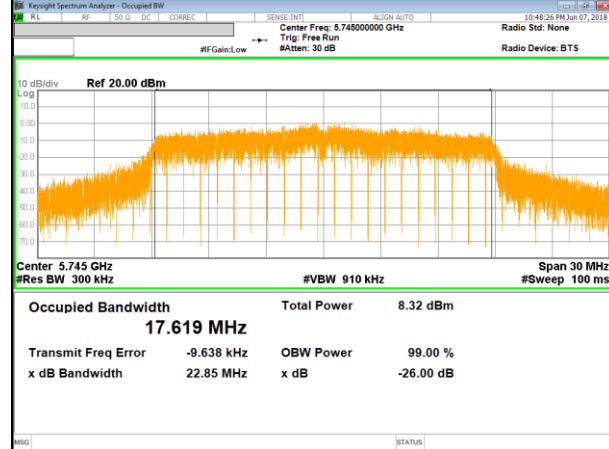
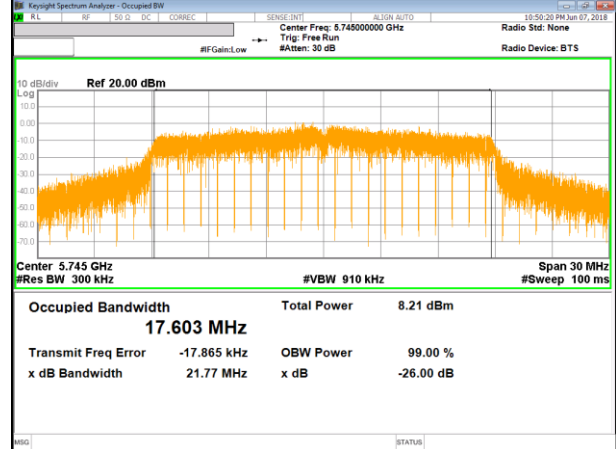


UNII 5.8 GHz IEEE 802.11n HT20 mode

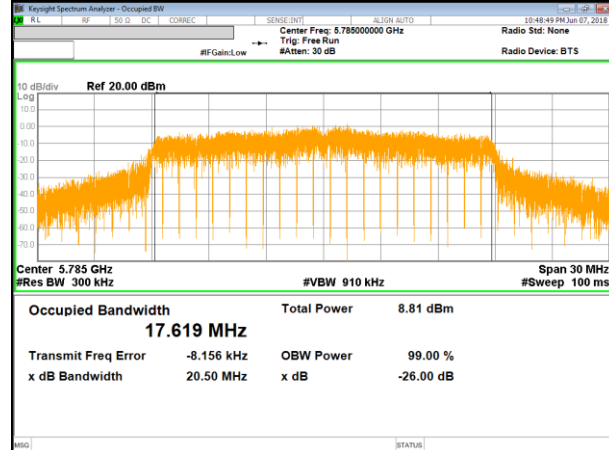
11n HT20 Mode Low Channel Antenna 1



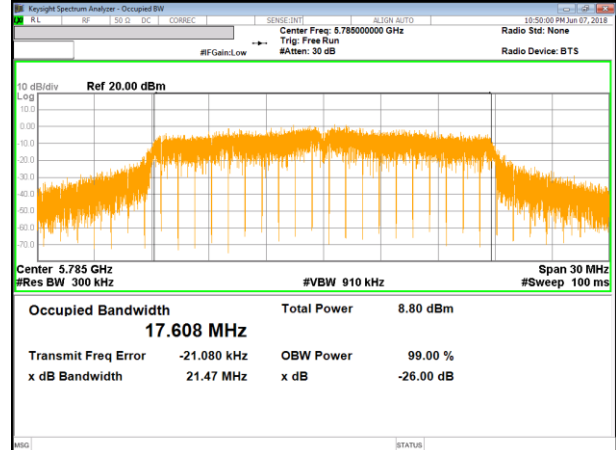
11n HT20 Mode Low Channel Antenna 2



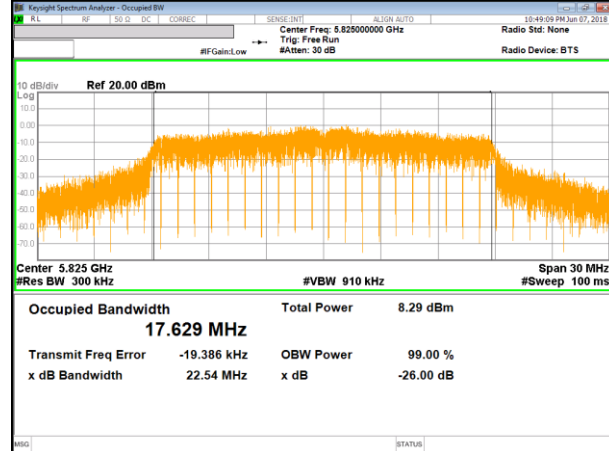
11n HT20 Mode Middle Channel Antenna 1



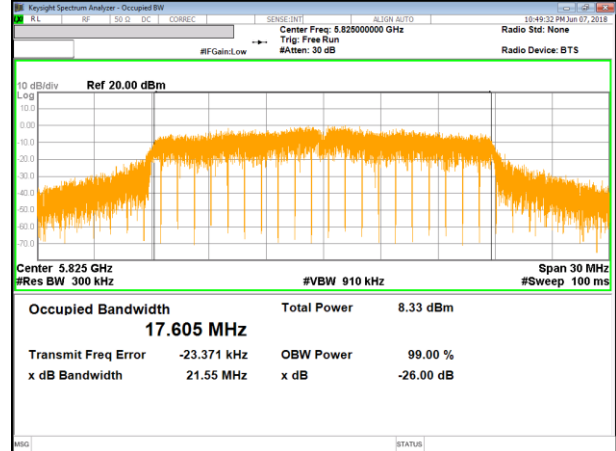
11n HT20 Mode Middle Channel Antenna 2



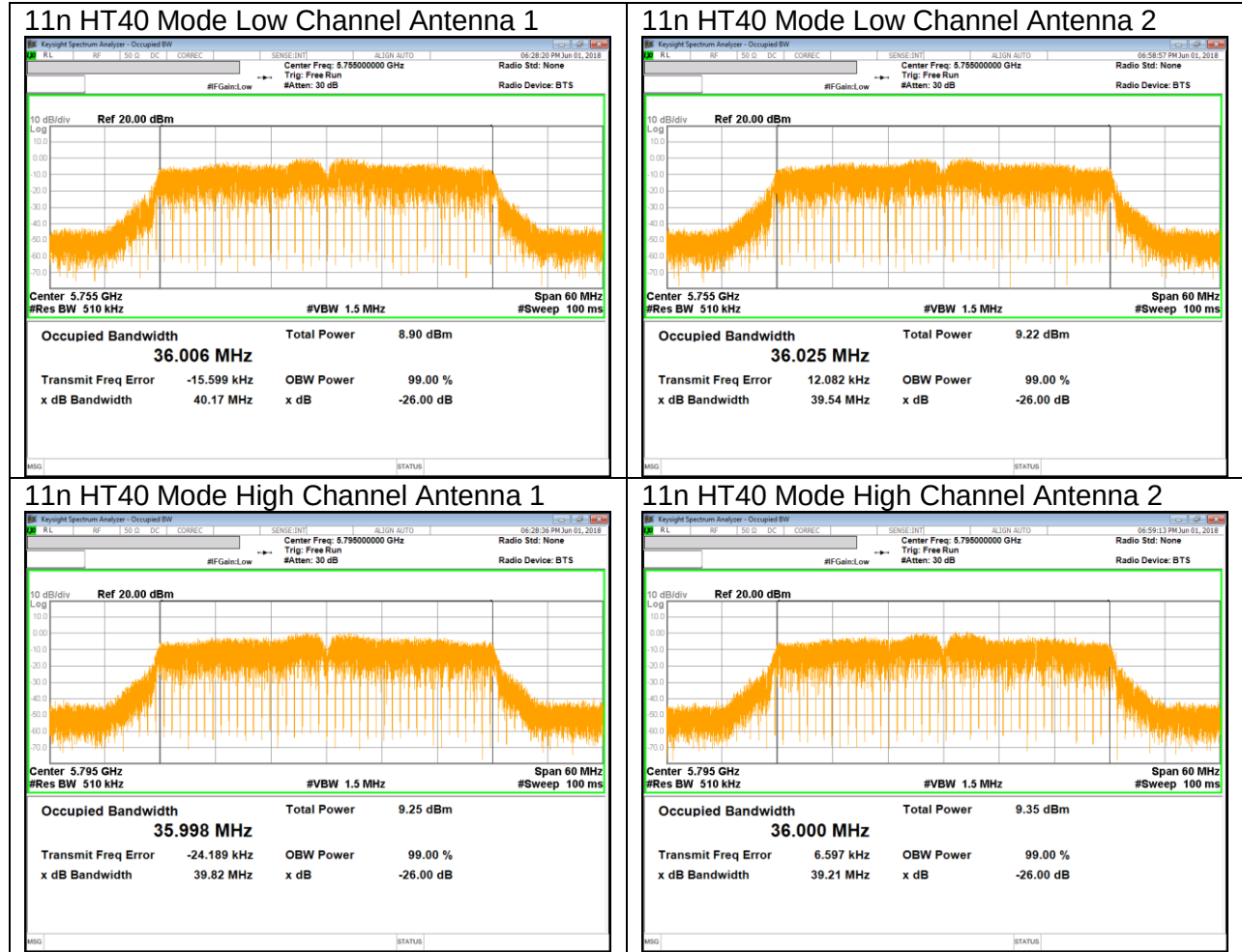
11n HT20 Mode High Channel Antenna 1



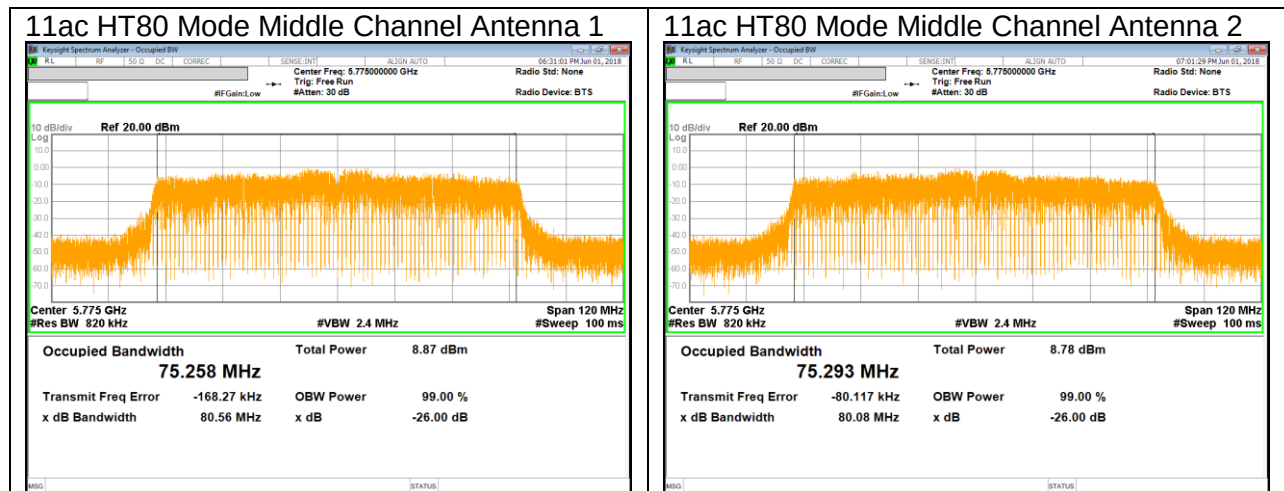
11n HT20 Mode High Channel Antenna 2



UNII 5.8 GHz IEEE 802.11n HT40 mode



UNII 5.8 GHz IEEE 802.11ac VHT80 mode



10. ANTENNA PORT TEST RESULTS

10.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407

The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to 100KHz, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

NOTE

- Calculation for 6dB Bandwidth of UNII-3 Straddle Channel

ex) Fundamental frequency : 5720MHz

- 6dB BW : 16.350MHz
- Starting Frequency of UNII-3 band : 5725MHz
- 6dB Bandwidth of UNII-3 band Portion
 $= (5720 + (16.350 / 2) - 5725) = 3.175 \text{ MHz}$

RESULTS

10.1.1. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Antenna 1	Antenna 2	
Straddle	5720	2.845	1.440	0.5
Low	5745	15.090	14.430	0.5
Mid	5785	12.140	10.140	0.5
High	5825	14.960	12.500	0.5
Worst		3.630		

10.1.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Antenna 1	Antenna 2	
Straddle	5720	3.645	0.130	0.5
Low	5745	16.650	13.200	0.5
Mid	5785	12.500	10.710	0.5
High	5825	13.810	13.740	0.5
Worst		3.630		

10.1.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Antenna 1	Antenna 2	
Straddle	5710	0.645	1.900	0.5
Low	5755	29.990	25.080	0.5
High	5795	31.270	33.770	0.5
Worst		2.840		

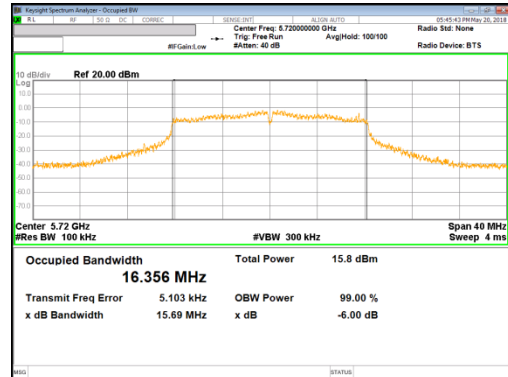
10.1.4. 802.11n VHT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Antenna 1	Antenna 2	
Straddle	5690	0.645	0.035	0.5
Middle	5775	71.280	70.060	0.5
Worst		2.560		

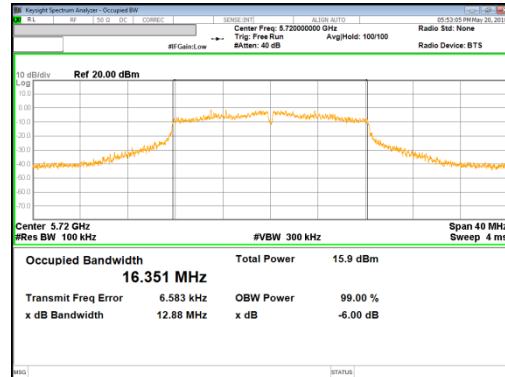
10.1.5. 6 dB BANDWIDTH PLOTS

IEEE 802.11a mode

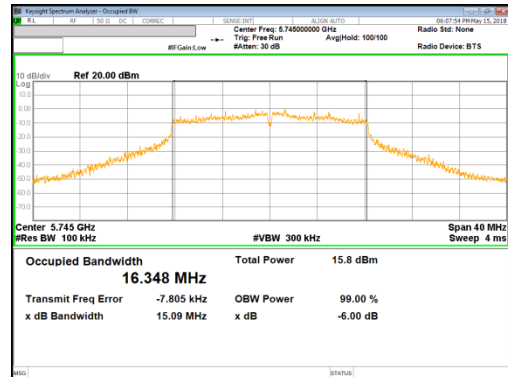
11a Mode Straddle Channel Antenna 1



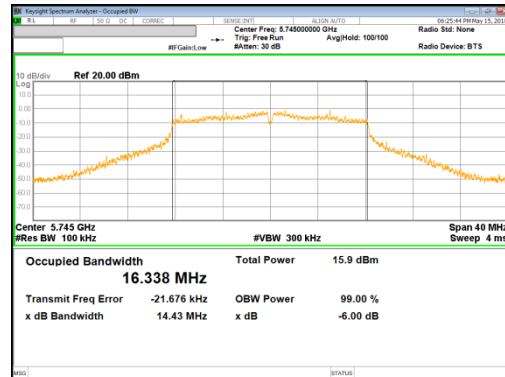
11a Mode Straddle Channel Antenna 2



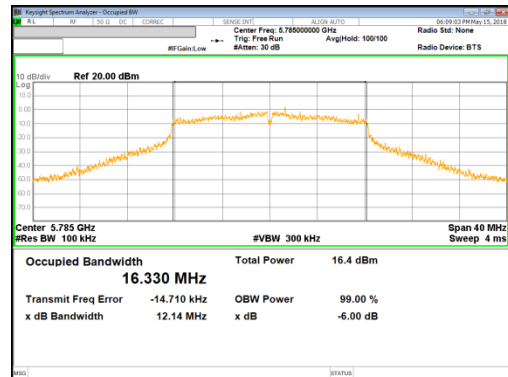
11a Mode Low Channel Antenna 1



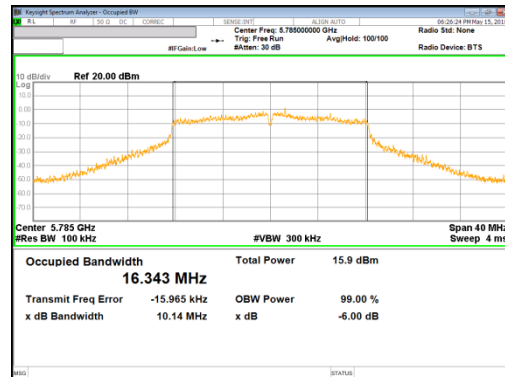
11a Mode Low Channel Antenna 2



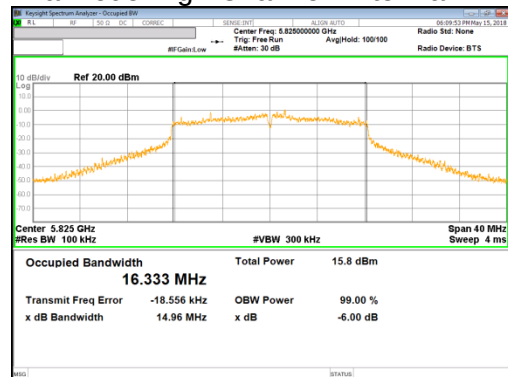
11a Mode Middle Channel Antenna 1



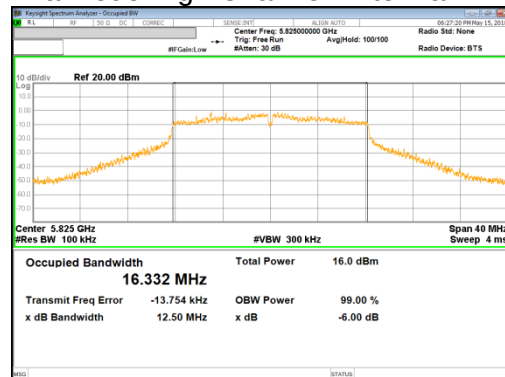
11a Mode Middle Channel Antenna 2



11a Mode High Channel Antenna 1

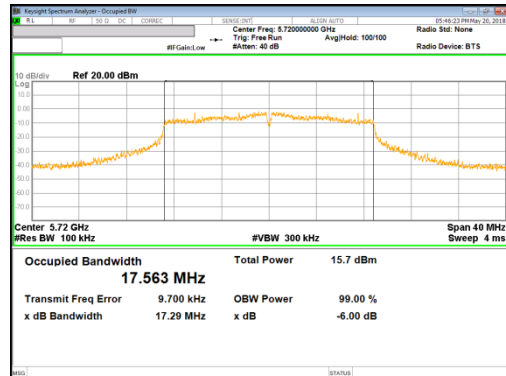


11a Mode High Channel Antenna 2

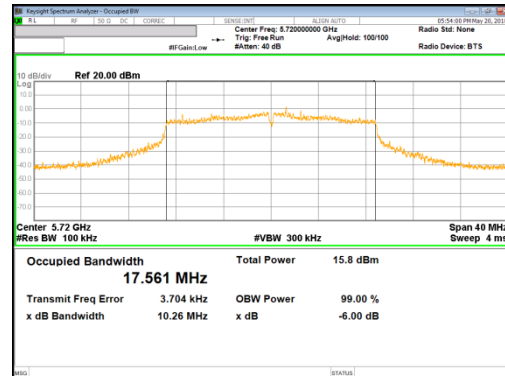


IEEE 802.11n HT20 mode

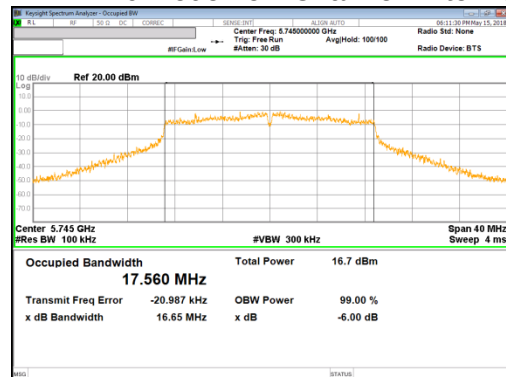
11n HT20 Mode Straddle Channel Antenna 1



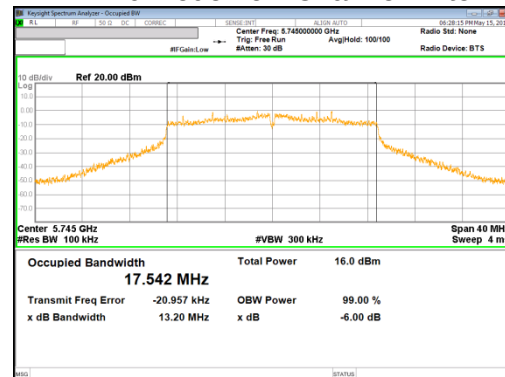
11n HT20 Mode Straddle Channel Antenna 2



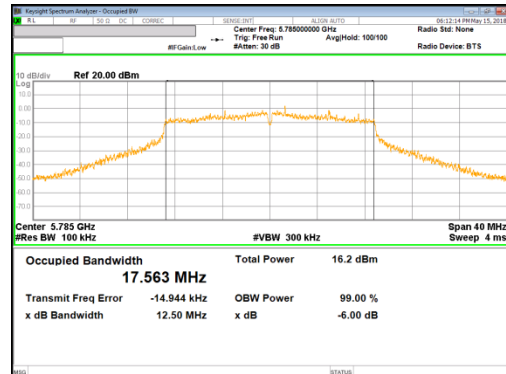
11n HT20 Mode Low Channel Antenna 1



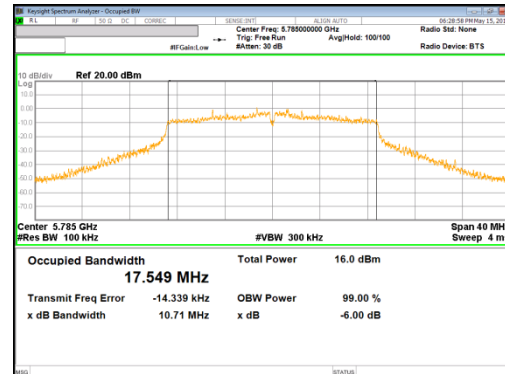
11n HT20 Mode Low Channel Antenna 2



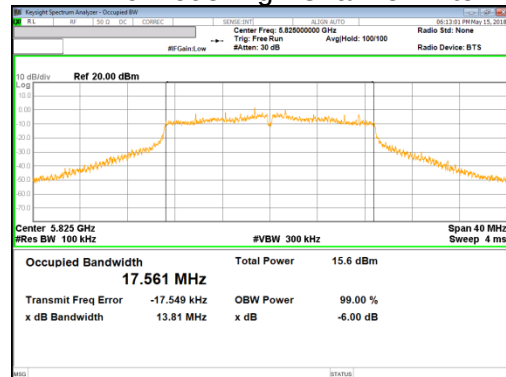
11n HT20 Mode Middle Channel Antenna 1



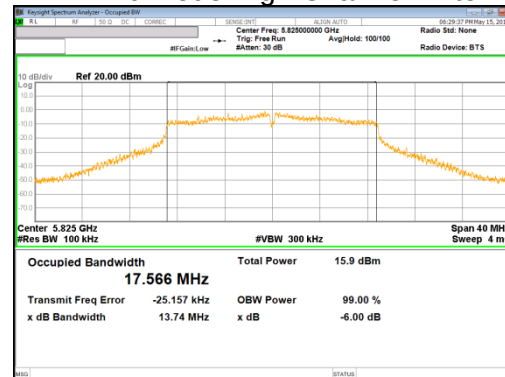
11n HT20 Mode Middle Channel Antenna 2



11n HT20 Mode High Channel Antenna 1

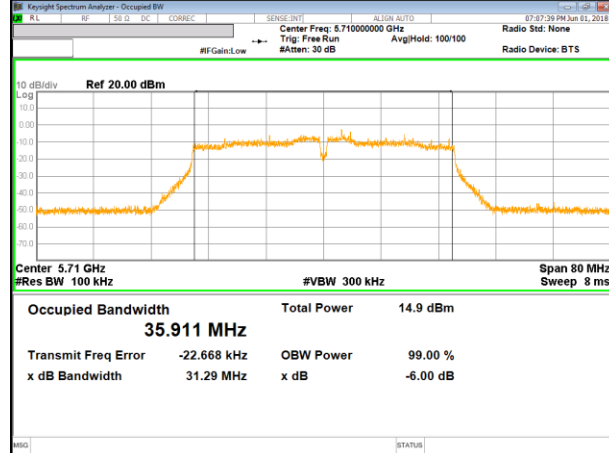


11n HT20 Mode High Channel Antenna 2

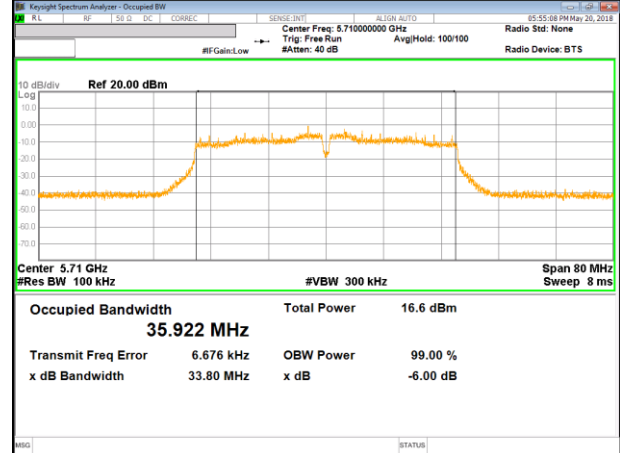


IEEE 802.11n HT40 mode

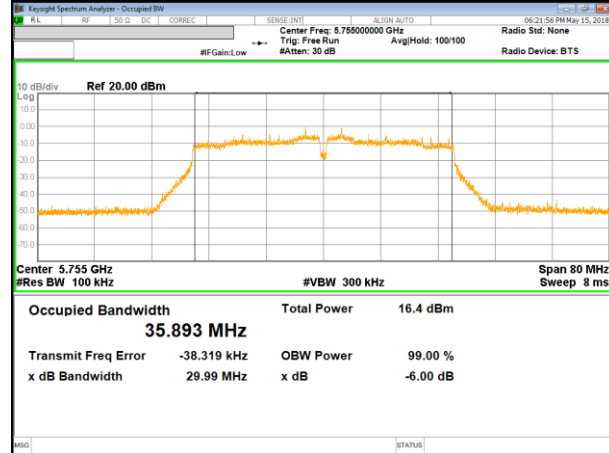
11n HT40 Mode Straddle Channel Antenna 1



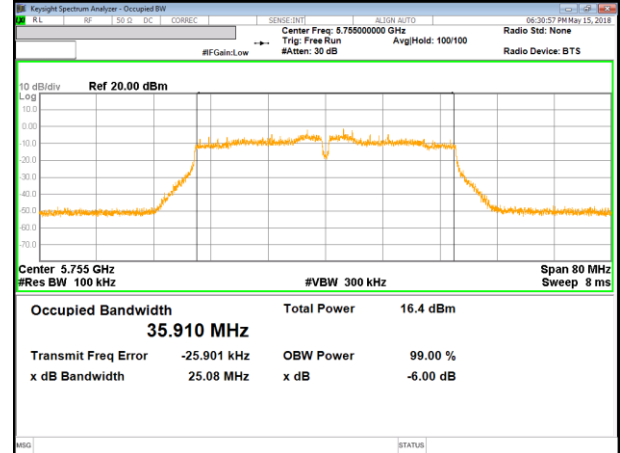
11n HT40 Mode Straddle Channel Antenna 2



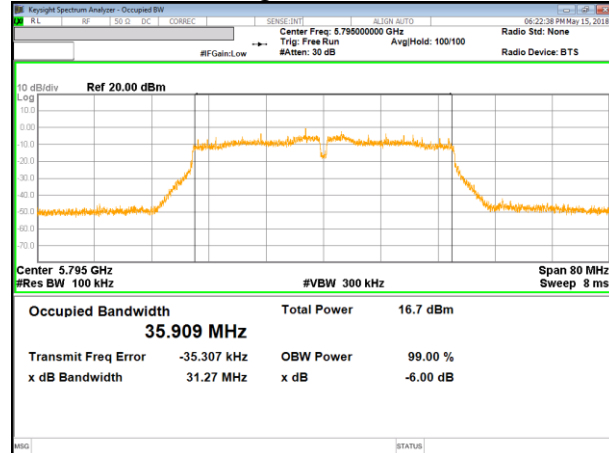
11n HT40 Mode Low Channel Antenna 1



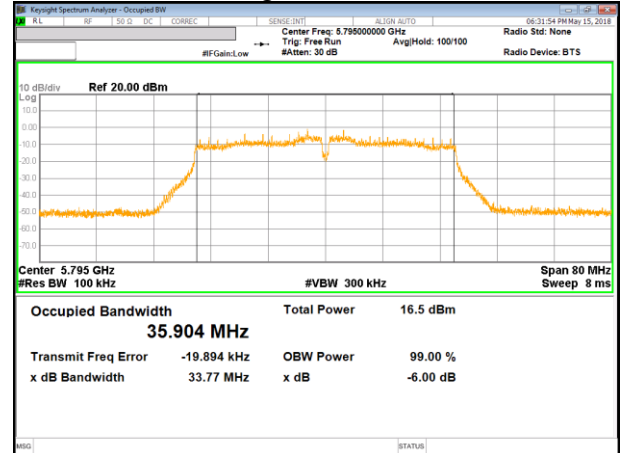
11n HT40 Mode Low Channel Antenna 2



11n HT40 Mode High Channel Antenna 1

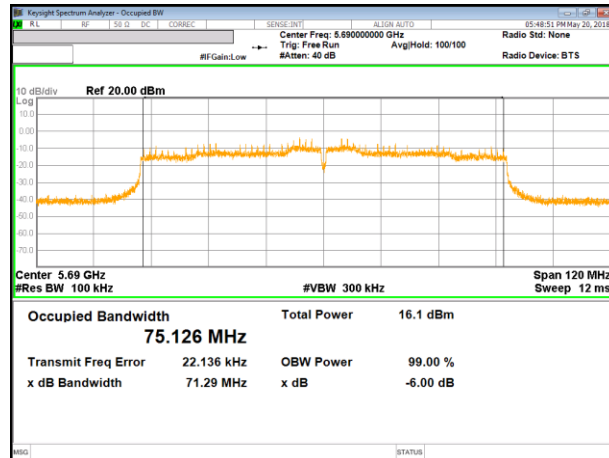


11n HT40 Mode High Channel Antenna 2

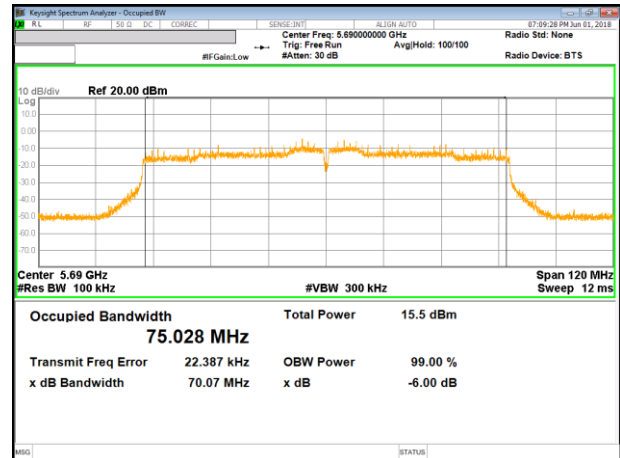


IEEE 802.11ac VHT80 mode

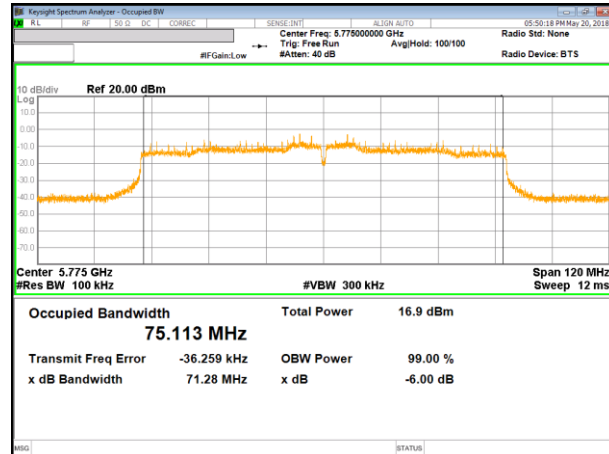
11ac VHT80 Mode Straddle Channel Antenna1



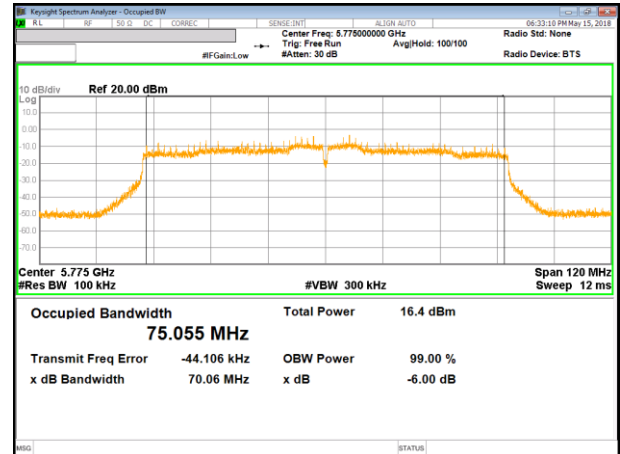
11ac VHT80 Mode Straddle Channel Antenna2



11ac VHT80 Mode Middle Channel Antenna 1



11ac VHT80 Mode Middle Channel Antenna 2



10.2. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1) (2) (3)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

TEST PROCEDURE

KDB 789033 Method PM is used for output power. Duty cycle correction factor is already added to the average output power results.

KDB 789033 Method SA-2 is used for only power of straddle Ch. and PPSD. RBW set to 1MHz(500kHz for the band 5.725-5.85 GHz, the VBW $\geq 3 \times$ RBW, RMS detector and trace averaging). Band power function used for power and peak marker value of the spectrum is used for PSD. Add duty cycle correction factor.

DIRECTIONAL ANTENNA GAIN

For OUTPUT POWER and PSD: The TX chains are correlated and the antenna gains are unequal among the chains. The directional gain is:

Frequency Band [MHz]	Antenna1 Gain [dBi]	Antenna2 Gain [dBi]	Correlated Chains Directional Gain [dBi]
5150 - 5250	-3.62	-5.37	-1.44
5250 - 5350	-3.62	-5.37	-1.44
5470 - 5725	-3.62	-5.37	-1.44
5725 - 5850	-3.62	-5.37	-1.44

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5180	20.91	16.41	-1.44
Mid	5200	20.24	16.40	-1.44
High	5240	20.96	16.38	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5180	24.00	24.00	11.00
Mid	5200	24.00	24.00	11.00
High	5240	24.00	24.00	11.00

Duty Cycle CF [dB]	0.12	Included in Calculations of Corr'd Power & PPSPD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	8.97	9.14	12.19	24.00	-11.81
Mid	5200	9.38	9.29	12.47	24.00	-11.53
High	5240	9.75	9.11	12.57	24.00	-11.43

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	-0.12	0.49	3.33	11.00	-7.67
Mid	5200	0.46	0.98	3.86	11.00	-7.14
High	5240	0.81	0.58	3.83	11.00	-7.17

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5180	20.27	17.61	-1.44
Mid	5200	21.10	17.62	-1.44
High	5240	20.55	17.61	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5180	24.00	24.00	11.00
Mid	5200	24.00	24.00	11.00
High	5240	24.00	24.00	11.00

Duty Cycle CF [dB]	0.14	Included in Calculations of Corr'd Power & PPCD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	8.74	9.04	12.04	24.00	-11.96
Mid	5200	9.16	9.20	12.33	24.00	-11.67
High	5240	9.52	8.97	12.40	24.00	-11.60

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	-0.07	-0.03	3.10	11.00	-7.90
Mid	5200	0.54	0.40	3.62	11.00	-7.38
High	5240	0.68	0.26	3.62	11.00	-7.38

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5190	39.77	30.00	-1.44
High	5230	40.03	35.95	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5190	24.00	24.00	11.00
High	5230	24.00	24.00	11.00

Duty Cycle CF [dB]	0.24	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5190	9.35	9.50	12.68	24.00	-11.32
High	5230	9.62	9.48	12.80	24.00	-11.20

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5190	-1.97	-1.84	1.35	11.00	-9.65
High	5230	-1.88	-2.18	1.23	11.00	-9.77

10.2.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Middle	5210	81.77	75.37	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Middle	5210	24.00	24.00	11.00

Duty Cycle CF [dB]	0.53	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Middle	5210	9.06	9.05	12.60	24.00	-11.40

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Middle	5210	-5.13	-5.24	-1.64	11.00	-12.64

10.2.5. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5260	20.55	16.38	-1.44
Mid	5300	21.00	16.38	-1.44
High	5320	21.27	16.36	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5260	24.00	24.00	11.00
Mid	5300	24.00	24.00	11.00
High	5320	24.00	24.00	11.00

Duty Cycle CF [dB]	0.12	Included in Calculations of Corr'd Power & PPCD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	9.78	9.18	12.62	24.00	-11.38
Mid	5300	9.77	8.92	12.50	24.00	-11.50
High	5320	9.21	9.28	12.38	24.00	-11.62

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	0.73	0.43	3.72	11.00	-7.28
Mid	5300	1.13	0.33	3.88	11.00	-7.12
High	5320	0.26	0.70	3.62	11.00	-7.38

10.2.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5260	21.21	17.62	-1.44
Mid	5300	21.10	17.58	-1.44
High	5320	21.88	17.60	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5260	24.00	24.00	11.00
Mid	5300	24.00	24.00	11.00
High	5320	24.00	24.00	11.00

Duty Cycle CF [dB]	0.14	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	9.55	9.02	12.44	24.00	-11.56
Mid	5300	9.54	8.87	12.37	24.00	-11.63
High	5320	8.98	9.11	12.20	24.00	-11.80

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	0.54	0.22	3.53	11.00	-7.47
Mid	5300	0.79	0.12	3.61	11.00	-7.39
High	5320	0.18	0.21	3.34	11.00	-7.66

10.2.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency	Min 26 dB BW	Min 99% BW	Directional Gain for Power
	[MHz]	[MHz]	[MHz]	[dBi]
Low	5270	39.66	35.95	-1.44
High	5310	39.65	35.97	-1.44

Limits

Channel	Frequency	FCC Power Limit	Power Limit	FCC PPSD Limit
	[MHz]	[dBm]	[dBm]	[dBm]
Low	5270	24.00	24.00	11.00
High	5310	24.00	24.00	11.00

Duty Cycle CF [dB]	0.24	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency	Antenna 1 Meas Power	Antenna 2 Meas Power	Total Corr'd Power	Power Limit	Power Margin
	[MHz]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]
Low	5270	8.81	9.30	12.31	24.00	-11.69
High	5310	8.66	9.21	12.19	24.00	-11.81

PPSD Results

Channel	Frequency	Antenna 1 Meas PPSD	Antenna 2 Meas PPSD	Total Corr'd PPSD	PPSD Limit	PPSD Margin
	[MHz]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]
Low	5270	-2.97	-2.52	0.51	11.00	-10.49
High	5310	-3.18	-2.61	0.37	11.00	-10.63

10.2.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Middle	5290	81.67	75.25	-1.44

Limits

Channel	Frequency	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Middle	5290	24.00	24.00	11.00

Duty Cycle CF [dB]	0.53	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Middle	5290	8.46	8.89	12.22	24.00	-11.78

PPSD Results

Channel	Frequency	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Middle	5290	-6.09	-5.61	-2.30	11.00	-13.30

10.2.9. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5500	20.30	16.41	-1.44
Mid	5580	20.89	16.39	-1.44
High	5700	21.24	16.37	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5500	24.00	24.00	11.00
Mid	5580	24.00	24.00	11.00
High	5700	24.00	24.00	11.00

Duty Cycle CF [dB]	0.12	Included in Calculations of Corr'd Power & PPCD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	9.28	9.28	12.41	24.00	-11.59
Mid	5580	9.15	9.30	12.36	24.00	-11.64
High	5700	8.59	9.13	12.00	24.00	-12.00

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	1.08	1.00	4.17	11.00	-6.83
Mid	5580	0.77	0.84	3.94	11.00	-7.06
High	5700	0.11	0.90	3.66	11.00	-7.34

10.2.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5500	21.50	17.62	-1.44
Mid	5580	21.73	17.59	-1.44
High	5700	21.64	17.61	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5500	24.00	24.00	11.00
Mid	5580	24.00	24.00	11.00
High	5700	24.00	24.00	11.00

Duty Cycle CF [dB]	0.14	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	9.06	9.14	12.25	24.00	-11.75
Mid	5580	8.92	9.15	12.19	24.00	-11.81
High	5700	8.36	8.98	11.83	24.00	-12.17

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	0.42	0.23	3.47	11.00	-7.53
Mid	5580	0.81	0.59	3.85	11.00	-7.15
High	5700	-0.16	0.65	3.41	11.00	-7.59

10.2.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5510	40.39	36.02	-1.44
Mid	5590	40.21	36.06	-1.44
High	5670	40.12	36.04	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5510	24.00	24.00	11.00
Mid	5590	24.00	24.00	11.00
High	5670	24.00	24.00	11.00

Duty Cycle CF [dB]	0.24	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5510	9.68	9.44	12.81	24.00	-11.19
Mid	5590	9.23	9.47	12.60	24.00	-11.40
High	5670	8.65	9.12	12.14	24.00	-11.86

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm]	Antenna 2 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5510	-2.46	-3.04	0.52	11.00	-10.48
Mid	5590	-2.34	-2.34	0.92	11.00	-10.08
High	5670	-2.43	-1.87	1.11	11.00	-9.89

10.2.12. 802.11ac VHT80 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency	Min 26 dB BW	Min 99% BW	Directional Gain for Power
	[MHz]	[MHz]	[MHz]	[dBi]
Low	5530	81.85	75.19	-1.44
High	5610	81.79	75.12	-1.44

Limits

Channel	Frequency	FCC Power Limit	Power Limit	FCC PPSD Limit
	[MHz]	[dBm]	[dBm]	[dBm]
Low	5530	24.00	24.00	11.00
High	5610	24.00	24.00	11.00

Duty Cycle CF [dB]	0.53	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency	Antenna 1 Meas Power	Antenna 2 Meas Power	Total Corr'd Power	Power Limit	Power Margin
	[MHz]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]
Low	5530	9.31	8.86	12.63	24.00	-11.37
High	5610	8.56	8.84	12.24	24.00	-11.76

PPSD Results

Channel	Frequency	Antenna 1 Meas PPSD	Antenna 2 Meas PPSD	Total Corr'd PPSD	PPSD Limit	PPSD Margin
	[MHz]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]
Low	5530	-5.05	-5.77	-1.85	11.00	-12.85
High	5610	-5.80	-5.25	-1.97	11.00	-12.97

10.2.13. 802.11a MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5745	20.79	16.39	-1.44
Mid	5785	21.70	16.41	-1.44
High	5825	21.79	16.39	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5745	30.00	30.00	30.00
Mid	5785	30.00	30.00	30.00
High	5825	30.00	30.00	30.00

Duty Cycle CF [dB]	0.12	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	8.58	9.21	12.04	30.00	-17.96
Mid	5785	9.32	9.44	12.51	30.00	-17.49
High	5825	8.99	9.27	12.26	30.00	-17.74

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm/500kHz]	Antenna 2 Meas PPSD [dBm/500kHz]	Total Corr'd PPSD [dBm/500kHz]	PPSD Limit [dBm/500kHz]	PPSD Margin [dB]
Low	5745	-2.80	-1.69	0.93	30.00	-29.07
Mid	5785	-1.60	-1.54	1.56	30.00	-28.44
High	5825	-2.13	-1.73	1.21	30.00	-28.79

10.2.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5745	21.66	17.62	-1.44
Mid	5785	21.86	17.62	-1.44
High	5825	20.70	17.63	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5745	30.00	30.00	30.00
Mid	5785	30.00	30.00	30.00
High	5825	30.00	30.00	30.00

Duty Cycle CF [dB]	0.14	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	9.79	9.07	12.60	30.00	-17.40
Mid	5785	9.10	9.28	12.34	30.00	-17.66
High	5825	8.77	9.12	12.10	30.00	-17.90

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm/500kHz]	Antenna 2 Meas PPSD [dBm/500kHz]	Total Corr'd PPSD [dBm/500kHz]	PPSD Limit [dBm/500kHz]	PPSD Margin [dB]
Low	5745	-2.77	-1.74	0.93	30.00	-29.07
Mid	5785	-1.78	-1.78	1.37	30.00	-28.63
High	5825	-2.49	-2.22	0.80	30.00	-29.20

10.2.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Low	5755	39.69	36.03	-1.44
High	5795	40.42	36.00	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5755	30.00	30.00	30.00
High	5795	30.00	30.00	30.00

Duty Cycle CF [dB]	0.24	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5755	8.86	9.38	12.38	30.00	-17.62
High	5795	9.45	9.62	12.79	30.00	-17.21

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm/500kHz]	Antenna 2 Meas PPSD [dBm/500kHz]	Total Corr'd PPSD [dBm/500kHz]	PPSD Limit [dBm/500kHz]	PPSD Margin [dB]
Low	5755	-5.12	-4.46	-1.52	30.00	-31.52
High	5795	-4.52	-4.38	-1.20	30.00	-31.20

10.2.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]
Middle	5775	81.23	75.29	-1.44

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Middle	5775	30.00	30.00	30.00

Duty Cycle CF [dB]	0.53	Included in Calculations of Corr'd Power & PPCD
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Output Power Results

Channel	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Middle	5775	9.17	8.98	12.62	30.00	-17.38

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm/500kHz]	Antenna 2 Meas PPSD [dBm/500kHz]	Total Corr'd PPSD [dBm/500kHz]	PPSD Limit [dBm/500kHz]	PPSD Margin [dB]
Middle	5775	-7.82	-7.70	-4.22	30.00	-34.22

10.2.17. 802.11a MODE IN THE STRADDLE CHANNEL

Bandwidth and Antenna Gain

Portion	Frequency [MHz]	Antenna 1 26 dB BW [MHz]	Antenna 2 26 dB BW [MHz]	Antenna 1 99% BW [MHz]	Antenna 2 99% BW [MHz]	Directional Gain for Power [dBi]
UNII-2C	5720	15.31	15.00	13.19	13.19	-1.44
UNII-3	5720	5.31	5.00	3.19	3.19	-1.44
Whole	5720	20.61	20.00	16.39	16.39	-1.44

Limits

Portion	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
UNII-2C	5720	22.85	22.85	11.00
UNII-3	5720	30.00	30.00	30.00
Whole	5720	24.00	24.00	11.00

Duty Cycle CF [dB]	0.12	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Portion	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5720	7.97	8.44	11.35	22.85	-11.50
UNII-3	5720	-0.07	0.26	3.23	30.00	-26.77
Whole	5720	8.60	9.05	11.97	24.00	-12.03

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm] or [dBm/kHz]	Antenna 2 Meas PPSD [dBm] or [dBm/kHz]	Total Corr'd PPSD [dBm] or [dBm/kHz]	PPSD Limit [dBm] or [dBm/kHz]	PPSD Margin [dB]
UNII-2C	5720	0.41	-0.08	3.31	11.00	-7.69
UNII-3	5720	-5.53	-5.31	-2.28	30.00	-32.28

10.2.18. 802.11n HT20 MODE IN THE STRADDLE CHANNEL

Bandwidth and Antenna Gain

Portion	Frequency [MHz]	Antenna 1 26 dB BW [MHz]	Antenna 2 26 dB BW [MHz]	Antenna 1 99% BW [MHz]	Antenna 2 99% BW [MHz]	Directional Gain for Power [dBi]
UNII-2C	5720	15.44	16.13	13.79	13.81	-1.44
UNII-3	5720	5.44	6.13	3.79	3.81	-1.44
Whole	5720	20.87	22.26	17.59	17.63	-1.44

Limits

Portion	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
UNII-2C	5720	22.89	22.93	11.00
UNII-3	5720	30.00	30.00	30.00
Whole	5720	24.00	24.00	11.00

Duty Cycle CF [dB]	0.14	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Portion	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5720	7.73	8.42	11.23	22.93	-11.70
UNII-3	5720	0.09	0.83	3.62	30.00	-26.38
Whole	5720	8.42	9.12	11.93	24.00	-12.07

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm] or [dBm/kHz]	Antenna 2 Meas PPSD [dBm] or [dBm/kHz]	Total Corr'd PPSD [dBm] or [dBm/kHz]	PPSD Limit [dBm] or [dBm/kHz]	PPSD Margin [dB]
UNII-2C	5720	-0.02	0.00	3.14	11.00	-7.86
UNII-3	5720	-6.02	-5.64	-2.68	30.00	-32.68

10.2.19. 802.11n HT40 MODE IN THE STRADDLE CHANNEL

Bandwidth and Antenna Gain

Portion	Frequency [MHz]	Antenna 1 26 dB BW [MHz]	Antenna 2 26 dB BW [MHz]	Antenna 1 99% BW [MHz]	Antenna 2 99% BW [MHz]	Directional Gain for Power [dBi]
UNII-2C	5710	35.06	34.88	33.01	33.02	-1.44
UNII-3	5710	5.06	4.88	3.01	3.02	-1.44
Whole	5710	40.12	39.76	36.03	36.04	-1.44

Limits

Portion	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
UNII-2C	5710	24.00	24.00	11.00
UNII-3	5710	30.00	30.00	30.00
Whole	5710	24.00	24.00	11.00

Duty Cycle CF [dB]	0.24	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Portion	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5710	8.81	9.16	12.24	24.00	-11.76
UNII-3	5710	-3.69	-3.13	-0.14	30.00	-30.14
Whole	5710	9.04	9.40	12.48	24.00	-11.52

PPSD Results

Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm] or [dBm/kHz]	Antenna 2 Meas PPSD [dBm] or [dBm/kHz]	Total Corr'd PPSD [dBm] or [dBm/kHz]	PPSD Limit [dBm] or [dBm/kHz]	PPSD Margin [dB]
UNII-2C	5710	-2.53	-2.20	0.90	11.00	-10.10
UNII-3	5710	-10.29	-10.03	-6.90	30.00	-36.90

10.2.20. 802.11ac VHT80 MODE IN THE STRADDLE CHANNEL

Bandwidth and Antenna Gain

Portion	Frequency [MHz]	Antenna 1 26 dB BW [MHz]	Antenna 2 26 dB BW [MHz]	Antenna 1 99% BW [MHz]	Antenna 2 99% BW [MHz]	Directional Gain for Power [dBi]
UNII-2C	5690	75.44	75.44	72.64	72.56	-1.44
UNII-3	5690	5.44	5.44	2.64	2.56	-1.44
Whole	5690	80.88	80.88	75.28	75.12	-1.44

Limits

Portion	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
UNII-2C	5690	24.00	24.00	11.00
UNII-3	5690	30.00	30.00	30.00
Whole	5690	24.00	24.00	11.00

Duty Cycle CF [dB]	0.53	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

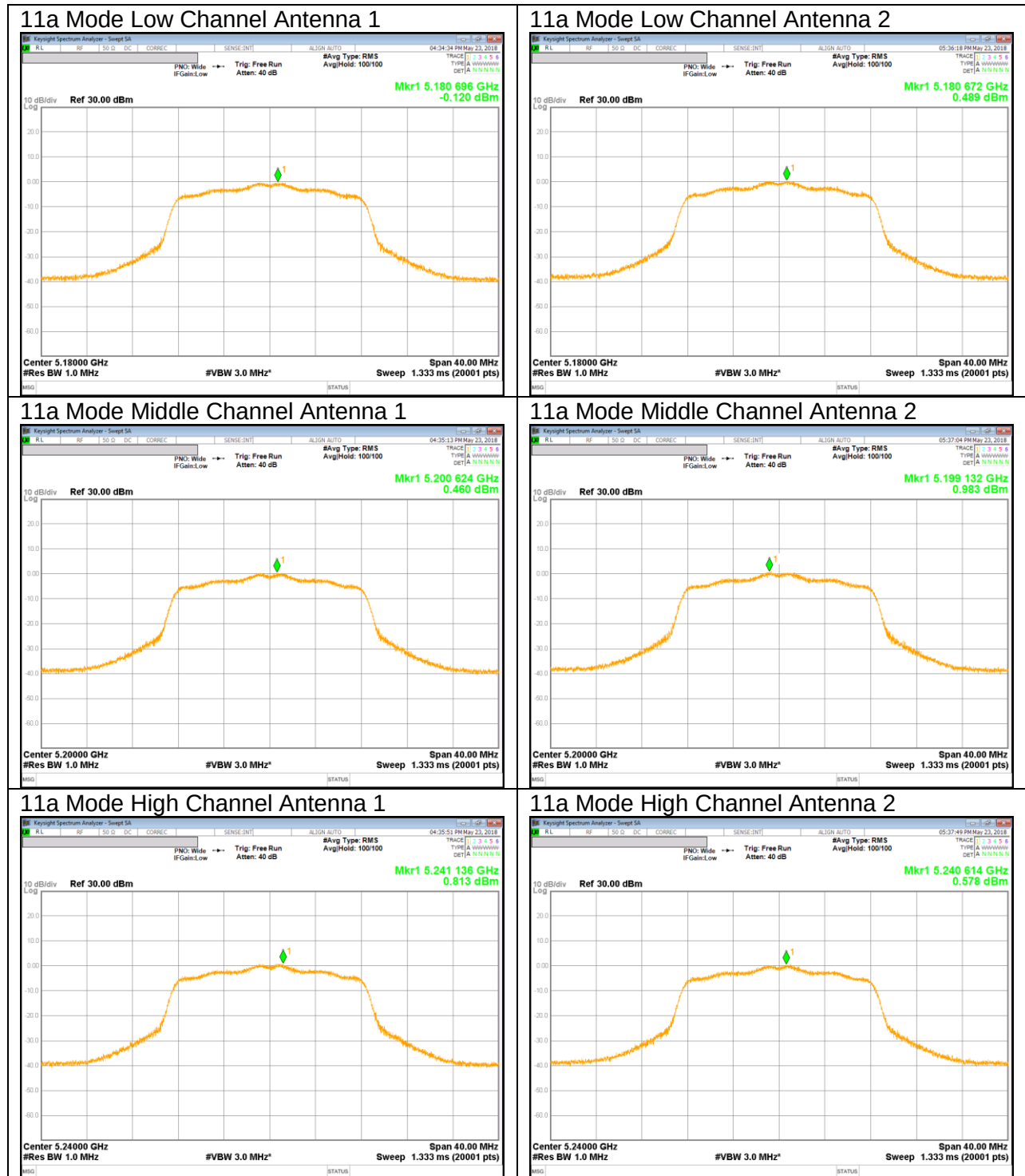
Portion	Frequency [MHz]	Antenna 1 Meas Power [dBm]	Antenna 2 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5690	9.01	9.00	12.55	24.00	-11.45
UNII-3	5690	-6.94	-6.58	-3.21	30.00	-33.21
Whole	5690	9.12	9.12	12.66	24.00	-11.34

PPSD Results

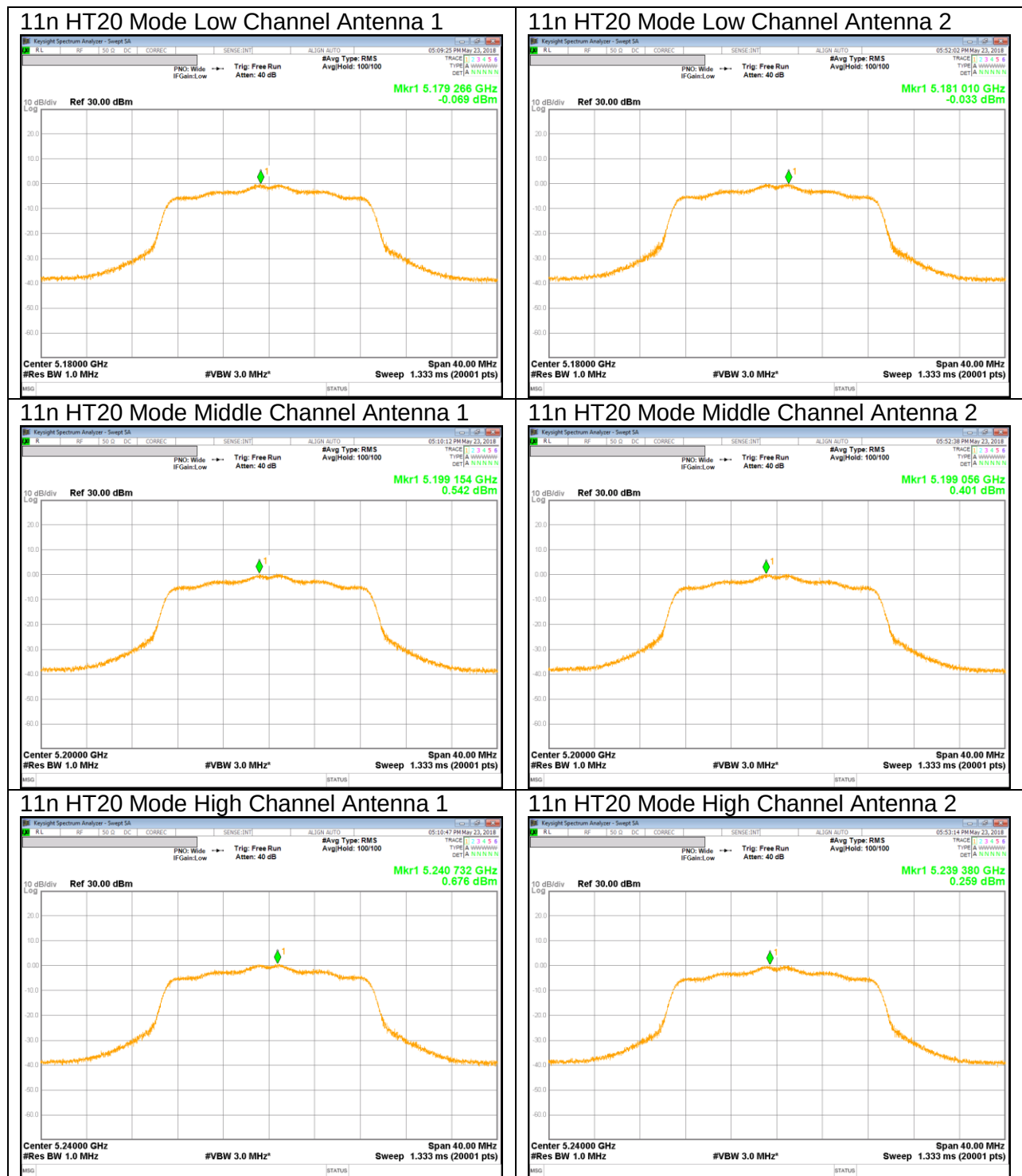
Channel	Frequency [MHz]	Antenna 1 Meas PPSD [dBm] or [dBm/kHz]	Antenna 2 Meas PPSD [dBm] or [dBm/kHz]	Total Corr'd PPSD [dBm] or [dBm/kHz]	PPSD Limit [dBm] or [dBm/kHz]	PPSD Margin [dB]
UNII-2C	5690	-4.40	-5.49	-1.37	11.00	-12.37
UNII-3	5690	-12.86	-15.51	-10.44	30.00	-40.44

10.2.21. OUTPUT POWER AND PSD PLOTS

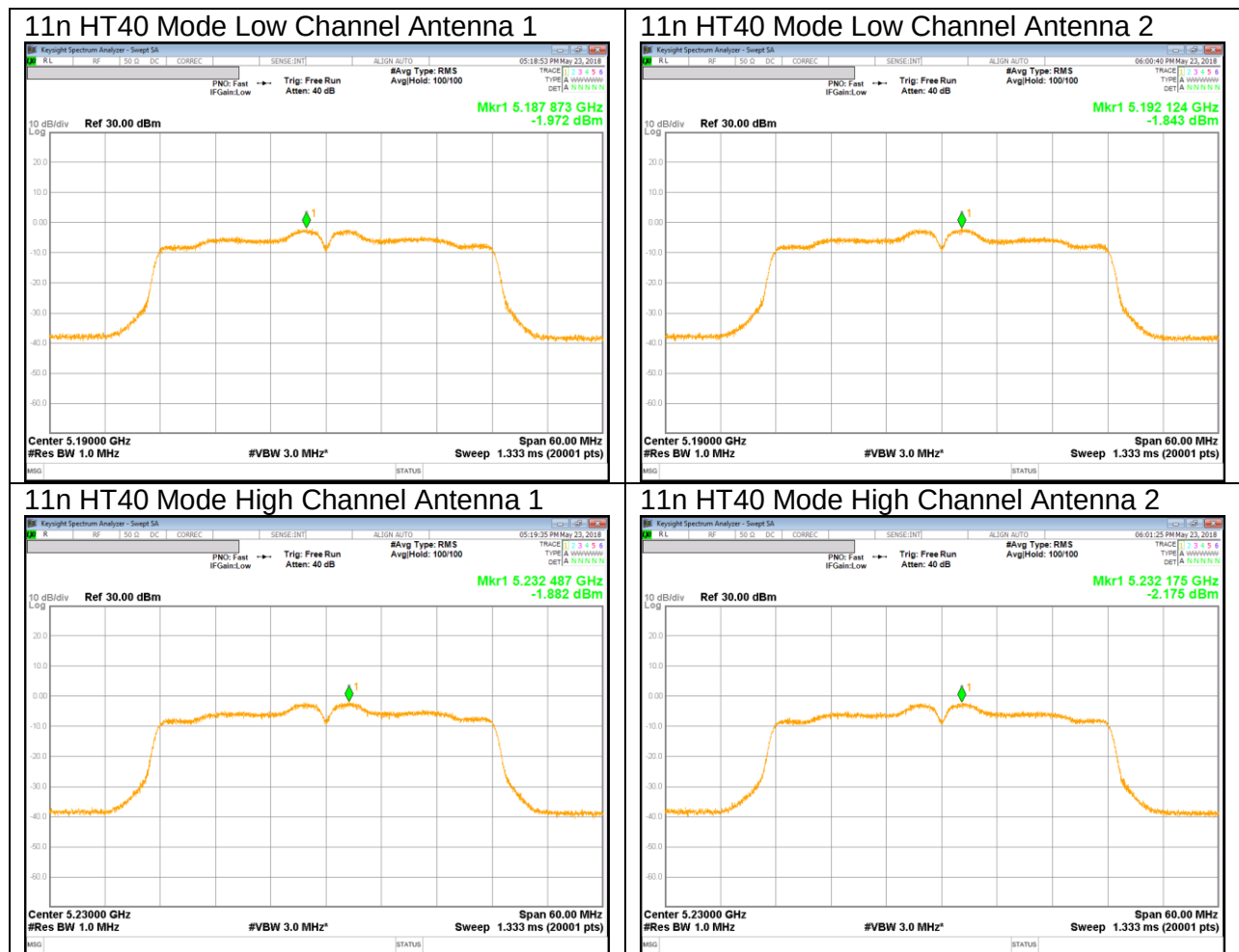
UNII 5.2 GHz IEEE 802.11a mode PSD



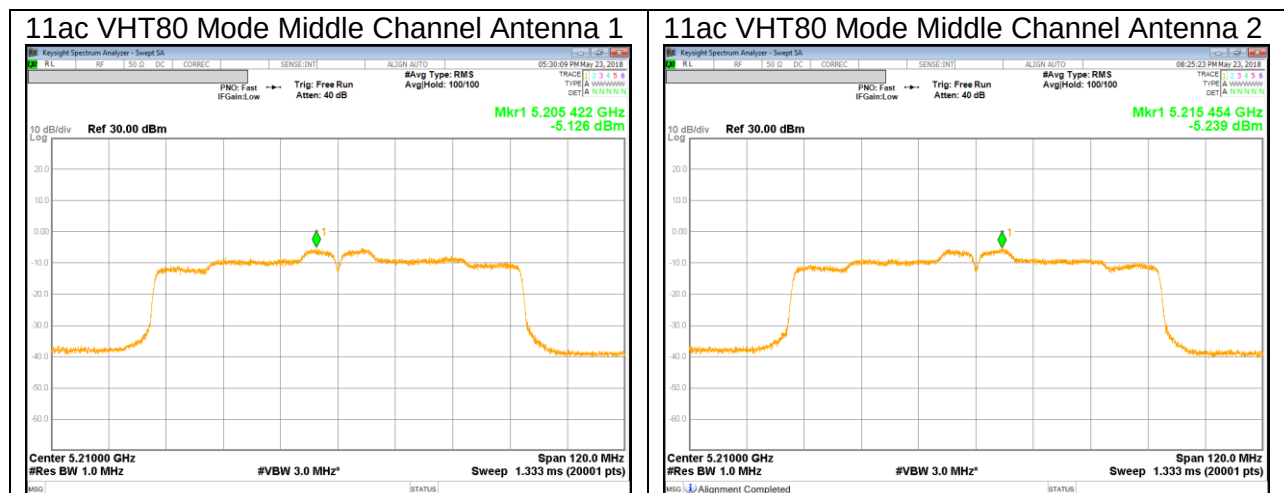
UNII 5.2 GHz IEEE 802.11n HT20 mode PSD



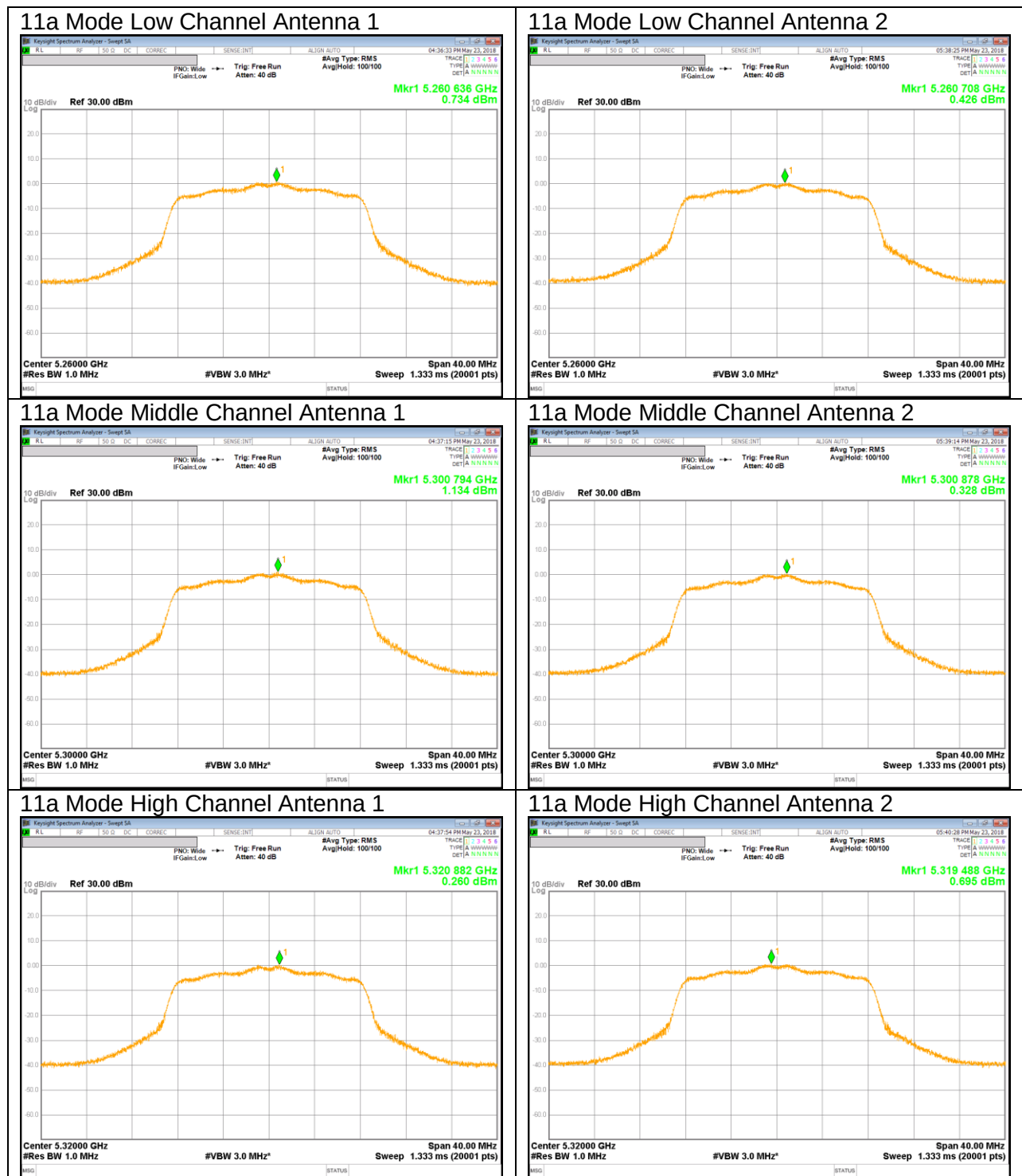
UNII 5.2 GHz IEEE 802.11n HT40 mode PSD



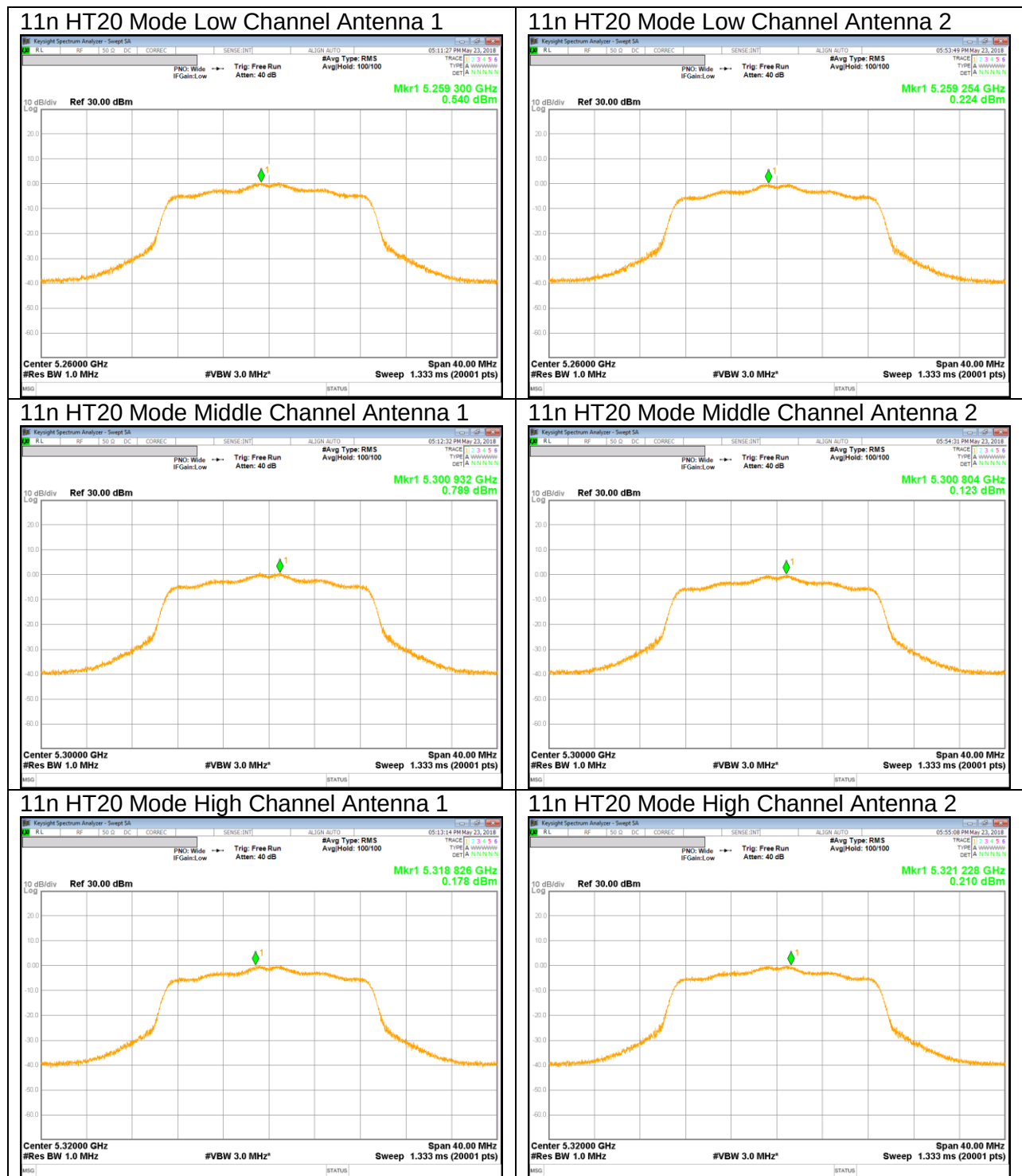
UNII 5.2 GHz IEEE 802.11ac VHT80 mode PSD



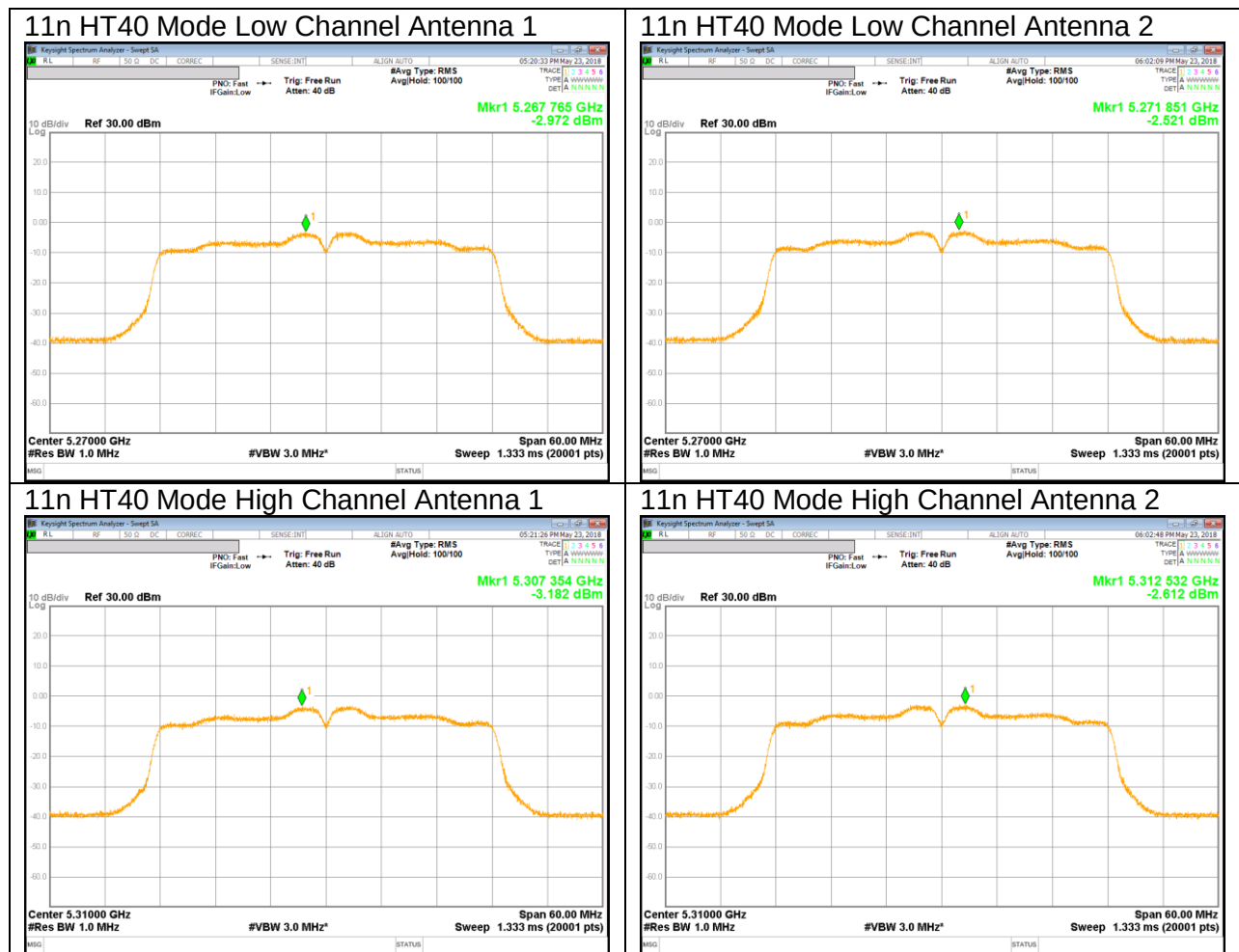
UNII 5.3 GHz IEEE 802.11a mode PSD



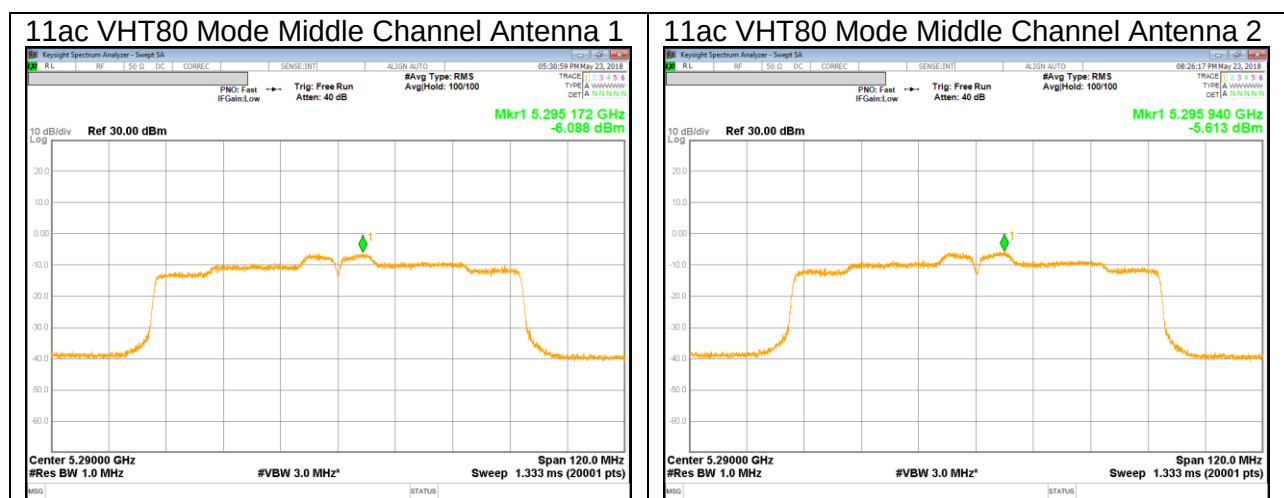
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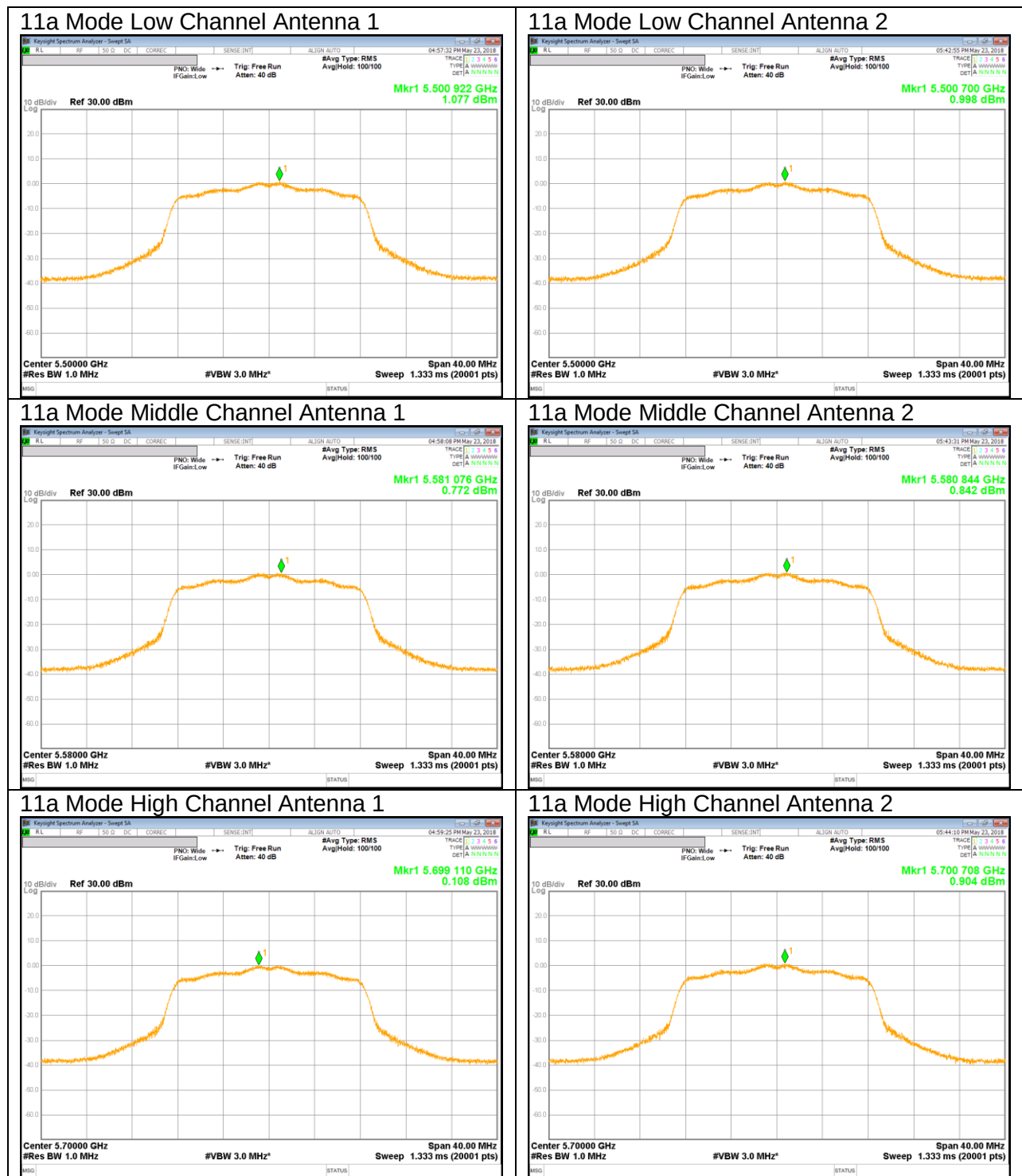
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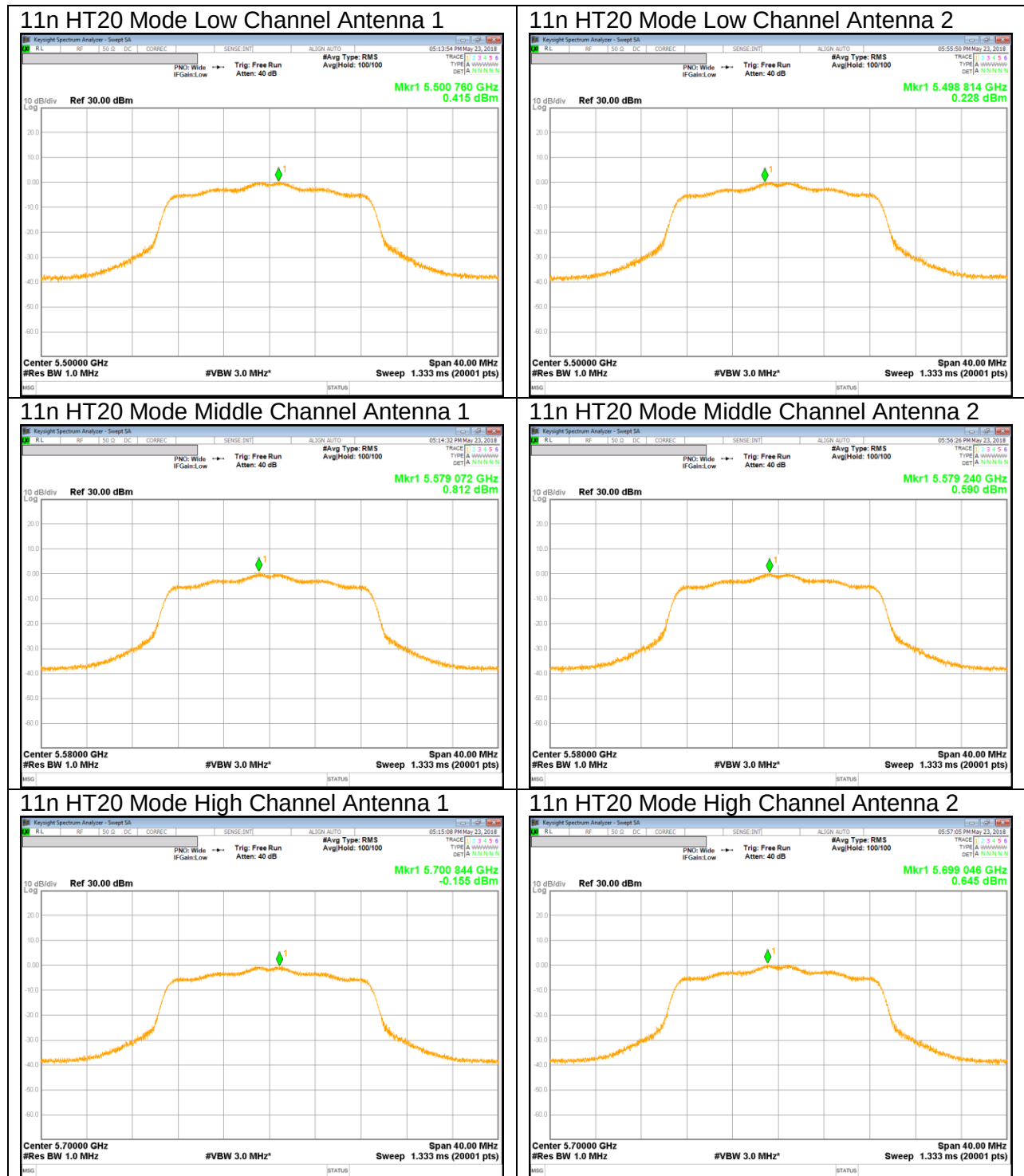
UNII 5.3 GHz IEEE 802.11ac VHT80 mode PSD



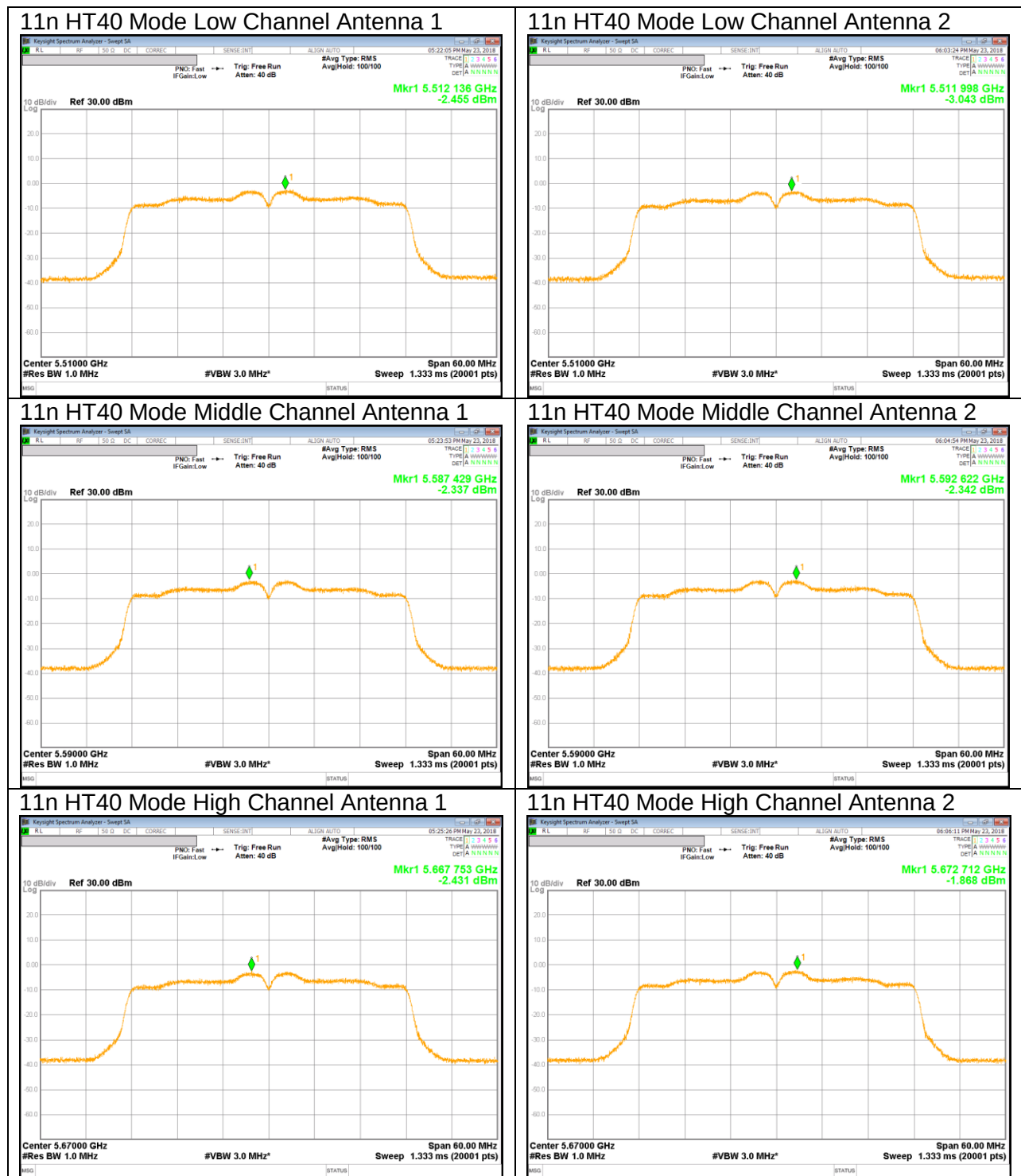
UNII 5.5 GHz IEEE 802.11a mode PSD



UNII 5.5 GHz IEEE 802.11n HT20 mode PSD



UNII 5.5 GHz IEEE 802.11n HT40 mode PSD



UNII 5.5 GHz IEEE 802.11ac VHT80 mode PSD

