8.40.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

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)
6.40	7.90	7.21

RESULTS

ID:	39004	Date:	9/2/16

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	5500	22.24	17.62	7.21	7.21	22.25	9.79
Mid	5580	22.24	17.73	7.21	7.21	22.28	9.79
High	5700	22.20	17.78	7.21	7.21	22.29	9.79

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

Output Power Results

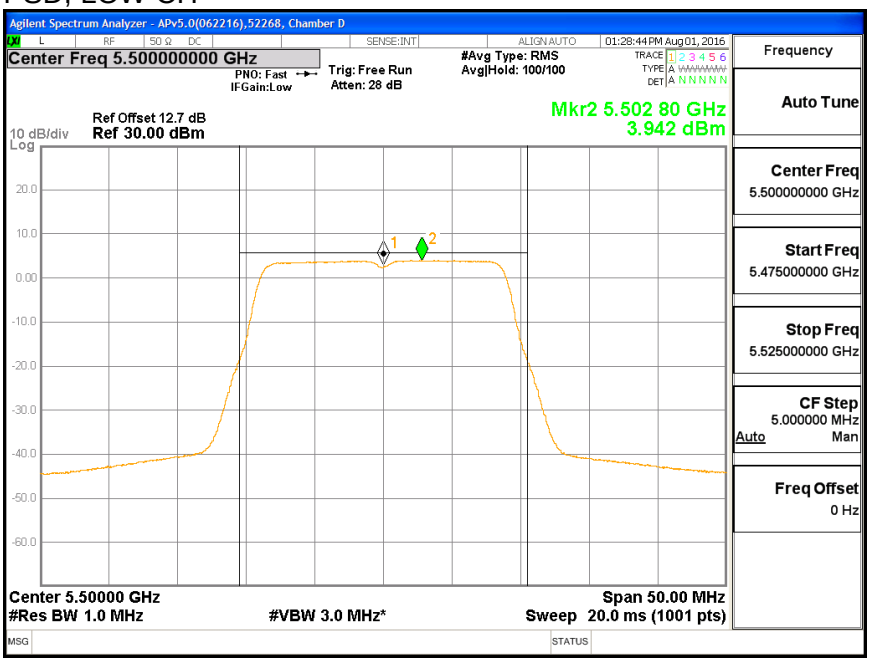
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.42	12.35	15.40	22.25	-6.85
Mid	5580	12.41	12.40	15.42	22.28	-6.86
High	5700	12.39	12.37	15.39	22.29	-6.90

PSD Results

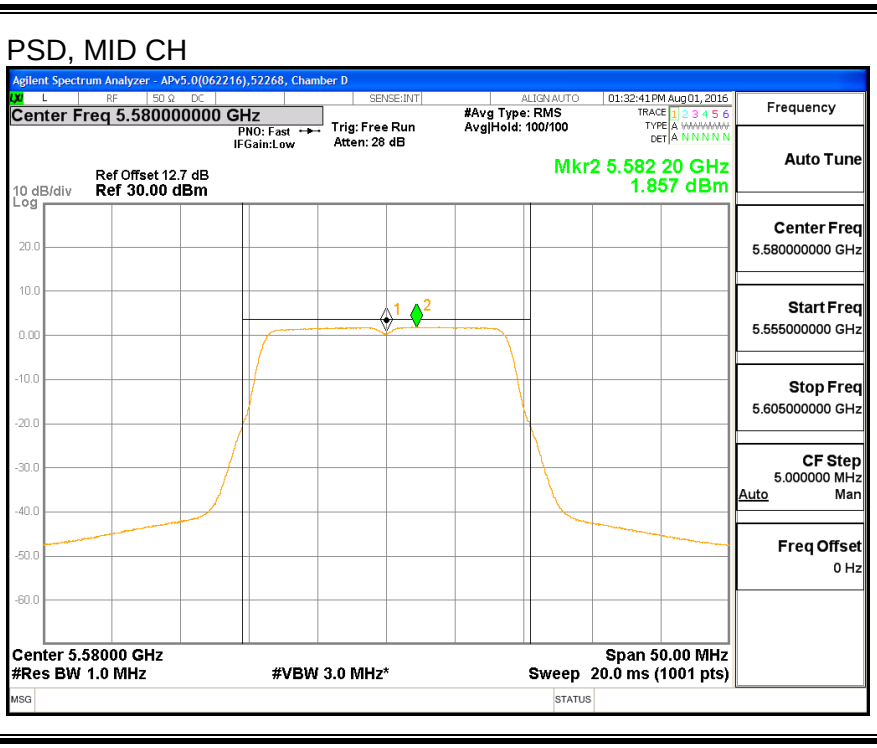
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	3.94	3.79	6.88	9.79	-2.91
Mid	5580	1.86	1.88	4.88	9.79	-4.91
High	5700	3.46	3.55	6.52	9.79	-3.27

PSD, CHAIN 0

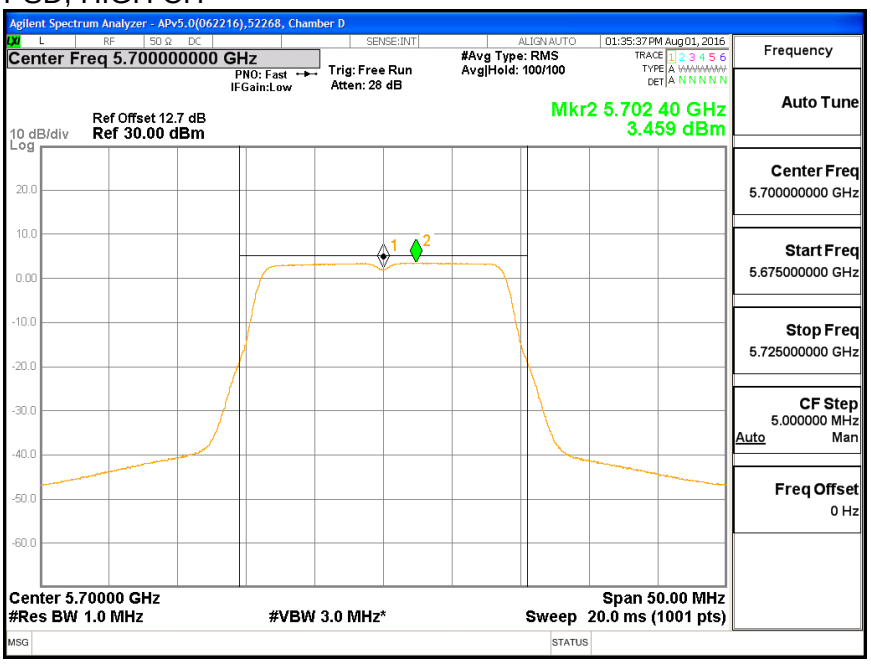
PSD, LOW CH



PSD, MID CH

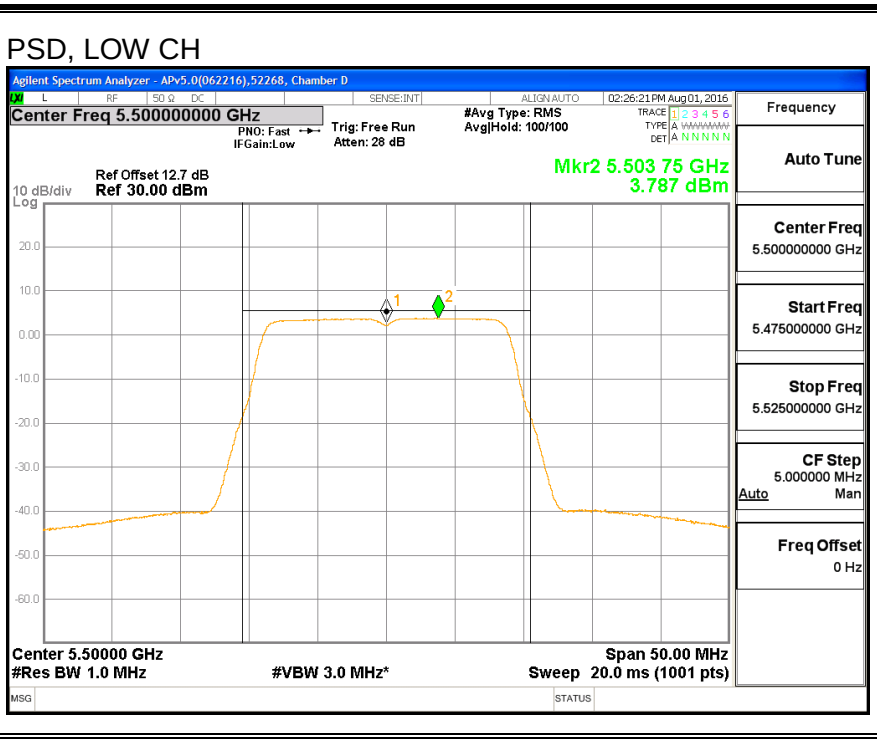


PSD, HIGH CH

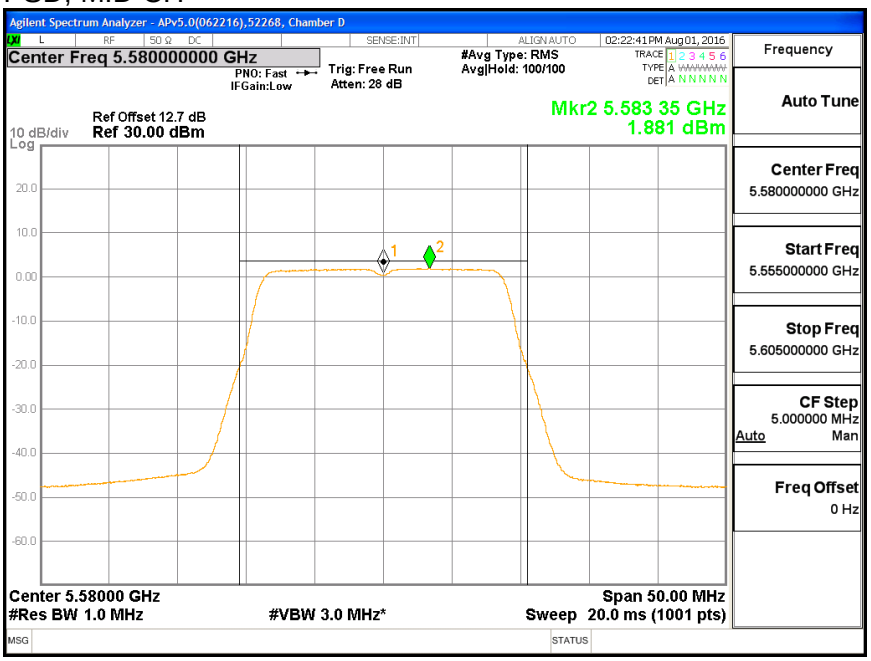


PSD, CHAIN 1

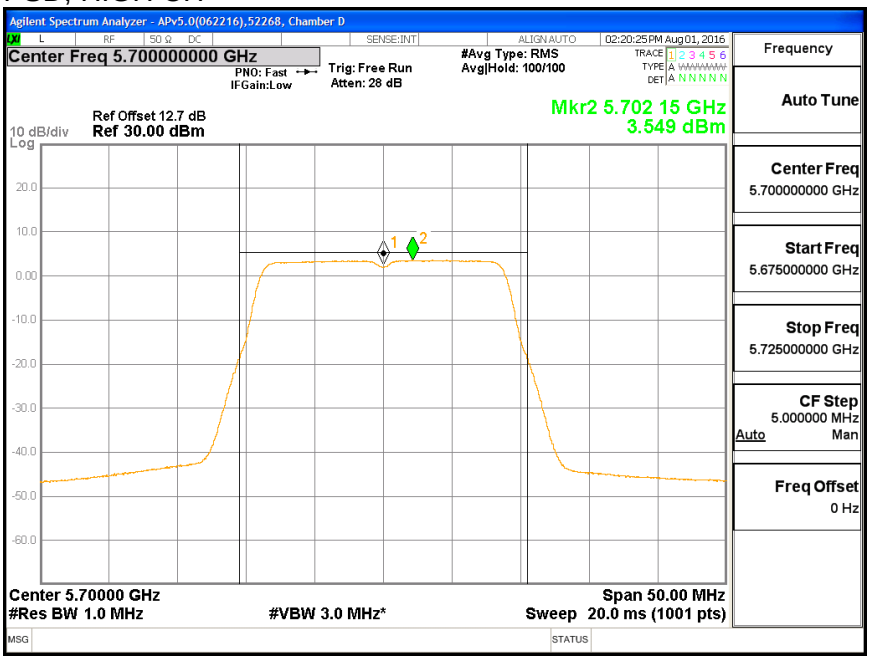
PSD, LOW CH



PSD, MID CH



PSD, HIGH CH



8.41. 802.11ac VHT20 2Tx STBC STRADDLE CHANNEL 144 RESULTS (FCC)

8.41.1. OUTPUT POWER AND PSD

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	16.03	7.21	7.21	21.84	9.79

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

Output Power Results

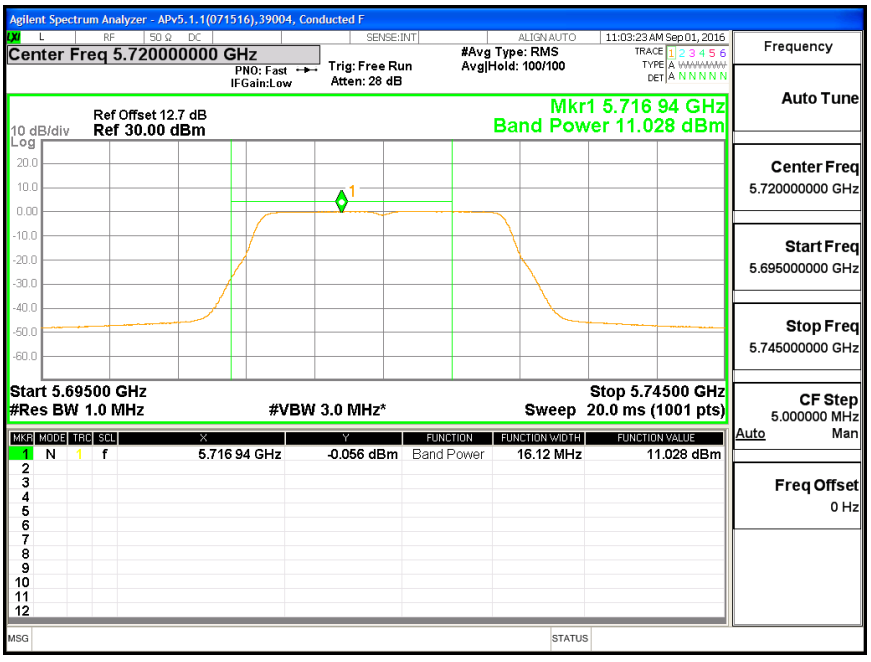
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	10.87	10.89	13.89	21.84	-7.95

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)
144	5720	0.19	0.11	3.16	9.79	-6.63

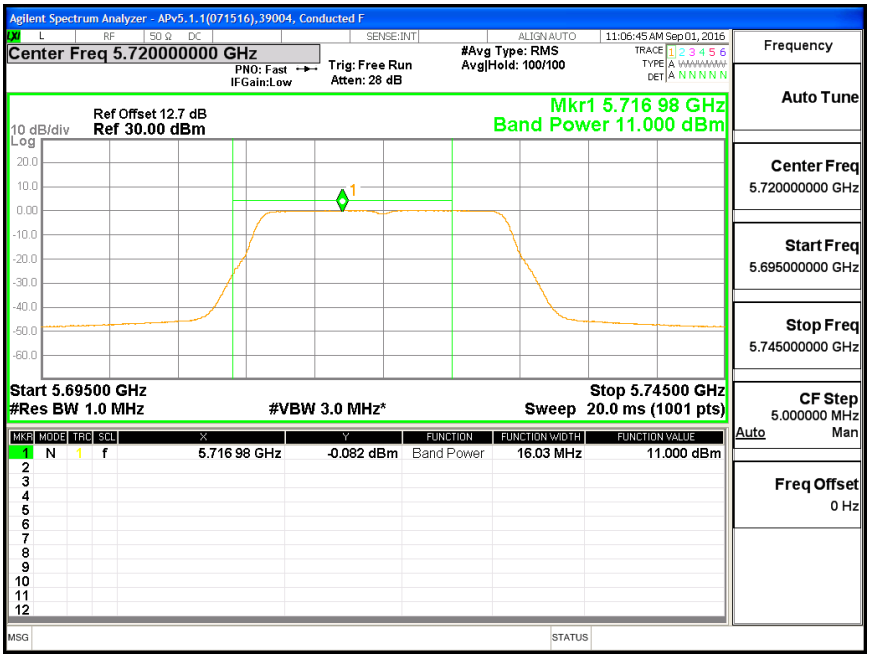
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



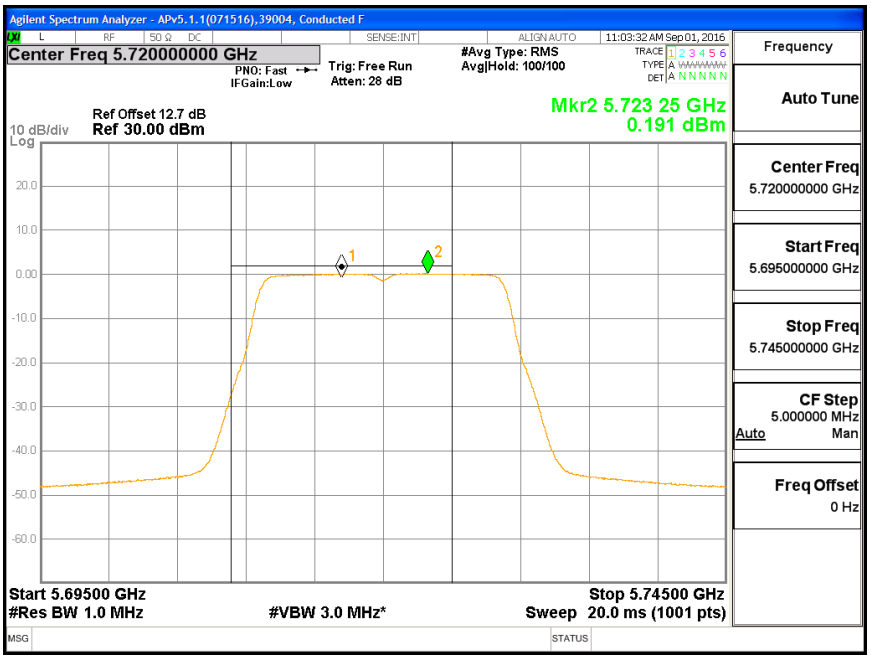
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



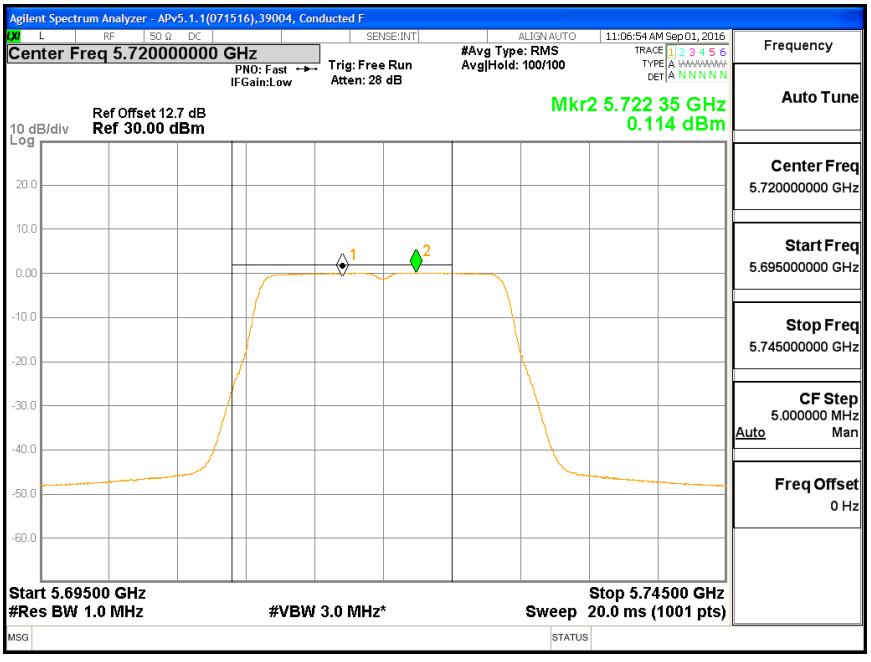
PSD, CHAIN 0

PSD, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



PSD, CHAIN 1

PSD, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain For Power (dBi)	Directional Gain For PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	6.03	7.21	7.21	28.79	28.79

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

Output Power Results

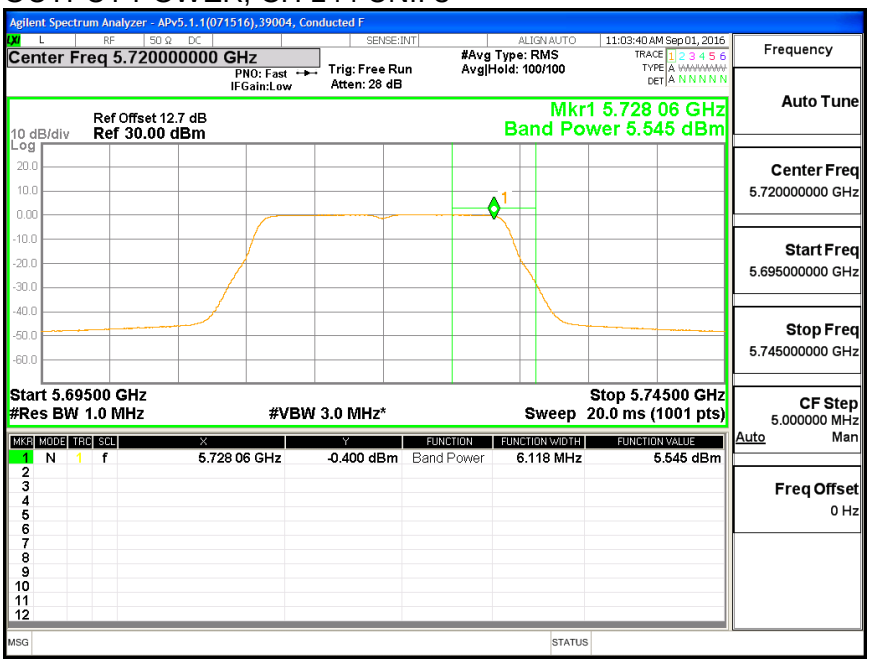
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	5.55	5.51	8.54	28.79	-20.25

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)
144	5720	-2.86	-2.85	0.16	28.79	-28.63

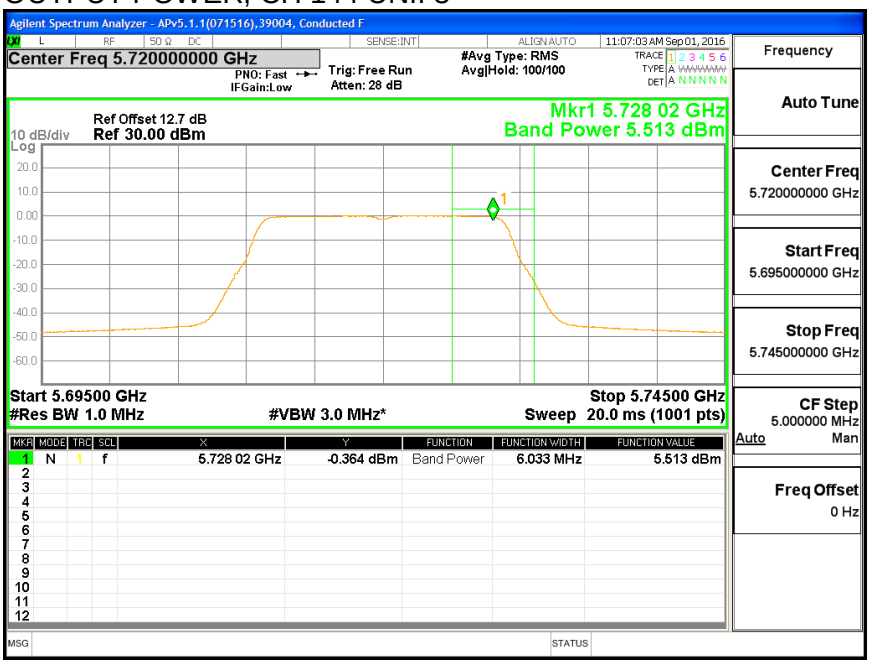
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 3



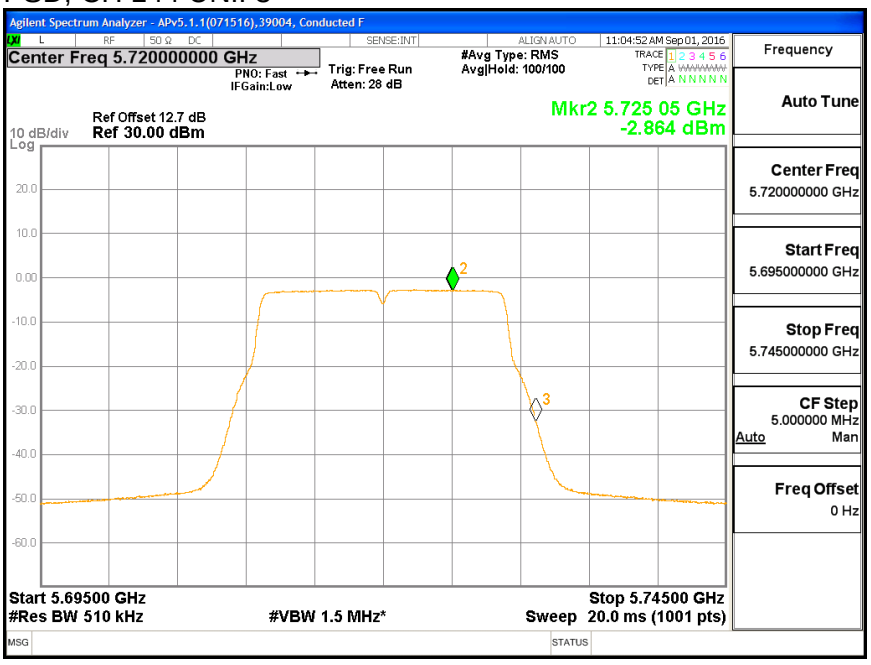
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 3



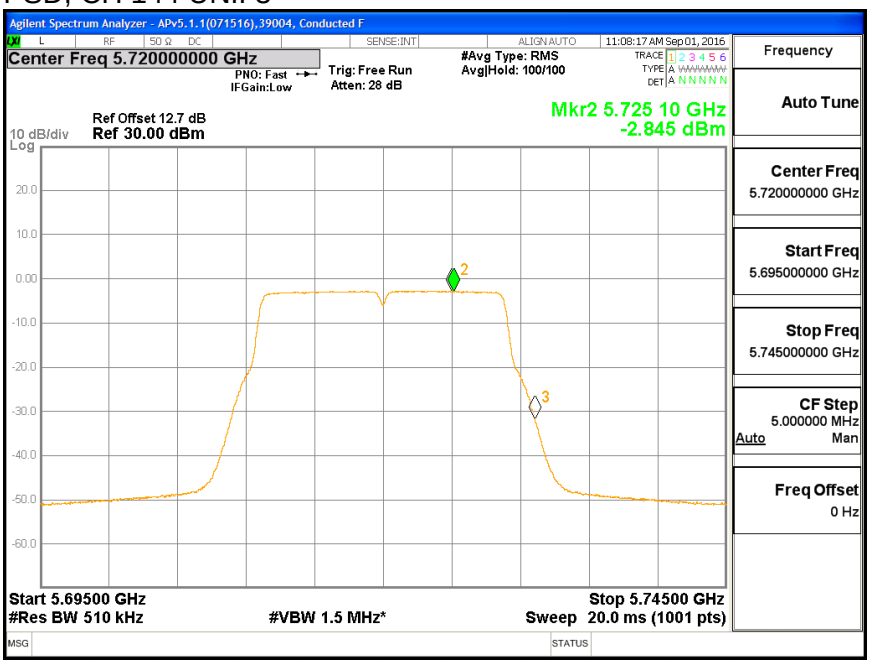
PSD, CHAIN 0

PSD, CH 144 UNII 3



PSD, CHAIN 1

PSD, CH 144 UNII 3



8.42. 802.11ac VHT20 2Tx STBC STRADDLE CHANNEL 144 RESULTS (IC)

8.42.1. OUTPUT POWER AND PSD

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	13.84	7.21	7.21	21.20	9.79

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

Output Power Results

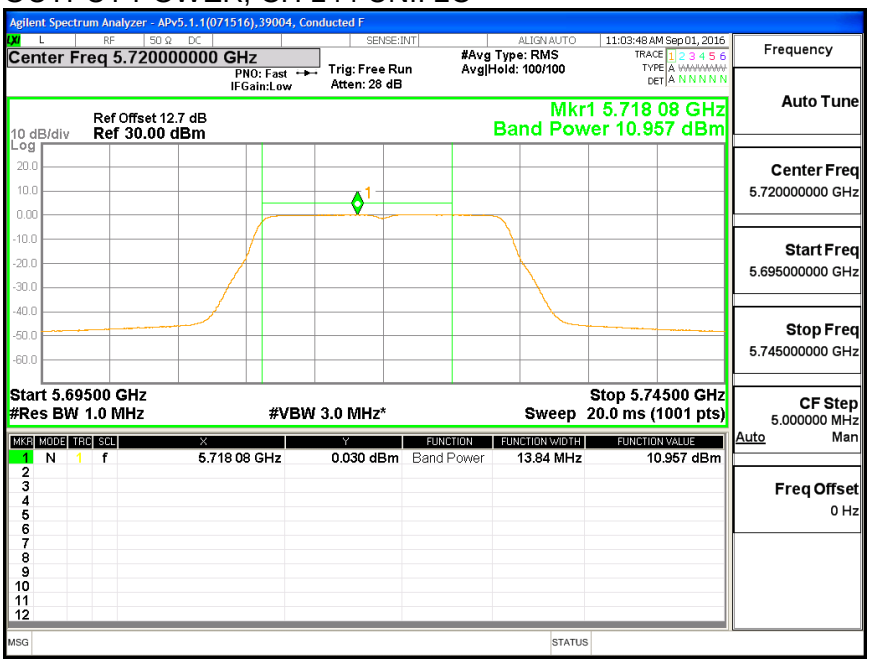
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	10.96	10.94	13.96	21.20	-7.24

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)
144	5720	0.19	1.11	3.69	9.79	-6.10

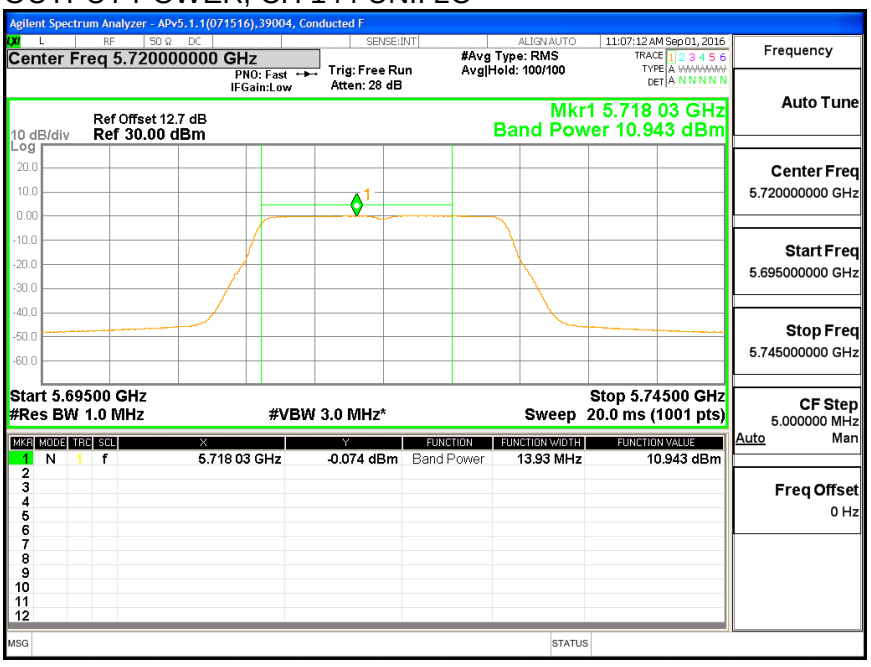
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 2C



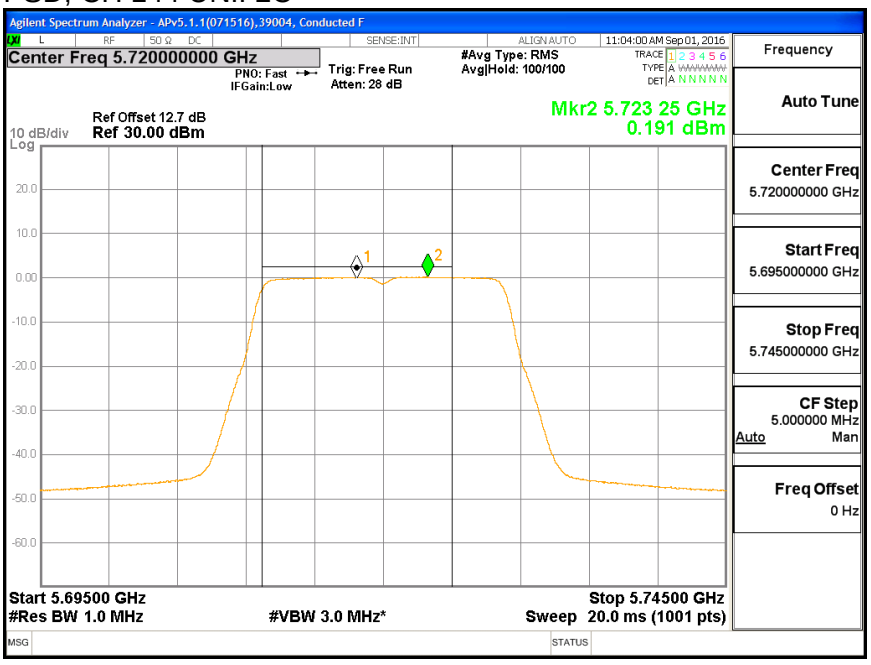
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 2C



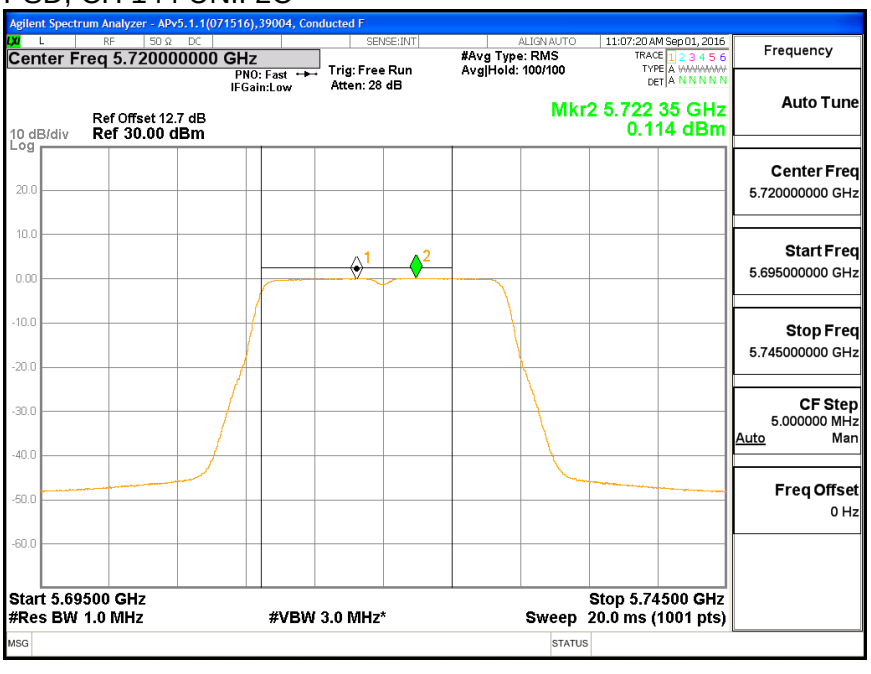
PSD, CHAIN 0

PSD, CH 144 UNII 2C



PSD, CHAIN 1

PSD, CH 144 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain For Power (dBi)	Directional Gain For PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	3.84	7.21	7.21	28.79	28.79

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

Output Power Results

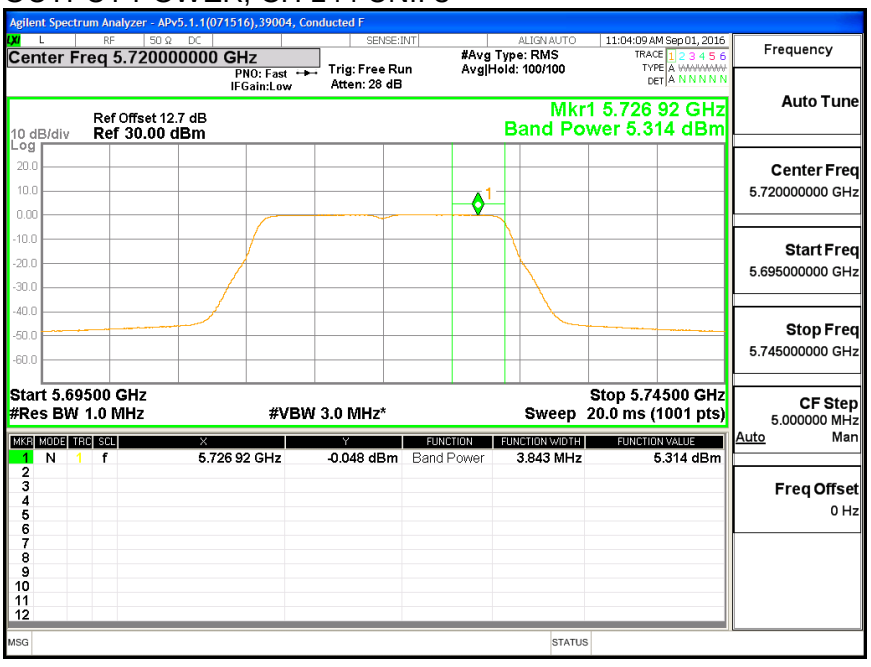
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	5.31	5.33	8.33	28.79	-20.46

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)
144	5720	-2.86	-2.85	0.16	28.79	-28.63

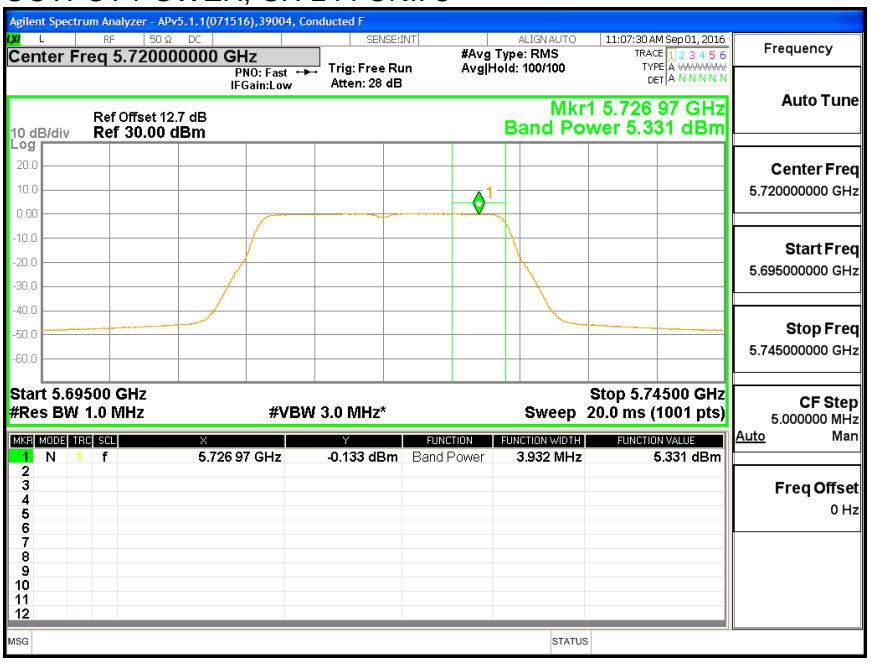
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 3



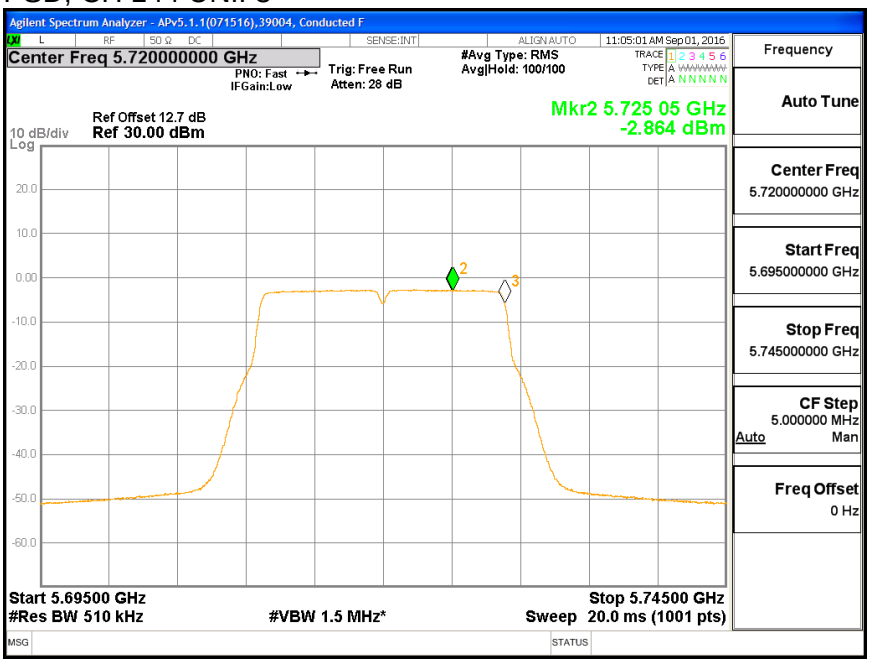
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 3



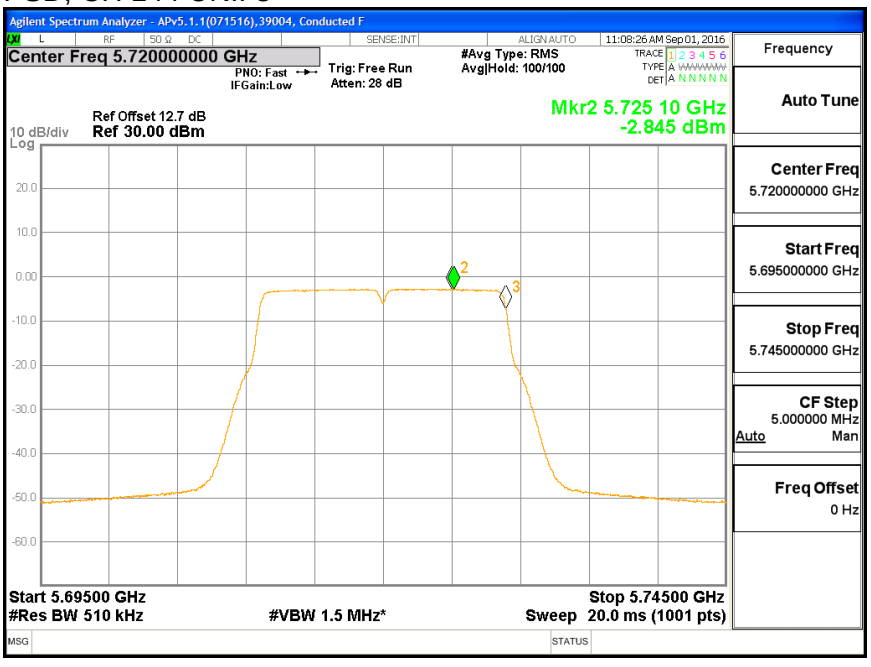
PSD, CHAIN 0

PSD, CH 144 UNII 3



PSD, CHAIN 1

PSD, CH 144 UNII 3



8.42.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

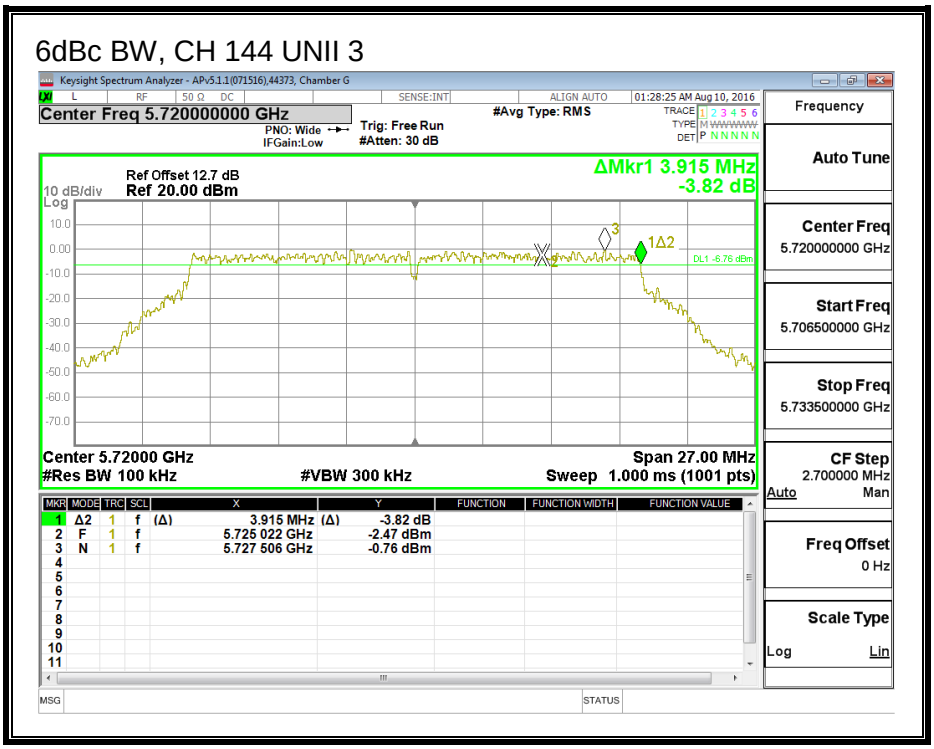
IC RSS-247 (6.2.4) (1)

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

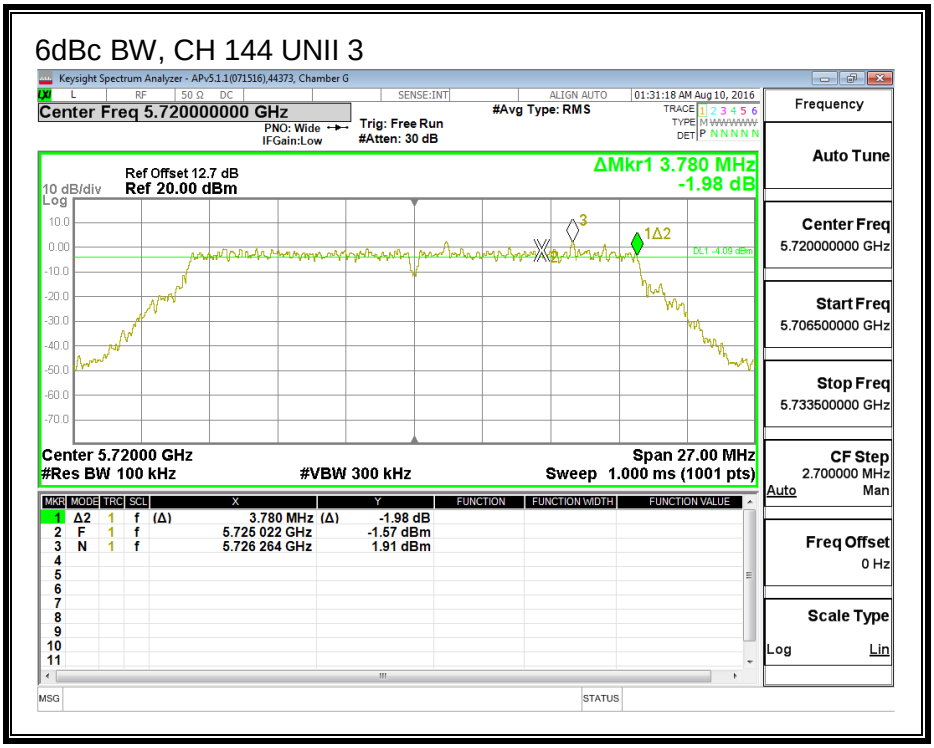
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)
144	5720	3.92	3.78

CHAIN 0



CHAIN 1



8.43. 802.11ac VHT20 2Tx BEAM FORMING MODE IN THE 5.6 GHz BAND

8.43.1. 26 dB BANDWIDTH

LIMITS

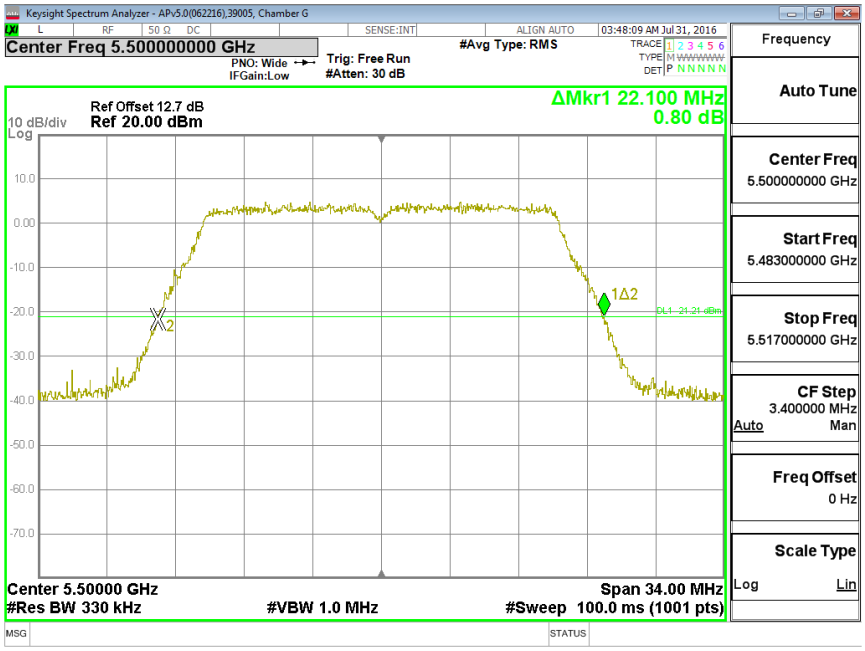
None; for reporting purposes only.

RESULTS

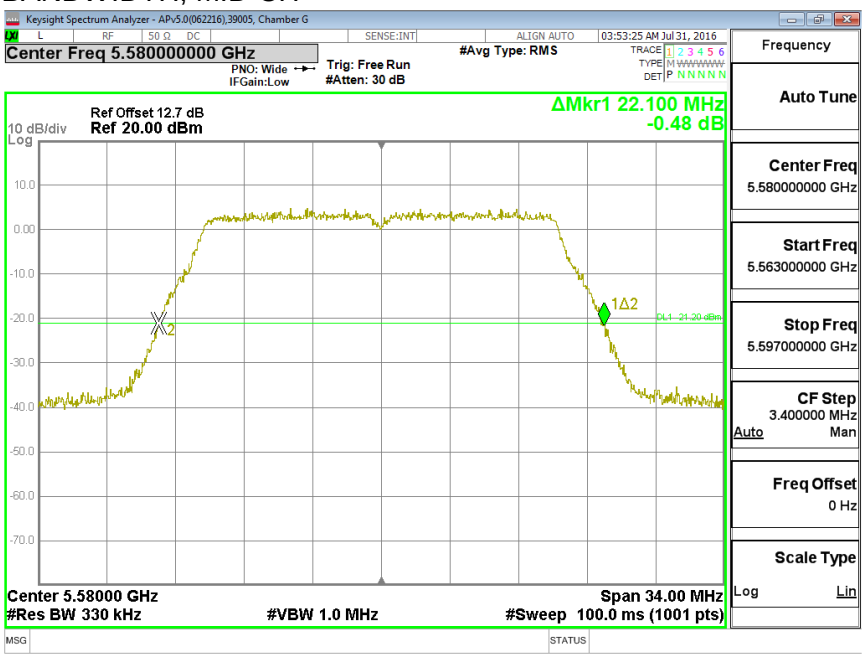
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	22.100	22.978
Mid	5580	22.100	21.813
High	5700	22.879	21.912
144	5720	22.338	22.338

26 dB BANDWIDTH, CHAIN 0

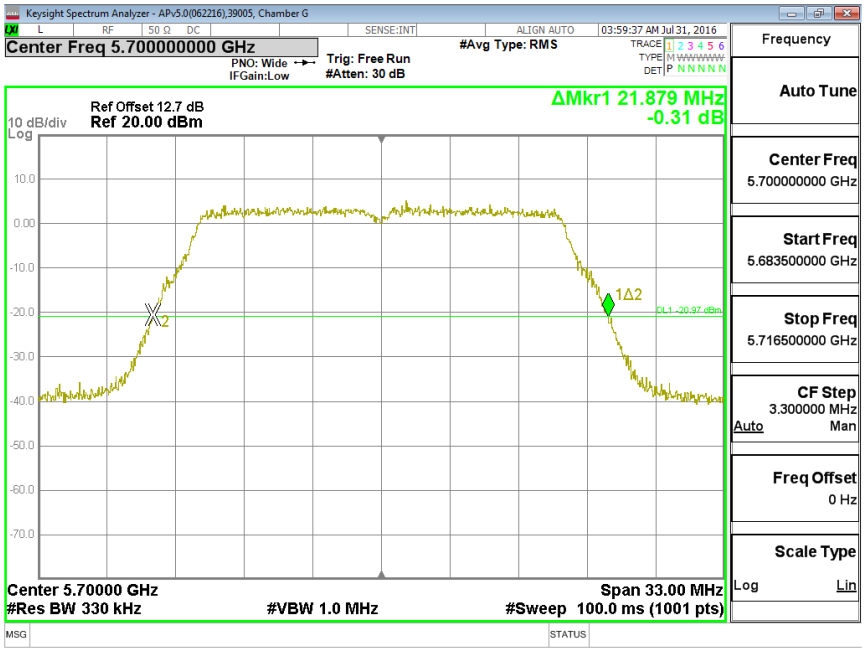
BANDWIDTH, LOW CH



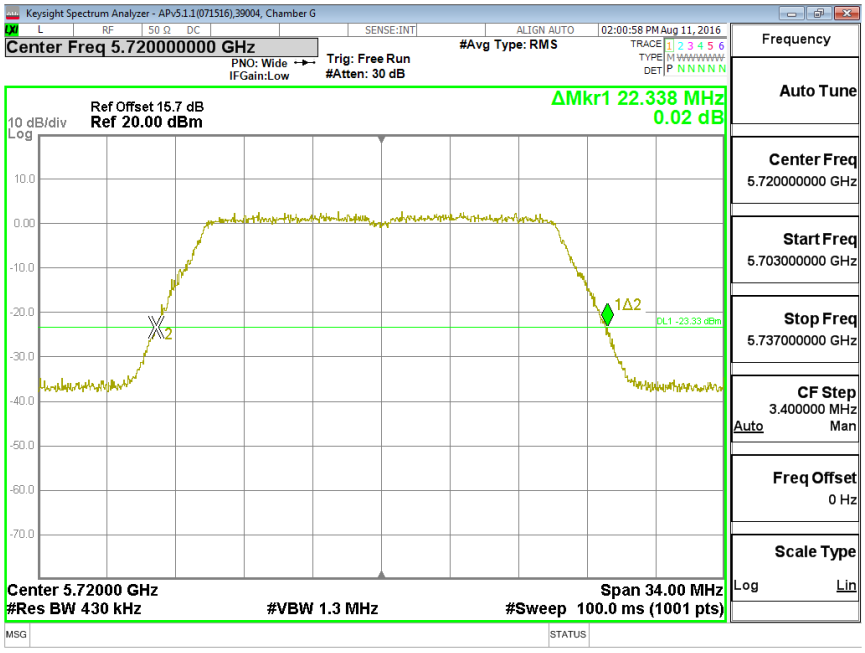
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH

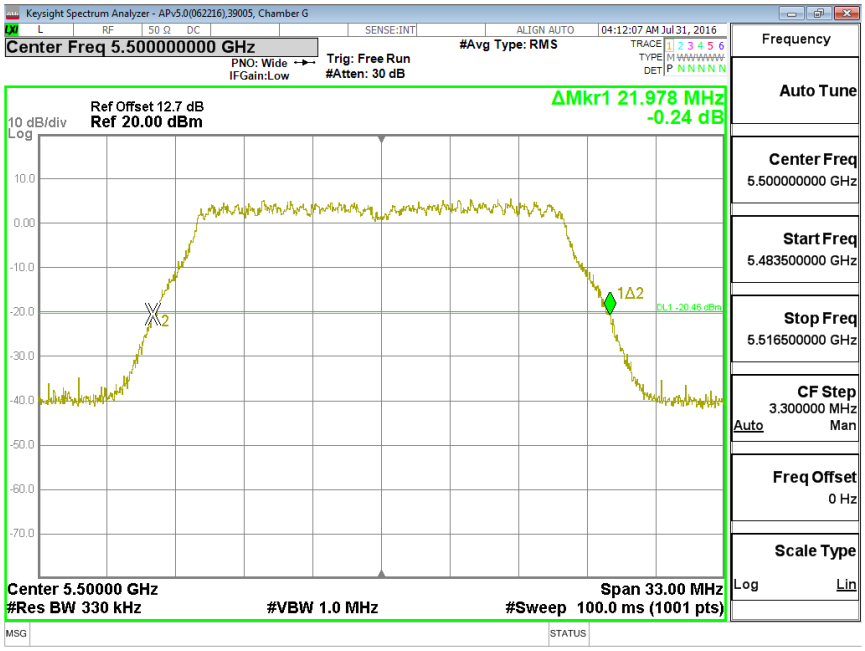


BANDWIDTH Chain 0 STRADDLE CH 144

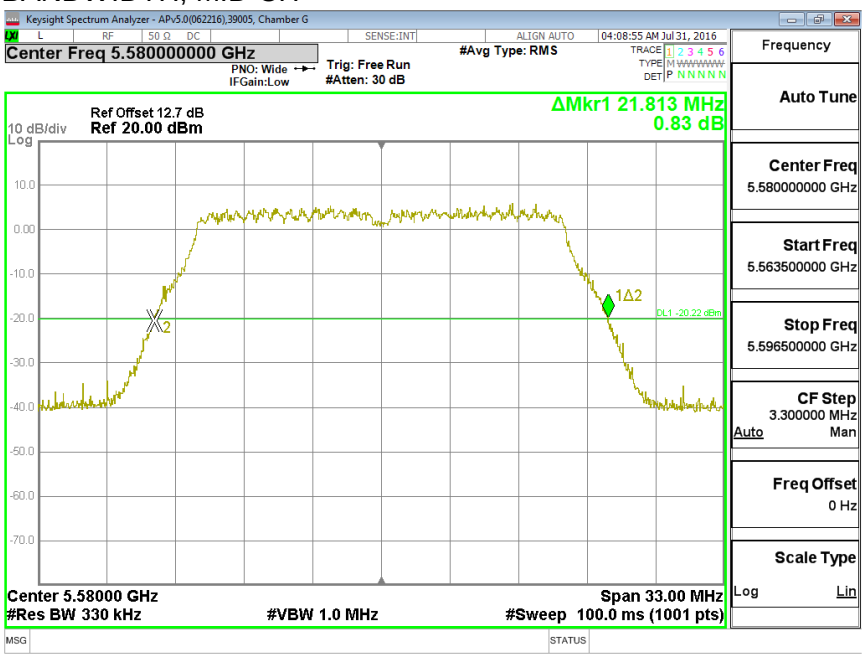


26 dB BANDWIDTH, CHAIN 1

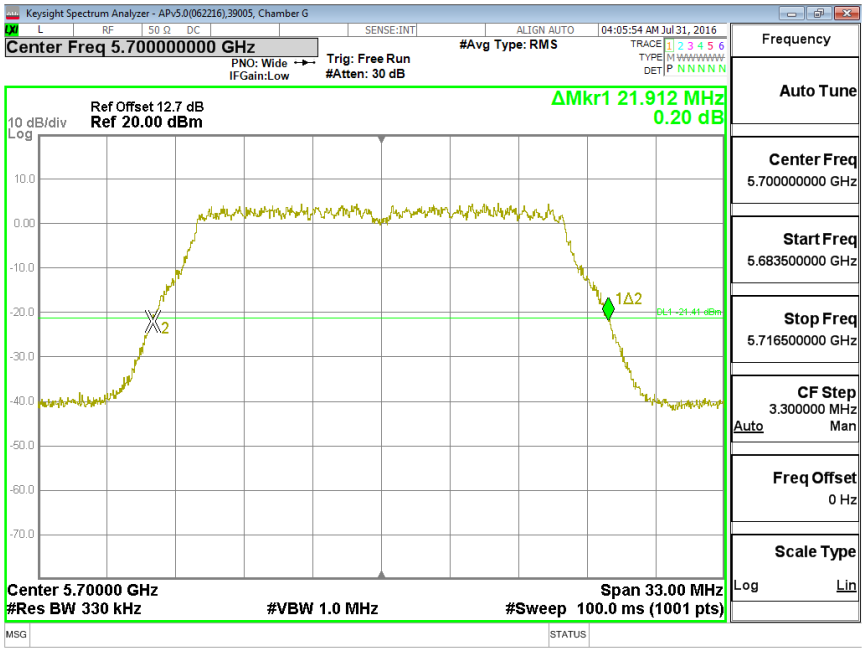
BANDWIDTH, LOW CH



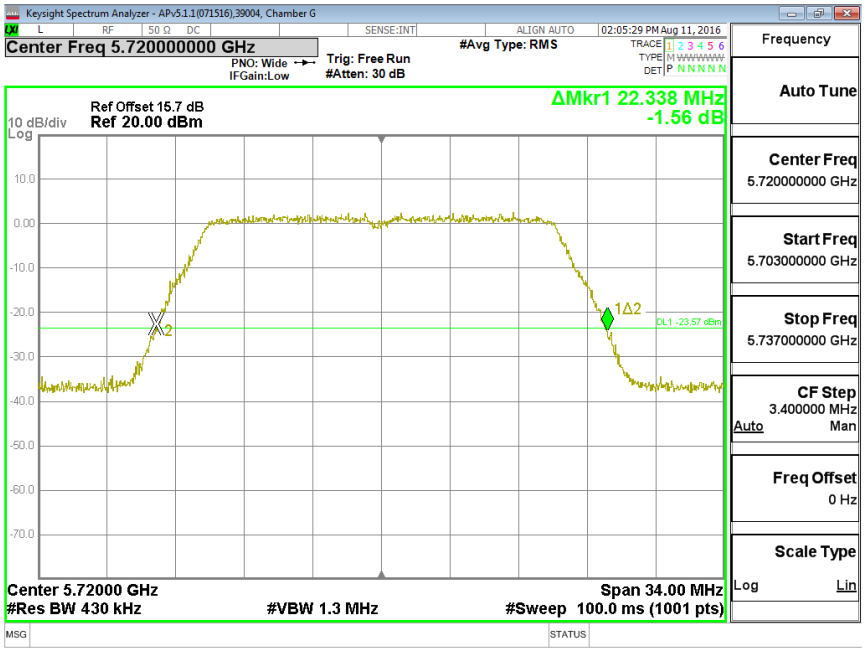
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH Chain 1 STRADDLE CH 144



8.43.2. 99% BANDWIDTH

LIMITS

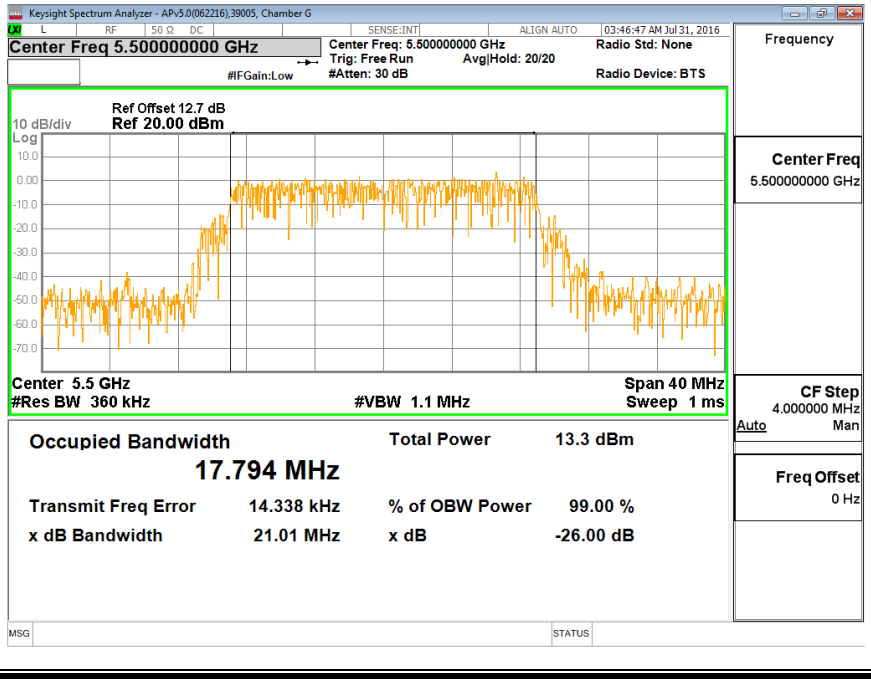
None; for reporting purposes only.

RESULTS

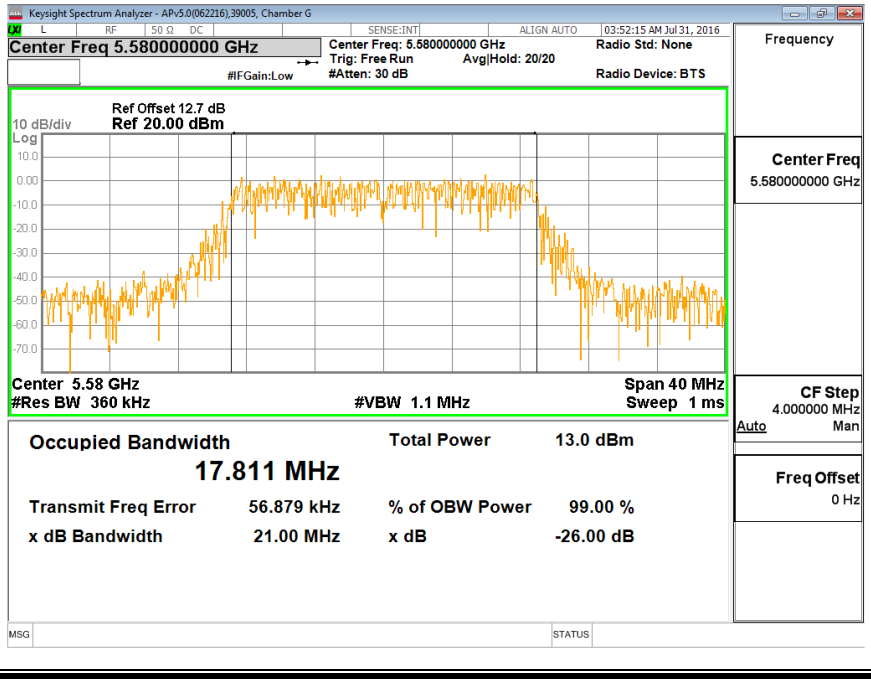
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	17.794	17.800
Mid	5580	17.811	17.767
High	5700	17.827	17.836
144	5720	17.788	17.736

99% BANDWIDTH, CHAIN 0

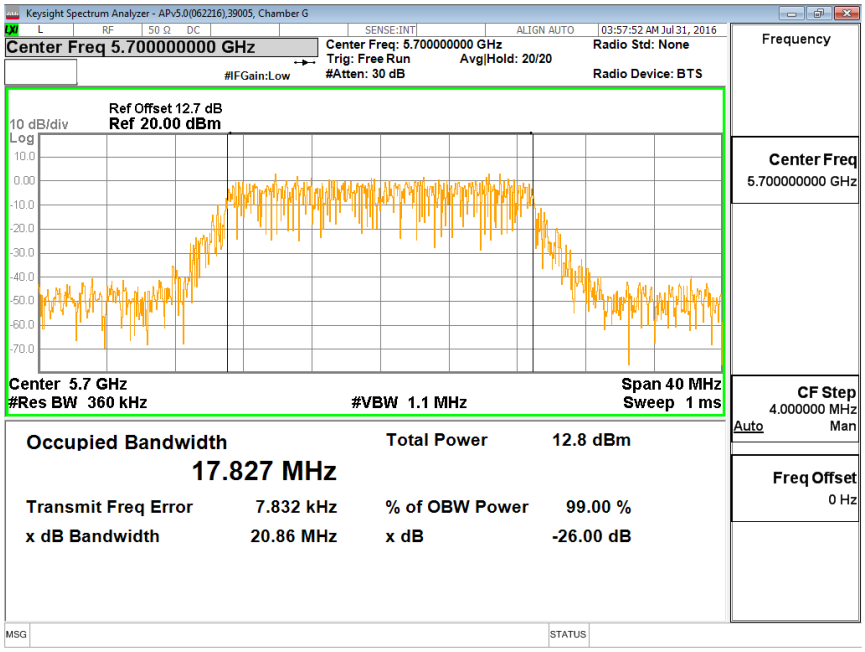
99% BANDWIDTH, LOW CH



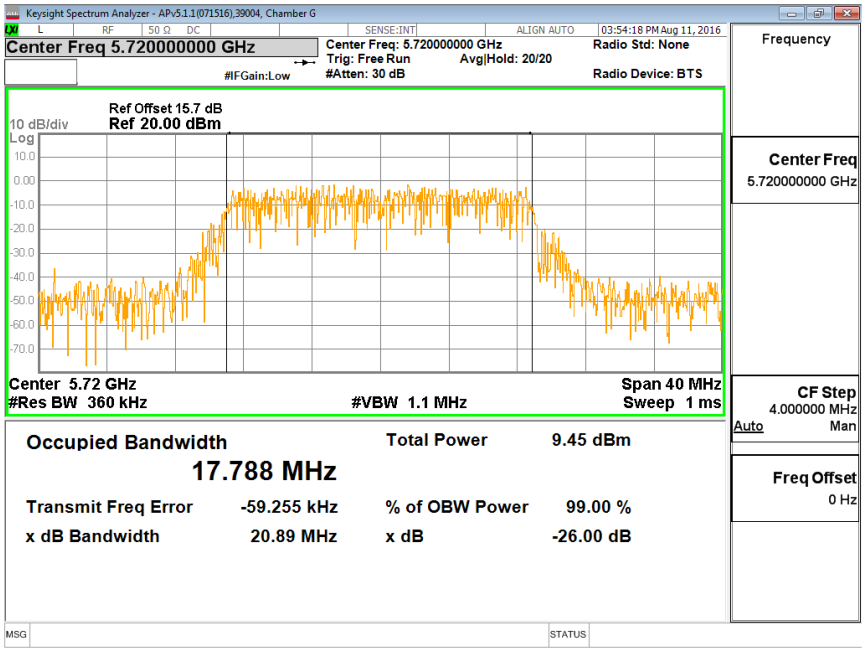
99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH

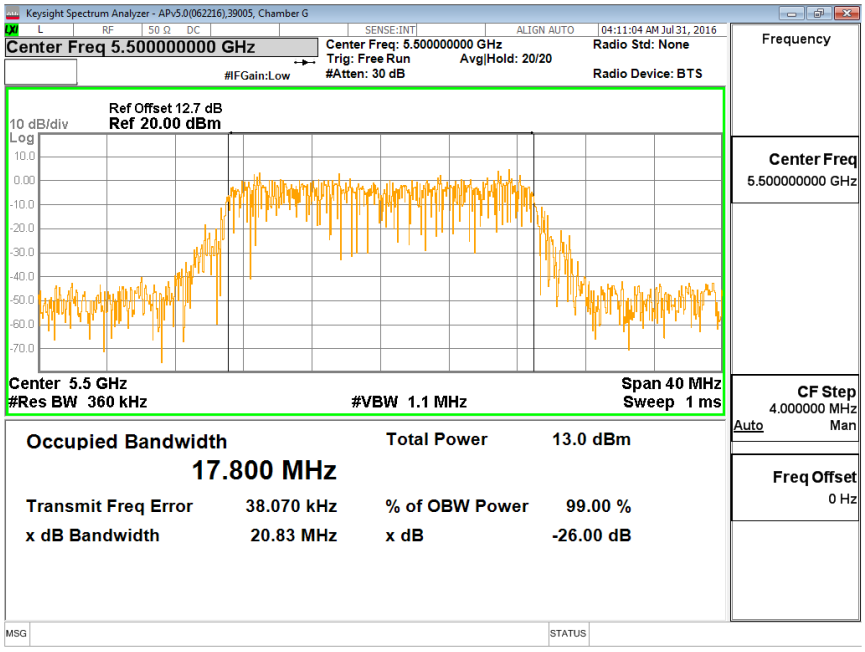


99% BANDWIDTH, STRADDLE CH 144

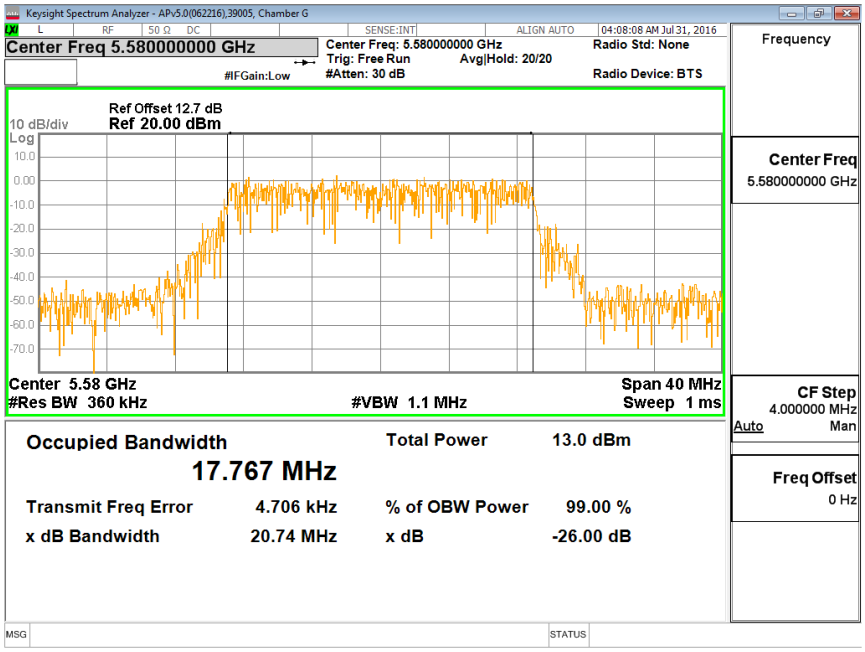


99% BANDWIDTH, CHAIN 1

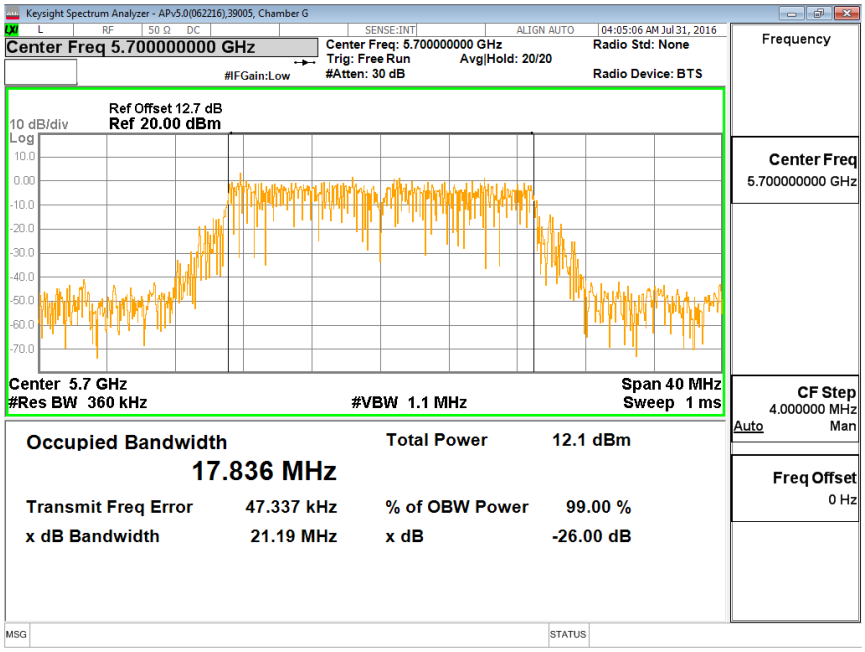
99% BANDWIDTH, LOW CH



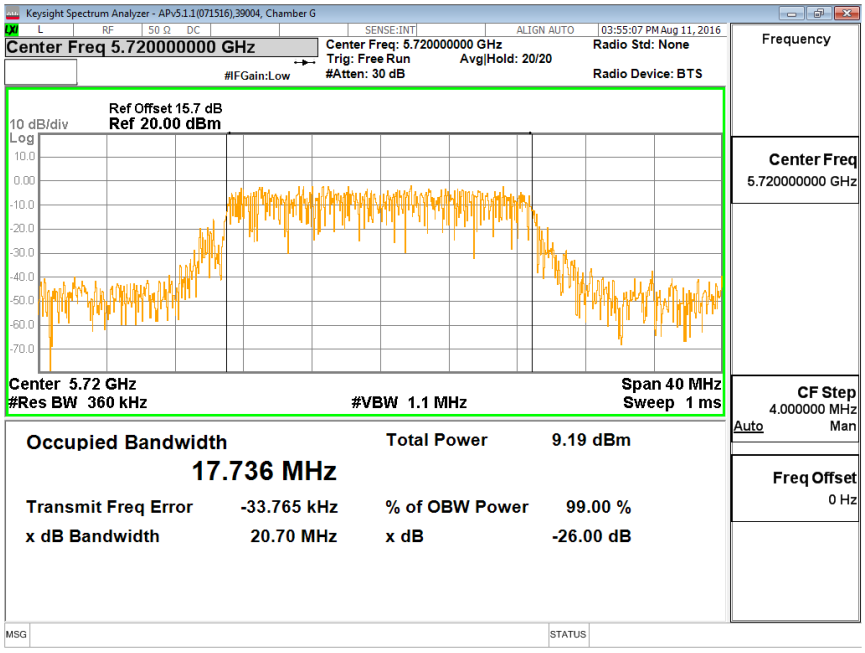
99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH



99% BANDWIDTH, STRADDLE CH 144



8.43.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	9/2/16

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5500	11.95	11.88	14.93
Mid	5580	11.45	11.40	14.44
High	5700	11.42	11.37	14.41
144	5720	11.49	11.48	14.50

8.43.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

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 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)
6.40	7.90	10.19

RESULTS

ID:	39005	Date:	7/31/16

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	5500	22.0	17.8	10.19	10.19	19.31	6.81
Mid	5580	21.8	17.8	10.19	10.19	19.31	6.81
High	5700	21.9	17.8	10.19	10.19	19.32	6.81

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

Output Power Results

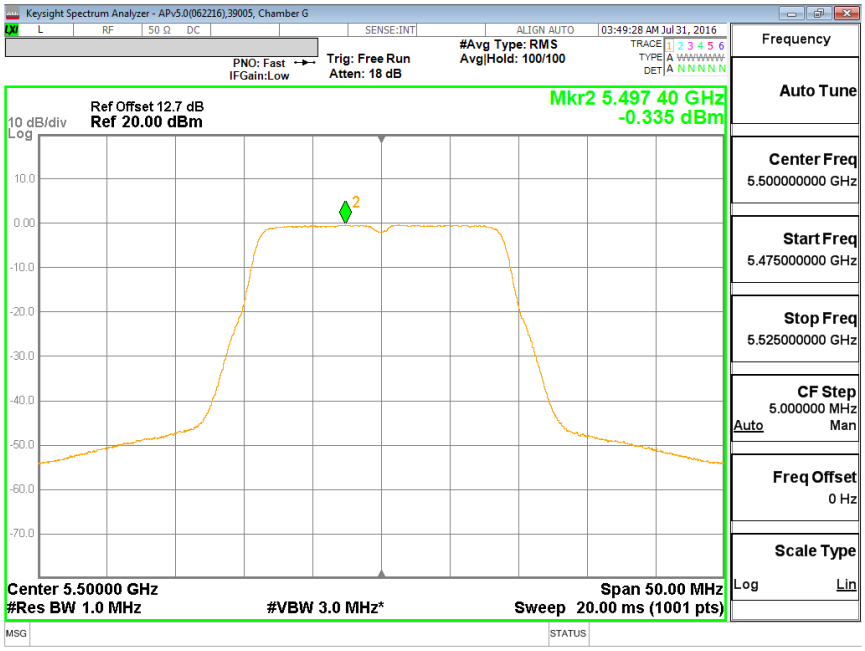
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.95	11.88	14.93	19.31	-4.39
Mid	5580	11.45	11.40	14.44	19.31	-4.87
High	5700	11.42	11.37	14.41	19.32	-4.92

PSD Results

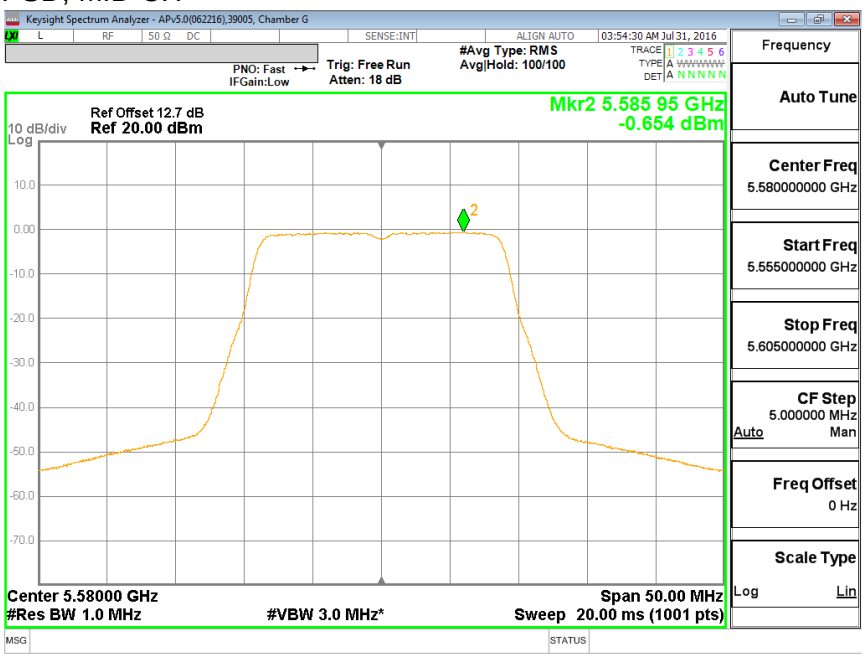
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	-0.34	-0.72	2.58	6.81	-4.23
Mid	5580	-0.65	-0.59	2.49	6.81	-4.32
High	5700	-0.78	-1.40	2.03	6.81	-4.78

PSD, CHAIN 0

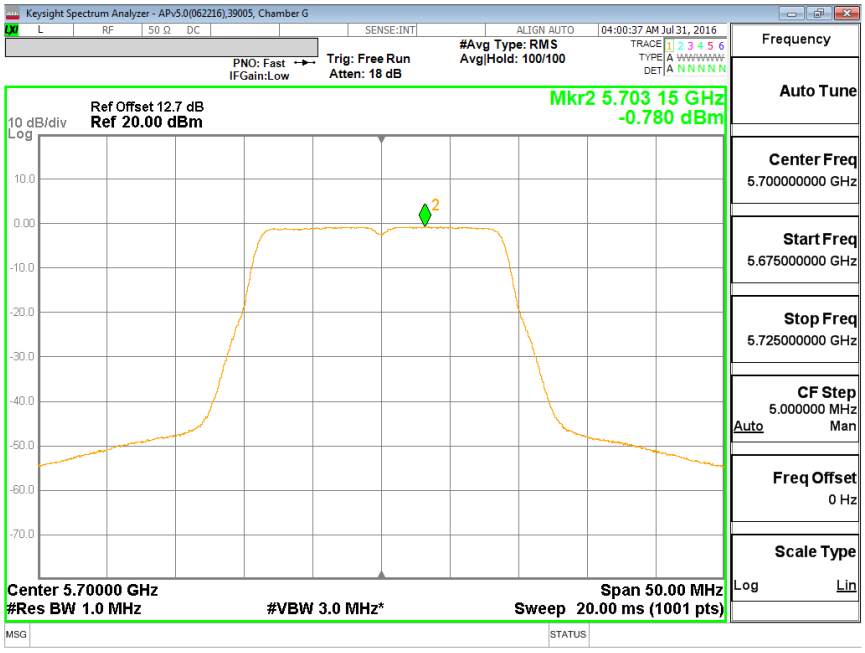
PSD, LOW CH



PSD, MID CH

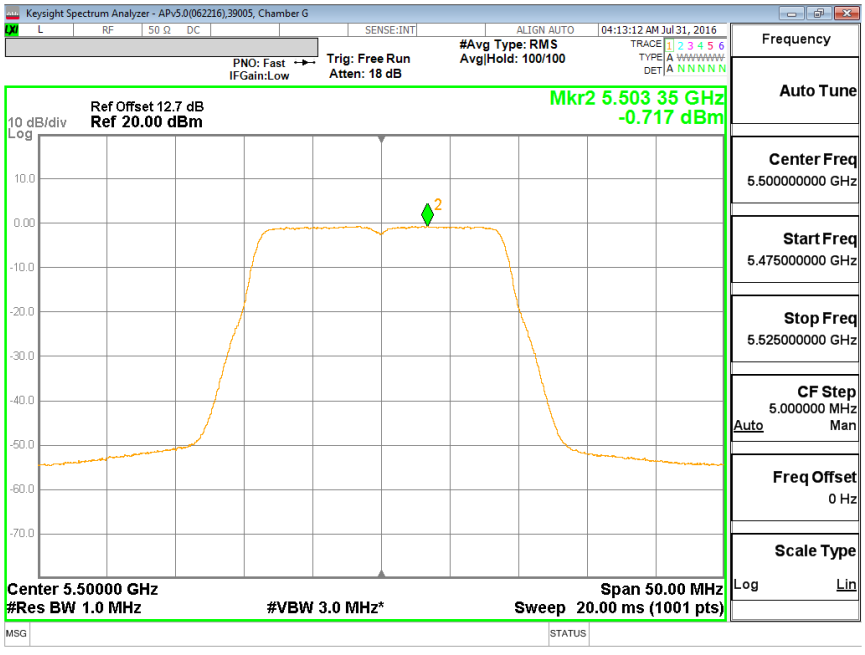


PSD, HIGH CH

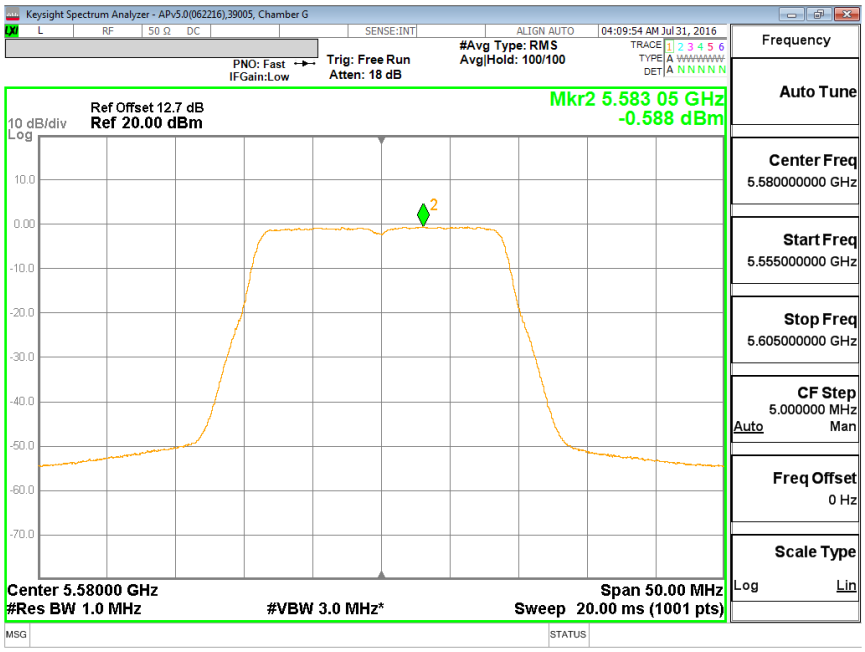


PSD, CHAIN 1

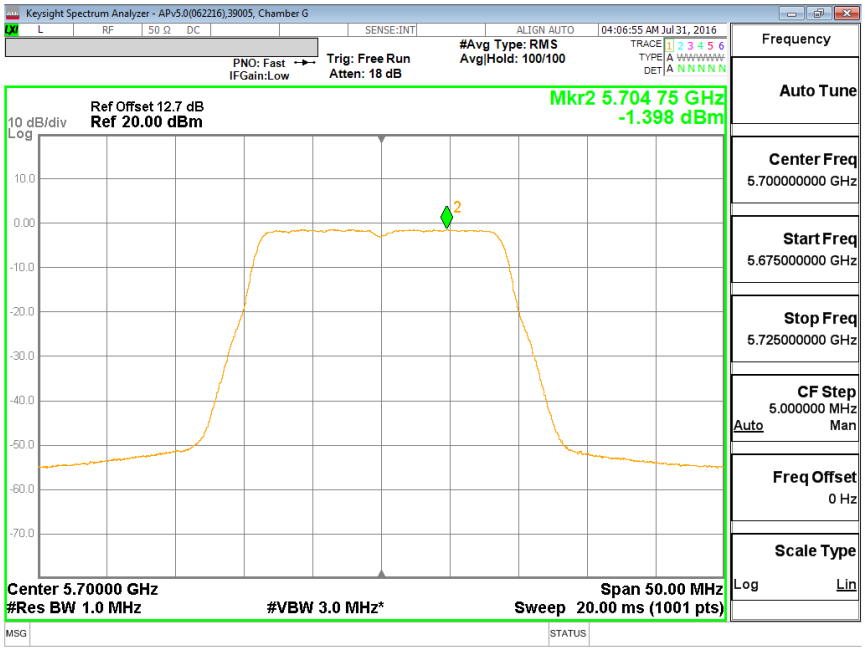
PSD, LOW CH



PSD, MID CH



PSD, HIGH CH



8.45. 802.11ac VHT20 2Tx BEAM FORMING STRADDLE CHANNEL 144 (FCC)

8.45.1. OUTPUT POWER AND PSD

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	16.17	10.19	10.19	18.90	6.81

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

Output Power Results

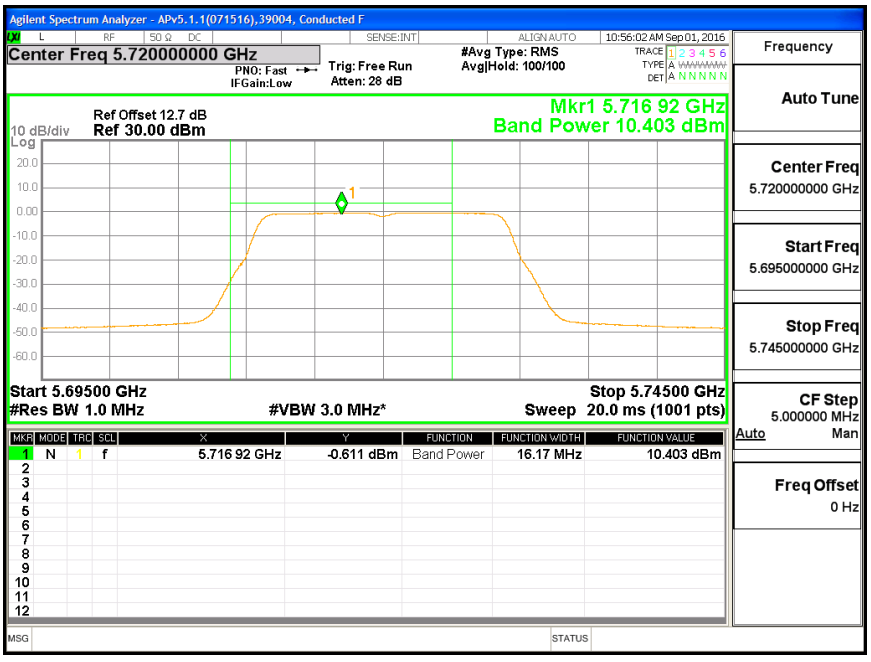
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	10.40	10.39	13.51	18.90	-5.39

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)
144	5720	-0.48	-0.48	2.63	6.81	-4.18

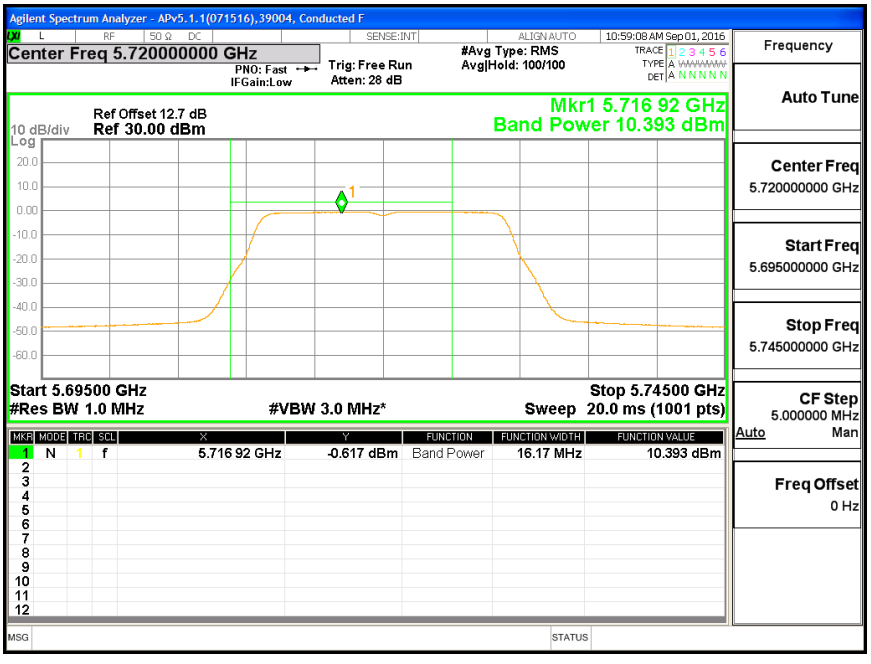
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



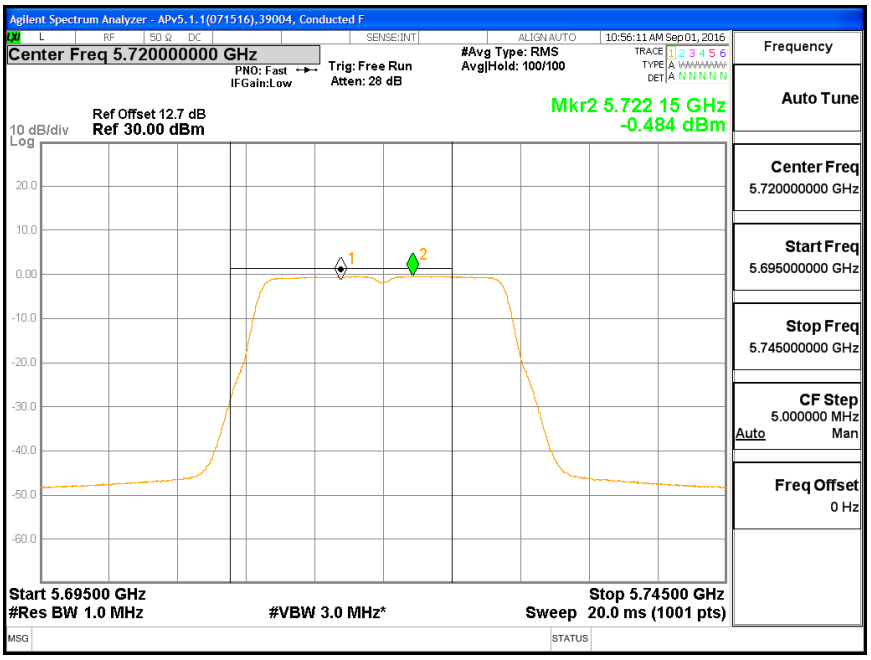
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



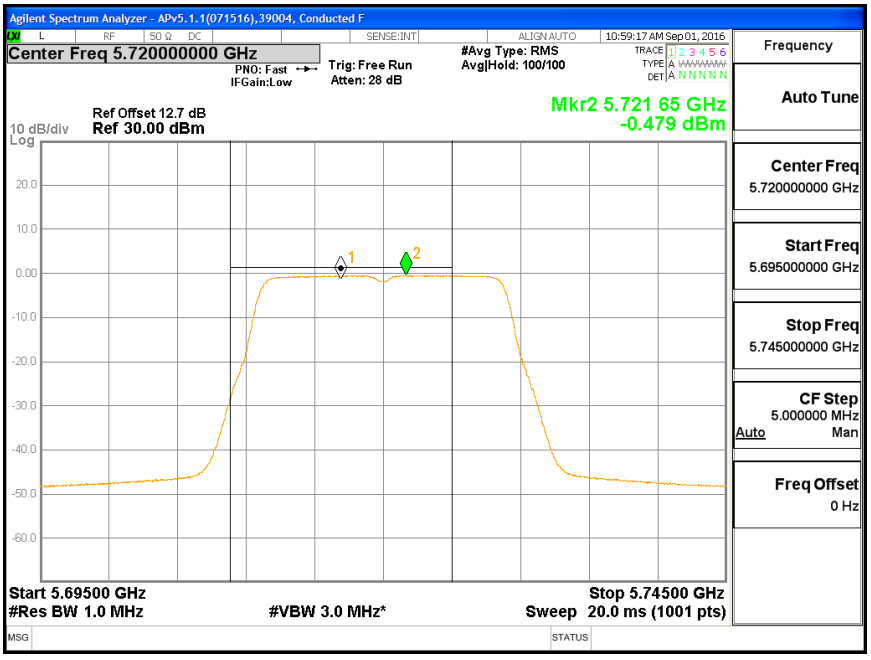
PSD, CHAIN 0

PSD, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



PSD, CHAIN 1

PSD, CH 144 UNII 2C
PSD WAS TESTED WITH HIGH POWER



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain For Power (dBi)	Directional Gain For PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	6.17	10.19	10.19	25.81	25.81

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

Output Power Results

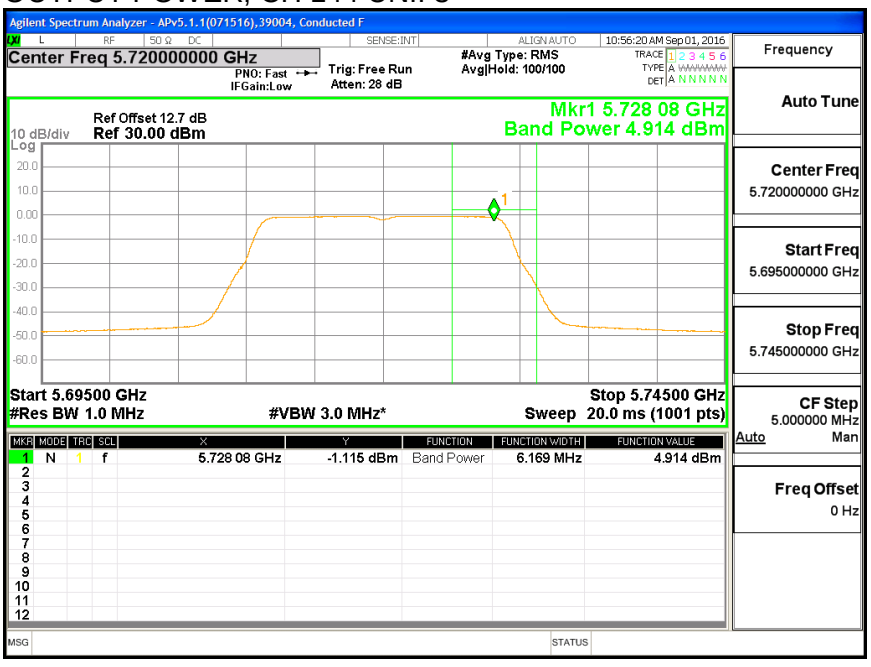
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	4.91	4.90	7.92	25.81	-17.89

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)
144	5720	-3.52	-3.44	-0.47	25.81	-26.28

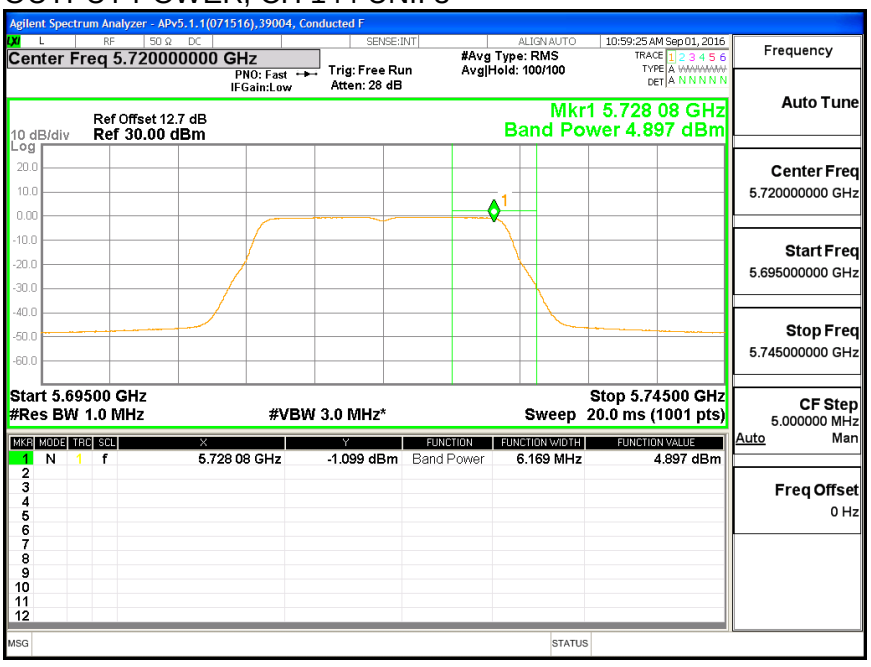
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 3



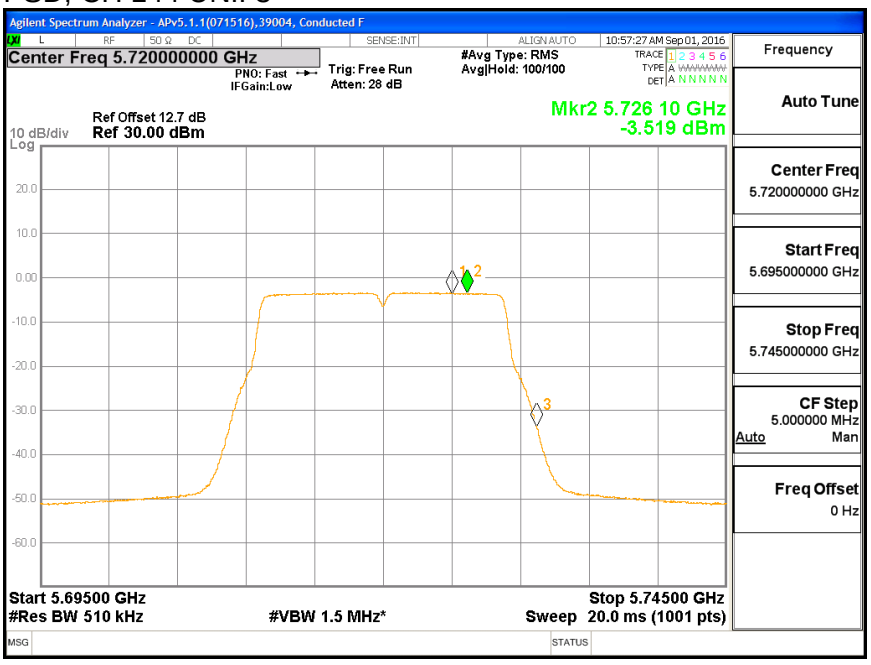
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 3



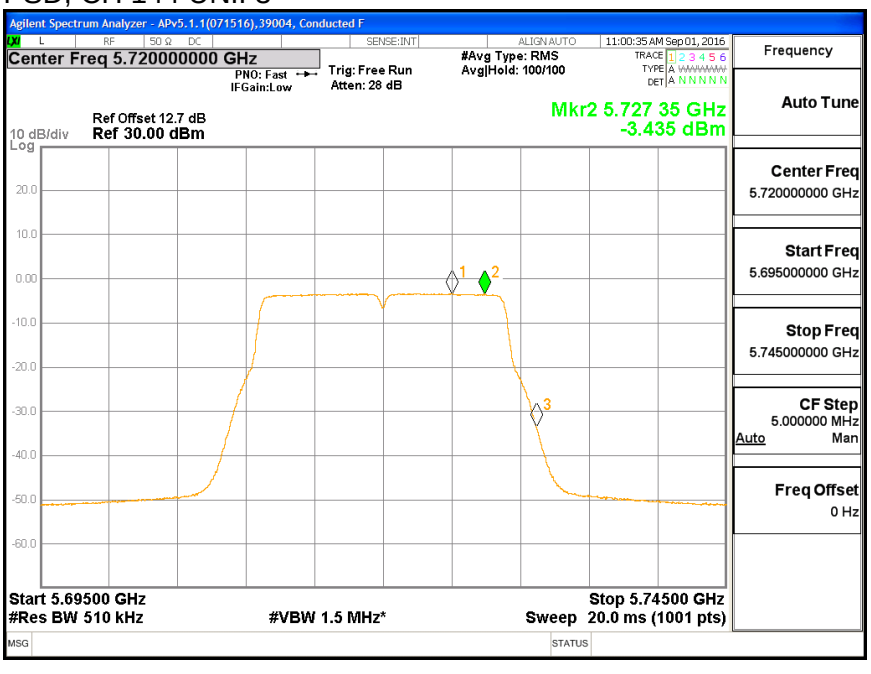
PSD, CHAIN 0

PSD, CH 144 UNII 3



PSD, CHAIN 1

PSD, CH 144 UNII 3



8.46. 802.11ac VHT20 2Tx BEAM FORMING STRADDLE CHANNEL 144 (IC)

8.46.1. OUTPUT POWER AND PSD

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	13.87	10.19	10.19	18.23	6.81

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

Output Power Results

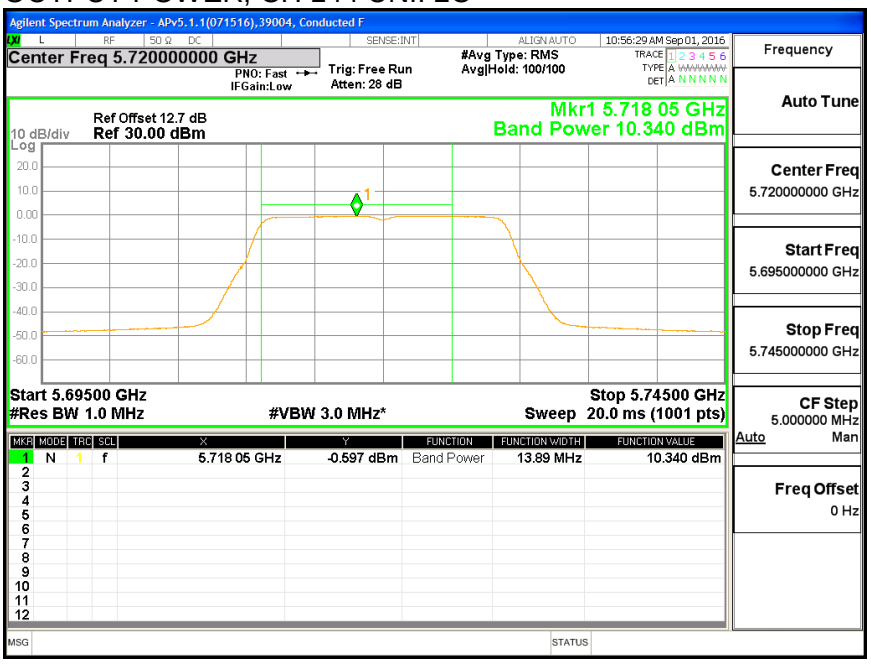
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	10.34	10.33	13.44	18.23	-4.79

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)
144	5720	-0.48	-0.48	2.63	6.81	-4.18

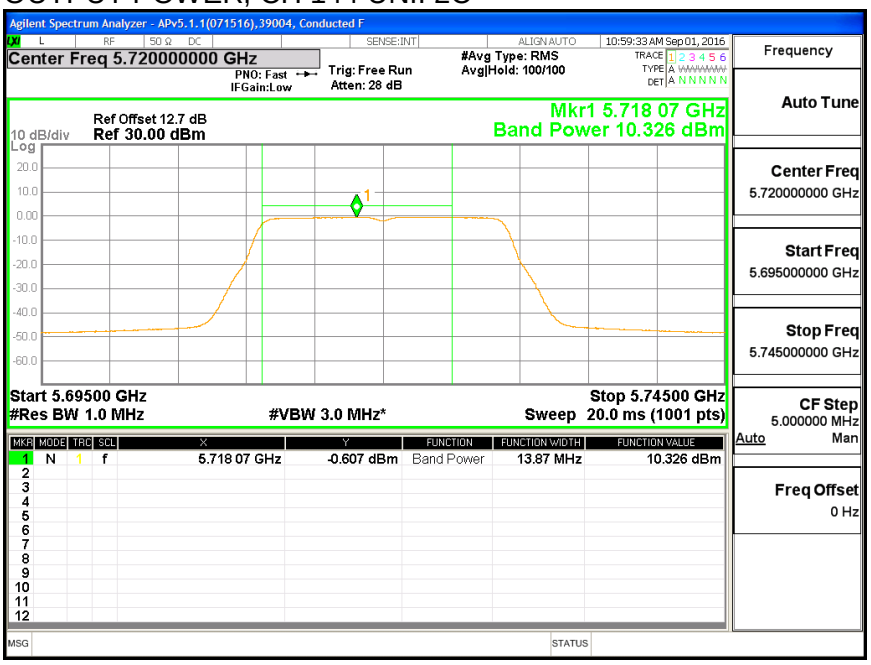
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 2C



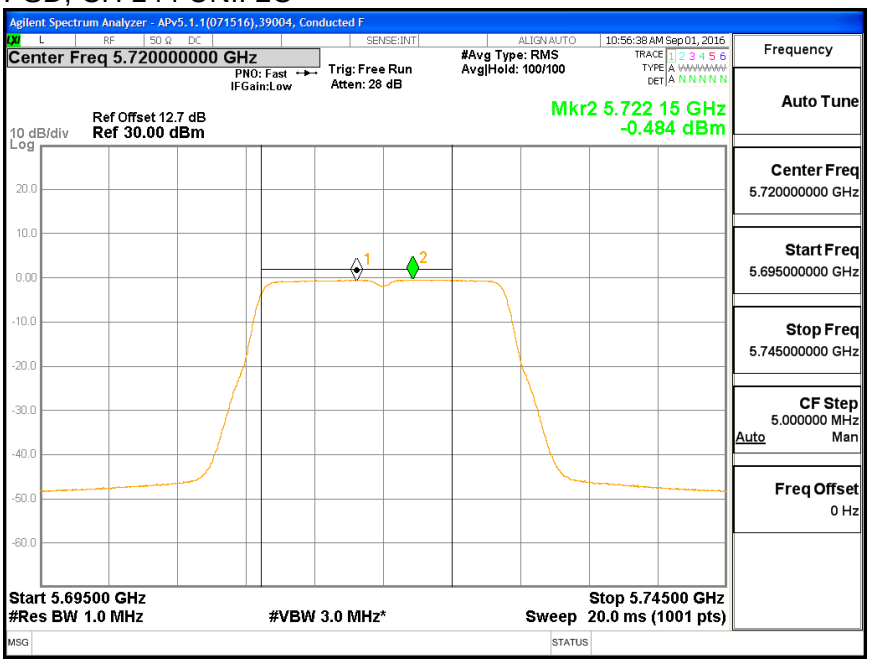
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 2C



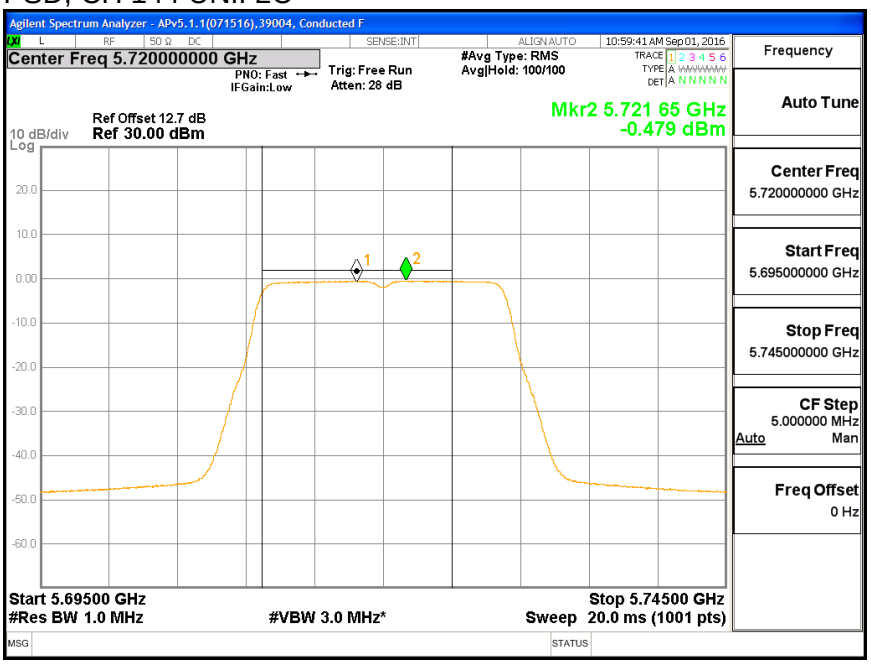
PSD, CHAIN 0

PSD, CH 144 UNII 2C



PSD, CHAIN 1

PSD, CH 144 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain For Power (dBi)	Directional Gain For PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	3.87	10.19	10.19	25.81	25.81

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

Output Power Results

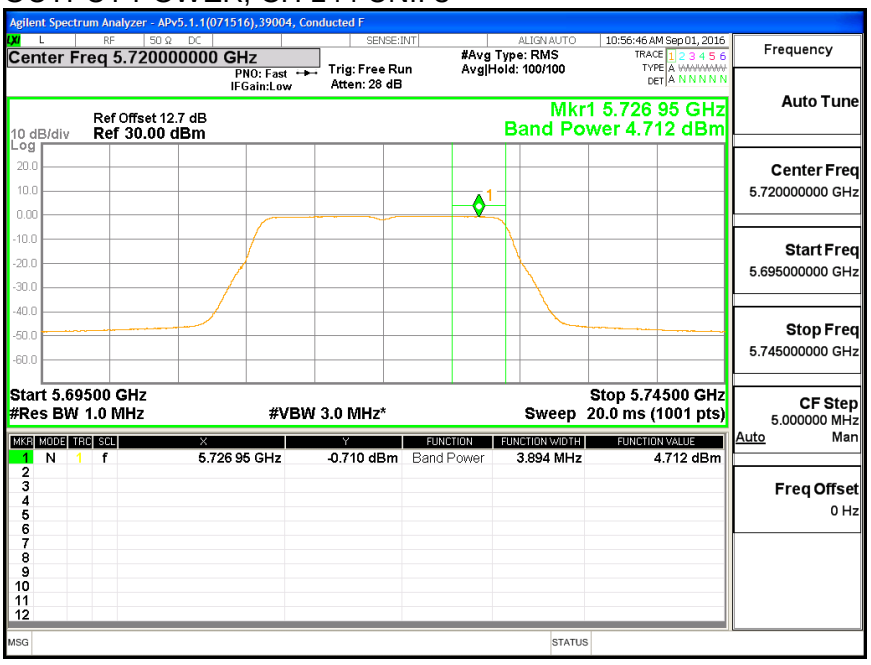
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	-3.52	-3.44	-0.47	25.81	-26.28

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)
144	5720	-5.62	-5.55	-2.58	25.81	-28.39

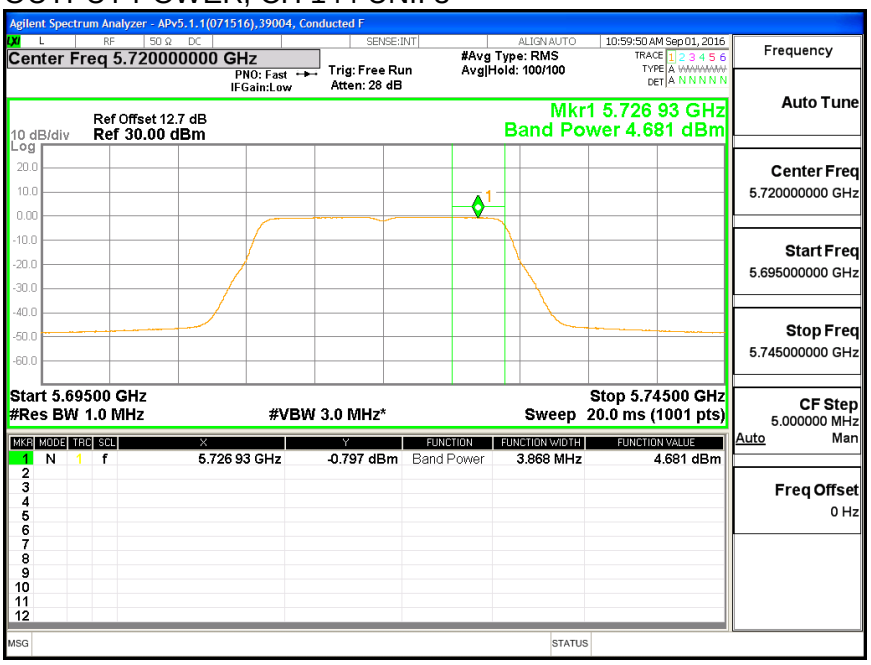
OUTPUT POWER, CHAIN 0

OUTPUT POWER, CH 144 UNII 3



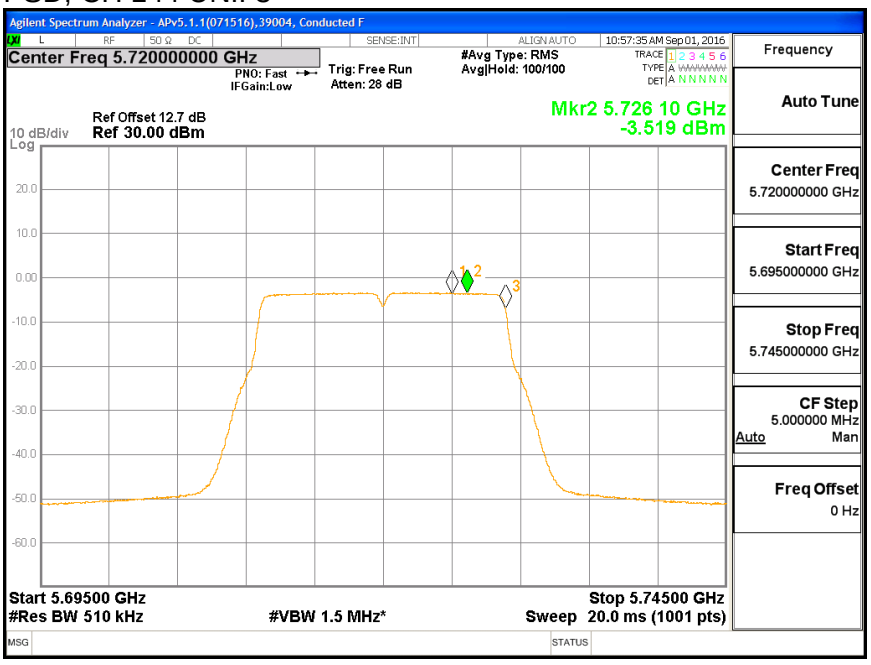
OUTPUT POWER, CHAIN 1

OUTPUT POWER, CH 144 UNII 3



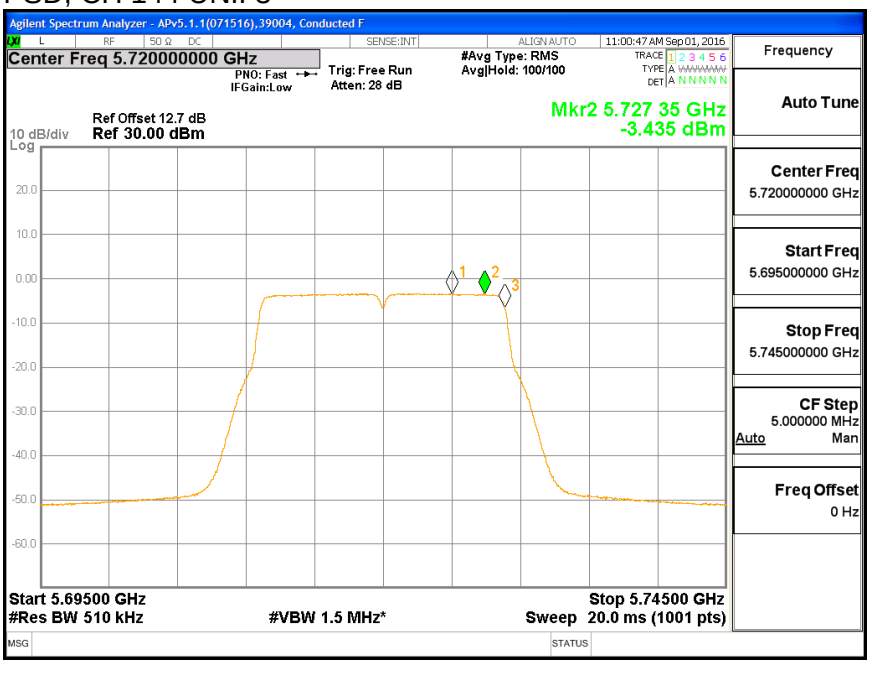
PSD, CHAIN 0

PSD, CH 144 UNII 3



PSD, CHAIN 1

PSD, CH 144 UNII 3



8.46.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

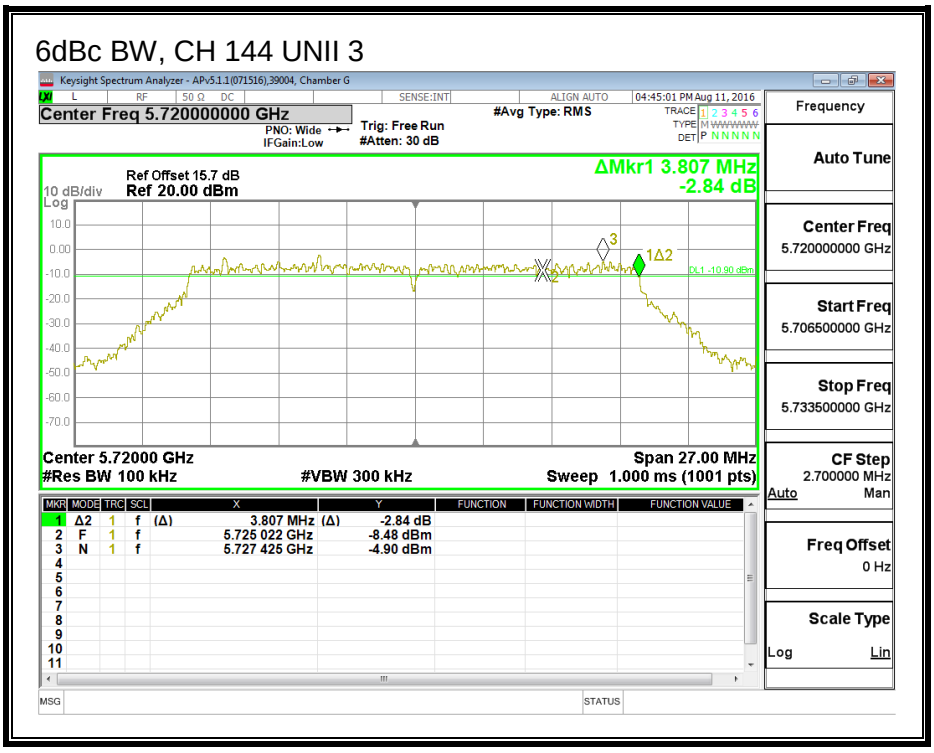
IC RSS-247 (6.2.4) (1)

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

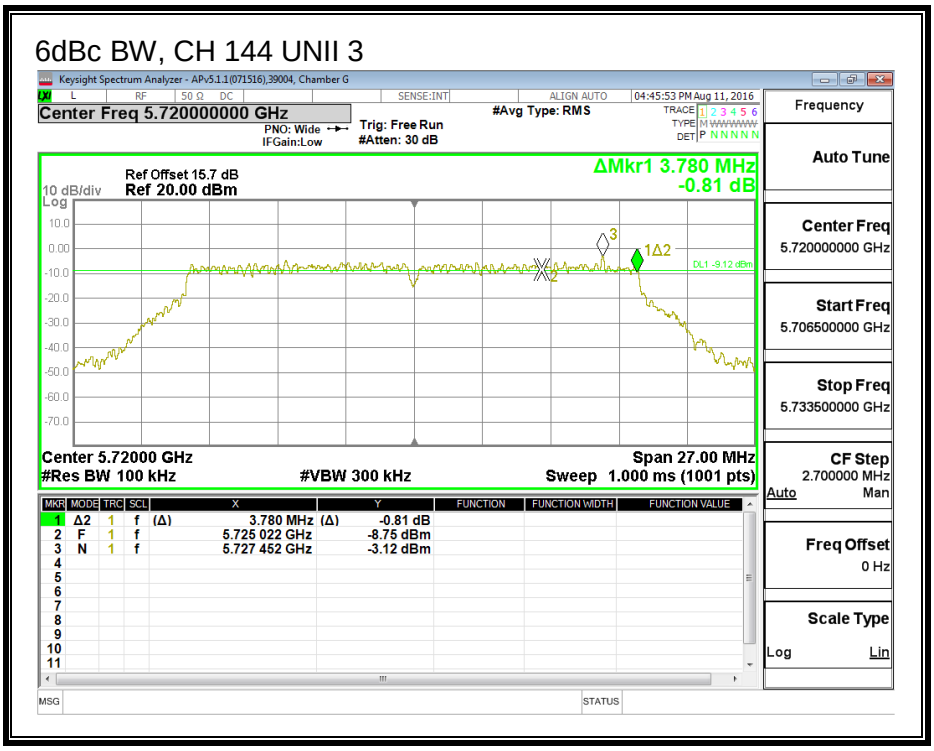
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)
144	5720	3.81	3.78

CHAIN 0



CHAIN 1



8.47. 802.11n HT40 CHAIN 0 MODE IN THE 5.6 GHz BAND

8.47.1. 26 dB BANDWIDTH

LIMITS

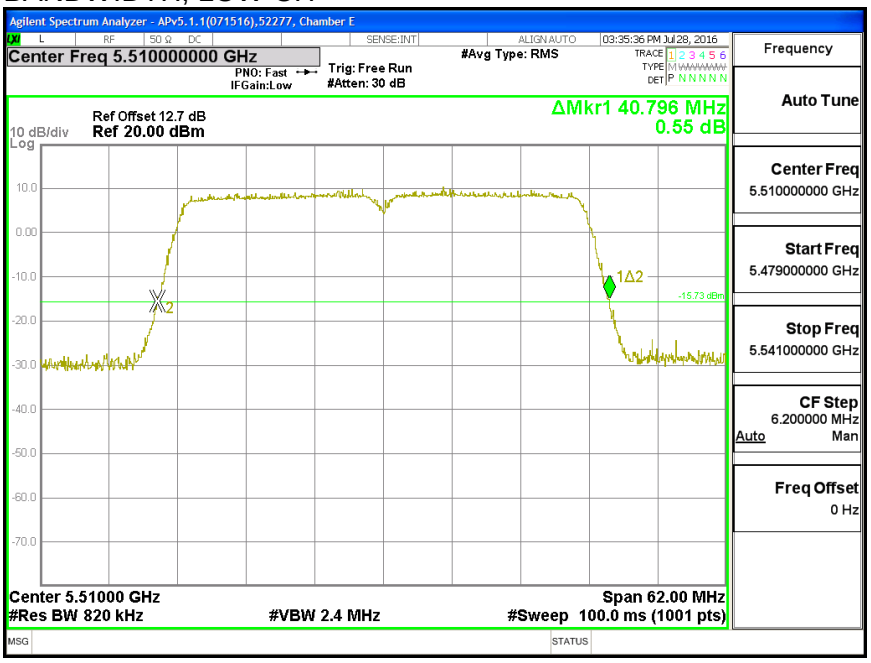
None; for reporting purposes only.

RESULTS

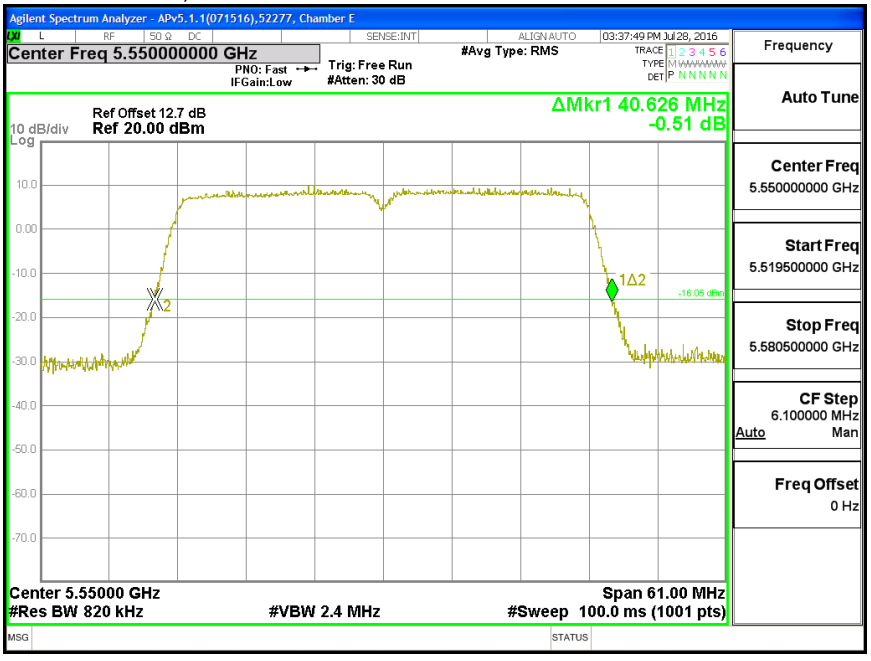
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	40.796
Mid	5550	40.626
High	5670	40.796
142	5710	40.796

26 dB BANDWIDTH

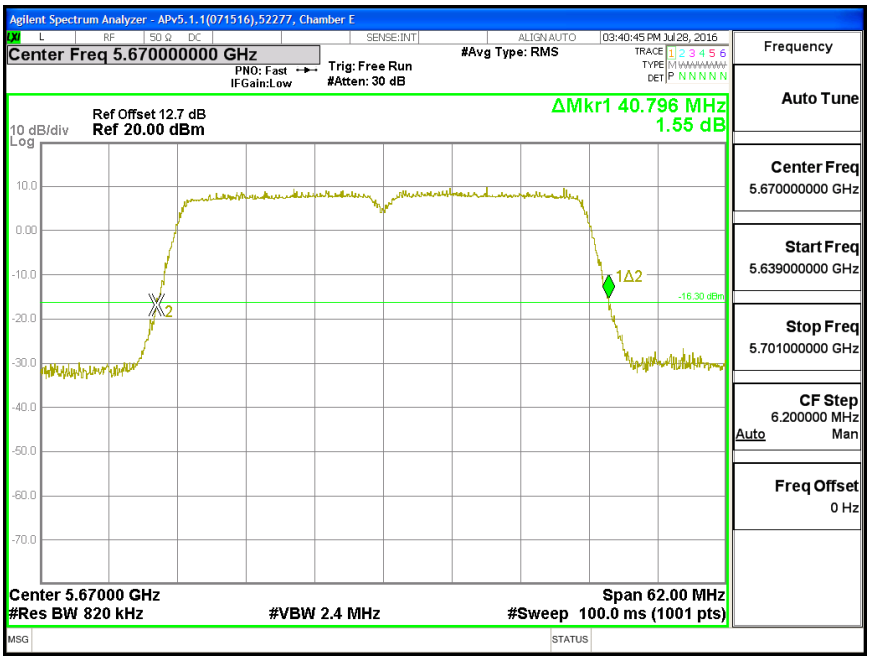
BANDWIDTH, LOW CH



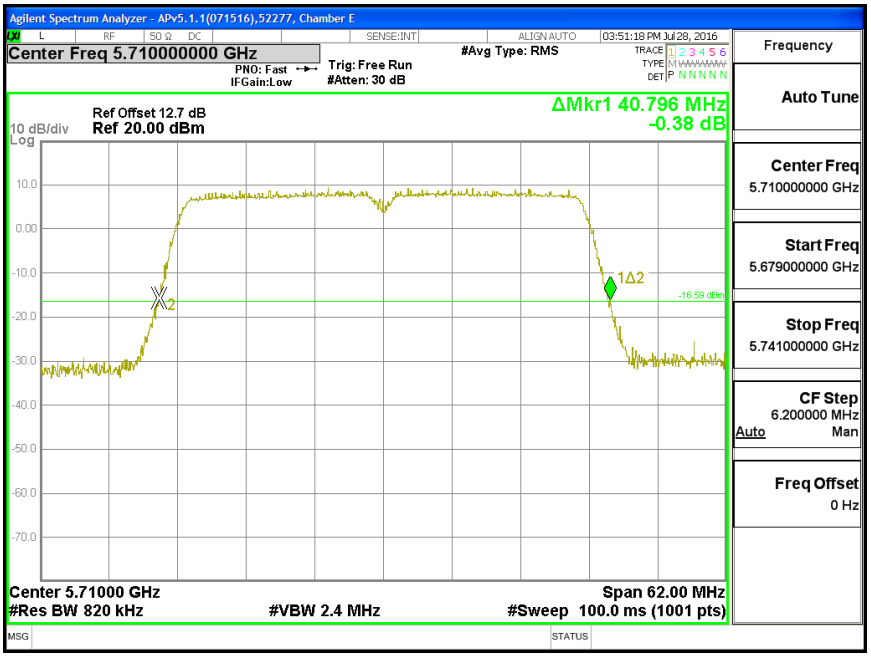
BANDWIDTH, MID CH



BANDWIDTH' HIGH CH



BANDWIDTH STRADDLE CH 142



8.47.2. 99% BANDWIDTH

LIMITS

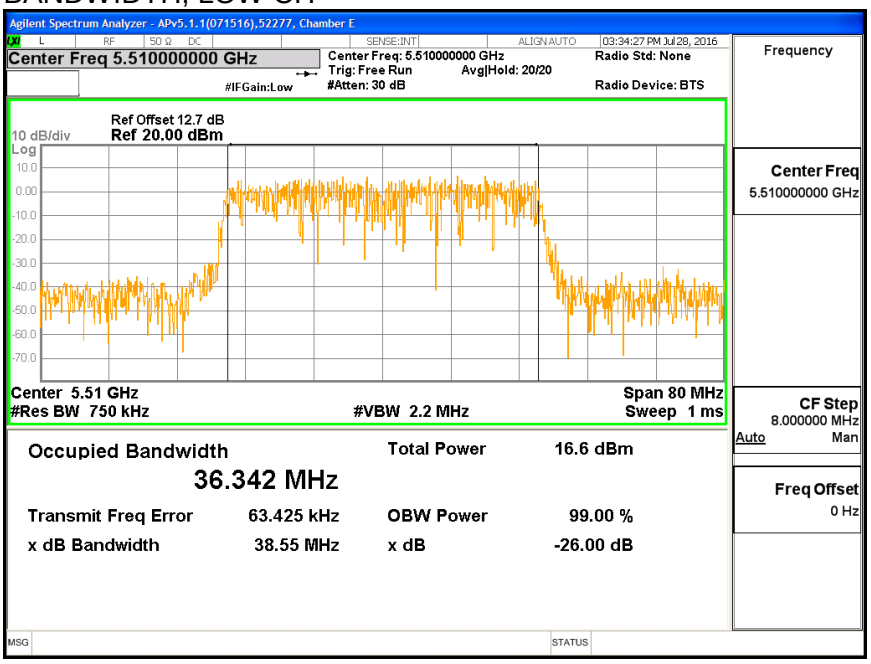
None; for reporting purposes only.

RESULTS

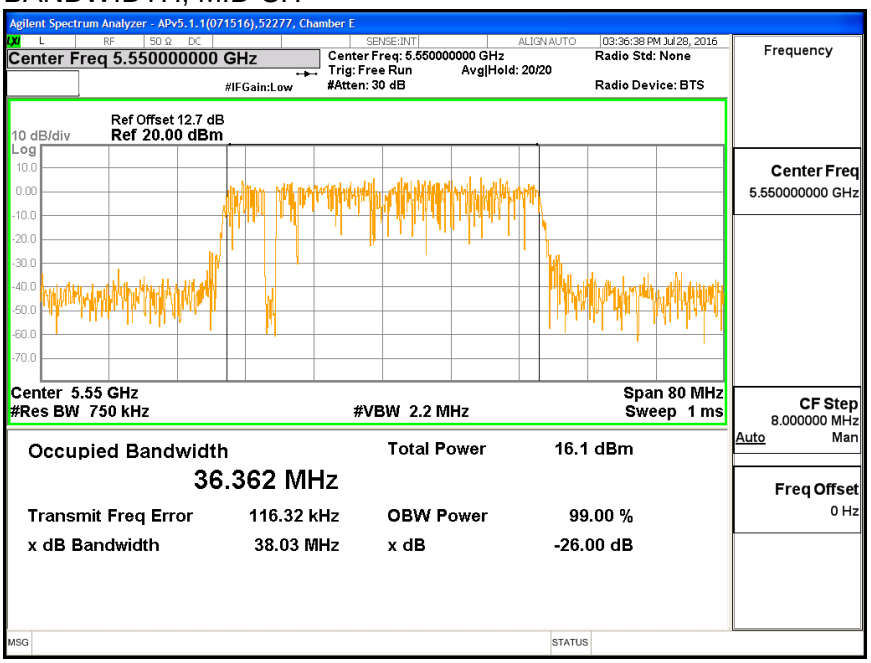
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.342
Mid	5550	36.362
High	5670	36.424
142	5710	36.282

99% BANDWIDTH

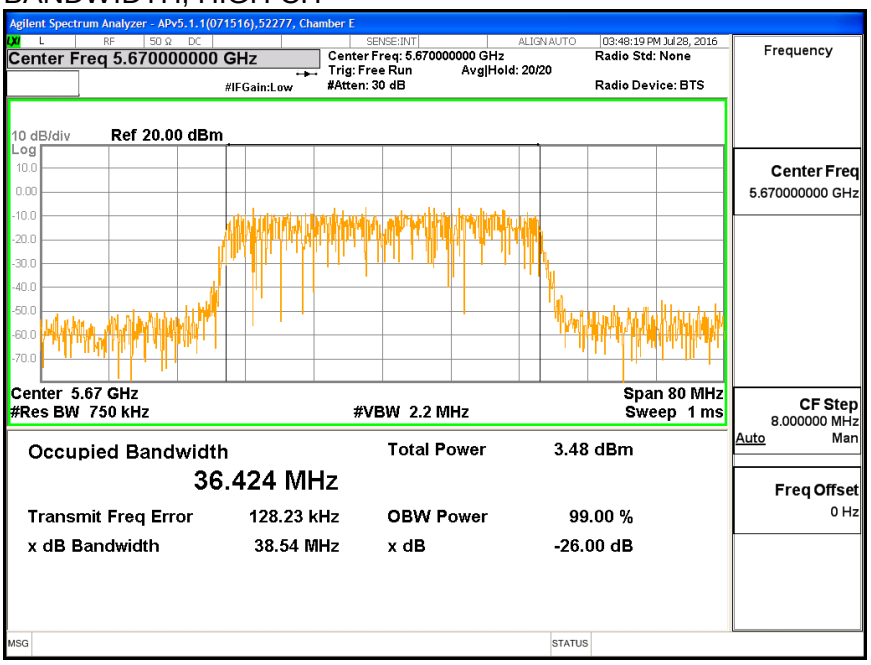
BANDWIDTH, LOW CH



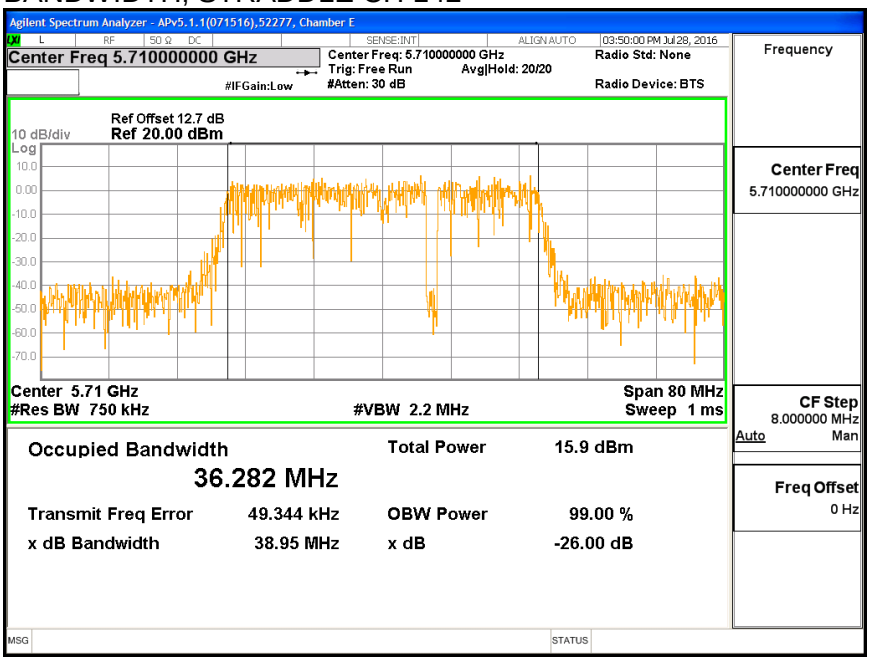
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH, STRADDLE CH 142



8.47.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39005	Date:	7/30/16

Channel	Frequency (MHz)	Power (dBm)
Low	5510	12.37
Mid	5550	12.41
High	5670	12.39
142	5710	12.40

8.47.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

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:	9/2/16

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	40.80	36.34	6.40	24.00	10.60
Mid	5550	40.63	36.36	6.40	24.00	10.60
High	5670	40.80	36.42	6.40	24.00	10.60

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

Output Power Results

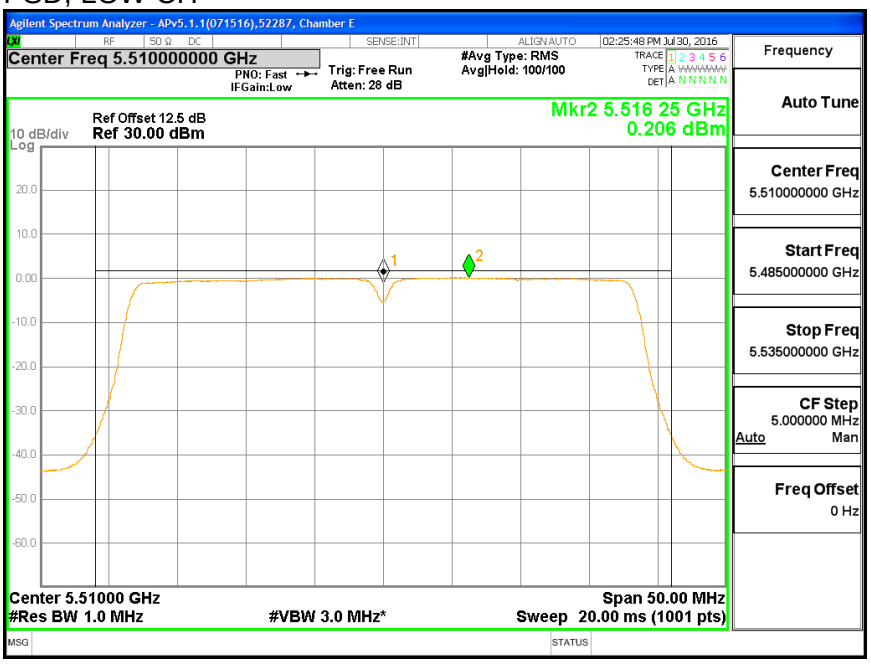
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	12.37	12.37	24.00	-11.63
Mid	5550	12.41	12.41	24.00	-11.59
High	5670	12.39	12.39	24.00	-11.61

PSD Results

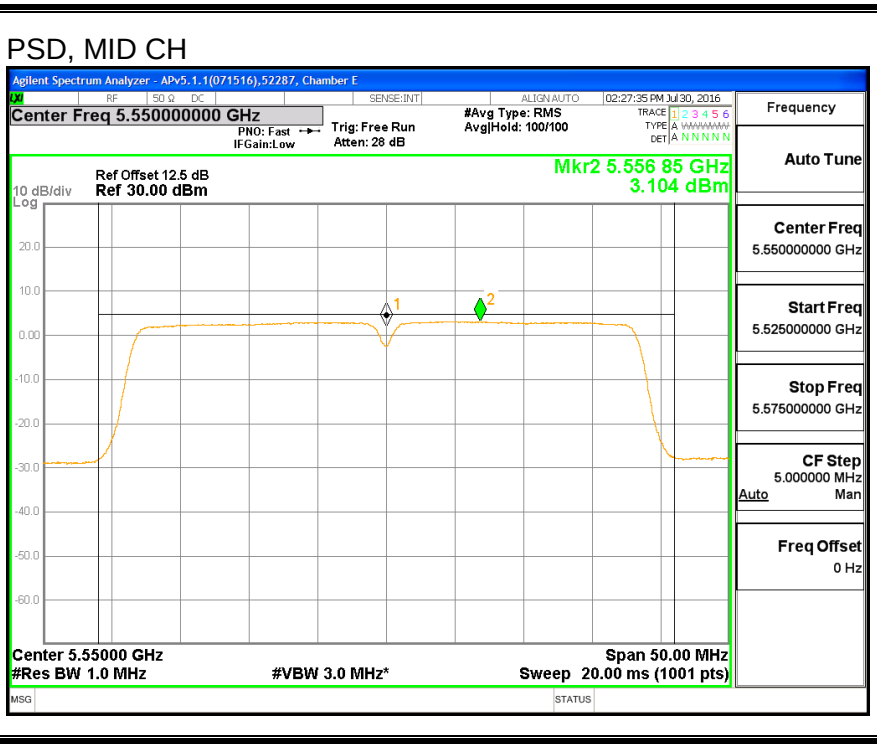
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	0.21	0.21	10.60	-10.39
Mid	5550	3.10	3.10	10.60	-7.50
High	5670	2.06	2.06	10.60	-8.54

PSD

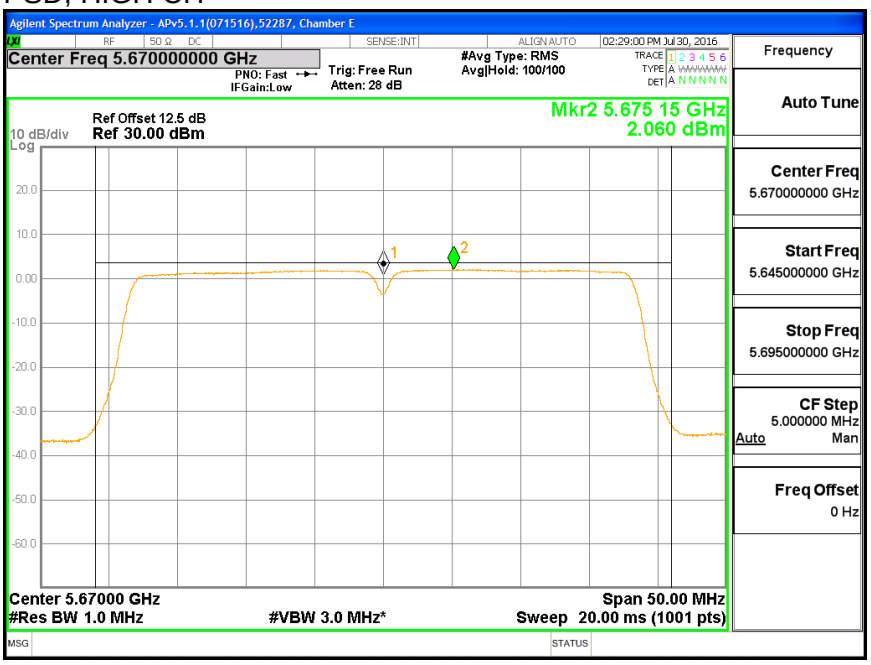
PSD, LOW CH



PSD, MID CH



PSD, HIGH CH



8.48. 802.11ac VHT40 CHAIN 0 STRADDLE CH 142 RESULTS (FCC)

8.48.1. OUTPUT POWER AND PSD

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	35.40	6.40	6.40	23.60	10.60

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

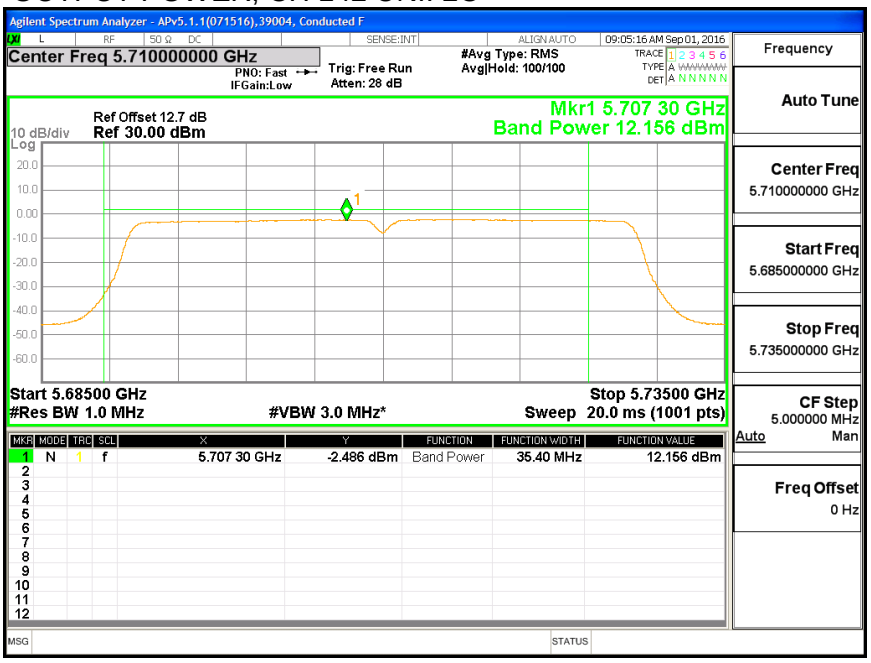
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	12.16	12.16	23.60	-11.44

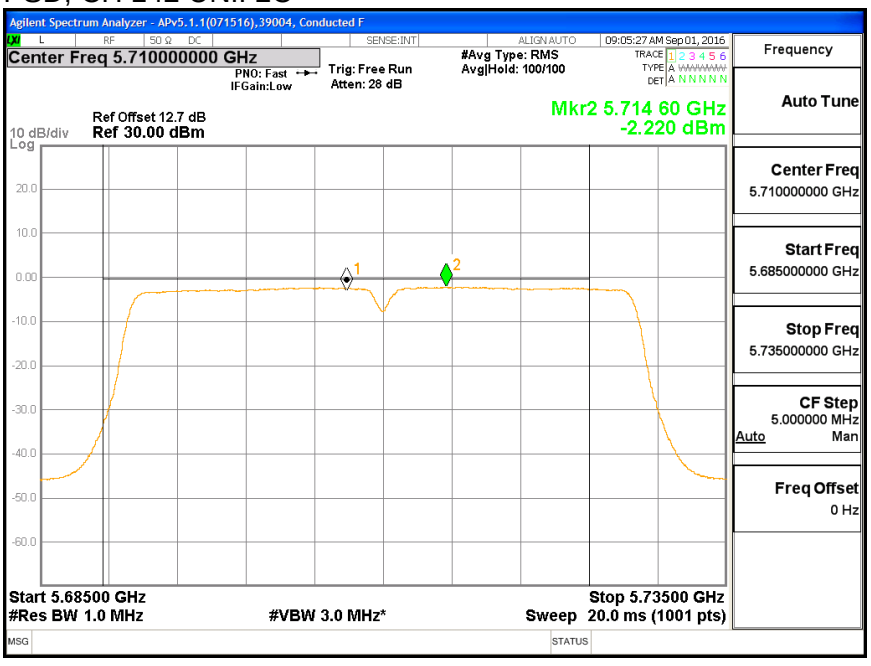
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-2.22	-2.22	10.60	-12.82

OUTPUT POWER, CH 142 UNII 2C



PSD, CH 142 UNII 2C



UNII-3 BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	5.40	6.40	6.40	17.92	10.60

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

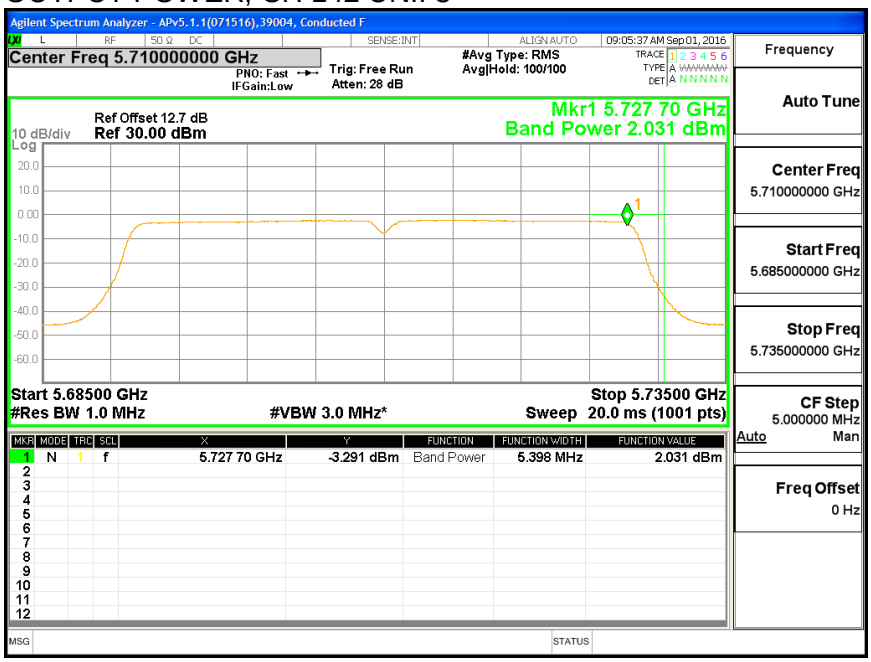
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	2.03	2.03	17.92	-15.89

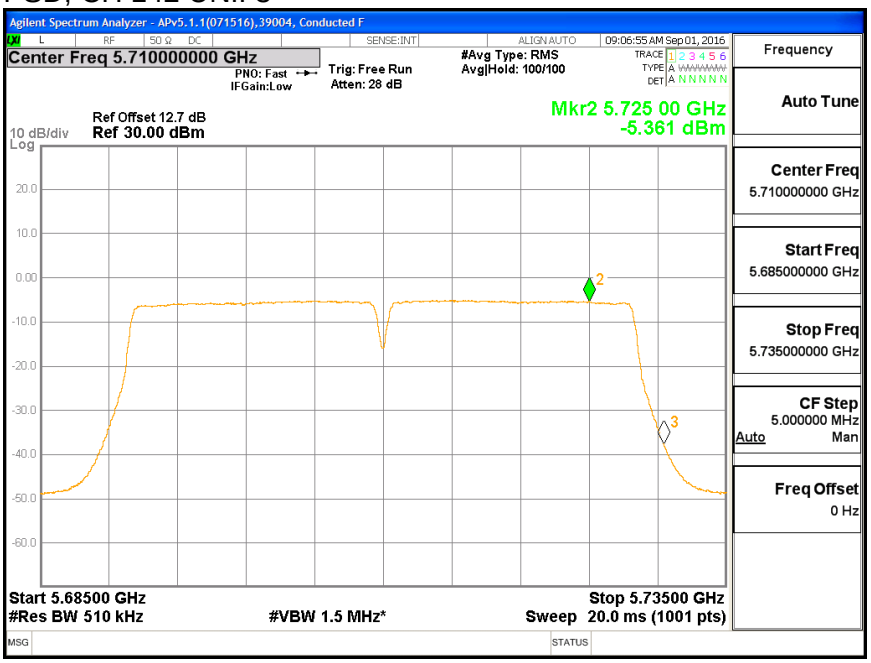
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-5.36	-5.36	10.60	-15.96

OUTPUT POWER, CH 142 UNII 3



PSD, CH 142 UNII 3



8.49. 802.11ac VHT40 CHAIN 0 STRADDLE CH 142 RESULTS (IC)

8.49.1. OUTPUT POWER AND PSD

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	33.14	6.40	6.40	23.60	10.60

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

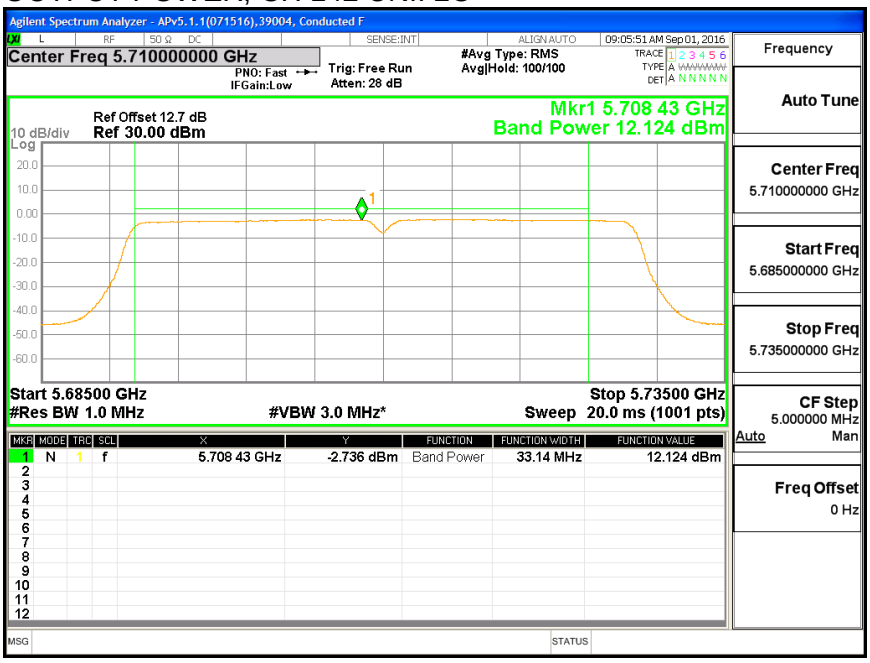
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	12.12	12.12	23.60	-11.48

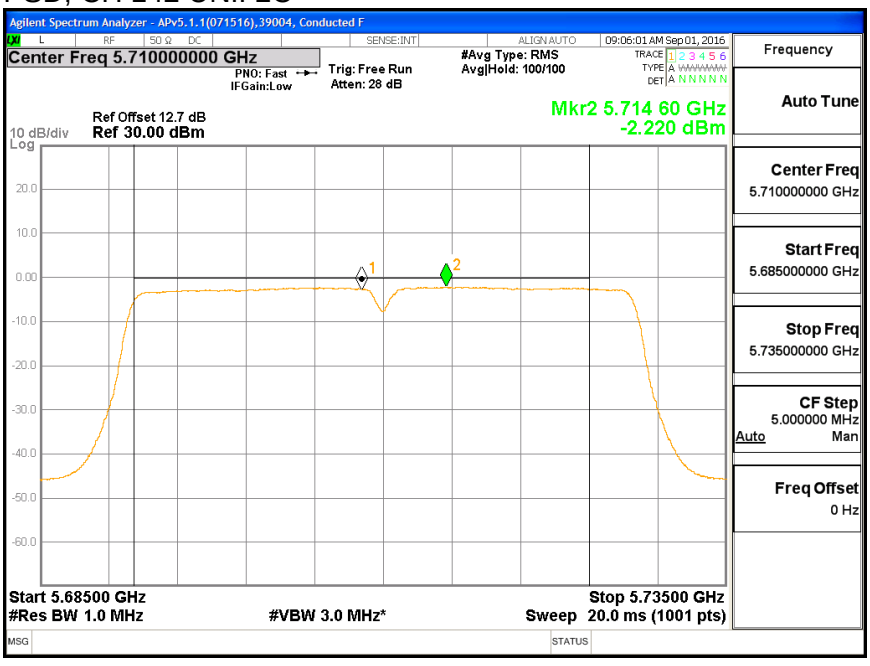
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-2.22	-2.22	10.60	-12.82

OUTPUT POWER, CH 142 UNII 2C



PSD, CH 142 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	3.14	6.40	29.60	29.60

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

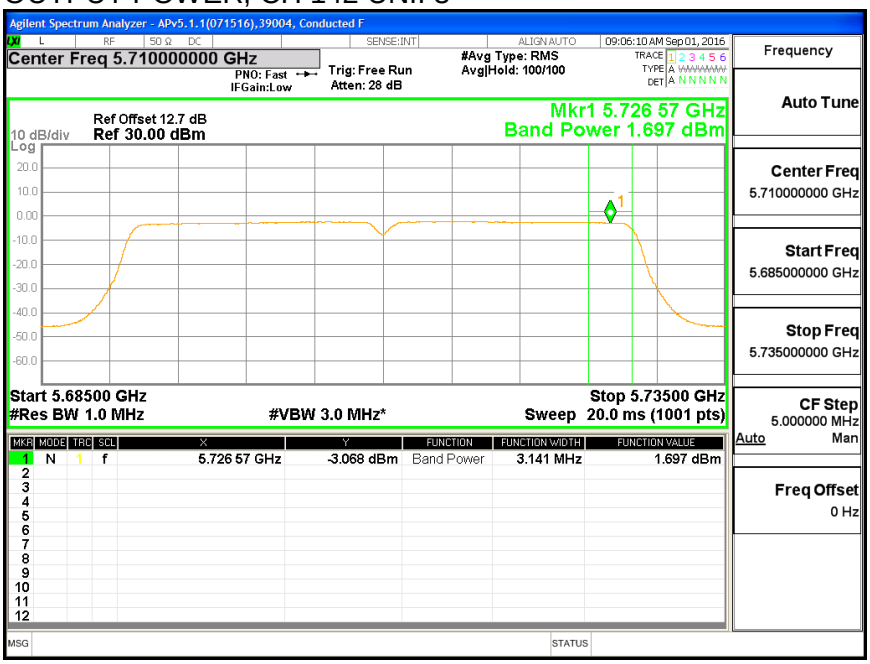
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	1.70	1.70	29.60	-27.90

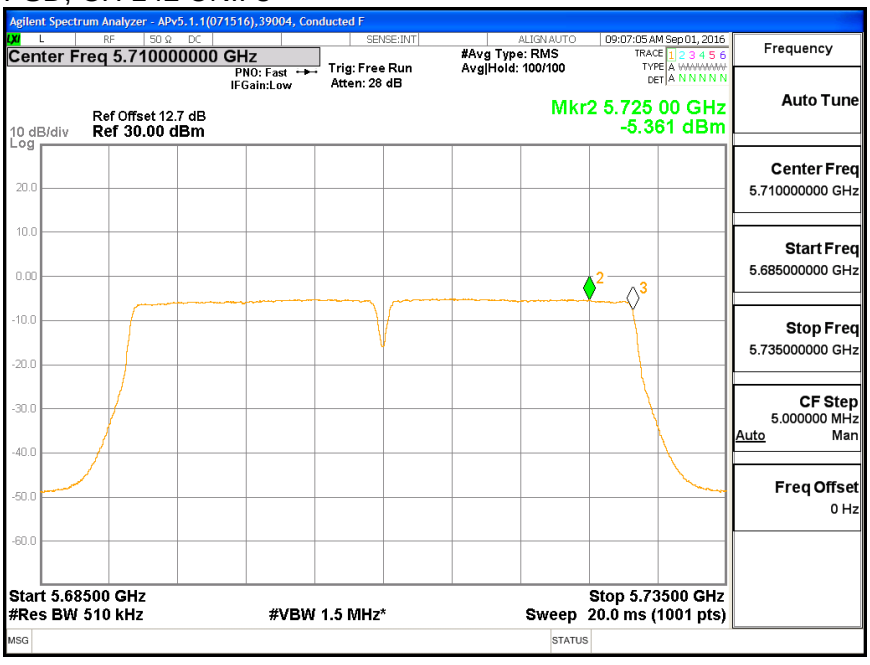
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-5.36	-5.36	29.60	-34.96

OUTPUT POWER, CH 142 UNII 3



PSD, CH 142 UNII 3



8.49.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
142	5710	36.63

6 dB BANDWIDTH

6dBc BW, CH 142 UNII 3

8.50. 802.11n HT40 CHAIN 1 MODE IN THE 5.6 GHz BAND

8.50.1. 26 dB BANDWIDTH

LIMITS

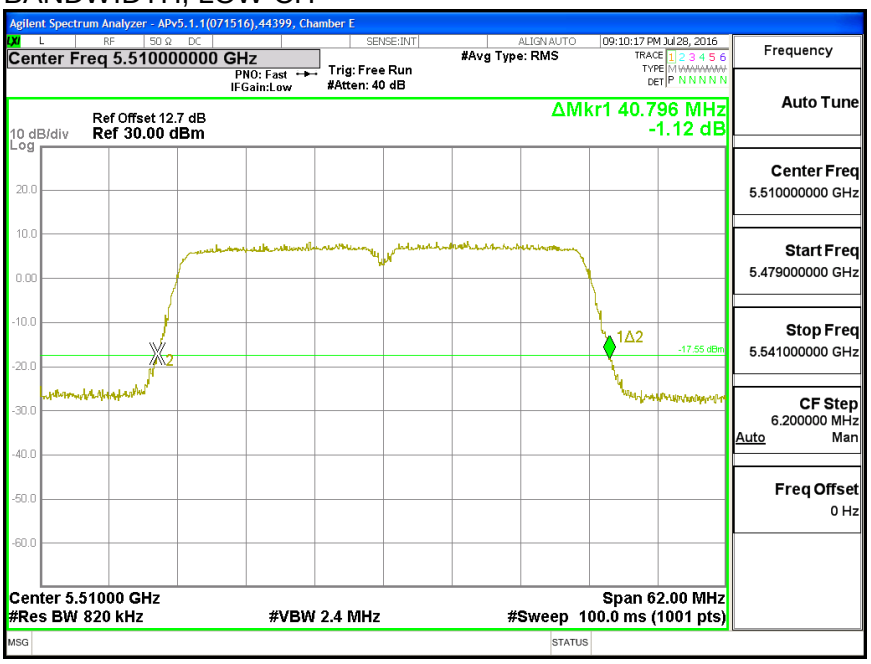
None; for reporting purposes only.

RESULTS

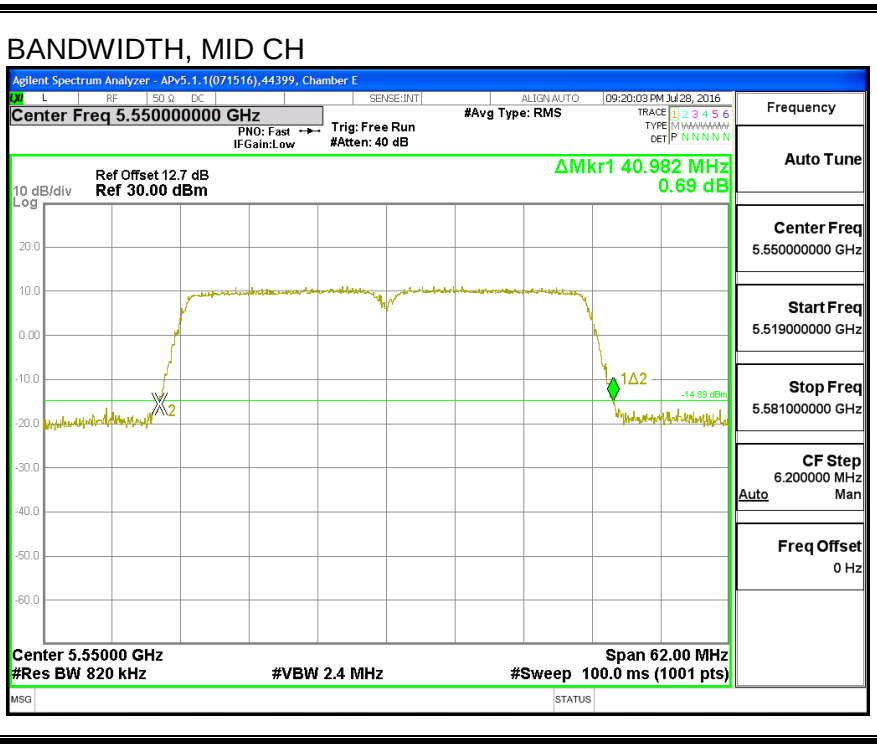
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	40.80
Mid	5550	40.98
High	5670	40.86
142	5710	40.80

26 dB BANDWIDTH

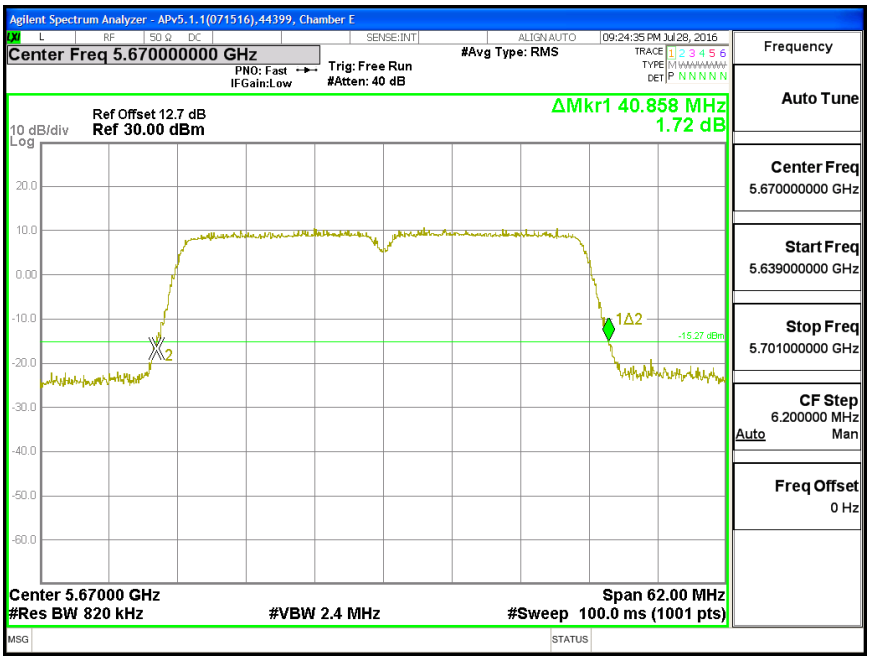
BANDWIDTH, LOW CH



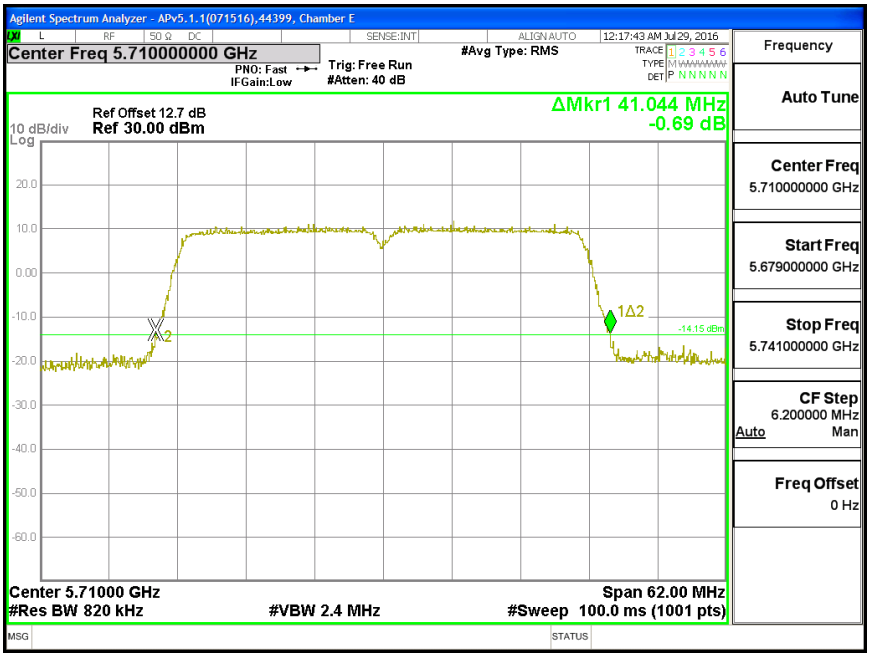
BANDWIDTH, MID CH



BANDWIDTH' HIGH CH



BANDWIDTH STRADDLE CH 142



8.50.2. 99% BANDWIDTH

LIMITS

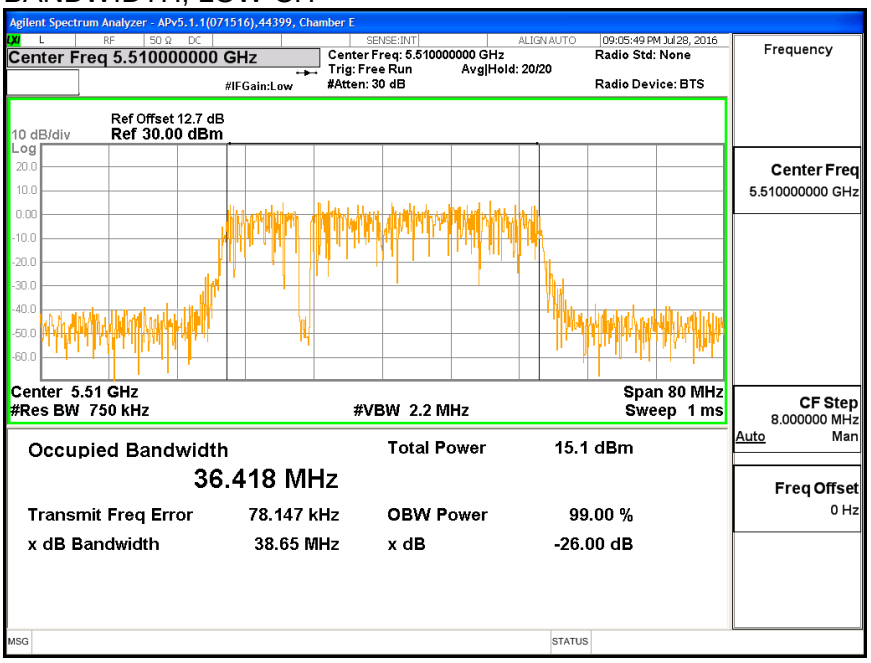
None; for reporting purposes only.

RESULTS

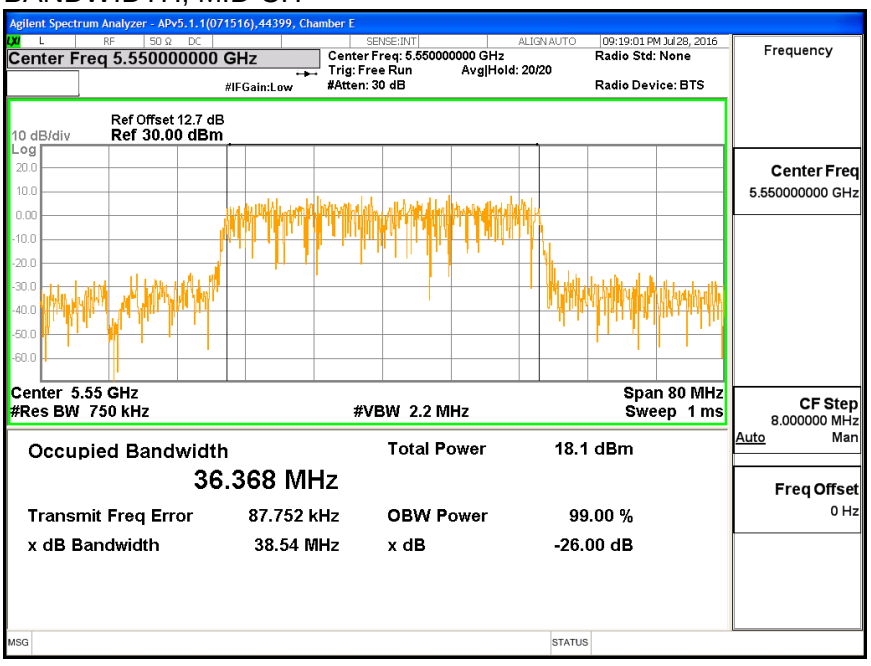
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.418
Mid	5550	36.368
High	5670	36.444
142	5710	36.355

99% BANDWIDTH

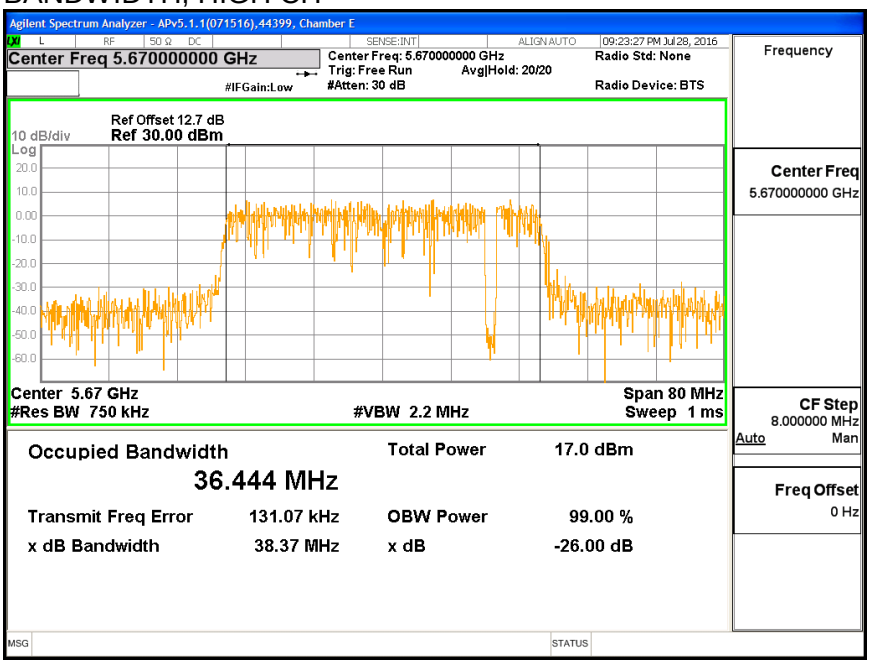
BANDWIDTH, LOW CH



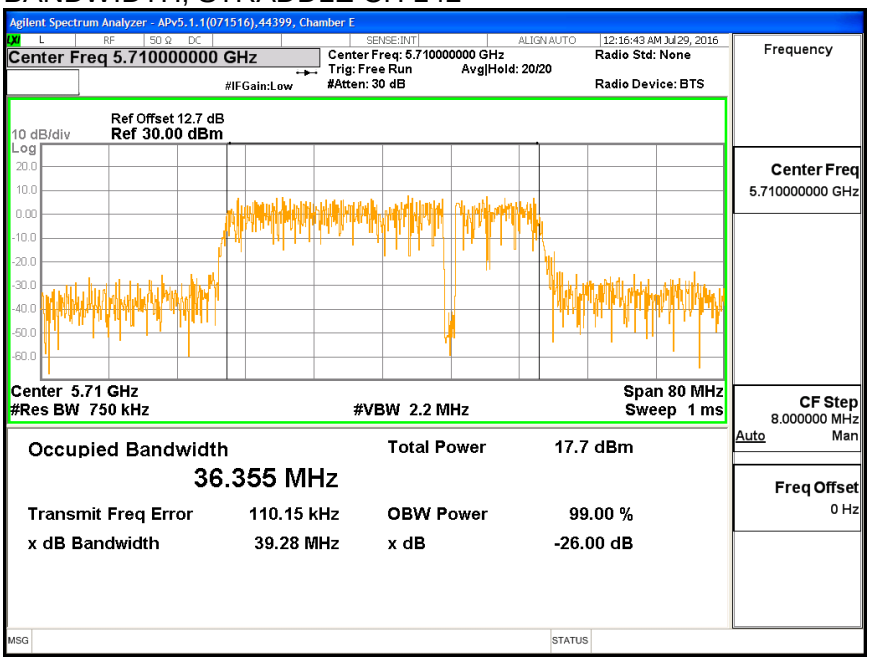
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH, STRADDLE CH 142



8.50.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	39004	Date:	9/2/16

Channel	Frequency (MHz)	Power (dBm)
Low	5510	12.39
Mid	5550	12.42
High	5670	12.36
142	5710	12.37

8.50.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

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:	9/2/16

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	40.80	36.42	7.90	24.00	9.10
Mid	5550	40.98	36.37	7.90	24.00	9.10
High	5670	40.86	36.44	7.90	24.00	9.10

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

Output Power Results

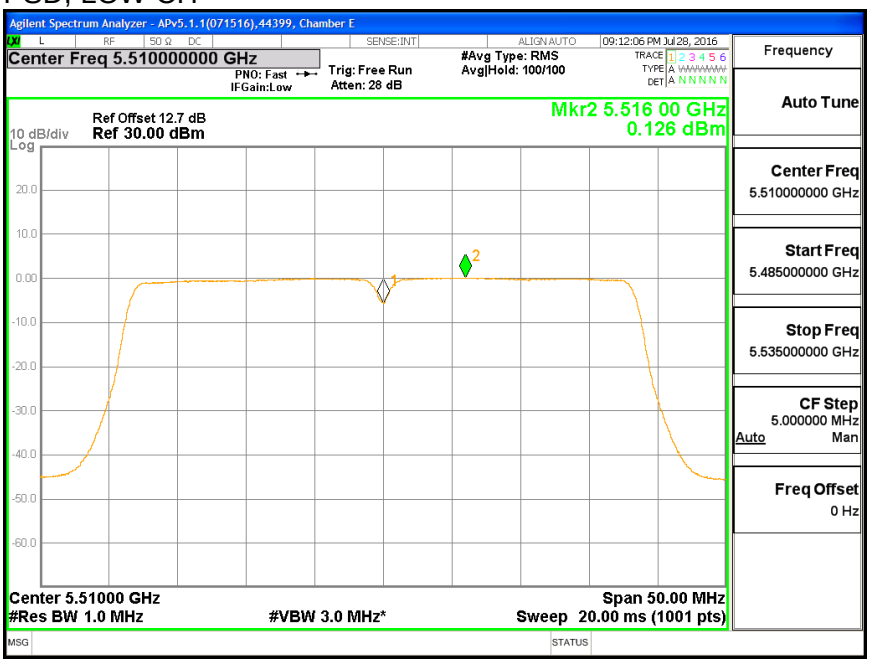
Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	12.39	12.39	24.00	-11.61
Mid	5550	12.42	12.42	24.00	-11.58
High	5670	12.36	12.36	24.00	-11.64

PSD Results

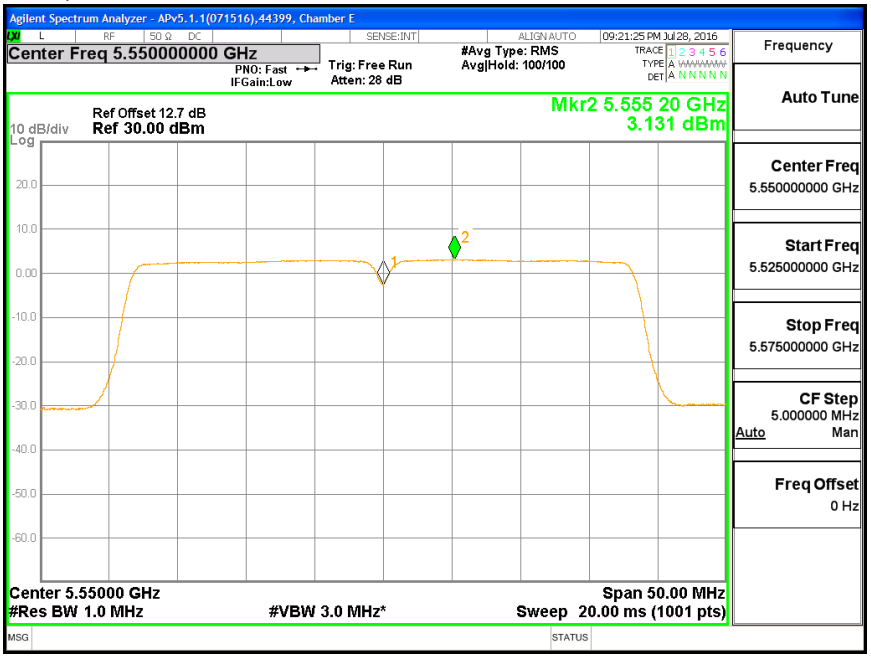
Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	0.13	0.13	9.10	-8.97
Mid	5550	3.13	3.13	9.10	-5.97
High	5670	2.27	2.27	9.10	-6.83

PSD

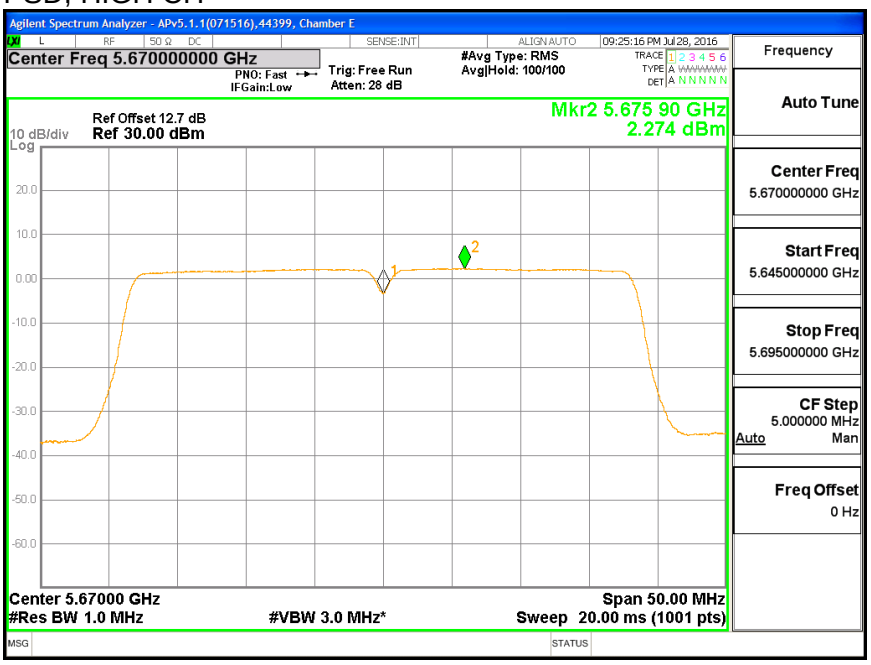
PSD, LOW CH



PSD, MID CH



PSD, HIGH CH



8.51. 802.11ac VHT40 CHAIN 1 STRADDLE CH 142 RESULTS (FCC)

8.51.1. OUTPUT POWER AND PSD

UNII-2C BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	35.40	7.90	28.10	28.10

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

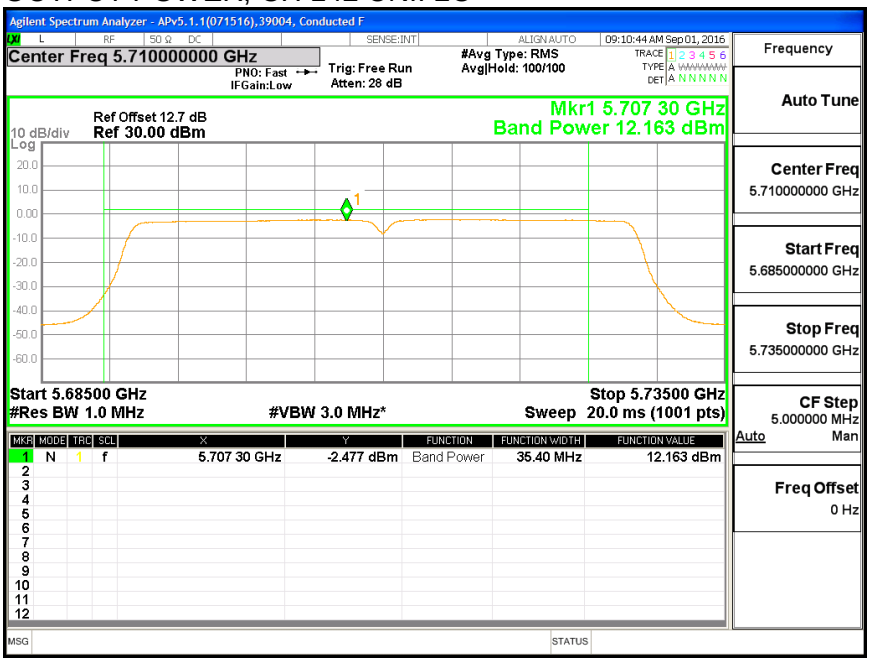
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	12.16	12.16	28.10	-15.94

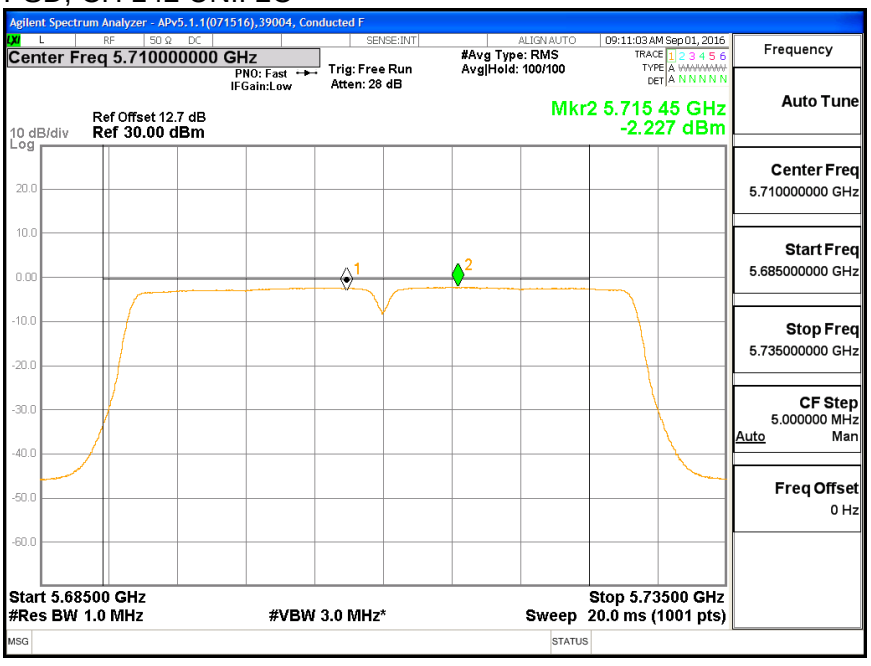
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-2.23	-2.23	28.10	-30.33

OUTPUT POWER, CH 142 UNII 2C



PSD, CH 142 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	5.40	7.90	28.10	28.10

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

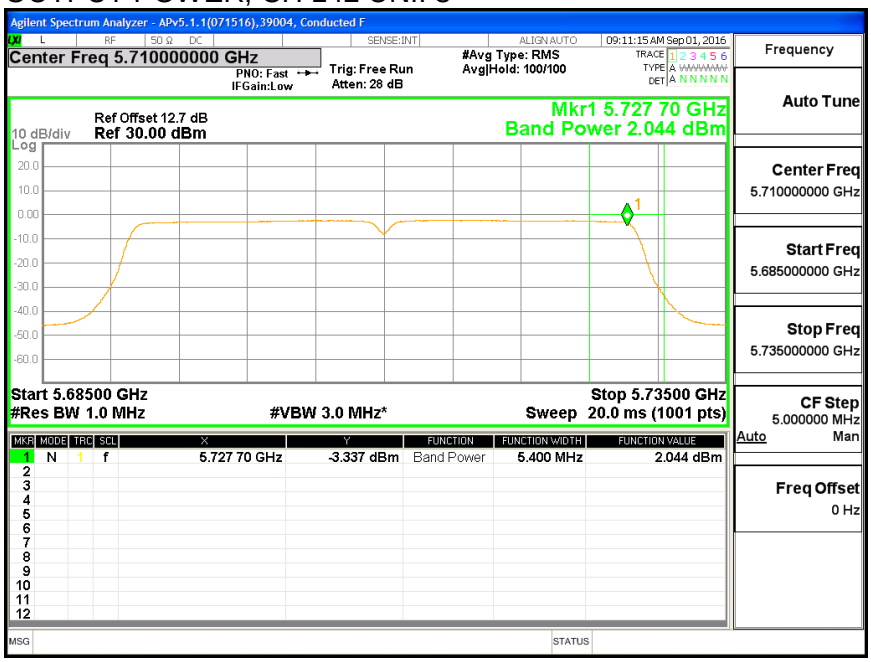
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	2.04	2.04	28.10	-26.06

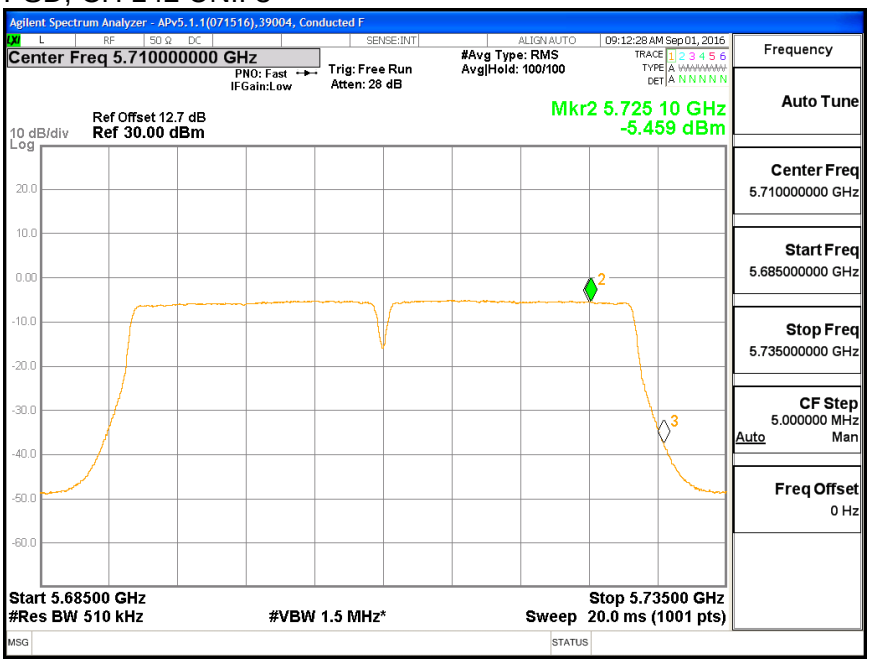
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-5.46	-5.46	28.10	-33.56

OUTPUT POWER, CH 142 UNII 3



PSD, CH 142 UNII 3



8.52. 802.11ac VHT40 CHAIN 1 STRADDLE CH 142 RESULTS (IC)

8.52.1. OUTPUT POWER AND PSD

UNII-2C BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	33.14	7.90	28.10	28.10

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

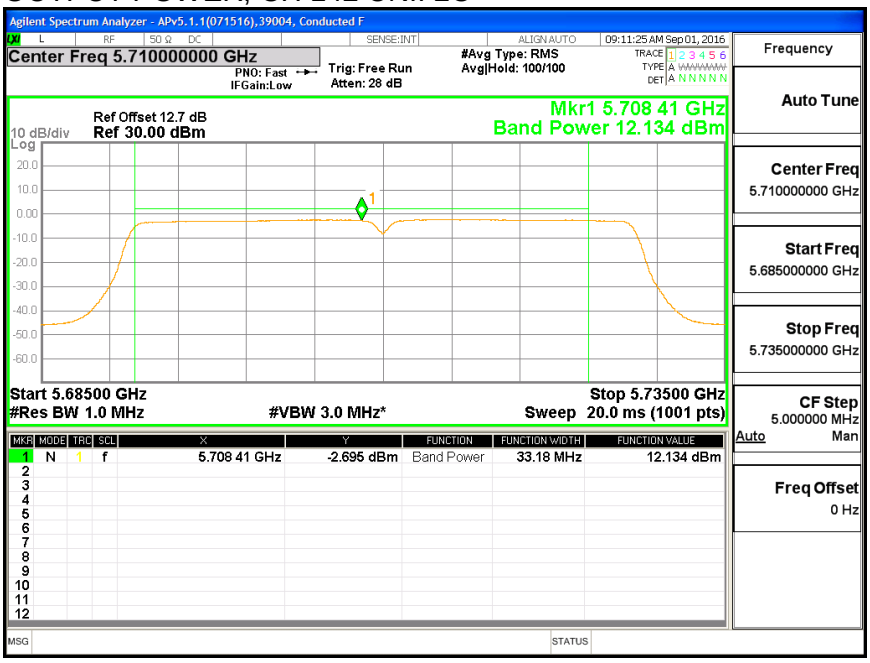
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	12.13	12.13	28.10	-15.97

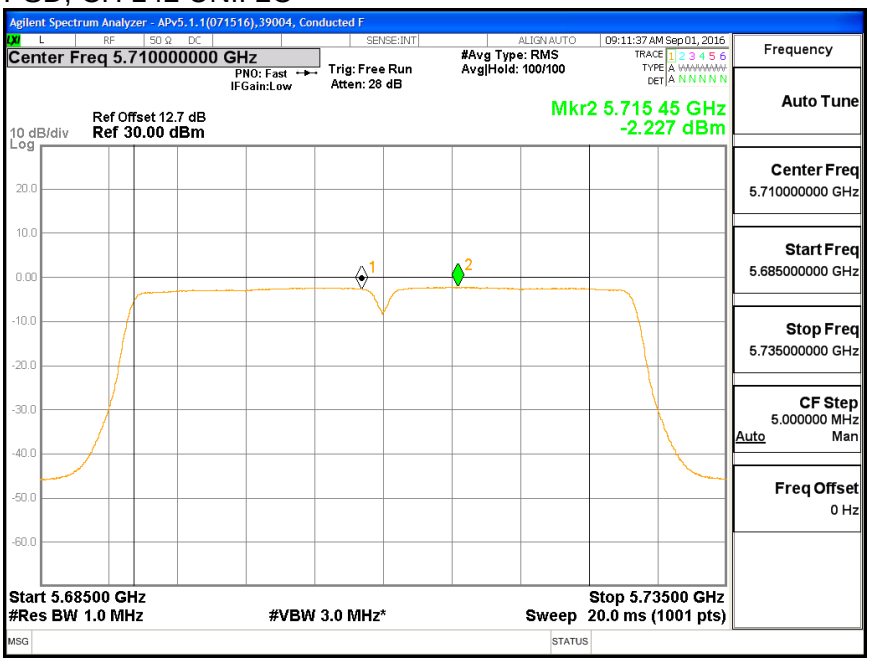
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-2.23	-2.23	28.10	-30.33

OUTPUT POWER, CH 142 UNII 2C



PSD, CH 142 UNII 2C



UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	3.18	7.90	28.10	28.10

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

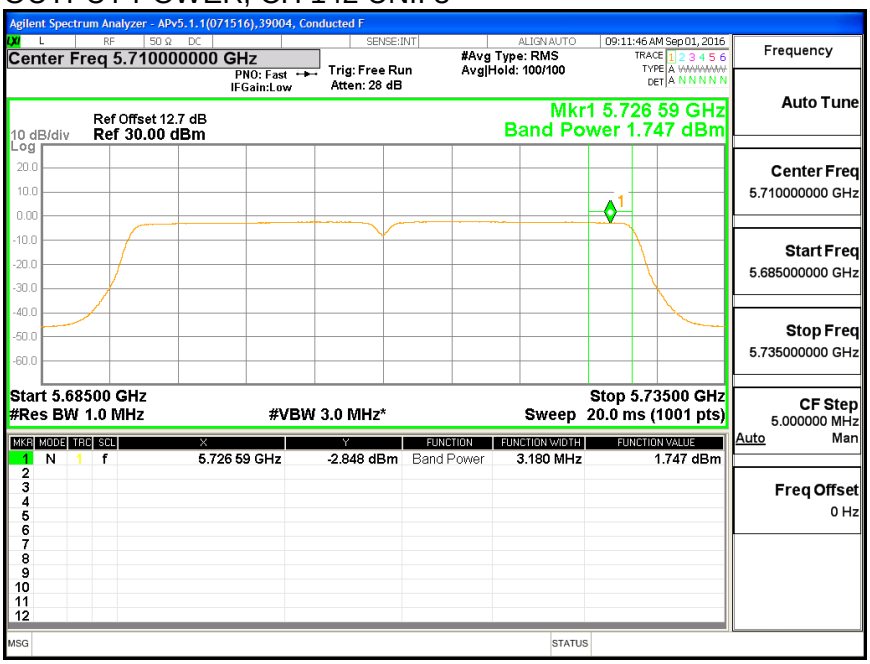
Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	1.75	1.75	28.10	-26.35

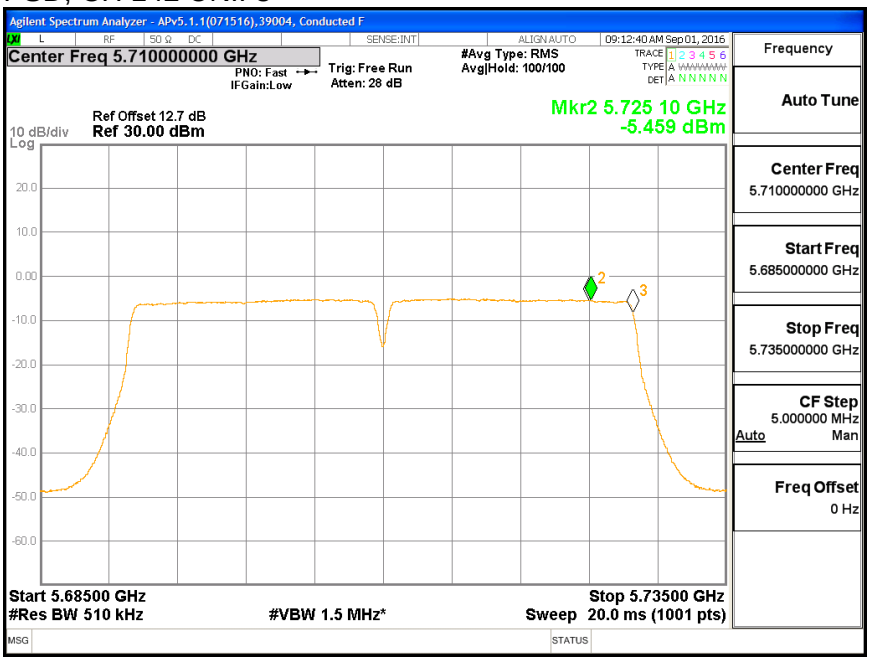
PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	-5.46	-5.46	28.10	-33.56

OUTPUT POWER, CH 142 UNII 3



PSD, CH 142 UNII 3



8.52.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

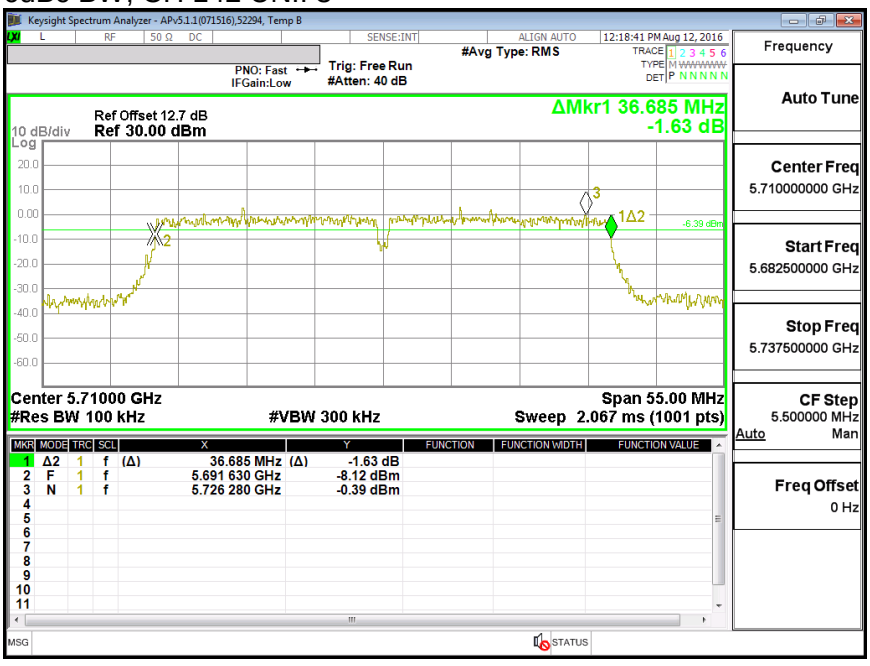
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
142	5710	36.69

6 dB BANDWIDTH

6dBc BW, CH 142 UNII 3



8.53. 802.11n HT40 2Tx CDD MODE IN THE 5.6 GHz BAND

8.53.1. 26 dB BANDWIDTH

LIMITS

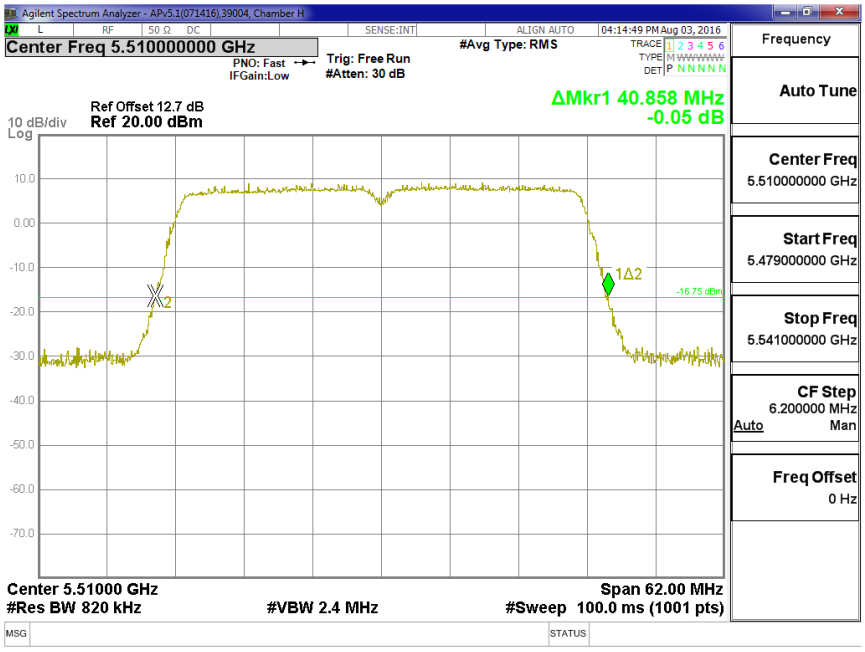
None; for reporting purposes only.

RESULTS

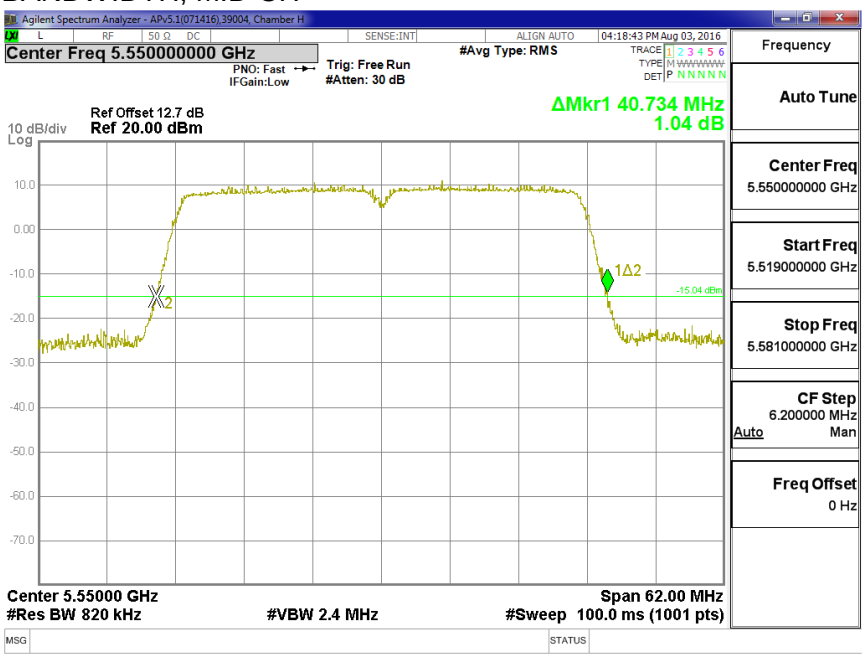
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5510	40.86	40.73
Mid	5550	40.73	40.67
High	5670	40.86	40.92
142	5710	40.80	40.44

26 dB BANDWIDTH, CHAIN 0

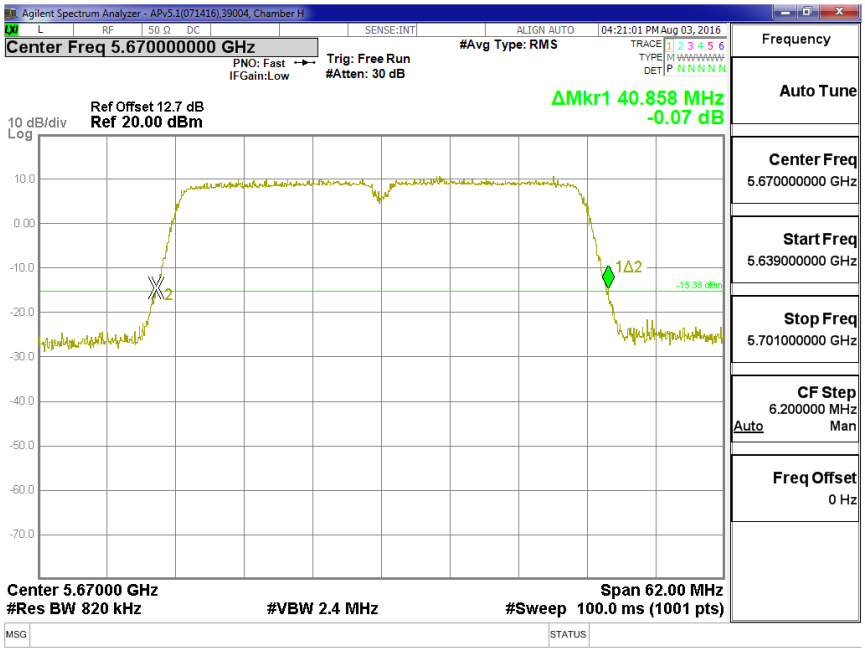
BANDWIDTH, LOW CH



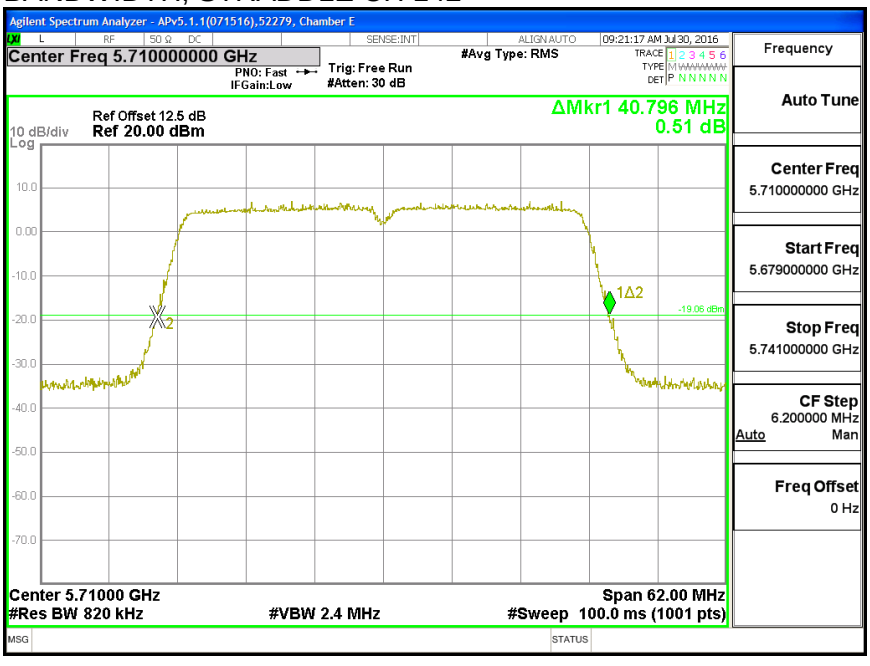
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH

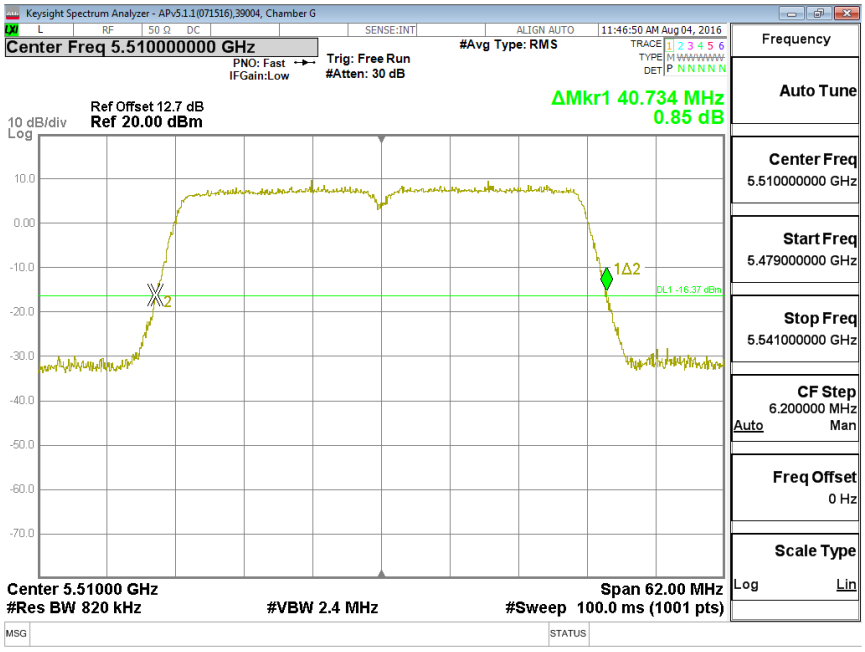


BANDWIDTH, STRADDLE CH 142

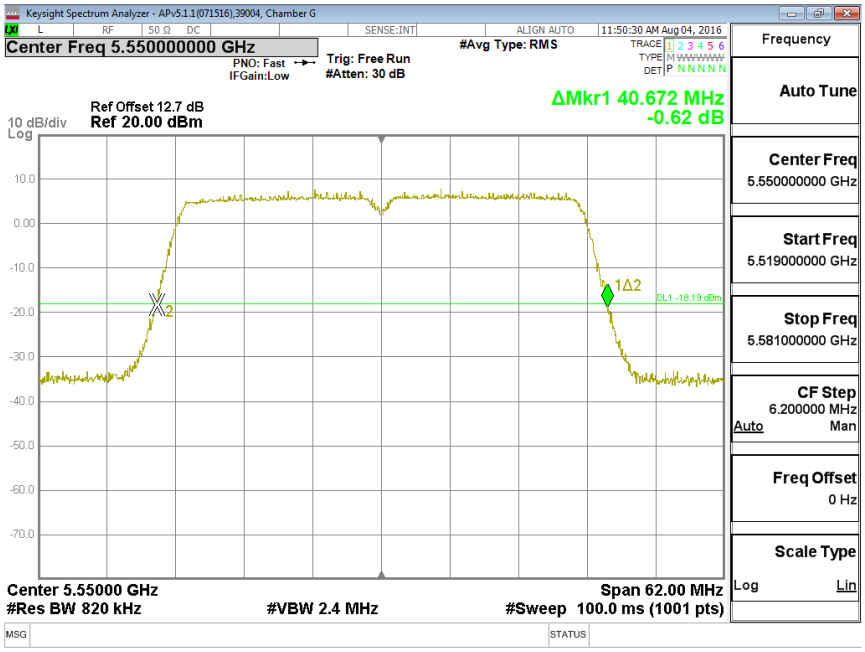


26 dB BANDWIDTH, CHAIN 1

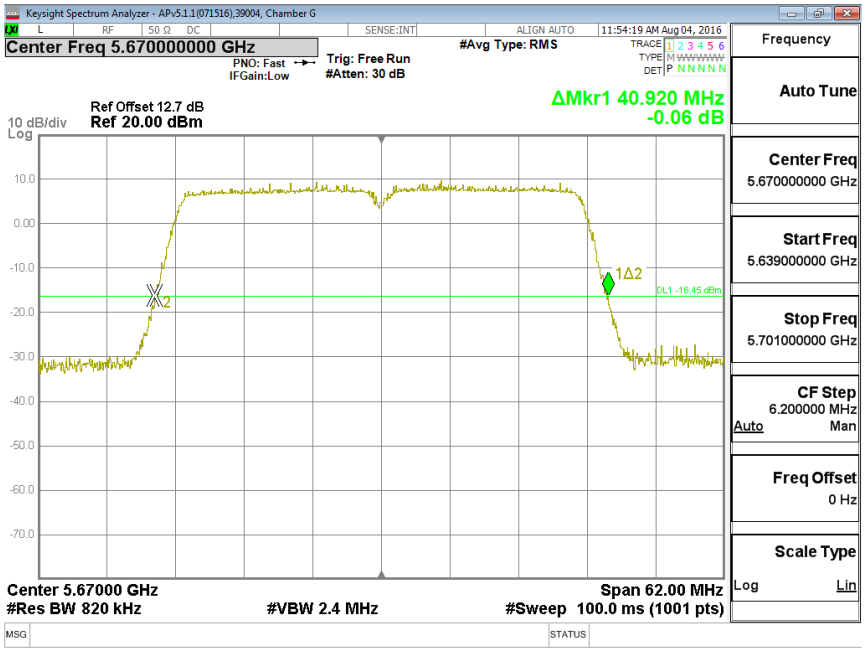
BANDWIDTH, LOW CH



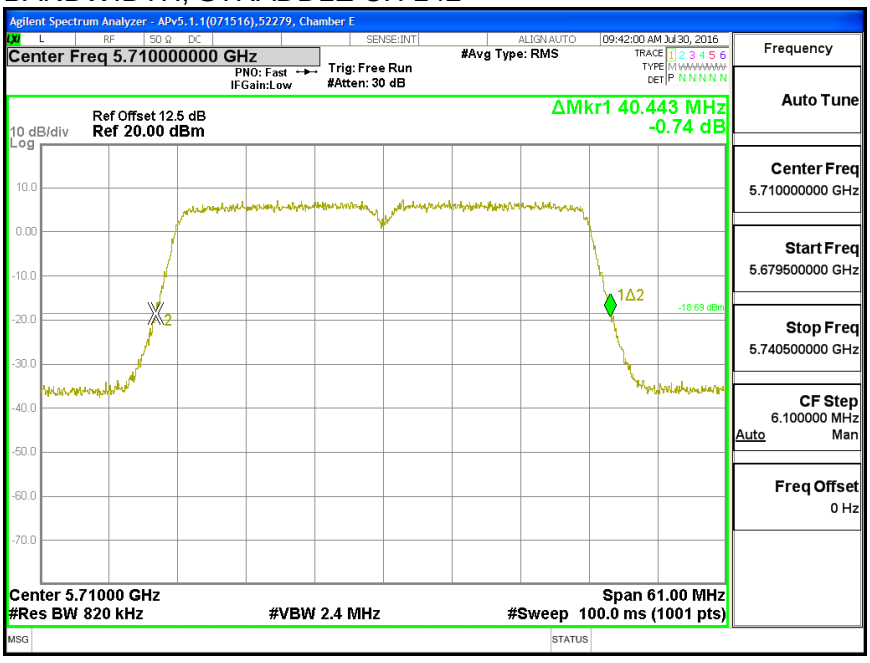
BANDWIDTH, MID CH



BANDWIDTH, HIGH CH



BANDWIDTH, STRADDLE CH 142



8.53.2. 99% BANDWIDTH

LIMITS

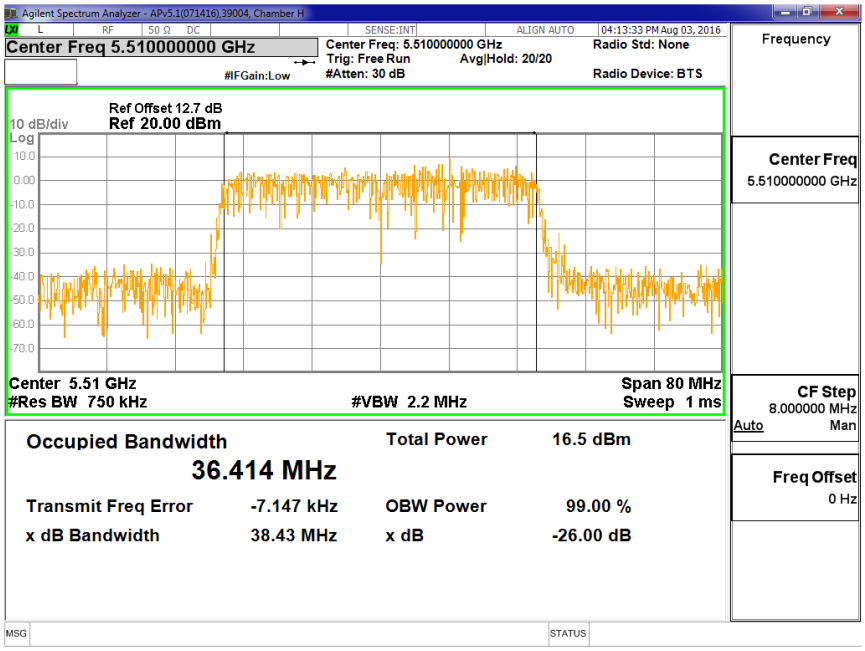
None; for reporting purposes only.

RESULTS

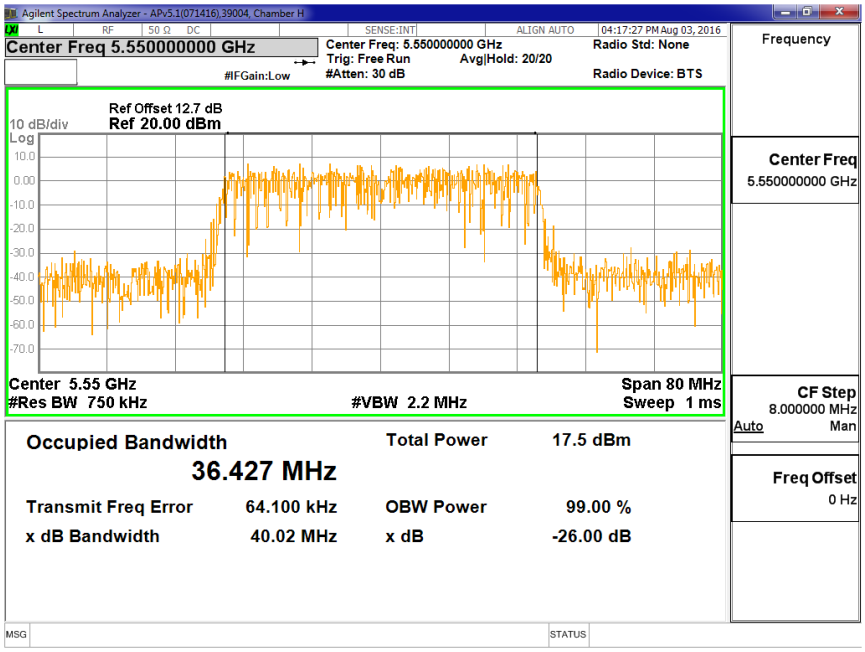
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5510	36.414	36.595
Mid	5550	36.427	36.284
High	5670	36.398	36.408
142	5710	36.362	36.201

99% BANDWIDTH, CHAIN 0

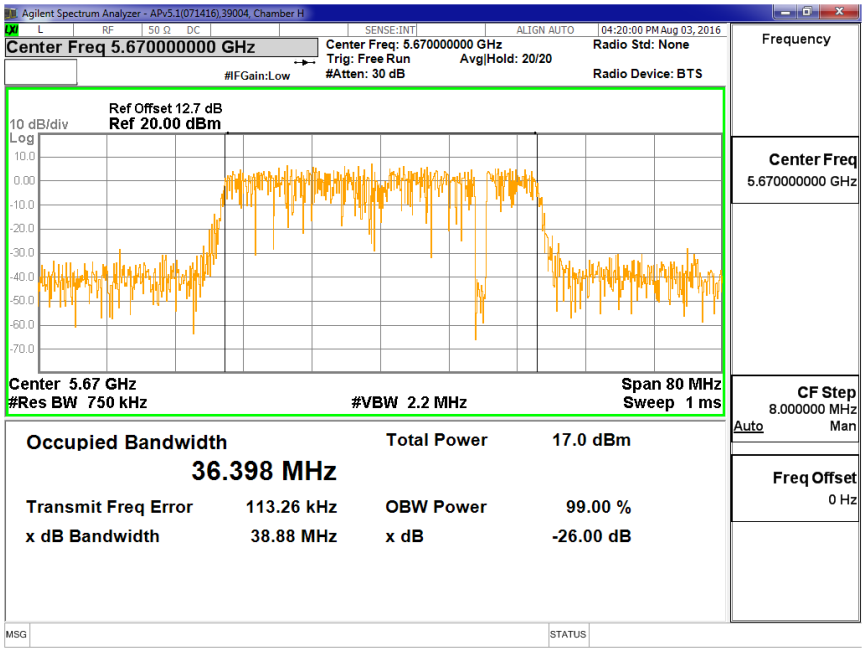
99% BANDWIDTH, LOW CH



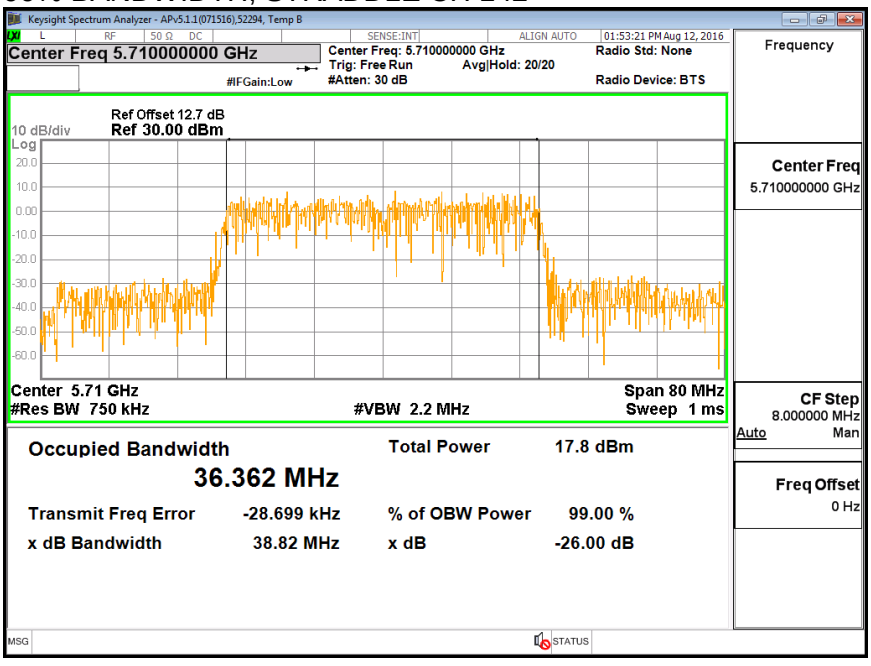
99% BANDWIDTH, MID CH



99% BANDWIDTH, HIGH CH

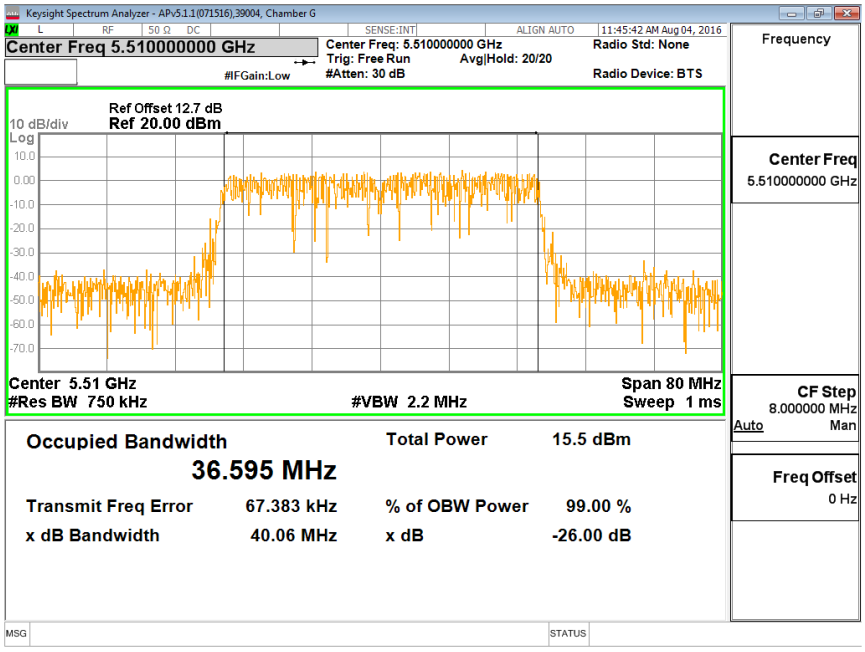


99% BANDWIDTH, STRADDLE CH 142



99% BANDWIDTH, CHAIN 1

99% BANDWIDTH, LOW CH



99% BANDWIDTH, MID CH