FCC ID: BCGA1566

#### 9.16.4. OUTPUT POWER AND PSD

#### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

#### **ANTENNA A**



#### **ANTENNA B**



Page 201 of 764

# **ANTENNA A RESULTS**

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Mid	5290	82.20	3.43	24.00	11.00

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

#### **Output Power Results**

Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	13.44	13.65	24.00	-10.35

#### **PSD Results**

Channel	Frequency	Antenna A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-4.05	-3.84	11.00	-14.84

# **ANTENNA B RESULTS**

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Mid	5290	82.20	3.88	24.00	11.00

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

#### **Output Power Results**

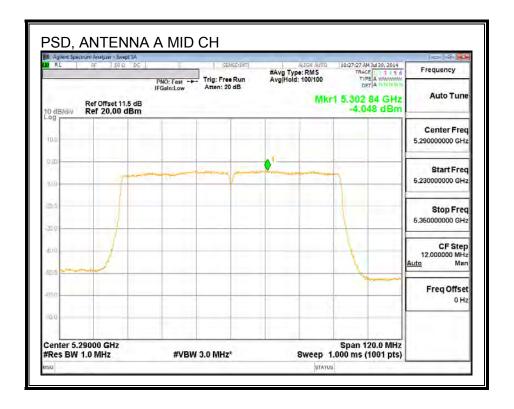
Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	13.42	13.63	24.00	-10.37

#### **PSD Results**

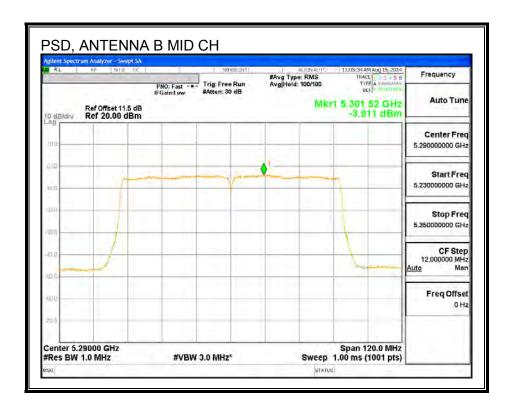
Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-3.91	-3.70	11.00	-14.70

FORM NO: CCSUP4701J

#### **PSD, ANTENNA A**



#### **PSD, ANTENNA B**



Page 204 of 764

REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

#### 9.17. 802.11ac VHT80 2TX CDD MODE IN THE 5.3 GHz BAND

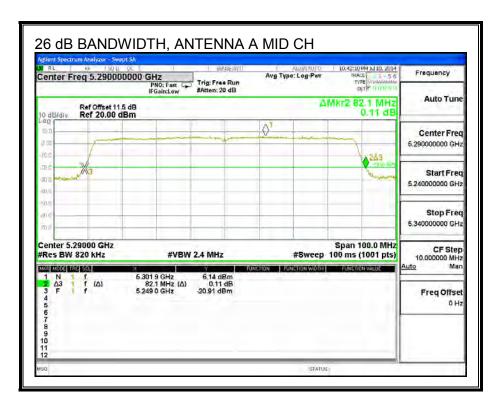
#### 9.17.1. 26 dB BANDWIDTH

### **LIMITS**

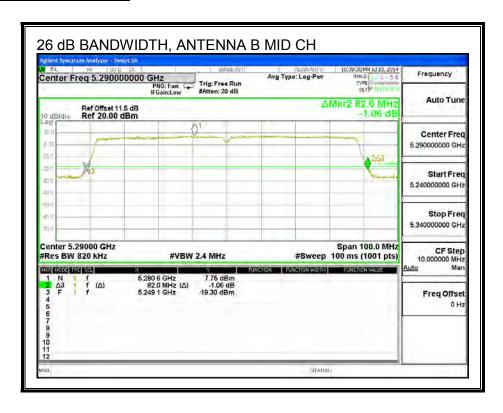
None; for reporting purposes only.

Channel	Frequency	26 dB BW	26 dB BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Mid	5290	82.10	82.00

### 26 dB BANDWIDTH, ANTENNA A



#### 26 dB BANDWIDTH, ANTENNA B



FCC ID: BCGA1566

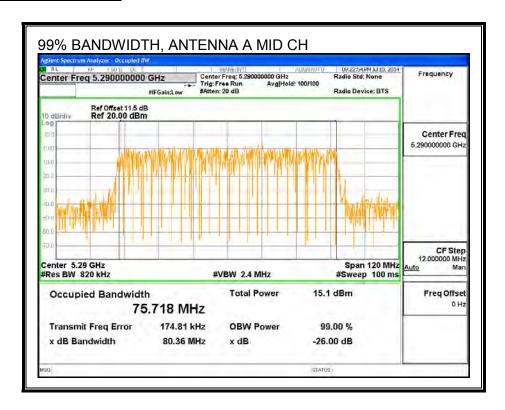
# 9.17.2. 99% BANDWIDTH

### **LIMITS**

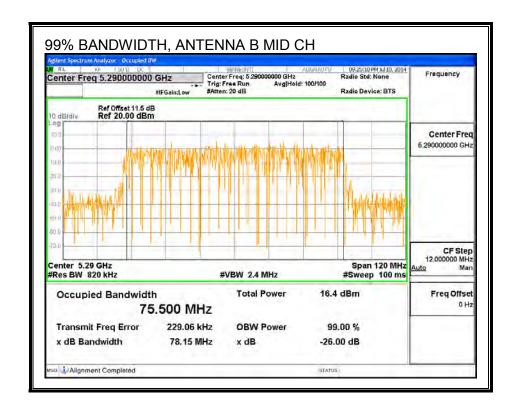
None; for reporting purposes only.

Channel	Frequency	99% BW	99% BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Mid	5290	75.718	75.500

#### 99% BANDWIDTH, ANTENNA A



#### 99% BANDWIDTH, ANTENNA B



FCC ID: BCGA1566

### 9.17.3. AVERAGE POWER

### **LIMITS**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

#### **Average Power Results**

Channel	Frequency	Antenna A	Antenna B	Total
		Power		Power
	(MHz)	(dBm)	(dBm)	(dBm)
Mid	5290	11.87	11.99	14.94

FCC ID: BCGA1566

#### 9.17.4. OUTPUT POWER AND PSD

### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

Antenna A	Antenna B	Uncorrelated Chains Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
3.434	3.875	3.66

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

Antenna A	Antenna B	Correlated Chains	
		Directional	
Gain	Gain	Gain	
(dBi)	(dBi)	(dBi)	
3.434	3.875	6.67	

# **RESULTS**

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5290	82.00	3.66	6.67	24.00	10.33

### **Output Power Results**

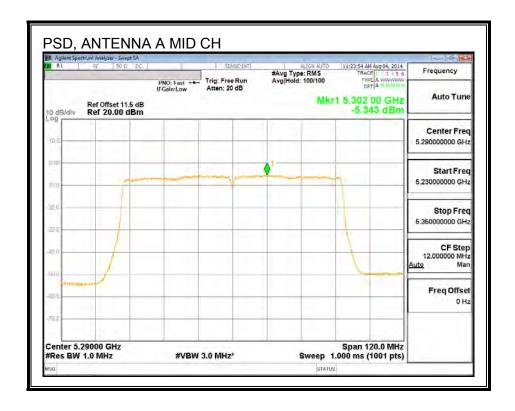
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	11.87	11.99	15.15	24.00	-8.85

#### **PSD Results**

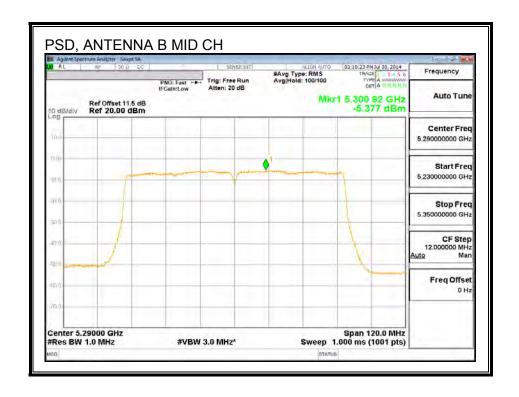
Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-5.34	-5.38	-2.14	10.33	-12.47

FORM NO: CCSUP4701J

#### **PSD, ANTENNA A**



#### **PSD, ANTENNA B**



REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.18. 802.11ac VHT80 2TX STBC MODE IN THE 5.3 GHz BAND

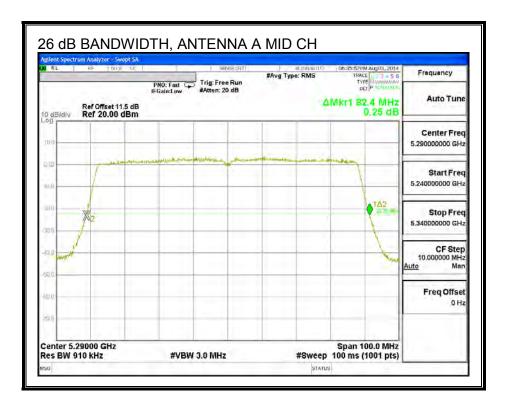
### 9.18.1. 26 dB BANDWIDTH

# **LIMITS**

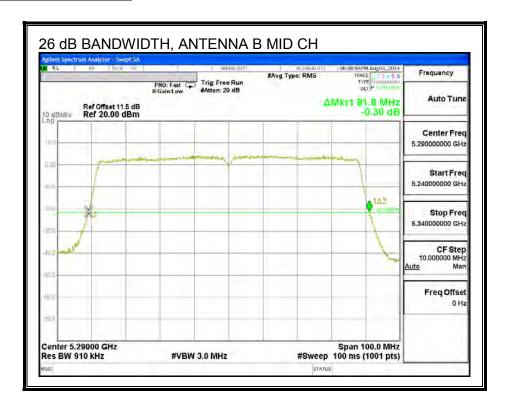
None; for reporting purposes only.

Channel	Frequency	26 dB BW	26 dB BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Mid	5290	82.40	81.80

### 26 dB BANDWIDTH, ANTENNA A



#### **26 dB BANDWIDTH, ANTENNA B**



FCC ID: BCGA1566

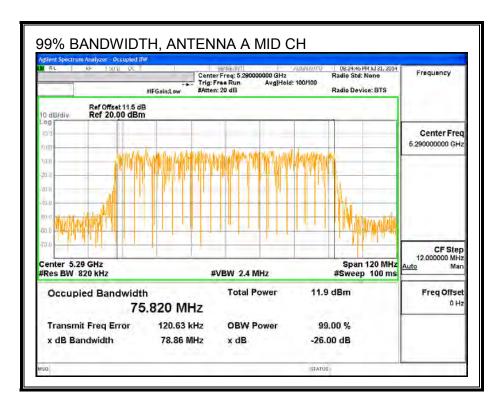
# 9.18.2. 99% BANDWIDTH

### **LIMITS**

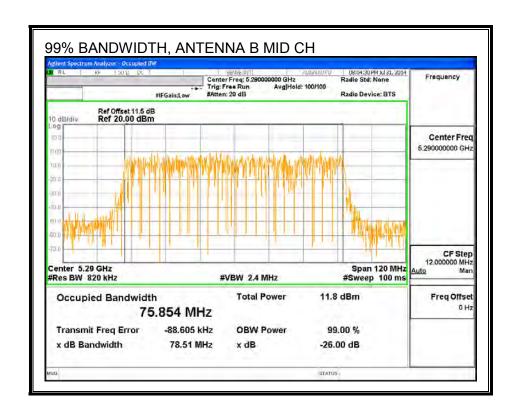
None; for reporting purposes only.

Channel	Frequency	99% BW	99% BW	
		Antenna A	Antenna B	
	(MHz)	(MHz)	(MHz)	
Mid	5290	75.820	75.854	

### 99% BANDWIDTH, ANTENNA A



#### 99% BANDWIDTH, ANTENNA B



FCC ID: BCGA1566

### 9.18.3. AVERAGE POWER

### **LIMITS**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

#### **Average Power Results**

Channel	Frequency	Antenna A	Antenna B	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Mid	5290	11.80	11.86	14.84

FCC ID: BCGA1566

#### 9.18.4. OUTPUT POWER AND PSD

### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

Antenna A	Antenna B	<b>Uncorrelated Chains</b>		
		Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
3.434	3.875	3.66		

# **RESULTS**

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5290	81.80	3.66	3.66	24.00	11.00

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

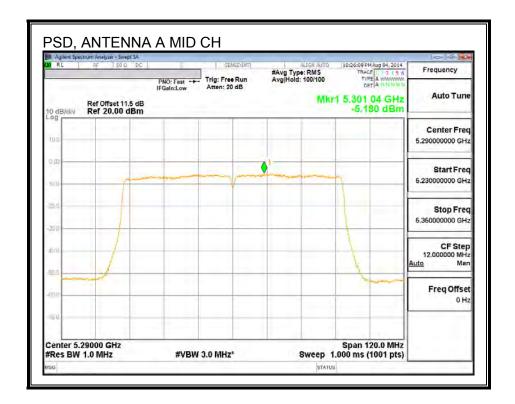
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	11.80	11.86	15.06	24.00	-8.94

#### **PSD Results**

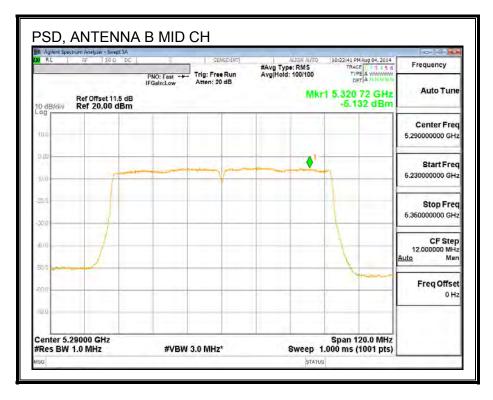
	Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
			Meas	Meas	Corr'd	Limit	Margin
			PSD	PSD	PSD		
		(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Ī	Mid	5290	-5.18	-5.13	-1.93	11.00	-12.93

FORM NO: CCSUP4701J

# **PSD, ANTENNA A**



#### **PSD, ANTENNA B**



Page 220 of 764

REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.19. 802.11a MODE IN THE 5.6 GHz BAND

### 9.19.1. 26 dB BANDWIDTH

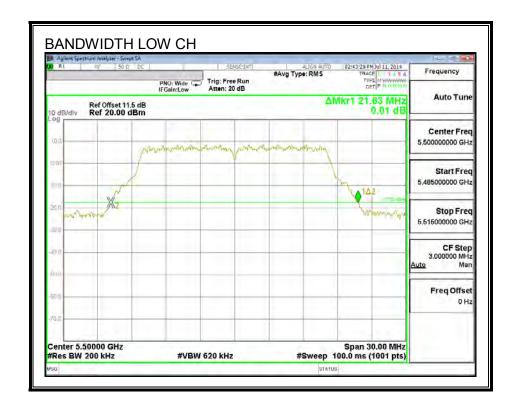
# **LIMITS**

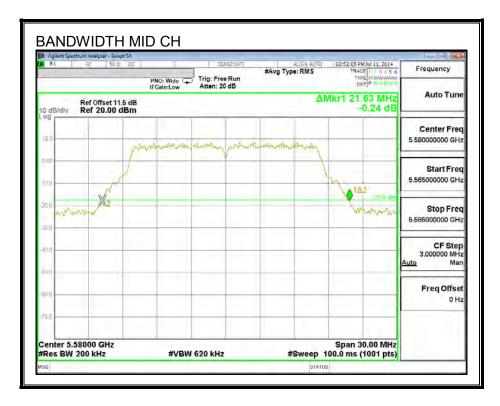
None; for reporting purposes only.

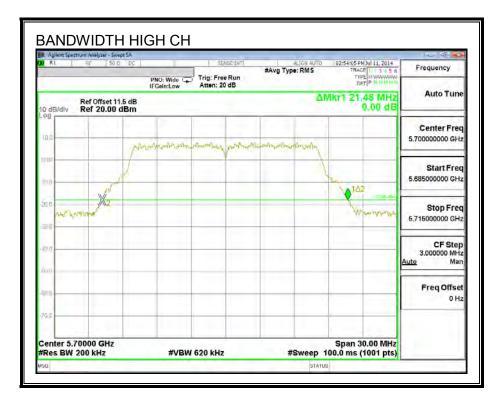
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5500	21.6
Mid	5580	21.6
High	5700	21.5
144	5720	21.6

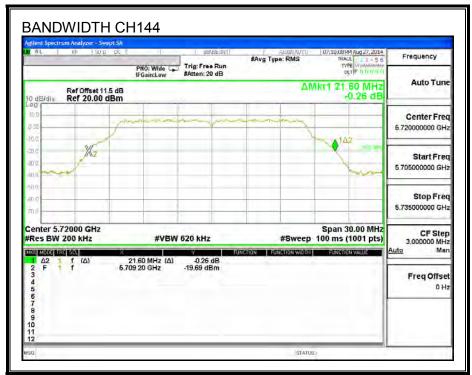
### DATE: SEPTEMBER 30, 2014

#### **26 dB BANDWIDTH**









# FCC ID: BCGA1566

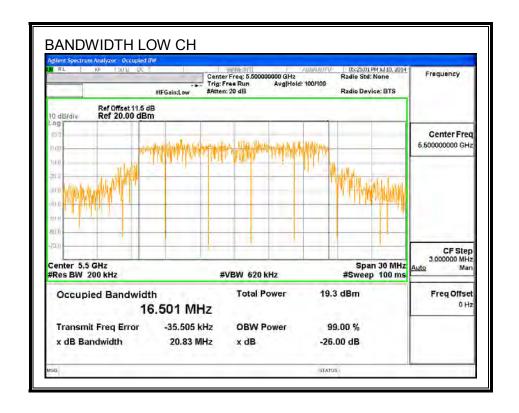
# 9.19.2. 99% BANDWIDTH

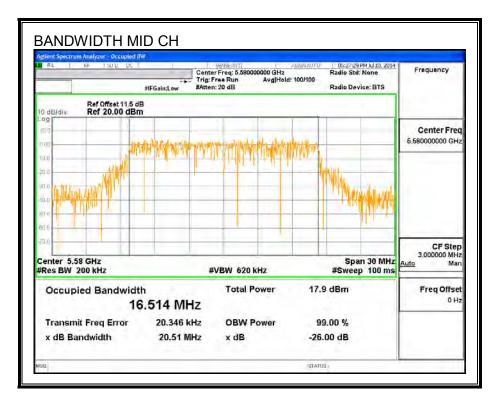
# **LIMITS**

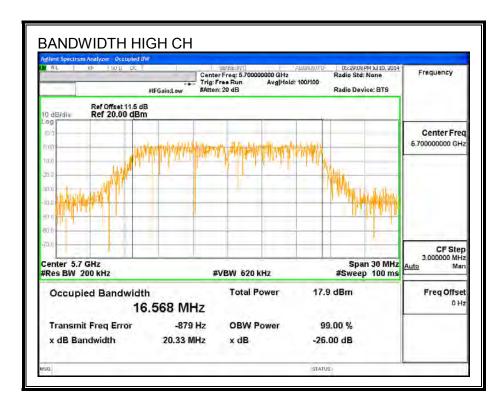
None; for reporting purposes only.

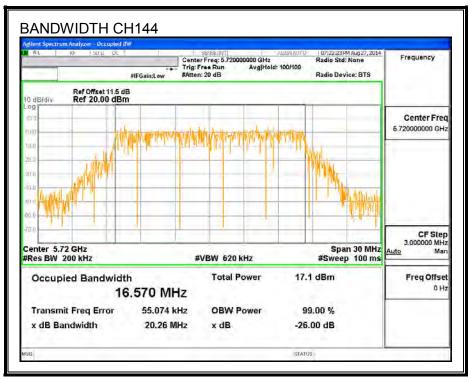
Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5500	16.501
Mid	5580	16.514
High	5700	16.568
144	5720	16.570

#### 99% BANDWIDTH









FCC ID: BCGA1566

### 9.19.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

### **TEST PROCEDURE**

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency	Antenna A	Antenna B
	(MHz)	Power	Power
		(dBm)	(dBm)
Low	5500	15.94	15.97
Mid	5580	17.43	17.86
High	5700	14.99	14.95
144	5720	17.47	17.98

FCC ID: BCGA1566

#### 9.19.4. OUTPUT POWER AND PSD

#### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.5–5.7 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

#### **ANTENNA A**

Antenna Gain (dBi) 4.293

#### **ANTENNA B**

Antenna Gain (dBi) 4.247

Page 228 of 764

# **ANTENNA A RESULTS**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5500	21.6	4.29	24.00	11.00
Mid	5580	21.6	4.29	24.00	11.00
High	5700	21.5	4.29	24.00	11.00

Duty Cycle CF (dB) 0.00	Included in Calculations of Corr'd Power & PSD
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#### **Output Power Results**

Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	15.94	15.94	24.00	-8.06
Mid	5580	17.43	17.43	24.00	-6.57
High	5700	14.99	14.99	24.00	-9.01

#### **PSD Results**

L 2D IVE 20	r 3D Nesulis							
Channel	Frequency	Antenna A	Total	PSD	PSD			
		Meas	Corr'd	Limit	Margin			
		PSD	PSD					
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)			
Low	5500	4.74	4.74	11.00	-6.26			
Mid	5580	6.75	6.75	11.00	-4.25			
High	5700	3.62	3.62	11.00	-7.38			

# **ANTENNA B RESULTS**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5500	21.6	4.29	24.00	11.00
Mid	5580	21.6	4.29	24.00	11.00
High	5700	21.5	4.29	24.00	11.00

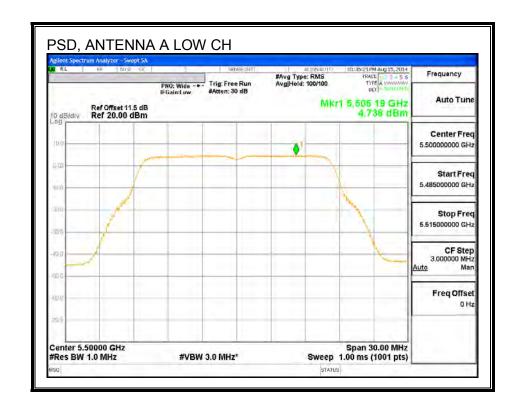
### **Output Power Results**

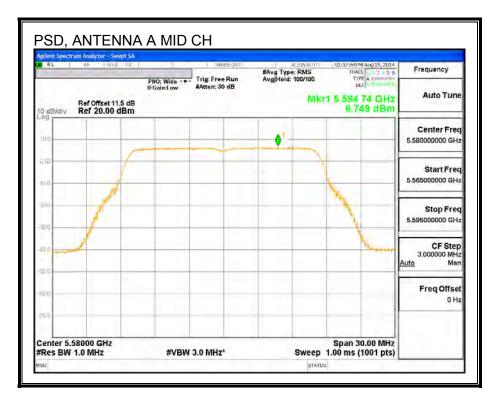
Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	15.97	15.97	24.00	-8.03
Mid	5580	17.86	17.86	24.00	-6.14
High	5700	14.95	14.95	24.00	-9.05

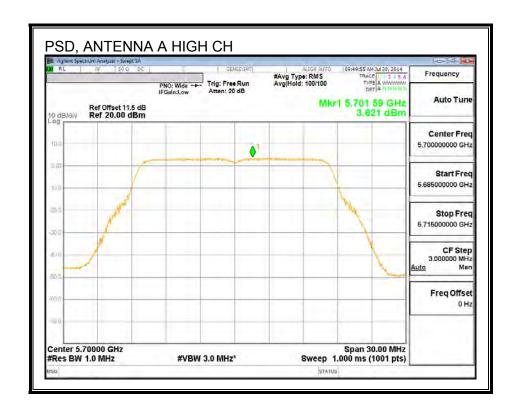
#### **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	5.04	5.04	11.00	-5.96
Mid	5580	7.14	7.14	11.00	-3.86
High	5700	3.93	3.93	11.00	-7.07

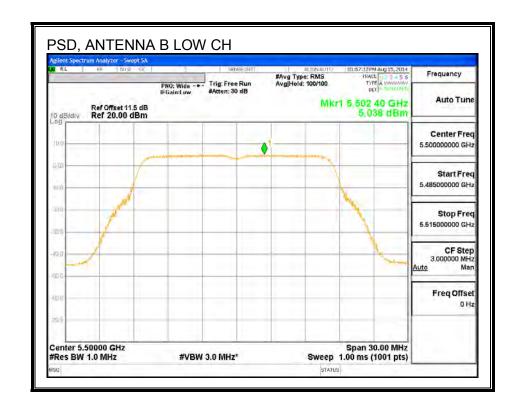
### **PSD, ANTENNA A**

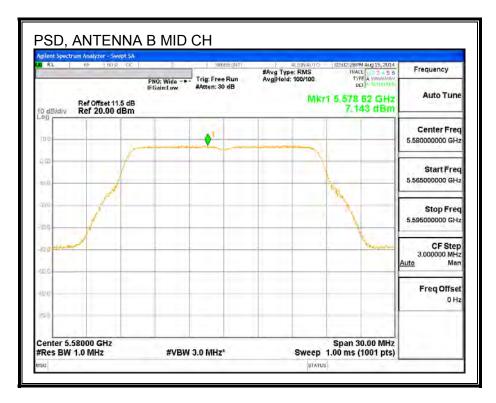


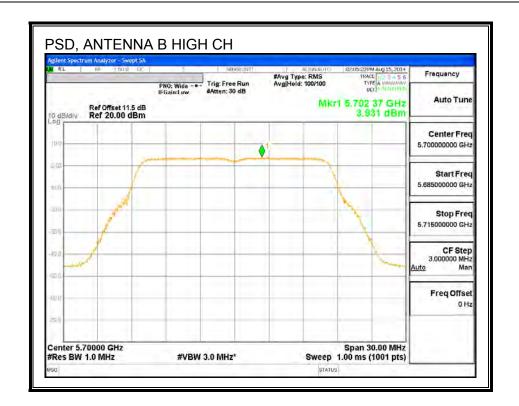




#### **PSD, ANTENNA B**







# **ANTENNA A, STRADDLE CHANNEL 144 RESULTS**

### **UNII-2C BAND**

### Bandwidth, Antenna Gain, and Limits

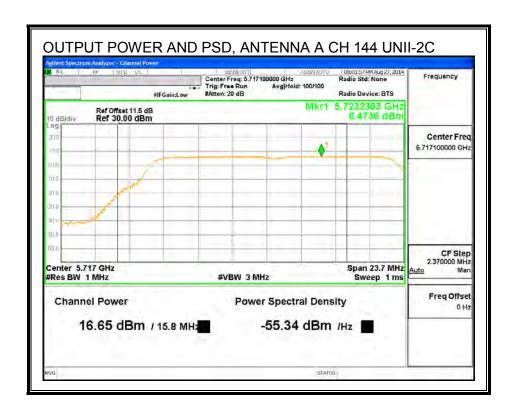
Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	15.80	4.29	4.29	22.99	11.00

### **Output Power Results**

Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	16.65	16.65	22.99	-6.34

#### **PSD Results**

Channel	Frequency	Antenna A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	6.47	6.47	11.00	-4.53



# **UNII-3 BAND**

### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	4.29	30.00	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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# **Output Power Results**

Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	10.43	10.43	30.00	-19.57

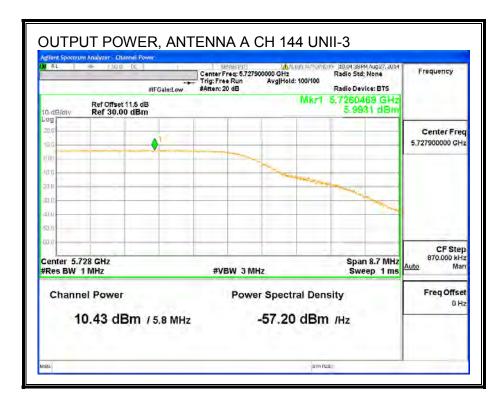
### **PSD Results**

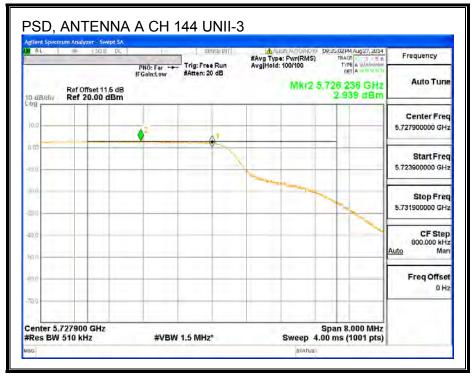
Ī	Channel	Frequency	Antenna A	Total	PSD	PSD
			Meas	Corr'd	Limit	Margin
			PSD	PSD		
		(MHz)	(dBm)	(dBm)	(dBm)	(dB)
ĺ	144	5720	2.94	2.94	30.00	-27.06

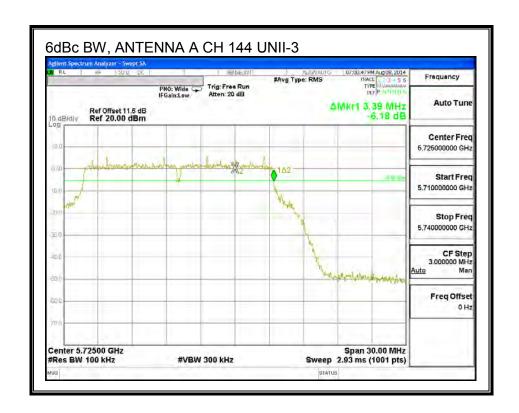
FORM NO: CCSUP4701J

DATE: SEPTEMBER 30, 2014

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# DATE: SEPTEMBER 30, 2014

# **ANTENNA B, STRADDLE CHANNEL 144 RESULTS**

# **UNII-2C BAND**

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	15.80	4.25	4.25	22.99	11.00

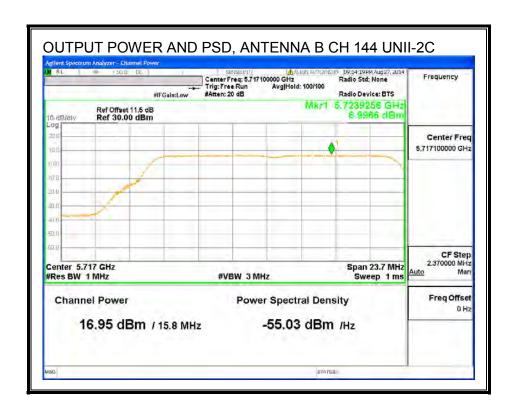
Duty Cycle CF (dB) 0.00	Included in Calculations of Corr'd Power & PSD
-------------------------	--

### **Output Power Results**

Chann	nel Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	16.95	16.95	22.99	-6.04

#### **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD				
		Meas	Corr'd	Limit	Margin				
		PSD	PSD						
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)				
144	5720	7.00	7.00	11.00	-4.00				



# **UNII-3 BAND**

### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	4.25	30.00	30.00

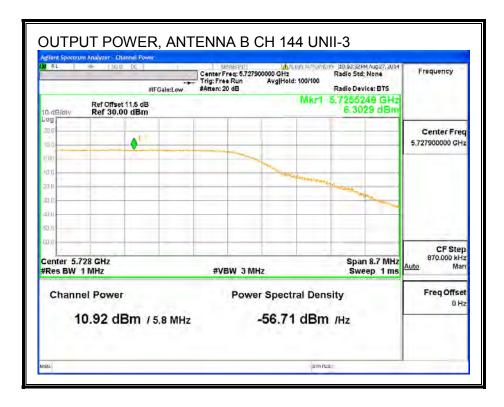
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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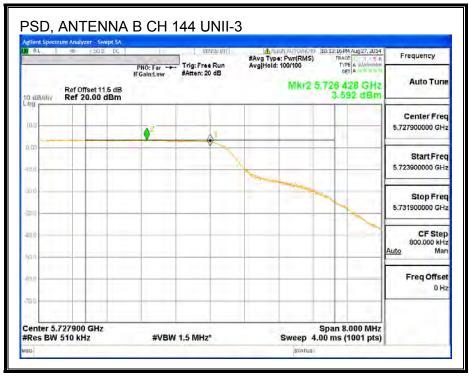
# **Output Power Results**

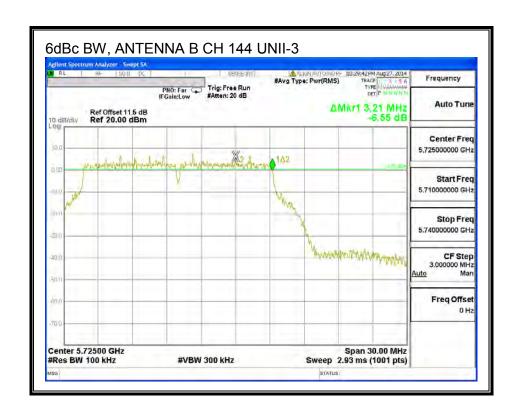
Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	10.92	10.92	30.00	-19.08

### **PSD Results**

	Channel	Frequency	Antenna B	Total	PSD	PSD
ı			Meas	Corr'd	Limit	Margin
ı			PSD	PSD		
ı		(MHz)	(dBm)	(dBm)	(dBm)	(dB)
ſ	144	5720	3.59	3.59	30.00	-26.41







REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.20. 802.11n HT20 2TX CDD MODE IN THE 5.6 GHz BAND

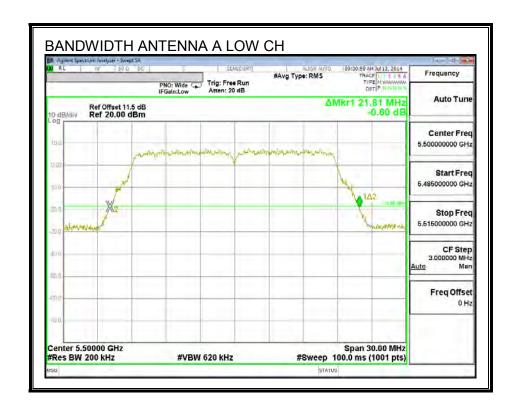
# 9.20.1. 26 dB BANDWIDTH

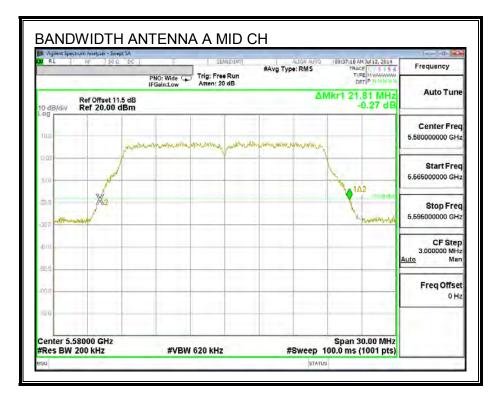
# **LIMITS**

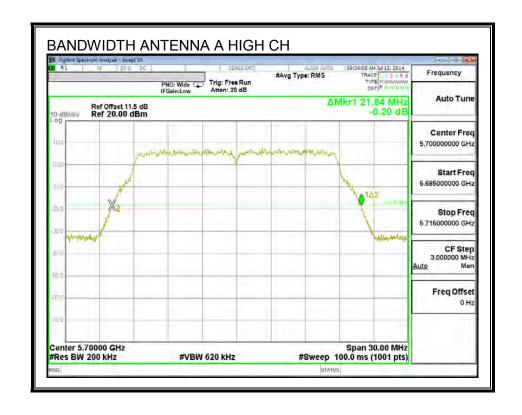
None; for reporting purposes only.

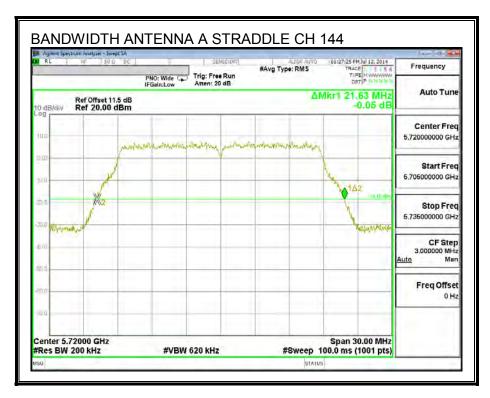
Channel	Frequency	26 dB BW	26 dB BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5500	21.81	21.75
Mid	5580	21.81	21.75
High	5700	21.84	21.57
144	5720	21.63	21.75

### 26 dB BANDWIDTH, ANTENNA A

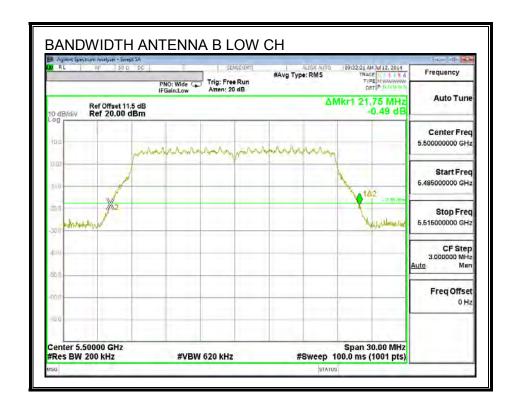


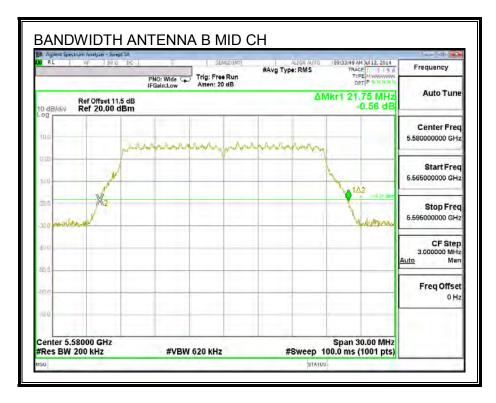


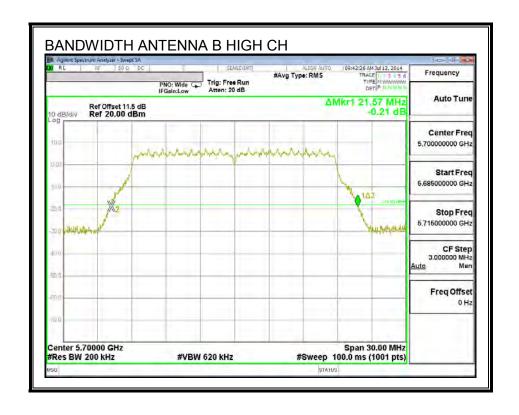


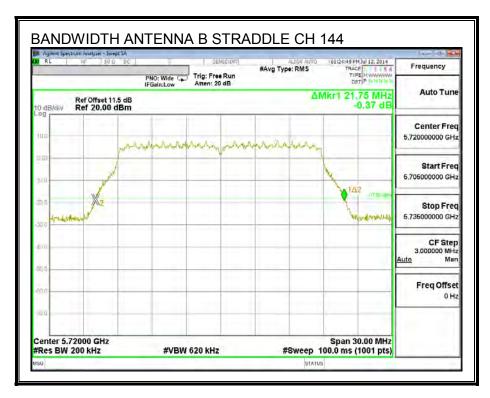


### 26 dB BANDWIDTH, ANTENNA B









FCC ID: BCGA1566

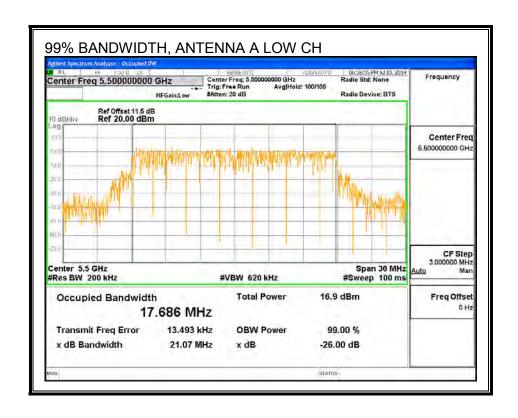
# 9.20.2. 99% BANDWIDTH

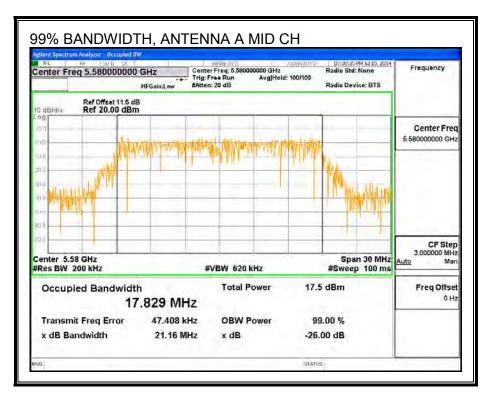
# **LIMITS**

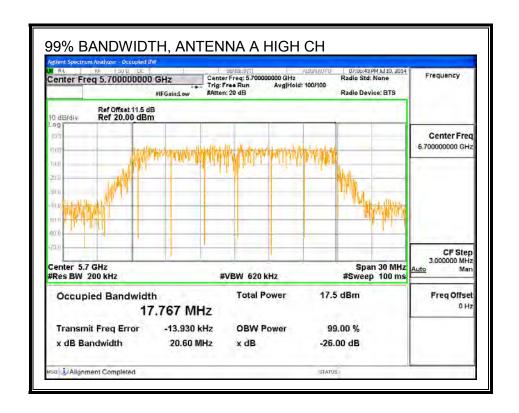
None; for reporting purposes only.

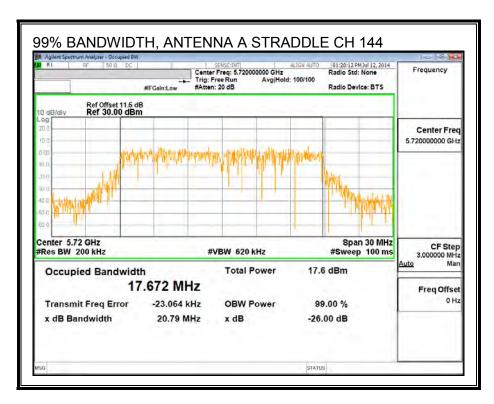
Channel Frequency		99% BW	99% BW	
		Antenna A	Antenna B	
	(MHz)	(MHz)	(MHz)	
Low	5500	17.686	17.777	
Mid	5580	17.829	17.709	
High	5700	17.767	17.715	
144	5720	17.672	17.665	

### 99% BANDWIDTH, ANTENNA A

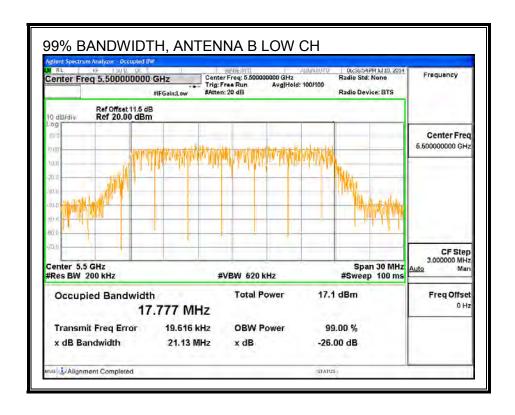


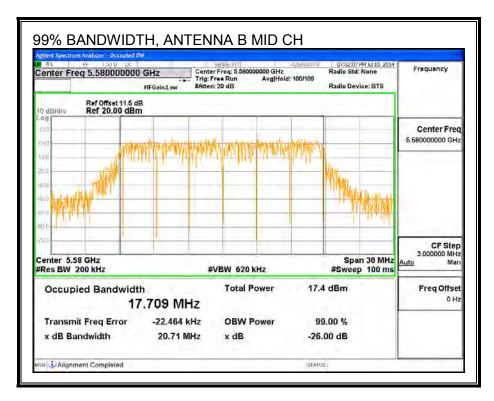


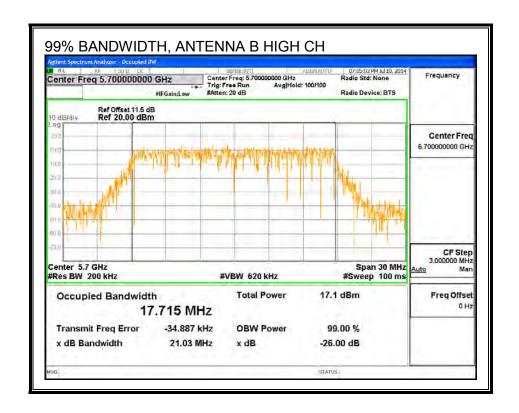


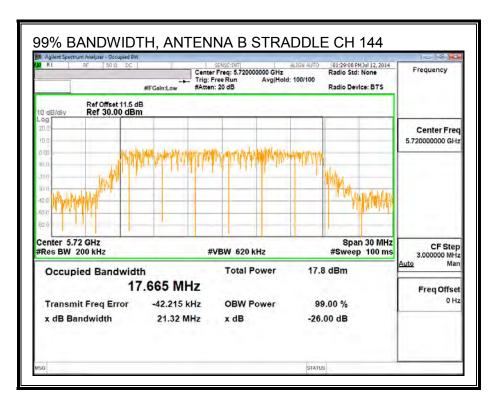


### 99% BANDWIDTH, ANTENNA B









FCC ID: BCGA1566

# 9.20.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **RESULTS**

### **Average Power Results**

Channel	Frequency	Antenna A	Antenna B	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	14.39	14.44	17.43
Mid	5580	14.32	14.39	17.37
High	5700	13.97	13.91	16.95
144	5720	14.47	14.38	17.44

FCC ID: BCGA1566

### 9.20.4. OUTPUT POWER AND PSD

#### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **DIRECTIONAL ANTENNA GAIN**

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

Antenna A	Antenna B	<b>Uncorrelated Chains</b>
		Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
4.29	4.25	4.27

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

Antenna A	Antenna B	Correlated Chains
		Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
4.29	4.25	7.28

# **RESULTS**

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min 26 dB	Directional Gain	Directional Gain	Power Limit	PSD Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5500	21.75	4.27	7.28	24.00	9.72
Mid	5580	21.75	4.27	7.28	24.00	9.72
High	5700	21.57	4.27	7.28	24.00	9.72

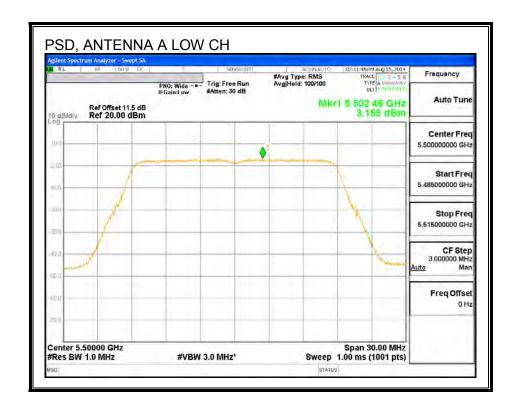
### **Output Power Results**

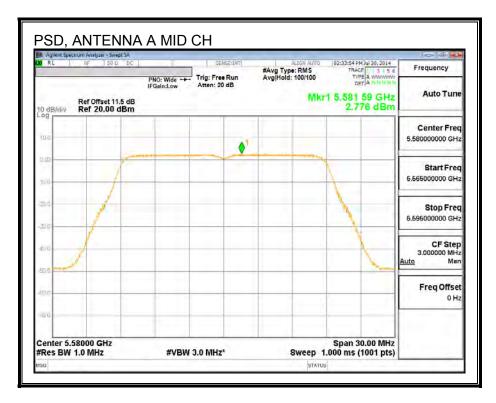
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas Power	Meas Power	Corr'd Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	14.39	14.44	17.43	24.00	-6.57
Low Mid	5500 5580	14.39 14.32	14.44 14.39	17.43 17.37	24.00 24.00	-6.57 -6.63

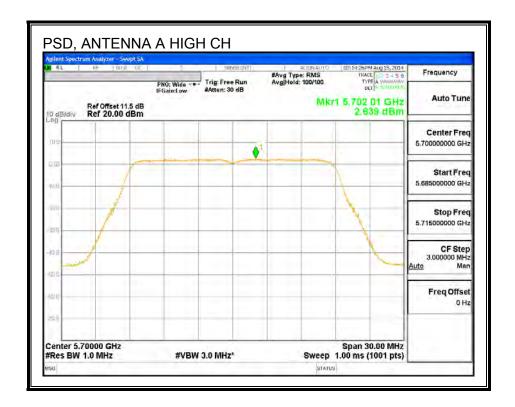
### **PSD Results**

Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	3.16	3.11	6.14	9.72	-3.58
Mid	5580	2.78	2.95	5.88	9.72	-3.84
High	5700	2.64	2.50	5.58	9.72	-4.14

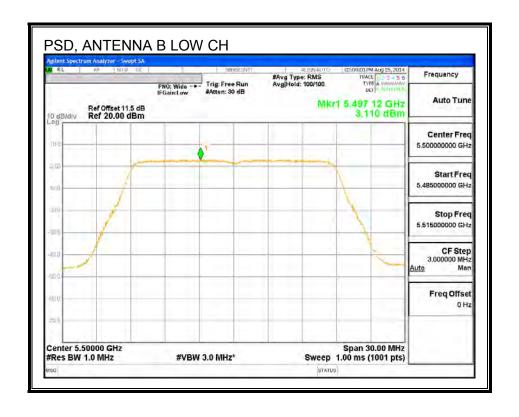
### **PSD, ANTENNA A**

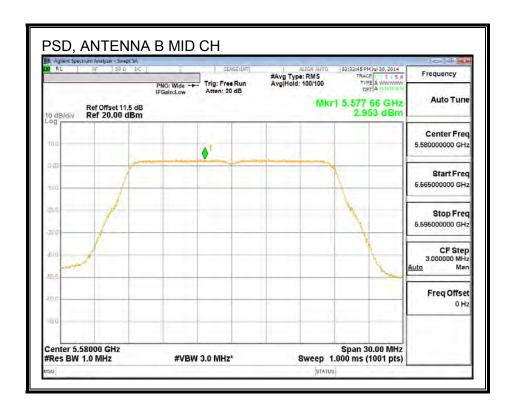


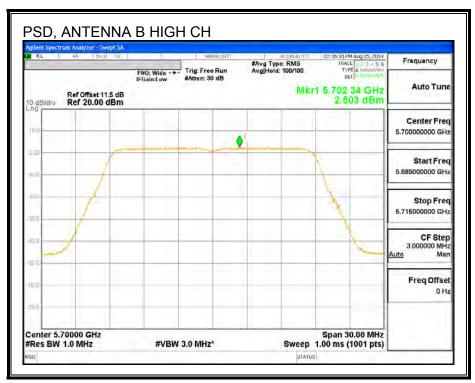




### PSD, ANTENNA B







# **STRADDLE CHANNEL 144 RESULTS**

# **UNII-2C BAND**

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	15.82	4.27	7.28	22.99	9.72

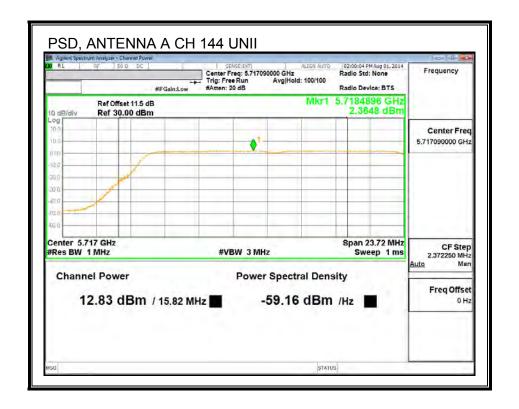
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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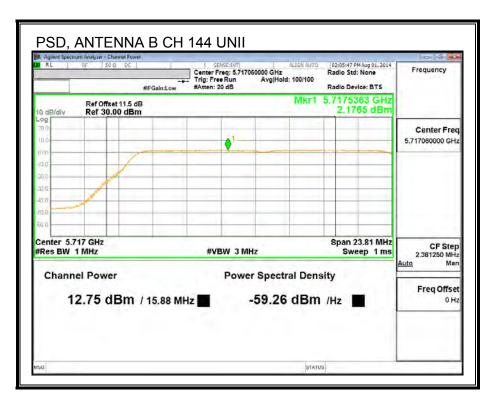
# **Output Power Results**

Chann	el Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	12.83	12.75	15.80	22.99	-7.19

#### **PSD Results**

Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	2.36	2.18	5.28	9.72	-4.44





# **UNII-3 BAND**

#### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	7.28	28.72	28.72

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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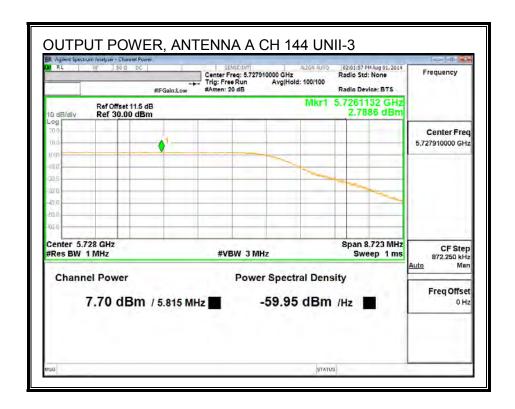
### **Output Power Results**

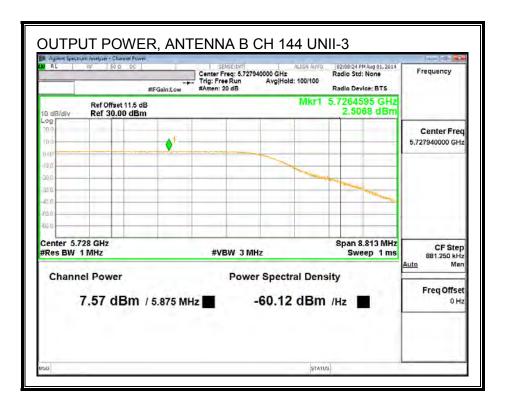
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	7.70	7.57	10.65	28.72	-18.07

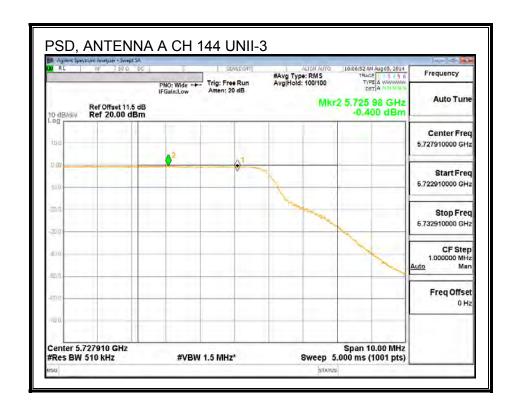
### **PSD Results**

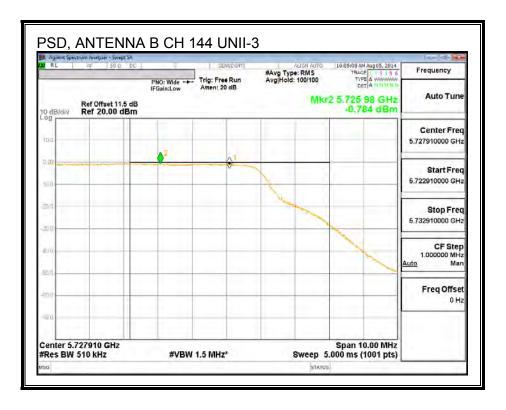
Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD	
		Meas	Meas	Corr'd	Limit	Margin	
		PSD	PSD	PSD			
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)	
144	5720	-0.40	-0.78	2.42	28.72	-26.30	

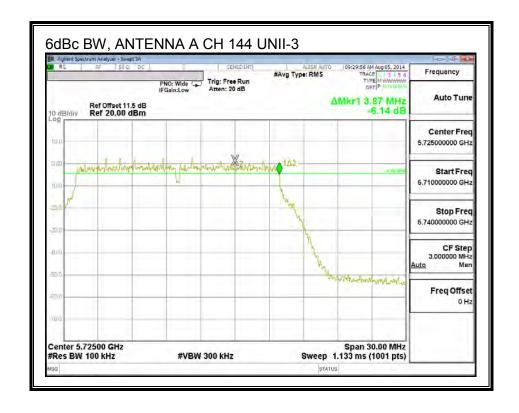
FORM NO: CCSUP4701J

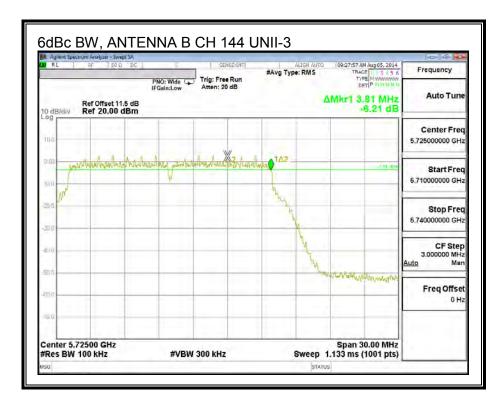












REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.21. 802.11n HT20 2TX STBC MODE IN THE 5.6 GHz BAND

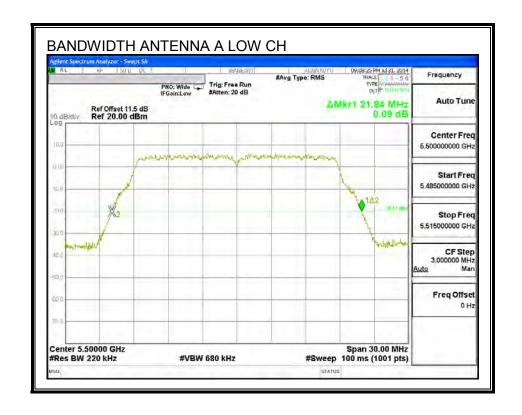
# 9.21.1. 26 dB BANDWIDTH

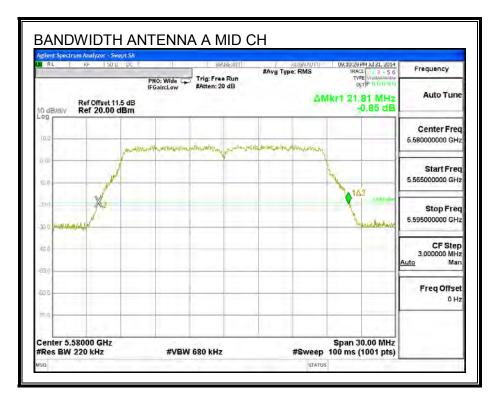
# **LIMITS**

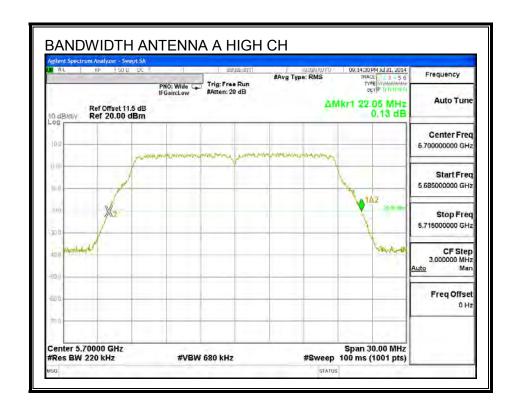
None; for reporting purposes only.

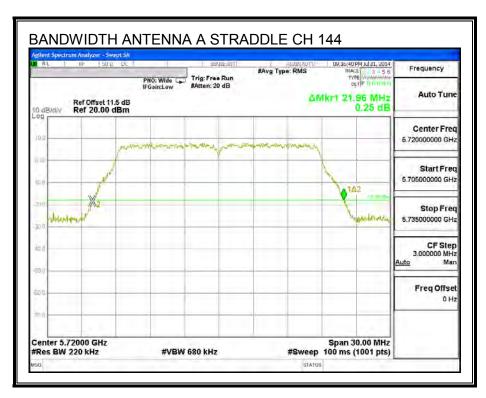
Channel	Frequency	26 dB BW	26 dB BW	
		Antenna A	Antenna B	
	(MHz)	(MHz)	(MHz)	
Low	5500	21.84	21.84	
Mid	5580	21.81	21.87	
High	5700	22.05	21.90	
144	5720	21.96	21.84	

### 26 dB BANDWIDTH, ANTENNA A

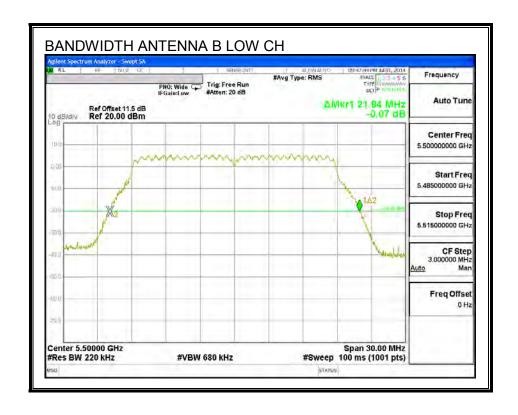


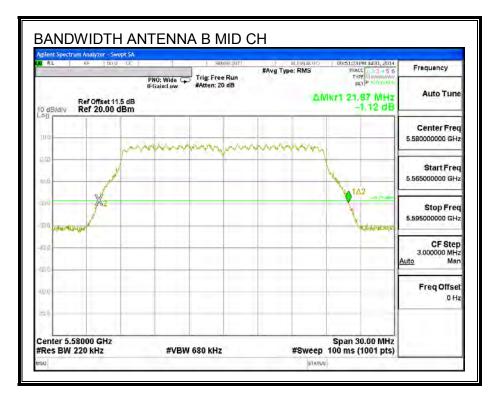


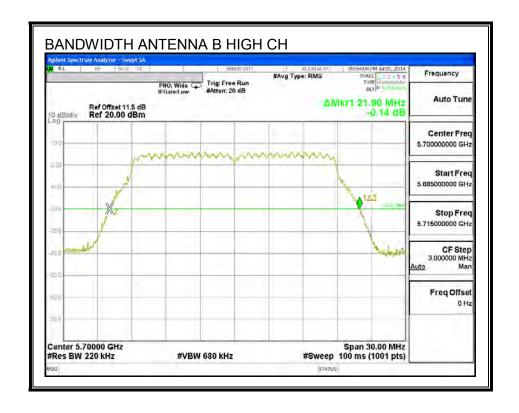


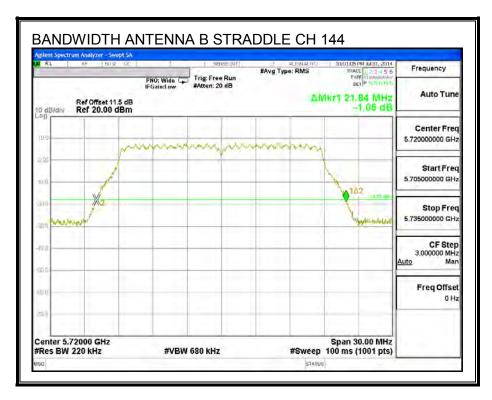


# 26 dB BANDWIDTH, ANTENNA B









FCC ID: BCGA1566

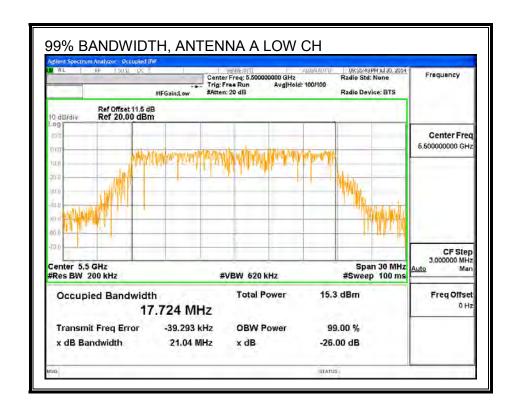
# 9.21.2. 99% BANDWIDTH

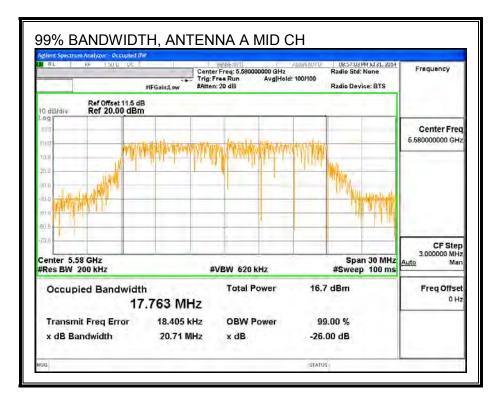
# **LIMITS**

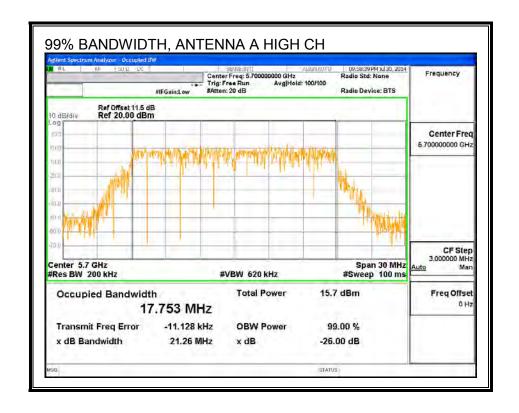
None; for reporting purposes only.

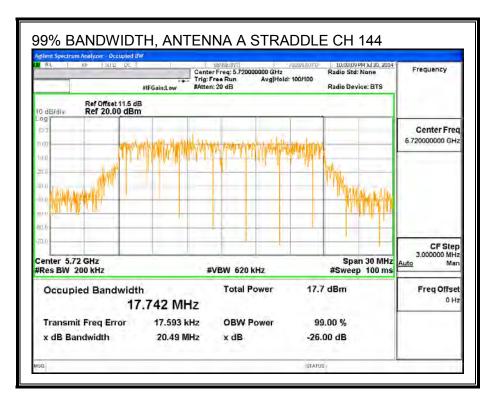
Channel	Frequency	99% BW	99% BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5500	17.724	17.658
Mid	5580	17.763	17.704
High	5700	17.753	17.733
144	5720	17.742	17.696

#### 99% BANDWIDTH, ANTENNA A

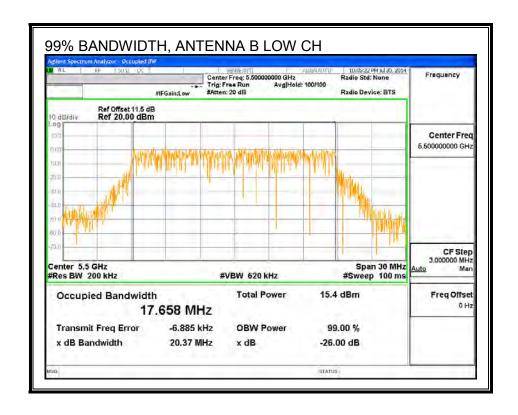


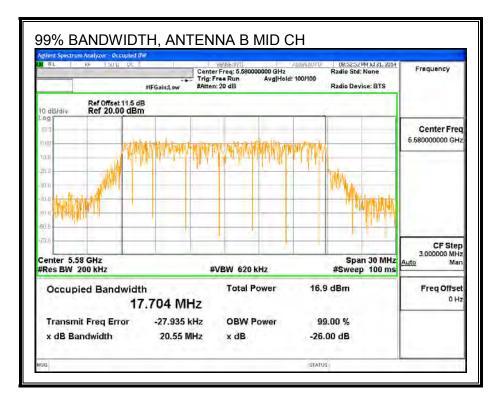


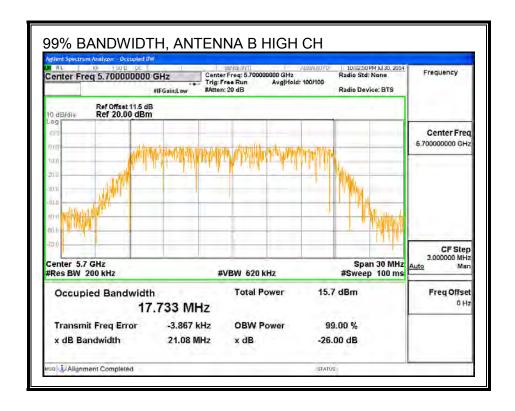


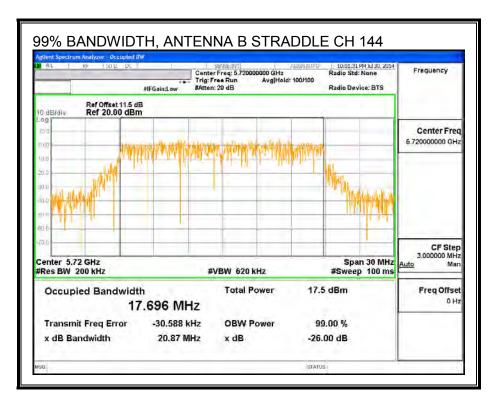


#### 99% BANDWIDTH, ANTENNA B









REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

#### 9.21.3. AVERAGE POWER

#### **LIMITS**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

#### **Average Power Results**

Channel	Frequency	Antenna A	Antenna B	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	15.40	15.48	18.45
Mid	5580	17.00	16.97	20.00
High	5700	13.92	13.95	16.95
144	5720	16.93	16.95	19.95

REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

#### 9.21.4. OUTPUT POWER AND PSD

#### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

Antenna A	Antenna B	Uncorrelated Chains
		Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
4.293	4.247	4.27

## **RESULTS**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5500	21.84	4.27	4.27	24.00	11.00
Mid	5580	21.81	4.27	4.27	24.00	11.00
High	5700	21.90	4.27	4.27	24.00	11.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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#### **Output Power Results**

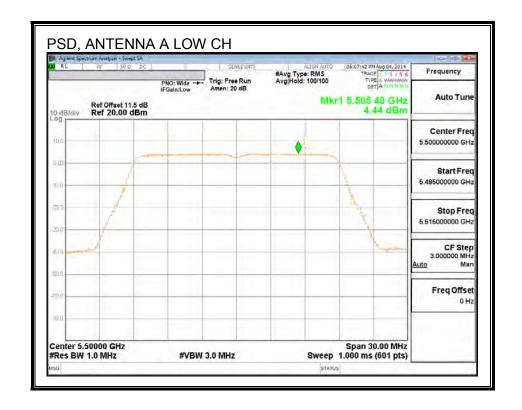
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas Power	Meas Power	Corr'd Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	15.40	15.48	18.45	24.00	-5.55
Low Mid	5500 5580	15.40 17.00	15.48 16.97	18.45 20.00	24.00 24.00	-5.55 -4.00

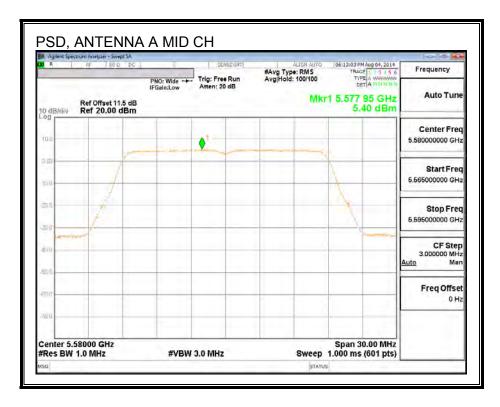
#### **PSD Results**

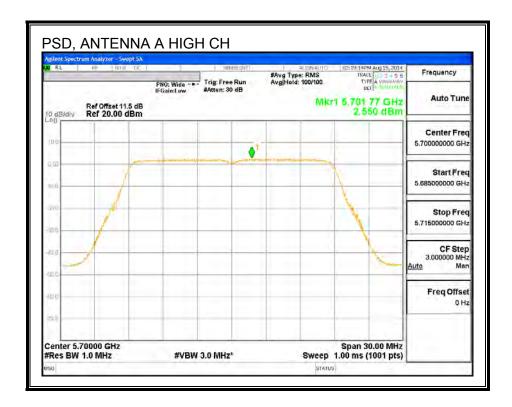
	1 OB NOCURE					
Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas PSD	Meas PSD	Corr'd PSD	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(AD)
	(IVITIZ)	(ubili)	(ubiii)	(ubiii)	(ubiii)	(dB)
Low	5500	4.44	4.35	7.40	11.00	-3.60
Low Mid	, ,	, ,	, ,	, ,	, ,	, ,

DATE: SEPTEMBER 30, 2014

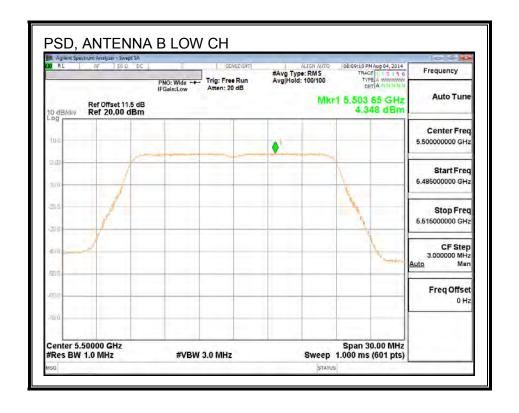
#### **PSD, ANTENNA A**

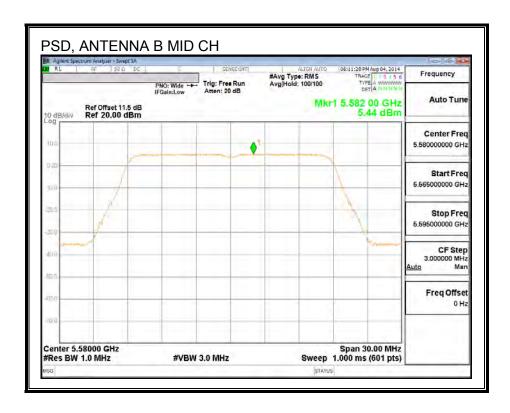


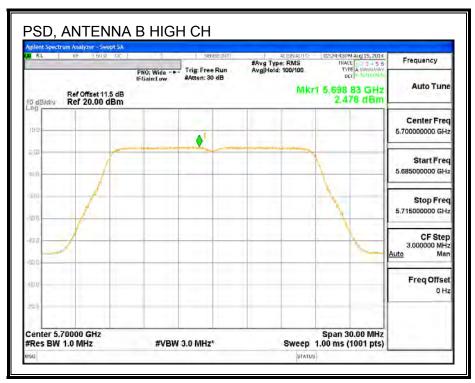




#### PSD, ANTENNA B







# **STRADDLE CHANNEL 144 RESULTS**

#### **UNII-2C BAND**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	15.00	4.27	4.27	22.76	11.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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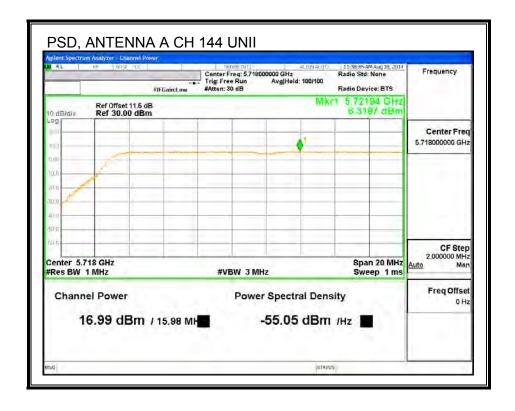
#### **Output Power Results**

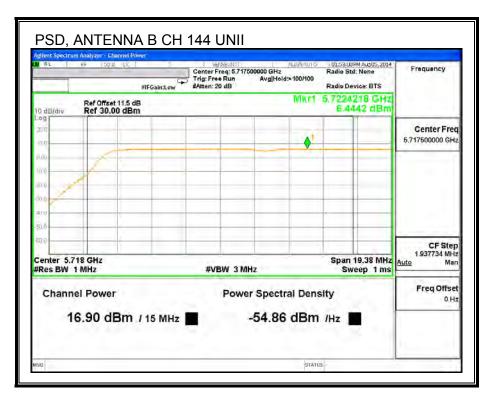
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	16.99	16.90	19.96	22.76	-2.81

#### **PSD Results**

Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	6.32	6.44	9.39	11.00	-1.61

DATE: SEPTEMBER 30, 2014





### **UNII-3 BAND**

#### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	4.27	30.00	30.00

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

#### **Output Power Results**

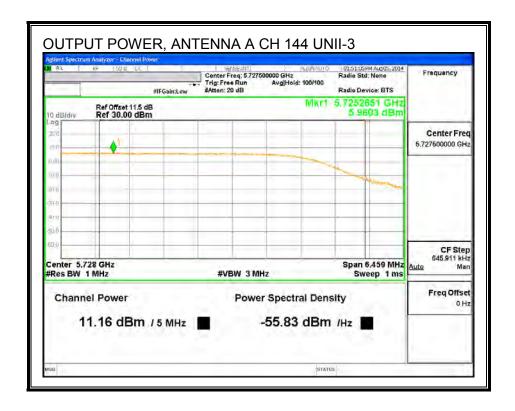
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	11.16	11.43	14.31	30.00	-15.69

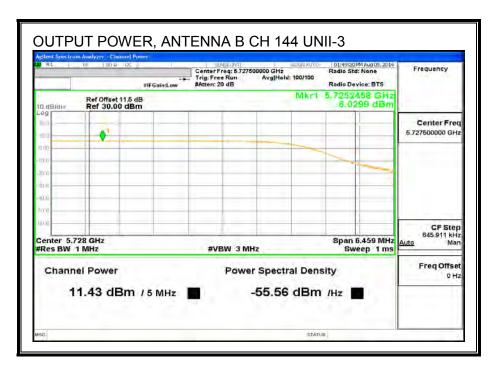
#### **PSD Results**

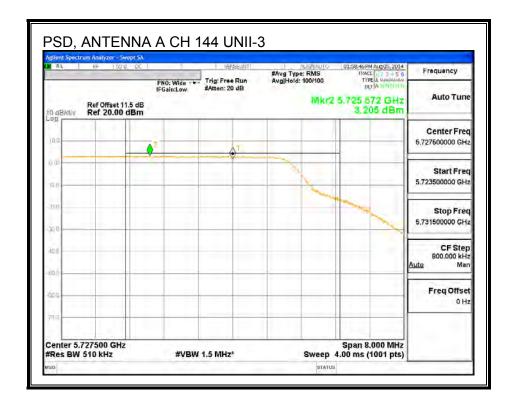
Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	3.21	3.33	6.28	30.00	-23.72

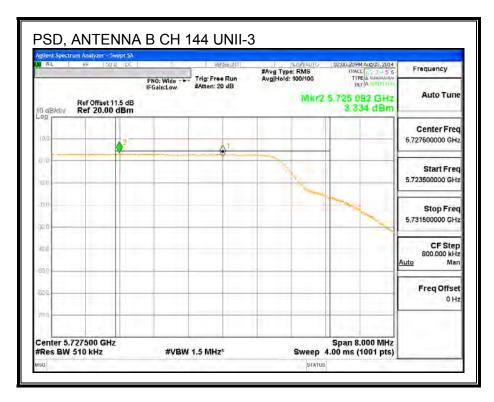
FORM NO: CCSUP4701J

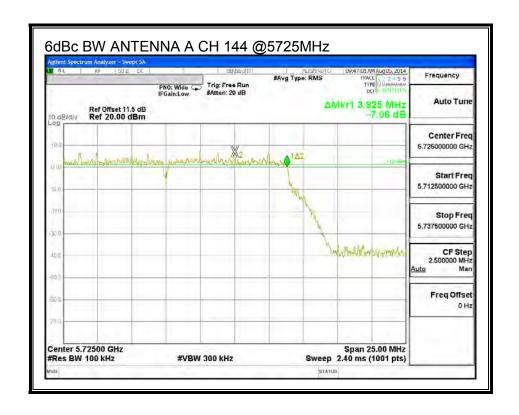
DATE: SEPTEMBER 30, 2014

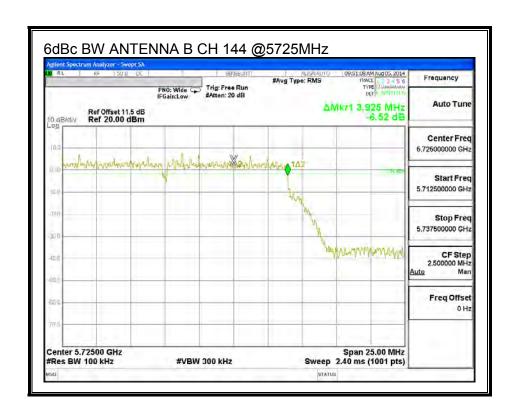












REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.22. 802.11n HT40 MODE IN THE 5.6 GHz BAND

#### 9.22.1. 26 dB BANDWIDTH

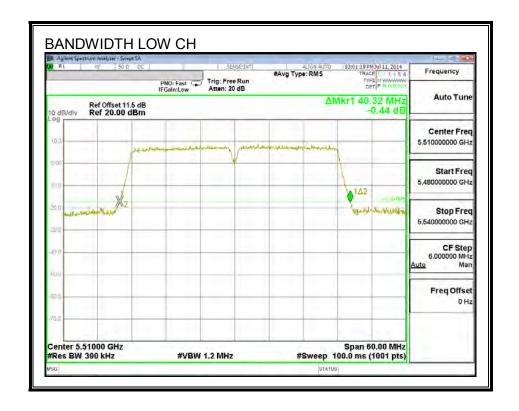
#### **LIMITS**

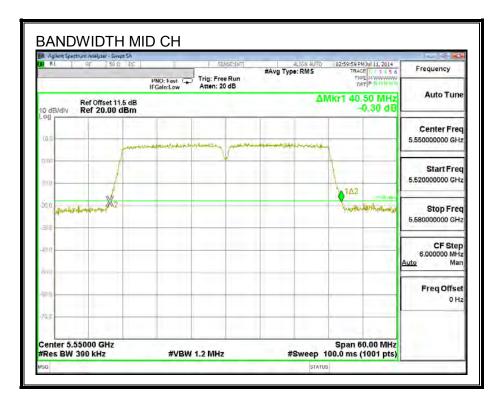
None; for reporting purposes only.

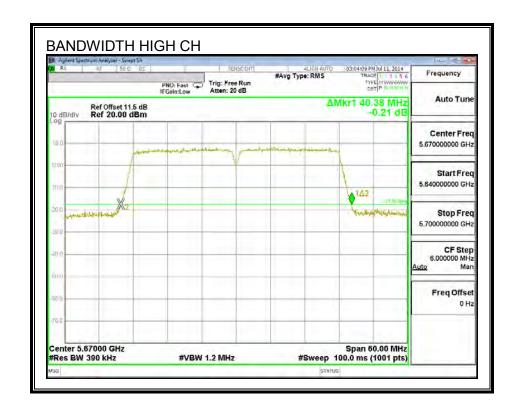
#### **RESULTS**

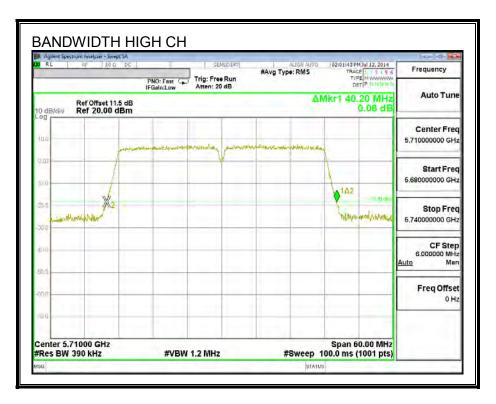
Channel Frequency		26 dB Bandwidth		
	(MHz)	(MHz)		
Low	5510	40.3		
Mid	5550	40.5		
High	5670	40.4		
142	5710	40.2		

#### **26 dB BANDWIDTH**









REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

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### 9.22.2. 99% BANDWIDTH

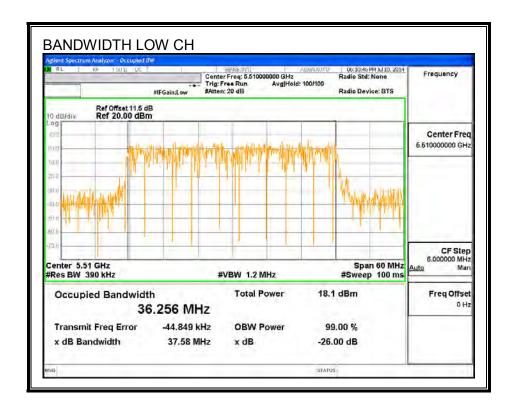
### **LIMITS**

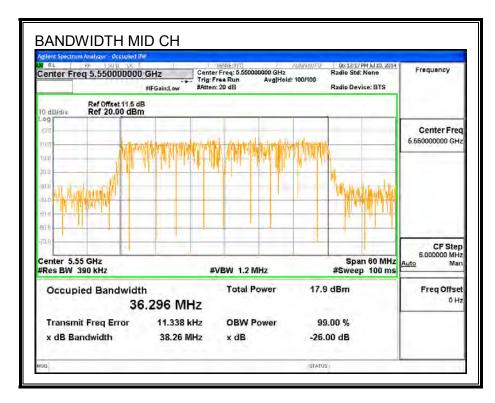
None; for reporting purposes only.

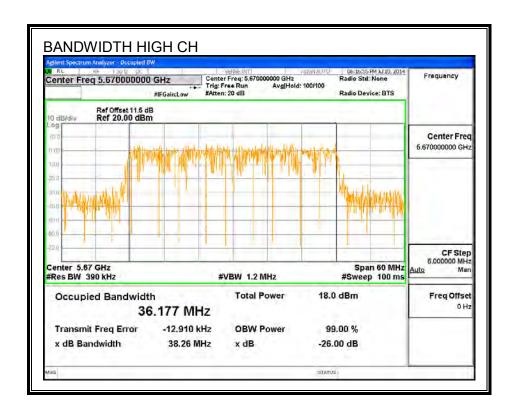
### **RESULTS**

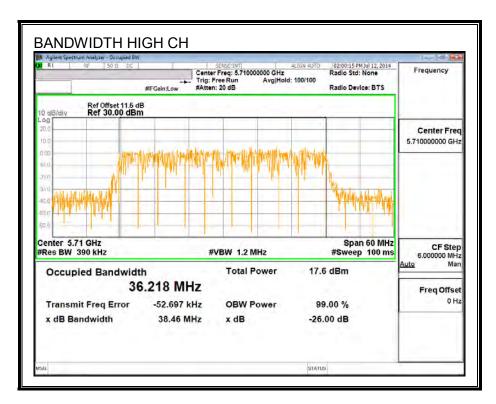
Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5510	36.256
Mid	5550	36.296
High	5670	36.177
142	5710	36.218

#### 99% BANDWIDTH









REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

#### 9.22.3. AVERAGE POWER

### **LIMITS**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

Channel	Frequency	Antenna A	Antenna B	
	(MHz)	Power	Power	
		(dBm)	(dBm)	
Low	5510	13.97	13.82	
Mid	5550	17.31	17.95	
High	5670	13.89	13.96	
142	5710	17.42	17.94	

REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

#### 9.22.4. **OUTPUT POWER AND PSD**

#### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.5–5.7 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

#### **ANTENNA A**

Antenna Gain (dBi) 4.293

#### **ANTENNA B**

Antenna Gain (dBi) 4.247

Page 296 of 764

### **ANTENNA A RESULTS**

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5510	40.3	4.29	24.00	11.00
Mid	5550	40.5	4.29	24.00	11.00
High	5670	40.4	4.29	24.00	11.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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#### **Output Power Results**

Channel	Frequency	Antenna A Meas Power	Total Corr'd Power	Power Limit	Power Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	13.97	13.97	24.00	-10.03
Mid	5550	17.31	17.31	24.00	-6.69
High	5670	13.89	13.89	24.00	-10.11

#### **PSD Results**

Channel	Frequency	Antenna A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-0.45	-0.45	11.00	-11.45
Mid	5550	2.94	2.94	11.00	-8.06
High	5670	-0.42	-0.42	11.00	-11.42

### **ANTENNA B RESULTS**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5510	40.3	4.29	24.00	11.00
Mid	5550	40.5	4.29	24.00	11.00
High	5670	40.4	4.29	24.00	11.00

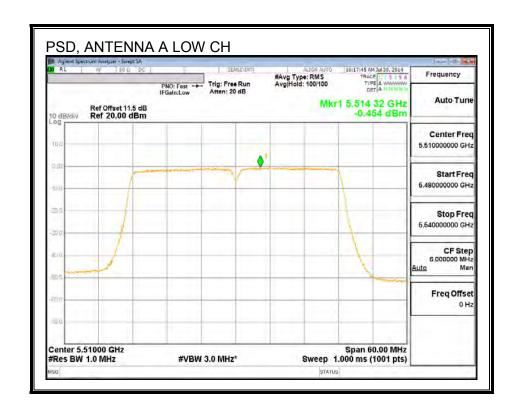
#### **Output Power Results**

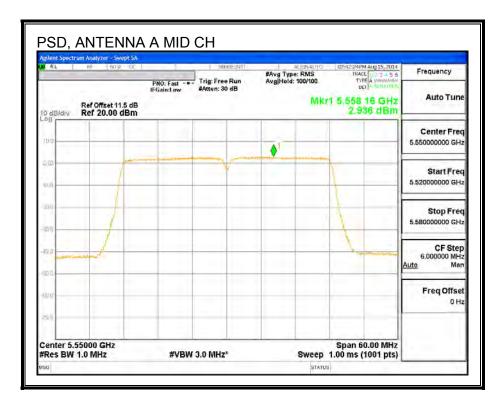
Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	13.82	13.82	24.00	-10.18
Mid	5550	17.95	17.95	24.00	-6.05
High	5670	13.96	13.96	24.00	-10.04

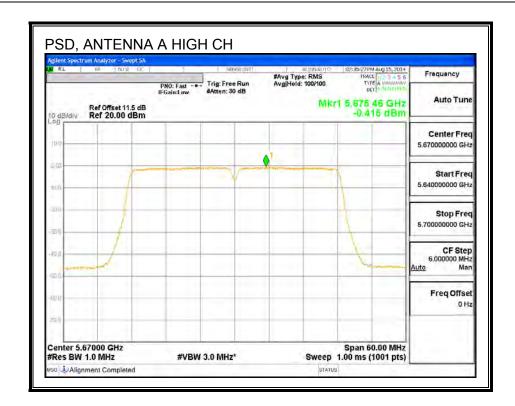
#### **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-0.49	-0.49	11.00	-11.49
Mid	5550	3.53	3.53	11.00	-7.47
High	5670	-0.17	-0.17	11.00	-11.17

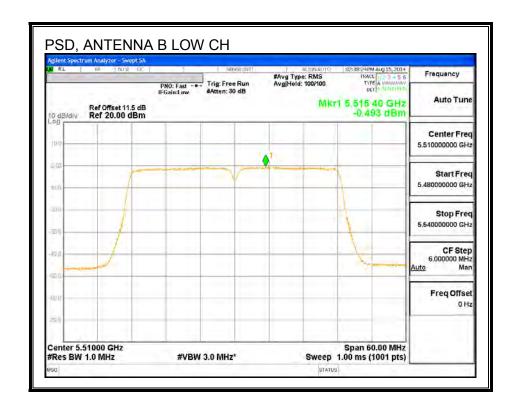
#### **OUTPUT POWER AND PSD, ANTENNA A**

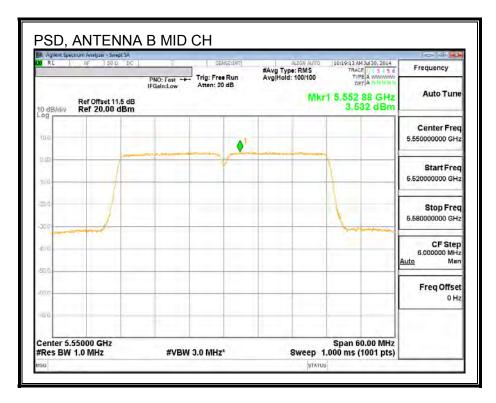


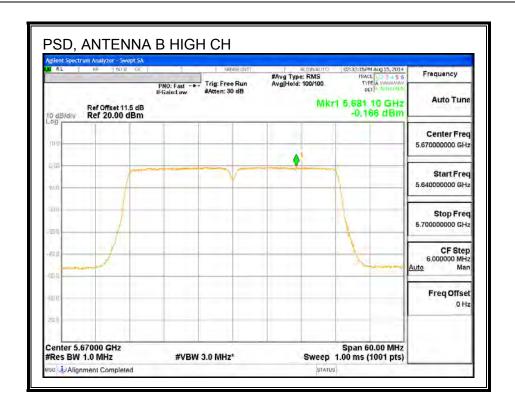




#### **PSD, ANTENNA B**







# DATE: SEPTEMBER 30, 2014

### STRADDLE CHANNEL 142 RESULTS, ANTENNA A

#### **UNII-2C BAND**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
142	5710	35.10	4.29	4.29	24.00	11.00

Duty Cycle CF (dB)	.00	Included in Calculations of Corr'd Power & PSD
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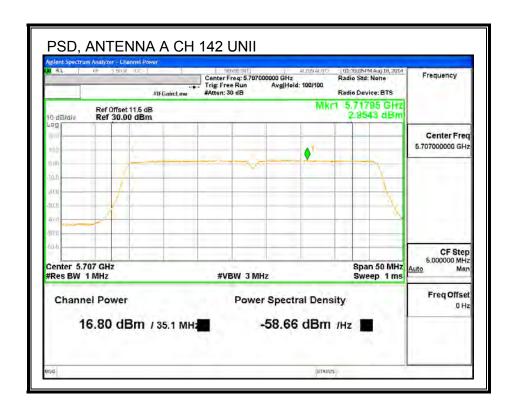
#### **Output Power Results**

Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	16.80	16.80	24.00	-7.20

#### **PSD Results**

Channel	Frequency	Antenna A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	2.95	2.95	11.00	-8.05

FORM NO: CCSUP4701J



### **UNII-3 BAND**

#### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
142	5710	4.29	30.00	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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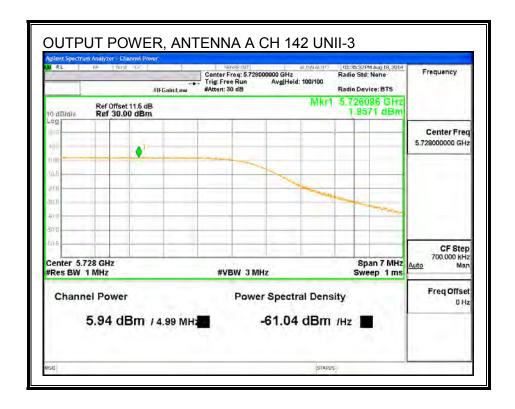
#### **Output Power Results**

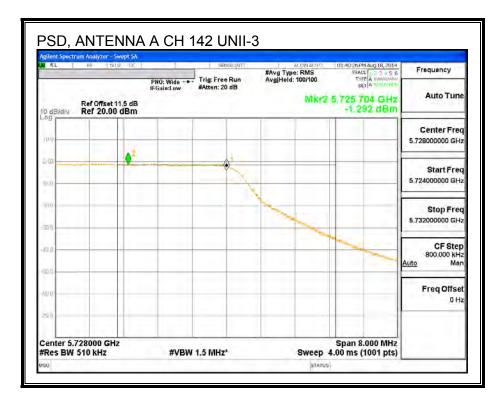
Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	5.94	5.94	30.00	-24.06

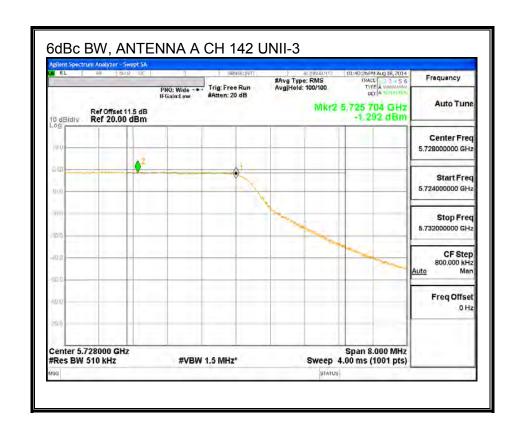
#### **PSD Results**

	Channel	Frequency	Antenna A	Total	PSD	PSD
١			Meas	Corr'd	Limit	Margin
١			PSD	PSD		
١		(MHz)	(dBm)	(dBm)	(dBm)	(dB)
ſ	142	5710	-1.29	-1.29	30.00	-31.29

DATE: SEPTEMBER 30, 2014







DATE: SEPTEMBER 30, 2014

**UNII-2C BAND** 

#### Bandwidth, Antenna Gain, and Limits

STRADDLE CHANNEL 142 RESULTS, ANTENNA B

Channel	Frequency	Min	Directional	Directional	Power	PSD	
		26 dB	Gain	Gain	Limit	Limit	
		BW	for Power	for PSD			
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)	
142	5710	35.10	4.29	4.29	24.00	11.00	

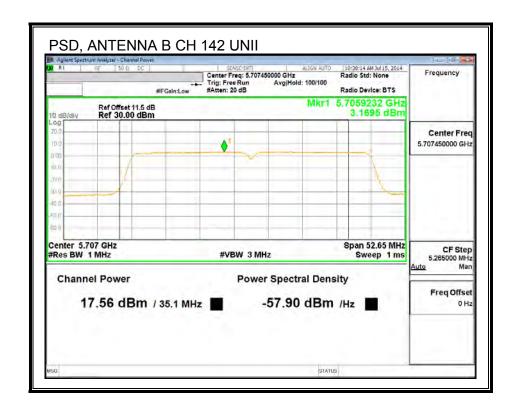
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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#### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	17.56	17.56	24.00	-6.44

#### **PSD Results**

	Channel	Frequency	Antenna B	Total	PSD	PSD
			Meas	Corr'd	Limit	Margin
			PSD	PSD		
		(MHz)	(dBm)	(dBm)	(dBm)	(dB)
	142	5710	3.17	3.17	11.00	-7.83



# **UNII-3 BAND**

### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD	
		Gain	Limit	Limit	
	(MHz)	(dBi)	(dBm)	(dBm)	
142	5710	4.29	30.00	30.00	

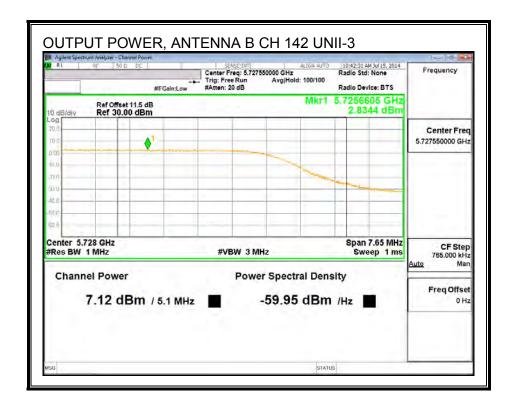
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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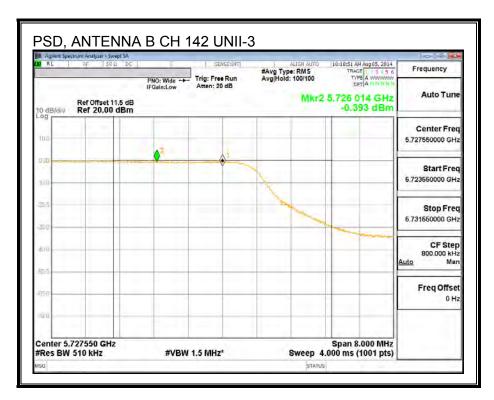
# **Output Power Results**

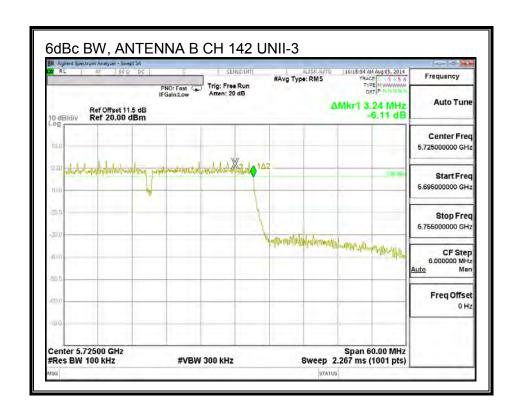
Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	7.12	7.12	30.00	-22.88

#### **PSD Results**

	Channel	Frequency	Antenna B	Total	PSD	PSD
١			Meas	Corr'd	Limit	Margin
١			PSD	PSD		
١		(MHz)	(dBm)	(dBm)	(dBm)	(dB)
ſ	142	5710	-0.39	-0.39	30.00	-30.39







REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.23. 802.11n HT40 2TX CDD MODE IN THE 5.6 GHz BAND

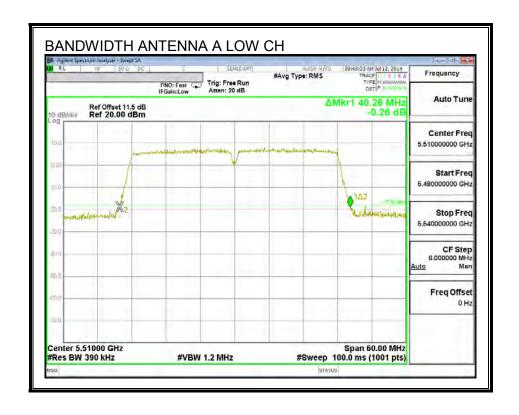
# 9.23.1. 26 dB BANDWIDTH

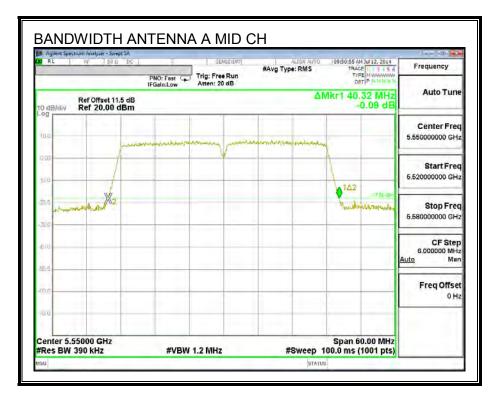
# **LIMITS**

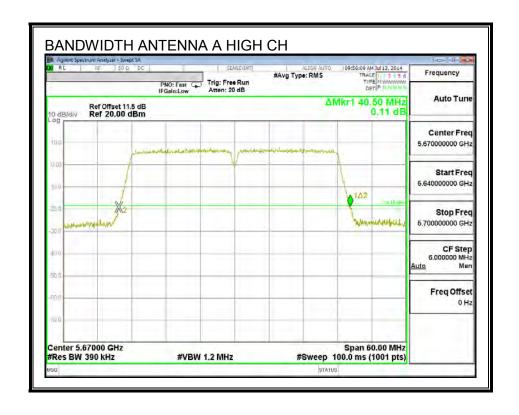
None; for reporting purposes only.

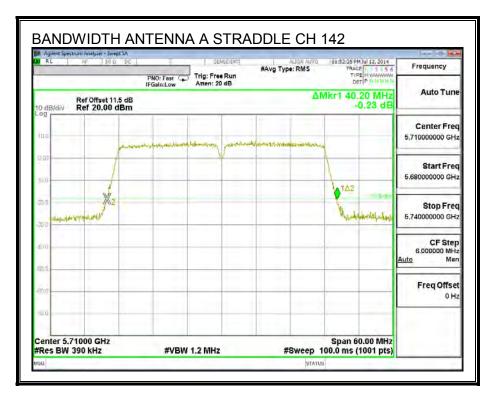
Channel	Frequency	26 dB BW	26 dB BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5510	40.26	39.96
Mid	5550	40.32	40.02
High	5670	40.50	39.90
142	5710	40.20	39.84

# 26 dB BANDWIDTH, ANTENNA A

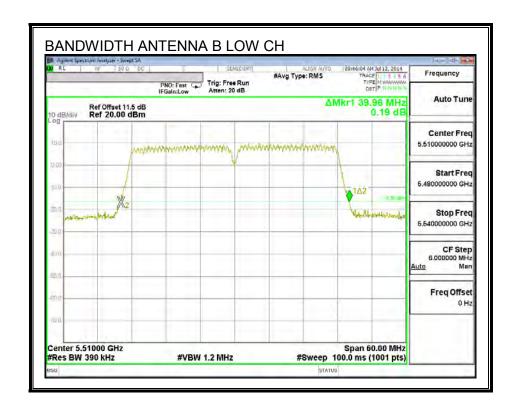


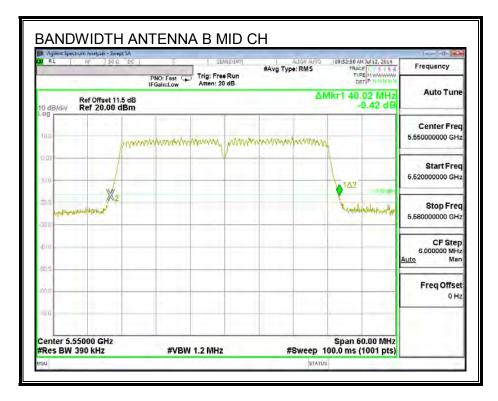


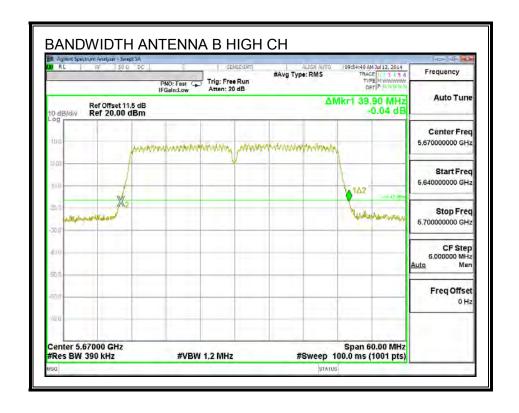


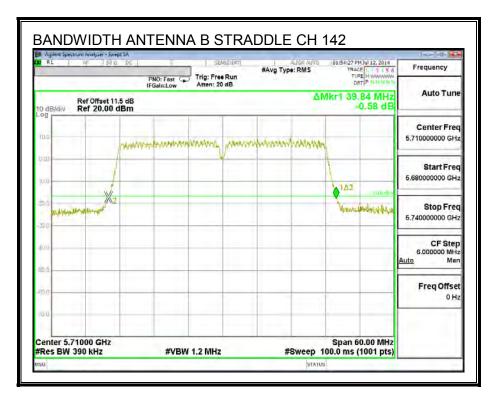


# 26 dB BANDWIDTH, ANTENNA B









FCC ID: BCGA1566

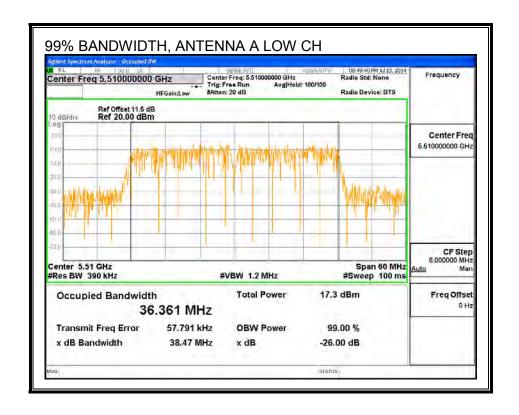
# 9.23.2. 99% BANDWIDTH

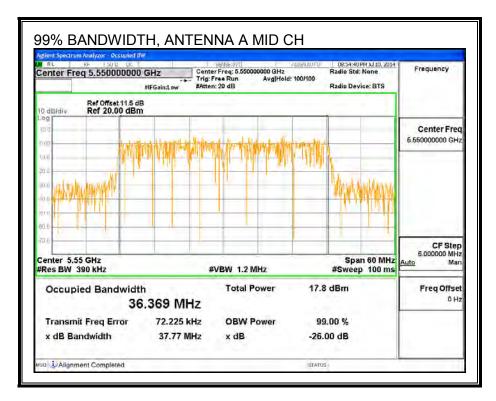
# **LIMITS**

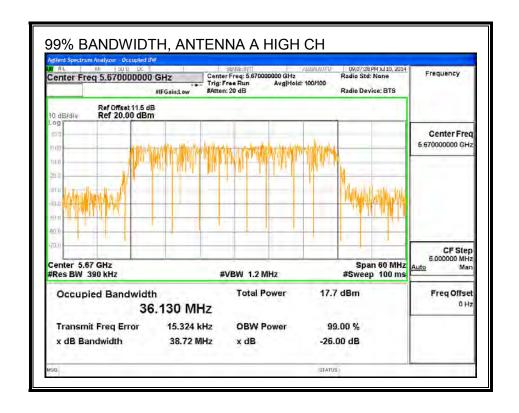
None; for reporting purposes only.

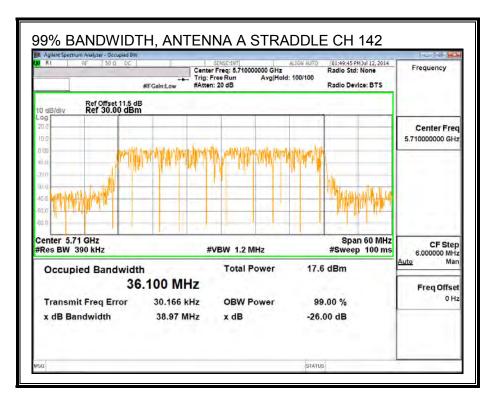
_			
Channel	Frequency	99% BW	99% BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5510	36.361	36.163
Mid	5550	36.369	36.107
High	5670	36.130	36.286
142	5710	36.100	36.153

### 99% BANDWIDTH, ANTENNA A

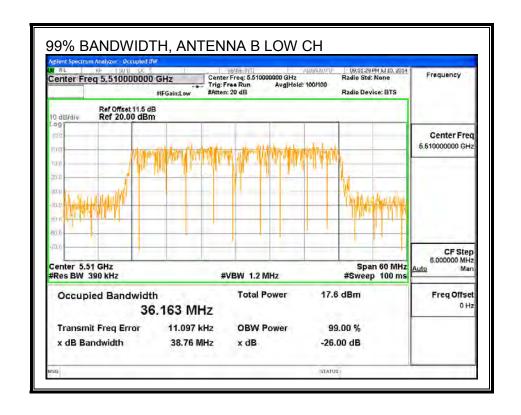


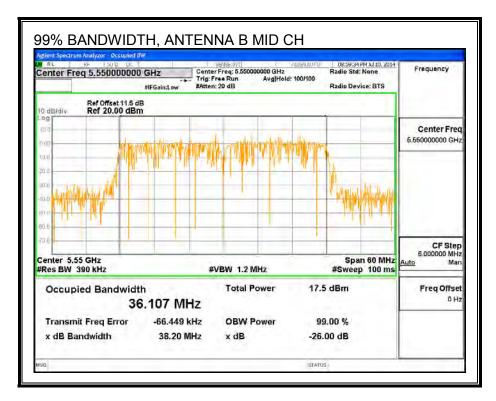


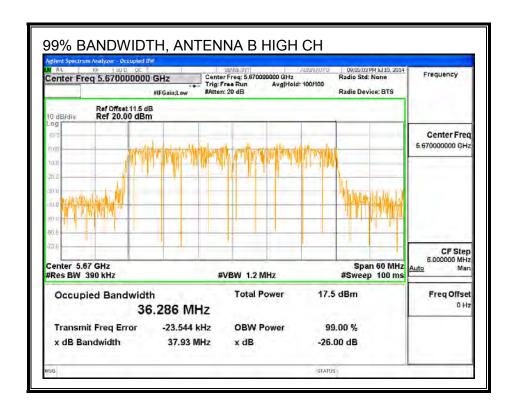


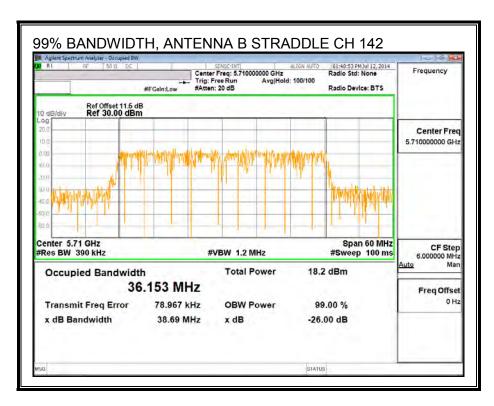


# 99% BANDWIDTH, ANTENNA B









FCC ID: BCGA1566

# 9.23.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

### **Average Power Results**

Channel	Frequency	Antenna A	Antenna B	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5510	12.73	12.98	15.87
Mid	5590	16.95	16.84	19.91
High	5670	12.94	12.92	15.94
142	5710	16.87	16.99	19.94

FCC ID: BCGA1566

# 9.23.4. OUTPUT POWER AND PSD

# **LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **DIRECTIONAL ANTENNA GAIN**

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

Antenna A	Antenna B	Uncorrelated Chains Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
4.29	4.25	4.27

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

Antenna A	Antenna B	<b>Correlated Chains</b>	
		Directional	
Gain	Gain	Gain	
(dBi) (dBi)		(dBi)	
4.29	4.25	7.28	

# **RESULTS**

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5510	39.96	4.27	7.28	24.00	9.72
Mid	5550	40.02	4.27	7.28	24.00	9.72
High	5670	39.90	4.27	7.28	24.00	9.72

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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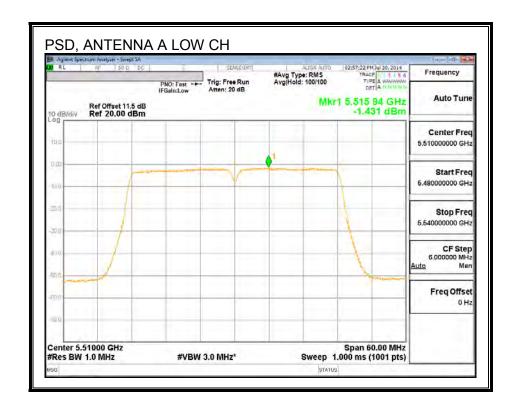
### **Output Power Results**

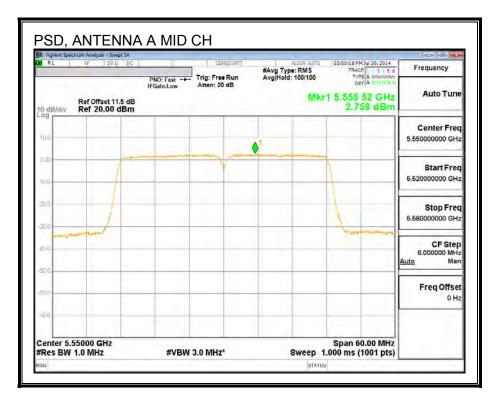
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas Power	Meas Power	Corr'd Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	12.73	12.98	15.87	24.00	-8.13
Mid	5550	16.95	16.84	19.91	24.00	-4.09
High	5670	12.94	12.92	15.94	24.00	-8.06

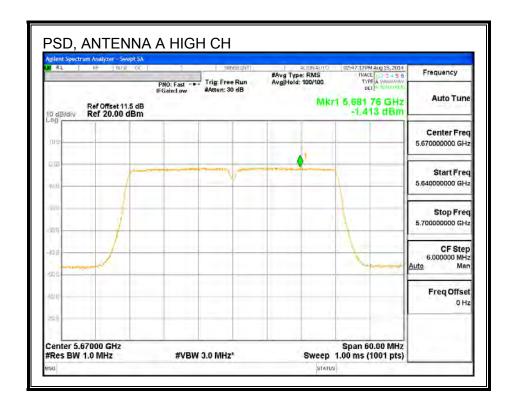
#### **PSD Results**

Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-1.43	-1.26	1.67	9.72	-8.05
Mid	5550	2.76	2.51	5.65	9.72	-4.07
High	5670	-1.41	-1.12	1.75	9.72	-7.97

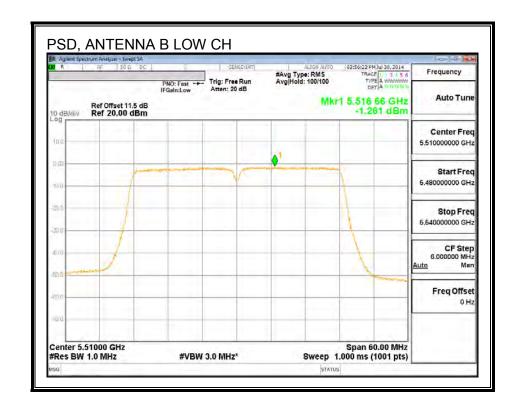
# **PSD, ANTENNA A**

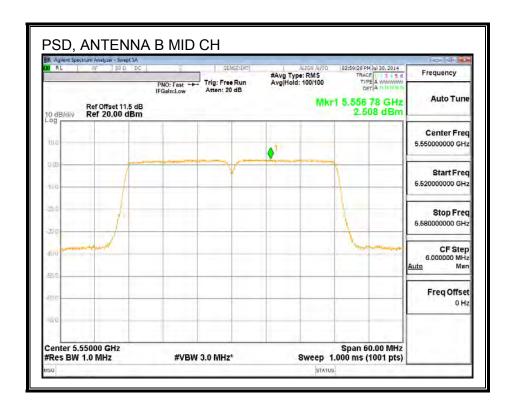


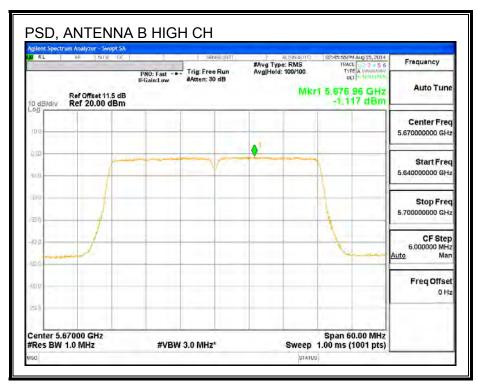




### **PSD, ANTENNA B**







# STRADDLE CHANNEL 142 RESULTS

# **UNII-2C BAND**

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
142	5710	34.92	4.27	7.28	24.00	9.72

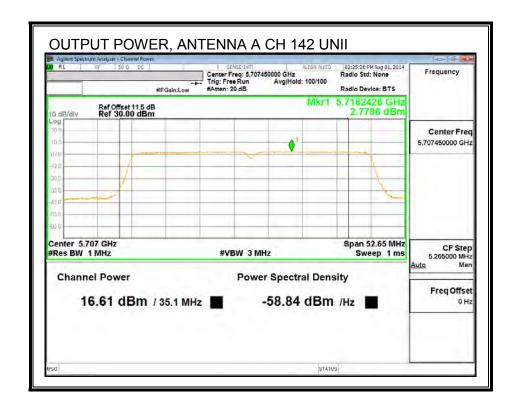
Duty Cycle CF (dB) 0.00 Included in Calculations of Corr'd Power 8	k PSD
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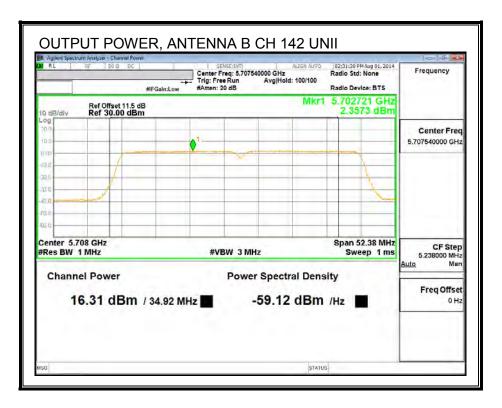
### **Output Power Results**

Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	16.61	16.31	19.47	24.00	-4.53

#### **PSD Results**

	Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
ı			Meas	Meas	Corr'd	Limit	Margin
ı			PSD	PSD	PSD		
ı		(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Ī	142	5710	2.78	2.36	5.58	9.72	-4.14





# **UNII-3 BAND**

### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
142	5710	7.28	28.72	28.72

Duty Cycle CF (dB) 0.00	Included in Calculations of Corr'd Power & PSD
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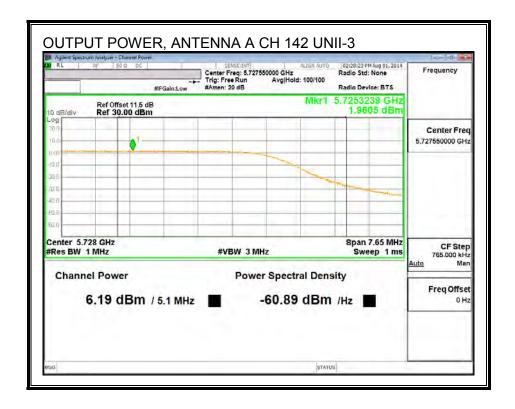
# **Output Power Results**

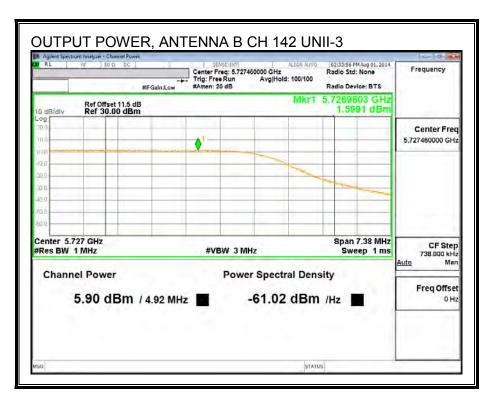
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	6.19	5.90	9.06	28.72	-19.66

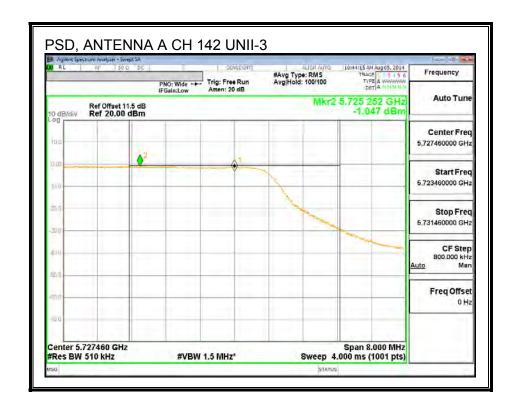
#### **PSD Results**

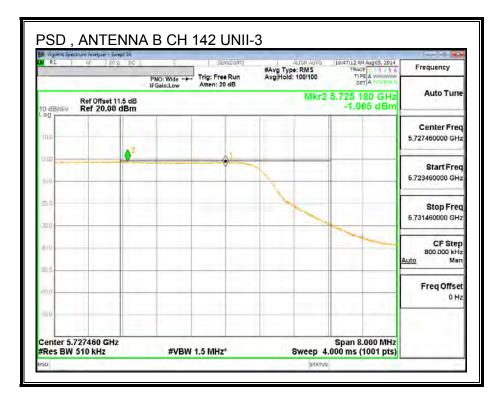
Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	-1.05	-1.07	1.95	28.72	-26.77

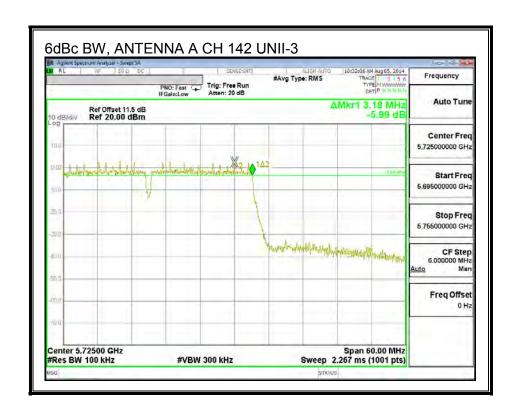
FORM NO: CCSUP4701J

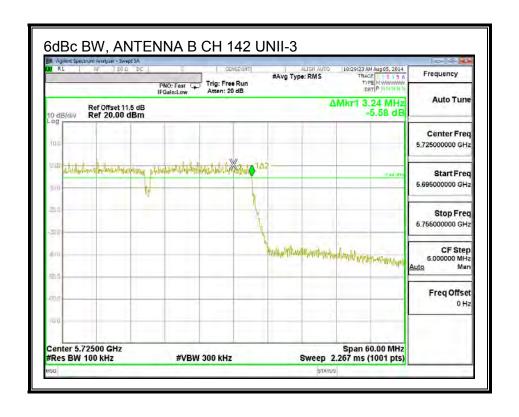












REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.24. 802.11n HT40 2TX STBC MODE IN THE 5.6 GHz BAND

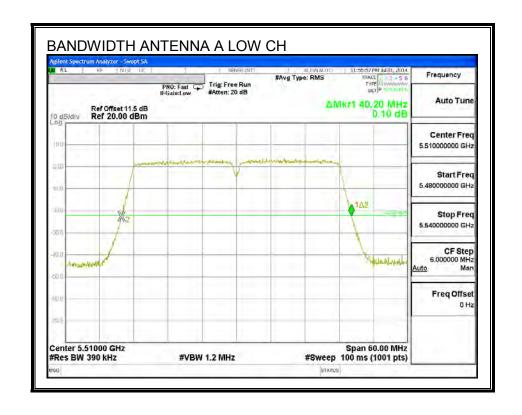
# 9.24.1. 26 dB BANDWIDTH

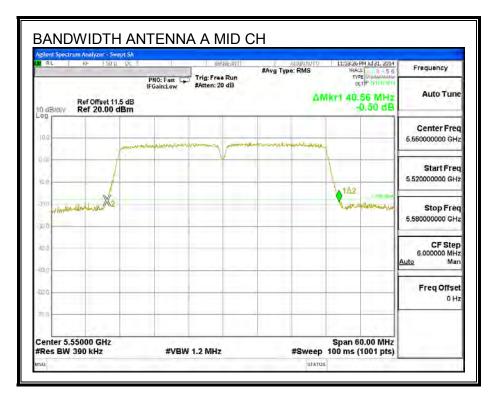
# **LIMITS**

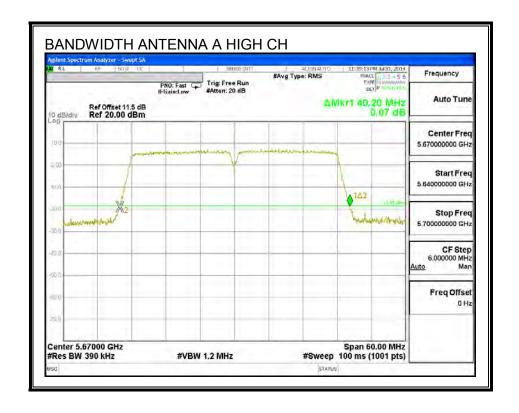
None; for reporting purposes only.

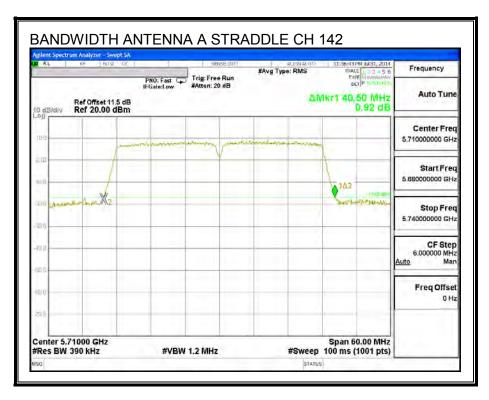
Channel Frequency		26 dB BW	26 dB BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5510	40.20	39.84
Mid	5550	40.56	40.14
High	5670	40.20	39.96
142	5710	40.50	40.02

# 26 dB BANDWIDTH, ANTENNA A

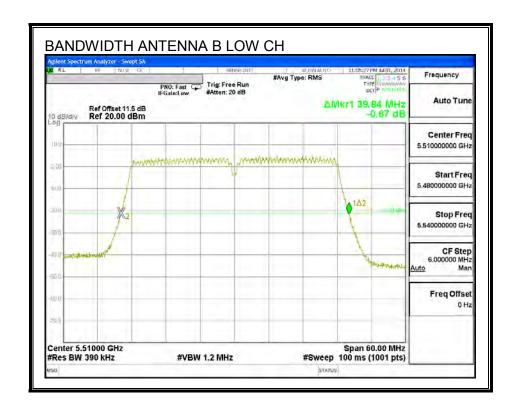


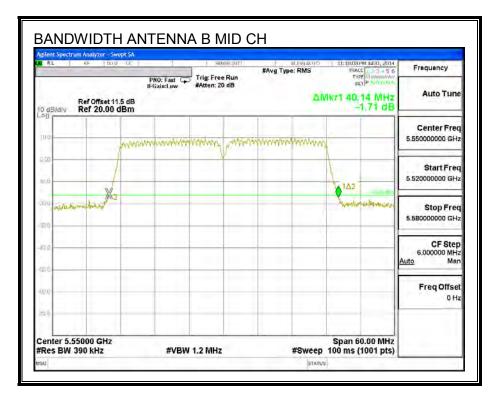


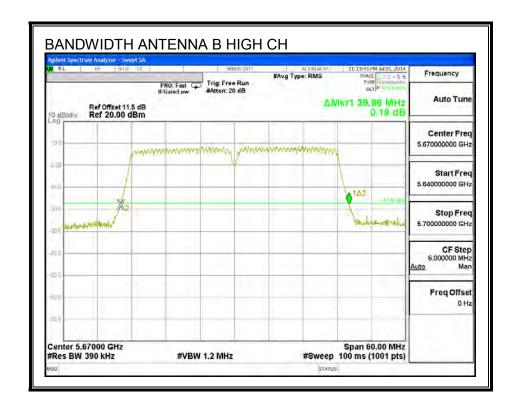


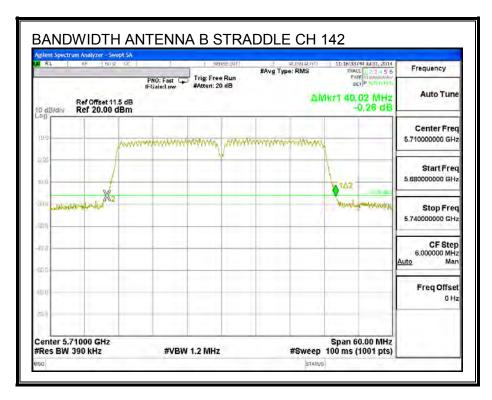


### 26 dB BANDWIDTH, ANTENNA B









FCC ID: BCGA1566

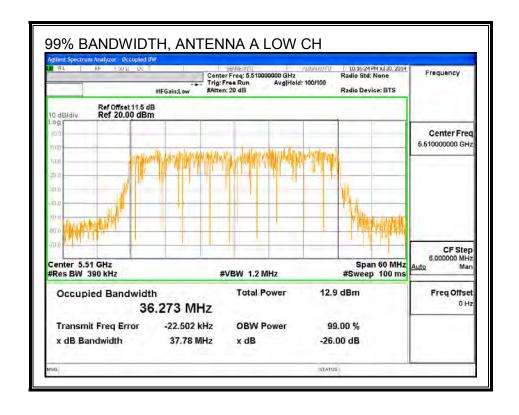
# 9.24.2. 99% BANDWIDTH

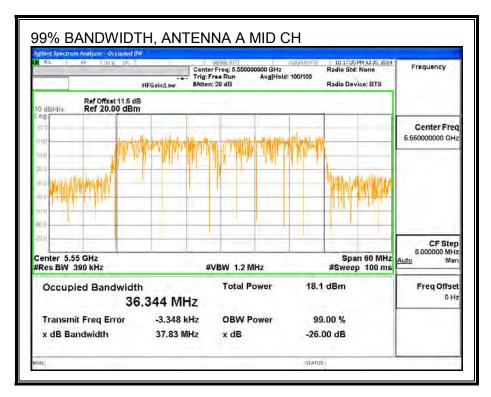
# **LIMITS**

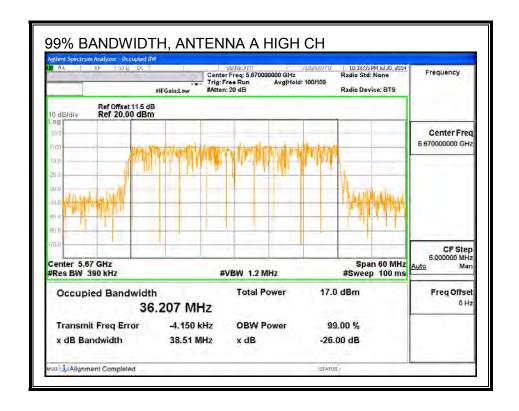
None; for reporting purposes only.

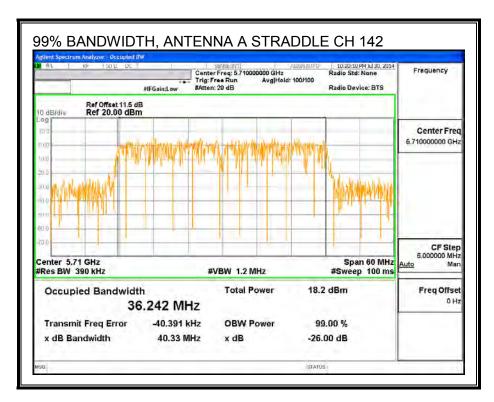
_			
Channel	Frequency	99% BW	99% BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5510	36.273	36.213
Mid	5550	36.344	36.306
High	5670	36.207	36.321
142	5710	36.242	36.208

### 99% BANDWIDTH, ANTENNA A

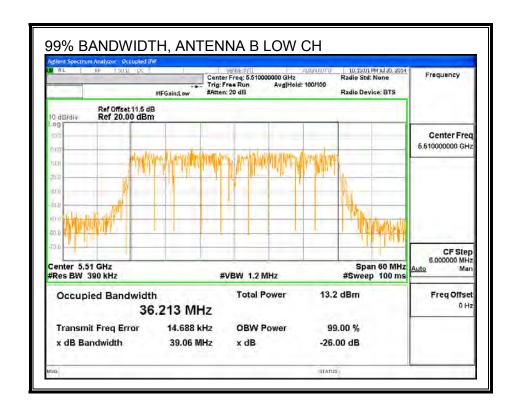


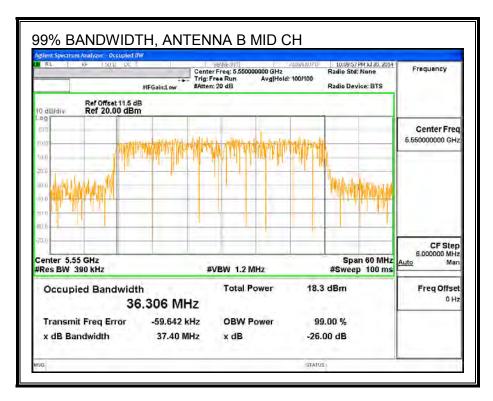


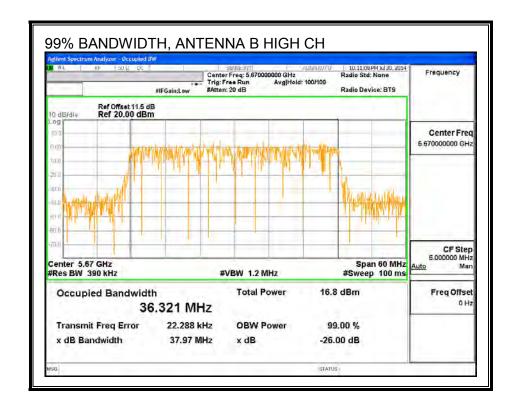


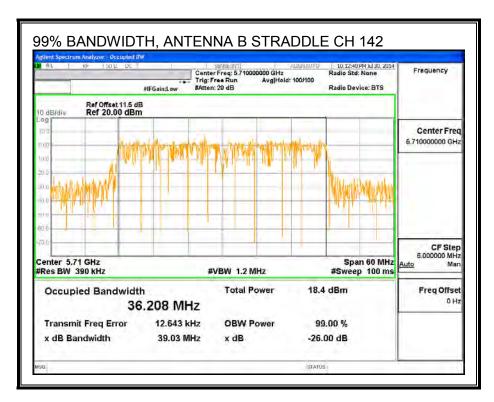


### 99% BANDWIDTH, ANTENNA B









REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

## 9.24.3. AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

## **Average Power Results**

Channel	Frequency	Antenna A	Antenna B	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5510	12.92	12.95	15.95
Mid	5550	17.29	17.80	20.56
High	5670	12.96	12.98	15.98
142	5710	17.32	18.00	20.68

REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

## 9.24.4. OUTPUT POWER AND PSD

## **LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

Antenna A	Antenna B	Uncorrelated Chains
		Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
4.293	4.247	4.27

## **RESULTS**

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5510	39.84	4.27	4.27	24.00	11.00
Mid	5550	40.14	4.27	4.27	24.00	11.00
High	5670	39.96	4.27	4.27	24.00	11.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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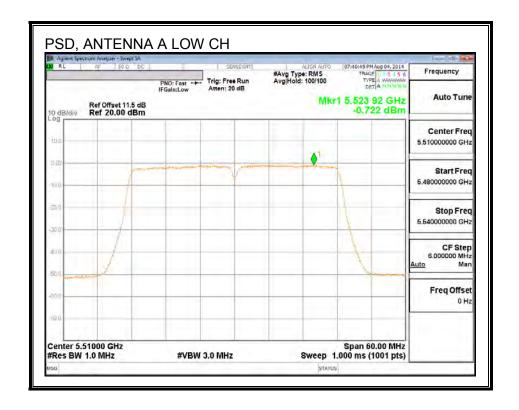
## **Output Power Results**

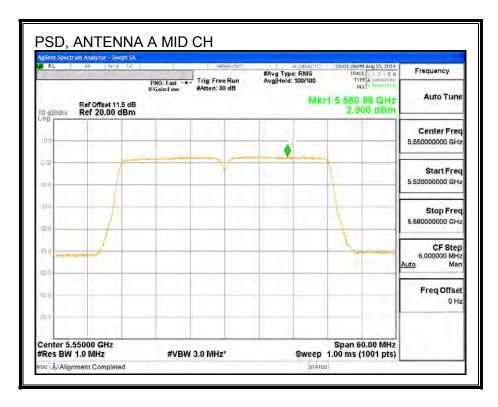
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	12.92	12.95	15.95	24.00	-8.05
Mid	5550	17.29	17.80	20.56	24.00	-3.44
High	5670	12.96	12.98	15.98	24.00	-8.02

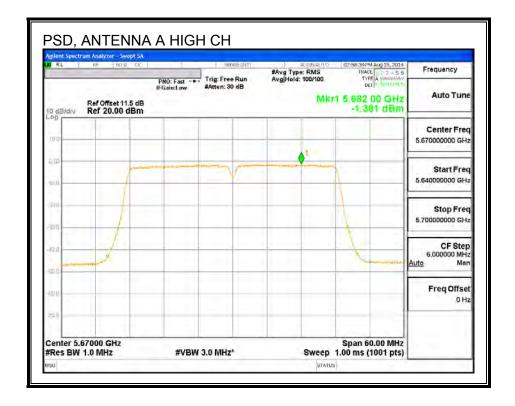
## **PSD Results**

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Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-0.72	-0.52	2.39	11.00	-8.61
Mid	5550	2.90	3.57	6.26	11.00	-4.74
High	5670	-1.39	-1.27	1.68	11.00	-9.32

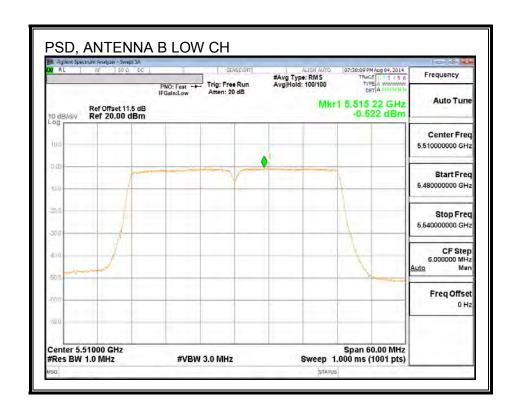
## **PSD, ANTENNA A**

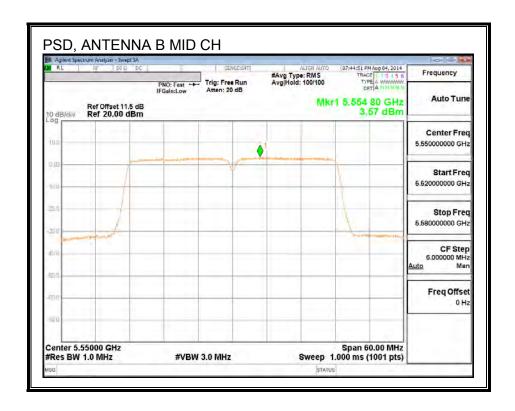


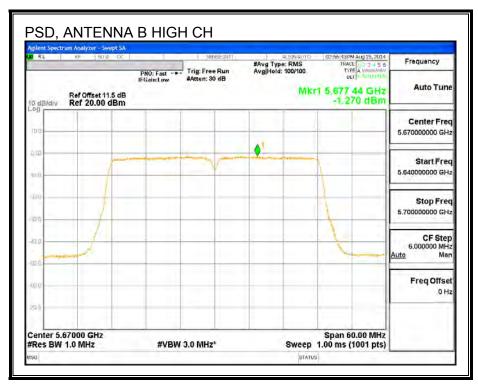




#### PSD, ANTENNA B







# **STRADDLE CHANNEL 142 RESULTS**

## **UNII-2C BAND**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
142	5710	35.01	4.27	4.27	24.00	11.00

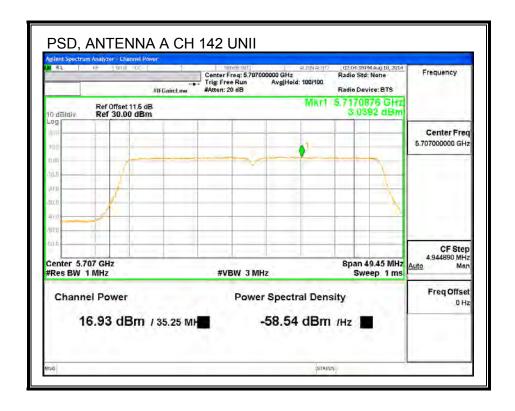
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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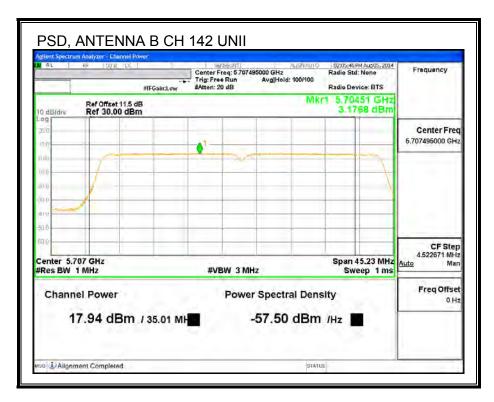
#### **Output Power Results**

Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	16.93	17.94	20.47	24.00	-3.53

#### **PSD Results**

Ī	Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
			Meas	Meas	Corr'd	Limit	Margin
			PSD	PSD	PSD		
١		(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
	142	5710	3.04	3.18	6.12	11.00	-4.88





## **UNII-3 BAND**

## **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
142	5710	4.27	30.00	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PSD
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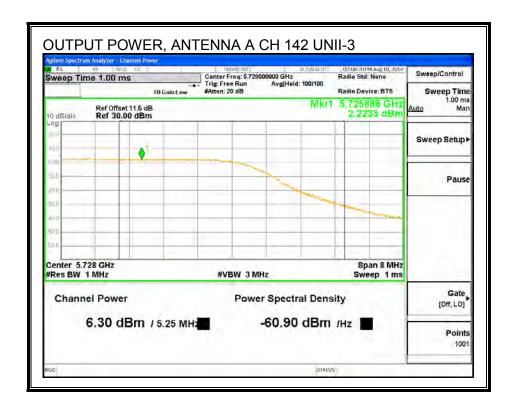
## **Output Power Results**

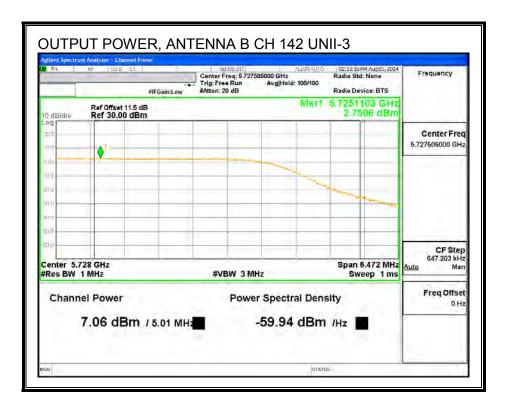
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	6.30	7.06	9.71	30.00	-20.29

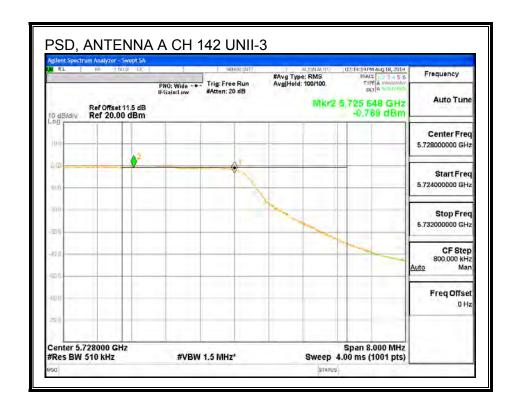
#### **PSD Results**

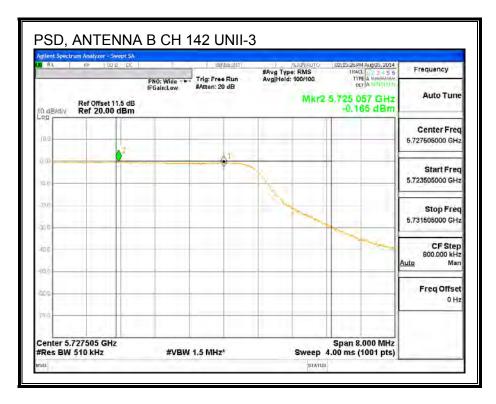
Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	-0.77	-0.17	2.55	30.00	-27.45

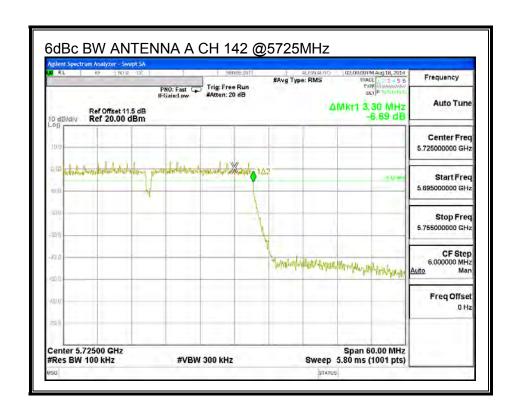
FORM NO: CCSUP4701J

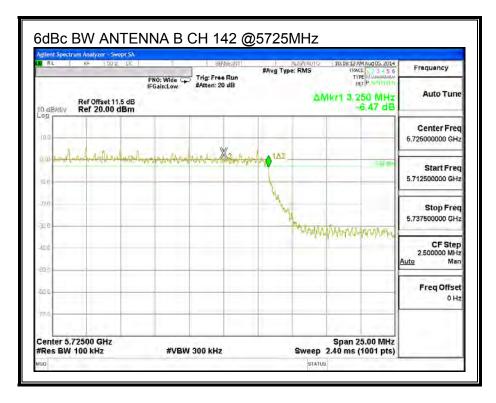












## 9.25. 802.11ac VHT80 MODE IN THE 5.6 GHz BAND

## 9.25.1. 26 dB BANDWIDTH

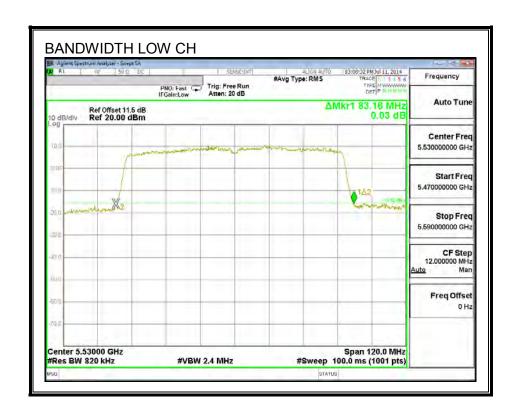
#### **LIMITS**

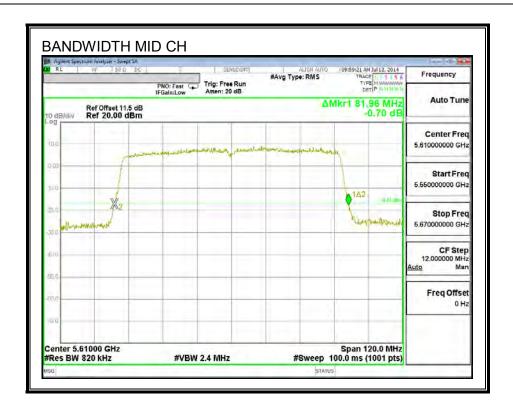
None; for reporting purposes only.

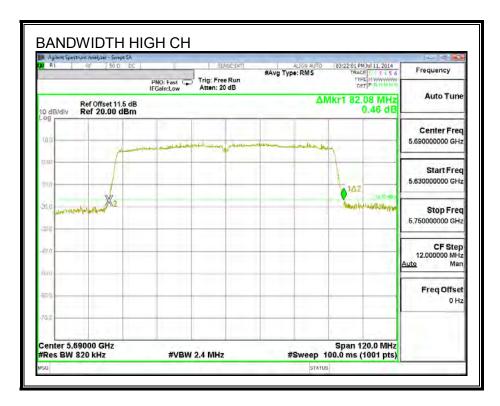
## **RESULTS**

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5530	83.16
Mid	5610	81.96
High	5690	82.08

#### **26 dB BANDWIDTH**







REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

## 9.25.2. 99% BANDWIDTH

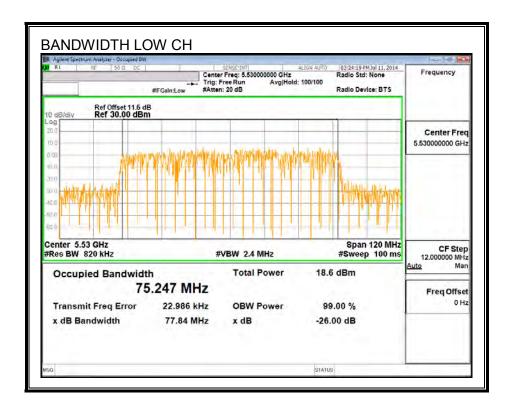
## **LIMITS**

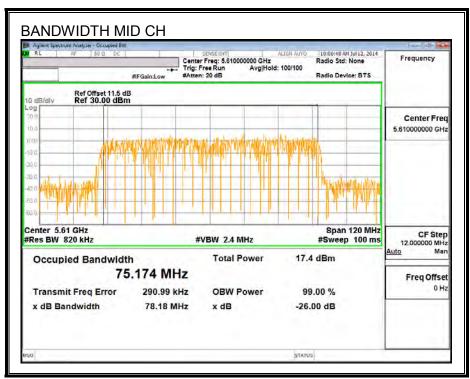
None; for reporting purposes only.

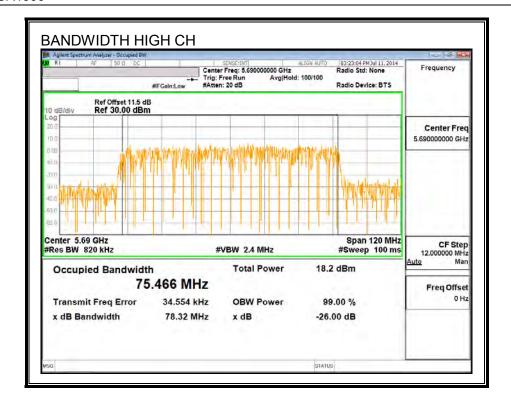
## **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5530	75.247
Mid	5610	75.174
High	5690	75.466

## 99% BANDWIDTH







REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

## 9.25.3. AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

## **RESULTS**

Channel	Frequency	Antenna A	Antenna B
	(MHz)	Power	Power
		(dBm)	(dBm)
Low	5530	13.33	13.35
Mid	5610	17.46	17.75
High	5690	17.38	17.97

REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

#### 9.25.4. **OUTPUT POWER AND PSD**

#### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

## DATE: SEPTEMBER 30, 2014

## **ANTENNA A RESULTS**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5530	83.16	4.29	24.00	11.00

Duty Cycle CF (dB) 0.2	1 Included in Calculation	s of Corr'd Power & PSD
------------------------	---------------------------	-------------------------

## **Output Power Results**

I	Channel	Frequency	Antenna A	Total	Power	Power		
			Meas	Corr'd	Limit	Margin		
			Power	Power				
		(MHz)	(dBm)	(dBm)	(dBm)	(dB)		
-								
	Low	5530	13.33	13.54	24.00	-10.46		

#### **PSD Results**

. C = 1 to curt	1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
Channel	Frequency	Antenna A	Total	PSD	PSD		
		Meas	Corr'd	Limit	Margin		
		PSD	PSD				
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)		
Low	5530	-3.59	-3.38	11.00	-14.38		

## **ANTENNA B RESULTS**

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5530	83.16	4.29	24.00	11.00
Mid	5610	81.96	4.29	24.00	11.00

Duty Cycle CF (dB) 0.2	Included in Calculations of Corr'd Power & PSD	)
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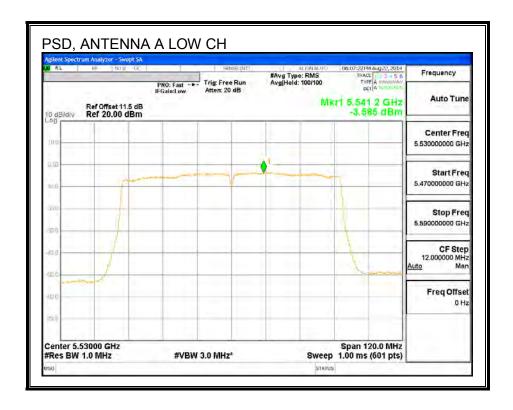
#### **Output Power Results**

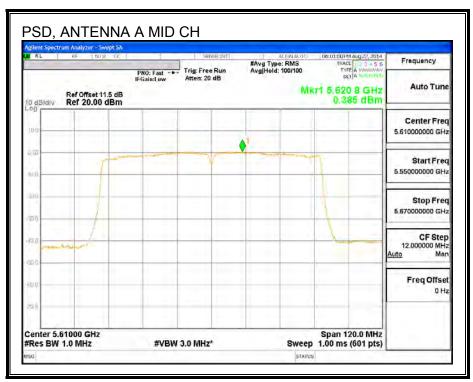
Channel	Frequency	Antenna B	Total	Power	Power		
		Meas	Corr'd	Limit	Margin		
		Power	Power				
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)		
_							
Low	5530	13.35	13.56	24.00	-10.44		

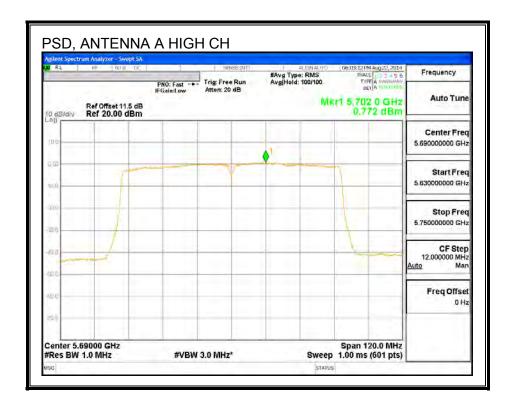
#### **PSD Results**

Channel	Frequency	Antenna B Meas	Total Corr'd	PSD Limit	PSD Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	-3.65	-3.44	11.00	-14.44
1 -500	1 2200	0.00	0.44	11.00	

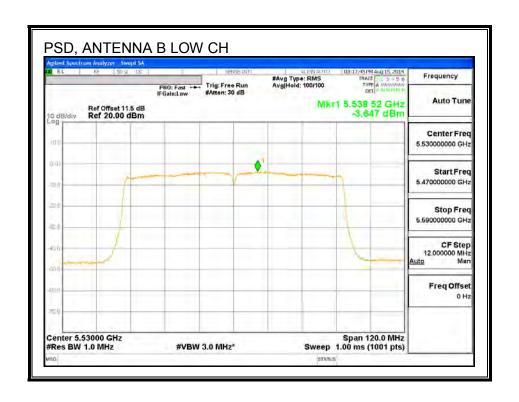
## **PSD, ANTENNA A**

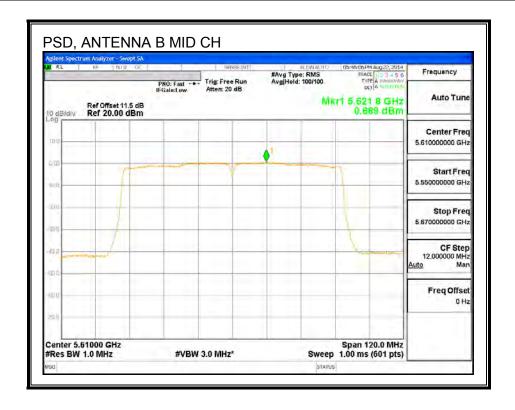


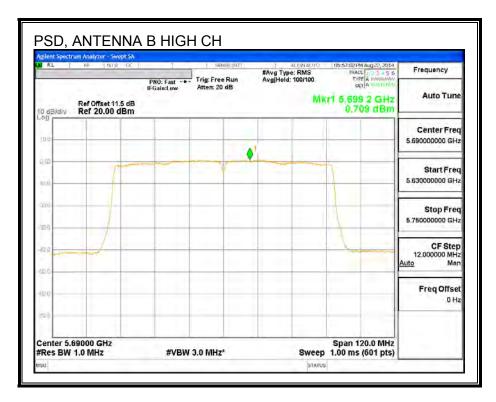




#### **PSD, ANTENNA B**







# **ANTENNA A, STRADDLE CHANNEL 138 RESULTS**

## **UNII-2C BAND**

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
138	5690	75.75	4.29	4.29	24.00	11.00

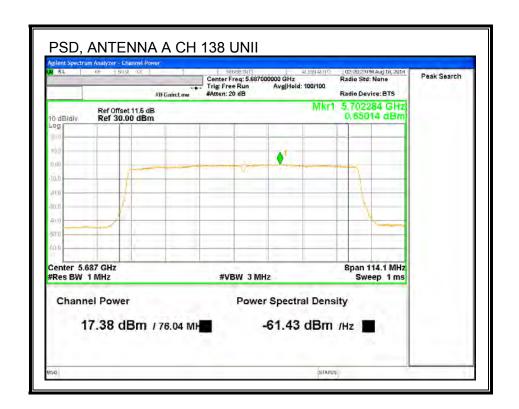
Duty Cycle CF (dB) 0	.21 Incl	uded in Calculations of Corr'd Power & PSD
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#### **Output Power Results**

Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	17.38	17.59	24.00	-6.41

#### **PSD Results**

Ī	Channel	Frequency	Antenna A	Total	PSD	PSD
ı			Meas	Corr'd	Limit	Margin
ı			PSD	PSD		
ı		(MHz)	(dBm)	(dBm)	(dBm)	(dB)



## **UNII-3 BAND**

#### **Antenna Gain and Limit**

Channel	Frequency	Directional Gain	Power Limit	PSD Limit	
	(MHz)	(dBi)	(dBm)	(dBm)	
138	5690	4.29	30.00	30.00	

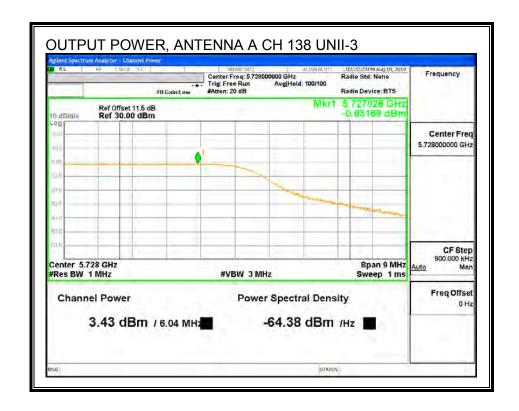
Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD
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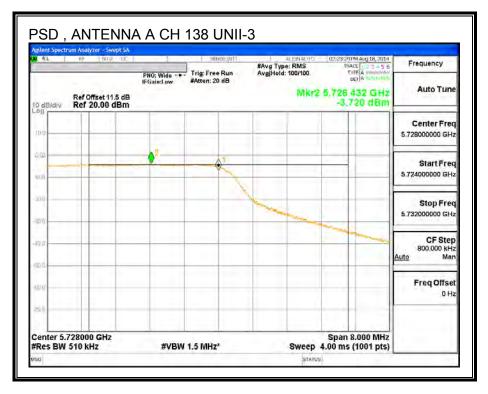
## **Output Power Results**

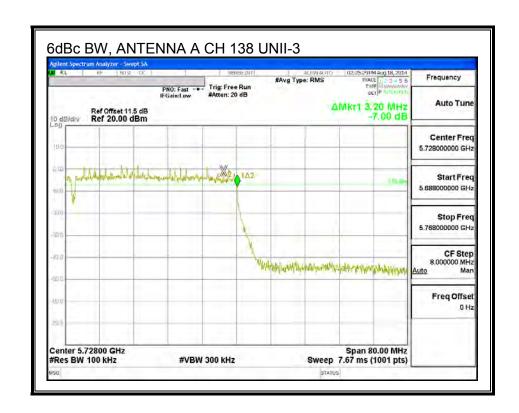
Channel	Frequency	Antenna A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power Power			
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	3.43	3.64	30.00	-26.36

#### **PSD Results**

Channel	Frequency	Antenna A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD PSD			
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	-3.72	-3.51	30.00	-33.51







# **ANTENNA B, STRADDLE CHANNEL 138 RESULTS**

## **UNII-2C BAND**

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
138	5690	75.75	4.29	4.29	24.00	11.00

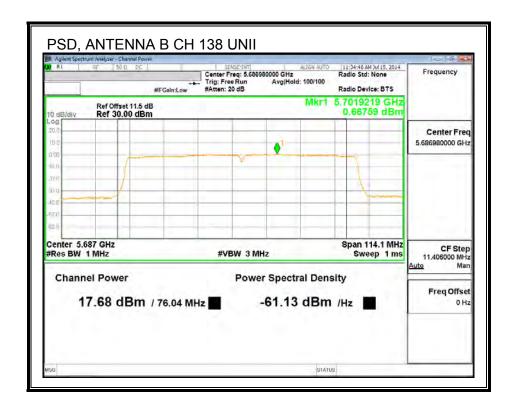
Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD
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#### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	17.68	17.89	24.00	-6.11

#### **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	0.67	0.88	11.00	-10.12



## **UNII-3 BAND**

#### **Antenna Gain and Limit**

Channel	Frequency	Directional Gain	Power Limit	PSD Limit
	(MHz)	(dBi)	(dBm)	(dBm)
138	5690	4.29	30.00	30.00

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD
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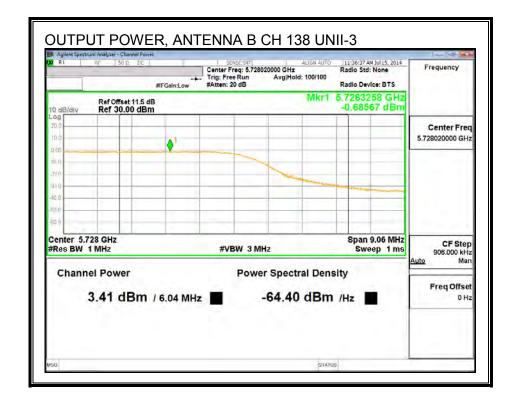
#### **Output Power Results**

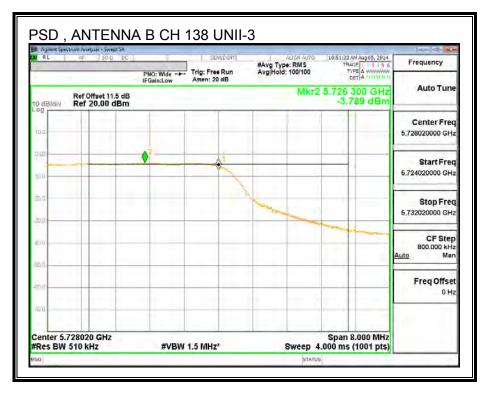
Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	3.41	3.62	30.00	-26.38

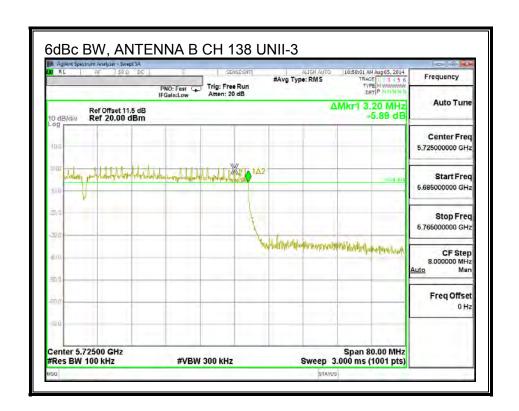
#### **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	-3.79	-3.58	30.00	-33.58

FORM NO: CCSUP4701J







REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

## 9.26. 802.11ac HT80 2TX CDD MODE IN THE 5.6 GHz BAND

## 9.26.1. 26 dB BANDWIDTH

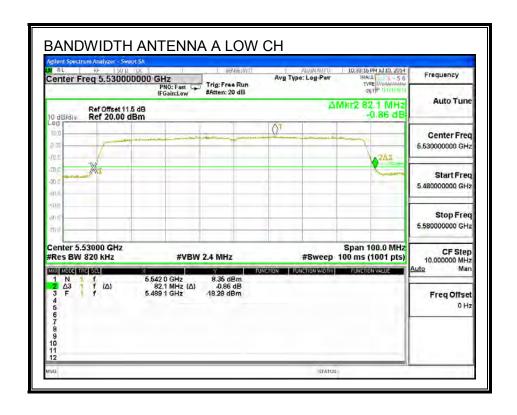
## **LIMITS**

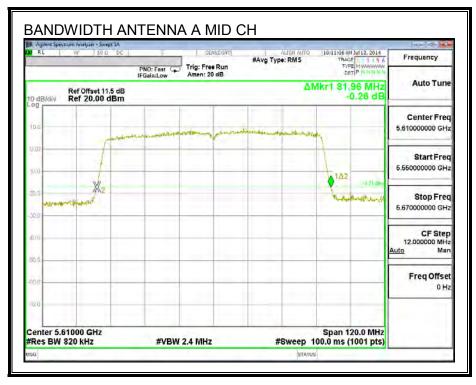
None; for reporting purposes only.

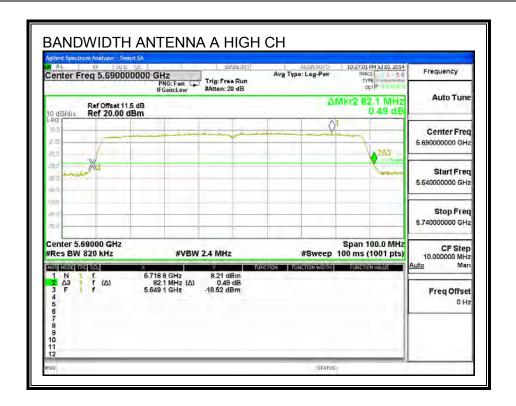
## **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5530	82.10	81.70
Mid	5610	81.96	81.96
High	5690	82.10	81.50

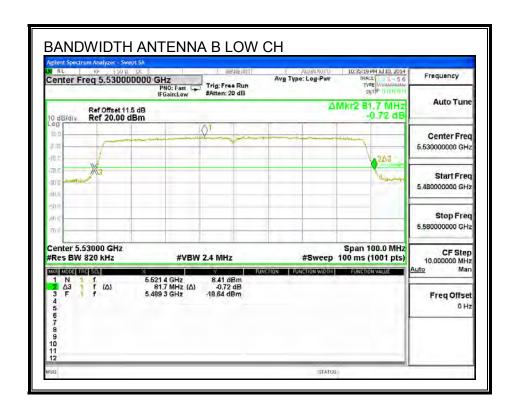
#### 26 dB BANDWIDTH, ANTENNA A

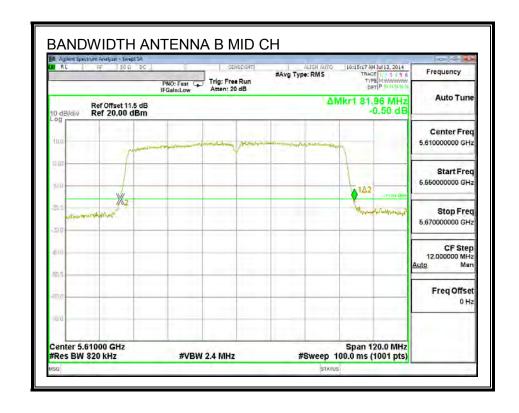


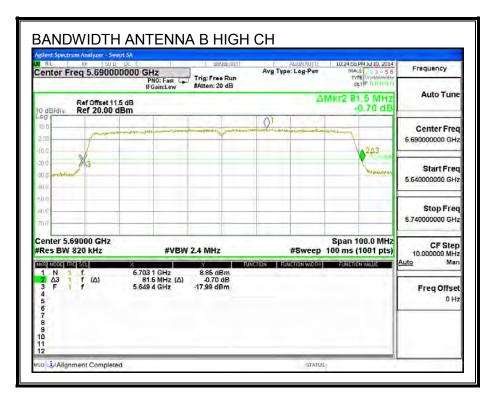




#### 26 dB BANDWIDTH, ANTENNA B







REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

# 9.26.2. 99% BANDWIDTH

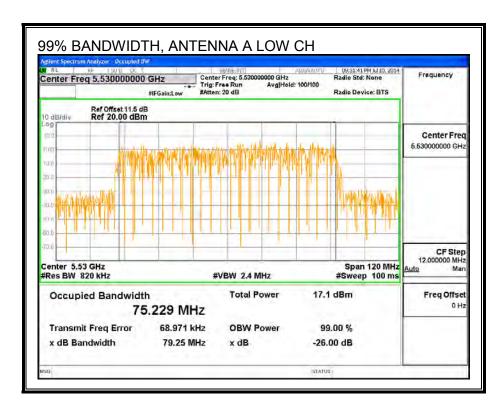
### **LIMITS**

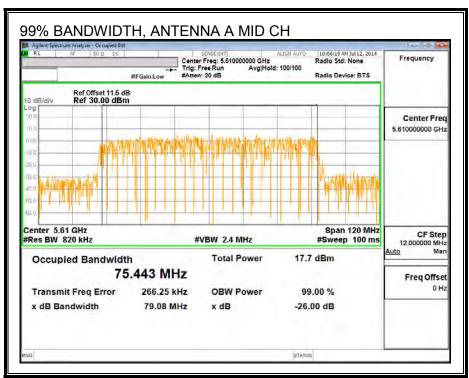
None; for reporting purposes only.

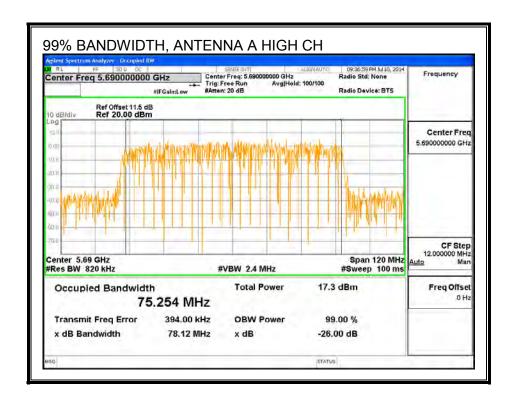
### **RESULTS**

Channel	Frequency	99% BW	99% BW
		Antenna A	Antenna B
	(MHz)	(MHz)	(MHz)
Low	5530	75.229	75.272
Mid	5610	75.443	75.555
High	5690	75.254	75.763

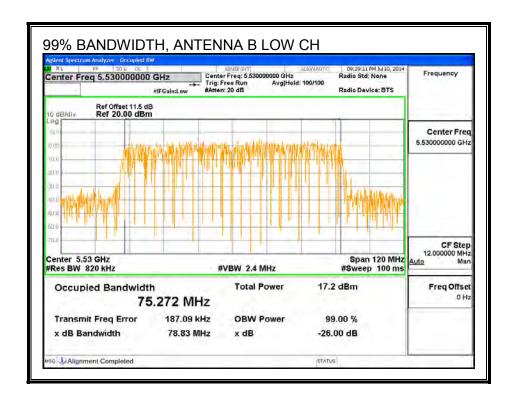
### 99% BANDWIDTH, ANTENNA A

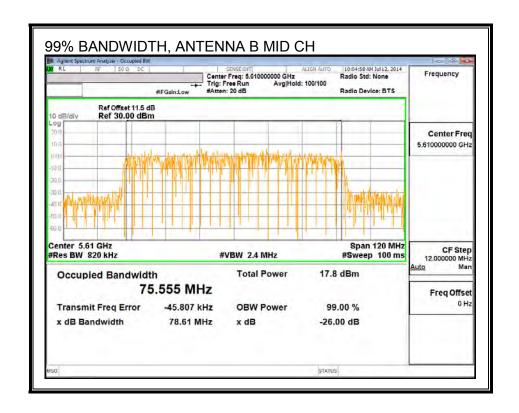


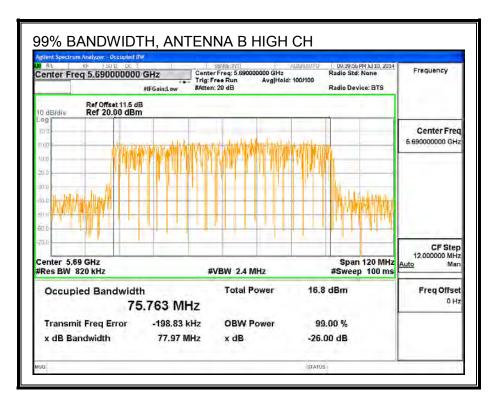




#### 99% BANDWIDTH, ANTENNA B







REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

### 9.26.3. AVERAGE POWER

### **LIMITS**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

### **Average Power Results**

Channel	Frequency	Antenna A	Antenna B	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5530	12.89	12.99	15.95
Mid	5610	16.94	16.99	19.98
High	5690	17.22	17.52	20.38

REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014

FCC ID: BCGA1566

### 9.26.4. OUTPUT POWER AND PSD

### **LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

Antenna A	Antenna B	Uncorrelated Chains Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
4.29	4.25	4.27

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

Antenna A	Antenna B	Correlated Chains
		Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
4.29	4.25	7.28

# **RESULTS**

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5530	81.70	4.27	7.28	24.00	9.72
Mid	5610	81.96	4.27	7.28	24.00	9.72

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD
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### **Output Power Results**

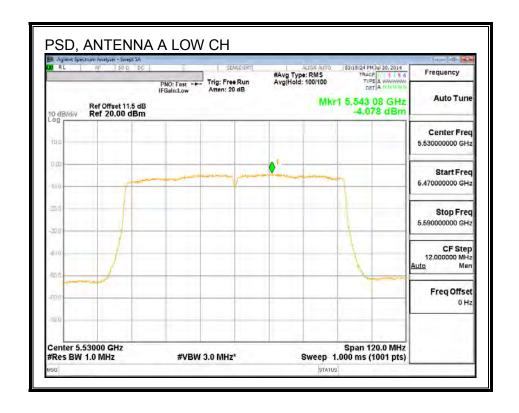
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	12.89	12.99	16.16	24.00	-7.84
Mid	5610	16.94	16.99	20.19	24.00	-3.81

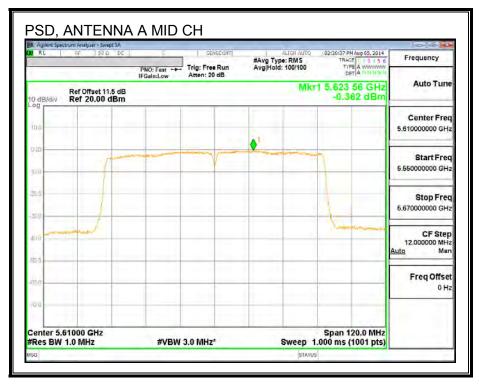
#### **PSD Results**

Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	(MHz) 5530	( <b>dBm</b> ) -4.08	( <b>dBm</b> ) -4.16	( <b>dBm</b> ) -0.90	(dBm) 9.72	( <b>dB</b> ) -10.62

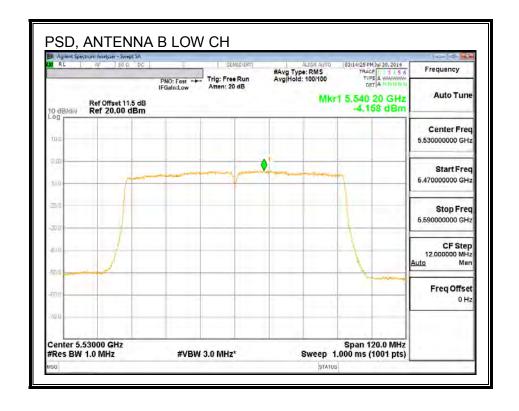
DATE: SEPTEMBER 30, 2014

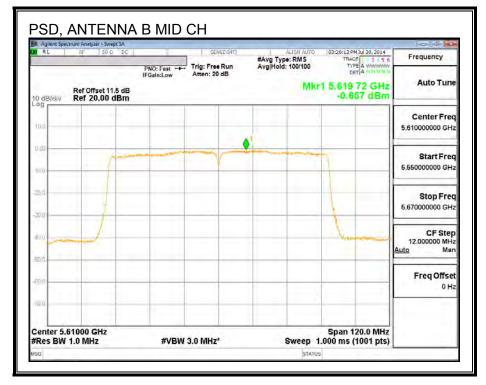
### **PSD, ANTENNA A**





### PSD, ANTENNA B





# **STRADDLE CHANNEL 138 RESULTS**

### **UNII-2C BAND**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
138	5690	75.75	4.27	7.28	24.00	9.72

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD
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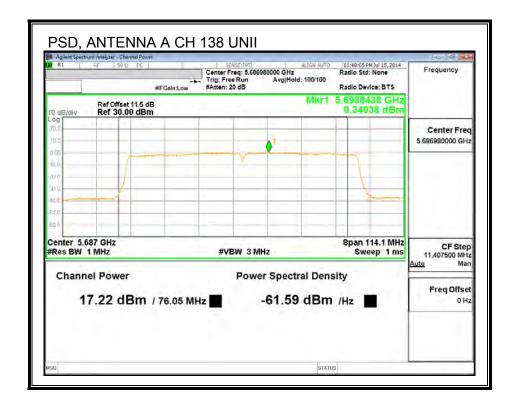
### **Output Power Results**

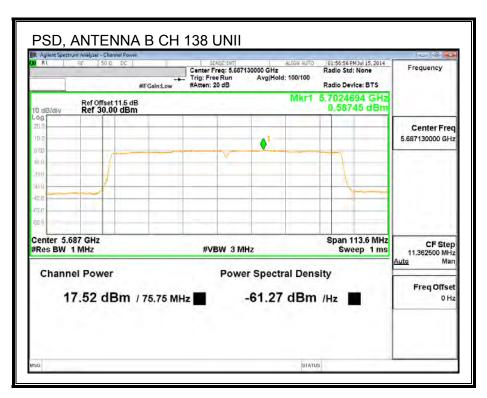
I	Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
l			Meas	Meas	Corr'd	Limit	Margin
l			Power	Power	Power		
l		(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
I	138	5690	17.22	17.52	20.59	24.00	-3.41

#### **PSD Results**

Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	0.34	0.59	3.69	9.72	-6.03

DATE: SEPTEMBER 30, 2014





# **UNII-3 BAND**

#### **Antenna Gain and Limit**

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
138	5690	7.28	28.72	28.72

Duty Cycle CF (dB) 0.21	Included in Calculations of Corr'd Power & PSD
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### **Output Power Results**

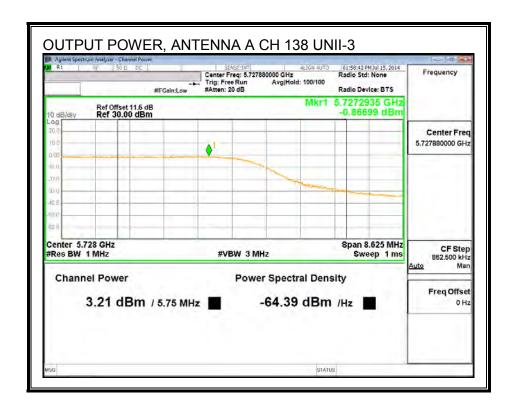
Channel	Frequency	Antenna A	Antenna B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	3.21	3.23	6.44	28.72	-22.28

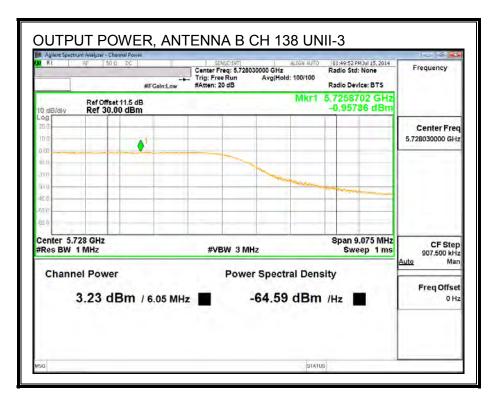
#### **PSD Results**

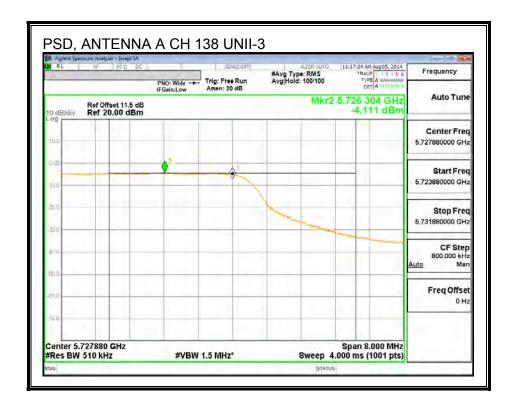
Channel	Frequency	Antenna A	Antenna B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	-4.11	-4.06	-0.87	28.72	-29.59

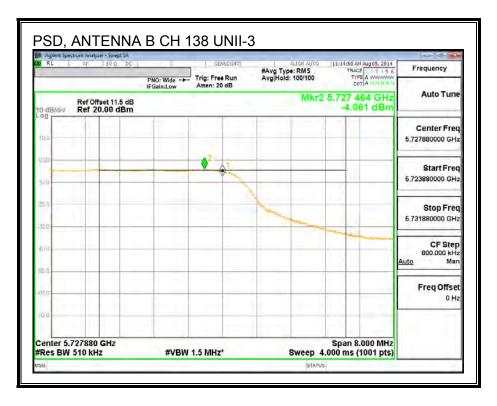
FORM NO: CCSUP4701J

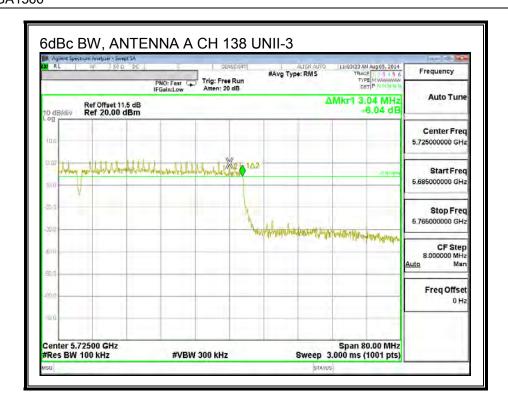
DATE: SEPTEMBER 30, 2014

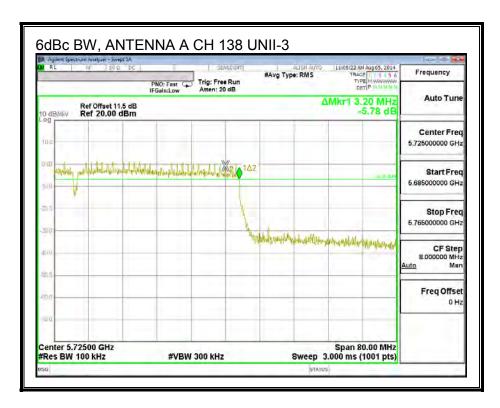












REPORT NO: 14U18207-E5B DATE: SEPTEMBER 30, 2014 FCC ID: BCGA1566

# 9.27. 802.11ac HT80 2TX STBC MODE IN THE 5.6 GHz BAND

### 9.27.1. 26 dB BANDWIDTH

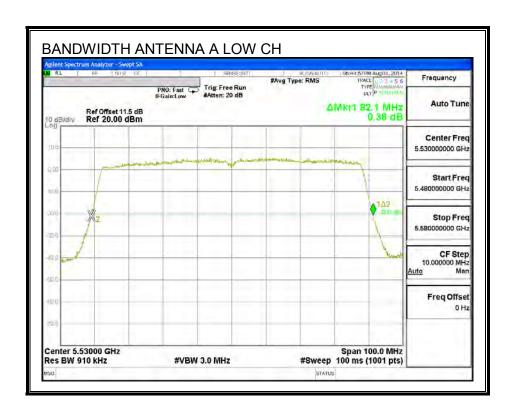
# **LIMITS**

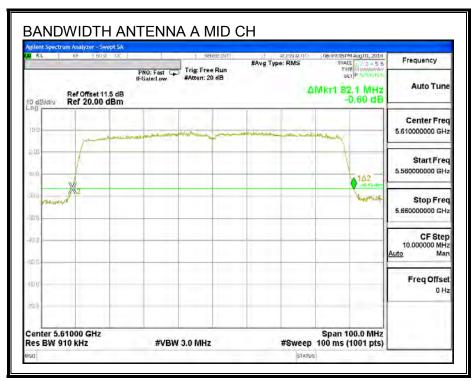
None; for reporting purposes only.

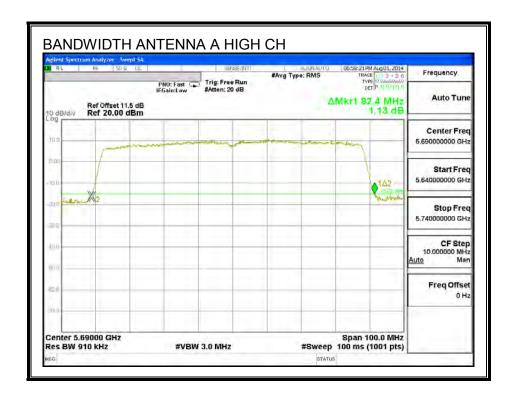
### **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW	
		Antenna A	Antenna B	
	(MHz)	(MHz)	(MHz)	
Low	5530	82.10	81.70	
Mid	5610	82.10	81.70	
High	5690	82.40	81.80	

### 26 dB BANDWIDTH, ANTENNA A







#### 26 dB BANDWIDTH, ANTENNA B

