

**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 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 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
0.96	-5.75	-1.21

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 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
0.96	-5.75	1.25

**RESULTS**

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**Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5530	83.60	75.856	-1.21	1.25
Mid	5610	83.20	75.754	-1.21	1.25
138	5690	76.80	72.877	-1.21	1.25

**Limits**

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (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

<b>Duty Cycle CF (dB)</b>	0.72	<b>Included in Calculations of Corr'd PPSD</b>
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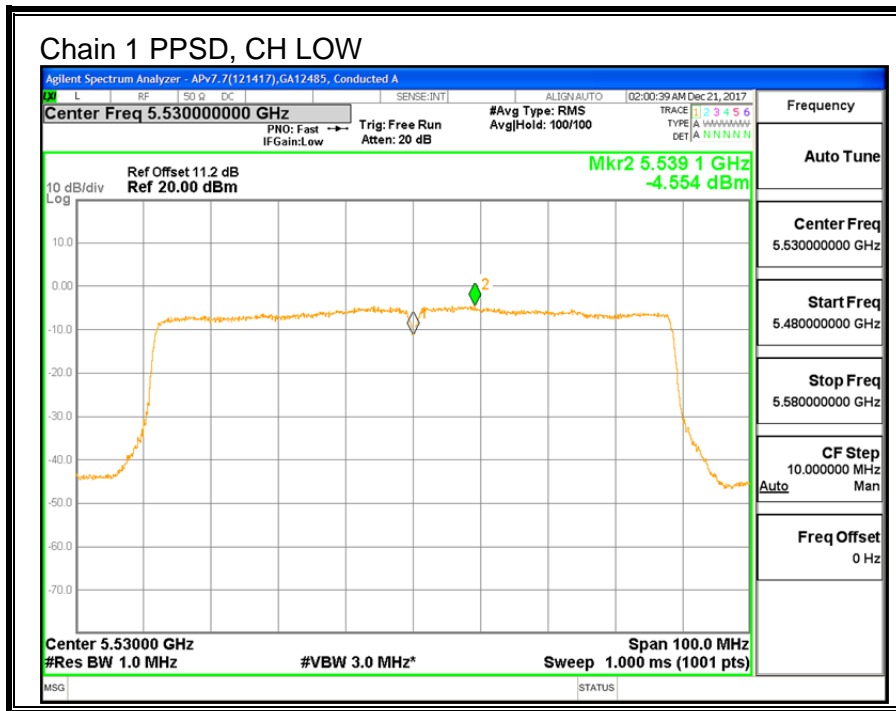
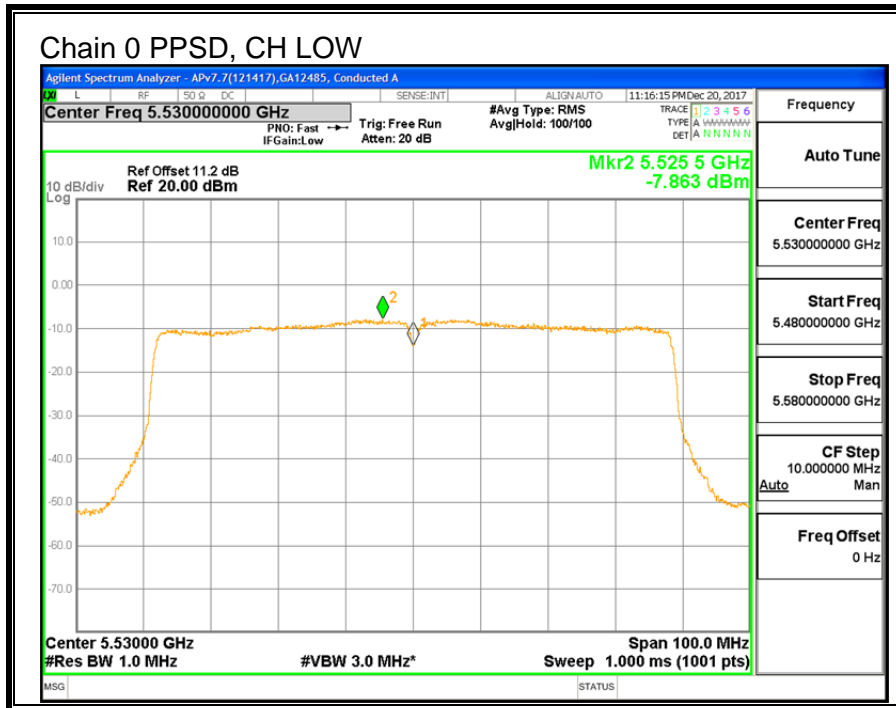
**Output Power Results**

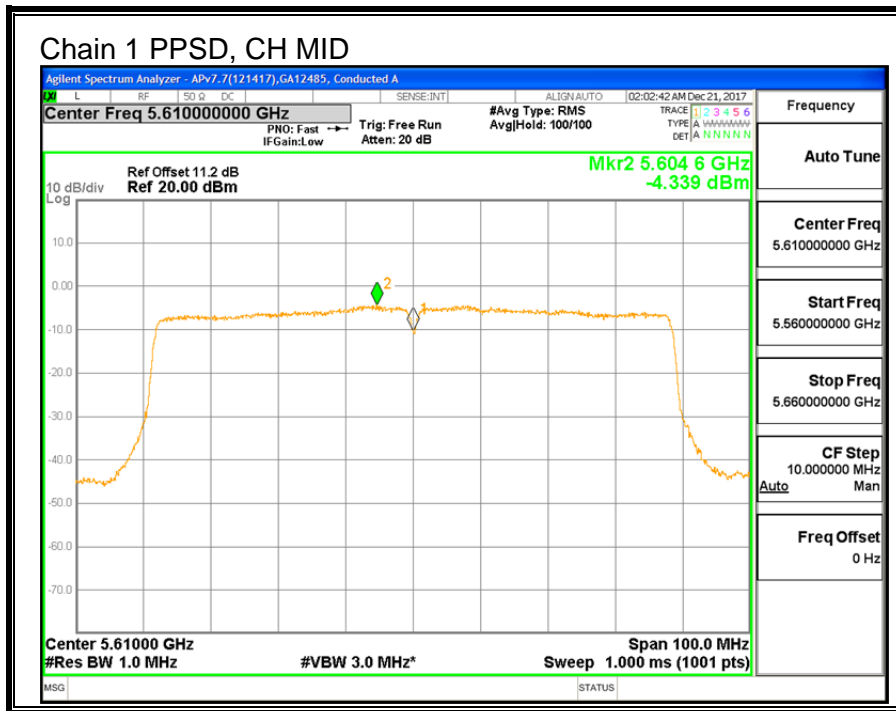
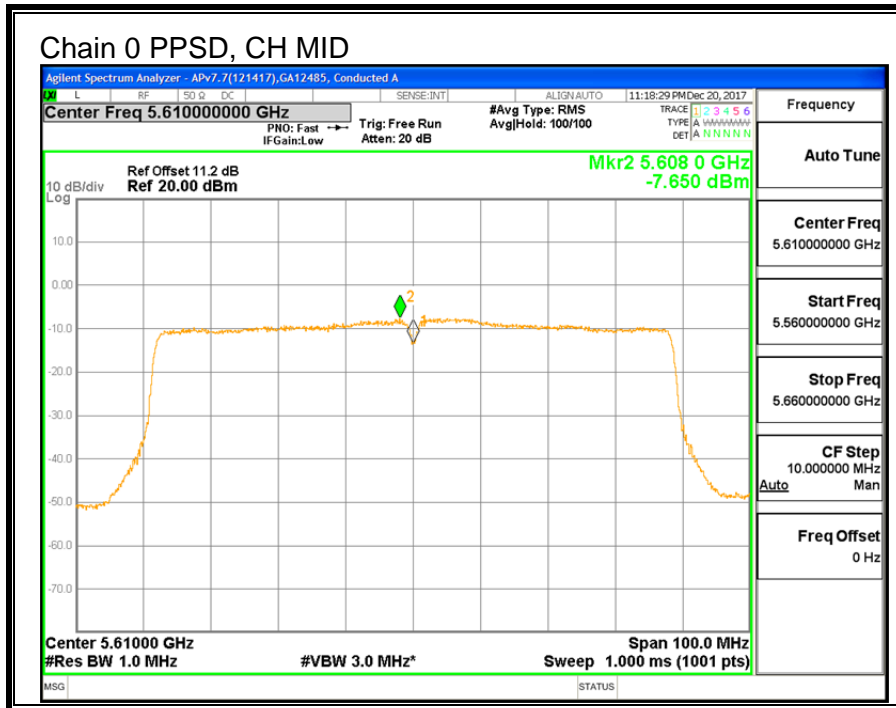
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	9.13	12.81	14.36	24.00	-9.64
Mid	5610	8.72	12.90	14.30	24.00	-9.70
138	5690	8.39	13.00	14.29	24.00	-9.71

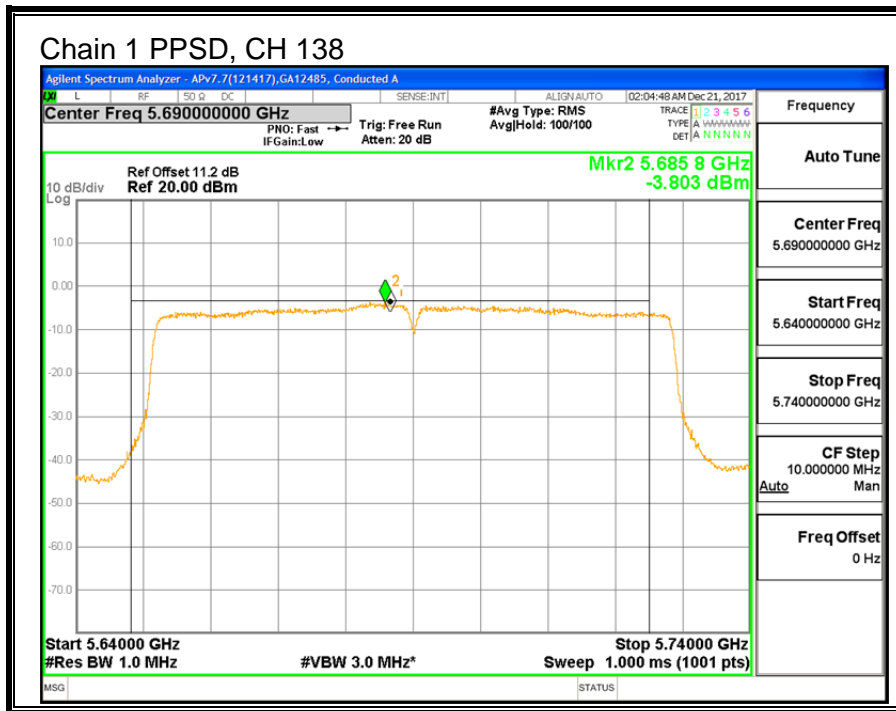
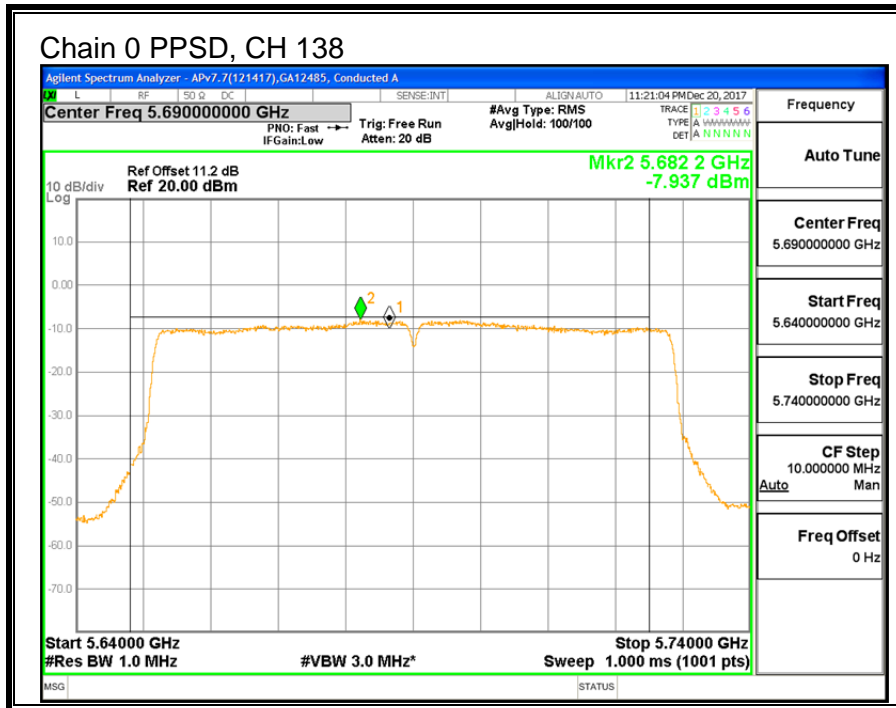
**PPSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5530	-7.863	-4.554	-2.17	11.00	-13.17
Mid	5610	-7.650	-4.339	-1.96	11.00	-12.96
138	5690	-7.937	-3.803	-1.67	11.00	-12.67

**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

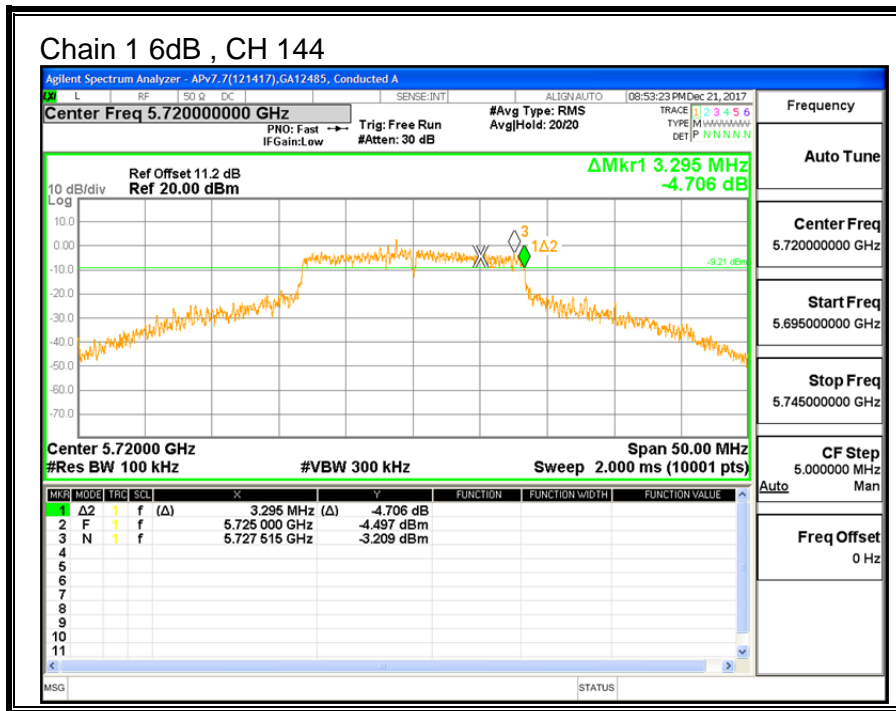
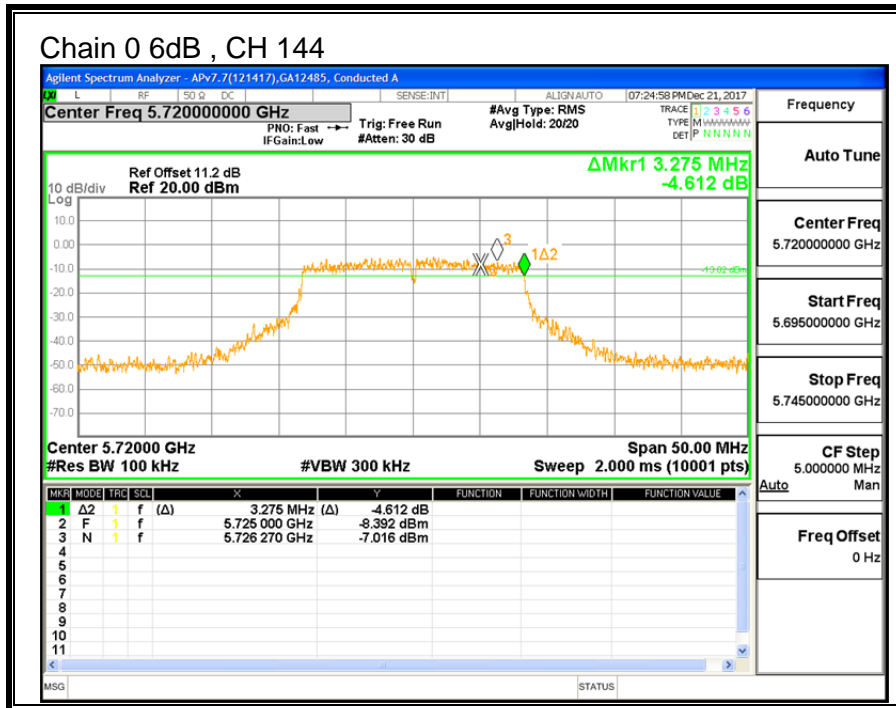
FCC §15.407 (e)

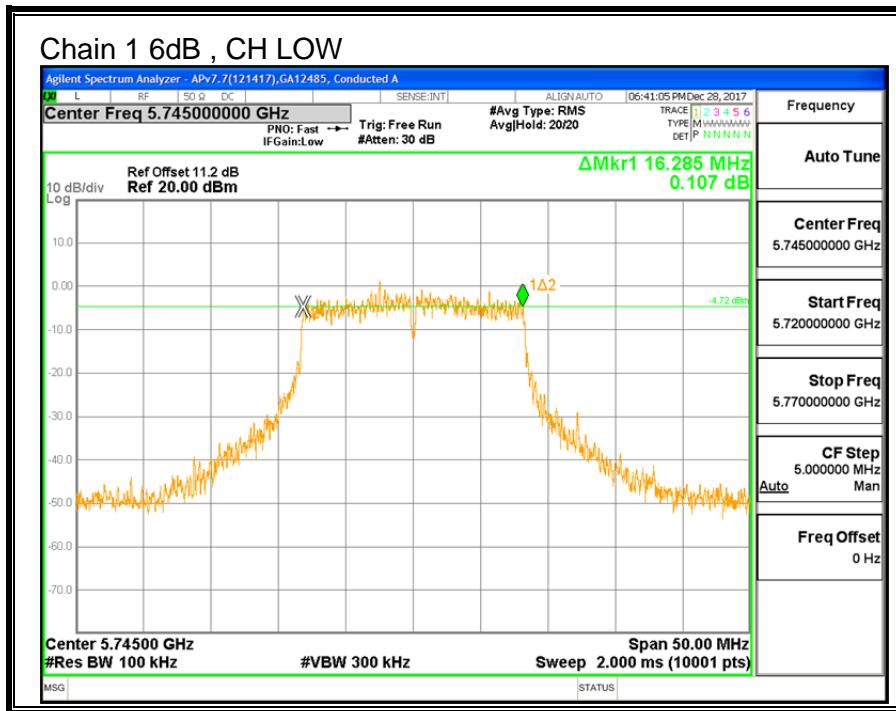
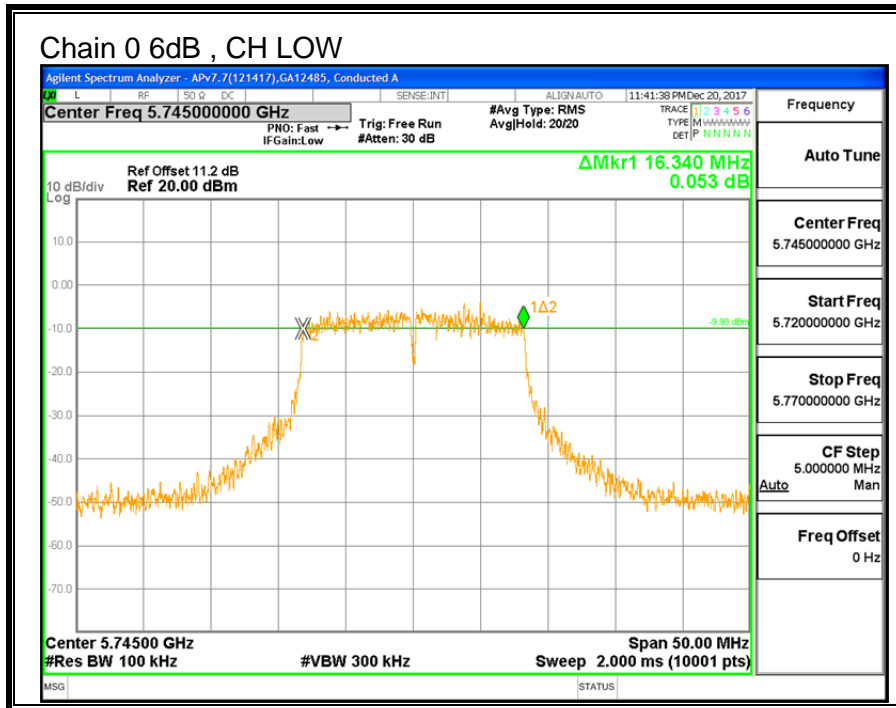
The minimum 6 dB bandwidth shall be at least 500 kHz.

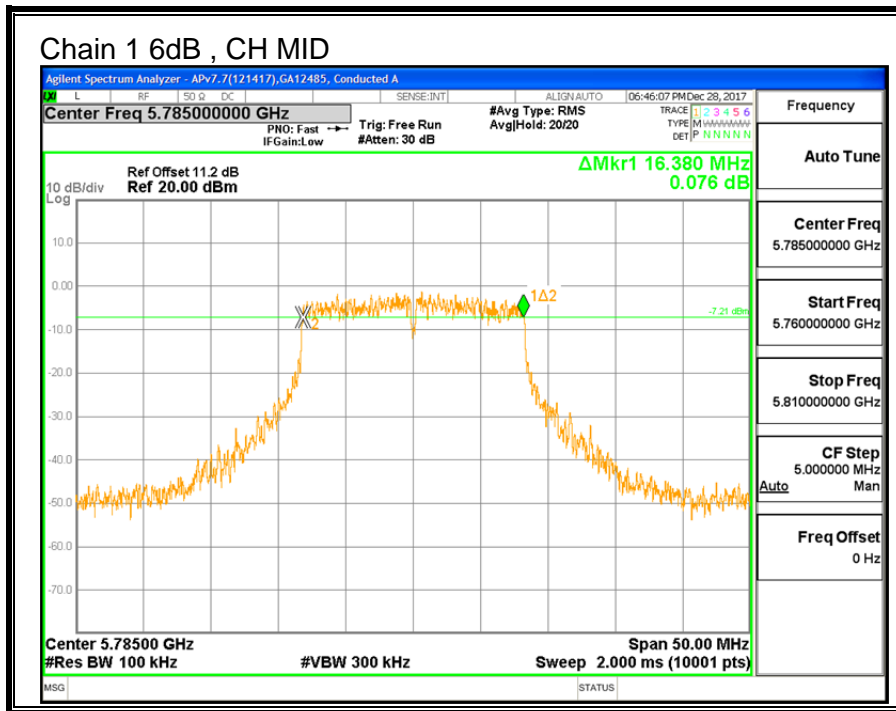
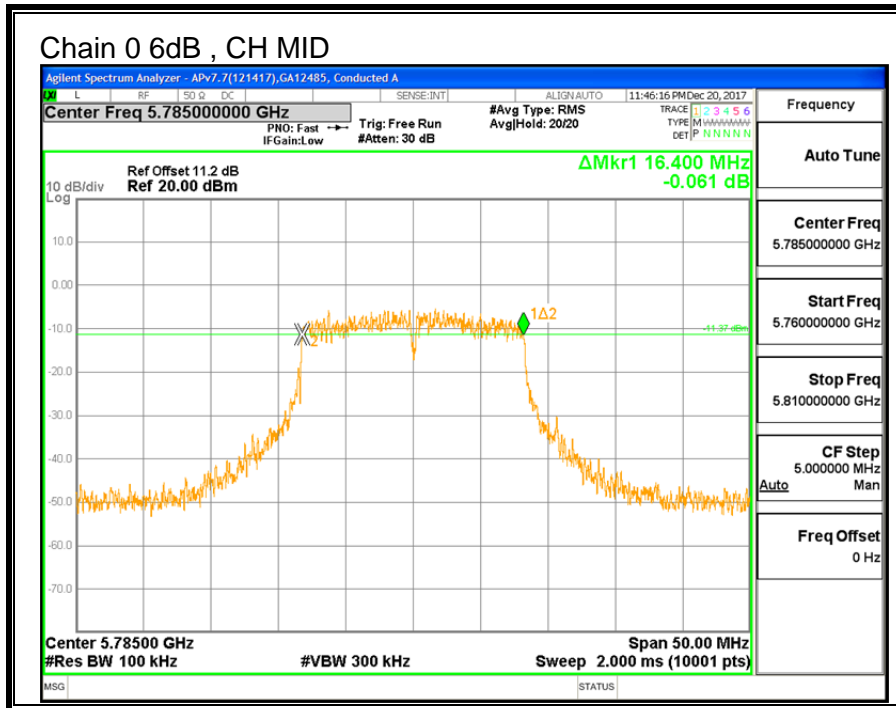
##### RESULTS

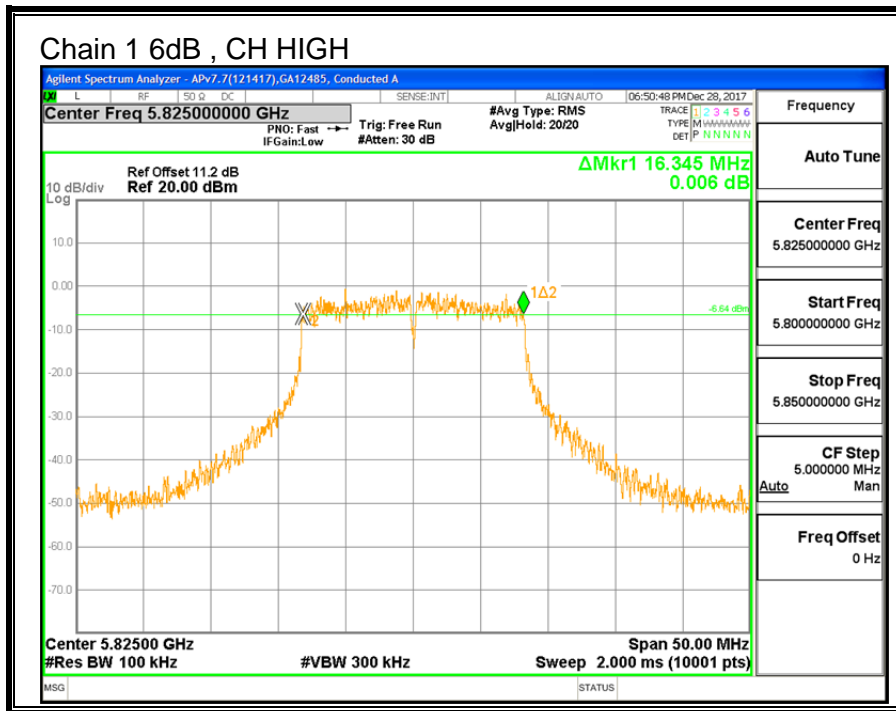
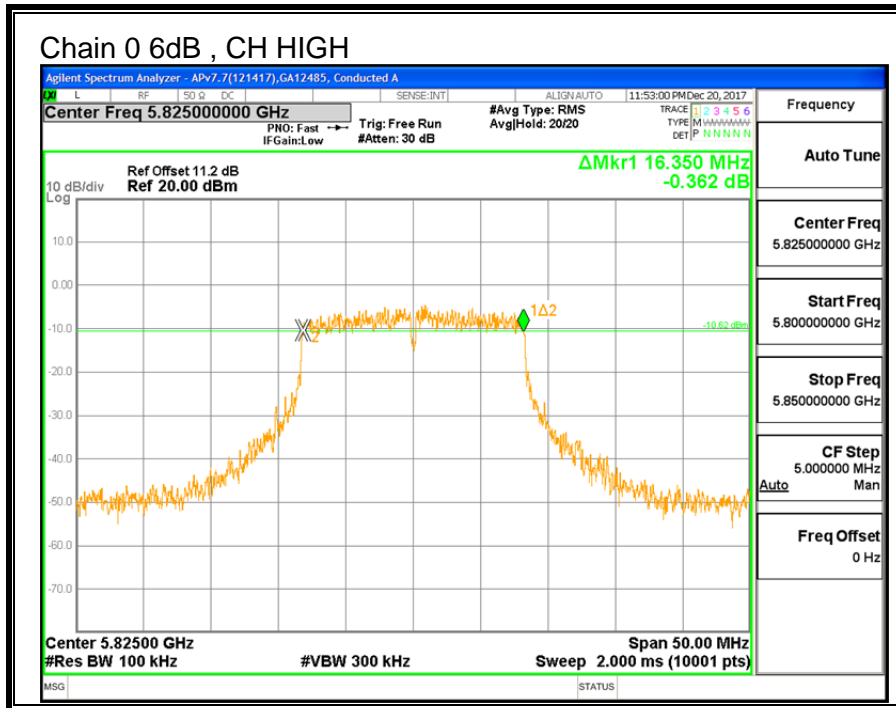
Channel	Frequency	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
144	5720	3.275	3.295	0.5
Low	5745	16.340	16.285	0.5
Mid	5785	16.400	16.380	0.5
High	5825	16.350	16.345	0.5











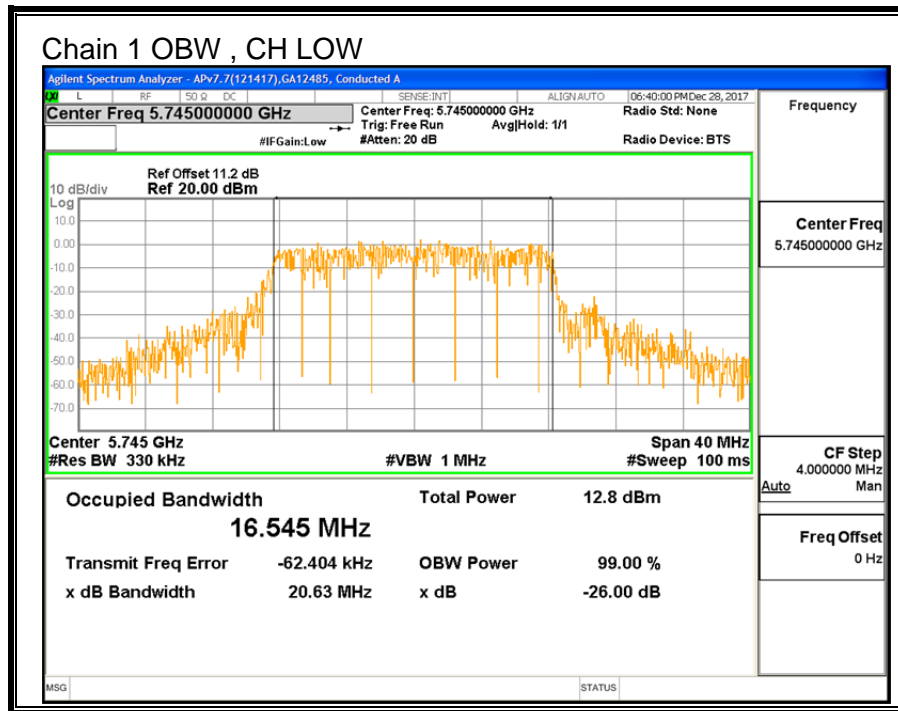
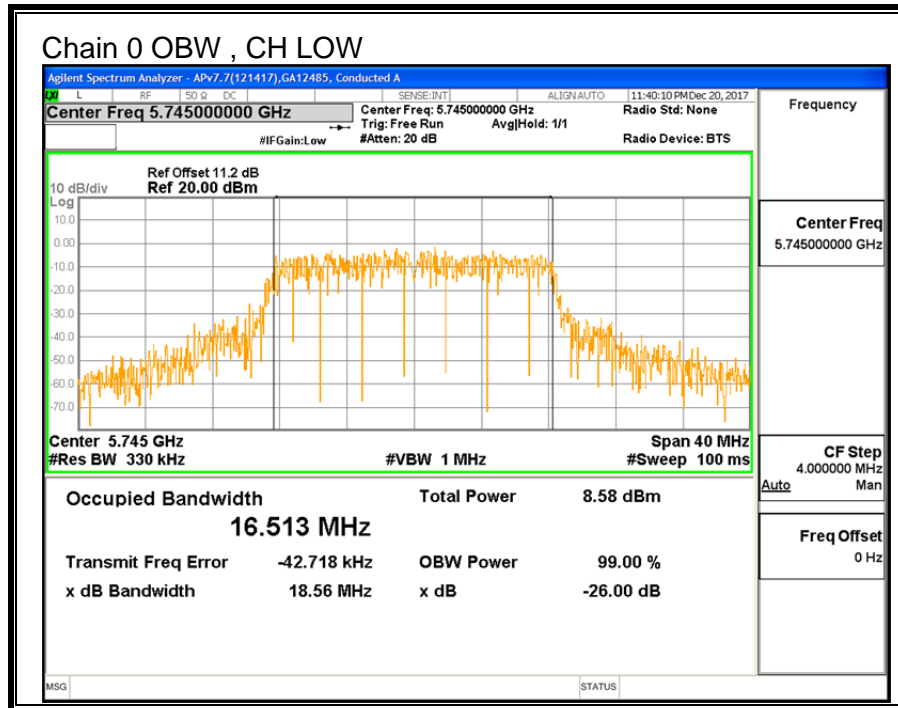
### 9.13.2. 99% BANDWIDTH

#### LIMITS

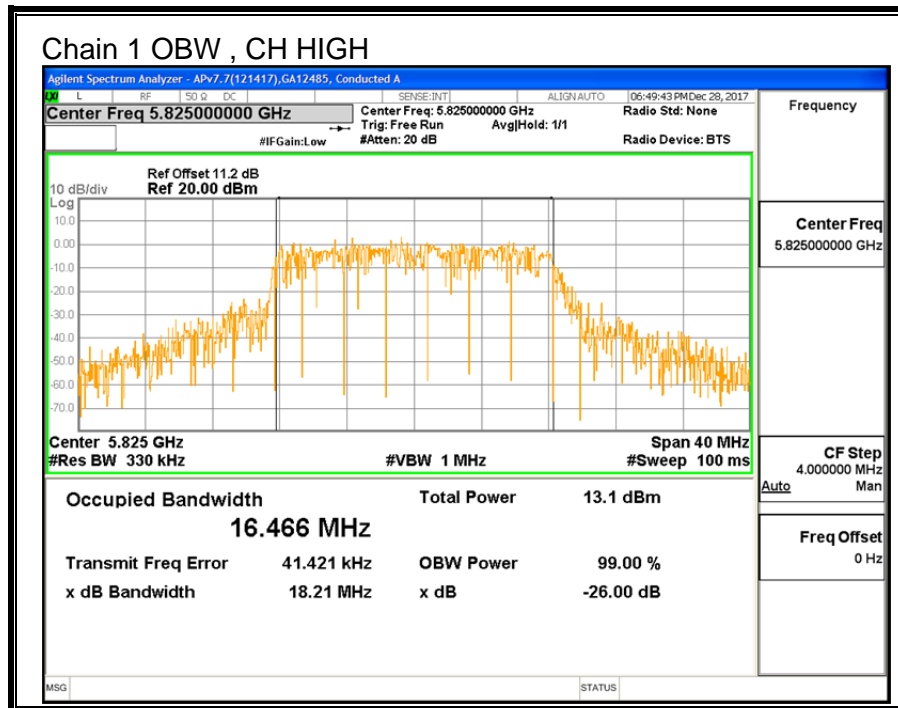
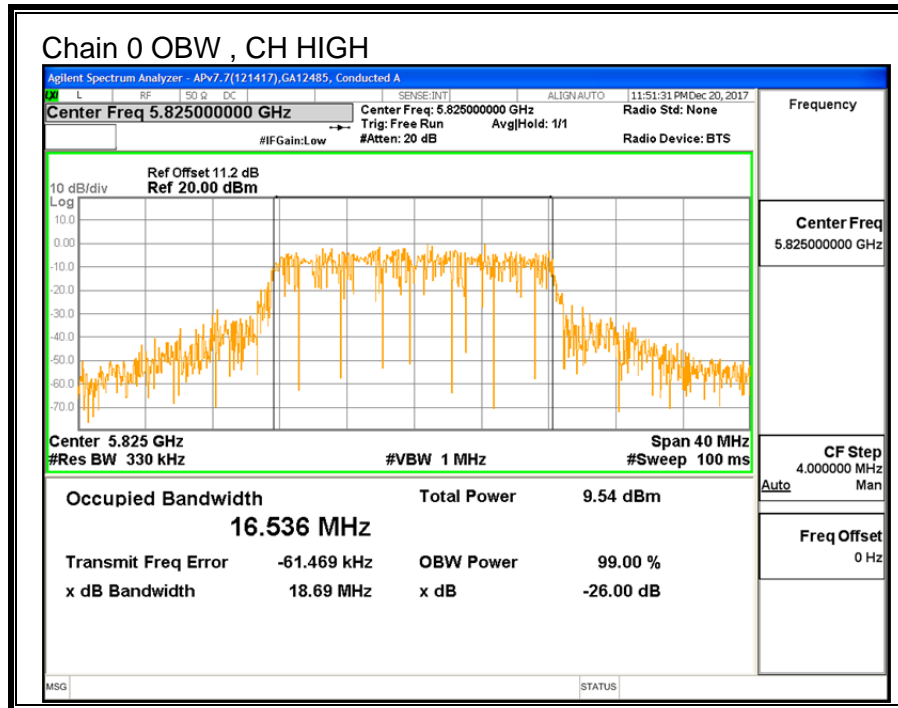
None; for reporting purposes only.

#### RESULTS

Channel	Frequency	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	16.513	16.545
Mid	5785	16.476	16.590
High	5825	16.536	16.466









### 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 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
0.98	-7.18	-1.41

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 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
0.98	-7.18	0.84

**RESULTS**

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**Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	Power Limit (dBm)
Low	5745	-1.41	0.84	30.00	30.00
Mid	5785	-1.41	0.84	30.00	30.00
High	5825	-1.41	0.84	30.00	30.00

<b>Duty Cycle CF (dB)</b>	0.11	<b>Included in Calculations of Corr'd PSD</b>
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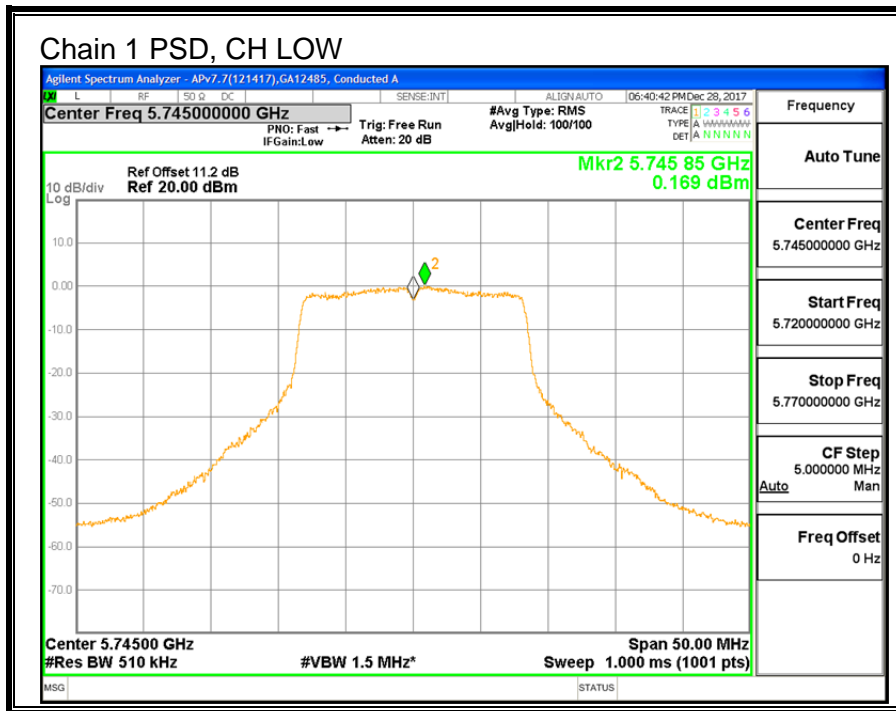
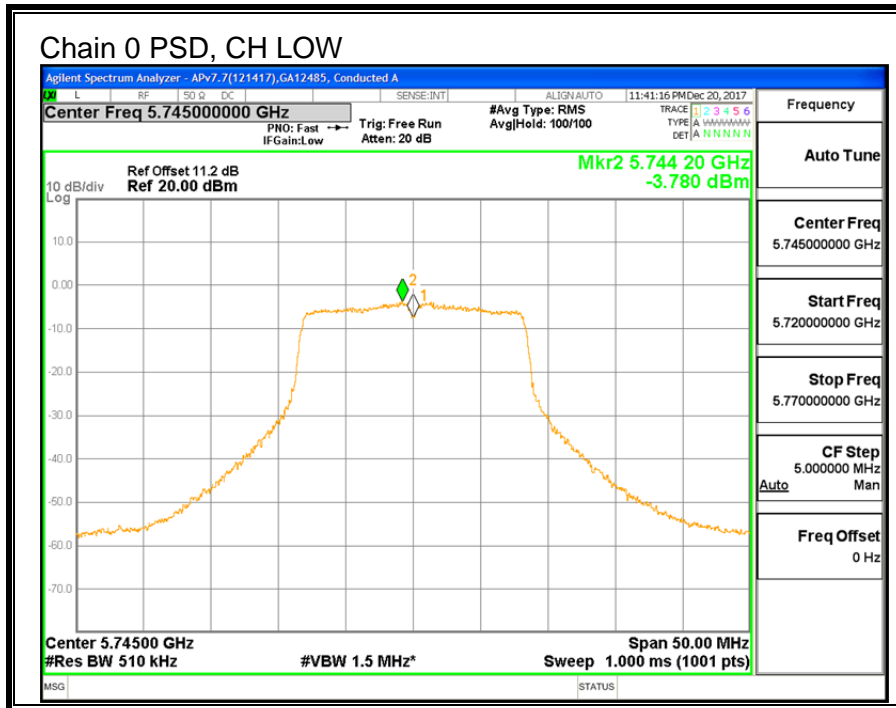
**Output Power Results**

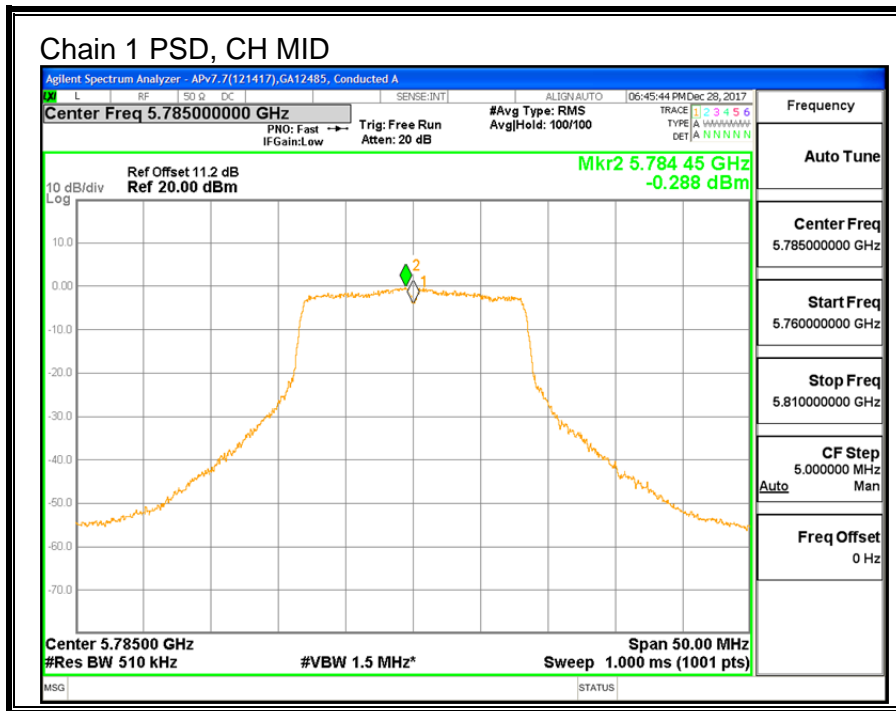
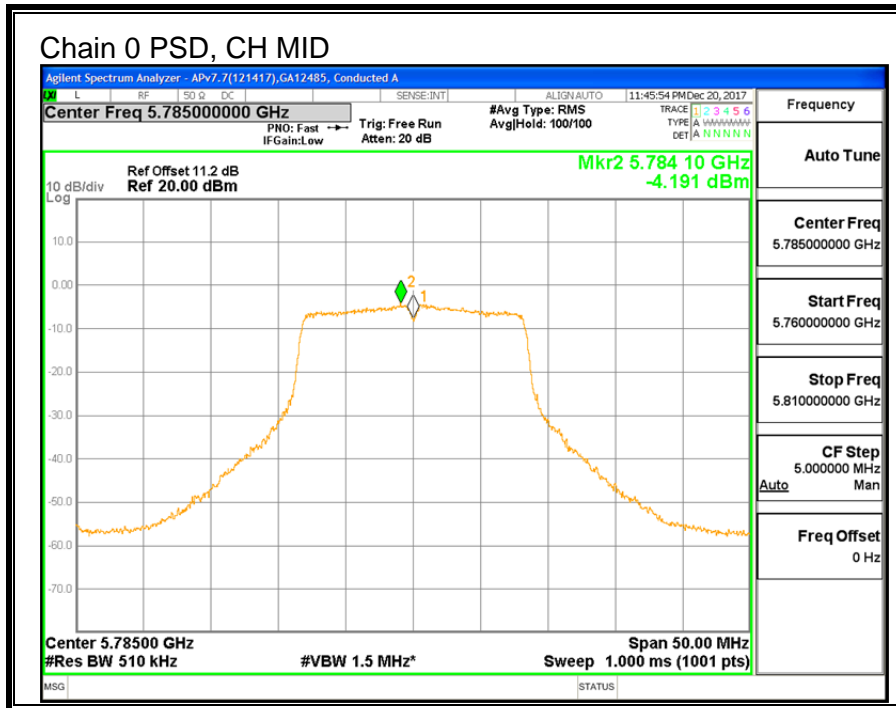
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	7.08	12.64	13.71	30.00	-16.29
Mid	5785	6.85	12.66	13.67	30.00	-16.33
High	5825	7.00	12.36	13.47	30.00	-16.53

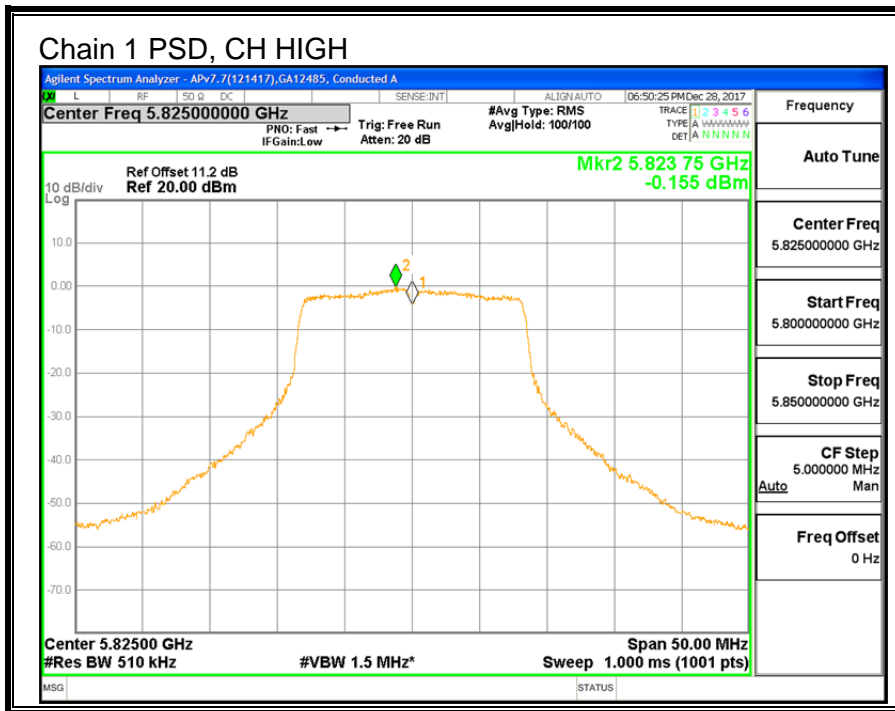
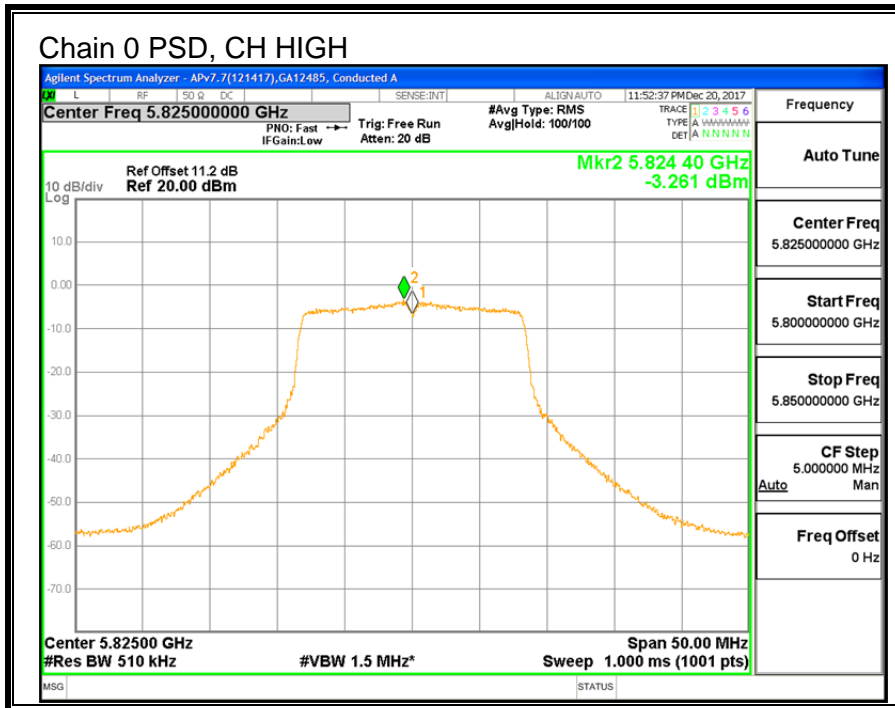
**PSD Results**

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	5745	-3.780	0.169	1.75	30.00	-28.25
Mid	5785	-4.191	-0.288	1.31	30.00	-28.69
High	5825	-3.261	-0.155	1.68	30.00	-28.32

**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

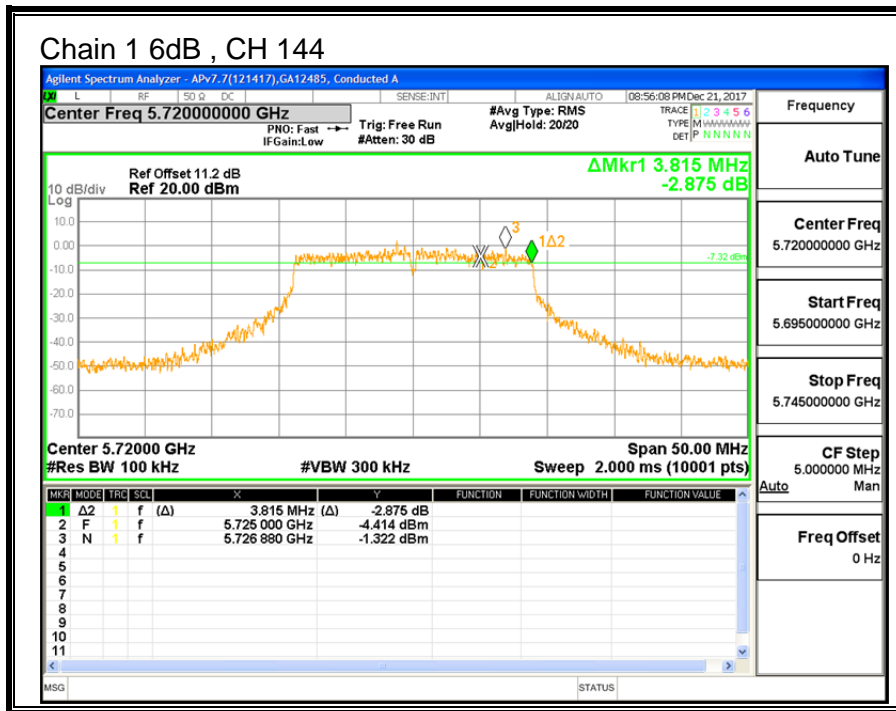
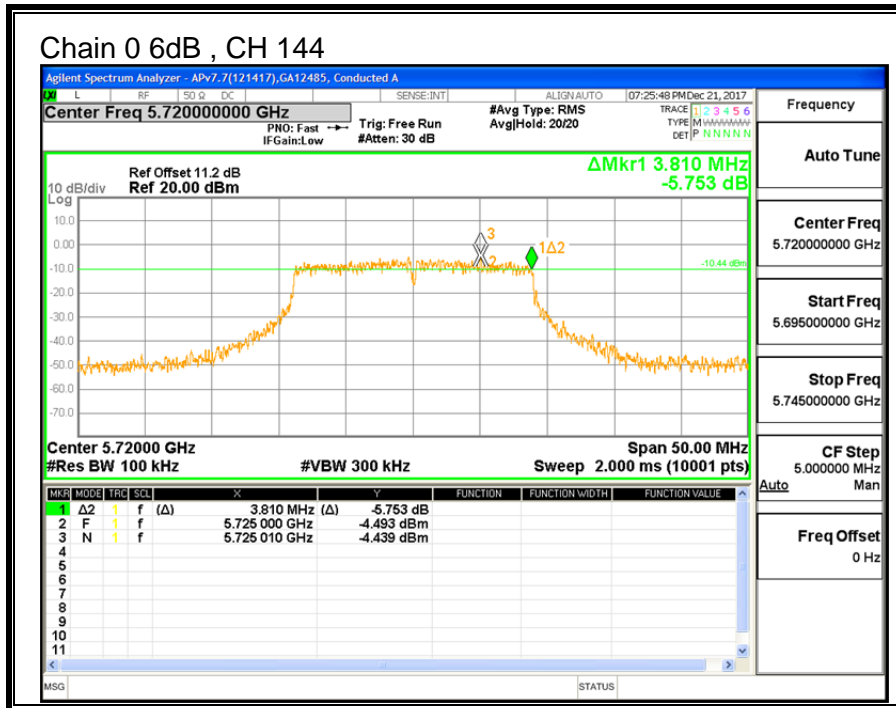
#### LIMITS

FCC §15.407 (e)

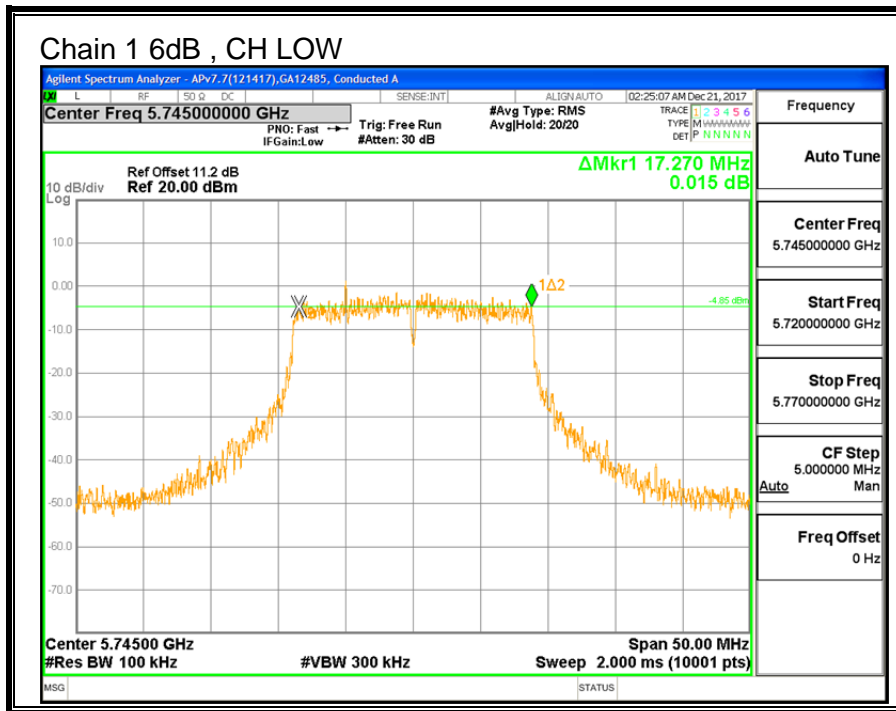
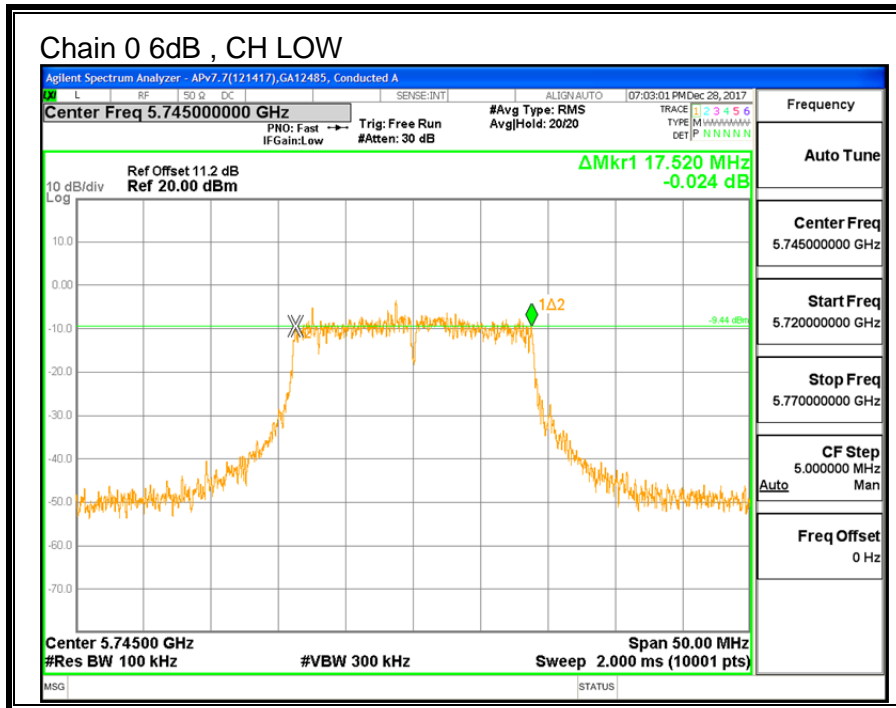
The minimum 6 dB bandwidth shall be at least 500 kHz.

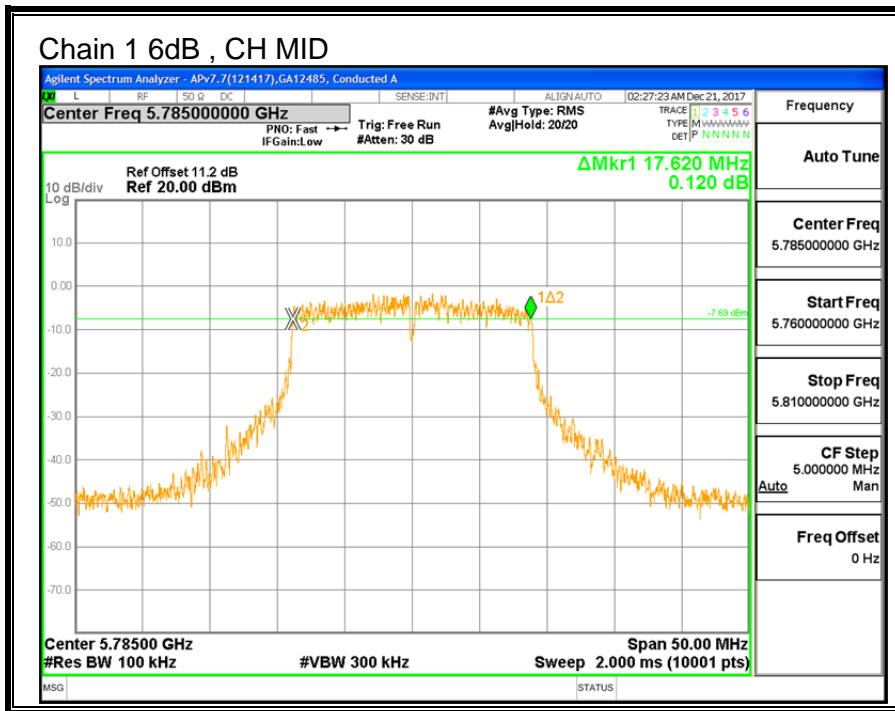
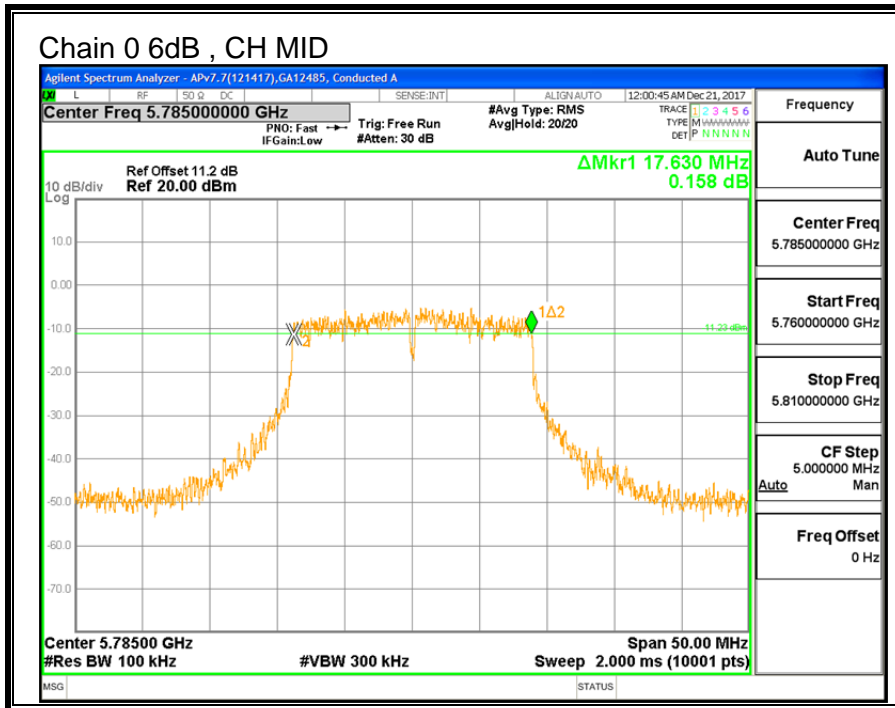
#### RESULTS

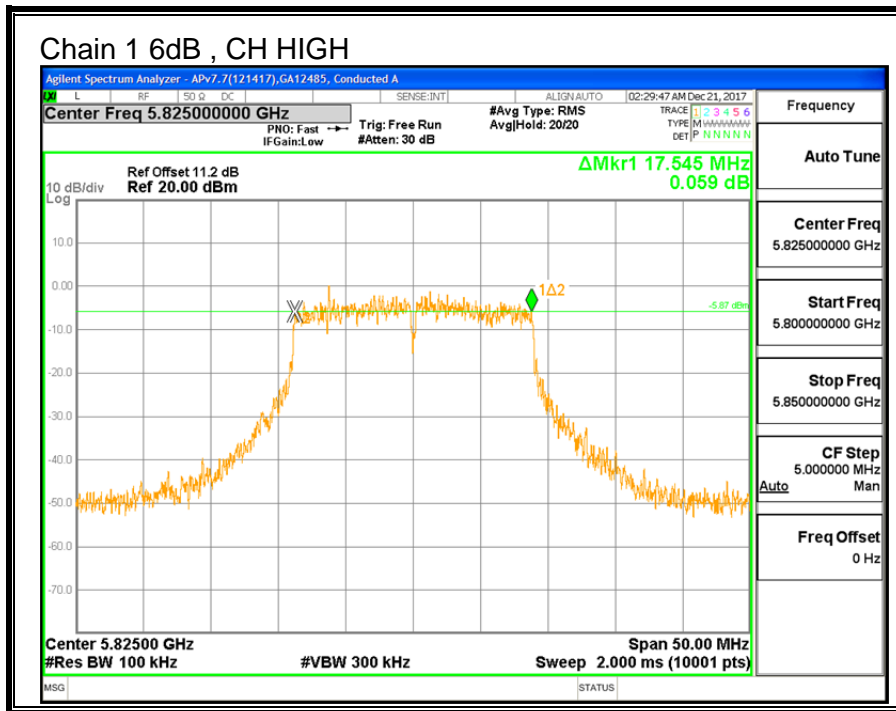
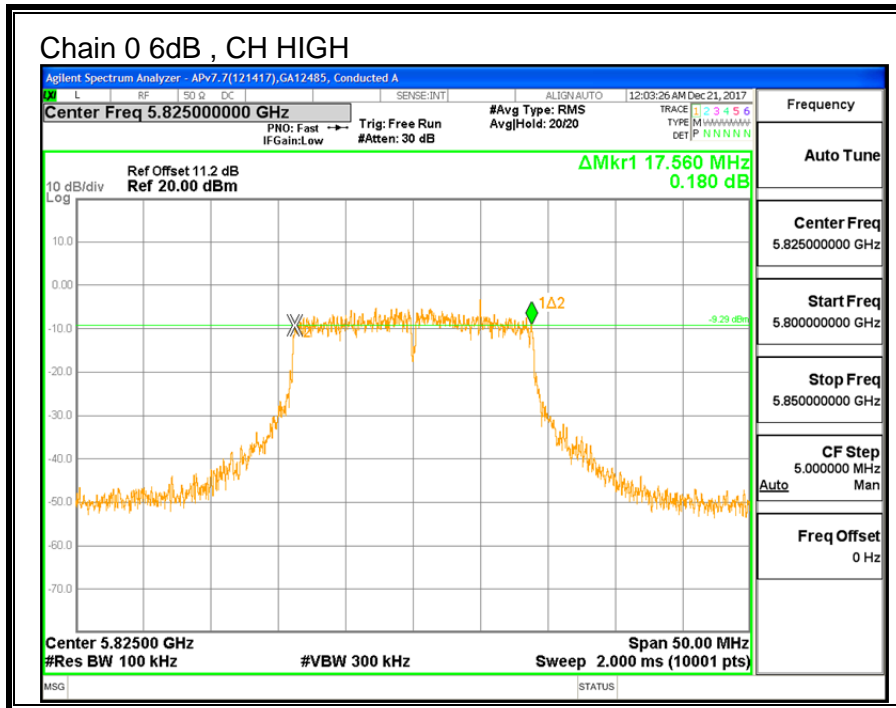
Channel	Frequency	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
144	5720	3.810	3.815	0.5
Low	5745	17.520	17.270	0.5
Mid	5785	17.630	17.620	0.5
High	5825	17.560	17.545	0.5











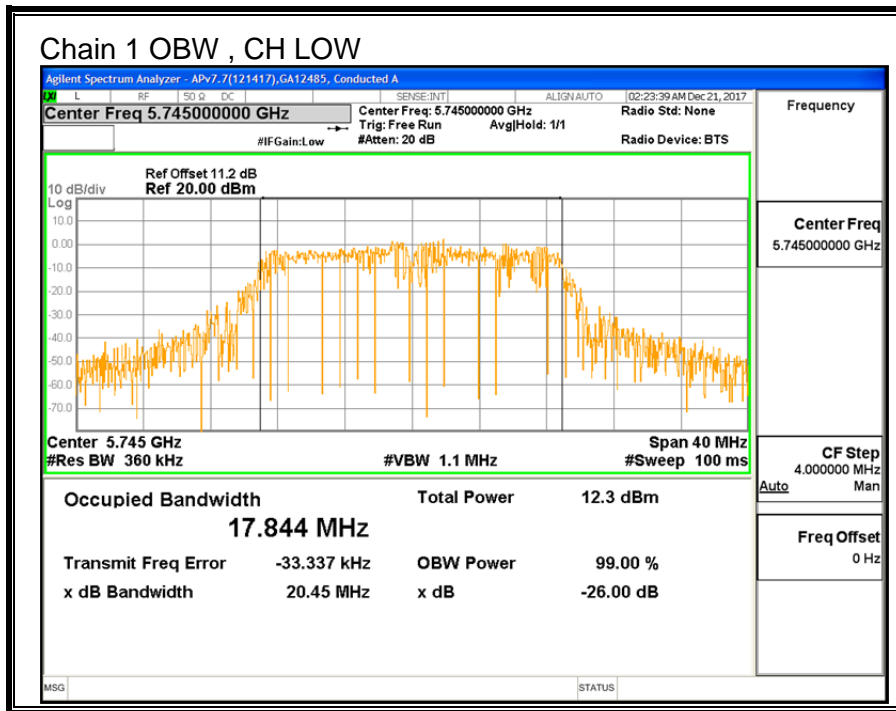
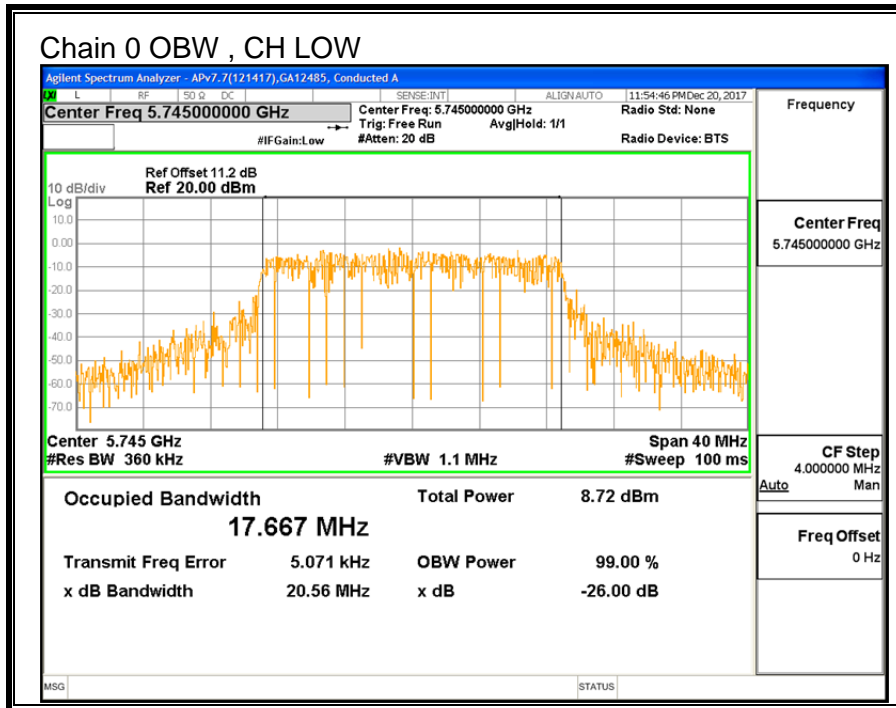
### 9.14.2. 99% BANDWIDTH

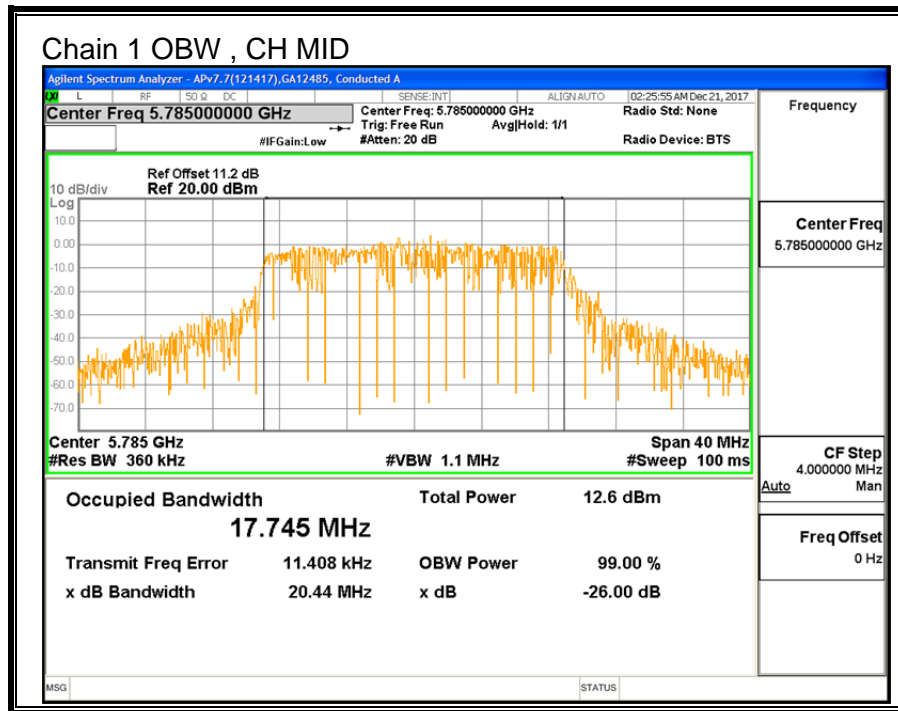
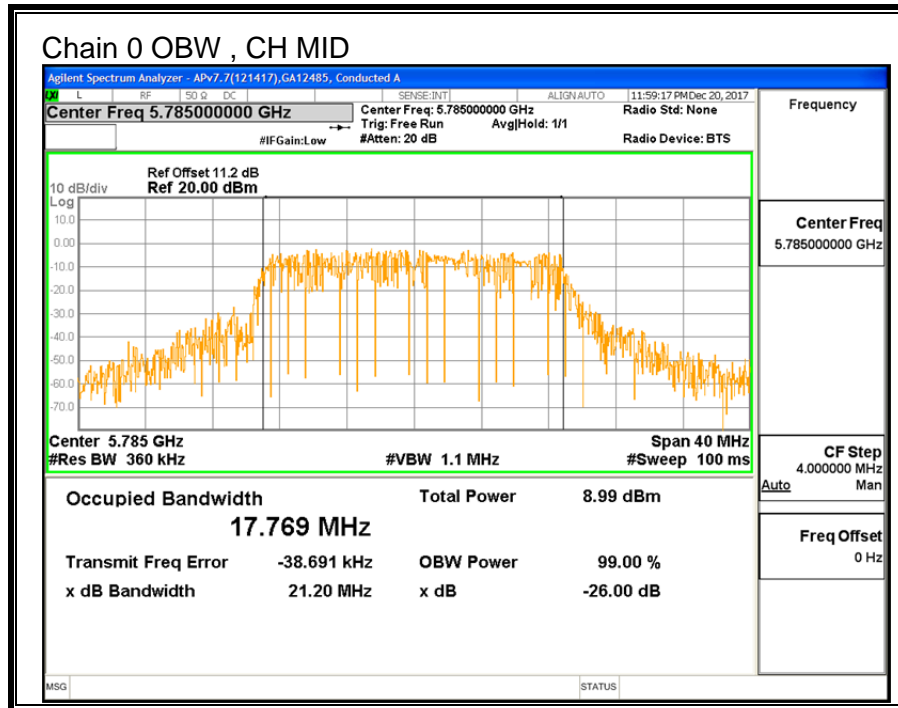
#### LIMITS

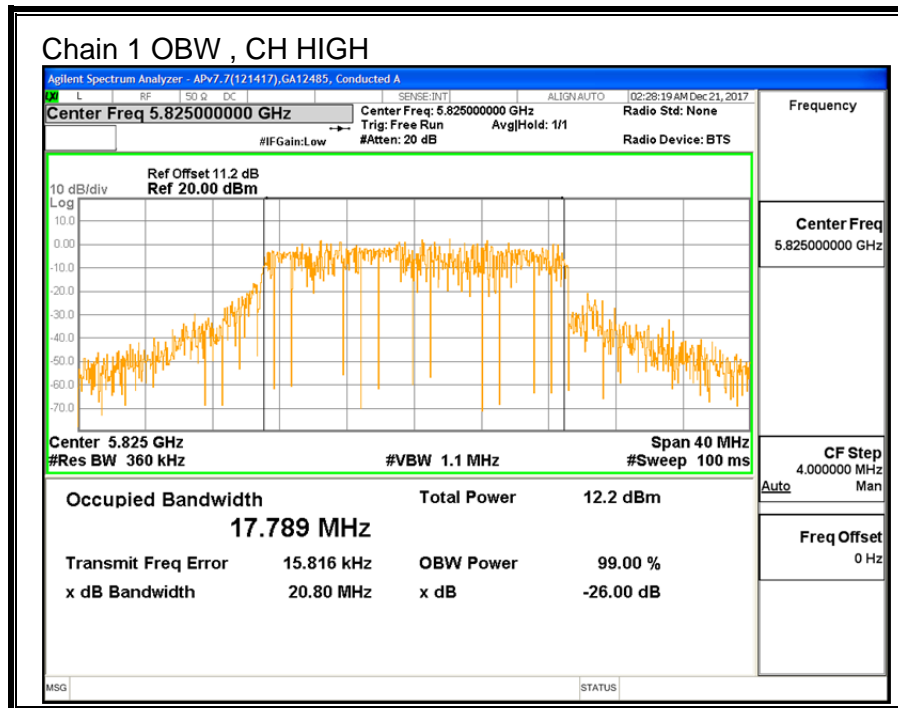
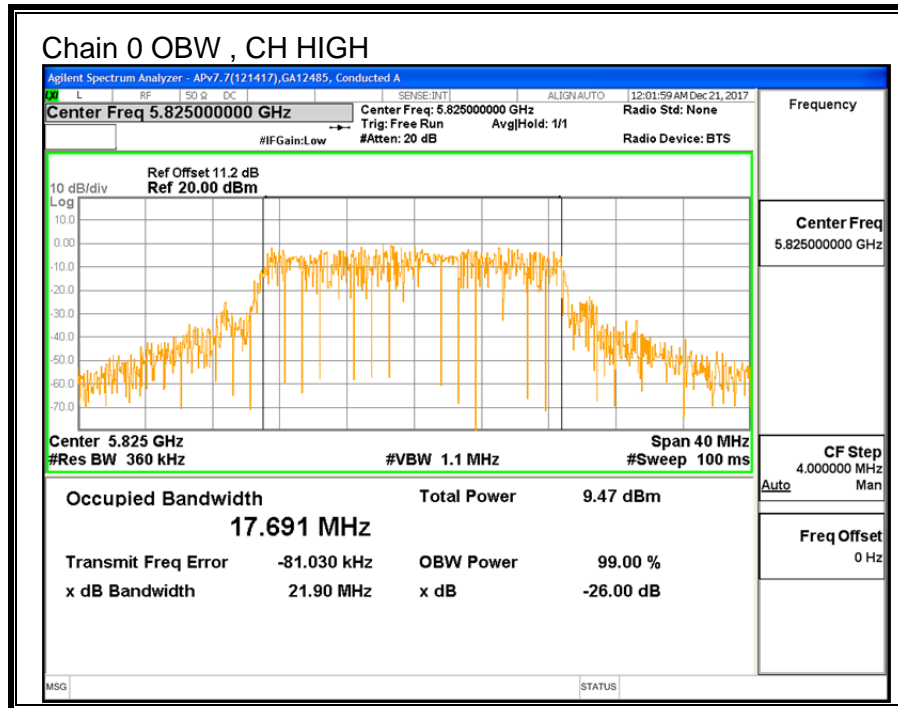
None; for reporting purposes only.

#### RESULTS

Channel	Frequency	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	17.667	17.844
Mid	5785	17.769	17.745
High	5825	17.691	17.789







### 9.14.3. 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 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
0.98	-7.18	-1.41

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 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
0.98	-7.18	0.84



**RESULTS**

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**Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	Power Limit (dBm)
Low	5745	-1.41	0.84	30.00	30.00
Mid	5785	-1.41	0.84	30.00	30.00
High	5825	-1.41	0.84	30.00	30.00

<b>Duty Cycle CF (dB)</b>	0.14	<b>Included in Calculations of Corr'd 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)
Low	5745	6.92	12.67	13.69	30.00	-16.31
Mid	5785	6.87	12.83	13.81	30.00	-16.19
High	5825	6.92	12.49	13.55	30.00	-16.45

**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	5745	-4.367	-0.415	1.19	30.00	-28.81
Mid	5785	-4.428	-0.940	0.81	30.00	-29.19
High	5825	-4.460	-1.238	0.59	30.00	-29.41

**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.

