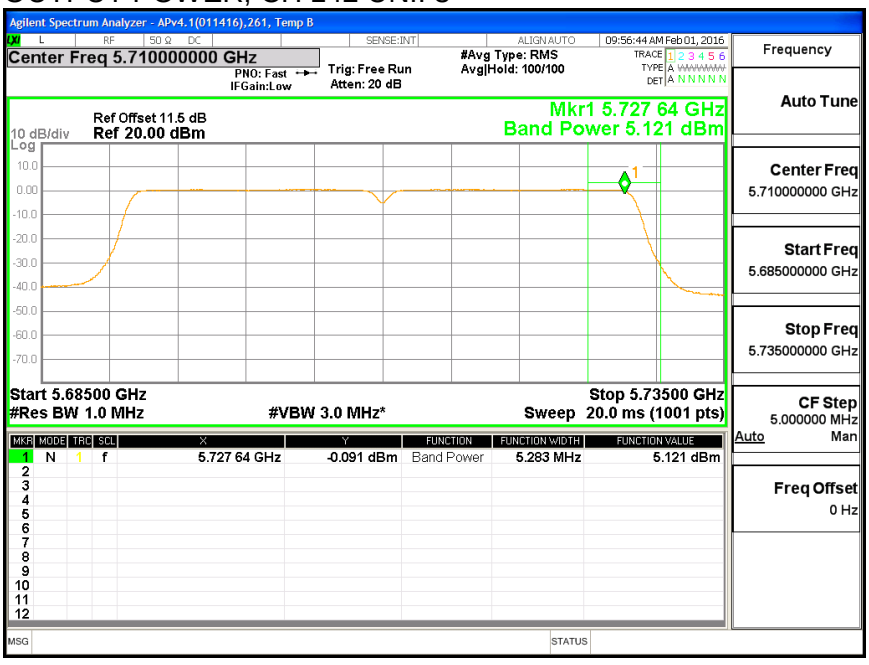
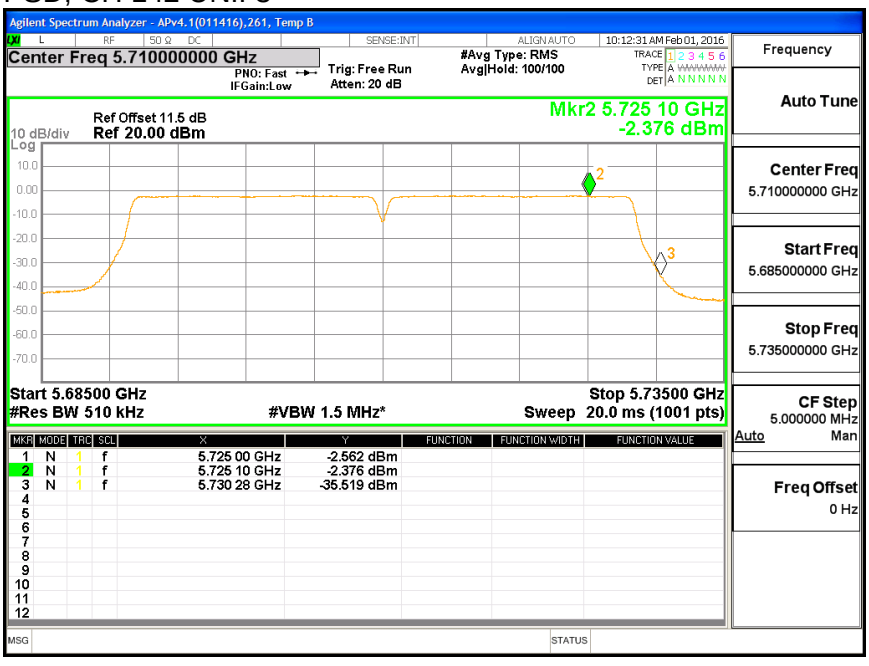
ANTENNA - A

OUTPUT POWER, CH 142 UNII 3

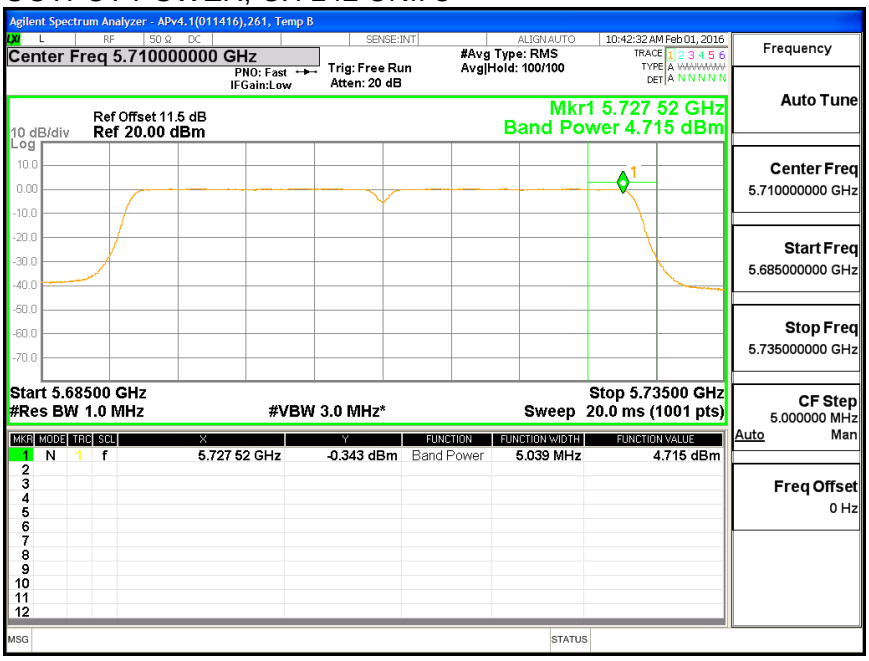


PSD, CH 142 UNII 3

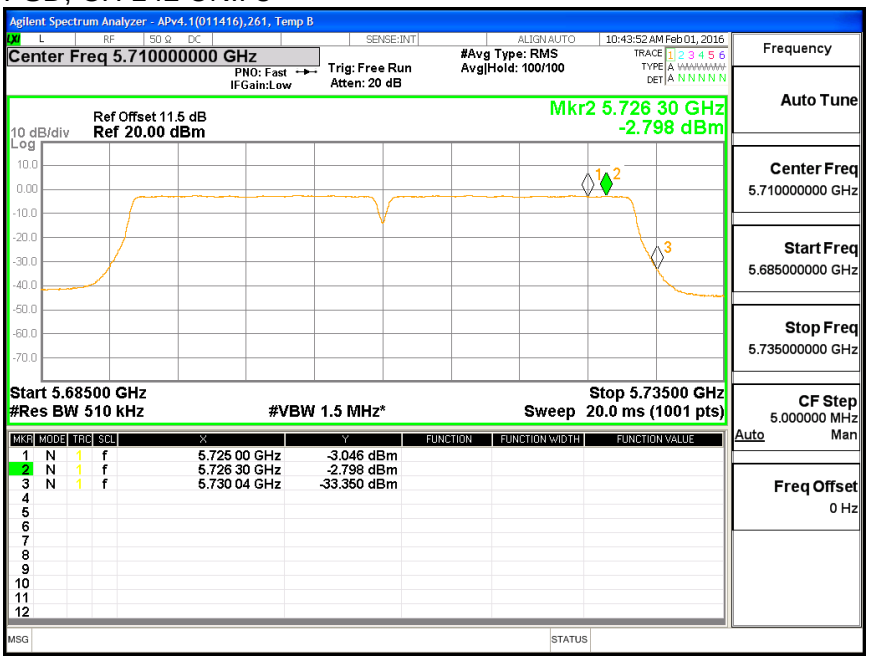


ANTENNA - C

OUTPUT POWER, CH 142 UNII 3



PSD, CH 142 UNII 3



8.95.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

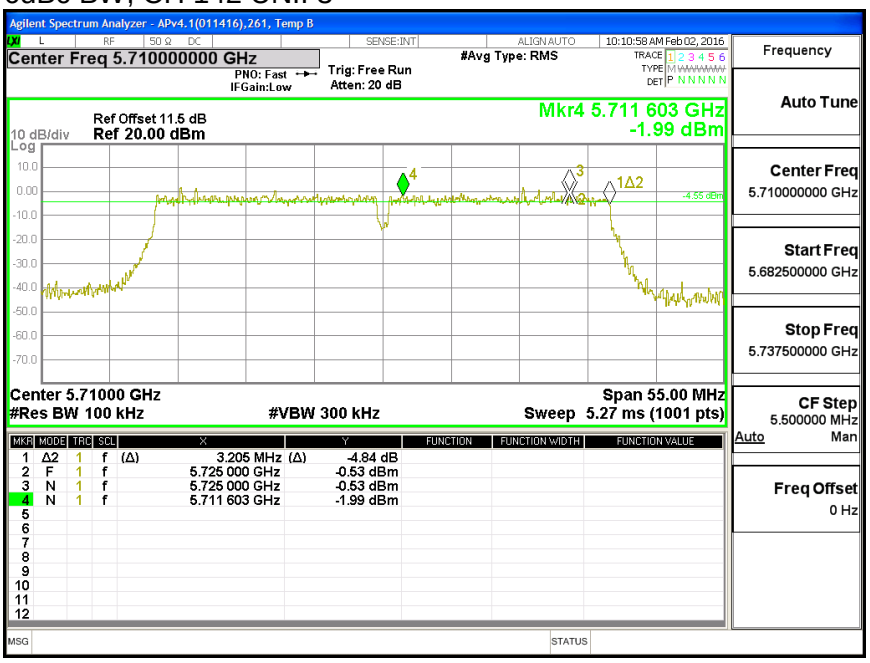
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB BW Antenna A (MHz)	6 dB BW Antenna C (MHz)
142	5710	3.21	3.15

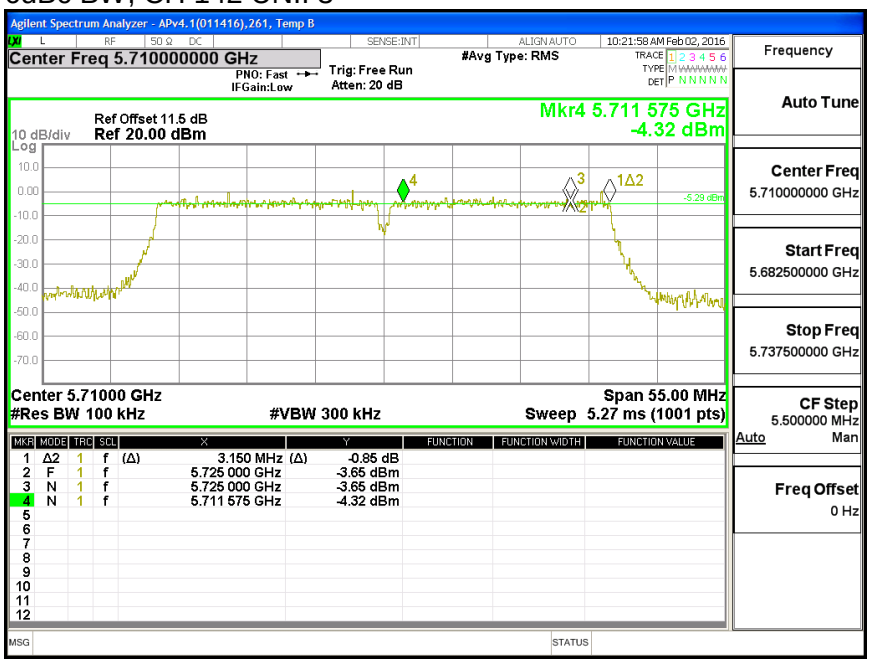
ANTENNA - A

6dBc BW, CH 142 UNII 3



ANTENNA - C

6dBc BW, CH 142 UNII 3



8.96. 802.11n HT40 ANTENNA B+A SDM MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11n HT40 ANTENNA B+A STBC MODE IN THE 5.6 GHz BAND

8.97. 802.11n HT40 ANTENNA A+C SDM MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11n HT40 ANTENNA A+C STBC MODE IN THE 5.6 GHz BAND

8.98. 802.11ac VHT80 ANTENNA - B MODE IN THE 5.6 GHz BAND

8.98.1. 26 dB BANDWIDTH

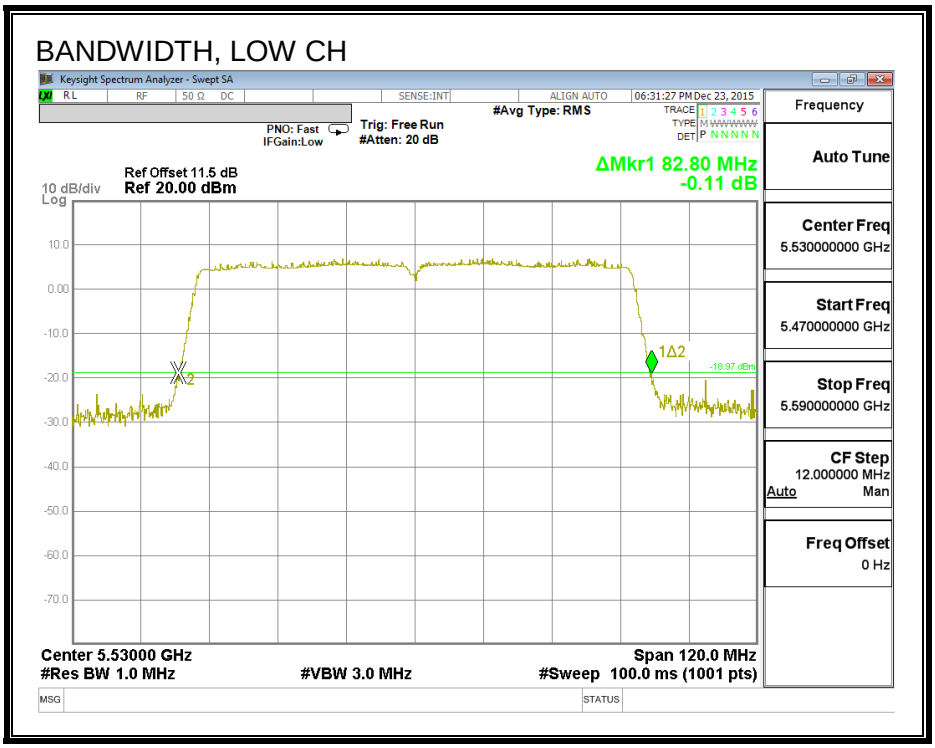
LIMITS

None; for reporting purposes only.

RESULTS

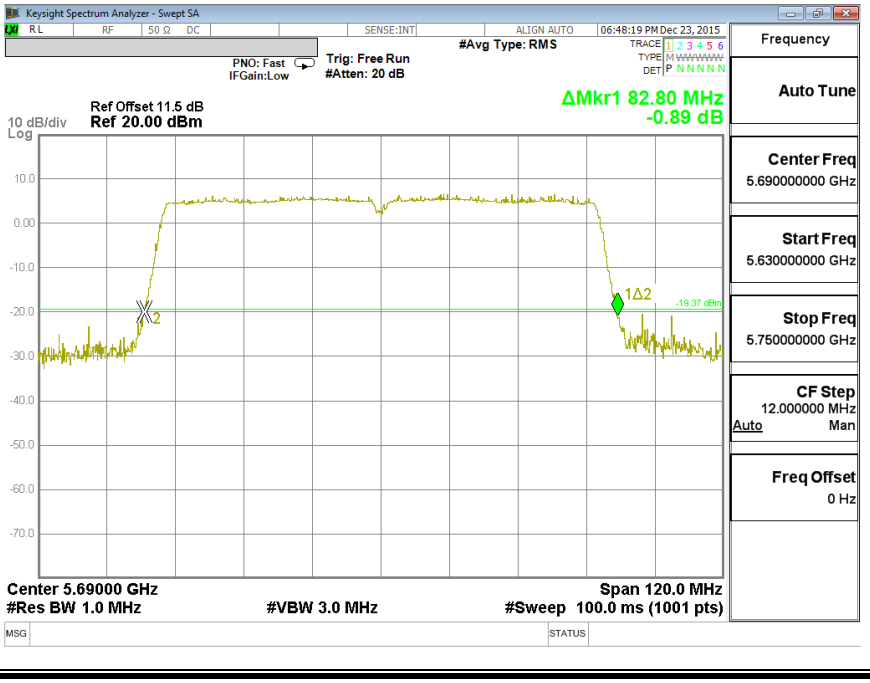
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.80
Mid	5610	82.80
High	5690	82.80

26 dB BANDWIDTH



BANDWIDTH, MID CH

BANDWIDTH, HIGH CH 138



8.98.2. 99% BANDWIDTH

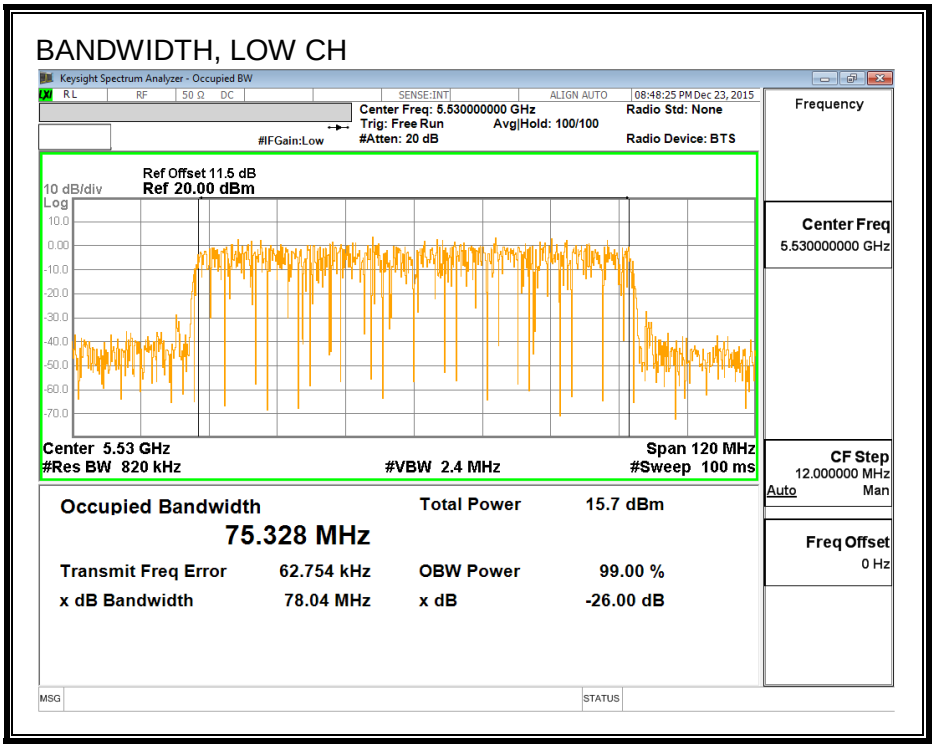
LIMITS

None; for reporting purposes only.

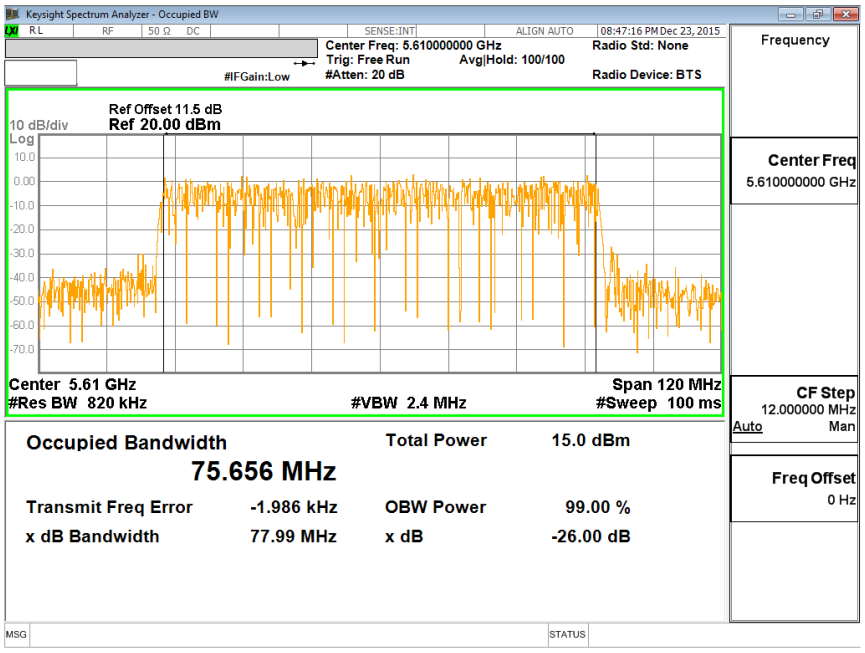
RESULTS

Frequency (MHz)	99% Bandwidth (MHz)
5530	75.328
5610	75.656
5690	76.109

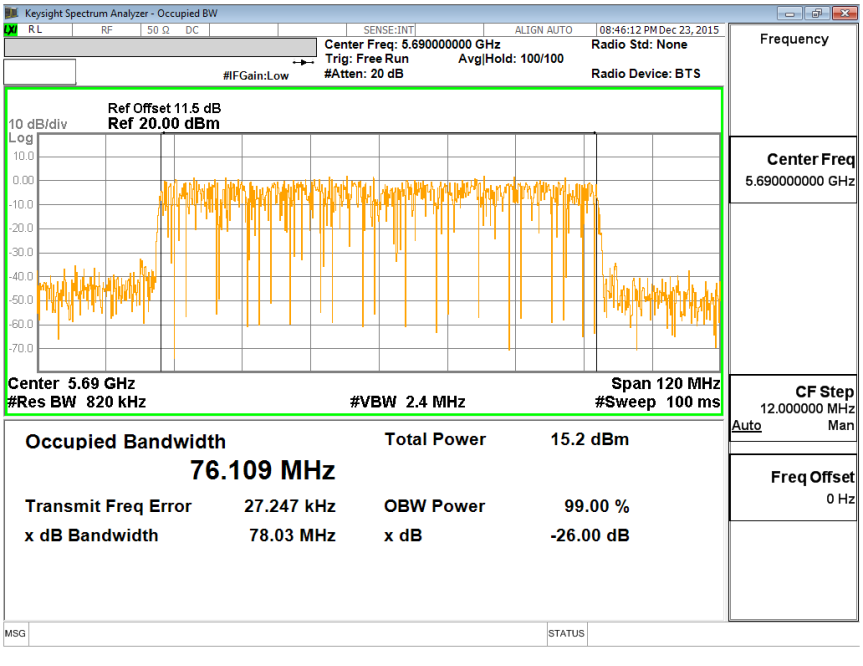
99% BANDWIDTH



BANDWIDTH, MID CH



BANDWIDTH HIGH CH 138



8.98.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5530	13.87
Mid	5610	16.42
High	5690	16.50

8.98.4. 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 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

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.80	75.328	2.83	24.00	11.00
High	5610	82.80	75.656	2.83	24.00	11.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd PSD

Output Power Results

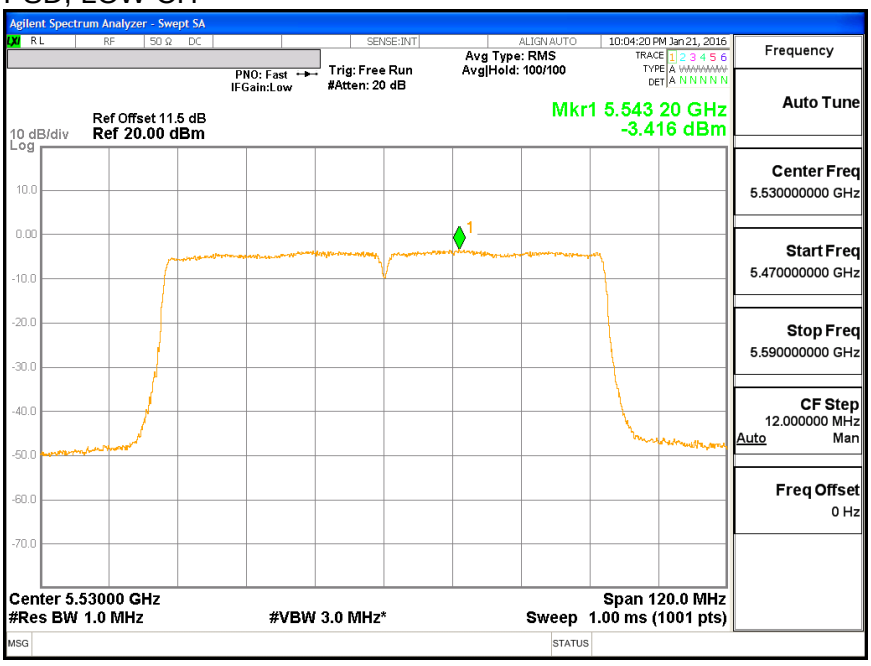
Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	13.87	13.87	24.00	-10.13
High	5610	16.42	16.42	24.00	-7.58

PSD Results

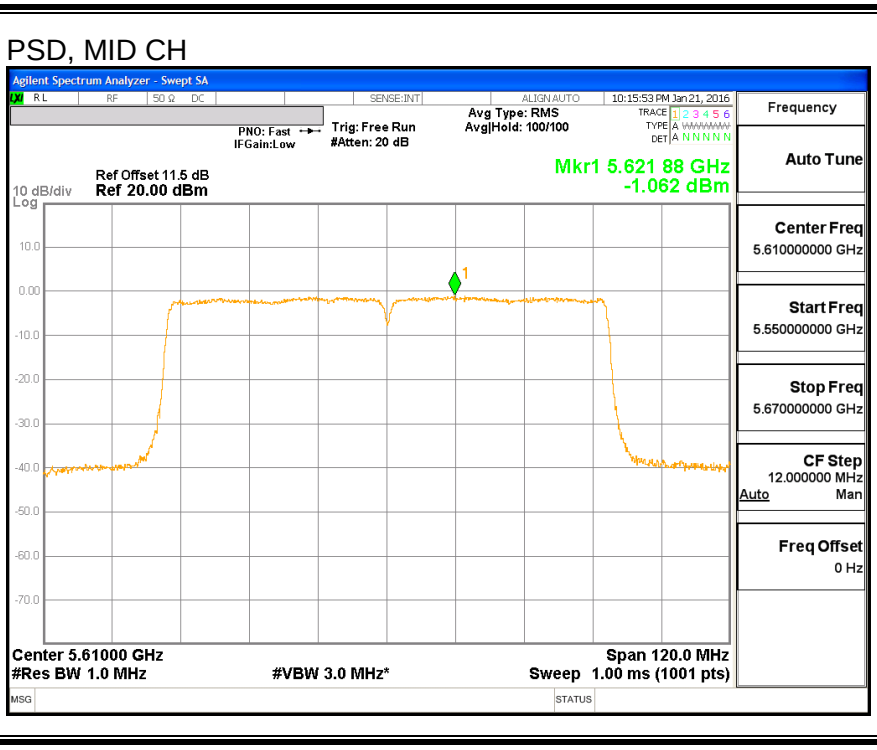
Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-3.42	-3.26	11.00	-14.26
High	5610	-1.06	-0.90	11.00	-11.90

PSD,

PSD, LOW CH



PSD, MID CH



8.98.5. STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	76.40	2.83	2.83	24.00	11.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD

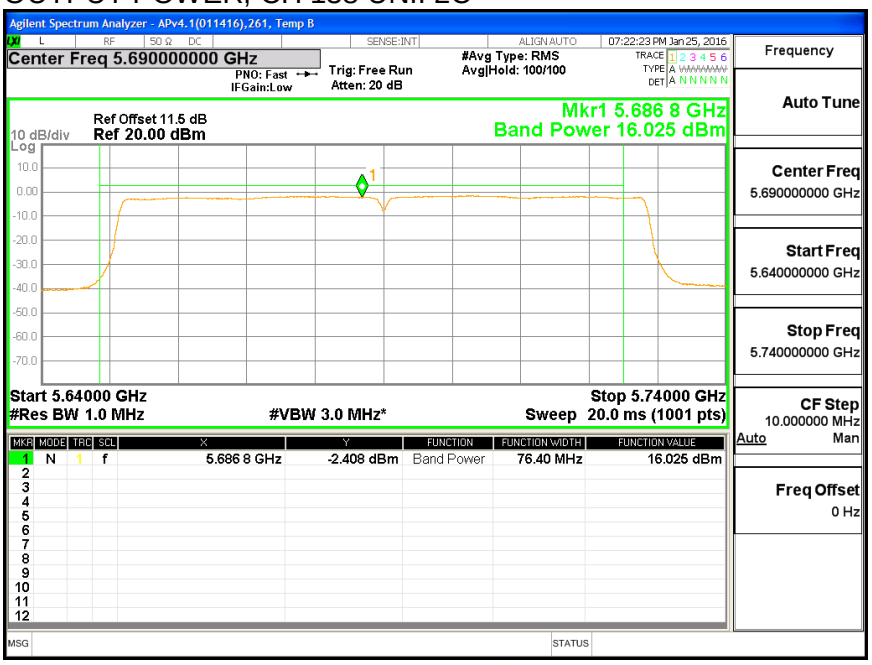
Output Power Results

Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	16.03	16.19	24.00	-7.82

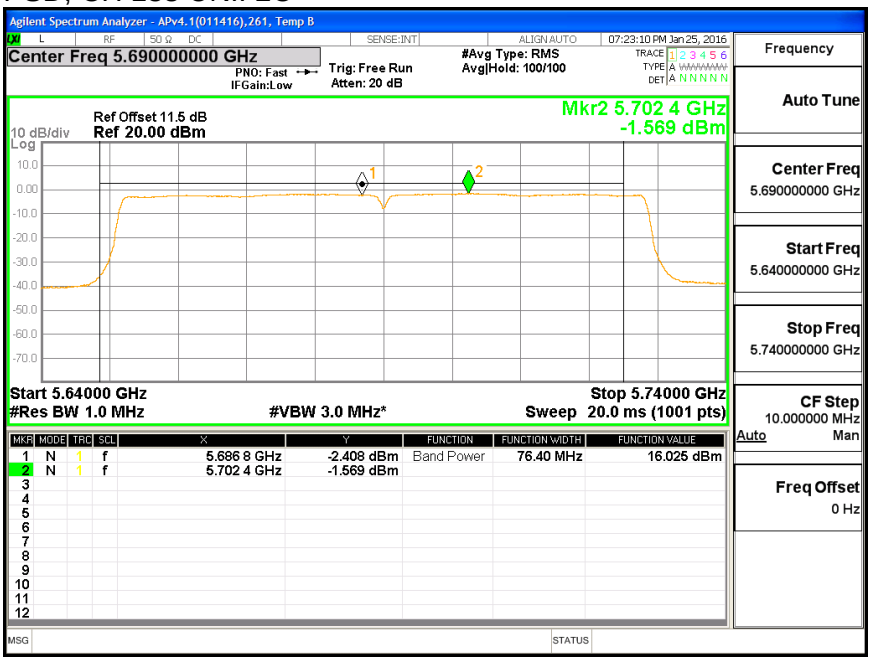
PSD Results

Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-1.57	-1.41	11.00	-12.41

OUTPUT POWER, CH 138 UNII 2C



PSD, CH 138 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.40	2.83	30.00	30.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD

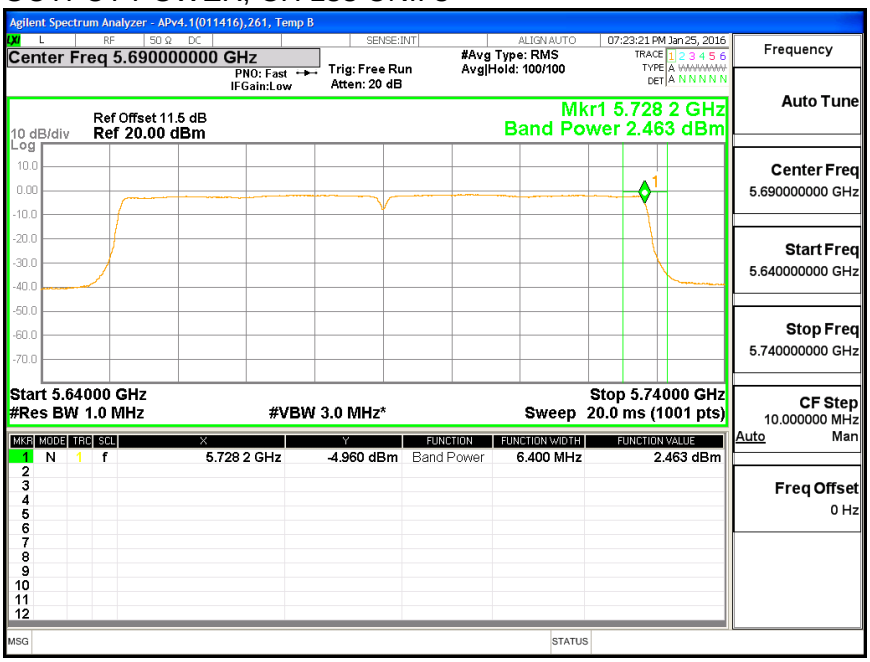
Output Power Results

Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	2.46	2.62	30.00	-27.38

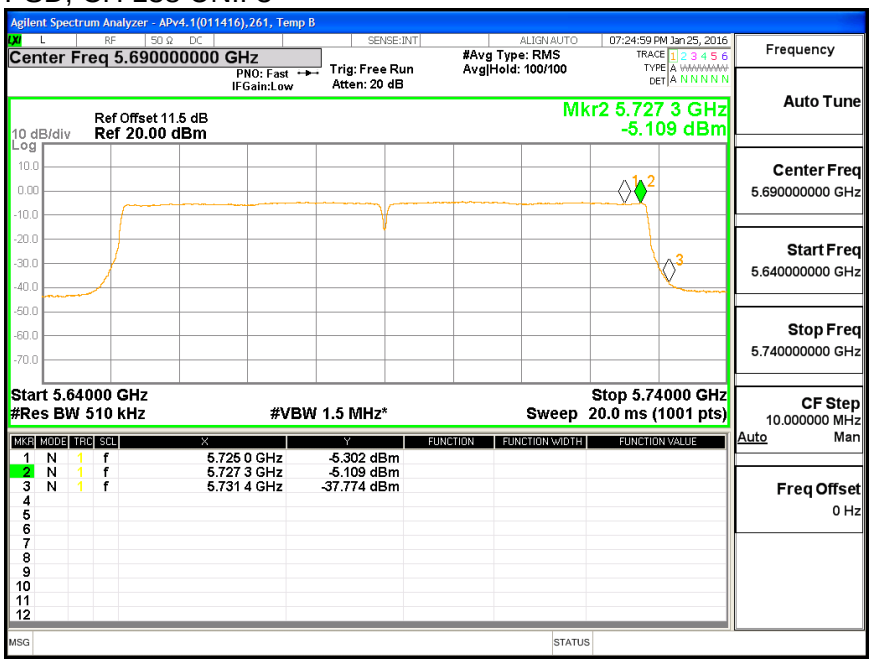
PSD Results

Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-5.11	-4.95	30.00	-34.95

OUTPUT POWER, CH 138 UNII 3



PSD, CH 138 UNII 3



8.98.6. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

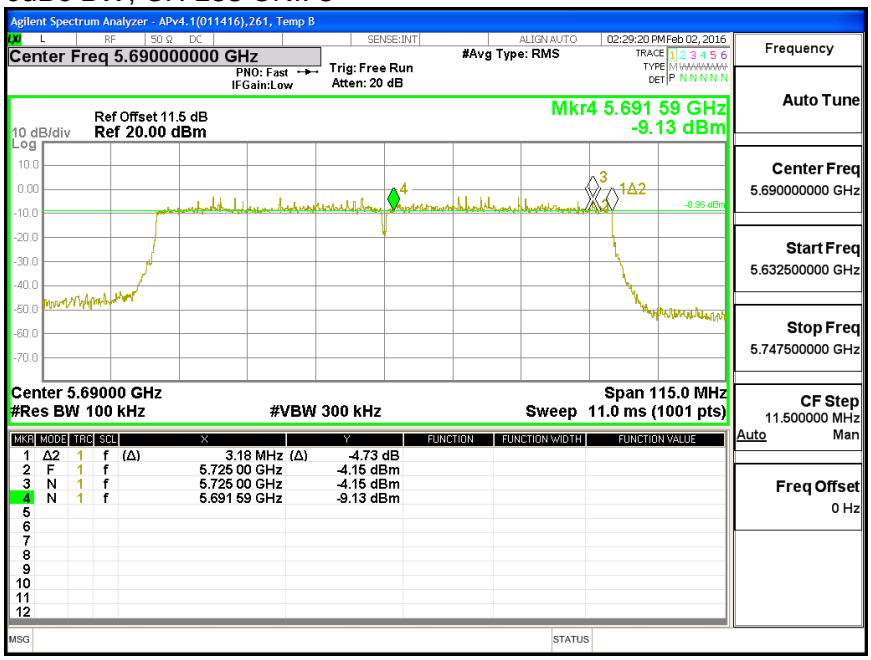
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	3.18

6 dB BANDWIDTH

6dBc BW, CH 138 UNII 3



8.99. 802.11ac VHT80 ANTENNA - A MODE IN THE 5.6 GHz BAND

8.99.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

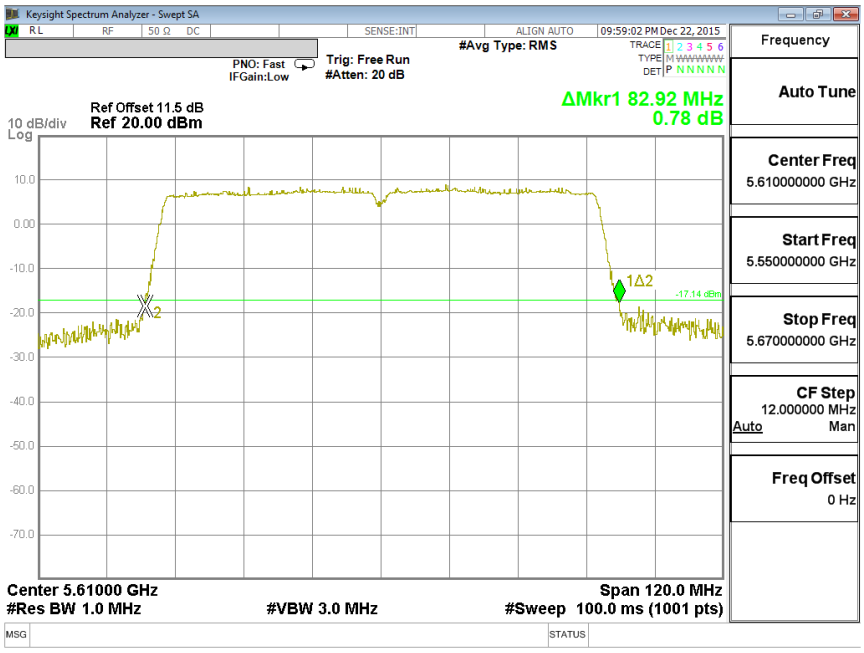
RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.44
Mid	5610	82.92
High	5690	82.92

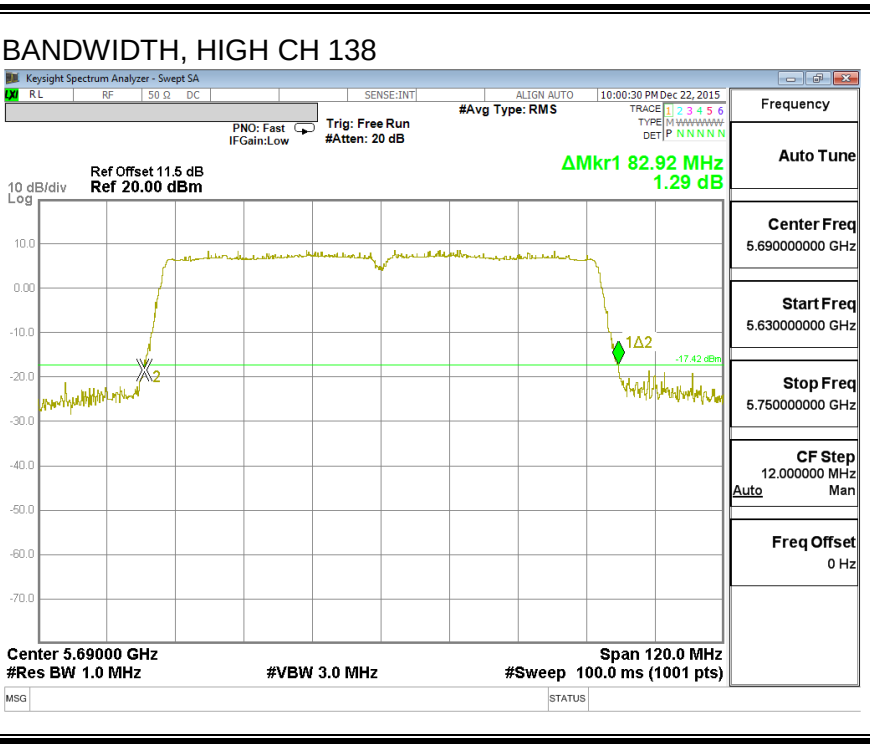
26 dB BANDWIDTH

BANDWIDTH, LOW CH

BANDWIDTH, MID CH



BANDWIDTH, HIGH CH 138



8.99.2. 99% BANDWIDTH

LIMITS

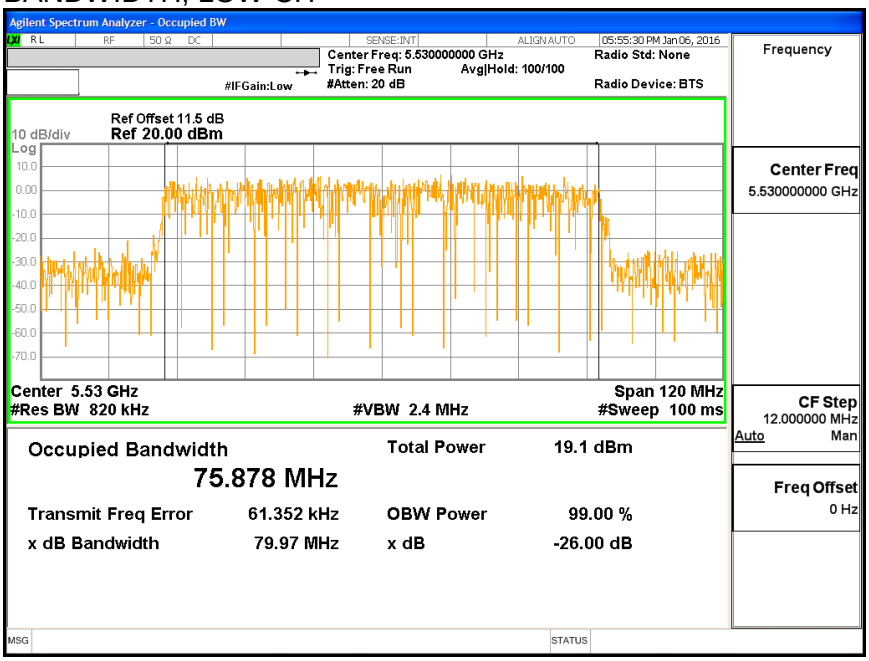
None; for reporting purposes only.

RESULTS

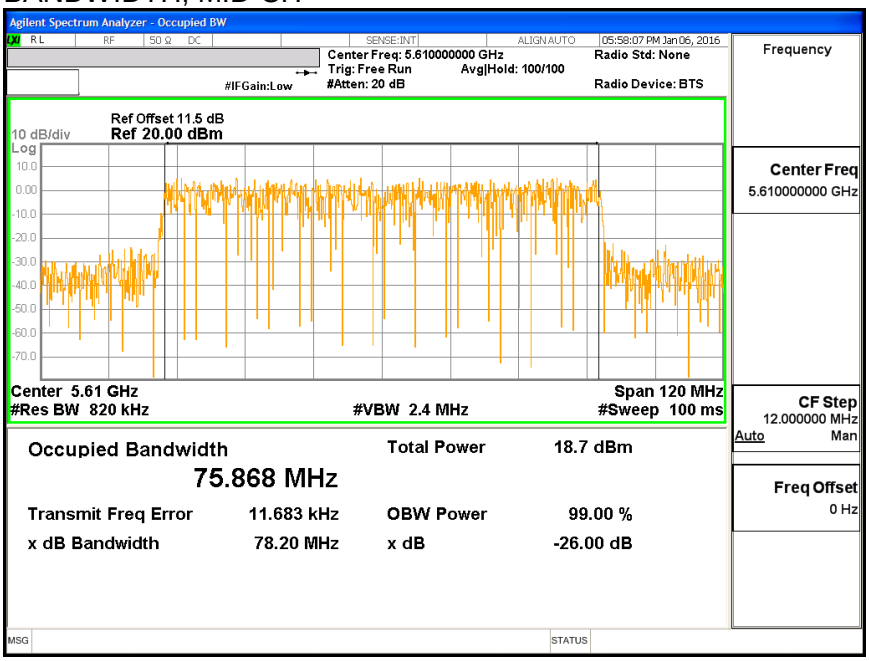
Frequency (MHz)	99% Bandwidth (MHz)
5530	75.878
5610	75.868
5690	75.476

99% BANDWIDTH

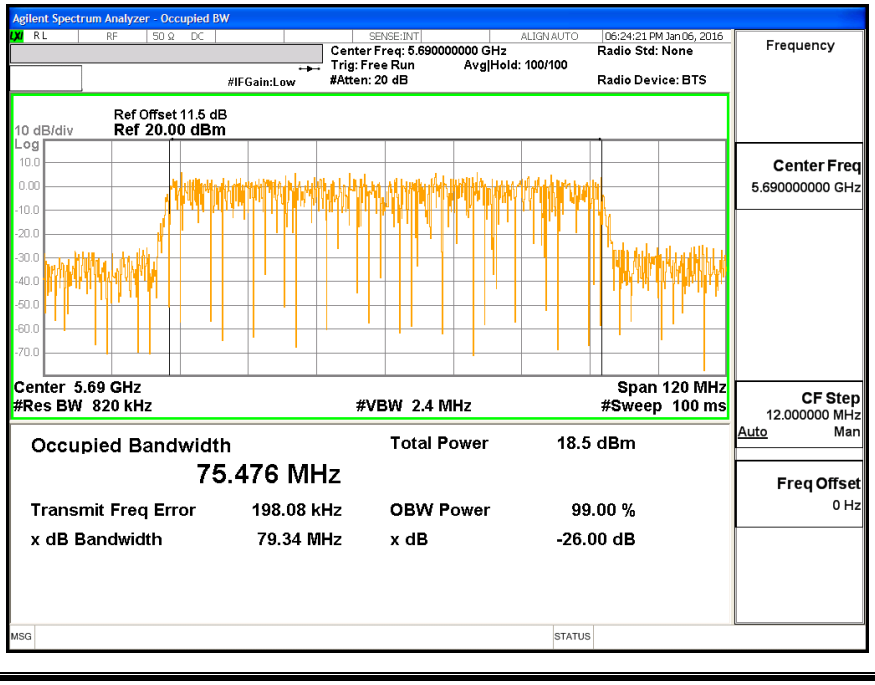
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH HIGH CH 138



8.99.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5530	13.85
Mid	5610	15.90
High	5690	15.95

8.99.4. 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 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

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.44	75.878	4.03	24.00	11.00
High	5610	82.92	75.868	4.03	24.00	11.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd PSD

Output Power Results

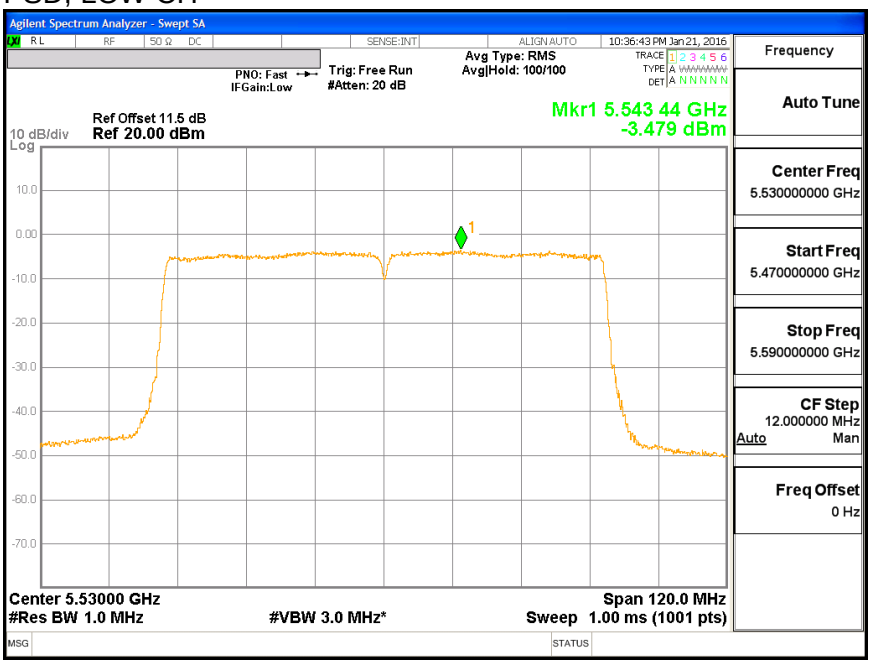
Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	13.85	13.85	24.00	-10.15
High	5610	15.90	15.90	24.00	-8.10

PSD Results

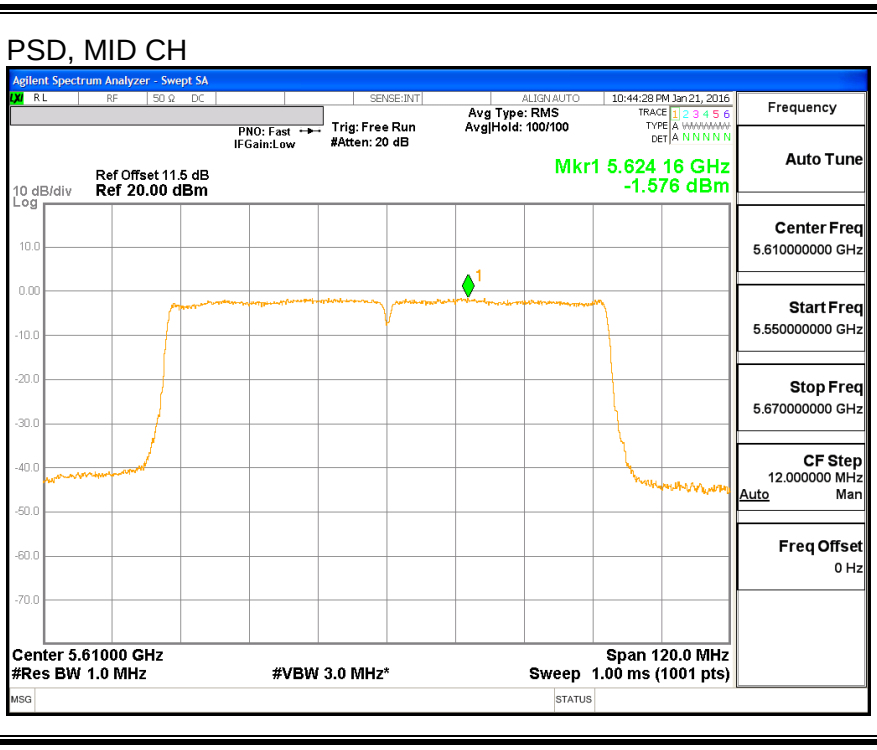
Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-3.48	-3.32	11.00	-14.32
High	5610	-1.58	-1.42	11.00	-12.42

PSD,

PSD, LOW CH



PSD, MID CH



8.99.5. STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	76.46	4.03	4.03	24.00	11.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD

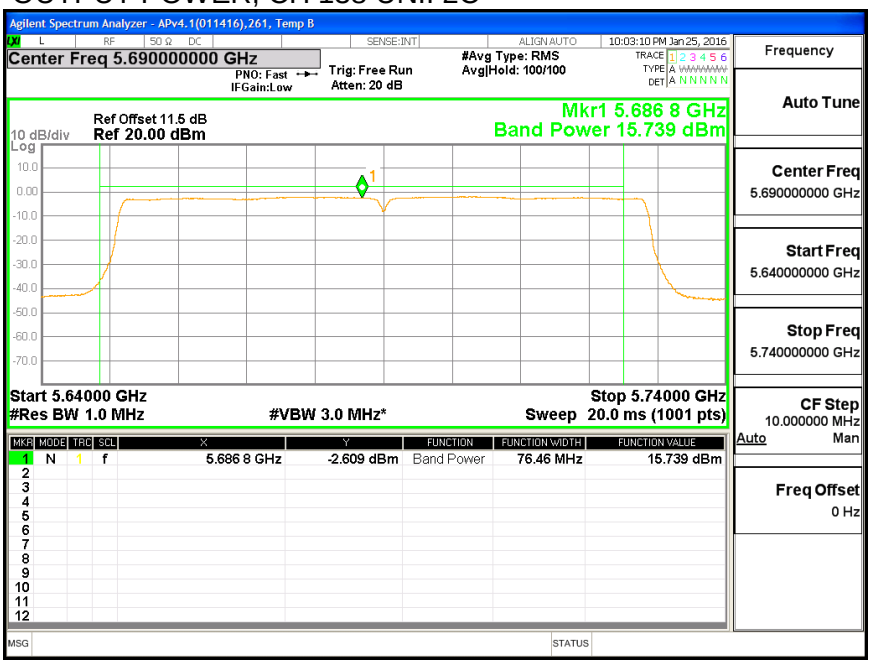
Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	15.74	15.90	24.00	-8.10

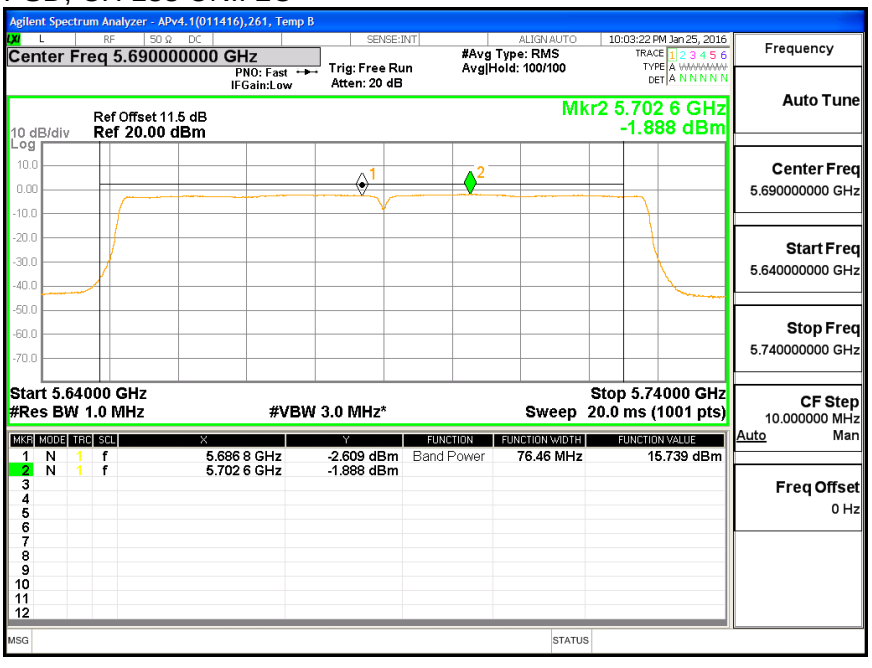
PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-1.89	-1.73	11.00	-12.73

OUTPUT POWER, CH 138 UNII 2C



PSD, CH 138 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.45	4.03	30.00	30.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD

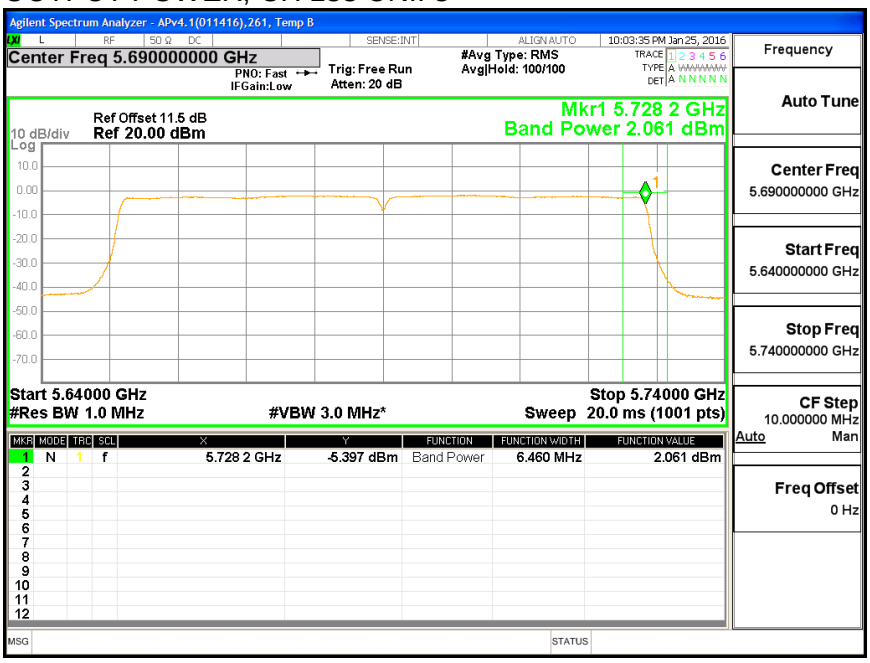
Output Power Results

Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	2.06	2.22	30.00	-27.78

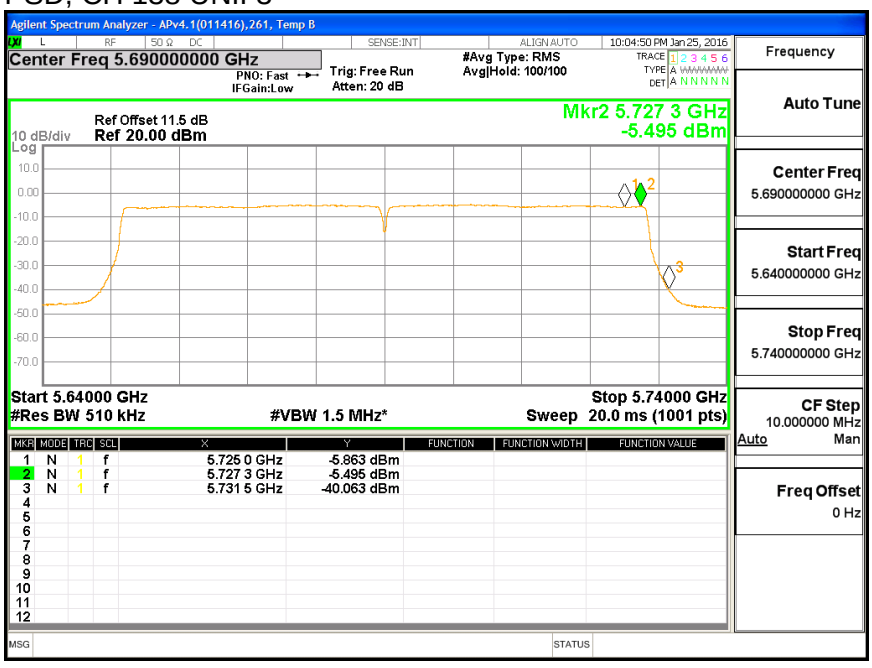
PSD Results

Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-5.50	-5.34	30.00	-35.34

OUTPUT POWER, CH 138 UNII 3



PSD, CH 138 UNII 3



8.99.6. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

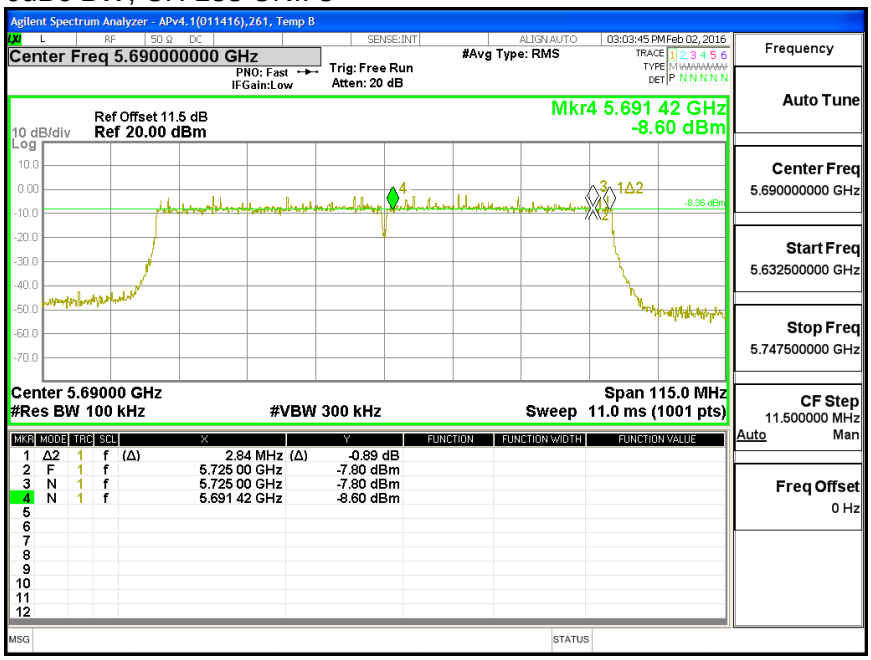
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	2.84

6 dB BANDWIDTH

6dBc BW, CH 138 UNII 3



8.100. 802.11ac VHT80 ANTENNA - C MODE IN THE 5.6 GHz BAND

8.100.1. 26 dB BANDWIDTH

LIMITS

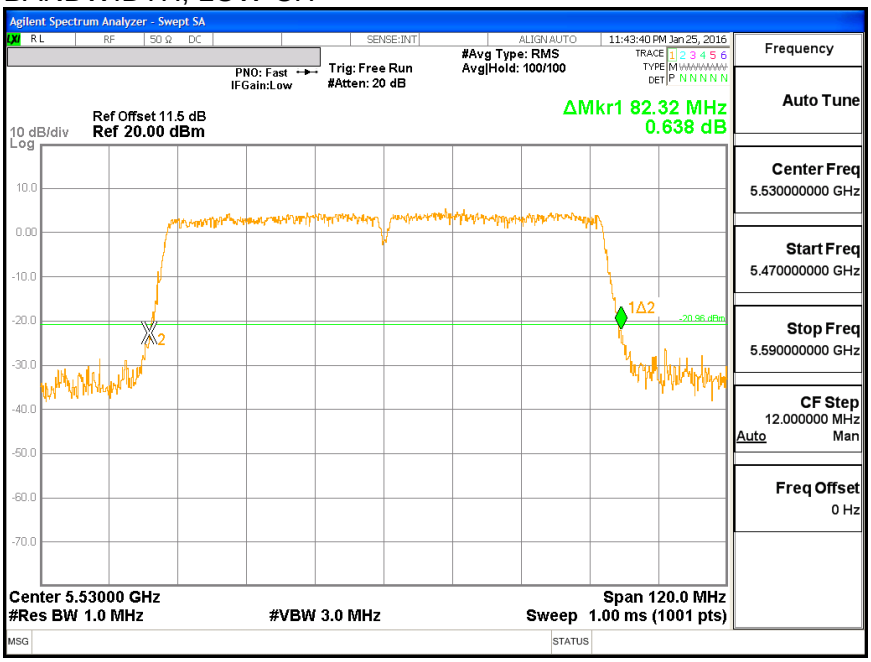
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.32
Mid	5610	82.44
High	5690	82.32

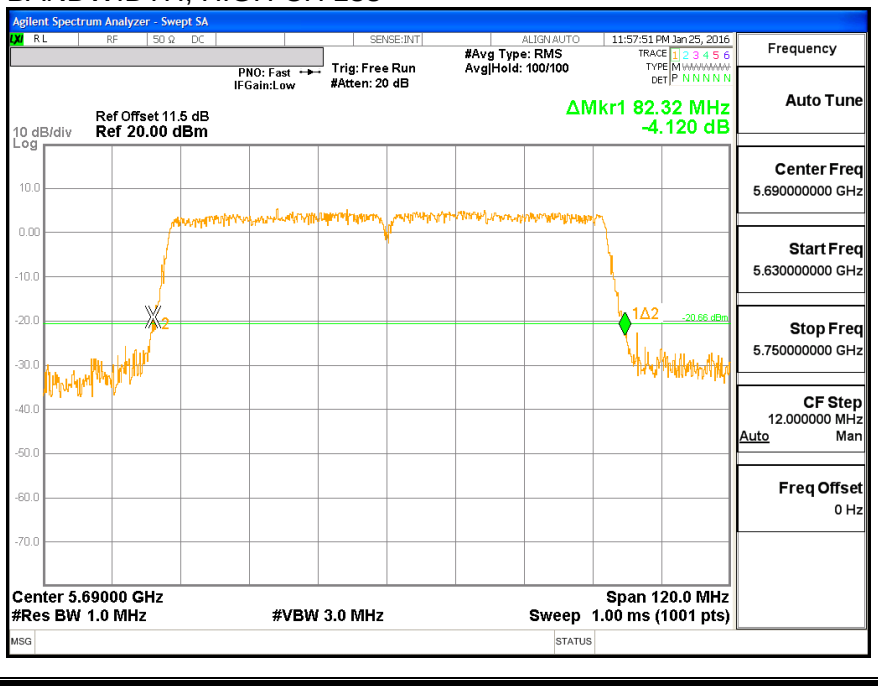
26 dB BANDWIDTH

BANDWIDTH, LOW CH



BANDWIDTH, MID CH

BANDWIDTH, HIGH CH 138



8.100.2. 99% BANDWIDTH

LIMITS

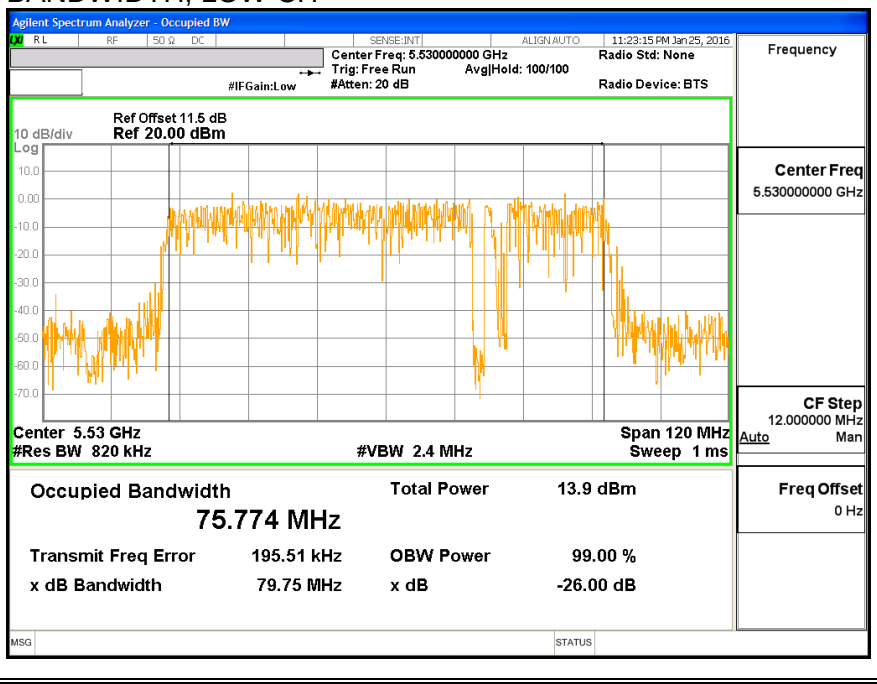
None; for reporting purposes only.

RESULTS

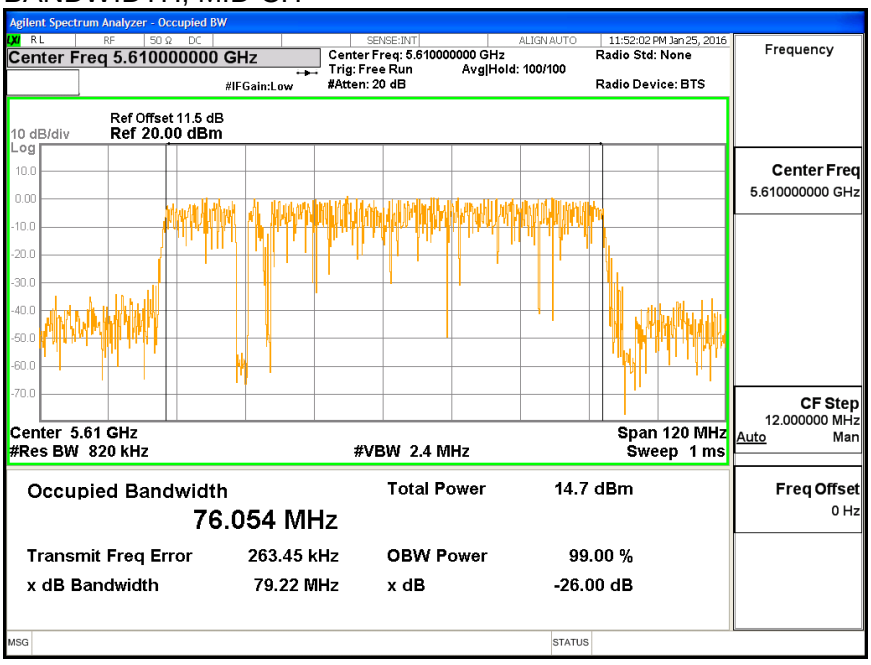
Frequency (MHz)	99% Bandwidth (MHz)
5530	75.774
5610	76.054
5690	75.733

99% BANDWIDTH

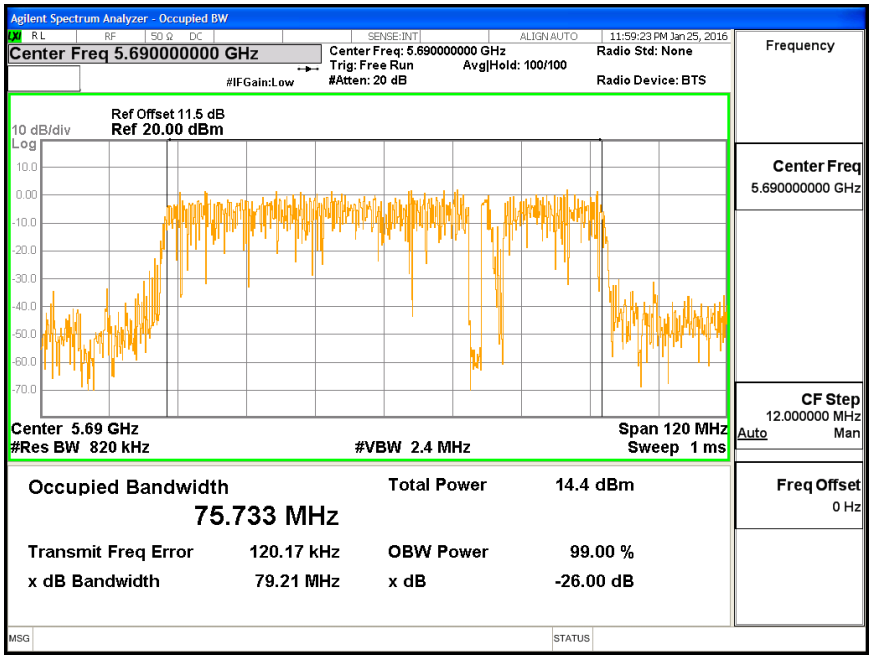
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH HIGH CH 138



8.100.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5530	14.00
Mid	5610	14.90
High	5690	14.98

8.100.4. 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 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

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.32	75.774	4.16	24.00	11.00
High	5610	82.44	76.054	4.16	24.00	11.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd PSD

Output Power Results

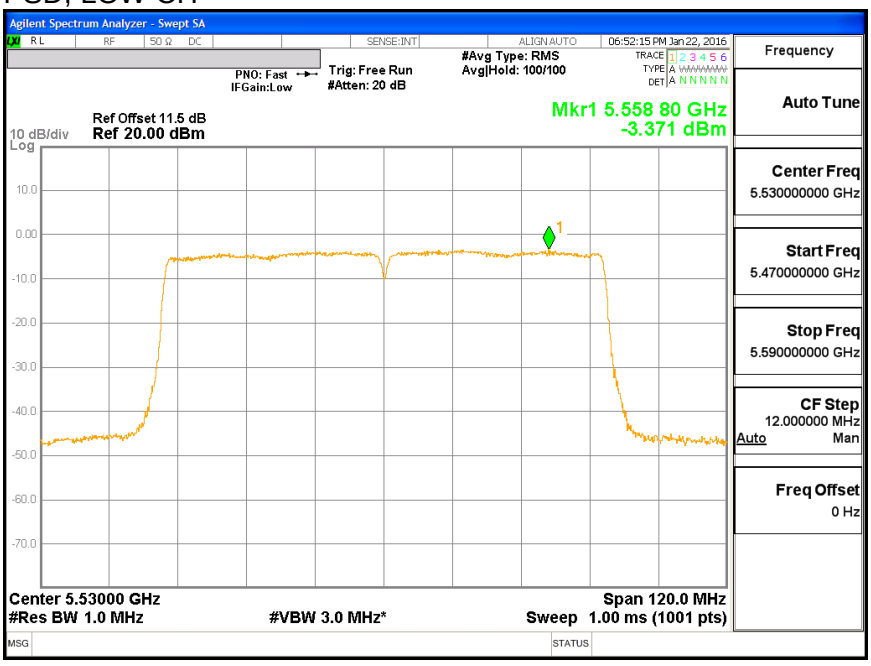
Channel	Frequency (MHz)	Antenna C Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	14.00	14.00	24.00	-10.00
High	5610	14.90	14.90	24.00	-9.10

PSD Results

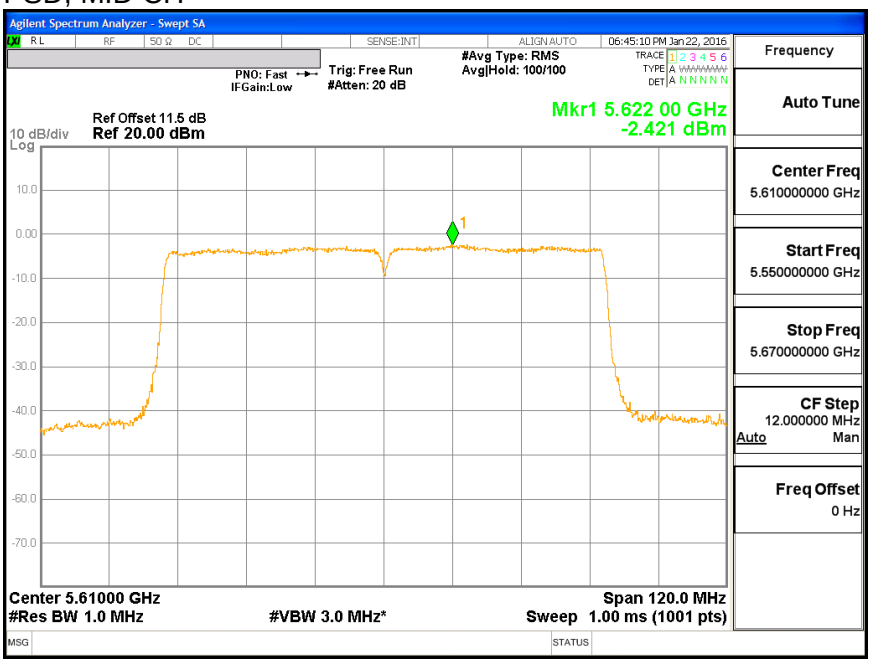
Channel	Frequency (MHz)	Antenna C Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-3.37	-3.21	11.00	-14.21
High	5610	-2.42	-2.26	11.00	-13.26

PSD,

PSD, LOW CH



PSD, MID CH



8.100.5. STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	76.16	4.16	4.16	24.00	11.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD

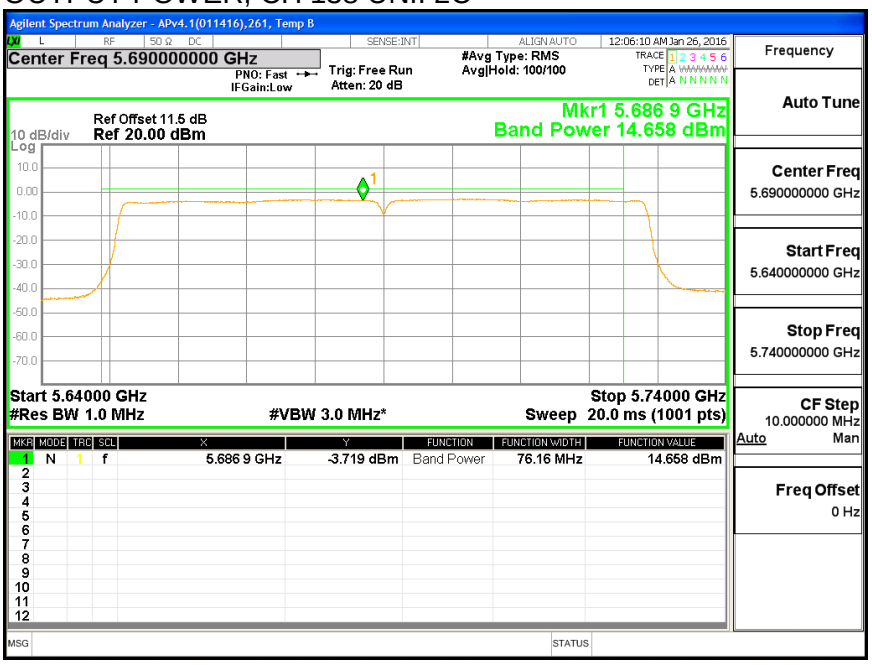
Output Power Results

Channel	Frequency (MHz)	Antenna C Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	14.66	14.82	24.00	-9.18

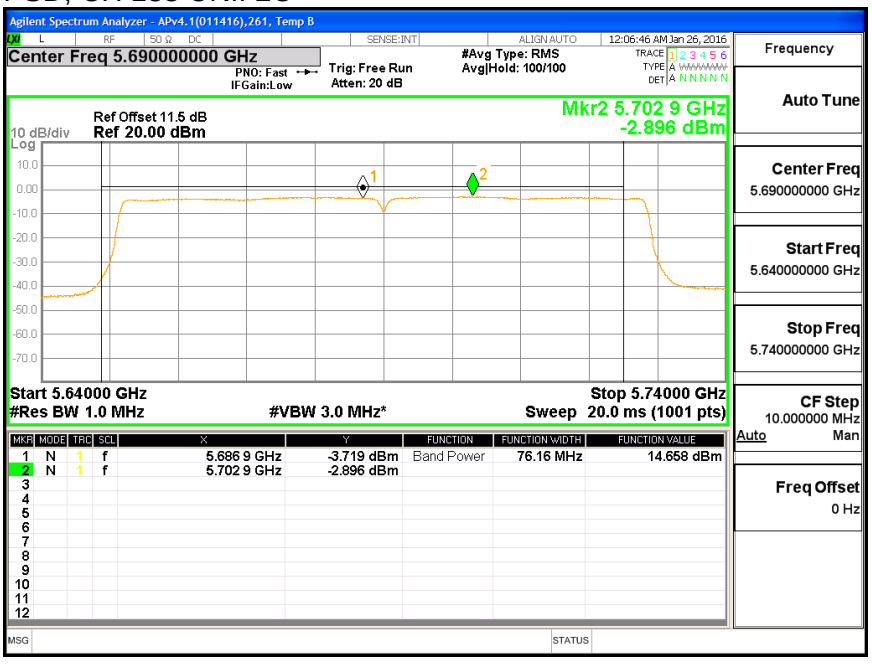
PSD Results

Channel	Frequency (MHz)	Antenna C Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-2.90	-2.74	11.00	-13.74

OUTPUT POWER, CH 138 UNII 2C



PSD, CH 138 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.14	4.16	30.00	30.00

Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD

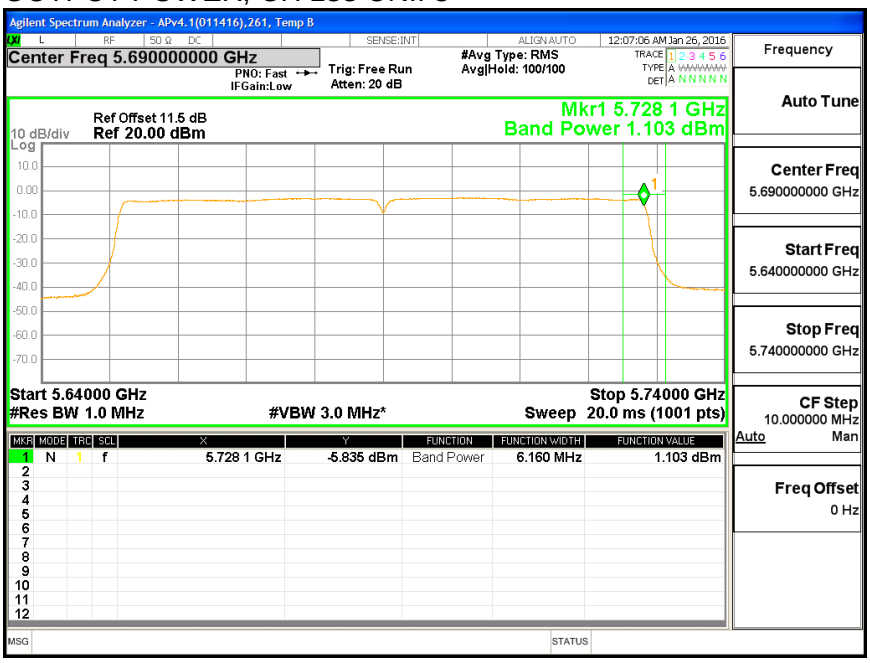
Output Power Results

Channel	Frequency (MHz)	Antenna C Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	1.10	1.26	30.00	-28.74

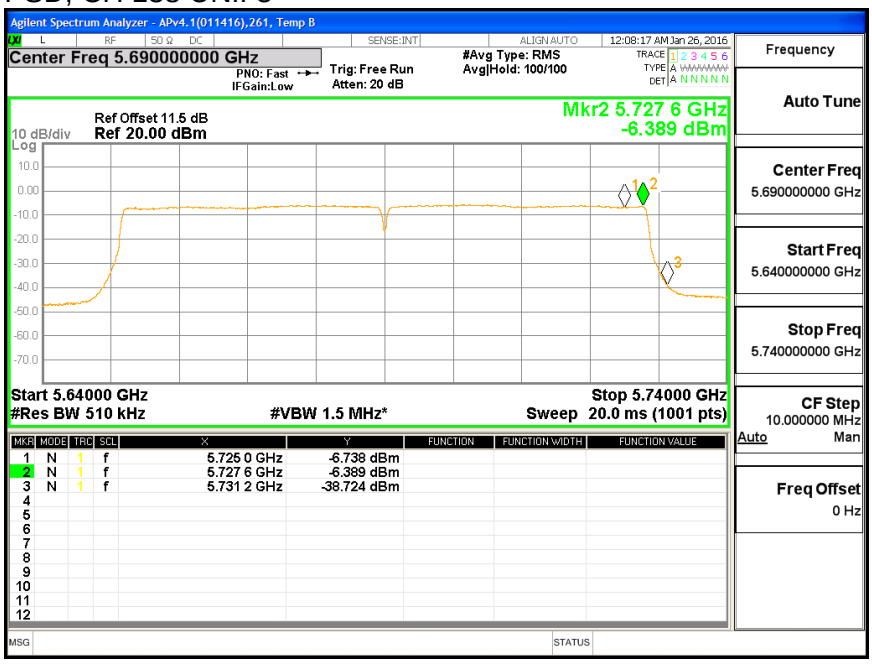
PSD Results

Channel	Frequency (MHz)	Antenna C Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-6.39	-6.23	30.00	-36.23

OUTPUT POWER, CH 138 UNII 3



PSD, CH 138 UNII 3



8.100.6. 6 dB BANDWIDTH

LIMITS

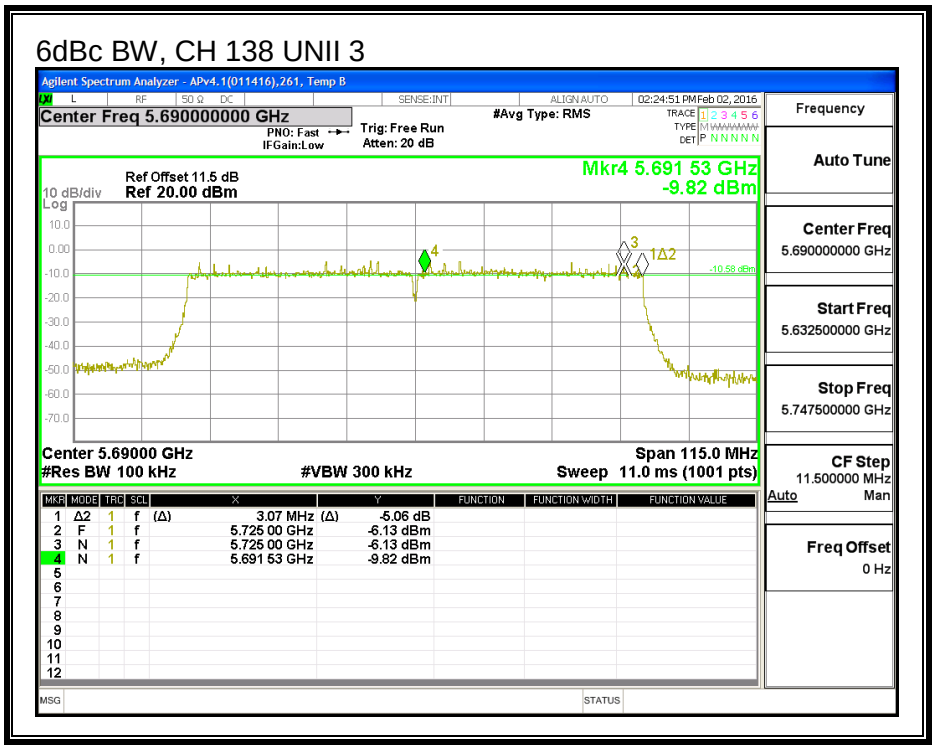
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	3.07

6 dB BANDWIDTH



8.101. 802.11ac VHT80 ANTENNA B+A CDD MODE IN THE 5.6 GHz BAND

8.101.1.1.26 dB BANDWIDTH

LIMITS

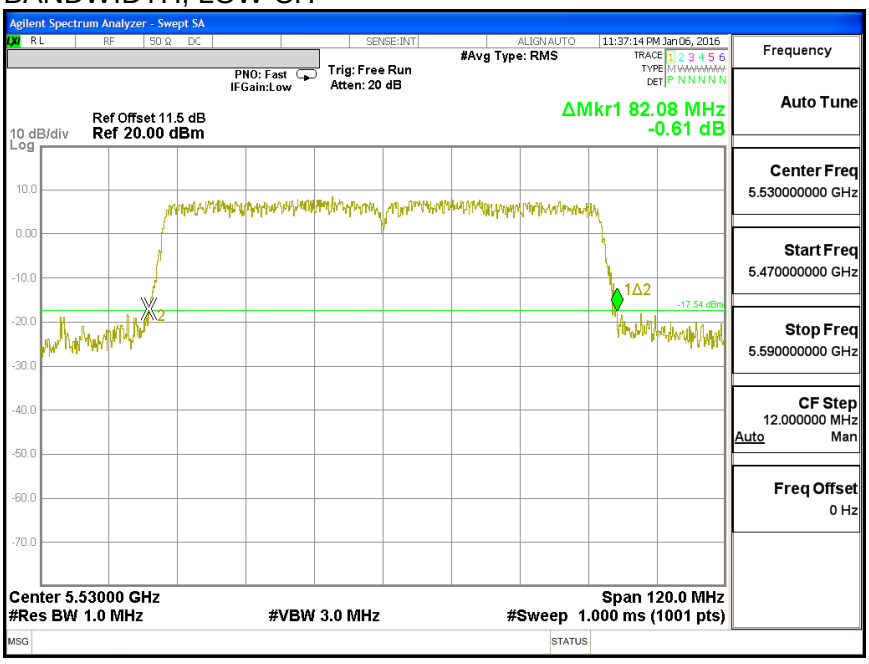
None; for reporting purposes only.

RESULTS

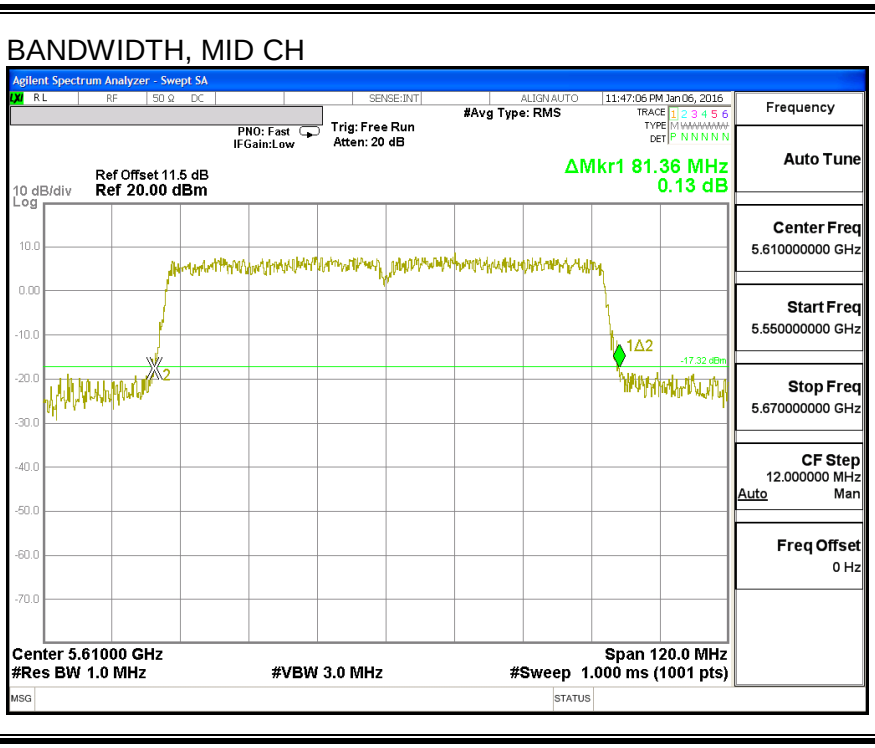
Channel	Frequency (MHz)	26 dB BW Antenna B (MHz)	26 dB BW Antenna A (MHz)
Low	5530	82.08	81.48
Mid	5610	81.36	81.24
High	5690	82.08	81.36

26 dB BANDWIDTH, ANTENNA - B

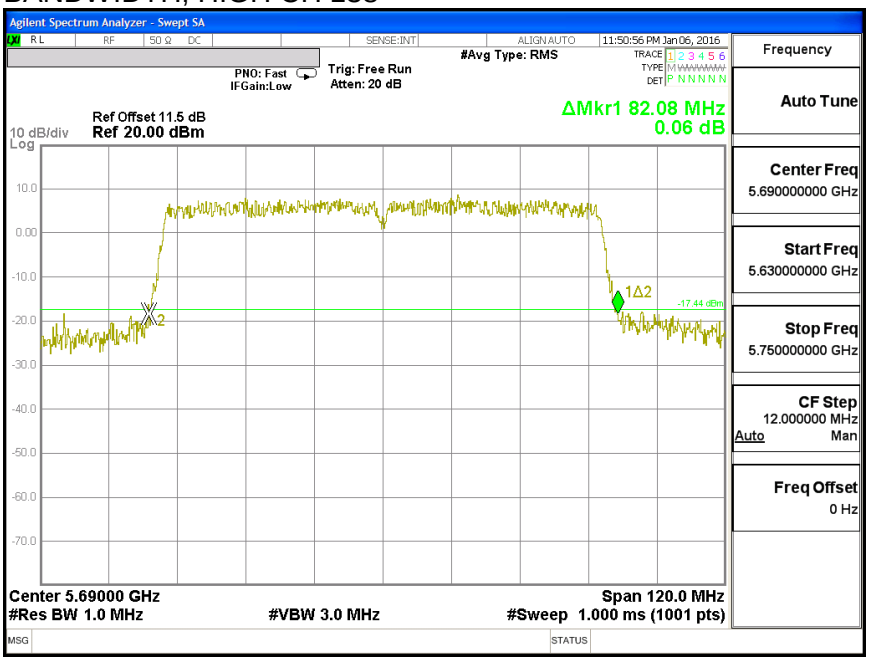
BANDWIDTH, LOW CH



BANDWIDTH, MID CH

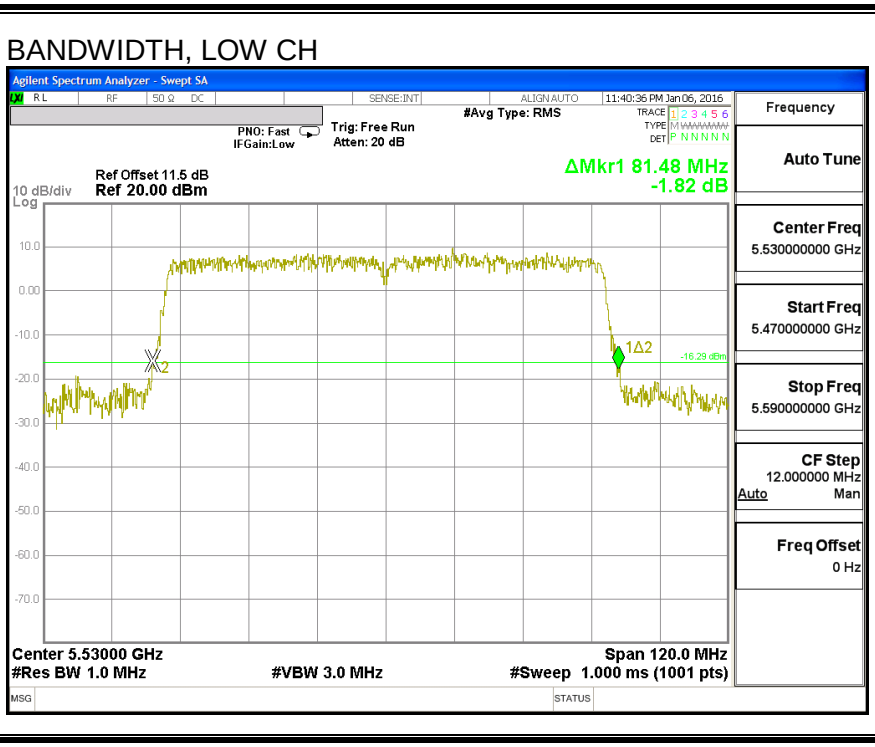


BANDWIDTH, HIGH CH 138

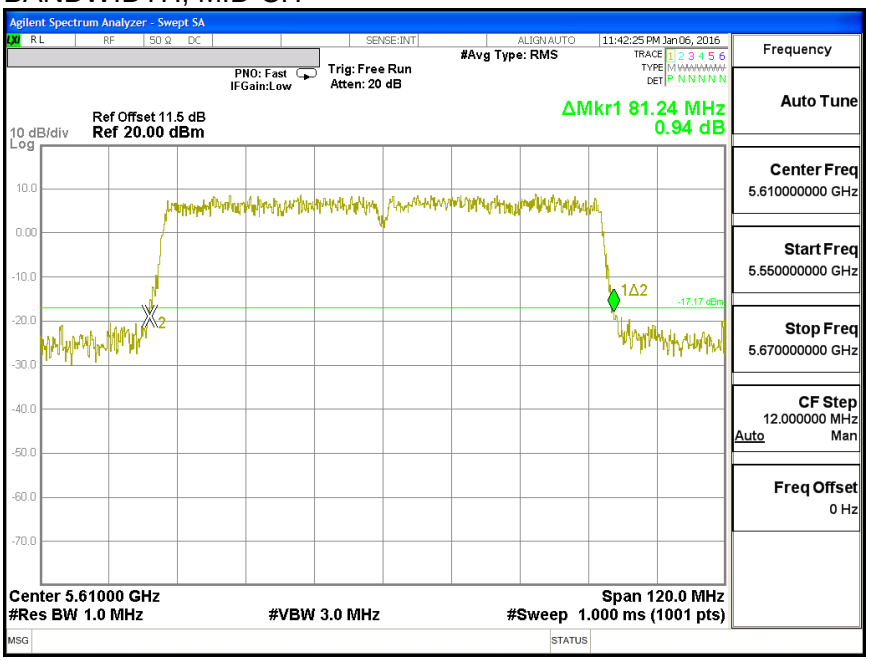


26 dB BANDWIDTH, ANTENNA - A

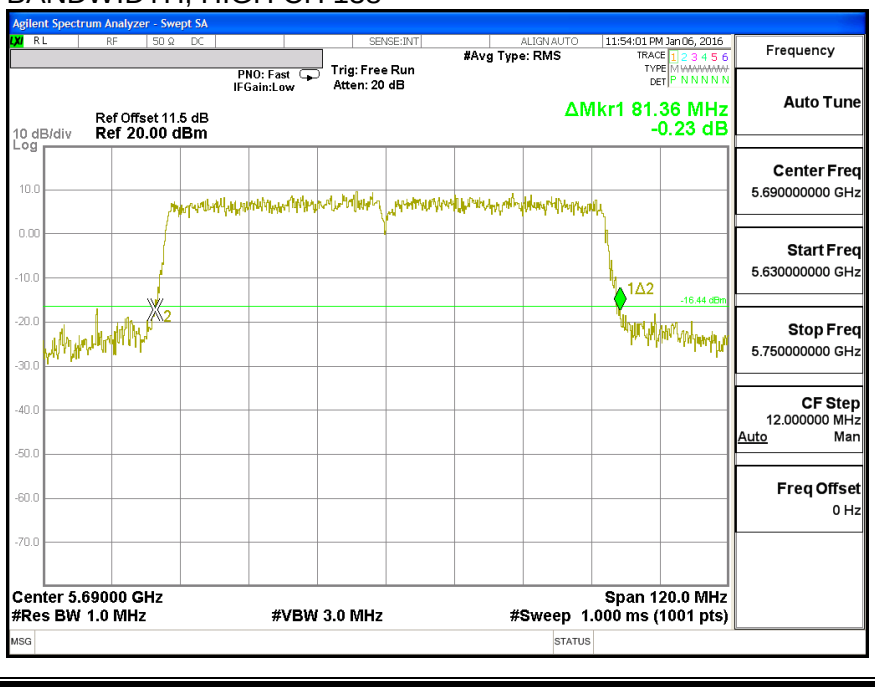
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH, HIGH CH 138



8.101.2. 99% BANDWIDTH

LIMITS

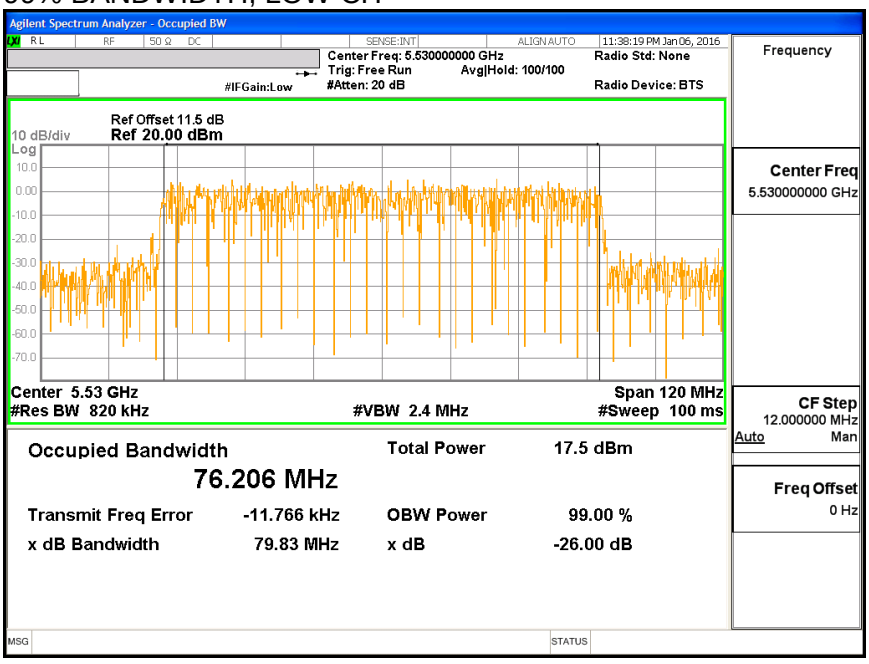
None; for reporting purposes only.

RESULTS

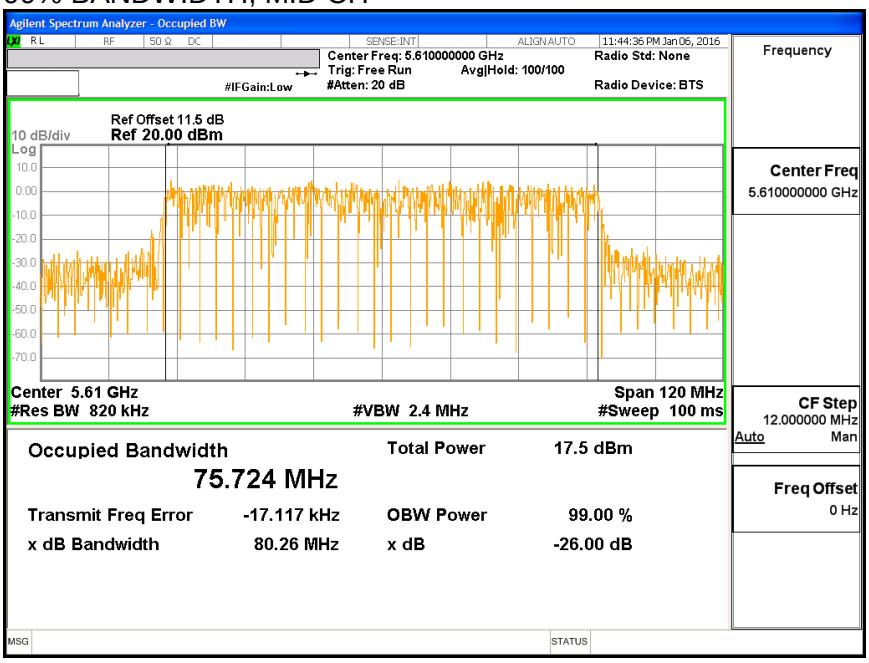
Channel	Frequency (MHz)	99% BW Antenna B (MHz)	99% BW Antenna A (MHz)
Low	5530	76.206	75.496
Mid	5610	75.724	75.664
High	5690	75.364	75.558

99% BANDWIDTH, ANTENNA - B

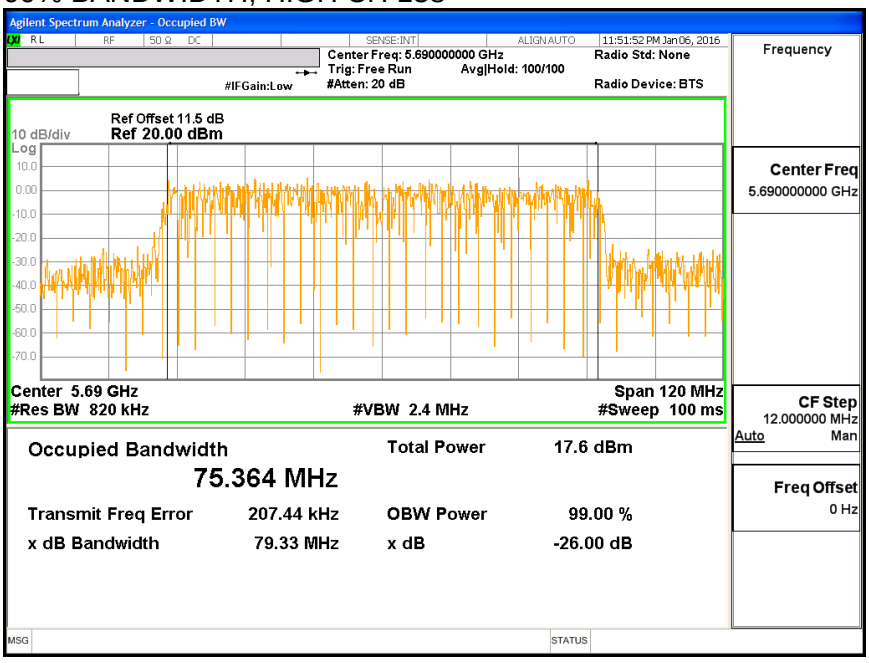
99% BANDWIDTH, LOW CH



99% BANDWIDTH, MID CH

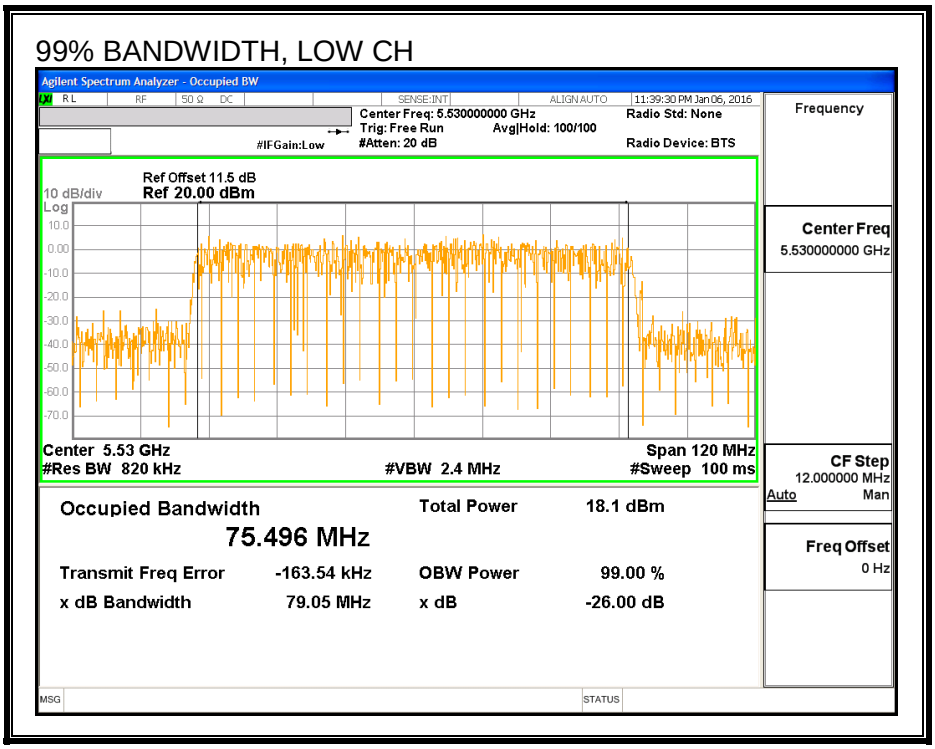


99% BANDWIDTH, HIGH CH 138

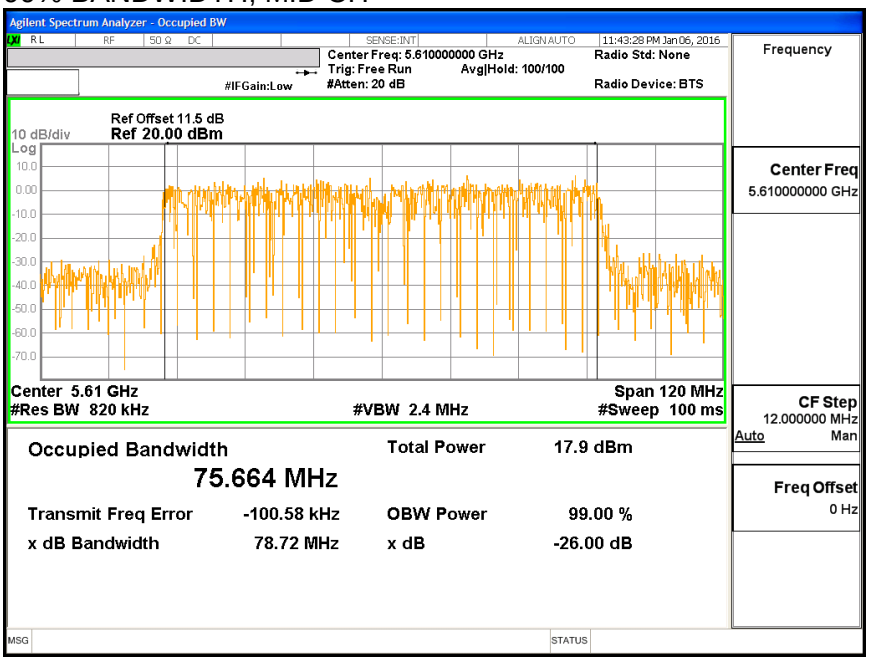


99% BANDWIDTH, ANTENNA - A

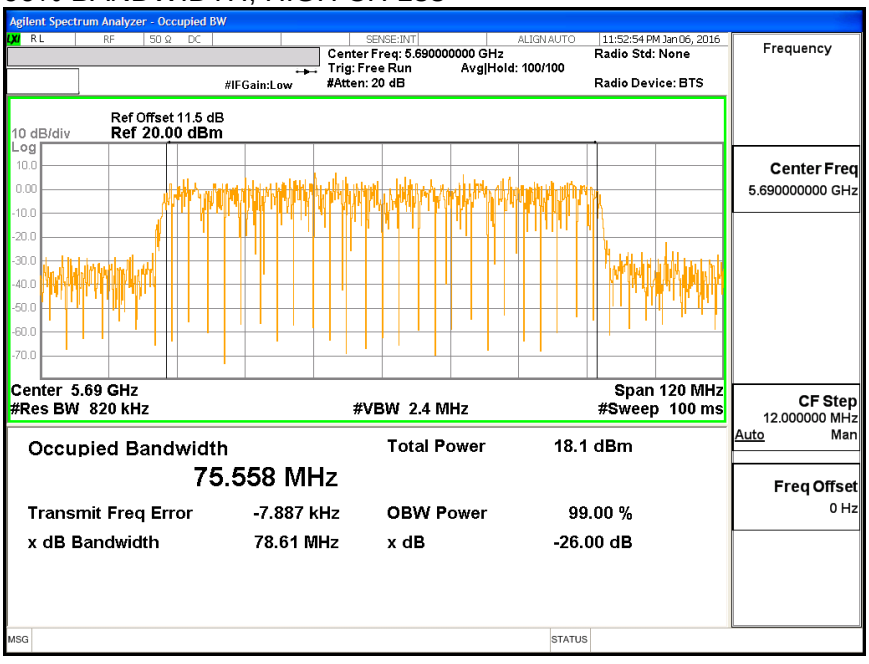
99% BANDWIDTH, LOW CH



99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH 138



8.101.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Antenna B Power (dBm)	Antenna A Power (dBm)	Total Power (dBm)
Low	5530	12.80	12.79	15.81
Mid	5610	16.50	15.93	19.23
High	5690	16.50	15.93	19.23

8.101.4. 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 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 B Gain (dBi)	Antenna A Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.83	4.03	3.47

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

Antenna B Gain (dBi)	Antenna A Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.83	4.03	6.46

RESULTS

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.08	76.206	3.47	6.46	24.00	10.54
High	5610	81.36	75.724	3.47	6.46	24.00	10.54

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

Output Power Results

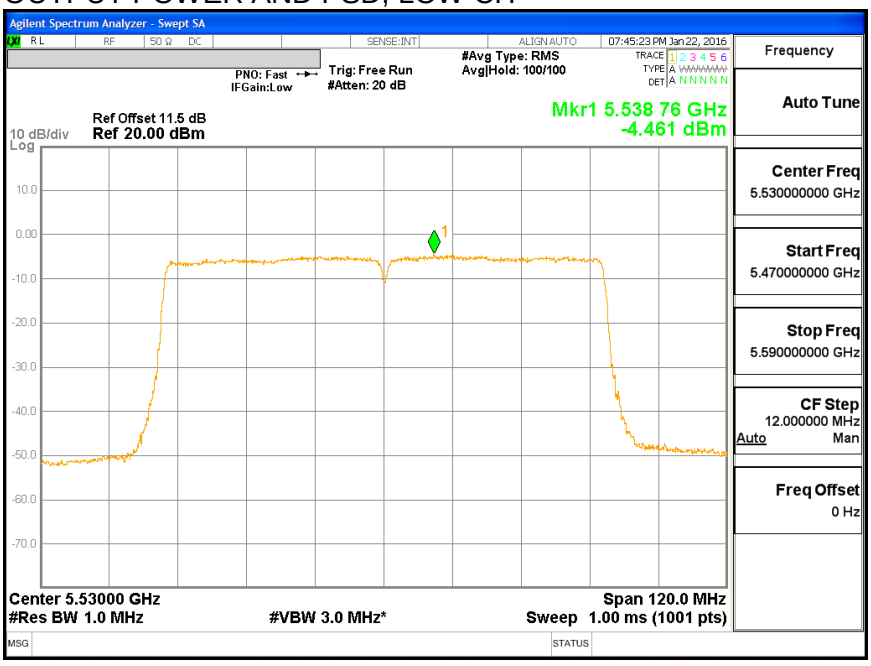
Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	12.80	12.79	15.81	24.00	-8.19
High	5610	16.50	15.93	19.23	24.00	-4.77

PSD Results

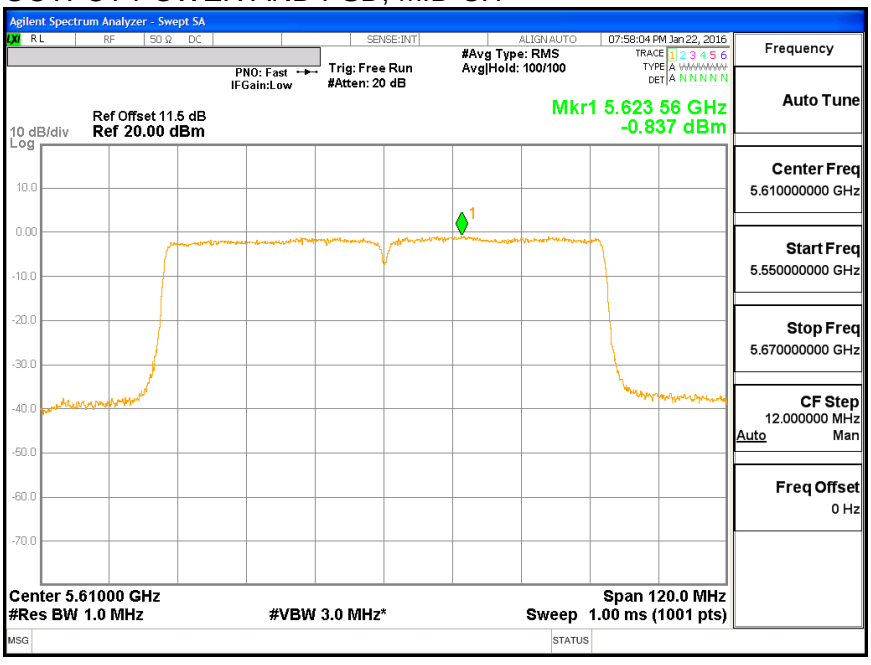
Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-4.46	-4.44	-1.24	10.54	-11.78
High	5610	-0.84	-1.24	2.18	10.54	-8.36

OUTPUT POWER AND PSD, ANTENNA - B

OUTPUT POWER AND PSD, LOW CH

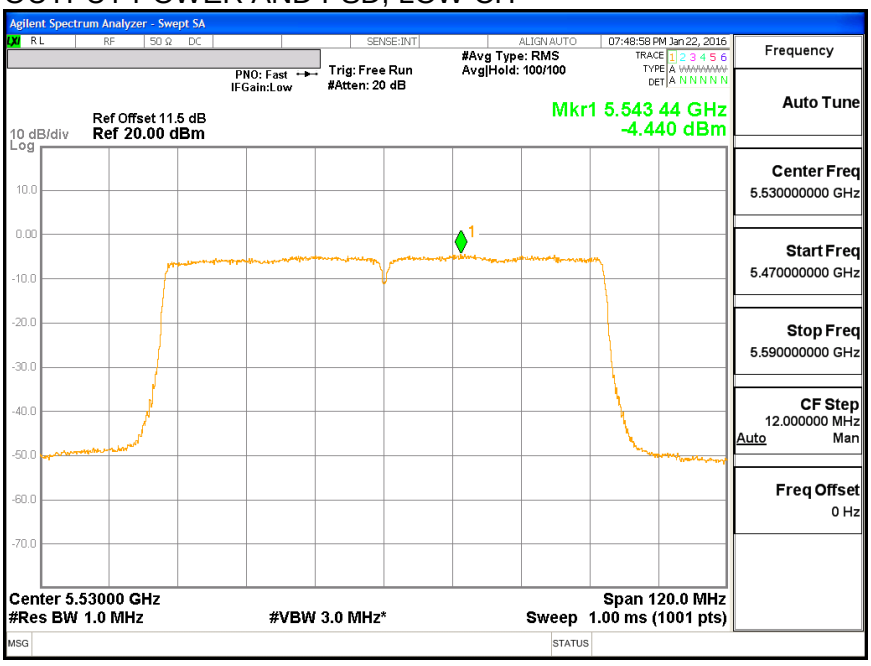


OUTPUT POWER AND PSD, MID CH

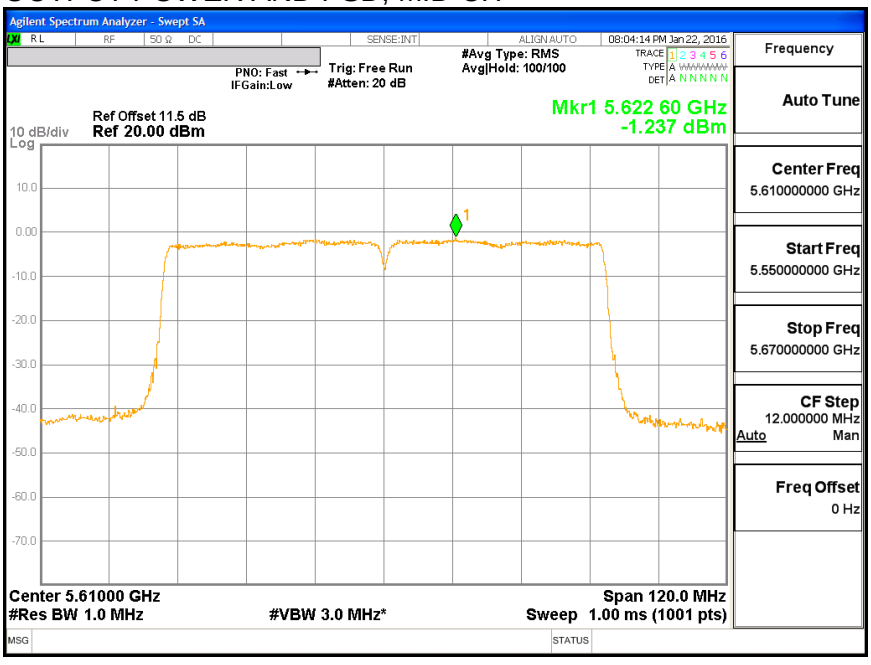


OUTPUT POWER AND PSD, ANTENNA - A

OUTPUT POWER AND PSD, LOW CH



OUTPUT POWER AND PSD, MID CH



8.101.5. STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	76.04	3.47	6.46	24.00	10.54

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

Output Power Results

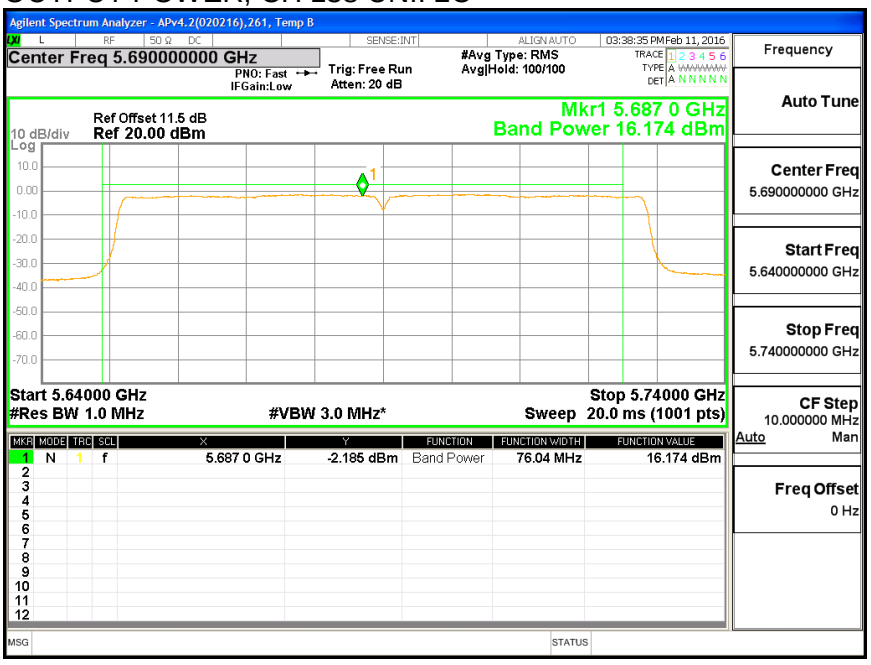
Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	16.17	15.74	19.17	24.00	-4.83

PSD Results

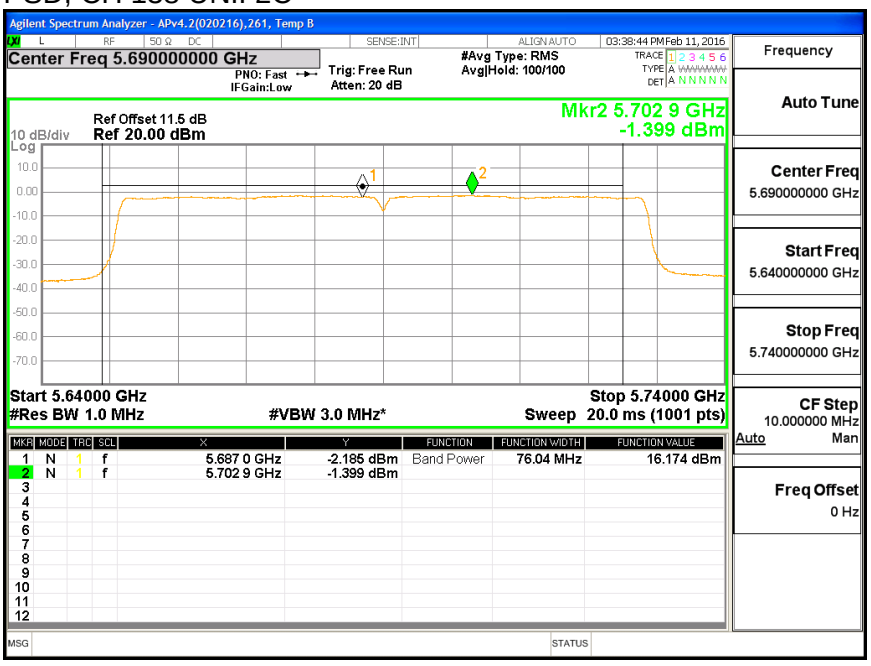
Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-1.40	-1.87	1.58	10.54	-8.96

ANTENNA - B

OUTPUT POWER, CH 138 UNII 2C

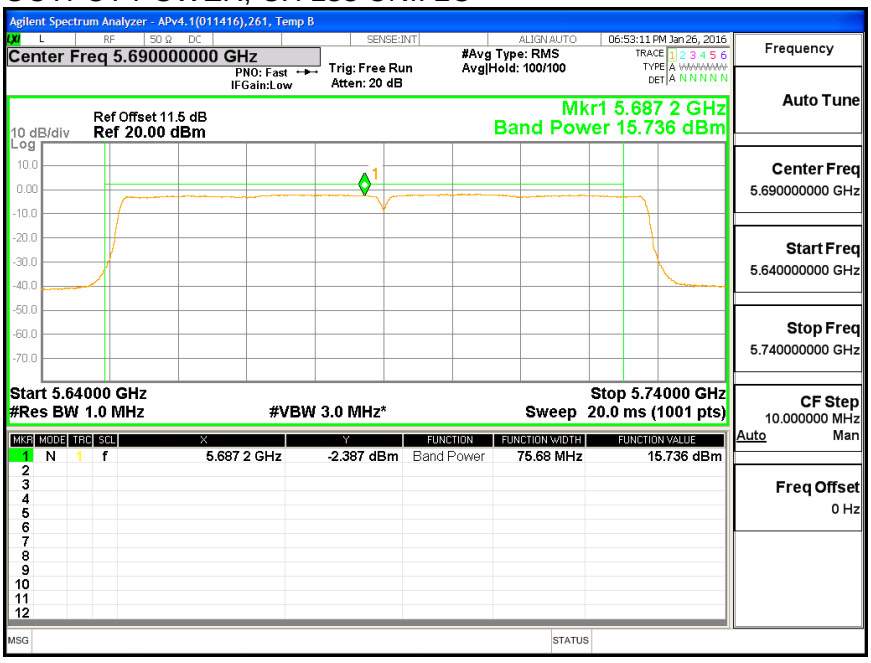


PSD, CH 138 UNII 2C

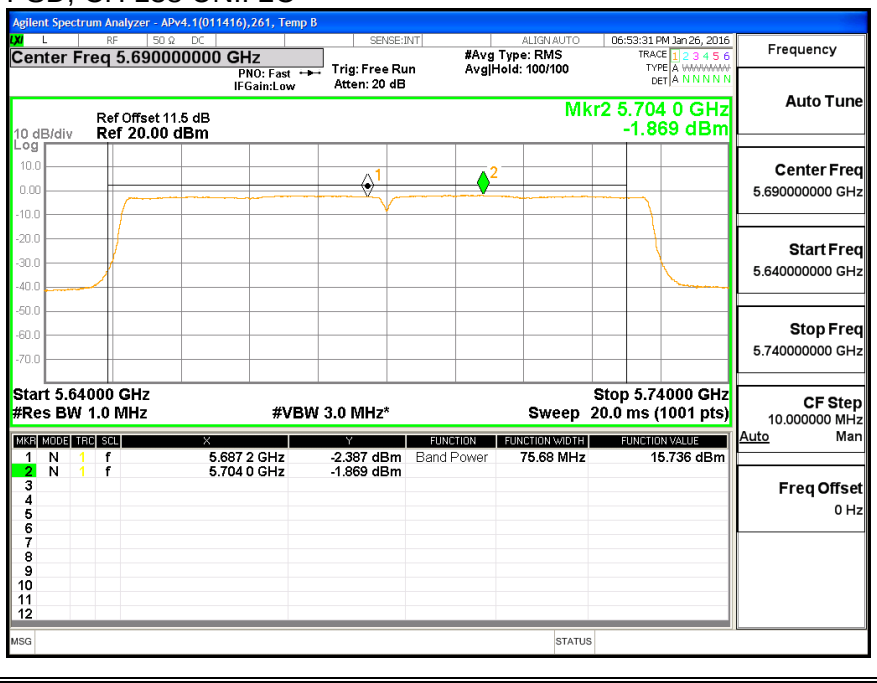


ANTENNA - A

OUTPUT POWER, CH 138 UNII 2C



PSD, CH 138 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.04	3.47	6.46	30.00	29.54

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

Output Power Results

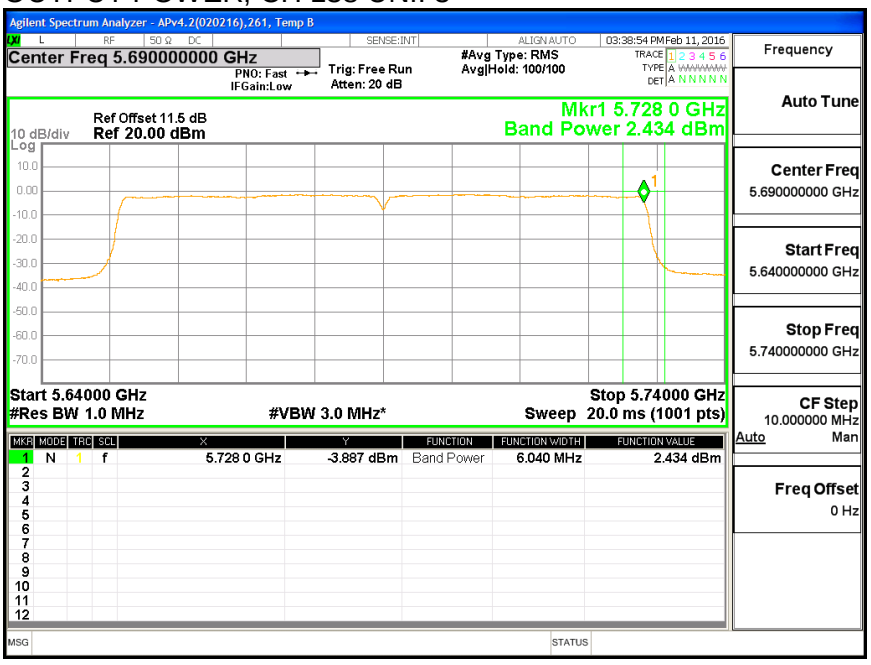
Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Antenna A Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	2.43	2.00	5.43	30.00	-24.57

PSD Results

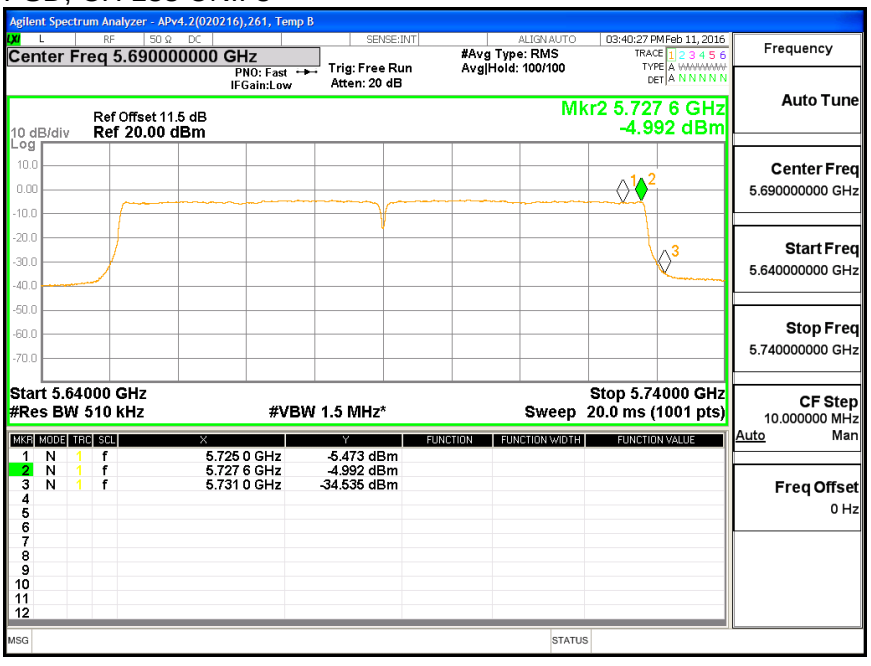
Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Antenna A Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-4.99	-5.43	-1.99	29.54	-31.53

ANTENNA - B

OUTPUT POWER, CH 138 UNII 3

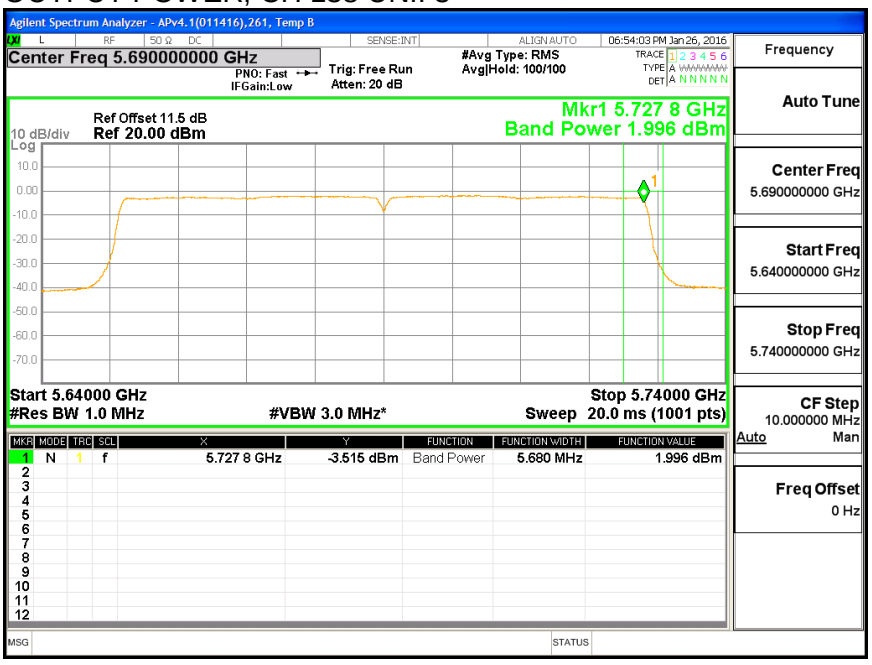


PSD, CH 138 UNII 3

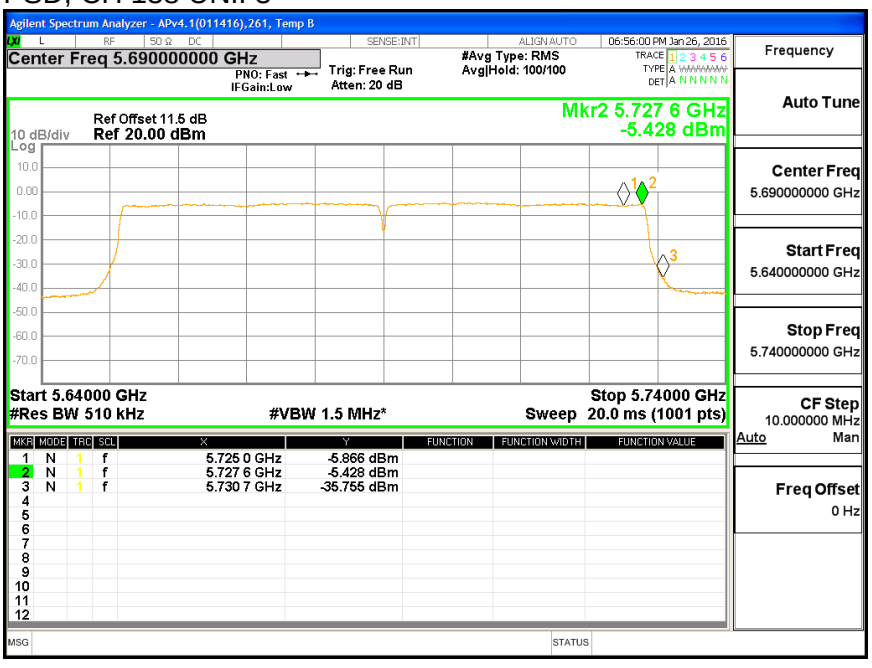


ANTENNA - A

OUTPUT POWER, CH 138 UNII 3



PSD, CH 138 UNII 3



8.101.6. 6 dB BANDWIDTH

LIMITS

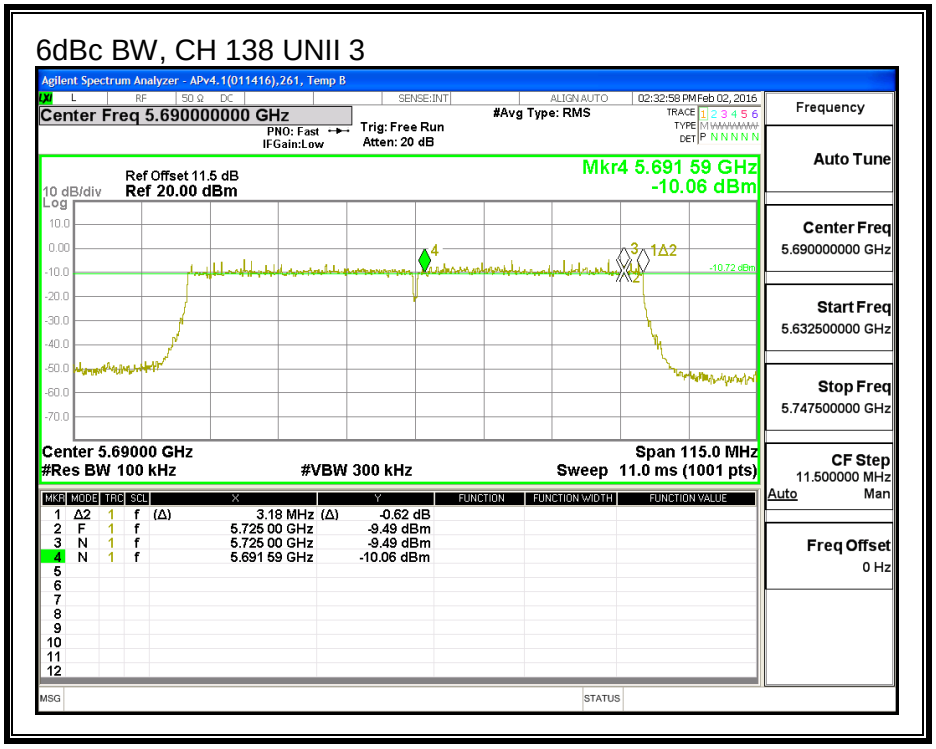
FCC §15.407 (e)

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

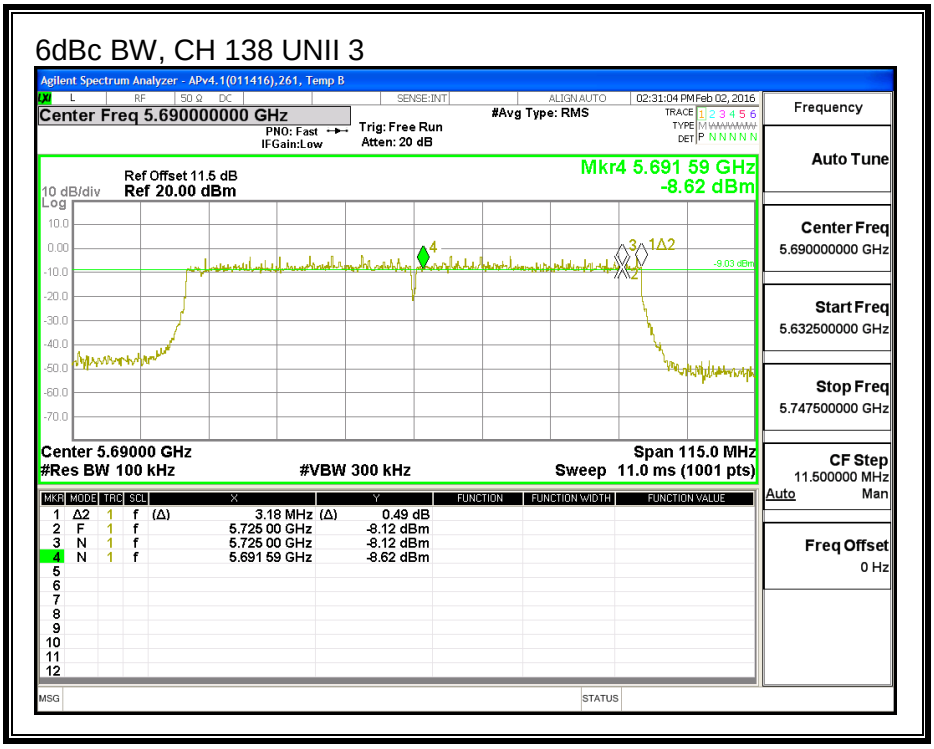
RESULTS

Channel	Frequency (MHz)	6 dB BW Antenna B (MHz)	6 dB BW Antenna A (MHz)
High	5690	3.18	3.18

ANTENNA - B



ANTENNA – A



8.102. 802.11ac VHT80 ANTENNA A+C CDD MODE IN THE 5.6 GHz BAND

8.102.1.1.26 dB BANDWIDTH

LIMITS

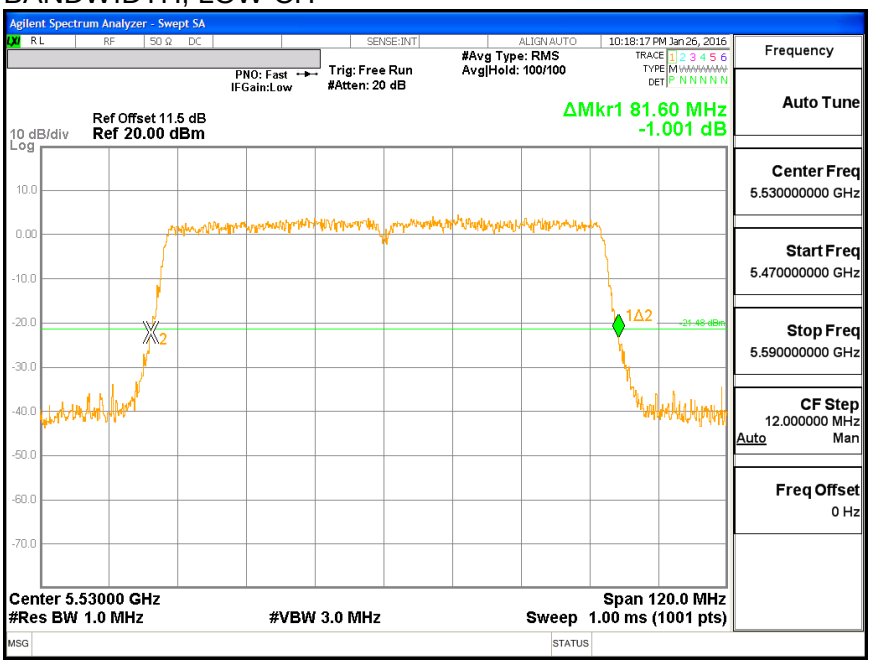
None; for reporting purposes only.

RESULTS

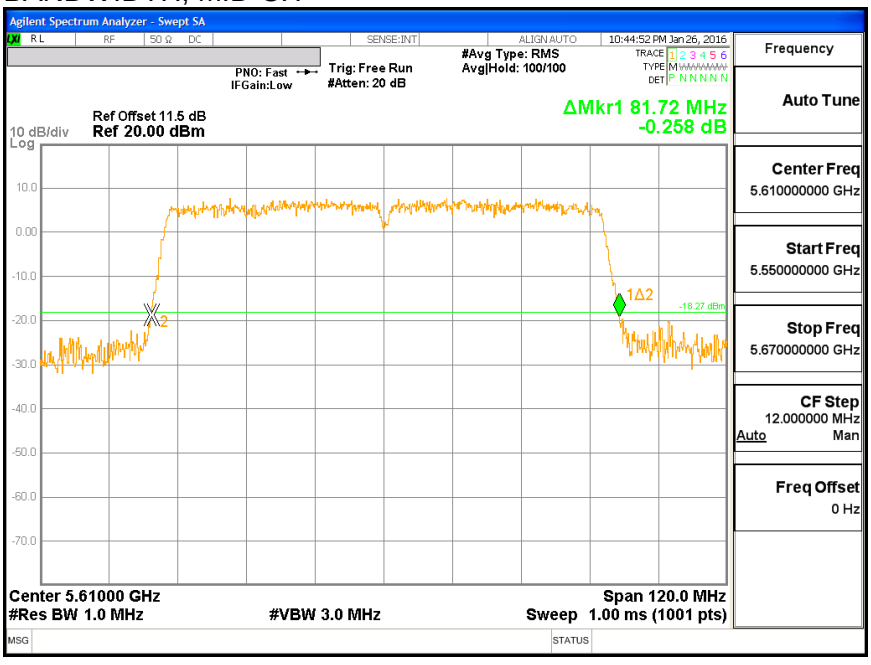
Channel	Frequency (MHz)	26 dB BW Antenna A (MHz)	26 dB BW Antenna C (MHz)
Low	5530	81.60	82.20
Mid	5610	81.72	81.96
High	5690	81.12	81.60

26 dB BANDWIDTH, ANTENNA - A

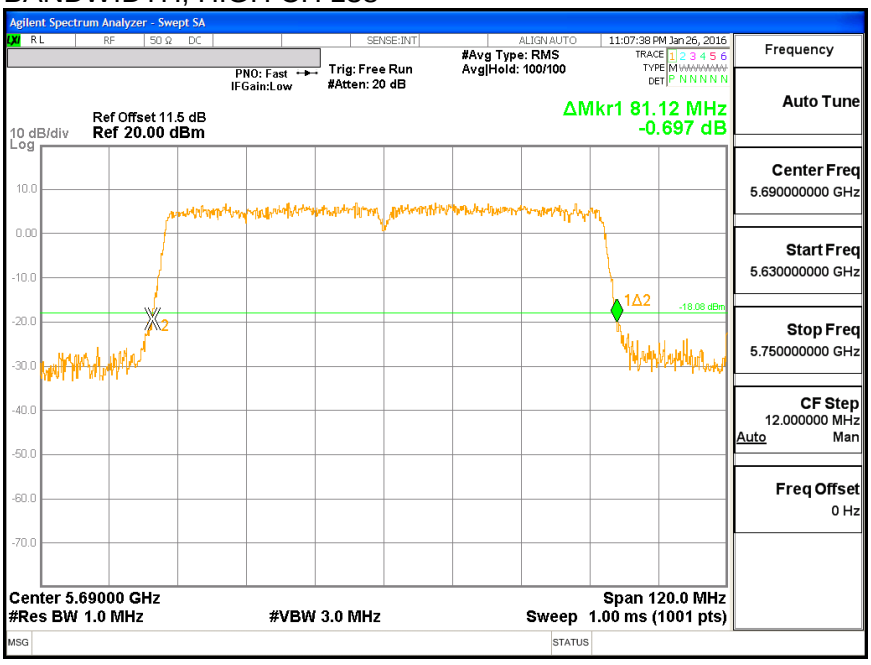
BANDWIDTH, LOW CH



BANDWIDTH, MID CH

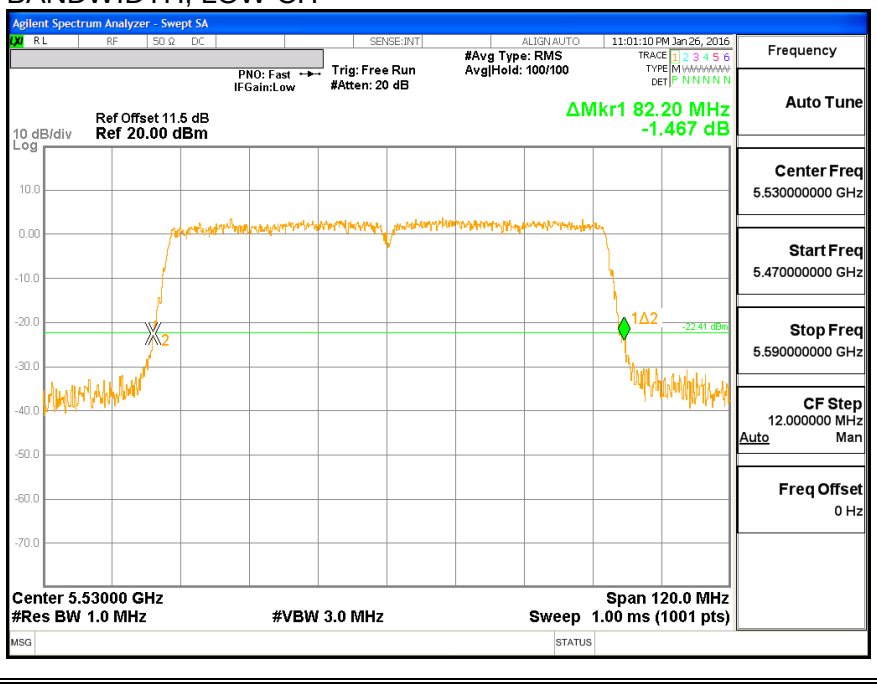


BANDWIDTH, HIGH CH 138

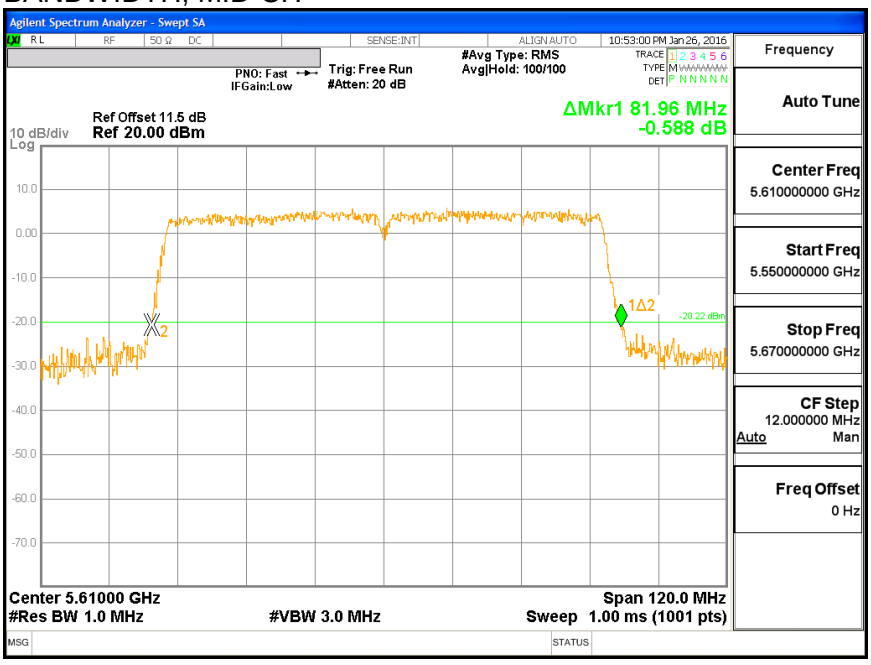


26 dB BANDWIDTH, ANTENNA - C

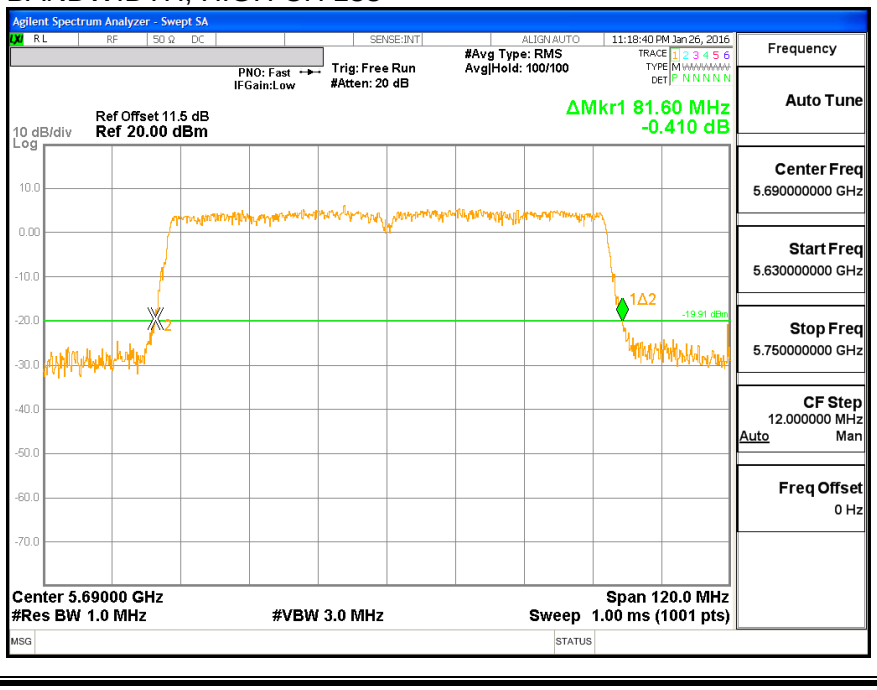
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH, HIGH CH 138



8.102.2. 99% BANDWIDTH

LIMITS

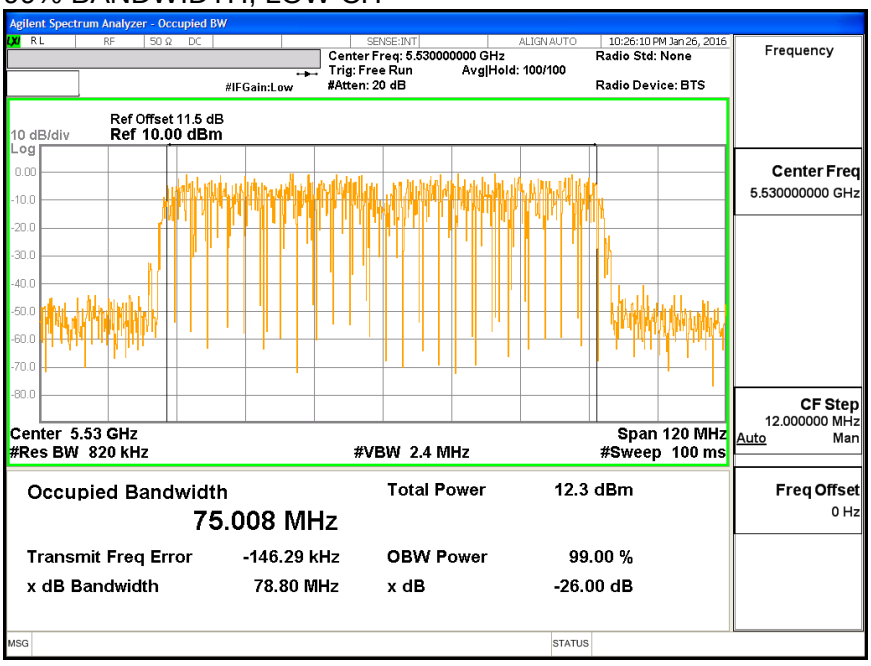
None; for reporting purposes only.

RESULTS

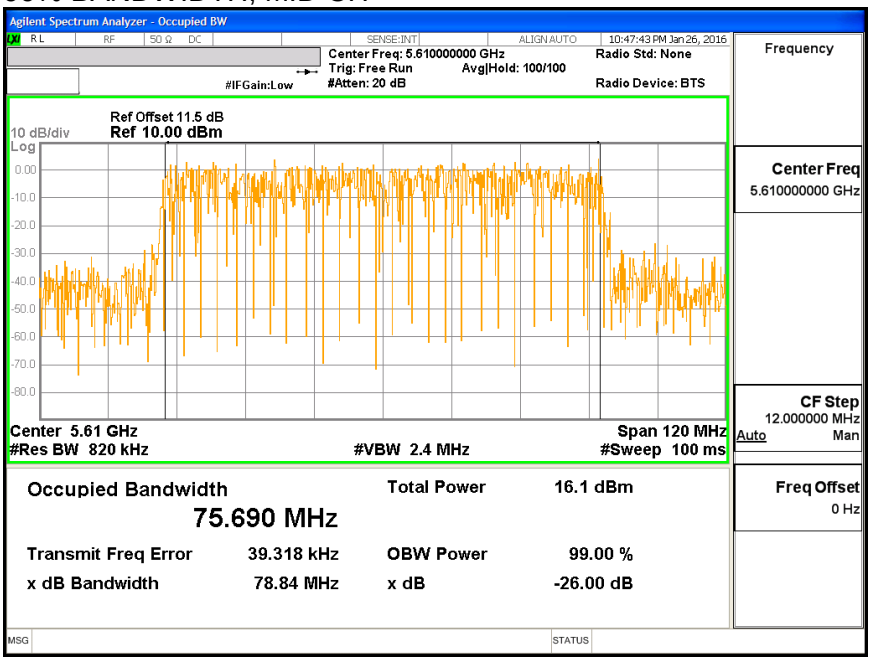
Channel	Frequency (MHz)	99% BW Antenna A (MHz)	99% BW Antenna C (MHz)
Low	5530	75.008	75.892
Mid	5610	75.690	76.068
High	5690	75.777	75.759

99% BANDWIDTH, ANTENNA - A

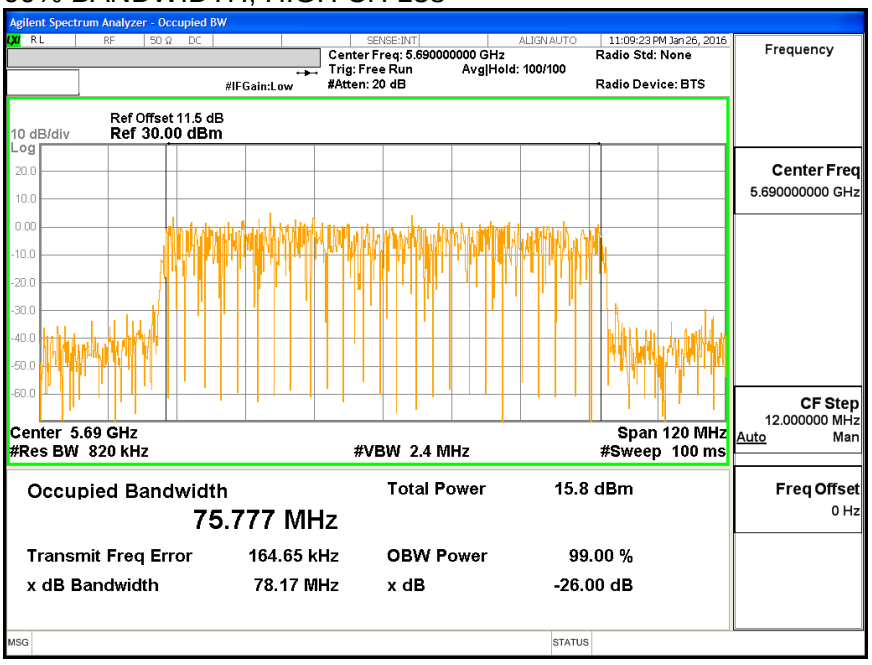
99% BANDWIDTH, LOW CH



99% BANDWIDTH, MID CH

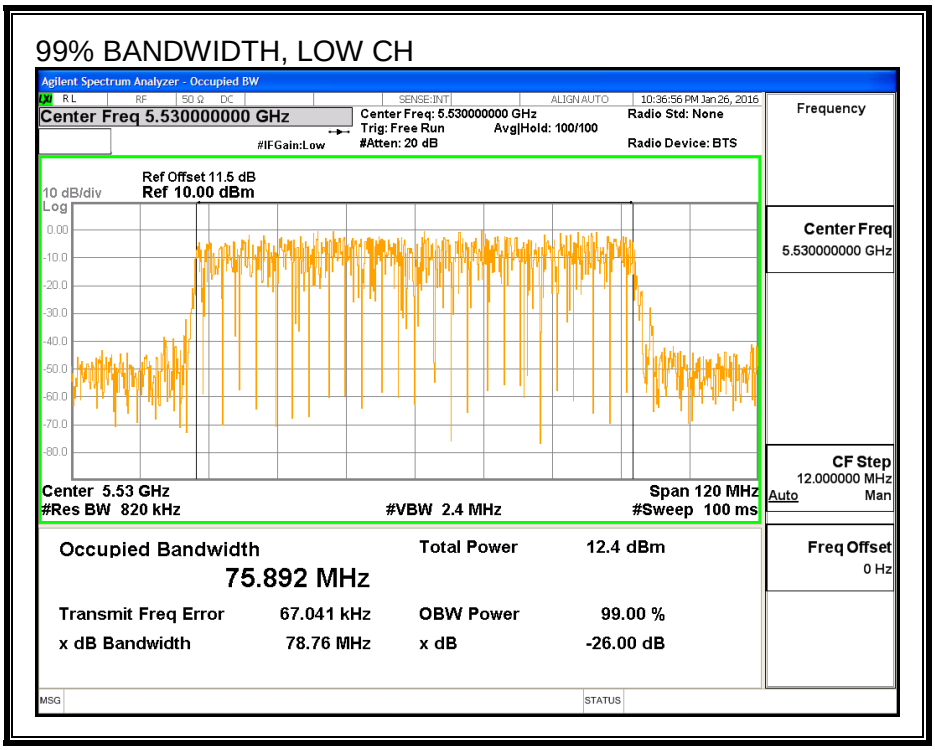


99% BANDWIDTH, HIGH CH 138

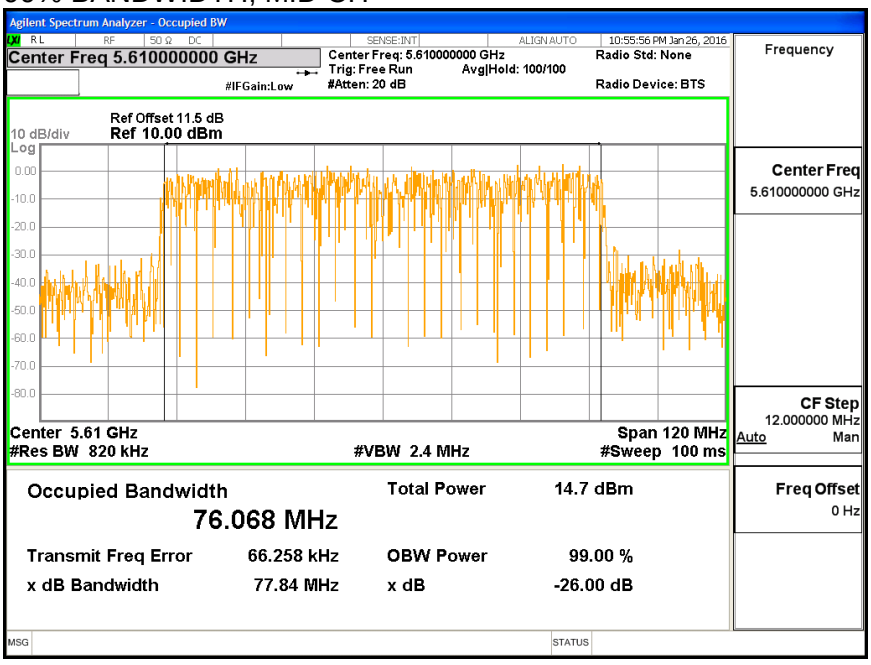


99% BANDWIDTH, ANTENNA - C

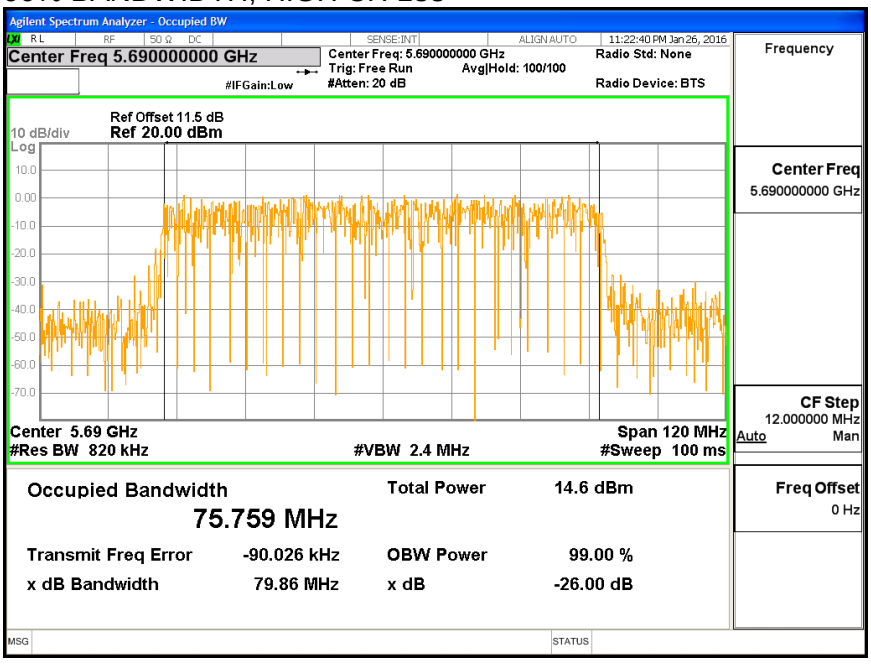
99% BANDWIDTH, LOW CH



99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH 138



8.102.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Antenna A Power (dBm)	Antenna C Power (dBm)	Total Power (dBm)
Low	5530	12.90	12.99	15.96
Mid	5610	15.86	14.88	18.41
High	5690	15.88	14.93	18.44

8.102.4. 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 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 Gain (dBi)	Antenna C Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
4.03	4.16	4.10

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

Antenna A Gain (dBi)	Antenna C Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.03	4.16	7.11

RESULTS

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.20	75.892	4.10	7.11	24.00	9.89
High	5610	81.96	76.068	4.10	7.11	24.00	9.89

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

Output Power Results

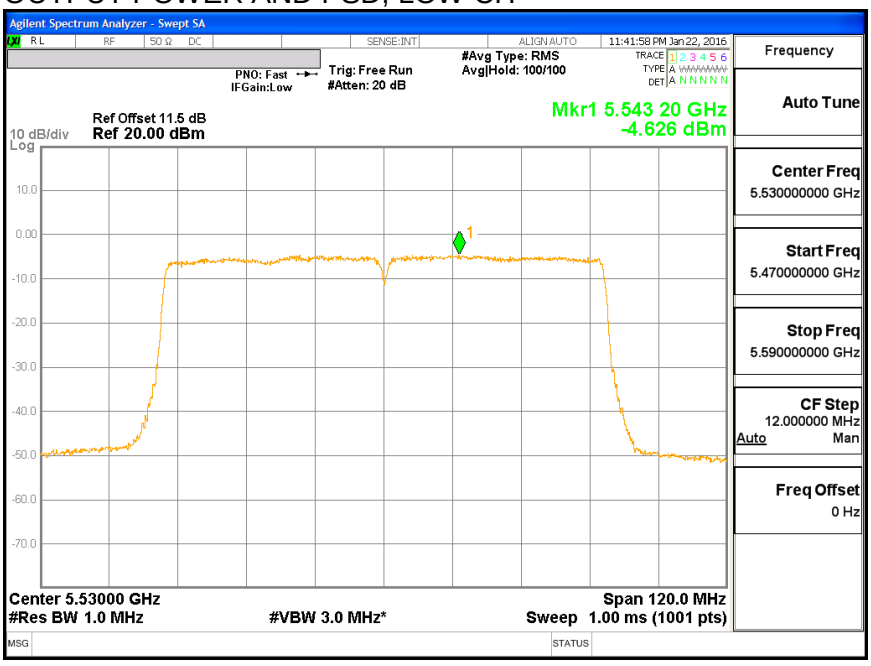
Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna C Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	12.90	12.99	15.96	24.00	-8.04
High	5610	15.86	14.88	18.41	24.00	-5.59

PSD Results

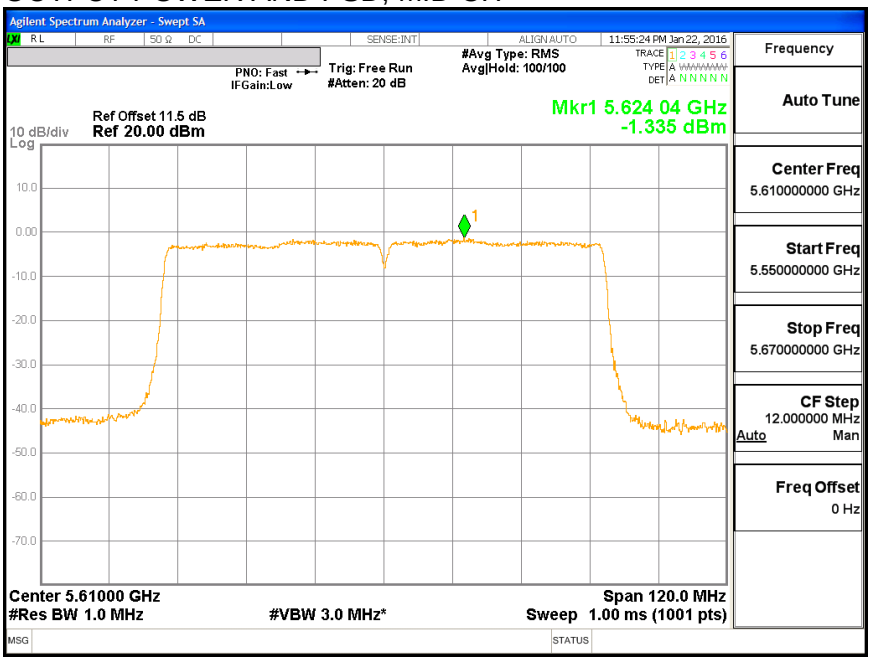
Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna C Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-4.63	-4.59	-1.40	9.89	-11.29
High	5610	-1.34	-2.36	1.39	9.89	-8.50

OUTPUT POWER AND PSD, ANTENNA - A

OUTPUT POWER AND PSD, LOW CH

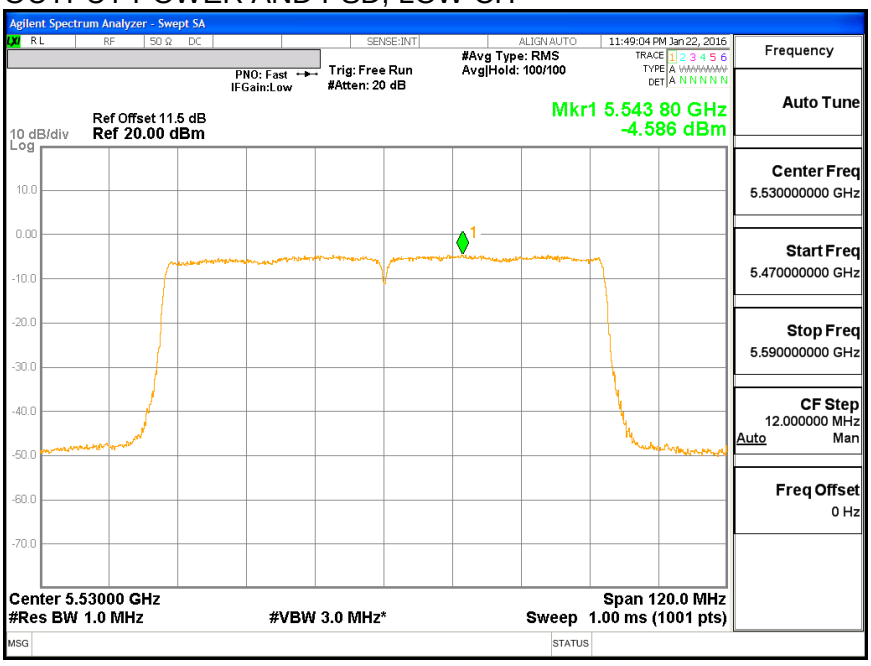


OUTPUT POWER AND PSD, MID CH

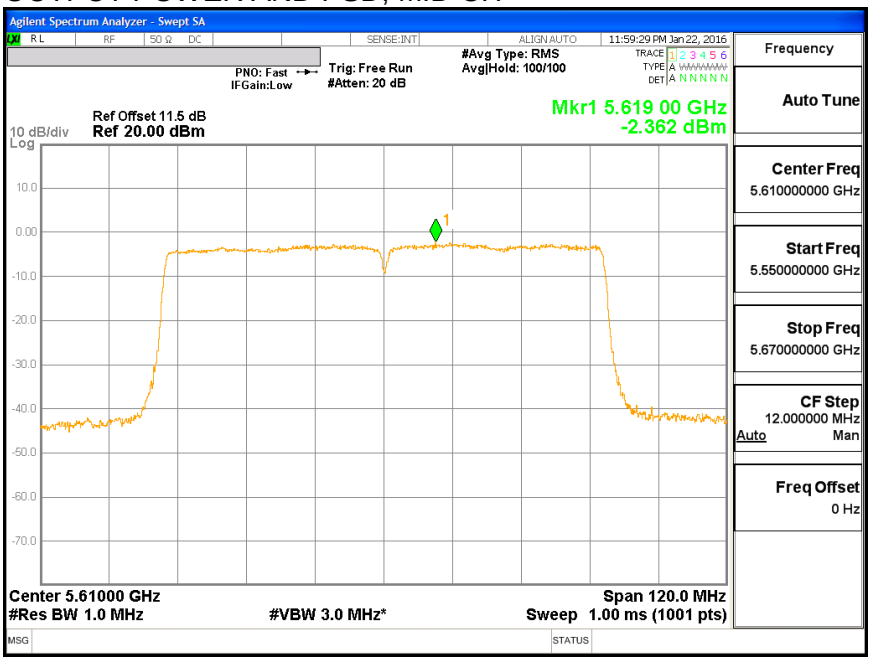


OUTPUT POWER AND PSD, ANTENNA - C

OUTPUT POWER AND PSD, LOW CH



OUTPUT POWER AND PSD, MID CH



8.102.5. STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	75.80	4.10	7.11	24.00	9.89

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

Output Power Results

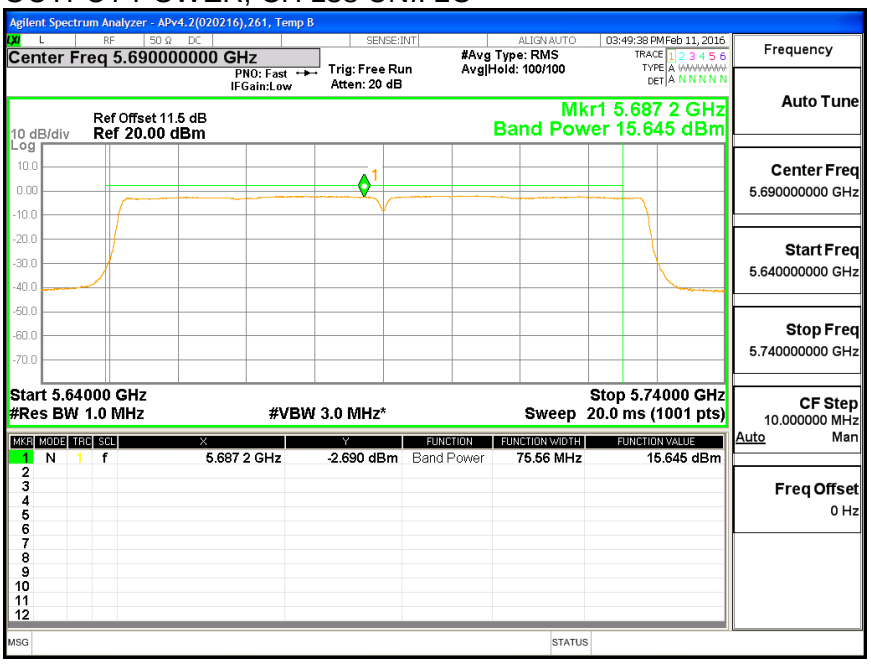
Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna C Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	15.65	14.62	18.37	24.00	-5.63

PSD Results

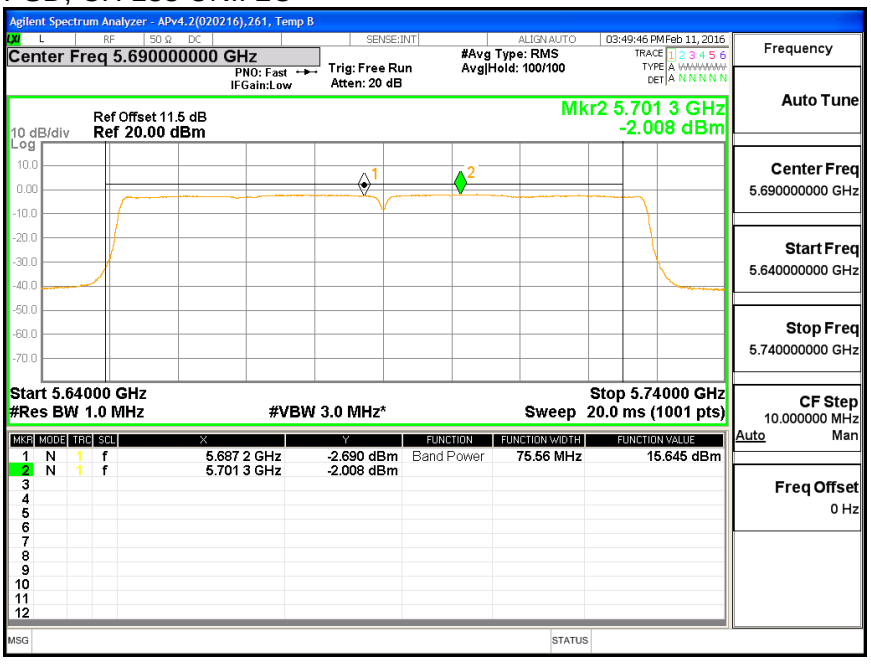
Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna C Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-2.01	-2.97	0.75	9.89	-9.14

ANTENNA - A

OUTPUT POWER, CH 138 UNII 2C

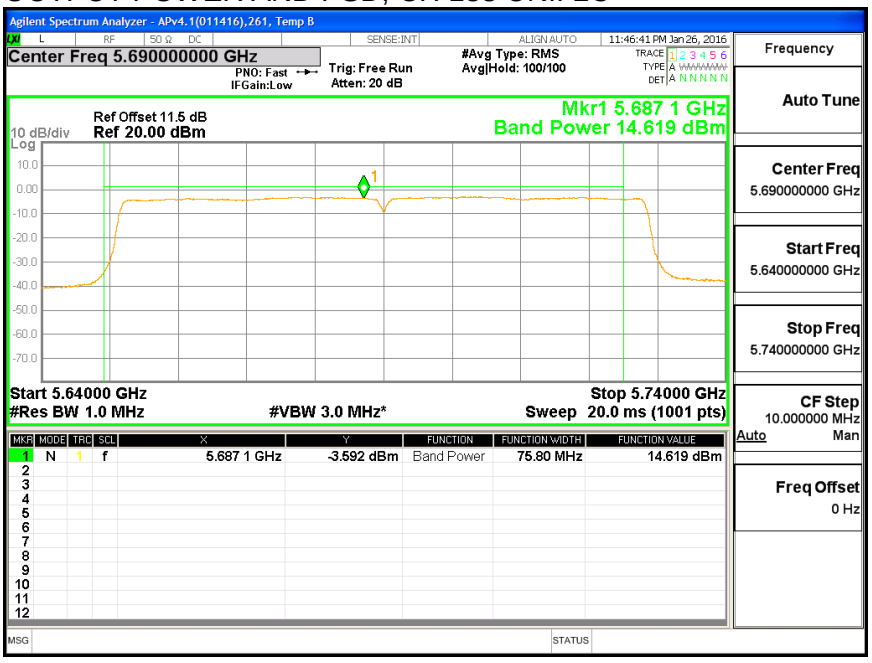


PSD, CH 138 UNII 2C

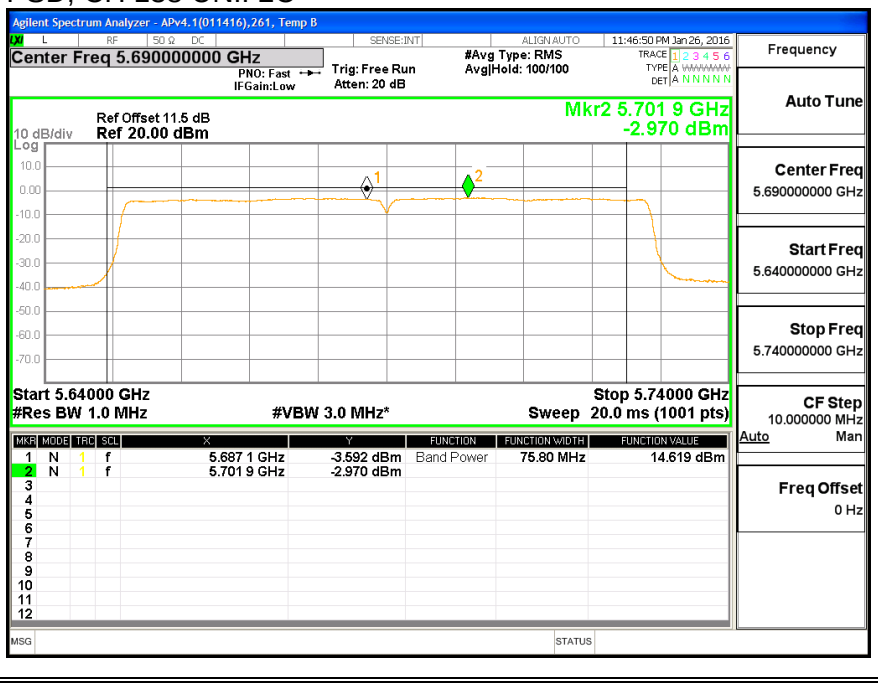


ANTENNA - C

OUTPUT POWER AND PSD, CH 138 UNII 2C



PSD, CH 138 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	5.56	4.10	7.11	30.00	28.89

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

Output Power Results

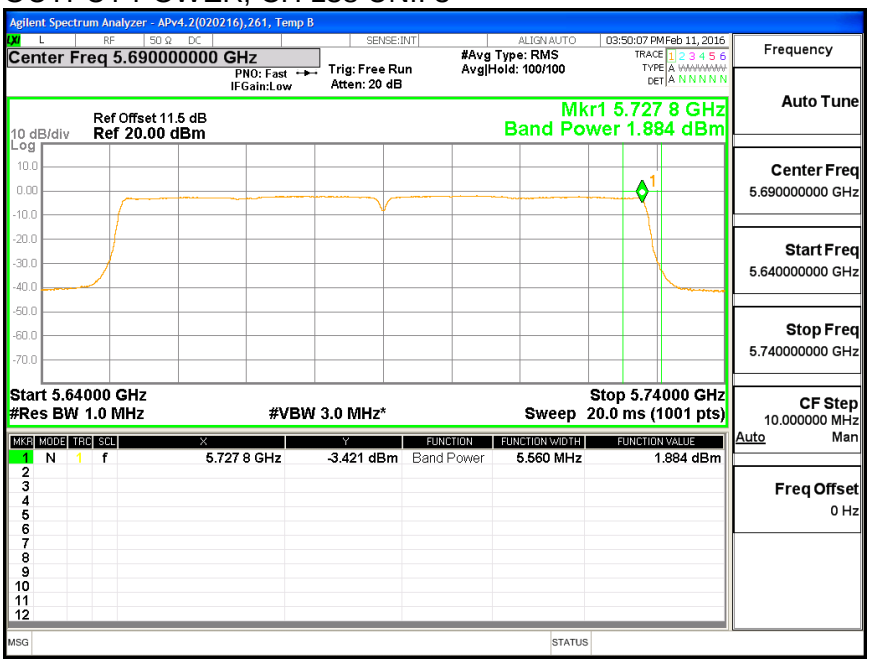
Channel	Frequency (MHz)	Antenna A Meas Power (dBm)	Antenna C Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	1.88	0.96	4.65	30.00	-25.35

PSD Results

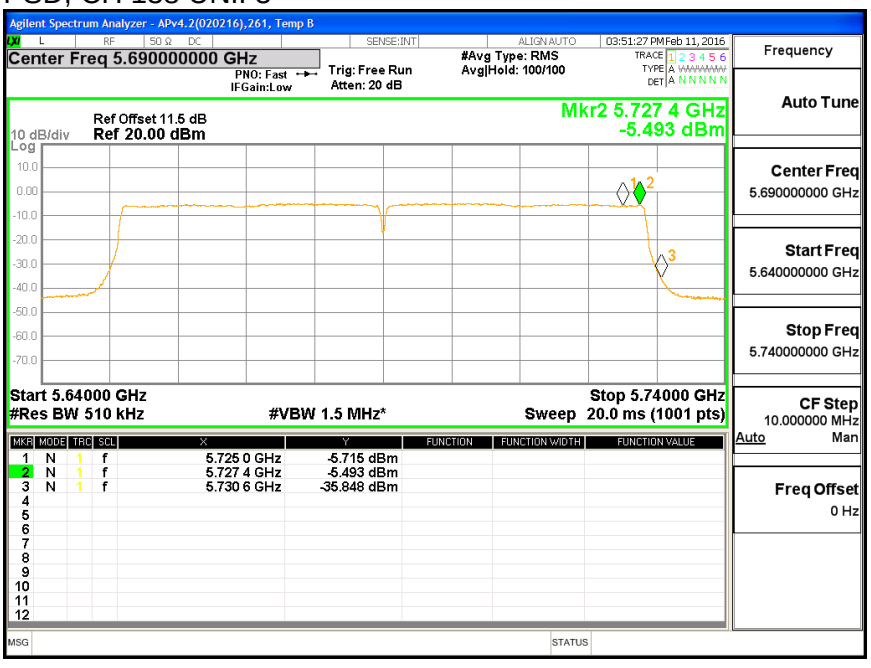
Channel	Frequency (MHz)	Antenna A Meas PSD (dBm)	Antenna C Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-5.49	-6.61	-2.80	28.89	-31.69

ANTENNA - A

OUTPUT POWER, CH 138 UNII 3

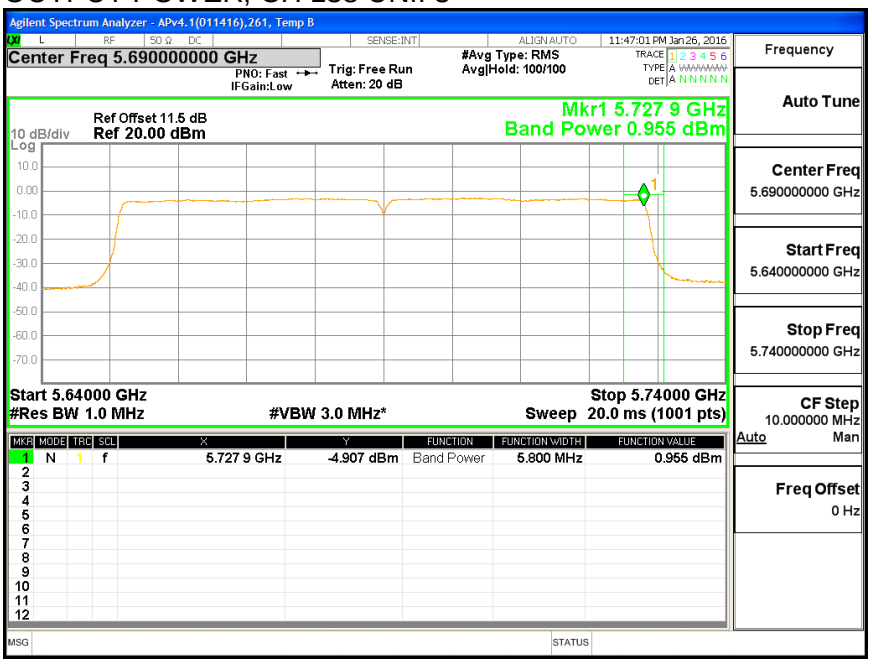


PSD, CH 138 UNII 3

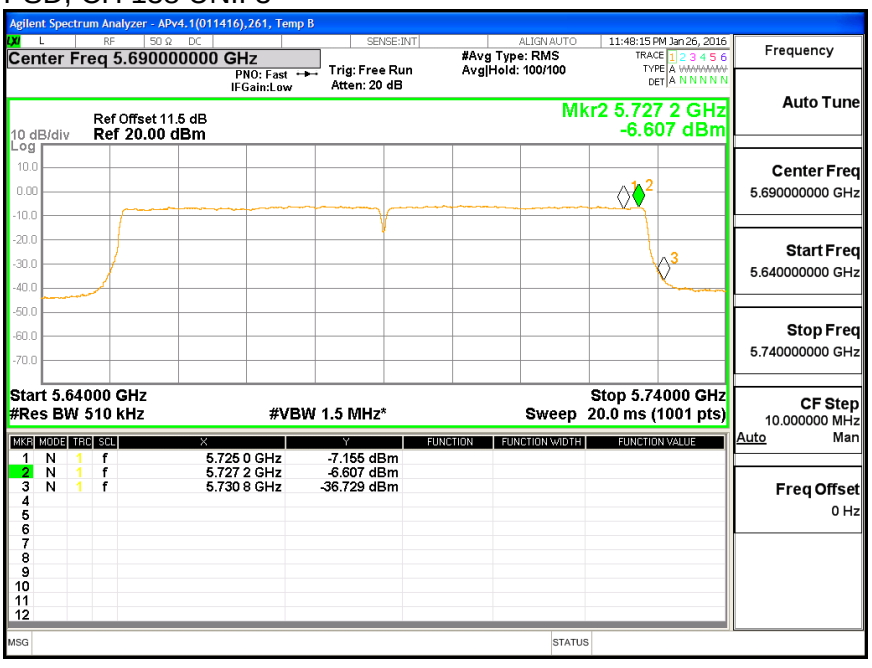


ANTENNA - C

OUTPUT POWER, CH 138 UNII 3



PSD, CH 138 UNII 3



8.102.6. 6 dB BANDWIDTH

LIMITS

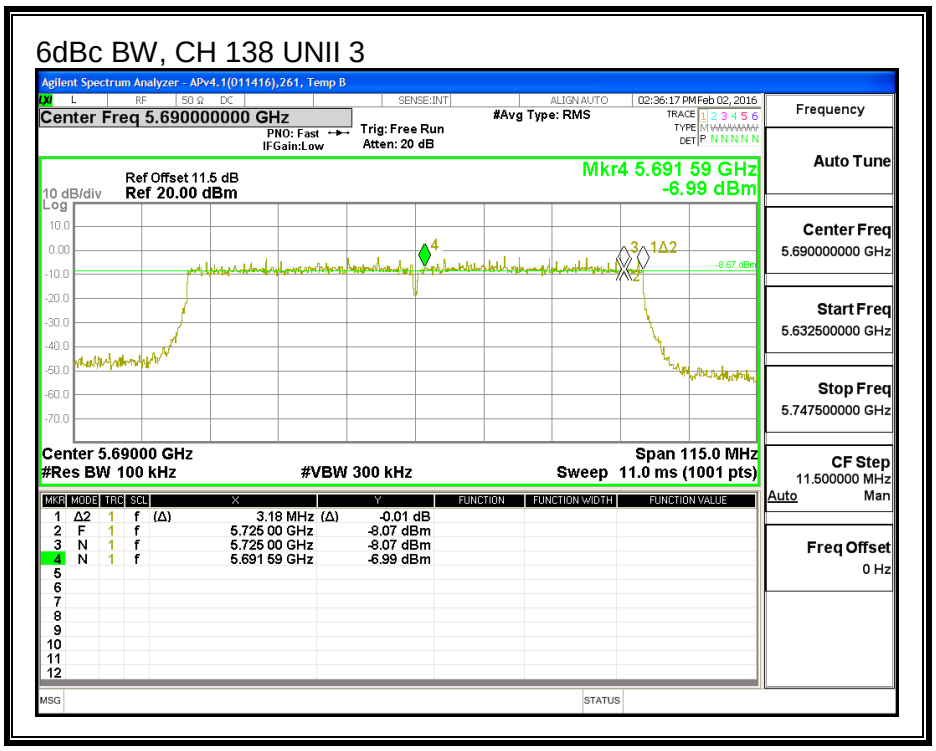
FCC §15.407 (e)

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

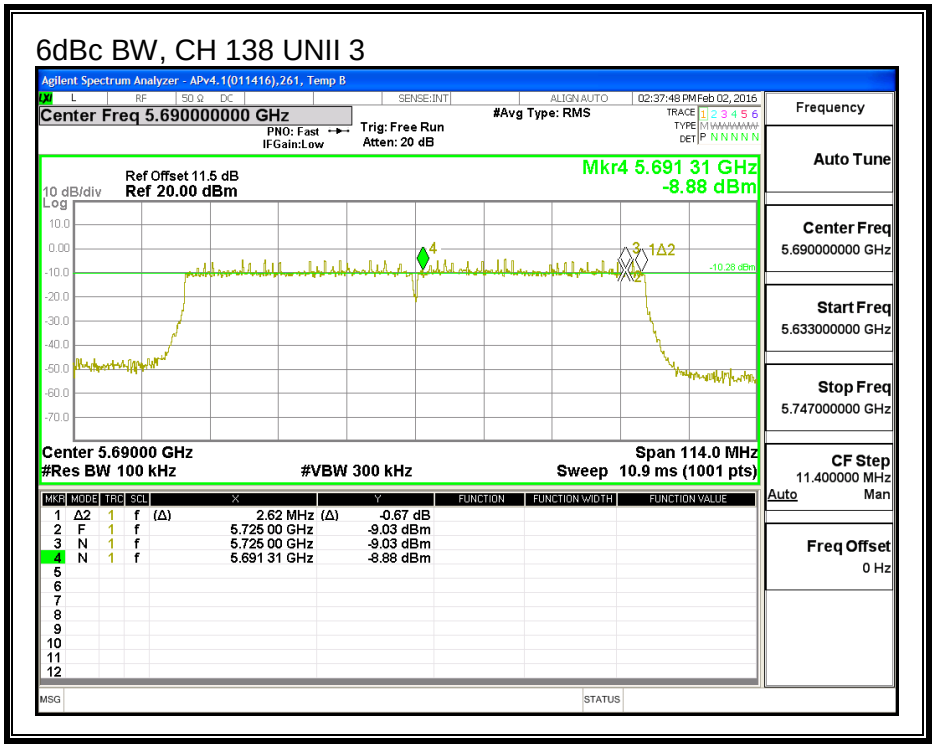
RESULTS

Channel	Frequency (MHz)	6 dB BW Antenna A (MHz)	6 dB BW Antenna C (MHz)
High	5690	3.18	2.62

ANTENNA - A



ANTENNA - C



8.103. 802.11ac VHT80 ANTENNA B+A STBC MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11n HT80 ANTENNA B+A CDD MODE IN THE 5.6 GHz BAND

8.104. 802.11ac VHT80 ANTENNA A+C STBC MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11n HT80 ANTENNA A+C CDD MODE IN THE 5.6 GHz BAND

8.105. 802.11ac VHT80 ANTENNA B+A SDM MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11n HT80 ANTENNA B+A CDD MODE IN THE 5.6 GHz BAND

8.106. 802.11ac VHT80 ANTENNA A+C SDM MODE IN THE 5.6 GHz BAND

Noted: Covered by 802.11n HT80 ANTENNA A+C CDD MODE IN THE 5.6 GHz BAND

8.107. 802.11a ANTENNA - B MODE IN THE 5.8 GHz BAND

Note: Covered by 802.11n HT20 ANTENNA B MODE IN THE 5.8 GHz BAND

8.108. 802.11n HT20 ANTENNA - B MODE IN THE 5.8 GHz BAND

8.108.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

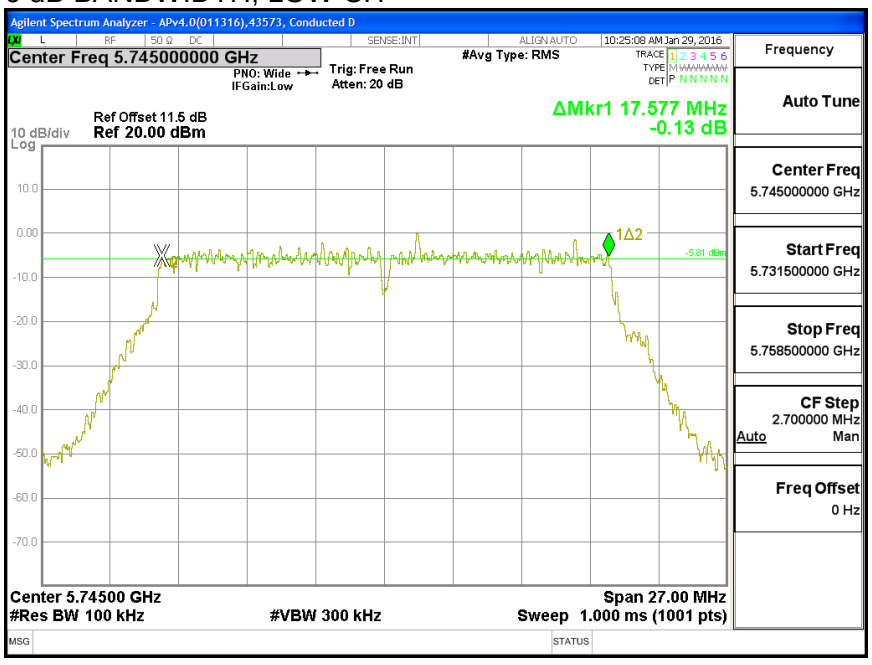
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

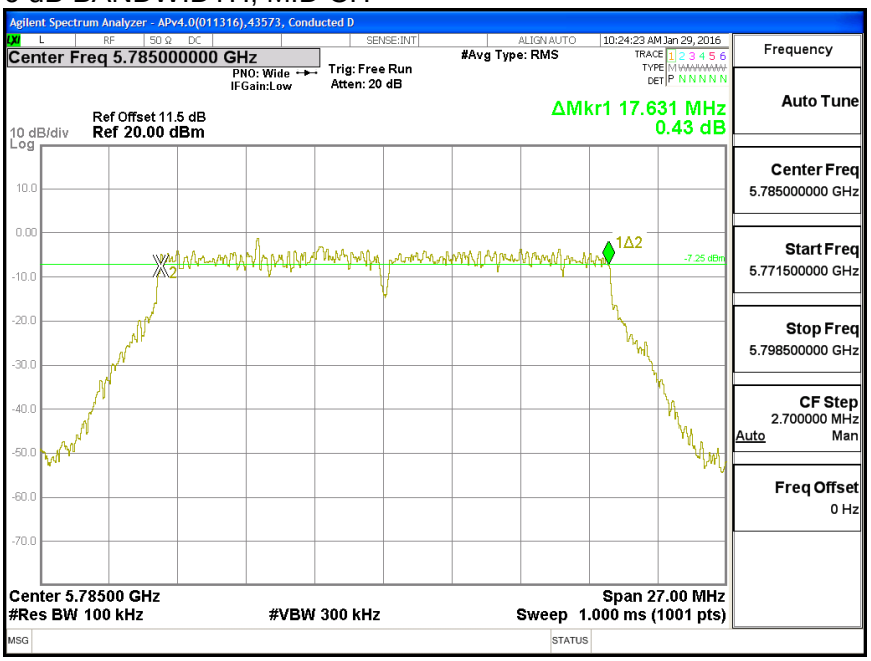
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.58	0.5
Mid	5785	17.63	0.5
High	5825	17.79	0.5

6 dB BANDWIDTH

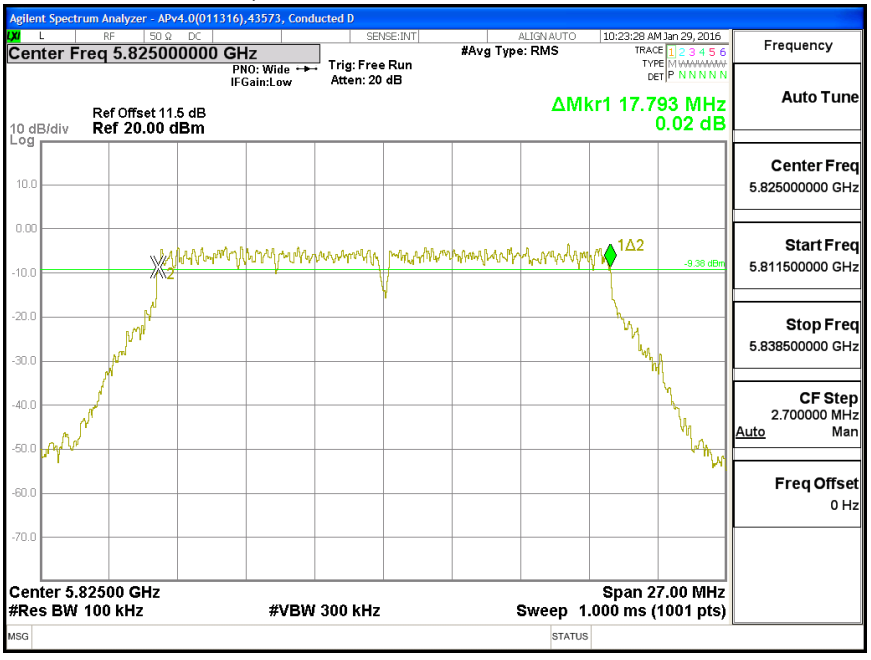
6 dB BANDWIDTH, LOW CH



6 dB BANDWIDTH, MID CH



6 dB BANDWIDTH, HIGH CH



8.108.2. 26 dB BANDWIDTH

LIMITS

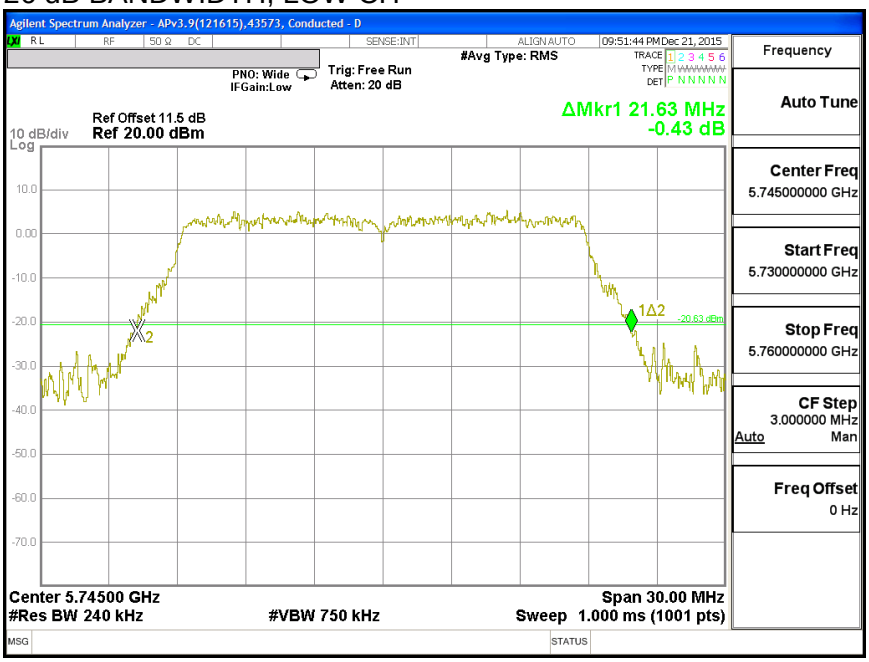
None, for reporting purposes only

RESULTS

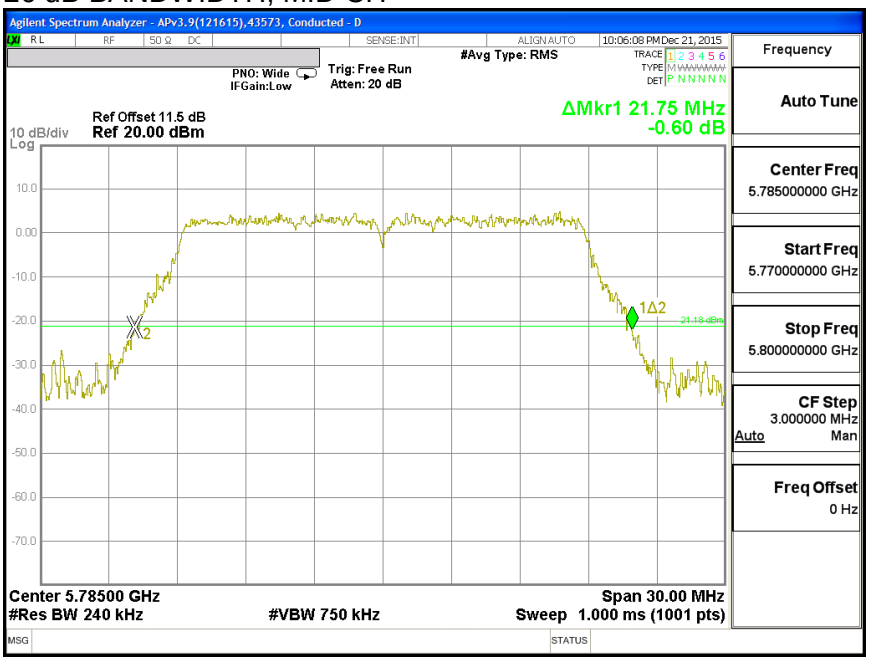
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	21.63
Mid	5785	21.75
High	5825	21.78

26 dB BANDWIDTH

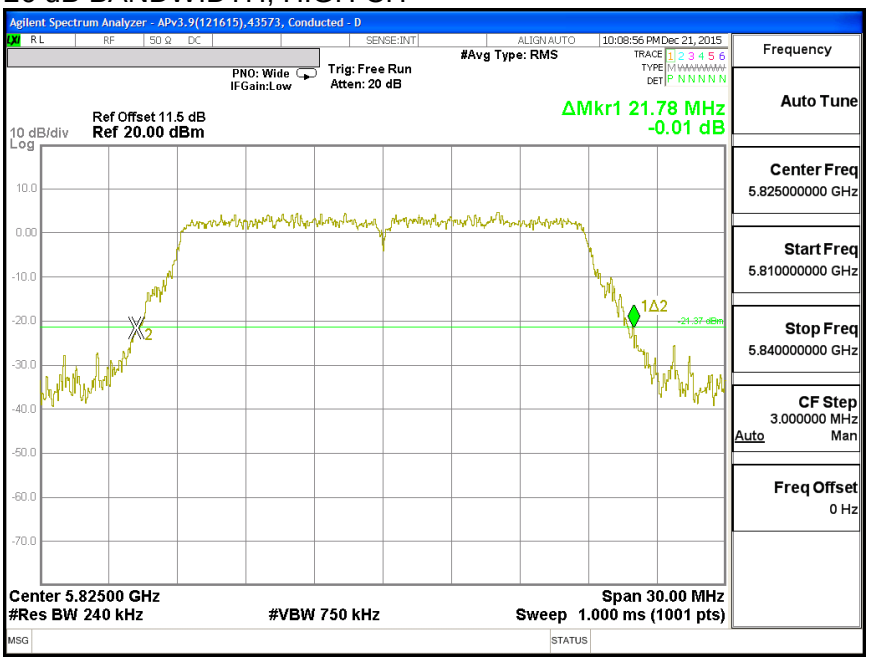
26 dB BANDWIDTH, LOW CH



26 dB BANDWIDTH, MID CH



26 dB BANDWIDTH, HIGH CH



8.108.3. 99% BANDWIDTH

LIMITS

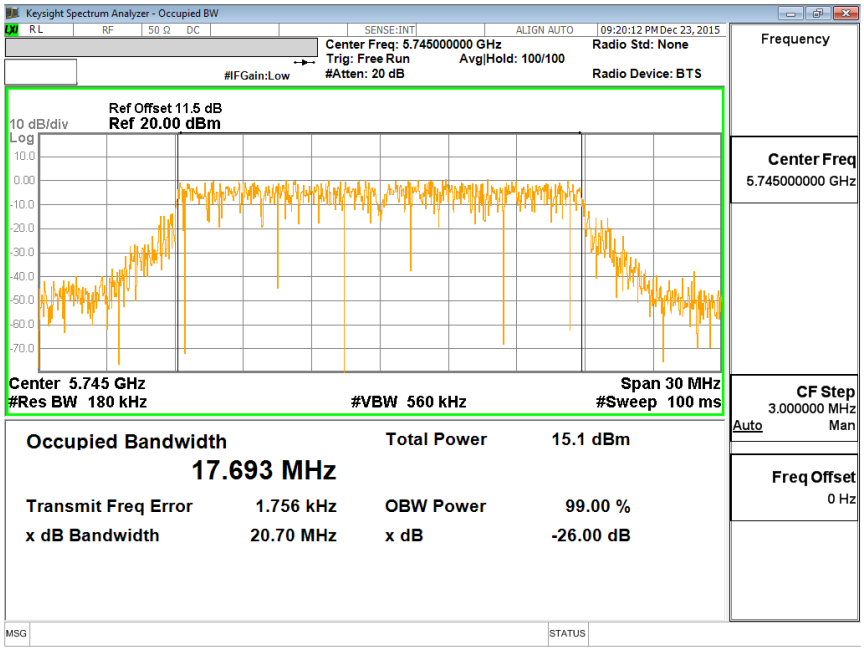
None; for reporting purposes only.

RESULTS

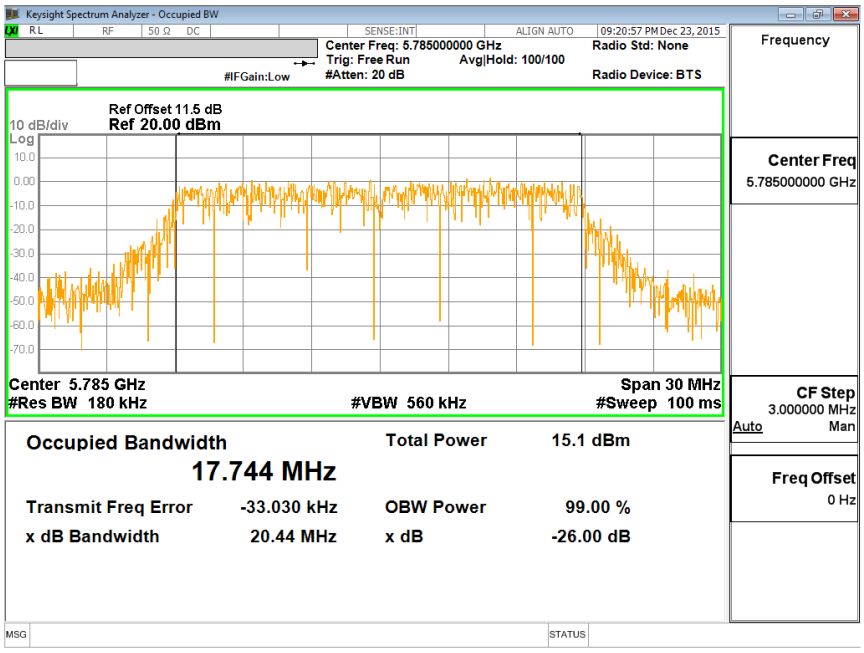
Frequency (MHz)	99% Bandwidth (MHz)
5745	17.693
5785	17.744
5825	17.684

99% BANDWIDTH

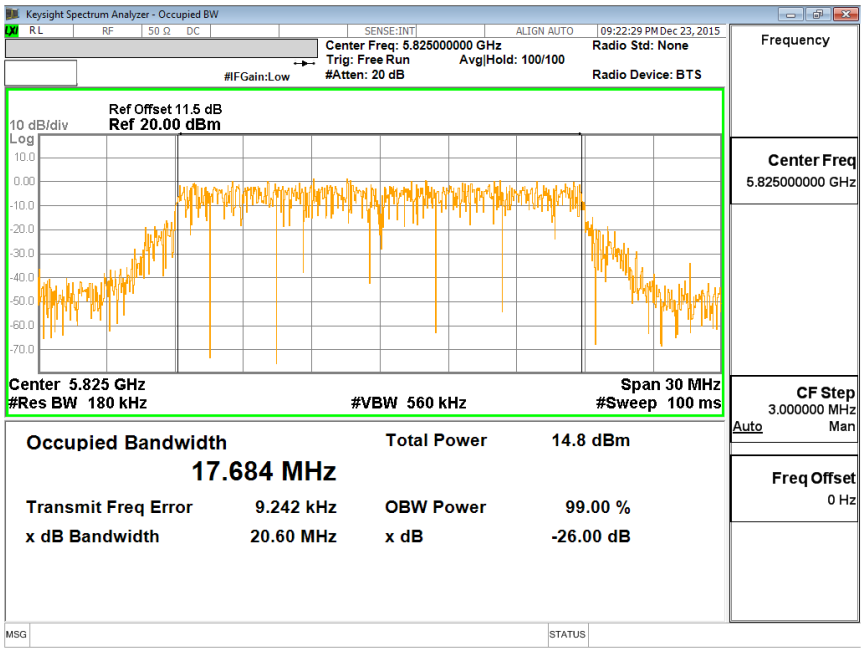
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



8.108.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5745	15.44
Mid	5785	17.39
High	5825	16.40

8.108.5. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	2.42	30.00
Mid	5785	2.42	30.00
High	5825	2.42	30.00

Output Power Results

Channel	Frequency (MHz)	Antenna B Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	15.44	15.44	30.00	-14.56
Mid	5785	17.39	17.39	30.00	-12.61
High	5825	16.40	16.40	30.00	-13.60

8.108.6. PSD

LIMITS

FCC §15.407 (a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	2.42	30.00
Mid	5785	2.42	30.00
High	5825	2.42	30.00

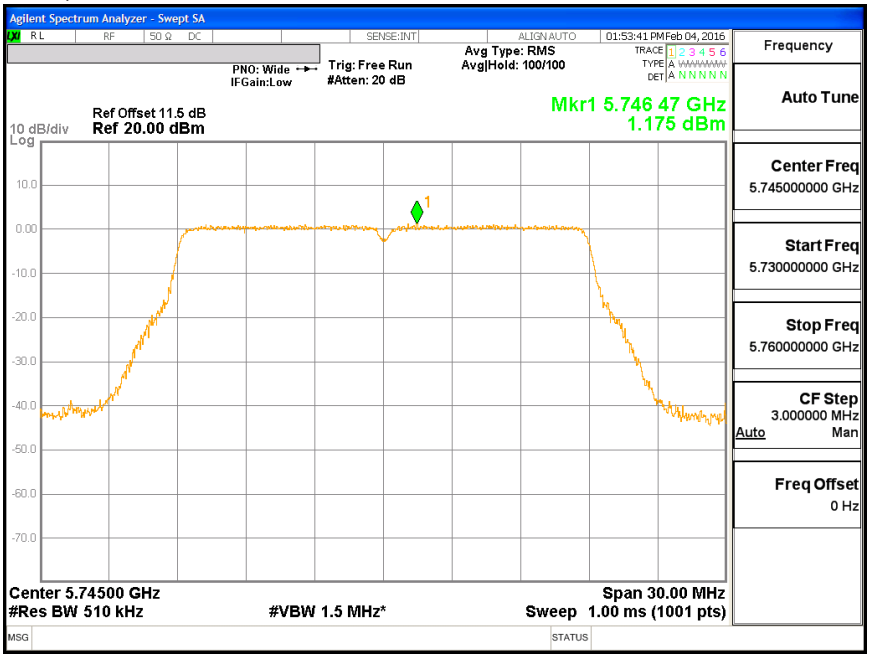
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Antenna B Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	1.18	1.18	30.00	-28.83
Mid	5785	3.05	3.05	30.00	-26.95
High	5825	2.14	2.14	30.00	-27.86

PSD,

PSD, LOW CH



PSD, MID CH