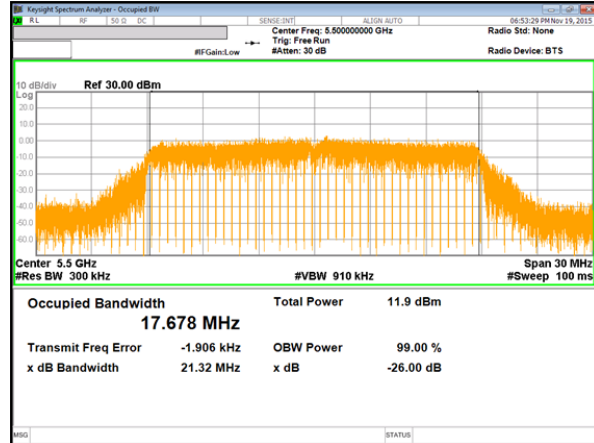
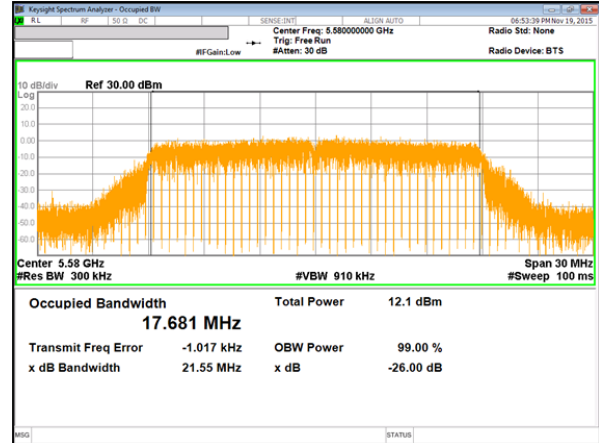


UNII 5.5 GHz IEEE 802.11n HT20 mode

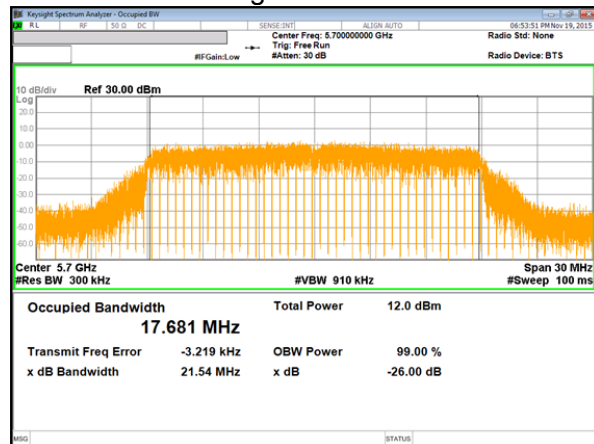
11n HT20 Mode Low Channel



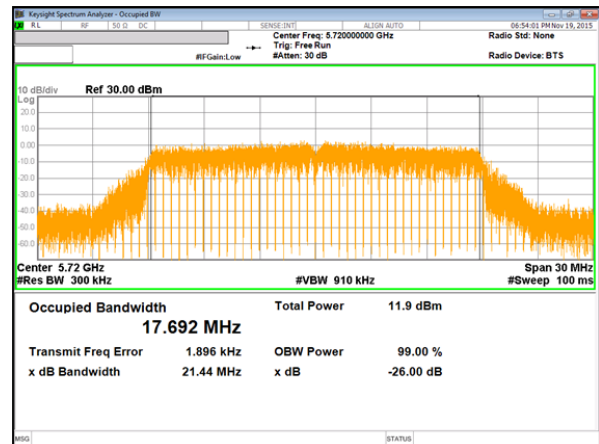
11n HT20 Mode Middle Channel



11n HT20 Mode High Channel

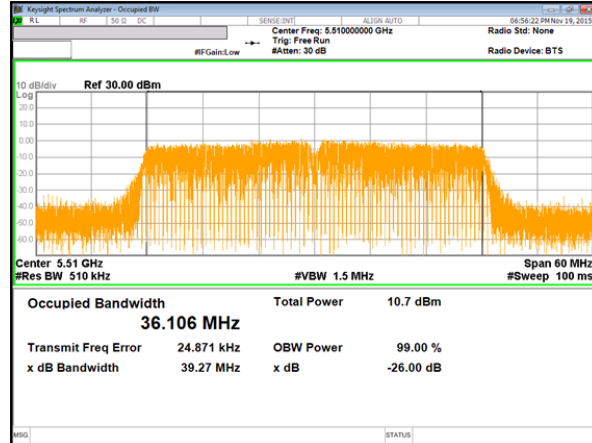


11n HT20 Mode Straddle Channel

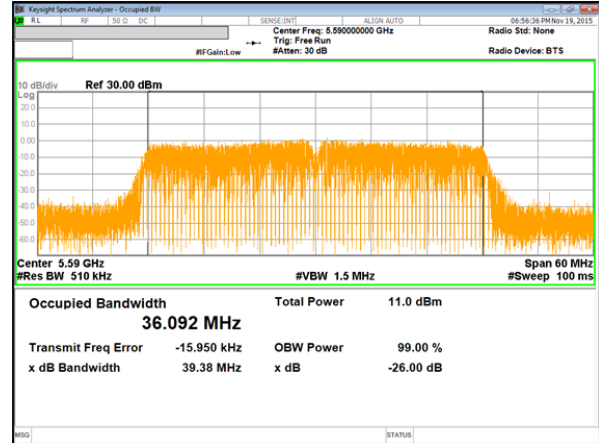


UNII 5.5 GHz IEEE 802.11n HT40 mode

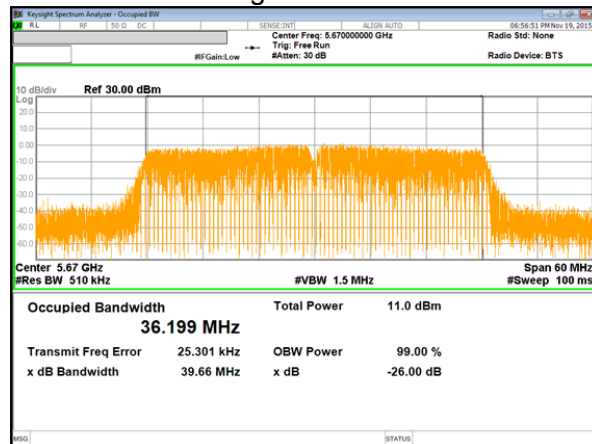
11n HT40 Mode Low Channel



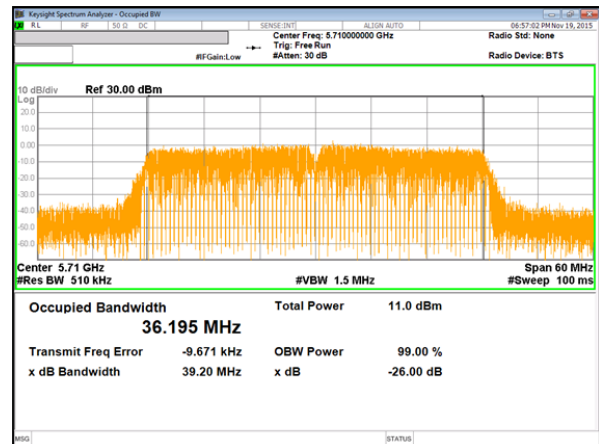
11n HT40 Mode Middle Channel



11n HT40 Mode High Channel

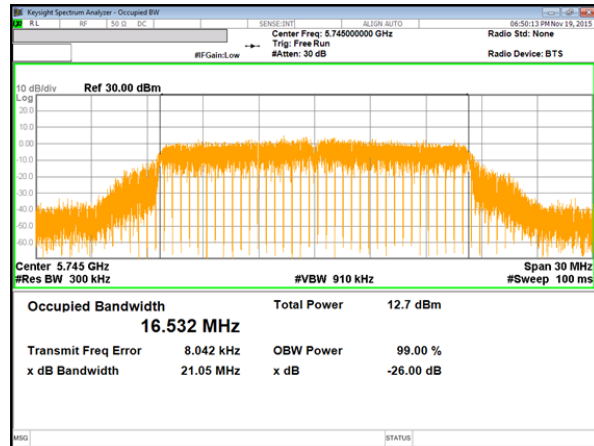


11n HT40 Mode Straddle Channel

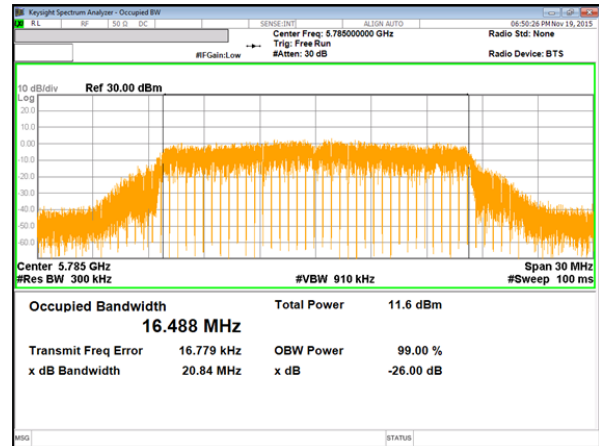


UNII 5.8 GHz IEEE 802.11a mode

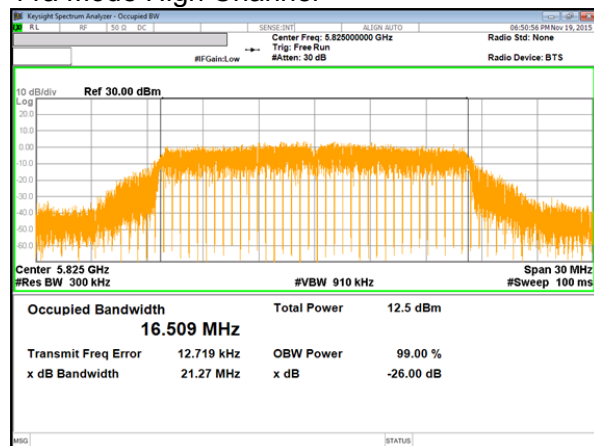
11a Mode Low Channel



11a Mode Middle Channel

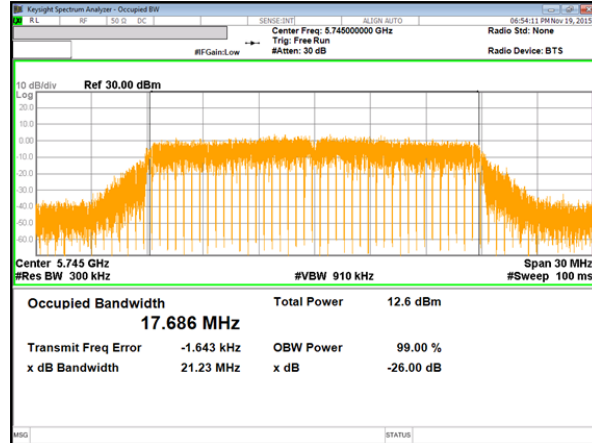


11a Mode High Channel

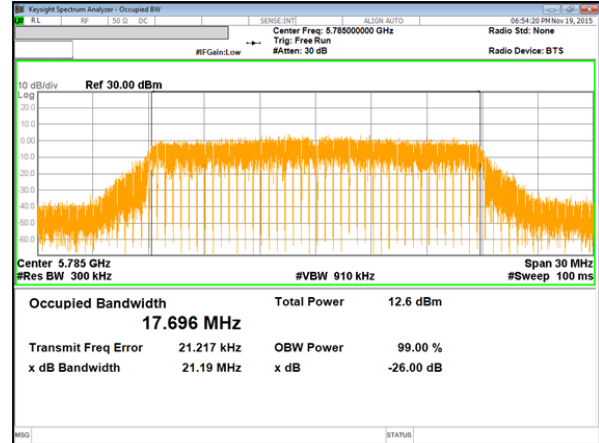


UNII 5.8 GHz IEEE 802.11n HT20 mode

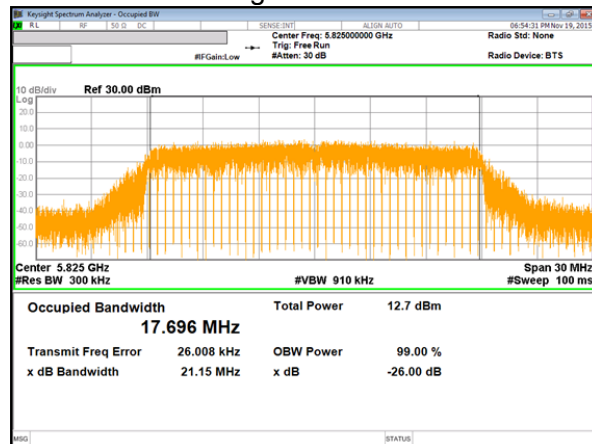
11n HT20 Mode Low Channel



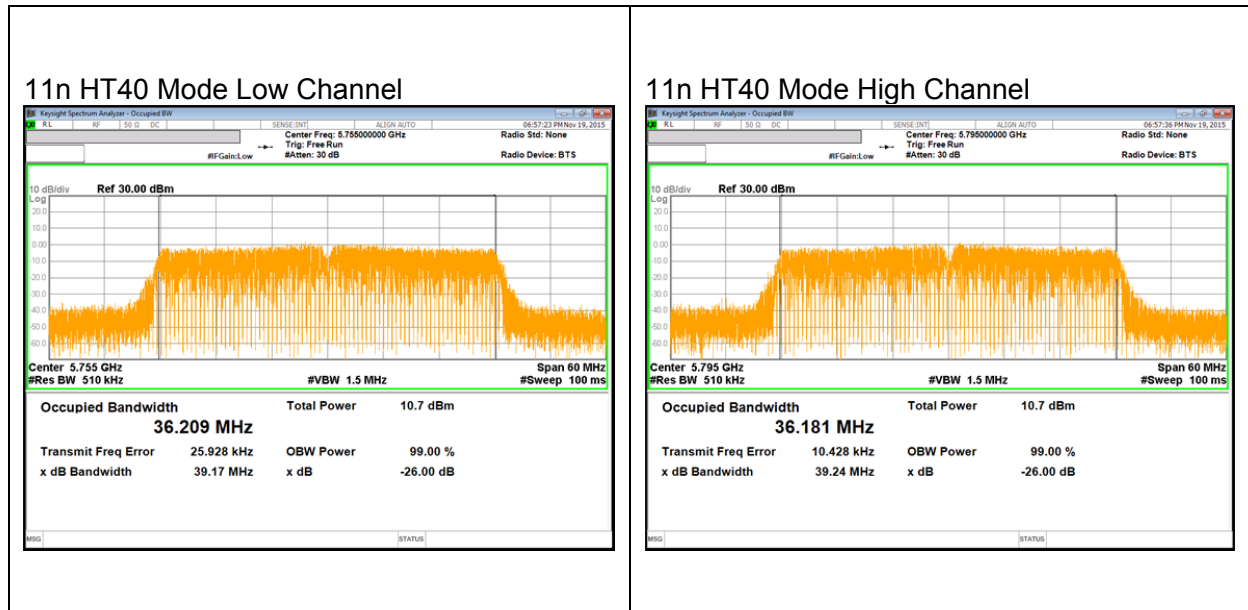
11n HT20 Mode Middle Channel



11n HT20 Mode High Channel



UNII 5.8 GHz IEEE 802.11n HT40 mode



10.4. 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 the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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 $11 \text{ dBm} + 10 \log B$, 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.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

5 GHz

Frequency Band [MHz]	Antenna Gain [dBi]
5150 - 5250	-0.78
5250 - 5350	-1.02
5470 - 5725	-1.32
5725 - 5850	-0.87

RESULTS

10.4.1. 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	21.08	16.48	-0.78	-0.78
Mid	5200	21.04	16.51	-0.78	-0.78
High	5240	20.99	16.49	-0.78	-0.78

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5180	24.00	22.17	24.78	24.00	11.00	10.00	11.00
Mid	5200	24.00	22.18	24.78	24.00	11.00	10.00	11.00
High	5240	24.00	22.17	24.78	24.00	11.00	10.00	11.00

Duty Cycle CF [dB]	0.30	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	12.17	12.47	24.00	-11.53
Mid	5200	12.11	12.40	24.00	-11.60
High	5240	12.08	12.37	24.00	-11.63

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	2.48	2.77	11.00	-8.23
Mid	5200	2.80	3.10	11.00	-7.90
High	5240	2.67	2.97	11.00	-8.03

10.4.2. 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	21.53	17.69	-0.78	-0.78
Mid	5200	21.30	17.67	-0.78	-0.78
High	5240	21.41	17.70	-0.78	-0.78

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5180	24.00	22.48	24.78	24.00	11.00	10.00	11.00
Mid	5200	24.00	22.47	24.78	24.00	11.00	10.00	11.00
High	5240	24.00	22.48	24.78	24.00	11.00	10.00	11.00

Duty Cycle CF [dB]	0.32	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	12.10	12.41	24.00	-11.59
Mid	5200	12.20	12.52	24.00	-11.48
High	5240	12.03	12.35	24.00	-11.65

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	2.16	2.48	11.00	-8.52
Mid	5200	2.69	3.01	11.00	-7.99
High	5240	2.65	2.97	11.00	-8.03

10.4.3. 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 PPSP [dBi]
Low	5190	39.59	36.11	-0.78	-0.78
High	5230	39.67	36.17	-0.78	-0.78

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSP Limit [dBm]	IC eirp PSD Limit [dBm]	PPSP Limit [dBm]
Low	5190	24.00	23.00	24.78	24.00	11.00	10.00	11.00
High	5230	24.00	23.00	24.78	24.00	11.00	10.00	11.00

Duty Cycle CF [dB]	0.62	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5190	10.90	11.52	24.00	-12.48
High	5230	10.88	11.50	24.00	-12.50

PPSP Results

Channel	Frequency [MHz]	Meas PPSP [dBm]	Total Corr'd PPSP [dBm]	PPSP Limit [dBm]	PPSP Margin [dB]
Low	5190	-1.54	-0.92	11.00	-11.92
High	5230	-1.79	-1.18	11.00	-12.18

10.4.4. 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 PPSP [dBi]
Low	5260	20.98	16.49	-1.02	-1.02
Mid	5300	21.09	16.48	-1.02	-1.02
High	5320	20.88	16.50	-1.02	-1.02

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSP Limit [dBm]	IC eirp PPSP Limit [dBm]	PPSP Limit [dBm]
Low	5260	24.00	22.17	25.02	24.00	11.00	11.00	11.00
Mid	5300	24.00	22.17	25.02	24.00	11.00	11.00	11.00
High	5320	24.00	22.18	25.02	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.30	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	12.35	12.64	24.00	-11.36
Mid	5300	12.02	12.32	24.00	-11.68
High	5320	12.06	12.36	24.00	-11.64

PPSP Results

Channel	Frequency [MHz]	Meas PPSP [dBm]	Total Corr'd PPSP [dBm]	PPSP Limit [dBm]	PPSP Margin [dB]
Low	5260	2.67	2.96	11.00	-8.04
Mid	5300	2.25	2.55	11.00	-8.45
High	5320	2.48	2.78	11.00	-8.22

10.4.5. 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	21.39	17.70	-1.02	-1.02
Mid	5300	21.45	17.68	-1.02	-1.02
High	5320	21.39	17.69	-1.02	-1.02

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5260	24.00	22.48	25.02	24.00	11.00	11.00	11.00
Mid	5300	24.00	22.47	25.02	24.00	11.00	11.00	11.00
High	5320	24.00	22.48	25.02	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.32	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	12.14	12.46	24.00	-11.54
Mid	5300	12.07	12.38	24.00	-11.62
High	5320	12.06	12.38	24.00	-11.62

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	2.32	2.63	11.00	-8.37
Mid	5300	2.27	2.59	11.00	-8.41
High	5320	2.37	2.69	11.00	-8.31

10.4.6. 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 PPSP [dBi]
Low	5270	39.44	36.18	-1.02	-1.02
High	5310	39.59	36.16	-1.02	-1.02

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSP Limit [dBm]	IC eirp PSD Limit [dBm]	PPSP Limit [dBm]
Low	5270	24.00	23.00	25.02	24.00	11.00	11.00	11.00
High	5310	24.00	23.00	25.02	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.62	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5270	11.21	11.83	24.00	-12.17
High	5310	11.25	11.87	24.00	-12.13

PPSP Results

Channel	Frequency [MHz]	Meas PPSP [dBm]	Total Corr'd PPSP [dBm]	PPSP Limit [dBm]	PPSP Margin [dB]
Low	5270	-1.64	-1.02	11.00	-12.02
High	5310	-1.36	-0.74	11.00	-11.74

10.4.7. 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 PPSP [dBi]
Low	5500	20.97	16.49	-1.32	-1.32
Mid	5580	21.09	16.48	-1.32	-1.32
High	5700	21.10	16.50	-1.32	-1.32

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSP Limit [dBm]	IC eirp PPSP Limit [dBm]	PPSP Limit [dBm]
Low	5500	24.00	22.17	25.32	24.00	11.00	11.00	11.00
Mid	5580	24.00	22.17	25.32	24.00	11.00	11.00	11.00
High	5700	24.00	22.17	25.32	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.30	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	12.04	12.33	24.00	-11.67
Mid	5580	12.06	12.35	24.00	-11.65
High	5700	12.26	12.56	24.00	-11.44

PPSP Results

Channel	Frequency [MHz]	Meas PPSP [dBm]	Total Corr'd PPSP [dBm]	PPSP Limit [dBm]	PPSP Margin [dB]
Low	5500	2.76	3.06	11.00	-7.94
Mid	5580	2.32	2.62	11.00	-8.38
High	5700	2.97	3.26	11.00	-7.74

10.4.8. 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	21.58	17.68	-1.32	-1.32
Mid	5580	21.36	17.68	-1.32	-1.32
High	5700	21.39	17.68	-1.32	-1.32

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5500	24.00	22.47	25.32	24.00	11.00	11.00	11.00
Mid	5580	24.00	22.48	25.32	24.00	11.00	11.00	11.00
High	5700	24.00	22.48	25.32	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.32	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	11.82	12.13	24.00	-11.87
Mid	5580	12.08	12.40	24.00	-11.60
High	5700	11.98	12.29	24.00	-11.71

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	2.15	2.46	11.00	-8.54
Mid	5580	2.19	2.51	11.00	-8.49
High	5700	2.52	2.84	11.00	-8.16

10.4.9. 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	39.75	36.11	-1.32	-1.32
Mid	5550	39.65	36.09	-1.32	-1.32
High	5670	39.76	36.20	-1.32	-1.32

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5510	24.00	23.00	25.32	24.00	11.00	11.00	11.00
Mid	5550	24.00	23.00	25.32	24.00	11.00	11.00	11.00
High	5670	24.00	23.00	25.32	24.00	11.00	11.00	11.00
Duty Cycle CF [dB]		0.62	Included in Calculations of Corr'd Power & PPSD					

Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5510	11.23	11.85	24.00	-12.15
Mid	5550	11.23	11.85	24.00	-12.15
High	5670	11.27	11.89	24.00	-12.11

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5510	-1.31	-0.69	11.00	-11.69
Mid	5550	-1.42	-0.80	11.00	-11.80
High	5670	-1.27	-0.65	11.00	-11.65

10.4.10. 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	21.15	16.53	-0.87	-0.87
Mid	5785	21.00	16.49	-0.87	-0.87
High	5825	20.98	16.51	-0.87	-0.87

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5745	24.00	22.18	24.87	24.00	30.00	30.00	30.00
Mid	5785	24.00	22.17	24.87	24.00	30.00	30.00	30.00
High	5825	24.00	22.18	24.87	24.00	30.00	30.00	30.00

Duty Cycle CF [dB]	0.30	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	12.55	12.85	24.00	-11.15
Mid	5785	12.58	12.88	24.00	-11.12
High	5825	12.55	12.84	24.00	-11.16

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	0.03	0.33	30.00	-29.67
Mid	5785	0.05	0.34	30.00	-29.66
High	5825	0.23	0.52	30.00	-29.48

10.4.11. 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	21.23	17.69	-0.87	-0.87
Mid	5785	21.31	17.70	-0.87	-0.87
High	5825	21.49	17.70	-0.87	-0.87

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5745	24.00	22.48	24.87	24.00	30.00	30.00	30.00
Mid	5785	24.00	22.48	24.87	24.00	30.00	30.00	30.00
High	5825	24.00	22.48	24.87	24.00	30.00	30.00	30.00

Duty Cycle CF [dB]	0.32	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	12.39	12.70	24.00	-11.30
Mid	5785	12.40	12.71	24.00	-11.29
High	5825	12.48	12.79	24.00	-11.21

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	-0.44	-0.12	30.00	-30.12
Mid	5785	-0.30	0.02	30.00	-29.98
High	5825	-0.23	0.08	30.00	-29.92

10.4.12. 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 PPSP [dBi]
Low	5755	39.79	36.21	-0.87	-0.87
High	5795	39.43	36.18	-0.87	-0.87

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSP Limit [dBm]	IC eirp PPSP Limit [dBm]	PPSP Limit [dBm]
Low	5755	24.00	23.00	24.87	24.00	30.00	30.00	30.00
High	5795	24.00	23.00	24.87	24.00	30.00	30.00	30.00

Duty Cycle CF [dB]	0.62	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5755	10.89	11.51	24.00	-12.49
High	5795	10.81	11.42	24.00	-12.58

PPSP Results

Channel	Frequency [MHz]	Meas PPSP [dBm]	Total Corr'd PPSP [dBm]	PPSP Limit [dBm]	PPSP Margin [dB]
Low	5755	-4.92	-4.30	30.00	-34.30
High	5795	-4.97	-4.36	30.00	-34.36

10.4.13. 802.11a MODE AT STRADDLE CHANNEL

Bandwidth and Antenna Gain

Portion	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
UNII-2C	5720	15.50	13.25	-1.32	-1.32
UNII-3	5720	5.50	3.25	-1.32	-1.32
Whole	5720	21.01	16.49	-1.32	-1.32

Limits

Portion	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
UNII-2C	5720	22.90	21.22	24.22	22.90	11.00	11.00	11.00
UNII-3	5720	18.41	15.11	19.73	18.41	11.00	11.00	11.00
Whole	5720	24.00	22.17	25.32	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.30	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Portion	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5720	11.62	11.91	22.90	-10.99
UNII-3	5720	4.16	4.46	18.41	-13.95
Whole	5720	12.33	12.63	24.00	-11.37

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
144	5720	2.84	3.14	11.00	-7.86

10.4.14. 802.11n HT20 MODE AT STRADDLE CHANNEL

Bandwidth and Antenna Gain

Portion	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
UNII-2C	5720	15.62	13.85	-1.32	-1.32
UNII-3	5720	5.62	3.85	-1.32	-1.32
Whole	5720	21.24	17.69	-1.32	-1.32

Limits

Portion	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
UNII-2C	5720	22.94	21.41	24.26	22.94	11.00	11.00	11.00
UNII-3	5720	18.50	15.85	19.82	18.50	11.00	11.00	11.00
Whole	5720	24.00	22.48	25.32	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.32	Included in Calculations of Corr'd Power & PPSD
--------------------	------	---

Output Power Results

Portion	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5720	11.00	11.32	22.94	-11.62
UNII-3	5720	4.26	4.58	18.50	-13.92
Whole	5720	11.84	12.15	24.00	-11.85

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
144	5720	2.10	2.42	11.00	-8.58

10.4.15. 802.11n HT40 MODE AT STRADDLE CHANNEL

Bandwidth and Antenna Gain

Portion	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
UNII-2C	5710	34.78	33.10	-1.32	-1.32
UNII-3	5710	4.78	3.10	-1.32	-1.32
Whole	5710	39.56	36.20	-1.32	-1.32

Limits

Portion	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
UNII-2C	5710	24.00	23.00	25.32	24.00	11.00	11.00	11.00
UNII-3	5710	17.79	14.91	19.11	17.79	11.00	11.00	11.00
Whole	5710	24.00	23.00	25.32	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.62	Included in Calculations of Corr'd Power & PPSD
--------------------	------	---

Output Power Results

Portion	Frequency [MHz]	Total Corr'd Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5710	10.94	11.56	24.00	-12.44
UNII-3	5710	-0.12	0.49	17.79	-17.30
Whole	5710	11.27	11.88	24.00	-12.12

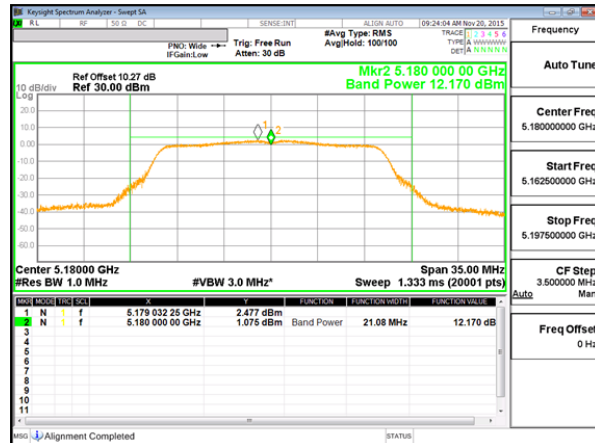
PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
142	5710	-1.33	-0.71	11.00	-11.71

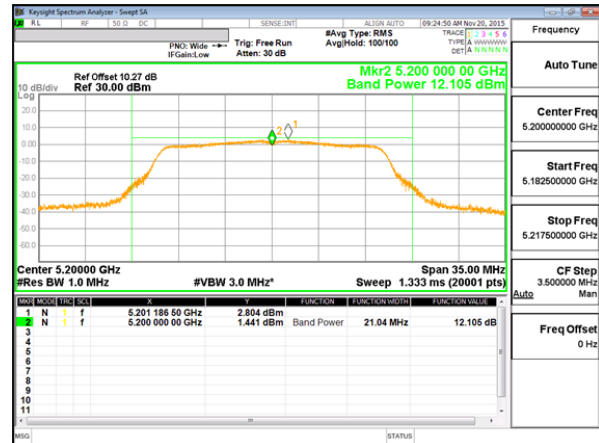
10.4.16. OUTPUT POWER AND PPSD PLOTS

UNII 5.2 GHz IEEE 802.11a mode

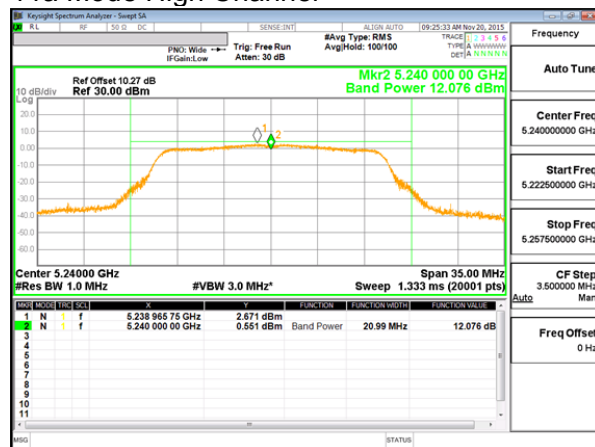
11a Mode Low Channel



11a Mode Middle Channel



11a Mode High Channel

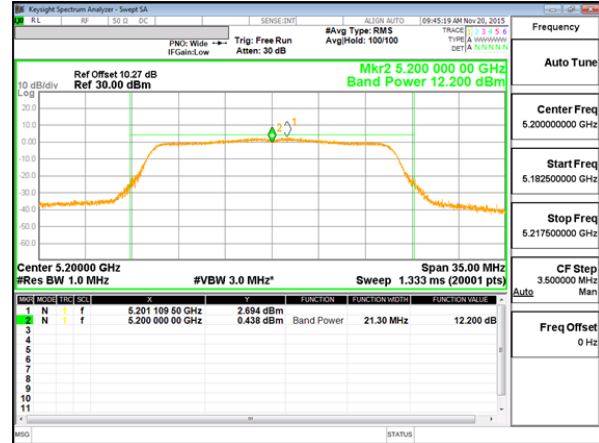


UNII 5.2 GHz IEEE 802.11n HT20 mode

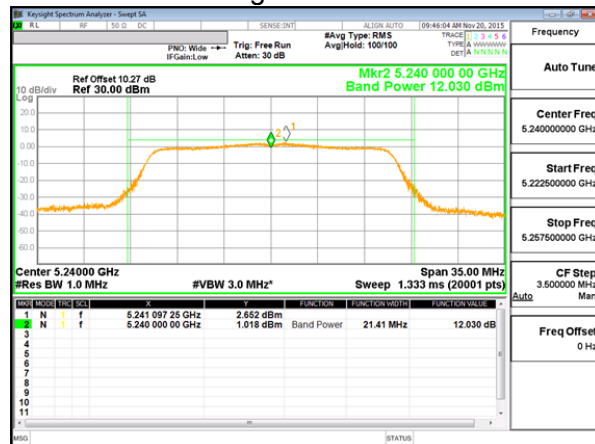
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

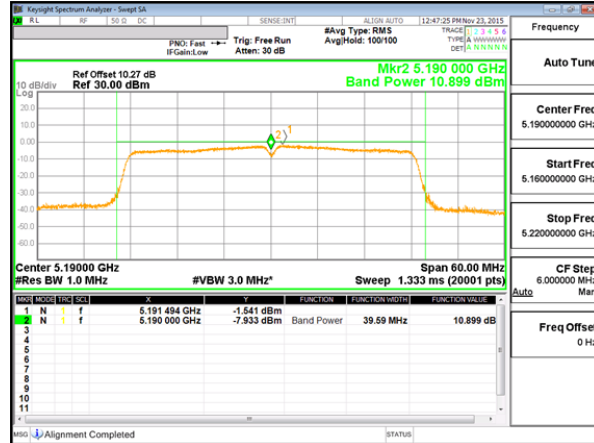


11n HT20 Mode High Channel

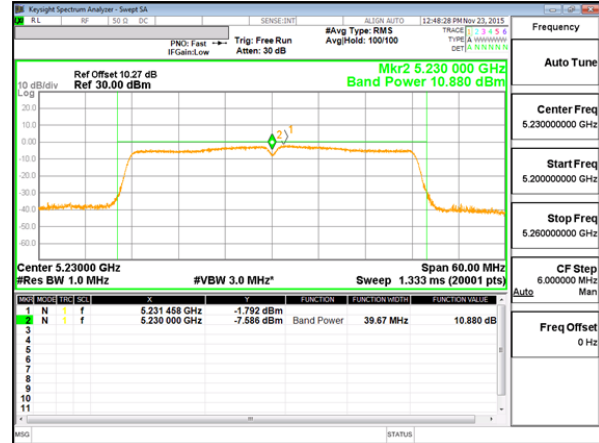


UNII 5.2 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel

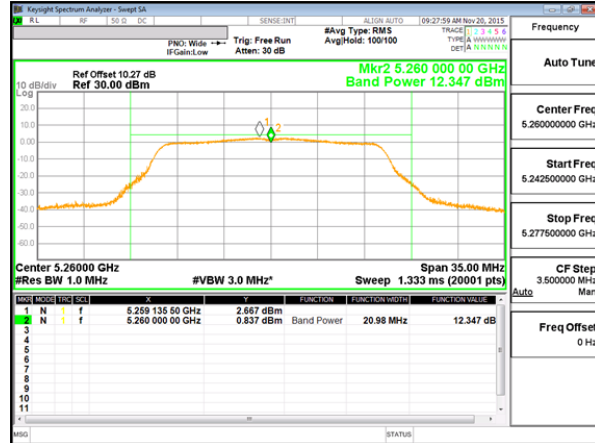


11n HT40 Mode High Channel

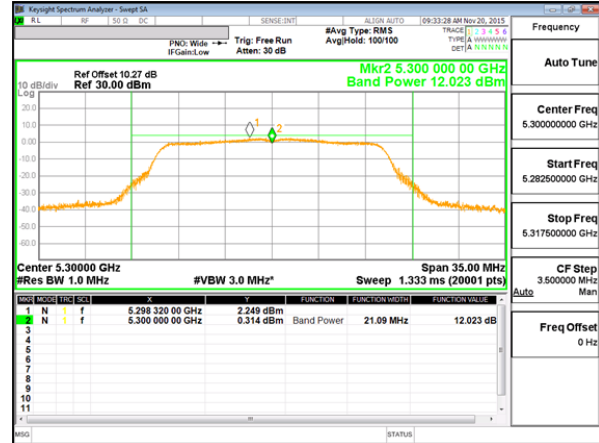


UNII 5.3 GHz IEEE 802.11a mode

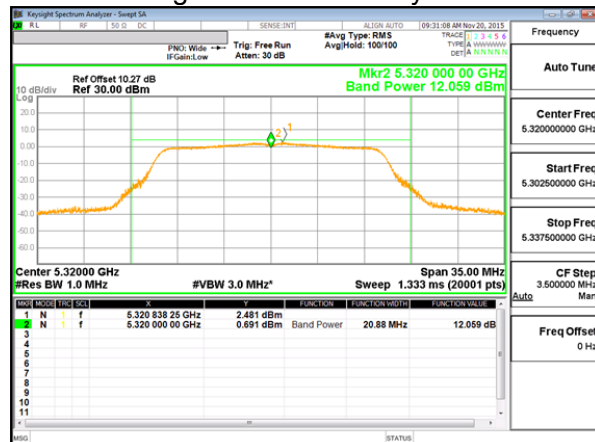
11a Mode Low Channel Primary



11a Mode Middle Channel Secondary

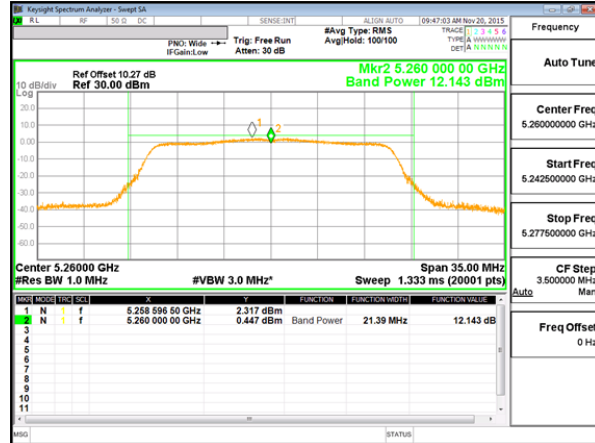


11a Mode High Channel Primary

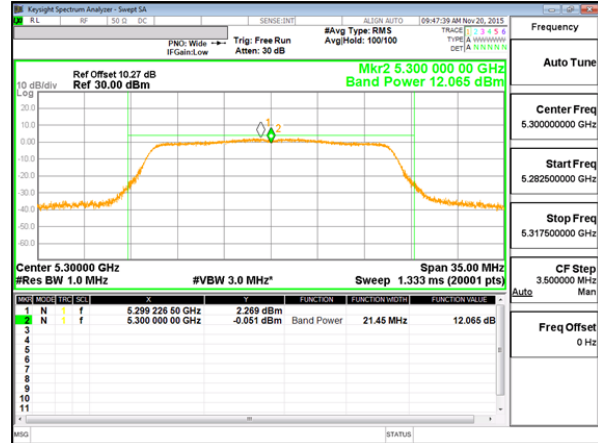


UNII 5.3 GHz IEEE 802.11n HT20 mode

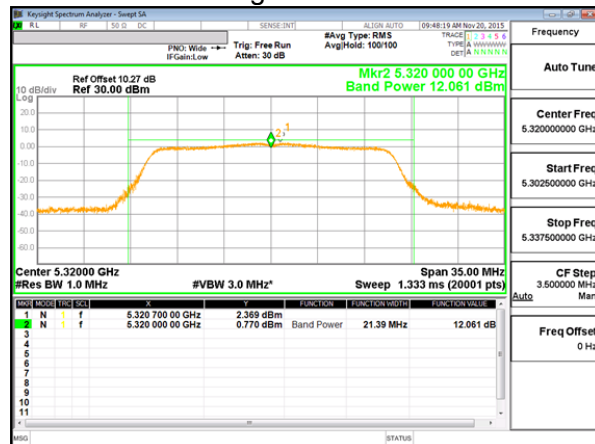
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel



11n HT20 Mode High Channel

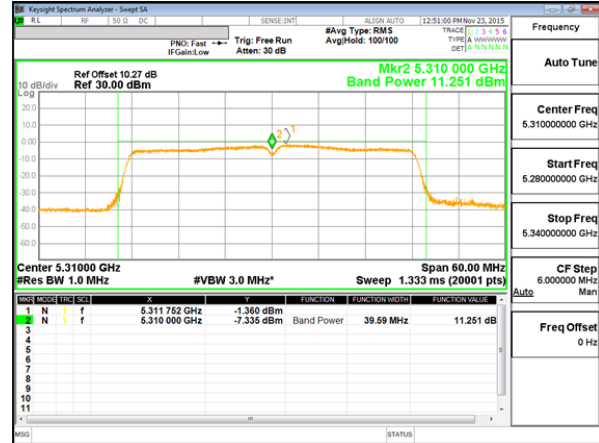


UNII 5.3 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel

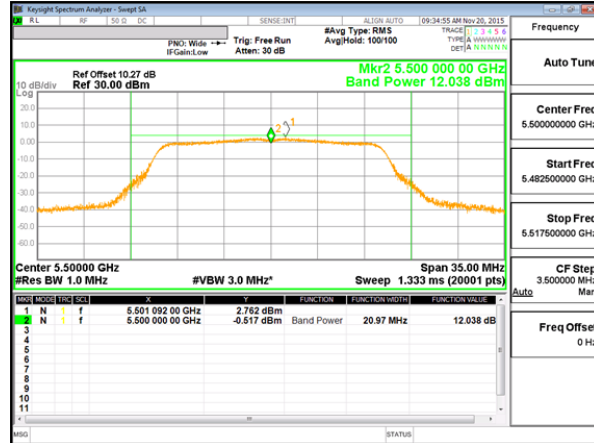


11n HT40 Mode High Channel

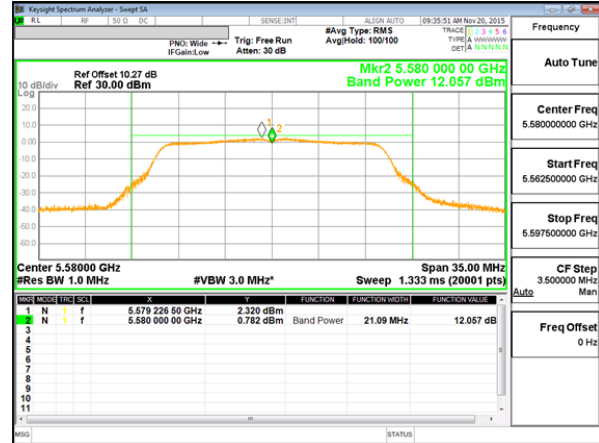


UNII 5.5 GHz IEEE 802.11a mode

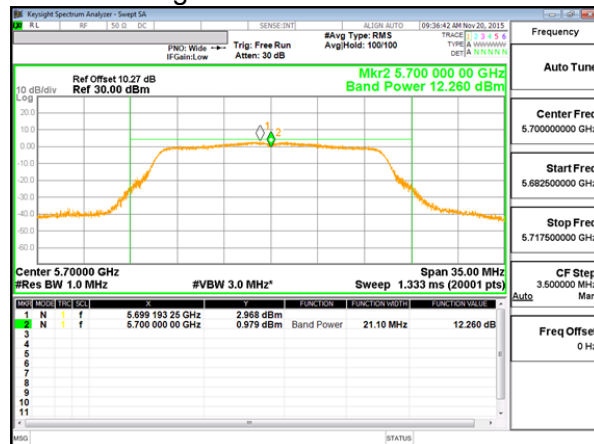
11a Mode Low Channel



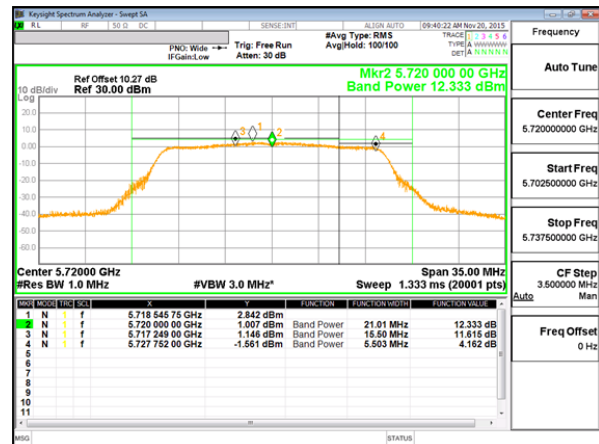
11a Mode Middle Channel



11a Mode High Channel



11a Mode Straddle Channel

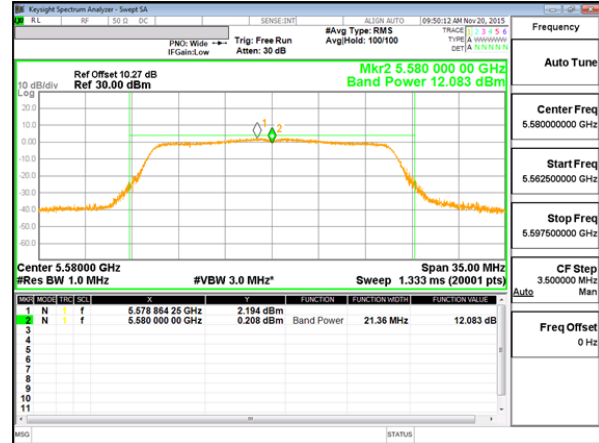


UNII 5.5 GHz IEEE 802.11n HT20 mode

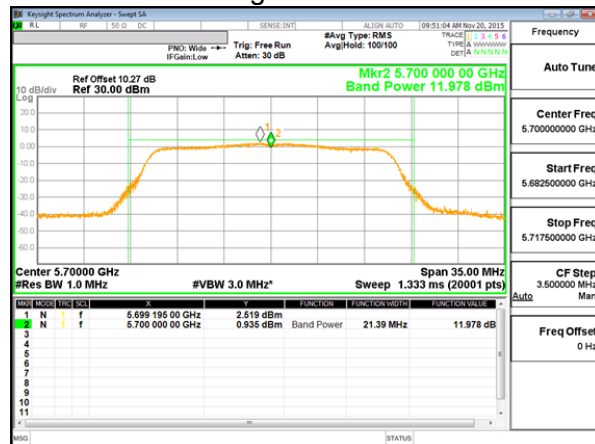
11n HT20 Mode Low Channel



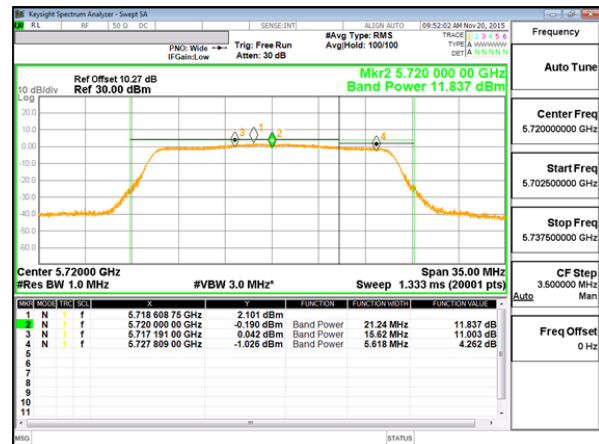
11n HT20 Mode Middle Channel



11n HT20 Mode High Channel

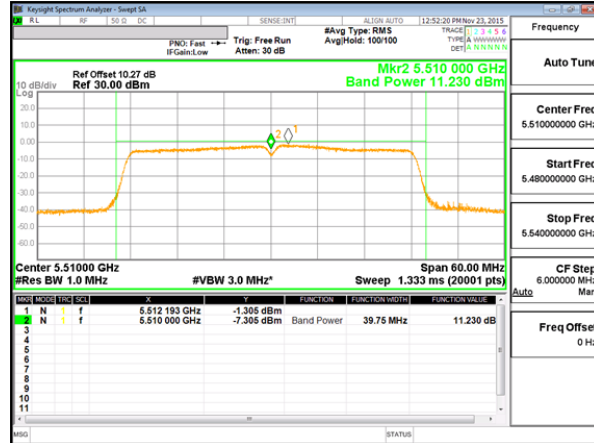


11n HT20 Mode Straddle Channel

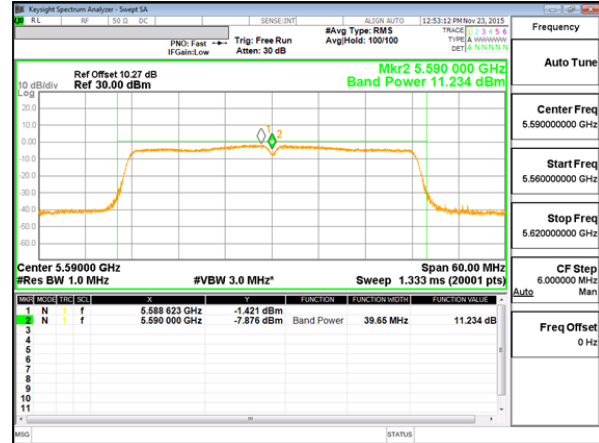


UNII 5.5 GHz IEEE 802.11n HT40 mode

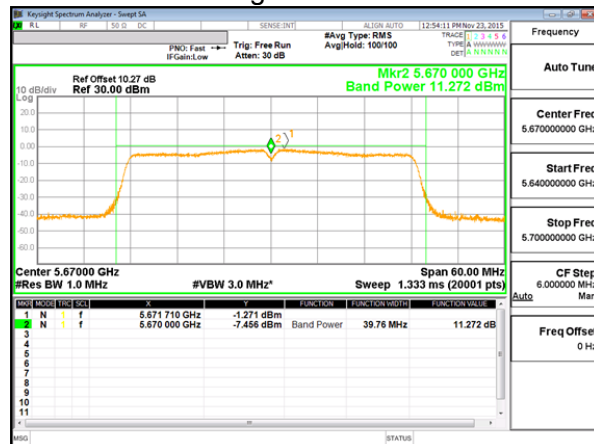
11n HT40 Mode Low Channel



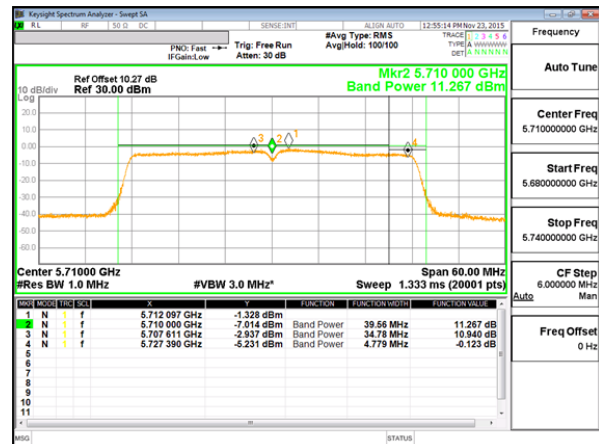
11n HT40 Mode Middle Channel



11n HT40 Mode High Channel

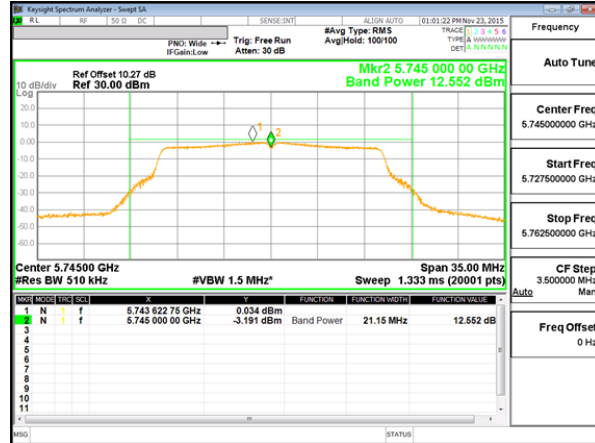


11n HT40 Mode Straddle Channel

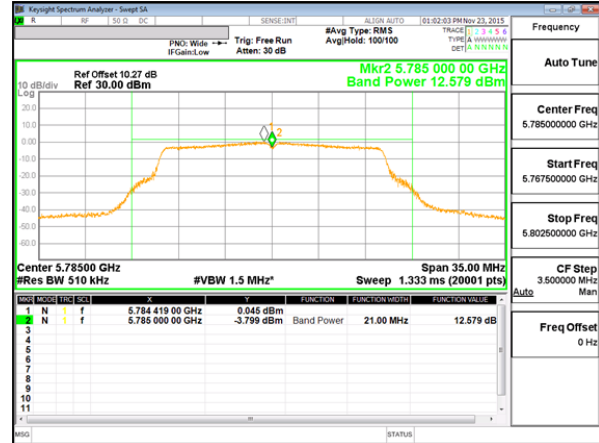


UNII 5.8 GHz IEEE 802.11a mode

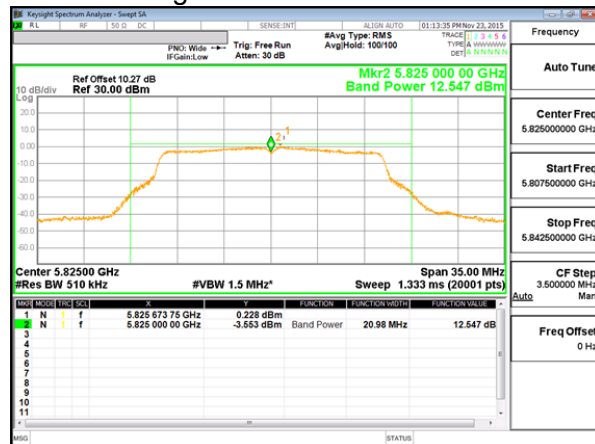
11a Mode Low Channel



11a Mode Middle Channel

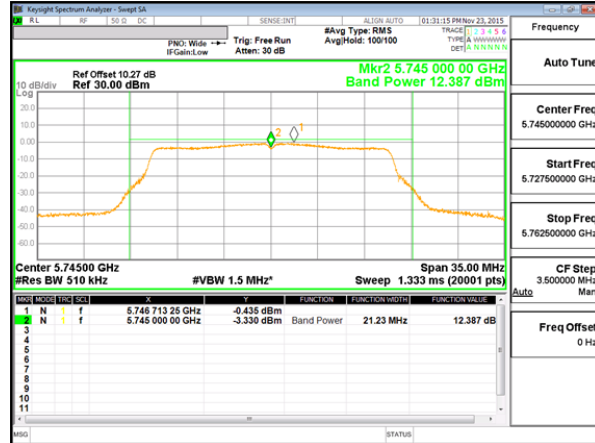


11a Mode High Channel

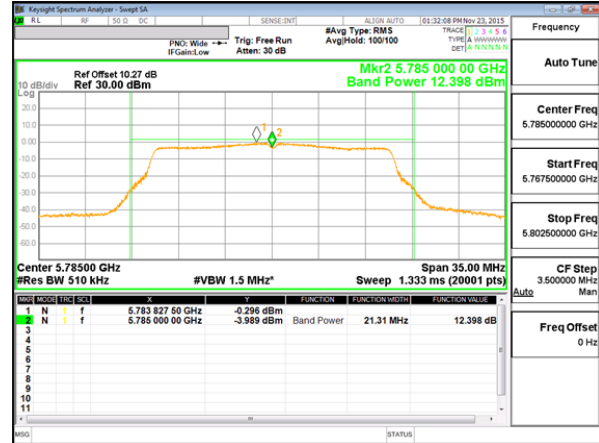


UNII 5.8 GHz IEEE 802.11n HT20 mode

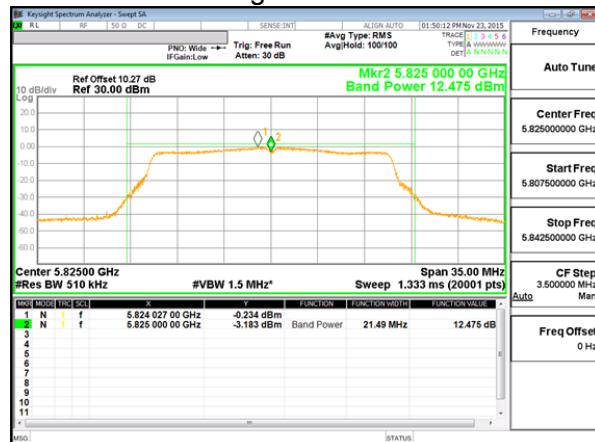
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

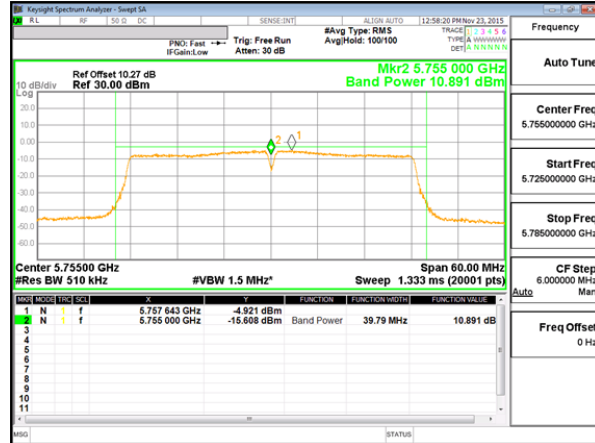


11n HT20 Mode High Channel

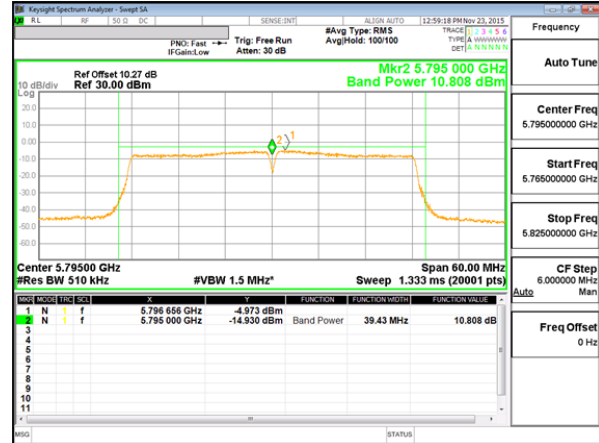


UNII 5.8 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel



11n HT40 Mode High Channel



11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

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 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.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

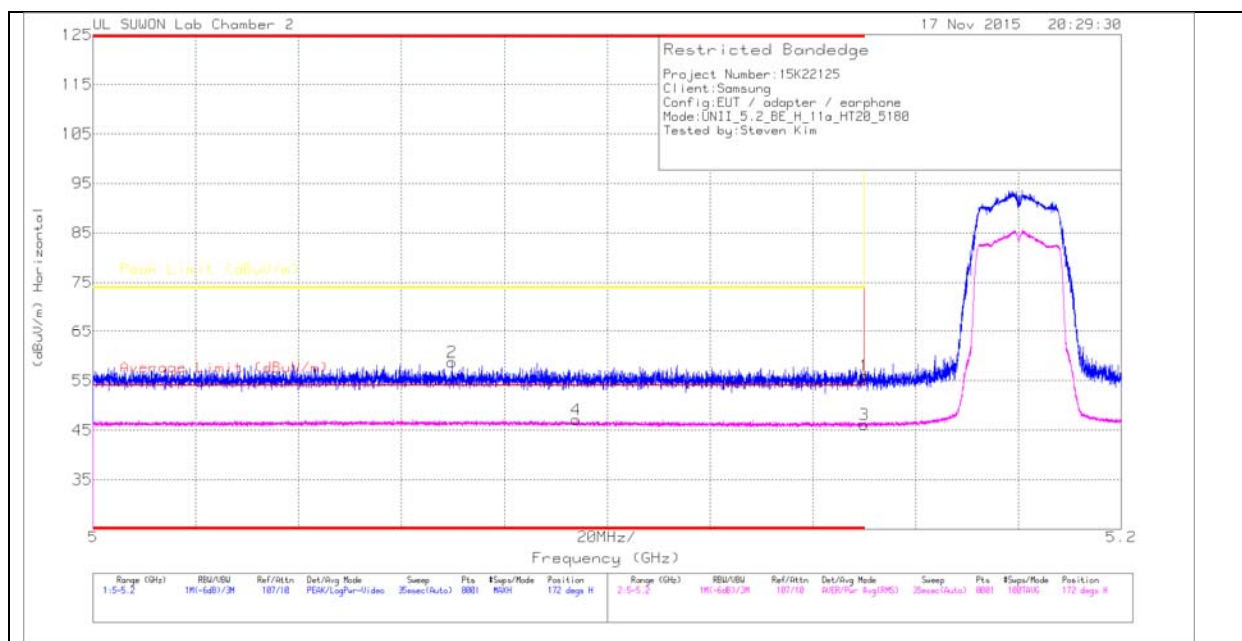
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

11.1. 5.2 GHz

11.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

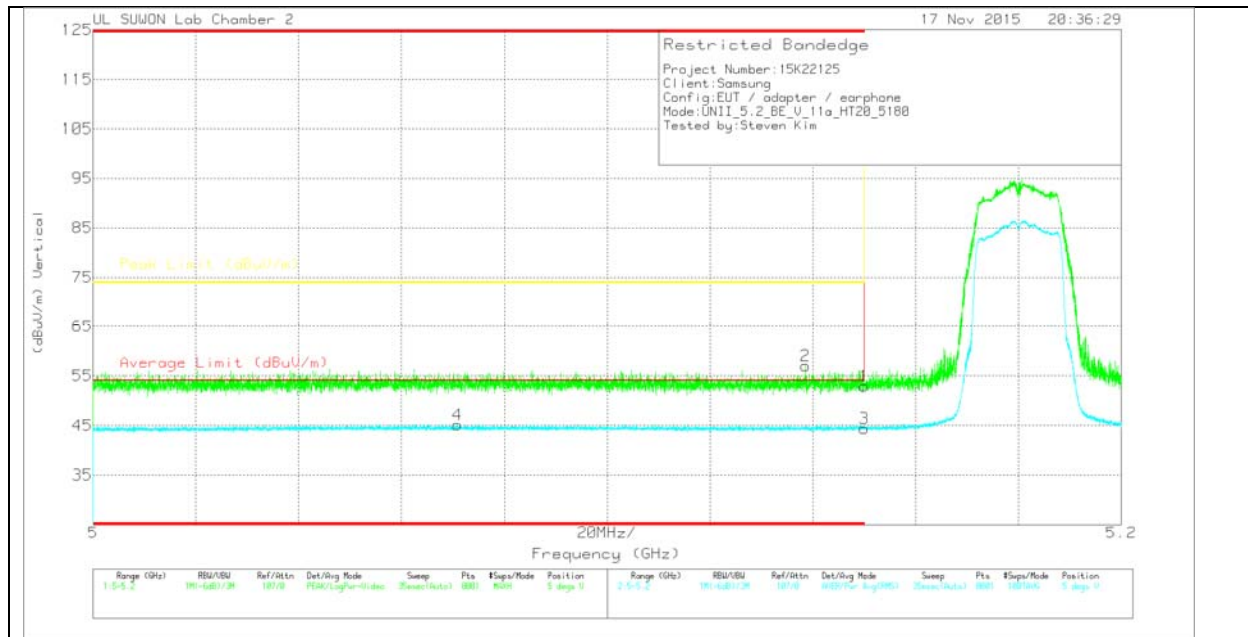
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	38.34	Pk	34.1	-16.4	0	56.04	-	-	74	-17.96	172	129	H
2	* 5.07	41.03	Pk	34	-16.3	0	58.73	-	-	74	-15.27	172	129	H
3	* 5.15	28.16	RMS	34.1	-16.4	.3	46.16	54	-7.84	-	-	172	129	H
4	* 5.094	29.1	RMS	34.1	-16.4	.3	47.1	54	-6.9	-	-	172	129	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	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	35.21	Pk	34.1	-16.4	0	52.91	-	-	74	-21.09	5	285	V
2	* 5.139	39.28	Pk	34.1	-16.4	0	56.98	-	-	74	-17.02	5	285	V
3	* 5.15	26.42	RMS	34.1	-16.4	.3	44.42	54	-9.58	-	-	5	285	V
4	* 5.071	27.18	RMS	34	-16.3	.3	45.18	54	-8.82	-	-	5	285	V

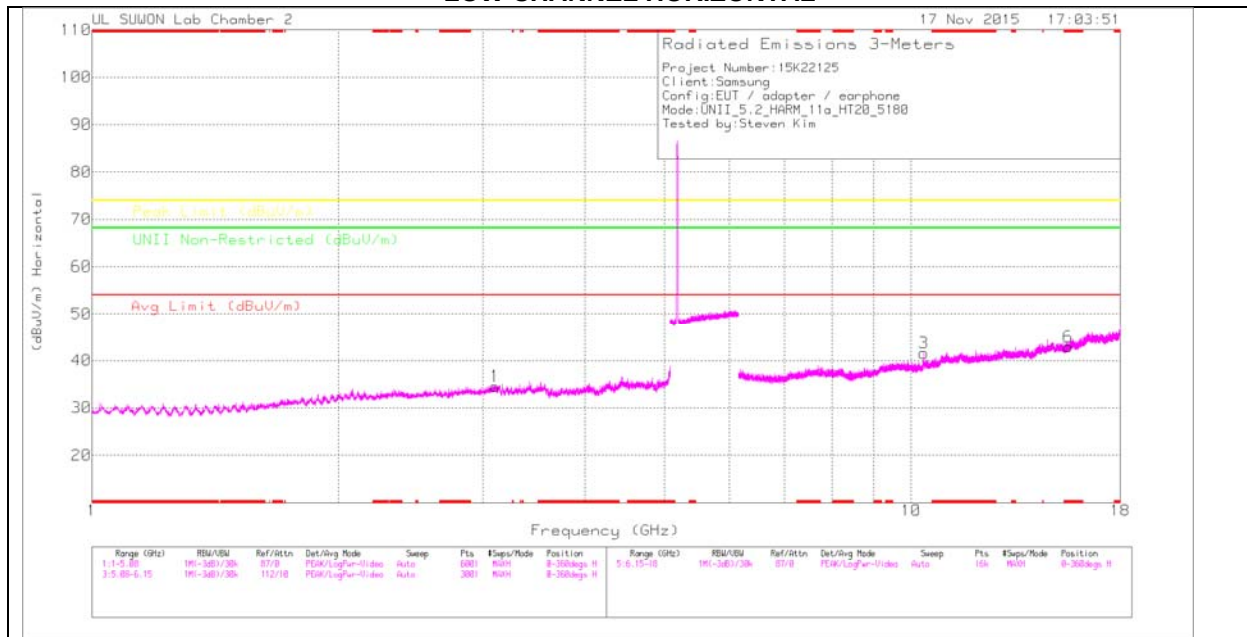
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

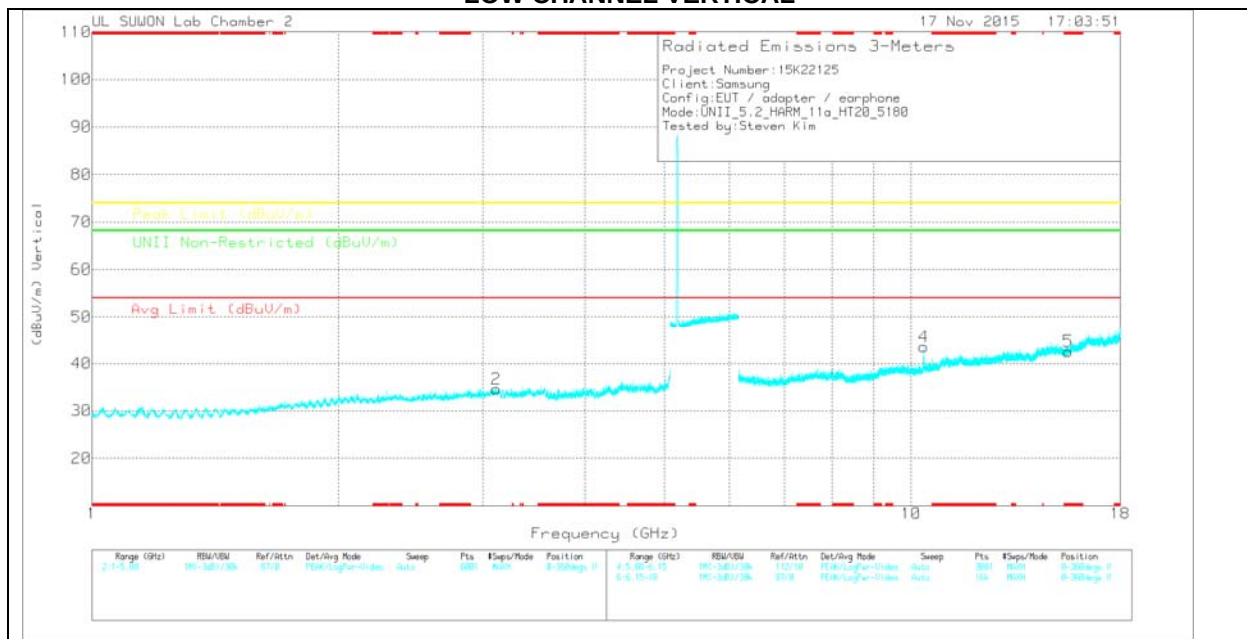
RMS - RMS detection

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.

LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_4	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	3.106	28.47	PK	32.5	-26.4	0	34.57	-	-	-	-	68.2	-33.63	0-360	200	H
2	3.113	28.59	PK	32.5	-26.4	0	34.69	-	-	-	-	68.2	-33.51	0-360	100	V
3	10.359	22.16	PK	37.6	-18.2	0	41.56	-	-	-	-	68.2	-26.64	0-360	200	H
6	* 15.541	19.16	PK	39.9	-16.1	0	42.96	-	-	74	-31.04	-	-	0-360	200	H
4	10.359	24.13	PK	37.6	-18.2	0	43.53	-	-	-	-	68.2	-24.67	0-360	200	V
5	* 15.54	18.79	PK	39.9	-16.1	0	42.59	-	-	74	-31.41	-	-	0-360	200	V

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

PK – Peak detector

Radiated Emissions

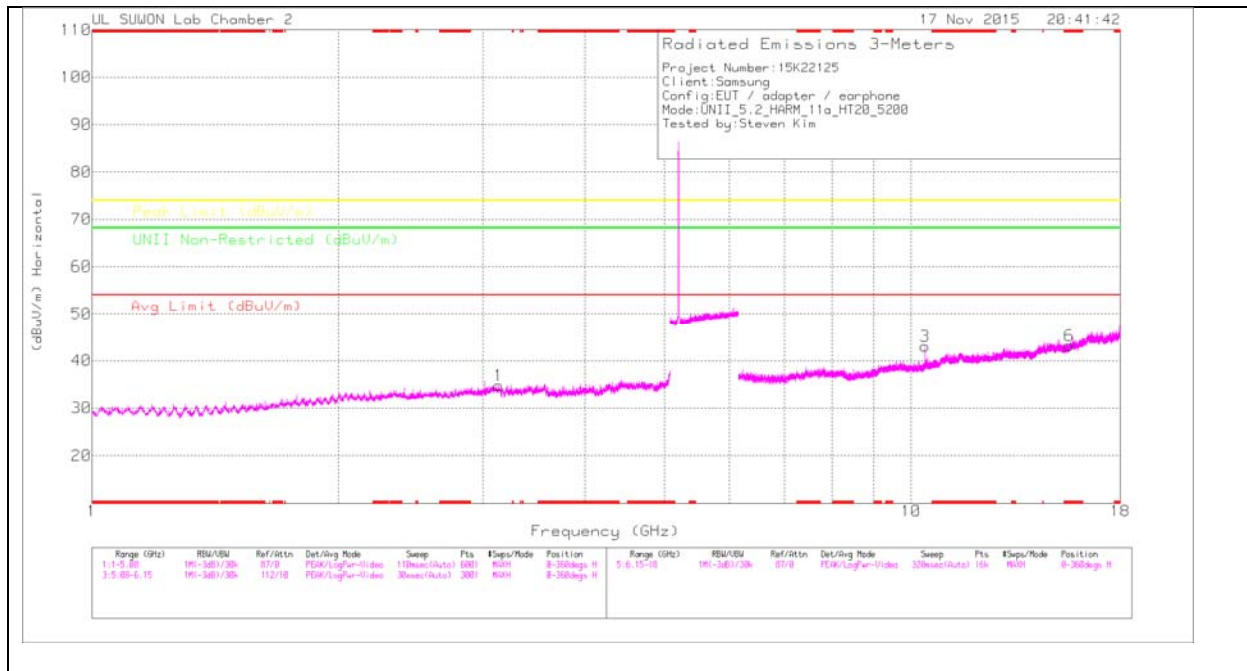
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.36	33.06	PK-U	37.6	-18.2	0	52.46	-	-	-	-	68.2	-15.74	337	350	H
10.362	34.16	PK-U	37.6	-18.1	0	53.66	-	-	-	-	68.2	-14.54	227	259	V

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

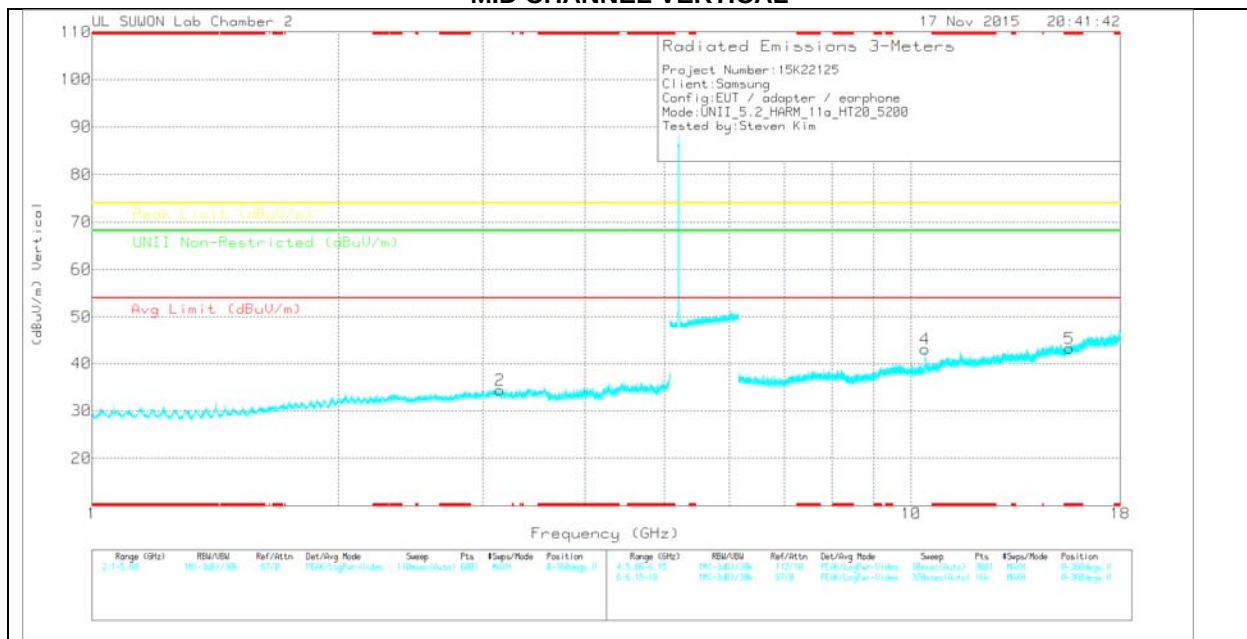
PK-U - U-NII: Maximum Peak

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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.

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_4	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	3.137	28.55	PK	32.5	-26.3	0	34.75	-	-	-	-	68.2	-33.45	0-360	200	H
2	3.147	28.11	PK	32.5	-26.2	0	34.41	-	-	-	-	68.2	-33.79	0-360	100	V
3	10.399	23.33	PK	37.6	-17.9	0	43.03	-	-	-	-	68.2	-25.17	0-360	200	H
6	* 15.598	19.52	PK	40	-16.3	0	43.22	-	-	74	-30.78	-	-	0-360	100	H
4	10.399	23.4	PK	37.6	-17.9	0	43.1	-	-	-	-	68.2	-25.1	0-360	200	V
5	* 15.602	19.48	PK	40	-16.3	0	43.18	-	-	74	-30.82	-	-	0-360	200	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_5	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
10.403	32.97	PK-U	37.6	-17.9	0	52.67	-	-	-	-	68.2	-15.53	331	329	H
10.401	35.96	PK-U	37.6	-17.9	0	55.66	-	-	-	-	68.2	-12.54	214	233	V

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

PK-U - U-NII: Maximum Peak

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).