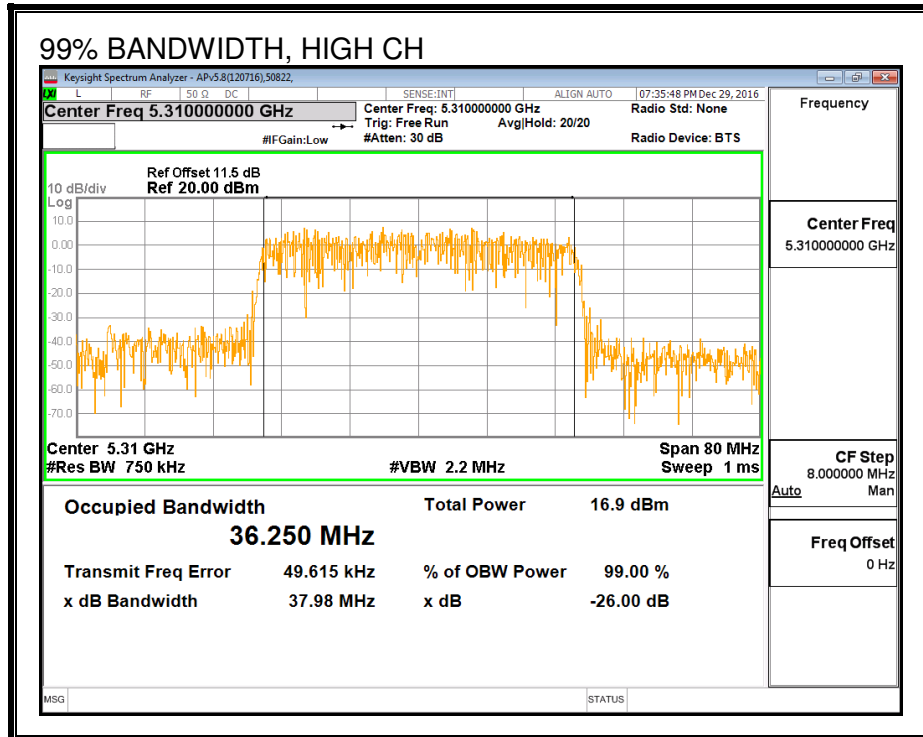
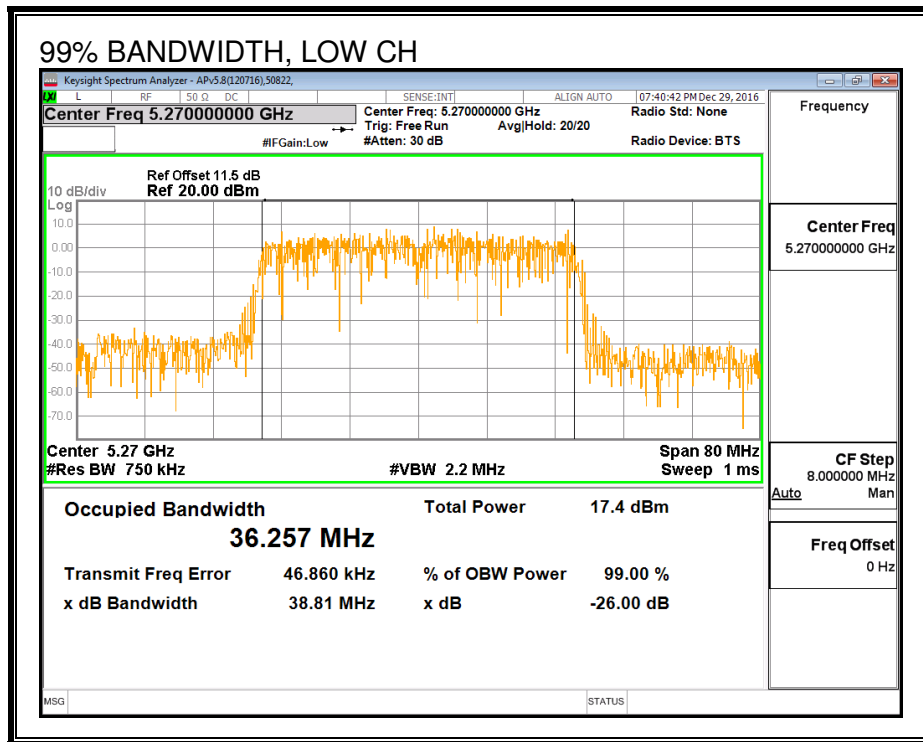
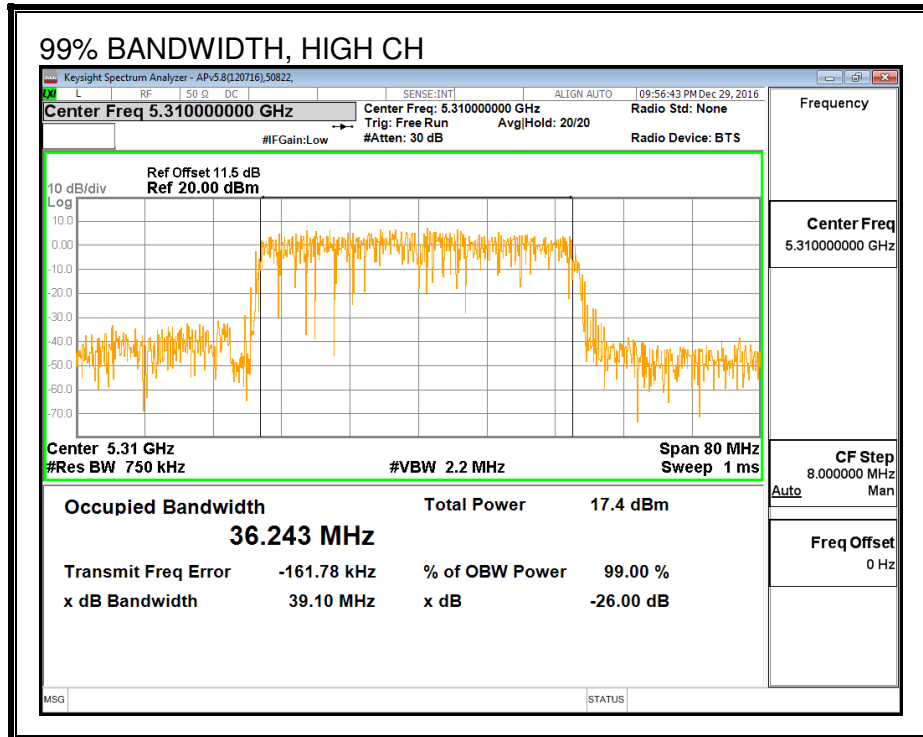
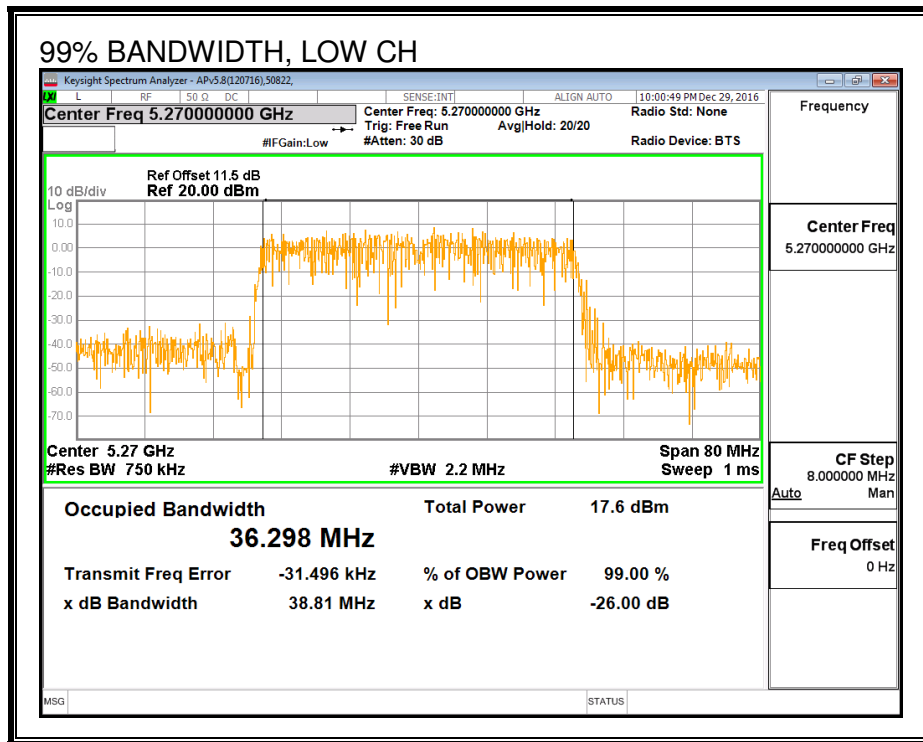


99% BANDWIDTH, ANTENNA A



99% BANDWIDTH, ANTENNA B



8.17.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	45256	Date:	1/31/17
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Average Power Results

Channel	Frequency (MHz)	Antenna A Power (dBm)	Antenna B Power (dBm)	Total Power (dBm)
Low	5270	15.96	15.93	18.96
High	5310	13.44	13.47	16.47

8.17.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 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 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.

DIRECTIONAL ANTENNA GAIN

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

Antenna A	Antenna B	Uncorrelated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
4.11	3.36	3.75

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

Antenna B	Antenna B	Correlated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
4.11	3.36	6.75

RESULTS

ID:	45256	Date:	1/31/17
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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	5270	40.24	36.257	3.75	6.75	24.00	10.25
High	5310	40.16	36.243	3.75	6.75	24.00	10.25

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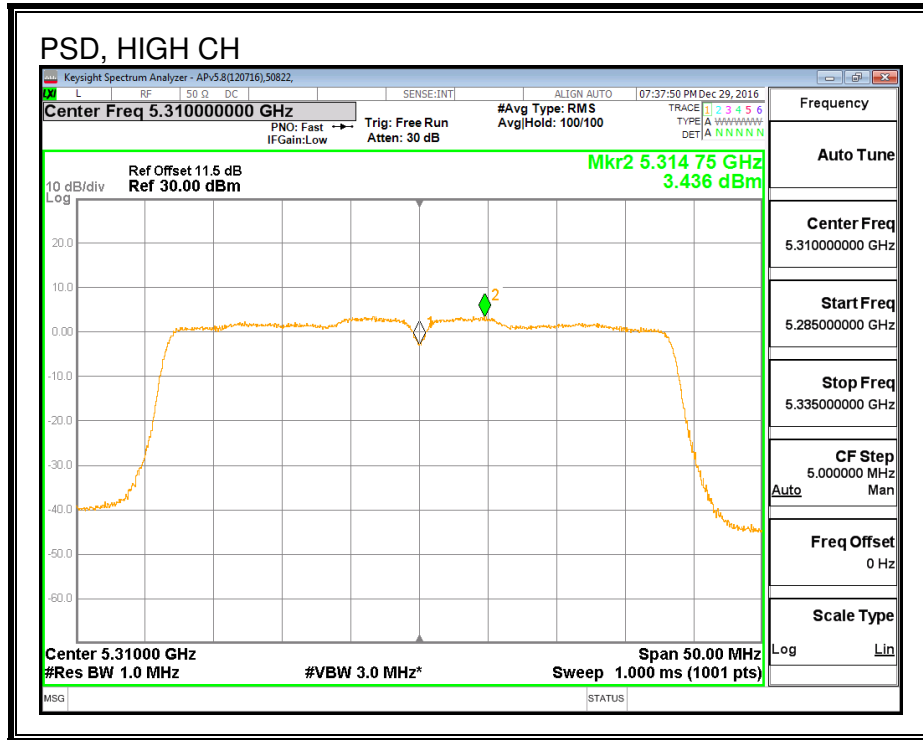
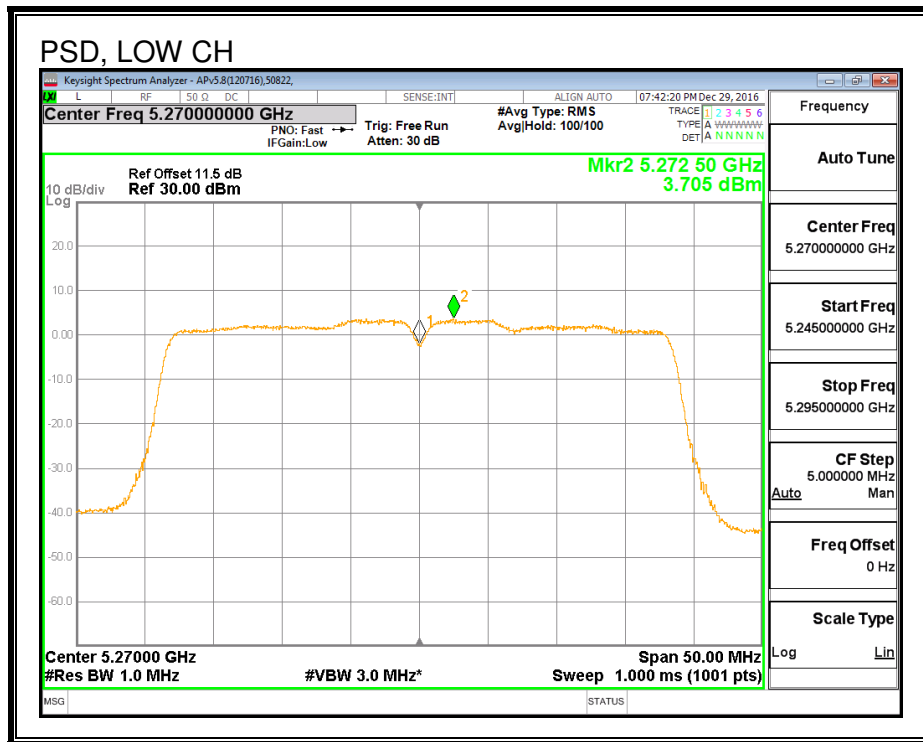
Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	15.96	15.93	18.96	24.00	-5.04
High	5310	13.44	13.47	16.47	24.00	-7.53

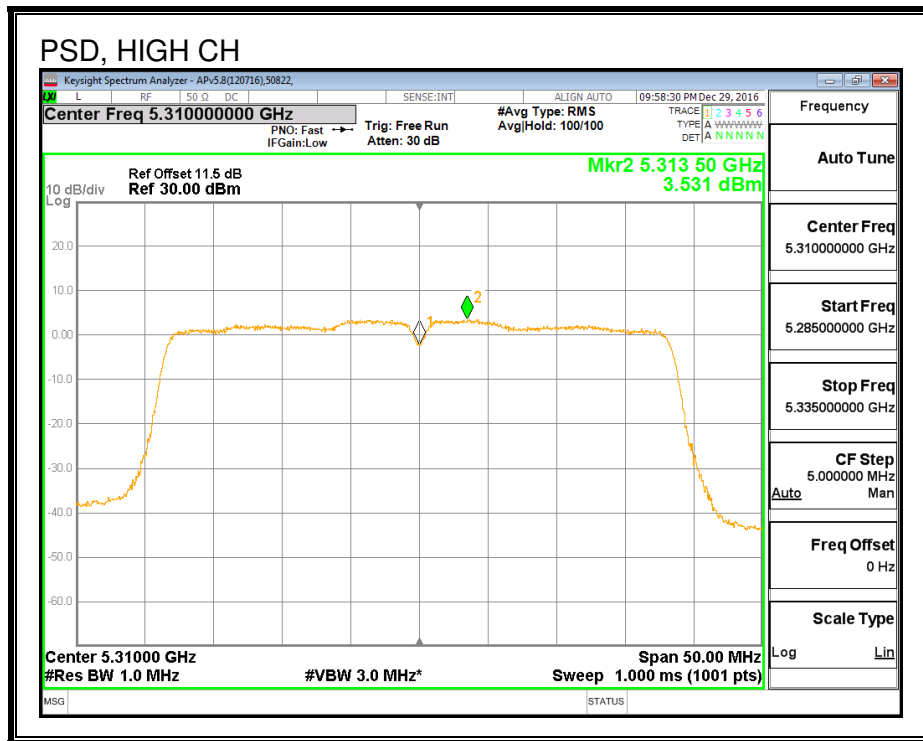
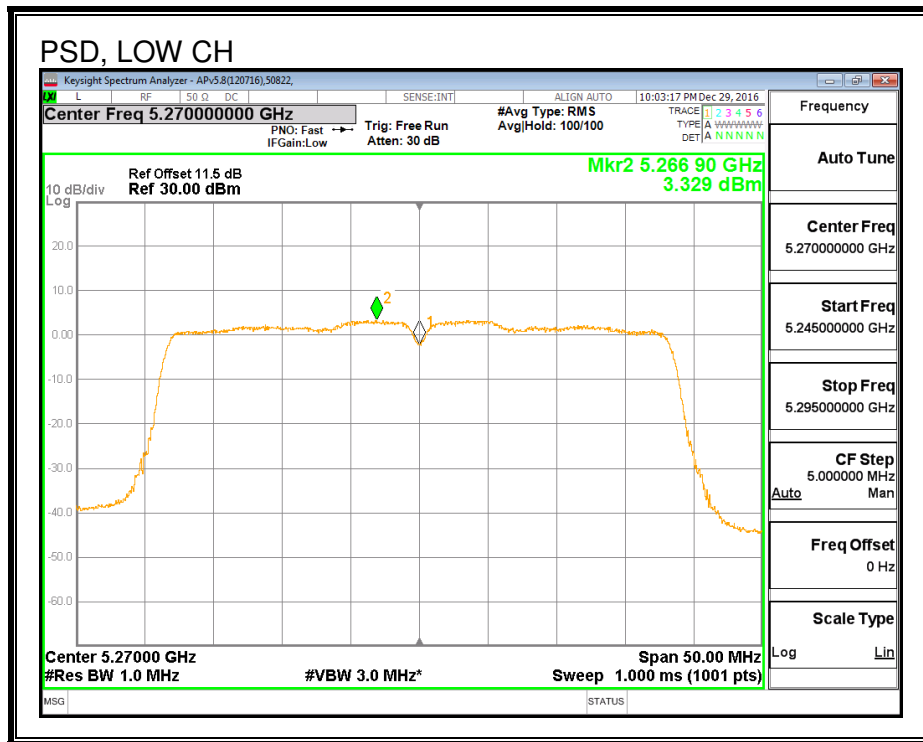
PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5270	3.71	3.33	6.63	10.25	-3.62
High	5310	3.44	3.53	6.59	10.25	-3.66

PSD, Antenna A



PSD, Antenna B



8.18. 802.11ac VHT80 Antenna A MODE IN THE 5.3 GHz BAND

8.18.1. 26 dB BANDWIDTH

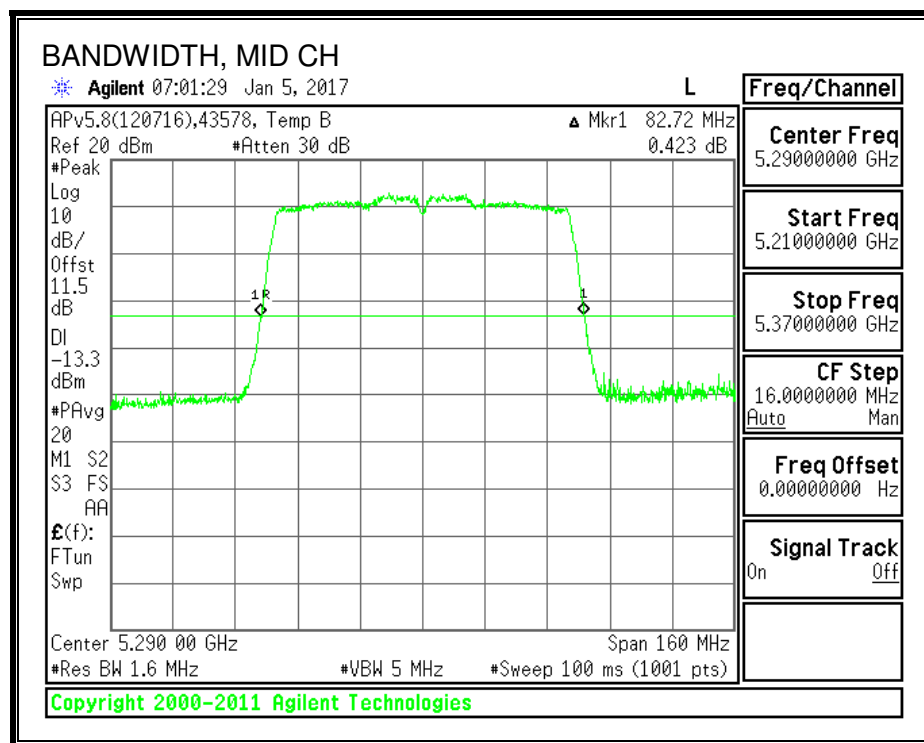
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Mid	5290	82.720

26 dB BANDWIDTH



8.18.2. 99% BANDWIDTH

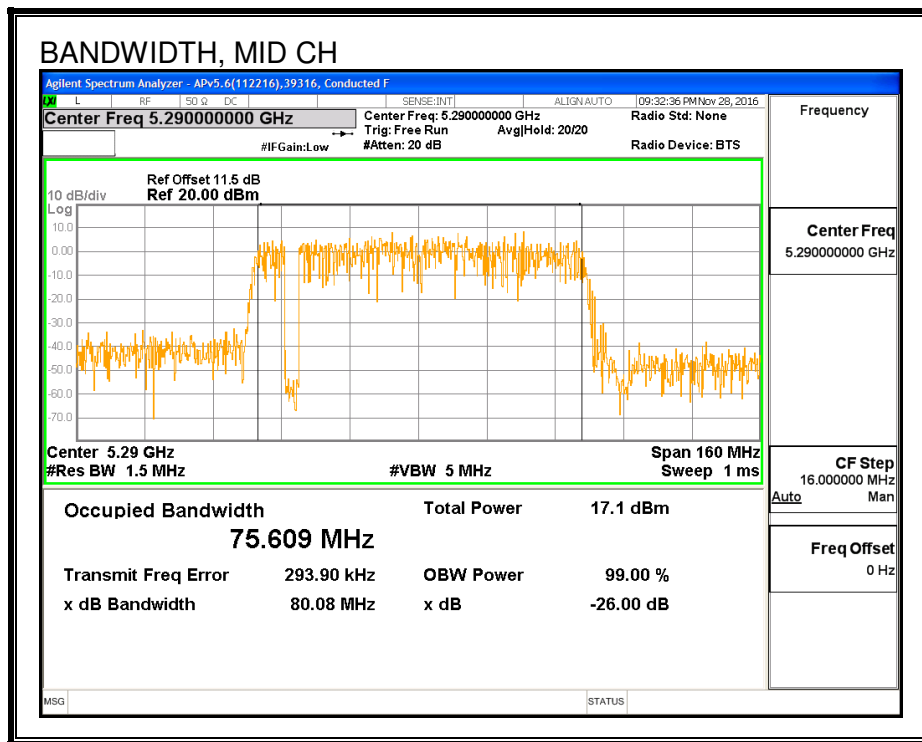
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Mid	5290	75.609

99% BANDWIDTH



8.18.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	45256	Date:	1/31/17
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Channel	Frequency (MHz)	Power (dBm)
Mid	5290	13.48

8.18.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	45256	Date:	1/31/17
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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)
Mid	5290	82.56	75.609	4.11	24.00	11.00

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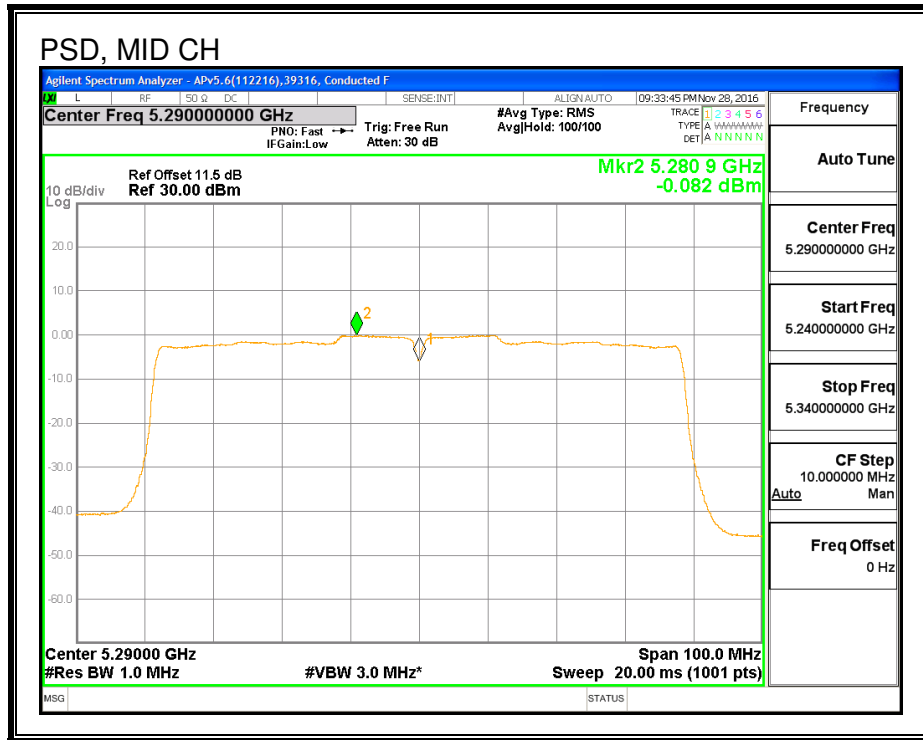
Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	13.48	13.48	24.00	-10.52

PPSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5290	-0.082	0.12	11.00	-10.88

PSD



8.19. 802.11ac VHT80 Antenna B MODE IN THE 5.3 GHz BAND

8.19.1. 26 dB BANDWIDTH

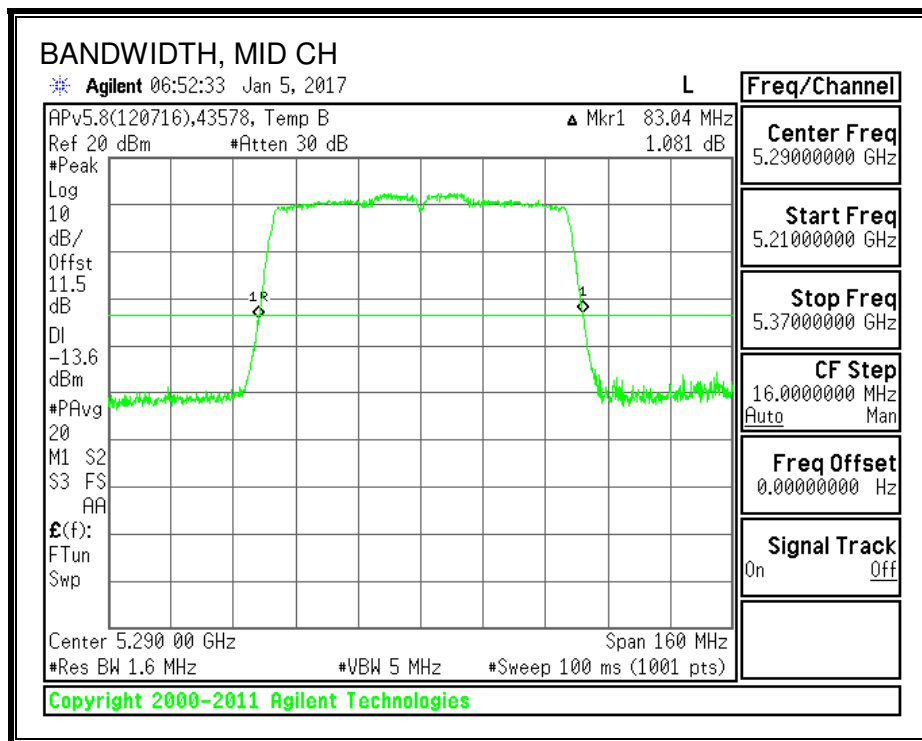
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Mid	5290	83.040

26 dB BANDWIDTH



8.19.2. 99% BANDWIDTH

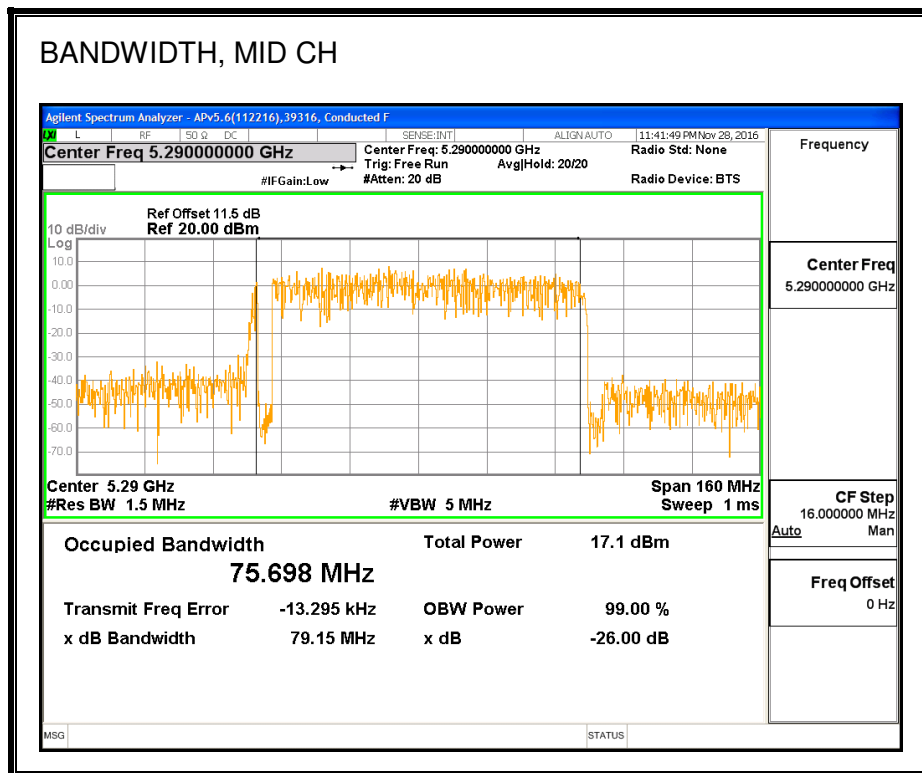
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Mid	5290	75.698

99% BANDWIDTH



8.19.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	45256	Date:	1/31/17
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Channel	Frequency (MHz)	Power (dBm)
Mid	5290	13.45

8.19.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	45256	Date:	1/31/17
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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)
Mid	5290	82.56	75.698	3.36	24.00	11.00

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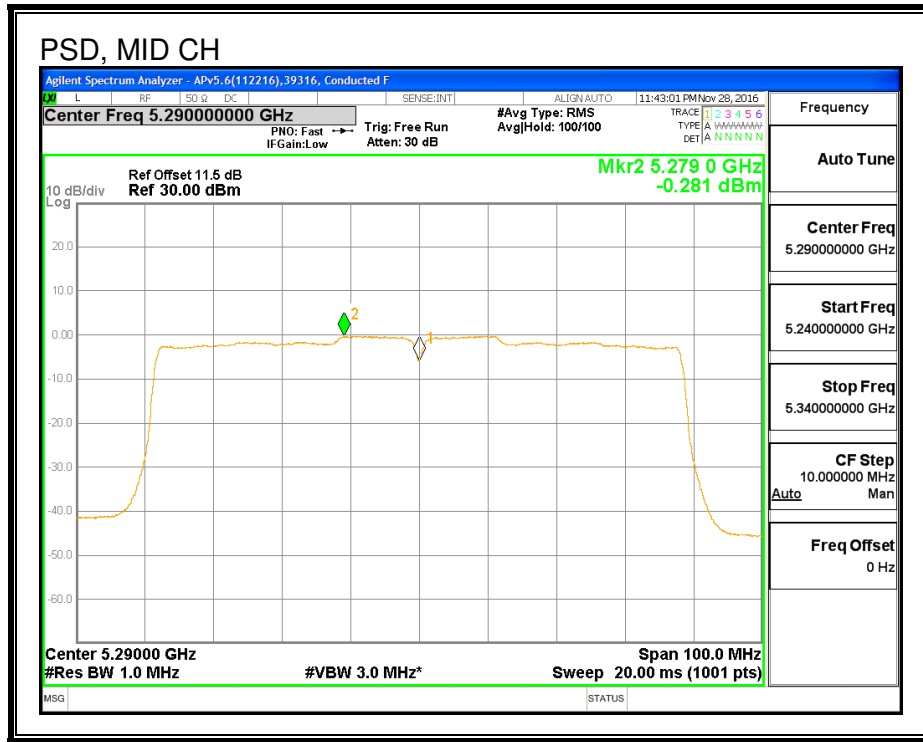
Output Power Results

Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	13.45	13.45	24.00	-10.55

PPSD Results

Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5290	-0.28	-0.08	11.00	-11.08

PSD



8.20. 802.11ac VHT80 2Tx (Antenna A + Antenna B) CDD MODE IN THE 5.3 GHz BAND

8.20.1. 26 dB BANDWIDTH

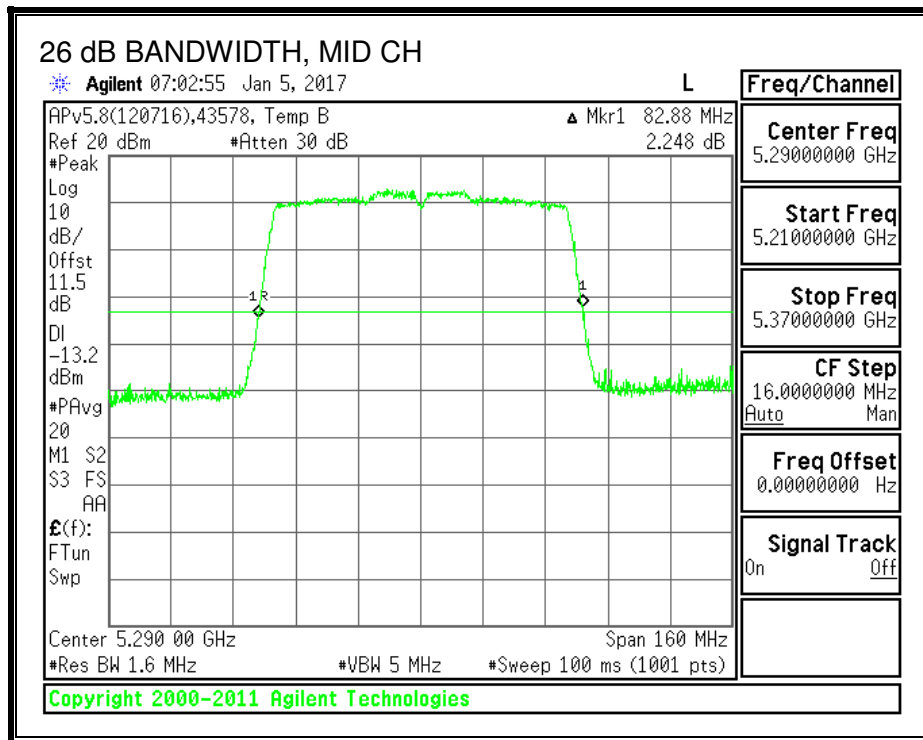
LIMITS

None; for reporting purposes only.

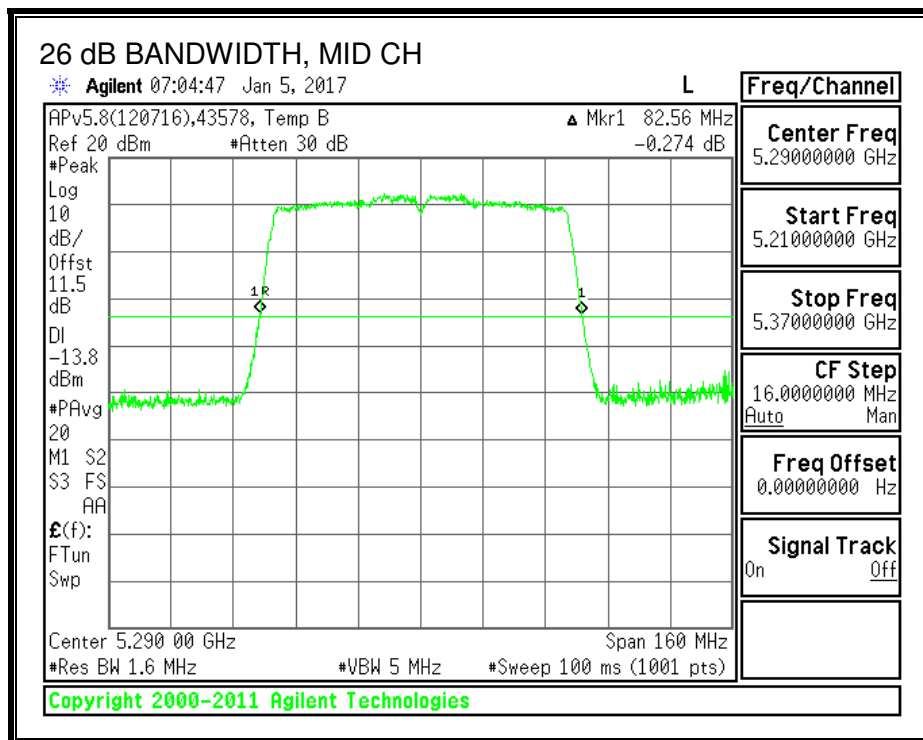
RESULTS

Channel	Frequency (MHz)	26 dB BW Antenna A (MHz)	26 dB BW Antenna B (MHz)
Mid	5290	82.880	82.560

26 DB BANDWIDTH, Antenna A



26 DB BANDWIDTH, Antenna B



8.20.2. 99% BANDWIDTH

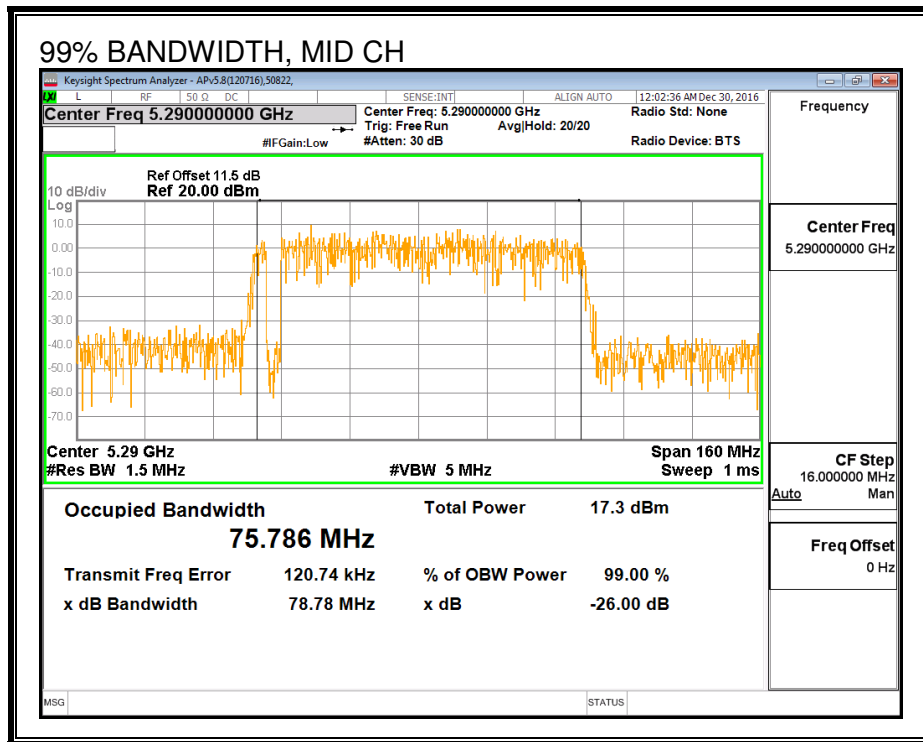
LIMITS

None; for reporting purposes only.

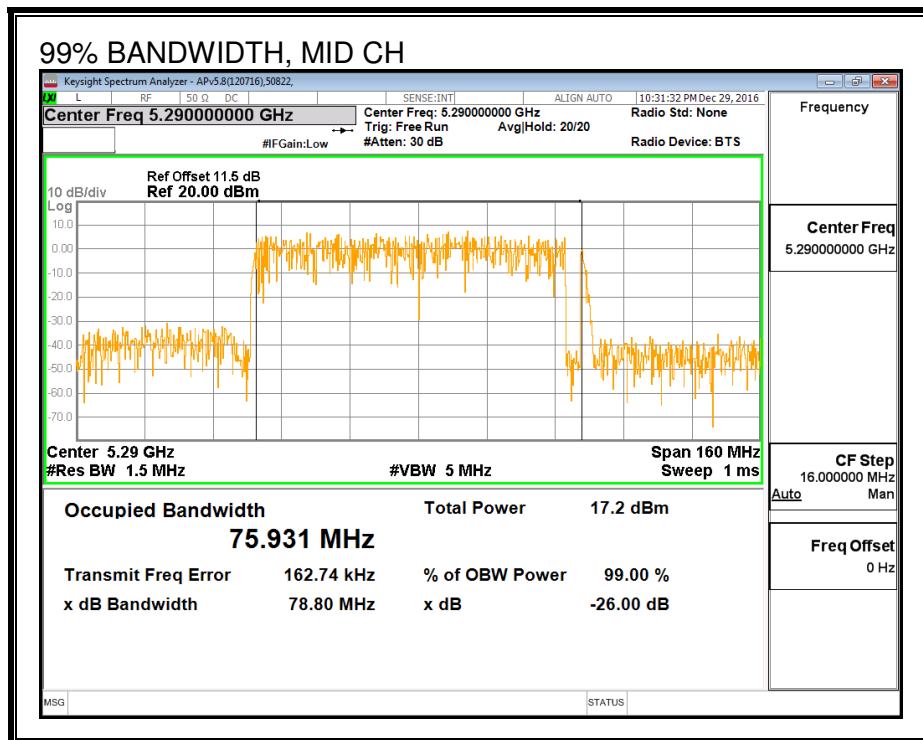
RESULTS

Channel	Frequency (MHz)	99% BW Antenna A (MHz)	99% BW Antenna B (MHz)
Mid	5290	75.786	75.931

99% BANDWIDTH, Antenna A



99% BANDWIDTH, Antenna B



8.20.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	45256	Date:	1/31/17
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Average Power Results

Channel	Frequency (MHz)	Antenna A Power (dBm)	Antenna B Power (dBm)	Total Power (dBm)
Mid	5290	11.47	11.48	14.49

8.20.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 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 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.

DIRECTIONAL ANTENNA GAIN

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

Antenna A	Antenna B	Uncorrelated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
4.11	3.36	3.75

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

Antenna A	Antenna B	Correlated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
4.11	3.36	6.75

RESULTS

ID:	45256	Date:	1/31/17
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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)
Mid	5290	82.56	75.786	3.75	6.75	24.00	10.25

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd PSD
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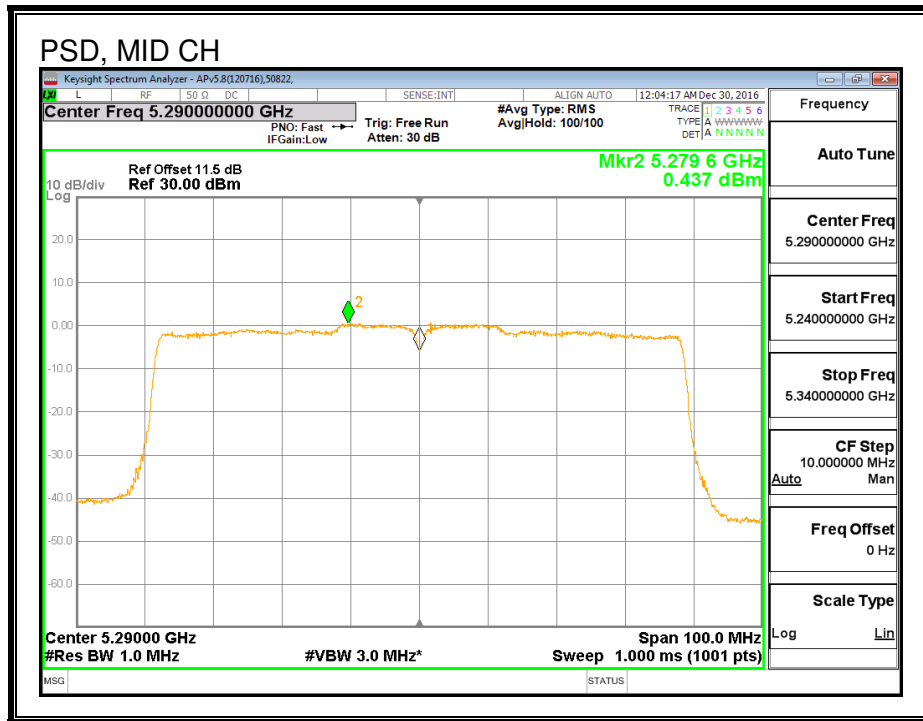
Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	11.47	11.48	14.49	24.00	-9.51

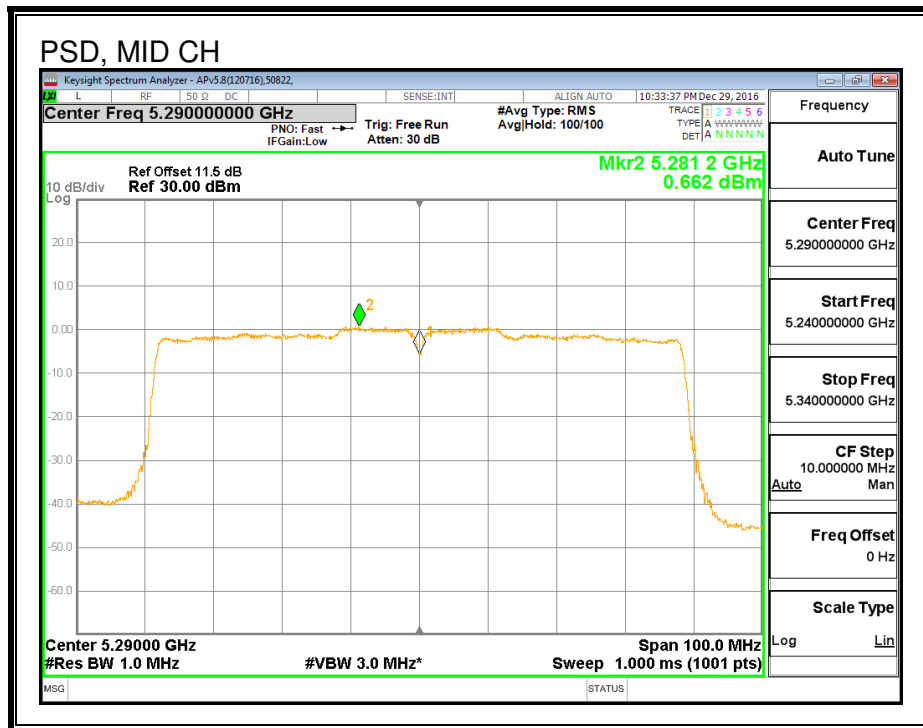
PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5290	0.44	0.66	3.77	10.25	-6.48

PSD, Antenna A



PSD, Antenna B



8.21. 802.11n HT20 Antenna A MODE IN THE 5.6 GHz BAND

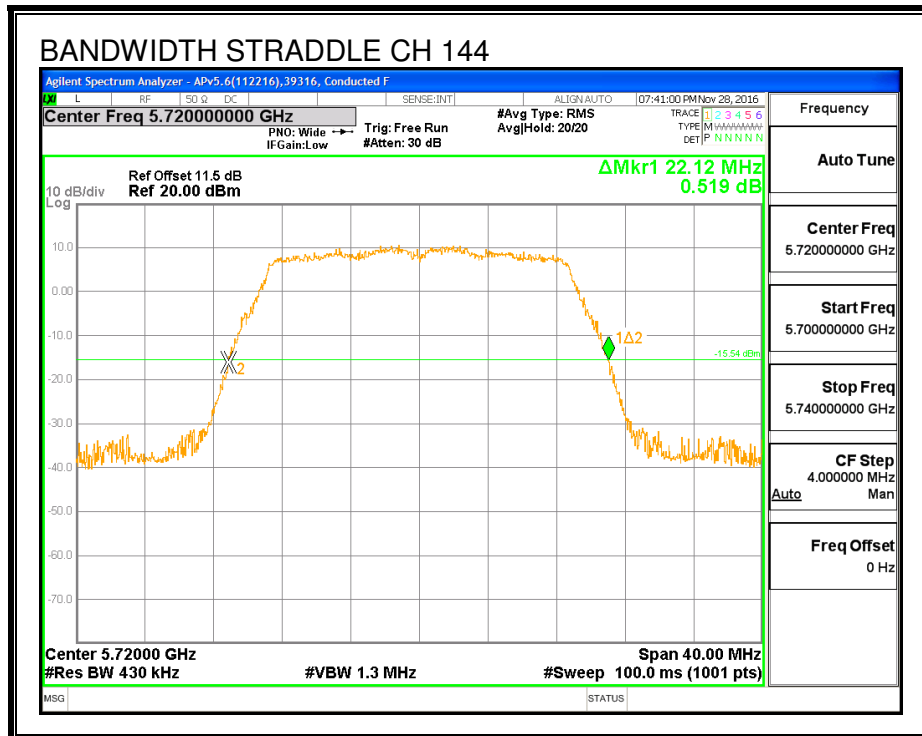
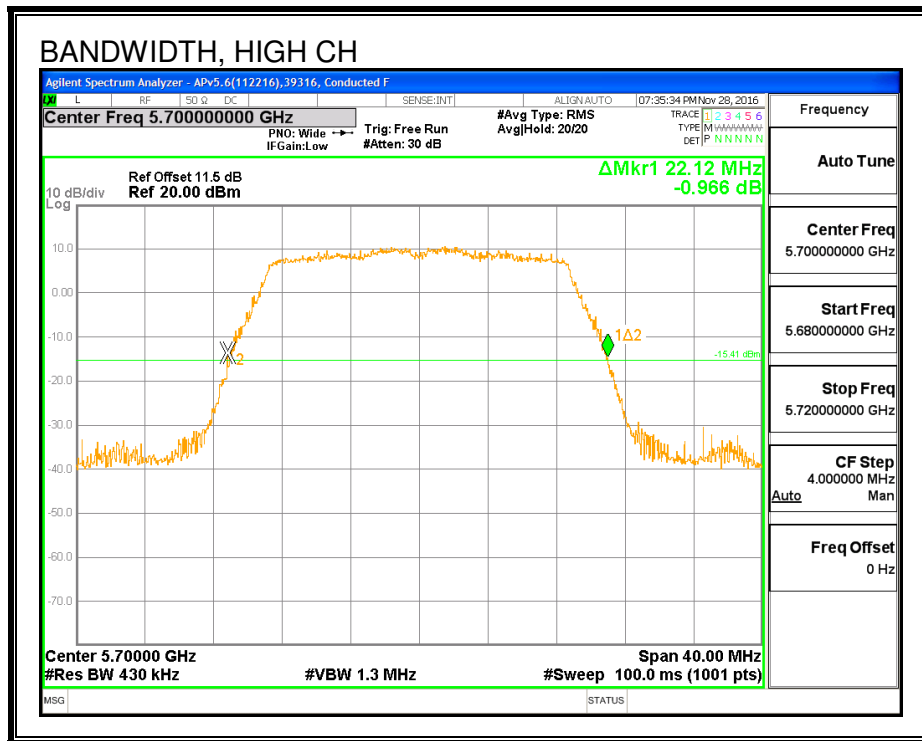
8.21.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.080
Mid	5580	22.000
High	5700	22.120
144	5720	22.120



8.21.2. 99% BANDWIDTH

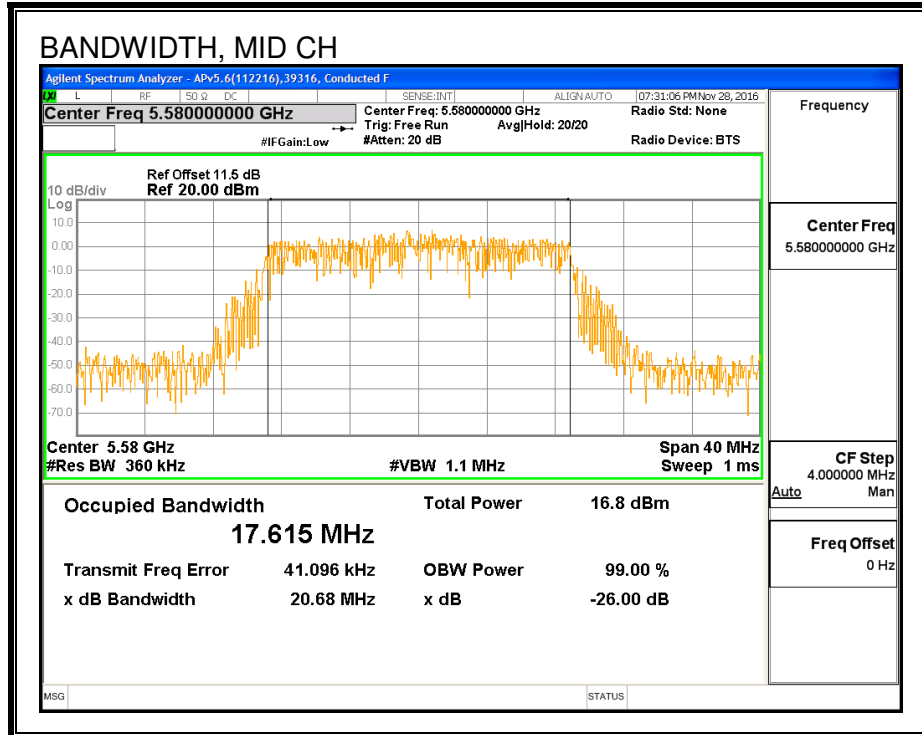
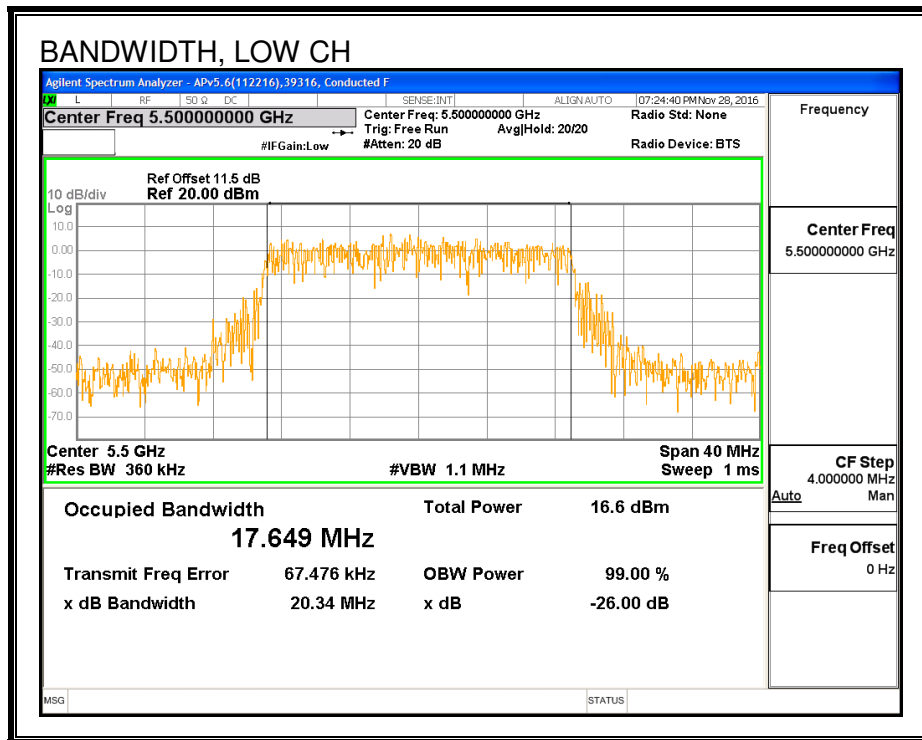
LIMITS

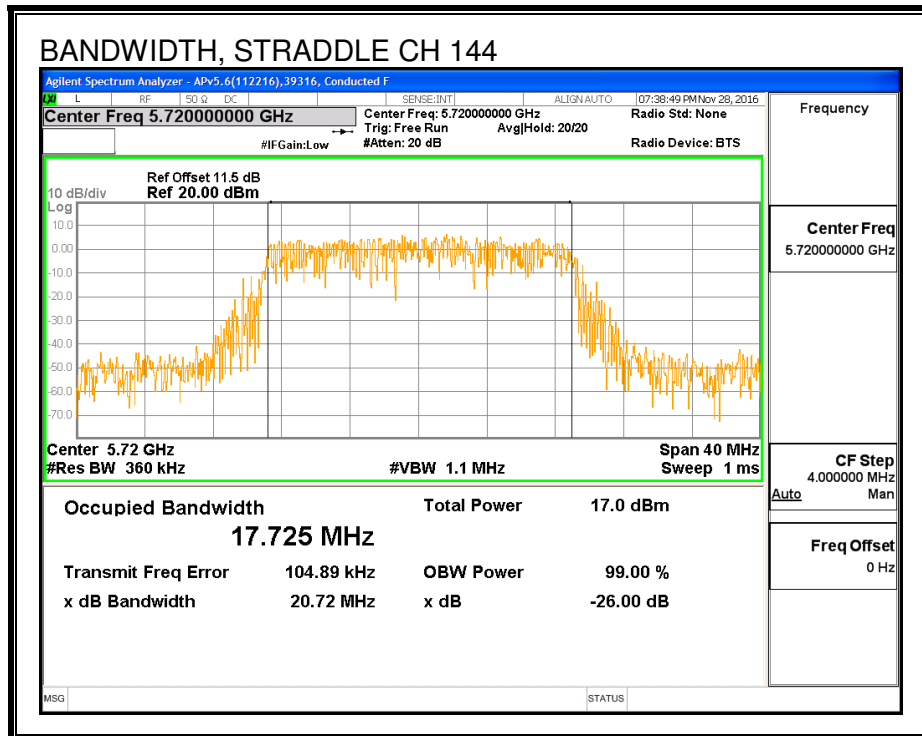
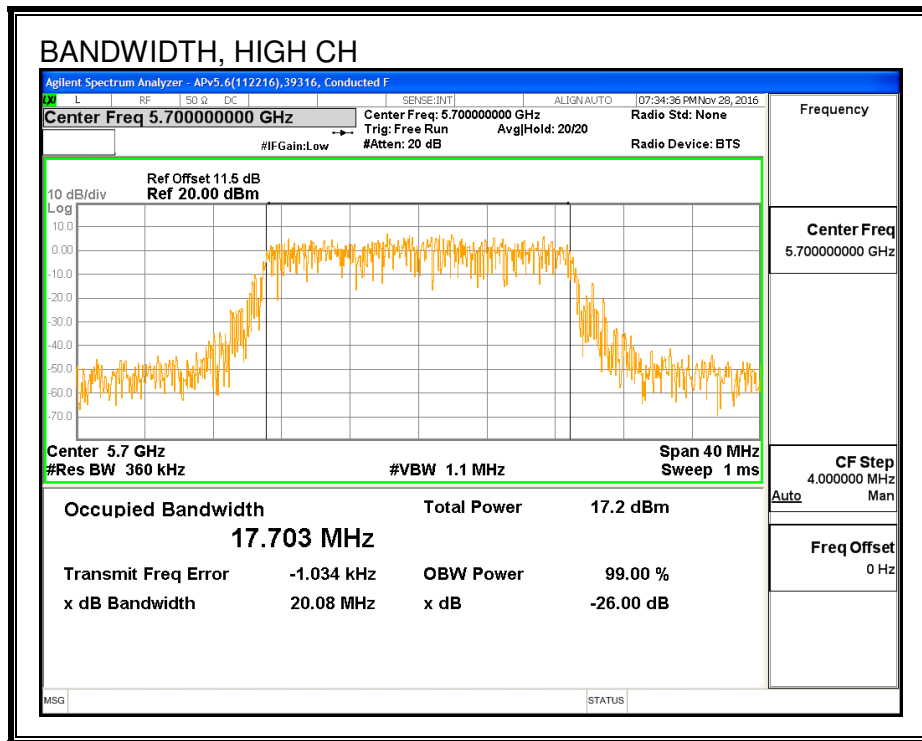
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.649
Mid	5580	17.615
High	5700	17.703
144	5720	17.725

99% BANDWIDTH





8.21.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	45256	Date:	1/31/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5500	14.92
Mid	5580	14.95
High	5700	14.97
144	5720	14.92

8.21.4. 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:	45256	Date:	1/31/17
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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	5500	22.08	17.65	5.41	23.47	11.00
Mid	5580	22.00	17.62	5.41	23.46	11.00
High	5700	22.12	17.70	5.41	23.48	11.00

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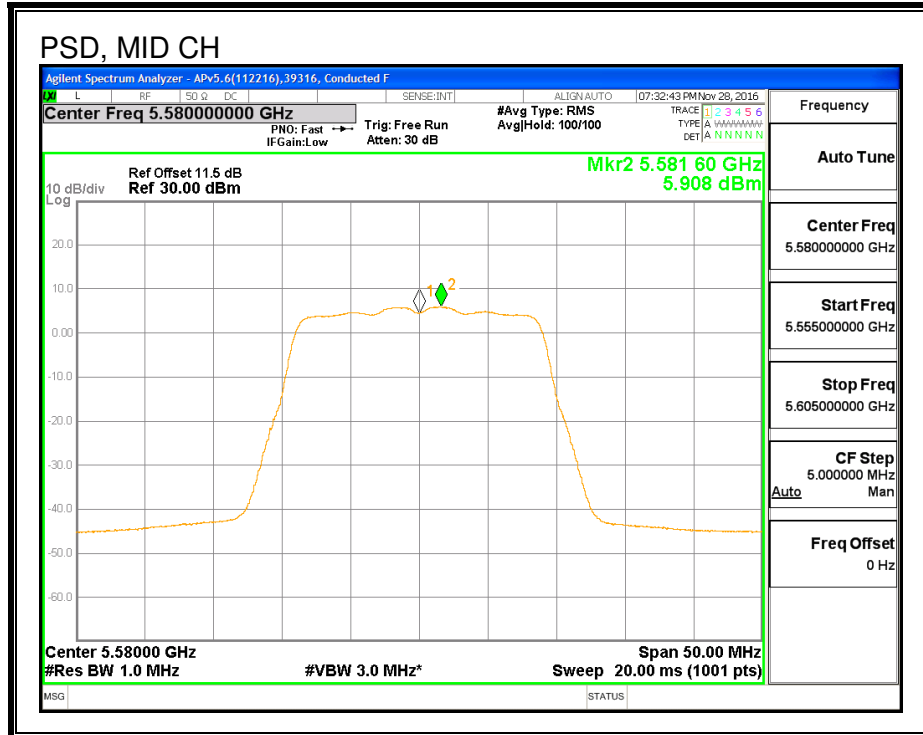
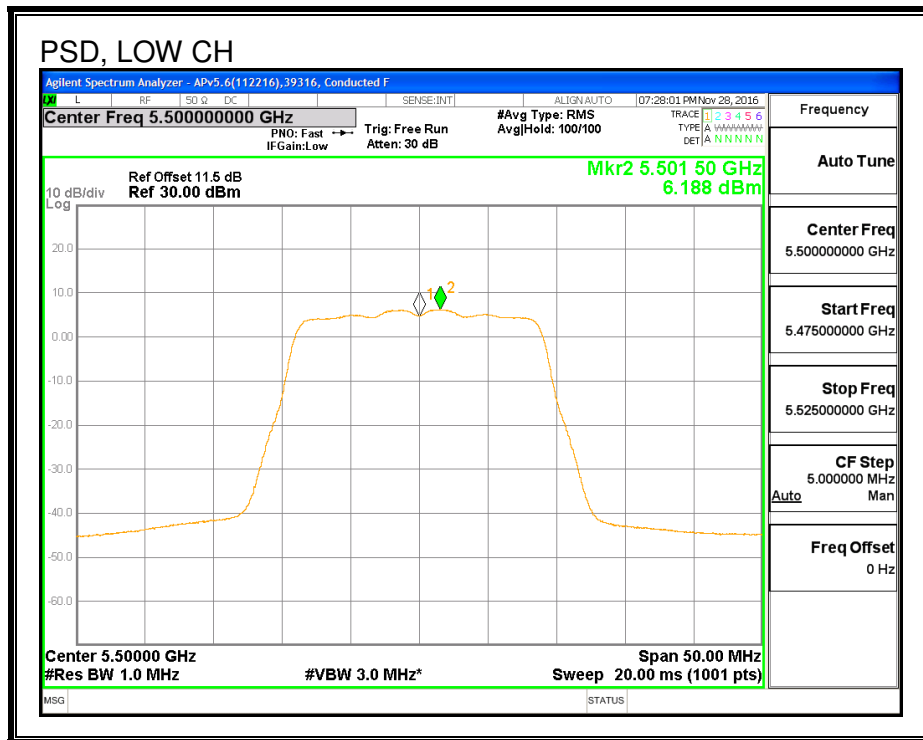
Output Power Results

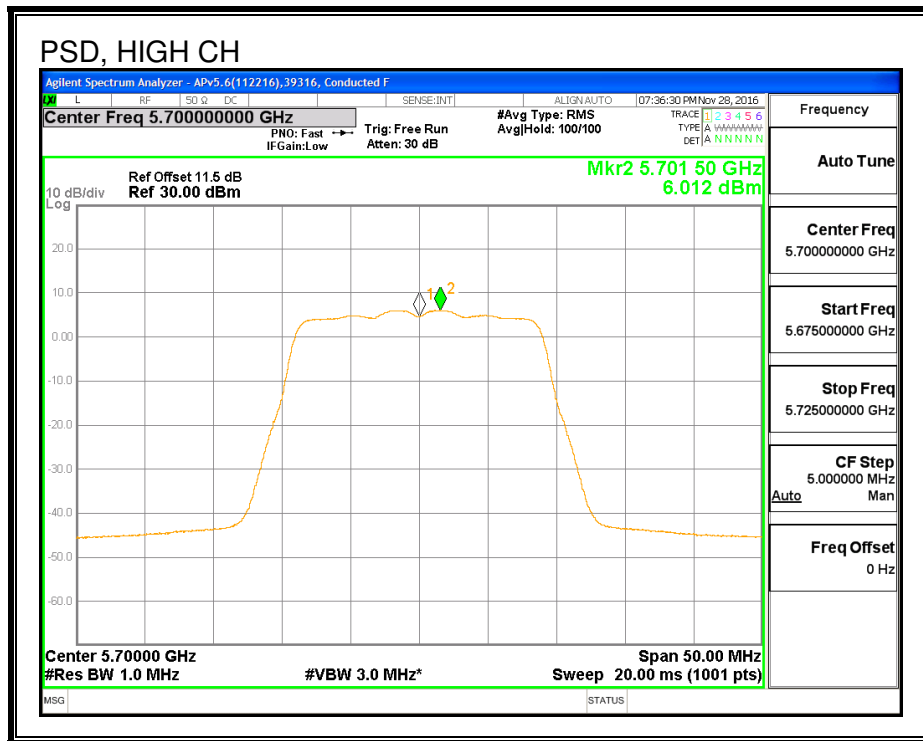
Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.92	14.92	23.47	-8.55
Mid	5580	14.95	14.95	23.46	-8.51
High	5700	14.97	14.97	23.48	-8.51

PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	6.19	6.19	11.00	-4.81
Mid	5580	5.91	5.91	11.00	-5.09
High	5700	6.01	6.01	11.00	-4.99

PSD





8.22. 802.11ac VHT20 Antenna A STRADDLE CHANNEL 144 RESULTS

8.22.1. 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)
144	5720	16.06	5.41	5.41	23.06	11.00

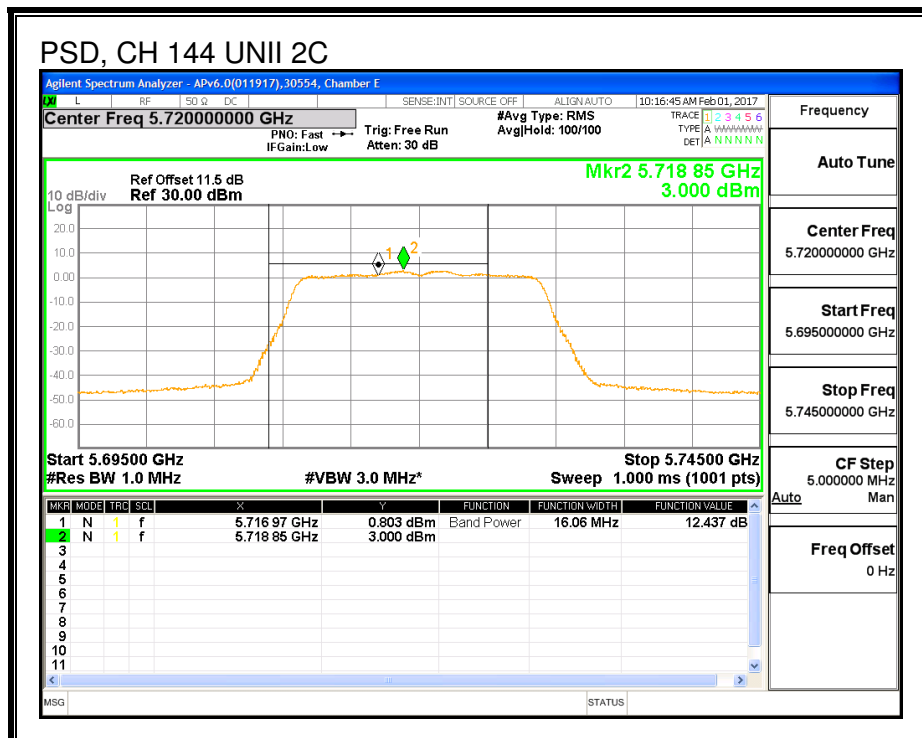
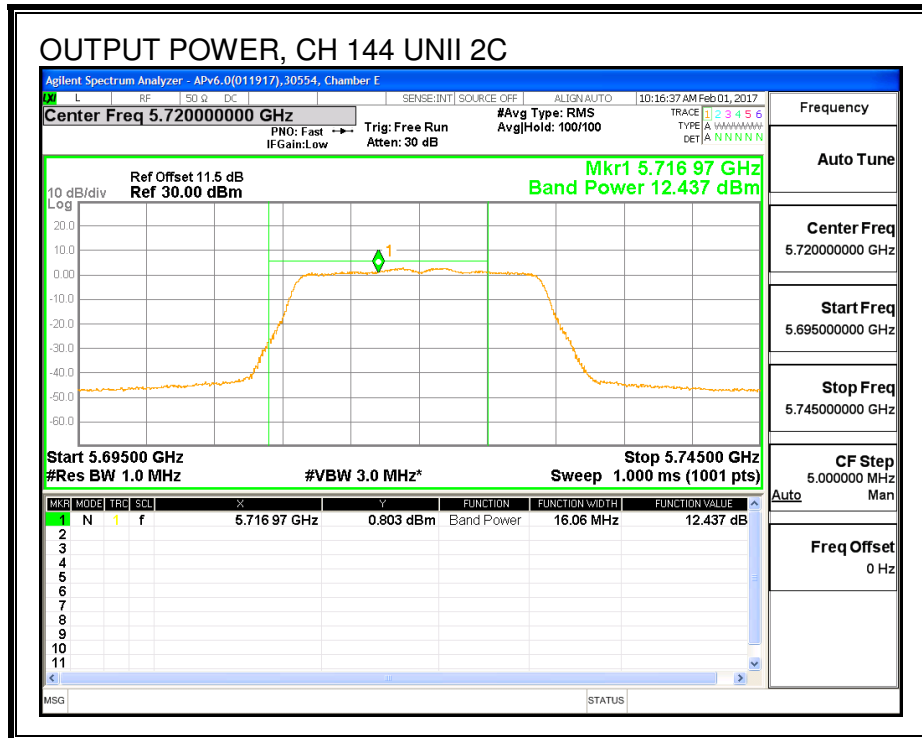
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	12.44	12.44	23.06	-10.62

PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	3.00	3.00	11.00	-8.00



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	6.06	5.41	30.00	30.00

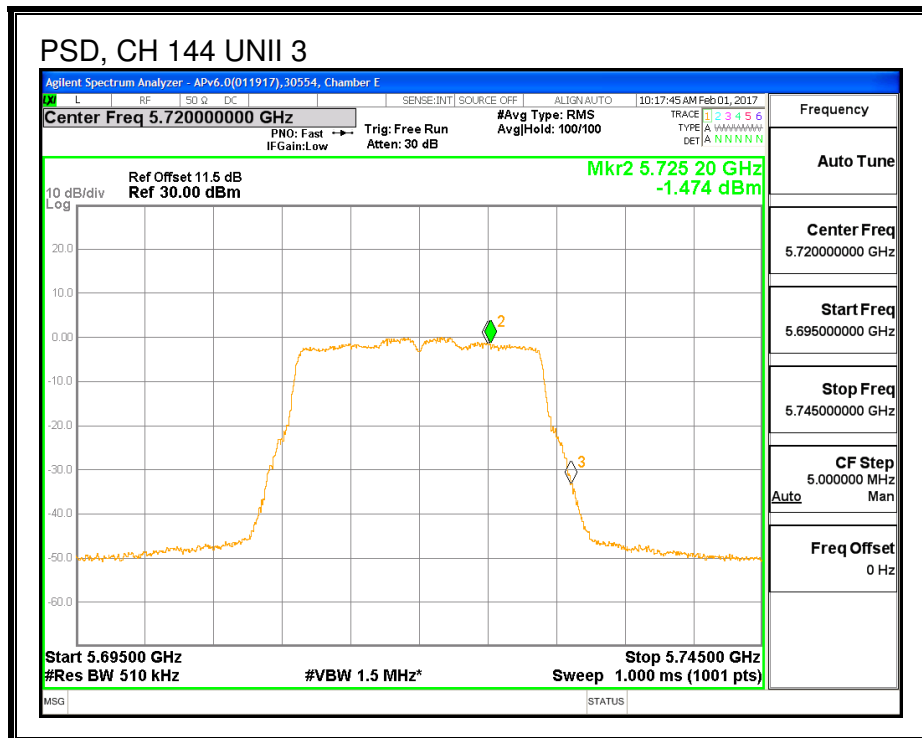
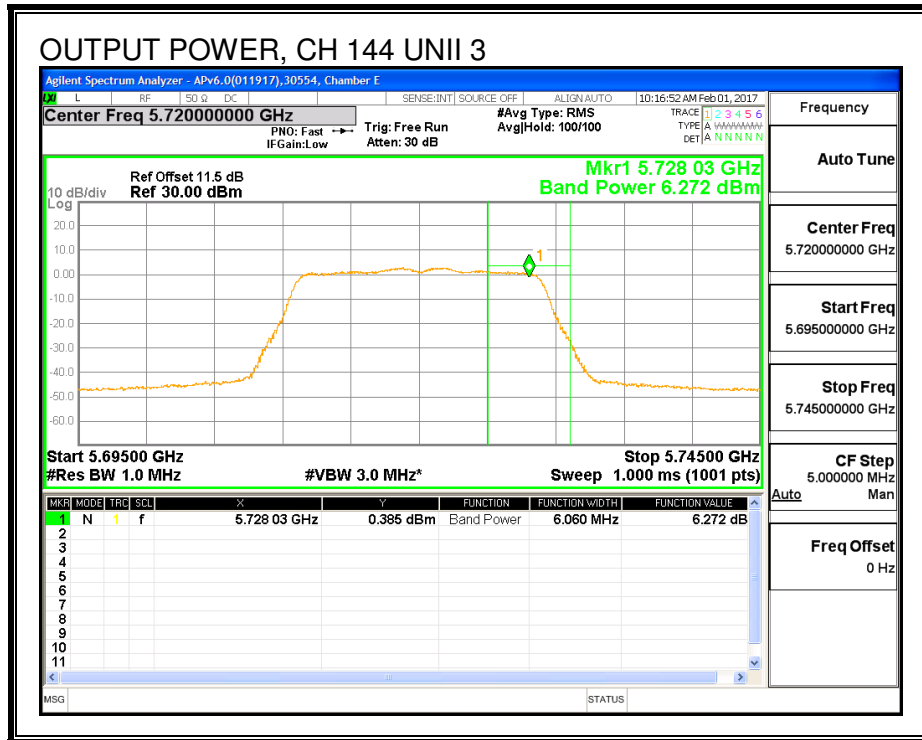
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	6.27	6.27	30.00	-23.73

PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	-1.47	-1.47	30.00	-31.47



8.22.2. 6 dB BANDWIDTH

LIMITS

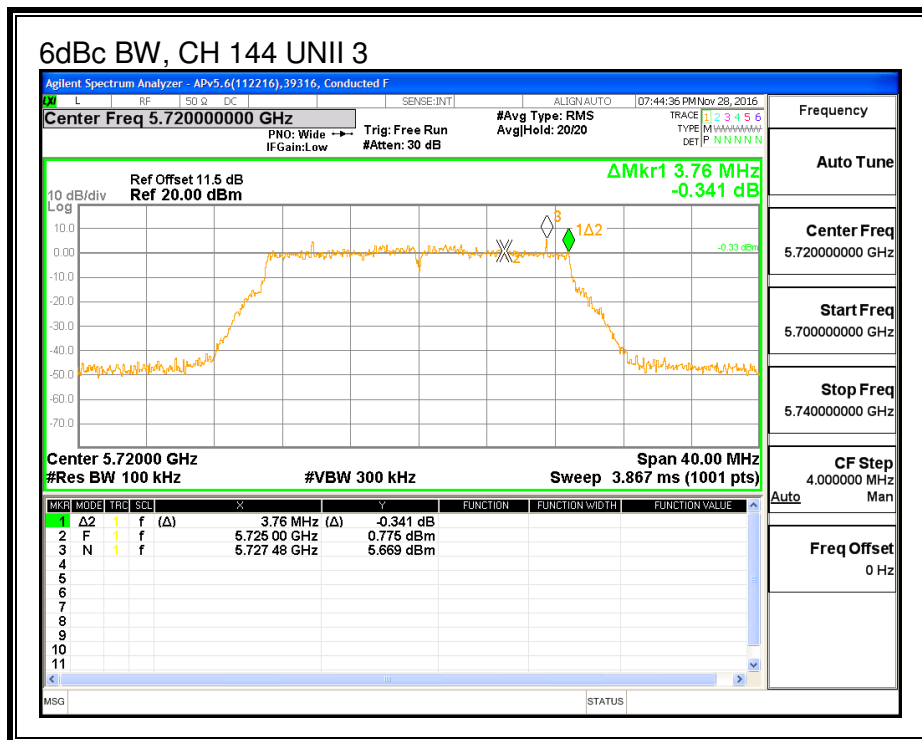
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
144	5720	3.760

6 dB BANDWIDTH



8.23. 802.11n HT20 Antenna B MODE IN THE 5.6 GHz BAND

8.23.1. 26 dB BANDWIDTH

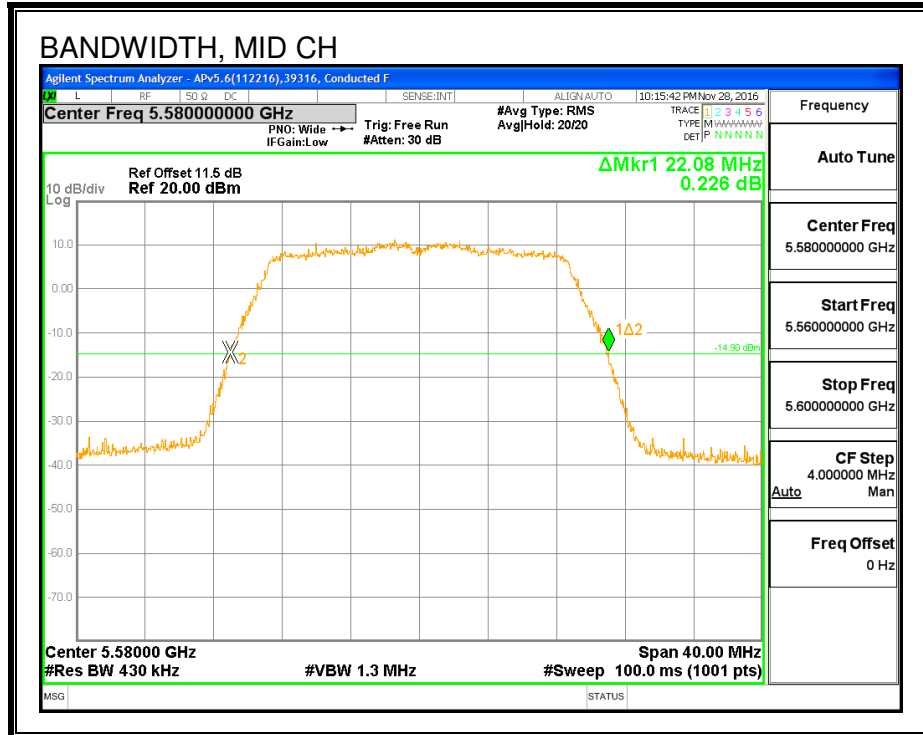
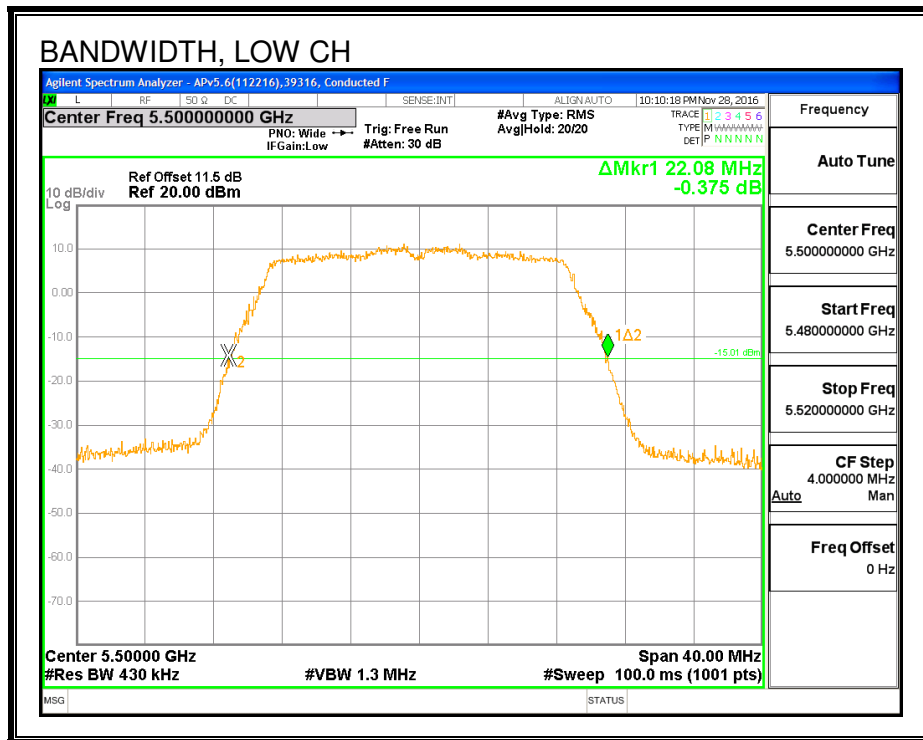
LIMITS

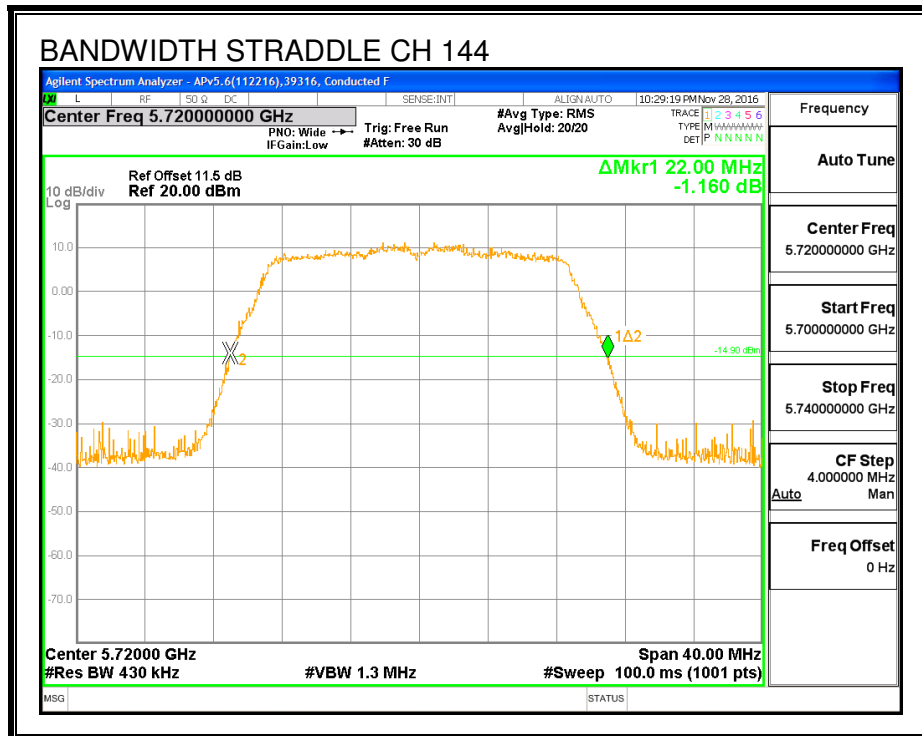
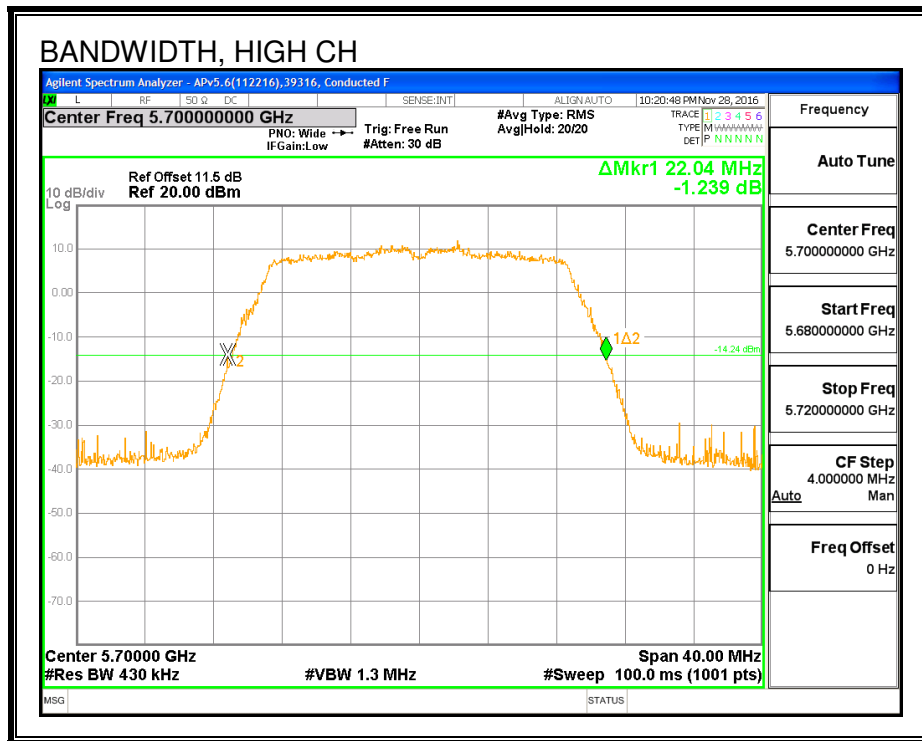
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.080
Mid	5580	22.080
High	5700	22.040
144	5720	22.000

26 dB BANDWIDTH





8.23.2. 99% BANDWIDTH

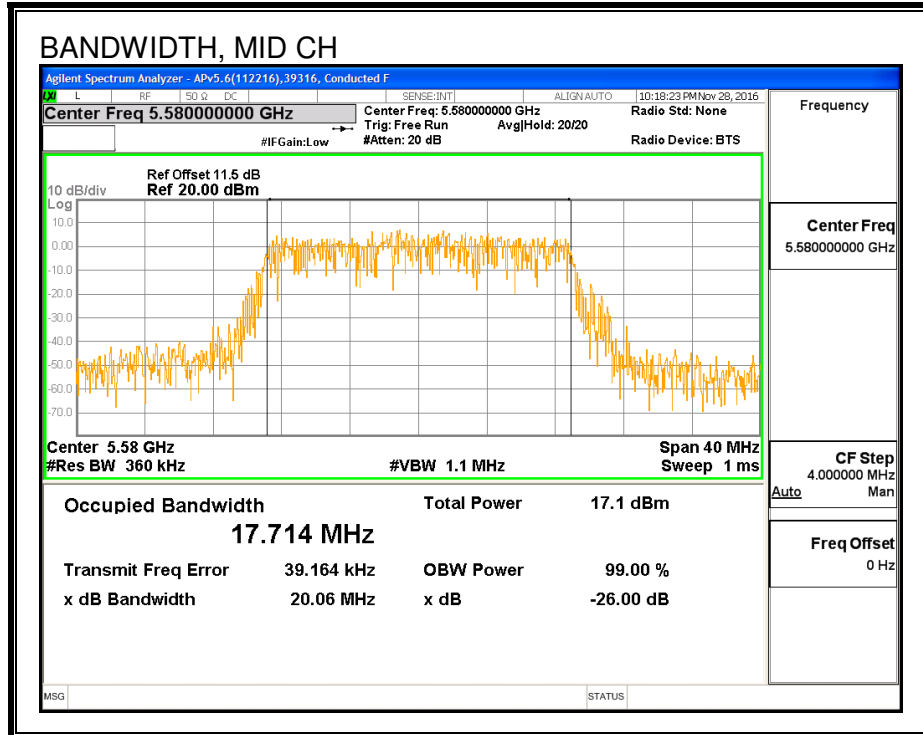
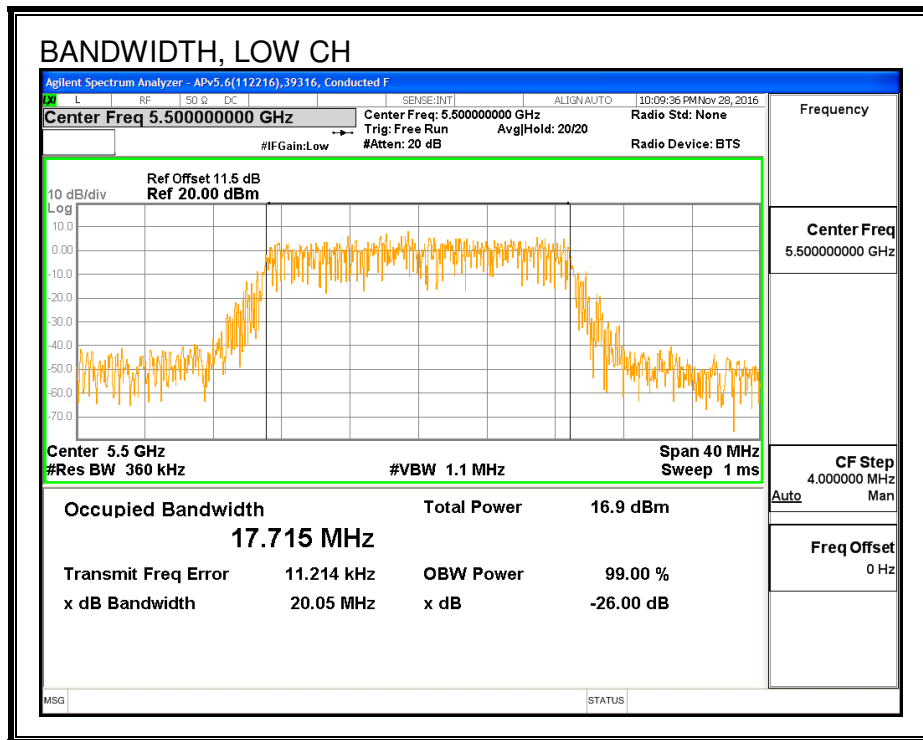
LIMITS

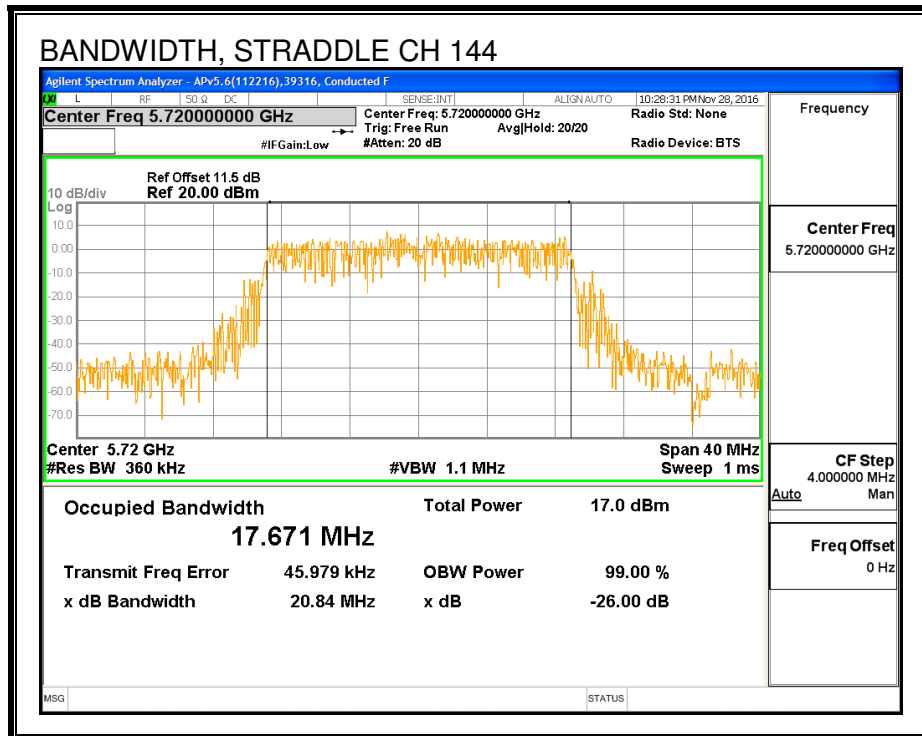
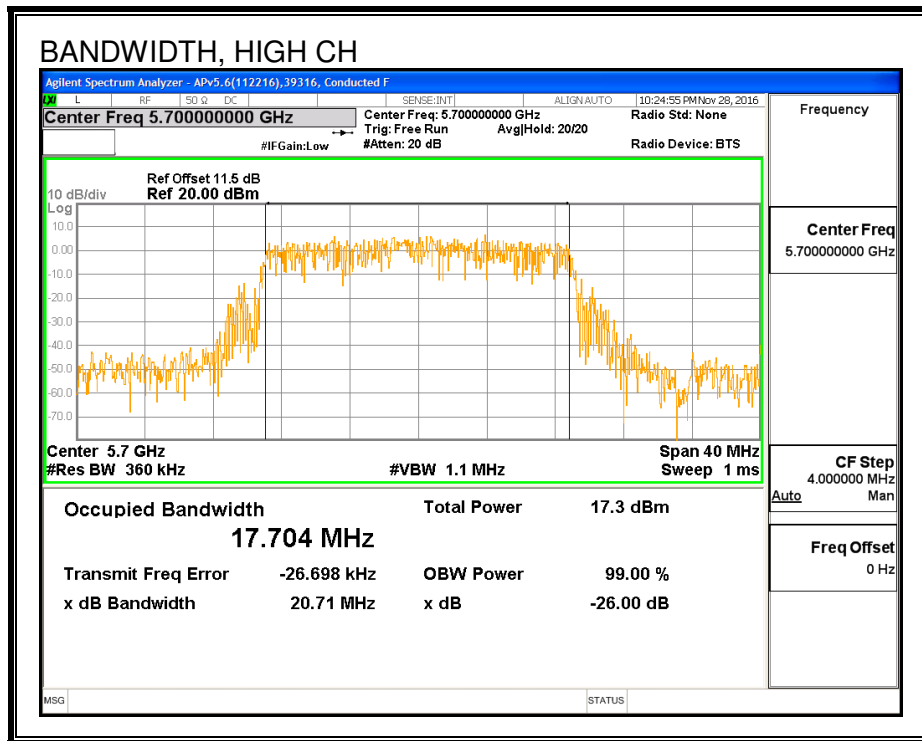
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.715
Mid	5580	17.714
High	5700	17.704
144	5720	17.671

99% BANDWIDTH





8.23.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	45256	Date:	1/31/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5500	14.94
Mid	5580	14.92
High	5700	14.98
144	5720	14.93

8.23.4. 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:	45256	Date:	1/31/17
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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	5500	22.08	17.72	5.17	23.48	11.00
Mid	5580	22.08	17.71	5.17	23.48	11.00
High	5700	22.04	17.70	5.17	23.48	11.00

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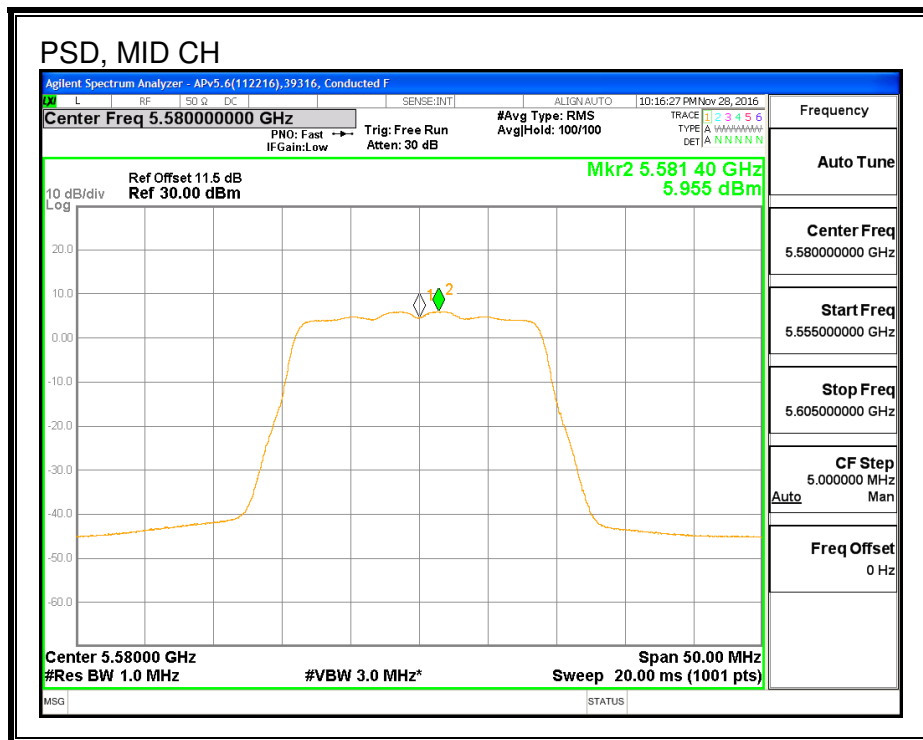
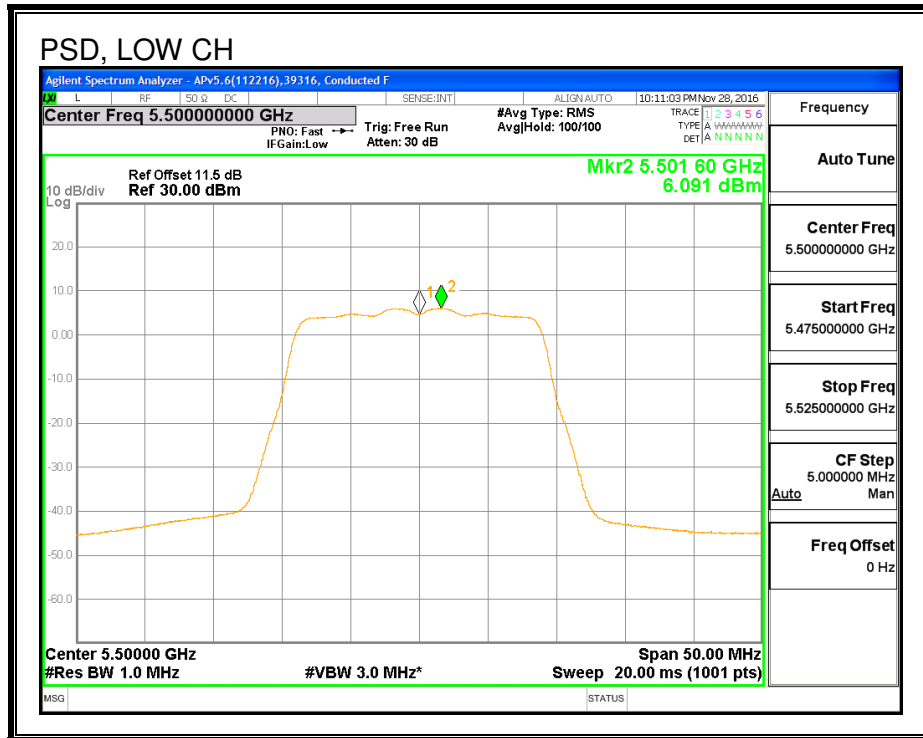
Output Power Results

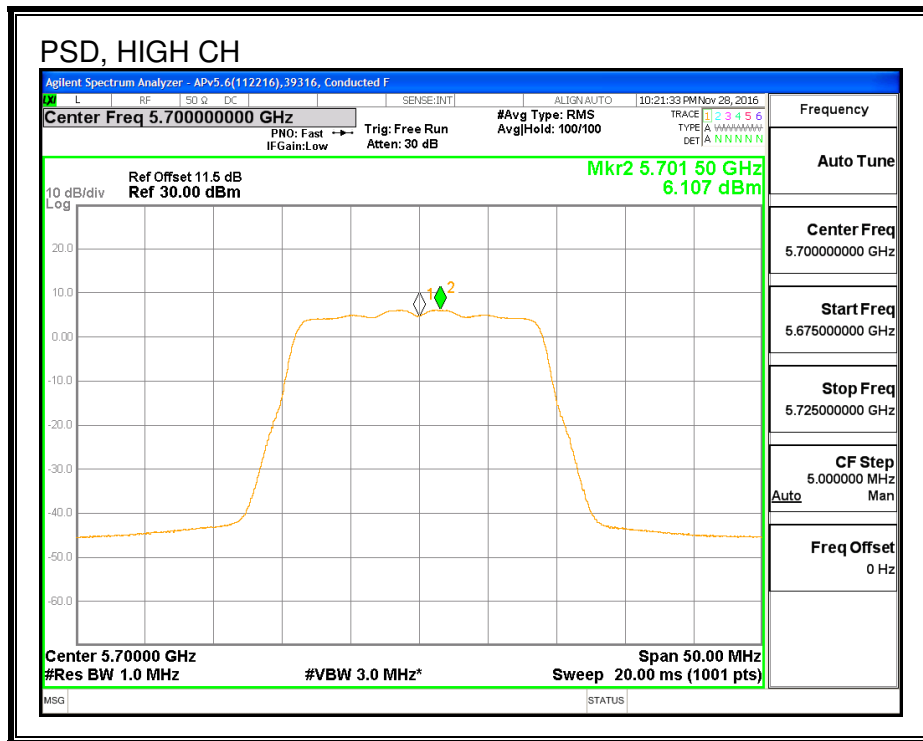
Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.94	14.94	23.48	-8.54
Mid	5580	14.92	14.92	23.48	-8.56
High	5700	14.98	14.98	23.48	-8.50

PSD Results

Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	6.091	6.09	11.00	-4.91
Mid	5580	5.955	5.96	11.00	-5.05
High	5700	6.107	6.11	11.00	-4.89

PSD





8.24. 802.11ac VHT20 Antenna B STRADDLE CHANNEL 144 RESULTS

8.24.1. 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)
144	5720	16.00	5.17	5.17	23.04	11.00

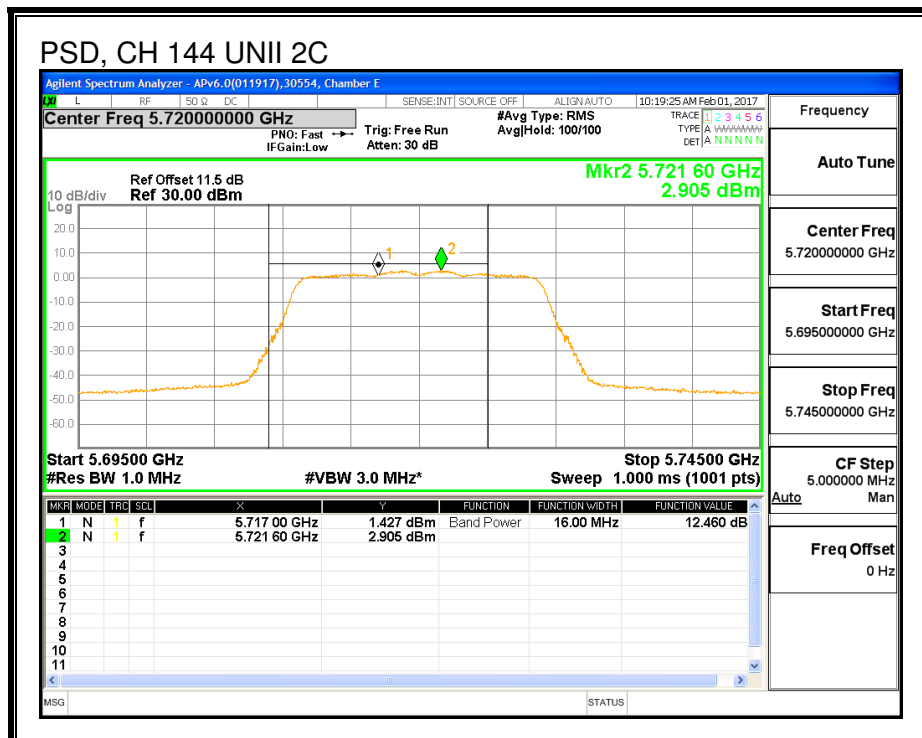
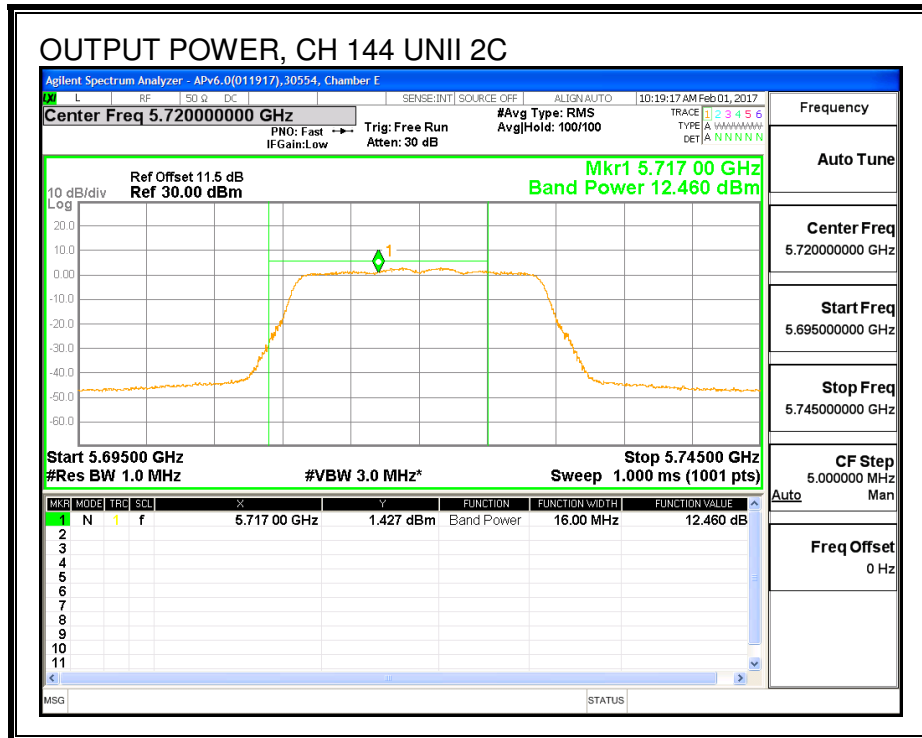
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	12.46	12.46	23.04	-10.58

PSD Results

Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	2.91	2.91	11.00	-8.10



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	6.00	5.17	30.00	30.00

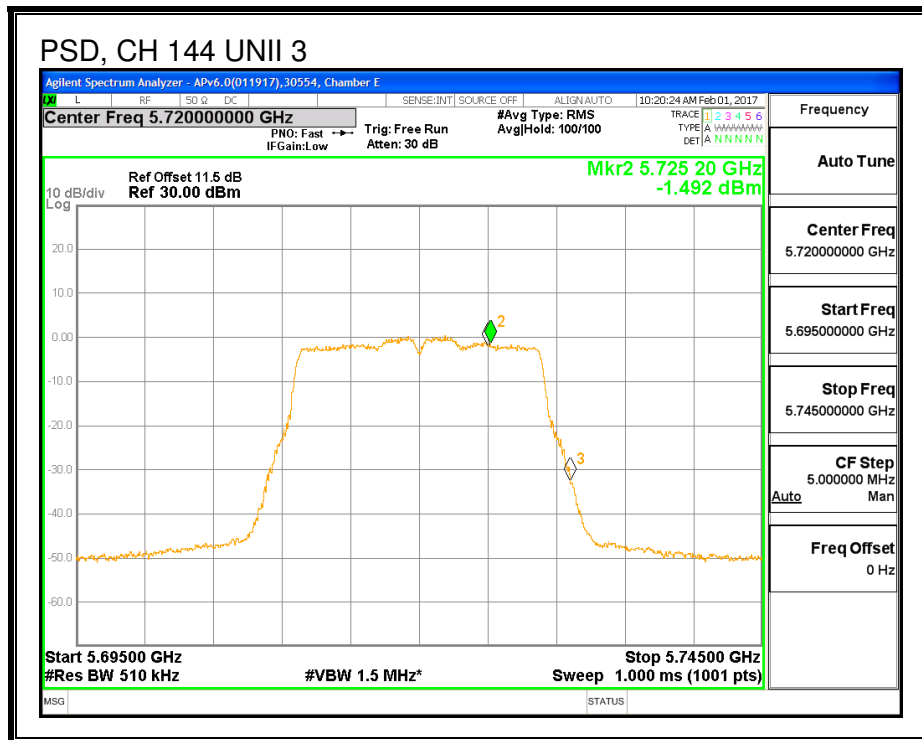
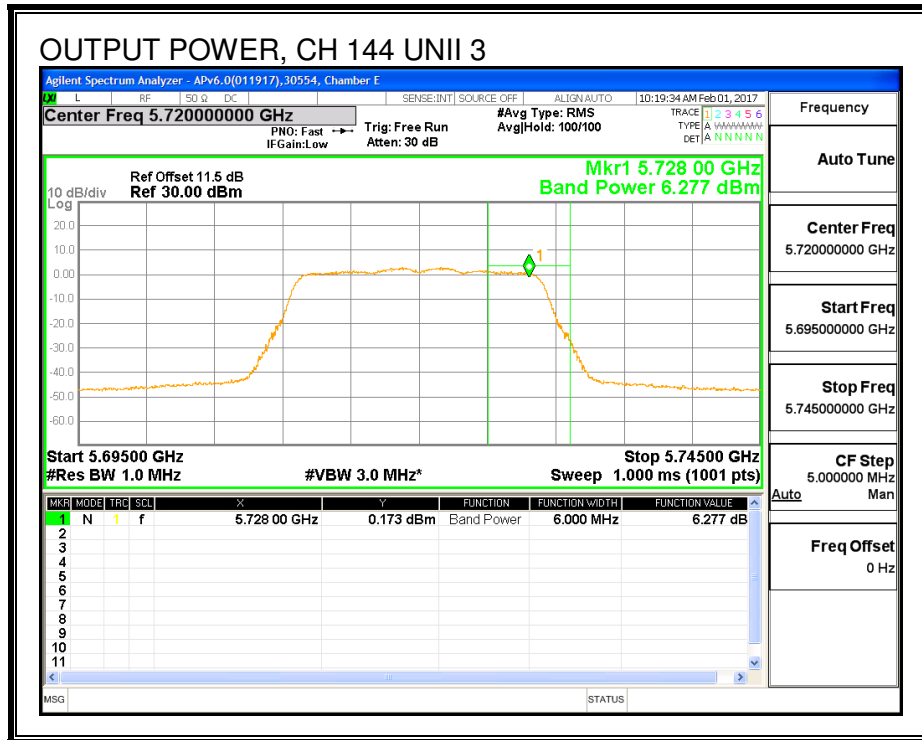
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	6.28	6.28	30.00	-23.72

PSD Results

Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	-1.49	-1.49	30.00	-31.49



8.24.2. 6 dB BANDWIDTH

LIMITS

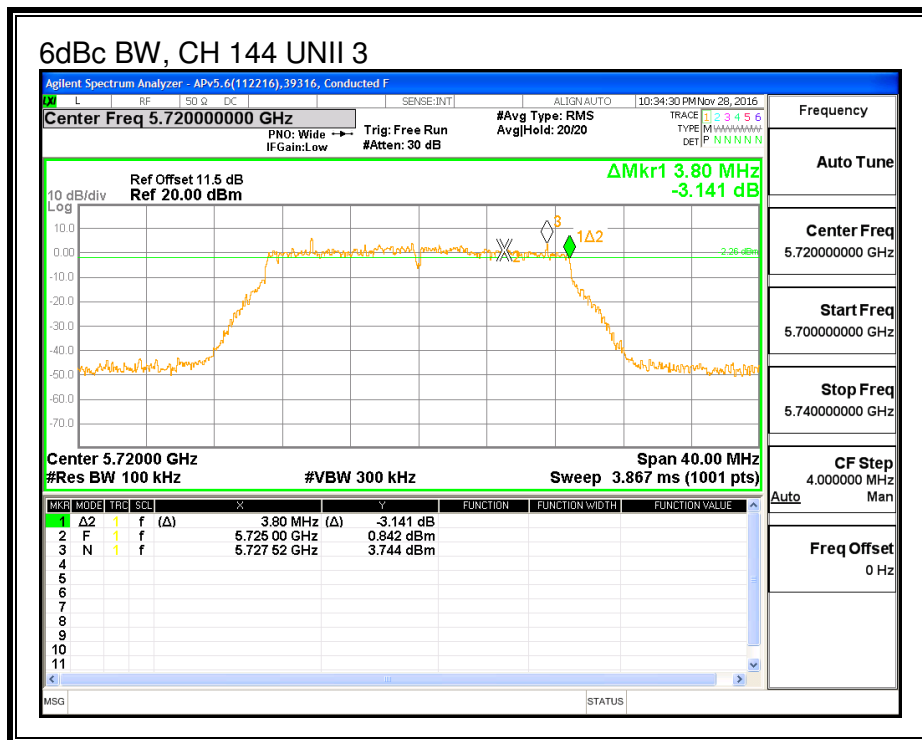
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
144	5720	3.800

6 dB BANDWIDTH



8.25. 802.11n HT20 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND

8.25.1. 26 dB BANDWIDTH

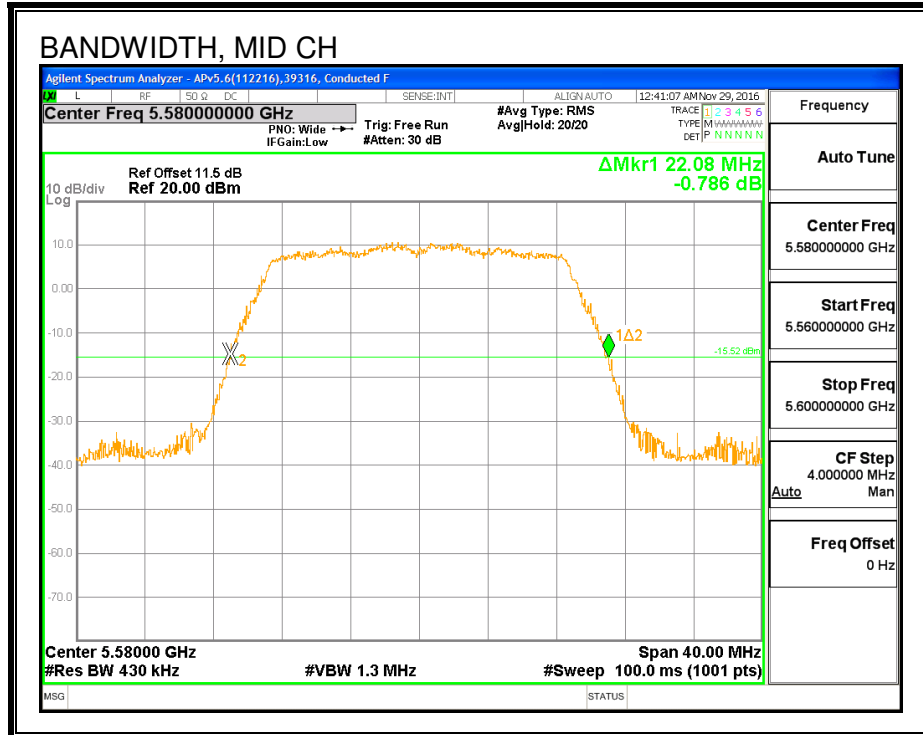
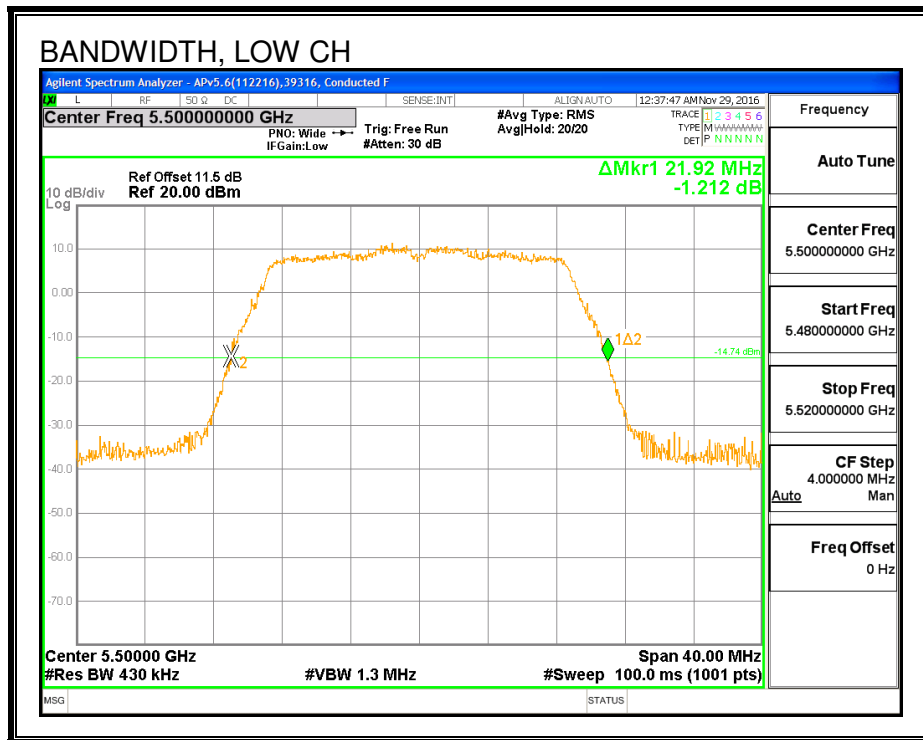
LIMITS

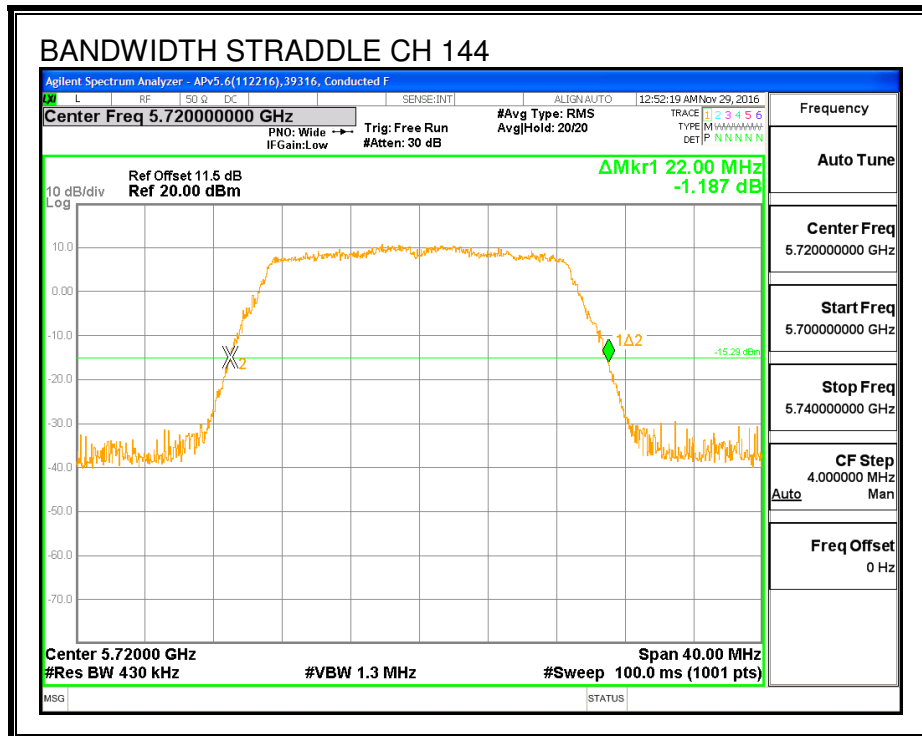
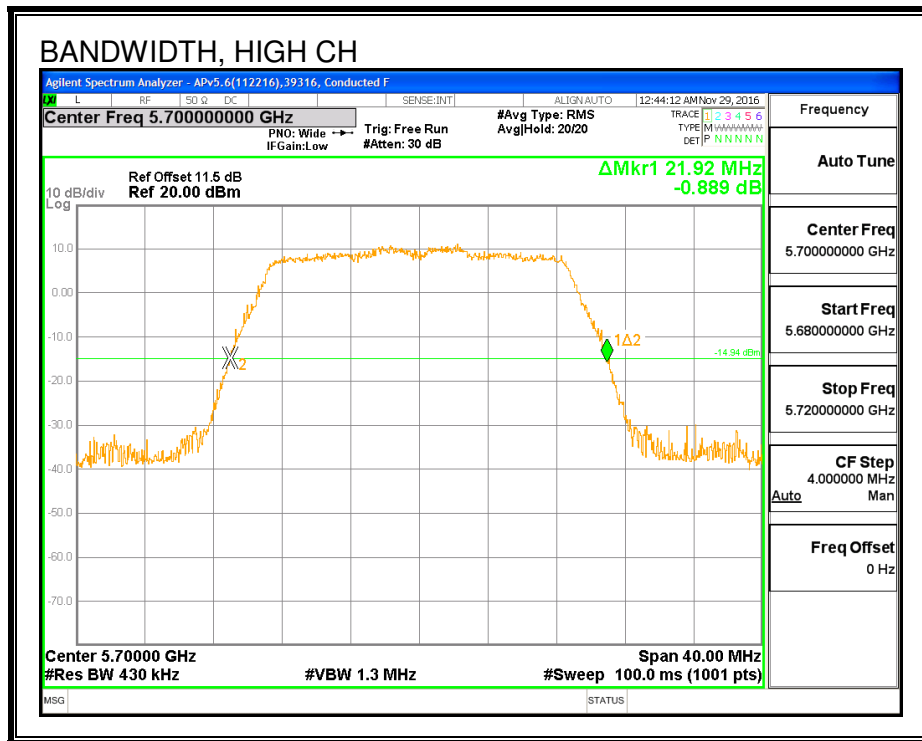
None; for reporting purposes only.

RESULTS

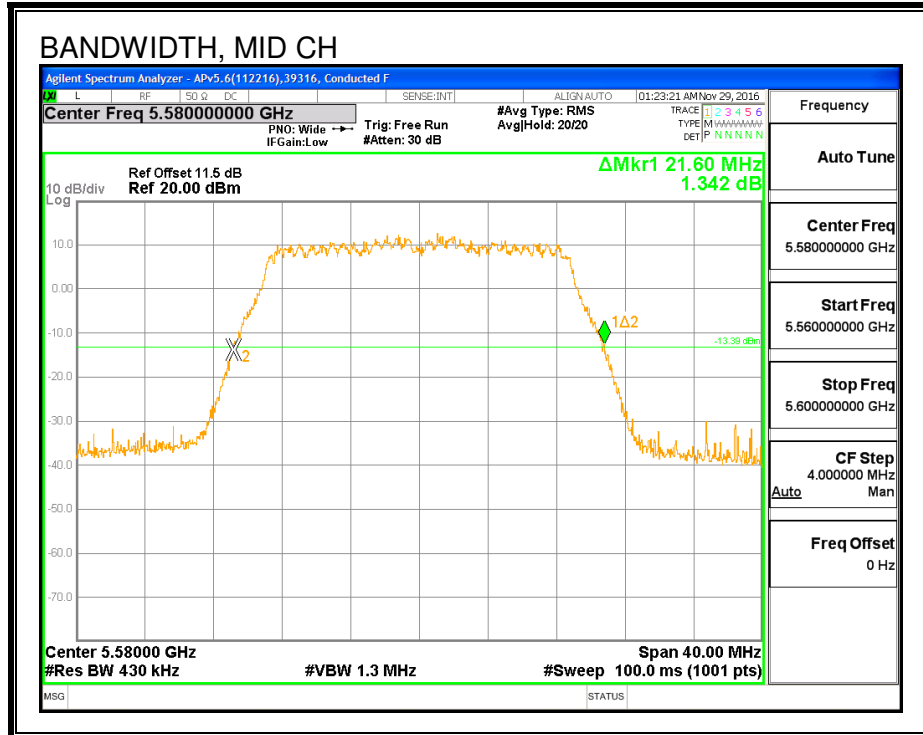
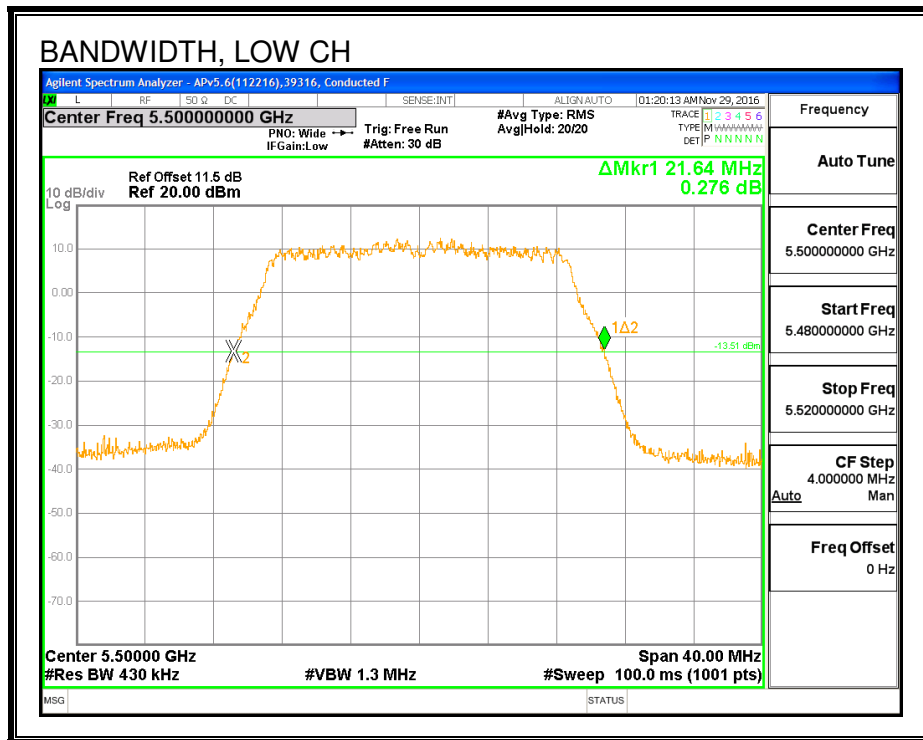
Channel	Frequency (MHz)	26 dB BW Antenna A (MHz)	26 dB BW Antenna B (MHz)
Low	5500	21.920	21.640
Mid	5580	22.080	21.600
High	5700	21.920	21.720
144	5720	22.000	21.680

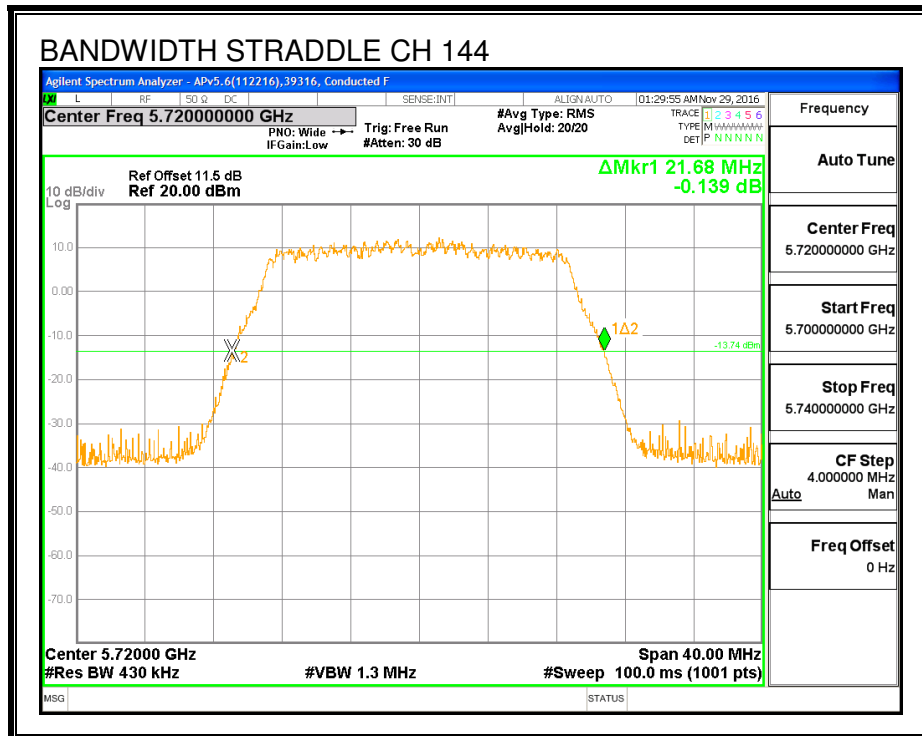
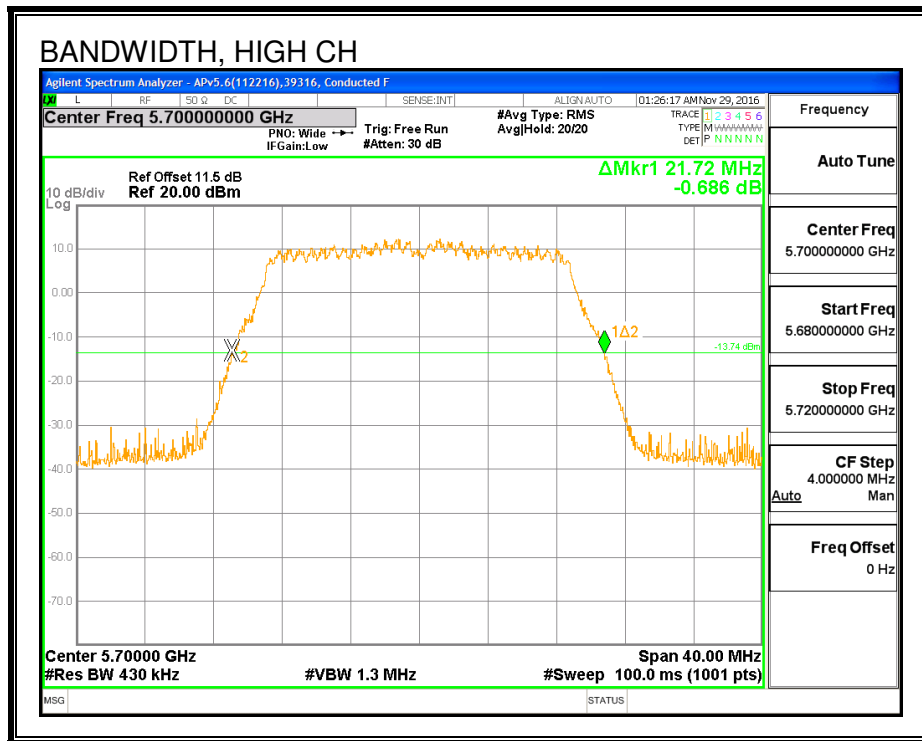
26 dB BANDWIDTH, ANTENNA A





26 dB BANDWIDTH, ANTENNA B





8.25.2. 99% BANDWIDTH

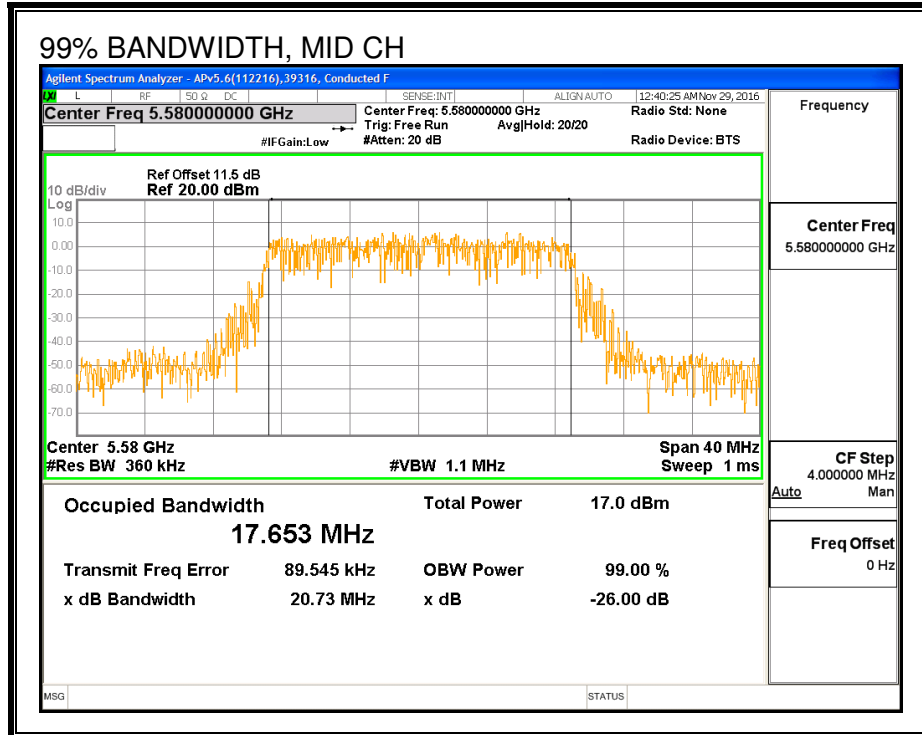
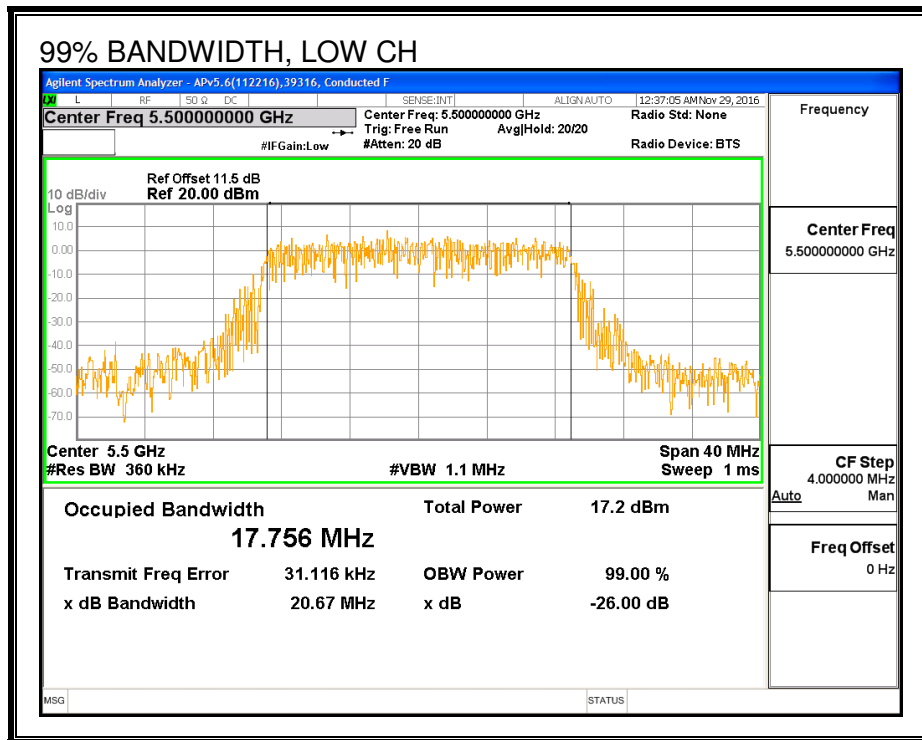
LIMITS

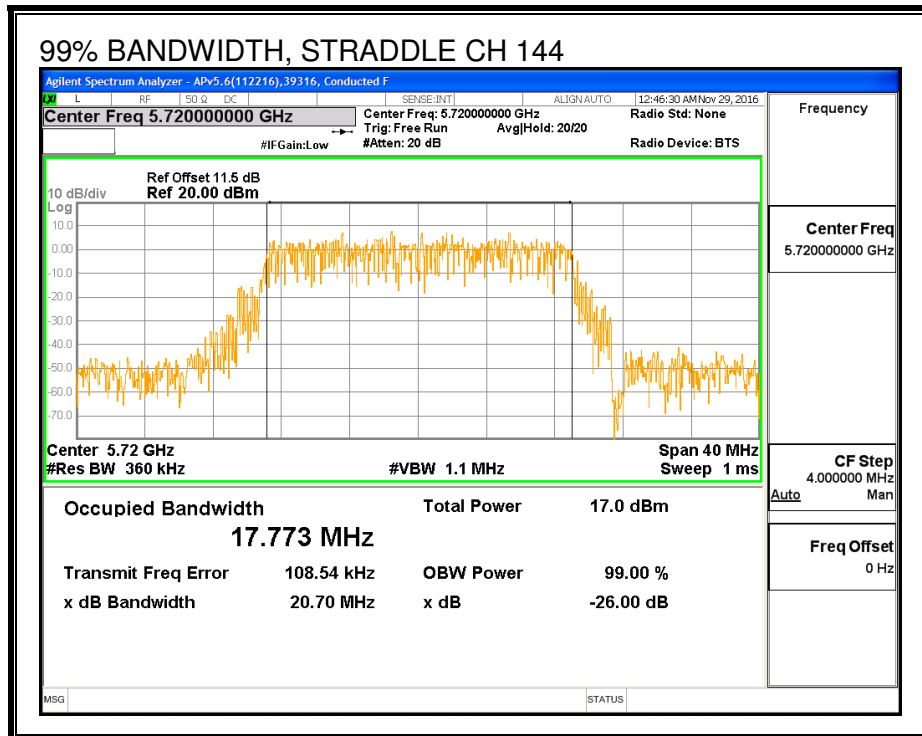
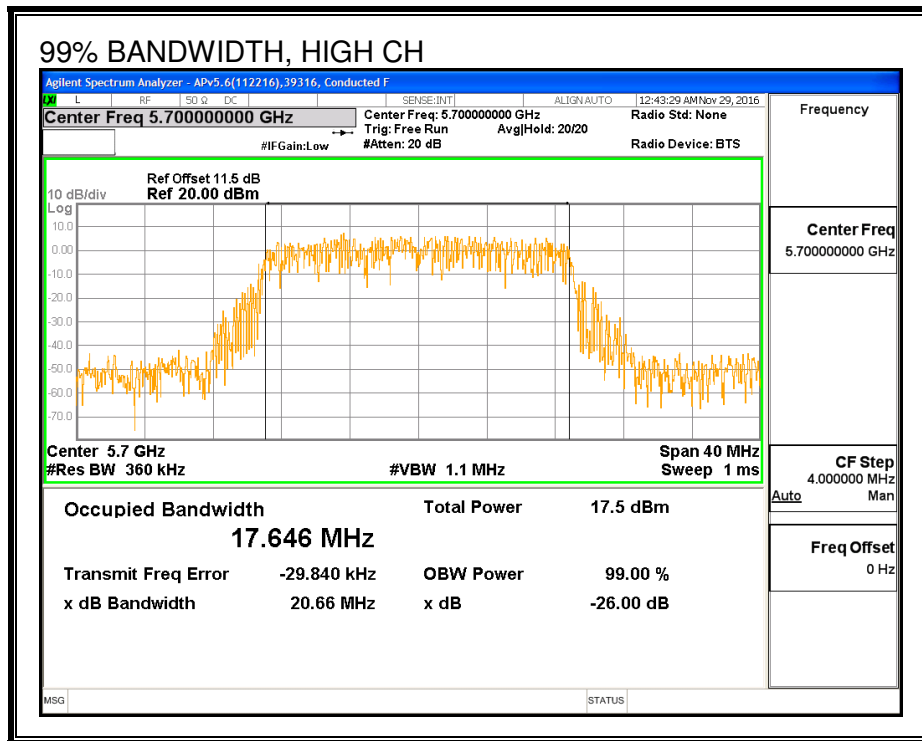
None; for reporting purposes only.

RESULTS

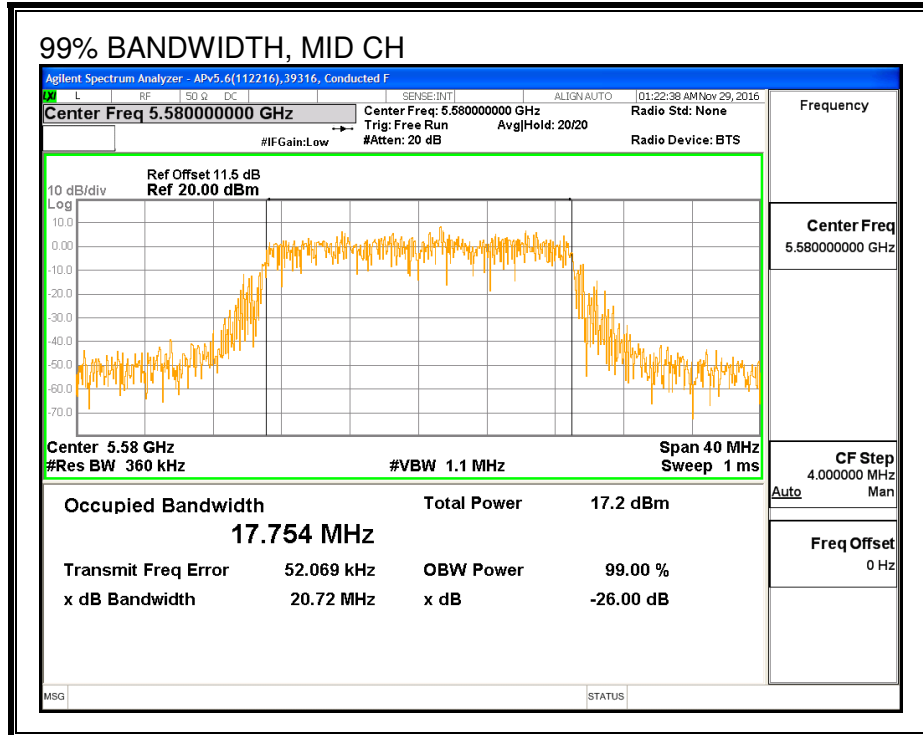
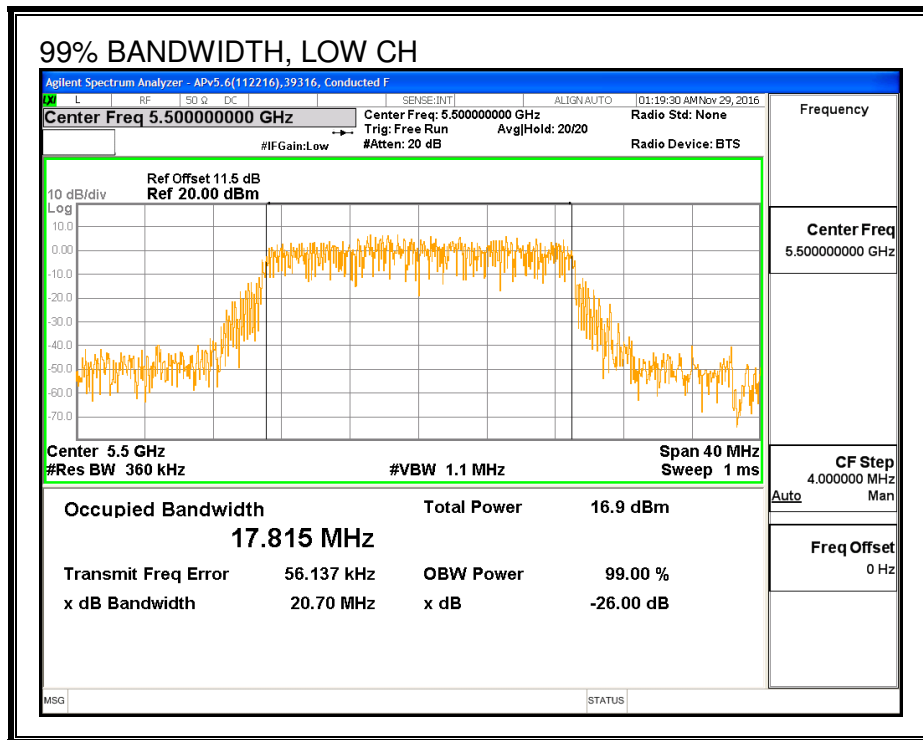
Channel	Frequency (MHz)	99% BW Antenna A (MHz)	99% BW Antenna B (MHz)
Low	5500	17.756	17.815
Mid	5580	17.653	17.754
High	5700	17.646	17.668
144	5720	17.773	17.716

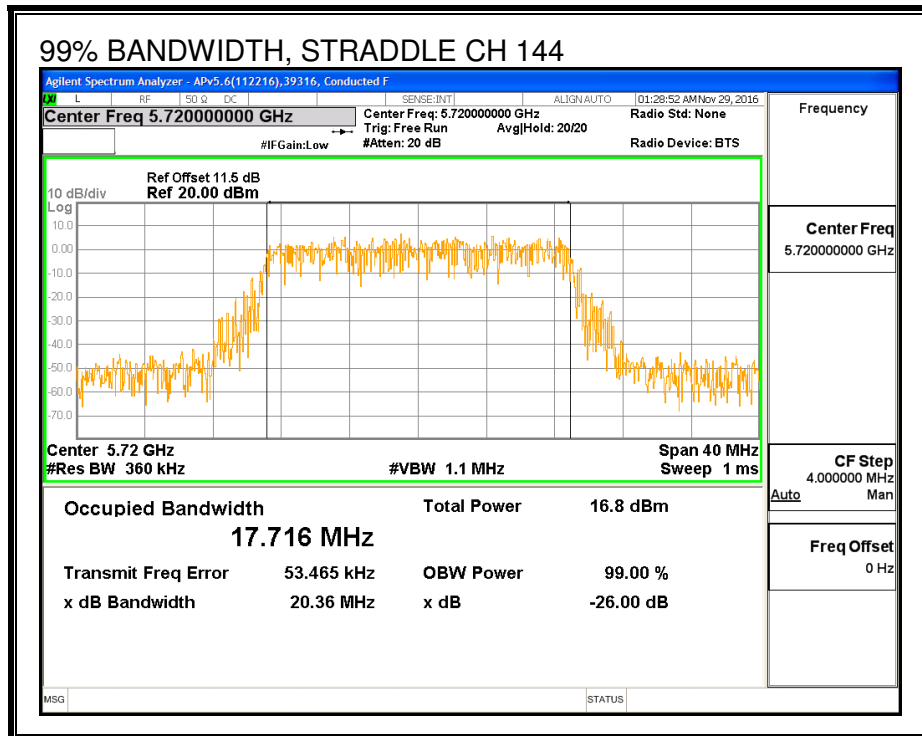
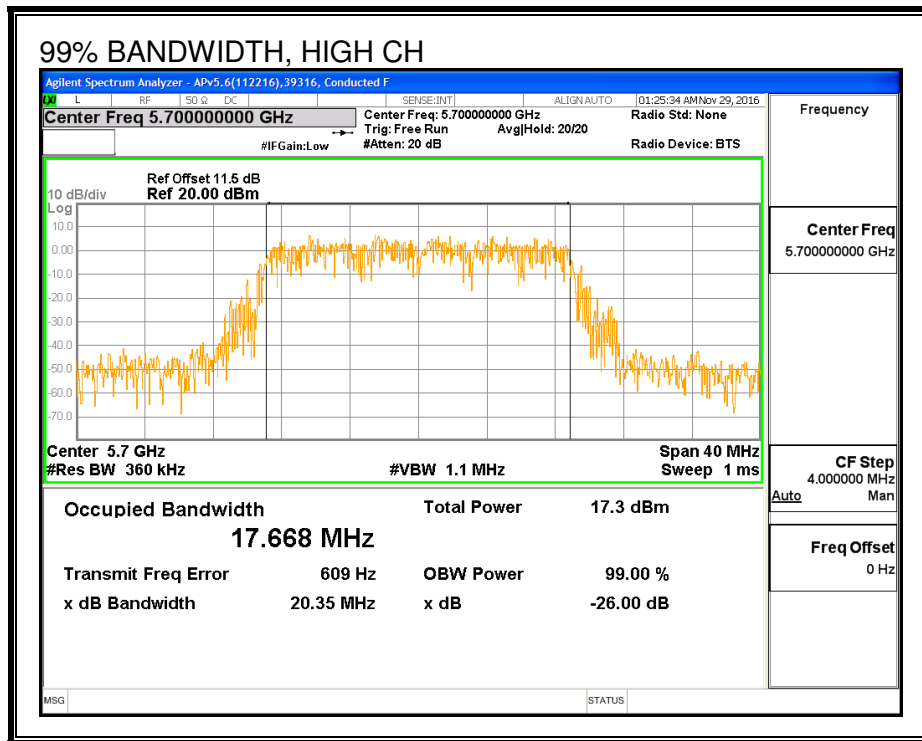
99% BANDWIDTH, ANTENNA A





99% BANDWIDTH, ANTENNA B





8.25.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	45256	Date:	1/31/17
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Average Power Results

Channel	Frequency (MHz)	Antenna A Power (dBm)	Antenna B Power (dBm)	Total Power (dBm)
Low	5500	13.91	13.95	16.94
Mid	5580	13.89	13.92	16.92
High	5700	13.97	13.96	16.98
144	5720	13.92	13.98	16.96

8.25.4. 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:

Antenna A	Antenna B	Uncorrelated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
5.41	5.17	5.29

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

Antenna A	Antenna B	Correlated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
5.41	5.17	8.30

RESULTS

ID:	30554	Date:	2/1/17
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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	5500	21.64	17.76	5.29	8.30	23.49	8.70
Mid	5580	21.60	17.65	5.29	8.30	23.47	8.70
High	5700	21.72	17.65	5.29	8.30	23.47	8.70

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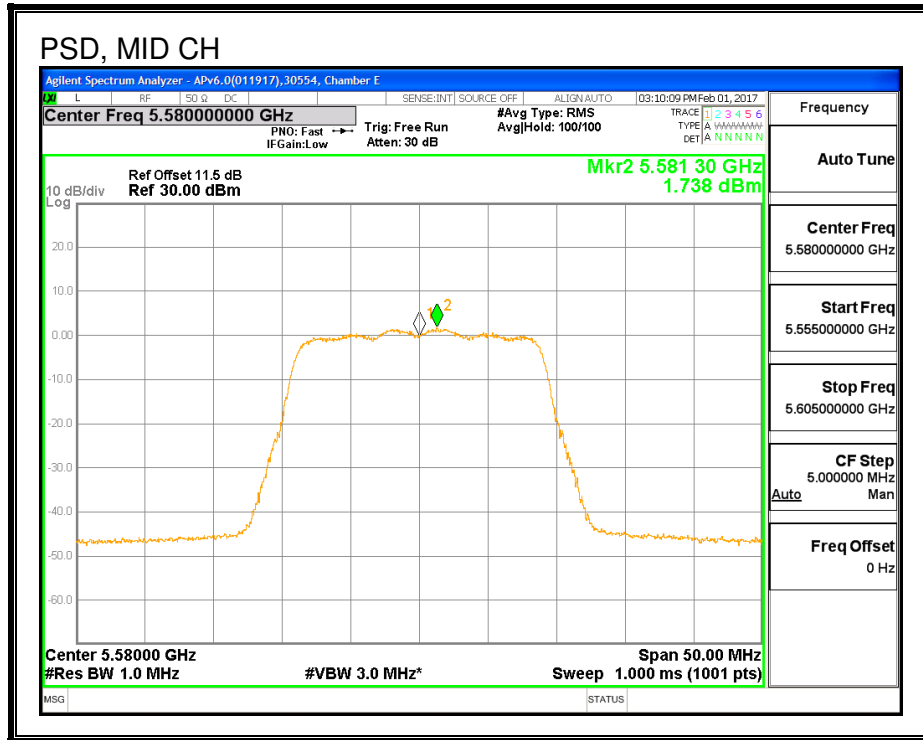
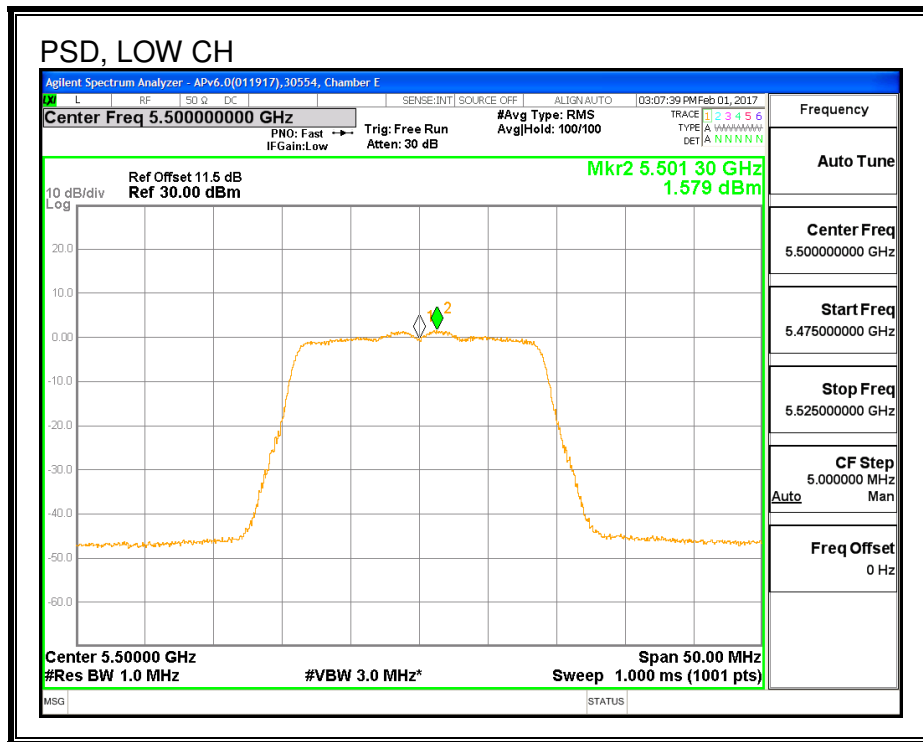
Output Power Results

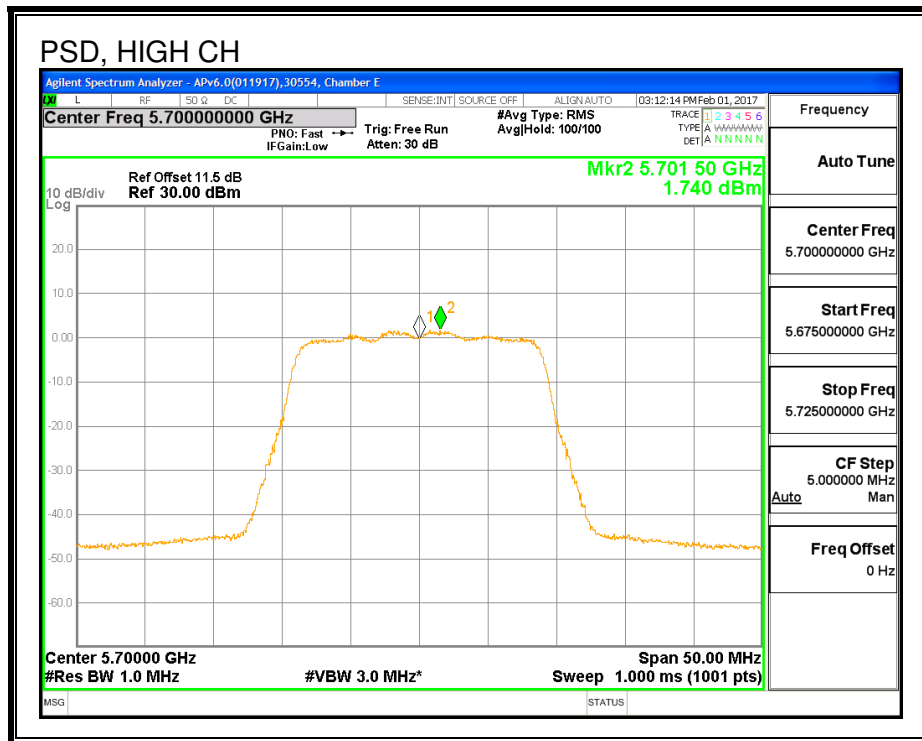
Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	13.91	13.95	16.94	23.49	-6.55
Mid	5580	13.89	13.92	16.92	23.47	-6.55
High	5700	13.97	13.96	16.98	23.47	-6.49

PSD Results

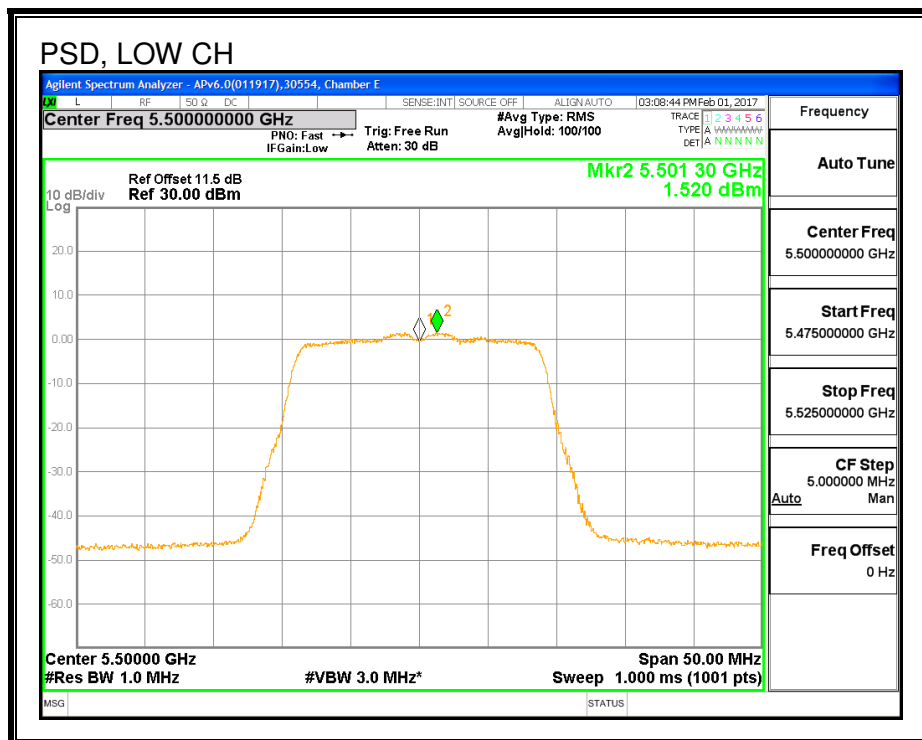
Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	1.58	1.52	4.56	8.70	-4.14
Mid	5580	1.74	1.58	4.67	8.70	-4.03
High	5700	1.74	1.44	4.60	8.70	-4.10

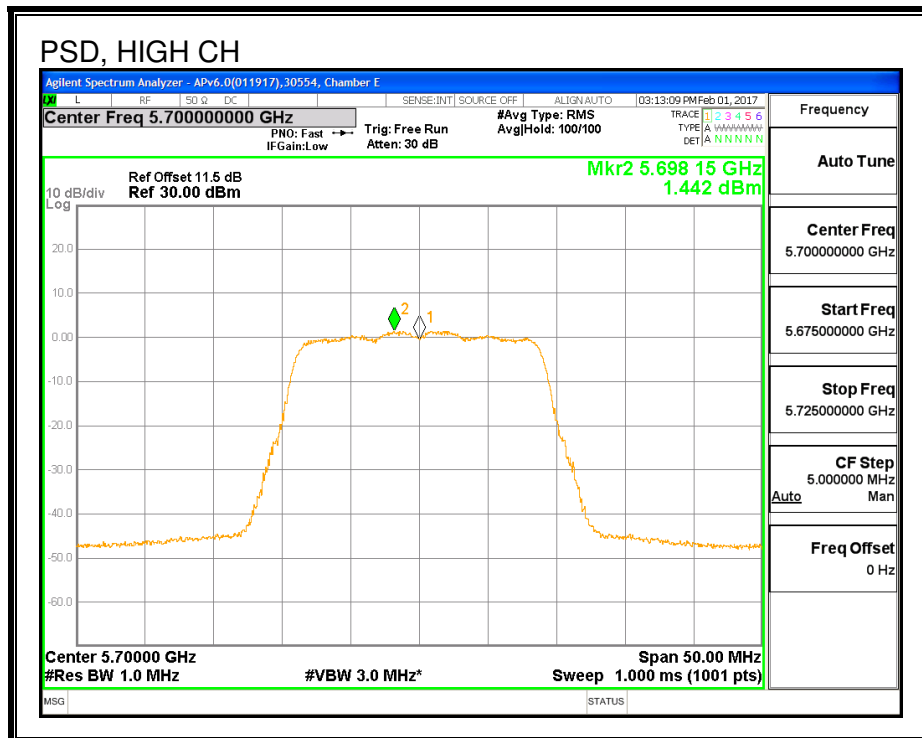
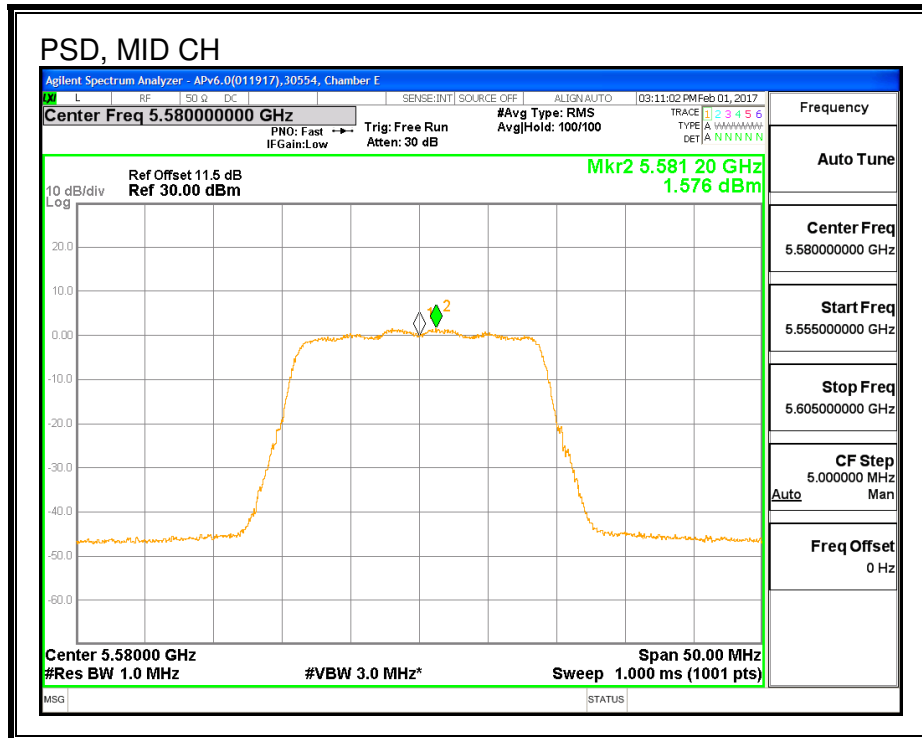
PSD, ANTENNA A





PSD, ANTENNA B





8.26. 802.11ac VHT20 2Tx (ANTENNA A + ANTENNA B) CDD STRADDLE CHANNEL 144 RESULTS

8.26.1. 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)
144	5720	16.00	5.29	8.30	23.04	8.70

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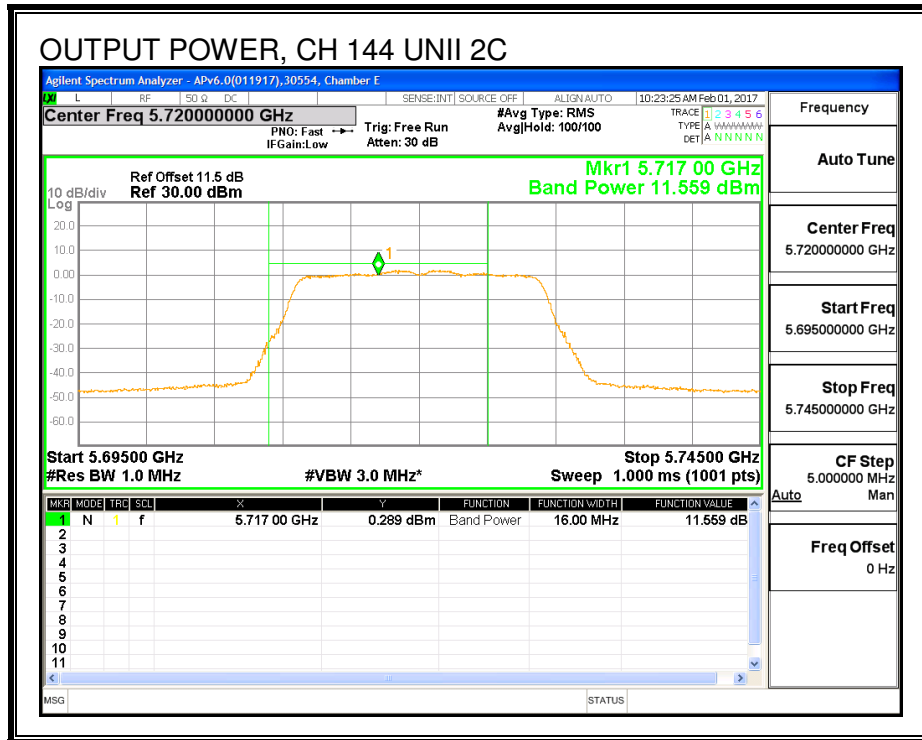
Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	11.56	11.53	14.55	23.04	-8.49

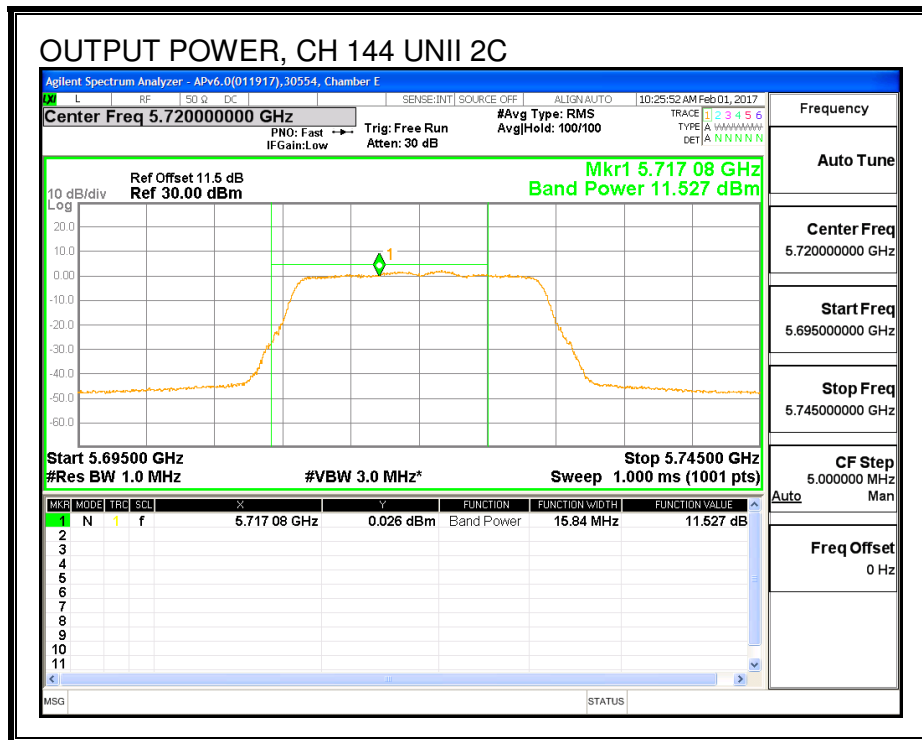
PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	1.93	2.194	5.07	8.70	-3.63

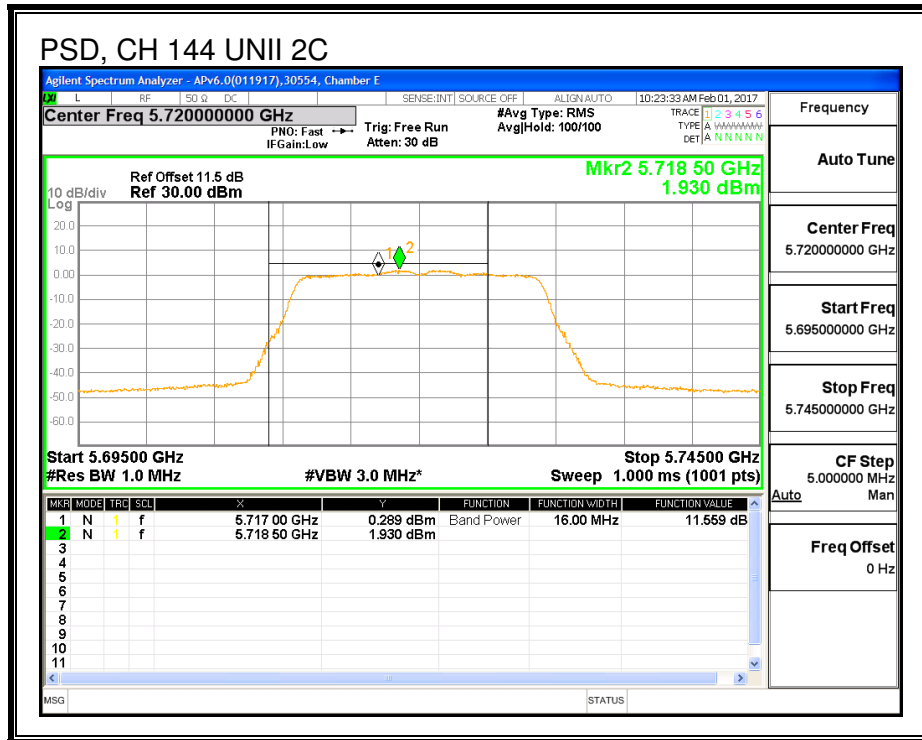
OUTPUT POWER, ANTENNA A



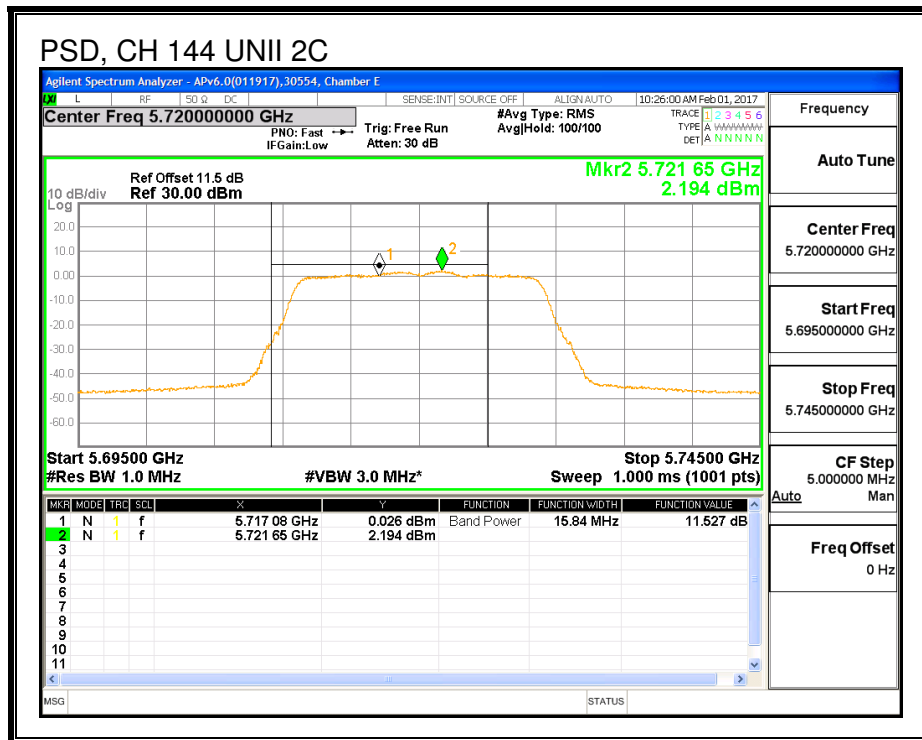
OUTPUT POWER, ANTENNA B



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)
144	5720	5.84	5.29	8.30	30.00	27.70

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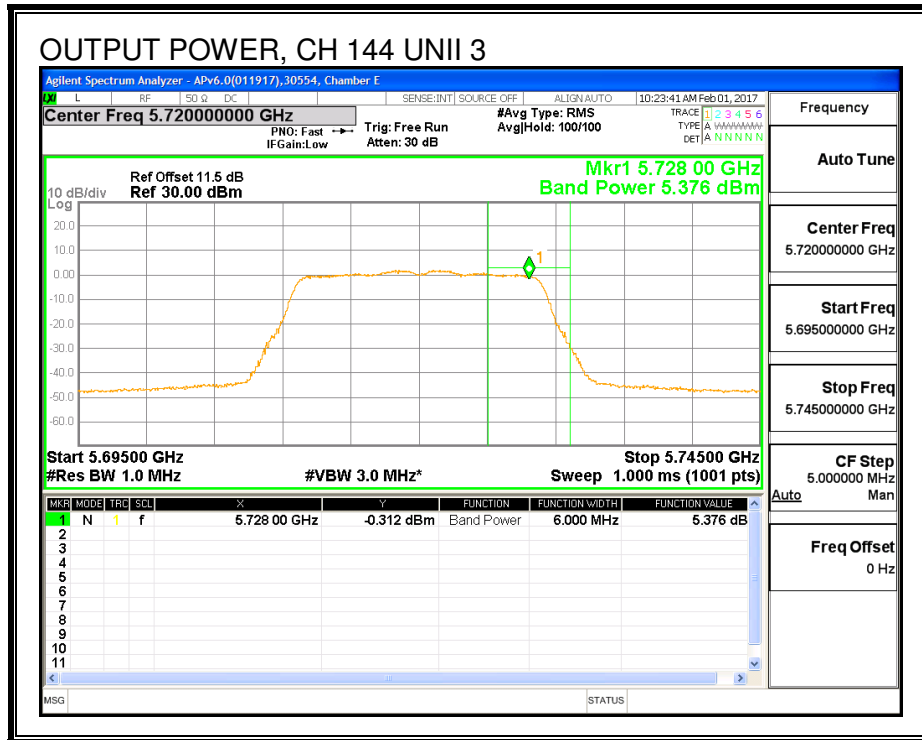
Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	5.38	5.34	8.37	30.00	-21.63

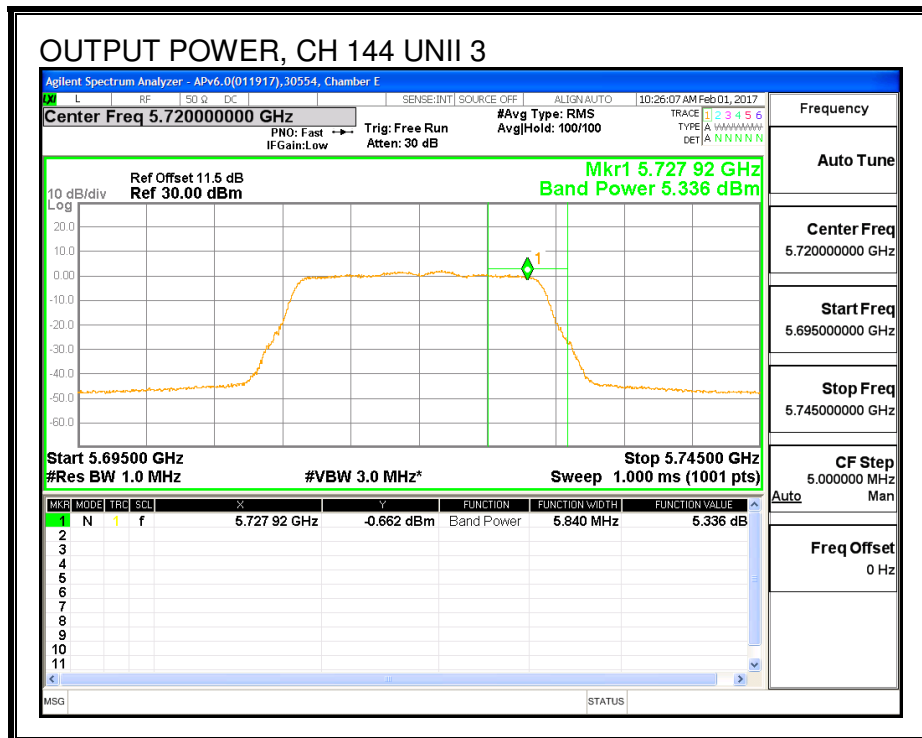
PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	-2.33	-2.39	0.65	27.70	-27.05

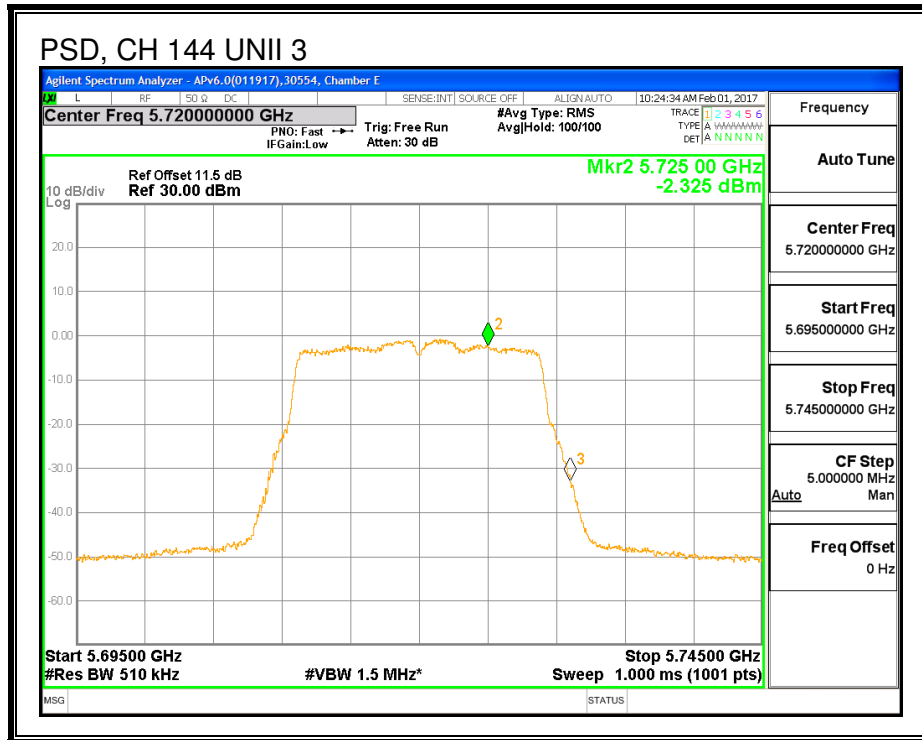
OUTPUT POWER, ANTENNA A



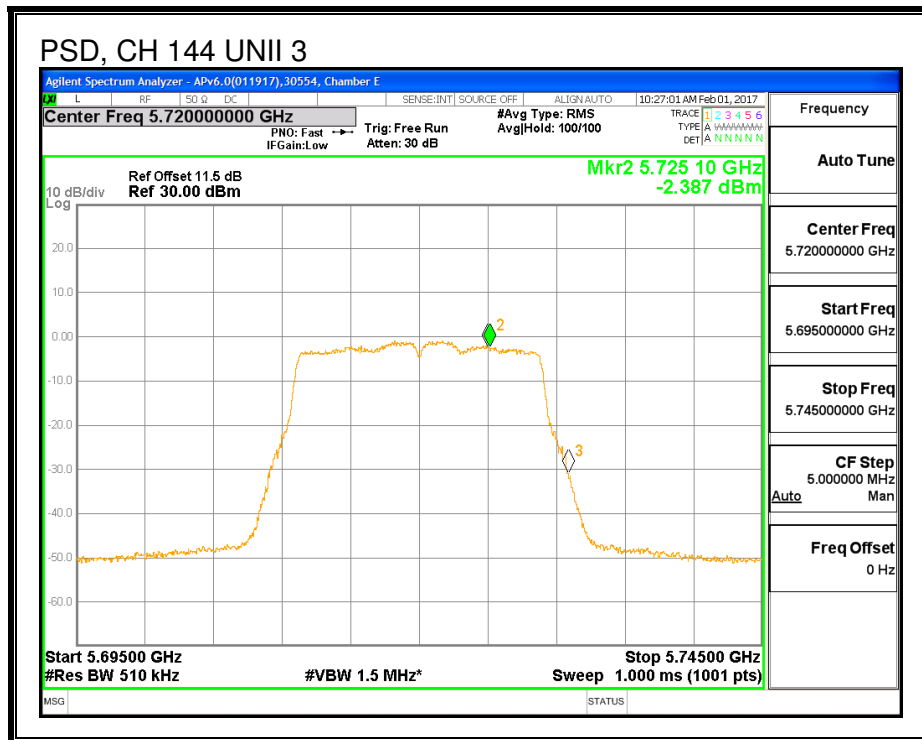
OUTPUT POWER, ANTENNA B



PSD, ANTENNA A



PSD, ANTENNA B



8.26.2. 6 dB BANDWIDTH

LIMITS

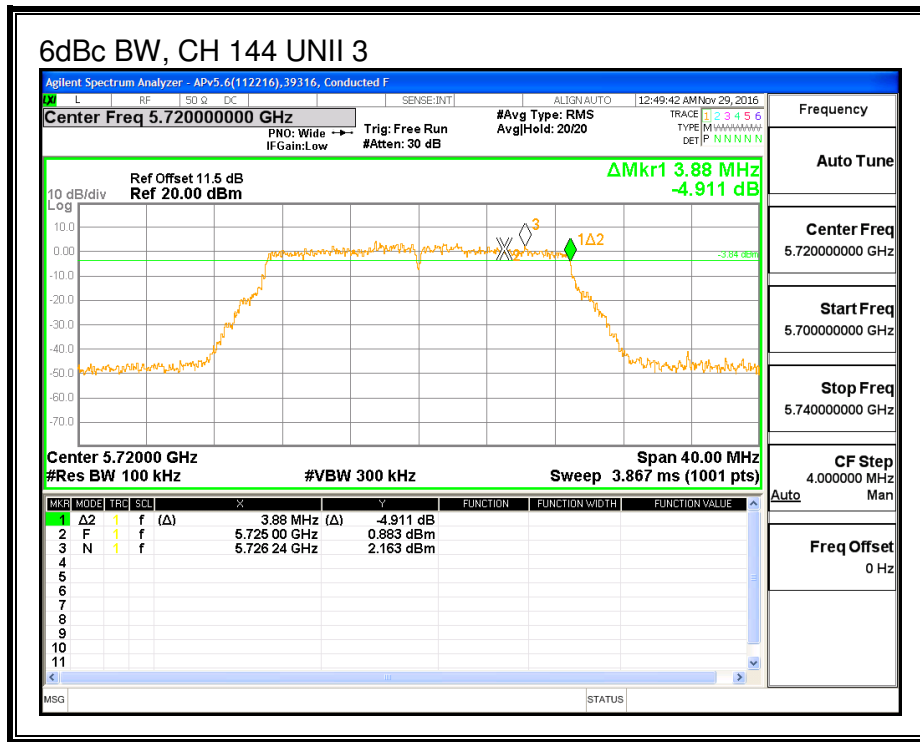
FCC §15.407 (e)

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

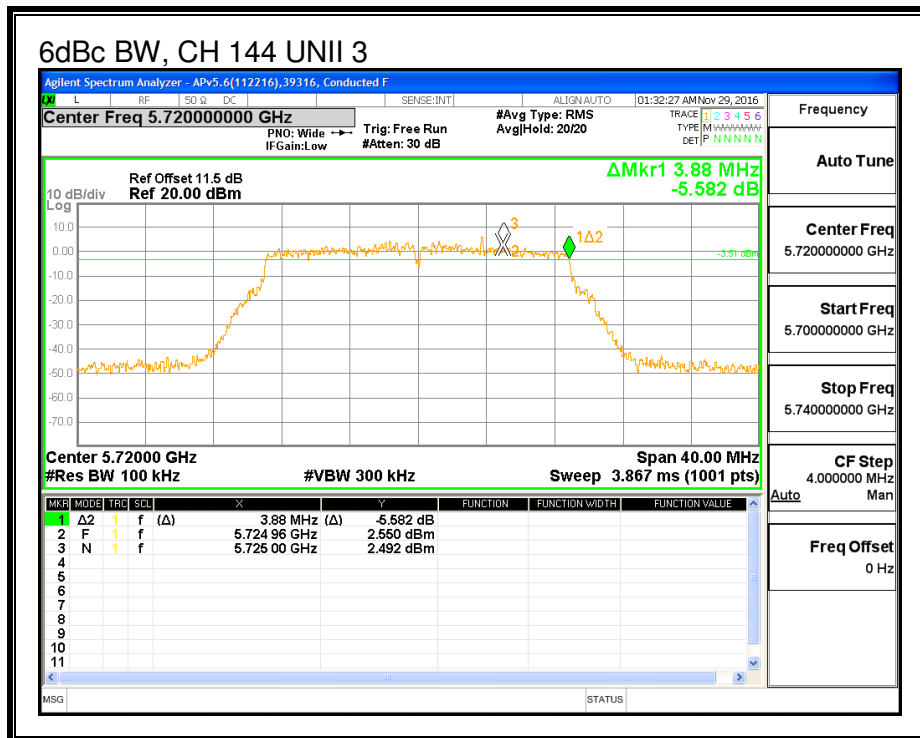
RESULTS

Channel	Frequency (MHz)	6 dB BW Antenna A (MHz)	6 dB BW Antenna B (MHz)
144	5720	3.880	3.880

ANTENNA A



ANTENNA B



8.27. 802.11n HT20 2Tx (ANTENNA A + ANTENNA B) STBC MODE IN THE 5.6 GHz BAND

8.27.1. 26 dB BANDWIDTH

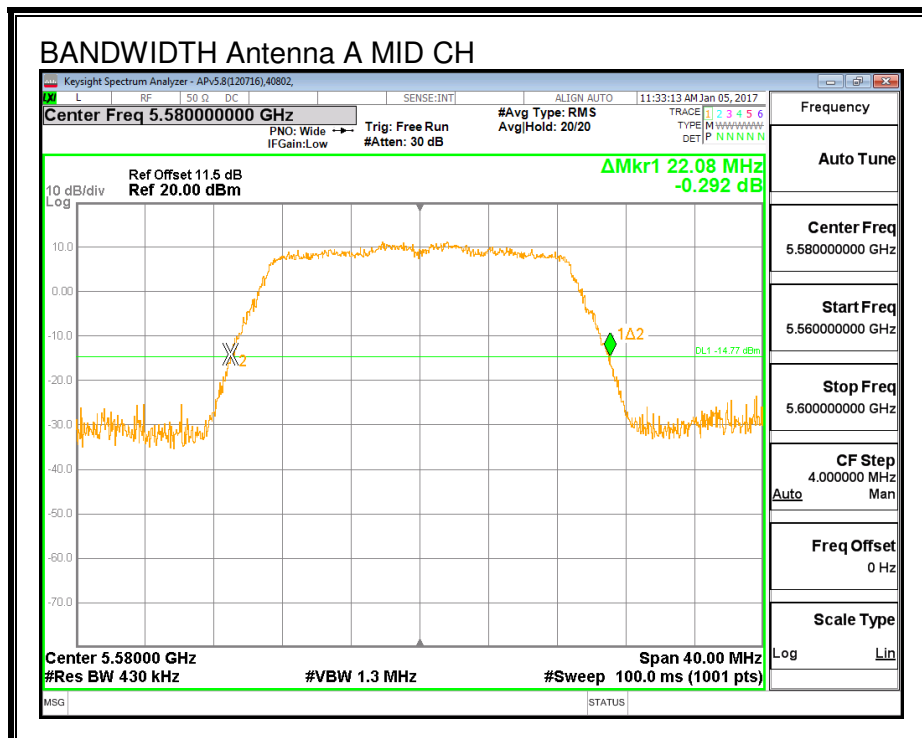
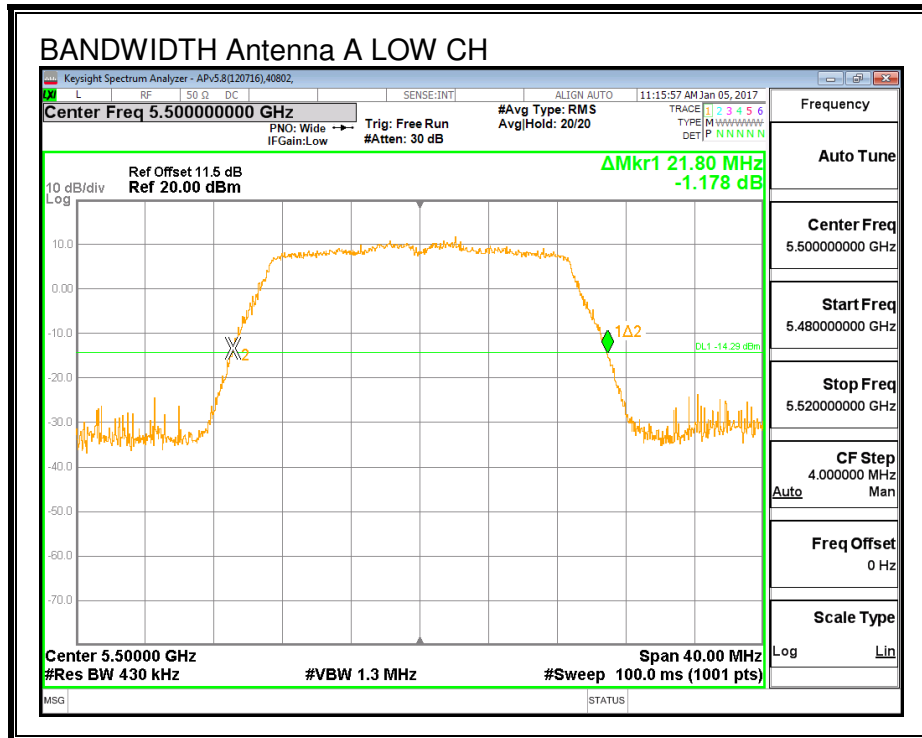
LIMITS

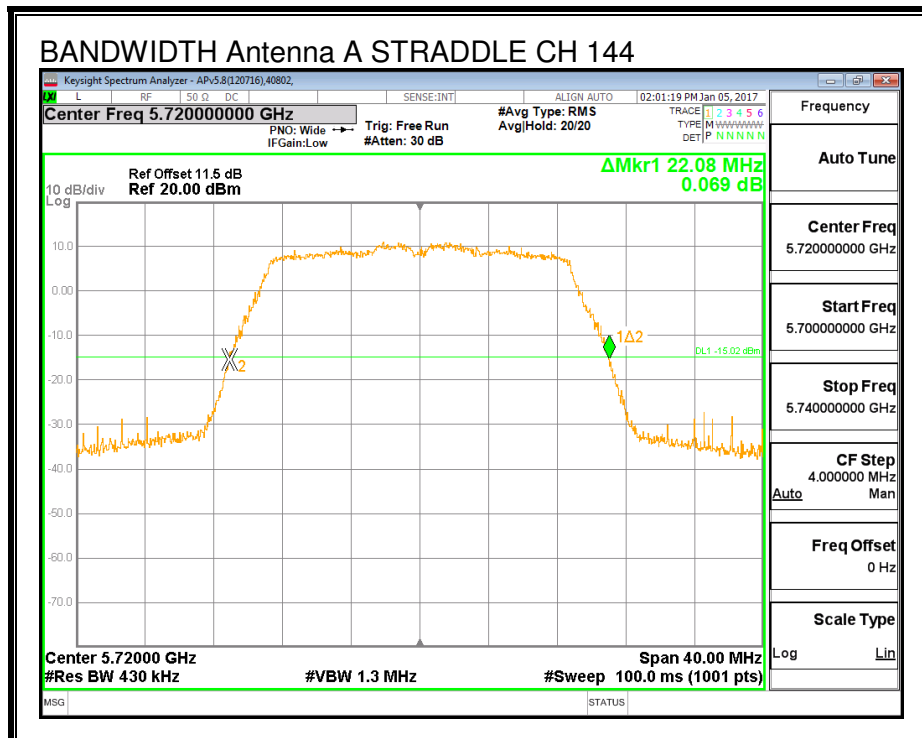
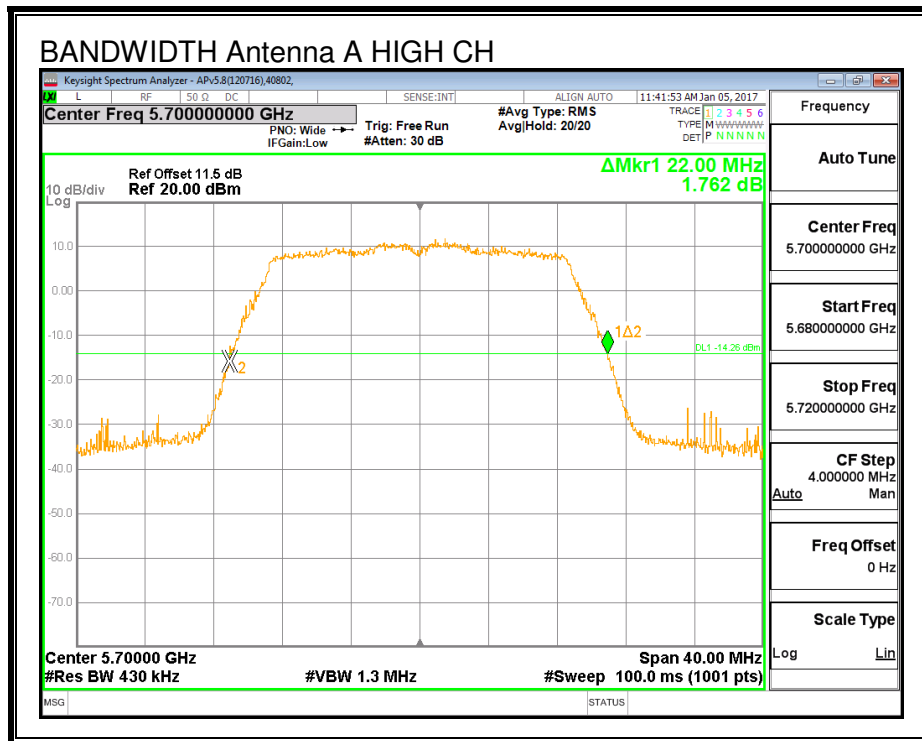
None; for reporting purposes only.

RESULTS

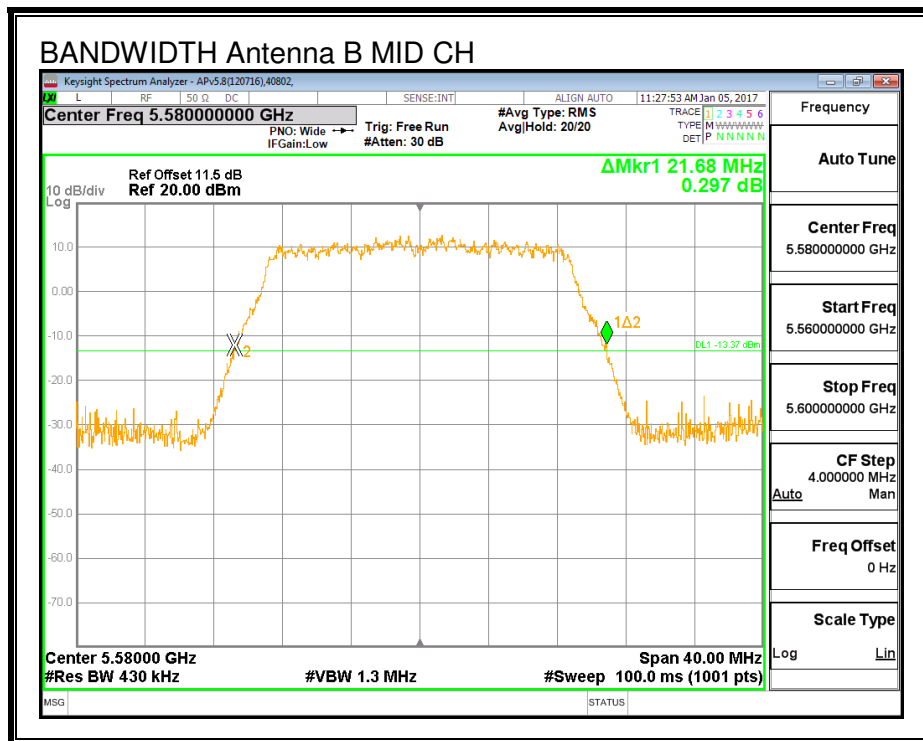
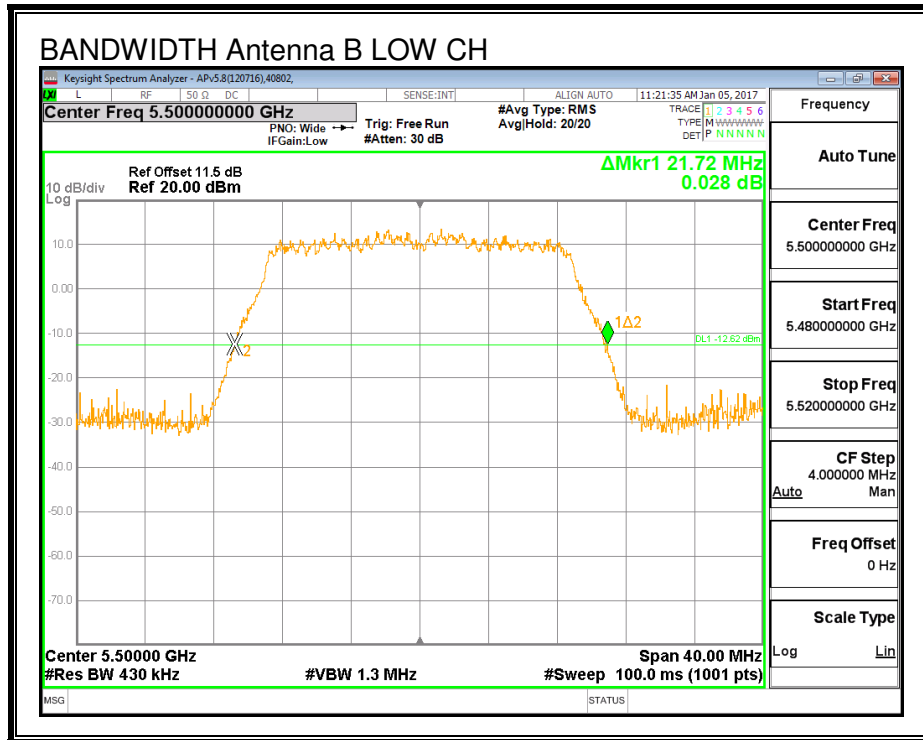
Channel	Frequency (MHz)	26 dB BW Antenna A (MHz)	26 dB BW Antenna B (MHz)
Low	5500	21.800	21.720
Mid	5600	22.080	21.680
High	5700	22.000	21.640
144	5720	22.080	21.960

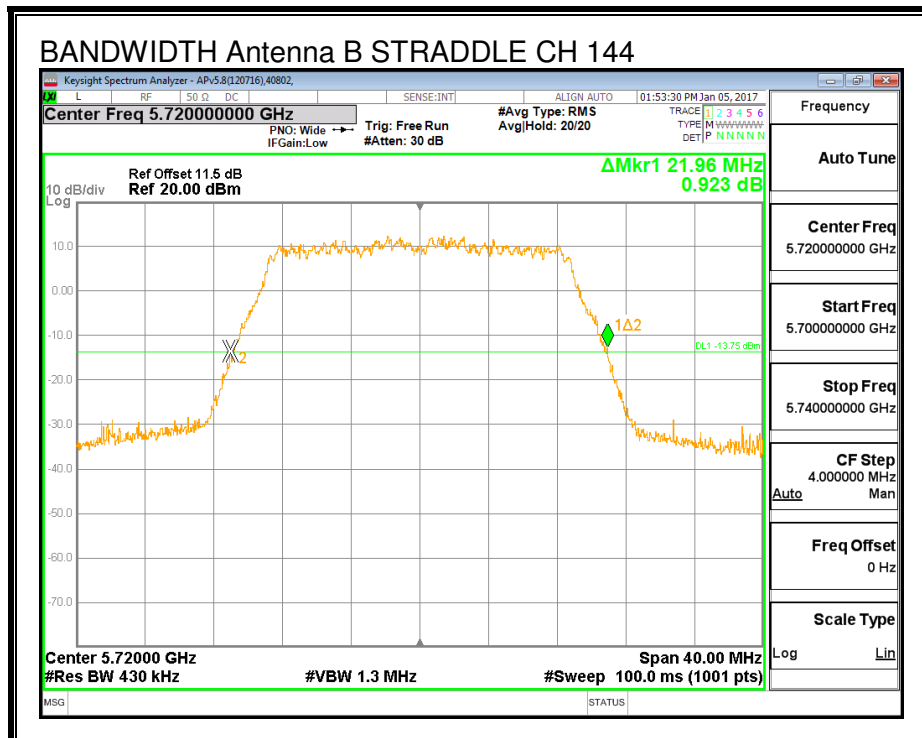
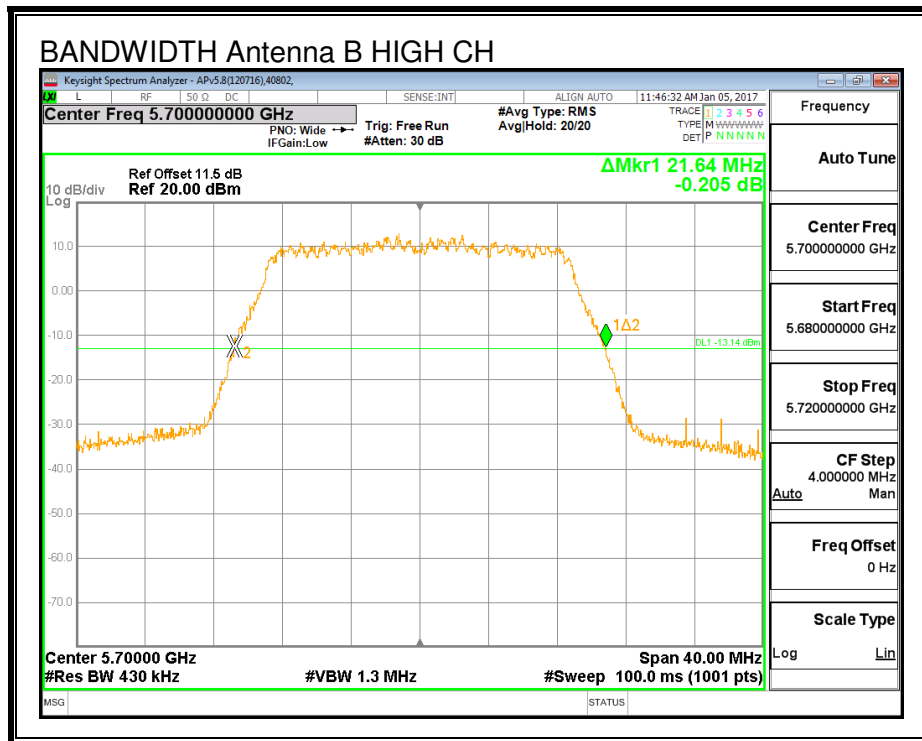
26 dB BANDWIDTH, Antenna A





26 dB BANDWIDTH, Antenna B





8.27.2. 99% BANDWIDTH

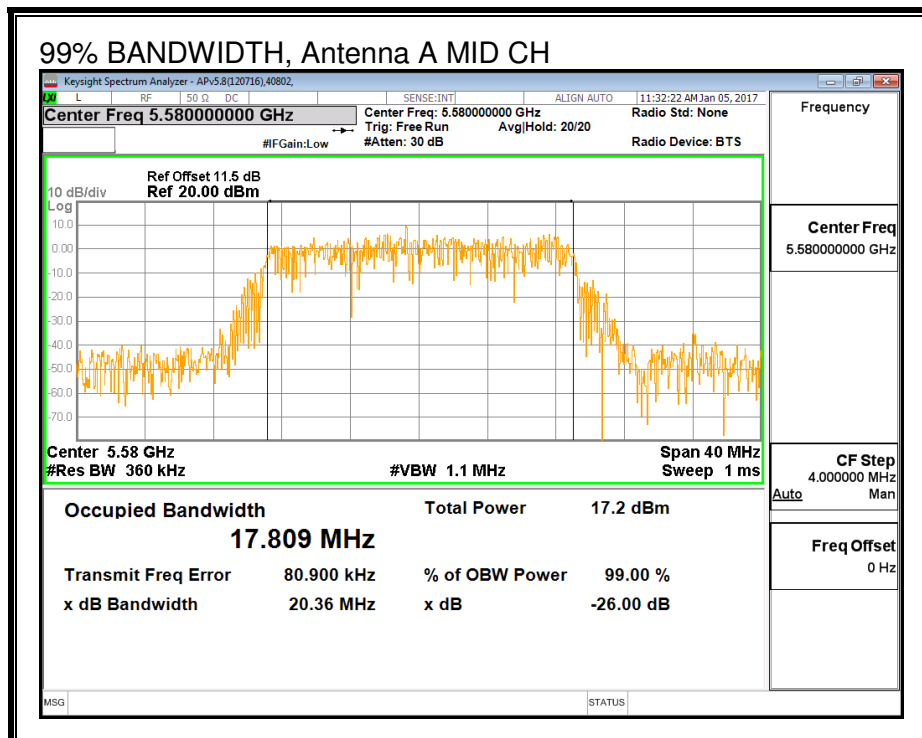
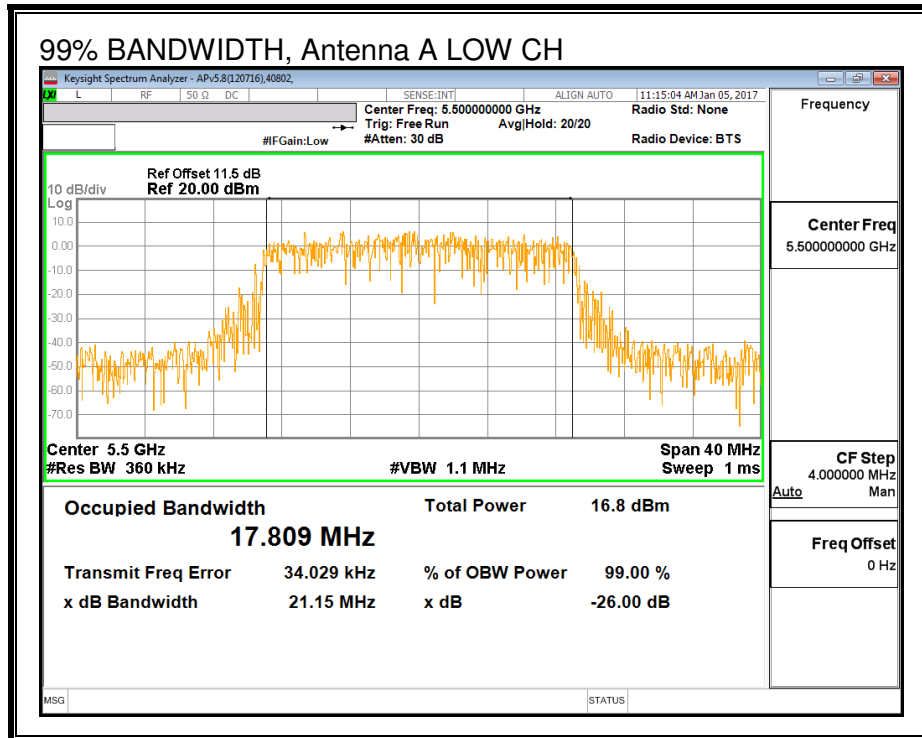
LIMITS

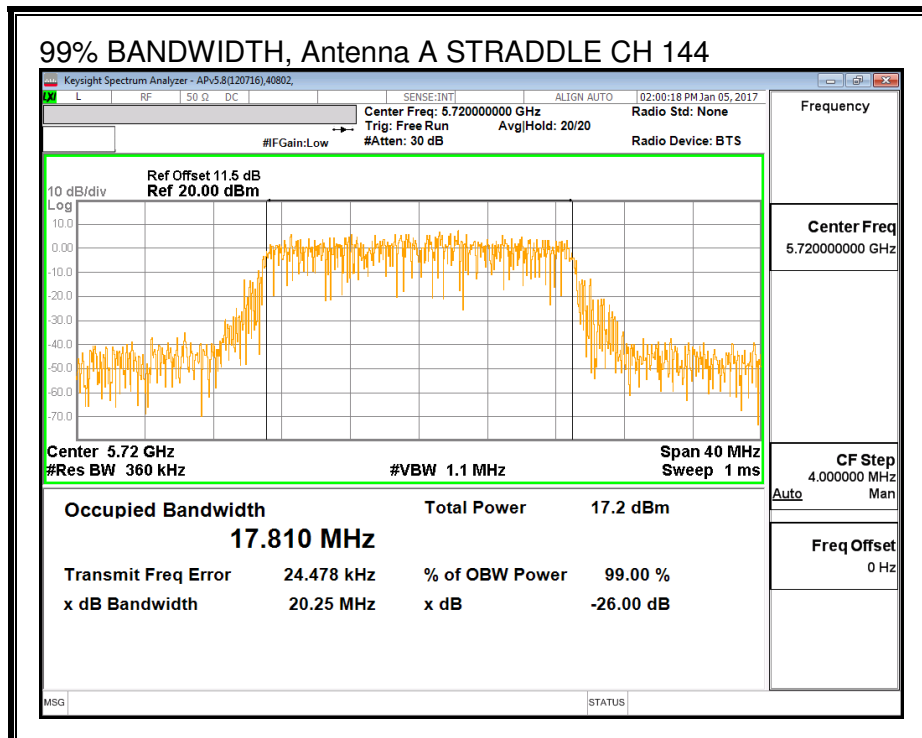
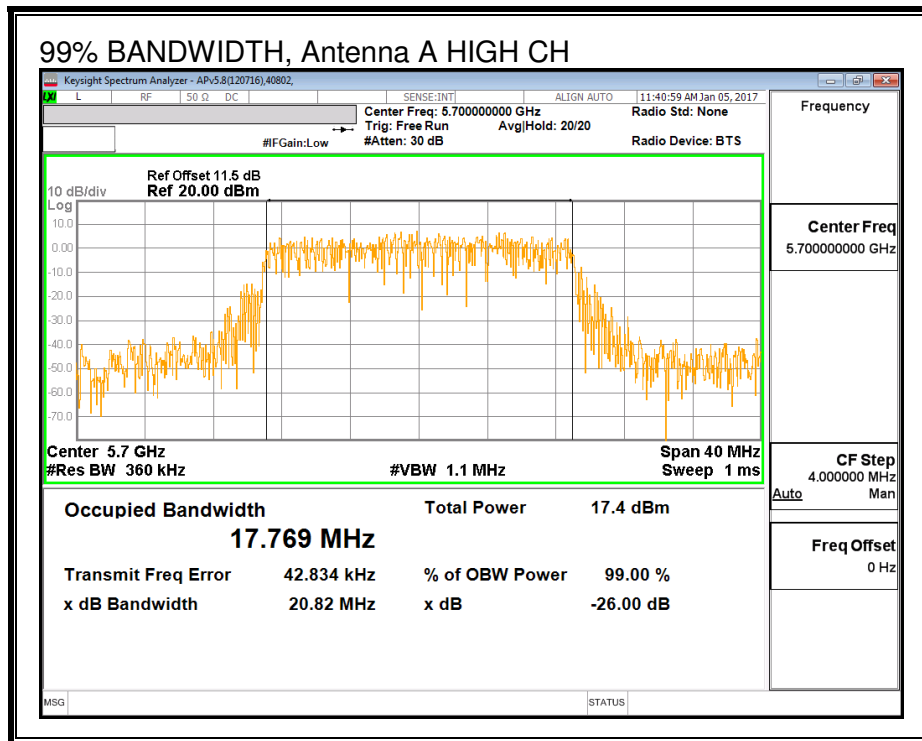
None; for reporting purposes only.

RESULTS

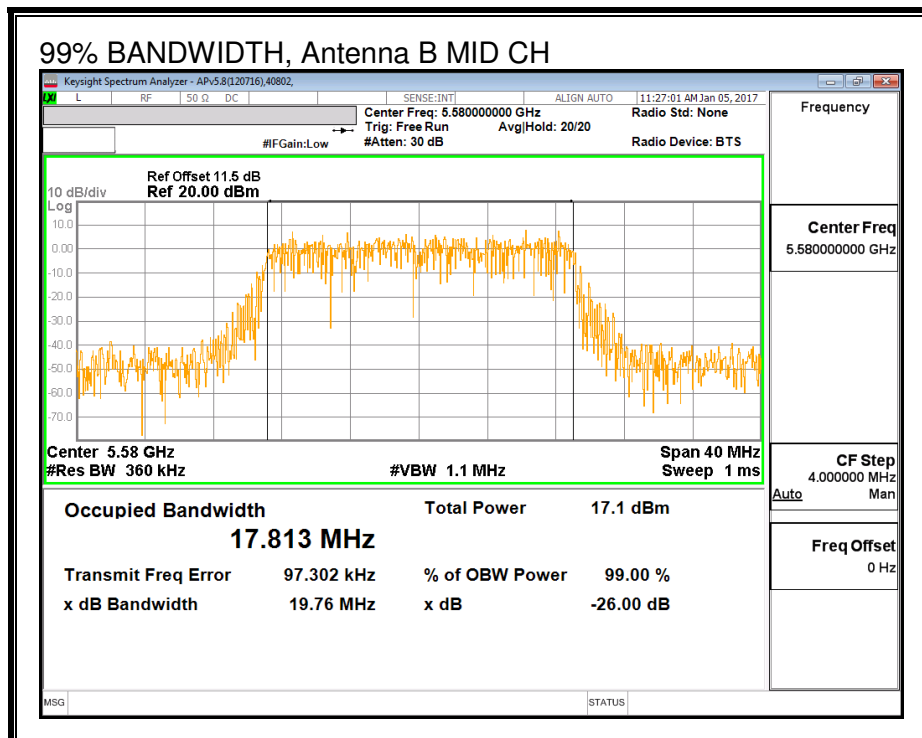
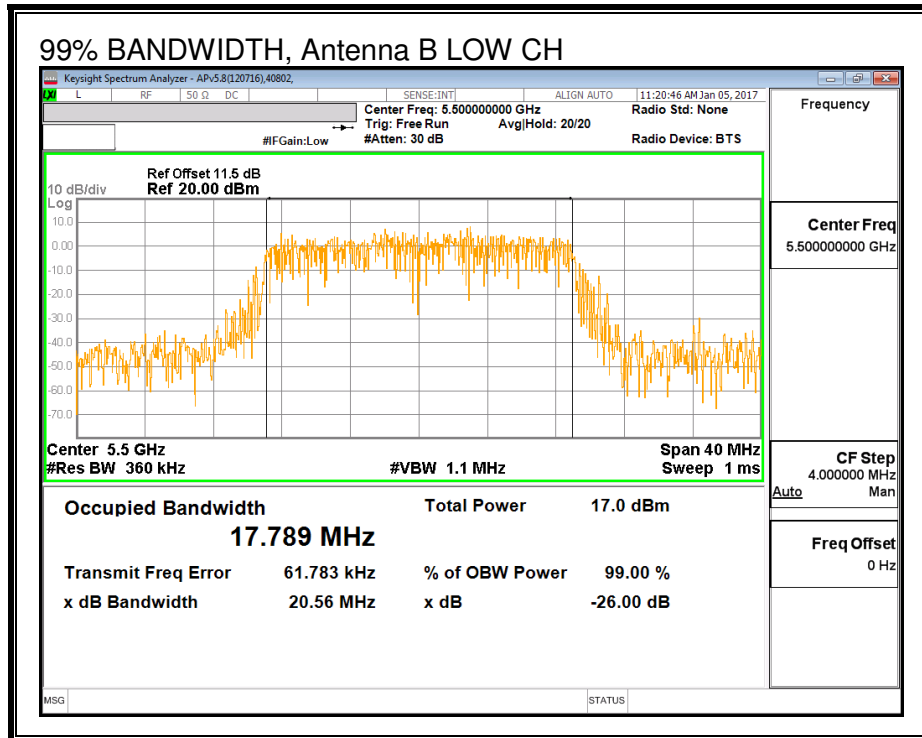
Channel	Frequency (MHz)	99% BW Antenna A (MHz)	99% BW Antenna B (MHz)
Low	5500	17.809	17.789
Mid	5580	17.809	17.813
High	5700	17.769	17.864
144	5720	17.810	17.763

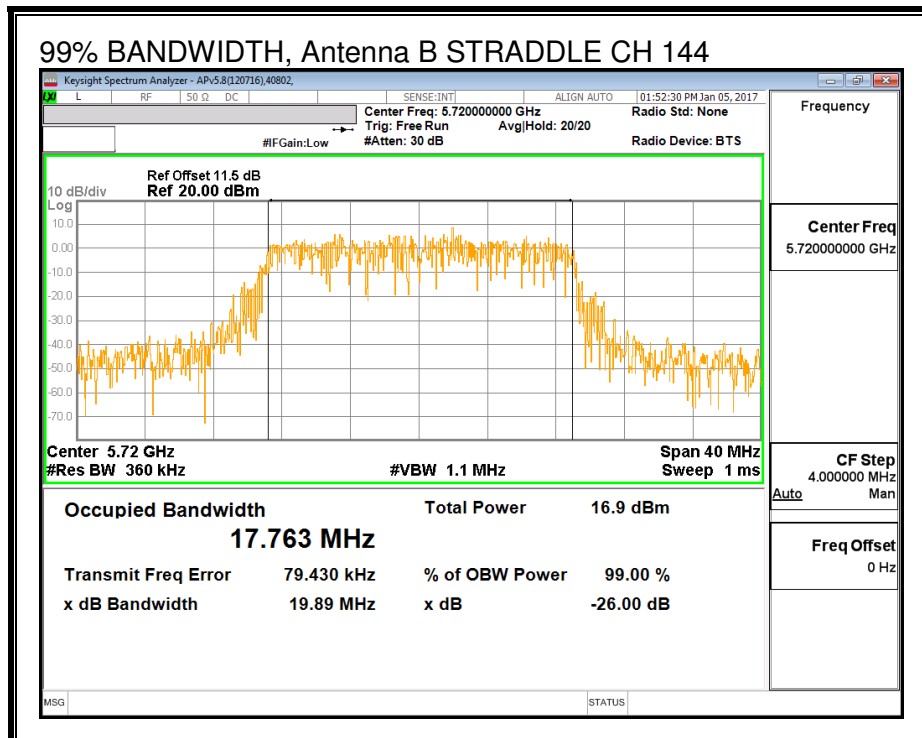
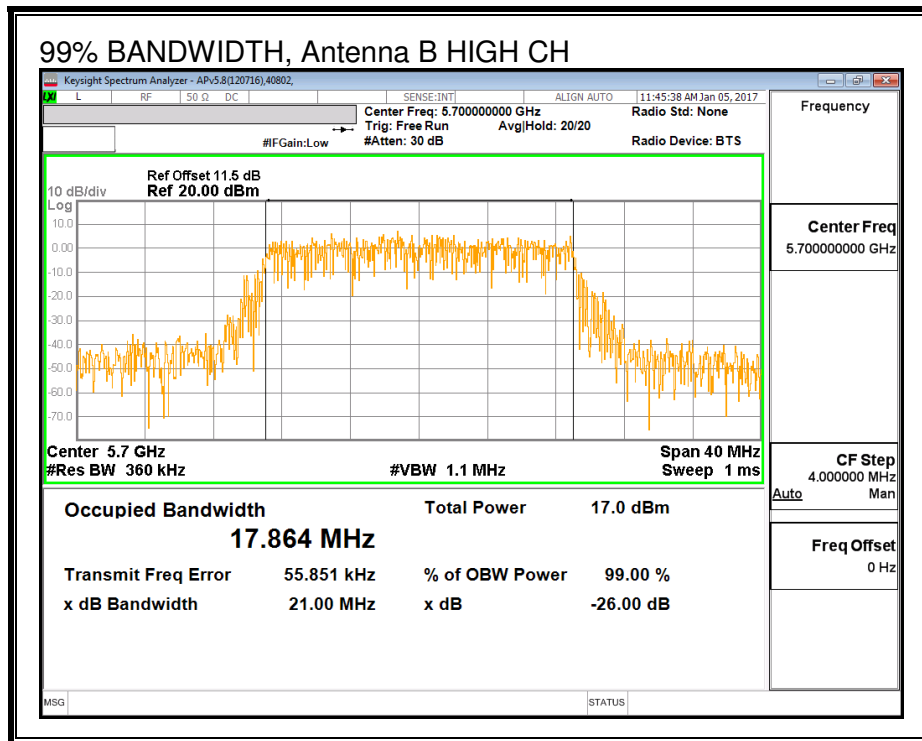
99% BANDWIDTH, Antenna A





99% BANDWIDTH, Antenna B





8.27.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Antenna A Power (dBm)	Antenna B Power (dBm)	Total Power (dBm)
Low	5500	14.95	14.95	17.96
Mid	5580	15.00	14.98	18.00
High	5700	13.96	13.99	16.99
144	5720	14.99	14.92	17.97

TEST INFORMATION

Date: 01/05/2017
Tester: 40802 TP

8.27.4. 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.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Use this table for uncorrelated chains and unequal antenna gain

Antenna A	Antenna B	Uncorrelated Chains
Gain	Gain	Directional
(dBi)	(dBi)	Gain
(dBi)	(dBi)	(dBi)
5.41	5.17	5.29

RESULTS

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)
Low	5500	21.72	5.29	5.29	24.00	11.00
Mid	5580	21.68	5.29	5.29	24.00	11.00
High	5700	21.96	5.29	5.29	24.00	11.00

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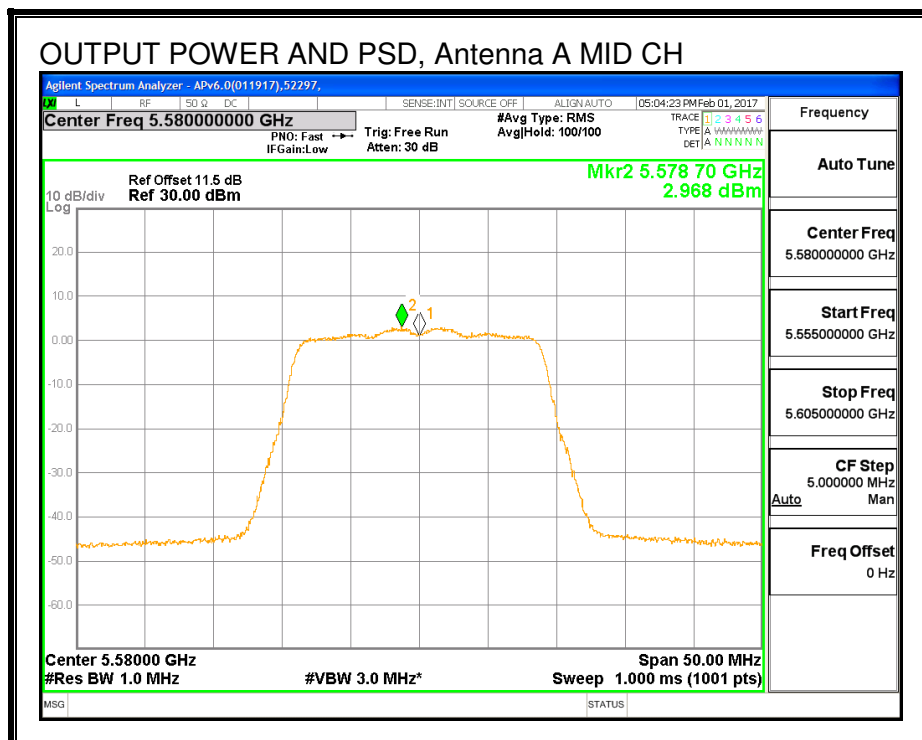
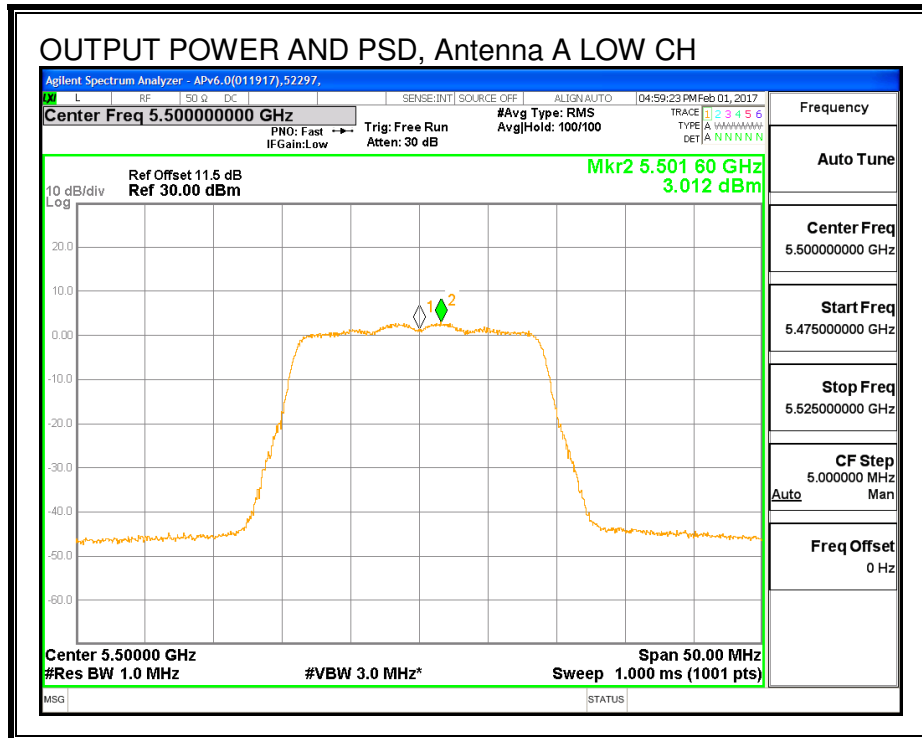
Output Power Results

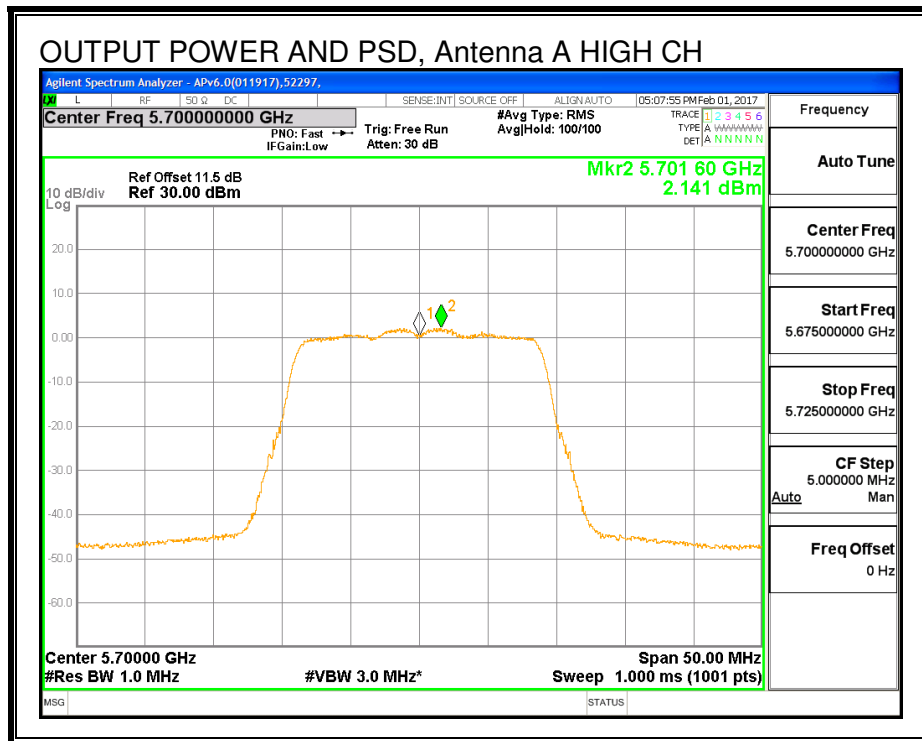
Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.95	14.95	17.96	24.00	-6.04
Mid	5580	15.00	14.98	18.00	24.00	-6.00
High	5700	13.96	13.99	16.99	24.00	-7.01

PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	3.01	2.74	5.89	11.00	-5.11
Mid	5580	2.97	3.10	6.04	11.00	-4.96
High	5700	2.14	2.15	5.15	11.00	-5.85

PSD, Antenna A





PSD, Antenna B

