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7.45.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
7.09	7.06	3.58	6.19

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

Chain 0	Chain 1	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
7.09	7.06	3.58	10.83

OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5270	43.33	36.1451	6.19

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5270	23.81	24.00	30.00	23.81
High	5310	23.81	24.00	30.00	23.81

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	5270	17.70	17.75	17.78	22.51	23.81	-1.30
High	5310	12.78	13.34	12.88	17.78	23.81	-6.03

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PPSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5270	43.33	36.1451	10.83
Lliab	5210	20 50	26 1227	10.02

Limits

Channel	Frequency	FCC	IC	PPSD
			PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5270	6.17	11.00	6.17
High	5310	6.17	11.00	6.17

Duty Cycle CF (dB)	0.43	Included in PPSD
	0.10	

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
							_
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	0.82	0.90	0.95	6.09	6.17	-0.08
High	5310	0.95	0.96	0.96	6.16	6.17	-0.01

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7.45.4. **PEAK EXCURSION**

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Chain 0

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Low	5270	9.26	0.82	0.43	8.01	13	-4.99
High	5310	7.11	0.95	0.43	5.73	13	-7.27

Chain 1

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Low	5270	12.30	0.90	0.43	10.97	13	-2.03
High	5310	10.56	0.96	0.43	9.17	13	-3.83

Chain 2

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Low	5270	7.55	0.95	0.43	6.17	13	-6.83
High	5310	5.27	0.96	0.43	3.88	13	-9.12

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PEAK EXCURSION, Chain 0





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PEAK EXCURSION, Chain 1





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PEAK EXCURSION, Chain 2





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7.46. 802.11n HT40 STBC 2TX MODE, 5.3 GHz BAND

Covered by testing 802.11n HT40 STBC 3TX mode, total power across all three chains is higher than the power level the device will operate at.

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7.47. 802.11n HT40 STBC 3TX MODE, 5.3 GHz BAND

7.47.1. **26 dB BANDWIDTH**

<u>LIMITS</u>

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW		
		Chain 0	Chain 1	Chain 2		
	(MHz)	(MHz)	(MHz)	(MHz)		
Low	5270	74.38	97.29	81.67		
High	5310	Covered by 802.11n HT40 CDD 3TX testing				

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7.47.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	99% BW		
		Chain 0	Chain 1	Chain 2		
	(MHz)	(MHz)	(MHz)	(MHz)		
Low	5270	36.2028	36.2516	36.2565		
High	5310	Covered by 802.11n HT40 CDD 3TX testing				

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99% BANDWIDTH, Chain 1



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7.47.3. **OUTPUT POWER AND PPSD**

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Chain 2	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
7.09	7.06	3.58	6.19

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min Min		Directional		
		26 dB	99%	Gain		
		BW	BW			
	(MHz)	(MHz)	(MHz)	(dBi)		
Low	5270	74.38	36.2028	6.19		
High	5310	Covered				

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5270	23.81	24.00	30.00	23.81	10.81	11.00	10.81
High	5310		Covered by 802.11n HT40 CDD 3TX testing					

Duty Cycle CF (dB) 0.59 Included in Calculations of PPSD

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	5270	18.62	18.80	18.56	23.43	23.81	-0.38		
High	5310		Covered by 802.11n HT40 CDD 3TX testing						

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	4.69	5.07	4.12	10.00	10.81	-0.81

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.



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7.48. 802.11n HT40 BF 2TX MODE, 5.3 GHz BAND

Covered by testing 802.11ac VHT40 BF 2TX mode, total power across the two chains is higher than the power level the device will operate at.

7.49. 802.11n HT40 BF 3TX MODE, 5.3 GHz BAND

Covered by testing 802.11ac VHT40 BF 3TX mode, total power across the three chains is higher than the power level the device will operate at.

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7.50. 802.11ac VHT40 BF 2TX MODE, 5.3 GHz BAND

7.50.1. **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	5270	61.83	57.00
High	5310	39.83	39.50

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7.50.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	nannel Frequency		99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5270	36.1894	36.1512
High	5310	36.1374	36.1272

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7.50.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Correlated Chains		
Antenna	Antenna	Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
7.09	7.06	10.09		

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Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5270	57.00	36.1512	10.09
High	5310	39.50	36.1272	10.09

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5270	19.91	24.00	30.00	19.91	6.91	11.00	6.91
High	5310	19.91	24.00	30.00	19.91	6.91	11.00	6.91

Duty Cycle CF (dB) 0.43 Included in Calculations of Corr'd Power & PPSD

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	5270	16.60	16.84	19.73	19.91	-0.18
High	5310	13.65	14.53	17.12	19.91	-2.79

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
				(al Dura)	(al Dura)	
	(IVIHZ)	(aBM)	(aBm)	(авт)	(авт)	(ав)
Low	(MHZ) 5270	(dBm) 2.40	(dBm) 2.79	6.04	(авт) 6.91	-0.87

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.





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7.51. 802.11ac VHT40 BF 3TX MODE, 5.3 GHz BAND

This mode has the same antenna port results as 802.11n HT40 CDD 3TX, except for output power, as shown below.

7.51.1. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
7.09	7.06	3.58	10.83

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OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5270	43.33	36.1451	10.83
Lliab	5210	20 50	26 1227	10.02

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5270	19.17	24.00	30.00	19.17
High	5310	19.17	24.00	30.00	19.17

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	5270	14.12	14.54	14.39	19.12	19.17	-0.05
High	5310	12.78	13.34	12.88	17.78	19.17	-1.39

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7.52. 802.11ac VHT80 1TX MODE, 5.3 GHz BAND

7.52.1. **26 dB BANDWIDTH**

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW
		Chain 0
	(MHz)	(MHz)
Mid	5290	86.70

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26 dB BANDWIDTH, Chain 0

- 1 20 4	Dan		044an 3	a 10			ΔM	kr1 86.3	7 MHz	Center Fred
Peak	UIII		Allen Z					-0.1		5.29000000 GH
og) B/				menne	Lunden	 www.				Start Frec 5.19000000 GH
πsτ 1.2 B			1R				1			Stop Free 5.39000000 GH
9.5 Bm gAv	radiation	hurther	hand the				Wallwey	W. MAN	m ⁴ ala	CF Ste 20.0000000 MH <u>Auto M</u>
1 S2 3 FC									·ˈɬm].	Freq Offset 0.00000000 Hz
f): - Fun - wp -										Signal Traci On <u>(</u>
enter 5	i.290 0	GHz				 # C a	on 100	Span 20	10 MHz	

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7.52.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	99% BW
		Chain 0
	(MHz)	(MHz)
Mid	5290	75.3786

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99% BANDWIDTH, Chain 0



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7.52.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5290	86.70	75.3678	7.09

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5290	22.91	24.00	30.00	22.91	9.91	11.00	9.91

Duty Cycle CF (dB) 0.85 Included in Calculations of PPSD

Output Power Results

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	16.00	16.00	22.91	-6.91

PPSD Results

Channel	Frequency	Chain 1	Total	PPSD	PPSD
		Meas	Corr'd	Limit	Margin
		PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-1.52	-0.67	9.91	-10.58

Note: method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

OUTPUT POWER AND PPSD, Chain 1



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7.53. 802.11ac VHT80 CDD 2TX MODE, 5.3 GHz BAND

7.53.1. **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	85.3	86.7

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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7.53.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5290	75.4348	75.3345

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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7.53.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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)
7.09	7.06	7.08

For PPSD, 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)
7.09	7.06	10.09

OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5290	85.3	75.3345	7.08

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Mid	5290	22.92	24.00	30.00	22.92

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	13.74	13.03	16.41	22.92	-6.51

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PPSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5290	85.3	75.3345	10.09

Limits

Channel	Frequency	FCC	IC	PPSD
		PPSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Mid	5290	6.91	11.00	6.91

Duty Cycle CF (dB) 0.85 Included in PPSD

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-3.42	-2.76	0.78	6.91	-6.13

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

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OUTPUT POWER AND PPSD, Chain 0



OUTPUT POWER AND PPSD, Chain 1



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7.54. 802.11ac VHT80 CDD 3TX MODE, 5.3 GHz BAND

7.54.1. **26 dB BANDWIDTH**

<u>LIMITS</u>

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5290	83.70	82.70	82.00

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2

Agrient 10.	10.40 1407 14,2	.012					г		
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3/									NOTHS
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JAV								× N	Ref 4
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enter 5.290 0 (GHz					1	Span 20	0 MHz	1 of 2

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7.54.1. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5290	75.3531	75.2961	75.2675

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2



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7.54.2. **OUTPUT POWER AND PPSD**

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
7.09	7.06	3.58	6.19

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

Chain 0	Chain 1	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
7.09	7.06	3.58	10.83

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OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5290	82.00	75.2675	6.19

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Mid	5290	23.81	24.00	30.00	23.81

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)
Mid	5290	12.12	12.29	12.34	17.02	23.81	-6.79

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PPSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5290	82.00	75.2675	10.83

Limits

Channel	Frequency	FCC	IC	PPSD
		PPSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Mid	5290	6.17	11.00	6.17

 Duty Cycle CF (dB)
 0.85
 Included in Calculations of PPSD

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
							•
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-3.71	-3.35	-2.69	2.39	6.17	-3.78

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

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PPSD, Chain 0



PPSD, Chain 1

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PPSD, Chain 2

R Aglient 11	:25:59	NOV 21, 2	2012					F		[⊢req/Channel
tef 10 dBm Avg		Atten 1	0 dB							Center Freq 5.29000000 GHz
.og 0 B/			~~~	~	~~	~~~	~~~~			Start Freq 5.22750000 GHz
1.2 B										Stop Freq 5.35250000 GHz
PAvg	l							he was	and the second	CF Step 12.5000000 MHz Auto Ma
00 V1 S2 i3 FS										Freq Offset 0.00000000 Hz
(f): Tun										Signal Track On <u>Of</u>
Center 5.290 0	0 GHz				<u> </u>			Span 12	25 MHz	

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7.55. 802.11ac VHT80 BF 2TX MODE, 5.3 GHz BAND

7.55.1. **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	85.3	86.7	

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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7.55.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Mid	5290	75.4348	75.3345	

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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7.55.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Correlated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
7.09	7.06	10.09

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5290	85.3	75.3345	10.09

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5290	19.91	24.00	30.00	19.91	6.91	11.00	6.91

Duty Cycle CF (dB)0.85Included in Calculations of Corr'd Power & PPSD

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	13.32	13.78	16.57	19.91	-3.34

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-3.42	-2.76	0.78	6.91	-6.13

Note: method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

OUTPUT POWER AND PPSD, Chain 0



OUTPUT POWER AND PPSD, Chain 1



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7.56. 802.11ac VHT80 BF 3TX, 5.3 GHz BAND

7.56.1. **26 dB BANDWIDTH**

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW	
		Chain 0	Chain 1	Chain 2	
	(MHz)	(MHz)	(MHz)	(MHz)	
Mid	5290	82.67	88.50	81.50	

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2

							L MIL	4 04 70	 	
ef 20 dBm Peak		Atten 2	:0 dB			,		-0.2	5 dB	Center Freq 5.29000000 GHz
0g) B/		n	WARMAN MARCHA	ar and the second	and the second	mana	oer or the way	Conglect-ong		Start Freq 5.24000000 GHz
I.2 B I	1R								1 0	Stop Freq 5.34000000 GHz
0.2 Bm gAv	<i></i>								WALL	CF Step 10.0000000 MHz <u>Auto Ma</u>
1 S2 3 FC										Freq Offset 0.00000000 Hz
f): Fun wp										Signal Track On <u>Off</u>
enter 5.29	0 00 GHz						. 100	Span 10	JO MHz	

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7.56.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5290	75.3812	75.4542	75.4123

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2



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7.56.3. **OUTPUT POWER AND PPSD**

LIMITS

FCC §15.407 (a) (1)

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 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
7.09	7.06	3.58	10.83

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5290	81.50	75.4123	10.83

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5290	19.17	24.00	30.00	19.17	6.17	11.00	6.17

 Duty Cycle CF (dB)
 0.85
 Included in Calculations of Corr'd Power & PPSD

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)
Mid	5290	13.21	13.88	13.19	18.21	19.17	-0.96

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-3.71	-3.35	-2.69	2.39	6.17	-3.78

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

PPSD, Chain 0



PPSD, Chain 1



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PPSD, Chain 2

R Aglient 11	:25:59	NOV 21, 2	2012					F		[⊢req/Channel
tef 10 dBm Avg		Atten 1	0 dB							Center Freq 5.29000000 GHz
.og 0 B/			~~~	~	~~	~~~	~~~~			Start Freq 5.22750000 GHz
1.2 B										Stop Freq 5.35250000 GHz
PAvg	l							he was	and the second	CF Step 12.5000000 MHz Auto Ma
00 V1 S2 i3 FS										Freq Offset 0.00000000 Hz
(f): Tun										Signal Track On <u>Of</u>
Center 5.290 0	0 GHz				<u> </u>			Span 12	25 MHz	

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802.11a LEGACY 1TX MODE, 5.6 GHz BAND 7.57.

7.57.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5500	51.250
Mid	5580	34.000
High	5700	53.375

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26 dB BANDWIDTH





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🔆 Agilent 00:	05:45 1	Nov 8, 20	012						Т	Freq/Channel
Ref 20 dBm Peak		Atten 2	0 dB				∆ Mkr1	53.375 -0.7	5 MHz 2 dB	Center Freq 5.70000000 GHz
.og 0 IB/			hand			hory				Start Freq 5.66250000 GHz
		<i>["</i>					<i>«</i> ۸	Là.	m	Stop Freq 5.73750000 GHz
8.1 IBm .gAv										CF Step 7.5000000 MHz Auto Ma
/1 S2 53 FC										Freq Offset 0.00000000 Hz
t(f): Tun										Signal Track On <u>Of</u>
Center 5.700 00	10 GHz Hz		#\/F	W 1.6 I	MHz	#Sw/9	en 100 :	Span 3	75 MHz	

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7.57.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5500	25.7077
Mid	5580	16.8648
High	5700	29.0206

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99% BANDWIDTH





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BANDWIDTH HIGH CH * Agilent 00:02:45 Nov 8, 2012	Т	Freq/Channel
Ch Freq 5.7 GHz Occupied Bandwidth	Trig Free Averages: 100	Center Freq 5.7000000 GHz
		Start Freq 5.66250000 GHz
Ref 20 dBm Atten 20 dB #Samp Log		Stop Freq 5.73750000 GHz
10 dB/ Offst 11.4		CF Step 7.50000000 MHz <u>Auto Man</u>
dB	Span 75 MHz	Freq Offset 0.00000000 Hz
#Res BW 820 kHz #VBW 2.	4 MHz #Sweep 100 ms (601 pts)	Signal Track
Occupied Bandwidth 29.0206 MHz	Occ BW % Pwr 99.00 % x dB -26.00 dB	On <u>Off</u>
Transmit Freq Error 59.624 kHz x dB Bandwidth 43.500 MHz*		
Copyright 2000-2010 Agilent Technologies		

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7.57.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min Min		Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	51.250	25.7077	6.66
Mid	5580	34.000	16.8648	6.66
High	5700	53.375	29.0206	6.66

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5500	23.34	24.00	30.00	23.34	10.34	11.00	10.34
Mid	5580	23.34	23.27	29.27	22.61	10.34	11.00	10.34
High	5700	23.34	24.00	30.00	23.34	10.34	11.00	10.34

Duty Cycle CF (dB) 0.22 Included in Calculations of PPSD

Output Power Results

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	19.20	19.20	23.34	-4.14
Mid	5580	20.12	20.12	22.61	-2.49
High	5700	18.20	18.20	23.34	-5.14

PPSD Results

Channel	Frequency	Chain 1	Total	PPSD	PPSD
		Meas	Corr'd	Limit	Margin
		PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	5.618	5.84	10.34	-4.50
Mid	5580	9.858	10.08	10.34	-0.26
High	5700	7.279	7.50	10.34	-2.84

Note: method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for MID channel for this PSD measurements.

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OUTPUT POWER AND PPSD, Chain 0





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7.57.4.**PEAK EXCURSION**

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Chain 1

-								
	Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
		(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
	Mid	5580	19.42	9.858	0.22	9.34	13	-3.66



7.58. 802.11a CDD 2TX MODE, 5.6 GHz BAND

Covered by testing 802.11n HT20 CDD 3TX mode, total power across all three chains is higher than the power level the device will operate at.

7.59. 802.11a CDD 3TX MODE, 5.6 GHz BAND

Covered by testing 802.11n HT20 CDD 3TX mode, total power across all three chains is higher than the power level the device will operate at.

7.60. 802.11a BF 2TX MODE, 5.6 GHz BAND

Covered by testing 802.11n HT20 BF 3TX mode, total power across all three chains is higher than the power level the device will operate at.

7.61. 802.11a BF 3TX MODE, 5.6 GHz BAND

Covered by testing 802.11n HT20 BF 3TX mode, total power across all three chains is higher than the power level the device will operate at.

7.62. 802.11n HT20 1TX MODE, 5.6 GHz BAND

Covered by testing 802.11a Legacy 1TX mode at the same power level.

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7.63. 802.11n HT20 CDD 2TX, 5.6 GHz BAND

7.63.1. **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	20.42	20.33	
Mid	5580	21.82	30.80	
High	5700	20.75	31.17	

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26 dB BANDWIDTH, Chain 0





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26 dB BANDWIDTH, Chain 1



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7.63.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Frequency	99% BW	99% BW
	Chain 0	Chain 1
(MHz)	(MHz)	(MHz)
5500	17.6158	17.6217
5580	17.6295	17.6947
5700	17.6144	17.6927

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99% BANDWIDTH, Chain 0





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99% BANDWIDTH, Chain 1



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7.63.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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)
5.03	6.66	5.92

For PPSD, 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)
5.03	6.66	8.89

OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min Min		Directional
		26 dB 99%		Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	20.33	17.6158	5.92
Mid	5580	21.82	17.6295	5.92
High	5700	20.75	17.6144	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5500	24.00	23.46	29.46	23.46
Mid	5580	24.00	23.46	29.46	23.46
High	5700	24.00	23.46	29.46	23.46

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	17.56	17.60	20.59	23.46	-2.87
Mid	5580	18.00	17.37	20.71	23.46	-2.76
High	5700	17.72	17.52	20.63	23.46	-2.83

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PPSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW BW		
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	20.33	17.6158	8.89
Mid	5580	21.82	17.6295	8.89
High	5700	20.75	17.6144	8.89

Limits

Channel	Frequency	FCC	IC	PPSD
		PPSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	8.11	11.00	8.11
Mid	5580	8.11	11.00	8.11
High	5700	8.11	11.00	8.11

Duty Cycle CF (dB) 0.22	Included in Calculations of PPSD
-------------------------	----------------------------------

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		DDOD	ррер	DDED		
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	4.55	4.66	7.84	8.11	-0.27
Mid	5580	5.12	4.57	8.08	8.11	-0.03
High	5700	4.62	4.90	7.99	8.11	-0.12

OUTPUT POWER AND PPSD, Chain 0





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OUTPUT POWER AND PPSD, Chain 1



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7.63.4.**PEAK EXCURSION**

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Refer to the results of 802.11n HT20 CDD 3TX mode in the 5.3 GHz band; Section 7.37.4.

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7.64. 802.11n HT20 CDD 2TX MODE, CHANNEL 144, 5.6 GHz BAND

7.64.1.26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
High	5720	24.92	30.08	

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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7.64.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5720	17.6315	17.6470

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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7.64.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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)
5.03	6.66	5.92

For PPSD, 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)
5.03	6.66	8.89

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
High	5720	17.46	13.8142	8.89	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	23.42	22.40	28.40	22.40	8.11	11.00	8.11

 Duty Cycle CF (dB)
 0.22
 Included in Calculations of Corr'd Power & PPSD

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)
High	5720	15.37	14.85	18.35	22.40	-4.06

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	5.036	4.691	8.10	8.11	-0.01

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Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
High	5720	7.46	3.8172	8.89	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	19.73	16.82	22.82	16.82	8.11	11.00	8.11

Duty Cycle CF (dB) 0.22 Included in Calculations of Corr'd Power & PPSD

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)
High	5720	9.66	9.09	12.61	16.82	-4.20

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	4.056	3.456	7.00	8.11	-1.11

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PSD, Chain 0





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PSD, Chain 1





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7.65. 802.11n HT20 CDD 3TX MODE IN THE 5.6 GHz BAND

7.65.1. **26 dB BANDWIDTH**

<u>LIMITS</u>

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5500	20.42	20.42	20.42
Mid	5580	20.25	20.58	20.42
High	5700	20.17	20.42	20.33

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26 dB BANDWIDTH, Chain 0





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26 dB BANDWIDTH, Chain 1



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ANDWIDTH Chair Agilent 09:15:17 Nov 9, 2	ר 1 MID CH 12	4	RT	Freq/Channel
Ref 20 dBm #Atten : #Peak	20 dB		∆ Mkr1 20.58 MHz -0.22 dB	Center Freq 5.58000000 GHz
Log	Mahanan	white the		Start Freq 5.55500000 GHz
dB				- Stop Freq 5.60500000 GHz
-20.7 dBm LgAv		- M.	anna anna ann ann ann ann ann ann ann a	CF Step 5.00000000 MHz Auto Ma
V1 S2 S3 FC				Freq Offset 0.00000000 Hz
¤(f): FTun Swp				Signal Track OnOf
Center 5.580 00 GHz #Res BW 180 kHz	VBW 560 ki	Hz #Sweep	Span 50 MH; 100 ms (601 pts)	



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26 dB BANDWIDTH, Chain 2





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7.65.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	99% BW	99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5500	17.6154	17.6097	17.6154
Mid	5580	17.6150	17.6295	17.6151
High	5700	17.6071	17.6353	17.6252

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99% BANDWIDTH, Chain 0





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99% BANDWIDTH, Cr Agilent 16:01:53 Nov 8, 2012	nain 0 HIGH CH	RТ	Freq/Channel
Ch Freq 5.7 GHz Occupied Bandwidth	Averages: 100	Trig Free	Center Freq 5.7000000 GHz
Center 5.700000000	GHz		Start Freq 5.67500000 GHz
Ref 20 dBm Atten 20 dE #Samp Log 10 dB/ Offst 11.4 dB			Stop Freq 5.72500000 GHz CF Step 5.00000000 MHz <u>Auto Man</u> Freq Offset
Center 5.700 00 GHz #Res BW 180 kHz	VBW 560 kHz #Sweep 100	Span 50 MHz ms (601 pts)	Signal Track
Occupied Bandwidth 17.6071	Occ BW % Pwr MHz x dB	99.00 % -26.00 dB	On <u>Off</u>
Transmit Freq Error -52.96 x dB Bandwidth 19.45	67 kHz 9 MHz*		
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99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2





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99% BANDWIDTH, (Agilent 16:05:49 Nov 8, 201	Chain 2 HIG	Н СН	RT	Freq/Channel
Ch Freq 5.7 Gł Occupied Bandwidth	Hz	verages: 100	Trig Free	Center Freq 5.70000000 GHz
				Start Freq 5.67500000 GHz
Ref 20 dBm Atten 20 #Samp				Stop Freq 5.72500000 GHz CF Step 5.00000000 MHz <u>Auto Man</u> Freq Offset
Center 5.700 00 GHz #Res BW 180 kHz	VBW 560 kHz	#Sweep 100 r	Span 50 MHz ns (601 pts)	0.00000000 Hz
Occupied Bandwidt 17.625	h 2 MHz	Occ BW % Pwr x dB	99.00 % -26.00 dB	Signal Irack On <u>Off</u>
Transmit Freq Error -52 x dB Bandwidth 19	2.069 kHz .437 MHz*			
Copyright 2000-2010 Agilent Tech	nologies			I

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7.65.3. **OUTPUT POWER AND PPSD**

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	5.36

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

Chain 0	Chain 1	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	10.05

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OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	20.42	17.6097	5.36
Mid	5580	20.25	17.6150	5.36
High	5700	20.17	17.6071	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5500	24.00	23.46	29.46	23.46
Mid	5580	24.00	23.46	29.46	23.46
High	5700	24.00	23.46	29.46	23.46

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	14.98	14.78	14.69	19.59	23.46	-3.87
Mid	5580	14.84	14.75	14.82	19.57	23.46	-3.88
High	5700	14.93	14.81	14.46	19.51	23.46	-3.95

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PPSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	20.42	17.6097	10.05
Mid	5580	20.25	17.6150	10.05
High	5700	20.17	17.6071	10.05

Limits

Channel	Frequency	FCC	IC	PPSD
		PPSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	6.95	11.00	6.95
Mid	5580	6.95	11.00	6.95
High	5700	6.95	11.00	6.95

Duty Cycle CF (dB)	0.22	Included in PPSD
--------------------	------	------------------

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		5505	DDOD	DD0D	5505		
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	1.86	1 91	1 99	6 91	6 95	-0.04
-	8888	1.00	1.01	1.55	0.51	0.00	0.01
Mid	5580	1.95	1.94	1.83	6.90	6.95	-0.05

OUTPUT POWER AND PPSD, Chain 0





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OUTPUT POWER AND PPSD, Chain 1



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OUTPUT POWER AND PPSD, Chain 2





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7.65.4.**PEAK EXCURSION**

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Refer to the results of 802.11n HT20 CDD 3TX mode in the 5.3 GHz band; Section 7.37.4.

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7.66. 802.11n HT20 CDD 3TX MODE, CHANNEL 144, 5.6 GHz BAND

7.66.1.26 dB BANDWIDTH- UNII

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5720	20.330	23.830	20.170

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2



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7.66.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5720	17.6151	17.6187	17.6287

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2



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7.66.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	5.36

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

Chain 0	Chain 1	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	10.05

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Mid	5720	15.085	13.8076	10.05	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5720	22.79	22.40	28.40	22.40	6.95	11.00	6.95

Duty Cycle CF (dB) 0.22 Included in Calculations of Corr'd Power & PPSD

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)
Mid	5720	11.57	11.72	11.82	16.70	22.40	-5.71

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5720	1.57	1.87	1.97	6.80	6.95	-0.15

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Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Mid	5720	5.085	3.8076	10.05	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5720	18.06	16.81	22.81	16.81	6.95	11.00	6.95

 Duty Cycle CF (dB)
 0.22
 Included in Calculations of Corr'd Power & PPSD

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)
Mid	5720	5.65	5.68	5.67	10.66	16.81	-6.15

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5720	0.630	0.11	0.70	5.48	6.95	-1.47

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OUTPUT POWER & PPSD, Chain 0

Tx Channel Bandwidth

Date: 14.JAN.2013 23:31:29

5.165 MHz

Power



5.65 dBm

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OUTPUT POWER & PPSD, Chain 1



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OUTPUT POWER & PPSD, Chain 2





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7.67. 802.11n HT20 STBC 2Tx MODE, 5.6 GHz BAND

7.67.1. **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	42.250	38.125
Mid	5580	45.750	41.500
High	5700	42.875	42.250

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26 dB BANDWIDTH, Chain 0





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26 dB BANDWIDTH, Chain 1



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7.67.2. 99% BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

RESULTS

UL CCS

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	17.8188	17.7964
Mid	5580	17.8436	17.8097
High	5700	17.8060	17.9826

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99% BANDWIDTH, Chain 0





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99% BANDWIDTH, C	hain 0 HIG	Н СН	Т	Freq/Channel
Ch Freq 5.7 GH Occupied Bandwidth	z	verages: 100	Trig Free	Center Freq 5.70000000 GHz
				Start Freq 5.67500000 GHz
Ref 20 dBm Atten 20 d #Samp Log		**************************************		Stop Freq 5.72500000 GHz
dB/ Offst 11.4				CF Step 5.0000000 MHz <u>Auto Man</u>
dB		#C	Span 50 MHz	Freq Offset 0.00000000 Hz
Res BW 200 kHz #VBW 620 kHz #Sweep 100 ms (601 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % On Off 17 8060 MHz × dB -26.00 dB On Off				
Transmit Freq Error -3.3 x dB Bandwidth 30.6	56 kHz 308 MHz*			
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99% BANDWIDTH, Chain 1



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7.67.3. **OUTPUT POWER AND PPSD**

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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)	
5.03	6.66	5.92	

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	38.125	17.7964	5.92
Mid	5580	41.500	17.8097	5.92
High	5700	42.250	17.8060	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5500	24.00	23.50	29.50	23.50	11.00	11.00	11.00
Mid	5580	24.00	23.51	29.51	23.51	11.00	11.00	11.00
High	5700	24.00	23.51	29.51	23.51	11.00	11.00	11.00

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)
Low	5500	18.56	18.71	21.65	23.50	-1.86
Mid	5580	18.70	18.84	21.78	23.51	-1.73
High	5700	18.69	18.75	21.73	23.51	-1.78

PPSD Results

Channel	Frequency	Chain 0	Chain 1 Total		PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	7.52	7.54	10.78	11.00	-0.22
Mid	5580	7.18	7.97	10.84	11.00	-0.16
High	5700	7.13	7.66	10.65	11.00	-0.35

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

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OUTPUT POWER AND PPSD, Chain 0





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OUTPUT POWER AND PPSD, Chain 1



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7.67.4.**PEAK EXCURSION**

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Refer to the results of 802.11n HT20 STBC 3TX mode in the 5.6 GHz band, Section 7.69.4.

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7.68. 802.11n HT20 STBC 2TX MODE, CHANNEL 144, 5.6 GHz BAND

7.68.1.26 dB BANDWIDTH- UNII

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
High	5720	37.33	43.67	

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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7.68.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5720	17.6843	17.7857

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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7.68.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Uncorrelated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
5.03	6.66	5.92

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RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Uncorrelated
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5690	23.665	13.8422	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5690	24.00	22.41	28.41	22.41	11.00	11.00	11.00

 Duty Cycle CF (dB)
 0.22
 Included in Calculations of Corr'd Power & PPSD

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	5690	16.18	16.36	19.50	22.41	-2.91

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5690	5.874	6.138	9.24	11.00	-1.76

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Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Uncorrelated
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5690	13.67	3.8422	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5690	22.36	16.85	22.85	16.85	11.00	11.00	11.00

 Duty Cycle CF (dB)
 0.22
 Included in Calculations of Corr'd Power & PPSD

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	5690	10.33	10.41	13.60	16.85	-3.25

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5690	4.897	5.010	8.18	11.00	-2.82

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PSD, Chain 0





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PSD, Chain 1





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7.69. 802.11n HT20 STBC 3Tx MODE, 5.6 GHz BAND

7.69.1. **26 dB BANDWIDTH**

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5500	24.08	35.58	20.75
Mid	5580	23.75	35.50	20.67
High	5700	24.00	35.75	20.92

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26 dB BANDWIDTH, Chain 0





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26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2





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7.69.2. 99% BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

RESULTS

UL CCS

Channel	Channel Frequency		99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5500	17.9789	18.1060	17.9679
Mid	5580	17.9793	18.1483	17.9447
High	5700	17.9669	18.1651	17.9742

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99% BANDWIDTH, Chain 0





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99% BANDWIDTH, Chain	0 HIGH CH	RT	Freq/Channel
Ch Freq 5.7 GHz Occupied Bandwidth	Averages: 100	Trig Free	Center Freq 5.7000000 GHz
			Start Freq 5.6750000 GHz
Ref 20 dBm Atten 20 dB #Samp Log			Stop Freq 5.72500000 GHz
10 dB/ Offst 11.4 dB			CF Step 5.0000000 MHz <u>Auto Man</u>
Center 5.700 00 GHz #Res BW 360 kHz VBW	1.1 MHz #Sweep 100 n	Span 50 MHz ns (601 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwidth 17.9669 MH	Occ BW % Pwr x dB	99.00 % -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error -36.407 kH x dB Bandwidth 20.987 MH	<u>z</u> *		
Copyright 2000-2010 Agilent Technologies			

99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2





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99% BANDWIDTH, C	hain 2 HIG	HCH	R T	Freq/Channel
Ch Freq 5.7 GH: Occupied Bandwidth	z	verages: 100	Trig Free	Center Freq 5.70000000 GHz
	<u> </u>			Start Freq 5.67500000 GHz
Ref 20 dBm Atten 20 d #Samp				Stop Freq 5.72500000 GHz CF Step 5.00000000 MHz <u>Auto</u> Freq Offset
Center 5.700 00 GHz #Res BW 360 kHz	VBW 1.1 MHz	#Sweep 100 i	Span 50 MHz ms (601 pts)	0.00000000 Hz
Occupied Bandwidth 17.9742	ı 2 MHz	Occ BW % Pwr x dB	99.00 % -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error-49.3x dB Bandwidth20.4	964 kHz 110 MHz*			
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7.69.3. **OUTPUT POWER AND PPSD**

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Chain 2	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	5.36

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	20.75	17.9679	5.36
Mid	5580	20.67	17.9447	5.36
High	5700	20.92	17.9669	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5500	24.00	23.54	29.54	23.54	11.00	11.00	11.00
Mid	5580	24.00	23.54	29.54	23.54	11.00	11.00	11.00
High	5700	24.00	23.54	29.54	23.54	11.00	11.00	11.00

Duty Cycle CF (dB)	0.24	Included in Calculations of PPSD
--------------------	------	----------------------------------

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	17.87	18.01	17.72	22.64	23.54	-0.91	
Mid	5580	17.84	18.03	17.72	22.64	23.54	-0.90	
High	5700	18.01	17.89	17.54	22.59	23.54	-0.96	

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	5.82	5.96	5.41	10.75	11.00	-0.25
Mid	5580	5.89	6.30	5.22	10.84	11.00	-0.16
High	5700	6.06	6.00	5.84	10.98	11.00	-0.02

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

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PPSD, Chain 0





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PPSD, Chain 1



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PPSD, Chain 2





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7.69.4.**PEAK EXCURSION**

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Chain 0

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5580	15.99	5.89	0.24	9.86	13	-3.14

Chain 1

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5580	16.86	6.30	0.24	10.32	13	-2.68

Chain 2

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5580	15.08	5.22	0.24	9.62	13	-3.38

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PEAK EXCURSION, Chain 0



PEAK EXCURSION, Chain 1



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PEAK EXCURSION, Chain 2

🤄 Agil	lent 14:3	32:02 N	Jov 19, 2	:012					R	<u> </u>	Peak Search
ef 21.4 Peak [dBm	#	/Atten 2	0 dB	1			Mkr1	5.578 92 15.08	? GHz dBm	Next Peak
og D B/				_www.	m	enn	horen				Next Pk Right
1.4 B	white	Hallione	HA MANN					how how	With Mary	Willing	Next Pk Left
LgAv	r									- 'N	Min Search
1 S2 3 FC AA											Pk-Pk Search
(f): Tun wp											Mkr © Cf
enter : Res BV	5.580 00 V 1 MHz	GHz		v	BW 3 M	Hz	<u> </u>	weep 1	Span 5 ms (601	i0 MHz pts)	More 1 of 2

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7.70. 802.11n HT20 STBC 3TX MODE, CHANNEL 144, 5.6 GHz BAND

7.70.1.26 dB BANDWIDTH- UNII

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW		
		Chain 0	Chain 1	Chain 2		
	(MHz)	(MHz)	(MHz)	(MHz)		
Mid	5720	20.170	25.330	20.250		

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2



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7.70.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5720	17.5829	17.6336	17.6027

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2



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7.70.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Chain 2	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	5.36

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RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Uncorrelated
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
High	5720	15.085	13.7914	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	22.79	22.40	28.40	22.40	11.00	11.00	11.00

Duty Cycle CF (dB) 0.22 Included in Calculations of PPSD

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)
High	5720	13.15	13.73	13.31	18.39	22.40	-4.00

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
							_
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	3.368	3.520	3.283	8.38	11.00	-2.62

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Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Uncorrelated
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
High	5720	5.085	3.7914	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	18.06	16.79	22.79	16.79	11.00	11.00	11.00

 Duty Cycle CF (dB)
 0.22
 Included in Calculations of Corr'd Power & PPSD

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)

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	4.070	2.708	3.462	8.44	11.00	-2.56

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OUTPUT POWER & PPSD, Chain 0





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OUTPUT POWER & PPSD, Chain 1





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OUTPUT POWER & PPSD, Chain 2



PSD, * Aş	, Cha jilent 00	i in 2 :10:56	MIE Jan 1) CH 1, 2013	– DTS	6				R	Т	Fre	q/Channe	
Chann	Ch Iel Pow	ı Freq er	5.	72756 G	Hz	Ave	erages:	100	Т	Frig	Free) 5.7	Center Fre 2756000 GH	q Iz
	Mkr1 5.726 587 GHz] 5.7	Start Fre 2371752 GH	q Iz		
Ref 21. #Avg Log	4 dBm		#Atte	n 20 dB	L >				3.	.462	dBm	5.7	Stop Fre 3140248 GH	eq Iz
dB/ Offst 11.4										~~~		768 <u>Auto</u>	CF St 3.496000 kH 2 !	:ep Iz Man
dB Center #Rec B	5.727 5	60 GH	z				C	S	pan i	7.68	5 MHz	1 0.0	Freq Offse ЮОООООО н	et Iz
Char	Channel Power Power Power Spectral Density								On S	Gignal Trac	:k <u>Off</u>			
8.1	8.15 dBm / 5.1250 MHz -58.94 dBm/Hz													
Copyrig	jht 2000-	-2011 /	Agilent	Technolo	gies							<u> </u>		

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7.71. 802.11n HT20 BF 2TX MODE, 5.6 GHz BAND

Covered by testing 802.11ac VHT20 BF 3TX mode, total power across all three chains is higher than the power level the device will operate at.

7.72. 802.11n HT20 BF 3TX MODE, 5.6 GHz BAND

Covered by testing 802.11ac VHT20 BF 3TX mode, total power across all three chains is higher than the power level the device will operate at.

7.73. 802.11ac VHT20 BF 2TX MODE, 5.6 GHz BAND

Covered by testing 802.11ac VHT20 BF 3TX mode, total power across all three chains is higher than the power level the device will operate at.

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7.74. 802.11ac VHT20 BF 3TX MODE, 5.6 GHz BAND

This mode has same antenna port test results as 802.11 HT20 CDD 3TX, except for output power as shown below.

7.74.1. **OUTPUT POWER**

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

Chain 0	Chain 1	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	10.05

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OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	20.42	17.6097	10.05
Mid	5580	20.25	17.6150	10.05
High	5700	20.17	17.6071	10.05

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5500	19.95	23.46	29.46	19.41
Mid	5580	19.95	23.46	29.46	19.41
High	5700	19.95	23.46	29.46	19.41

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	14.45	14.78	14.59	19.38	19.41	-0.03
Mid	5580	14.52	14.61	14.74	19.40	19.41	-0.01
High	5700	14.49	14.75	14.46	19.34	19.41	-0.07

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7.75. 802.11n HT40 1TX MODE, 5.6 GHz BAND

7.75.1. **26 dB BANDWIDTH**

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5510	88.33
Mid	5550	98.75
High	5670	98.96

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26 dB BANDWIDTH





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7.75.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5510	36.4040
Mid	5550	37.1415
High	5670	38.0142

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99% BANDWIDTH





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BANDWIDTH HIGH CH * Agilent 01:07:54 Dec 7, 2012		Т	Freq/Channel
Ch Freq 5.67 GHz Occupied Bandwidth	Trig	Free	Center Freq 5.67000000 GHz
			Start Freq 5.60750000 GHz
Ref 20 dBm Atten 20 dB #Samp	Allive August Wing		Stop Freq 5.73250000 GHz
10 dB/ Offst 11.4 dB			CF Step 12.500000 MHz <u>Auto Man</u>
Center 5.670 00 GHz #Res BW 430 kHz #VB1	Span 1 N 1.3 MHz #Sweep 100 ms (60	25 MHz 1 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwidth 38.0142 MI	Осс ВW % Рwr 9 ЧZ x dB -26.0	9.00 %)0 dB	Signal Track On <u>Off</u>
Transmit Freq Error 176.236 ki x dB Bandwidth 74.661 MH	Hz Hz*		
Copyright 2000-2011 Agilent Technologie	s		

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7.75.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5510	88.33	36.4040	6.66
Mid	5550	98.75	37.1415	6.66
High	5670	98.96	38.0142	6.66

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5510	23.34	24.00	30.00	23.34	10.34	11.00	10.34
Mid	5550	23.34	24.00	30.00	23.34	10.34	11.00	10.34
High	5670	23.34	24.00	30.00	23.34	10.34	11.00	10.34

Output Power Results

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	19.46	19.46	23.34	-3.88
Mid	5550	20.38	20.38	23.34	-2.96
High	5670	18.86	18.86	23.34	-4.48

PPSD Results

Channel	Frequency	Chain 1	Total	PPSD	PPSD
		Meas	Corr'd	Limit	Margin
		PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	4.640	5.070	10.34	-5.270
Mid	5550	5.912	6.342	10.34	-3.998
High	5670	5.860	6.290	10.34	-4.050

OUTPUT POWER AND PPSD, Chain 1





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7.76. 802.11n HT40 1TX MODE, CHANNEL 142, 5.6 GHz BAND

7.76.1. **26 dB BANDWIDTH**

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
High	5710	76.00

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26 dB BANDWIDTH



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7.76.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
High	5710	36.2165

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99% BANDWIDTH

99% BANDWIDTH HIGH CH	Freq/Channel
Ch Freq 5.71 GHz Trig Free Occupied Bandwidth Averages: 100	Center Freq 5.71000000 GHz
	Start Freq 5.68500000 GHz
Ref 11.4 dBm Atten 10 dB #Samp Log 10 dB/ Offst 11.4 dB Center 5.710 00 GHz Span 50 MHz	Stop Freq 5.73500000 GHz CF Step 5.00000000 MHz <u>Auto Man</u> Freq Offset 0.00000000 Hz
#Res BW 430 kHz VBW 1.3 MHz #Sweep 100 ms (601 pts)	Signal Track
Occupied Bandwidth Occ BW % Pwr 99.00 % 36.2165 MHz × dB -26.00 dB	On <u>Off</u>
Transmit Freq Error -80.577 kHz x dB Bandwidth 47.061 MHz*	
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7.76.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5710	53.0	33.1083	6.66

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5710	23.34	24.00	30.00	23.34	10.34	11.00	10.34

Duty Cycle CF (dB)0.43Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	16.70	17.13	23.34	-6.21

PPSD Results

Channel	Frequency	Chain 1	Total	PPSD	PPSD
		Meas	Corr'd	Limit	Margin
		PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	3.163	3.59	10.34	-6.75

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Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5720	23.0	3.1083	6.66

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5720	23.34	15.93	21.93	15.27	10.34	11.00	10.34

 Duty Cycle CF (dB)
 0.43
 Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5720	6.790	7.22	15.27	-8.05

PPSD Results

Channel	Frequency	Chain 1	Total	PPSD	PPSD
		Meas	Corr'd	Limit	Margin
		PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5720	2.122	2.55	10.34	-7.79

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OUTPUT POWER AND PPSD, Chain 1



Ch Freq 5.7365 GHz Trig Free Channel Power Averages: 100 Start Freq Mkr1 5.725 172 5 GHz Start Freq Mkr1 5.722 dBm Stop Freq Averages: 100 Stop Freq 5.7365000 GHz Mkr1 5.725 172 5 GHz Stop Freq Comparison Stop Freq 5.75375000 GHz Mg CF Step Stop Step 10 Grad Grad Grad Mg Grad Grad Grad Grad Mg Grad Grad Grad Grad Mg Grad Grad Grad Grad Grad Grad Mg Grad Grad Grad Grad Grad Grad Grad Generation Grad Grad Grad Grad Grad Grad Grad <	PPSD, Chain 1 HIG Agilent 02:08:33 Jan 12,	6H CH - DTS 2013	R	t T	Freq/Channel
Mkr1 5.725 T72 5 GHz Start Freq Avg 2.122 dBm Avg 2.122 dBm Cog 3.4500000 GHz MdB/ 3.4500000 MHz MB 3.4500000 MHz MB 3.4500000 MHz Man Freq 5.75375000 Grad 3.4500000 MHz Auto Man Freq Offset 0.00000000 MHz VBW 3 MHz Sweep 1 ms (601 pts) Channel Power Power Spectral Density Signal Track On On Off 0.0000000	Ch Freq 5.73 Channel Power	65 GHz	Trig	Free	Center Freq 5.73650000 GHz
Ref 21.4 dBm #Atten 20 dB 2.122 dBm #Avg			Mkr1 5.725 172 5	GHz	Start Freq 5.71925000 GHz
ID ID <td< th=""><th>Ref 21.4 dBm #Atten 2 #Avg Log</th><th>20 dB</th><th>2.122</th><th>dBm</th><th>Stop Freq 5.75375000 GHz</th></td<>	Ref 21.4 dBm #Atten 2 #Avg Log	20 dB	2.122	dBm	Stop Freq 5.75375000 GHz
dB Gener 5.736 500 0 GHz Span 34.5 MHz Freq Offset // Res BW 1 MHz VBW 3 MHz Sweep 1 ms (601 pts) Signal Track Channel Power Power Spectral Density Signal Track 6.79 dBm / 23.0000 MHz -66.83 dBm/Hz Generation	0 dB/ 0 dfst				CF Step 3.4500000 MHz <u>Auto Man</u>
Channel Power Power Spectral Density 6.79 dBm /23.0000 MHz -66.83 dBm/Hz	dB Center 5.736 500 0 GHz #Res BW 1 MHz	VBW 3 MHz	Span 34. Sween 1 ms (601	5 MHz	Freq Offset 0.00000000 Hz
	Channel Power 6 79 dBm / 23 0	Signal Track On <u>Off</u>			
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7.77. 802.11n HT40 CDD 2TX MODE, 5.6 GHz BAND

7.77.1. **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	5510	39.83	40.83
Mid	5550	84.17	89.17
High	5670	78.67	85.00

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26 dB BANDWIDTH, Chain 0





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26 dB BANDWIDTH, Chain 1



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7.77.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	nannel Frequency		99% BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5510	36.1656	36.1996	
Mid	5550	36.4674	36.9126	
High	5670	40.8144	36.4150	

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99% BANDWIDTH, Chain 0





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99% BANDWIDTH, Chain 0	HIGH CH	RT	BV	V/Avg
Ch Freq 5.67 GHz Occupied Bandwidth	Averages: 100	Trig Free	Auto	Res BW 560.0 kHz <u>Man</u>
			<u>Auto</u>	Video BW 1.6 MHz <u>Man</u>
Ref 20 dBm #Atten 20 dB #Samp Log 10		Millin Milling Andrews and a state	Auto	VBW/RBV 3.00000 <u>Man</u> Average
Offst 11.4 dB			On Avg/VE Log-Pw	100 <u>Off</u> 3VV Type rr (Video)
Center 5.670 00 GHz #Res BW 560 kHz VBW 1.	5 MHz #Sweep 100	Span 80 MHz ms (601 pts)	Auto	<u>Man</u>
Occupied Bandwidth 40.8144 MHz	Occ BW % Pwr x dB	99.00 % -26.00 dB		n an (DD) & (
Transmit Freq Error -144.998 kHz x dB Bandwidth 76.072 MHz*			Auto S	pan/RBVV 106 <u>Man</u>
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99% BANDWIDTH, Chain 1



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7.77.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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)
5.03	6.66	5.92

For PPSD, 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)
5.03	6.66	8.89

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OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5510	39.83	36.1656	5.92
Mid	5550	84.17	36.4674	5.92
High	5670	78.67	36.4150	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5510	24.00	24.00	30.00	24.00
Mid	5550	24.00	24.00	30.00	24.00
High	5670	24.00	24.00	30.00	24.00

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)
Low	5510	15.45	16.02	18.75	24.00	-5.25
Mid	5550	18.94	18.54	21.75	24.00	-2.25
High	5670	18.36	18.12	21.25	24.00	-2.75

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PPSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5510	39.83	36.1656	8.89
Mid	5550	84.17	36.4674	8.89
High	5670	78.67	36.4150	8.89

Limits

Channel	Frequency	FCC	IC	PPSD
		PPSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5510	8.11	11.00	8.11
Mid	5550	8.11	11.00	8.11
High	5670	8.11	11.00	8.11

Duty Cycle CF (dB)	0.43	Included in PPSD

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(8.41.1.)			(10	(al Dura)	
	(MHZ)	(aBm)	(aBm)	(aBm)	(aBM)	(aB)
Low	(MHZ) 5510	(dBm) 1.91	2.12	(dBm) 5.46	(dBm) 8.11	(dB) -2.65
Low Mid	(MHz) 5510 5550	(dBm) 1.91 4.45	(dBm) 2.12 4.11	(dBm) 5.46 7.72	(dBm) 8.11 8.11	(dB) -2.65 -0.39

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

OUTPUT POWER AND PPSD, Chain 0





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OUTPUT POWER AND PPSD, Chain 1



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7.78. 802.11n HT40 CDD 2TX MODE CHANNEL 142, 5.6 GHz BAND

7.78.1.26 dB BANDWIDTH- UNII

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	requency 26 dB BW	
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5710	59.33	69.50

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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7.78.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency 99% BW		99% BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
High	5710	36.2042	36.2335	

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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7.78.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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)
5.03	6.66	5.92

For PPSD, 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)
5.03	6.66	8.89

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RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Mid	5710	44.67	33.1021	8.89	5.92

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5710	24.00	24.00	30.00	24.00	8.11	11.00	8.11

Duty Cycle CF (dB)0.43Included in Calculations of Corr'd Power & PPSD

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	5710	16.11	16.29	19.64	24.00	-4.36

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	2.233	2.567	5.84	8.11	-2.27

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Limits (FCC), portion in 5.8 GHz DTS band

Channel Frequency		Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Mid	5710	14.67	3.1021	8.89	5.92

Bandwidth and Antenna Gain

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5710	22.66	15.92	21.92	15.92	8.11	11.00	8.11

 Duty Cycle CF (dB)
 0.43
 Included in Calculations of Corr'd Power & PPSD

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	5710	5.94	6.32	9.14	15.92	-6.77

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	1.043	1.349	4.64	8.11	-3.47

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PSD, Chain 0





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PSD, Chain 1





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7.79. 802.11n HT40 CDD 3TX MODE IN THE 5.6 GHz BAND

7.79.1. **26 dB BANDWIDTH**

<u>LIMITS</u>

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW	
		Chain 0	Chain 1	Chain 2	
	(MHz)	(MHz)	(MHz)	(MHz)	
Low	5510	40.000	39.750	39.625	
Mid	5550	39.750	39.750	39.625	
High	5670	40.125	39.625	39.500	

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26 dB BANDWIDTH, Chain 0





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26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2





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7.79.2. **99% BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Channel Frequency		99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5510	36.0770	36.0932	36.1226
Mid	5550	36.1377	36.1300	36.1113
High	5670	36.1147	36.1395	36.0829

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99% BANDWIDTH, Chain 0





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99% BANDWIDTH, Cha	ain 0 HIGH CH	RТ	Freq/Channel
Ch Freq 5.67 GHz	Averages: 100	Trig Free	Center Freq 5.67000000 GHz
			Start Freq 5.62000000 GHz
Ref 20 dBm #Atten 20 dB #Samp			Stop Freq 5.72000000 GHz
dB/ Offst 11.4			CF Step 10.000000 MHz <u>Auto Man</u>
dB		Span 100 MHz	Freq Offset 0.00000000 Hz
Occupied Bandwidth	BW 1.1 MHz #Sweep 100 Occ BW % Pwr MHz x dB	ms (601 pts) 99.00 % -26.00 dB	Signal Track ^{On <u>Off</u>}
Transmit Freq Error -59.906 x dB Bandwidth 38.013	i kHz MHz*		
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99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2





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99% BANDWIDTH, Ch	ain 2 HIGH CH	RT	Freq/Channel
Ch Freq 5.67 GHz Occupied Bandwidth	Averages: 100	Trig Free	Center Freq 5.67000000 GHz
			Start Freq 5.62000000 GHz
Ref 20 dBm #Atten 20 dB #Samp Log 10 dB/ Offst 11.4 dB Center 5.670 00 GHz #Res BW 360 kHz	VBW 1.1 MHz #Sweep 100	Span 100 MHz ms (601 pts)	Stop Freq 5.72000000 GHz CF Step 10.0000000 MHz Auto Freq Offset 0.0000000 Hz
Occupied Bandwidth 36.0829 Transmit Freq Error -31.20	Occ BW % Pwr MHz x dB 14 kHz	99.00 % -26.00 dB	Signal Track On <u>Off</u>
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7.79.3. **OUTPUT POWER AND PPSD**

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	5.36

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

Chain 0	Chain 1	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	10.05

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OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5510	39.625	36.0770	5.36
Mid	5550	39.625	36.1113	5.36
High	5670	39.500	36.0829	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5510	24.00	24.00	30.00	24.00
Mid	5550	24.00	24.00	30.00	24.00
High	5670	24.00	24.00	30.00	24.00

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	5510	13.45	14.10	13.60	18.50	24.00	-5.50
Mid	5550	17.91	17.60	17.85	22.56	24.00	-1.44
High	5670	15.83	16.10	15.78	20.68	24.00	-3.32

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PPSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional	
		26 dB	99%	Gain	
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	
Low	5510	39.625	36.0770	10.05	
Mid	5550	39.625	36.1113	10.05	
High	5670	39.500	36.0829	10.05	

Limits

Channel	Frequency	FCC	IC	PPSD
		PPSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5510	6.95	11.00	6.95
Mid	5550	6.95	11.00	6.95
High	5670	6.95	11.00	6.95

Duty Cycle CF (dB)	0.43	Included in PPSD
--------------------	------	------------------

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		DDCD	DDCD	DDCD	DDCD		
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	0.00	-1.00	0.00	4.89	6.95	-2.06
Mid	5550	1.73	1.71	-7.40	5.42	6.95	-1.53
	5070	4 40	0.00	4.00	0.00	0.05	0.00

Note: method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements, except for mid channel.

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OUTPUT POWER AND PPSD, Chain 0





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OUTPUT POWER AND PPSD, Chain 1



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OUTPUT POWER AND PPSD, Chain 2





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Ref 20 dBm Avg	Atten	20 dB					5.67000000 GHz
.og 0 IB/					~~~~		Start Freq 5.64000000 GHz
1.4 IB							Stop Freq 5.70000000 GHz
PAvg	4						CF Step 6.0000000 MHz <u>Auto Ma</u>
W1 S2 53 FS AA							Freq Offset 0.00000000 Hz
t(f): -Tun Swp							Signal Track On <u>Of</u> i
Center 5.670 0 Gl	Hz	#\/R	W 3 MHz	#Sween *	Span 15.36 ms /60	60 MHz	

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7.80. 802.11n HT40 CDD 3TX MODE CHANNEL 142, 5.6 GHz BAND

7.80.1.26 dB BANDWIDTH- UNII

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW	
		Chain 0	Chain 1	Chain 2	
	(MHz)	(MHz)	(MHz)	(MHz)	
Mid	5710	42.50	49.83	42.00	

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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2



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7.80.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	99% BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5710	36.1813	36.195	36.1564

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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2



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7.80.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output 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	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	5.36

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

Chain 0	Chain 1	Chain 2	Correlated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	10.05

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RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
High	5710	36.25	33.0782	10.05	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5710	24.00	24.00	30.00	24.00	6.95	11.00	6.95

Duty Cycle CF (dB) 0.43 Included in Calculations of Corr'd Power & PPSD

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)
High	5710	13.47	13.53	13.85	18.82	24.00	-5.18

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	-0.590	-0.223	0.163	5.00	6.95	-1.95

Limits (FCC), portion in 5.8 GHz DTS band

Channe	el Frequency	Min	Min	Correlated	Uncorrelated
		26 dB	99%	Gain	Gain
		BW	BW		
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
High	5710	6.25	3.0782	10.05	5.36

Bandwidth and Antenna Gain

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5710	18.96	15.88	21.88	15.88	6.95	11.00	6.95

Duty Cycle CF (dB) 0.43 Included in Calculations of Corr'd Power & PPSD

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)
High	5710	3.69	3.65	3.87	8.94	15.88	-6.94

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	-1.257	-1.612	-0.545	4.09	6.95	-2.86

OUTPUT POWER AND PPSD, Chain 0



PSD, ∰ Ag	, Chain 0 HIG jilent 04:07:17 Jan 12	H CH - DTS 2, 2013	R	T Freq/Channel		
Chann	Center Freq 5.72812500 GHz					
	Mkr1 5.725 014 GHz					
Ref 21. #Avg Log	4 dBm #Atter	n 20 dB	-1.257 dB	m Stop Freq 5.73281500 GHz		
dB/ Offst 11.4				CF Step 938.000000 kHz <u>Auto Man</u>		
aB Center #Res B	5.728 125 GHz W 1 MHz	VBW 3 MHz	Span 9.38 I Sweep 1 ms (601 pt	Freq Offset 0.00000000 Hz		
Char 3.6	nel Power 69 dBm /6.2	Signal Track On <u>Off</u> Z				
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OUTPUT POWER & PPSD, Chain 1





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OUTPUT POWER & PPSD, Chain 2



PSD, * Ag	, Chain 3 jilent 04:20:3	2 HIG 30 Jan 12	H CH – D 2, 2013	ΓS		F	₹ T	Freq/Channel
Chann	Ch Freq 5.728 GHz Trig Free Channel Power Averages: 100						Center Freq 5.72800000 GHz	
D _421							Start Freq 5.72349760 GHz	
Kerzi. #Avg Log 10						-0.343		Stop Freq 5.73250240 GHz
dB/ Offst 11.4 dB								CF Step 900.480000 kHz <u>Auto Man</u>
Center #Res B	5.728 000 G W 1 MHz	Hz	VBW 3 I	ИНz	Sweep	Span 9.00 1 ms (601	5 MHz pts)	Freq Offset 0.00000000 Hz
Char 3.8	Channel Power Power Spectral Density 3.87 dBm /6.0000 MHz -63.91 dBm/Hz						Signal Track On <u>Off</u>	
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7.81. 802.11n HT40 STBC 2TX MODE IN THE 5.6 GHz BAND

Covered by testing 802.11n HT40 STBC 3TX mode, total power across all three chains is higher than the power level the device will operate at.

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7.82. 802.11n HT40 STBC 3TX MODE IN THE 5.6 GHz BAND

7.82.1. **26 dB BANDWIDTH**

<u>LIMITS</u>

None; for reporting purposes only.

RESULTS

Channel	Frequency	26 dB BW	26 dB BW	26 dB BW
		Chain 0	Chain 1	Chain 2
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5510	39.83	53.17	39.83
Mid	5550	75.21	100.83	74.38
High	5670	75.42	104.75	75.62

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26 dB BANDWIDTH, Chain 0





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26 dB BANDWIDTH, Chain 1



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26 dB BANDWIDTH, Chain 2





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7.82.2. **99% BANDWIDTH**

<u>LIMITS</u>

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	99% BW	
		Chain 0	Chain 1	Chain 2	
	(MHz)	(MHz)	(MHz)	(MHz)	
Low	5510	36.1027	36.1545	36.1812	
Mid	5550	36.2878	54.7203	36.3252	
High	5670	36.3096	59.2668	36.3063	

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99% BANDWIDTH, Chain 0





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99% BANDWIDTH, Chain 1



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99% BANDWIDTH, Chain 2





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99% BANDWIDTH, Chain 2 HIGH CH	Freq/Channel
Ch Freq 5.67 GHz Trig Free Occupied Bandwidth Averages: 100	Center Freq 5.67000000 GHz
	Start Freq 5.63250000 GHz
Ref 20 dBm Atten 20 dB #Samp	Stop Freq 5.70750000 GHz
10 dB/ Offst 11.4	CF Step 7.5000000 MHz <u>Auto Man</u>
dB	Freq Offset 0.00000000 Hz
Week BW 430 kHz #VBW 1.3 MHz #Sweep 100 ms (601 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % .36.3063 MHz × dB -26.00 dB	Signal Track ^{On <u>Off</u>}
Transmit Freq Error -7.542 kHz x dB Bandwidth 52.063 MHz*	
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7.82.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

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	Chain 2	Uncorrelated Chains
Antenna	Antenna	Antenna	Directional
Gain	Gain	Gain	Gain
(dBi)	(dBi)	(dBi)	(dBi)
5.03	6.66	3.94	5.36

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min Min		Directional
		26 dB 99%		Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5510	39.83	36.1027	5.36
Mid	5550	74.38	36.2878	5.36
High	5670	75.42	36.3063	5.36

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
Mid	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.57	Included in PPSD
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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	5510	13.65	13.56	13.57	18.36	24.00	-5.64
Mid	5550	18.84	19.06	18.80	23.67	24.00	-0.33
High	5670	18.97	19.13	18.92	23.78	24.00	-0.22

PPSD Results

Channel	Frequency	Chain 0	Chain 1	Chain 2	Total	PPSD	PPSD
		Meas	Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD	PPSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	-1.56	-1.05	-1.55	3.96	11.00	-7.04
Mid	5550	4.53	4.95	3.77	9.78	11.00	-1.22
High	5670	4.46	5.09	5.45	10.36	11.00	-0.64

<u>Note:</u> method (1) "Measure and sum the spectra across the outputs" as specified in KDB 662911 D01 v01r02 was used for this PSD measurements.

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OUTPUT POWER AND PPSD, Chain 0





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OUTPUT POWER AND PPSD, Chain 1



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