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# 8.39. 802.11n HT20 2Tx CDD MODE IN THE 5.8 GHz BAND

## 8.39.1. 6 dB BANDWIDTH

## LIMITS

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

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

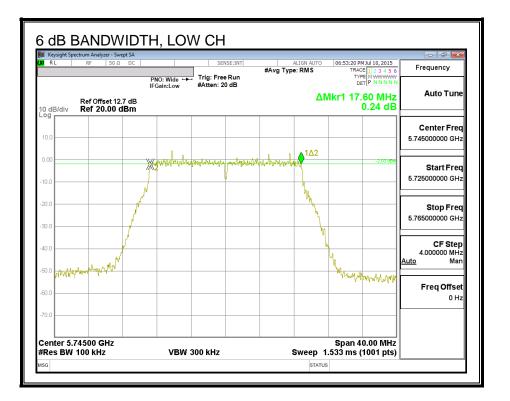
### **RESULTS**

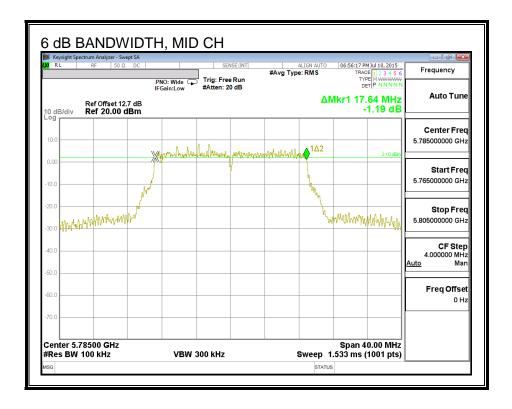
Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Chain 0	Chain 1	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5745	17.60	17.68	0.5
Mid	5785	17.64	17.68	0.5
High	5825	17.64	17.68	0.5

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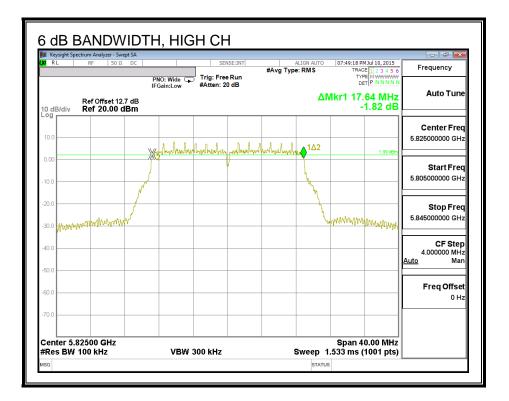
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#### 6 dB BANDWIDTH, CHAIN 0

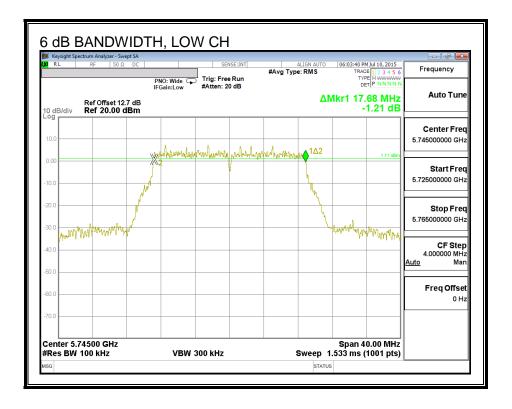




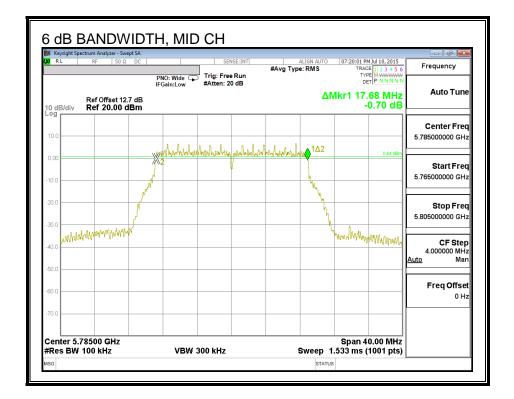
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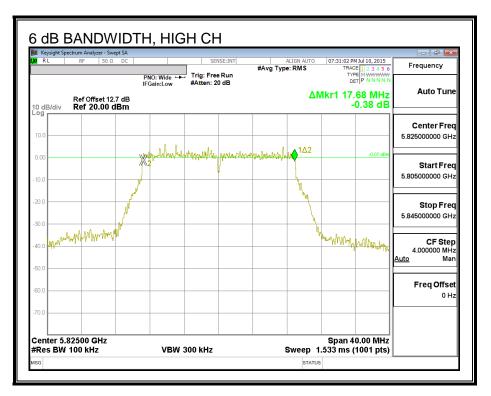


#### 6 dB BANDWIDTH, CHAIN 1



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## 8.39.2. 26 dB BANDWIDTH

## <u>LIMITS</u>

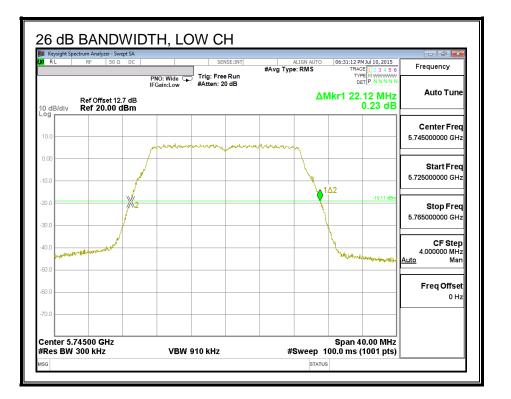
None, for reporting purposes only.

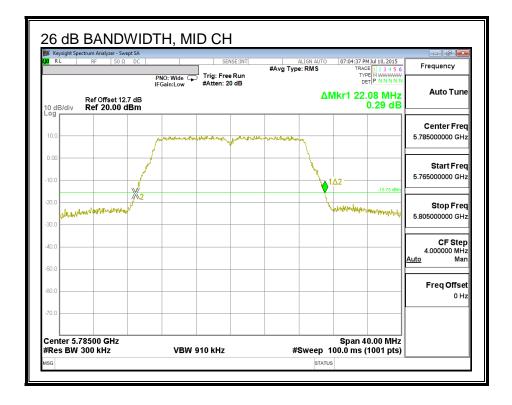
## **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5745	22.12	21.92
Mid	5785	22.08	21.92
High	5825	21.88	21.80

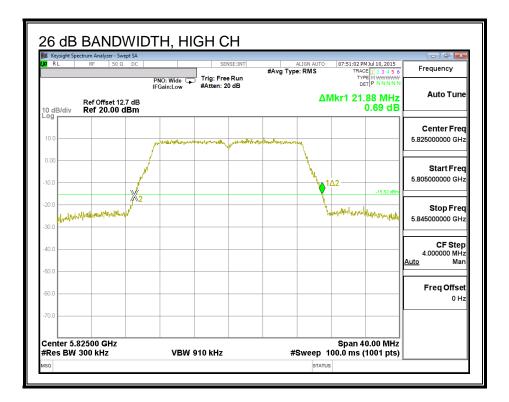
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#### 26 dB BANDWIDTH, CHAIN 0

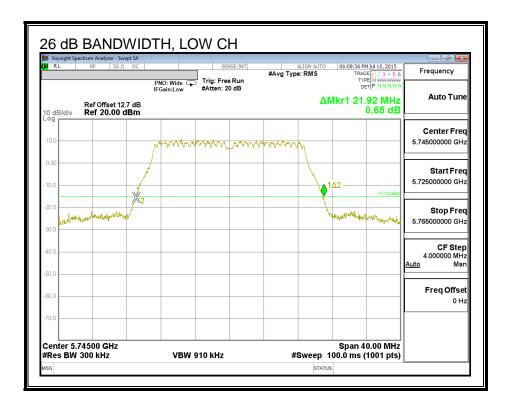




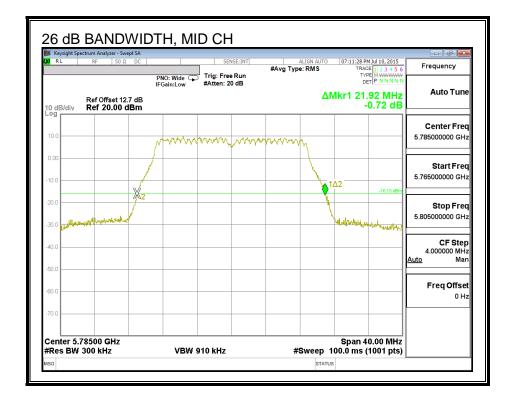
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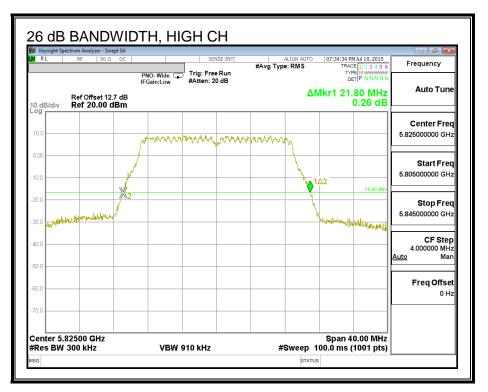


#### 26 dB BANDWIDTH, CHAIN 1



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## 8.39.3. 99% BANDWIDTH

### <u>LIMITS</u>

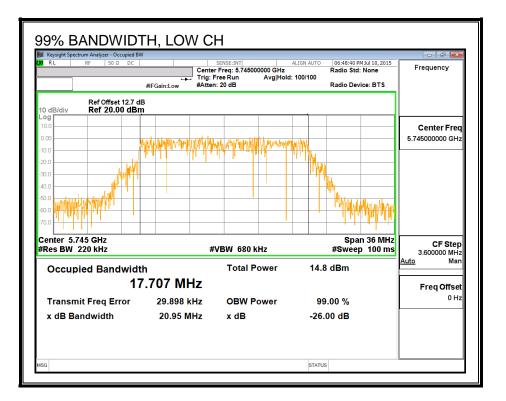
None; for reporting purposes only.

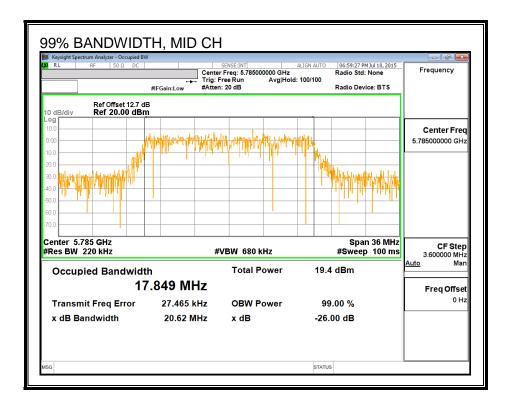
## **RESULTS**

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5745	17.707	17.744
Mid	5785	17.849	17.788
High	5825	17.646	17.732

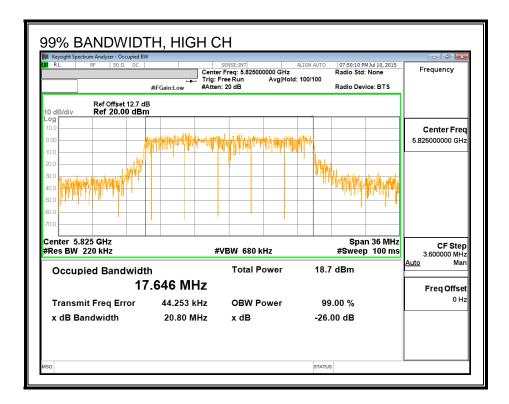
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#### 99% BANDWIDTH, CHAIN 0

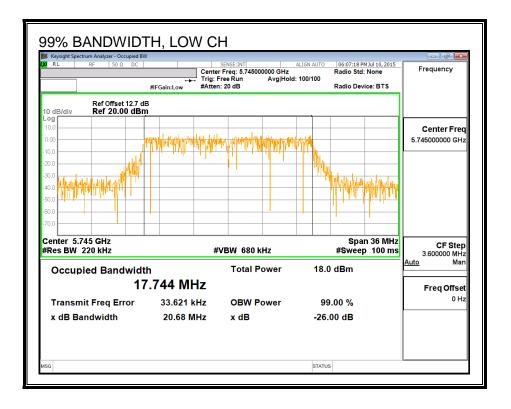




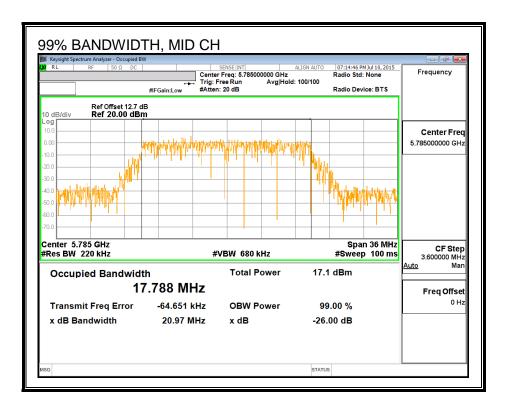
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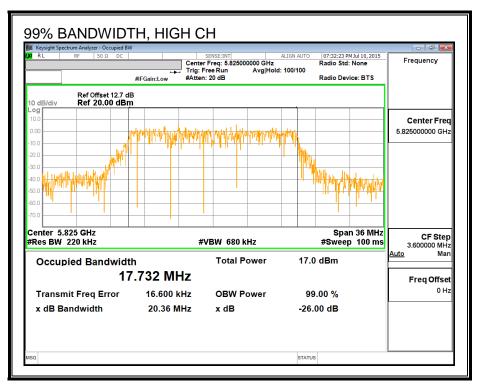


#### 99% BANDWIDTH, CHAIN 1



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## 8.39.4. AVERAGE POWER

#### <u>LIMITS</u>

None; for reporting purposes only.

## <u>RESULTS</u>

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5745	14.98	14.93	17.97
Mid	5785	17.92	17.97	20.96
High	5825	15.85	15.89	18.88

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## 8.39.5. OUTPUT POWER

## LIMITS

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

Chain 0	Chain 1	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.07	-1.35	-0.66

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## RESULTS

#### Antenna Gain and Limit

Channel	Frequency	Directional	Power
		Gain	Limit
		for Power	
	(MHz)	(dBi)	(dBm)
Low	5745	-0.66	30.00
Mid	5785	-0.66	30.00
High	5825	-0.66	30.00

Duty Cycle CF (dB) 0.00 Included in Calculations of Corr'd Power

## **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5745	14.98	14.93	17.97	30.00	-12.03
Mid	5785	17.92	17.97	20.96	30.00	-9.04
High	5825	15.85	15.89	18.88	30.00	-11.12

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## 8.39.6. PSD

## <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

Chain 0	Chain 1	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.07	-1.40	2.30

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## RESULTS

#### Antenna Gain and Limits

Channel	Frequency	Directional	PSD
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Low	5745	2.30	30.00
Mid	5785	2.30	30.00
High	5825	2.30	30.00

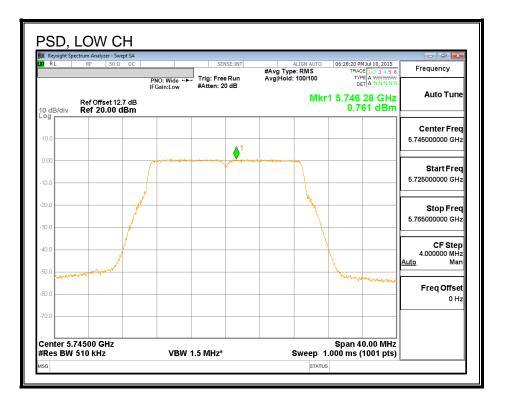
Duty Cycle CF (dB) 0.0	00	Included in Calculations of Corr'd PSD
------------------------	----	--

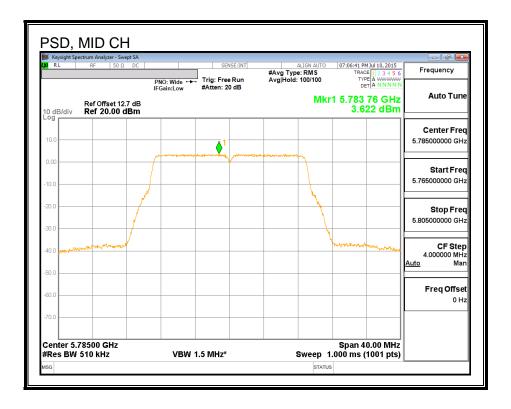
#### **PSD** Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5745	0.76	0.73	3.75	30.00	-26.25
Mid	5785	3.62	3.78	6.71	30.00	-23.29
High	5825	1.81	1.97	4.90	30.00	-25.10

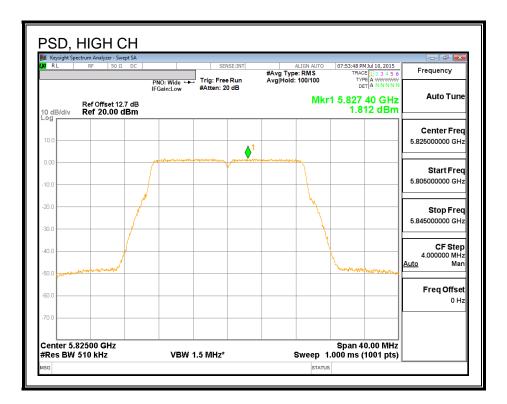
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### PSD, CHAIN 0

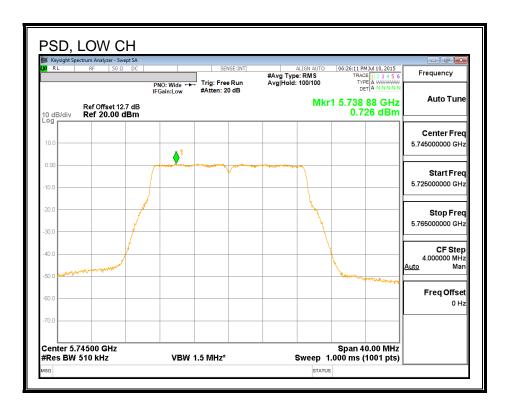




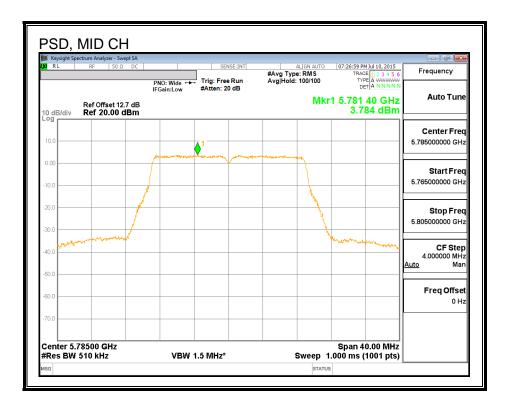
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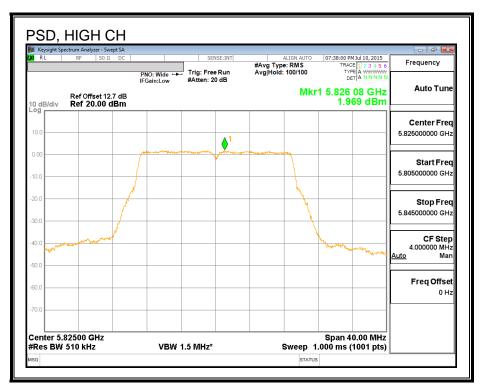


## PSD, CHAIN 1



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# 8.40. 802.11n HT20 2Tx STBC MODE IN THE 5.8 GHz BAND

Note: Covered by 802.11n HT20 2Tx CDD MODE

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# 8.41. 802.11n HT40 CHAIN 0 MODE IN THE 5.8 GHz BAND

# 8.41.1. 6 dB BANDWIDTH

## LIMITS

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

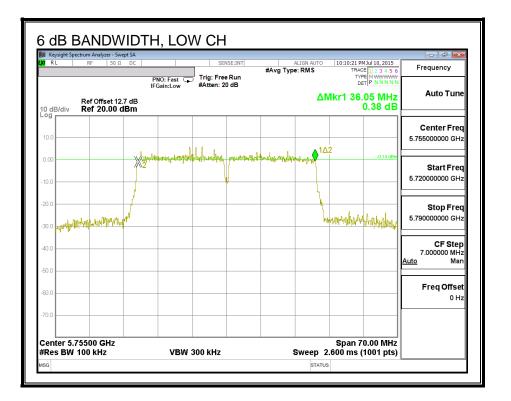
The minimum 6 dB bandwidth shall be at least 500 kHz.

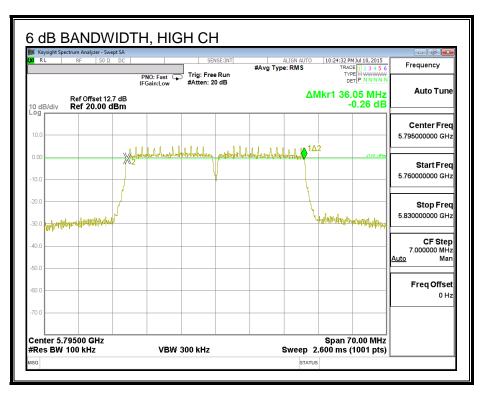
## **RESULTS**

Channel	Frequency	6 dB Bandwidth	Minimum Limit
	(MHz)	(MHz)	(MHz)
Low	5755	36.05	0.5
High	5795	36.05	0.5

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#### 6 dB BANDWIDTH





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## 8.41.2. 26 dB BANDWIDTH

## <u>LIMITS</u>

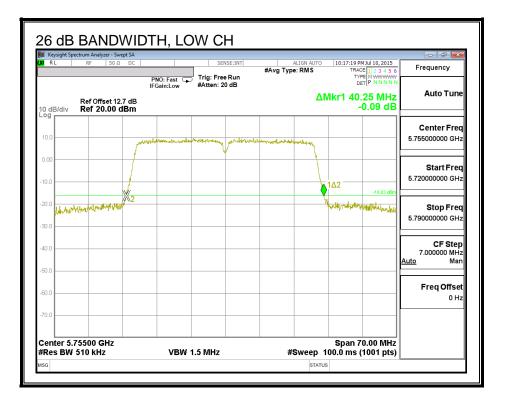
None, for reporting purposes only.

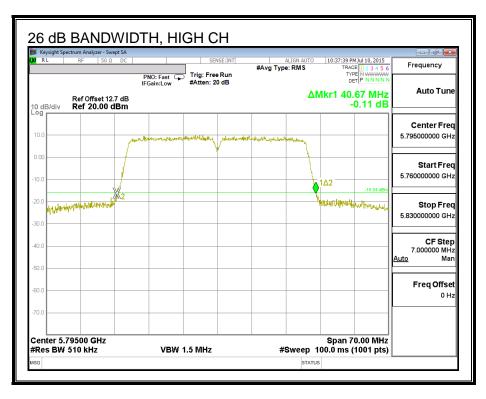
## **RESULTS**

Channel	Frequency	26 dB Bandwidth	
	(MHz)	(MHz)	
Low	5755	40.25	
High	5795	40.67	

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### 26 dB BANDWIDTH





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## 8.41.3. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

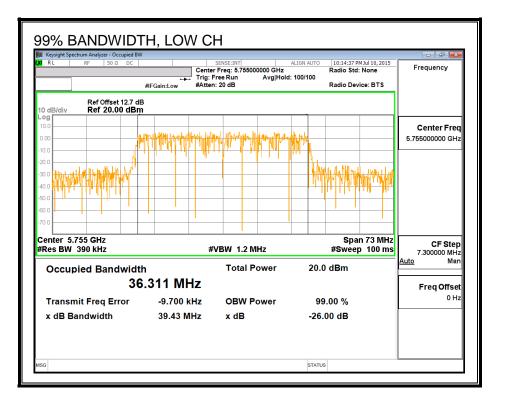
### **RESULTS**

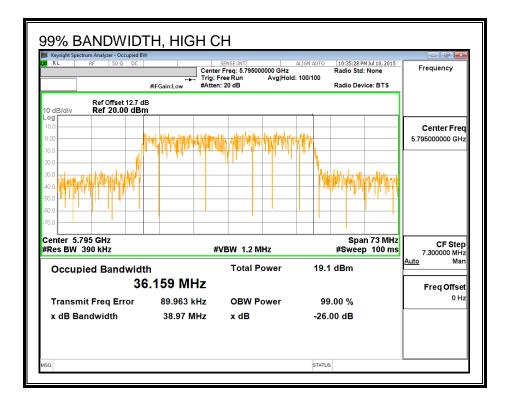
Channel	Frequency	99% Bandwidth	
	(MHz)	(MHz)	
Low	5755	36.311	
High	5795	36.159	

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#### 99% BANDWIDTH





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## 8.41.4. AVERAGE POWER

#### <u>LIMITS</u>

None; for reporting purposes only.

### **RESULTS**

Channel	Frequency	Power
	(MHz)	(dBm)
Low	5755	14.40
High	5795	17.44

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## 8.41.5. OUTPUT POWER

## <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

## **DIRECTIONAL ANTENNA GAIN**

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

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## RESULTS

#### Antenna Gain and Limit

Channel	Frequency	Directional	Power
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Low	5755	-0.07	30.00
High	5795	-0.07	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
	0.00	

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
1	EZEE		4.4.40	20.00	15.60
Low	5755	14.40	14.40	30.00	-15.60

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## 8.41.6. PSD

## <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

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## RESULTS

#### Antenna Gain and Limits

Channel	Frequency	Directional	PSD
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Low	5755	-0.07	30.00
High	5795	-0.07	30.00

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

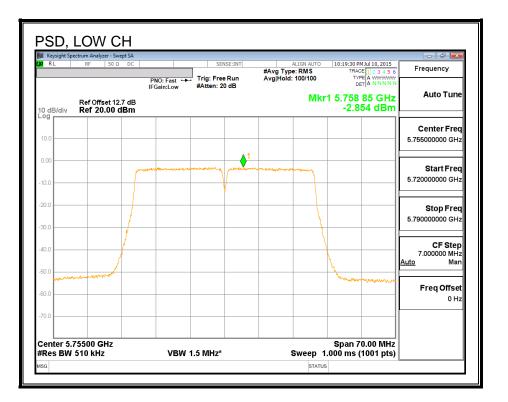
#### **PSD** Results

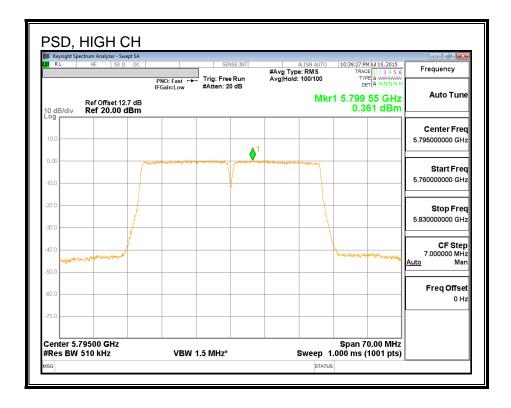
Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	-2.85	-2.85	30.00	-32.85

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### PSD, CHAIN 0





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# 8.42. 802.11n HT40 CHAIN 1 MODE IN THE 5.8 GHz BAND

## 8.42.1. 6 dB BANDWIDTH

## LIMITS

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

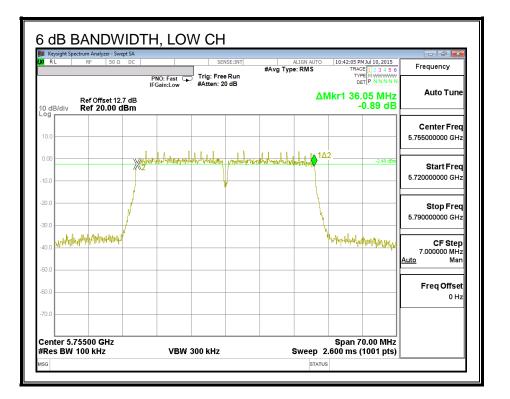
The minimum 6 dB bandwidth shall be at least 500 kHz.

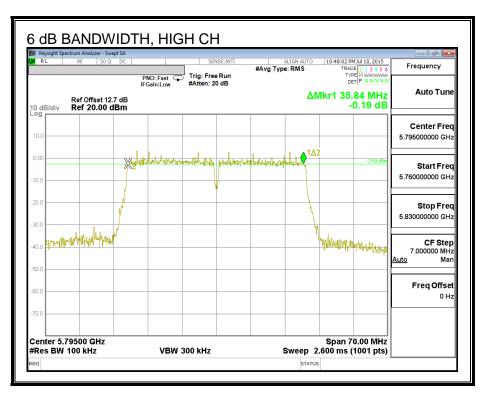
## **RESULTS**

Channel	Frequency 6 dB Bandwidth		Minimum Limit
	(MHz)	(MHz)	(MHz)
Low	5755	36.05	0.5
High	5795	35.84	0.5

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#### 6 dB BANDWIDTH





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# 8.42.2. 26 dB BANDWIDTH

### <u>LIMITS</u>

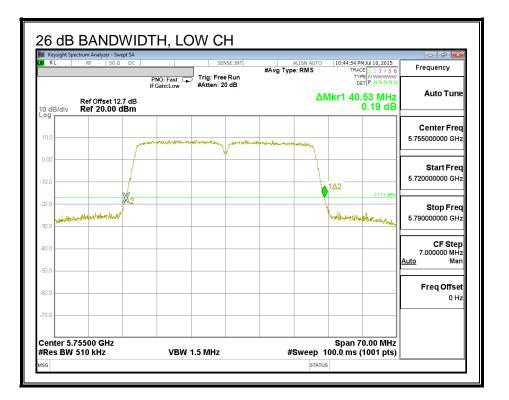
None, for reporting purposes only.

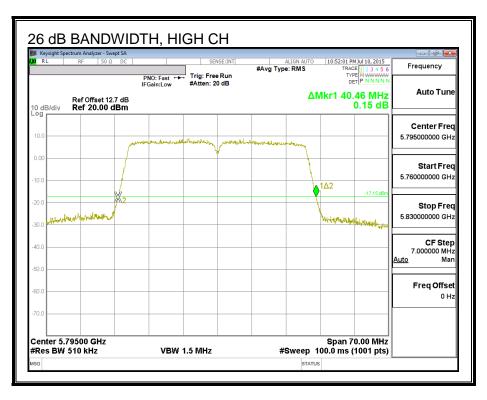
### **RESULTS**

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5755	40.53
High	5795	40.46

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### 26 dB BANDWIDTH





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## 8.42.3. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

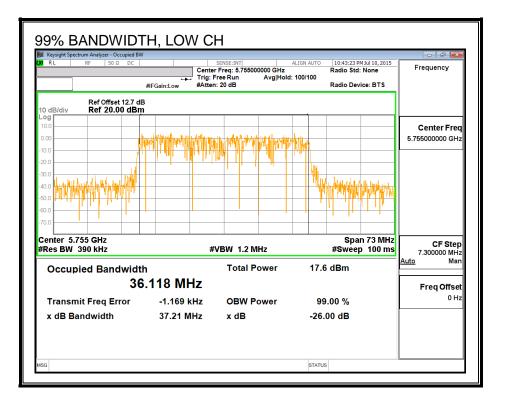
### **RESULTS**

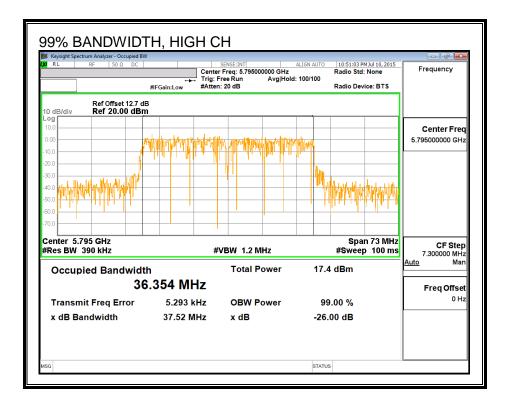
Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5755	36.118
High	5795	36.354

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#### 99% BANDWIDTH





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# 8.42.4. AVERAGE POWER

### <u>LIMITS</u>

None; for reporting purposes only.

### **RESULTS**

Channel	Frequency	Power
	(MHz)	(dBm)
Low	5755	14.41
High	5795	17.95

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# 8.42.5. OUTPUT POWER

### <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

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### RESULTS

### Antenna Gain and Limit

Channel	Frequency	Directional	Power
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Low	5755	-1.35	30.00
High	5795	-1.35	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
,		

#### **Output Power Results**

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
	(	(	(	()	()
Low	5755	14.41	14.41	30.00	-15.59

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# 8.42.6. PSD

### <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

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### RESULTS

### Antenna Gain and Limits

Channel	Frequency	Directional	PSD
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Low	5755	-1.35	30.00
High	5795	-1.35	30.00

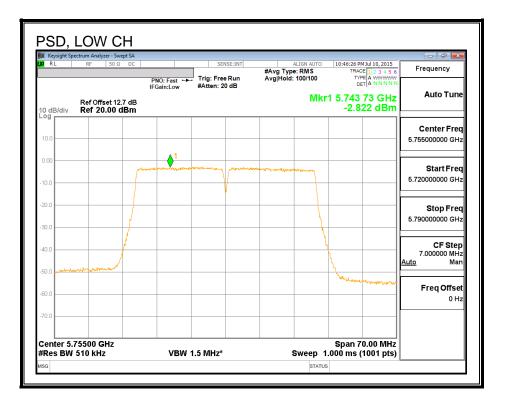
Duty Cycle CF (dB) 0.00	Included in Calculations of Corr'd PSD
-------------------------	--

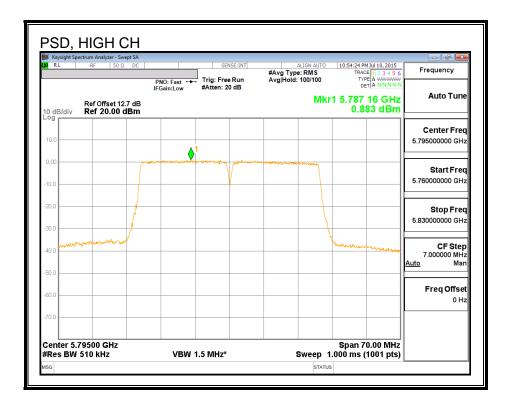
#### **PSD** Results

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	-2.82	-2.82	30.00	-32.82
LOW	0100	2.02	2.02	00.00	02.02

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### PSD, CHAIN 1





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# 8.43. 802.11n HT40 2Tx CDD MODE IN THE 5.8 GHz BAND

# 8.43.1. 6 dB BANDWIDTH

### **LIMITS**

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

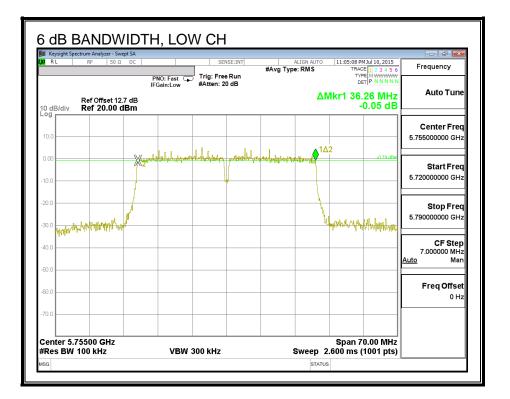
The minimum 6 dB bandwidth shall be at least 500 kHz.

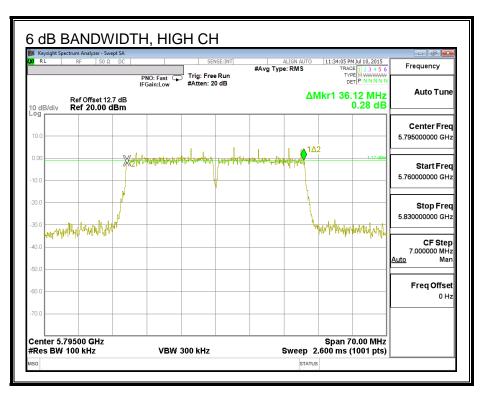
### **RESULTS**

Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Chain 0	Chain 1	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5755	36.26	36.26	0.5
High	5795	36.12	36.26	0.5

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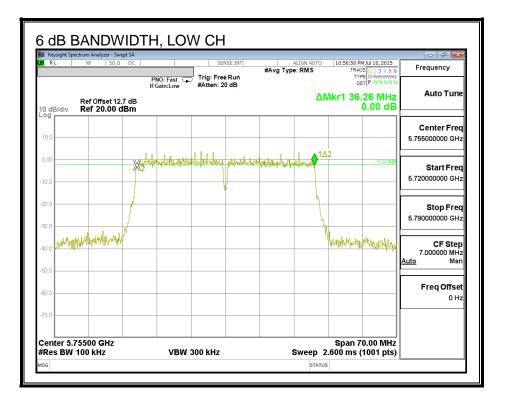
#### 6 dB BANDWIDTH, CHAIN 0

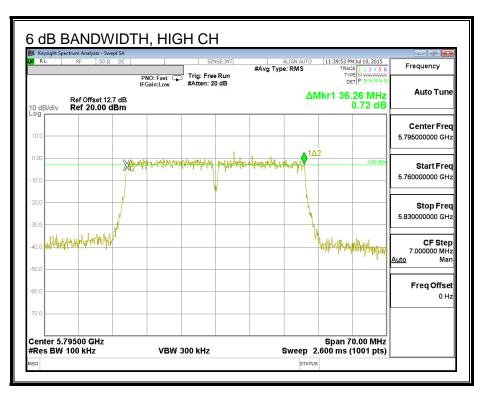




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#### 6 dB BANDWIDTH, CHAIN 1





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# 8.43.2. 26 dB BANDWIDTH

### <u>LIMITS</u>

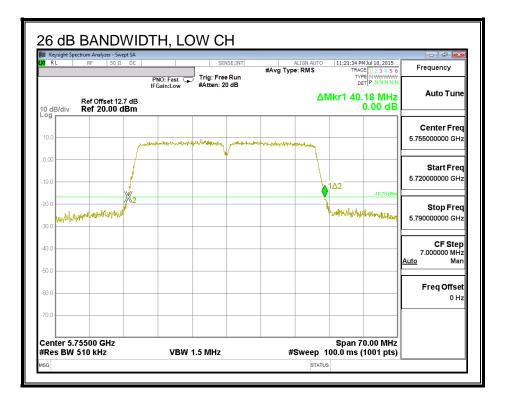
None, for reporting purposes only.

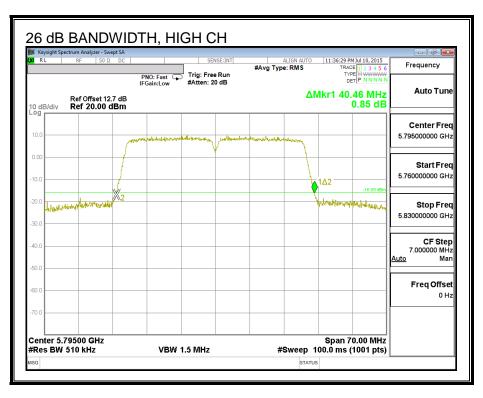
### **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5755	40.18	40.04
High	5795	40.46	39.90

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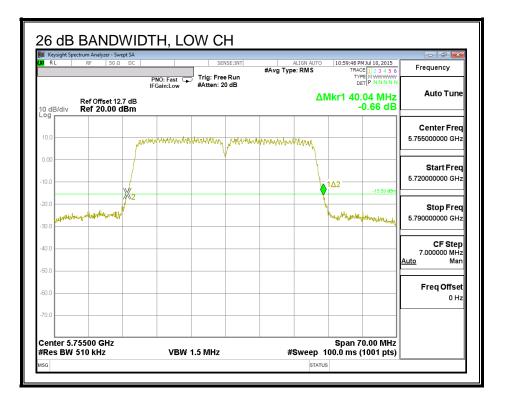
### 26 dB BANDWIDTH, CHAIN 0

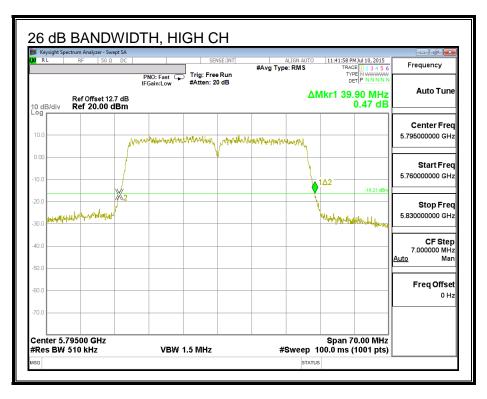




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### 26 dB BANDWIDTH, CHAIN 1





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## 8.43.3. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

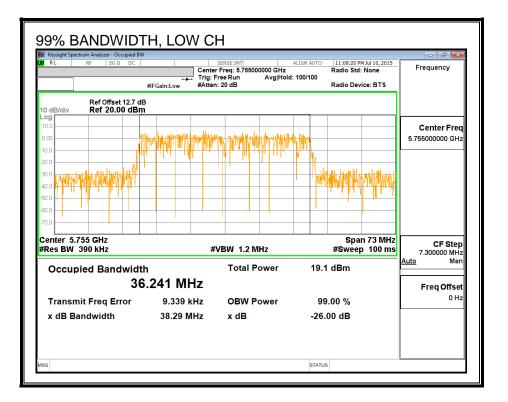
### **RESULTS**

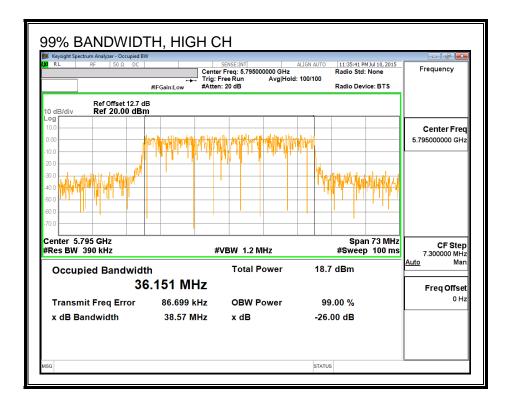
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5755	36.241	36.266
High	5795	36.151	36.210

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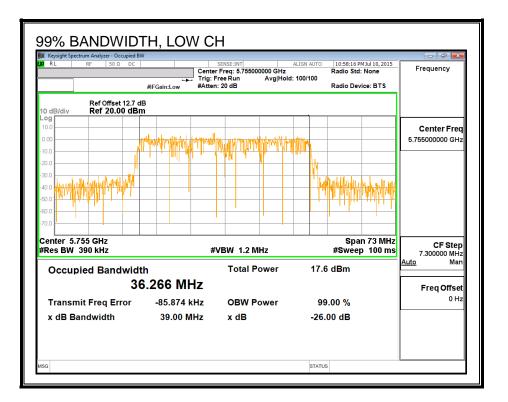
#### 99% BANDWIDTH, CHAIN 0

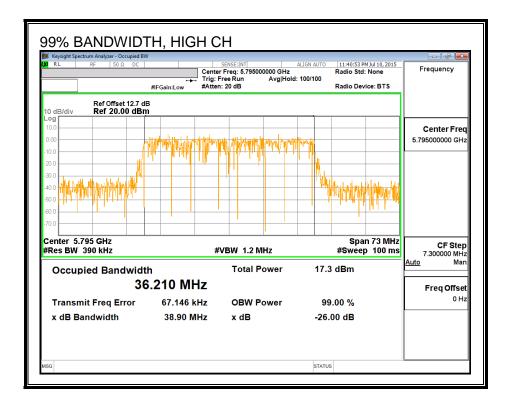




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#### 99% BANDWIDTH, CHAIN 1





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# 8.43.4. AVERAGE POWER

### <u>LIMITS</u>

None; for reporting purposes only.

### **RESULTS**

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5755	12.93	12.98	15.97
High	5795	16.97	16.96	19.98

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# 8.43.5. OUTPUT POWER

### LIMITS

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

Chain 0	Chain 1	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.07	-1.35	-0.66

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### **RESULTS**

#### Antenna Gain and Limit

Channel	Frequency	Directional	Power
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Low	5755	-0.66	30.00
High	5795	-0.66	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	12.93	12.98	15.97	30.00	-14.03
High	5795	16.97	16.96	19.98	30.00	-10.02

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## 8.43.6. PSD

### <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

Chain 0	Chain 1	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.07	-1.40	2.30

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### RESULTS

#### Antenna Gain and Limit

Channel	Frequency	Directional	PSD
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Low	5755	2.30	30.00
High	5795	2.30	30.00

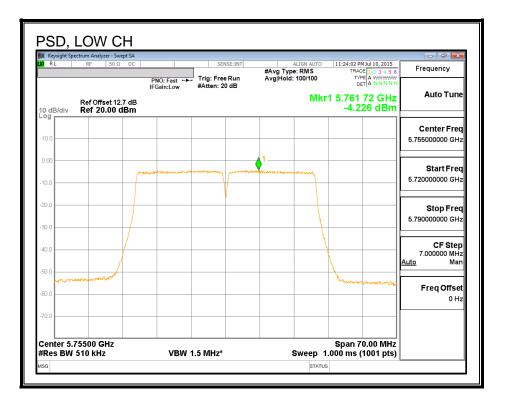
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
	0.00	

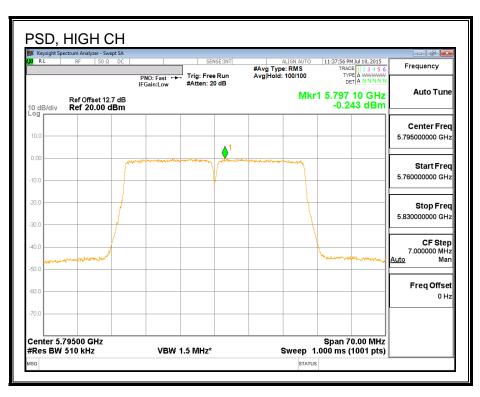
#### **PSD** Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	-4.23	-4.08	-1.14	30.00	-31.14
High	5795	-0.24	-0.24	2.77	30.00	-27.23

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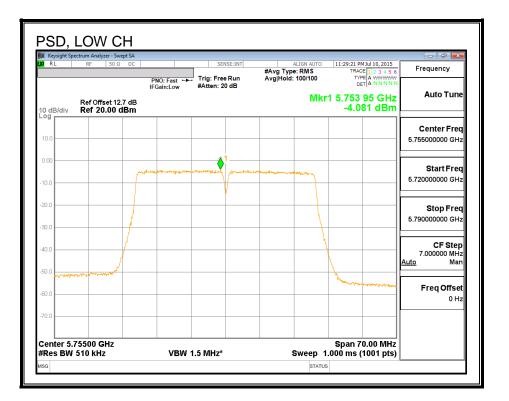
### PSD, CHAIN 0

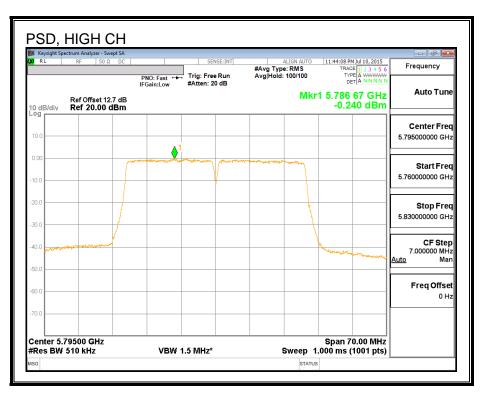




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### PSD, CHAIN 1





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# 8.44. 802.11n HT40 2Tx STBC MODE IN THE 5.8 GHz BAND

Note: Covered by 802.11n HT40 2Tx CDD MODE

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# 8.45. 802.11ac VHT80 CHAIN 0 MODE IN THE 5.8 GHz BAND

# 8.45.1. 6 dB BANDWIDTH

### **LIMITS**

FCC §15.407 (e)

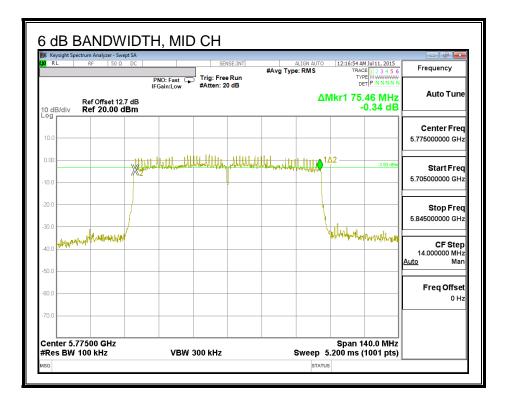
IC RSS-247 (6.2.4) (1)

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

### **RESULTS**

Channel	Frequency	6 dB Bandwidth	Minimum Limit
	(MHz)	(MHz)	(MHz)
Mid	5775	75.46	0.5

#### 6 dB BANDWIDTH



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# 8.45.2. 26 dB BANDWIDTH

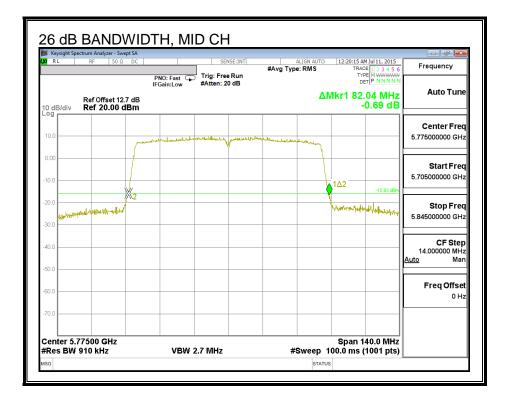
### <u>LIMITS</u>

None, for reporting purposes only.

### **RESULTS**

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Mid	5775	82.04

#### 26 dB BANDWIDTH



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### 8.45.3. 99% BANDWIDTH

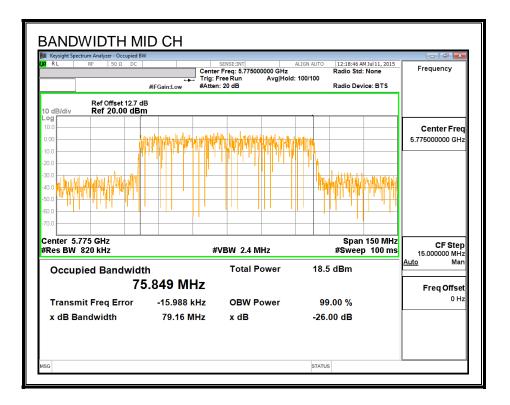
### <u>LIMITS</u>

None; for reporting purposes only.

### **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Mid	5775	75.849

#### 99% BANDWIDTH



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# 8.45.4. AVERAGE POWER

### <u>LIMITS</u>

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	Power
	(MHz)	(dBm)
Mid	5775	14.45

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# 8.45.5. OUTPUT POWER

### <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

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### RESULTS

### Antenna Gain and Limit

Channel	Frequency	Directional	Power
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Mid	5775	-0.07	30.00

Duty Cycle CF (dB) 0.18 Included in Calculations of Corr'd Power	Duty Cycle CF (dB)
--	--------------------

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5775	14.45	14.63	30.00	-15.37

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## 8.45.6. PSD

### <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

### **DIRECTIONAL ANTENNA GAIN**

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

### **RESULTS**

Antenna Gain and Limits

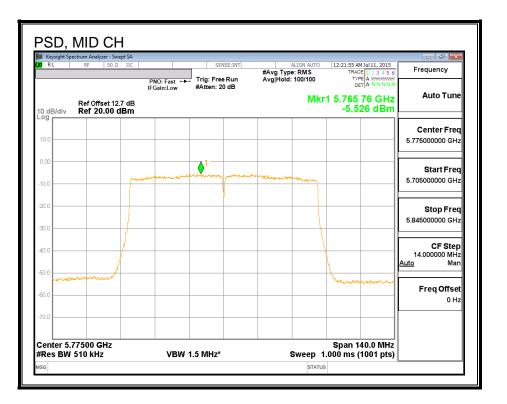
Channel	Frequency	Directional	PSD
		Gain	Limit
			(al Dura)
	(MHz)	(dBi)	(dBm)

Duty Cycle CF (dB)	0.18	Included in Calculations of Corr'd PSD

### **PSD Results**

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5775	-5.526	-5.35	30.00	-35.35

### PSD, CHAIN 0



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# 8.46. 802.11ac VHT80 CHAIN 1 MODE IN THE 5.8 GHz BAND

# 8.46.1. 6 dB BANDWIDTH

### <u>LIMITS</u>

FCC §15.407 (e)

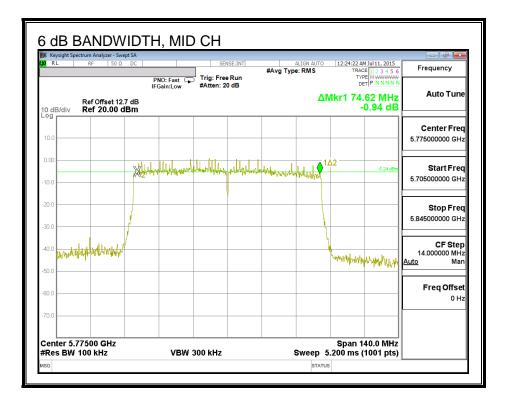
IC RSS-247 (6.2.4) (1)

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

### **RESULTS**

Channel	Frequency	6 dB Bandwidth	Minimum Limit	
	(MHz)	(MHz)	(MHz)	
Mid	5775	74.62	0.5	

#### 6 dB BANDWIDTH



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# 8.46.2. 26 dB BANDWIDTH

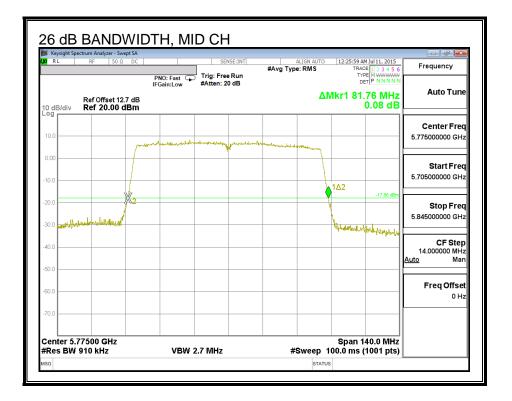
#### <u>LIMITS</u>

None, for reporting purposes only.

# **RESULTS**

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Mid	5775	81.76

#### 26 dB BANDWIDTH



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# 8.46.3. 99% BANDWIDTH

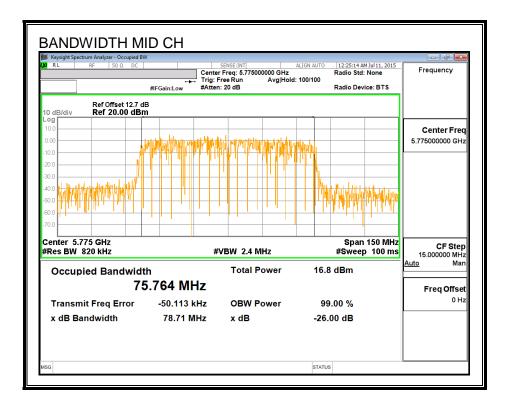
#### <u>LIMITS</u>

None; for reporting purposes only.

## **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Mid	5775	75.764

#### 99% BANDWIDTH



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# 8.46.4. AVERAGE POWER

#### <u>LIMITS</u>

None; for reporting purposes only.

## **RESULTS**

Channel	Frequency	Power
	(MHz)	(dBm)
Mid	5775	14.46

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# 8.46.5. OUTPUT POWER

# LIMITS

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

## **DIRECTIONAL ANTENNA GAIN**

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

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# RESULTS

#### Antenna Gain and Limit

Channel	Frequency	Directional	Power
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Mid	5775	-1.35	30.00

Duty Cycle CF (dB) 0.18 Included in Calculations of Corr'd Power
--

### **Output Power Results**

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5775	14.46	14.64	30.00	-15.36

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# 8.46.6. PSD

# <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

## **DIRECTIONAL ANTENNA GAIN**

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

## **RESULTS**

Antenna Gain and Limits

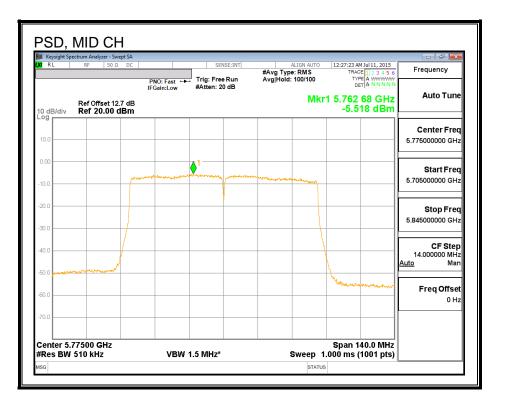
Channel	Frequency	Directional	PSD
		Gain	Limit
	(8411-)		
	(MHz)	(dBi)	(dBm)

Duty Cycle CF (dB)	0.18	Included in Calculations of Corr'd PSD

## **PSD Results**

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5775	-5.518	-5.34	30.00	-35.34

## PSD, CHAIN 1



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# 8.47. 802.11ac VHT80 2TxCDD MODE IN THE 5.8 GHz BAND

# 8.47.1. 6 dB BANDWIDTH

# LIMITS

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

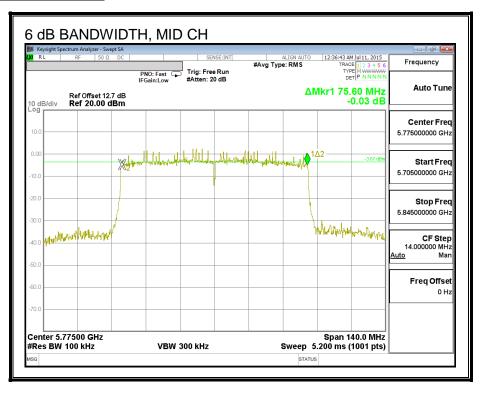
The minimum 6 dB bandwidth shall be at least 500 kHz.

## **RESULTS**

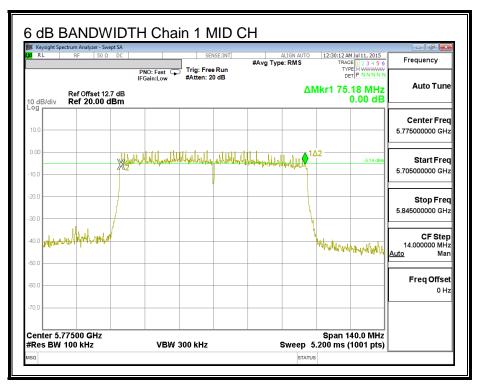
Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Chain 0	Chain 1	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5775	75.60	75.18	0.5

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#### 6 dB BANDWIDTH, CHAIN 0



#### 6 DB BANDWIDTH, CHAIN 1



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# 8.47.2. 26 dB BANDWIDTH

# <u>LIMITS</u>

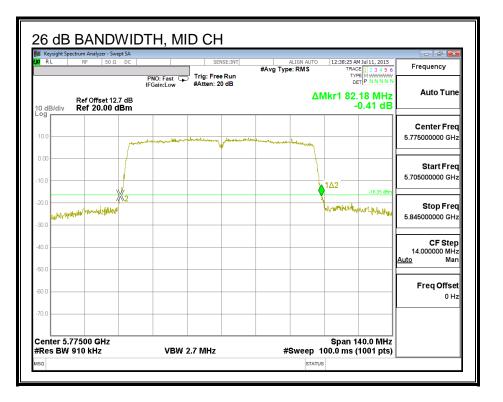
None, for reporting purposes only.

# **RESULTS**

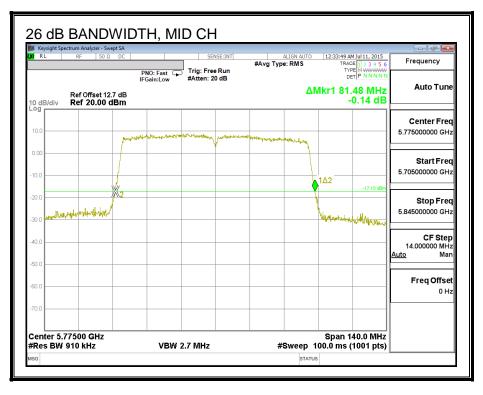
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5775	82.18	81.48

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## 26 dB BANDWIDTH, CHAIN 0



#### 26 dB BANDWIDTH, CHAIN 1



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# 8.47.3. 99% BANDWIDTH

## <u>LIMITS</u>

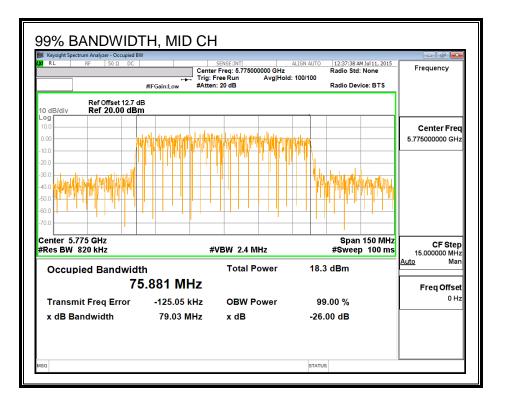
None; for reporting purposes only.

## **RESULTS**

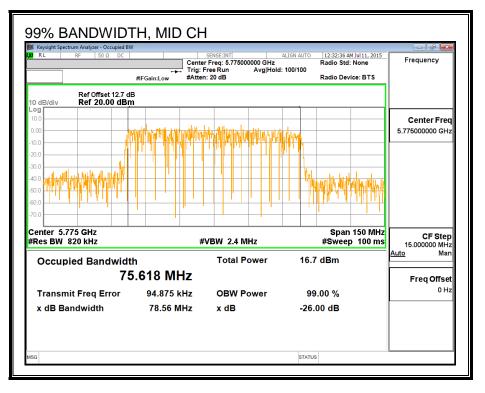
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5775	75.881	75.618

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#### 99% BANDWIDTH, CHAIN 0



#### 99% BANDWIDTH, CHAIN 1



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# 8.47.4. AVERAGE POWER

#### <u>LIMITS</u>

None; for reporting purposes only.

# RESULTS

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Mid	5775	13.48	13.46	16.48

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# 8.47.5. OUTPUT POWER

# <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

#### DIRECTIONAL ANTENNA GAIN

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

Chain 0	Chain 1	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.07	-1.35	-0.66

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# RESULTS

#### Antenna Gain and Limit

Channel	Frequency	Directional	Power		
		Gain	Limit		
	(MHz)	(dBi)	(dBm)		
Mid	5775	-0.66	30.00		

	0.04	In all a difference of the second difference of the second difference of
Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5775	13.48	13.46	16.69	30.00	-13.31

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# 8.47.6. PSD

# <u>LIMITS</u>

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

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

## **DIRECTIONAL ANTENNA GAIN**

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

Chain 0	Chain 1	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.07	-1.40	2.30

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# RESULTS

Antenna Gain and Limit

Channel	Frequency	Directional	PSD
		Gain	Limit
	(MHz)	(dBi)	(dBm)
Mid		2.30	30.00

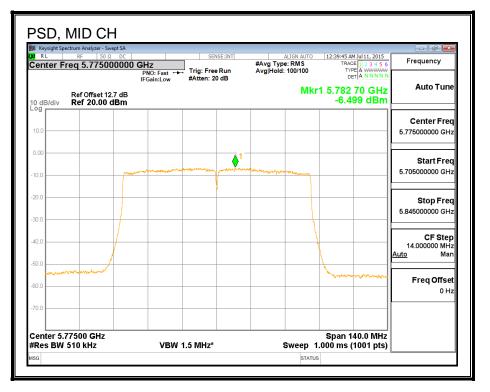
Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd PSD
--------------------	------	--

#### **PSD** Results

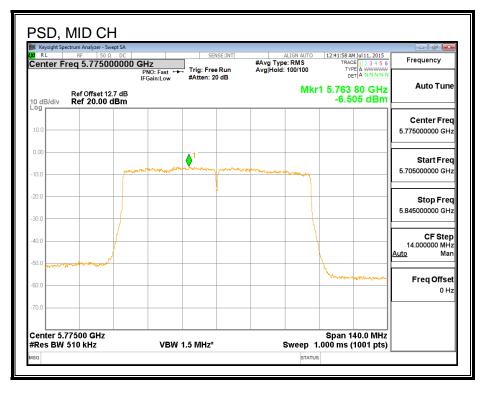
Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5775	-6.50	-6.51	-3.28	30.00	-33.28

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#### PSD, CHAIN 0



#### PSD, CHAIN 1



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# 8.48. 802.11n HT80 2Tx STBC MODE IN THE 5.8 GHz BAND

Note: Covered by 802.11n HT80 2Tx CDD MODE

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# 9. ANTENNA PORT TEST RESULTS (MODEL: 1687)

For antenna port data, refer to Model A1634.

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# 10. RADIATED TEST RESULTS (MODEL: A1634)

# 10.1. LIMITS AND PROCEDURE

# <u>LIMITS</u>

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

# TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

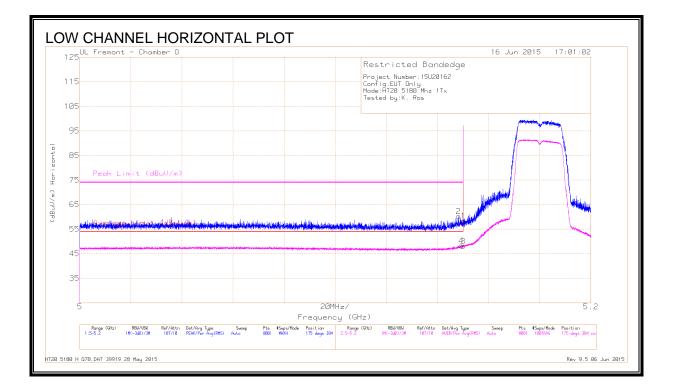
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

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# 10.2. 802.11n HT20 1Tx MODE IN THE 5.2 GHz BAND

# **RESTRICTED BANDEDGE, CHAIN 0 (LOW CHANNEL)**



# <u>DATA</u>

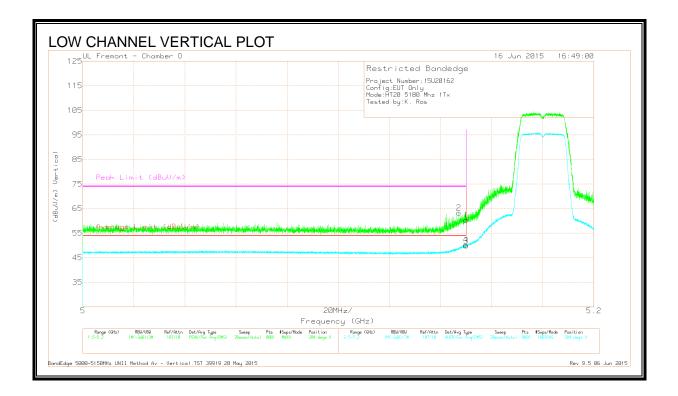
Marker	Frequency (GHz)	Meter Reading	Det	AF T344 (dB/m)	Amp/Cbl/ Fltr/Pad	Corrected Reading	Average Limit	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
		(dBuV)			(dB)	(dBuV/m)	(dBuV/m)						
1	* 5.15	42.58	Pk	34.3	-18.5	58.38	-	-	74	-15.62	175	384	Н
2	* 5.148	44.43	Pk	34.3	-18.5	60.23	-	-	74	-13.77	175	384	Н
3	* 5.15	35.35	RMS	34.3	-21.4	48.25	54	-5.75	-	-	175	384	Н
4	* 5.15	35.78	RMS	34.3	-21.4	48.68	54	-5.32	-	-	175	384	Н

\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

#### Pk - Peak detector

RMS - RMS detection

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#### <u>DATA</u>

Marker	Frequency	Meter	Det	AF T344	Amp/Cbl/	Corrected	Average	Margin	Peak Limit	PK Margin	Azimuth	Height	Polarity
	(GHz)	Reading		(dB/m)	Fltr/Pad	Reading	Limit	(dB)	(dBuV/m)	(dB)	(Degs)	(cm)	
		(dBuV)			(dB)	(dBuV/m)	(dBuV/m)						
1	* 5.15	44.57	Pk	34.3	-18.5	60.37	-	-	74	-13.63	204	224	V
2	* 5.147	47.51	Pk	34.3	-18.5	63.31	-	-	74	-10.69	204	224	V
3	* 5.15	37.19	RMS	34.3	-21.4	50.09	54	-3.91	-	-	204	224	V
4	* 5.15	37.61	RMS	34.3	-21.4	50.51	54	-3.49	-	-	204	224	V

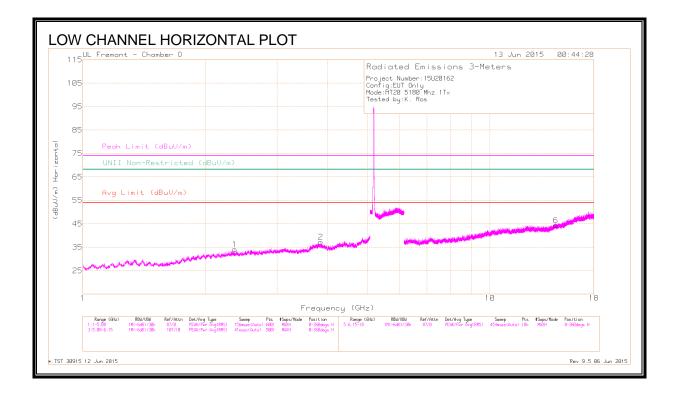
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

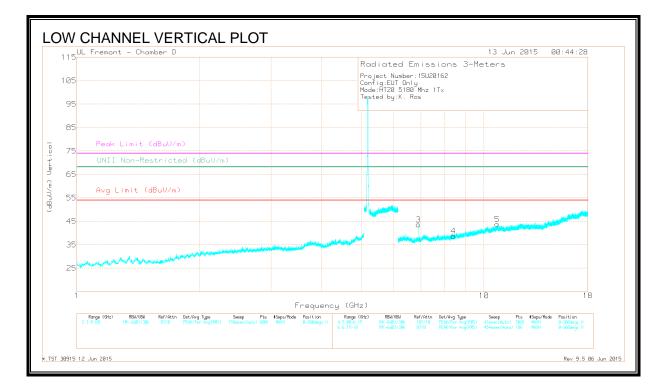
Pk - Peak detector

RMS - RMS detection

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#### LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS





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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fl tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.36	39.72	PK3	32	-30.5	41.22	-	-	74	-32.78	-	-	45	200	Н
	* 2.363	28.03	ADR	32	-30.5	29.53	54	-24.47	-	-	-	-	45	200	н
2	* 3.844	39.29	PK3	33.4	-28.9	43.79	-	-	74	-30.21	-	-	45	200	н
	* 3.844	27.61	ADR	33.4	-28.9	32.11	54	-21.89	-	-	-	-	45	200	н
3	6.907	39.83	PK3	35.5	-25.8	49.53	-	-	-	-	68.2	-18.67	79	278	V
4	* 8.412	36.37	PK3	35.7	-24.2	47.87	-	-	74	-26.13	-	-	79	103	V
	* 8.412	24.29	ADR	35.7	-24.2	35.79	54	-18.21	-	-	-	-	79	103	V
5	* 10.776	34.49	PK3	37.9	-20.9	51.49	-	-	74	-22.51	-	-	79	103	V
	* 10.775	22.61	ADR	37.9	-20.9	39.61	54	-14.39	-	-	-	-	79	103	V
6	14.512	35.78	PK3	39.6	-22.7	52.68	-	-	-	-	68.2	-15.52	45	102	н

#### DATA

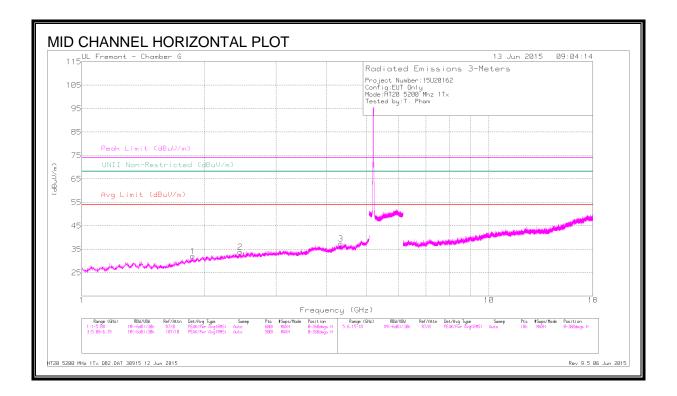
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

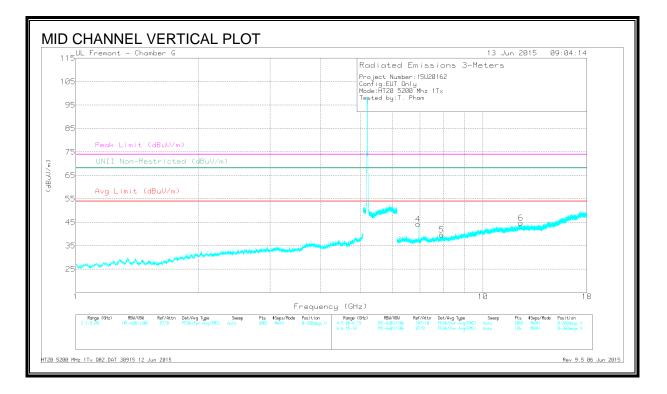
PK3 - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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#### MID CHANNEL HARMONICS AND SPURIOUS EMISSIONS





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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fl tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.323	41.79	PK3	33.6	-28.5	46.89	-	-	74	-27.11	-	-	275	190	н
	* 4.325	30.06	ADR	33.7	-28.6	35.16	54	-18.84	-	-	-	-	275	190	н
6	* 12.388	38.33	PK3	39	-21.5	55.83	-	-	74	-18.17	-	-	100	284	V
	* 12.388	26.63	ADR	39	-21.5	44.13	54	-9.87	-	-	-	-	100	284	V
1	1.874	43.54	PK3	30.6	-31.4	42.74	-	-	-	-	68.2	-25.46	142	223	н
2	2.448	42.8	PK3	32.1	-30.8	44.1	-	-	-	-	68.2	-24.1	314	180	Н
4	6.933	47.69	PK3	35.5	-25.6	57.59	-	-	-	-	68.2	-10.61	220	329	V
5	7.915	28.45	Pk	35.7	-24.4	39.75	-	-	-	-	68.2	-28.45	360	200	V

#### DATA

\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK3 - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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