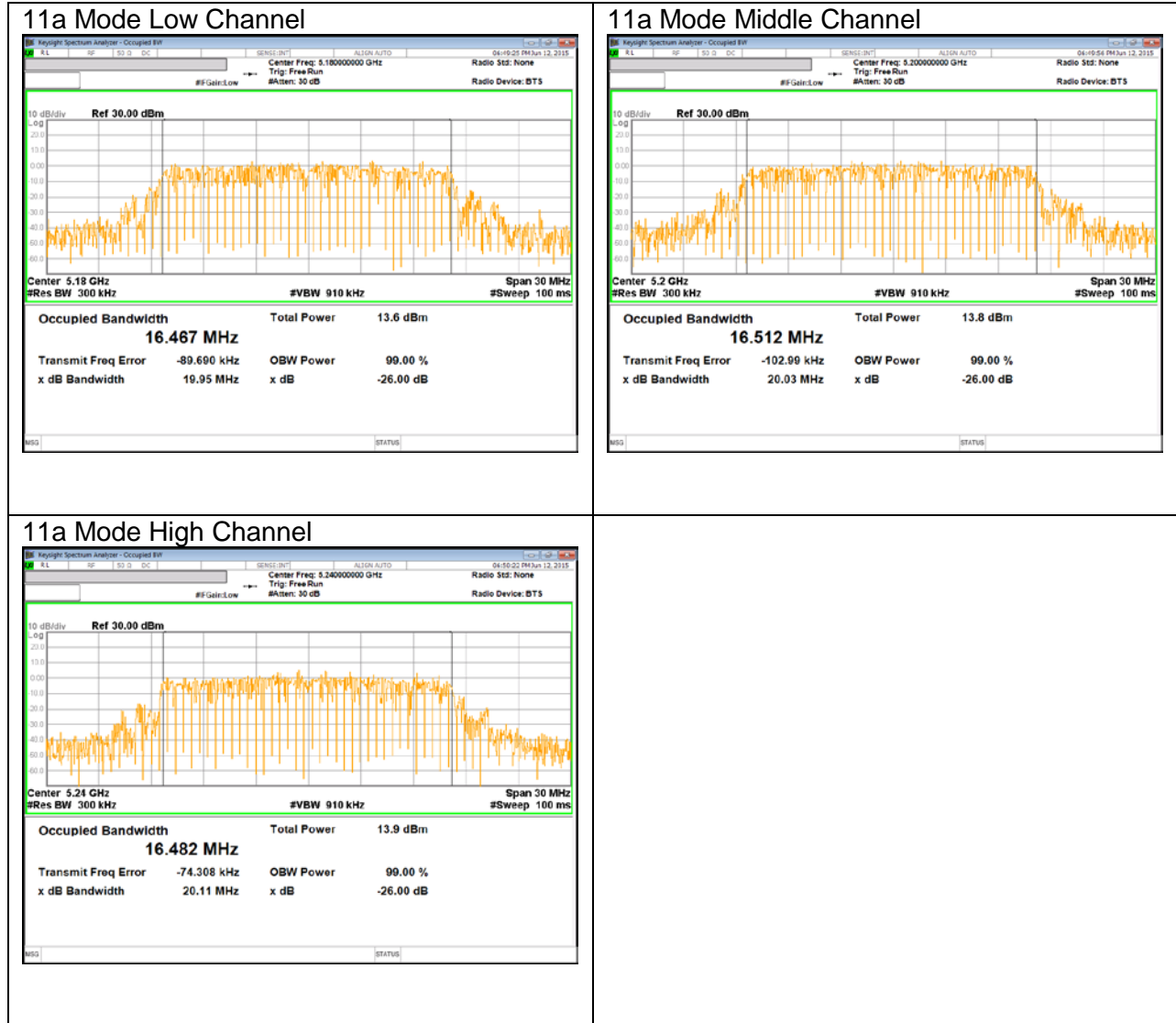


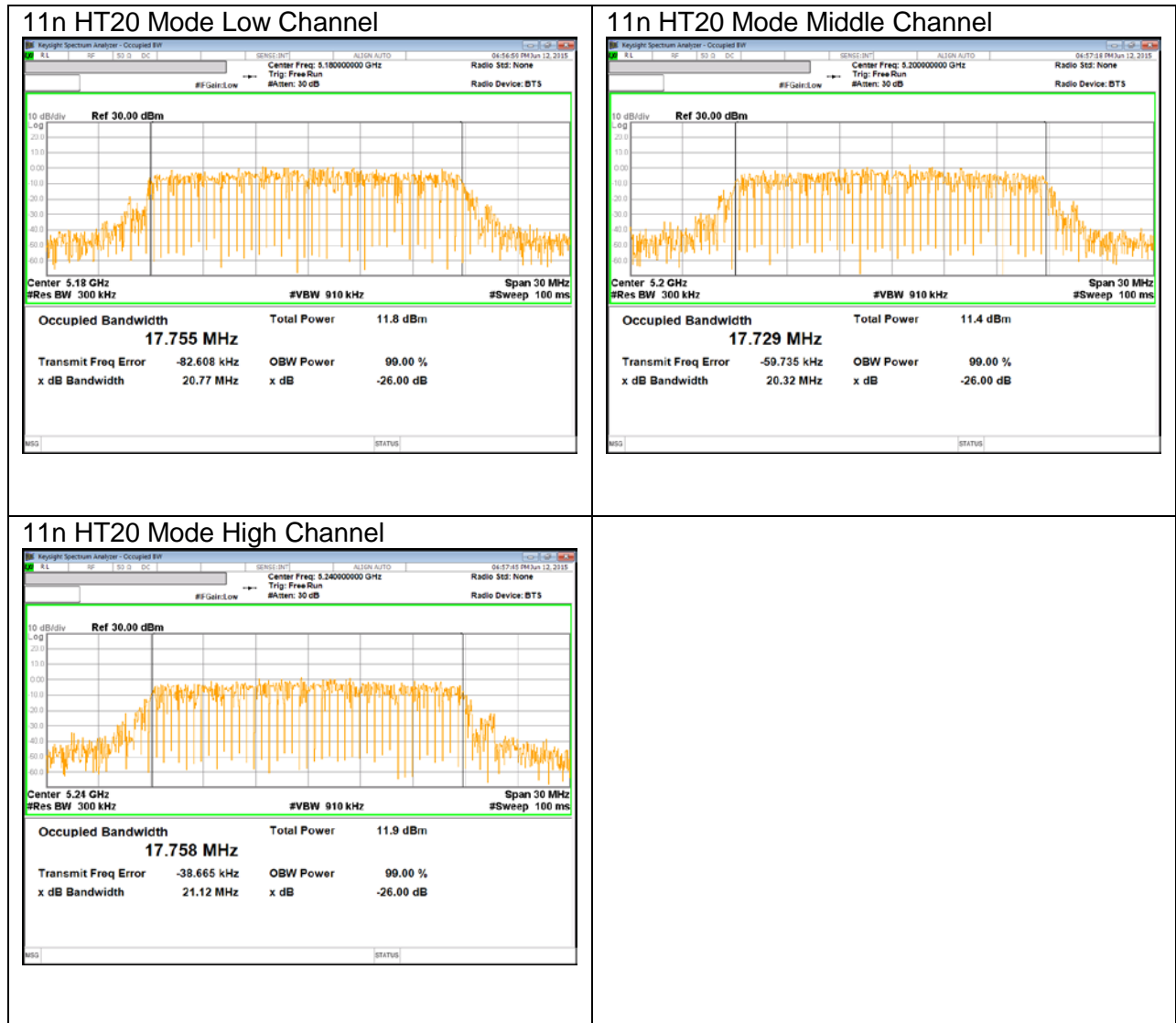
10.3.17. 99% BANDWIDTH PLOTS

UNII 5.2 GHz

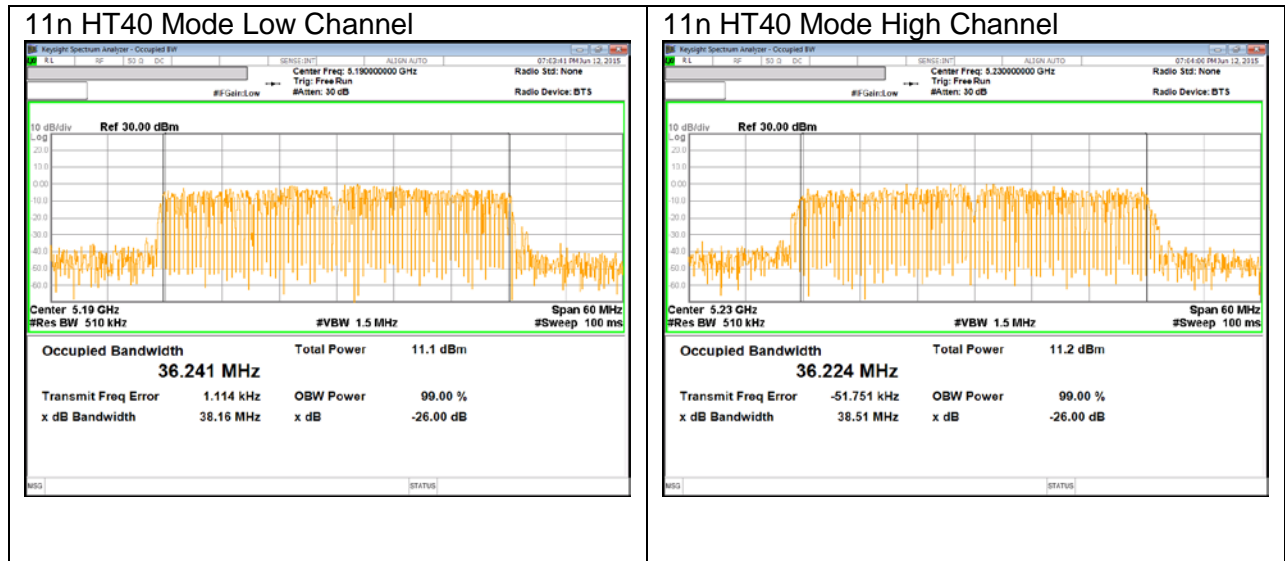
IEEE 802.11a mode



IEEE 802.11n HT20 mode



IEEE 802.11n HT40 mode

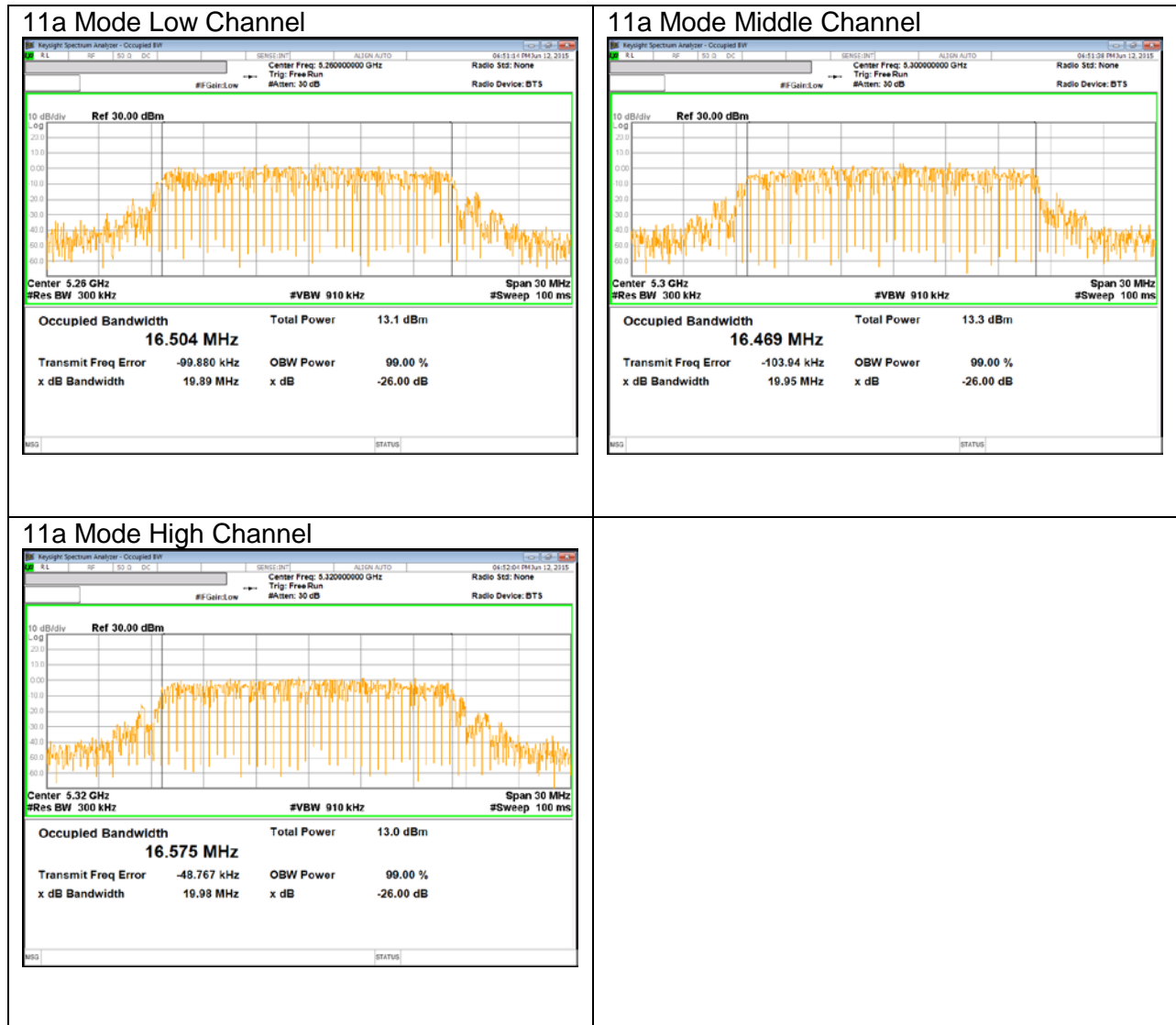


IEEE 802.11ac VHT80 mode

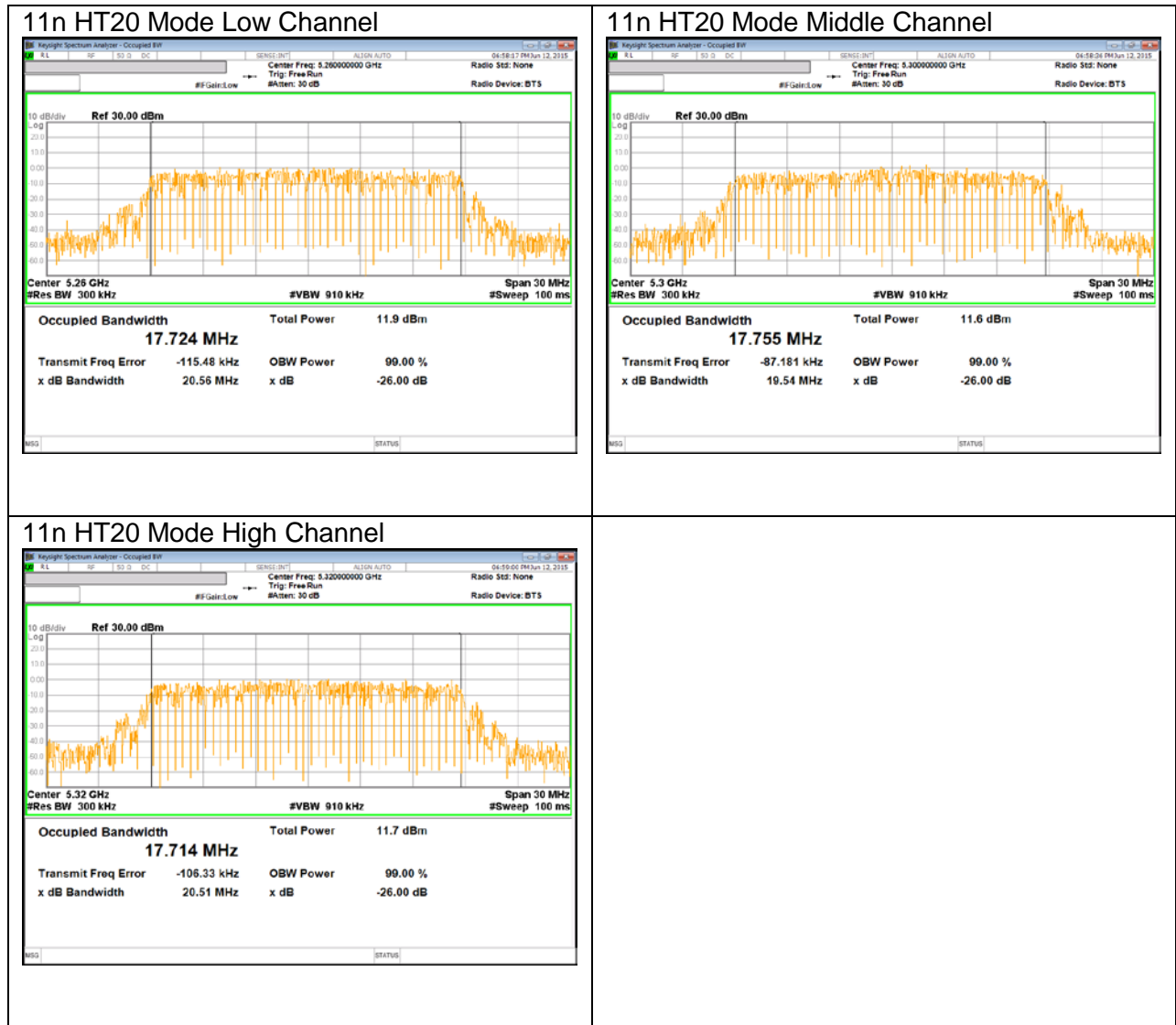


UNII 5.3 GHz

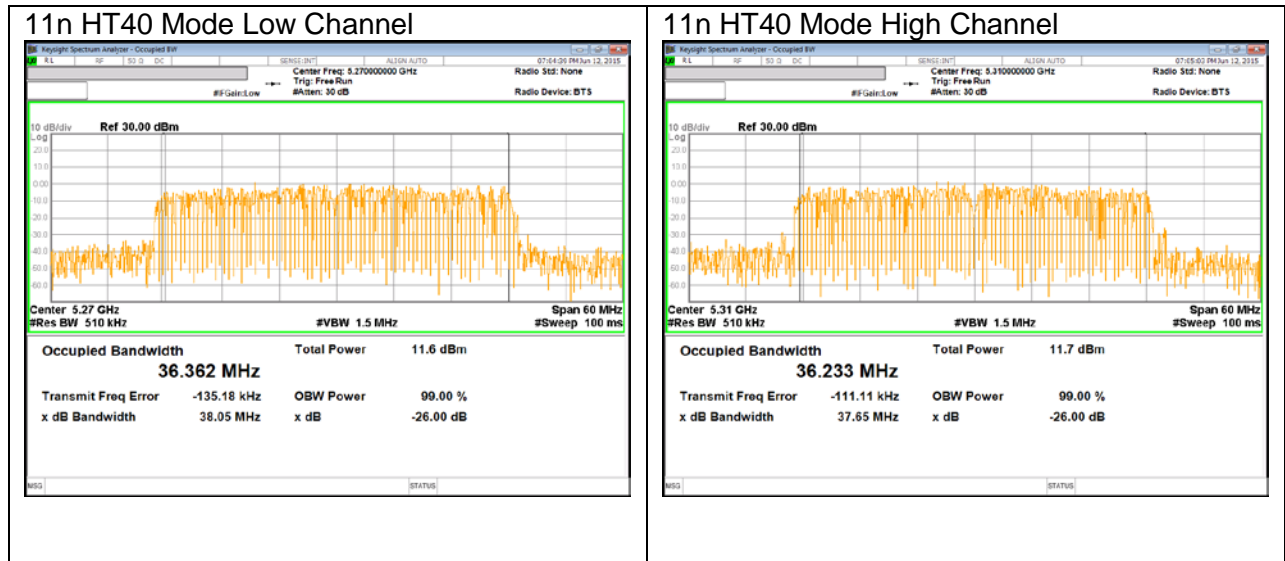
IEEE 802.11a mode



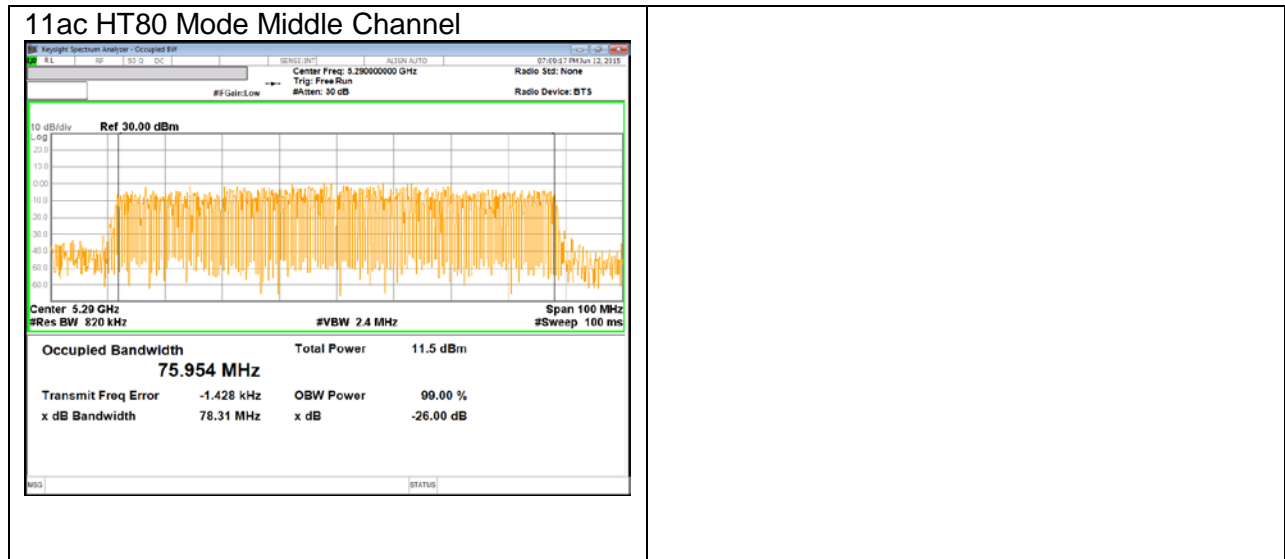
IEEE 802.11n HT20 mode



IEEE 802.11n HT40 mode



IEEE 802.11ac VHT80 mode

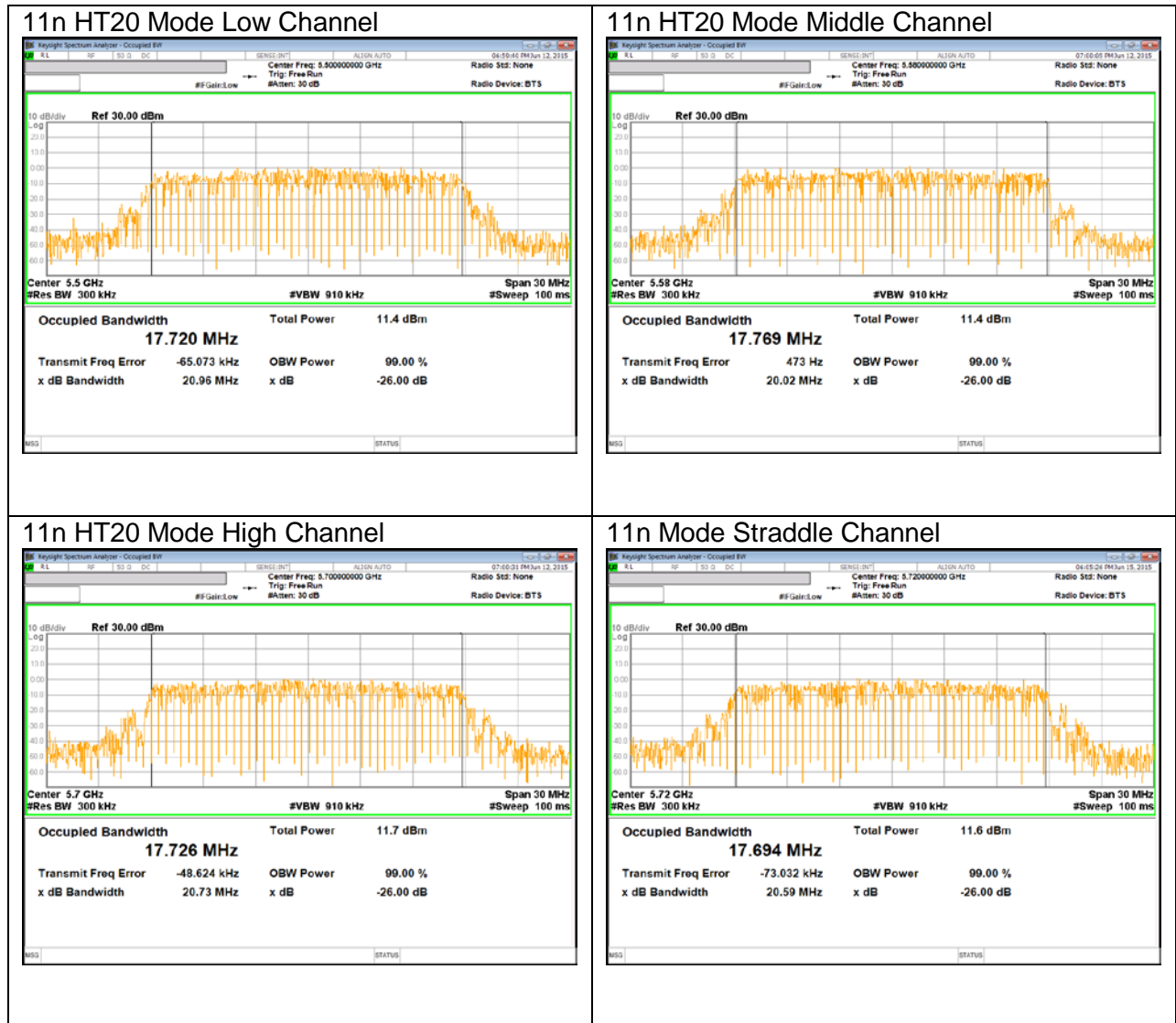


UNII 5.5 GHz

IEEE 802.11a mode



IEEE 802.11n HT20 mode



IEEE 802.11n HT40 mode

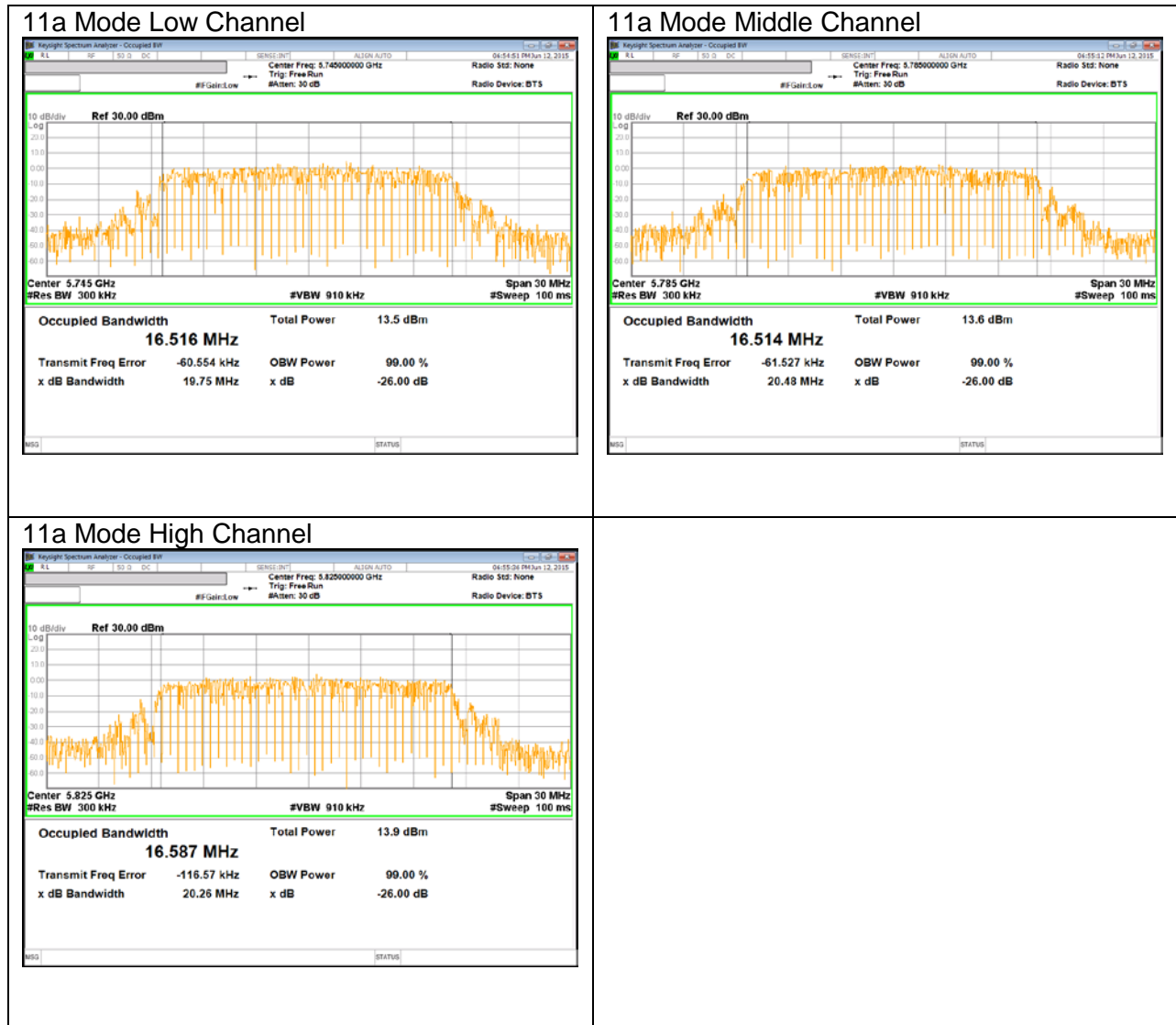


IEEE 802.11ac VHT80 mode

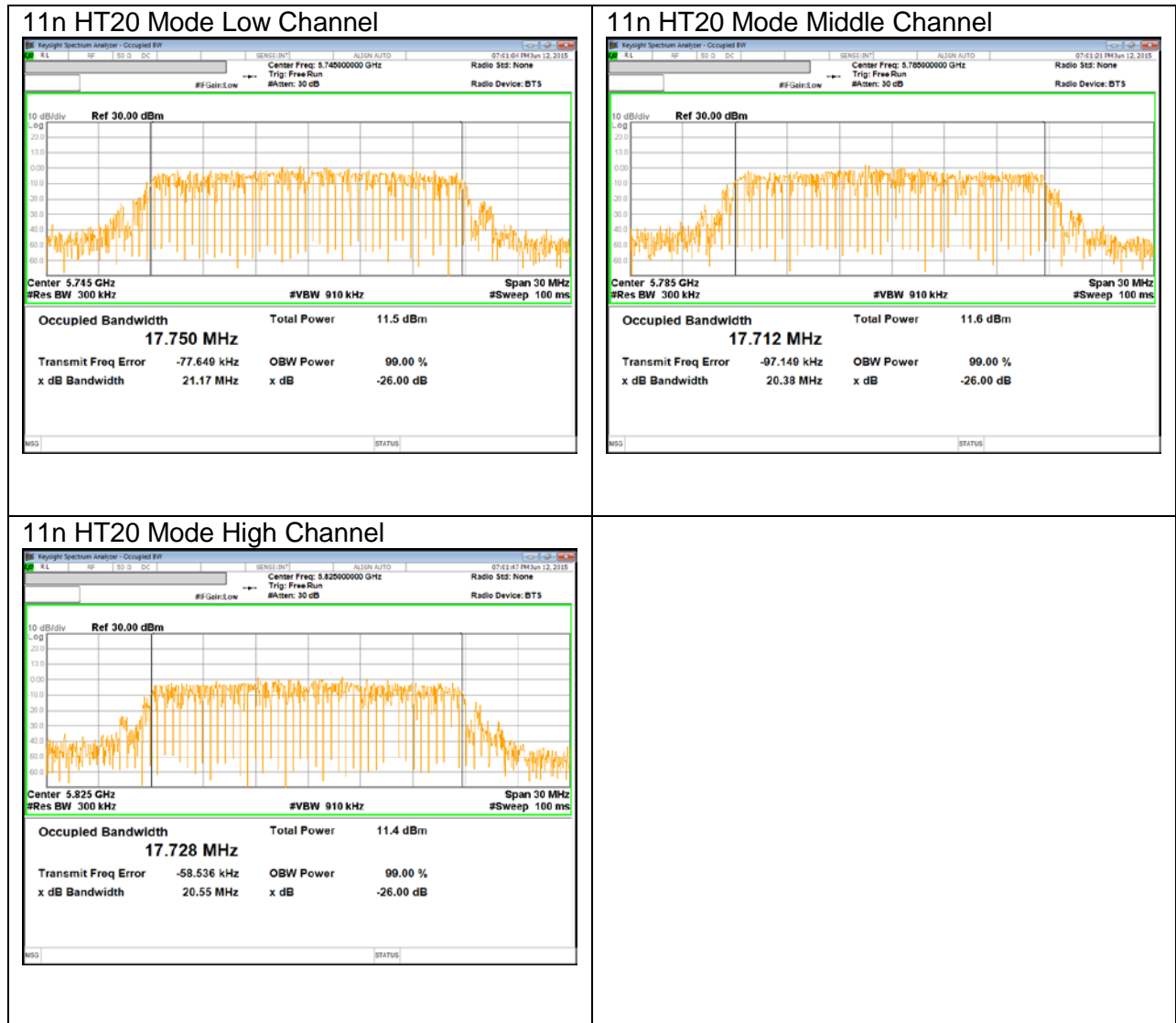


UNII 5.8 GHz

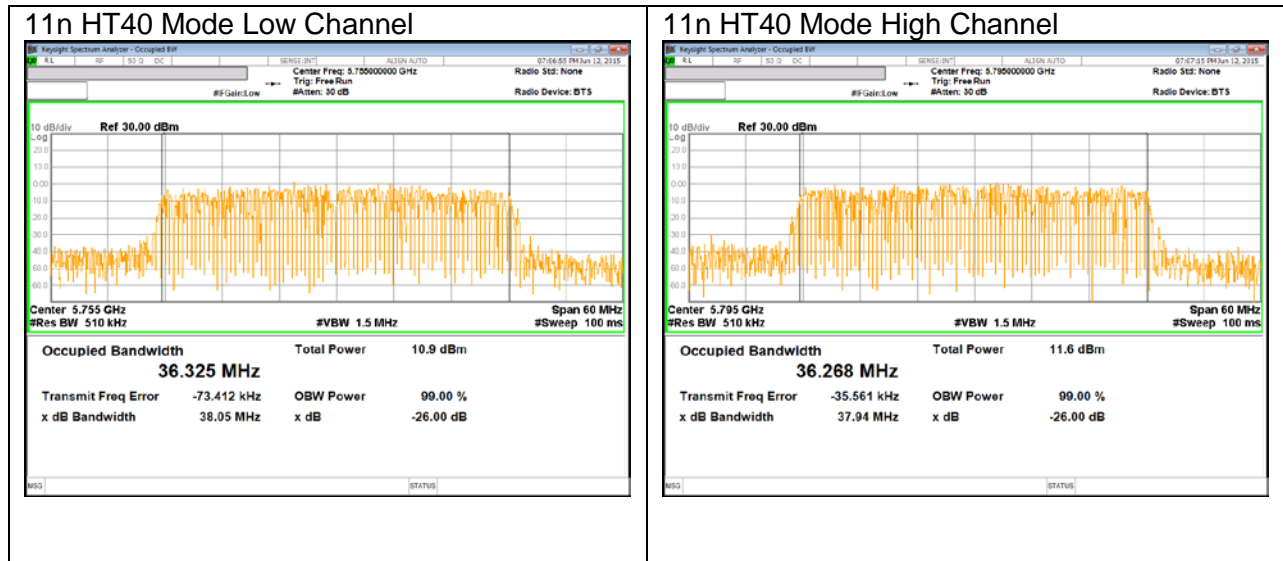
IEEE 802.11a mode



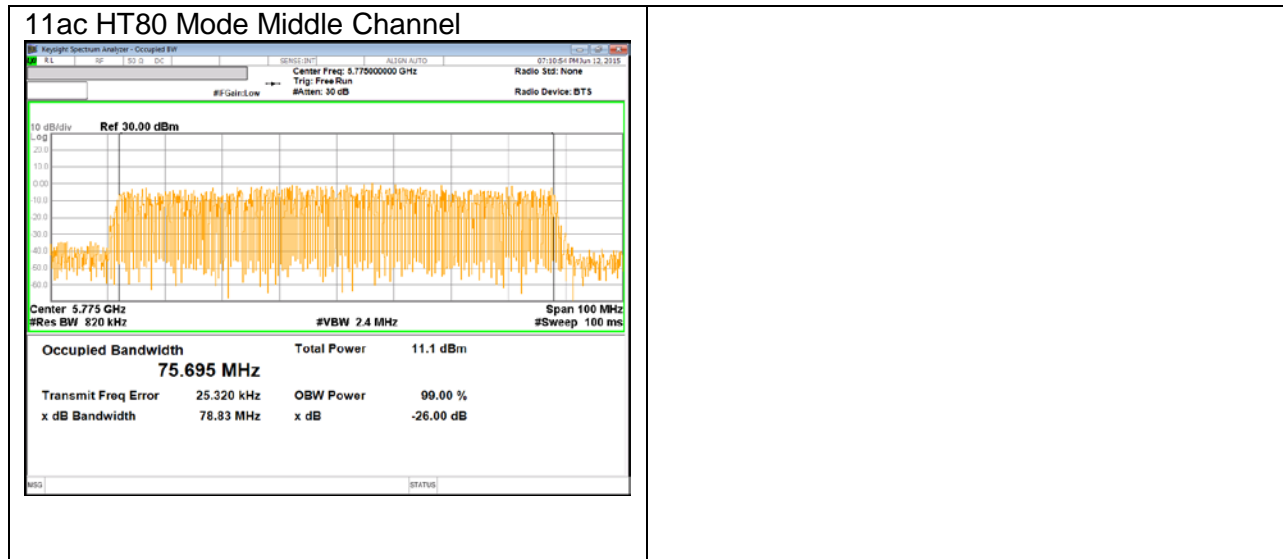
IEEE 802.11n HT20 mode



IEEE 802.11n HT40 mode



IEEE 802.11ac VHT80 mode



10.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.29 dB (including 10 dB pad and 0.29 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5180	14.40
Mid	5200	14.42
High	5240	14.25
Worst		14.42

10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5180	11.77
Mid	5200	12.02
High	5240	12.00
Worst		12.02

10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5190	11.93
High	5230	11.80
Worst		11.93

10.4.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Middle	5210	11.96
Worst		11.96

10.4.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5260	13.61
Mid	5300	13.60
High	5320	13.64
Worst		13.64

10.4.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5260	12.37
Mid	5300	11.89
High	5320	12.21
Worst		12.37

10.4.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5270	12.15
High	5310	12.17
Worst		12.17

10.4.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Middle	5290	12.30
Worst		12.30

10.4.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5500	14.21
Mid	5580	14.06
High	5700	14.35
Straddle	5720	13.64
Worst		14.35

10.4.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5500	11.66
Mid	5580	11.53
High	5700	12.05
Straddle	5720	11.79
Worst		12.05

10.4.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5510	11.75
Mid	5550	11.62
High	5670	11.62
Straddle	5710	12.38
Worst		12.38

10.4.12. 802.11ac VHT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5530	11.95
High	5610	11.87
Straddle	5690	11.52
Worst		11.95

10.4.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5745	14.36
Mid	5785	14.25
High	5825	14.13
Worst		14.36

10.4.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5745	12.05
Mid	5785	11.94
High	5825	11.65
Worst		12.05

10.4.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Low	5755	12.10
High	5795	12.25
Worst		12.25

10.4.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	Average Power [dBm]
Mid	5775	12.40
Worst		12.40

10.5. 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 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 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.

Frequency Range [MHz]		Antenna Gain [dBi]
UNII 1 5150 – 5250	5150	-7.16
	5250	-3.60
UNII 2A 5250 – 5350	5250	-3.60
	5350	-3.37
UNII 2C 5470 – 5725	5500	-0.56
	5725	-1.48
UNII 3 5725 – 5825	5775	-2.10
	5825	-2.48

RESULTS

10.5.1. 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	21.200	16.467	-3.60	-3.60
Mid	5200	21.200	16.512	-3.60	-3.60
High	5240	21.160	16.482	-3.60	-3.60

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	27.60	24.00	11.00	10.00	10.00
Mid	5200	24.00	22.18	27.60	24.00	11.00	10.00	10.00
High	5240	24.00	22.17	27.60	24.00	11.00	10.00	10.00

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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	13.971	14.271	24.00	-9.73
Mid	5200	14.049	14.349	24.00	-9.65
High	5240	14.002	14.302	24.00	-9.70

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	3.921	4.221	10.00	-5.78
Mid	5200	4.233	4.533	10.00	-5.47
High	5240	4.129	4.429	10.00	-5.57

10.5.2. 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	21.640	17.755	-3.60	-3.60
Mid	5200	21.560	17.729	-3.60	-3.60
High	5240	21.640	17.758	-3.60	-3.60

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	22.49	27.60	24.00	11.00	10.00	10.00
Mid	5200	24.00	22.49	27.60	24.00	11.00	10.00	10.00
High	5240	24.00	22.49	27.60	24.00	11.00	10.00	10.00

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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	11.435	11.755	24.00	-12.25
Mid	5200	11.687	12.007	24.00	-11.99
High	5240	11.744	12.064	24.00	-11.94

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	1.332	1.652	10.00	-8.35
Mid	5200	1.549	1.869	10.00	-8.13
High	5240	1.786	2.106	10.00	-7.89

10.5.3. 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	40.080	36.241	-3.60	-3.60
High	5230	40.080	36.224	-3.60	-3.60

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	5190	24.00	23.00	27.60	24.00	11.00	10.00	10.00
High	5230	24.00	23.00	27.60	24.00	11.00	10.00	10.00

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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5190	11.676	12.296	24.00	-11.70
High	5230	11.706	12.326	24.00	-11.67

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5190	-1.309	-0.689	10.00	-10.69
High	5230	-1.243	-0.623	10.00	-10.62

10.5.4. 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]
Mid	5210	81.900	75.852	-3.60	-3.60

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]
Mid	5210	24.00	23.00	27.60	24.00	11.00	10.00	10.00

Duty Cycle CF [dB]	1.18	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Mid	5210	10.952	12.132	24.00	-11.87

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Mid	5210	-4.445	-3.265	10.00	-13.27

10.5.5. 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	21.160	16.504	-3.37	-3.37
Mid	5300	21.160	16.469	-3.37	-3.37
High	5320	21.120	16.575	-3.37	-3.37

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	22.18	27.37	24.00	11.00	11.00	11.00
Mid	5300	24.00	22.17	27.37	24.00	11.00	11.00	11.00
High	5320	24.00	22.19	27.37	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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	13.286	13.586	24.00	-10.41
Mid	5300	13.005	13.305	24.00	-10.70
High	5320	13.056	13.356	24.00	-10.64

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	3.645	3.945	11.00	-7.06
Mid	5300	3.188	3.488	11.00	-7.51
High	5320	3.613	3.913	11.00	-7.09

10.5.6. 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	21.760	17.724	-3.37	-3.37
Mid	5300	21.520	17.755	-3.37	-3.37
High	5320	21.600	17.714	-3.37	-3.37

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	22.49	27.37	24.00	11.00	11.00	11.00
Mid	5300	24.00	22.49	27.37	24.00	11.00	11.00	11.00
High	5320	24.00	22.48	27.37	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]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	11.786	12.106	24.00	-11.89
Mid	5300	11.706	12.026	24.00	-11.97
High	5320	11.790	12.110	24.00	-11.89

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	1.689	2.009	11.00	-8.99
Mid	5300	1.643	1.963	11.00	-9.04
High	5320	1.668	1.988	11.00	-9.01

10.5.7. 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	40.080	36.362	-3.37	-3.37
High	5310	39.960	36.233	-3.37	-3.37

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	5270	24.00	23.00	27.37	24.00	11.00	11.00	11.00
High	5310	24.00	23.00	27.37	24.00	11.00	11.00	11.00

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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5270	11.877	12.497	24.00	-11.50
High	5310	11.598	12.218	24.00	-11.78

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5270	-1.005	-0.385	11.00	-11.39
High	5310	-0.888	-0.268	11.00	-11.27

10.5.8. 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]
Mid	5290	81.800	75.954	-3.37	-3.37

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]
Mid	5290	24.00	23.00	27.37	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	1.18	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Mid	5290	11.304	12.484	24.00	-11.52

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Mid	5290	-4.327	-3.147	11.00	-14.15

10.5.9. 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	21.160	16.498	-0.56	-0.56
Mid	5580	21.160	16.498	-0.56	-0.56
High	5700	21.160	16.459	-0.56	-0.56

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	22.17	24.56	24.00	11.00	11.00	11.00
Mid	5580	24.00	22.17	24.56	24.00	11.00	11.00	11.00
High	5700	24.00	22.16	24.56	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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	13.655	13.955	24.00	-10.05
Mid	5580	13.259	13.559	24.00	-10.44
High	5700	14.177	14.477	24.00	-9.52

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	3.707	4.007	11.00	-6.99
Mid	5580	3.301	3.601	11.00	-7.40
High	5700	4.431	4.731	11.00	-6.27

10.5.10. 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	21.680	16.498	-0.56	-0.56
Mid	5580	21.520	16.498	-0.56	-0.56
High	5700	21.520	16.459	-0.56	-0.56

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	22.17	24.56	24.00	11.00	11.00	11.00
Mid	5580	24.00	22.17	24.56	24.00	11.00	11.00	11.00
High	5700	24.00	22.16	24.56	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]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	11.314	11.634	24.00	-12.37
Mid	5580	11.117	11.437	24.00	-12.56
High	5700	11.816	12.136	24.00	-11.86

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	1.371	1.691	11.00	-9.31
Mid	5580	1.083	1.403	11.00	-9.60
High	5700	1.888	2.208	11.00	-8.79

10.5.11. 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	40.080	36.298	-0.56	-0.56
Mid	5550	40.020	36.399	-0.56	-0.56
High	5670	40.020	36.228	-0.56	-0.56

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	24.56	24.00	11.00	11.00	11.00
Mid	5550	24.00	23.00	24.56	24.00	11.00	11.00	11.00
High	5670	24.00	23.00	24.56	24.00	11.00	11.00	11.00

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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5510	11.394	12.014	24.00	-11.99
Mid	5550	11.220	11.840	24.00	-12.16
High	5670	11.187	11.807	24.00	-12.19

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5510	-1.478	-0.858	11.00	-11.86
Mid	5550	-1.793	-1.173	11.00	-12.17
High	5670	-1.858	-1.238	11.00	-12.24

10.5.12. 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	82.000	75.774	-0.56	-0.56
High	5610	81.800	75.622	-0.56	-0.56

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	5530	24.00	23.00	24.56	24.00	11.00	11.00	11.00
High	5610	24.00	23.00	24.56	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	1.18	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5530	10.766	11.946	24.00	-12.05
High	5610	10.610	11.790	24.00	-12.21

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5530	-5.166	-3.986	11.00	-14.99
High	5610	-5.044	-3.864	11.00	-14.86

10.5.13. 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	21.160	16.516	-2.10	-2.10
Mid	5785	21.200	16.514	-2.10	-2.10
High	5825	21.200	16.587	-2.10	-2.10

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	26.10	24.00	11.00	11.00	11.00
Mid	5785	24.00	22.18	26.10	24.00	11.00	11.00	11.00
High	5825	24.00	22.20	26.10	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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	14.121	14.421	24.00	-9.58
Mid	5785	13.705	14.005	24.00	-10.00
High	5825	13.600	13.900	24.00	-10.10

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	4.289	4.589	11.00	-6.41
Mid	5785	3.681	3.981	11.00	-7.02
High	5825	3.636	3.936	11.00	-7.06

10.5.14. 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	21.600	17.750	-2.10	-2.10
Mid	5785	21.760	17.712	-2.10	-2.10
High	5825	21.720	17.728	-2.10	-2.10

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	22.49	26.10	24.00	11.00	11.00	11.00
Mid	5785	24.00	22.48	26.10	24.00	11.00	11.00	11.00
High	5825	24.00	22.49	26.10	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]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	11.815	12.135	24.00	-11.87
Mid	5785	11.506	11.826	24.00	-12.17
High	5825	11.208	11.528	24.00	-12.47

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	1.548	1.868	11.00	-9.13
Mid	5785	1.484	1.804	11.00	-9.20
High	5825	0.988	1.308	11.00	-9.69

10.5.15. 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	40.020	36.325	-2.10	-2.10
High	5795	39.960	36.268	-2.10	-2.10

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	5755	24.00	23.00	26.10	24.00	11.00	11.00	11.00
High	5795	24.00	23.00	26.10	24.00	11.00	11.00	11.00

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

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5755	11.703	12.323	24.00	-11.68
High	5795	11.517	12.137	24.00	-11.86

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5755	-0.931	-0.311	11.00	-11.31
High	5795	-1.187	-0.567	11.00	-11.57

10.5.16. 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]
Mid	5775	82.300	75.695	-2.10	-2.10

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]
Mid	5775	24.00	23.00	26.10	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	1.18	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Mid	5775	11.316	12.496	24.00	-11.50

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Mid	5775	-5.028	-3.848	11.00	-14.85

10.5.17. 802.11a MODE IN 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	15.600	13.220	-0.56	-0.56
UNII-3	5720	5.600	3.220	-2.10	-2.10
Whole	5720	21.200	16.440	-0.56	-0.56

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	22.93	21.21	23.49	22.93	11.00	11.00	11.00
UNII-3	5720	18.48	15.08	20.58	18.48	11.00	11.00	11.00
Whole	5720	24.00	22.16	24.56	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]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5720	12.506	12.806	22.93	-10.13
UNII-3	5720	4.808	5.108	18.48	-13.37
Whole	5720	13.187	13.487	24.00	-10.51

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
144	5720	3.249	3.549	11.00	-7.45

10.5.18. 802.11n HT20 MODE IN 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	15.620	13.847	-0.56	-0.56
UNII-3	5720	5.620	3.847	-2.10	-2.10
Whole	5720	21.240	17.694	-0.56	-0.56

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	23.50	22.94	11.00	11.00	11.00
UNII-3	5720	18.50	15.85	20.60	18.50	11.00	11.00	11.00
Whole	5720	24.00	22.48	24.56	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

Portion	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5720	11.078	11.398	22.94	-11.54
UNII-3	5720	4.037	4.357	18.50	-14.14
Whole	5720	11.861	12.181	24.00	-11.82

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
144	5720	1.368	1.688	11.00	-9.31

10.5.1. 802.11n HT40 MODE IN 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	34.770	33.113	-0.56	-0.56
UNII-3	5710	4.770	3.113	-2.10	-2.10
Whole	5710	39.540	36.225	-0.56	-0.56

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	24.56	24.00	11.00	11.00	11.00
UNII-3	5710	17.79	14.93	19.89	17.79	11.00	11.00	11.00
Whole	5710	24.00	23.00	24.56	24.00	11.00	11.00	11.00

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

Portion	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5710	11.544	12.164	24.00	-11.84
UNII-3	5710	0.547	1.167	17.79	-16.62
Whole	5710	11.876	12.496	24.00	-11.50

PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
144	5710	0.982	1.602	11.00	-9.40

10.5.1. 802.11ac VHT80 MODE IN 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	5690	76.050	72.891	-0.56	-0.56
UNII-3	5690	6.050	2.891	-2.10	-2.10
Whole	5690	82.100	75.781	-0.56	-0.56

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	5690	24.00	23.00	24.56	24.00	11.00	11.00	11.00
UNII-3	5690	18.82	14.61	20.92	18.82	11.00	11.00	11.00
Whole	5690	24.00	23.00	24.56	24.00	11.00	11.00	11.00

Duty Cycle CF [dB]	1.18	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Portion	Frequency [MHz]	Measure Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
UNII-2C	5690	10.577	11.757	24.00	-12.24
UNII-3	5690	-4.628	-3.448	18.82	-22.27
Whole	5690	10.706	11.886	24.00	-12.11

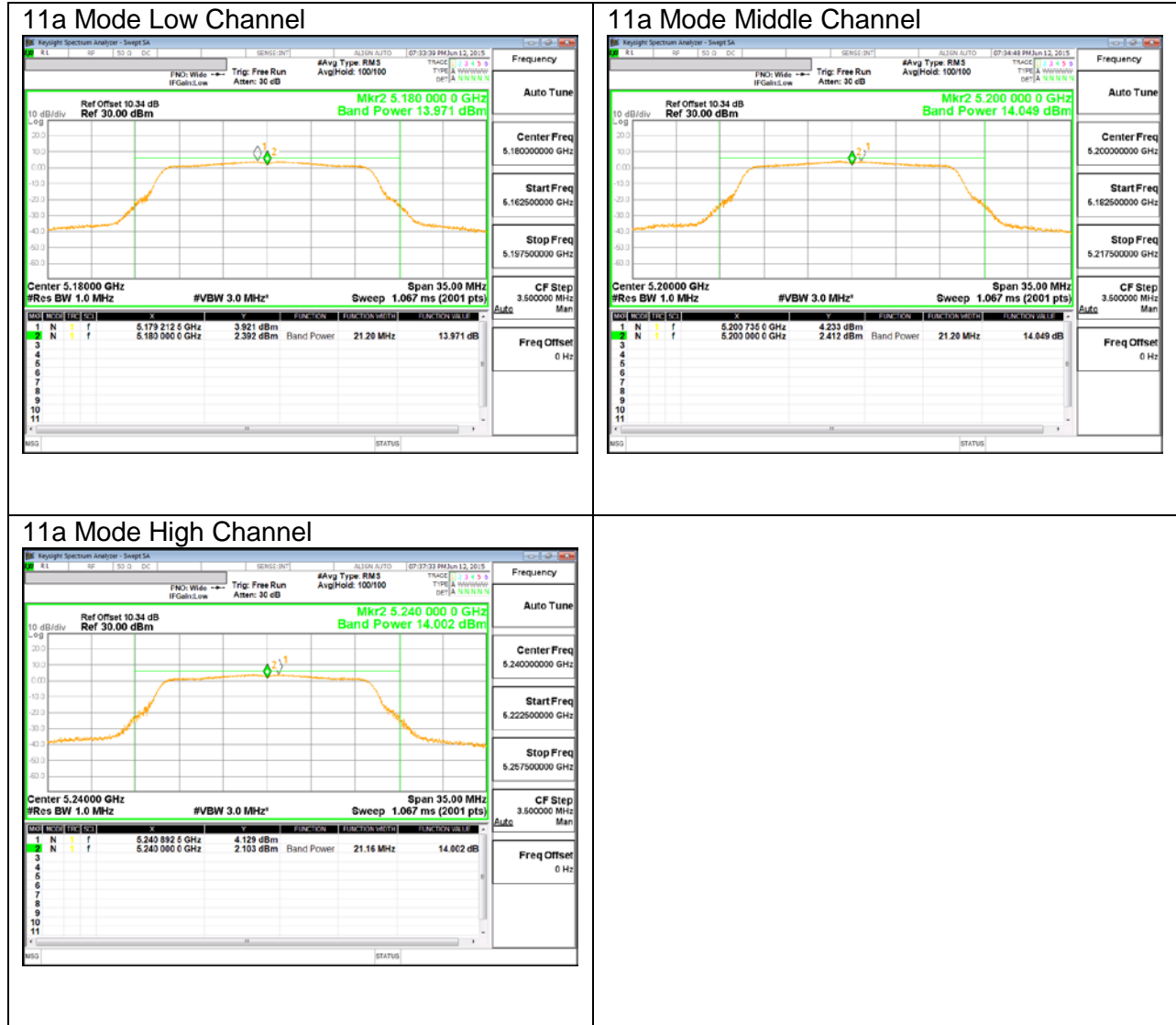
PPSD Results

Channel	Frequency [MHz]	Measure PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
144	5690	-5.407	-4.227	11.00	-15.23

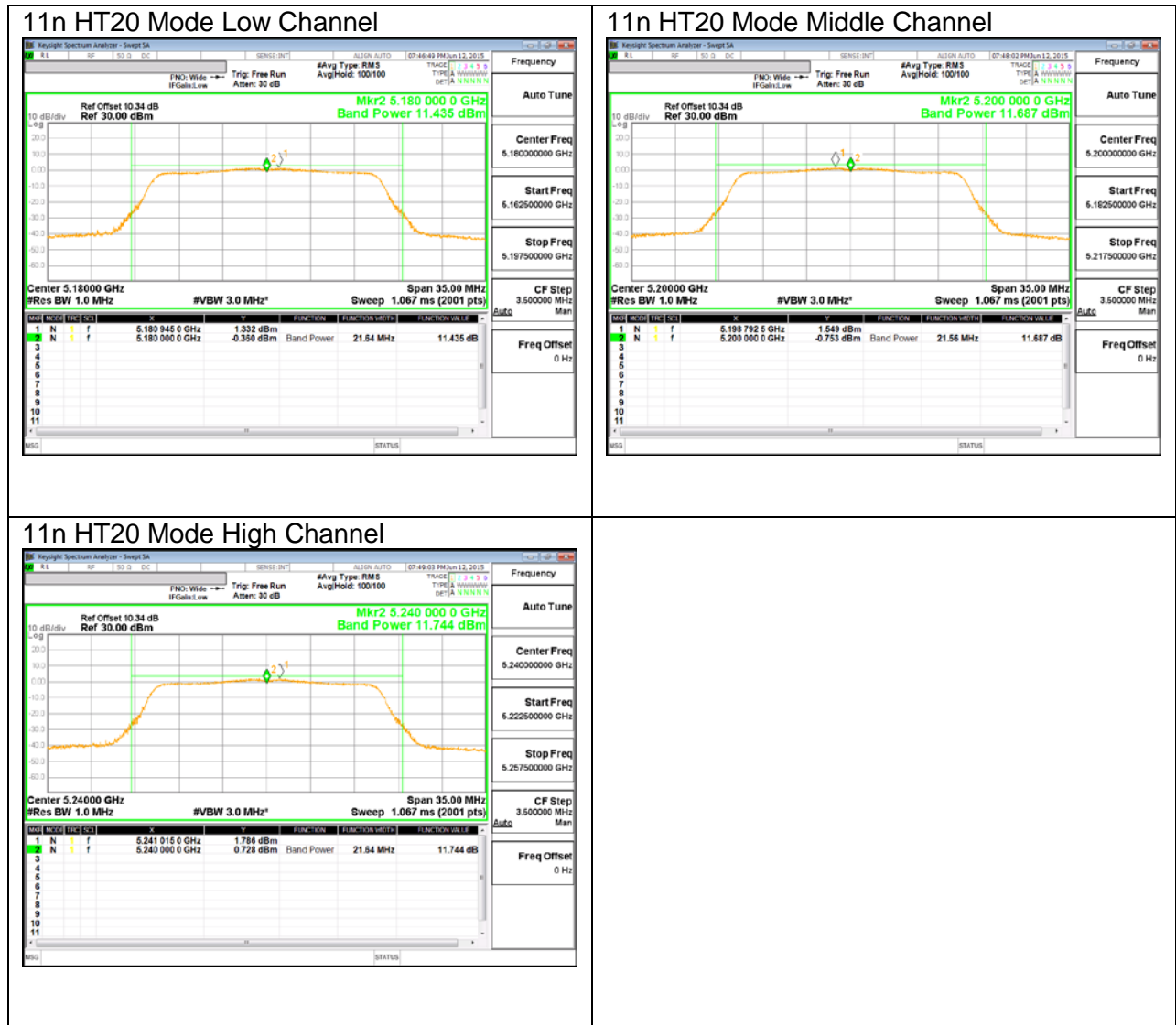
10.5.2. OUTPUT POWER AND PPSD PLOTS

UNII 5.2 GHz

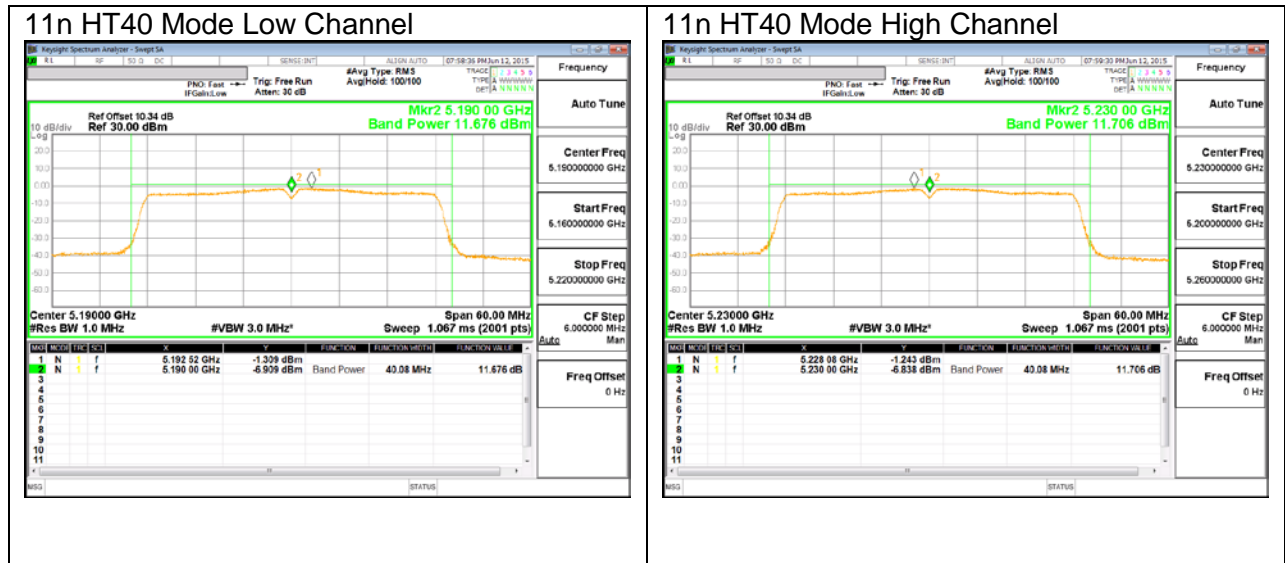
IEEE 802.11a mode



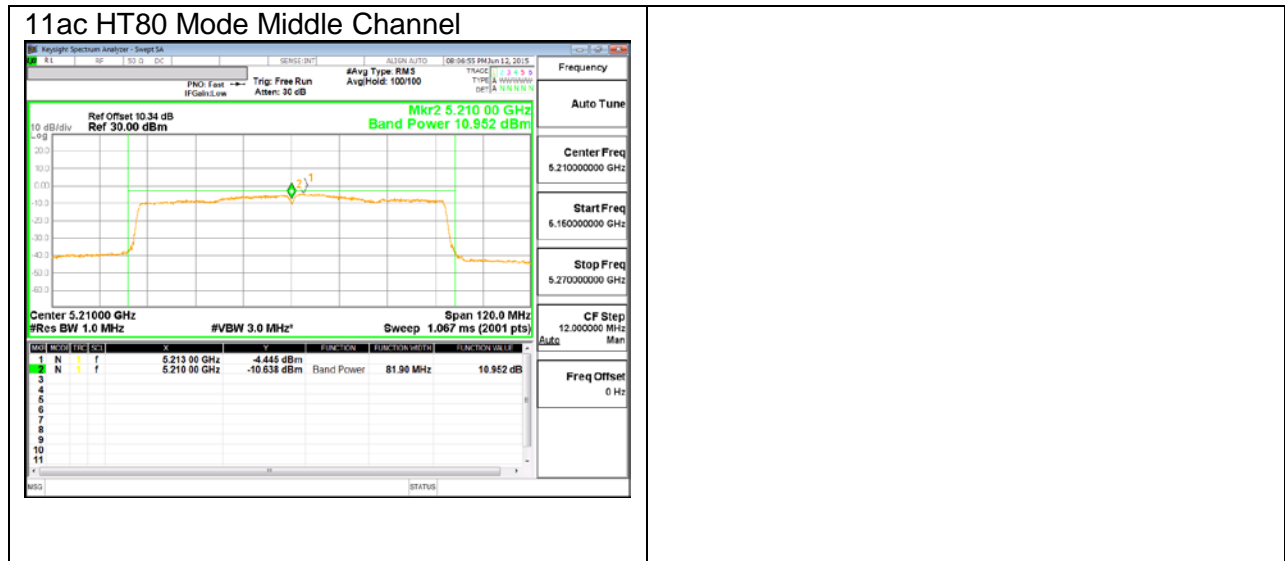
IEEE 802.11n HT20 mode



IEEE 802.11n HT40 mode



IEEE 802.11ac VHT80 mode



UNII 5.3 GHz

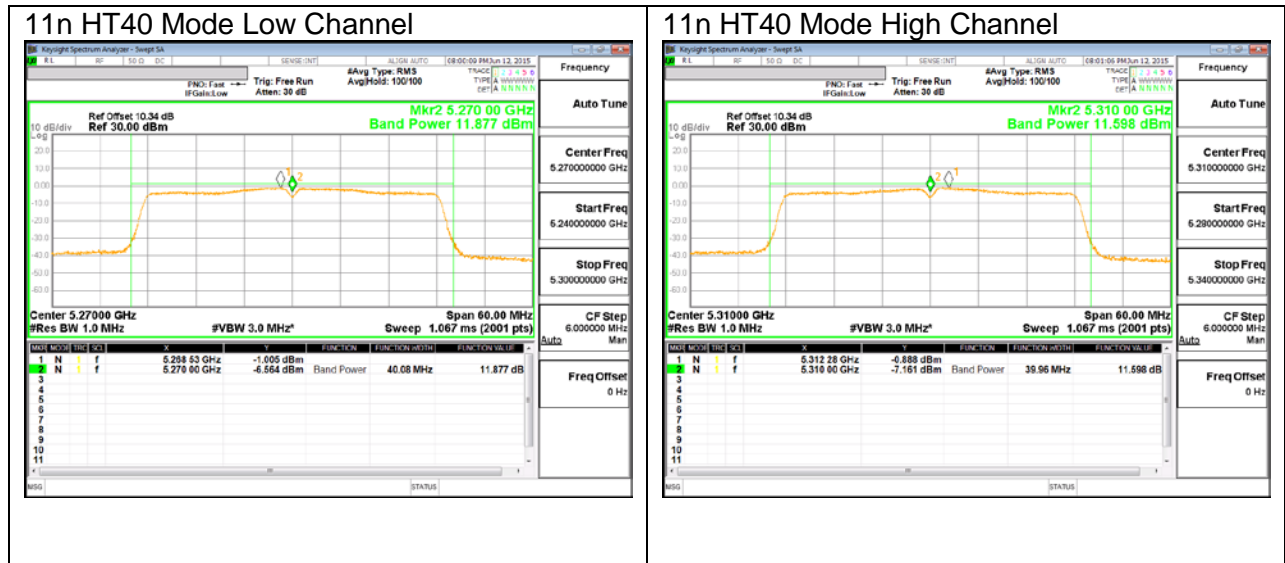
IEEE 802.11a mode



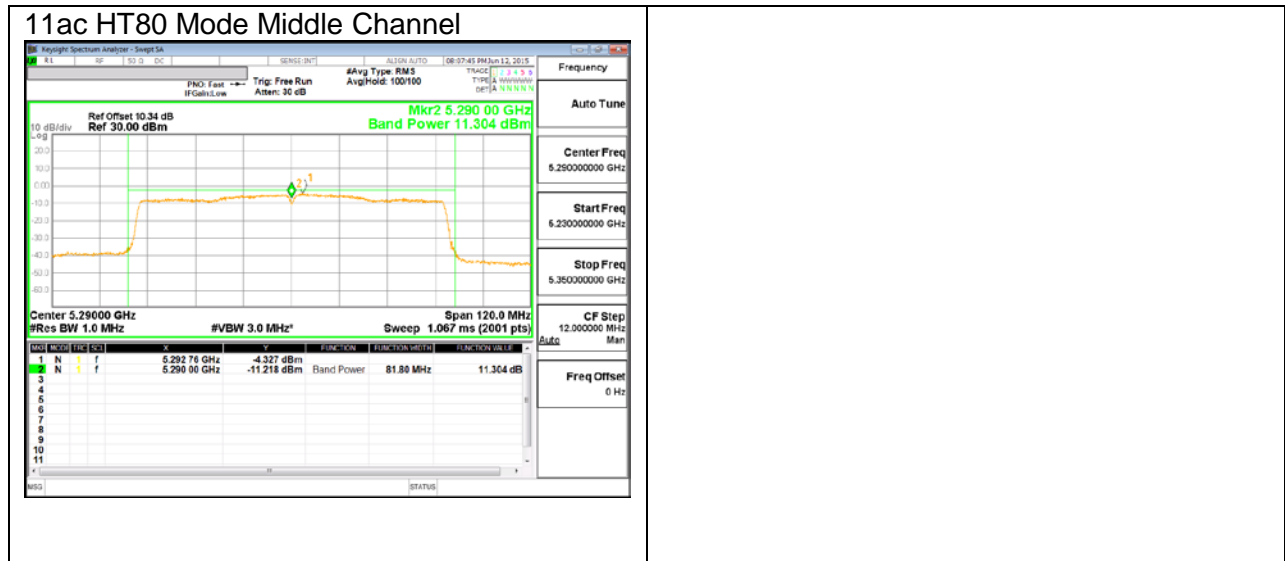
IEEE 802.11n HT20 mode



IEEE 802.11n HT40 mode

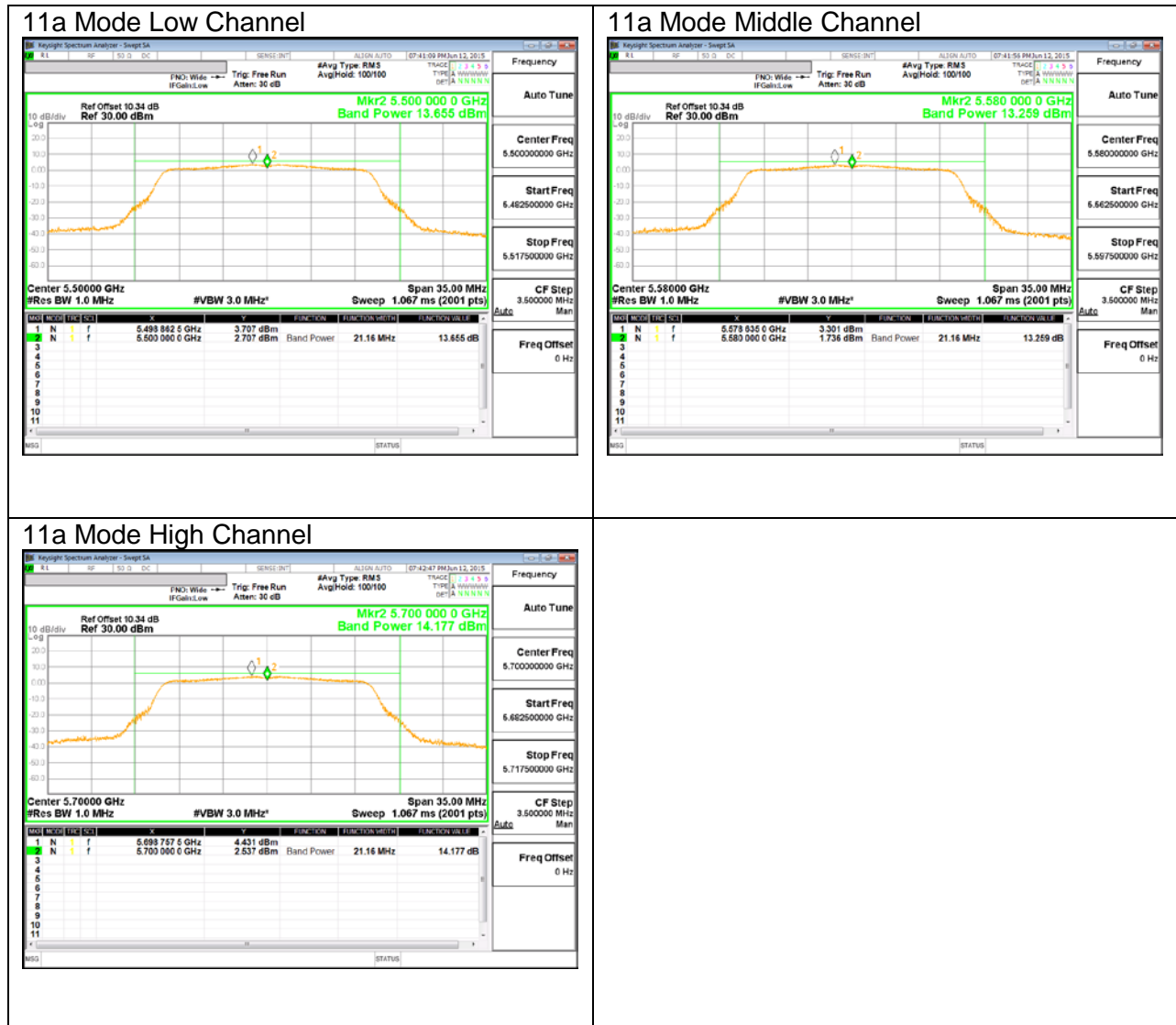


IEEE 802.11ac VHT80 mode



UNII 5.5 GHz

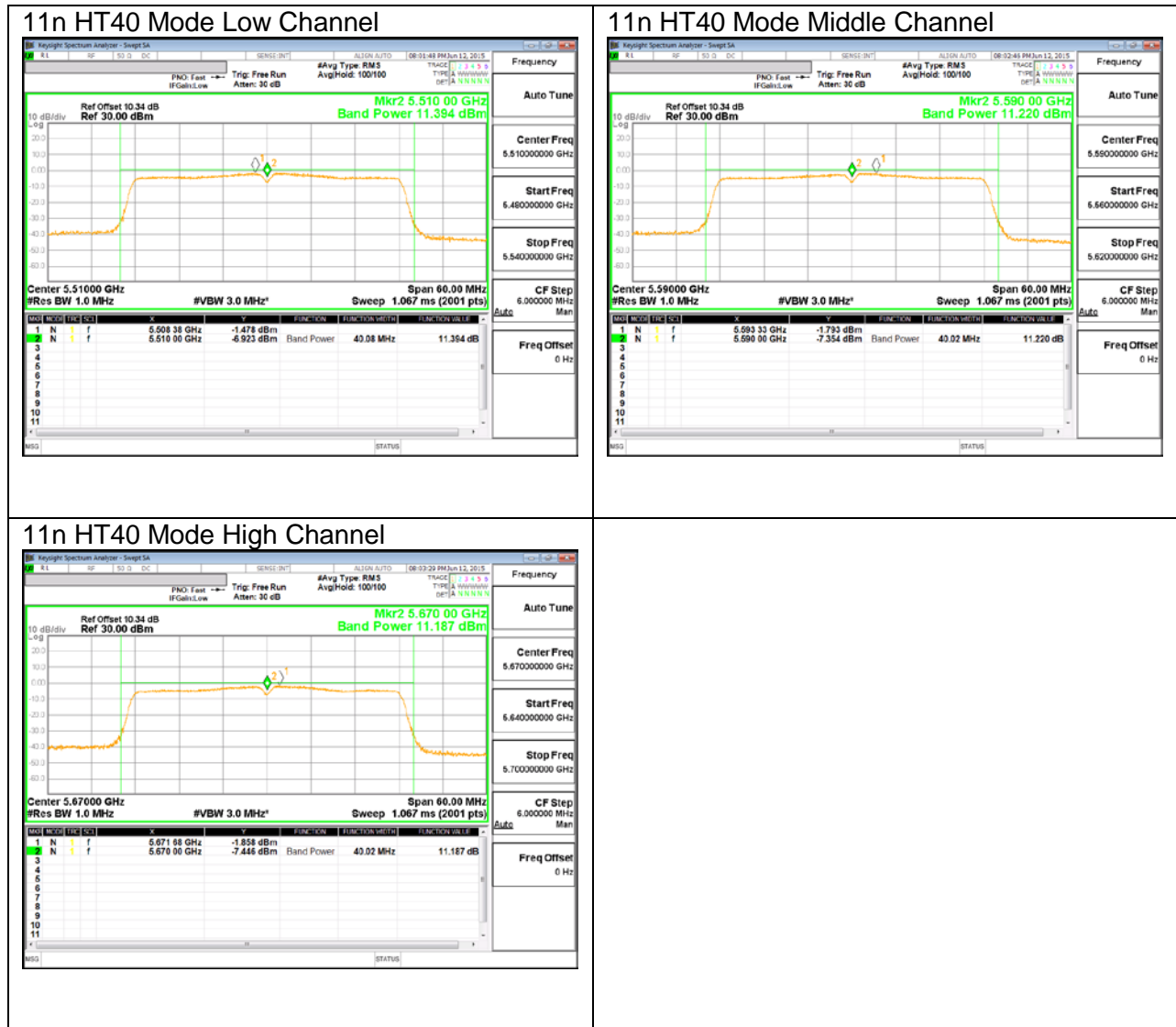
IEEE 802.11a mode



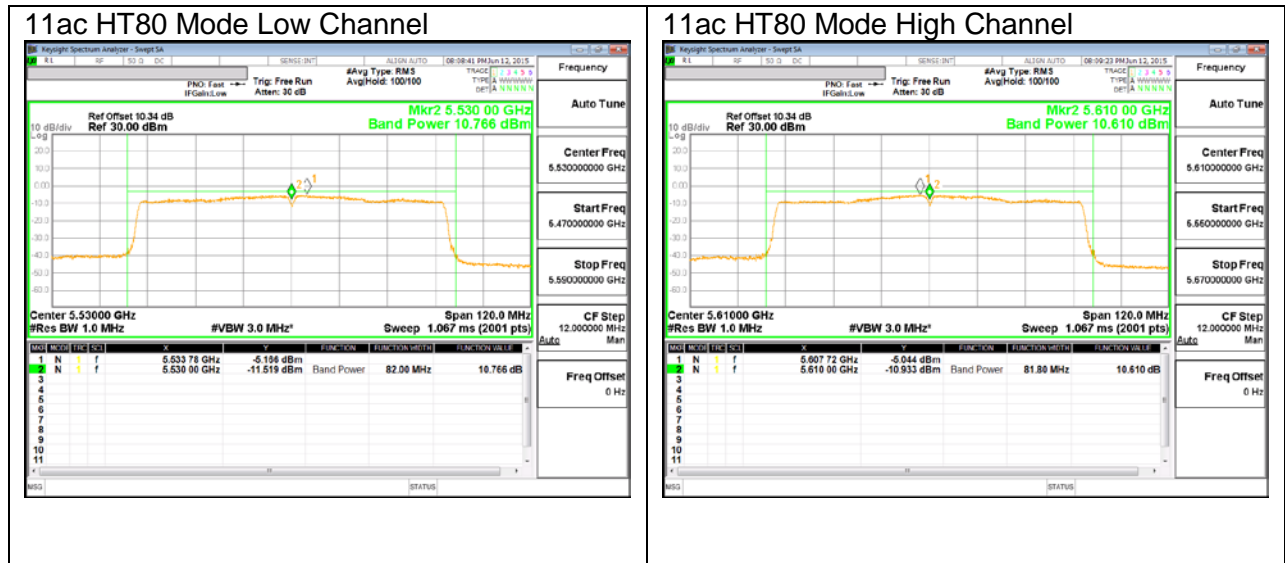
IEEE 802.11n HT20 mode



IEEE 802.11n HT40 mode



IEEE 802.11ac VHT80 mode

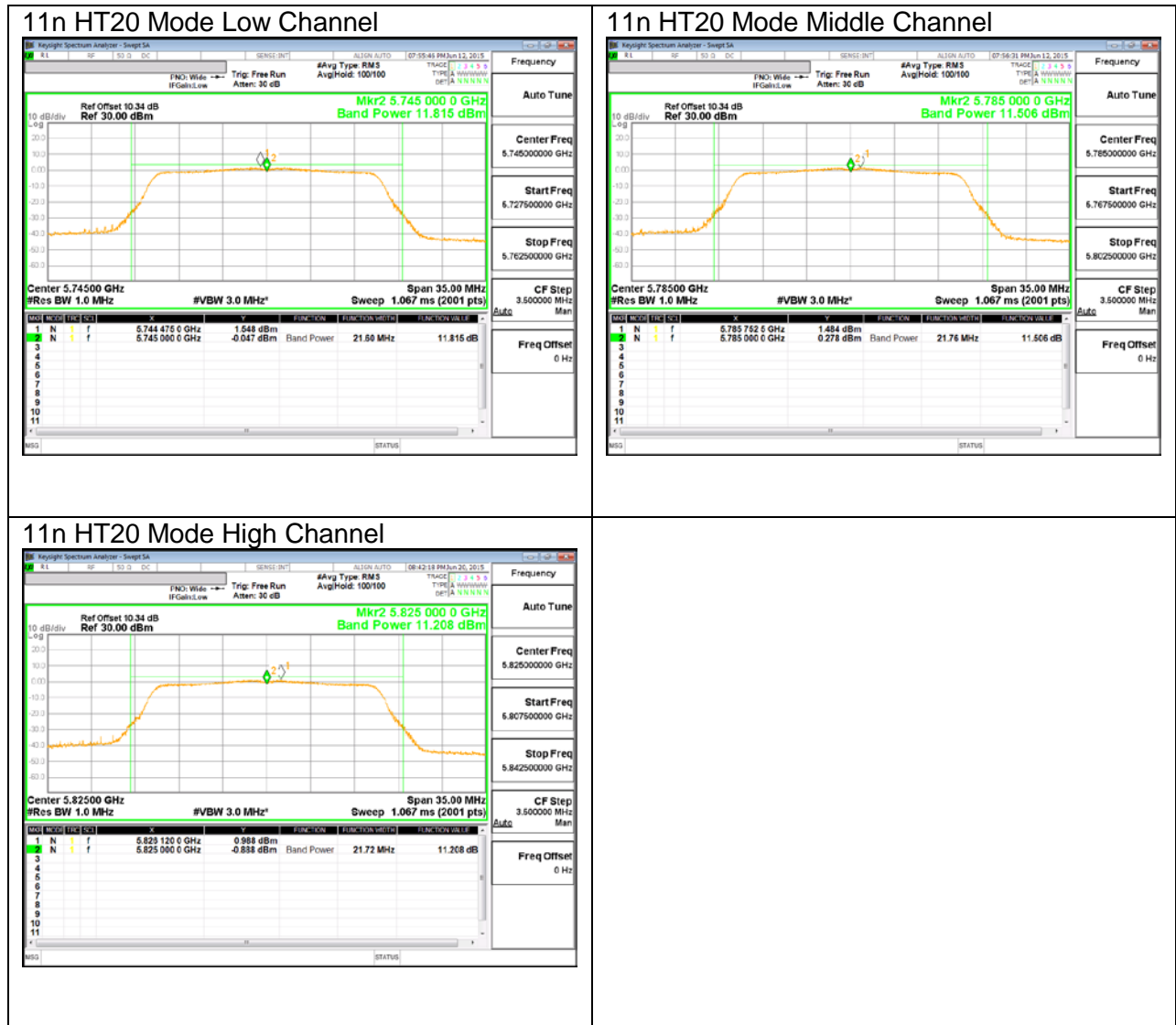


UNII 5.8 GHz

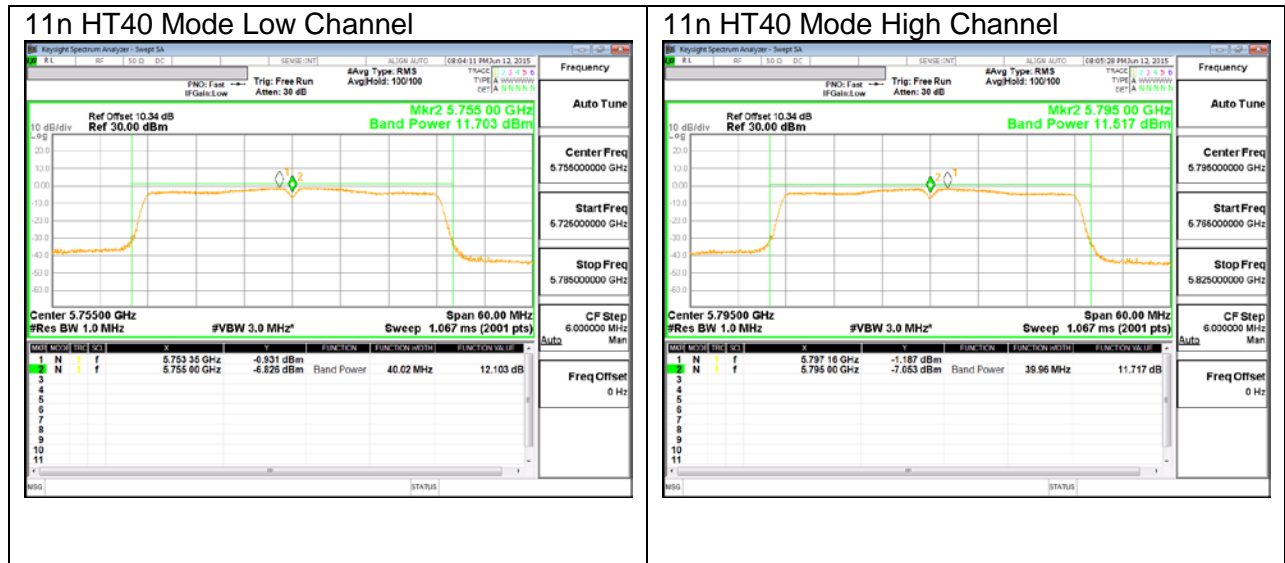
IEEE 802.11a mode



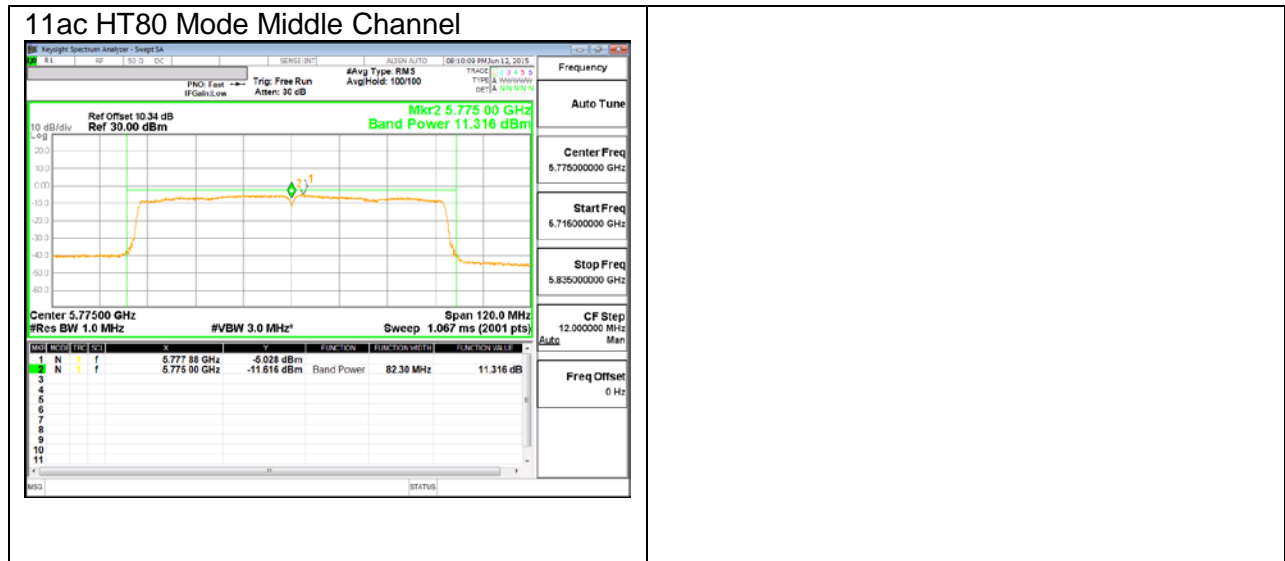
IEEE 802.11n HT20 mode



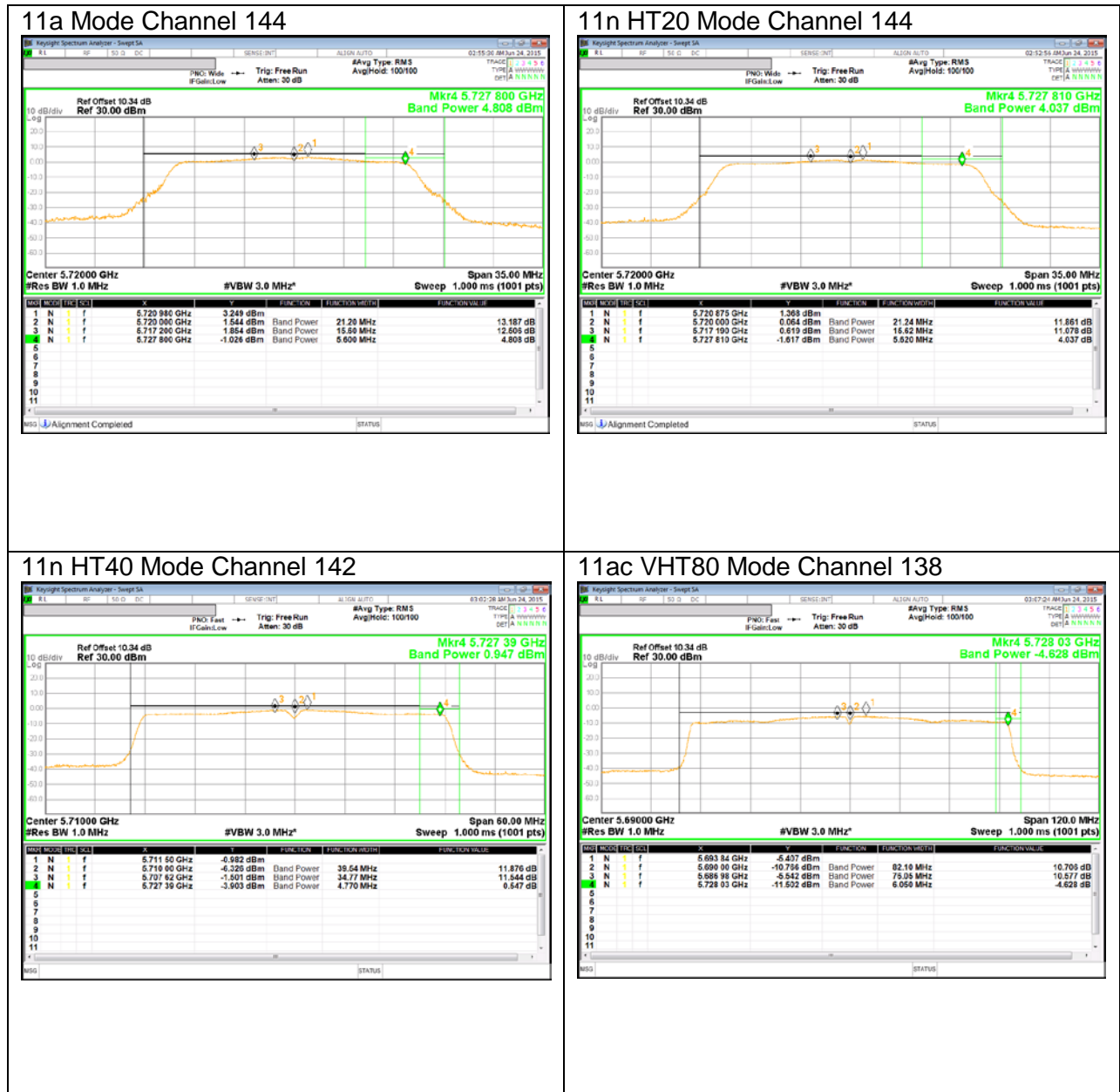
IEEE 802.11n HT40 mode



IEEE 802.11ac VHT80 mode



Straddle 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 UNII part H) 6) d) 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.

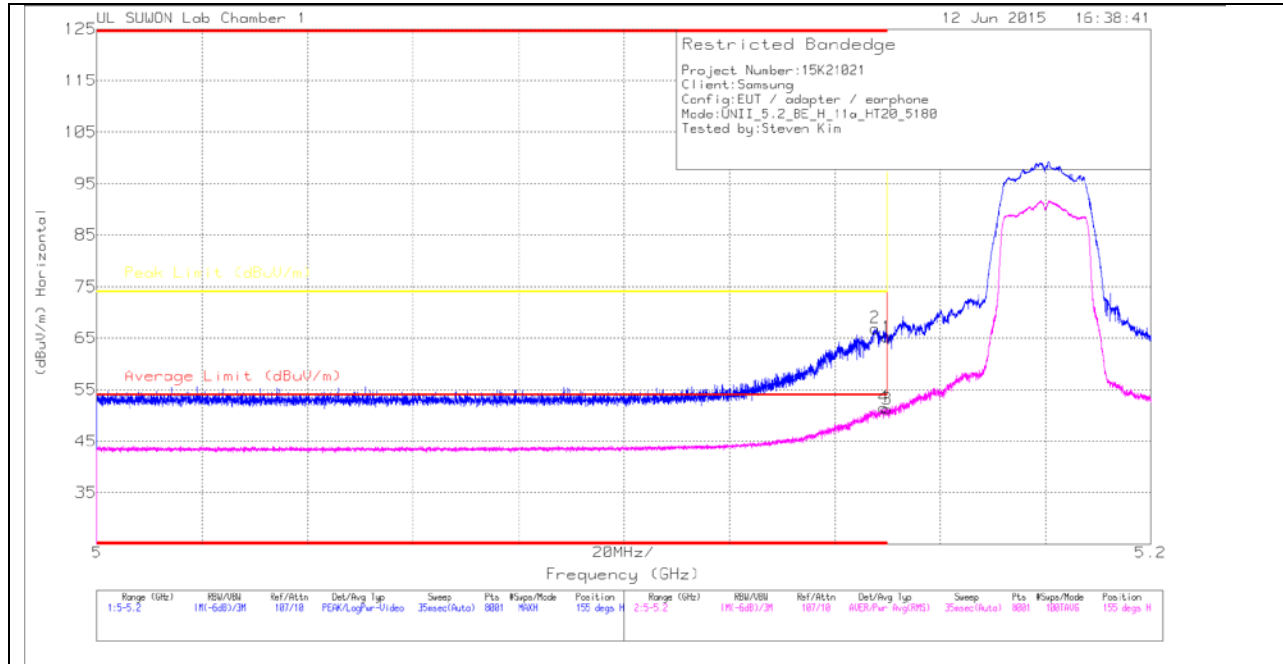
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

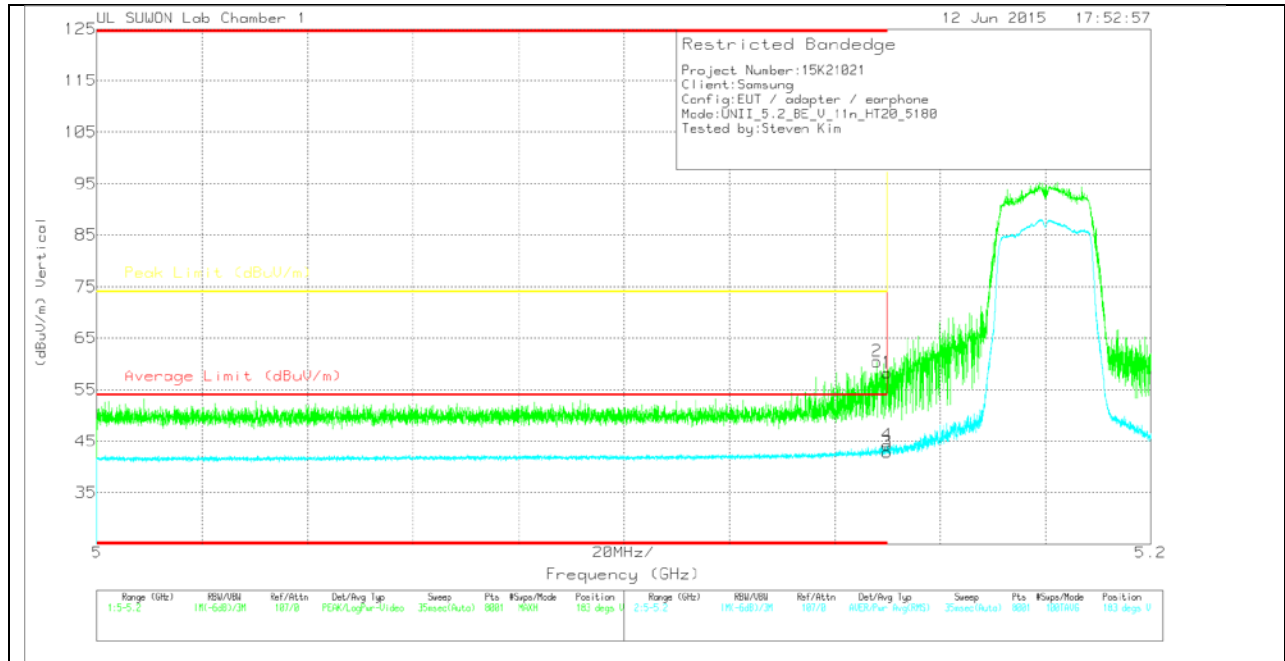
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3115D Factor	Path_2_10d B	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	51.89	Pk	32.7	-19.4	0	65.19	-	-	74	-8.81	155	100	H
2	* 5.148	53.67	Pk	32.7	-19.4	0	66.97	-	-	74	-7.03	155	100	H
3	* 5.15	37.68	RMS	32.7	-19.4	.3	51.28	54	-2.72	-	-	155	100	H
4	* 5.149	37.97	RMS	32.7	-19.4	.3	51.57	54	-2.43	-	-	155	100	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3115D Factor	Path_2_10d B	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	44.98	Pk	32.7	-19.4	0	58.28	-	-	74	-15.72	183	218	V
2	* 5.148	47.2	Pk	32.7	-19.4	0	60.5	-	-	74	-13.5	183	218	V
3	* 5.15	29.27	RMS	32.7	-19.4	.32	42.89	54	-11.11	-	-	183	218	V
4	* 5.15	30.69	RMS	32.7	-19.4	.32	44.31	54	-9.69	-	-	183	218	V

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

PK - Peak detector

RMS - RMS detection