L RF 50 Ω D	C	SENSE:INT	ALIGN AUTO	3:31:42 AM Mar 31, 2017	Erequency
enter Freq 5.2600000	UO GHZ	enter Freq: 5.260000000 G rig: Free Run Avg Atten: 30 dB	Hz R Hold: 20/20	adio Std: None adio Device: BTS	Frequency
Ref Offset 14.	6 dB				
dB/div Ref 20.00 d	Bm				
00	when methoden	Margine waresharkagen	-mellon		Center Fr
1.0	1		<b>N</b>		5.200000000
	6M <sup>4</sup>		Manager 1	dathers at a	
				and have all here and here and	
0.0					
10					
enter 5.26 GHz				Span 40 MHz	05.00
Res BW 360 kHz		#VBW 1.1 MHz		Śweep 1 ms	4.000000 M
Occupied Bandwi	dth	Total Power	r 20.3 d	Bm	<u>Auto</u> M
	17.840 MHz	1			Freg Off
Transmit Freg Error	72.226 kHz	% of OBW P	ower 99.0	0 %	0
x dB Bandwidth	23.59 MHz	x dB	-26.00	dB	



Page 71 of 241

Keysight Spectrum Analyzer - APv6.3(032317	),44350, Temp A	55	NCE-INT	AL	IGN AUTO	02:41:04 0	M Mar 21, 2017	
enter Freq 5.30000000	GHz	Center F	req: 5.30000	0000 GHz	0/20	Radio Std	None	Frequency
NFE	#IFGain:Low	#Atten: 3	0 dB	Avginola. 2	0/20	Radio Dev	ice: BTS	
Ref Offset 14.6 dB								
g Ref 20.00 dBm					1			
1.0	HURPHIMAN	mann	wherepaper	and would				Center F
					N			5.300000000
10 Inderen Martine Martine Martine Martine					W ARAN	- Warman	Helach Jones	
1.0							- Children	
1.0								
.0								
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1.0					+			
enter 5.3 GHz Res BW 360 kHz		#VE	- BW 1.1 M	IHz		Spa Swe	n 40 MHz ep 1 ms	CF St
Occupied Bandwidth			Total P	ower	22.0	6 dBm		Auto N
18	.360 MI	Ηz						Freg Off
Transmit Freg Error 69.135 kHz		Hz	% of O	3W Power	99	9.00 %		0
x dB Bandwidth	36.57 N	IHz	x dB		-26.	00 dB		



Page 72 of 241

L RF 50 Ω DC	17),44350, Temp A	SENSE:INT	ALIGN AUTO 03:49:20	) AM Mar 31, 2017	-
enter Freq 5.32000000	) GHz Cente	r Freq: 5.320000000 GHz Free Run Avg Hold	Radio S	td: None	Frequency
	#IFGain:Low #Atter	n: 30 dB	Radio D	evice: BTS	
Ref Offset 14.41	dB				
	- Marine Many Marine	And more way and a more than	Ne.		Center Fi
10	r i				5.320000000
0.0	۴		Wheeler .		
D.O. HUMANAMANA MANAMANA			. Journa W.	Marphone March	
1.0					
0.0					
).0					
enter 5.32 GHz Res BW 360 kHz	#	VBW 1.1 MHz	Sp	an 40 MHz veep 1 ms	CF SI
Occupied Bandwidt	th	Total Power	20.5 dBm	A	4.000000 N
1	7 9 <b>49 MU</b> -	i otari otioi	2010 4211	- F	
	.045 WIT12				FreqOff
Transmit Freq Error	102.24 kHz	% of OBW Pow	er 99.00 %	L	
x dB Bandwidth	23.21 MHz	x dB	-26.00 dB		



Page 73 of 241

Keysight Spectrum Analyzer - APv6.3(03231)       L     RF     50 Ω     DC       enter Freq 5.320000000     NFE	GHz Cente Trig: 1	SENSE:INT A r Freq: 5.320000000 GHz Free Run Avg Hold: s: 20 dB	LIGN AUTO 03:5 Radio 20/20	1:59 AM Mar 31, 2017 Std: None	Frequency
Ref Offset 14.61 d O dB/div Ref 20.00 dBm	B	1. 30 0.0	Kauk	Device. B13	
og 0.0	anna m Marrison March	entry schalaran fan Heinen meinen	*		Center Fre 5.320000000 Gł
0.0	A		Manager	Marille	
0.0					
enter 5.32 GHz Res BW 360 kHz	#	VBW 1.1 MHz		Span 40 MHz Sweep 1 ms	CF Ste 4 000000 M
Occupied Bandwidt	n	Total Power	20.6 dBn	n	Auto Ma
17	.839 MHz				Freq Offs
Transmit Freq Error	50.185 kHz	% of OBW Powe	r 99.00 %	6	01
x dB Bandwidth	25.85 MHz	x dB	-26.00 dl	3	

Page 74 of 241

## 9.5.3. OUTPUT POWER AND PPSD

### LIMITS

FCC §15.407 (a) (2)

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

### TEST PROCEDURE

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**

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

Chain 0	Chain 1	Chain 2	<b>Uncorrelated Chains</b>
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
3.41	2.26	4.22	3.37

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

Chain 0	Chain 1	Chain 2	<b>Correlated Chains</b>
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
3.41	2.26	4.22	8.10

#### **RESULTS**

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5260	33.35	3.37	8.10	24.00	8.90
Mid	5300	42.75	3.37	8.10	24.00	8.90
High	5320	33.50	3.37	8.10	24.00	8.90

Duty Cycle CF (dB)	0.37	Included in Calculations of Corr'd Power & PSD
--------------------	------	--

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	Power	Power
		Meas	Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	14.18	14.77	14.37	19.59	24.00	-4.41
Mid	5300	14.60	14.80	14.51	19.78	24.00	-4.22
High	5320	14.76	15.26	14.97	20.14	24.00	-3.86

#### **PPSD Results**

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PSD	PSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	2.593	3.355	2.831	8.08	8.90	-0.82
Mid	5300	3.040	3.659	2.903	8.35	8.90	-0.55
High	5320	3.323	3.842	3.683	8.76	8.90	-0.14

<u>Note:</u> the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

















Center F	RF 50	APV03(03231/) Ω DC 000000 0 NFE	GHz PNO: Fast ↔	SENSE:INT	#Avg Type Avg Hold:	ALIGN AUTO e: RMS 100/100	07:29:58 AM TRAC TYP	Apr01, 2017 E 1 2 3 4 5 6 E A	Frequency
0 dB/div	Ref Offset Ref 30.00	14.61 dB 0 dBm	IFGain:Low	Atten: 26 dB		Mkr	2 5.326 3.6	30 GHz 83 dBm	Auto Tun
20.0									Center Fre 5.32000000 GH
0.00				1	¢2				Start Fre 5.295000000 GH
10.0									<b>Stop Fre</b> 5.345000000 GH
30.0	ne water and the same	ang	···			Ward Vale warded	and for the state of the state	Mary Water	CF Ste 5.000000 MH Auto Ma
50.0									Freq Offs 0 F
60.0									Scale Typ

Page 81 of 241

# 9.6. 11n HT20 2TX CDD MIMO MODE IN THE 5.6GHz BAND

## 9.6.1. 26 dB BANDWIDTH

### LIMITS

None; for reporting purposes only.

### **RESULTS**

Channel	Frequency	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	26.15	32.25
Mid	5580	27.80	34.65
High	5700	25.40	34.85

Page 82 of 241





Page 83 of 241









Page 85 of 241

## 9.6.2. 99% BANDWIDTH

### LIMITS

None; for reporting purposes only.

#### **RESULTS**

Channel	Frequency	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	17.6503	17.6138
Mid	5580	17.4714	17.6166
High	5700	17.3627	17.6284

Page 86 of 241

Chain 0 OBW , CH LOW	Freq/Channel
Ch Freq 5.5 GHz Trig Free Occupied Bandwidth Averages: 20	Center Freq 5.50000000 GHz
APv6.7(050417),GE43578, Cond B	Start Freq 5.48000000 GHz
Ref 20 dBm #Atten 30 dB #Samp Log 10 dB/	Stop Freq 5.52000000 GHz
00ffst AAR AV 100000000000000000000000000000000000	4.00000000 MH2 <u>Auto</u> Man Freq Offset 0.00000000 Hz
•Res BW 360 kHz     •VBW 1.1 MHz     Sweep 1.066 ms (1000 pts)       Occupied Bandwidth     осс BW % Рыг     99.00 %       17.6503 MHz     × dB     -26.00 dB	Signal Track <sup>On <u>Off</u></sup>
Transmit Freq Error 24.398 kHz   x dB Bandwidth 22.438 MHz*	



Page 87 of 241

Chain 0 OBW, CH MID	Erog/Channe
Agricit 20.33.20 May 10, 2017	
Ch Freq 5.58 GHz Occupied Bandwidth Av	Trig Free 5.58000000 GH
OD. 6 7(868417) CE42E72 Cond P	<b>Start Fre</b> 5.5600000 GH
Ref 20 dBm #Atten 30 dB #Samp	Stop Free 5.6000000 GH
10 dB/ 0ffst 11.4	CF Step 4.00000000 MH <u>Auto</u> Ma
dB     T     T       Center 5.580 00 GHz     #WBW 1.1 MHz     #WBW 1.1 MHz	Span 40 MHz Span 40 MHz Sween 1 066 ms (1000 nts)
Occupied Bandwidth 17.4714 MHz	OCC BW % PWr 99.00 % x dB -26.00 dB
Transmit Freq Error 110.060 kHz x dB Bandwidth 21.935 MHz*	
Copyright 2000-2011 Agilent Technologies	



Page 88 of 241

Chain 0 OBW , CH HIGH	Freq/Channel
Ch Freq 5.7 GHz Trig Fre Occupied Bandwidth Averages: 20	e Center Freq 5.70000000 GHz
APv6.7(050417).GE43578, Cond B	Start Freq 5.68000000 GHz
Ref 20 dBm #Atten 30 dB #Samp Log	Stop Freq 5.72000000 GHz
10 dB/ 0ffst 11.4	CF Step 4.00000000 MHz <u>Auto</u> Man
dB	Z Freq Offset
Image: Product in the second secon	Signal Track
Transmit Freq Error 73.562 kHz   x dB Bandwidth 21.905 MHz*	
Copyright 2000–2011 Agilent Technologies	



Page 89 of 241

## 9.6.3. OUTPUT POWER AND PPSD

### LIMITS

FCC §15.407 (a) (2)

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

#### TEST PROCEDURE

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**

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

Chain 0	Chain 1	Uncorrelated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
3.41	2.26	2.87

For PSD, 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)
3.41	2.26	5.86

Page 90 of 241

#### **RESULTS**

	ID:	GF43578	Date:	5/16/17
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#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5500	32.25	2.87	5.86	24.00	11.00
Mid	5600	34.65	2.87	5.86	24.00	11.00
High	5700	34.85	2.87	5.86	24.00	11.00

Duty Cycle CF (dB) 0.3	37 Include	ed 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	16.34	17.35	19.88	24.00	-4.12
Mid	5600	16.54	17.30	19.95	24.00	-4.05
High	5700	16.41	17.78	20.16	24.00	-3.84

#### **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	4.922	5.485	8.59	11.00	-2.41
Mid	5600	5.263	5.713	8.87	11.00	-2.13
High	5700	4.833	6.029	8.85	11.00	-2.15

<u>Note:</u> the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.





Page 92 of 241





Page 93 of 241





Page 94 of 241

# 9.7. 11n HT20 3TX CDD MIMO MODE IN THE 5.6GHz BAND

## 9.7.1. 26 dB BANDWIDTH

### LIMITS

None; for reporting purposes only.

### **RESULTS**

Channel	Frequency	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5500	23.55	33.85	28.00
Mid	5580	32.45	38.60	41.60
High	5700	24.15	26.40	25.70

Page 95 of 241





Page 96 of 241





Page 97 of 241





Page 98 of 241





Page 99 of 241



Page 100 of 241

## 9.7.2. 99% BANDWIDTH

### LIMITS

None; for reporting purposes only.

#### **RESULTS**

Channel	Frequency	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5500	17.738	17.835	17.787
Mid	5580	17.815	17.941	17.899
High	5700	17.811	17.874	17.764

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Page 101 of 241

L RF 50 Ω DC	7),44350, Temp A	SENSE:INT A	LIGN AUTO 03:58:10 AM Ma	r 31, 2017
enter Freq 5.50000000	GHz Cente	r Freq: 5.50000000 GHz Free Run AvalHold:	Radio Std: No 20/20	Frequency
NFE	#IFGain:Low #Atter	n: 30 dB	Radio Device:	BTS
Ref Offset 14.47 d	в			
ng Ref 20.00 aBm				— <b>—</b>
D.0		the stream day short-walk with the		Center Fi
.00	1	**************************************		5.500000000
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10 - Low All allywing on the second			Mary Mary Land	
			a second second	No WORK
0.0				
0.0				
0.0				—— <b> </b>
enter 5.5 GHz			Span 4	
Res BW 360 kHz	#	VBW 1.1 MHz	Sweep	1 ms 4.000000 M
Occupied Bandwidt	n	Total Power	19.4 dBm	Auto N
17	738 MHz			Erog Off
Transmit Error Error	70 772 kHz		- 00.00.%	
I ransmit Freq Error	79.773 KHZ	% of OBW Powe	r 99.00 %	
x dB Bandwidth	22.53 MHz	x dB	-26.00 dB	



Page 102 of 241

Keysight Spectrum Analyzer - APv6.3(03231	7),44350, Temp A	SENSE-INT		:45 AM Mar 31 2017	
enter Freq 5.50000000	GHz Cente	r Freq: 5.50000000 GHz	Radio	Std: None	Frequency
NFE	#IFGain:Low #Atter	n: 30 dB	Radio	Device: BTS	
Ref Offset 14.67 d	в				
dB/div Ref 20.00 dBn					
0.0	a subdraw offer				Center F
00		and the second state of a date			5.50000000 0
).0	/		The last		
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10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				1 the second	
10					
0.0					
0.0					
antar 5.5 CHz				Shop 40 MHz	
Res BW 360 kHz	#	VBW 1.1 MHz		Sweep 1 ms	CF S1 4.000000 N
Occupied Bandwidt	h	Total Power	20.5 dBm	1	Auto N
17	797 MU-				
17	./0/ 10/12				FreqOff
Transmit Freq Error	70.041 kHz	% of OBW Pow	ver 99.00 %	b	
x dB Bandwidth	23.13 MHz	x dB	-26.00 dE	3	



Page 103 of 241

L RF 50 Ω DC	17),44350, Temp A	SENSE:INT	ALIGN AUTO 04:07	43 AM Mar 31, 2017	Ere guerre u
enter Freq 5.58000000	BHZ #IFGain:Low Cente Trig: #Atten	r Freq: 5.580000000 GHz Free Run Avg Hold n: 30 dB	Radio 20/20 Radio	Std: None Device: BTS	Frequency
Ref Offset 14.69 O dB/div Ref 20.00 dB	dB n				
<b>29</b> 0.0	an many second and a star	New manufacture of the constant of the			Center Fr
.00		A to an a constant of the	N		5.580000000 G
0.0	#		Mary Market Star La	λu	
0.0			1	and when he was	
0.0					
0.0					
0.0					
enter 5.58 GHz Res BW 360 kHz	#	VBW 1.1 MHz	S	pan 40 MHz Sweep 1 ms	CF St 4.000000 M
Occupied Bandwid	th	Total Power	22.1 dBm		<u>Auto</u> M
1	7.941 MHz				Freq Offs
Transmit Freq Error	27.007 kHz	% of OBW Pow	er 99.00 %		. 0
x dB Bandwidth	30.25 MHz	x dB	-26.00 dE		



Page 104 of 241

Keysight Spectrum Analyzer - APv6.3(03231)	7),44350, Temp A	SENSE:INT	ALIGN AUTO 04:	16:50 AM Mar 31, 2017	- <b>-</b>
enter Freq 5.70000000	GHz Cent Trig	ter Freq: 5.700000000 GHz Free Run Avg Hol	Rad	io Std: None	Frequency
	#IFGain:Low #Att	en: 30 dB	Rad	io Device: BTS	
Ref Offset 14.6 dE	3				
g					Contor F
00	made manage malara	mut when we want	- Cunh		5.700000000 0
.0	<u> </u>		<u> </u>		
			"NI -		
0.0 Martin V Hay Wild War In			- In May O	there and a fight of the state	
0.0					
1.0					
0.0					
				0	
Res BW 360 kHz		#VBW 1.1 MHz		Sweep 1 ms	CF S1 4.000000 M
Occupied Bandwidt	n	Total Power	20.0 dB	m	<u>Auto</u> N
17	811 MHz				<b>F</b> === 0#
T			00.00	•	Prequi
I ransmit Freq Error	94.611 KHZ	% of OBW Pov	ver 99.00	%	
x dB Bandwidth	23.26 MHz	X dB	-26.00 d	в	



Page 105 of 241

Keysight Spectrum Analyzer - APv6.3(03231       L     RF     50 Ω     DC       enter Freq 5.7000000000     NFE	GHz Cente Trig: F	SENSE:INT A r Freq: 5.70000000 GHz Free Run Avg Hold:	ALIGN AUTO 04:19:32 Radio Sto 20/20	AM Mar 31, 2017 d: None	Frequency
Ref Offset 14.8 df 0 dB/div Ref 20.00 dBn	#FGain:Low #Atter	h: 30 dB	Radio De	vice: BTS	
og 0.0 1.00	- Manpar Anthony Manharen	an put man and a star and a		<b> </b>	Center Fr 5.700000000 G
0.0 0.0 0.0 arter Maral Maral Maral Maral			hun music anthrough	A strategistics	
0.0					
0.0					
enter 5.7 GHz Res BW 360 kHz	#	VBW 1.1 MHz	Spa Sw	an 40 MHz eep 1 ms	CF St 4.000000 M
Occupied Bandwidt	h	Total Power	20.3 dBm	1	Auto M
17	./64 MHz				Freq Offs
Transmit Freq Error	72.562 kHz	% of OBW Powe	r 99.00 %		0
x dB Bandwidth	21.26 MHz	x dB	-26.00 dB		

Page 106 of 241

## 9.7.3. OUTPUT POWER AND PPSD

### LIMITS

FCC §15.407 (a) (2)

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

#### TEST PROCEDURE

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**

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

Chain 0	Chain 1	Chain 2	<b>Uncorrelated Chains</b>
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
3.41	2.26	4.22	3.37

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

Chain 0	Chain 1	Chain 2	<b>Correlated Chains</b>
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
3.41	2.26	4.22	8.10

Page 107 of 241

#### **RESULTS**

<b>ID:</b> GE43578	Date:	5/16/17
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#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5500	33.85	3.37	8.10	24.00	8.90
Mid	5600	41.60	3.37	8.10	24.00	8.90
High	5700	26.40	3.37	8.10	24.00	8.90

#### Duty Cycle CF (dB) 0.37 Included in Calculations of Corr'd Power & PSD

#### **Output Power Results**

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	Power	Power
		Meas	Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	14.28	15.07	14.88	19.90	24.00	-4.10
Mid	5600	14.32	15.05	14.59	19.81	24.00	-4.19
High	5700	13.05	13.96	13.78	18.76	24.00	-5.24

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PSD	PSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	2.700	3.639	3.527	8.45	8.90	-0.45
Mid	5600	2.969	3.903	3.669	8.67	8.90	-0.23
High	5700	2.798	3.696	3.519	8.50	8.90	-0.40

<u>Note:</u> the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.





Page 109 of 241





Page 110 of 241











Page 113 of 241

# 9.8. 11n HT20 2TX CDD MIMO MODE IN THE 5.8GHz BAND

## 9.8.1. 6 dB BANDWIDTH

### <u>LIMITS</u>

FCC §15.407 (e)

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

#### **RESULTS**

Channel	Frequency	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	17.65	17.55	0.5
Mid	5785	17.55	17.60	0.5
High	5825	17.60	17.55	0.5

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Page 114 of 241





Page 115 of 241





Page 116 of 241





## 9.8.2. 26 dB BANDWIDTH

#### LIMITS

None; for reporting purposes only.

#### **RESULTS**

		26 dB BW	26 dB BW	
Channel	Frequency	Chain 0 (MHz)	Chain 1 (MHz)	
Low	5745		24.55	
LOW	5745	20.00	34.33	
Mid	5785	25.80	39.25	
High	5825	26.05	39.85	

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Page 118 of 241





Page 119 of 241





Page 120 of 241





Page 121 of 241

## 9.8.3. 99% BANDWIDTH

### **LIMITS**

None; for reporting purposes only.

#### **RESULTS**

Channel	Frequency	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	17.2911	17.3877
Mid	5785	17.3420	17.6140
High	5825	17.5044	17.5563

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Page 122 of 241

Ch Freq     5.745 GHz     Trig     Free       0ccupied Bandwidth     Averages: 20     Start Freq       APv6.7(050417),GE43578, Cond B     Stop Freq     5.72500000 GHz       Ref 20 dBm     *Atten 30 dB     Stop Freq       *Samp     Stop Freq     5.76500000 GHz       Log     Center 5.745 00 GHz     Stop Freq       0ffst     Center 5.745 00 GHz     Span 40 MHz       *Res BW 360 KHz     *VBW 1.1 MHz     Sweep 1.066 ms (1000 pts)       Occupied Bandwidth     Occ BH % PHr     99.00 %       17.2911 MHz     x dB     -26.00 dB       Transmit Freq Error     -18.189 KHz       x dB Bandwidth     22.465 MHz*	Chain 0 OBW , CH LOW ∦ Agilent 21:17:43 May 16, 2017 L	Freq/Channel
Start Freq       APv6.7(050417),GE43578, Cond B       Ref 20 dBm     *Atten 30 dB       *Samp     Stop Freq       Log     Stop Freq       10	Ch Freq 5.745 GHz Trig Free Occupied Bandwidth Averages: 20	Center Freq 5.74500000 GHz
Ref 20 dBm     #Atten 30 dB       *Samp Log 10 dB/ dB/ dB/ dfst 11.5 dB     Stop Freq 5.76500000 GHz       CF Step 4.00000000 MHz       Center 5.745 00 GHz     Span 40 MHz       *Res BW 360 kHz     *VBW 1.1 MHz     Sweep 1.066 ms (1000 pts)       Occupied Bandwidth     Occ BM % PMr     99.00 %       Transmit Freq Error     -18.189 kHz 22.465 MHz*     × dB     -26.00 dB	APv6.7(050417),GE43578, Cond B	Start Freq 5.72500000 GHz
dB/ Offst 11.5 dB     CF Step 4.00000000 MHz Auto       Center 5.745 00 GHz *Res BW 360 kHz     *VBW 1.1 MHz     Span 40 MHz Sweep 1.066 ms (1000 pts)       Occupied Bandwidth     Occ BW % Pwr     99.00 % 99.00 %       17.2911 MHz     × dB     -26.00 dB       Transmit Freq Error     -18.189 kHz 22.465 MHz*     × dB	Ref 20 dBm #Atten 30 dB #Samp Log	<b>Stop Freq</b> 5.76500000 GHz
Center     5.745     00 GHz     Freq Offset       *Res     BW 360     kHz     *VBW 1.1     MHz     Sweep 1.066 ms (1000 pts)     Signal Track       Occupied     Bandwidth     Occ BW % Pwr     99.00 %     Signal Track     On     Off       Transmit     Freq Error     -18.189     kHz     × dB     -26.00 dB     MHz     Image: Signal Track     Image: Signal Track <t< td=""><td>dB/ Offst 11.5</td><td><b>CF Step</b> 4.0000000 MHz <u>Auto</u> Man</td></t<>	dB/ Offst 11.5	<b>CF Step</b> 4.0000000 MHz <u>Auto</u> Man
Occupied Bandwidth     Occ BW % Pwr     99.00 %     Signal Track       17.2911 MHz     × dB     -26.00 dB     0n     0ff       Transmit Freq Error     -18.189 kHz     × dB Bandwidth     22.465 MHz*     0	Center 5.745 00 GHz     #VRW 1.1 MHz     Sween 1.066 ms (1.000 nts)       #Res RW 360 kHz     #VRW 1.1 MHz     Sween 1.066 ms (1.000 nts)	FreqOffset 0.00000000 Hz
Transmit Freq Error-18.189 kHz× dB Bandwidth22.465 MHz*	Occupied Bandwidth     Occ BM % Pwr     99.00 %       17.2911 MHz     × dB     -26.00 dB	Signal Track <sup>On <u>Off</u></sup>
	Transmit Freq Error -18.189 kHz   x dB Bandwidth 22.465 MHz*	



Page 123 of 241

Chain 0 OBW , CH MID	Freq/Channel
Ch Freq 5.785 GHz Trig Free Occupied Bandwidth Averages: 20	Center Freq 5.78500000 GHz
APv6.7(050417),GE43578, Cond B	Start Freq 5.76500000 GHz
Ref 20 dBm #Atten 30 dB #Samp Log	<b>Stop Freq</b> 5.80500000 GHz
dB/ offst 11.7	<b>CF Step</b> 4.00000000 MHz <u>Auto</u> Man
OB     MI     MI       Center 5.785 00 GHz     Span 40 MHz     Span 40 MHz       Page RU 360 kHz     #URU 11 MHz     Succes 1.066 ms (1000 ptc)	Freq Offset 0.00000000 Hz
Occupied Bandwidth     Осс ВМ % Рыг     99.00 %       17.3420 MHz     × dB     -26.00 dB	<b>Signal Track</b> <sup>On <u>Off</u></sup>
Transmit Freq Error -50.891 kHz x dB Bandwidth 21.715 MHz*	
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Page 124 of 241

Chain 0 OBW , CH HIGH	Freq/Channel
Ch Freq 5.825 GHz Trig Free Occupied Bandwidth Averages: 20	Center Freq 5.82500000 GHz
APv6.7(050417),6E43578, Cond B	Start Freq 5.80500000 GHz
Ref 20 dBm #Atten 30 dB #Samp	<b>Stop Freq</b> 5.84500000 GHz
dB/ offst 11.7	<b>CF Step</b> 4.00000000 MHz <u>Auto</u> Man
dB	FreqOffset 0.00000000 Hz
Image: Week Bardwidth     Occ BW % Pwr     99.00 %       17.5044 MHz     × dB     -26.00 dB	Signal Track <sup>On <u>Off</u></sup>
Transmit Freq Error −19.748 kHz x dB Bandwidth 22.199 MHz*	
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Page 125 of 241

# 9.8.4. OUTPUT POWER AND PSD

### LIMITS

FCC §15.407 (a) (3)

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

#### 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**

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

Chain 0	Chain 1	Uncorrelated Chain		
Antenna	Antenna	Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
3.41	2.26	2.87		

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

Chain 0	Chain 1	Correlated Chains		
Antenna	Antenna	Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
3.41	2.26	5.86		

Page 126 of 241

#### RESULTS

#### Antenna Gain and Limit

Channel	Frequency	Directional	Directional	Power	Power
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5745	2.87	5.86	30.00	30.00
Mid	5785	2.87	5.86	30.00	30.00
High	5825	2.87	5.86	30.00	30.00

Duty Cycle CF (dB) 0.37 Included

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	5745	17.17	18.22	20.74	30.00	-9.26
Mid	5785	17.02	18.53	20.85	30.00	-9.15
High	5825	16.87	18.72	20.90	30.00	-9.10

#### **PSD Results**

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5745	2.799	3.304	6.44	30.00	-23.56
Mid	5785	2.506	3.686	6.52	30.00	-23.48
High	5825	2.603	3.878	6.67	30.00	-23.33

<u>Note:</u> the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.





Page 128 of 241





Page 129 of 241





Page 130 of 241