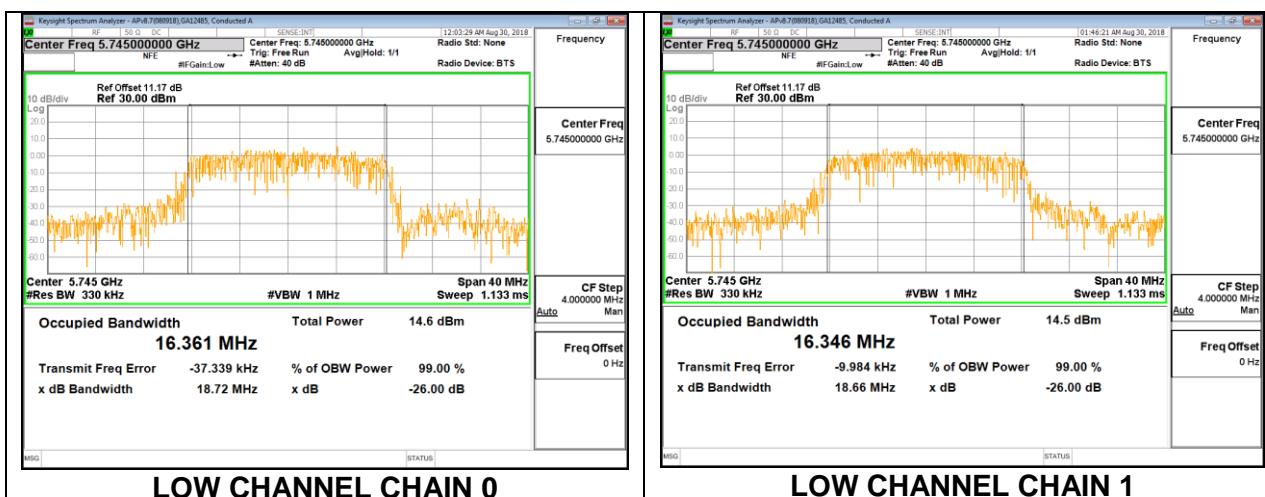
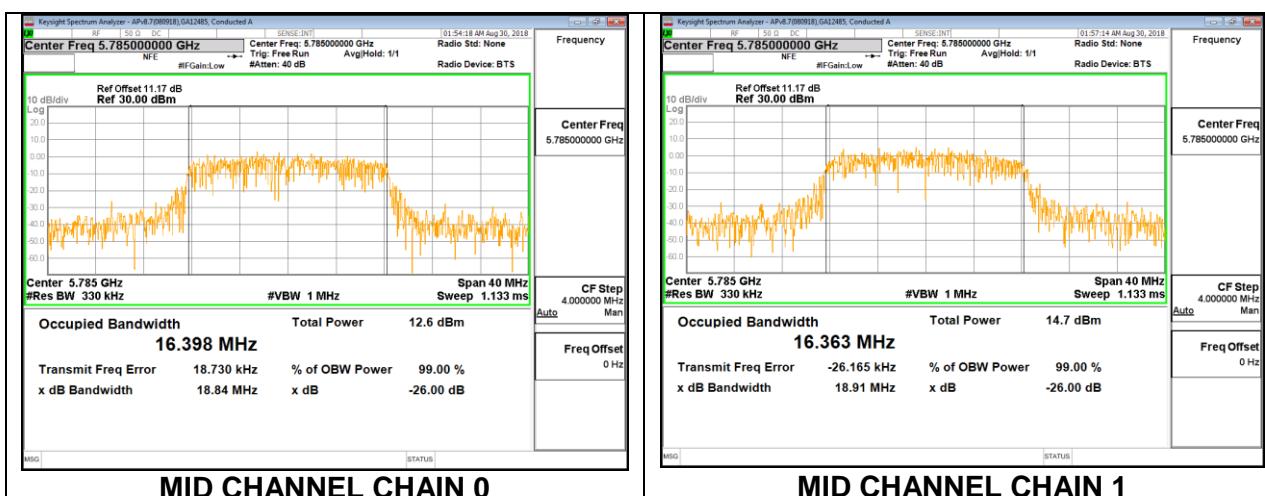


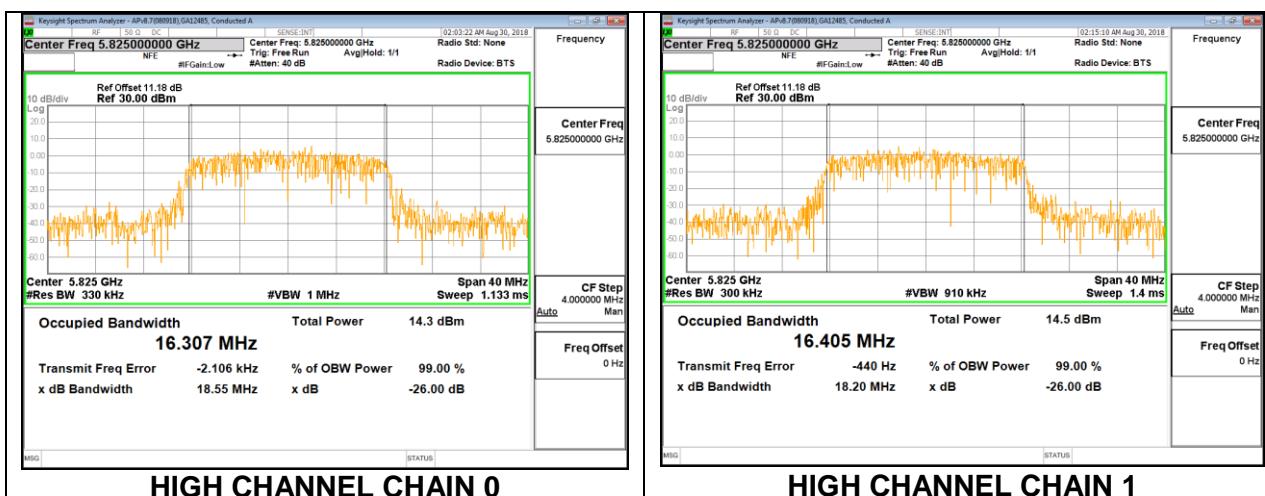
LOW CHANNEL



MID CHANNEL



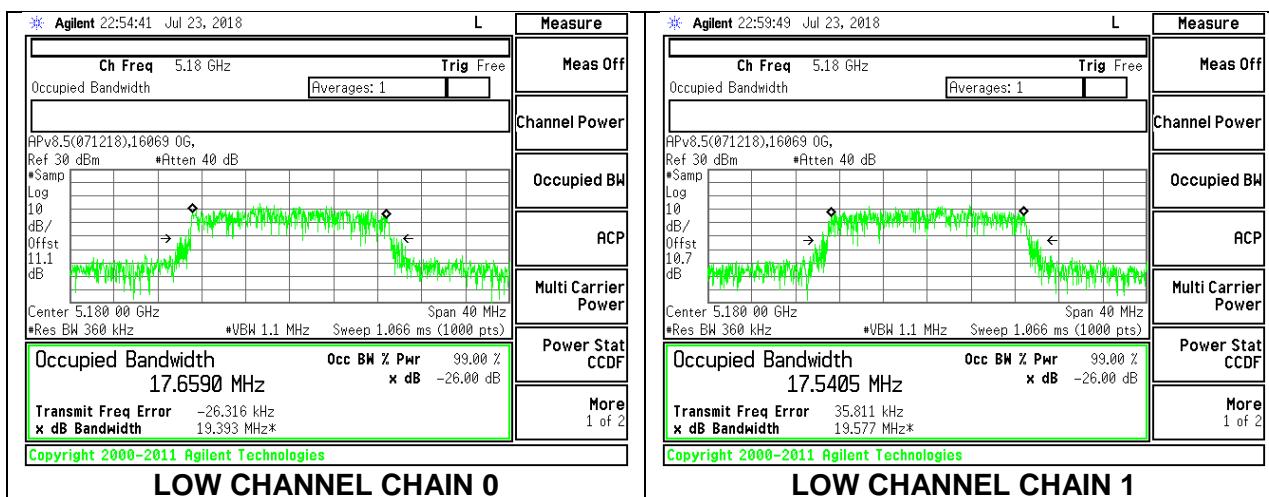
HIGH CHANNEL



8.3.5. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5180	17.66	17.54
Mid	5200	17.66	17.42
High	5240	17.68	17.57

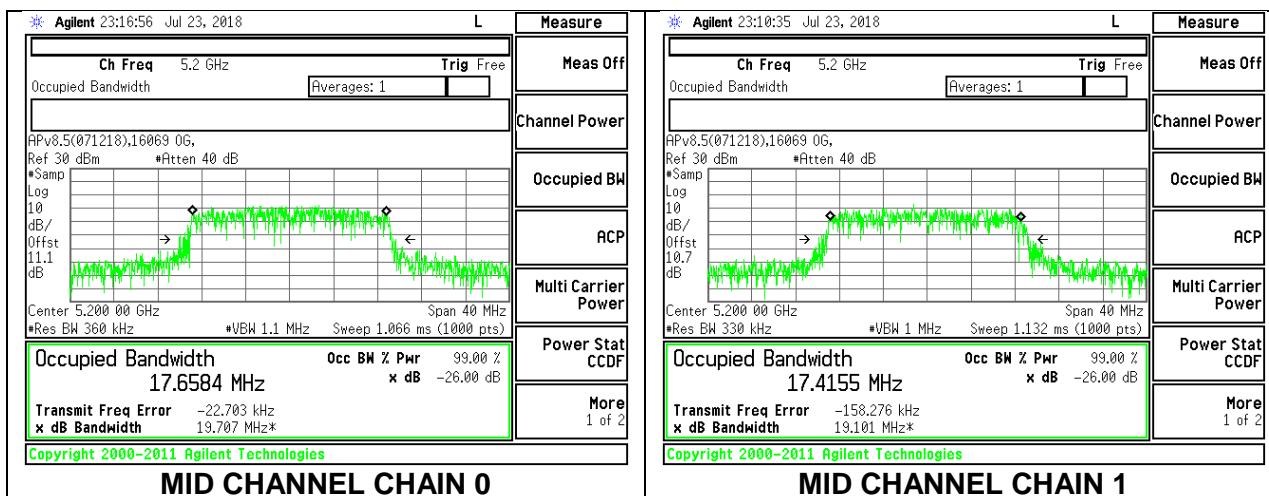
LOW CHANNEL



LOW CHANNEL CHAIN 0

LOW CHANNEL CHAIN 1

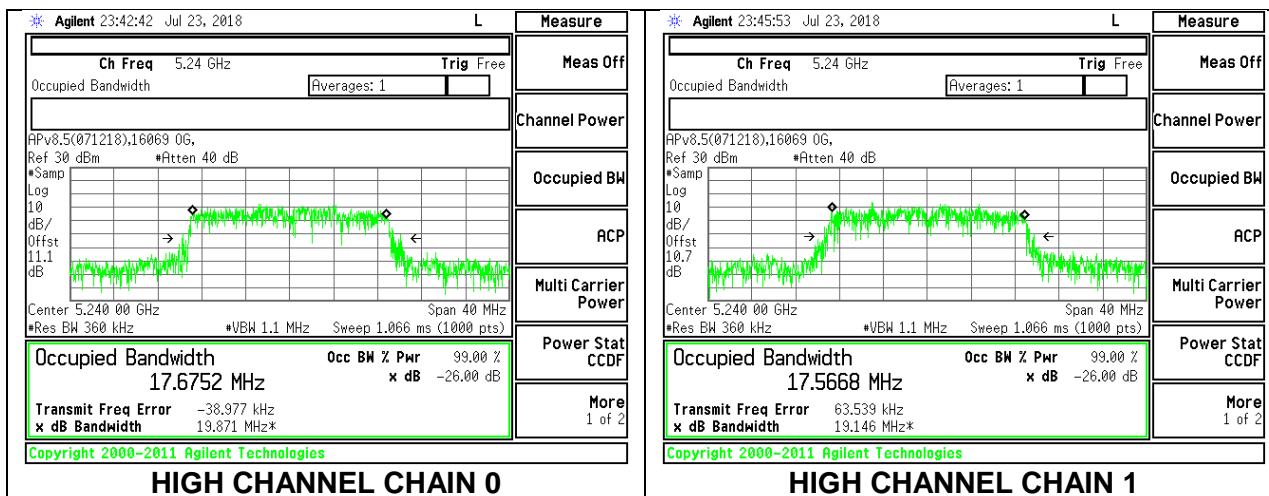
MID CHANNEL



MID CHANNEL CHAIN 0

MID CHANNEL CHAIN 1

HIGH CHANNEL



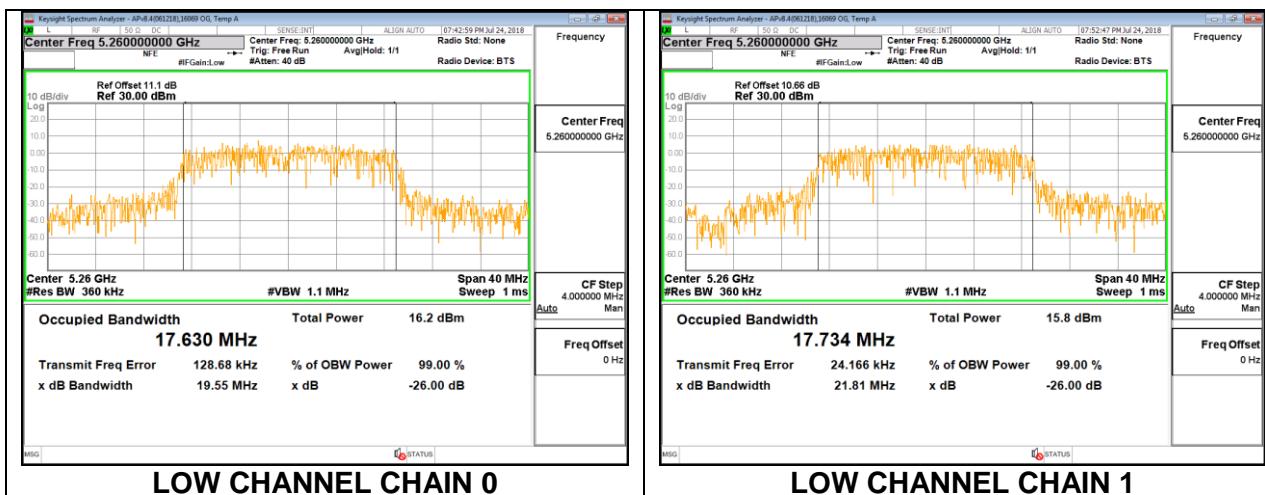
HIGH CHANNEL CHAIN 0

HIGH CHANNEL CHAIN 1

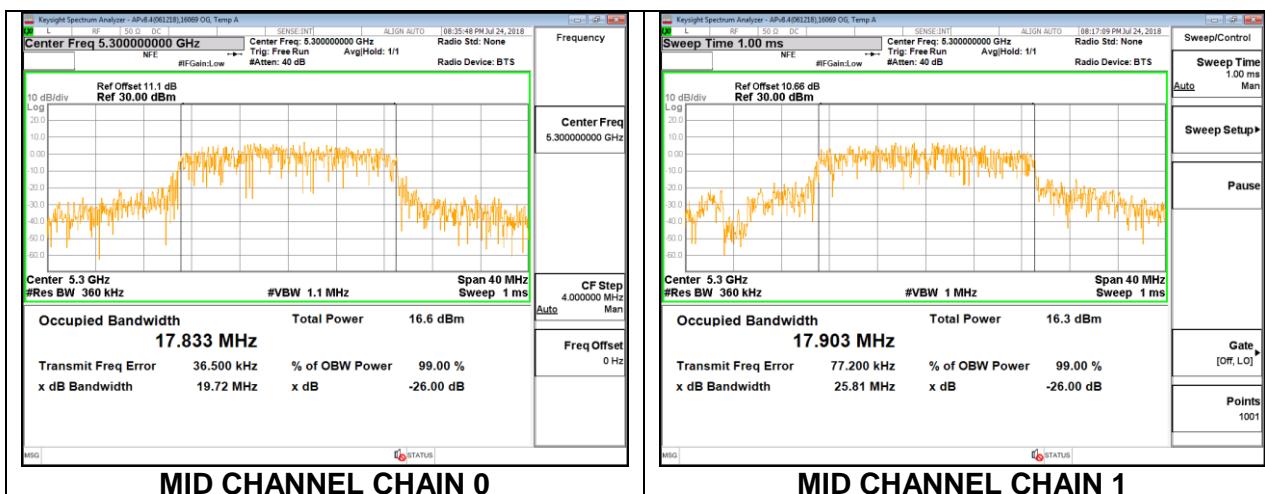
8.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5260	17.63	17.73
Mid	5300	17.83	17.90
High	5320	17.78	17.83

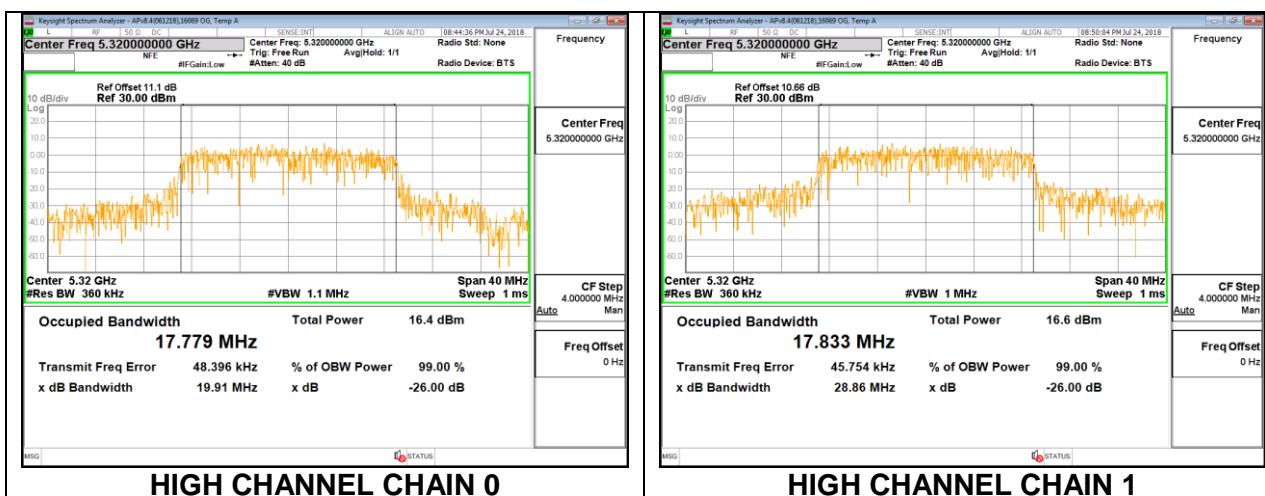
LOW CHANNEL



MID CHANNEL



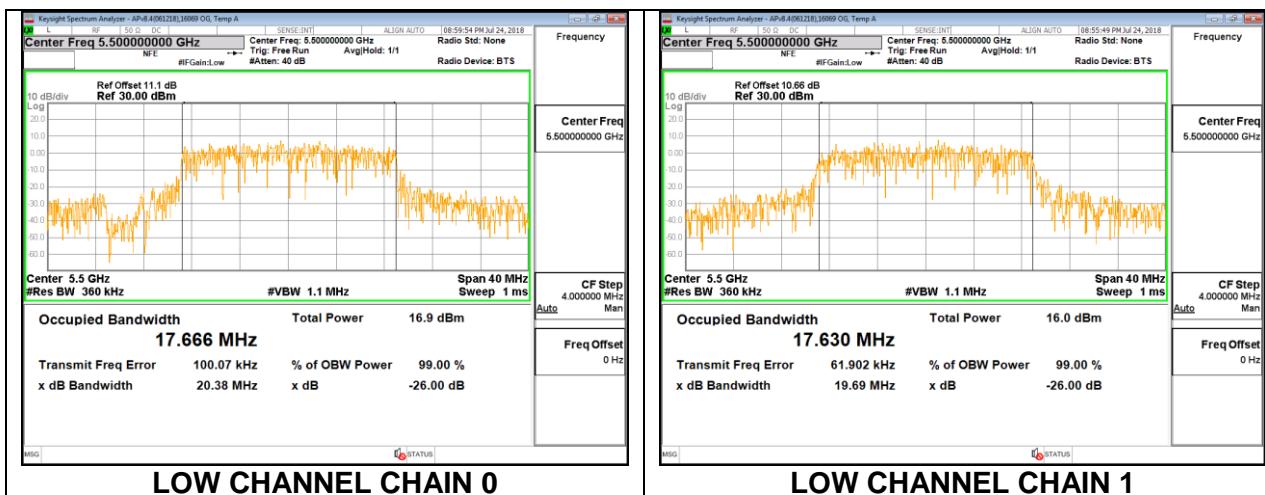
HIGH CHANNEL



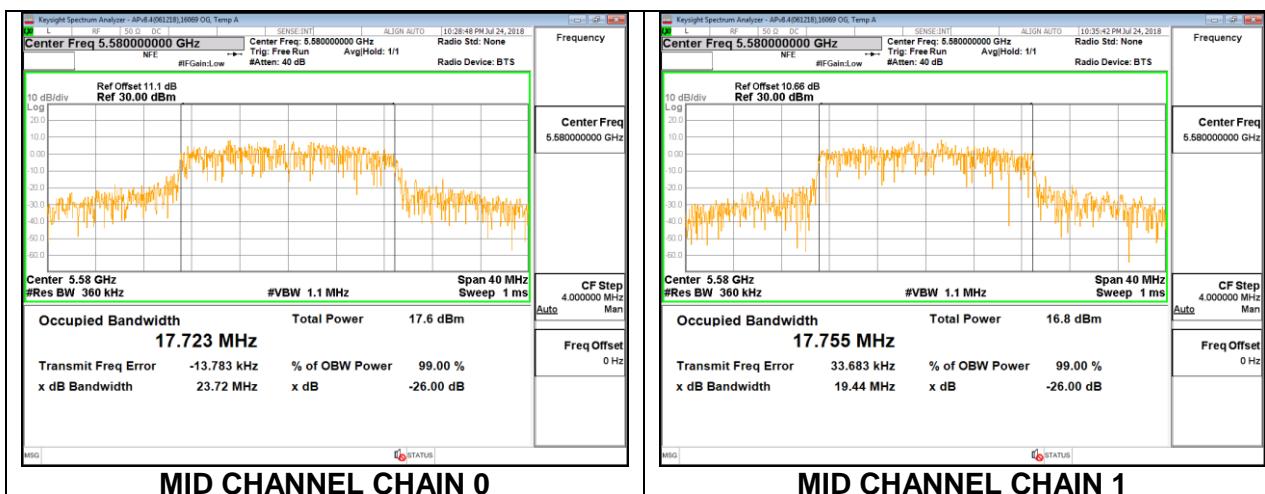
8.3.7. 802.11n HT20 MODE IN THE 5.6 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5500	17.67	17.63
Mid	5580	17.72	17.76
High	5700	17.78	17.68

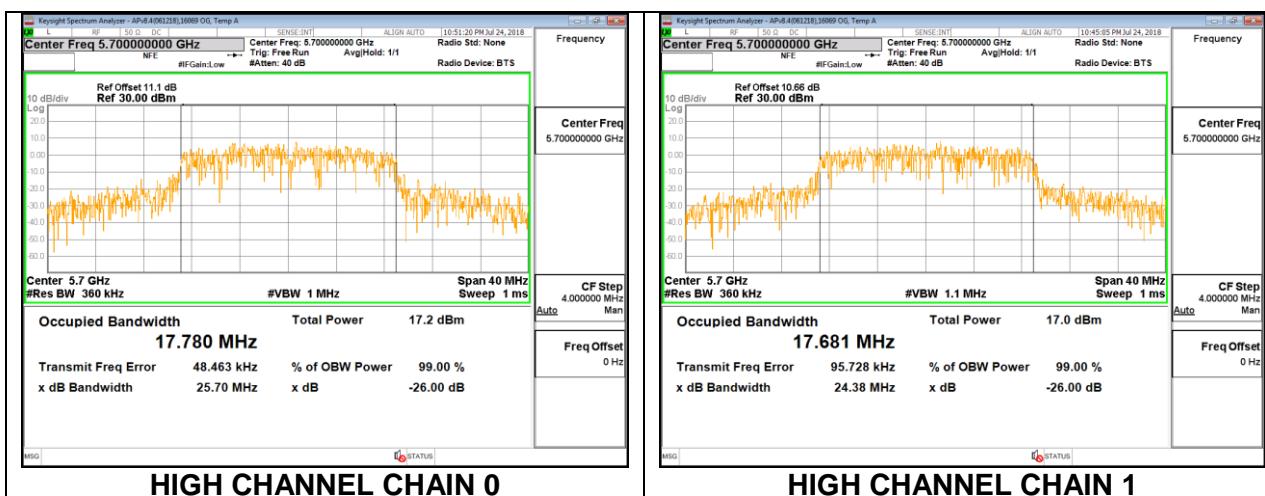
LOW CHANNEL



MID CHANNEL



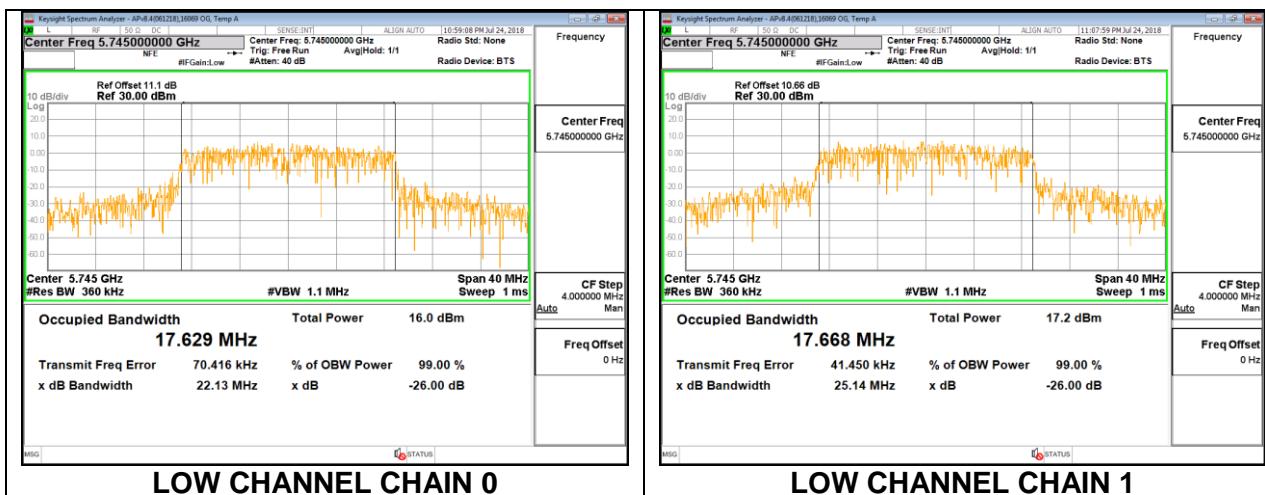
HIGH CHANNEL



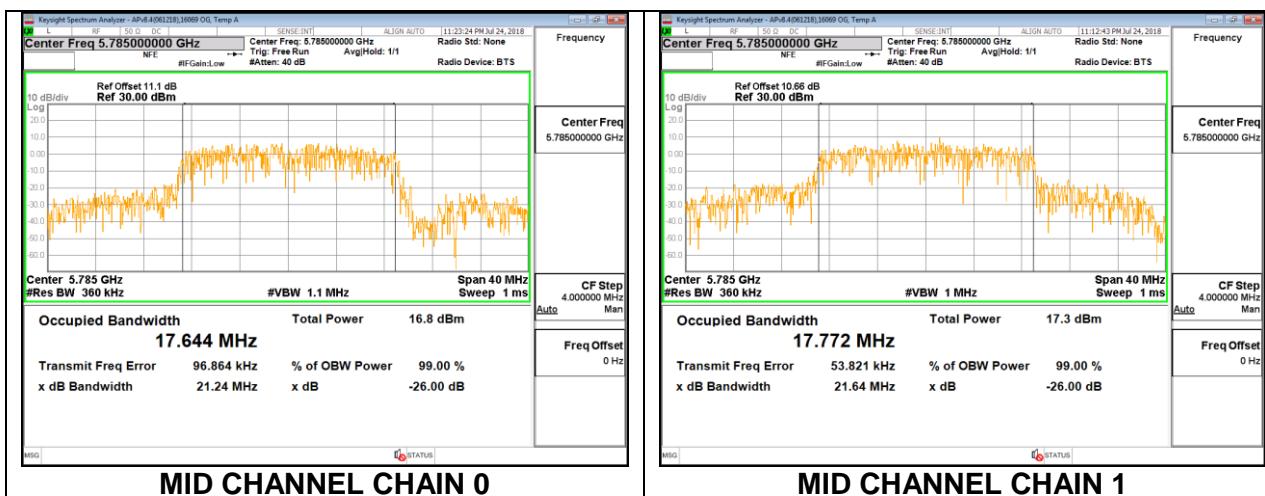
8.3.8. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5745	17.63	17.67
Mid	5785	17.64	17.77
High	5825	17.69	18.18

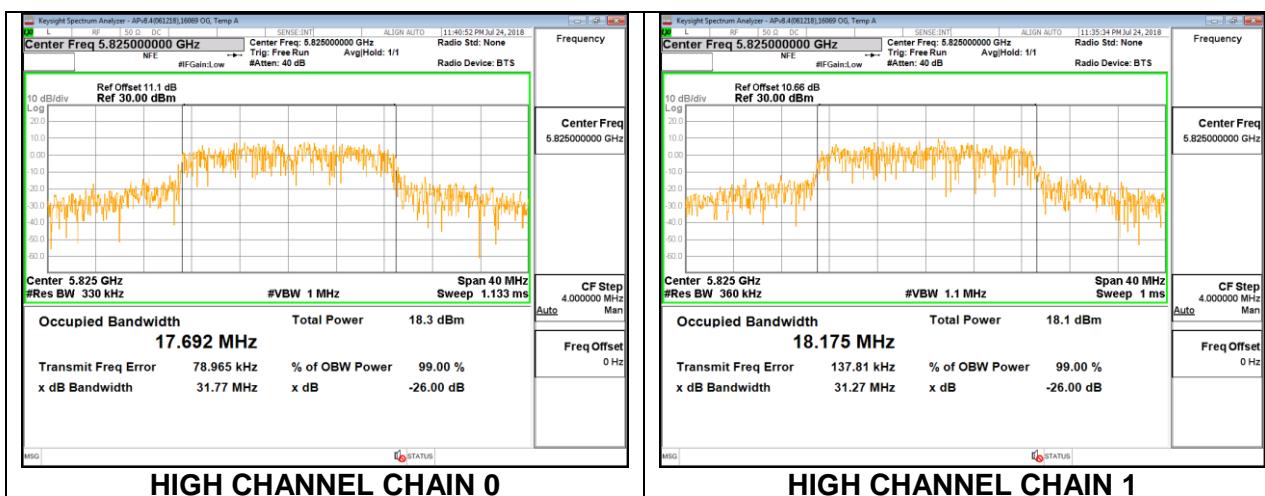
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.4. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

RSS-247 6.2.4.1

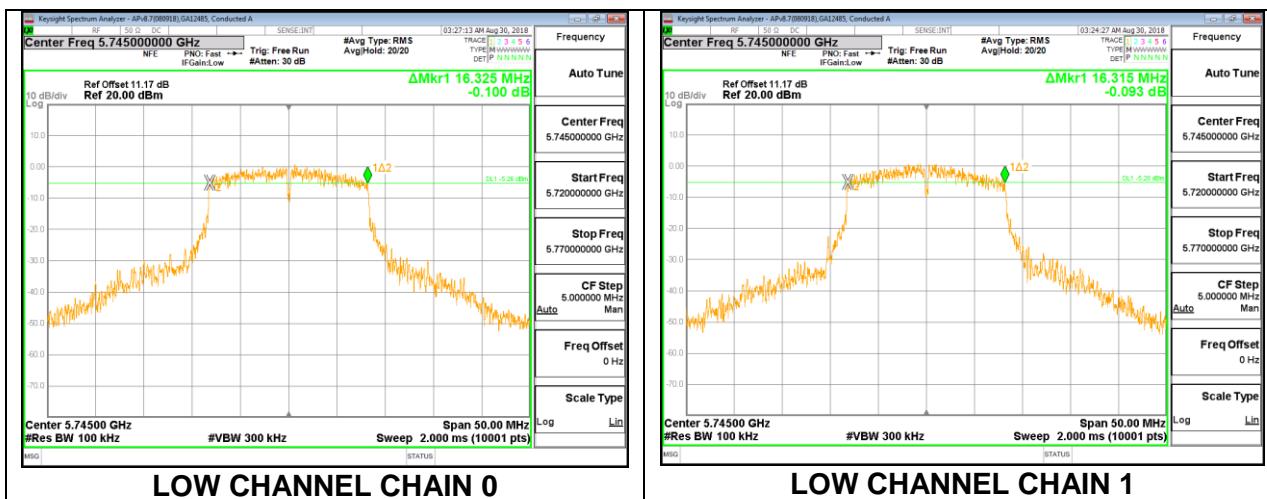
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

8.4.1. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	16.325	16.315	0.5
Mid	5785	16.300	16.300	0.5
High	5825	16.310	16.310	0.5

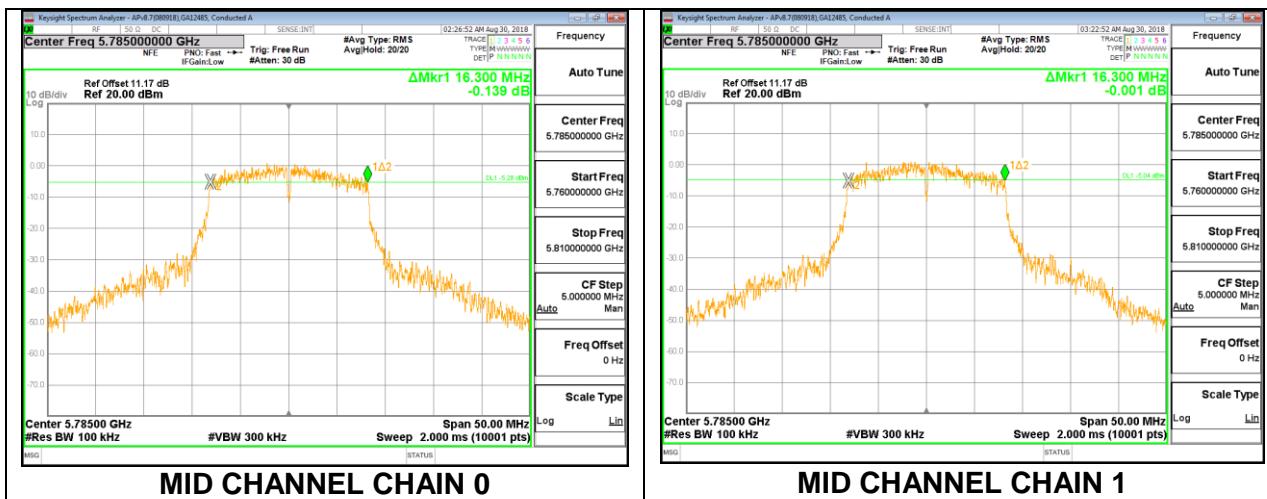
LOW CHANNEL



LOW CHANNEL CHAIN 0

LOW CHANNEL CHAIN 1

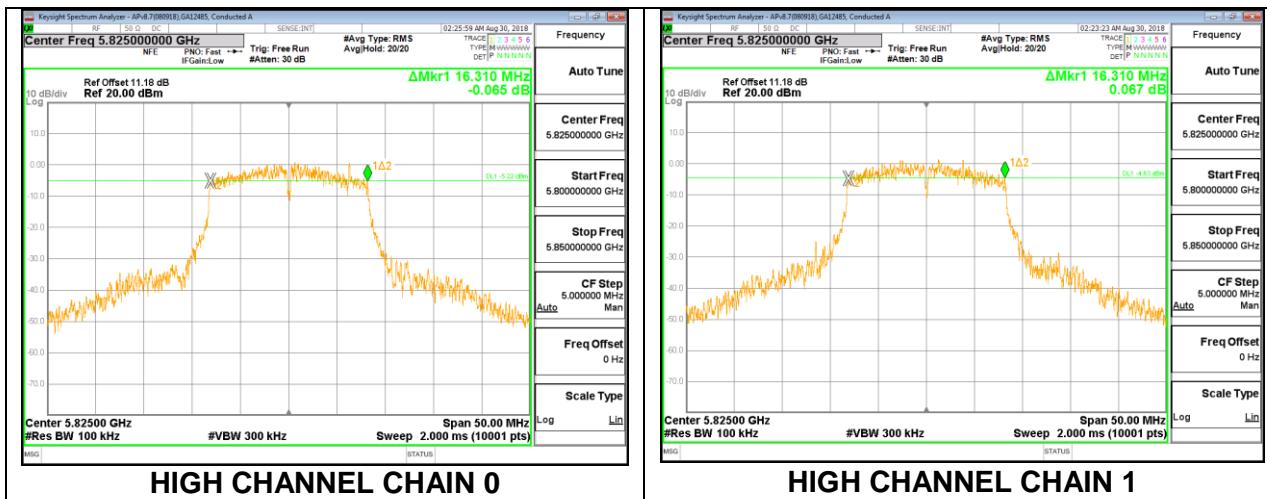
MID CHANNEL



MID CHANNEL CHAIN 0

MID CHANNEL CHAIN 1

HIGH CHANNEL



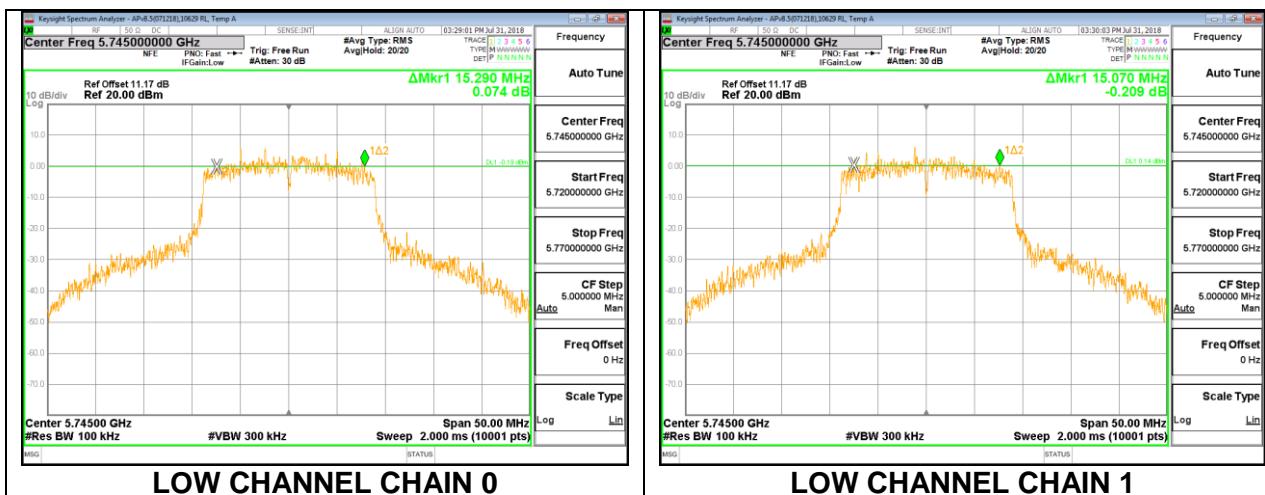
HIGH CHANNEL CHAIN 0

HIGH CHANNEL CHAIN 1

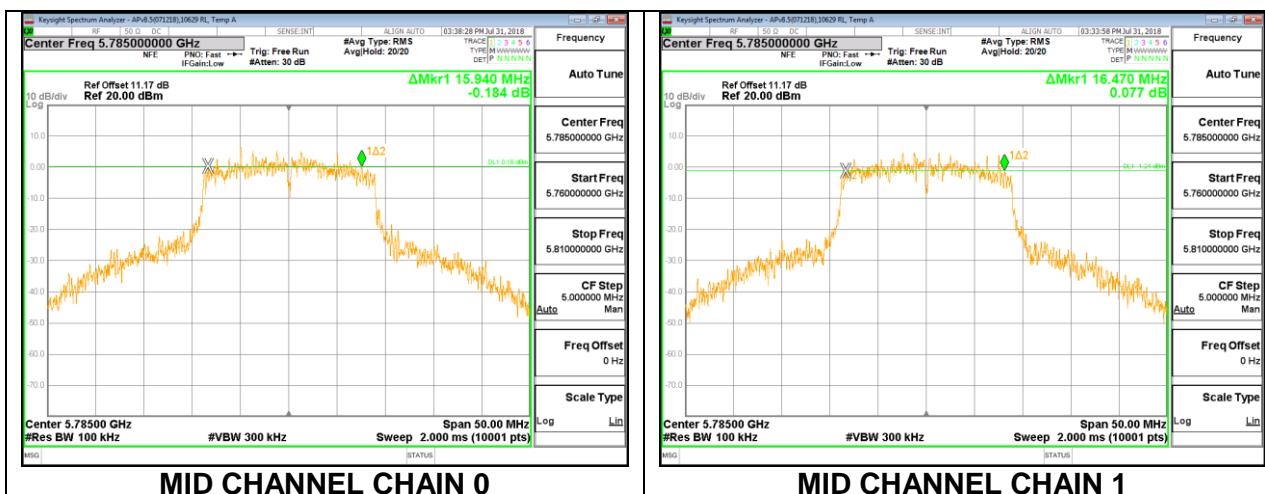
8.4.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	15.290	15.070	0.5
Mid	5785	15.940	16.470	0.5
High	5825	15.930	15.655	0.5

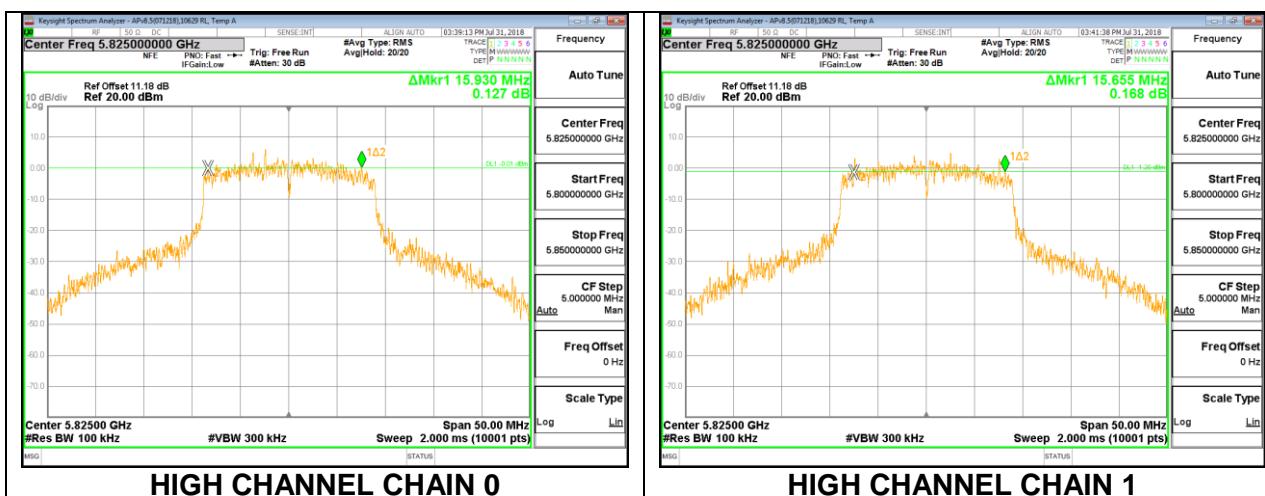
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.5. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

- (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
- (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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.
- (iii) For fixed point-to-point access points operating in the band 5.15-5.25 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 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.
- (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Bands 5.25-5.35 GHz and 5.47-5.725 GHz

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.

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. 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

RSS-247

Band 5.15-5.25 GHz

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10}B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Band 5.25-5.35 GHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Bands 5.47-5.6 GHz and 5.65-5.725 GHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Band 5.725-5.85 GHz

The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G) and for straddles channels KDB 789033 D02 v02r01, Section E.2.b (Method SA-1) was used.

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F

DIRECTIONAL ANTENNA GAIN

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5.2	0.60	2.60	1.71	4.67
5.3	0.60	2.60	1.71	4.67
5.6	0.60	2.60	1.71	4.67
5.8	0.60	2.60	1.71	4.67

RESULTS

8.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	16.50	1.71	4.67
Mid	5200	16.39	1.71	4.67
High	5240	16.42	1.71	4.67

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/ 1MHz)	ISED eirp PSD Limit (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)
Low	5180	24.00	22.17	20.46	20.46	11.00	10.00	5.33
Mid	5200	24.00	22.15	20.44	20.44	11.00	10.00	5.33
High	5240	24.00	22.15	20.44	20.44	11.00	10.00	5.33

Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd PSD
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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	12.80	13.15	15.99	20.46	-4.48
Mid	5200	12.91	13.12	16.03	20.44	-4.41
High	5240	13.54	12.49	16.06	20.44	-4.39

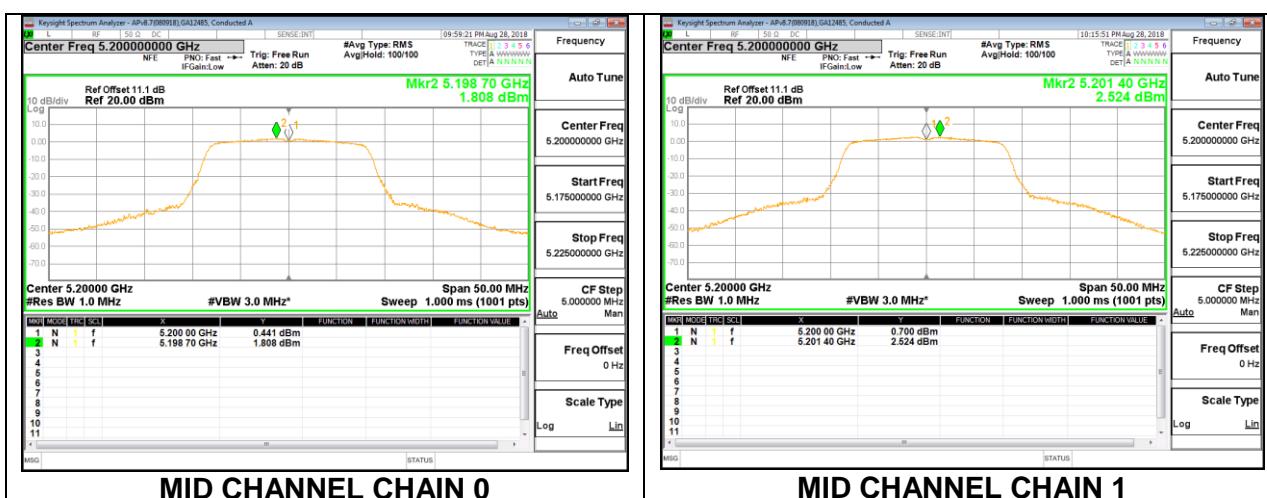
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	1.75	1.43	4.70	5.33	-0.63
Mid	5200	1.81	2.52	5.29	5.33	-0.04
High	5240	1.77	2.13	5.06	5.33	-0.27

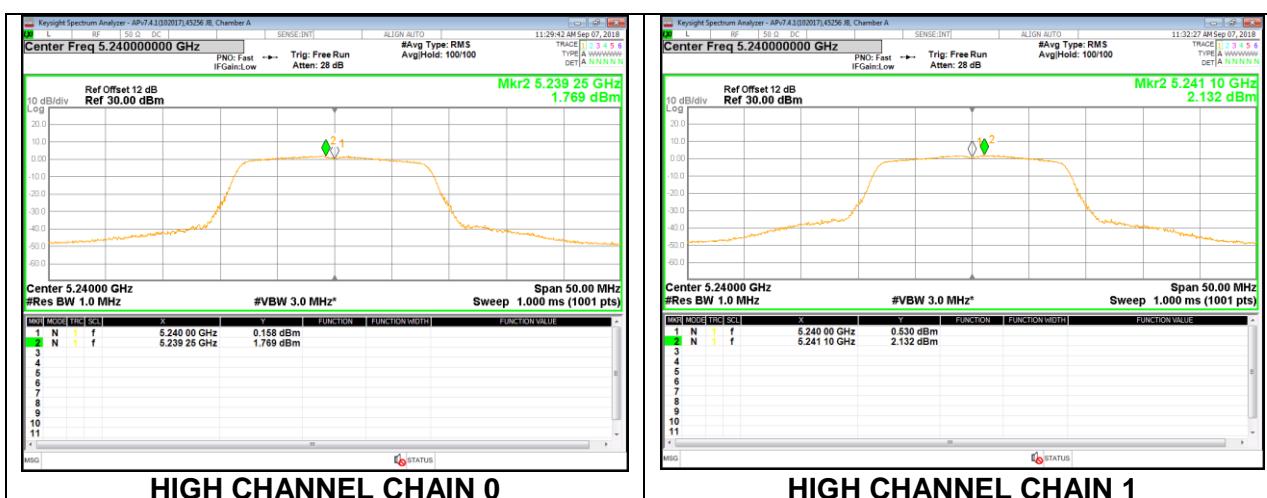
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.5.2. 802.11a MODE IN THE 5.3 GHz BAND

(FCC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	25.55	1.71	4.67	24.00	11.00
Mid	5300	22.55	1.71	4.67	24.00	11.00
High	5320	20.85	1.71	4.67	24.00	11.00

Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd PSD
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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	15.79	15.99	18.90	24.00	-5.10
Mid	5300	16	15.94	18.98	24.00	-5.02
High	5320	16.29	16.06	19.19	24.00	-4.81

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Chain 1 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	6.51	6.31	9.52	11.00	-1.48
Mid	5300	6.84	6.24	9.66	11.00	-1.34
High	5320	6.76	6.52	9.75	11.00	-1.25

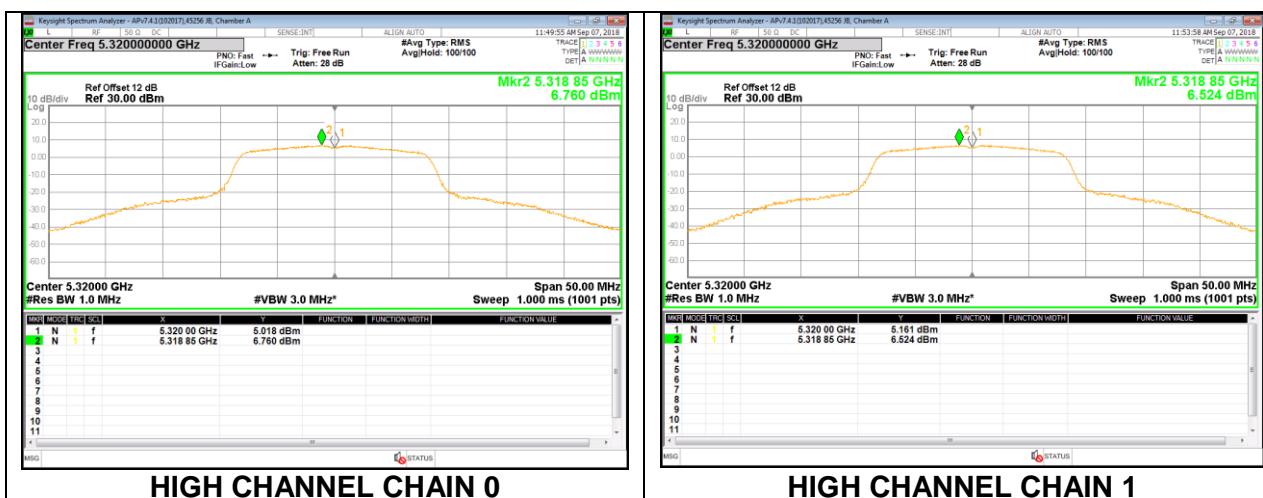
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



(IC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	16.47	1.71	4.67	23.17	11.00
Mid	5300	16.28	1.71	4.67	23.12	11.00
High	5320	16.31	1.71	4.67	23.12	11.00

Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd PSD
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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	15.79	15.99	18.90	23.17	-4.27
Mid	5300	16	15.94	18.98	23.12	-4.14
High	5320	16.29	16.06	19.19	23.12	-3.94

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Chain 1 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	6.51	6.31	9.52	11.00	-1.48
Mid	5300	6.84	6.24	9.66	11.00	-1.34
High	5320	6.76	6.52	9.75	11.00	-1.25

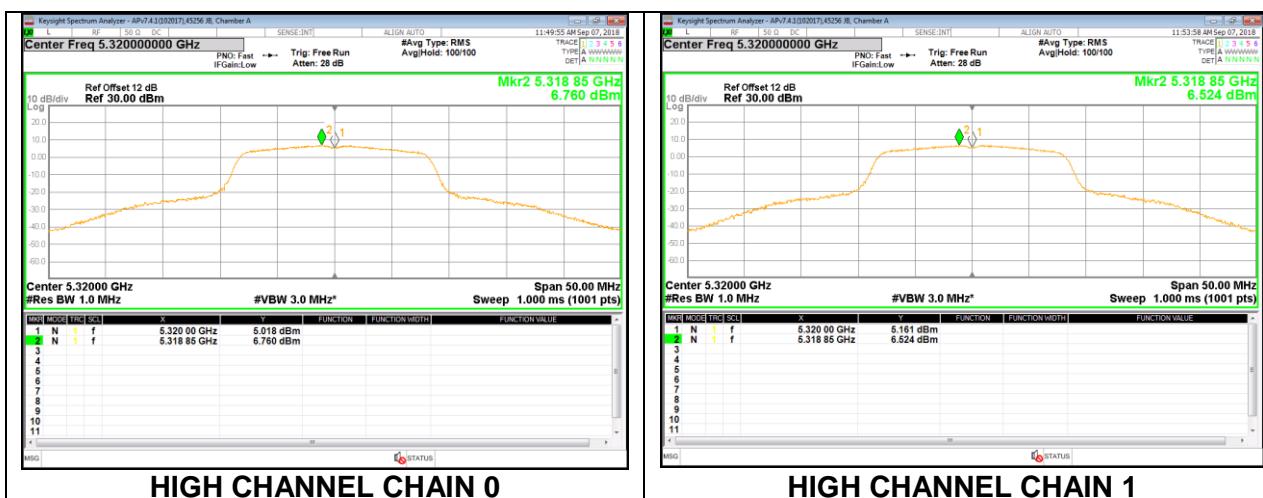
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.5.3. 802.11a MODE IN THE 5.6 GHz BAND

(FCC+IC)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5500	21.00	16.35	1.71	4.67
Mid	5580	21.00	16.47	1.71	4.67
High	5700	20.75	16.30	1.71	4.67

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/ 1MHz)	ISED PSD Limit (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)
Low	5500	24.00	23.14	29.14	23.14	11.00	11.00	11.00
Mid	5580	24.00	23.17	29.17	23.17	11.00	11.00	11.00
High	5700	24.00	23.12	29.12	23.12	11.00	11.00	11.00
Duty Cycle CF (dB)		0.32	Included in Calculations of Corr'd Power & PSD					

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	16.71	16.3	19.52	23.14	-3.62
Mid	5580	16.29	16.62	19.47	23.17	-3.70
High	5700	16.21	16.51	19.37	23.12	-3.75

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	5.92	6.39	9.494	11.00	-1.51
Mid	5580	6.42	7.11	10.112	11.00	-0.89
High	5700	6.19	5.91	9.382	11.00	-1.62

LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.5.4. 802.11a MODE IN THE 5.8 GHz BAND

(FCC+IC)

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBm)	FCC/ISED Power Limit (dBm)	FCC/ISED PSD Limit (dBm/ 1MHz)
Low	5745	1.71	4.67	30.00	30.00
Mid	5785	1.71	4.67	30.00	30.00
High	5825	1.71	4.67	30.00	30.00

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd Power & PSD
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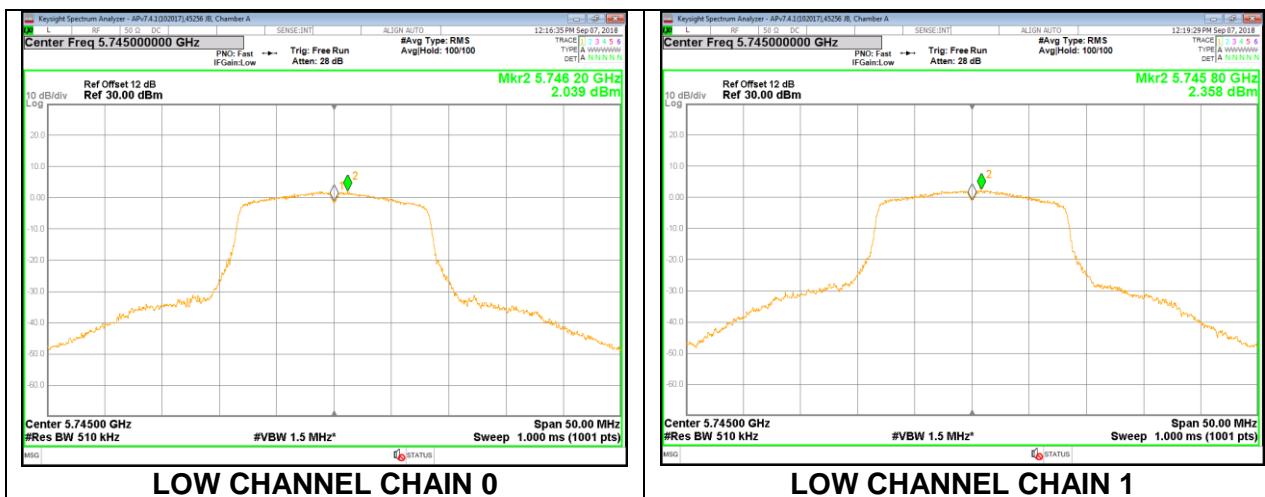
Output Power Results

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	16.2	16.44	19.33	30.00	-10.67
Mid	5785	16.19	16.43	19.32	30.00	-10.68
High	5825	16.18	16.64	19.43	30.00	-10.57

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5745	2.04	2.36	5.532	30.00	-24.47
Mid	5785	1.97	2.23	5.428	30.00	-24.57
High	5825	2.12	2.06	5.422	30.00	-24.58

LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.5.5. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	17.42	1.71	4.67
Mid	5200	17.63	1.71	4.67
High	5240	17.63	1.71	4.67

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/ 1MHz)	ISED eirp PSD Limit (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)
Low	5180	24.00	22.41	20.70	20.70	11.00	10.00	5.33
Mid	5200	24.00	22.46	20.75	20.75	11.00	10.00	5.33
High	5240	24.00	22.46	20.75	20.75	11.00	10.00	5.33

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd PSD
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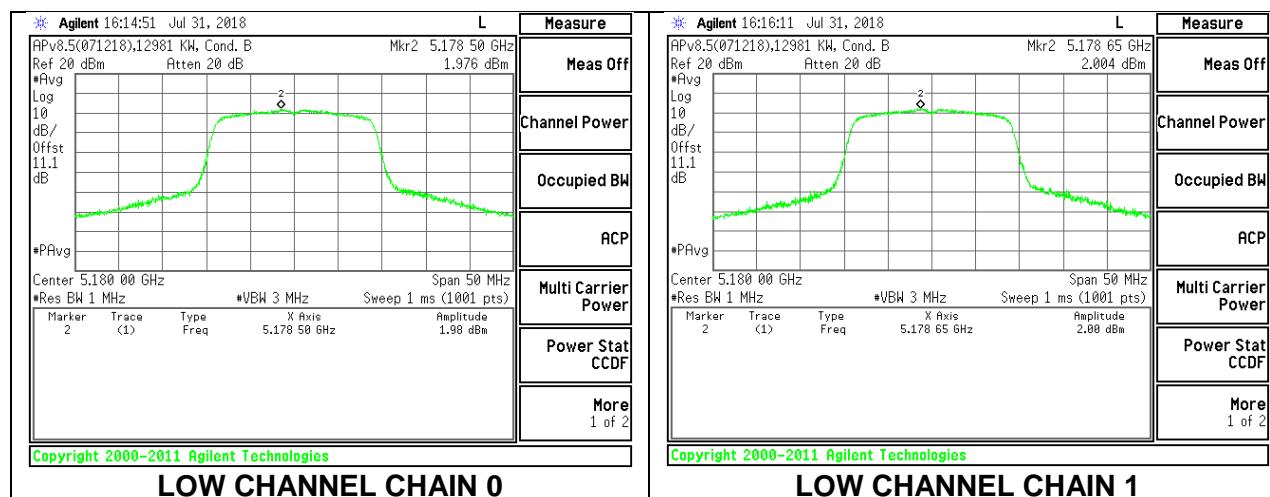
Output Power Results

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	12.61	12.15	15.40	20.70	-5.30
Mid	5200	12.73	12.21	15.49	20.75	-5.26
High	5240	12.86	13.5	16.20	20.75	-4.55

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	1.98	2.00	5.32	5.33	-0.01
Mid	5200	2.14	1.76	5.28	5.33	-0.05
High	5240	1.60	1.83	5.05	5.33	-0.28

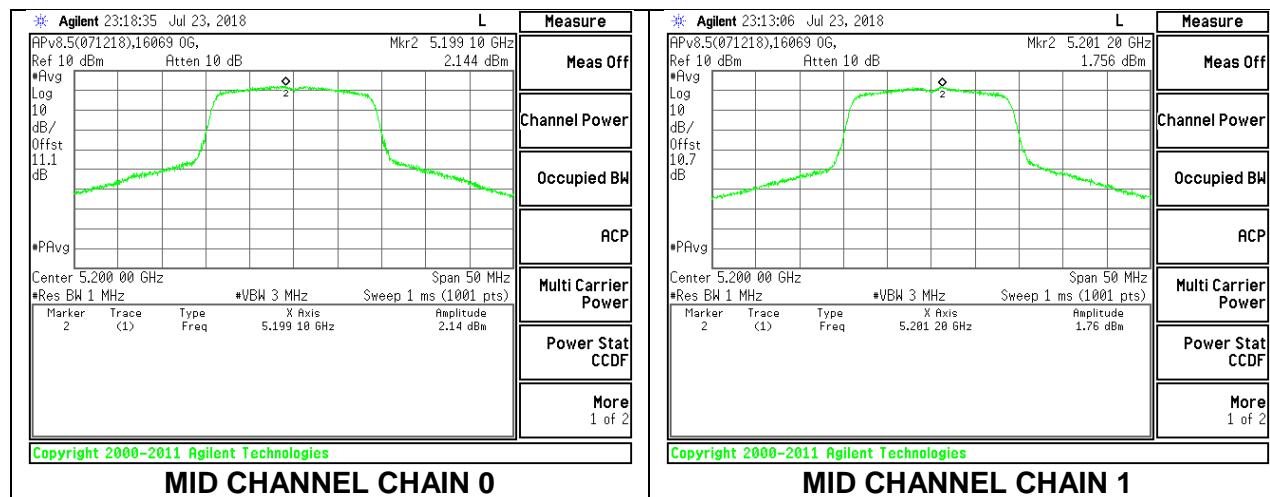
LOW CHANNEL



LOW CHANNEL CHAIN 0

LOW CHANNEL CHAIN 1

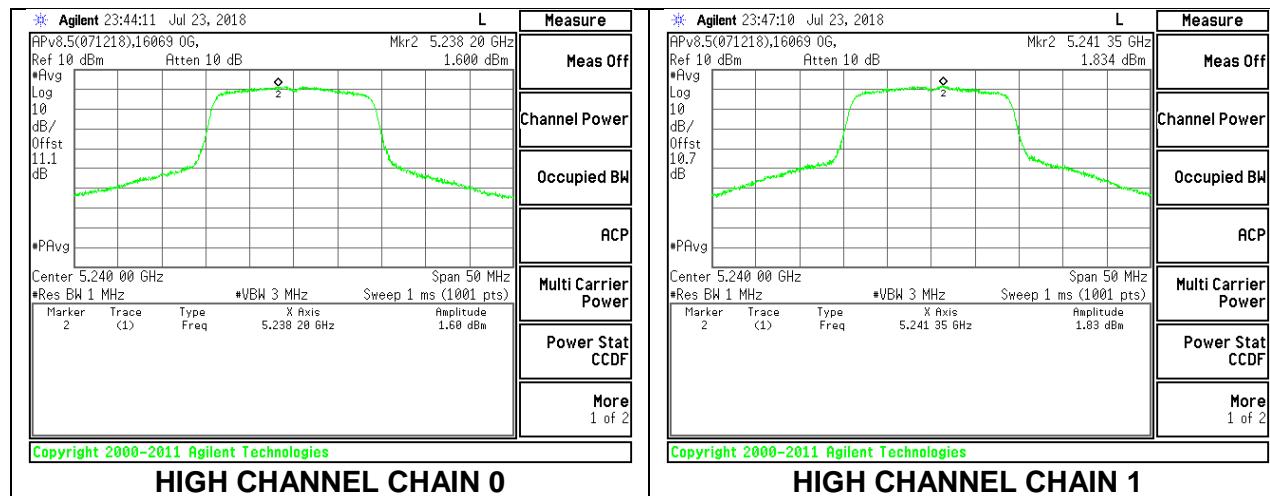
MID CHANNEL



MID CHANNEL CHAIN 0

MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

HIGH CHANNEL CHAIN 1

8.5.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

(FCC)

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	20.80	1.71	4.67	24.00	11.00
Mid	5300	22.00	1.71	4.67	24.00	11.00
High	5320	20.80	1.71	4.67	24.00	11.00

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd PSD
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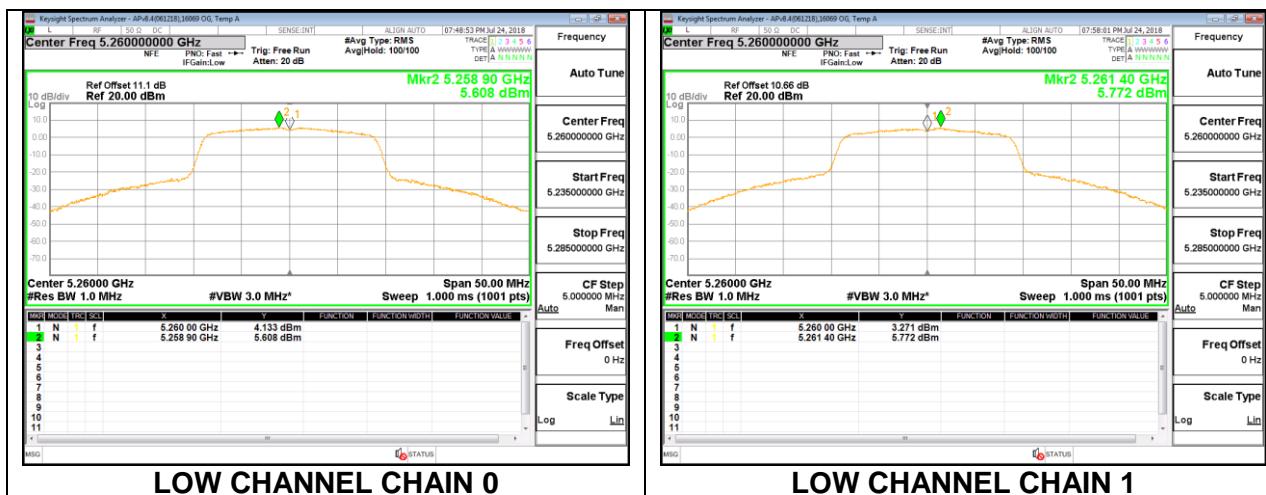
Output Power Results

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	17.31	17.54	20.44	24.00	-3.56
Mid	5300	17.08	17.32	20.21	24.00	-3.79
High	5320	17.08	17.27	20.19	24.00	-3.81

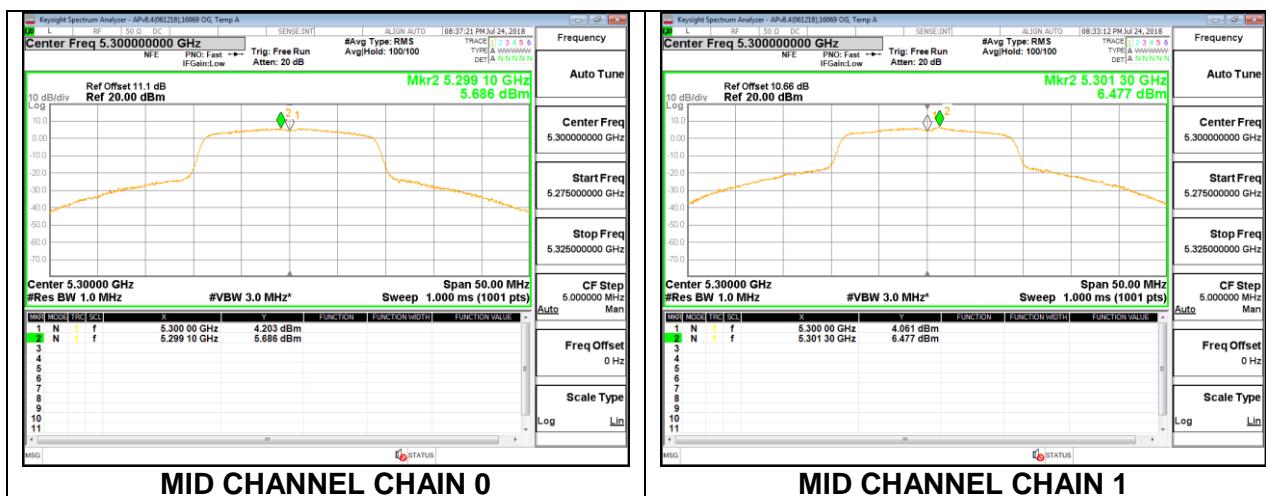
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Chain 1 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	5.61	5.77	9.02	11.00	-1.98
Mid	5300	5.69	6.48	9.43	11.00	-1.57
High	5320	5.55	5.99	9.10	11.00	-1.90

LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

