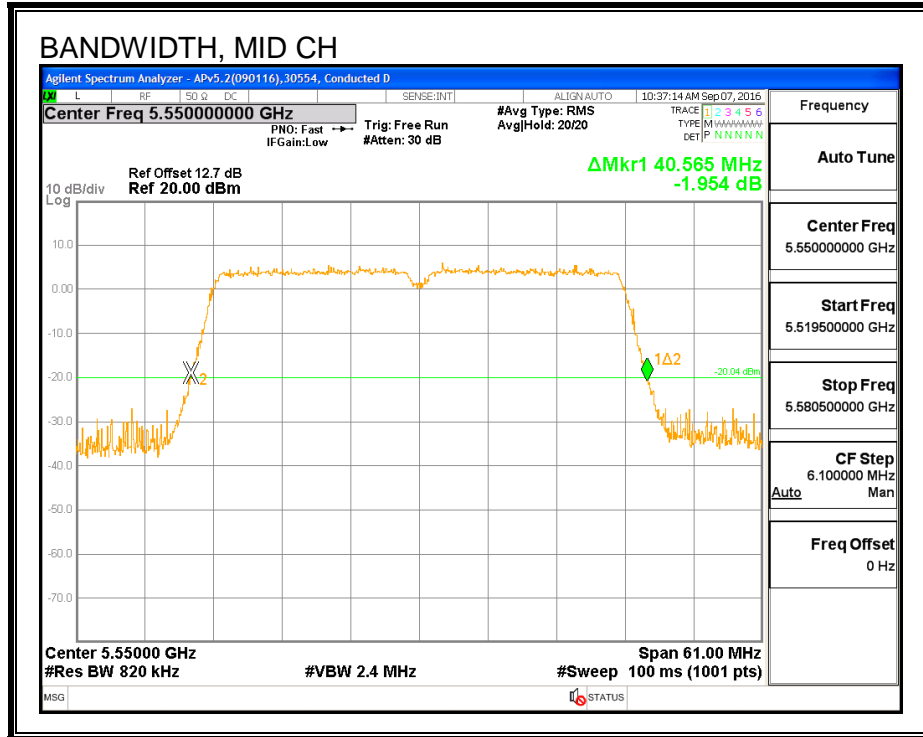
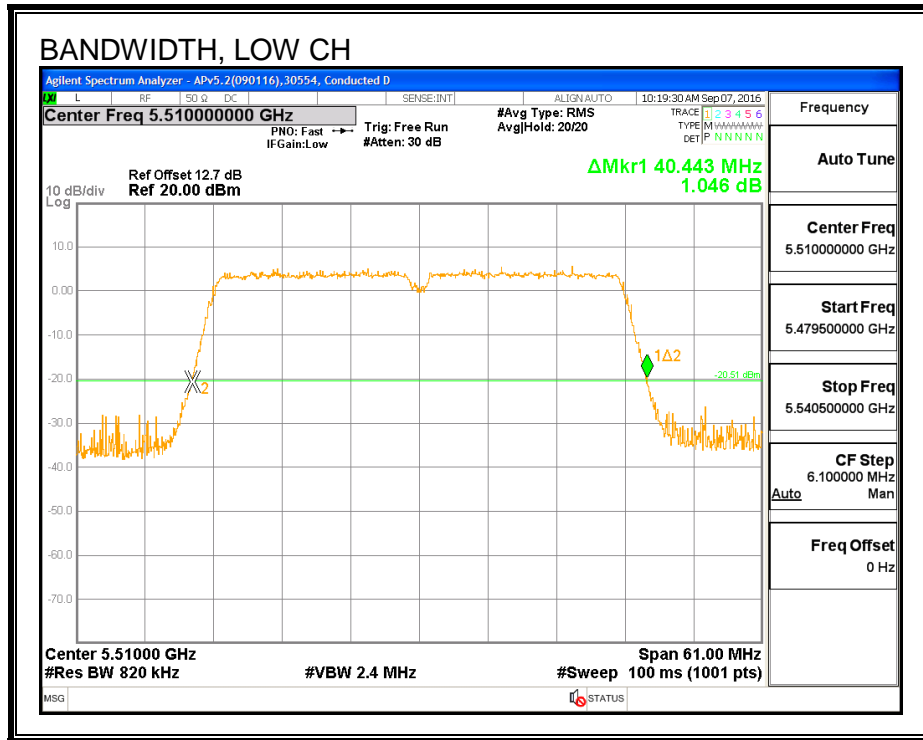
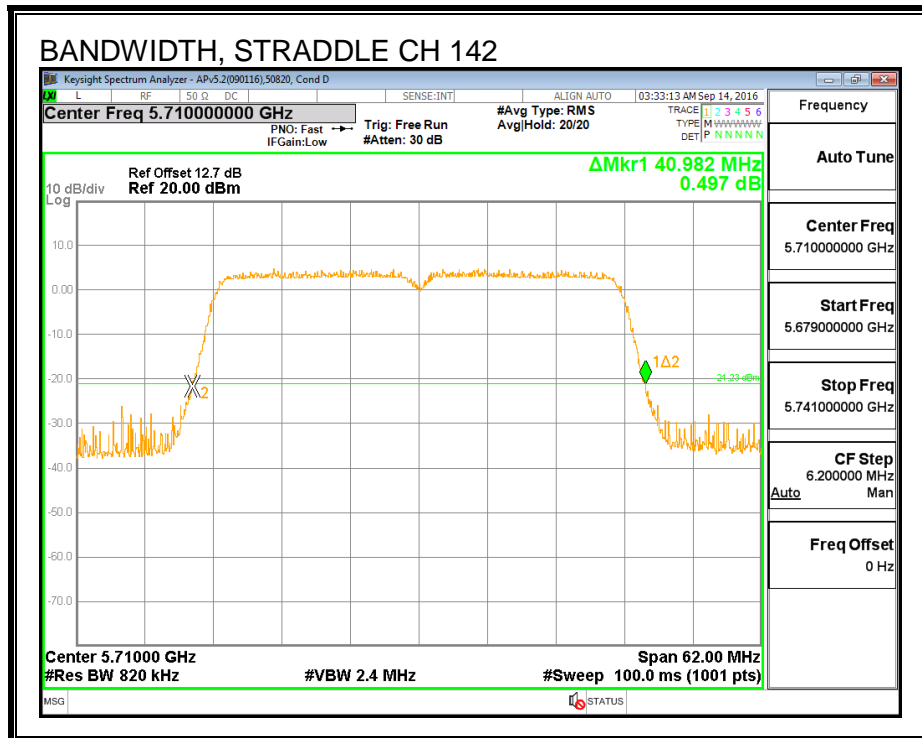
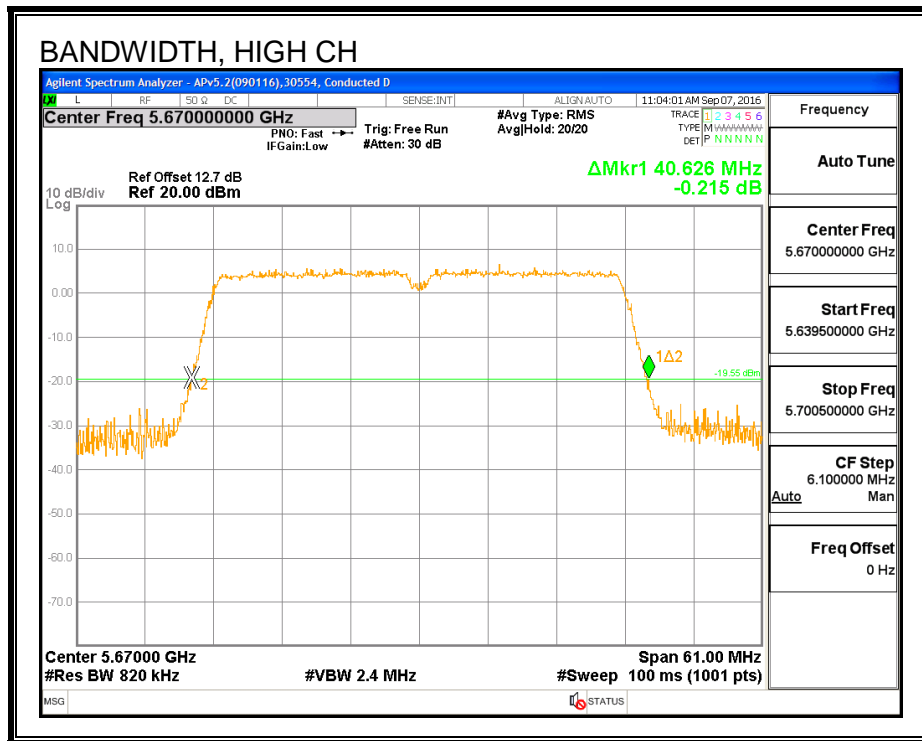
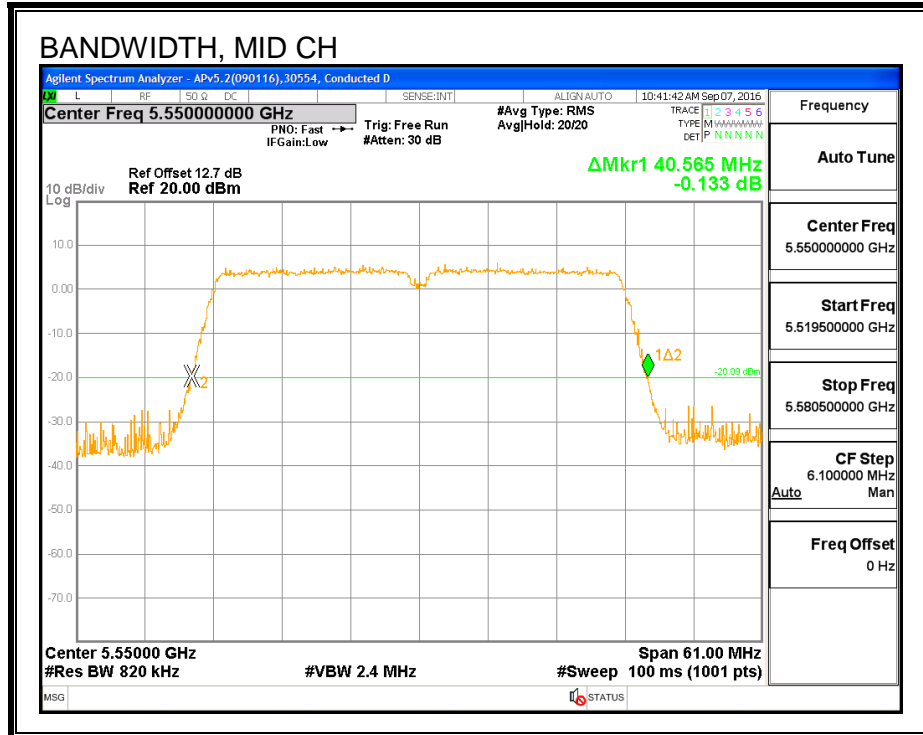
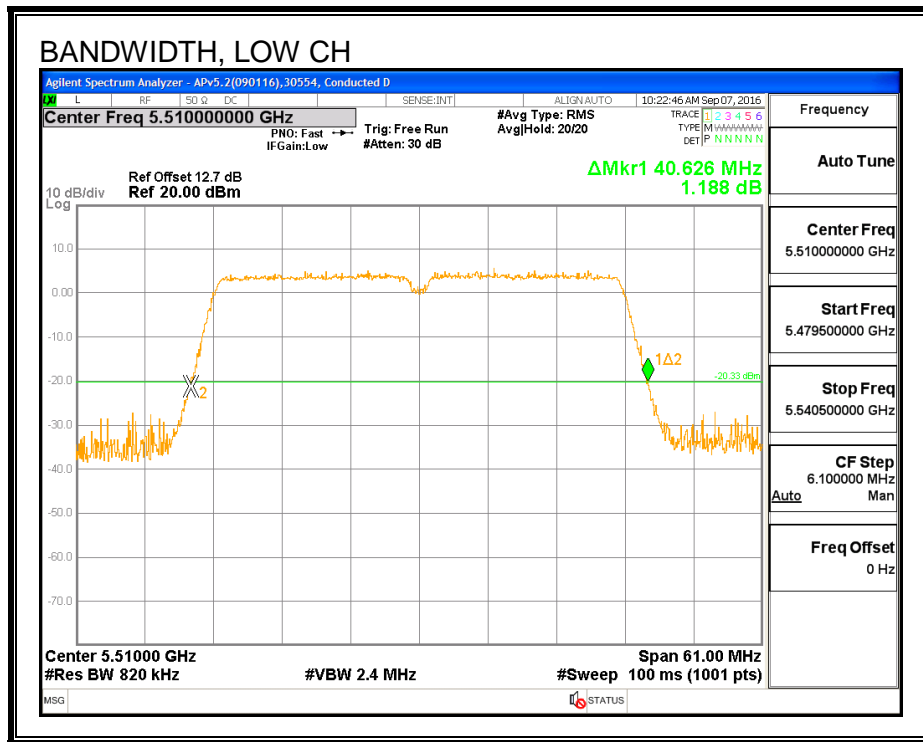


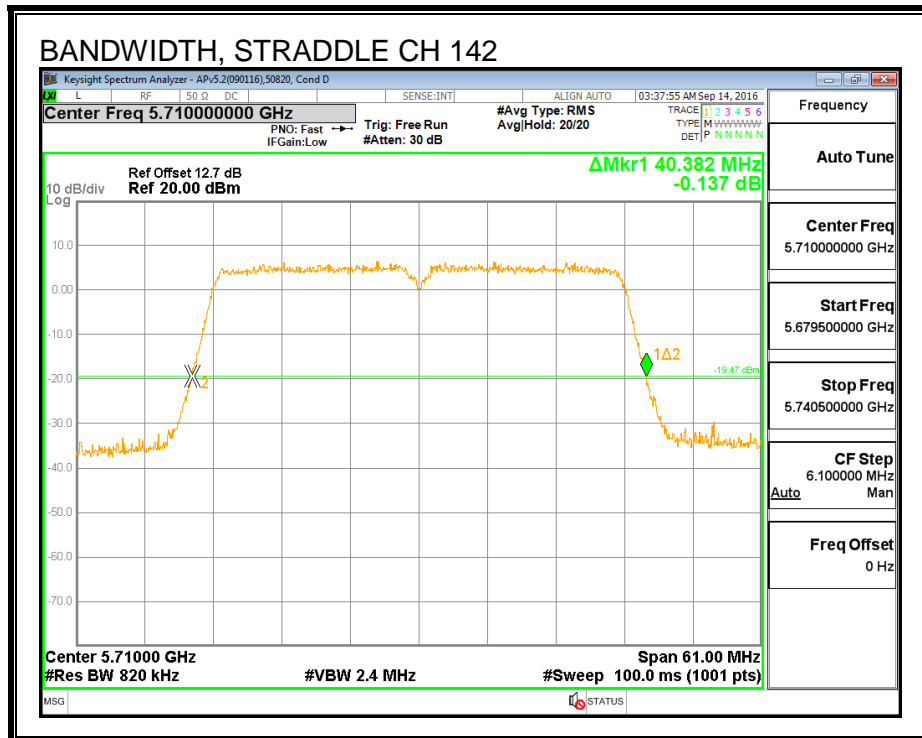
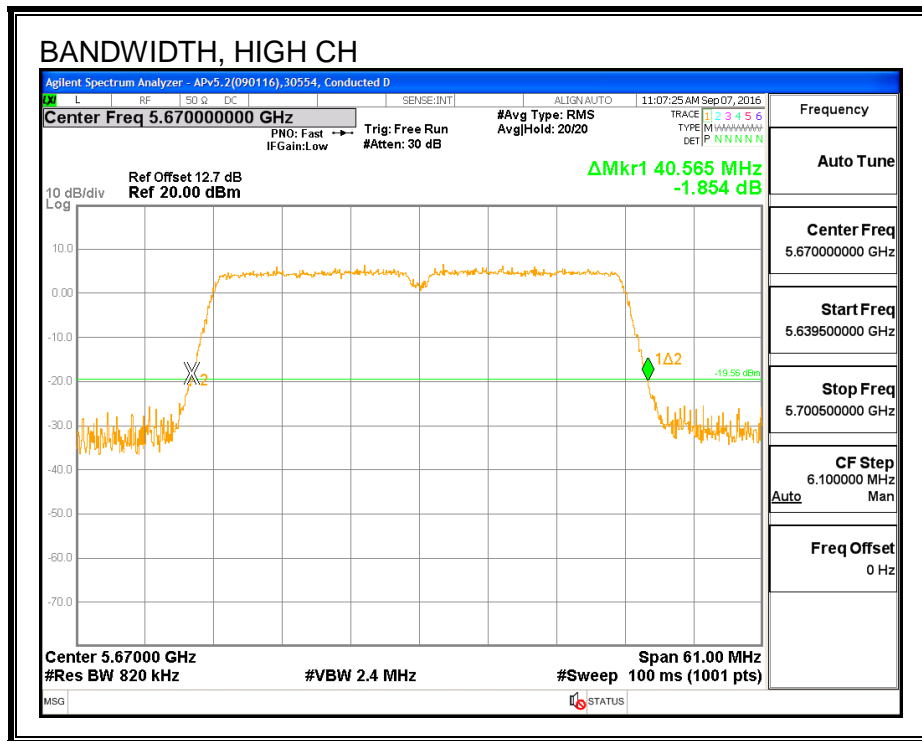
**26 dB BANDWIDTH, CHAIN 1**





**26 dB BANDWIDTH, CHAIN 2**





**8.70.2. 99% BANDWIDTH**

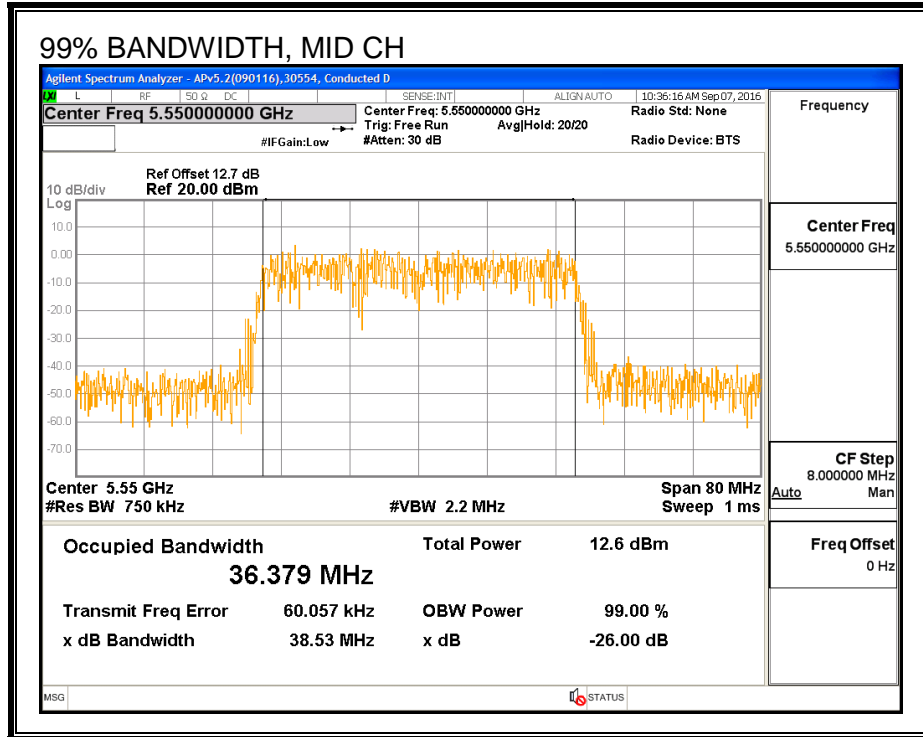
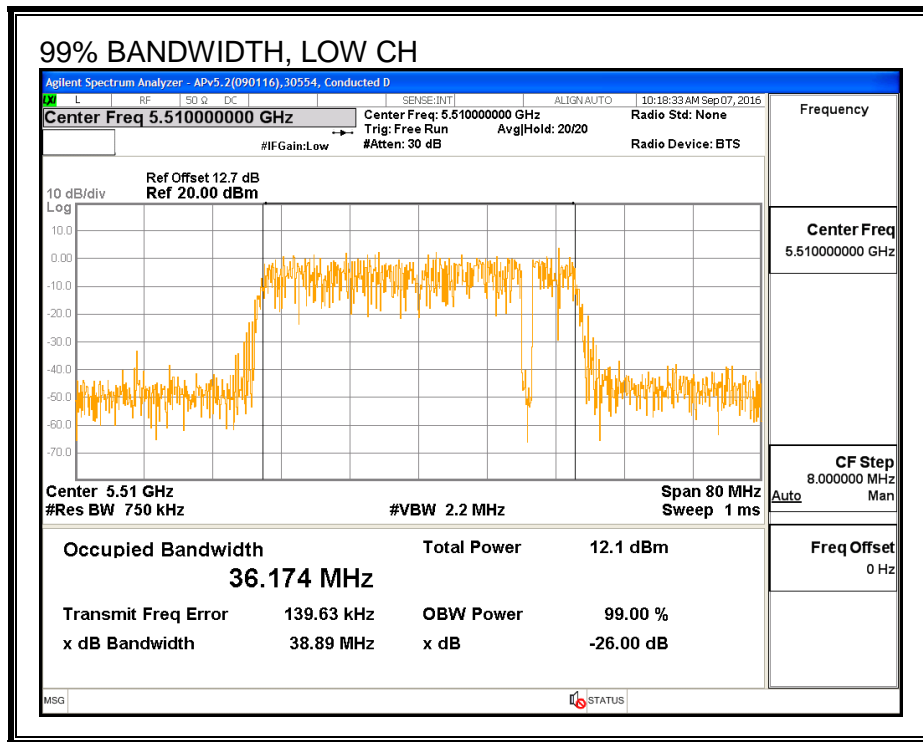
**LIMITS**

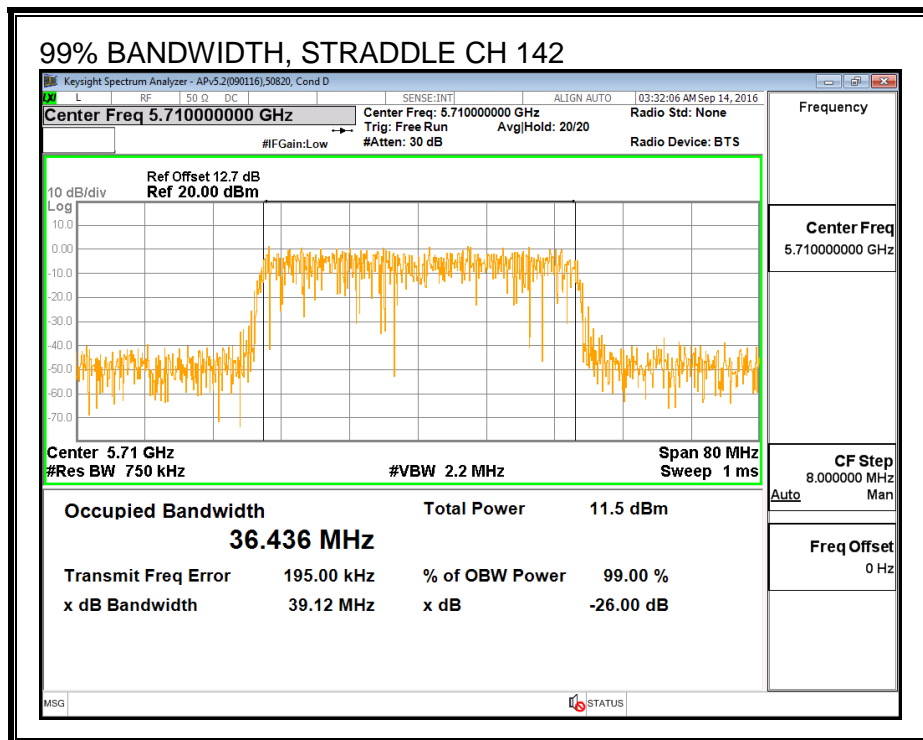
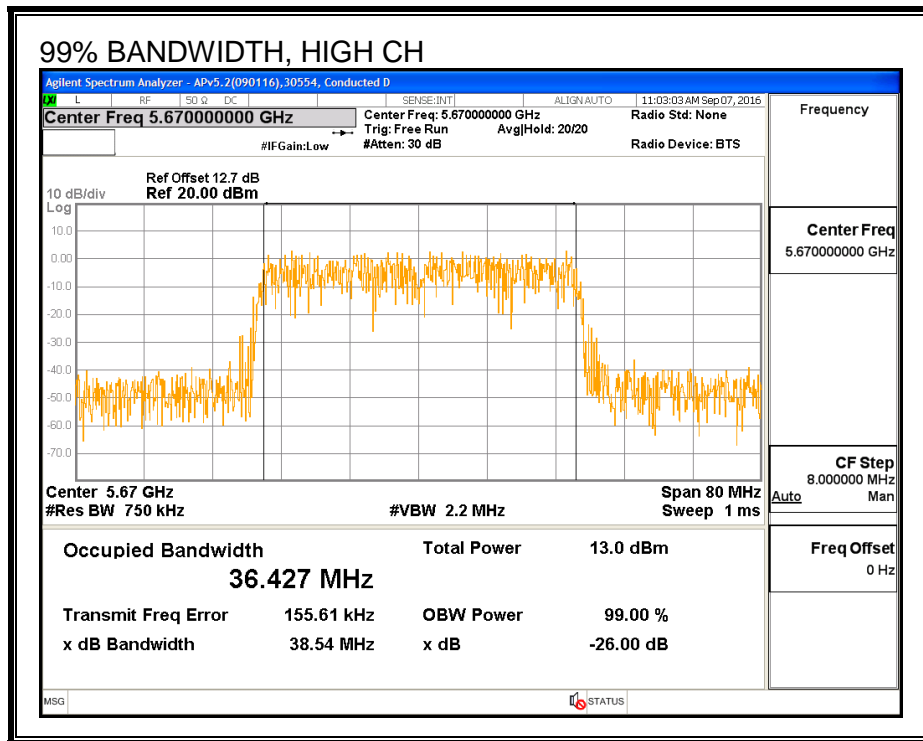
None; for reporting purposes only.

**RESULTS**

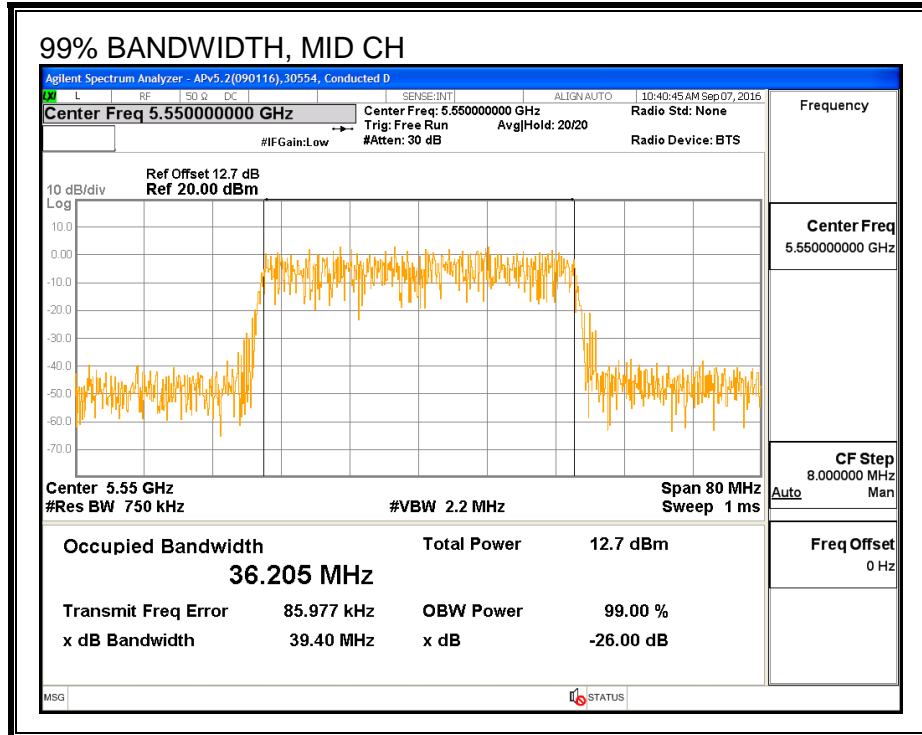
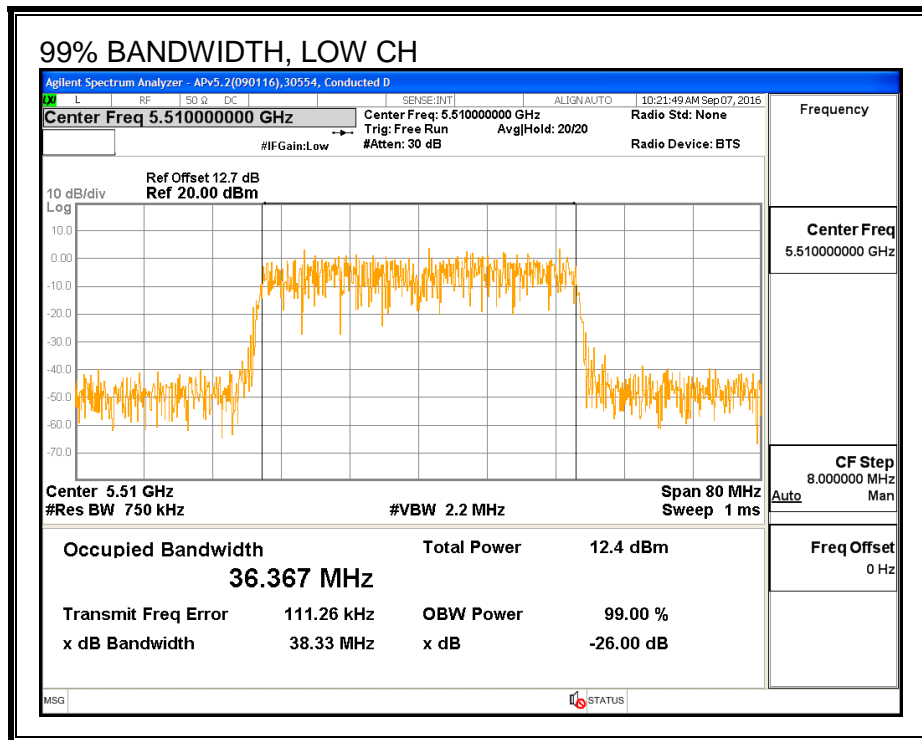
| Channel | Frequency<br>(MHz) | 99% BW<br>Chain 1<br>(MHz) | 99% BW<br>Chain 2<br>(MHz) |
|---------|--------------------|----------------------------|----------------------------|
| Low     | 5510               | 36.174                     | 36.367                     |
| Mid     | 5550               | 36.379                     | 36.205                     |
| High    | 5670               | 36.427                     | 36.428                     |
| 142     | 5710               | 36.436                     | 36.387                     |

**99% BANDWIDTH, CHAIN 1**

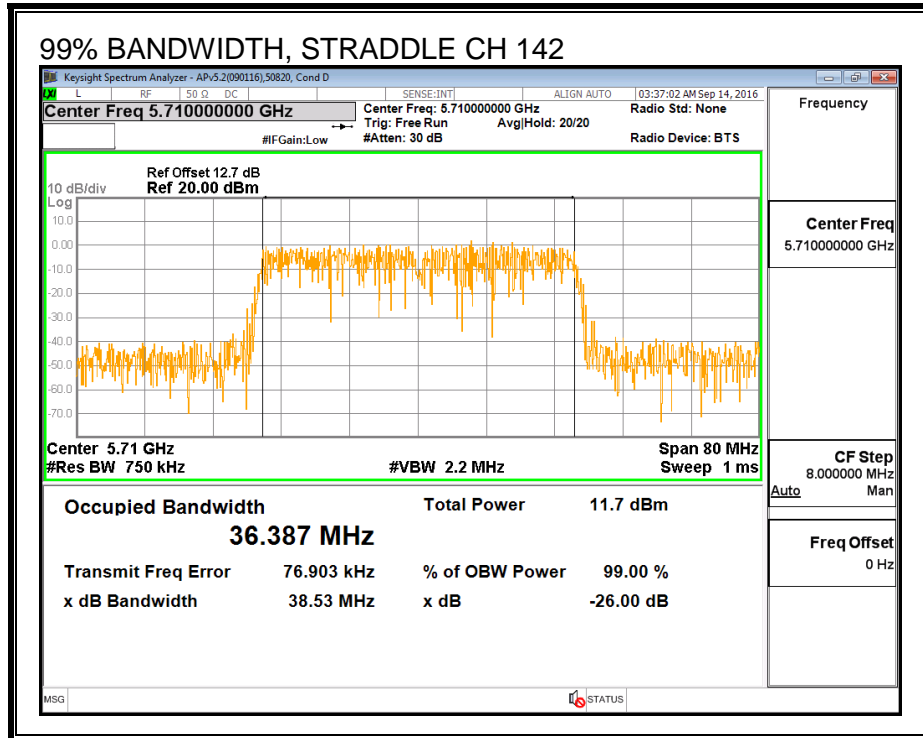
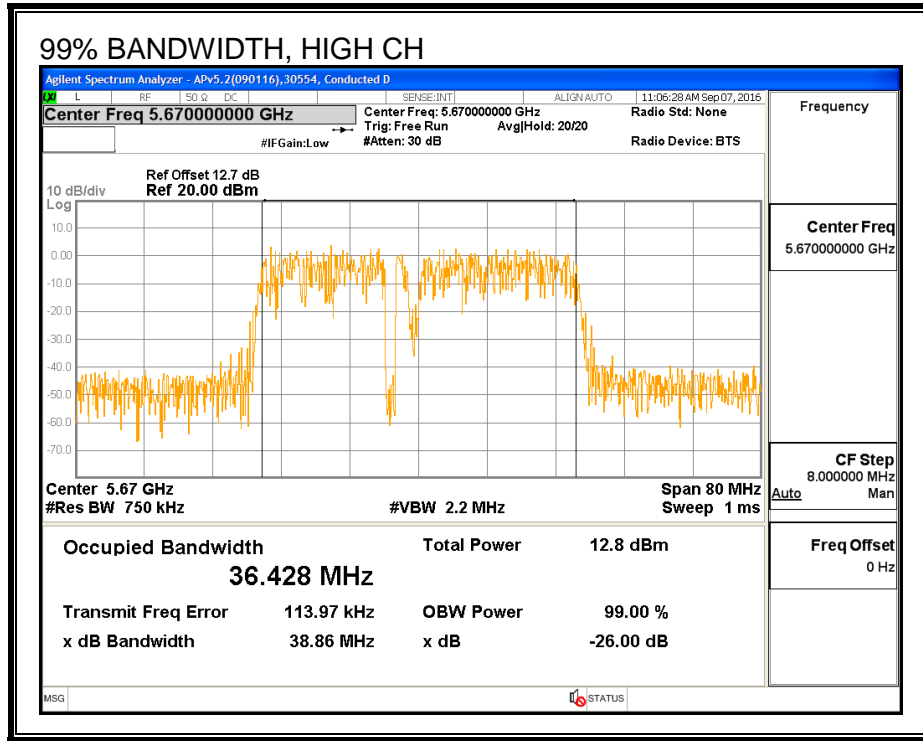




**99% BANDWIDTH, CHAIN 2**







### 8.70.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 43573 | <b>Date:</b> | 9/7/16 |
|------------|-------|--------------|--------|

#### Average Power Results

| Channel | Frequency<br>(MHz) | Chain 1<br>Power<br>(dBm) | Chain 2<br>Power<br>(dBm) | Total<br>Power<br>(dBm) |
|---------|--------------------|---------------------------|---------------------------|-------------------------|
| Low     | 5510               | 11.94                     | 11.91                     | 14.94                   |
| Mid     | 5550               | 12.22                     | 12.21                     | 15.23                   |
| High    | 5670               | 12.18                     | 12.89                     | 15.56                   |
| 142     | 5710               | 11.88                     | 12.19                     | 15.05                   |

#### 8.70.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log_{10} B$ , 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  $17 + 10 \log_{10} B$ , 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:

| <b>Chain 1<br/>Antenna<br/>Gain<br/>(dBi)</b> | <b>Chain 2<br/>Antenna<br/>Gain<br/>(dBi)</b> | <b>Uncorrelated Chains<br/>Directional<br/>Gain<br/>(dBi)</b> |
|---|---|---|
| 7.40  | 5.20  | 6.44  |

**RESULTS**

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 43573 | <b>Date:</b> | 9/7/16 |
|------------|-------|--------------|--------|

**Bandwidth, Antenna Gain and Limits**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Min<br>99%<br>BW<br>(MHz) | Directional<br>Gain<br>for Power<br>(dBi) | Directional<br>Gain<br>for PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---------------------------|---|---|-------------------------|-----------------------|
| Low     | 5510               | 40.44                       | 36.174                    | 6.44                                      | 6.44                                    | 24.00                   | 10.56                 |
| Mid     | 5550               | 40.57                       | 36.205                    | 6.44                                      | 6.44                                    | 24.00                   | 10.56                 |
| High    | 5670               | 40.57                       | 36.427                    | 6.44                                      | 6.44                                    | 24.00                   | 10.56                 |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.00 | <b>Included in Calculations of Corr'd PSD</b> |
|---------------------------|------|---|

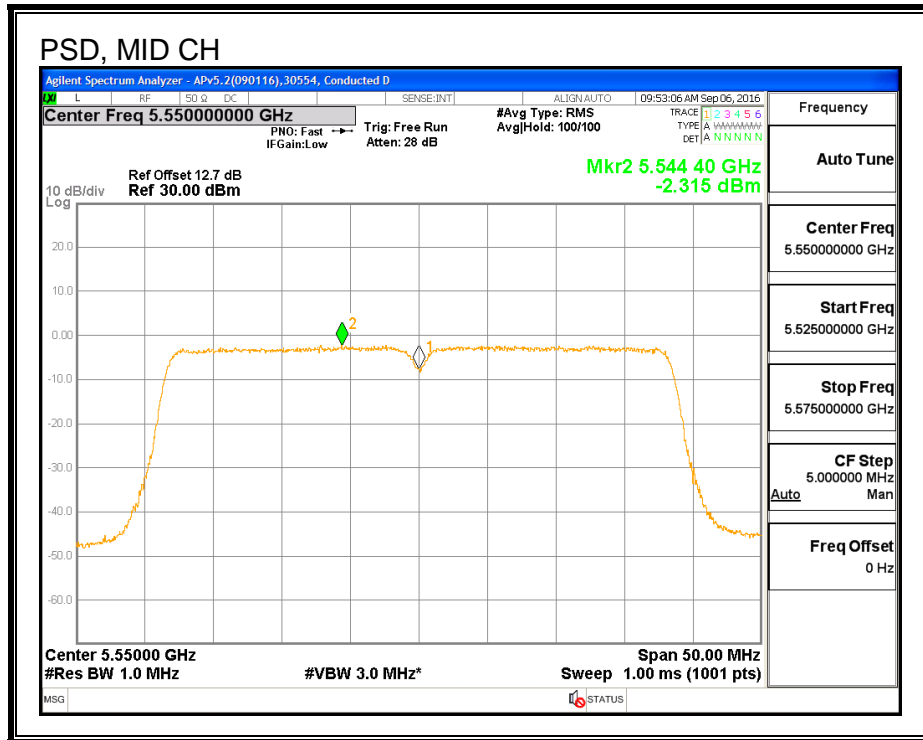
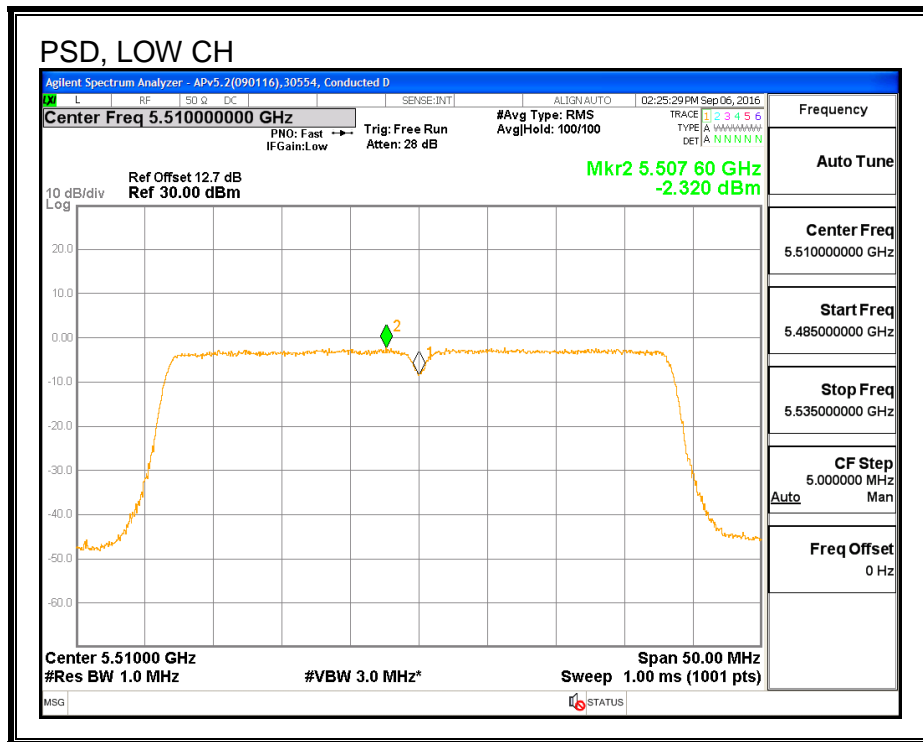
**Output Power Results**

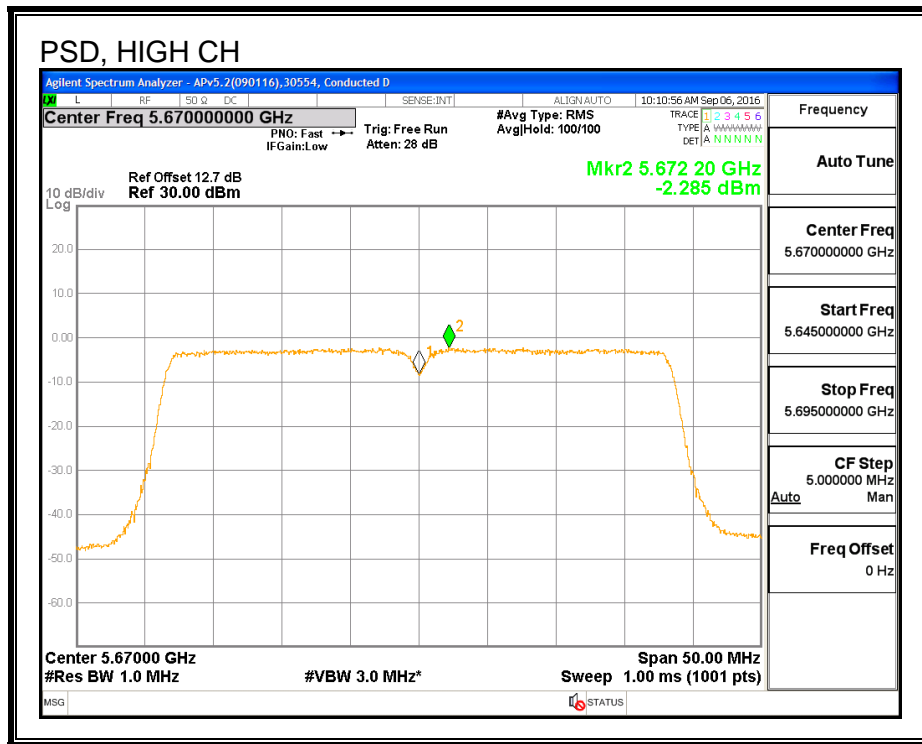
| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>Power<br>(dBm) | Chain 2<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5510               | 11.94                             | 11.91                             | 14.94                             | 24.00                   | -9.06                   |
| Mid     | 5550               | 12.22                             | 12.21                             | 15.23                             | 24.00                   | -8.77                   |
| High    | 5670               | 12.18                             | 12.89                             | 15.56                             | 24.00                   | -8.44                   |

**PSD Results**

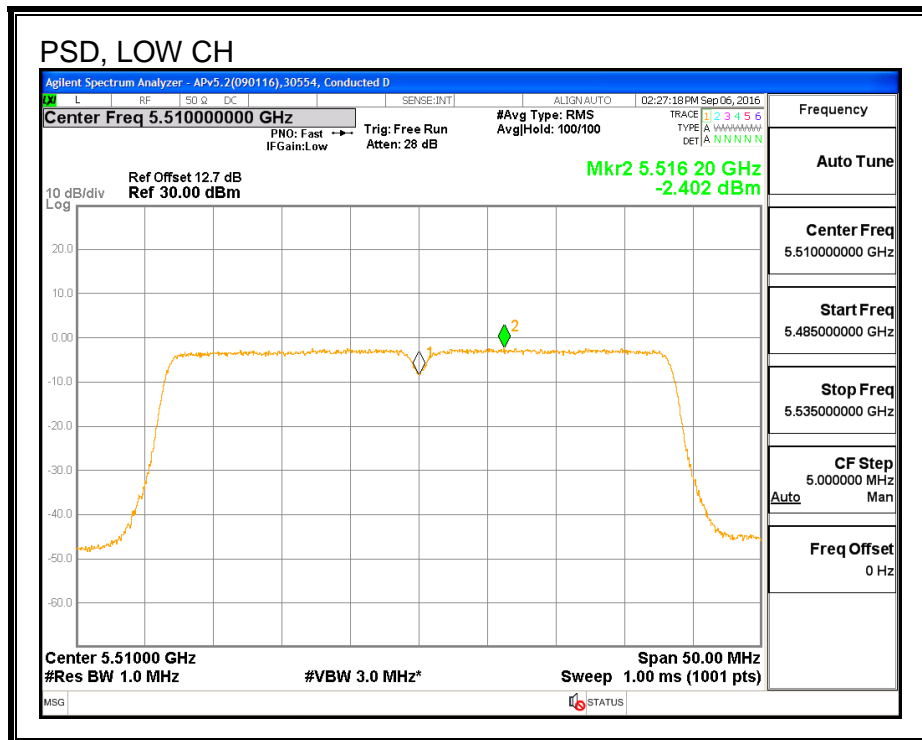
| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>PSD<br>(dBm) | Chain 2<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| Low     | 5510               | -2.32                           | -2.402                          | 0.65                            | 10.56                 | -9.91                 |
| Mid     | 5550               | -2.315                          | -2.287                          | 0.71                            | 10.56                 | -9.85                 |
| High    | 5670               | 2.285                           | -2.168                          | 3.62                            | 10.56                 | -6.94                 |

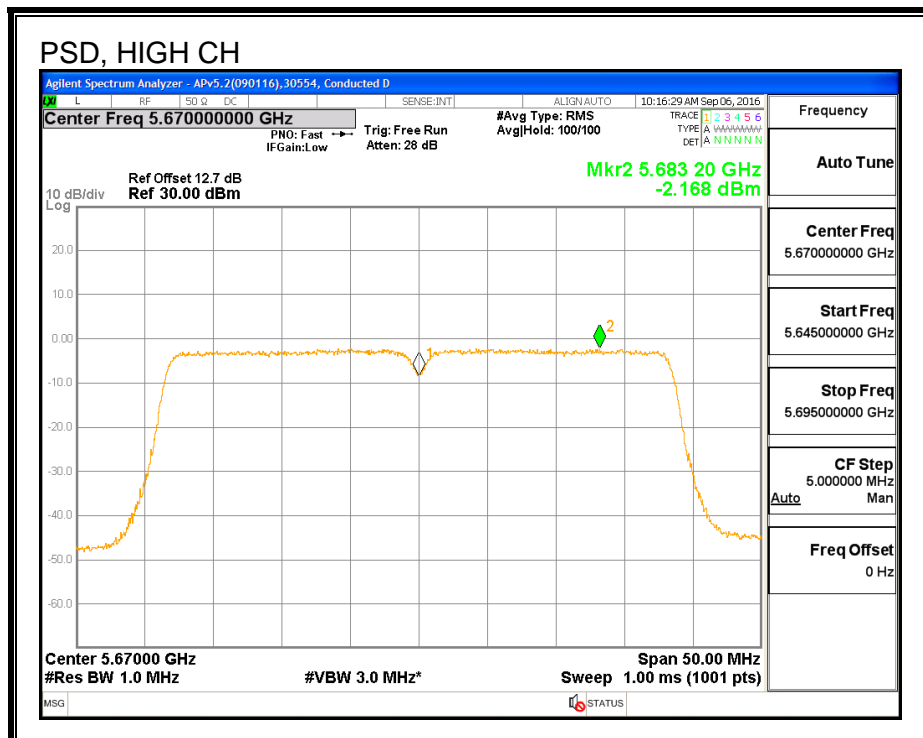
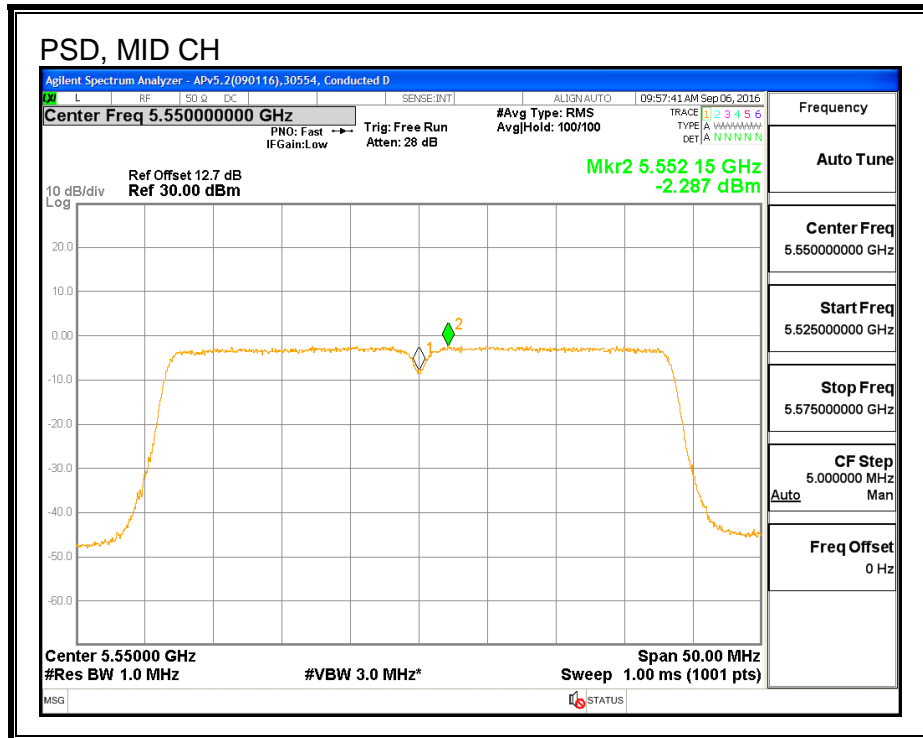
**PSD, CHAIN 1**





**PSD, CHAIN 2**







**8.71. 802.11ac VHT40 2Tx (CHAIN 1 + CHAIN 2) STBC STRADDLE CHANNEL 142 RESULTS (FCC)**

**8.71.1. OUTPUT POWER AND PSD**

**UNII-2C BAND**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Directional<br>Gain<br>for Power<br>(dBi) | Directional<br>Gain<br>for PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---|---|-------------------------|-----------------------|
| 142     | 5710               | 35.19                       | 6.44                                      | 6.44                                    | 23.56                   | 10.56                 |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.00 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

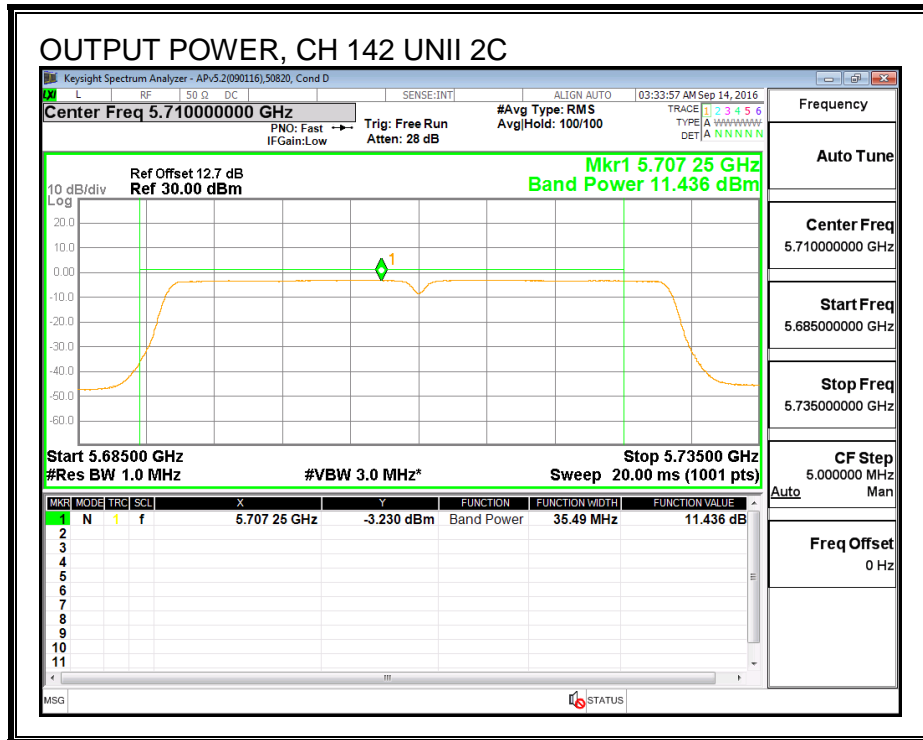
**Output Power Results**

| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>Power<br>(dBm) | Chain 2<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| 142     | 5710               | 11.44                             | 11.75                             | 14.61                             | 23.56                   | -8.95                   |

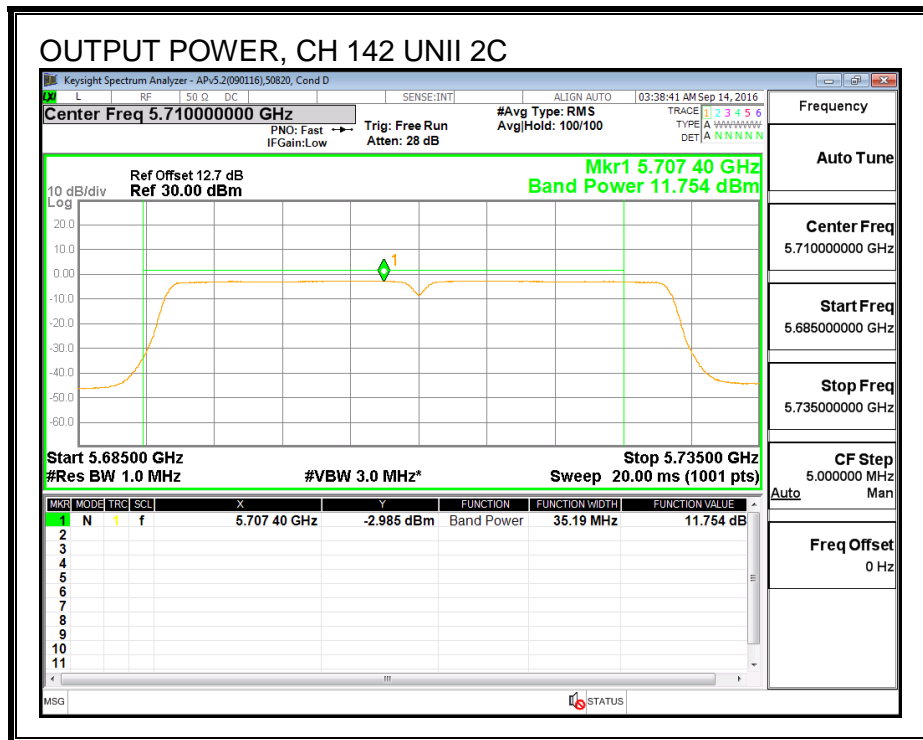
**PSD Results**

| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>PSD<br>(dBm) | Chain 2<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| 142     | 5710               | -3.11                           | -2.74                           | 0.09                            | 10.56                 | -10.47                |

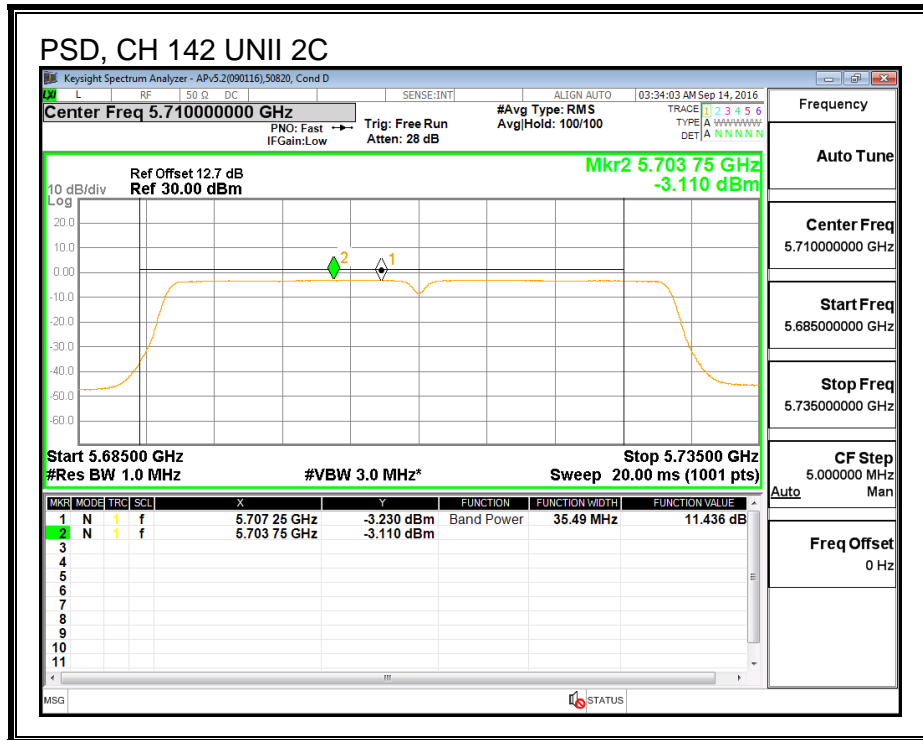
**OUTPUT POWER, CHAIN 1**



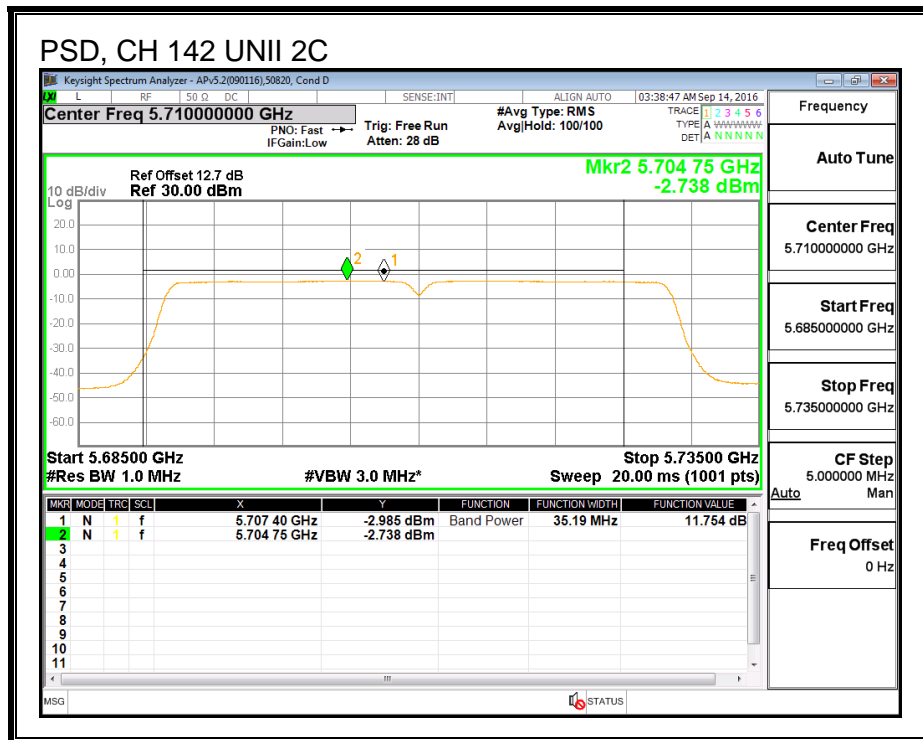
**OUTPUT POWER, CHAIN 2**



**PSD, CHAIN 1**



**PSD, CHAIN 2**



**UNII-3 BAND**

**Antenna Gain and Limit**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Directional<br>Gain<br>For Power<br>(dBi) | Directional<br>Gain<br>For PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---|---|-------------------------|-----------------------|
| 142     | 5710               | 5.19                        | 6.44                                      | 6.44                                    | 29.56                   | 29.56                 |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.00 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

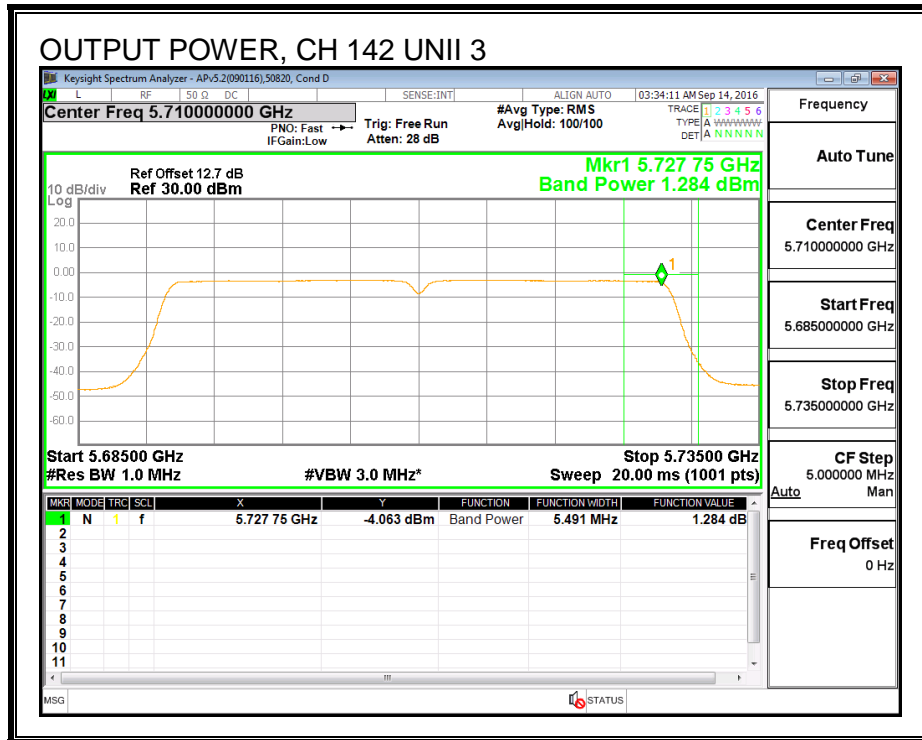
**Output Power Results**

| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>Power<br>(dBm) | Chain 2<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| 142     | 5710               | 1.28                              | 1.57                              | 4.44                              | 29.56                   | -25.12                  |

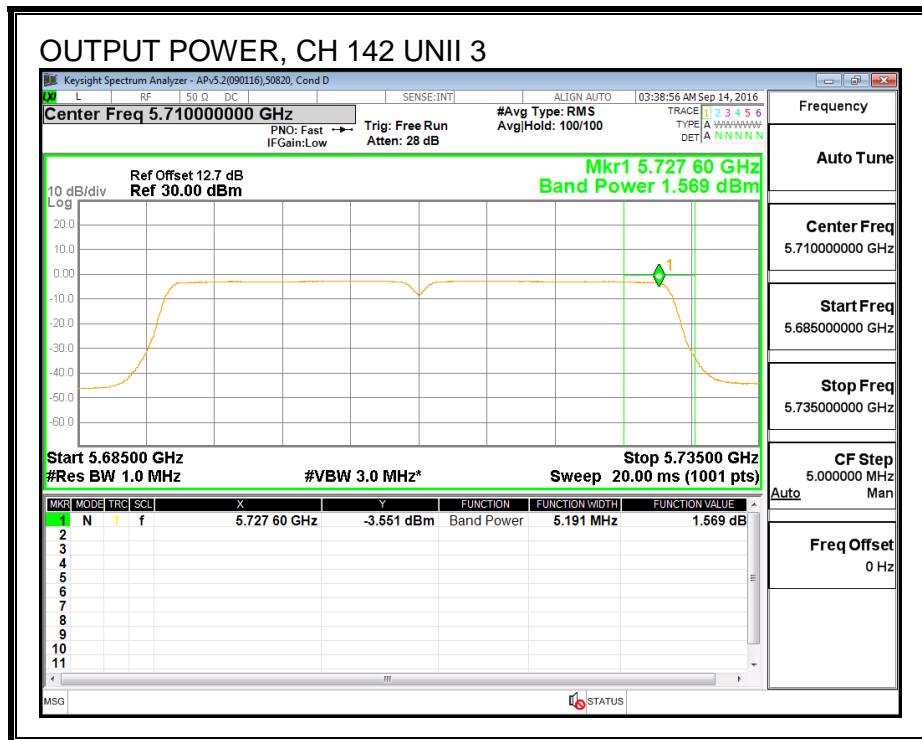
**PSD Results**

| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>PSD<br>(dBm) | Chain 2<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| 142     | 5710               | -6.27                           | -5.98                           | -3.11                           | 29.56                 | -32.67                |

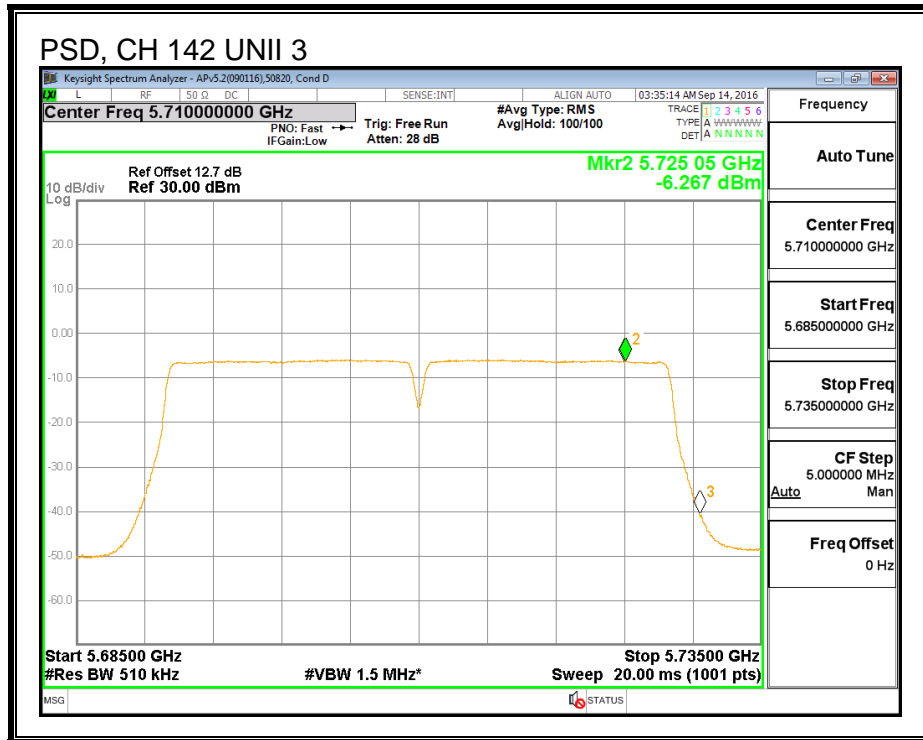
**OUTPUT POWER, CHAIN 1**



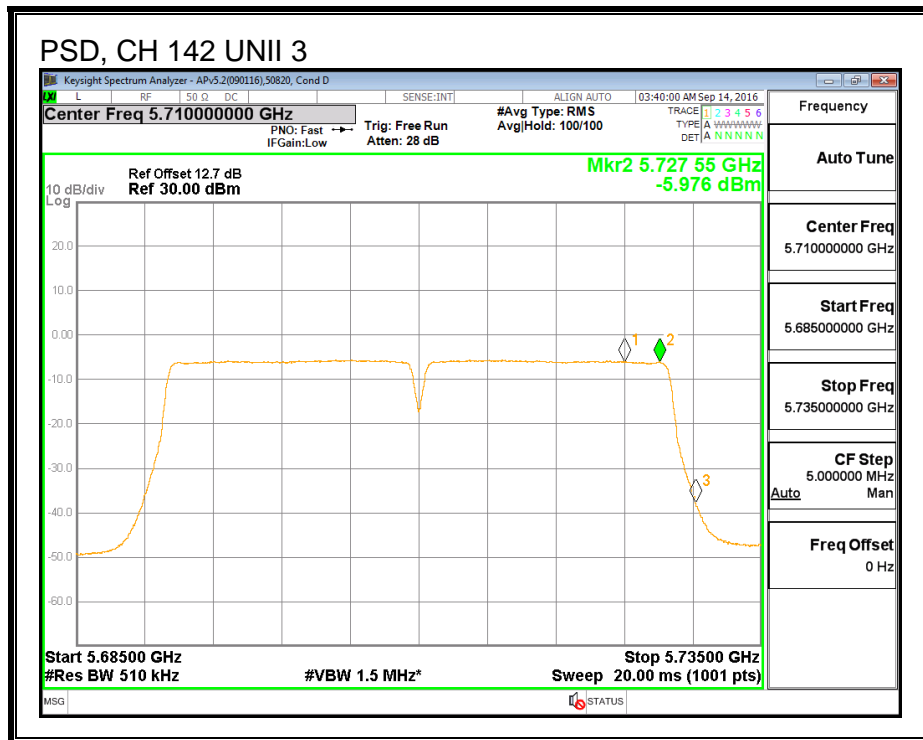
**OUTPUT POWER, CHAIN 2**



**PSD, CHAIN 1**



**PSD, CHAIN 2**



**8.72. 802.11ac VHT40 2Tx (CHAIN 1 + CHAIN 2 ) STBC STRADDLE CHANNEL 142 RESULTS (IC)**

**8.72.1. 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            | 33.190           | 6.44                             | 6.44                           | 23.56             | 10.56           |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.00 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

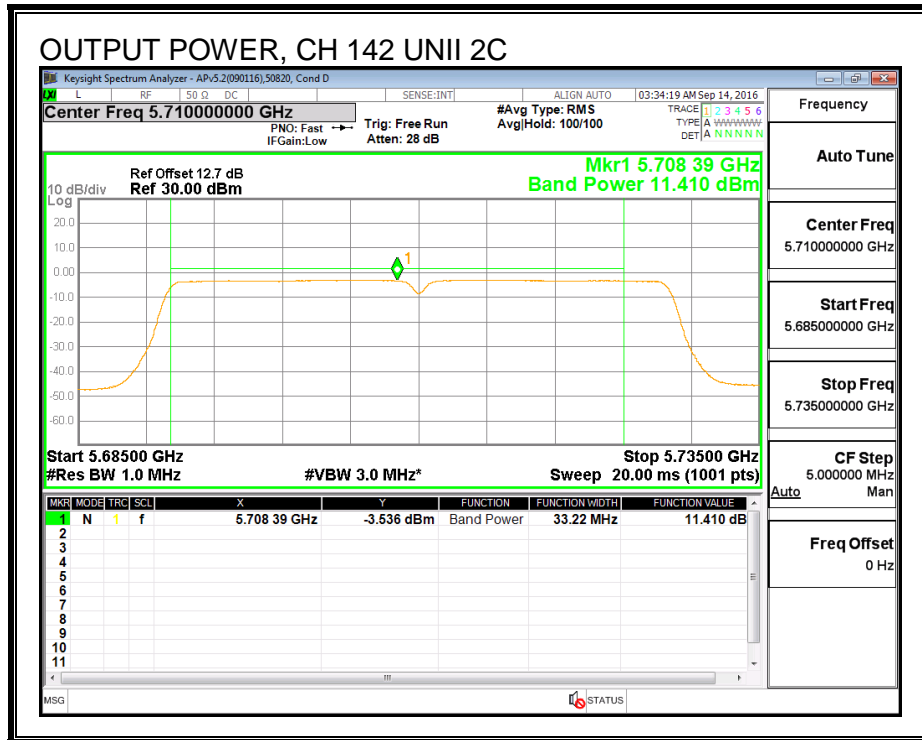
**Output Power Results**

| Channel | Frequency (MHz) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---------|-----------------|--------------------------|--------------------------|--------------------------|-------------------|-------------------|
| 142     | 5710            | 11.41                    | 11.73                    | 14.58                    | 23.56             | -8.98             |

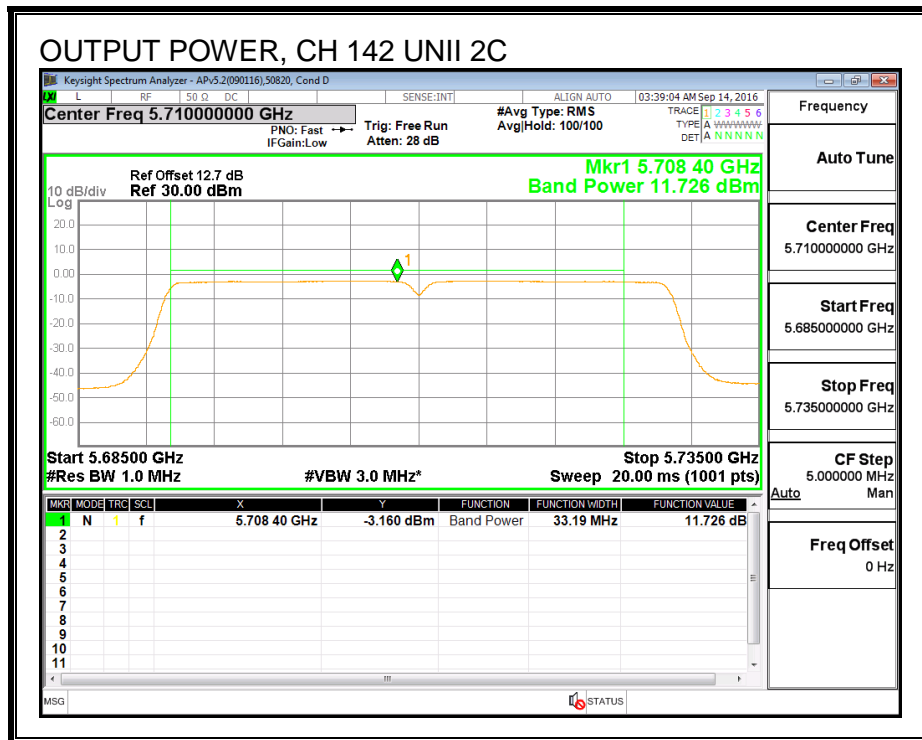
**PSD Results**

| Channel | Frequency (MHz) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---------|-----------------|------------------------|------------------------|------------------------|-----------------|-----------------|
| 142     | 5710            | -3.11                  | -2.74                  | 0.09                   | 10.56           | -10.47          |

**OUTPUT POWER, CHAIN 1**

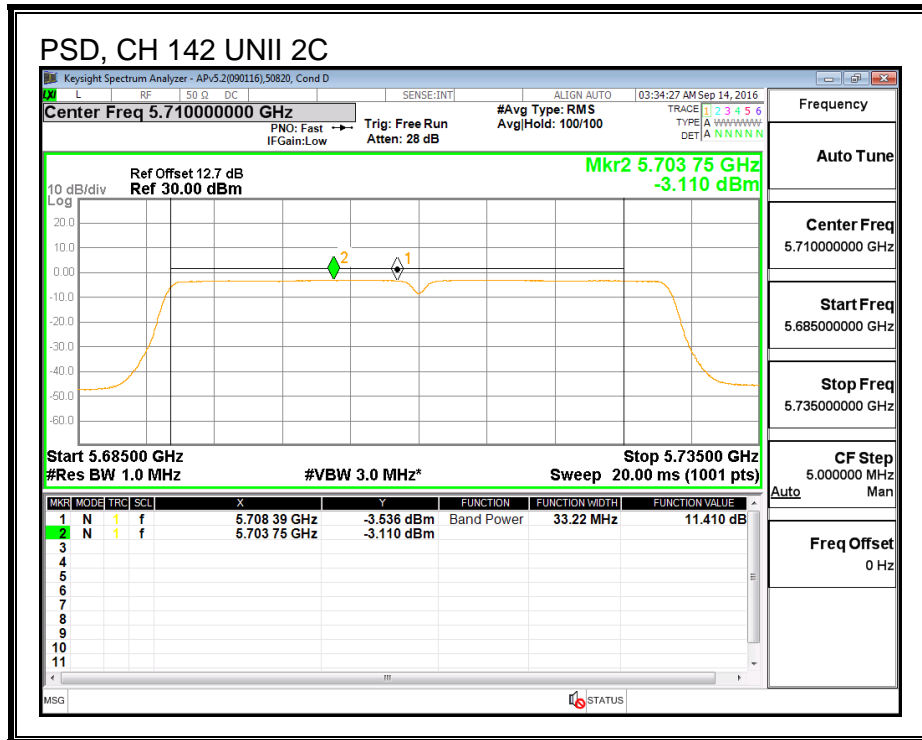


**OUTPUT POWER, CHAIN 2**

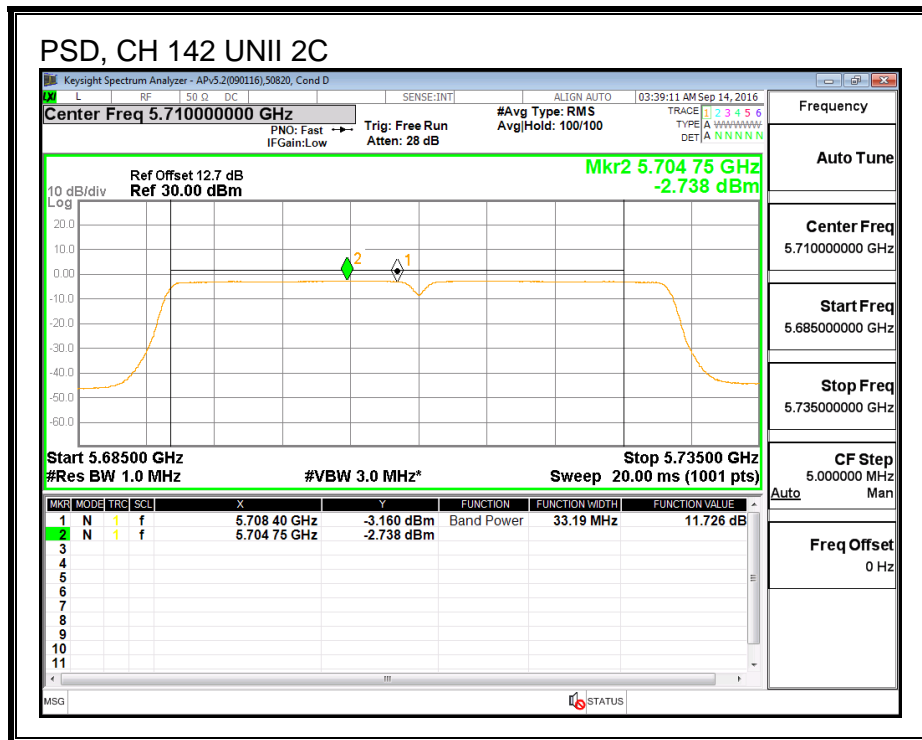




**PSD, CHAIN 1**



**PSD, CHAIN 2**



**UNII-3 BAND**

**Antenna Gain and Limit**

| Channel | Frequency<br>(MHz) | Min<br>99%<br>BW<br>(MHz) | Directional<br>Gain<br>For Power<br>(dBi) | Directional<br>Gain<br>For PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|---------------------------|---|---|-------------------------|-----------------------|
| 142     | 5710               | 3.193                     | 6.44                                      | 6.44                                    | 29.56                   | 29.56                 |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.00 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

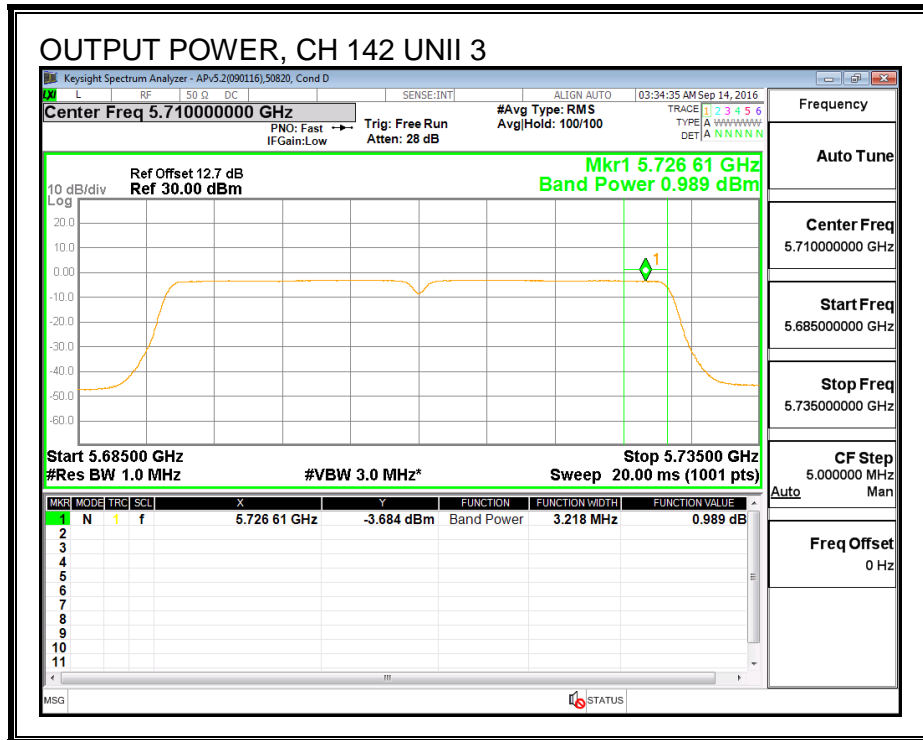
**Output Power Results**

| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>Power<br>(dBm) | Chain 2<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| 142     | 5710               | 0.99                              | 1.26                              | 4.13                              | 29.56                   | -25.43                  |

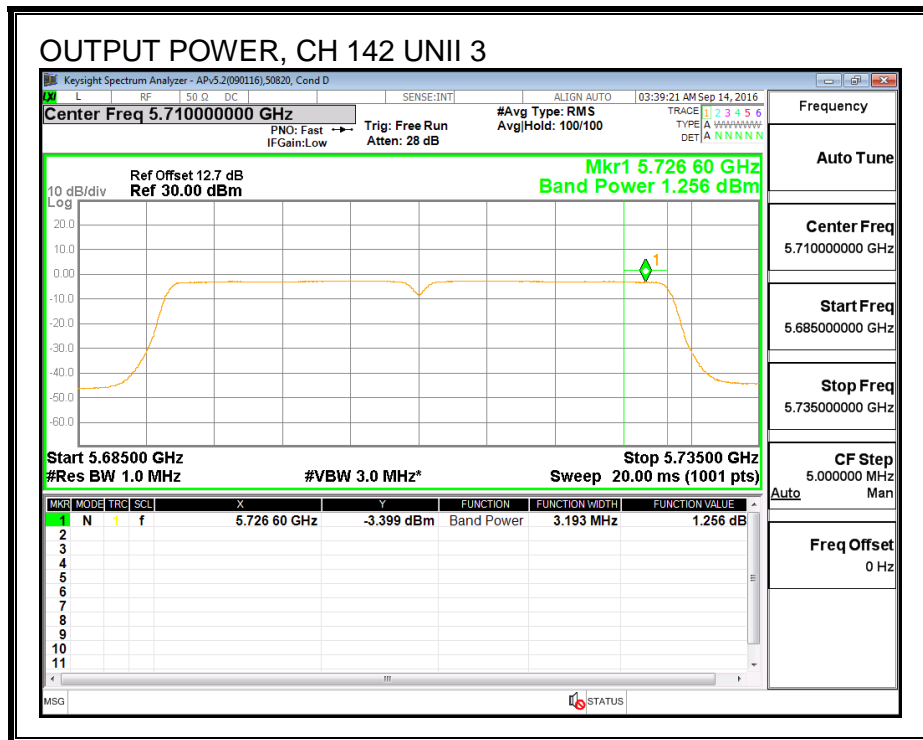
**PSD Results**

| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>PSD<br>(dBm) | Chain 2<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| 142     | 5710               | -6.27                           | -5.98                           | -3.11                           | 29.56                 | -32.67                |

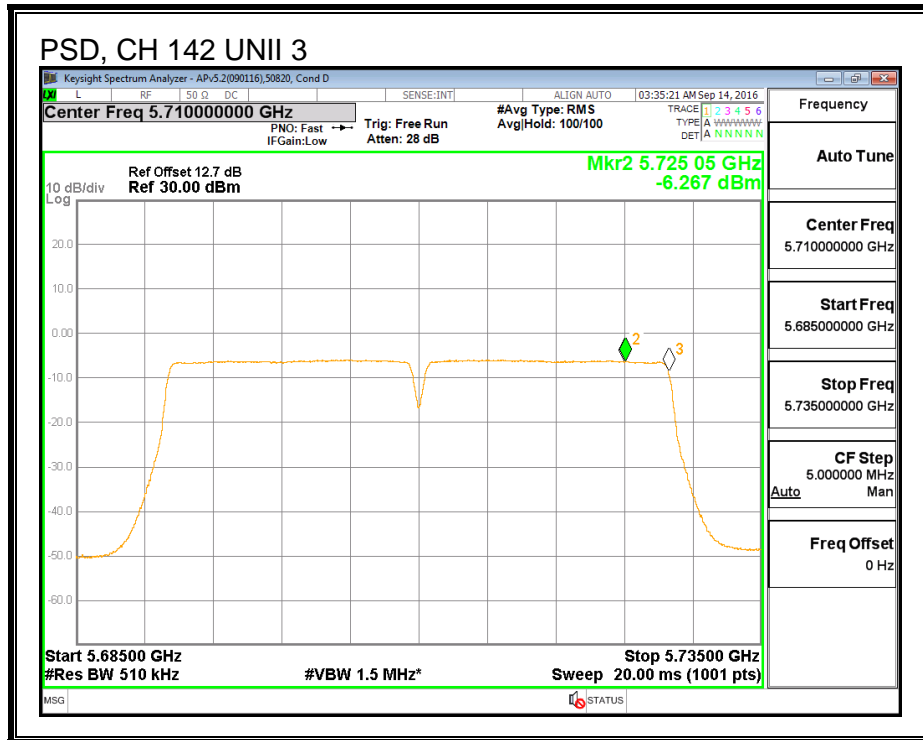
**OUTPUT POWER, CHAIN 1**



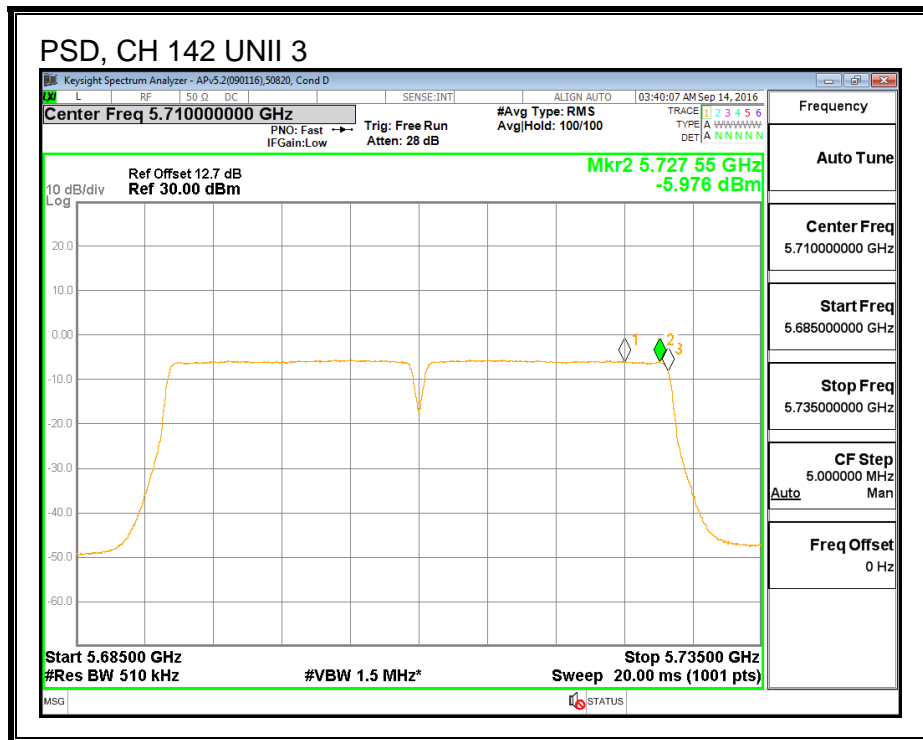
**OUTPUT POWER, CHAIN 2**



**PSD, CHAIN 1**



**PSD, CHAIN 2**



**8.72.2. 6 dB BBANDWIDTH**

**LIMITS**

FCC §15.407 (e)

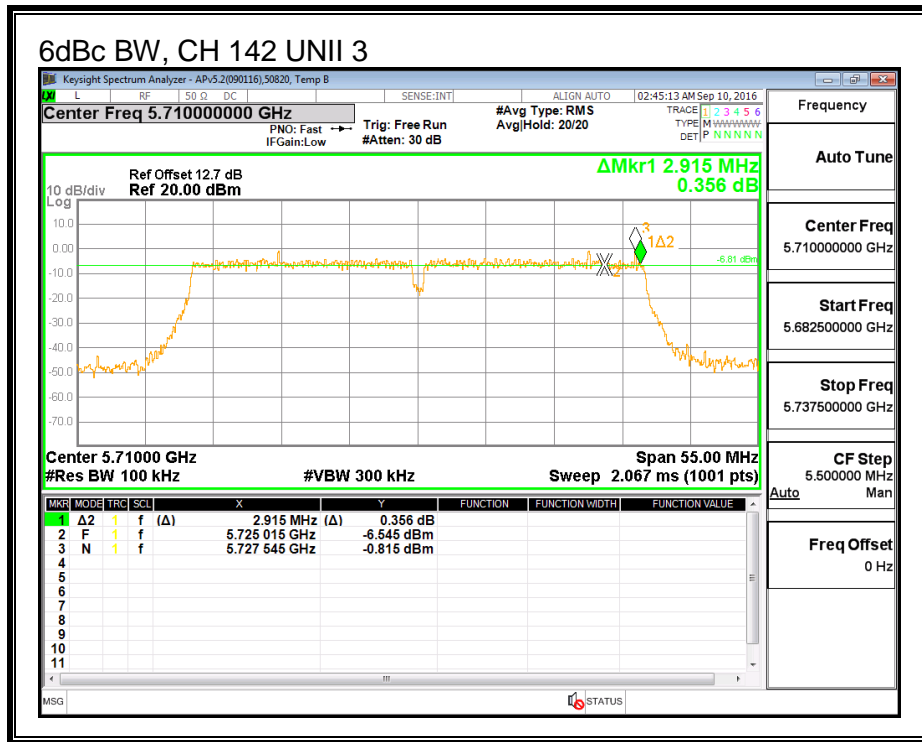
IC RSS-247 (6.2.4) (1)

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

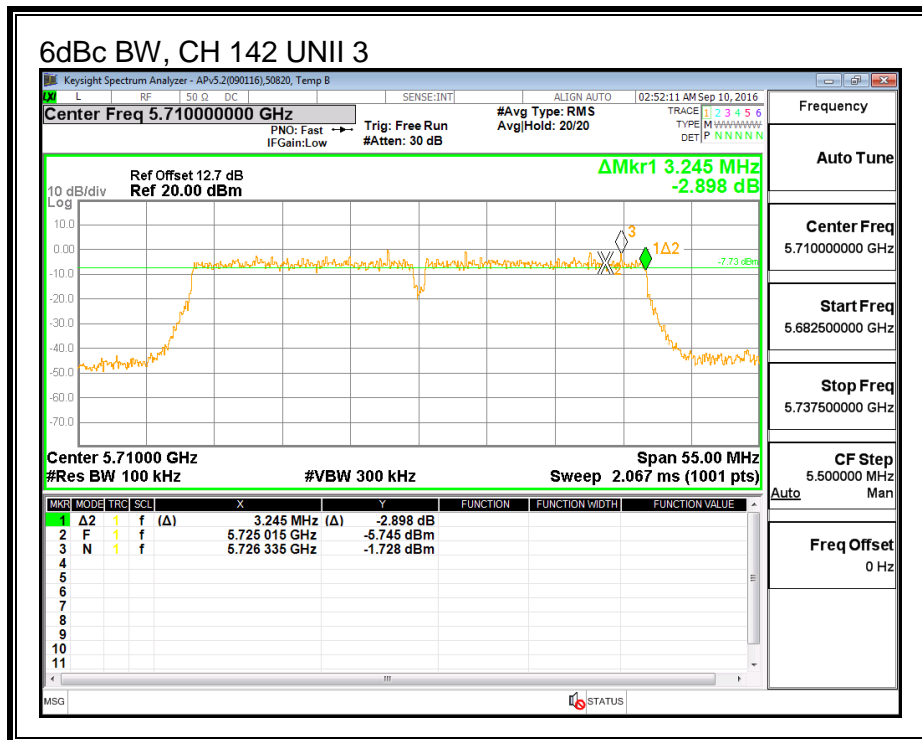
**RESULTS**

| Channel | Frequency<br>(MHz) | 6 dB BW<br>Chain 1<br>(MHz) | 6 dB BW<br>Chain 2<br>(MHz) |
|---------|--------------------|-----------------------------|-----------------------------|
| 142     | 5710               | 2.915                       | 3.245                       |

**CHAIN 1**



**CHAIN 2**



**8.73. 802.11ac VHT40 2Tx (CHAIN 0 + CHAIN 1) BEAM FORMING MODE IN THE 5.6 GHz BAND**

**8.73.1. 26 dB BANDWIDTH**

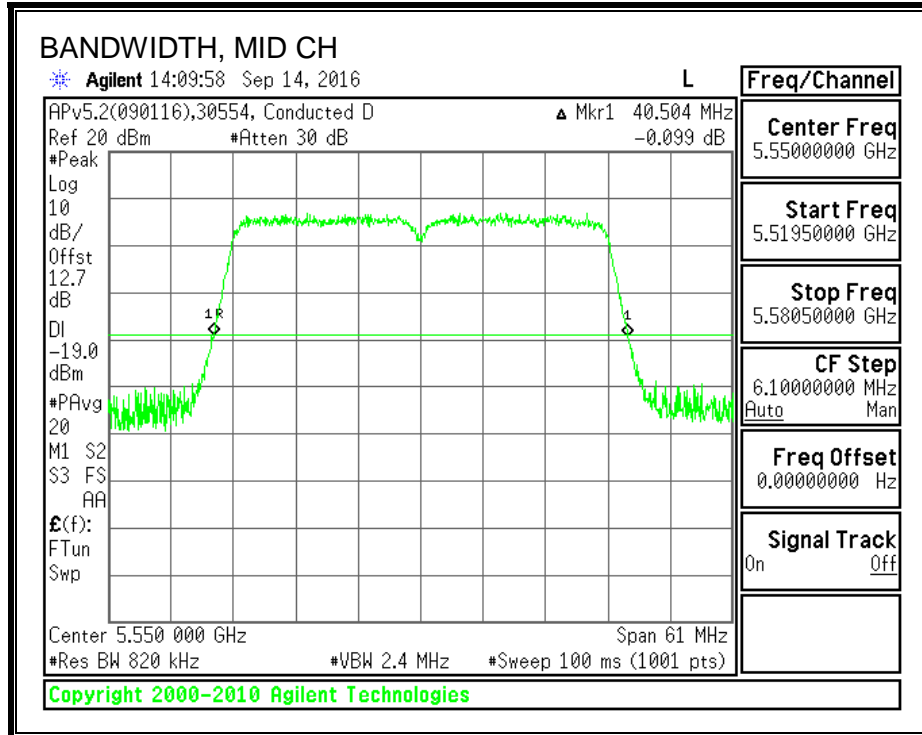
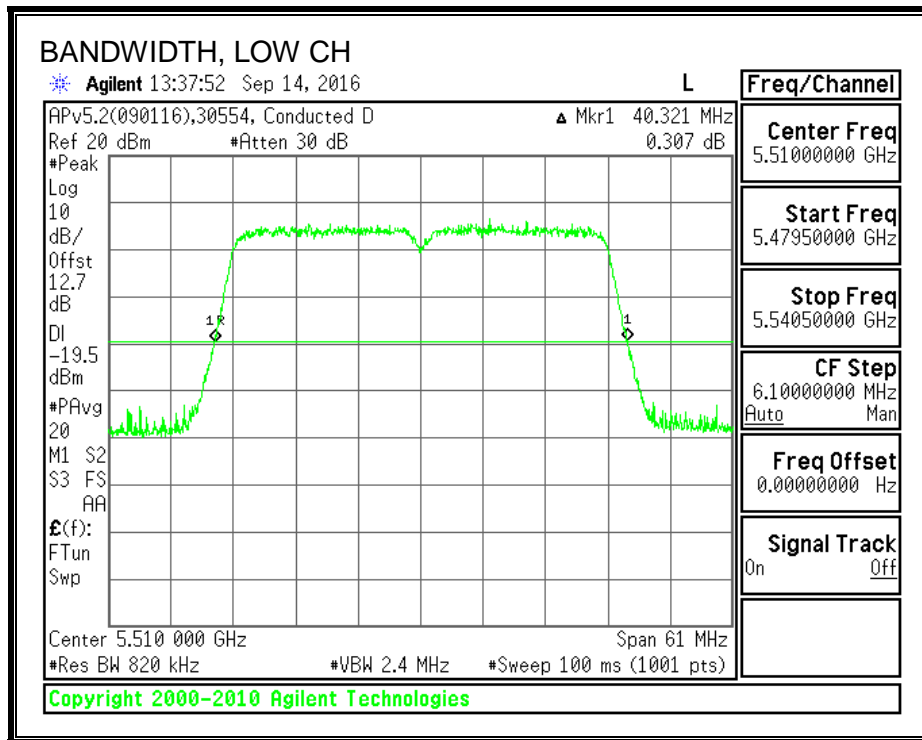
**LIMITS**

None; for reporting purposes only.

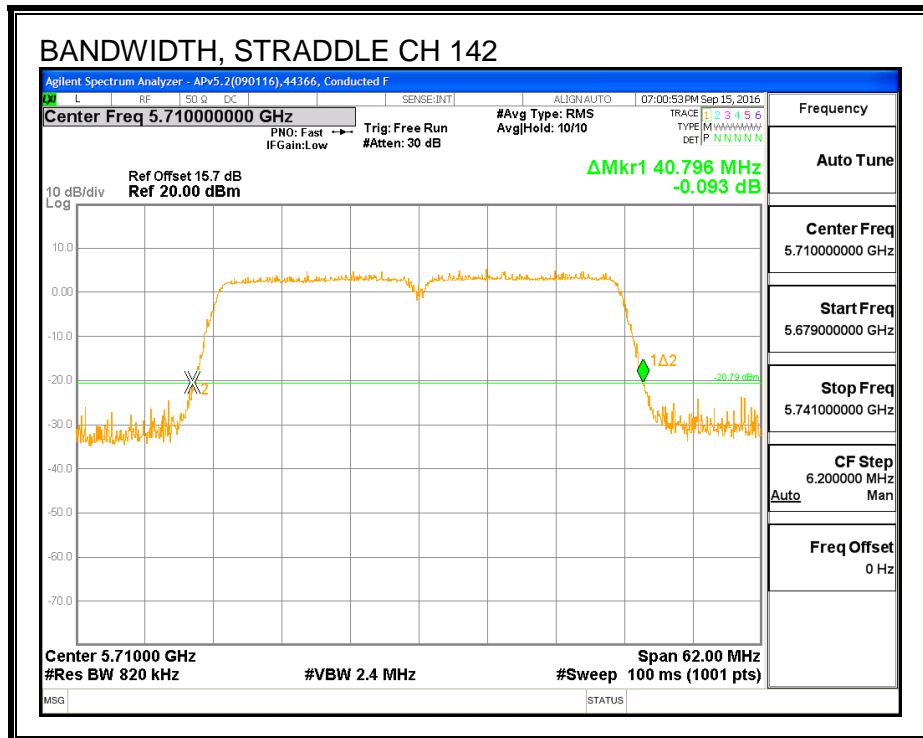
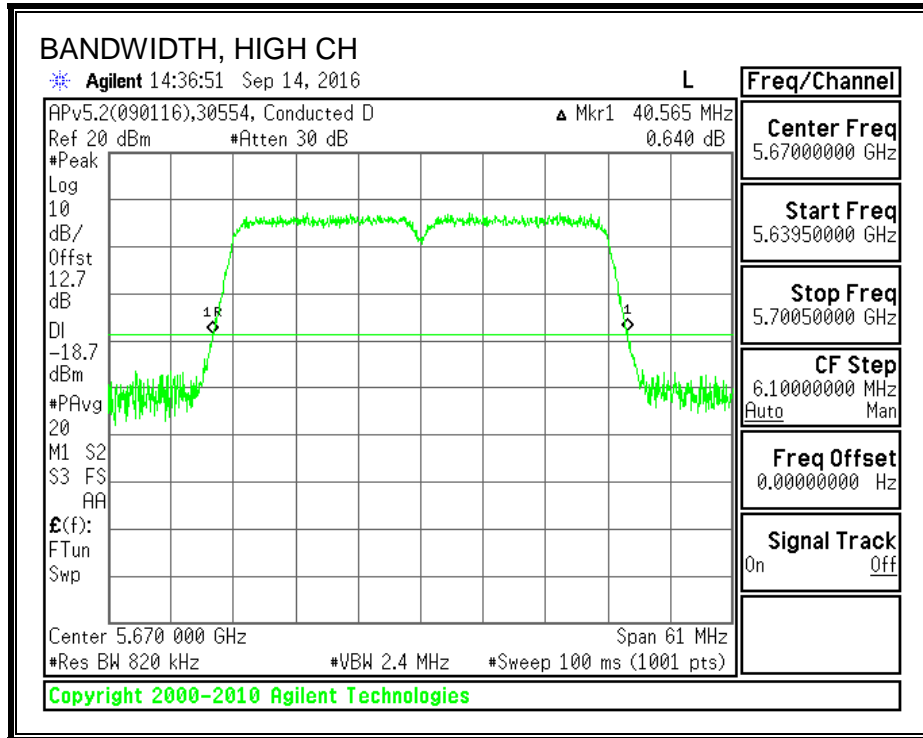
**RESULTS**

| Channel | Frequency (MHz) | 26 dB BW Chain 0 (MHz) | 26 dB BW Chain 1 (MHz) |
|---------|-----------------|------------------------|------------------------|
| Low     | 5510            | 40.321                 | 40.626                 |
| Mid     | 5550            | 40.504                 | 40.565                 |
| High    | 5670            | 40.565                 | 40.626                 |
| 142     | 5710            | 40.796                 | 40.858                 |

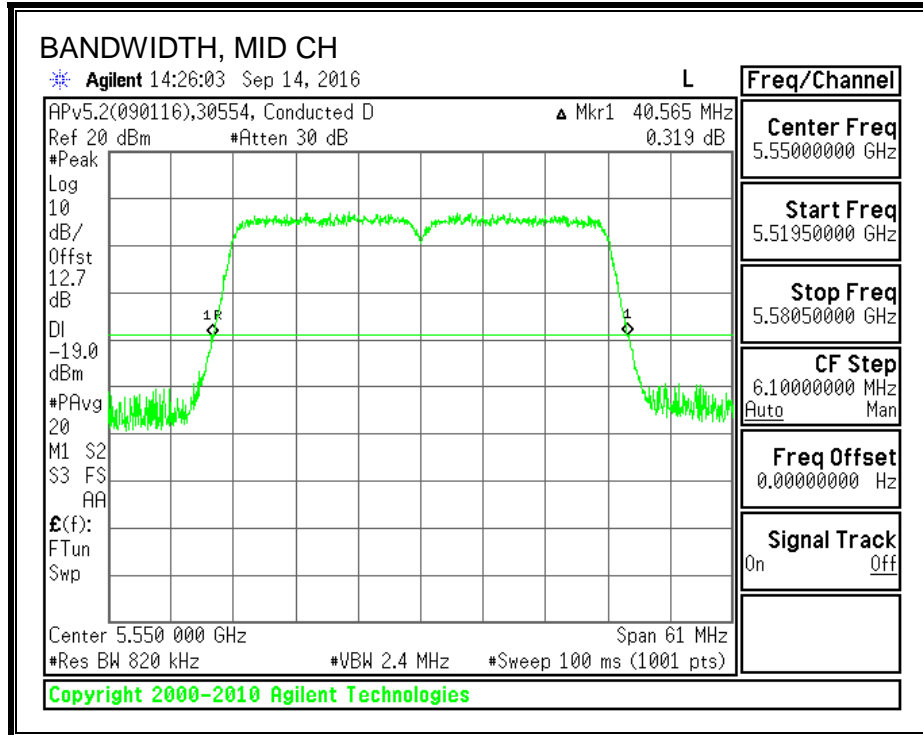
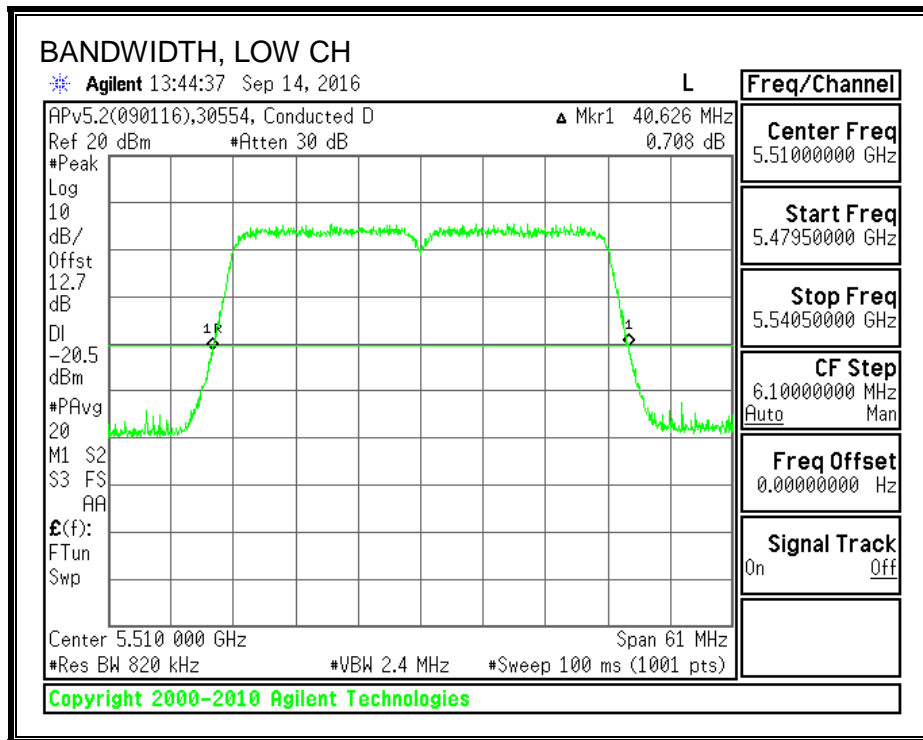
**26 dB BANDWIDTH, CHAIN 0**

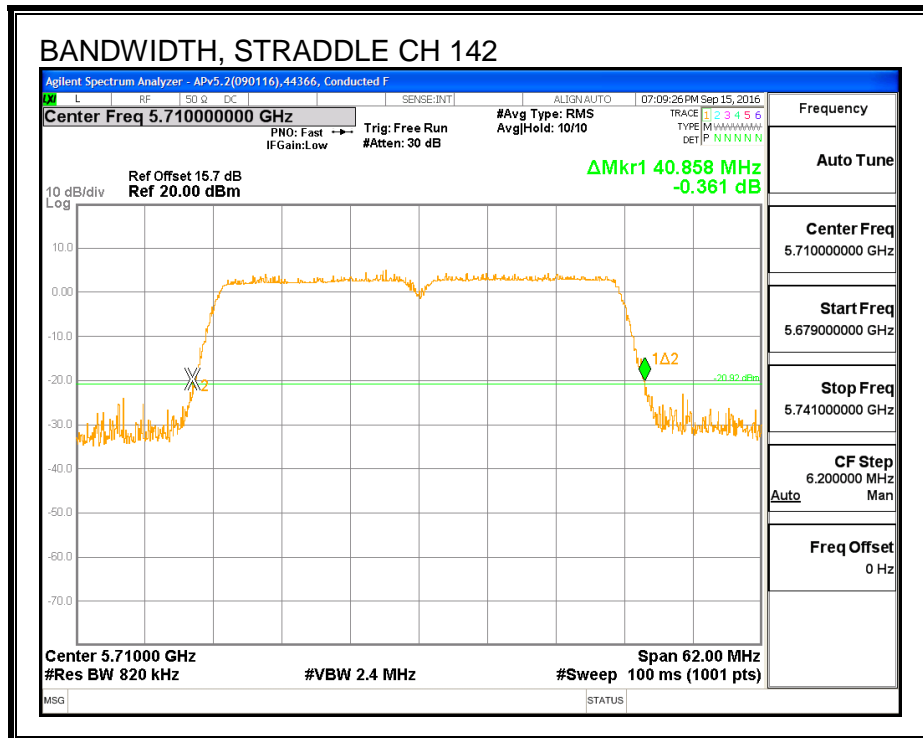
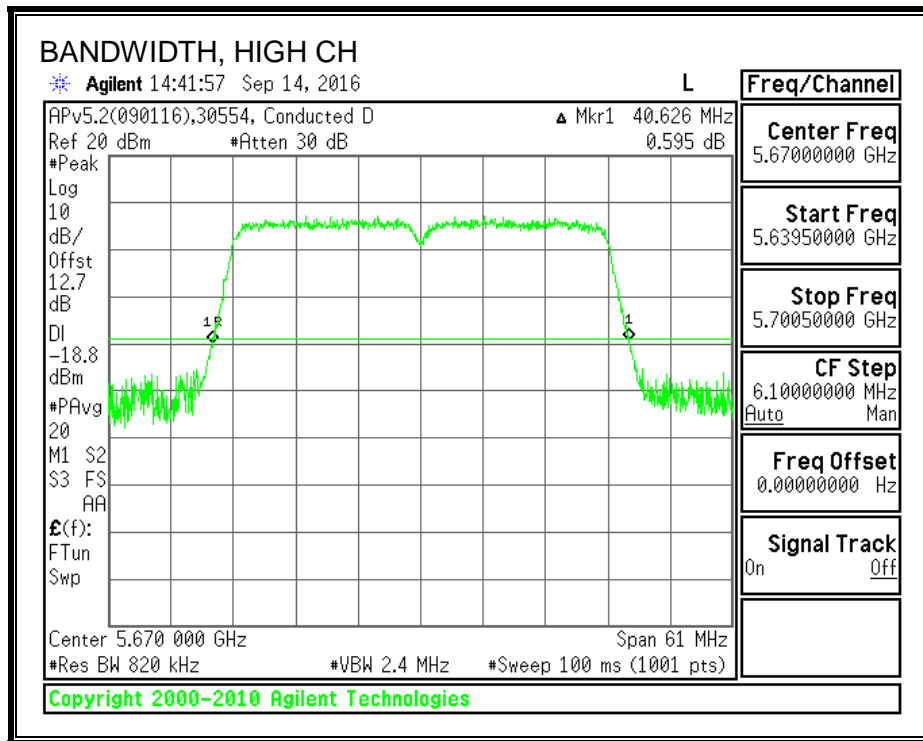






**26 dB BANDWIDTH, CHAIN 1**





**8.73.2. 99% BANDWIDTH**

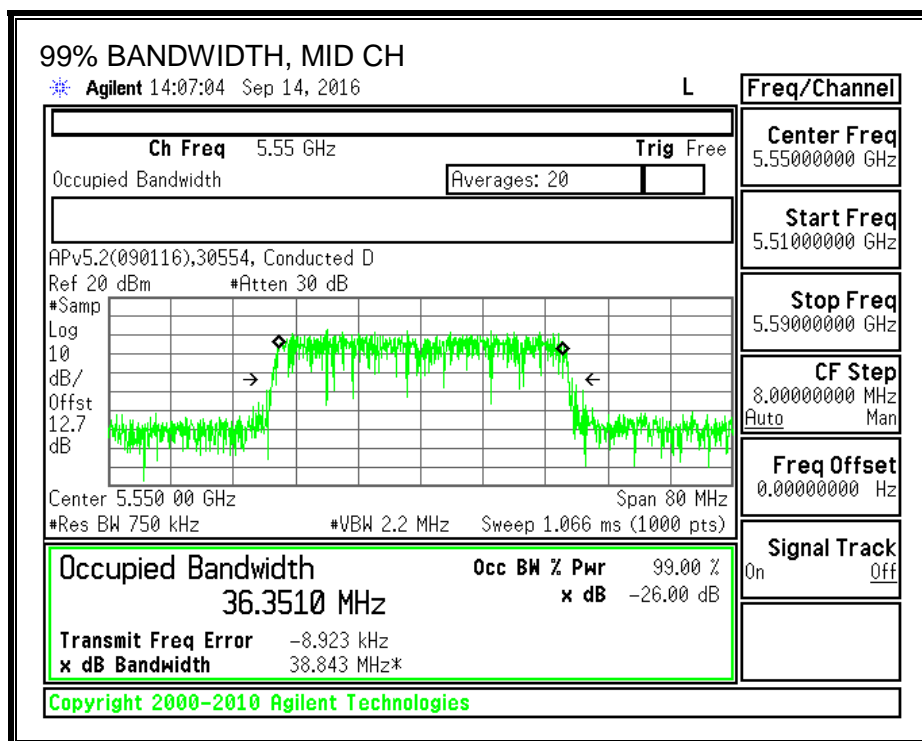
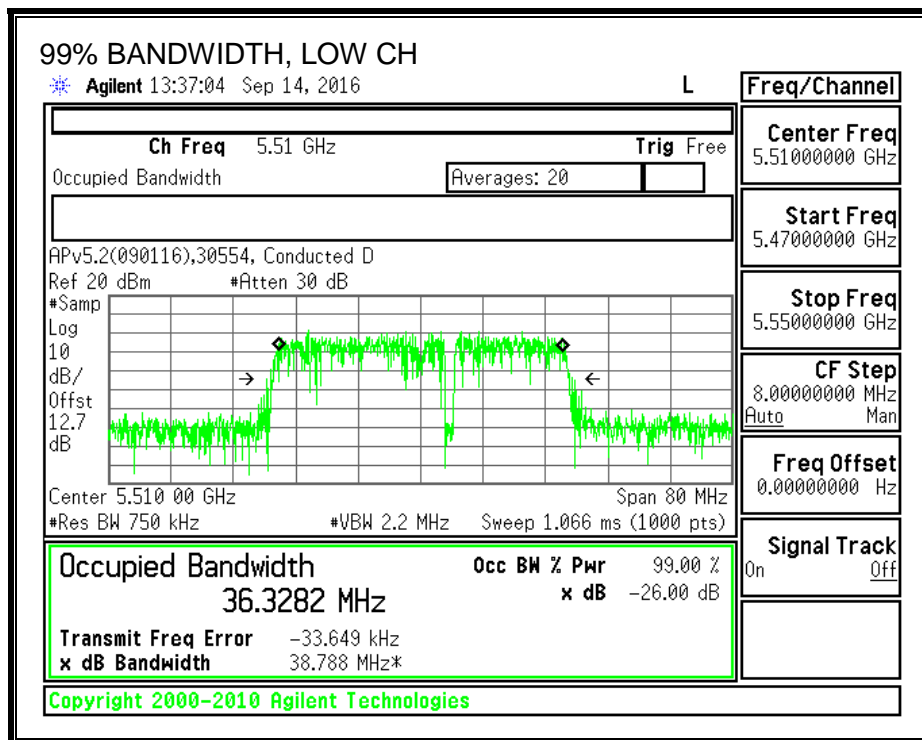
**LIMITS**

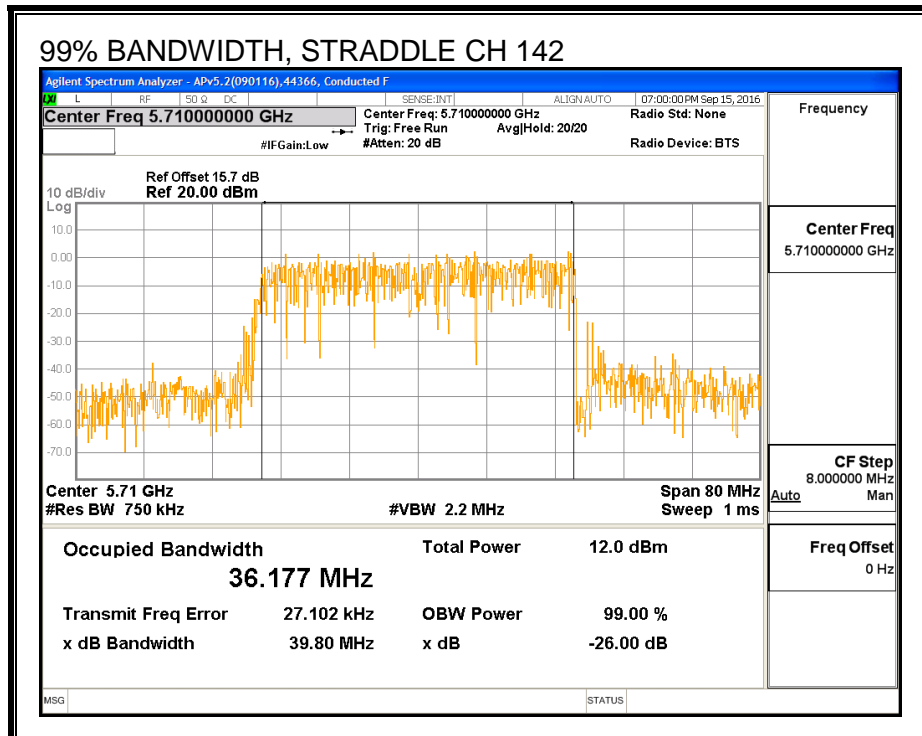
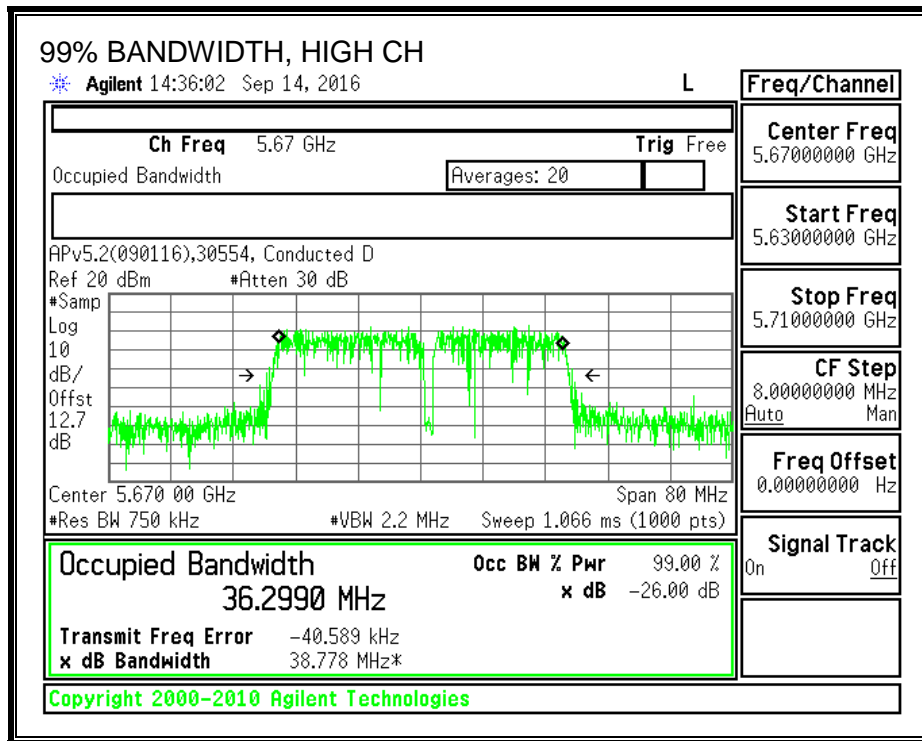
None; for reporting purposes only.

**RESULTS**

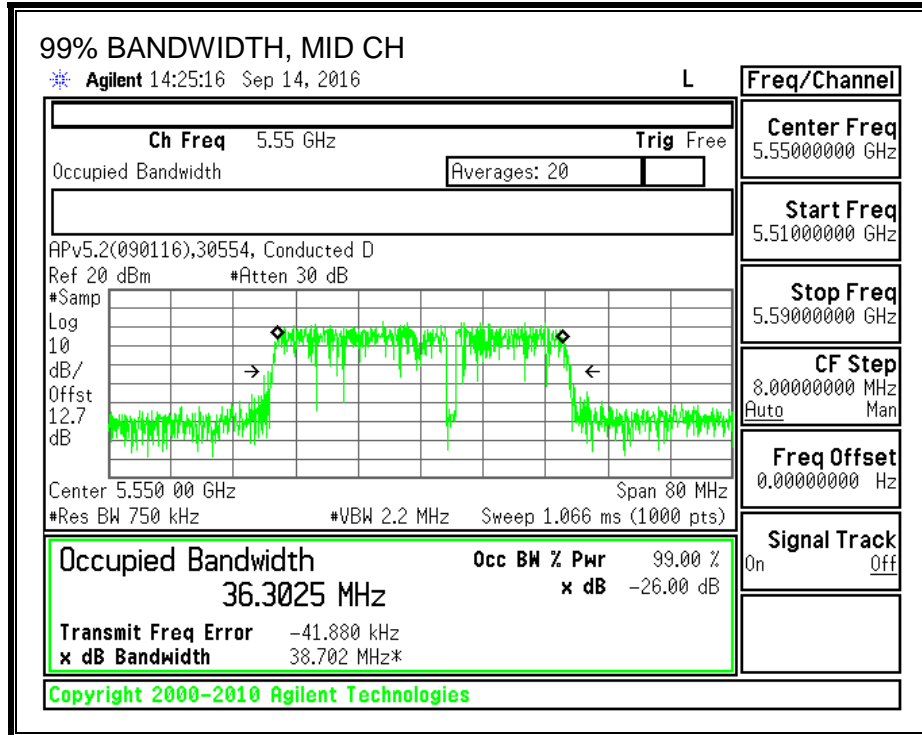
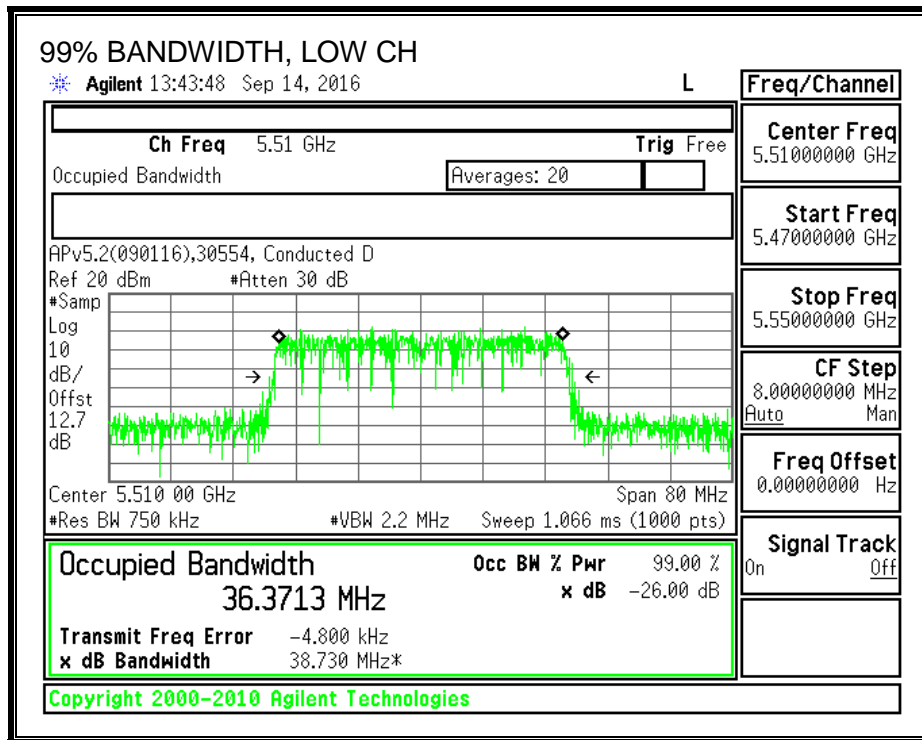
| Channel | Frequency<br>(MHz) | 99% BW<br>Chain 0<br>(MHz) | 99% BW<br>Chain 1<br>(MHz) |
|---------|--------------------|----------------------------|----------------------------|
| Low     | 5510               | 36.328                     | 36.371                     |
| Mid     | 5550               | 36.351                     | 36.303                     |
| High    | 5670               | 36.299                     | 36.311                     |
| 142     | 5710               | 36.177                     | 36.441                     |

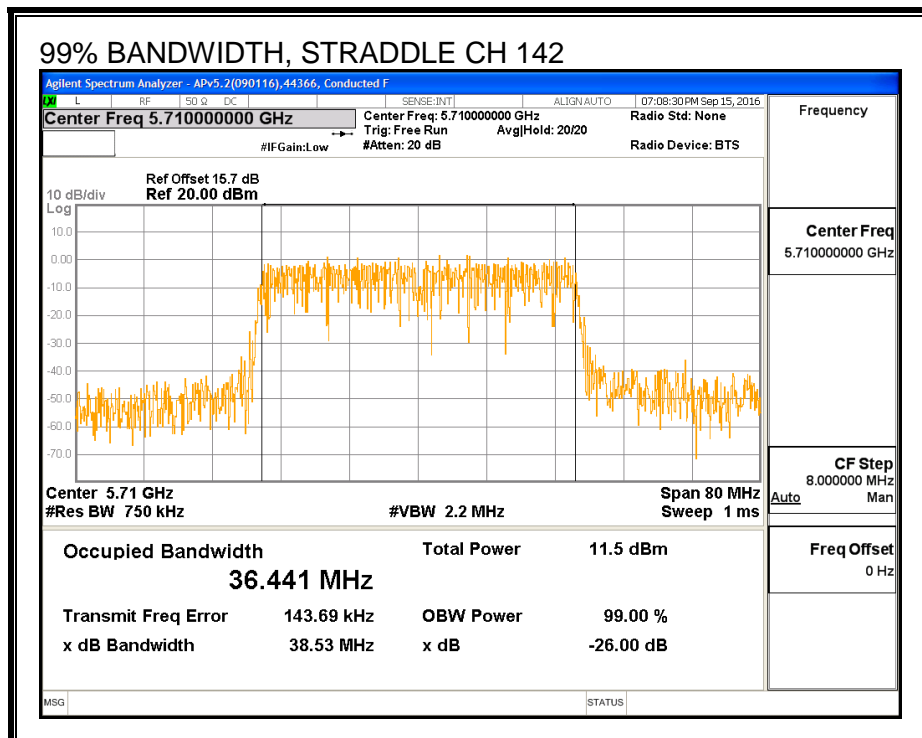
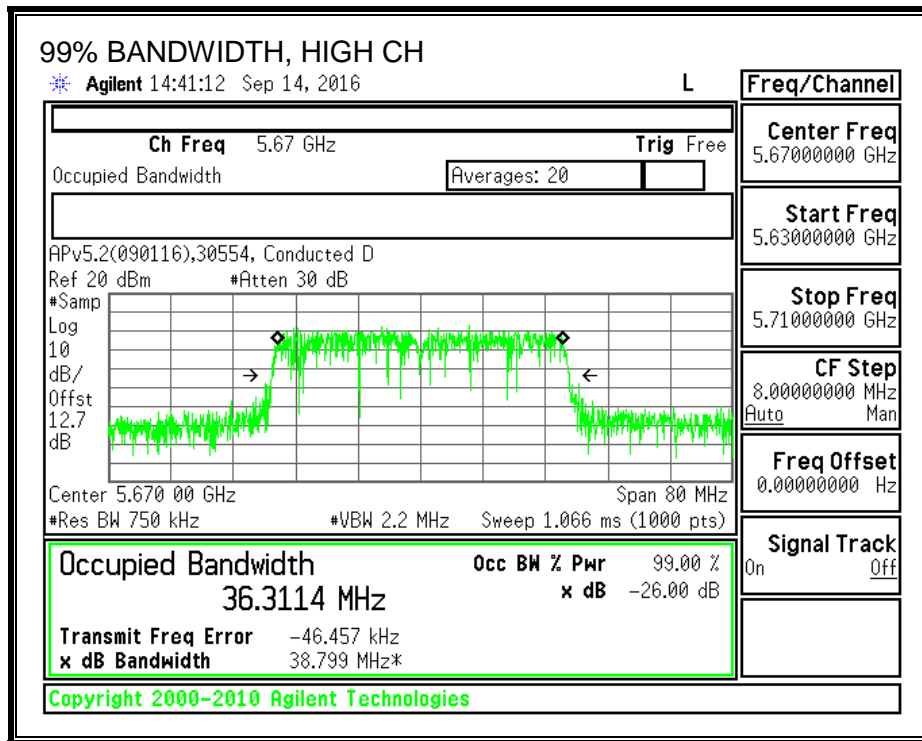
**99% BANDWIDTH, CHAIN 0**





**99% BANDWIDTH, CHAIN 1**







### 8.73.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

|            |       |              |         |
|------------|-------|--------------|---------|
| <b>ID:</b> | 44366 | <b>Date:</b> | 9/12/16 |
|------------|-------|--------------|---------|

#### Average Power Results

| Channel | Frequency<br>(MHz) | Chain 0<br>Power<br>(dBm) | Chain 1<br>Power<br>(dBm) | Total<br>Power<br>(dBm) |
|---------|--------------------|---------------------------|---------------------------|-------------------------|
| Low     | 5510               | 11.00                     | 10.87                     | 13.95                   |
| Mid     | 5590               | 12.25                     | 12.22                     | 15.25                   |
| High    | 5670               | 12.25                     | 12.20                     | 15.24                   |
| 142     | 5710               | 12.21                     | 12.24                     | 15.24                   |

#### 8.73.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log_{10} B$ , 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  $17 + 10 \log_{10} B$ , 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:

| <b>Chain 0<br/>Antenna<br/>Gain<br/>(dBi)</b> | <b>Chain 1<br/>Antenna<br/>Gain<br/>(dBi)</b> | <b>Correlated Chains<br/>Directional<br/>Gain<br/>(dBi)</b> |
|---|---|---|
| 4.90  | 7.40  | 9.25  |

**RESULTS**

|            |       |              |         |
|------------|-------|--------------|---------|
| <b>ID:</b> | 44366 | <b>Date:</b> | 9/12/16 |
|------------|-------|--------------|---------|

**Bandwidth, Antenna Gain and Limits**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Min<br>99%<br>BW<br>(MHz) | Directional<br>Gain<br>for Power<br>(dBi) | Directional<br>Gain<br>for PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---------------------------|---|---|-------------------------|-----------------------|
| Low     | 5510               | 40.32                       | 36.328                    | 9.25                                      | 9.25                                    | 23.35                   | 7.75                  |
| Mid     | 5550               | 40.50                       | 36.303                    | 9.25                                      | 9.25                                    | 23.35                   | 7.75                  |
| High    | 5670               | 40.57                       | 36.311                    | 9.25                                      | 9.25                                    | 23.35                   | 7.75                  |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.79 | <b>Included in Calculations of Corr'd PSD</b> |
|---------------------------|------|---|

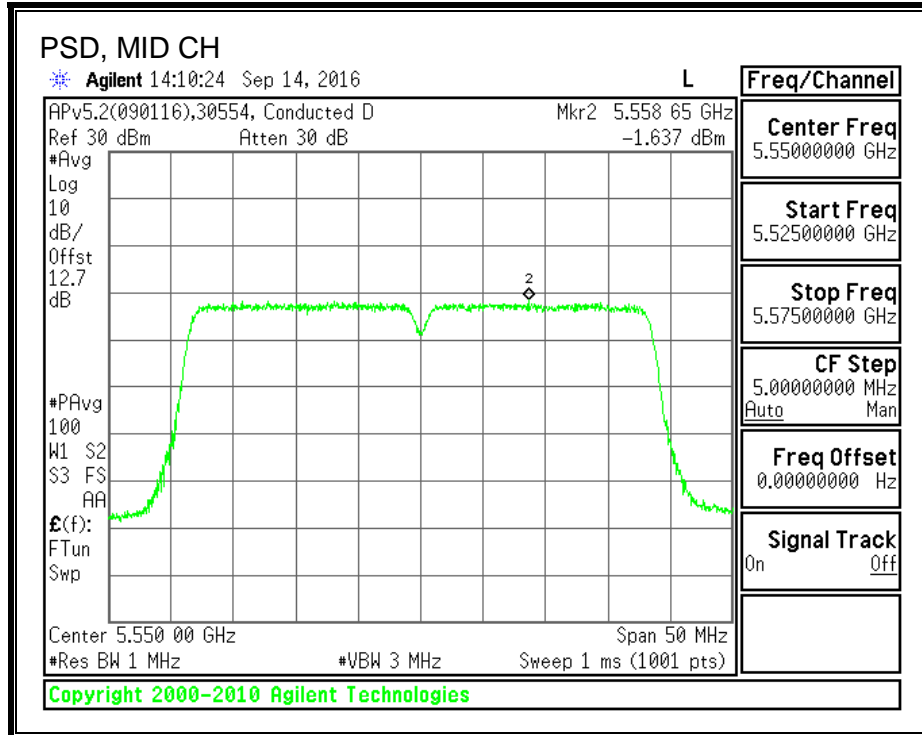
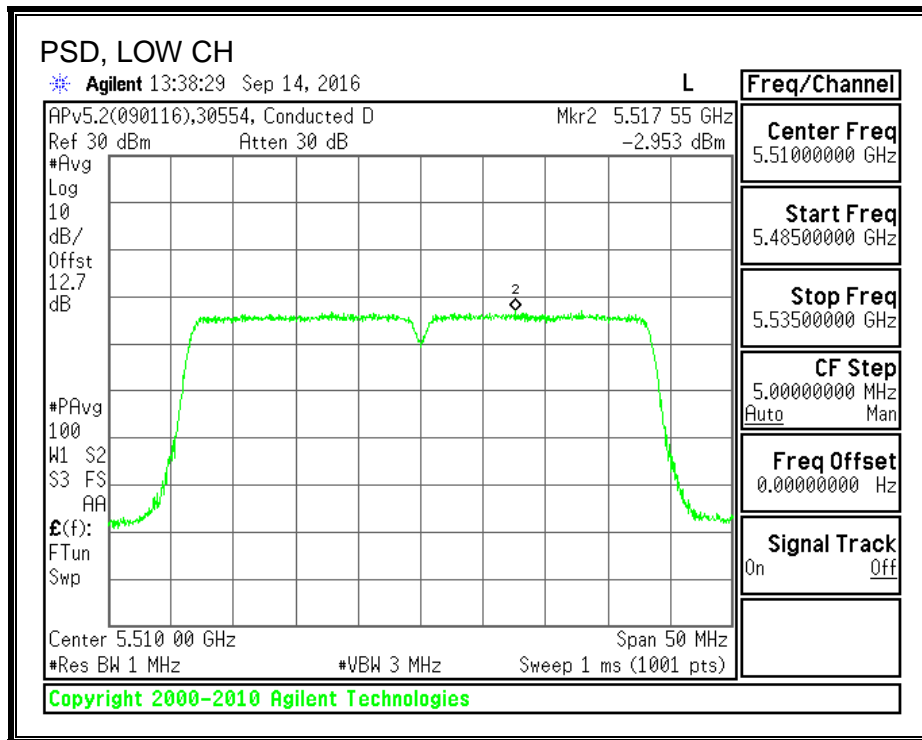
**Output Power Results**

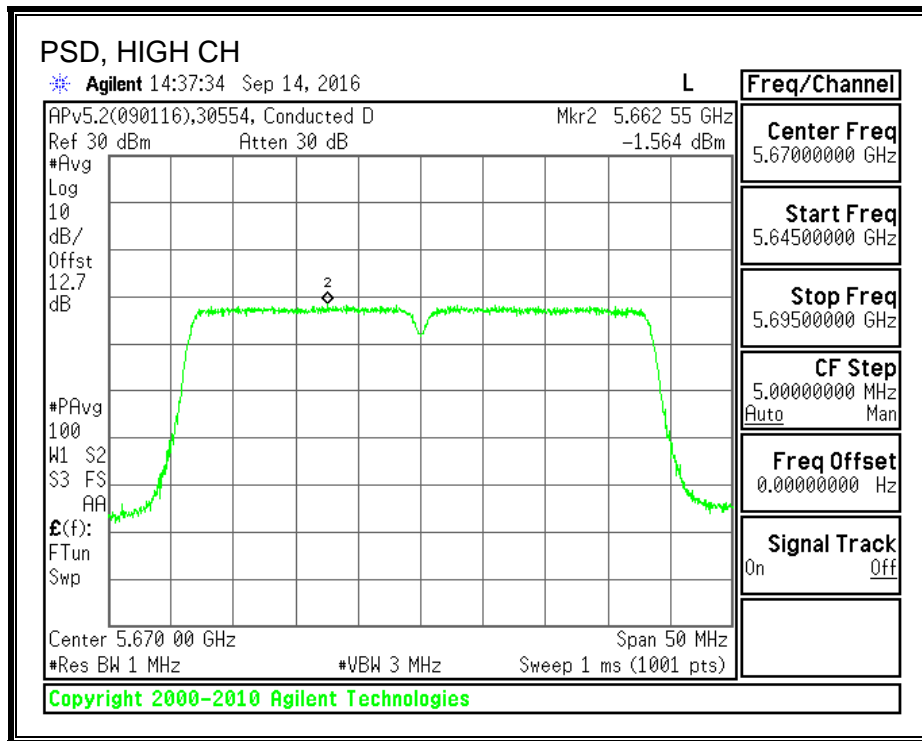
| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>Power<br>(dBm) | Chain 1<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5510               | 11.00                             | 10.87                             | 13.95                             | 23.35                   | -9.41                   |
| Mid     | 5550               | 12.25                             | 12.22                             | 15.25                             | 23.35                   | -8.10                   |
| High    | 5670               | 12.25                             | 12.20                             | 15.24                             | 23.35                   | -8.12                   |

**PSD Results**

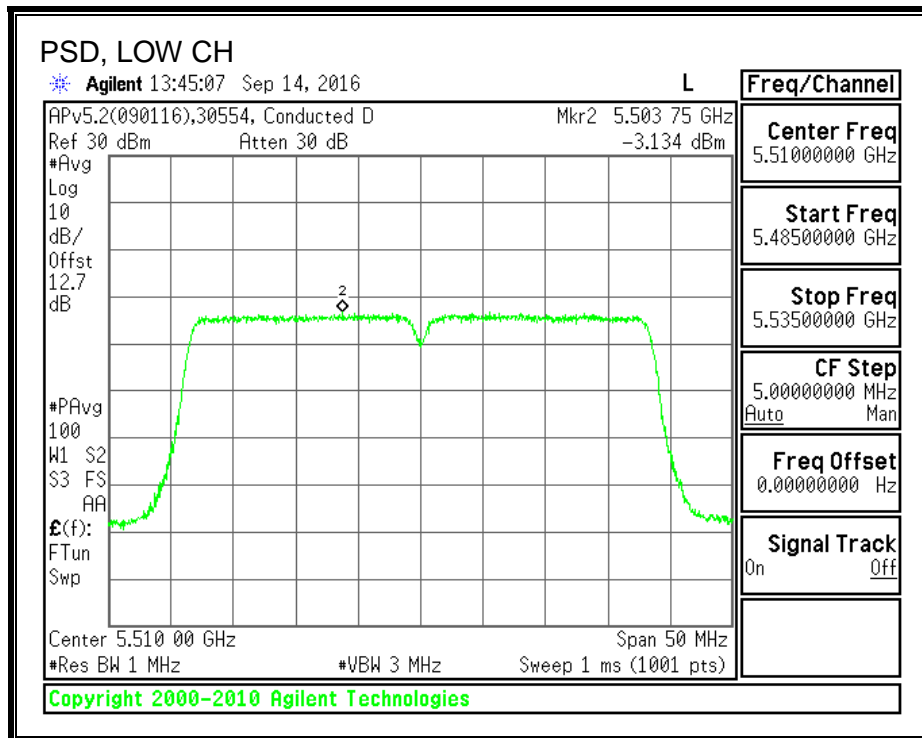
| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>PSD<br>(dBm) | Chain 1<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| Low     | 5510               | -2.95                           | -3.13                           | 0.76                            | 7.75                  | -6.99                 |
| Mid     | 5550               | -1.64                           | -1.75                           | 2.11                            | 7.75                  | -5.64                 |
| High    | 5670               | -1.56                           | -1.69                           | 2.18                            | 7.75                  | -5.57                 |

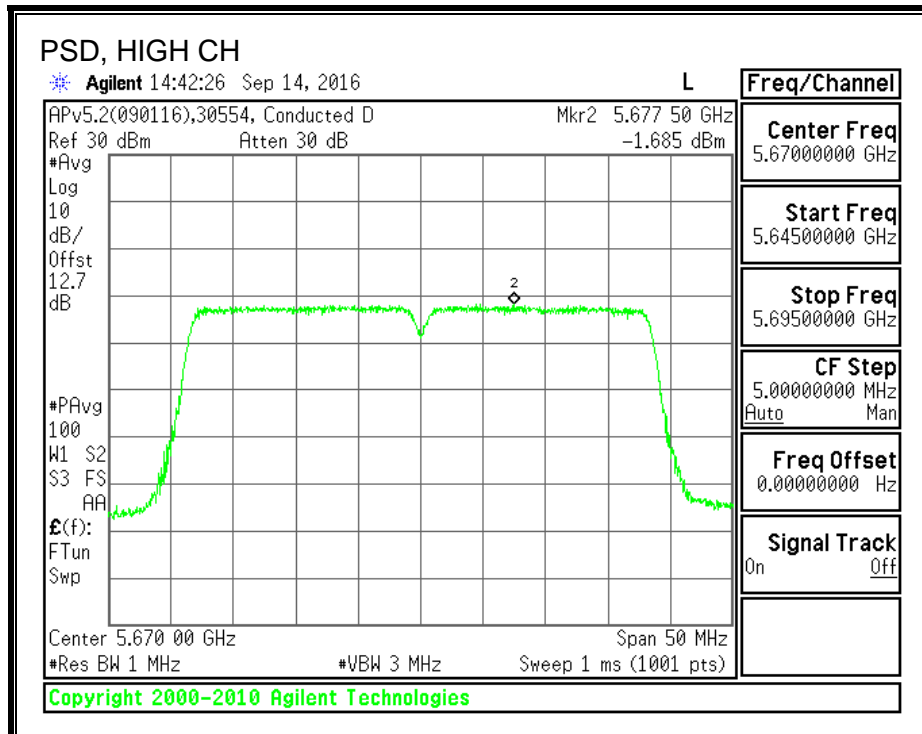
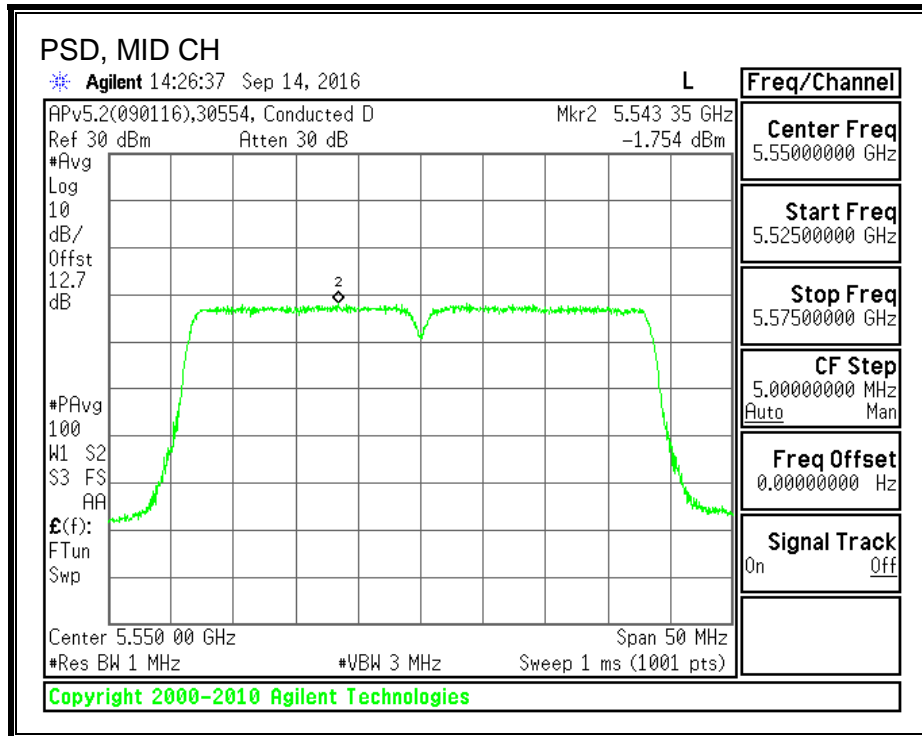
**PSD, CHAIN 0**





**PSD, CHAIN 1**





**8.74. 802.11ac VHT40 2Tx (CHAIN 0 + CHAIN 1) BEAM FORMING STRADDLE CHANNEL 142 RESULTS (FCC)**

**8.74.1. OUTPUT POWER AND PSD**

**UNII-2C BAND**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Directional<br>Gain<br>for Power<br>(dBi) | Directional<br>Gain<br>for PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---|---|-------------------------|-----------------------|
| 142     | 5710               | 35.40                       | 9.25                                      | 9.25                                    | 20.75                   | 7.75                  |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.79 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

**Output Power Results**

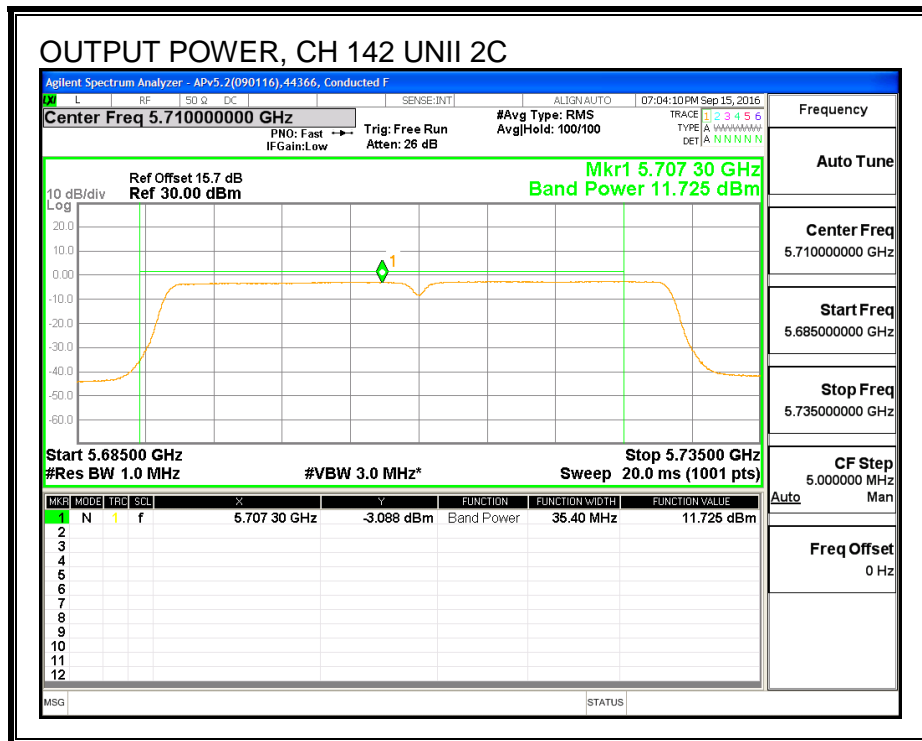
| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>Power<br>(dBm) | Chain 2<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| 142     | 5710               | 11.73                             | 11.77                             | 15.55                             | 20.75                   | -5.20                   |

**PSD Results**

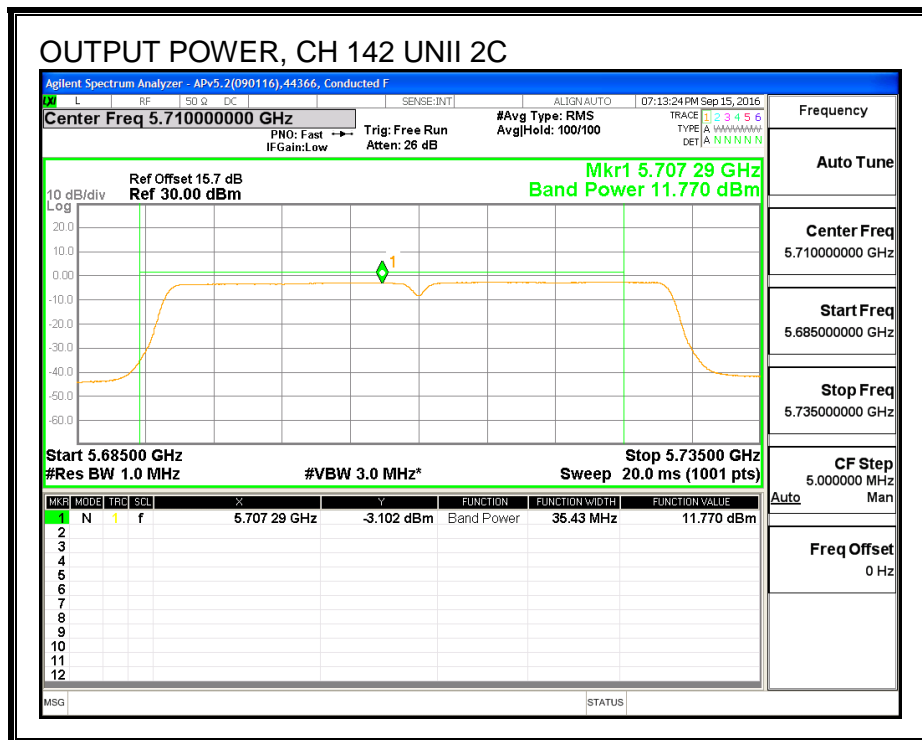
| Channel | Frequency<br>(MHz) | Chain 1<br>Meas<br>PSD<br>(dBm) | Chain 2<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| 142     | 5710               | -2.59                           | -2.55                           | 1.23                            | 7.75                  | -6.52                 |



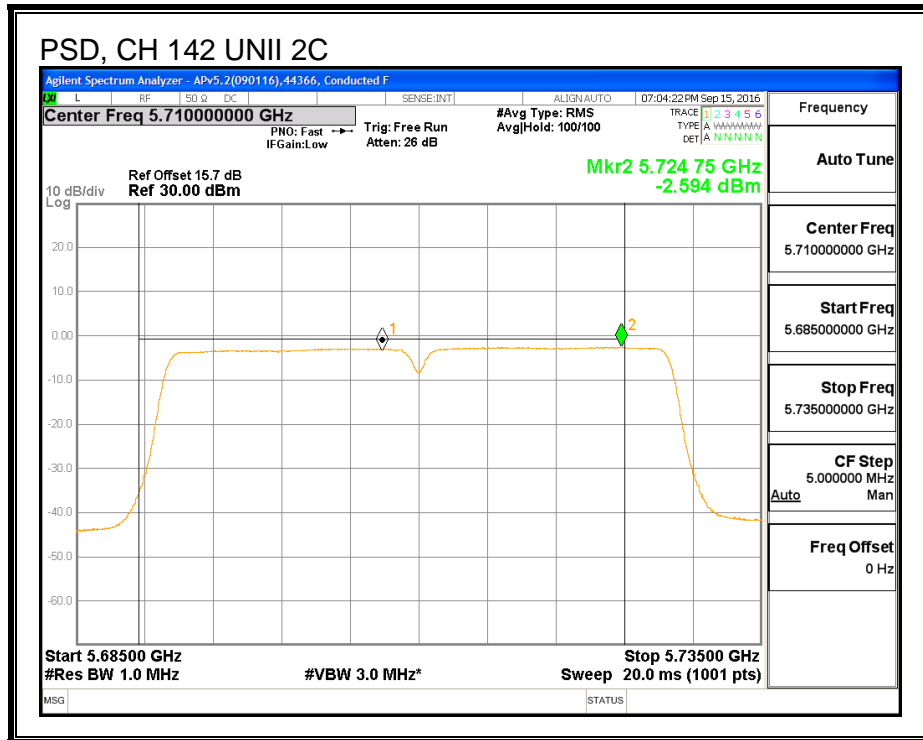
**OUTPUT POWER, CHAIN 0**



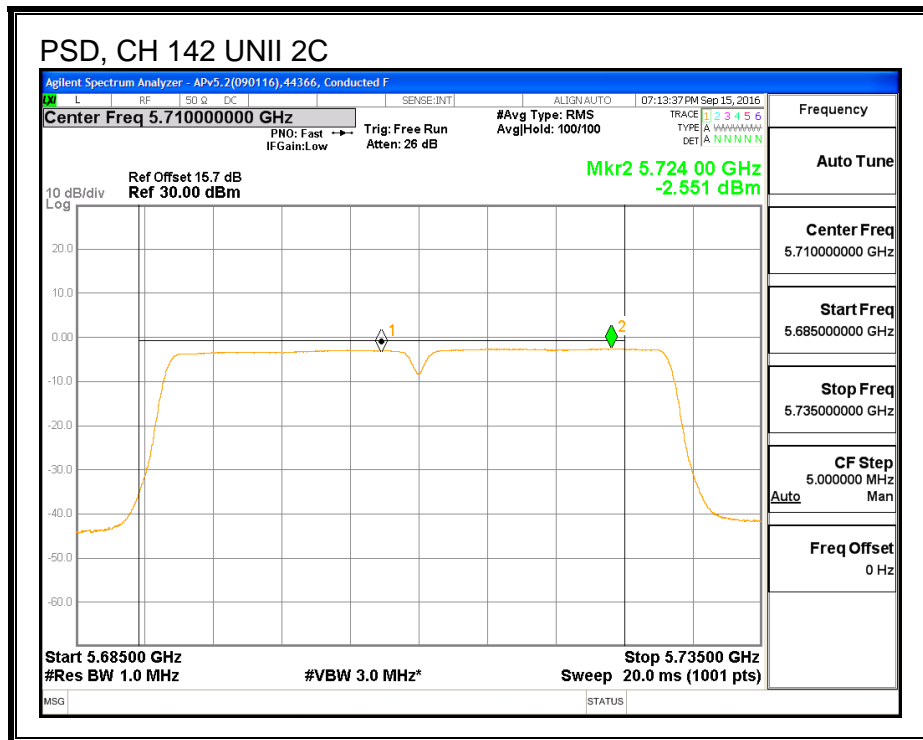
**OUTPUT POWER, CHAIN 1**



**PSD, CHAIN 0**



**PSD, CHAIN 1**



**UNII-3 BAND**

**Antenna Gain and Limit**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Directional<br>Gain<br>For Power<br>(dBi) | Directional<br>Gain<br>For PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---|---|-------------------------|-----------------------|
| 142     | 5710               | 5.40                        | 9.25                                      | 9.25                                    | 26.75                   | 26.75                 |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.79 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

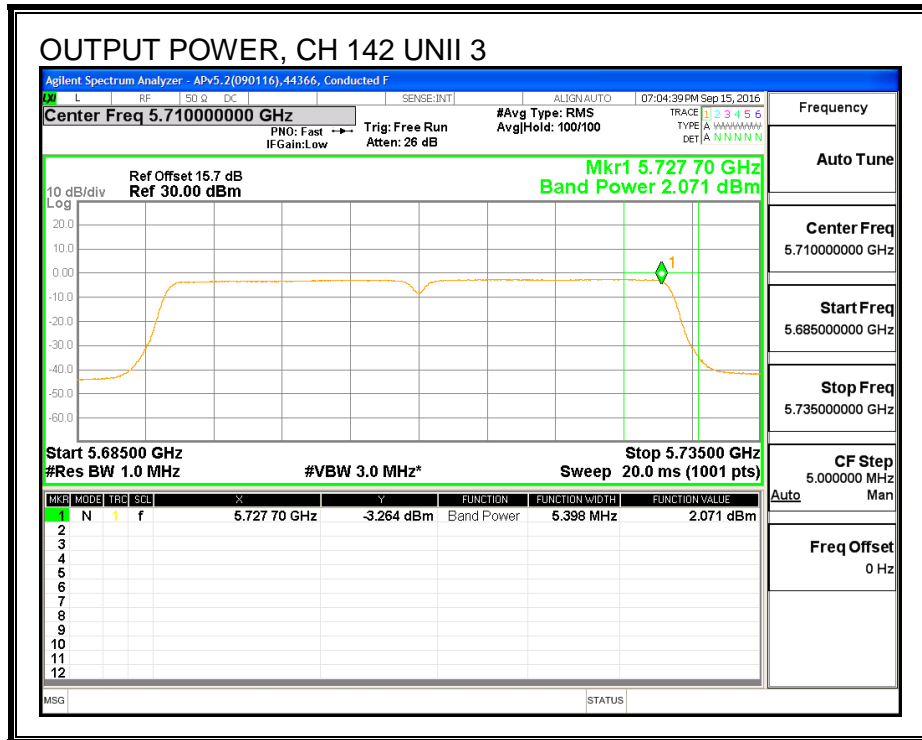
**Output Power Results**

| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>Power<br>(dBm) | Chain 1<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| 142     | 5710               | 2.07                              | 2.12                              | 5.89                              | 26.75                   | -20.86                  |

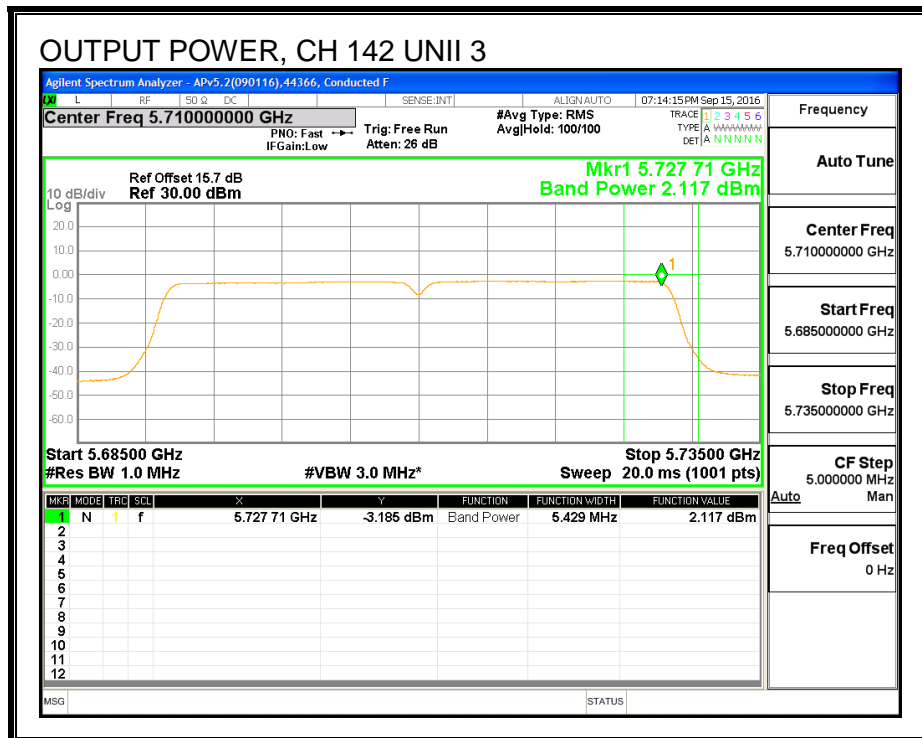
**PSD Results**

| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>PSD<br>(dBm) | Chain 1<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| 142     | 5710               | -5.41                           | -5.40                           | -1.60                           | 26.75                 | -28.35                |

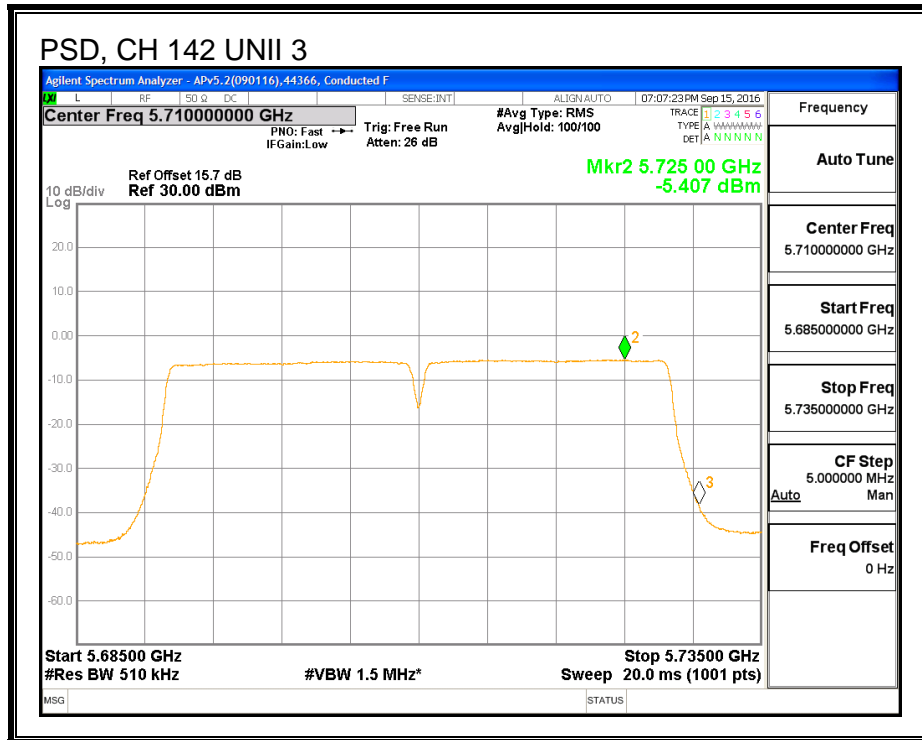
**OUTPUT POWER, CHAIN 0**



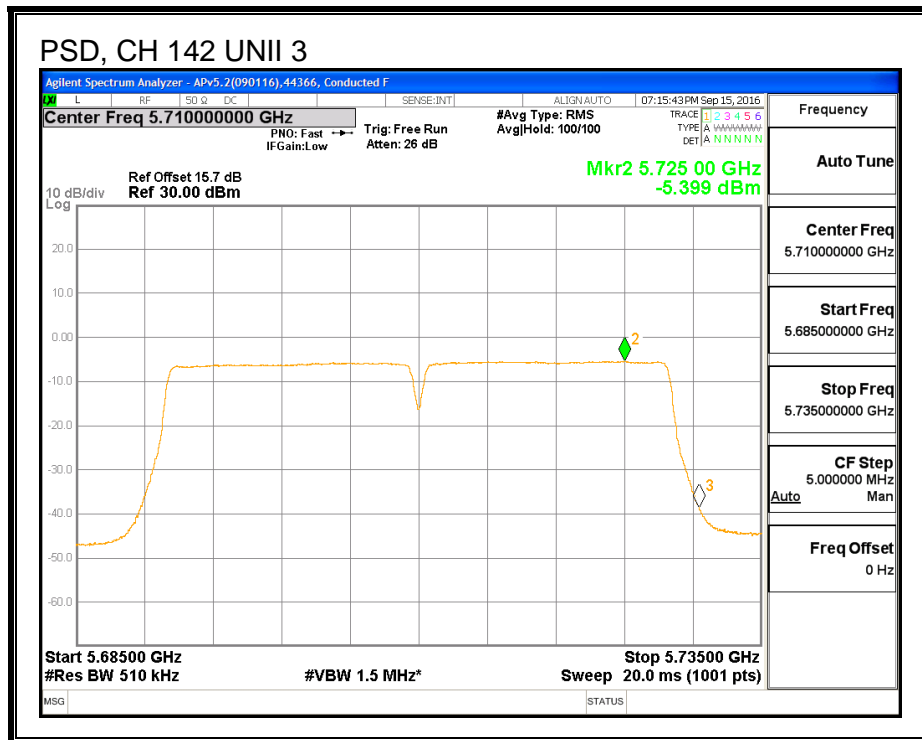
**OUTPUT POWER, CHAIN 1**



**PSD, CHAIN 0**



**PSD, CHAIN 1**



**8.75. 802.11ac VHT40 2Tx (CHAIN 0 + CHAIN 1) BEAM FORMING STRADDLE CHANNEL 142 RESULTS (IC)**

**8.75.1. 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            | 33.090           | 9.25                             | 9.25                           | 20.75             | 7.75            |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.79 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

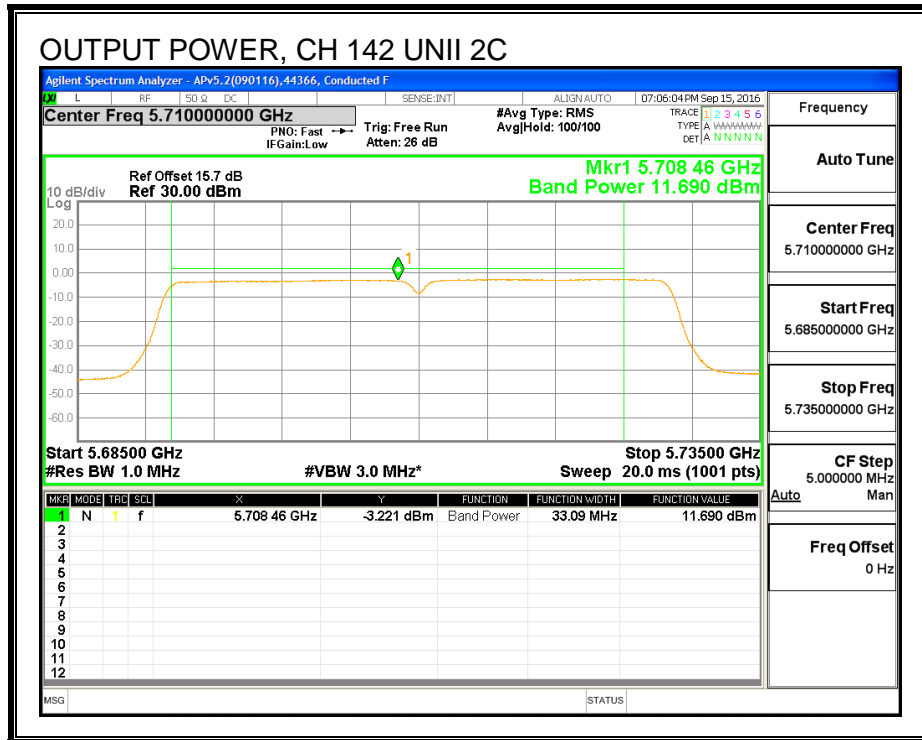
**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---------|-----------------|--------------------------|--------------------------|--------------------------|-------------------|-------------------|
| 142     | 5710            | 11.69                    | 11.74                    | 15.52                    | 20.75             | -5.23             |

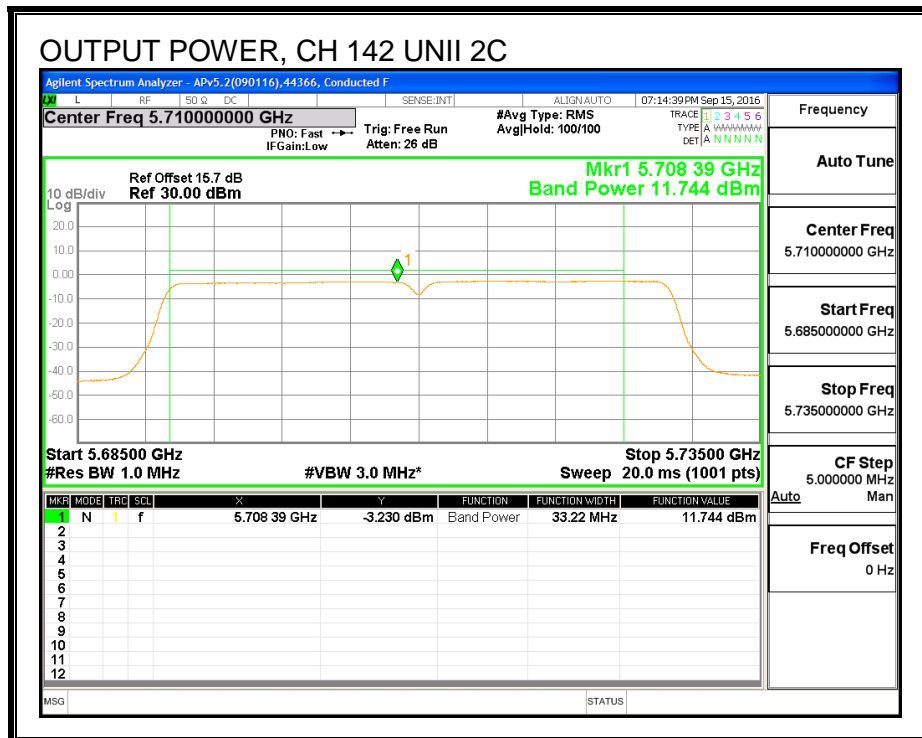
**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---------|-----------------|------------------------|------------------------|------------------------|-----------------|-----------------|
| 142     | 5710            | -2.59                  | -2.55                  | 1.23                   | 7.75            | -6.52           |

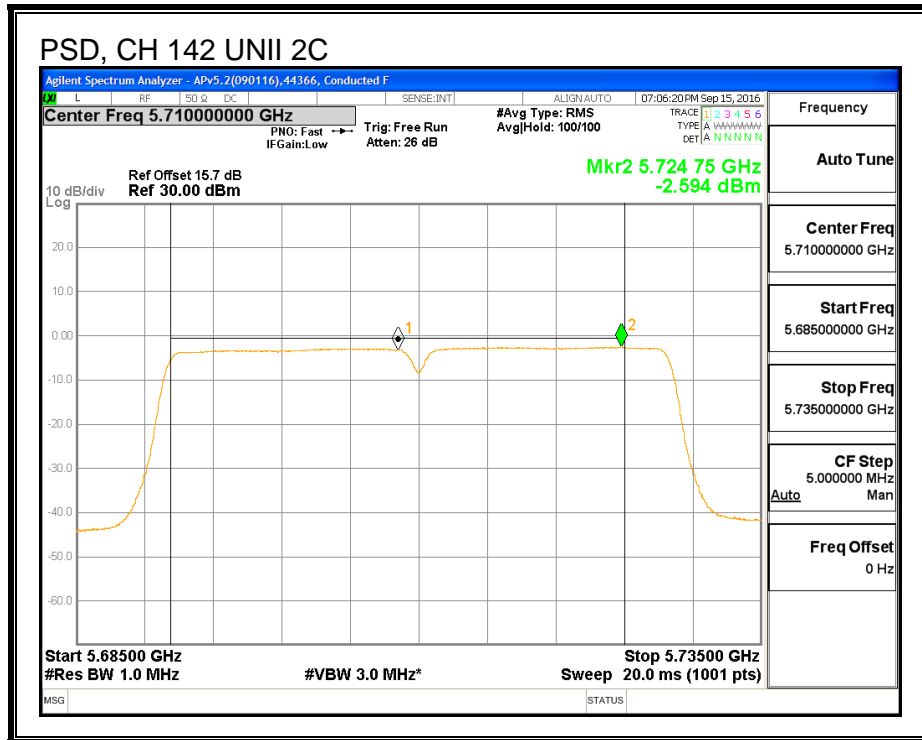
**OUTPUT POWER, CHAIN 0**



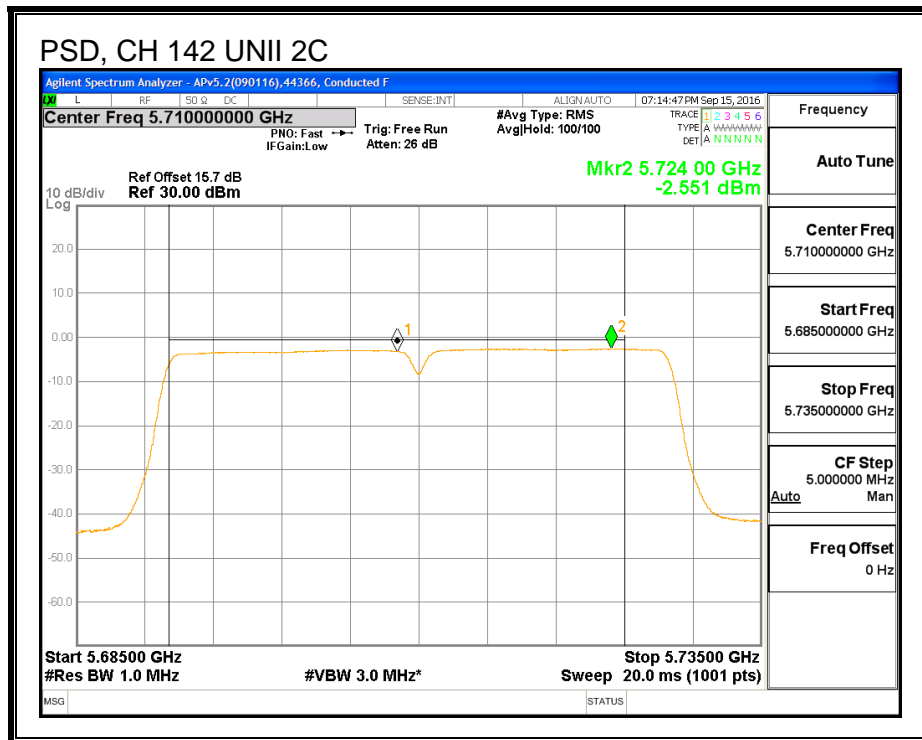
**OUTPUT POWER, CHAIN 1**



**PSD, CHAIN 0**



**PSD, CHAIN 1**





**UNII-3 BAND**

**Antenna Gain and Limit**

| Channel | Frequency<br>(MHz) | Min<br>99%<br>BW<br>(MHz) | Directional<br>Gain<br>For Power<br>(dBi) | Directional<br>Gain<br>For PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|---------------------------|---|---|-------------------------|-----------------------|
| 142     | 5710               | 3.088                     | 9.25                                      | 9.25                                    | 26.75                   | 26.75                 |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.79 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

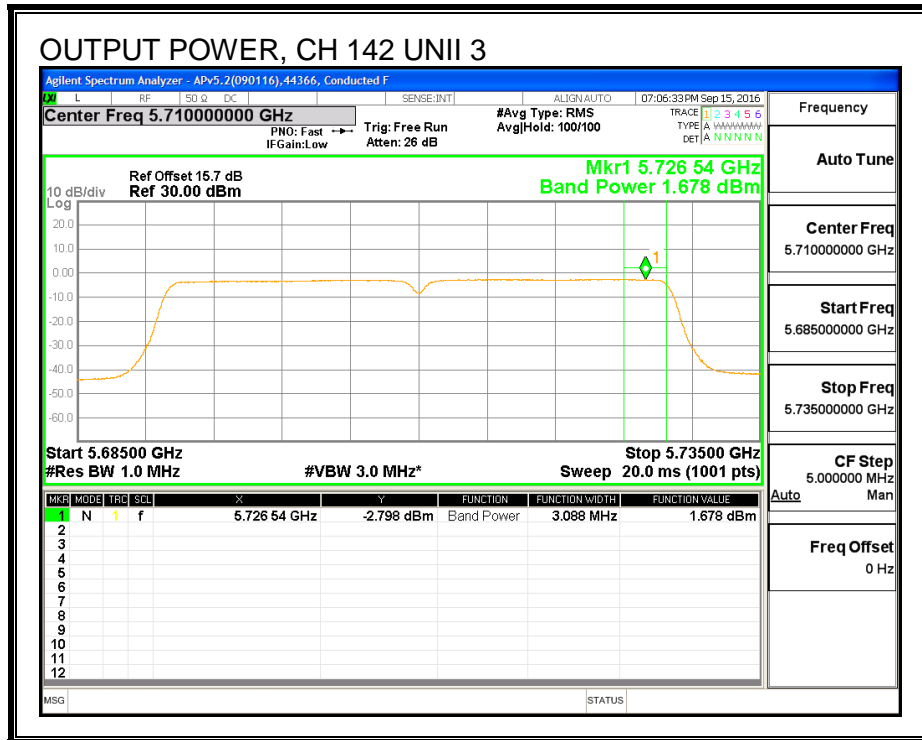
**Output Power Results**

| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>Power<br>(dBm) | Chain 1<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| 142     | 5710               | 1.68                              | 1.84                              | 5.56                              | 26.75                   | -21.19                  |

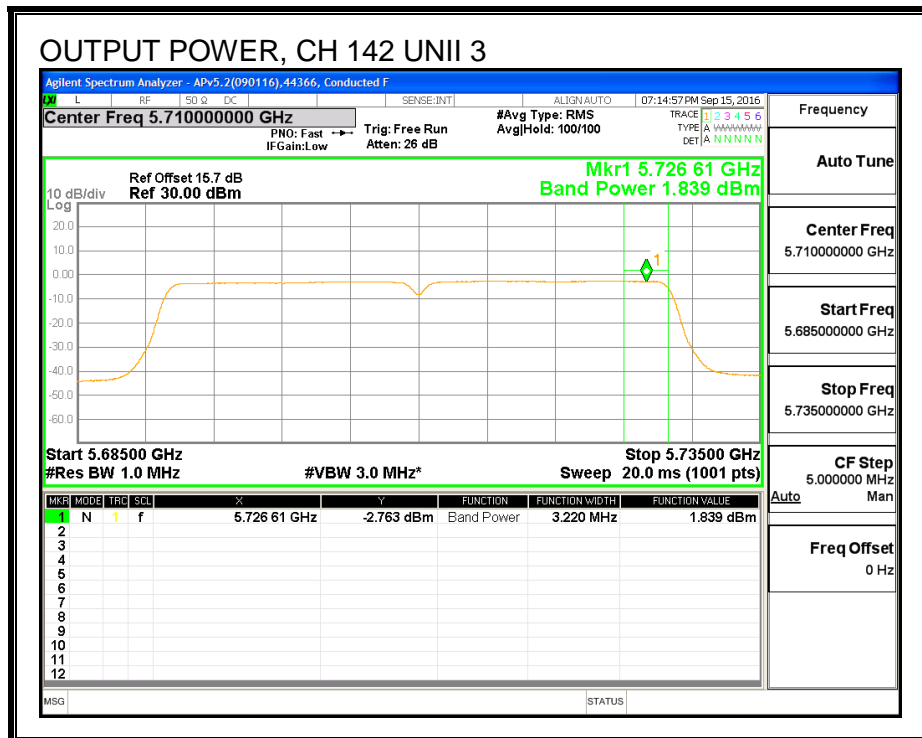
**PSD Results**

| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>PSD<br>(dBm) | Chain 1<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| 142     | 5710               | -5.41                           | -5.40                           | -1.60                           | 26.75                 | -28.35                |

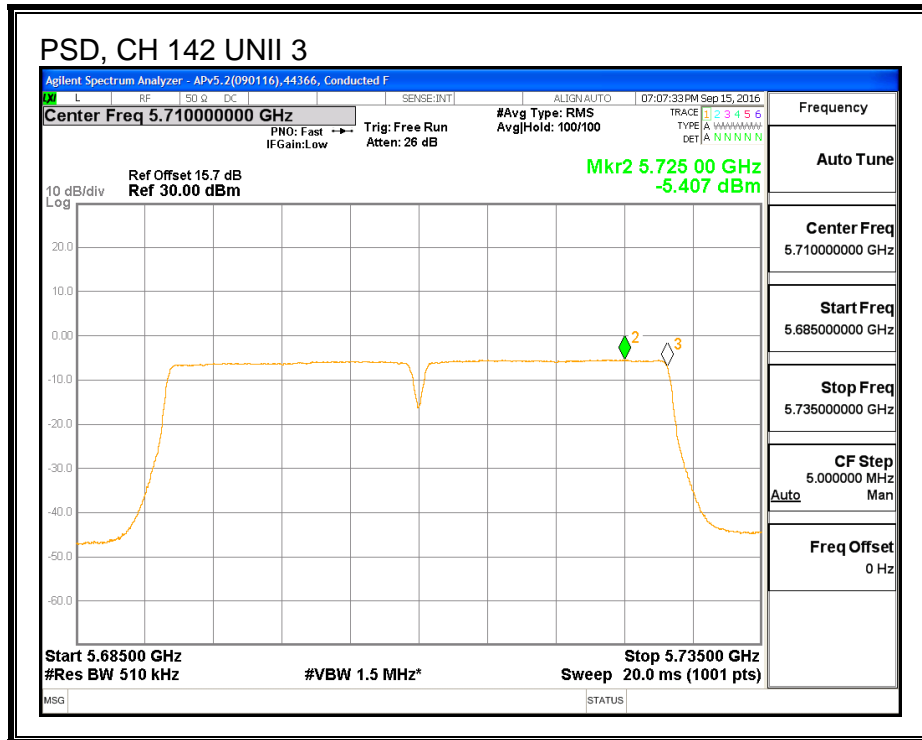
**OUTPUT POWER, CHAIN 0**



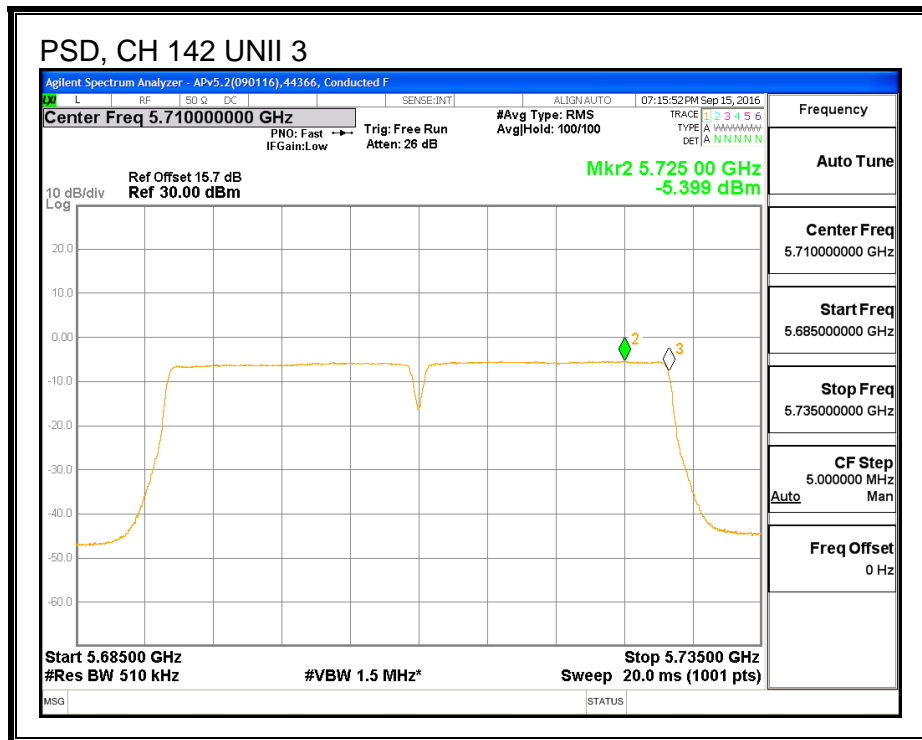
**OUTPUT POWER, CHAIN 1**



**PSD, CHAIN 0**



**PSD, CHAIN 1**



**8.75.2. 6 dB BBANDWIDTH**

**LIMITS**

FCC §15.407 (e)

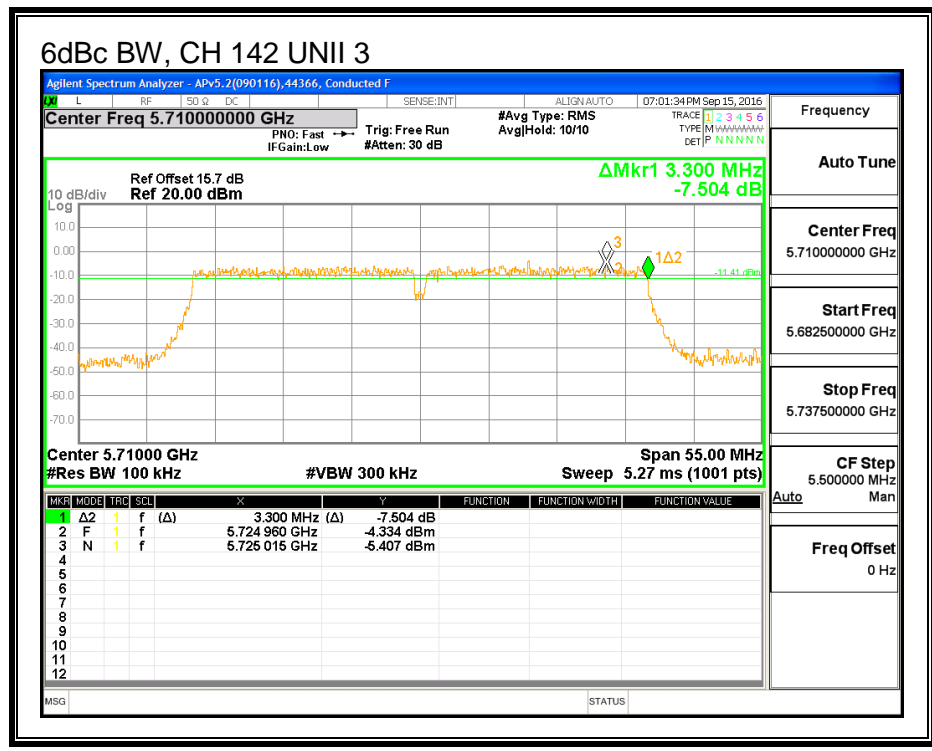
IC RSS-247 (6.2.4) (1)

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

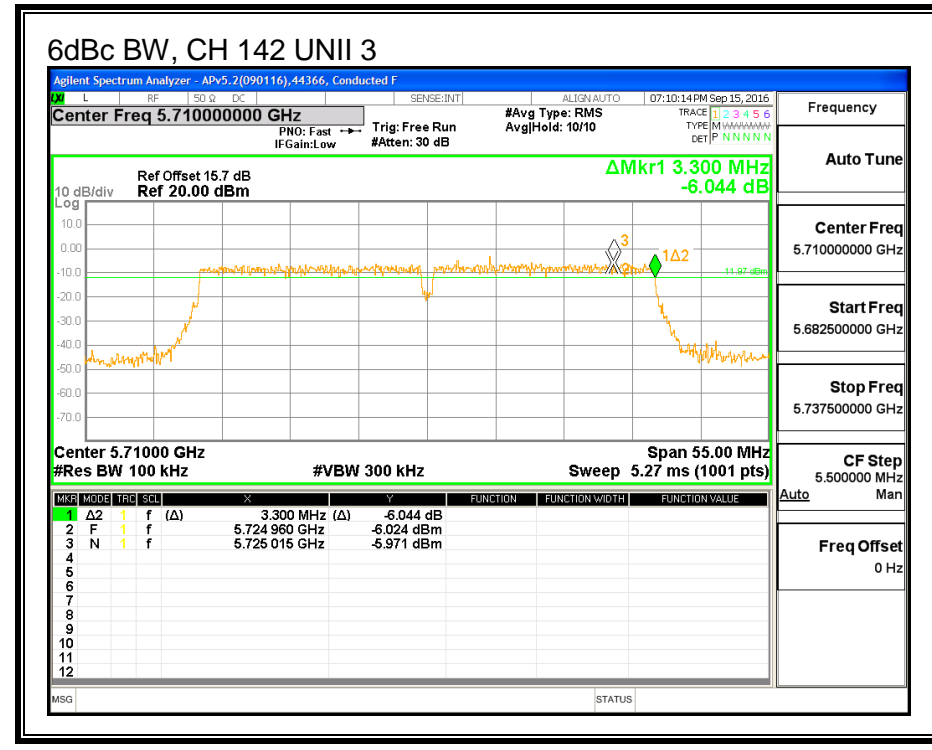
**RESULTS**

| Channel | Frequency<br>(MHz) | 6 dB BW<br>Chain 0<br>(MHz) | 6 dB BW<br>Chain 1<br>(MHz) |
|---------|--------------------|-----------------------------|-----------------------------|
| 142     | 5710               | 3.30                        | 3.30                        |

**CHAIN 0**



**CHAIN 1**



**8.76. 802.11n HT40 2Tx (CHAIN 0 + CHAIN 2) BEAM FORMING MODE IN THE 5.6 GHz BAND**

**8.76.1. 26 dB BANDWIDTH**

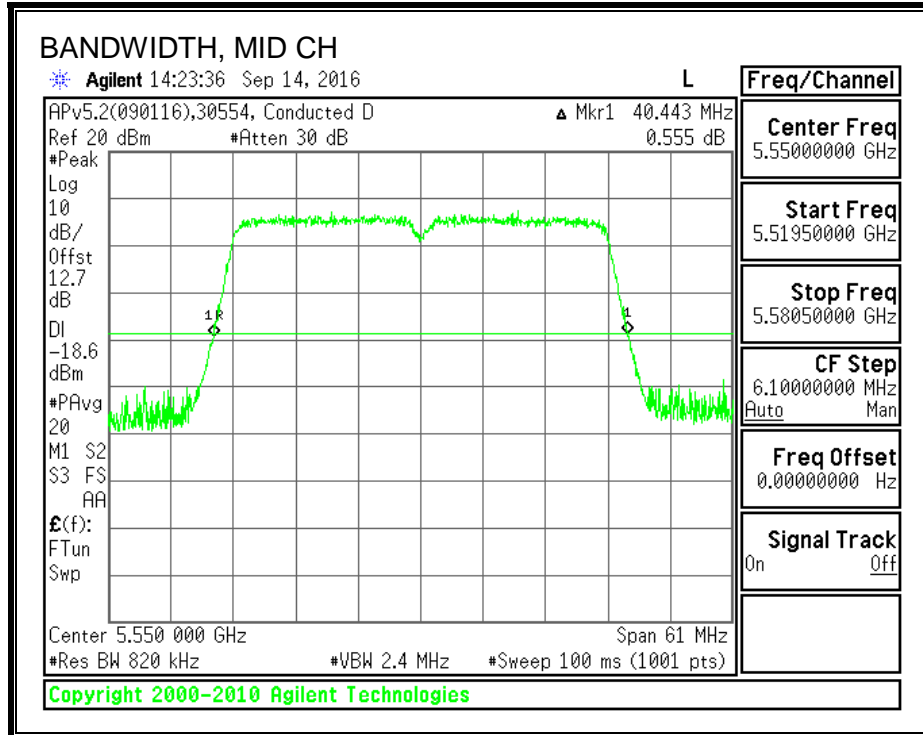
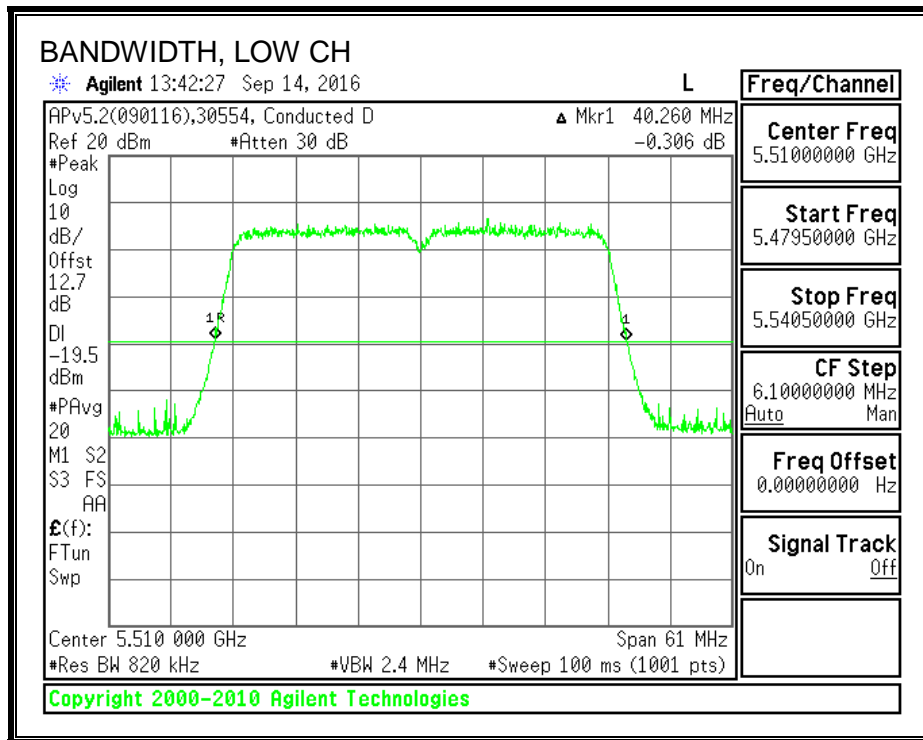
**LIMITS**

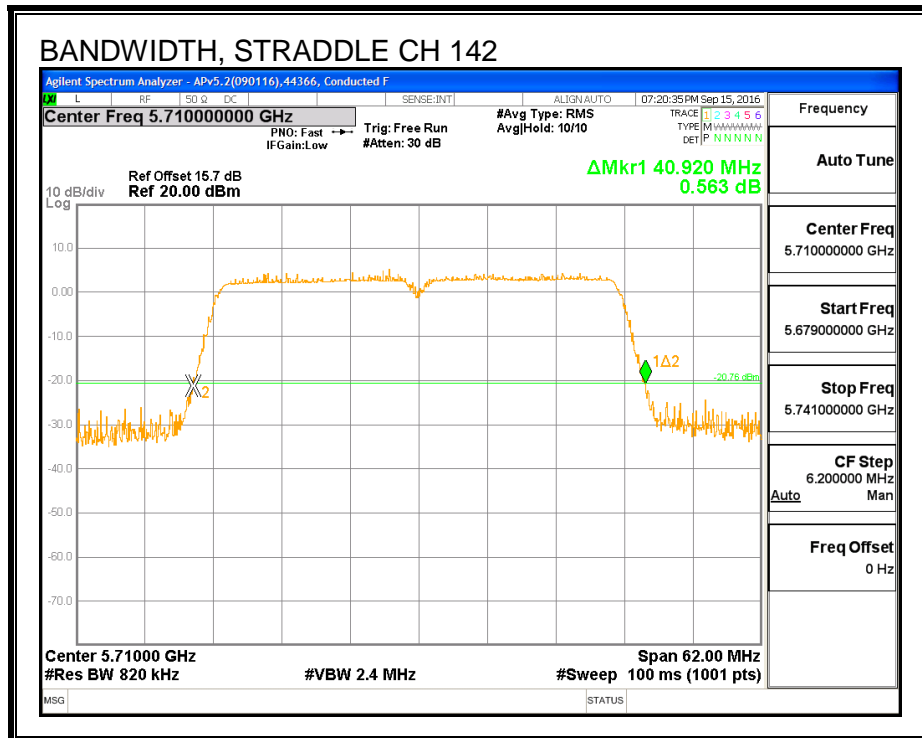
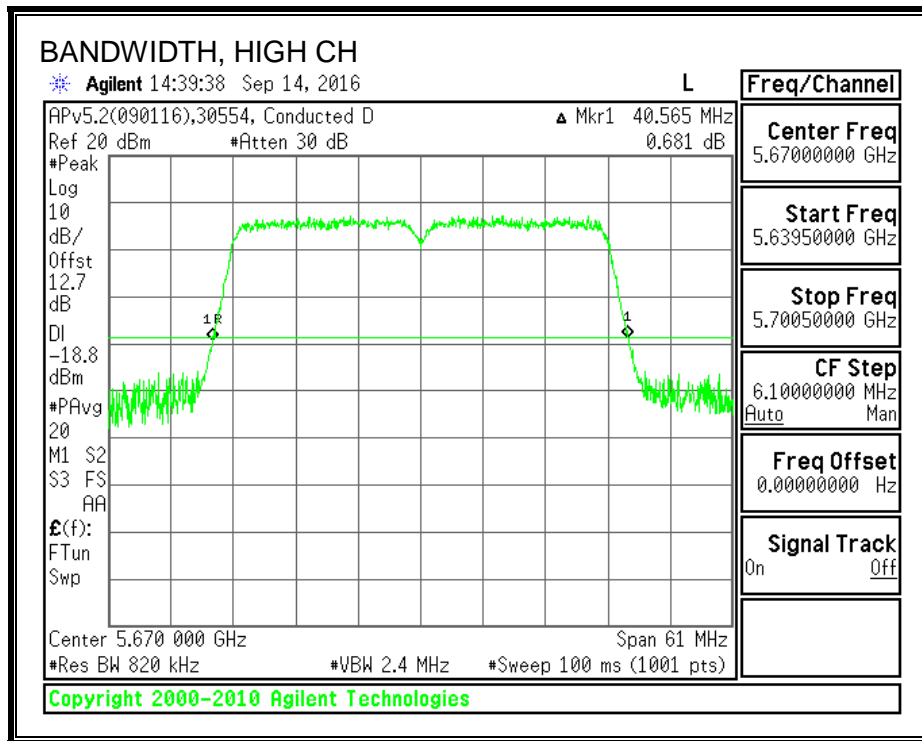
None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 26 dB BW Chain 0 (MHz) | 26 dB BW Chain 2 (MHz) |
|---------|-----------------|------------------------|------------------------|
| Low     | 5510            | 40.260                 | 40.443                 |
| Mid     | 5550            | 40.443                 | 40.382                 |
| High    | 5670            | 40.565                 | 40.321                 |
| 142     | 5710            | 40.920                 | 40.796                 |

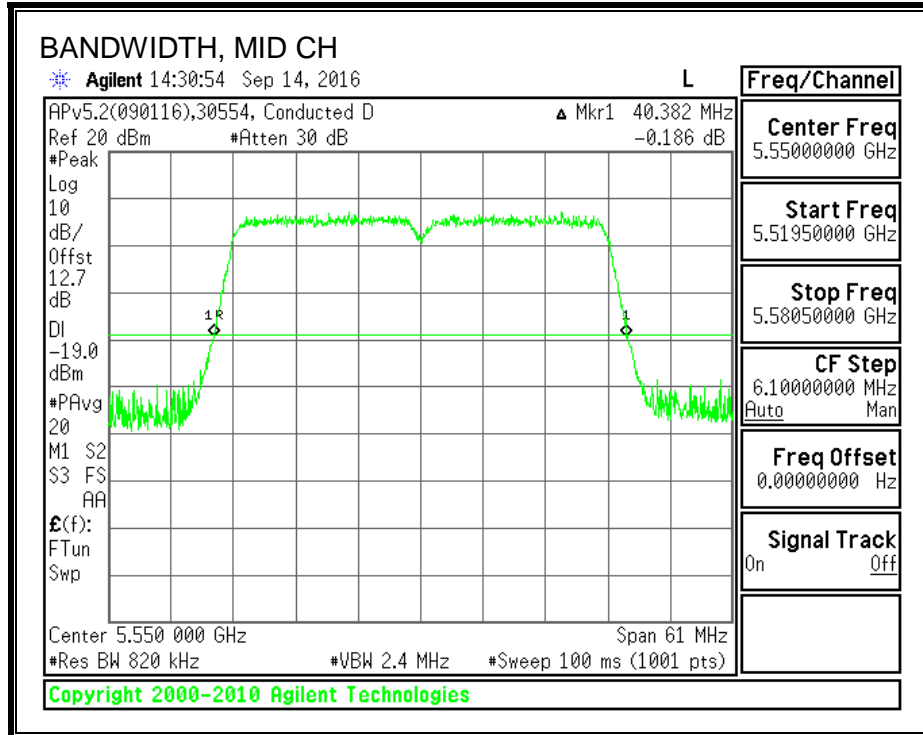
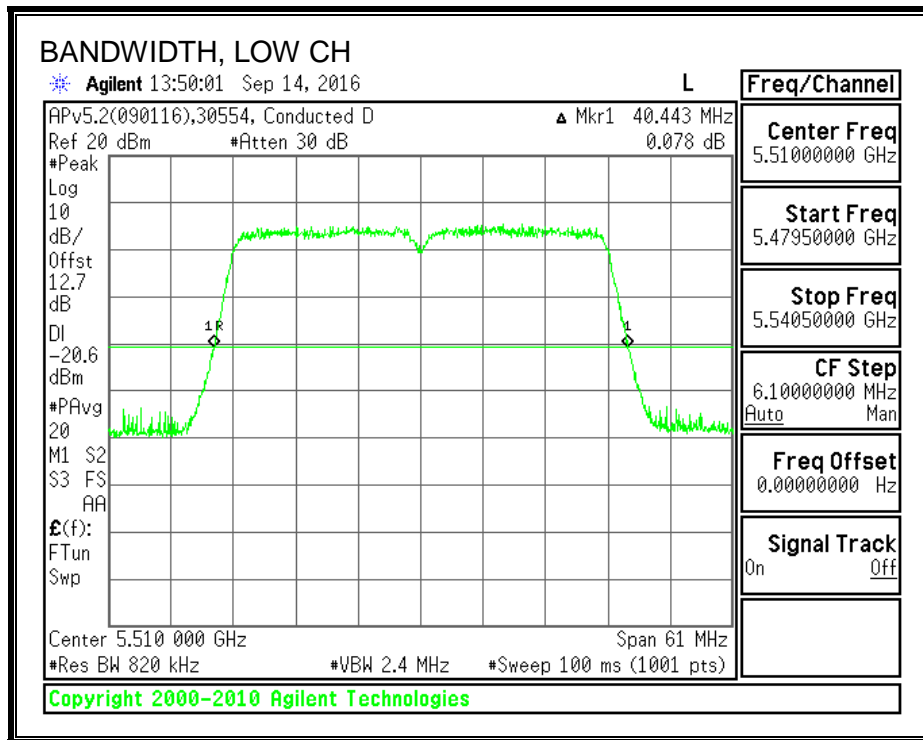
**26 dB BANDWIDTH, CHAIN 0**

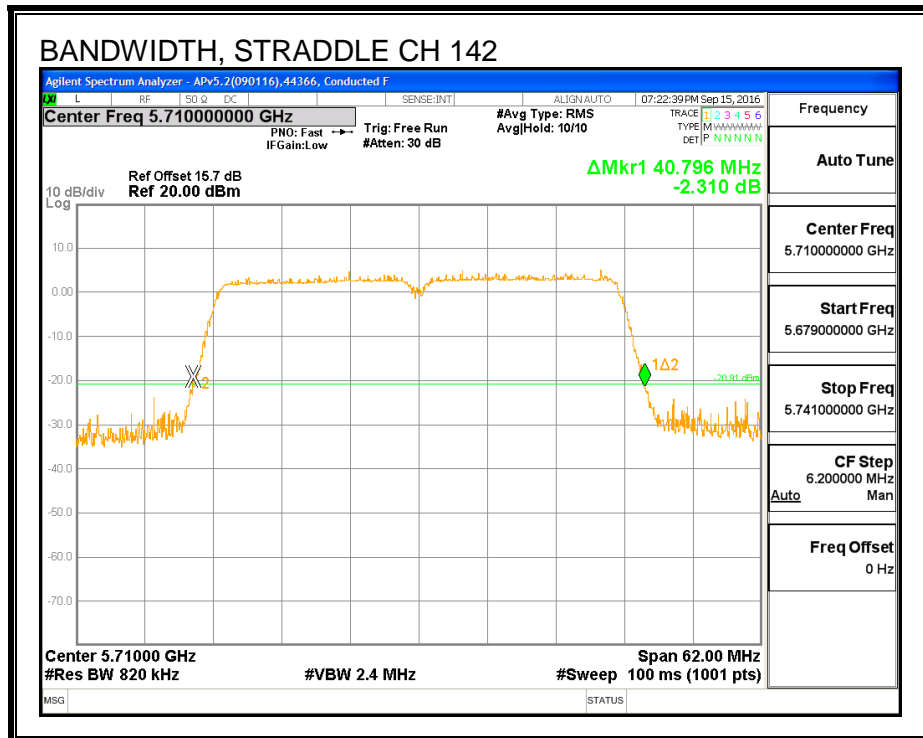
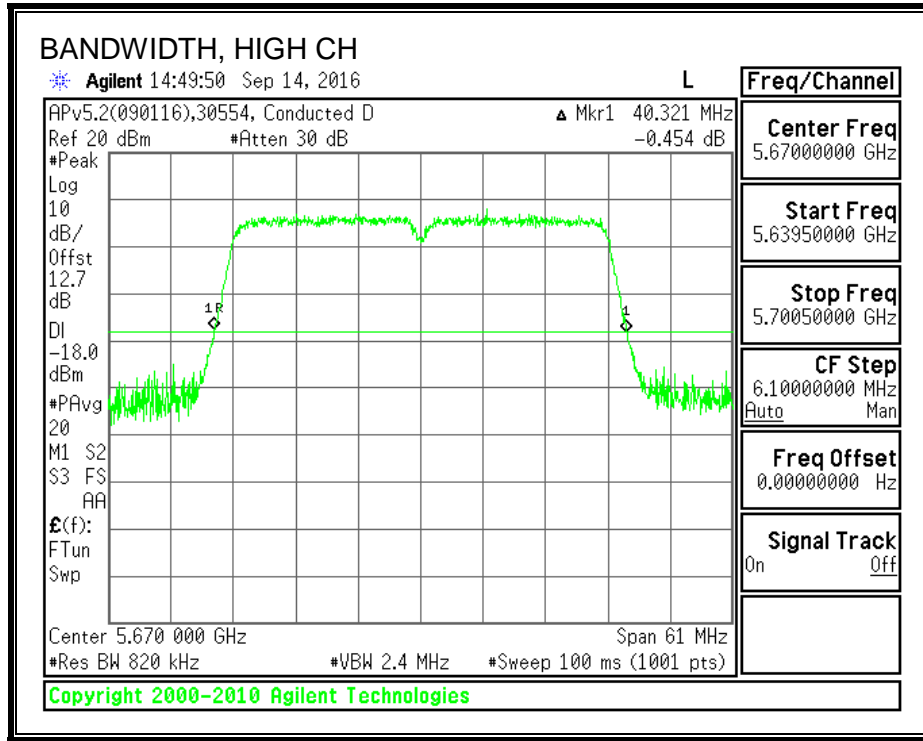






**26 dB BANDWIDTH, CHAIN 2**





**8.76.2. 99% BANDWIDTH**

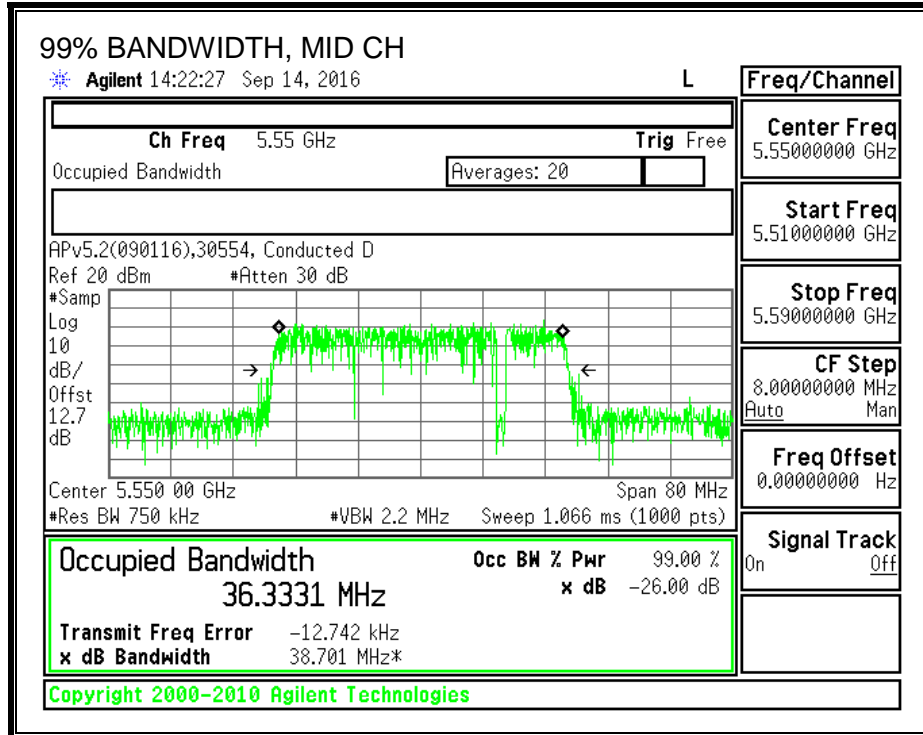
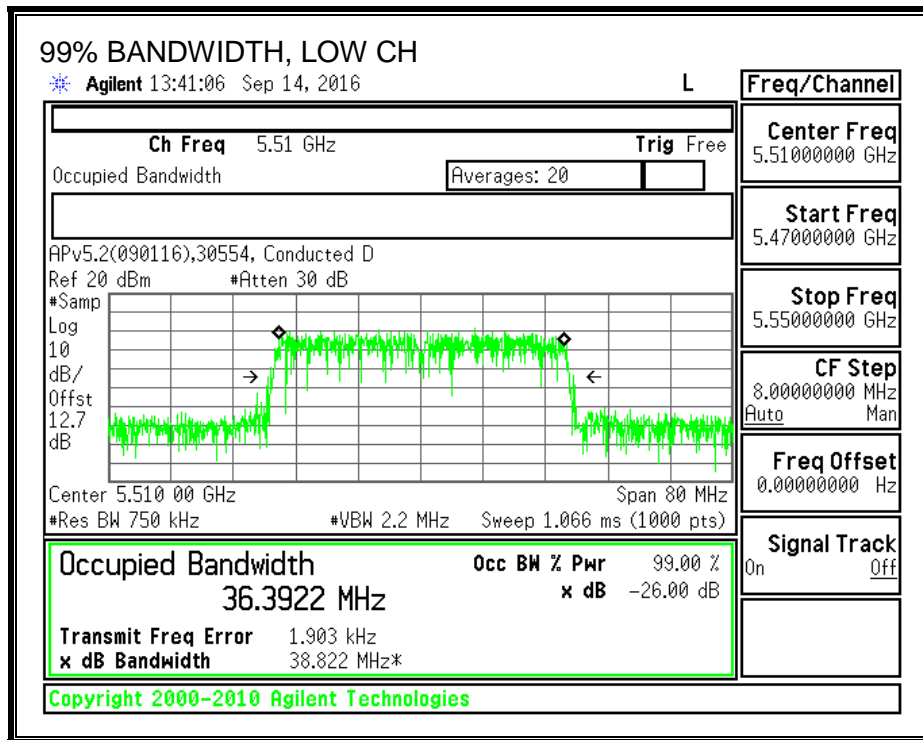
**LIMITS**

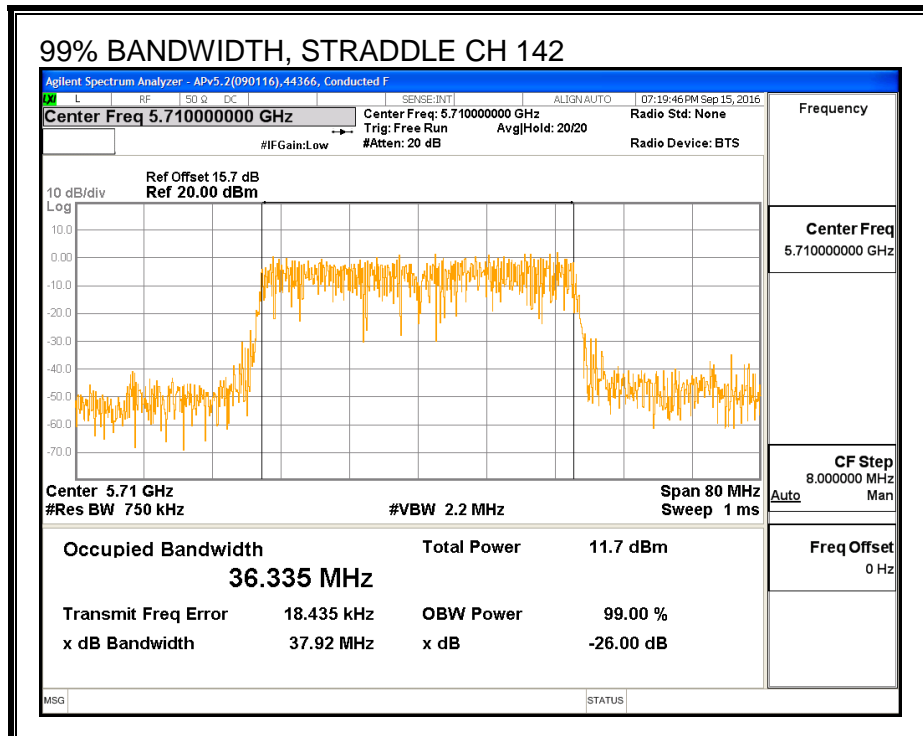
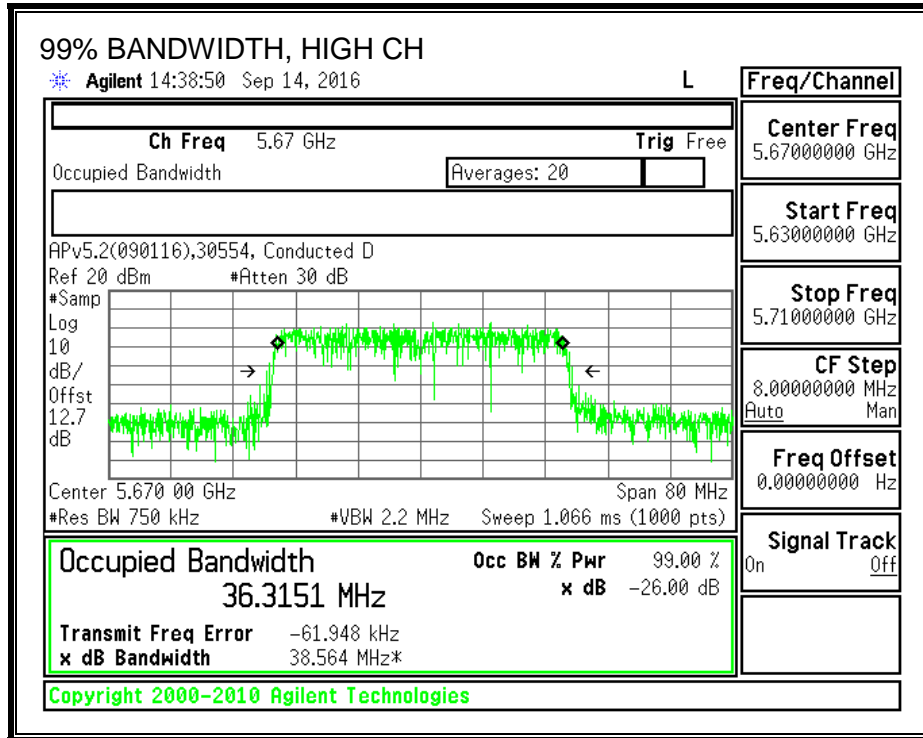
None; for reporting purposes only.

**RESULTS**

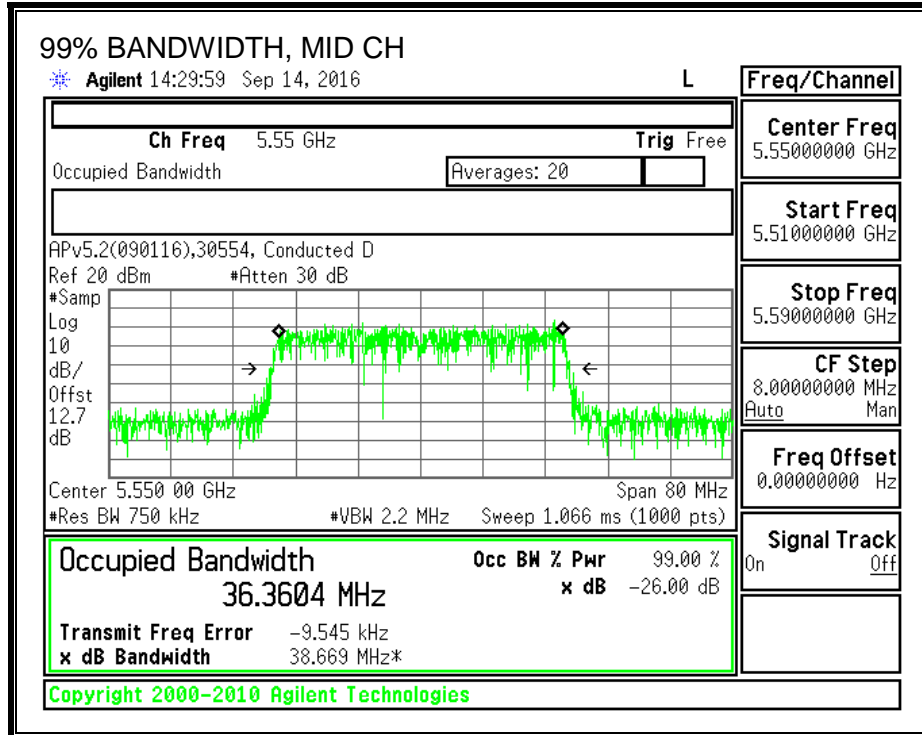
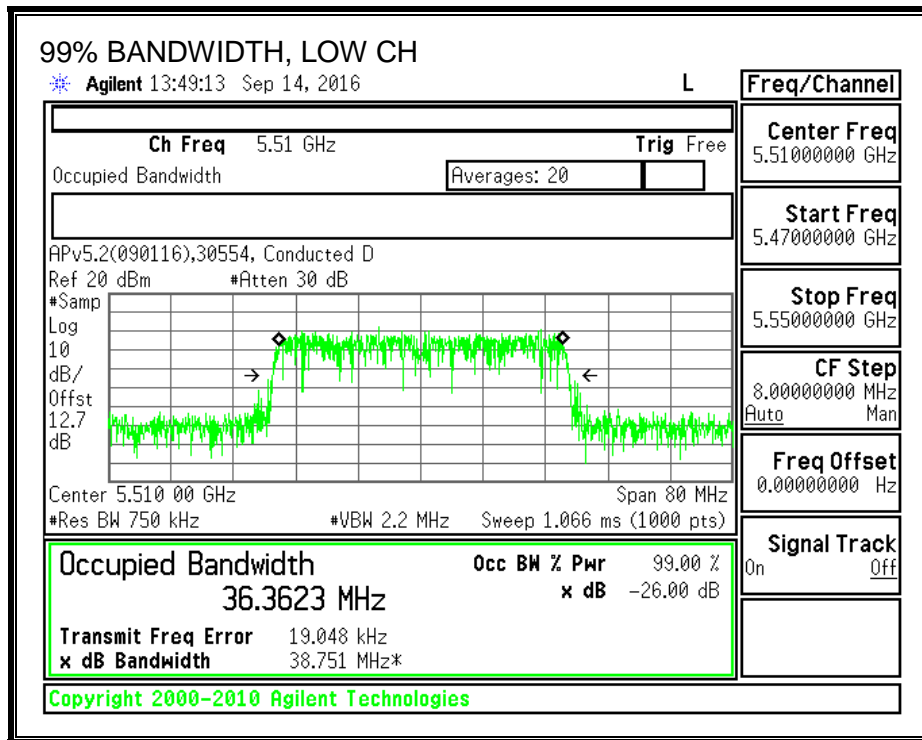
| Channel | Frequency<br>(MHz) | 99% BW<br>Chain 0<br>(MHz) | 99% BW<br>Chain 2<br>(MHz) |
|---------|--------------------|----------------------------|----------------------------|
| Low     | 5510               | 36.392                     | 36.362                     |
| Mid     | 5550               | 36.333                     | 36.360                     |
| High    | 5670               | 36.315                     | 36.271                     |
| 142     | 5710               | 36.335                     | 36.401                     |

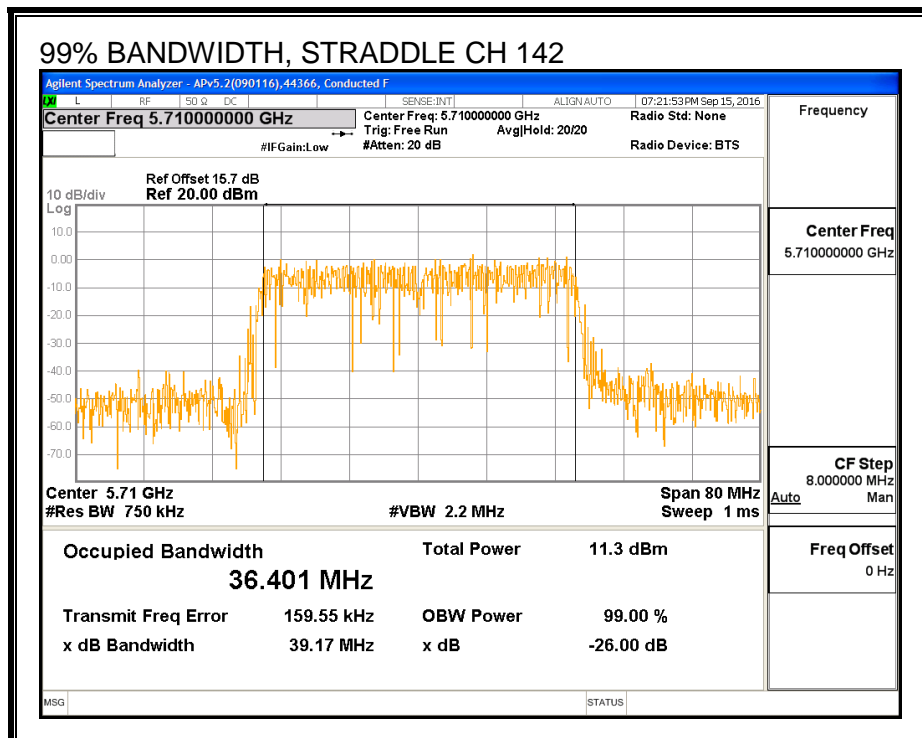
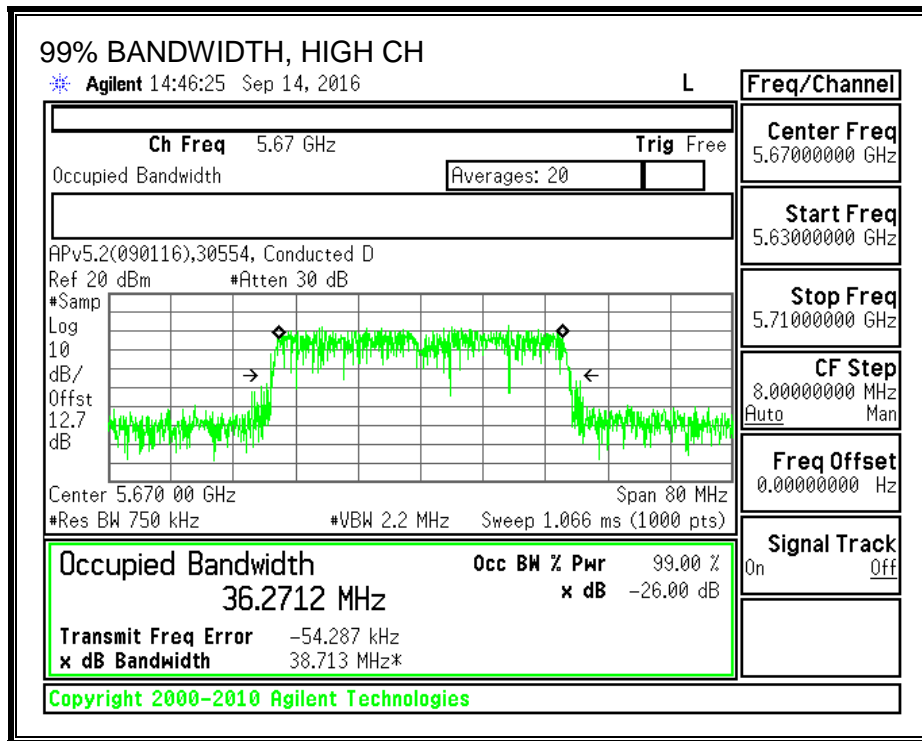
**99% BANDWIDTH, CHAIN 0**





**99% BANDWIDTH, CHAIN 2**





### 8.76.3. AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### RESULTS

|            |       |              |         |
|------------|-------|--------------|---------|
| <b>ID:</b> | 44366 | <b>Date:</b> | 9/12/16 |
|------------|-------|--------------|---------|

#### **Average Power Results**

| <b>Channel</b> | <b>Frequency<br/>(MHz)</b> | <b>Chain 0<br/>Power<br/>(dBm)</b> | <b>Chain 2<br/>Power<br/>(dBm)</b> | <b>Total<br/>Power<br/>(dBm)</b> |
|----------------|----------------------------|------------------------------------|------------------------------------|----------------------------------|
| Low            | 5510                       | 10.99                              | 10.87                              | 13.94                            |
| Mid            | 5550                       | 12.25                              | 12.19                              | 15.23                            |
| High           | 5670                       | 12.21                              | 12.22                              | 15.23                            |
| 142            | 5710                       | 12.17                              | 12.21                              | 15.20                            |



#### 8.76.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log_{10} B$ , 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  $17 + 10 \log_{10} B$ , 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:

| <b>Chain 0<br/>Antenna<br/>Gain<br/>(dBi)</b> | <b>Chain 2<br/>Antenna<br/>Gain<br/>(dBi)</b> | <b>Correlated Chains<br/>Directional<br/>Gain<br/>(dBi)</b> |
|---|---|---|
| 4.90  | 5.20  | 8.06  |

**RESULTS**

|            |       |              |         |
|------------|-------|--------------|---------|
| <b>ID:</b> | 44366 | <b>Date:</b> | 9/12/16 |
|------------|-------|--------------|---------|

**Bandwidth, Antenna Gain and Limits**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Min<br>99%<br>BW<br>(MHz) | Directional<br>Gain<br>for Power<br>(dBi) | Directional<br>Gain<br>for PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---------------------------|---|---|-------------------------|-----------------------|
| Low     | 5510               | 40.26                       | 36.3623                   | 8.06                                      | 8.06                                    | 24.00                   | 8.94                  |
| Mid     | 5550               | 40.38                       | 36.333                    | 8.06                                      | 8.06                                    | 24.00                   | 8.94                  |
| High    | 5670               | 40.32                       | 36.2712                   | 8.06                                      | 8.06                                    | 24.00                   | 8.94                  |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.79 | <b>Included in Calculations of Corr'd PSD</b> |
|---------------------------|------|---|

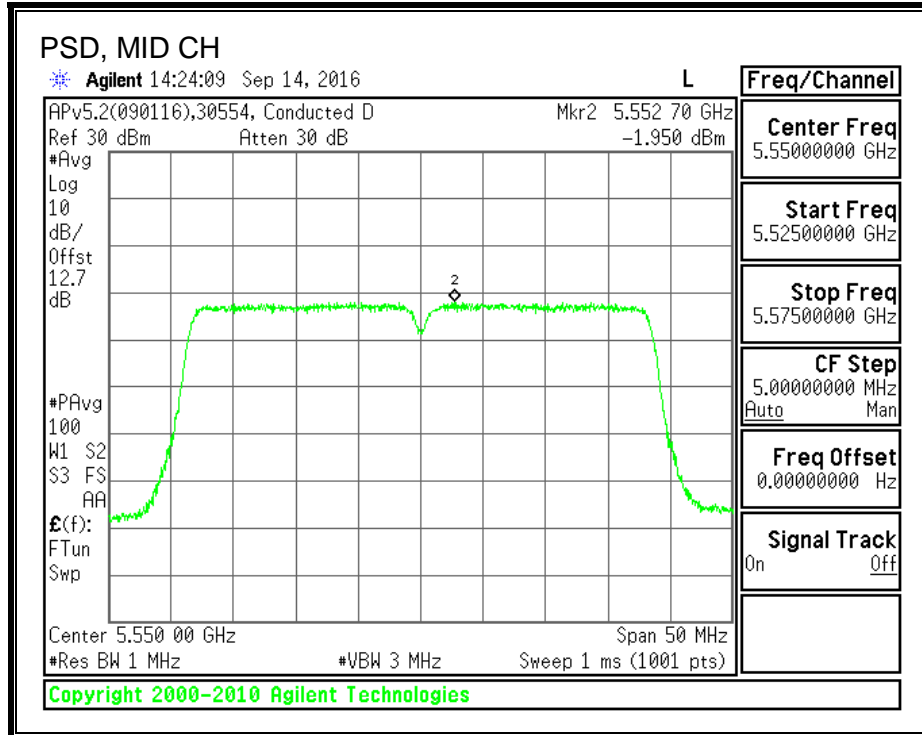
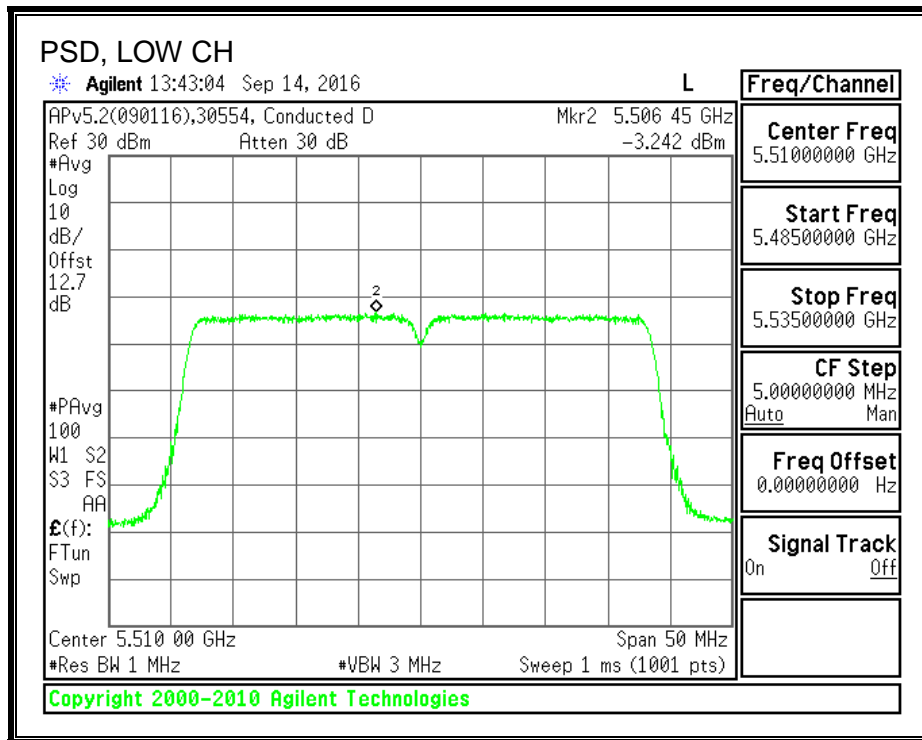
**Output Power Results**

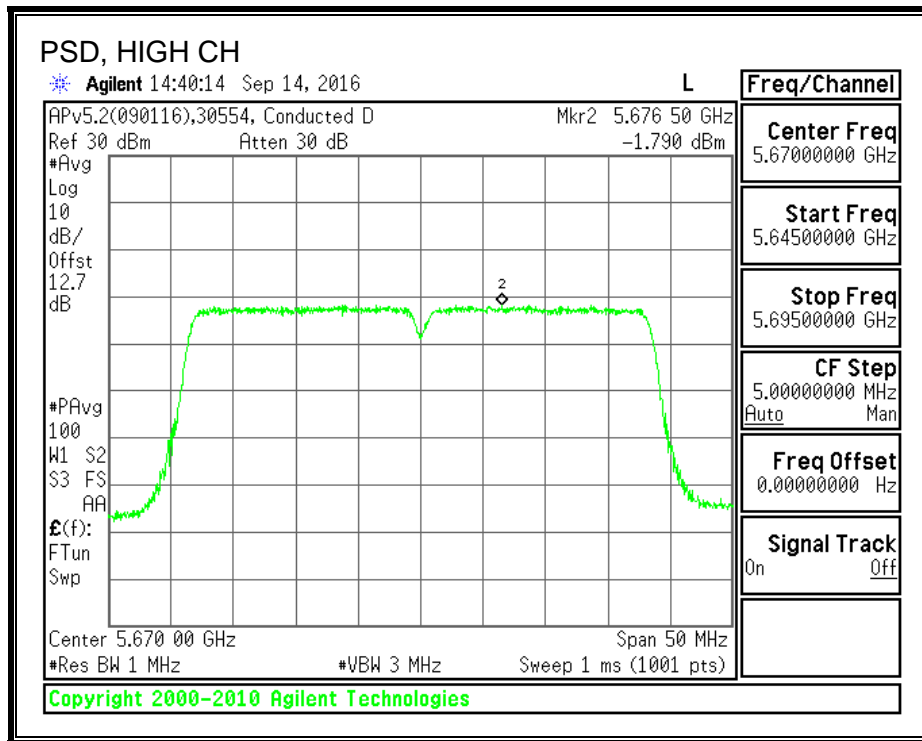
| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>Power<br>(dBm) | Chain 2<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5510               | 10.99                             | 10.87                             | 13.94                             | 24.00                   | -10.06                  |
| Mid     | 5550               | 12.25                             | 12.19                             | 15.23                             | 24.00                   | -8.77                   |
| High    | 5670               | 12.21                             | 12.22                             | 15.23                             | 24.00                   | -8.77                   |

**PSD Results**

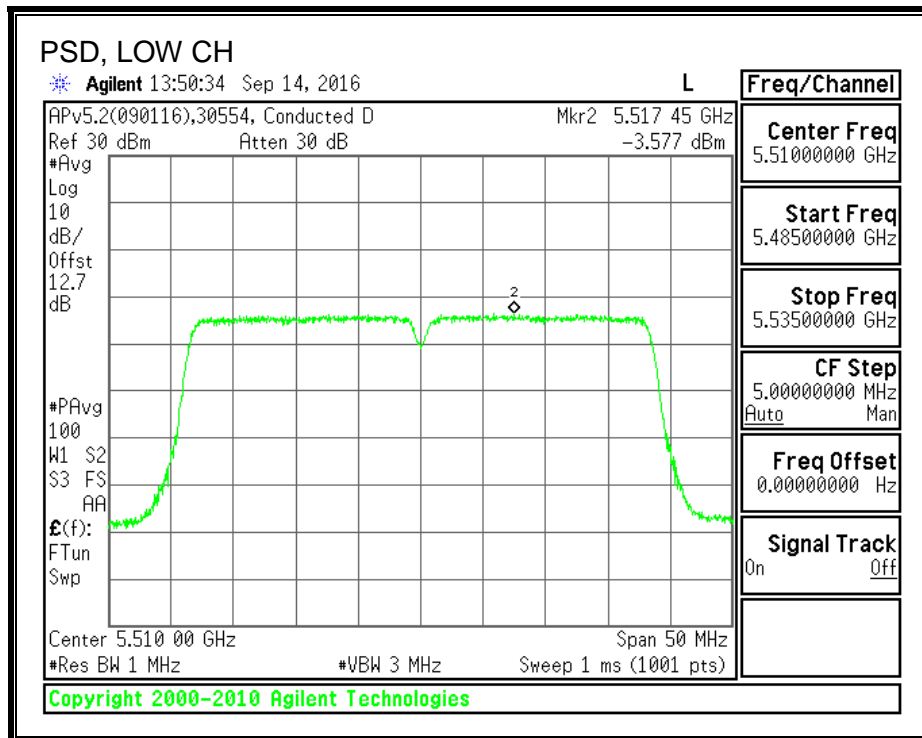
| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>PSD<br>(dBm) | Chain 2<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| Low     | 5510               | -3.242                          | -3.577                          | 0.39                            | 8.94                  | -8.55                 |
| Mid     | 5550               | -1.95                           | -1.825                          | 1.91                            | 8.94                  | -7.03                 |
| High    | 5670               | -1.79                           | -1.745                          | 2.03                            | 8.94                  | -6.91                 |

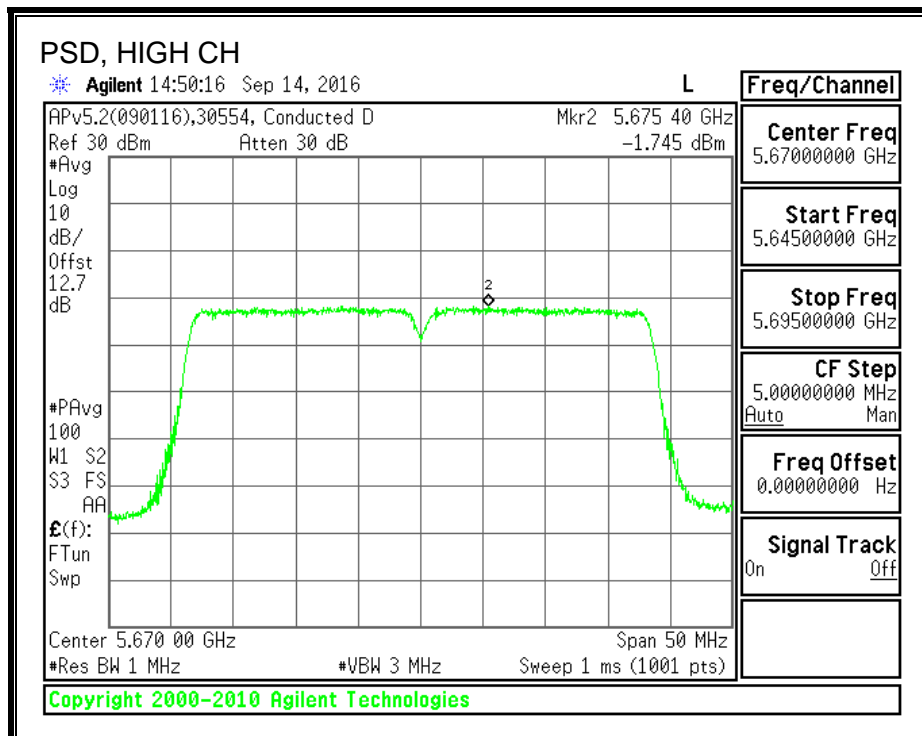
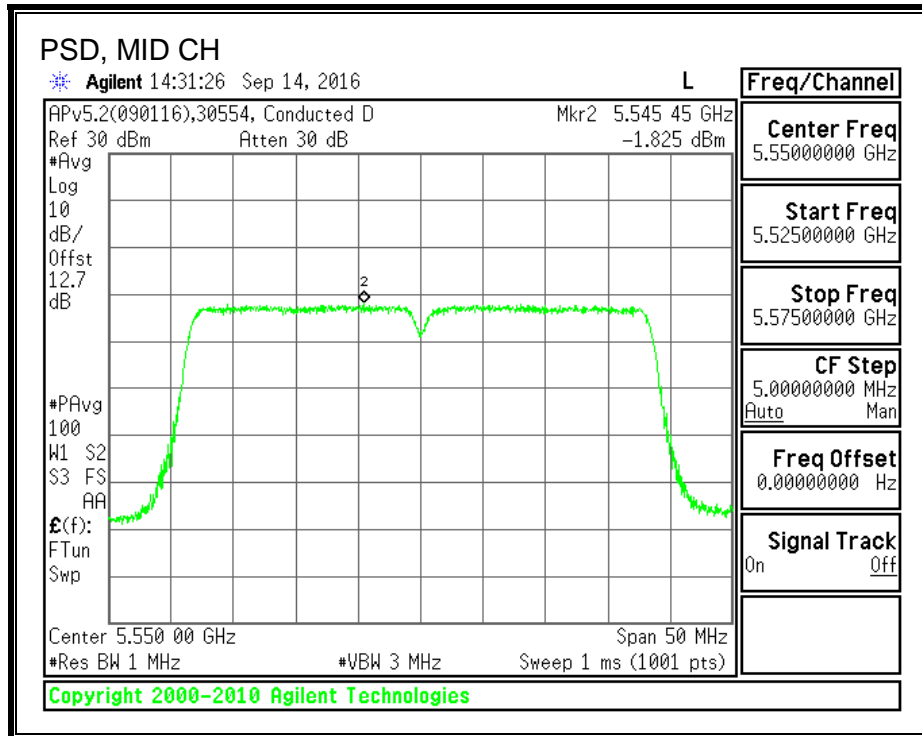
**PSD, CHAIN 0**





**PSD, CHAIN 2**





**8.77. 802.11ac VHT40 2Tx (CHAIN 0 + CHAIN 2) BEAM FORMING STRADDLE CHANNEL 142 RESULTS (FCC)**

**8.77.1. OUTPUT POWER AND PSD**

**UNII-2C BAND**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency<br>(MHz) | Min<br>26 dB<br>BW<br>(MHz) | Directional<br>Gain<br>for Power<br>(dBi) | Directional<br>Gain<br>for PSD<br>(dBi) | Power<br>Limit<br>(dBm) | PSD<br>Limit<br>(dBm) |
|---------|--------------------|-----------------------------|---|---|-------------------------|-----------------------|
| 142     | 5710               | 35.40                       | 8.06                                      | 8.06                                    | 21.94                   | 8.94                  |

|                           |      |   |
|---------------------------|------|---|
| <b>Duty Cycle CF (dB)</b> | 0.79 | <b>Included in Calculations of Corr'd Power &amp; PSD</b> |
|---------------------------|------|---|

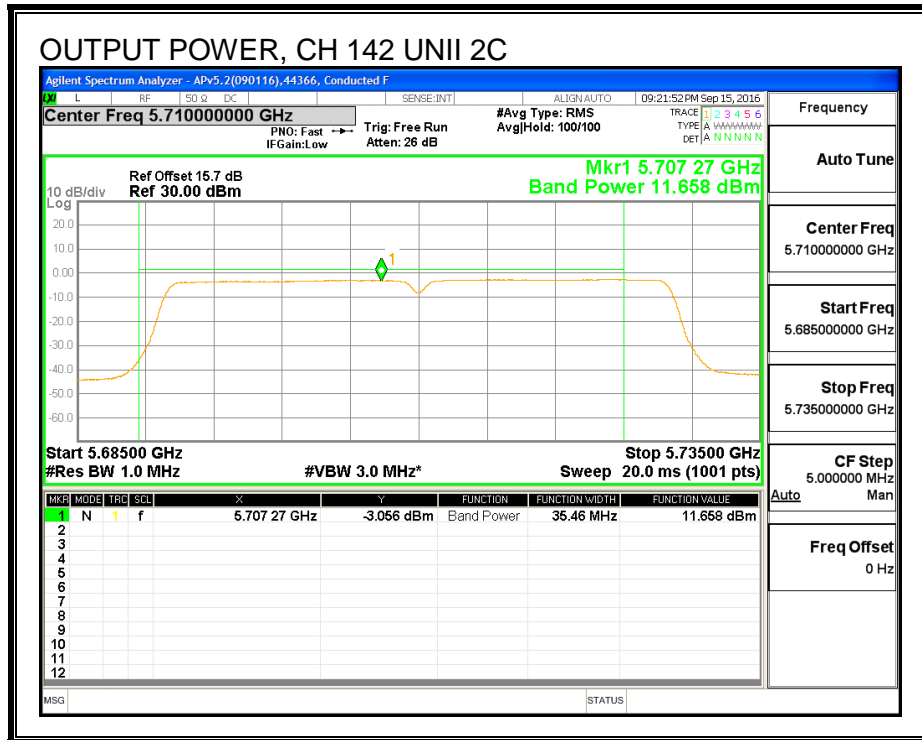
**Output Power Results**

| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>Power<br>(dBm) | Chain 2<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| 142     | 5710               | 11.66                             | 11.73                             | 15.49                             | 21.94                   | -6.45                   |

**PSD Results**

| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>PSD<br>(dBm) | Chain 2<br>Meas<br>PSD<br>(dBm) | Total<br>Corr'd<br>PSD<br>(dBm) | PSD<br>Limit<br>(dBm) | PSD<br>Margin<br>(dB) |
|---------|--------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|
| 142     | 5710               | -2.65                           | -2.61                           | 1.17                            | 8.94                  | -7.77                 |

**OUTPUT POWER, CHAIN 0**



**OUTPUT POWER, CHAIN 2**

