# 8.33. 802.11n HT40 ANTENNA A MODE IN THE 5.6 GHz BAND

## 8.33.1. 26 dB BANDWIDTH

## **LIMITS**

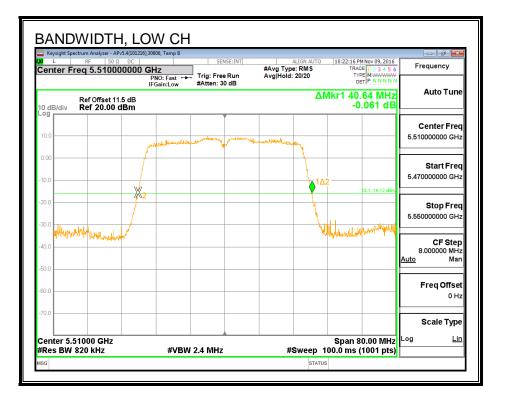
None; for reporting purposes only.

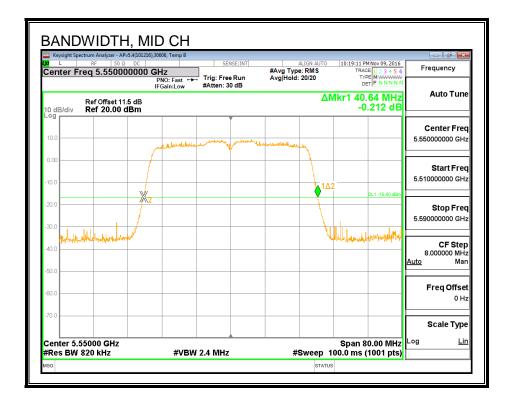
## <u>RESULTS</u>

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5510	40.640
Mid	5550	40.640
High	5670	40.640
142	5710	40.720

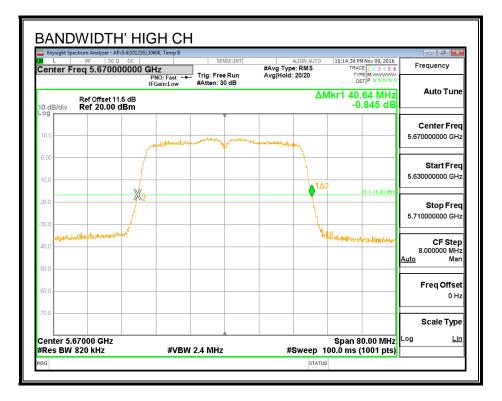
Page 301 of 884

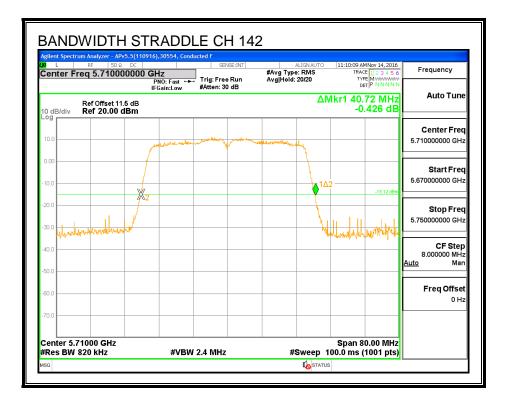
#### 26 dB BANDWIDTH





Page 302 of 884





Page 303 of 884

## 8.33.2. 99% BANDWIDTH

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

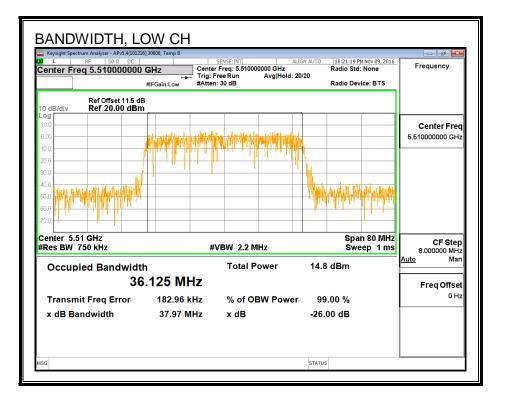
None; for reporting purposes only.

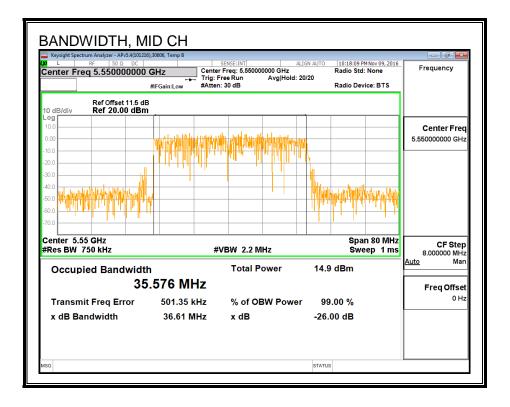
## <u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5510	36.125
Mid	5550	36.576
High	5670	36.218
142	5710	36.235

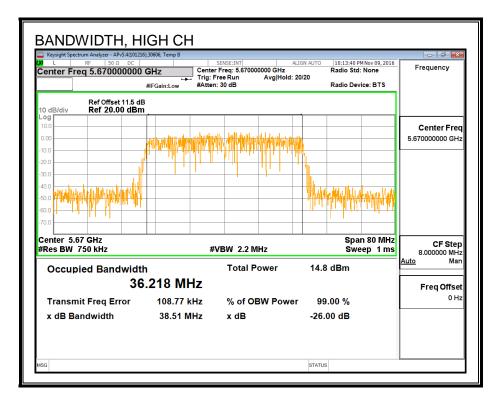
Page 304 of 884

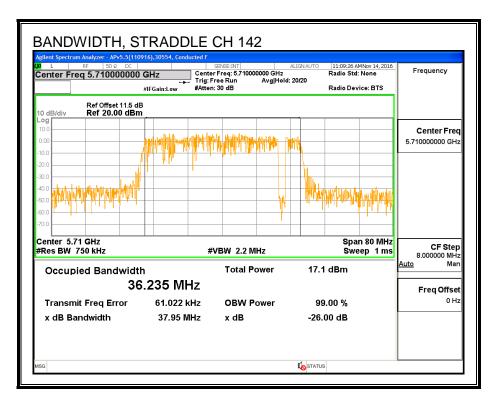
#### 99% BANDWIDTH





Page 305 of 884





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Page 306 of 884

## 8.33.3. AVERAGE POWER

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

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### **RESULTS**

ID: 30554	Date:	12/15/16
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Channel	Frequency	Power
	(MHz)	(dBm)
Low	5510	13.96
Mid	5550	16.41
High	5670	15.97
142	5710	16.39

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Page 307 of 884

# 8.33.4. OUTPUT POWER AND PSD

## <u>LIMITS</u>

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 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

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.

Page 308 of 884

## <u>RESULTS</u>

ID:	30554	Date:	12/15/16
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#### 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	5510	40.64	36.125	3.39	24.00	11.00
Mid	5550	40.64	36.576	3.39	24.00	11.00
High	5670	40.64	36.218	3.39	24.00	11.00

Duty Cycle CF (dB)

Included in Calculations of Corr'd PSD

#### **Output Power Results**

Channel	Frequency	Ant A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	13.96	13.96	24.00	-10.04
Mid	5550	16.41	16.41	24.00	-7.59
High	5670	15.97	15.97	24.00	-8.03

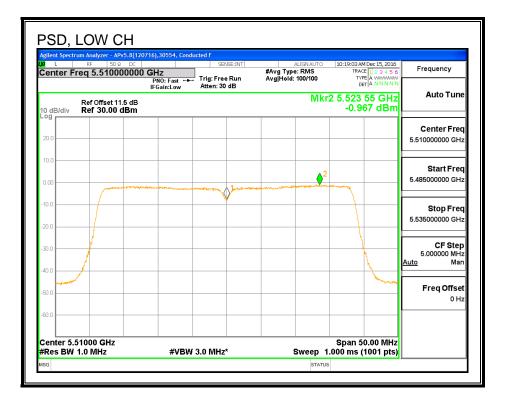
0.10

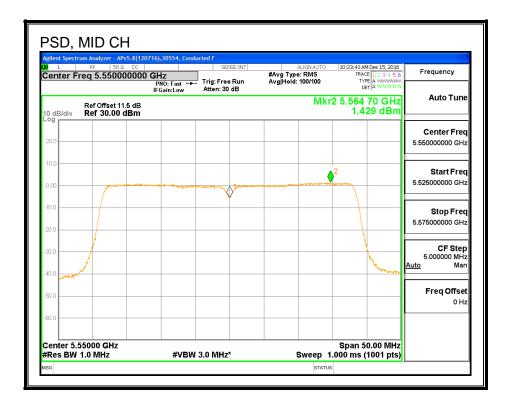
#### **PSD** Results

Channel	Frequency	Ant A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-0.97	-0.87	11.00	-11.87
Mid	5550	1.43	1.53	11.00	-9.47
High	5670	1.14	1.24	11.00	-9.76

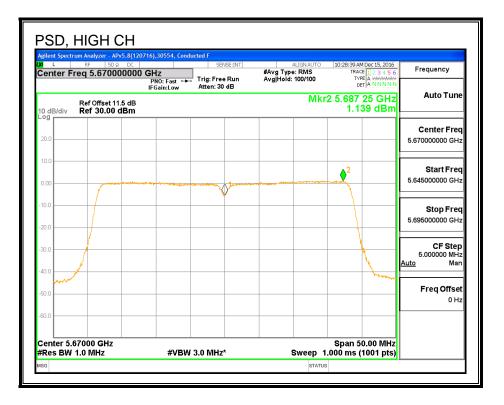
Page 309 of 884

<u>PSD</u>





Page 310 of 884



Page 311 of 884

# 8.34. 802.11ac VHT40 ANTENNA A STRADDLE CH 142 RESULTS

# 8.34.1. 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)
142	5710	35.36	3.39	3.39	24.00	11.00

 Duty Cycle CF (dB)
 0.10
 Included in Calculations of Corr'd Power & PSD

#### **Output Power Results**

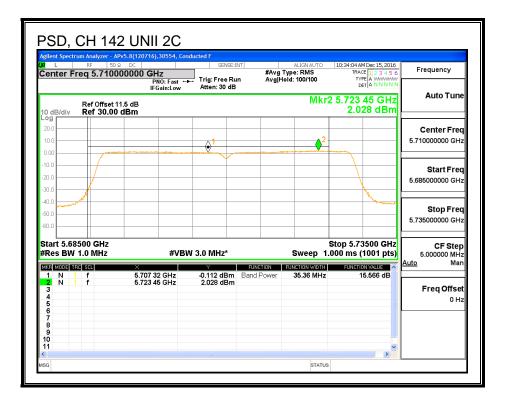
Channel	Frequency	Ant A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	15.57	15.67	24.00	-8.33

#### **PSD** Results

Channel	Frequency	Ant A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	2.03	2.13	11.00	-8.87

Page 312 of 884

	RF 50 Q DC PG 5.710000000	) GHz PNO: Fast ↔ IFGain:Low	Trig: Free Run Atten: 30 dB	#Avg	ALIGNAUTO Type: RMS fold: 100/100	10:33:56 AM Dec 15, 2016 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	Frequency
dB/div	Ref Offset 11.5 dB Ref 30.00 dBm	IFGain:Low	Atten: 30 db			5.707 32 GHz r 15.566 dBm	Auto Tun
9			<b>0</b> <sup>1</sup>				Center Fre 5.710000000 GH
.0							<b>Start Fre</b> 5.685000000 GH
1.0						second and a second and a second a se	<b>Stop Fre</b> 5.735000000 GH
art 5.685 tes BW 1		#VBV	V 3.0 MHz*			top 5.73500 GHz 00 ms (1001 pts)	CF Ste 5.000000 MH
R MODE TRC		707 32 GHz	ĭ -0.112 dBm	FUNCTION Band Power	FUNCTION WIDTH 35.36 MHz	FUNCTION VALUE	<u>Auto</u> Ma
							Freq Offse 0 H



Page 313 of 884

## UNII-3 BAND

#### Antenna Gain and Limit

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
142	5710	5.96	3.39	30.00	30.00

Duty Cycle CF (dB)	0.10 Included in	Calculations of Corr'o	Power & PSD
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#### **Output Power Results**

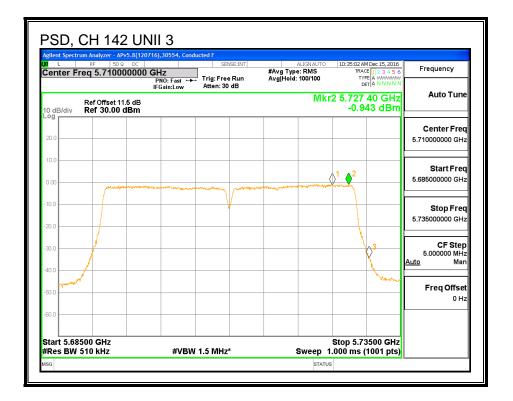
Channel	Frequency	Ant A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	6.27	6.37	30.00	-23.63

#### **PSD** Results

Channel	Frequency	Ant A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	-0.94	-0.84	30.00	-30.84

Page 314 of 884

ent Spectrum Analyzer - APv5 L RF 50 Ω nter Freq 5.710000	DC DOOD GHz PN0: Fast ↔	SENSE:INT	ALIGNAU #Avg Type: RMS Avg Hold: 100/10	TRACE 1 2 3 4 5 6	Frequency
Ref Offset 11.5 dB/div Ref 30.00 dl		Atten: 30 dB		1kr1 5.727 68 GHz Power 6.274 dBm	Auto Tune
•9				1	Center Fred 5.710000000 GH:
					Start Free 5.685000000 GH:
0.0					<b>Stop Fred</b> 5.735000000 GH:
tart 5.68500 GHz Res BW 1.0 MHz	#VB\	V 3.0 MHz*	Swee	Stop 5.73500 GHz 5 1.000 ms (1001 pts)	
KE         MODE         TEC         SCI           1         N         1         F           2         -         -         -           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           9         -         -         -           0         -         -         -	× 5.727 68 GHz		UNETION FUNCTIONS		Freq Offsel



Page 315 of 884

## 8.34.2. 6 dB BANDWIDTH

## LIMITS

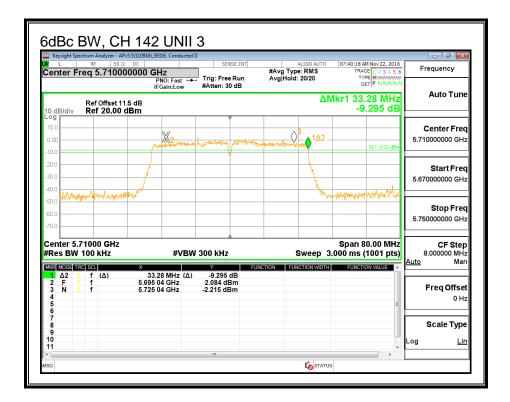
FCC §15.407 (e)

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

#### **RESULTS**

Channel Frequency		6 dB Bandwidth
	(MHz)	(MHz)
142	5710	33.280

#### 6 dB BANDWIDTH



Page 316 of 884

# 8.35. 802.11n HT40 ANTENNA B MODE IN THE 5.6 GHz BAND

# 8.35.1. 26 dB BANDWIDTH

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

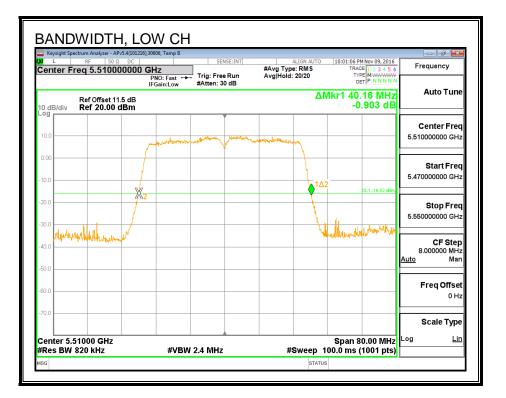
None; for reporting purposes only.

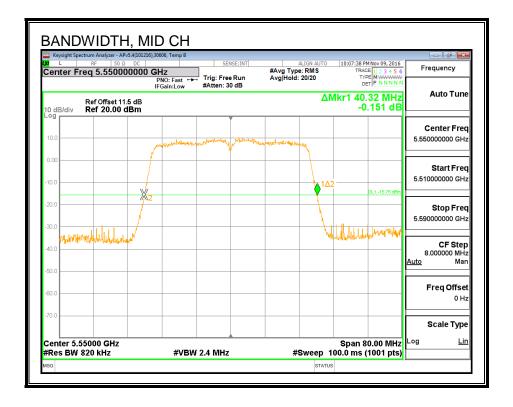
## <u>RESULTS</u>

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5510	40.160
Mid	5550	40.320
High	5670	40.240
142	5710	40.560

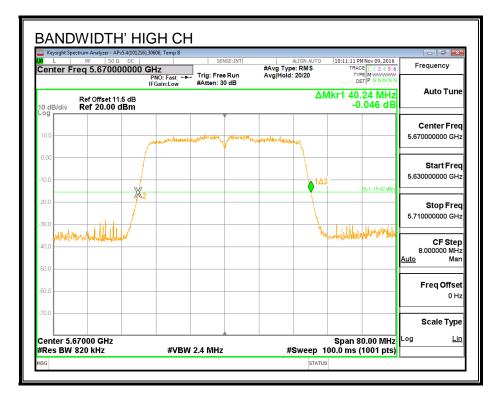
Page 317 of 884

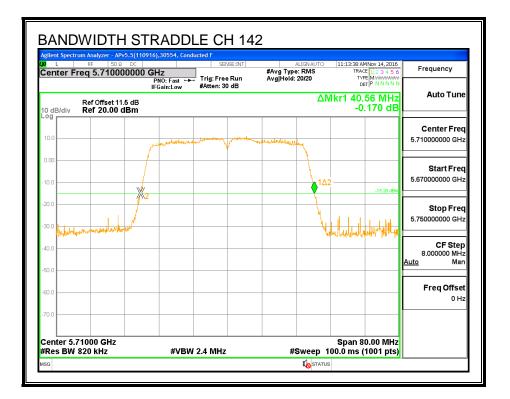
#### 26 dB BANDWIDTH





Page 318 of 884





Page 319 of 884

## 8.35.2. 99% BANDWIDTH

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

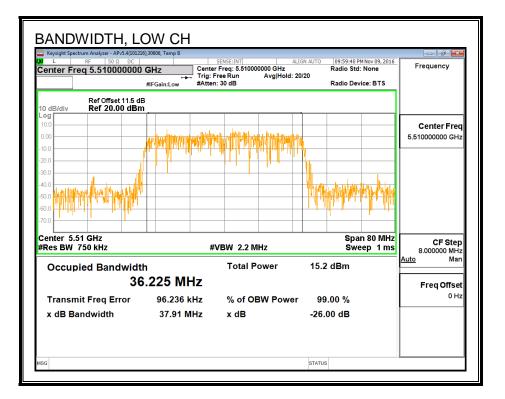
None; for reporting purposes only.

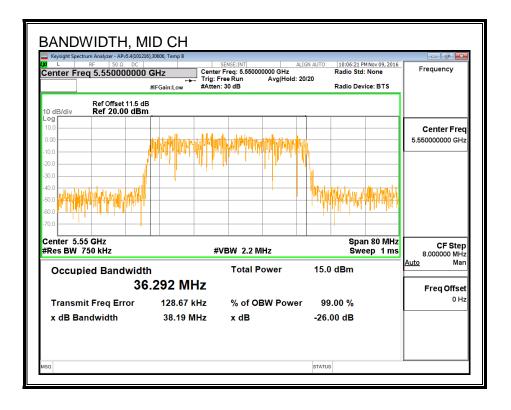
## **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5510	36.225
Mid	5550	36.292
High	5670	36.394
142	5710	36.287

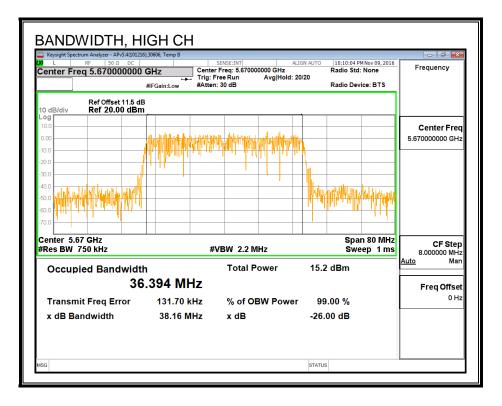
Page 320 of 884

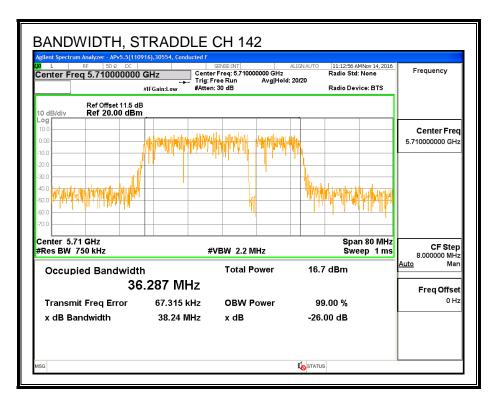
#### 99% BANDWIDTH





Page 321 of 884





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Page 322 of 884

## 8.35.3. AVERAGE POWER

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

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### **RESULTS**

ID: 3055	4 Date:	12/15/16
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Channel	Frequency	Power
	(MHz)	(dBm)
Low	5510	13.94
Mid	5550	16.98
High	5670	15.89
142	5710	16.88

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Page 323 of 884

# 8.35.4. OUTPUT POWER AND PSD

## <u>LIMITS</u>

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 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

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.

Page 324 of 884

## <u>RESULTS</u>

ID:	30554	Date:	12/15/16
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#### 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	5510	40.16	36.23	3.17	24.00	11.00
Mid	5550	40.32	36.29	3.17	24.00	11.00
High	5670	40.24	36.39	3.17	24.00	11.00

Duty Cycle CF (dB)

Included in Calculations of Corr'd PSD

## **Output Power Results**

Channel	Frequency	Ant B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	13.94	13.94	24.00	-10.06
Mid	5550	16.98	16.98	24.00	-7.02
High	5670	15.89	15.89	24.00	-8.11

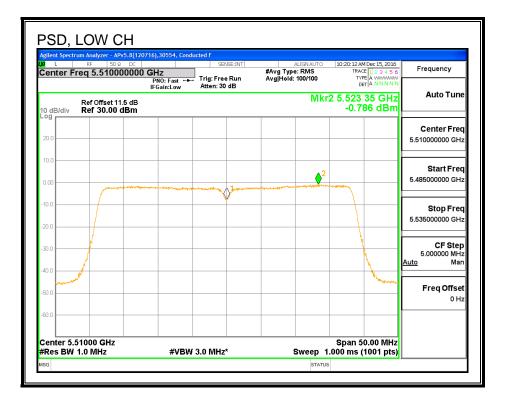
0.10

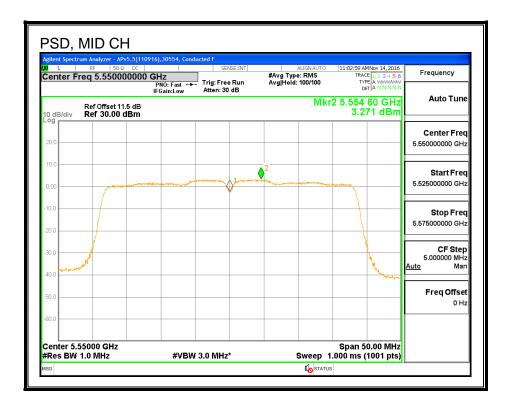
#### **PSD** Results

Channel	Frequency	Ant B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-0.79	-0.69	11.00	-11.69
Mid	5550	3.27	3.37	11.00	-7.63
High	5670	1.47	1.57	11.00	-9.43

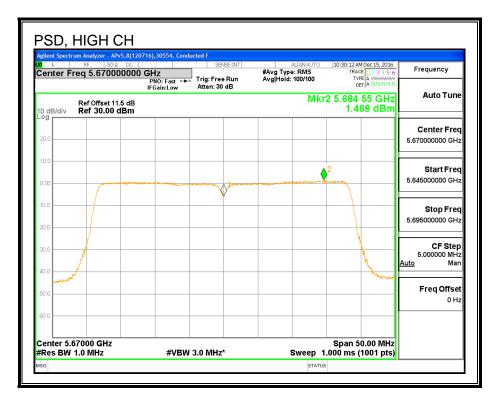
Page 325 of 884

<u>PSD</u>





Page 326 of 884



Page 327 of 884

# 8.36. 802.11ac VHT40 ANTENNA B STRADDLE CH 142 RESULTS

# 8.36.1. 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)
142	5710	35.28	3.17	3.17	24.00	11.00

 Duty Cycle CF (dB)
 0.10
 Included in Calculations of Corr'd Power & PSD

#### **Output Power Results**

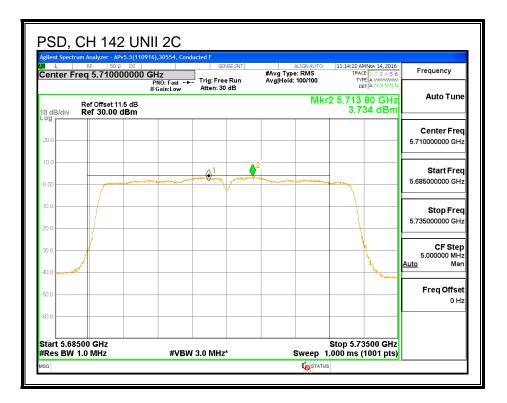
Channel	Frequency	Ant B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	16.59	16.69	24.00	-7.31

#### **PSD** Results

Channel	Frequency	Ant B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	3.73	3.83	11.00	-7.17

Page 328 of 884

L	RF	- APv5.5(11091 50 Ω DC			E:INT	ALIGN AUTO	11:14:14 AMNov	/ 14, 2016	Frequency
enter F	req 5.71		FRO: Fast ← FGain:Low	Trig: Free I Atten: 30 d	Run Avg	Hold: 100/100	TYPE A		
0 dB/div	Ref Offse Ref 30.	et 11.5 dB 00 dBm				Mkr Band Pow	1 5.707 36 er 16.586		Auto Tune
20.0									Center Free
10.0				<b>0</b> <sup>1</sup>					5.710000000 GH
0.0	1							— F	
0.0									Start Free
0.0							\		5.685000000 GH
0.0	~~~						<u> </u>		
50.0									Stop Free 5.735000000 GH;
50.0			_					— IL	5.735000000 GH
	8500 GHz						Stop 5.7350		CF Ster
Res BW	1.0 MHz		#VBI	N 3.0 MHz*		Sweep 1.	.000 ms (100		5.000000 MH uto Mar
KR MODE T	RC SCL	× 5.707	36 GHz	2.585 dBr	FUNCTION Band Power	FUNCTION WIDTH 35.28 MHz	FUNCTION VA	B6 dB	<u>110</u> Mai
2 3									Freq Offse
4 5									он
6 7									
8									
9 0									
1								~	



Page 329 of 884

#### UNII-3 BAND

Antenna Gain and Limit

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
142	5710	5.28	3.22	30.00	30.00

Duty Cycle CF (dB) 0.10 Included in Calculations of Corr'd Power & PSD

#### **Output Power Results**

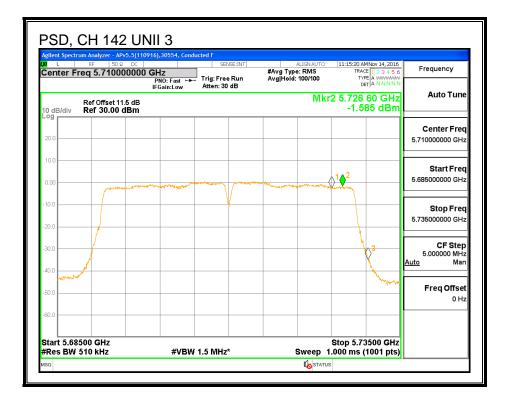
Channel	Frequency	Ant B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	5.57	5.67	30.00	-24.33

#### **PSD** Results

Channel	Frequency	Ant B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	-1.59	-1.49	30.00	-31.49

Page 330 of 884

i <mark>lient Spectrum Analyzer - APv</mark> L RF 50 Ω enter Freq 5.71000	DC	SENSE:INT	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	11:14:29 AMNov 14, 2016 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET IA N N N N	Frequency
Ref Offset 11		Atten: 30 dB		1 5.727 64 GHz wer 5.569 dBm	Auto Tune
				1	Center Fred 5.710000000 GHz
					Start Fred 5.685000000 GHz
0.0					Stop Fred 5.735000000 GHz
tart 5.68500 GHz Res BW 1.0 MHz	#VBI	₩ 3.0 MHz*		Stop 5.73500 GHz .000 ms (1001 pts)	CF Step 5.000000 MH;
XE         MOD3         FRE         SOL           1         N         1         f           2         3         -         -           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           9         -         -         -           11         -         -         -	× 5.727 64 GHz		INCTION FUNCTIONWIDTH d Power 5,280 MHz	FUNCTION VALUE 5.569 dB	<u>Auto</u> Man <b>Freq Offset</b> 0 Hz



Page 331 of 884

## 8.36.2. 6 dB BANDWIDTH

## LIMITS

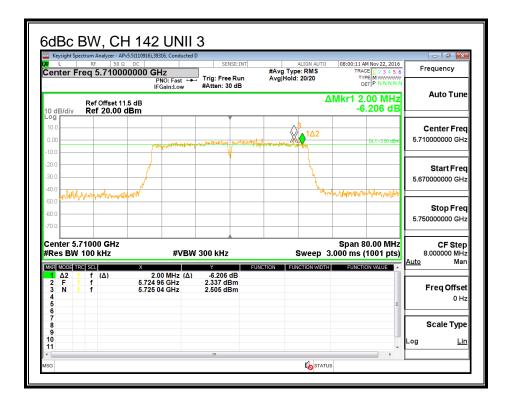
FCC §15.407 (e)

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

#### **RESULTS**

Channel	Frequency	6 dB Bandwidth
	(MHz)	(MHz)
142	5710	2.000

#### 6 dB BANDWIDTH



Page 332 of 884

# 8.37. 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND

# 8.37.1. 26 dB BANDWIDTH

## LIMITS

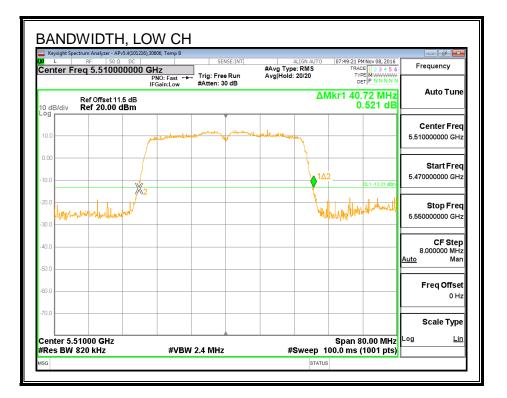
None; for reporting purposes only.

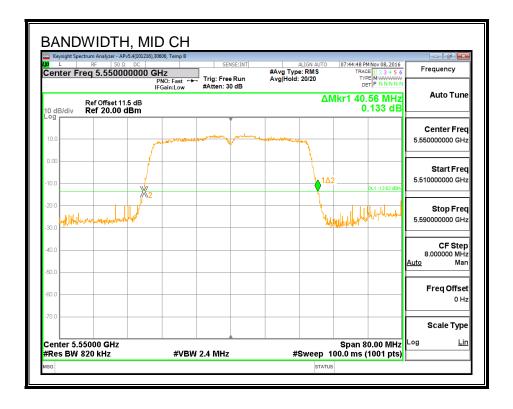
## **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Ant A	Ant B
	(MHz)	(MHz)	(MHz)
Low	5510	40.72	40.24
Mid	5550	40.56	40.32
High	5670	40.64	40.32
142	5710	40.56	40.64

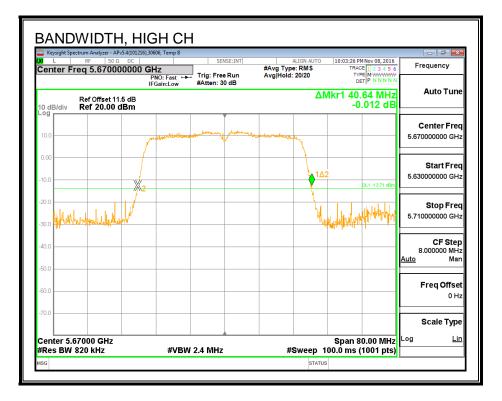
Page 333 of 884

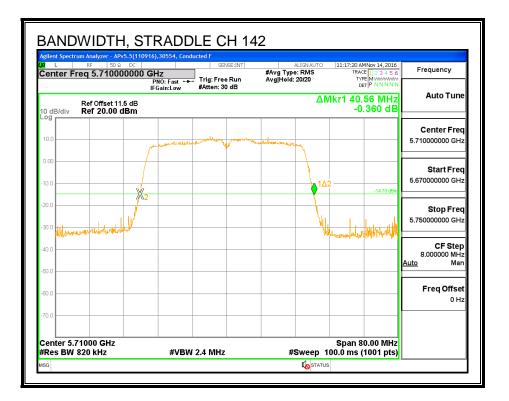
#### 26 dB BANDWIDTH, ANTENNA A





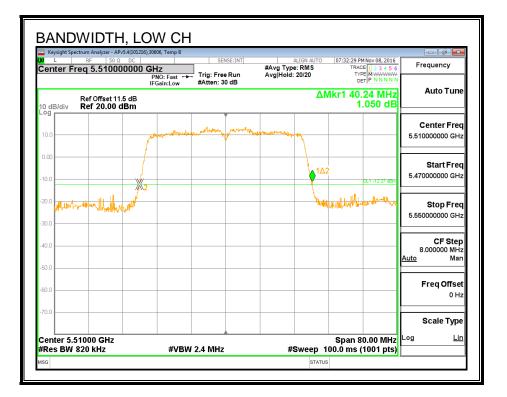
Page 334 of 884

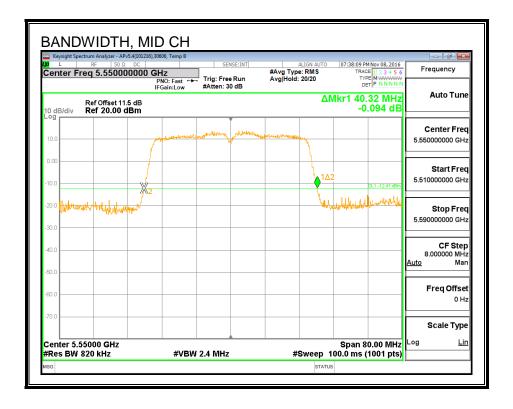




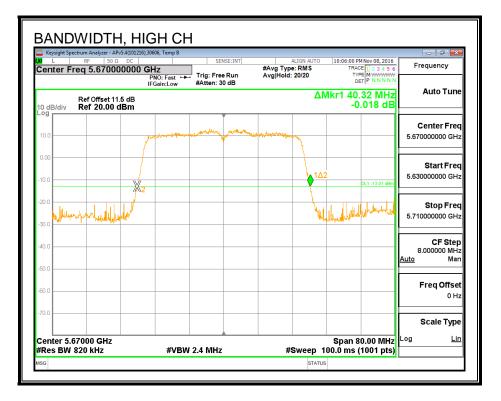
Page 335 of 884

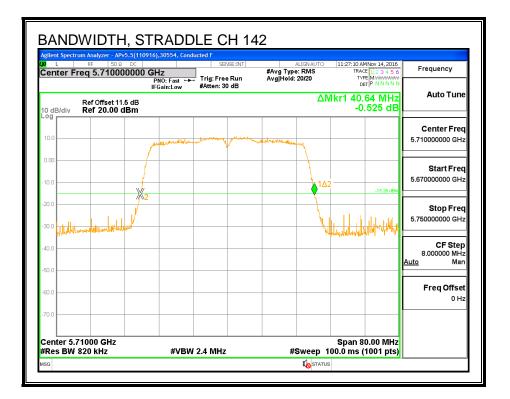
#### 26 dB BANDWIDTH, ANTENNA B





Page 336 of 884





Page 337 of 884

# 8.37.2. 99% BANDWIDTH

### <u>LIMITS</u>

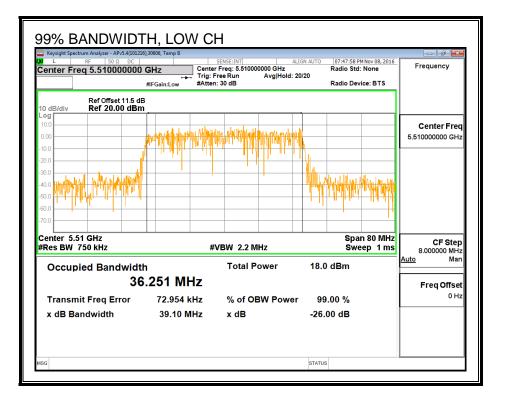
None; for reporting purposes only.

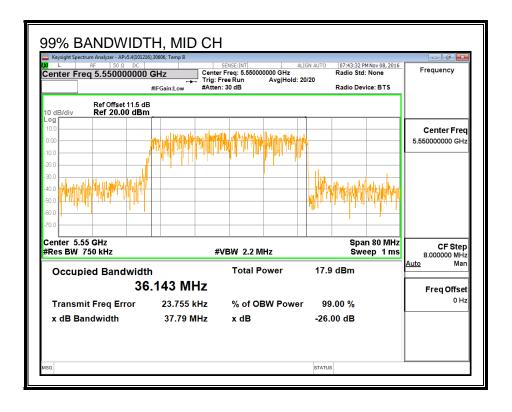
# **RESULTS**

Channel	Frequency	99% BW	99% BW
		Ant A	Ant B
	(MHz)	(MHz)	(MHz)
Low	5510	36.251	36.245
Mid	5550	36.143	36.235
High	5670	36.348	36.171
142	5710	36.356	36.175

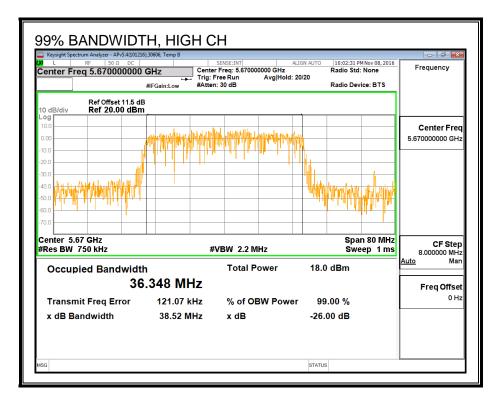
Page 338 of 884

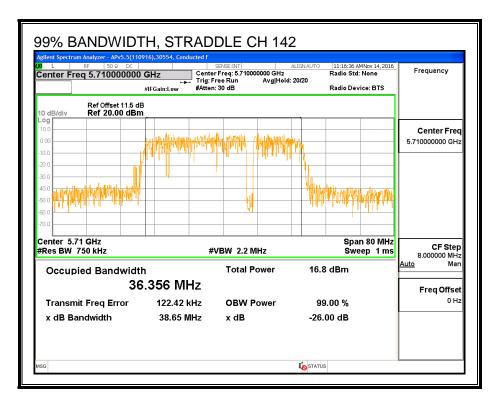
# 99% BANDWIDTH, ANTENNA A





Page 339 of 884

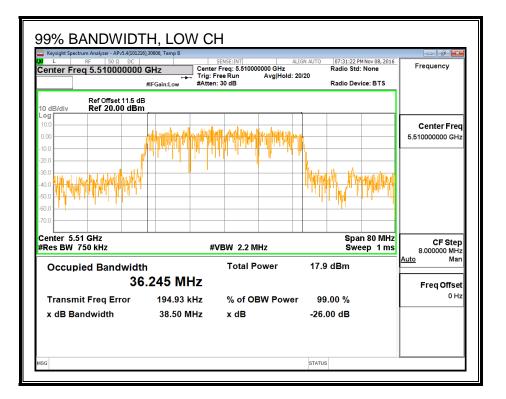


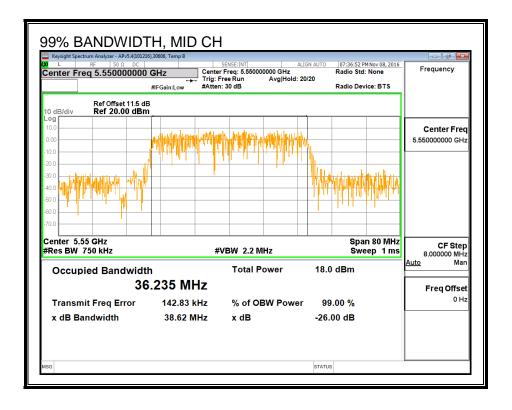


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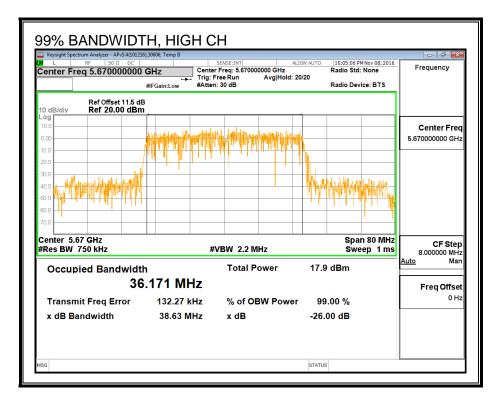
Page 340 of 884

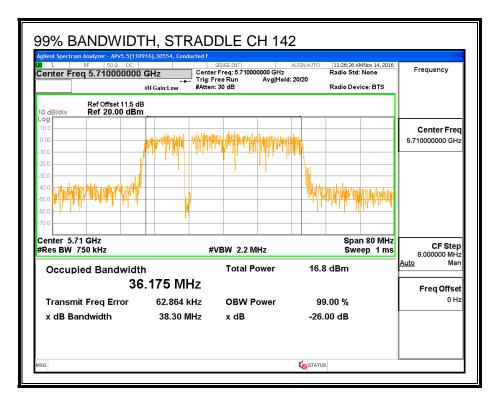
## 99% BANDWIDTH, ANTENNA B





Page 341 of 884





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Page 342 of 884

# 8.37.3. AVERAGE POWER

# LIMITS

None; for reporting purposes only.

# TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### **RESULTS**

ID:	39316	Date:	12/15/16

#### Average Power Results

Channel	Frequency	Ant A Ant I		Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5510	12.99	12.98	16.00
Mid	5550	16.47	17.00	19.75
High	5670	14.98	14.86	17.93
142	5710	16.44	16.94	19.71

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Page 343 of 884

# 8.37.4. OUTPUT POWER AND PSD

# <u>LIMITS</u>

FCC §15.407 (a) (2)

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

# TEST PROCEDURE

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

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

Page 344 of 884

# **DIRECTIONAL ANTENNA GAIN**

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

Ant A	Ant B	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
3.39	3.17	3.28

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

Ant A	Ant B	<b>Correlated Chains</b>	
Antenna	Antenna	Directional	
Gain	Gain	Gain	
(dBi)	(dBi)	(dBi)	
3.39	3.17	6.29	

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Page 345 of 884

# **RESULTS**

ID:	39316	Date:	12/15/16
-----	-------	-------	----------

0.10

## 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)
Low	5510	40.24	36.245	3.28	6.29	24.00	10.71
Mid	5550	40.32	36.143	3.28	6.29	24.00	10.71
High	5670	40.32	36.171	3.28	6.29	24.00	10.71

Duty Cycle CF (dB)

Included in Calculations of Corr'd PSD

### **Output Power Results**

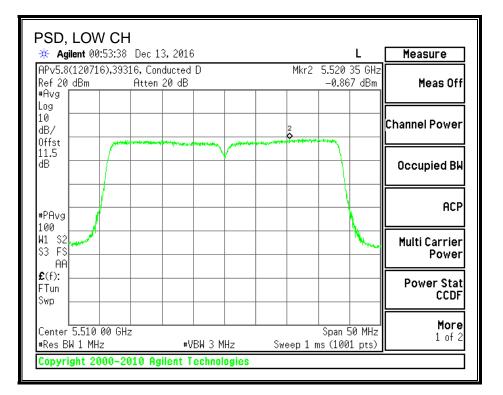
Channel	Frequency	Ant A	Ant B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	12.99	12.98	16.00	24.00	-8.00
Mid	5550	16.47	17.00	19.75	24.00	-4.25
High	5670	14.98	14.86	17.93	24.00	-6.07

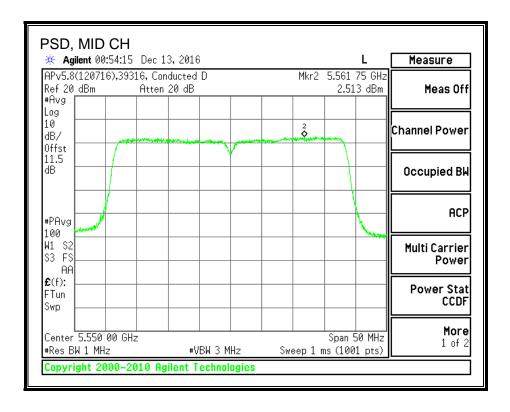
#### **PSD** Results

Channel	Frequency	Ant A	Ant B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-0.867	-0.549	2.41	10.71	-8.30
Mid	5550	2.513	3.308	6.04	10.71	-4.67
High	5670	1.548	1.324	4.55	10.71	-6.16

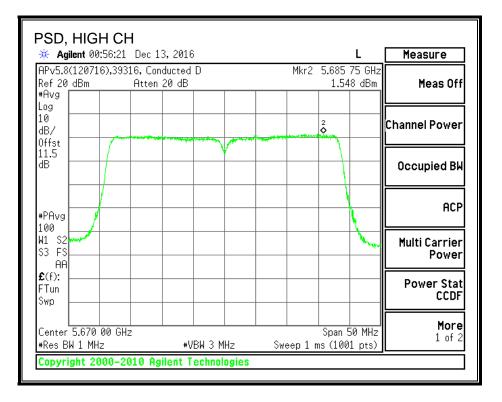
Page 346 of 884

## PSD, ANTENNA A

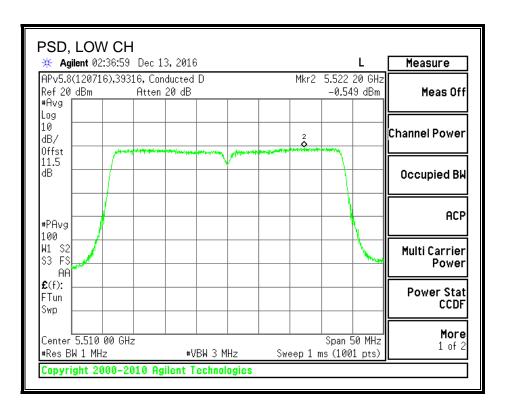




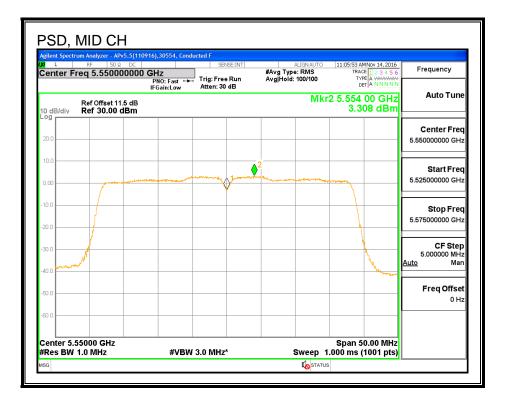
Page 347 of 884

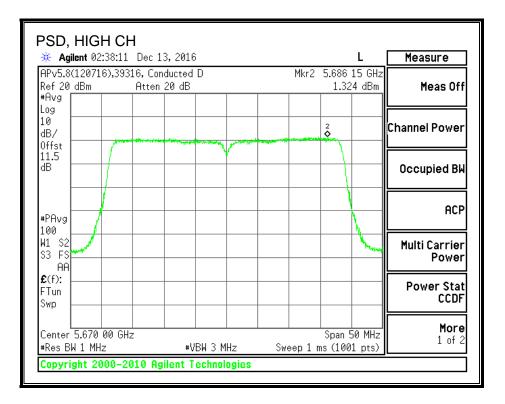


#### PSD, ANTENNA B



Page 348 of 884





Page 349 of 884

# 8.38. 802.11ac VHT40 2Tx (ANTENNA A + ANTENNA B) CDD STRADDLE CHANNEL 142 RESULTS

# 8.38.1. 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)
142	5710	35.28	3.28	6.29	24.00	10.71

Duty Cycle CF (dB) 0.10	Included in Calculations of Corr'd Power & PSD
-------------------------	--

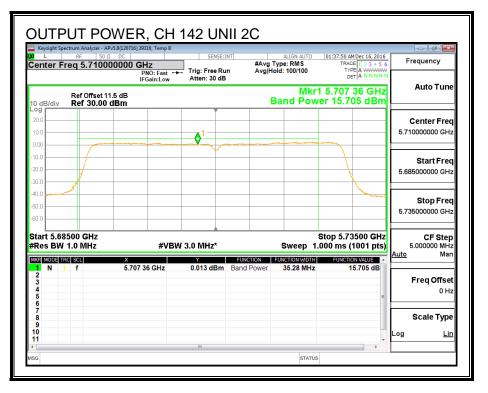
#### **Output Power Results**

Channel	Frequency	Ant A	Ant B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	15.71	16.76	19.38	24.00	-4.62

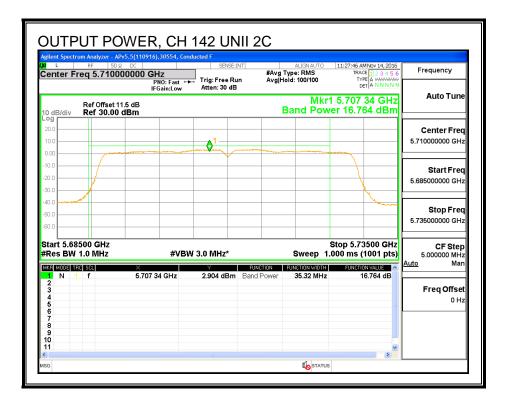
#### **PSD** Results

Channel	Frequency	Ant A	Ant B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	2.32	3.71	6.18	10.71	-4.53

# **OUTPUT POWER, ANTENNA A**

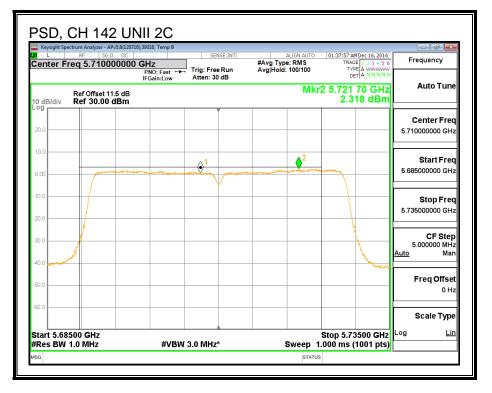


#### **OUTPUT POWER, ANTENNA B**

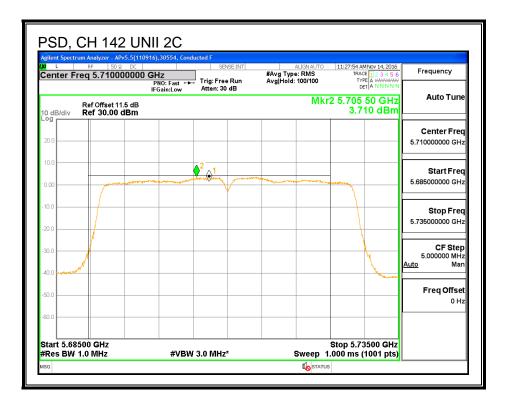


Page 351 of 884

## PSD, ANTENNA A



#### PSD, ANTENNA B



Page 352 of 884

# UNII-3 BAND

#### Antenna Gain and Limit

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	5.28	3.28	6.29	30.00	29.71

Duty Cycle CF (dB)	0.10	Included in Calculations of Corr'd Power & PSD
	0.10	

#### **Output Power Results**

Channel	Frequency	Ant A	Ant B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	6.50	5.75	9.25	30.00	-20.75

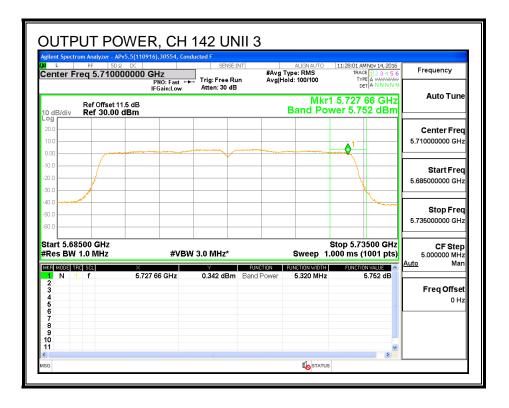
#### **PSD** Results

Channel	Frequency	Ant A	Ant B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
142	5710	-0.69	-1.45	2.06	29.71	-27.65

# **OUTPUT POWER, ANTENNA A**

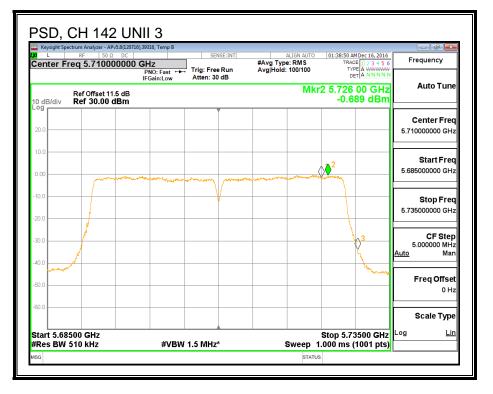
enter F	RF 50 Ω DC req 5.71000000	0 GHz PNO: Fast ↔ IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	01:38:03 AM Dec 16, 2016 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
dB/div	Ref Offset 11.5 dB Ref 30.00 dBm				1 5.727 64 GHz wer 6.498 dBm	Auto Tune
						Center Fred
0.0					1	5.710000000 GHz
00		And and the second s		and the second se		
0.0					\	Start Freq 5.68500000 GHz
0.0	J. J					
0.0 <b></b>						Stop Freq
1.0						5.735000000 GHz
	500 GHz 1.0 MHz	#VBV	V 3.0 MHz*		Stop 5.73500 GHz 000 ms (1001 pts)	CF Step 5.000000 MH Auto Mar
KRIMODEITE 1 N 1		727 64 GHz		FUNCTION WIDTH           d Power         5.280 MHz	FUNCTION VALUE	Auto Mai
2 3 4 5 6					E	Freq Offse 0 Ha
7 B						Scale Type
9 D 1						Log <u>Lir</u>

#### **OUTPUT POWER, ANTENNA B**

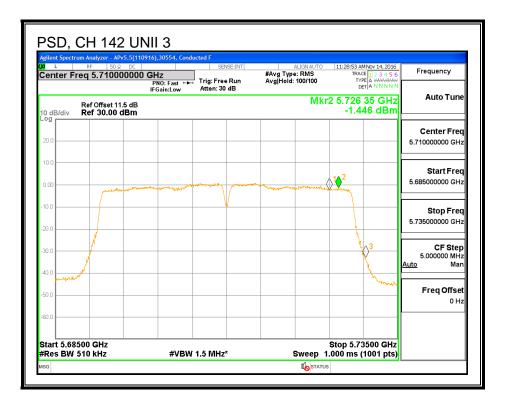


Page 354 of 884

## PSD, ANTENNA A



#### PSD, ANTENNA B



Page 355 of 884

# 8.38.2. 6 dB BBANDWIDTH

## LIMITS

FCC §15.407 (e)

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

### **RESULTS**

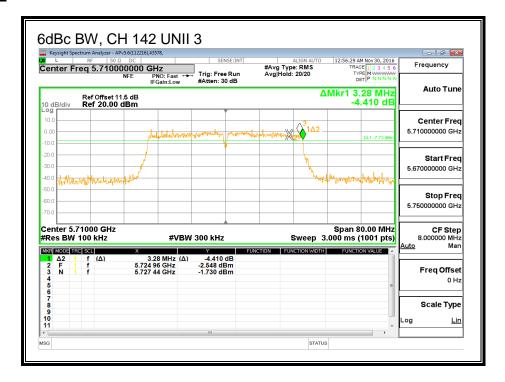
Channel	Frequency	6 dB BW	6 dB BW
		Ant A	Ant B
	(MHz)	(MHz)	(MHz)
142	5710	3.12	3.28

Page 356 of 884

### ANTENNA A

Keysight Spectrum Analyzer - AP4 L RF 50 Ω enter Freq 5.71000	DC	SENSE:INT	ALIGN AUTO #Avg Type: RMS Avg Hold: 20/20	12:54:36 AM Nov 30, 2016 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N	Frequency
Ref Offset 11 dB/div Ref 20.00 d			Δ	Mkr1 3.12 MHz 0.379 dB	Auto Tune
29 0.0	mininahamp	the month	p. chundelen X21	DL1 -4.10 dBm	Center Freq 5.710000000 GHz
2.0 2.0 2.0 	m.W		- Mad	muterality	Start Fred 5.670000000 GHz
2.0					Stop Frec 5.75000000 GHz
enter 5.71000 GHz Res BW 100 kHz R MODE TRO SCL	#VB	W 300 kHz	Sweep 3.	Span 80.00 MHz 000 ms (1001 pts) Eunction value	CF Step 8.000000 MH Auto Mar
1 Δ2 1 f (Δ) 2 F 1 f 3 N 1 f 4 5	3.12 MHz (Δ 5.725 04 GHz 5.727 52 GHz	) 0.379 dB -4.097 dBm 1.898 dBm		E	Freq Offset 0 Hz
6 7 8 9					Scale Type
0				•	Log <u>Lir</u>

#### ANTENNA B



Page 357 of 884

# 8.39. 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) STBC MODE IN THE 5.6 GHz BAND

**Noted**: Covered by 802.11n HT40 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND

Page 358 of 884

# 8.40. 802.11ac VHT80 ANTENNA A MODE IN THE 5.6 GHz BAND

# 8.40.1. 26 dB BANDWIDTH

## **LIMITS**

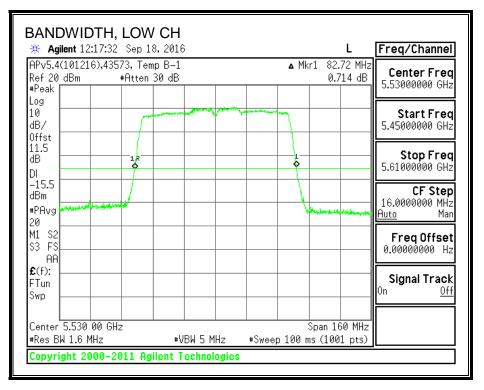
None; for reporting purposes only.

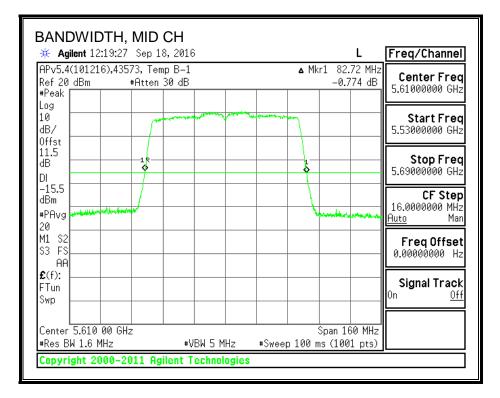
# **RESULTS**

Channel	Frequency	26 dB Bandwidth		
	(MHz)	(MHz)		
Low	5530	82.72		
Mid	5610	82.72		
High	5690	83.04		

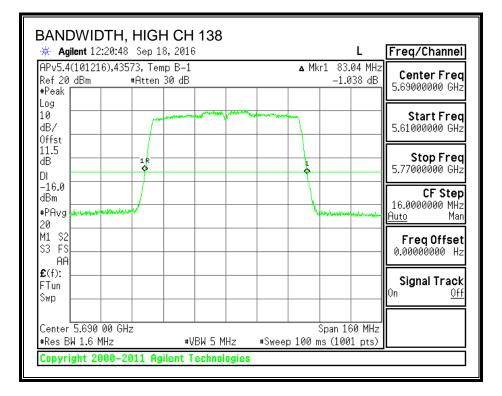
Page 359 of 884

### 26 dB BANDWIDTH





Page 360 of 884



Page 361 of 884

# 8.40.2. 99% BANDWIDTH

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

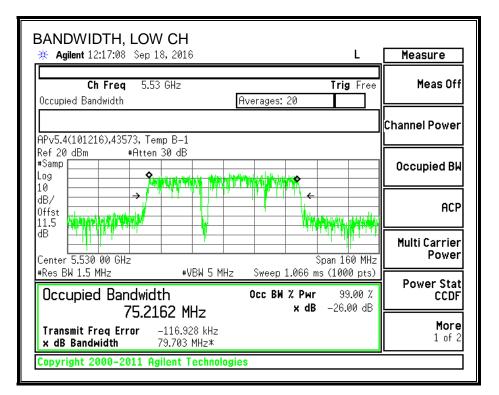
None; for reporting purposes only.

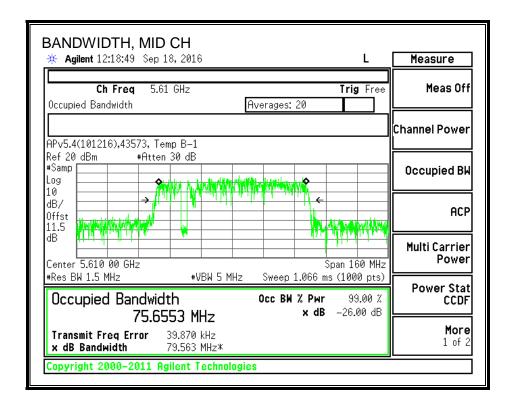
# <u>RESULTS</u>

Frequency	99% Bandwidth	
(MHz)	(MHz)	
5530	75.216	
5610	75.655	
5690	75.414	

Page 362 of 884

#### 99% BANDWIDTH





Page 363 of 884

BANDWIDTH HIGH CH 138	
✤ Agilent 12:20:14 Sep 18, 2016	Measure
Ch Freq 5.69 GHz Trig Free Occupied Bandwidth Averages: 20	Meas Off
APv5.4(101216),43573, Temp B-1	Channel Power
Ref 20 dBm #Atten 30 dB #Samp	Occupied BW
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ACP
dB         mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	Multi Carrier Power
Image: Weight of the second	Power Stat CCDF
Transmit Freq Error –108.162 kHz x dB Bandwidth 79.371 MHz*	More 1 of 2
Copyright 2000–2011 Agilent Technologies	

Page 364 of 884

# 8.40.3. AVERAGE POWER

### <u>LIMITS</u>

None; for reporting purposes only.

#### TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### **RESULTS**

ID:	30554	Date:	12/15/16
-----	-------	-------	----------

Channel	Frequency	Power
	(MHz)	(dBm)
Low	5530	13.89
Mid	5610	16.43
High	5690	16.40

Page 365 of 884

# 8.40.4. OUTPUT POWER AND PSD

# <u>LIMITS</u>

FCC §15.407 (a) (2)

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

# TEST PROCEDURE

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

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.

Page 366 of 884

# **RESULTS**

ID:	30554	Date:	12/15/16
-----	-------	-------	----------

## 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	5530	82.72	75.22	3.39	24.00	11.00
Mid	5610	82.72	75.66	3.39	24.00	11.00

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

# **Output Power Results**

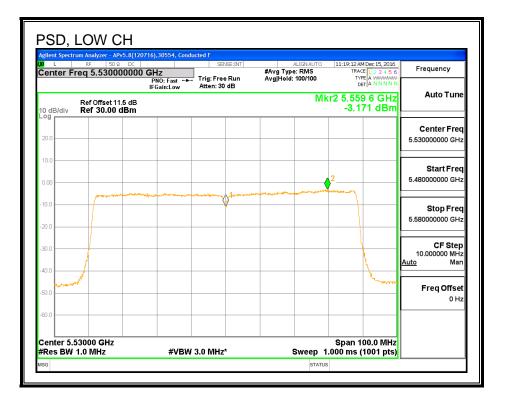
Channel	Frequency	Ant A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	13.89	13.89	24.00	-10.11
Mid	5610	16.43	16.43	24.00	-7.57

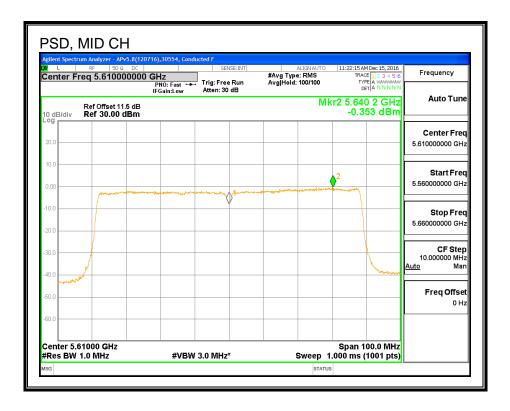
#### **PSD** Results

Channel	Frequency	Ant A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	-3.171	-2.96	11.00	-13.96

Page 367 of 884

<u>PSD</u>





Page 368 of 884

# 8.40.5. 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	76.52	3.39	3.39	24.00	11.00

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

#### **Output Power Results**

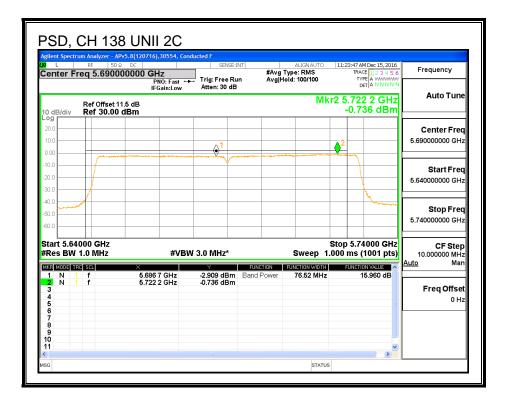
Channel	Frequency	Ant A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	15.96	16.17	24.00	-7.83

#### **PSD** Results

Channel	Frequency	Ant A	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	-0.74	-0.53	11.00	-11.53

Page 369 of 884

enter F	RF 50 req 5.690		Hz PNO: Fast ↔ FGain:Low	SENSE Trig: Free F Atten: 30 d	#Avg Run Avg	ALIGN AUTO Type: RMS Hold: 100/100	11:23:39 AM Dec 15, TRACE 1 2 3 TYPE A WAY DET A N N	4 5 6 Frequency
dB/div	Ref Offset Ref 30.0	11.5 dB					r1 5.686 7 G er 15.960 di	
9 9 0.0				1				Center Fre 5.690000000 GH
								Start Fre 5.640000000 GH
1.0 1.0 1.0							\	<b>Stop Fre</b> 5.740000000 GH
	000 GHz 1.0 MHz		#VB\	N 3.0 MHz*			Stop 5.74000 C 000 ms (1001 j	ots) 10.000000 MH
R MODE T	RC SCL f	× 5.68	6 7 GHz	¥ -2.909 dBn	n Band Power	FUNCTION WIDTH 76.52 MHz	EUNCTION VALUE 15.960 c	1B
3 4 5 7 7								Freq Offse 0 H
9 0 1								<ul> <li>✓</li> </ul>



Page 370 of 884

# UNII-3 BAND

#### Antenna Gain and Limit

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
138	5690	6.52	3.54	30.00	30.00

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

#### **Output Power Results**

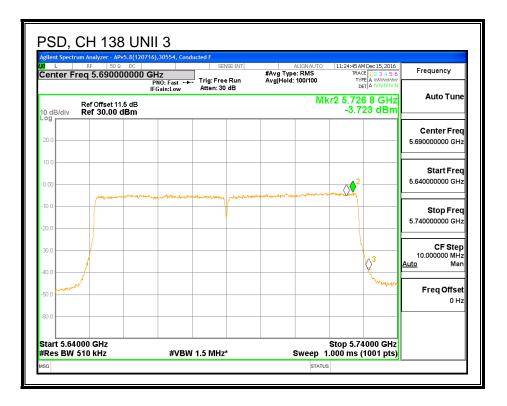
Channel	Frequency	Ant A	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	3.21	3.42	30.00	-26.58

#### **PSD Results**

Channel	Frequency	Ant 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

Page 371 of 884

L RF	5.690000000	Hz	SENSE	#Avg	ALIGNAUTO Type: RMS Iold: 100/100	11:23:54 AM Dec 15, 2016 TRACE 1 2 3 4 5 6	Frequency
	Offset 11.5 dB	PNO: Fast ↔ FGain:Low	Atten: 30 dE		Mkr		Auto Tune
0 dB/div Re	f 30.00 dBm					er 3.211 dBm	Center Freq 5.69000000 GHz
0.0 0.0							Start Freq 5.640000000 GHz
0.0							<b>Stop Freq</b> 5.740000000 GHz
tart 5.64000 Res BW 1.0		#VB\	V 3.0 MHz*			top 5.74000 GHz 00 ms (1001 pts)	CF Step 10.000000 MHz
KR MODE TRO SO 1 N 1 f 2 3 4 5 6 7		8 3 GHz	-5.156 dBm	Band Power	function width 6.520 MHz	FUNCTION VALUE	Auto Man Freq Offset 0 Hz
7 8 9 0 1						~	



Page 372 of 884

# 8.40.6. 6 dB BANDWIDTH

## <u>LIMITS</u>

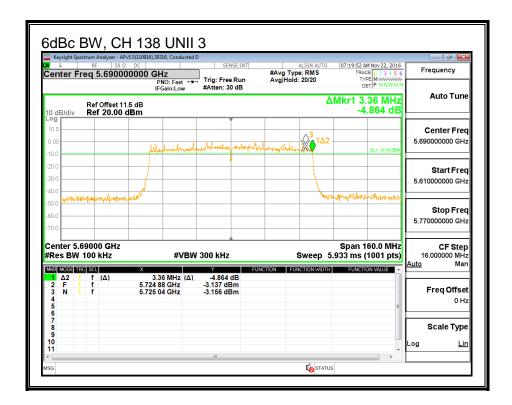
FCC §15.407 (e)

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

## <u>RESULTS</u>

Channel	Frequency	6 dB Bandwidth	
	(MHz)	(MHz)	
High	5690	3.36	

## 6 dB BANDWIDTH



Page 373 of 884

# 8.41. 802.11ac VHT80 ANTENNA B MODE IN THE 5.6 GHz BAND

# 8.41.1. 26 dB BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

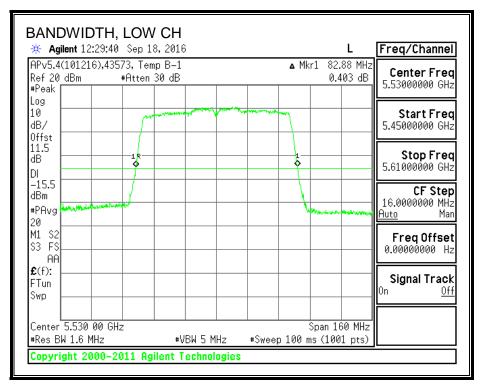
## <u>RESULTS</u>

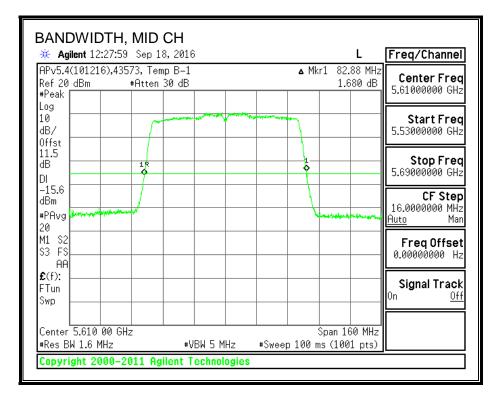
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5530	82.88
Mid	5610	82.88
High	5690	83.04

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Page 374 of 884

## 26 dB BANDWIDTH





Page 375 of 884

BANDWIDTH, HIGI Agilent 12:26:35 Sep 1		L	Freq/Channel
APv5.4(101216),43573, Ter Ref 20 dBm #Atten #Peak	•	▲ Mkr1 83.04 MHz -1.658 dB	Center Freq 5.69000000 GHz
Log 10 dB/ Offst			Start Freq 5.61000000 GHz
11.5 dB DI -15.9			<b>Stop Freq</b> 5.77000000 GHz
-15.9 dBm #PAvg			<b>CF Step</b> 16.0000000 MHz <u>Auto</u> Man
M1 S2 S3 FS AA			Freq Offset 0.00000000 Hz
<b>£</b> (f): FTun Swp			Signal Track <sup>On <u>Off</u></sup>
Center 5.690 00 GHz #Res BW 1.6 MHz		Span 160 MHz Sweep 100 ms (1001 pts)	
Copyright 2000-2011 Ag	ilent Technologies		

Page 376 of 884

# 8.41.2. 99% BANDWIDTH

## <u>LIMITS</u>

None; for reporting purposes only.

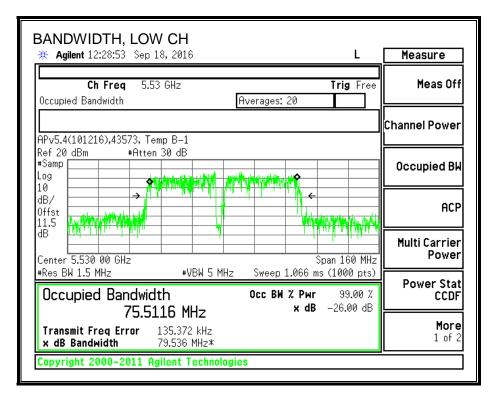
## <u>RESULTS</u>

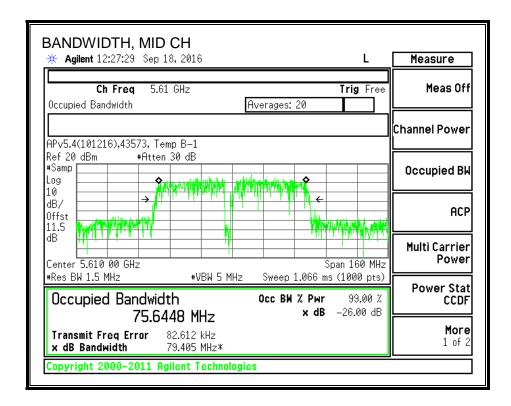
Frequency	99% Bandwidth
(MHz)	(MHz)
5530	75.512
5610	75.645
5690	75.607

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Page 377 of 884

#### 99% BANDWIDTH





Page 378 of 884

BANDWIDTH HIGH CH 138	
🔆 Agilent 12:26:08 Sep 18, 2016 🛛 🛛 🖁 L	Measure
Ch Freq 5.69 GHz Trig Free Occupied Bandwidth Averages: 20	Meas Off
APv5.4(101216),43573, Temp B-1	Channel Power
Ref 20 dBm #Atten 30 dB #Samp	Occupied Bk
dB/ → · · · · · · · · · · · · · · · · · ·	ACF
dB	Multi Carrier Power
*Res BW 1.5 MHz         *VBW 5 MHz         Sweep 1.066 ms (1000 pts)           Occupied Bandwidth 75.6065 MHz         Occ BW % Pwr         99.00 %           * dB         -26.00 dB	Power Stat CCDF
Transmit Freq Error 99.638 kHz x dB Bandwidth 79.081 MHz*	More 1 of 2
Copyright 2000–2011 Agilent Technologies	_

Page 379 of 884

# 8.41.3. AVERAGE POWER

## <u>LIMITS</u>

None; for reporting purposes only.

## TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

#### **RESULTS**

ID: 30554	Date:	12/15/16
-----------	-------	----------

Channel	Frequency	Power
	(MHz)	(dBm)
Low	5530	13.95
Mid	5610	16.90
High	5690	16.87

Page 380 of 884

# 8.41.4. OUTPUT POWER AND PSD

## <u>LIMITS</u>

FCC §15.407 (a) (2)

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

## TEST PROCEDURE

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

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.

Page 381 of 884

## **RESULTS**

ID:	30554	Date:	12/15/16
-----	-------	-------	----------

## 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	5530	82.88	75.51	3.17	24.00	11.00
Mid	5610	82.88	75.64	3.17	24.00	11.00

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

## **Output Power Results**

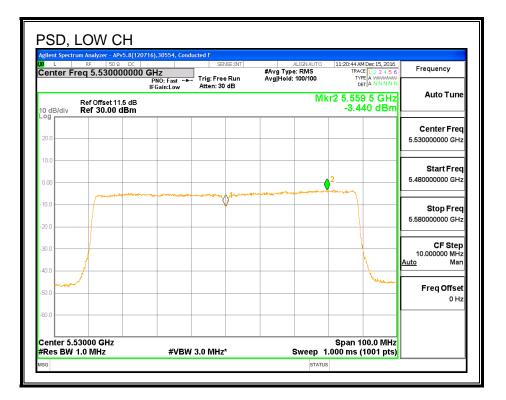
Channel	Frequency	Ant B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	13.95	13.95	24.00	-10.05
Mid	5610	16.90	16.90	24.00	-7.10

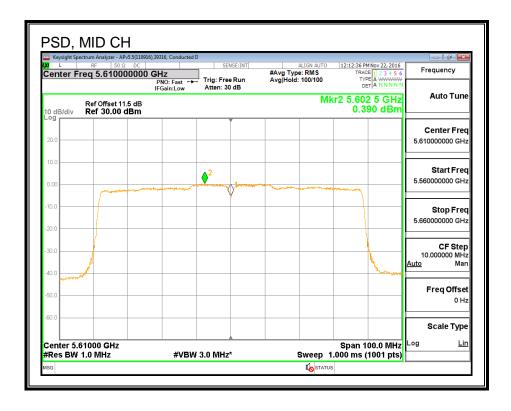
#### **PSD** Results

Channel	Frequency	Ant B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	-3.440	-3.23	11.00	-14.23
Mid	5610	0.390	0.60	11.00	-10.40

Page 382 of 884

<u>PSD</u>





Page 383 of 884

# 8.41.5. 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	76.52	3.17	3.17	24.00	11.00

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

## **Output Power Results**

Channel	Frequency	Ant B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	16.61	16.82	24.00	-7.18

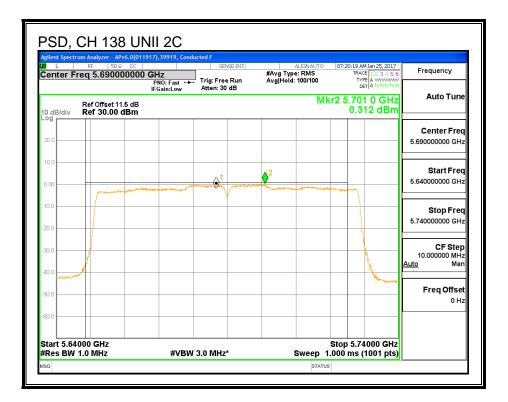
#### **PSD** Results

Channel	Frequency	Ant B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	0.31	0.52	11.00	-10.48

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Page 384 of 884

PNO: Fast ↔ Trig: Free Run Avg Hold: 100/100 TYPE A MANANA	quency
FGain:Low Acten. 50 dB	Auto Tun
	enter Fre 1000000 GH
	Start Fre
	<b>Stop Fre</b> 1000000 GH
	CF Ste 000000 MH
6 7 GHz -0.849 dBm Band Power 76.52 MHz 16.606 dB	Ma reqOffse 0 H



Page 385 of 884

## UNII-3 BAND

#### Antenna Gain and Limit

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
138	5690	6.52	3.22	30.00	30.00

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

#### **Output Power Results**

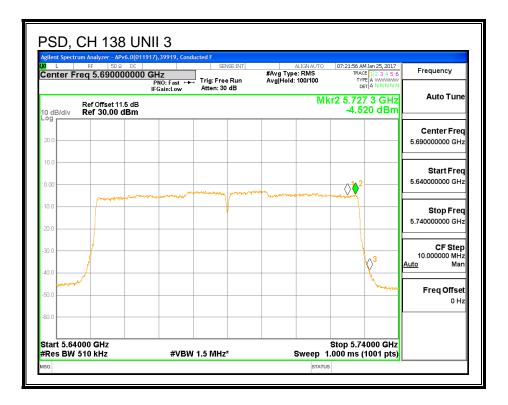
Channel	Frequency	Ant B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	2.62	2.83	30.00	-27.17

#### **PSD** Results

Channel	Frequency	Ant B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
138	5690	-4.52	-4.31	30.00	-34.31

Page 386 of 884

L L	rum Analyzer - APv6.0 RF 50 Ω D		SENSE:IN	al I	ALIGN AUTO	07:20:34 AM	Jan 25, 2017	
enter F	req 5.690000	DOO GHZ PNO: Fast IFGain:Low	Trig: Free Rur Atten: 30 dB		Type: RMS told: 100/100	TYPE	123456 A WWWWWW A N N N N N	Frequency
) dB/div	Ref Offset 11.5 ( Ref 30.00 dB				Mki Band Pov	<sup>.</sup> 1 5.728 ver 2.61		Auto Tune
0.0								Center Free
0.0								5.690000000 GH
		and the start of t						
0.0		-	¥					Start Free
0.0								5.640000000 GH
0.0	-/							
0.0							Manner	Stop Free
0.0								5.740000000 GH
0.0								
	1000 GHz					Stop 5.740		CF Ster
Res BW	1.0 MHz	#VE	SW 3.0 MHz*		Sweep 1.	000 ms (1		10.000000 MH Auto Mar
KR MODE 1	RC SCL	× 5.728 3 GHz	Y -5.784 dBm	FUNCTION Band Power	FUNCTION WIDTH 6.520 MHz	FUNCTION	.619 dB	<u>Auto</u> Mai
2		0.720 0 0112	0.704 0.011	Dana i ower	0.020 101 12	2		Freq Offse
4								0 H
5 6								
7 8								
9								
1							~	



Page 387 of 884

# 8.41.6. 6 dB BANDWIDTH

## LIMITS

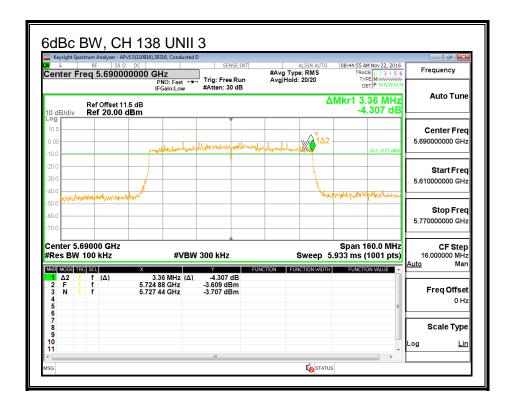
FCC §15.407 (e)

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

## <u>RESULTS</u>

Channel	Frequency	6 dB Bandwidth	
	(MHz)	(MHz)	
High	5690	3.36	

## 6 dB BANDWIDTH



Page 388 of 884

# 8.42. 802.11ac VHT80 2Tx (ANTENNA A + ANTENNA B) CDD MODE IN THE 5.6 GHz BAND (5610MHz for FCC only)

# 8.42.1. 26 dB BANDWIDTH

## **LIMITS**

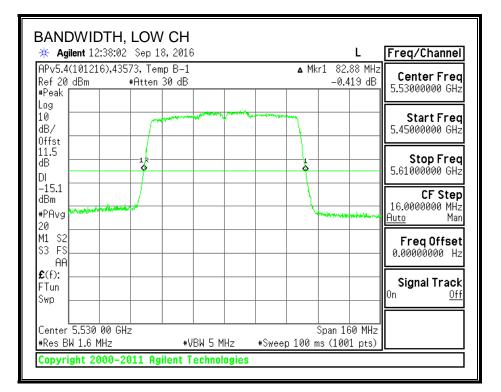
None; for reporting purposes only.

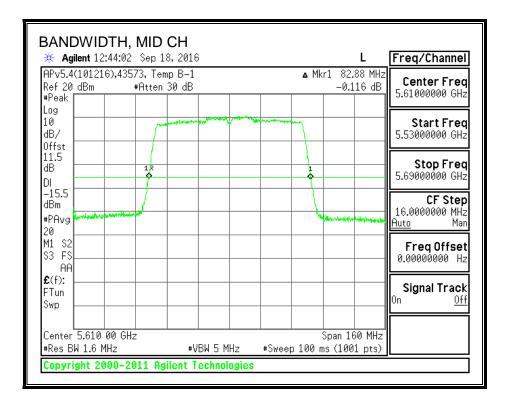
## <u>RESULTS</u>

Channel	Frequency	26 dB BW	26 dB BW
		Ant A	Ant B
	(MHz)	(MHz)	(MHz)
Low	5530	82.88	83.04
Mid	5610	82.88	83.04
High	5690	82.88	82.72

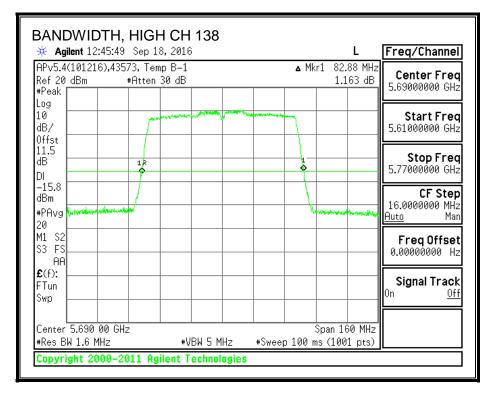
Page 389 of 884

## 26 dB BANDWIDTH, ANTENNA A

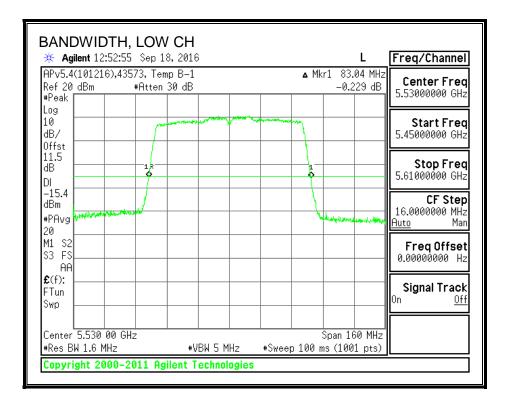




Page 390 of 884

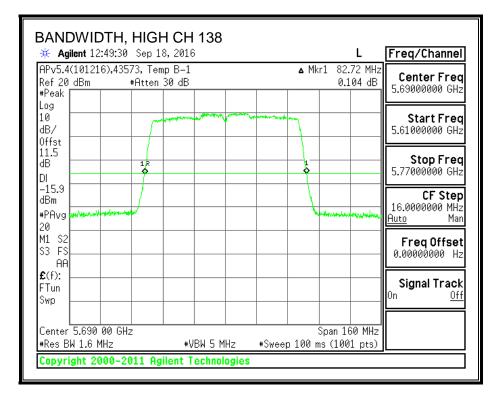


## 26 dB BANDWIDTH, ANTENNA B



Page 391 of 884

BANDWIDTH, MID			L	Freg/Channel
APv5.4(101216),43573, Tem Ref 20 dBm #Atten #Peak	ip B-1	▲ Mkr1	83.04 MHz 0.029 dB	Center Freq 5.61000000 GHz
Log 10 dB/ 0ffst	and the second			<b>Start Freq</b> 5.53000000 GHz
11.5 dB 18 DI -15.5				<b>Stop Freq</b> 5.69000000 GHz
dBm #PAvg 20		- Jun	In mar his file was	<b>CF Step</b> 16.0000000 MHz <u>Auto</u> Man
M1 S2 S3 FS AA £(f):				FreqOffset 0.00000000 Hz
FTun Swp				Signal Track <sup>On <u>Off</u></sup>
Center 5.610 00 GHz #Res BW 1.6 MHz Copyright 2000-2011 Ag	#VBW 5 MHz		an 160 MHz (1001 pts)	
cupyright 2000-2011 Hg	nent rechnologies			



Page 392 of 884

# 8.42.2. 99% BANDWIDTH

## <u>LIMITS</u>

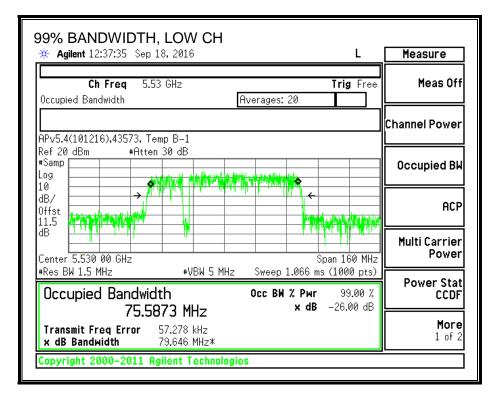
None; for reporting purposes only.

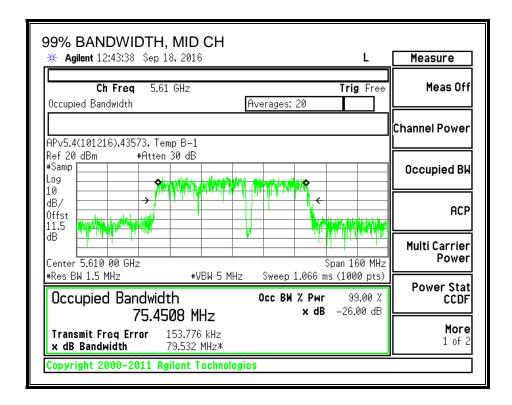
## **RESULTS**

Channel	Frequency	99% BW	99% BW
		Ant A	Ant B
	(MHz)	(MHz)	(MHz)
Low	5530	75.587	75.662
Mid	5610	75.451	75.309
High	5690	75.617	75.289

Page 393 of 884

## 99% BANDWIDTH, ANTENNA A

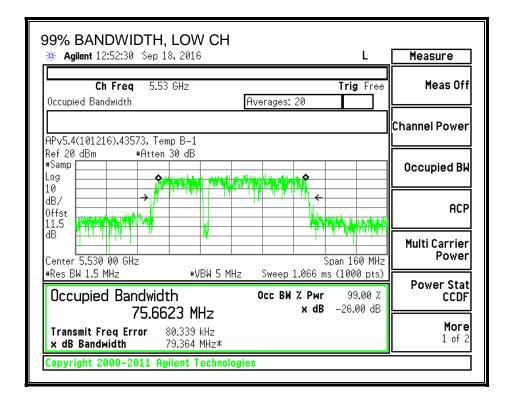




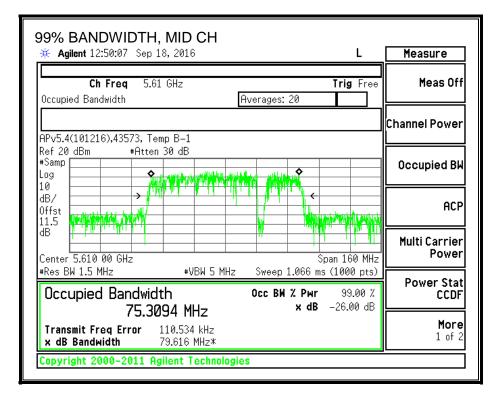
Page 394 of 884

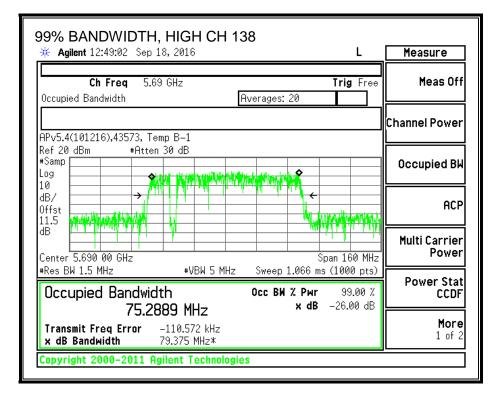
Trig Free	Meas Off
	hannel Power
Ļ	
	Occupied B
	ACF
Span 160 MHz	Multi Carriei Powei
Sweep 1.066 ms (1000 pts)	Douton Stat
сс ВИ % Рwr 99.00 % х dB –26.00 dB	Power Stat CCDF
	More
	1 of 2
	Span 160 MHz Sweep 1.066 ms (1000 pts)

## 99% BANDWIDTH, ANTENNA B



Page 395 of 884





Page 396 of 884

# 8.42.3. AVERAGE POWER

## LIMITS

None; for reporting purposes only.

## TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

## **RESULTS**

ID:	39316	Date:	12/15/16

Channel	Frequency	Ant A	Ant B	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5530	12.99	12.98	16.00
Mid	5610	16.39	16.87	19.65
High	5690	16.46	16.97	19.73

Page 397 of 884

# 8.42.4. OUTPUT POWER AND PSD

## <u>LIMITS</u>

FCC §15.407 (a) (2)

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

## TEST PROCEDURE

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

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

Page 398 of 884

## DIRECTIONAL ANTENNA GAIN

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

Ant A	Ant B	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
3.39	3.17	3.28

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

Ant A	Ant B	<b>Correlated Chains</b>		
Antenna	Antenna	Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
3.39	3.17	6.29		

Page 399 of 884

## **RESULTS**

**ID:** 39316 **Date:** 12/15/16

## 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)
Low	5530	82.88	75.587	3.28	6.29	24.00	10.71
High	5610	82.88	75.309	3.28	6.29	24.00	10.71

Duty Cycle CF	(dB)	0.20	Included in C

Included in Calculations of Corr'd PSD

## **Output Power Results**

Channel	Frequency	Ant A	Ant B	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	12.99	12.98	16.00	24.00	-8.00
High	5610	16.39	16.87	19.65	24.00	-4.35

## **PSD Results**

Channel	Frequency	Ant A	Ant B	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5530	-3.50	-3.57	-0.32	10.71	-11.03
High	5610	-0.32	0.51	3.32	10.71	-7.39

Page 400 of 884