

## 8.51.2. 99% BANDWIDTH

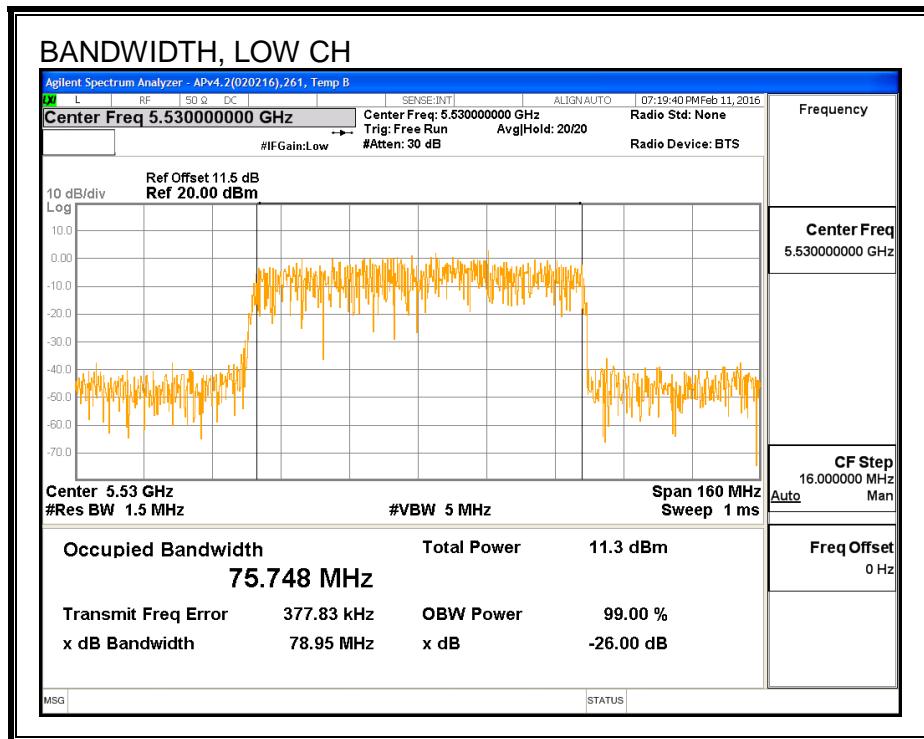
### LIMITS

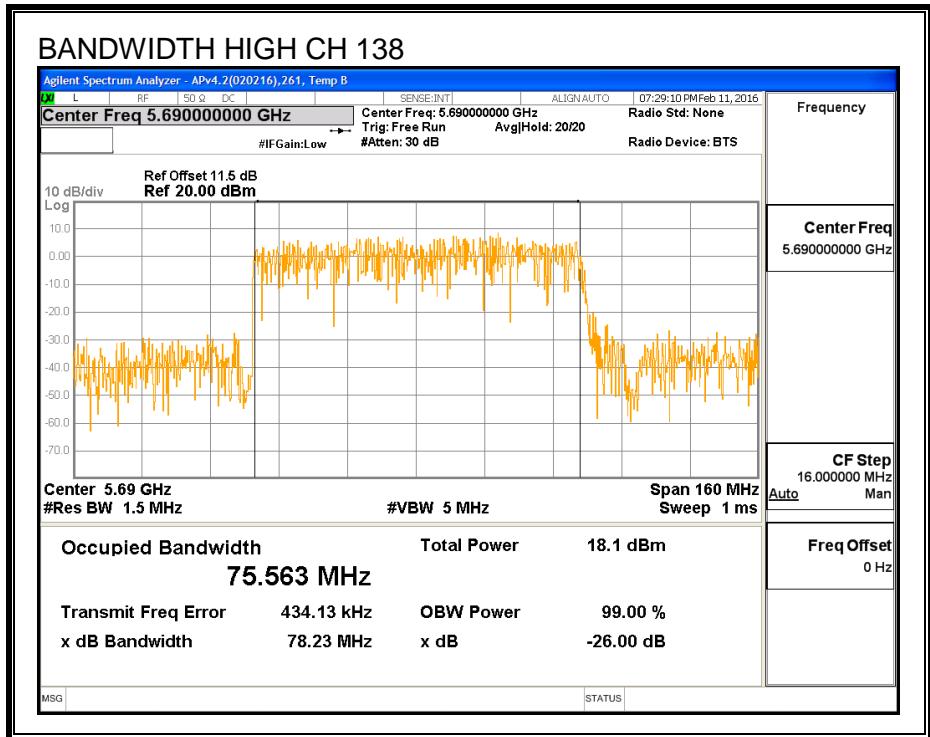
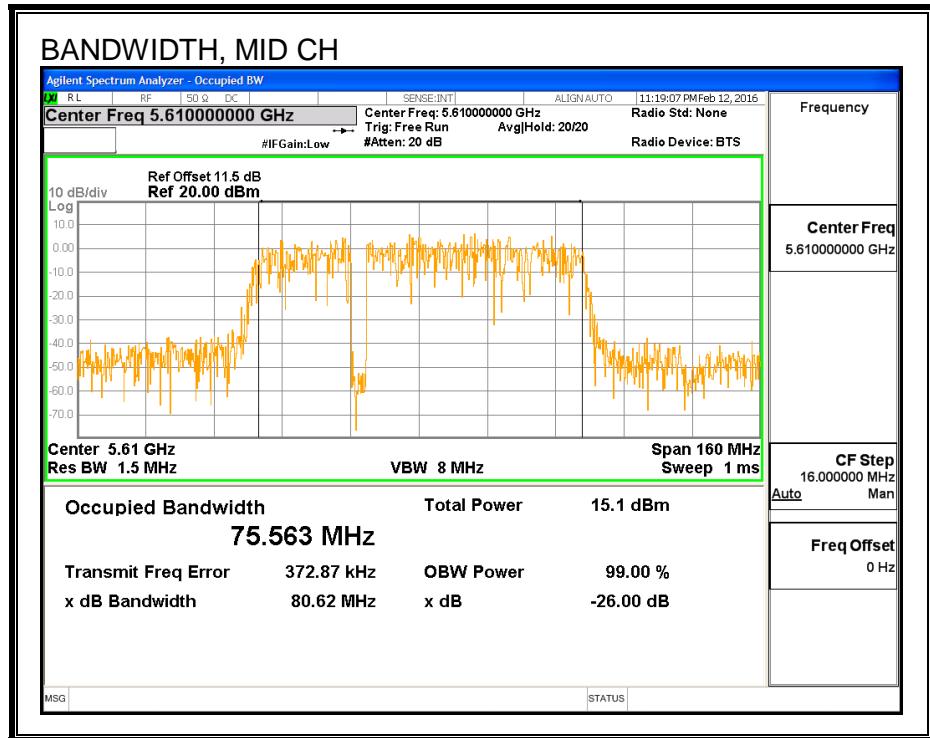
None; for reporting purposes only.

### RESULTS

Frequency (MHz)	99% Bandwidth (MHz)
5530	75.748
5610	75.563
5690	75.563

### 99% BANDWIDTH





### 8.51.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5530	10.46
Mid	5610	17.86
High	5690	17.99

#### 8.51.4. OUTPUT POWER AND PSD

##### LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

##### TEST PROCEDURE

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

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

##### DIRECTIONAL ANTENNA GAIN

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

## RESULTS

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.09	75.748	5.00	24.00	11.00
High	5610	82.09	75.563	5.00	24.00	11.00

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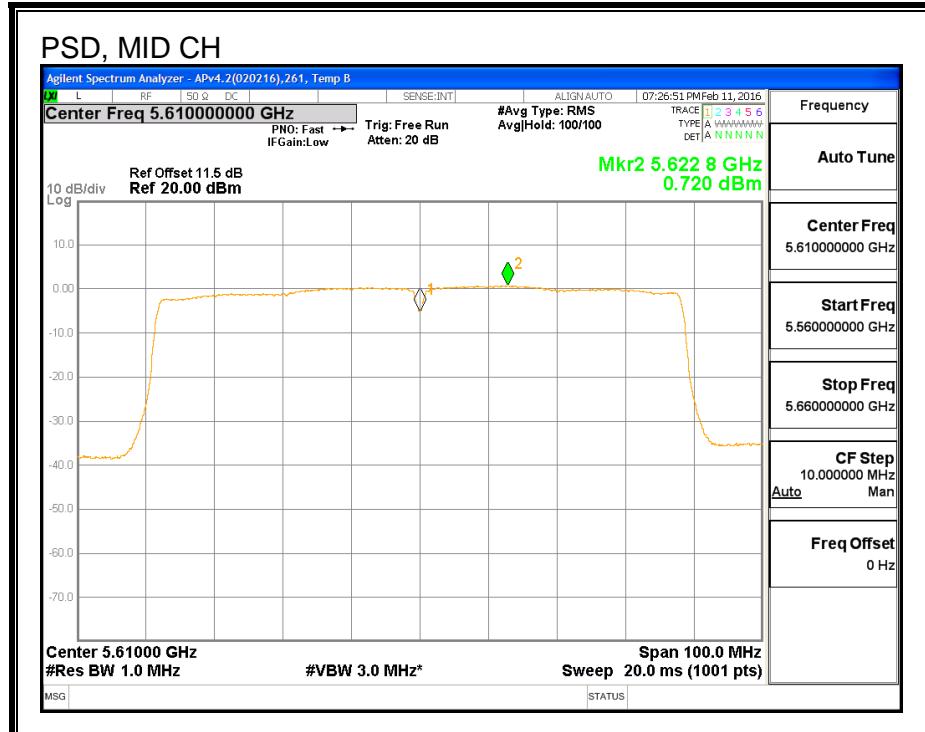
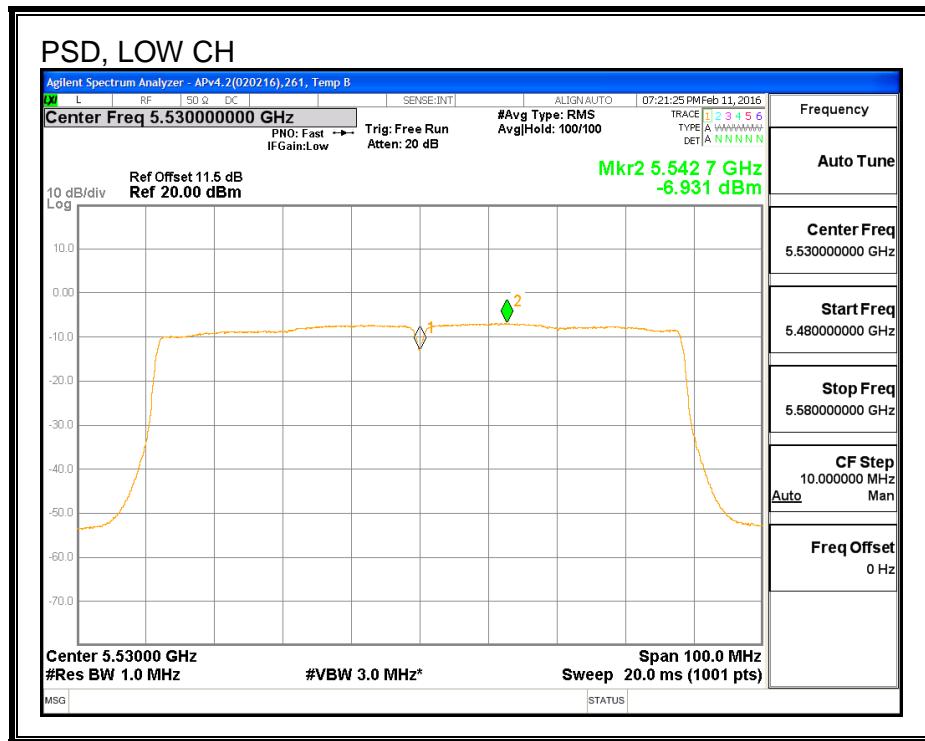
### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	10.46	10.46	24.00	-13.54
High	5610	17.86	17.86	24.00	-6.14

### PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-6.93	-6.77	11.00	-17.77
High	5610	0.72	0.88	11.00	-10.12

**PSD**



### 8.51.5. STRADDLE CHANNEL 138 RESULTS (FCC)

#### 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	5.00	5.00	24.00	11.00

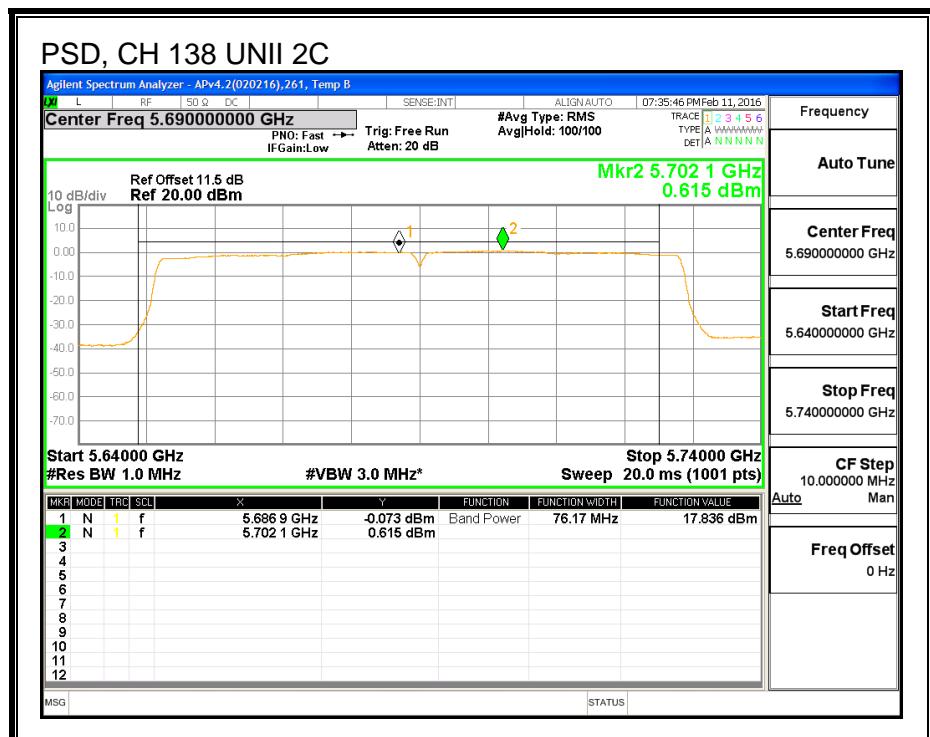
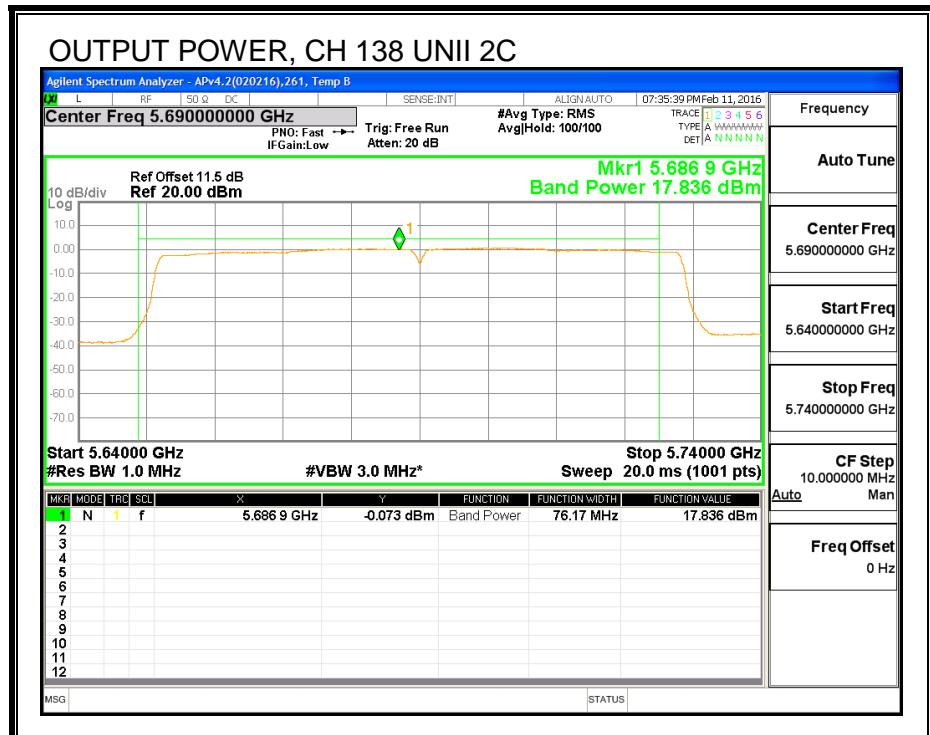
Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD
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##### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	17.84	18.00	24.00	-6.00

##### PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	0.62	0.78	11.00	-10.23



**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	5.00	30.00	30.00

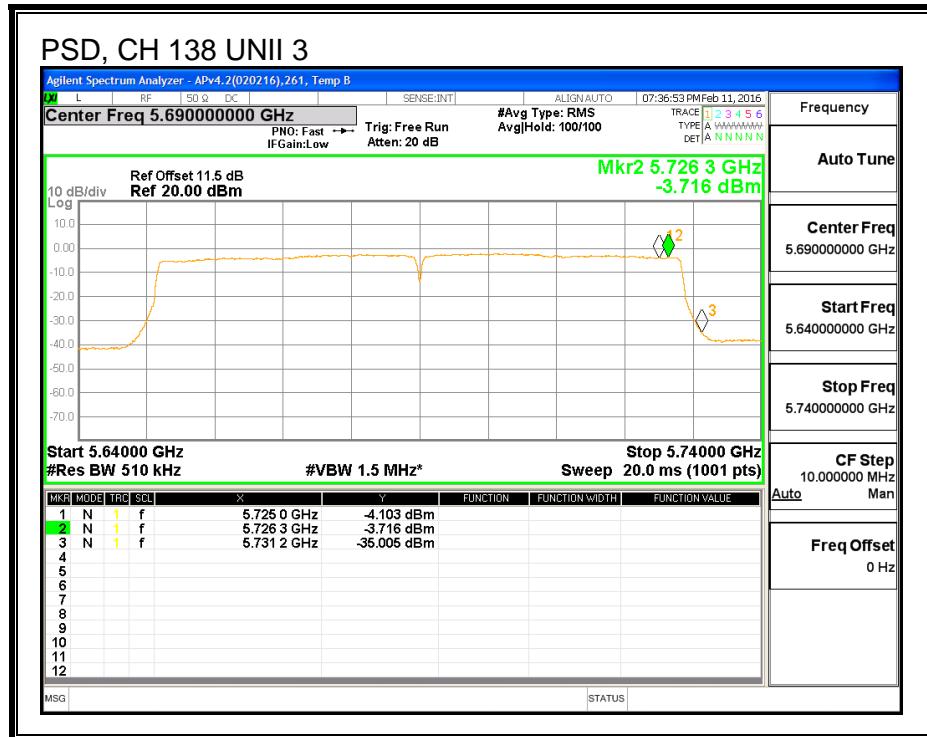
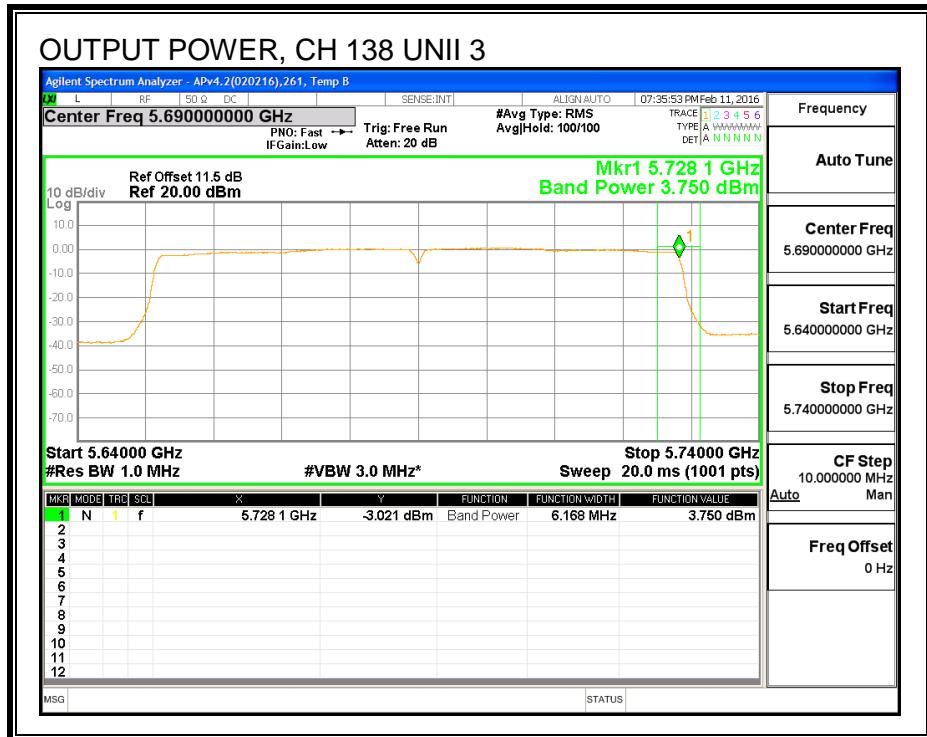
<b>Duty Cycle CF (dB)</b>	0.16	<b>Included in Calculations of Corr'd Power &amp; PSD</b>
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**Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	3.75	3.91	30.00	-26.09

**PSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-3.72	-3.56	30.00	-33.56



## 8.51.6. 6 dB BANDWIDTH

### LIMITS

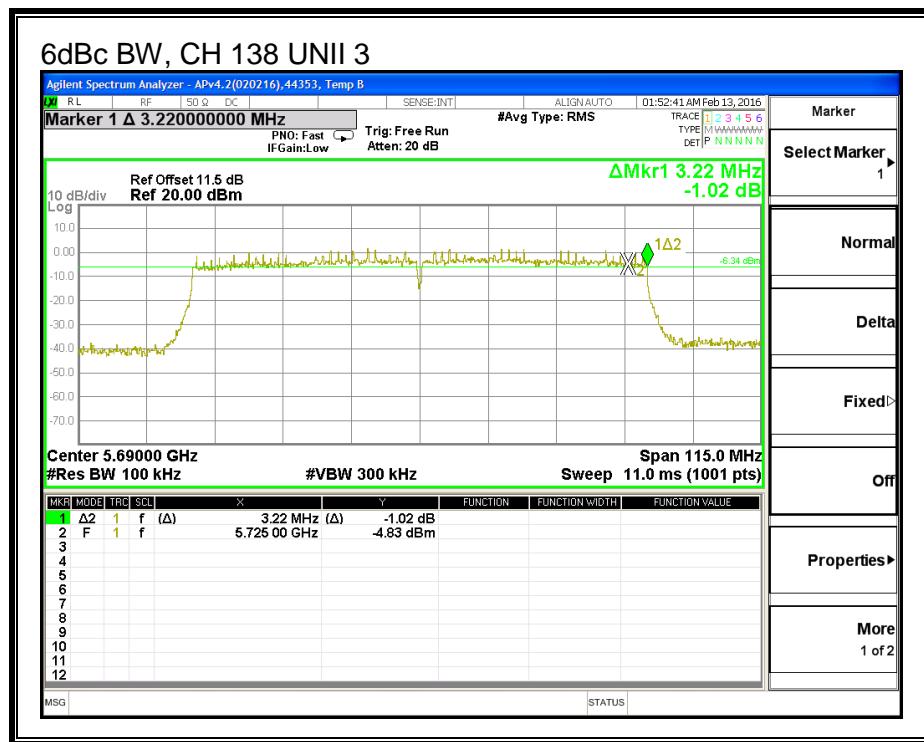
FCC §15.407 (e)

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

### RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	3.22

### 6 dB BANDWIDTH



## 8.52. 802.11ac VHT80 CHAIN 1 MODE IN THE 5.6 GHz BAND

### 8.52.1. 26 dB BANDWIDTH

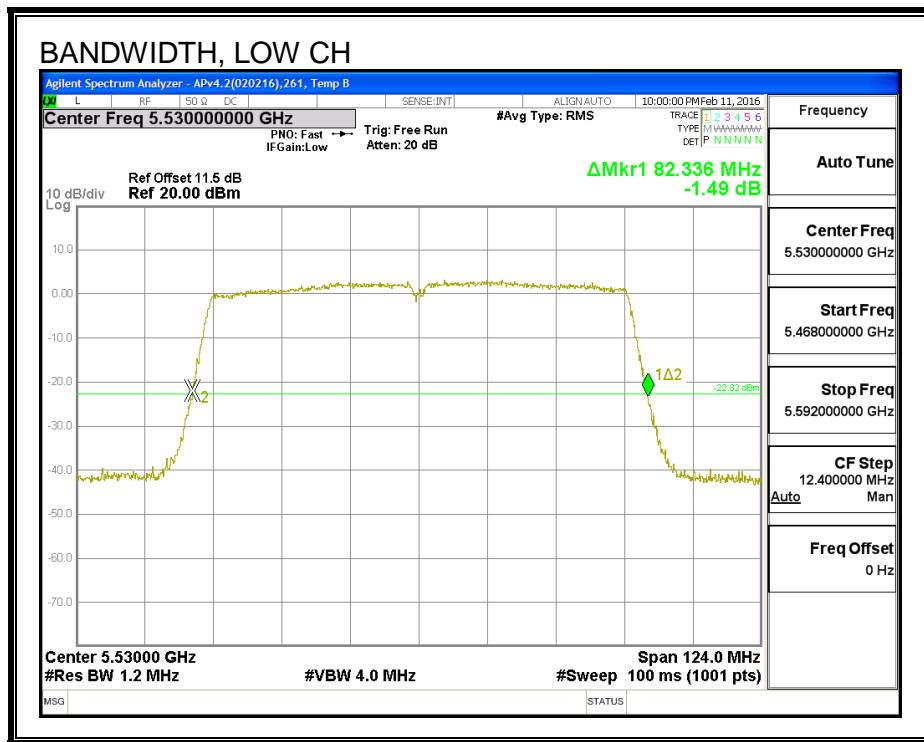
#### LIMITS

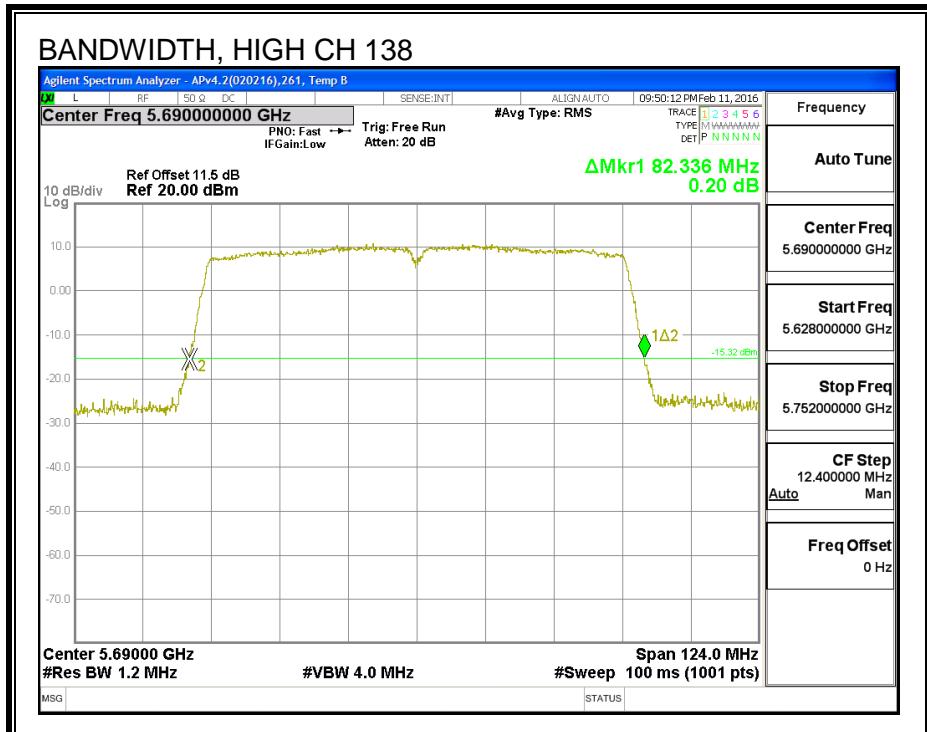
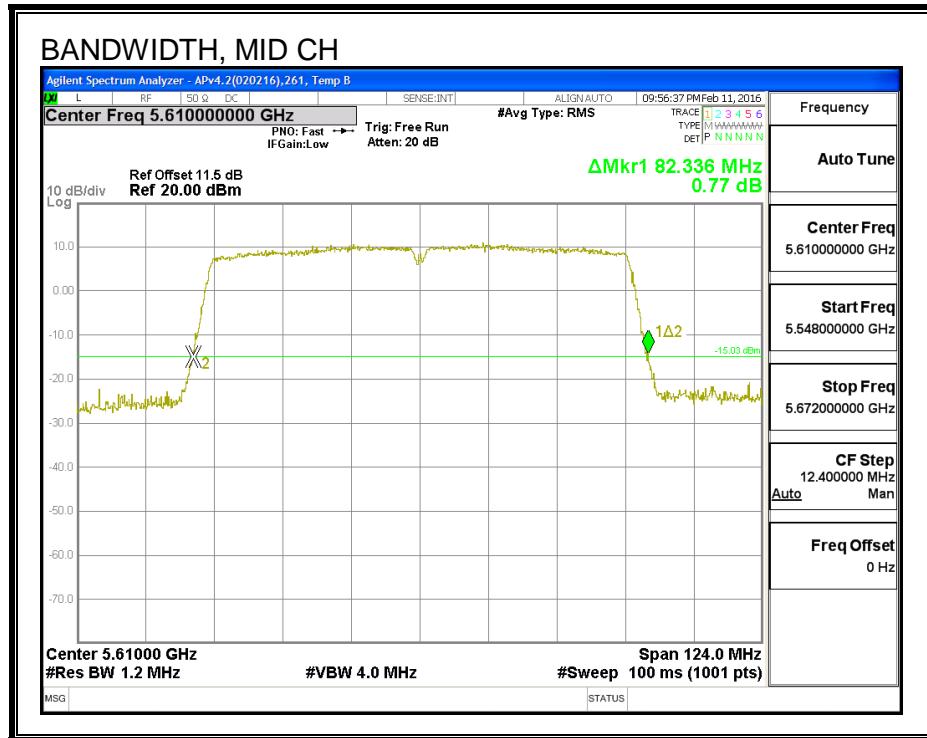
None; for reporting purposes only.

#### RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	82.34
Mid	5610	82.34
High	5690	82.34

#### 26 dB BANDWIDTH





## 8.52.2. 99% BANDWIDTH

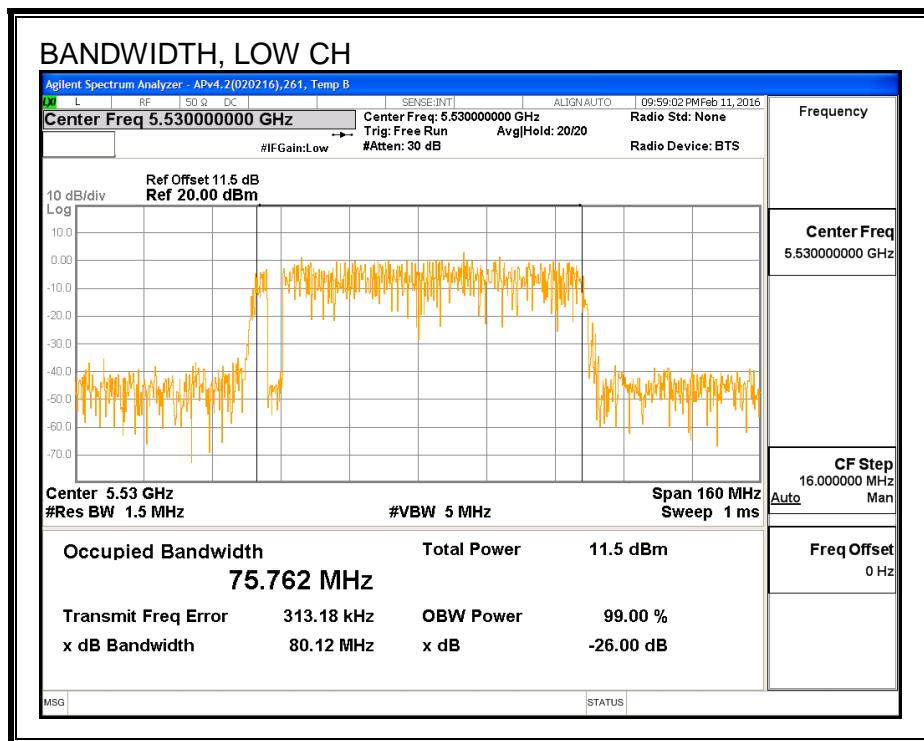
### LIMITS

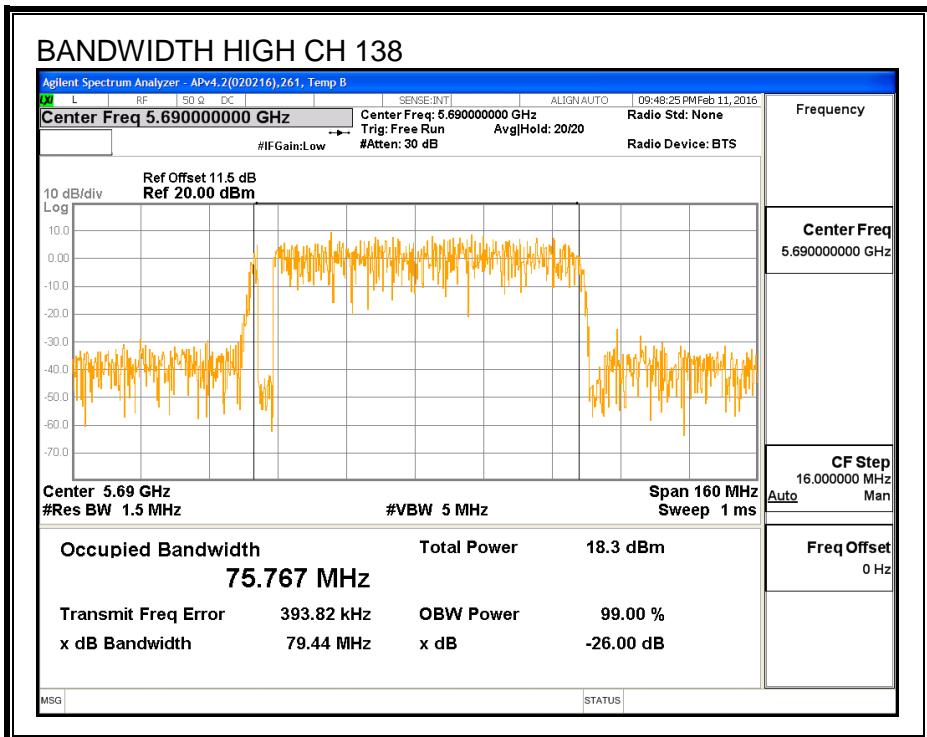
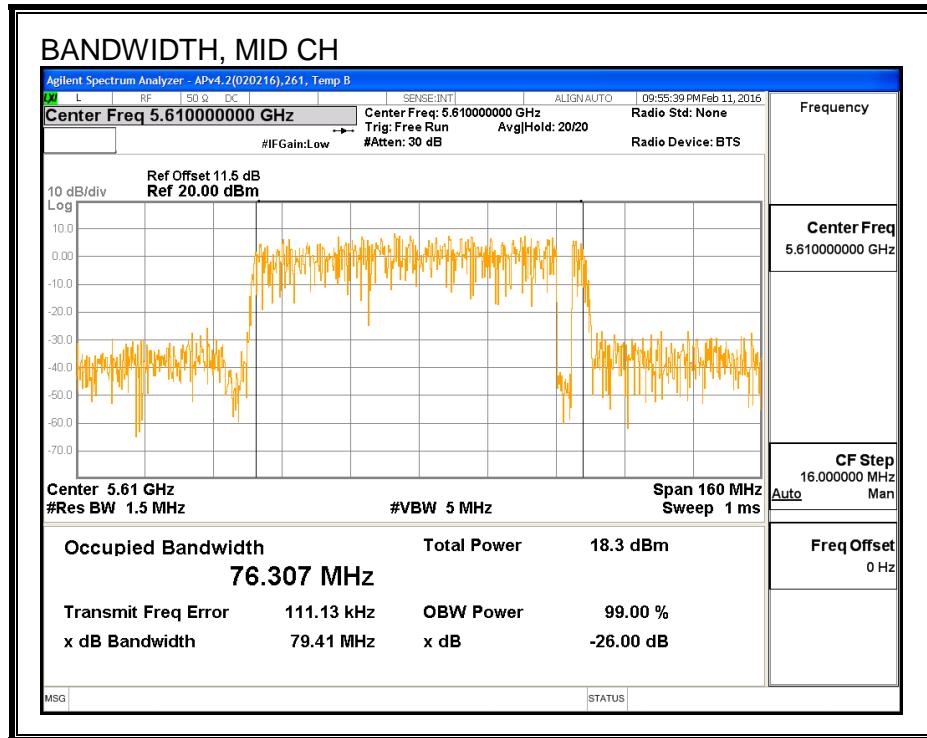
None; for reporting purposes only.

### RESULTS

Frequency (MHz)	99% Bandwidth (MHz)
5530	75.762
5610	76.307
5690	75.767

### 99% BANDWIDTH





### 8.52.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5530	10.42
Mid	5610	17.86
High	5690	17.99

#### 8.52.4. OUTPUT POWER AND PSD

##### LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

##### TEST PROCEDURE

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

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

##### DIRECTIONAL ANTENNA GAIN

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

## RESULTS

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.34	75.762	4.57	24.00	11.00
High	5610	82.34	76.307	4.57	24.00	11.00

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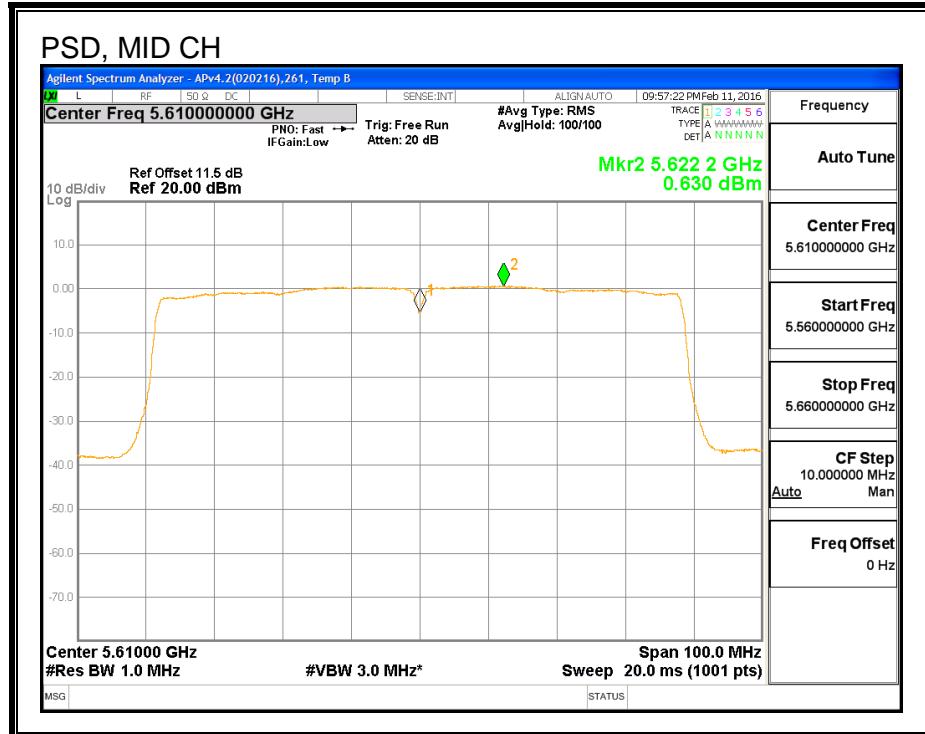
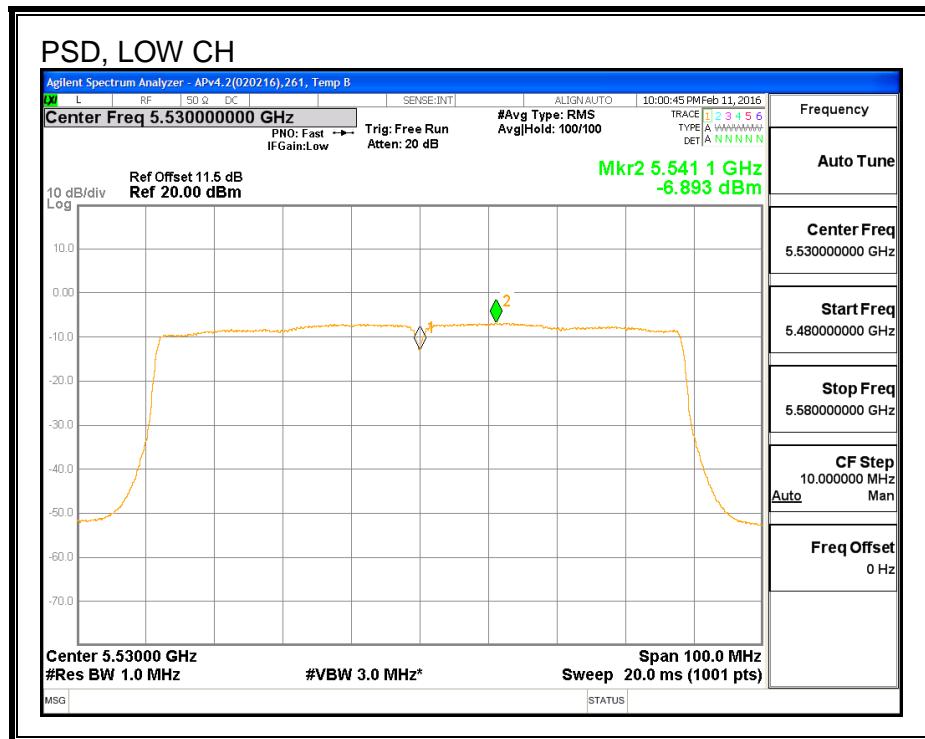
### Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	10.42	10.42	24.00	-13.58
High	5610	17.86	17.86	24.00	-6.14

### PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-6.89	-6.73	11.00	-17.73
High	5610	0.63	0.79	11.00	-10.21

**PSD**



### 8.52.5. STRADDLE CHANNEL 138 RESULTS (FCC)

#### UNII-2C BAND

##### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	76.17	4.57	4.57	24.00	11.00

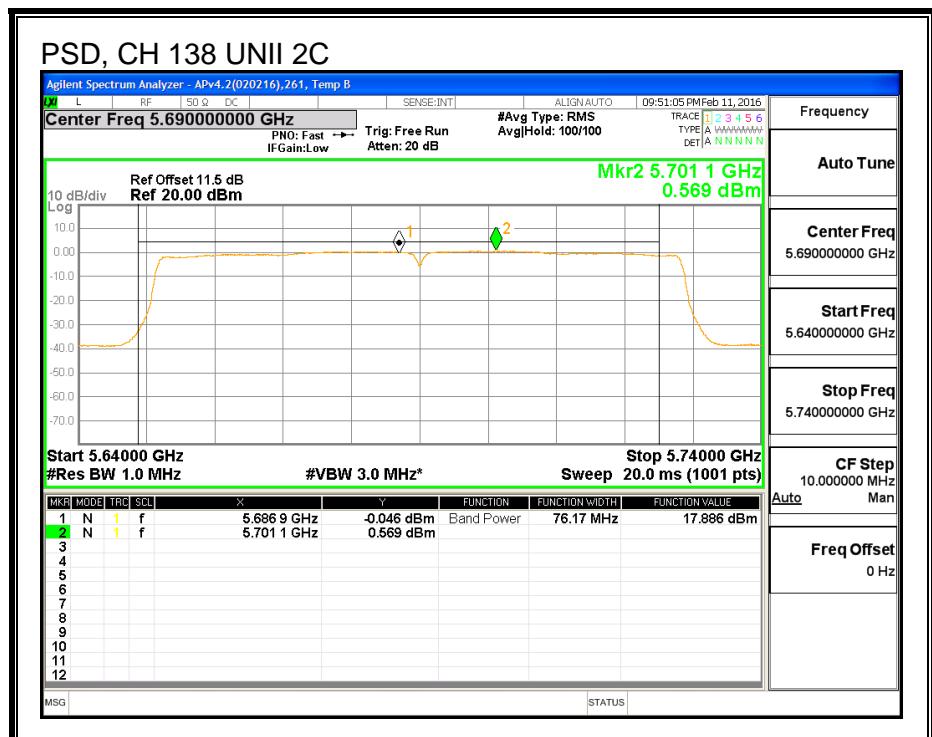
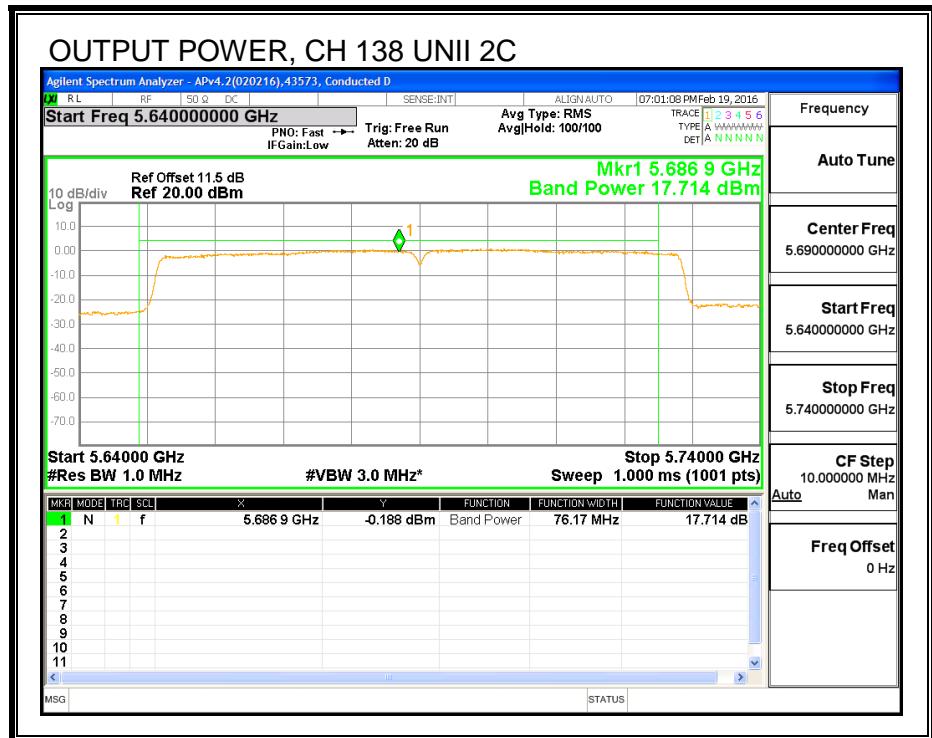
Duty Cycle CF (dB)	0.16	Included in Calculations of Corr'd Power & PSD
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##### Output Power Results

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	17.71	17.87	24.00	-6.13

##### PSD Results

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	0.57	0.73	11.00	-10.27



**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	4.57	30.00	30.00

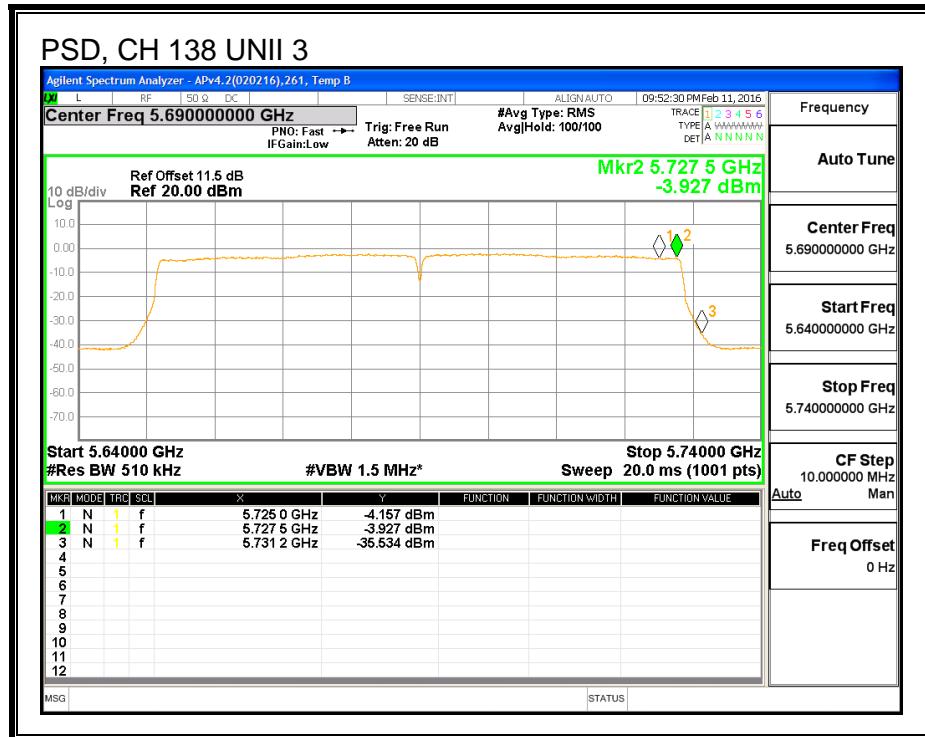
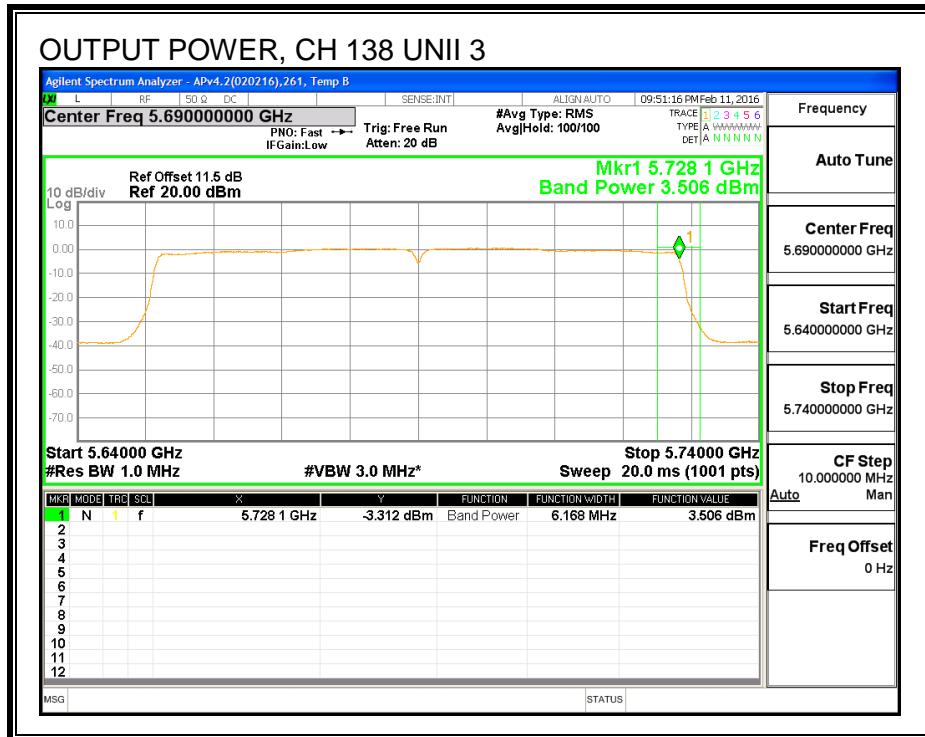
<b>Duty Cycle CF (dB)</b>	0.16	<b>Included in Calculations of Corr'd Power &amp; PSD</b>
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**Output Power Results**

Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	3.51	3.67	30.00	-26.33

**PSD Results**

Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-3.93	-3.77	30.00	-33.77



## 8.52.6. 6 dB BANDWIDTH

### LIMITS

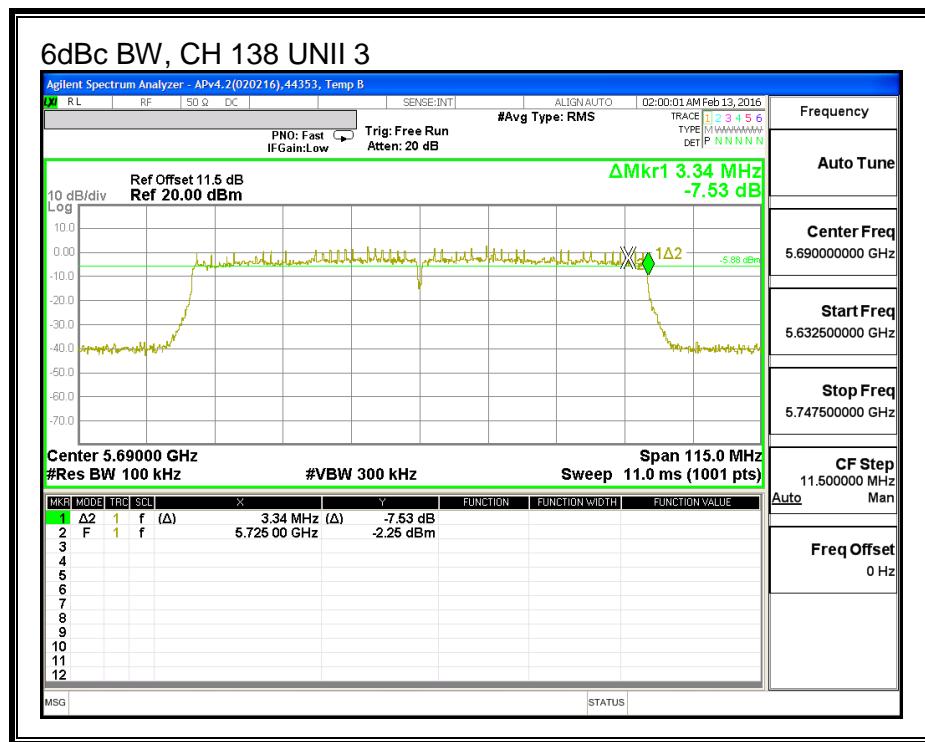
FCC §15.407 (e)

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

### RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
High	5690	3.34

### 6 dB BANDWIDTH



## 8.53. 802.11ac VHT80 2Tx CDD MODE IN THE 5.6 GHz BAND

### 8.53.1. 26 dB BANDWIDTH

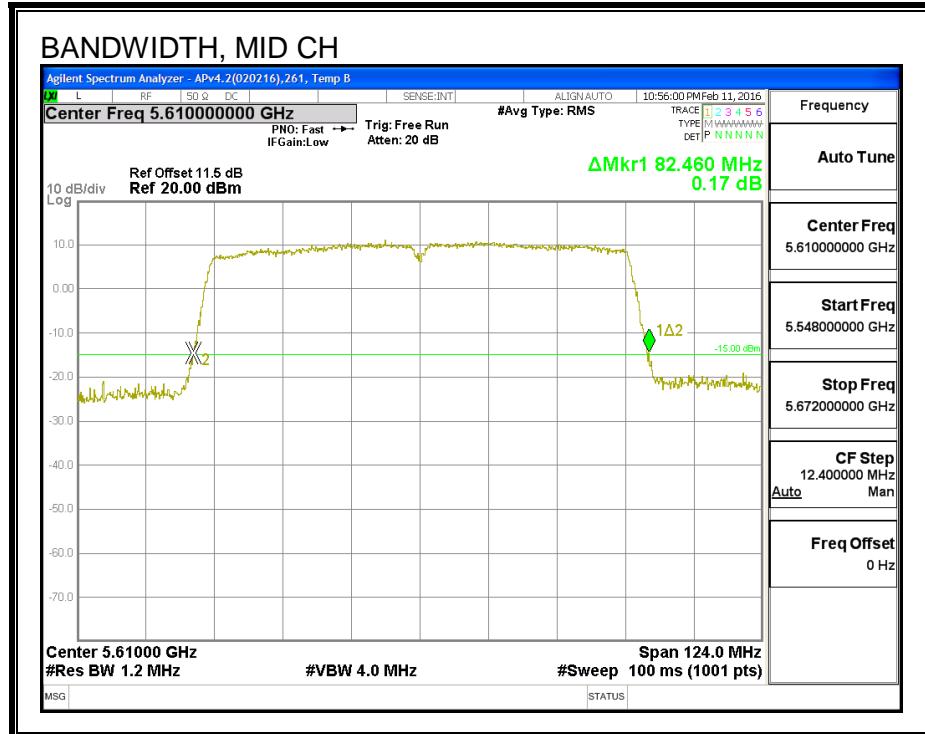
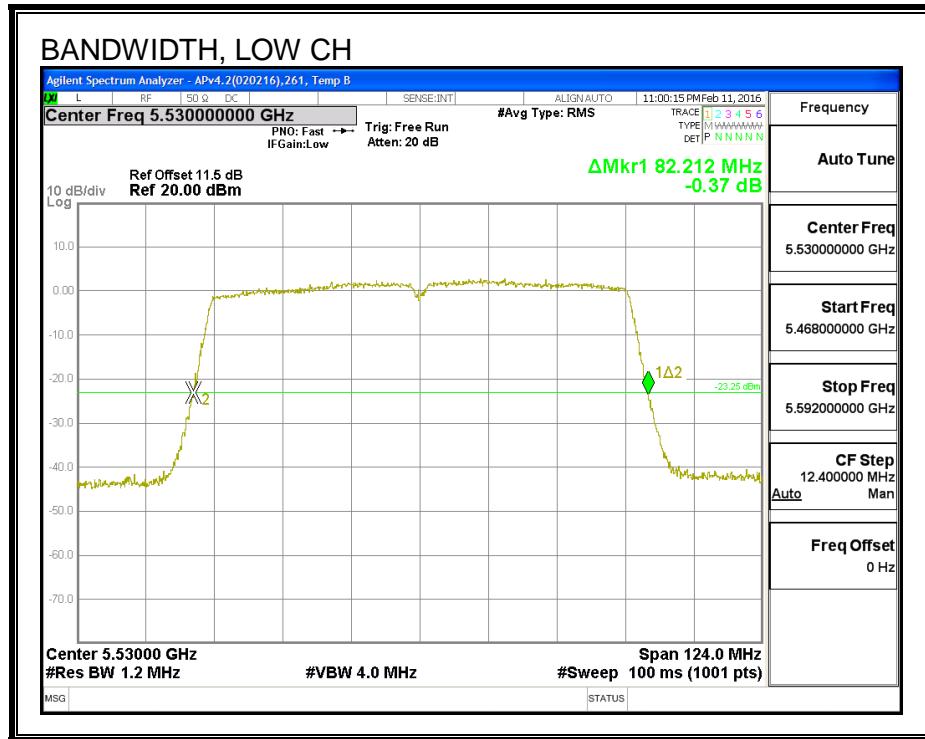
#### LIMITS

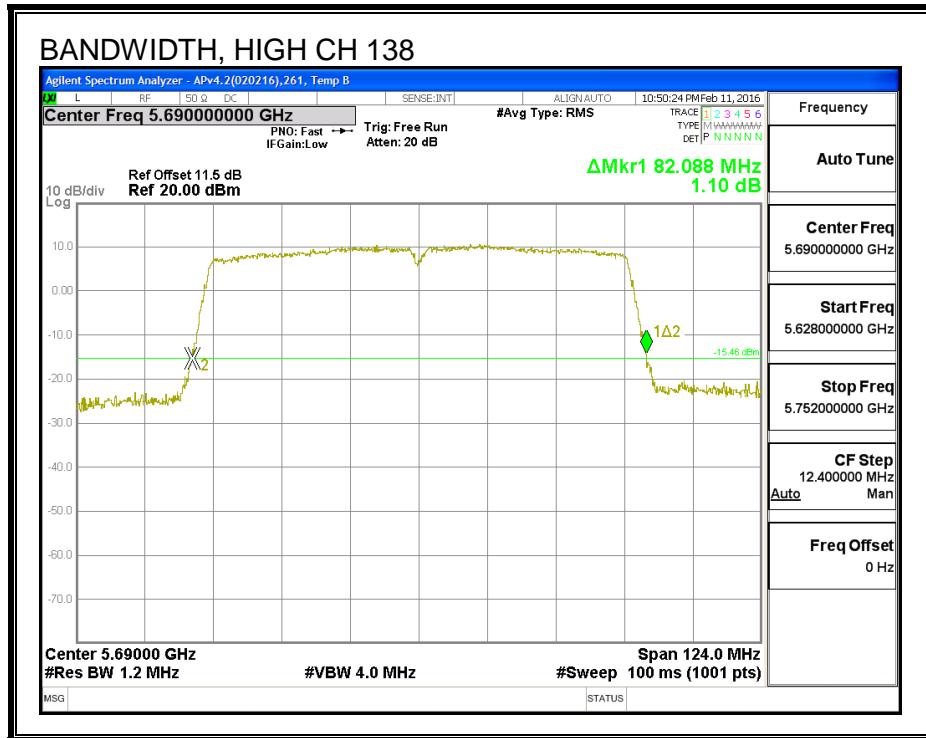
None; for reporting purposes only.

#### RESULTS

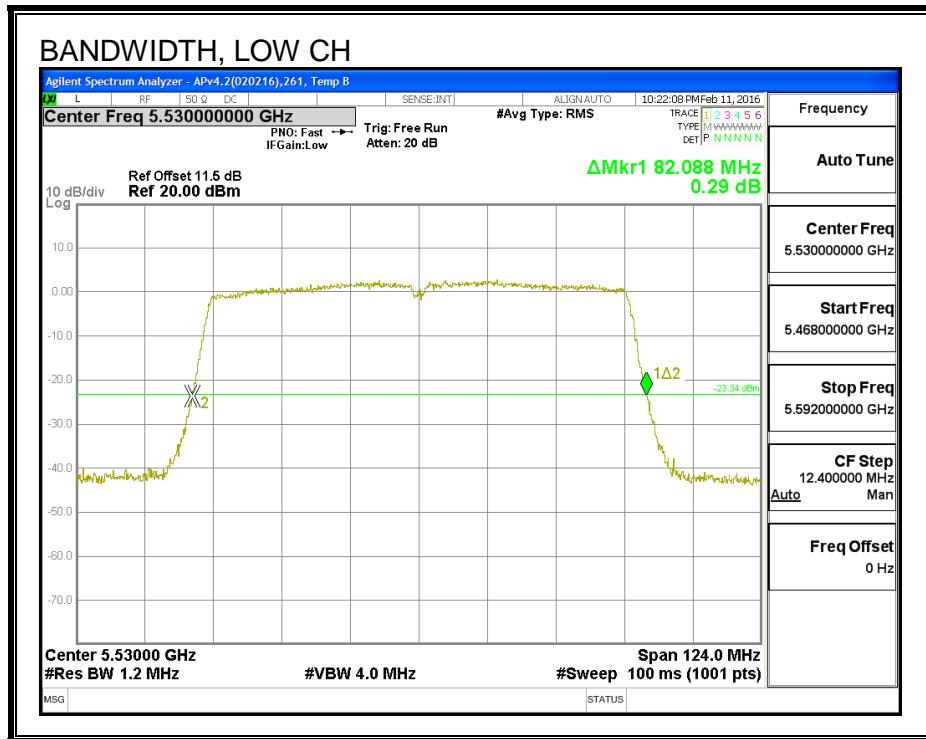
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5530	82.21	82.09
Mid	5610	82.46	82.55
High	5690	82.09	81.92

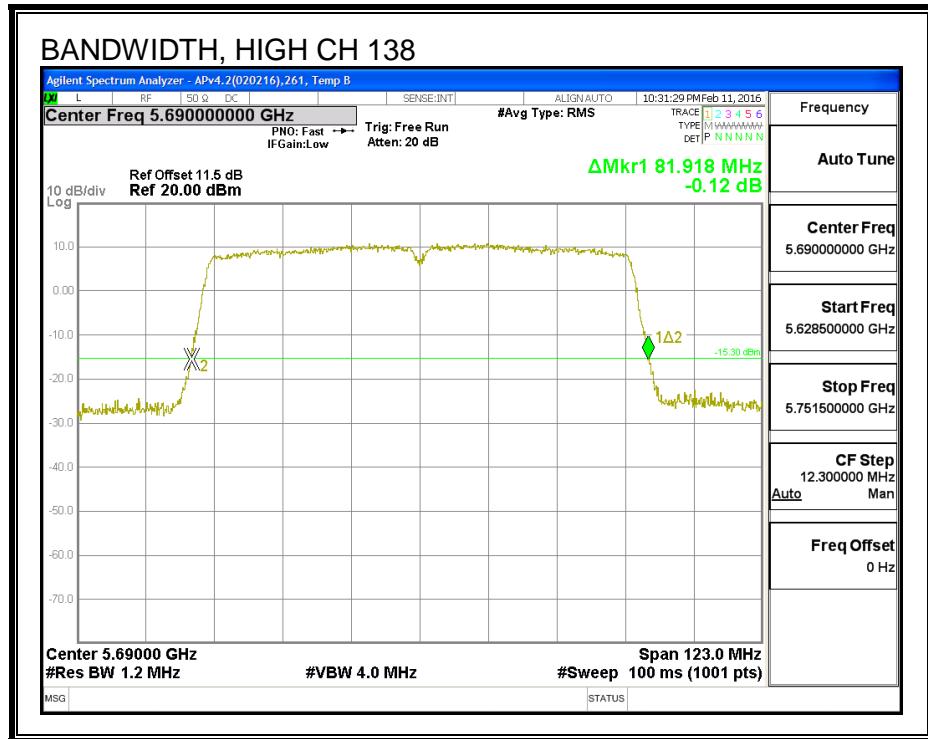
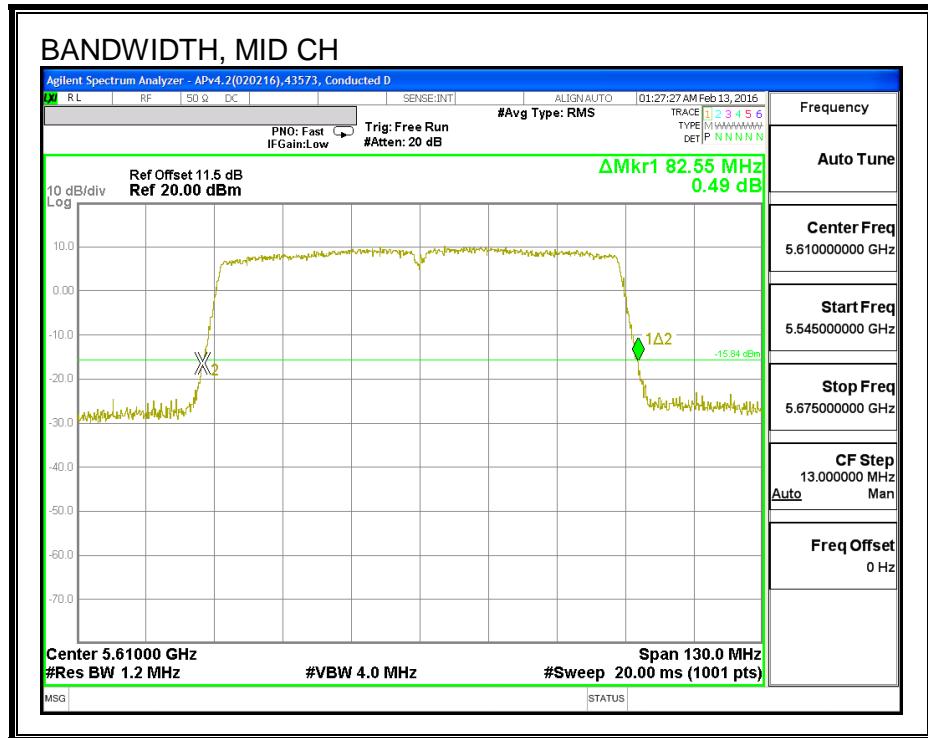
**26 dB BANDWIDTH, CHAIN 0**





**26 dB BANDWIDTH, CHAIN 1**





### 8.53.2. 99% BANDWIDTH

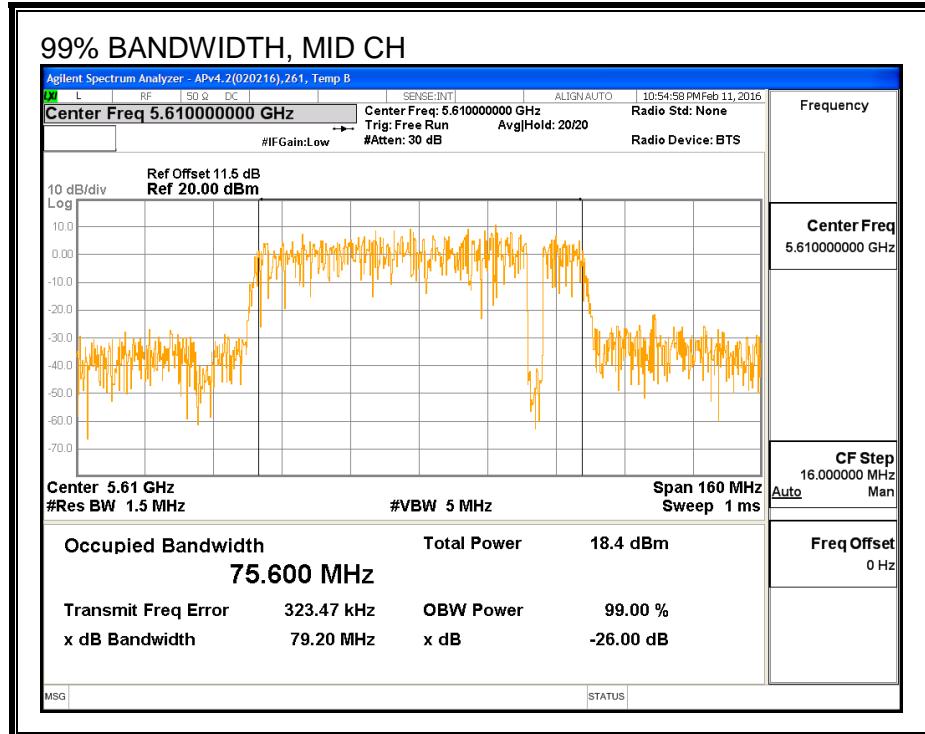
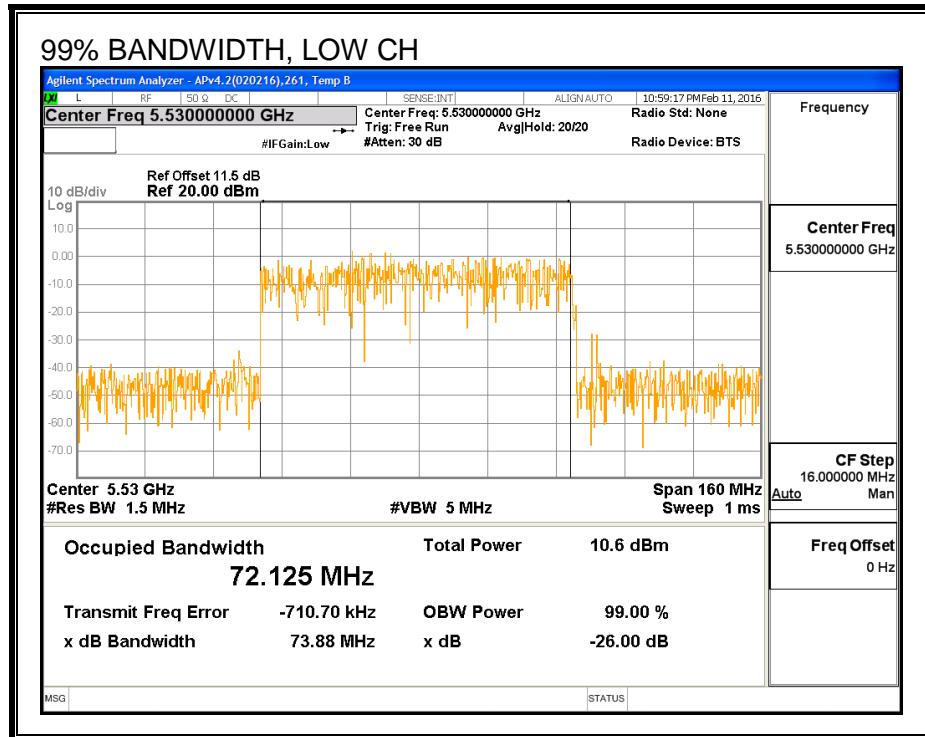
#### LIMITS

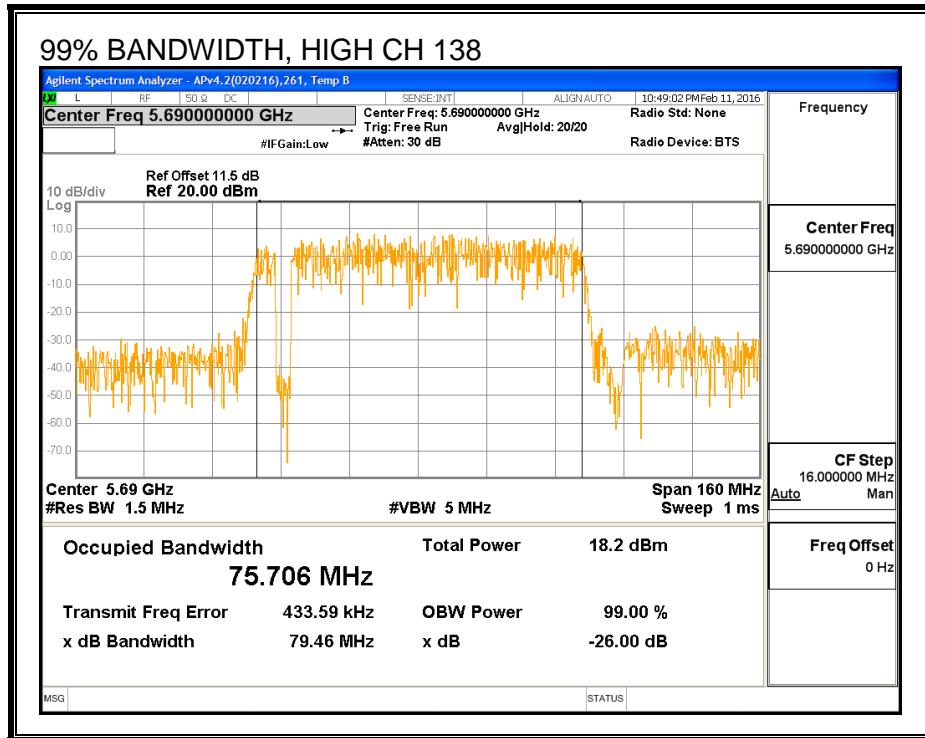
None; for reporting purposes only.

#### RESULTS

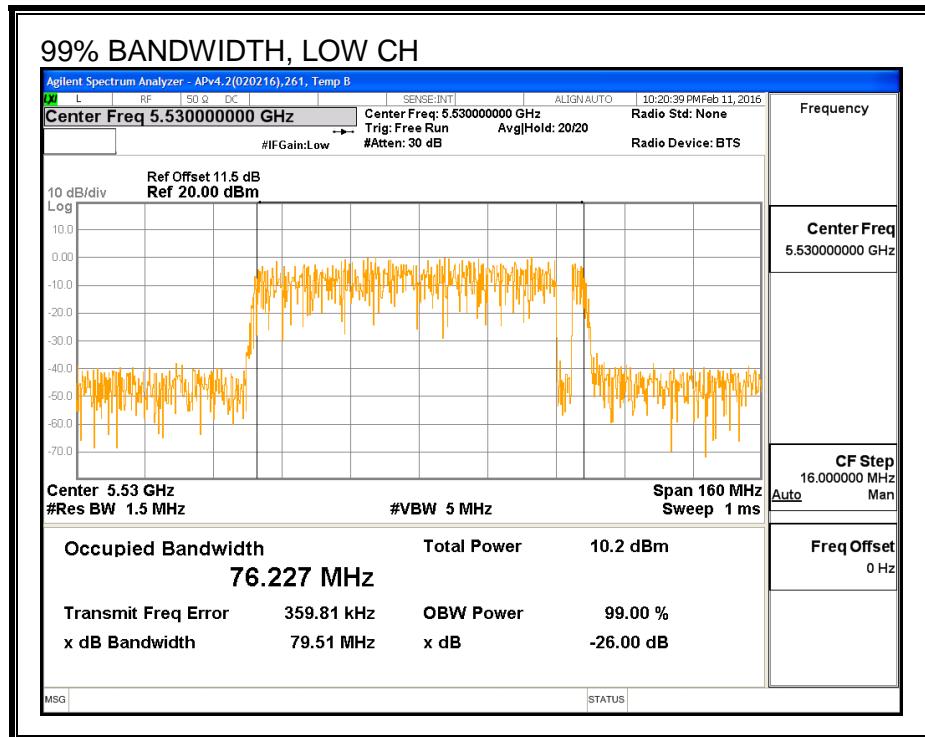
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5530	72.125	76.227
Mid	5610	75.600	72.575
High	5690	75.706	75.893

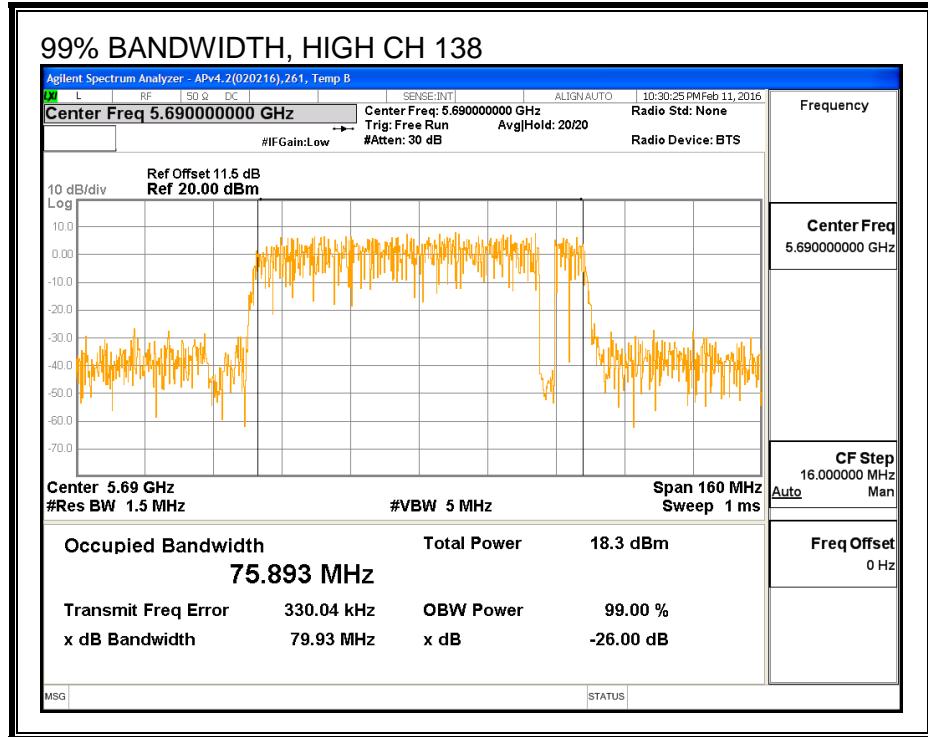
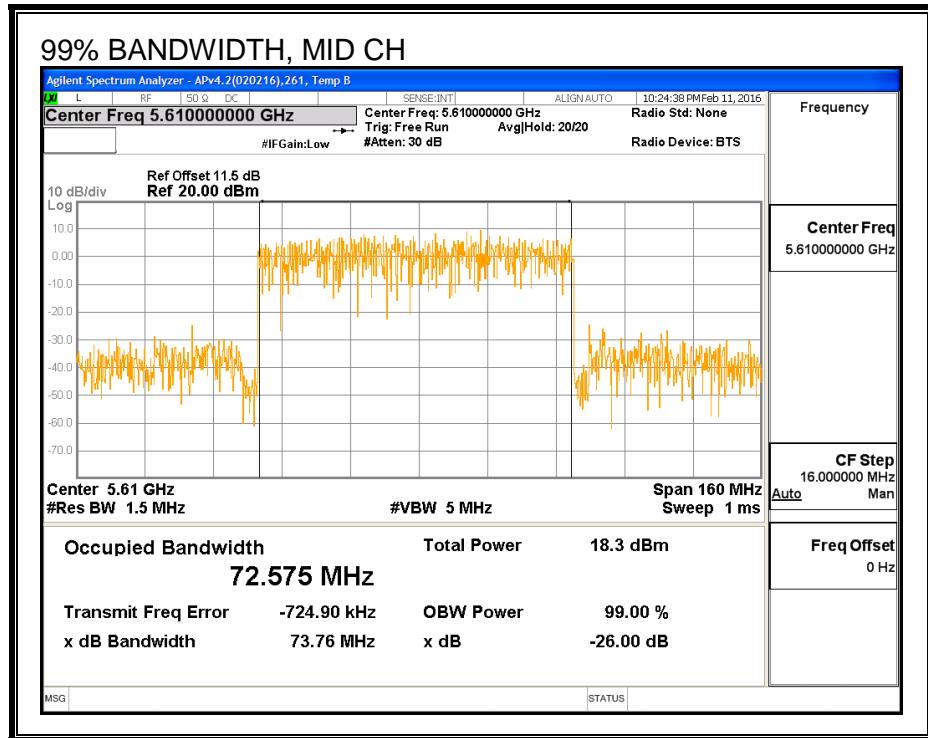
**99% BANDWIDTH, CHAIN 0**





**99% BANDWIDTH, CHAIN 1**





### 8.53.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5530	9.98	9.89	12.95
Mid	5610	18.00	17.92	20.97
High	5690	17.88	17.90	20.90

#### 8.53.4. 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:

<b>Chain 0 Antenna Gain (dBi)</b>	<b>Chain 1 Antenna Gain (dBi)</b>	<b>Uncorrelated Chains Directional Gain (dBi)</b>
5.00	4.57	4.79

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

<b>Chain 0 Antenna Gain (dBi)</b>	<b>Chain 1 Antenna Gain (dBi)</b>	<b>Correlated Chains Directional Gain (dBi)</b>
5.00	4.57	7.80

## RESULTS

### Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.21	76.227	4.79	7.80	24.00	9.20
High	5610	82.55	75.600	4.79	7.80	24.00	9.20

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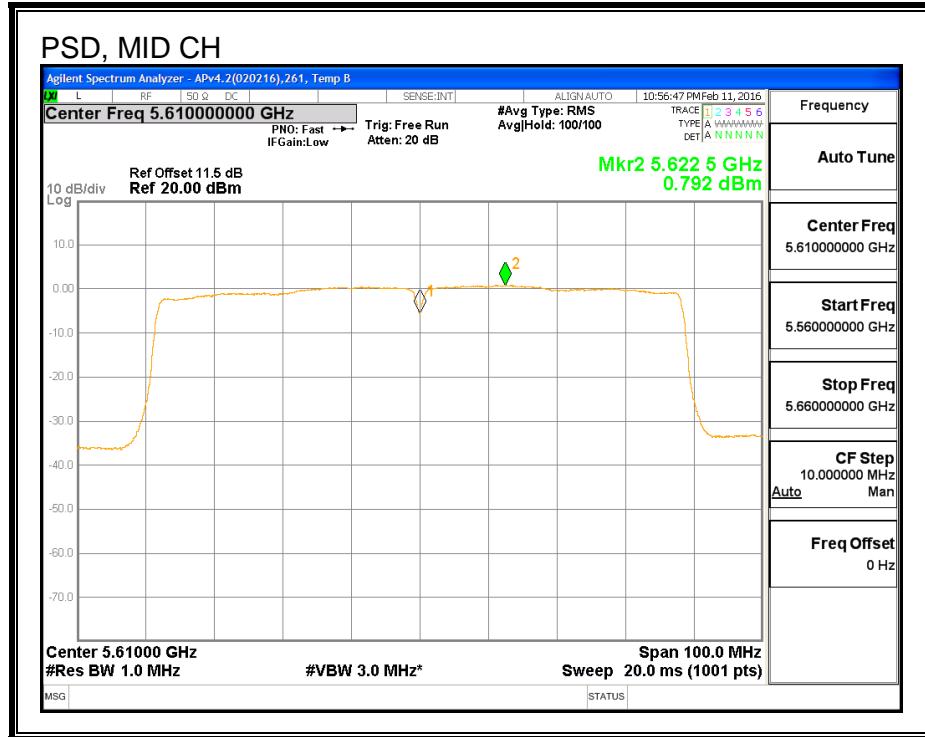
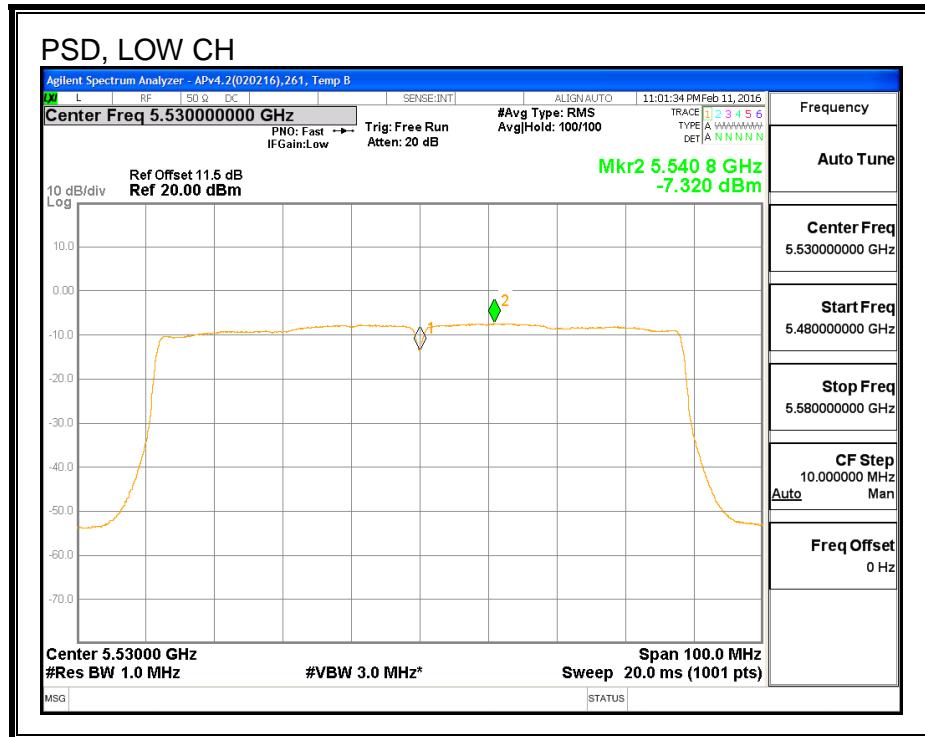
### Output Power Results

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	9.98	9.89	12.95	24.00	-11.05
High	5610	18.00	17.92	20.97	24.00	-3.03

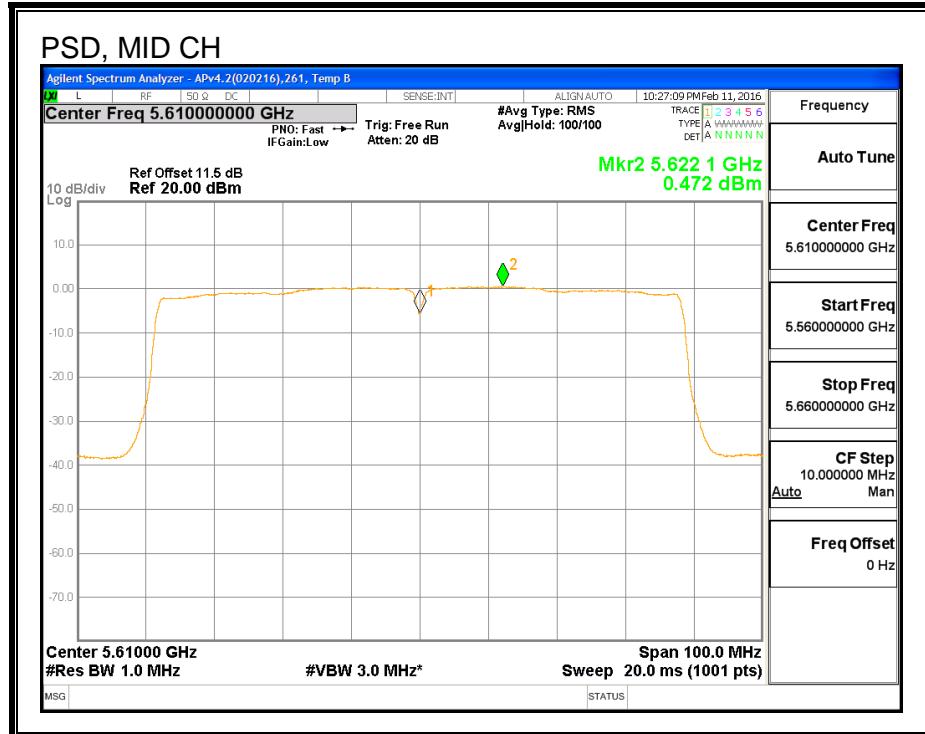
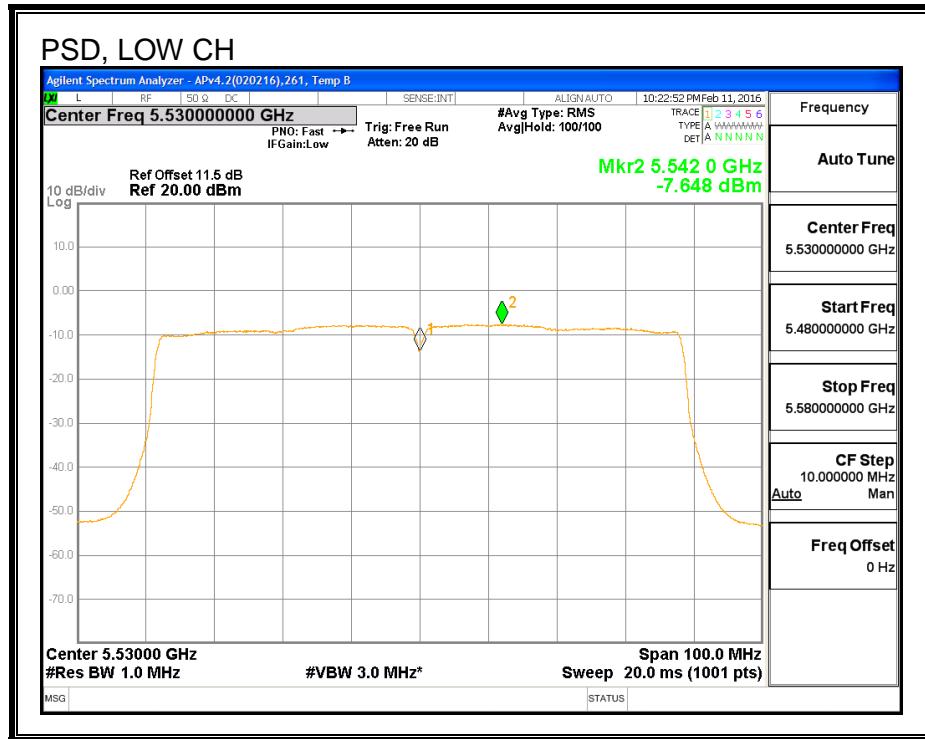
### PSD Results

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	-7.32	-7.65	-4.26	9.20	-13.46
High	5610	0.79	0.47	3.86	9.20	-5.34

**PSD, CHAIN 0**



**PSD, CHAIN 1**



### 8.53.5. STRADDLE CHANNEL 138 RESULTS (FCC)

#### UNII-2C BAND

##### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	76.04	4.79	7.80	24.00	9.20

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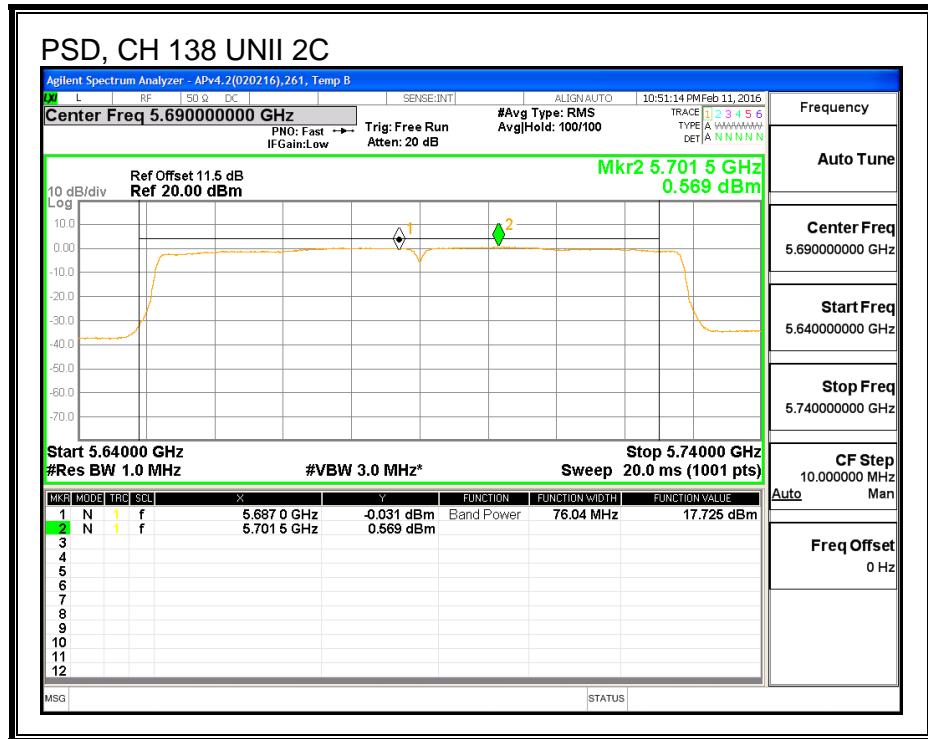
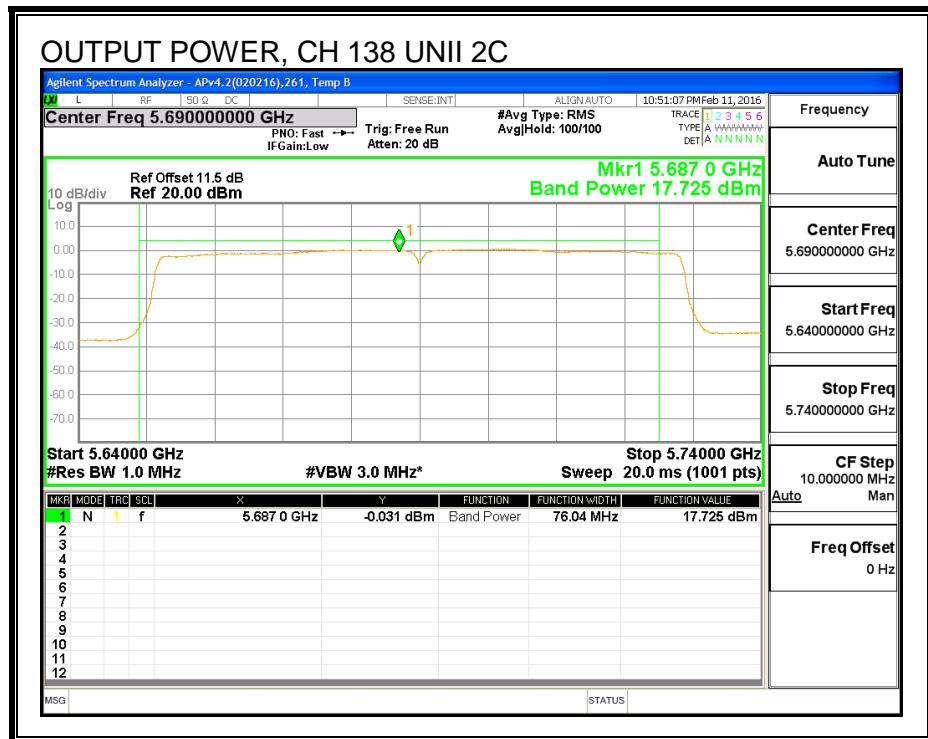
##### Output Power Results

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	17.73	17.89	21.03	24.00	-2.97

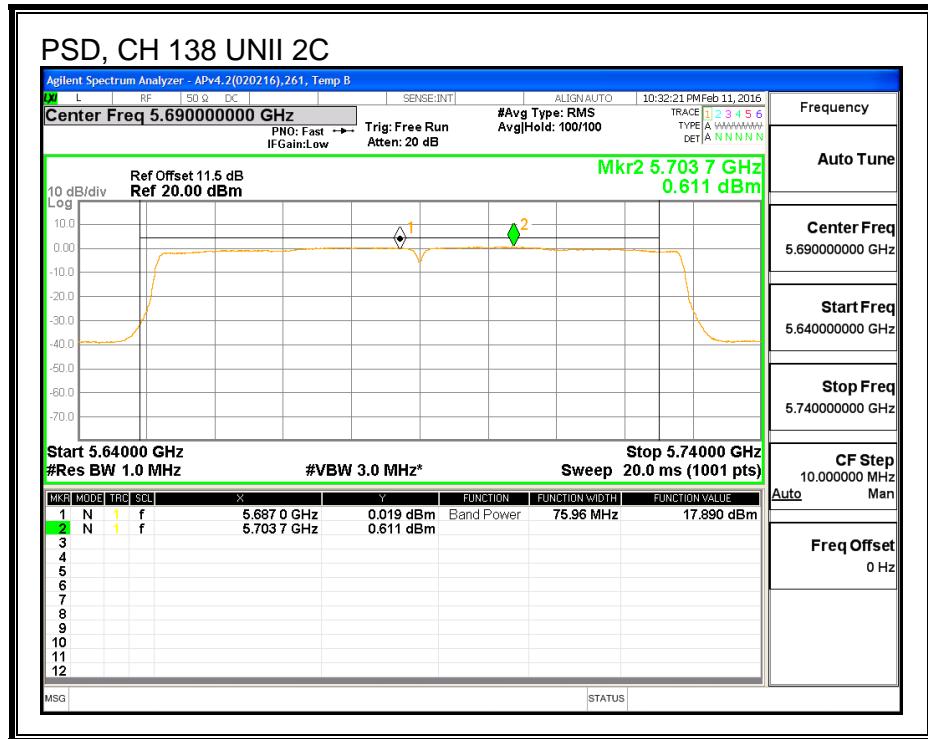
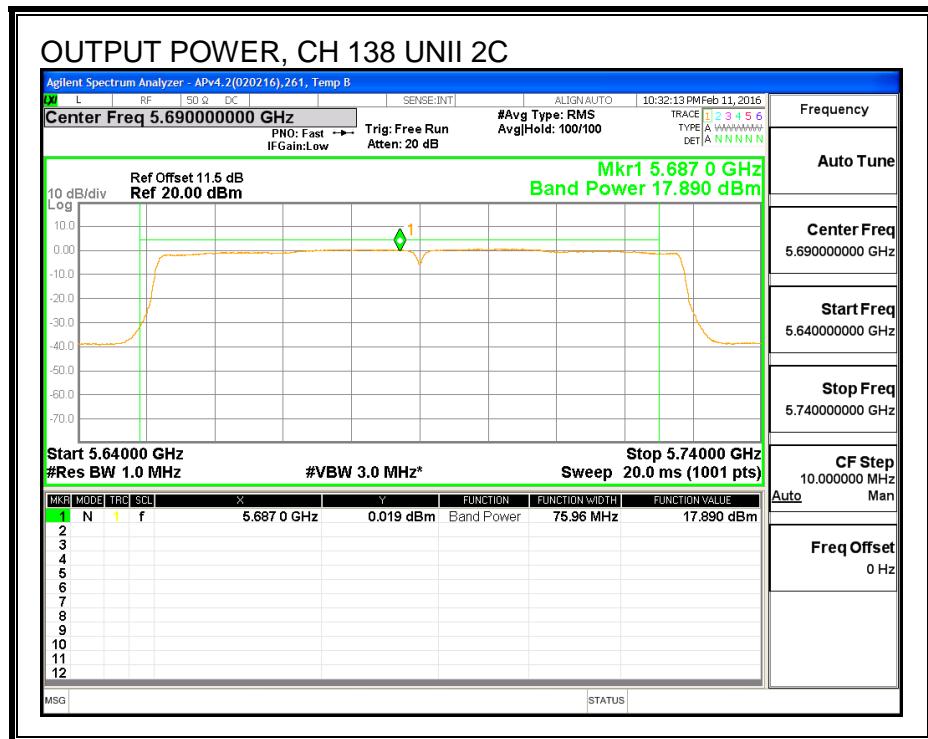
##### PSD Results

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	0.57	0.61	3.81	9.20	-5.39

**CHAIN 0**



**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	6.04	4.79	7.80	30.00	28.20

<b>Duty Cycle CF (dB)</b>	0.21	<b>Included in Calculations of Corr'd Power &amp; PSD</b>
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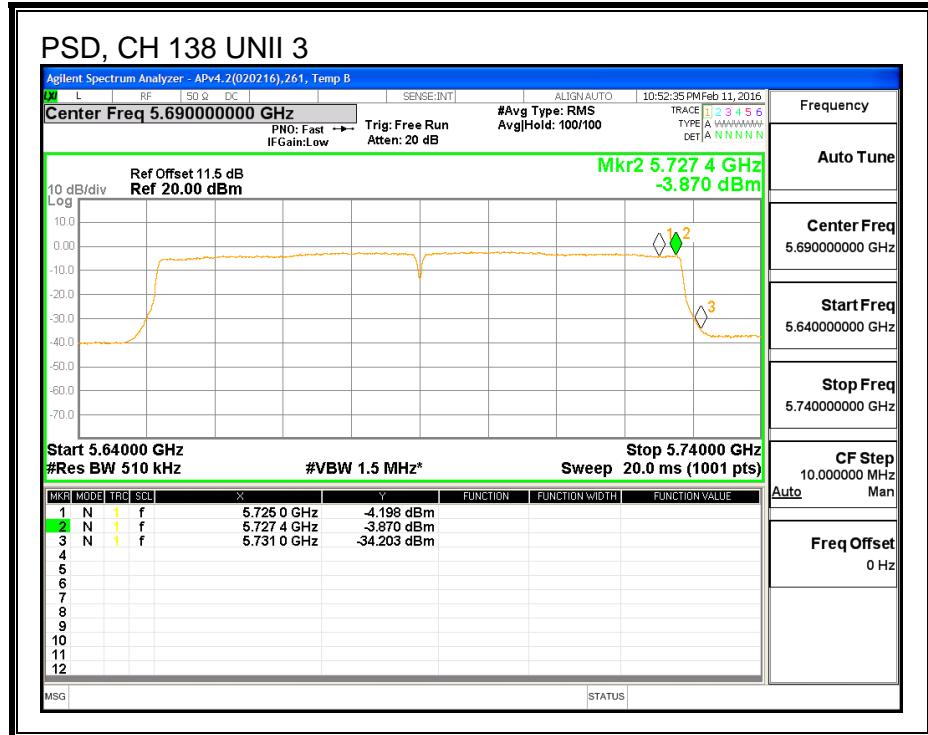
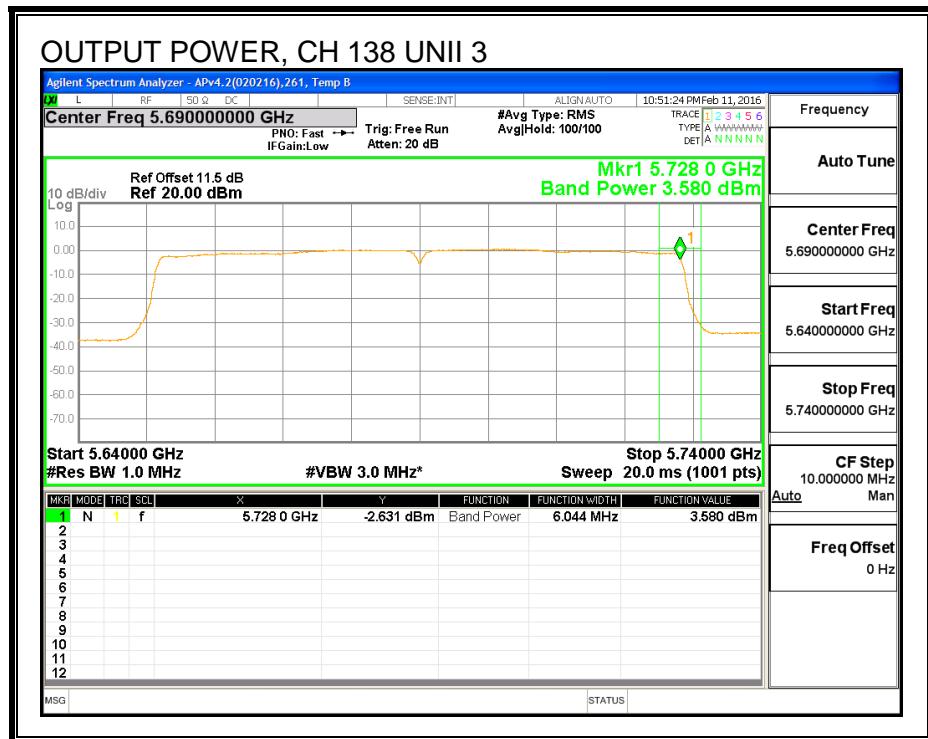
**Output Power Results**

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	3.58	3.52	6.77	30.00	-23.23

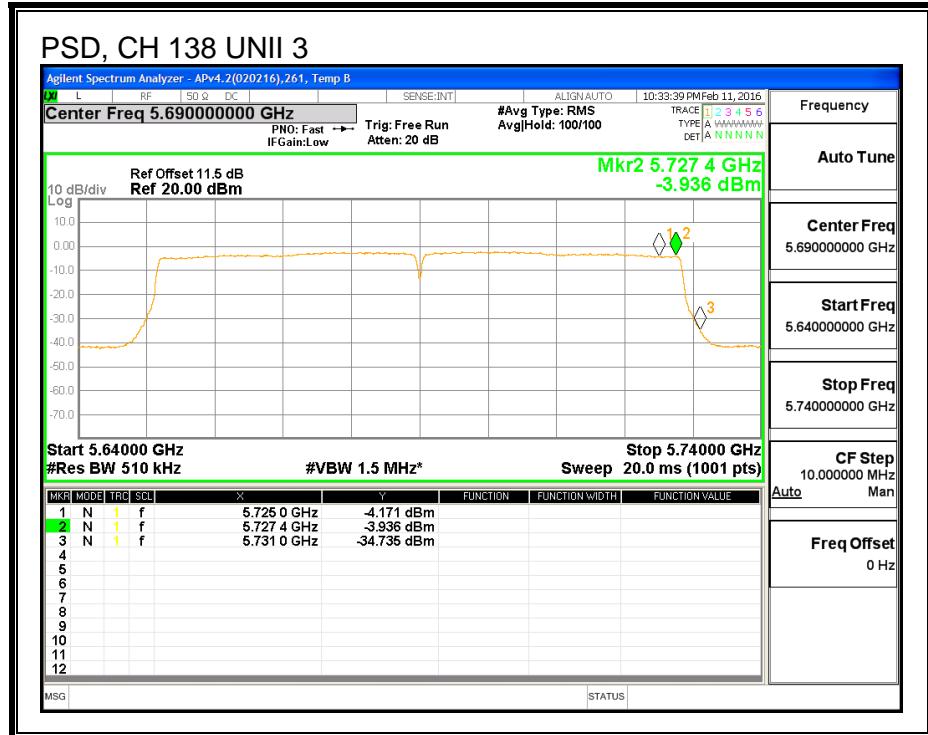
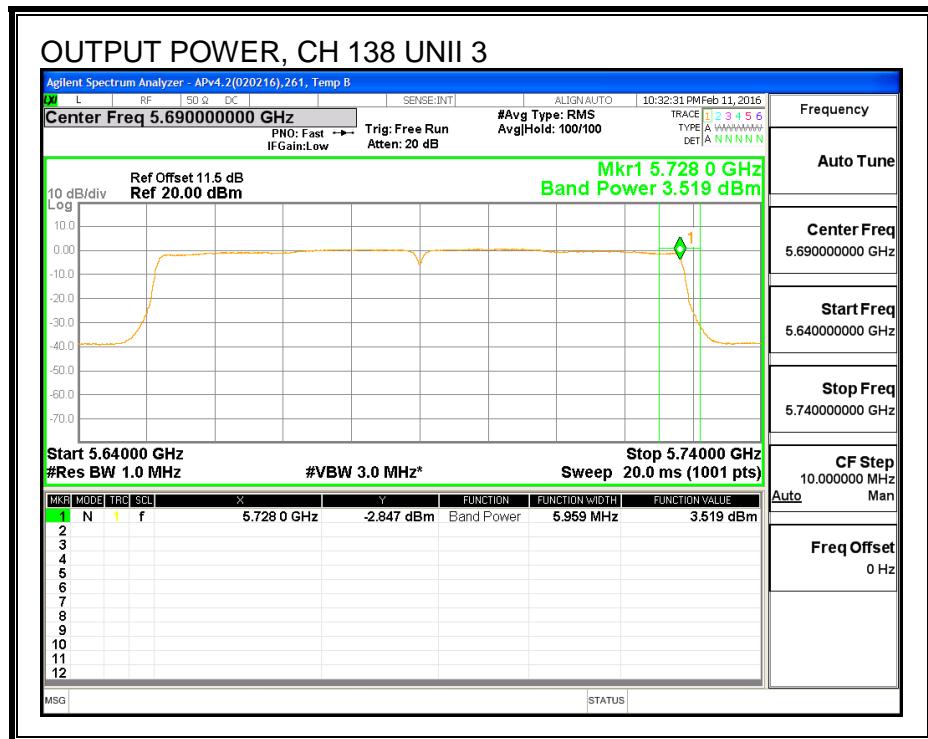
**PSD Results**

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	-3.87	-3.94	-0.68	28.20	-28.88

**CHAIN 0**



**CHAIN 1**



### 8.53.6. 6 dB BANDWIDTH

#### LIMITS

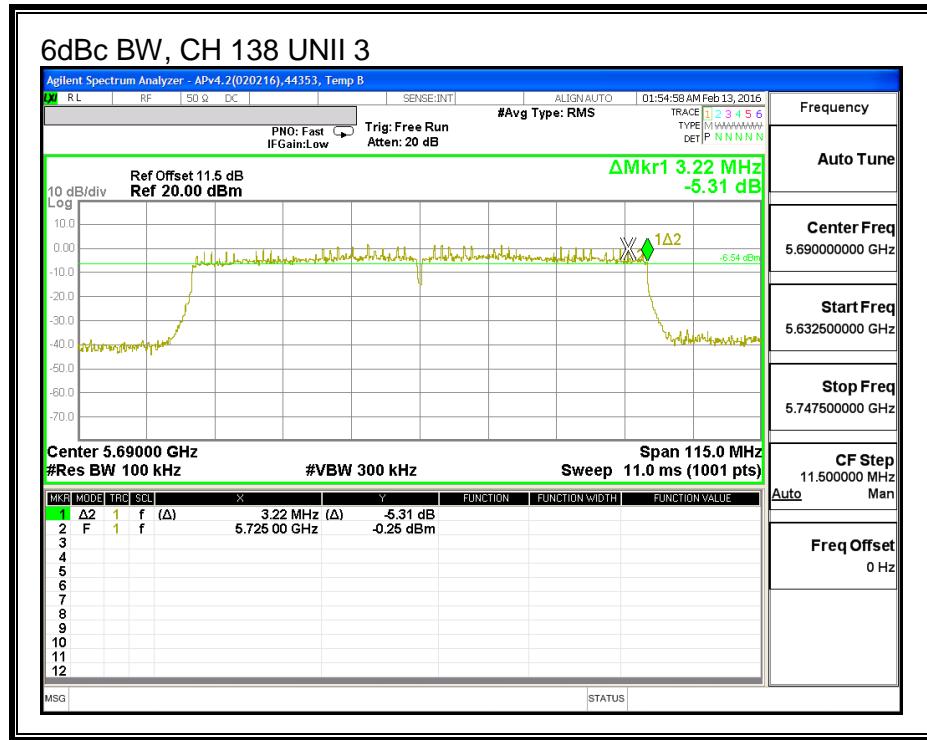
FCC §15.407 (e)

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

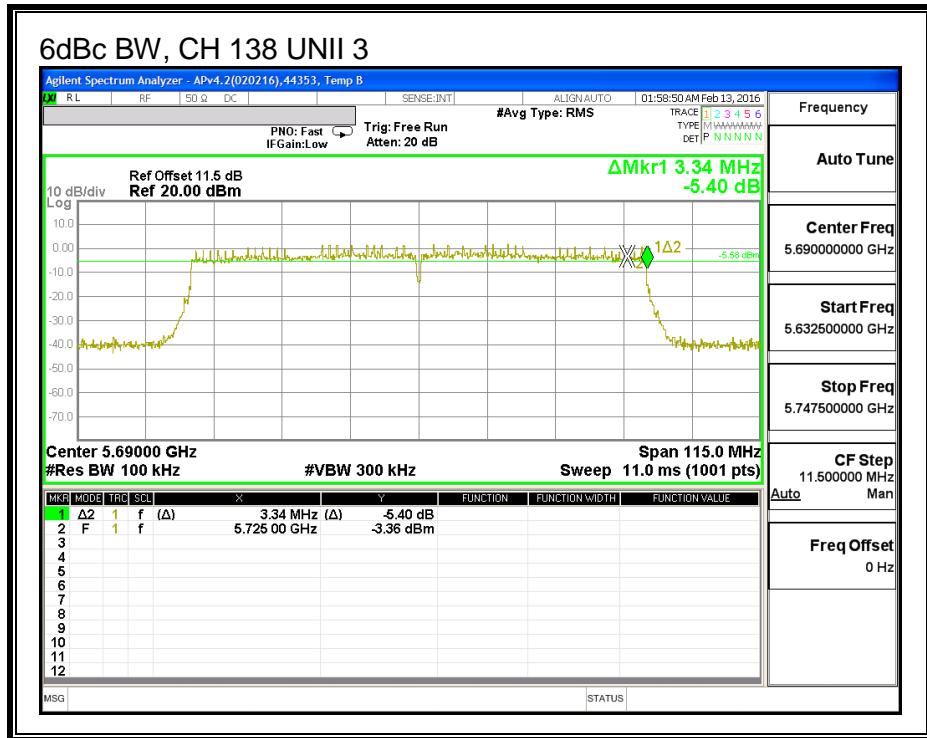
#### RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)
High	5690	3.22	3.34

## CHAIN 0



## CHAIN 1



## 8.54. 802.11ac VHT80 2Tx STBC MODE IN THE 5.6 GHz BAND

### 8.54.1. 26 dB BANDWIDTH

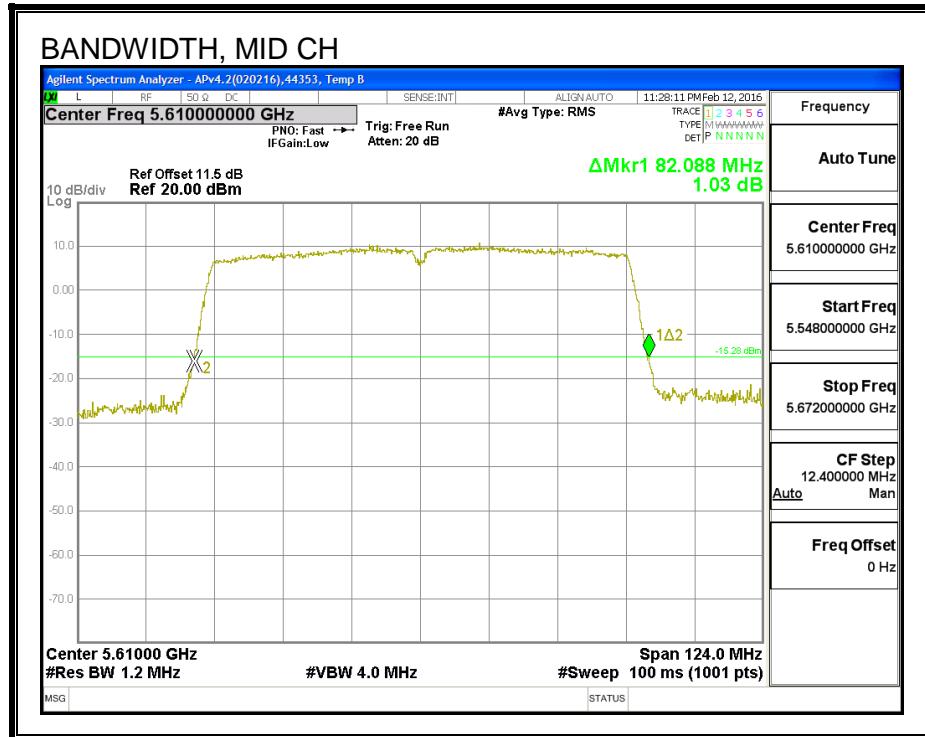
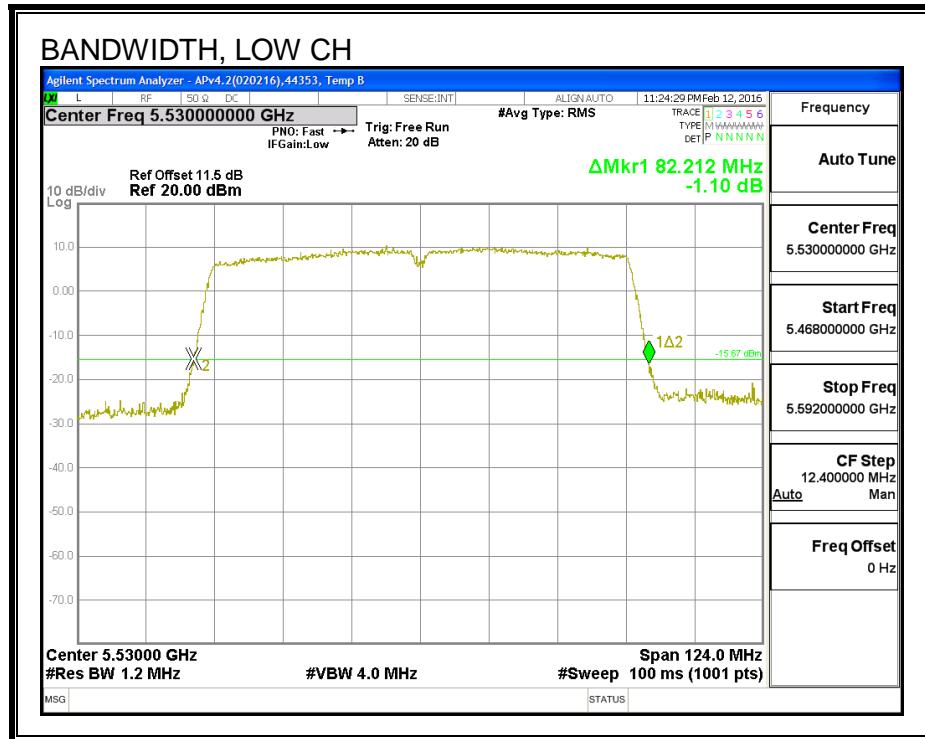
#### LIMITS

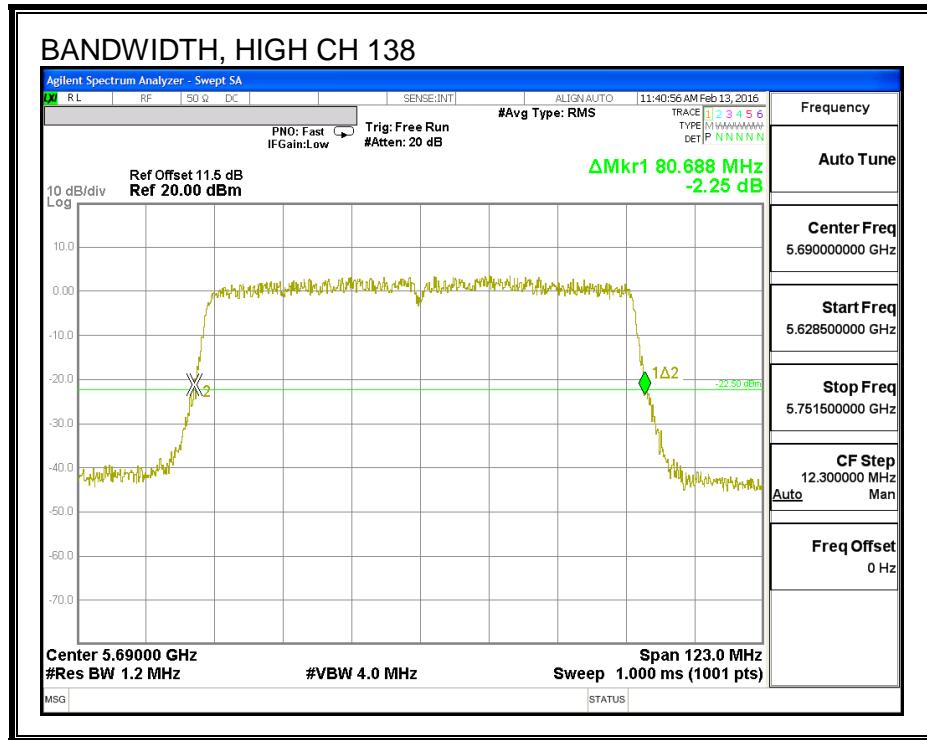
None; for reporting purposes only.

#### RESULTS

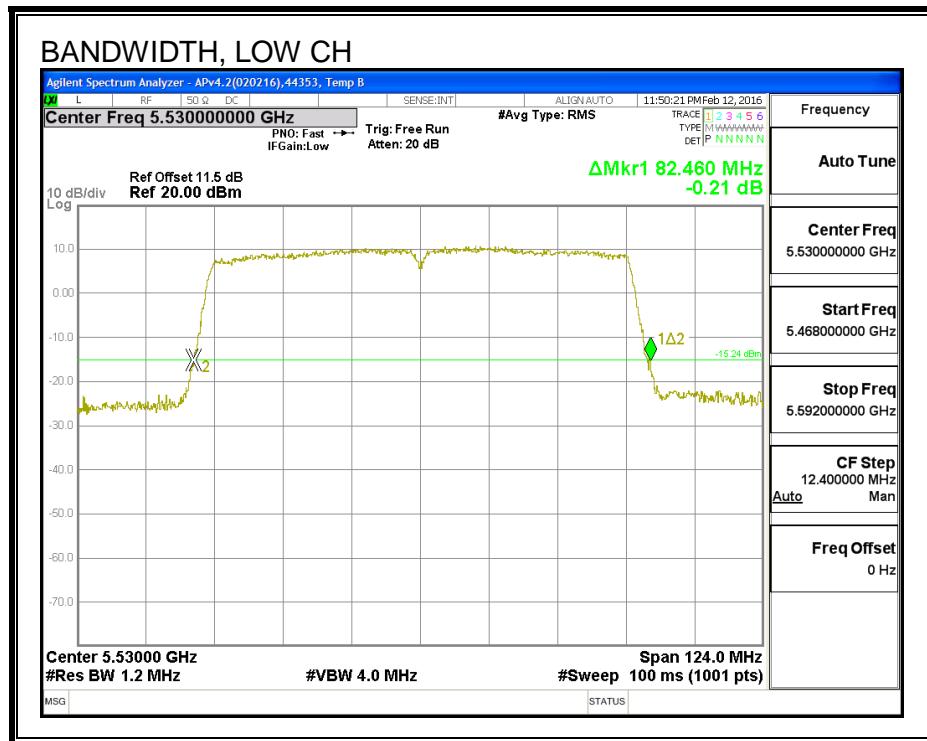
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5530	82.21	82.46
Mid	5610	82.09	81.92
High	5690	80.69	81.55

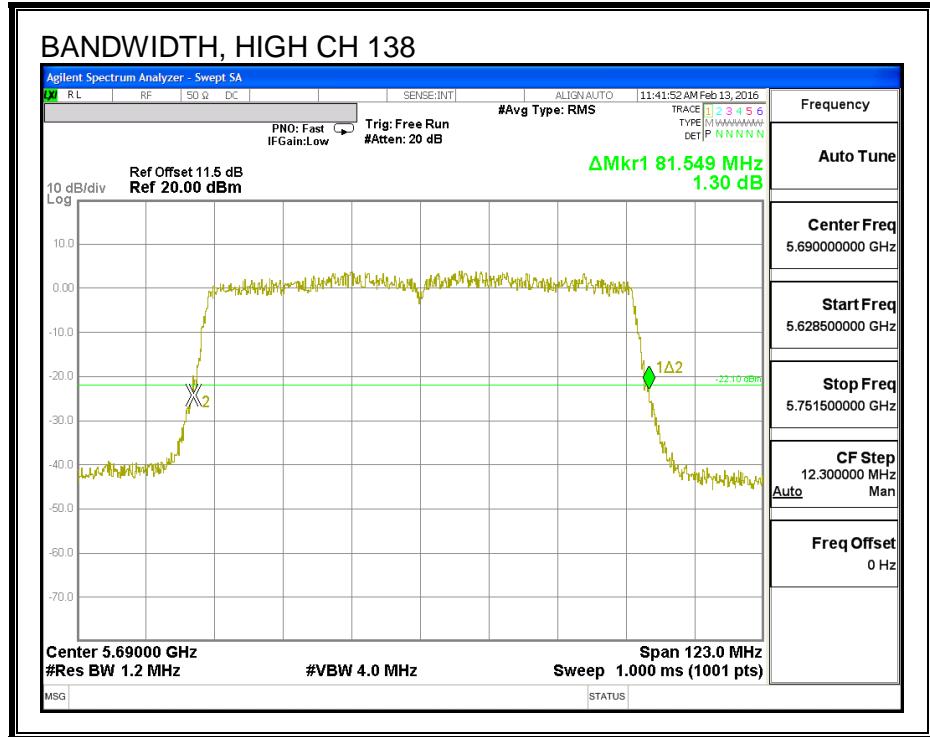
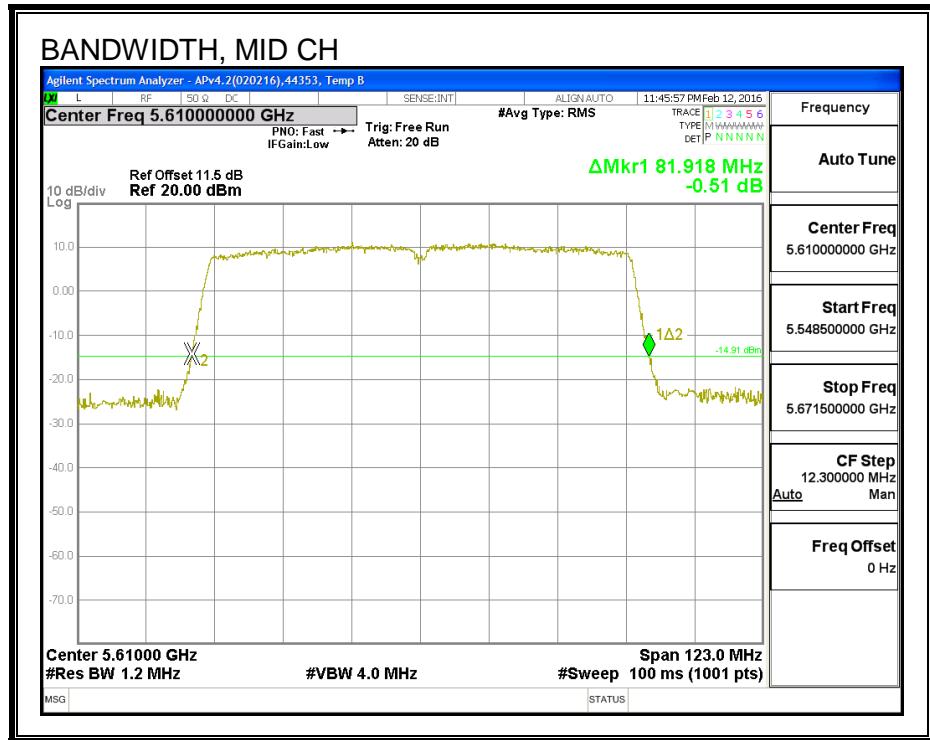
**26 dB BANDWIDTH, CHAIN 0**





**26 dB BANDWIDTH, CHAIN 1**





### 8.54.2. 99% BANDWIDTH

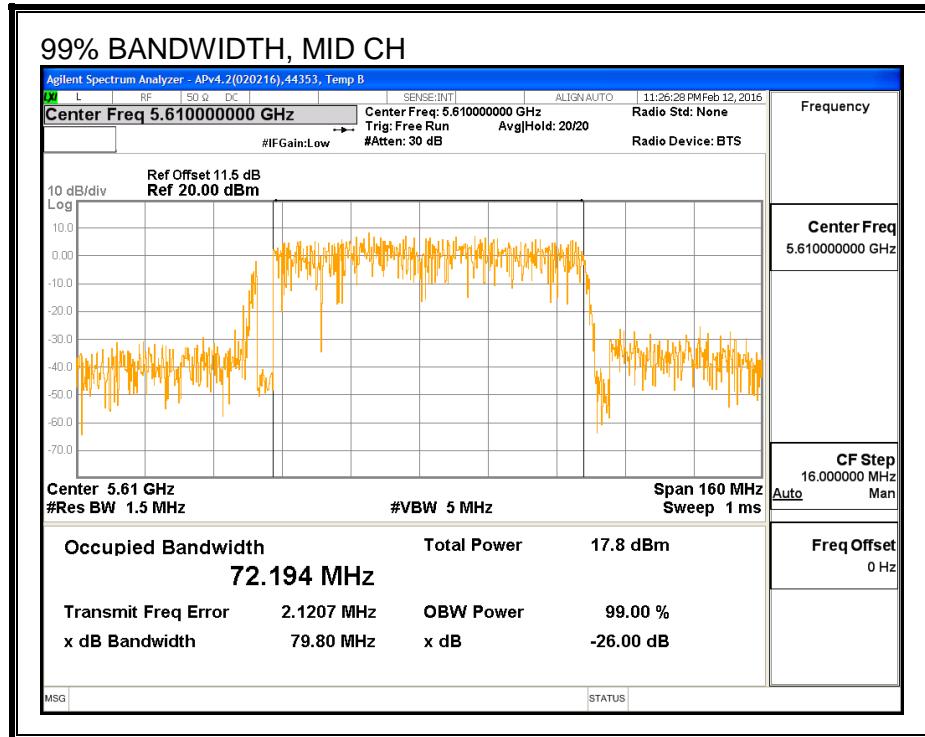
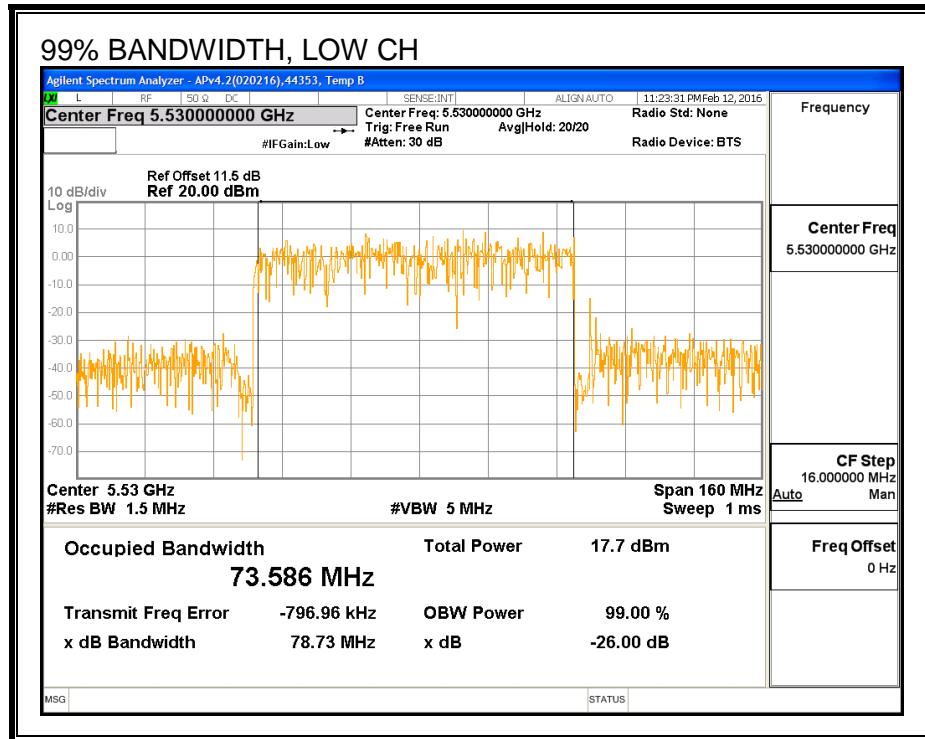
#### LIMITS

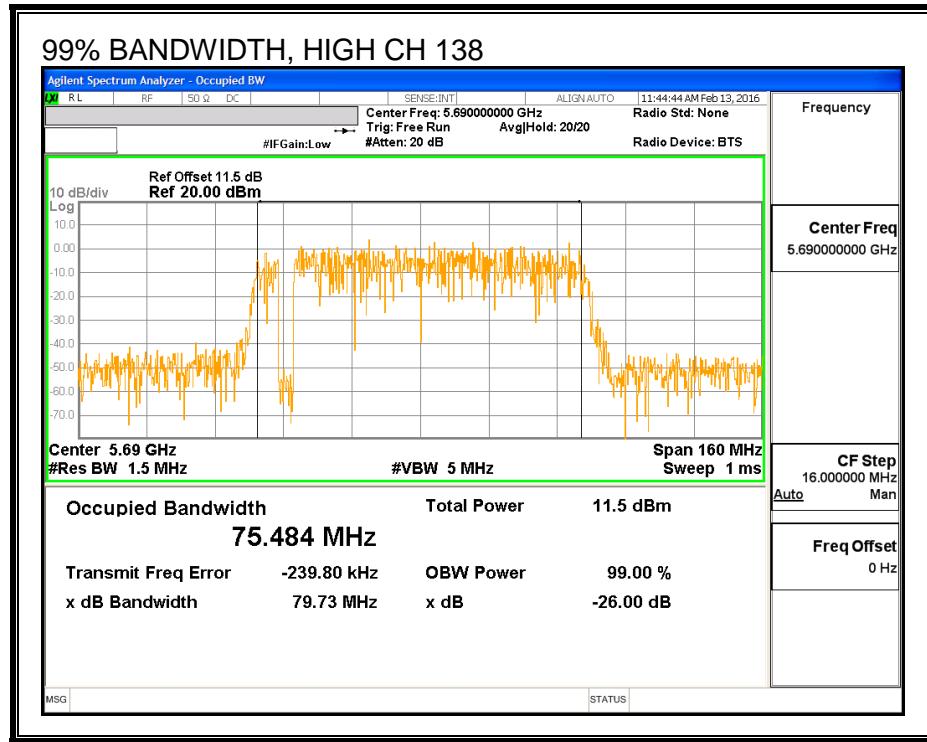
None; for reporting purposes only.

#### RESULTS

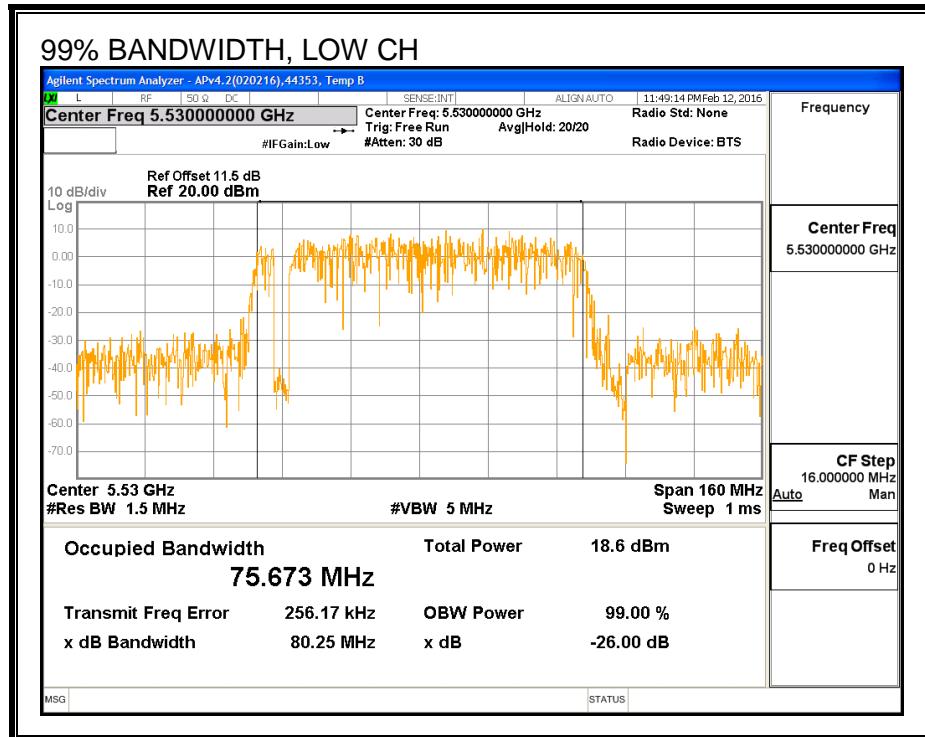
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5530	73.586	75.673
Mid	5610	72.194	75.730
High	5690	75.484	76.277

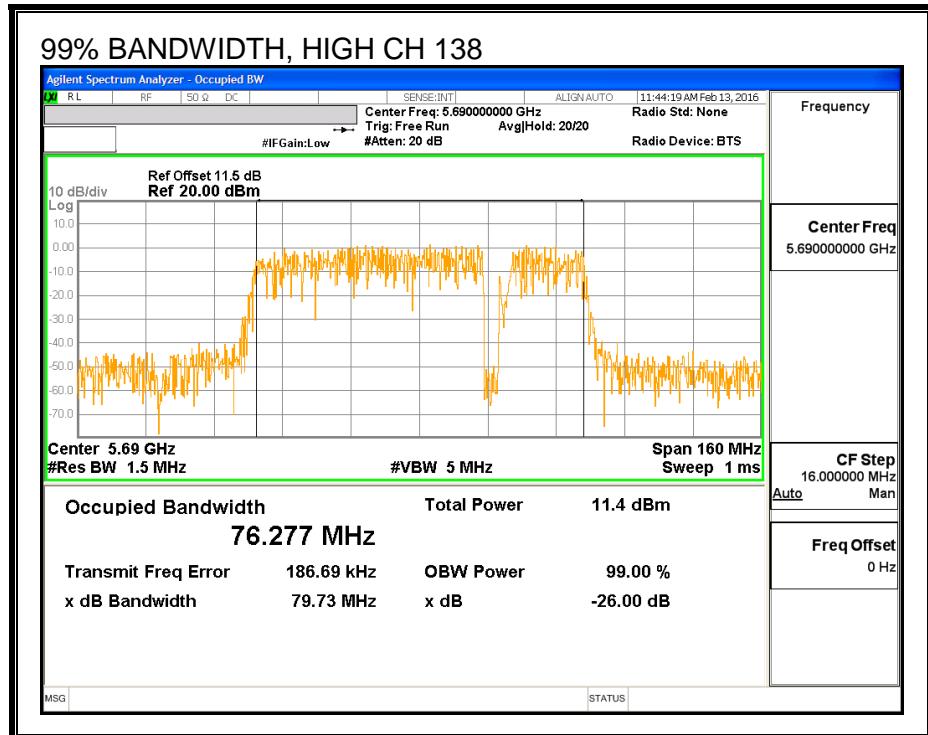
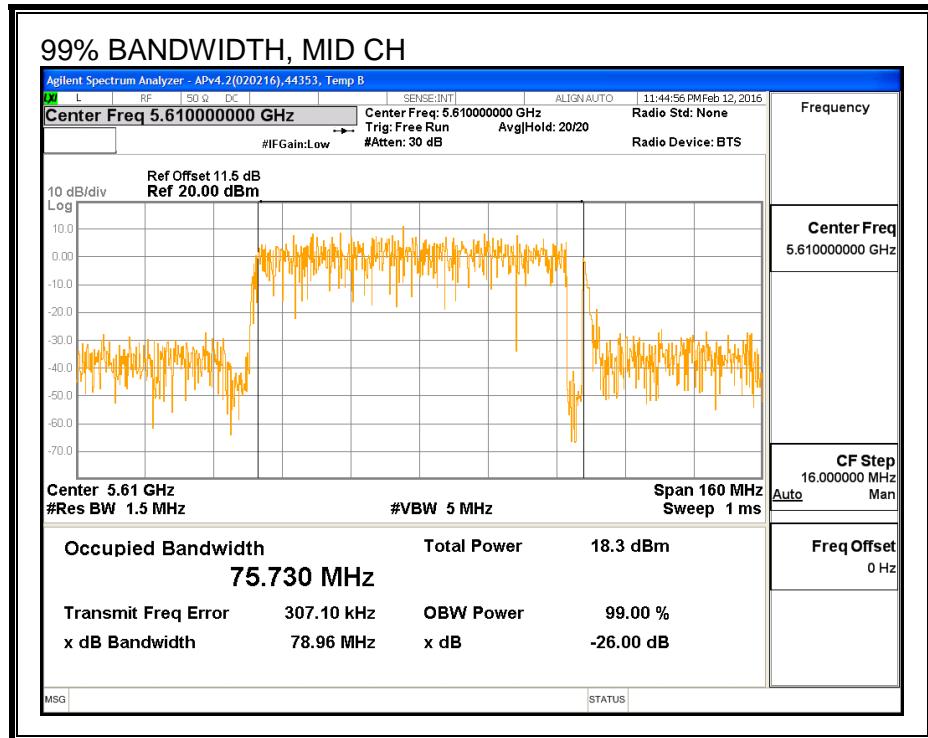
**99% BANDWIDTH, CHAIN 0**





### **99% BANDWIDTH, CHAIN 1**





### 8.54.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5530	9.92	9.98	12.96
Mid	5610	17.92	17.85	20.90
High	5690	17.91	17.94	20.94

#### 8.54.4. 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)
5.00	4.57	4.79

## RESULTS

### Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.46	75.673	4.79	4.79	24.00	11.00
High	5610	82.09	75.730	4.79	4.79	24.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd PSD
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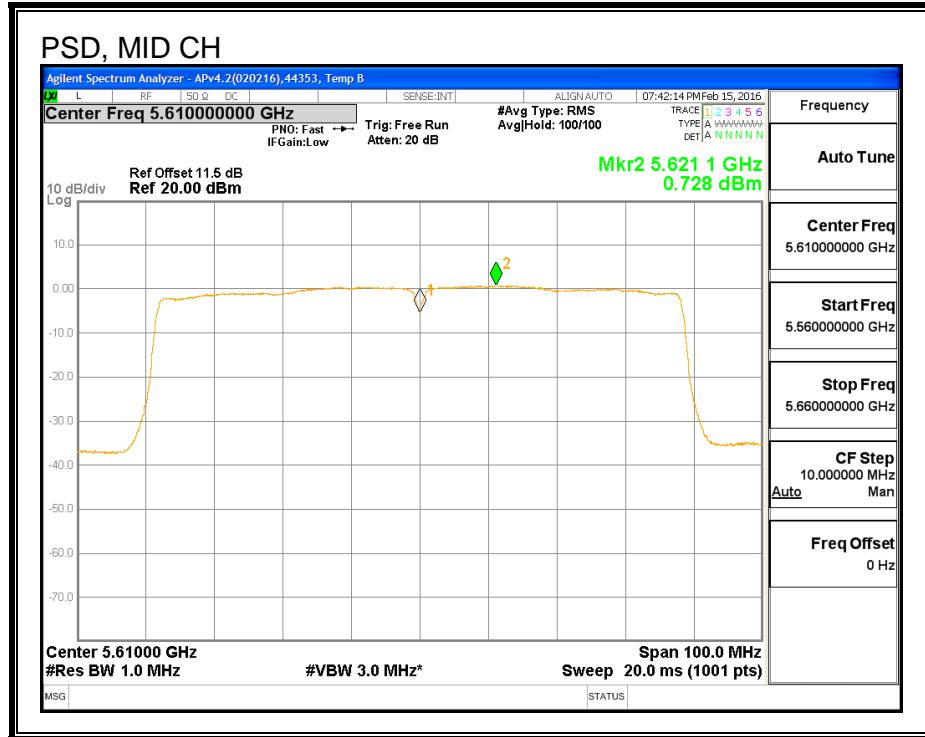
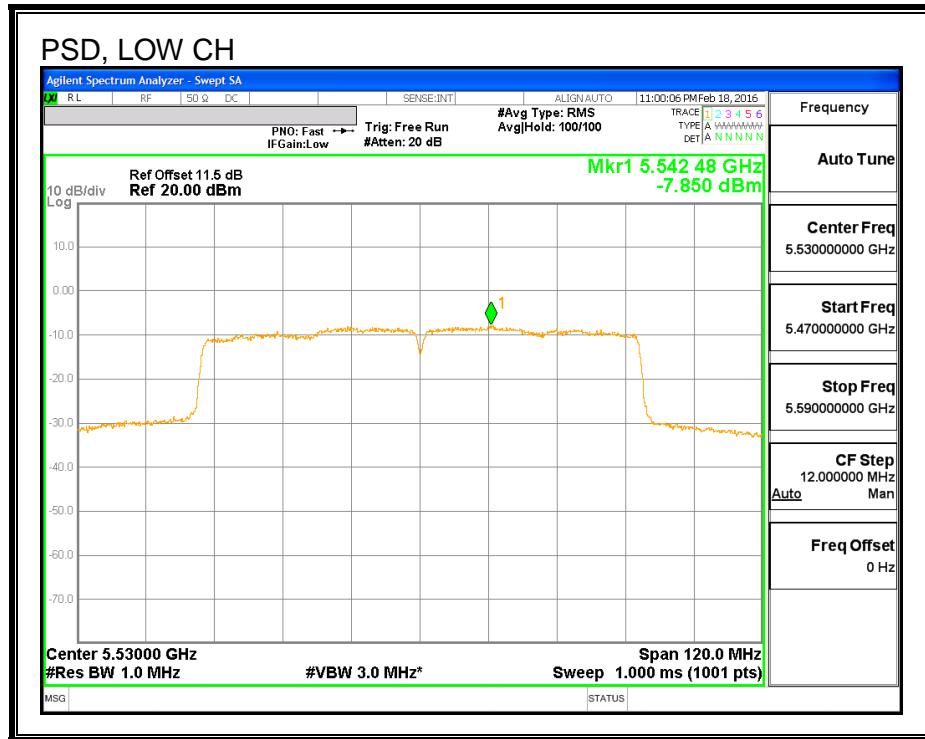
### Output Power Results

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	9.92	9.98	12.96	24.00	-11.04
High	5610	17.92	17.85	20.90	24.00	-3.10

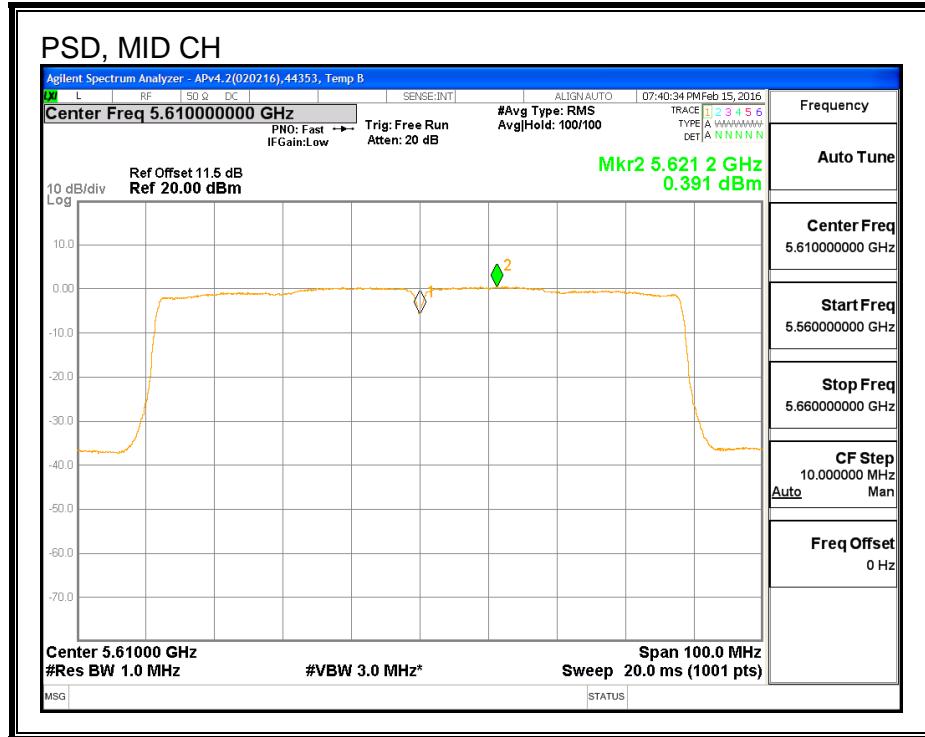
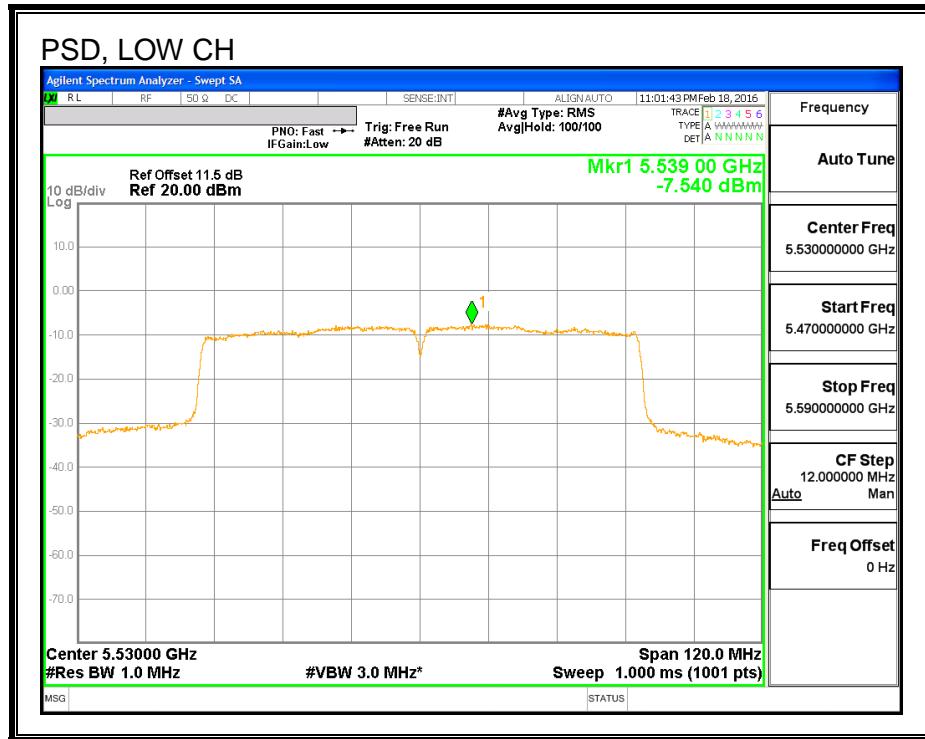
### PSD Results

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	-7.85	-7.54	-4.46	11.00	-15.46
High	5610	0.73	0.39	3.79	11.00	-7.21

**PSD, CHAIN 0**



**PSD, CHAIN 1**



### 8.54.5. STRADDLE CHANNEL 138 RESULTS (FCC)

#### UNII-2C BAND

##### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	75.78	4.79	4.79	24.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PSD
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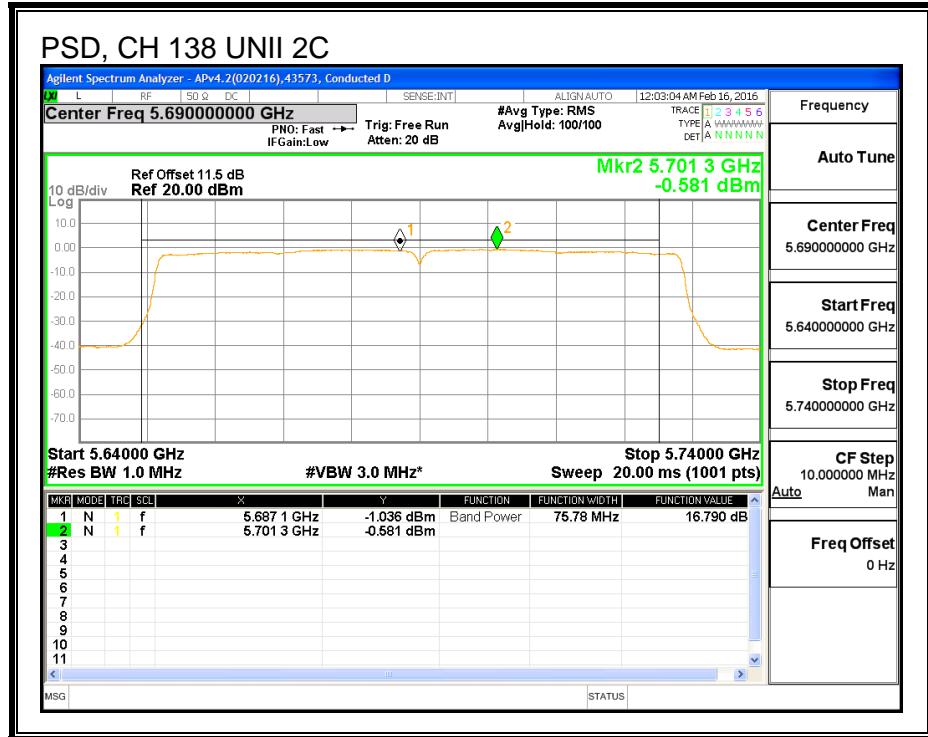
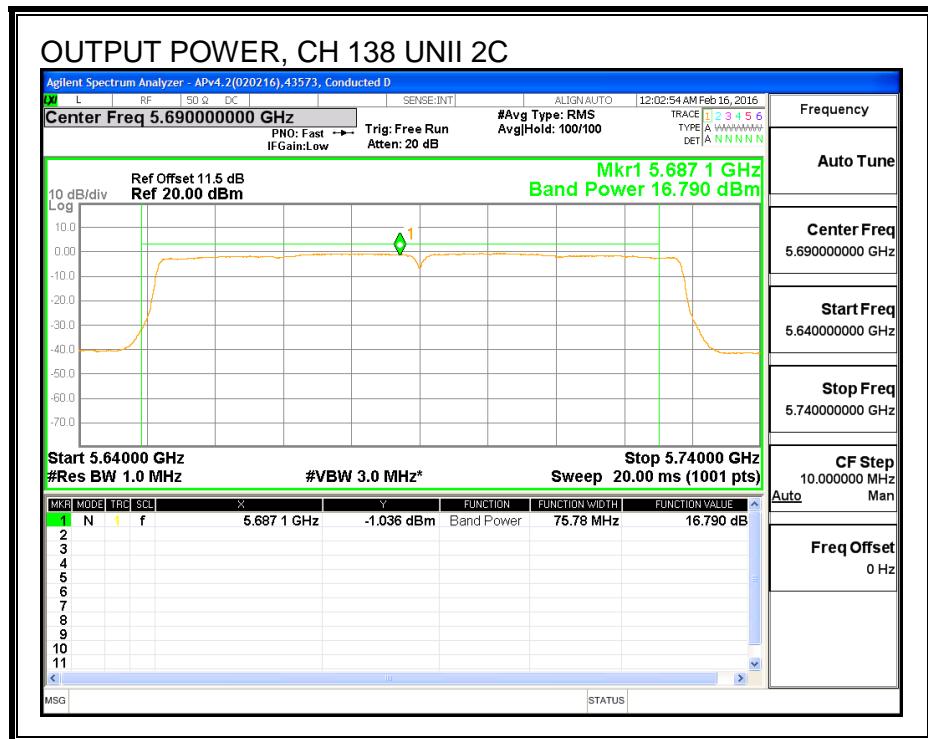
##### Output Power Results

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	16.79	17.04	20.15	24.00	-3.85

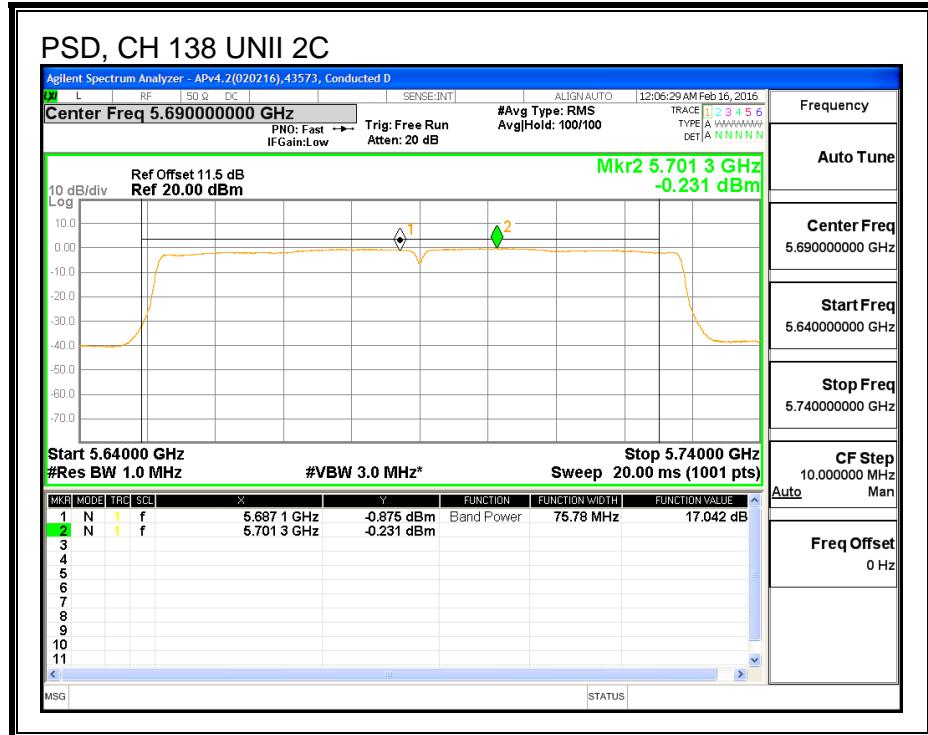
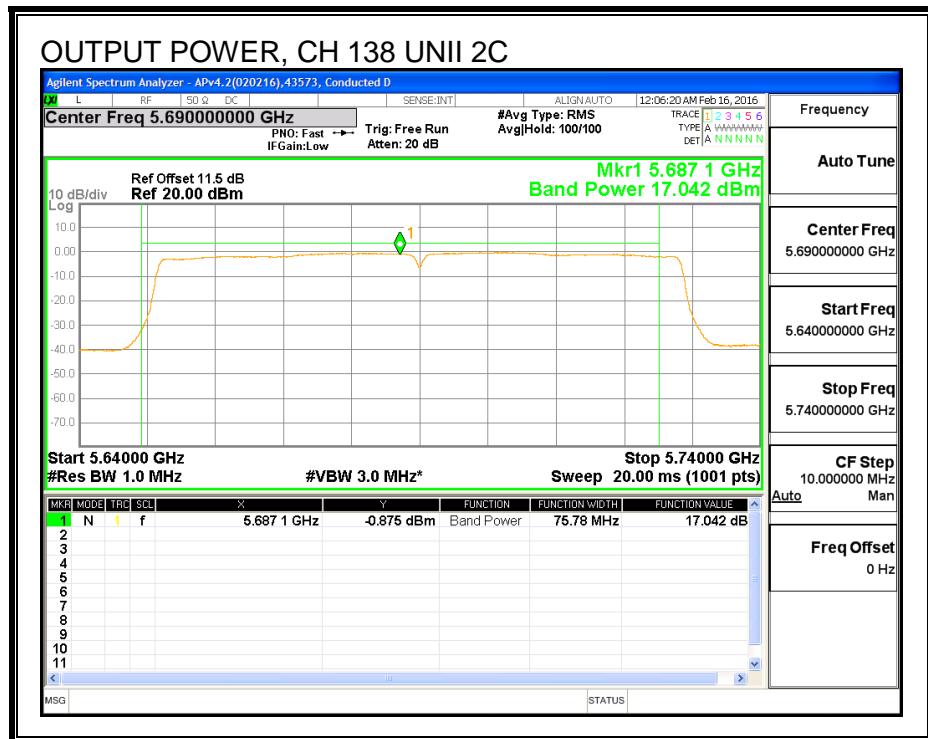
##### PSD Results

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	-0.58	-0.23	2.83	11.00	-8.17

**CHAIN 0**



**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	5.34	4.79	4.79	30.00	30.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PSD
--------------------	------	--

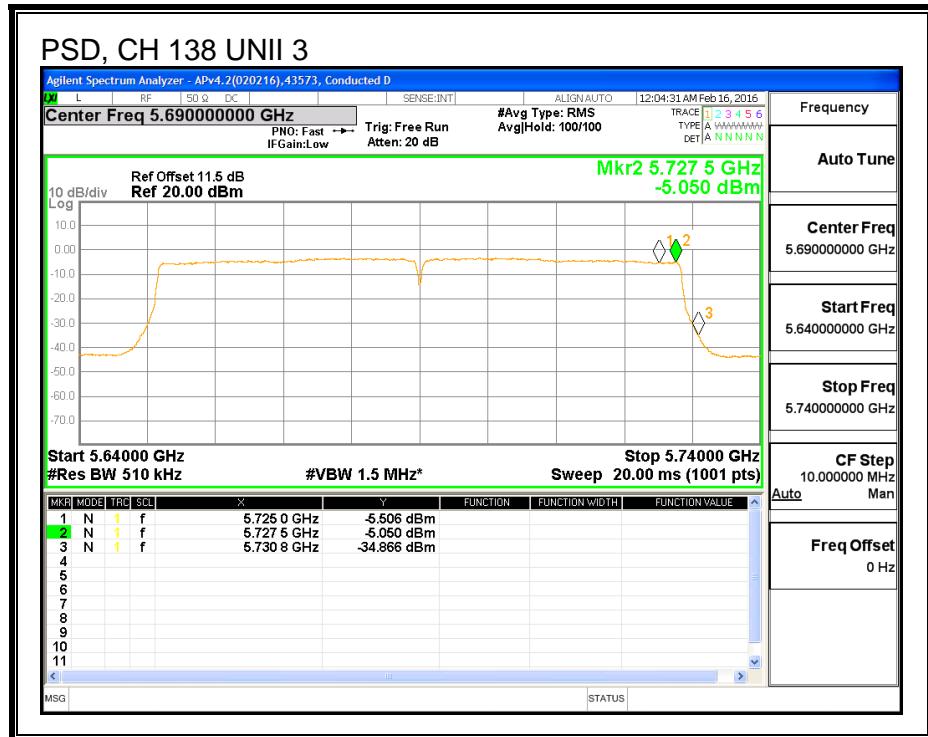
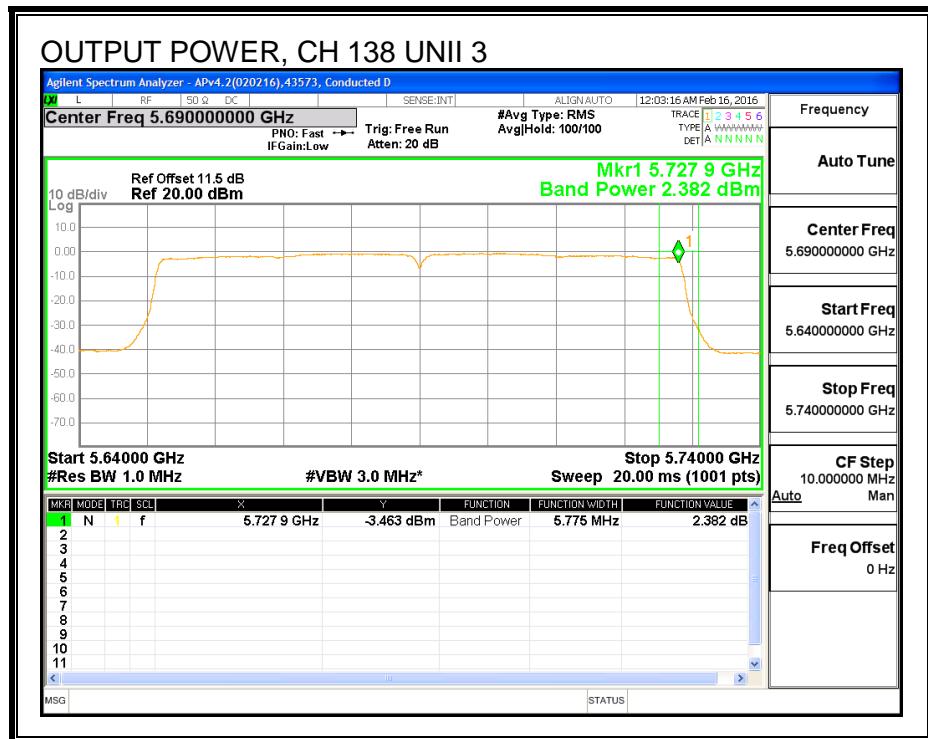
**Output Power Results**

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	2.38	2.87	5.86	30.00	-24.14

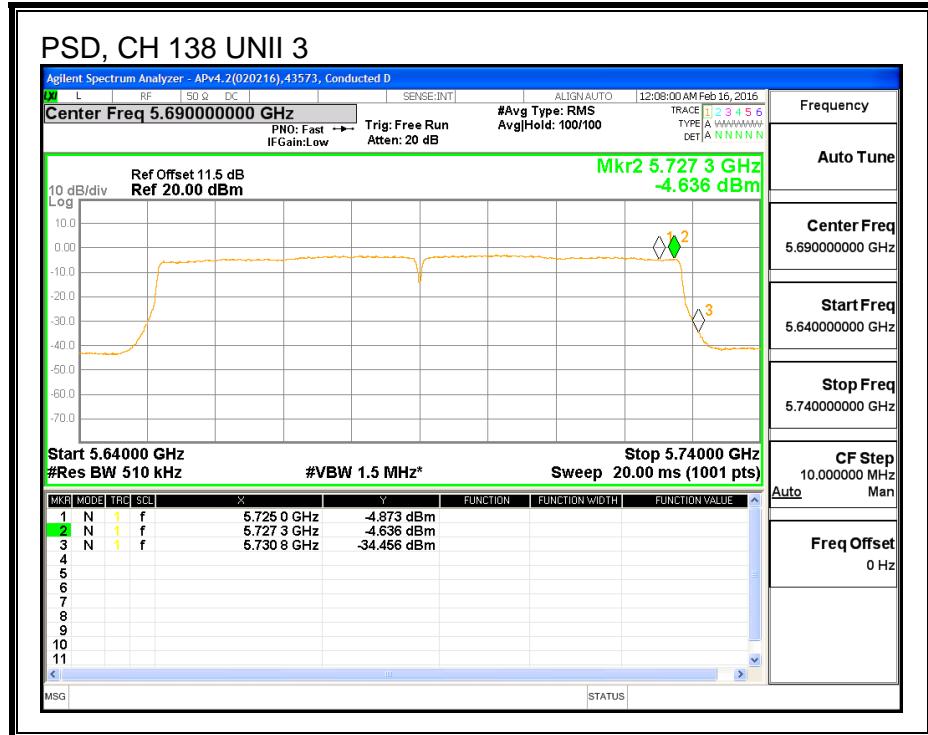
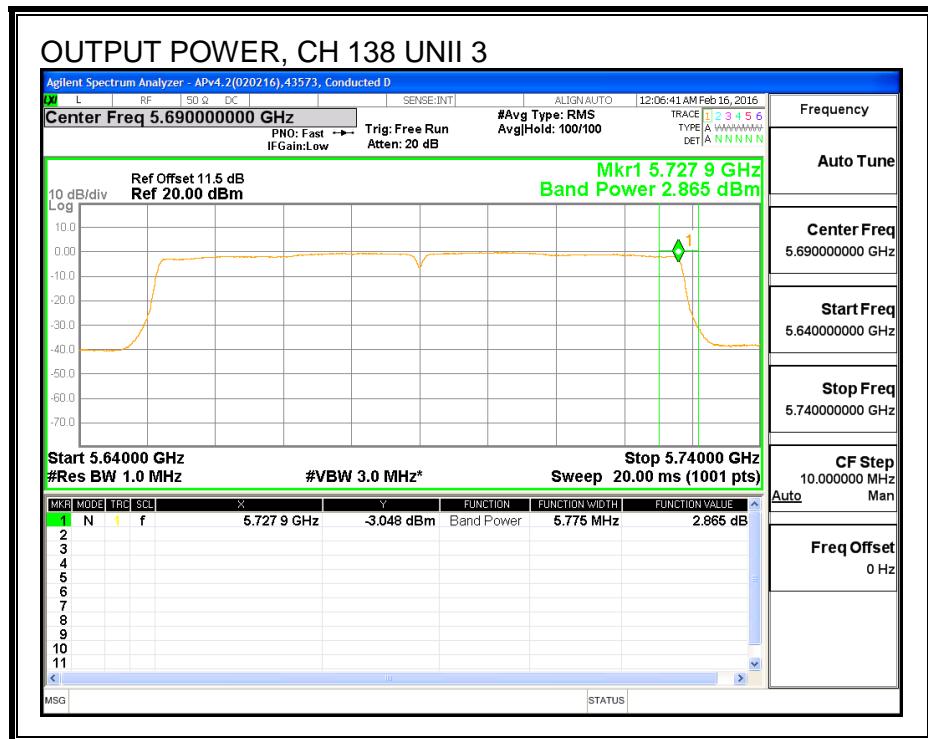
**PSD Results**

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	-5.05	-4.64	-1.61	30.00	-31.61

**CHAIN 0**



**CHAIN 1**



### 8.54.6. 6 dB BANDWIDTH

#### LIMITS

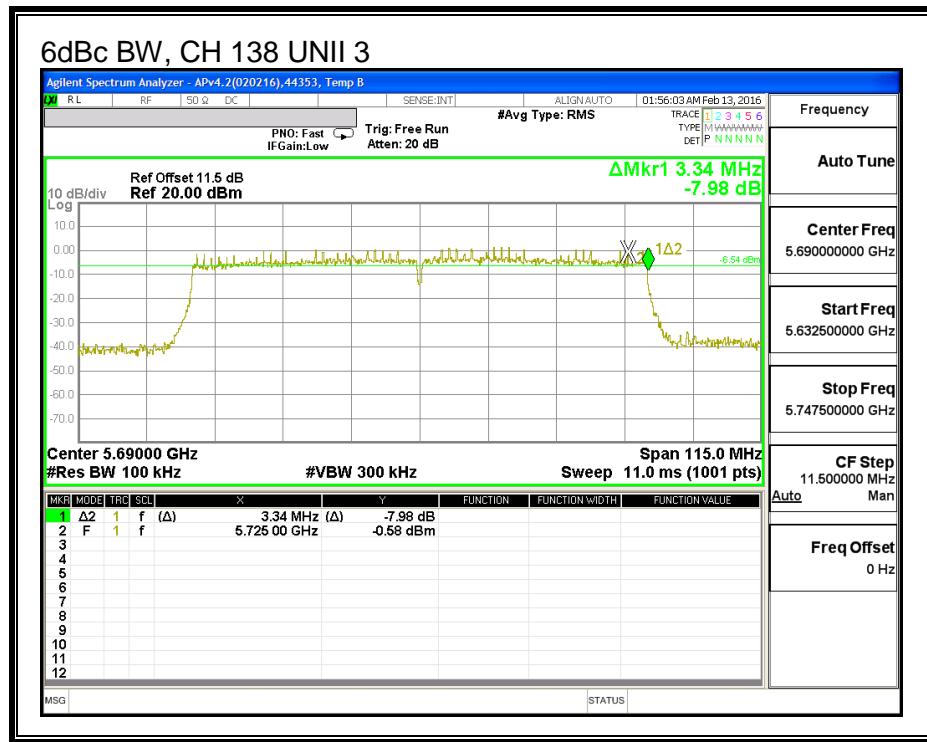
FCC §15.407 (e)

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

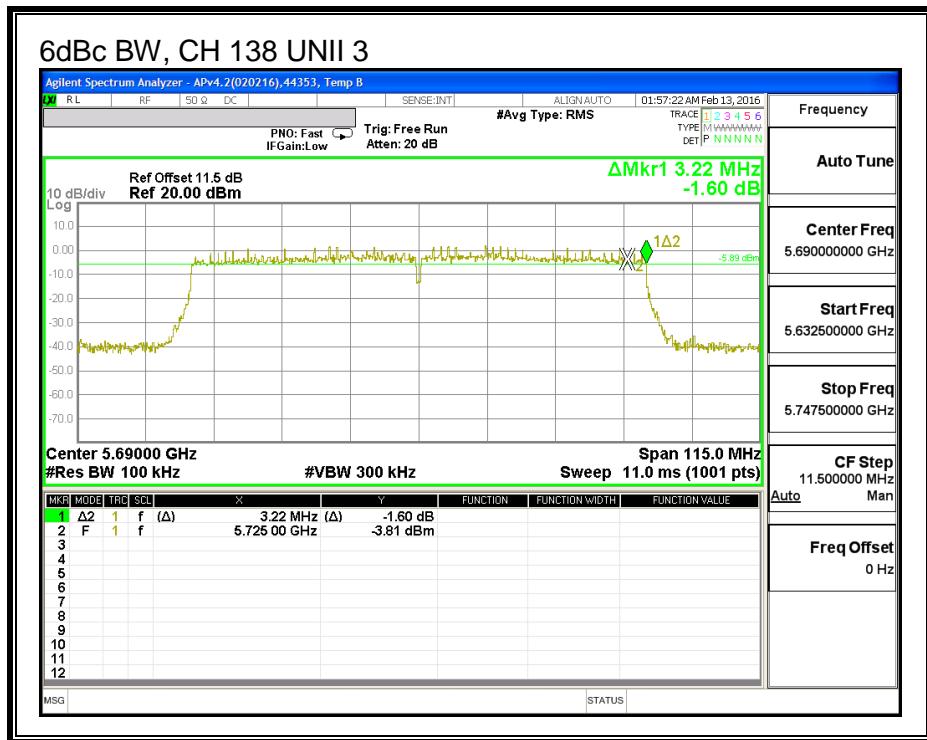
#### RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)
High	5690	3.34	3.22

**CHAIN 0**



**CHAIN 1**



## 8.55. 802.11ac VHT80 2Tx BEAM FORMING MODE IN THE 5.6 GHz BAND

### 8.55.1. 26 dB BANDWIDTH

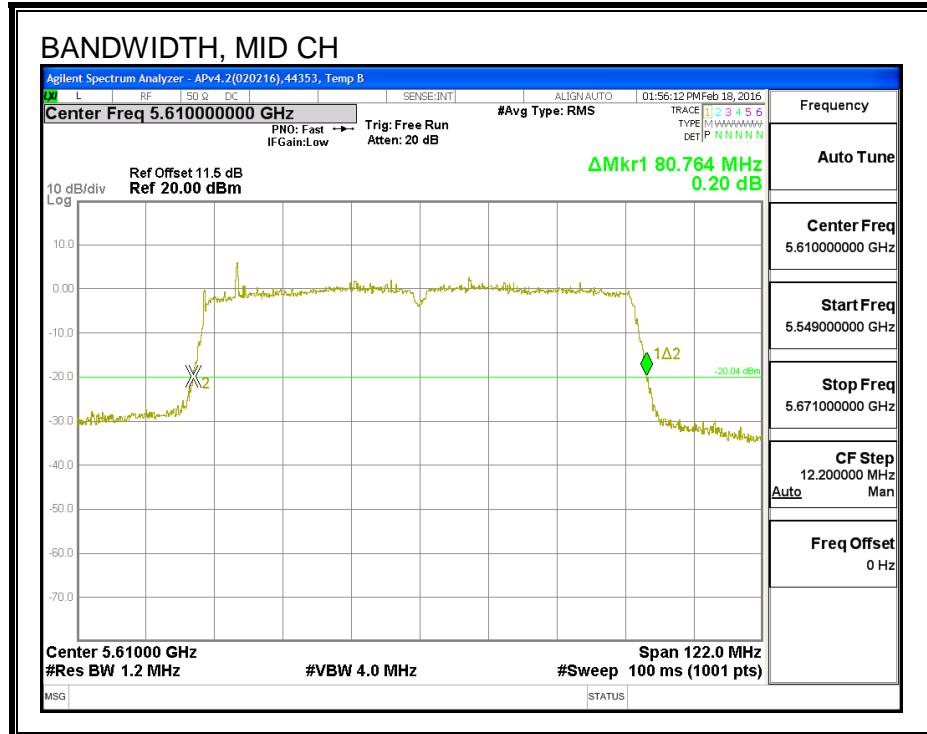
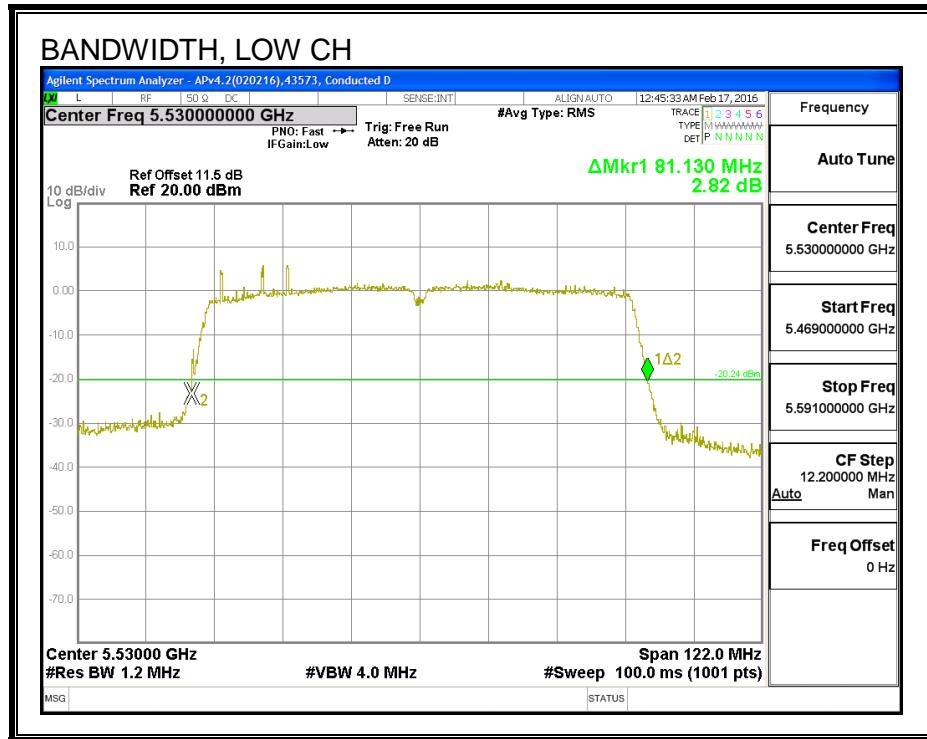
#### LIMITS

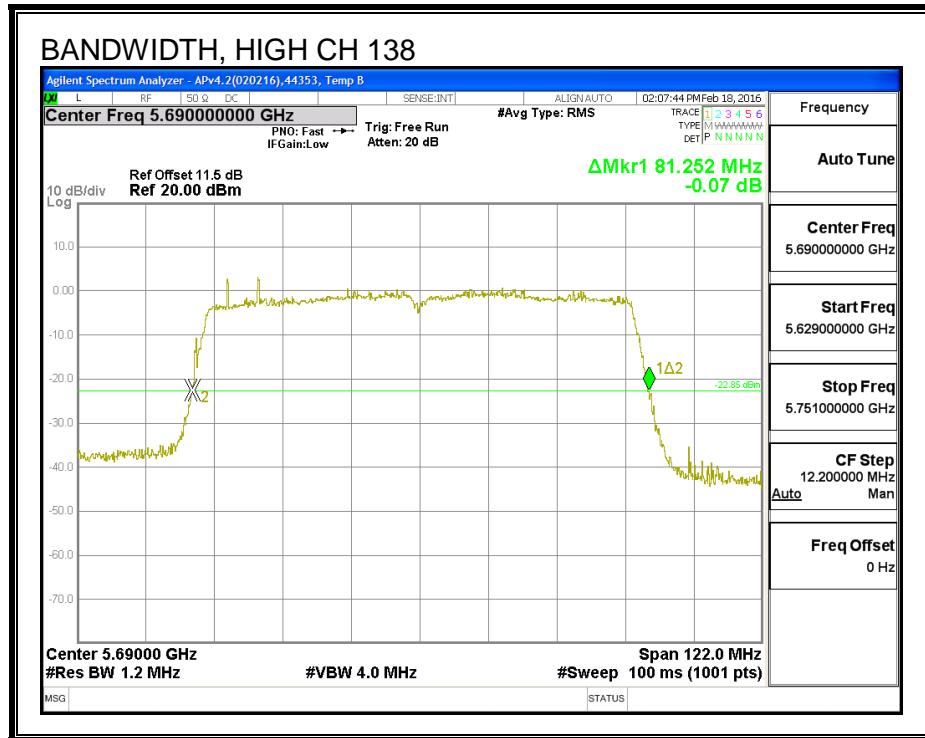
None; for reporting purposes only.

#### RESULTS

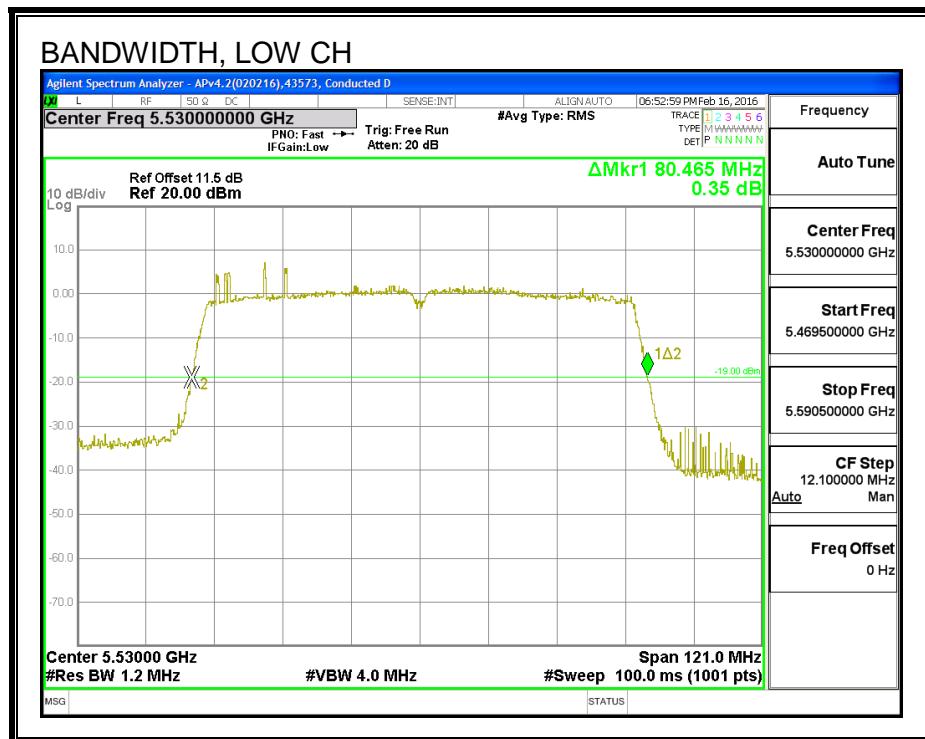
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5530	81.13	80.47
Mid	5610	80.76	81.13
High	5690	81.25	80.76

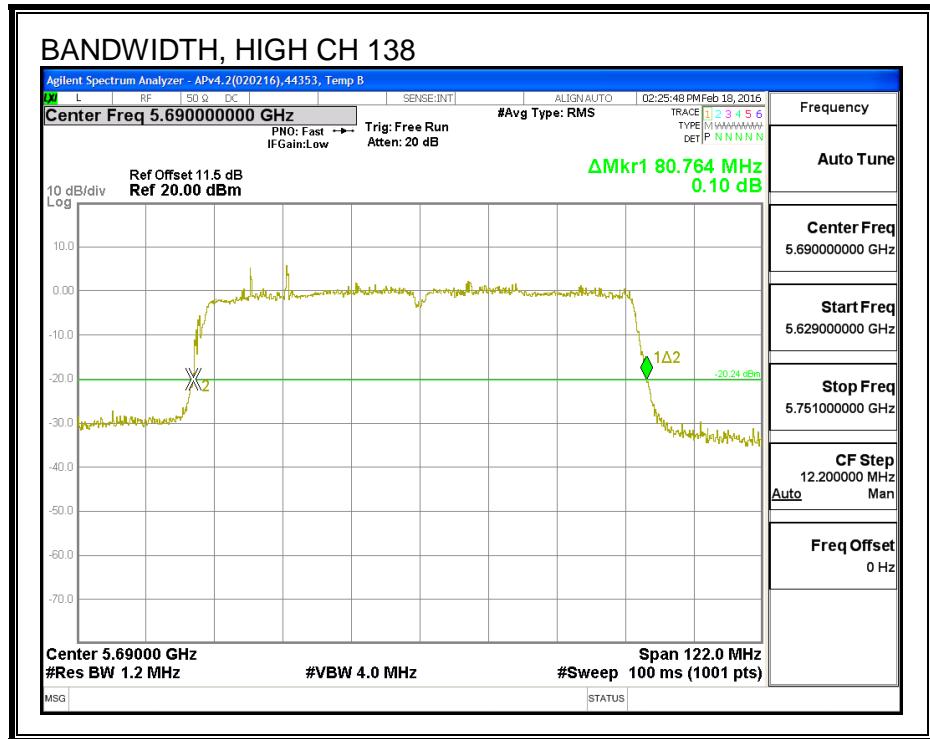
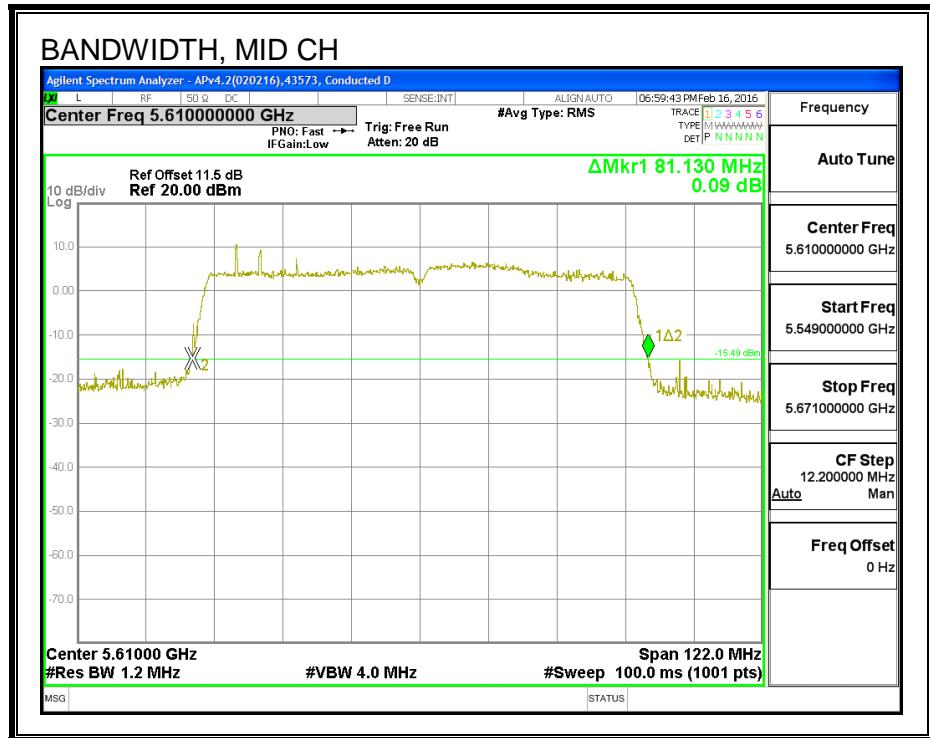
**26 dB BANDWIDTH, CHAIN 0**





## 26 dB BANDWIDTH, CHAIN 1





### 8.55.2. 99% BANDWIDTH

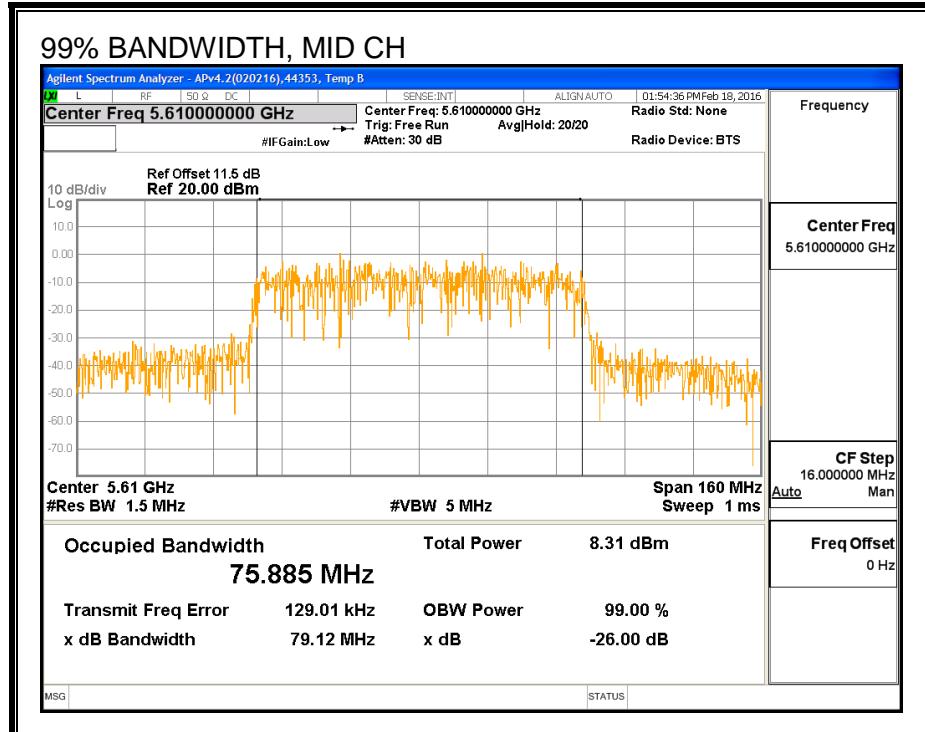
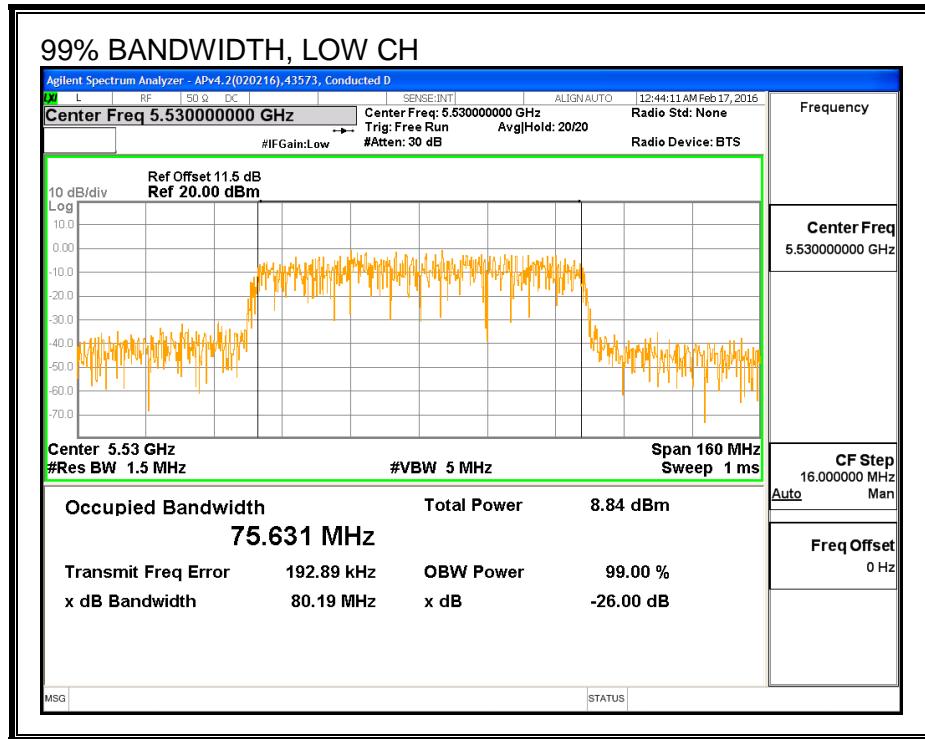
#### LIMITS

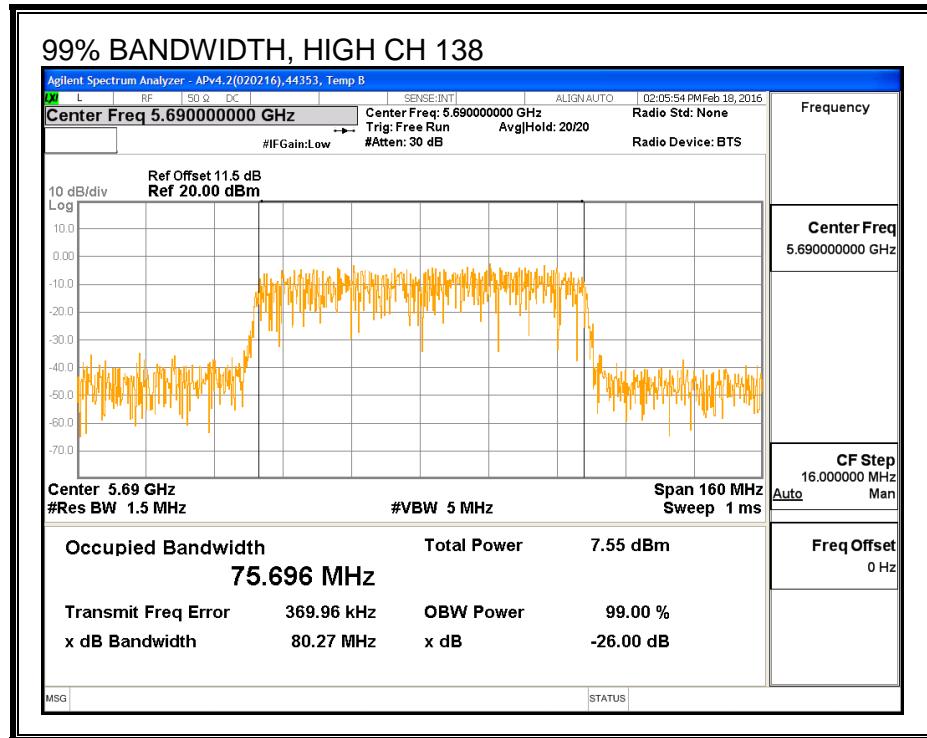
None; for reporting purposes only.

#### RESULTS

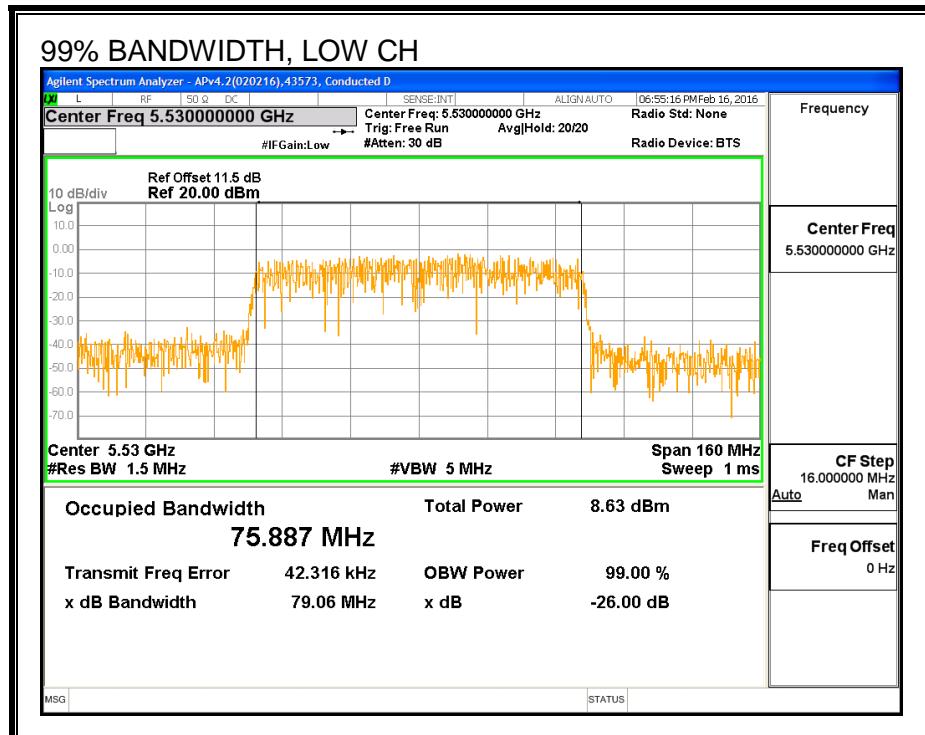
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5530	75.631	75.887
Mid	5610	75.885	76.259
High	5690	75.696	76.159

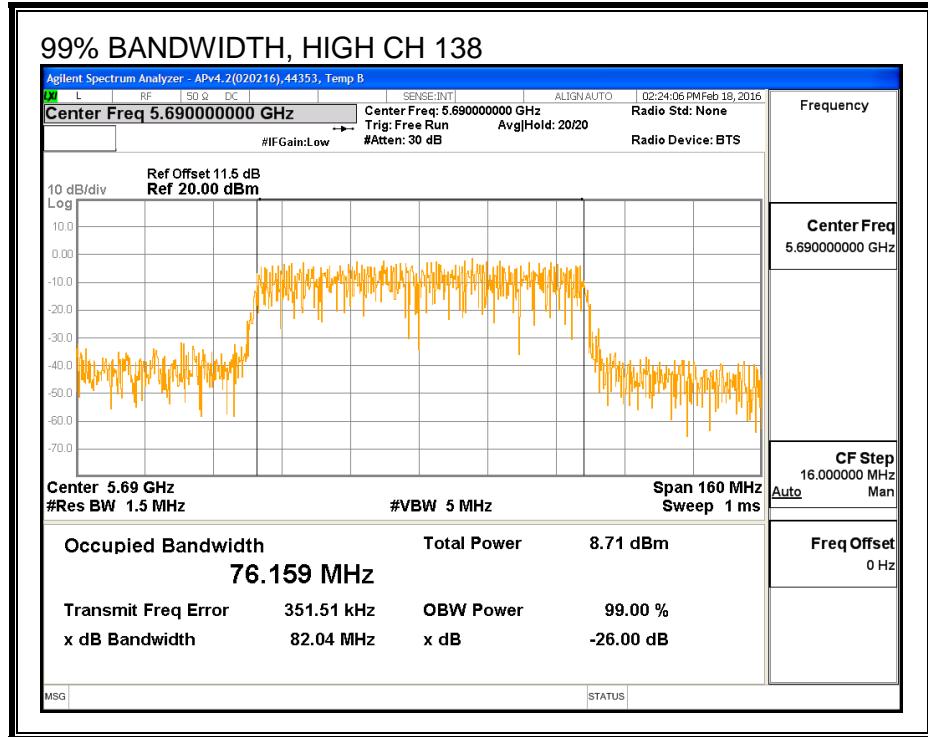
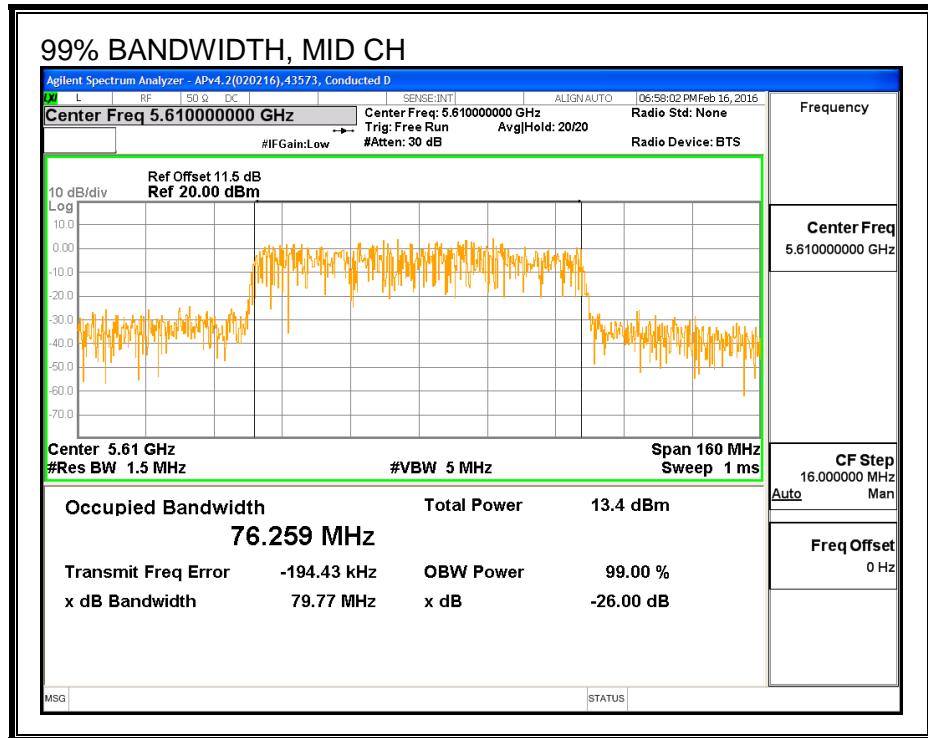
**99% BANDWIDTH, CHAIN 0**





**99% BANDWIDTH, CHAIN 1**





### 8.55.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5530	8.45	8.48	11.48
Mid	5610	16.91	16.88	19.91
High	5690	16.88	16.50	19.70

#### 8.55.4. OUTPUT POWER AND PSD

##### LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26-dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

##### TEST PROCEDURE

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

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

##### DIRECTIONAL ANTENNA GAIN

The TX chains are 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)
5.00	4.57	7.80

## RESULTS

### Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	80.47	75.631	7.80	7.80	24.00	9.20
High	5610	80.76	75.885	7.80	7.80	24.00	9.20

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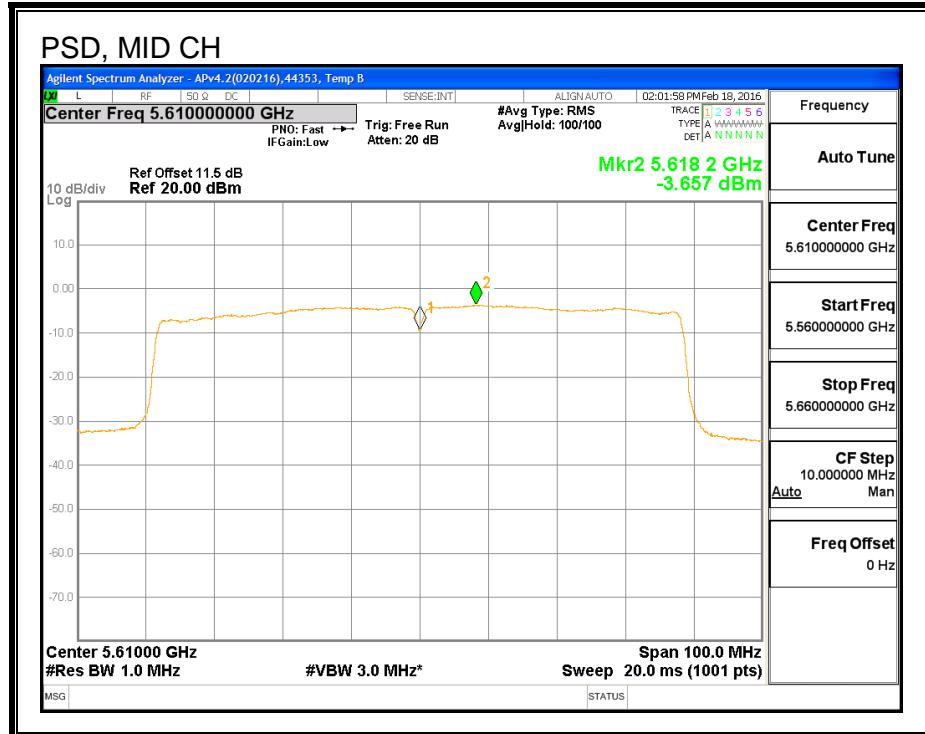
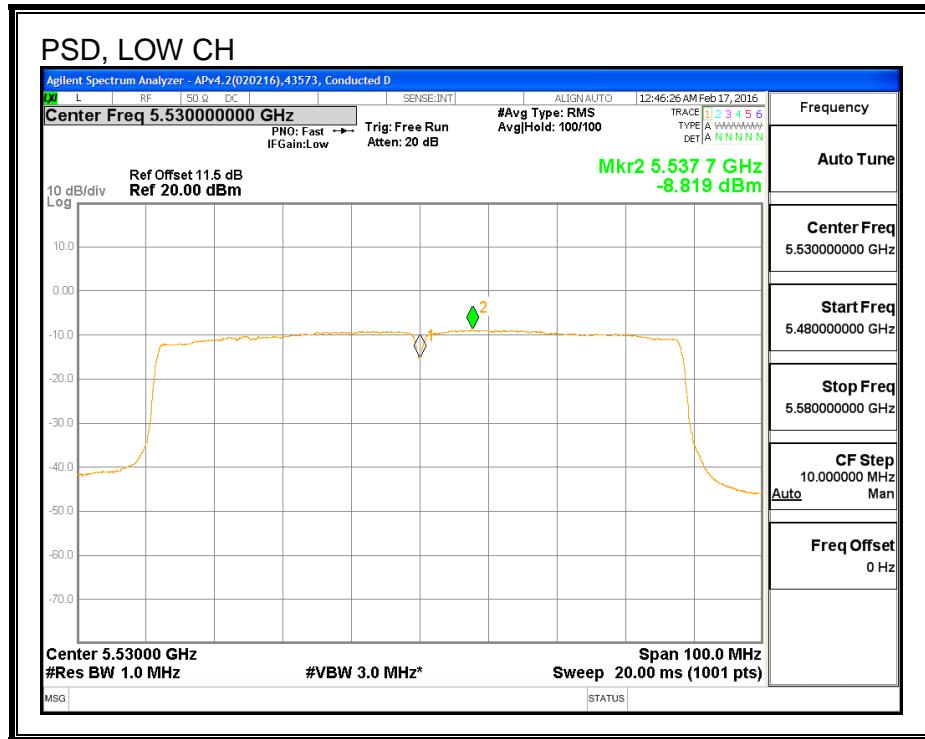
### Output Power Results

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	8.45	8.48	11.48	24.00	-12.52
High	5610	16.91	16.88	19.91	24.00	-4.09

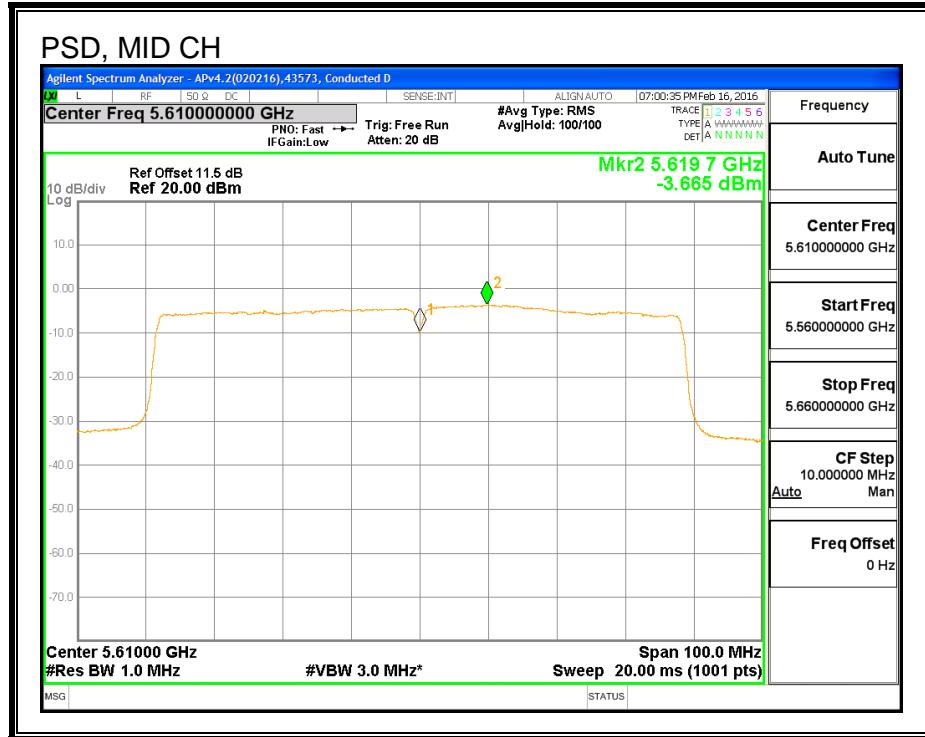
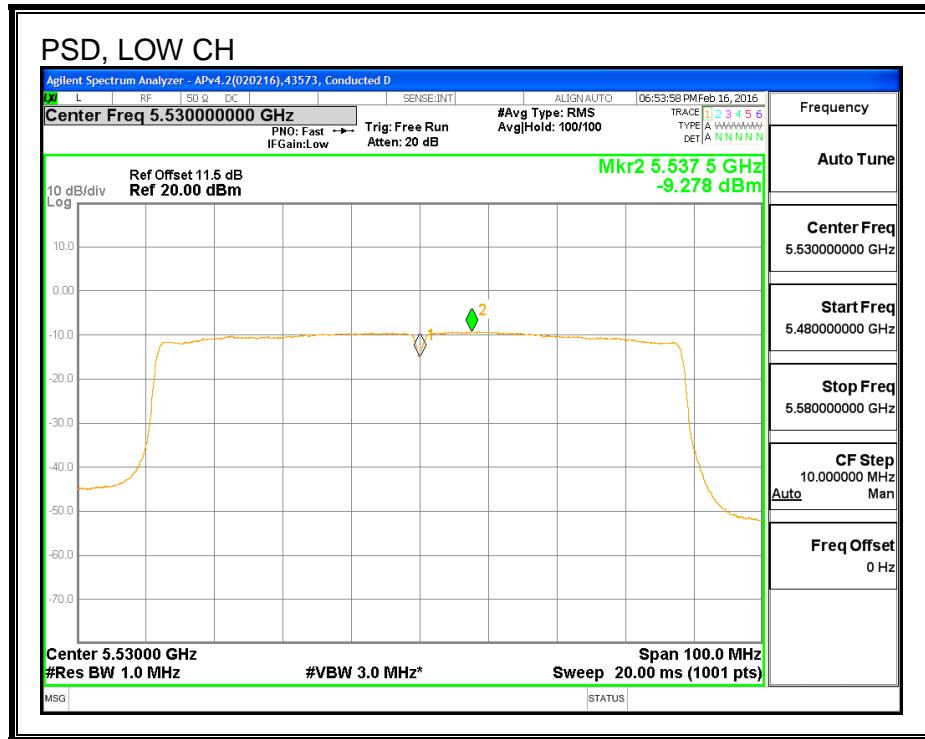
### PSD Results

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	-8.82	-9.28	-5.93	9.20	-15.13
High	5610	-3.66	-3.67	-0.55	9.20	-9.75

**PSD, CHAIN 0**



**PSD, CHAIN 1**



### 8.55.5. TPC POWER

#### LIMITS

FCC: §15.407 (h) (1)

Transmit power control (TPC). U-NII devices operating in the 5.25–5.35 GHz band and the 5.47–5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

#### 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)
5.00	4.57	7.80

**RESULTS**

**TPC Limits**

Channel	Frequency (MHz)	Limit EIRP (dBm)	Directional Gain (dBi)	Limit Cond (dBm)
Mid	5610	24	7.80	16.20

<b>Duty Cycle CF (dB)</b>	0.10	<b>Included in Calculations of Corr'd Power</b>
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**TPC Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Cond Power Limit (dBm)	Margin (dB)
Mid	5610	10.87	10.84	13.97	16.20	-2.23

### 8.55.7. STRADDLE CHANNEL 138 RESULTS (FCC)

#### UNII-2C BAND

##### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	75.38	7.80	7.80	22.20	9.20

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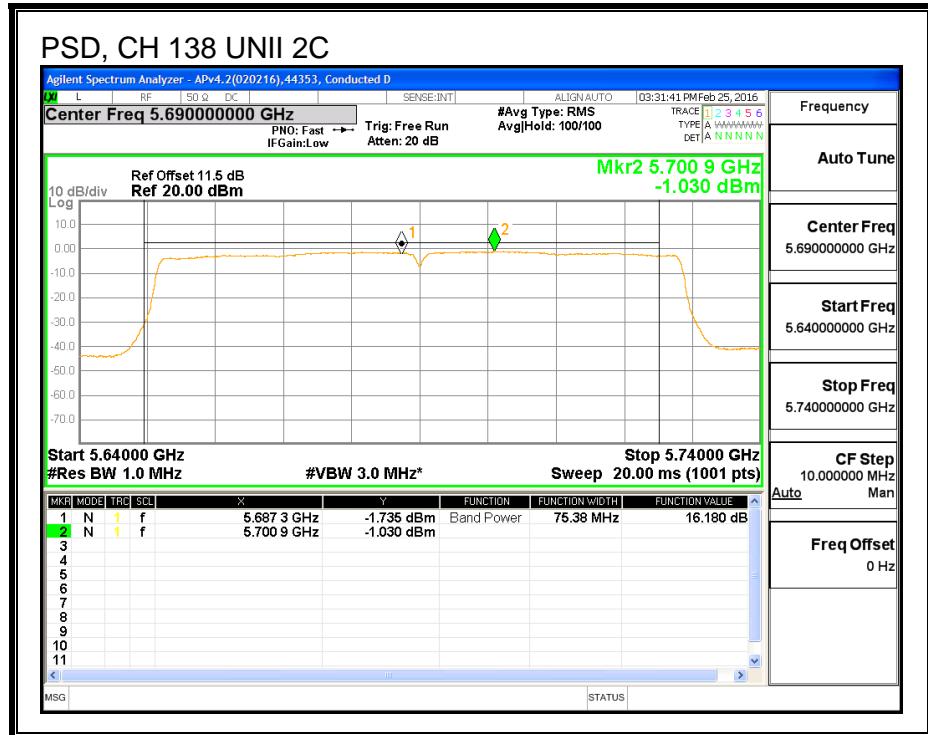
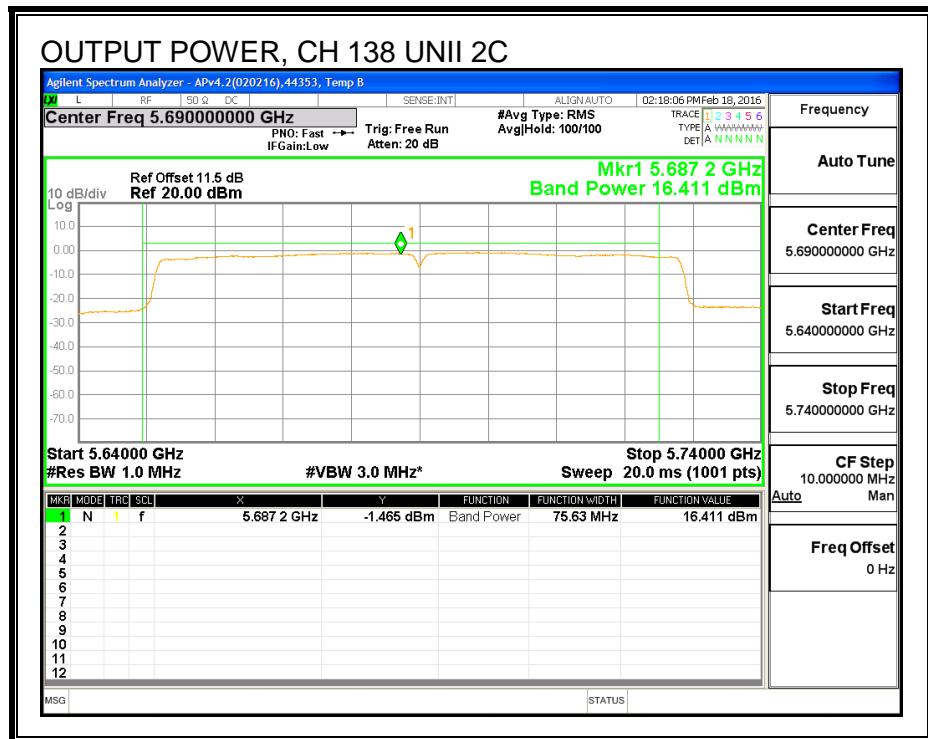
##### Output Power Results

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	16.41	16.18	19.41	22.20	-2.79

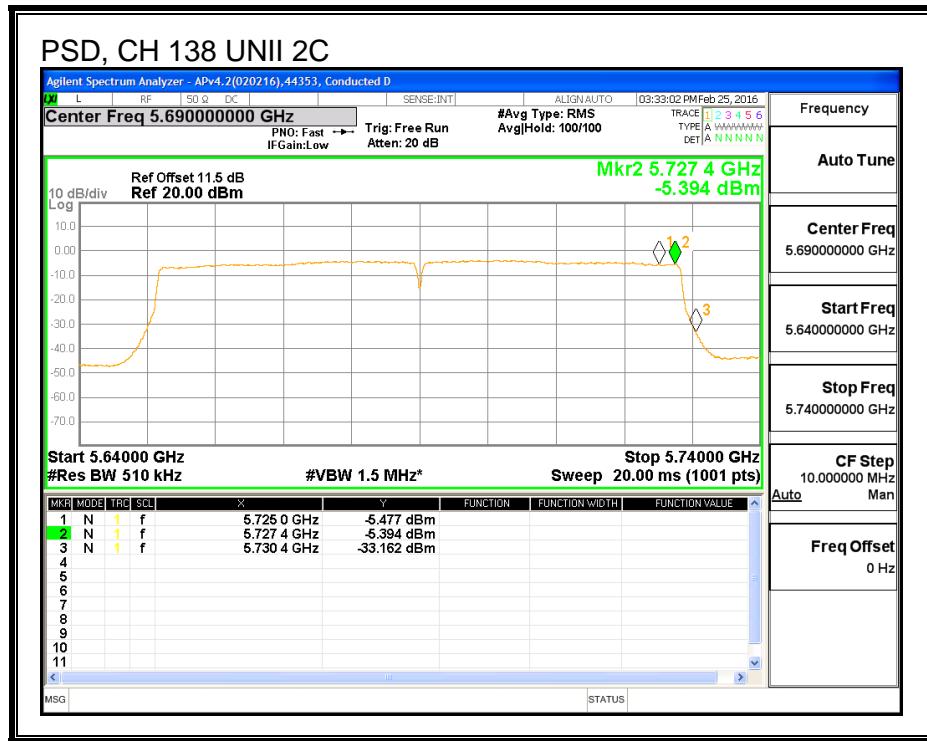
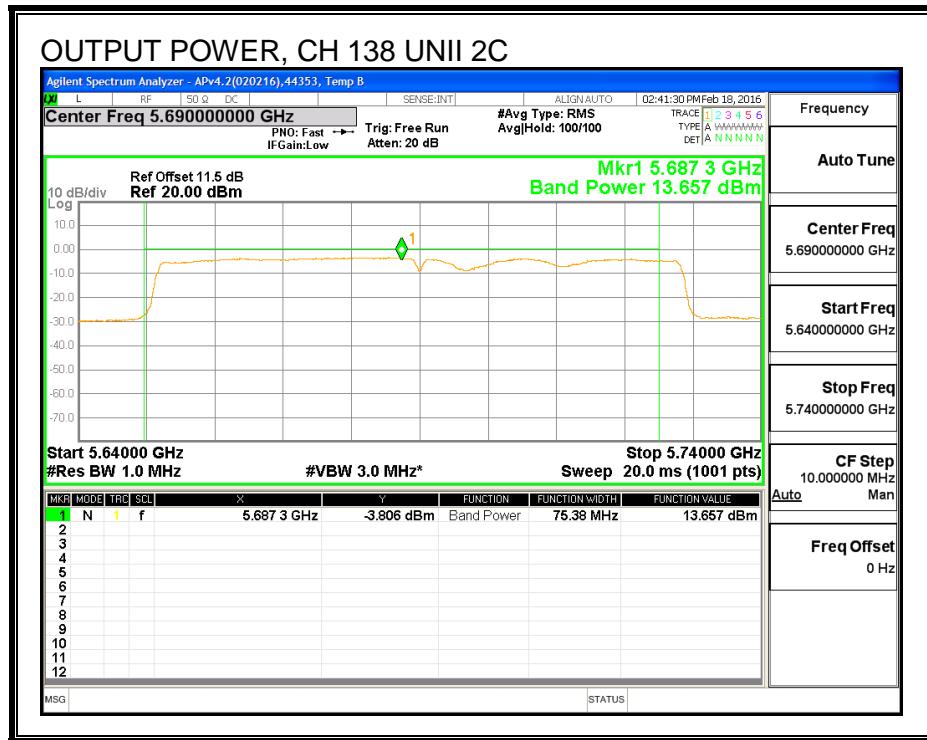
##### PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-0.92	-1.03	2.14	9.20	-7.06

**OUTPUT POWER, CHAIN 0**



**OUTPUT POWER, 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	5.38	7.80	7.80	28.20	28.20

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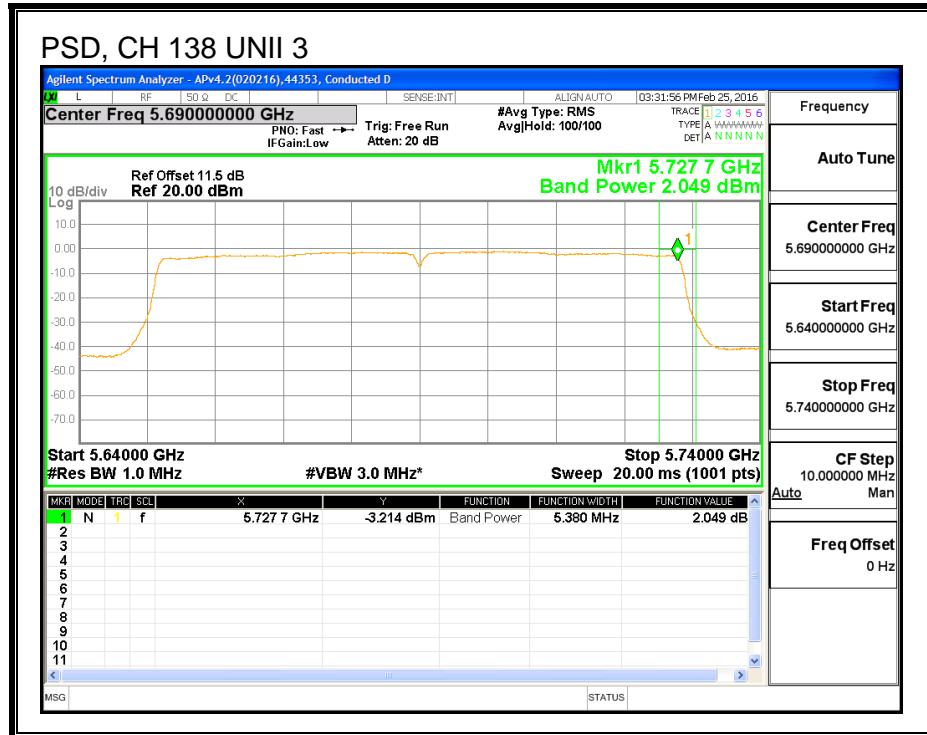
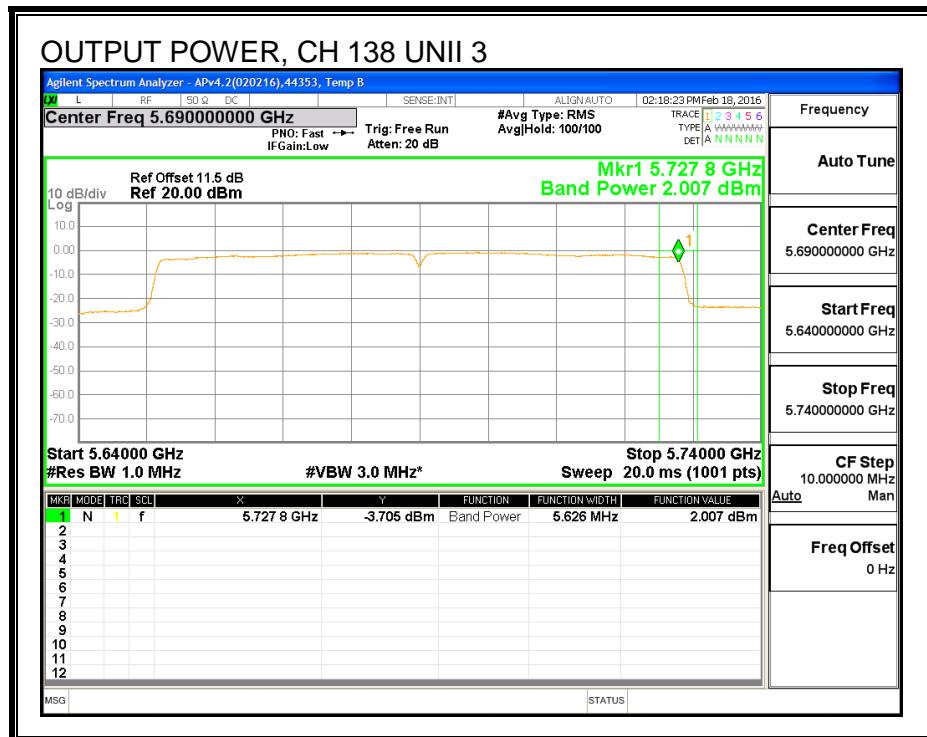
**Output Power Results**

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	2.01	2.05	5.14	28.20	-23.06

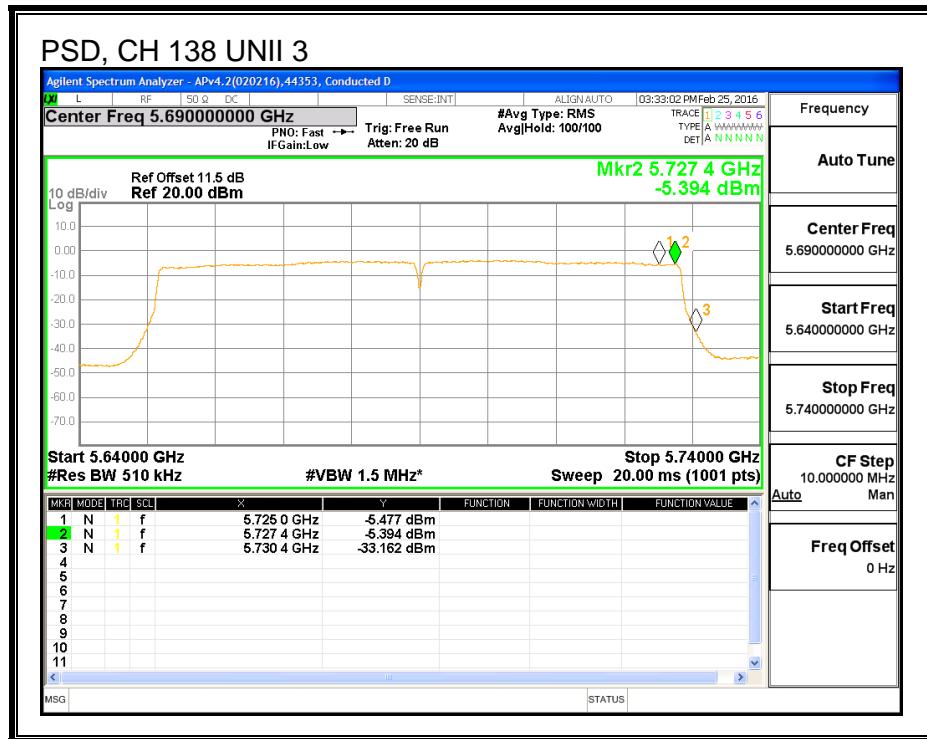
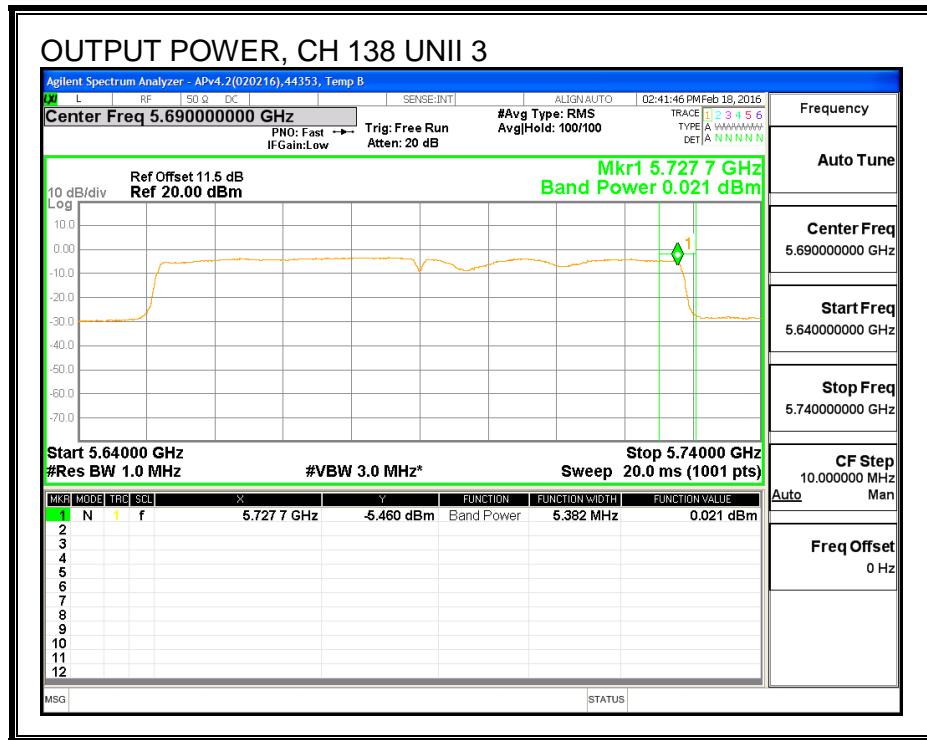
**PSD Results**

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	-5.72	-5.39	-2.44	28.20	-30.64

## OUTPUT POWER, CHAIN 0



**OUTPUT POWER, CHAIN 1**



### 8.55.8. TPC POWER STRADDLE CHANNEL 138 RESULTS (FCC)

#### UNII-2C BAND

##### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	75.38	7.80	7.80	22.20	9.20

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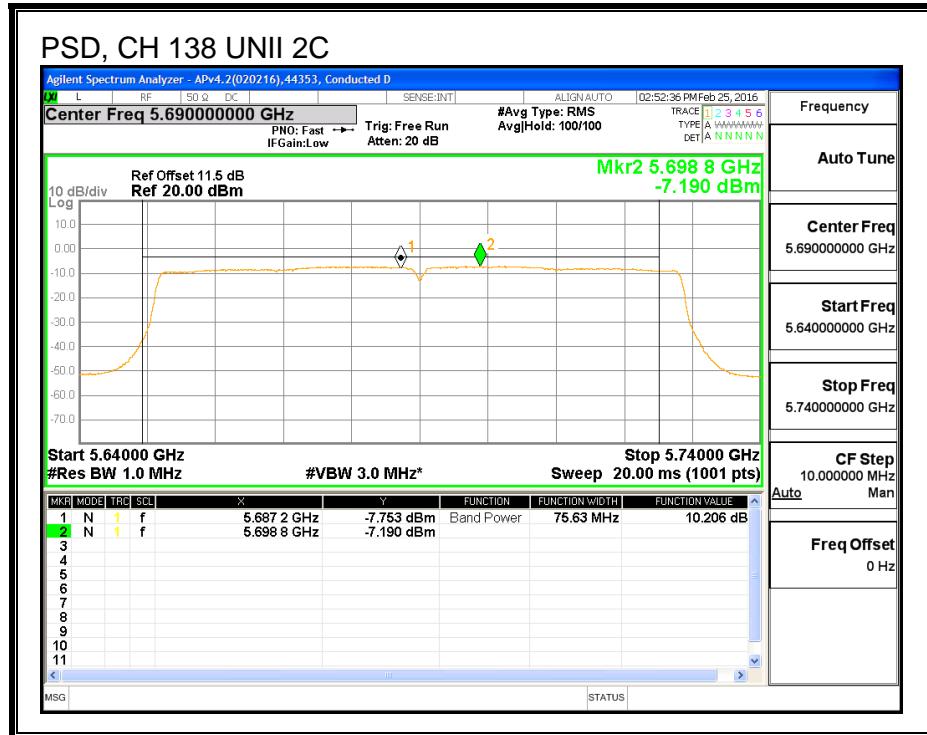
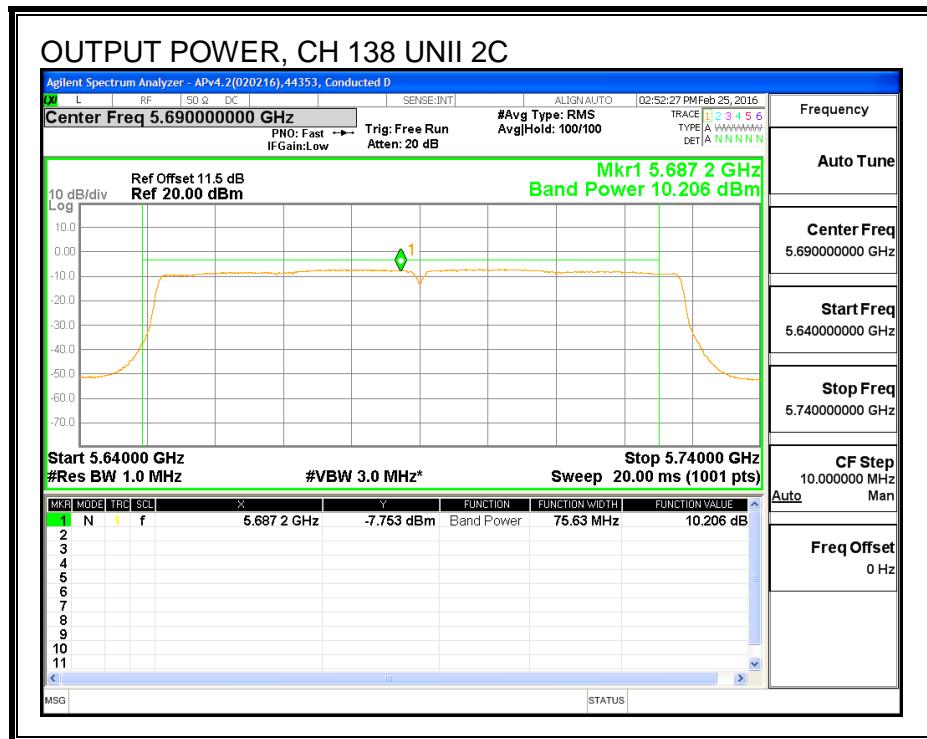
##### Output Power Results

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	10.21	10.29	13.36	22.20	-8.84

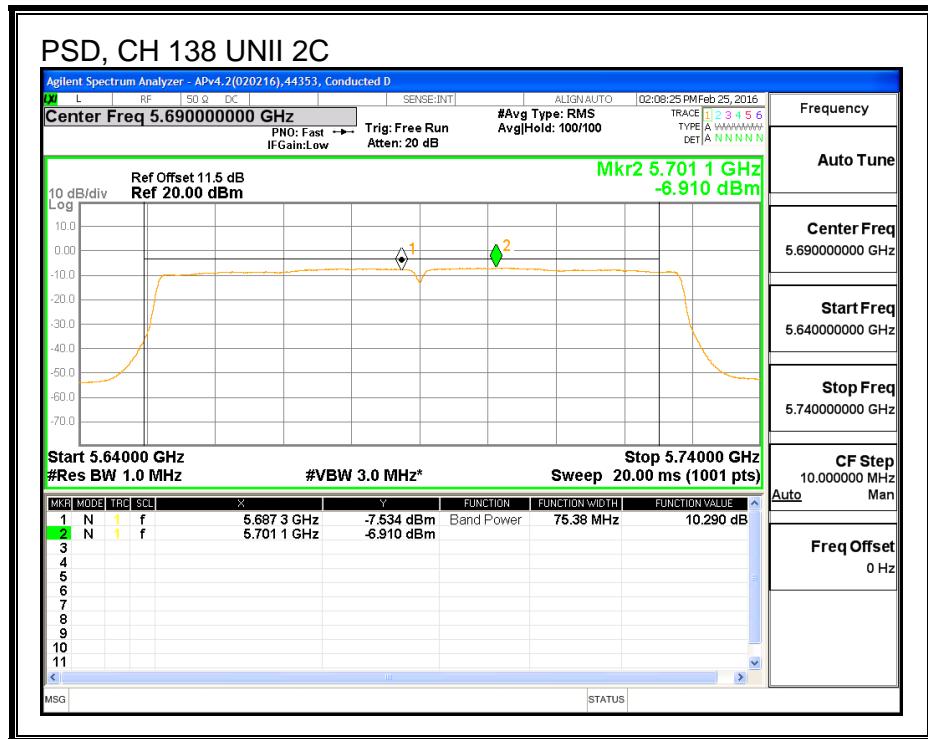
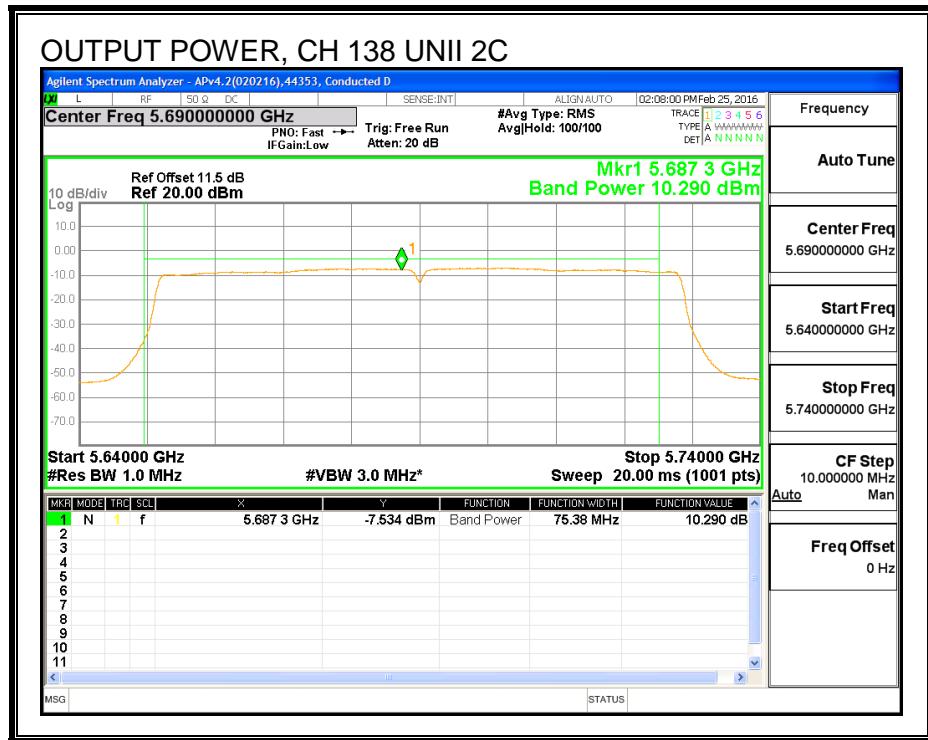
##### PSD Results

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	-7.19	-6.91	-3.94	9.20	-13.14

**OUTPUT POWER, CHAIN 0**



**OUTPUT POWER, 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	5.38	7.80	7.80	28.20	28.20

<b>Duty Cycle CF (dB)</b>	0.10	<b>Included in Calculations of Corr'd Power &amp; PSD</b>
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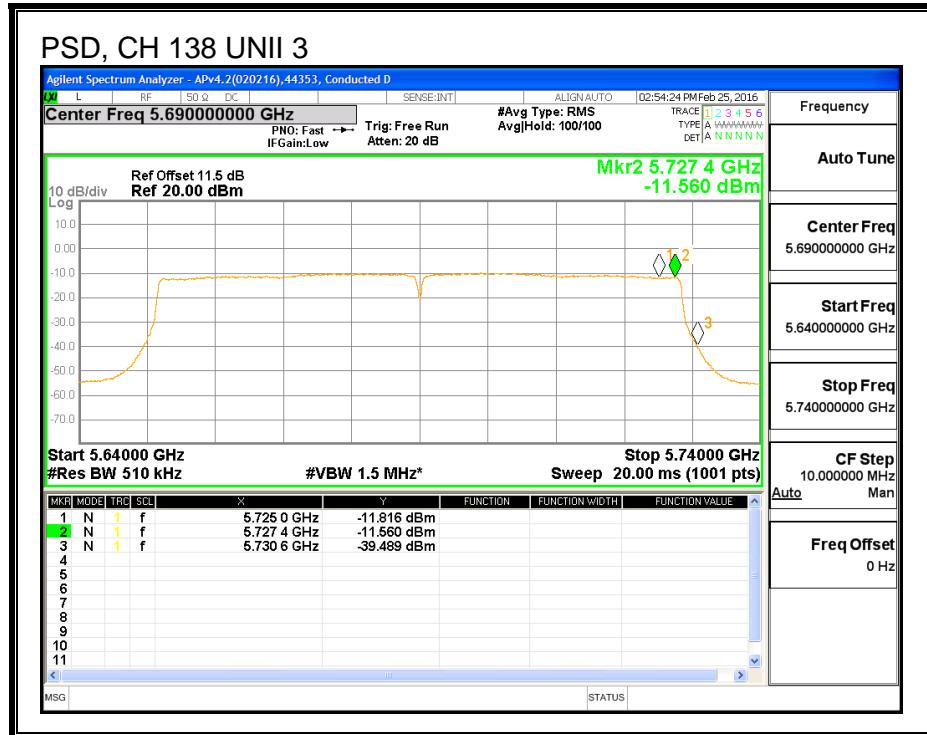
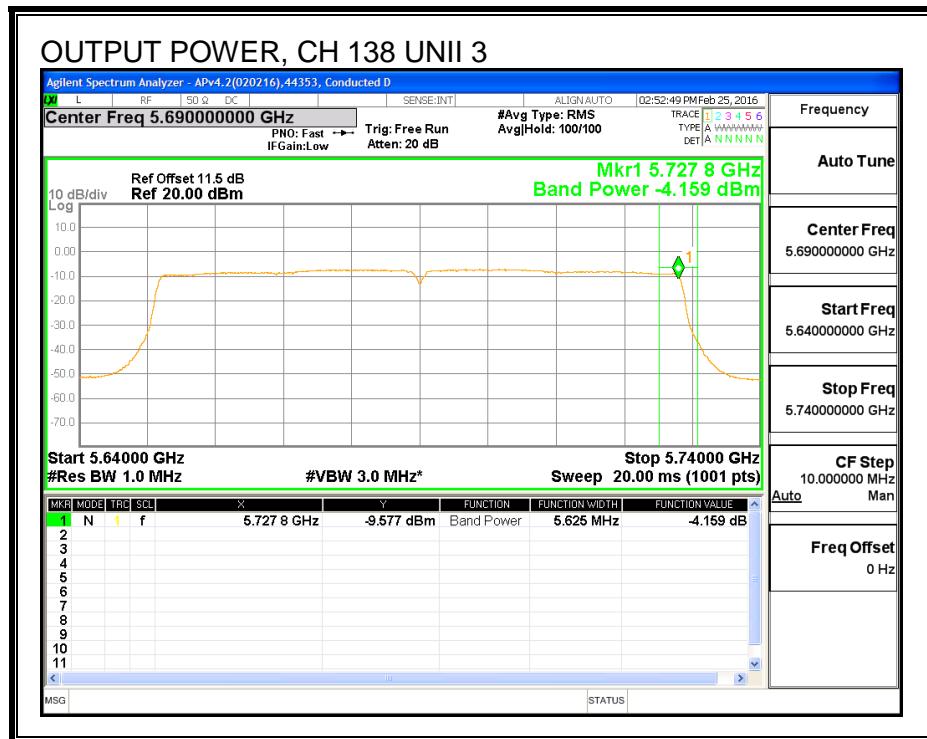
**Output Power Results**

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	-4.16	-3.82	-0.88	28.20	-29.08

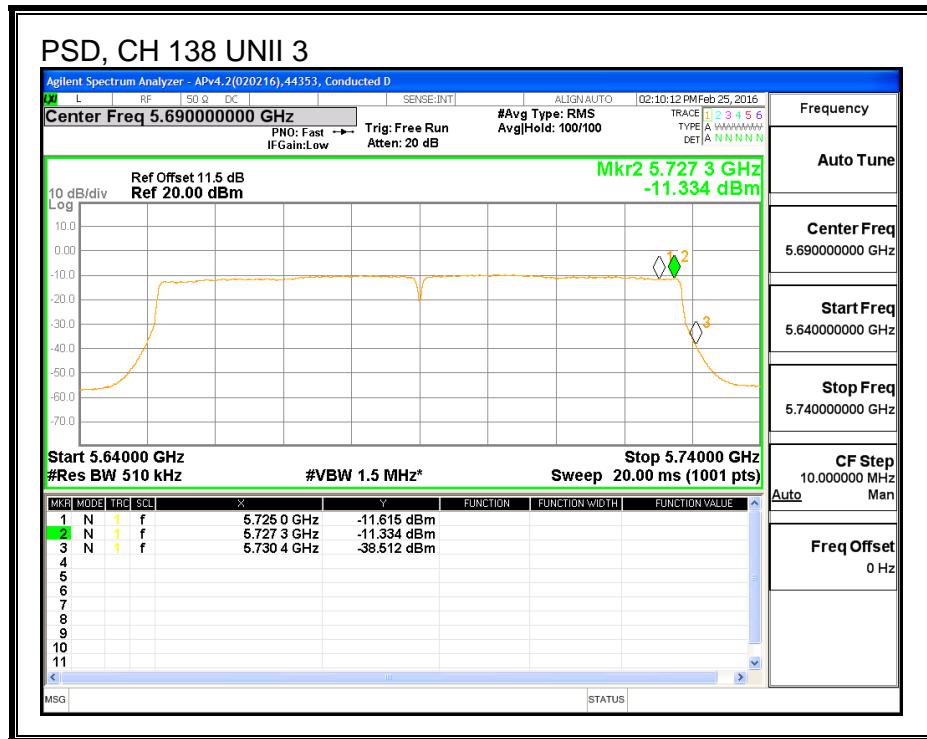
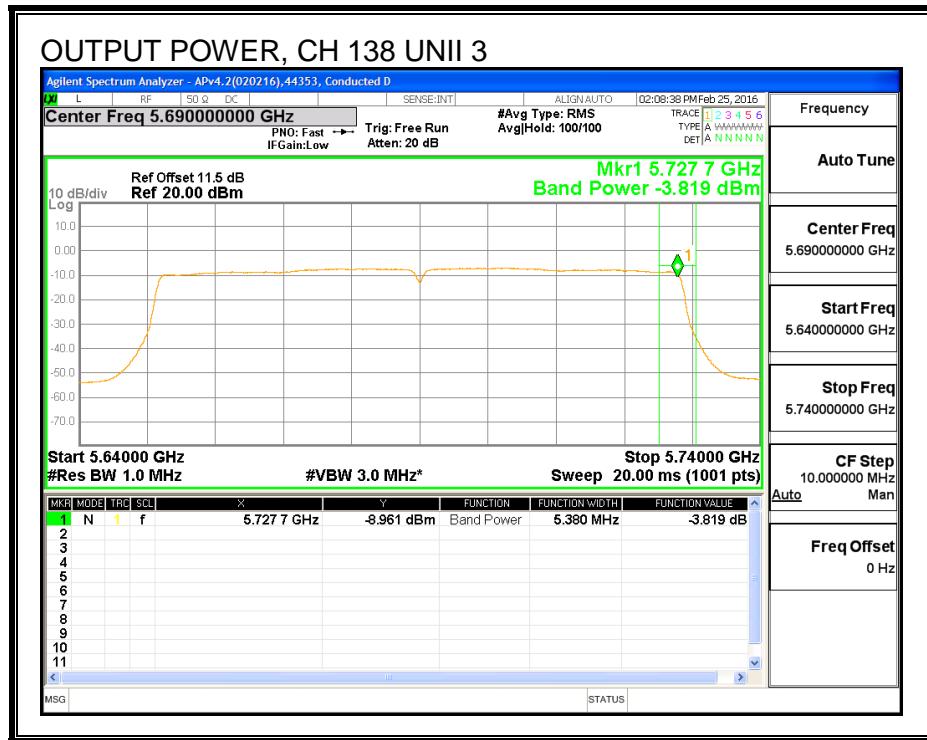
**PSD Results**

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	-11.56	-11.33	-8.34	28.20	-36.54

**OUTPUT POWER, CHAIN 0**



**OUTPUT POWER, CHAIN 1**



## 8.55.10.6 dB BANDWIDTH

### LIMITS

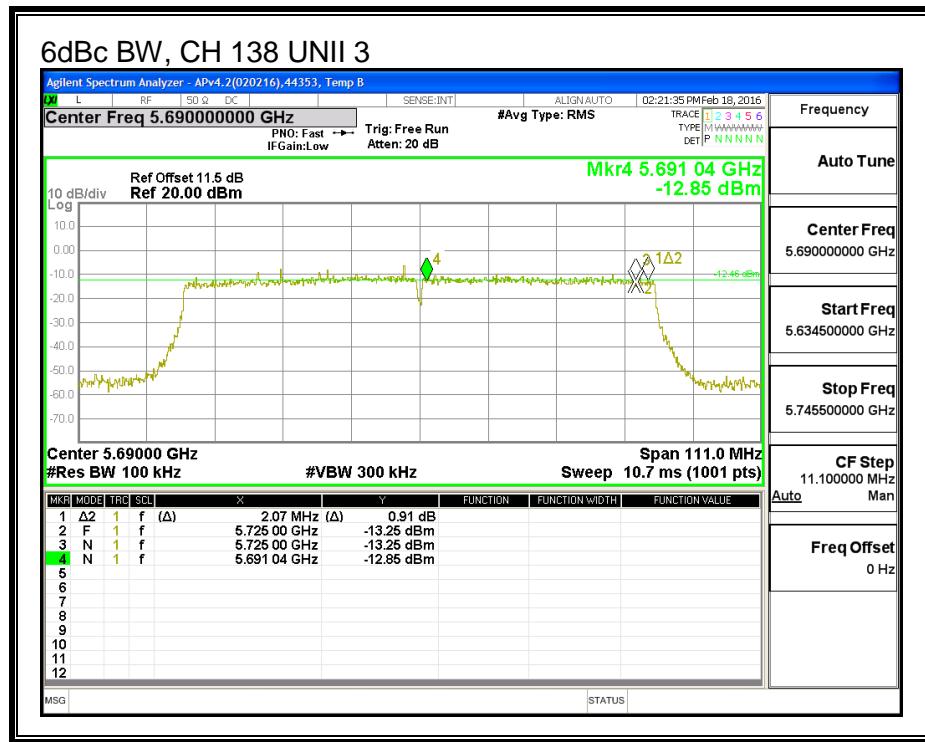
FCC §15.407 (e)

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

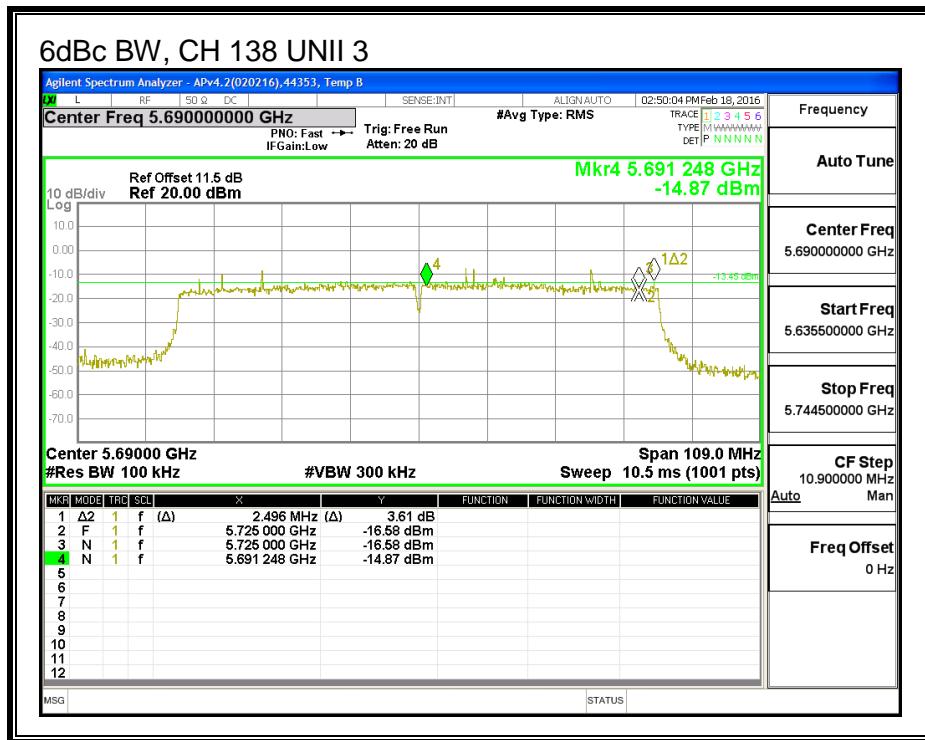
### RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)
High	5690	2.07	2.50

**CHAIN 0**



**CHAIN 1**



## 8.56. 802.11n HT20 CHAIN 0 MODE IN THE 5.8 GHz BAND

### 8.56.1. 6 dB BANDWIDTH

#### LIMITS

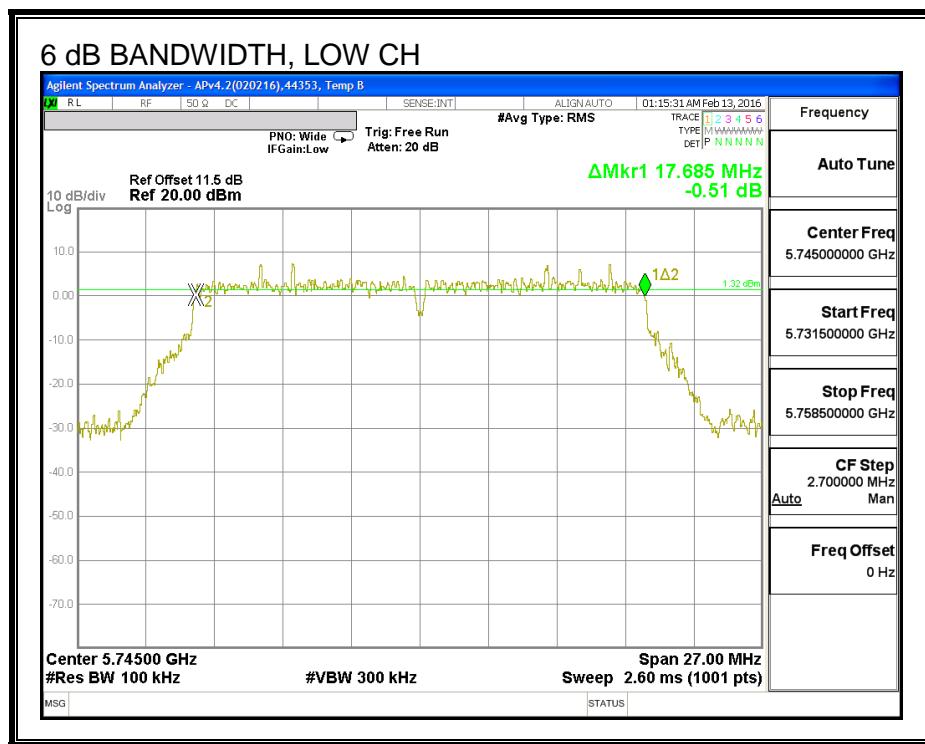
FCC §15.407 (e)

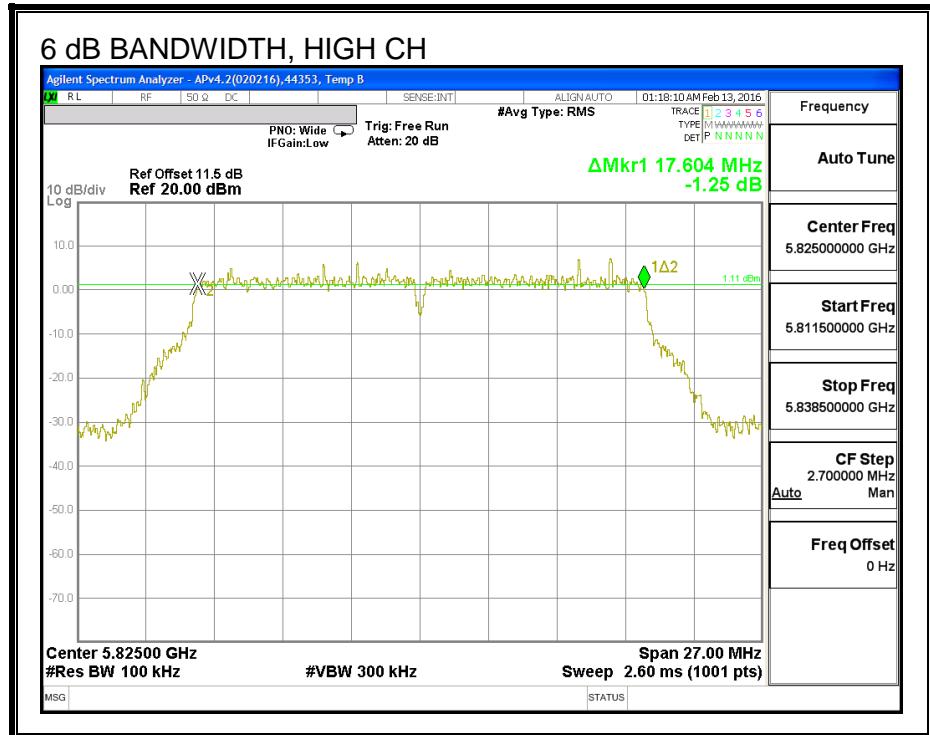
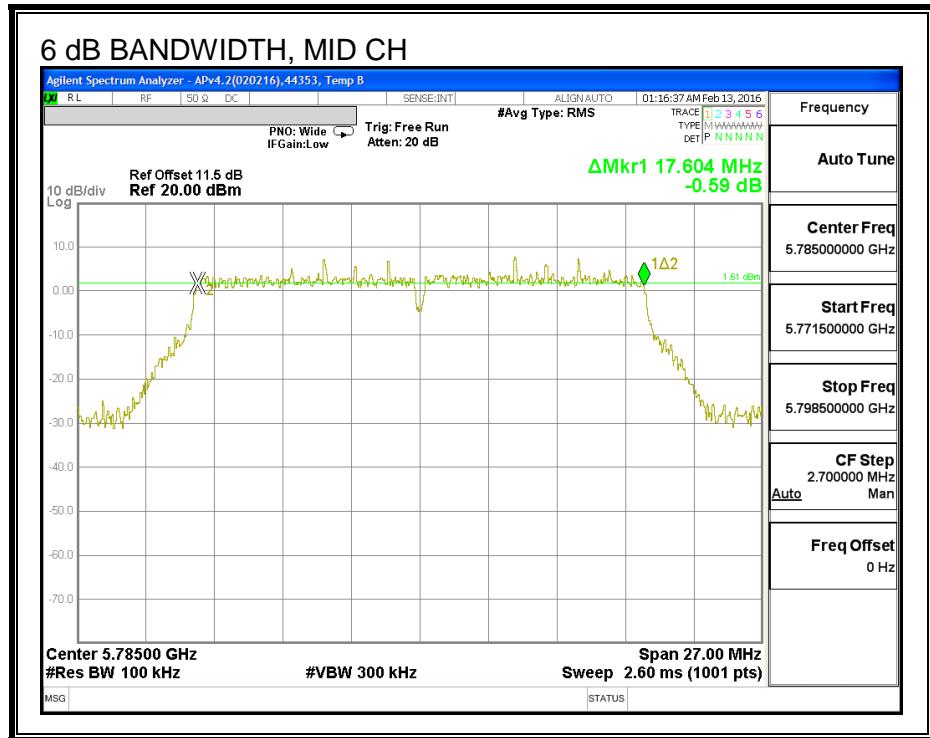
The minimum 6 dB bandwidth shall be at least 500 kHz.

#### RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.69	0.5
Mid	5785	17.60	0.5
High	5825	17.60	0.5

#### 6 dB BANDWIDTH





### 8.56.2. 26 dB BANDWIDTH

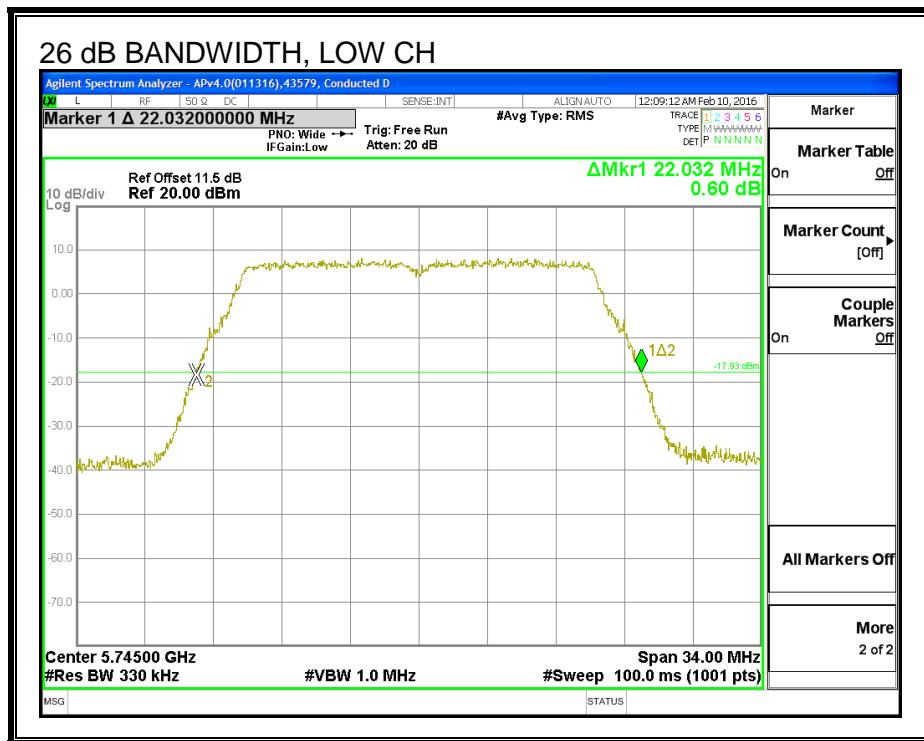
#### LIMITS

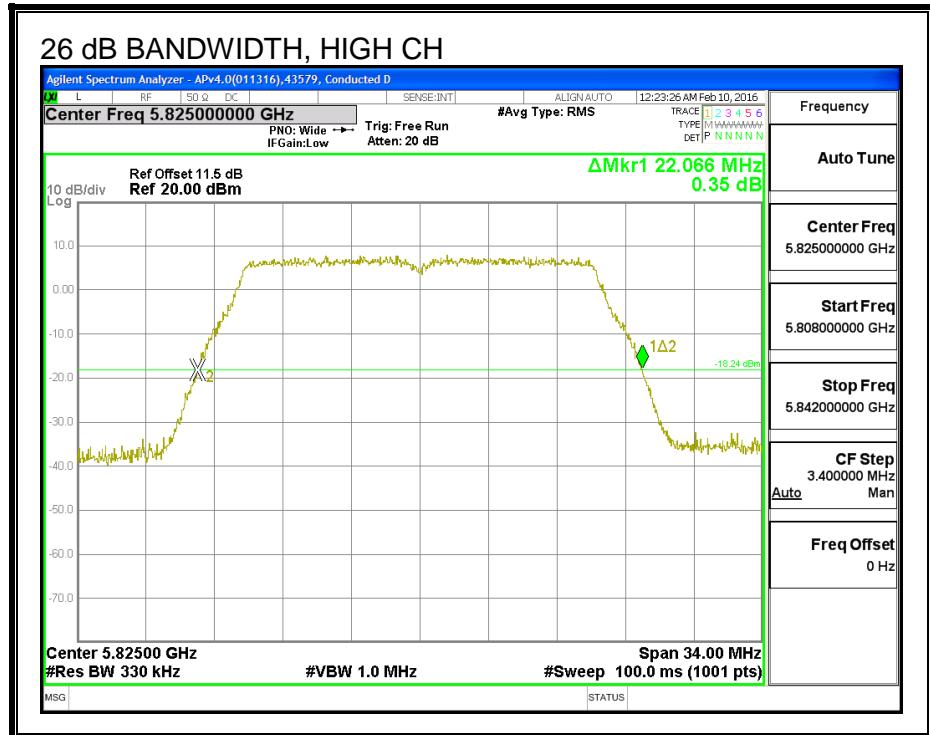
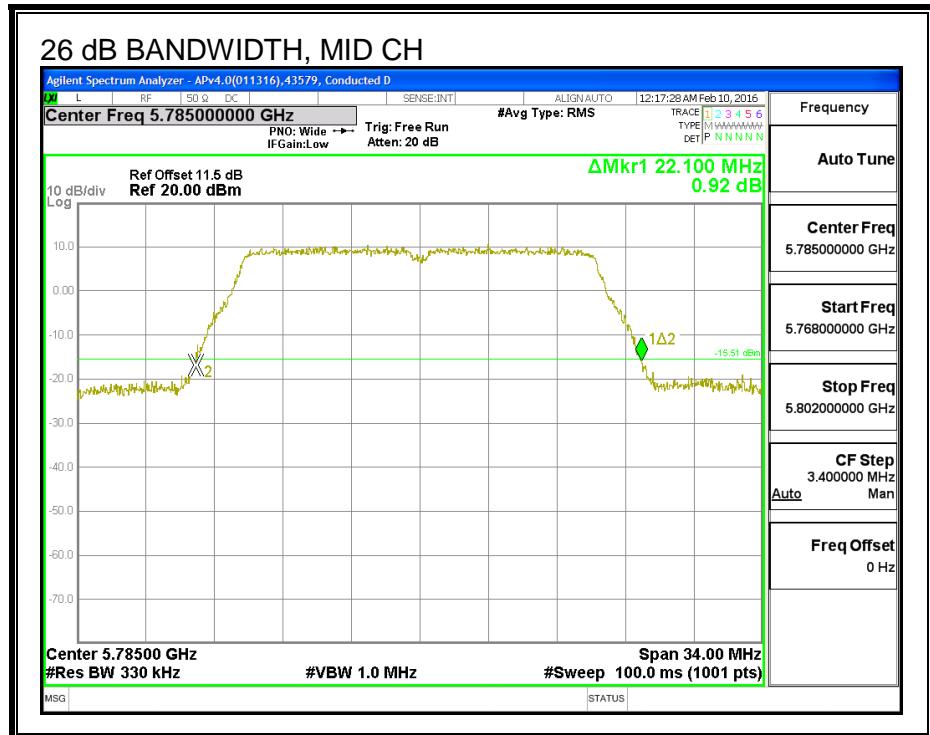
None, for reporting purposes only

#### RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	22.03
Mid	5785	22.10
High	5825	22.07

#### 26 dB BANDWIDTH





### 8.56.3. 99% BANDWIDTH

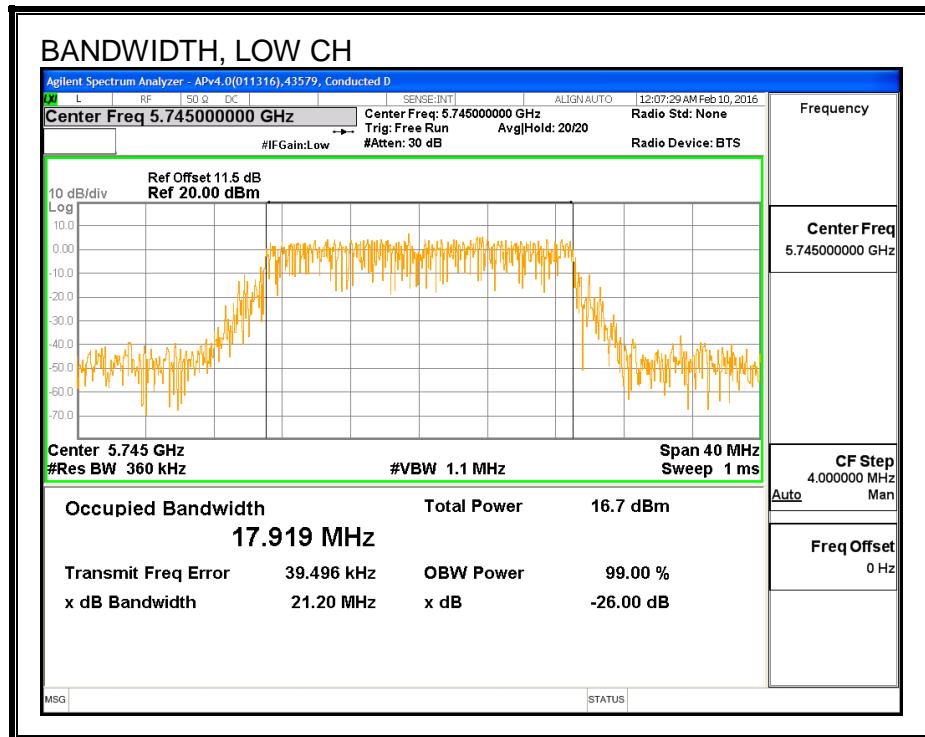
#### LIMITS

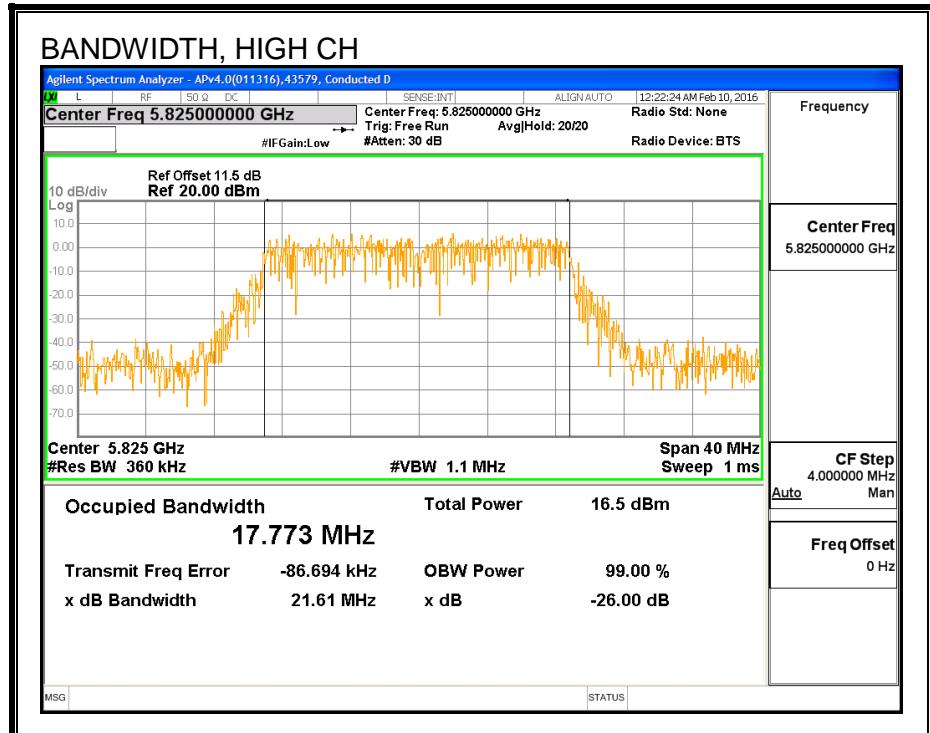
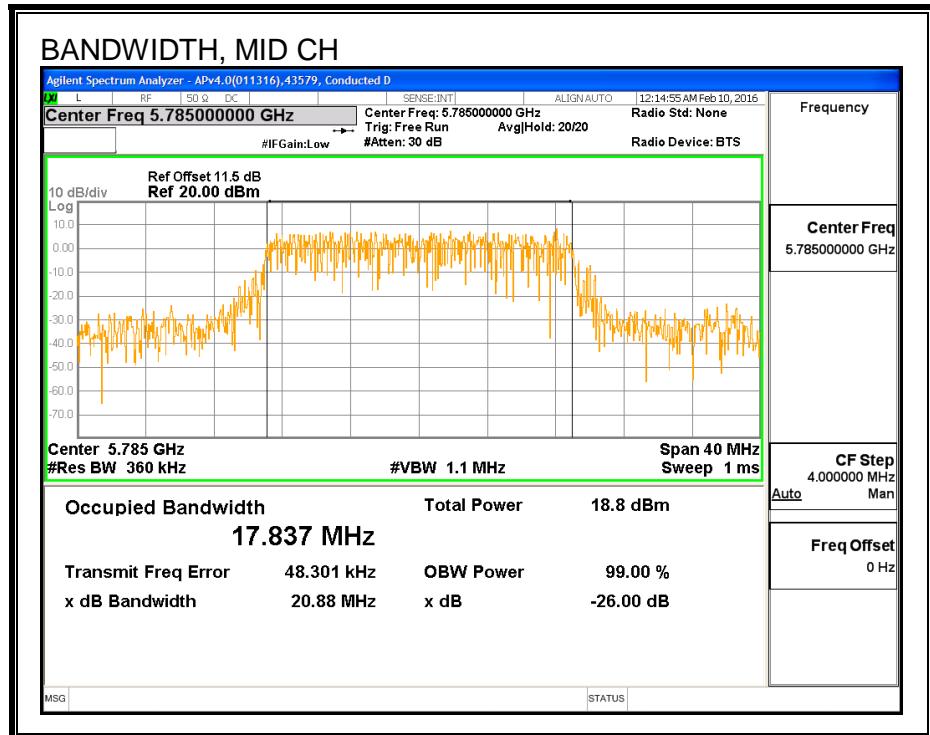
None; for reporting purposes only.

#### RESULTS

Frequency (MHz)	99% Bandwidth (MHz)
5745	17.919
5785	17.837
5825	17.773

#### 99% BANDWIDTH





#### 8.56.4. AVERAGE POWER

##### LIMITS

None; for reporting purposes only.

##### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

##### RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5745	15.92
Mid	5785	18.00
High	5825	16.38

## 8.56.5. OUTPUT POWER

### LIMITS

FCC §15.407 (a) (3)

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

### TEST PROCEDURE

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

### DIRECTIONAL ANTENNA GAIN

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

### RESULTS

#### Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	4.78	30.00
Mid	5785	4.78	30.00
High	5825	4.78	30.00

#### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	15.92	15.92	30.00	-14.08
Mid	5785	18.00	18.00	30.00	-12.00
High	5825	16.38	16.38	30.00	-13.62

## 8.56.6. PSD

### LIMITS

FCC §15.407 (a) (3)

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

### DIRECTIONAL ANTENNA GAIN

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

### RESULTS

#### Antenna Gain and Limits

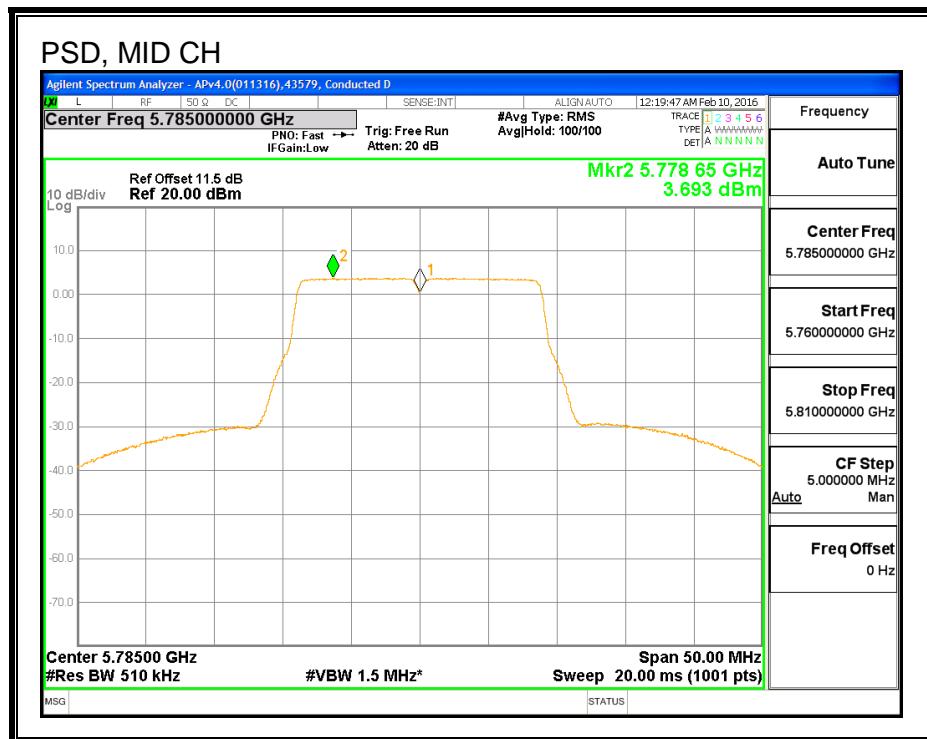
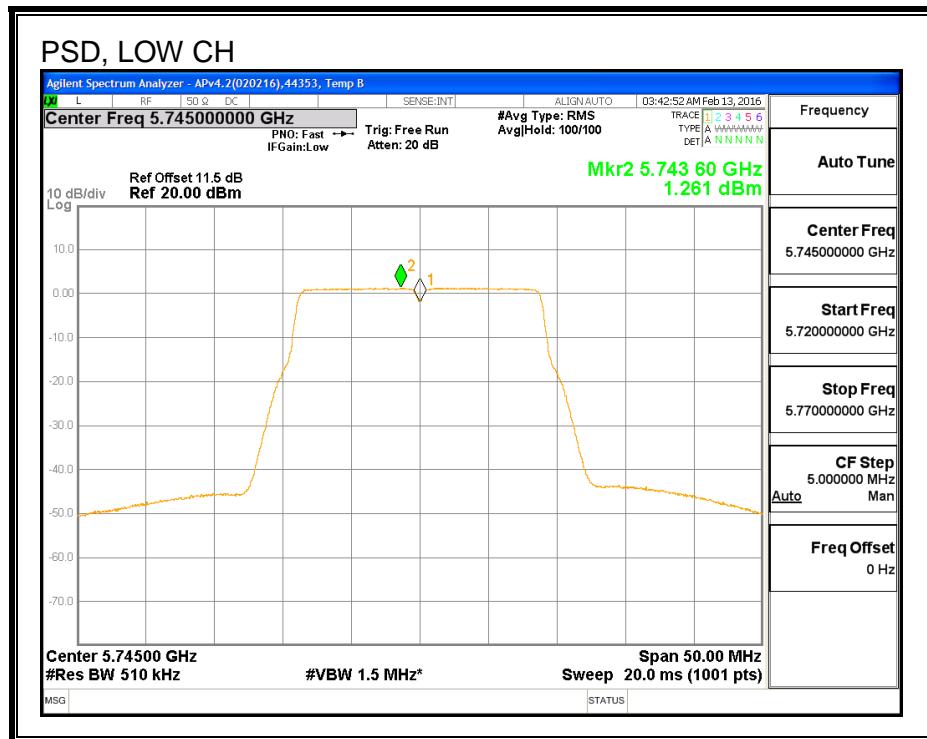
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	4.78	30.00
Mid	5785	4.78	30.00
High	5825	4.78	30.00

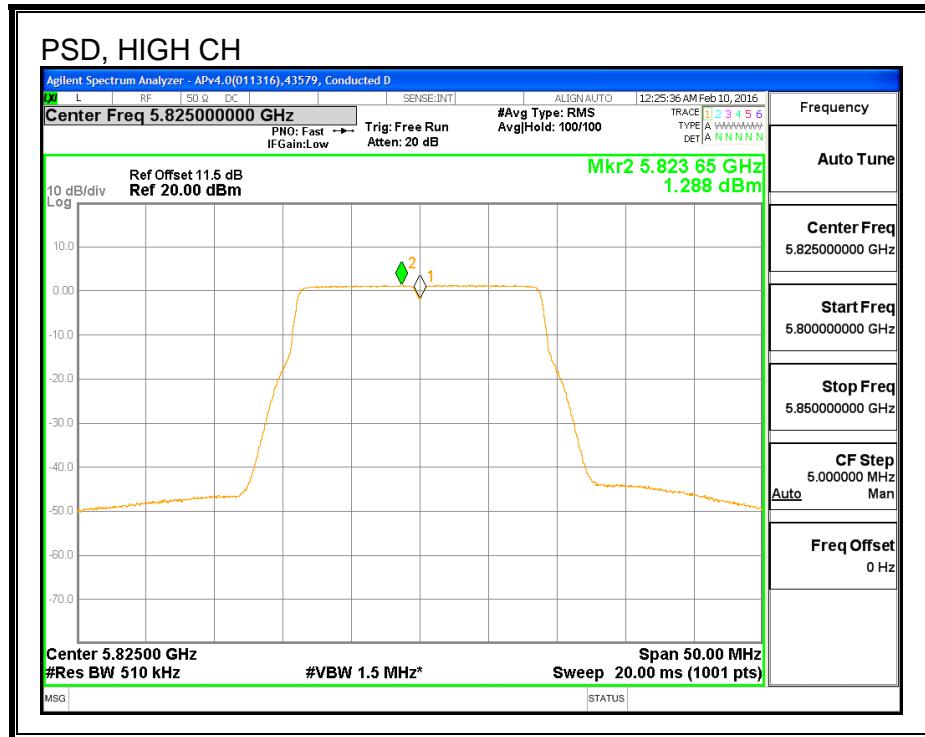
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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#### PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	1.26	1.26	30.00	-28.74
Mid	5785	3.69	3.69	30.00	-26.31
High	5825	1.29	1.29	30.00	-28.71

**PSD**





## 8.57. 802.11n HT20 CHAIN 1 MODE IN THE 5.8 GHz BAND

### 8.57.1. 6 dB BANDWIDTH

#### LIMITS

FCC §15.407 (e)

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

#### RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.63	0.5
Mid	5785	17.69	0.5
High	5825	17.63	0.5

#### 6 dB BANDWIDTH

