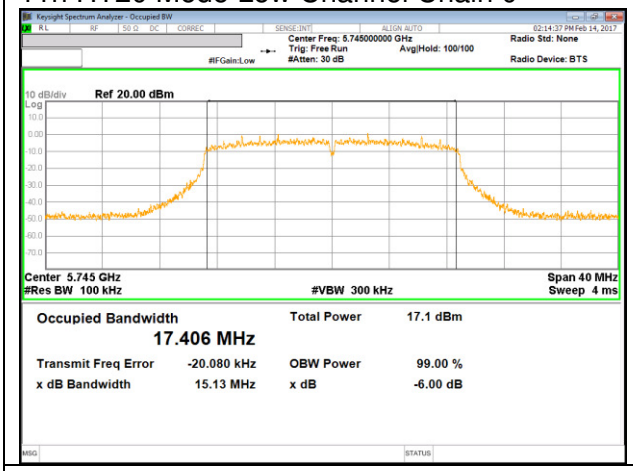
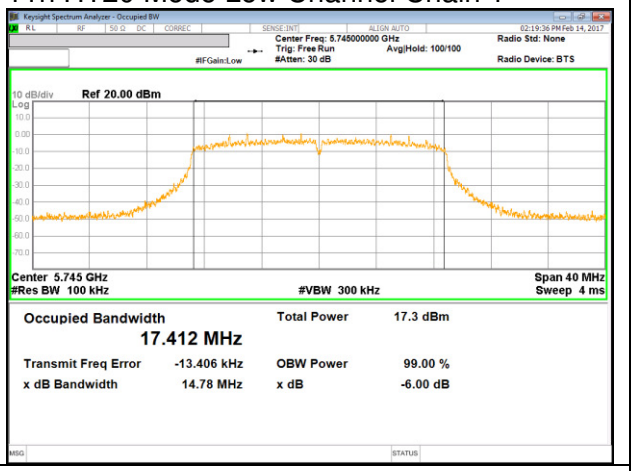
IEEE 802.11n HT20 mode

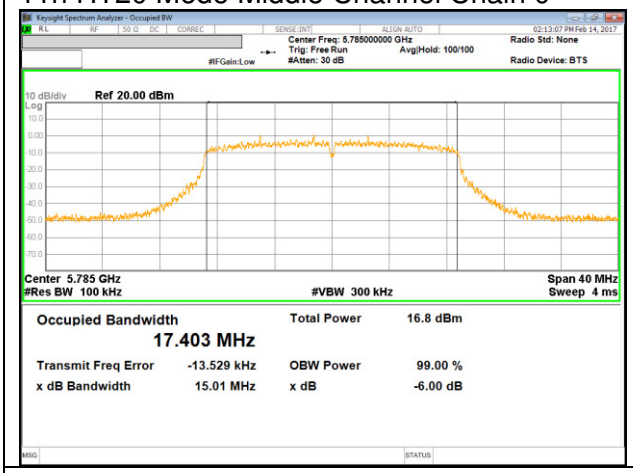
11n HT20 Mode Low Channel Chain 0



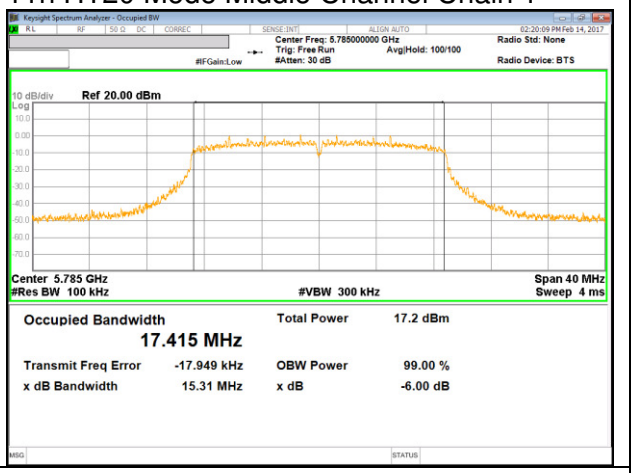
11n HT20 Mode Low Channel Chain 1



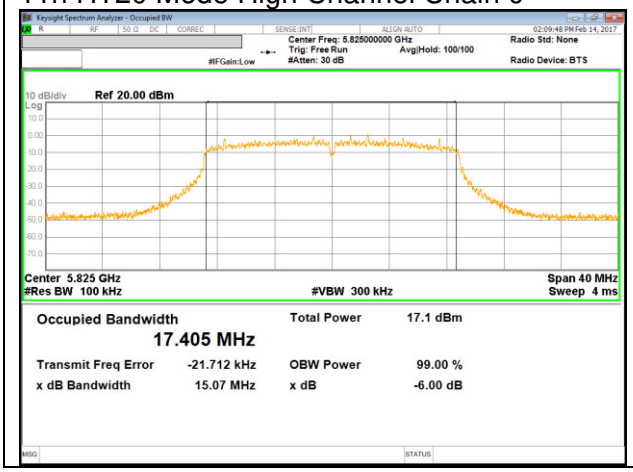
11n HT20 Mode Middle Channel Chain 0



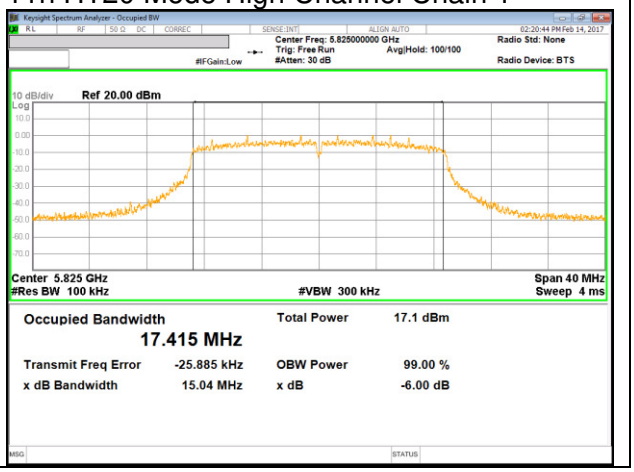
11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



11n HT20 Mode High Channel Chain 1



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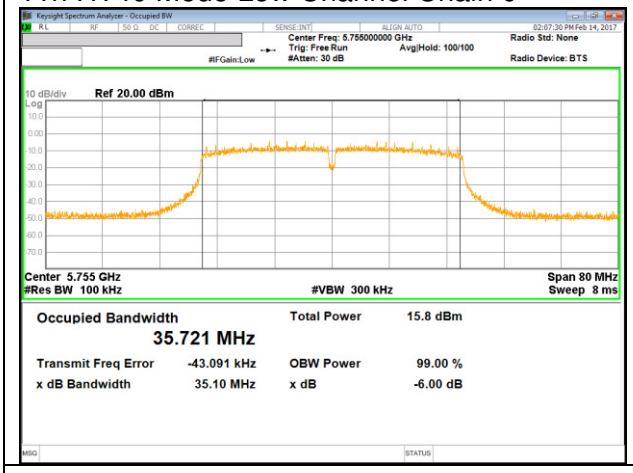
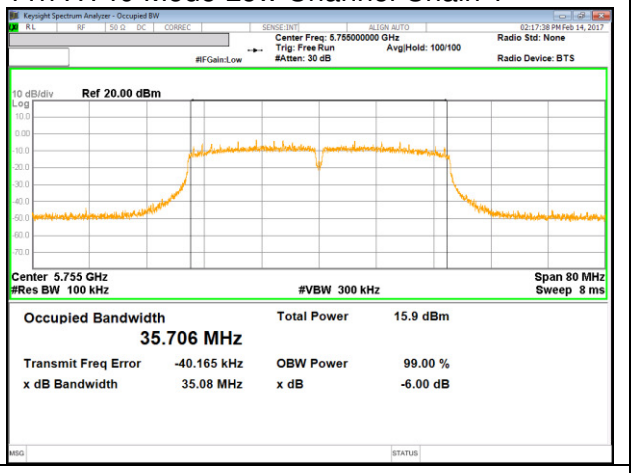
IEEE 802.11n HT40 mode

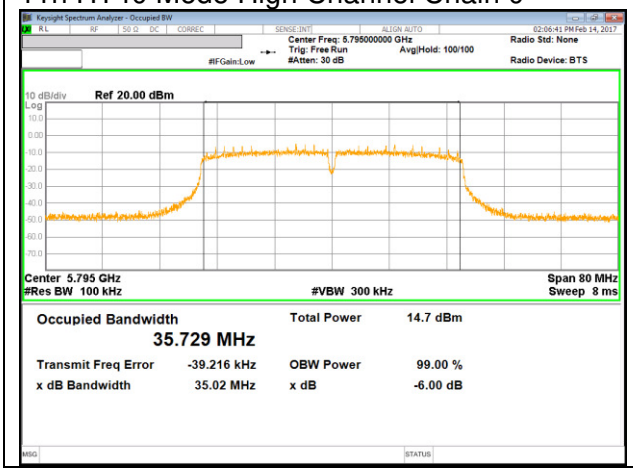
11n HT40 Mode Low Channel Chain 0



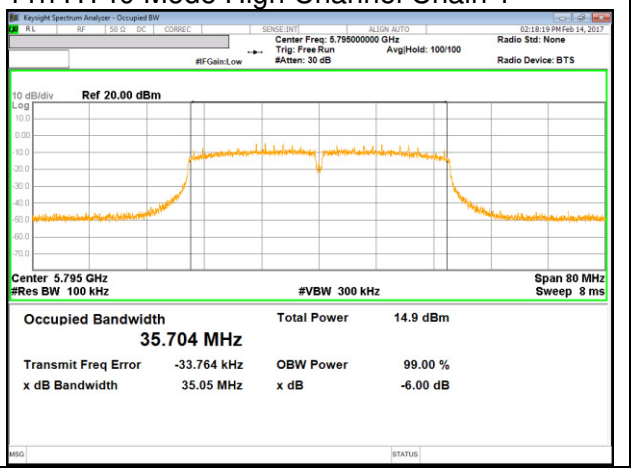
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0



11n HT40 Mode High Channel Chain 1



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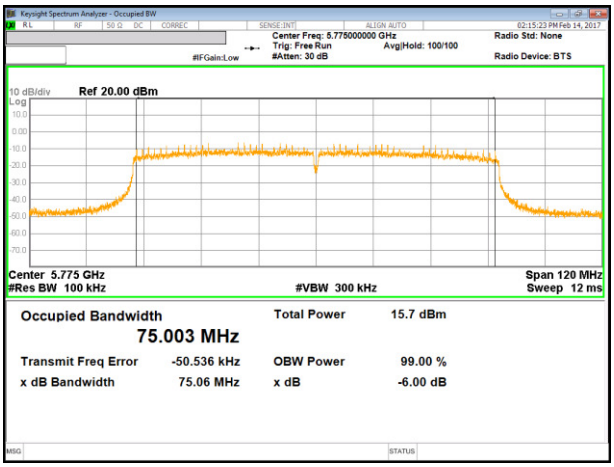
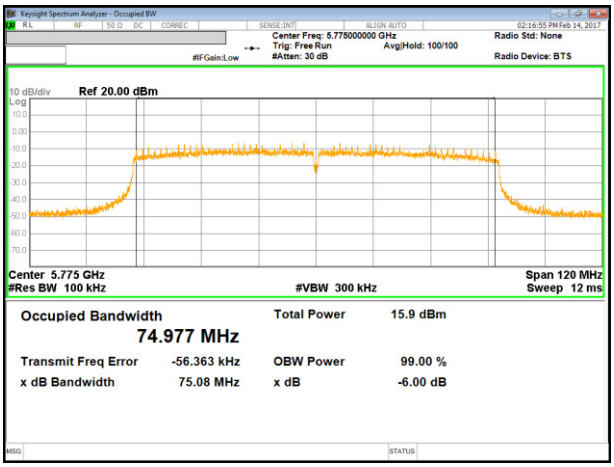
IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



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9.2. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1) (2) (3)

FCC

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band 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 MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak 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 SA-2 is used for PPSD. RBW set to1MHz(500kHz for the band 5.725-5.85 GHz, the VBW >= 3 x RBW, RMS detector and trace averaging). Peak marker value of the spectrum is used for PSD. Add duty cycle correction factor.

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

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]	Chain 0 Antenna Gain [dBi]	Chain 1 Antenna Gain [dBi]	Correlated Chains Directional Gain [dBi]
5150 - 5250	-0.41	-2.15	1.77
5250 - 5350	-1.50	-2.98	0.80
5470 - 5725	-2.18	-2.47	0.69
5725 - 5850	-1.90	-1.81	1.16

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RESULTS

9.2.1.802.11a 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]	Directional Gain for PPSD [dBi]
Low	5180	18.55	16.32	1.77	1.77
Mid	5200	18.54	16.33	1.77	1.77
High	5240	18.60	16.32	1.77	1.77

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5180	23.68	23.68	11.00
Mid	5200	23.68	23.68	11.00
High	5240	23.70	23.70	11.00

Duty Cycle CF [dB]	0.22	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Primary Antenna 1 Power [dBm]	Secendary Antenna 2 Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	12.25	11.59	14.94	23.68	-8.74
Mid	5200	12.12	11.93	15.04	23.68	-8.64
High	5240	11.53	12.10	14.83	23.70	-8.86

PPSD Results

Channel	Frequency [MHz]	Primary Antenna 1 PPSD [dBm]	Secondary Antenna 2 PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	1.85	1.00	4.68	11.00	-6.32
Mid	5200	1.18	1.73	4.70	11.00	-6.30
High	5240	1.07	1.83	4.70	11.00	-6.30

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9.2.2.802.11n 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]	Directional Gain for PPSD [dBi]
Low	5180	19.63	17.48	1.77	1.77
Mid	5200	19.50	17.50	1.77	1.77
High	5240	19.43	17.50	1.77	1.77

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5180	23.93	23.93	11.00
Mid	5200	23.90	23.90	11.00
High	5240	23.88	23.88	11.00

Duty Cycle CF [dB]	0.24	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	11.52	11.81	14.68	23.93	-9.25
Mid	5200	12.44	12.14	15.30	23.90	-8.60
High	5240	11.77	12.28	15.04	23.88	-8.84

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	1.05	1.16	4.35	11.00	-6.65
Mid	5200	1.90	1.64	5.02	11.00	-5.98
High	5240	1.65	1.77	4.96	11.00	-6.04

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9.2.3.802.11n 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]	Directional Gain for PPSD [dBi]
Low	5190	40.24	30.00	1.77	1.77
High	5230	39.88	35.89	1.77	1.77

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]	0.47	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5190	10.38	9.64	13.04	24.00	-10.96
High	5230	10.48	10.01	13.26	24.00	-10.74

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5190	-3.33	-3.99	-0.16	11.00	-11.16
High	5230	-3.45	-3.83	-0.15	11.00	-11.15

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9.2.4. 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]	Directional Gain for PPSD [dBi]
Middle	5210	81.79	75.01	1.77	1.77

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]	0.88	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Middle	5210	10.06	9.65	12.87	24.00	-11.13

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Middle	5210	-7.24	-7.78	-3.61	11.00	-14.61

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9.2.5.802.11a 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]	Directional Gain for PPSD [dBi]
Low	5260	18.48	16.33	0.80	0.80
Mid	5300	18.58	16.32	0.80	0.80
High	5320	18.71	16.31	0.80	0.80

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5260	23.67	23.67	11.00
Mid	5300	23.69	23.69	11.00
High	5320	23.72	23.72	11.00

Duty Cycle CF [dB]	0.22	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Primary Antenna 1 Power [dBm]	Secendary Antenna 2 Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	12.42	12.05	15.25	23.67	-8.42
Mid	5300	12.48	11.85	15.19	23.69	-8.50
High	5320	12.45	11.87	15.18	23.72	-8.54

PPSD Results

Channel	Frequency [MHz]	Primary Antenna 1 PPSD [dBm]	Secendary Antenna 2 PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	2.30	1.74	5.27	11.00	-5.73
Mid	5300	2.09	1.60	5.08	11.00	-5.92
High	5320	2.13	1.63	5.12	11.00	-5.88

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9.2.6.802.11n 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]	Directional Gain for PPSD [dBi]
Low	5260	19.36	17.49	0.80	0.80
Mid	5300	19.47	17.50	0.80	0.80
High	5320	19.67	17.50	0.80	0.80

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5260	23.87	23.87	11.00
Mid	5300	23.89	23.89	11.00
High	5320	23.94	23.94	11.00

Duty Cycle CF [dB]	0.24	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	11.76	12.30	15.05	23.87	-8.82
Mid	5300	11.80	12.09	14.96	23.89	-8.94
High	5320	11.64	12.06	14.87	23.94	-9.07

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	1.22	1.64	4.69	11.00	-6.31
Mid	5300	1.71	1.48	4.85	11.00	-6.15
High	5320	1.30	1.50	4.65	11.00	-6.35

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9.2.7.802.11n HT40 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]	Directional Gain for PPSD [dBi]
Low	5270	40.10	35.83	0.80	0.80
High	5310	40.11	35.88	0.80	0.80

Limits

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

Duty Cycle CF [dB]	0.47	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5270	9.56	10.02	12.81	24.00	-11.19
High	5310	9.58	9.79	12.70	24.00	-11.30

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5270	-3.96	-3.70	-0.34	11.00	-11.34
High	5310	-4.16	-3.91	-0.55	11.00	-11.55

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9.2.8. 802.11ac VHT80 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]	Directional Gain for PPSD [dBi]
Middle	5290	82.24	75.03	0.80	0.80

Limits

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

Duty Cycle CF [dB]	0.88	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Middle	5290	10.23	9.55	12.91	24.00	-11.09

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Middle	5290	-6.98	-7.80	-3.48	11.00	-14.48

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9.2.9.802.11a 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]	Directional Gain for PPSD [dBi]
Low	5500	18.44	16.32	0.69	0.69
Mid	5580	18.36	16.32	0.69	0.69
High	5700	18.76	16.33	0.69	0.69

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5500	23.66	23.66	11.00
Mid	5580	23.64	23.64	11.00
High	5700	23.73	23.73	11.00

Duty Cycle CF [dB]	0.22	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Primary Antenna 1 Power [dBm]	Secendary Antenna 2 Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	12.31	11.71	15.03	23.66	-8.63
Mid	5580	12.37	12.02	15.21	23.64	-8.43
High	5700	12.39	11.67	15.06	23.73	-8.68

PPSD Results

Channel	Frequency [MHz]	Primary Antenna 1 PPSD [dBm]	Secendary Antenna 2 PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	2.08	1.25	4.92	11.00	-6.08
Mid	5580	2.28	1.60	5.19	11.00	-5.81
High	5700	2.12	2.01	5.30	11.00	-5.70

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9.2.10.802.11n 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]	Directional Gain for PPSD [dBi]
Low	5500	19.54	17.50	0.69	0.69
Mid	5580	19.48	17.51	0.69	0.69
High	5700	19.53	17.49	0.69	0.69

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5500	23.91	23.91	11.00
Mid	5580	23.90	23.90	11.00
High	5700	23.91	23.91	11.00

Duty Cycle CF [dB]	0.24	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	11.75	12.12	14.95	23.91	-8.96
Mid	5580	11.73	12.41	15.09	23.90	-8.80
High	5700	11.78	12.06	14.93	23.91	-8.97

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	1.19	1.72	4.71	11.00	-6.29
Mid	5580	1.03	1.97	4.77	11.00	-6.23
High	5700	1.24	1.46	4.60	11.00	-6.40

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9.2.11.802.11n 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]	Directional Gain for PPSD [dBi]
Low	5510	40.10	35.83	0.69	0.69
Mid	5550	40.26	35.82	0.69	0.69
High	5670	39.84	35.92	0.69	0.69

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]
Low	5510	24.00	24.00	11.00
Mid	5550	24.00	24.00	11.00
High	5670	24.00	24.00	11.00

Duty Cycle CF [dB]	0.47	Included in Calculations of PPSD

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5510	10.43	9.72	13.10	24.00	-10.90
Mid	5550	10.31	9.75	13.05	24.00	-10.95
High	5670	10.48	9.59	13.07	24.00	-10.93

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5510	-3.80	-4.55	-0.68	11.00	-11.68
Mid	5550	-3.78	-4.44	-0.62	11.00	-11.62
High	5670	-2.99	-3.83	0.09	11.00	-10.91

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9.2.12. 802.11ac VHT80 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]	Directional Gain for PPSD [dBi]
Low	5530	82.35	75.06	0.69	0.69

Limits

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

Duty Cycle CF [dB]	0.88	Included in Calculations of PPSD

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5530	10.07	10.38	13.24	24.00	-10.76

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5530	-7.03	-6.86	-3.05	11.00	-14.05

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9.2.13.802.11a 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]	Directional Gain for PPSD [dBi]
Low	5745	18.42	16.31	1.16	1.16
Mid	5785	18.49	16.33	1.16	1.16
High	5825	18.59	16.32	1.16	1.16

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]	0.22	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Primary Antenna 1 Power [dBm]	Secendary Antenna 2 Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	12.43	12.45	15.45	30.00	-14.55
Mid	5785	11.53	11.69	14.62	30.00	-15.38
High	5825	11.58	11.69	14.65	30.00	-15.35

PPSD Results

Channel	Frequency [MHz]	Primary Antenna 1 PPSD [dBm]	Secendary Antenna 2 PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	-0.63	-0.63	2.61	30.00	-27.39
Mid	5785	-1.77	-1.50	1.60	30.00	-28.40
High	5825	-1.69	-1.51	1.64	30.00	-28.36

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9.2.14.802.11n 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]	Directional Gain for PPSD [dBi]
Low	5745	19.53	17.49	1.16	1.16
Mid	5785	19.63	17.50	1.16	1.16
High	5825	19.61	17.51	1.16	1.16

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]	0.24	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	11.78	11.82	14.81	30.00	-15.19
Mid	5785	11.85	12.08	14.98	30.00	-15.02
High	5825	12.12	12.01	15.08	30.00	-14.92

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	-1.71	-1.02	1.90	30.00	-28.10
Mid	5785	-1.73	-1.12	1.84	30.00	-28.16
High	5825	-1.47	-1.46	1.78	30.00	-28.22

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9.2.15.802.11n 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]	Directional Gain for PPSD [dBi]
Low	5755	39.75	35.86	1.16	1.16
High	5795	39.96	35.86	1.16	1.16

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]	0.47	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5755	10.39	10.33	13.37	30.00	-16.63
High	5795	9.53	9.61	12.58	30.00	-17.42

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5755	-5.91	-5.92	-2.43	30.00	-32.43
High	5795	-7.06	-6.47	-3.27	30.00	-33.27

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9.2.16. 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]	Directional Gain for PPSD [dBi]
Middle	5775	81.82	74.96	1.16	1.16

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]	0.88	**Included in Calculations of PPSD**

Output Power Results

Channel	Frequency [MHz]	Chain 0 Meas Power [dBm]	Chain 1 Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Middle	5775	10.10	10.08	13.10	30.00	-16.90

PPSD Results

Channel	Frequency [MHz]	Chain 0 Meas PPSD [dBm]	Chain 1 Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Middle	5775	-9.72	-9.32	-5.63	30.00	-35.63

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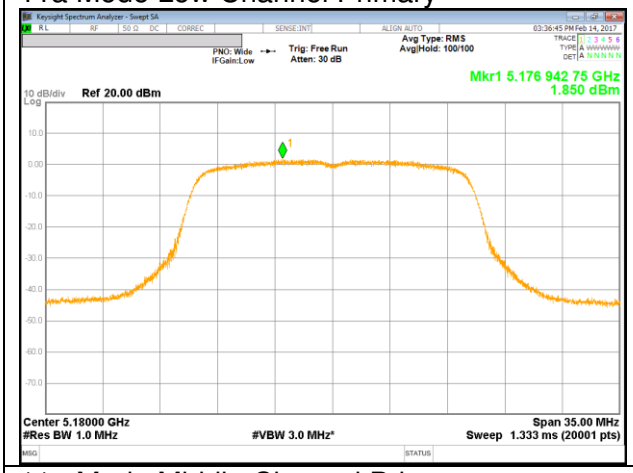
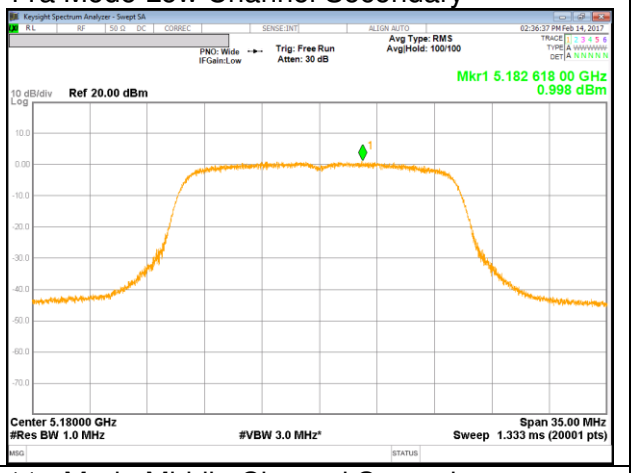
9.2.17. PPSD PLOTS

UNII 5.2 GHz IEEE 802.11a mode

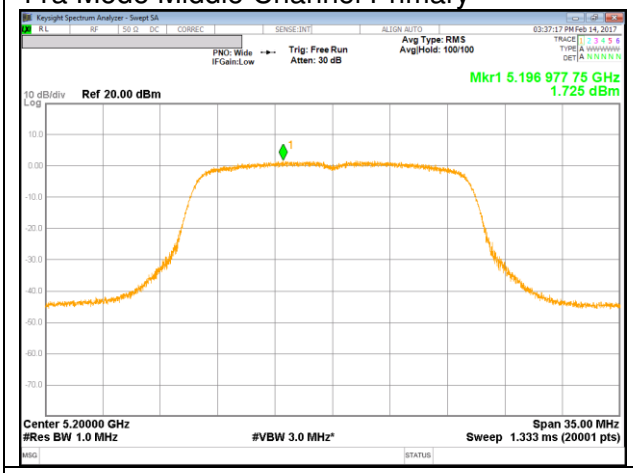
11a Mode Low Channel Primary



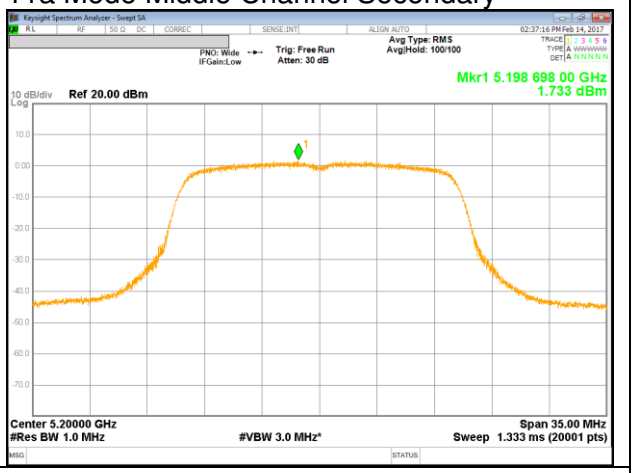
11a Mode Low Channel Secondary



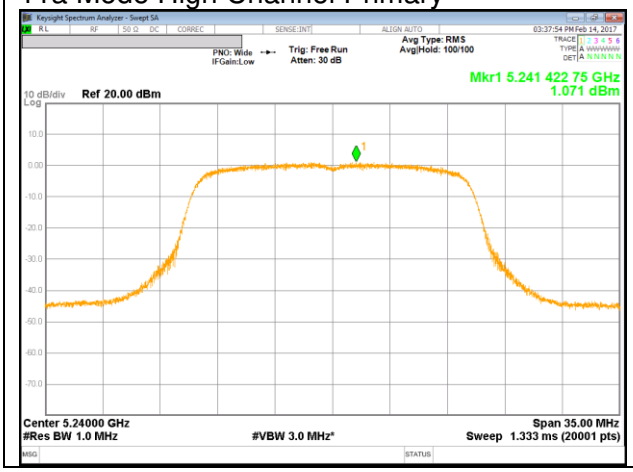
11a Mode Middle Channel Primary



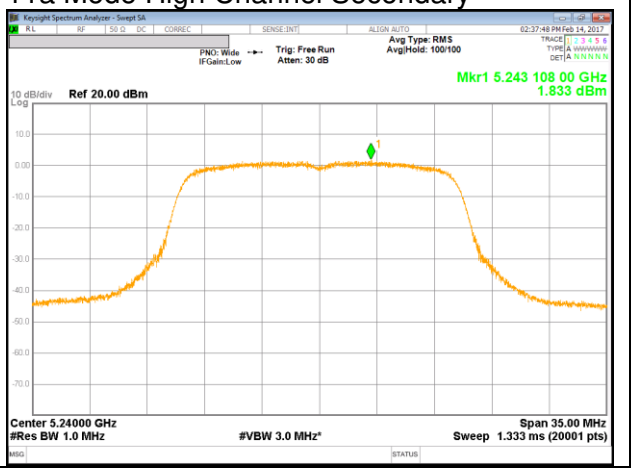
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary



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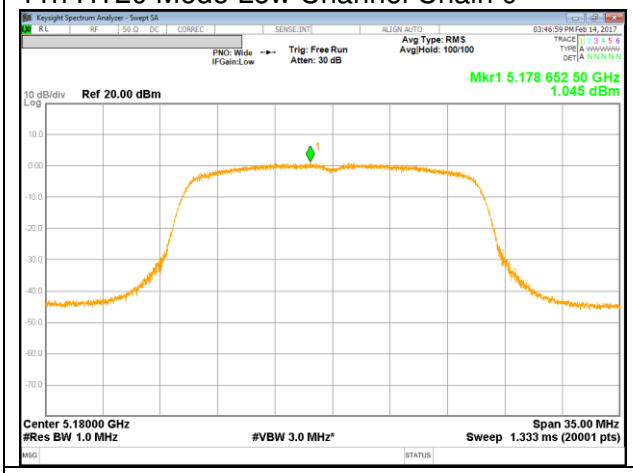
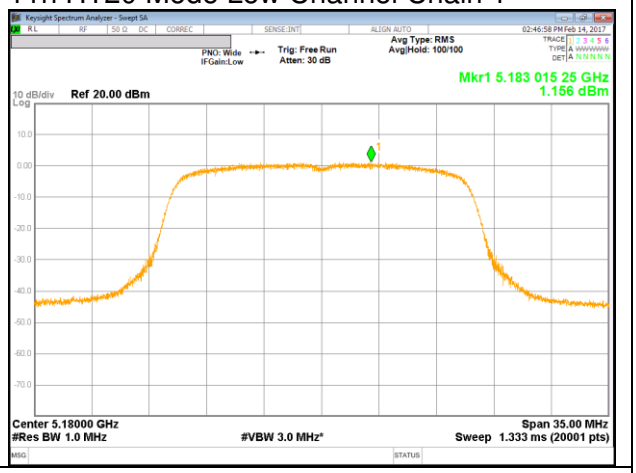
UNII 5.2 GHz IEEE 802.11n HT20 mode

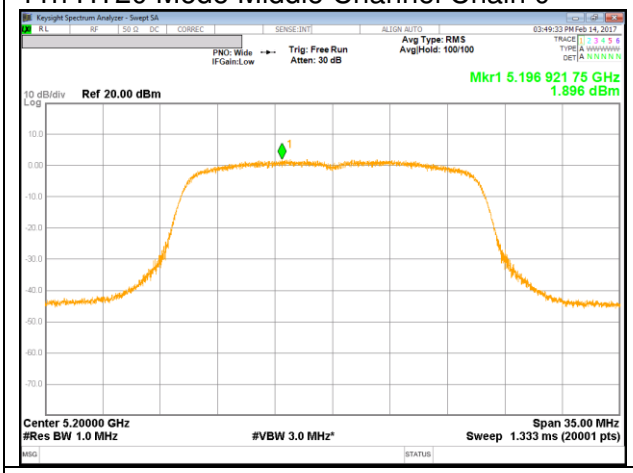
11n HT20 Mode Low Channel Chain 0



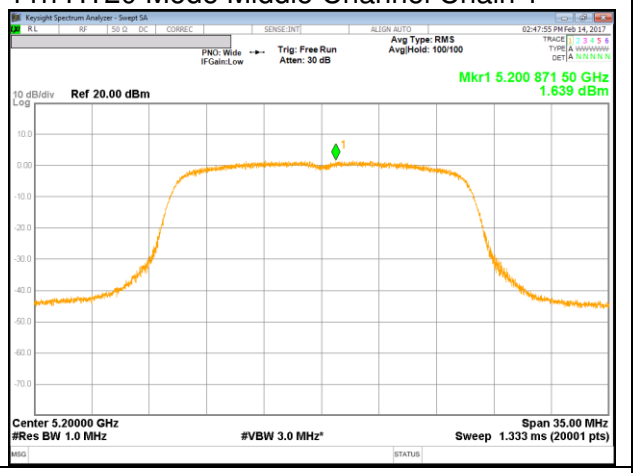
11n HT20 Mode Low Channel Chain 1



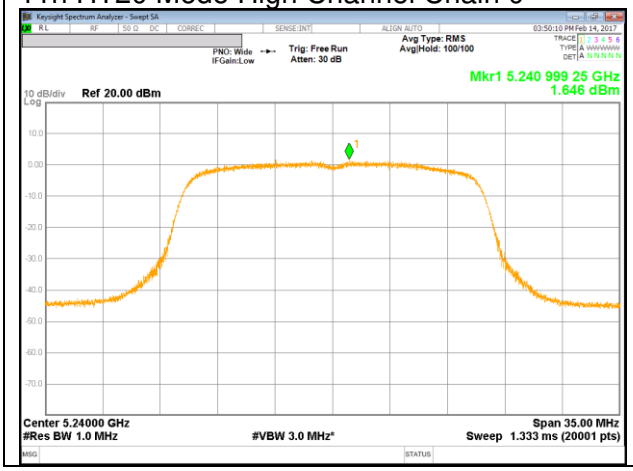
11n HT20 Mode Middle Channel Chain 0



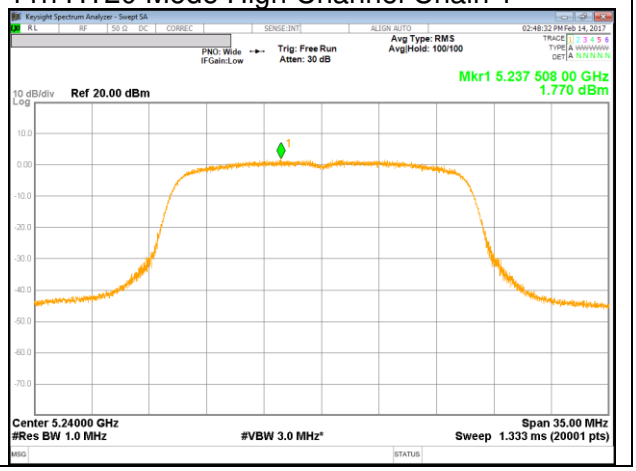
11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



11n HT20 Mode High Channel Chain 1



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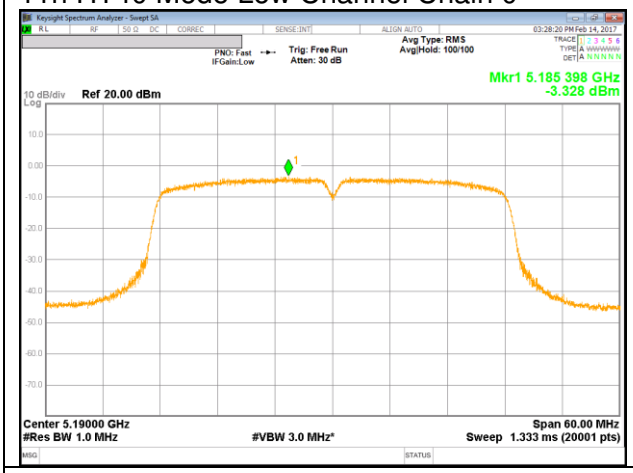
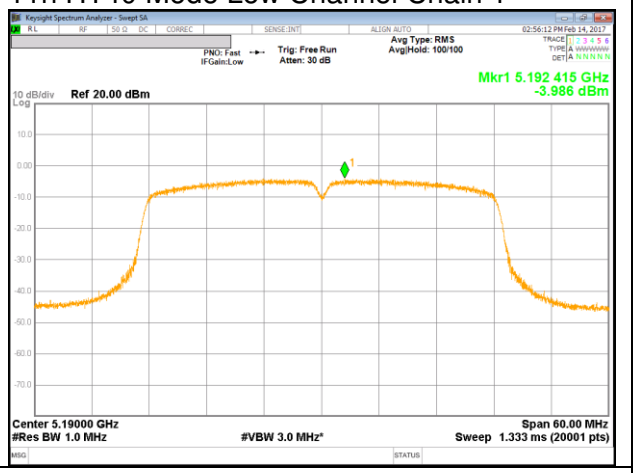
UNII 5.2 GHz IEEE 802.11n HT40 mode

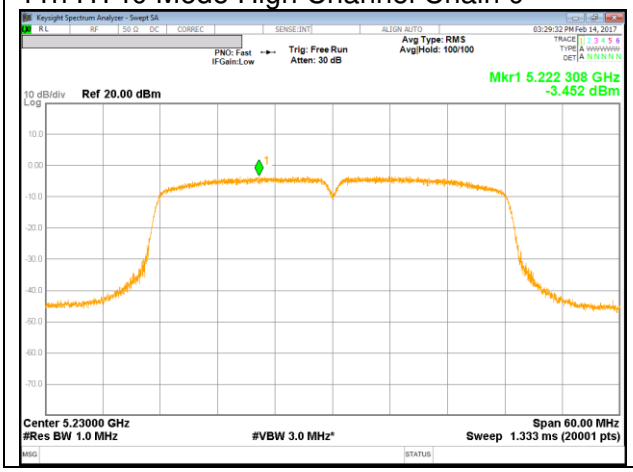
11n HT40 Mode Low Channel Chain 0



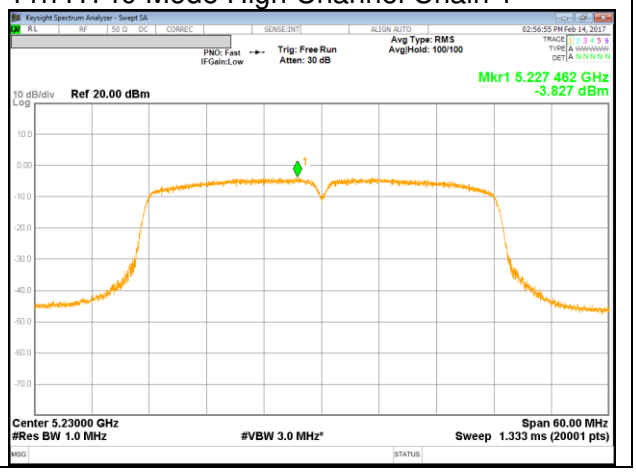
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0

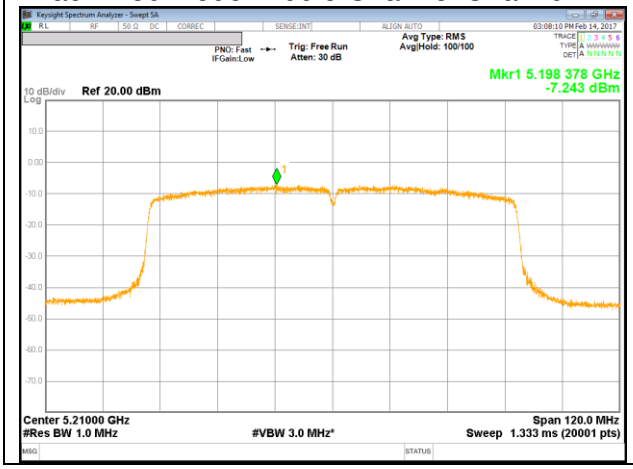


11n HT40 Mode High Channel Chain 1

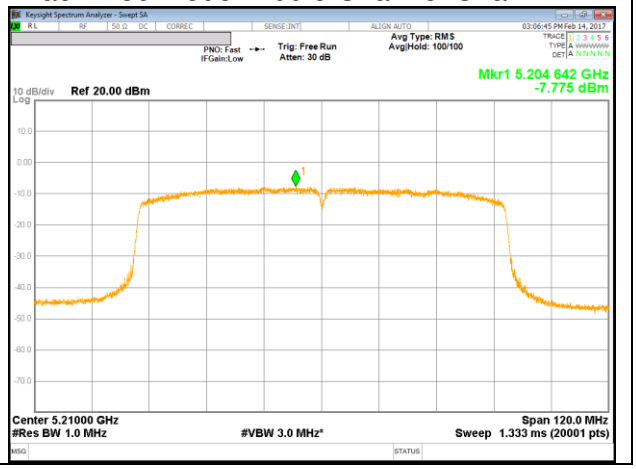


UNII 5.2 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



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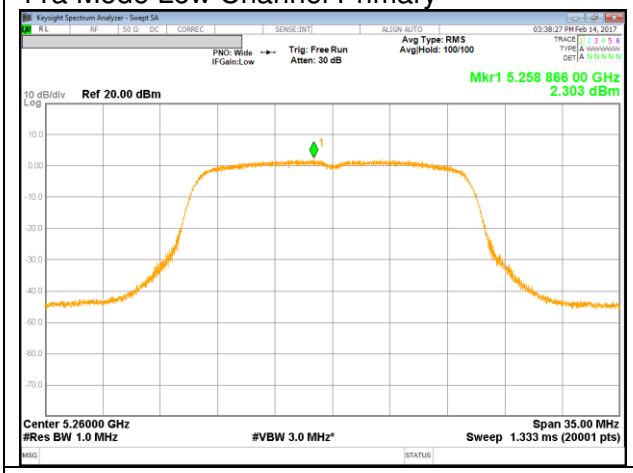
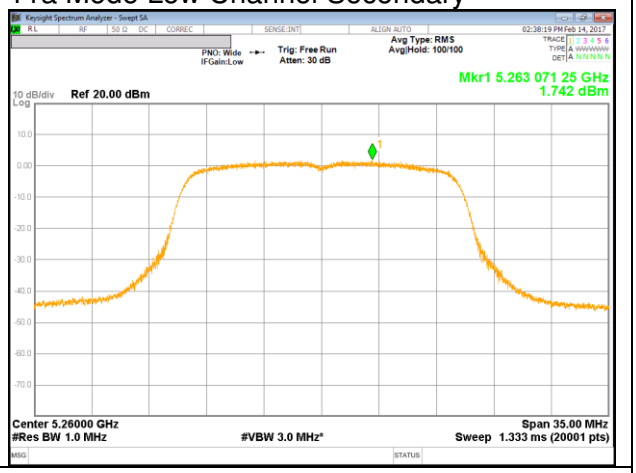
UNII 5.3 GHz IEEE 802.11a mode

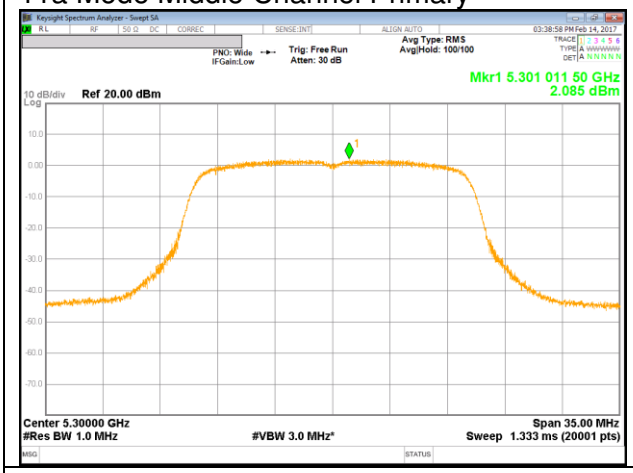
11a Mode Low Channel Primary



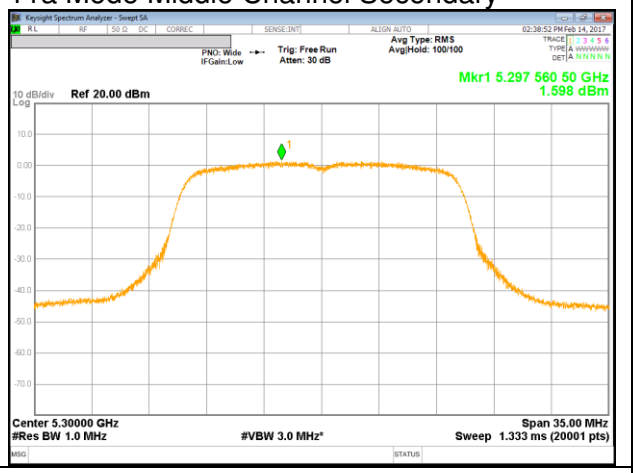
11a Mode Low Channel Secondary



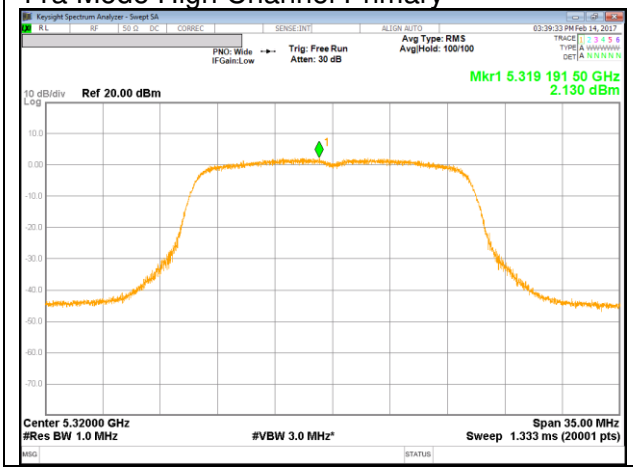
11a Mode Middle Channel Primary



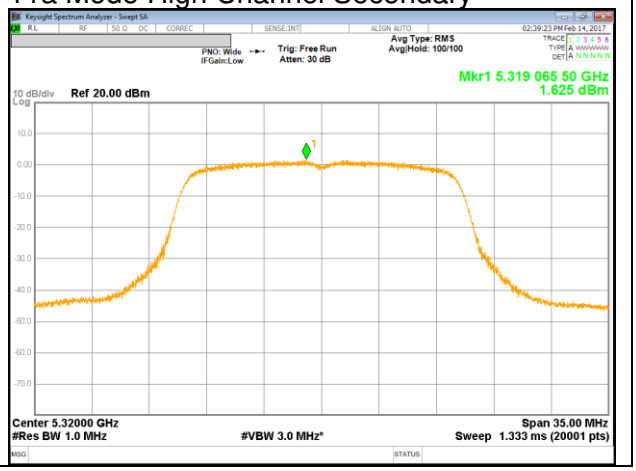
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary



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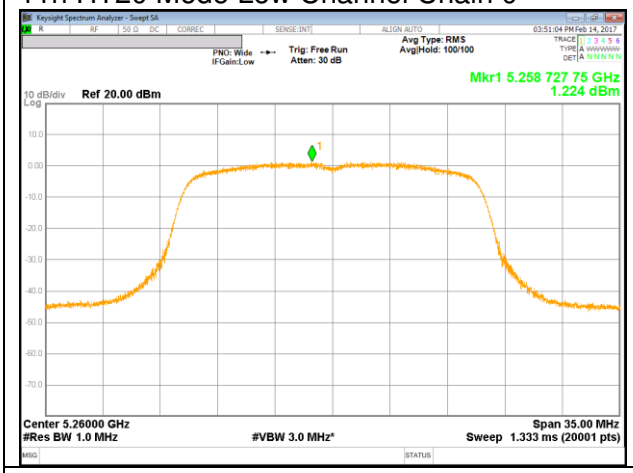
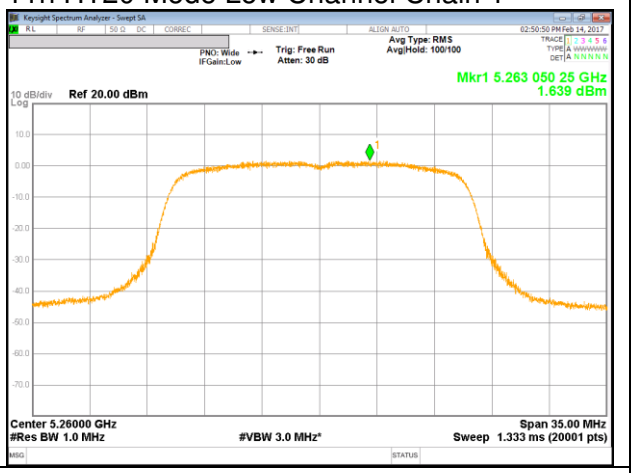
UNII 5.3 GHz IEEE 802.11n HT20 mode

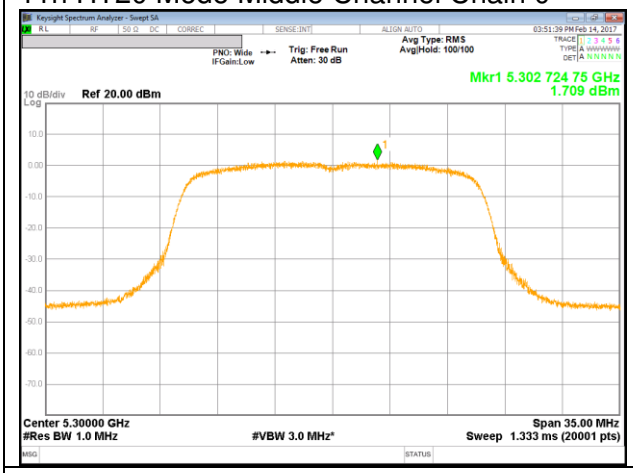
11n HT20 Mode Low Channel Chain 0



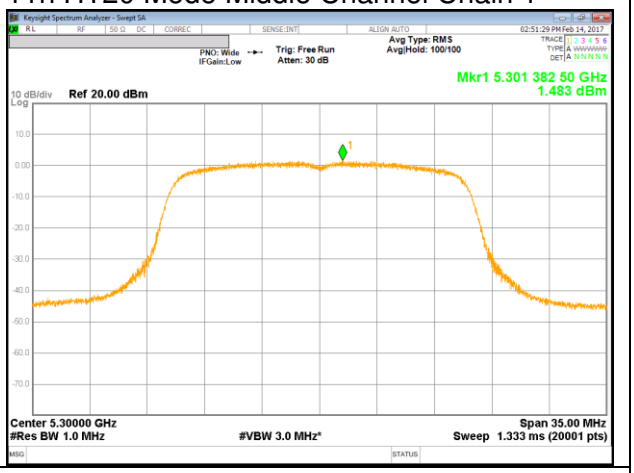
11n HT20 Mode Low Channel Chain 1



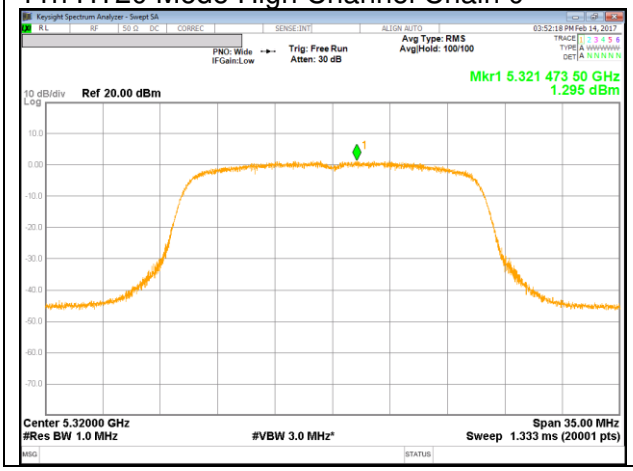
11n HT20 Mode Middle Channel Chain 0



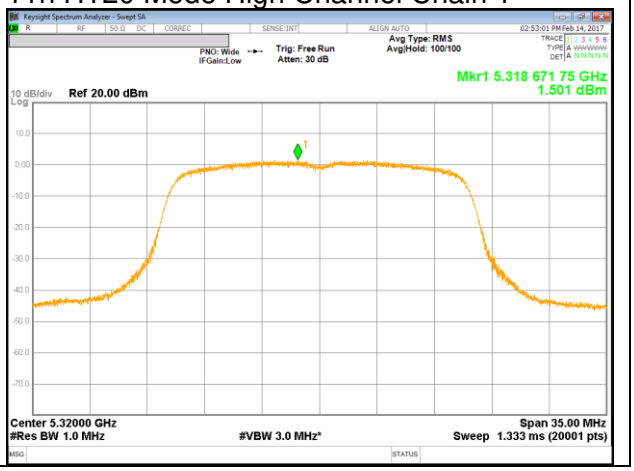
11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



11n HT20 Mode High Channel Chain 1



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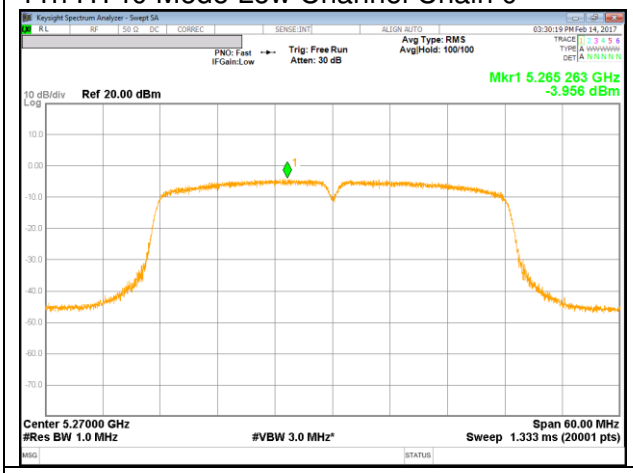
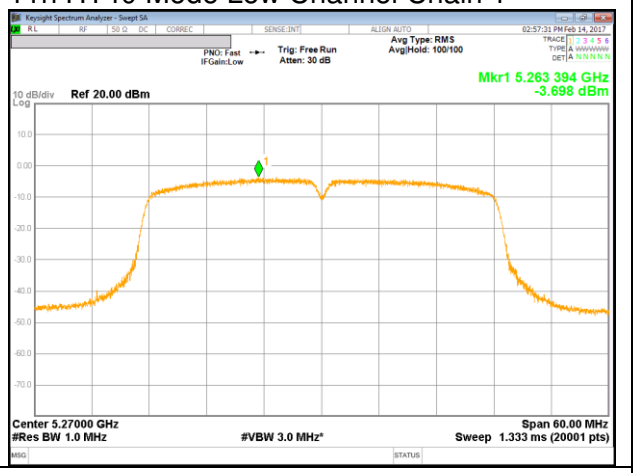
UNII 5.3 GHz IEEE 802.11n HT40 mode

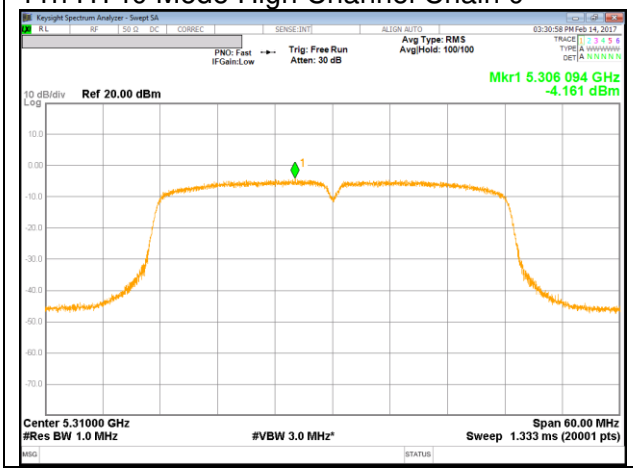
11n HT40 Mode Low Channel Chain 0



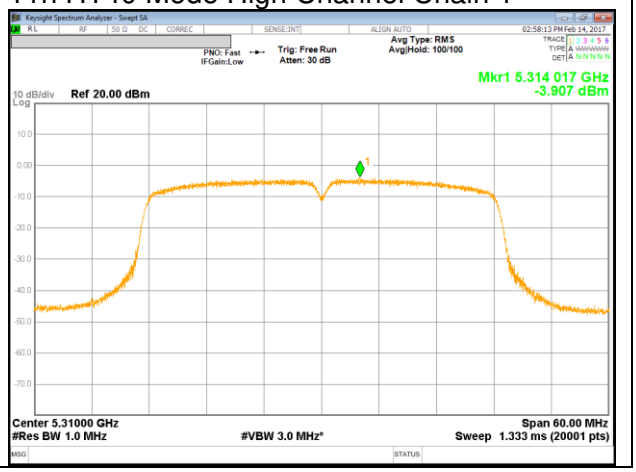
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0

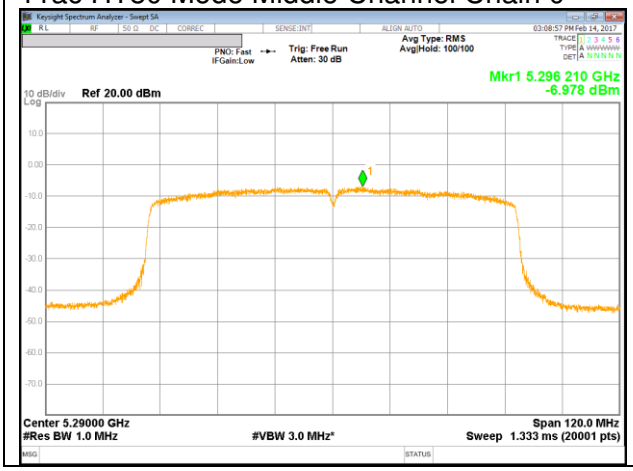


11n HT40 Mode High Channel Chain 1

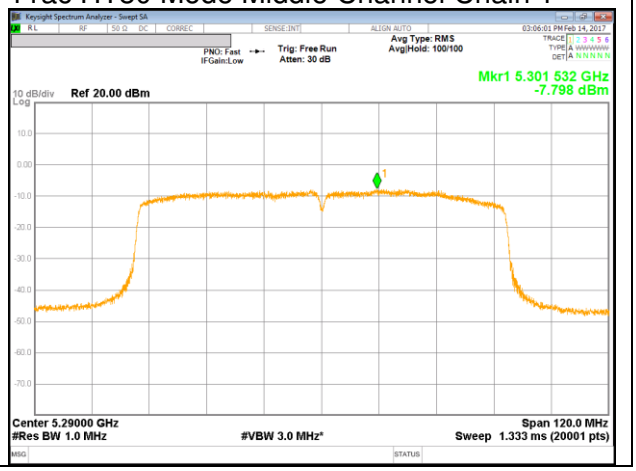


UNII 5.3 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



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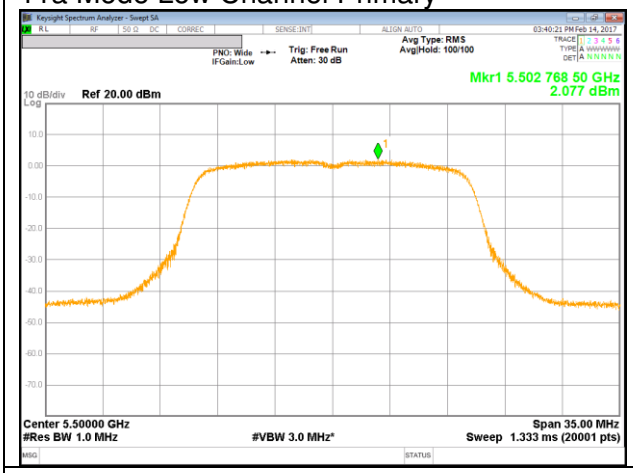
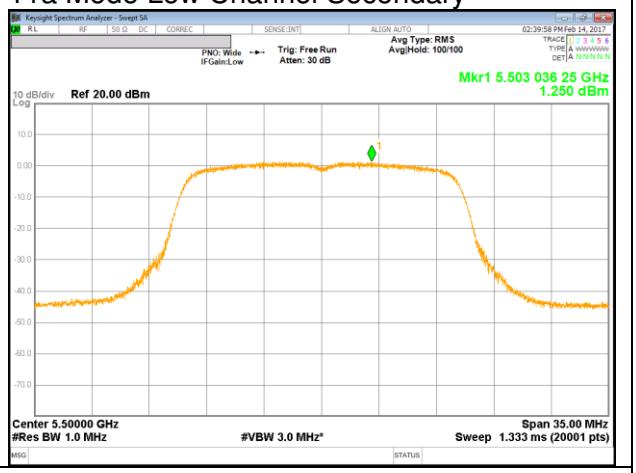
UNII 5.5 GHz IEEE 802.11a mode

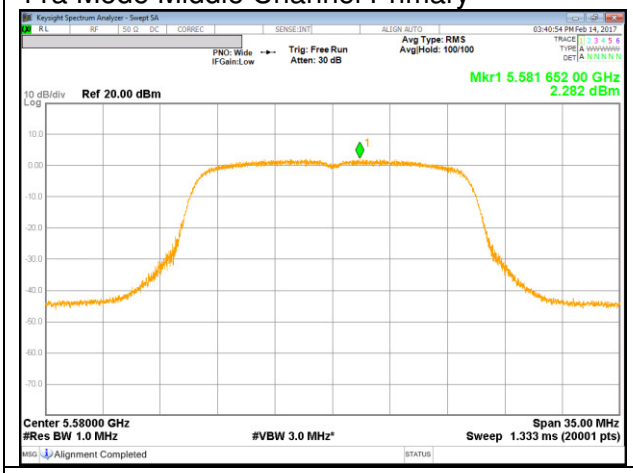
11a Mode Low Channel Primary



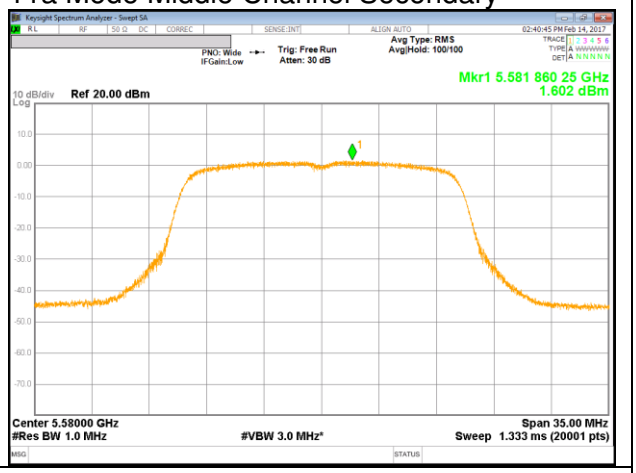
11a Mode Low Channel Secondary



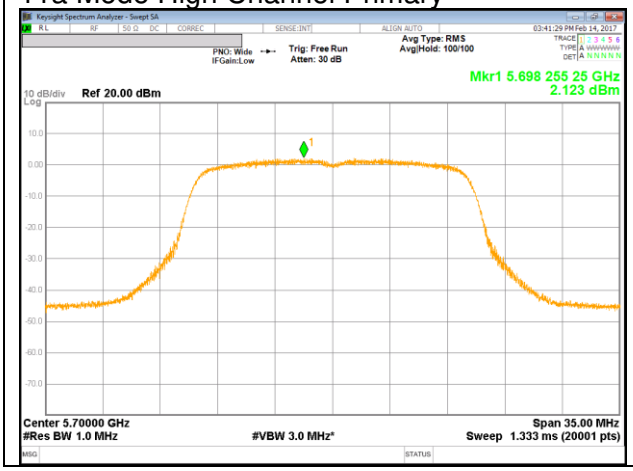
11a Mode Middle Channel Primary



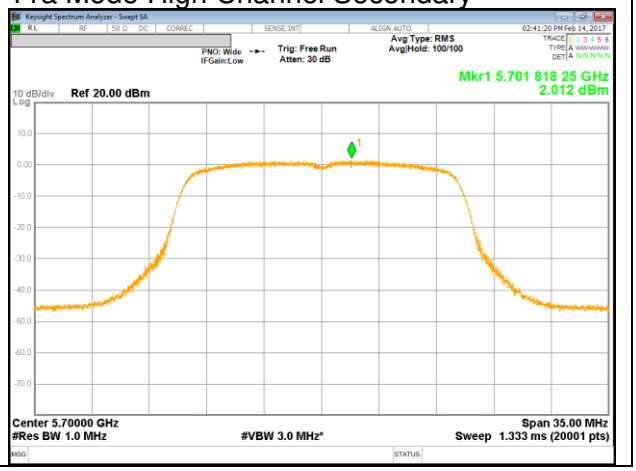
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary



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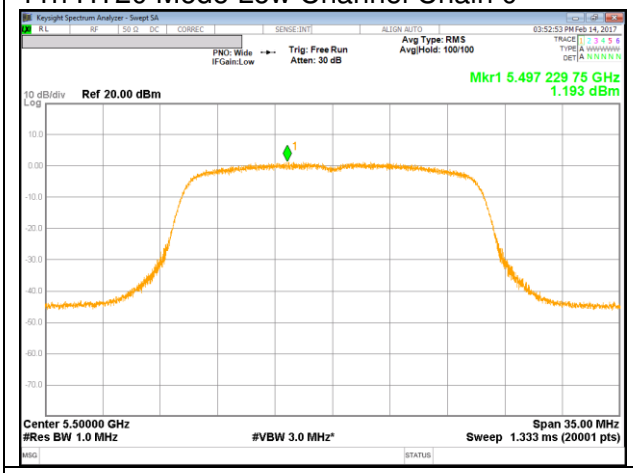
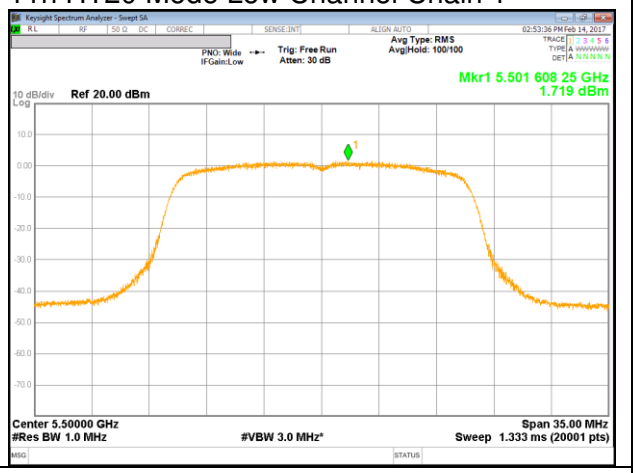
UNII 5.5 GHz IEEE 802.11n HT20 mode

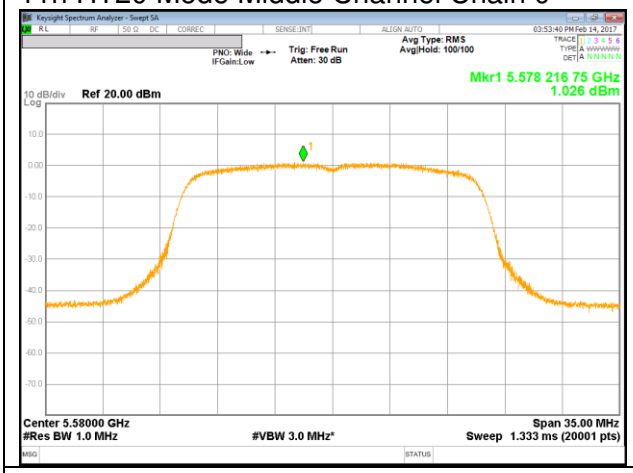
11n HT20 Mode Low Channel Chain 0



11n HT20 Mode Low Channel Chain 1



11n HT20 Mode Middle Channel Chain 0



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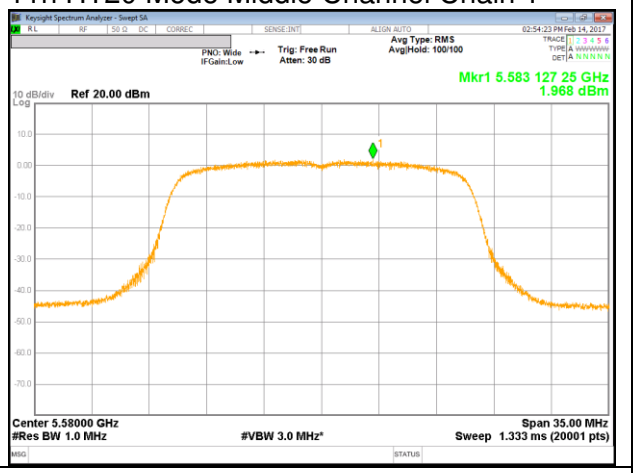
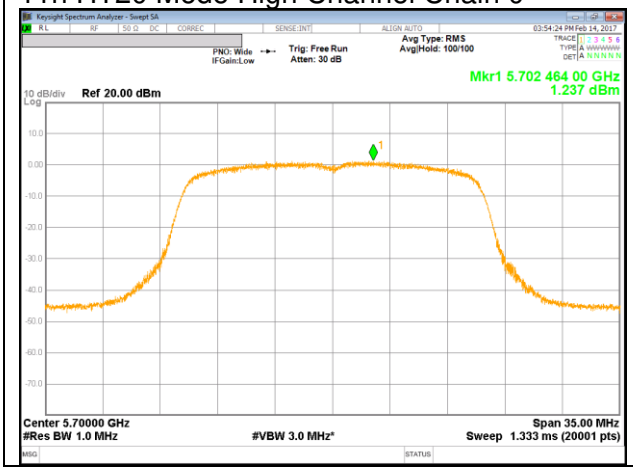
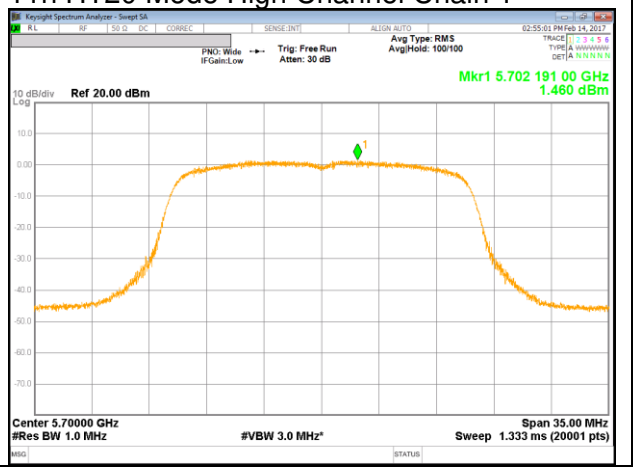


11n HT20 Mode High Channel Chain 0



11n HT20 Mode High Channel Chain 1



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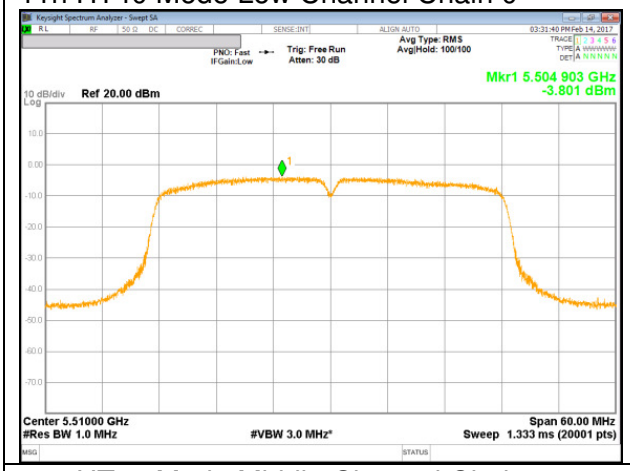
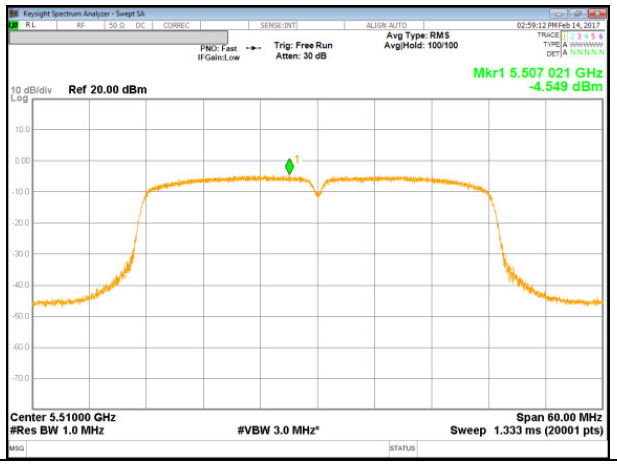
UNII 5.5 GHz IEEE 802.11n HT40 mode

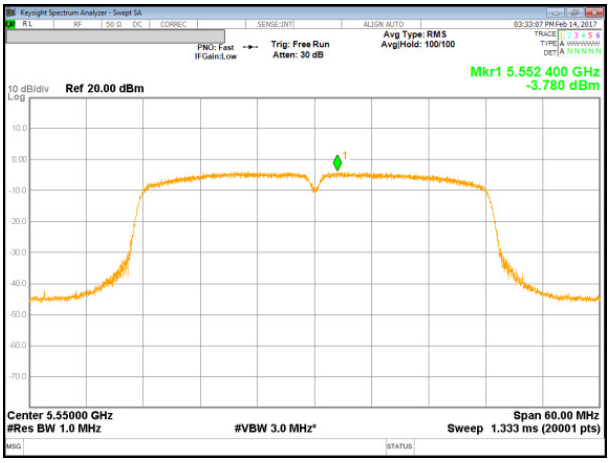
11n HT40 Mode Low Channel Chain 0



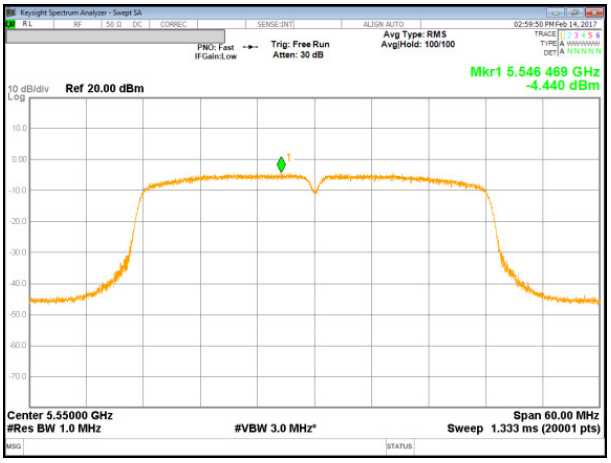
11n HT40 Mode Low Channel Chain 1



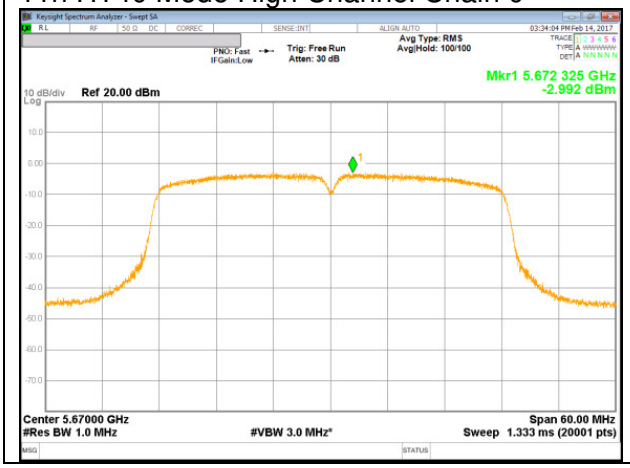
11n HT40 Mode Middle Channel Chain 0



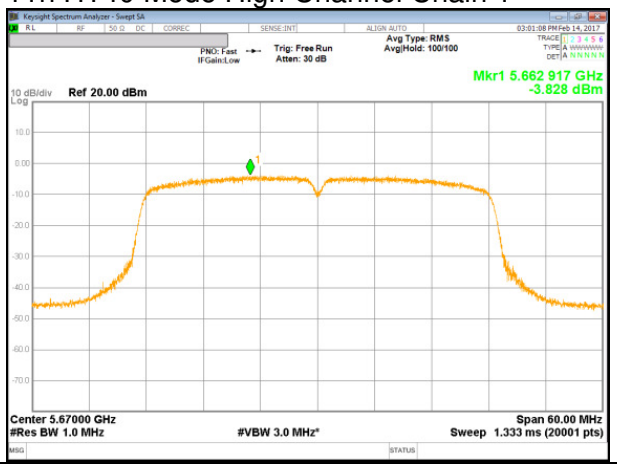
11n HT40 Mode Middle Channel Chain 1



11n HT40 Mode High Channel Chain 0



11n HT40 Mode High Channel Chain 1



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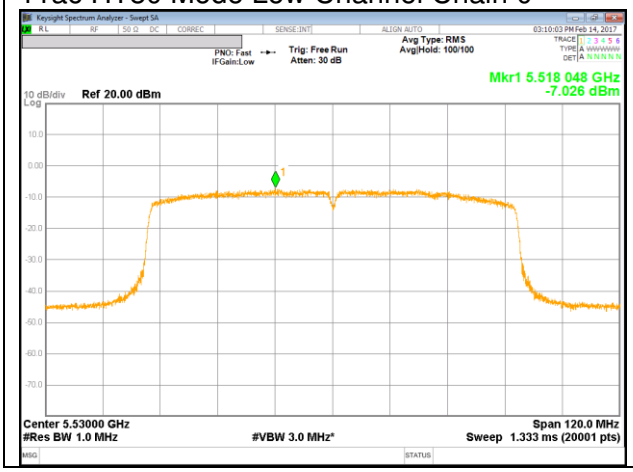
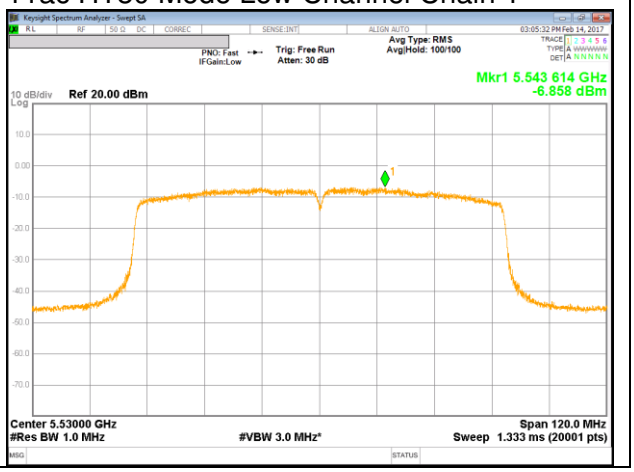
UNII 5.5 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Low Channel Chain 0



11ac HT80 Mode Low Channel Chain 1



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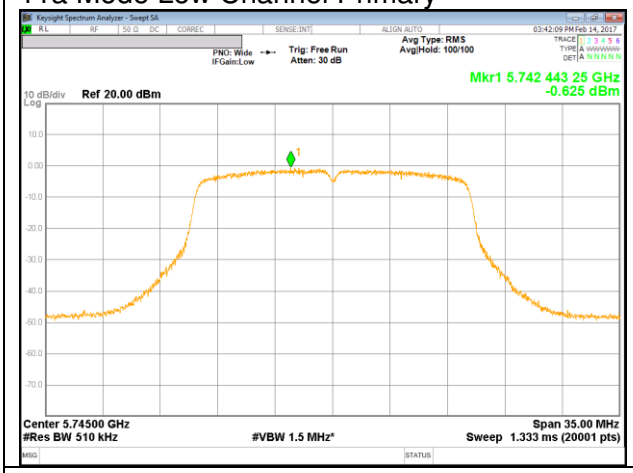
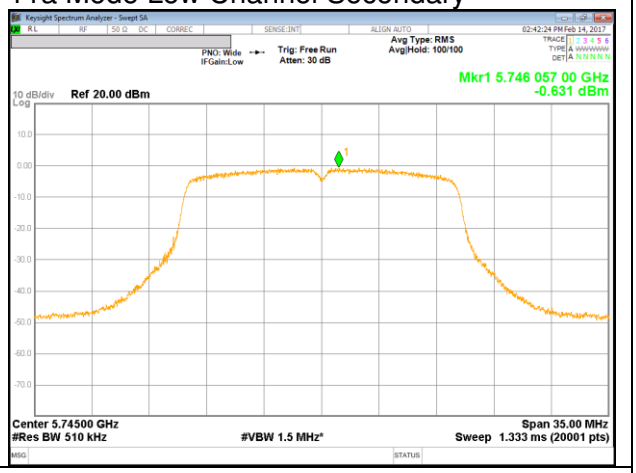
UNII 5.8 GHz IEEE 802.11a mode

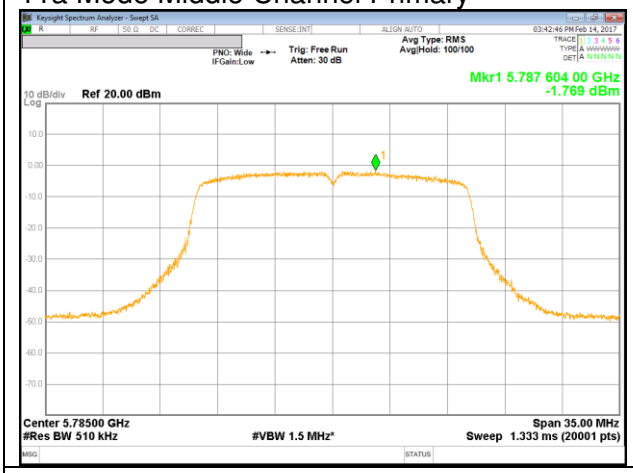
11a Mode Low Channel Primary



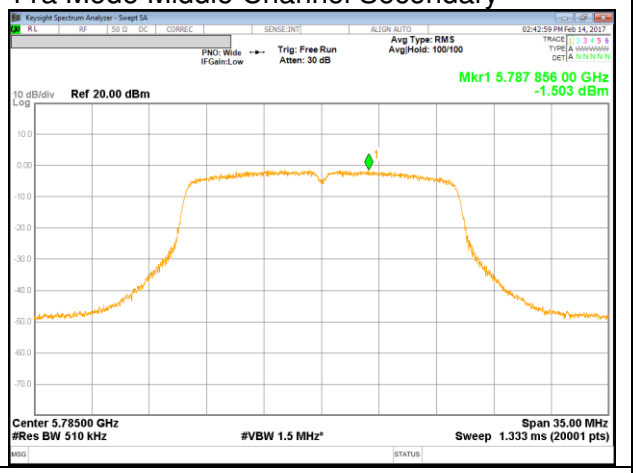
11a Mode Low Channel Secondary



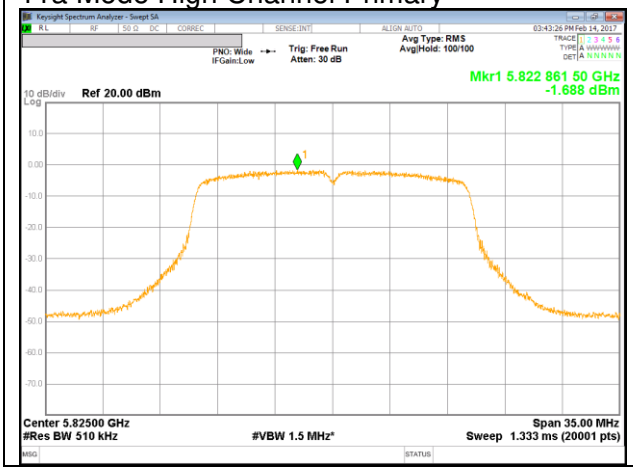
11a Mode Middle Channel Primary



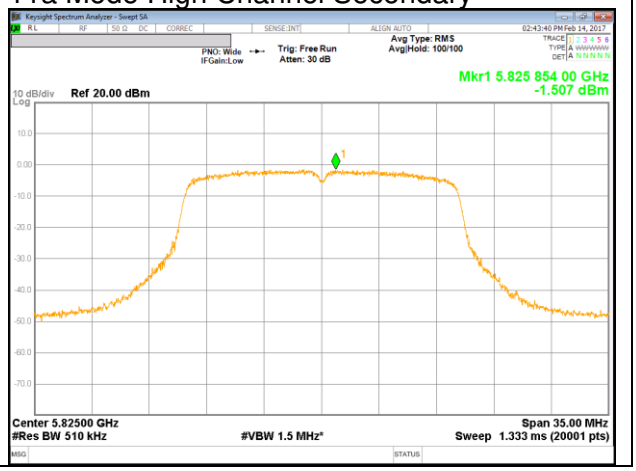
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary



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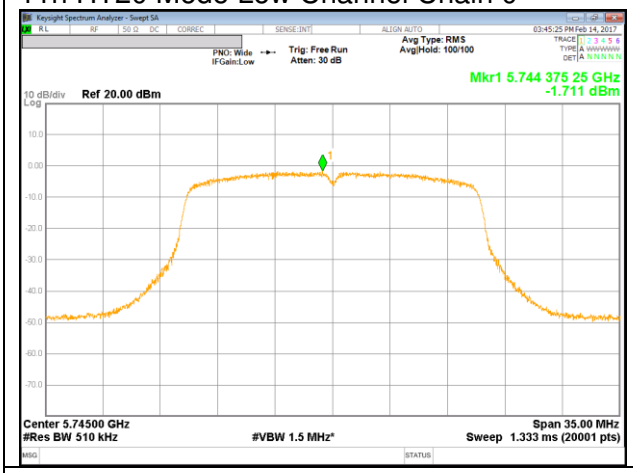
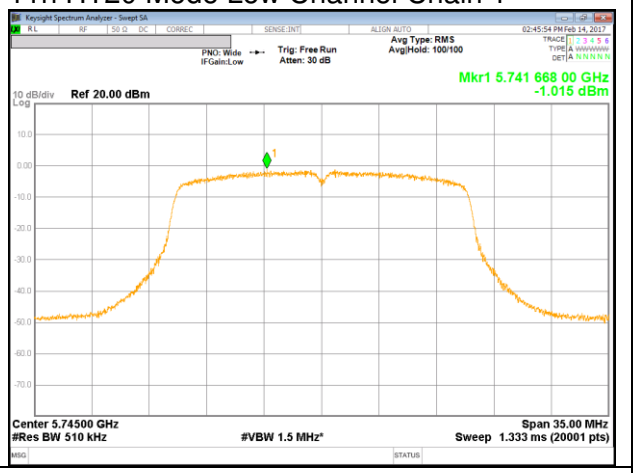
UNII 5.8 GHz IEEE 802.11n HT20 mode

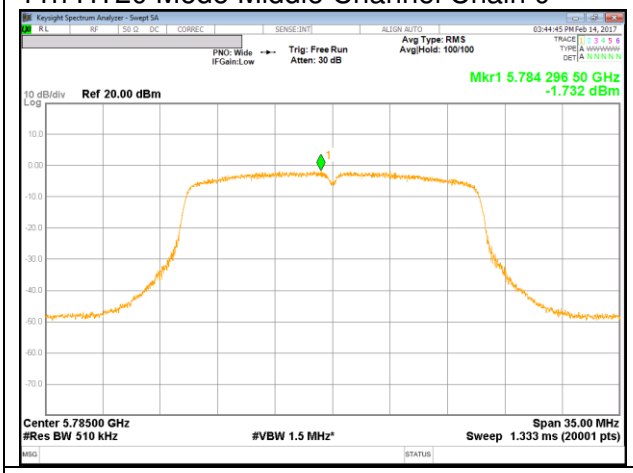
11n HT20 Mode Low Channel Chain 0



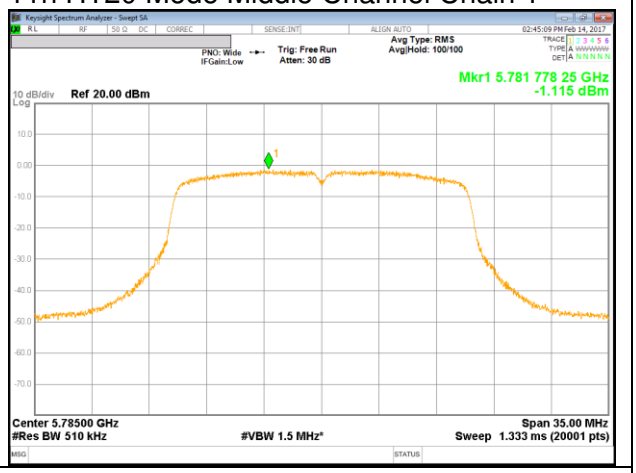
11n HT20 Mode Low Channel Chain 1



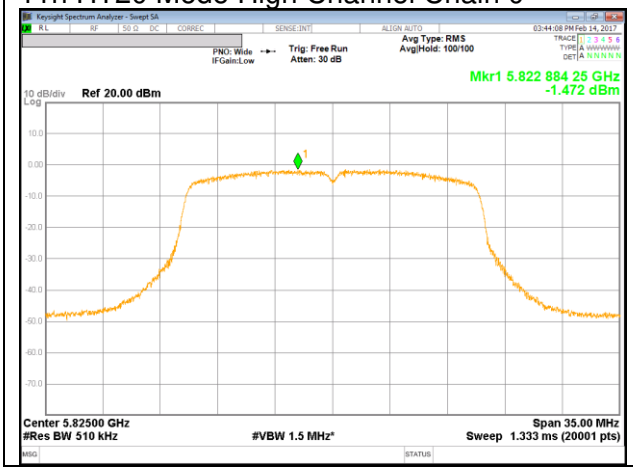
11n HT20 Mode Middle Channel Chain 0



11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



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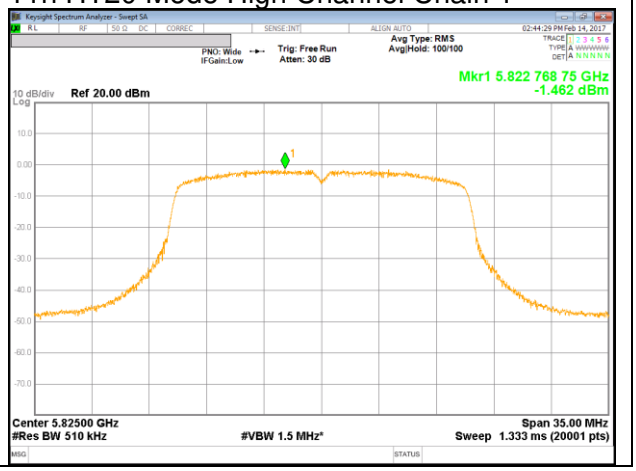

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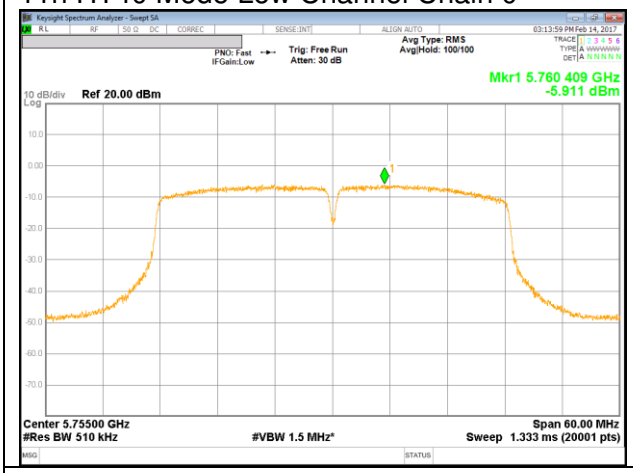
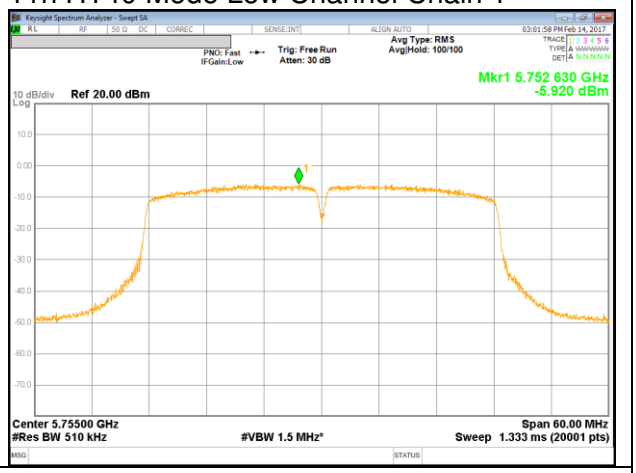
UNII 5.8 GHz IEEE 802.11n HT40 mode

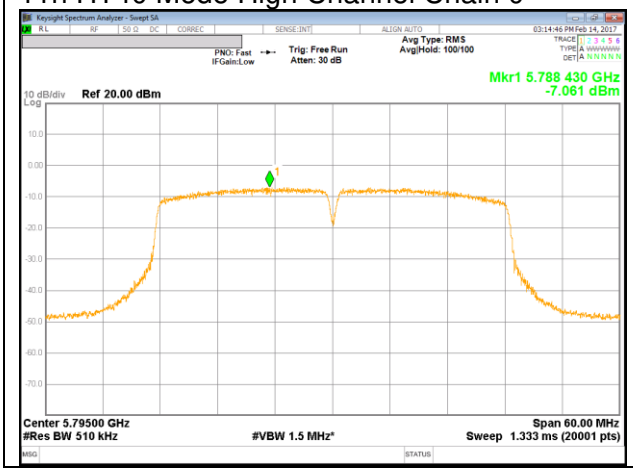
11n HT40 Mode Low Channel Chain 0



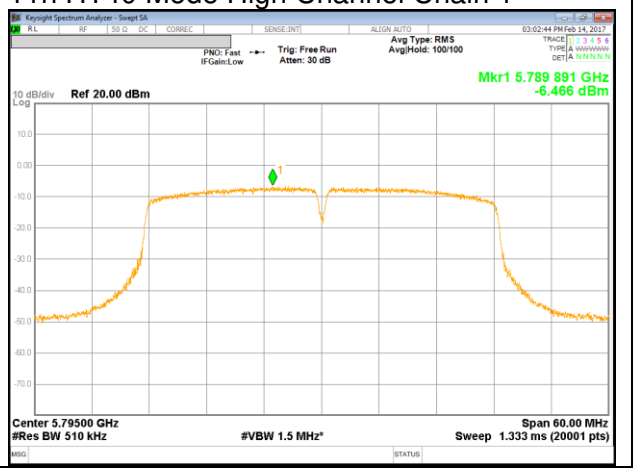
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0

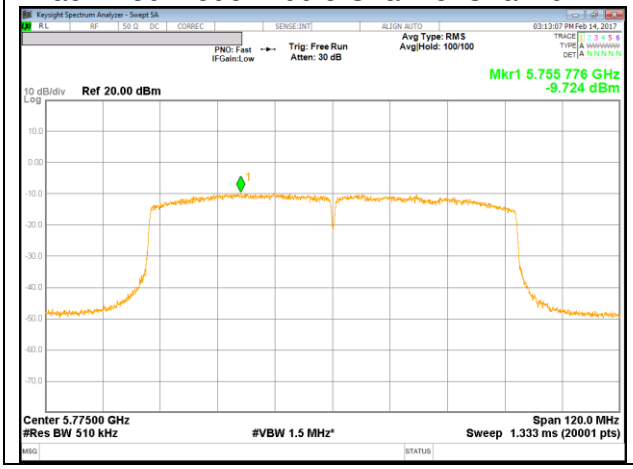


11n HT40 Mode High Channel Chain 1

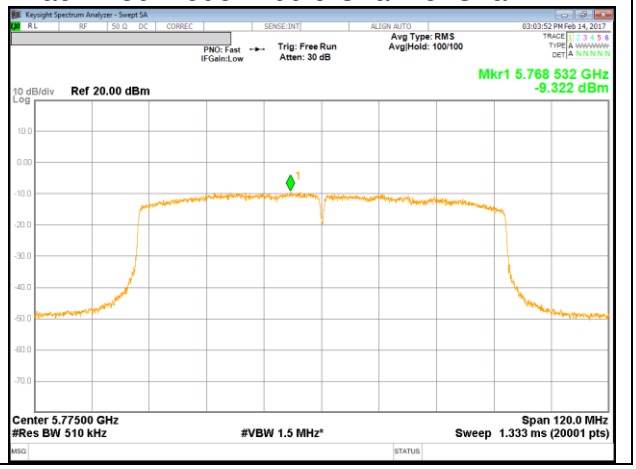


UNII 5.8 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



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10. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

FCC §15.407 (b)

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

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(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
(7) The provisions of §15.205 apply to intentional radiators operating under this section.
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Note

- Limit translation to field strength level (FCC §15.407)

E[dBuV/m] = EIRP[dBm] + 95.2 = -27dBm + 95.2 = 68.2dBuV/m

E[dBuV/m] = EIRP[dBm] + 95.2 = -17dBm + 95.2 = 78.2dBuV/m

- Undesirable emission limit for 5.725-5.8GHz, old limit line described on the result plot(More worst case) due to future IC(ISED) filling.

  Limit : For the band 5725-5850 MHz, emissions at frequencies from the band edges to 10 MHz above or below the band edges shall not exceed -17 dBm/MHz e.i.r.p.

  For emissions at frequencies more than 10 MHz above or below the band edges, the emissions power shall not exceed -27 dBm/MHz.

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TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Reference to KDB 789033 D02 v01r03 UNII part G) 6) c) Method AD:
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

The spectrum from 1GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note : Emission was pre-scanned from 9KHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

Formula for converting the filed strength from uV/m to dBuV/m is:
Limit (dBuV/m) = 20 log limit (uV/m)

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 937606.

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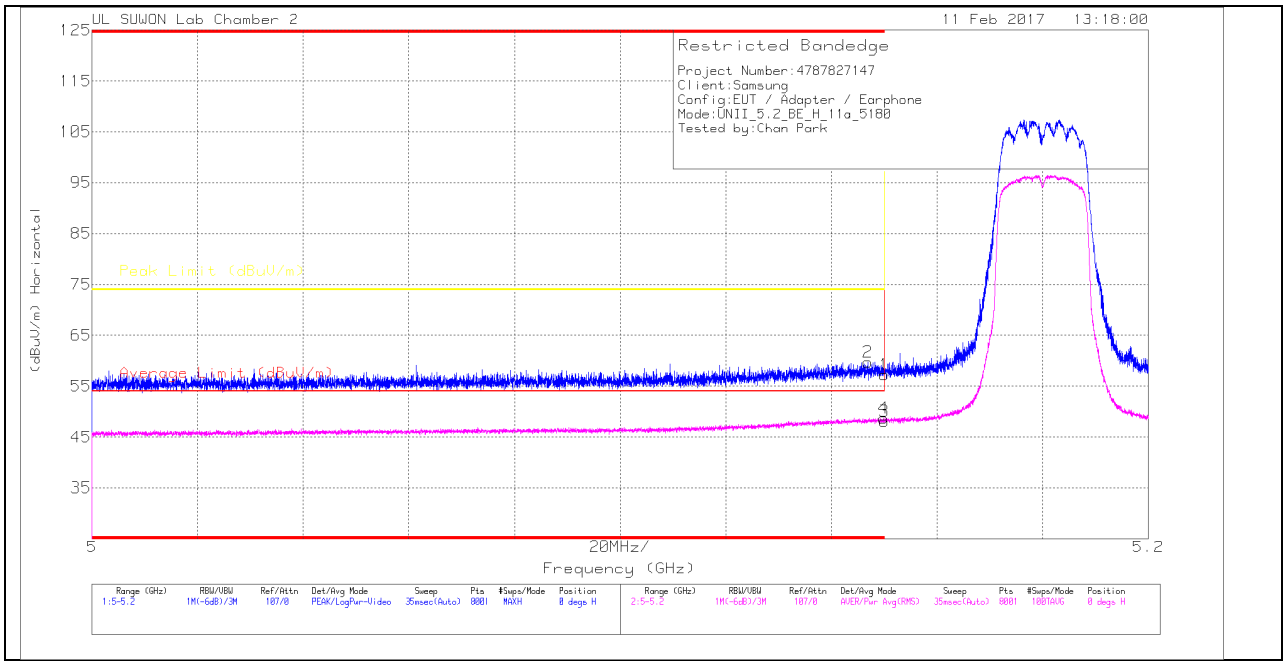
10.1. 5.2 GHz

10.1.1. TX Above 1GHz 802.11a 2Tx CDD MODE IN THE 5.2GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	38.46	Pk	34.1	-15.3	0	57.26	-	-	74	-16.74	0	193	H
2	* 5.147	40.96	Pk	34.1	-15.3	0	59.76	-	-	74	-14.24	0	193	H
3	* 5.15	29.04	RMS	34.1	-15.3	.22	48.06	54	-5.94	-	-	0	193	H
4	* 5.15	29.74	RMS	34.1	-15.3	.22	48.76	54	-5.24	-	-	0	193	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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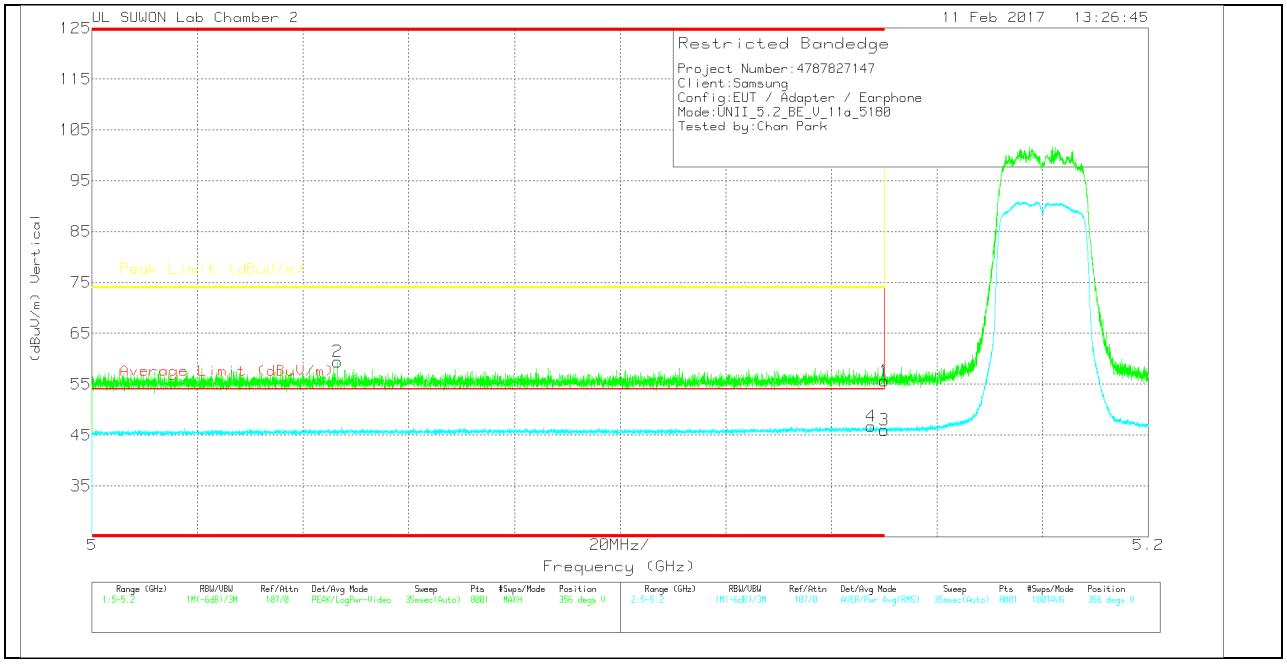
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	36.85	Pk	34.1	-15.3	0	55.65	-	-	74	-18.35	356	123	V
2	* 5.047	40.62	Pk	34	-15.2	0	59.42	-	-	74	-14.58	356	123	V
3	* 5.15	26.92	RMS	34.1	-15.3	.22	45.94	54	-8.06	-	-	356	123	V
4	* 5.147	27.7	RMS	34.1	-15.3	.22	46.72	54	-7.28	-	-	356	123	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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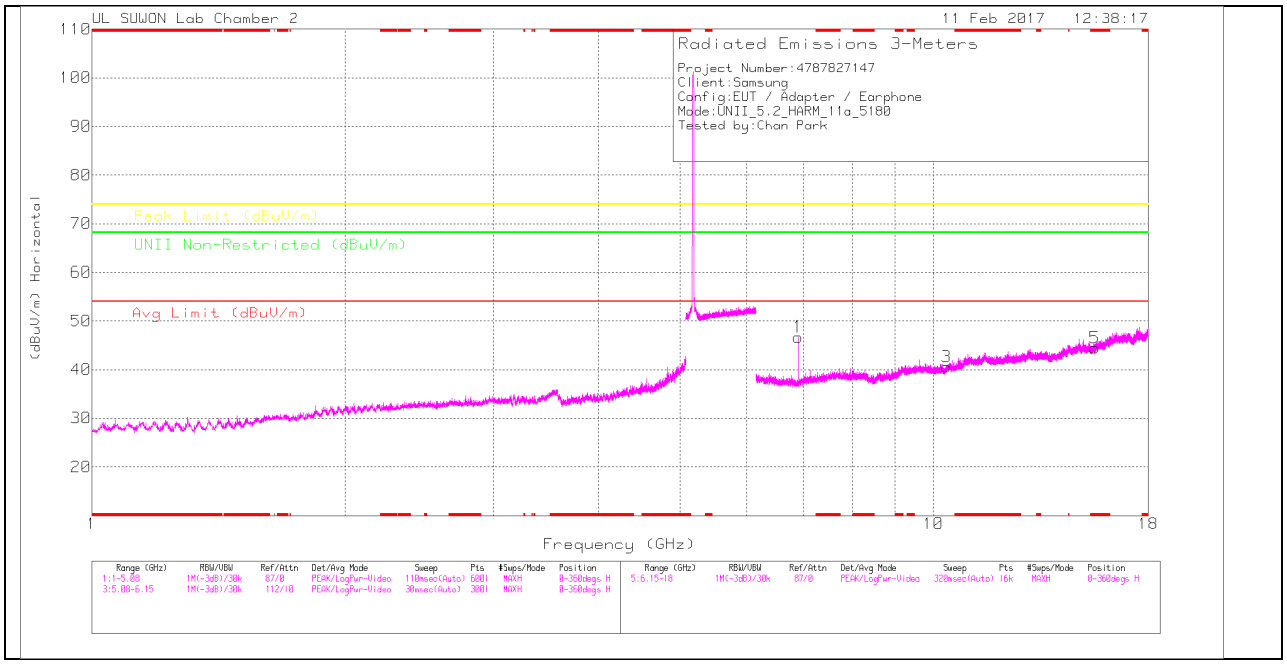
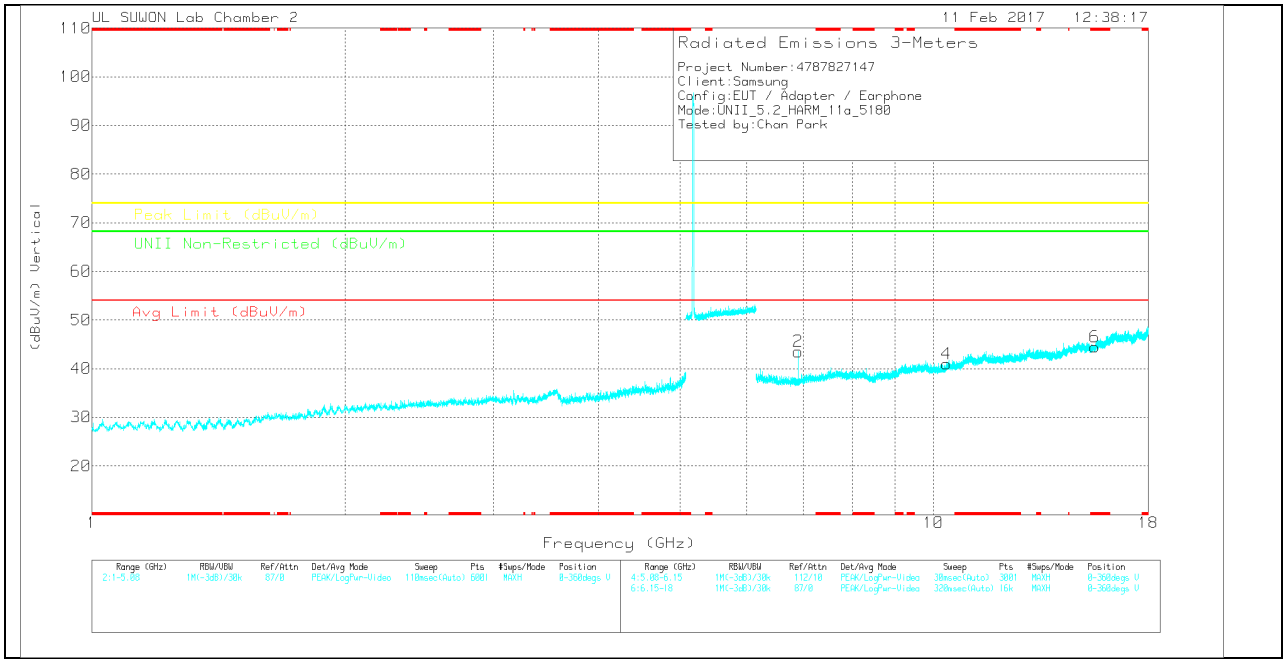
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.906	33.03	Pk	35.5	-21.8	0	46.73	-	-	-	-	68.2	-21.47	0-360	250	H
3	10.36	19.65	Pk	37.6	-16.7	0	40.55	-	-	-	-	68.2	-27.65	0-360	150	H
5	* 15.541	18.95	Pk	39.9	-14.4	0	44.45	-	-	74	-29.55	-	-	0-360	150	H
2	6.906	29.8	Pk	35.5	-21.8	0	43.5	-	-	-	-	68.2	-24.7	0-360	250	V
4	10.362	20.13	Pk	37.6	-16.7	0	41.03	-	-	-	-	68.2	-27.17	0-360	250	V
6	* 15.541	18.98	Pk	39.9	-14.4	0	44.48	-	-	74	-29.52	-	-	0-360	150	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.907	38.95	PK-U	35.5	-21.8	0	52.65	-	-	-	-	68.2	-15.55	339	284	H
6.907	36.21	PK-U	35.5	-21.8	0	49.91	-	-	-	-	68.2	-18.29	312	112	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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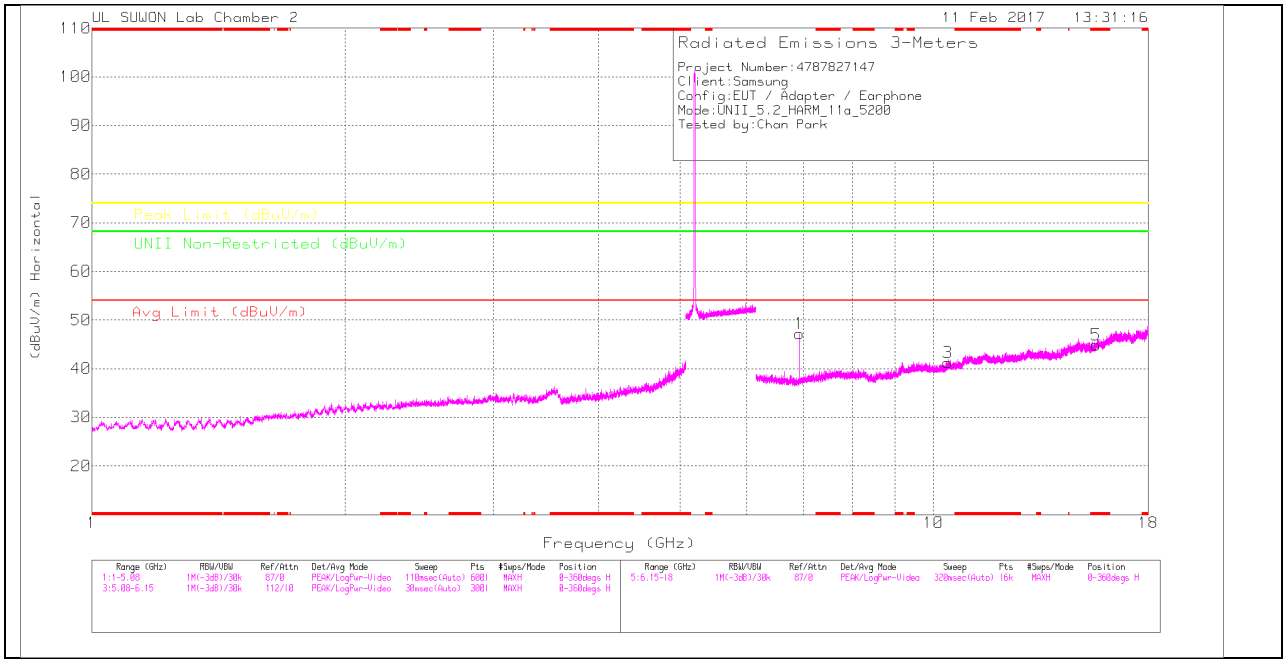
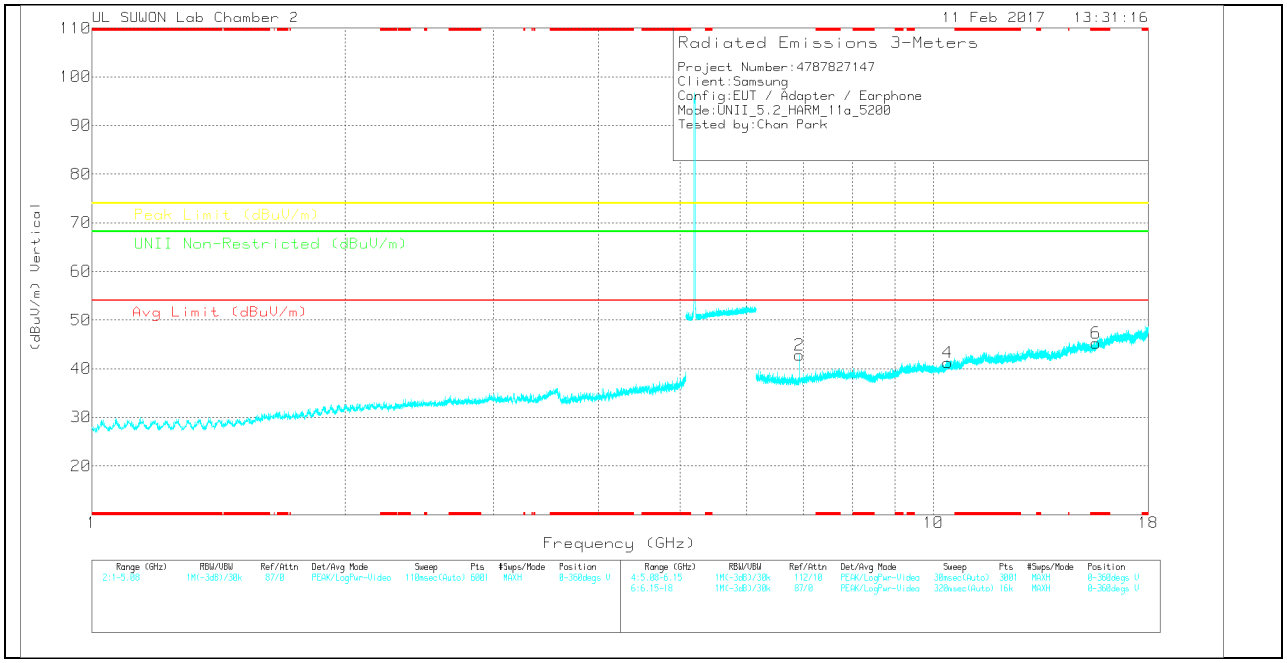
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.933	33.14	Pk	35.5	-21.4	0	47.24	-	-	-	-	68.2	-20.96	0-360	250	H
3	10.399	20.02	Pk	37.6	-16.4	0	41.22	-	-	-	-	68.2	-26.98	0-360	250	H
5	* 15.603	19.36	Pk	40	-14.5	0	44.86	-	-	74	-29.14	-	-	0-360	150	H
2	6.933	28.63	Pk	35.5	-21.4	0	42.73	-	-	-	-	68.2	-25.47	0-360	250	V
4	10.404	19.88	Pk	37.6	-16.3	0	41.18	-	-	-	-	68.2	-27.02	0-360	150	V
6	* 15.603	19.72	Pk	40	-14.5	0	45.22	-	-	74	-28.78	-	-	0-360	150	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.933	38.44	PK-U	35.5	-21.4	0	52.54	-	-	-	-	68.2	-15.66	343	162	H
6.933	36.23	PK-U	35.5	-21.4	0	50.33	-	-	-	-	68.2	-17.87	312	118	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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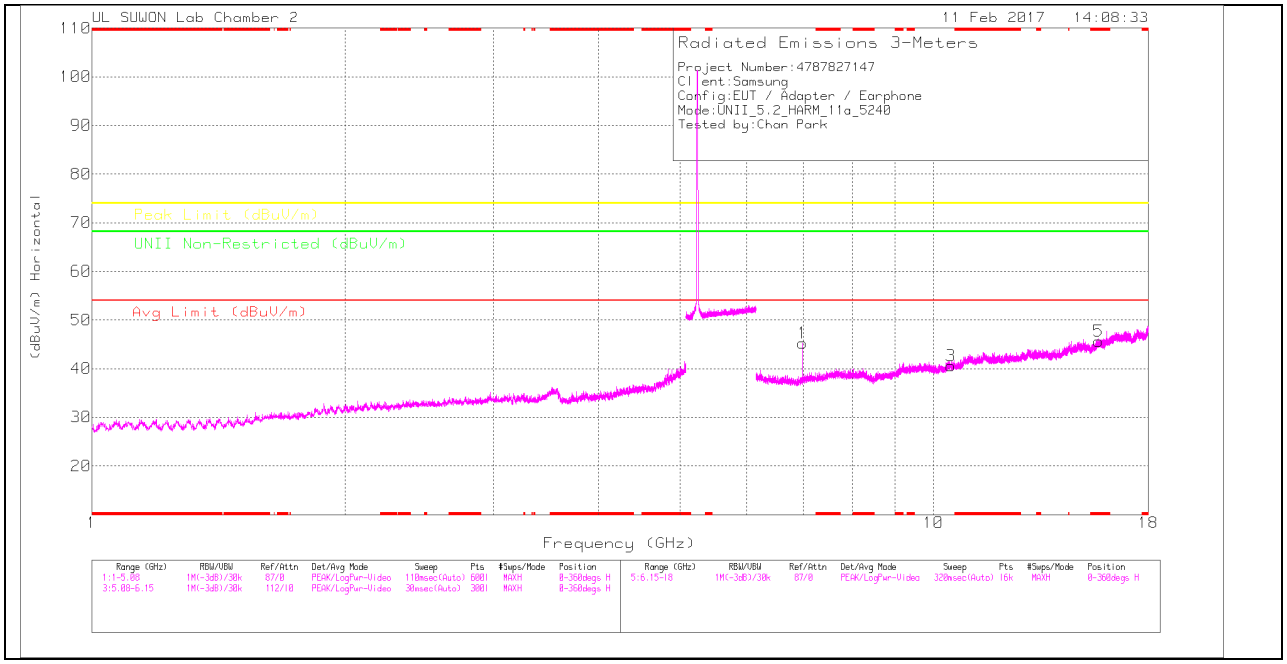
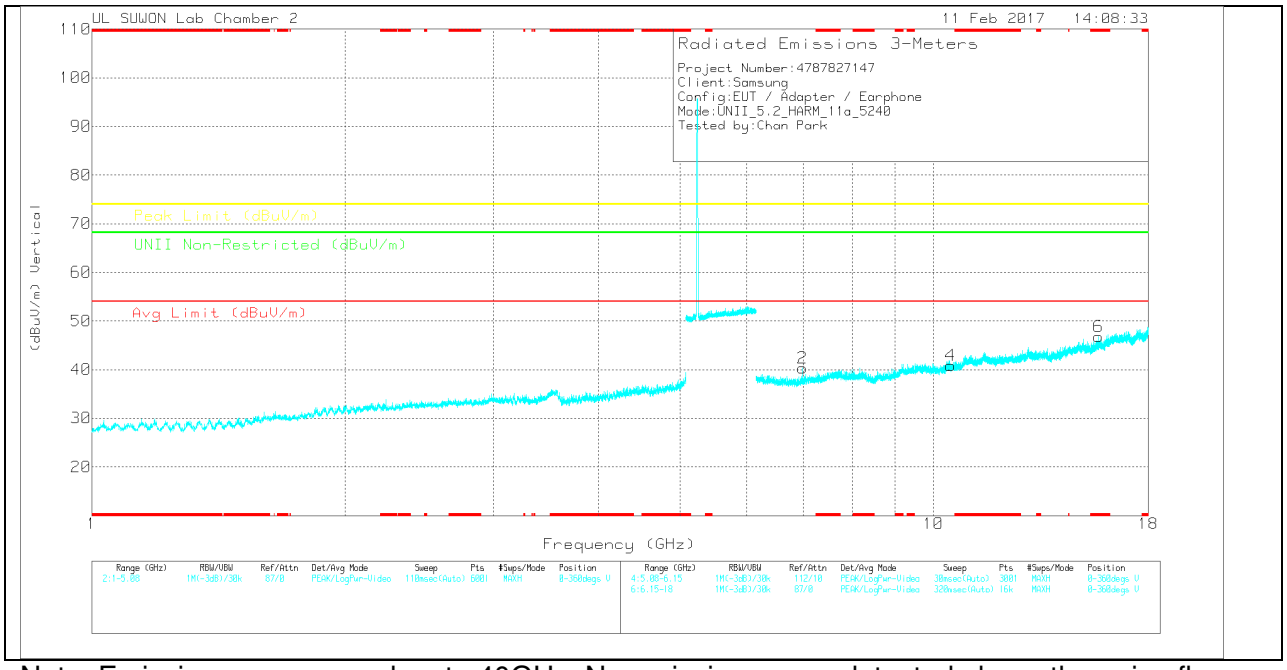
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.986	30.27	Pk	35.5	-20.5	0	45.27	-	-	-	-	68.2	-22.93	0-360	150	H
3	10.483	19.43	Pk	37.7	-16.5	0	40.63	-	-	-	-	68.2	-27.57	0-360	150	H
5	* 15.722	20.2	Pk	40.2	-14.8	0	45.6	-	-	74	-28.4	-	-	0-360	150	H
2	6.986	25.27	Pk	35.5	-20.5	0	40.27	-	-	-	-	68.2	-27.93	0-360	250	V
4	10.479	19.6	Pk	37.7	-16.4	0	40.9	-	-	-	-	68.2	-27.3	0-360	250	V
6	* 15.717	21.61	Pk	40.1	-14.9	0	46.81	-	-	74	-27.19	-	-	0-360	150	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.986	36.51	PK-U	35.5	-20.5	0	51.51	-	-	-	-	68.2	-16.69	341	171	H
6.986	34.48	PK-U	35.5	-20.5	0	49.48	-	-	-	-	68.2	-18.72	312	171	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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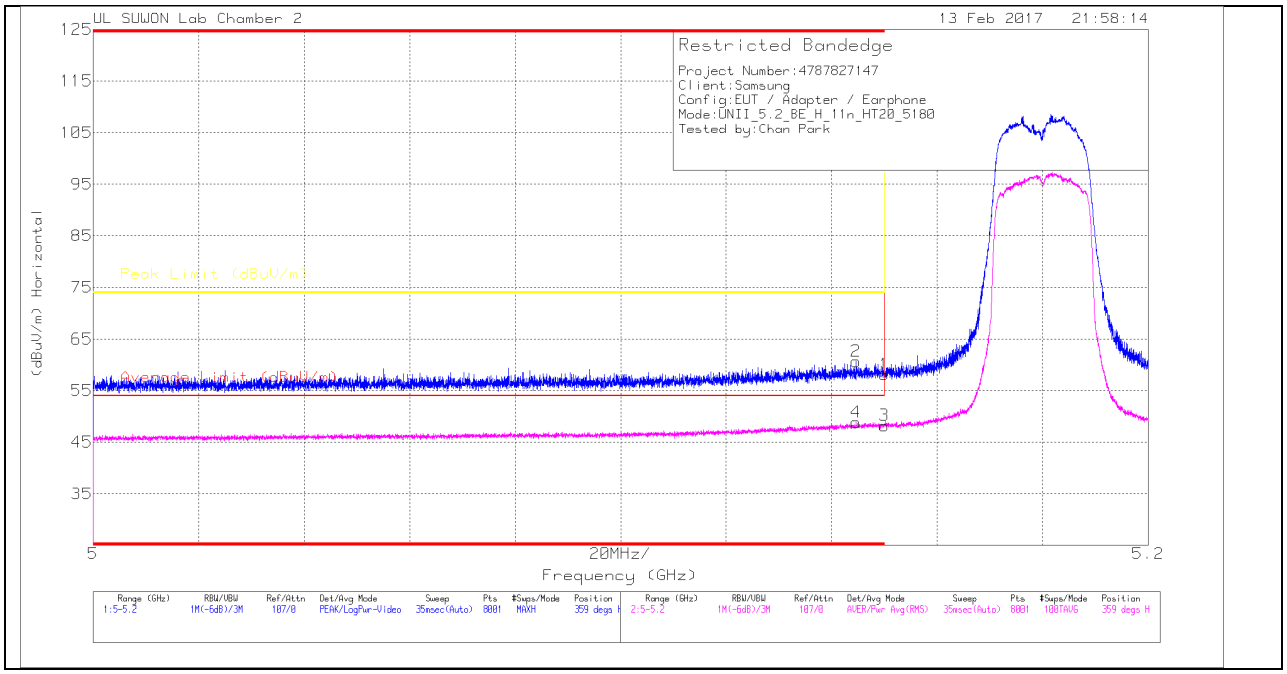
10.1.2. TX Above 1GHz 802.11n HT20 2Tx CDD MODE IN THE 5.2GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	39.32	Pk	34.1	-15.3	0	58.12	-	-	74	-15.88	359	148	H
2	* 5.145	41.86	Pk	34.1	-15.3	0	60.66	-	-	74	-13.34	359	148	H
3	* 5.15	29.18	RMS	34.1	-15.3	.25	48.23	54	-5.77	-	-	359	148	H
4	* 5.145	29.81	RMS	34.1	-15.3	.25	48.86	54	-5.14	-	-	359	148	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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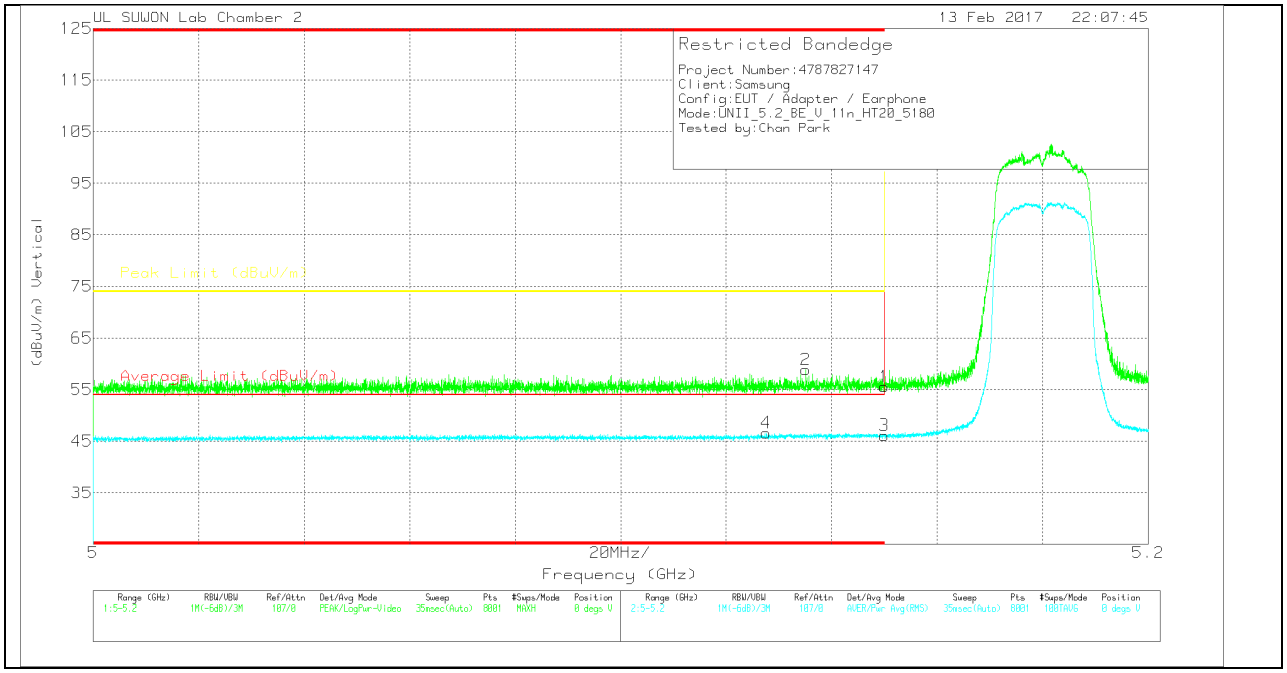
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	36.8	Pk	34.1	-15.3	0	55.6	-	-	74	-18.4	0	108	V
2	* 5.135	40.07	Pk	34.1	-15.3	0	58.87	-	-	74	-15.13	0	108	V
3	* 5.15	27.07	RMS	34.1	-15.3	.25	46.12	54	-7.88	-	-	0	108	V
4	* 5.128	27.56	RMS	34.1	-15.3	.25	46.61	54	-7.39	-	-	0	108	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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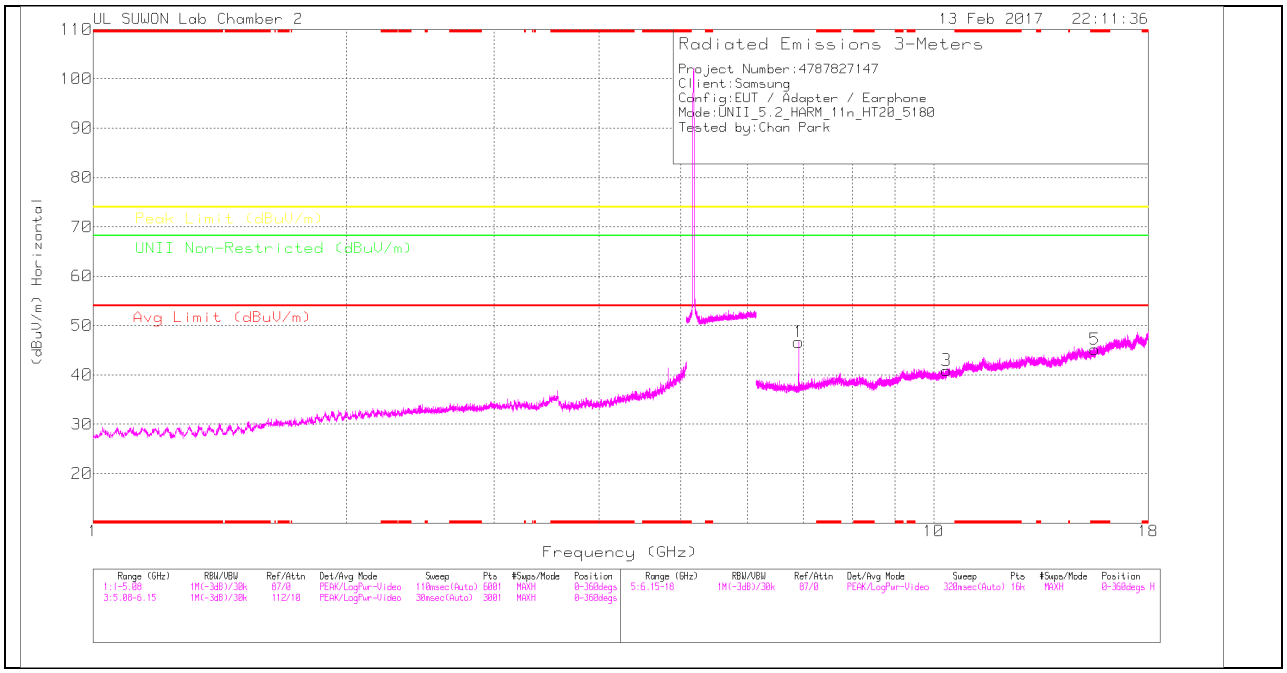
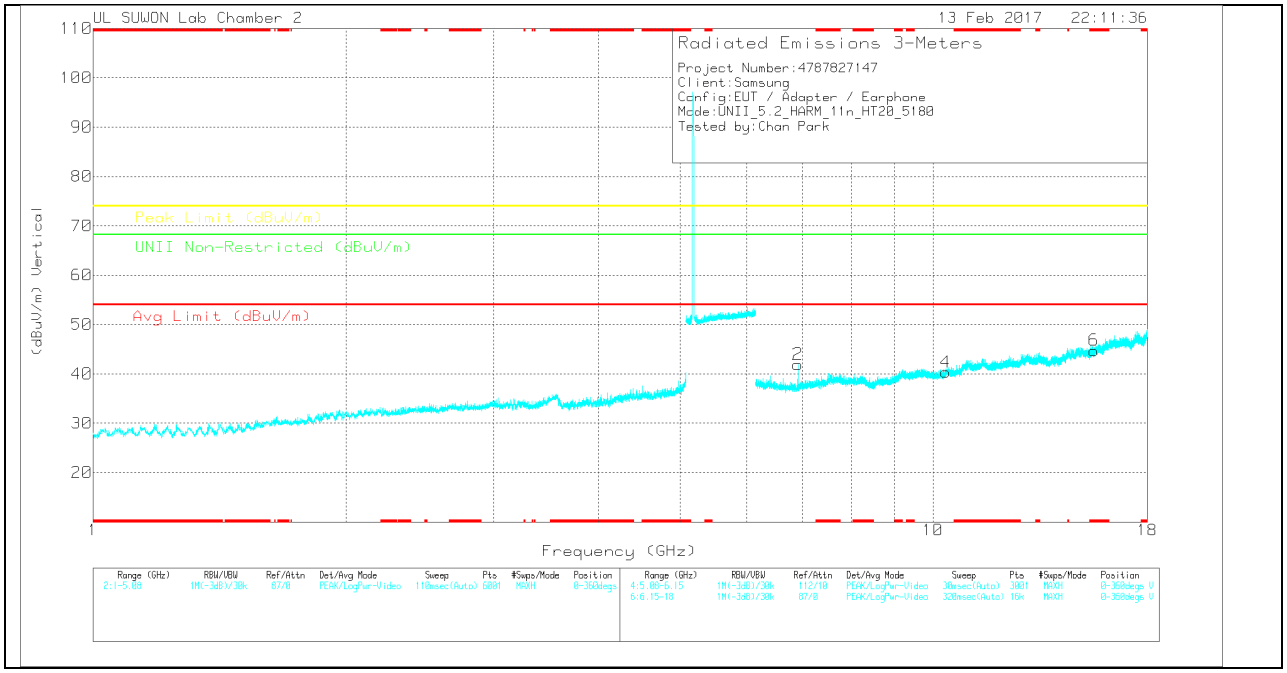
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.906	32.98	Pk	35.5	-21.8	0	46.68	-	-	-	-	68.2	-21.52	0-360	250	H
3	10.361	20	Pk	37.6	-16.7	0	40.9	-	-	-	-	68.2	-27.3	0-360	250	H
5	* 15.54	19.7	Pk	39.9	-14.4	0	45.2	-	-	74	-28.8	-	-	0-360	150	H
2	6.906	28.24	Pk	35.5	-21.8	0	41.94	-	-	-	-	68.2	-26.26	0-360	250	V
4	10.362	19.47	Pk	37.6	-16.7	0	40.37	-	-	-	-	68.2	-27.83	0-360	150	V
6	* 15.541	19.25	Pk	39.9	-14.4	0	44.75	-	-	74	-29.25	-	-	0-360	150	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.907	38.49	PK-U	35.5	-21.8	0	52.19	-	-	-	-	68.2	-16.01	340	198	H
6.907	35.61	PK-U	35.5	-21.8	0	49.31	-	-	-	-	68.2	-18.89	223	120	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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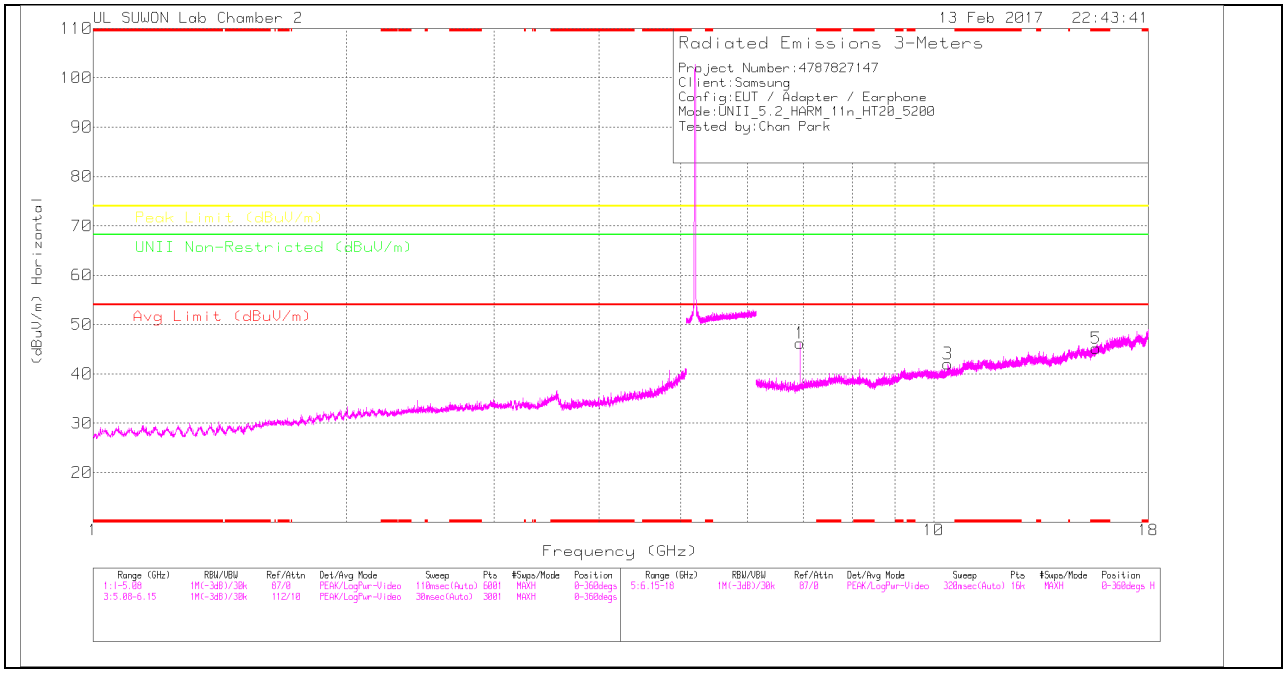
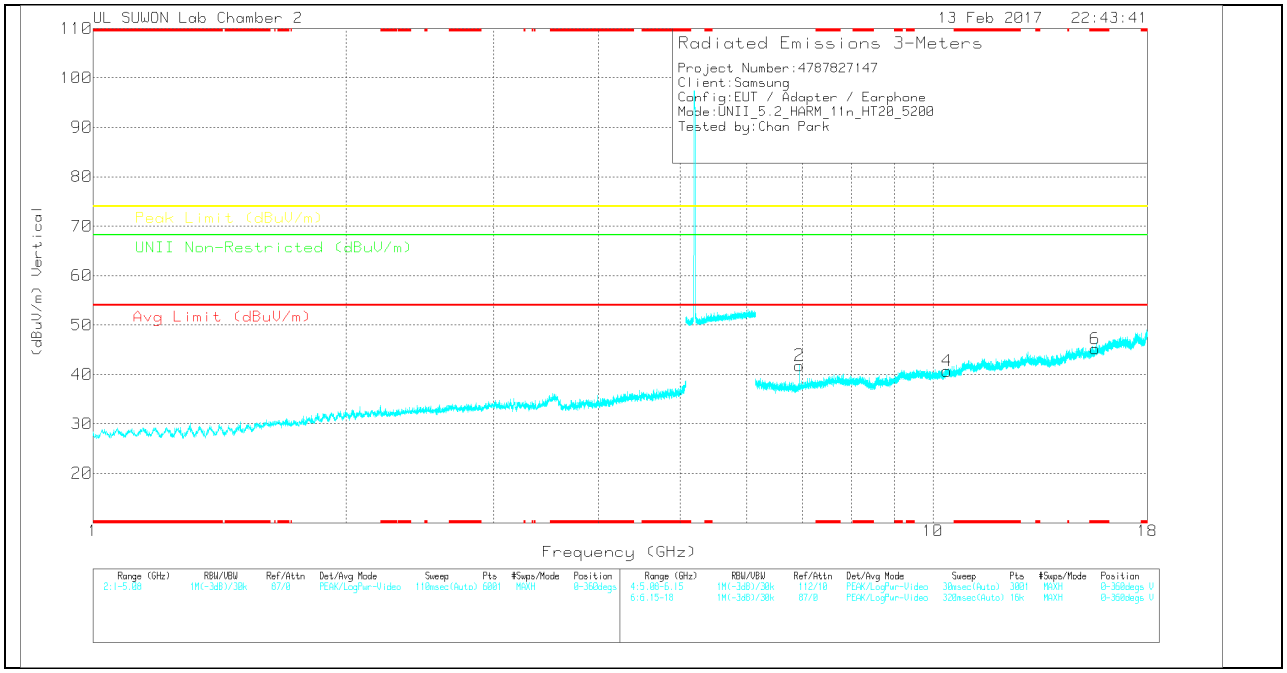
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.933	32.13	Pk	35.5	-21.4	0	46.23	-	-	-	-	68.2	-21.97	0-360	150	H
3	10.399	20.84	Pk	37.6	-16.4	0	42.04	-	-	-	-	68.2	-26.16	0-360	250	H
5	* 15.599	19.66	Pk	40	-14.5	0	45.16	-	-	74	-28.84	-	-	0-360	150	H
2	6.934	27.7	Pk	35.5	-21.4	0	41.8	-	-	-	-	68.2	-26.4	0-360	250	V
4	10.399	19.49	Pk	37.6	-16.4	0	40.69	-	-	-	-	68.2	-27.51	0-360	150	V
6	* 15.601	19.67	Pk	40	-14.5	0	45.17	-	-	74	-28.83	-	-	0-360	250	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.933	37.71	PK-U	35.5	-21.4	0	51.81	-	-	-	-	68.2	-16.39	343	131	H
6.933	36.16	PK-U	35.5	-21.4	0	50.26	-	-	-	-	68.2	-17.94	311	106	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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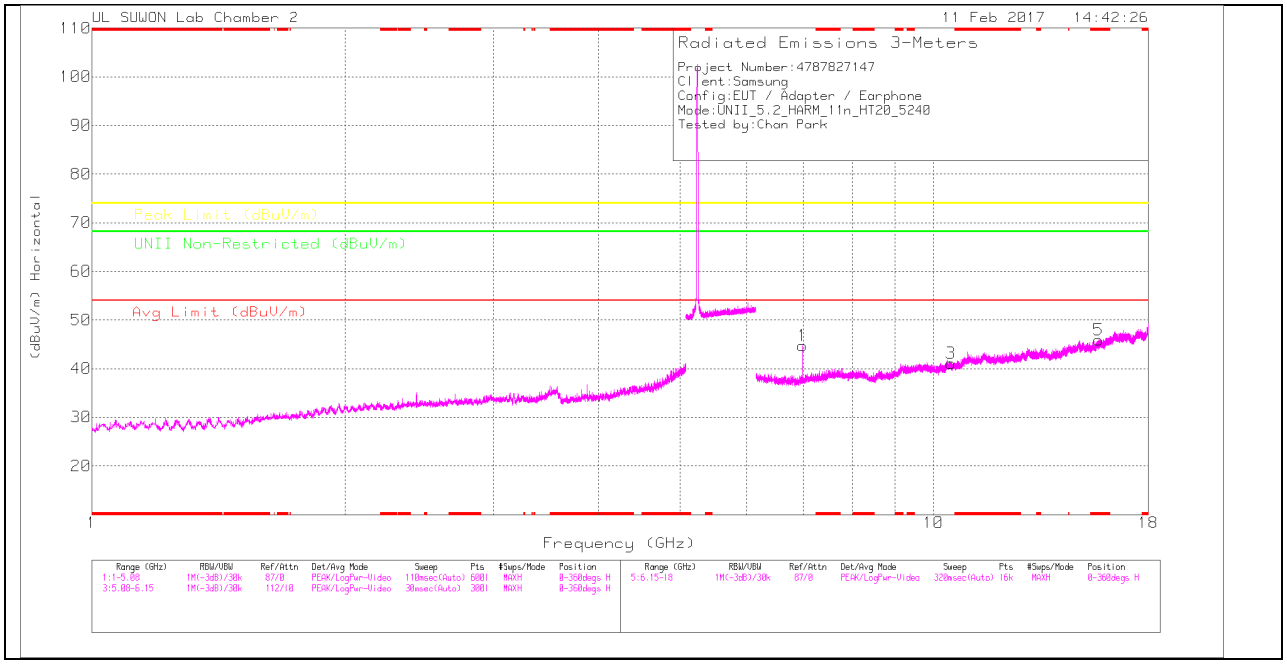
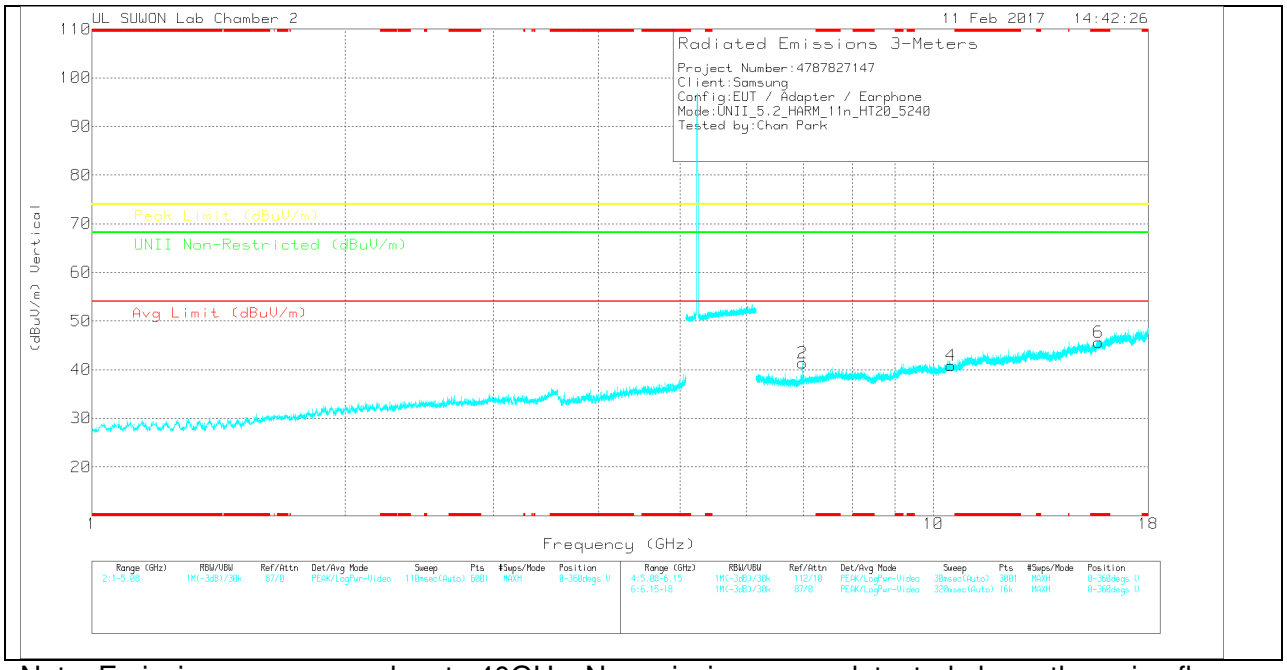
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.986	29.7	Pk	35.5	-20.5	0	44.7	-	-	-	-	68.2	-23.5	0-360	150	H
3	10.484	19.88	Pk	37.7	-16.5	0	41.08	-	-	-	-	68.2	-27.12	0-360	250	H
5	* 15.721	20.53	Pk	40.1	-14.8	0	45.83	-	-	74	-28.17	-	-	0-360	250	H
2	6.986	26.35	Pk	35.5	-20.5	0	41.35	-	-	-	-	68.2	-26.85	0-360	250	V
4	10.482	19.59	Pk	37.7	-16.5	0	40.79	-	-	-	-	68.2	-27.41	0-360	250	V
6	* 15.717	20.42	Pk	40.1	-14.9	0	45.62	-	-	74	-28.38	-	-	0-360	150	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.986	36.71	PK-U	35.5	-20.5	0	51.71	-	-	-	-	68.2	-16.49	341	206	H
6.986	34.67	PK-U	35.5	-20.5	0	49.67	-	-	-	-	68.2	-18.53	310	162	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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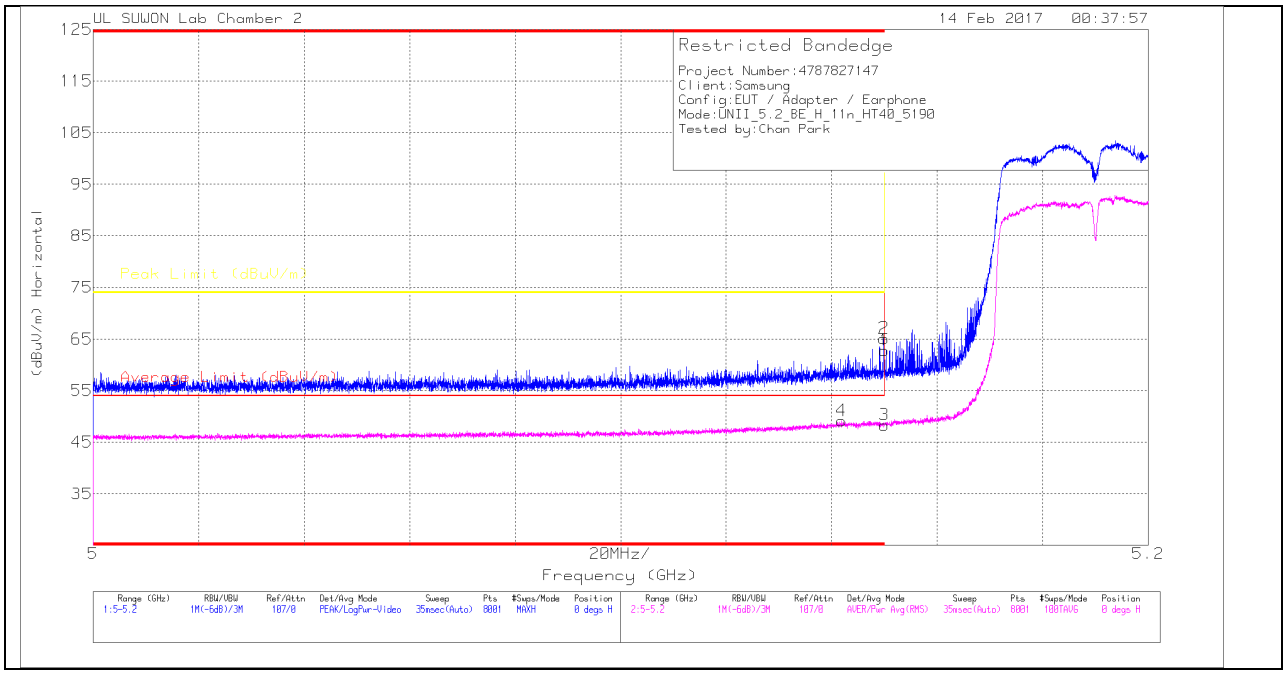
10.1.3. TX Above 1GHz 802.11n HT40 2Tx CDD MODE IN THE 5.2GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.04	Pk	34.1	-15.3	0	62.84	-	-	74	-11.16	0	189	H
2	* 5.15	46.32	Pk	34.1	-15.3	0	65.12	-	-	74	-8.88	0	189	H
3	* 5.15	29.08	RMS	34.1	-15.3	.47	48.35	54	-5.65	-	-	0	189	H
4	* 5.142	29.91	RMS	34.1	-15.3	.47	49.18	54	-4.82	-	-	0	189	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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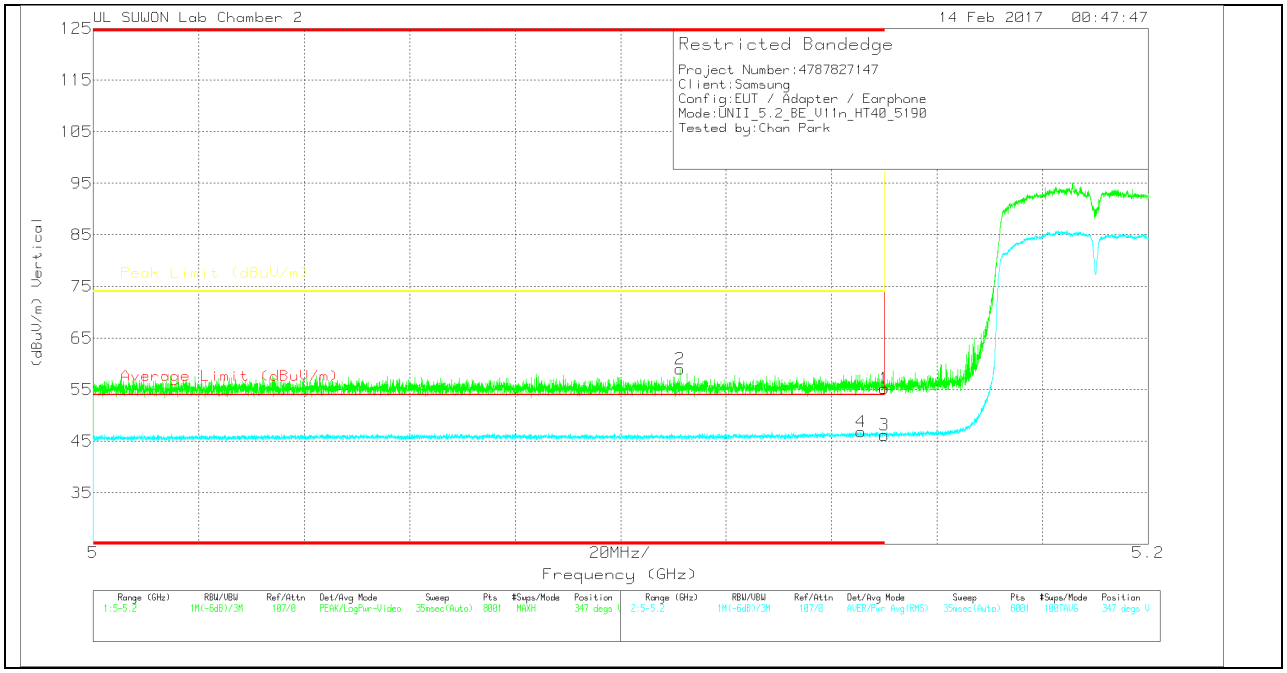
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	36.4	Pk	34.1	-15.3	0	55.2	-	-	74	-18.8	347	148	V
2	* 5.111	40.2	Pk	34.1	-15.3	0	59	-	-	74	-15	347	148	V
3	* 5.15	26.9	RMS	34.1	-15.3	.47	46.17	54	-7.83	-	-	347	148	V
4	* 5.146	27.57	RMS	34.1	-15.3	.47	46.84	54	-7.16	-	-	347	148	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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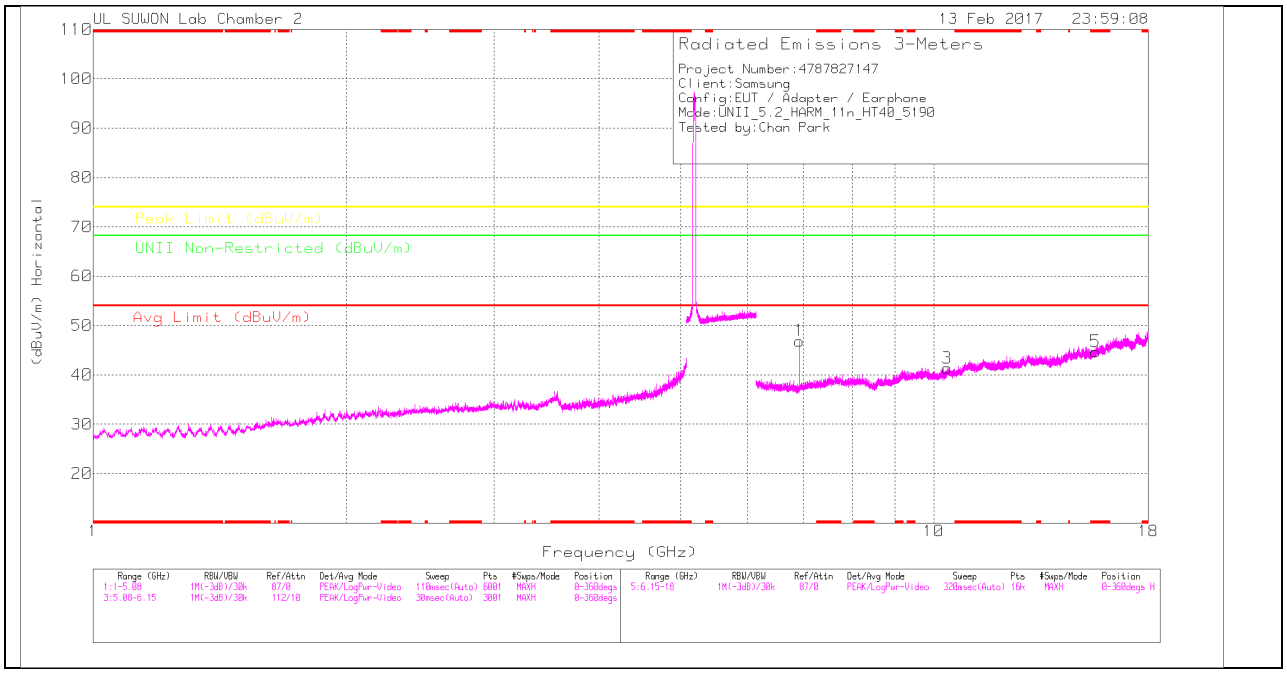
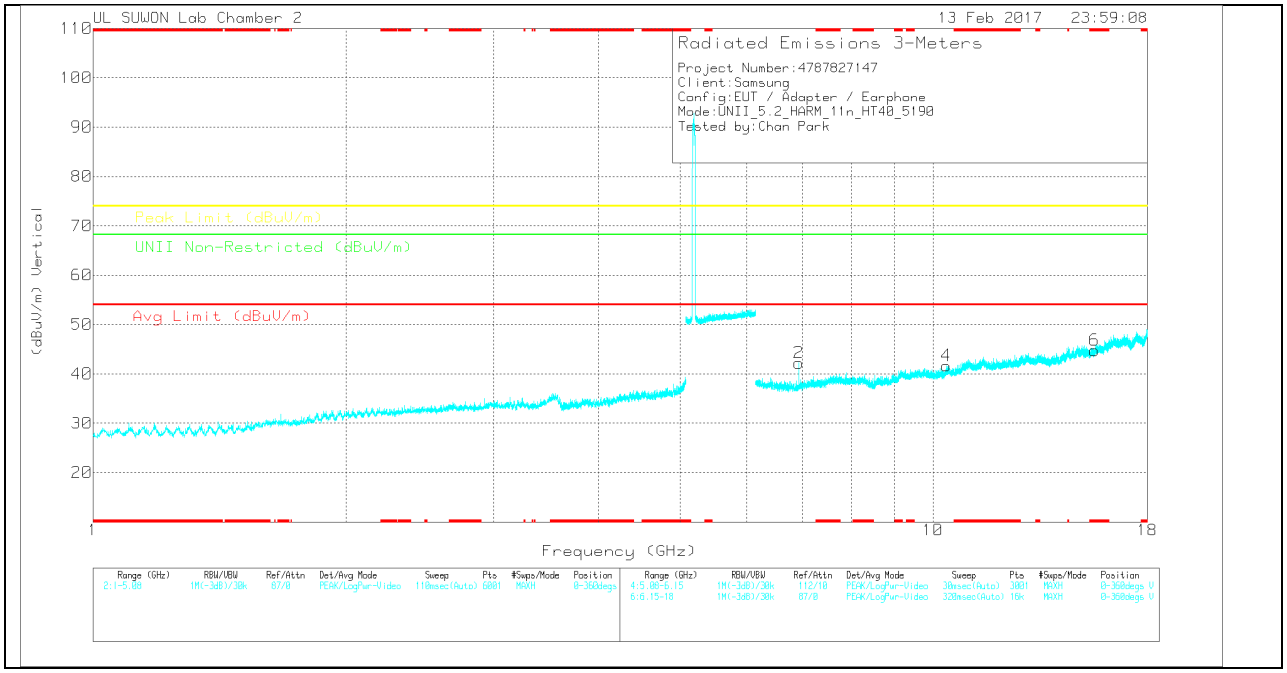
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.919	33.01	Pk	35.5	-21.6	0	46.91	-	-	-	-	68.2	-21.29	0-360	250	H
3	10.38	20.27	Pk	37.6	-16.5	0	41.37	-	-	-	-	68.2	-26.83	0-360	150	H
5	* 15.568	19.21	Pk	40	-14.5	0	44.71	-	-	74	-29.29	-	-	0-360	150	H
2	6.919	28.32	Pk	35.5	-21.6	0	42.22	-	-	-	-	68.2	-25.98	0-360	250	V
4	10.378	20.65	Pk	37.6	-16.6	0	41.65	-	-	-	-	68.2	-26.55	0-360	150	V
6	* 15.568	19.27	Pk	40	-14.5	0	44.77	-	-	74	-29.23	-	-	0-360	250	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.92	38.46	PK-U	35.5	-21.6	0	52.36	-	-	-	-	68.2	-15.84	343	150	H
6.92	36.4	PK-U	35.5	-21.6	0	50.3	-	-	-	-	68.2	-17.9	310	136	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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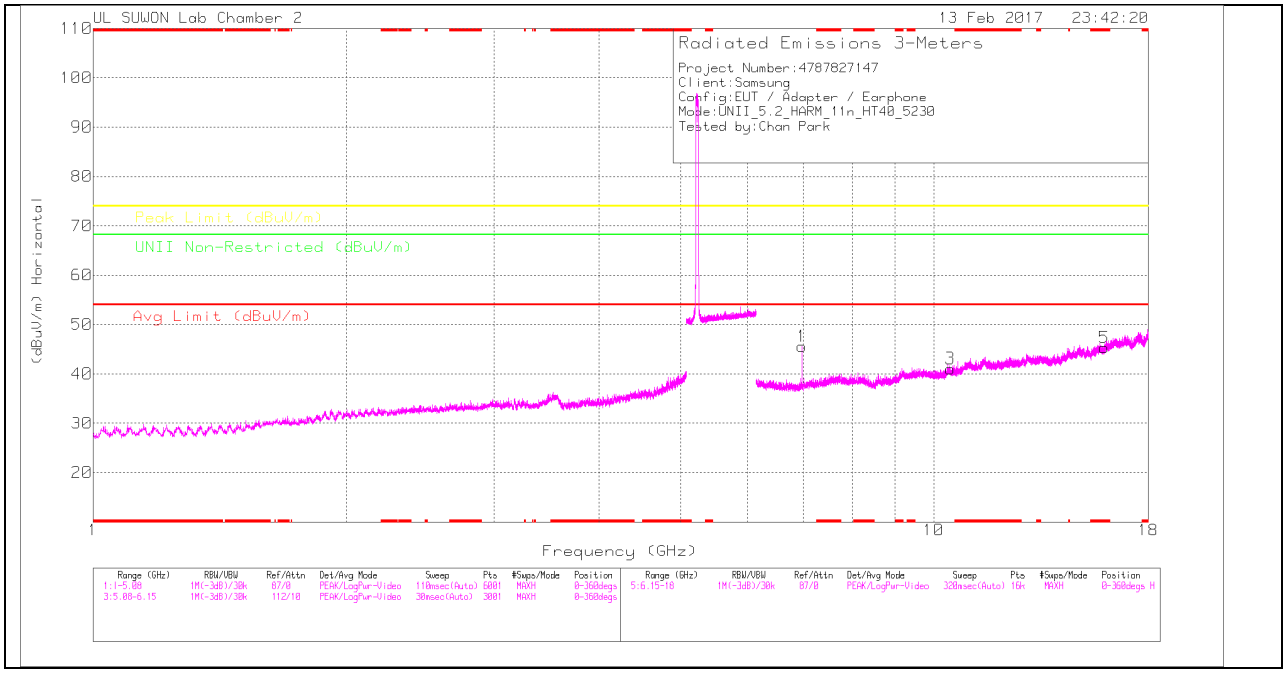
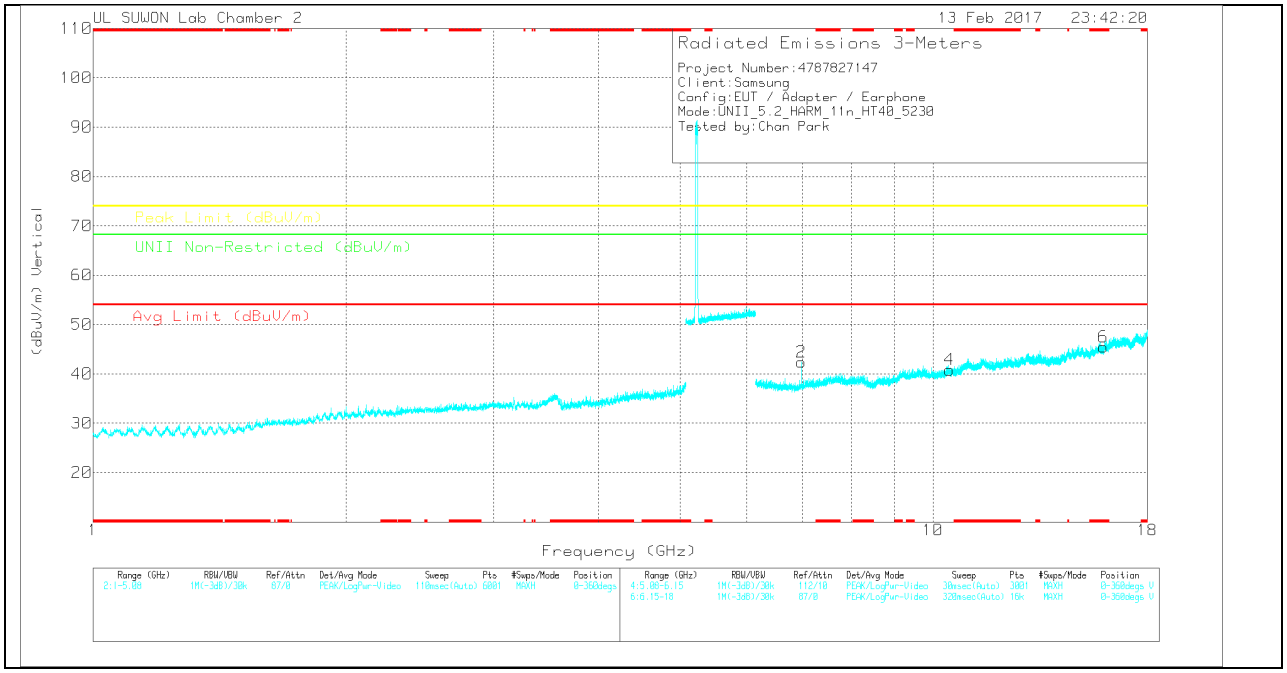
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001688724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.973	30.68	Pk	35.5	-20.6	0	45.58	-	-	-	-	68.2	-22.62	0-360	250	H
3	10.46	19.65	Pk	37.7	-16.3	0	41.05	-	-	-	-	68.2	-27.15	0-360	250	H
5	* 15.964	19.19	Pk	40.4	-14.3	0	45.29	-	-	74	-28.71	-	-	0-360	250	H
2	6.973	27.46	Pk	35.5	-20.6	0	42.36	-	-	-	-	68.2	-25.84	0-360	250	V
4	10.459	19.42	Pk	37.7	-16.3	0	40.82	-	-	-	-	68.2	-27.38	0-360	150	V
6	* 15.963	19.35	Pk	40.4	-14.3	0	45.45	-	-	74	-28.55	-	-	0-360	250	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.973	37.03	PK-U	35.5	-20.6	0	51.93	-	-	-	-	68.2	-16.27	343	148	H
6.974	34.95	PK-U	35.5	-20.6	0	49.85	-	-	-	-	68.2	-18.35	311	111	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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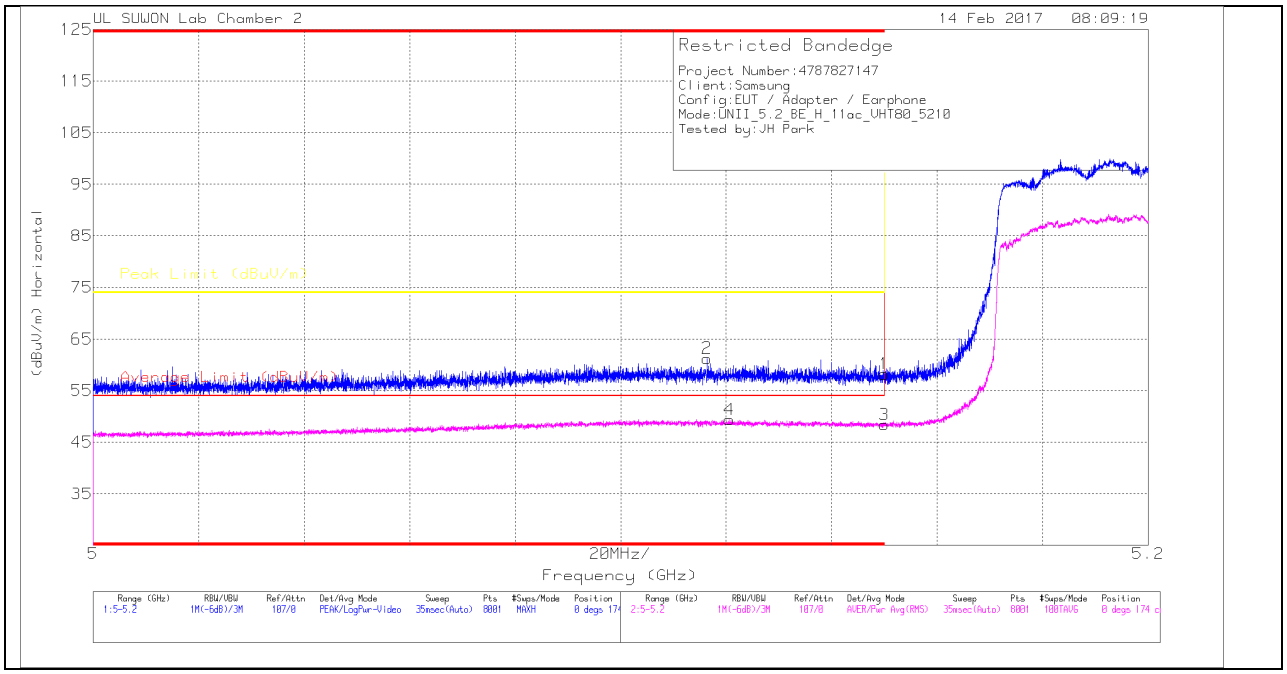
10.1.4. TX ABOVE 1GHz 802.11ac VHT80 2Tx CDD MODE IN THE 5.2GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	39.42	Pk	34.1	-15.3	0	58.22	-	-	74	-15.78	0	174	H
2	* 5.116	42.44	Pk	34.1	-15.3	0	61.24	-	-	74	-12.76	0	174	H
3	* 5.15	28.73	RMS	34.1	-15.3	.88	48.41	54	-5.59	-	-	0	174	H
4	* 5.121	29.61	RMS	34.1	-15.2	.88	49.39	54	-4.61	-	-	0	174	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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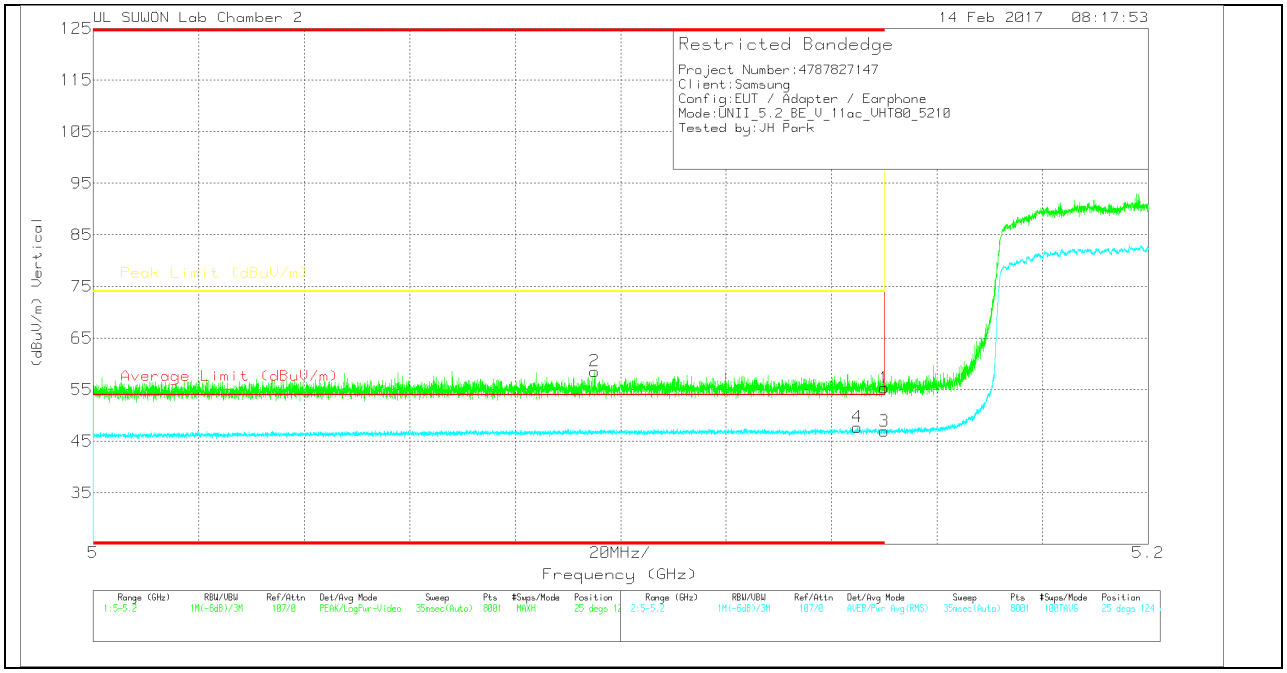
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	36.56	Pk	34.1	-15.3	0	55.36	-	-	74	-18.64	25	124	V
2	* 5.095	39.67	Pk	34.1	-15.2	0	58.57	-	-	74	-15.43	25	124	V
3	* 5.15	27.28	RMS	34.1	-15.3	.88	46.96	54	-7.04	-	-	25	124	V
4	* 5.145	28.06	RMS	34.1	-15.3	.88	47.74	54	-6.26	-	-	25	124	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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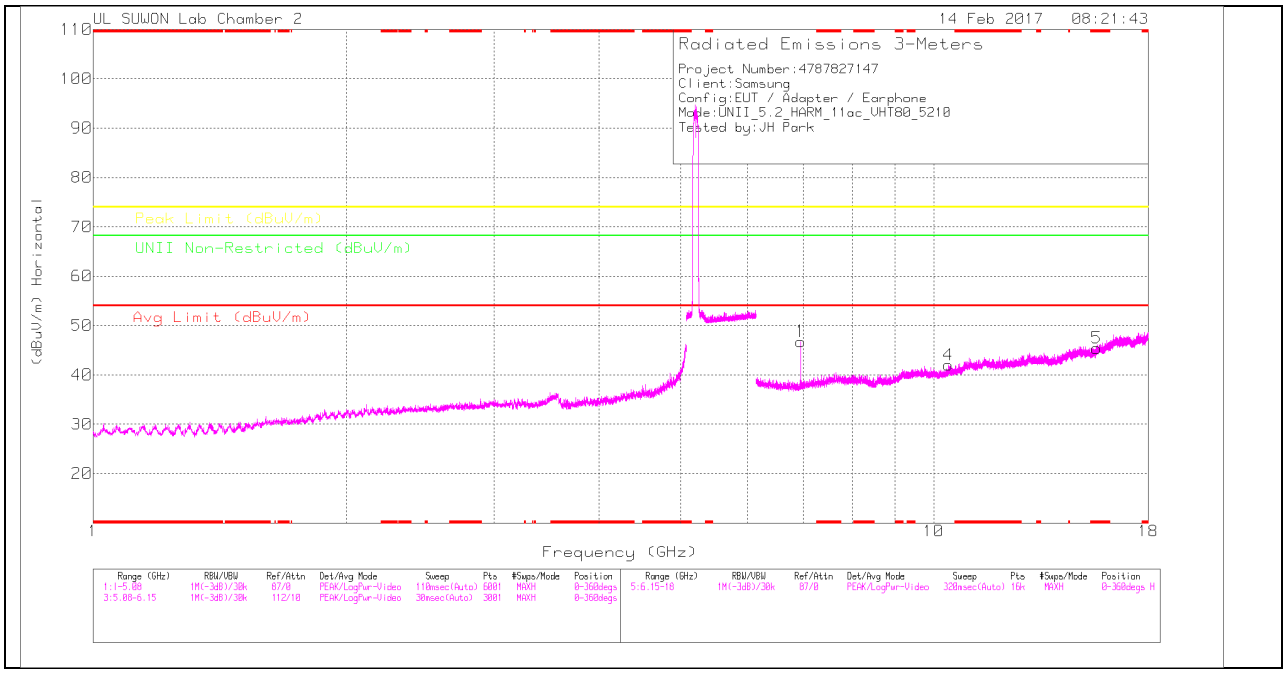
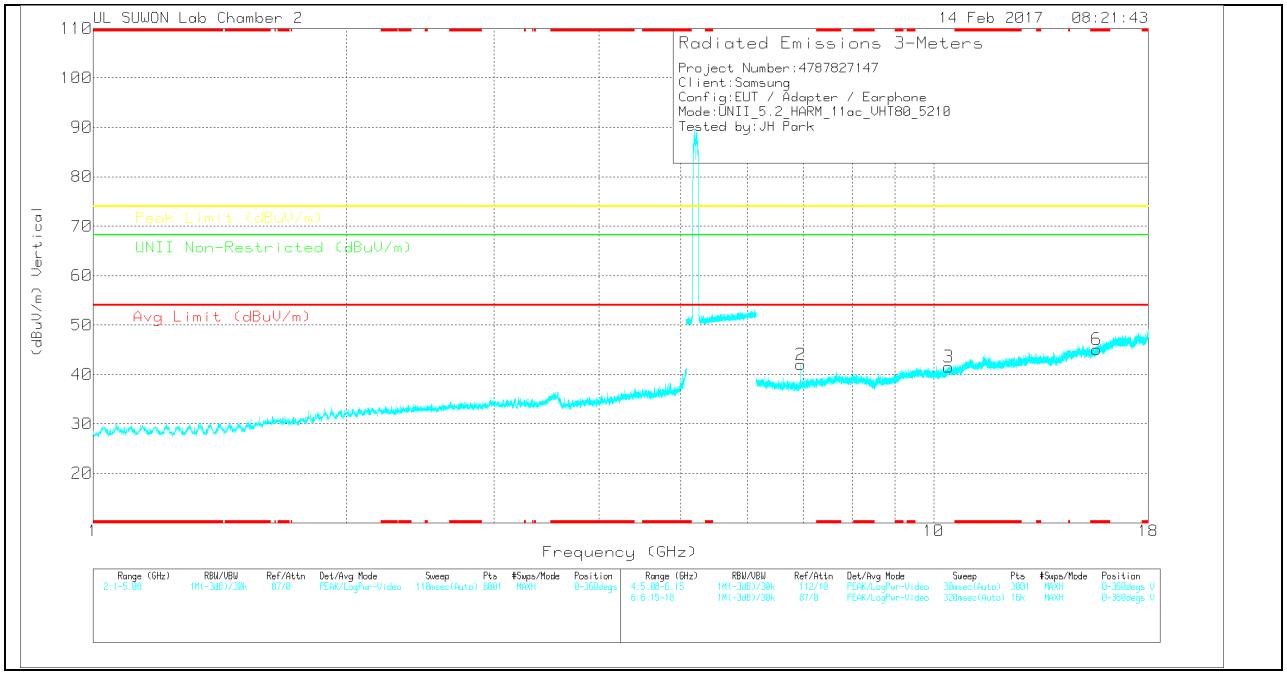
HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.946	32.46	PK	35.5	-21.2	0	46.76	-	-	-	-	68.2	-21.44	0-360	250	H
4	10.416	20.6	PK	37.6	-16.2	0	42	-	-	-	-	68.2	-26.2	0-360	150	H
5	* 15.628	20.1	PK	40	-14.7	0	45.4	-	-	74	-28.6	-	-	0-360	150	H
2	6.946	27.72	PK	35.5	-21.2	0	42.02	-	-	-	-	68.2	-26.18	0-360	250	V
3	10.419	20.13	PK	37.6	-16.2	0	41.53	-	-	-	-	68.2	-26.67	0-360	150	V
6	* 15.629	19.8	PK	40	-14.7	0	45.1	-	-	74	-28.9	-	-	0-360	250	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.947	38.31	PK-U	35.5	-21.2	0	52.61	-	-	-	-	68.2	-15.59	342	265	H
6.947	35.78	PK-U	35.5	-21.2	0	50.08	-	-	-	-	68.2	-18.12	315	160	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

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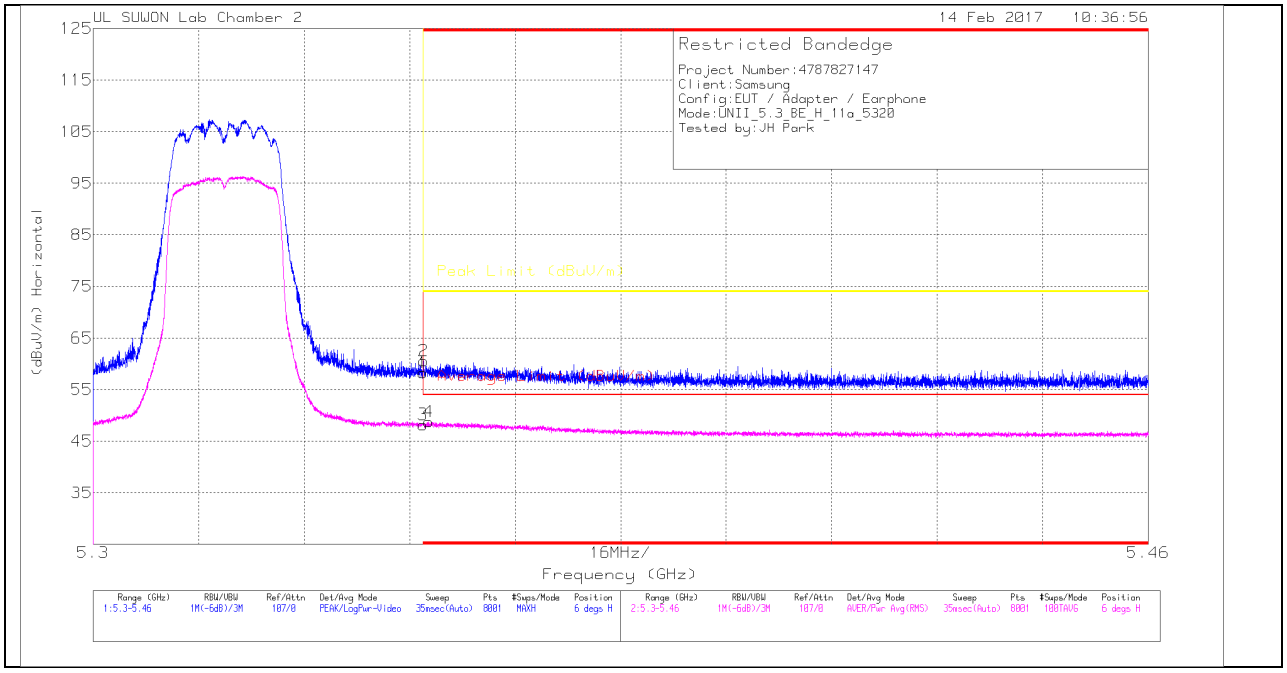
10.2. 5.3 GHz

10.2.1. TX ABOVE 1 GHz 802.11a 2Tx CDD MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	39.09	Pk	34.4	-15.2	0	58.29	-	-	74	-15.71	6	169	H
2	* 5.35	41.37	Pk	34.4	-15.2	0	60.57	-	-	74	-13.43	6	169	H
3	* 5.35	28.78	RMS	34.4	-15.2	.22	48.2	54	-5.8	-	-	6	169	H
4	* 5.351	29.34	RMS	34.4	-15.2	.22	48.76	54	-5.24	-	-	6	169	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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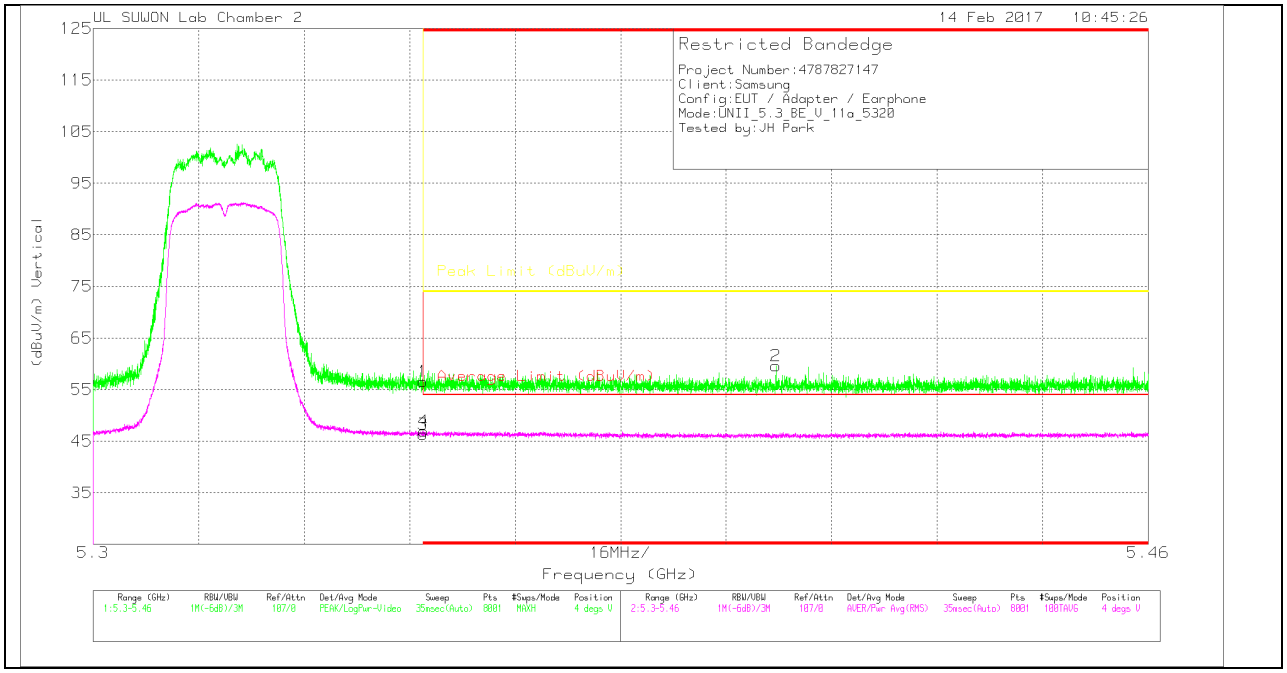
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.35	Pk	34.4	-15.2	0	56.55	-	-	74	-17.45	4	145	V
2	* 5.404	40.4	Pk	34.4	-15.2	0	59.6	-	-	74	-14.4	4	145	V
3	* 5.35	26.93	RMS	34.4	-15.2	.22	46.35	54	-7.65	-	-	4	145	V
4	* 5.35	27.53	RMS	34.4	-15.2	.22	46.95	54	-7.05	-	-	4	145	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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