

## RESULTS

### Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Mid	5210	N/A	N/A	10.73

### 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)
Mid	5210	19.27	N/A	N/A	19.27	6.27	N/A	N/A

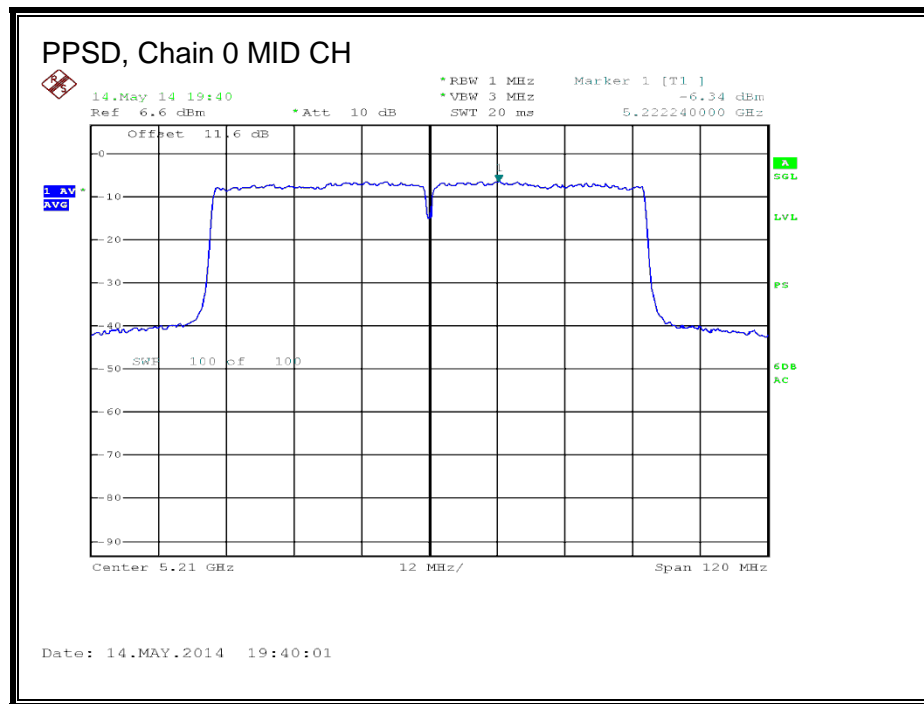
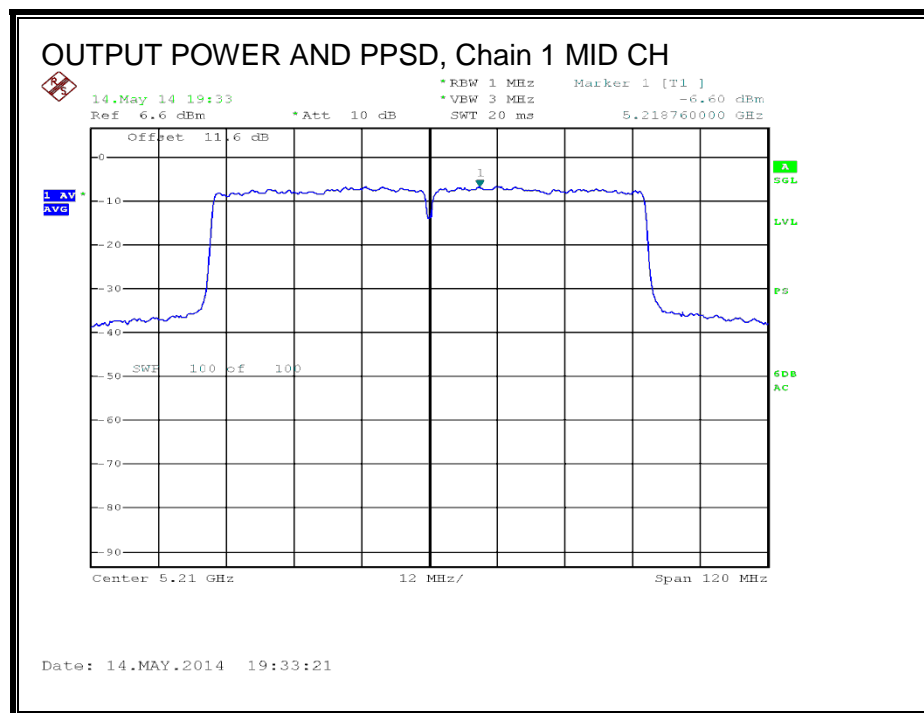
Duty Cycle CF (dB)	0.85	Included in Calculations of Corr'd Power & PPSP
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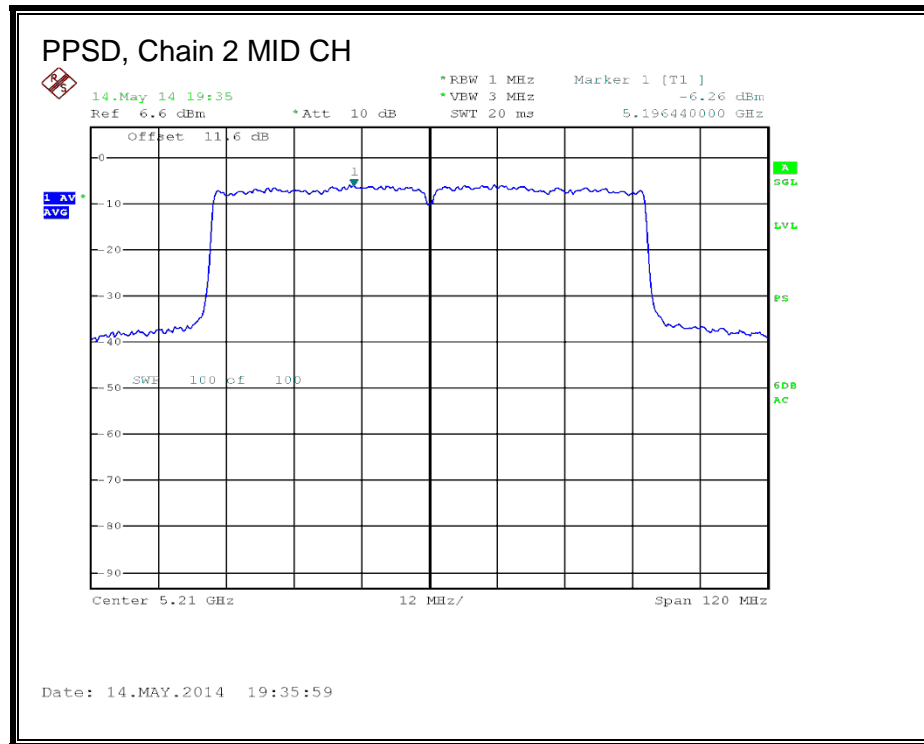
### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5210	10.60	10.30	10.20	15.14	19.27	-4.13

### PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Mid	5210	-6.34	-6.60	-6.26	-0.78	6.27	-7.05

**OUTPUT POWER AND PPSP, Chain 0****OUTPUT POWER AND PPSP, Chain 1**

**OUTPUT POWER AND PSD, Chain 2**

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8.11. **802.11a LEGACY MODE IN THE 5.3GHz BAND**

8.11.1. **26 dB BANDWIDTH**

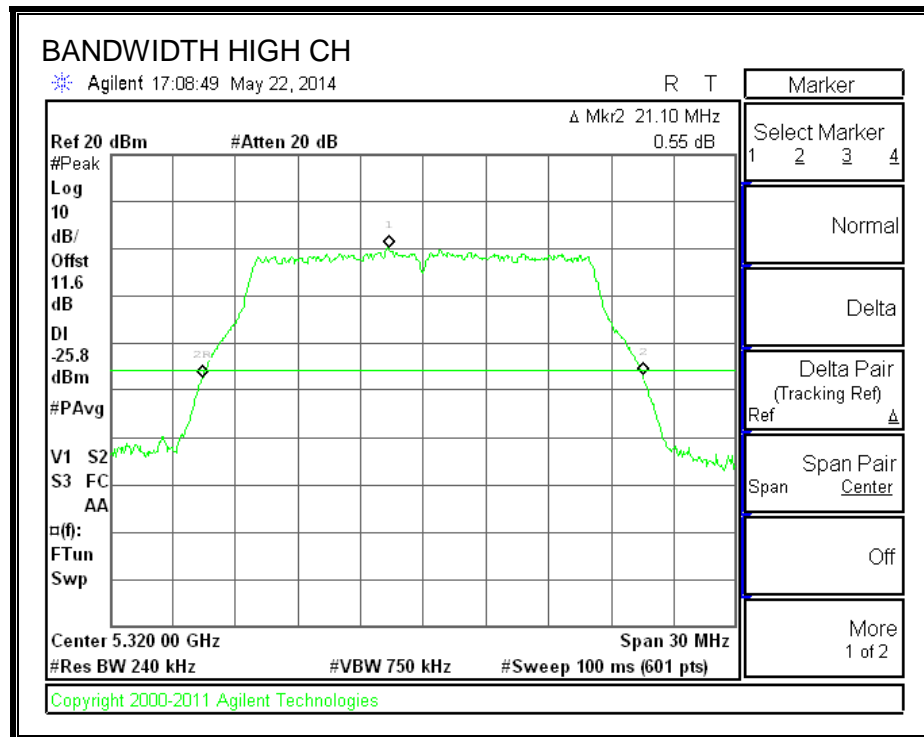
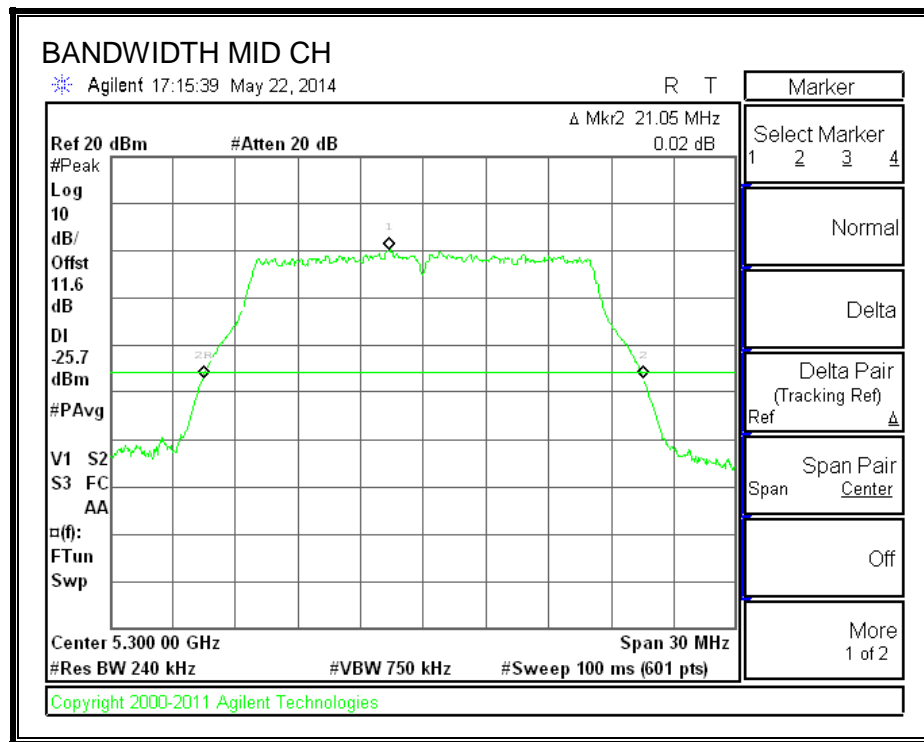
**LIMITS**

None; for reporting purposes only.

**RESULTS**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Mid	5300	21.05
High	5320	21.10

## 26 dB BANDWIDTH



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8.11.2. **99% BANDWIDTH**

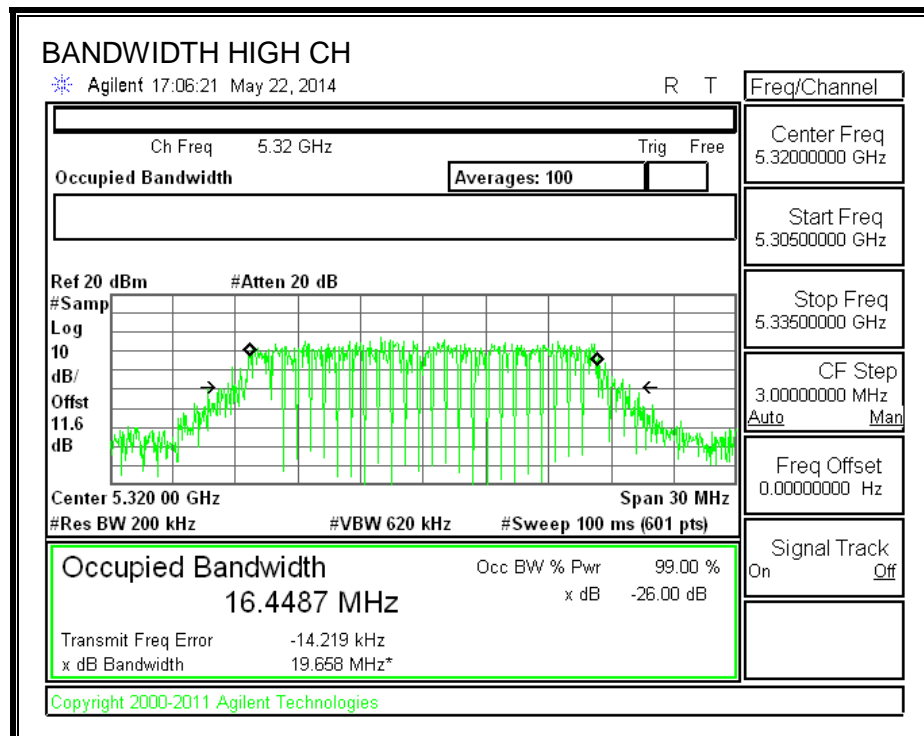
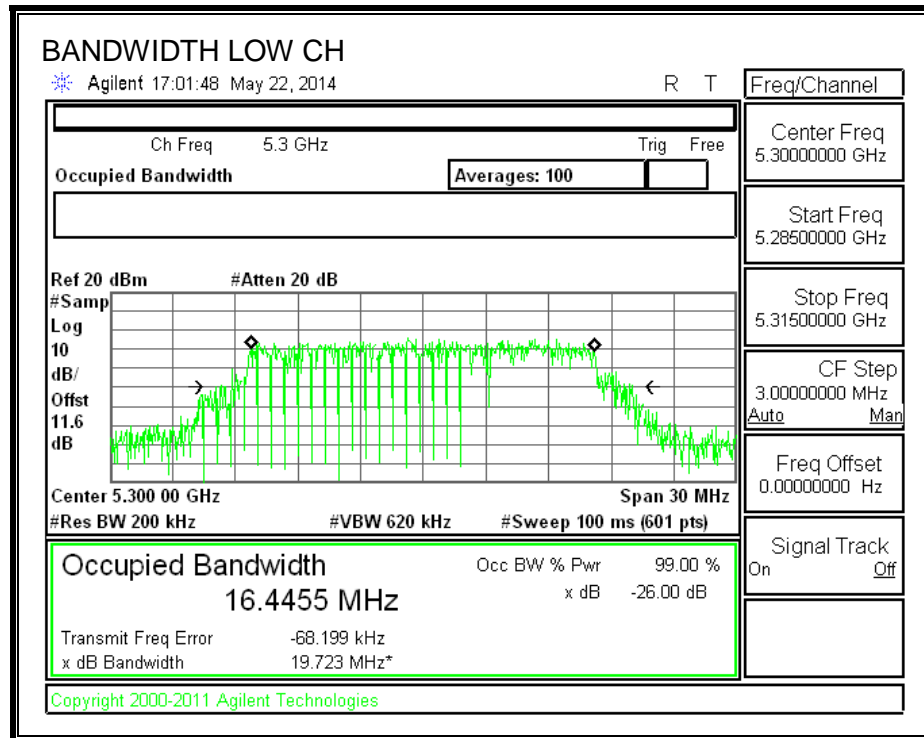
**LIMITS**

None; for reporting purposes only.

**RESULTS**

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Mid	5300	16.4455
High	5320	16.4487

**99% BANDWIDTH**



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8.11.3. **OUTPUT POWER**

**LIMITS**

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

**DIRECTIONAL ANTENNA GAIN**

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



## **RESULTS**

### **Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Mid	5300	21.05	16.4455	7.09
High	5320	21.10	16.4487	7.09

### **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)
Mid	5300	22.91	23.16	29.16	22.07	9.91	11.00	9.91
High	5320	22.91	23.16	29.16	22.07	9.91	11.00	9.91

### **Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5300	20.17	20.17	22.07	-1.90
High	5320	18.57	18.57	22.07	-3.50

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8.12. **802.11n HT20 CDD 3TX MODE IN THE 5.3 GHz Band**

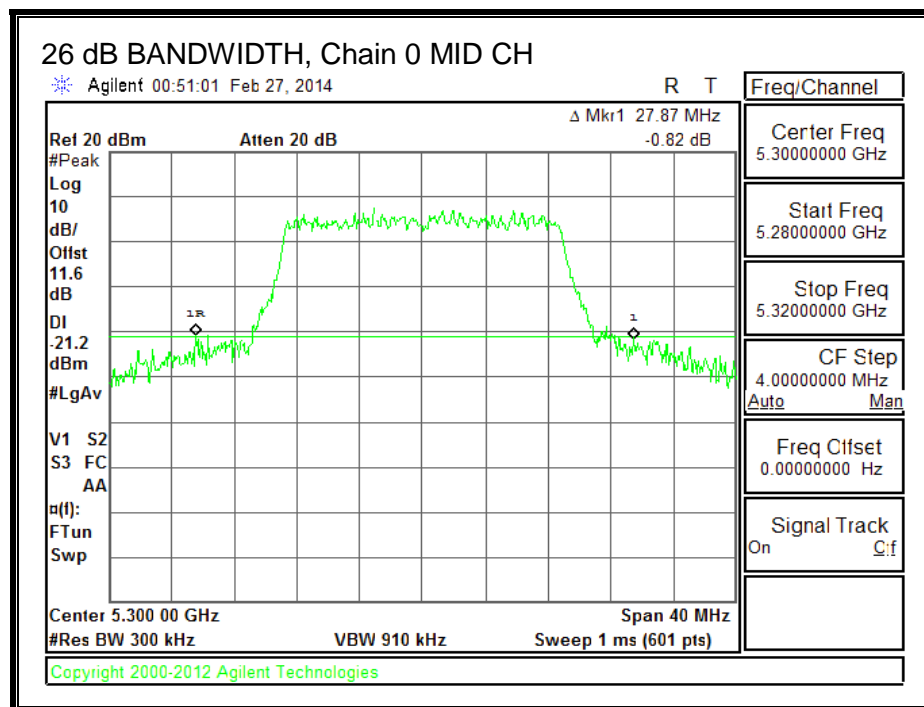
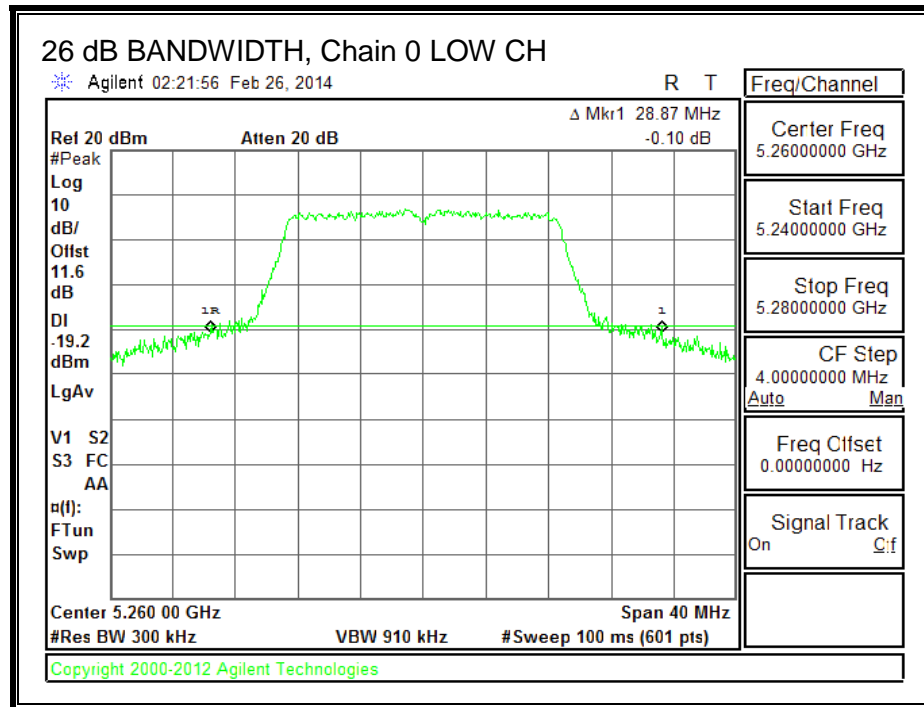
8.12.1. **26 dB BANDWIDTH**

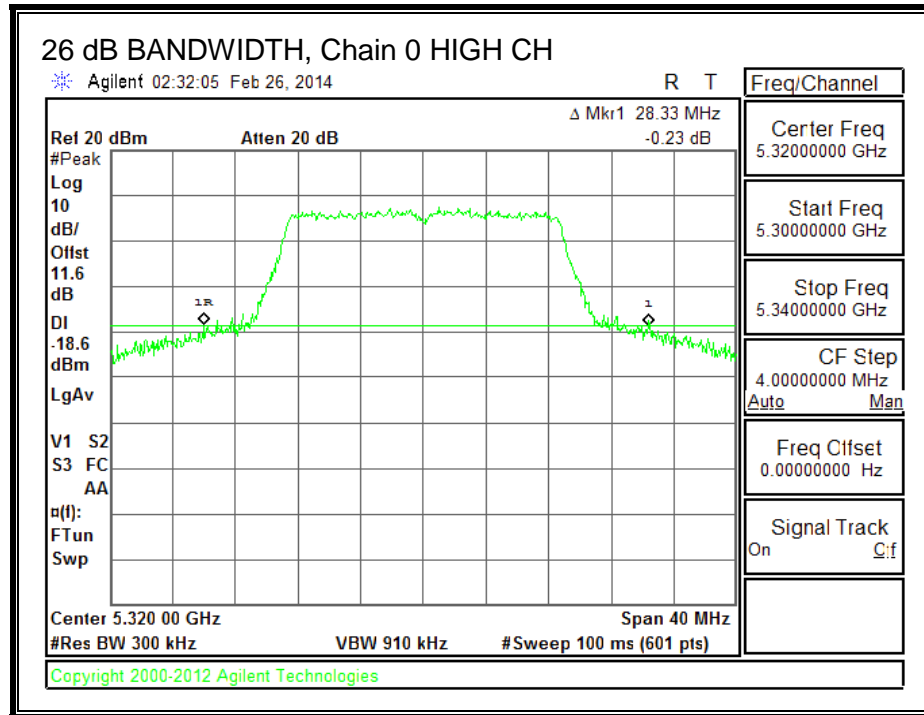
**LIMITS**

None; for reporting purposes only.

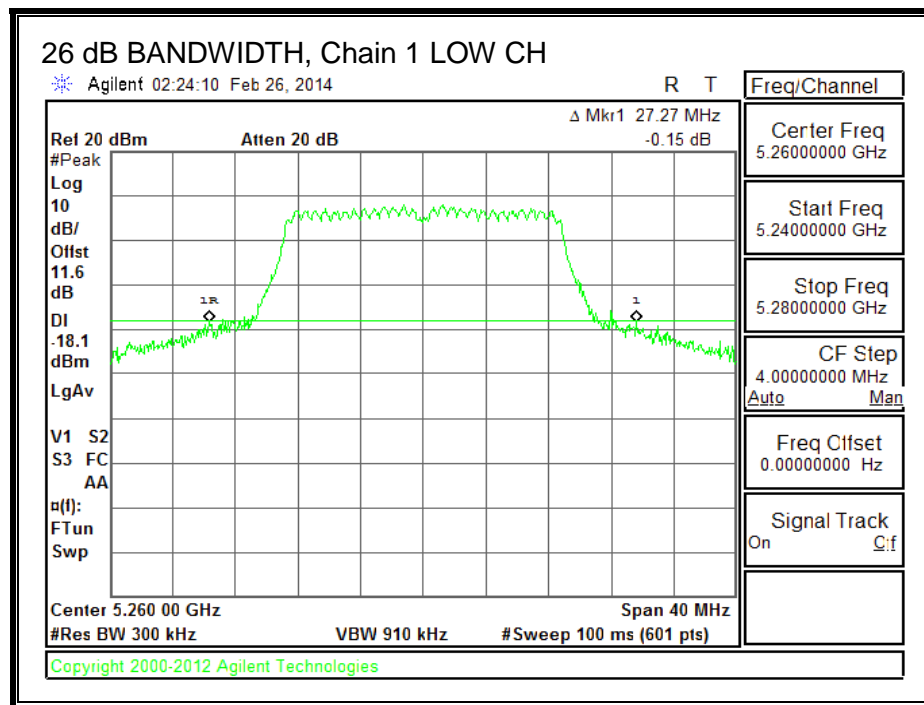
**RESULTS**

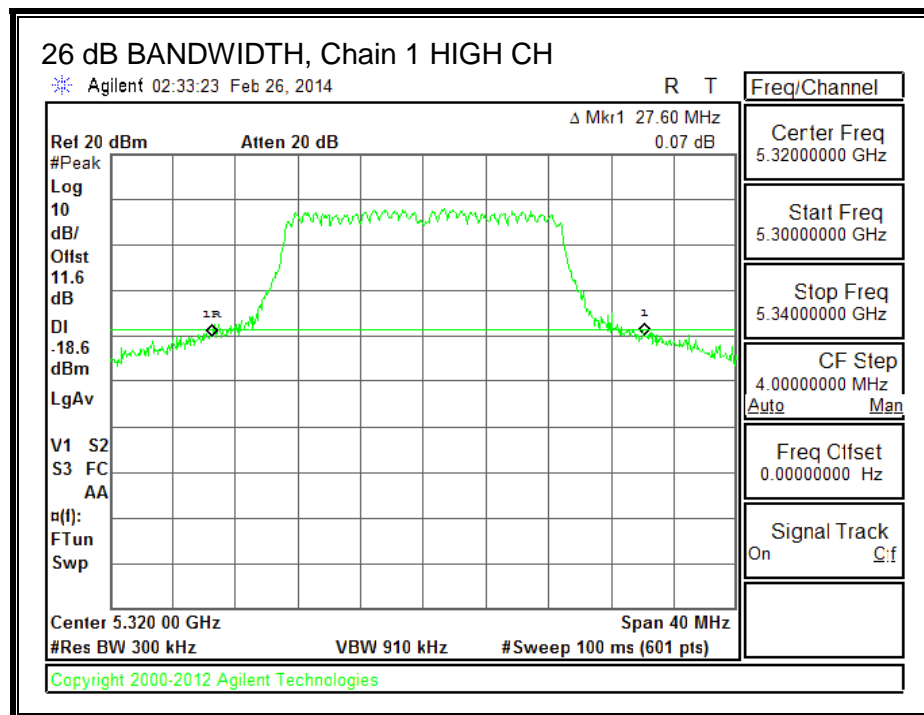
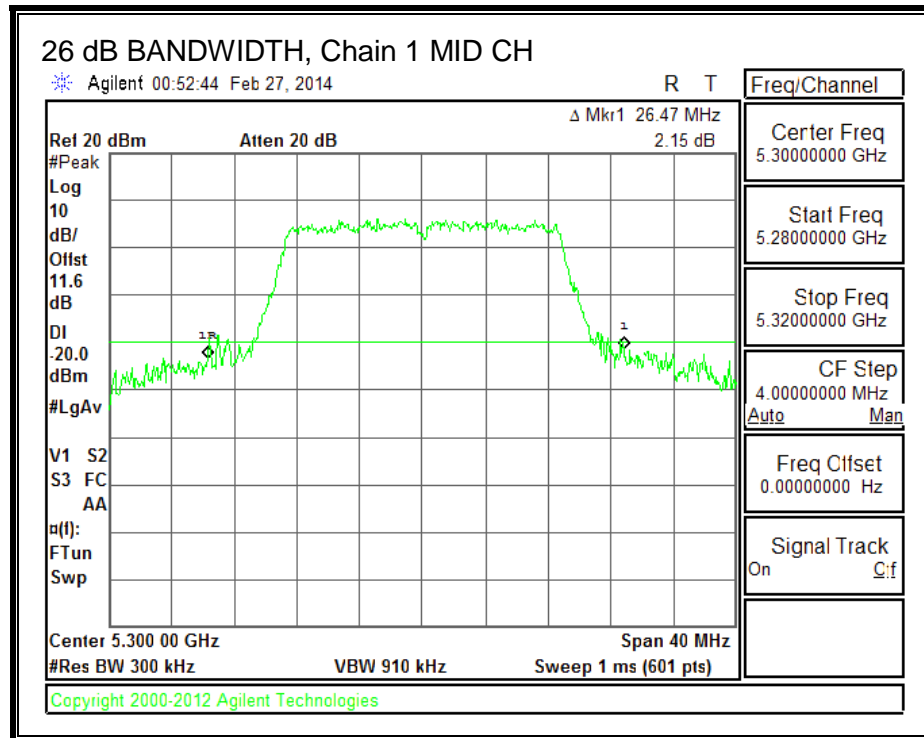
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5260	28.87	27.27	26.67
Mid	5300	27.87	26.47	22.33
High	5320	28.33	27.60	29.53

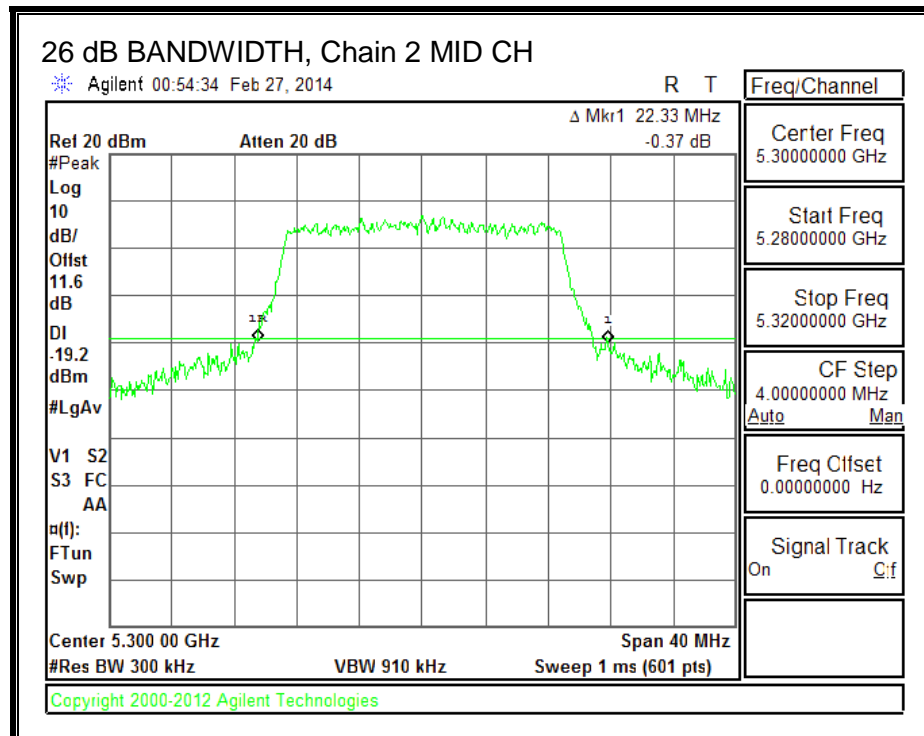
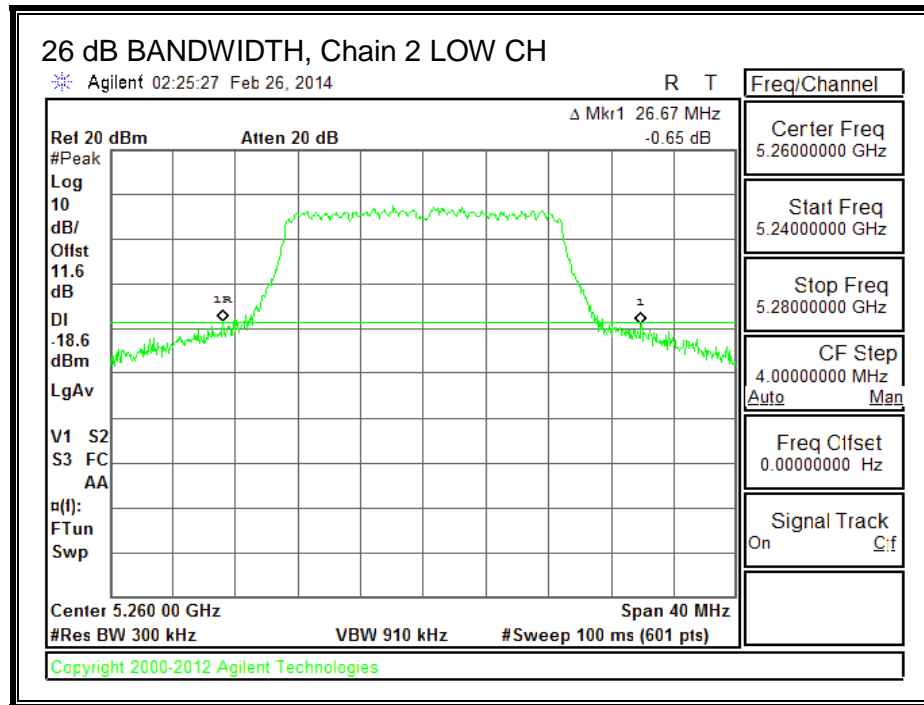


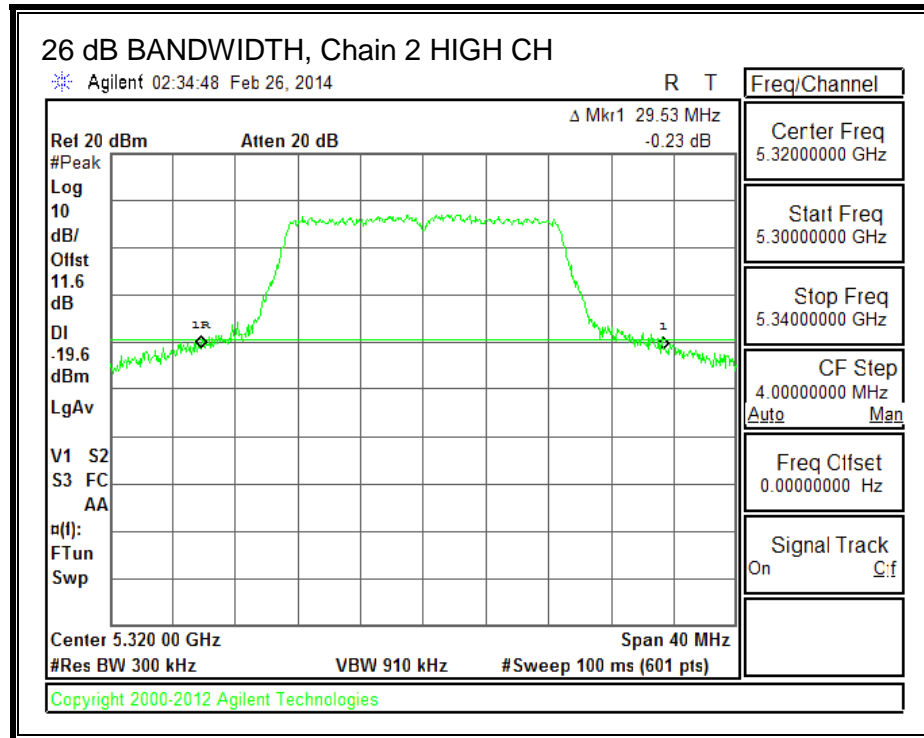


**26 dB BANDWIDTH, Chain 1**









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8.12.2. **99% BANDWIDTH**

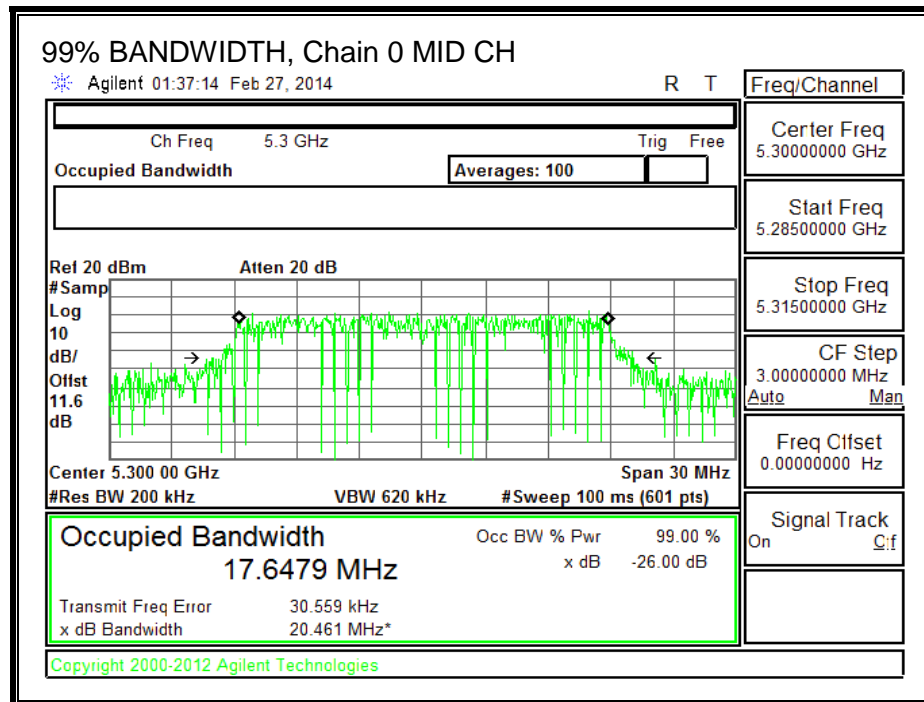
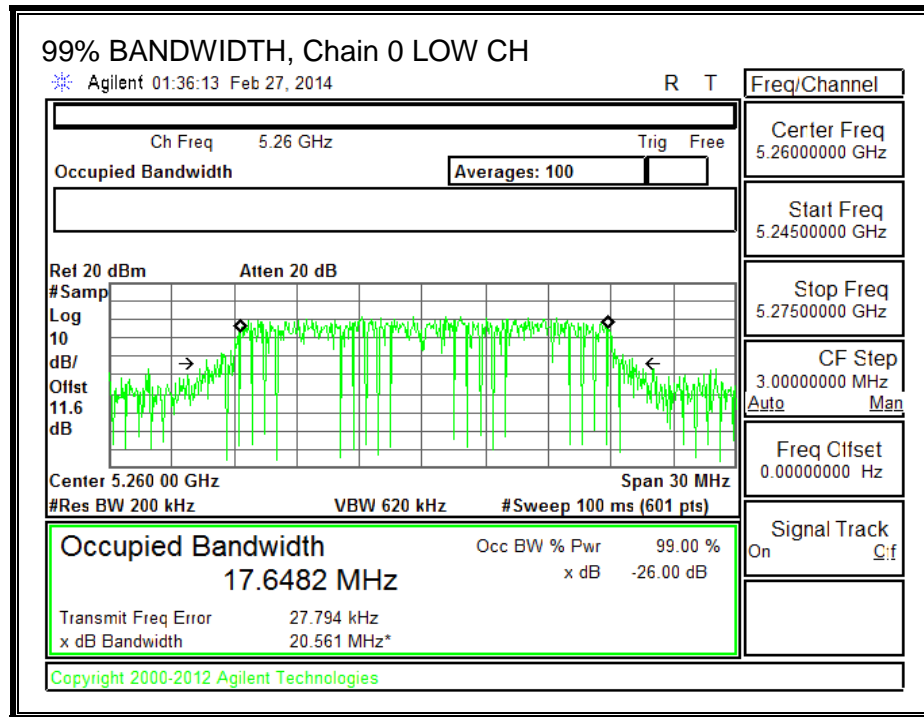
**LIMITS**

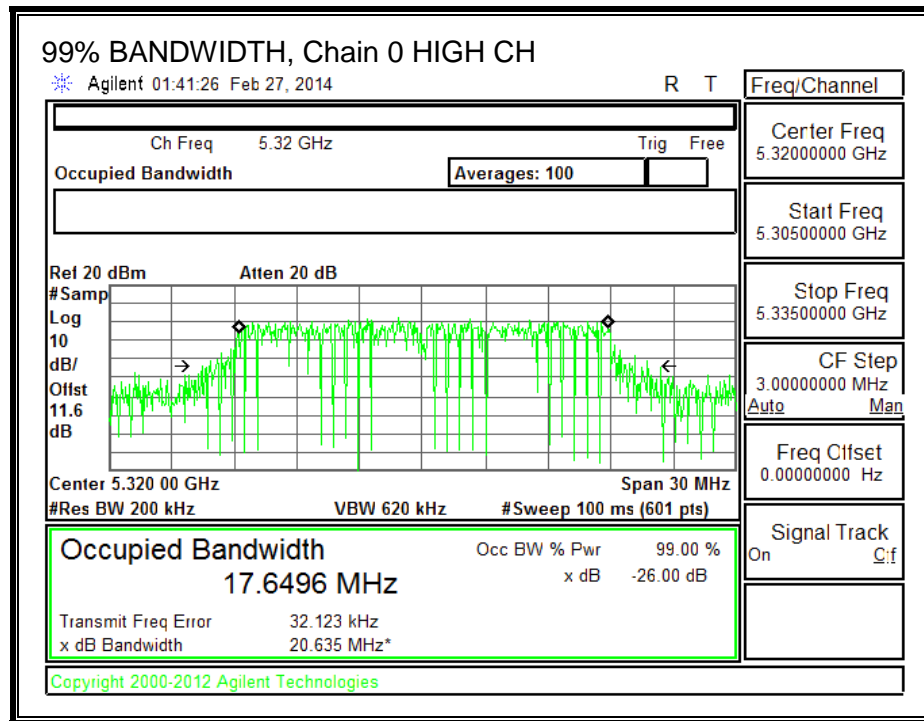
None; for reporting purposes only.

**RESULTS**

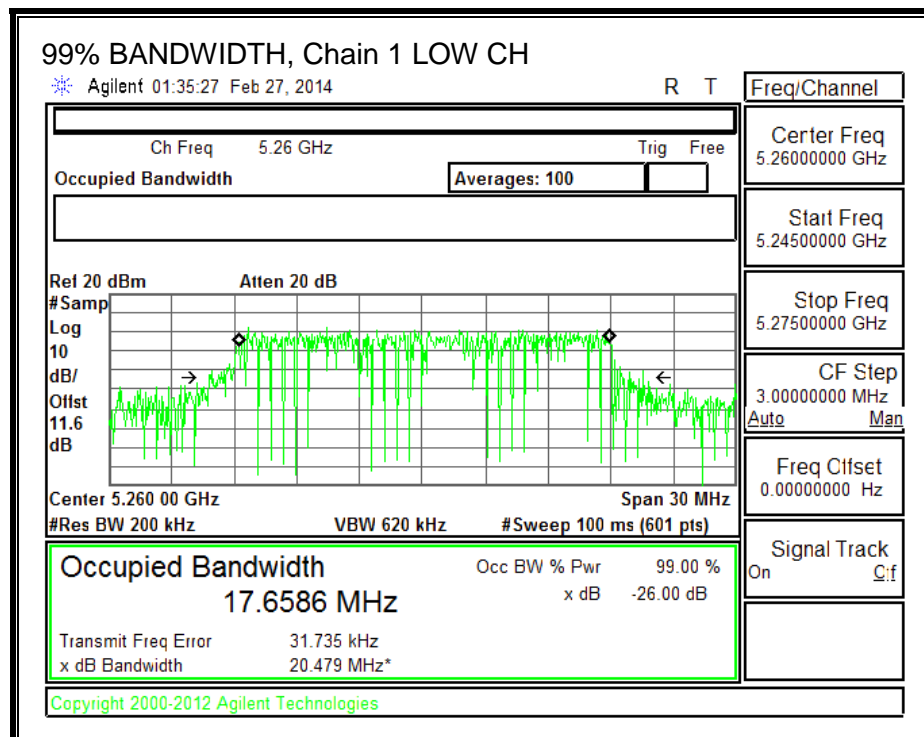
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5260	17.6482	17.6586	17.6409
Mid	5300	17.6479	17.6711	17.6520
High	5320	17.6496	17.6637	17.6593

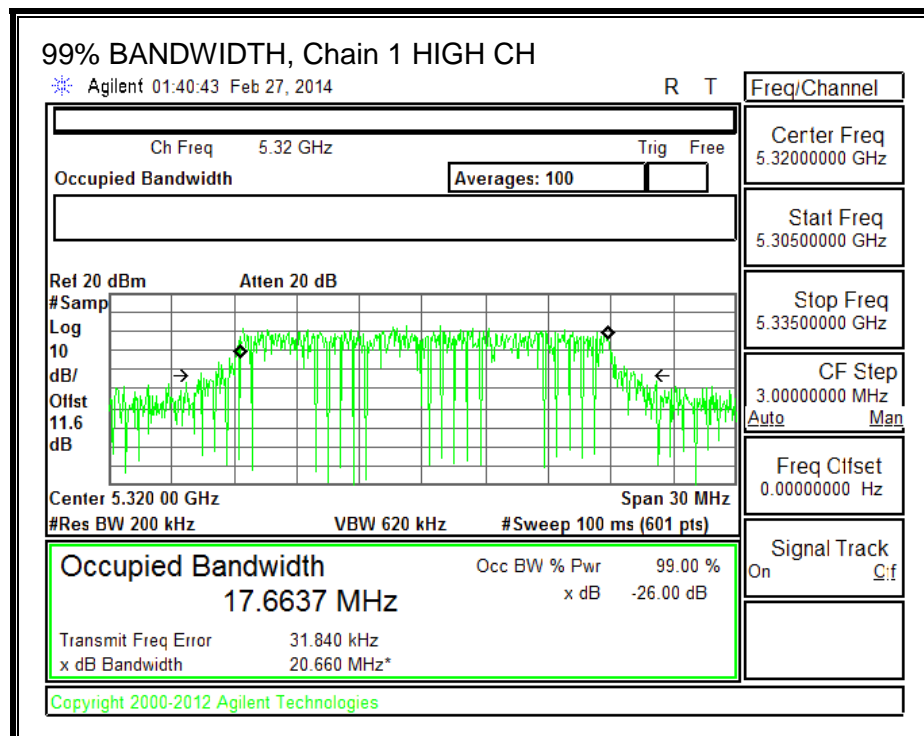
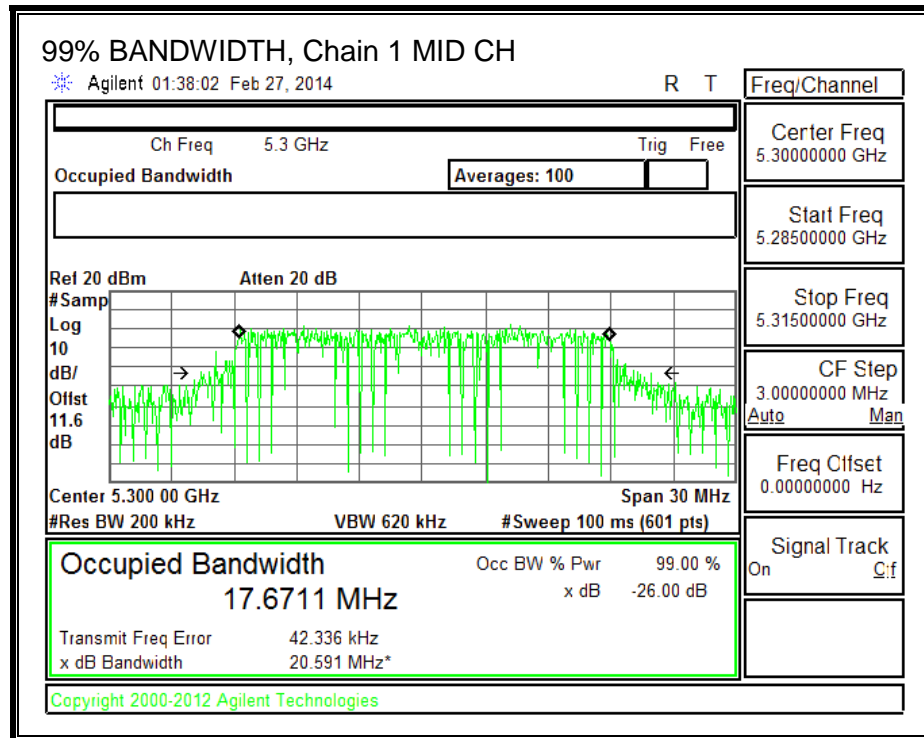


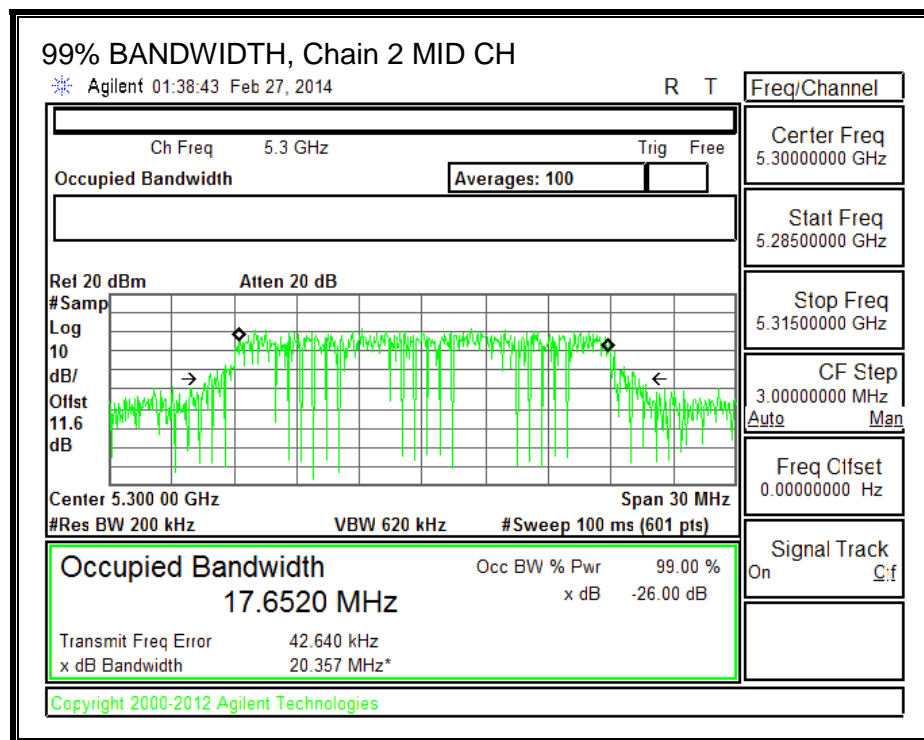
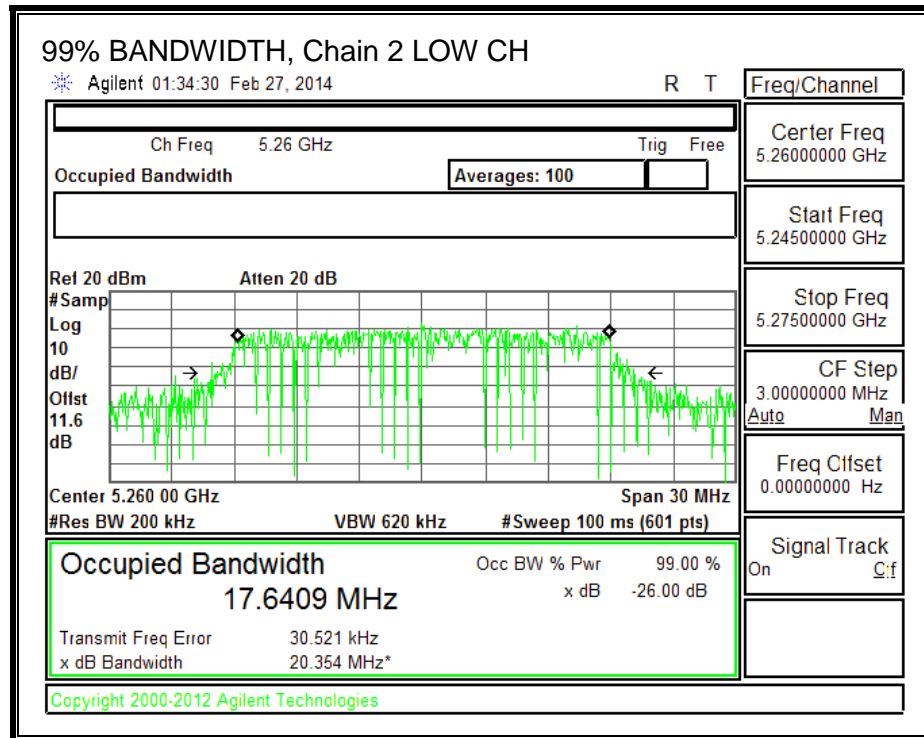
**99% BANDWIDTH, Chain 0**

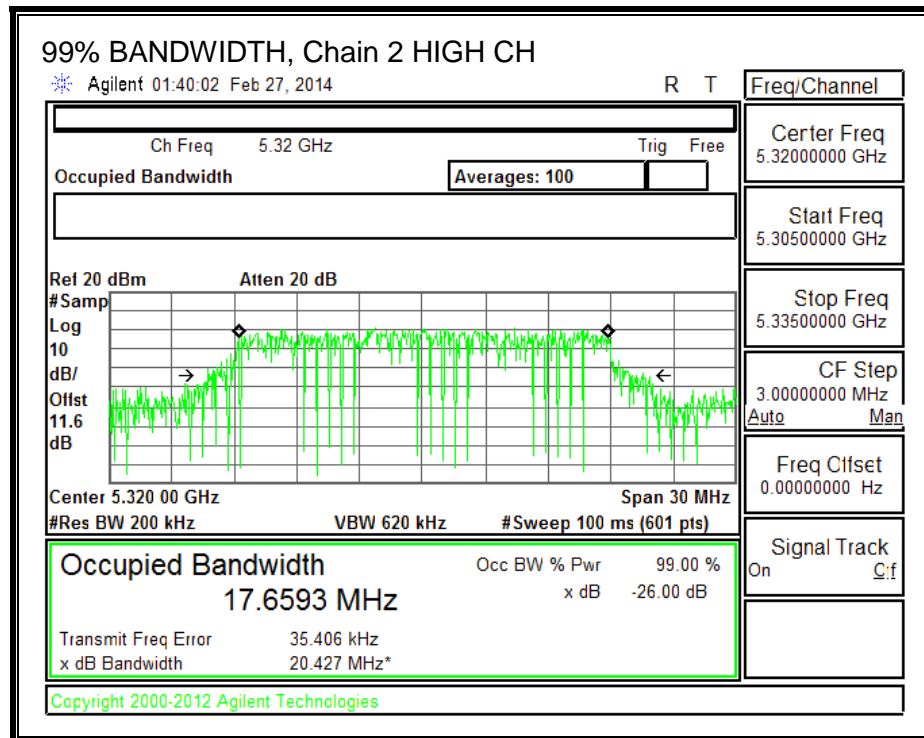


**99% BANDWIDTH, Chain 1**





**99% BANDWIDTH, Chain 2**



### 8.12.3. OUTPUT POWER AND PPSD

#### LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

#### DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
7.09	7.06	3.58	6.19

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
7.09	7.06	3.58	10.83

## RESULTS

### 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	5260	26.67	17.6409	6.19	10.83
Mid	5300	22.33	17.6479	6.19	10.83
High	5320	27.60	17.6496	6.19	10.83

### 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	5260	23.81	23.47	29.47	23.28	6.17	11.00	6.17
Mid	5300	23.81	23.47	29.47	23.28	6.17	11.00	6.17
High	5320	23.81	23.47	29.47	23.28	6.17	11.00	6.17

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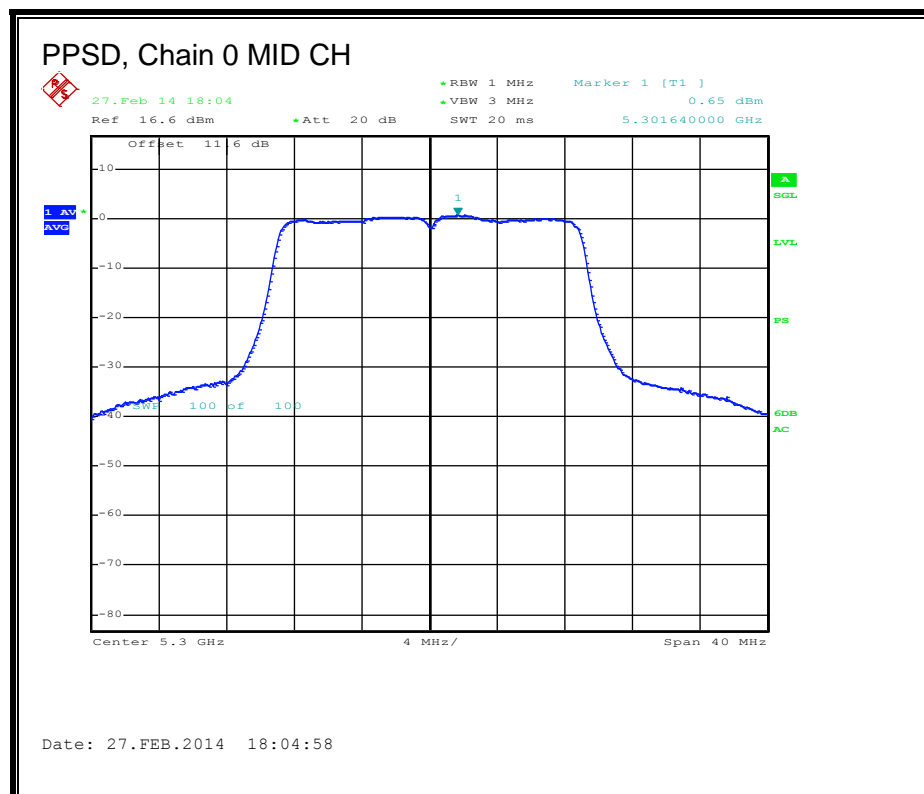
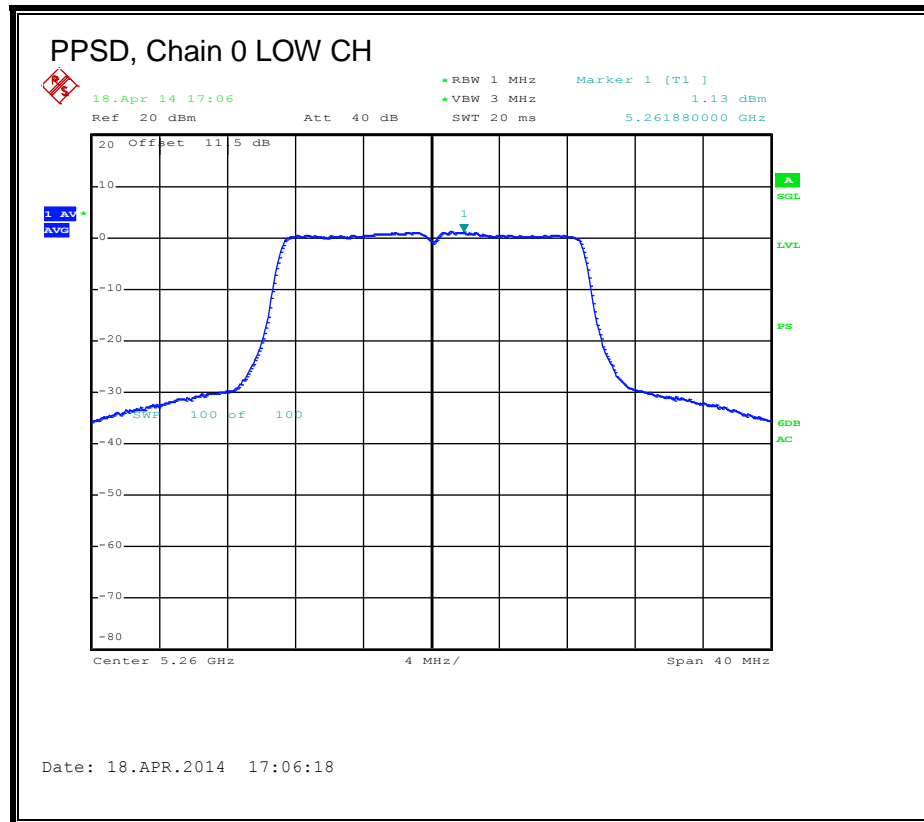
### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	16.60	16.10	16.20	21.08	23.28	-2.20
Mid	5300	16.12	16.71	16.50	21.22	23.28	-2.06
High	5320	16.47	16.63	16.32	21.25	23.28	-2.03

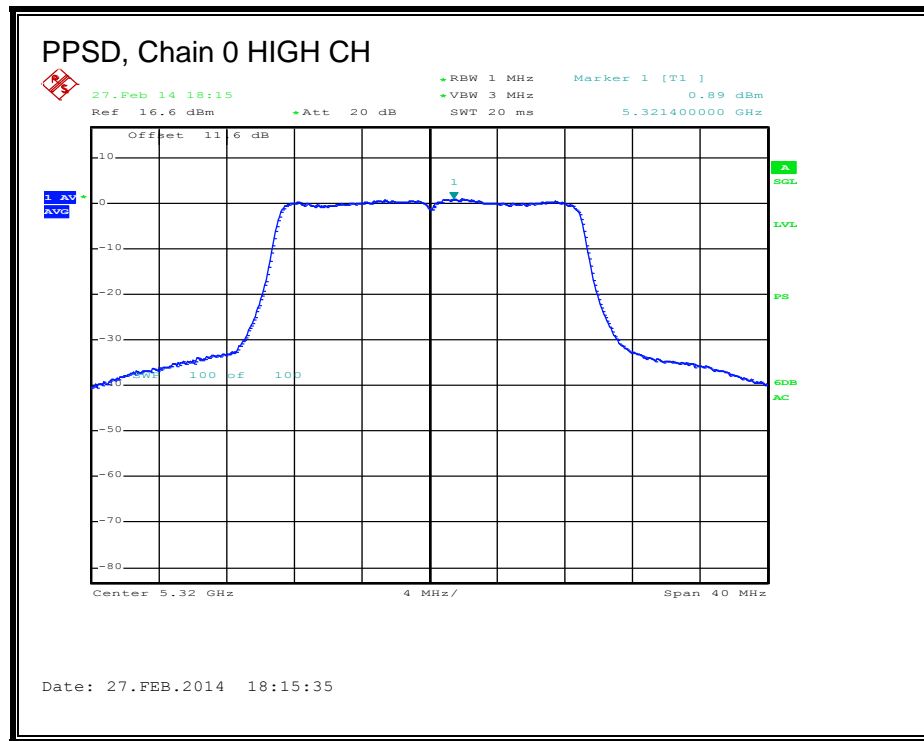
### PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	1.13	0.96	0.72	5.93	6.17	-0.24
Mid	5300	0.65	0.76	1.41	5.94	6.17	-0.23
High	5320	0.89	0.95	1.59	6.15	6.17	-0.02

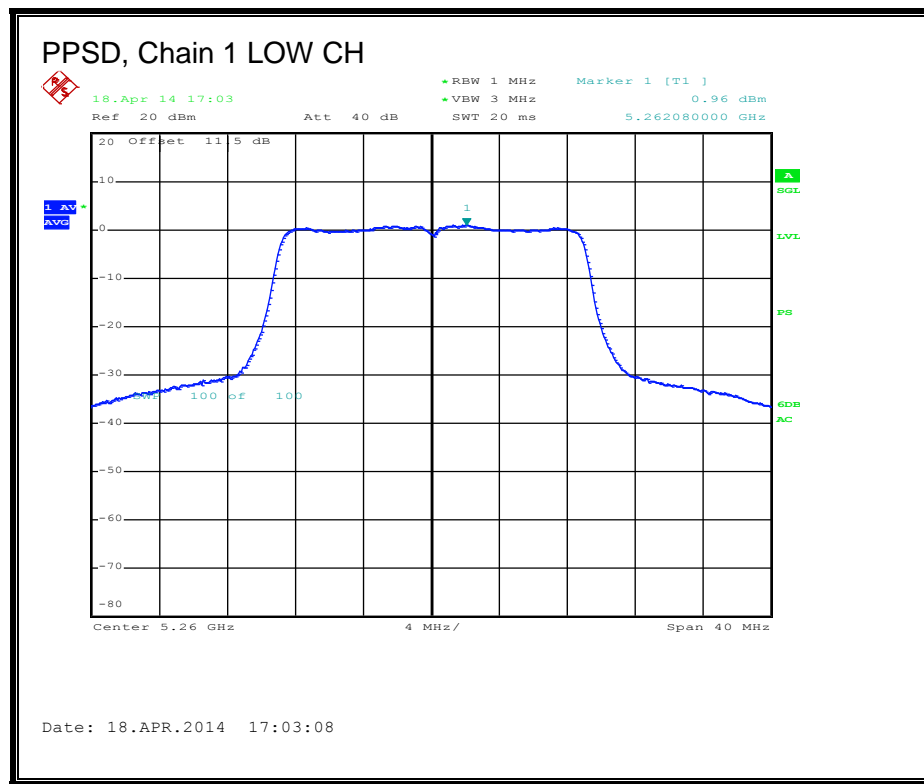
**PPSD, Chain 0**

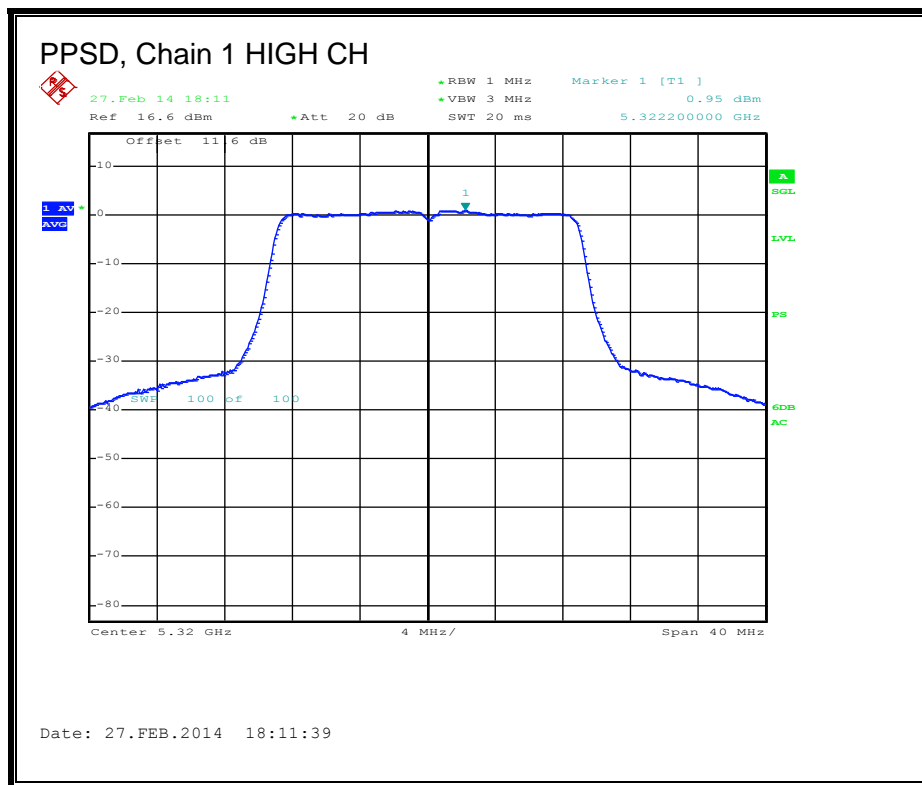
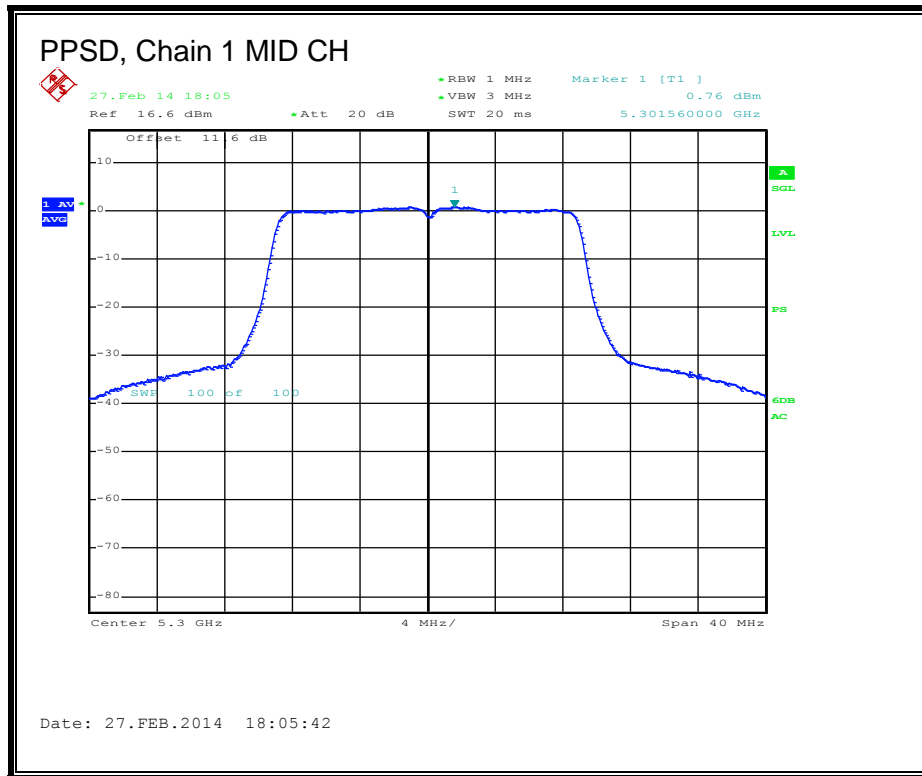




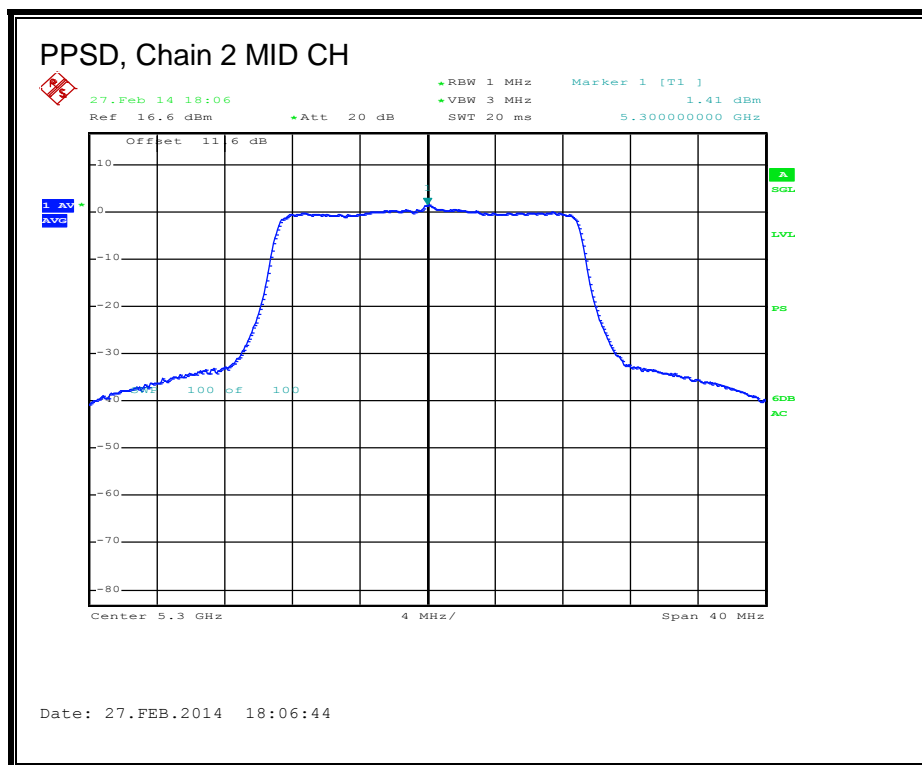
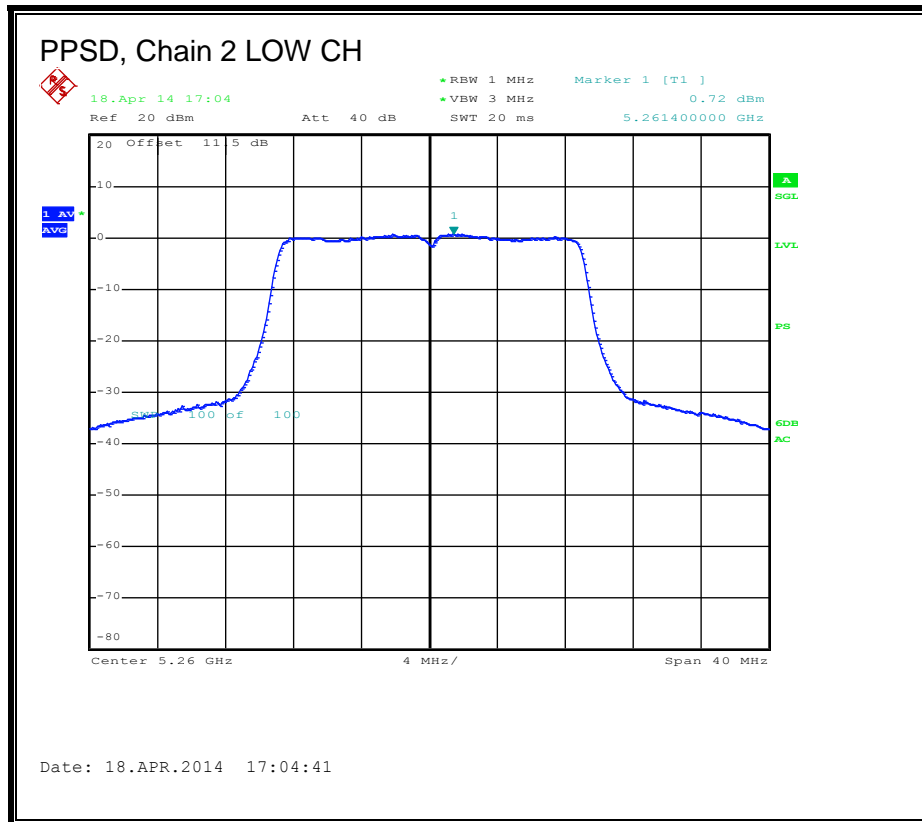


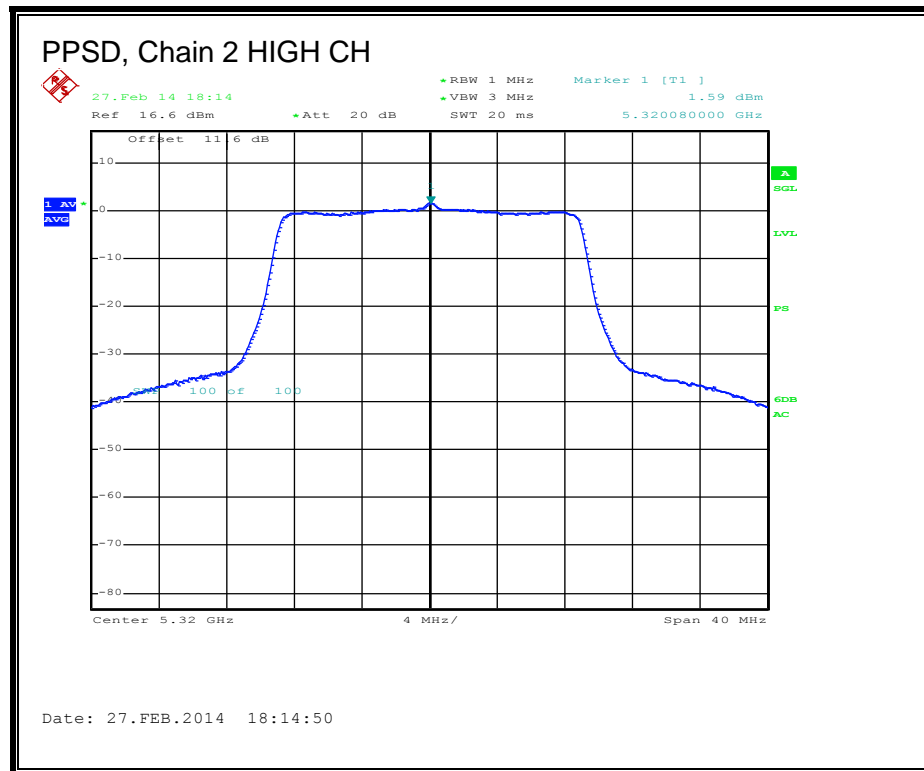
**PPSD, Chain 1**





**PPSD, Chain 2**





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8.13. **802.11n HT20 STBC 3TX MODE IN TH 5.3 GHz Band**

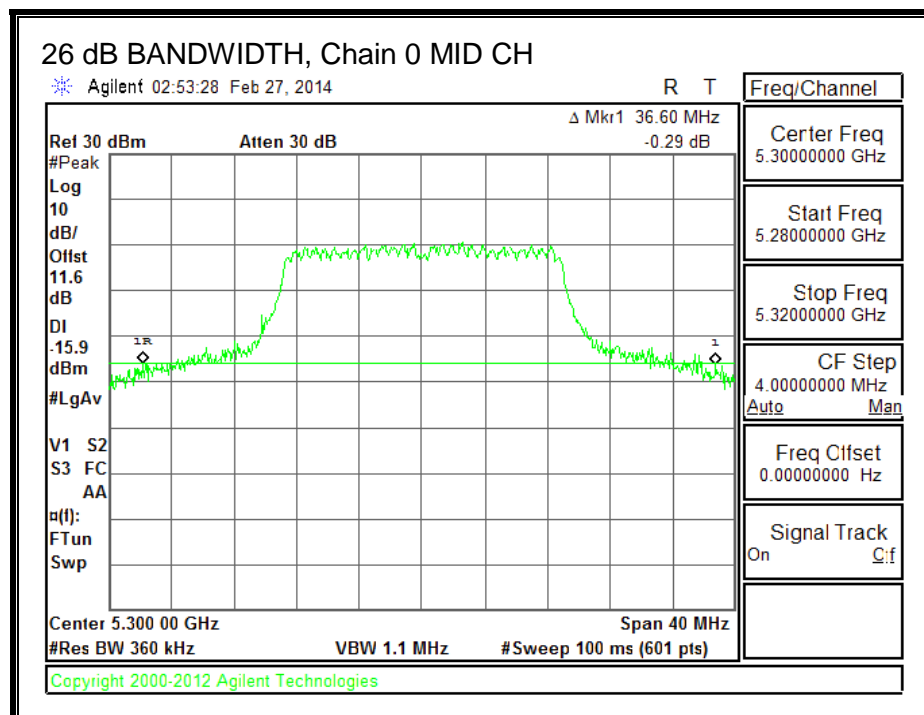
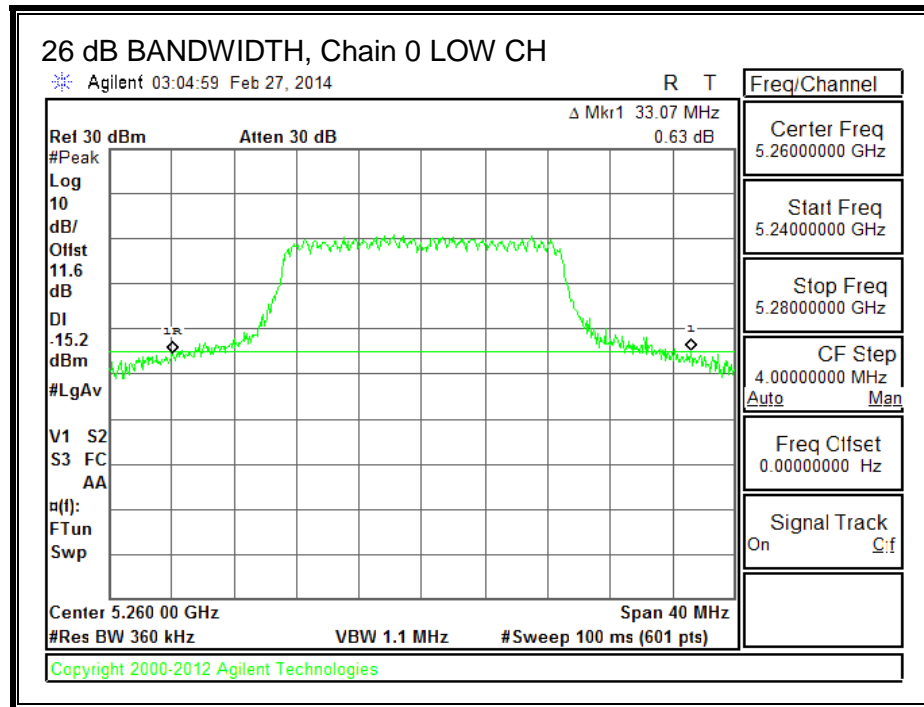
8.13.1. **26 dB BANDWIDTH**

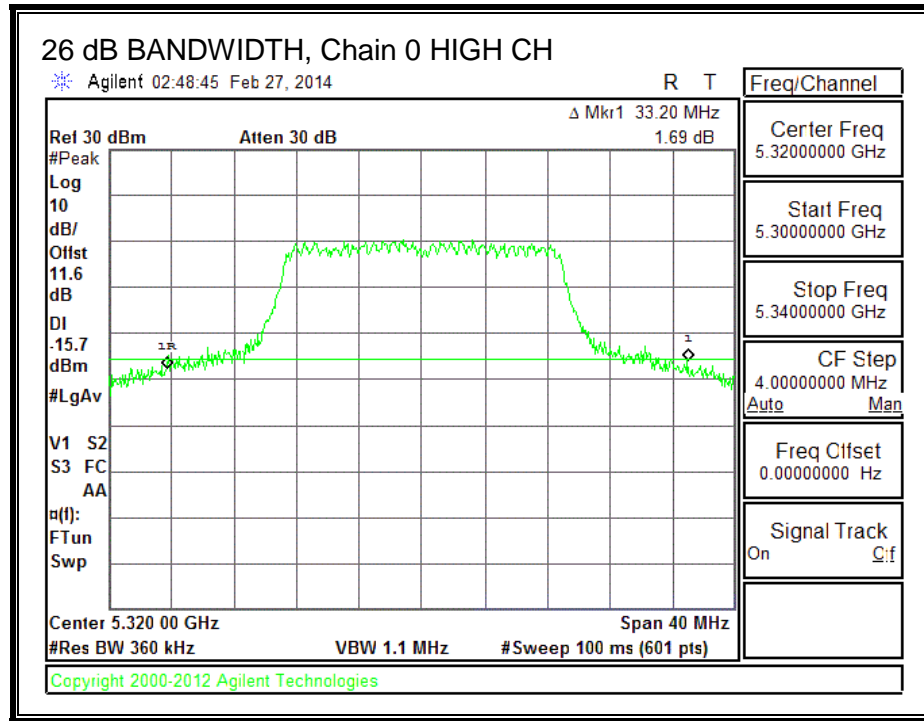
**LIMITS**

None; for reporting purposes only.

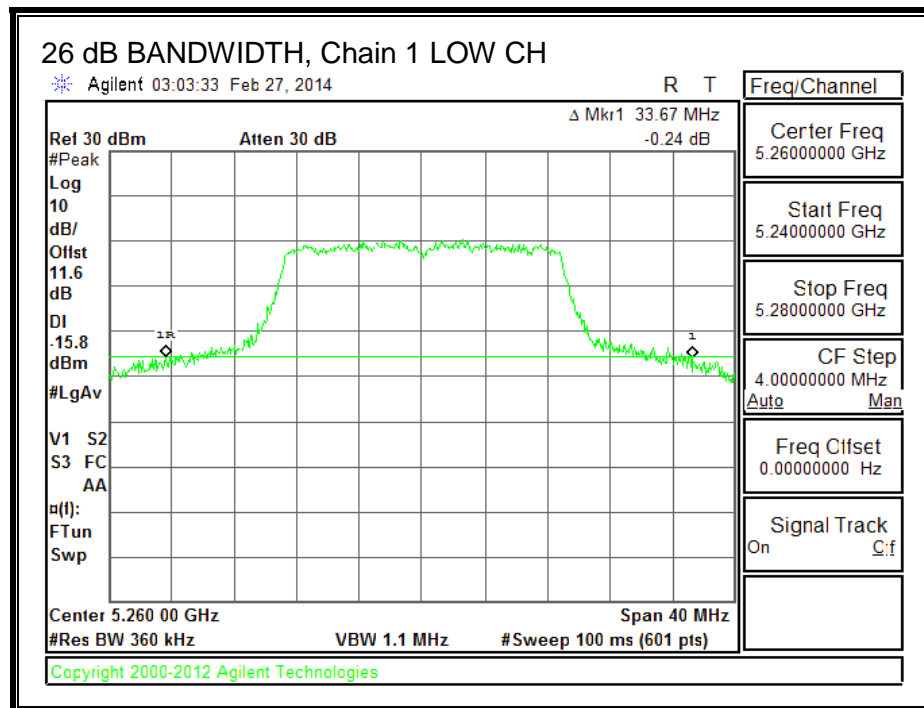
**RESULTS**

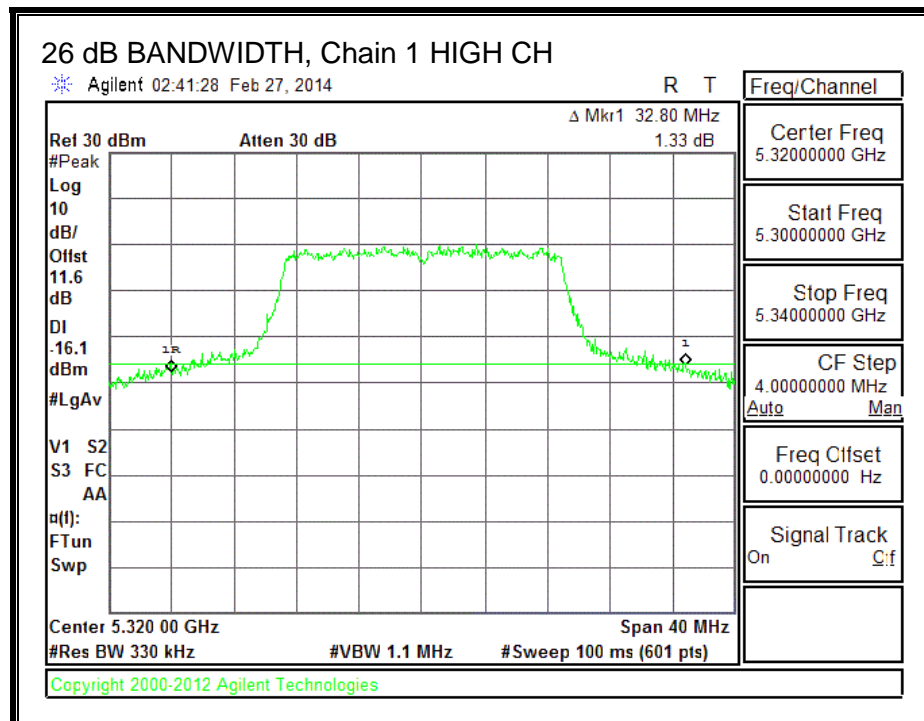
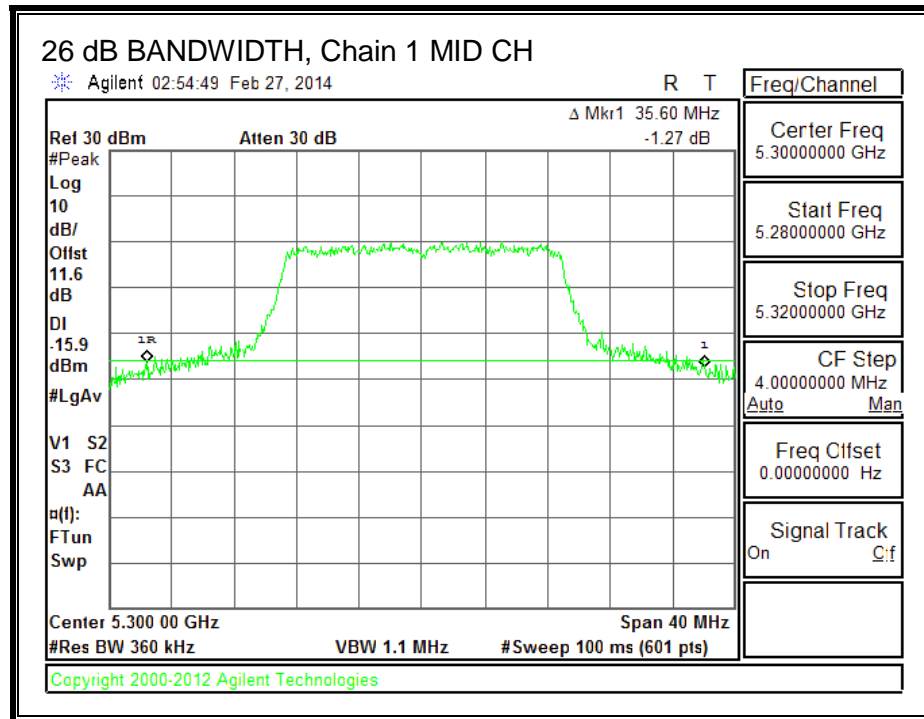
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5260	33.07	33.67	31.20
Mid	5300	36.60	35.60	31.67
High	5320	33.20	32.80	29.80

**26 dB BANDWIDTH, Chain 0**

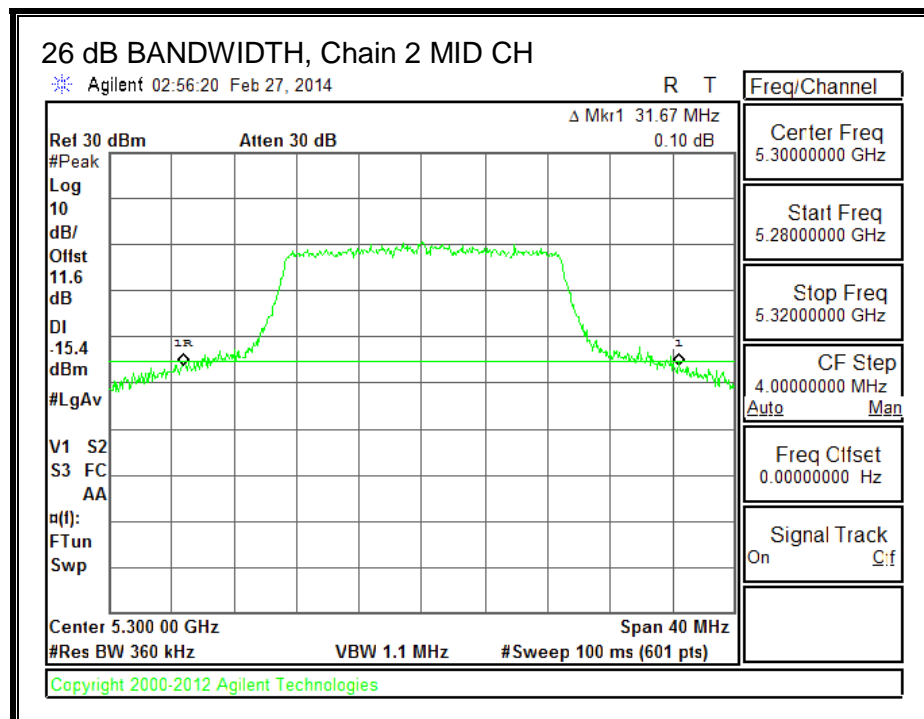
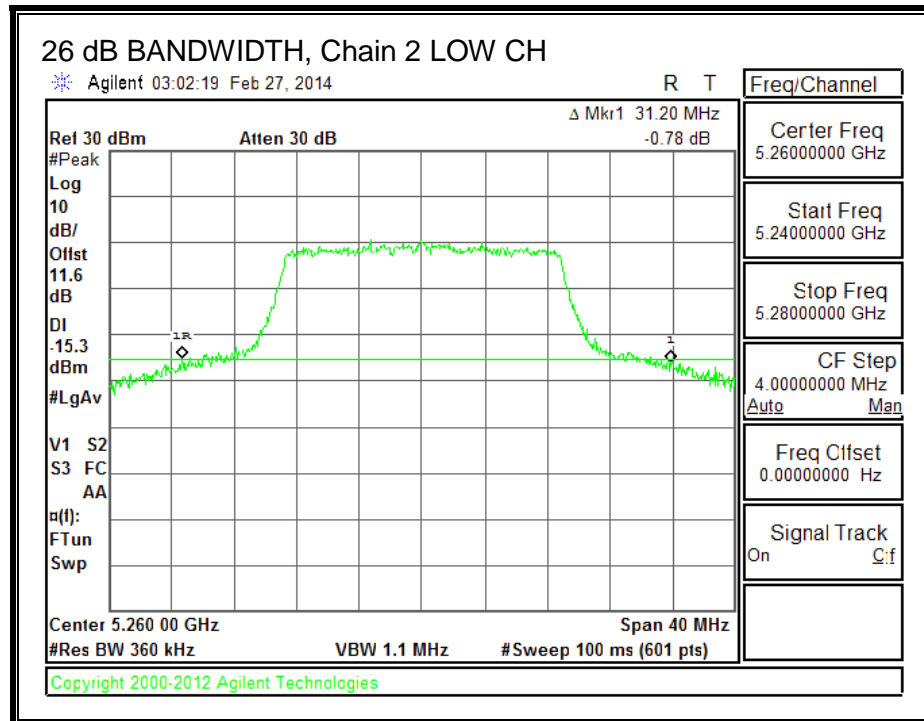


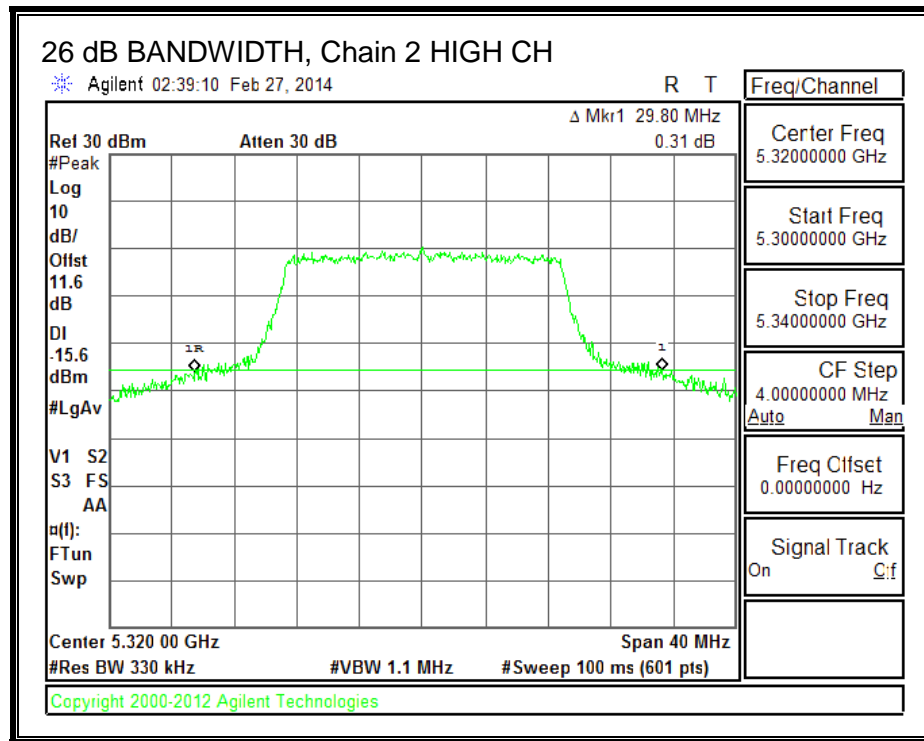
**26 dB BANDWIDTH, Chain 1**











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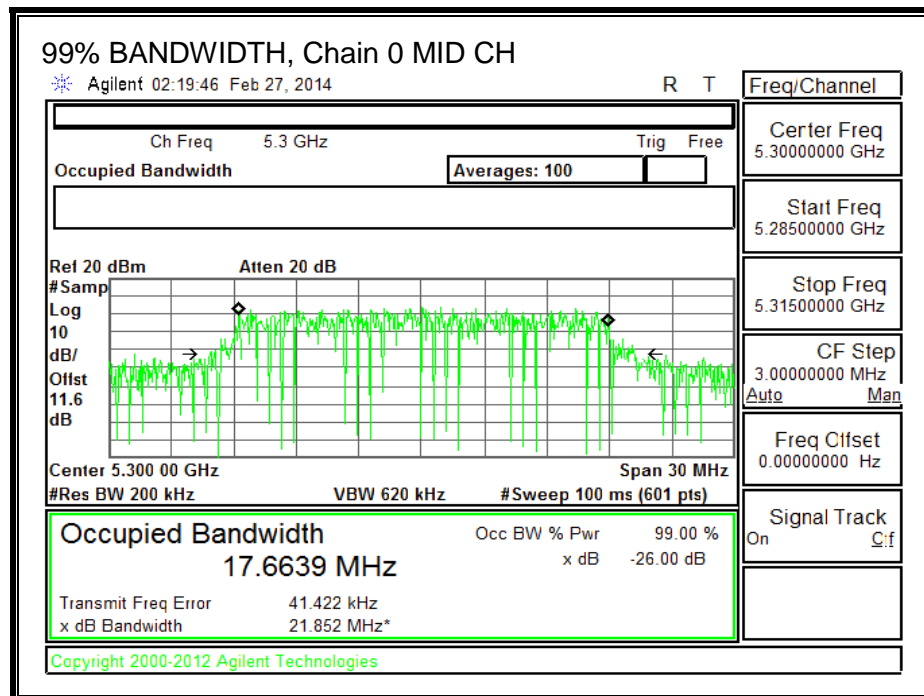
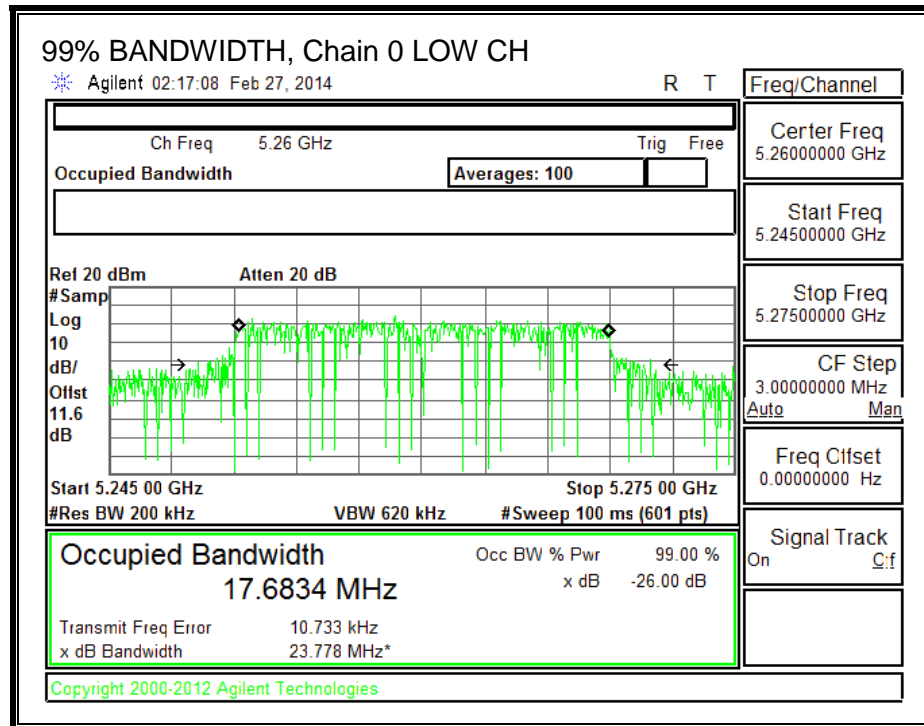
8.13.2. **99% BANDWIDTH**

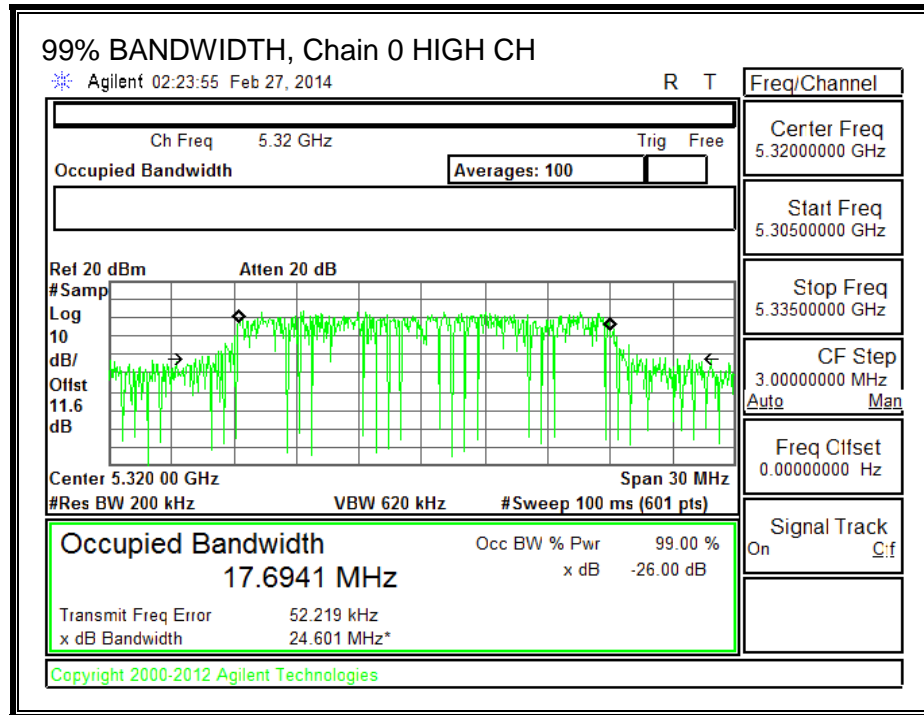
**LIMITS**

None; for reporting purposes only.

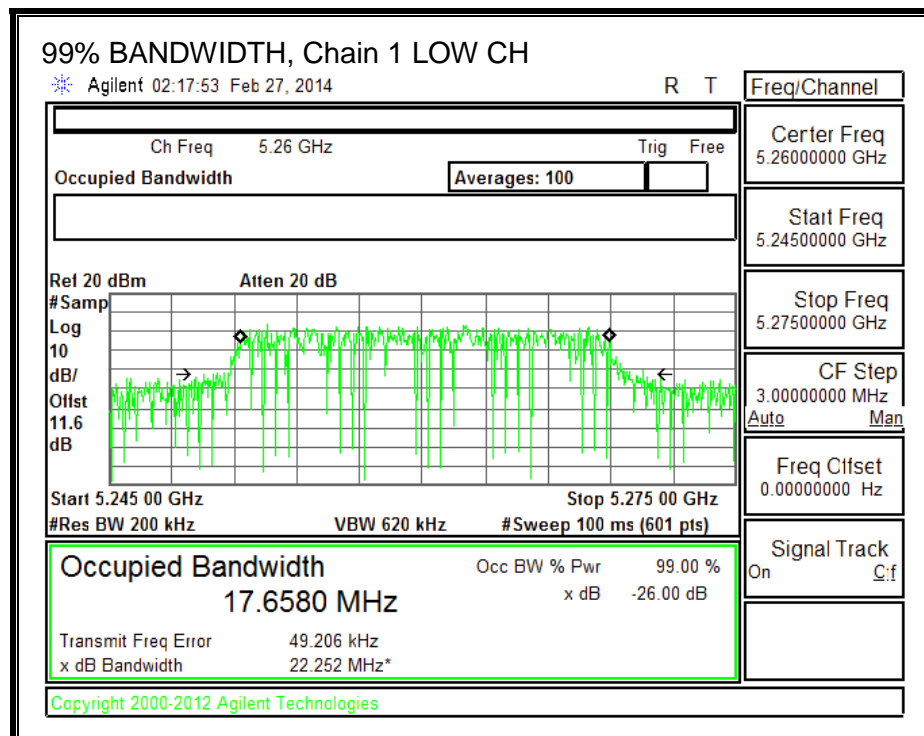
**RESULTS**

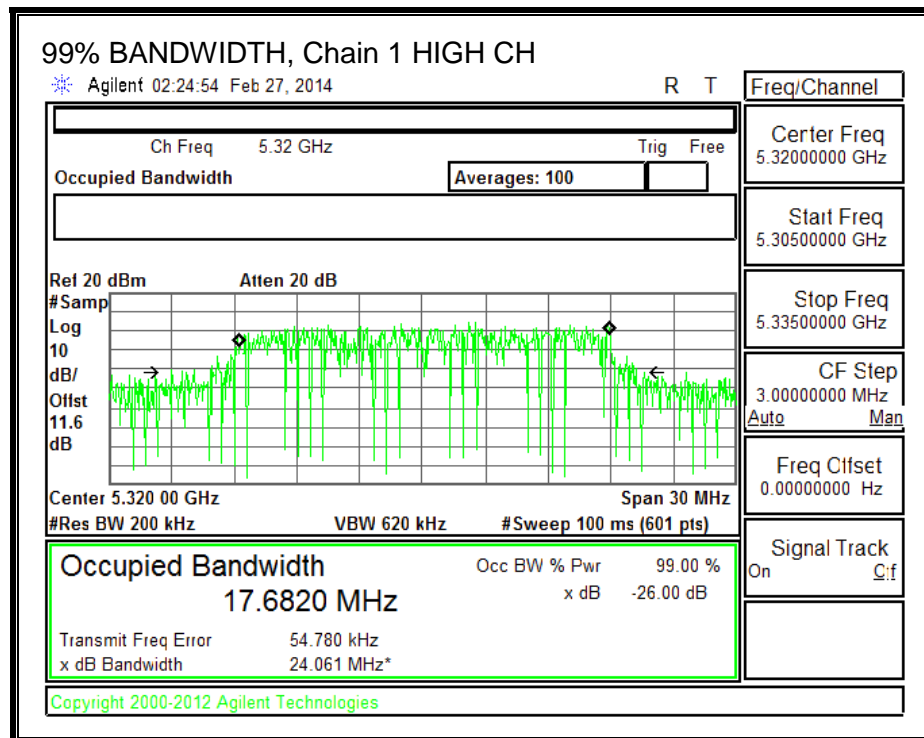
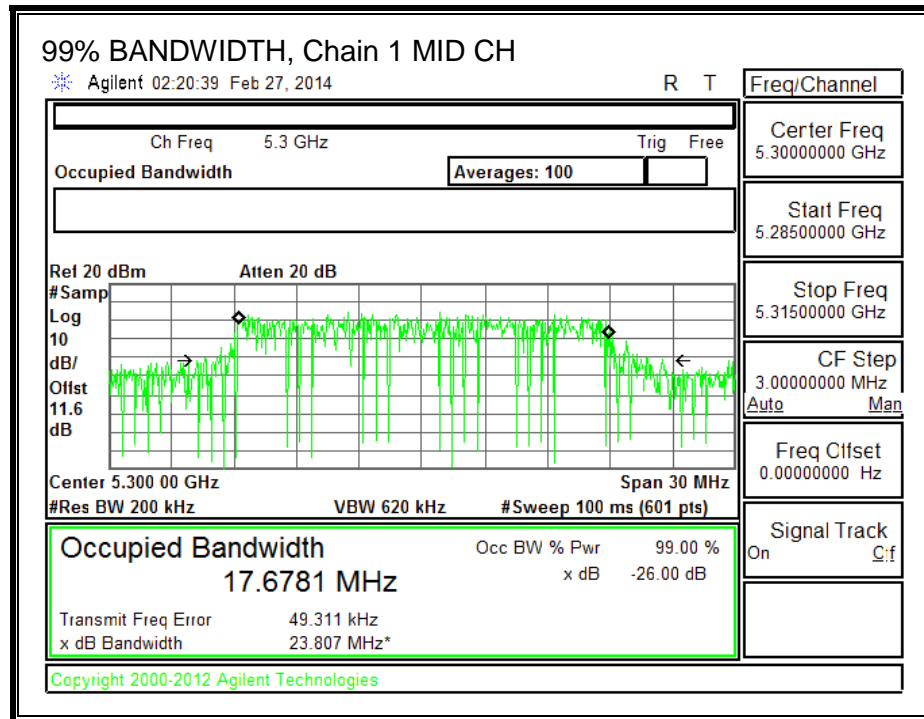
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5260	17.6834	17.6580	17.6537
Mid	5300	17.6639	17.6781	17.6838
High	5320	17.6941	17.6820	17.6527

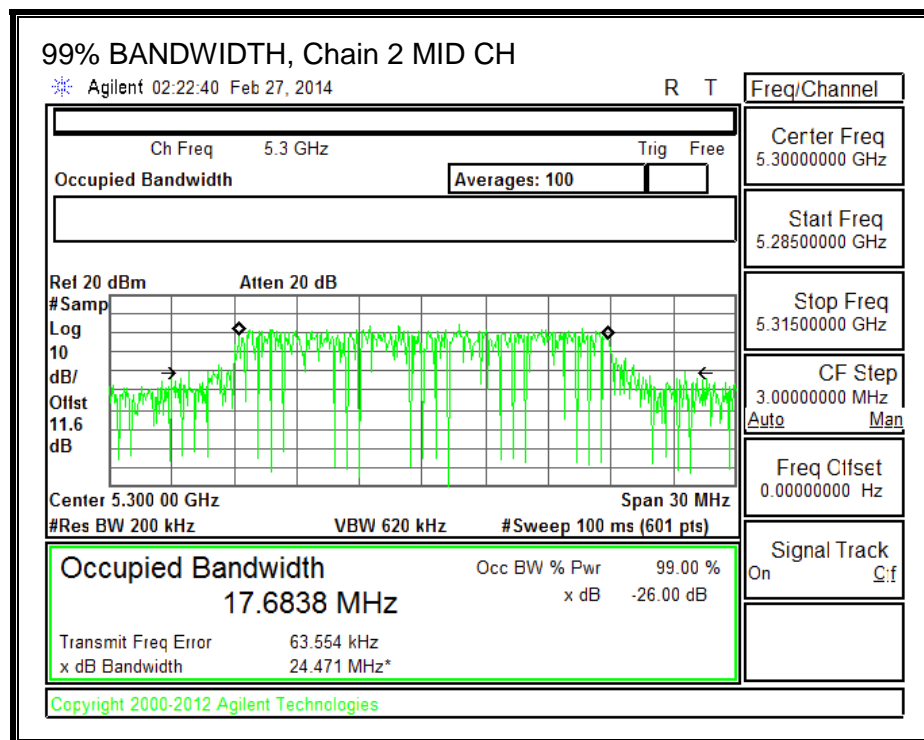
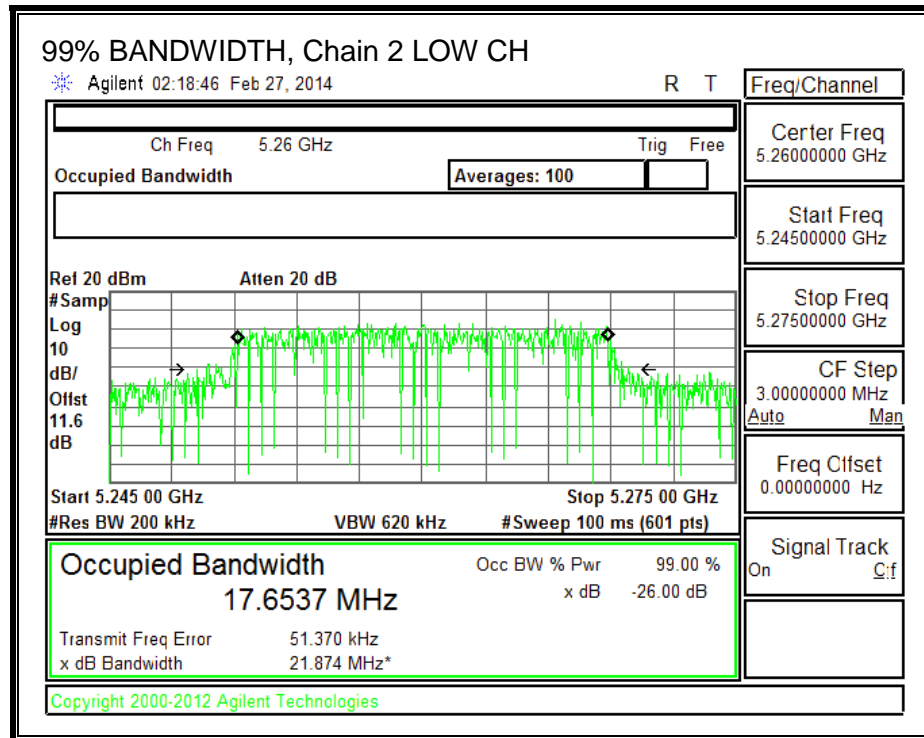
**99% BANDWIDTH, Chain 0**

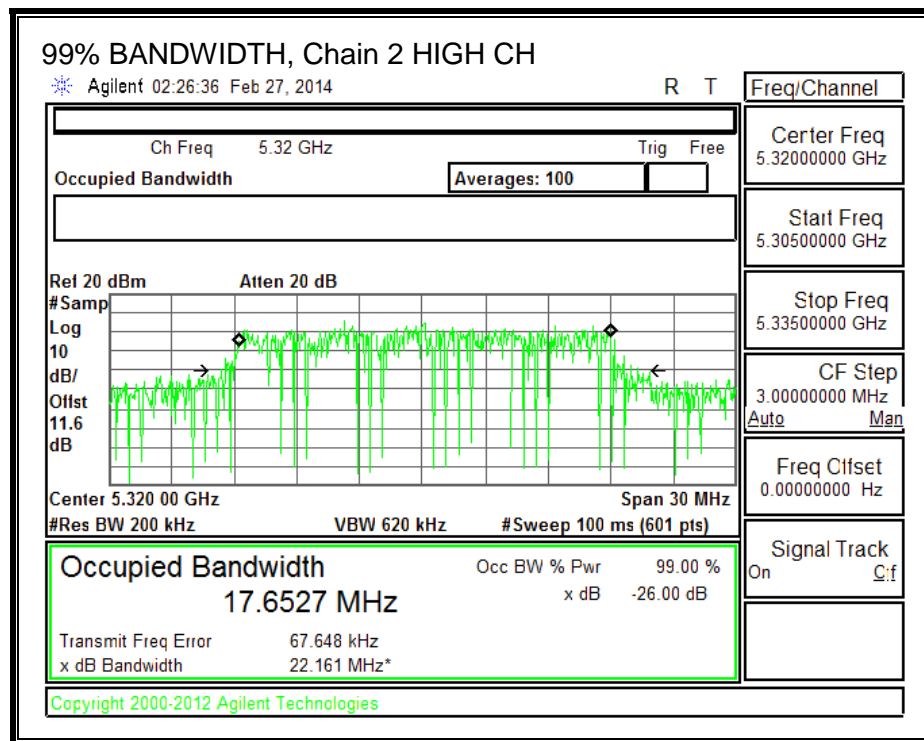


**99% BANDWIDTH, Chain 1**





**99% BANDWIDTH, Chain 2**





### 8.13.3. OUTPUT POWER AND PPSD

#### **LIMITS**

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

#### **DIRECTIONAL ANTENNA GAIN**

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
7.09	7.06	3.58	6.19

## RESULTS

### 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	5260	31.20	17.6537	6.19	6.19
Mid	5300	31.67	17.6639	6.19	6.19
High	5320	29.80	17.6527	6.19	6.19

### 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	5260	23.81	23.47	29.47	23.28	10.81	11.00	10.81
Mid	5300	23.81	23.47	29.47	23.28	10.81	11.00	10.81
High	5320	23.81	23.47	29.47	23.28	10.81	11.00	10.81

Duty Cycle CF (dB)	0.21	Included in Calculations of PPSP
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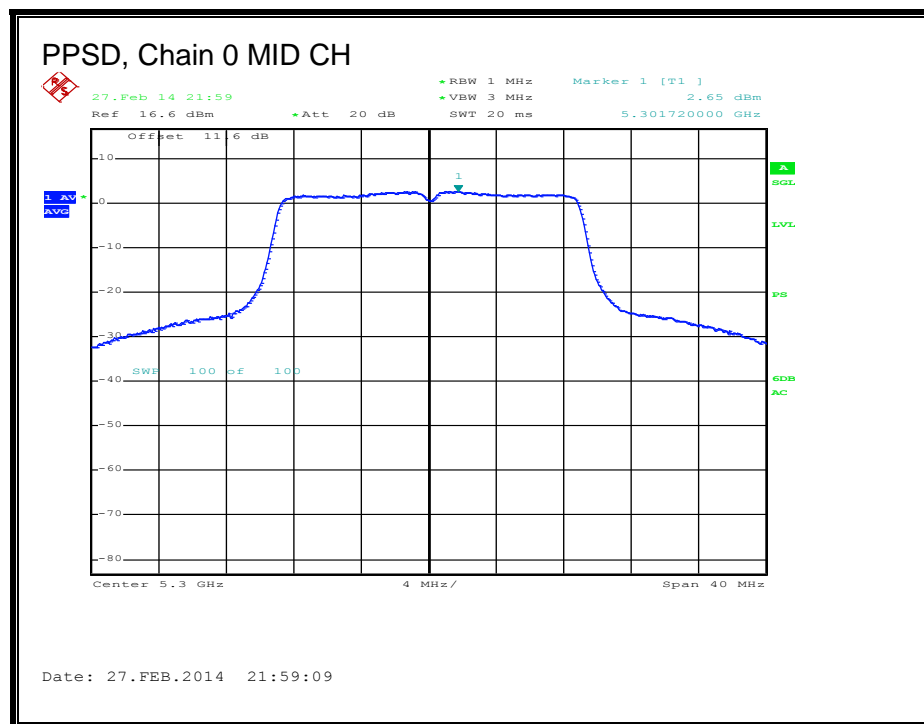
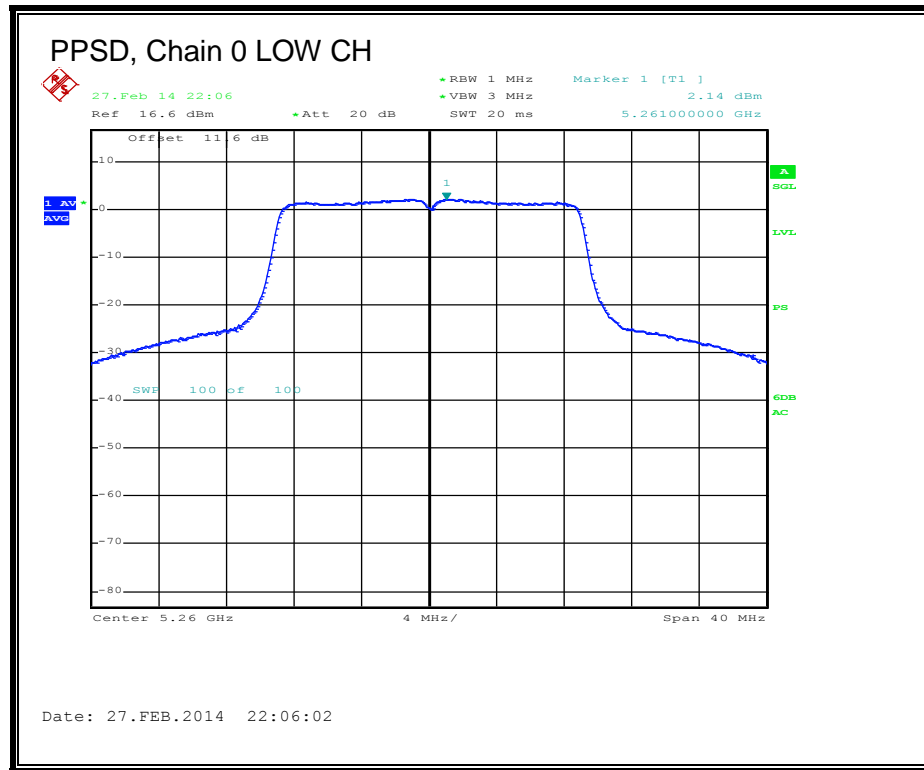
### Output Power Results

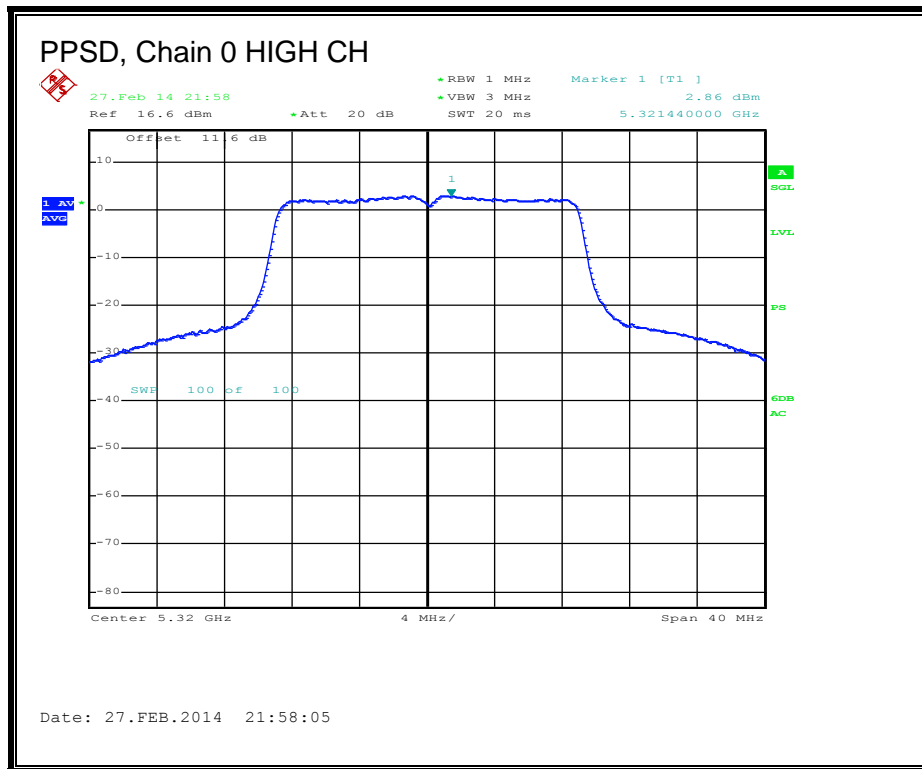
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	18.46	18.41	18.13	23.11	23.28	-0.17
Mid	5300	18.53	18.37	18.12	23.11	23.28	-0.17
High	5320	18.65	18.51	18.32	23.27	23.28	-0.01

### PPSD Results

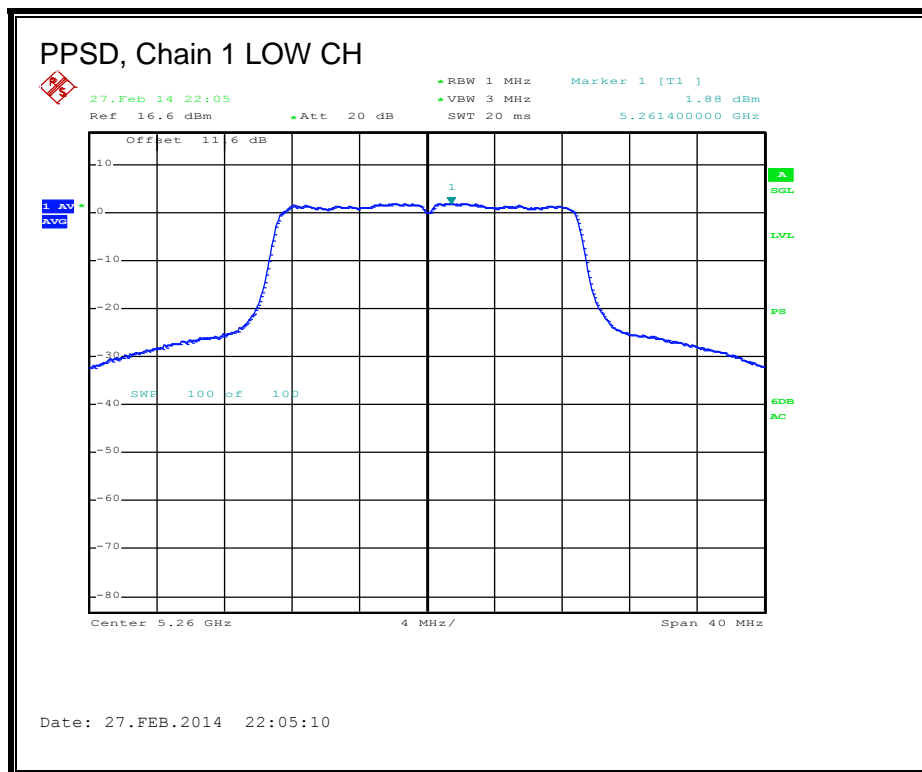
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	2.14	1.88	3.00	7.35	10.81	-3.46
Mid	5300	2.65	2.46	3.36	7.82	10.81	-2.99
High	5320	2.86	2.62	3.89	8.14	10.81	-2.67

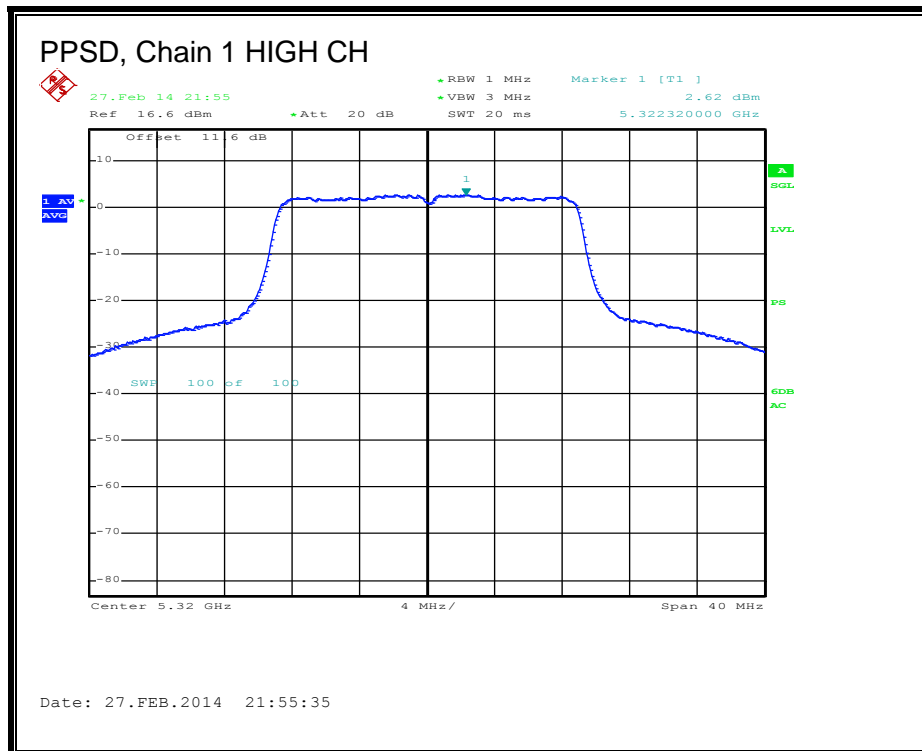
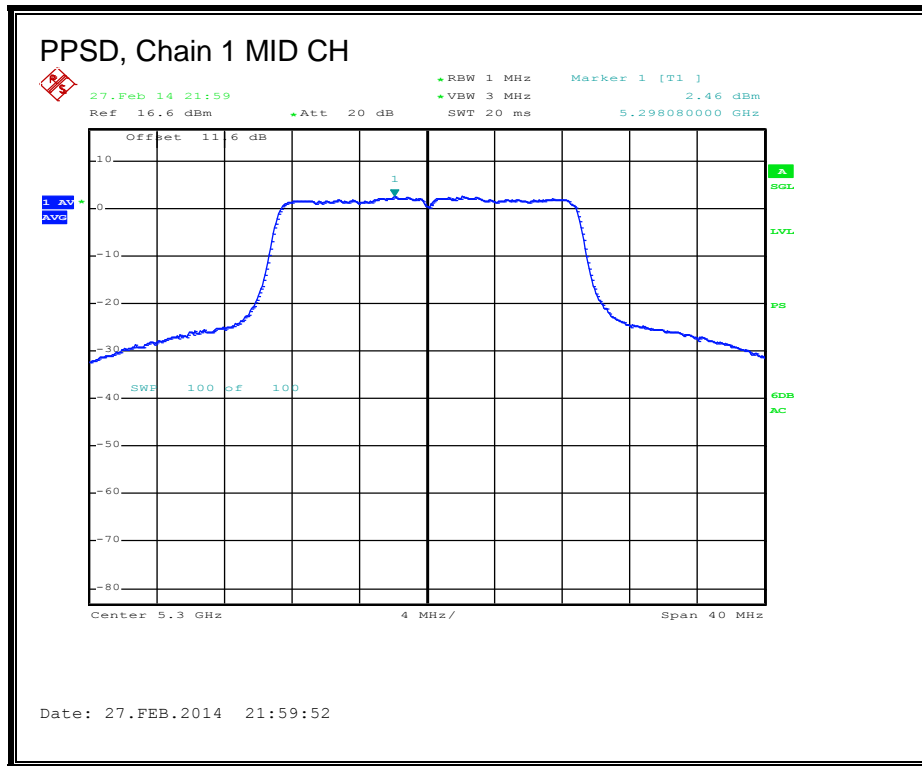
**PPSD, Chain 0**



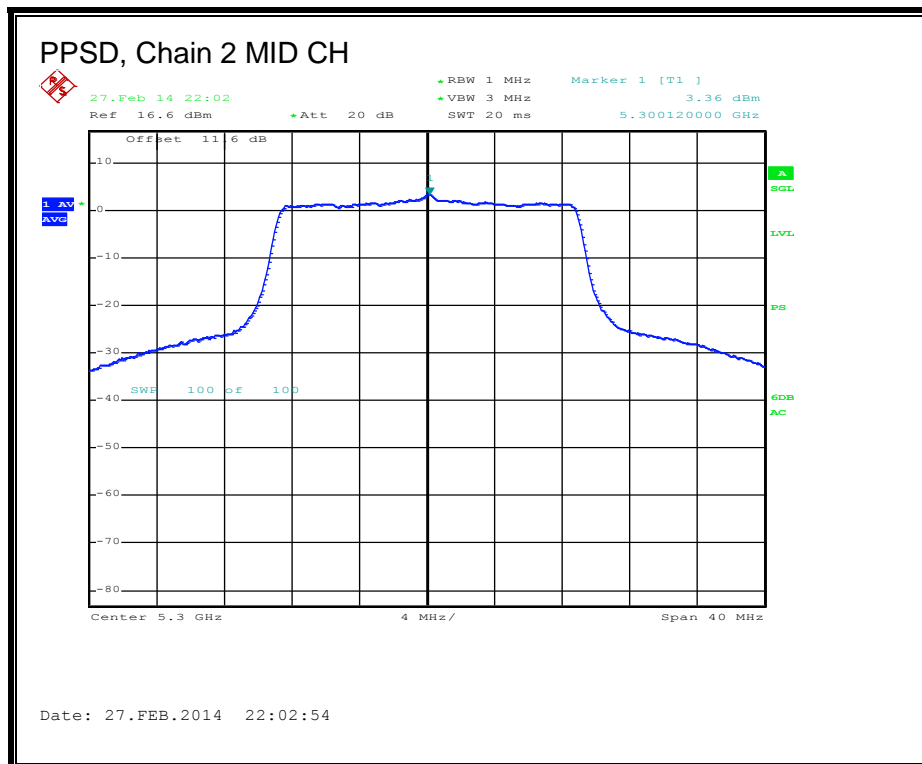
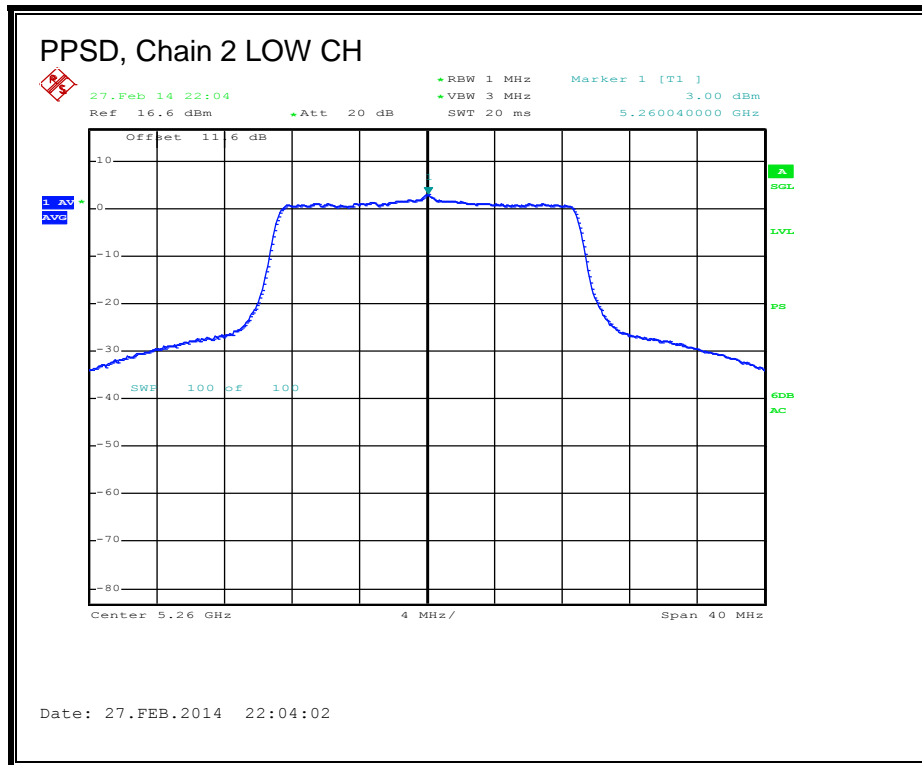


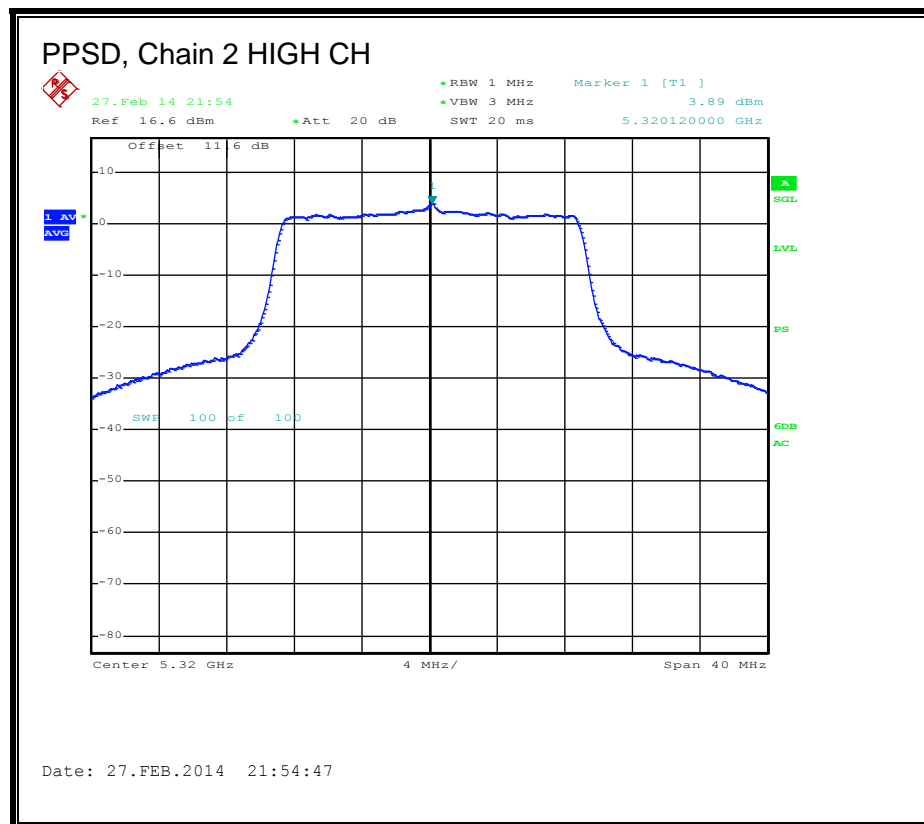
**PPSD, Chain 1**





**PPSD, Chain 2**





## 8.14 802.11n HT20 BF MODE IN THE 5.3GHz BAND

### 8.14.1. OUTPUT POWER AND PPSD

#### LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

#### DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
7.09	7.06	3.58	10.83



## RESULTS

### 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	5260	26.67	17.6409	10.83	10.83
Mid	5300	22.33	17.6479	10.83	10.83
High	5320	27.60	17.6496	10.83	10.83

### 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	5260	19.17	23.47	29.47	18.64	6.17	11.00	6.17
Mid	5300	19.17	23.47	29.47	18.64	6.17	11.00	6.17
High	5320	19.17	23.47	29.47	18.64	6.17	11.00	6.17

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

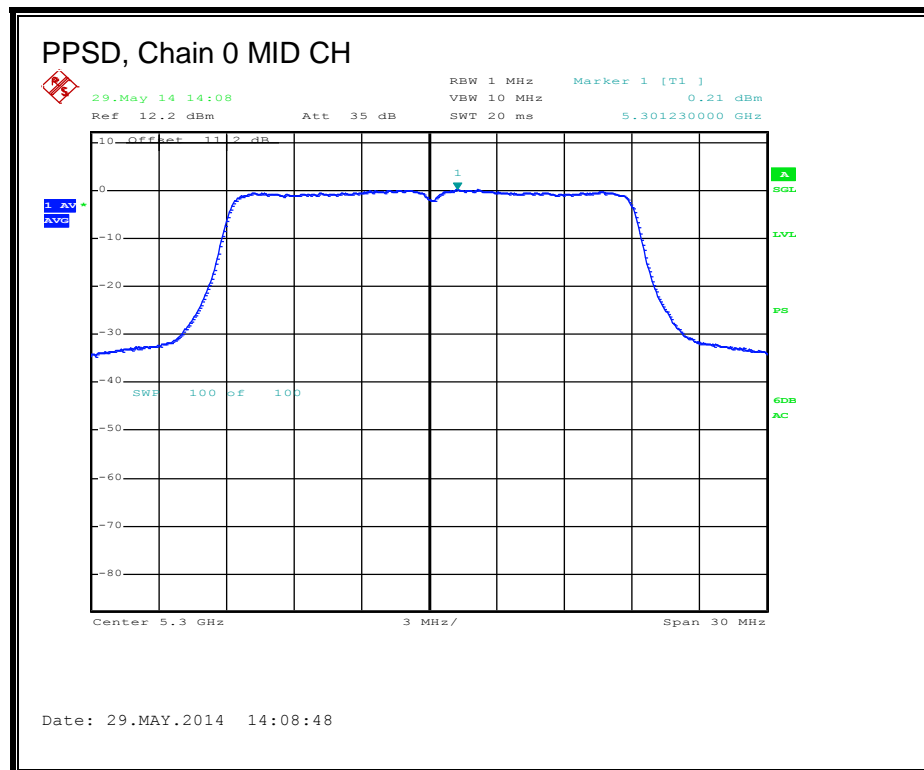
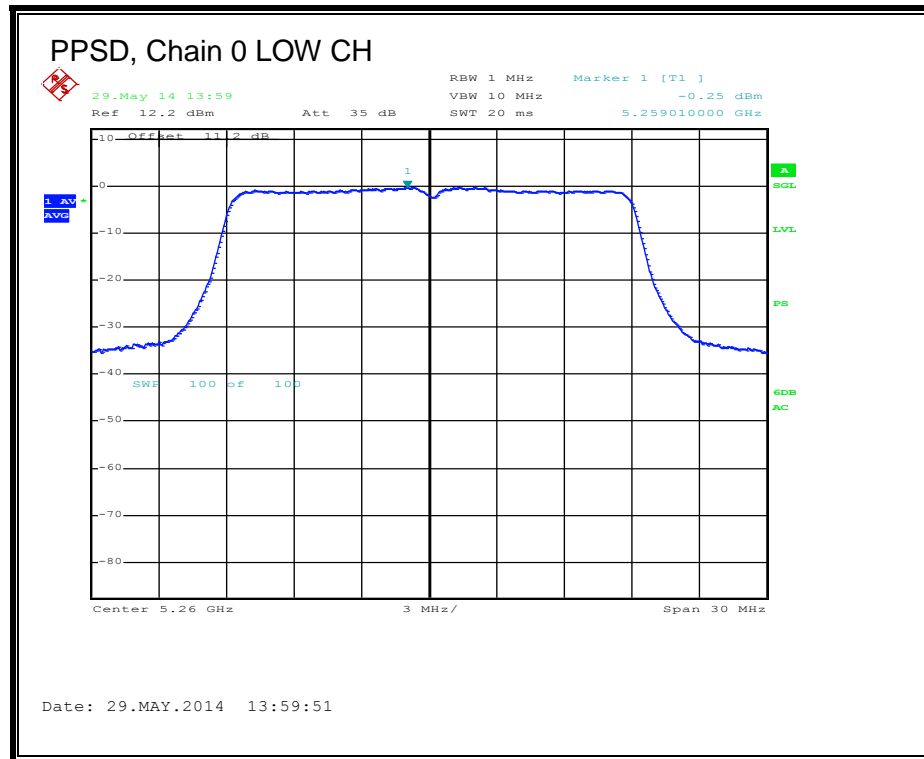
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	13.96	13.51	13.37	18.39	18.64	-0.24
Mid	5300	14.04	13.70	13.58	18.55	18.64	-0.09
High	5320	13.87	13.48	13.60	18.42	18.64	-0.21

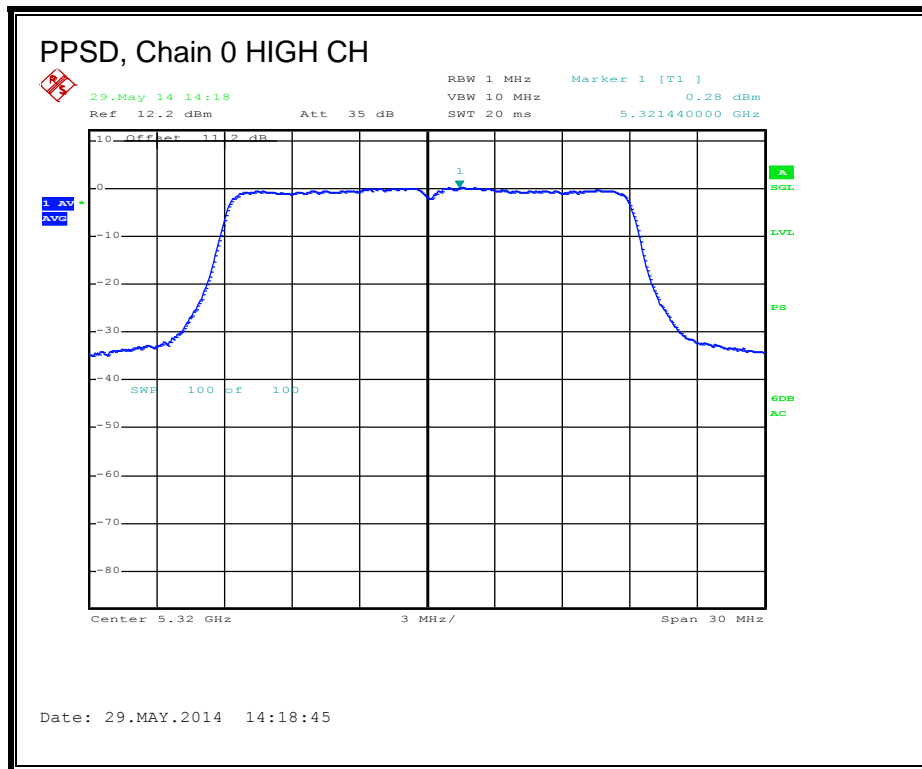
### PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-0.25	-0.48	-0.76	4.50	6.17	-1.67
Mid	5300	0.21	-0.07	0.02	5.05	6.17	-1.12
High	5320	0.28	-0.03	0.03	5.09	6.17	-1.08

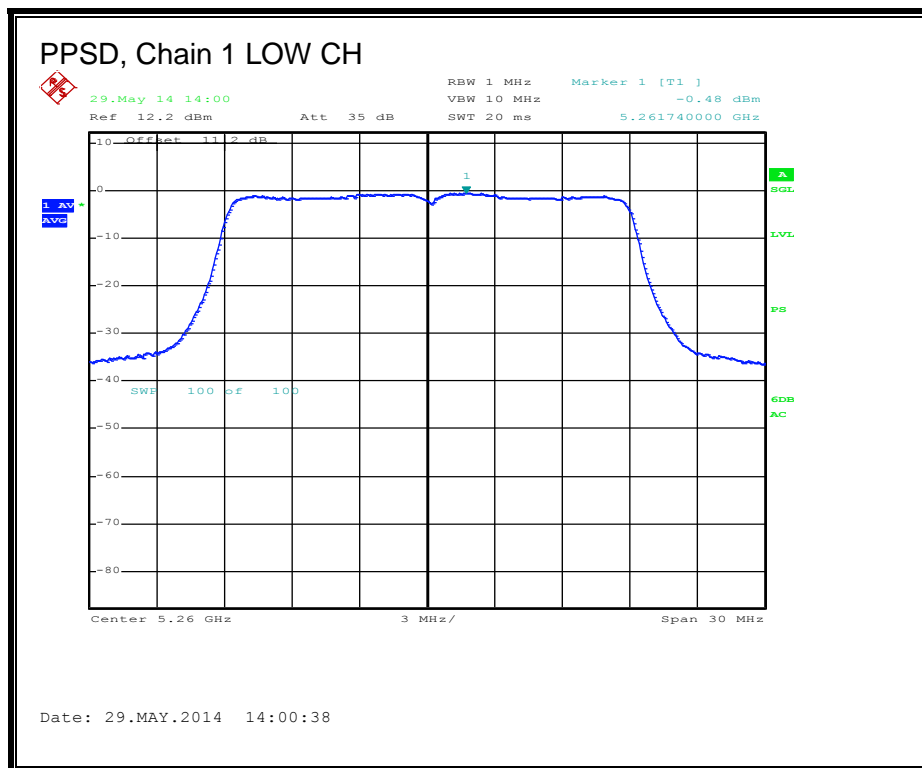
**Note:** 26dB & 99% data & plots, see section 802.11n HT20 CDD 3TX IN THE 5.3GHz BAND.

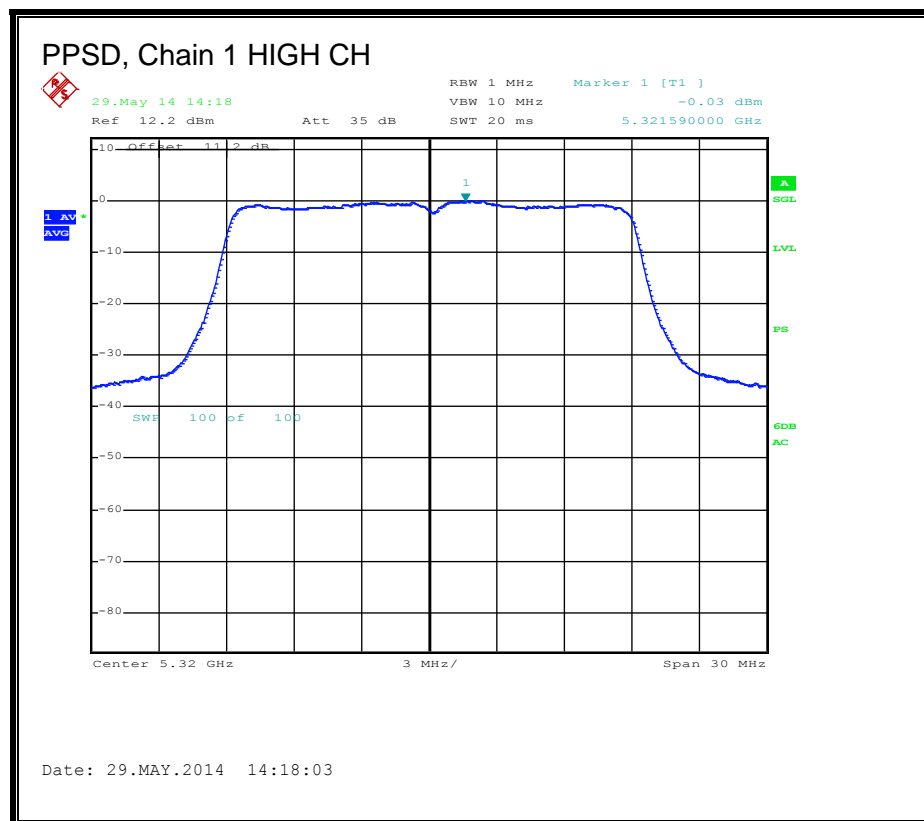
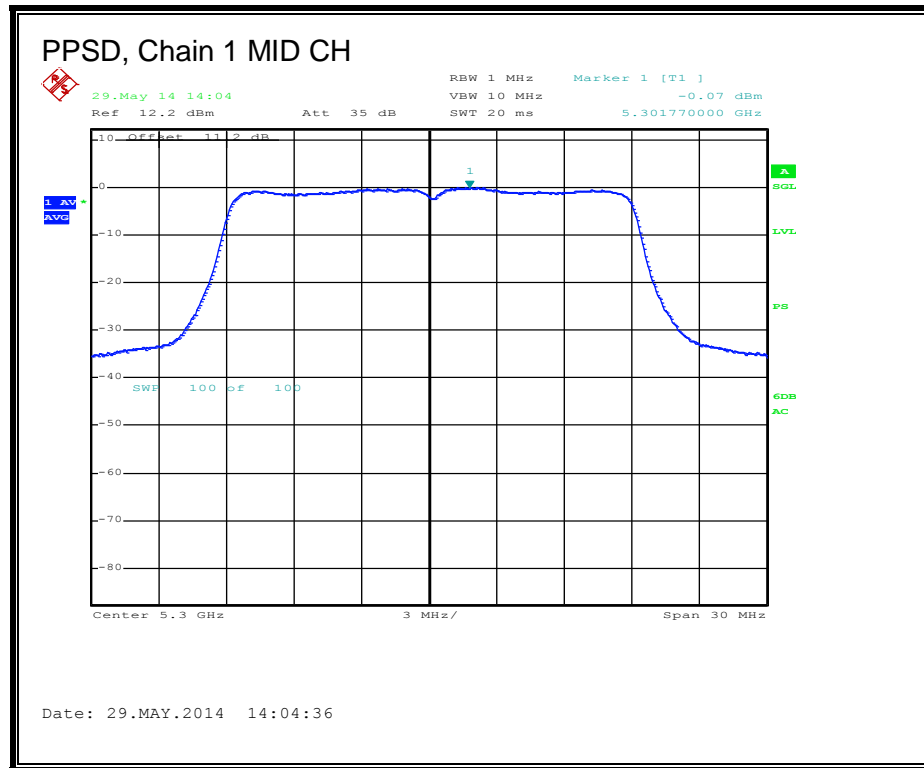
**PPSD, Chain 0**



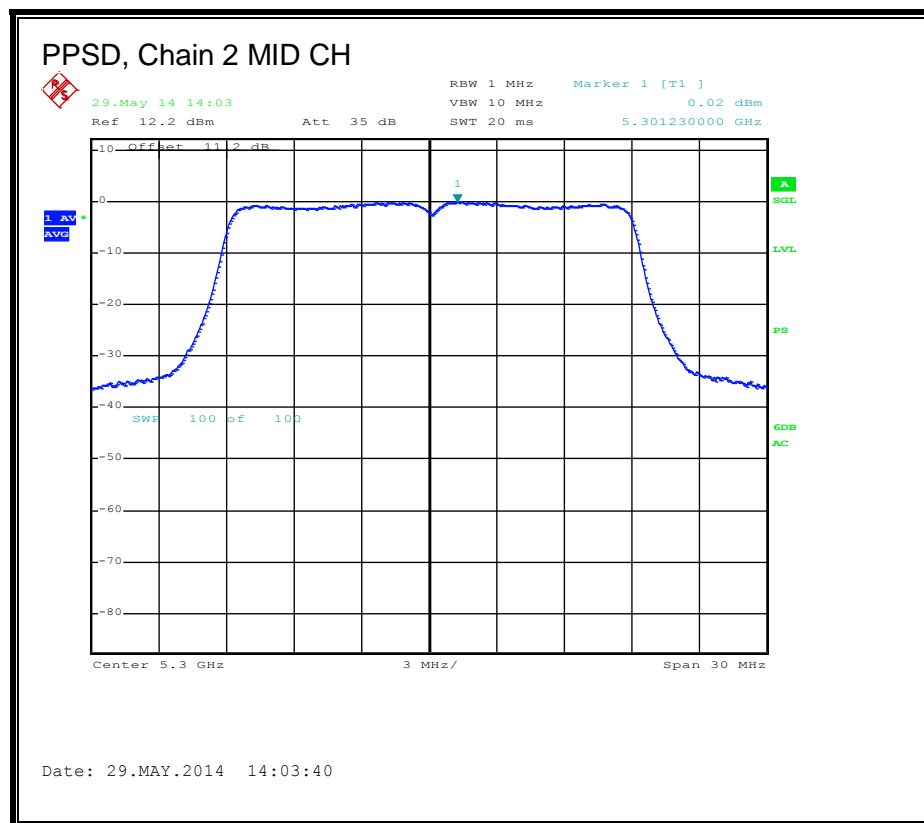
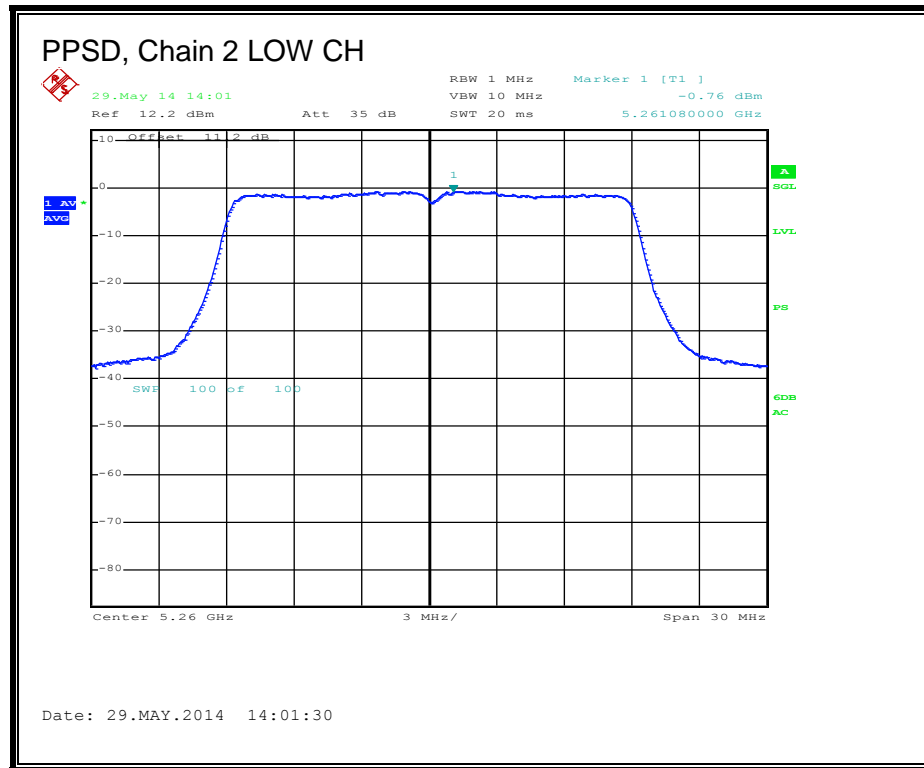


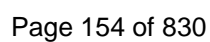
**PPSD, Chain 1**





**PPSD, Chain 2**





### 8.15.1. OUTPUT POWER

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

## RESULTS

### Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
High	5310	57.98	36.1926	7.09

### 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)
High	5310	22.91	24.00	30.00	22.91	9.91	11.00	9.91

### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
High	5310	15.08	15.08	22.91	-7.83

**Note:** for Chain 0, 26dB & 99% data & plots, see section 11n HT40 CDD 3TX MODE IN THE 5.3 GHz BAND



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8.16. **802.11n HT40 CDD 3TX MODE IN THE 5.3 GHz BAND**

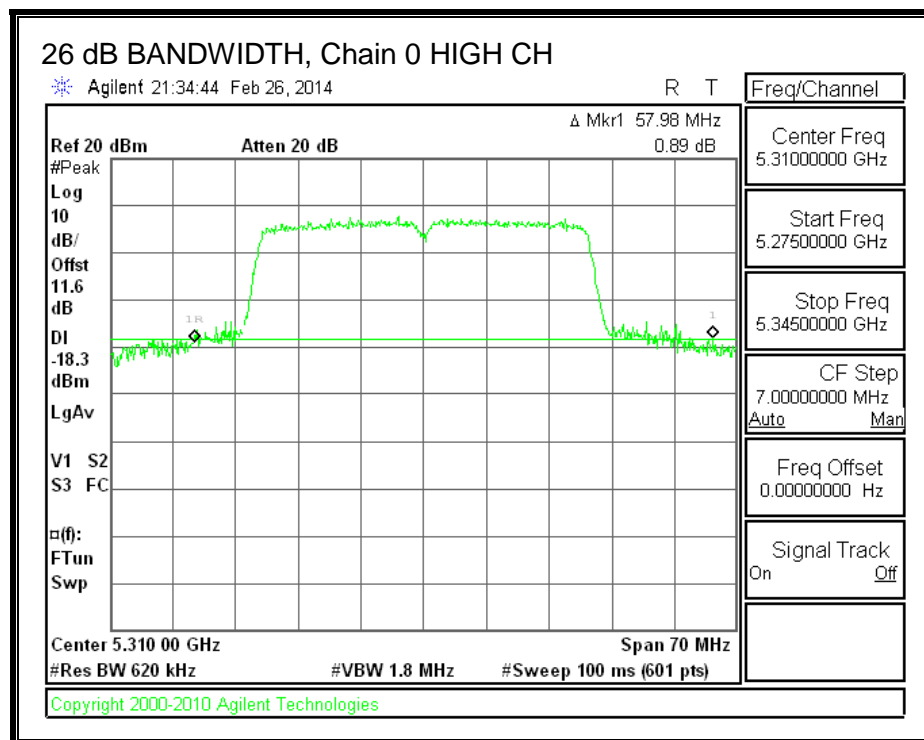
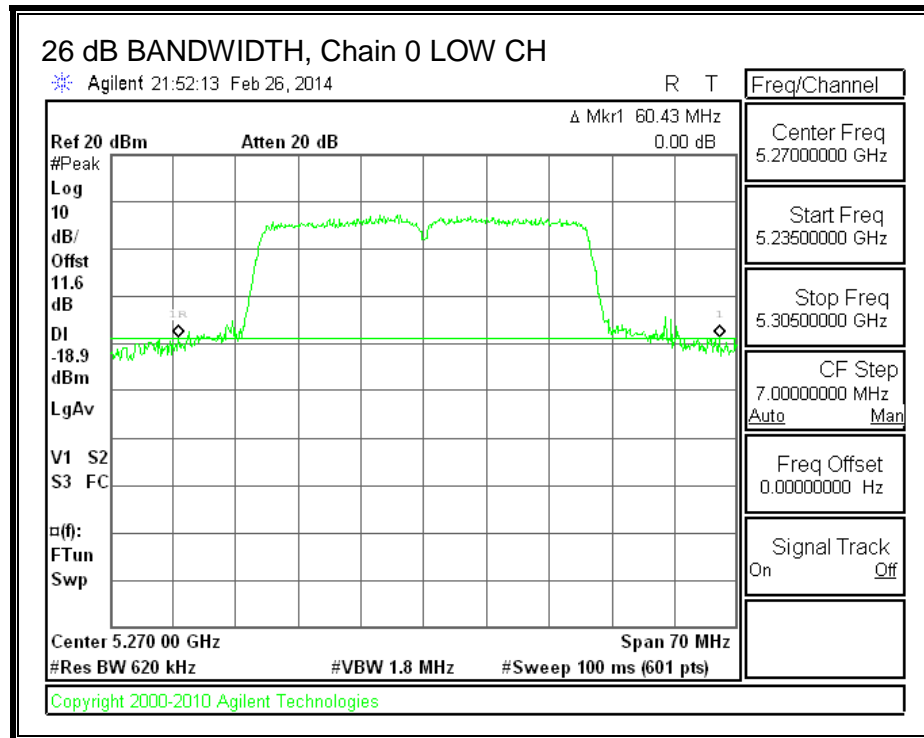
8.16.1. **26 dB BANDWIDTH**

**LIMITS**

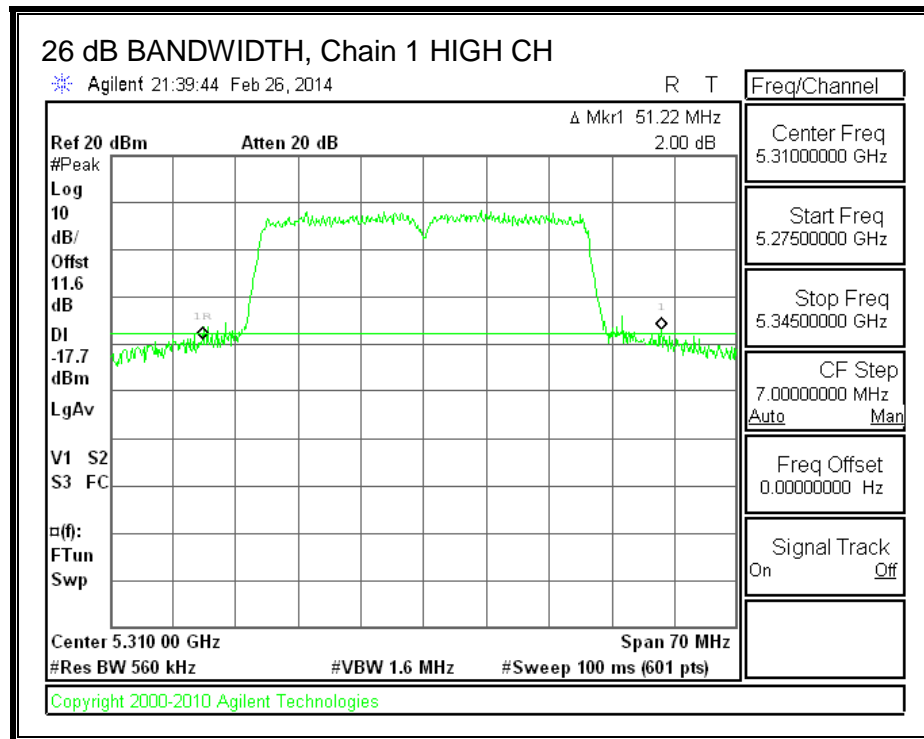
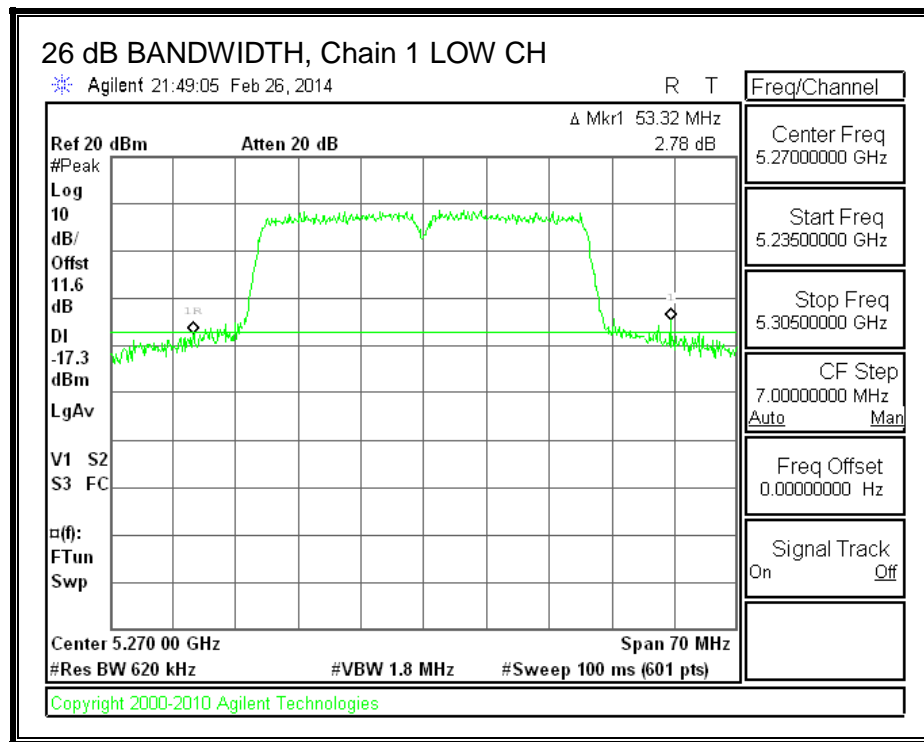
None; for reporting purposes only.

**RESULTS**

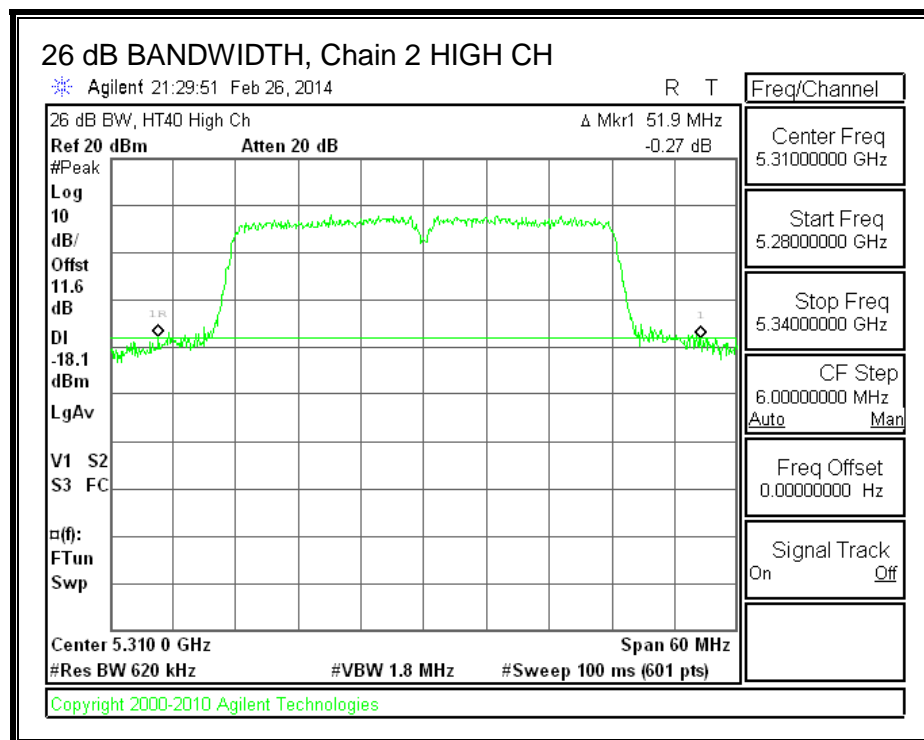
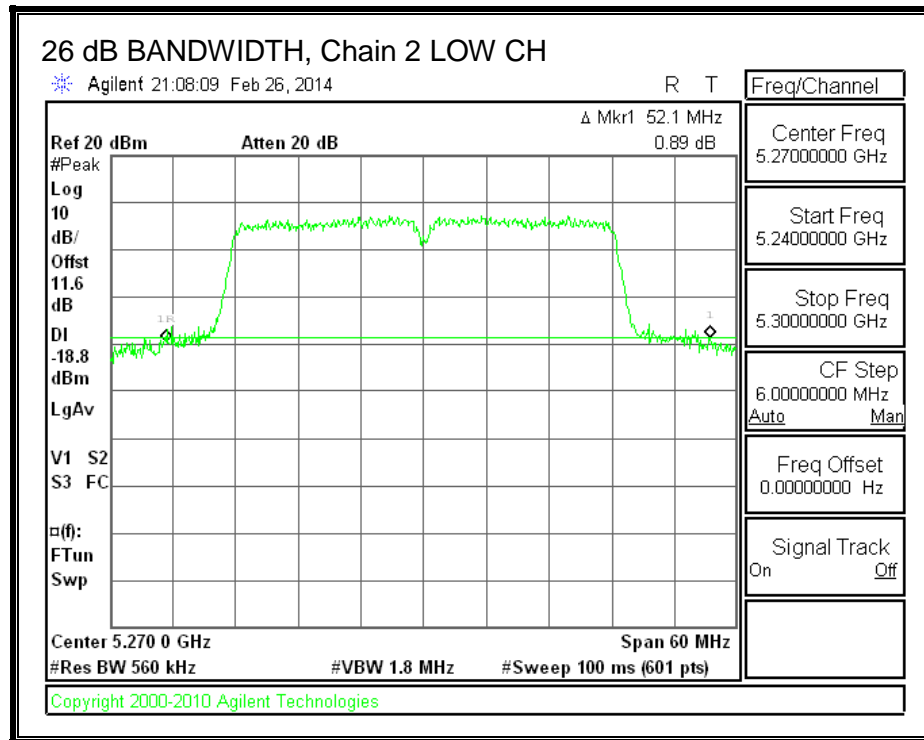
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5270	60.43	53.32	52.10
High	5310	57.98	51.22	51.90

**26 dB BANDWIDTH, Chain 0**

**26 dB BANDWIDTH, Chain 1**



**26 dB BANDWIDTH, Chain 2**



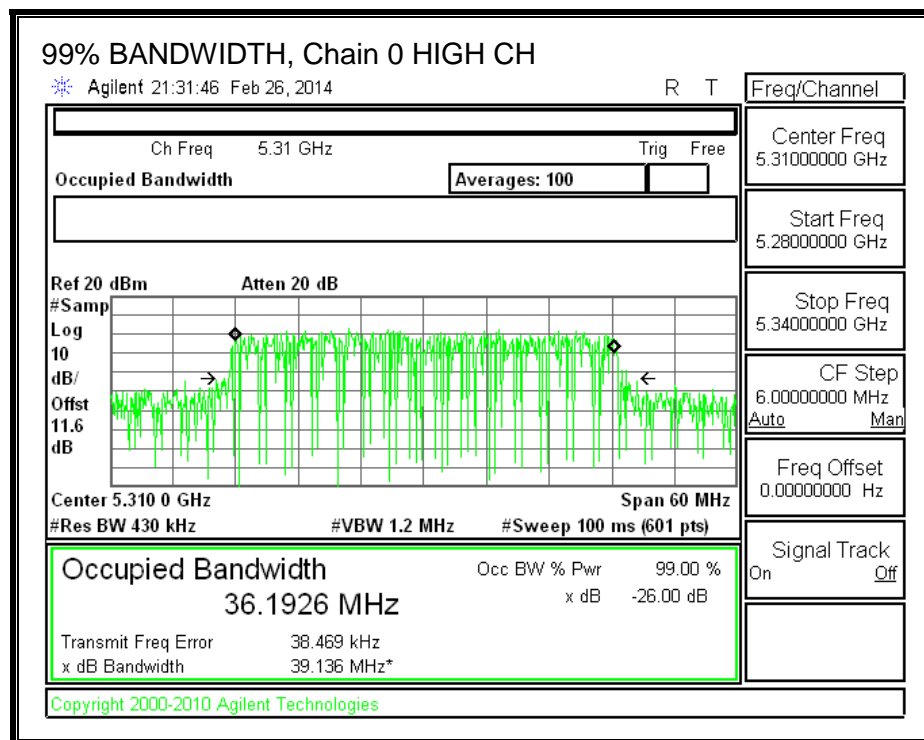
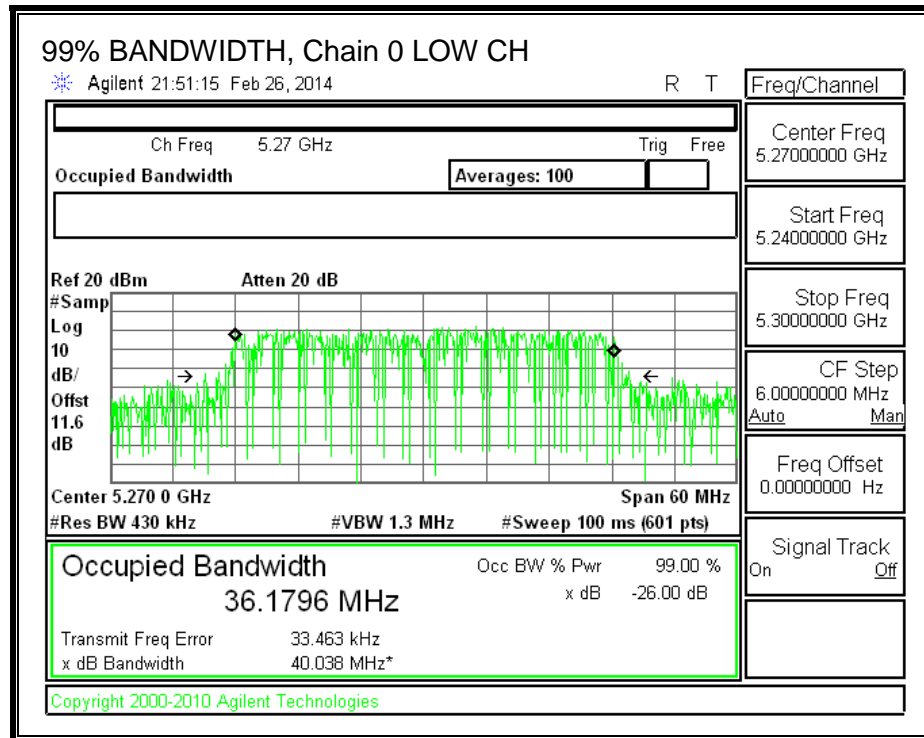
8.16.2. **99% BANDWIDTH**

**LIMITS**

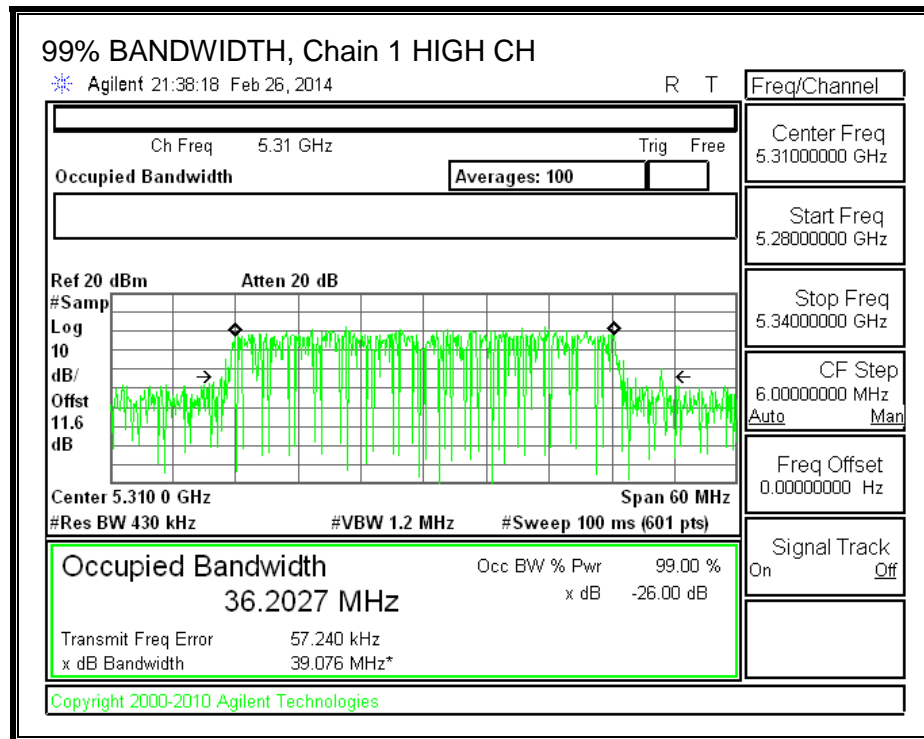
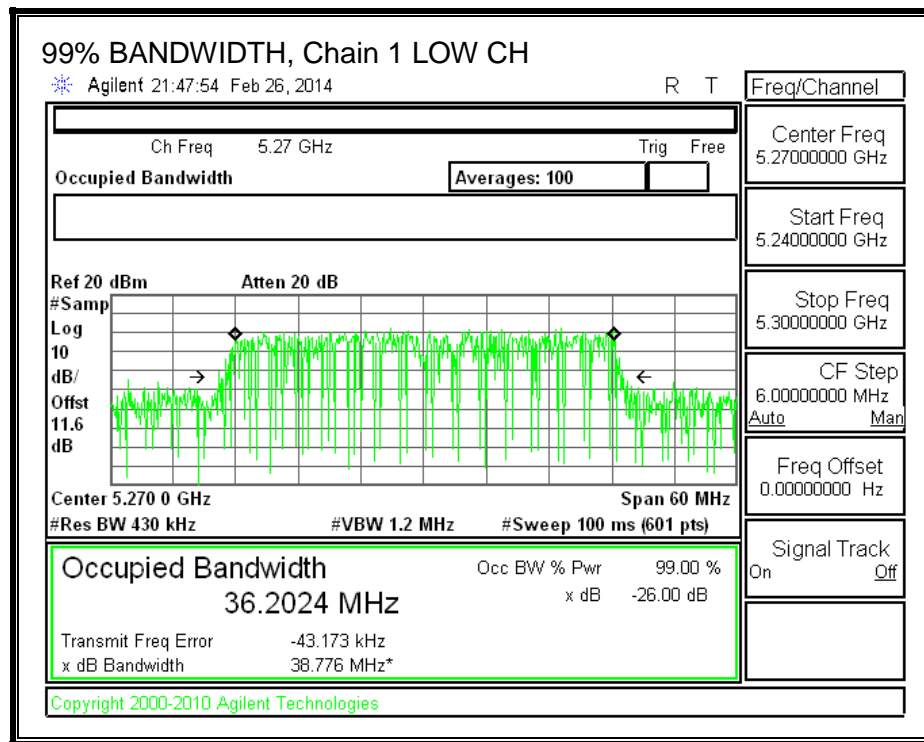
None; for reporting purposes only.

**RESULTS**

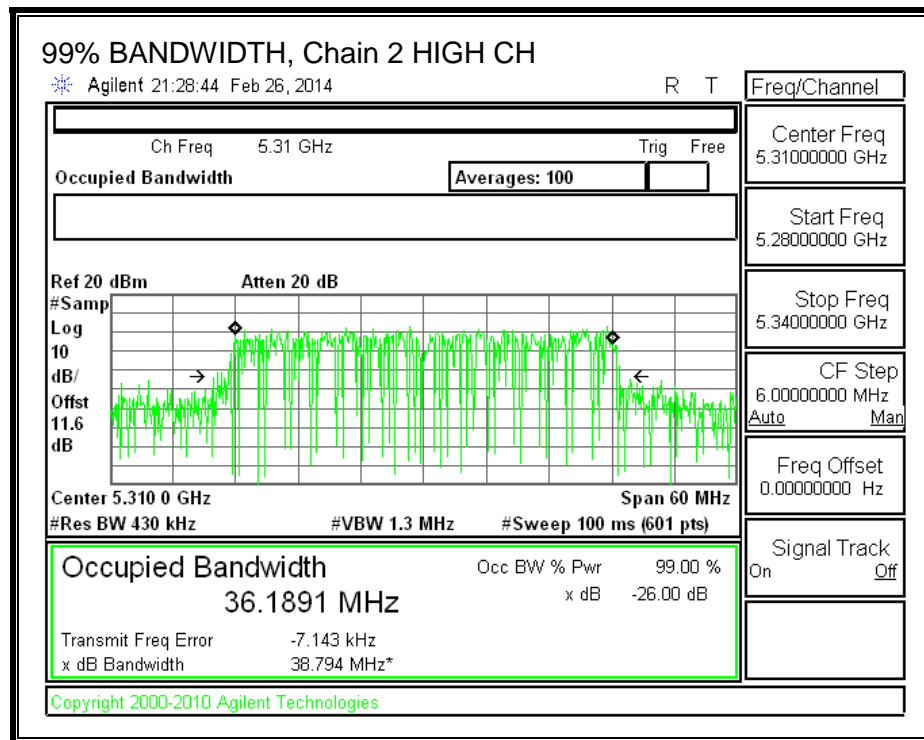
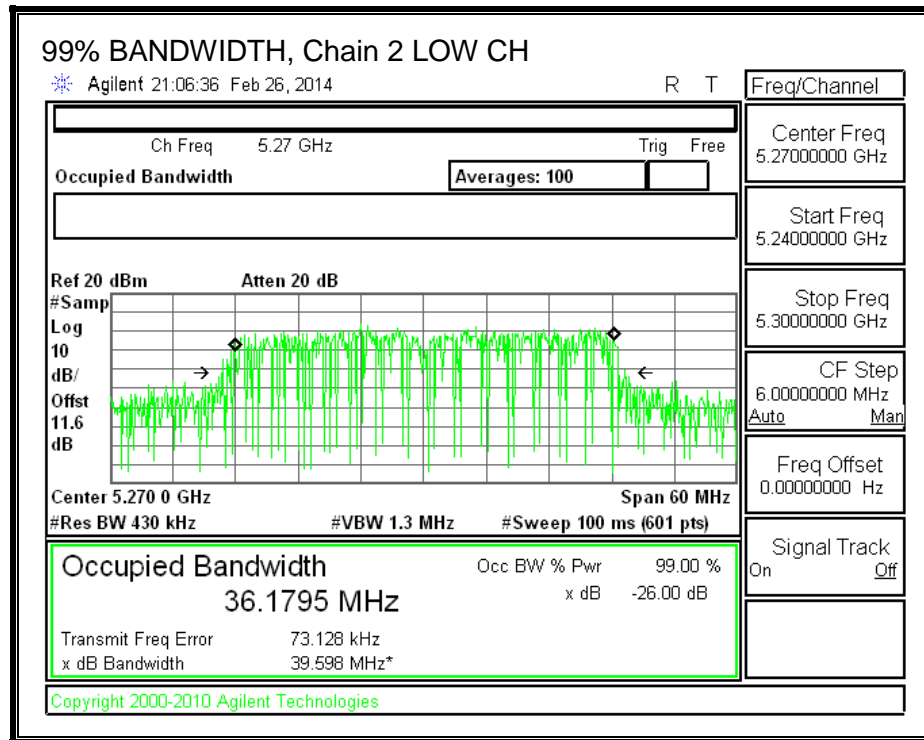
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5270	36.1796	36.2024	36.1795
High	5310	36.1926	36.2027	36.1891

**99% BANDWIDTH, Chain 0**

**99% BANDWIDTH, Chain 1**



**99% BANDWIDTH, Chain 2**





## 8.16.3. OUTPUT POWER AND PPSD

### LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

### DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
7.09	7.06	3.58	6.19

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
7.09	7.06	3.58	10.83

## RESULTS

### 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	5270	52.10	36.1795	6.19	10.83
High	5310	51.22	36.1891	6.19	10.83

### 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	5270	23.81	24.00	30.00	23.81	6.17	11.00	6.17
High	5310	23.81	24.00	30.00	23.81	6.17	11.00	6.17

Duty Cycle CF (dB)	0.47	Included in Calculations of Corr'd PPSD
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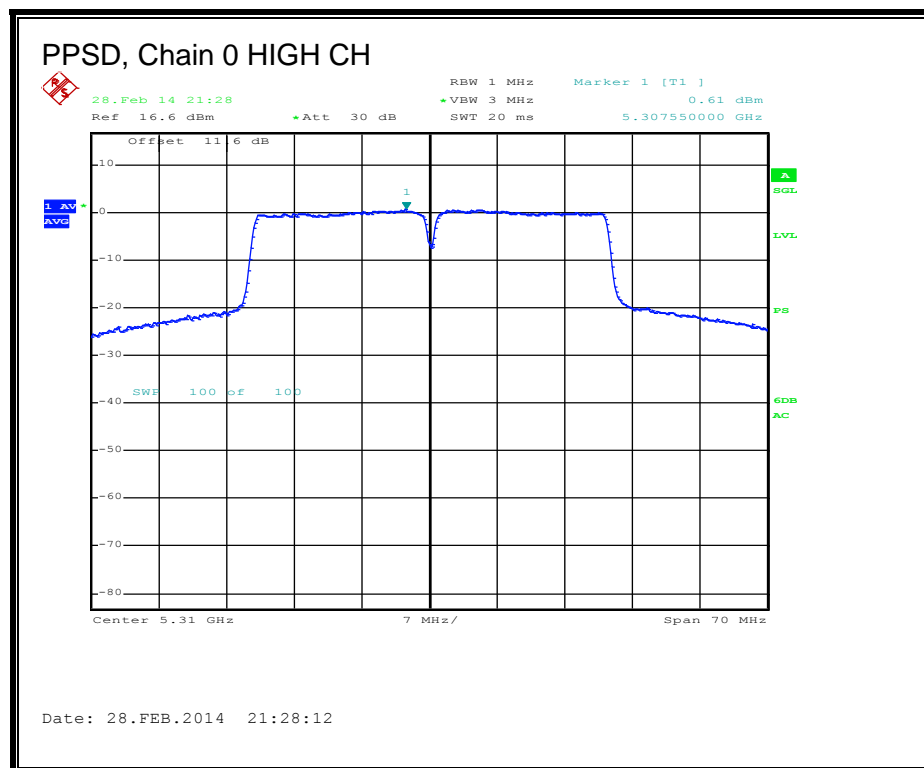
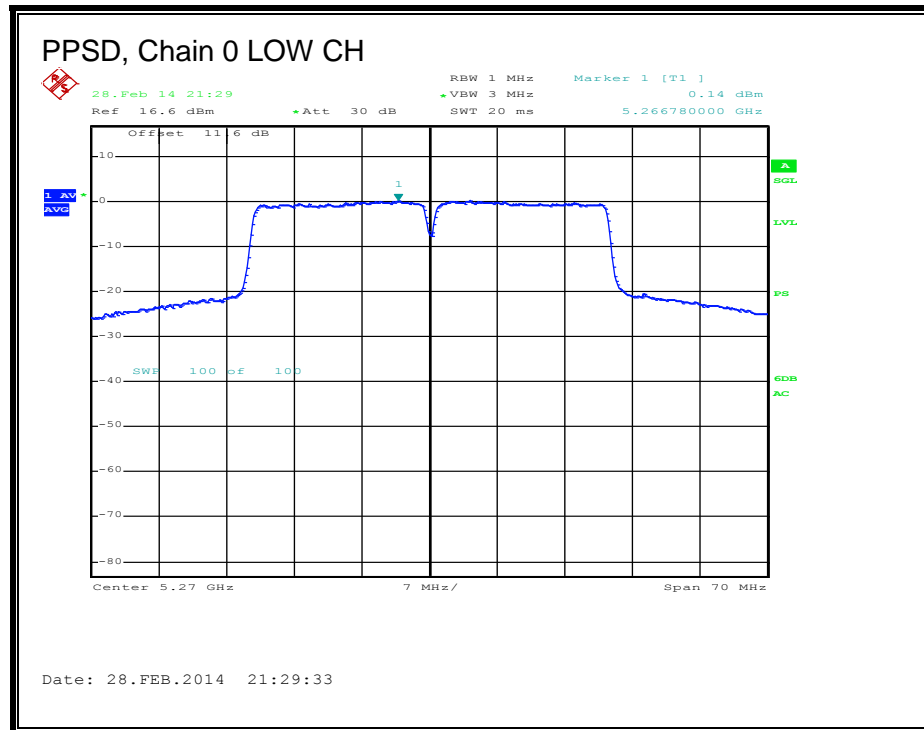
### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	19.09	18.92	18.86	23.73	23.81	-0.08
High	5310	12.53	12.55	12.60	17.33	23.81	-6.48

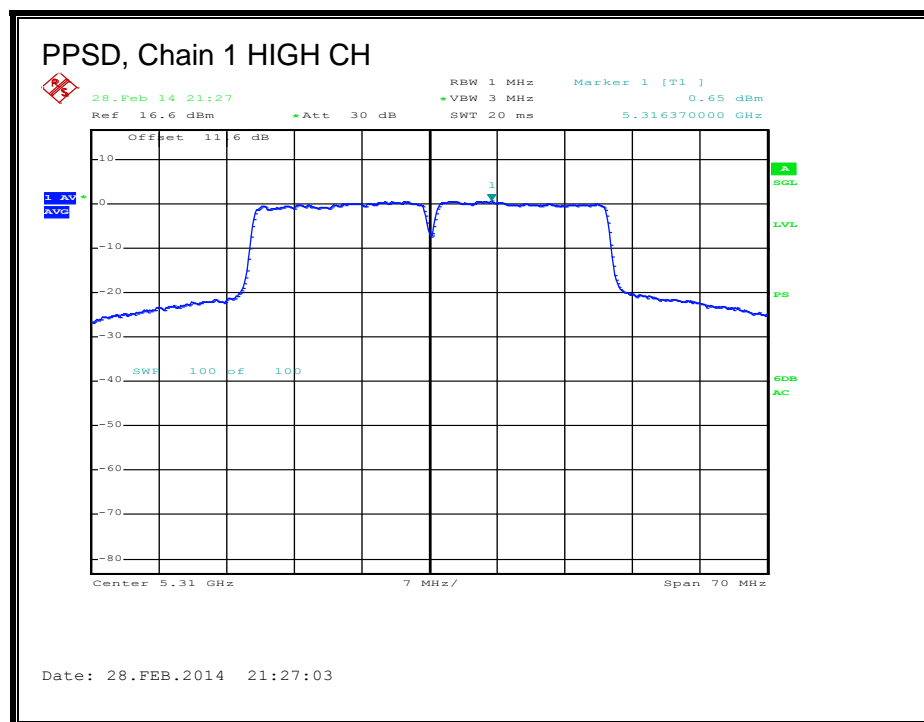
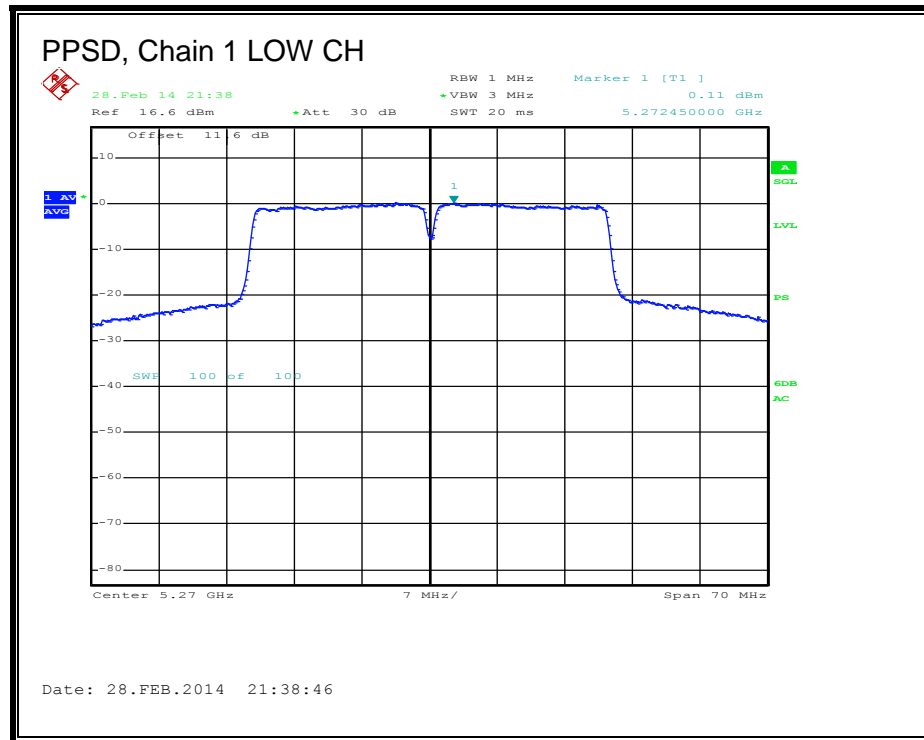
### PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	0.14	0.11	-0.23	5.25	6.17	-0.92
High	5310	0.61	0.65	0.43	5.81	6.17	-0.36

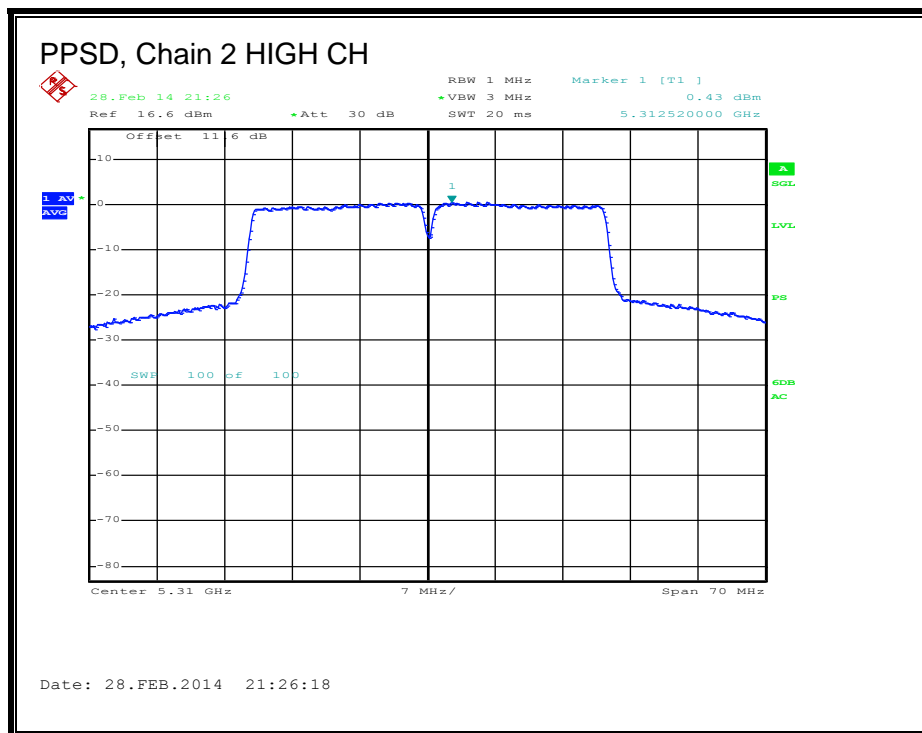
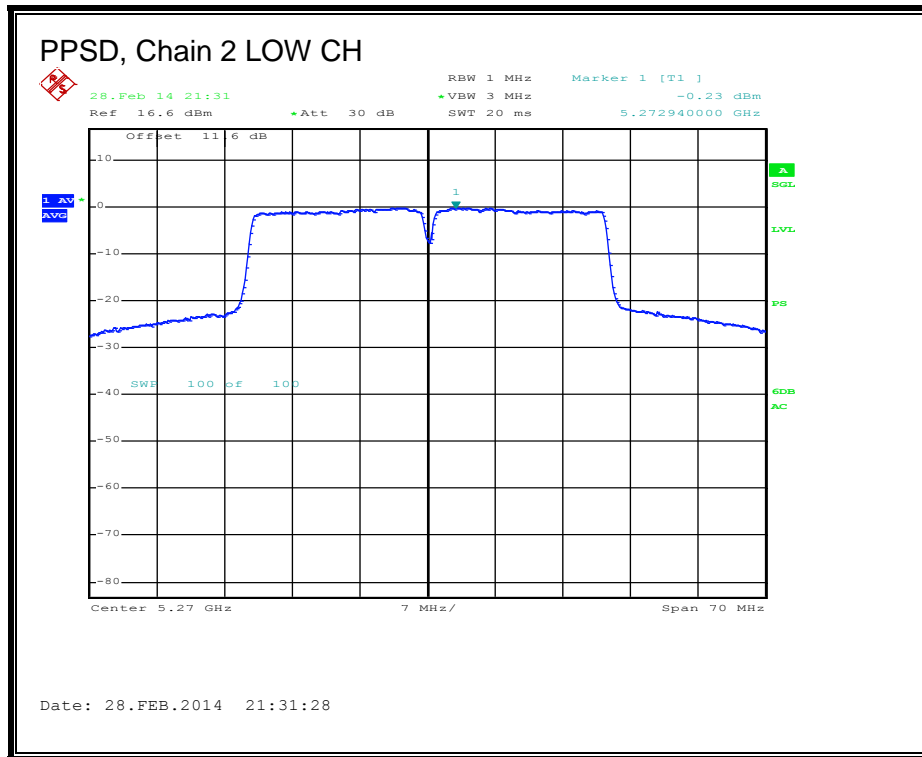
**PPSD, Chain 0**



**PPSD, Chain 1**



**PPSD, Chain 2**



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8.17. **802.11n HT40 BF 3TX MODE IN THE 5.3 GHz BAND**

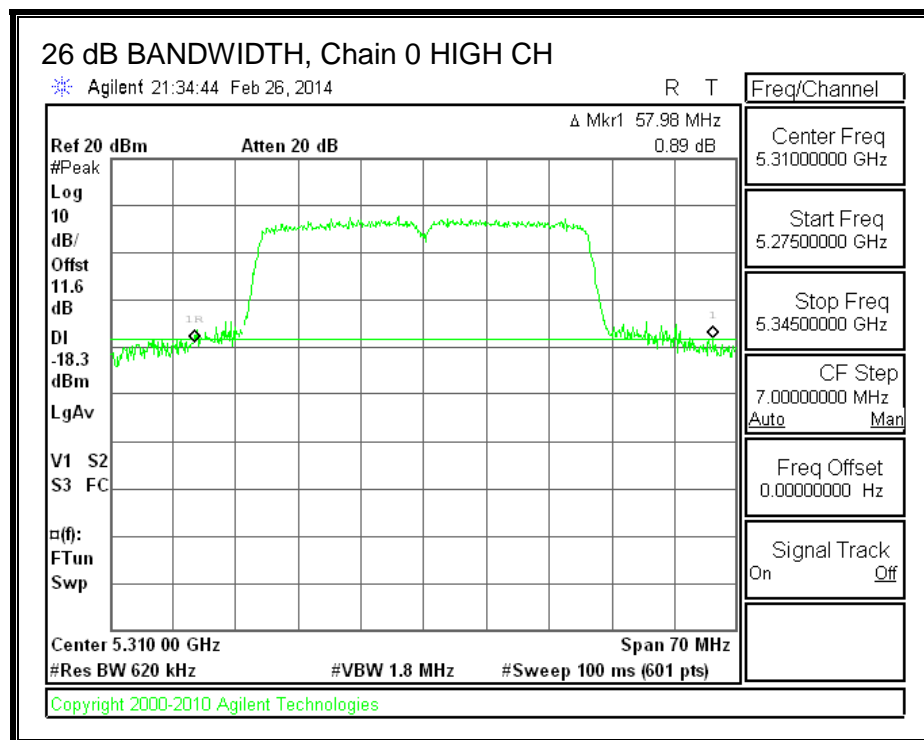
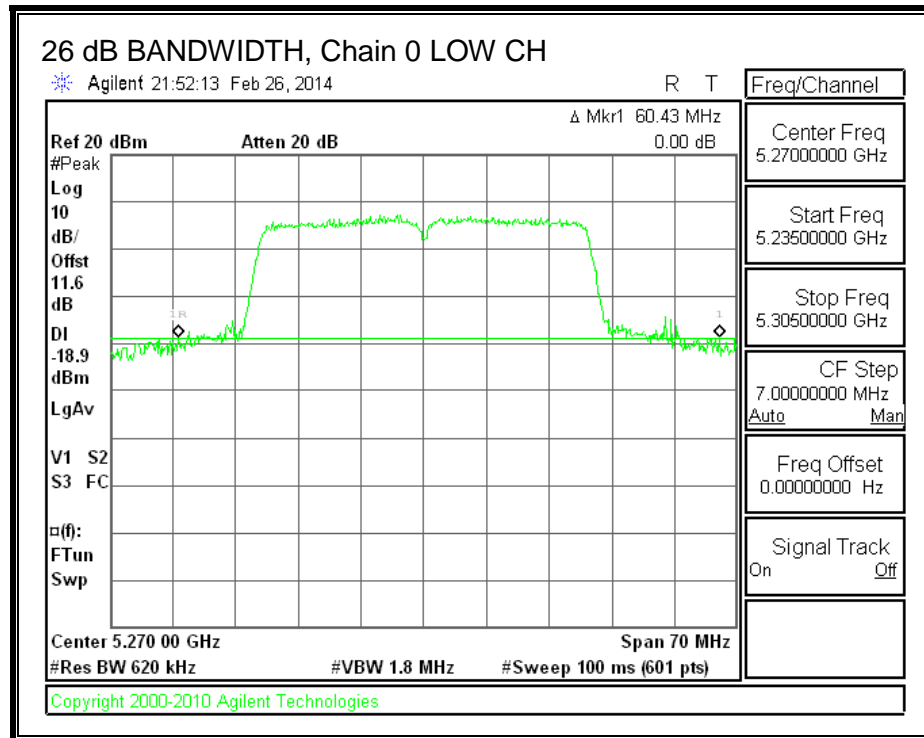
8.17.1. **26 dB BANDWIDTH**

**LIMITS**

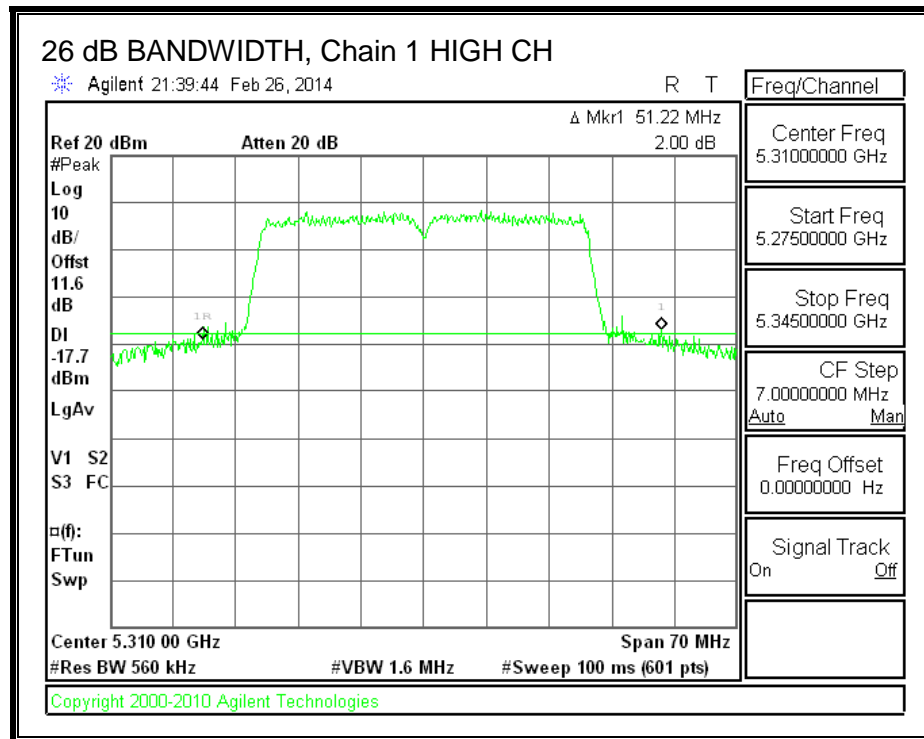
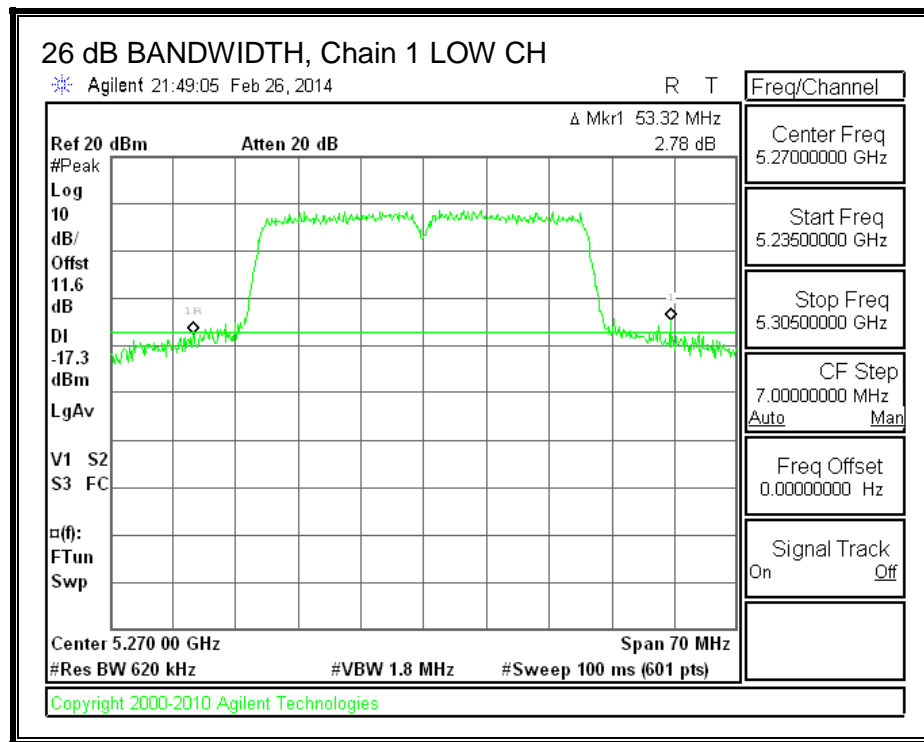
None; for reporting purposes only.

**RESULTS**

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5270	60.43	53.32	52.10
High	5310	57.98	51.22	51.90

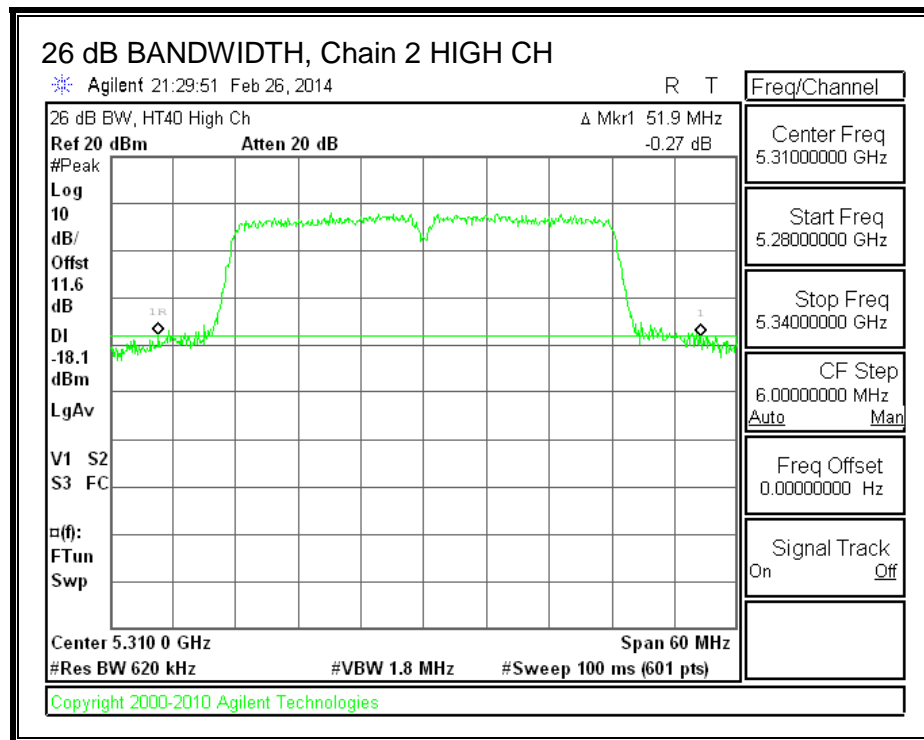
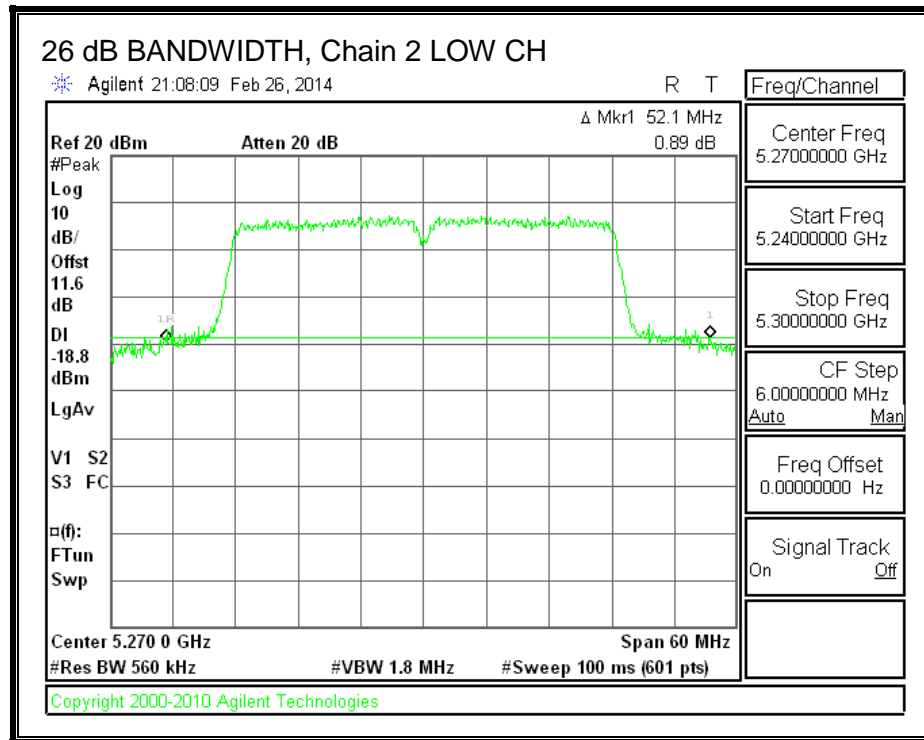


**26 dB BANDWIDTH, Chain 1**





**26 dB BANDWIDTH, Chain 2**



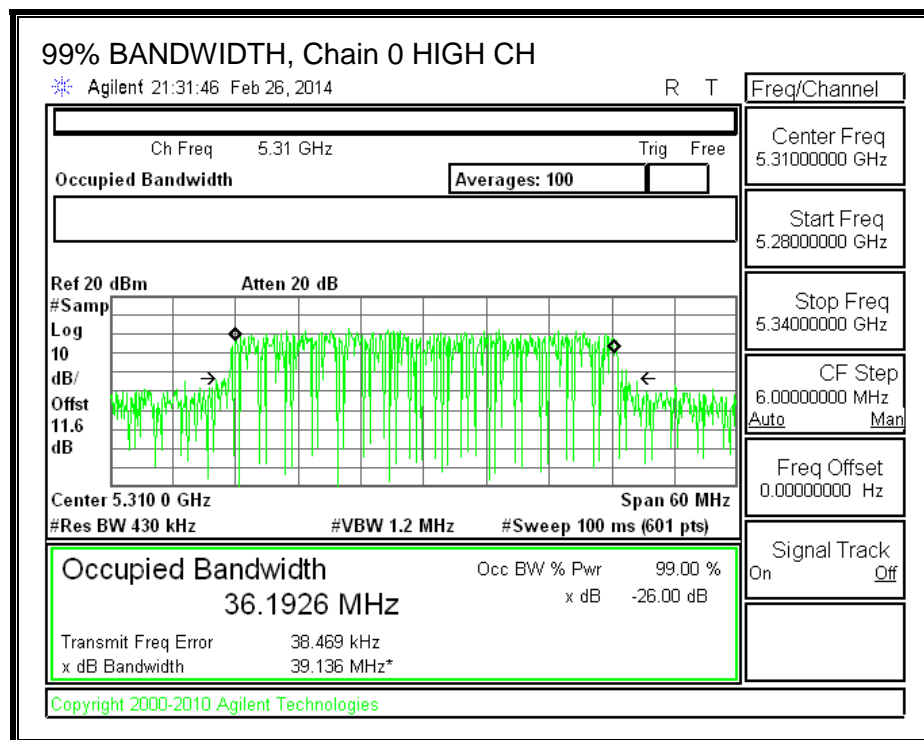
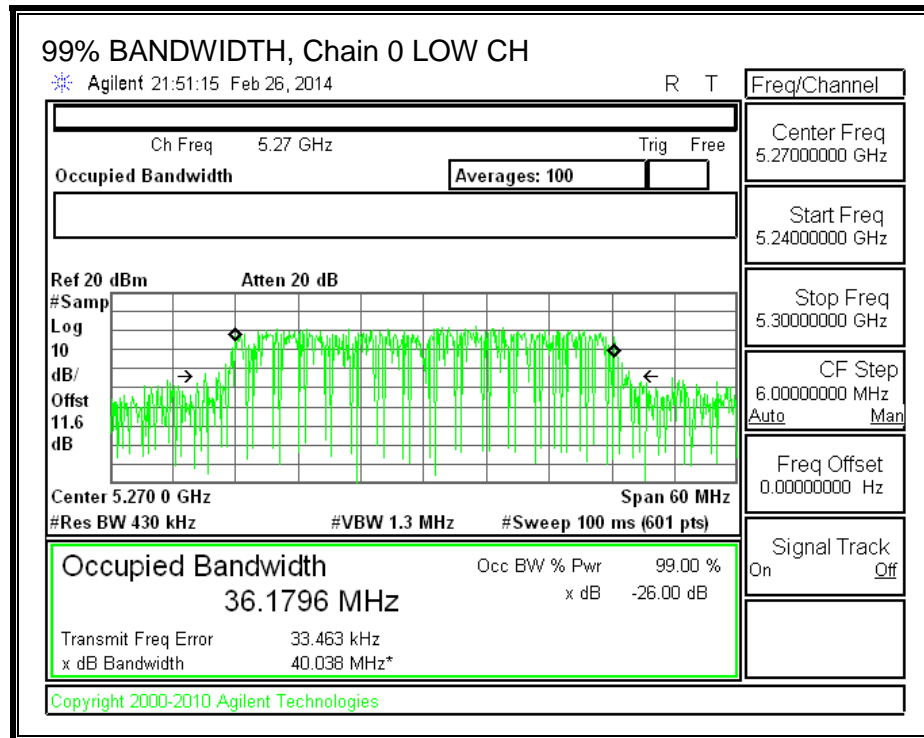
8.17.2. **99% BANDWIDTH**

**LIMITS**

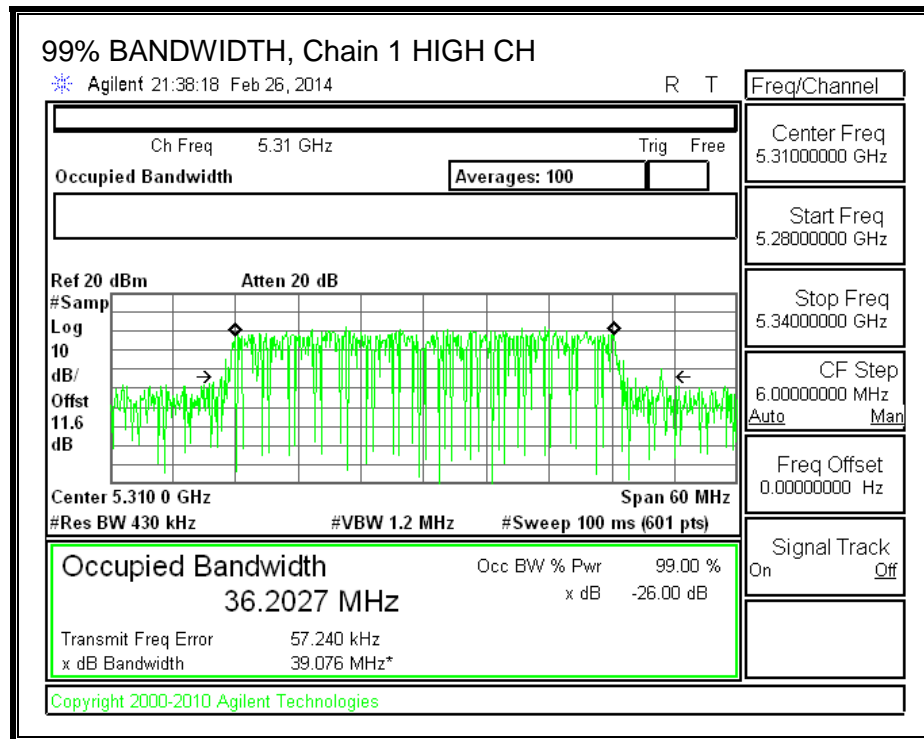
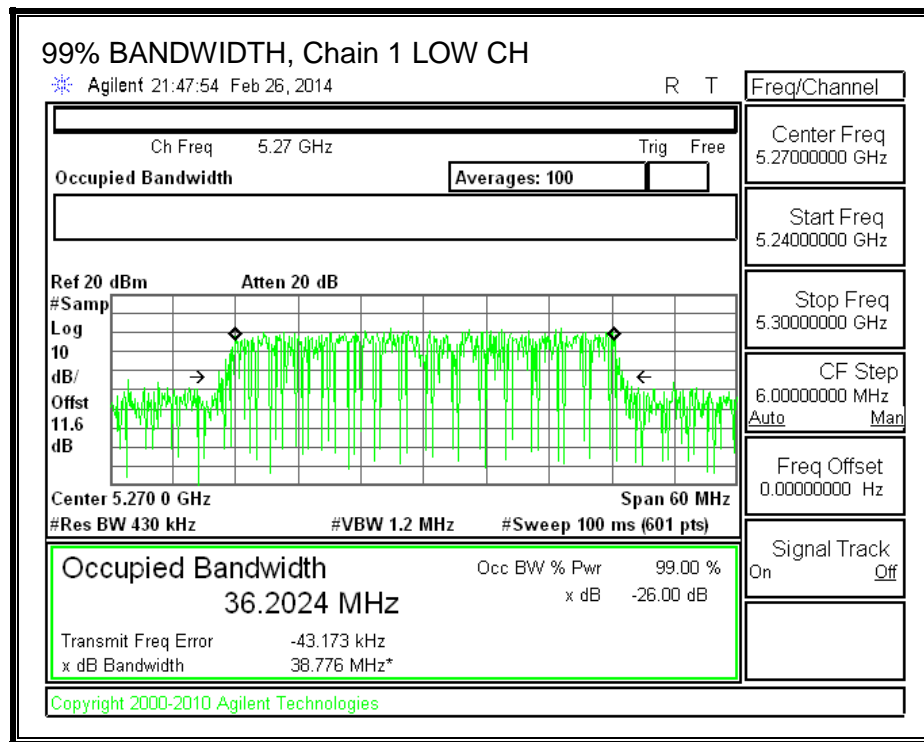
None; for reporting purposes only.

**RESULTS**

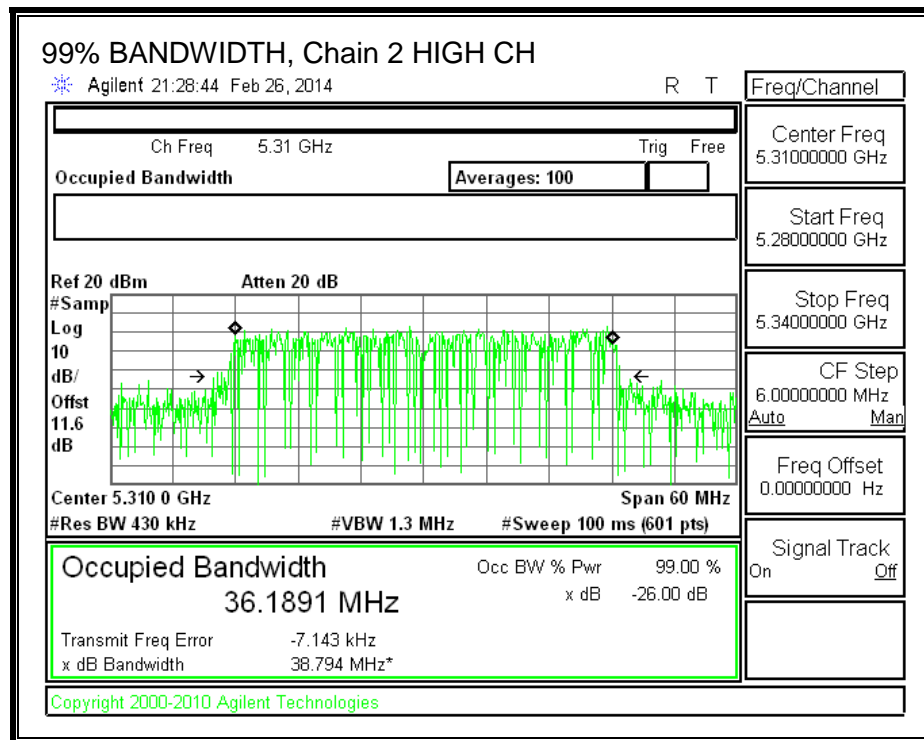
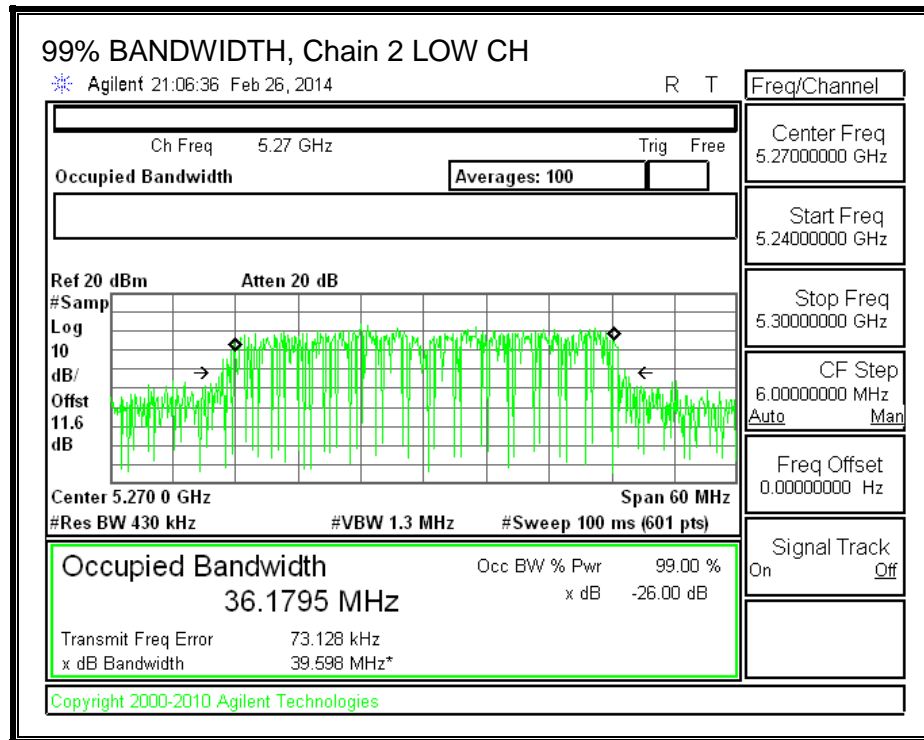
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5270	36.1796	36.2024	36.1795
High	5310	36.1926	36.2027	36.1891

**99% BANDWIDTH, Chain 0**

**99% BANDWIDTH, Chain 1**



**99% BANDWIDTH, Chain 2**



### 8.17.3. OUTPUT POWER AND PPSD

#### **LIMITS**

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

#### **DIRECTIONAL ANTENNA GAIN**

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
7.09	7.06	3.58	10.83

## RESULTS

### 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	5270	52.10	36.1795	10.83	10.83
High	5310	51.22	36.1891	10.83	10.83

### 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	5270	19.17	24.00	30.00	19.17	6.17	11.00	6.17
High	5310	19.17	24.00	30.00	19.17	6.17	11.00	6.17

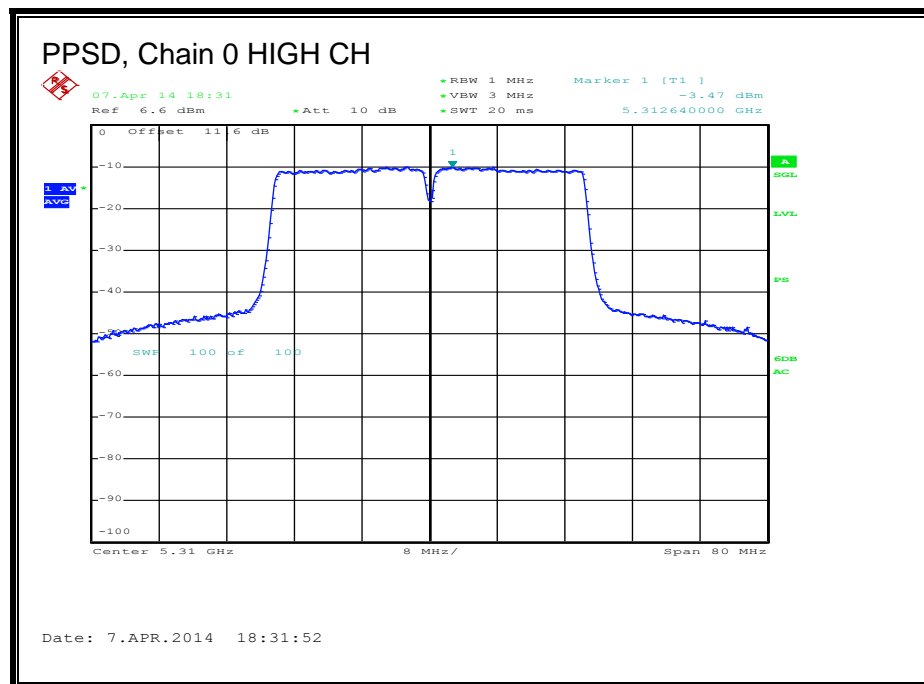
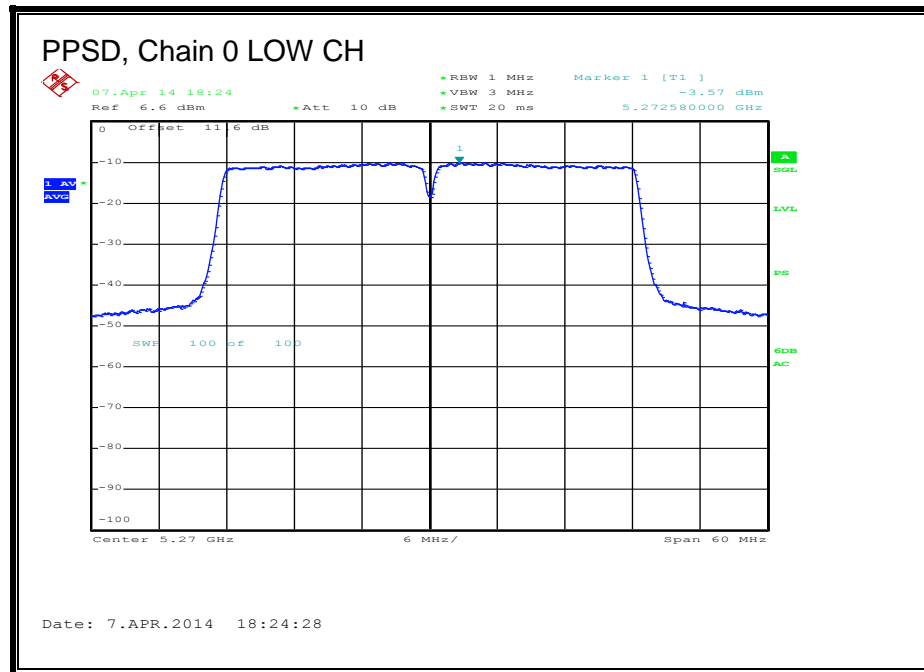
Duty Cycle CF (dB)	0.47	Included in Calculations of Corr'd PPSD
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### Output Power Results

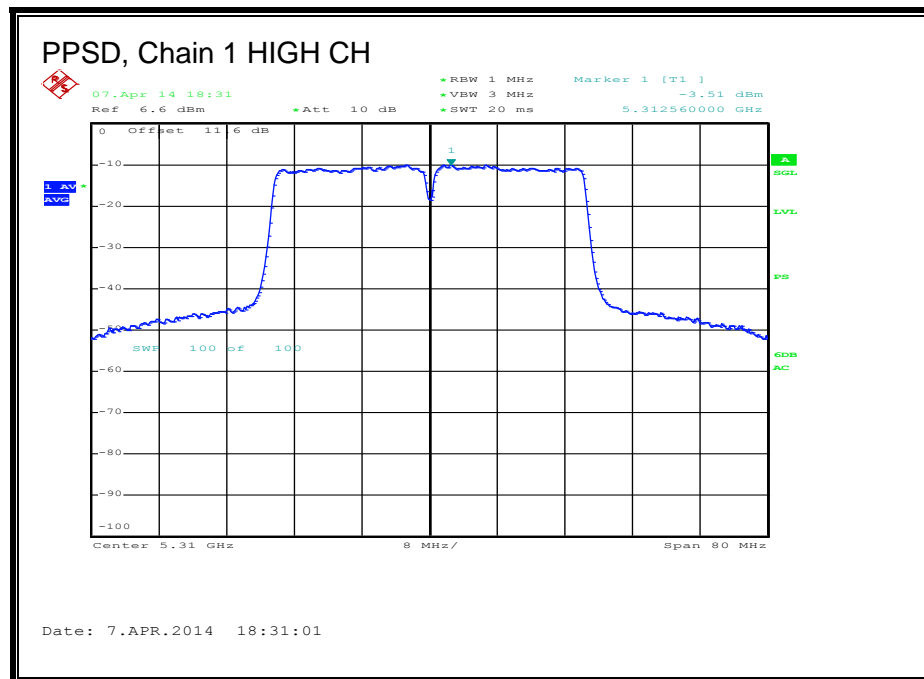
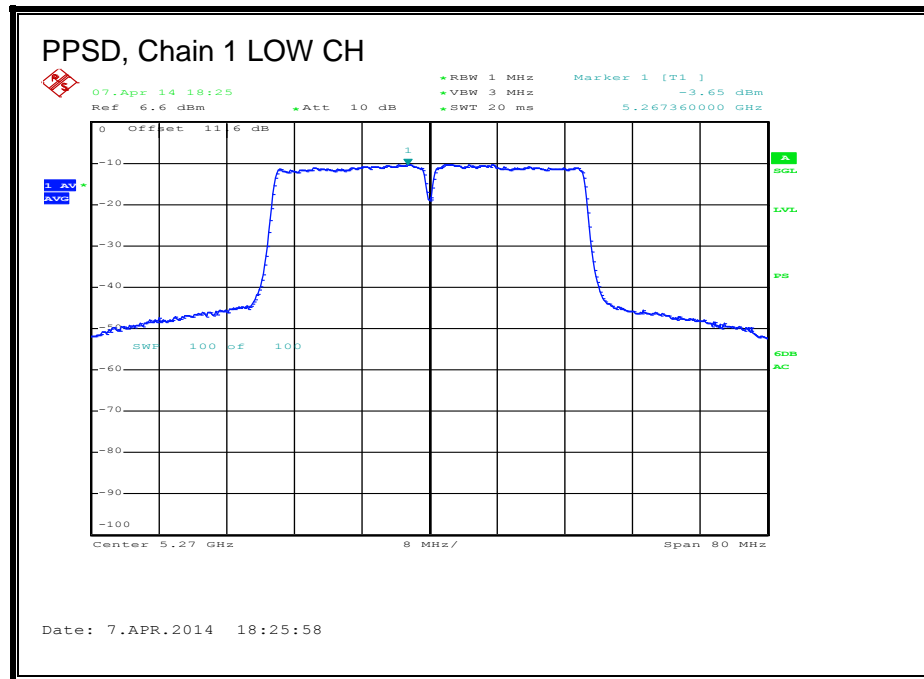
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	14.33	14.28	14.22	19.05	19.17	-0.12
High	5310	12.10	11.90	11.70	16.67	19.17	-2.50

### PPSD Results

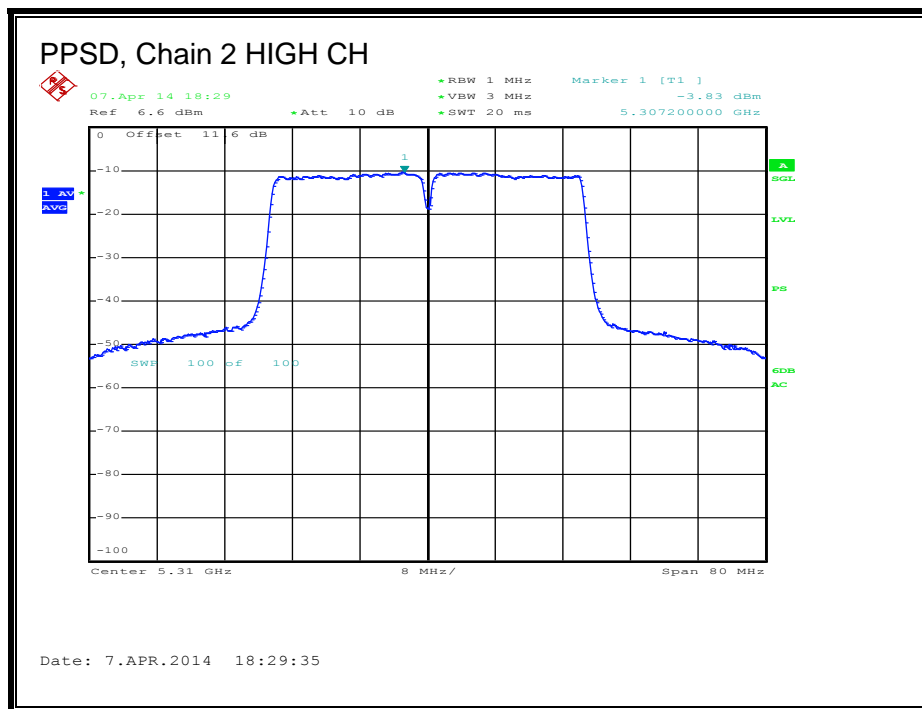
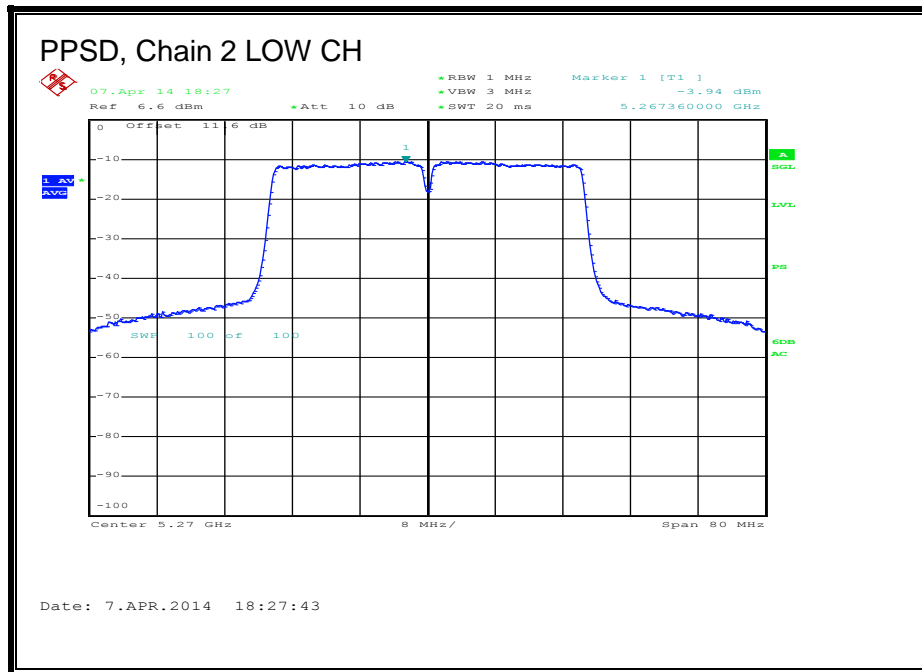
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-3.57	-3.65	-3.94	1.52	6.17	-4.65
High	5310	-3.47	-3.51	-3.83	1.64	6.17	-4.53

**PPSD, Chain 0**



**PPSD, Chain 1**

**PPSD, Chain 2**



## 8.18. **802.11ac VHT80 1TX MODE IN THE 5.3GHz BAND**

### 8.18.1. **OUTPUT POWER**

#### **LIMITS**

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

#### **DIRECTIONAL ANTENNA GAIN**

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

## **RESULTS**

### **Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
MID	5290	83.00	75.4523	7.09

### **Limits**

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
MID	5290	22.91	24.00	30.00	22.91

### **Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
MID	5290	13.83	13.83	22.91	-9.08

**Note:** for Chain 0, 26dB & 99% data & plots, see section 802.11n HT80 CDD 3TX MODE IN THE 5.3 GHz BAND

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8.19. **802.11ac VHT80 CDD 3TX MODE IN THE 5.3 GHz BAND**

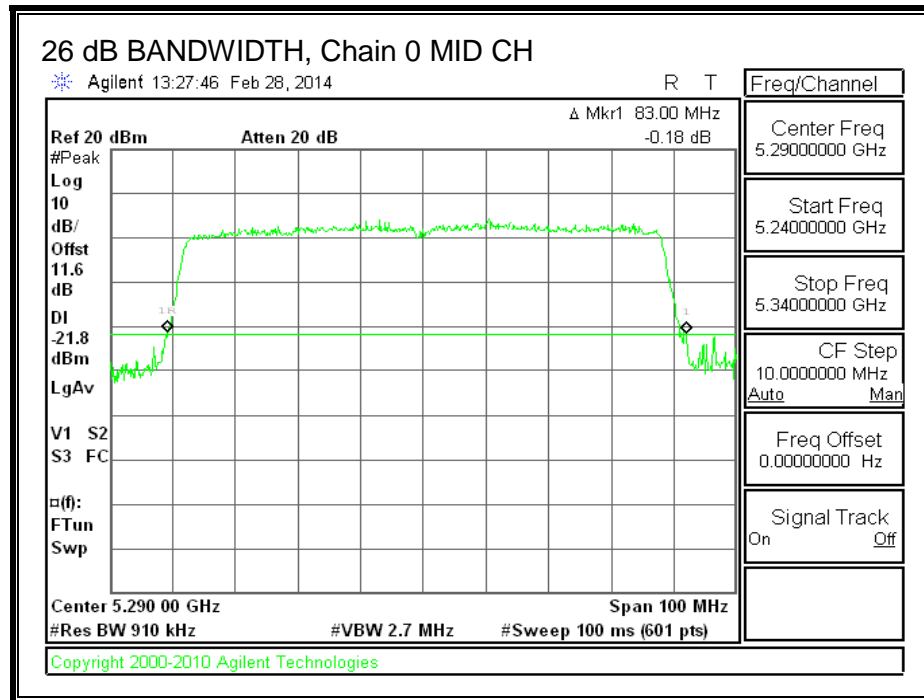
8.19.1. **26 dB BANDWIDTH**

**LIMITS**

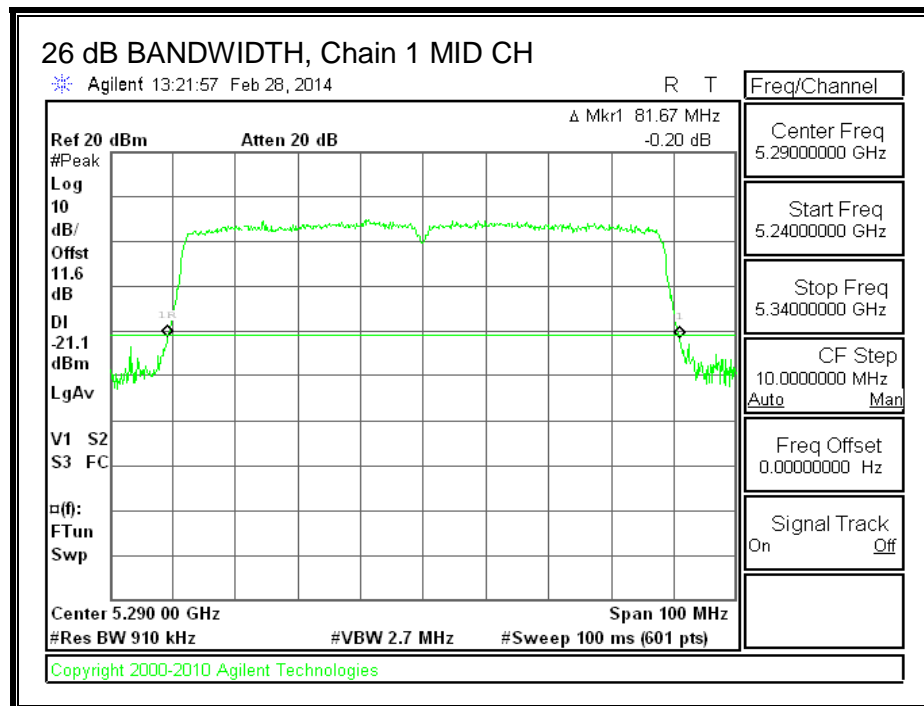
None; for reporting purposes only.

**RESULTS**

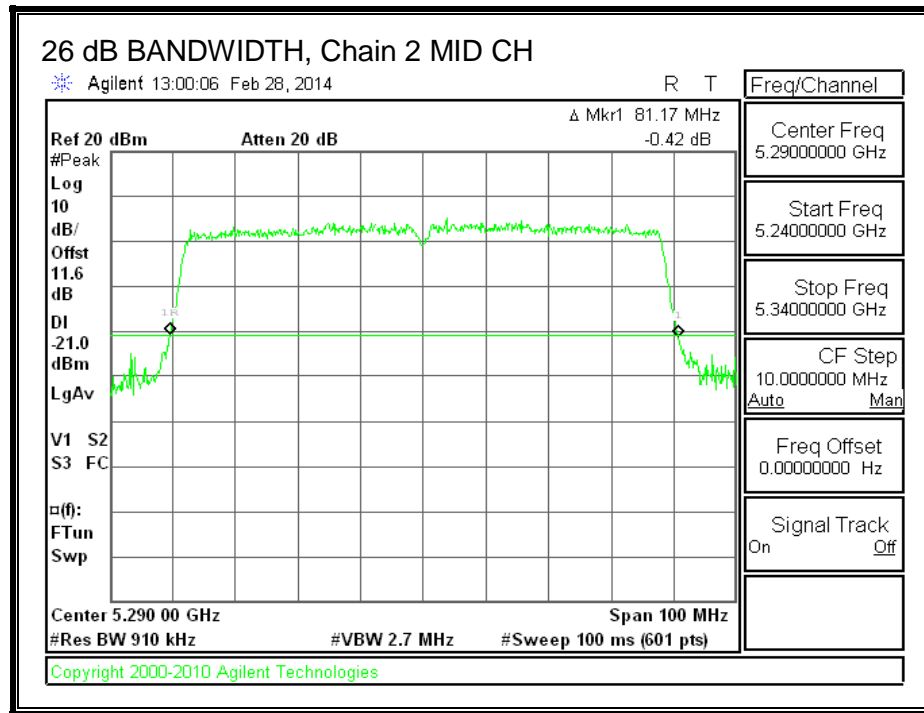
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Mid	5290	83.00	81.67	81.17



**26 dB BANDWIDTH, Chain 1**



**26 dB BANDWIDTH, Chain 2**



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8.19.2. **99% BANDWIDTH**

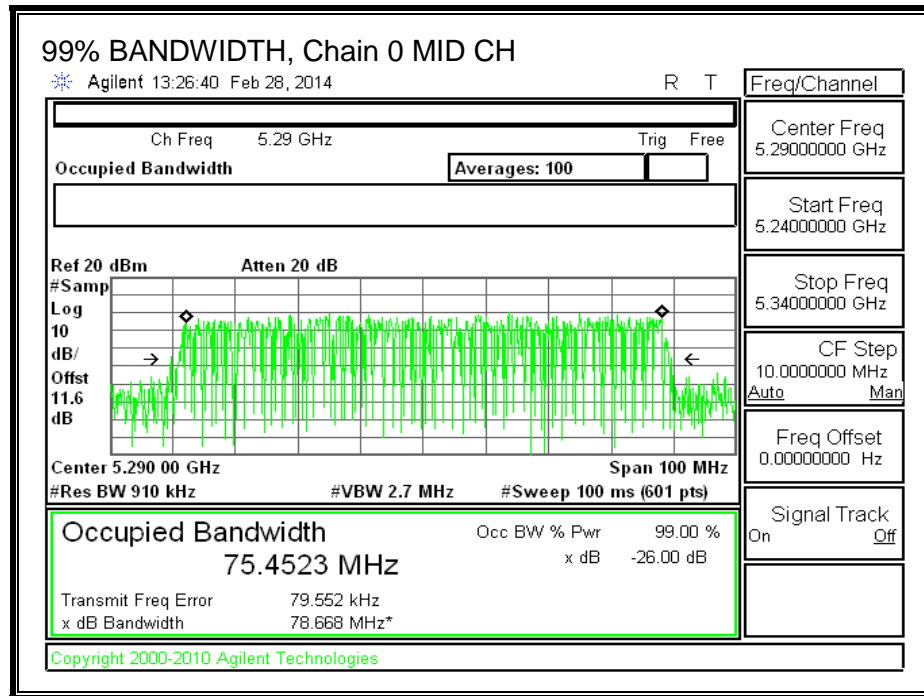
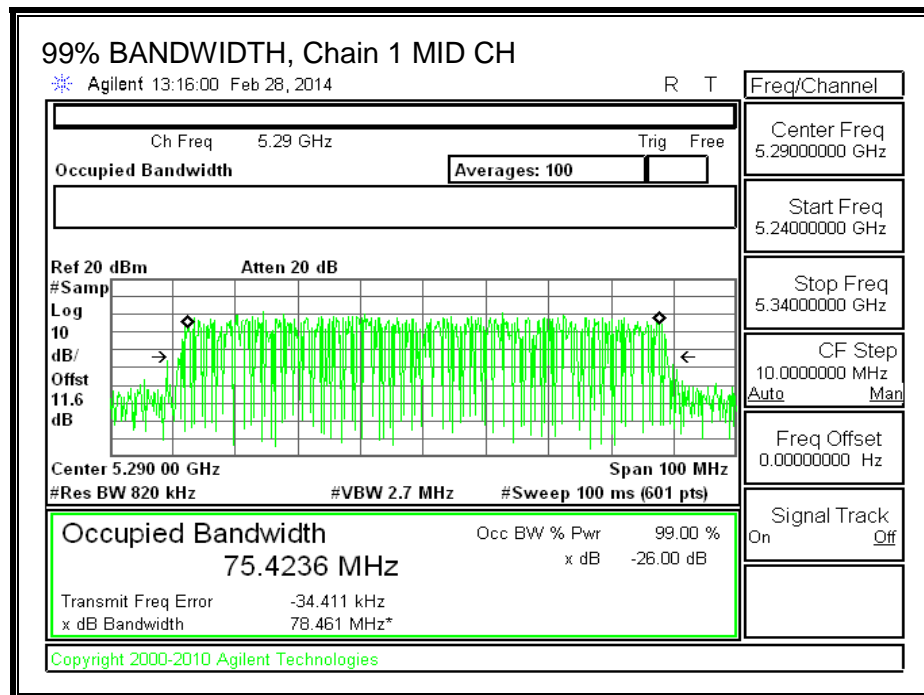
**LIMITS**

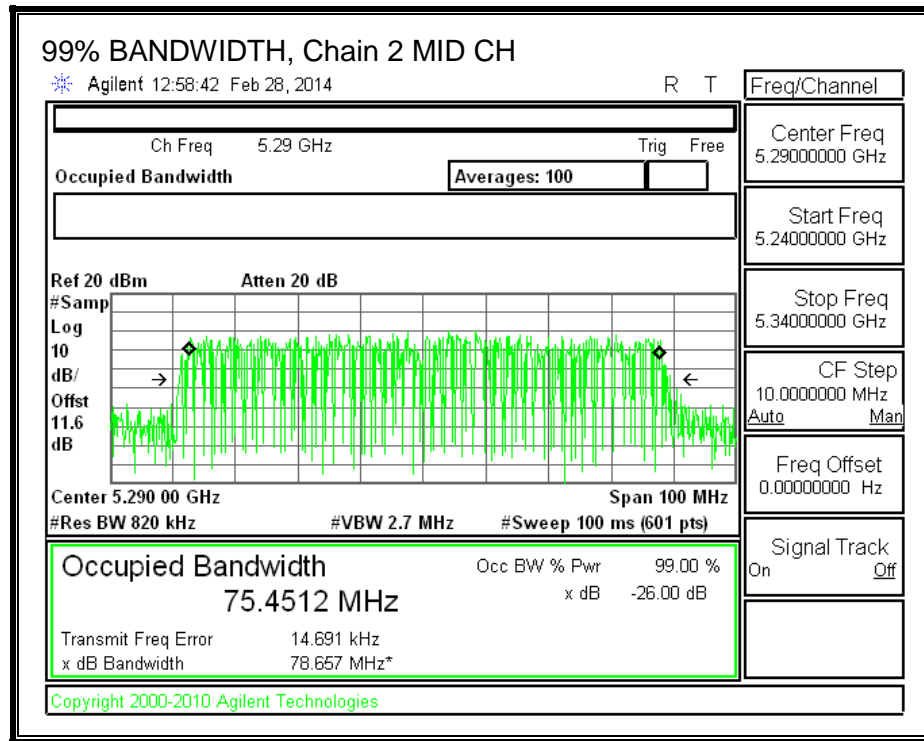
None; for reporting purposes only.

**RESULTS**

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Mid	5290	75.4523	75.4236	75.4512



**99% BANDWIDTH, Chain 0****99% BANDWIDTH, Chain 1**

**99% BANDWIDTH, Chain 2**

### 8.19.3. OUTPUT POWER AND PPSD

#### LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

#### DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
7.09	7.06	3.58	6.19

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
7.09	7.06	3.58	10.83

## RESULTS

### 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)
Mid	5290	81.17	75.4236	6.19	10.83

### 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)
Mid	5290	23.81	24.00	30.00	23.81	6.17	11.00	6.17

Duty Cycle CF (dB)	0.85	Included in Calculations of Corr'd PPSD
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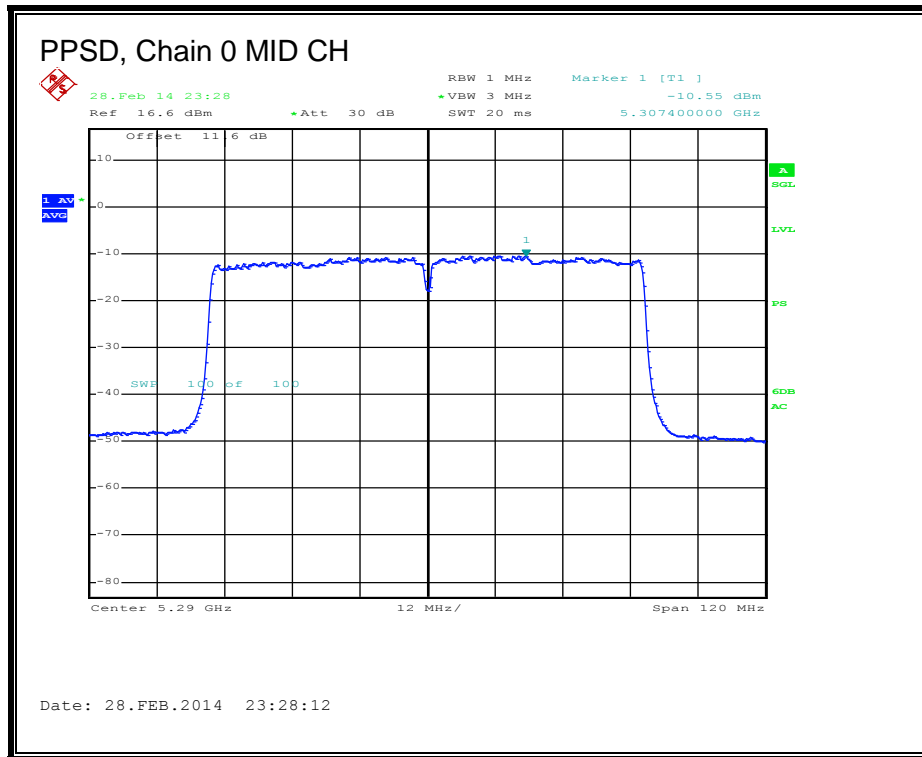
### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	11.42	11.18	11.31	16.08	23.81	-7.73

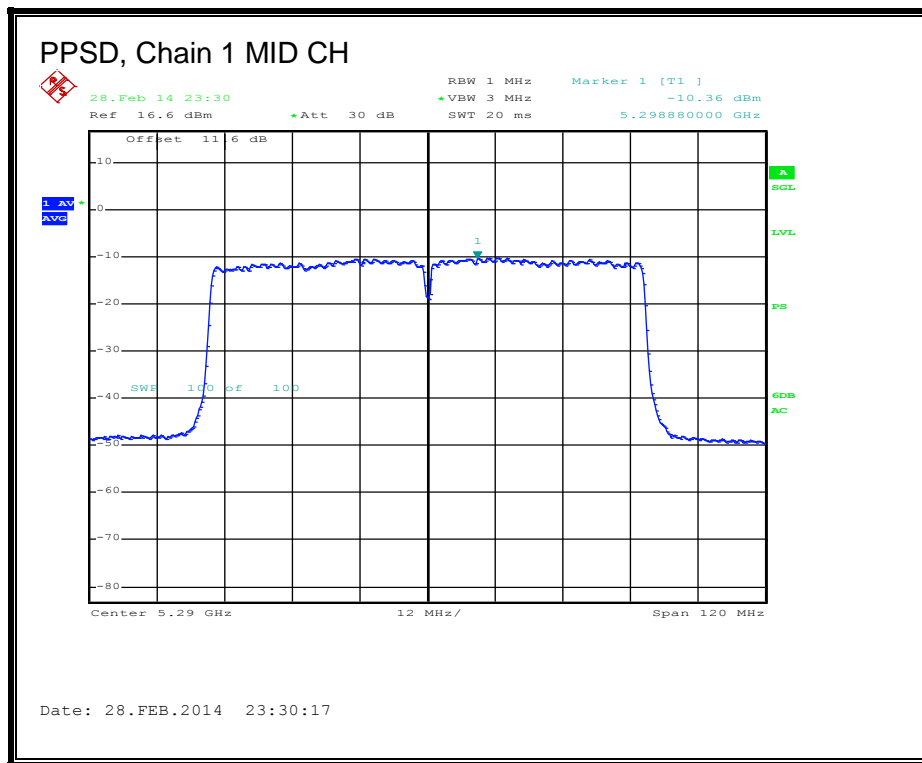
### PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Mid	5290	-10.55	-10.36	-10.57	-4.87	6.17	-11.04

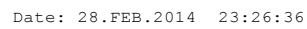
**PPSD, Chain 0**



**PPSD, Chain 1**



## PPSD, Chain 2 MID CH



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8.20. **802.11ac VHT80 BF 3TX MODE IN THE 5.3 GHz BAND**

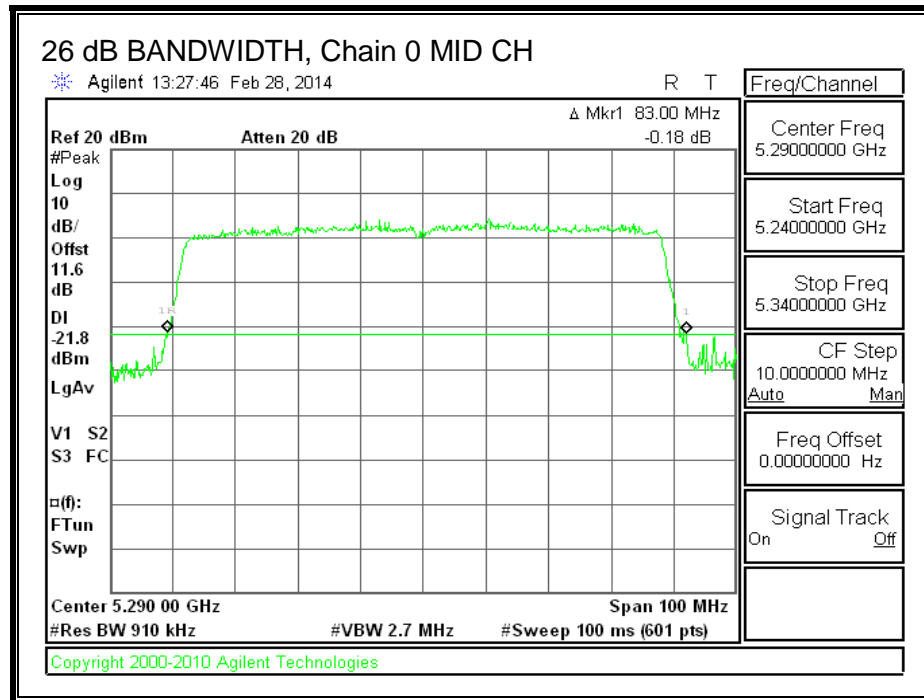
8.20.1. **26 dB BANDWIDTH**

**LIMITS**

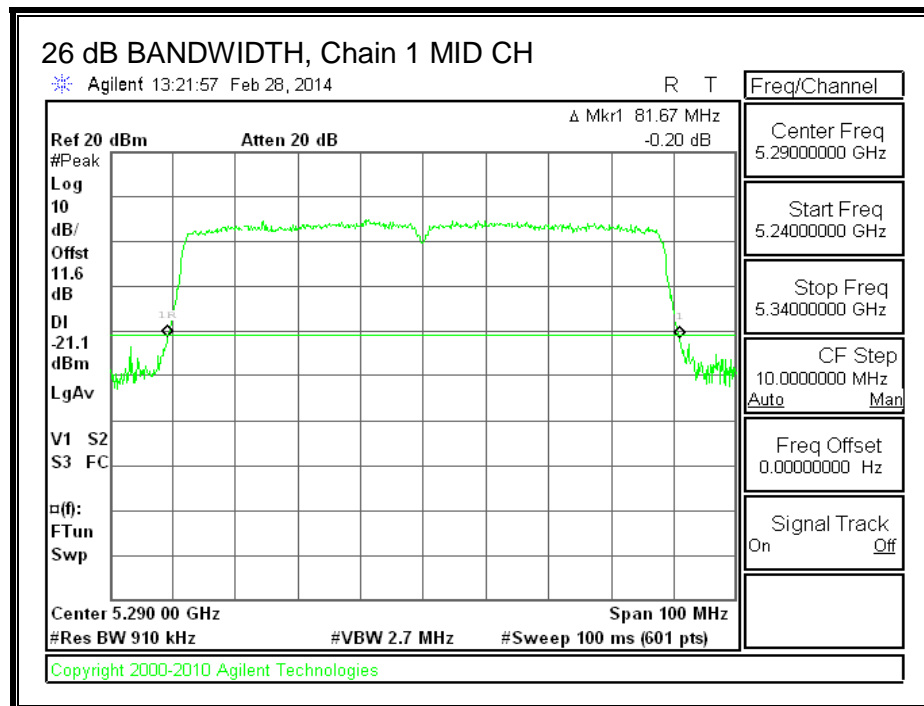
None; for reporting purposes only.

**RESULTS**

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Mid	5290	83.00	81.67	81.17

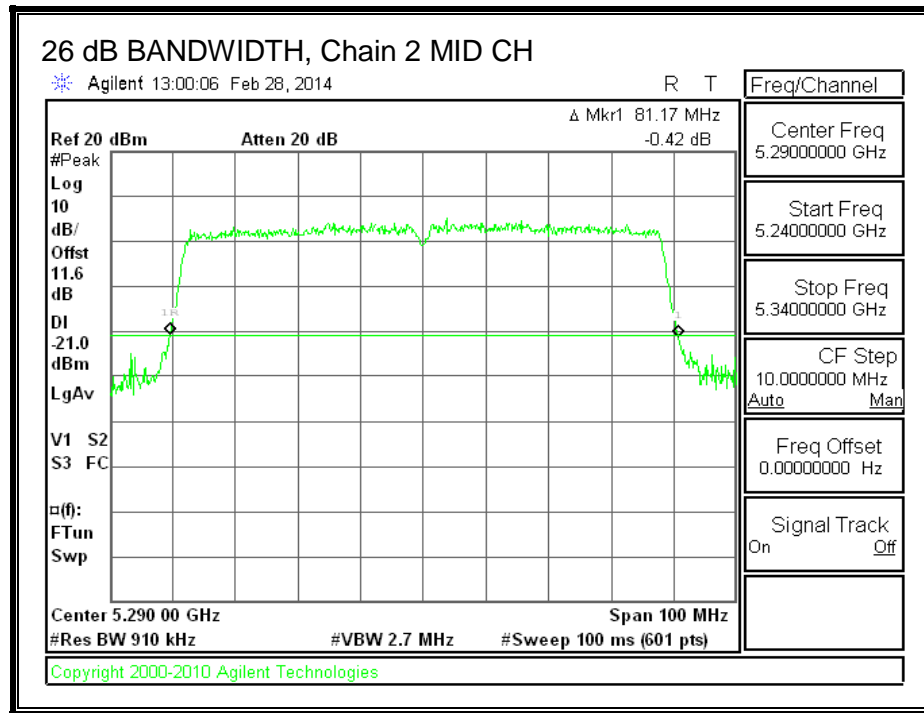


**26 dB BANDWIDTH, Chain 1**





**26 dB BANDWIDTH, Chain 2**



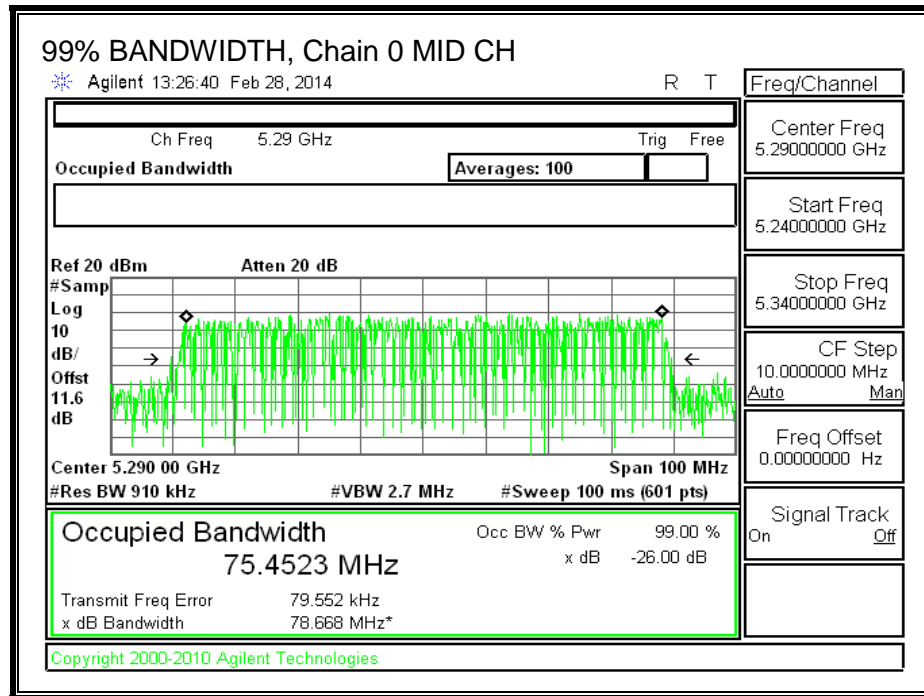
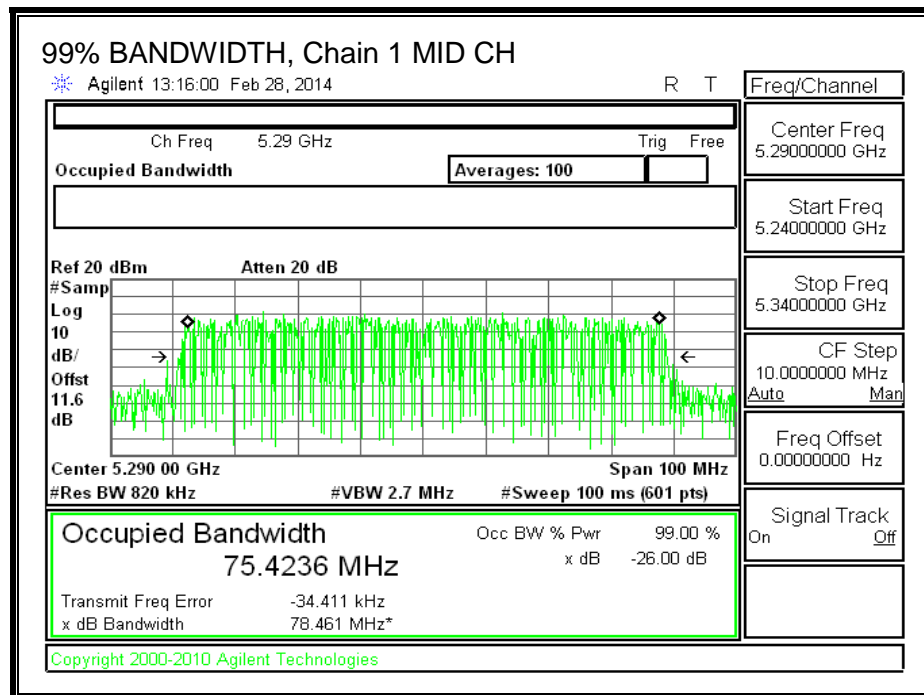
8.20.2. **99% BANDWIDTH**

**LIMITS**

None; for reporting purposes only.

**RESULTS**

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Mid	5290	75.4523	75.4236	75.4512

**99% BANDWIDTH, Chain 0****99% BANDWIDTH, Chain 1**

**99% BANDWIDTH, Chain 2**

