# **RESULTS**

<b>ID:</b> 3	39004 <b>I</b>	Date:	9/2/16
ID: 3	39004	Date:	9/2/16

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Min	Directional	Directional	Power	PSD
		26 dB	99%	Gain	Gain	Limit	Limit
		BW	BW	for Power	for PSD		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5290	82.88	75.81	7.36	10.36	24.00	6.64

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd PSI
	0.21	included in calculations of con u FS

### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	8.93	8.89	11.92	24.00	-12.08

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-8.61	-8.82	-5.49	6.64	-12.13

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# PSD, CHAIN 0



#### PSD, CHAIN 1



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# 8.29. 802.11ac VHT80 2Tx STBC MODE IN THE 5.3 GHz BAND

# 8.29.1. 26 dB BANDWIDTH

# LIMITS

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Mid	5290	83.000	85.750	

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# 26 DB BANDWIDTH, CHAIN 0



### 26 DB BANDWIDTH, CHAIN 1



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# 8.29.2. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	99% BW	99% BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Mid	5290	73.877	74.077	

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# 99% BANDWIDTH, CHAIN 0



#### 99% BANDWIDTH, CHAIN 1



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# 8.29.3. AVERAGE POWER

# LIMITS

None; for reporting purposes only.

# TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

# **RESULTS**

|--|

### Average Power Results

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
	· · ·	X- /	<b>X</b> - <b>7</b>	· · ·

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# 8.29.4. 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.

IC RSS-247 (6.2.2) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

# TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

# **DIRECTIONAL ANTENNA GAIN**

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

Chain 0	Chain 1	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
7.10	7.60	7.36

# **RESULTS**

<b>ID:</b> 39004 <b>Date:</b> 9/2/16
--------------------------------------

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Min	Directional	Directional	Power	PSD
		26 dB	99%	Gain	Gain	Limit	Limit
		BW	BW	for Power	for PSD		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5290	83.00	73.88	7.36	7.36	24.00	9.64

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd PSI
	0.21	included in calculations of con u FS

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	9.84	9.88	12.87	24.00	-11.13

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-7.73	-7.78	-4.53	9.64	-14.17

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# PSD, CHAIN 0



#### PSD, CHAIN 1



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# 8.30. 802.11ac VHT80 2Tx BEAM FORMING MODE IN THE 5.3 GHz BAND

# 8.30.1. 26 dB BANDWIDTH

### LIMITS

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Mid	5290	82.490	82.620	

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# 26 DB BANDWIDTH, CHAIN 0



#### 26 DB BANDWIDTH, CHAIN 1



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# 8.30.2. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5290	75.924	76.504

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# 99% BANDWIDTH, CHAIN 0



#### 99% BANDWIDTH, CHAIN 1



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# 8.30.3. AVERAGE POWER

# LIMITS

None; for reporting purposes only.

# TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

### **RESULTS**

ID:	39004	Date:	9/2/16

### Average Power Results

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Mid	5290	7 92	7.93	10.94

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# 8.30.4. 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.

IC RSS-247 (6.2.2) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

# TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

# **DIRECTIONAL ANTENNA GAIN**

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

Chain 0	Chain 1	<b>Correlated Chains</b>		
Antenna	Antenna	Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
7.10	7.60	10.36		

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### **RESULTS**

<b>ID:</b> 39004 <b>Date:</b> 9/2/16
--------------------------------------

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Min	Directional	Directional	Power	PSD
		26 dB	99%	Gain	Gain	Limit	Limit
		BW	BW	for Power	for PSD		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5290	82.49	75.92	10.36	10.36	24.00	6.64

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd PSD
	0.00	

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	7.92	7.93	10.94	24.00	-13.06

### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-10.32	-10.13	-6.89	6.64	-13.53

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# PSD, CHAIN 0



#### PSD, CHAIN 1



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# 8.31. 802.11n HT20 CHAIN 0 MODE IN THE 5.6 GHz BAND

# 8.31.1. 26 dB BANDWIDTH

### **LIMITS**

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5500	22.304
Mid	5580	22.270
High	5700	22.270
144	5720	22.236

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# 26 dB BANDWIDTH





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# 8.31.2. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5500	17.856
Mid	5580	17.837
High	5700	17.801
144	5720	17.596

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### 99% BANDWIDTH





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# 8.31.3. AVERAGE POWER

# LIMITS

None; for reporting purposes only.

# TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

# **RESULTS**

<b>ID:</b> 39004 <b>Date:</b> 9/2/16
--------------------------------------

Channel	Frequency	Power
	(MHz)	(dBm)
Low	5500	12.41
Mid 5580		12.46
High	5700	12.37
144 5720		12.42

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# 8.31.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

# TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

# **DIRECTIONAL ANTENNA GAIN**

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

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### **RESULTS**

<b>ID:</b> 39004 <b>Date:</b> 9/2/16
--------------------------------------

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Min	Directional	Power	PSD
		26 dB	99%	Gain	Limit	Limit
		BW	BW			
	(MHz)	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5500	22.30	17.86	6.40	23.12	10.60
Mid	5580	22.27	17.84	6.40	23.11	10.60
High	5700	22.27	17.80	6.40	23.10	10.60

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	12.41	12.41	23.12	-10.71
Mid	5580	12.46	12.46	23.11	-10.65
High	5700	12.37	12.37	23.10	-10.73

# **PSD Results**

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	3.54	3.54	10.60	-7.06
Mid	5580	4.87	4.87	10.60	-5.73
High	5700	2.05	2.05	10.60	-8.55

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<u>PSD</u>





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# 8.32. 802.11ac VHT20 CHAIN 0 STRADDLE CHANNEL 144 RESULTS (FCC)

# 8.32.1. OUTPUT POWER AND PSD

#### 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	16.12	6.40	6.40	22.67	10.60

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	11.31	11.31	22.67	-11.36

#### **PSD Results**

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	0.44	0.44	10.60	-10.16

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enter F	req 5.72000000	9 GHz PNO: Fast	Trig: Free Ru	#Avg n Avg	Type: RMS Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
0 dB/div	Ref Offset 12.7 dB Ref 30.00 dBm	IFGain:Low	Aπen: 28 dB		Mkr Band Pow	1 5.716 94 GHz ver 11.312 dBm	Auto Tune
.og 20.0 10.0			1				Center Fred 5.720000000 GH;
10.0 20.0 30.0							Start Free 5.695000000 GH:
40.0 50.0 50.0							<b>Stop Free</b> 5.745000000 GH:
tart 5.69 Res BW	9500 GHz 1.0 MHz	#VB	W 3.0 MHz*		Sweep	Stop 5.74500 GHz 20.0 ms (1001 pts)	CF Ster 5.000000 MH
KF MODE Ti   2 3 4   5 6 7   8 9 10   11 11 11	RC SCL X	'16 94 GHz	v 0.236 dBm	FUNCTION Band Power	FUNCTION WIDTH	FUNCTION VALUE 11.312 dBm	Freq Offse



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# UNII-3 BAND

#### Antenna Gain and Limit

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	6.12	6.40	29.60	29.60

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	5.83	5.83	29.60	-23.77

#### **PSD Results**

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-2.49	-2.49	29.60	-32.09

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enter Freq 5.7	50 Ω DC 20000000 GHz	SENSE:INT	ALIGNAUTO #Avg Type: RMS	10:35:34 AM Sep 01, 2016 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast ← IFGain:Low	Atten: 28 dB		DETANNNN	Auto Tum
Ref Off: 0 dB/div Ref 30	set 12.7 dB ).00 dBm		Mkr1 Band Pow	5.728 06 GHz /er 5.827 dBm	Auto Tune
og 20.0					Center Fred
10.0			<b>A</b> 1		5.720000000 GH
0.00					
0.0					Start Free
0.0					5.695000000 GH
0.0					Stop Fre
:0.0					5.745000000 GH
tart 5.69500 GH	z			top 5.74500 GHz	CF Ster
Res BW 1.0 IVIH:	z #VB	V 3.0 WHZ*	Sweep 2	0.0 ms (1001 pts)	5.000000 MH
A MUDE THE SEL	× 5.728 06 GHz	0.037 dBm Band	Power 6.118 MHz	5.827 dBm	
3 4					Freq Offse
5 6					0 H:
7					
9					



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# 8.33. 802.11ac VHT20 CHAIN 0 STRADDLE CHANNEL 144 RESULTS (IC)

# 8.33.1. OUTPUT POWER AND PSD

#### UNII-2C BAND

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		<b>99%</b>	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	13.80	6.40	6.40	22.00	10.60

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	11.23	11.23	22.00	-10.77

#### **PSD Results**

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas Corr'd		Limit	Margin
		PSD PSD			
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	0.44	0.44	10.60	-10.16

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enter Fre	RF 50 Ω DC eq 5.720000000 GHz PN0	:Fast +++	SENSE:	INT #Avg un Avg	ALIGN AUTO Type: RMS Hold: 100/100	10:35:44 AM Sep 01, 201 TRACE 1 2 3 4 5 TYPE A WMANN	Frequency
0 dB/div	IFGa Ref Offset 12.7 dB Ref 30.00 dBm	in:Low	Atten: 28 dE		Mkr Band Pov	1 5.718 10 GH: ver 11.233 dBn	z Auto Tune
og 20.0 10.0			<b>⊘</b> <sup>1</sup>				Center Free 5.720000000 GH
0.0							<b>Start Free</b> 5.695000000 GH
i0.0 i0.0 i0.0							<b>Stop Free</b> 5.745000000 GH
tart 5.695 Res BW 1	00 GHz .0 MHz	#VBW	3.0 MHz*		Sweep	Stop 5.74500 GH 20.0 ms (1001 pts	Z CF Step 5.000000 MH
MODE TRC   1 N 1   2 3 -   3 - -   4 - -   5 - -   6 - -   7 - -   9 - -   10 - 1	(SCL) X F 5.718 10 (	GHz	0.315 dBm	FUNCTION Band Power	FUNCTION WIDTH 13.80 MHz	FUNCTION VALUE 11.233 dBm	Freq Offse



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# UNII-3 BAND

#### Antenna Gain and Limit

Channel	Frequency	Min	Directional	Power	PSD
		99%	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	6.12	6.40	29.60	29.60

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	5.83	5.83	29.60	-23.77

#### **PSD Results**

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-2.49	-2.49	29.60	-32.09

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v ∟ RF Center Freq 5.7	50 Ω DC 20000000 GHz	SENSE:INT	ALIGN AUTO #Avg Type: RMS Aug/Hold: 100/100	10:35:34 AM Sep 01, 2016 TRACE 1 2 3 4 5 6	Frequency
Def Off	PNO: Fast ← IFGain:Low	Atten: 28 dB	Mkr1	5.728 06 GHz	Auto Tune
0 dB/div Ref 3	).00 dBm		Band Pov	ver 5.827 dBm	
20.0					Center Free
0.00					3.72000000 GH
20.0					Start Free 5.69500000 GH:
40.0					Stop Free
60.0					5.745000000 GH
tart 5.69500 GH Res BW 1.0 MH	z z #VB	W 3.0 MHz*	Sweep 2	Stop 5.74500 GHz 0.0 ms (1001 pts)	CF Step 5.000000 MH
4kr mode tro scl 1 N 1 f 2	× 5.728 06 GHz	FU 0.037 dBm Ban	NCTION FUNCTION WIDTH d Power 6.118 MHz	FUNCTION VALUE 5.827 dBm	<u>Auto</u> Mar
3 4 5 6 7					Freq Offse 0 H
8 9 10					



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## 8.33.2. 6 dB BANDWIDTH

## **LIMITS**

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

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

## **RESULTS**

Channel	Frequency	6 dB Bandwidth
	(MHz)	(MHz)
144 5720		3.78

## 6 dB BANDWIDTH

L enter Fre	RF 50 Ω q 5.72000	DC DOOOO GHz PNO: Wide	SENSE:INT	ALIGN AUTO #Avg Type: RMS	10:39:54 AM Aug 12, 2016 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
0 dB/div	Ref Offset 12 Ref 20.00 ·	IFGain:Low 2.7 dB dBm	#Atten: 30 dB	ΔN	/kr1 3.780 MHz -3.03 dB	Auto Tun
<b>°g</b> 10.0 0.00			makendering parties	numerous and the second s	1Δ2 	Center Fre 5.720000000 GH
10.0	AND CONT				Marine Contraction	Start Free 5.706500000 GH
i0.0 i0.0 i0.0						Stop Fre 5.733500000 GH
enter 5.72 Res BW 1	000 GHz 00 kHz	#VI	3W 300 kHz	Sweep	Span 27.00 MHz 2.60 ms (1001 pts)	CF Stej 2.700000 MH
<b>1</b> <u>A</u> 2 1 2 F 1 3 N 1 4 5 6 7 8 9	f (∆) f f	3.780 MHz ( 5.725 022 GHz 5.727 425 GHz	∆) 3.03 dB 0.56 dBm 3.75 dBm		FUNCTION VALUE	Freq Offse 0 H

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# 8.34. 802.11n HT20 CHAIN 1 MODE IN THE 5.6 GHz BAND

## 8.34.1. 26 dB BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

## **RESULTS**

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5500	22.270
Mid 5580		22.100
High	5700	22.236
144	5720	22.170

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## 26 dB BANDWIDTH





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## 8.34.2. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

## **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5500	17.779
Mid	5580	17.833
High	5700	17.527
144	5720	17.820

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### 99% BANDWIDTH





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## 8.34.3. AVERAGE POWER

## LIMITS

None; for reporting purposes only.

## **TEST PROCEDURE**

Measurements perform using a wideband gated RF power meter.

### **RESULTS**

<b>ID:</b> 39004 <b>Date:</b> 9/2/16
--------------------------------------

Channel	Frequency	Power
	(MHz)	(dBm)
Low	5500	12.39
Mid	5580	12.42
High	5700	12.37
144	5720	12.43

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# 8.34.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

## TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

### **DIRECTIONAL ANTENNA GAIN**

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

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### RESULTS

ID:	39004	Date:	9/2/16
-----	-------	-------	--------

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Min	Directional	Power	PSD	
		26 dB	99%	Gain	Limit	Limit	
		BW	BW				
	(MHz)	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)	
Low	5500	22.27	17.78	7.90	21.60	9.10	
Mid	5580	22.10	17.83	7.90	21.61	9.10	
High	5700	22.24	17.53	7.90	21.54	9.10	
Duty C	ycle CF (dB)	0.00	Included in Calculations of Corr'd PSD			)	

#### **Output Power Results**

Duty Cycle CF (dB)

Channel	Frequency	Chain 1	Total	Power	Power
		Meas Corr'd		Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	12.39	12.39	21.60	-9.21
Mid	5580	12.42	12.42	21.61	-9.19
High	5700	12.37	12.37	21.54	-9.17

## **PSD Results**

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	3.72	3.72	9.10	-5.38
Mid	5580	5.12	5.12	9.10	-3.98
High	5700	2.19	2.19	9.10	-6.91

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# 8.35. 802.11ac VHT20 CHAIN 1 STRADDLE CHANNEL 144 RESULTS (FCC)

# 8.35.1. OUTPUT POWER AND PSD

#### 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	16.09	7.90	7.90	21.17	9.10

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

#### **Output Power Results**

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	11.32	11.32	21.17	-9.85

#### **PSD Results**

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	0.44	0.44	9.10	-8.66

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	Teq 5.72000000	PNO: Fast H IFGain:Low	Trig: Free Rur Atten: 28 dB	n Avg F	fold: 100/100	TYPE A WWWWWW DET A NNNNN	
0 dB/div	Ref Offset 12.7 dB Ref 30.00 dBm				Mkr1 Band Powe	5.716 96 GHz er 11.316 dBm	Auto Tune
og 20.0 10.0			1				Center Fred 5.720000000 GH:
10.0			<b>Q</b>				
0.0							Start Fred 5.695000000 GH
10.0 10.0		7					Stop Free
50.0							5.745000000 GH;
tart 5.69 Res BW	9500 GHz 1.0 MHz	#VB\	N 3.0 MHz*		S Sweep 2	top 5.74500 GHz 0.0 ms (1001 pts)	CF Step 5.000000 MH:
KR MODE T	RC SCL X 1 f 5.7	'16 96 GHz	Y 0.286 dBm	FUNCTION Band Power	FUNCTION WIDTH 16.09 MHz	FUNCTION VALUE 11.316 dBm	<u>Auto</u> Mar
2 3 4 5							Freq Offse 0 H:
7							



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## UNII-3 BAND

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	6.09	7.90	7.90	16.95	9.10

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

#### **Output Power Results**

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	5.84	5.84	16.95	-11.11

#### **PSD Results**

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-2.51	-2.51	9.10	-11.61

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enter F	req 5.7200	Ω DC 000000 GHz PNO: Fa	SEN Ist +++ Trig: Free	#Avg Run Avg	aLIGN AUTO 3 Type: RMS Hold: 100/100	10:38:50 AM Sep 01, 2016 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	Frequency
0 dB/div	Ref Offset 1 Ref 30.00	2.7 dB dBm	ow Atten: 20	ab	Mkr Band Pov	1 5.728 04 GHz wer 5.836 dBm	Auto Tune
og 20.0 10.0					Q <sup>1</sup>		Center Free 5.720000000 GH:
0.0							Start Free 5.695000000 GH
i0.0 i0.0 i0.0							Stop Free 5.745000000 GH:
tart 5.69 Res BW	500 GHz 1.0 MHz	#	VBW 3.0 MHz	x	Sweep 2	Stop 5.74500 GHz 20.0 ms (1001 pts)	CF Step 5.000000 MH
1 N 2 3 4 5 6 7 8 9 1 1	f	5.728 04 GH	z -0.019 dE	Band Power	6.085 MHz	5.836 dBm	Freq Offse 0 H



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# 8.36. 802.11ac VHT20 CHAIN 1 STRADDLE CHANNEL 144 RESULTS (IC)

## 8.36.1. OUTPUT POWER AND PSD

#### UNII-2C BAND

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		<b>99%</b>	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	13.91	7.90	7.90	20.53	9.10

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	11.26	11.26	20.53	-9.28

#### **PSD Results**

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	0.44	0.44	9.10	-8.66

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enter Fi	RF 50 Ω req 5.720000	DC DOOD GHz PNO: Fast	SENSE	INT #Avç un Avg	ALIGN AUTO   Type: RMS Hold: 100/100	10:38:58 AM Sep TRACE 1 2 TYPE A V	01, 2016 3 4 5 6 Frequency
0 dB/div	Ref Offset 12.7 Ref 30.00 dl	IFGain:Low dB <b>3m</b>	Atten: 28 df	3	Mkr Band Pov	1 5.718 05 /er 11.256	GHz dBm
og 20.0 10.0			<b>●</b> <sup>1</sup>				Center Free 5.720000000 GH;
0.0							Start Free 5.695000000 GHz
i0.0 i0.0 i0.0							<b>Stop Free</b> 5.745000000 GH
tart 5.69 Res BW	500 GHz 1.0 MHz	#V	BW 3.0 MHz*		Sweep	Stop 5.74500 20.0 ms (100	0 GHz CF Step 1 pts) 5.000000 MH
MdDe         Transmission           1         N         1           2         3         4           5         6         7           7         8         9           9         10         11	f	× 5.718 05 GHz	v 0.299 dBm	EUNCTION Band Power	FUNCTION WADTH 13.91 MHz	FUNCTION VALU 11.256	S dBm Freq Offset 0 H;



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## UNII-3 BAND

#### Antenna Gain and Limit

Channel	Frequency	Min	Directional	Power	PSD
		99%	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	3.91	7.90	28.10	28.10

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

#### **Output Power Results**

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	5.64	5.64	28.10	-22.46

#### **PSD Results**

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-2.51	-2.51	28.10	-30.61

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L RF	50 Ω DC	SENSE:INT	ALIGN AUTO	10:39:17 AM Sep 01, 2016	Erequency
Center Freq 5.72	20000000 GHz PNO: Fast - IFGain:Low	► Trig: Free Run Atten: 28 dB	#Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	Frequency
Ref Offs 0 dB/div Ref 30	et 12.7 dB .00 dBm		Mkr Band Pov	1 5.726 96 GHz wer 5.643 dBm	Auto Tune
og 20.0					Contor Fro
10.0					5.720000000 GH:
10.0					Start Free
20.0					5.695000000 GH
40.0					
50.0					<b>Stop Fred</b> 5.745000000 GH:
tart 5.69500 GH Res BW 1.0 MHz	z 2 #VB	W 3.0 MHz*	Sweep 3	Stop 5.74500 GHz 20.0 ms (1001 pts)	CF Step 5.000000 MH
ike mode tro scl 1 N 1 f	× 5.726 96 GHz	Y FUT 0.217 dBm Band	TELEVISION FUNCTION WIDTH	FUNCTION VALUE 5.643 dBm	<u>Auto</u> Mar
2 3 4 5 6					Freq Offse 0 Ha
/ 8 9 0					



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## 8.36.2. 6 dB BANDWIDTH

## LIMITS

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

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

### **RESULTS**

Channel	Frequency	6 dB Bandwidth
	(MHz)	(MHz)
144	5720	3.942

### 6 dB BANDWIDTH



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# 8.37. 802.11n HT20 2Tx CDD MODE IN THE 5.6 GHz BAND

# 8.37.1. 26 dB BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

## **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	22.170	22.270
Mid	5580	22.340	22.168
High	5700	22.200	22.338
144	5720	22.236	22.100

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## 26 dB BANDWIDTH, CHAIN 0





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## 26 dB BANDWIDTH, CHAIN 1





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## 8.37.2. 99% BANDWIDTH

### LIMITS

None; for reporting purposes only.

## **RESULTS**

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	17.762	17.926
Mid	5580	17.799	17.864
High	5700	17.757	17.712
144	5720	18.035	17.828

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### 99% BANDWIDTH, CHAIN 0





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### 99% BANDWIDTH, CHAIN 1





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## 8.37.3. AVERAGE POWER

## LIMITS

None; for reporting purposes only.

## TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

## **RESULTS**

<b>ID:</b> 39004 <b>Date:</b> 9/2/16	ID:
--------------------------------------	-----

### Average Power Results

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	11.98	11.89	14.95
Mid	5580	11.42	11.39	14.42
High	5700	11.44	11.45	14.46
144	5720	11.48	11.49	14.50

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# 8.37.4. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

## TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power is measured using PXA spectrum analyzer, duty cycle correction factor is required.

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### DIRECTIONAL ANTENNA GAIN

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

Chain 0	Chain 1	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
6.40	7.90	7.21

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

Chain 0	Chain 1	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
6.40	7.90	10.19

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### **RESULTS**

ID:	39004	Date:	9/2/16
-----	-------	-------	--------

## Bandwidth, Antenna Gain and Limits

Channel	Frequency	Min	Min	Directional	Directional	Power	PSD
		26 dB	<b>99%</b>	Gain	Gain	Limit	Limit
		BW	BW	for Power	for PSD		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5500	22.17	17.76	7.21	10.19	22.28	6.81
Mid	5580	22.17	17.86	7.21	10.19	22.31	6.81
High	5700	22.20	17.71	7.21	10.19	22.27	6.81

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	11.98	11.89	14.95	22.28	-7.34
Mid	5580	11.42	11.39	14.42	22.31	-7.89
High	5700	11.44	11.45	14.46	22.27	-7.82

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	2.23	2.24	5.25	6.81	-1.56
Mid	5580	-0.35	-0.43	2.62	6.81	-4.19
High	5700	1.07	0.83	3.96	6.81	-2.85

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# 8.38. 802.11ac VHT20 2Tx CDD STRADDLE CHANNEL 144 RESULTS (FCC)

# 8.38.1. OUTPUT POWER AND PSD

### UNII-2C BAND

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		2600%	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	16.05	7.21	10.19	21.84	6.81

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

### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	10.41	10.42	13.43	21.84	-8.42

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-0.49	-0.53	2.50	6.81	-4.31

# OUTPUT POWER, CHAIN 0



### **OUTPUT POWER, CHAIN 1**



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### PSD, CHAIN 1



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## UNII-3 BAND

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	6.05	7.21	10.19	17.61	6.81

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

## **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	4.91	4.86	7.90	17.61	-9.71

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-3.42	-3.48	-0.44	6.81	-7.25

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enter F	req 5.72000000	0 GHz PNO: Fast ←	Trig: Free Ru	n Avgl	Type: RMS Hold: 100/100	10:49:24 AM Sep 01, 2016 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
0 dB/div	Ref Offset 12.7 dB Ref 30.00 dBm	IFGain:Low	Aπen: 28 dB		Mkr Band Po	1 5.728 06 GHz wer 4.913 dBm	Auto Tune
.og 20.0 10.0					0 <sup>1</sup>		Center Fred 5.720000000 GH:
20.0							Start Free 5.695000000 GH:
10.0 50.0 50.0							<b>Stop Frec</b> 5.745000000 GH;
tart 5.69 Res BW	9500 GHz 1.0 MHz	#VB	₩ 3.0 MHz*	EUNICITION	Sweep 2	Stop 5.74500 GHz 20.0 ms (1001 pts)	CF Step 5.000000 MH <u>Auto</u> Mar
1 N 2 3 4 5 6	f 5.	728 06 GHz	-0.901 dBm	Band Power	6.118 MHz	4.913 dBm	Freq Offse 0 H:
7 8 9 10							

# **OUTPUT POWER, CHAIN 1**



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### PSD, CHAIN 1



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# 8.39. 802.11ac VHT20 2Tx CDD STRADDLE CHANNEL 144 RESULTS (IC)

# 8.39.1. OUTPUT POWER AND PSD

### UNII-2C BAND

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		<b>99%</b>	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	13.92	7.21	10.19	21.23	6.81

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

### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	10.35	10.29	13.33	21.23	-7.90

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-0.49	-0.53	2.50	6.81	-4.31

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# **OUTPUT POWER, CHAIN 0**

enter Fr	RF 50 Ω DC eq 5.72000000	0 GHz PNO: East ↔	SENSE:I	NT #Avg n Avg t	ALIGNAUTO Type: RMS Iold: 100/100	10:49:33 AM Sep 01, 2016 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
0 dB/div	Ref Offset 12.7 dB Ref 30.00 dBm	IFGain:Low	Atten: 28 dB		Mkr1 Band Powe	5.717 99 GHz er 10.350 dBm	Auto Tune
0.0			<b>0</b> <sup>1</sup>				Center Fred 5.720000000 GHz
0.0 0.0 0.0							<b>Start Fred</b> 5.695000000 GH:
0.0 0.0 0.0							Stop Fred 5.745000000 GHz
tart 5.69 Res BW	500 GHz 1.0 MHz	#VBV	/ 3.0 MHz*	FUNCTION	Sweep 2 Sweep 2	top 5.74500 GHz 0.0 ms (1001 pts) FUNCTION VALUE	CF Step 5.000000 MHz <u>Auto</u> Mar
1 N 1 2 3 4 5 6 7 8 9 0	f 5.	717 99 GHz	-0.556 dBm	Band Power	14.02 MHz	10.350 dBm	Freq Offsel 0 Hz

### **OUTPUT POWER, CHAIN 1**



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### PSD, CHAIN 1



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# UNII-3 BAND

#### Antenna Gain and Limit

Channel	Frequency	Min	Directional	Directional	Power	PSD
		99%	Gain	Gain	Limit	Limit
		BW	For Power	For PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	3.92	7.21	10.19	28.79	25.81

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

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	4.77	4.67	7.73	28.79	-21.06

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	-3.42	-3.48	-0.44	25.81	-26.25

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# **OUTPUT POWER, CHAIN 0**

enter F	RF 50 Freq 5.7200	Ω DC 000000 GHz PNO:	Fast T	SENSE:IN	n #Avg n Avg H	ALIGN AUTO Type: RMS Iold: 100/100	10:49:51 AM Se TRACE 1 TYPE A	2 3 4 5 6	Frequency
0 dB/div	Ref Offset 1 Ref 30.00	IFGain 12.7 dB 1 dBm	Low P	atten: 28 αΒ		Mkr Band Pov	5.727 01 ver 4.773	GHz dBm	Auto Tune
<b>°g</b> 20.0									Center Fred 5.720000000 GHz
0.0 0.0 0.0									Start Fred 5.69500000 GH
0.0 0.0 0.0									Stop Fred 5.745000000 GHz
tart 5.6 Res BW	9500 GHz / 1.0 MHz	×	#VBW 3.0	0 MHz*	FUNCTION	Sweep 2	Stop 5.7450 20.0 ms (100	00 GHz 01 pts)	CF Step 5.000000 MHz uto Mar
1 N 2 3 4 5 6 7 8 9 0 1	1 f	5.727 01 G	Hz -0	9.694 dBm	Band Power	4.020 MHz	4.77	73 dBm	Freq Offsel 0 Hz

### **OUTPUT POWER, CHAIN 1**



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### PSD, CHAIN 1



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# 8.39.2. 6 dB BANDWIDTH

# **LIMITS**

FCC §15.407 (e)

IC RSS-247 (6.2.4) (1)

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

## **RESULTS**

Channel	Frequency	6 dB BW	6 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
144	5720	3.915	3.915

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## CHAIN 0



#### CHAIN 1



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# 8.40. 802.11n HT20 2Tx STBC MODE IN THE 5.6 GHz BAND

# 8.40.1. 26 dB BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

## **RESULTS**

Channel Frequency		26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5500	22.372	22.236	
Mid	5580	22.372	22.236	
High	5700	22.270	22.202	
144	5720	22.236	22.066	

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# 26 dB BANDWIDTH, CHAIN 0





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# 26 dB BANDWIDTH, CHAIN 1





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# 8.40.2. 99% BANDWIDTH

### LIMITS

None; for reporting purposes only.

# **RESULTS**

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	17.805	17.616
Mid	5580	18.086	17.730
High	5700	17.778	17.875
144	5720	17.685	17.864

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### 99% BANDWIDTH, CHAIN 0





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### 99% BANDWIDTH, CHAIN 1





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# 8.40.3. AVERAGE POWER

## LIMITS

None; for reporting purposes only.

## TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

### **RESULTS**

|--|

### **Average Power Results**

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	12.42	12.35	15.40
Mid	5580	12.41	12.40	15.42
High	5700	12.39	12.37	15.39
144	5720	12.01	12.03	15.03

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