

8.14. 802.11n HT20 ANTENNA B MODE IN THE 5.3 GHz BAND

8.14.1. 26 dB BANDWIDTH

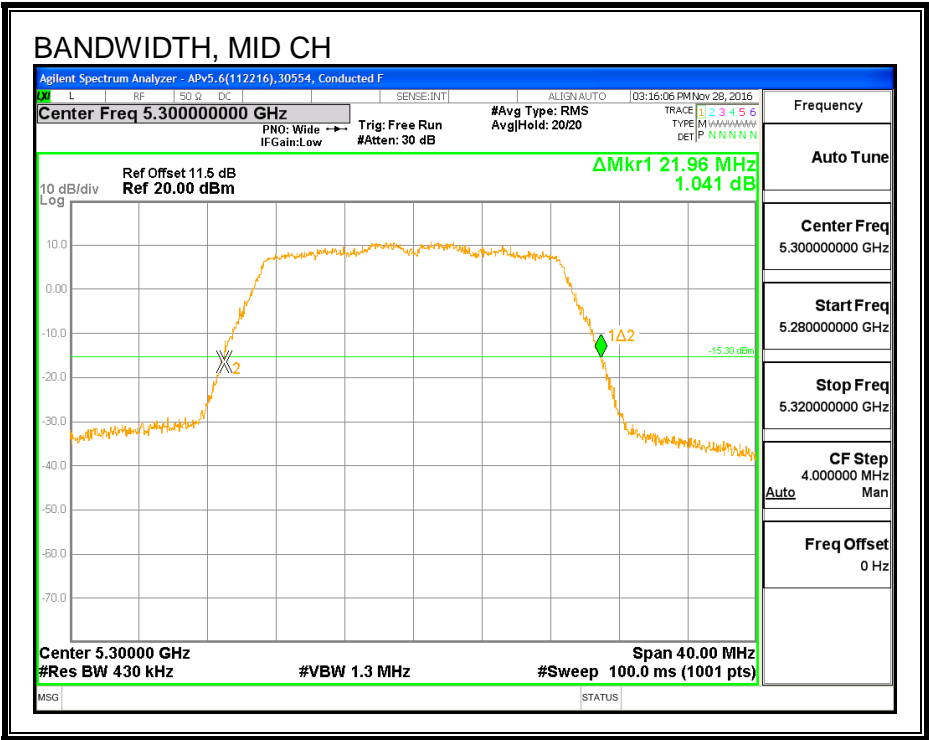
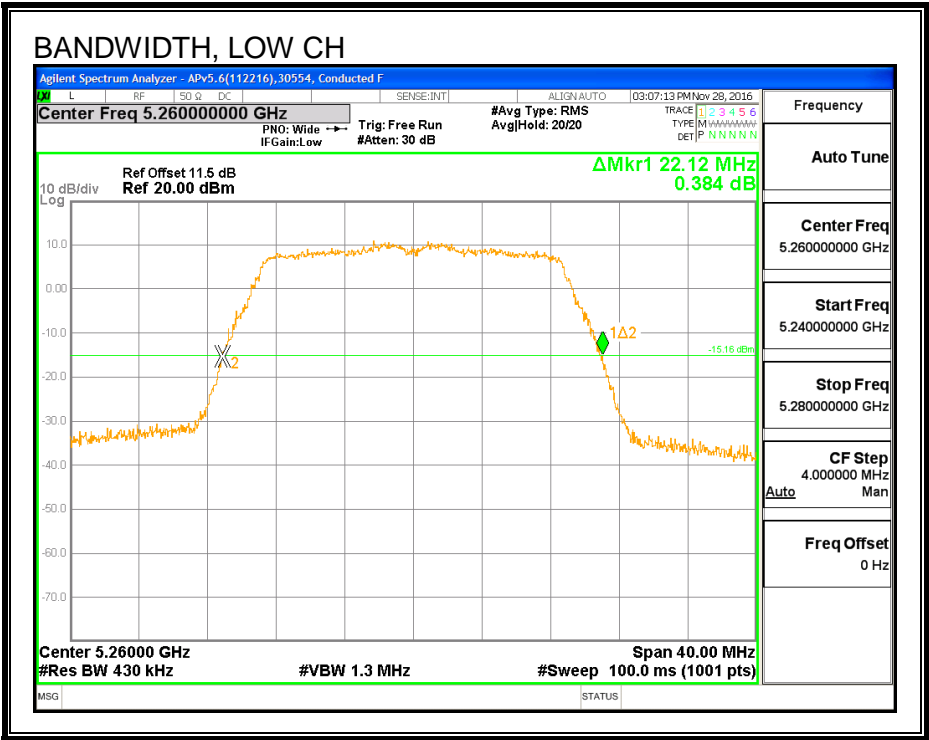
LIMITS

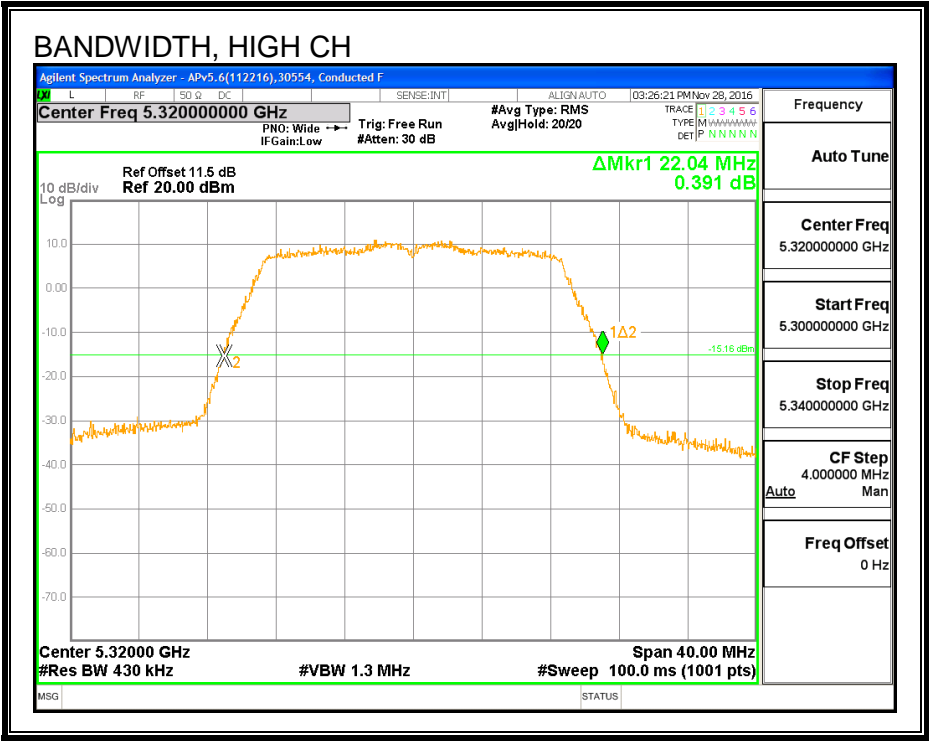
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	22.120
Mid	5300	21.960
High	5320	22.040

26 dB BANDWIDTH





8.14.2. 99% BANDWIDTH

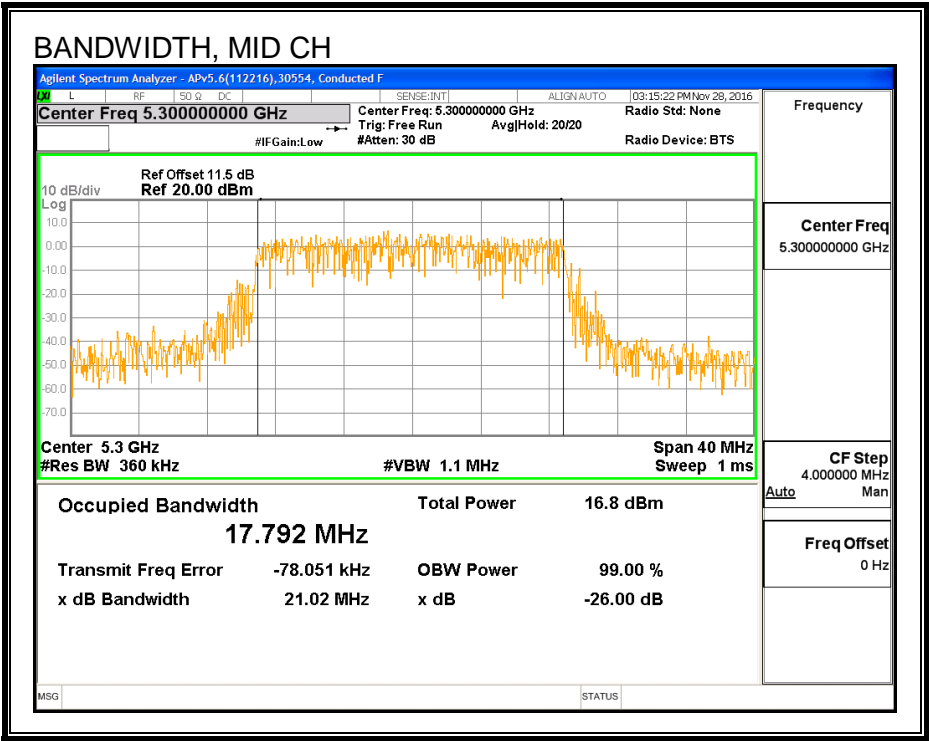
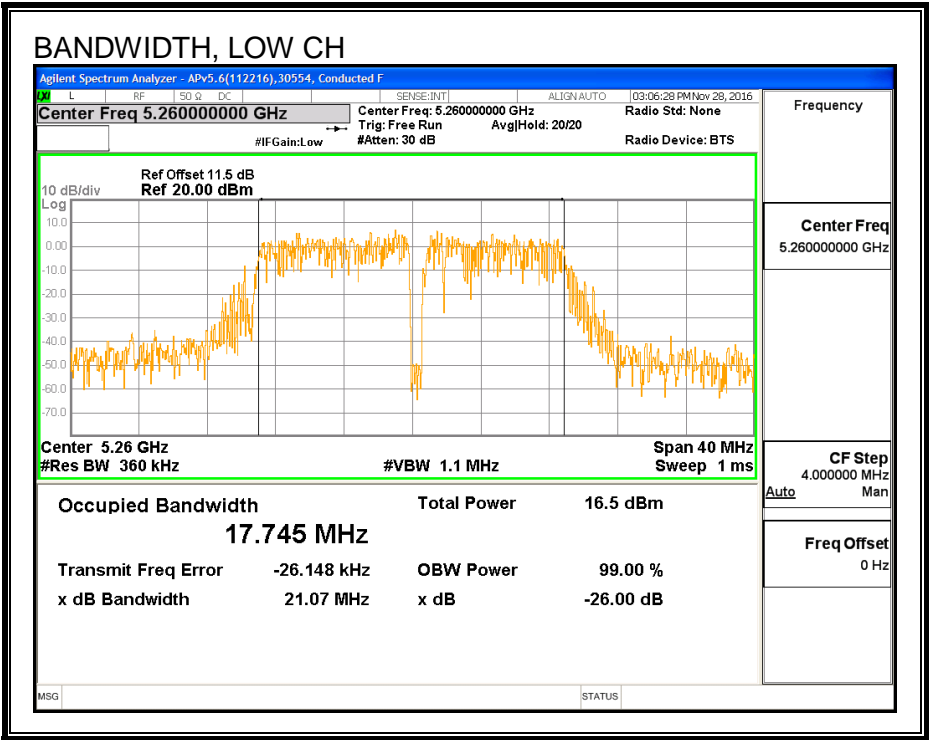
LIMITS

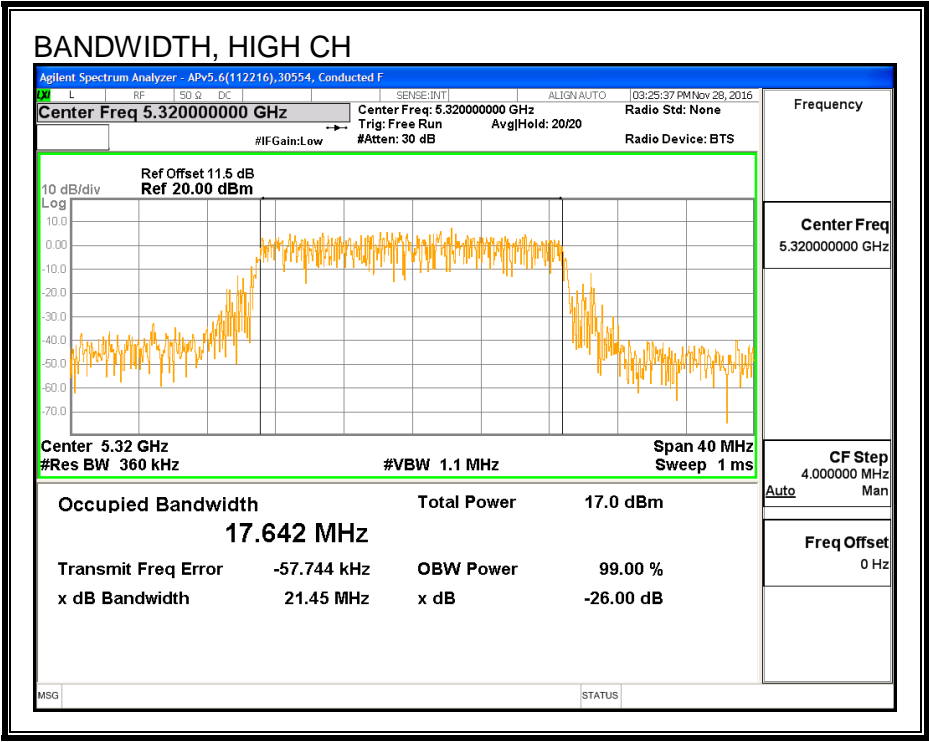
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.745
Mid	5300	17.792
High	5320	17.642

99% BANDWIDTH





8.14.3. 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	5260	15.99
Mid	5300	15.91
High	5320	15.88

8.14.4. 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

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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	5260	22.12	17.75	3.36	23.49	11.00
Mid	5300	21.96	17.79	3.36	23.50	11.00
High	5320	22.04	17.64	3.36	23.47	11.00

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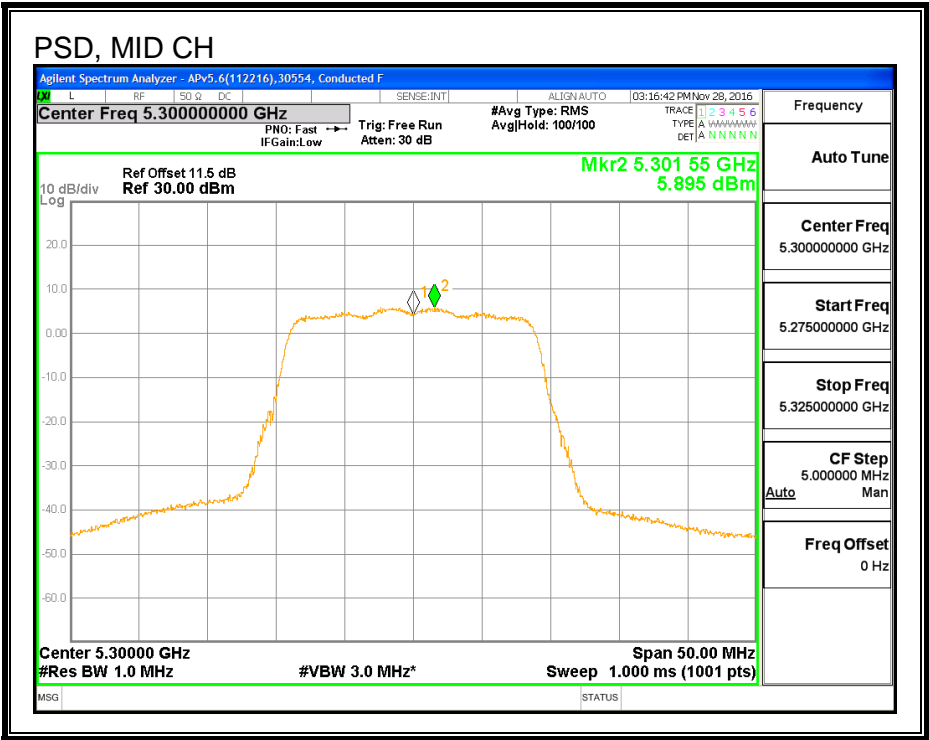
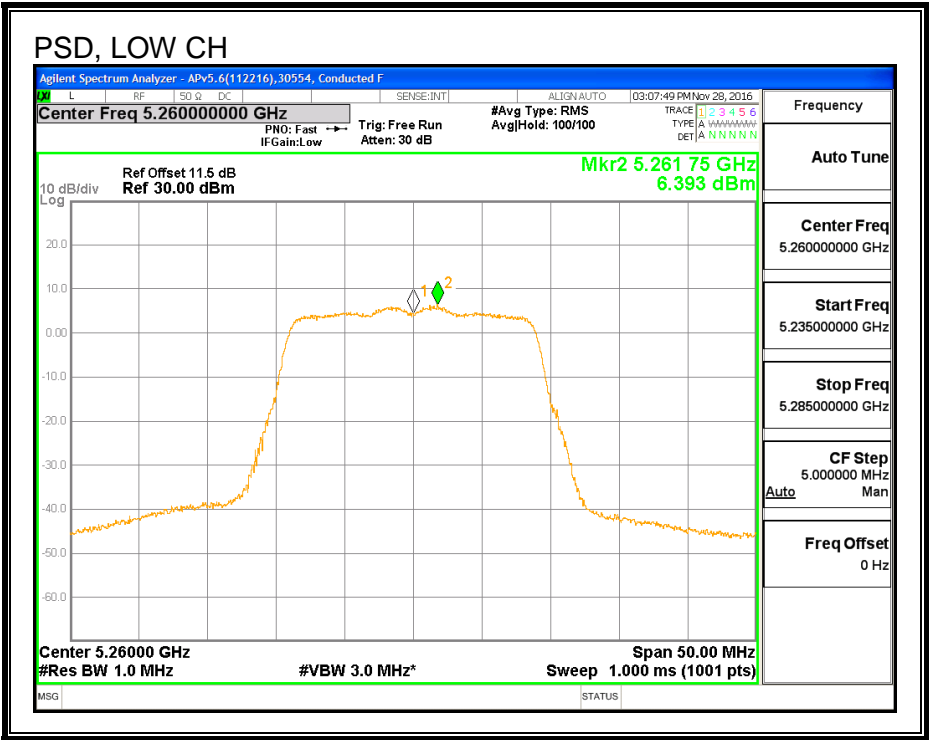
Output Power Results

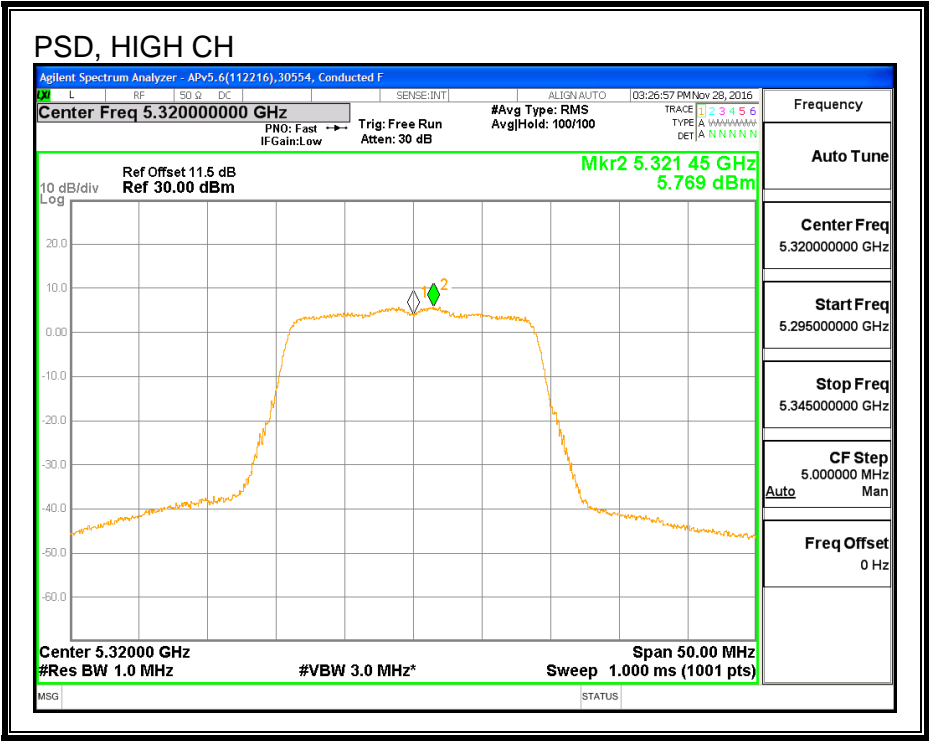
Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	15.99	15.99	23.49	-7.50
Mid	5300	15.91	15.91	23.50	-7.59
High	5320	15.88	15.88	23.47	-7.59

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	6.39	6.39	11.00	-4.61
Mid	5300	5.90	5.90	11.00	-5.11
High	5320	5.77	5.77	11.00	-5.23

PSD





8.15. 802.11n HT20 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.3 GHz BAND

8.15.1. 26 dB BANDWIDTH

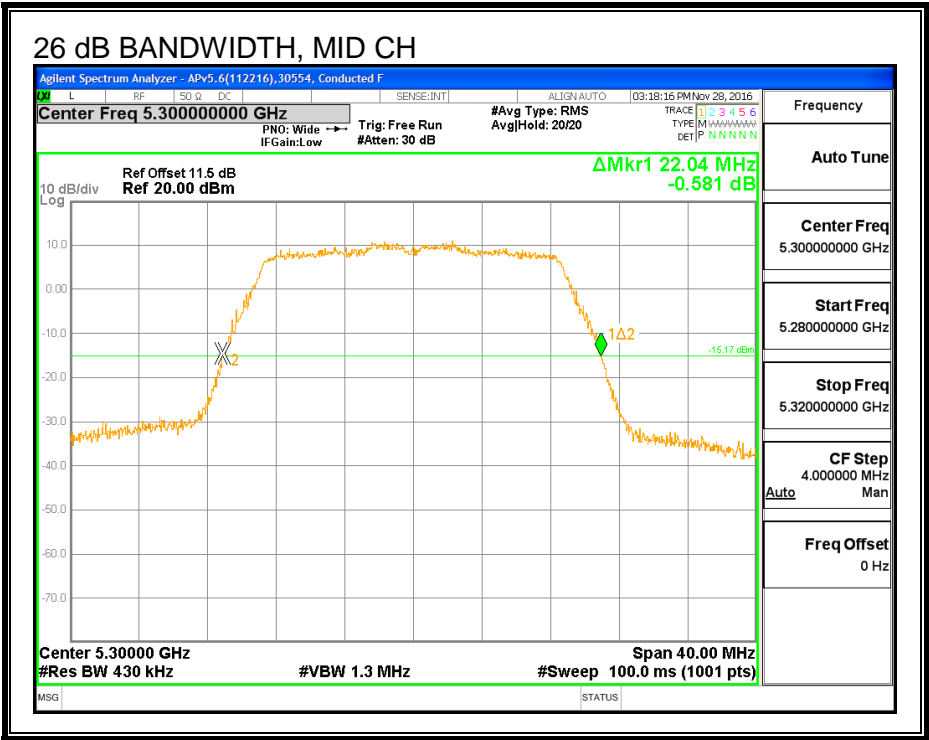
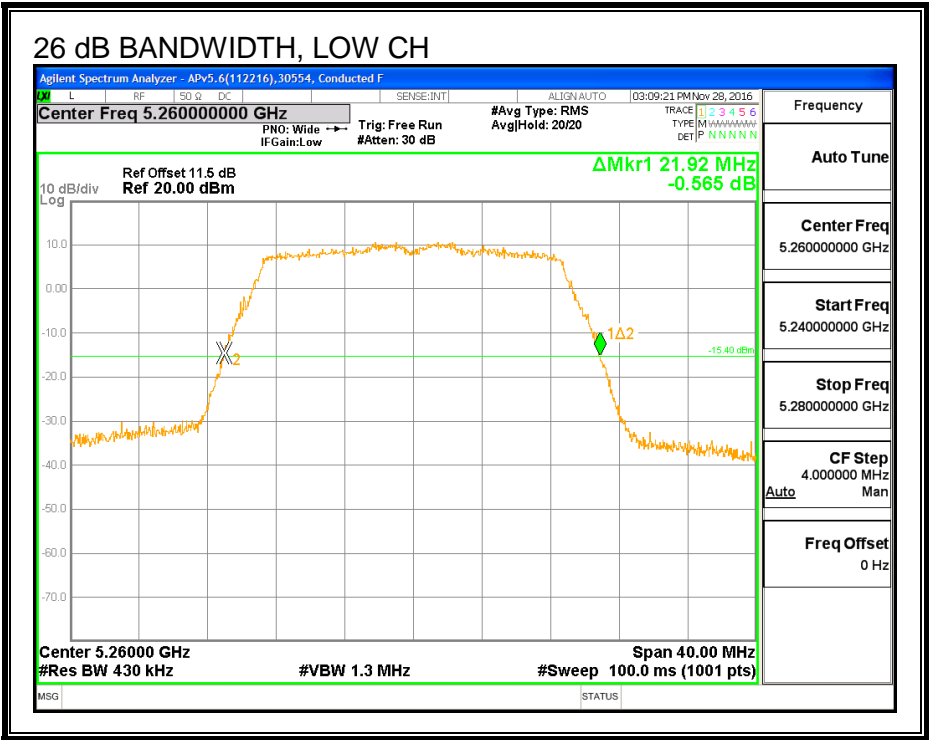
LIMITS

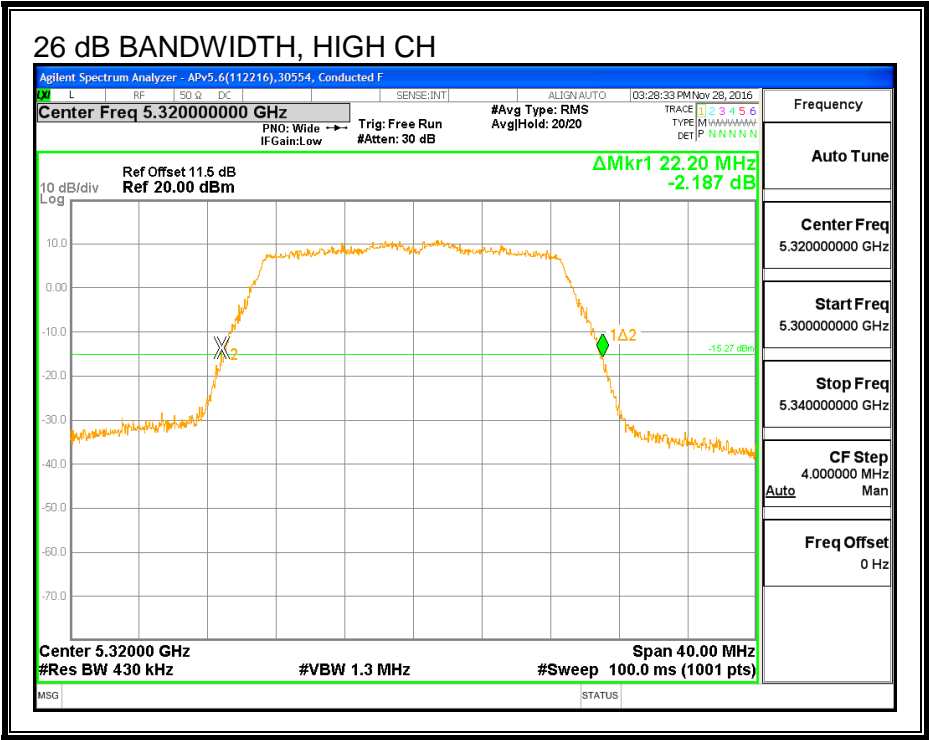
None; for reporting purposes only.

RESULTS

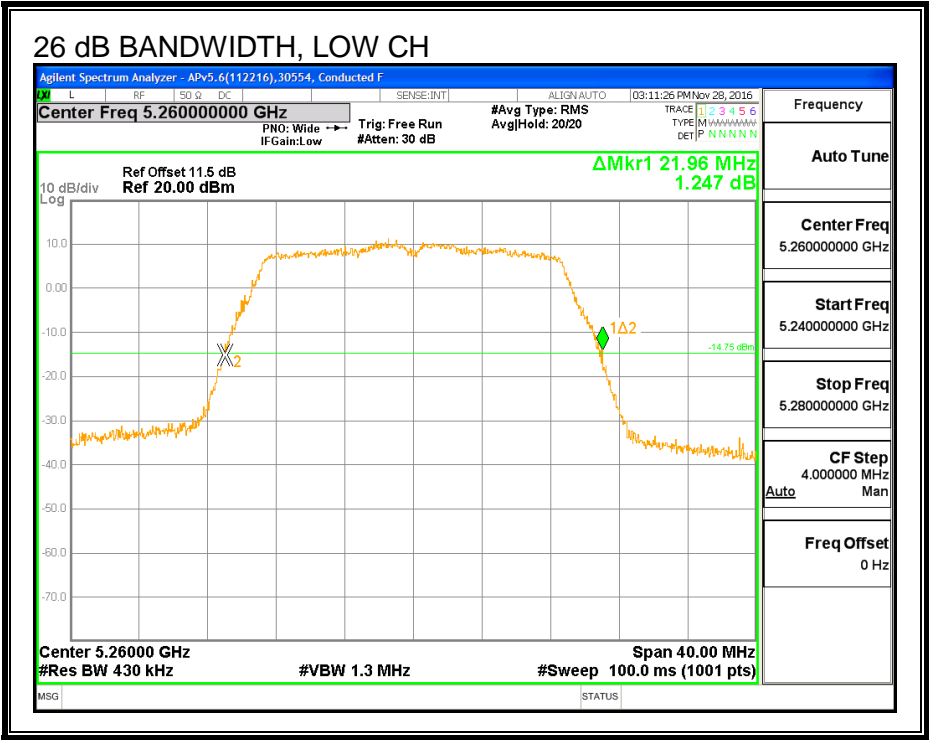
Channel	Frequency (MHz)	26 dB BW Ant A (MHz)	26 dB BW Ant B (MHz)
Low	5260	21.920	21.960
Mid	5300	22.040	22.040
High	5320	22.200	22.080

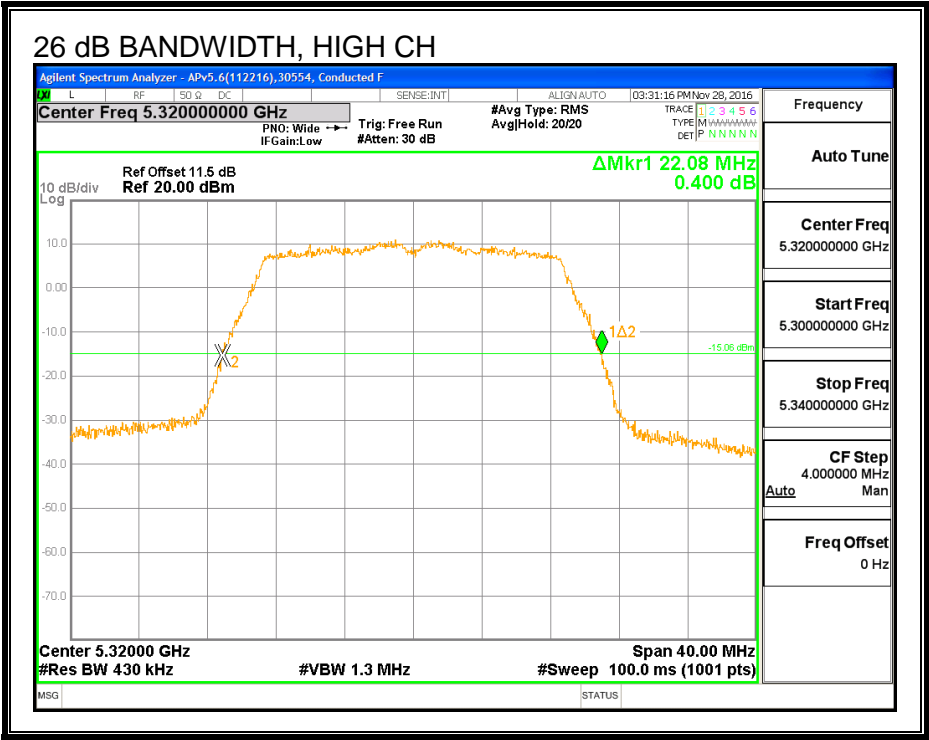
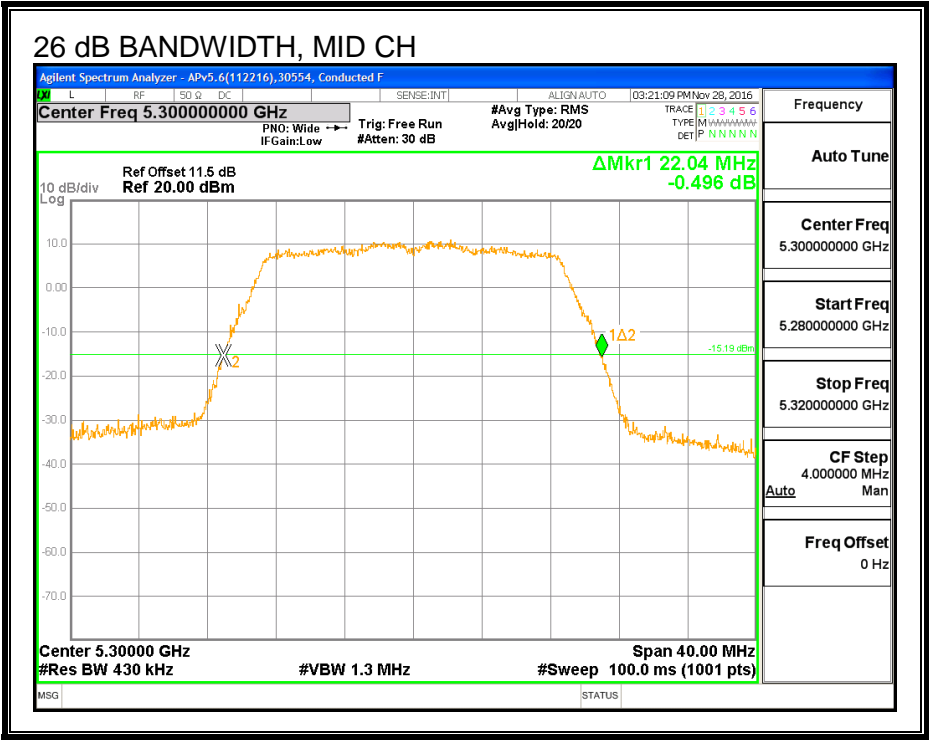
26 DB BANDWIDTH, ANTENNA A





26 dB BANDWIDTH, ANTENNA B





8.15.2. 99% BANDWIDTH

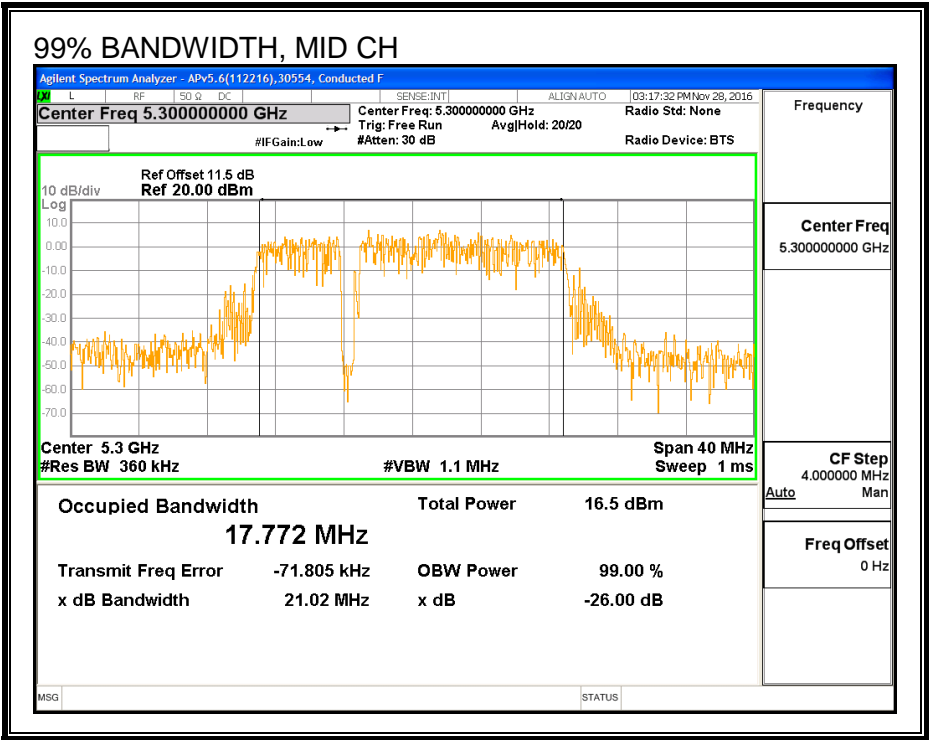
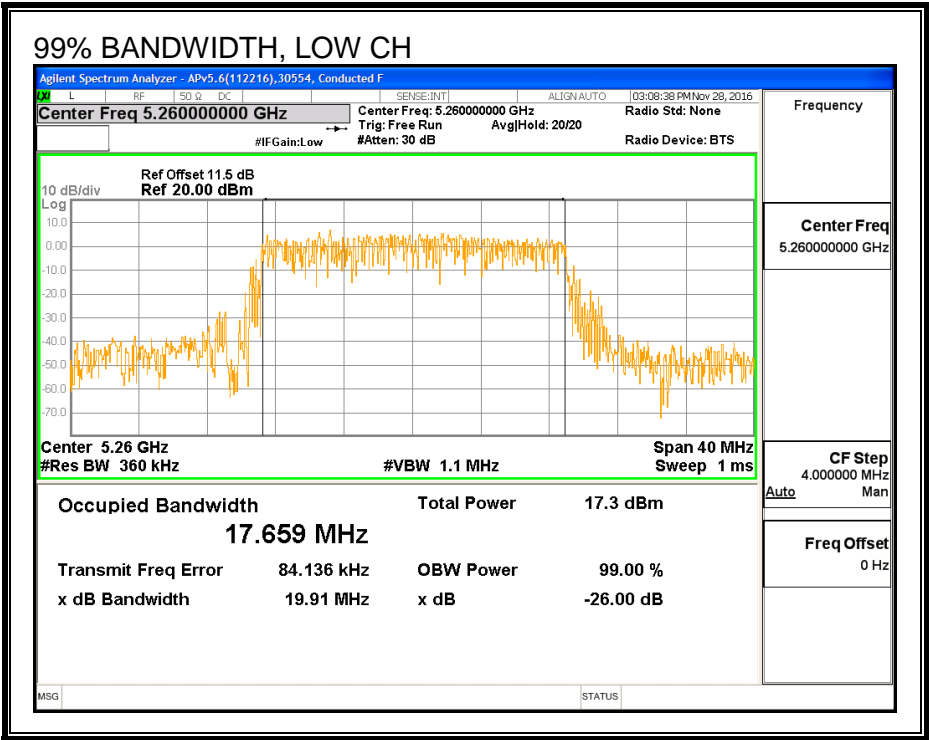
LIMITS

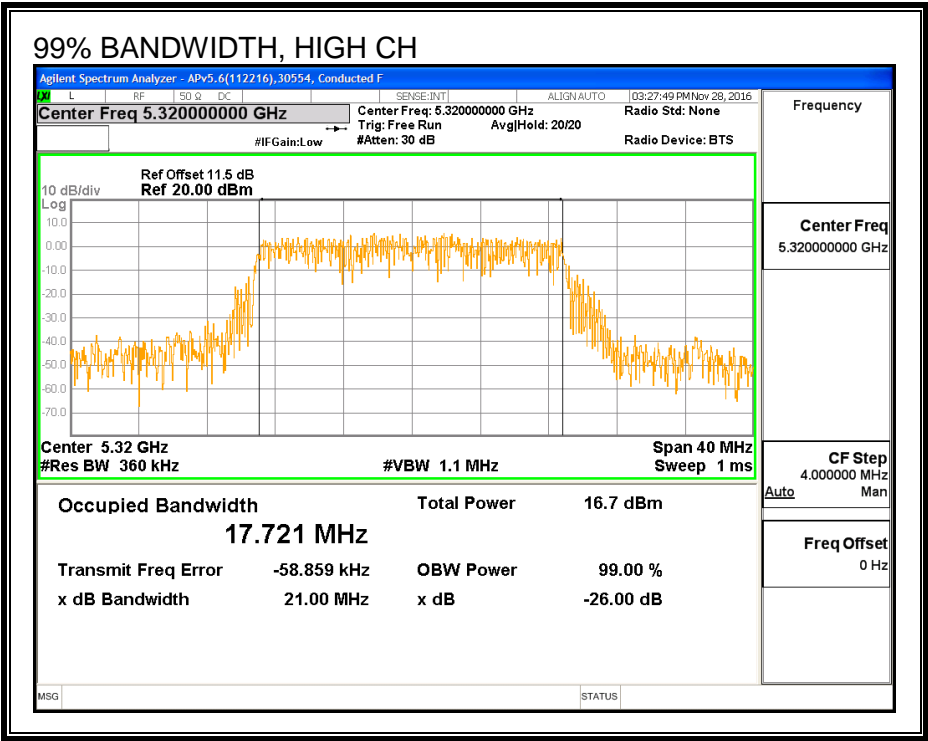
None; for reporting purposes only.

RESULTS

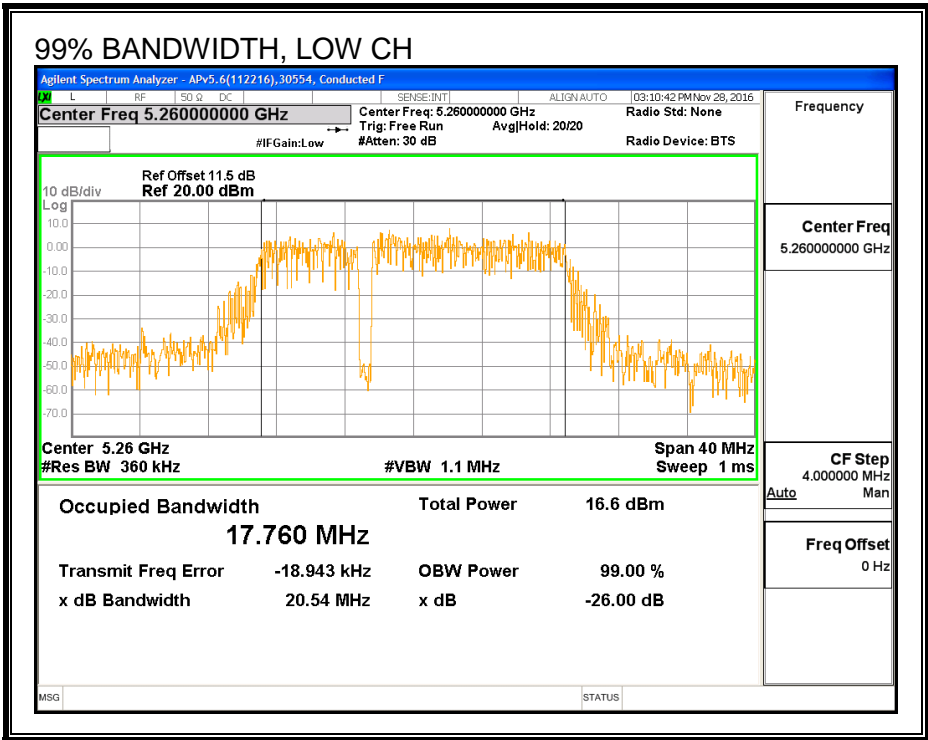
Channel	Frequency (MHz)	99% BW Ant A (MHz)	99% BW Ant B (MHz)
Low	5260	17.659	17.760
Mid	5300	17.772	17.702
High	5320	17.721	17.734

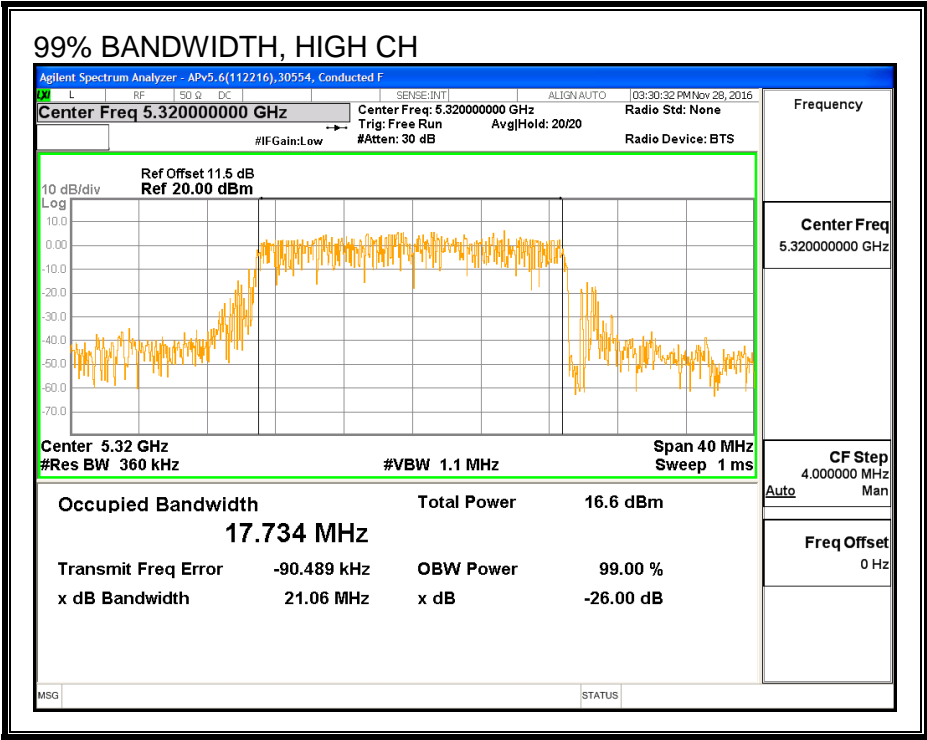
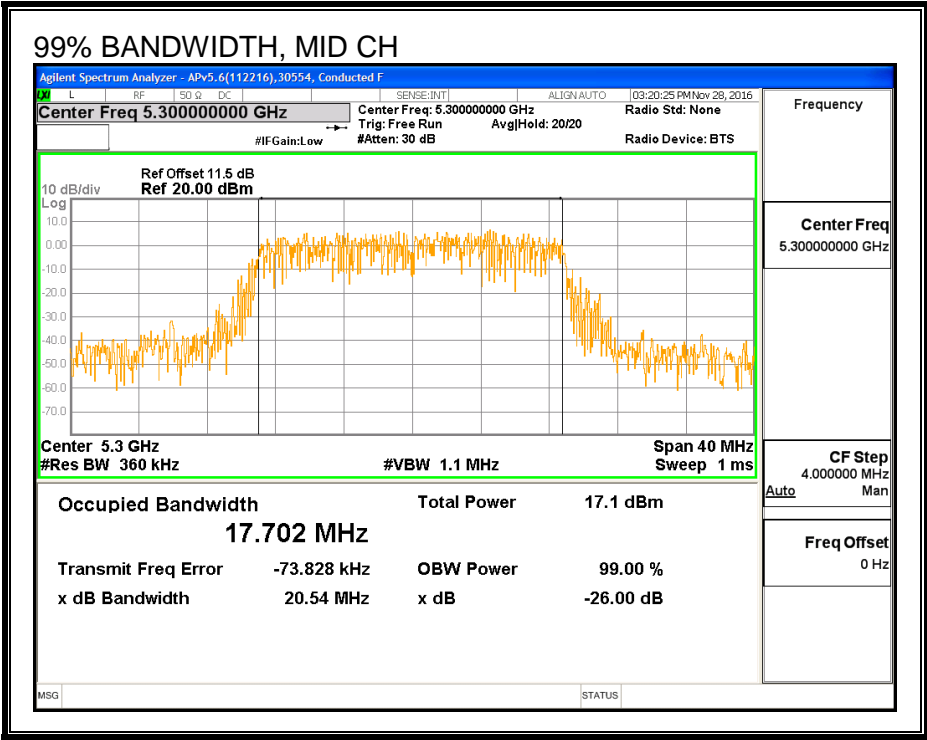
99% BANDWIDTH, ANTENNA A





99% BANDWIDTH, ANTENNA B





8.15.3. 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	5260	14.95	14.97	17.97
Mid	5300	14.87	14.91	17.90
High	5320	14.39	14.49	17.45

8.15.4. 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

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

Ant A	Ant 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:

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

RESULTS

ID:	39472	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	5260	21.92	17.66	3.75	6.75	23.47	10.25
Mid	5300	22.04	17.70	3.75	6.75	23.48	10.25
High	5320	22.08	17.72	3.75	6.75	23.48	10.25

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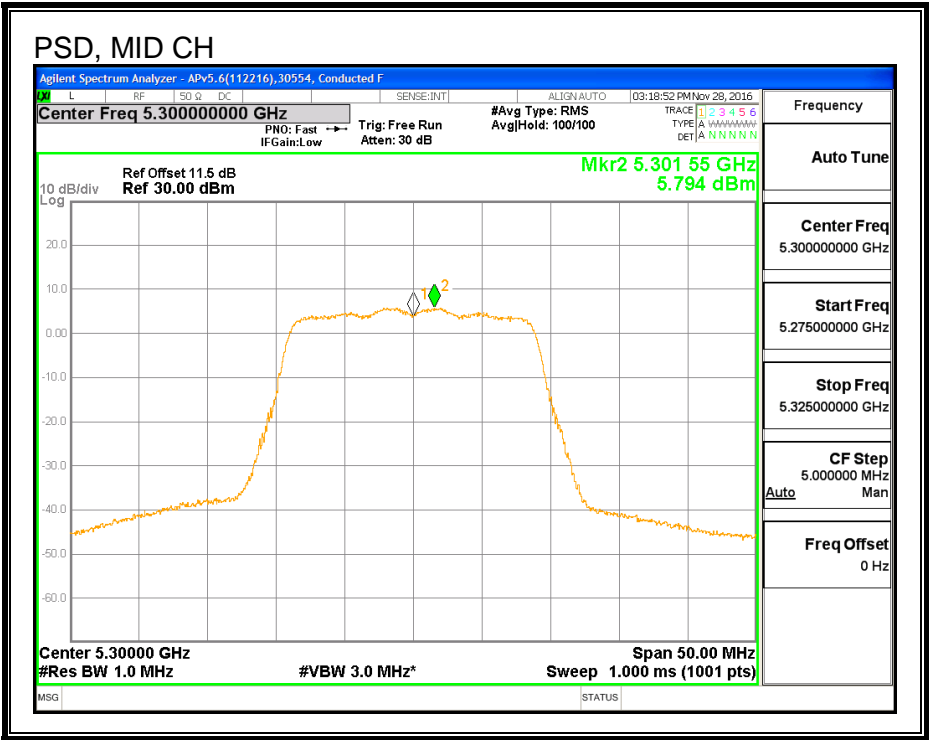
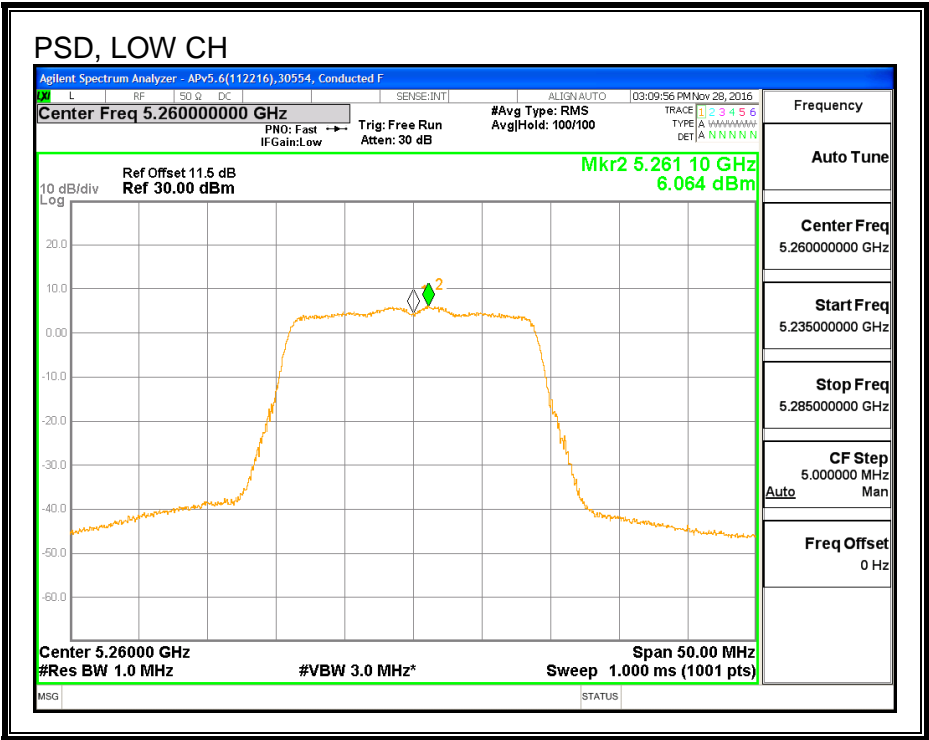
Output Power Results

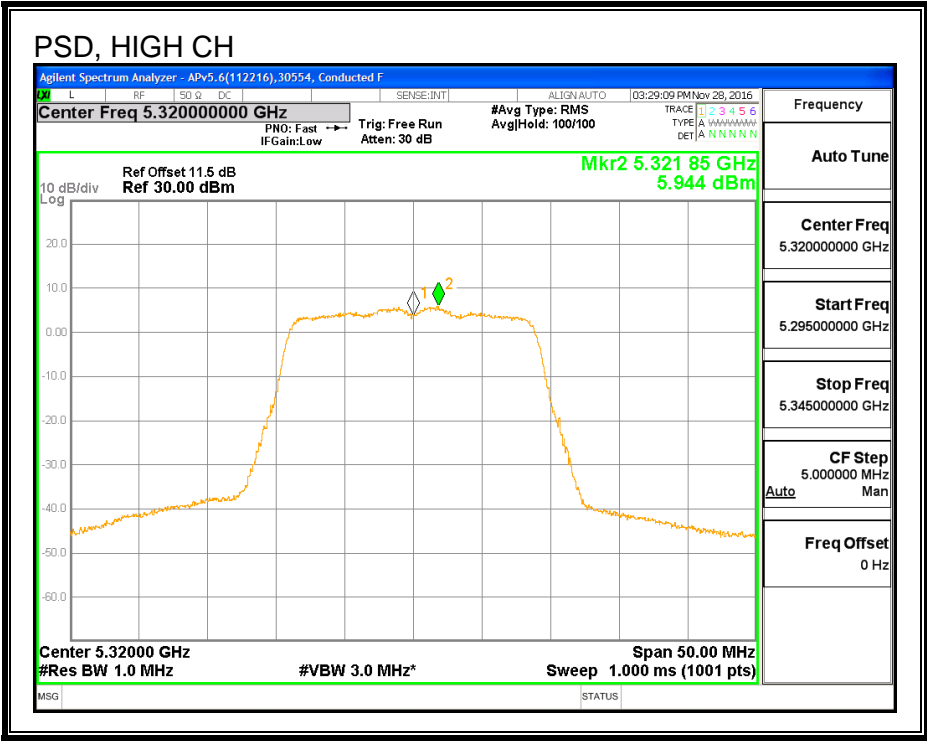
Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	14.95	14.97	17.97	23.47	-5.50
Mid	5300	14.87	14.91	17.90	23.48	-5.58
High	5320	14.39	14.49	17.45	23.48	-6.03

PSD Results

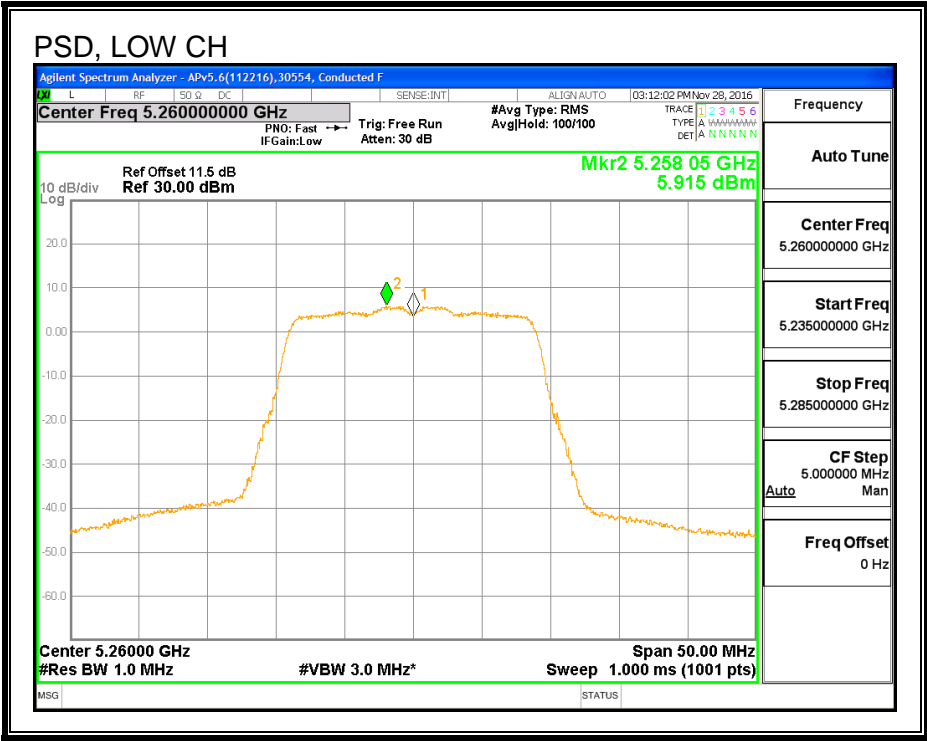
Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	6.06	5.92	9.00	10.25	-1.25
Mid	5300	5.79	5.97	8.89	10.25	-1.36
High	5320	5.94	5.88	8.92	10.25	-1.33

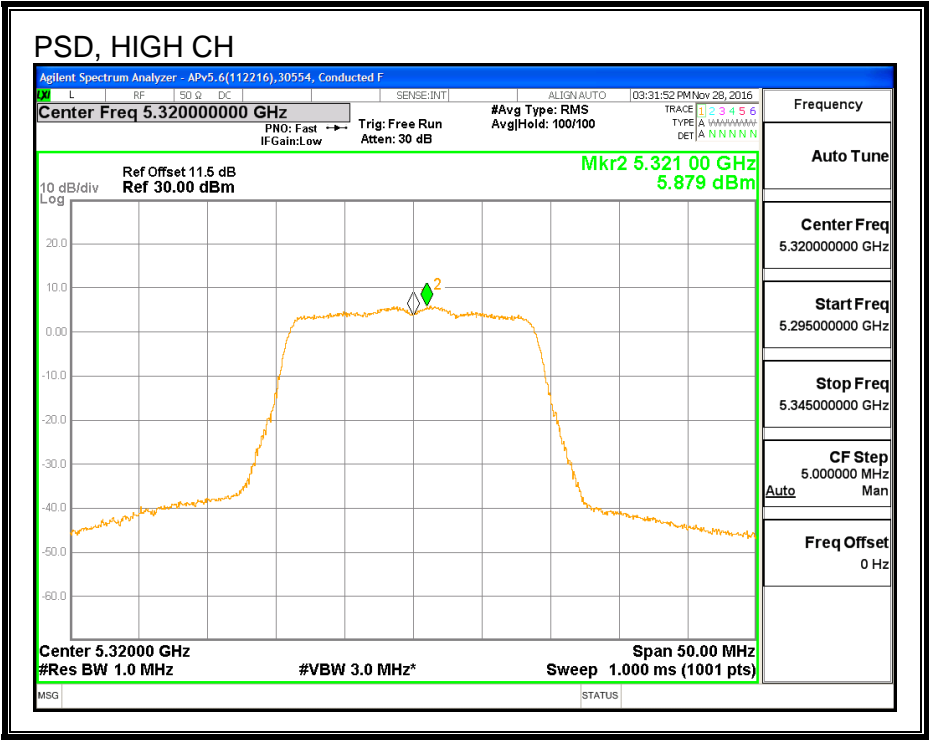
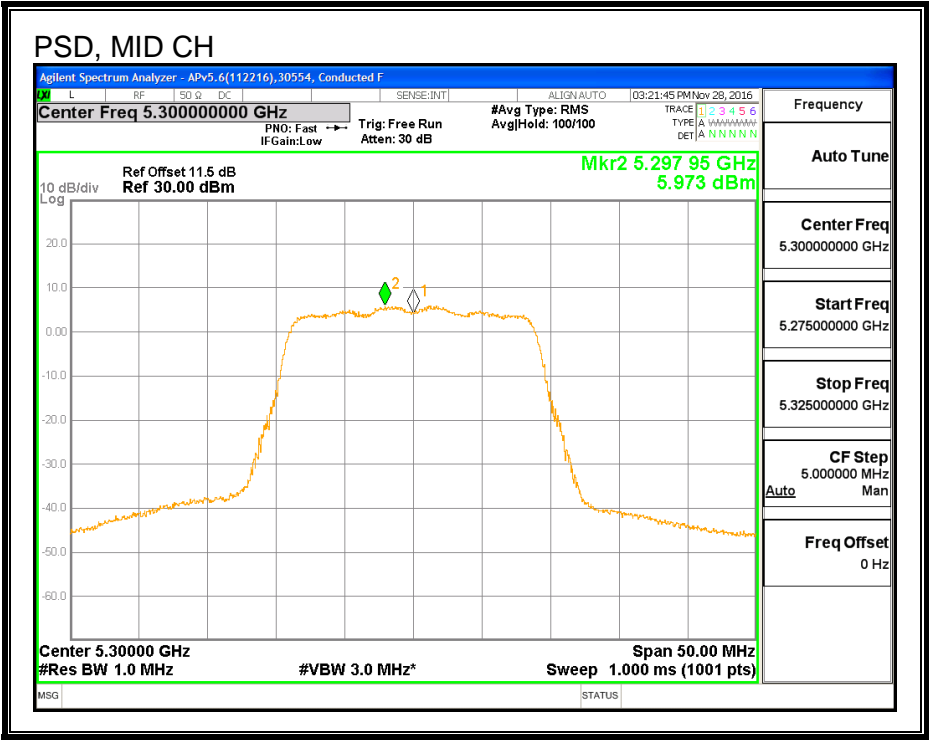
PSD, ANTENNA A





PSD, ANTENNA B





8.16. 802.11n HT20 2Tx (ANTENNA A + ANTENNA B) STBC MODE IN THE 5.3 GHz BAND

8.16.1. 26 dB BANDWIDTH

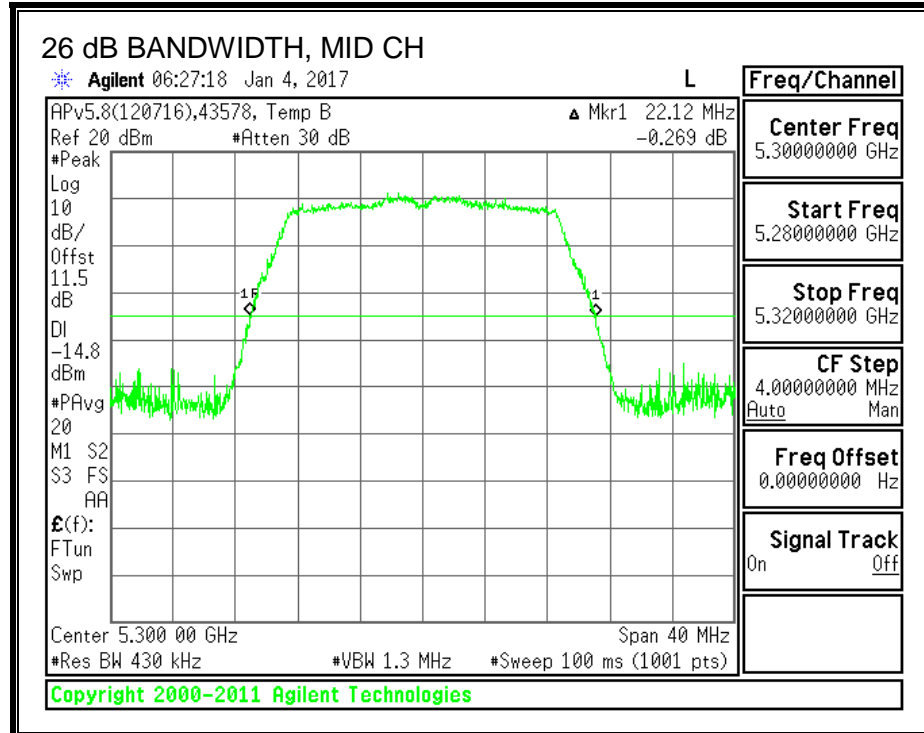
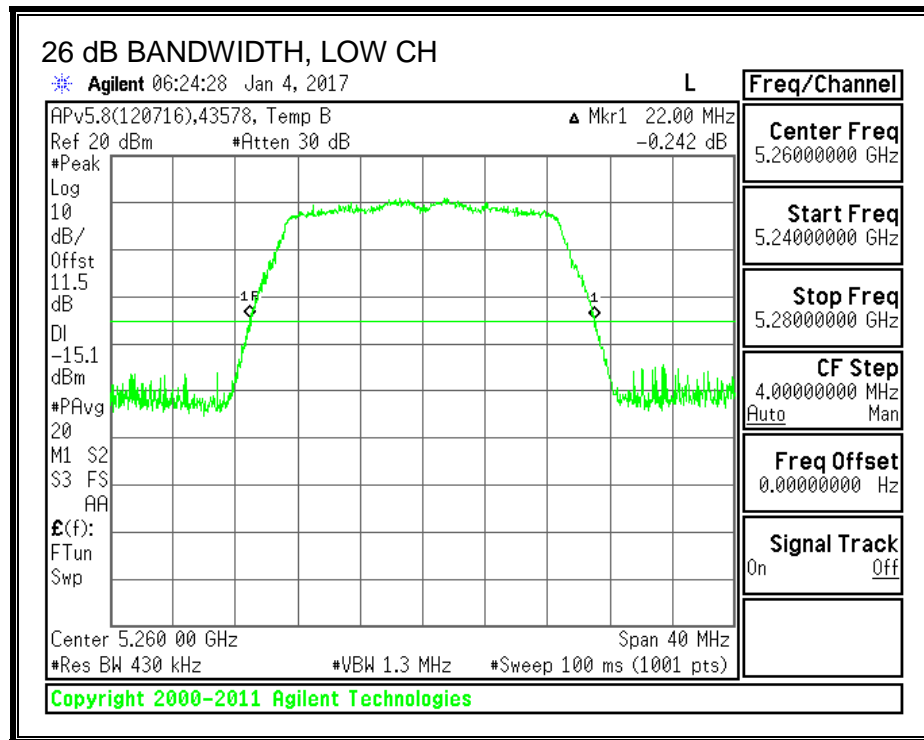
LIMITS

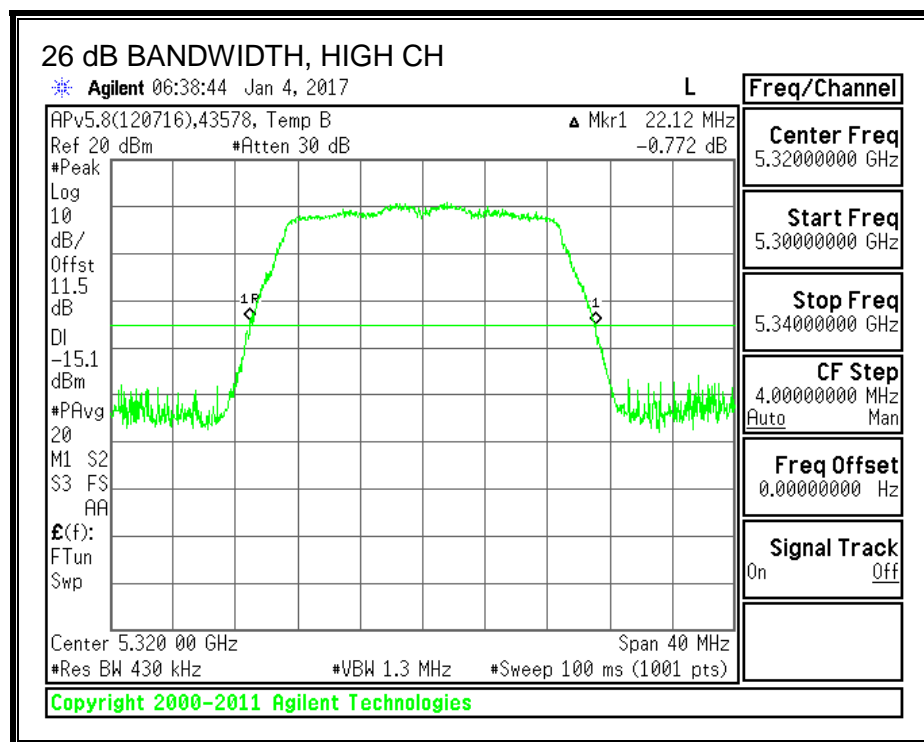
None; for reporting purposes only.

RESULTS

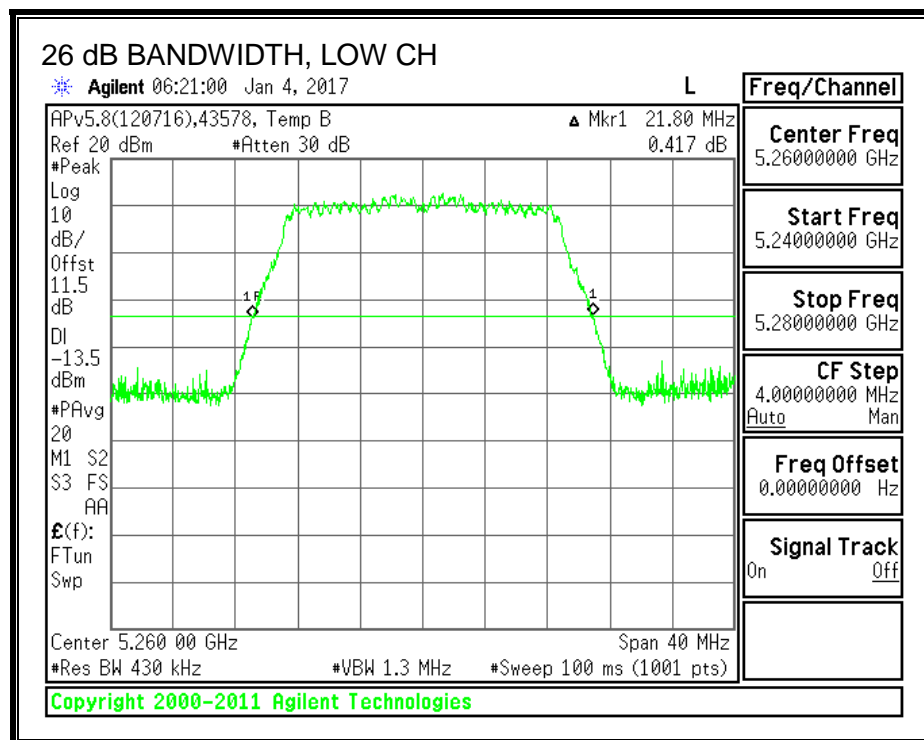
Channel	Frequency (MHz)	26 dB BW Ant A (MHz)	26 dB BW Ant B (MHz)
Low	5260	22.000	21.800
Mid	5300	22.120	21.760
High	5320	22.120	21.760

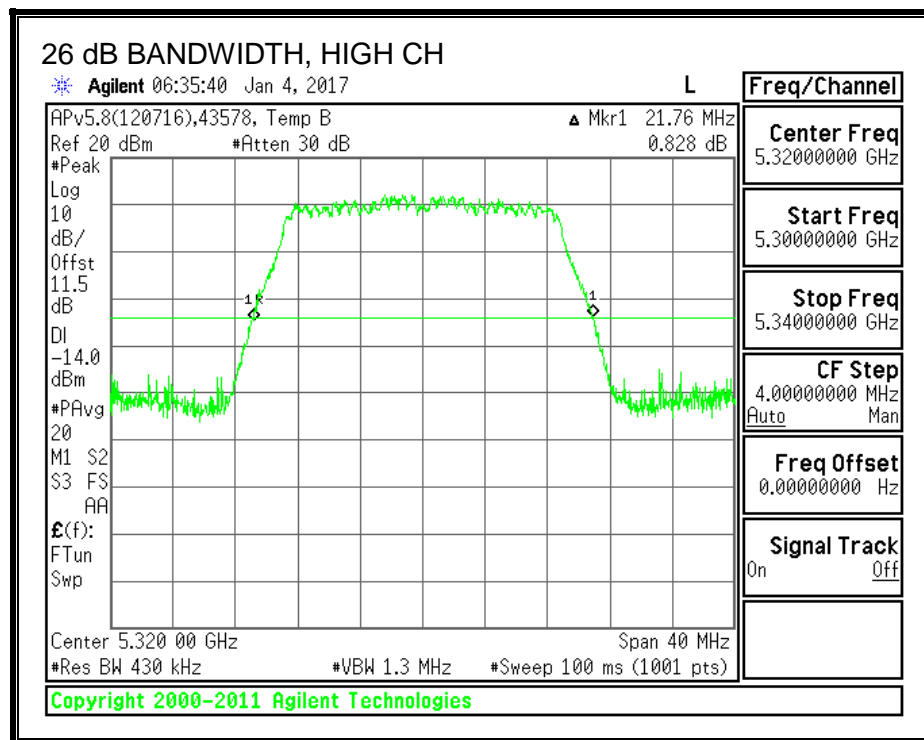
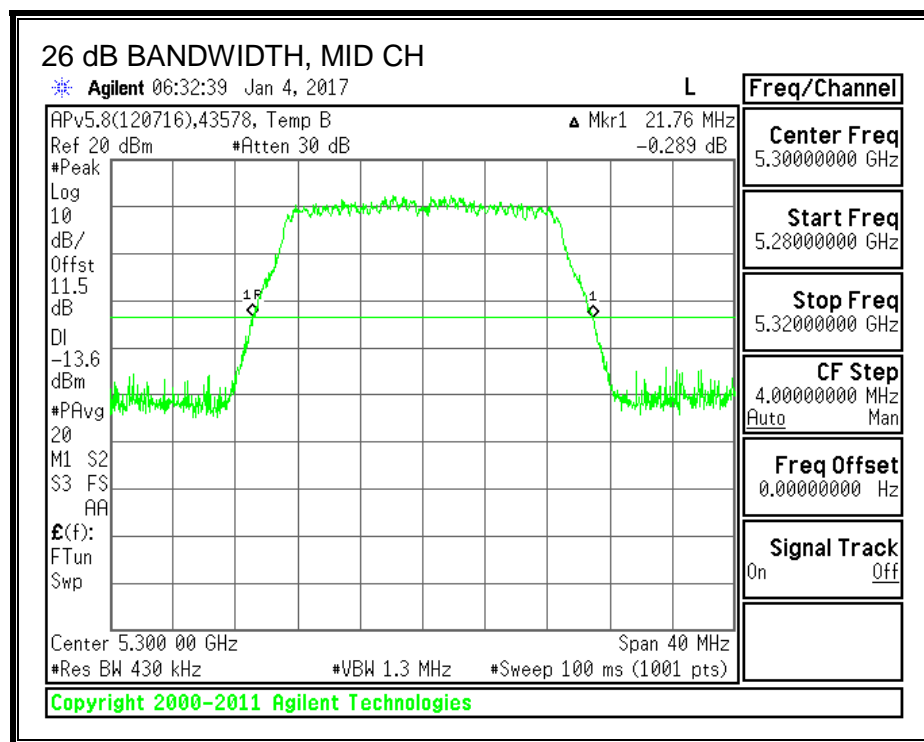
26 DB BANDWIDTH, ANTENNA A





26 DB BANDWIDTH, ANTENNA B





8.16.2. 99% BANDWIDTH

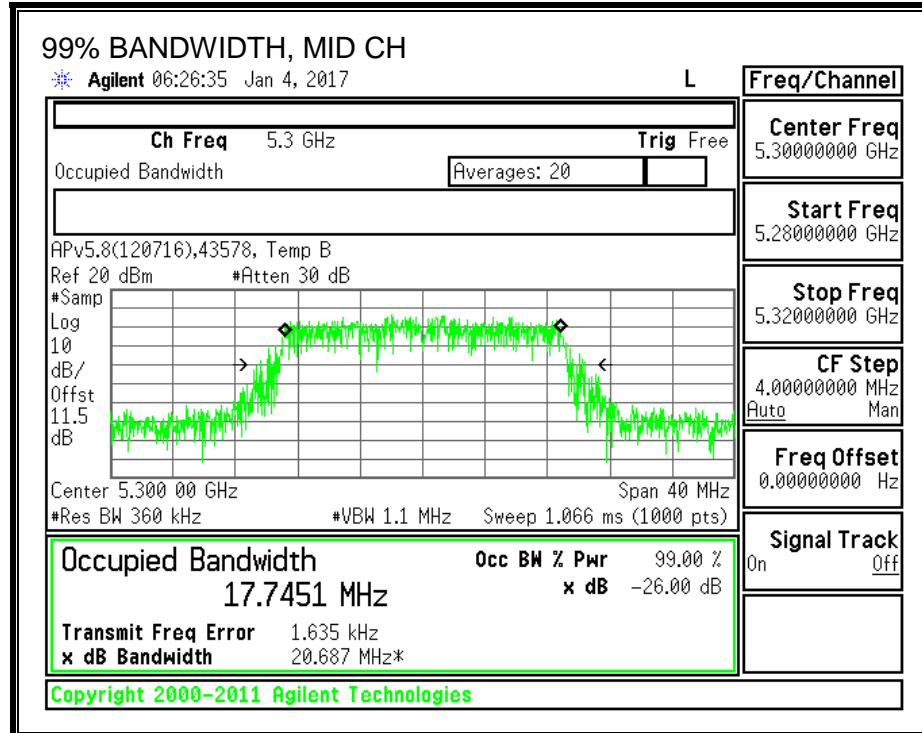
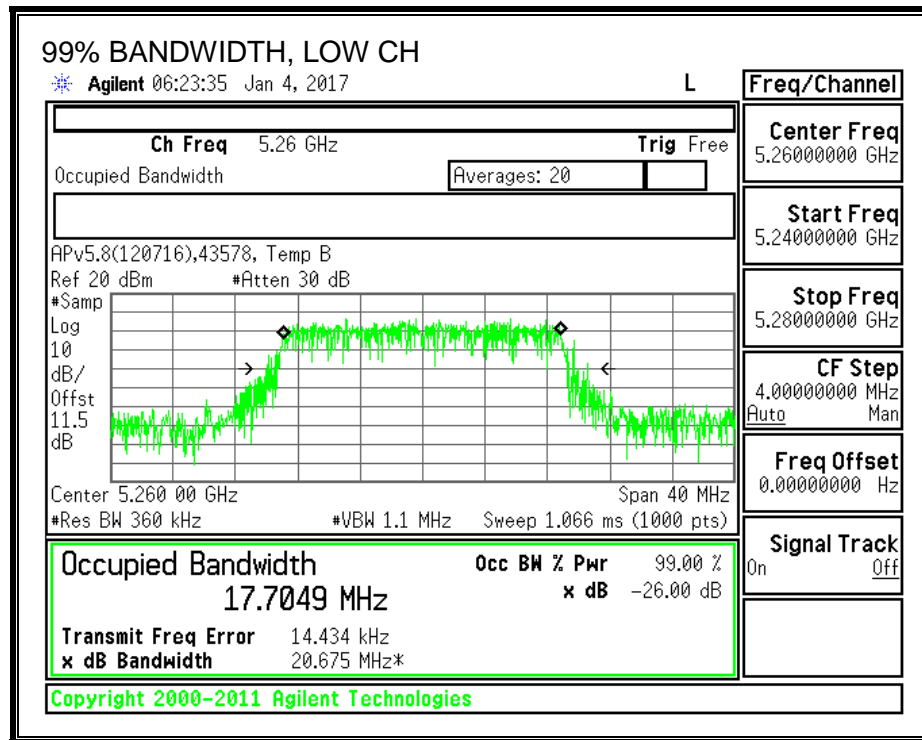
LIMITS

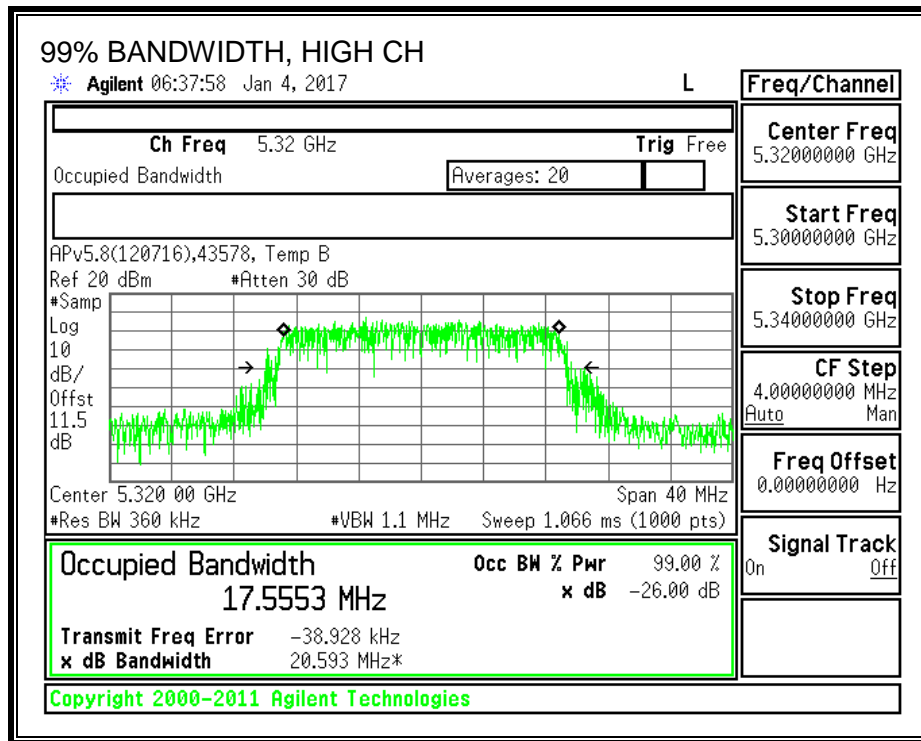
None; for reporting purposes only.

RESULTS

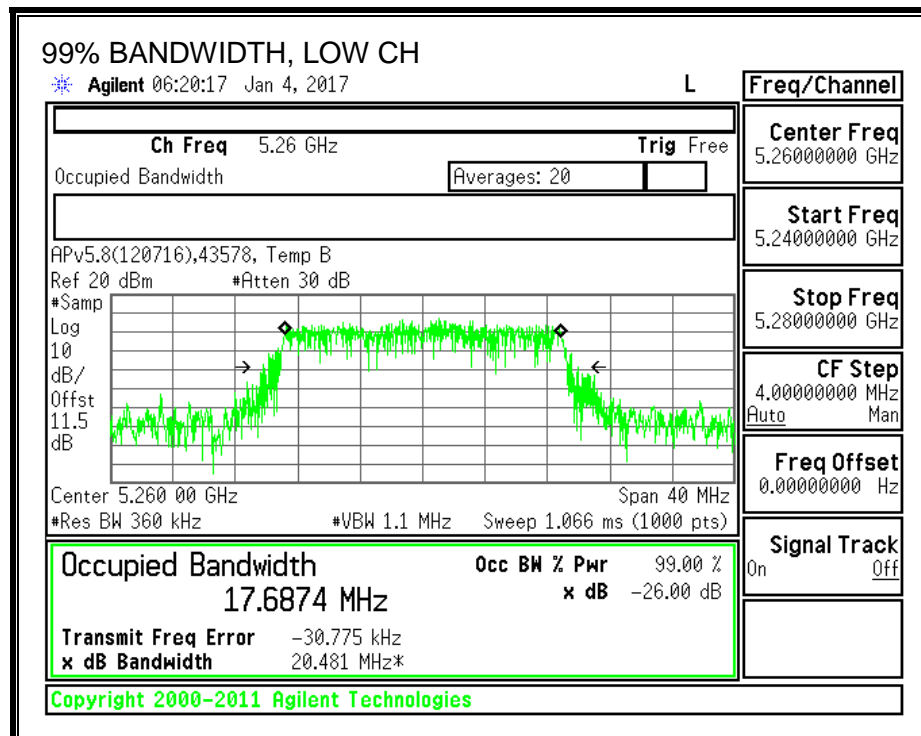
Channel	Frequency (MHz)	99% BW Ant A (MHz)	99% BW Ant B (MHz)
Low	5260	17.705	17.687
Mid	5300	17.745	17.707
High	5320	17.555	17.627

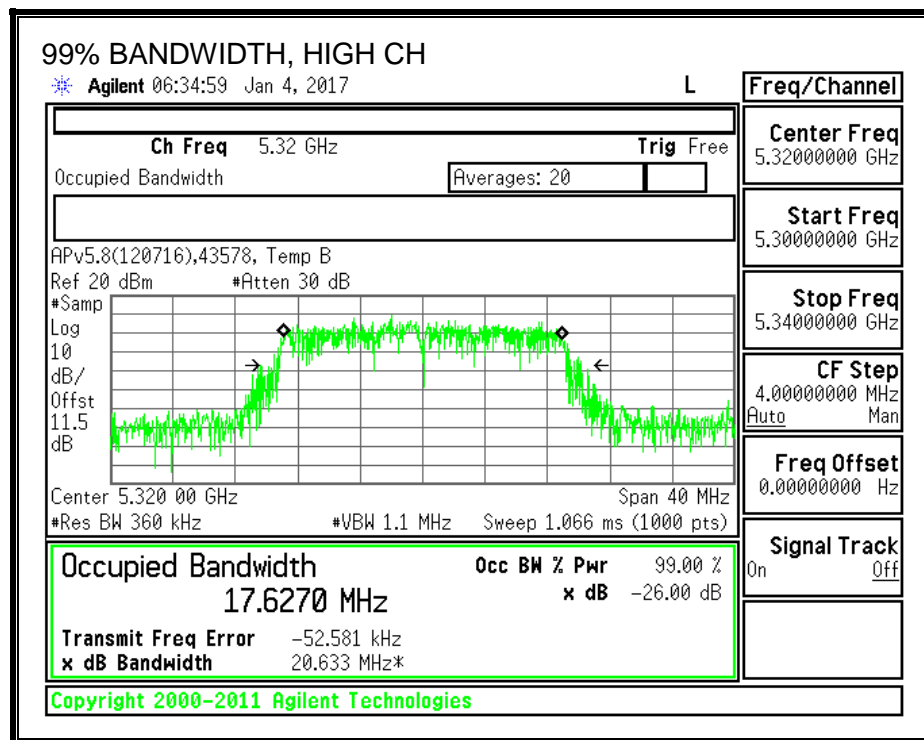
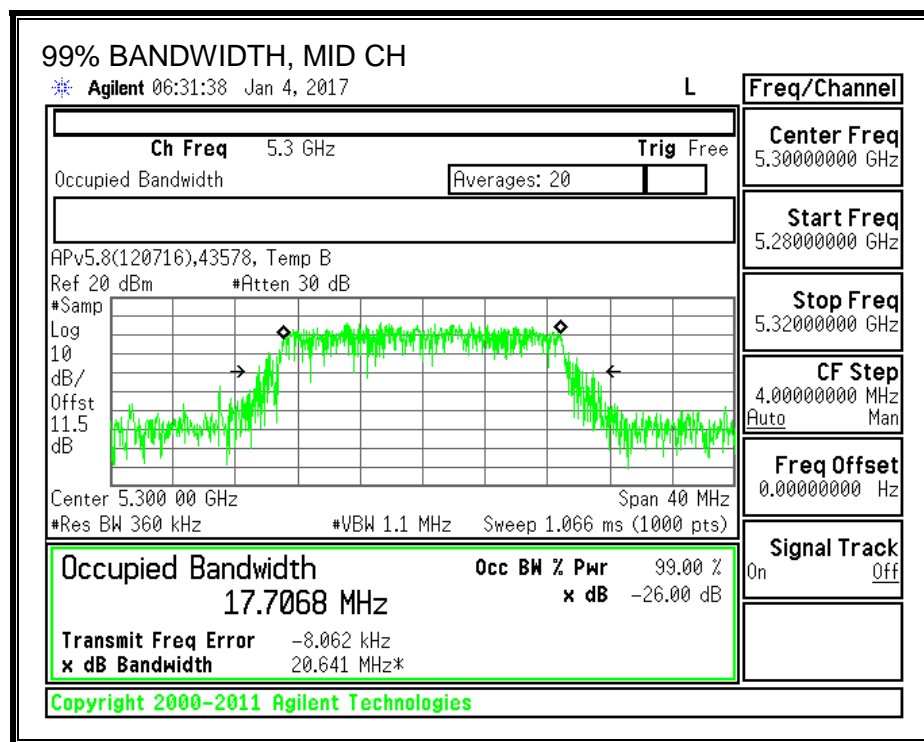
99% BANDWIDTH, ANTENNA A





99% BANDWIDTH, ANTENNA B





8.16.3. 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	5260	15.90	15.99	18.96
Mid	5300	15.79	15.91	18.86
High	5320	14.45	14.48	17.48

8.16.4. 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

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)
4.11	3.36	3.75

RESULTS

ID:	39472	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	5260	21.80	17.69	3.75	3.75	23.48	11.00
Mid	5300	21.76	17.71	3.75	3.75	23.48	11.00
High	5320	21.76	17.56	3.75	3.75	23.44	11.00

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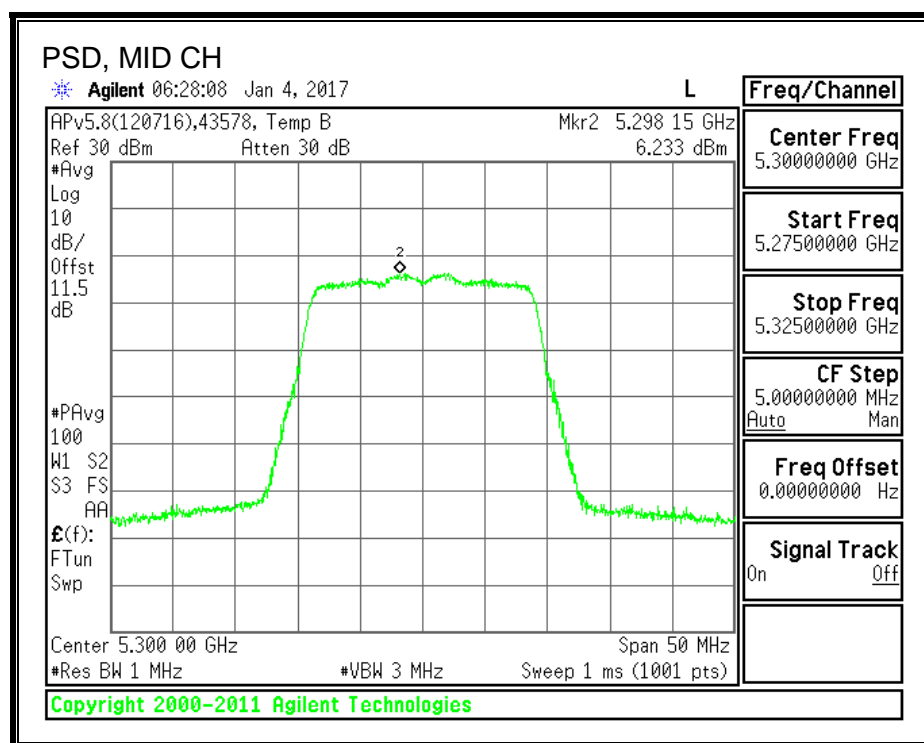
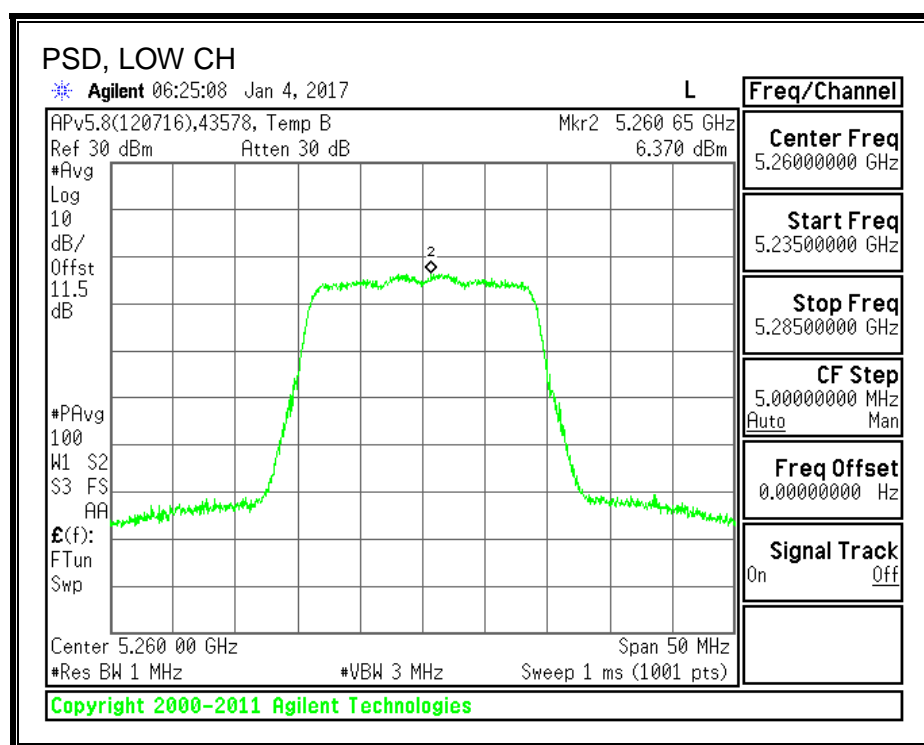
Output Power Results

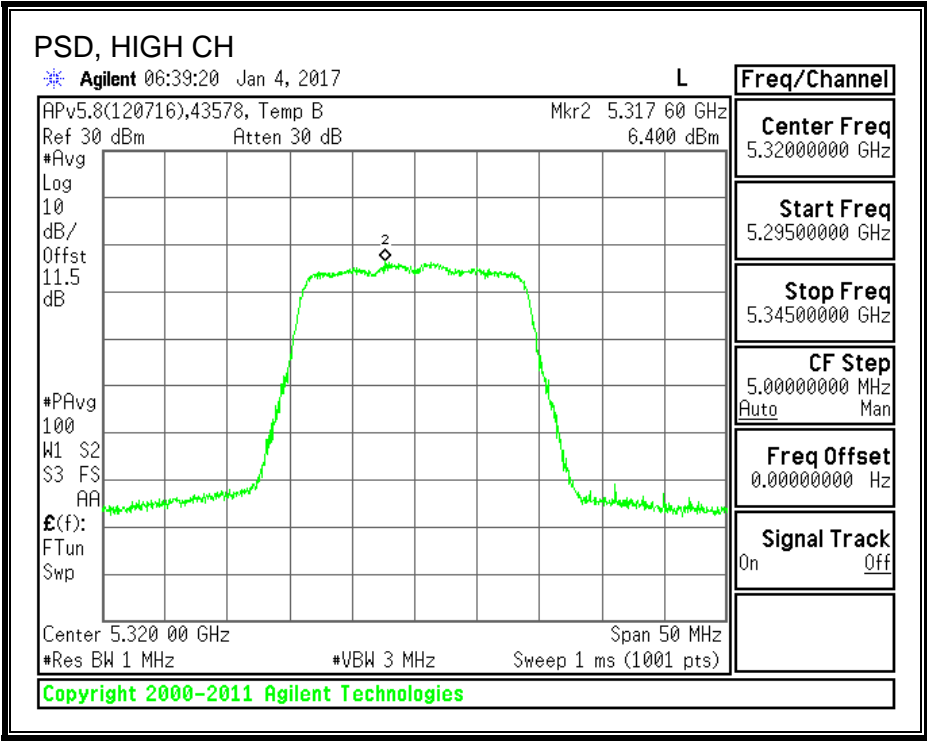
Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	15.90	15.99	18.96	23.48	-4.52
Mid	5300	15.79	15.91	18.86	23.48	-4.62
High	5320	14.45	14.48	17.48	23.44	-5.97

PSD Results

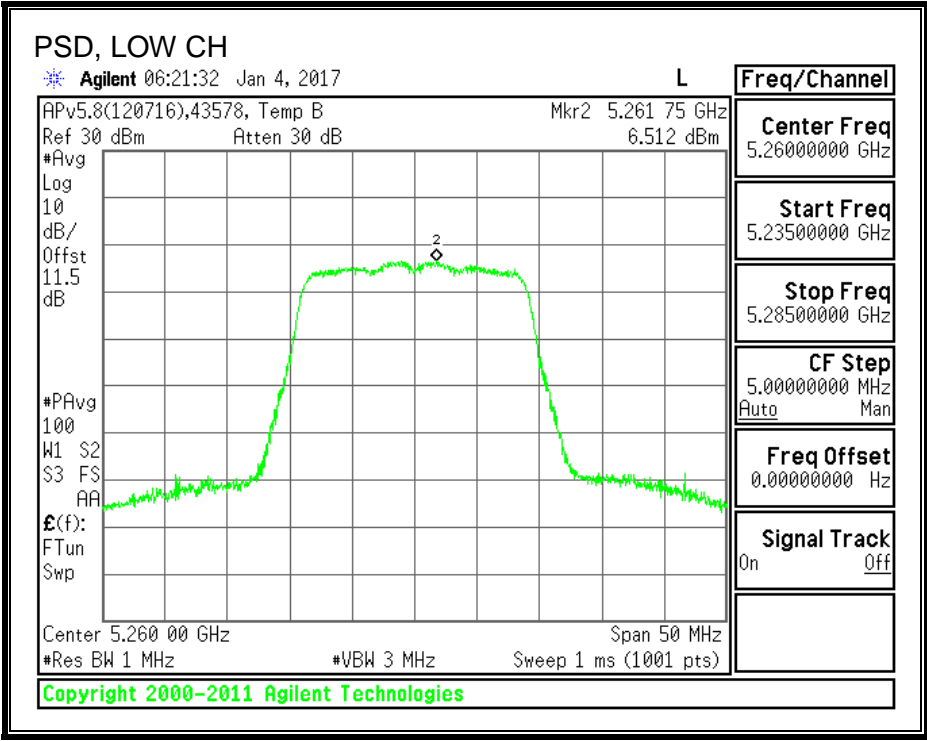
Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	6.37	6.51	9.45	11.00	-1.55
Mid	5300	6.23	6.54	9.40	11.00	-1.60
High	5320	6.40	6.36	9.39	11.00	-1.61

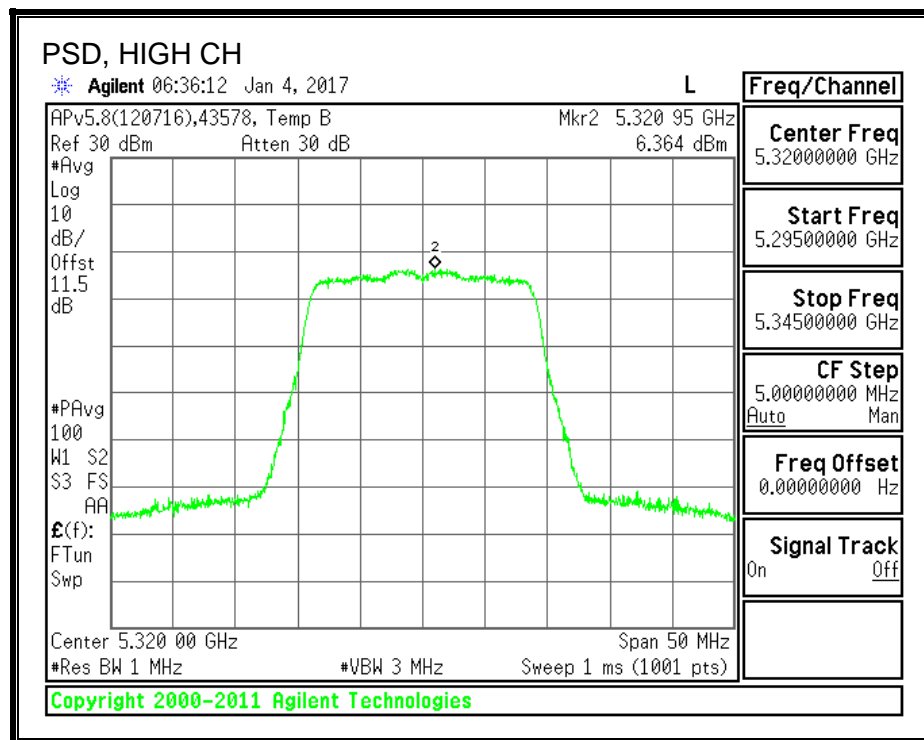
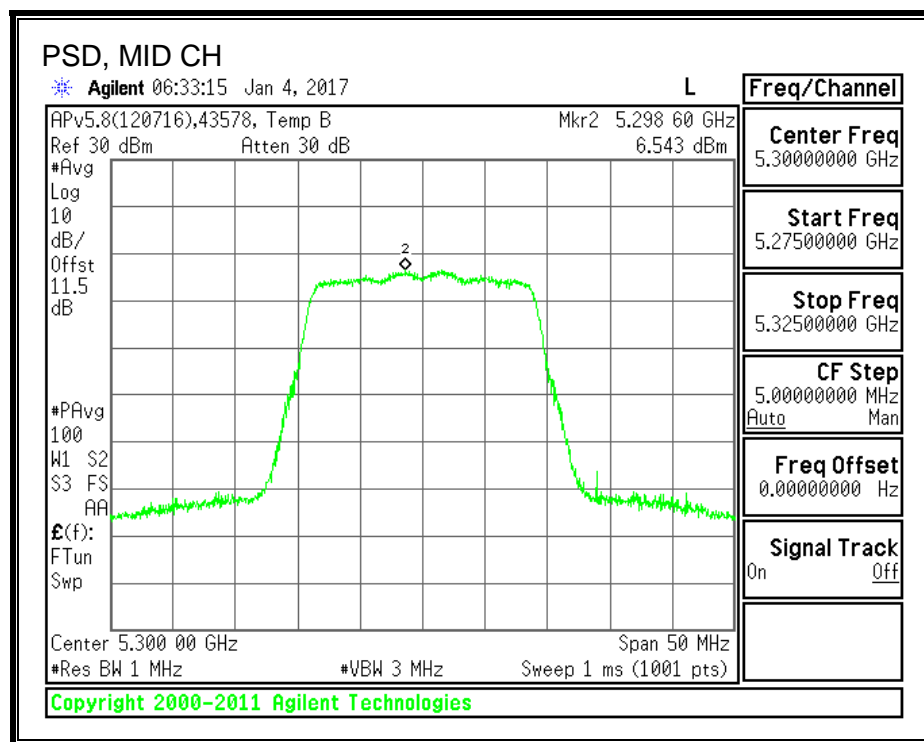
PSD, ANTENNA A





PSD, ANTENNA B





8.17. 802.11n HT40 ANTENNA A MODE IN THE 5.3 GHz BAND

8.17.1. 26 dB BANDWIDTH

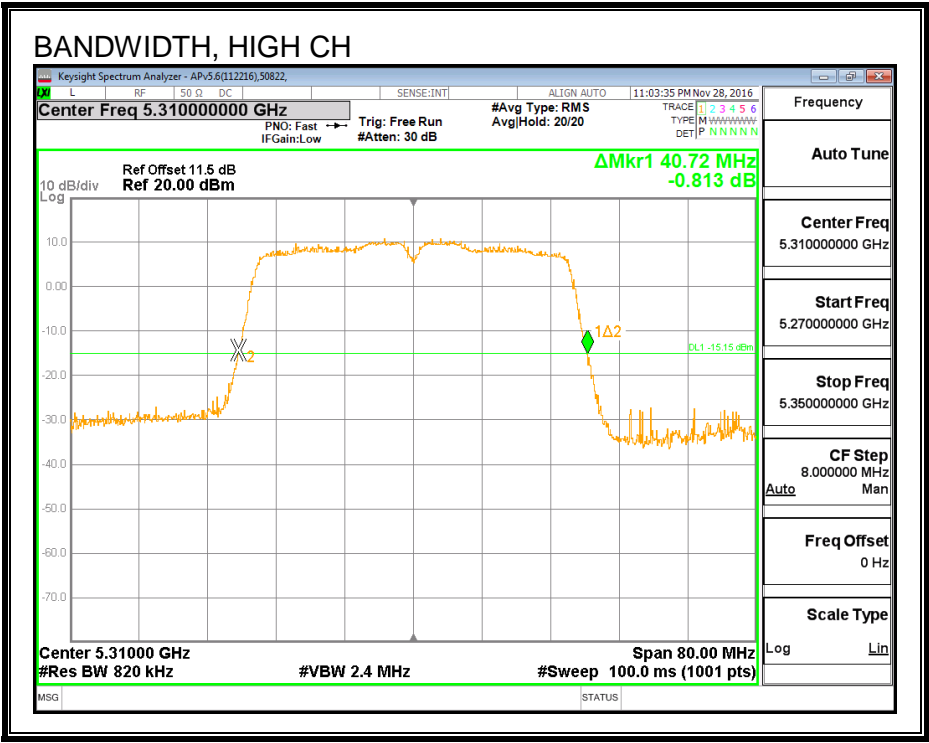
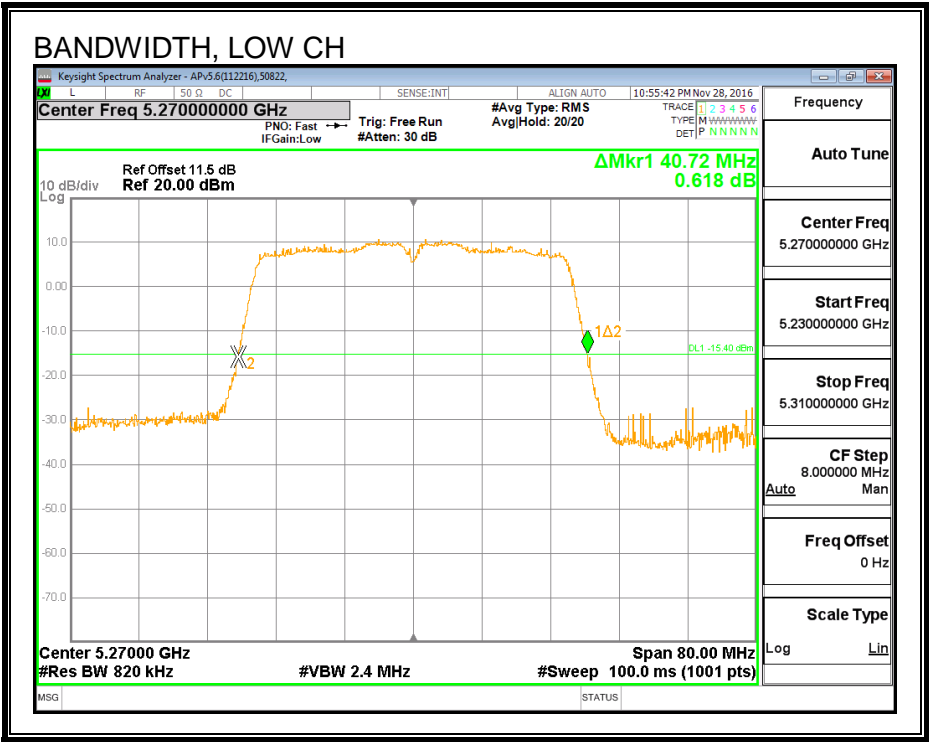
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	40.720
High	5310	40.720

26 dB BANDWIDTH



8.17.2. 99% BANDWIDTH

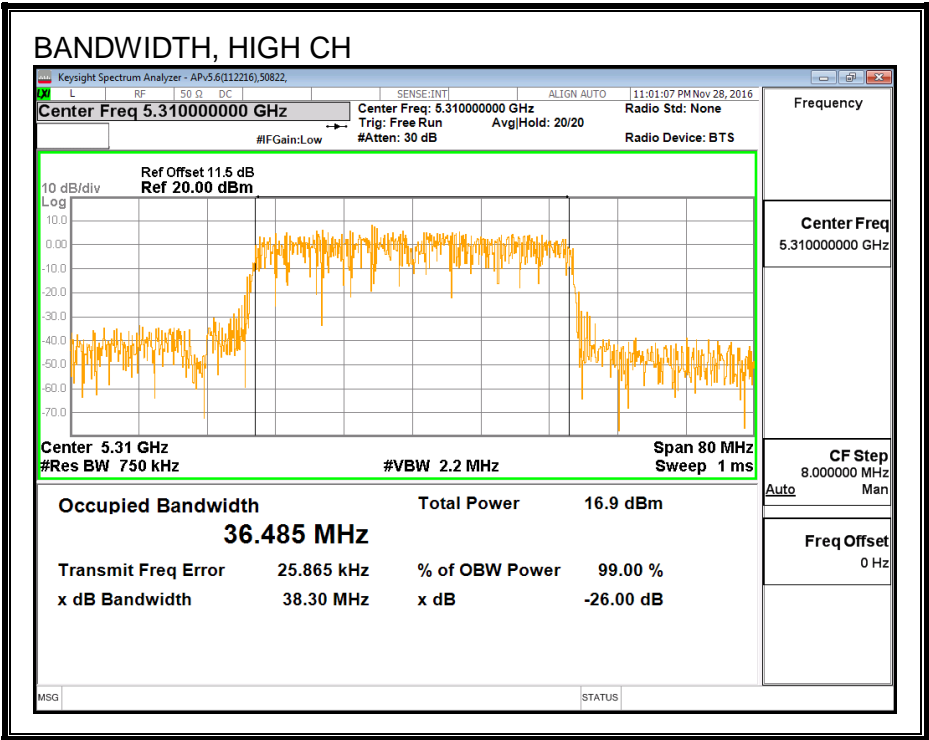
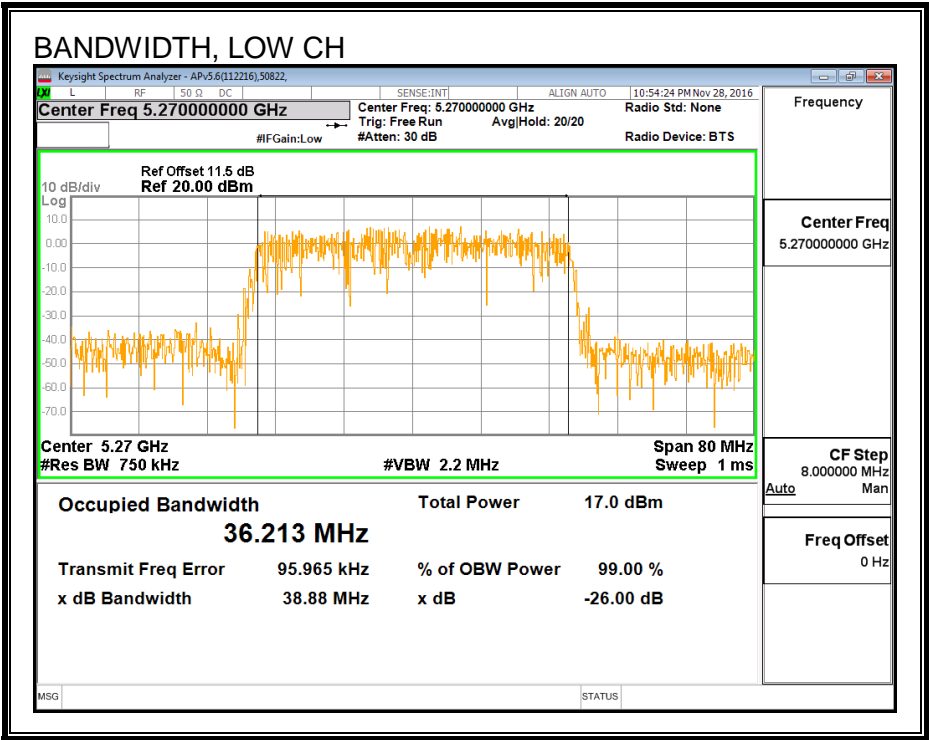
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.213
High	5310	36.485

99% BANDWIDTH



8.17.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39472	Date:	2/1/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5270	15.82
High	5310	14.00

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 $11 \text{ dBm} + 10 \log B$, 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:	39472	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 (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5270	40.72	36.21	4.11	24.00	11.00
High	5310	40.72	36.49	4.11	24.00	11.00

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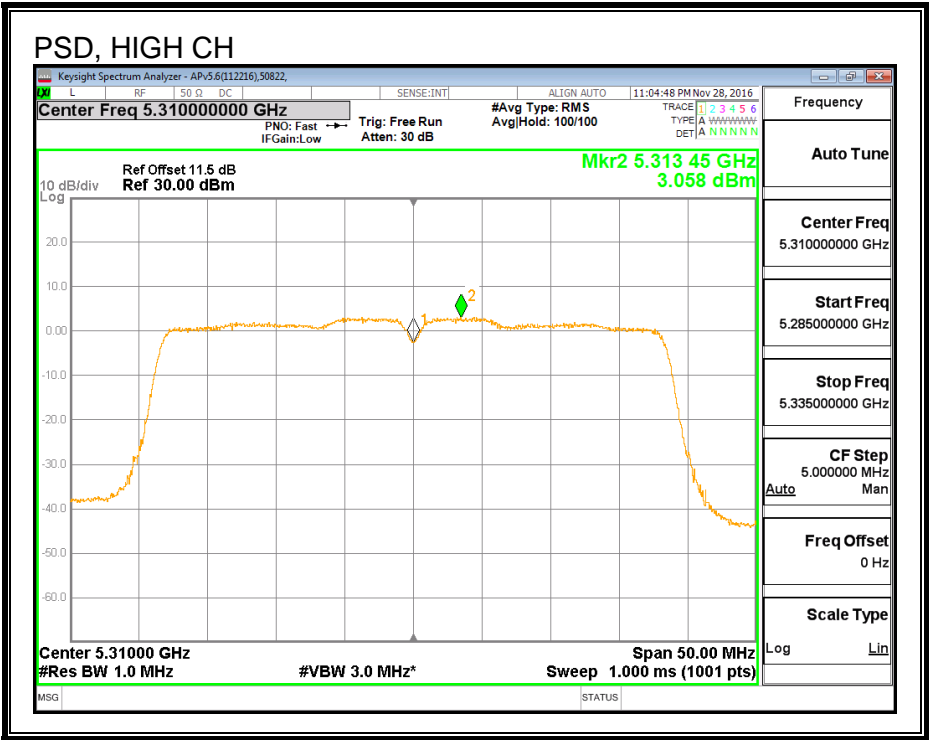
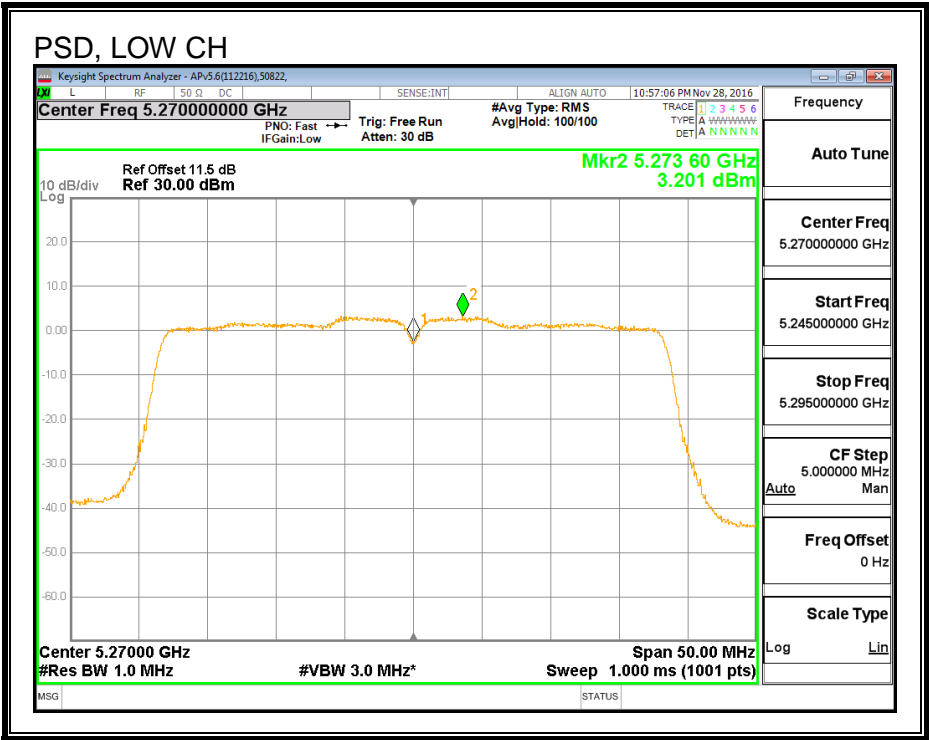
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	15.82	15.82	24.00	-8.18
High	5310	14.00	14.00	24.00	-10.00

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5270	3.20	3.30	11.00	-7.70
High	5310	3.06	3.16	11.00	-7.84

PSD



8.18. 802.11n HT40 ANTENNA B MODE IN THE 5.3 GHz BAND

8.18.1. 26 dB BANDWIDTH

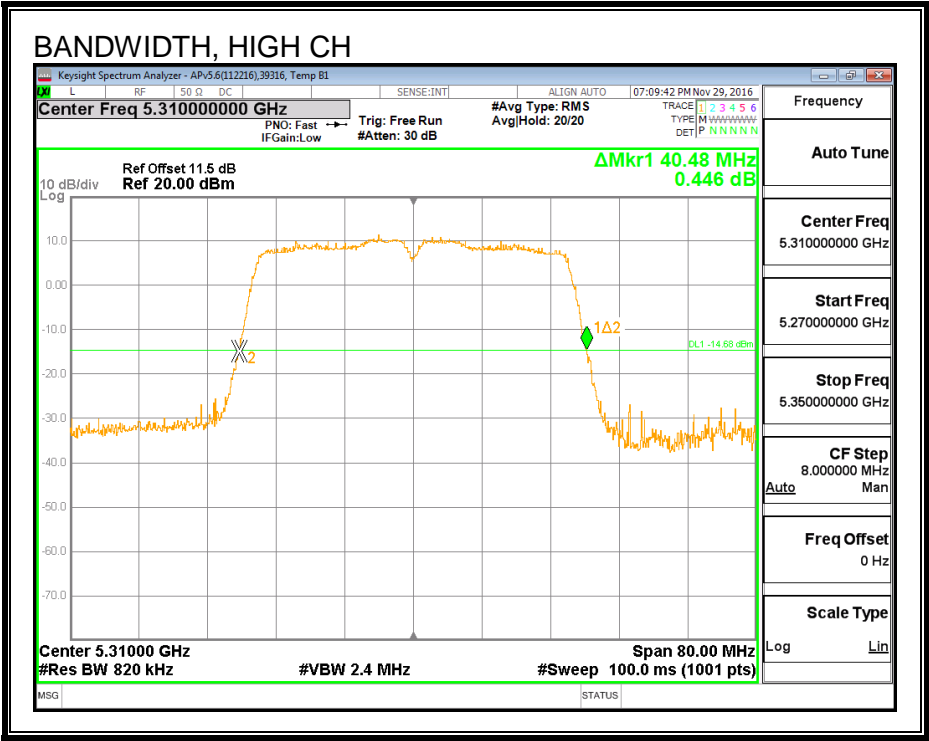
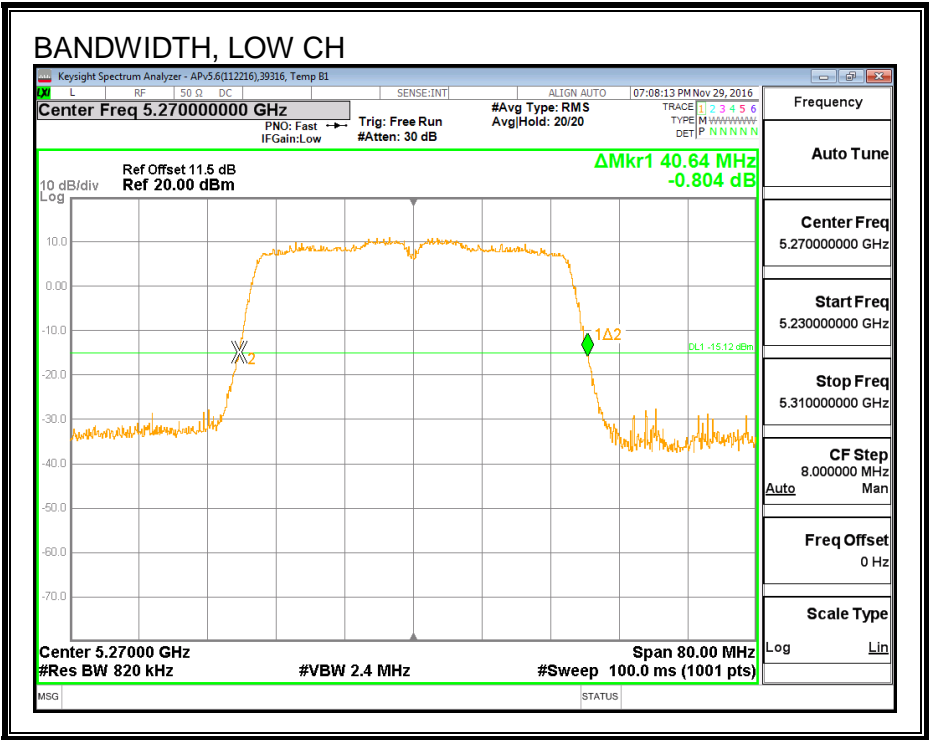
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	40.640
High	5310	40.480

26 dB BANDWIDTH



8.18.2. 99% BANDWIDTH

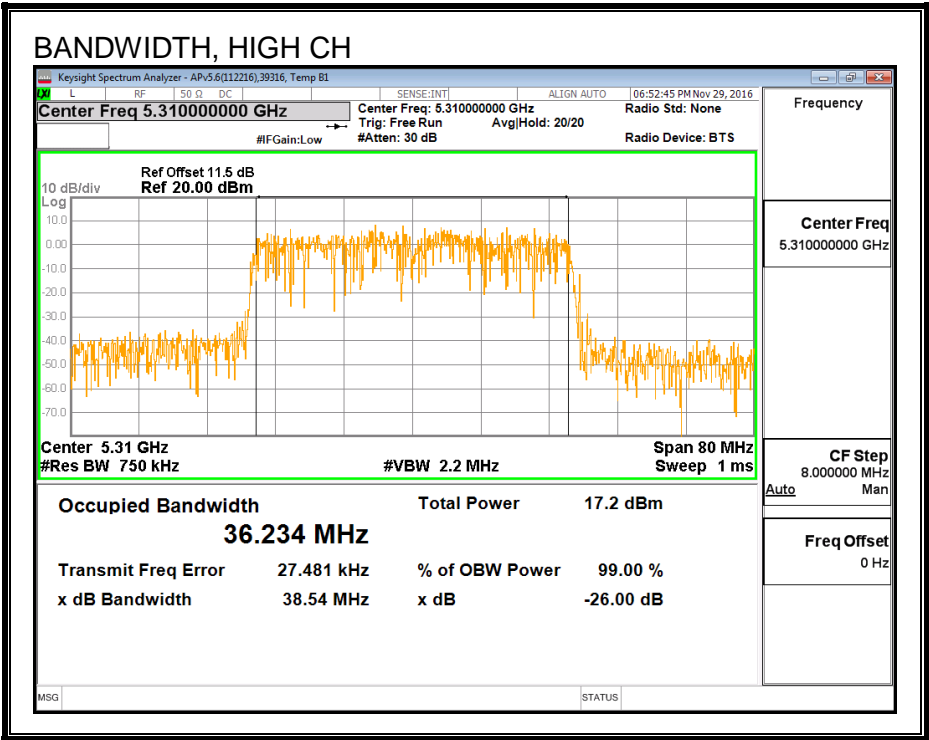
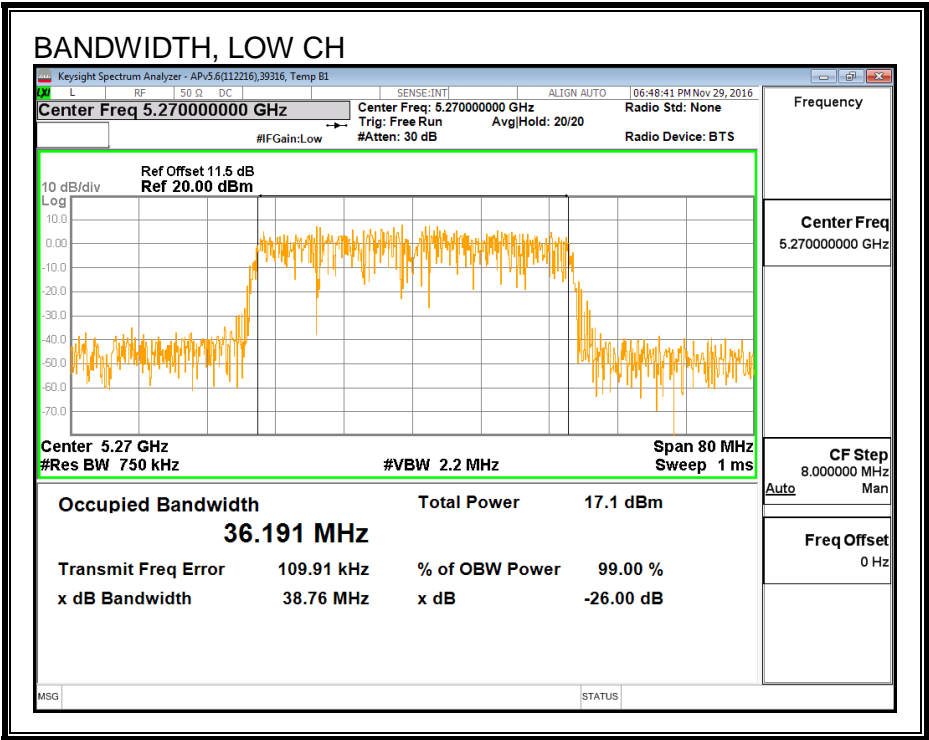
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.191
High	5310	36.234

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:	39472	Date:	2/1/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5270	15.91
High	5310	13.93

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:	39472	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 (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5270	40.64	36.19	3.36	24.00	11.00
High	5310	40.48	36.23	3.36	24.00	11.00

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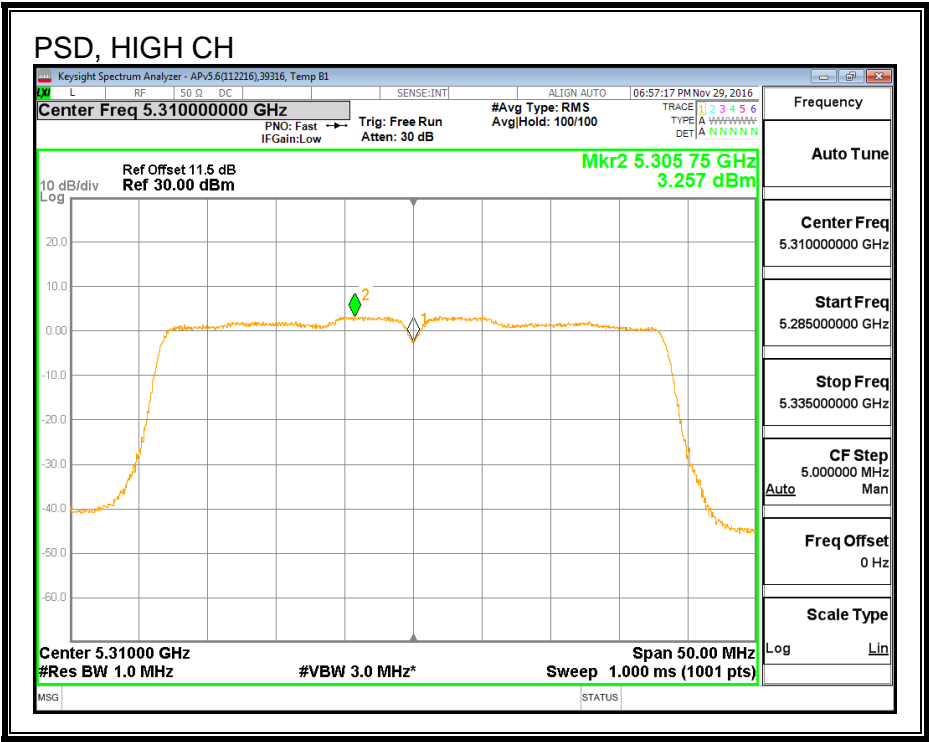
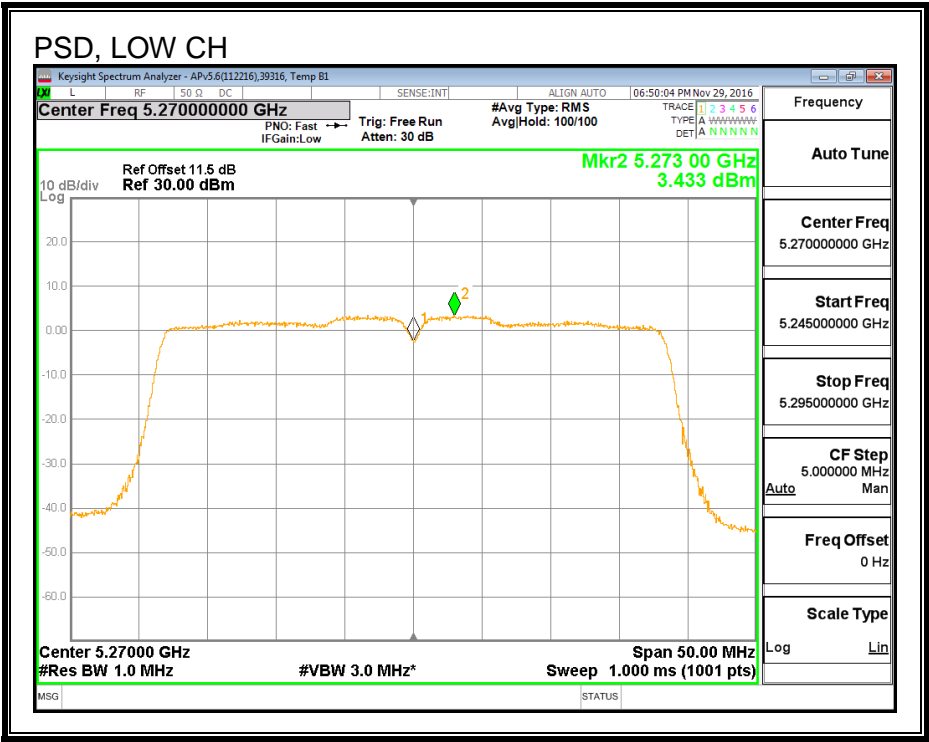
Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	15.91	15.91	24.00	-8.09
High	5310	13.93	13.93	24.00	-10.07

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5270	3.43	3.53	11.00	-7.47
High	5310	3.26	3.36	11.00	-7.64

PSD



8.19. 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.3 GHz BAND

8.19.1. 26 dB BANDWIDTH

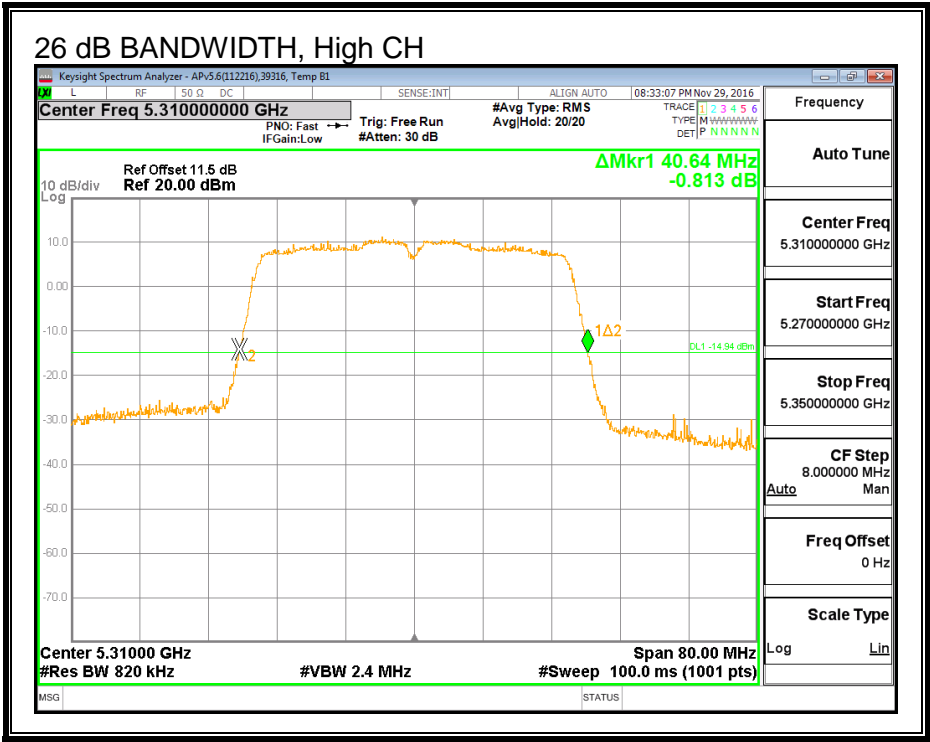
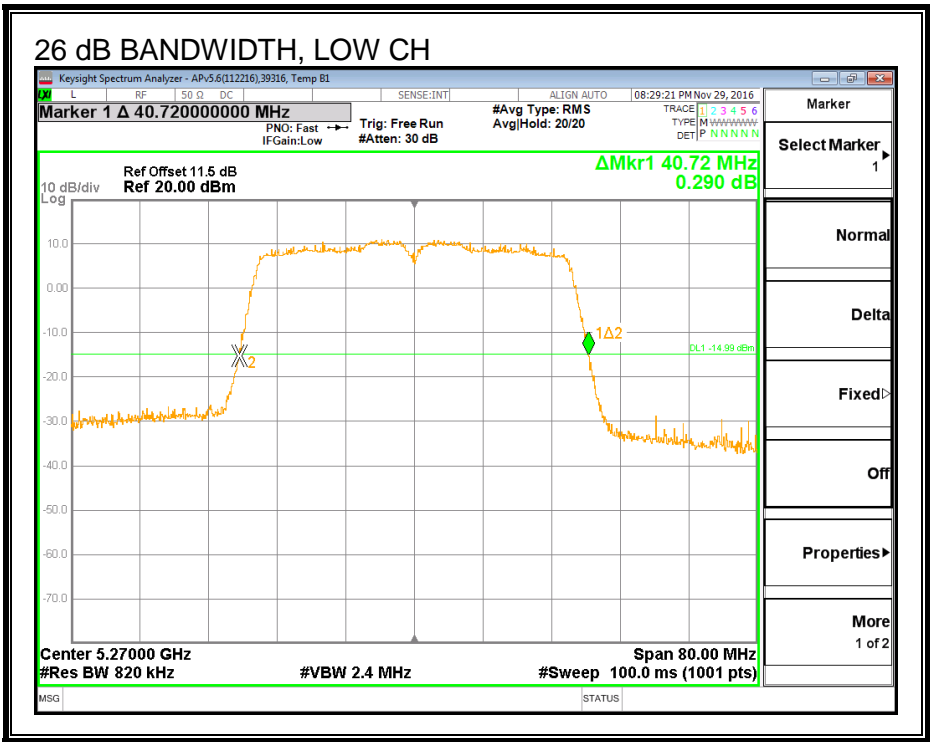
LIMITS

None; for reporting purposes only.

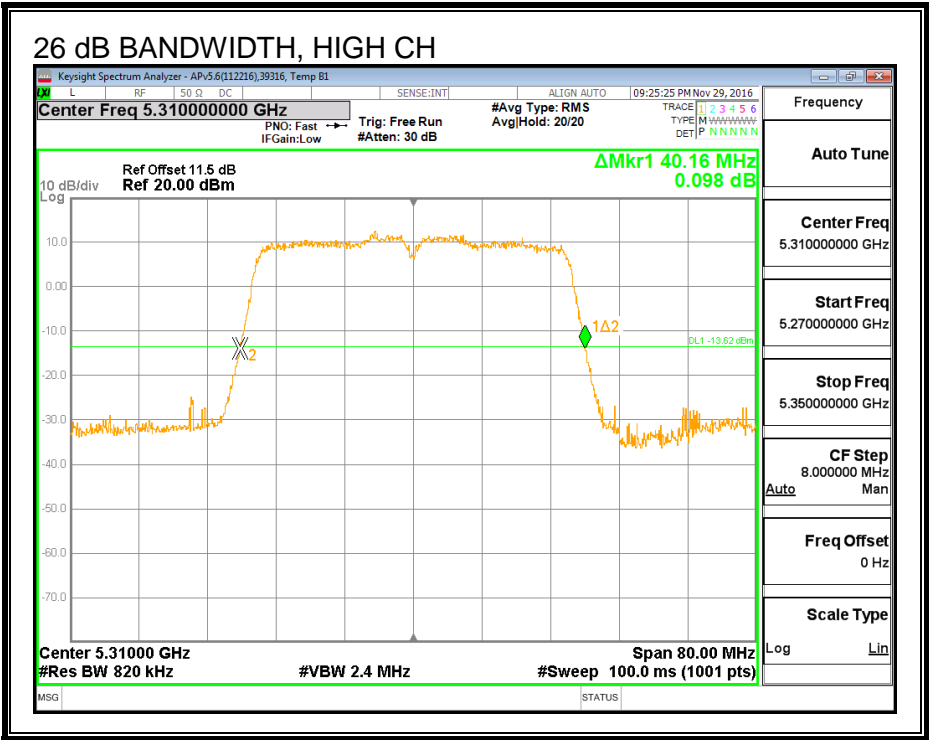
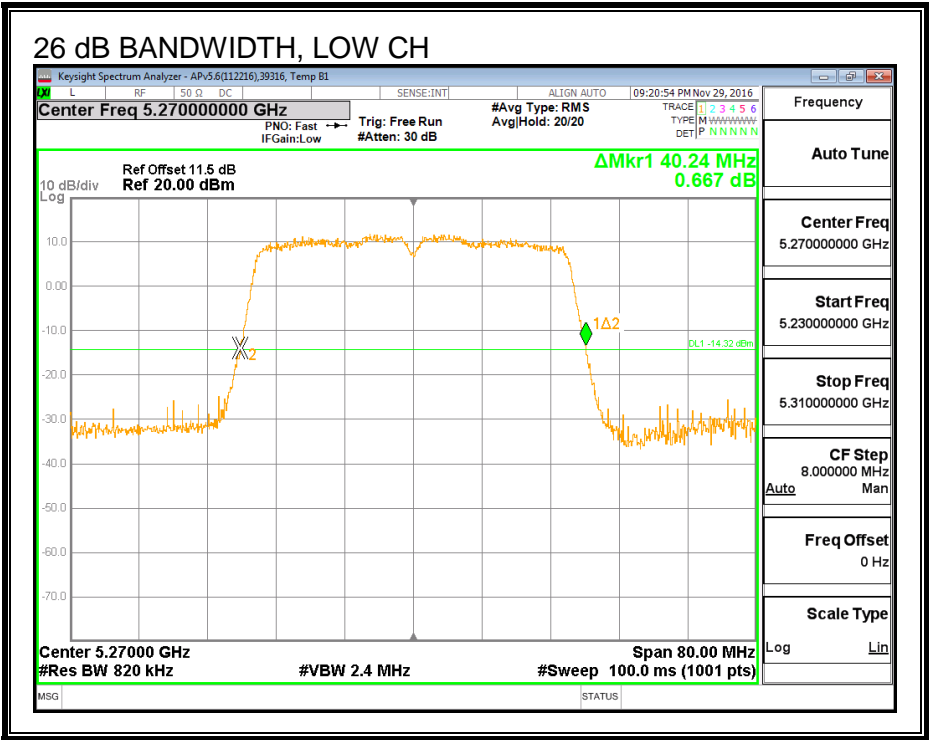
RESULTS

Channel	Frequency (MHz)	26 dB BW Ant A (MHz)	26 dB BW Ant B (MHz)
Low	5270	40.720	40.240
High	5310	40.640	40.160

26 DB BANDWIDTH, ANTENNA A



26 DB BANDWIDTH, ANTENNA B



8.19.2. 99% BANDWIDTH

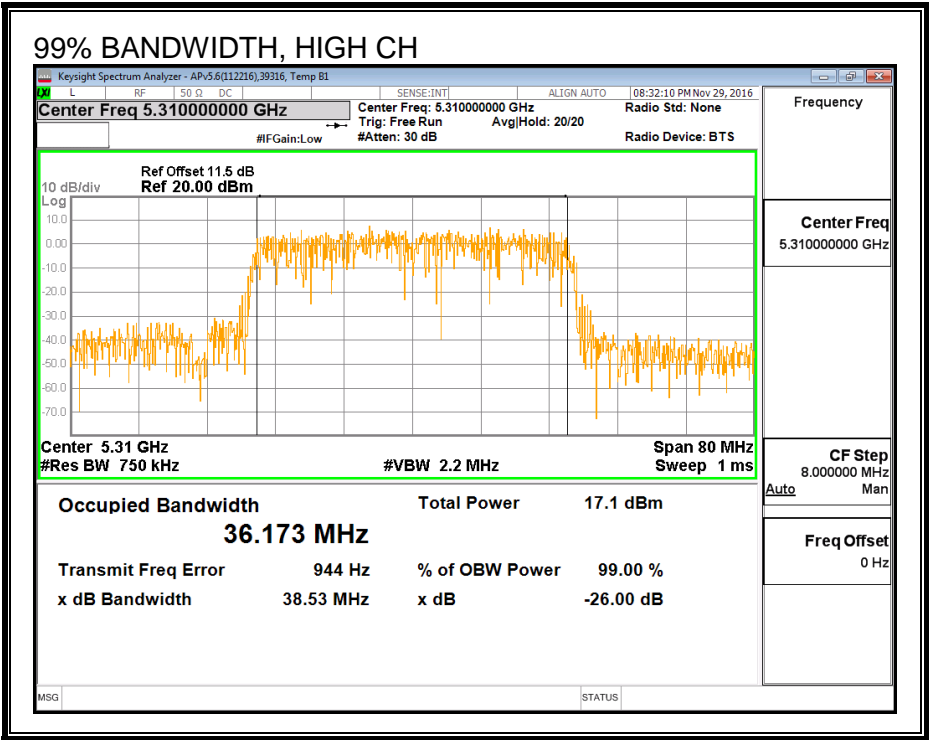
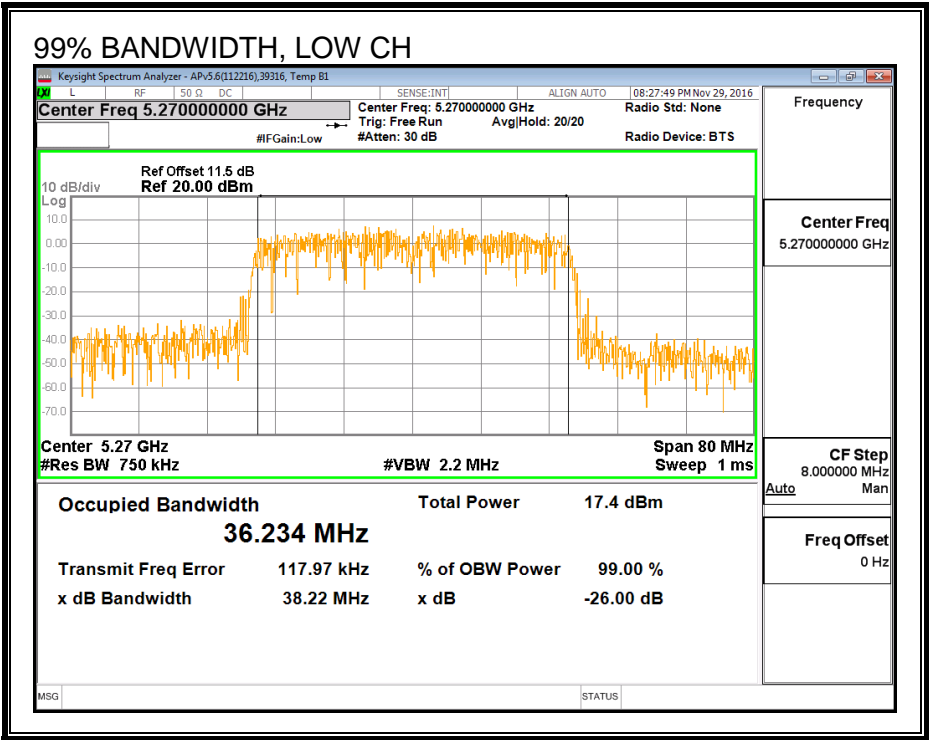
LIMITS

None; for reporting purposes only.

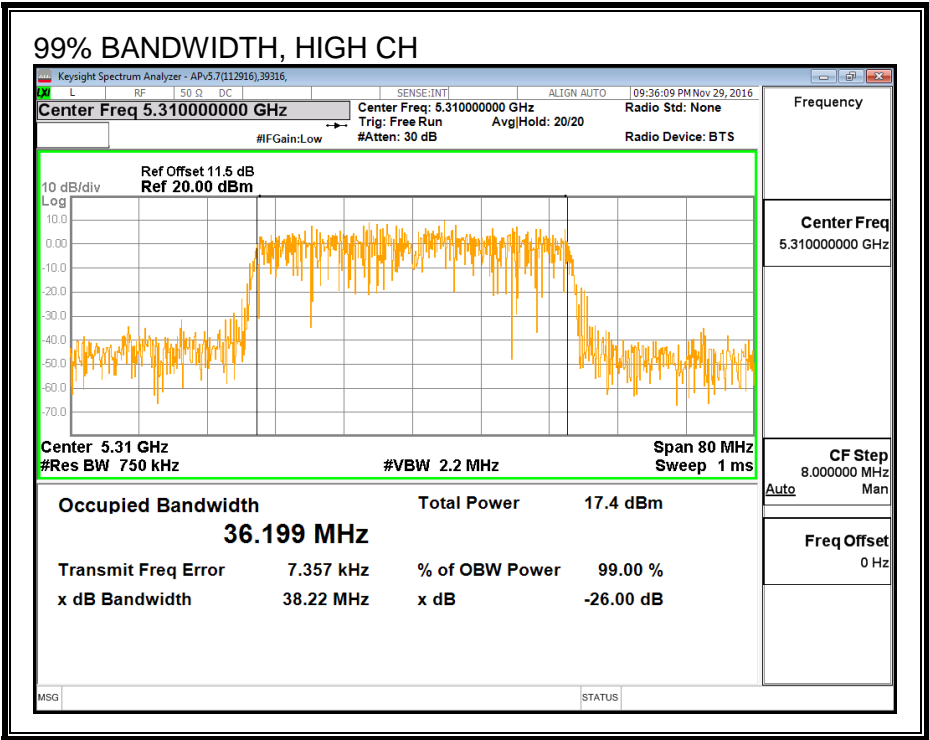
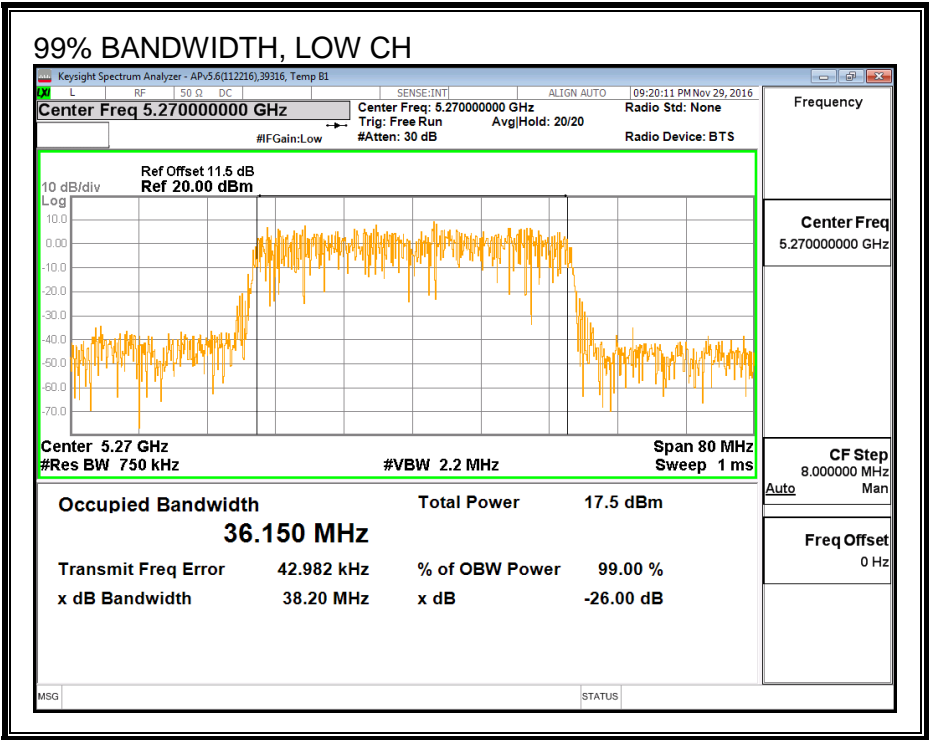
RESULTS

Channel	Frequency (MHz)	99% BW Ant A (MHz)	99% BW Ant B (MHz)
Low	5270	36.234	36.150
High	5310	36.173	36.199

99% BANDWIDTH, ANTENNA A



99% BANDWIDTH, ANTENNA B



8.19.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39472	Date:	2/1/17
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Average Power Results

Channel	Frequency (MHz)	Ant A Power (dBm)	Ant B Power (dBm)	Total Power (dBm)
Low	5270	15.96	16.00	18.99
High	5310	13.37	13.48	16.44

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

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)
4.11	3.36	3.75

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)
4.11	3.36	6.75

RESULTS

ID:	39472	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	5270	40.24	36.15	3.75	6.75	24.00	10.25
High	5310	40.16	36.17	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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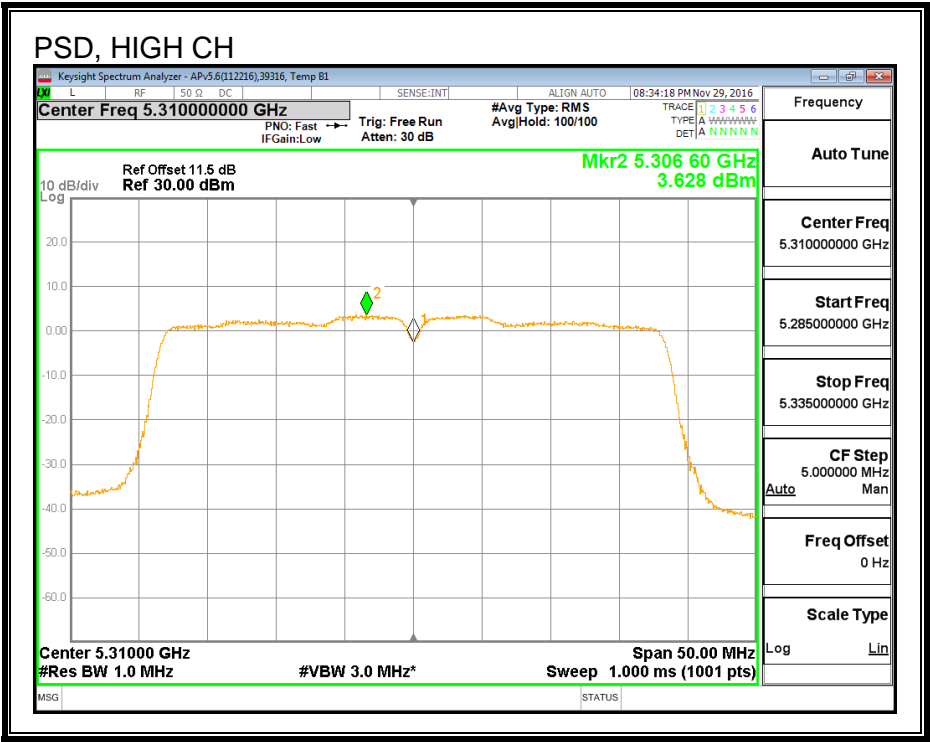
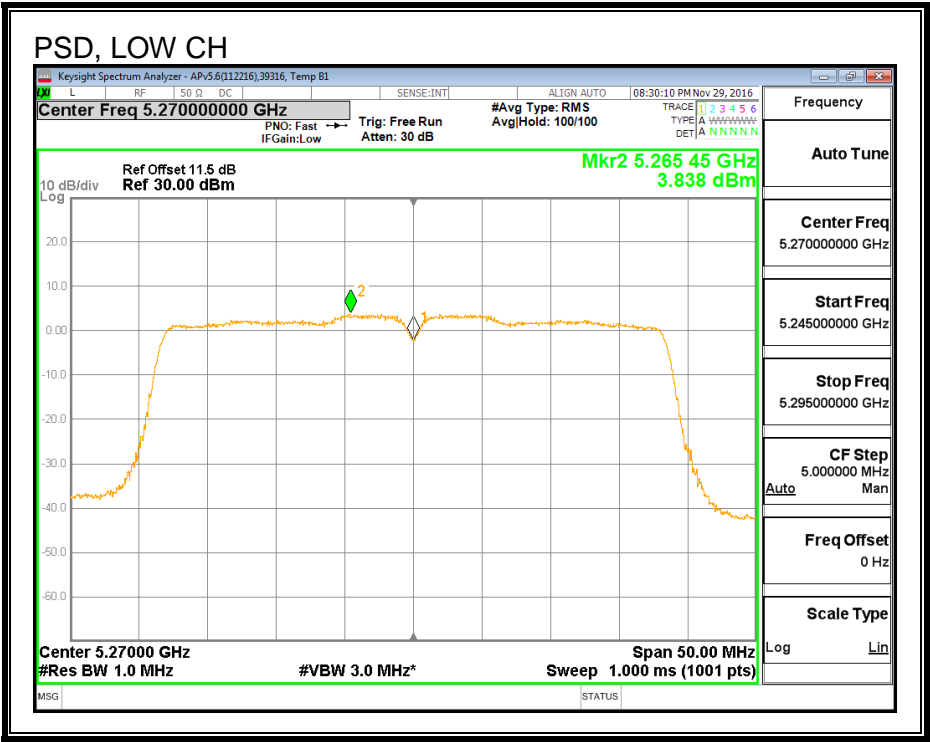
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	15.96	16.00	18.99	24.00	-5.01
High	5310	13.37	13.48	16.44	24.00	-7.56

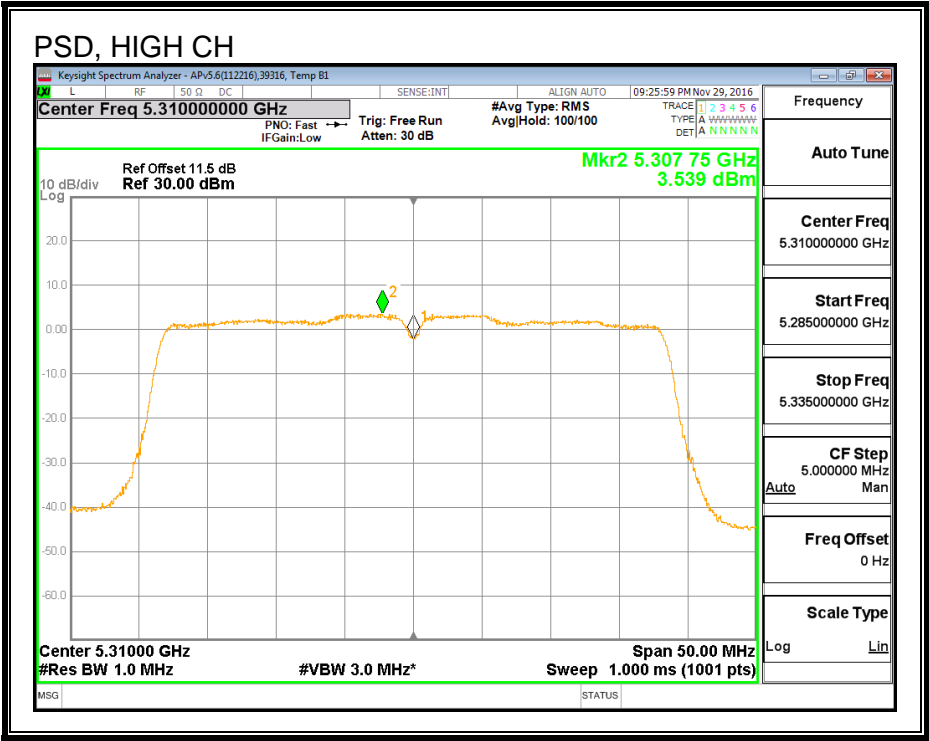
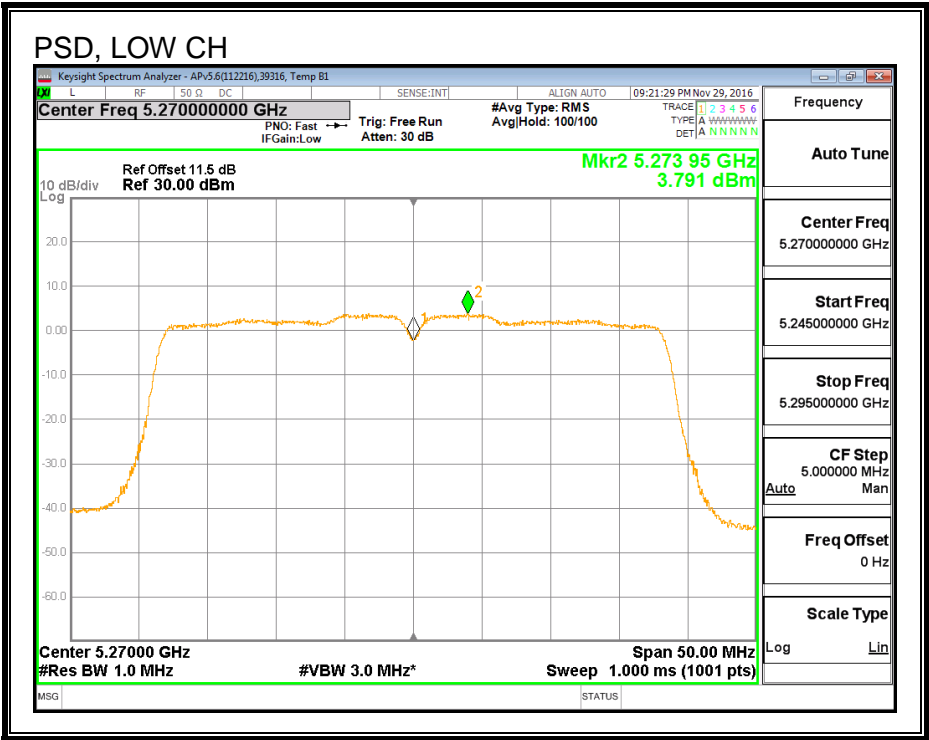
PSD Results

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	5270	3.84	3.79	6.92	10.25	-3.33
High	5310	3.63	3.54	6.69	10.25	-3.56

PSD, ANTENNA A



PSD, ANTENNA B



**8.20. 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) STBC MODE IN THE
5.3 GHz BAND**

Noted: Covered by 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.2 GHz
BAND

8.21. 802.11ac VHT80 ANTENNA A MODE IN THE 5.3 GHz BAND

8.21.1. 26 dB BANDWIDTH

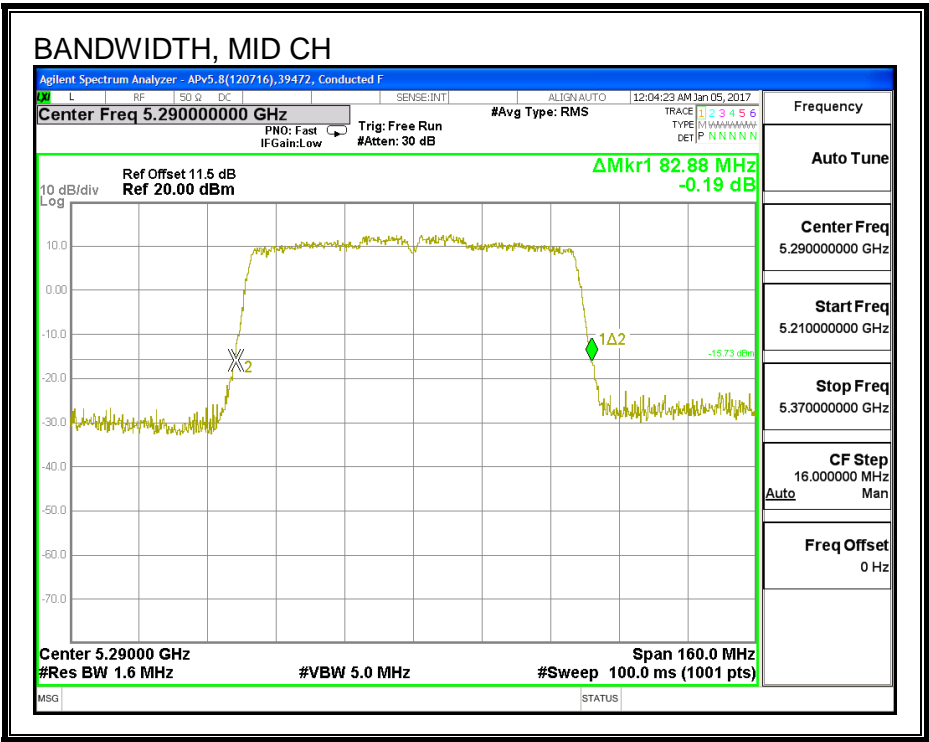
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Mid	5290	82.880

26 dB BANDWIDTH



8.21.2. 99% BANDWIDTH

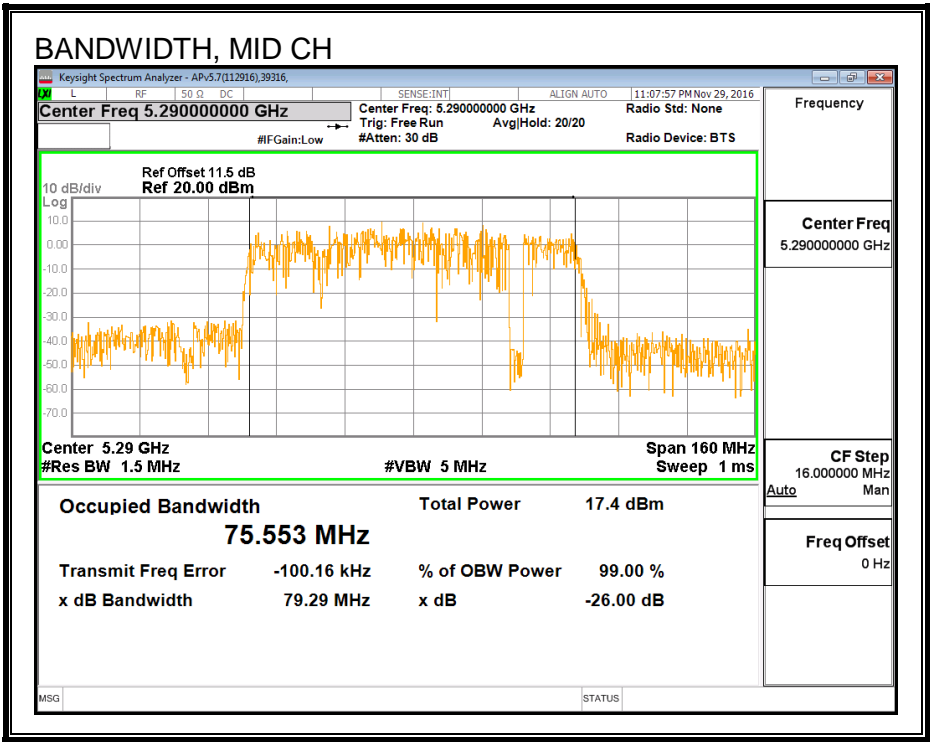
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Mid	5290	75.553

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:	39472	Date:	2/2/17
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Channel	Frequency (MHz)	Power (dBm)
Mid	5290	13.50

8.21.4. 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:	39472	Date:	2/2/17
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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	75.55	4.11	24.00	11.00

Duty Cycle CF (dB)	0.19	Included in Calculations of Corr'd PSD
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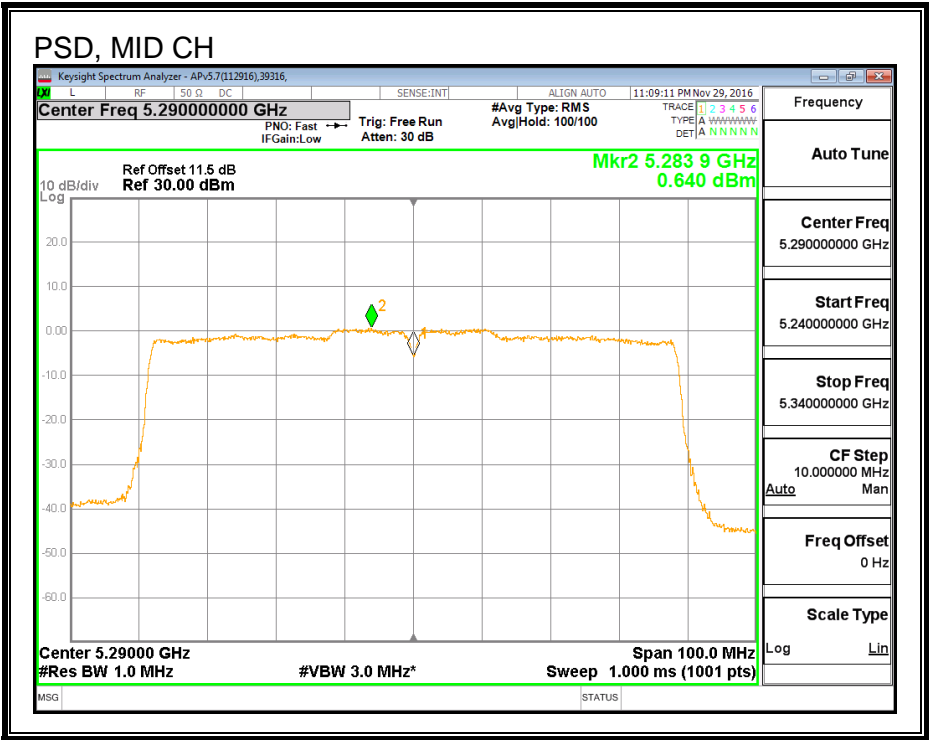
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	13.50	13.50	24.00	-10.50

PPSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5290	0.640	0.83	11.00	-10.17

PSD



8.22. 802.11ac VHT80 ANTENNA B MODE IN THE 5.3 GHz BAND

8.22.1. 26 dB BANDWIDTH

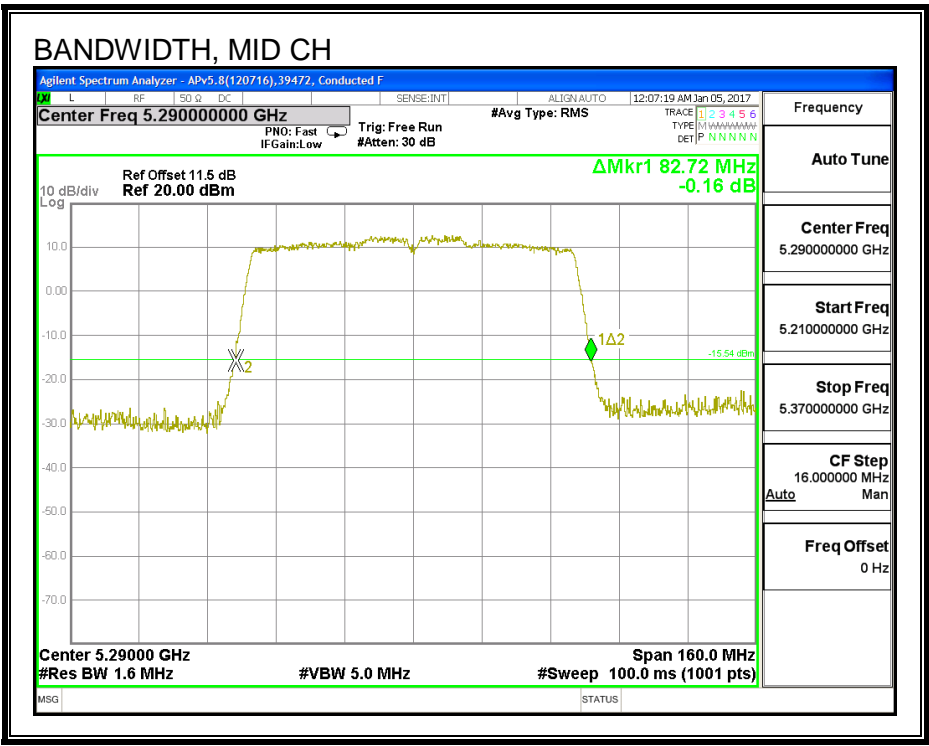
LIMITS

None; for reporting purposes only.

RESULTS

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

26 dB BANDWIDTH



8.22.2. 99% BANDWIDTH

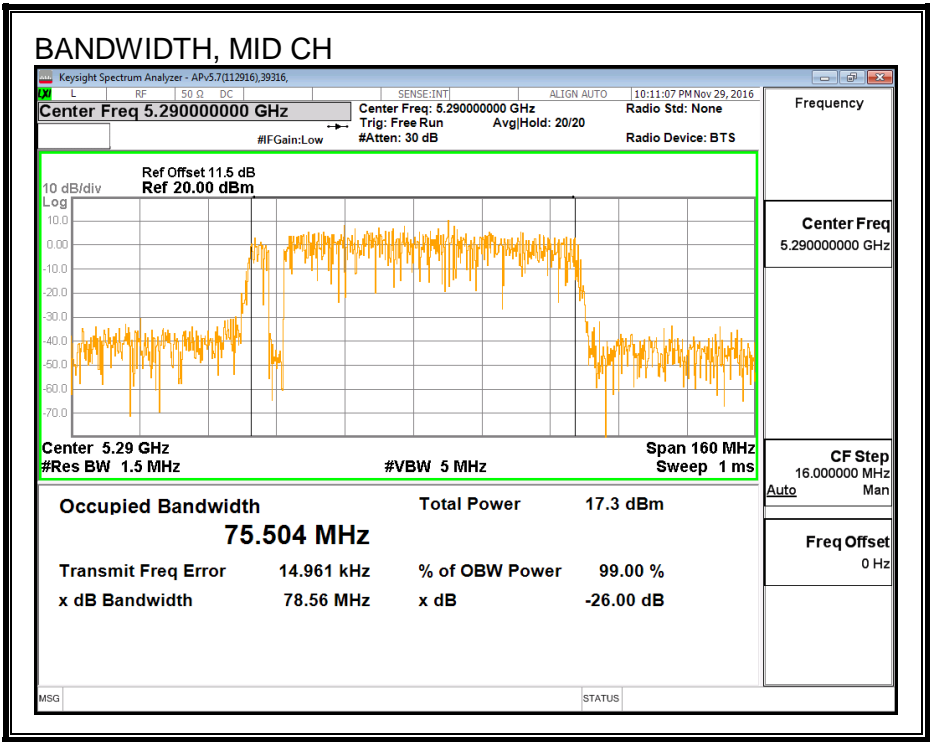
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Mid	5290	75.504

99% BANDWIDTH



8.22.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39472	Date:	2/2/17
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Channel	Frequency (MHz)	Power (dBm)
Mid	5290	13.46

8.22.4. 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:	39472	Date:	2/2/17
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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	82.72	75.50	3.36	24.00	11.00

Duty Cycle CF (dB)	0.19	Included in Calculations of Corr'd PSD
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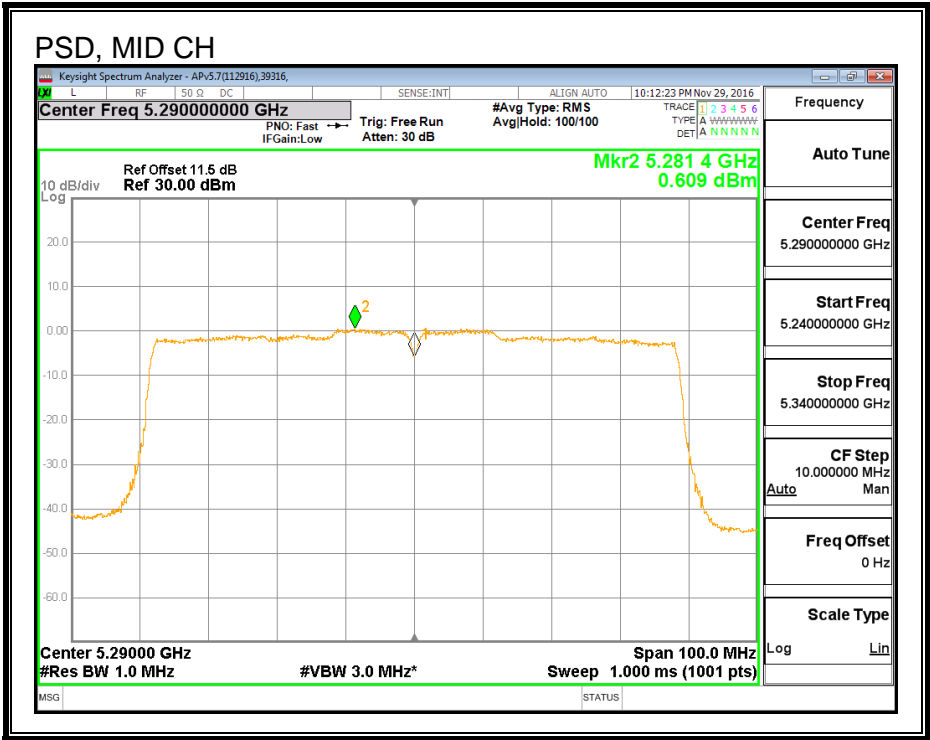
Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	13.46	13.46	24.00	-10.54

PPSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5290	0.61	0.80	11.00	-10.20

PSD



8.23. 802.11ac VHT80 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.3 GHz BAND

8.23.1. 26 dB BANDWIDTH

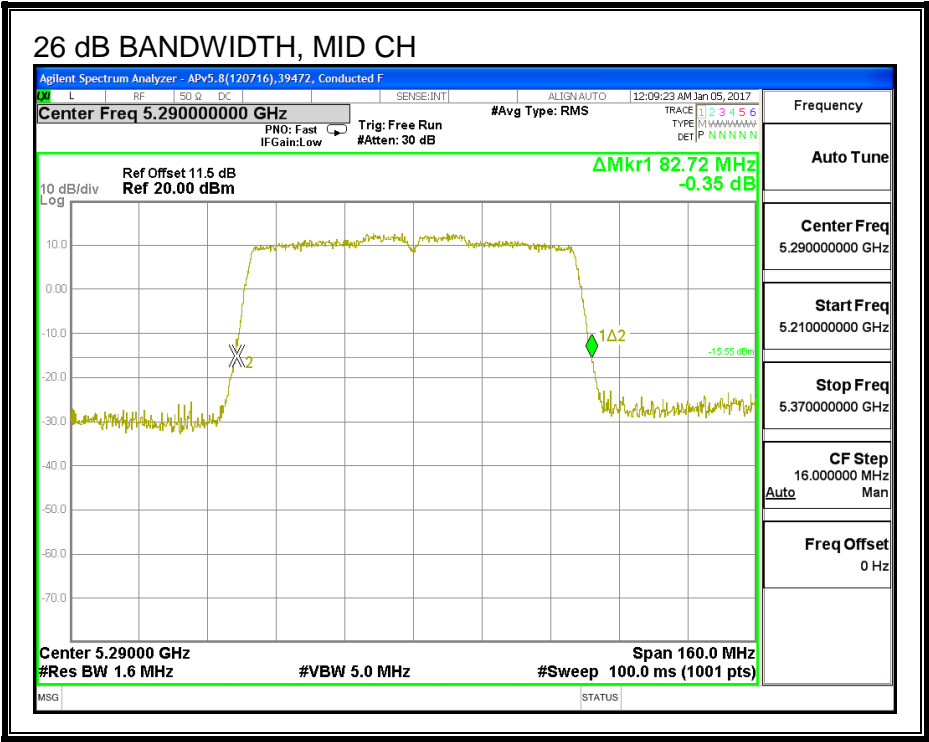
LIMITS

None; for reporting purposes only.

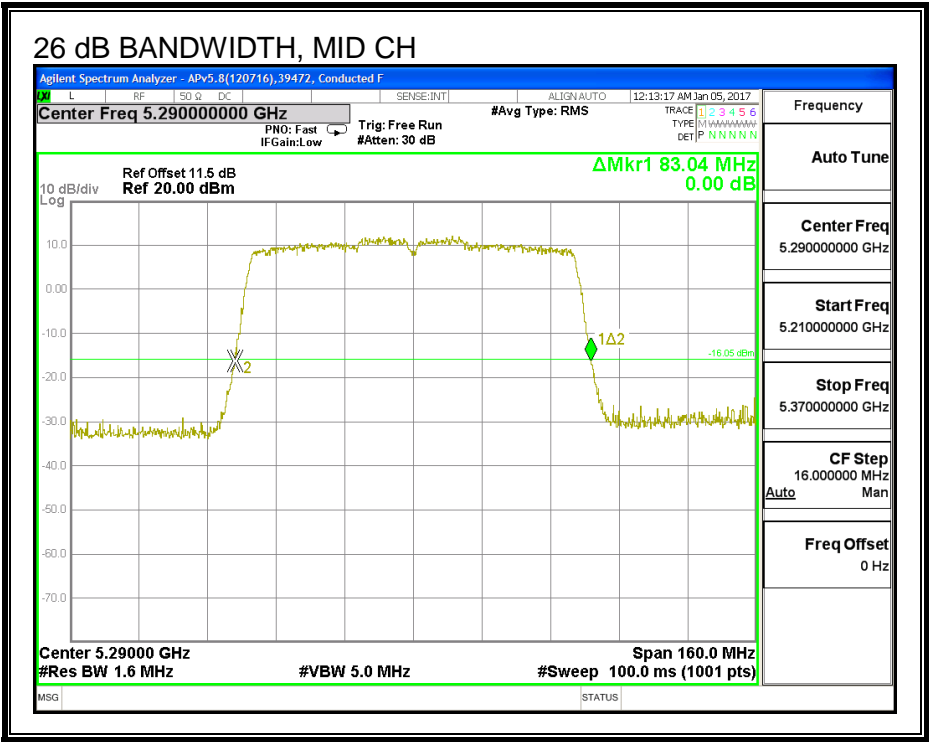
RESULTS

Channel	Frequency (MHz)	26 dB BW Ant A (MHz)	26 dB BW Ant B (MHz)
Mid	5290	82.720	83.040

26 dB BANDWIDTH, ANTENNA A



26 dB BANDWIDTH, ANTENNA B



8.23.2. 99% BANDWIDTH

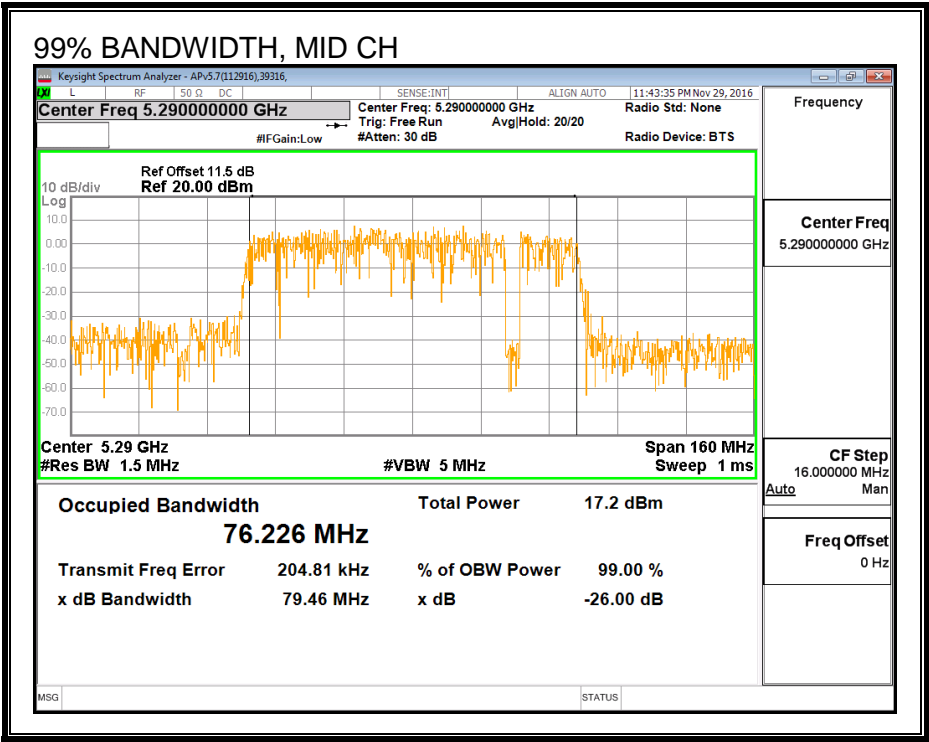
LIMITS

None; for reporting purposes only.

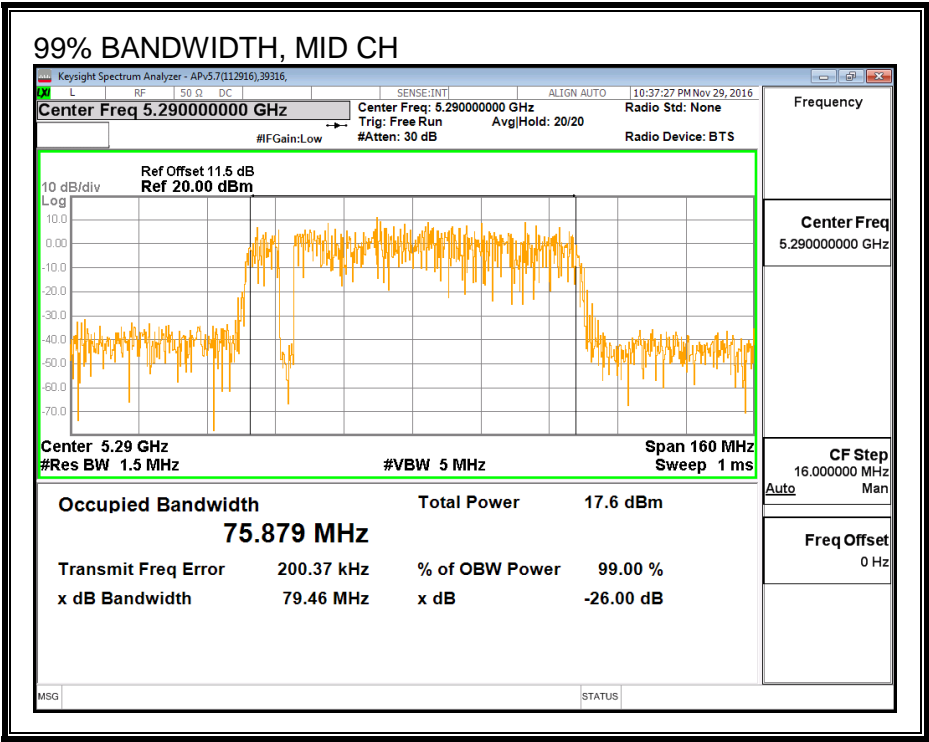
RESULTS

Channel	Frequency (MHz)	99% BW Ant A (MHz)	99% BW Ant B (MHz)
Mid	5290	76.226	75.879

99% BANDWIDTH, ANTENNA A



99% BANDWIDTH, ANTENNA B



8.23.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39472	Date:	2/2/17
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Average Power Results

Channel	Frequency (MHz)	Ant A Power (dBm)	Ant B Power (dBm)	Total Power (dBm)
Mid	5290	11.39	11.43	14.42

8.23.4. 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

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)
4.11	3.36	3.75

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)
4.11	3.36	6.75

RESULTS

ID:	39472	Date:	2/2/17
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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	82.72	75.88	3.75	6.75	24.00	10.25

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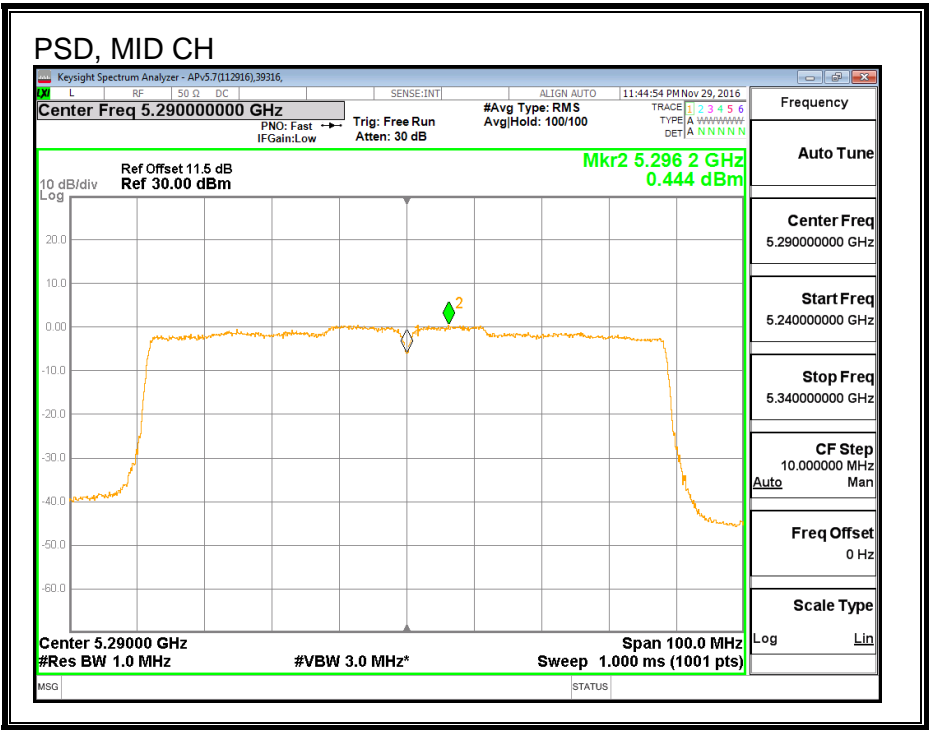
Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	11.39	11.43	14.42	24.00	-9.58

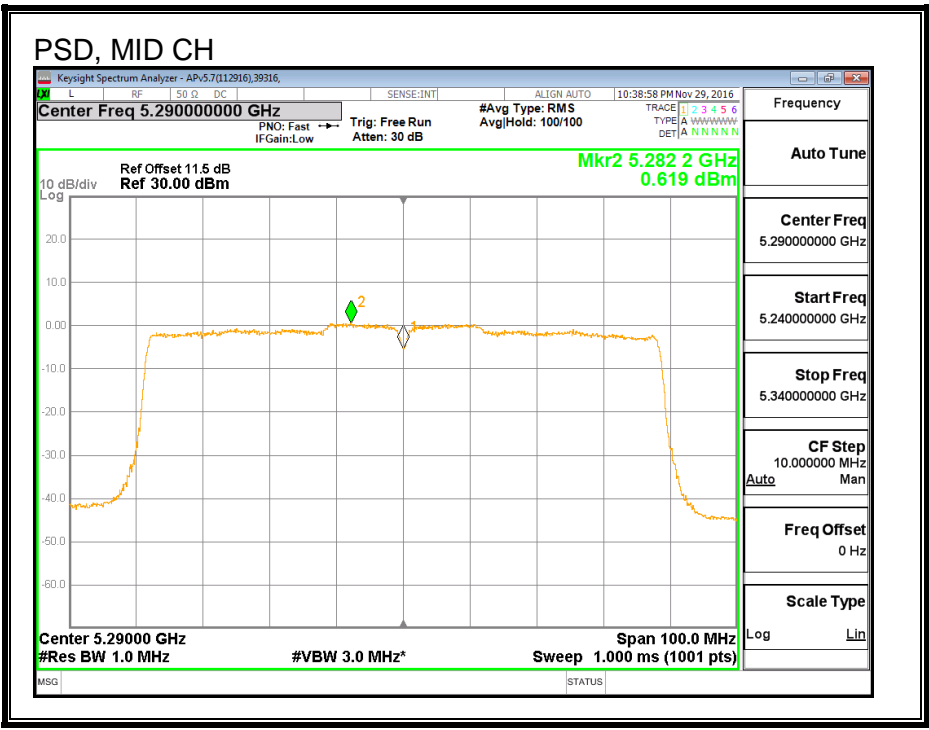
PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5290	0.44	0.62	3.74	10.25	-6.51

PSD, ANTENNA A



PSD, ANTENNA B



8.24. 802.11ac VHT80 2Tx (ANTENNA A + ANTENNA B) STBC MODE IN THE 5.3 GHz BAND

Noted: Covered by 802.11ac VHT80 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.3 GHz BAND

8.25. 802.11n HT20 ANTENNA A MODE IN THE 5.6 GHz BAND

8.25.1. 26 dB BANDWIDTH

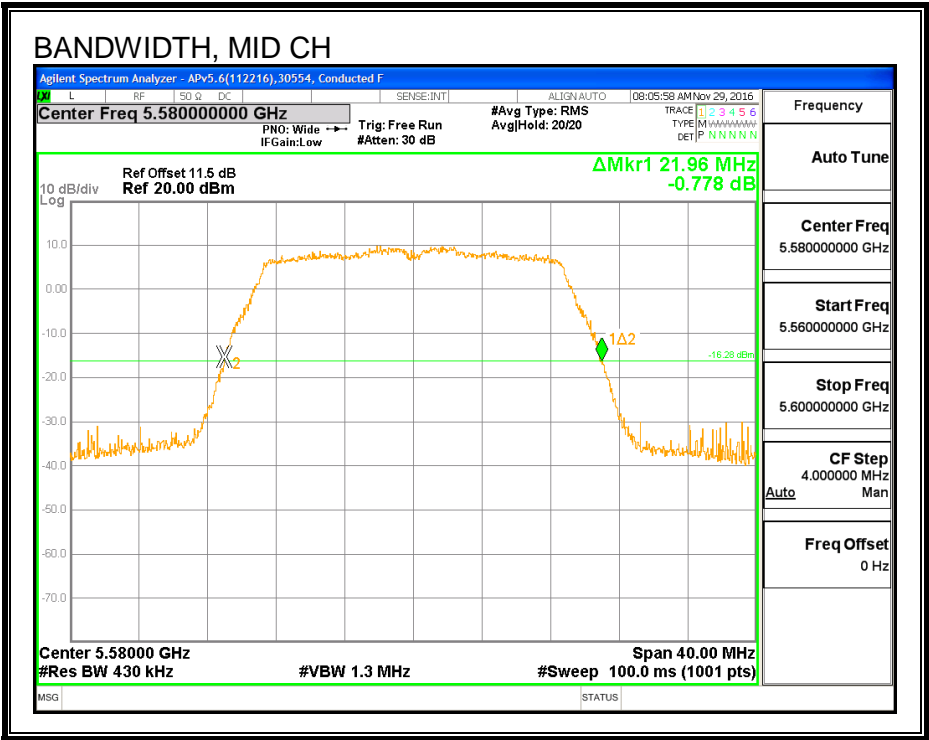
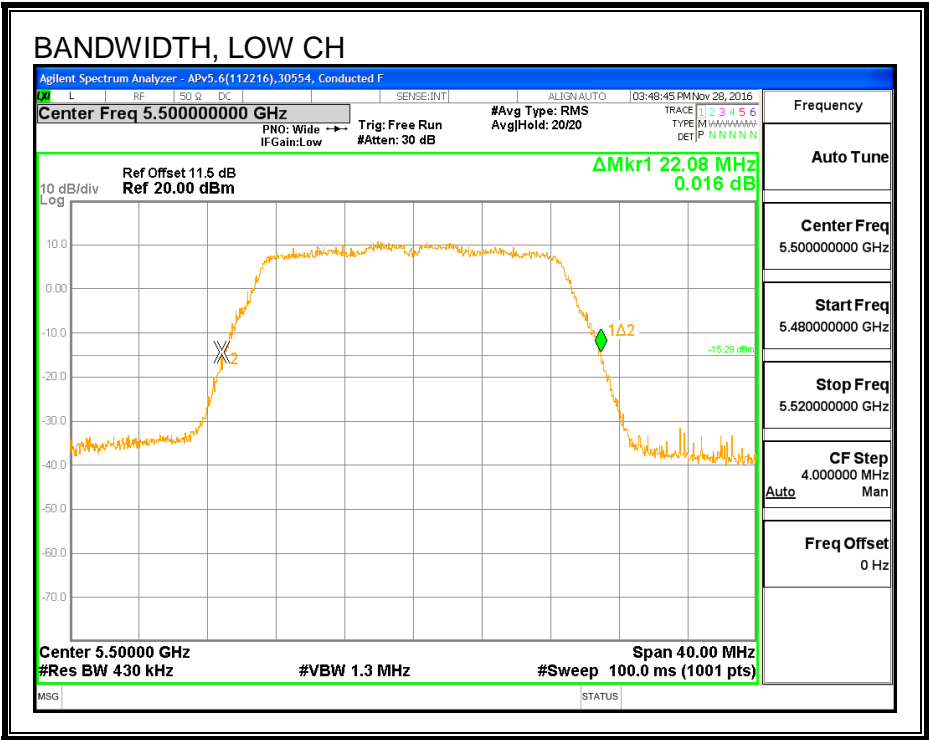
LIMITS

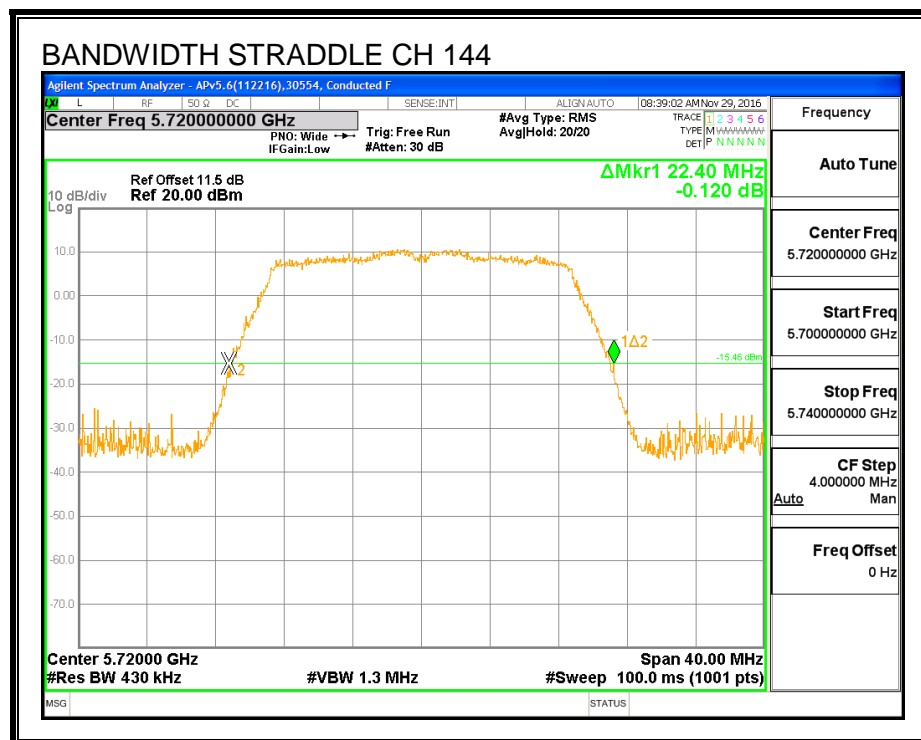
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.080
Mid	5580	21.960
High	5700	22.120
144	5720	22.400

26 dB BANDWIDTH





8.25.2. 99% BANDWIDTH

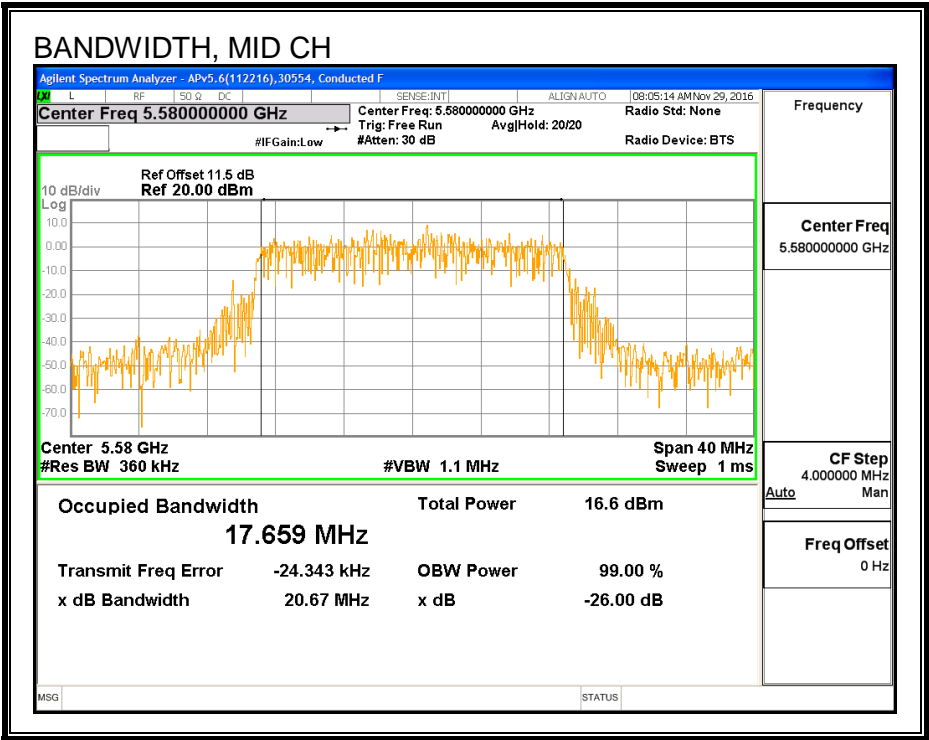
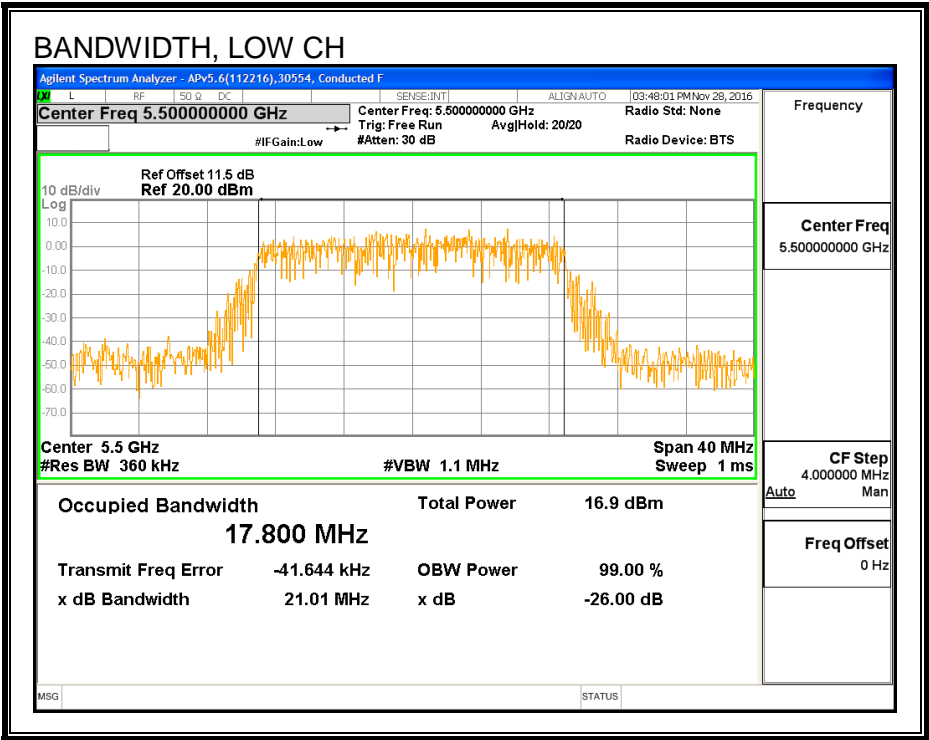
LIMITS

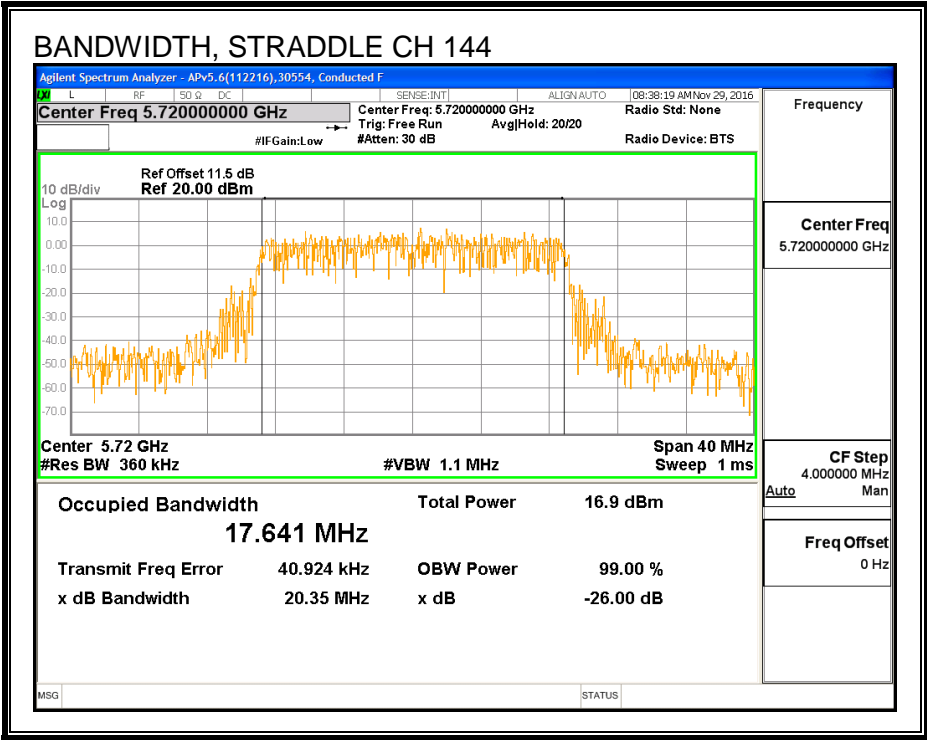
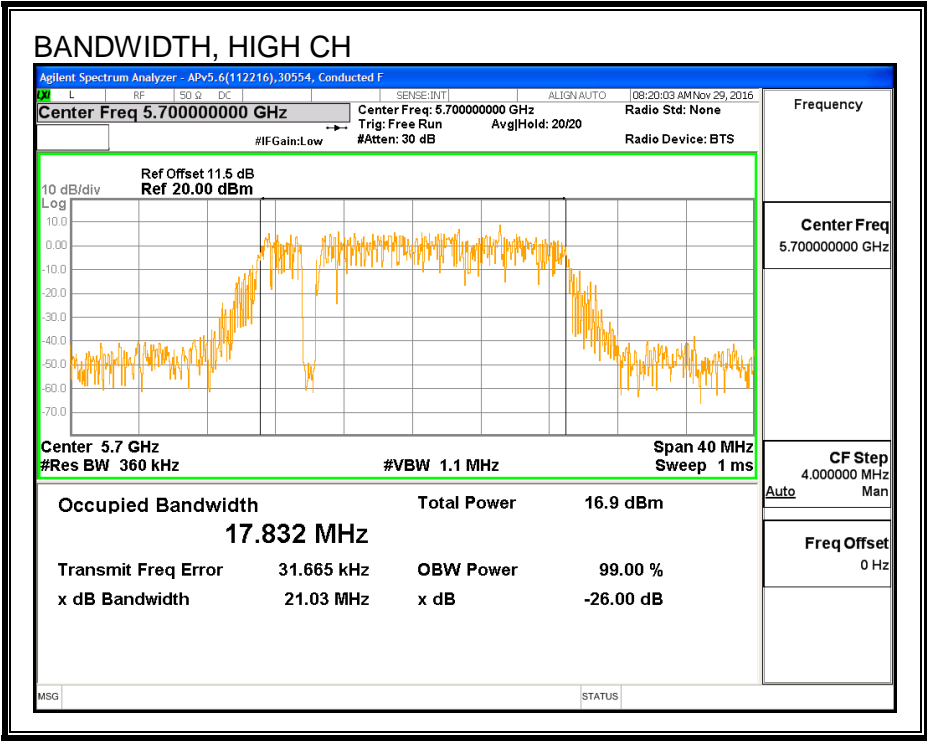
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.800
Mid	5580	17.659
High	5700	17.832
144	5720	17.641

99% BANDWIDTH





8.25.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39472	Date:	2/2/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5500	14.98
Mid	5580	14.82
High	5700	14.90
144	5720	14.93

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

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

RESULTS

ID:	39472	Date:	2/2/17
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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	17.80	5.41	23.50	11.00
Mid	5580	21.96	17.66	5.41	23.47	11.00
High	5700	22.12	17.83	5.41	23.51	11.00

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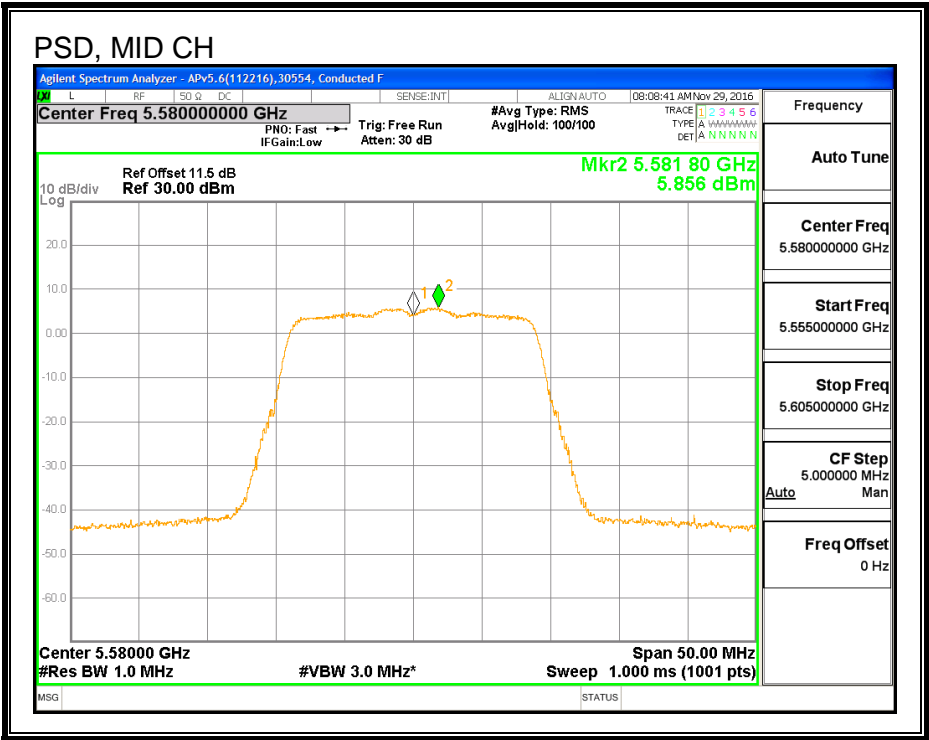
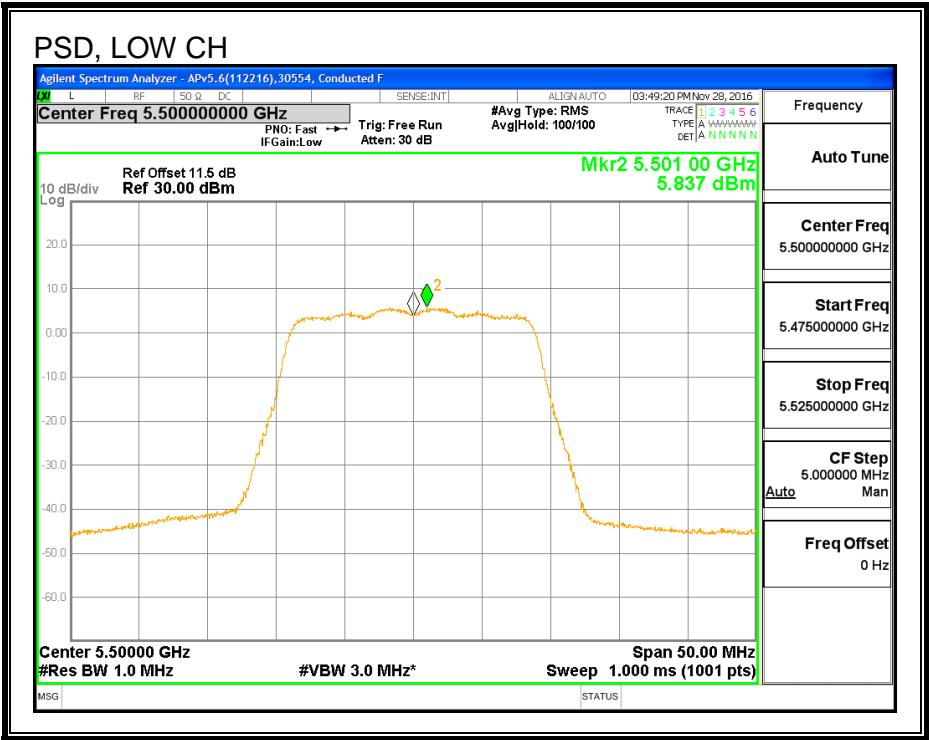
Output Power Results

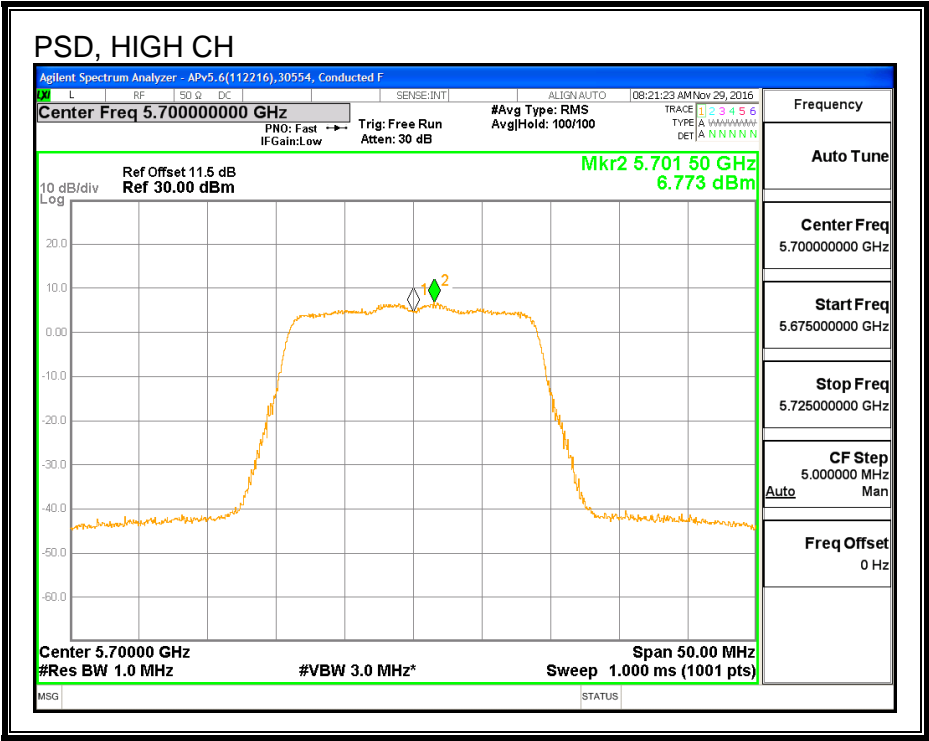
Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.98	14.98	23.50	-8.52
Mid	5580	14.82	14.82	23.47	-8.65
High	5700	14.90	14.90	23.51	-8.61

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	5.84	5.84	11.00	-5.16
Mid	5580	5.86	5.86	11.00	-5.14
High	5700	6.77	6.77	11.00	-4.23

PSD





8.26. 802.11ac VHT20 ANTENNA A 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	16.20	5.41	5.41	23.10	11.00

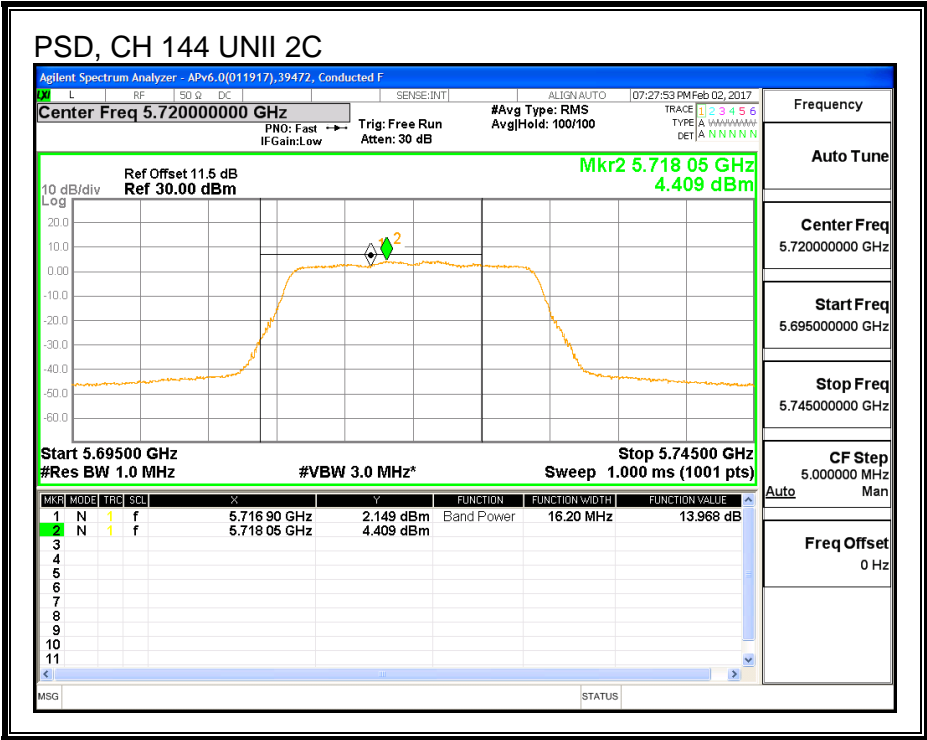
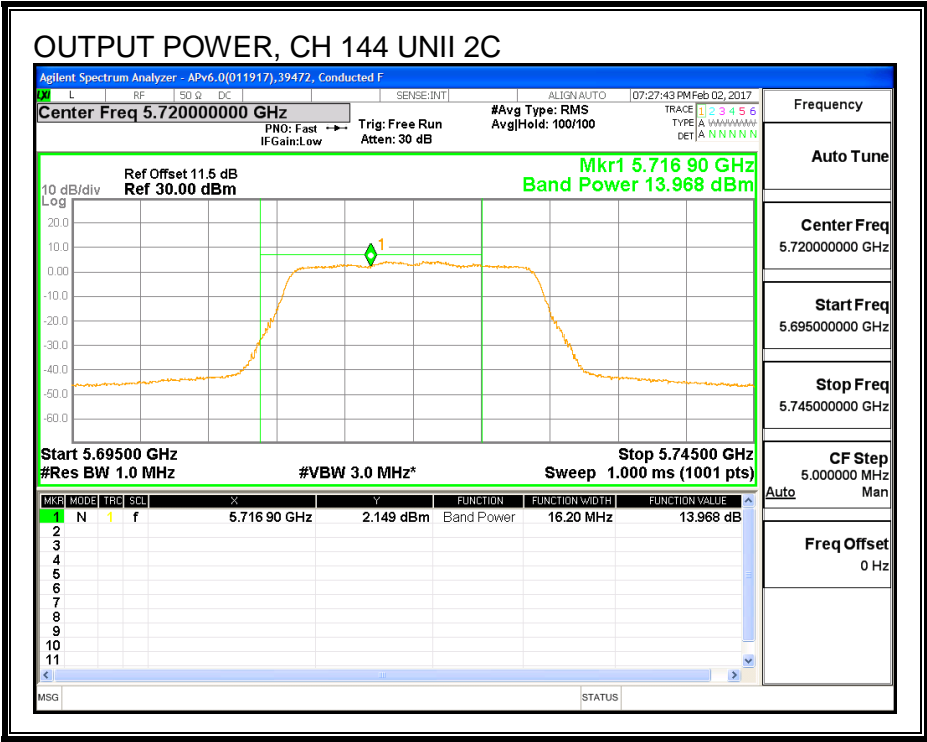
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	13.97	13.97	23.10	-9.13

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	4.41	4.41	11.00	-6.59



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	6.20	4.20	30.00	30.00

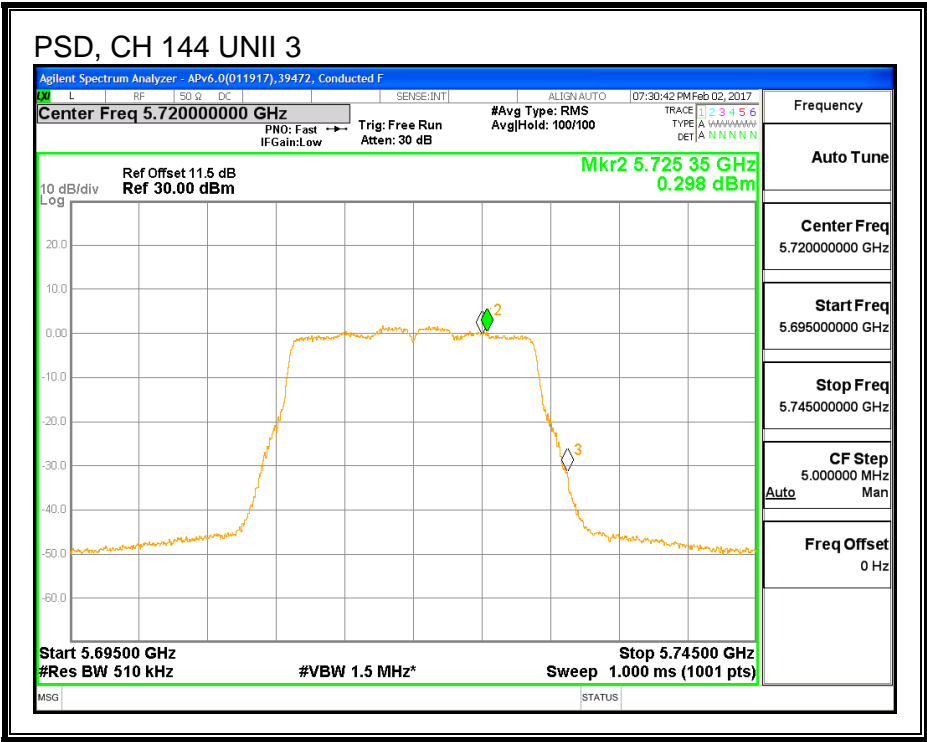
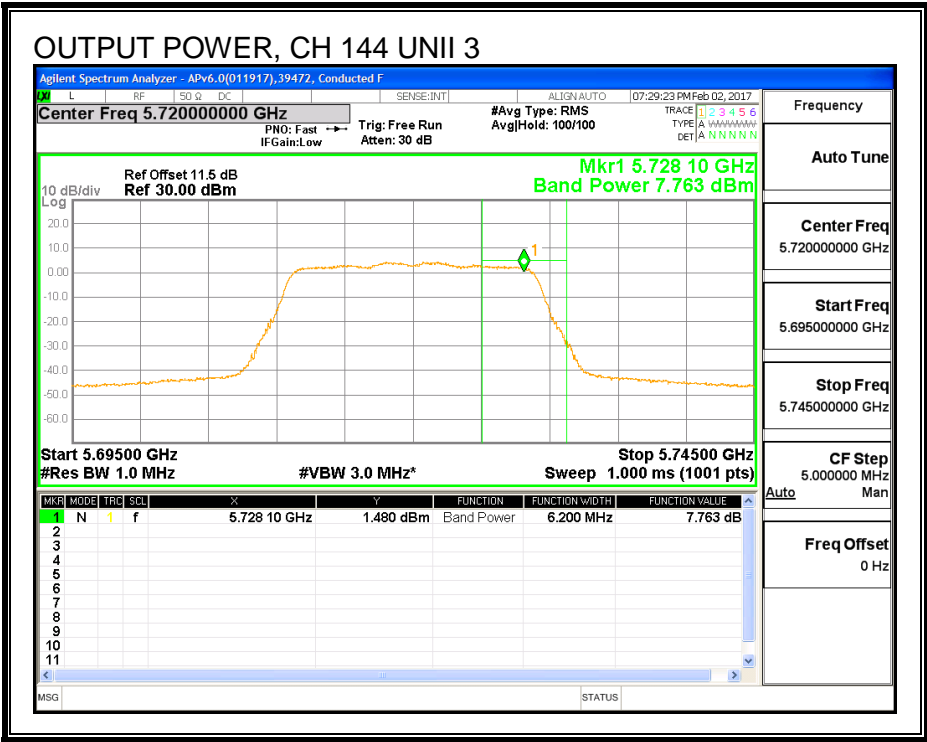
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	7.76	7.76	30.00	-22.24

PSD Results

Channel	Frequency (MHz)	Ant A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	0.30	0.30	30.00	-29.70



8.26.2. 6 dB BANDWIDTH

LIMITS

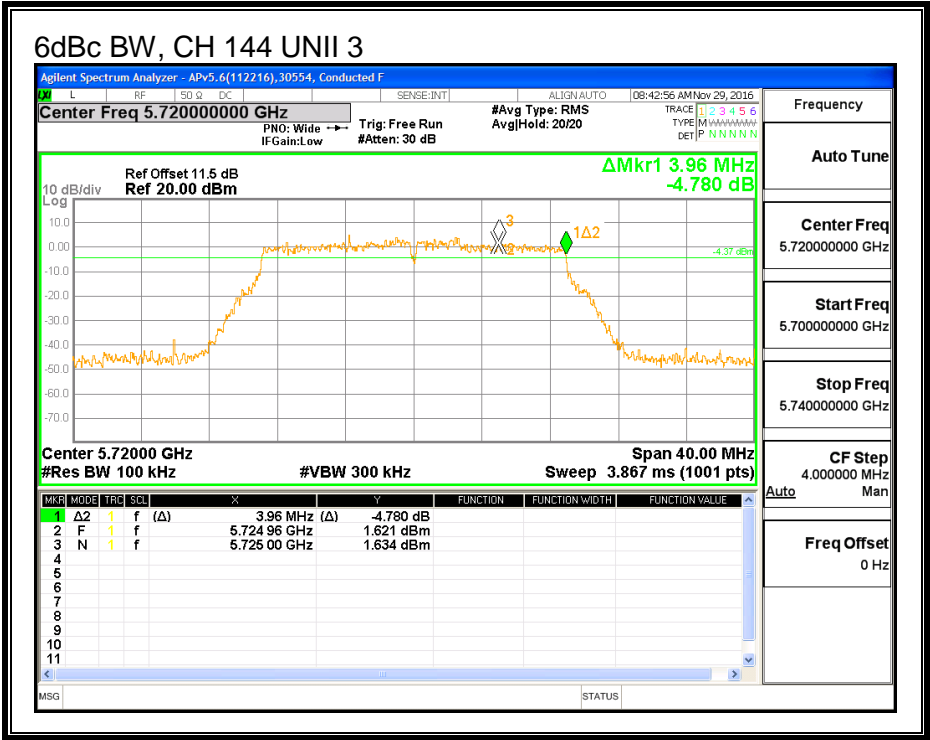
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
144	5720	3.96

6 dB BANDWIDTH



8.27. 802.11n HT20 ANTENNA B MODE IN THE 5.6 GHz BAND

8.27.1. 26 dB BANDWIDTH

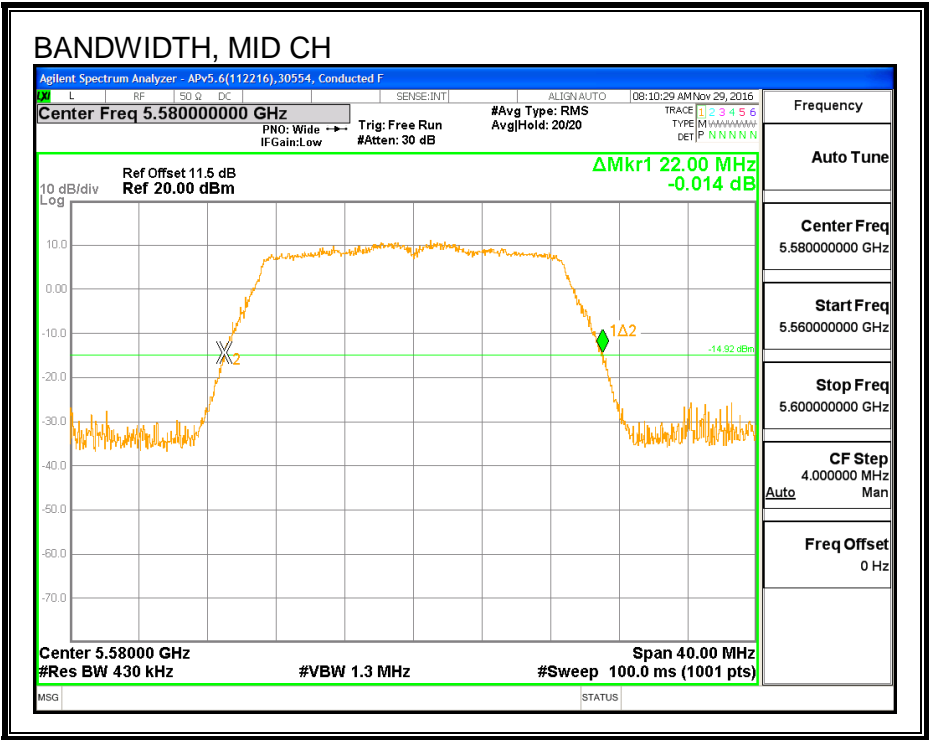
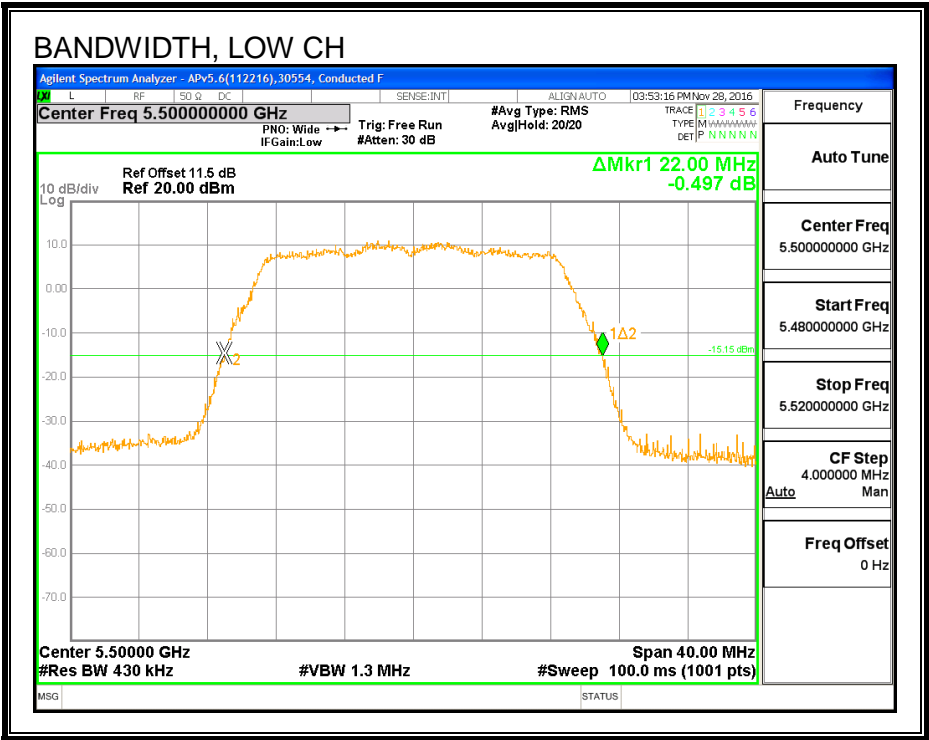
LIMITS

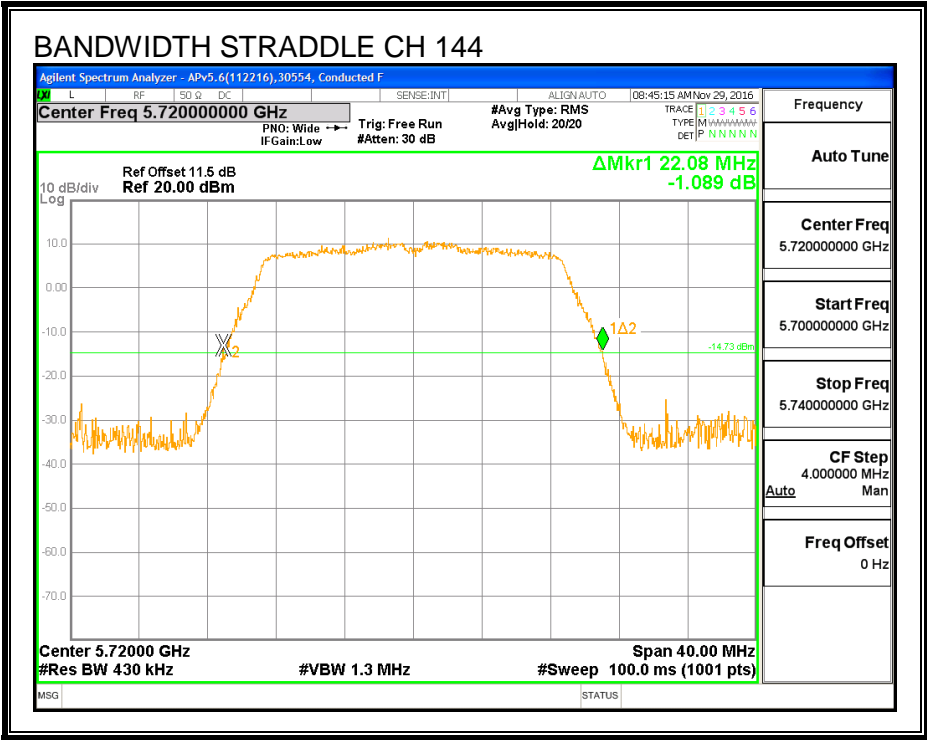
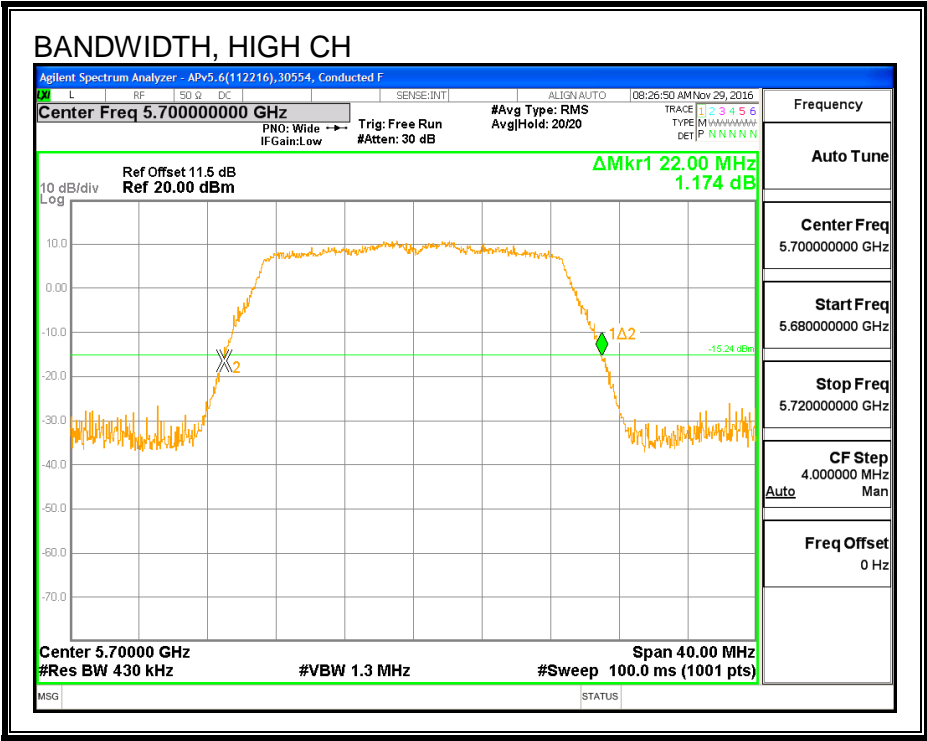
None; for reporting purposes only.

RESULTS

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

26 dB BANDWIDTH





8.27.2. 99% BANDWIDTH

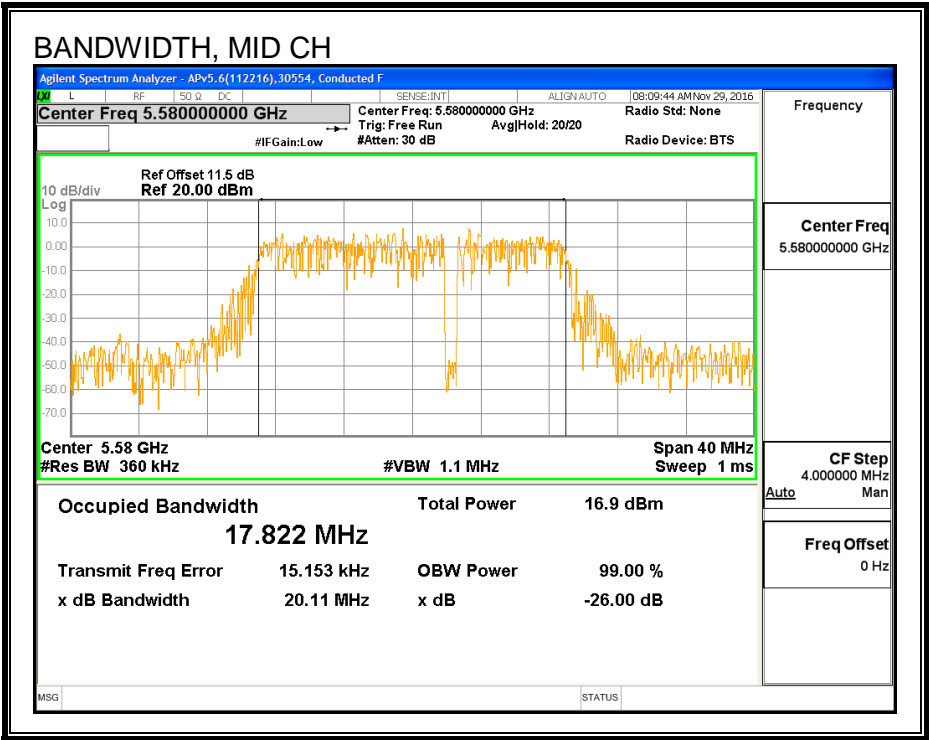
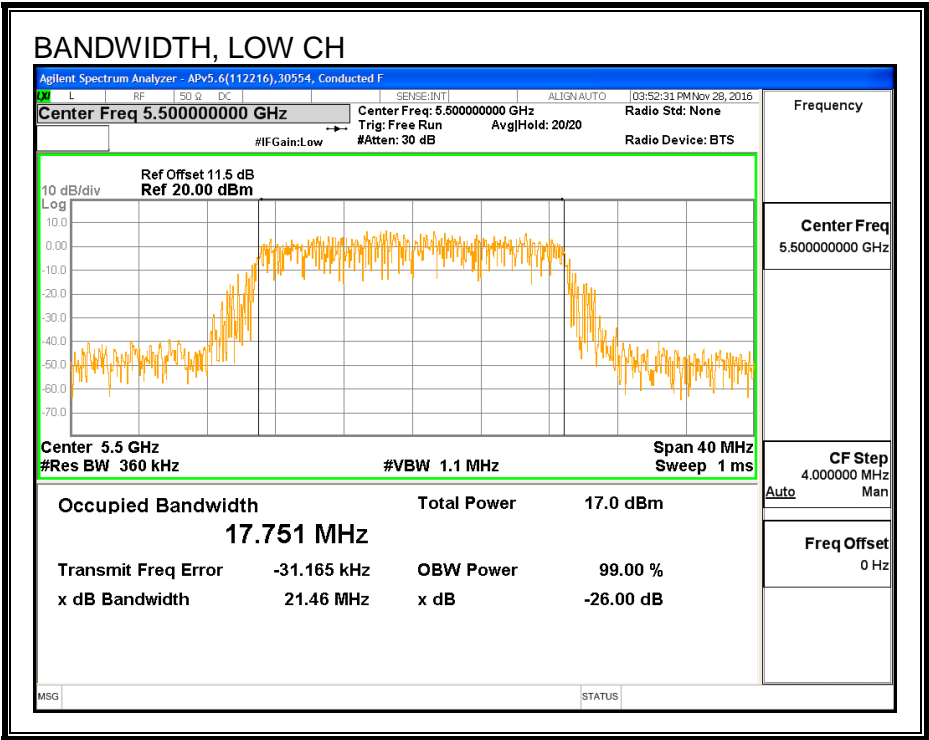
LIMITS

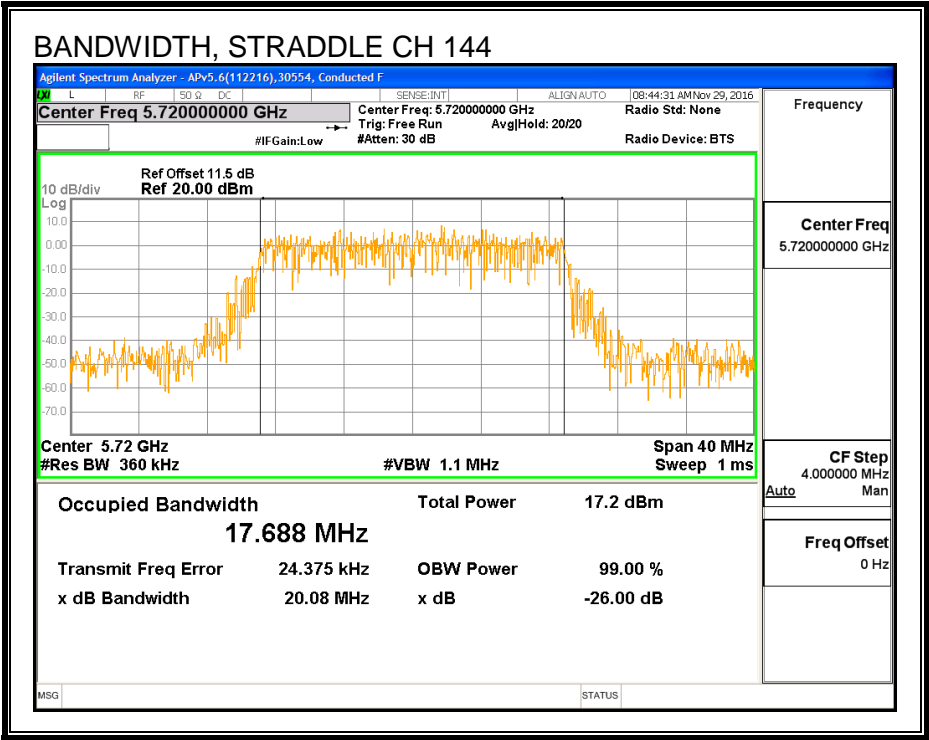
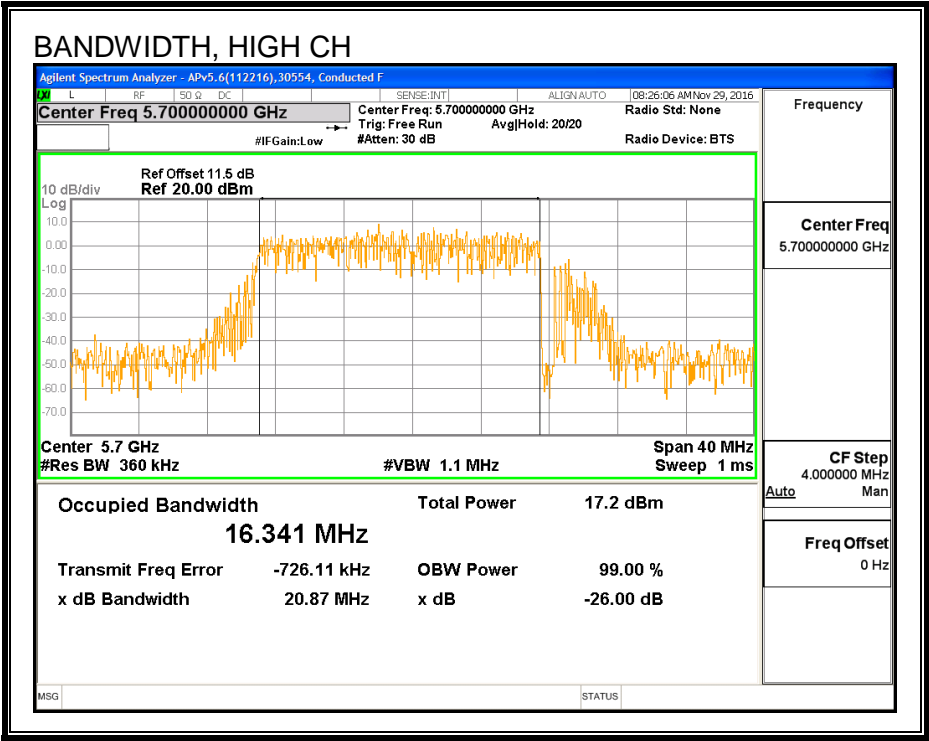
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.751
Mid	5580	17.822
High	5700	16.341
144	5720	17.688

99% BANDWIDTH





8.27.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39472	Date:	2/2/17
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Channel	Frequency (MHz)	Power (dBm)
Low	5500	14.89
Mid	5580	14.94
High	5700	14.99
144	5720	14.88

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.

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:	39472	Date:	2/2/17
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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	22.00	17.75	5.17	23.49	11.00
Mid	5580	22.00	17.82	5.17	23.51	11.00
High	5700	22.00	16.34	5.17	23.13	11.00

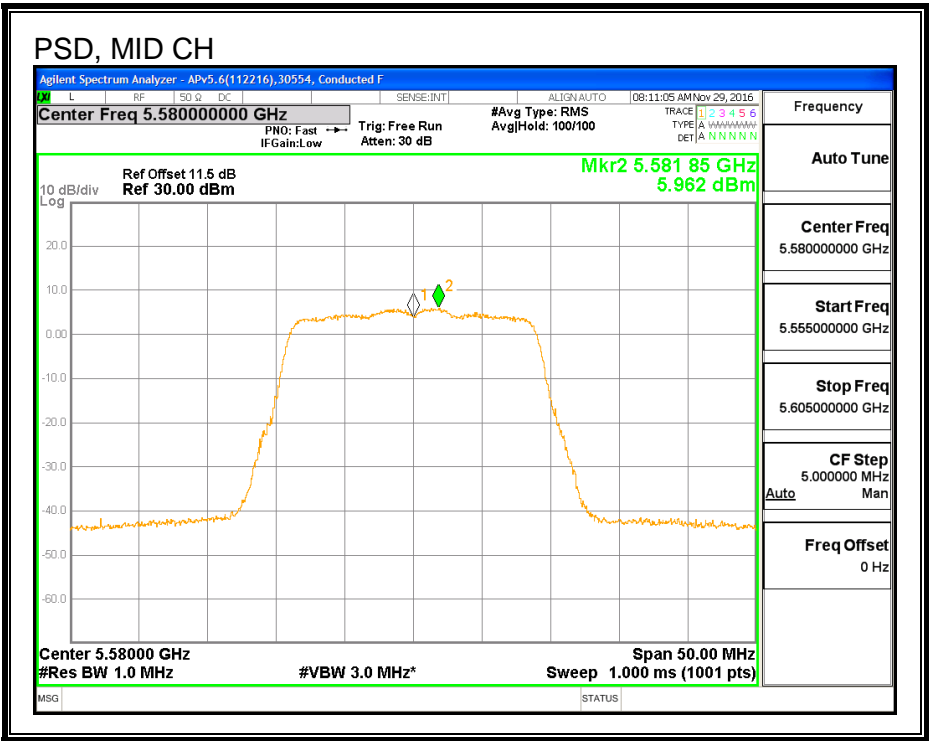
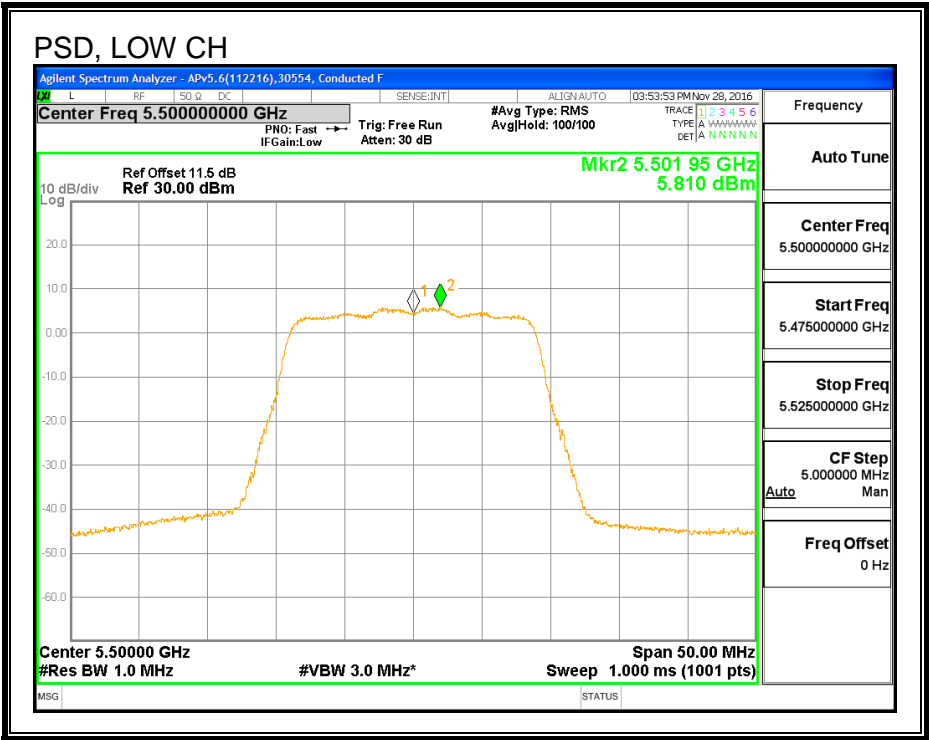
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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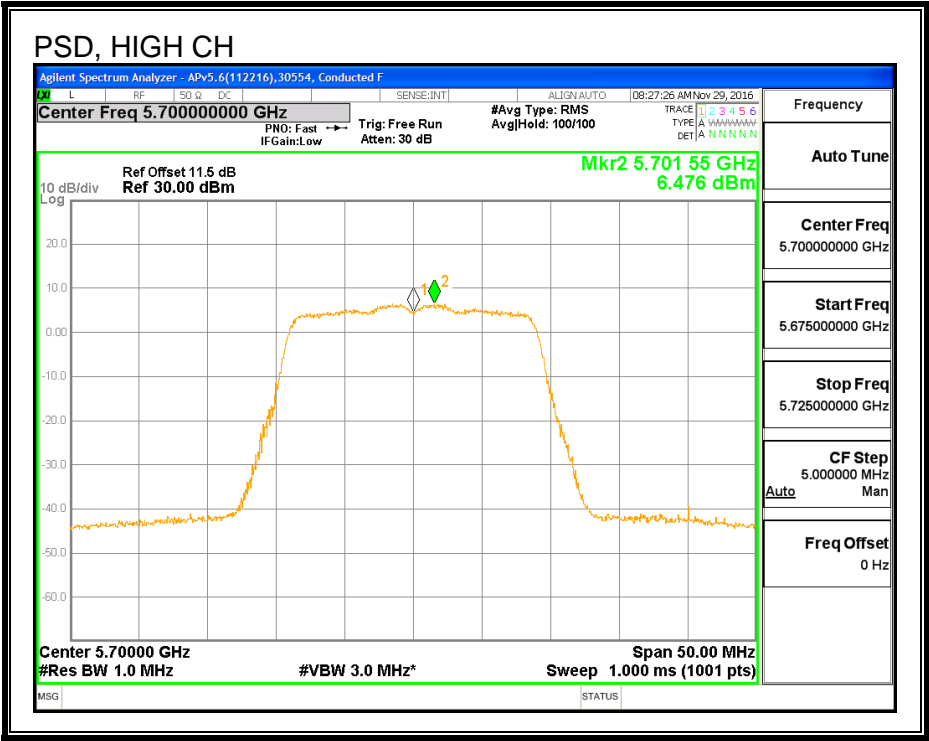
Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.89	14.89	23.49	-8.60
Mid	5580	14.94	14.94	23.51	-8.57
High	5700	14.99	14.99	23.13	-8.14

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	5.81	5.81	11.00	-5.19
Mid	5580	5.96	5.96	11.00	-5.04
High	5700	6.48	6.48	11.00	-4.52





8.28. 802.11ac VHT20 ANTENNA B STRADDLE CHANNEL 144 RESULTS

8.28.1. 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	16.04	5.17	5.17	23.05	11.00

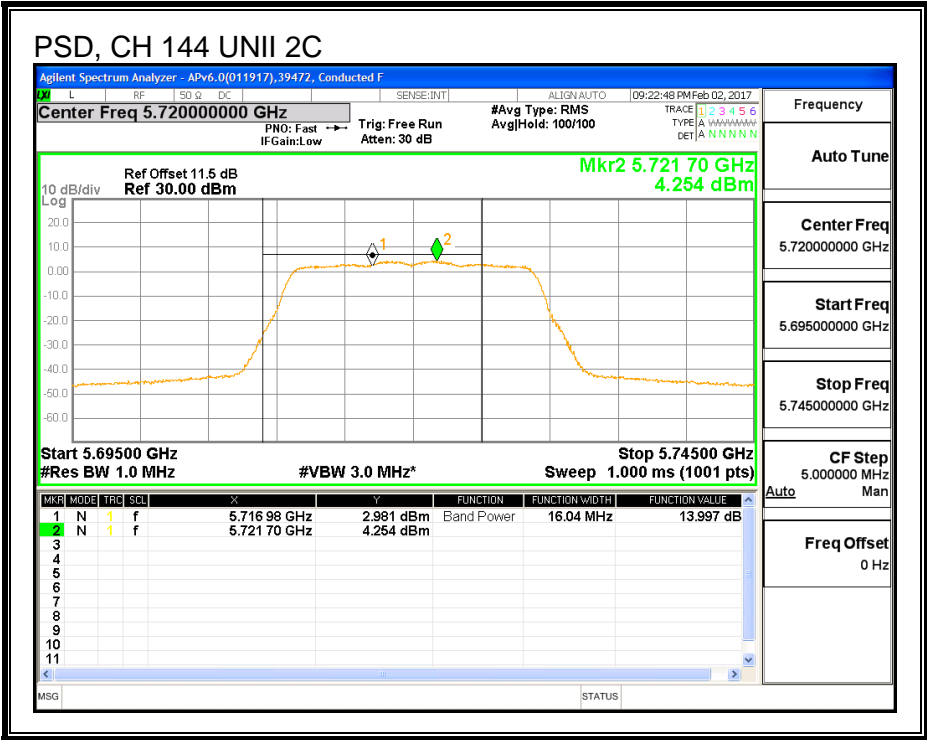
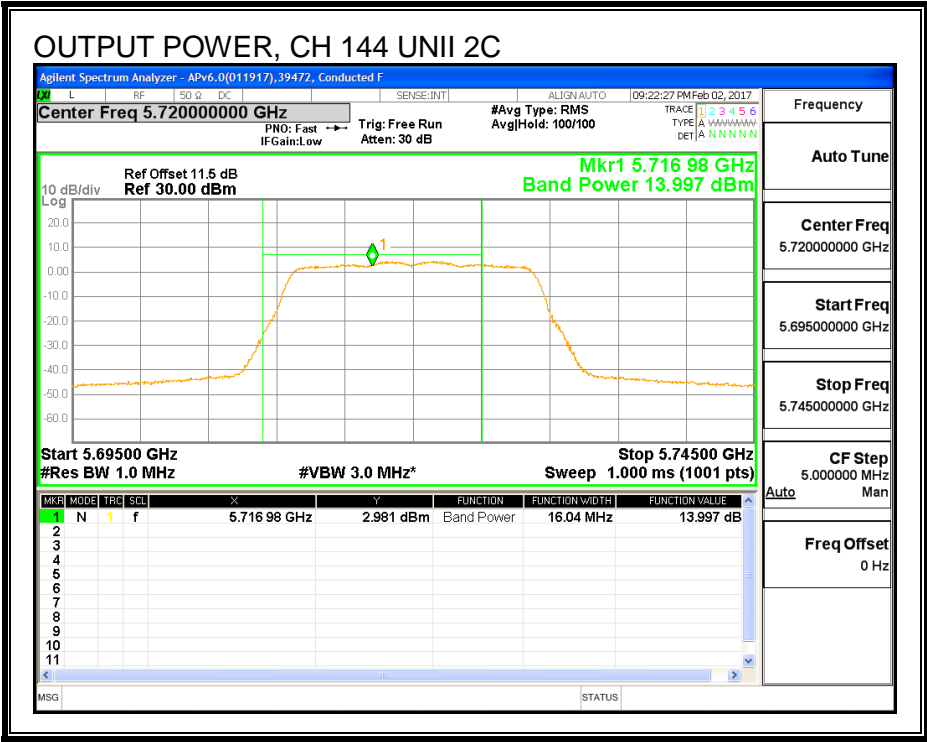
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	14.00	14.00	23.05	-9.06

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	4.25	4.25	11.00	-6.75



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	6.04	4.32	30.00	30.00

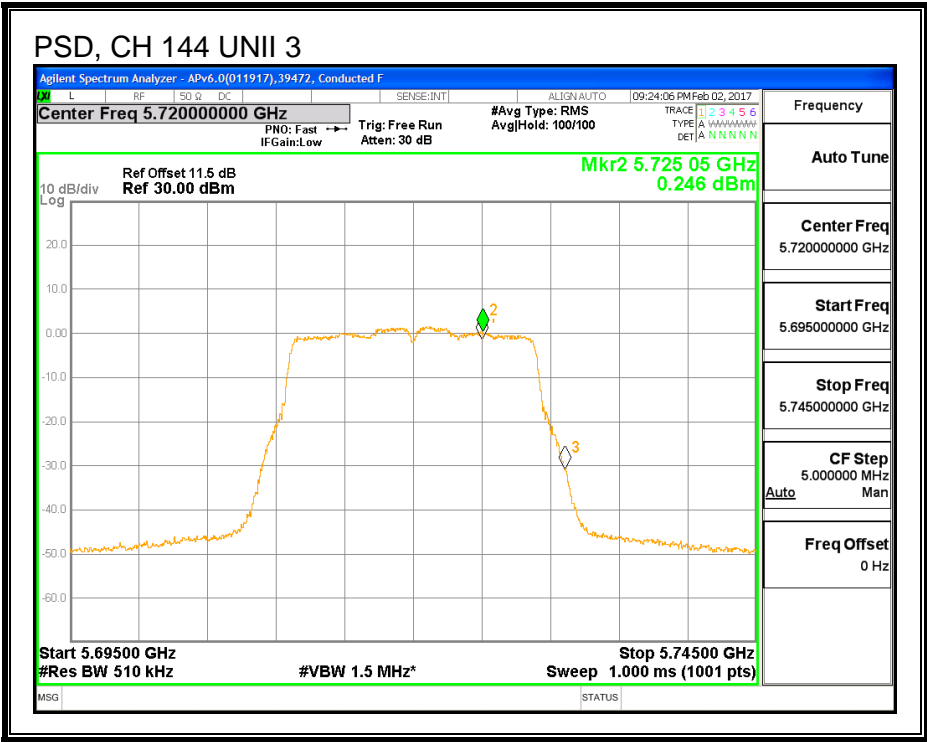
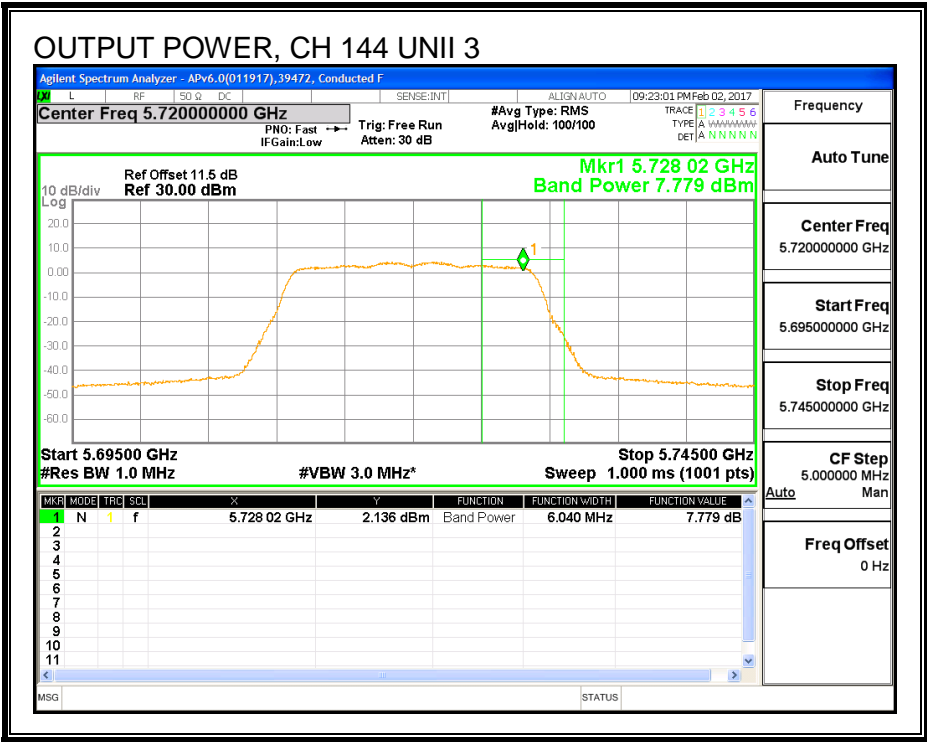
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Ant B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	7.78	7.78	30.00	-22.22

PSD Results

Channel	Frequency (MHz)	Ant B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	0.25	0.25	30.00	-29.75



8.28.2. 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	3.84

6 dB BANDWIDTH

