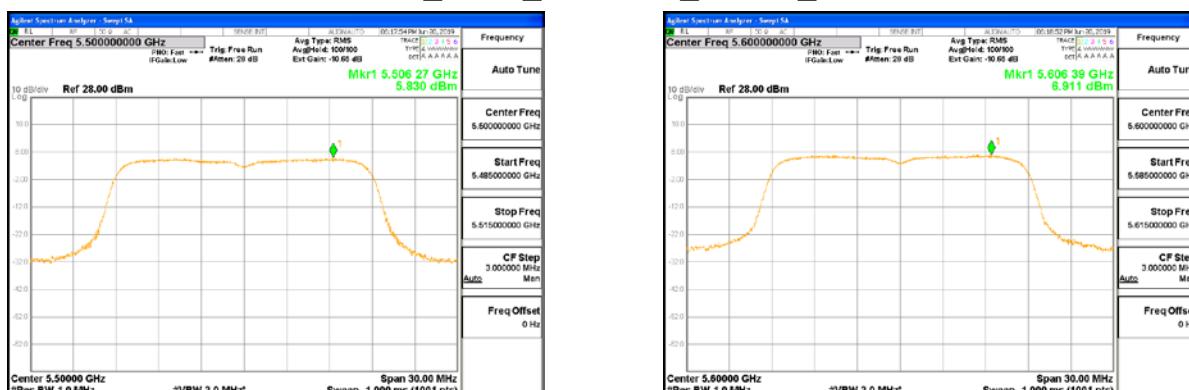
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### SDM Mode\_ANT2\_802.11ac\_VHT20\_UNII 2A



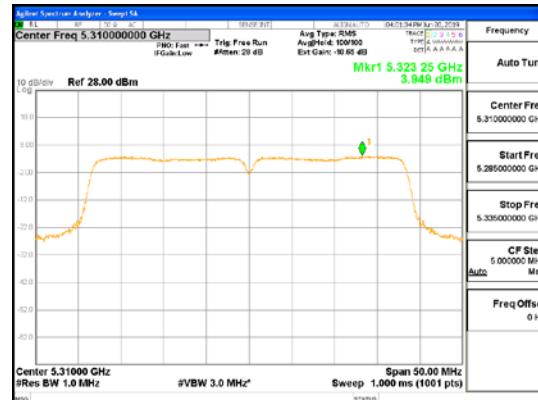
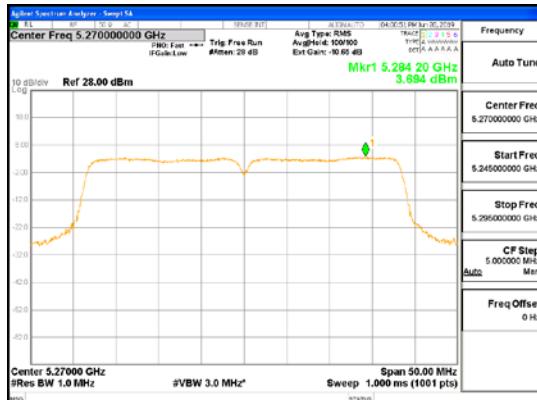
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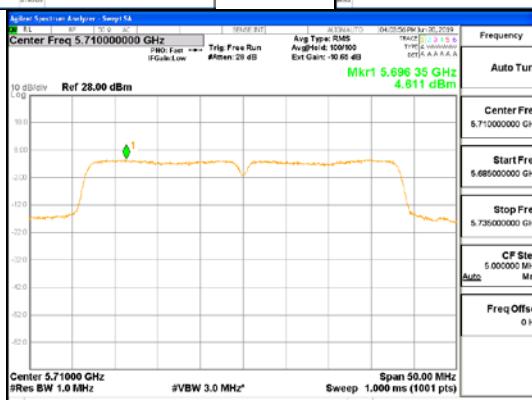
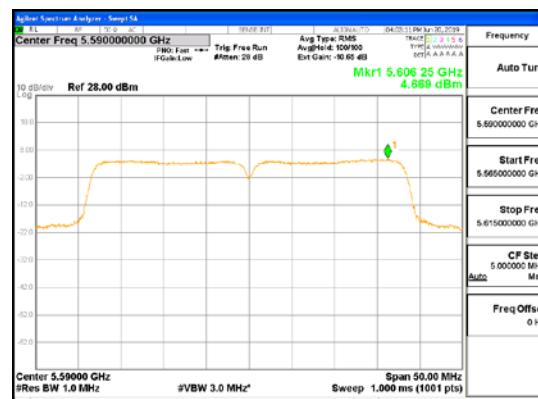
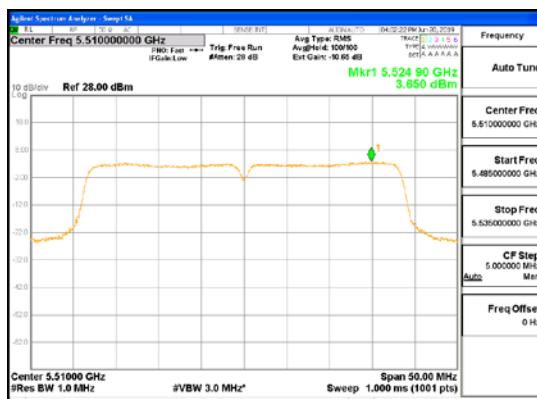
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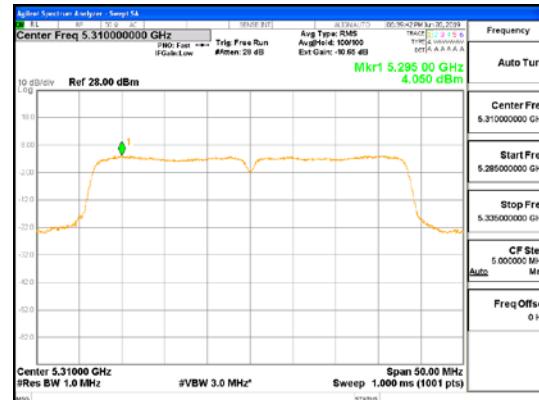
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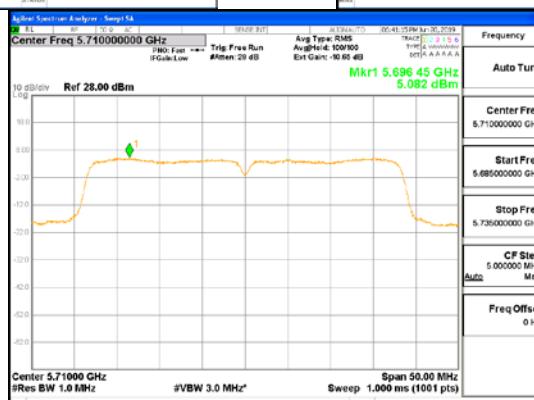
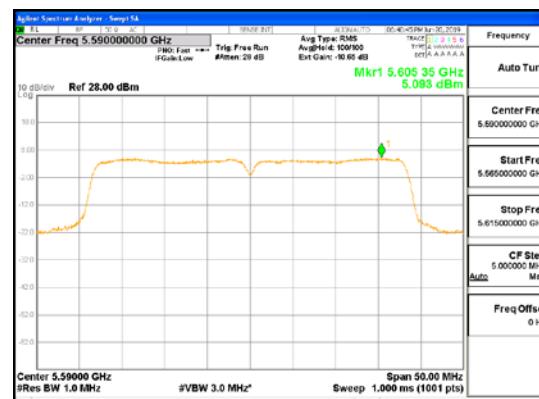
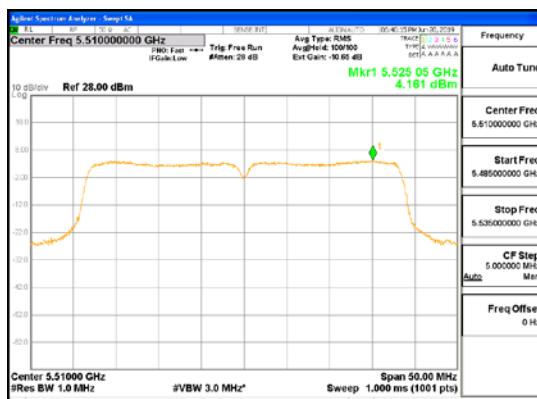
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### SDM Mode\_AN2\_802.11n\_HT40\_UNII\_2A



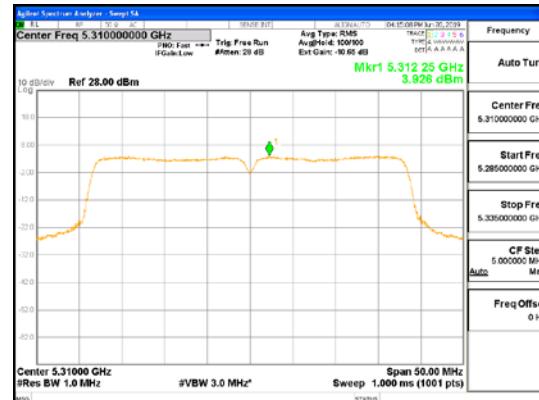
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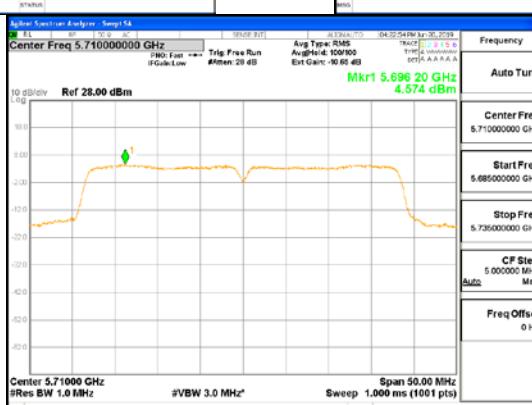
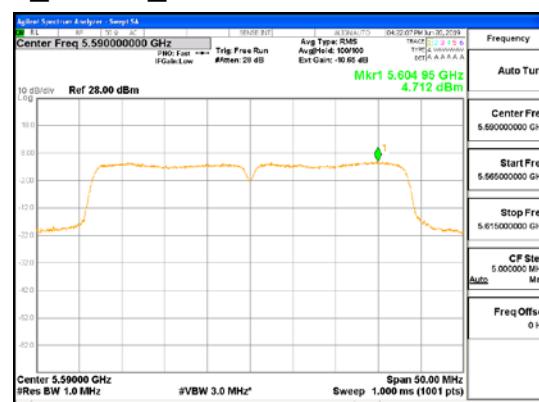
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### SDM Mode\_ANT1\_802.11ac\_VHT40\_UNII 2A



### SDM Mode\_ANT1\_802.11ac\_VHT40\_UNII 2C



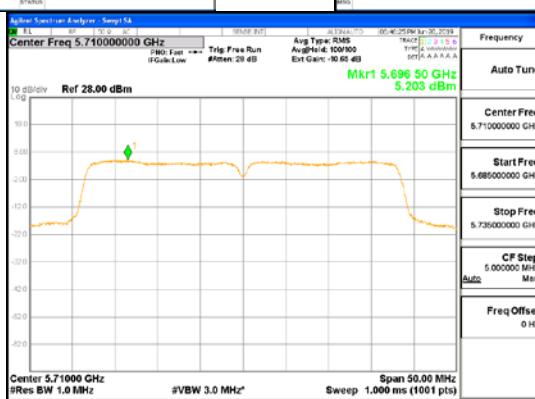
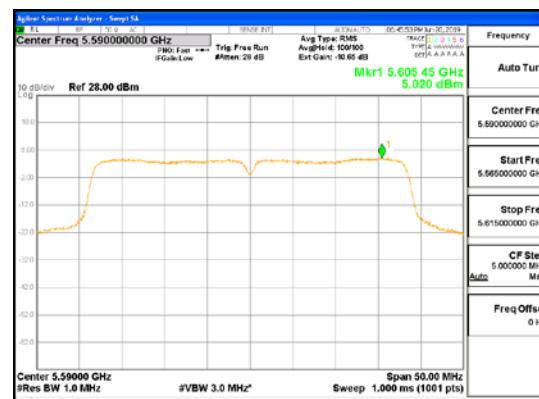
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### SDM Mode\_ANT2\_802.11ac\_VHT40\_UNII 2C