

8.32. 802.11n HT40 ANTENNA A MODE IN THE 5.6 GHz BAND

8.32.1. 26 dB BANDWIDTH

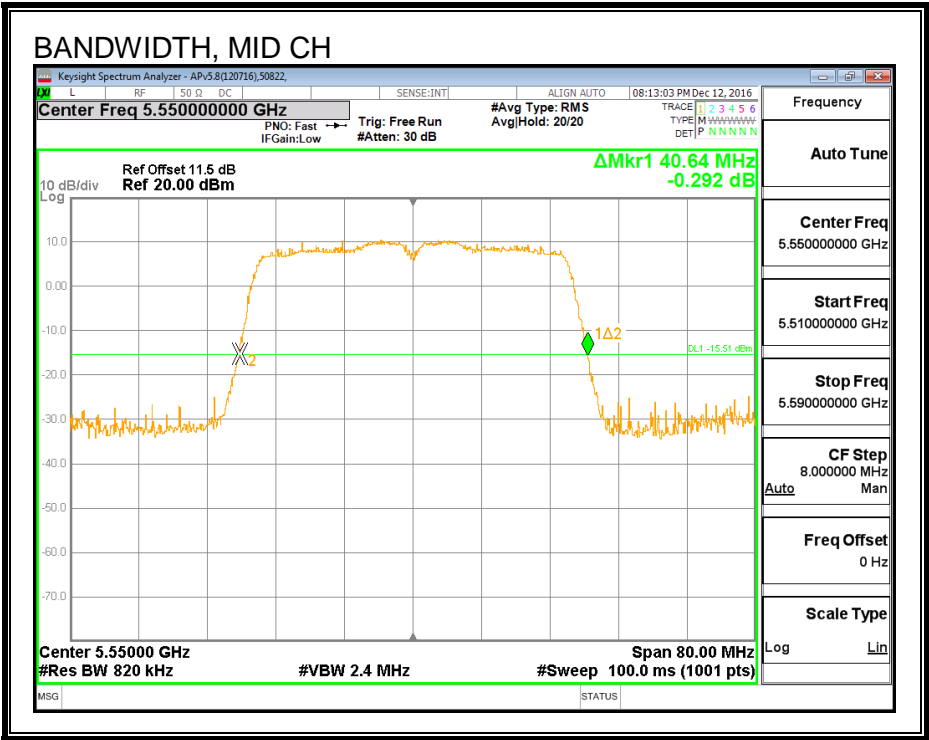
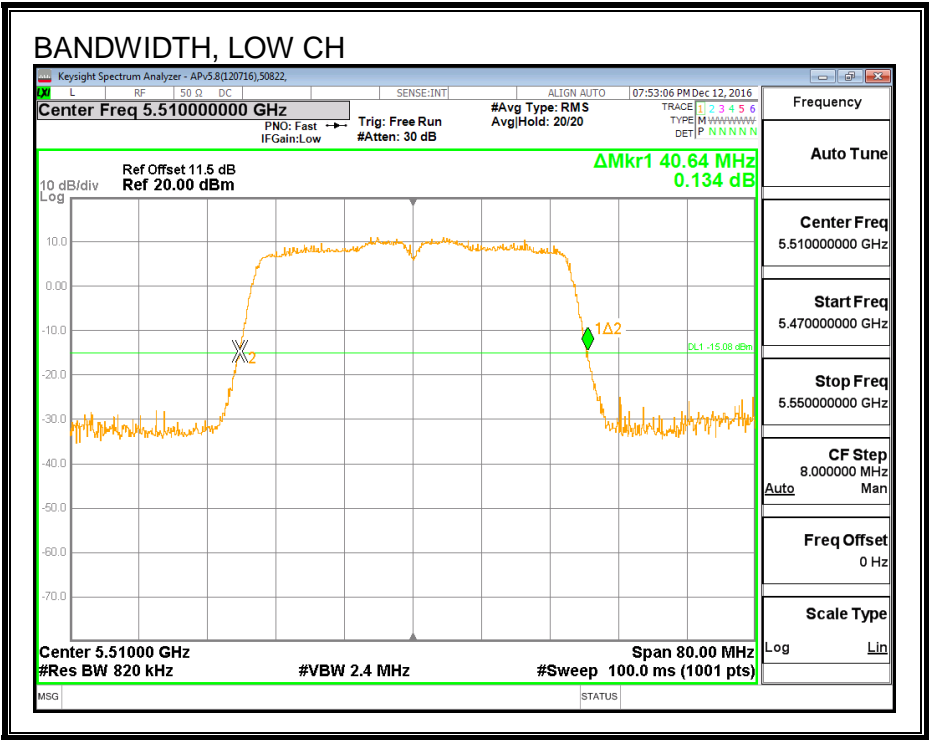
LIMITS

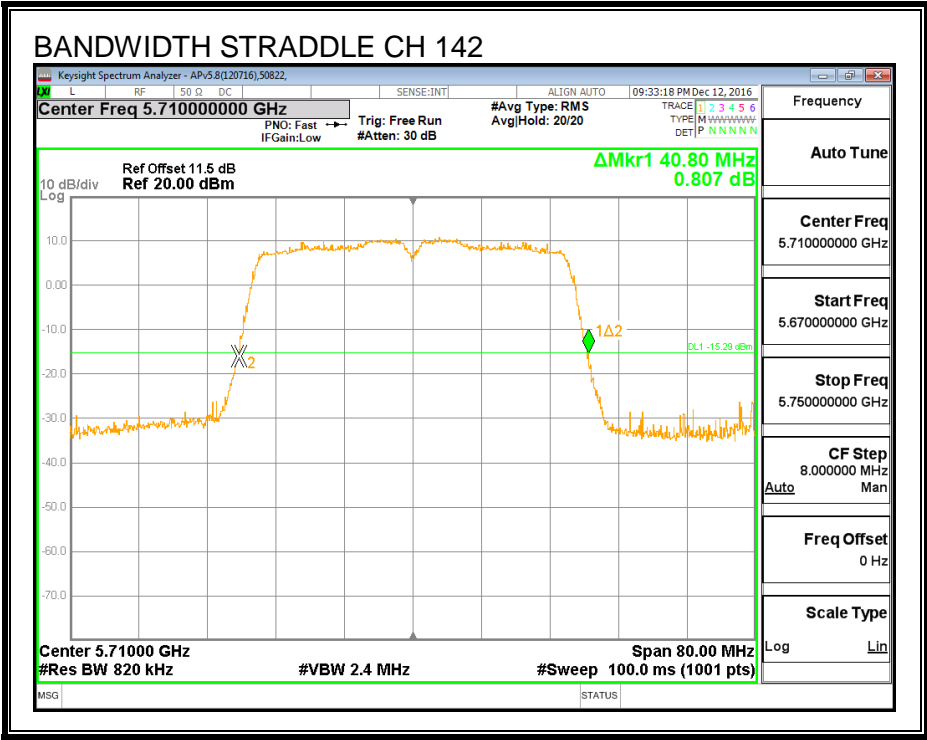
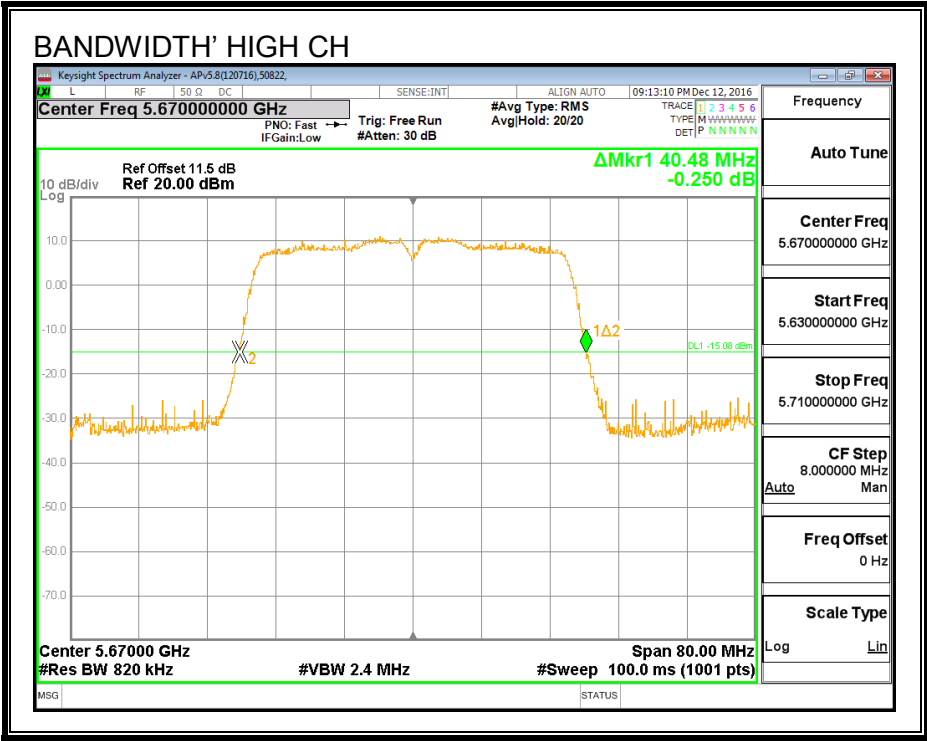
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	40.64
Mid	5550	40.64
High	5670	40.48
142	5710	40.80

26 dB BANDWIDTH





8.32.2. 99% BANDWIDTH

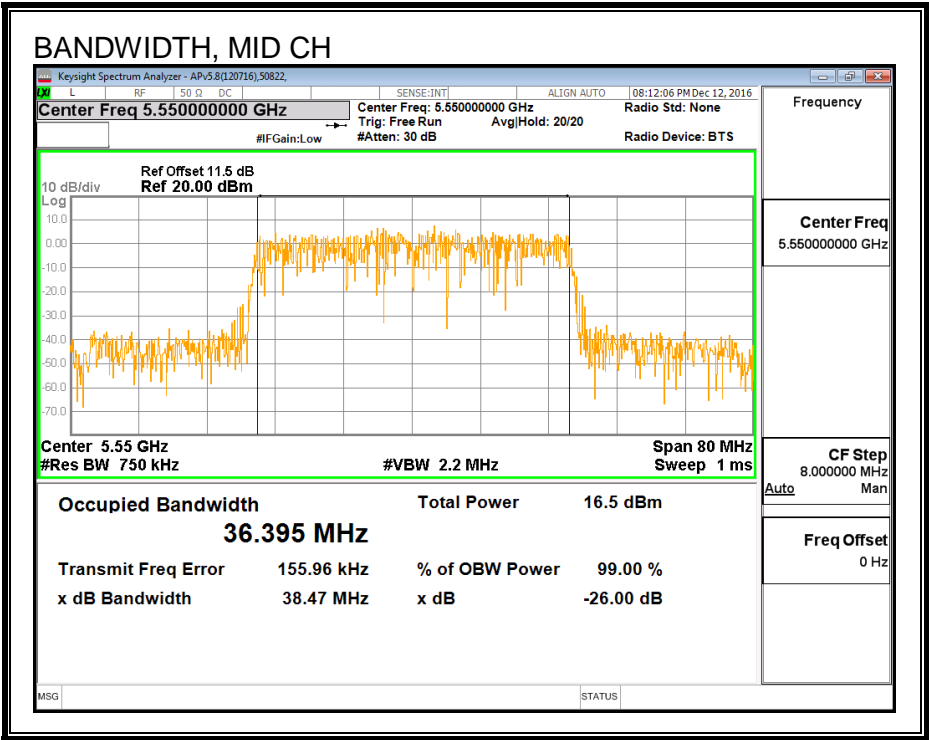
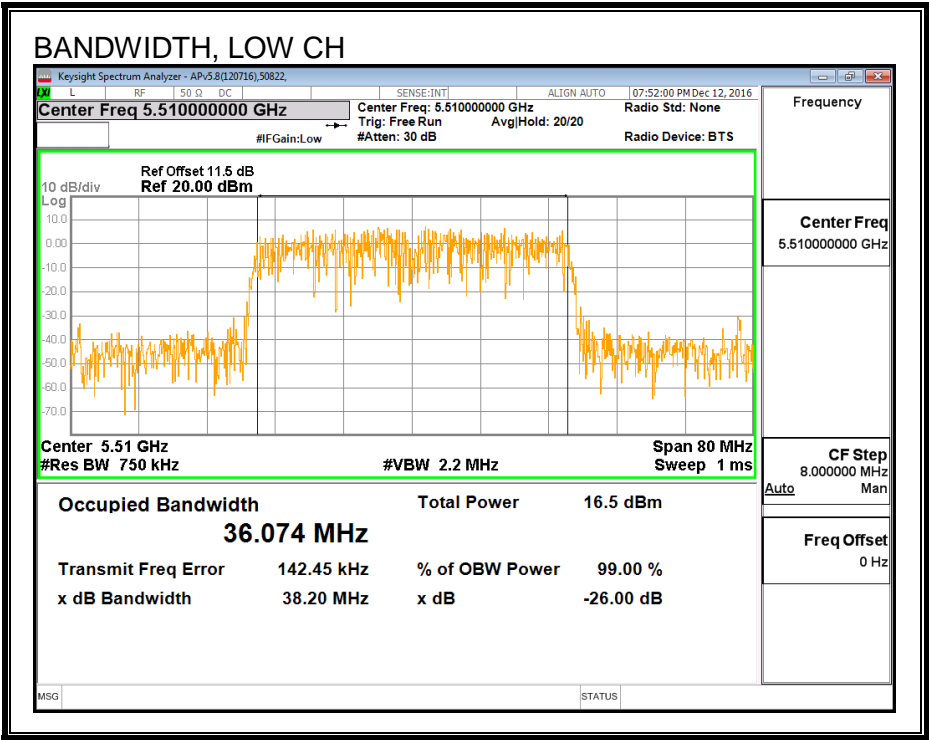
LIMITS

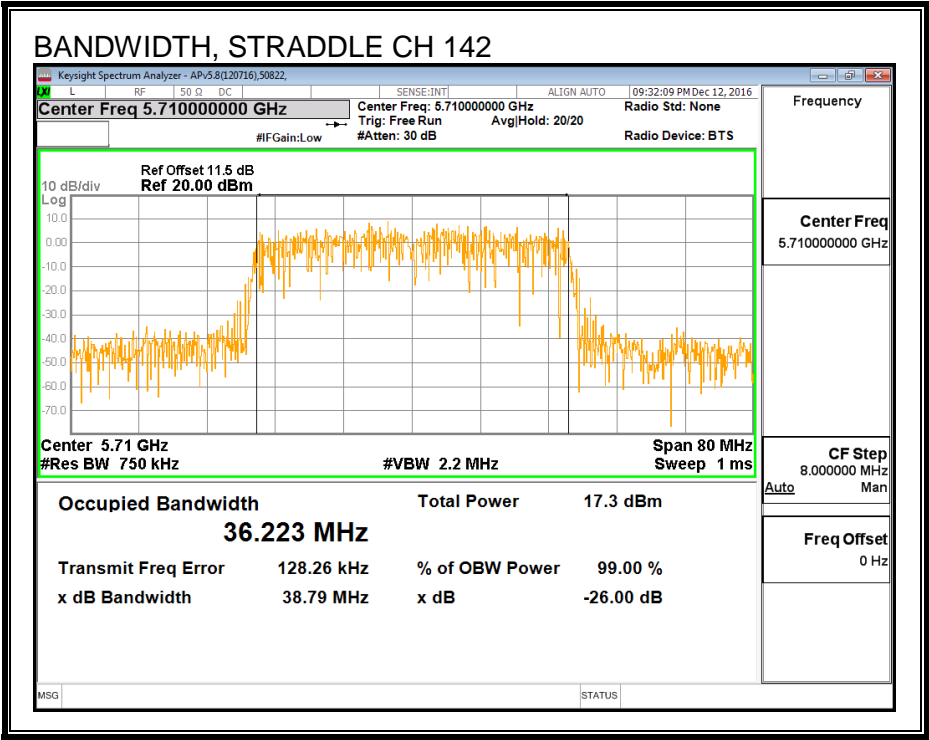
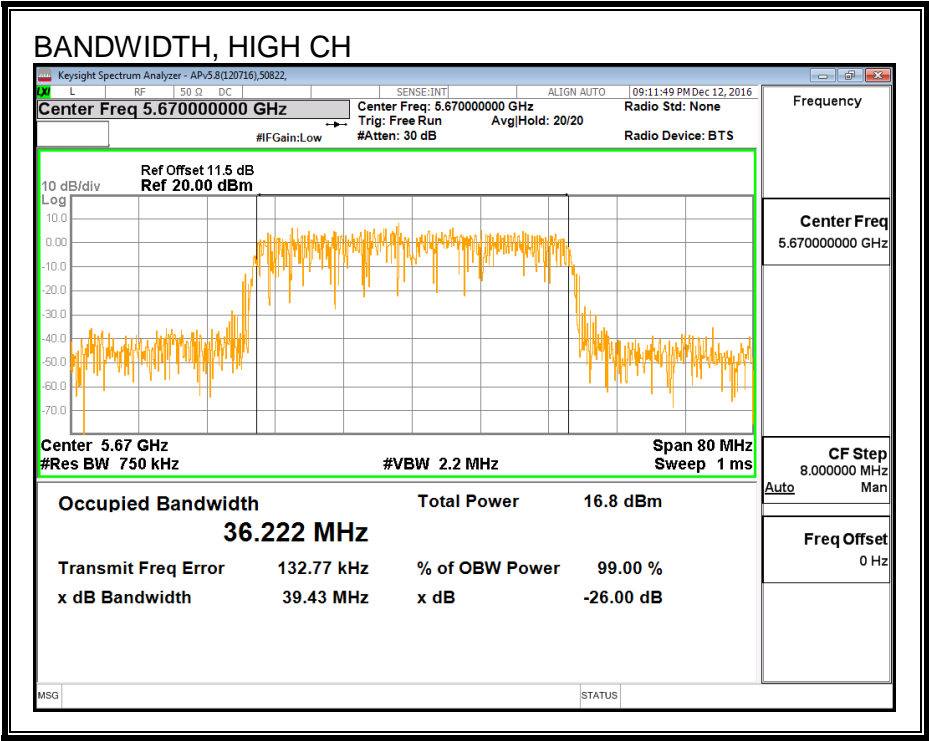
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.074
Mid	5550	36.395
High	5670	36.222
142	5710	36.223

99% BANDWIDTH





8.32.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

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Channel	Frequency (MHz)	Power (dBm)
Low	5510	14.49
Mid	5550	14.93
High	5670	14.94
142	5710	14.89

8.32.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 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 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	43578	Date:	1/21/17
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Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	40.64	36.074	3.77	24.00	11.00
Mid	5550	40.64	36.395	3.77	24.00	11.00
High	5670	40.48	36.222	3.77	24.00	11.00

Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd PSD
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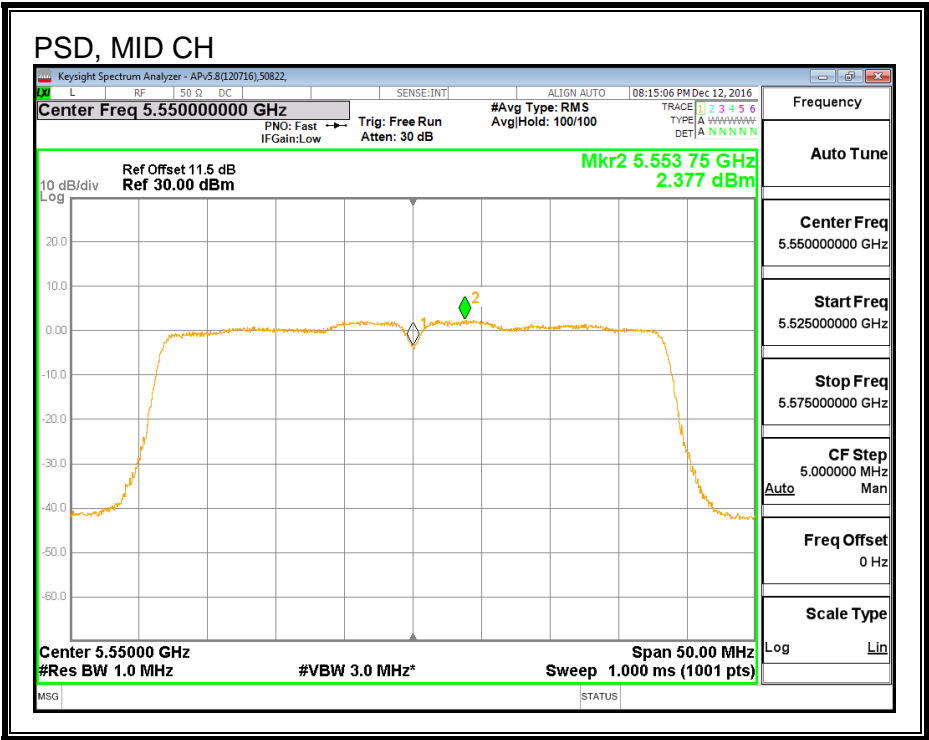
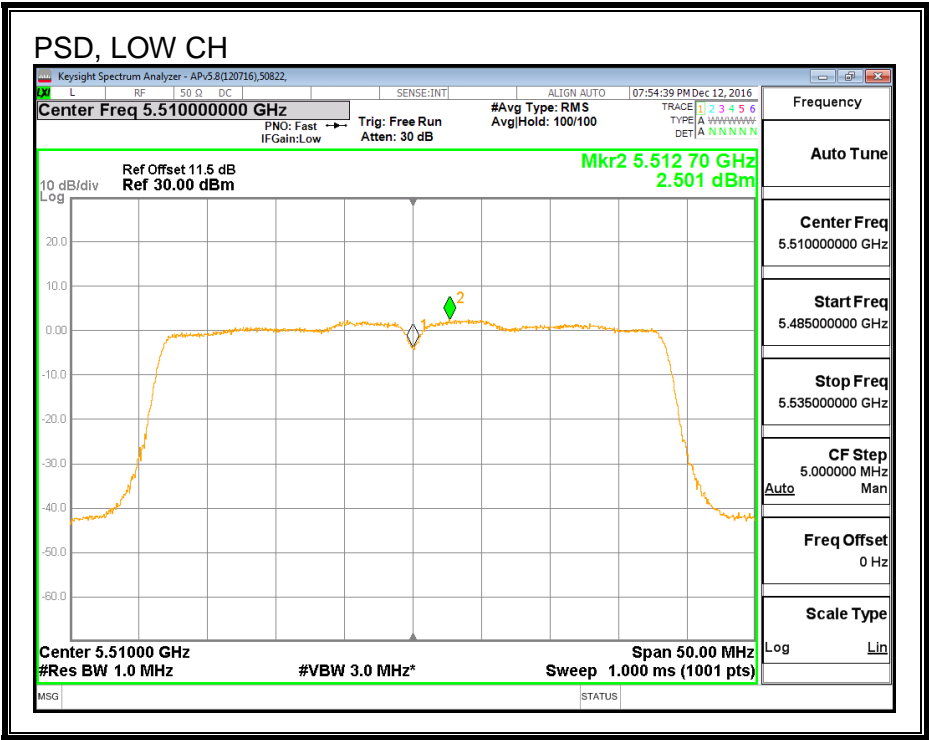
Output Power Results

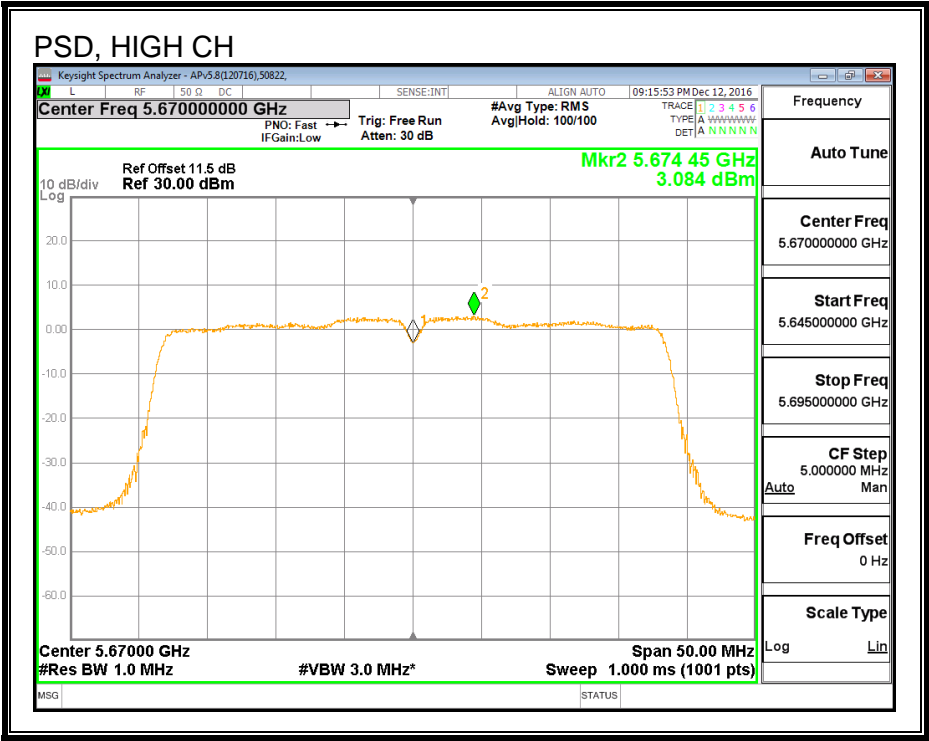
Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	14.49	14.49	24.00	-9.51
Mid	5550	14.93	14.93	24.00	-9.07
High	5670	14.94	14.94	24.00	-9.06

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	2.50	2.601	11.00	-8.40
Mid	5550	2.38	2.477	11.00	-8.52
High	5670	3.08	3.184	11.00	-7.82

PSD





8.33. 802.11ac VHT40 ANTENNA A STRADDLE CH 142 RESULTS

8.33.1. OUTPUT POWER AND PSD

UNII-2C BAND

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)
142	5710	35.40	3.77	3.77	24.00	11.00

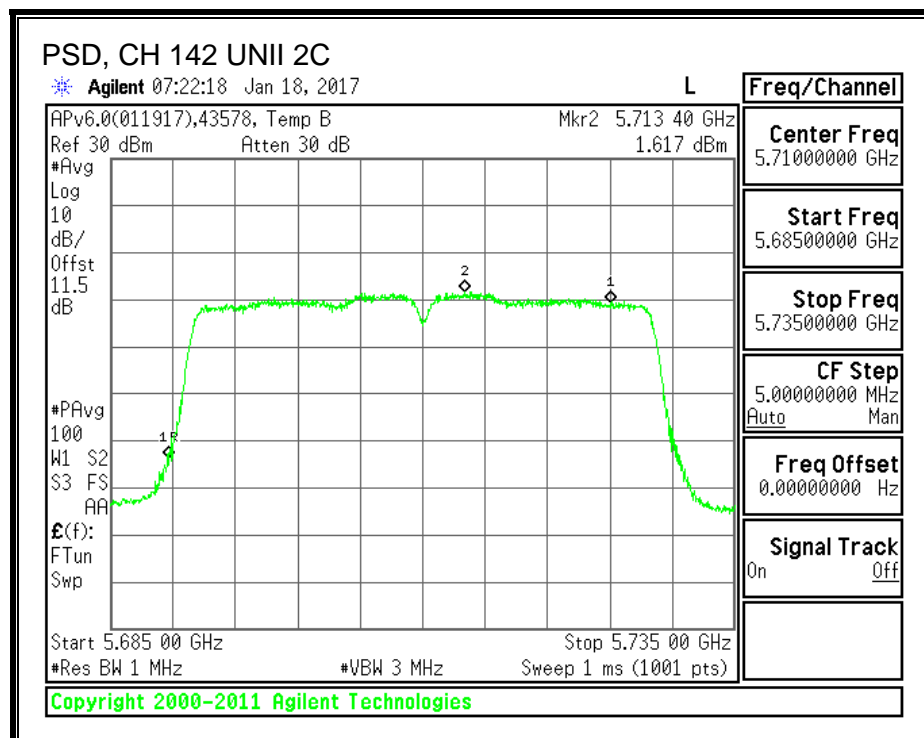
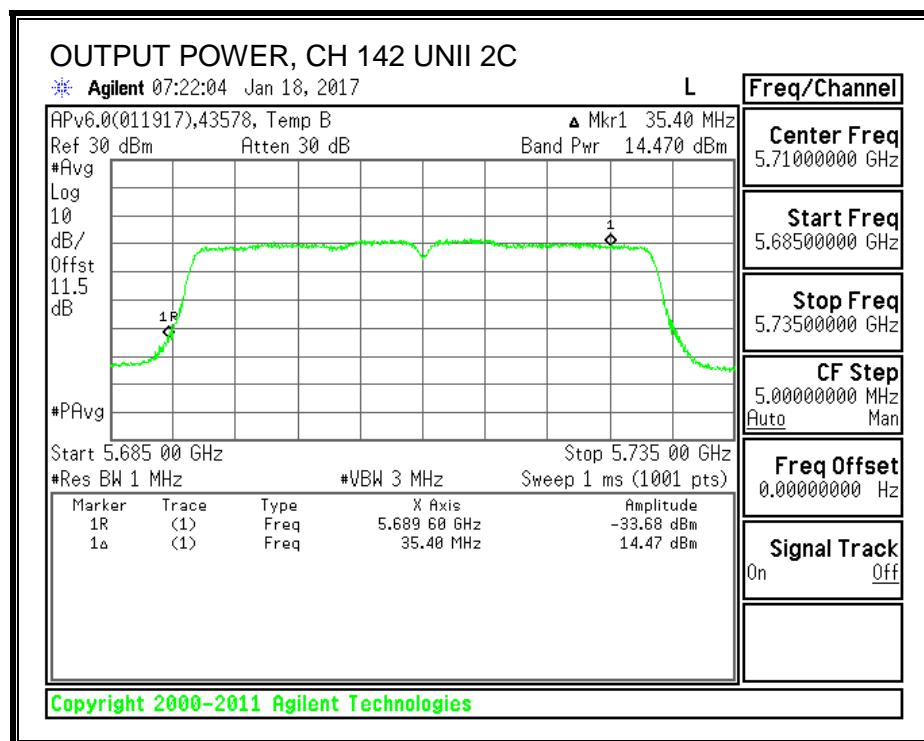
Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	14.47	14.57	24.00	-9.43

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	1.62	1.72	11.00	-9.28



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	5.40	3.40	30.00	30.00

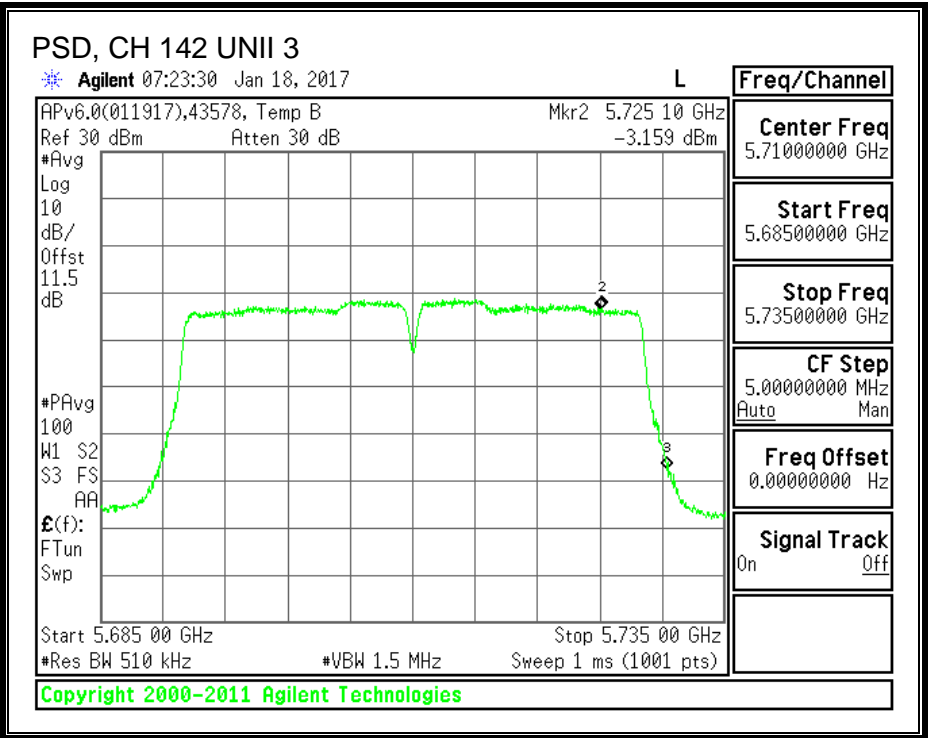
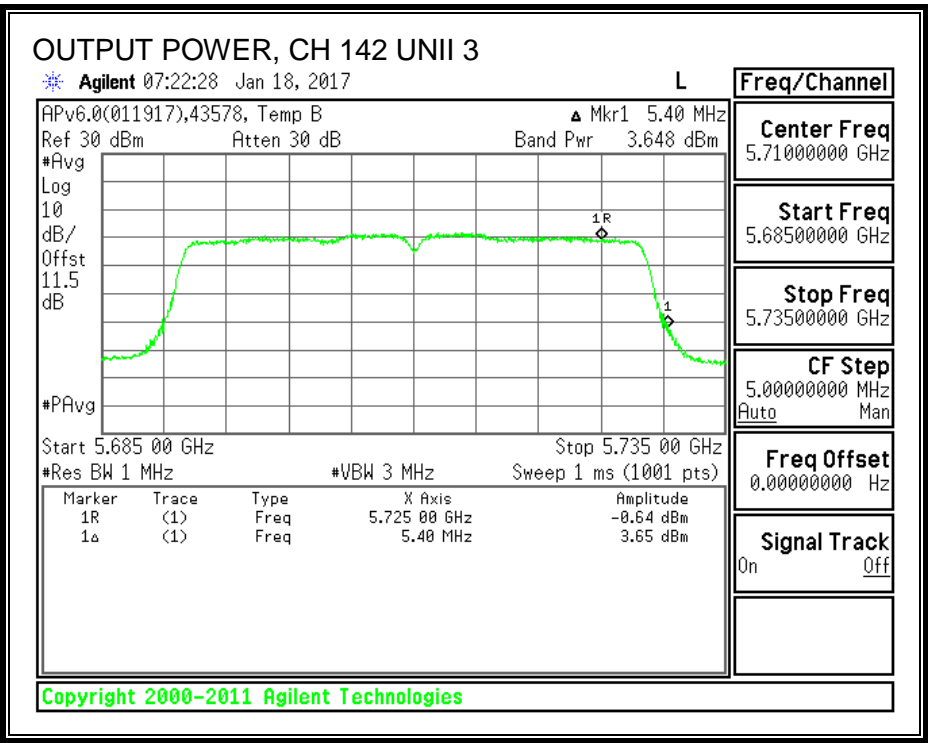
Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	3.65	3.75	30.00	-26.25

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-3.16	-3.06	30.00	-33.06



8.33.2. 6 dB BANDWIDTH

LIMITS

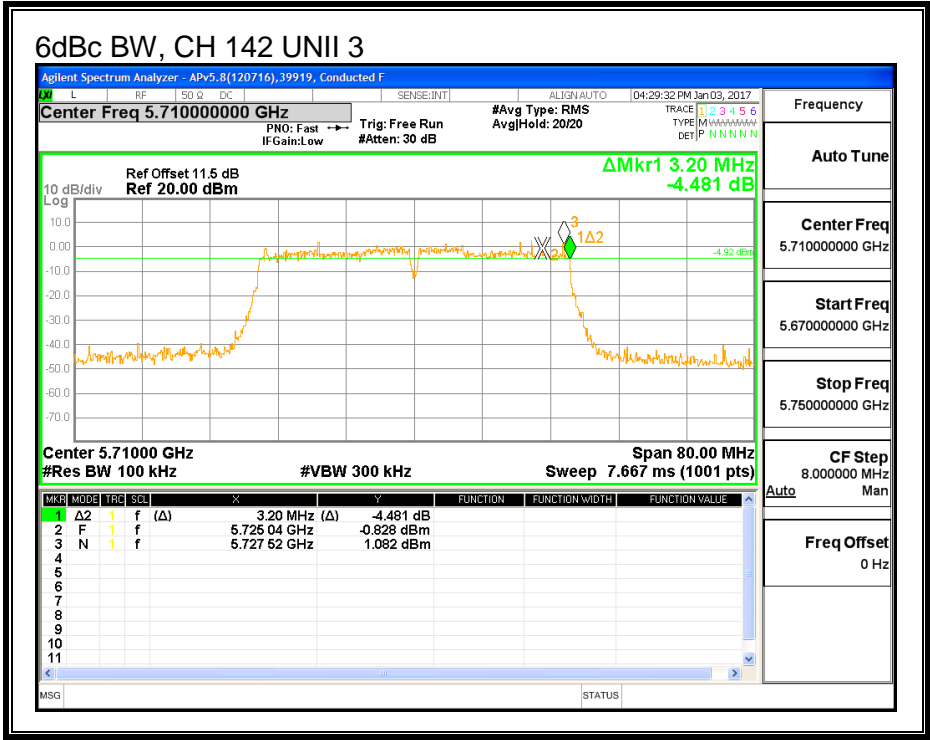
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
142	5710	3.20

6 dB BANDWIDTH



8.34. 802.11n HT40 ANTENNA B MODE IN THE 5.6 GHz BAND

8.34.1. 26 dB BANDWIDTH

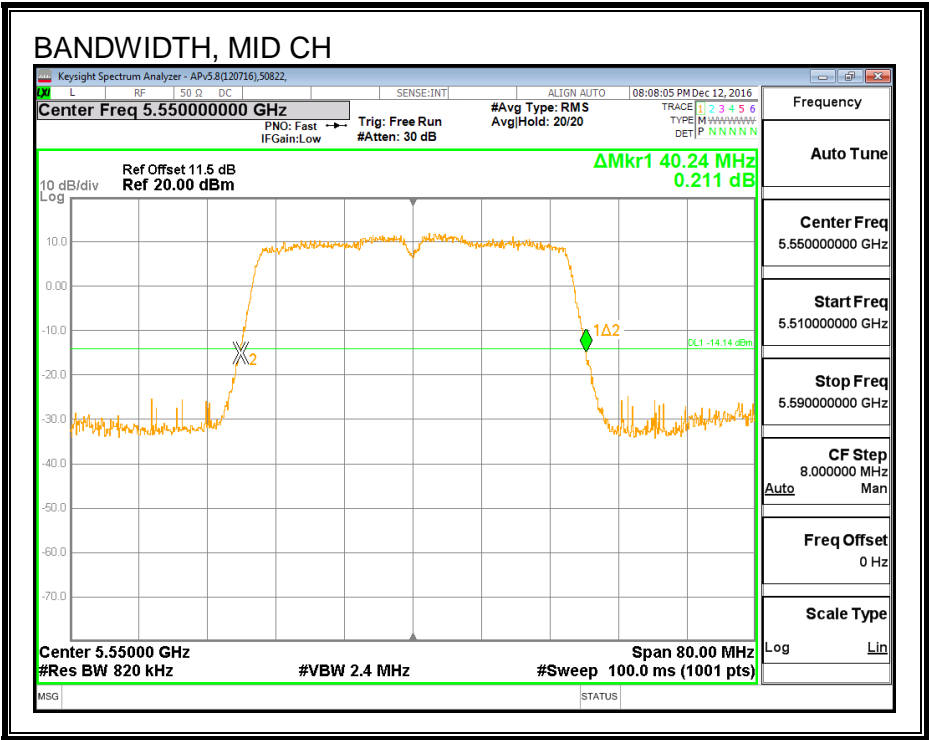
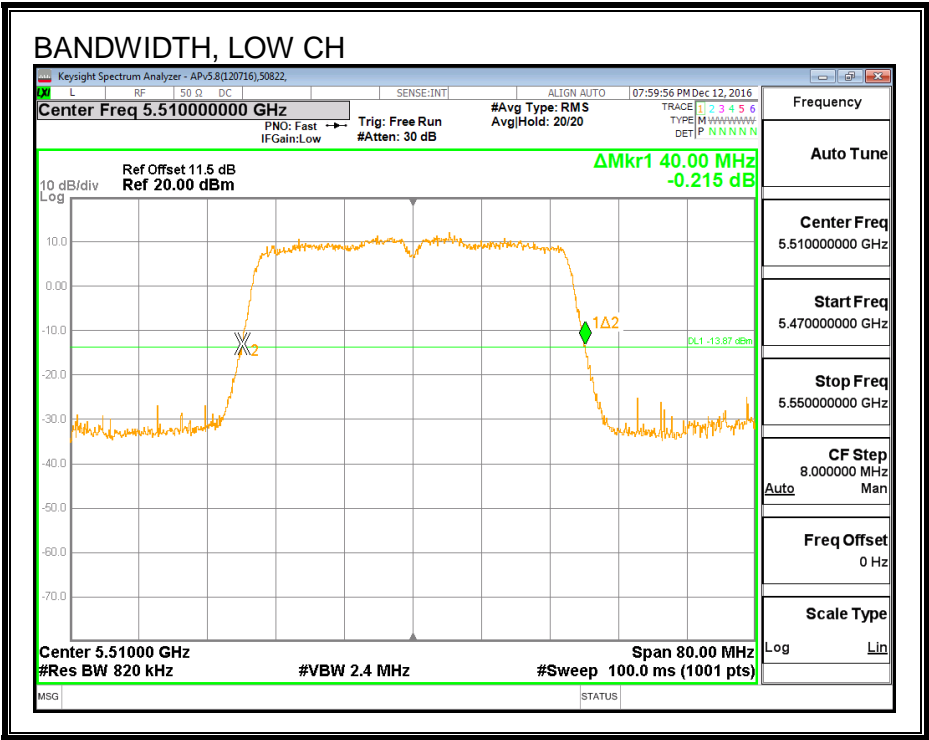
LIMITS

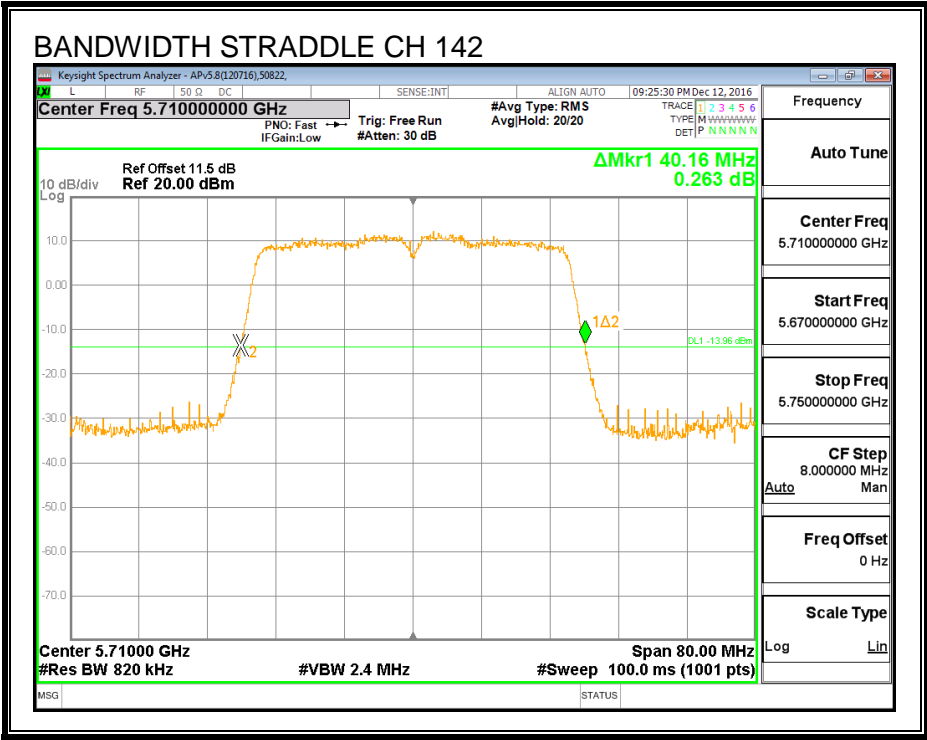
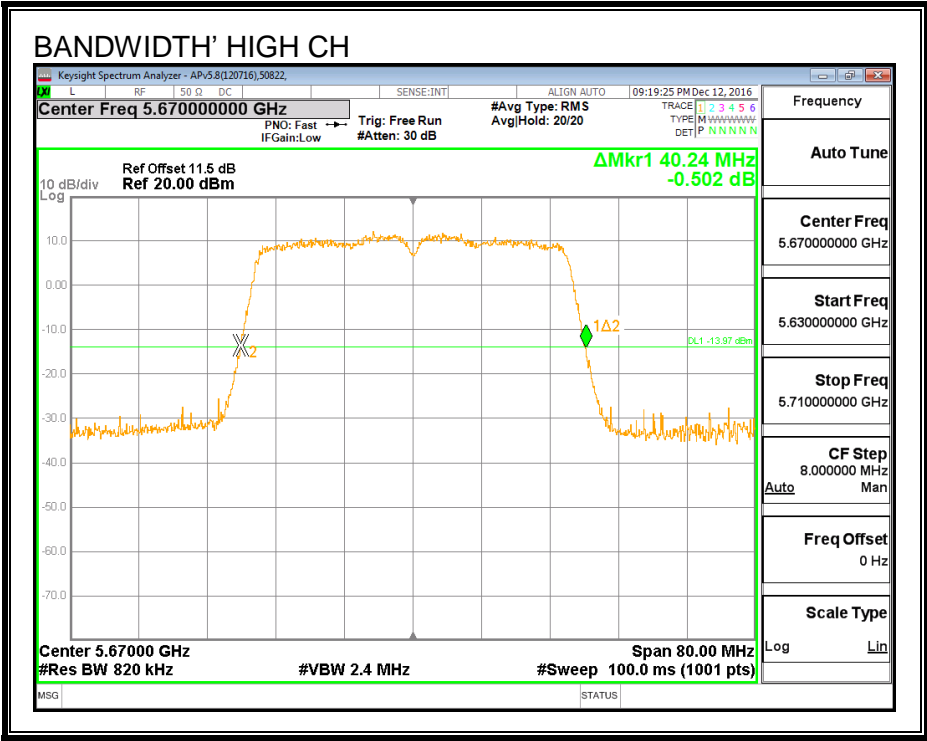
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	40.00
Mid	5550	40.24
High	5670	40.24
142	5710	40.16

26 dB BANDWIDTH





8.34.2. 99% BANDWIDTH

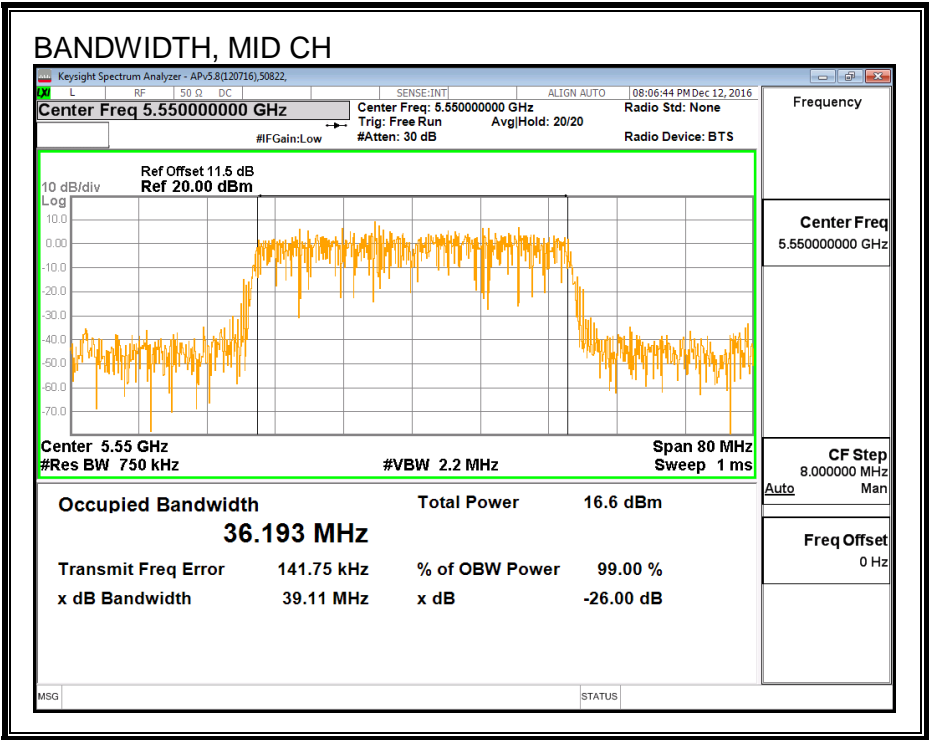
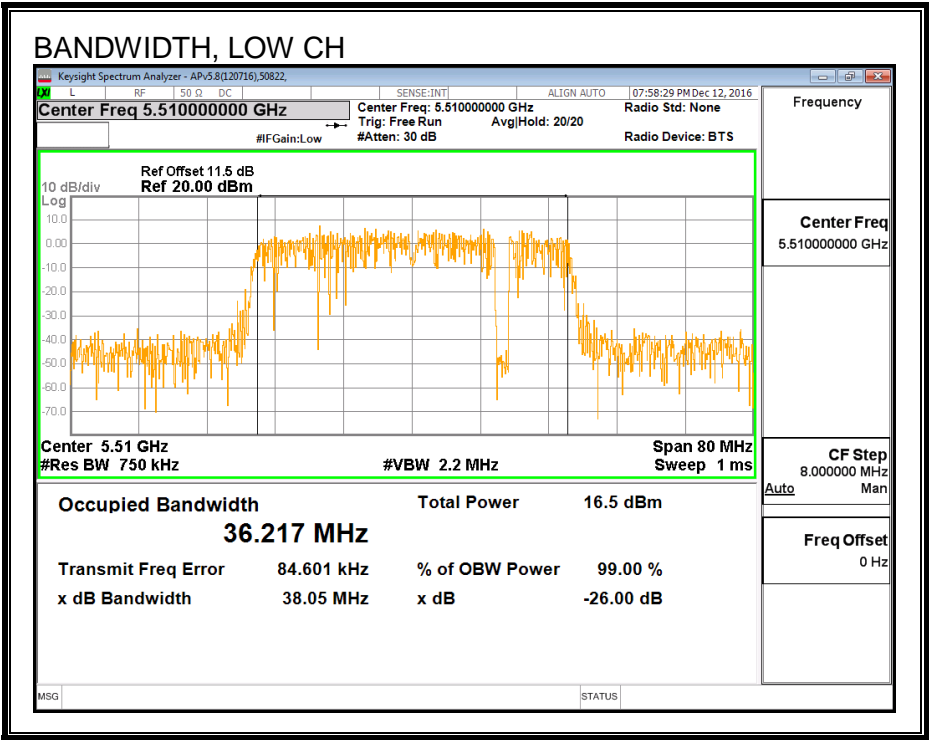
LIMITS

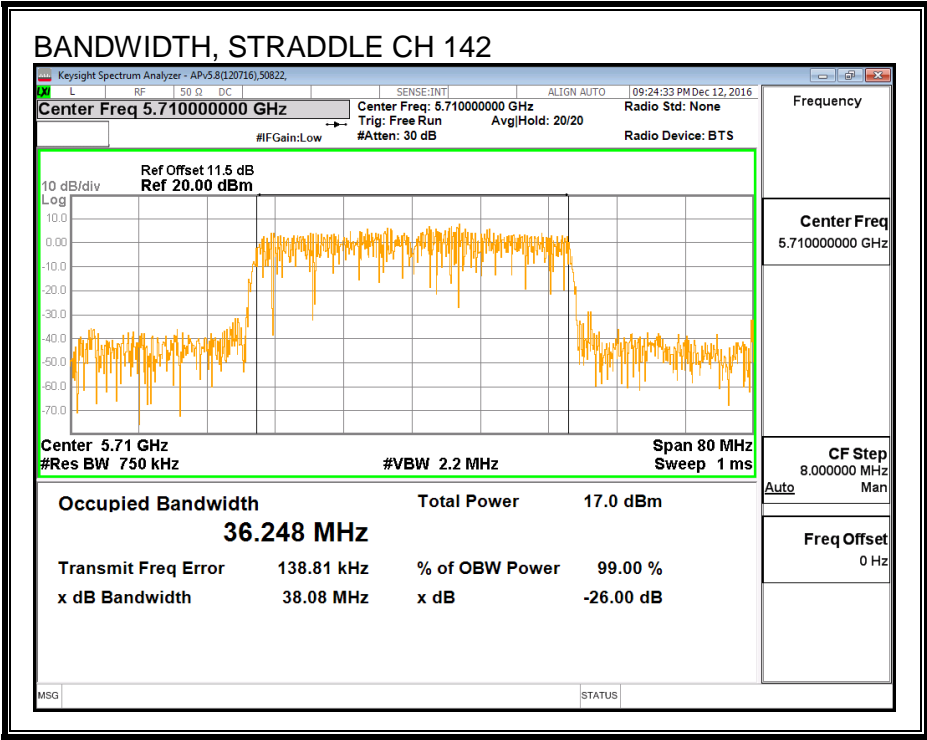
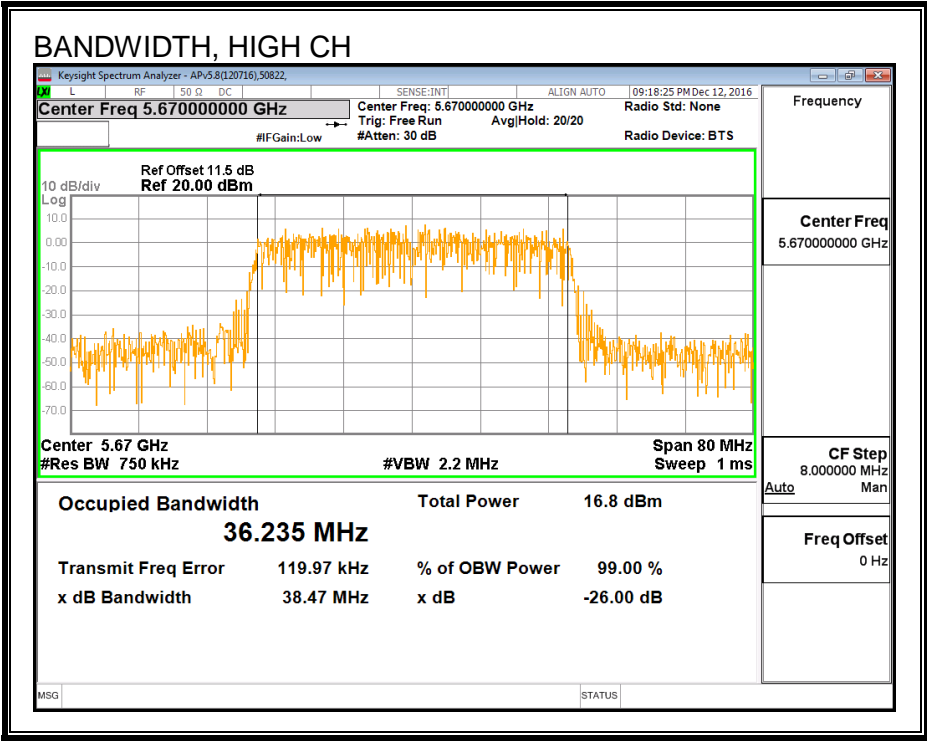
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.217
Mid	5550	36.193
High	5670	36.235
142	5710	36.248

99% BANDWIDTH





8.34.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

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Channel	Frequency (MHz)	Power (dBm)
Low	5510	14.46
Mid	5550	14.93
High	5670	14.96
142	5710	14.91

8.34.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 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 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	43578	Date:	1/21/17
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Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	40.00	36.217	3.10	24.00	11.00
Mid	5550	40.24	36.193	3.10	24.00	11.00
High	5670	40.24	36.235	3.10	24.00	11.00

Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd PSD
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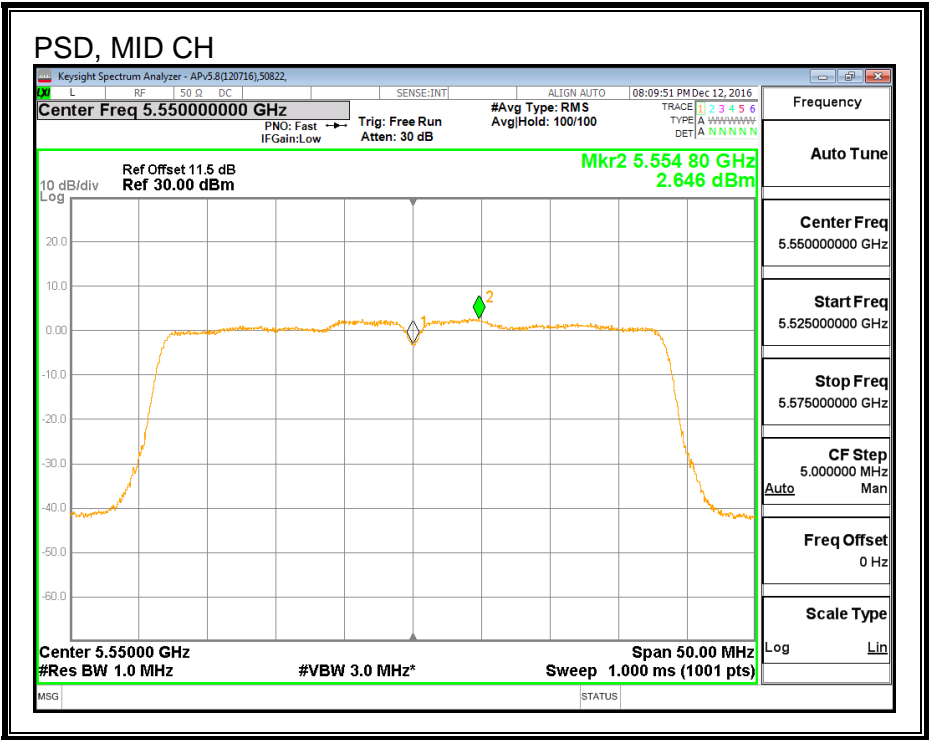
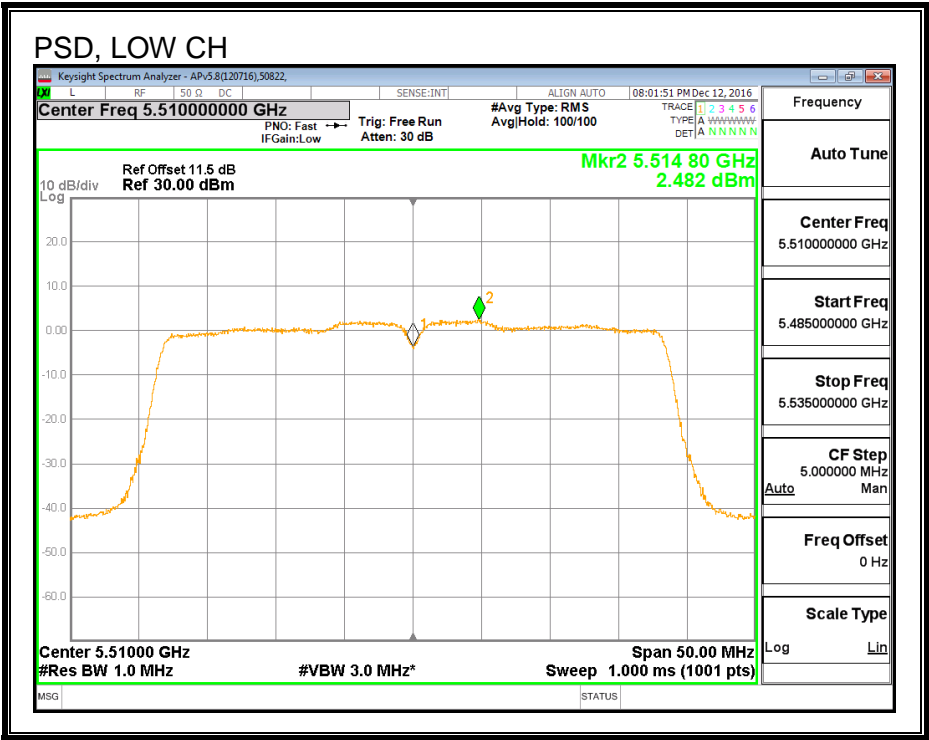
Output Power Results

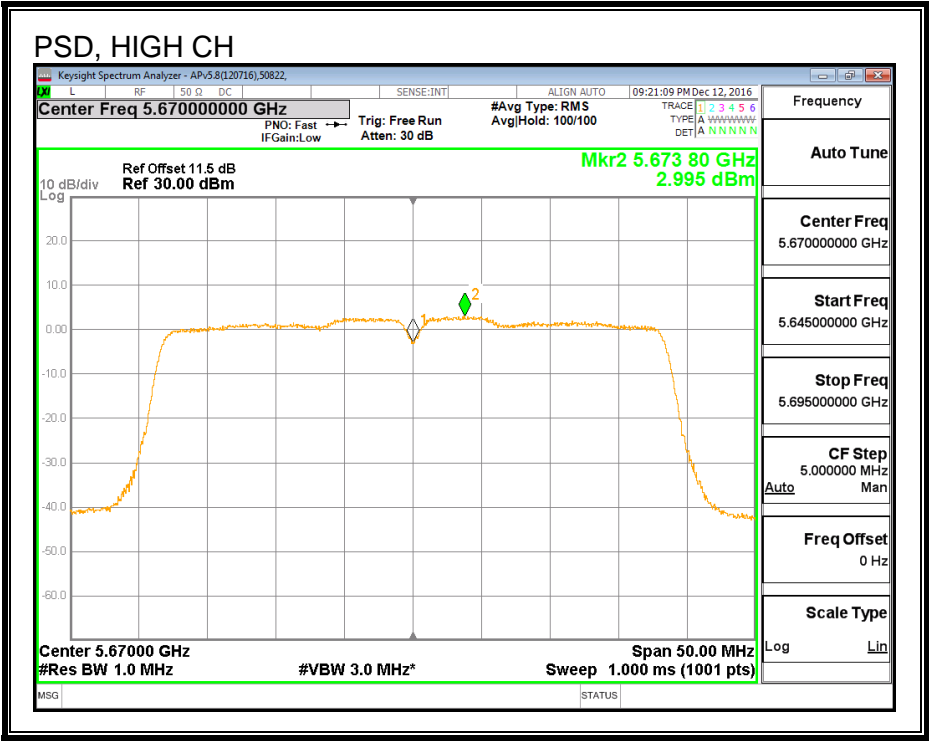
Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	14.46	14.46	24.00	-9.54
Mid	5550	14.93	14.93	24.00	-9.07
High	5670	14.96	14.96	24.00	-9.04

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	2.48	2.58	11.00	-8.42
Mid	5550	2.65	2.75	11.00	-8.25
High	5670	3.00	3.10	11.00	-7.91

PSD





8.35. 802.11ac VHT40 ANTENNA B STRADDLE CH 142 RESULTS

8.35.1. OUTPUT POWER AND PSD

UNII-2C BAND

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)
142	5710	35.08	3.10	3.10	24.00	11.00

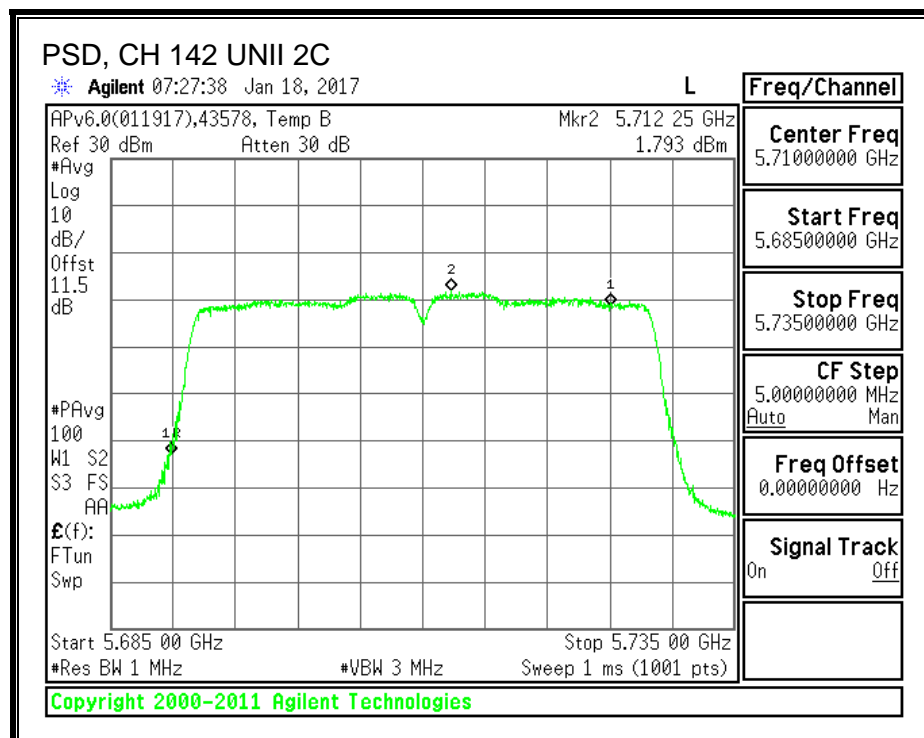
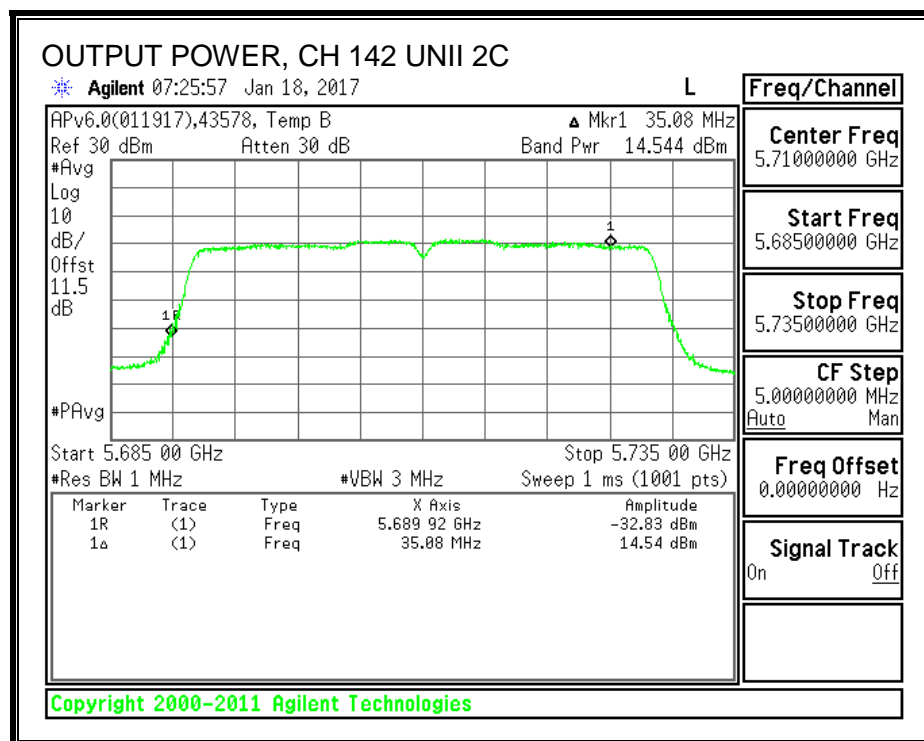
Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	14.54	14.64	24.00	-9.36

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	1.79	1.89	11.00	-9.11



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	5.08	3.18	30.00	30.00

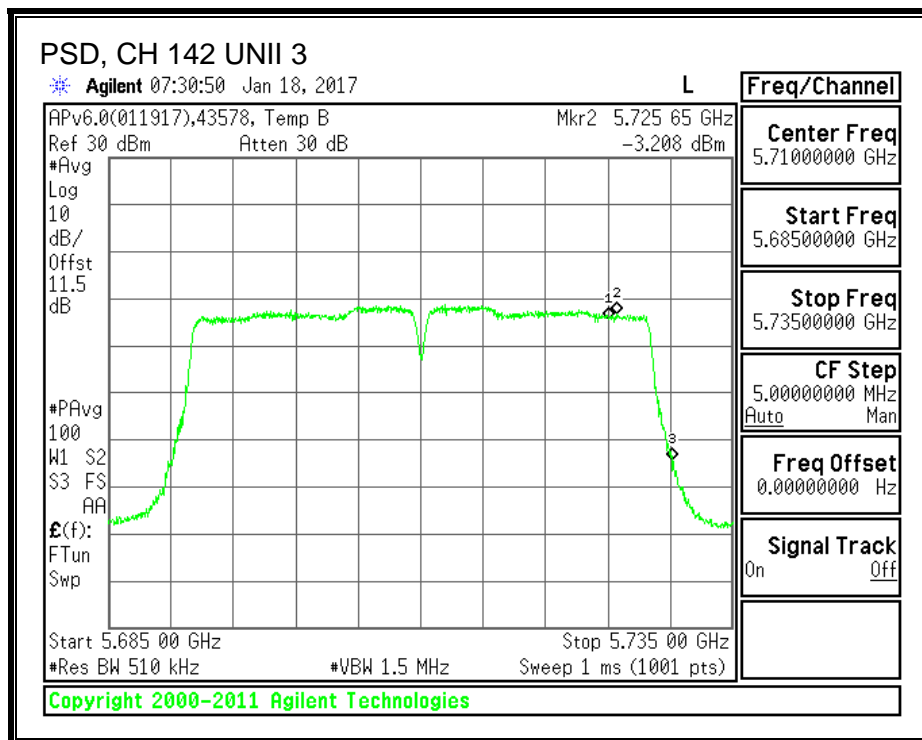
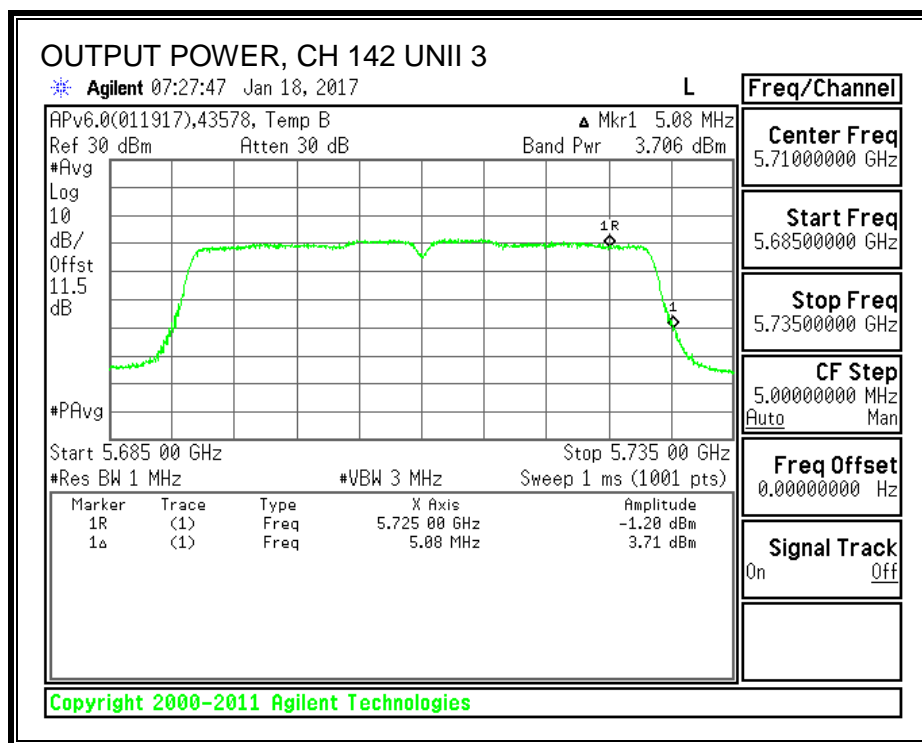
Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	3.71	3.81	30.00	-26.19

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-3.21	-3.11	30.00	-33.11



8.35.2. 6 dB BANDWIDTH

LIMITS

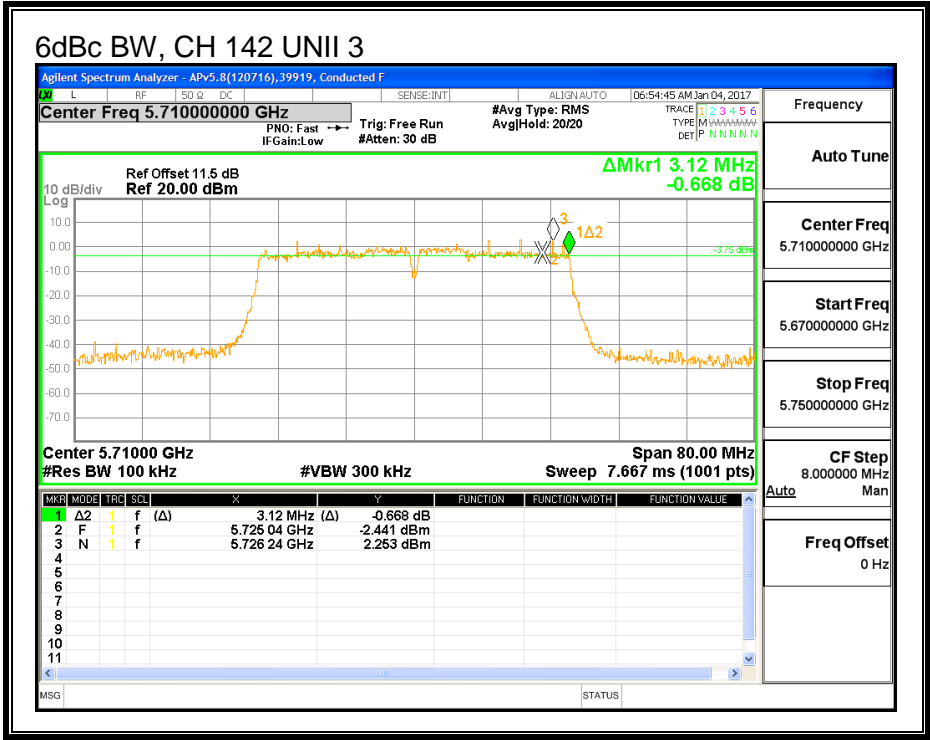
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
142	5710	3.12

6 dB BANDWIDTH



8.36. 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND

8.36.1. 26 dB BANDWIDTH

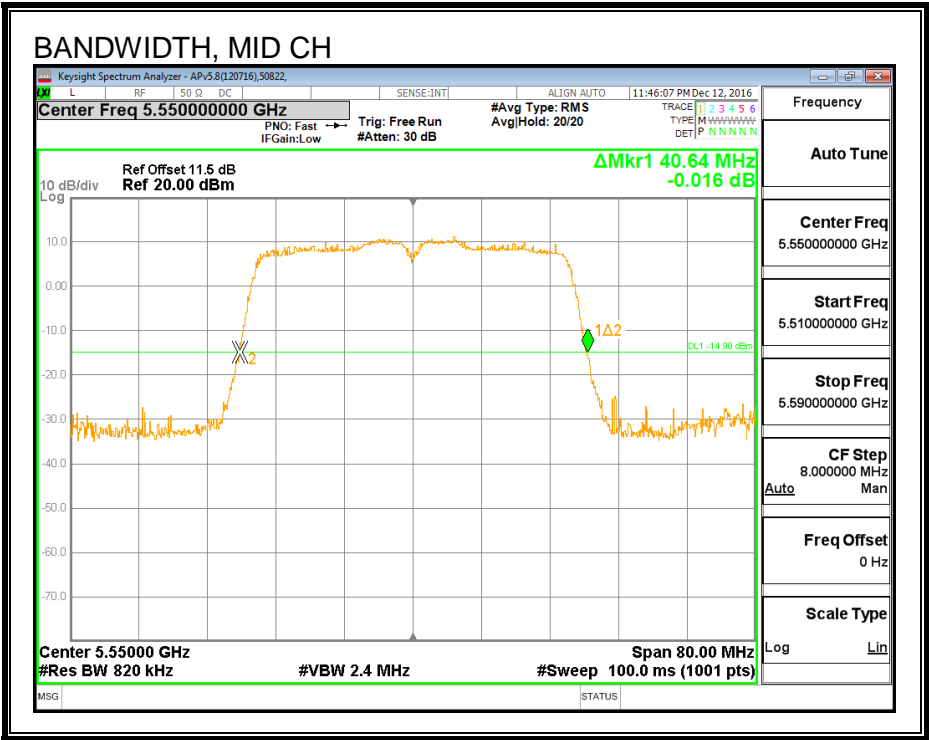
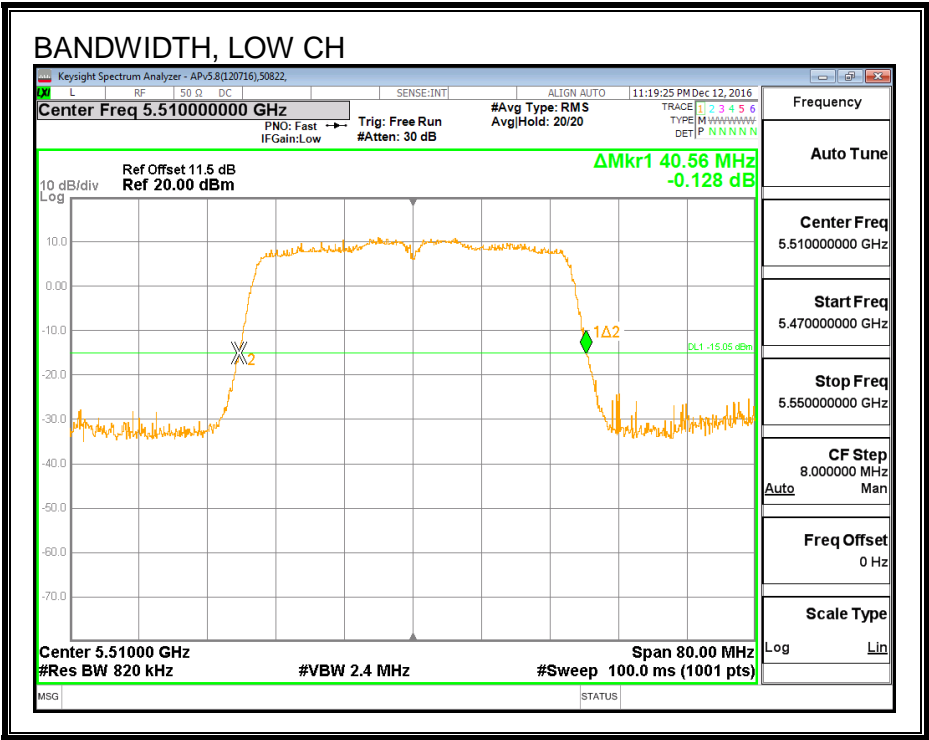
LIMITS

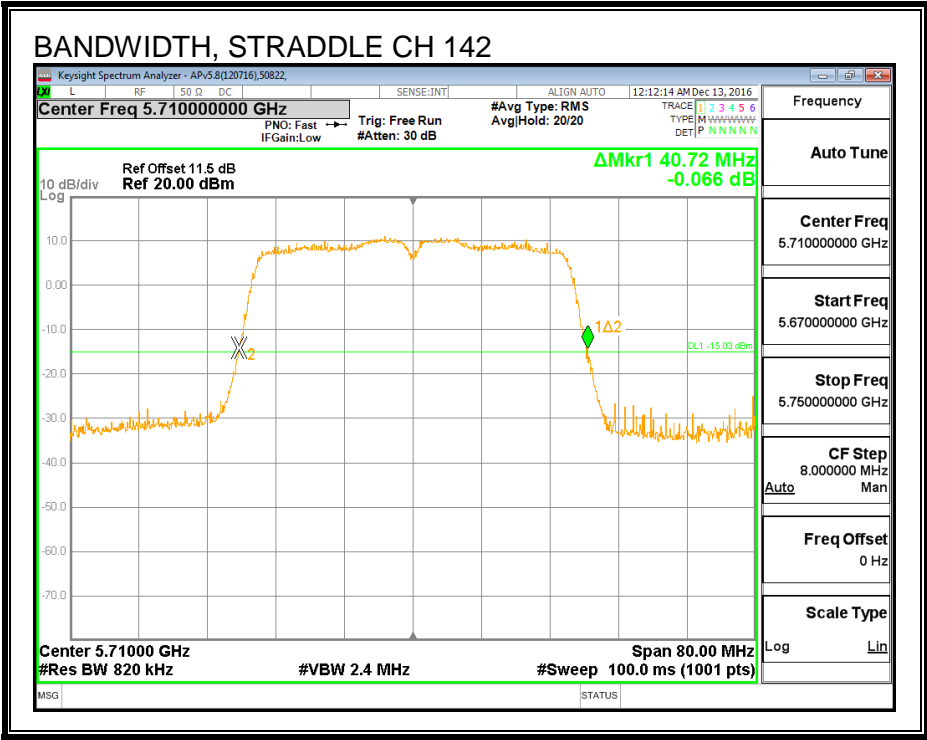
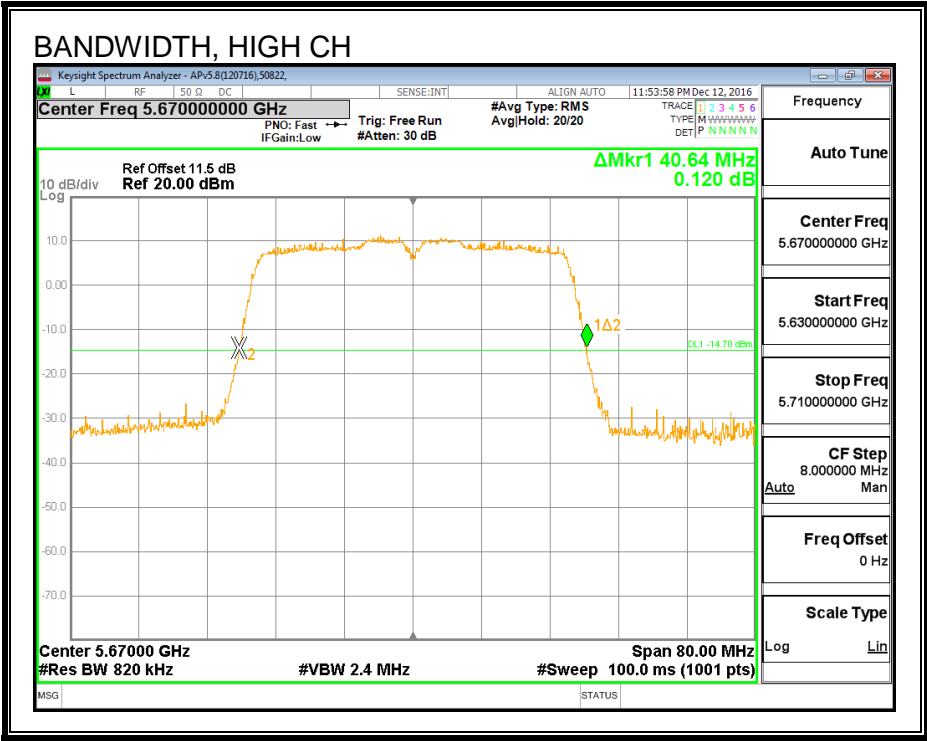
None; for reporting purposes only.

RESULTS

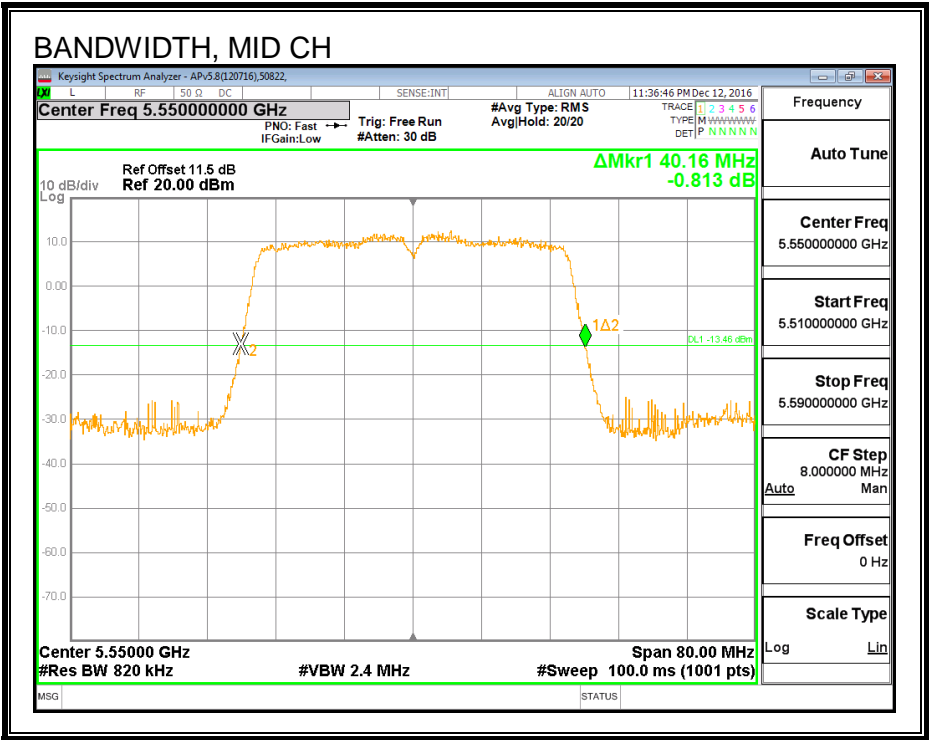
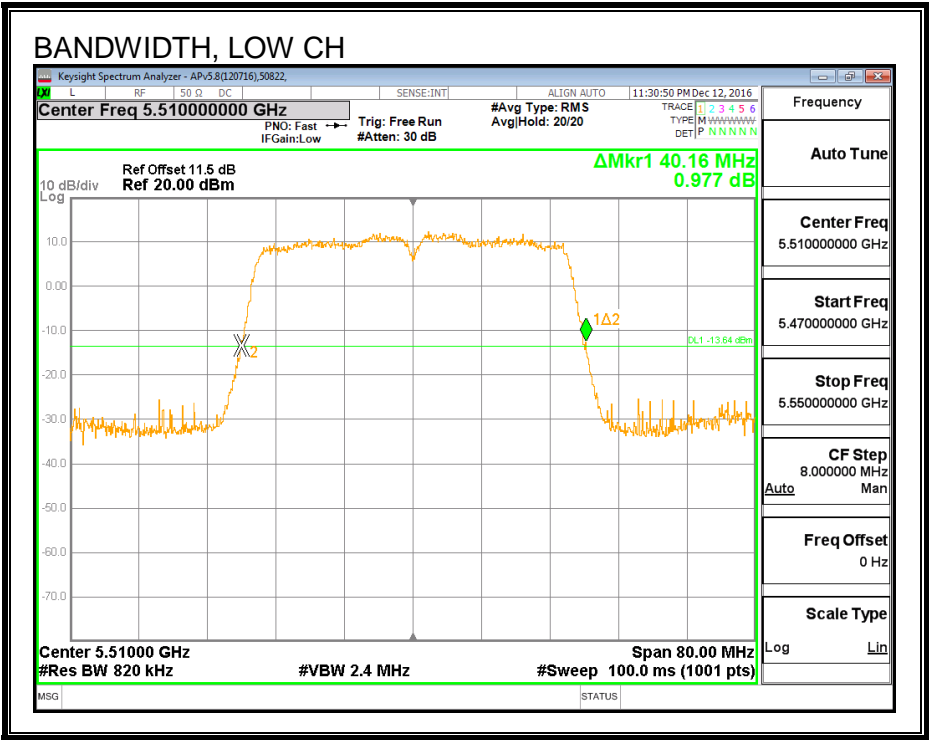
Channel	Frequency (MHz)	26 dB BW Ant A (MHz)	26 dB BW Ant B (MHz)
Low	5510	40.56	40.16
Mid	5550	40.64	40.16
High	5670	40.64	40.08
142	5710	40.72	40.32

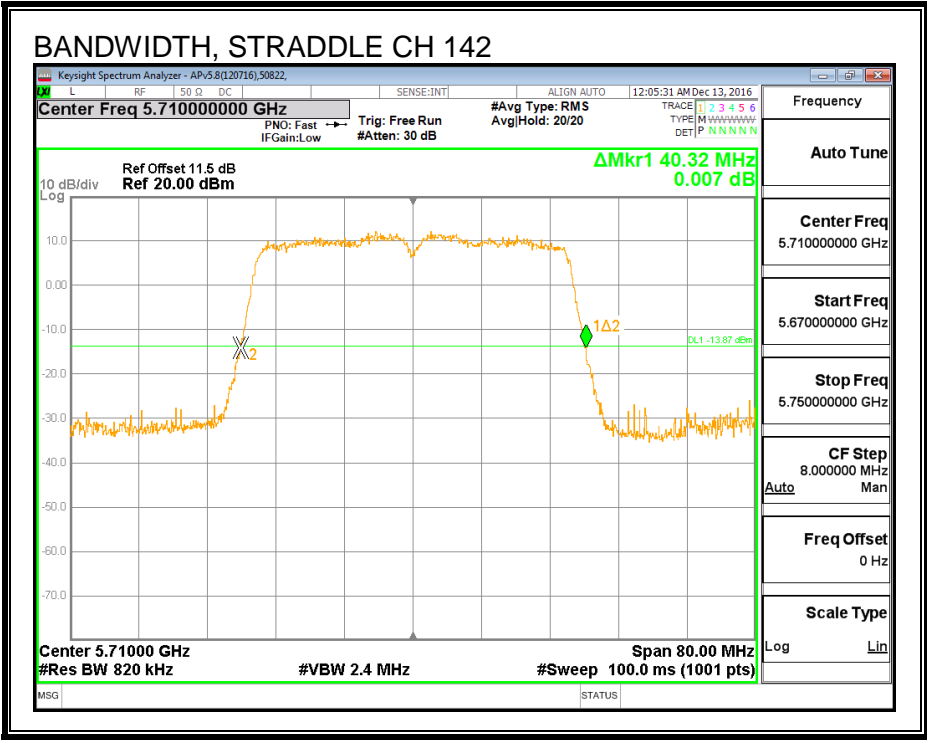
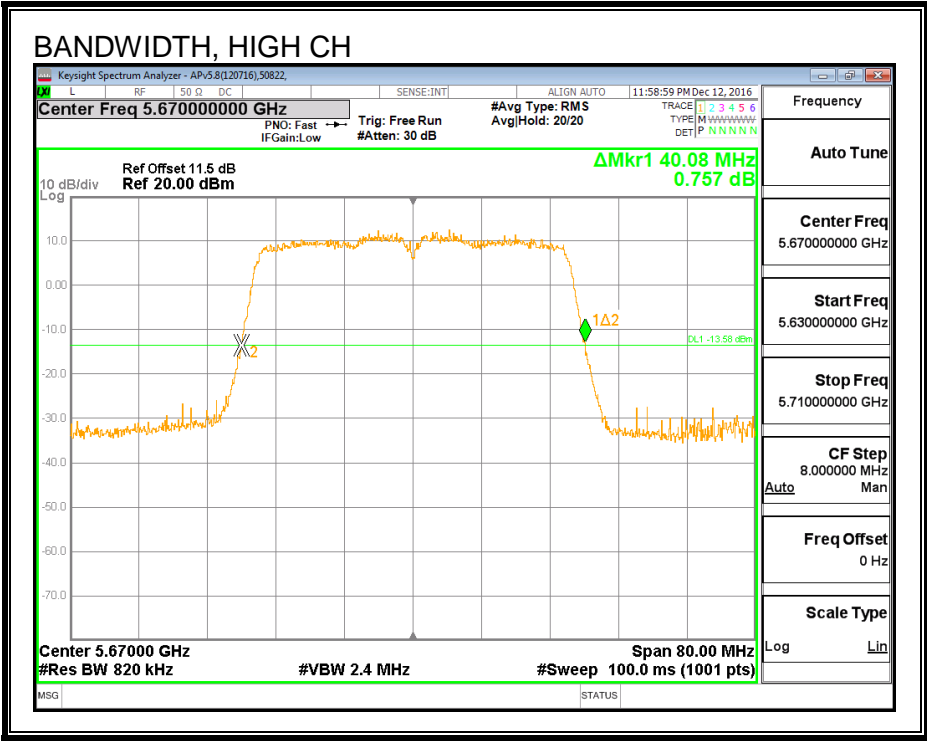
26 dB BANDWIDTH, ANTENNA A





26 dB BANDWIDTH, ANTENNA B





8.36.2. 99% BANDWIDTH

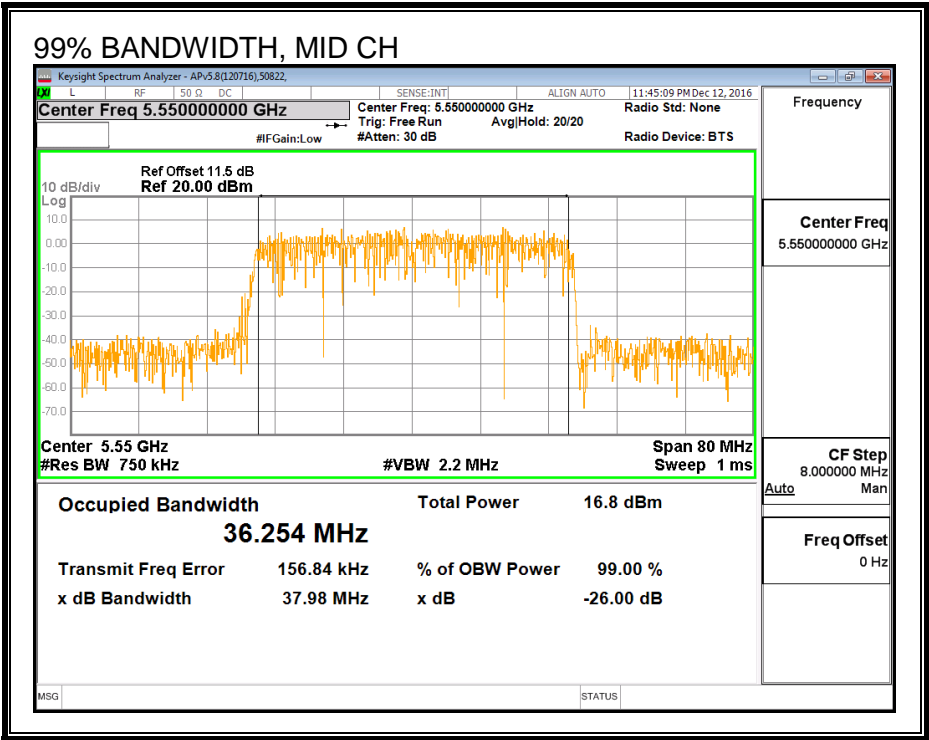
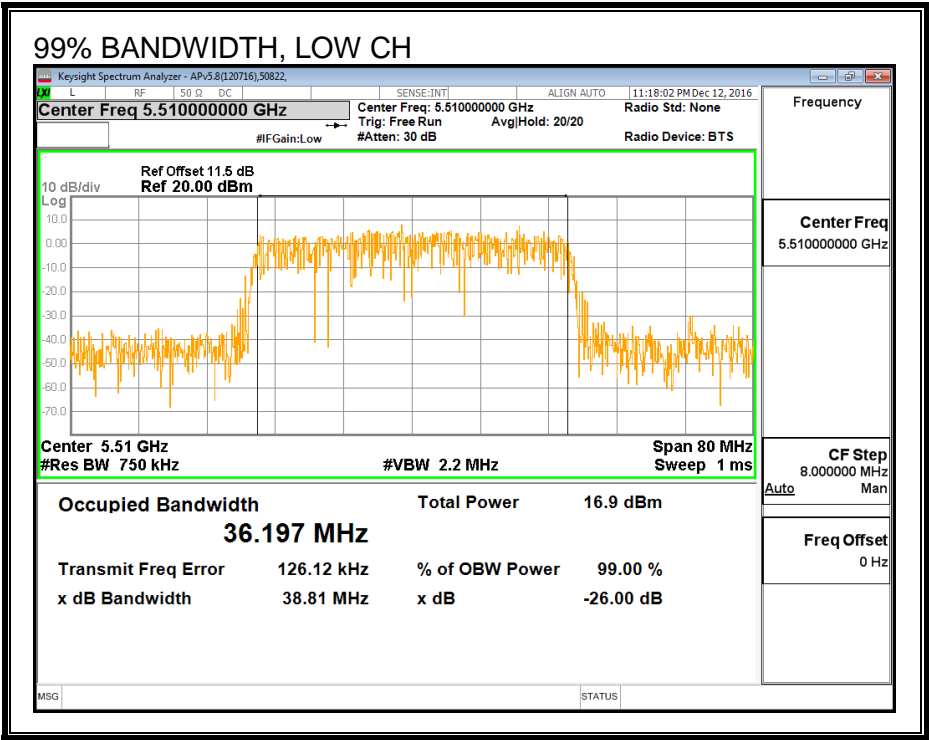
LIMITS

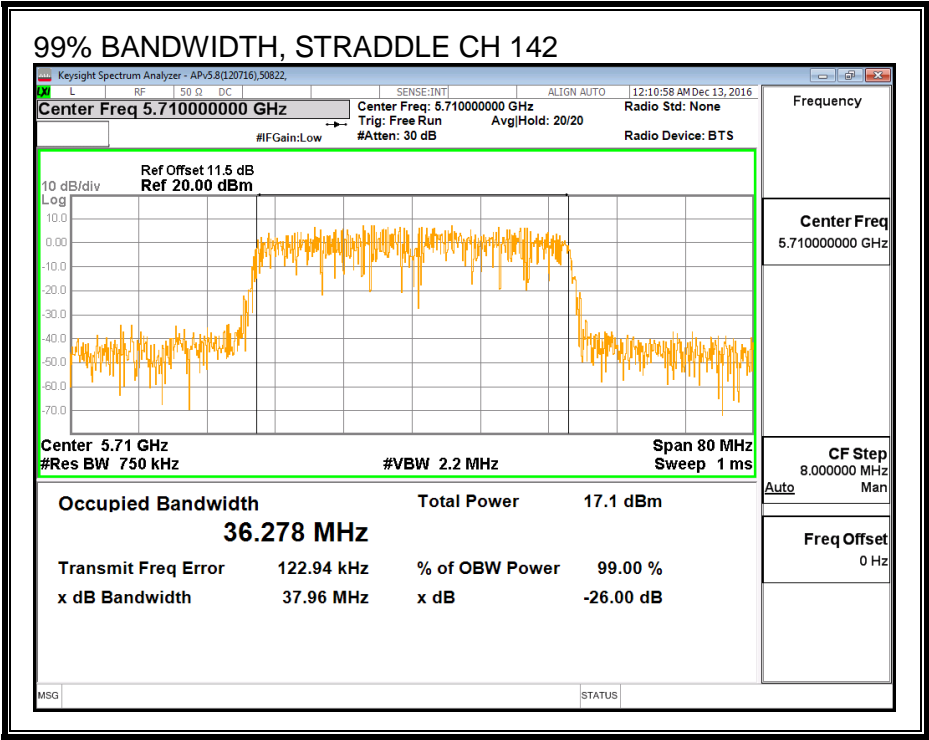
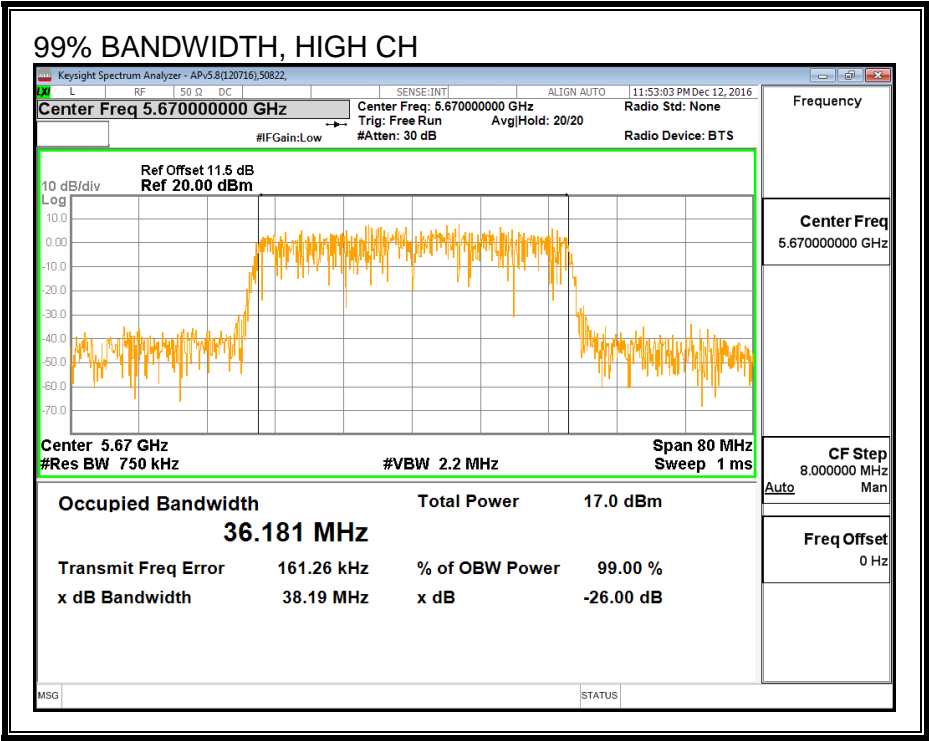
None; for reporting purposes only.

RESULTS

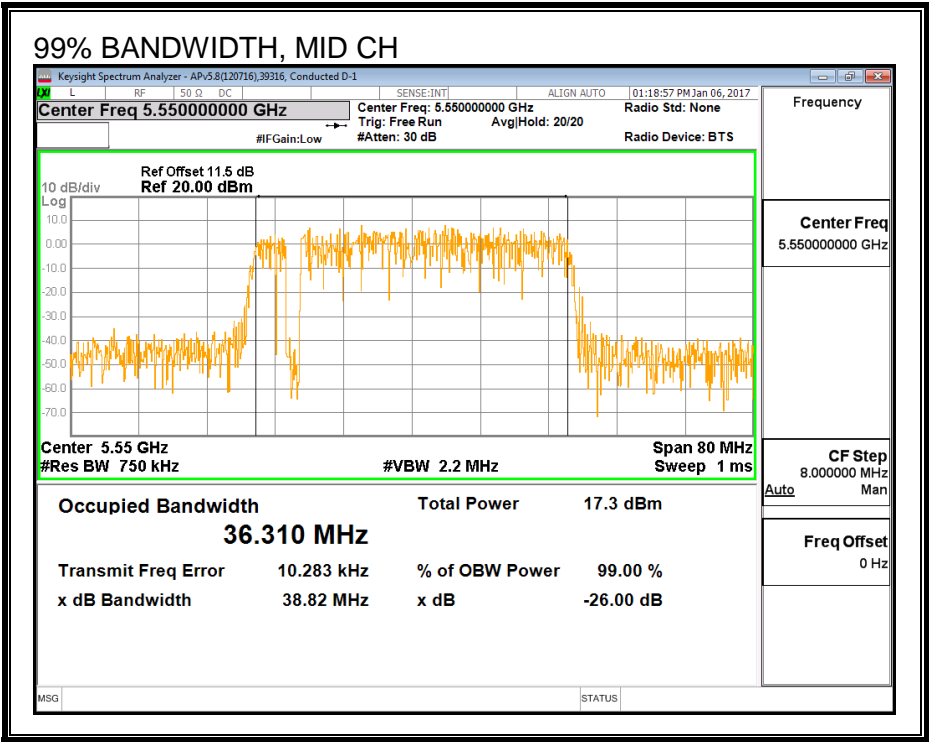
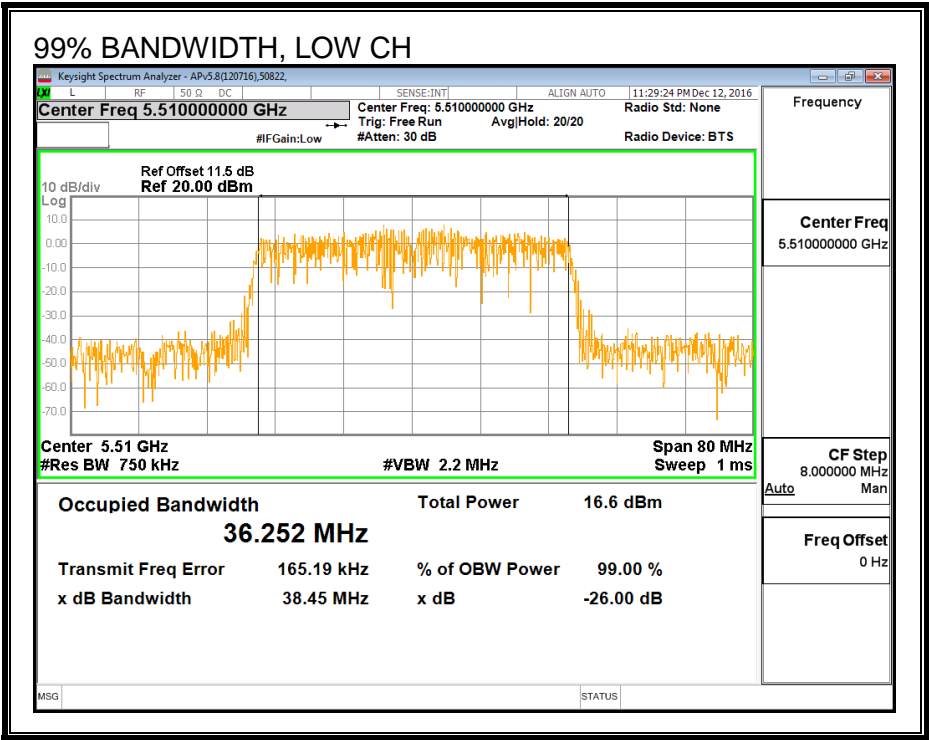
Channel	Frequency (MHz)	99% BW Ant A (MHz)	99% BW Ant B (MHz)
Low	5510	36.197	36.252
Mid	5550	36.254	36.310
High	5670	36.181	36.198
142	5710	36.278	36.323

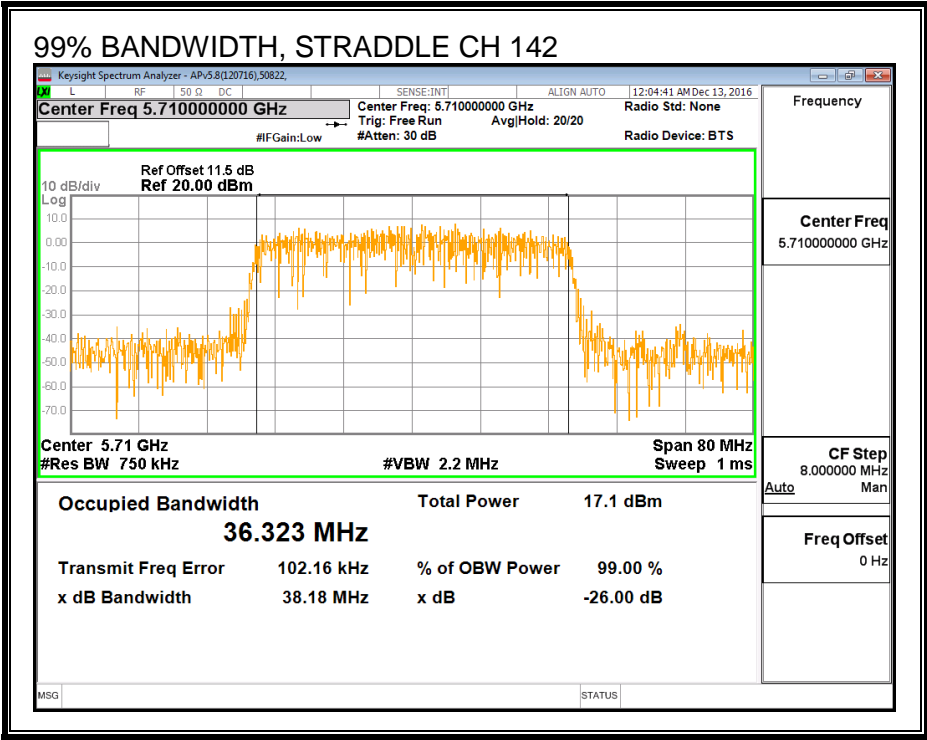
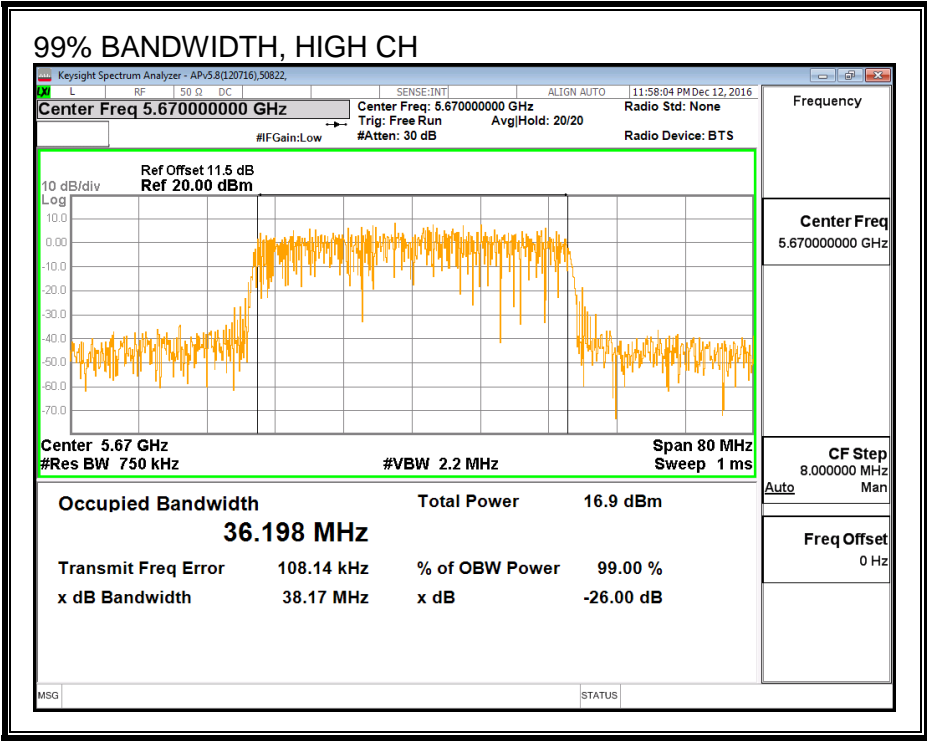
99% BANDWIDTH, ANTENNA A





99% BANDWIDTH, ANTENNA B





8.36.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43578	Date:	1/21/17
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Average Power Results

Channel	Frequency (MHz)	Ant A Power (dBm)	Ant B Power (dBm)	Total Power (dBm)
Low	5510	13.47	13.48	16.49
Mid	5550	14.95	14.97	17.97
High	5670	14.44	14.45	17.46
142	5710	14.91	14.98	17.96

8.36.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 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 maximum power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Ant A Antenna Gain (dBi)	Ant B Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.77	3.10	3.45

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Ant A Antenna Gain (dBi)	Ant B Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.77	3.10	6.45

RESULTS

ID:	43578	Date:	1/21/17
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Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	40.16	36.197	3.45	6.45	24.00	10.55
Mid	5550	40.16	36.254	3.45	6.45	24.00	10.55
High	5670	40.08	36.181	3.45	6.45	24.00	10.55

Duty Cycle CF (dB)	0.11	Included in Calculations of Corr'd PSD
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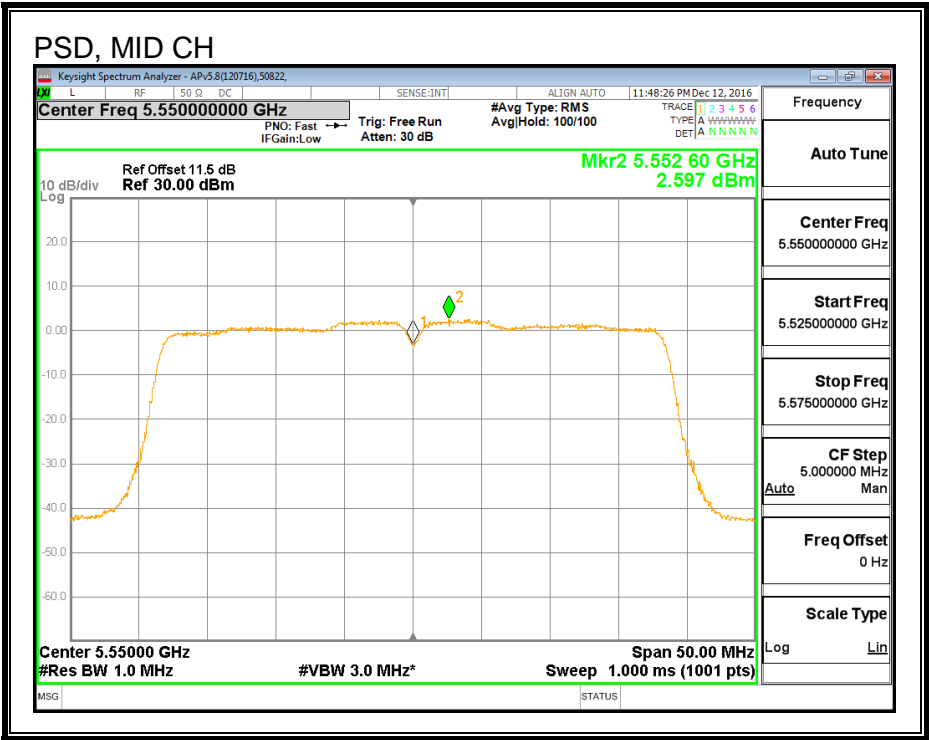
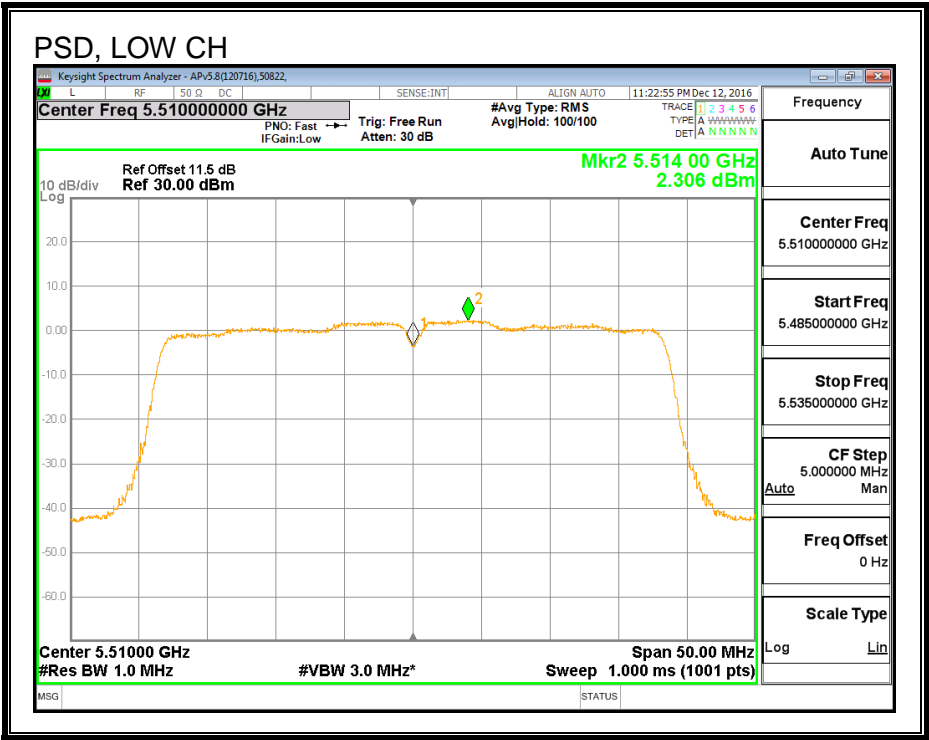
Output Power Results

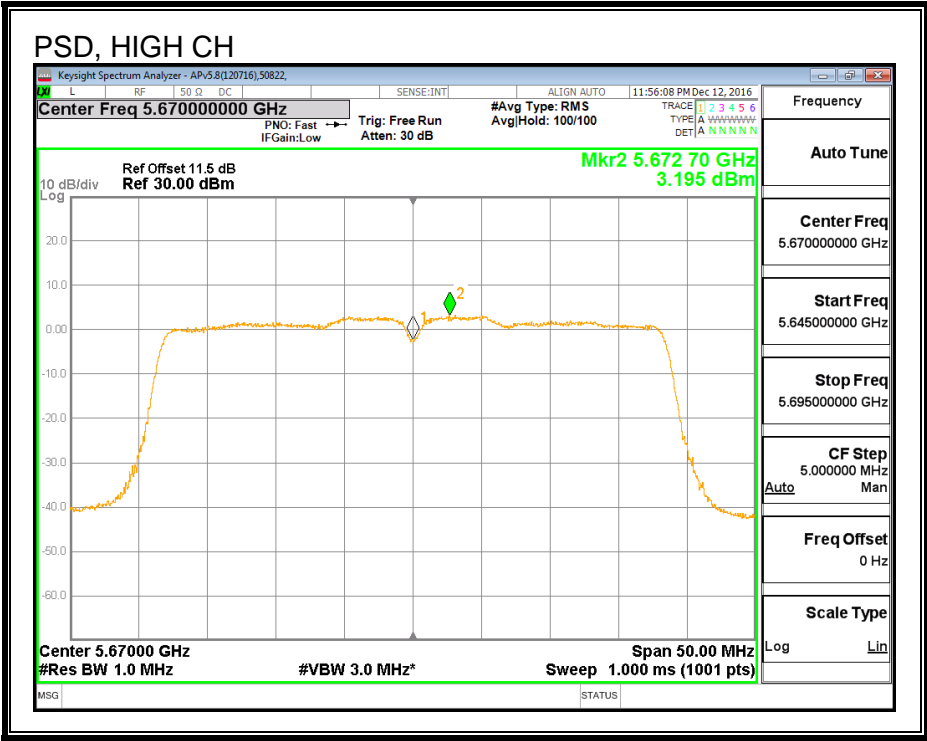
Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	13.47	13.48	16.49	24.00	-7.51
Mid	5550	14.95	14.97	17.97	24.00	-6.03
High	5670	14.44	14.45	17.46	24.00	-6.54

PSD Results

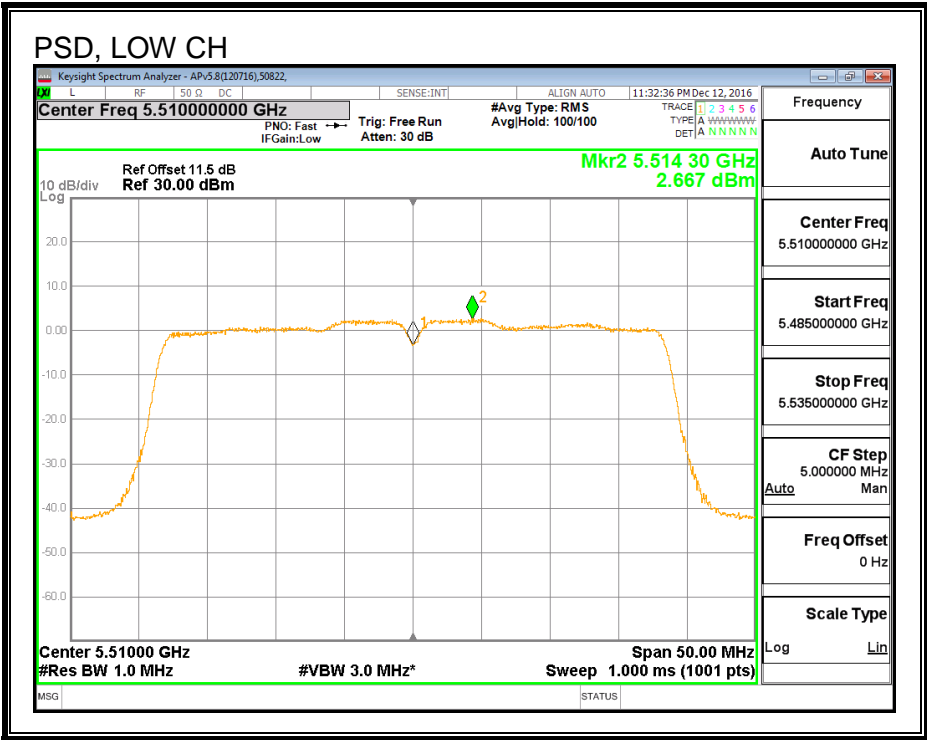
Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	2.31	2.67	5.61	10.55	-4.94
Mid	5550	2.60	2.67	5.75	10.55	-4.80
High	5670	3.20	3.10	6.27	10.55	-4.28

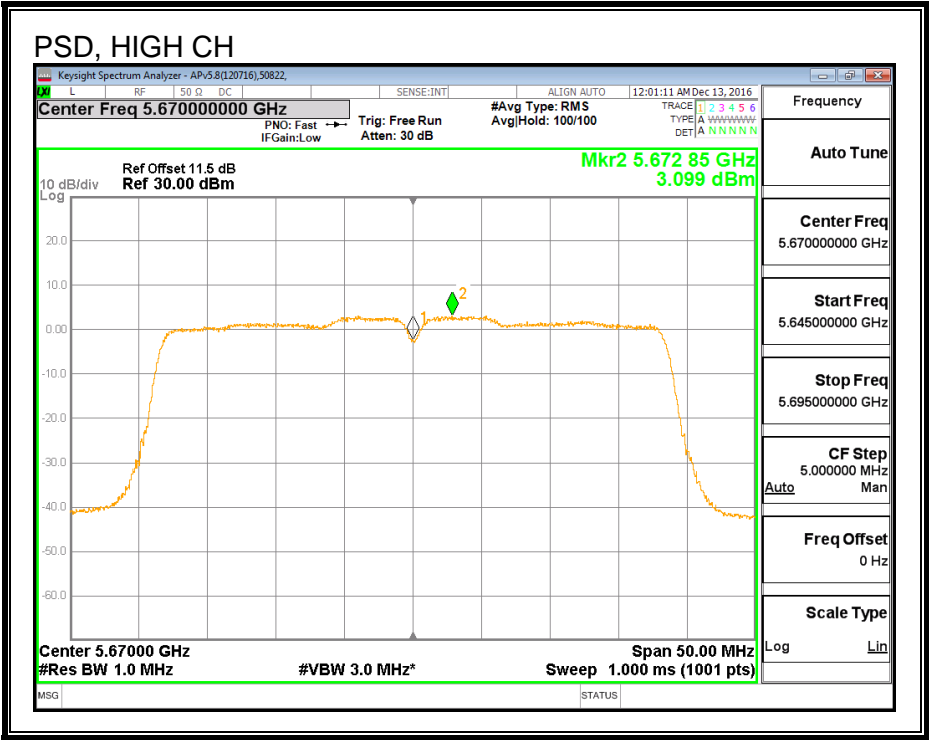
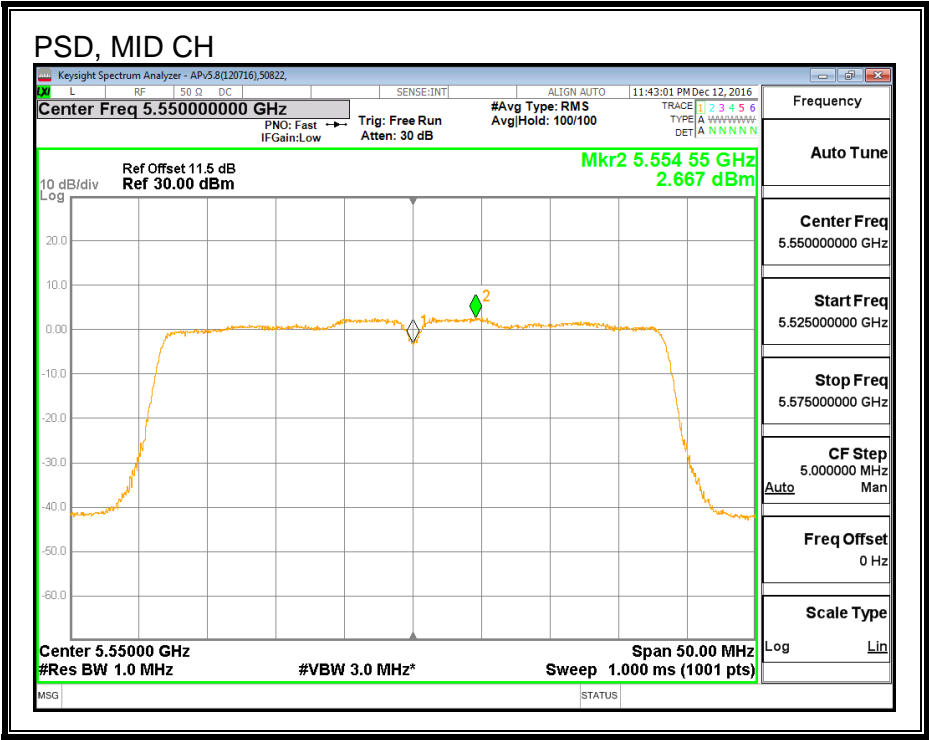
PSD, ANTENNA A





PSD, ANTENNA B





8.37. 802.11ac VHT40 2Tx (ANTENNA A + ANTENNA B) CDD STRADDLE CHANNEL 142 RESULTS

8.37.1. OUTPUT POWER AND PSD

UNII-2C BAND

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)
142	5710	35.16	3.45	6.45	24.00	10.55

Duty Cycle CF (dB)	0.11	Included in Calculations of Corr'd Power & PSD
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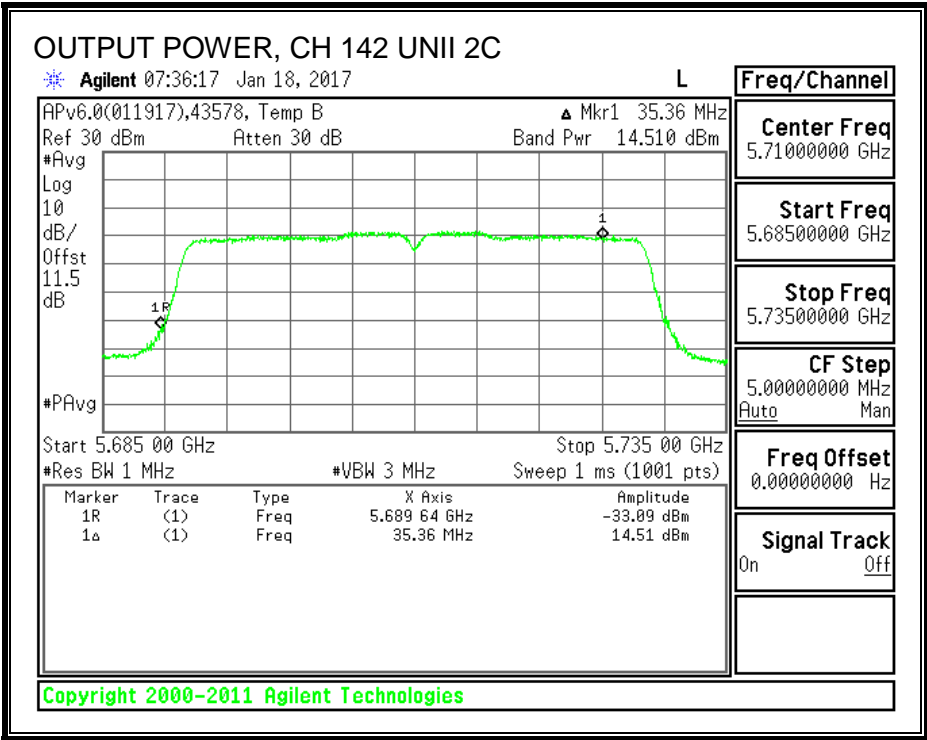
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	14.51	14.60	17.68	24.00	-6.32

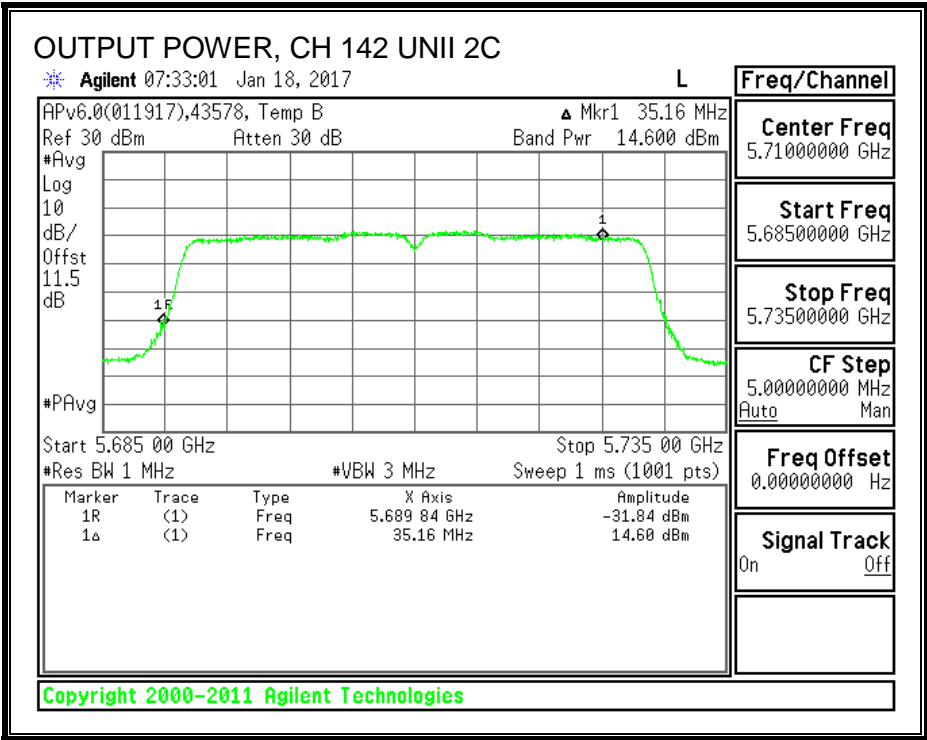
PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	1.58	1.67	4.74	10.55	-5.81

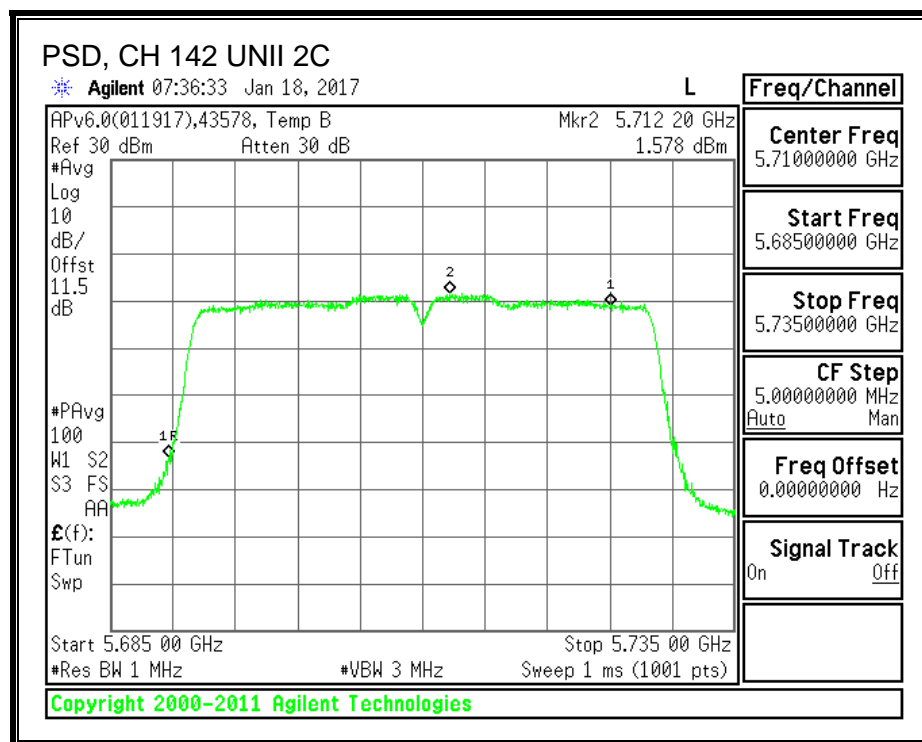
OUTPUT POWER, ANTENNA A



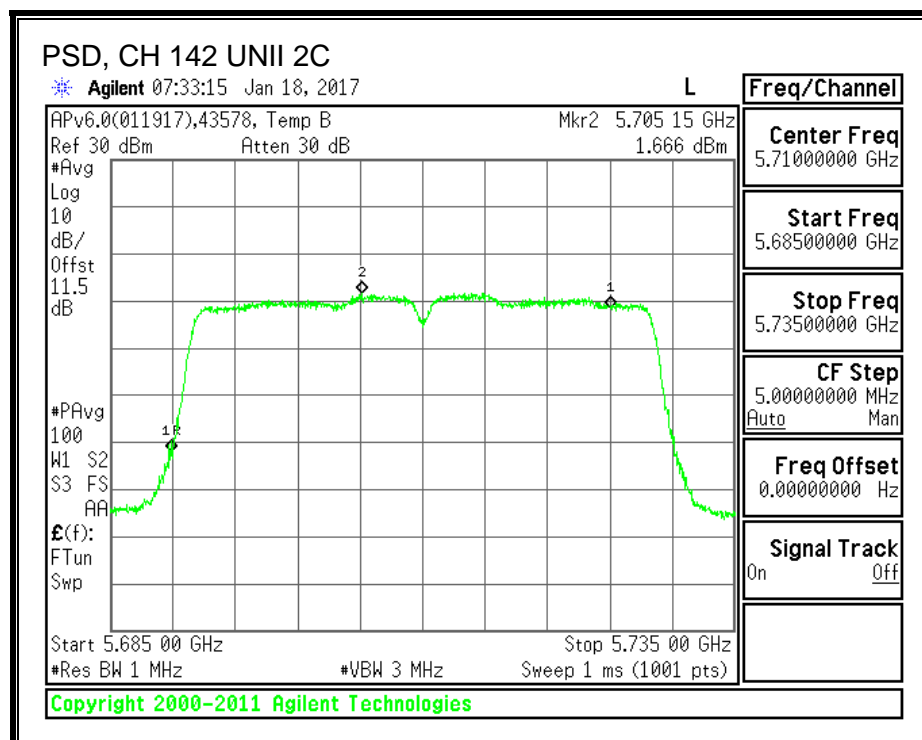
OUTPUT POWER, ANTENNA B



PSD, ANTENNA A



PSD, ANTENNA B



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain For Power (dBi)	Directional Gain For PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	5.16	3.29	6.30	30.00	29.70

Duty Cycle CF (dB)	0.11	Included in Calculations of Corr'd Power & PSD
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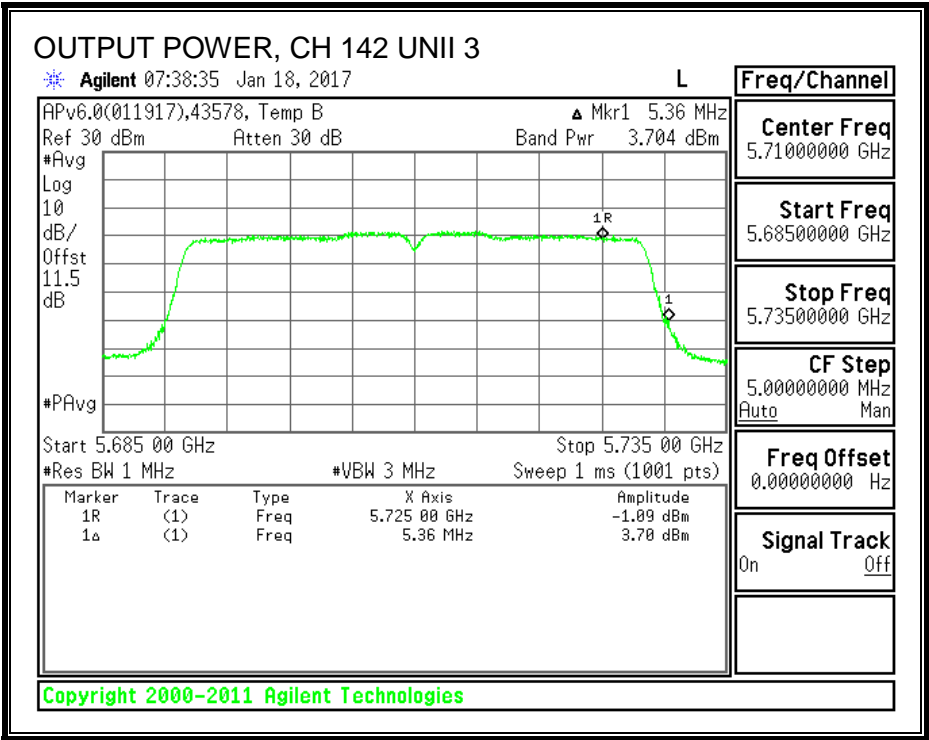
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	3.70	3.81	6.88	30.00	-23.12

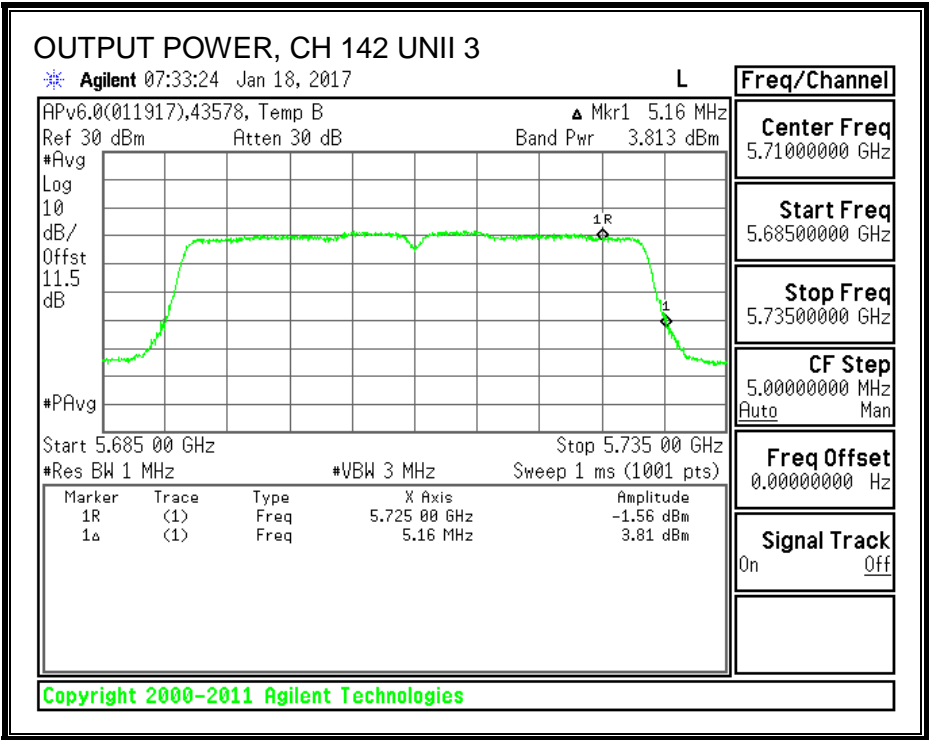
PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-3.32	-3.22	-0.15	29.70	-29.85

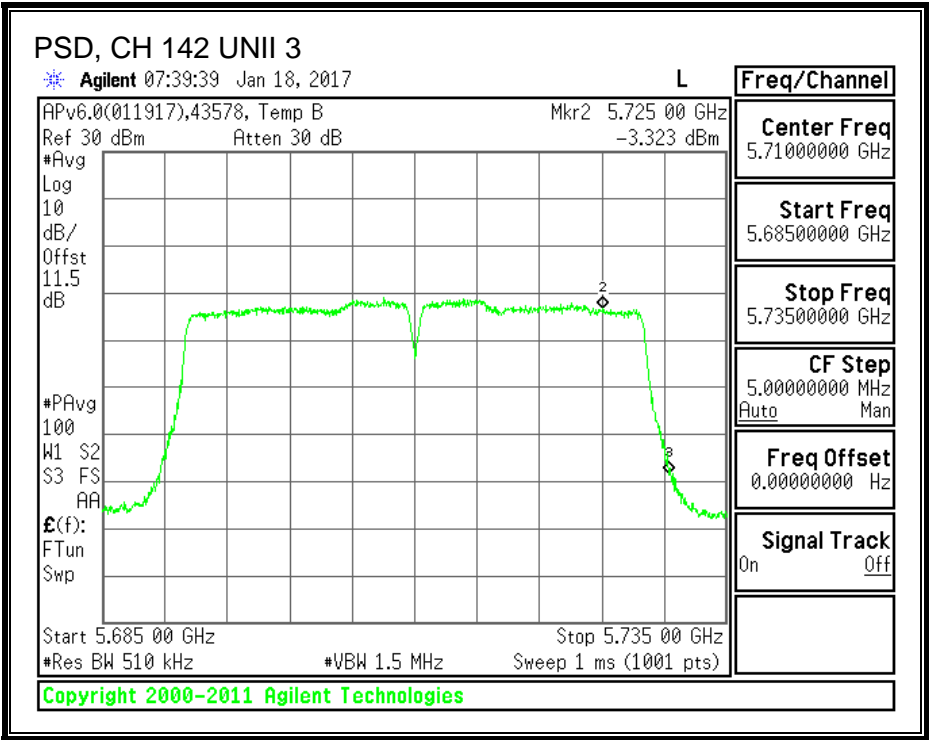
OUTPUT POWER, ANTENNA A



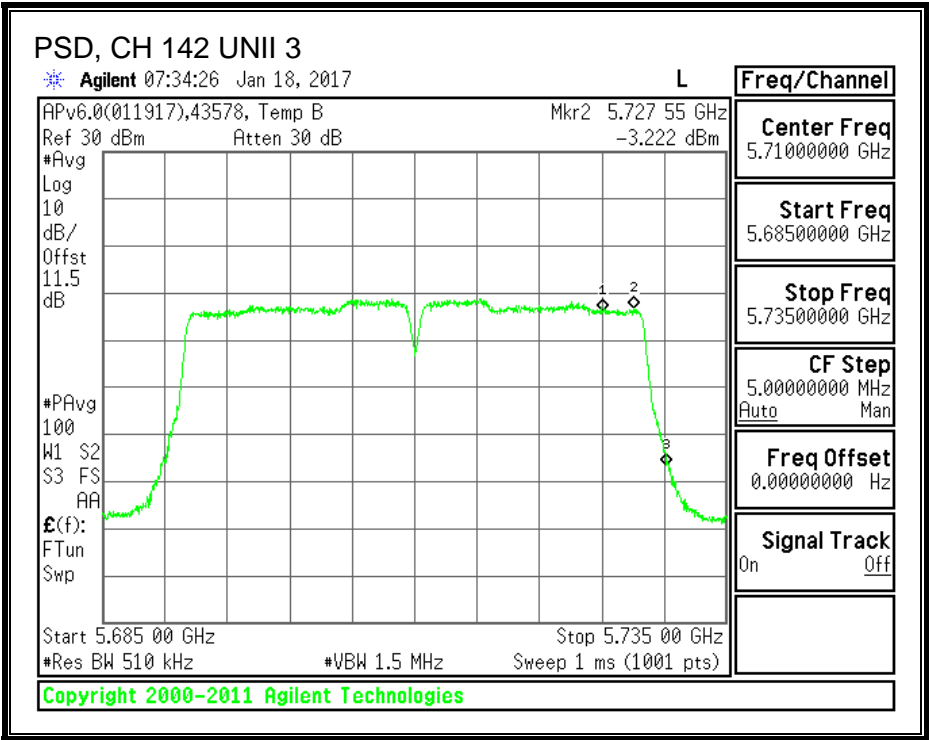
OUTPUT POWER, ANTENNA B



PSD, ANTENNA A



PSD, ANTENNA B



8.37.2. 6 dB BBANDWIDTH

LIMITS

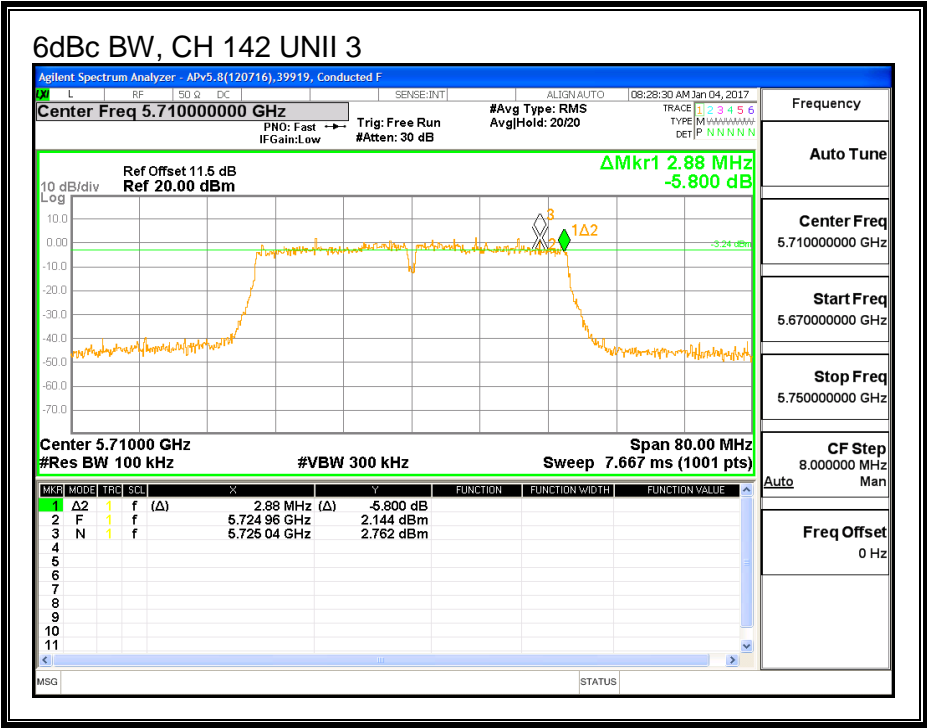
FCC §15.407 (e)

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

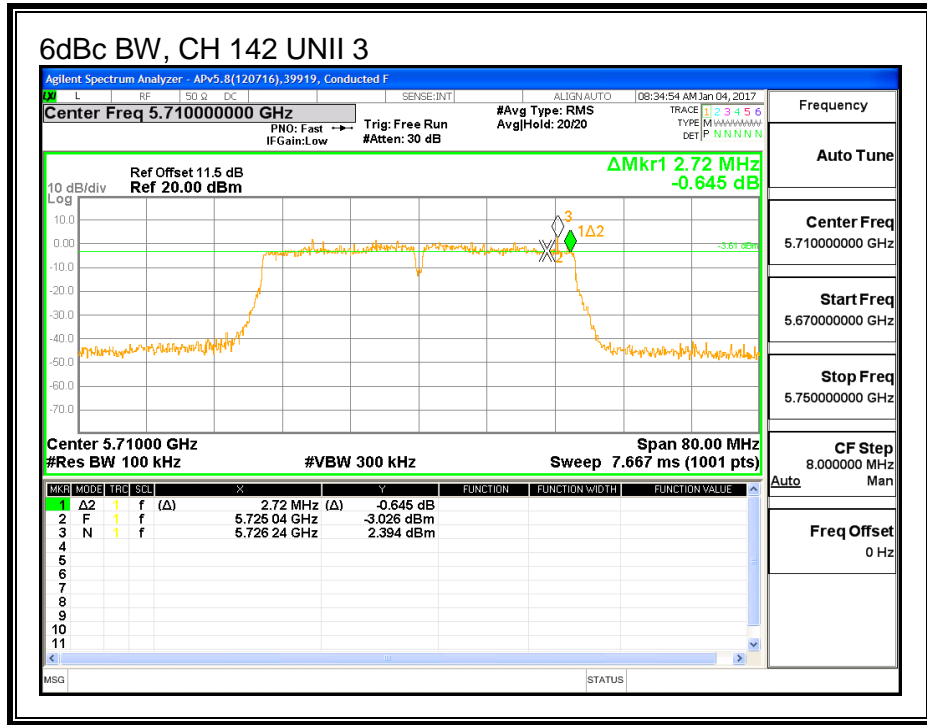
RESULTS

Channel	Frequency (MHz)	6 dB BW Ant A (MHz)	6 dB BW Ant B (MHz)
142	5710	2.88	2.72

ANTENNA A



ANTENNA B



8.38. 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) STBC MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND

8.39. 802.11ac VHT80 ANTENNA A MODE IN THE 5.6 GHz BAND

8.39.1. 26 dB BANDWIDTH

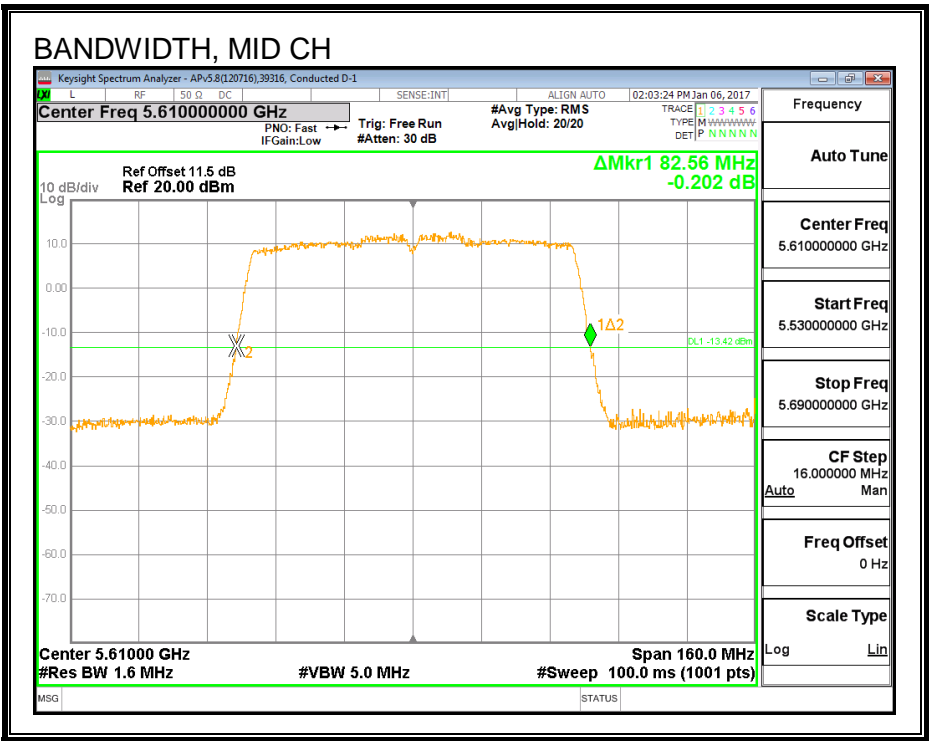
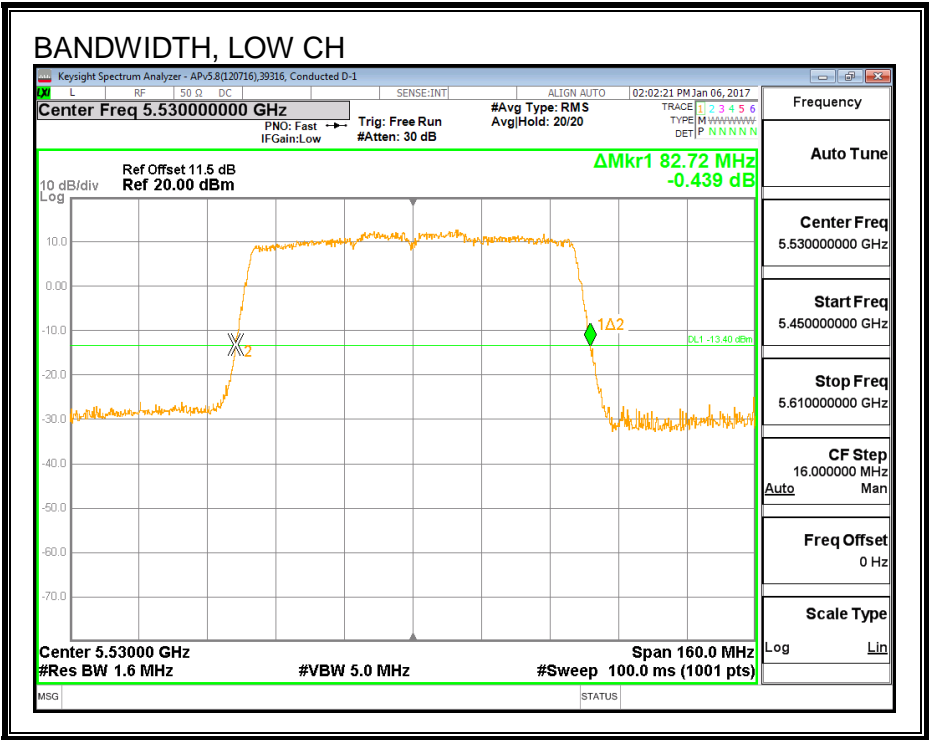
LIMITS

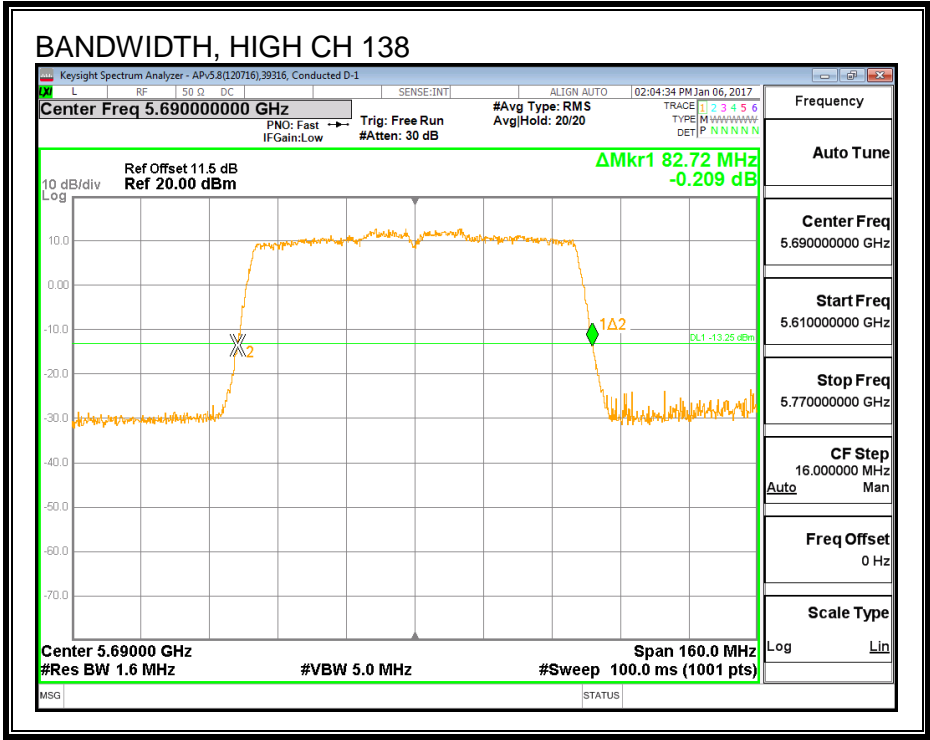
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.72
Mid	5610	82.56
High	5690	82.72

26 dB BANDWIDTH





8.39.2. 99% BANDWIDTH

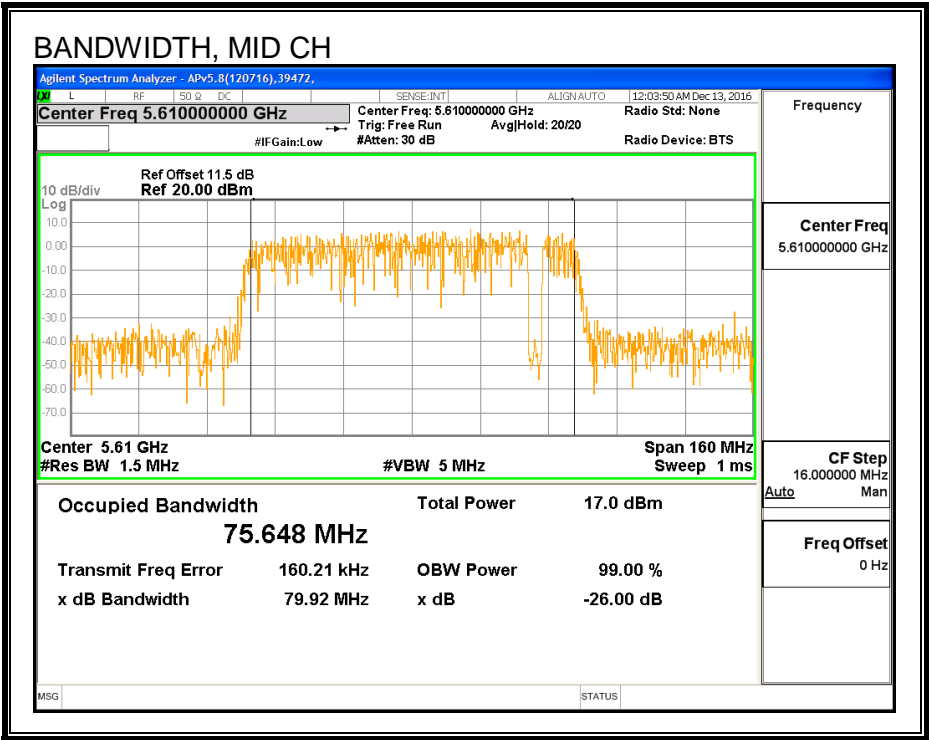
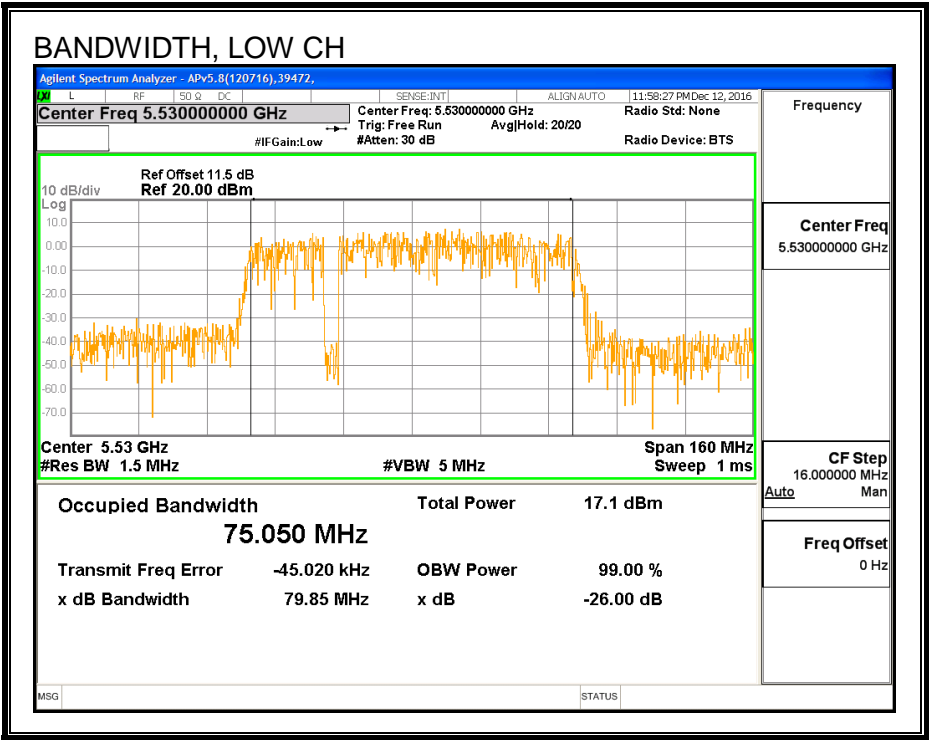
LIMITS

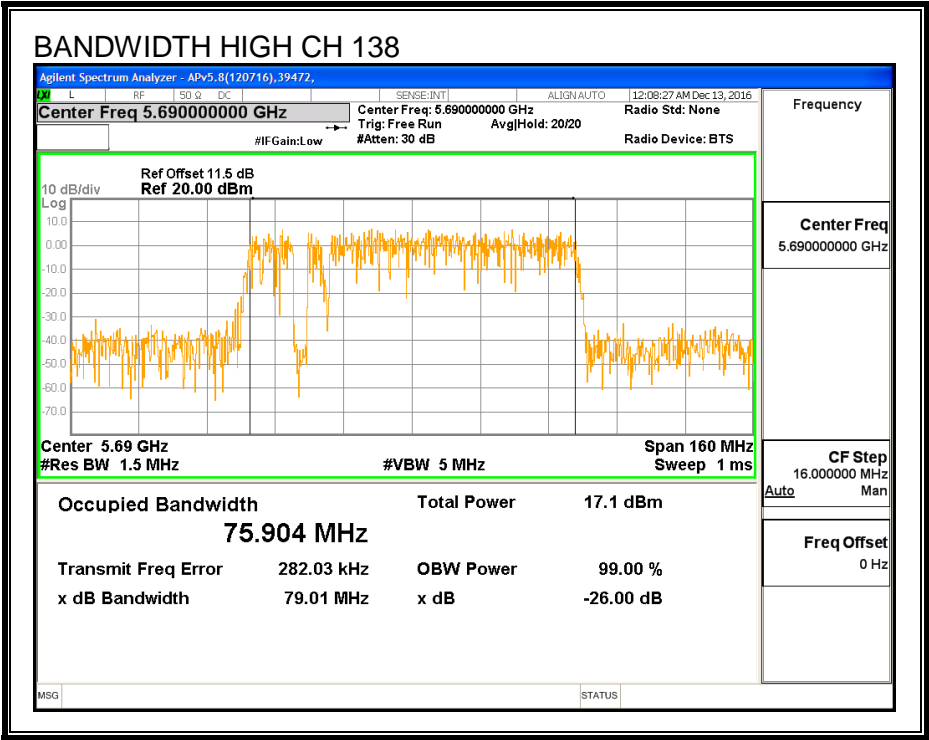
None; for reporting purposes only.

RESULTS

Frequency (MHz)	99% Bandwidth (MHz)
5530	75.050
5610	75.648
5690	75.904

99% BANDWIDTH





8.39.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43578	Date:	1/21/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5530	13.39
Mid	5610	14.89
High	5690	14.91

8.39.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 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 maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	43578	Date:	1/21/17
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Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.72	75.050	3.77	24.00	11.00
Mid	5610	82.56	75.648	3.77	24.00	11.00

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd PSD
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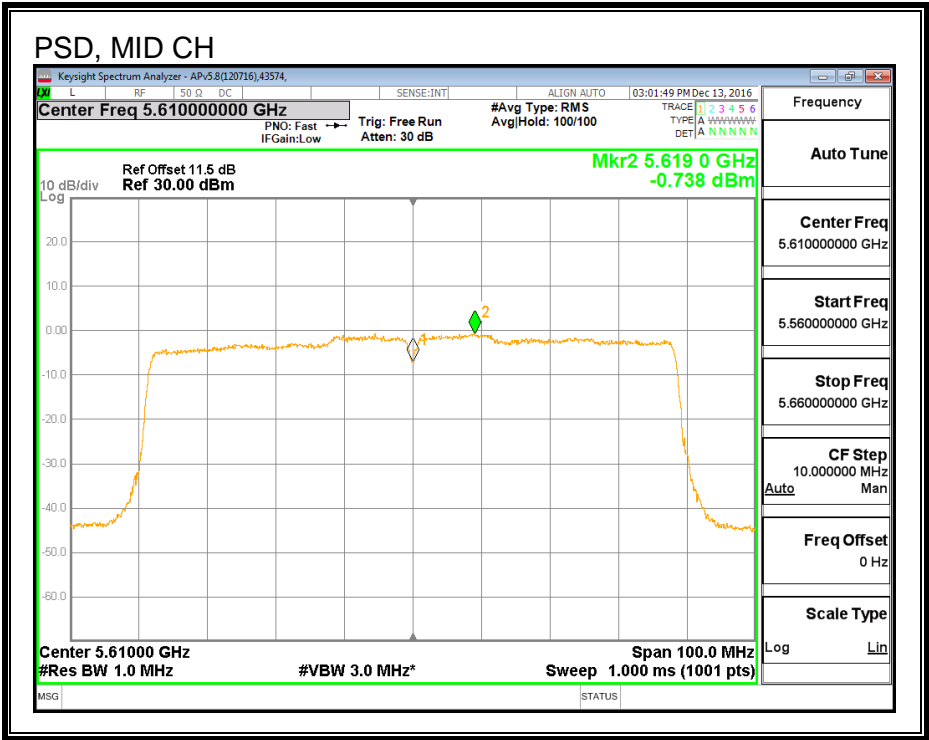
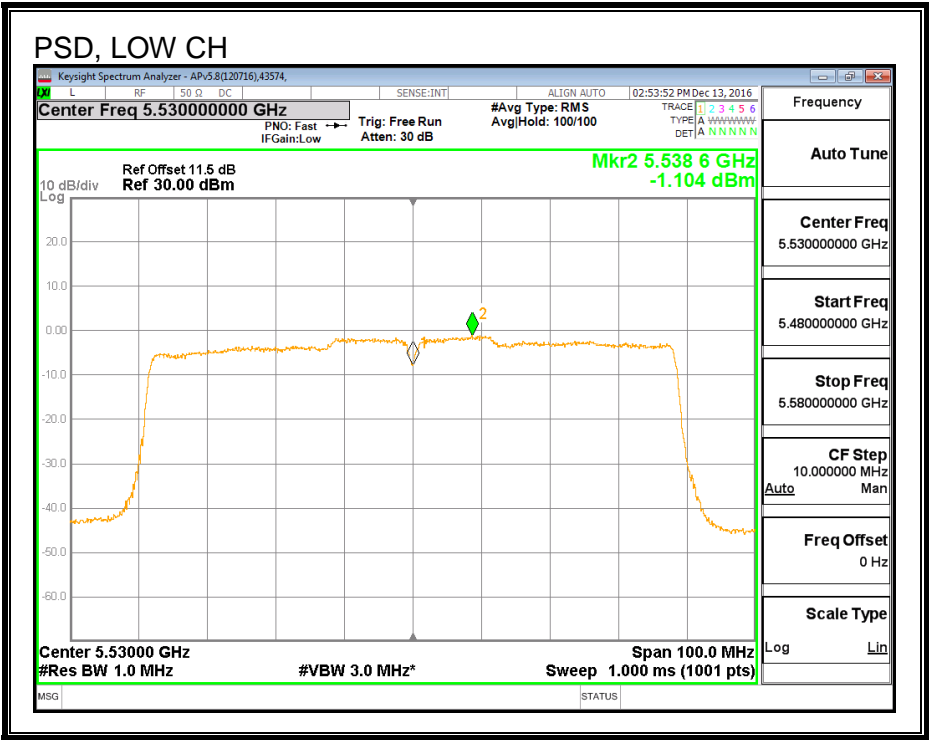
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	13.39	13.39	24.00	-10.61
Mid	5610	14.89	14.89	24.00	-9.11

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-1.10	-0.90	11.00	-11.90
Mid	5610	-0.74	-0.54	11.00	-11.54

PSD



8.39.5. STRADDLE CHANNEL 138 RESULTS

8.39.6. OUTPUT POWER AND PSD

UNII-2C BAND

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)
138	5690	76.36	3.77	3.77	24.00	11.00

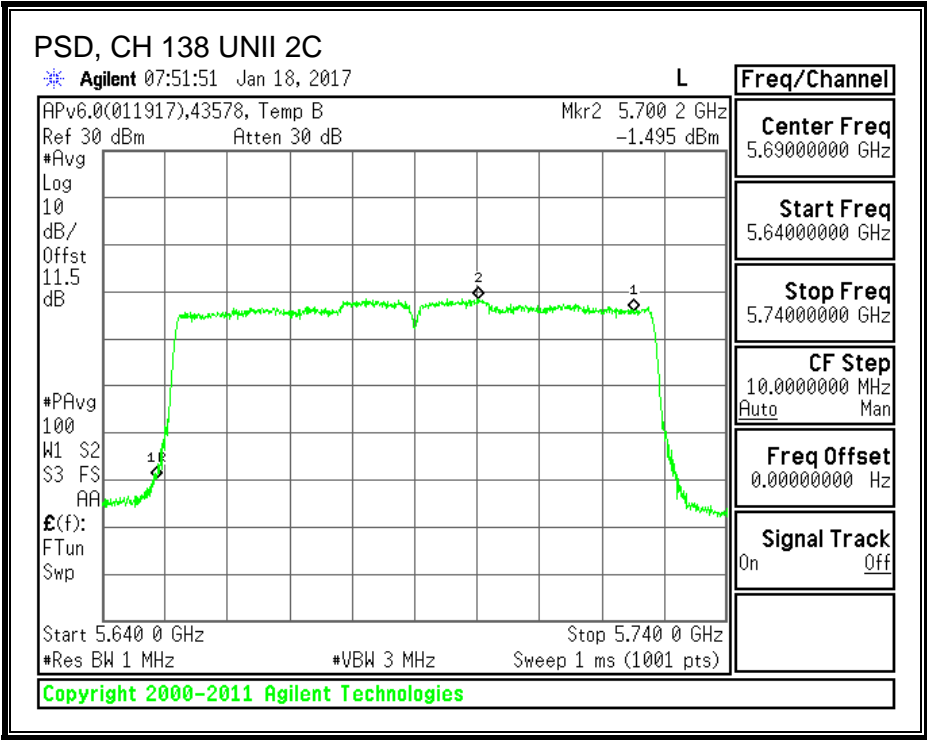
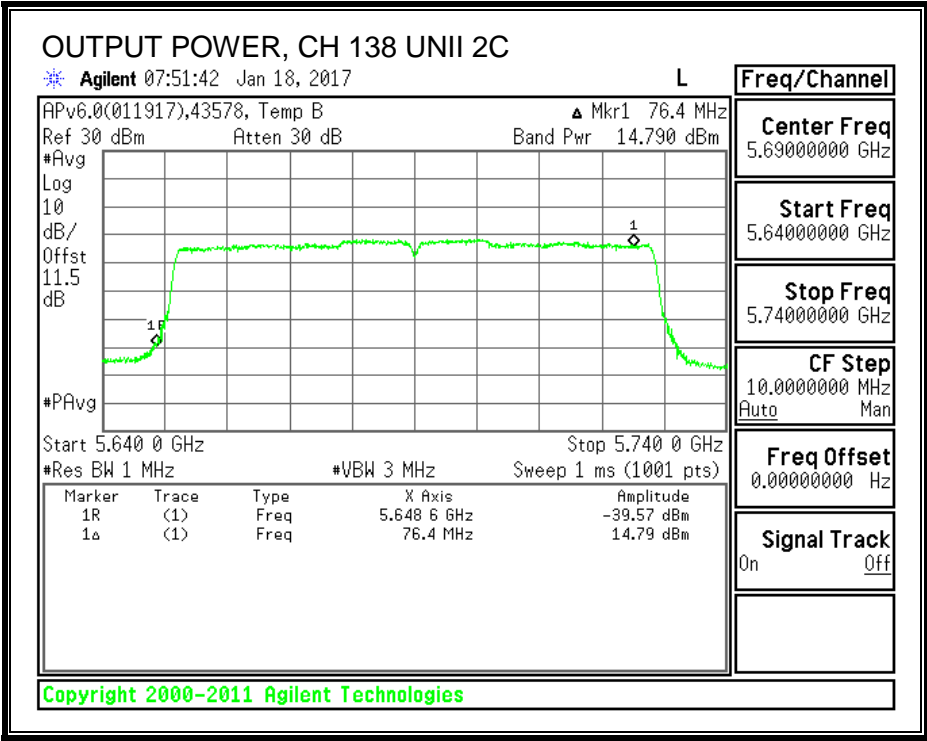
Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	14.79	14.99	24.00	-9.01

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-1.50	-1.30	11.00	-12.30



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.36	3.40	30.00	30.00

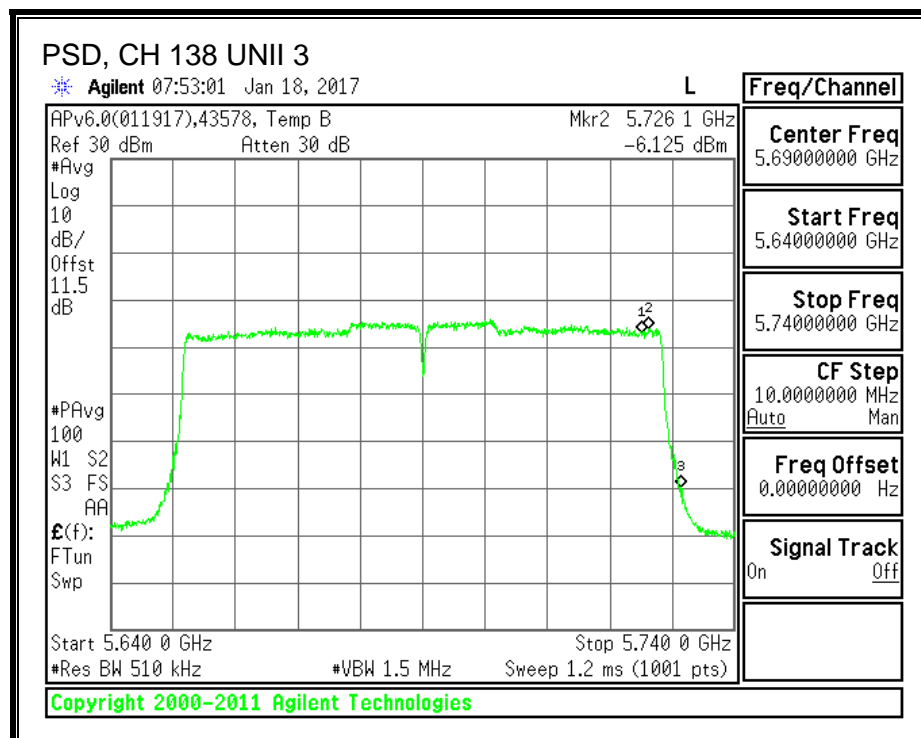
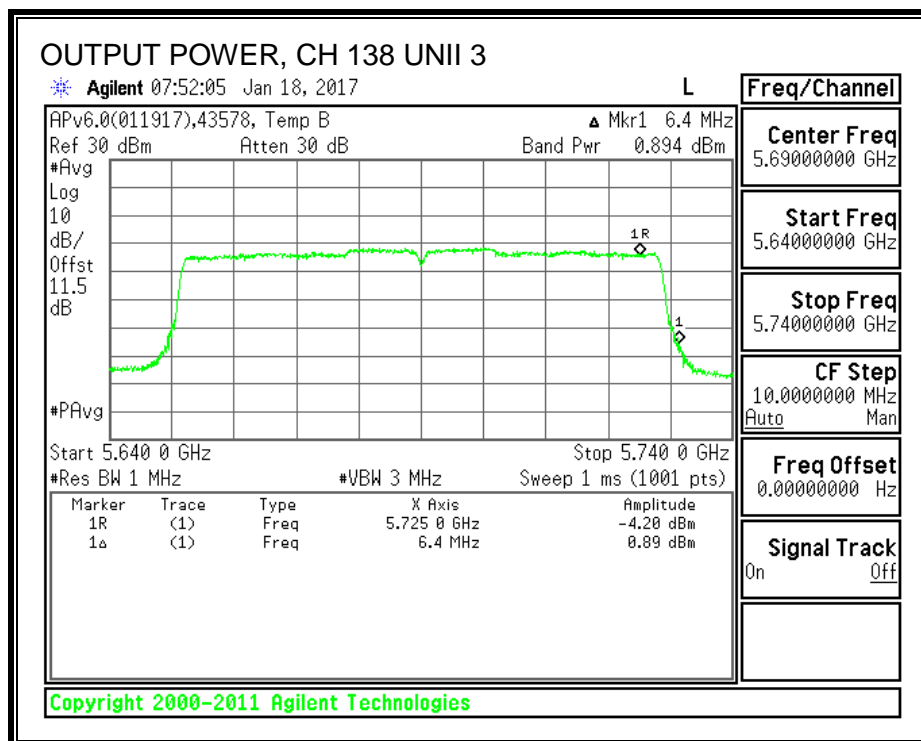
Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	0.89	1.09	30.00	-28.91

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-6.125	-5.925	30.00	-35.93



8.39.7. 6 dB BANDWIDTH

LIMITS

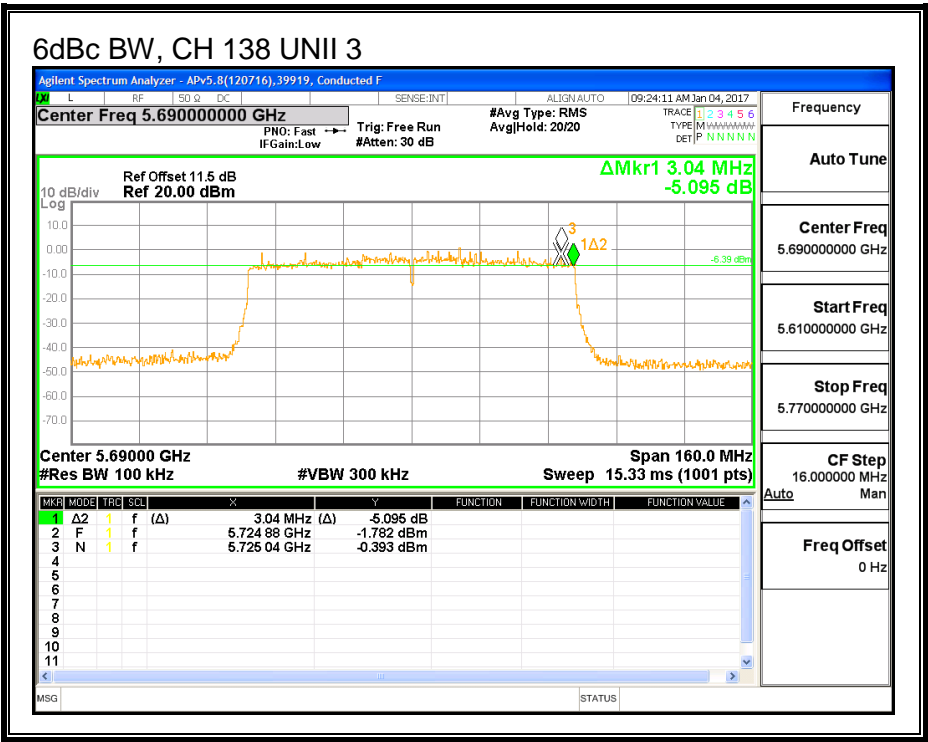
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	3.04

6 dB BANDWIDTH



8.40. 802.11ac VHT80 ANTENNA B MODE IN THE 5.6 GHz BAND

8.40.1. 26 dB BANDWIDTH

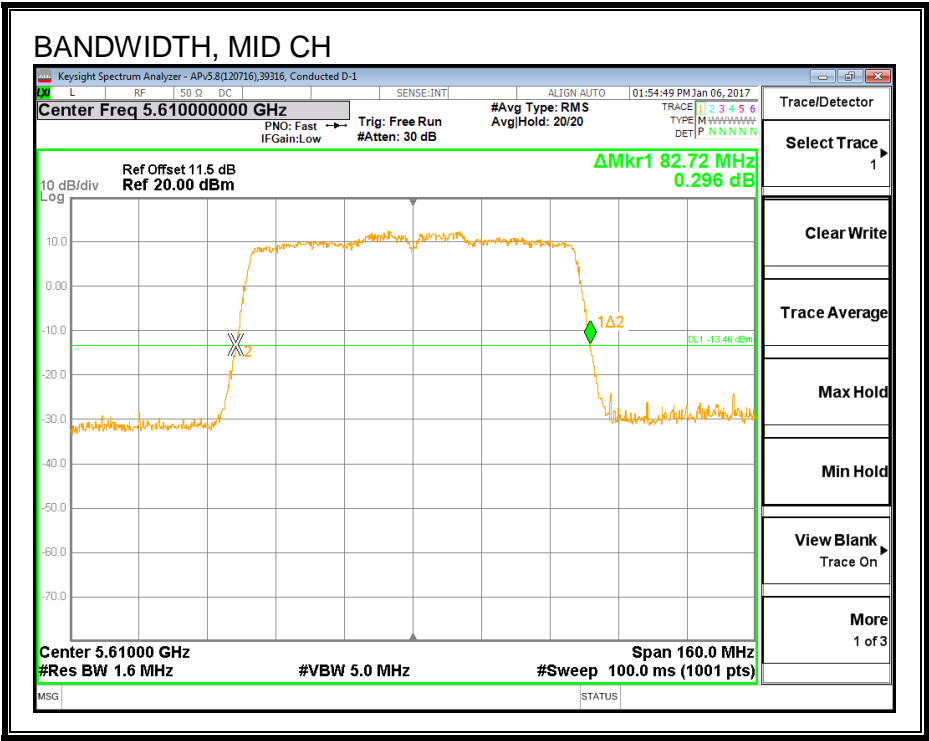
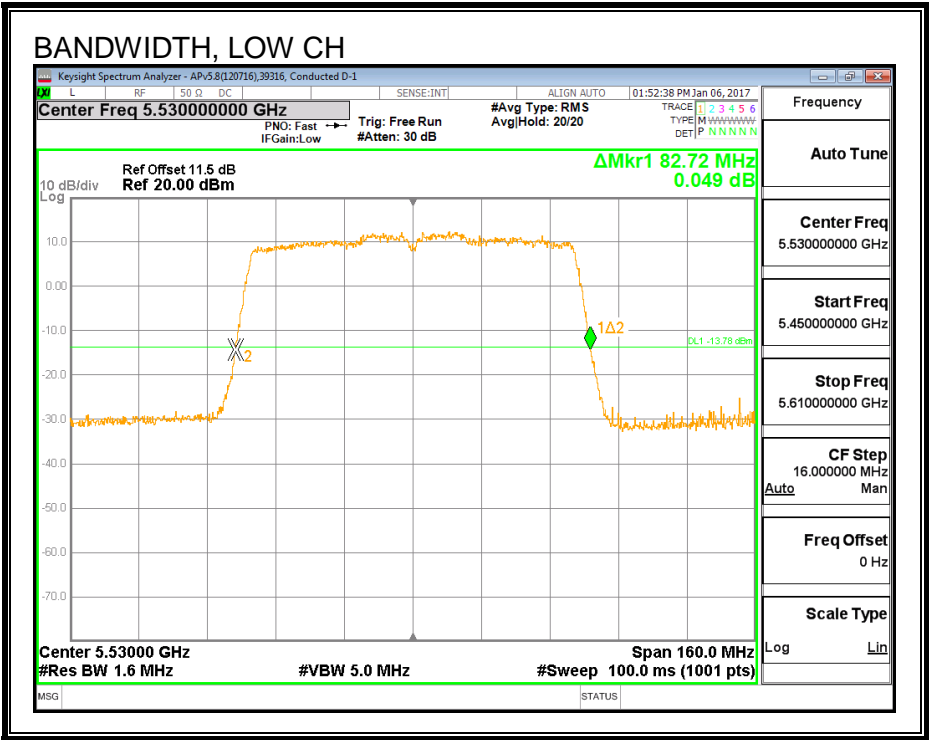
LIMITS

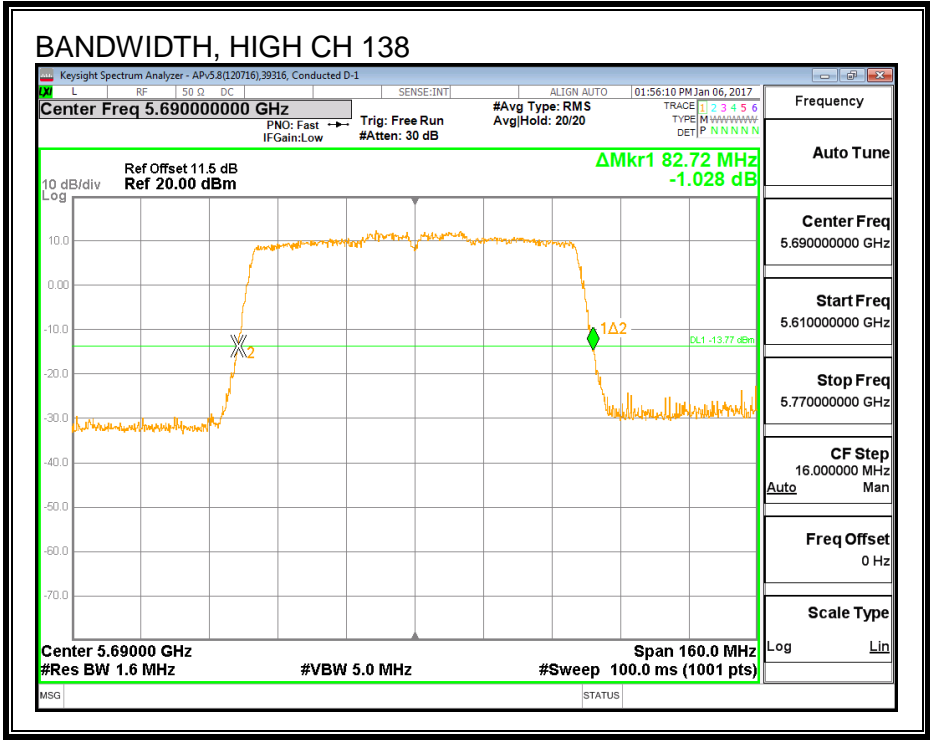
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.72
Mid	5610	82.72
High	5690	82.72

26 dB BANDWIDTH





8.40.2. 99% BANDWIDTH

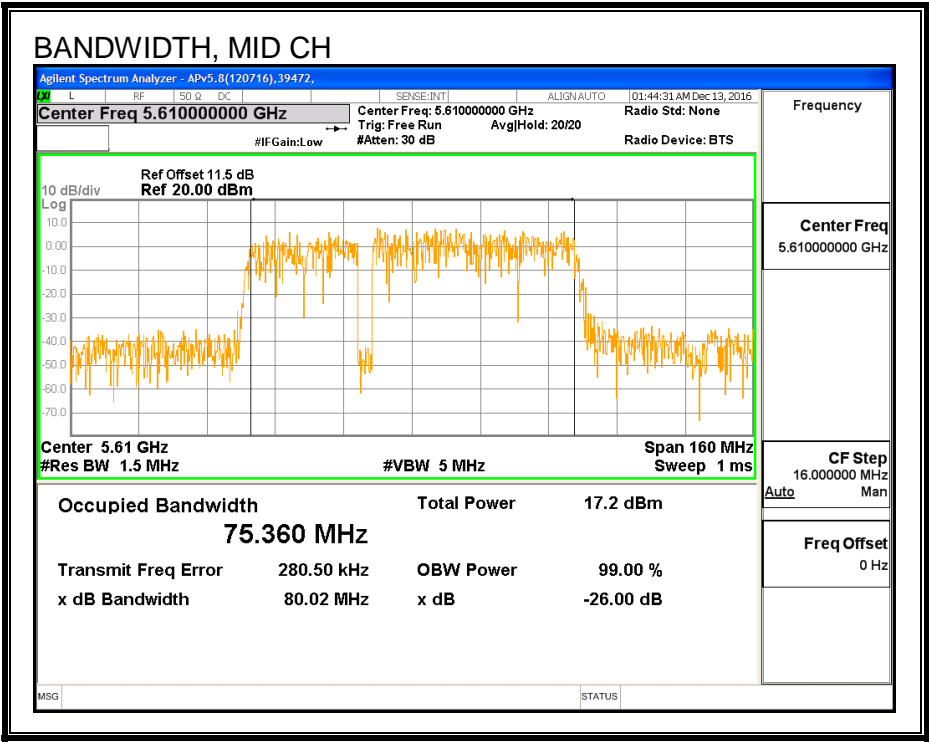
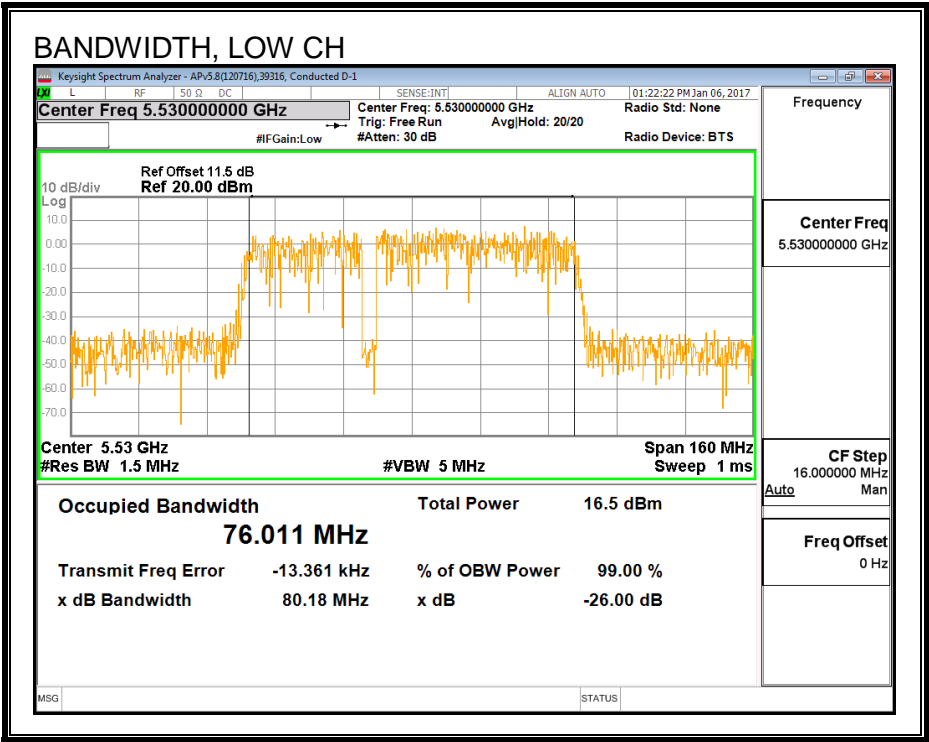
LIMITS

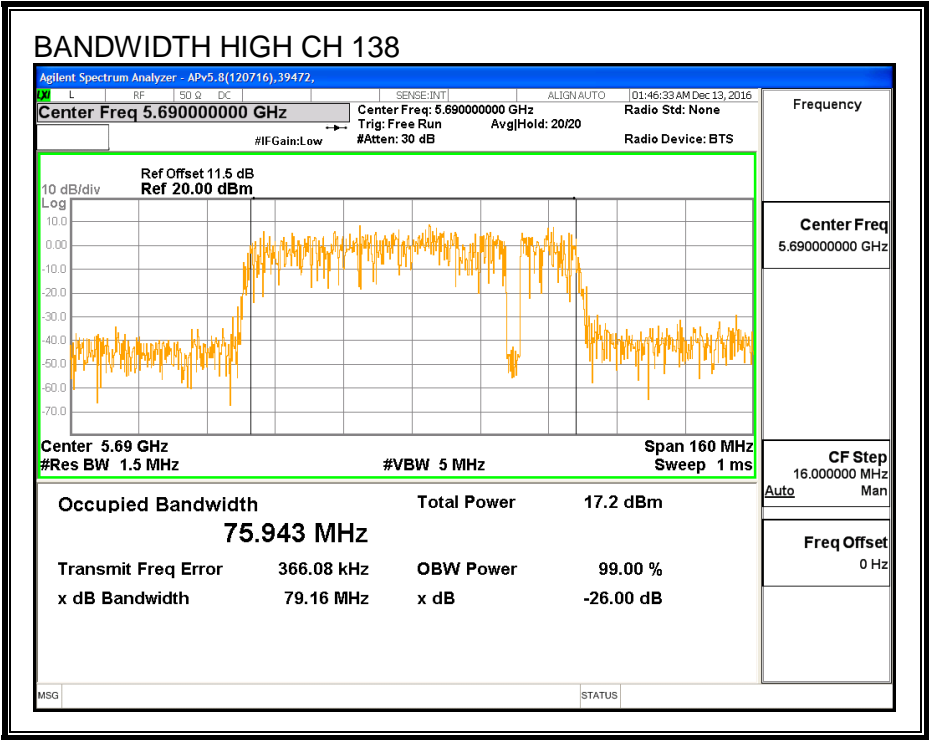
None; for reporting purposes only.

RESULTS

Frequency (MHz)	99% Bandwidth (MHz)
5530	76.011
5610	75.360
5690	75.943

99% BANDWIDTH





8.40.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43578	Date:	1/21/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5530	13.41
Mid	5610	14.92
High	5690	14.97

8.40.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 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 maximum power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	43578	Date:	1/21/17
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Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.72	76.011	3.10	24.00	11.00
Mid	5610	82.72	75.360	3.10	24.00	11.00

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd PSD
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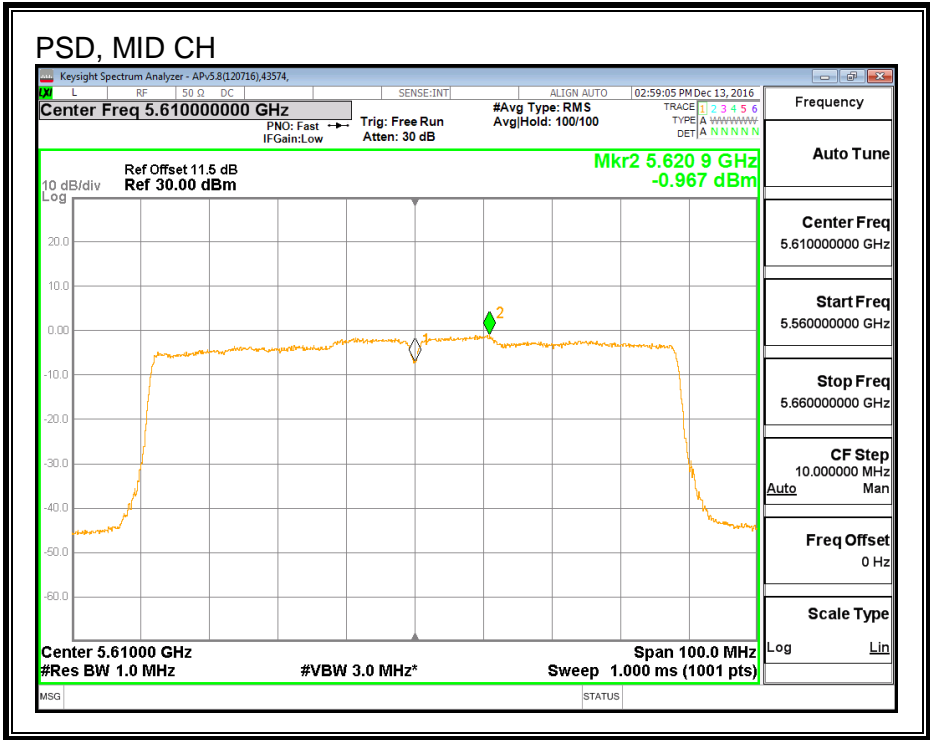
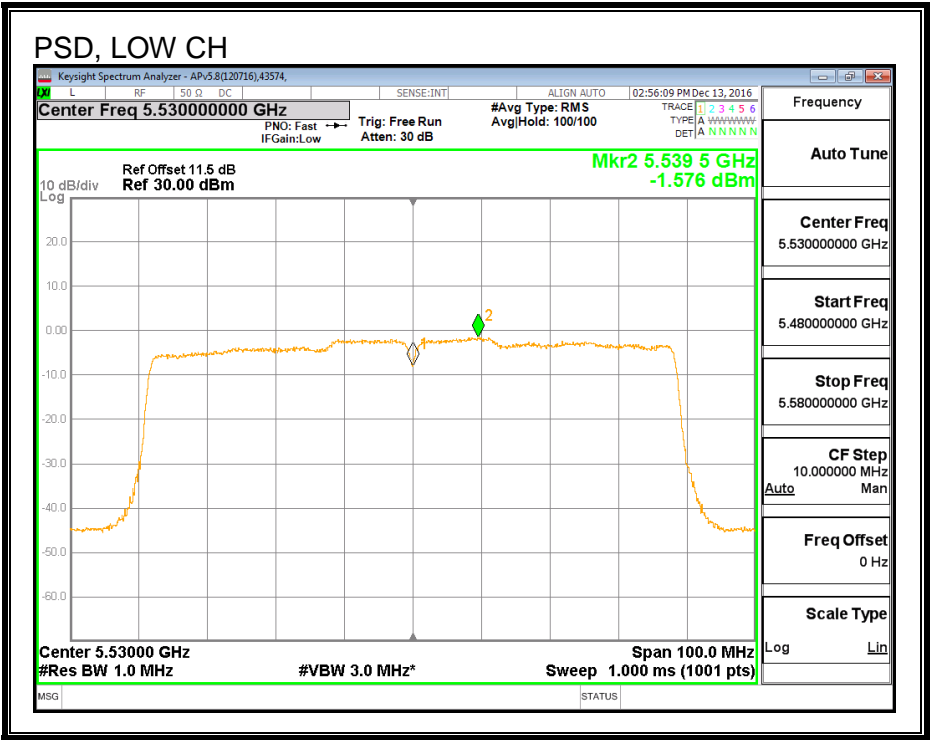
Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	13.41	13.41	24.00	-10.59
Mid	5610	14.92	14.92	24.00	-9.08

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-1.58	-1.38	11.00	-12.38
Mid	5610	-0.97	-0.77	11.00	-11.77

PSD



8.40.5. STRADDLE CHANNEL 138 RESULTS

8.40.6. OUTPUT POWER AND PSD

UNII-2C BAND

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)
138	5690	76.36	3.10	3.10	24.00	11.00

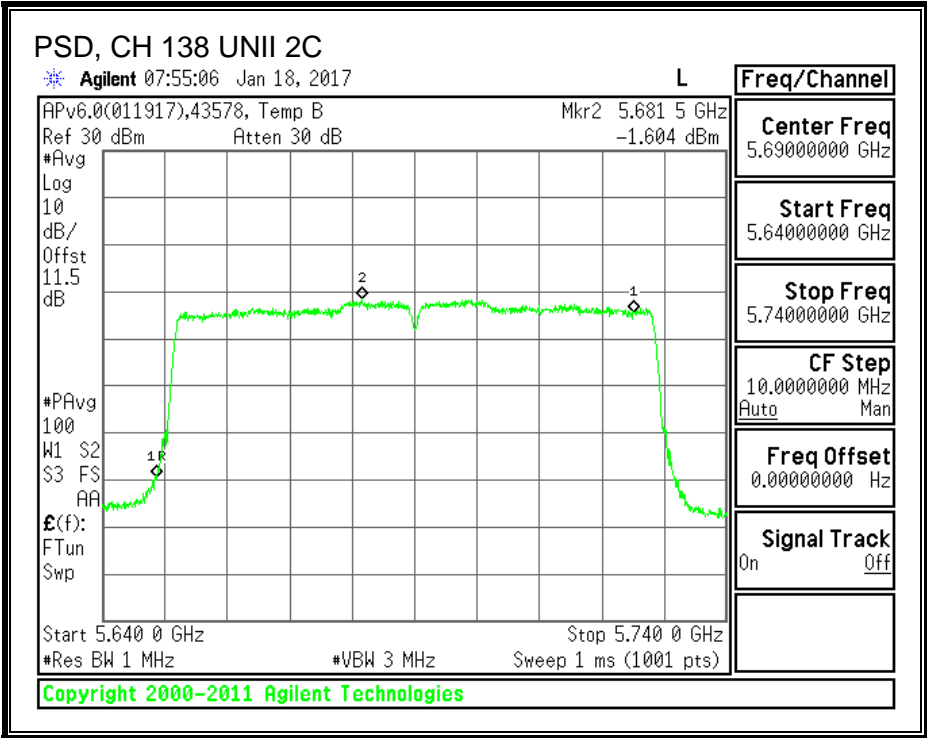
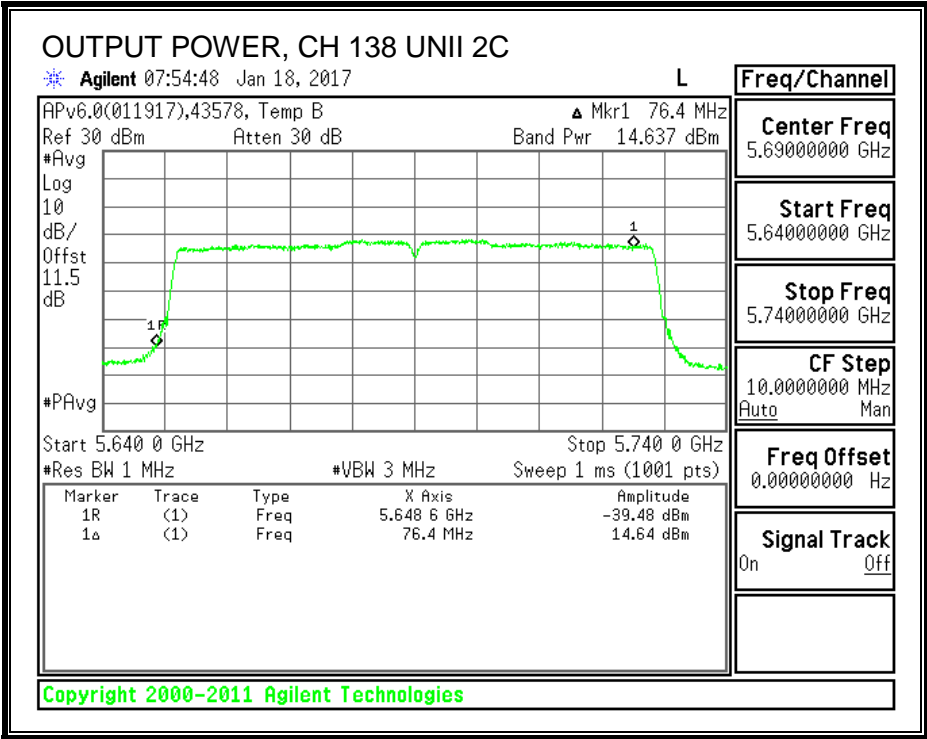
Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	14.64	14.84	24.00	-9.16

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-1.60	-1.40	11.00	-12.40



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.36	3.18	30.00	30.00

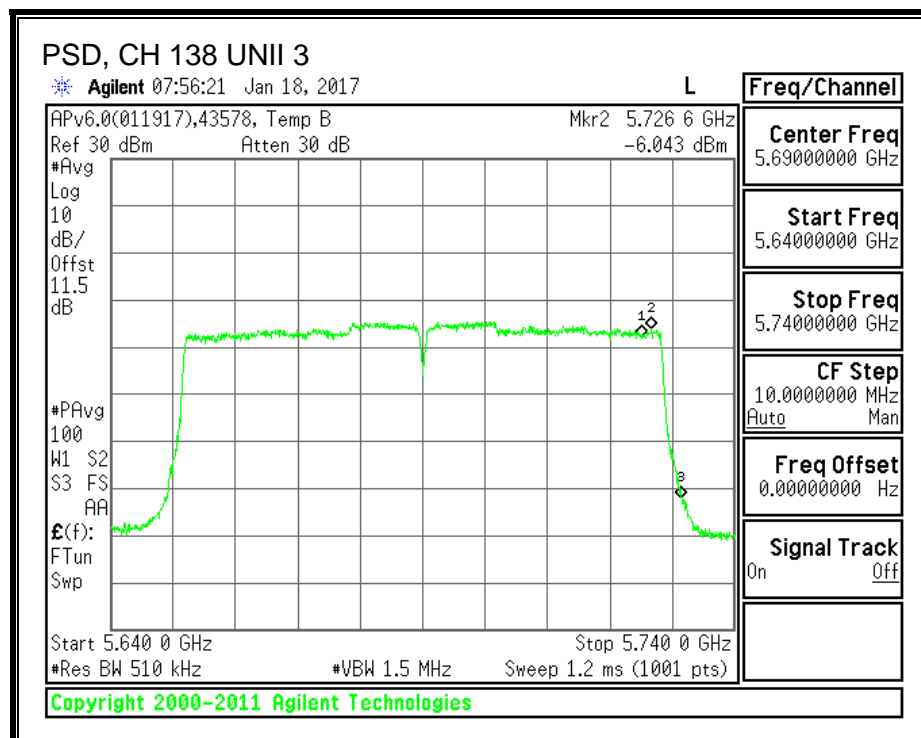
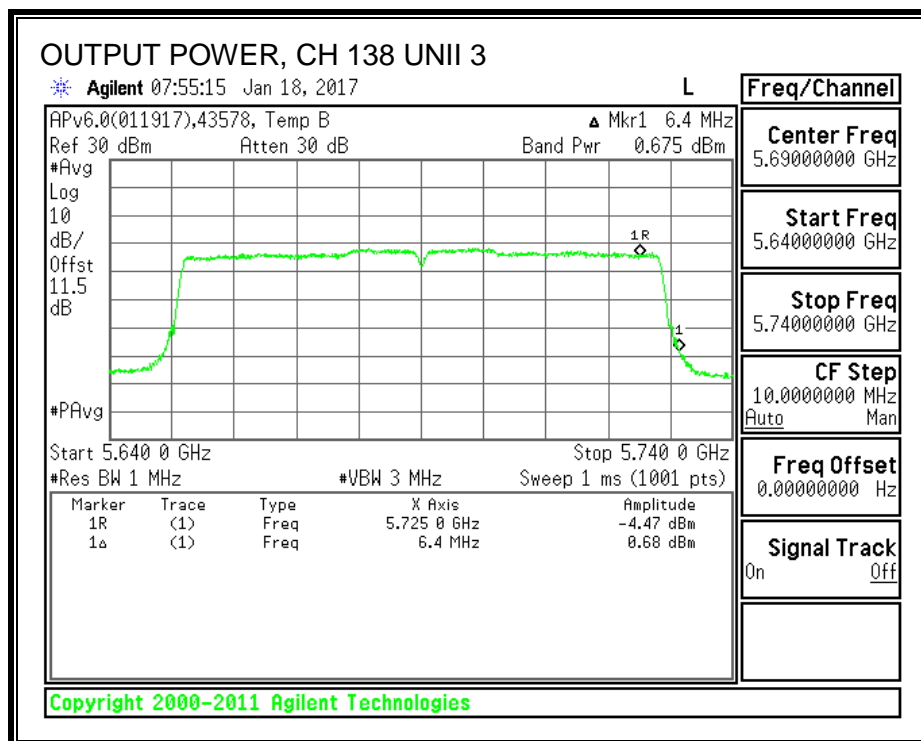
Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	0.68	0.88	30.00	-29.13

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-6.04	-5.84	30.00	-35.84



8.40.7. 6 dB BANDWIDTH

LIMITS

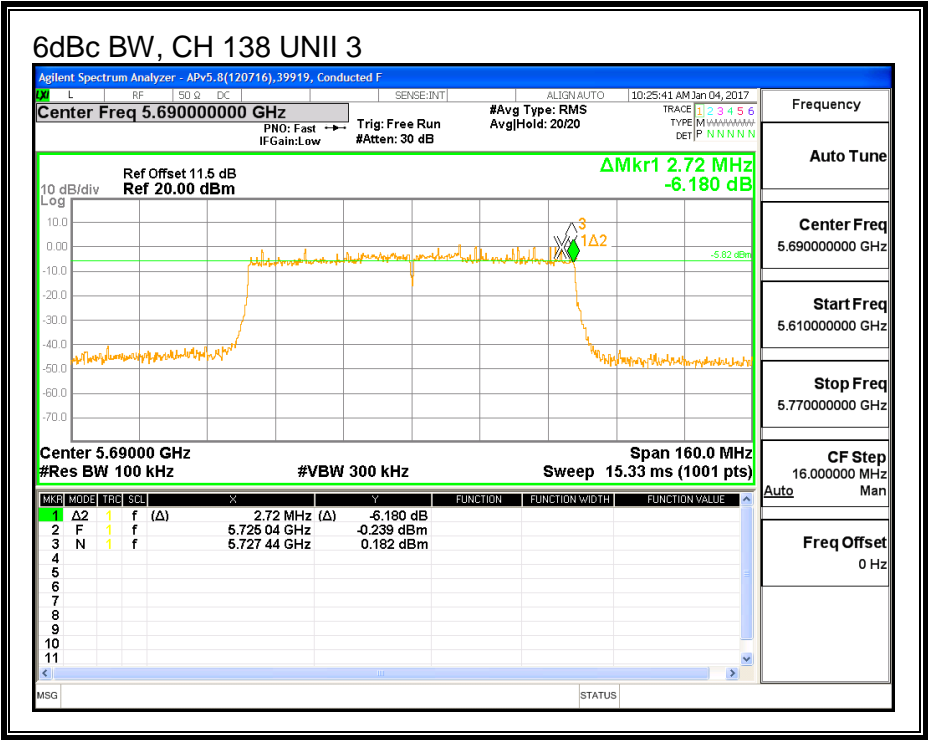
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	2.72

6 dB BANDWIDTH



8.41. 802.11ac VHT80 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND

8.41.1. 26 dB BANDWIDTH

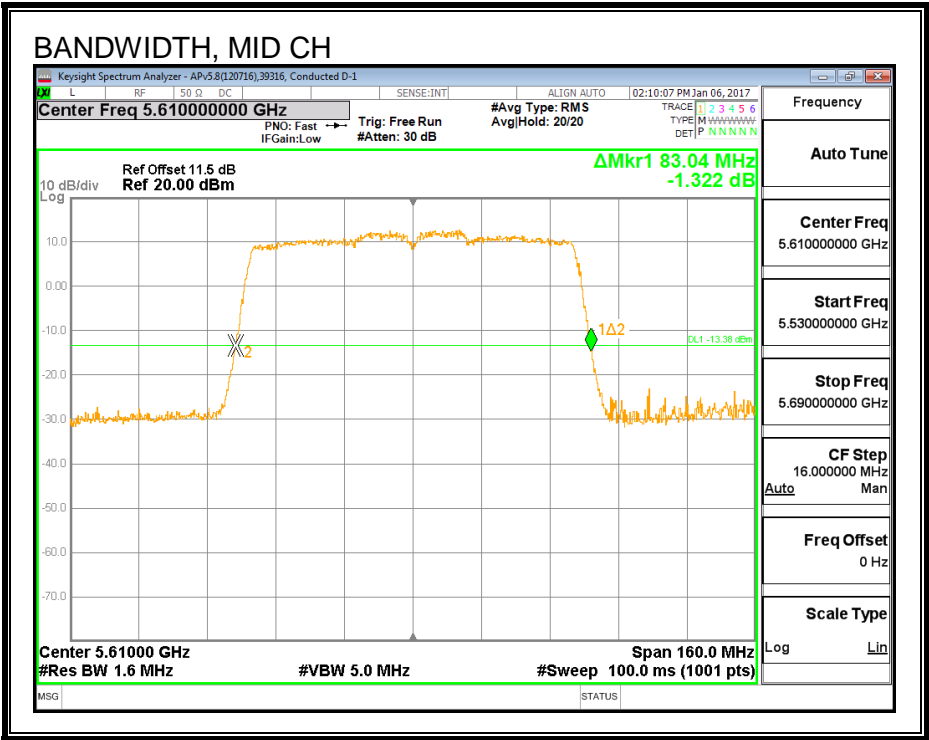
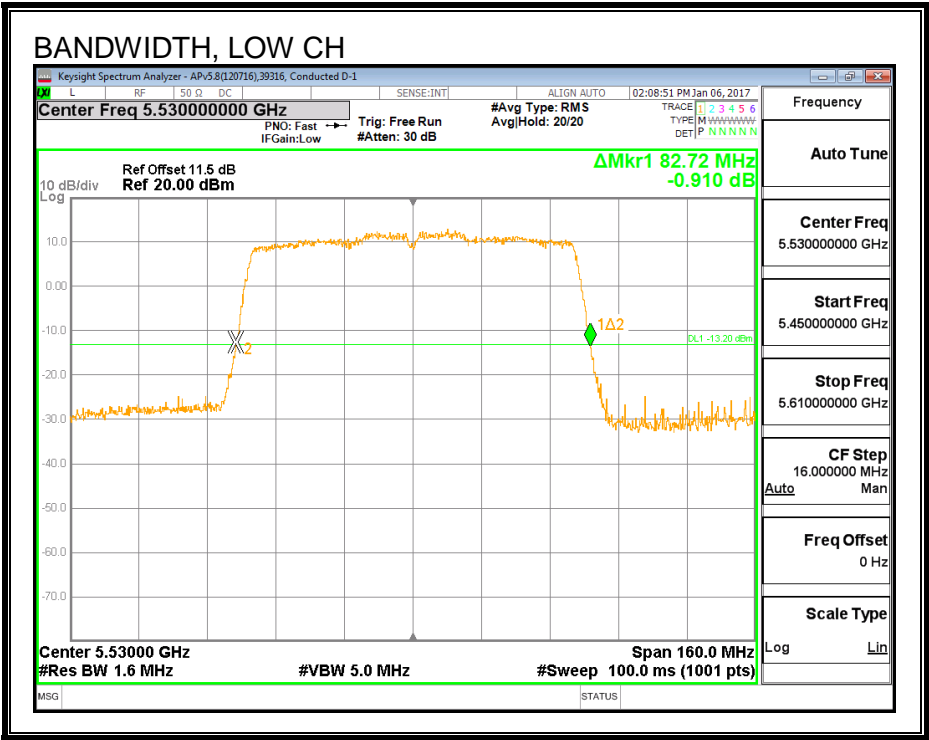
LIMITS

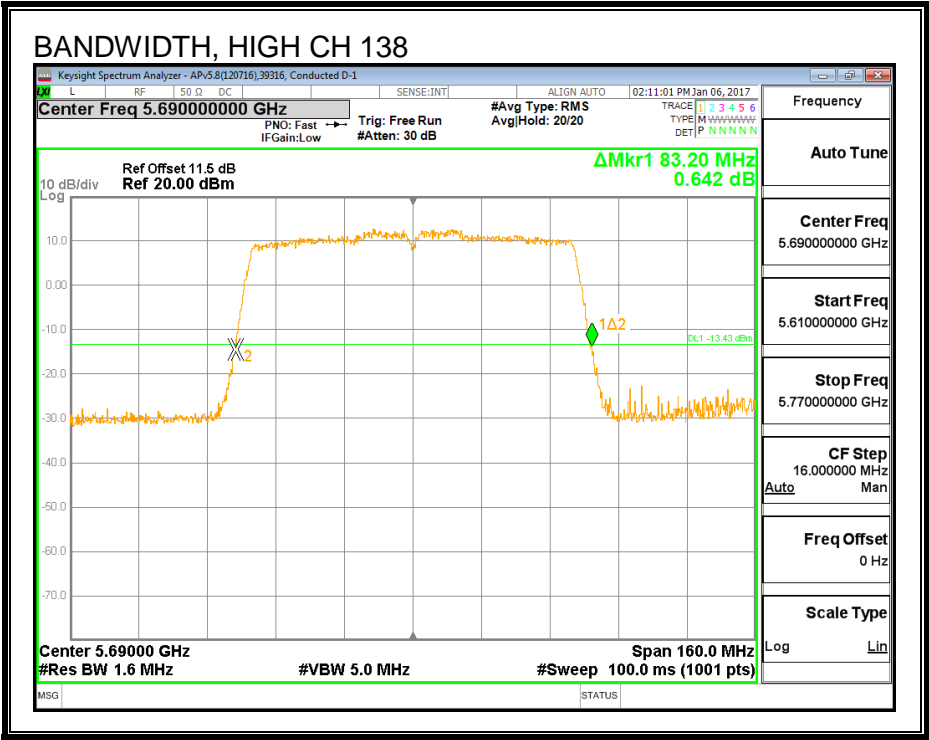
None; for reporting purposes only.

RESULTS

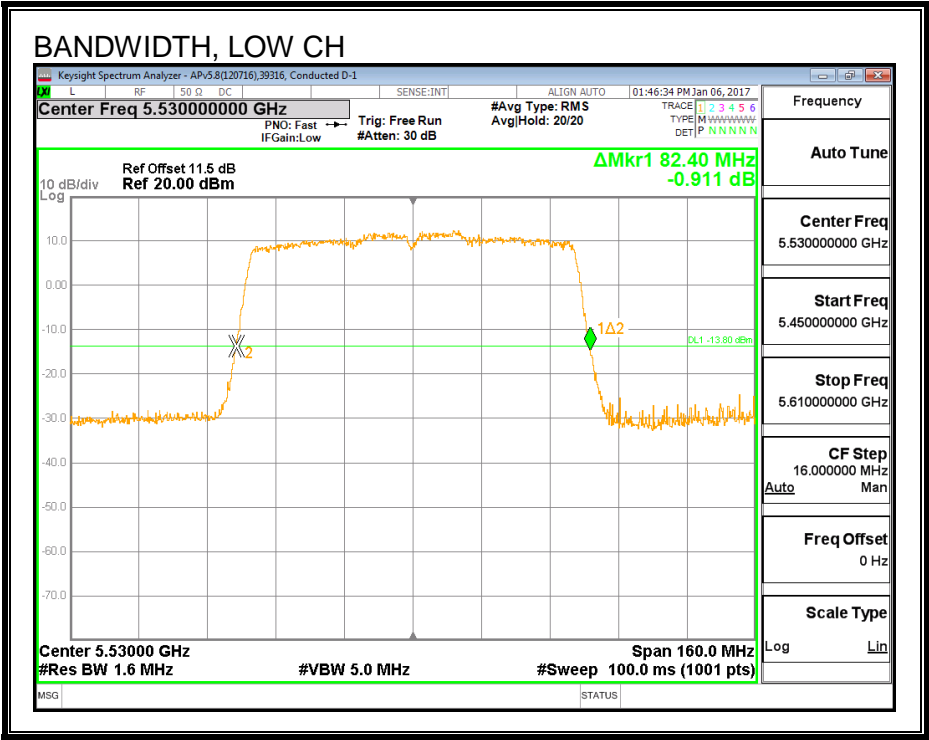
Channel	Frequency (MHz)	26 dB BW Ant A (MHz)	26 dB BW Ant B (MHz)
Low	5530	82.72	82.40
Mid	5610	83.04	82.24
High	5690	83.20	82.40

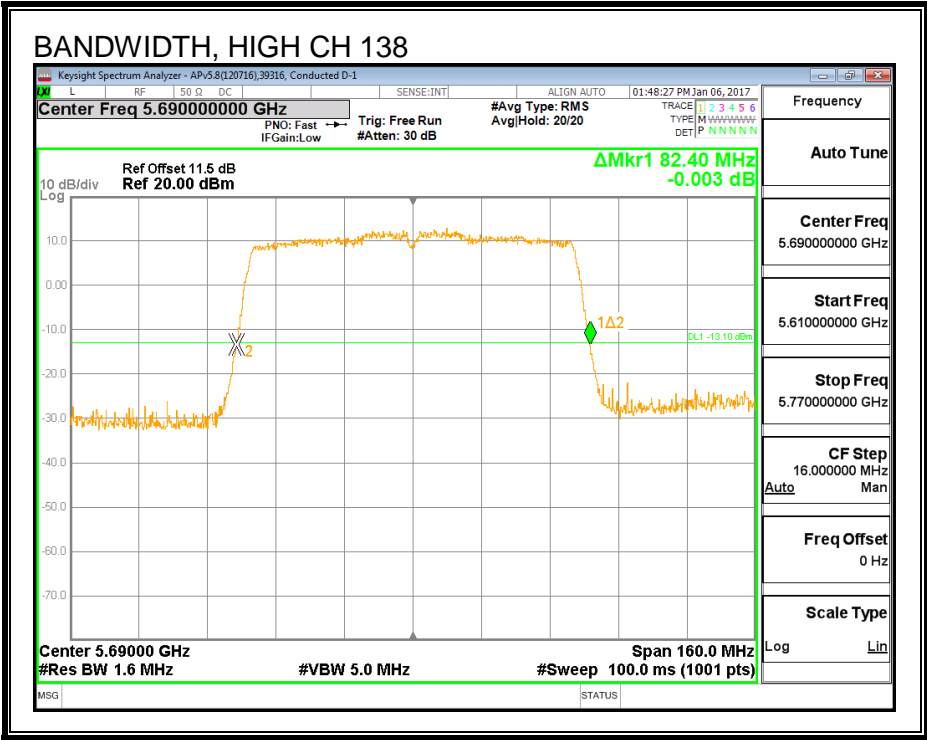
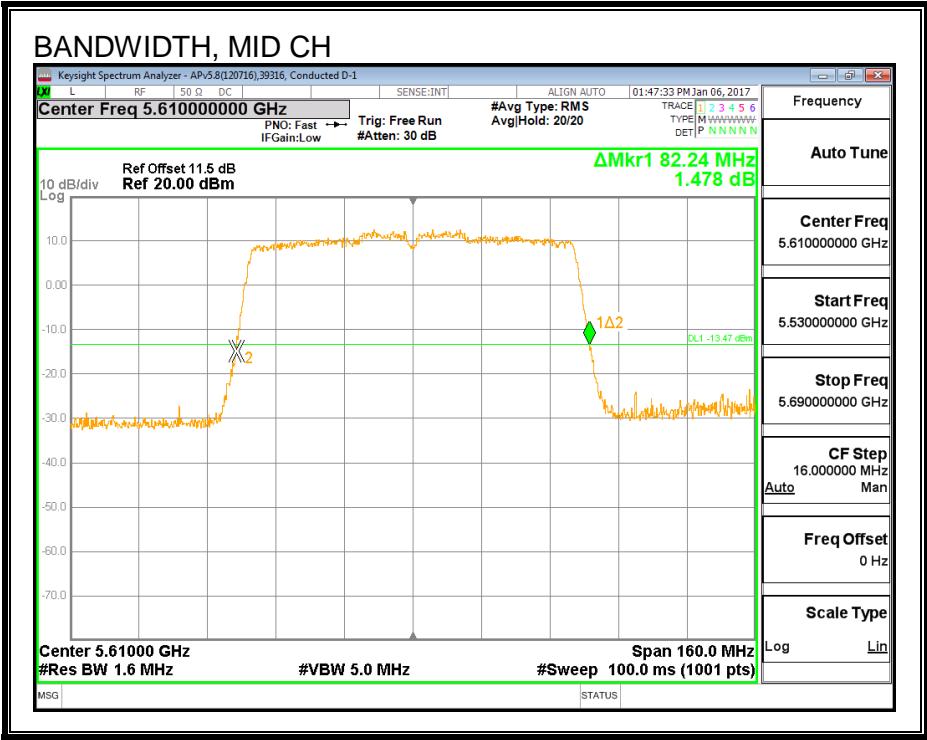
26 dB BANDWIDTH, ANTENNA A





26 dB BANDWIDTH, ANTENNA B





8.41.2. 99% BANDWIDTH

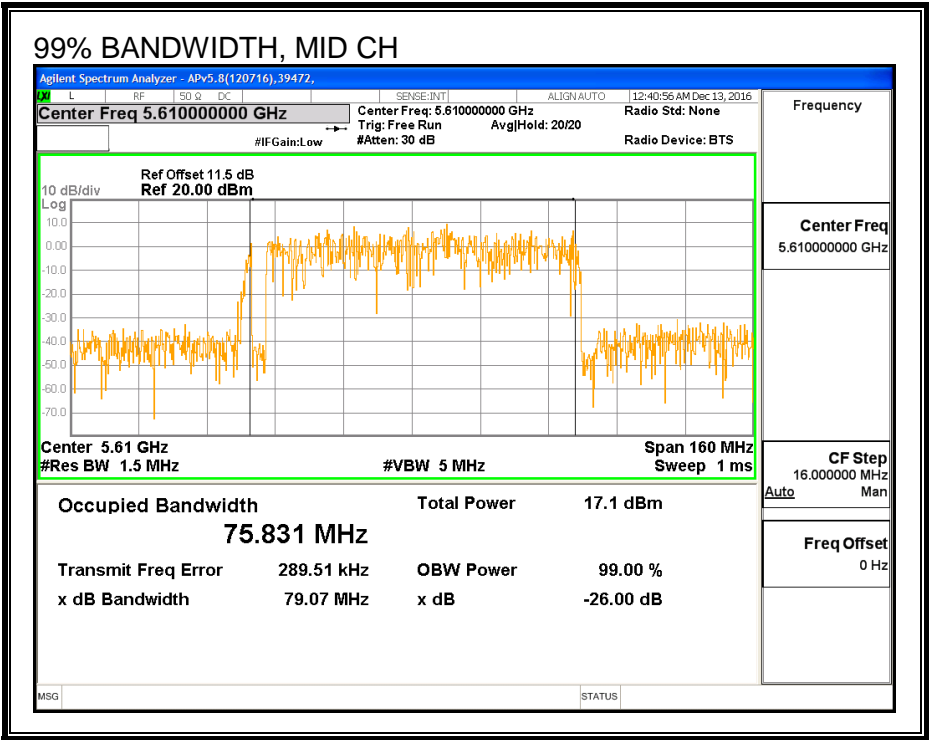
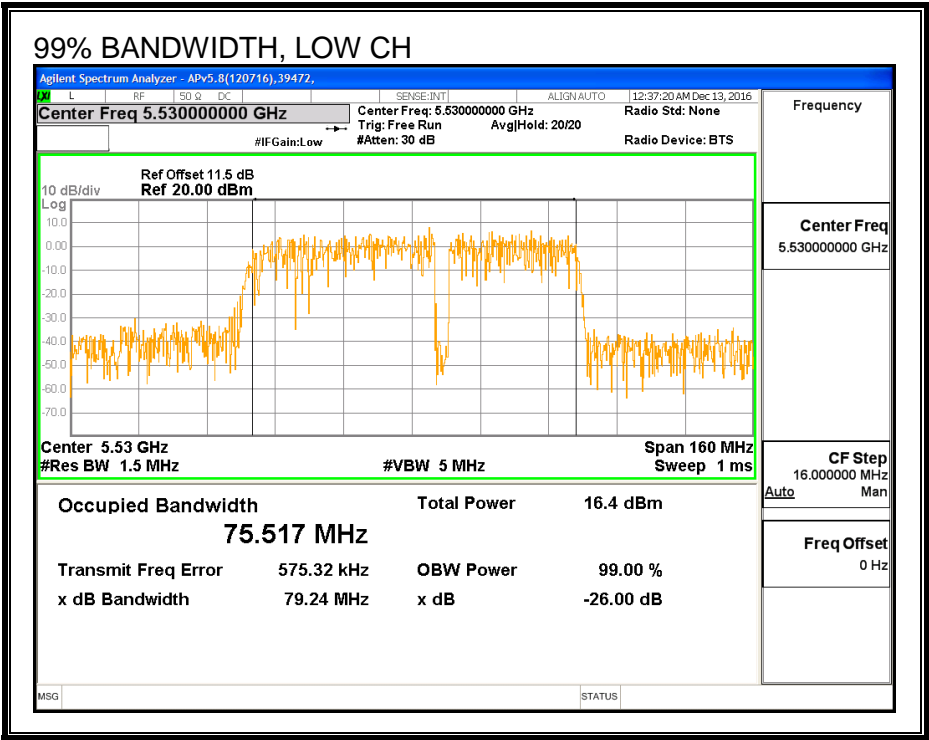
LIMITS

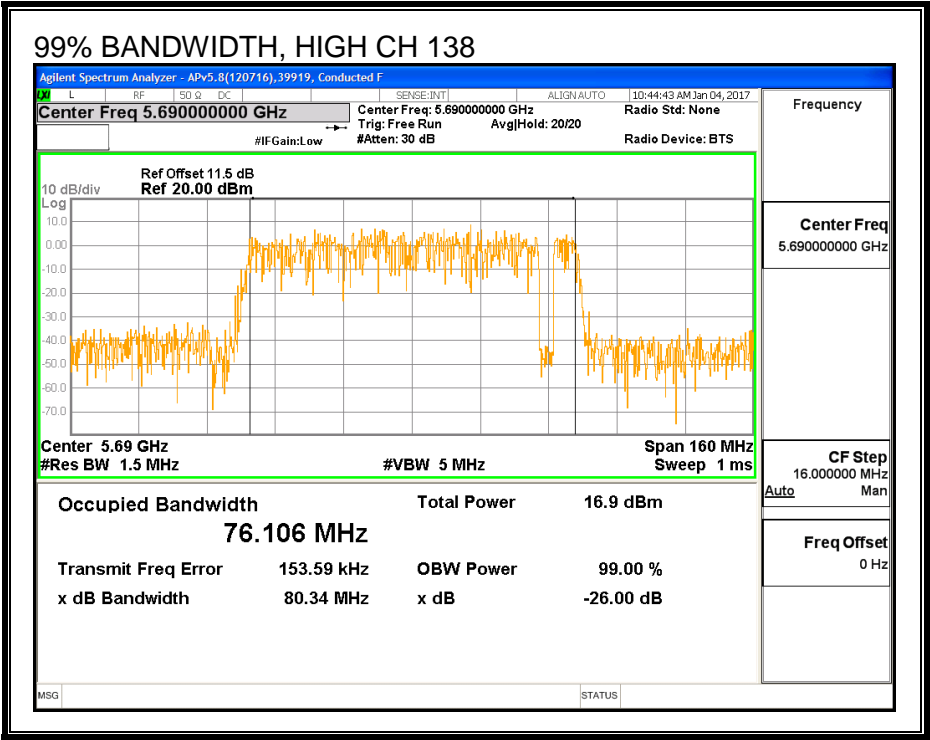
None; for reporting purposes only.

RESULTS

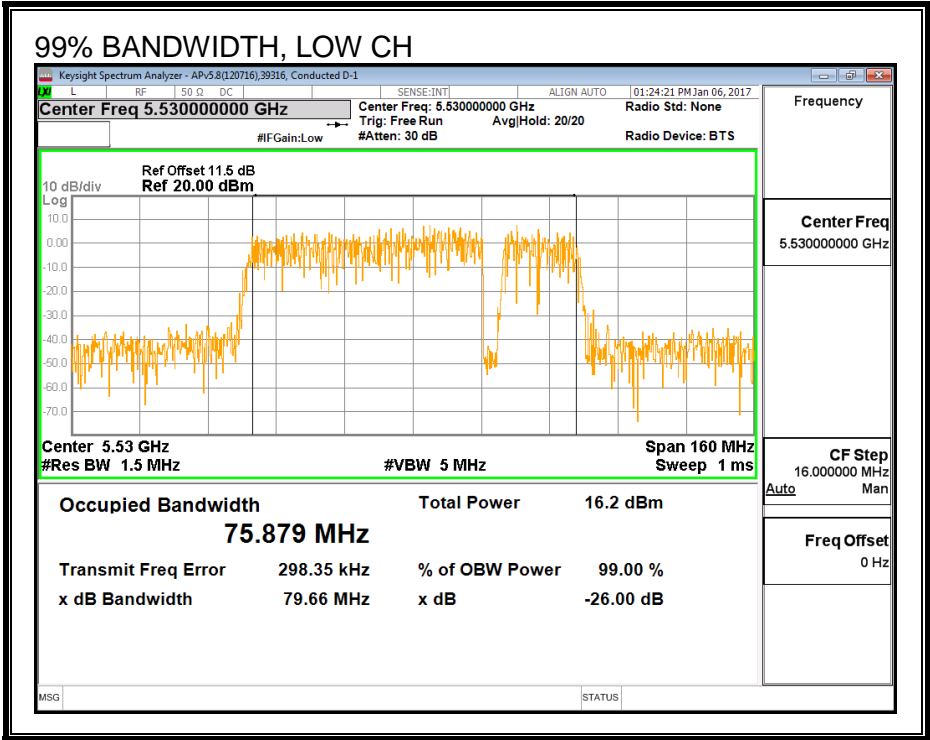
Channel	Frequency (MHz)	99% BW Ant A (MHz)	99% BW Ant B (MHz)
Low	5530	75.517	75.879
Mid	5610	75.831	75.785
High	5690	76.106	75.959

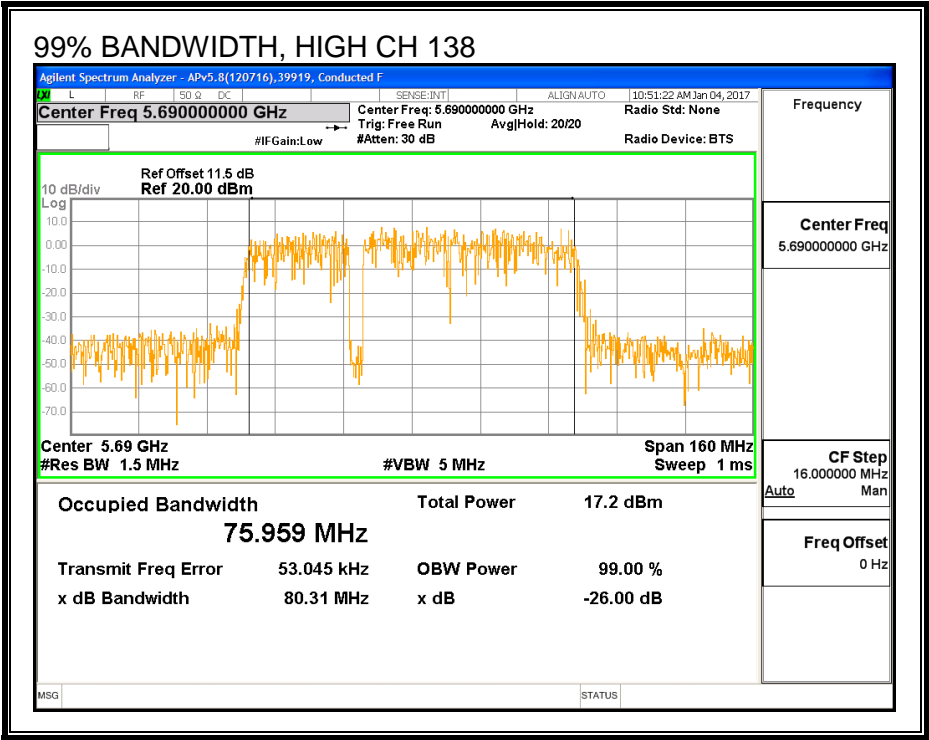
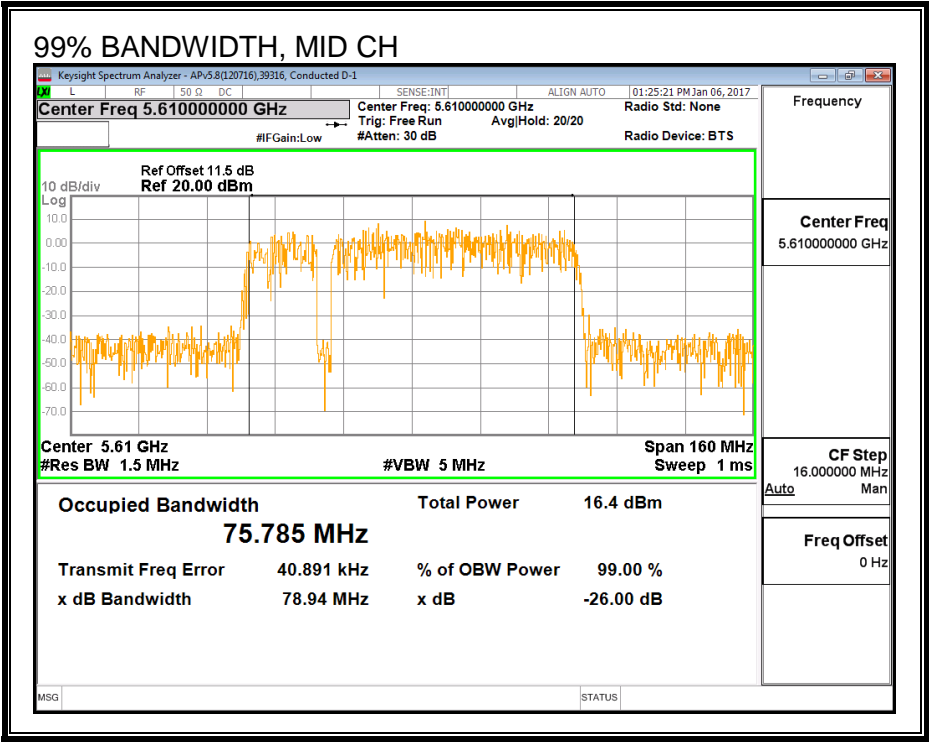
99% BANDWIDTH, ANTENNA A





99% BANDWIDTH, ANTENNA B





8.41.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

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Average Power Results

Channel	Frequency (MHz)	Ant A Power (dBm)	Ant B Power (dBm)	Total Power (dBm)
Low	5530	11.97	11.96	14.98
Mid	5610	14.87	14.98	17.94
High	5690	14.86	14.97	17.93

8.41.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 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 maximum power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Ant A Antenna Gain (dBi)	Ant B Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.77	3.10	3.45

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Ant A Antenna Gain (dBi)	Ant B Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.77	3.10	6.45

RESULTS

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Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.40	72.777	3.45	6.45	24.00	10.55
High	5610	82.40	72.623	3.45	6.45	24.00	10.55

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd PSD
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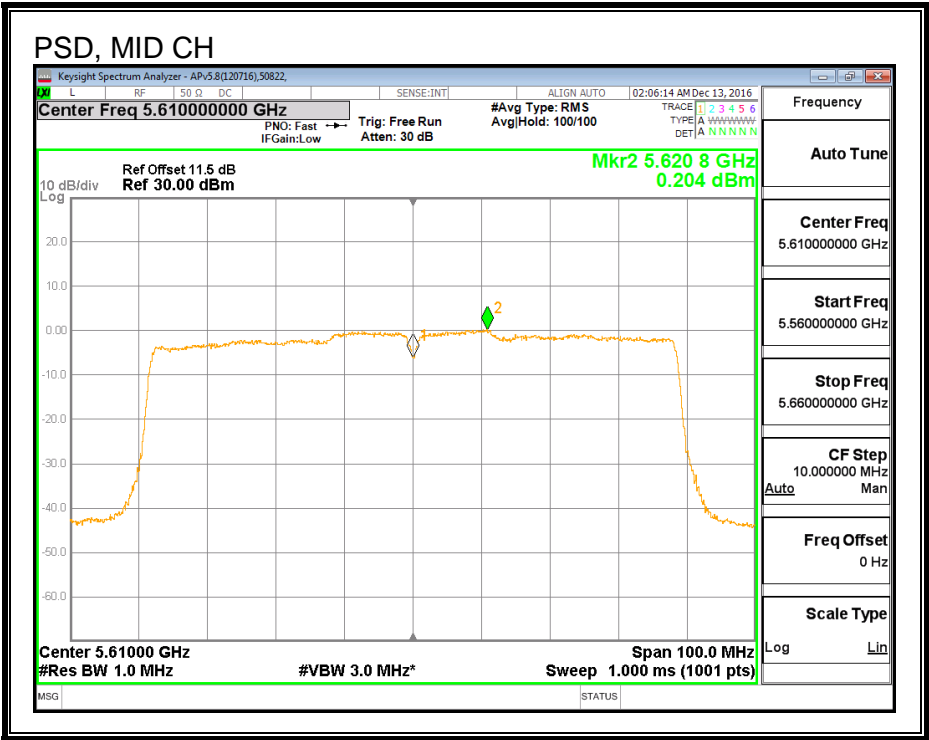
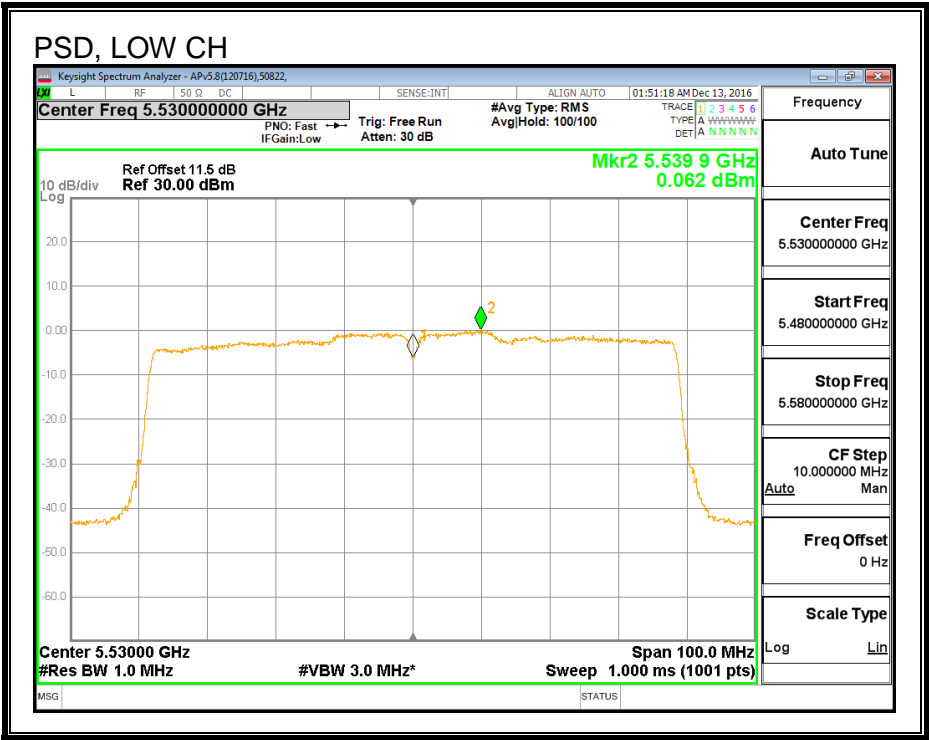
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	11.97	11.96	14.98	24.00	-9.02
High	5610	14.87	14.98	17.94	24.00	-6.06

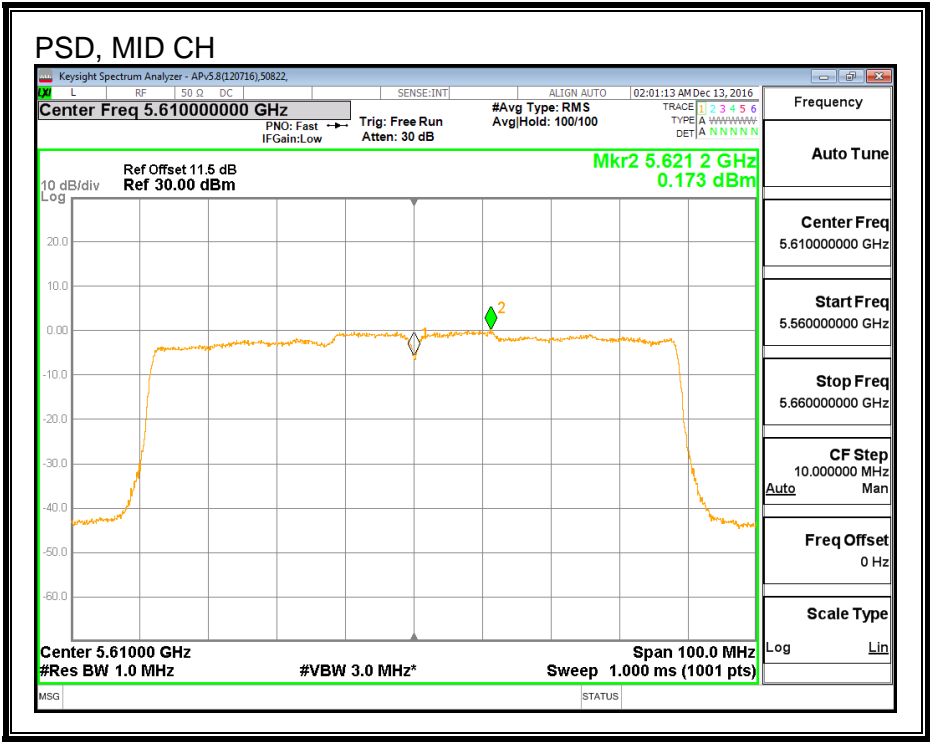
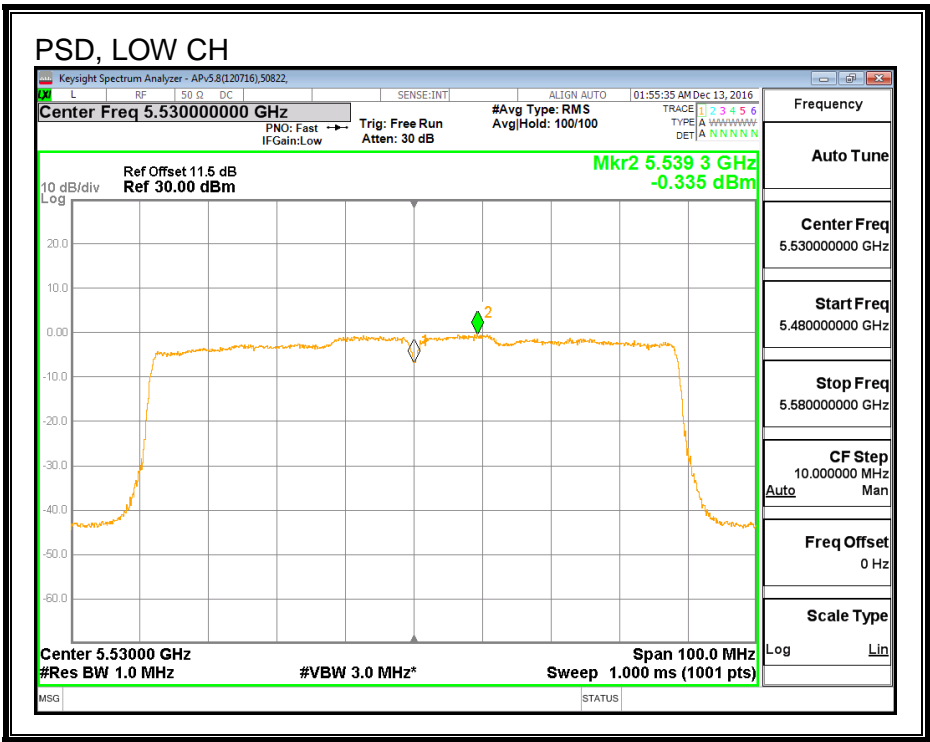
PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	0.062	-0.335	3.08	10.55	-7.47
High	5610	0.204	0.173	3.40	10.55	-7.15

PSD, ANTENNA A



PSD, ANTENNA B



8.41.5. STRADDLE CHANNEL 138 RESULTS

8.41.6. OUTPUT POWER AND PSD

UNII-2C BAND

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)
138	5690	76.20	3.45	6.45	24.00	10.55

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PSD
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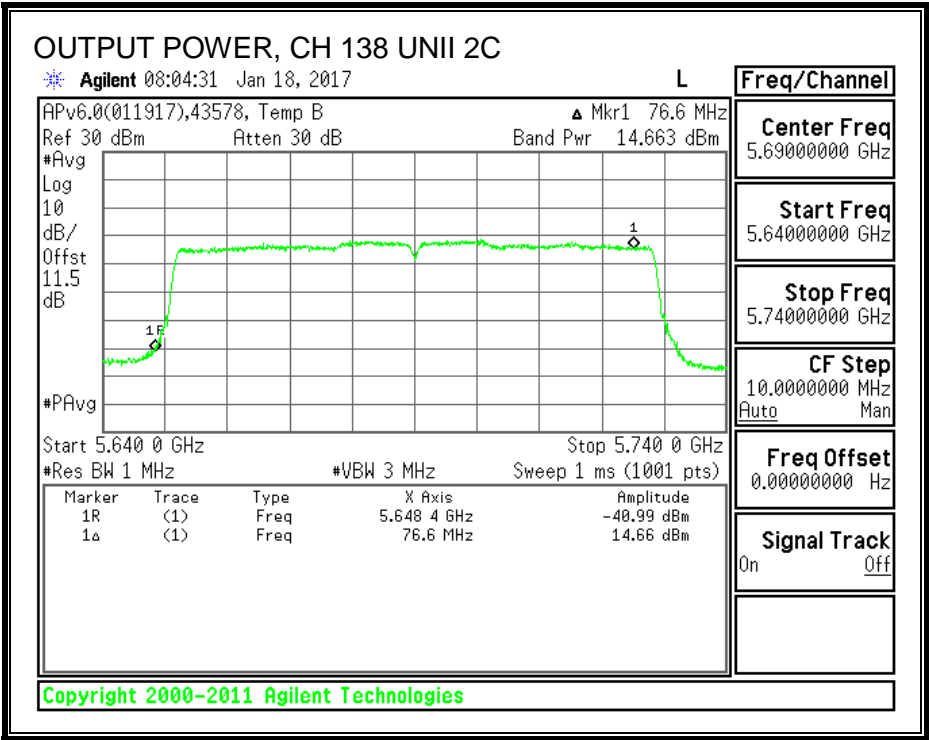
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	14.66	14.71	17.90	24.00	-6.10

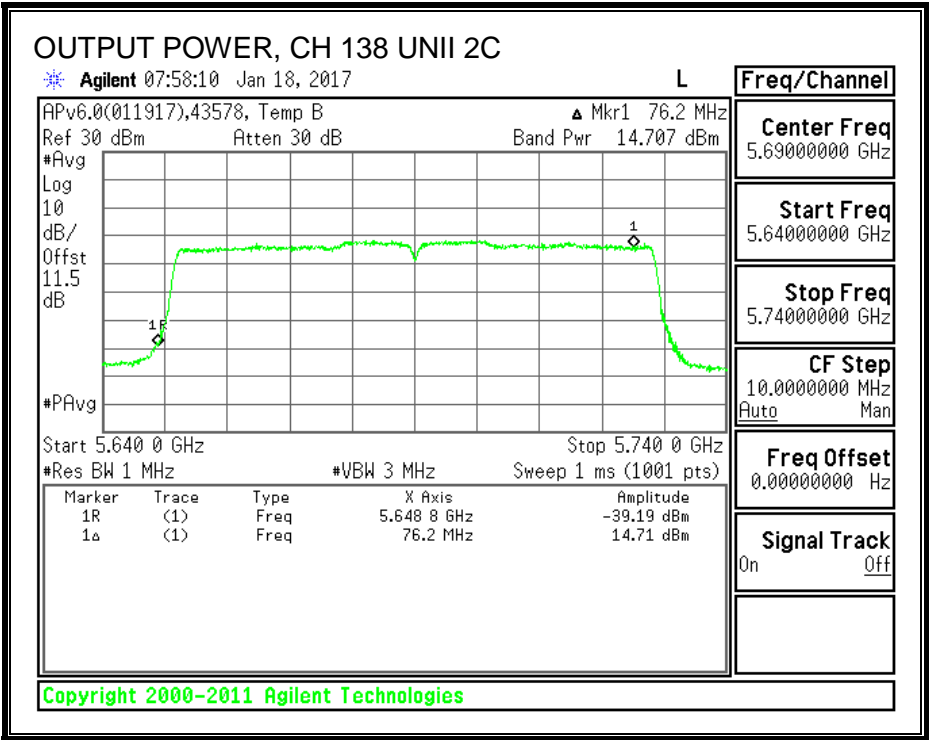
PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-1.40	-1.57	1.73	10.55	-8.82

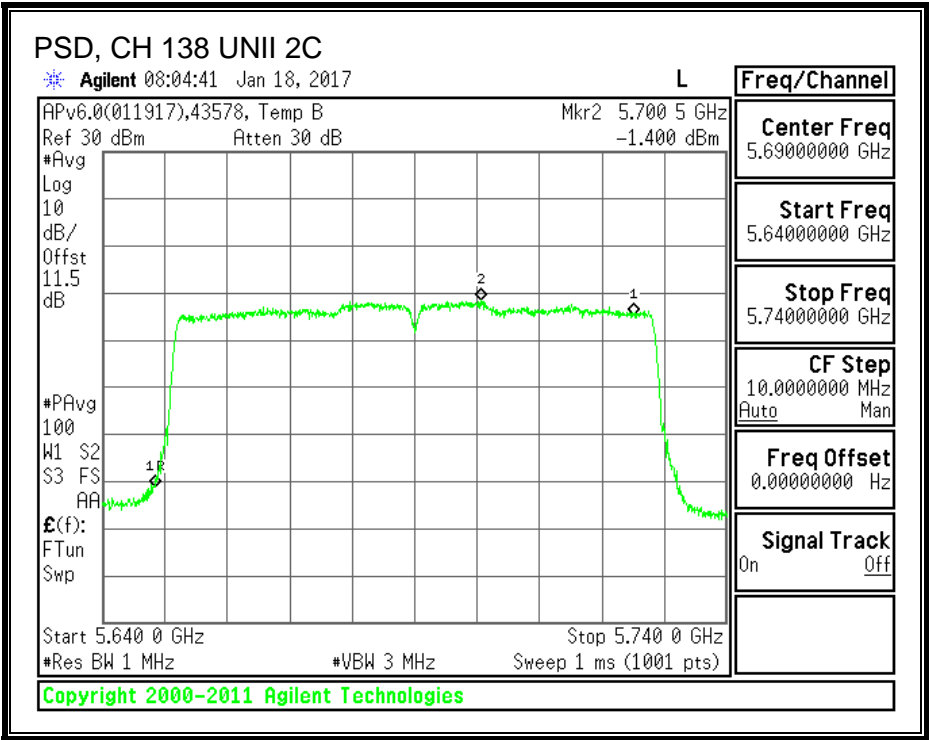
OUTPUT POWER, ANTENNA A



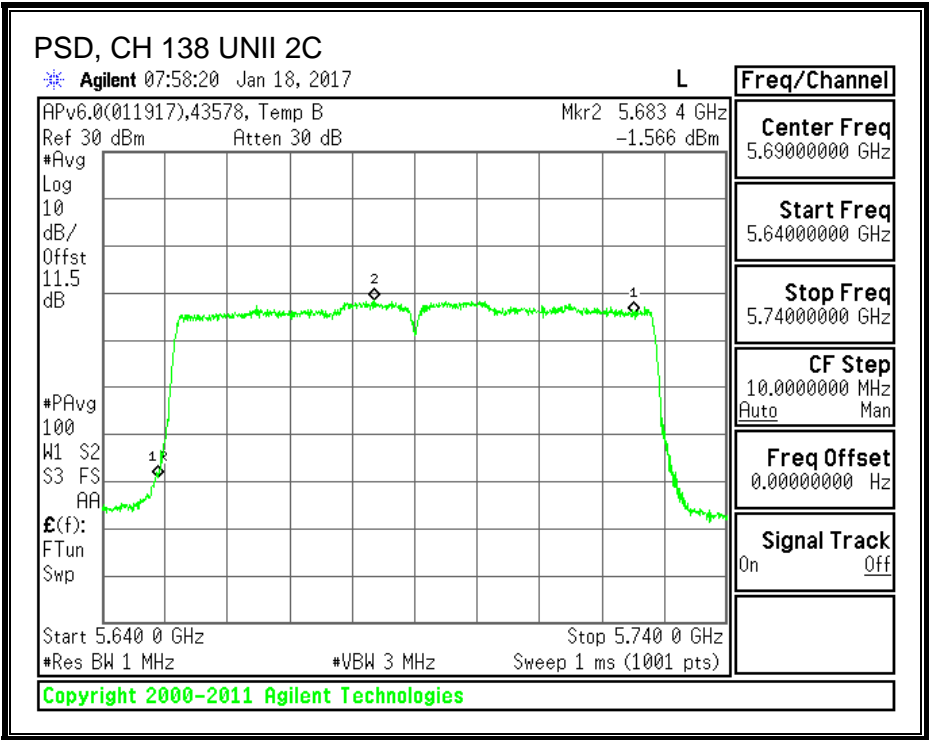
OUTPUT POWER, ANTENNA B



PSD, ANTENNA A



PSD, ANTENNA B



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.28	3.29	6.30	30.00	29.70

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PSD
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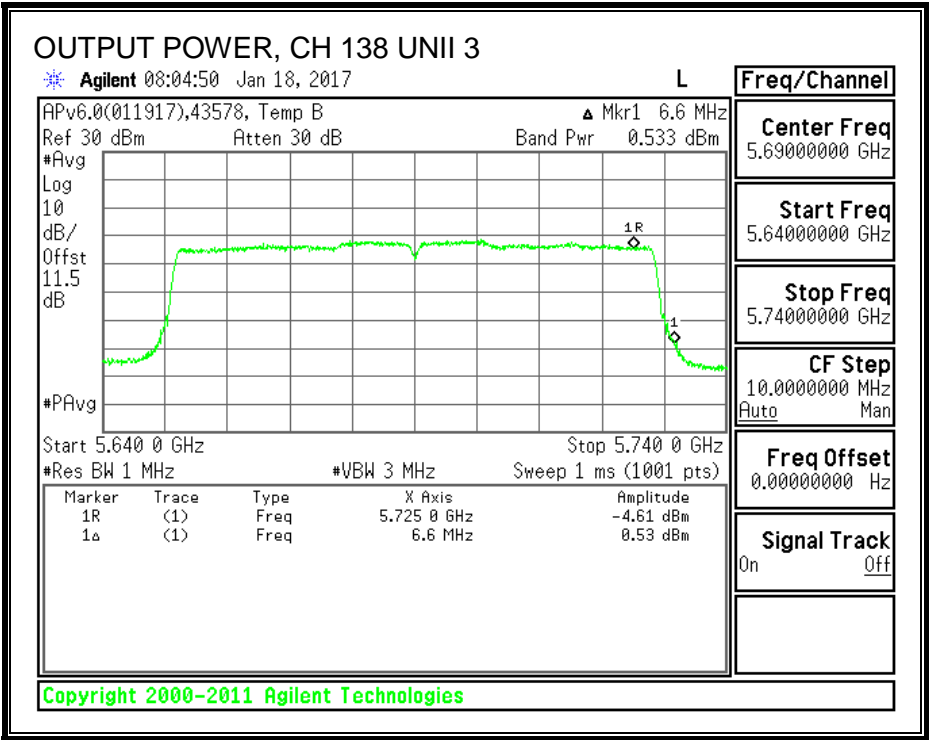
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	0.53	0.85	3.91	30.00	-26.09

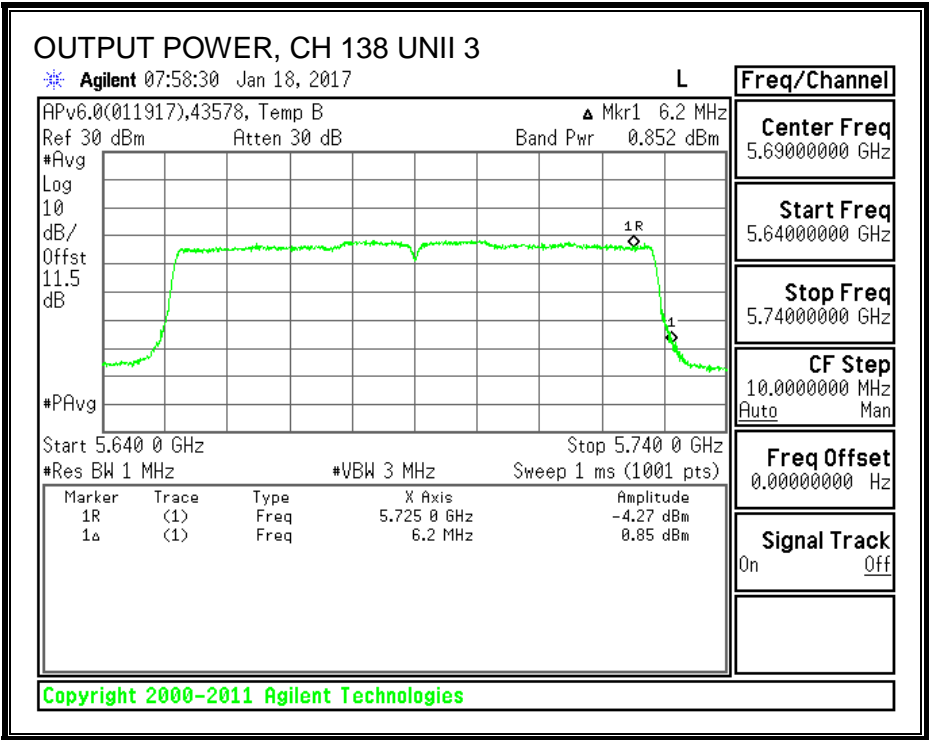
PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-6.44	-6.47	-3.25	29.70	-32.95

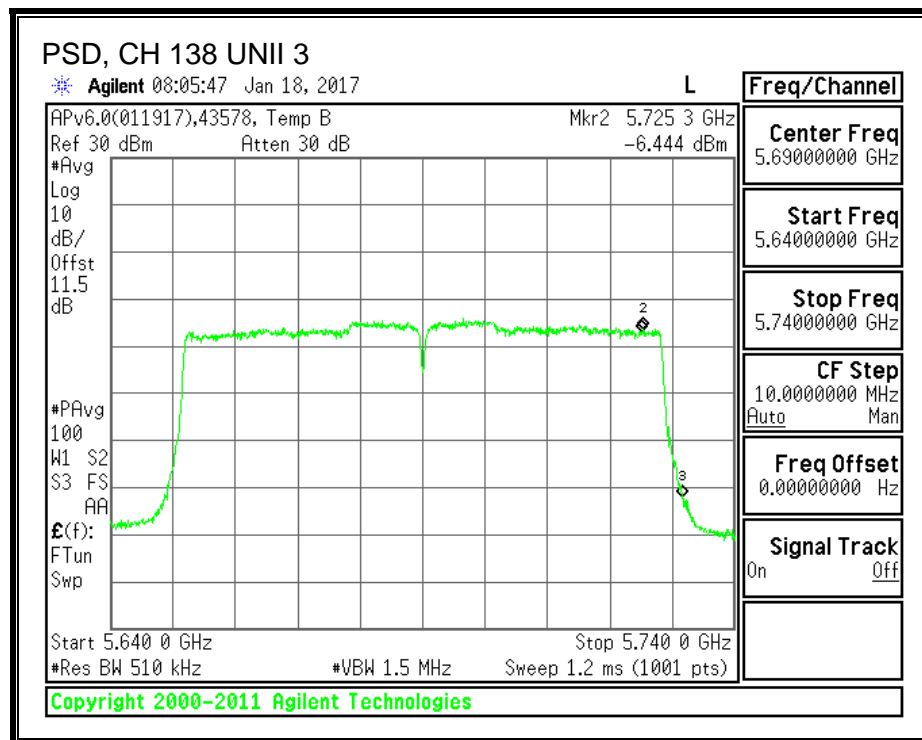
OUTPUT POWER, ANTENNA A



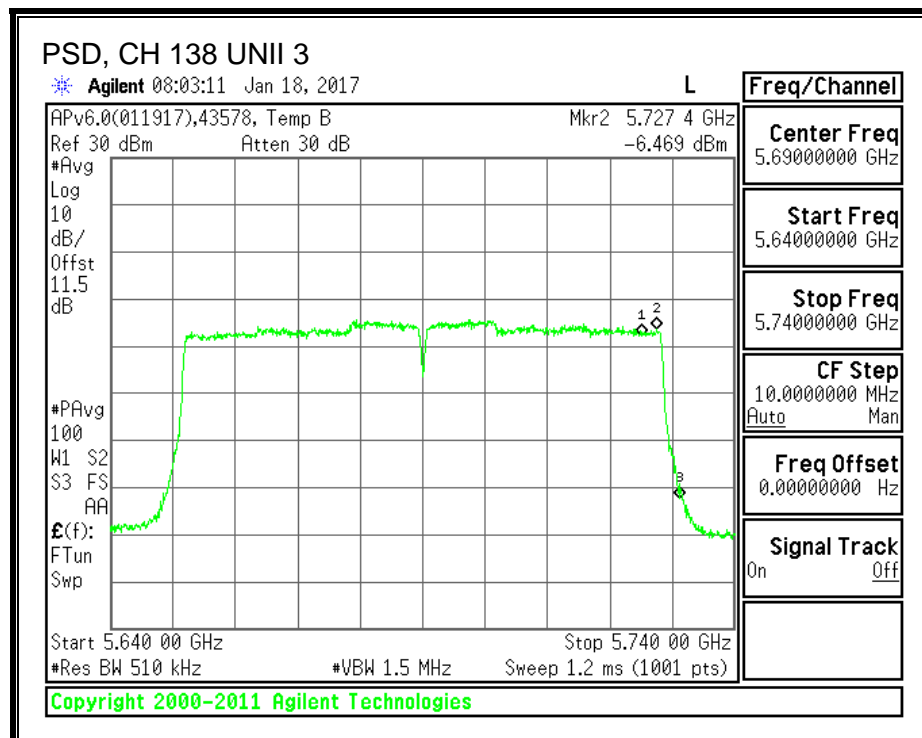
OUTPUT POWER, ANTENNA B



PSD, ANTENNA A



PSD, ANTENNA B



8.41.7. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB BW Ant A (MHz)	6 dB BW Ant B (MHz)
High	5690	2.72	2.72

[illegible]

6dBc BW, CH 138 UNII 3

8.42. 802.11ac VHT80 2Tx (ANTENNA A + ANTENNA B) STBC MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11ac VHT80 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND

8.43. 802.11n HT20 ANTENNA A MODE IN THE 5.8 GHz BAND

8.43.1. 6 dB BANDWIDTH

LIMITS

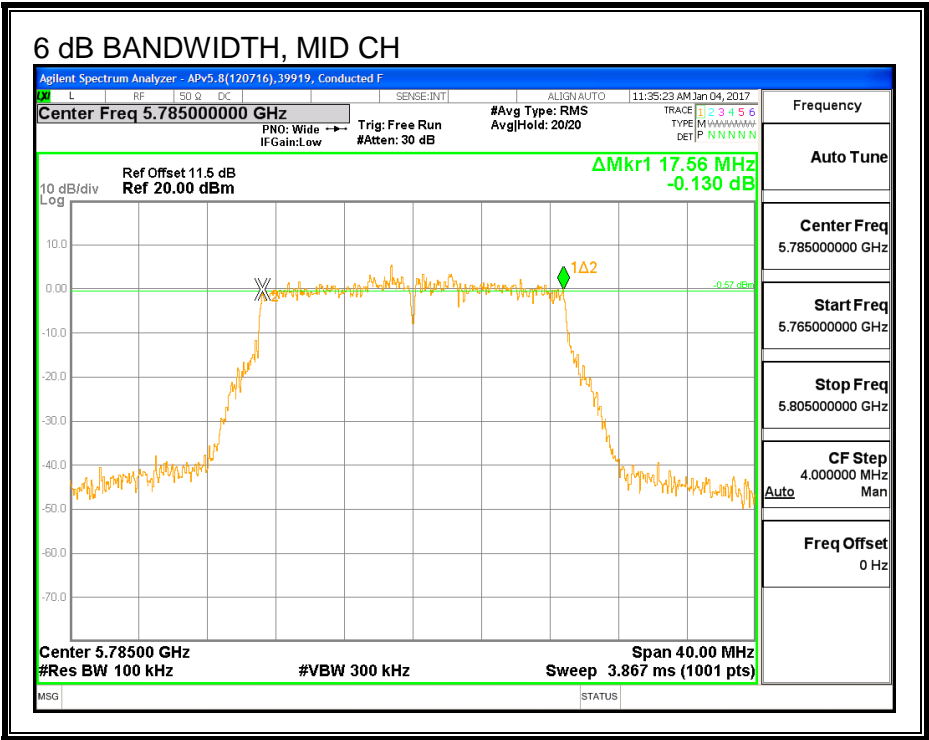
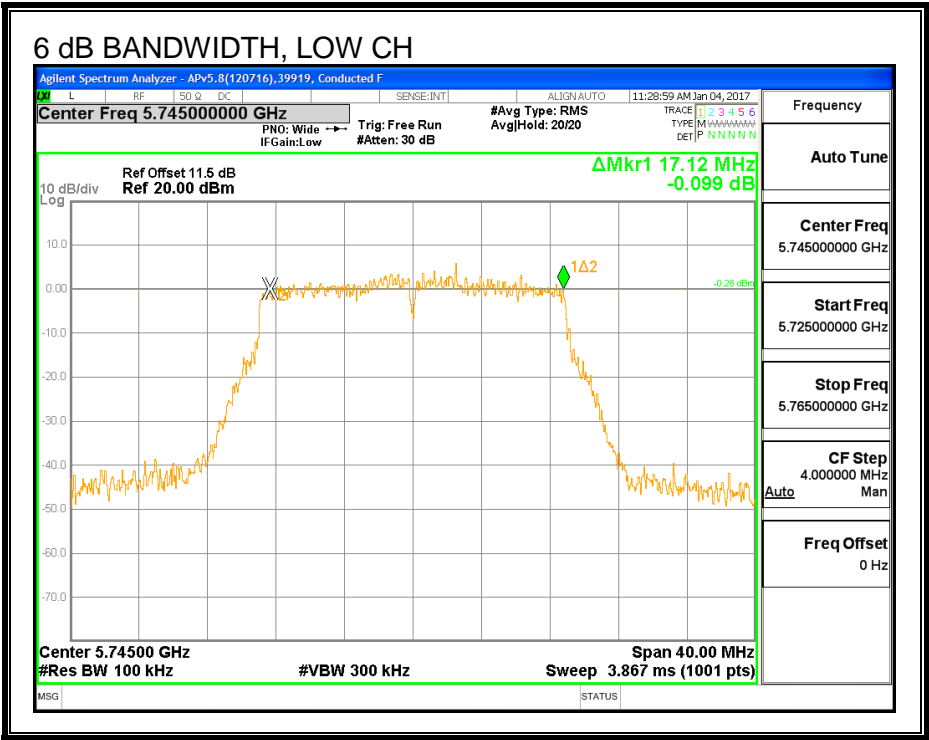
FCC §15.407 (e)

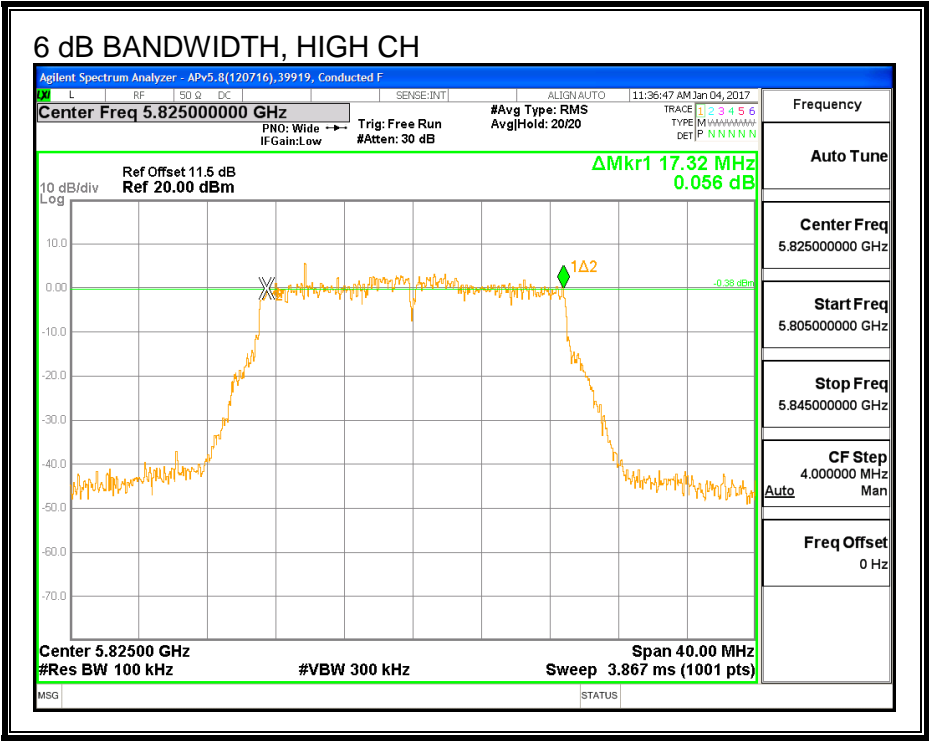
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.12	0.5
Mid	5785	17.56	0.5
High	5825	17.32	0.5

6 dB BANDWIDTH





8.43.2. 26 dB BANDWIDTH

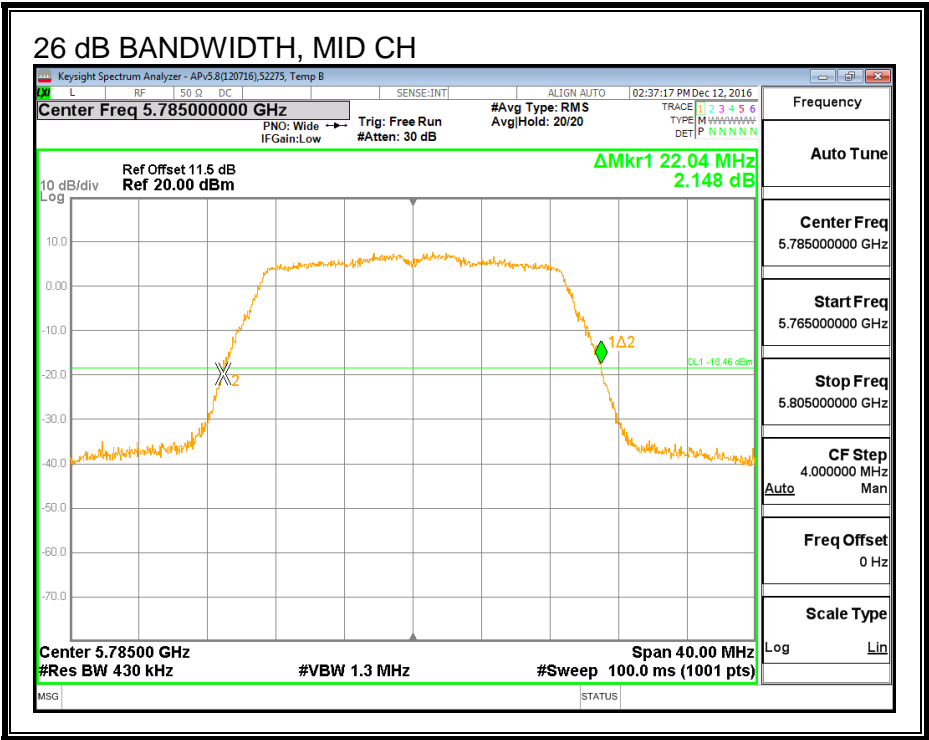
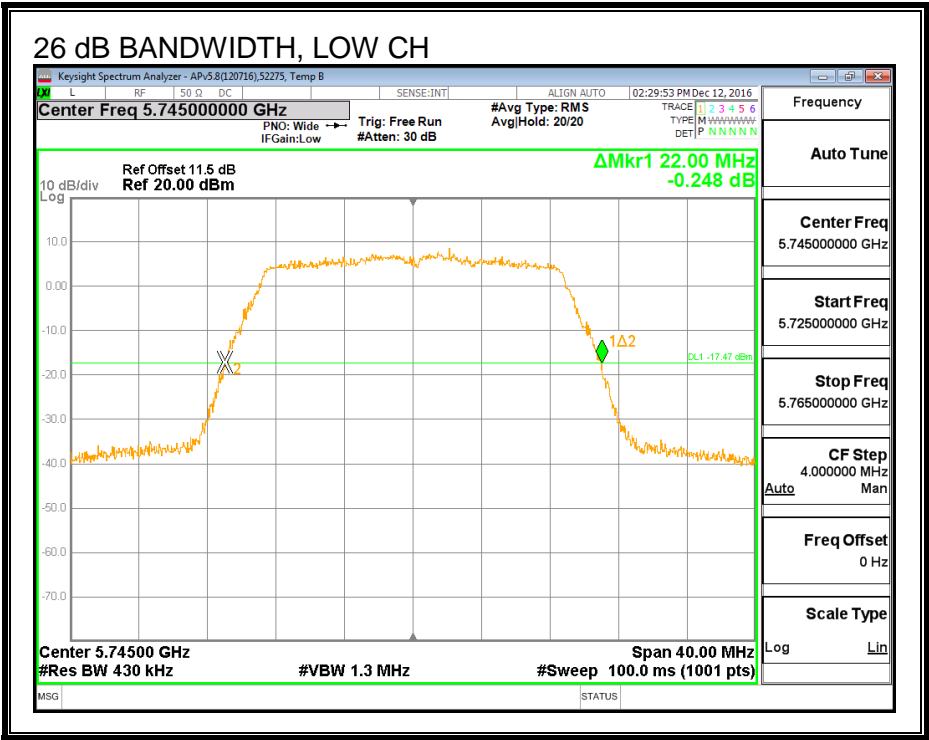
LIMITS

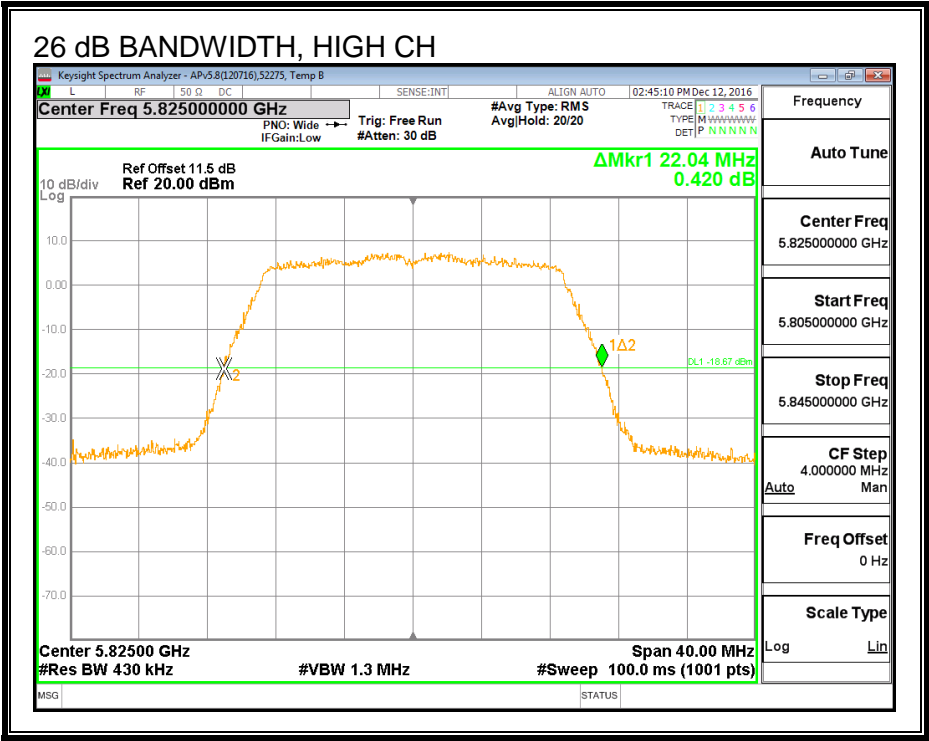
None, for reporting purposes only

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	22.000
Mid	5785	22.040
High	5825	22.040

26 dB BANDWIDTH





8.43.3. 99% BANDWIDTH

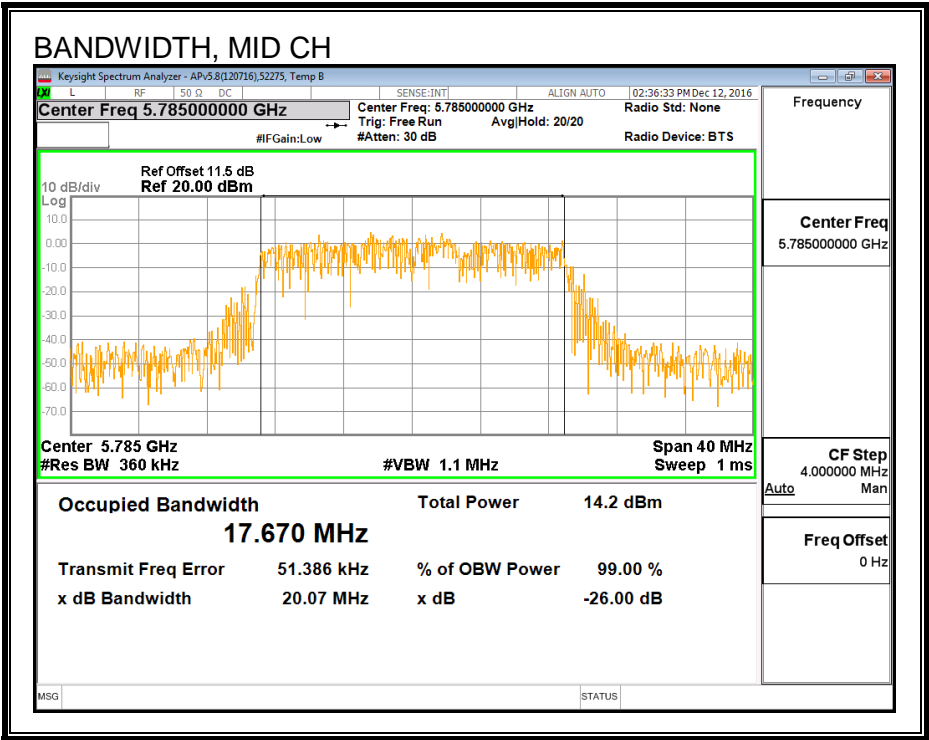
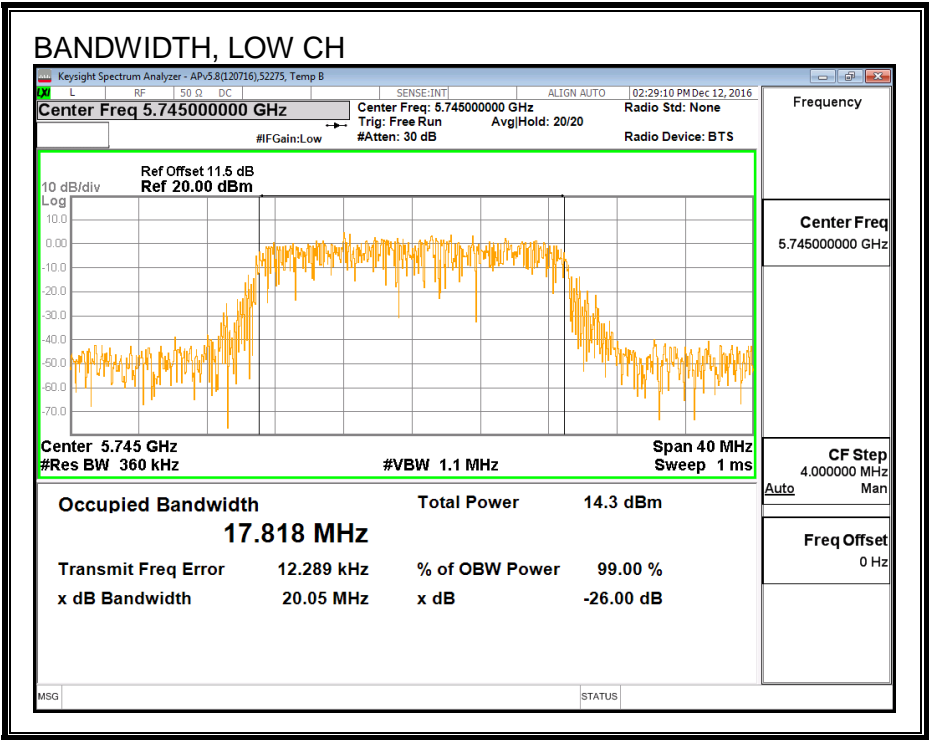
LIMITS

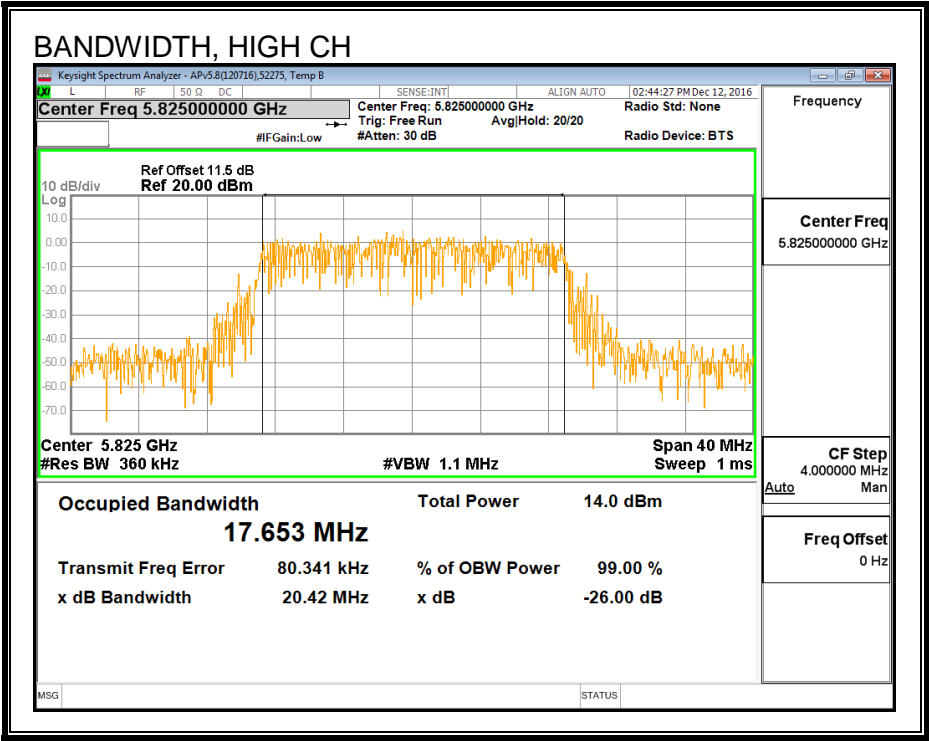
None; for reporting purposes only.

RESULTS

Frequency (MHz)	99% Bandwidth (MHz)
5745	17.818
5785	17.670
5825	17.653

99% BANDWIDTH





8.43.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

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Channel	Frequency (MHz)	Power (dBm)
Low	5745	14.47
Mid	5785	14.43
High	5825	14.39

8.43.5. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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. 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.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

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Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	3.40	30.00
Mid	5785	3.40	30.00
High	5825	3.40	30.00

Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	14.47	14.47	30.00	-15.53
Mid	5785	14.43	14.43	30.00	-15.57
High	5825	14.39	14.39	30.00	-15.61

8.43.6. PSD

LIMITS

FCC §15.407 (a) (3)

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. 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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	3.40	30.00
Mid	5785	3.40	30.00
High	5825	3.40	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	2.43	2.43	30.00	-27.58
Mid	5785	2.68	2.68	30.00	-27.32
High	5825	2.54	2.54	30.00	-27.46

PSD

