8.25. 802.11n HT40 CHAIN 0 MODE IN THE 5.6 GHz BAND

8.25.1. 26 dB BANDWIDTH

LIMITS

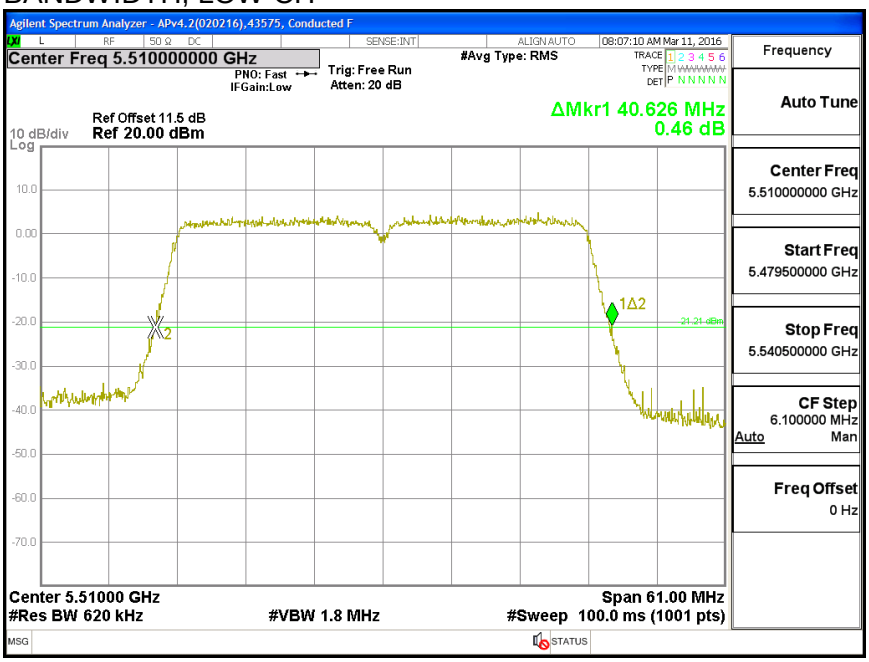
None; for reporting purposes only.

RESULTS

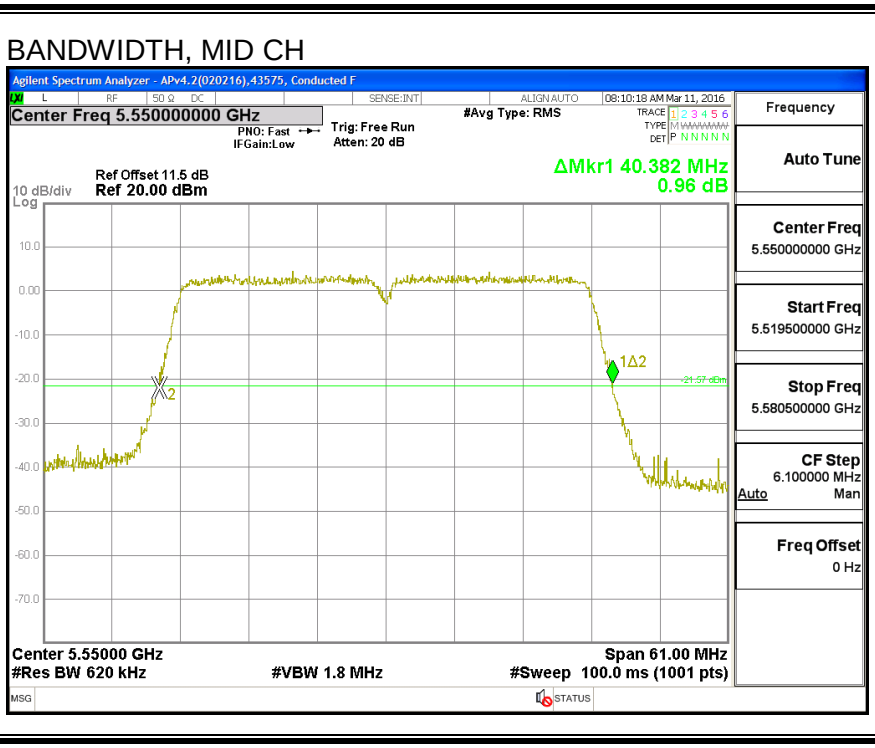
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	40.626
Mid	5550	40.382
Mid	5590	41.044
High	5670	40.504
142	5710	40.565

26 dB BANDWIDTH

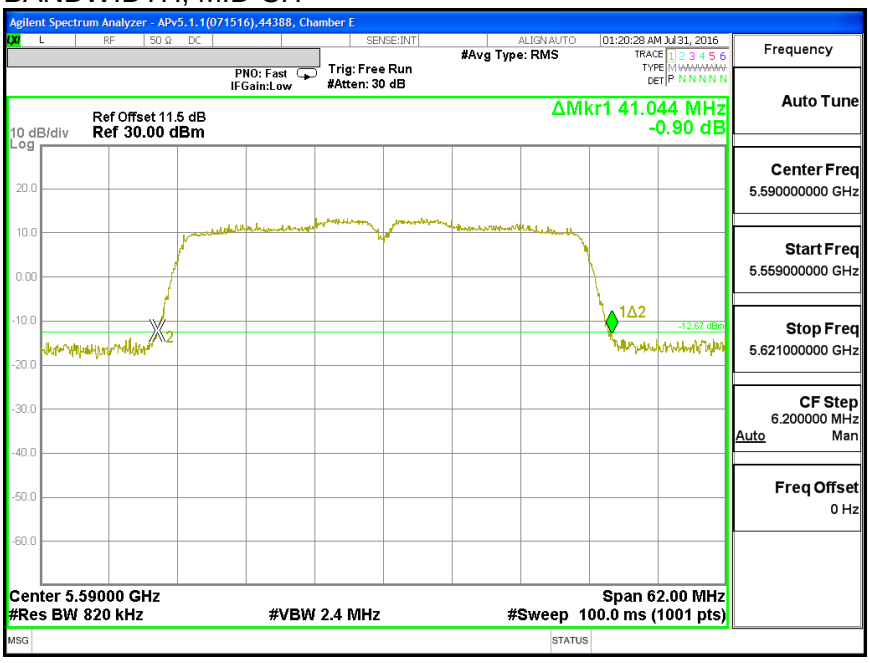
BANDWIDTH, LOW CH



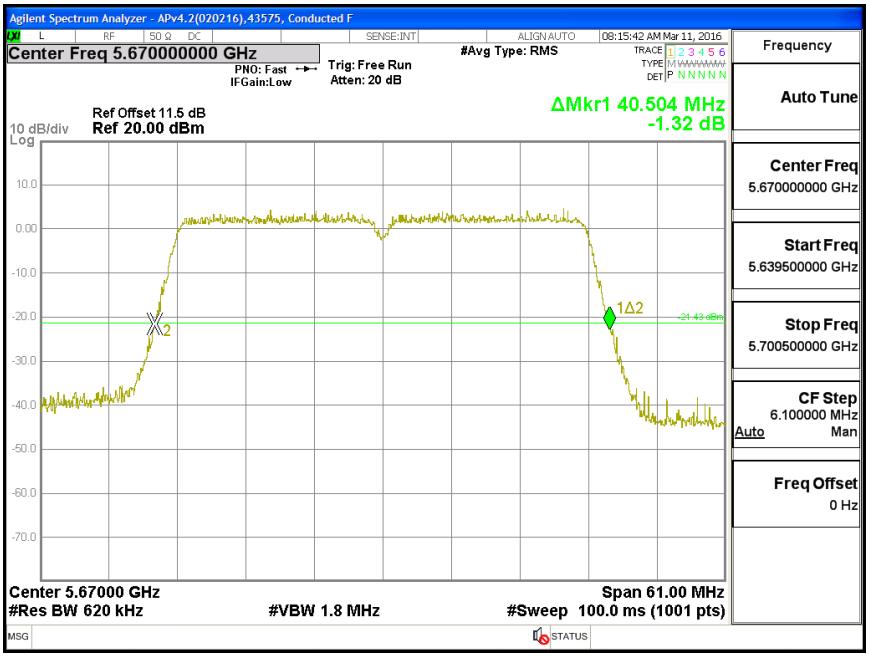
BANDWIDTH, MID CH



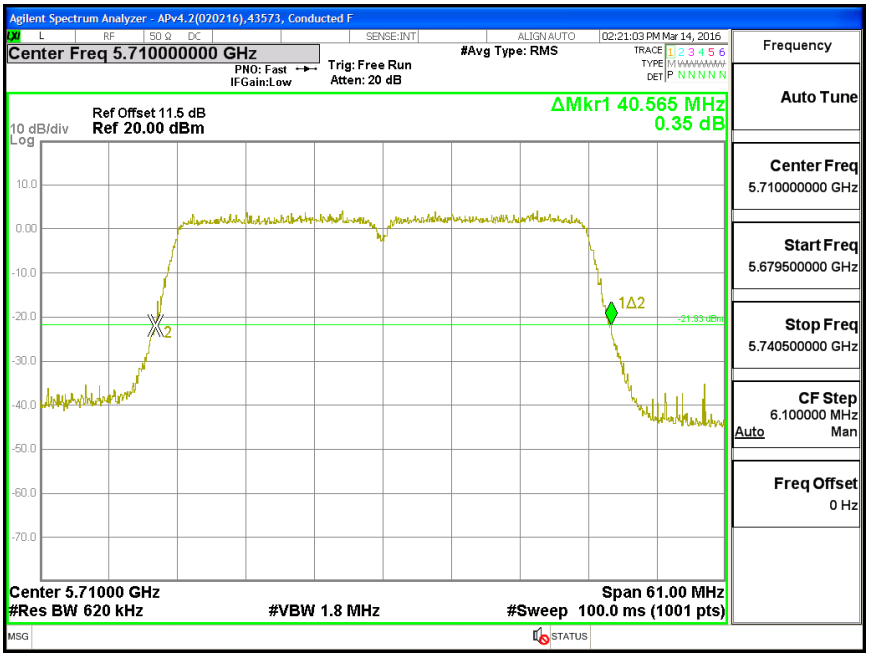
BANDWIDTH, MID CH



BANDWIDTH' HIGH CH



BANDWIDTH STRADDLE CH 142



8.25.2. 99% BANDWIDTH

LIMITS

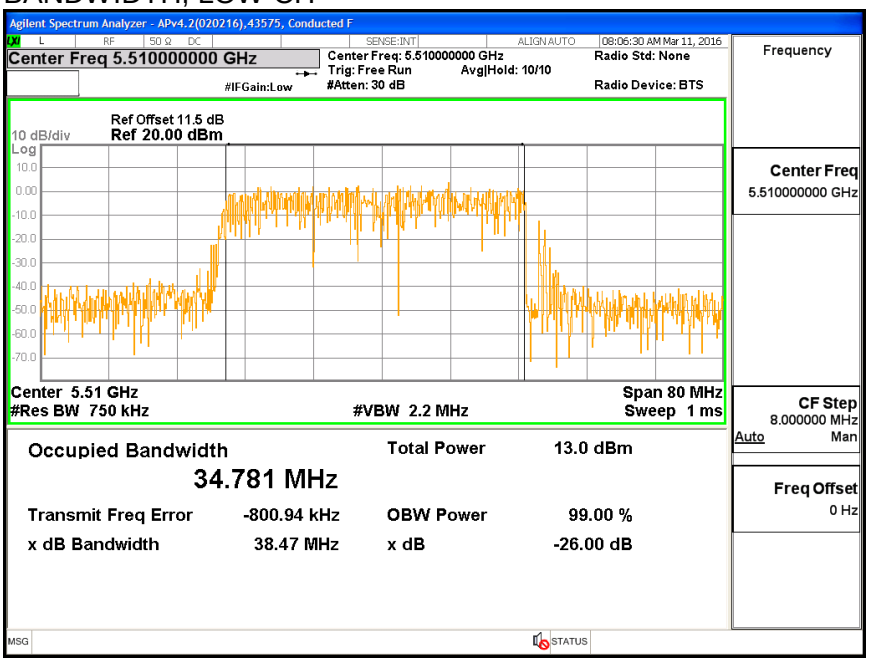
None; for reporting purposes only.

RESULTS

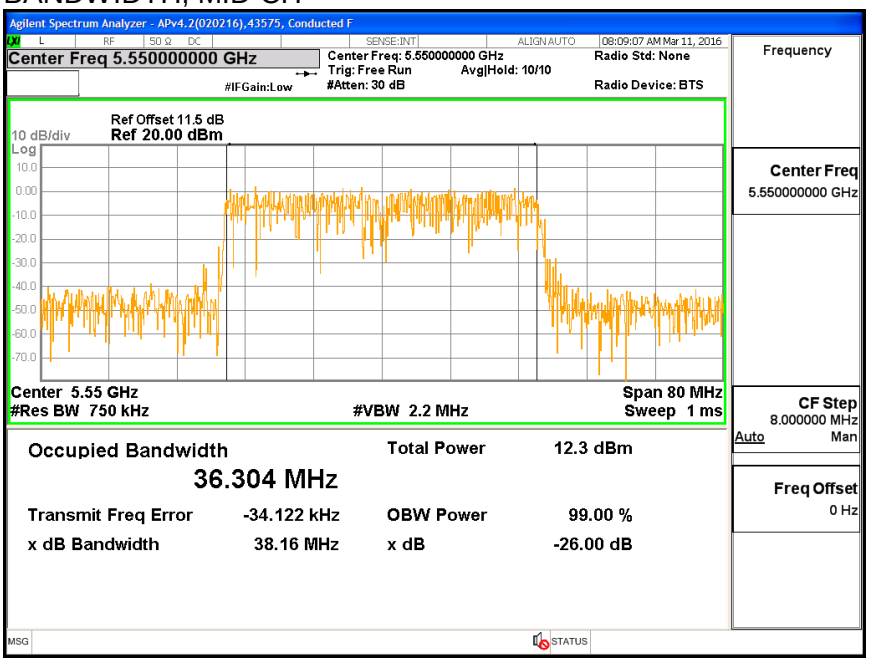
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	34.781
Mid	5550	36.304
Mid	5590	36.253
High	5670	36.248
142	5710	36.362

99% BANDWIDTH

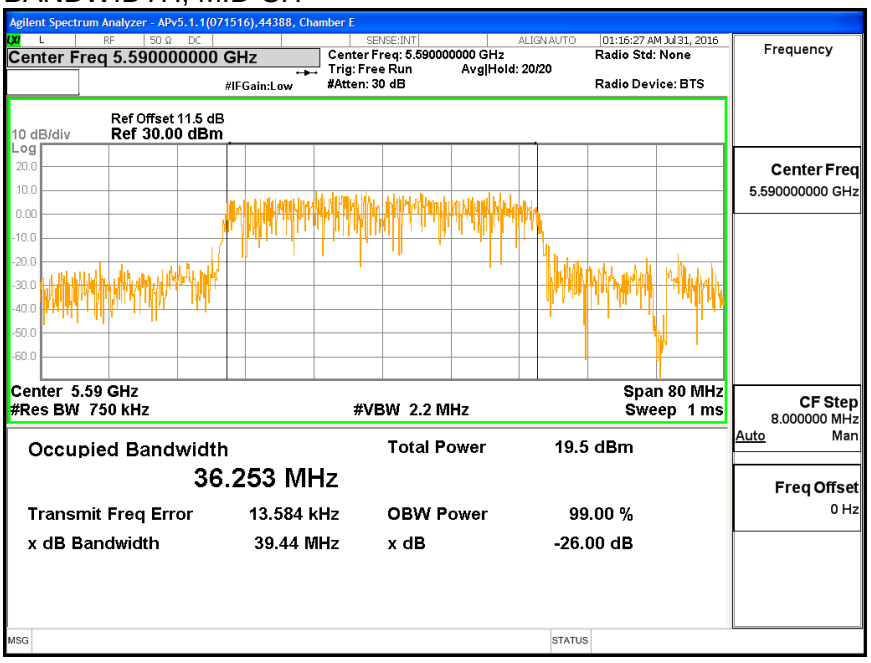
BANDWIDTH, LOW CH



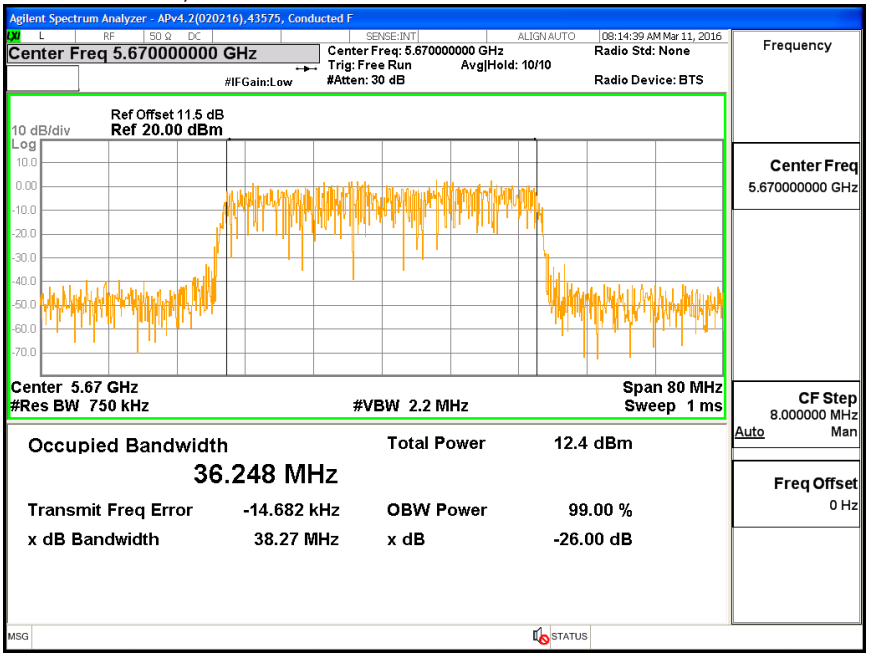
BANDWIDTH, MID CH



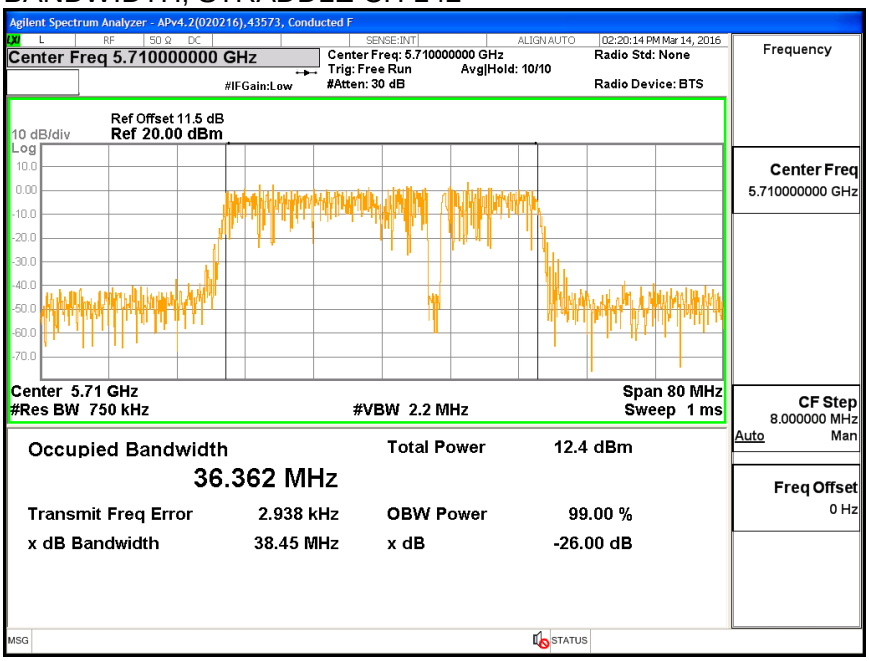
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH, STRADDLE CH 142



8.25.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	7/27/16

Channel	Frequency (MHz)	Power (dBm)
Low	5510	15.29
Mid	5550	17.00
Mid	5590	16.98
High	5670	17.00
142	5710	17.00

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 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

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

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	39004	Date:	7/27/16

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	40.63	34.78	0.17	24.00	11.00
Mid	5550	40.38	36.30	0.17	24.00	11.00
Mid	5590	41.04	36.25	0.17	24.00	11.00
High	5670	40.50	36.25	0.17	24.00	11.00

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

Output Power Results

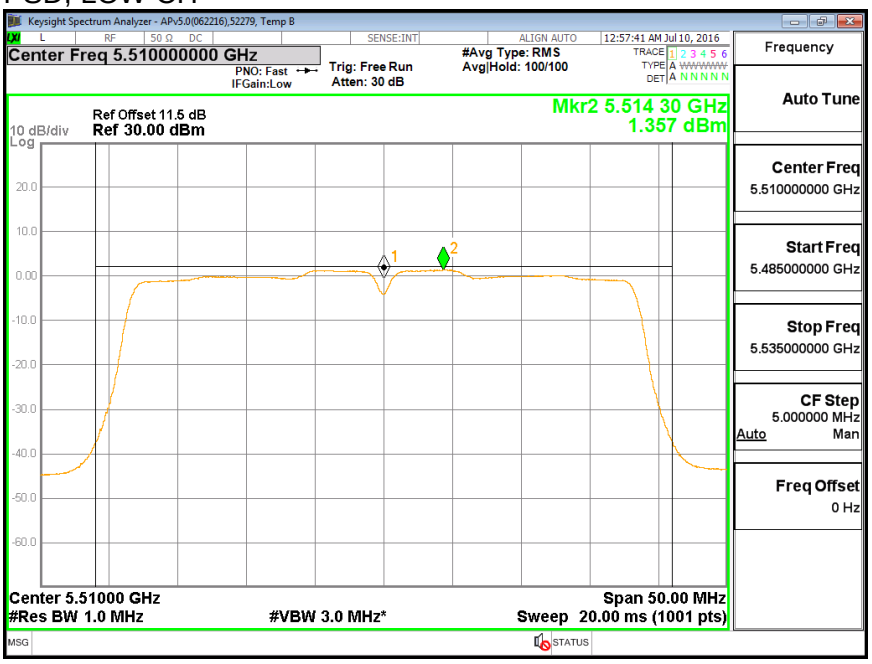
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.29	15.29	24.00	-8.71
Mid	5550	17.00	17.00	24.00	-7.00
Mid	5590	16.98	16.98	24.00	-7.02
High	5670	17.00	17.00	24.00	-7.00

PSD Results

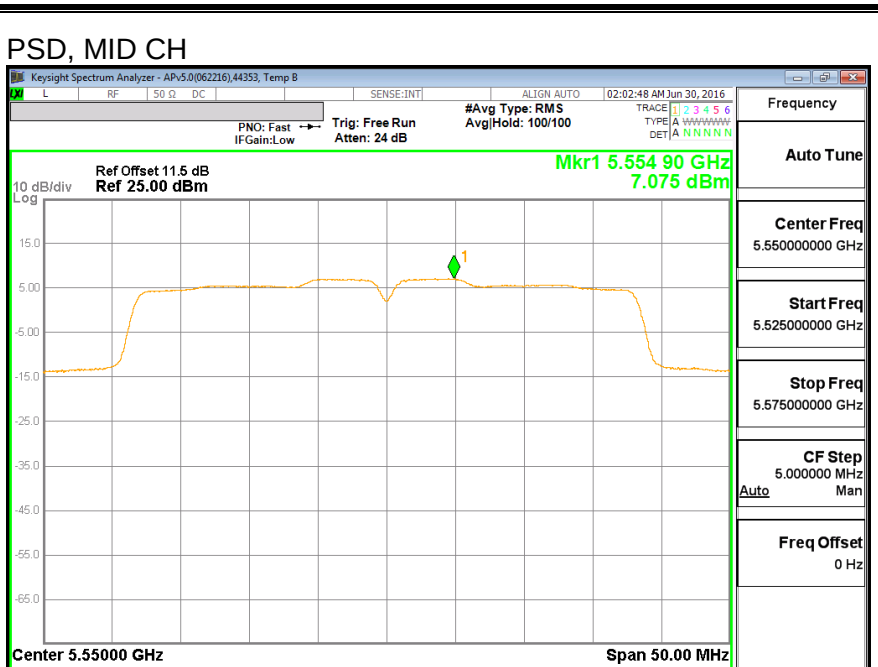
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	1.36	1.36	11.00	-9.64
Mid	5550	7.08	7.08	11.00	-3.93
Mid	5590	5.61	5.61	11.00	-5.39
High	5670	3.39	3.39	11.00	-7.61

PSD

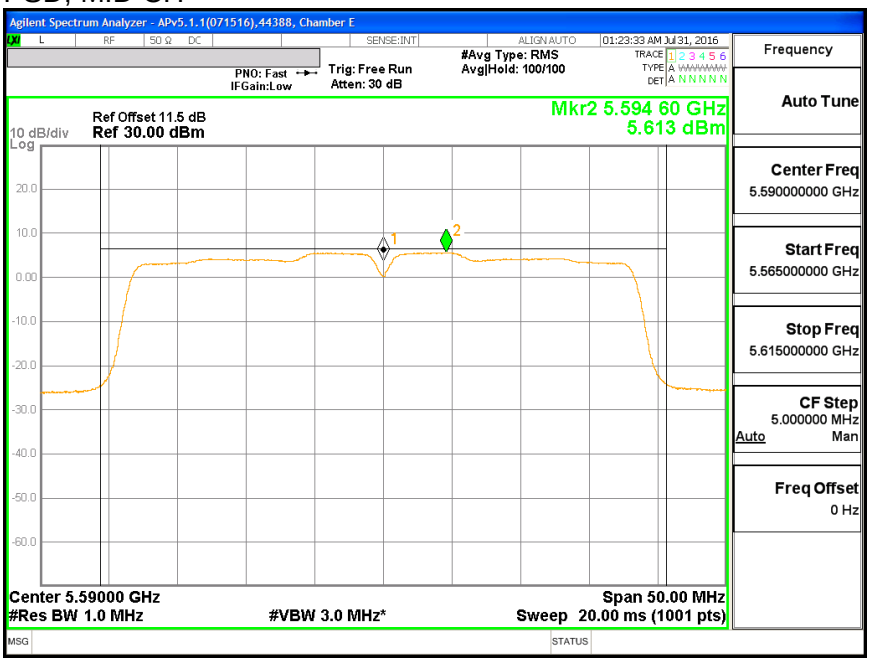
PSD, LOW CH



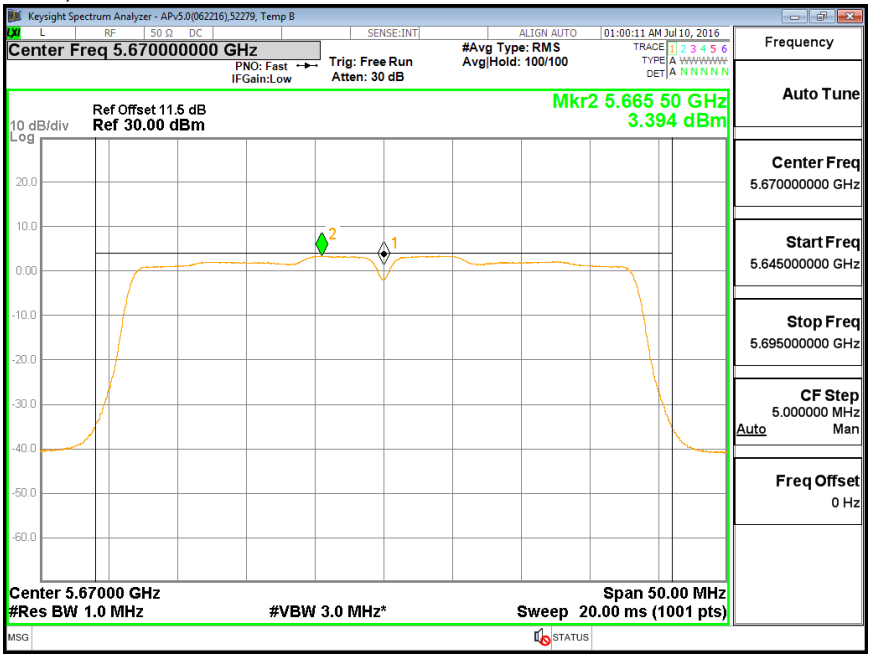
PSD, MID CH



PSD, MID CH



PSD, HIGH CH



8.26. 802.11ac VHT40 CHAIN 0 STRADDLE CH 142 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)
142	5710	35.28	0.17	0.17	24.00	11.00

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

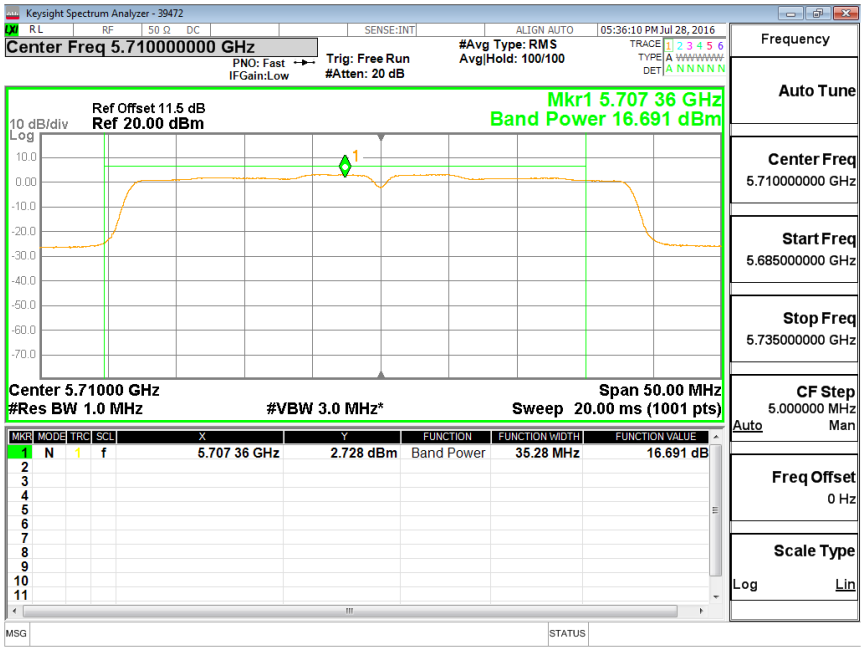
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	16.69	16.69	24.00	-7.31

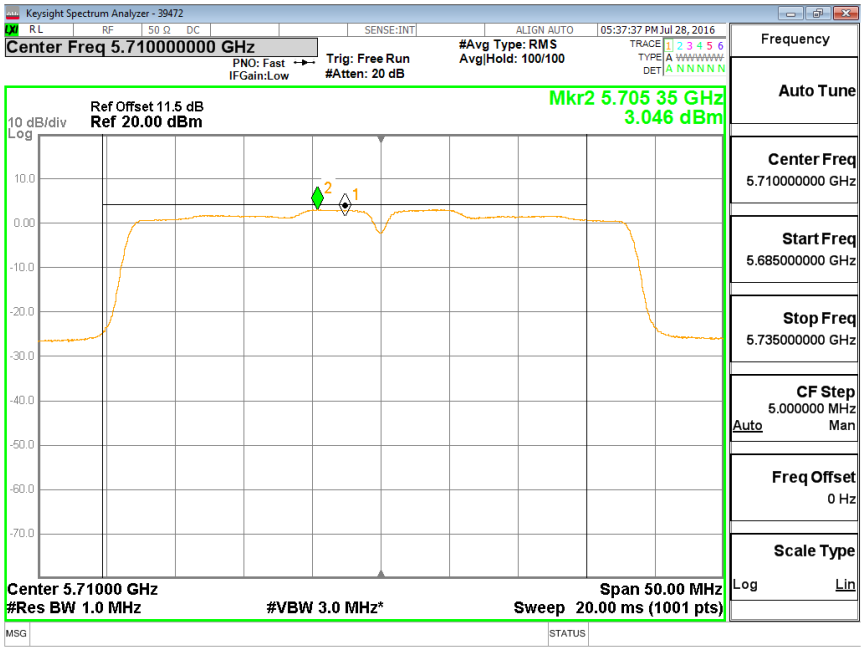
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	3.05	3.05	11.00	-7.95

OUTPUT POWER, CH 142 UNII 2C



PSD, CH 142 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)
142	5710	5.94	0.17	30.00	30.00

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

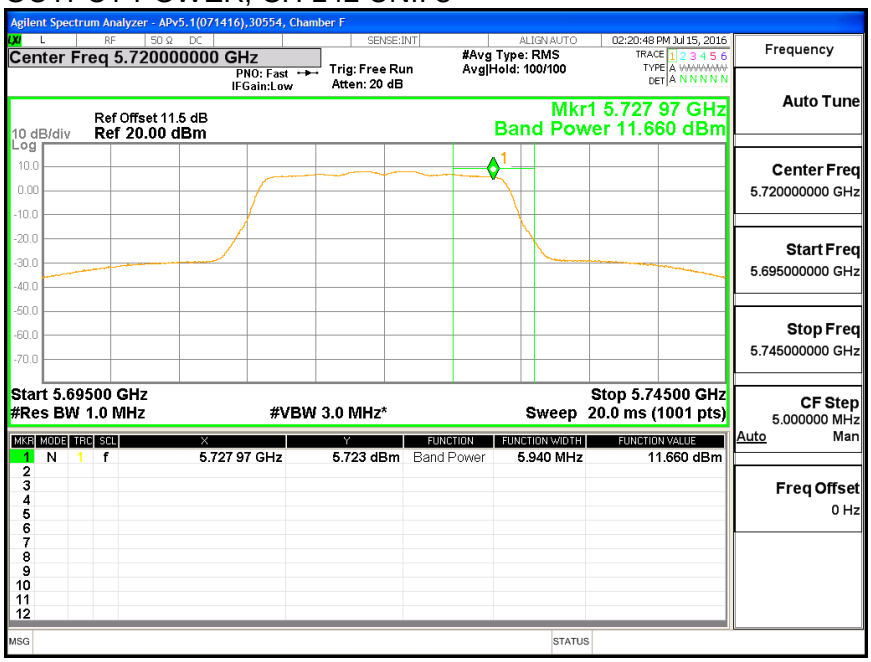
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	11.66	11.66	30.00	-18.34

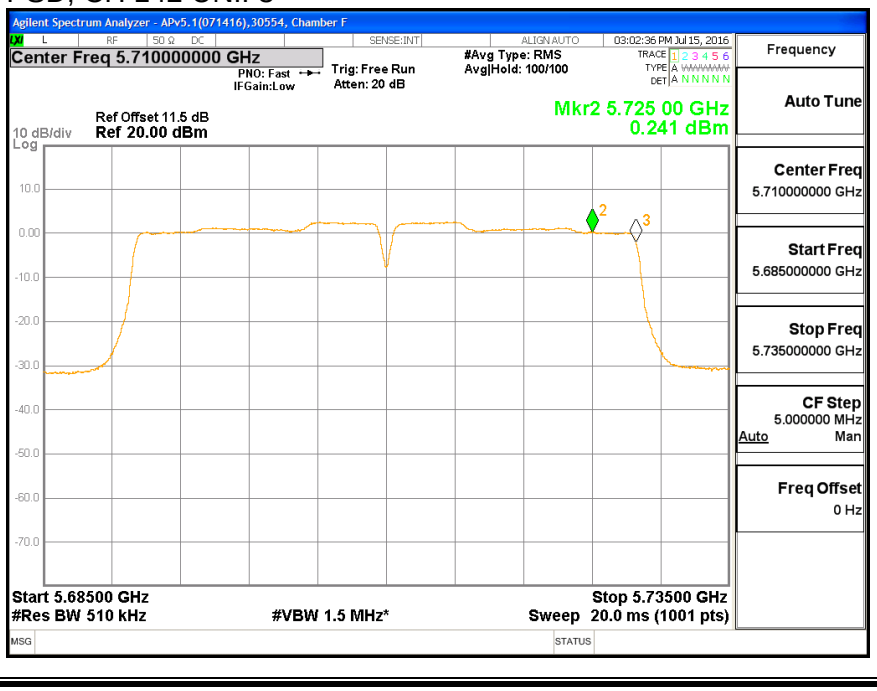
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	0.24	0.24	30.00	-29.76

OUTPUT POWER, CH 142 UNII 3



PSD, CH 142 UNII 3



8.26.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

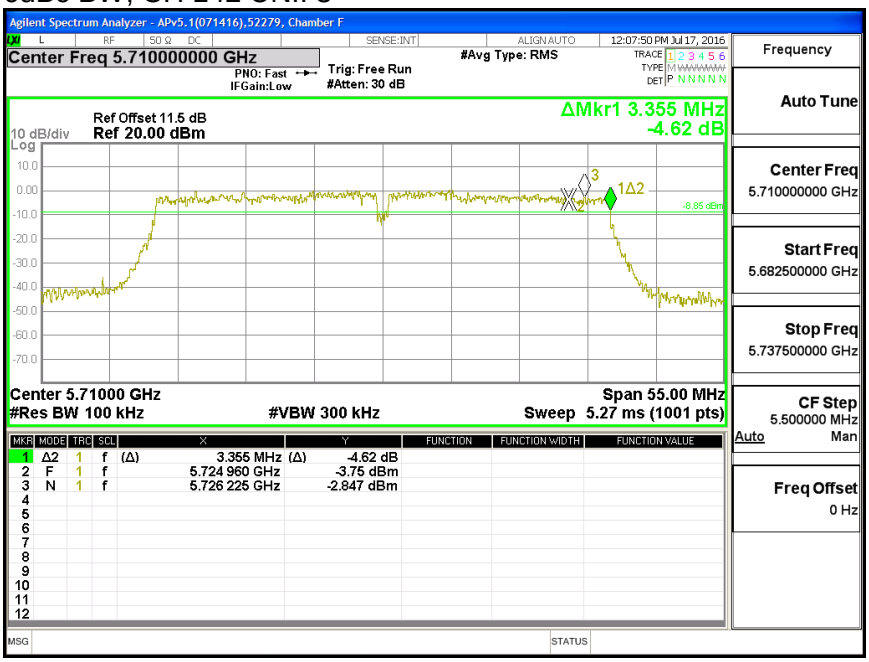
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
142	5710	3.36

6 dB BANDWIDTH

6dBc BW, CH 142 UNII 3



8.27. 802.11n HT40 CHAIN 1 MODE IN THE 5.6 GHz BAND

8.27.1. 26 dB BANDWIDTH

LIMITS

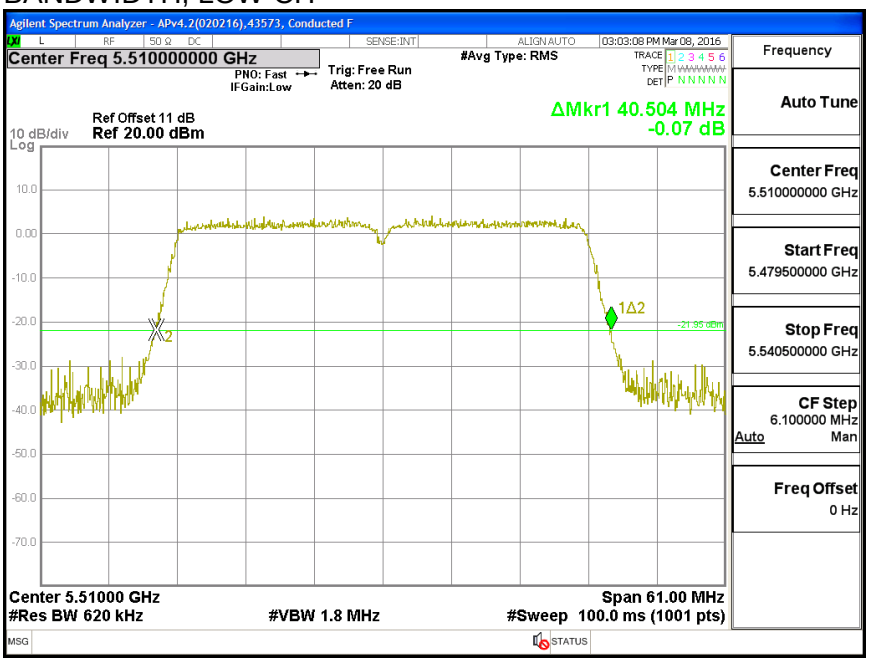
None; for reporting purposes only.

RESULTS

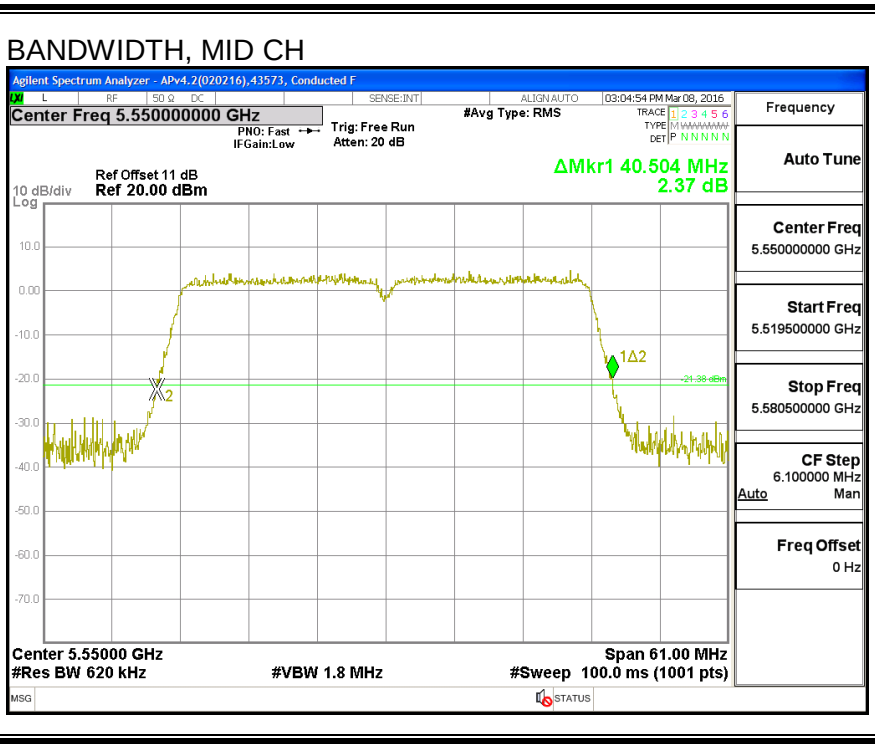
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	40.504
Mid	5550	40.504
Mid	5590	44.100
High	5670	40.260
142	5710	40.504

26 dB BANDWIDTH

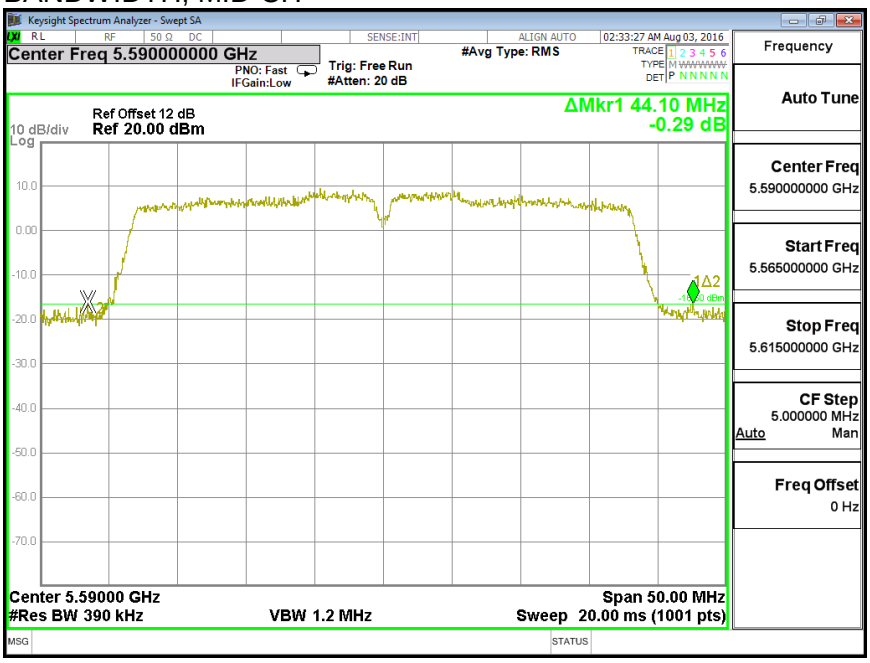
BANDWIDTH, LOW CH



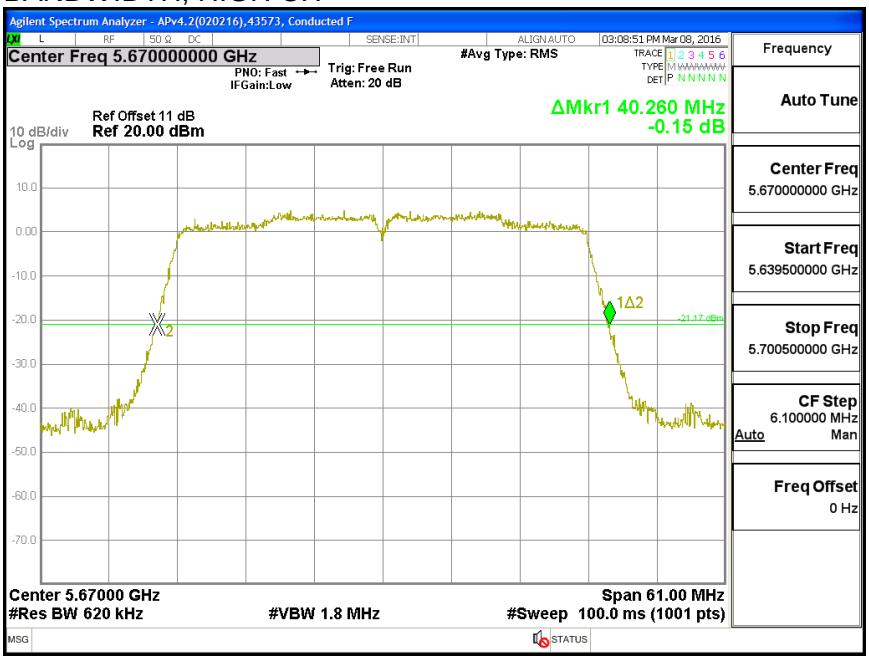
BANDWIDTH, MID CH



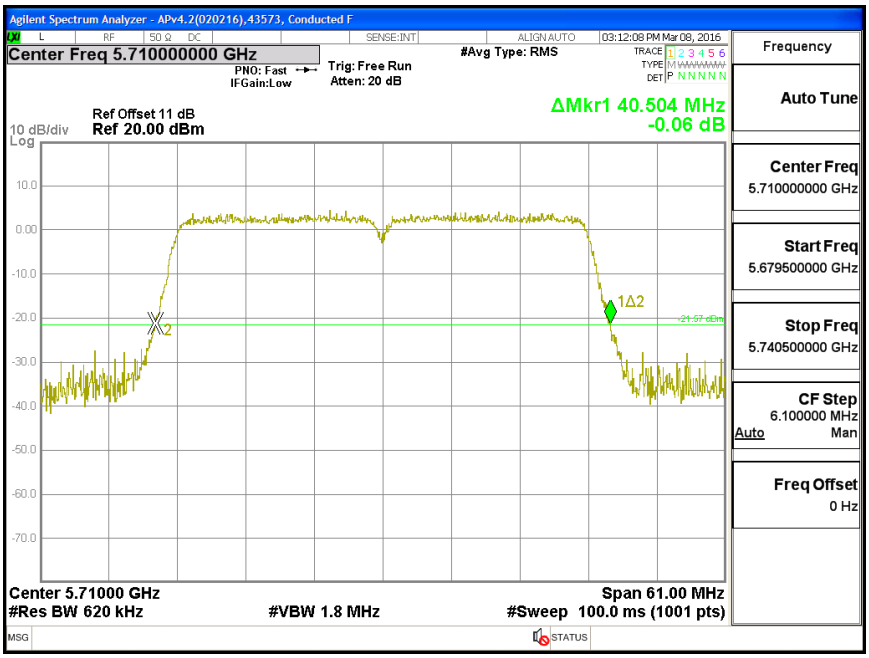
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH STRADDLE CH 142



8.27.2. 99% BANDWIDTH

LIMITS

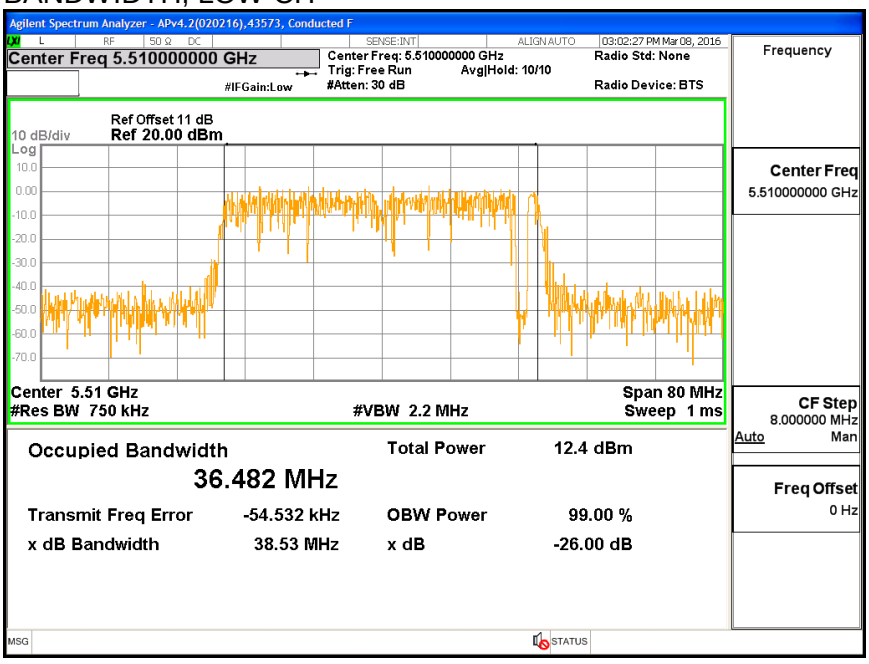
None; for reporting purposes only.

RESULTS

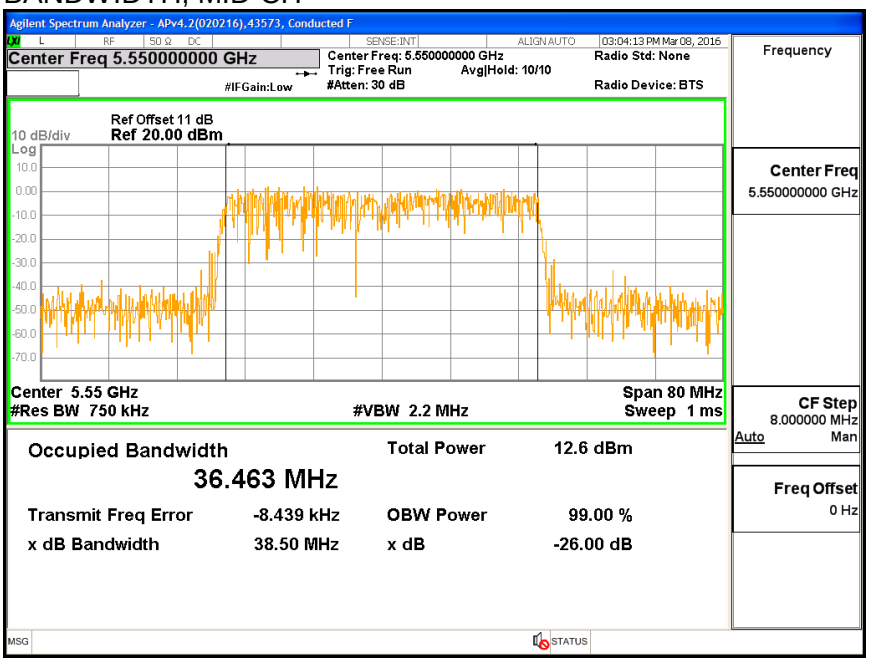
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.482
Mid	5550	36.463
Mid	5590	36.849
High	5670	36.371
142	5710	34.922

99% BANDWIDTH

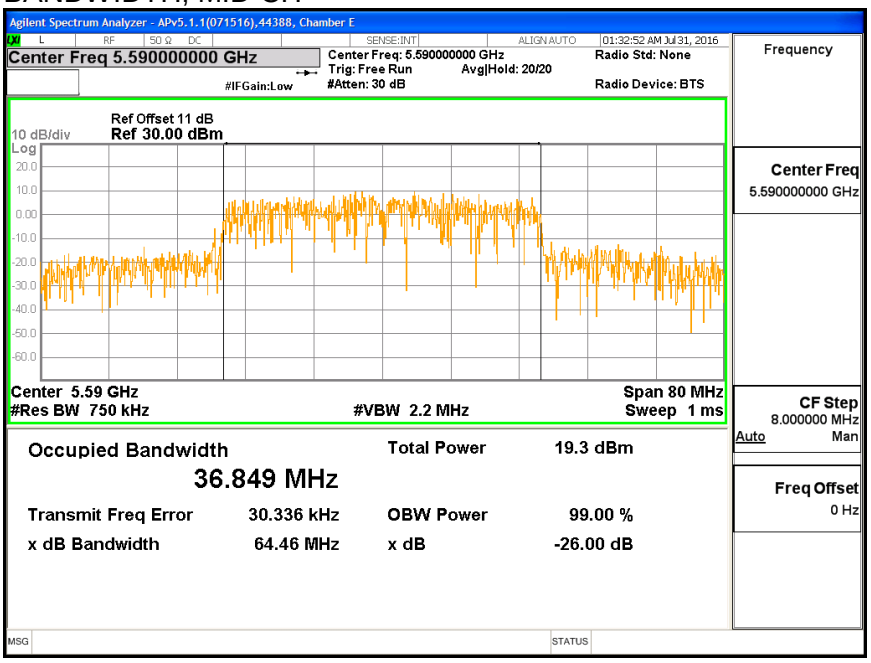
BANDWIDTH, LOW CH



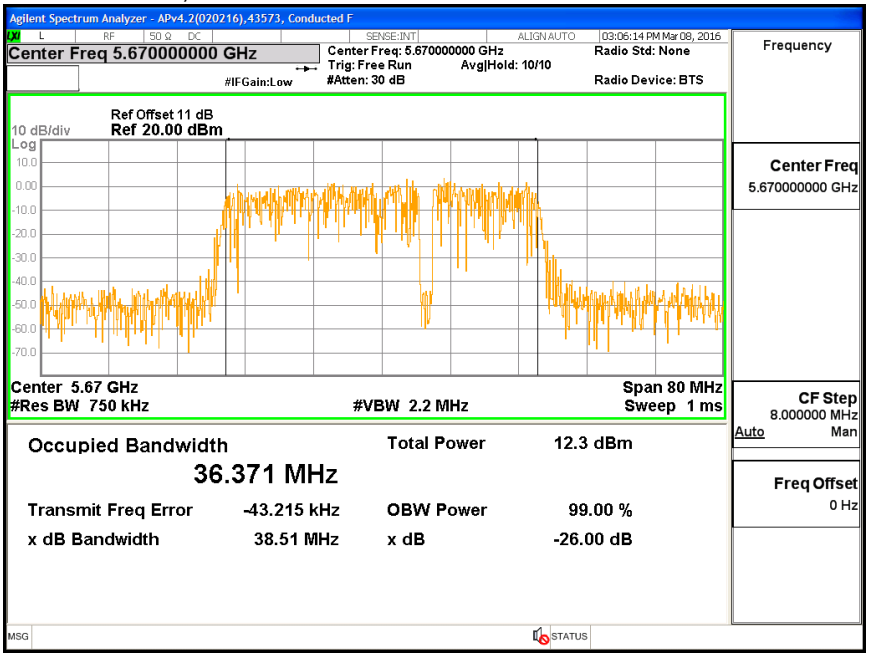
BANDWIDTH, MID CH



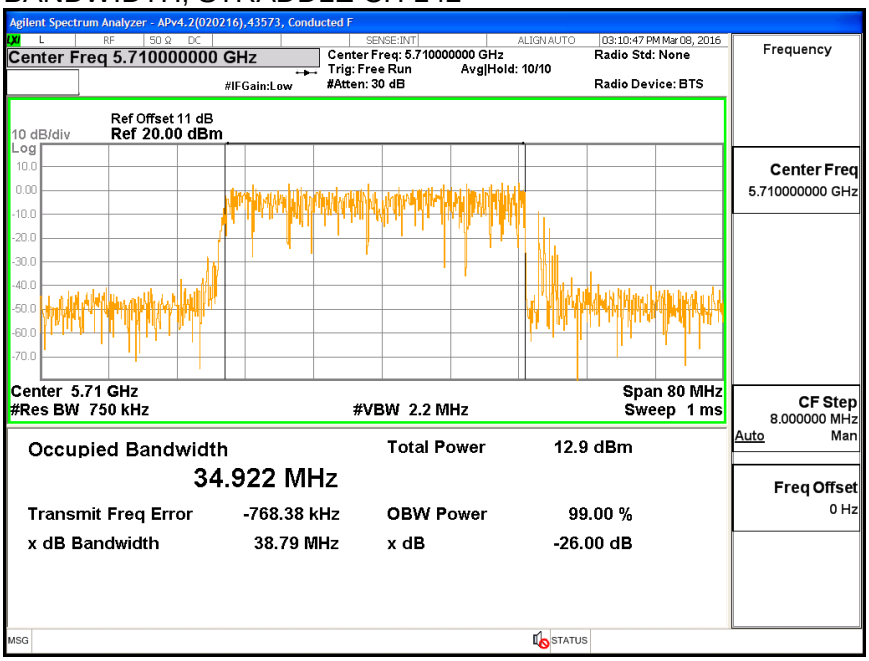
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH, STRADDLE CH 142



8.27.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	7/28/16

Channel	Frequency (MHz)	Power (dBm)
Low	5510	15.32
Mid	5550	18.50
Mid	5590	19.50
High	5670	17.30
142	5710	18.98

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 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

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

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

ID:	39004	Date:	7/28/16

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	40.50	36.482	-0.80	24.00	11.00
Mid	5550	40.50	36.463	-0.80	24.00	11.00
Mid	5590	44.10	36.849	-0.80	24.00	11.00
High	5670	40.26	36.371	-0.80	24.00	11.00

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

Output Power Results

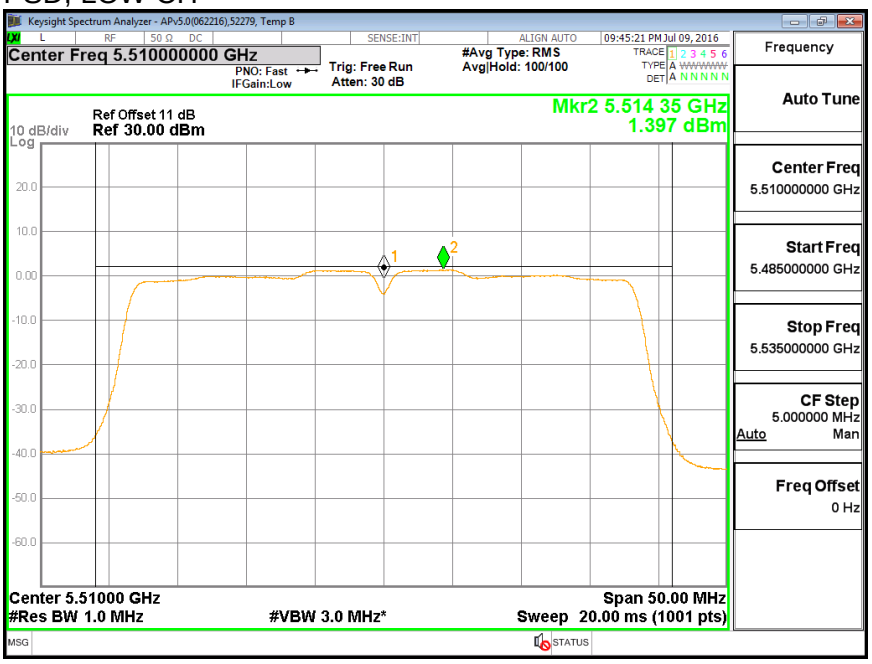
Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.32	15.32	24.00	-8.68
Mid	5550	18.50	18.50	24.00	-5.50
Mid	5590	19.50	19.50	24.00	-4.50
High	5670	17.30	17.30	24.00	-6.70

PSD Results

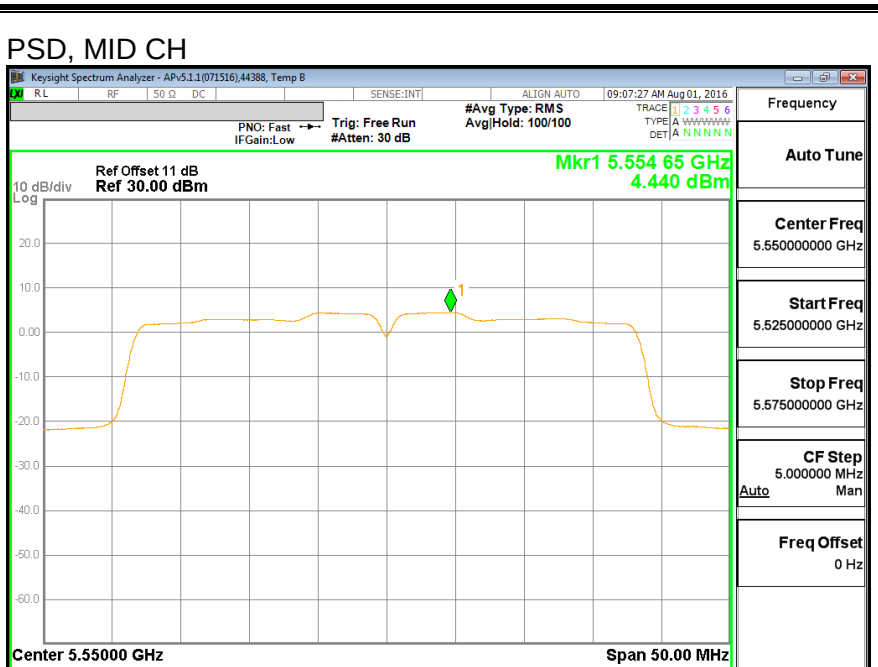
Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	1.40	1.40	11.00	-9.60
Mid	5550	4.44	4.44	11.00	-6.56
Mid	5590	5.16	5.16	11.00	-5.84
High	5670	3.32	3.32	11.00	-7.68

PSD

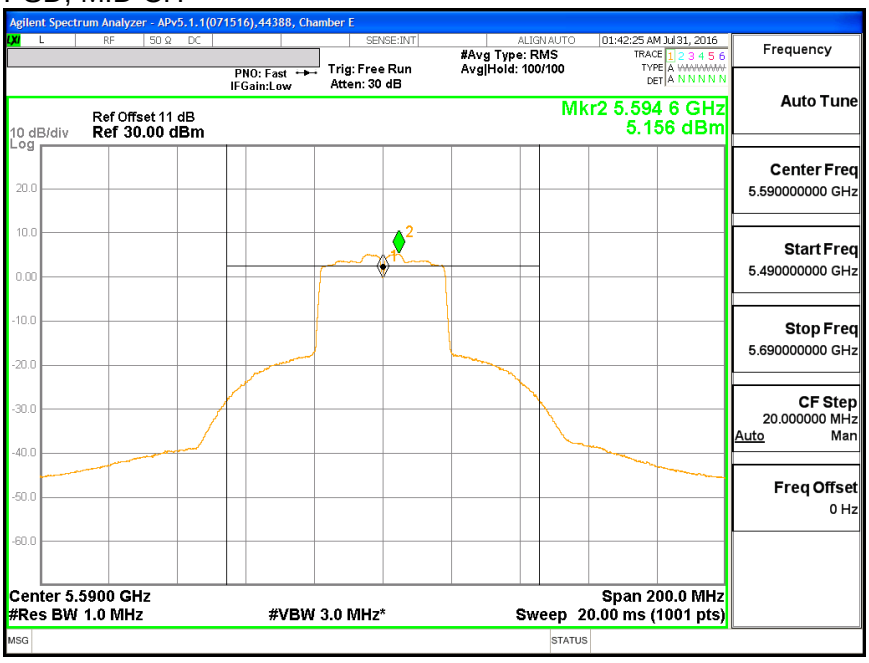
PSD, LOW CH



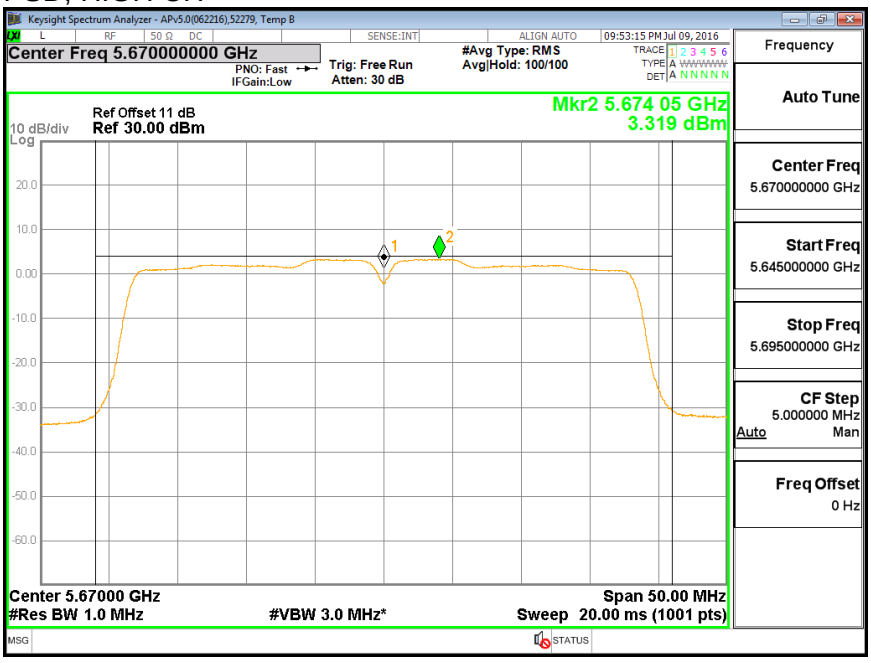
PSD, MID CH



PSD, MID CH



PSD, HIGH CH



8.28. 802.11ac VHT40 CHAIN 1 STRADDLE CH 142 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)
142	5710	35.25	-0.80	-0.80	24.00	11.00

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

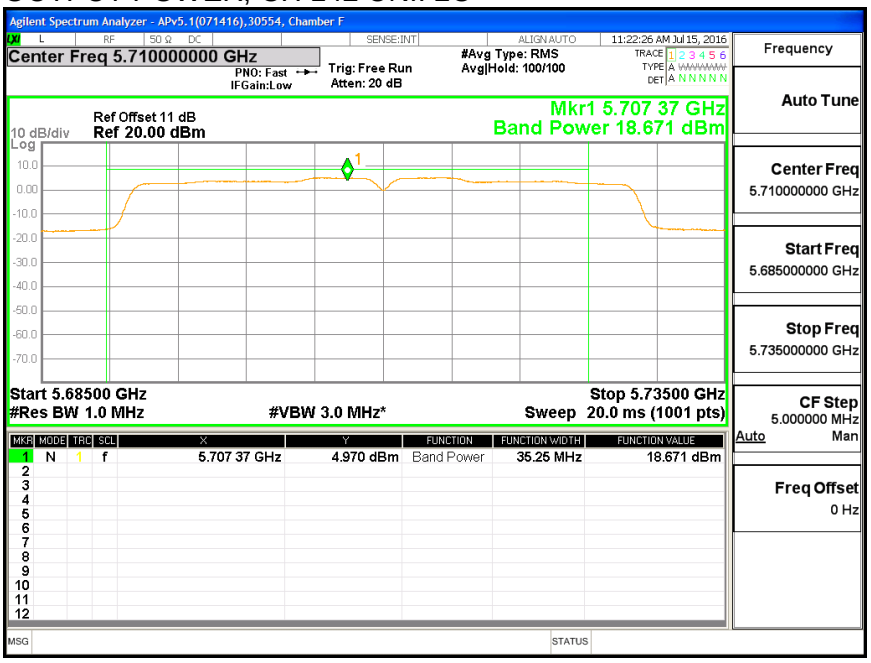
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	18.67	18.67	24.00	-5.33

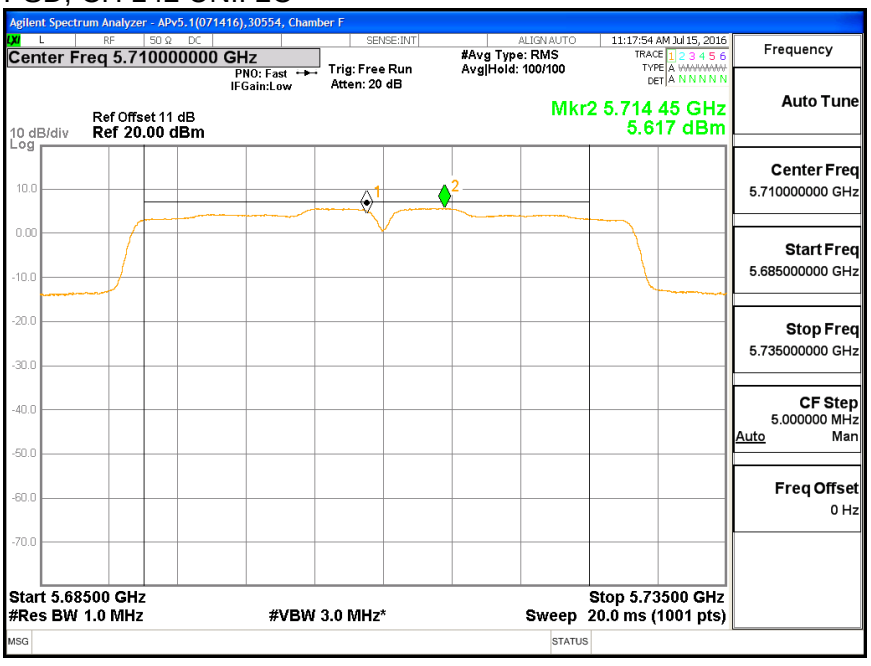
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	5.62	5.62	11.00	-5.38

OUTPUT POWER, CH 142 UNII 2C



PSD, CH 142 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)
142	5710	5.25	-0.80	30.00	30.00

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

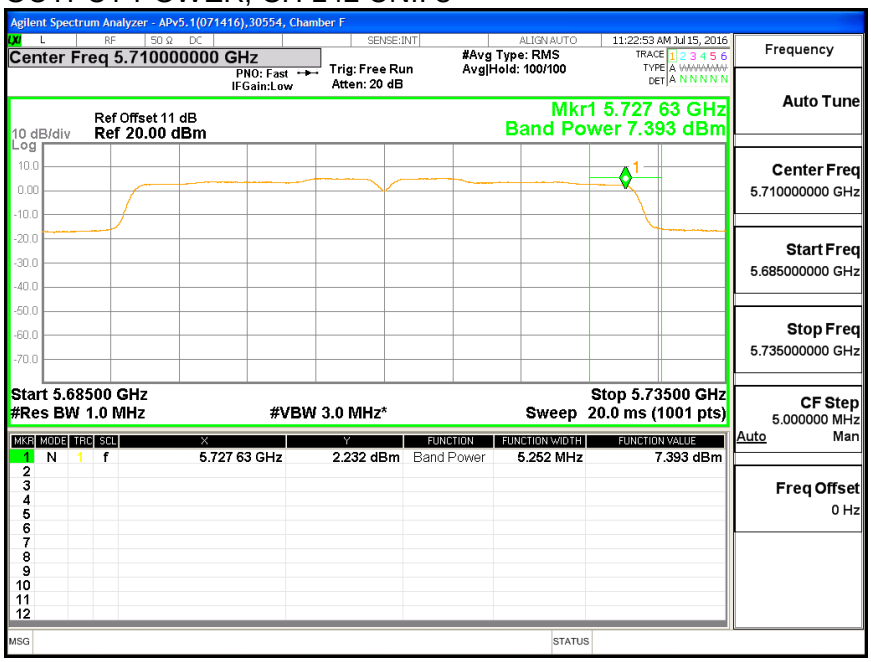
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	7.39	7.39	30.00	-22.61

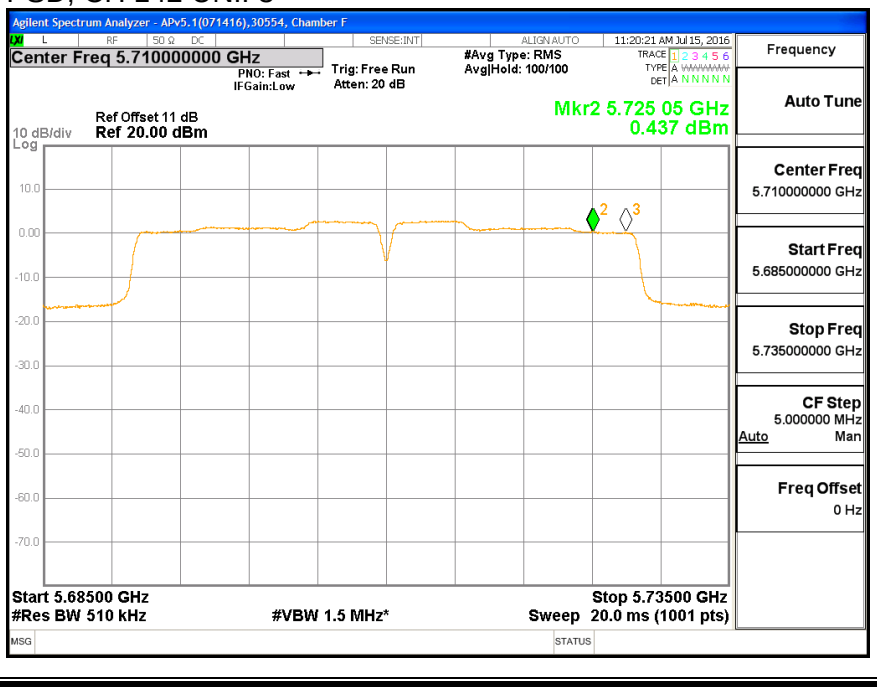
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	0.44	0.44	30.00	-29.56

OUTPUT POWER, CH 142 UNII 3



PSD, CH 142 UNII 3



8.28.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

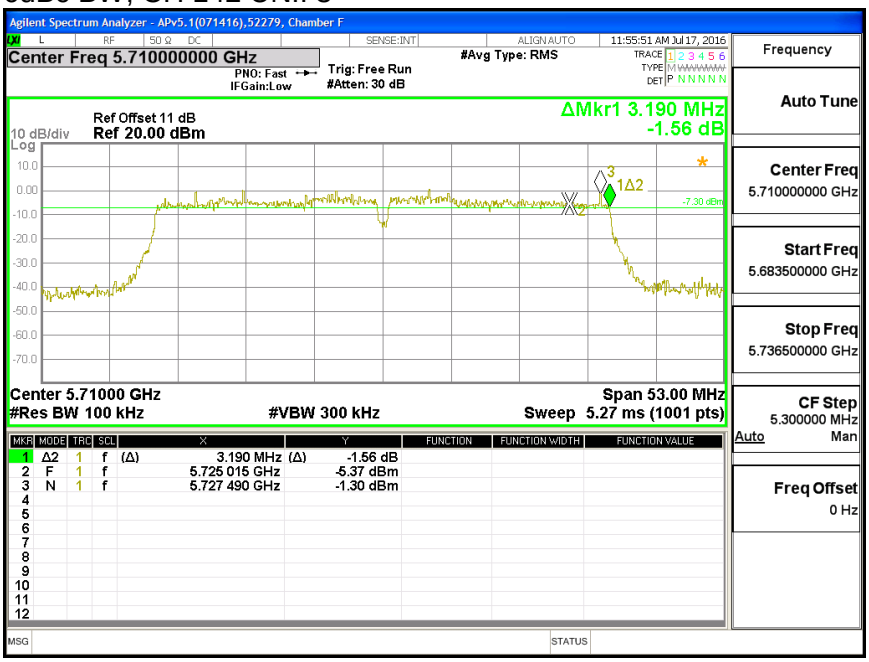
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
142	5710	3.19

6 dB BANDWIDTH

6dBc BW, CH 142 UNII 3



8.29. 802.11n HT40 2Tx CDD MODE IN THE 5.6 GHz BAND

8.29.1. 26 dB BANDWIDTH

LIMITS

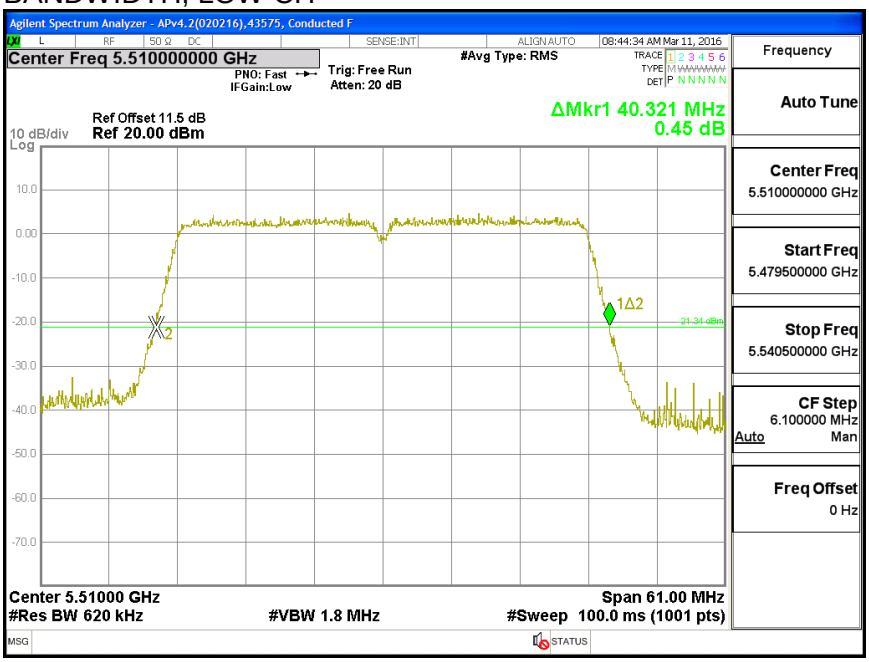
None; for reporting purposes only.

RESULTS

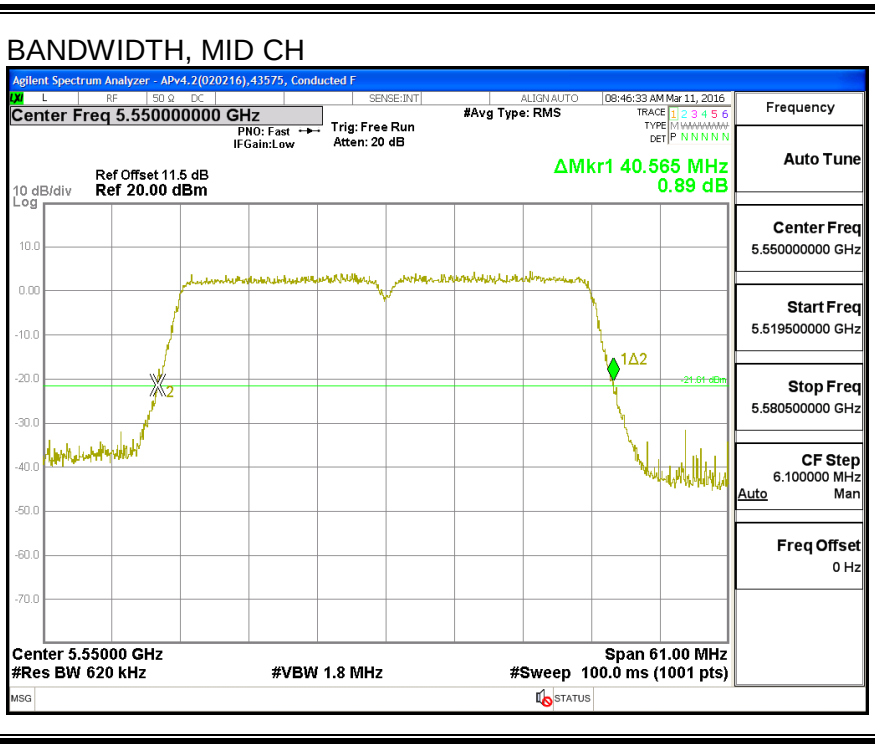
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5510	40.321	39.840
Mid	5550	40.565	39.660
Mid	5590	40.016	40.687
High	5670	40.443	39.840
142	5710	40.626	39.960

26 dB BANDWIDTH, CHAIN 0

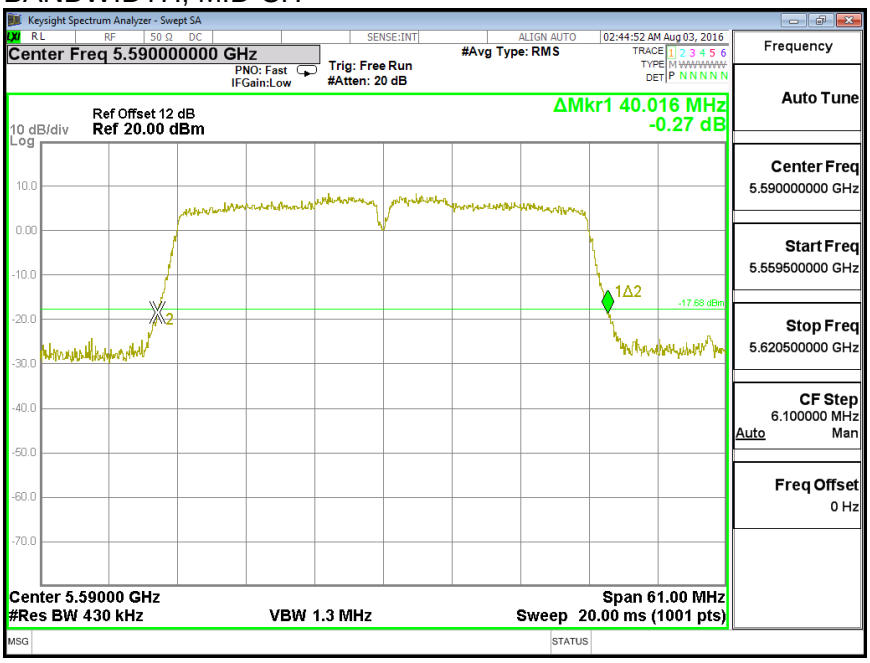
BANDWIDTH, LOW CH



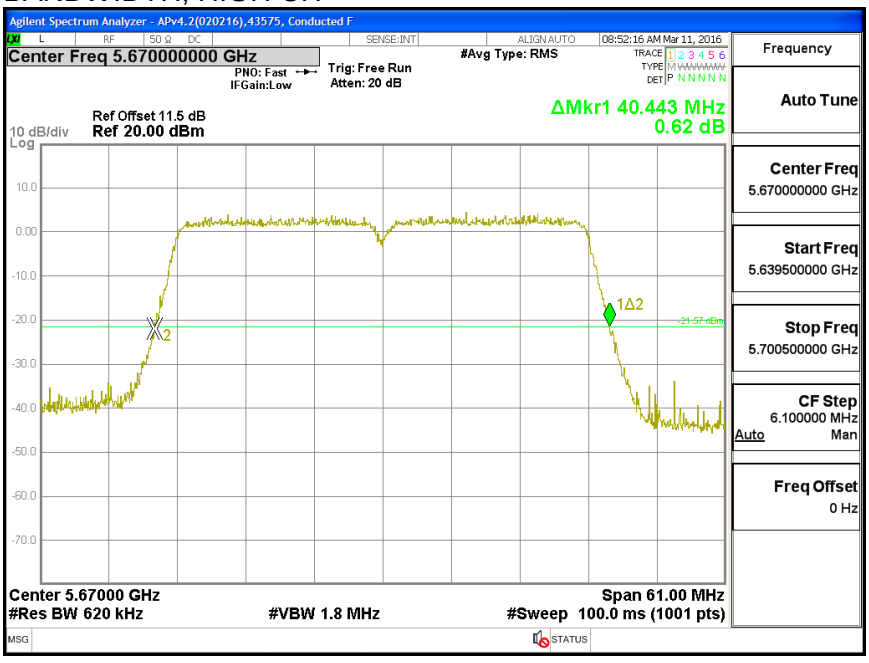
BANDWIDTH, MID CH



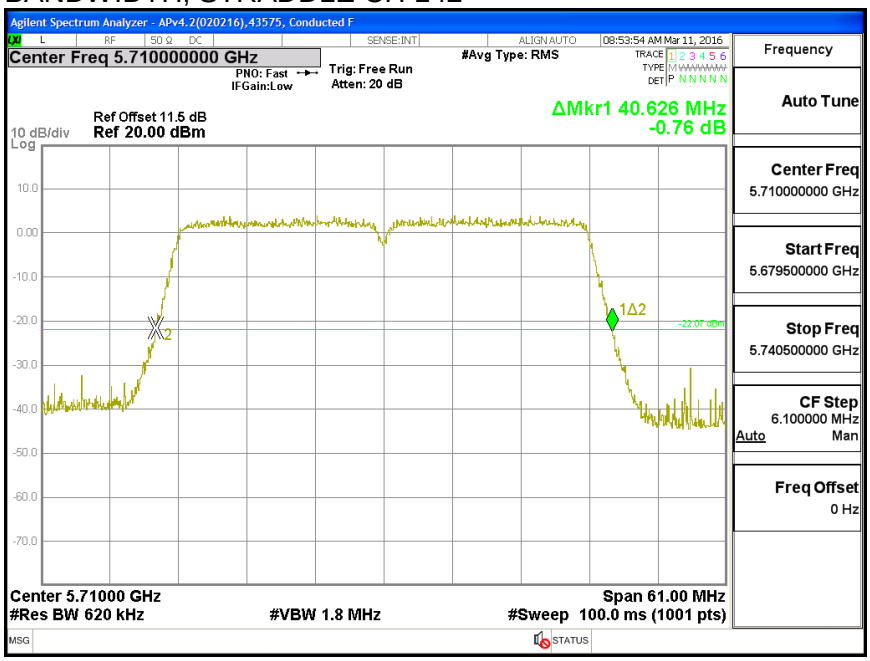
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH

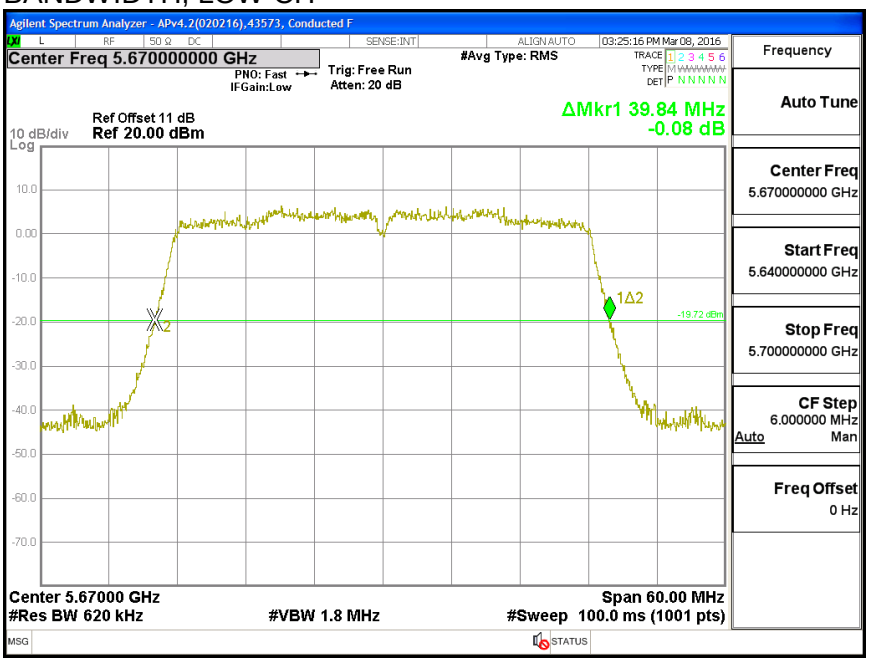


BANDWIDTH, STRADDLE CH 142

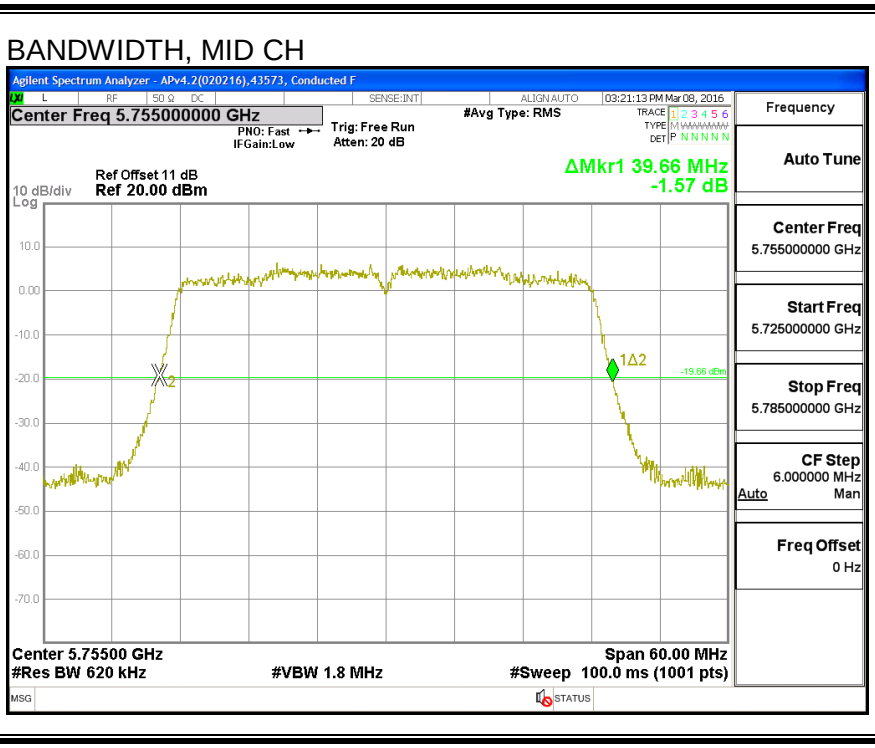


26 dB BANDWIDTH, CHAIN 1

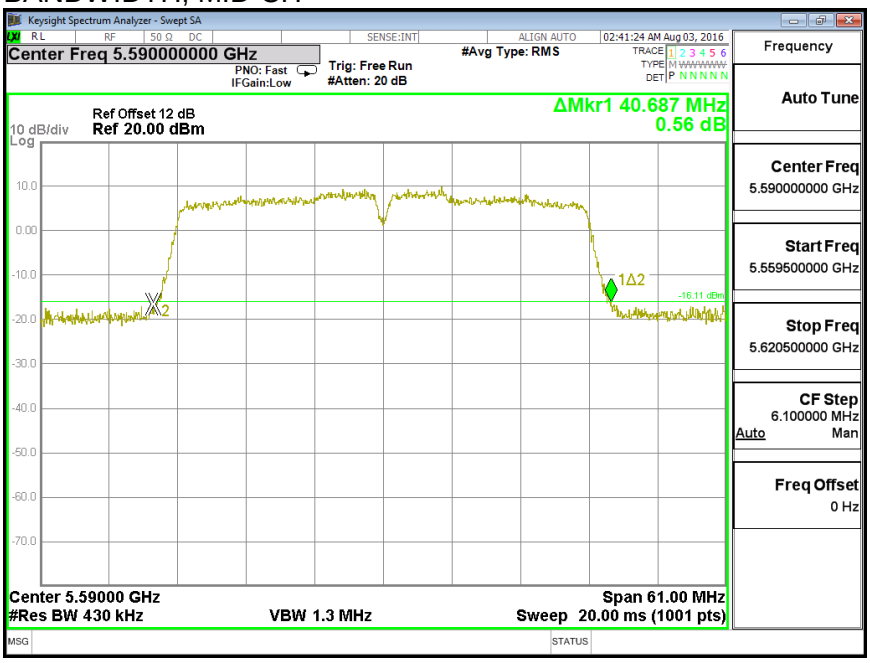
BANDWIDTH, LOW CH



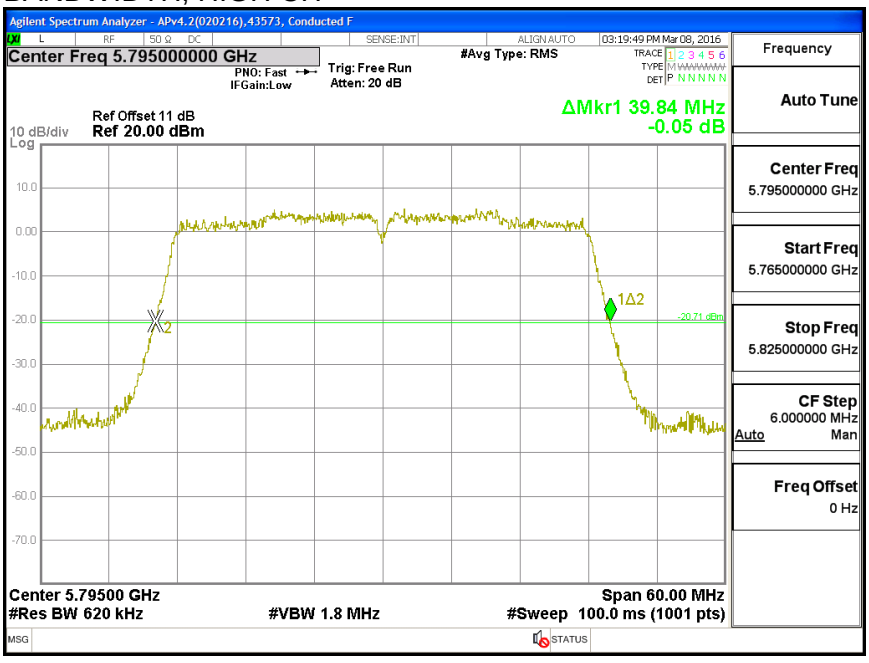
BANDWIDTH, MID CH



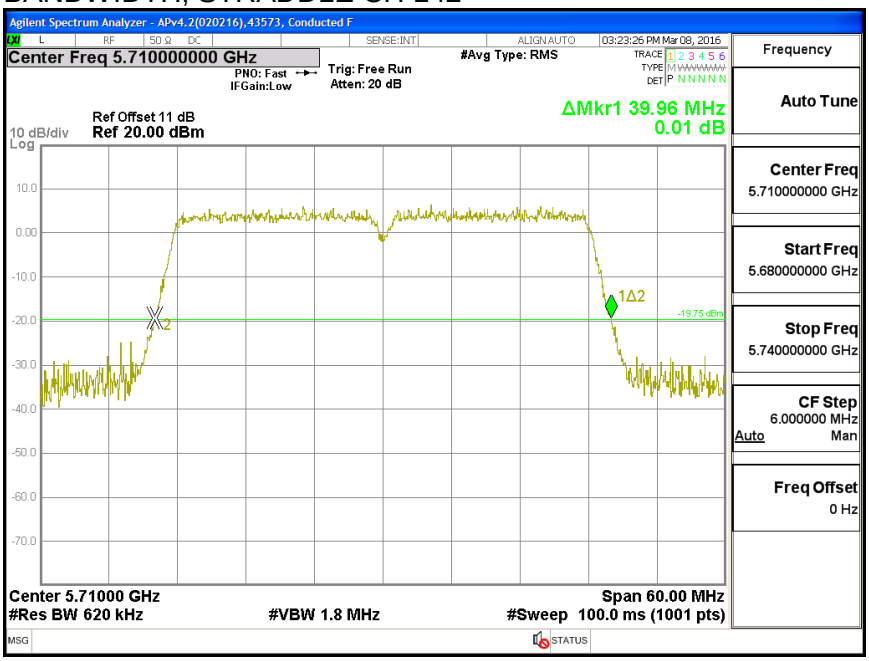
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH, STRADDLE CH 142



8.29.2. 99% BANDWIDTH

LIMITS

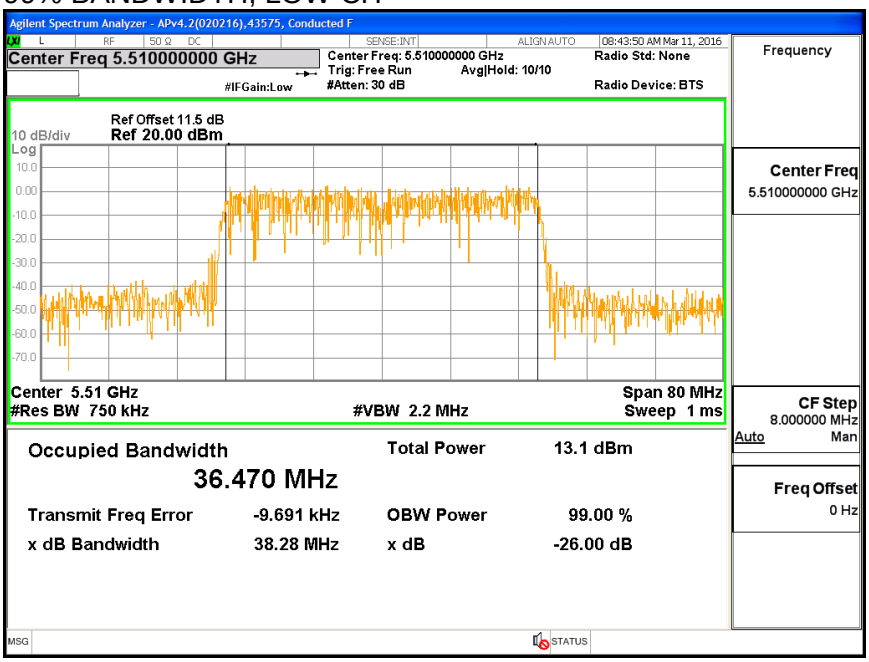
None; for reporting purposes only.

RESULTS

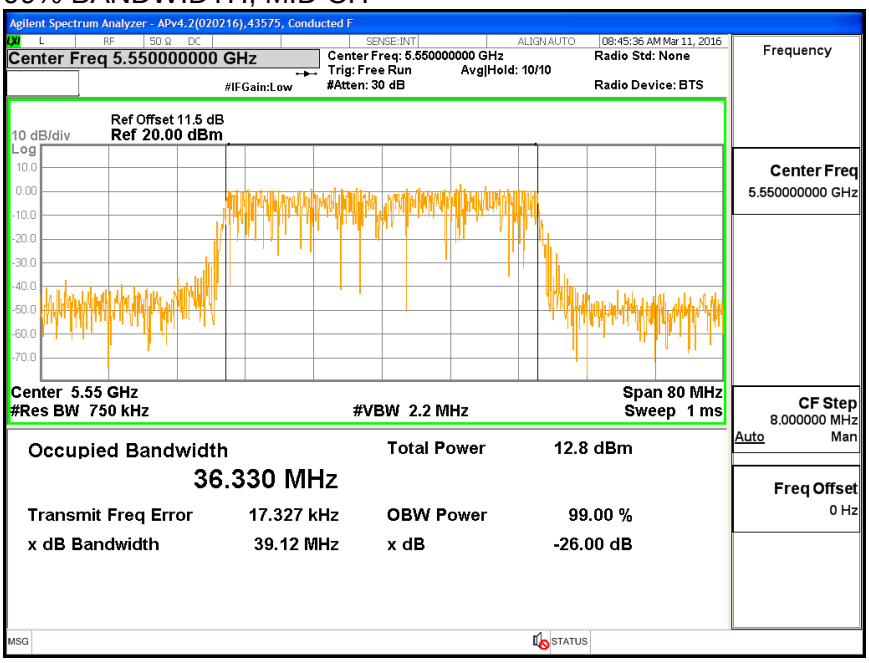
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5510	36.470	36.336
Mid	5550	36.330	36.388
Mid	5590	36.456	39.953
High	5670	36.399	36.216
142	5710	36.417	36.578

99% BANDWIDTH, CHAIN 0

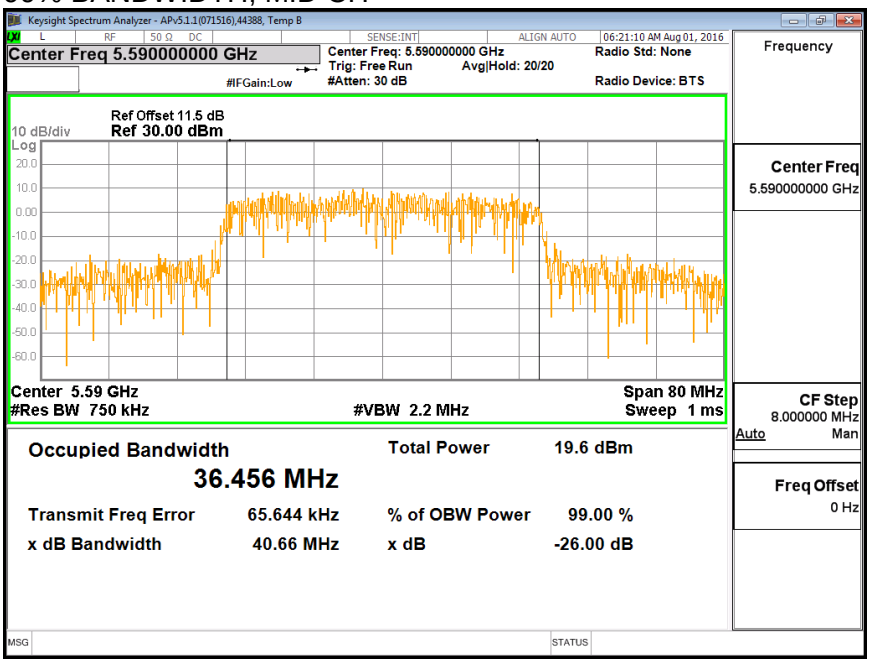
99% BANDWIDTH, LOW CH



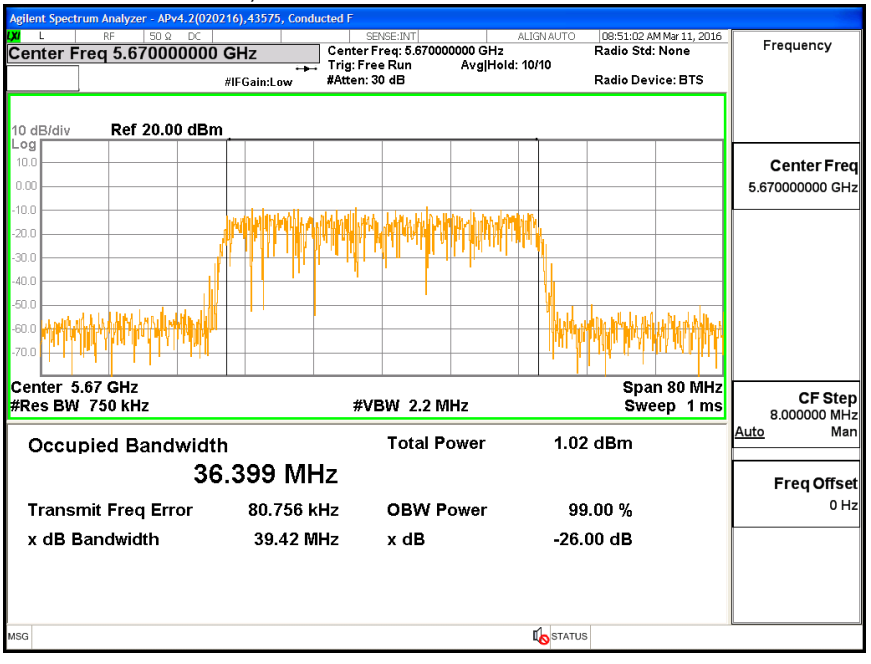
99% BANDWIDTH, MID CH



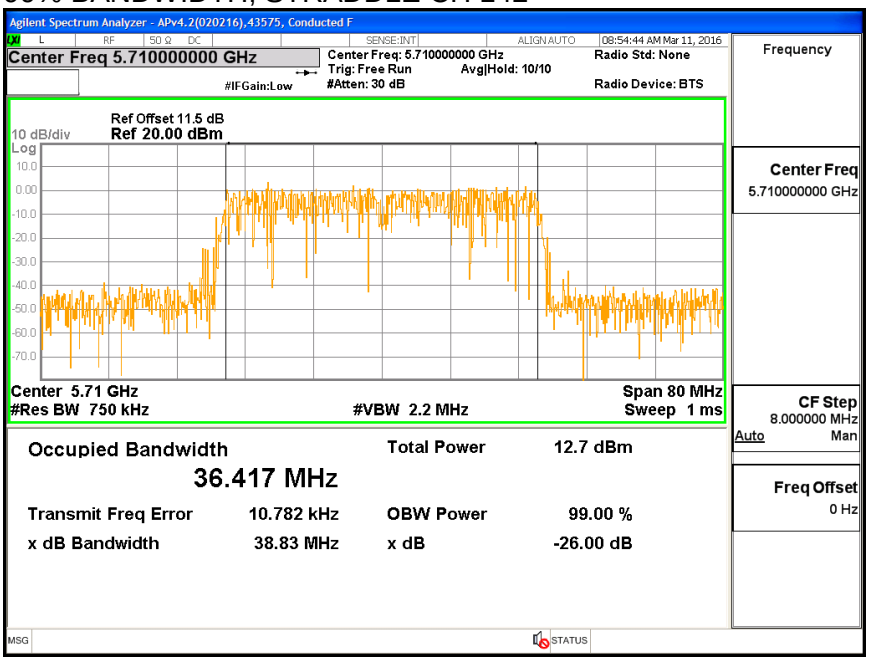
99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH

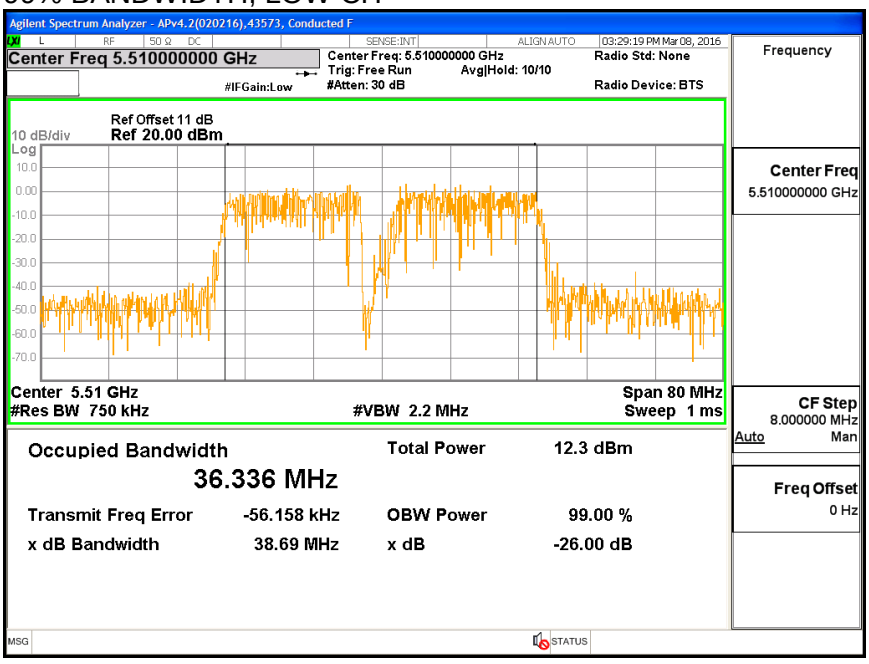


99% BANDWIDTH, STRADDLE CH 142

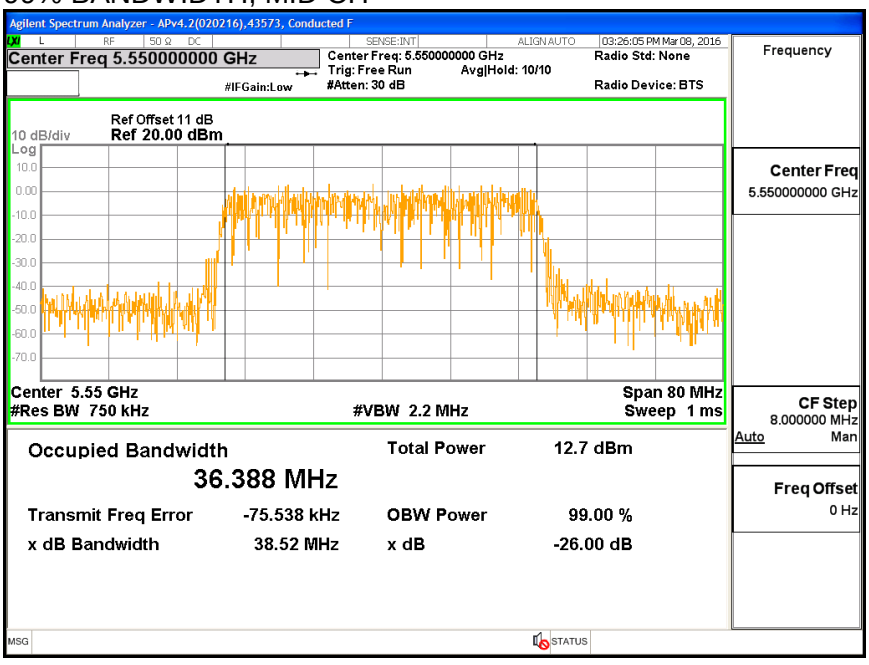


99% BANDWIDTH, CHAIN 1

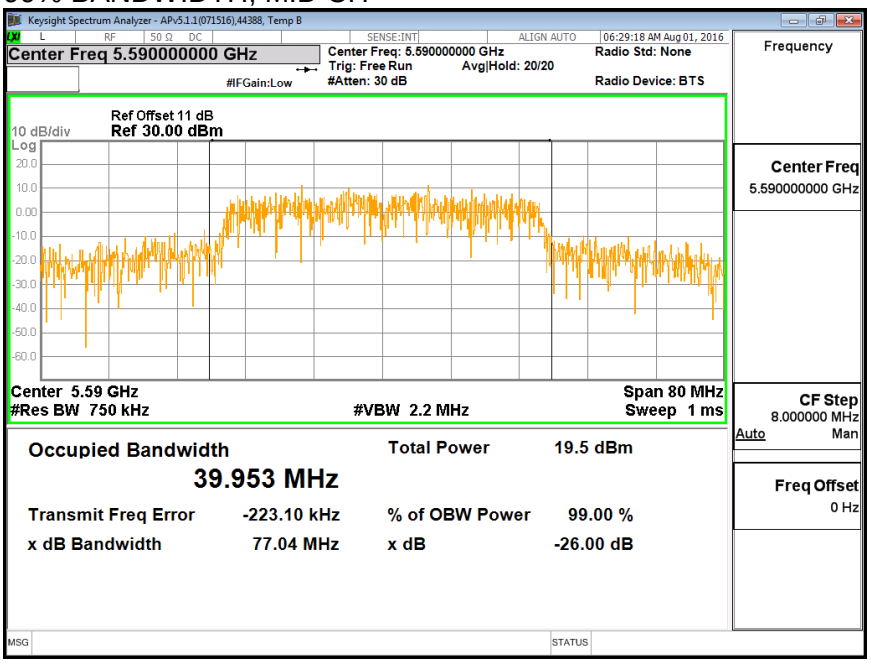
99% BANDWIDTH, LOW CH



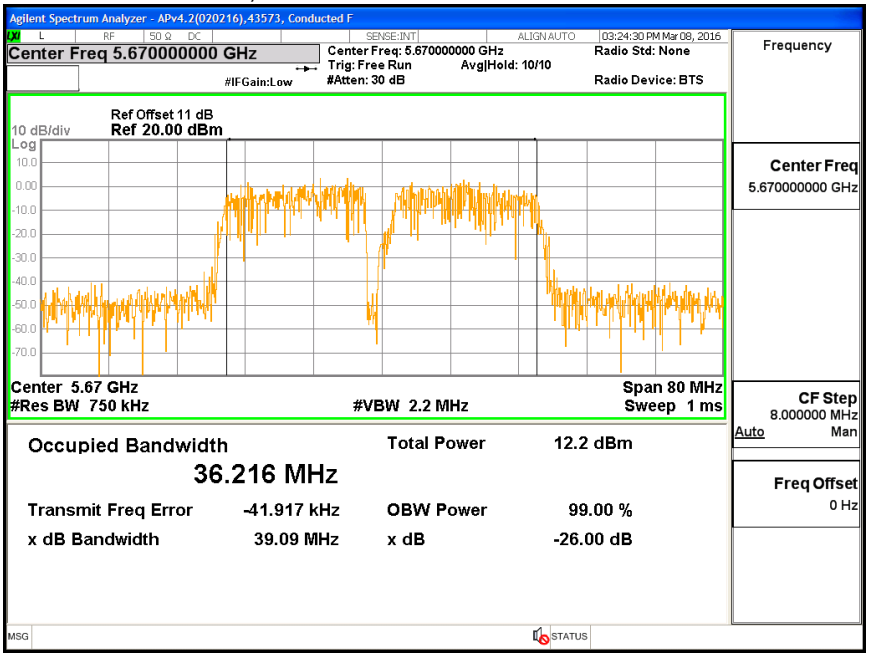
99% BANDWIDTH, MID CH



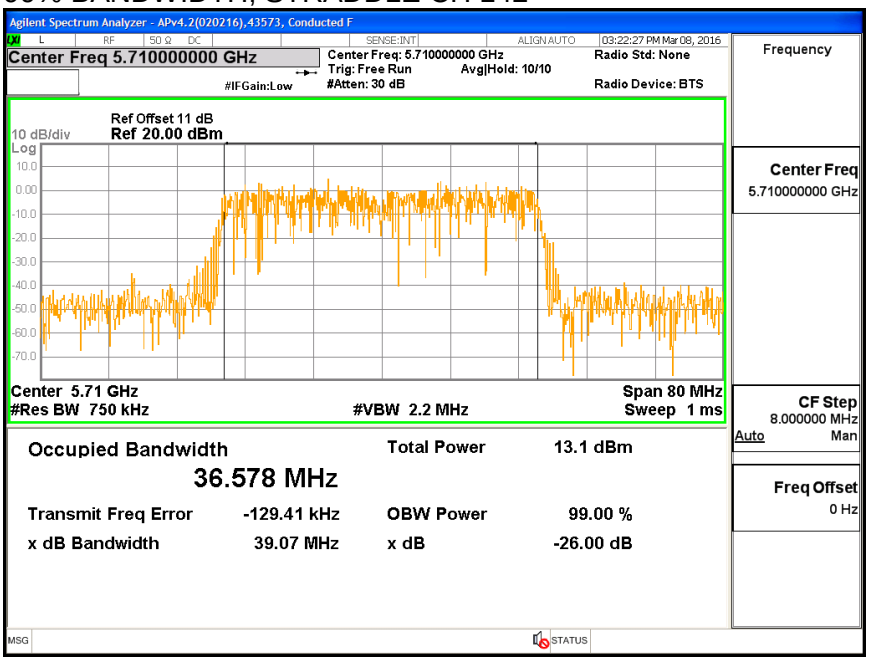
99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH



99% BANDWIDTH, STRADDLE CH 142



8.29.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	7/28/16

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5510	13.46	13.50	16.49
Mid	5550	17.00	18.50	20.82
Mid	5590	17.00	19.48	21.42
High	5670	15.39	15.30	18.36
142	5710	17.00	18.50	20.82

8.29.4. 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:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
0.17	-0.80	-0.29

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
0.17	-0.80	2.71

RESULTS

ID:	52279	Date:	7/10/16

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	39.84	36.336	-0.29	2.71	24.00	11.00
Mid	5550	39.66	36.33	-0.29	2.71	24.00	11.00
Mid	5590	40.69	39.953	-0.29	2.71	24.00	11.00
High	5670	39.84	36.417	-0.29	2.71	24.00	11.00

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

Output Power Results

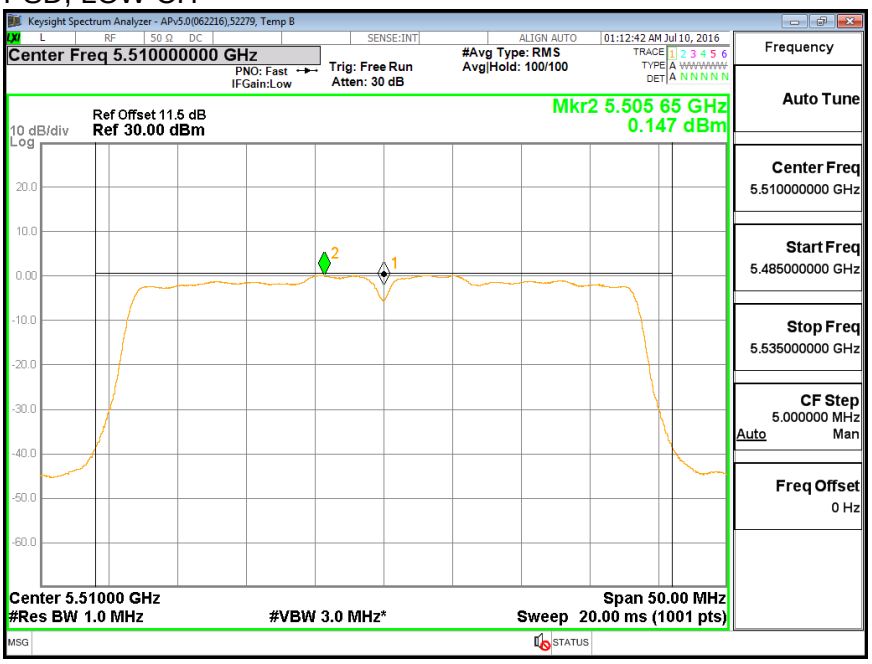
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	13.46	13.50	16.49	24.00	-7.51
Mid	5550	17.00	18.50	20.82	24.00	-3.18
Mid	5590	17.00	19.48	21.42	24.00	-2.58
High	5670	15.39	15.30	18.36	24.00	-5.64

PSD Results

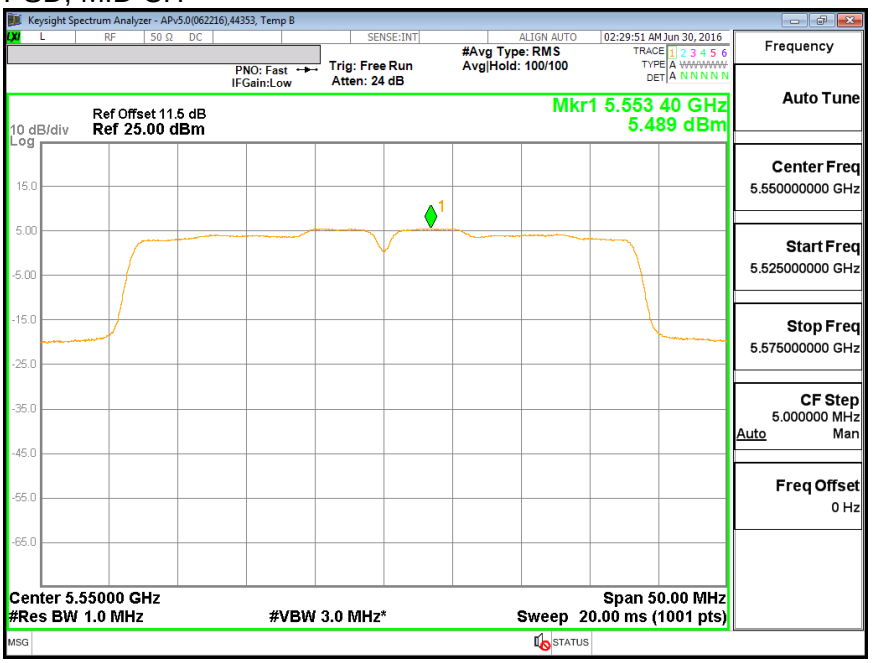
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	0.147	0.158	3.16	11.00	-7.84
Mid	5550	5.489	5.556	8.53	11.00	-2.47
Mid	5590	5.283	5.401	8.35	11.00	-2.65
High	5670	1.608	1.325	4.48	11.00	-6.52

PSD, CHAIN 0

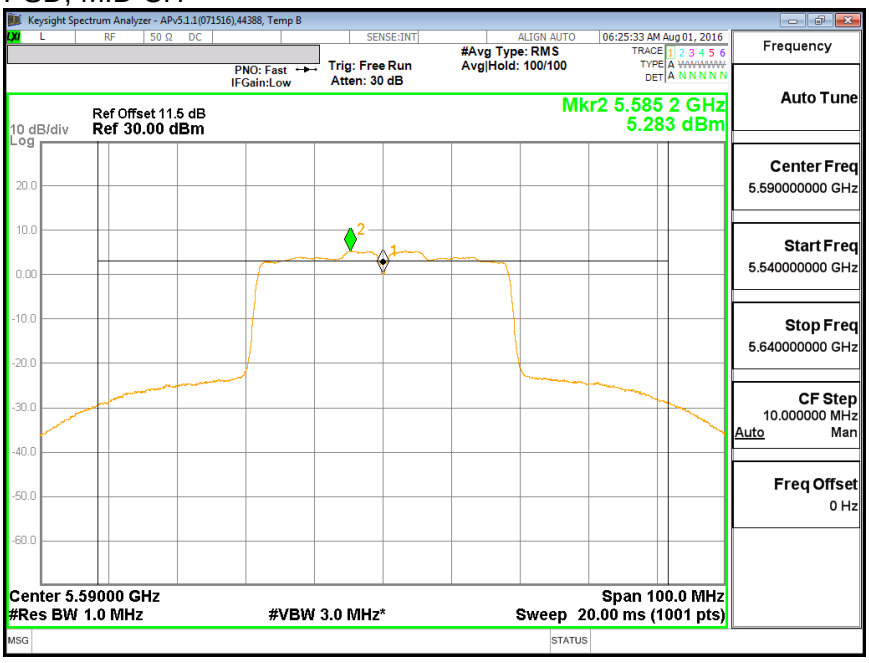
PSD, LOW CH



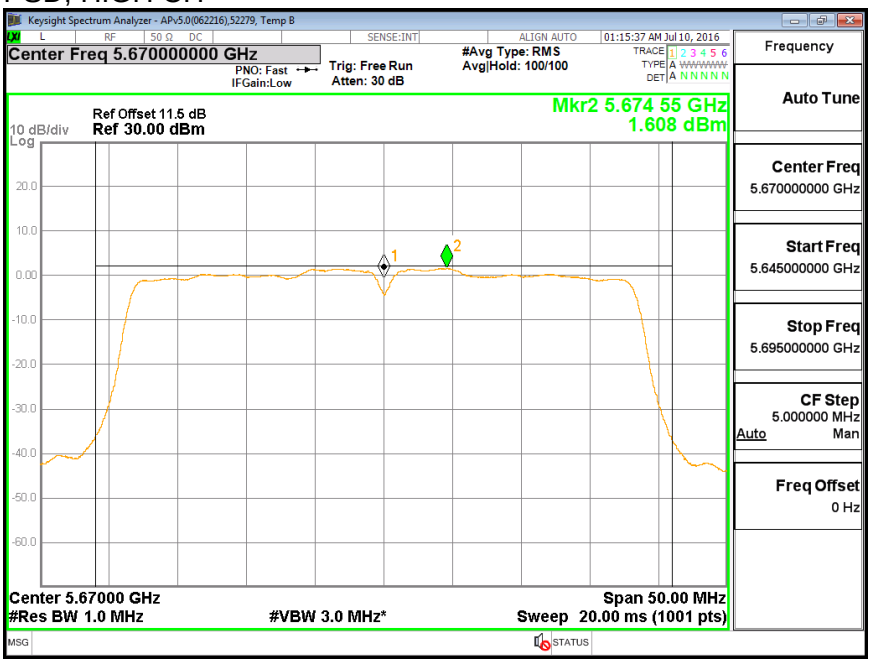
PSD, MID CH



PSD, MID CH

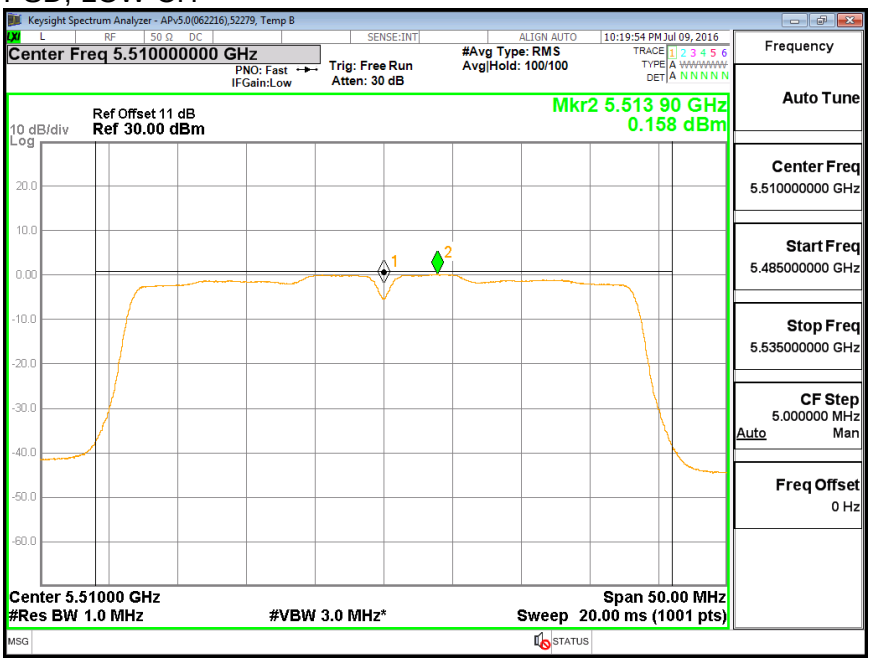


PSD, HIGH CH

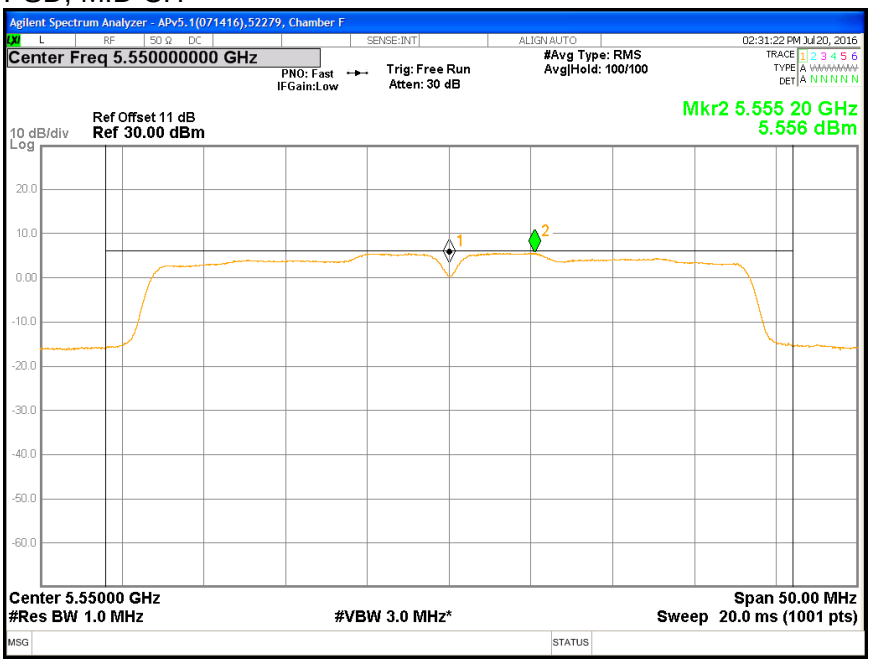


PSD, CHAIN 1

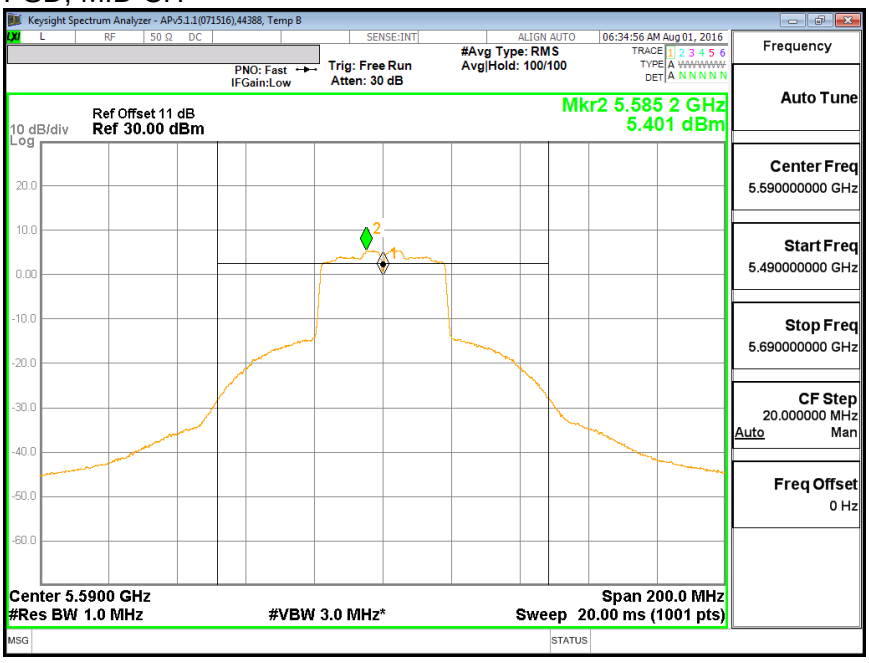
PSD, LOW CH



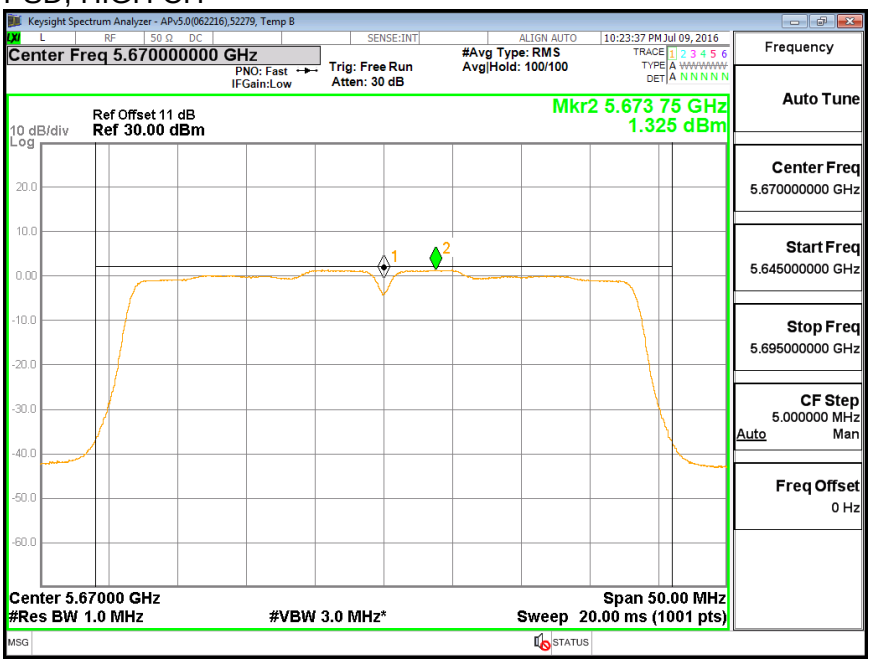
PSD, MID CH



PSD, MID CH



PSD, HIGH CH



8.30. 802.11ac VHT40 2Tx CDD STRADDLE CHANNEL 142 RESULTS

8.30.1. OUTPUT POWER AND PSD

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	35.31	-0.29	2.71	24.00	11.00

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

Output Power Results

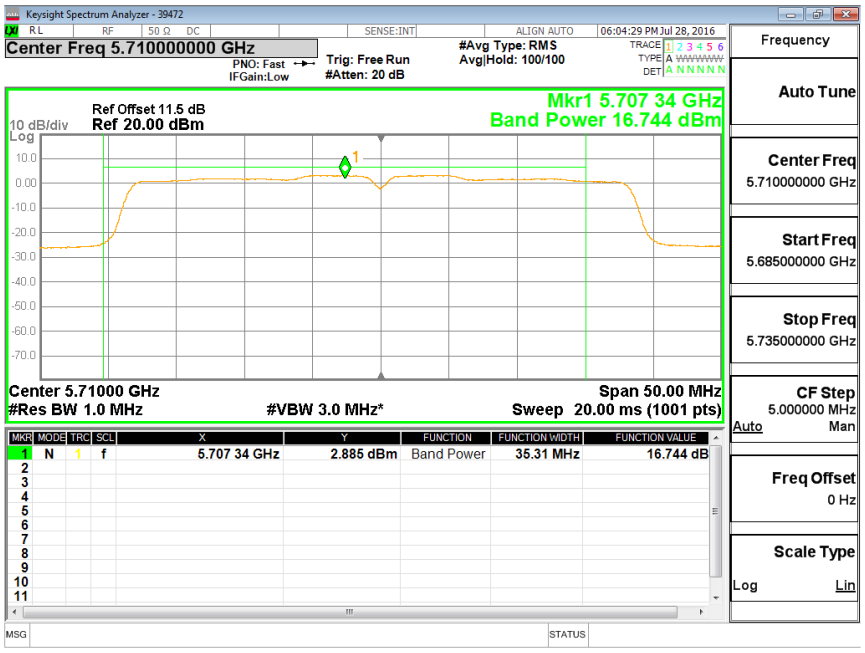
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	16.74	18.65	20.81	24.00	-3.19

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	2.93	5.11	7.16	11.00	-3.84

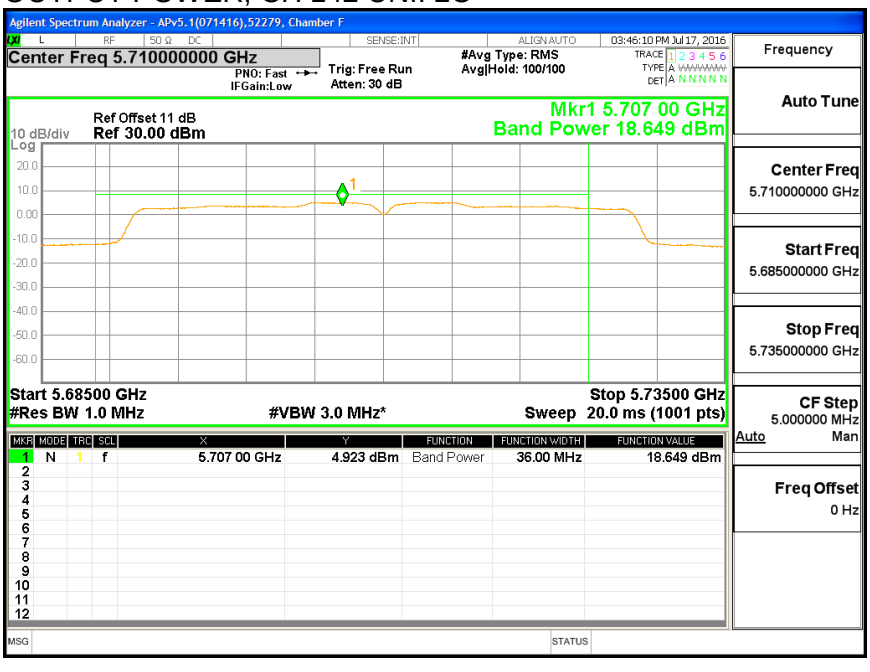
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 142 UNII 2C

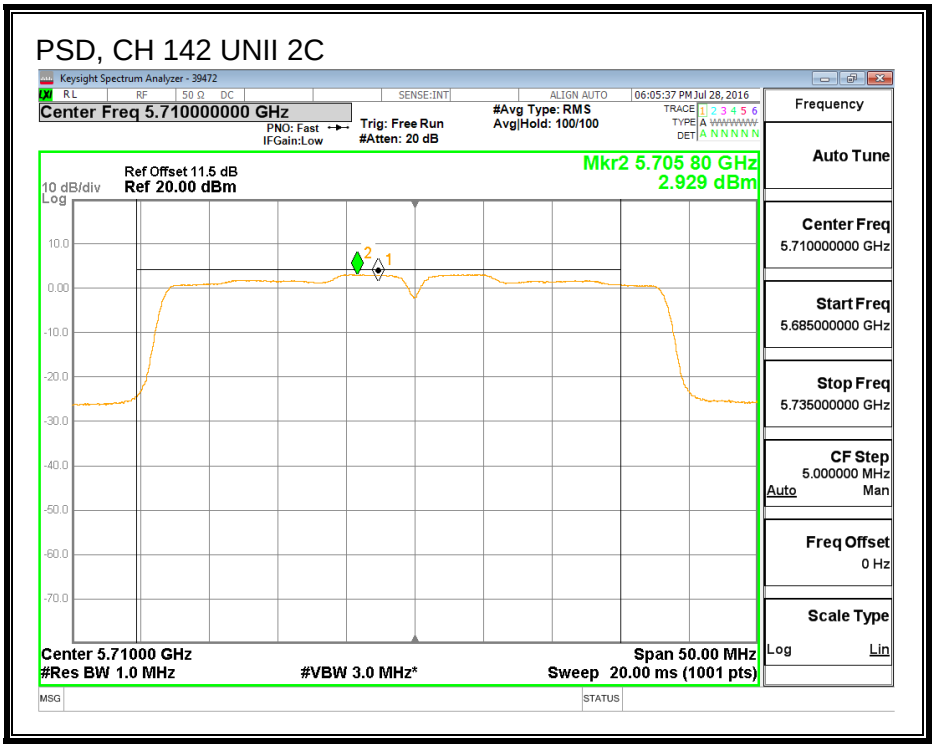


OUTPUT POWER, CHAIN 1

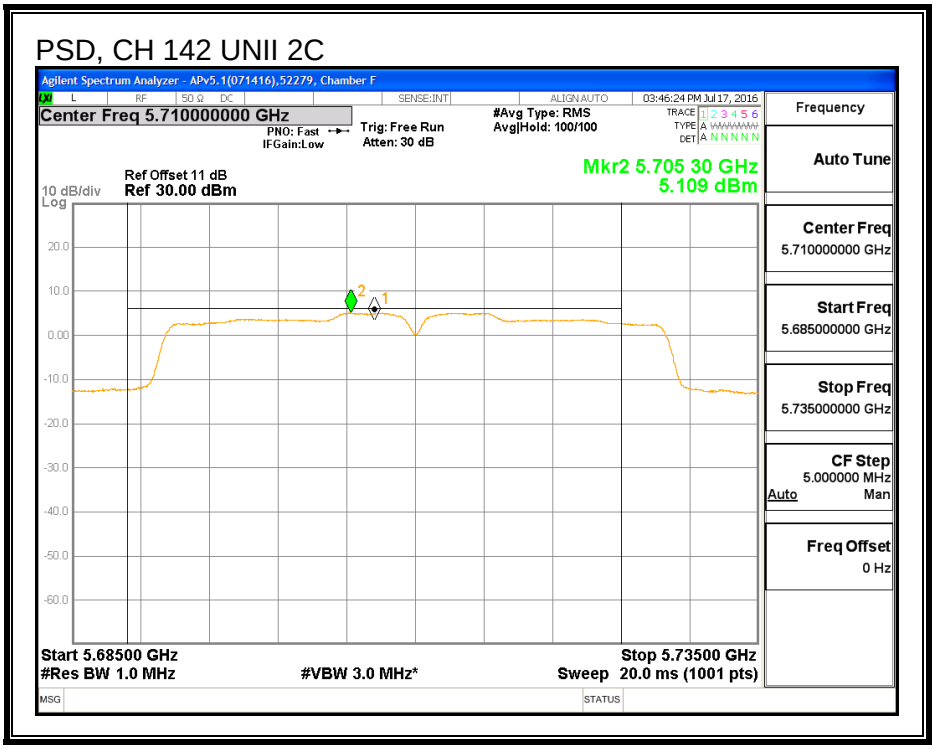
OUTPUT POWER, CH 142 UNII 2C



PSD, CHAIN 0



PSD, CHAIN 1



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain For Power (dBi)	Directional Gain For PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	6.38	-0.29	2.71	30.00	30.00

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

Output Power Results

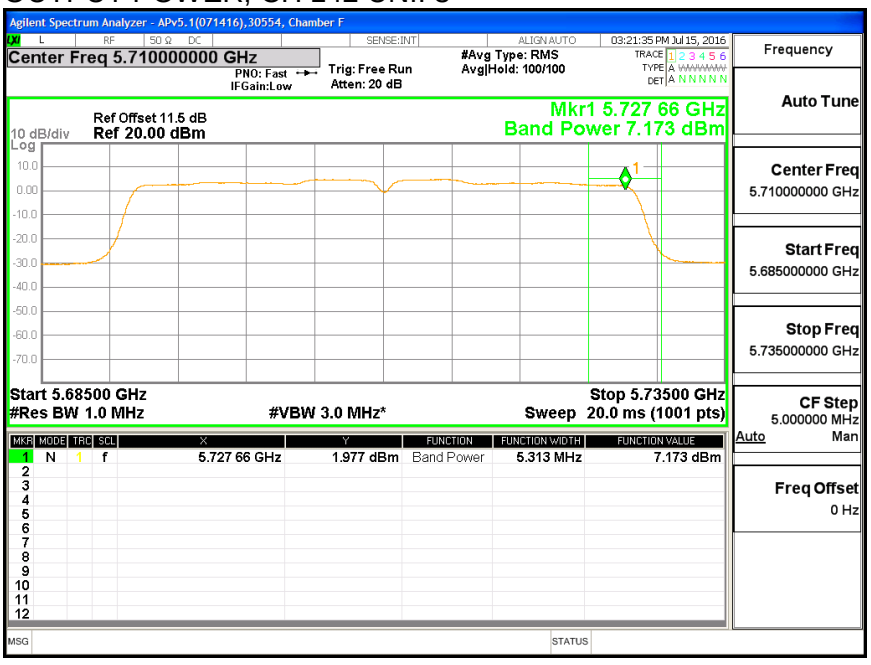
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	7.17	7.51	10.36	30.00	-19.64

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-0.28	-0.73	2.51	30.00	-27.49

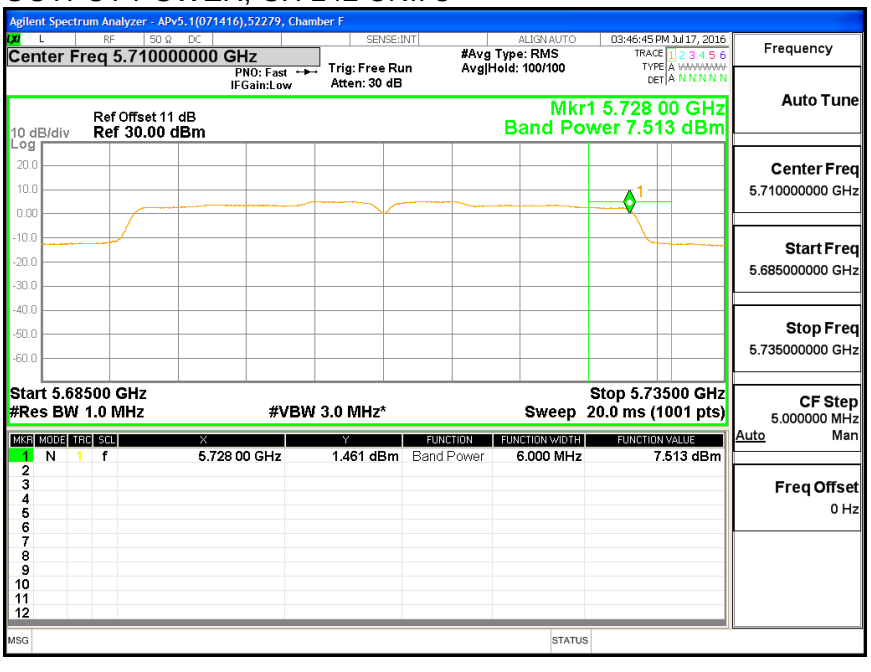
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 142 UNII 3

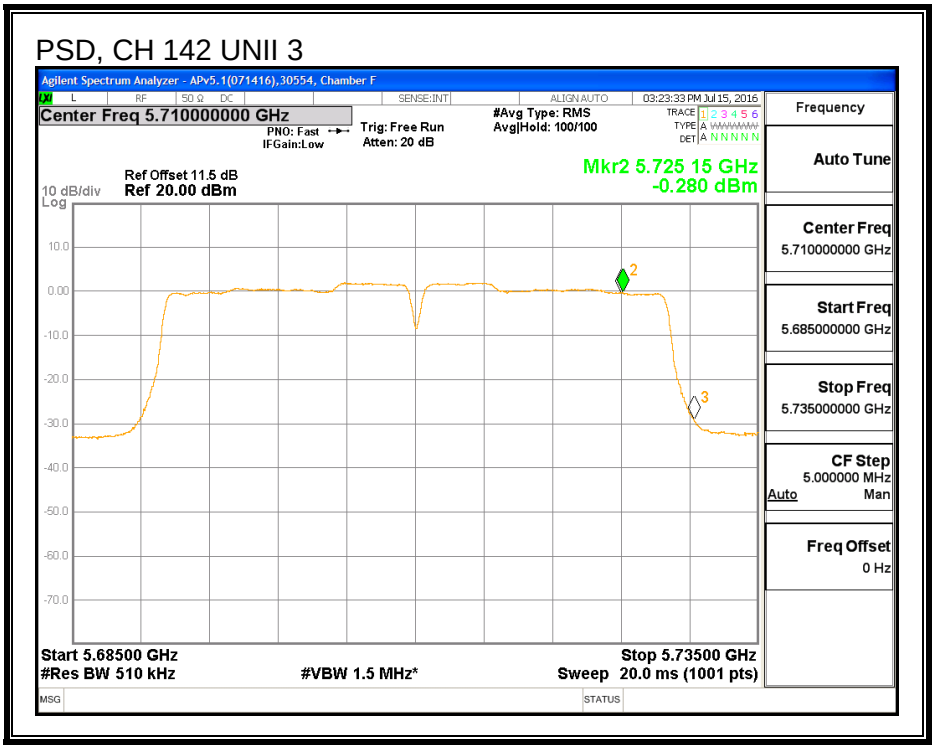


OUTPUT POWER, CHAIN 1

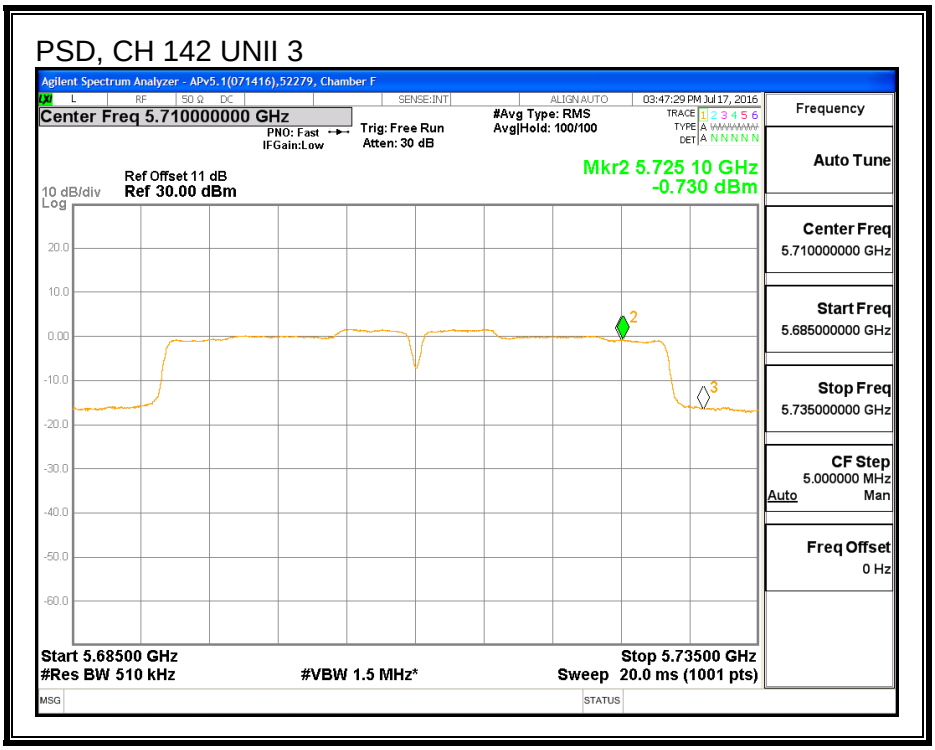
OUTPUT POWER, CH 142 UNII 3



PSD, CHAIN 0



PSD, CHAIN 1



8.30.2. 6 dB BANDWIDTH

LIMITS

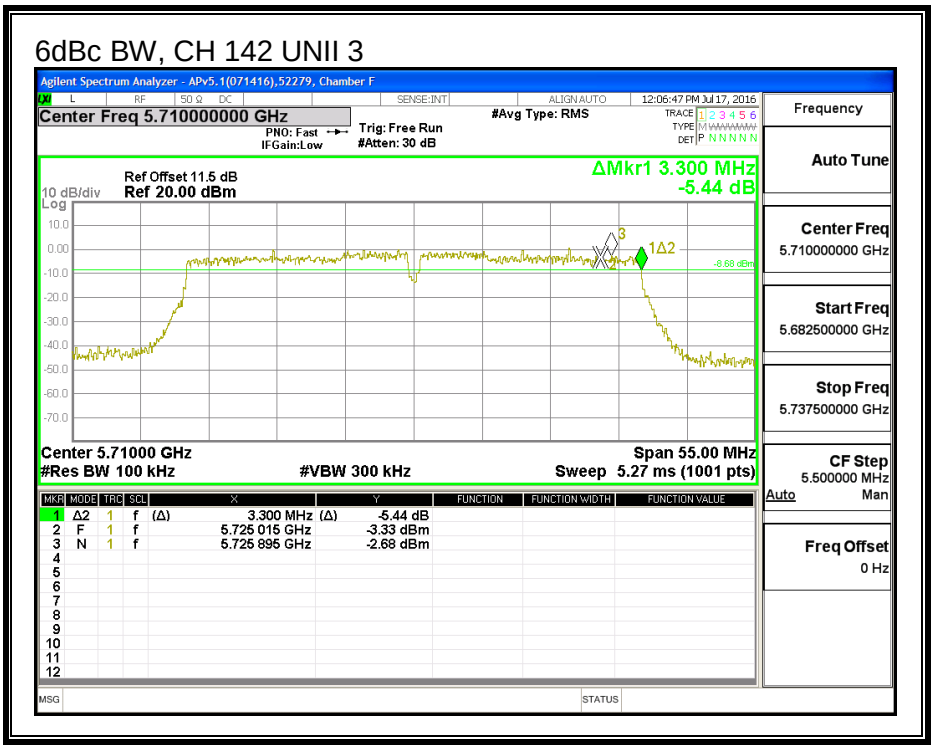
FCC §15.407 (e)

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

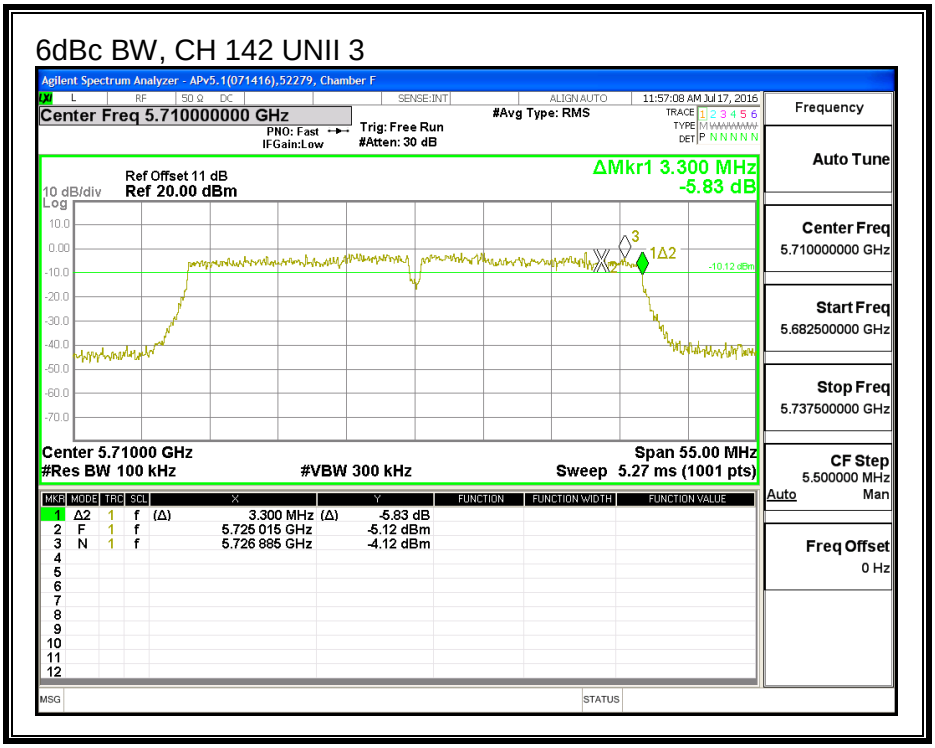
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)
142	5710	3.30	3.30

CHAIN 0



CHAIN 1



8.31. 802.11ac VHT80 CHAIN 0 MODE IN THE 5.6 GHz BAND

8.31.1. 26 dB BANDWIDTH

LIMITS

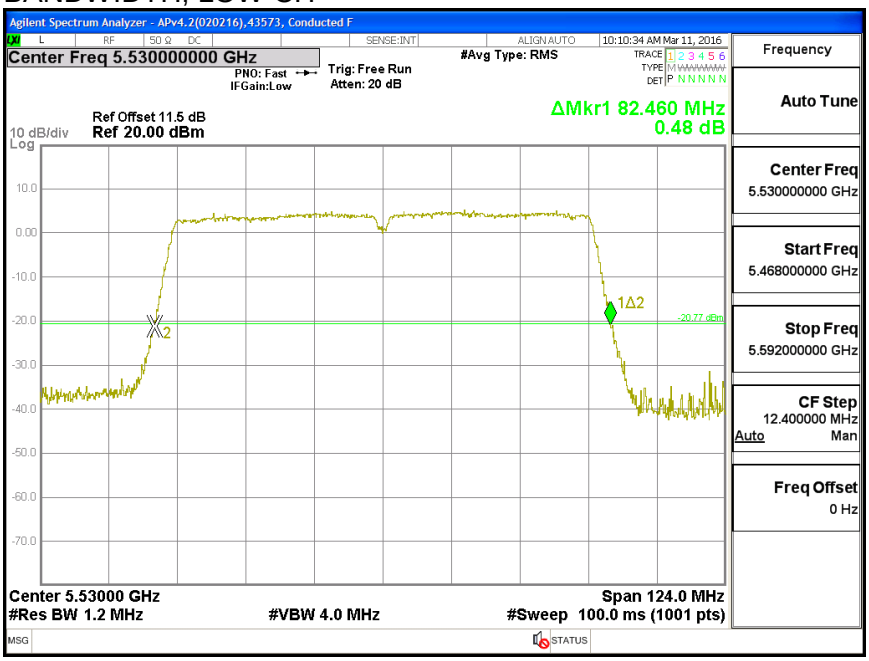
None; for reporting purposes only.

RESULTS

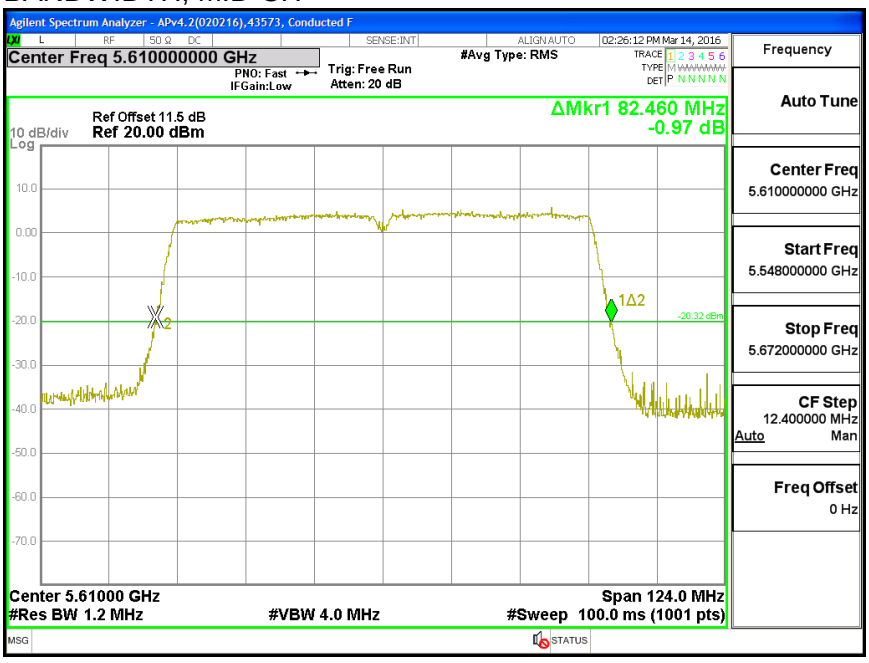
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.460
Mid	5610	82.460
High	5690	82.584

26 dB BANDWIDTH

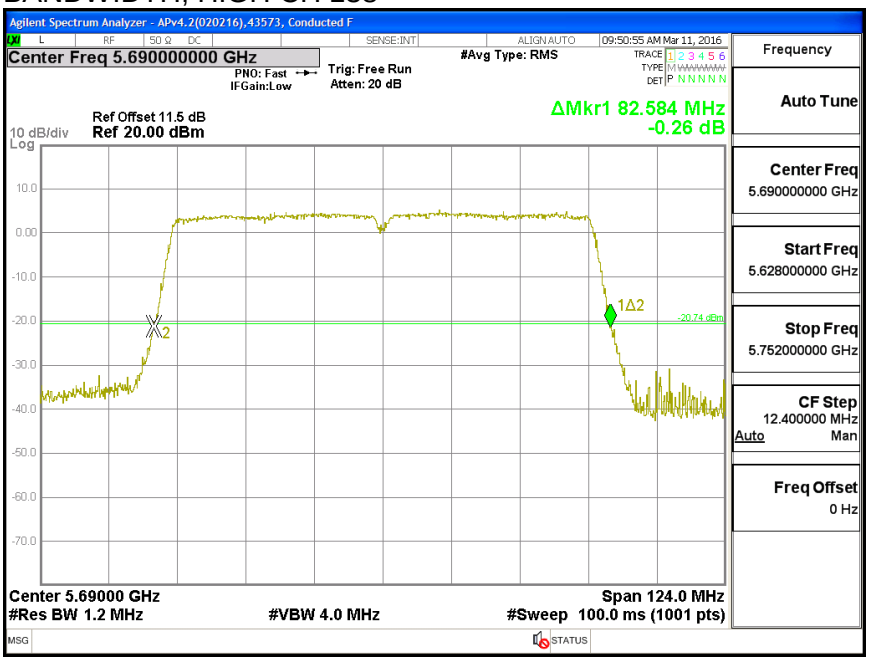
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH, HIGH CH 138



8.31.2. 99% BANDWIDTH

LIMITS

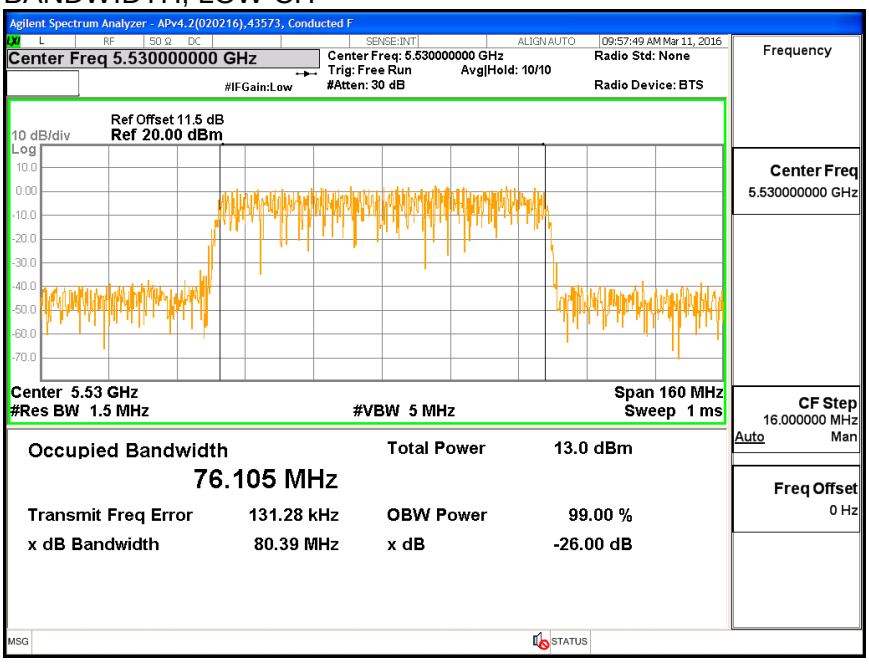
None; for reporting purposes only.

RESULTS

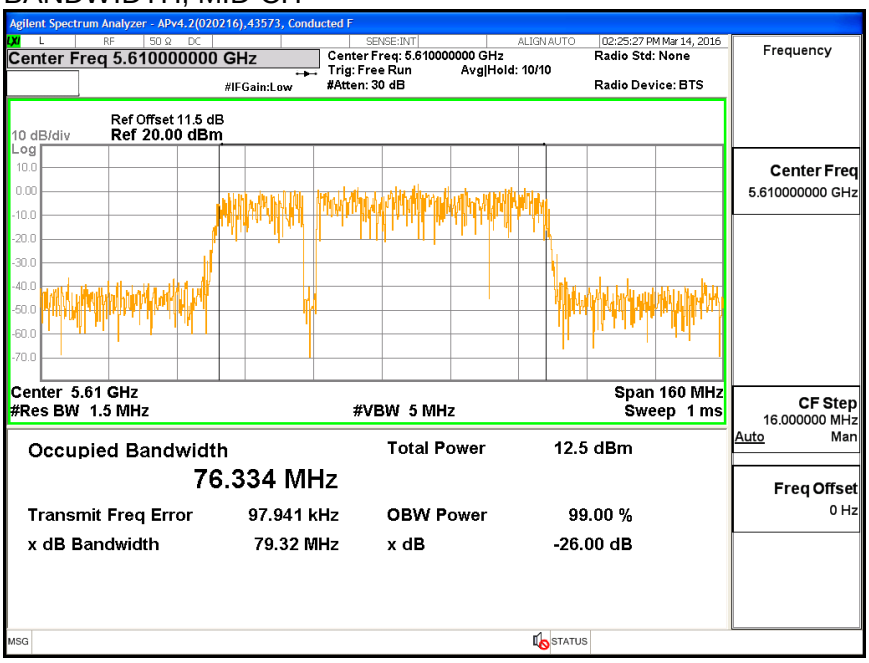
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5530	76.105
Mid	5610	76.334
High	5690	76.131

99% BANDWIDTH

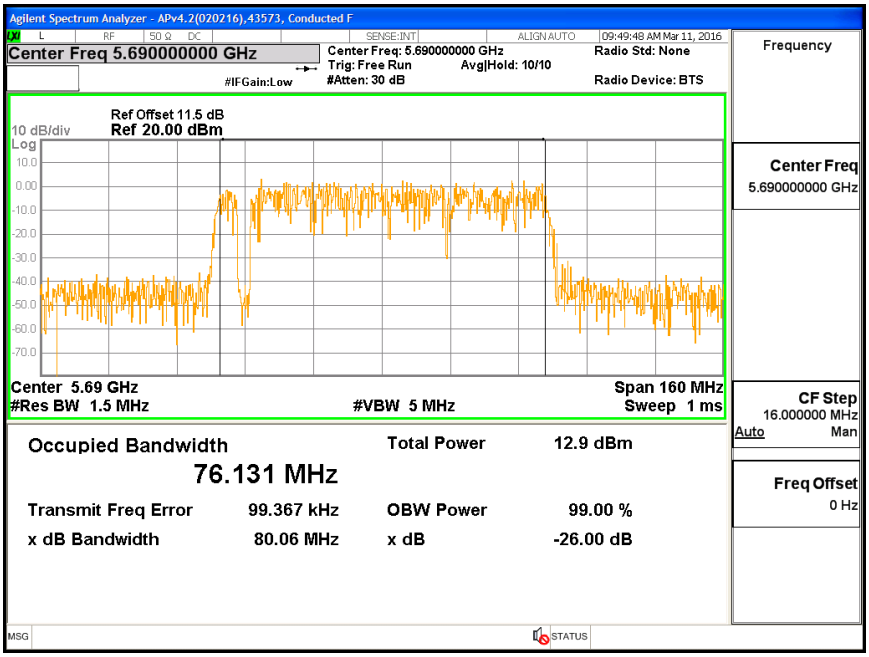
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH HIGH CH 138



8.31.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	7/28/16

Channel	Frequency (MHz)	Power (dBm)
Low	5530	13.83
Mid	5610	17.00
High	5690	17.00

8.31.4. 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

ID:	39004	Date:	7/28/16

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	82.46	76.105	0.17	24.00	11.00
High	5610	82.46	76.334	0.17	24.00	11.00

Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd PSD

Output Power Results

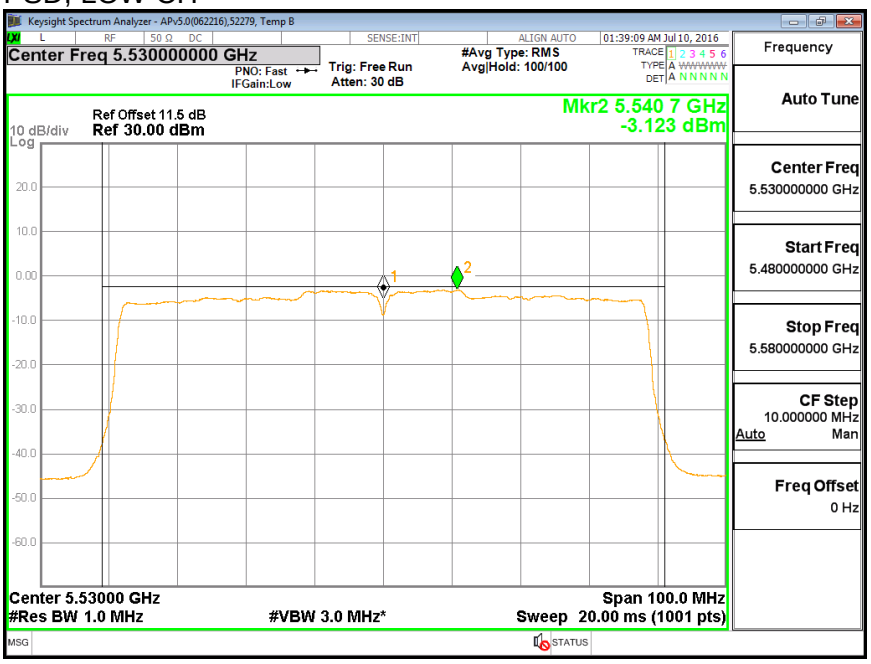
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	13.83	13.83	24.00	-10.17
High	5610	17.00	17.00	24.00	-7.00

PSD Results

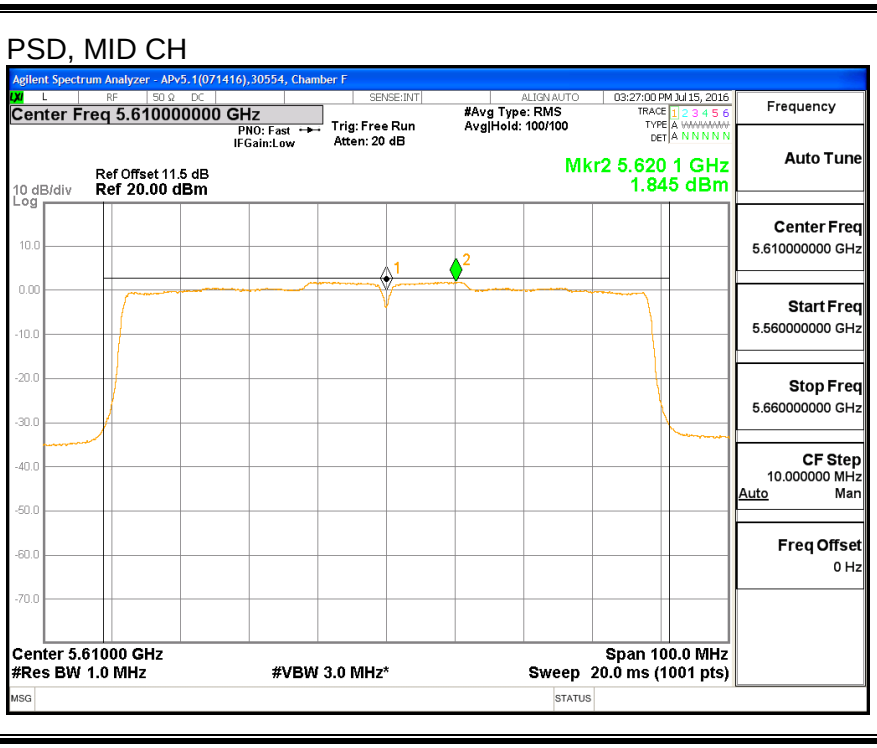
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-3.12	-2.97	11.00	-13.97
High	5610	1.85	2.00	11.00	-9.01

PSD

PSD, LOW CH



PSD, MID CH



8.31.5. 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	76.29	0.17	0.17	24.00	11.00

Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd Power & PSD

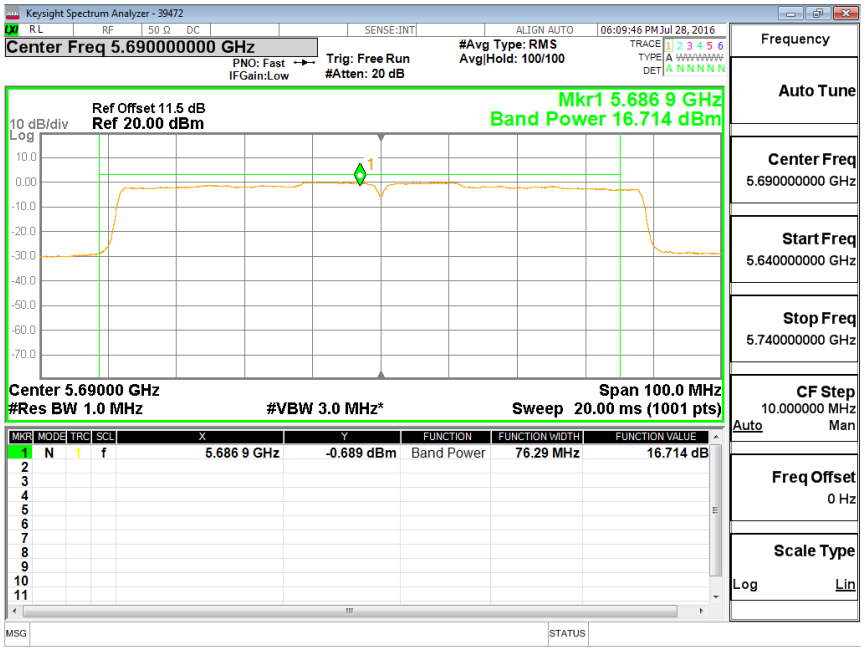
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	16.71	16.86	24.00	-7.14

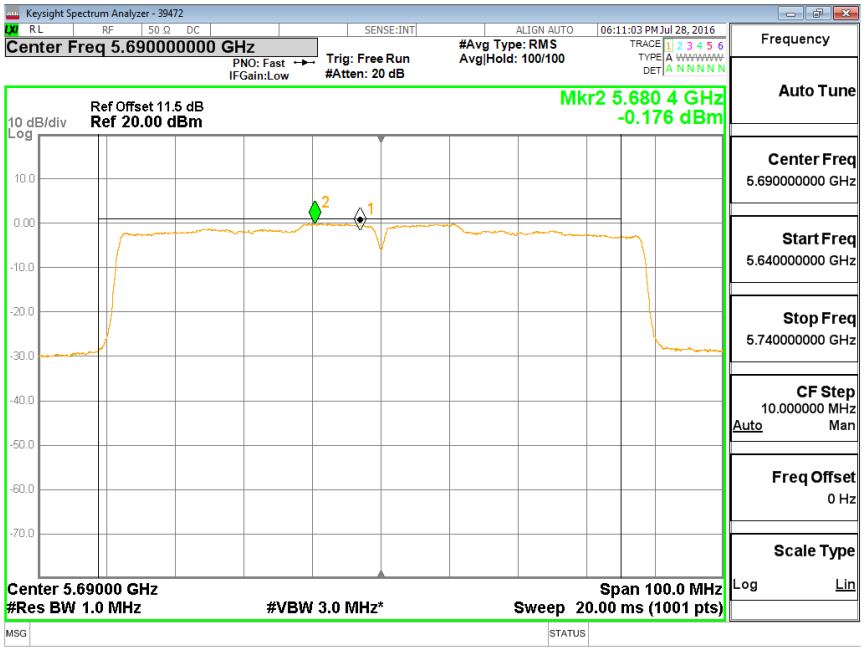
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-0.18	-0.03	11.00	-11.03

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	6.29	0.17	30.00	30.00

Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd Power & PSD

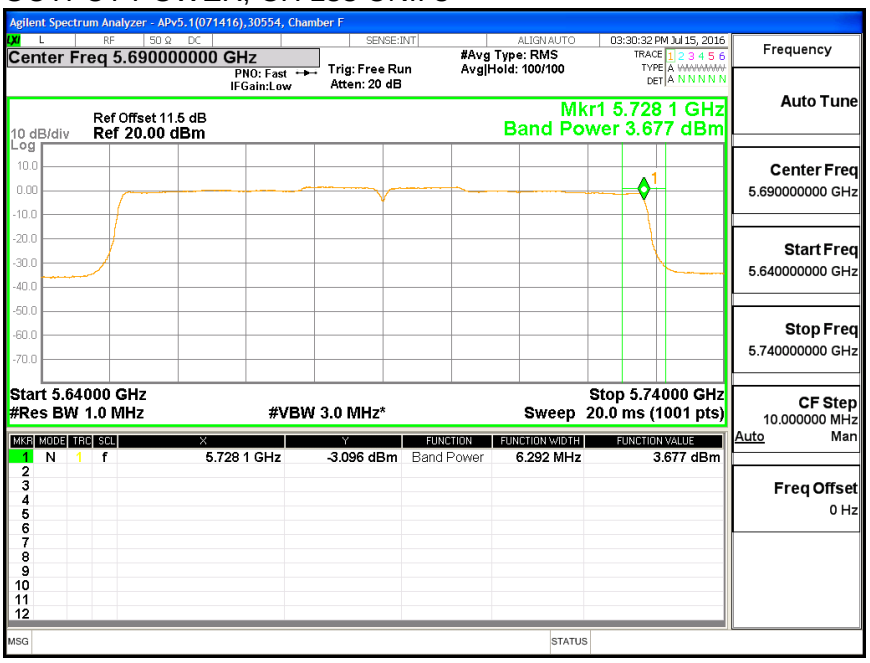
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	3.68	3.83	30.00	-26.17

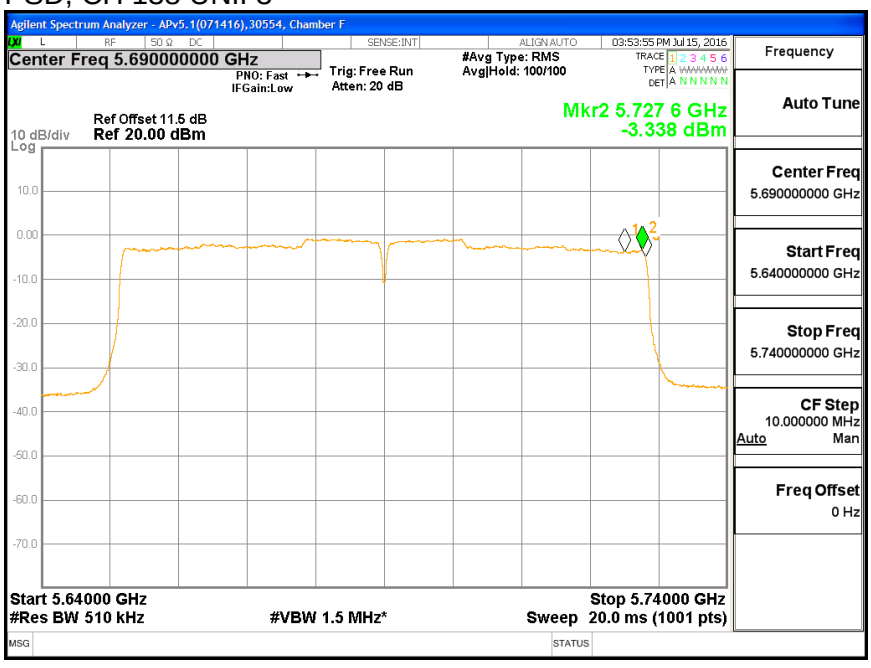
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-3.34	-3.19	30.00	-33.19

OUTPUT POWER, CH 138 UNII 3



PSD, CH 138 UNII 3



8.31.6. 6 dB BANDWIDTH

LIMITS

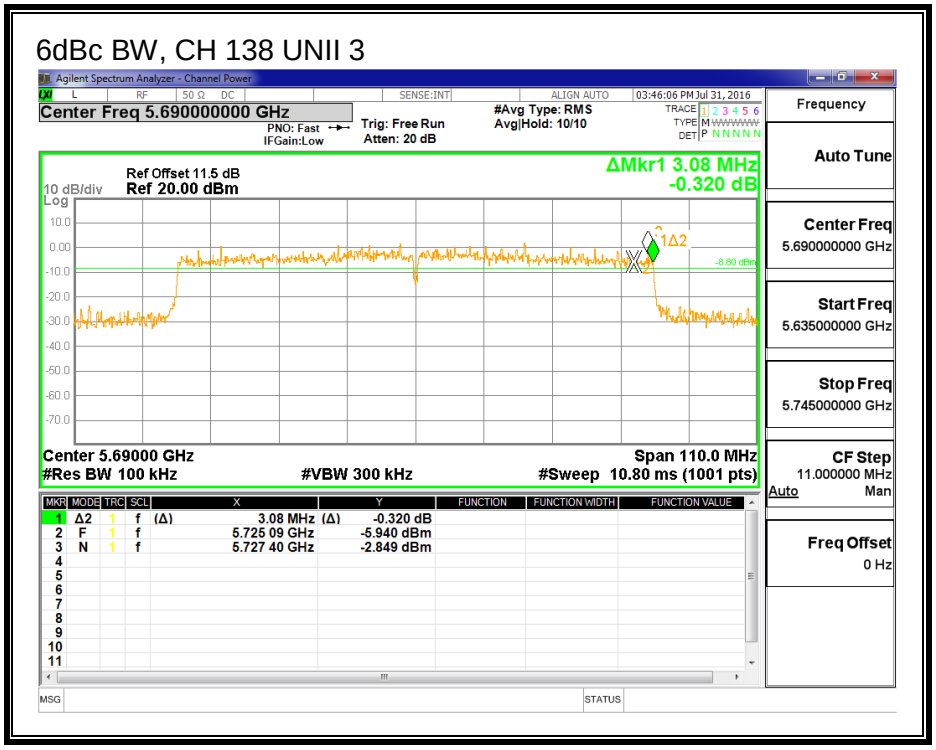
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	3.08

6 dB BANDWIDTH



8.32. 802.11ac VHT80 CHAIN 1 MODE IN THE 5.6 GHz BAND

8.32.1. 26 dB BANDWIDTH

LIMITS

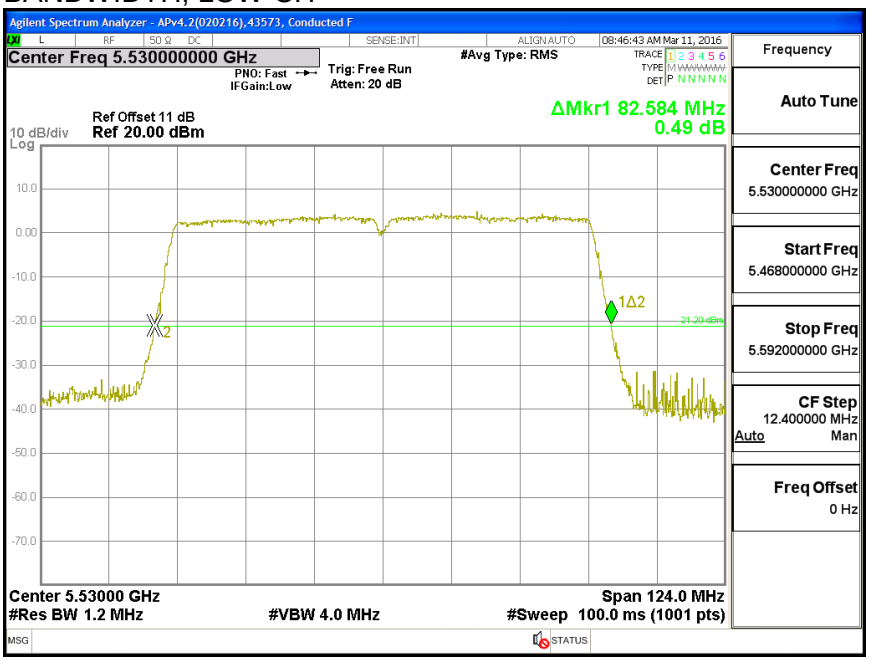
None; for reporting purposes only.

RESULTS

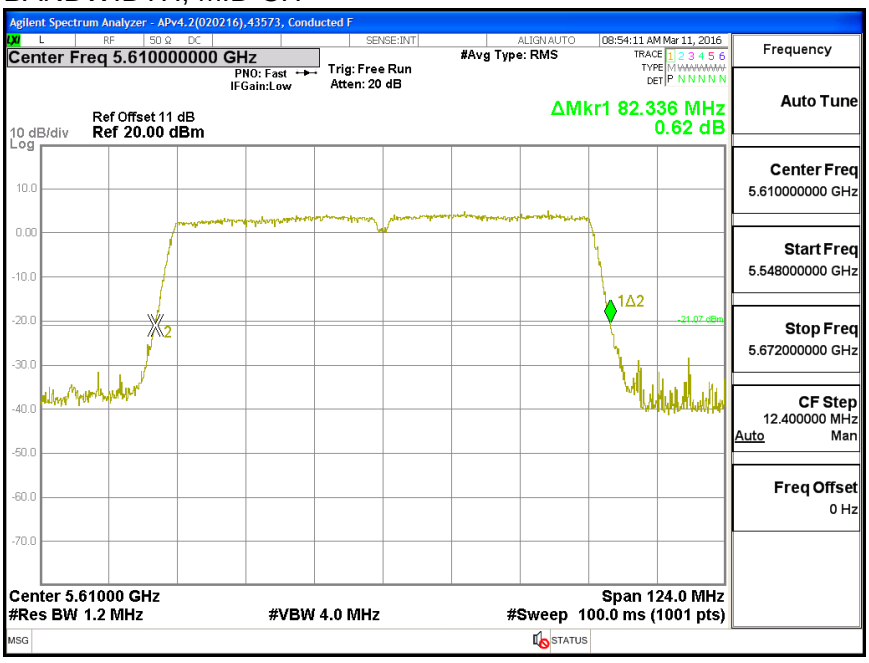
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.584
Mid	5610	82.336
High	5690	82.336

26 dB BANDWIDTH

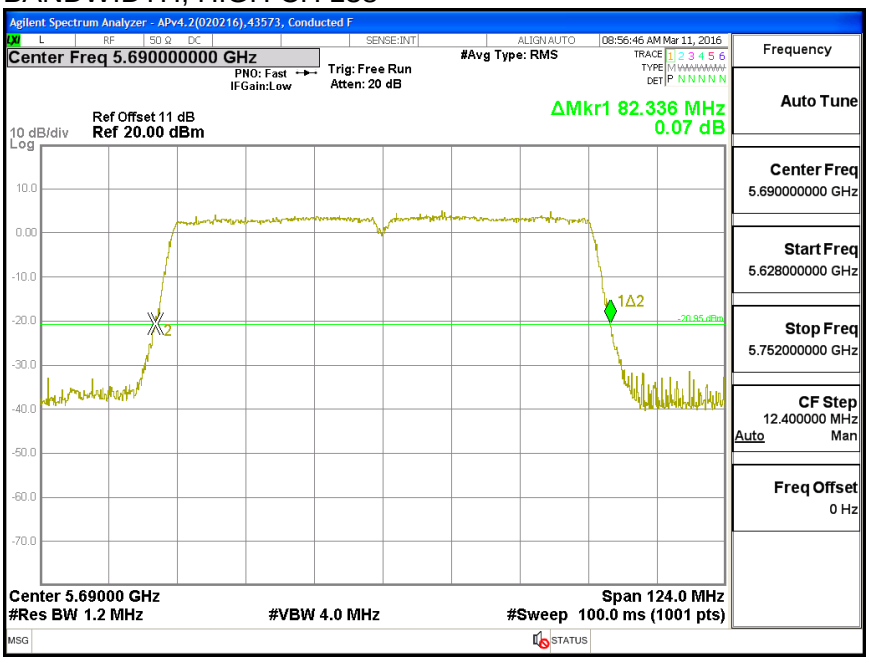
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH, HIGH CH 138



8.32.2. 99% BANDWIDTH

LIMITS

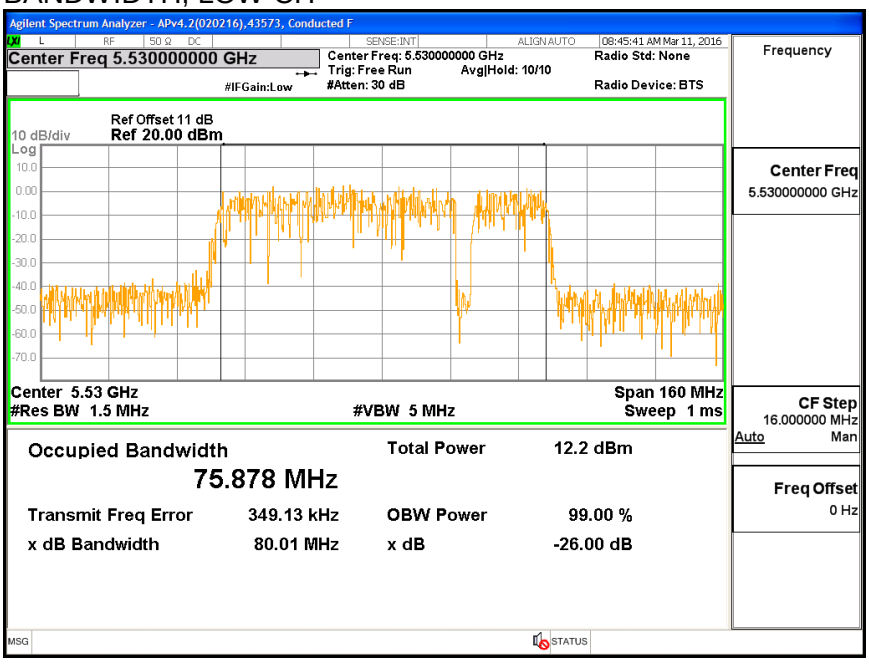
None; for reporting purposes only.

RESULTS

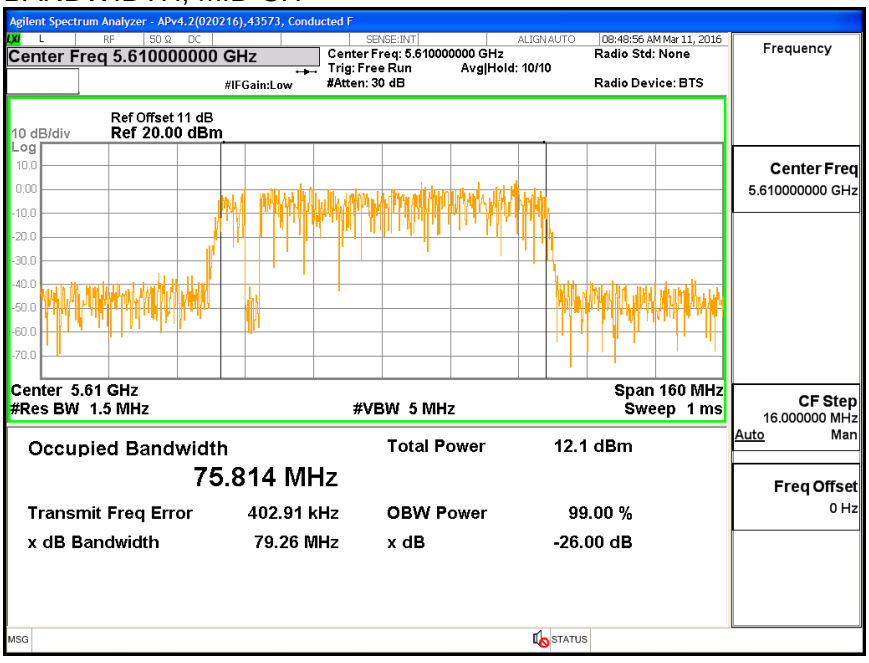
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5530	75.878
Mid	5610	75.814
High	5690	76.184

99% BANDWIDTH

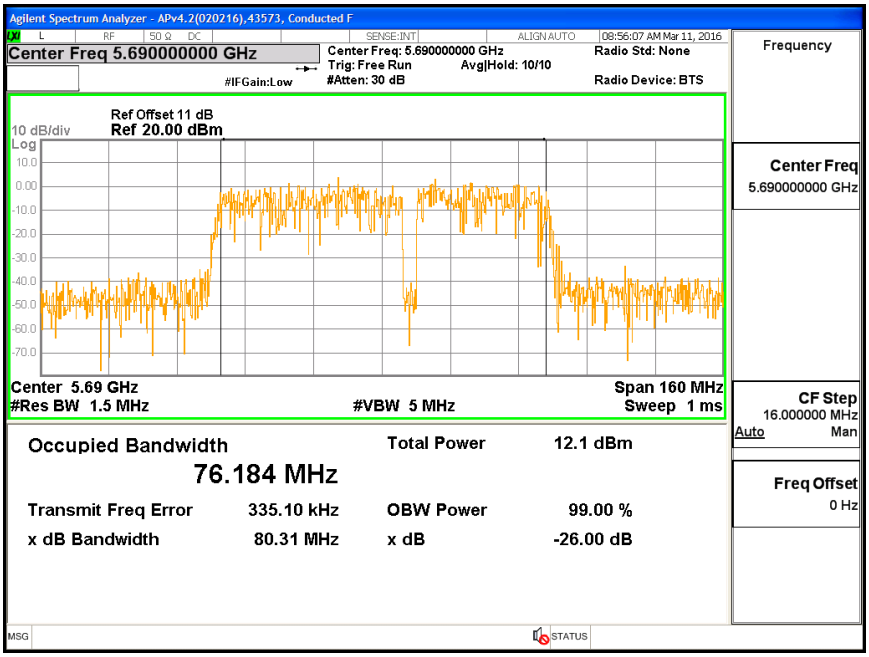
BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH HIGH CH 138



8.32.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	7/28/16

Channel	Frequency (MHz)	Power (dBm)
Low	5530	13.89
Mid	5610	18.89
High	5690	18.89

8.32.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 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:	39004	Date:	7/28/16

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	82.58	75.878	-0.80	24.00	11.00
High	5610	82.34	75.814	-0.80	24.00	11.00

Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd PSD

Output Power Results

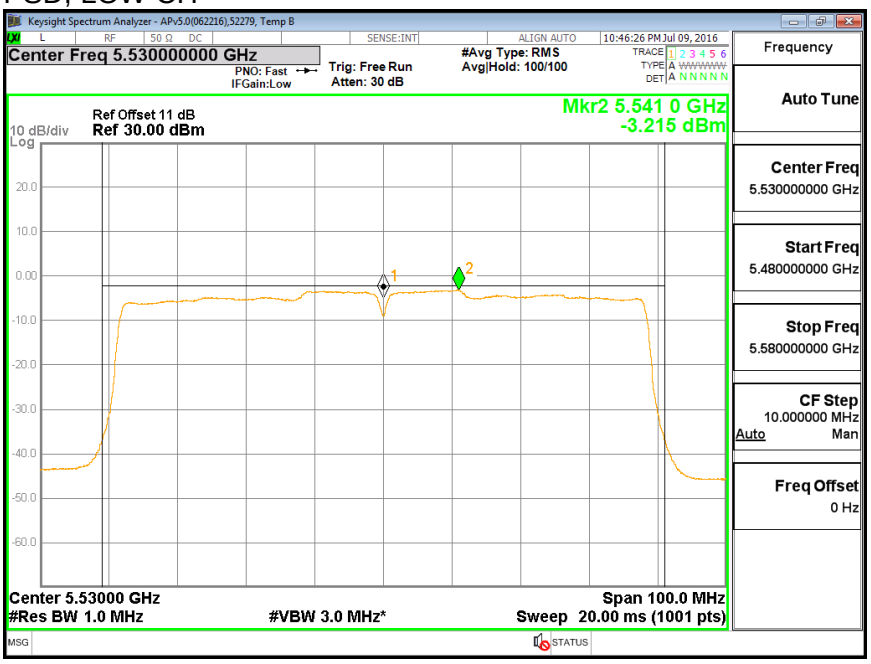
Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	13.89	13.89	24.00	-10.11
High	5610	18.89	18.89	24.00	-5.11

PSD Results

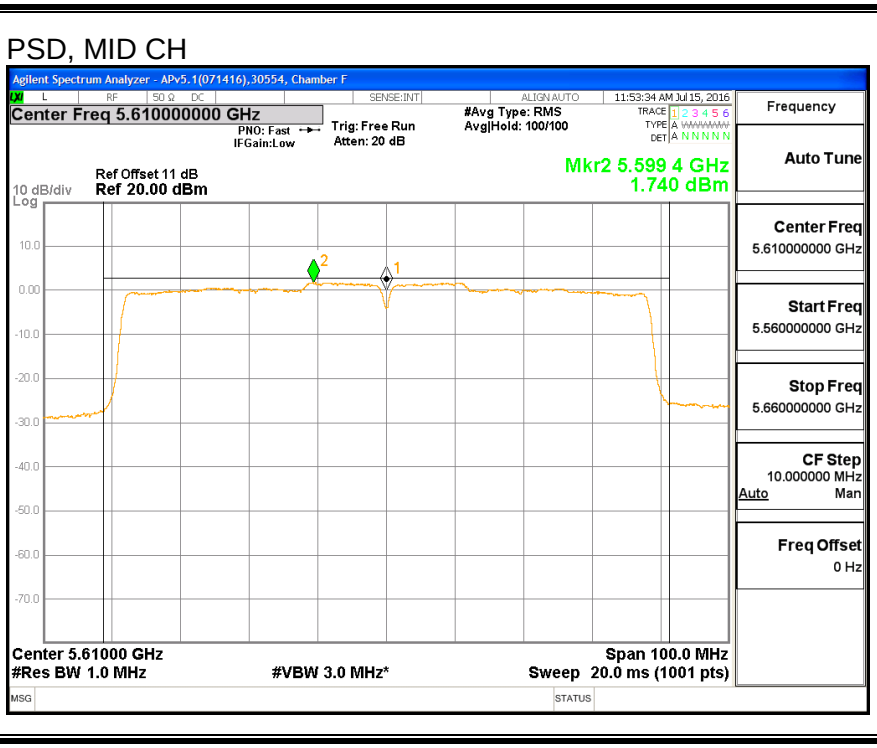
Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-3.22	-3.07	11.00	-14.07
High	5610	1.74	1.89	11.00	-9.11

PSD

PSD, LOW CH



PSD, MID CH



8.32.5. 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	76.17	-0.80	-0.80	24.00	11.00

Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd Power & PSD

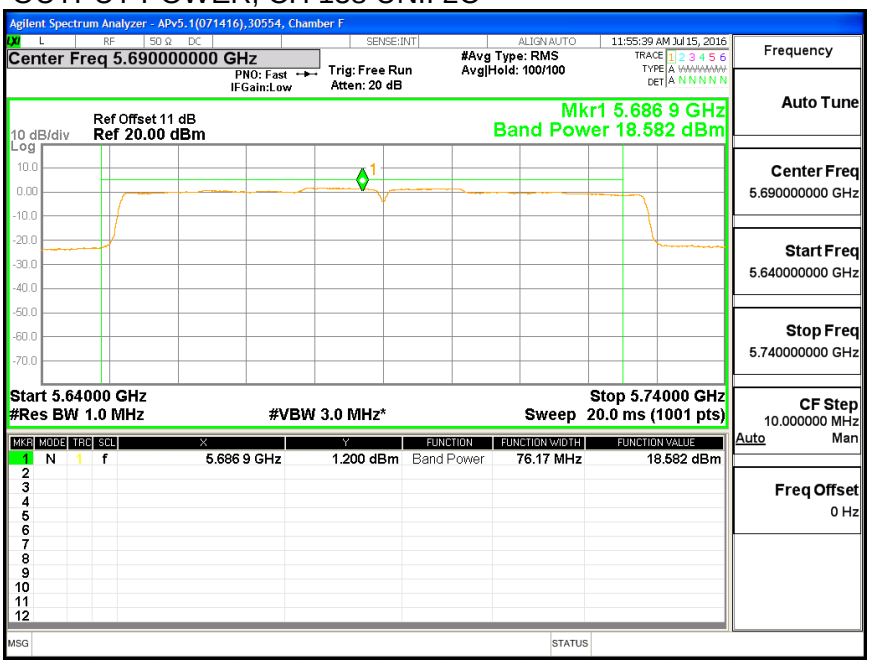
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	18.58	18.73	24.00	-5.27

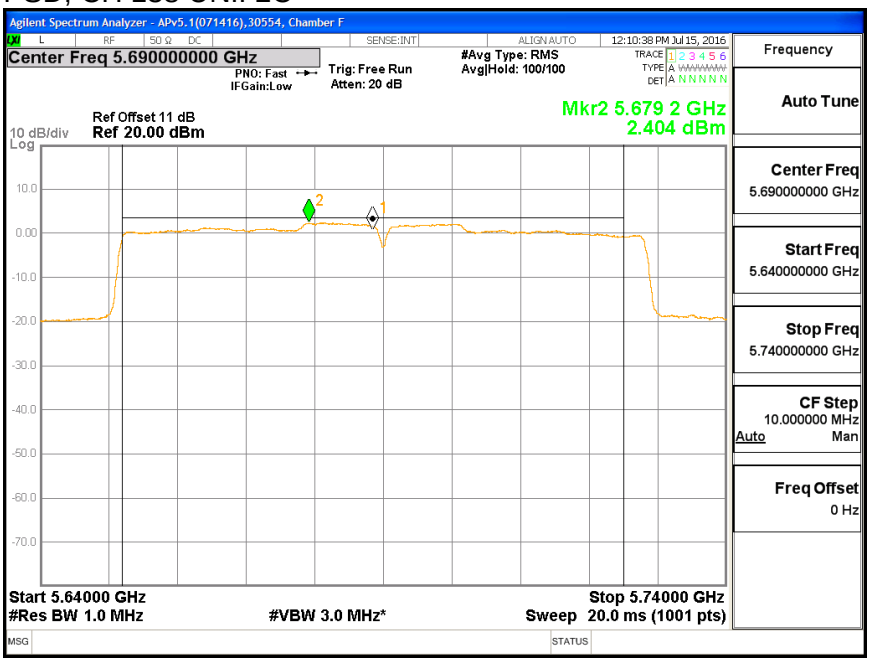
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	2.40	2.55	11.00	-8.45

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	6.17	-0.80	30.00	30.00

Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd Power & PSD

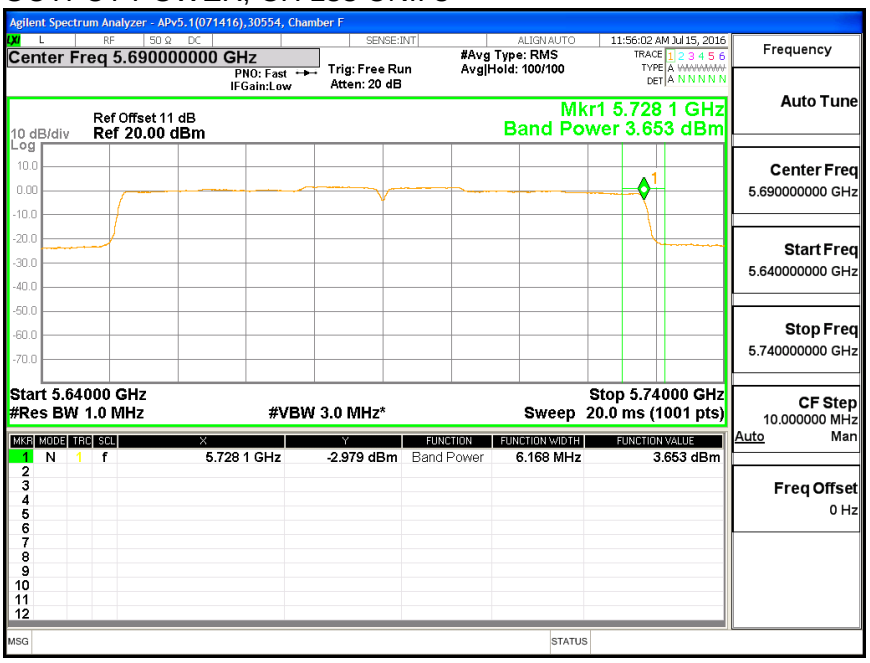
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	3.65	3.80	30.00	-26.20

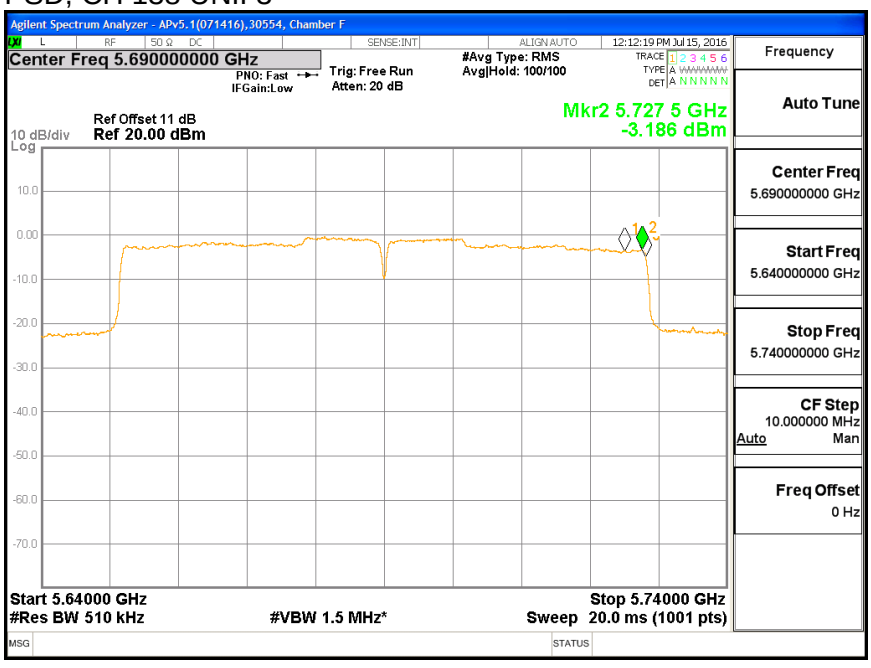
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-3.19	-3.04	30.00	-33.04

OUTPUT POWER, CH 138 UNII 3



PSD, CH 138 UNII 3



8.32.6. 6 dB BANDWIDTH

LIMITS

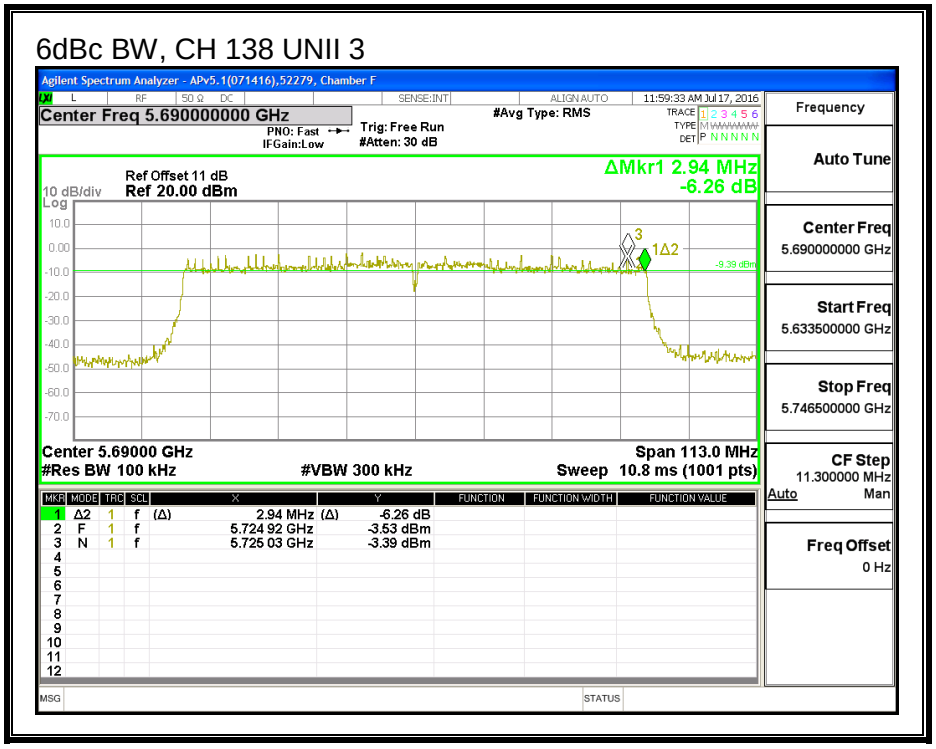
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	2.94

6 dB BANDWIDTH



8.33. 802.11ac VHT80 2Tx CDD MODE IN THE 5.6 GHz BAND

8.33.1. 26 dB BANDWIDTH

LIMITS

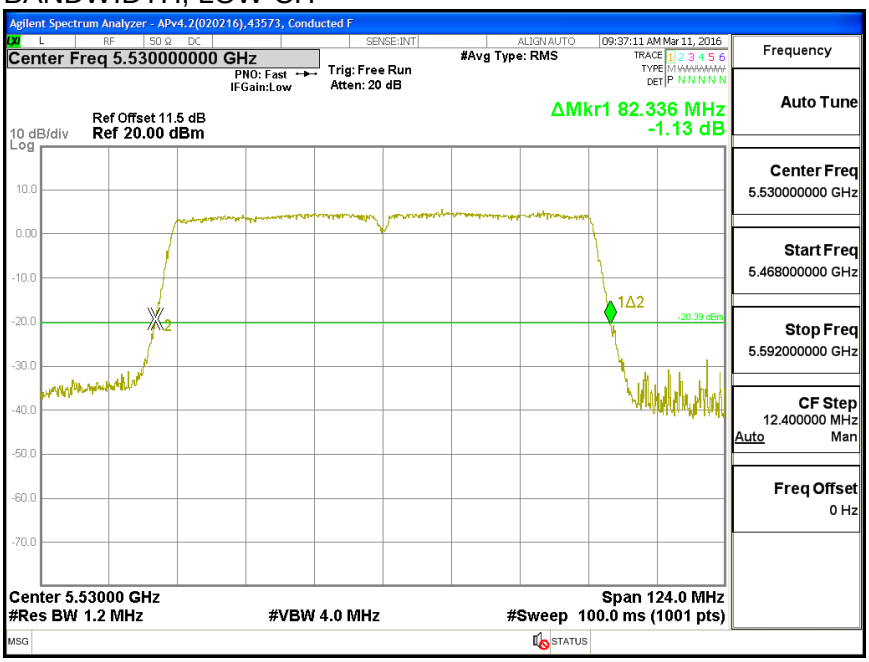
None; for reporting purposes only.

RESULTS

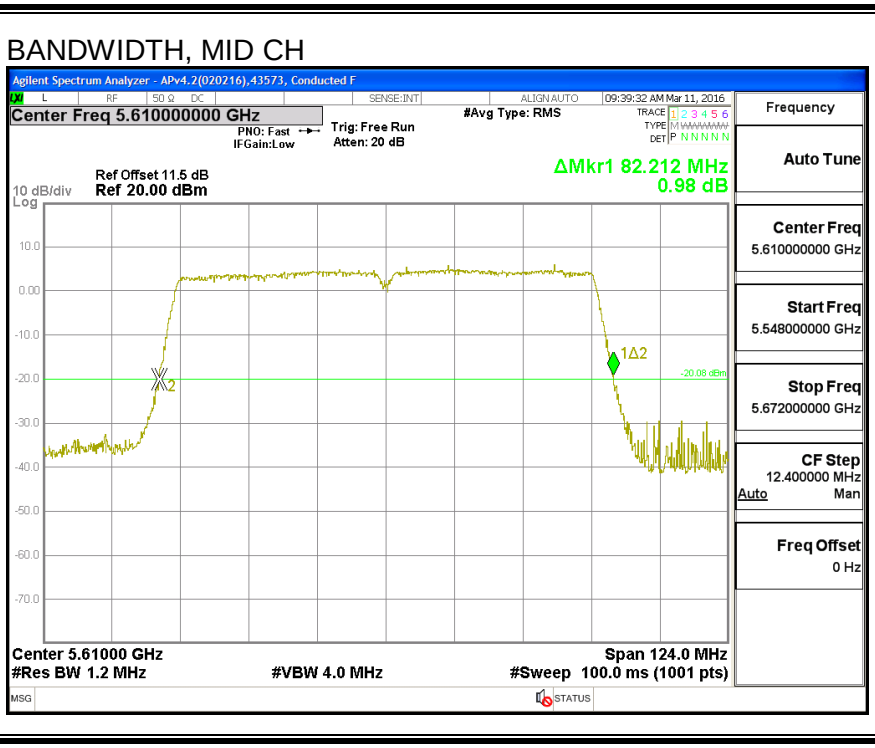
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5530	82.336	82.460
Mid	5610	82.212	82.212
High	5690	82.750	82.336

26 dB BANDWIDTH, CHAIN 0

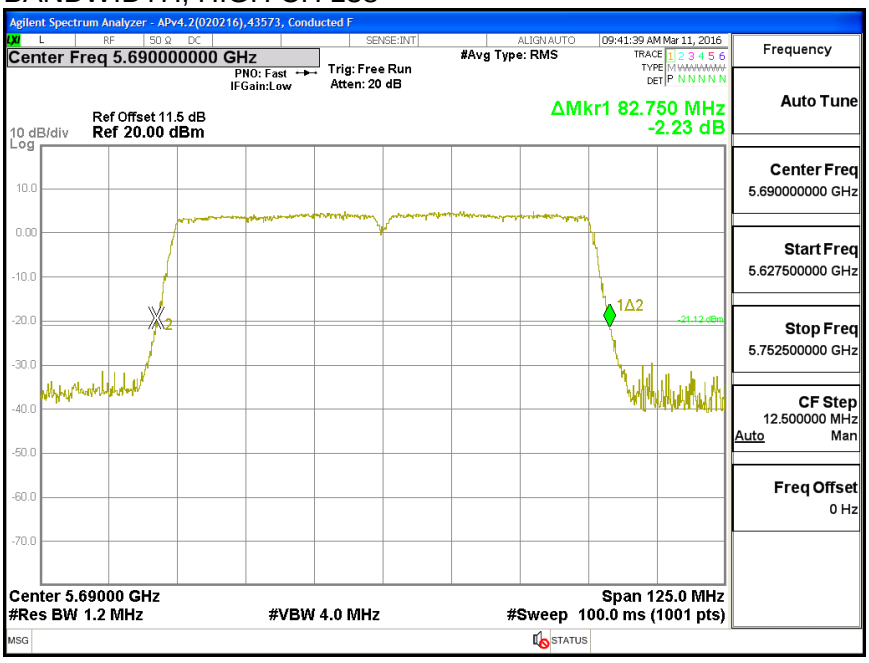
BANDWIDTH, LOW CH



BANDWIDTH, MID CH

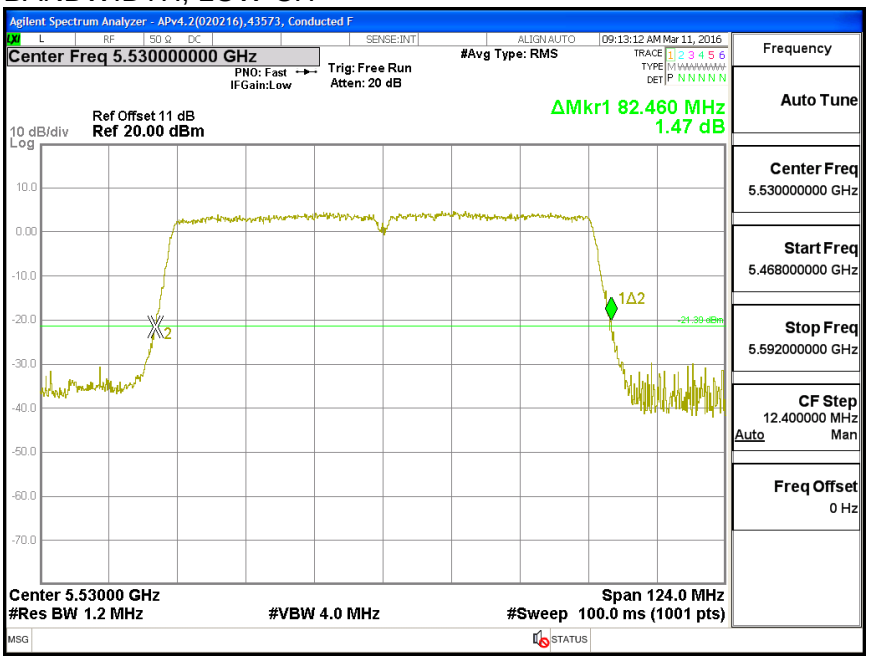


BANDWIDTH, HIGH CH 138

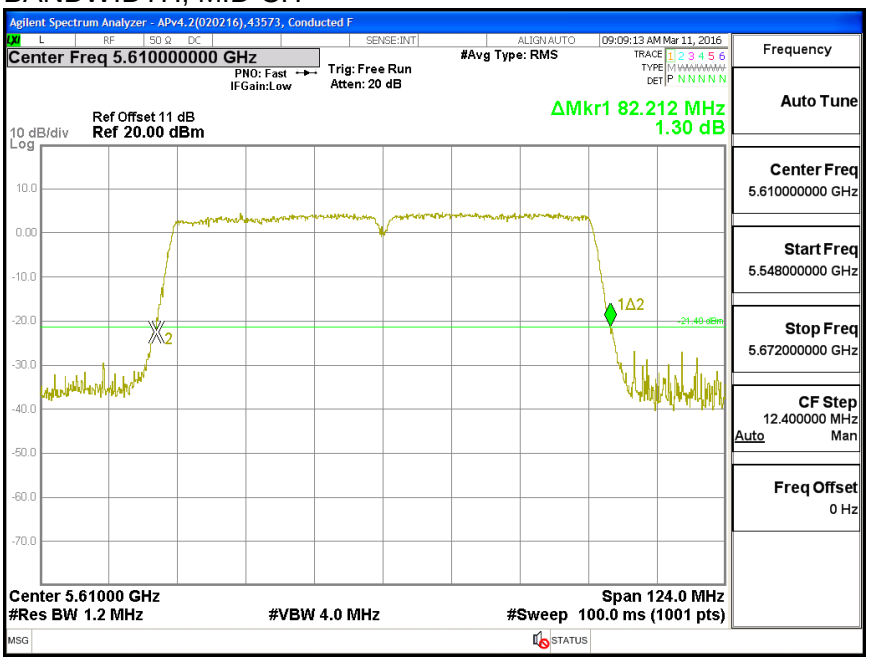


26 dB BANDWIDTH, CHAIN 1

BANDWIDTH, LOW CH



BANDWIDTH, MID CH



BANDWIDTH, HIGH CH 138

8.33.2. 99% BANDWIDTH

LIMITS

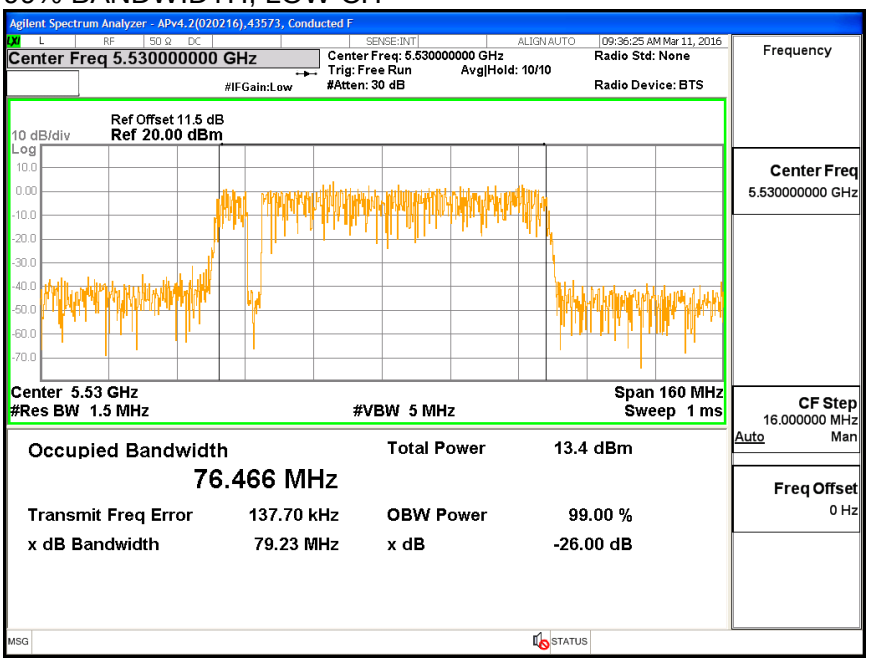
None; for reporting purposes only.

RESULTS

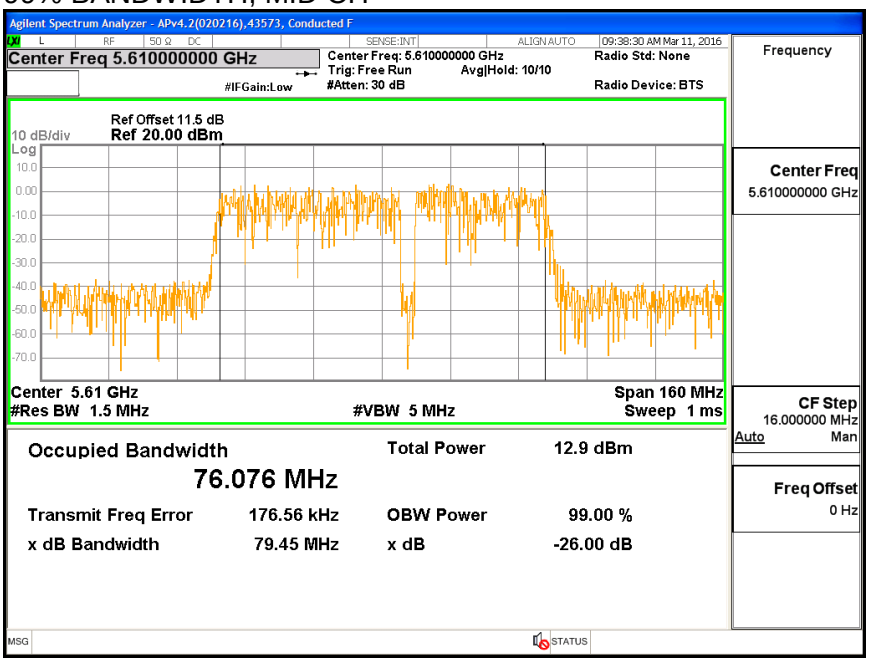
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5530	76.466	72.576
Mid	5610	76.076	76.257
High	5690	76.355	75.706

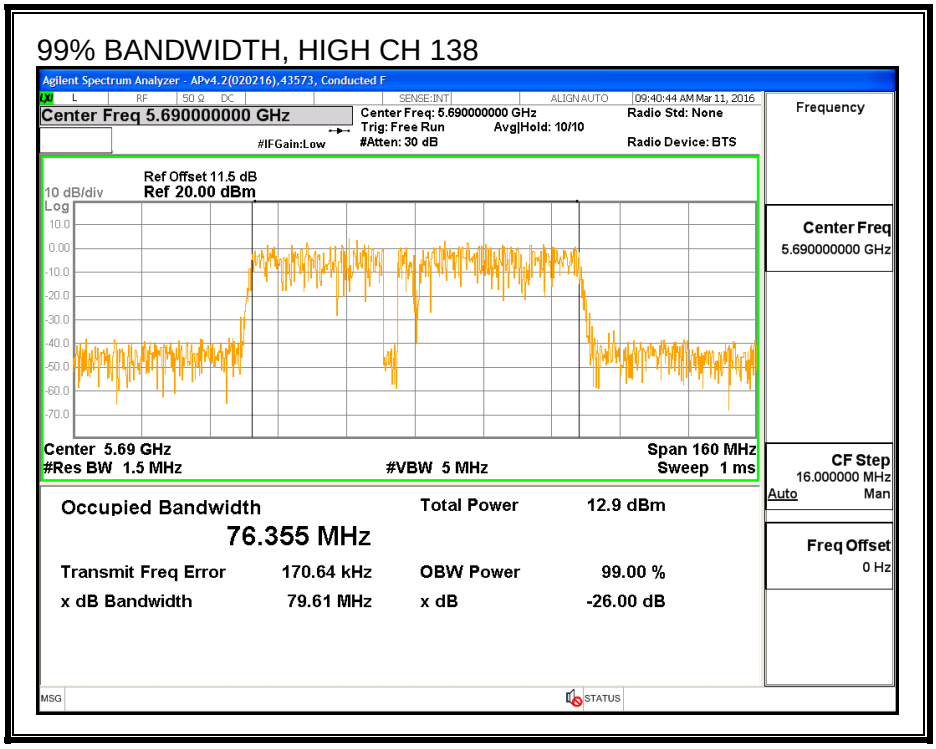
99% BANDWIDTH, CHAIN 0

99% BANDWIDTH, LOW CH

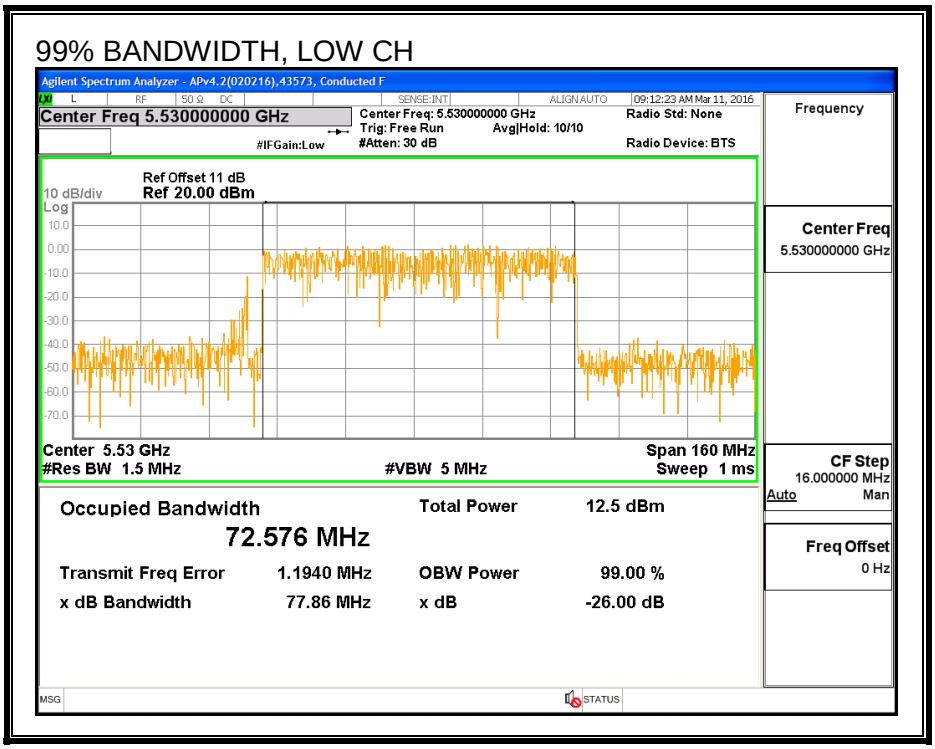


99% BANDWIDTH, MID CH

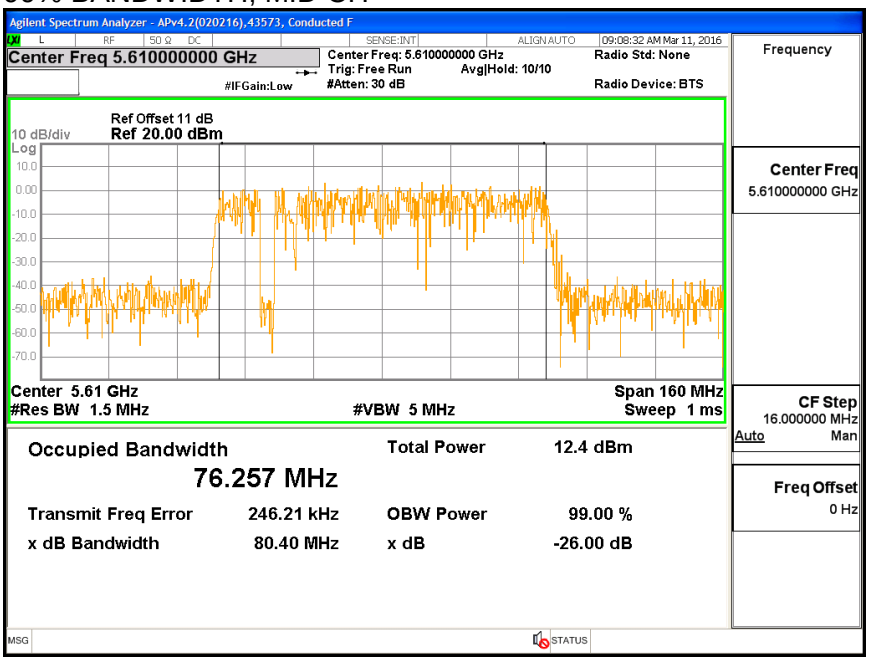




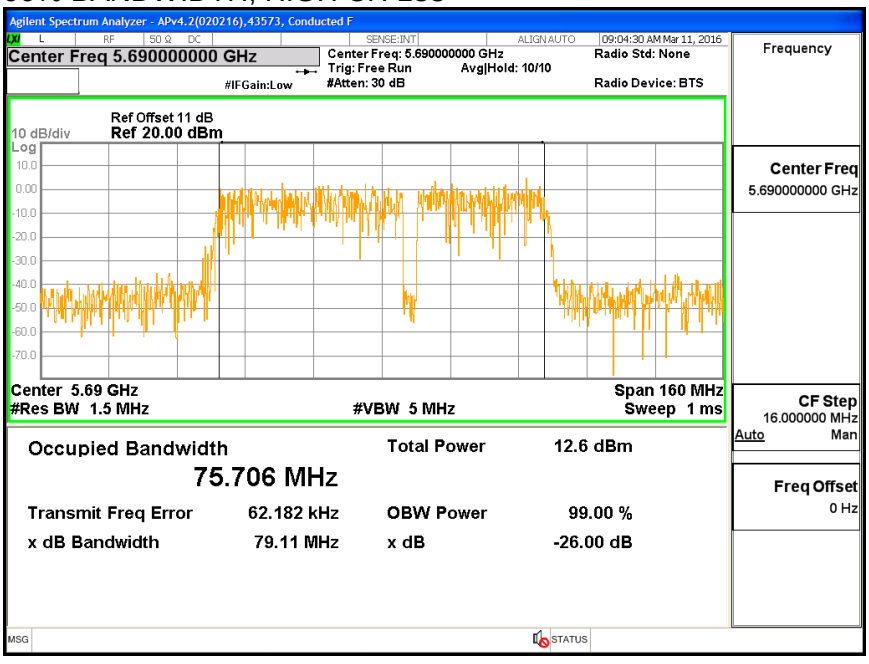
99% BANDWIDTH, CHAIN 1



99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH 138



8.33.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	7/28/16

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5530	13.78	13.94	16.87
Mid	5610	17.00	18.98	21.11
High	5690	17.00	18.92	21.07

8.33.4. 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:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
0.17	-0.80	-0.29

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
0.17	-0.80	2.71

RESULTS

ID:	39004	Date:	7/28/16

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	82.34	72.58	-0.29	2.71	24.00	11.00
High	5610	82.21	76.08	-0.29	2.71	24.00	11.00

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

Output Power Results

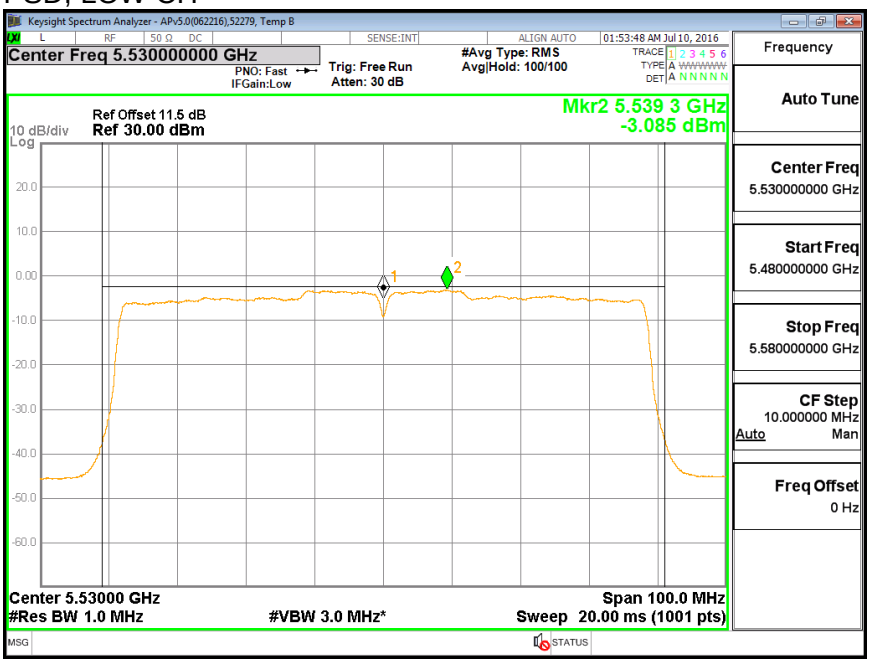
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	13.783	13.941	16.87	24.00	-7.13
High	5610	17	18.982	21.11	24.00	-2.89

PSD Results

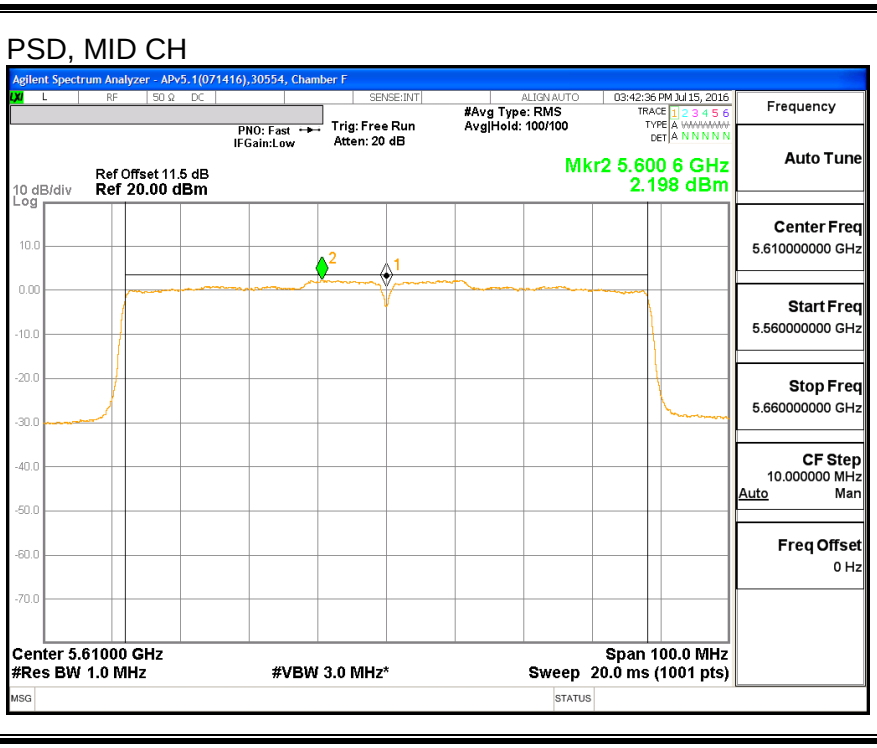
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-3.085	-3.165	0.08	11.00	-10.92
High	5610	2.198	2.315	5.46	11.00	-5.54

PSD, CHAIN 0

PSD, LOW CH

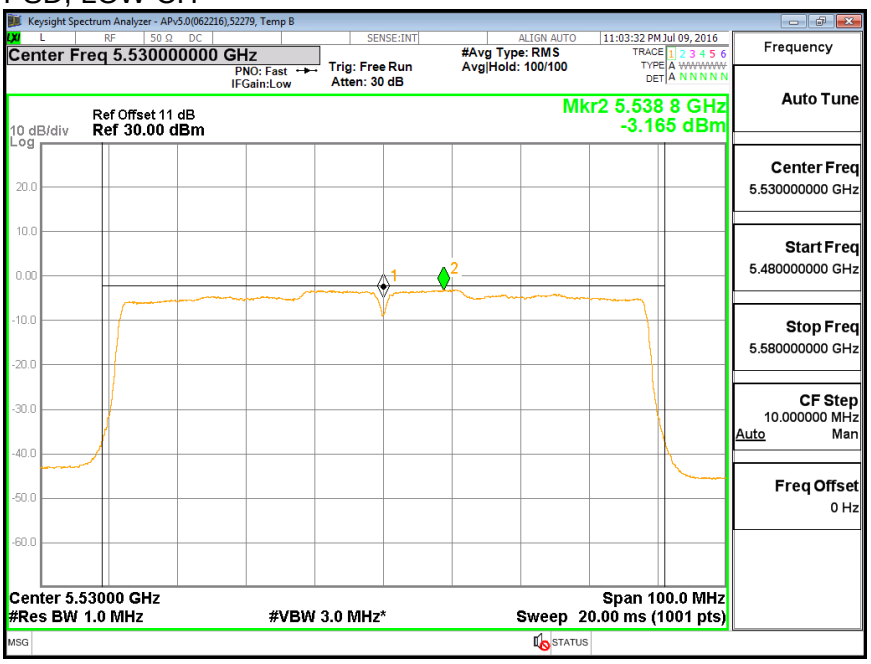


PSD, MID CH

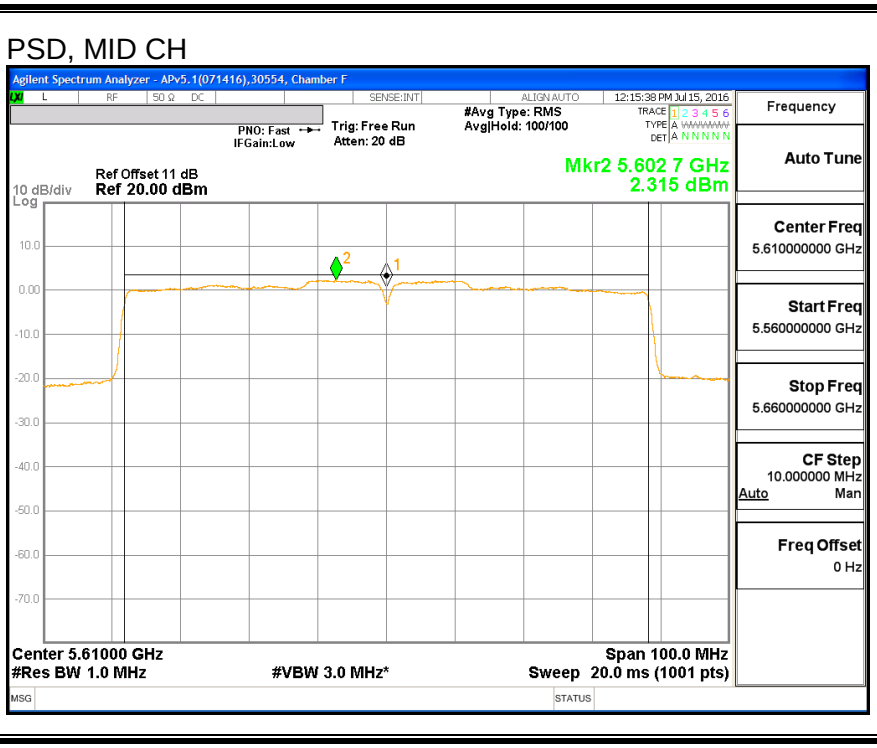


PSD, CHAIN 1

PSD, LOW CH



PSD, MID CH



8.33.5. 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	76.17	-0.29	2.71	24.00	11.00

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

Output Power Results

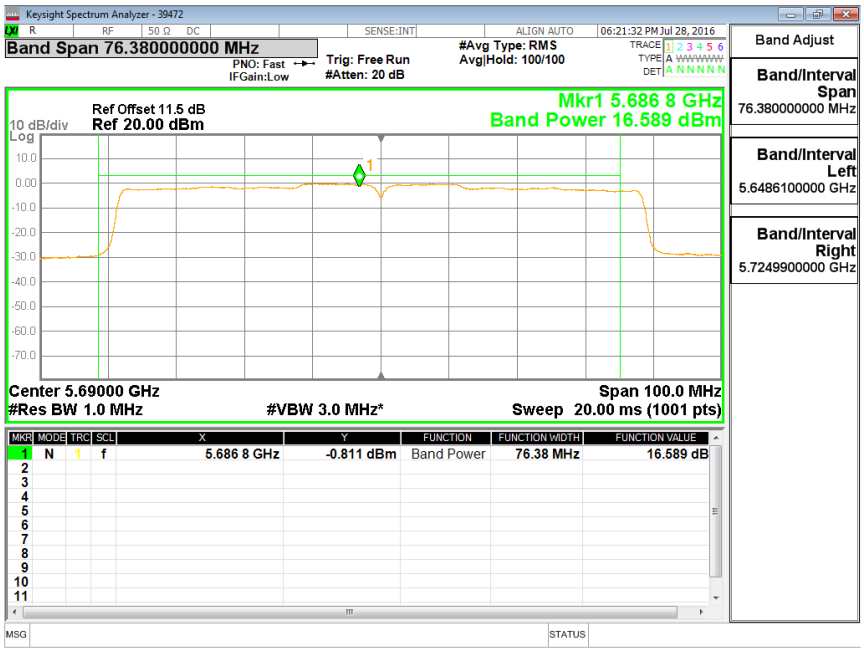
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	16.59	18.78	21.02	24.00	-2.98

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-0.21	2.42	4.50	11.00	-6.50

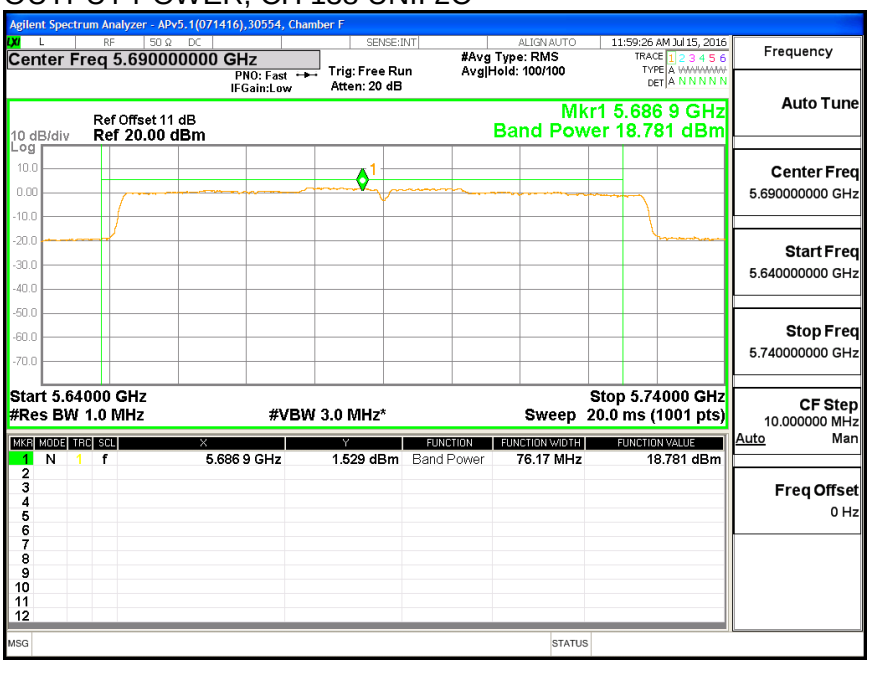
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 138 UNII 2C

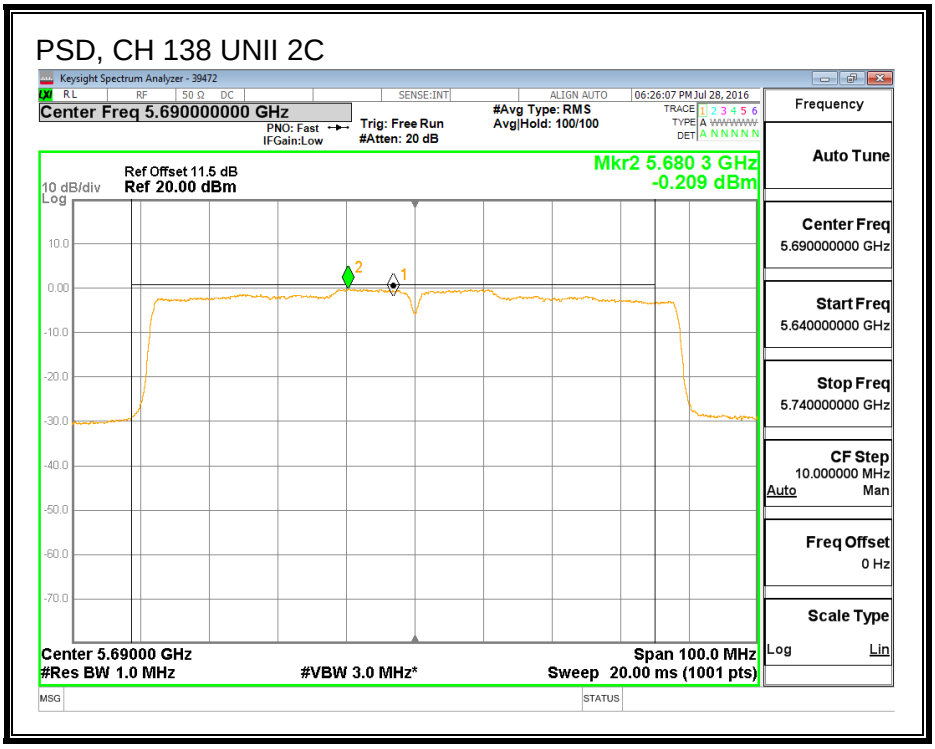


OUTPUT POWER, CHAIN 1

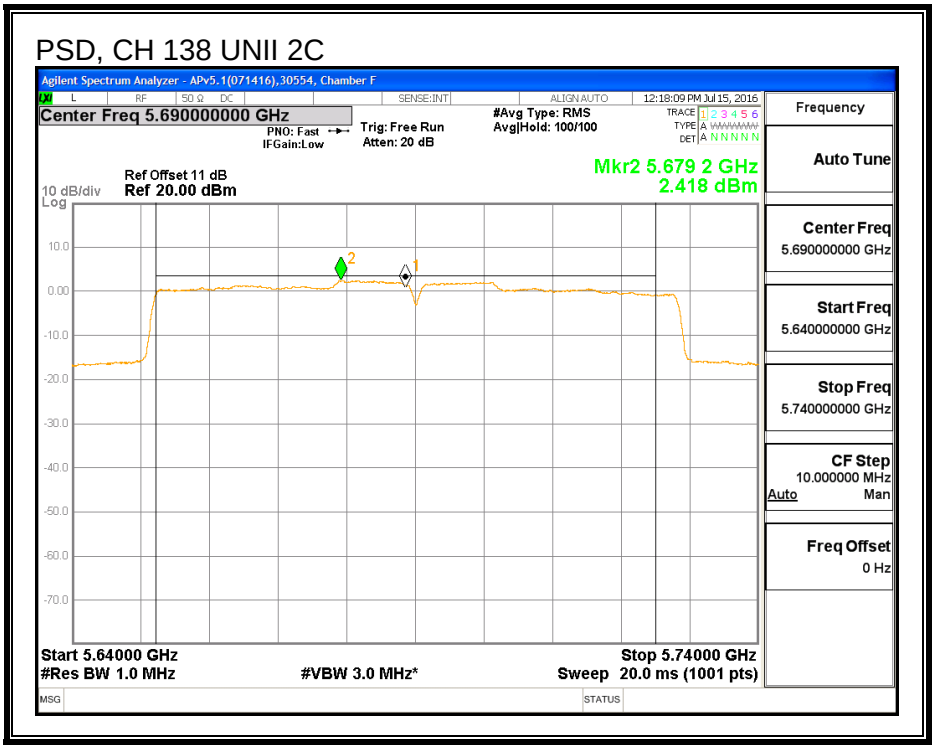
OUTPUT POWER, CH 138 UNII 2C



PSD, CHAIN 0



PSD, CHAIN 1



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	6.17	-0.29	2.71	30.00	30.00

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

Output Power Results

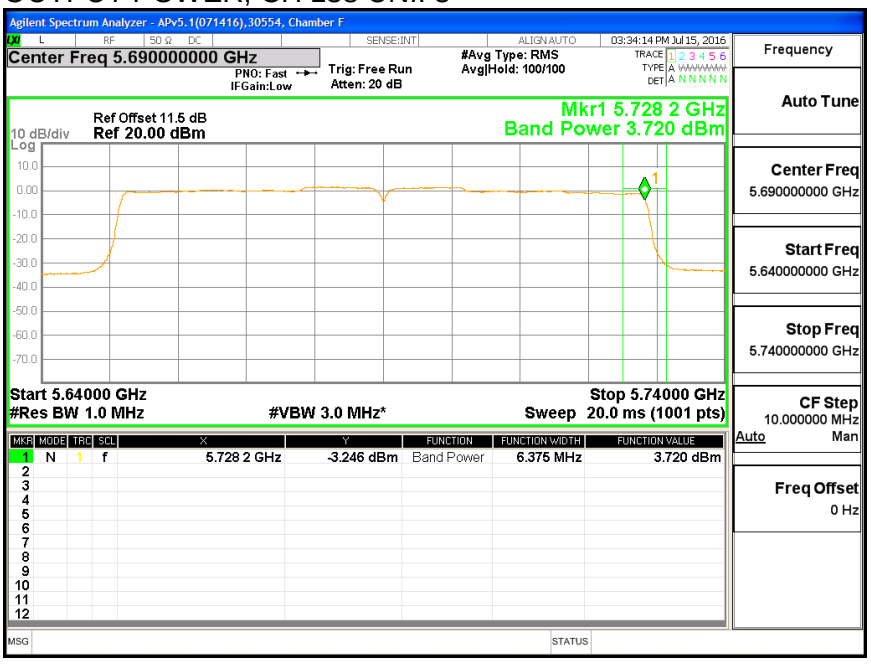
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	3.72	3.89	7.00	30.00	-23.00

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-3.13	-3.50	-0.11	30.00	-30.11

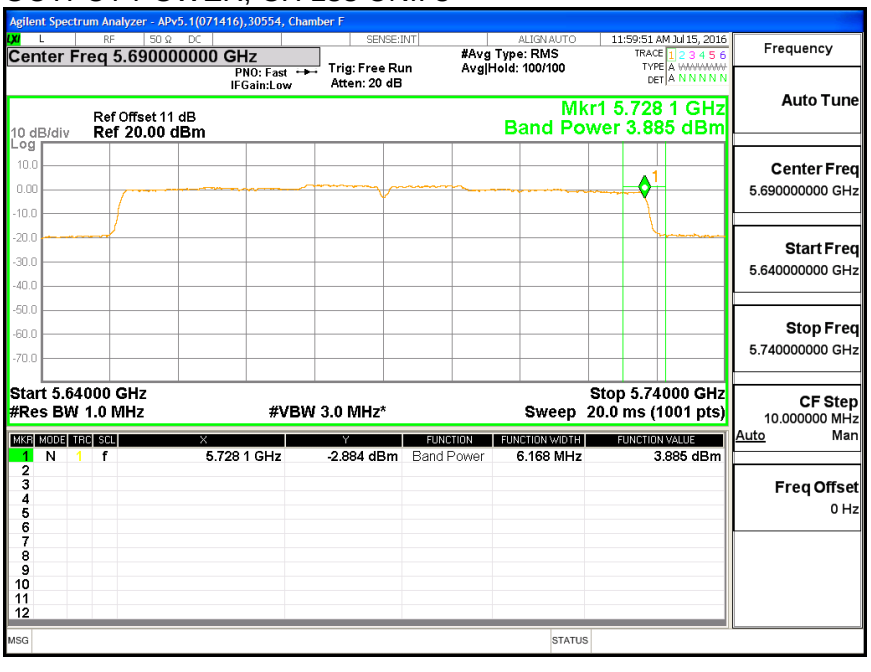
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 138 UNII 3

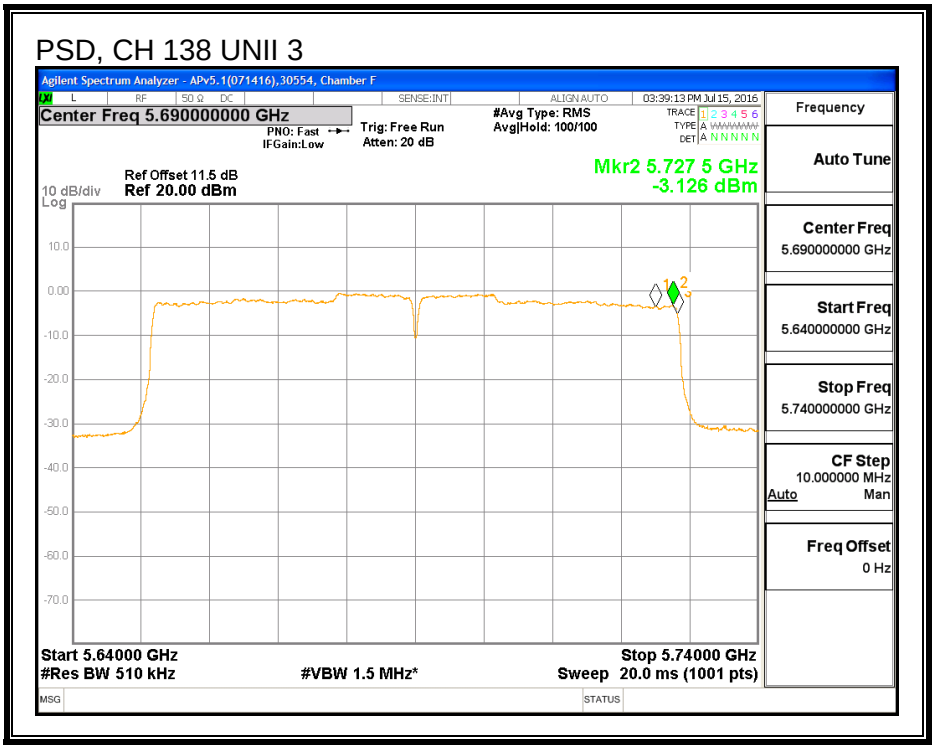


OUTPUT POWER, CHAIN 1

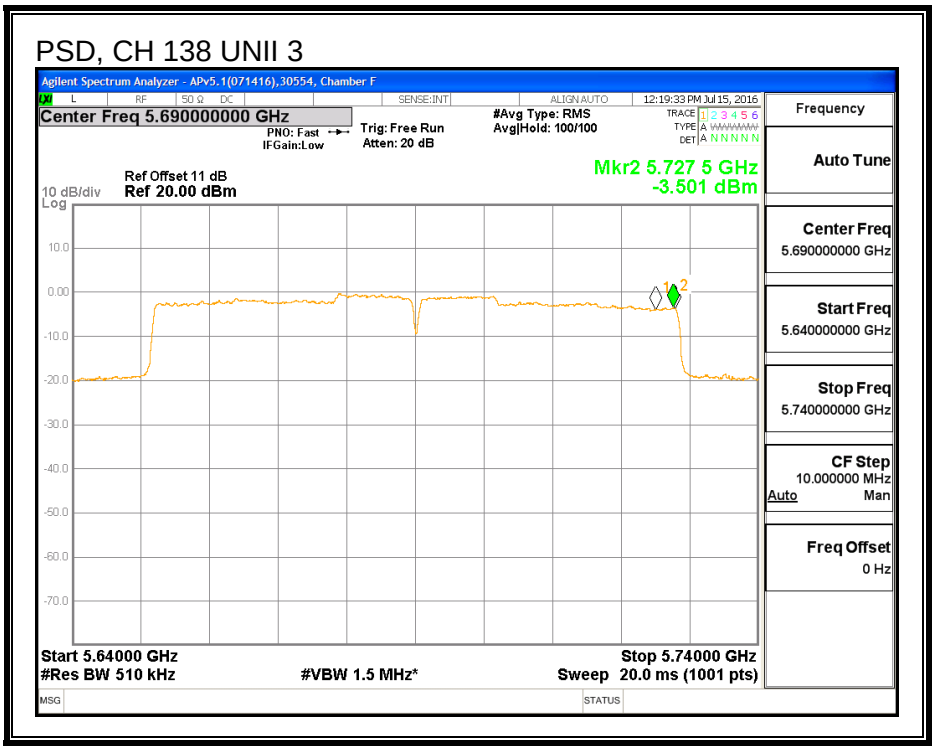
OUTPUT POWER, CH 138 UNII 3



PSD, CHAIN 0



PSD, CHAIN 1



8.33.6. 6 dB BANDWIDTH

LIMITS

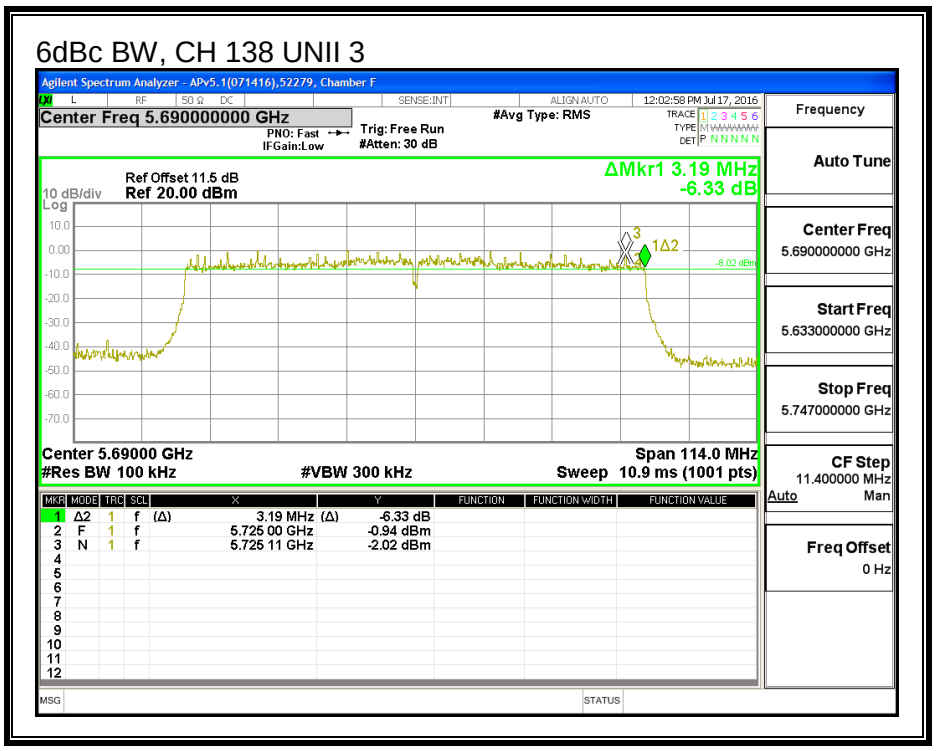
FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)
High	5690	3.19	3.08

CHAIN 0



CHAIN 1