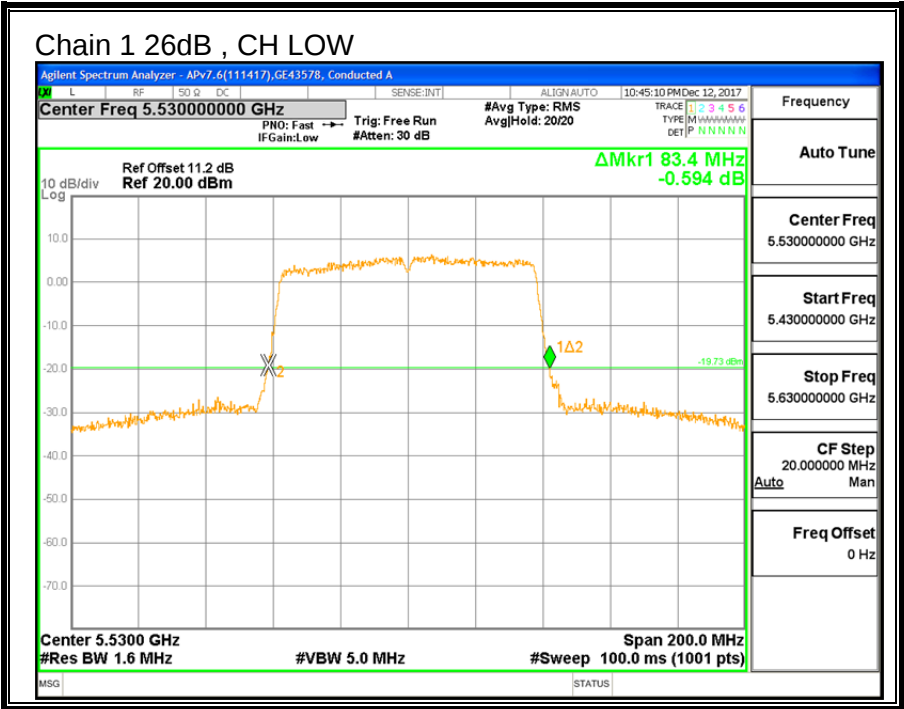
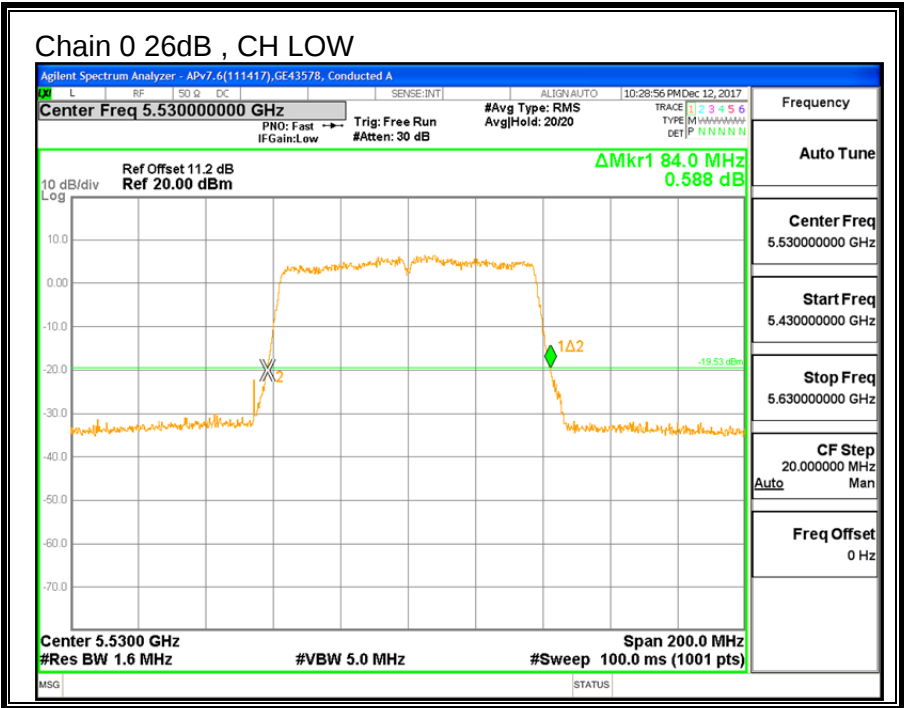
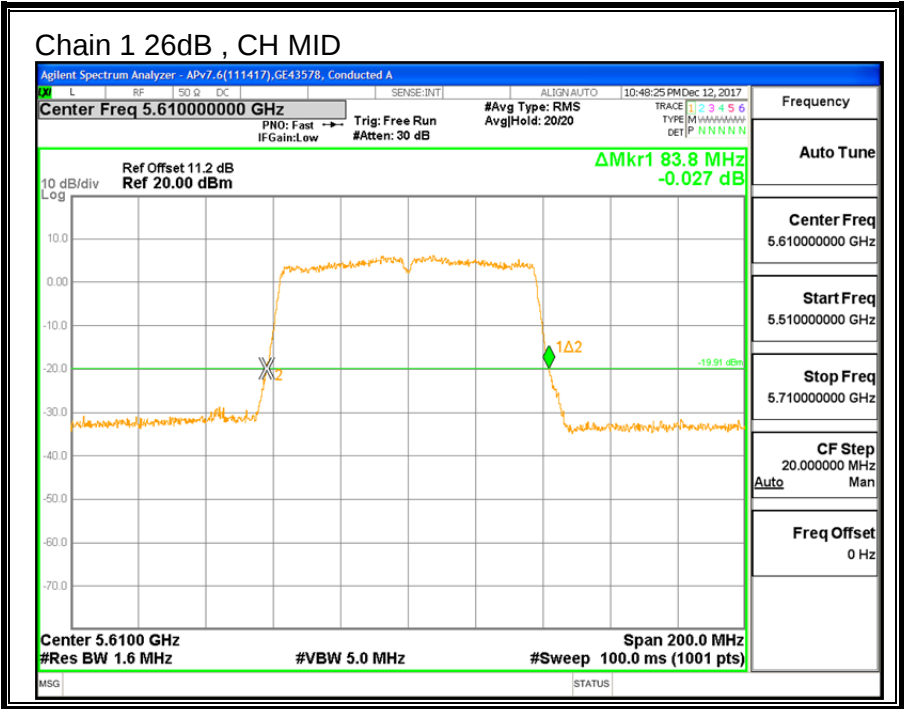
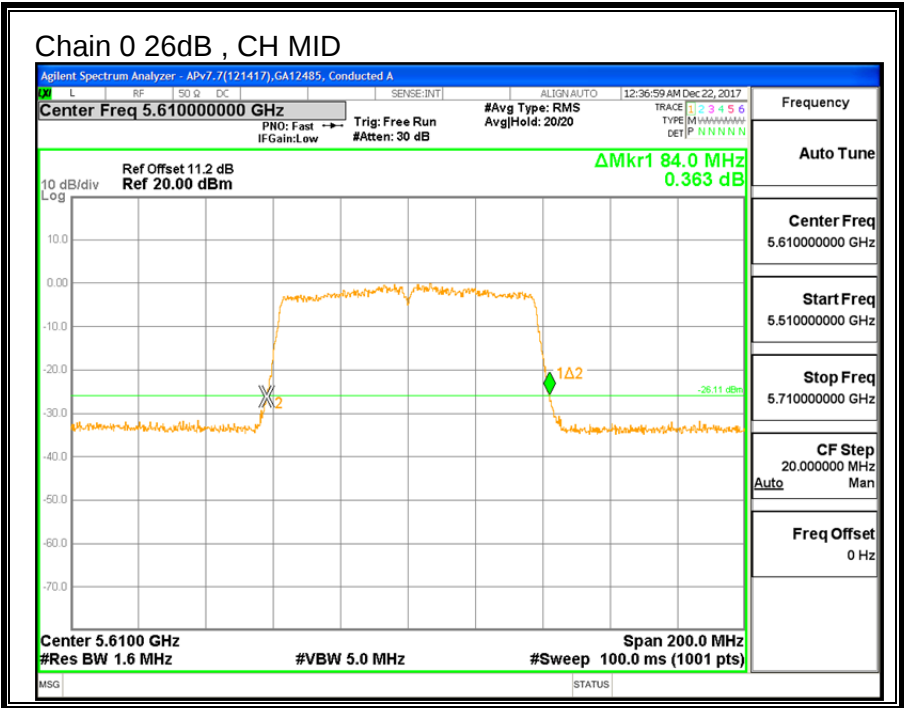
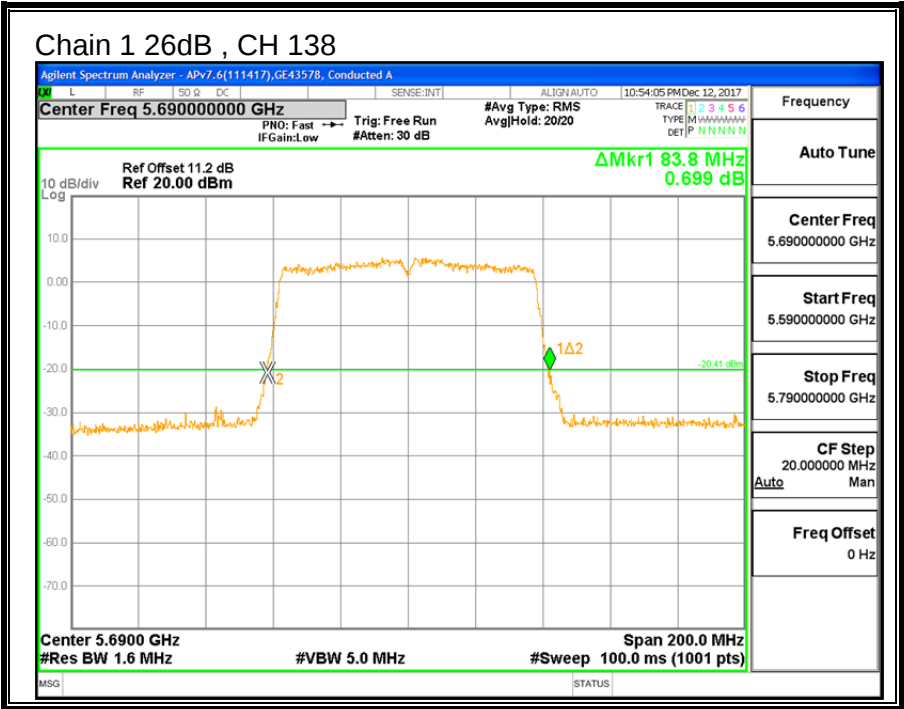
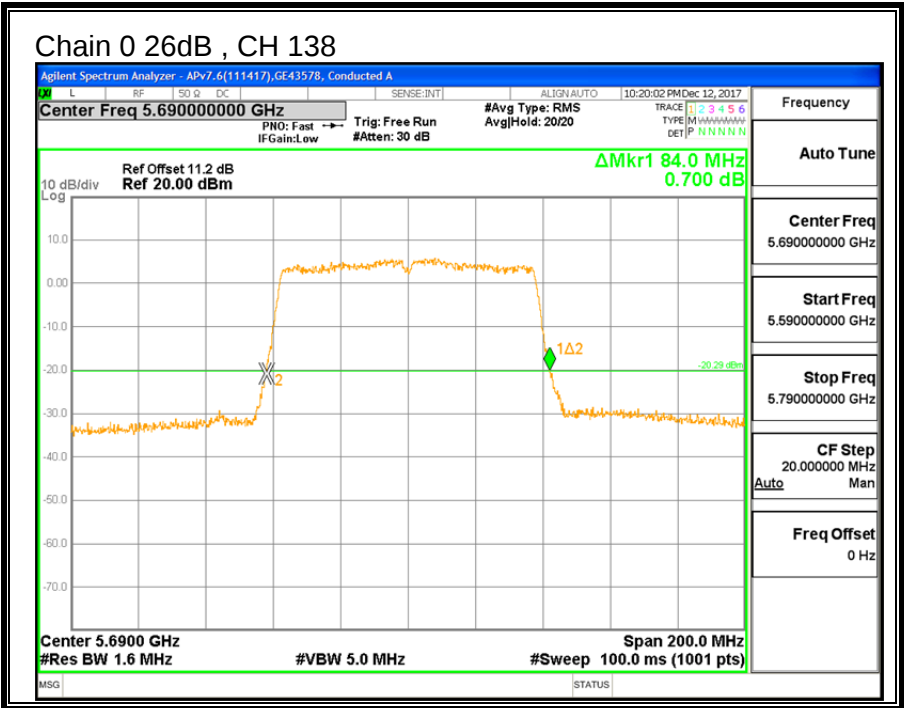








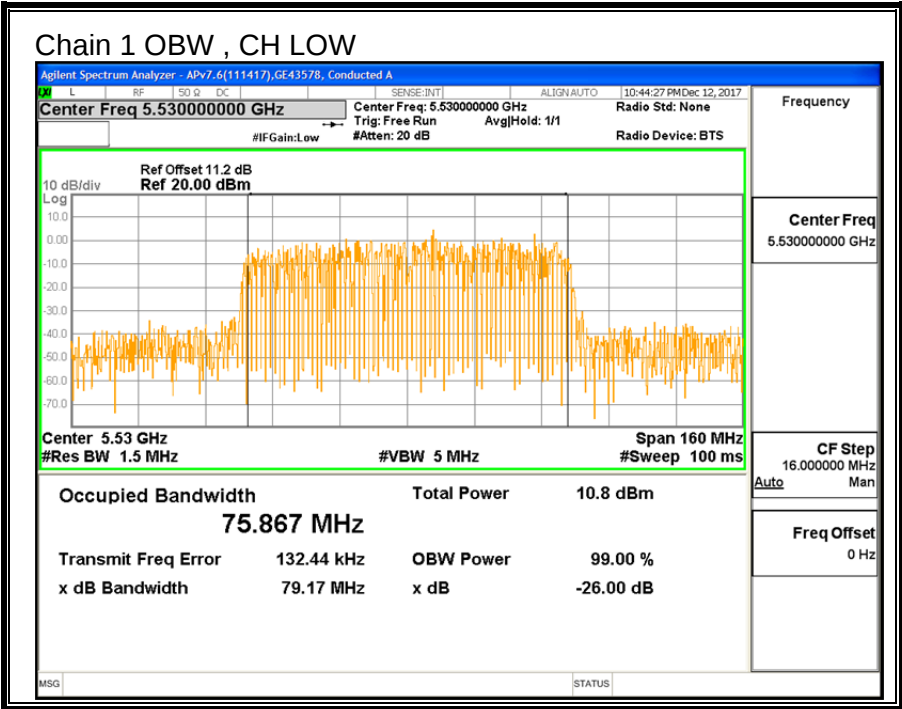
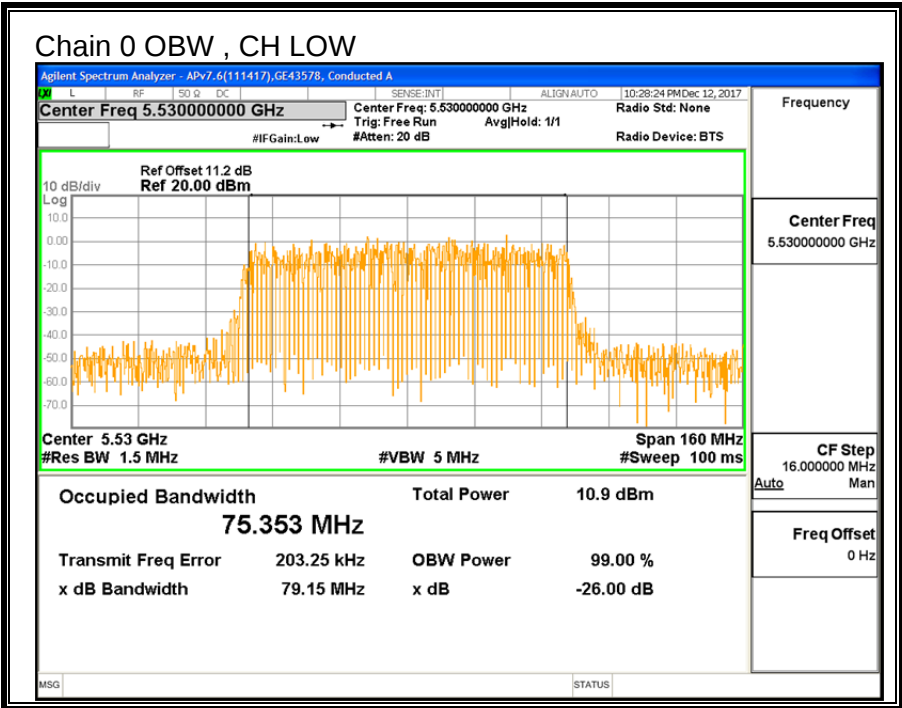
### 9.12.2. 99% BANDWIDTH

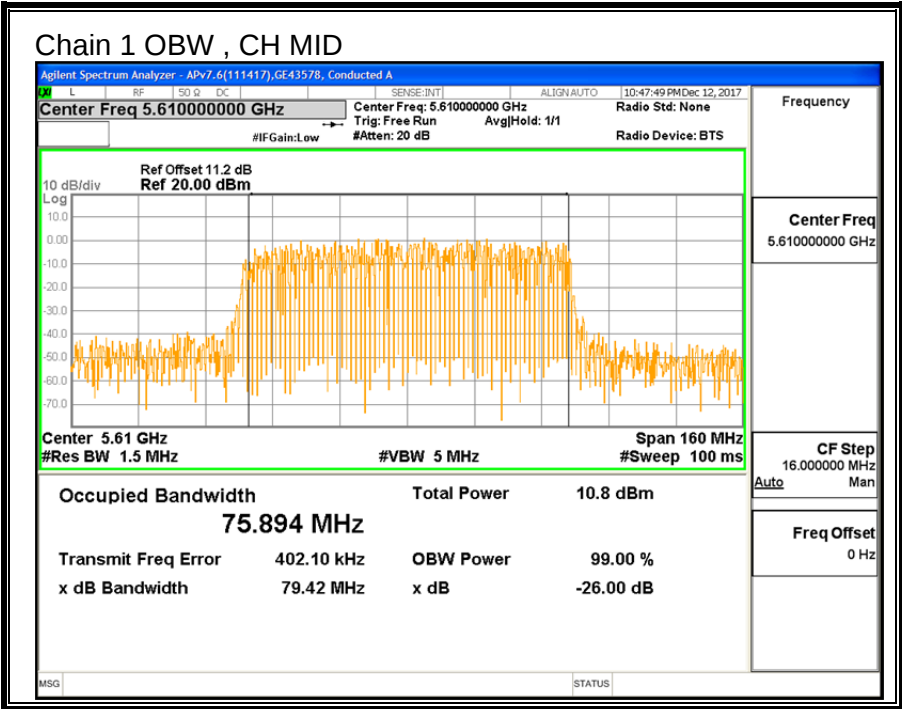
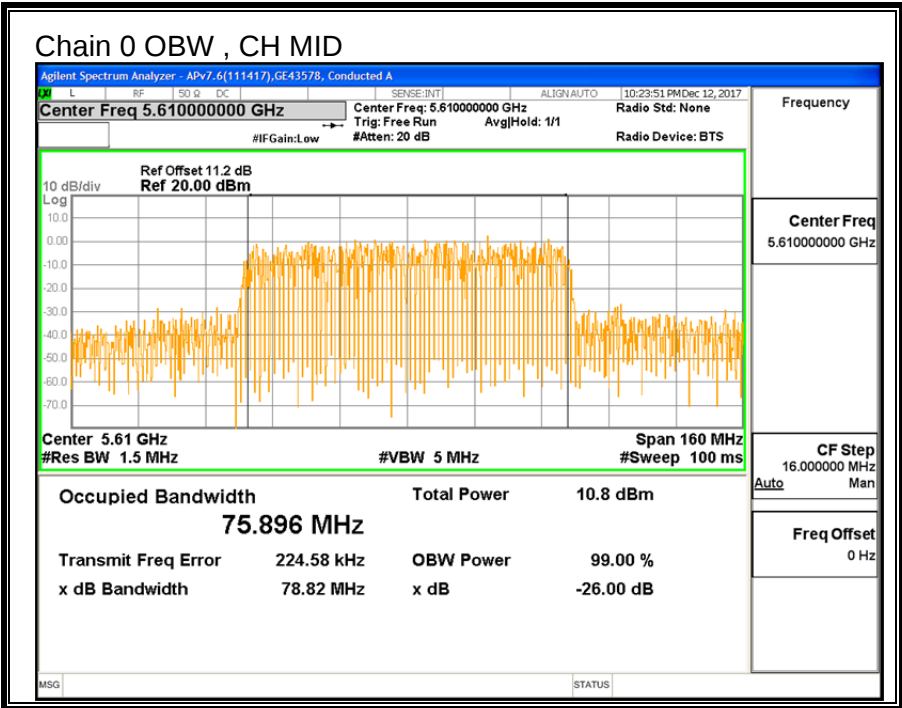
#### LIMITS

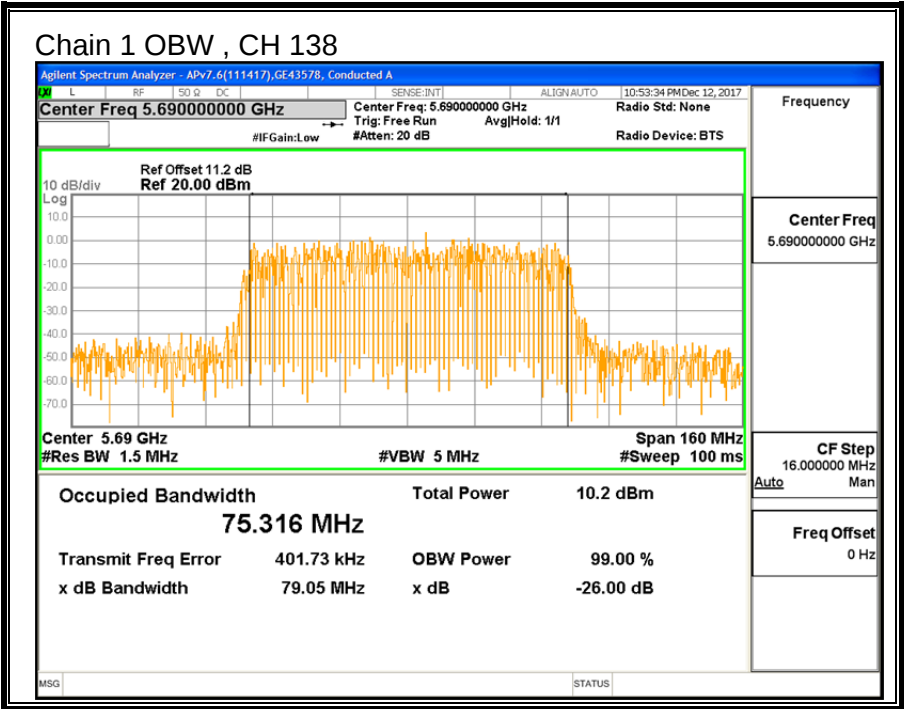
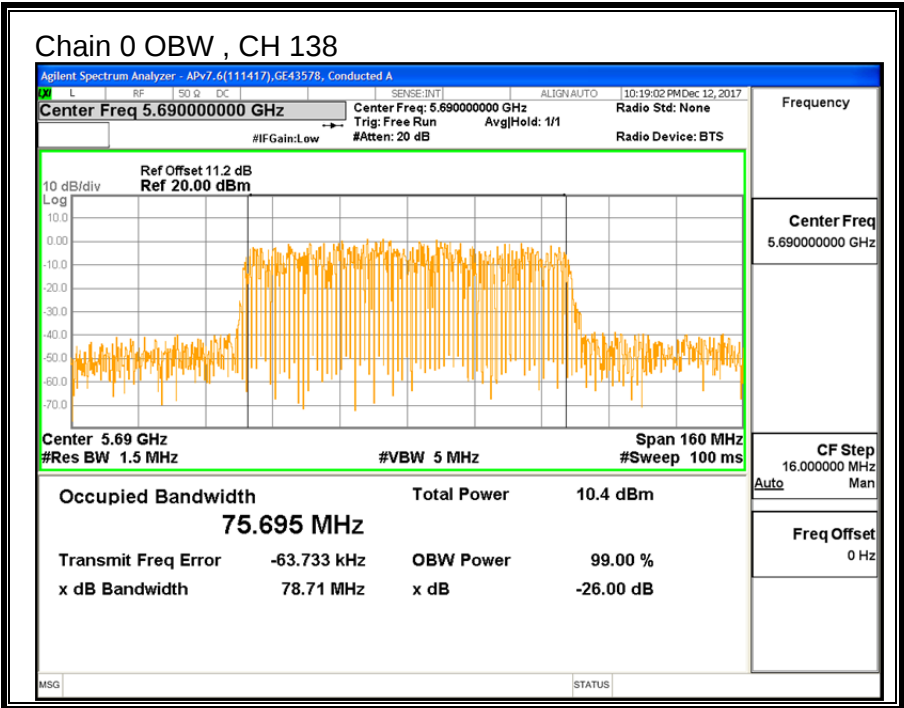
None; for reporting purposes only.

#### RESULTS

| Channel | Frequency | 99% BW<br>Chain 0<br>(MHz) | 99% BW<br>Chain 1<br>(MHz) |
|---------|-----------|----------------------------|----------------------------|
| Low     | 5530      | 75.353                     | 75.867                     |
| Mid     | 5610      | <b>75.896</b>              | <b>75.894</b>              |
| 138     | 5690      | 75.695                     | 75.316                     |







### 9.12.3. OUTPUT POWER AND PPSD

#### 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.

#### DIRECTIONAL ANTENNA GAIN

For power, the TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

##### 5470-5725 MHz

| Chain 0<br>Antenna<br>Gain<br>(dBi) | Chain 1<br>Antenna<br>Gain<br>(dBi) | Uncorrelated Chains<br>Directional<br>Gain<br>(dBi) |
|-------------------------------------|-------------------------------------|-----------------------------------------------------|
| -2.80                               | -5.70                               | -4.01                                               |

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

##### 5470-5725 MHz

| Chain 0<br>Antenna<br>Gain<br>(dBi) | Chain 1<br>Antenna<br>Gain<br>(dBi) | Correlated Chains<br>Directional<br>Gain<br>(dBi) |
|-------------------------------------|-------------------------------------|---------------------------------------------------|
| -2.80                               | -5.70                               | -1.12                                             |

#### RESULTS

|     |         |       |          |
|-----|---------|-------|----------|
| ID: | GE43578 | Date: | 12/12/17 |
|-----|---------|-------|----------|

#### Bandwidth and Antenna Gain

| 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 PPSD<br>(dBi) |
|---------|--------------------|-----------------------------|---------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5530               | 83.40                       | 75.353                    | -4.01                                     | -1.12                                    |
| Mid     | 5610               | 83.80                       | 75.894                    | -4.01                                     | -1.12                                    |
| 138     | 5690               | 83.80                       | 75.316                    | -4.01                                     | -1.12                                    |

#### Limits

| Channel | Frequency<br>(MHz) | FCC<br>Power<br>Limit<br>(dBm) | IC<br>Power<br>Limit<br>(dBm) | IC<br>EIRP<br>Limit<br>(dBm) | Power<br>Limit<br>(dBm) | FCC<br>PPSD<br>Limit<br>(dBm) | IC<br>PSD<br>Limit<br>(dBm) | PPSD<br>Limit<br>(dBm) |
|---------|--------------------|--------------------------------|-------------------------------|------------------------------|-------------------------|-------------------------------|-----------------------------|------------------------|
| Low     | 5530               | 24.00                          | 24.00                         | 30.00                        | 24.00                   | 11.00                         | 11.00                       | 11.00                  |
| Mid     | 5610               | 24.00                          | 24.00                         | 30.00                        | 24.00                   | 11.00                         | 11.00                       | 11.00                  |
| 138     | 5690               | 24.00                          | 24.00                         | 30.00                        | 24.00                   | 11.00                         | 11.00                       | 11.00                  |

|                    |      |                                         |
|--------------------|------|-----------------------------------------|
| Duty Cycle CF (dB) | 0.77 | Included in Calculations of Corr'd PPSP |
|--------------------|------|-----------------------------------------|

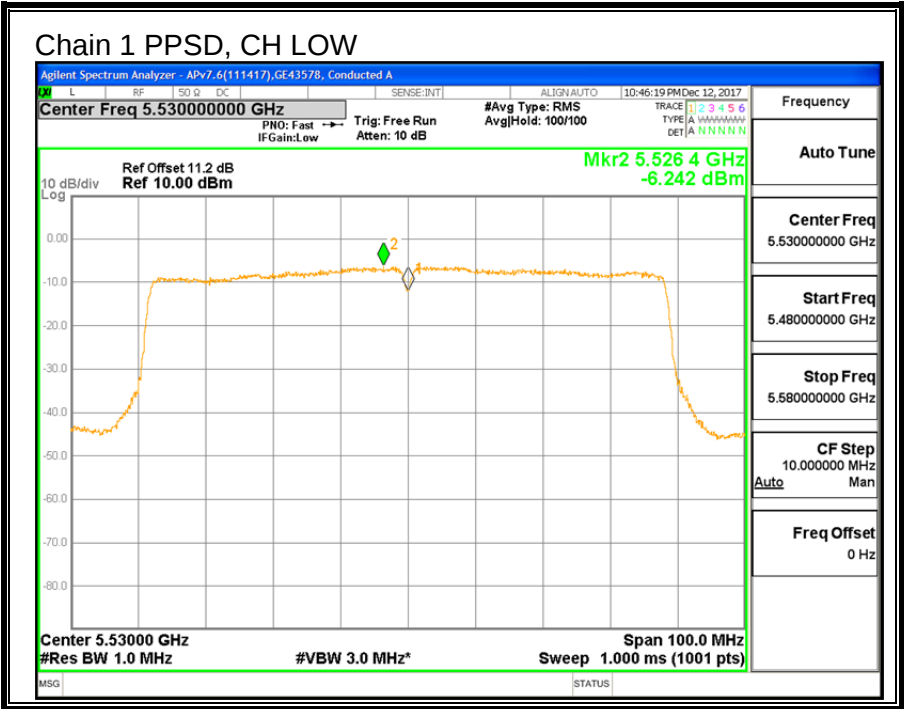
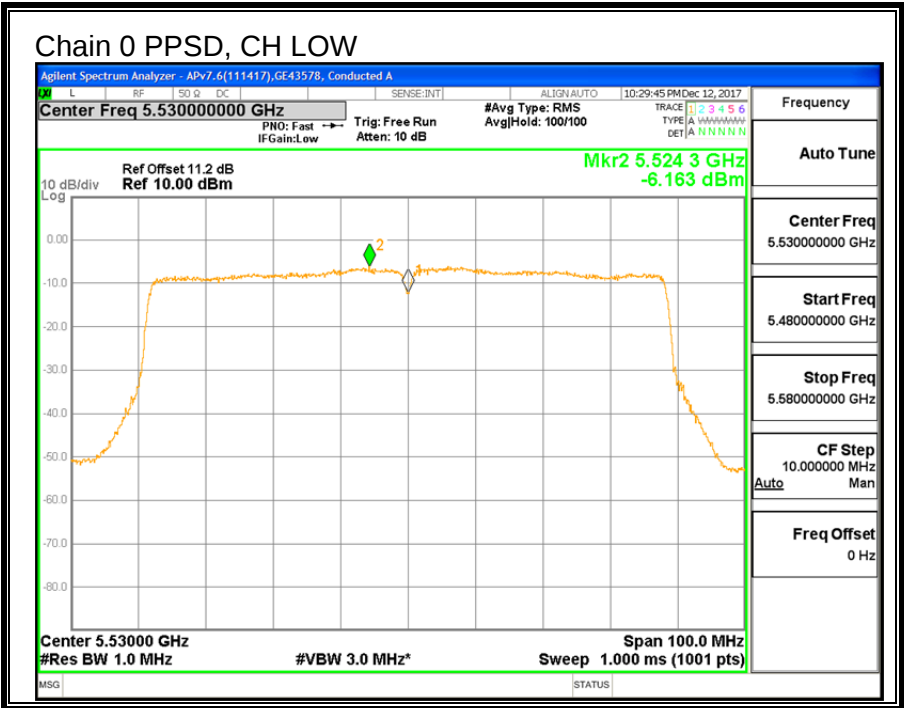
#### Output Power Results

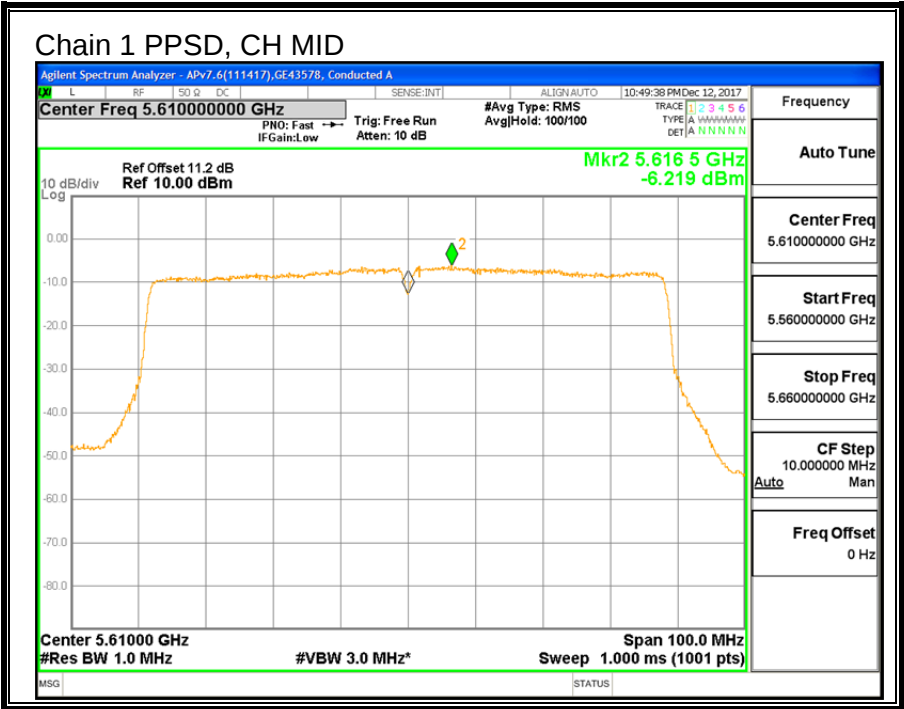
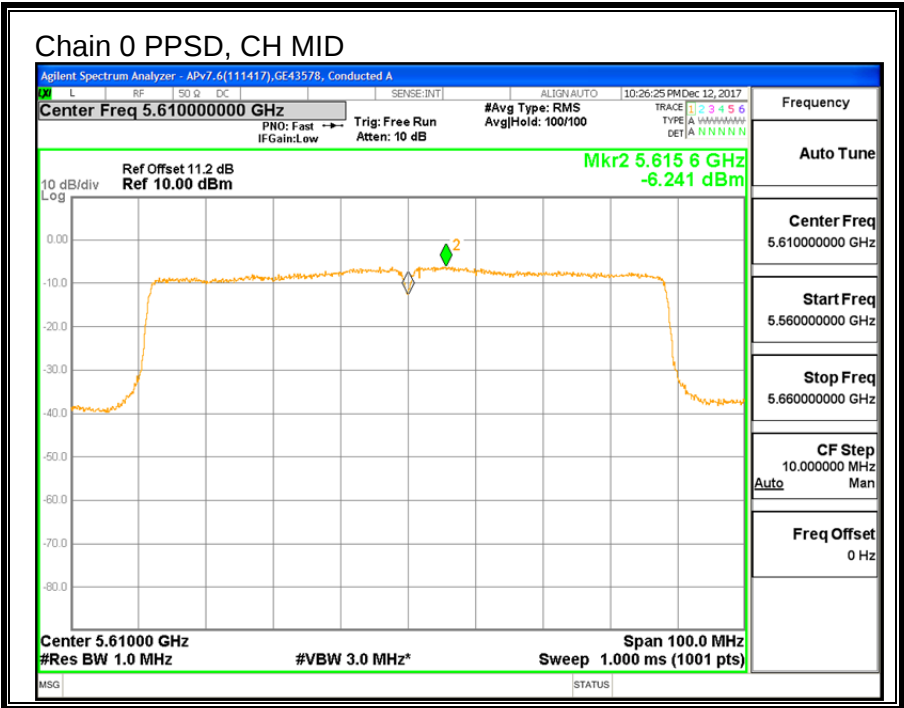
| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>Power<br>(dBm) | Chain 1<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5530               | 10.93                             | <b>10.92</b>                      | <b>13.94</b>                      | 24.00                   | -10.06                  |
| Mid     | 5610               | <b>11.01</b>                      | 10.81                             | 13.92                             | 24.00                   | -10.08                  |
| 138     | 5690               | 11.00                             | 10.35                             | 13.70                             | 24.00                   | -10.30                  |

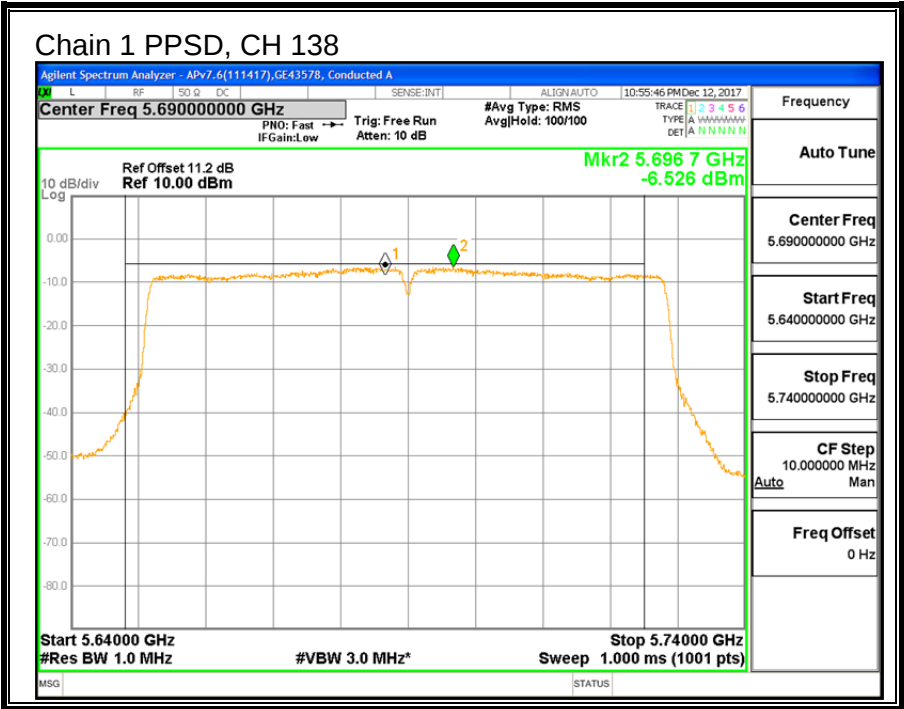
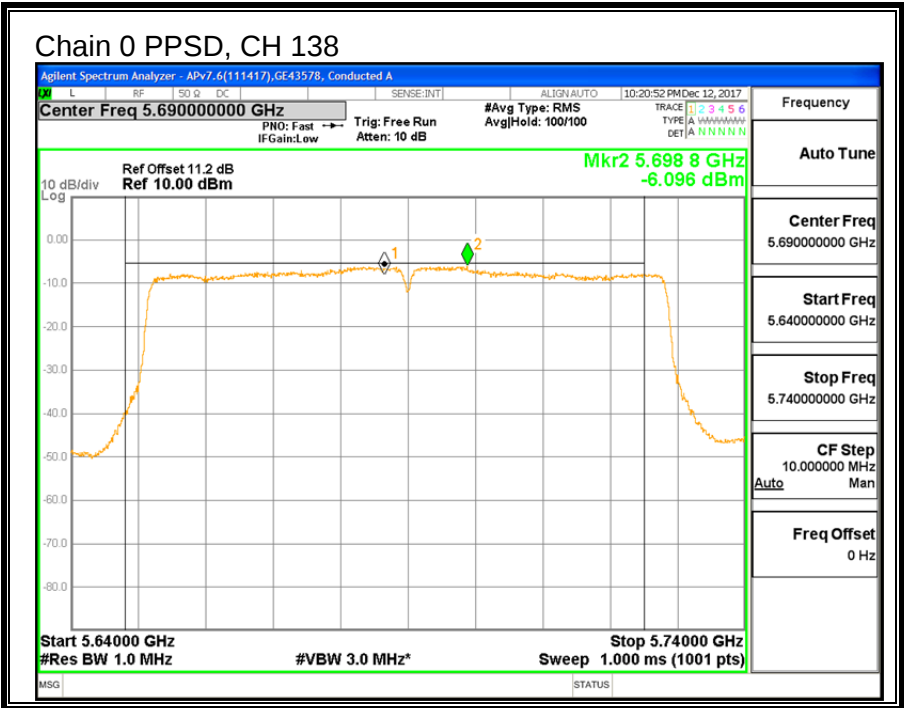
#### PPSD Results

| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>PPSD<br>(dBm) | Chain 1<br>Meas<br>PPSD<br>(dBm) | Total<br>Corr'd<br>PPSD<br>(dBm) | PPSD<br>Limit<br>(dBm) | PPSD<br>Margin<br>(dB) |
|---------|--------------------|----------------------------------|----------------------------------|----------------------------------|------------------------|------------------------|
| Low     | 5530               | -6.163                           | -6.242                           | -2.42                            | 11.00                  | -13.42                 |
| Mid     | 5610               | -6.241                           | <b>-6.219</b>                    | -2.45                            | 11.00                  | -13.45                 |
| 138     | 5690               | <b>-6.096</b>                    | -6.526                           | <b>-2.53</b>                     | 11.00                  | -13.53                 |

**Note:** the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.







## 9.13. 11a 2TX CDD MIMO MODE IN THE 5.8GHz BAND

### 9.13.1. 6 dB BANDWIDTH

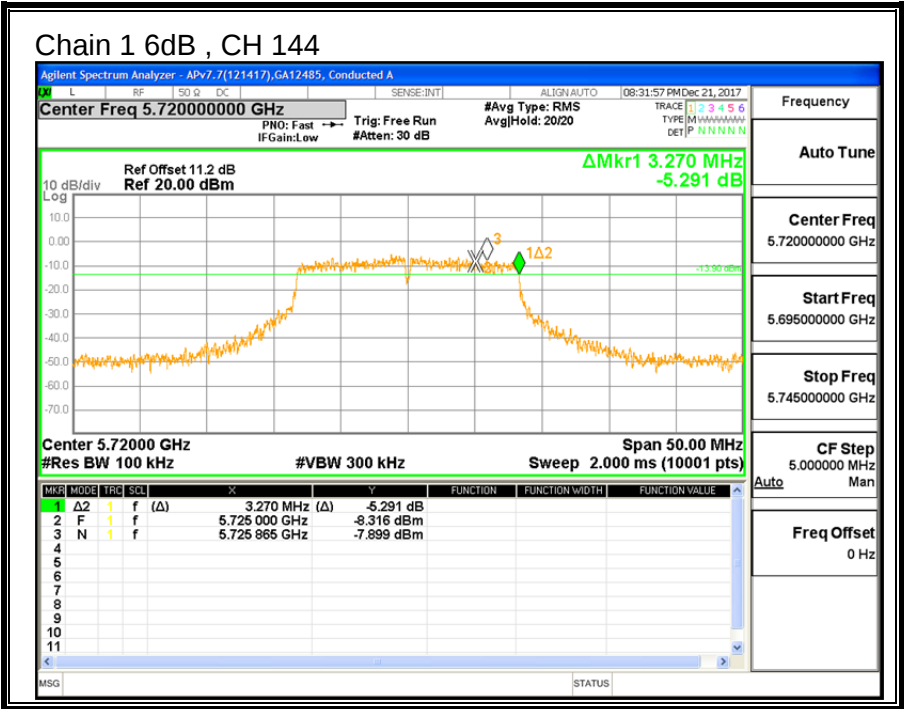
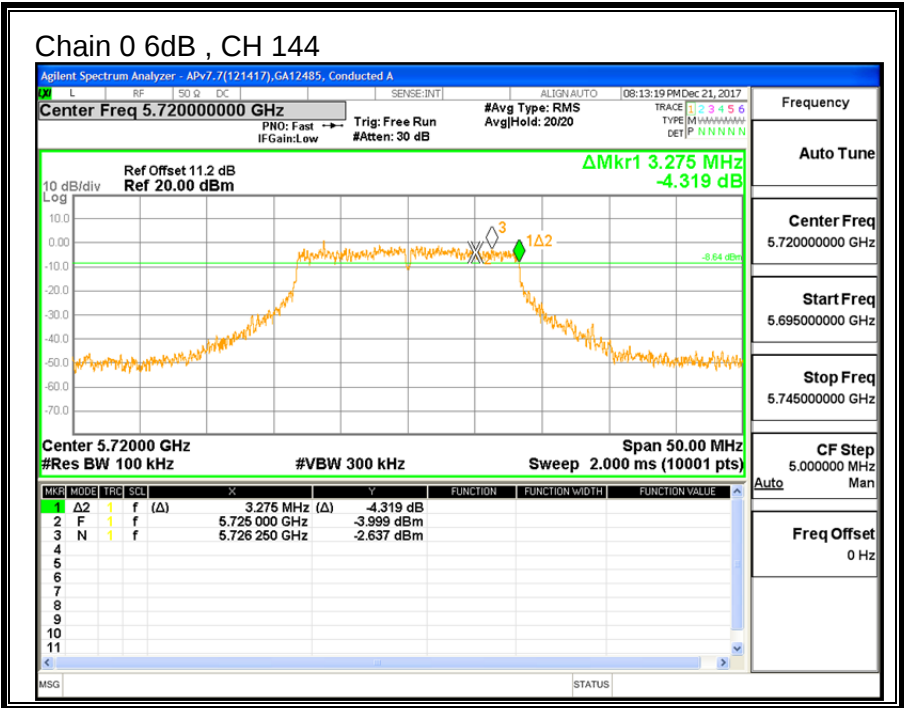
#### LIMITS

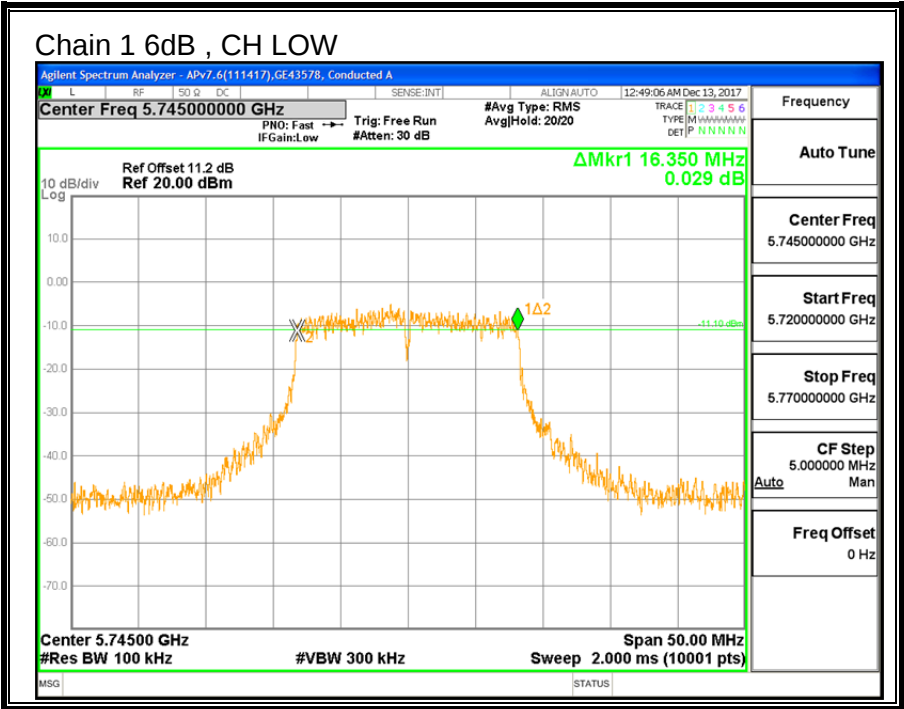
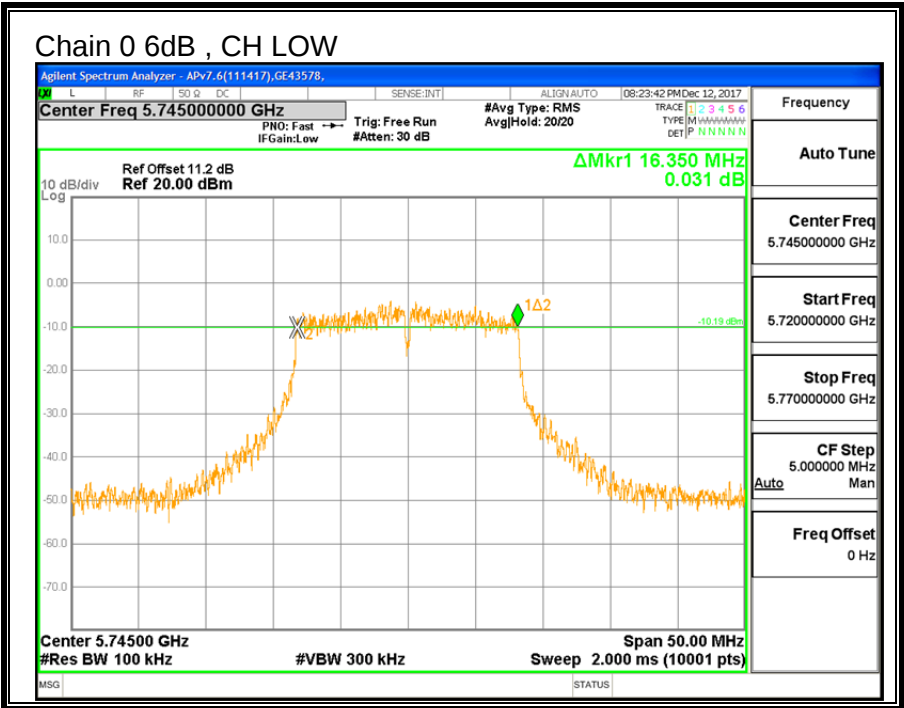
FCC §15.407 (e)

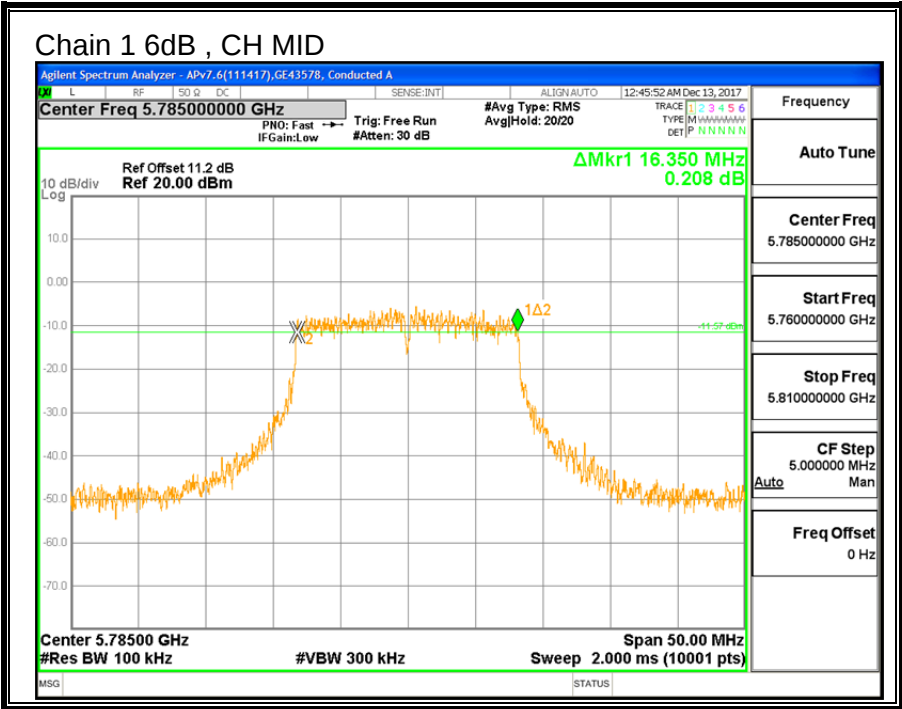
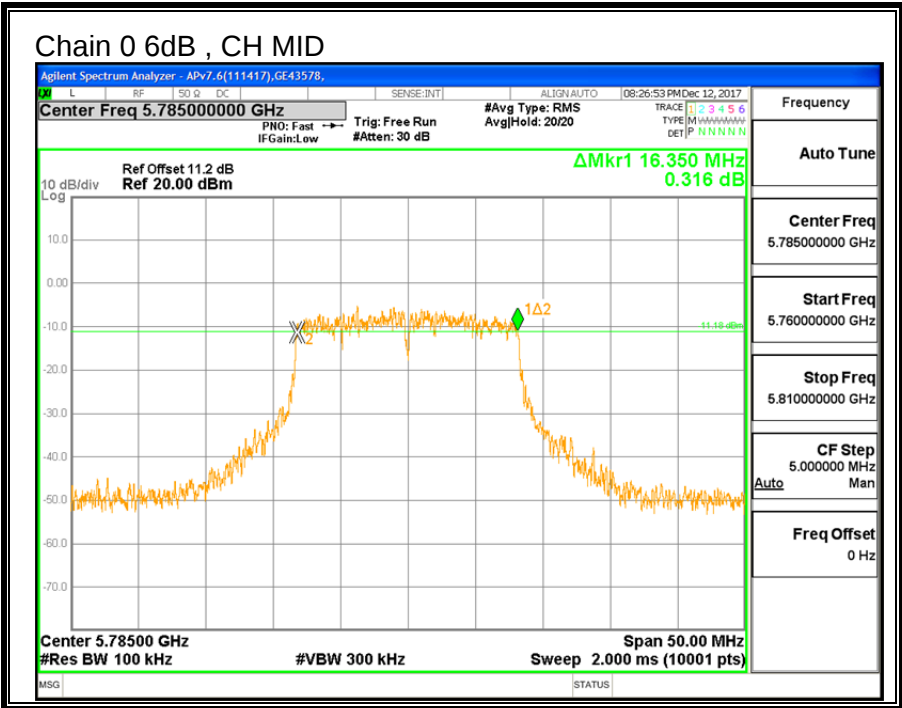
The minimum 6 dB bandwidth shall be at least 500 kHz.

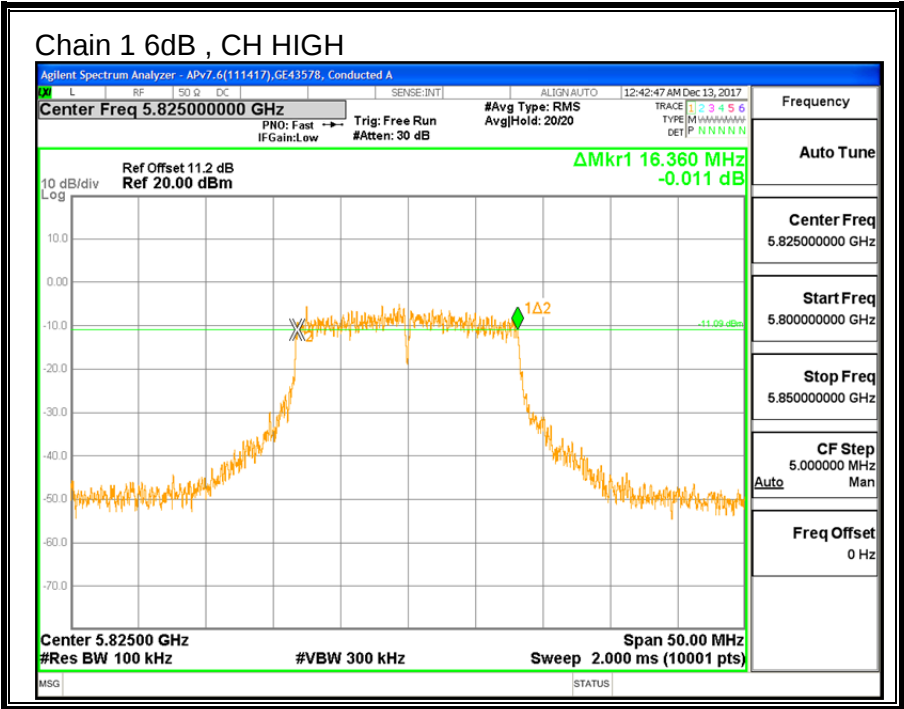
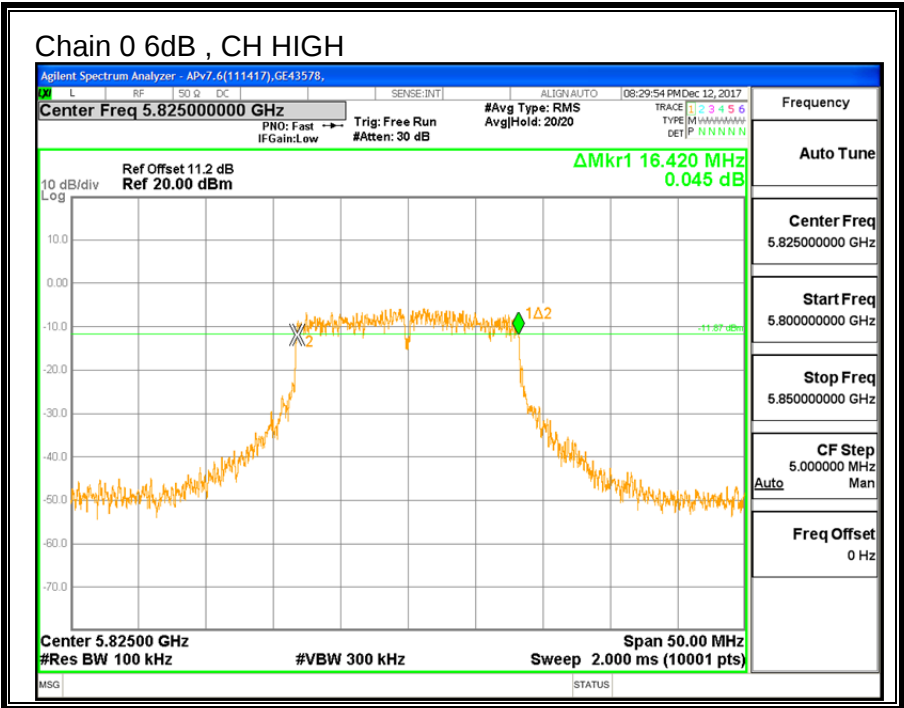
#### RESULTS

| Channel | Frequency | 6 dB BW<br>Chain 0<br>(MHz) | 6 dB BW<br>Chain 1<br>(MHz) | Minimum<br>Limit (MHz) |
|---------|-----------|-----------------------------|-----------------------------|------------------------|
| 144     | 5720      | 3.275                       | 3.270                       | 0.5                    |
| Low     | 5745      | 16.350                      | 16.350                      | 0.5                    |
| Mid     | 5785      | 16.350                      | 16.350                      | 0.5                    |
| High    | 5825      | <b>16.420</b>               | <b>16.360</b>               | 0.5                    |









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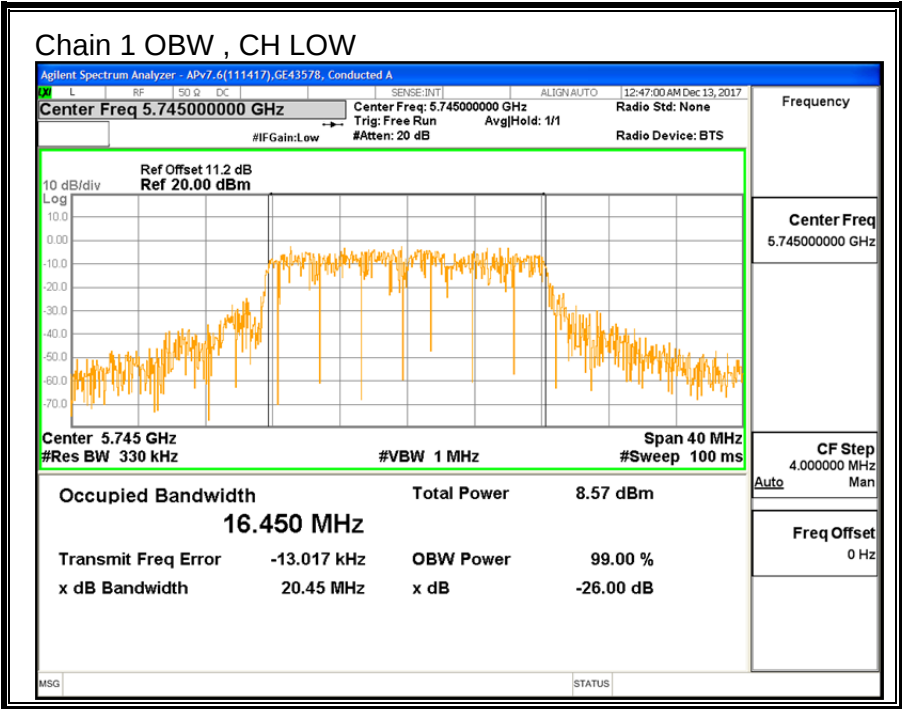
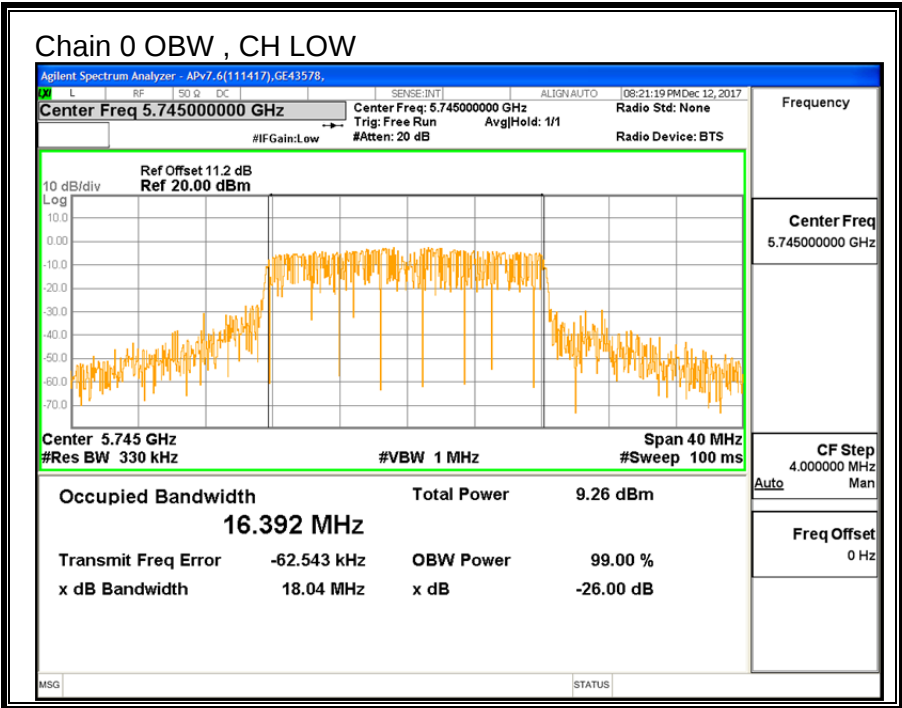
### 9.13.2. 99% BANDWIDTH

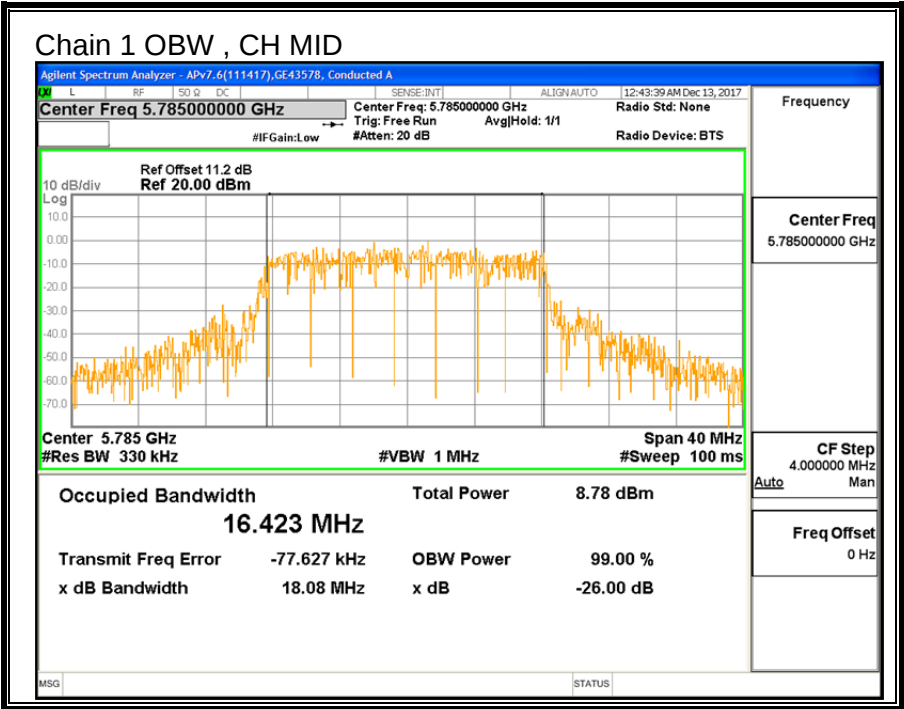
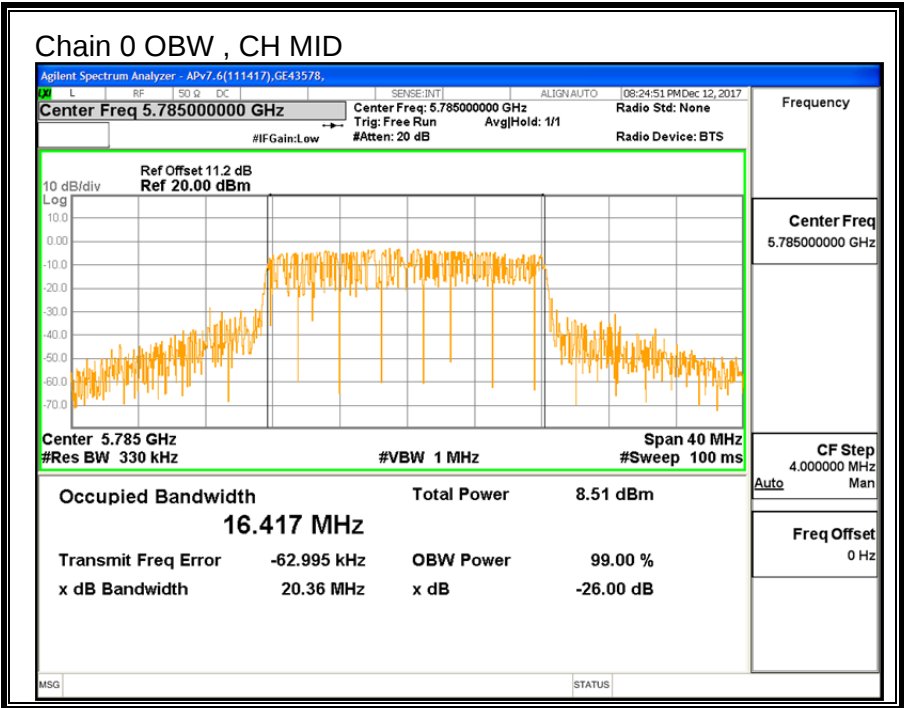
#### LIMITS

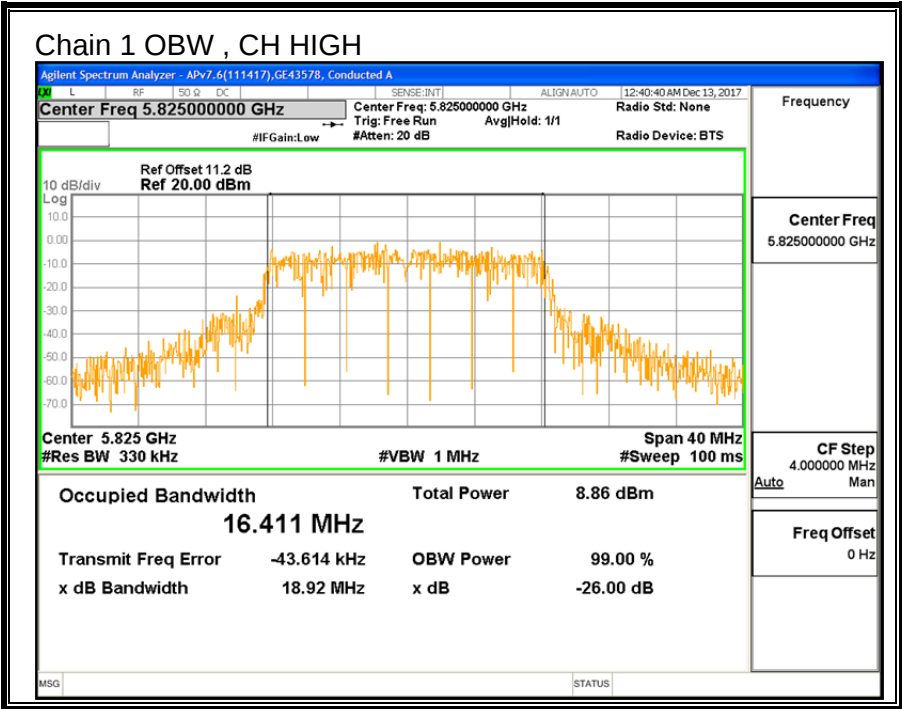
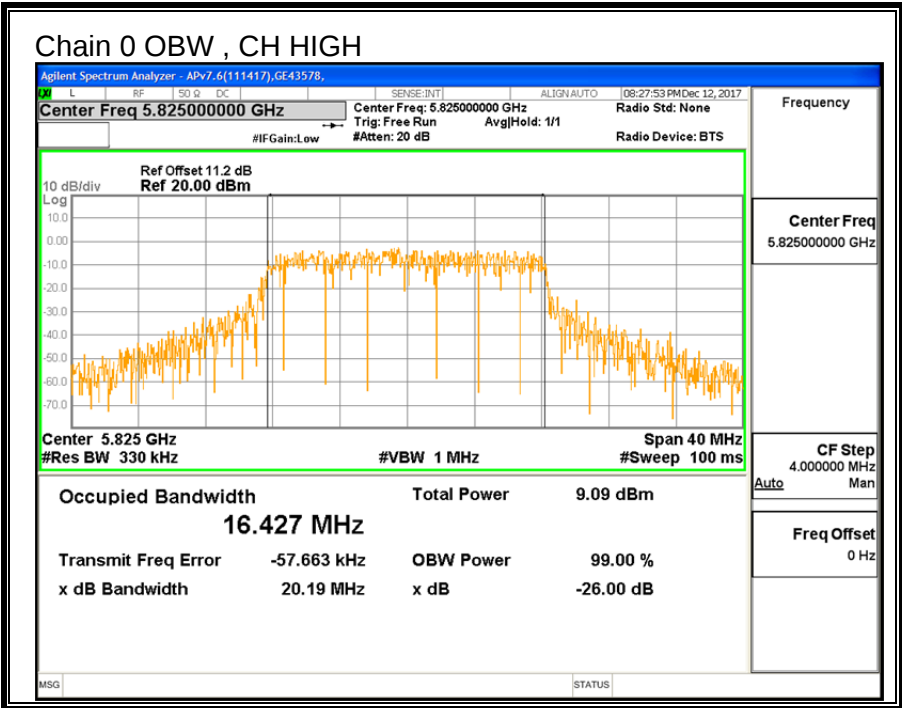
None; for reporting purposes only.

#### RESULTS

| Channel | Frequency | 99% BW<br>Chain 0<br>(MHz) | 99% BW<br>Chain 1<br>(MHz) |
|---------|-----------|----------------------------|----------------------------|
| Low     | 5745      | 16.392                     | <b>16.450</b>              |
| Mid     | 5785      | 16.417                     | 16.423                     |
| High    | 5825      | <b>16.427</b>              | 16.411                     |







### 9.13.3. OUTPUT POWER AND 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.

#### 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

For power, the TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

##### 5725-5850 MHz

| Chain 0<br>Antenna<br>Gain<br>(dBi) | Chain 1<br>Antenna<br>Gain<br>(dBi) | Uncorrelated Chains<br>Directional<br>Gain<br>(dBi) |
|-------------------------------------|-------------------------------------|-----------------------------------------------------|
| -4.30                               | -7.50                               | -5.61                                               |

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

##### 5725-5850 MHz

| Chain 0<br>Antenna<br>Gain<br>(dBi) | Chain 1<br>Antenna<br>Gain<br>(dBi) | Correlated Chains<br>Directional<br>Gain<br>(dBi) |
|-------------------------------------|-------------------------------------|---------------------------------------------------|
| -4.30                               | -7.50                               | -2.74                                             |

## RESULTS

|            |         |              |          |
|------------|---------|--------------|----------|
| <b>ID:</b> | GE43578 | <b>Date:</b> | 12/12/17 |
|------------|---------|--------------|----------|

### Antenna Gain and Limit

| Channel | Frequency<br>(MHz) | Directional<br>Gain<br>for Power<br>(dBi) | Directional<br>Gain<br>for PSD<br>(dBi) | Power<br>Limit<br>(dBm) | Power<br>Limit<br>(dBm) |
|---------|--------------------|-------------------------------------------|-----------------------------------------|-------------------------|-------------------------|
| Low     | 5745               | -5.61                                     | -2.74                                   | 30.00                   | 30.00                   |
| Mid     | 5785               | -5.61                                     | -2.74                                   | 30.00                   | 30.00                   |
| High    | 5825               | -5.61                                     | -2.74                                   | 30.00                   | 30.00                   |

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

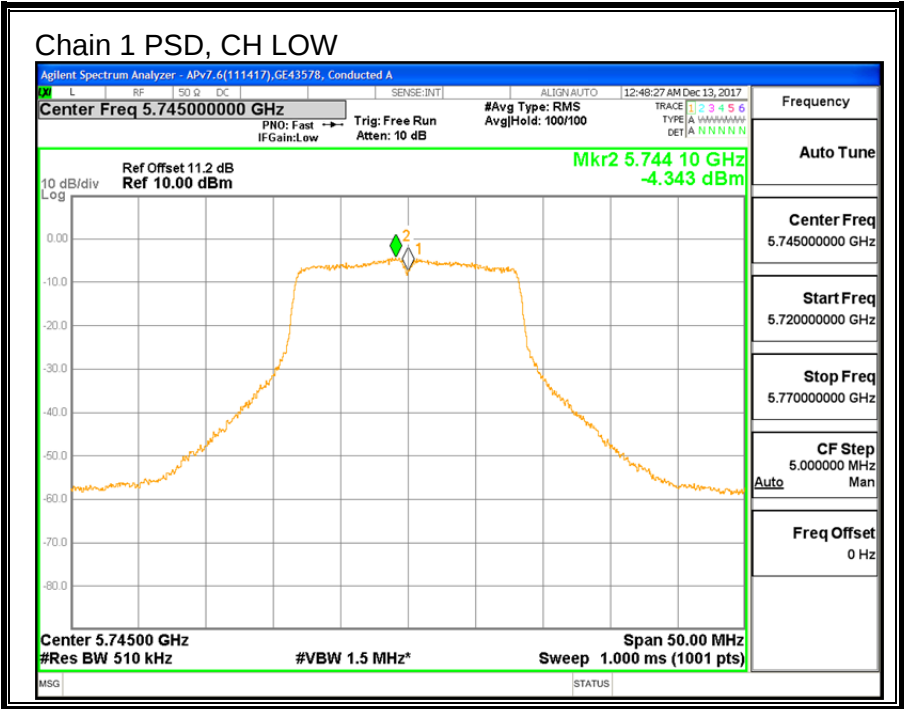
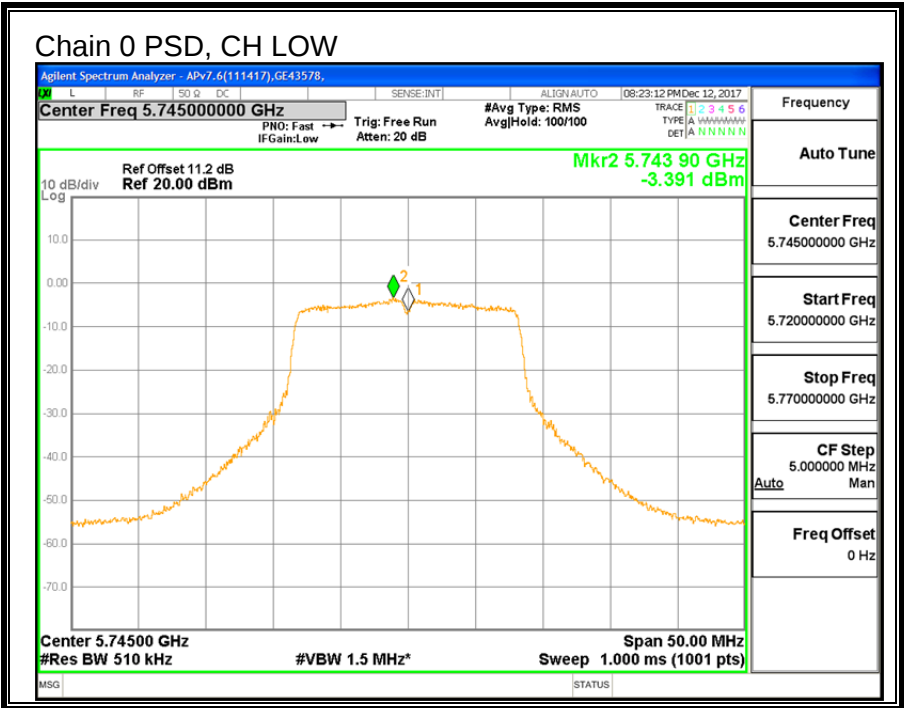
### Output Power Results

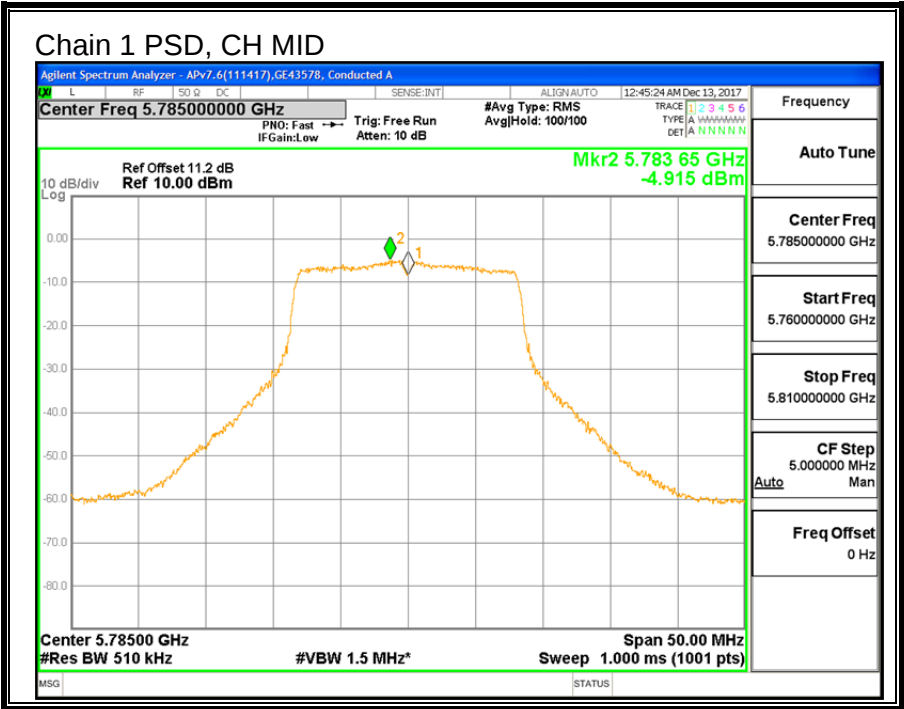
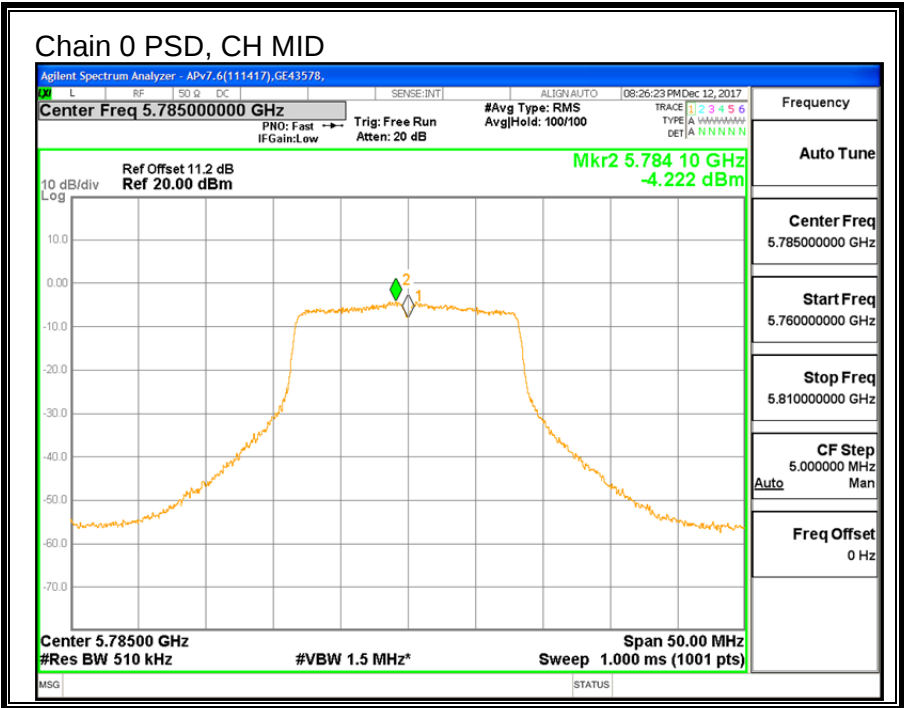
| Channel | Frequency<br>(MHz) | Chain 0<br>Meas<br>Power<br>(dBm) | Chain 1<br>Meas<br>Power<br>(dBm) | Total<br>Corr'd<br>Power<br>(dBm) | Power<br>Limit<br>(dBm) | Power<br>Margin<br>(dB) |
|---------|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5745               | <b>8.84</b>                       | 8.32                              | 11.60                             | 30.00                   | -18.40                  |
| Mid     | 5785               | 8.81                              | <b>8.37</b>                       | <b>11.61</b>                      | 30.00                   | -18.39                  |
| High    | 5825               | 8.79                              | 8.33                              | 11.58                             | 30.00                   | -18.42                  |

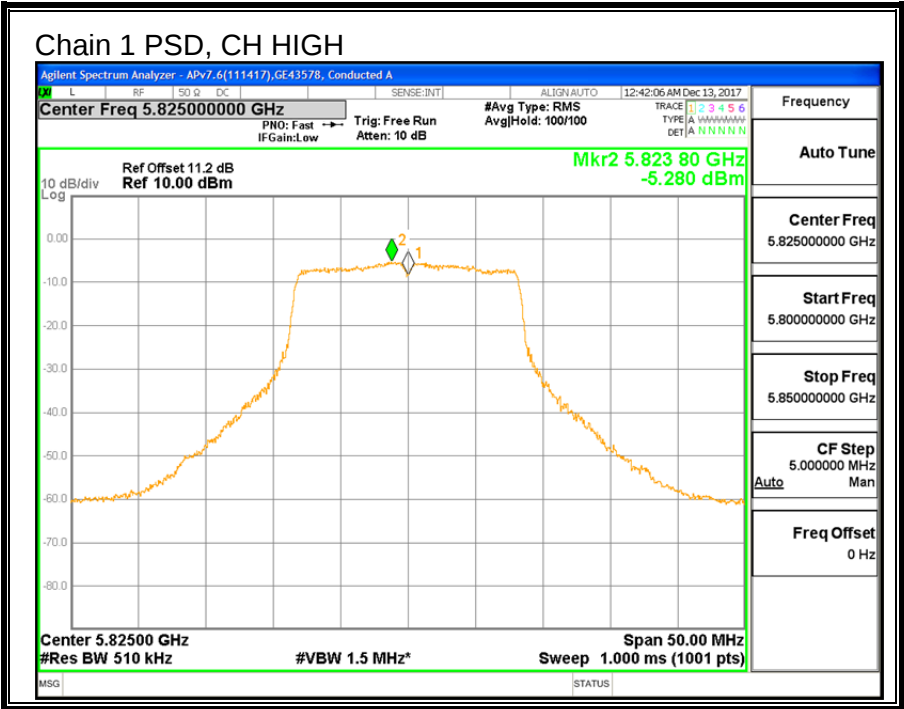
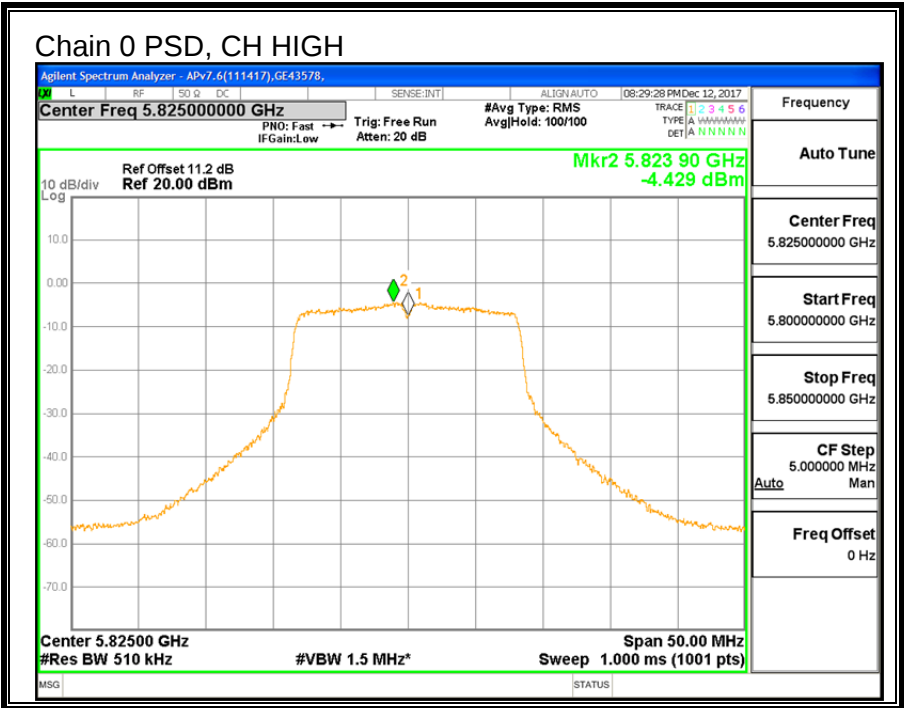
### PSD Results

| 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     | 5745               | <b>-3.391</b>                   | <b>-4.343</b>                   | <b>-0.83</b>                    | 30.00                 | -30.83                |
| Mid     | 5785               | -4.222                          | -4.915                          | -1.54                           | 30.00                 | -31.54                |
| High    | 5825               | -4.429                          | -5.280                          | -1.82                           | 30.00                 | -31.82                |

**Note:** the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.







## 9.14. 11n HT20 2TX CDD MIMO MODE IN THE 5.8GHz BAND

### 9.14.1. 6 dB BANDWIDTH

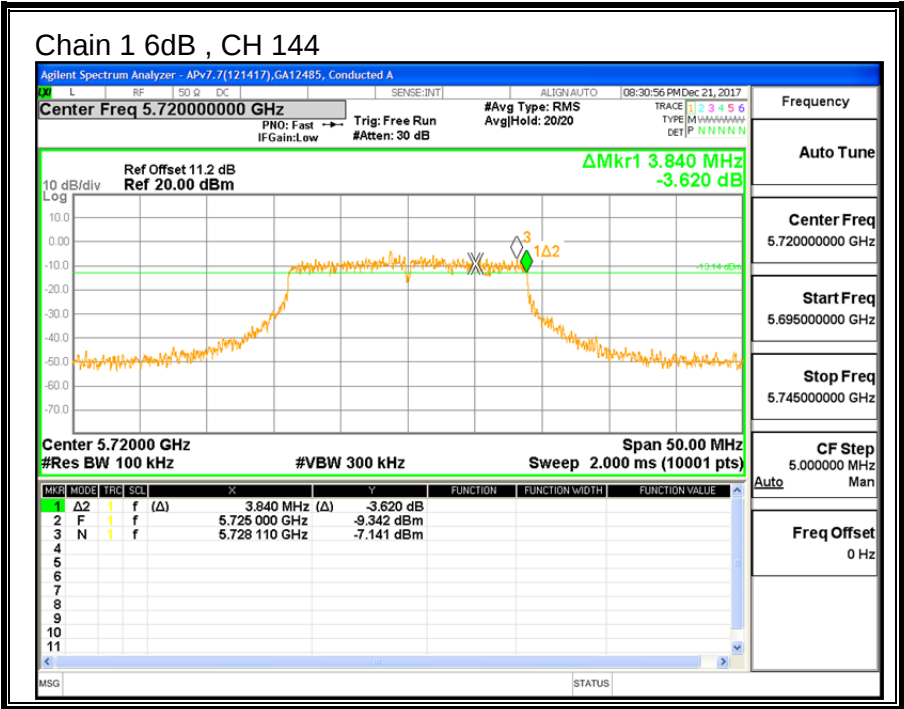
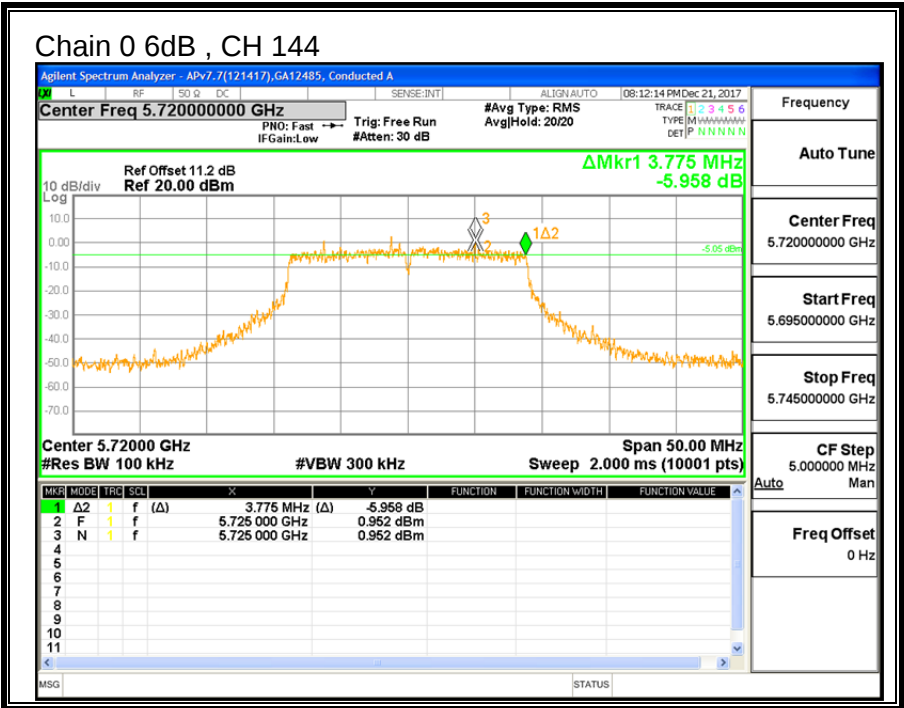
#### LIMITS

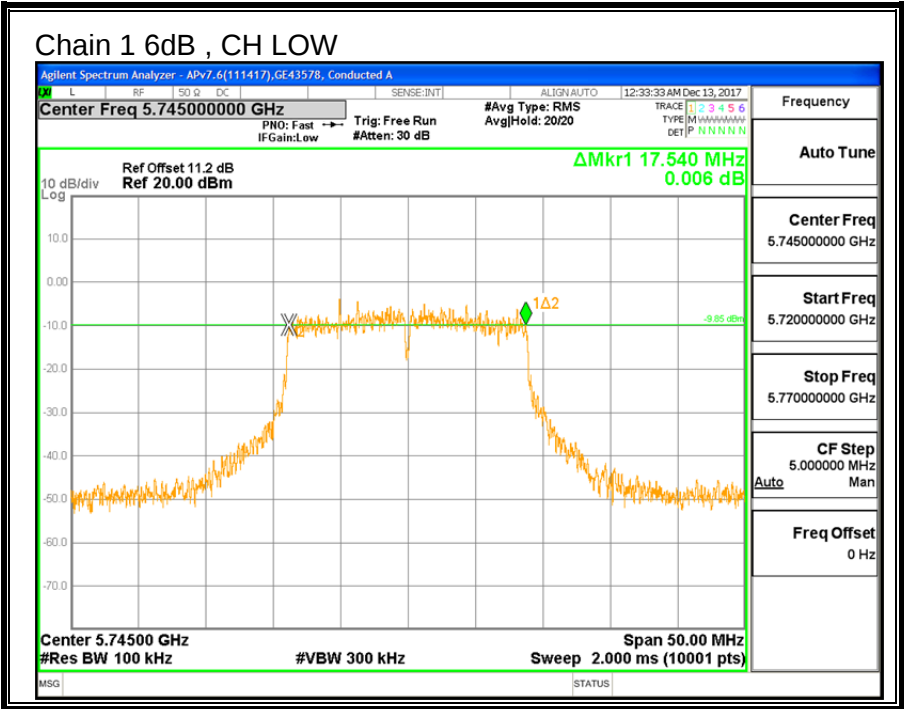
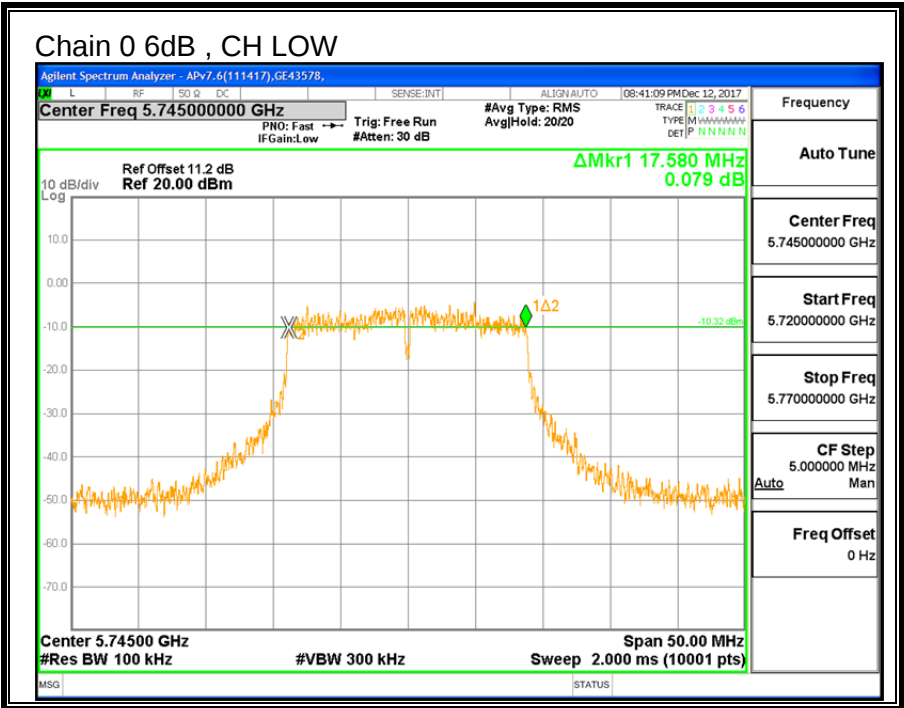
FCC §15.407 (e)

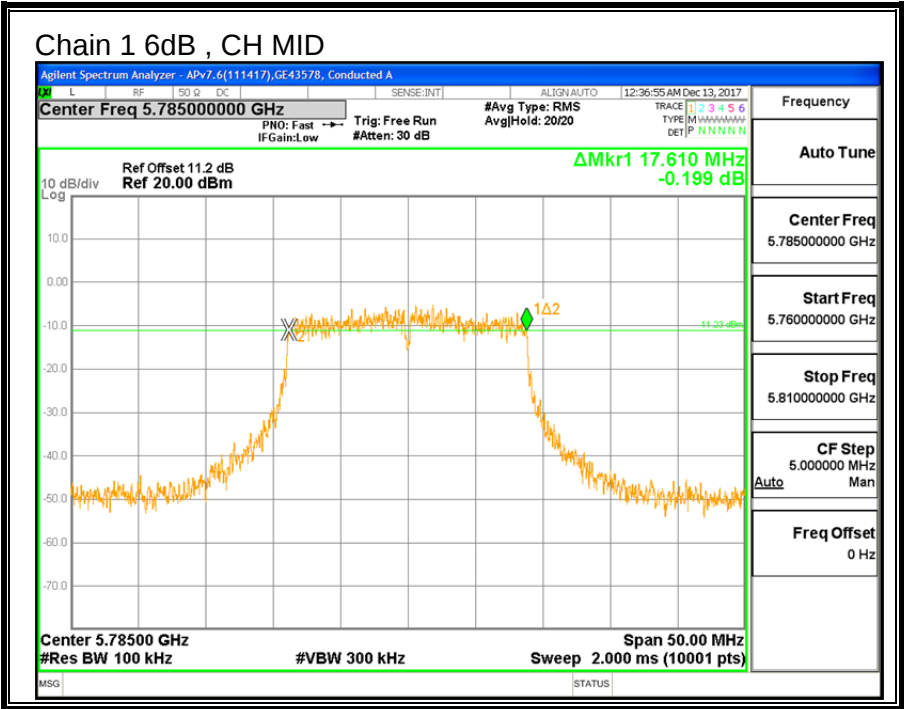
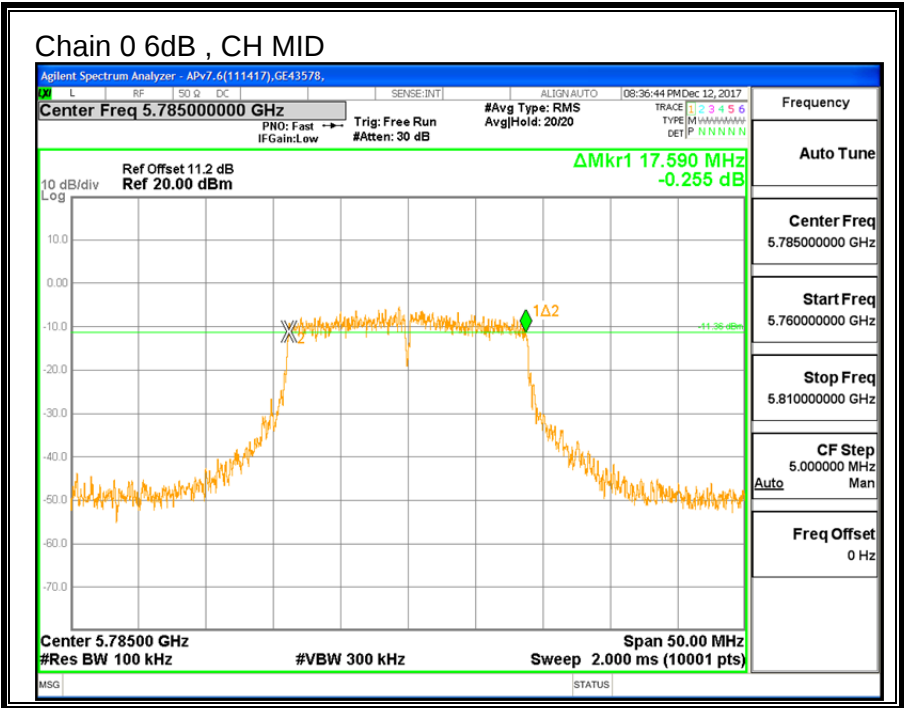
The minimum 6 dB bandwidth shall be at least 500 kHz.

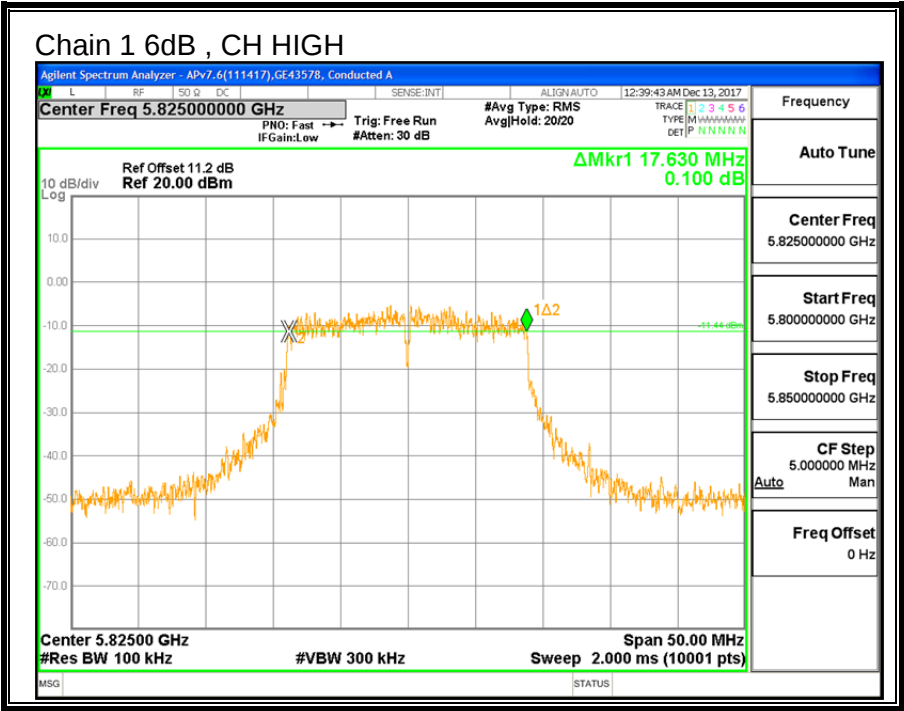
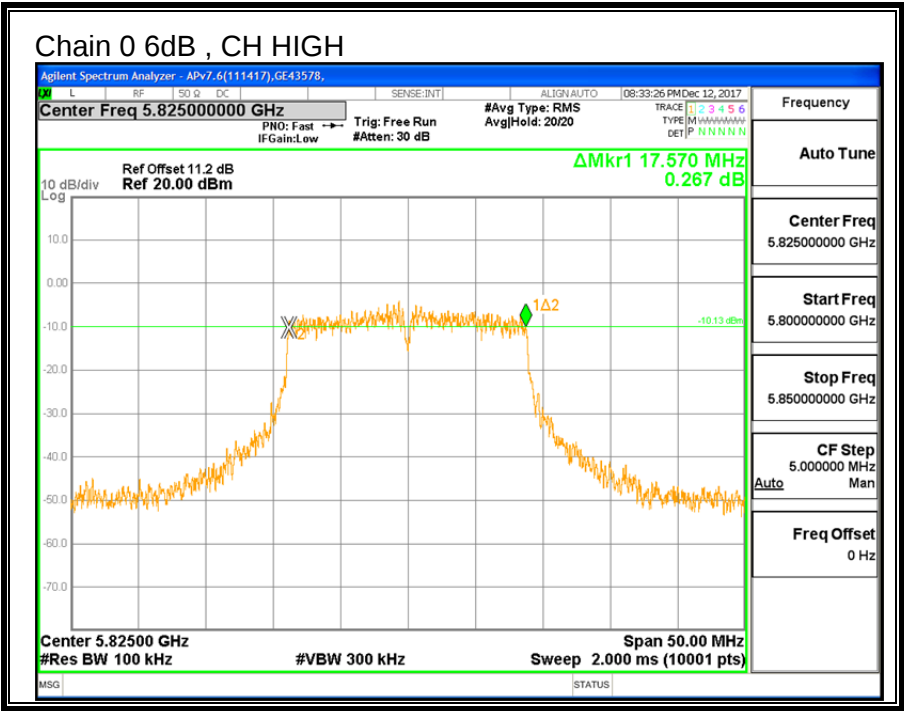
#### RESULTS

| Channel | Frequency | 6 dB BW<br>Chain 0<br>(MHz) | 6 dB BW<br>Chain 1<br>(MHz) | Minimum<br>Limit (MHz) |
|---------|-----------|-----------------------------|-----------------------------|------------------------|
| 144     | 5720      | 3.775                       | 3.840                       | 0.5                    |
| Low     | 5745      | 17.580                      | 17.540                      | 0.5                    |
| Mid     | 5785      | <b>17.590</b>               | 17.610                      | 0.5                    |
| High    | 5825      | 17.570                      | <b>17.630</b>               | 0.5                    |









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### 9.14.2. 99% BANDWIDTH

#### **LIMITS**

None; for reporting purposes only.

#### **RESULTS**

| Channel | Frequency | 99% BW<br>Chain 0<br>(MHz) | 99% BW<br>Chain 1<br>(MHz) |
|---------|-----------|----------------------------|----------------------------|
| Low     | 5745      | 17.706                     | 17.743                     |
| Mid     | 5785      | 17.675                     | 17.717                     |
| High    | 5825      | 17.647                     | 17.713                     |

