

FCC CFR47 PART 15 SUBPART E INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

802.11a/g/n/ac WLAN + BLUETOOTH PCI-E CUSTOM COMBINATION CARD

MODEL NUMBER: BCM94360CS2

FCC ID: QDS-BRCM1072 IC: 4324A-BRCM1072

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Prepared for BROADCOM CORPORATION 190 MATHILDA PLACE SUNNYVALE, CA 94086, U.S.A.

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NVLAP LAB CODE 200065-0

Revision History

Rev.	lssue Date	Revisions	Revised By
	03/18/13	Initial Issue	F. Ibrahim
Α	03/20/13	Revised sections 7.1.1, 9.2.18, 8.14.3, 8.16.3, 8.18.3, 8.20.3, 8.22.3, 8.24.3 and 9.2.18	F. Ibrahim
В	03/21/03	Revised sections 9.2.7, 9.2.9, 9.2.16, 9.2.18, 9.2.30, 9.2.31, 9.2.33, and 9.2.34	F. Ibrahim
С	03/27/13	Added AC80 data and power in the 5.2 GHz band	F. Ibrahim
D	03/27/13	Added the worst-case data rate for AC80 in section 5.5	F. Ibrahim

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1. ATTESTATION OF TEST RESULTS

APPLICABLE STANDARDS				
DATE TESTED:	January 10 - March 12 and March 14-15, 2013			
SERIAL NUMBER:	C8Y2521000NFC31EM & C8Y2521000FC31EK (RF) / C8Y2521000QFC31EK and C8Y3061002TFC31E0 (DFS Standard Client Mode AND DFS Client to Client Mode)			
MODEL:	BCM94360CS2			
EUT DESCRIPTION:	802.11a/g/n/ac WLAN + Bluetooth PCI-E Custom Combination Card			
COMPANY NAME:	BROADCOM CORPORATION 190 MATHILDA PLACE SUNNYVALE, CA 94086, U.S.A.			

STANDARD	TEST RESULTS		
CFR 47 Part 15 Subpart E	Pass		
INDUSTRY CANADA RSS-210 Issue 8 Annex 9	Pass		
INDUSTRY CANADA RSS-GEN Issue 3	Pass		

UL CCS tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, ANSI C63.10:2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <u>http://www.ccsemc.com</u>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB) 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11a/g/n/ac WLAN + Bluetooth PCI-E Custom Combination Card.

The radio module is manufactured by Broadcom.

5.2. MAXIMUM AVERAGE OUTPUT POWER

The transmitter has a maximum conducted average output power as follows:

5.2 GHz BAND

Frequency Range	Mode	Power, Chain	Power, Chain	Output	Output Power
(MHz)		0 (dBm)	1 (dBm)	Power	(mW)
				(dBm)	
5.2 GHz band, 1TX					
5180 - 5240	802.11a	16.17	N/A	16.17	41.40
5190 - 5230	802.11n HT40	16.98	N/A	16.98	49.89
5210	802.11n AC80	15.48	N/A	15.48	35.32
5.2 GHz band, 2TX	5.2 GHz band, 2TX				
5180 - 5240	802.11n HT20 CDD	11.85	12.06	14.97	31.380
5180 - 5240	802.11n HT20 STBC	13.55	13.59	16.58	45.502
5190 - 5230	802.11n HT40 CDD	13.93	13.98	16.97	49.721
5190 - 5230	802.11n AC40 BF	11.16	11.05	14.12	25.797
5210	802.11n AC80 CDD	13.80	14.10	16.96	49.692
5210	802.11n AC80 BF	11.04	11.06	14.06	25.470

5.3 GHz BAND

Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Output Power (dBm)	Output Power (mW)
5.3 GHz band, 1TX					
5260 - 5320	802.11a	20.16	N/A	20.16	103.75
5270 - 5310	802.11n HT40	20.36	N/A	20.36	108.64
5.3 GHz band, 2TX					
5260 - 5320	802.11n HT20 CDD	19.08	19.01	22.06	160.53
5260 - 5320	802.11n HT20 STBC	20.43	20.36	23.41	219.05
5270 - 5310	802.11n HT40 CDD	20.12	20.18	23.16	207.03
5270 - 5310	802.11n AC40 BF	18.03	18.15	21.10	128.85

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5.6 GHz BAND

Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Output Power (dBm)	Output Power (mW)
5.6 GHz band, 1TX	•				
5500-5700	802.11a	20.12	N/A	20.12	102.80
5510-5670	802.11n HT40	20.25	N/A	20.25	105.93
5.6 GHz band, 2TX	5.6 GHz band, 2TX				
5500-5700	802.11n HT20 CDD	18.29	18.53	21.42	138.74
5500-5700	802.11n HT20 STBC	20.21	20.19	23.21	209.43
5510-5670	802.11n HT40 CDD	20.12	20.16	23.15	206.55
5510-5670	802.11n AC40 BF	17.78	17.67	20.74	118.46

Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Output Power (dBm)	Output Power (mW)
5.6 GHz band, 1TX (C	hannels overlapping UNII and D	TS bands)			
5720	802.11a	20.04	N/A	20.04	100.93
5710	802.11n HT40	20.31	N/A	20.31	107.40
5.6 GHz band, 2TX (C	hannels overlapping UNII and D)TS bands)			
5720	802.11n HT20 CDD	18.82	18.70	21.77	150.34
5720	802.11n HT20 STBC	20.02	20.09	23.07	202.56
5710	802.11n HT40 CDD	20.02	20.13	23.09	203.50
5710	802.11n AC40 BF	20.02	20.13	23.09	203.50

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List of test reduction and modes covering other modes:

5.2 GHz BAN

5150 - 5250 MHz Authorized Frequency Band (Antenna Port Testing)					
Frequency Range	Mode	Covered by			
(MHz)					
5.2 GHz band, 1TX					
5180 - 5240	802.11n HT20	802.11a Legacy			
5.2 GHz band, 2TX					
5180 - 5240	802.11a CDD	802.11n HT20 2TX CDD			
5180 - 5240	802.11a BF	802.11n AC20 2TX BF			
5180 - 5240	802.11n HT20 BF	802.11n HT20 2TX CDD			
5180 - 5240	802.11n AC20 BF	802.11n HT20 2TX CDD			
5190 - 5230	802.11n HT40 BF	802.11n AC40 2TX BF			

5150 - 5250 MHz Au	5150 - 5250 MHz Authorized Frequency Band (Radiated Testing)					
Frequency Range	Mode	Covered by				
(MHz)						
5.2 GHz band, 1TX						
5180 - 5240	802.11n HT20	802.11a Legacy				
5190 - 5230	802.11n HT40 (Harmonics)	802.11n HT40 2TX CDD				
5.2 GHz band, 2TX						
5180 - 5240	802.11a CDD	802.11n HT20 2TX CDD				
5180 - 5240	802.11a BF	802.11n AC20 2TX BF				
5180 - 5240	802.11n HT20 STBC MCS0	802.11n HT20 2TX CDD				
5180 - 5240	802.11n HT20 BF	802.11n HT20 2TX CDD				
5180 - 5240	802.11n AC20 BF	802.11n HT20 2TX CDD				
5190 - 5230	802.11n HT40 BF	802.11n AC40 2TX BF				

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5.3 GHz BAND

5250 - 5350 MHz Authorized Frequency Band (Antenna Port Testing)					
Frequency Range	Mode	Covered By			
(MHz)					
5.3 GHz band, 1TX					
5260 - 5320	802.11n HT20	802.11a Legacy			
5.3 GHz band, 2TX					
5260 - 5320	802.11a CDD	802.11n HT20 2TX CDD			
5260 - 5320	802.11a BF	802.11n AC20 2TX BF			
5260 - 5320	802.11n HT20 BF	802.11n HT20 2TX CDD			
5260 - 5320	802.11n AC20 BF	802.11n HT20 2TX CDD			
5270 - 5310	802.11n HT40 BF	802.11n AC40 2TX BF			

5250 - 5350 MHz Au	5250 - 5350 MHz Authorized Frequency Band (Radiated Testing)					
Frequency Range (MHz)	Mode	Covered By				
5.3 GHz band, 1TX						
5260 - 5320	802.11n HT20	802.11a Legacy				
5270 - 5310	802.11n HT40 (Harmonics)	802.11n HT40 2TX CDD				
5.3 GHz band, 2TX						
5260 - 5320	802.11a CDD	802.11n HT20 2TX CDD				
5260 - 5320	802.11a BF	802.11n AC20 2TX BF				
5260 - 5320	802.11n HT20 STBC MCS0	802.11n HT20 2TX CDD				
5260 - 5320	802.11n HT20 BF	802.11n HT20 2TX CDD				
5260 - 5320	802.11n AC20 BF	802.11n HT20 2TX CDD				
5270 - 5310	802.11n HT40 BF	802.11n AC40 2TX BF				

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5.6 GHz BAND

5470 - 5725 MHz Authorized Frequency Band (Antenna Port Testing)					
Frequency Range (MHz)	Mode	Covered By			
5.6 GHz band, 1TX	-				
5500-5700	802.11n HT20	802.11a Legacy			
5720	802.11n HT20	802.11a Legacy			
5.6 GHz band, 2TX					
5500-5700	802.11a CDD	802.11n HT20 2TX CDD			
5500-5700	802.11a BF	802.11n AC20 2TX BF			
5500-5700	802.11n HT20 BF	802.11n HT20 2TX CDD			
5720	802.11n HT20 BF	802.11n HT20 2TX CDD			
5500-5700	802.11n AC20 BF	802.11n HT20 2TX CDD			
5720	802.11n AC20 BF	802.11n HT20 2TX CDD			
5510-5670	802.11n HT40 BF	802.11n AC40 2TX BF			
5710	802.11n HT40 BF	802.11n AC40 2TX BF			

5470 - 5725 MHz Au	5470 - 5725 MHz Authorized Frequency Band (Radiated Testing)						
Frequency Range (MHz)	Mode	Covered By					
5.6 GHz band, 1TX	·	•					
5500-5700	802.11n HT20	802.11a Legacy					
5720	802.11n HT20	802.11a Legacy					
5510-5670	802.11n HT40	802.11n HT40 2TX CDD					
5710	802.11n HT40	802.11n HT40 2TX CDD					
5.6 GHz band, 2TX							
5500-5700	802.11a CDD	802.11n HT20 2TX CDD					
5500-5700	802.11a BF	802.11n AC20 2TX BF					
5500-5700	802.11n HT20 STBC MCS0	802.11n HT20 2TX CDD					
5720	802.11n HT20 STBC MCS0	802.11n HT20 2TX CDD					
5500-5700	802.11n HT20 BF	802.11n HT20 2TX CDD					
5720	802.11n HT20 BF	802.11n HT20 2TX CDD					
5500-5700	802.11n AC20 BF	802.11n HT20 2TX CDD					
5720	802.11n AC20 BF	802.11n HT20 2TX CDD					
5510-5670	802.11n HT40 BF	802.11n AC40 2TX BF					
5710	802.11n HT40 BF	802.11n AC40 2TX BF					

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5.3. DESCRIPTION OF AVAILABLE ANTENNAS

No	Anteonia Manufacturer	Antenna Type	Model	Peak gain @ 2412, 2422, 2432MHz.	Peak gain (5150- 5250MHz) @5200MHz	Peak gain (6250- 5350MHz) (26320MHz	Peak gain (6470-6725MHz) @5600, 6760MHz	Peak gain (5725- 6850MHz) @5785, 5805MHz	
1	Ambienol/Public	WLANIET Antonna	631-1548 WIF) 1	1 67	5.01		541	438	Had 1
	Amplitentil Polse	WLAH Antenna	601-1540 WF12	SND.	\$ 16 -	2.5%	5個	129	Fide 1
-	Amphenill Pulla	802 114hgv WLAVET Avienti	\$31-1547 WFI	4.01.	50¢	493	0.14-	49	
4	Amphenol Fuhr	NEAN Antoinna	\$1.1547 WE17	4.07	1.74	521		-	Hegi
1	Ampheisol/Pulse	802 1 Maturn WLANIOT Antegna	631-1547-B1	4-57					

Notes:

- This table includes two sets of antennas, first set is identified by number (1) in the first column, and the second set is identified by number (2) in the first column.
- Red numbers in this table are the highest antenna gain used for SISO antenna port testing as worst-case scenario.
- Blue highlighted cells in this table are the antenna gains that yield the highest composite gain for 2TX modes, these numbers are used for 2TX antenna port testing as worst-case scenario.
- For radiated testing, the antennas with highest gains from first and second sets were selected as worst-case scenario.

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was Broadcom, rev. 6.30.118.62. The test utility software used during testing was BCM Internal, rev. 6.30.RC118.62.

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5.5. WORST-CASE CONFIGURATION AND MODE

The EUT was tested as an external module installed in a test jig board connected to a host Laptop PC.

Worst-Case data rates, as provided by the client, were as follows:

For 5 GHz Bands: 802.11a: 6 Mb/s. 802.11n 20MHz: MCS0. 802.11n 40MHz: MCS0. 802.11n 80MHz: MCS0.

Worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was the mode and channel with the highest output power.

For Radiated Band Edge measurements preliminary testing showed that the worst case was vertical polarization, so final measurements were performed with vertical polarization only.

For all modes with single chain, chain 0 (connector J0, Main port) was selected per the software provided by the client. Based on the client a preliminary investigation was performed on the two chains and chain 0 was found to be worst-case.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List							
Description	Manufacturer	Model	Serial Number	FCC ID			
Laptop	HP	EliteBook 2730p	2CE848852D	DoC			
Laptop	Lenovo	G560	CBU4473193	DoC			
Laptop	Apple	Macbook Pro	C02H124BDV10	DoC			
AC Adapter	HP	PPP09L	592C40CLLUTBUY	DoC			
AC Adapter	Lenovo	ADP-65KH B	11S36001646ZZ1001FKY6	DoC			
AC Adapter	Apple	A1343	C04207625HVDJ92BD	DoC			
Adapter Board	Catalyst	MINI2EXP	N/A	N/A			
Adapter Board	Catalyst	MINI2EXP	N/A	N/A			
Adapter Board	Broadcom	BCM94331CSMFG	1458937	N/A			
Adapter Board	Broadcom	BCM94331CSMFG	1504043	N/A			

I/O CABLES

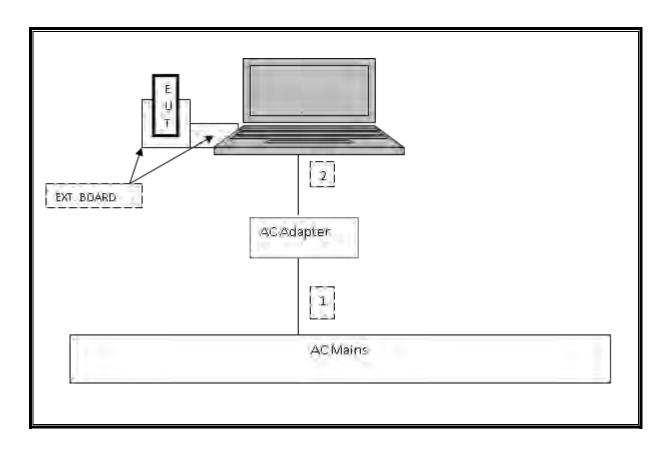
	I/O Cable List							
Cable No					Cable Length (m)	Remarks		
1	AC	2	US 115V	Un-Shielded	1.0m	NA		
2	DC	2	DC	Un-Shielded	1.8m	Ferrite at laptop's end		

TEST SETUP

The EUT is attached to a jig board which is installed in the PCMCI slot of a host laptop computer during the tests. Test software exercised the radio card.

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SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List									
Description	Manufacturer	Model	Asset	Cal Date	Cal Due				
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/13/11	12/13/13				
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	05/11/11	05/11/13				
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	07/13/12	07/06/13				
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/08/12	08/08/13				
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/11	12/13/13				
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/11	12/13/13				
Antenna, Horn, 18 GHz	EMCO	3115	C00945	11/12/12	11/12/13				
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00946	11/12/12	11/12/13				
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	06/14/12	06/14/13				
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C00885	08/14/12	08/14/13				
Preamplifier, 1300 MHz	Agilent / HP	8447D	C01016	01/16/13	01/16/14				
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/12	10/22/13				
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/02/11	08/02/13				
LISN, 30 MHz	FCC	50/250-25-2	N02396	08/08/12	08/08/13				
Reject Filter, 5.15-5.35 GHz	Micro-Tronics	BRC13190	N02680	CNR	CNR				
Reject Filter, 5.47-5.725 GHz	Micro-Tronics	BRC13191	N02678	CNR	CNR				
Reject Filter, 5.725-5.825 GHz	Micro-Tronics	BRC13192	N02676	CNR	CNR				

7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

<u>LIMITS</u>

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

Mode	ON Time	Period	Duty Cycle	Duty	Duty Cycle	1/B			
	В		x	Cycle	Correction Factor	Minimum VBW			
	(msec)	(msec)	(linear)	(%)	(dB)	(kHz)			
5GHz Band									
802.11a	2.07	2.09	0.993	99.3%	0.00	0.010			
802.11n HT20 CDD	1.93	1.95	0.989	98.9%	0.00	0.010			
802.11n HT20 STBC	1.93	1.95	0.991	99.1%	0.00	0.010			
802.11n HT40 SISO	0.95	1.00	0.950	95.0%	0.22	1.000			
802.11n HT40 CDD	0.95	1.00	0.950	95.0%	0.22	1.000			
802.11n HT40 STBC	0.95	1.00	0.951	95.1%	0.22	1.000			
802.11n AC80 SISO	0.46	0.49	0.946	94.6%	0.24	2.040			
802.11n AC80 CDD	0.46	0.48	0.962	96.2%	0.17	2.076			

7.1.1. ON TIME AND DUTY CYCLE RESULTS

7.1.2. MEASUREMENT METHOD FOR POWER AND PPSD

For output power measurement, KDB 789033 Method PM as described in section C) f) was used.

For PSD measurement, KDB 789033 Method SA-1 was used when Duty Cycle is greater than or equal to 98%.

For PSD measurement, KDB 789033 Method SA-2 was used when Duty Cycle is less than 98%.

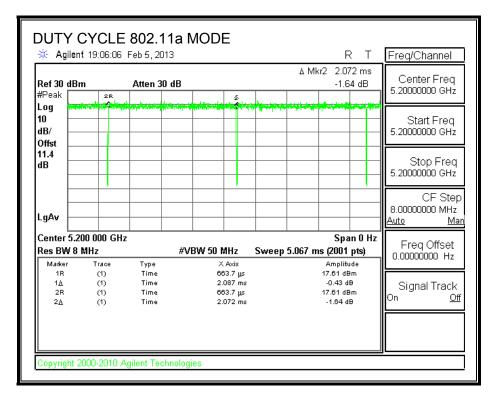
7.1.3. MEASUREMENT METHOD FOR AVG SPURIOUS EMISSION ABOVE 1 GHz

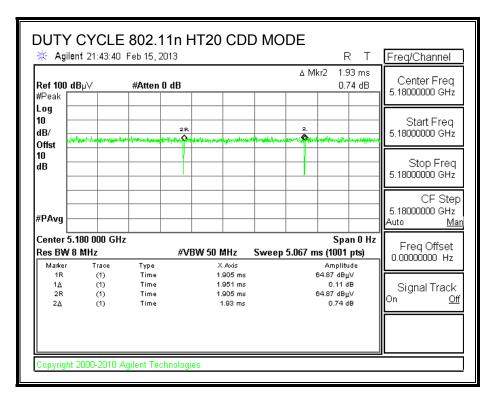
KDB 789033 Method VB with Power RMS Averaging is used.

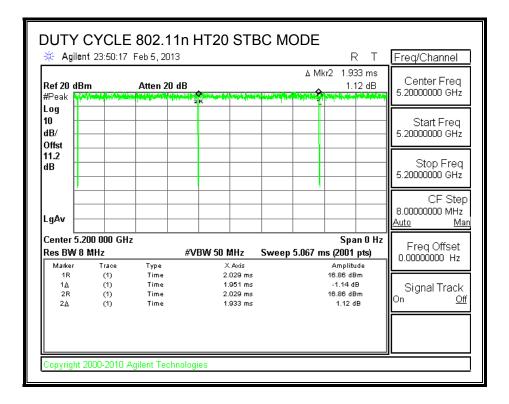
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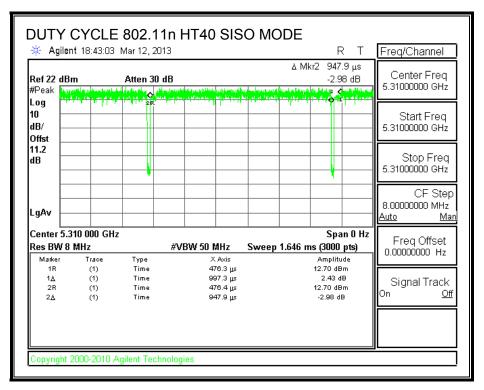
7.1.4. DUTY CYCLE PLOTS

<u>5 GHz</u>



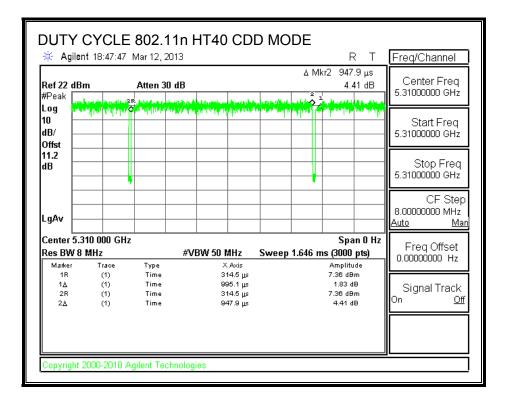


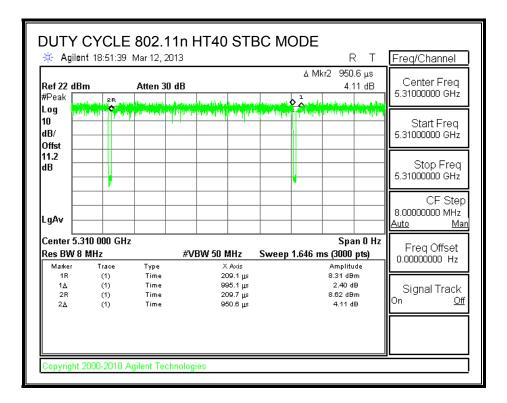




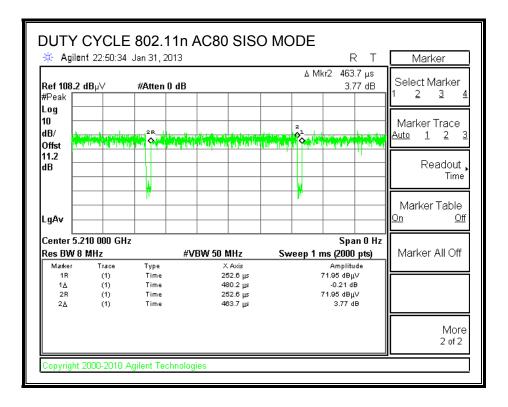
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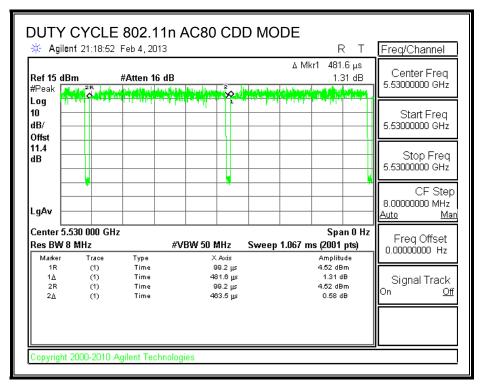
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8. ANTENNA PORT TEST RESULTS

8.1. 802.11a LEGACY 1TX MODE, 5.2 GHz BAND

8.1.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

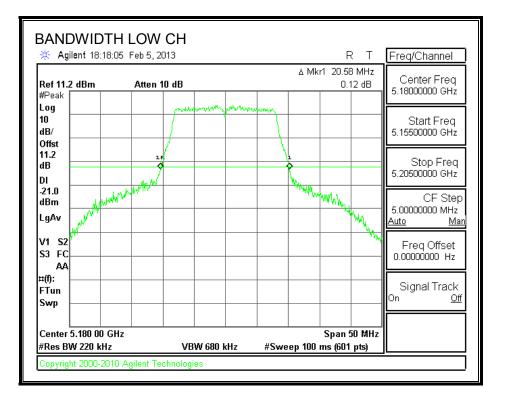
RESULTS

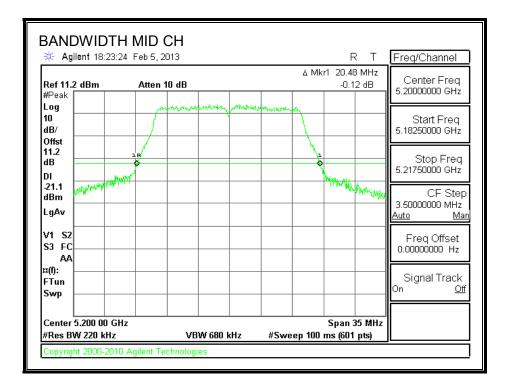
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5180	20.58
Mid	5200	20.48
High	5240	20.42

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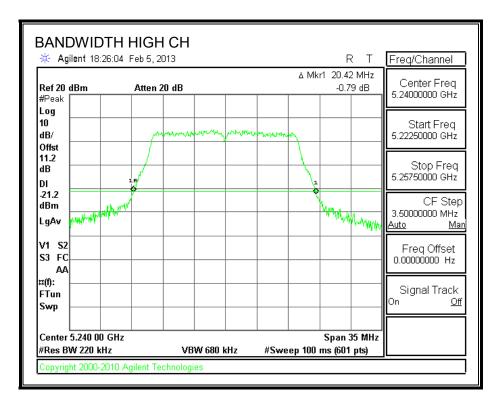
26 dB BANDWIDTH





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8.1.2. 99% BANDWIDTH

LIMITS

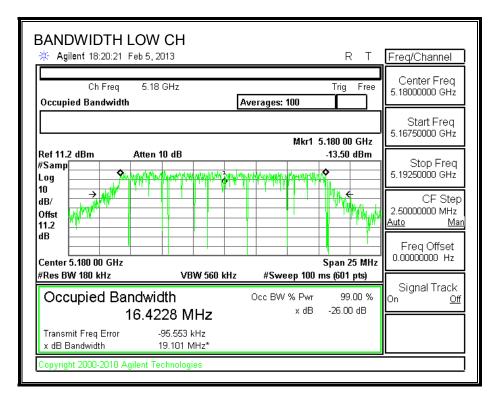
None; for reporting purposes only.

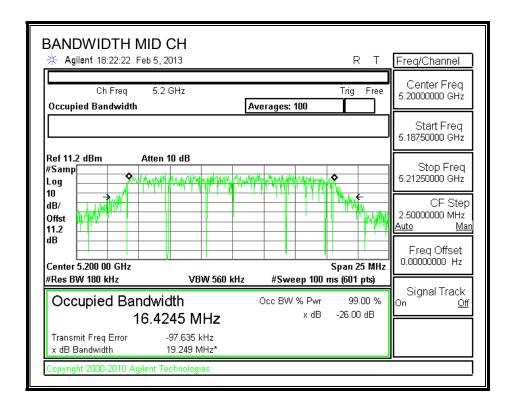
<u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5180	16.4228
Mid	5200	16.4245
High	5240	16.4159

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99% BANDWIDTH





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BANDWIDTH HIG Agilent 18:27:28 Feb 5	-		RT	Freq/Channel
Ch Freq 5.2 Occupied Bandwidth	24 GHz	Averages: 100	Trig Free	Center Freq 5.24000000 GHz
	Ľ			Start Freq 5.22750000 GHz
#Samp	n 20 dB	¹⁵ พไฟมีเวลากัน และวัลงได้เป็	×	Stop Freq 5.25250000 GHz
dB/ → /// · · · · · · · · · · · · · · · ·			₩. (CF Step 2.5000000 MHz <u>Auto Ma</u>
dB			Span 25 MHz	Freq Offset 0.00000000 Hz
#Res BW 180 kHz Occupied Bandw	VBW 560 kHz	#Sweep 100 r		Signal Track On Of
	159 MHz	x dB	-26.00 dB	
Transmit Freq Error x dB Bandwidth	-97.625 kHz 19.150 MHz*			
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8.1.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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	5180	20.58	16.4228	5.93
Mid	5200	20.48	16.4245	5.93
High	5240	20.42	16.4159	5.93

Limits

Channel	Frequency	FCC	IC	Max	Power	FCC	IC	PSD
		Power	EIRP	IC	Limit	PSD	eirp	Limit
		Limit	Limit	Power		Limit	PSD	
							Limit	
	(MHz)	(dBm)						
Low	5180	17.00	22.15	16.22	16.22	4.00	10.00	4.00
Mid	5200	17.00	22.15	16.22	16.22	4.00	10.00	4.00
High	5240	17.00	22.15	16.22	16.22	4.00	10.00	4.00

Duty Cycle CF (dB) 0.00

Output Power Results

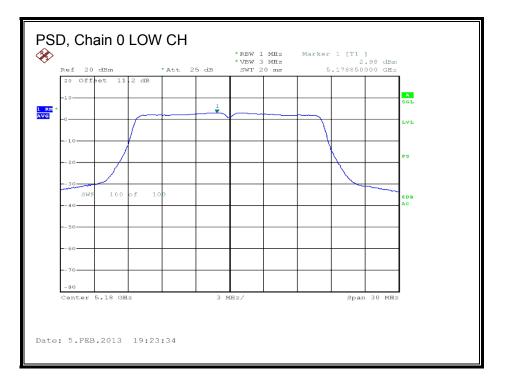
Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	16.13	16.13	16.22	-0.09
Mid	5200	16.17	16.17	16.22	-0.05
High	5240	16.15	16.15	16.22	-0.07

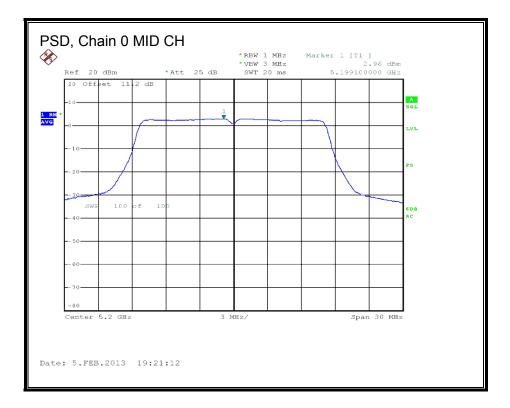
PSD Results

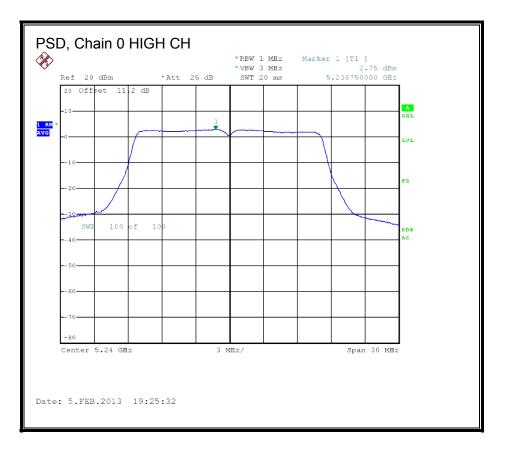
Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	2.98	2.98	4.00	-1.02
Mid	5200	2.96	2.96	4.00	-1.04
High	5240	2.75	2.75	4.00	-1.25

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PSD, Chain 0







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8.2. 802.11n HT20 CDD 2TX MODE, 5.2 GHz BAND

8.2.1. 26 dB BANDWIDTH

LIMITS

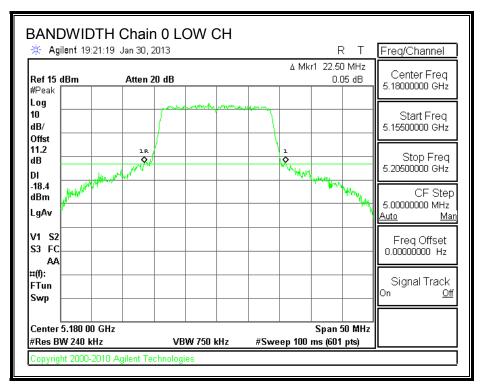
None; for reporting purposes only.

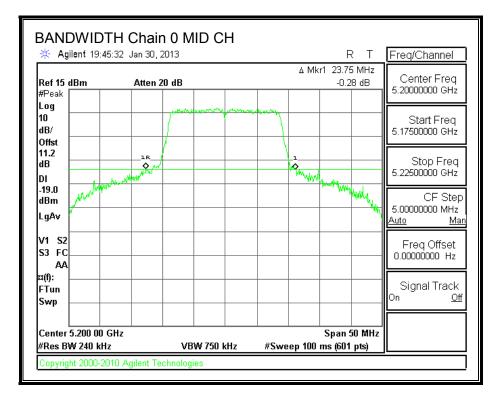
RESULTS

Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5180	22.50	30.67	
Mid	5200	23.75	29.17	
High	5240	20.67	22.17	

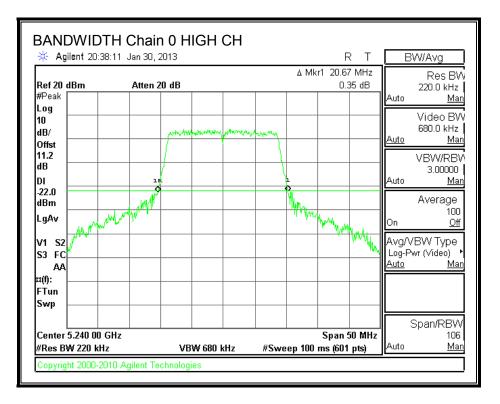
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26 dB BANDWIDTH, Chain 0

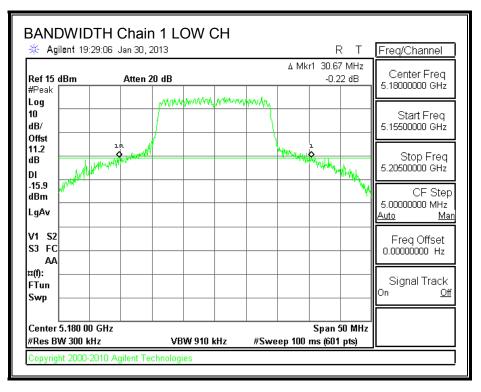




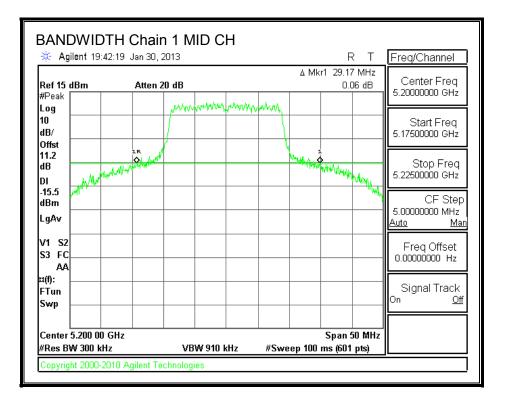
Page 36 of 428 UL CCS FORM NO: CCSUP4701H 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of UL CCS.

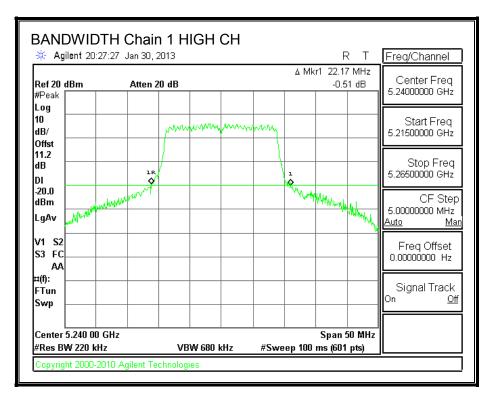


26 dB BANDWIDTH, Chain 1



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8.2.2. 99% BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

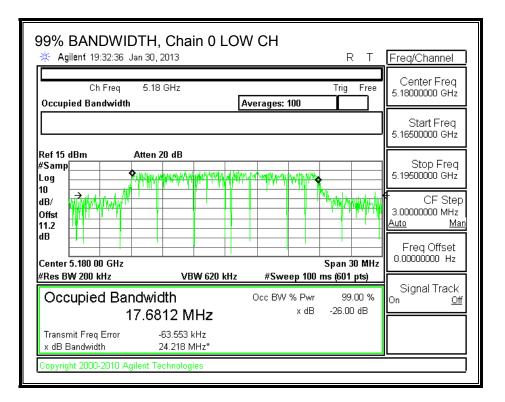
RESULTS

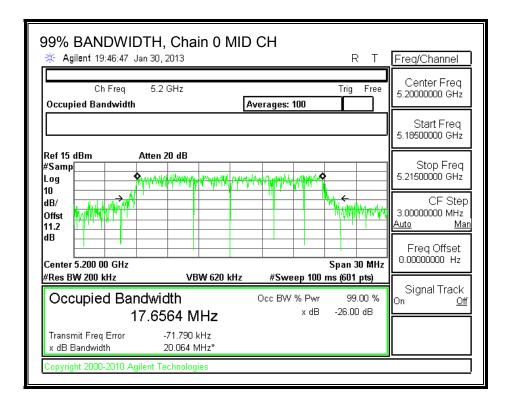
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5180	17.6812	17.6788
Mid	5200	17.6564	17.6547
High	5240	17.6403	17.6380

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99% BANDWIDTH, Chain 0

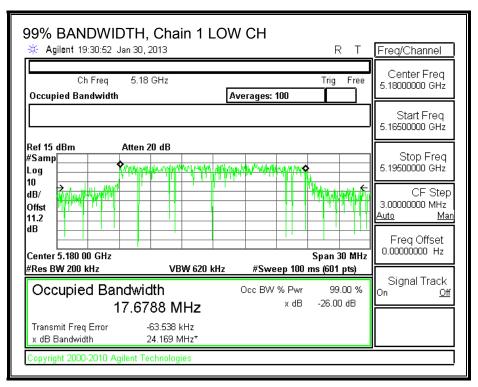




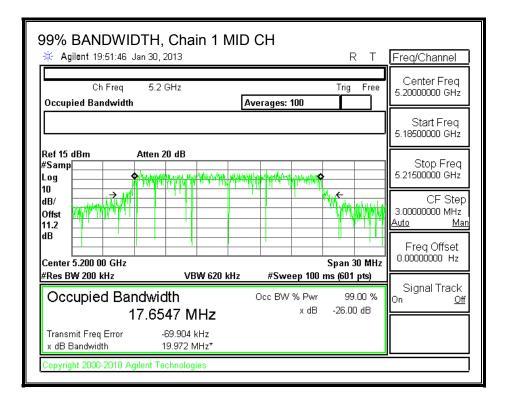
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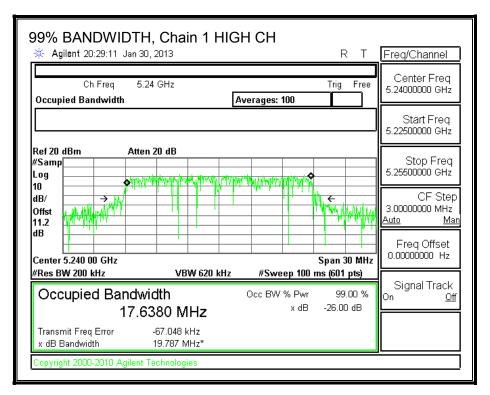
99% BANDWIDTH,		GH CH	RТ	Freq/Channel
Ch Freq 5.24 Occupied Bandwidth	GHz	Averages: 100	Trig Free	Center Freq 5.24000000 GHz
				Start Freq 5.22500000 GHz
Ref 20 dBm Atten 2 #Samp Log 10		"MANAME AND A MANA MARKA		Stop Freq 5.25500000 GHz
dB/ Offst				CF Step 3.00000000 MHz <u>Auto Man</u>
Center 5.240 00 GHz #Res BW 200 kHz	VBW 620 kHz	#Sweep 100	Span 30 MHz ms (601 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwid 17.64	th 03 MHz	Occ BW % Pwr x dB		Signal Track On <u>Off</u>
x dB Bandwidth 1	8.144 kHz 9.649 MHz*			
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99% BANDWIDTH, Chain 1



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8.2.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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 two chains are considered 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)
5.93	5.75	5.84

For PSD, the two chains are considered 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)	
5.93	5.75	8.85	

OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5180	22.50	17.6788	5.84
Mid	5200	23.75	17.6547	5.84
High	5240	20.67	17.6380	5.84

Limits

Channel	Frequency	FCC	IC	Max	Power
		Power	EIRP	IC	Limit
		Limit	Limit	Power	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5180	17.00	22.47	16.63	16.63
Mid	5200	17.00	22.47	16.63	16.63
High	5240	17.00	22.46	16.62	16.62

Duty Cycle CF (dB) 0.00

Output Power Results

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	11.59	11.68	14.65	16.63	-1.99
Mid	5200	11.85	12.06	14.97	16.63	-1.66
High	5240	11.81	12.01	14.92	16.62	-1.70

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Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5180	22.50	17.6788	8.85
Mid	5200	23.75	17.6547	8.85
High	5240	20.67	17.6380	8.85

Limits

Channel	Frequency	FCC	IC	PSD
		PPSD	eirp	Limit
		Limit	PSD	
			Limit	
	(1 1 1 1 1 1	· · - ·	<i></i> .	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	(MHz) 5180	(dBm) 1.15	(dBm) 10.00	(dBm) 1.15
Low Mid			· /	. ,

Duty Cycle CF (dB) 0.00

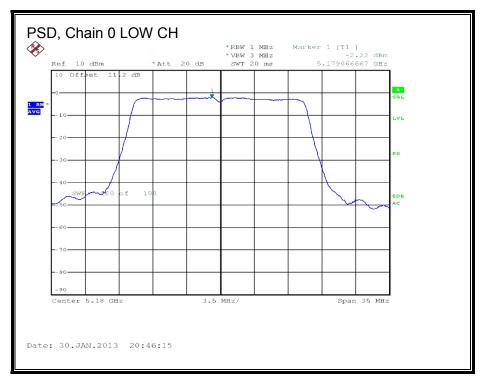
PPSD Results

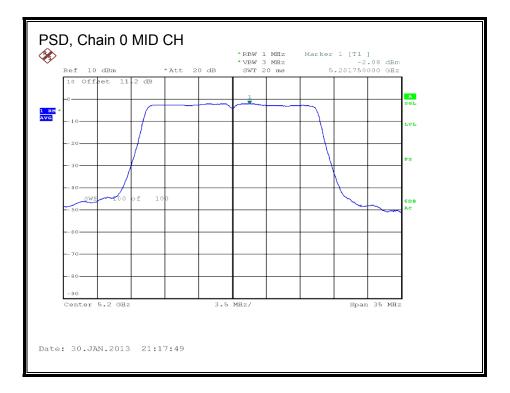
Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	-2.20	-1.96	0.93	1.15	-0.22
Mid	5200	-2.08	-1.77	1.09	1.15	-0.06
High	5240	-2.09	-1.87	1.03	1.15	-0.12

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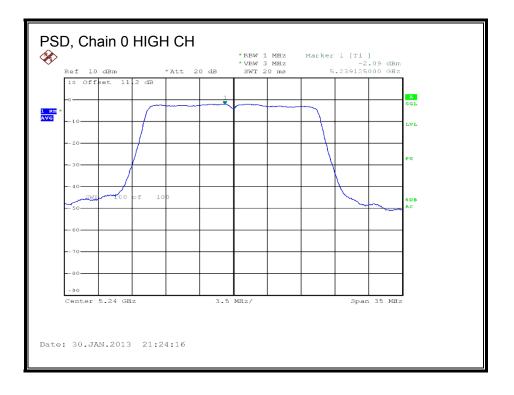
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PSD, Chain 0





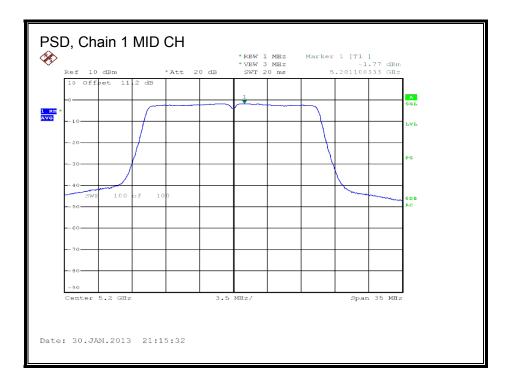
Page 46 of 428 UL CCS FORM NO: CCSUP4701H 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of UL CCS.

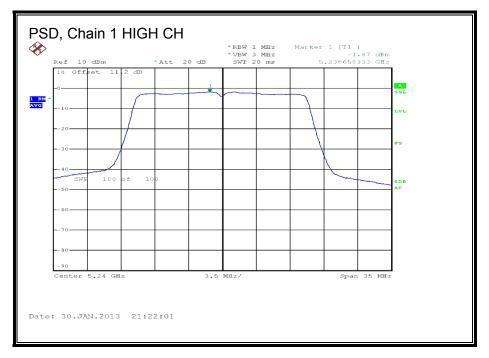


PSD, Chain 1



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8.3. 802.11n HT20 STBC 2TX MODE, 5.2 GHz BAND

8.3.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

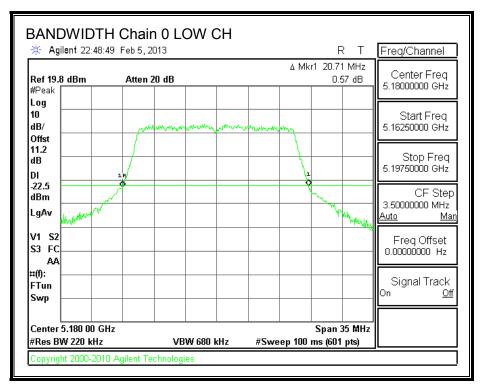
RESULTS

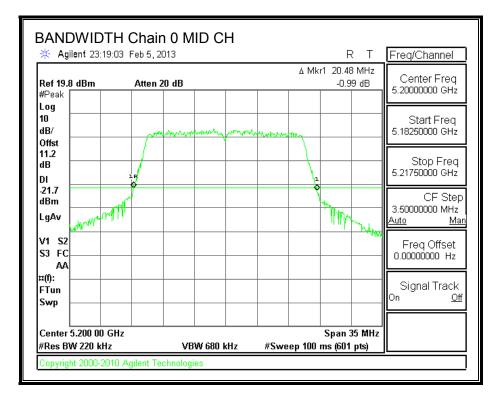
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5180	20.71	20.65
Mid	5200	20.48	20.59
High	5240	20.65	20.65

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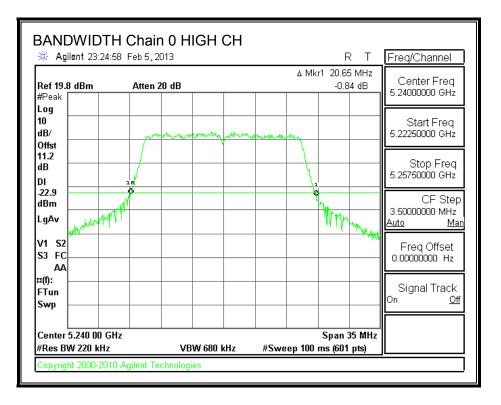
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26 dB BANDWIDTH, Chain 0

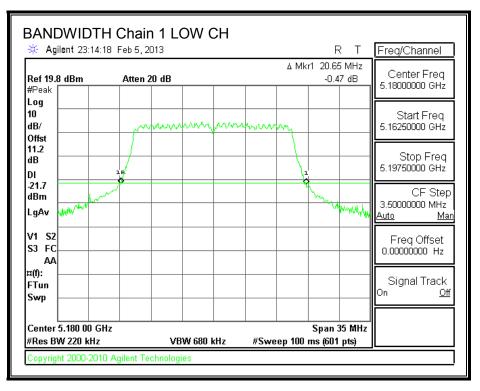




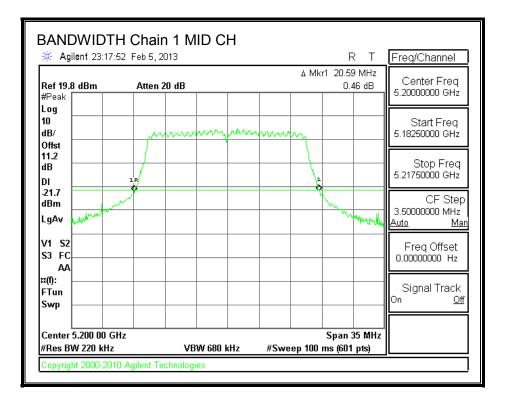
Page 50 of 428 UL CCS FORM NO: CCSUP4701H 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of UL CCS.

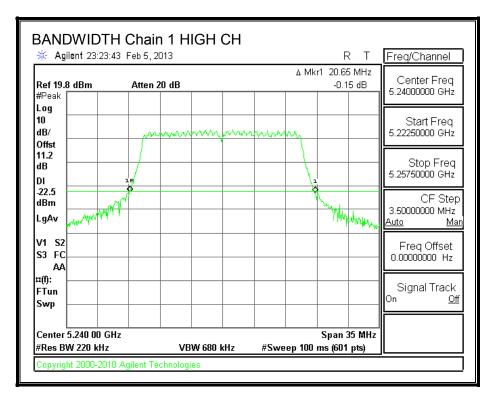


26 dB BANDWIDTH, Chain 1



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8.3.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

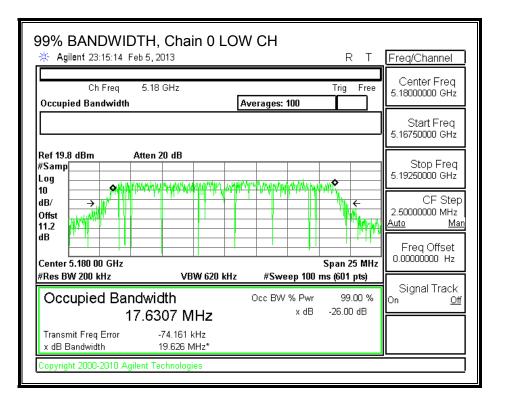
<u>RESULTS</u>

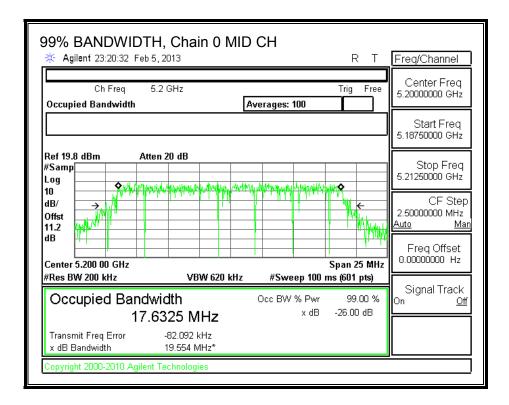
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5180	17.6307	17.6403
Mid	5200	17.6325	17.6274
High	5240	17.6466	17.6631

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99% BANDWIDTH, Chain 0

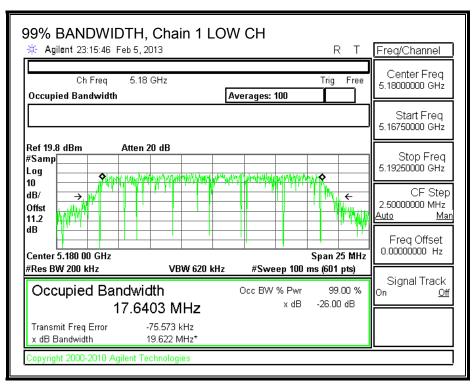




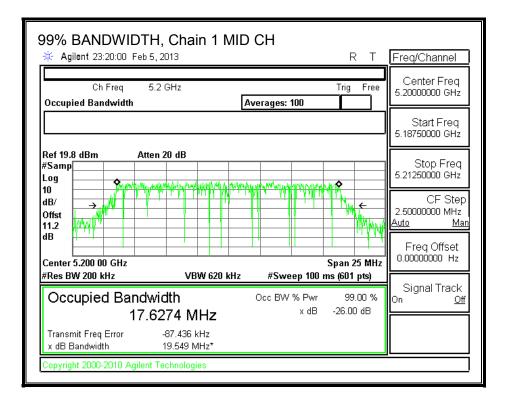
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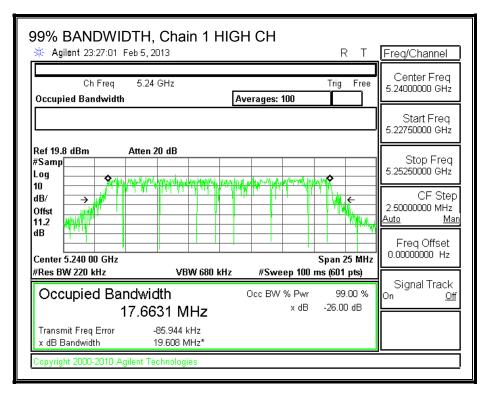
99% BANDWIDTH, C		GH CH	RT	Freq/Channel
Ch Freq 5.24 GH Occupied Bandwidth	z	Averages: 100	Trig Free	Center Freq 5.24000000 GHz
				Start Freq 5.22750000 GHz
Ref 19.8 dBm Atten 20 d #Samp Log		warman and the		Stop Freq 5.25250000 GHz
dB/ → // Offst // dB/ → //			↓ ←	CF Step 2.5000000 MHz <u>Auto Man</u>
Center 5.240 00 GHz #Res BW 220 kHz	VBW 680 kHz	z #Sweep 100	Span 25 MHz ms (601 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwidth 17.6466		Occ BW % Pwr x dB		Signal Track On <u>Off</u>
x dB Bandwidth 19.6	895 kHz 600 MHz*			
Copyright 2000-2010 Agilent Techn	ologies			

99% BANDWIDTH, Chain 1



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8.3.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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)
5.93	5.75	5.84

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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	5180	20.65	17.6307	5.84
Mid	5200	20.48	17.6274	5.84
High	5240	20.65	17.6466	5.84

Limits

Channel	Frequency	FCC	IC	Max	Power	FCC	IC	PSD
		Power	EIRP	IC	Limit	PPSD	eirp	Limit
		Limit	Limit	Power		Limit	PSD	
							Limit	
	(MHz)	(dBm)						
Low	5180	17.00	22.46	16.62	16.62	4.00	10.00	4.00
Mid	5200	17.00	22.46	16.62	16.62	4.00	10.00	4.00
High	5240	17.00	22.47	16.63	16.63	4.00	10.00	4.00

Duty Cycle CF (dB) 0.00

Output Power Results

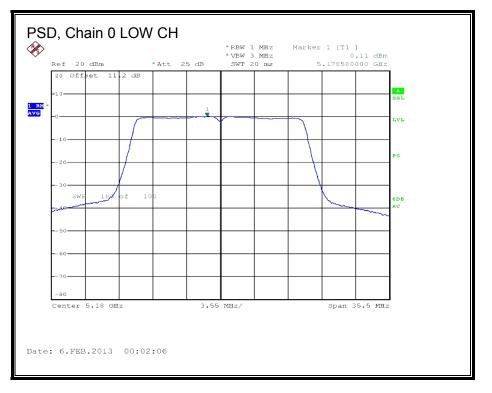
Channel	Frequency	Chain 0 Chain 1		Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	13.58	13.52	16.56	16.62	-0.06
Mid	5200	13.52	13.60	16.57	16.62	-0.05
High	5240	13.55	13.59	16.58	16.63	-0.05

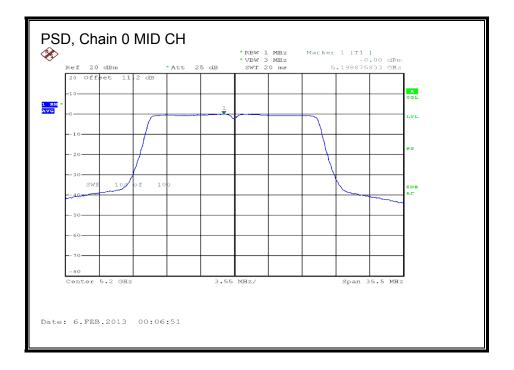
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	0.11	0.21	3.17	4.00	-0.83
Mid	5200	0.00	0.08	3.05	4.00	-0.95
High	5240	-0.46	0.07	2.82	4.00	-1.18

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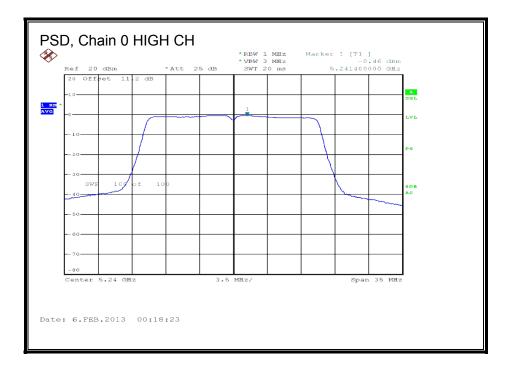
PSD, Chain 0



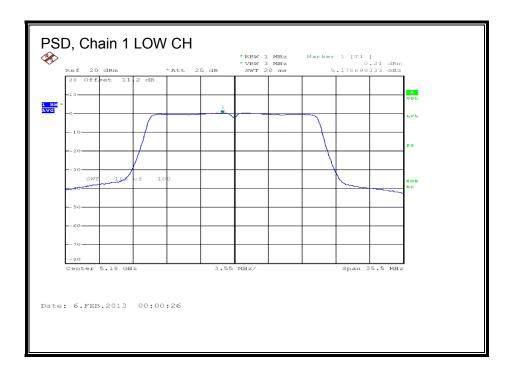


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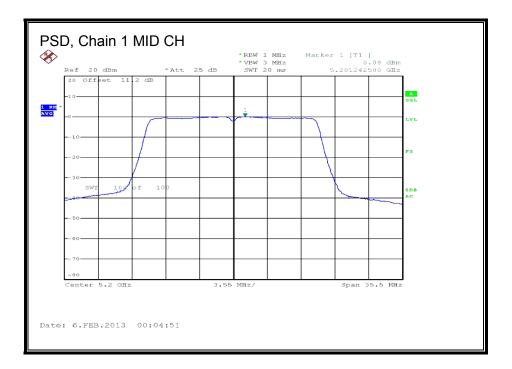


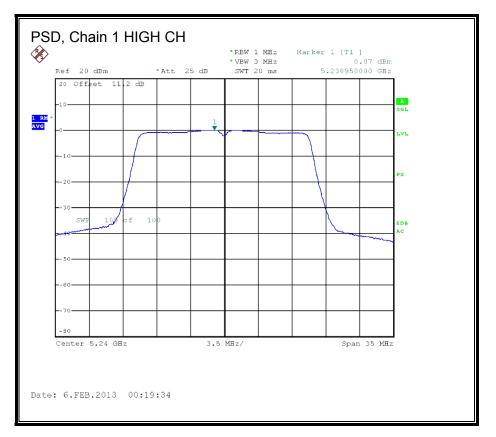
PSD, Chain 1



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8.4. 802.11n HT40 1TX MODE, 5.2 GHz BAND

8.4.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

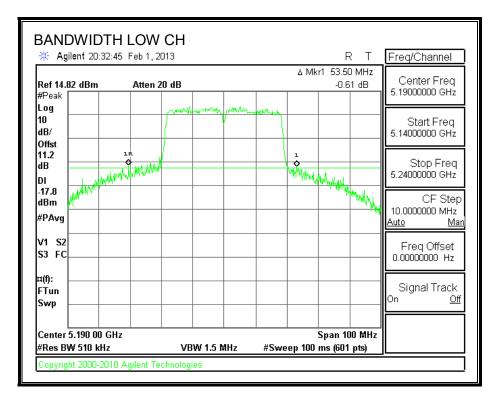
RESULTS

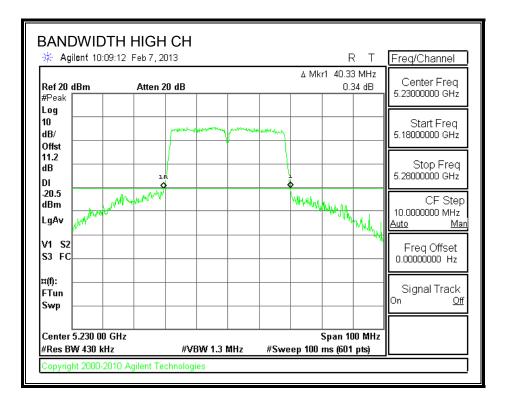
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5190	53.50
High	5230	40.33

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26 dB BANDWIDTH





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8.4.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

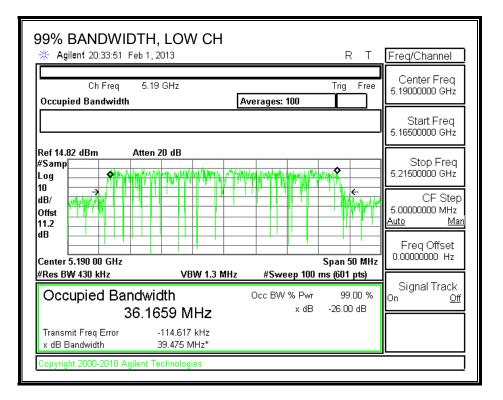
RESULTS

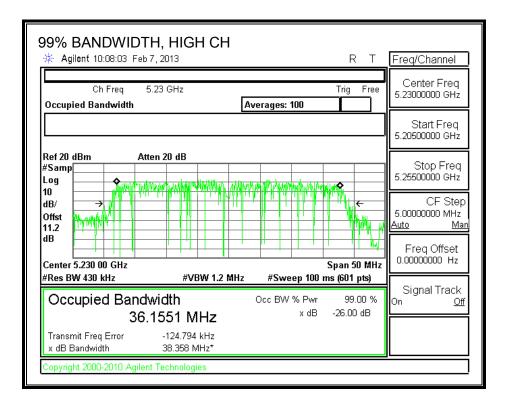
Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5190	36.1659
High	5230	36.1551

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99% BANDWIDTH





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8.4.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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	5190	53.50	36.1659	5.93

Limits

Channel	Frequency	FCC	IC	Max	Power	FCC	IC	PSD
		Power	EIRP	IC	Limit	PPSD	eirp	Limit
		Limit	Limit	Power		Limit	PSD	
							Limit	
	(MHz)	(dBm)						
Low	5190	17.00	23.00	17.07	17.00	4.00	10.00	4.00
High	5230	17.00	23.00	17.07	17.00	4.00	10.00	4.00

Duty Cycle CF (dB) 0.22

Output Power Results

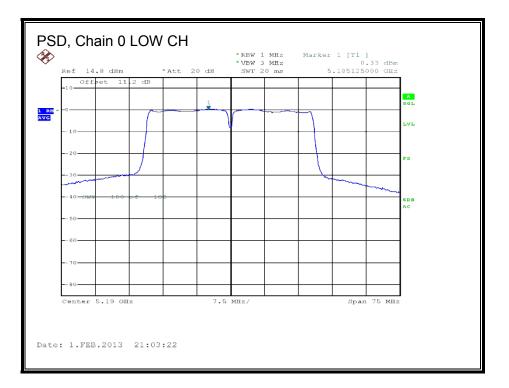
Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	16.98	16.98	17.00	-0.02

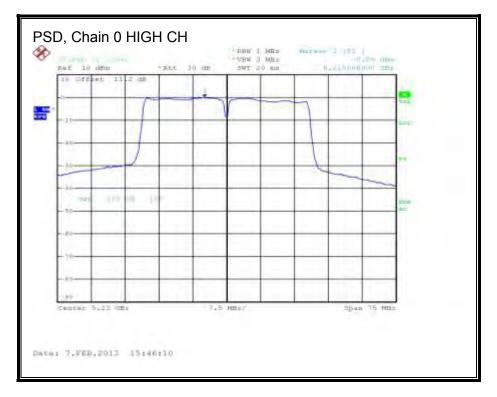
PSD Results

Channel	Frequency	Meas	Total Corr'd	PSD Limit	PSD Margin
	(MHz)	PSD (dBm)	PSD (dBm)	(dBm)	(dB)
Low	5190	0.33	0.55	4.00	-3.45
High	5230	-0.09	0.13	4.00	-3.87

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PSD, Chain 0





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8.5. 802.11n HT40 CDD 2TX MODE, 5.2 GHz BAND

8.5.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

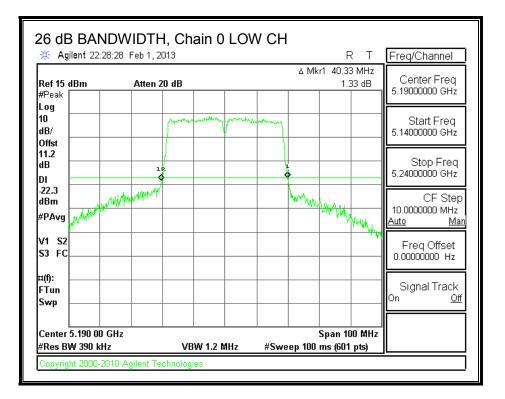
RESULTS

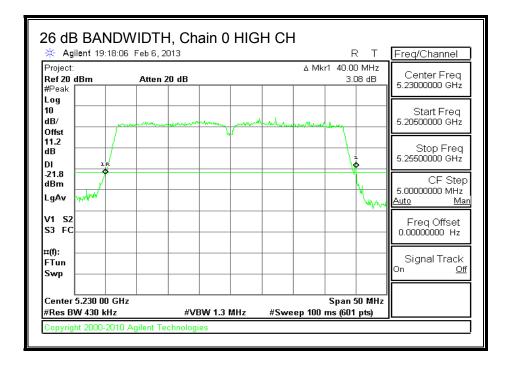
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5190	40.33	39.83
High	5230	40.00	39.50

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26 dB BANDWIDTH, Chain 0

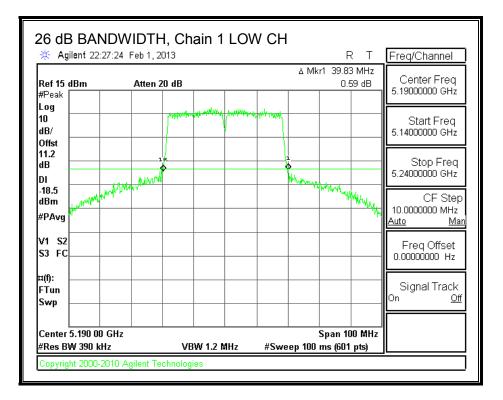


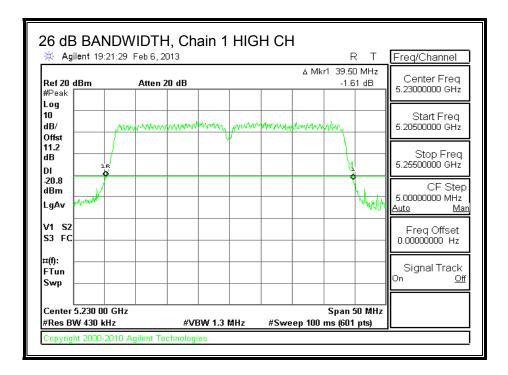


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26 dB BANDWIDTH, Chain 1





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8.5.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

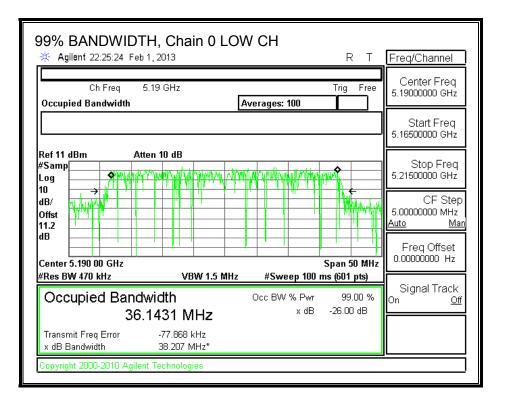
<u>RESULTS</u>

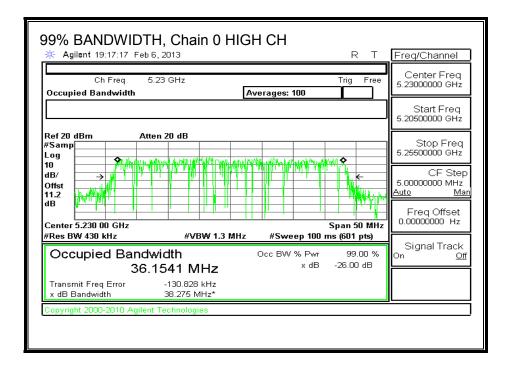
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5190	36.1431	36.1269
High	5230	36.1541	36.1294

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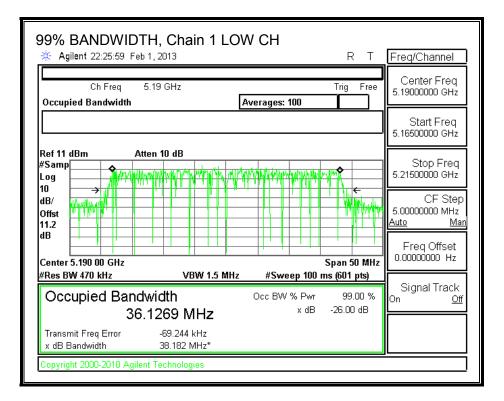
99% BANDWIDTH, Chain 0

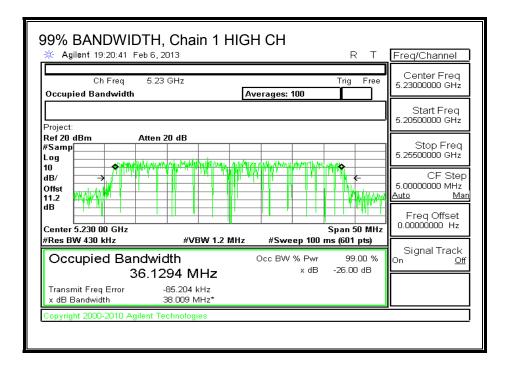




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99% BANDWIDTH, Chain 1





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8.5.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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)		
5.93	5.75	5.84		

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

Chain 0	Chain 1	Correlated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
5.93	5.75	8.85

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Uncorrelated	Correlated
		26 dB	99%	Directional	Directional
		BW	BW	Gain	Gain
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5190	39.83	36.1269	5.84	8.85
High	5230	39.50	36.1294	5.84	8.85

Limits

Channel	Frequency	FCC	IC	Max	Power	FCC	IC	PSD
		Power	EIRP	IC	Limit	PPSD	eirp	Limit
		Limit	Limit	Power		Limit	PSD	
							Limit	
	(MHz)	(dBm)						
Low	5190	17.00	23.00	17.16	17.00	1.15	10.00	1.15
High	5230	17.00	23.00	17.16	17.00	1.15	10.00	1.15

Duty Cycle CF (dB)	0.22	
--------------------	------	--

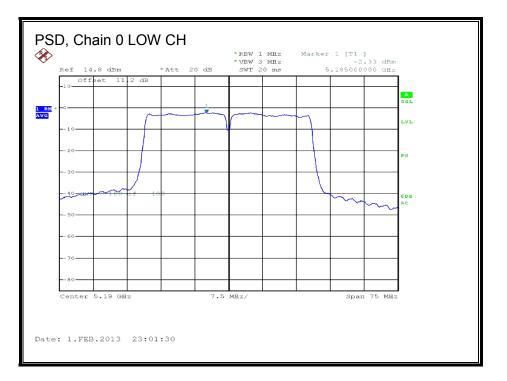
Output Power Results

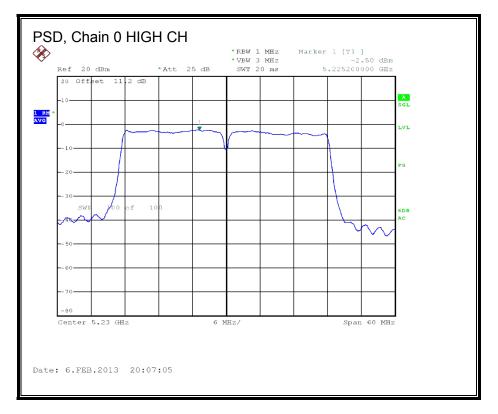
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	13.93	13.98	16.97	17.00	-0.03
High	5230	13.91	13.95	16.94	17.00	-0.06

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	-2.33	-2.49	0.82	1.15	-0.33
High	5230	-2.50	-2.21	0.88	1.15	-0.27

PSD, Chain 0

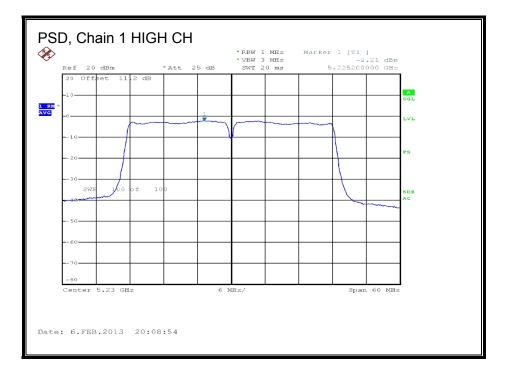




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<u>PSD, Chain 1</u>





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8.6. 802.11n AC40 BF 2TX MODE, 5.2 GHz BAND

8.6.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

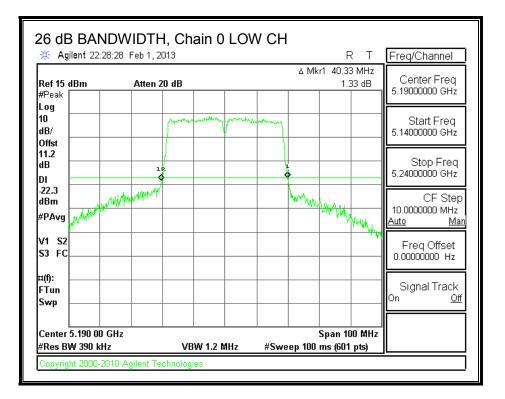
RESULTS

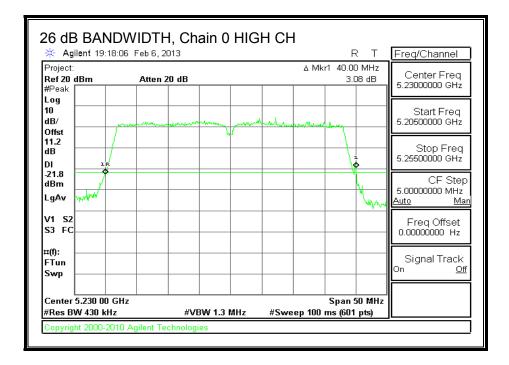
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5190	40.33	39.83
High	5230	40.00	39.50

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26 dB BANDWIDTH, Chain 0

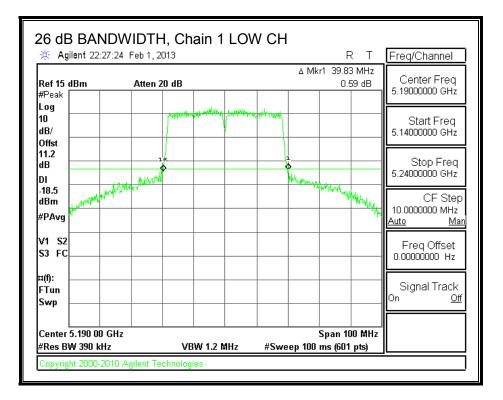


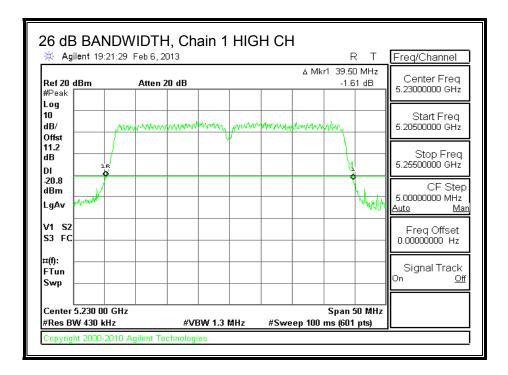


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26 dB BANDWIDTH, Chain 1





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8.6.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

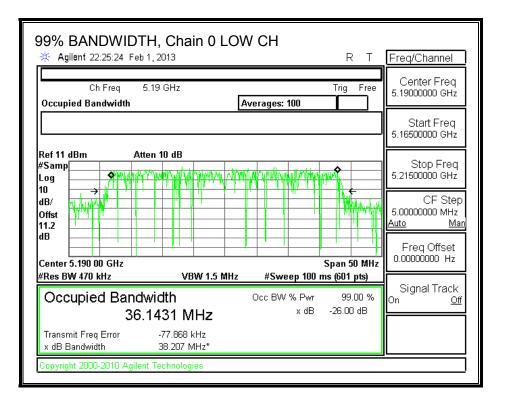
<u>RESULTS</u>

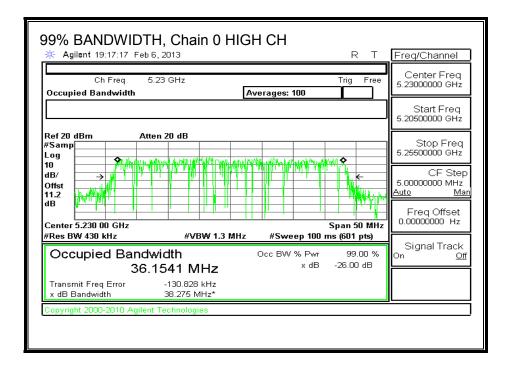
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5190	36.1431	36.1269
High	5230	36.1541	36.1294

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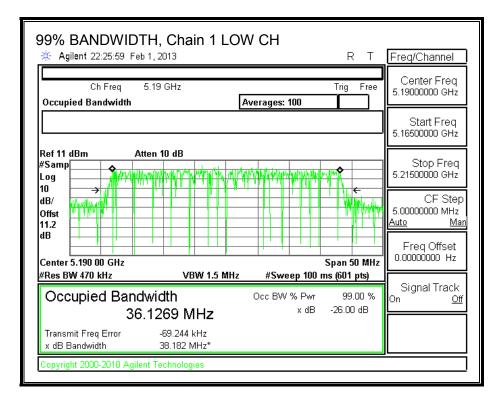
99% BANDWIDTH, Chain 0

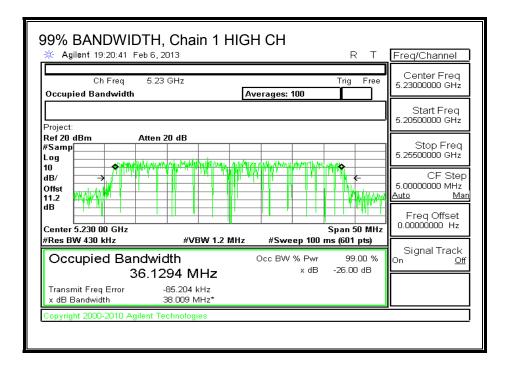




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99% BANDWIDTH, Chain 1





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8.6.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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)		
5.93	5.75	8.85		

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RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Grain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5190	39.83	36.1269	8.85
High	5230	39.50	36.1294	8.85

Limits

Channel	Frequency	FCC	IC	Max	Power	FCC	IC	PSD
		Power	EIRP	IC	Limit	PPSD	eirp	Limit
		Limit	Limit	Power		Limit	PSD	
							Limit	
	(MHz)	(dBm)						
Low	5190	14.15	23.00	14.15	14.15	1.15	10.00	1.15
High	5230	14.15	23.00	14.15	14.15	1.15	10.00	1.15

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

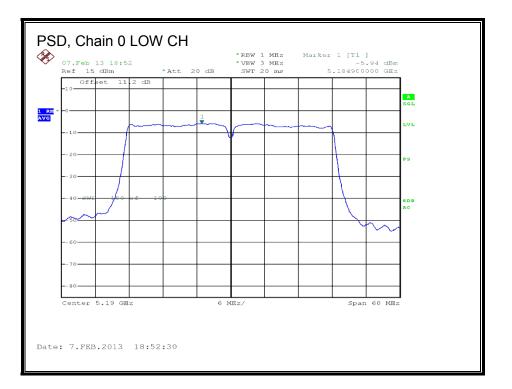
Output Power Results

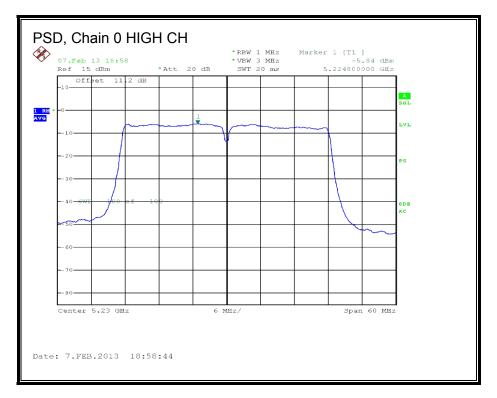
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	11.13	11.02	14.09	14.15	-0.06
High	5230	11.16	11.05	14.12	14.15	-0.03

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	-5.94	-6.01	-2.74	1.15	-3.89
High	5230	-5.84	-6.15	-2.76	1.15	-3.91

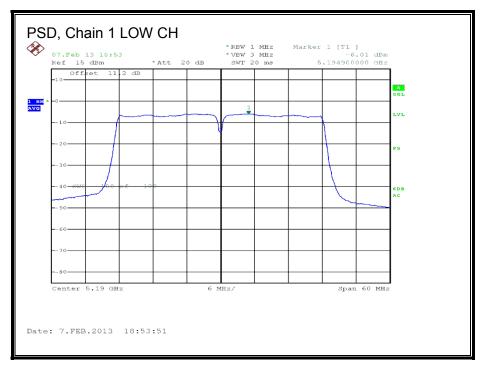
PSD, Chain 0

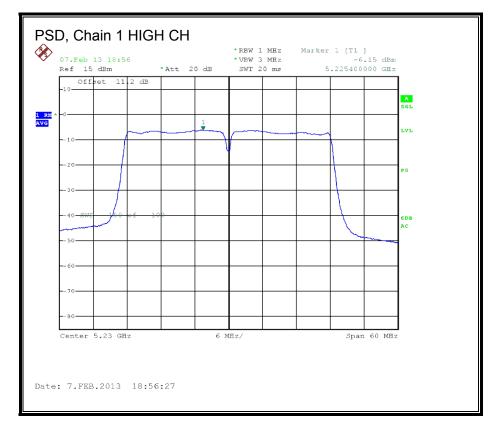




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PSD, Chain 1





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8.7. 802.11n AC80 1TX MODE, 5.2 GHz BAND

8.7.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

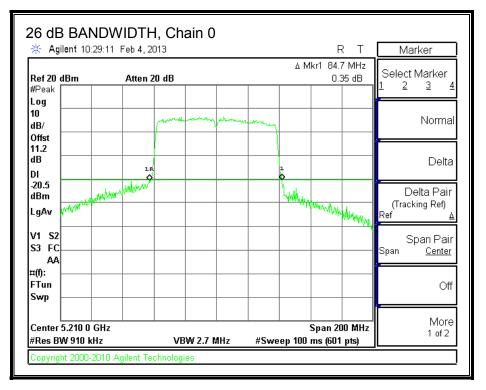
RESULTS

Channel	Frequency	26 dB BW
		Chain 0
	(MHz)	(MHz)
Mid	5210	84.7

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26 dB BANDWIDTH, Chain 0



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8.7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

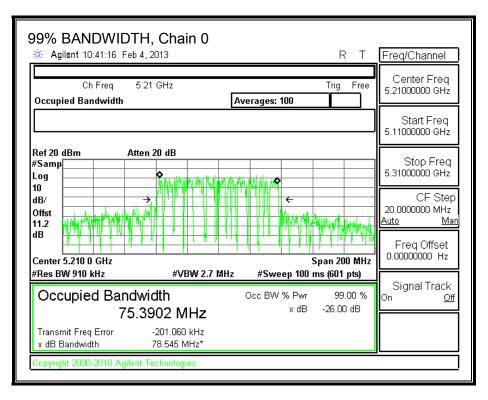
RESULTS

Channel	Frequency	99% BW
		Chain 0
	(MHz)	(MHz)
Mid	5210	75.3902

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99% BANDWIDTH, Chain 0



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8.7.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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	5210	84.7	75.3902	5.93

Limits

Channel	Frequency	FCC	IC	Max	Power	FCC	IC	PSD
		Power	EIRP	IC	Limit	PPSD	eirp	Limit
		Limit	Limit	Power		Limit	PSD	
							Limit	
	(MHz)	(dBm)						
Mid	5210	17.00	23.00	17.07	17.00	4.00	10.00	4.00

Duty Cycle CF (dB) 0.15

Output Power Results

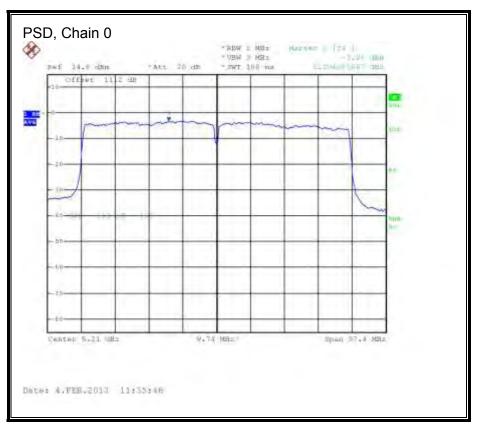
Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	15.48	15.48	17.00	-1.52

PSD Results

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	-3.26	-3.11	4.00	-7.11

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PSD, Chain 0



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8.8. 802.11n AC80 CDD 2TX MODE, 5.2 GHz BAND

8.8.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

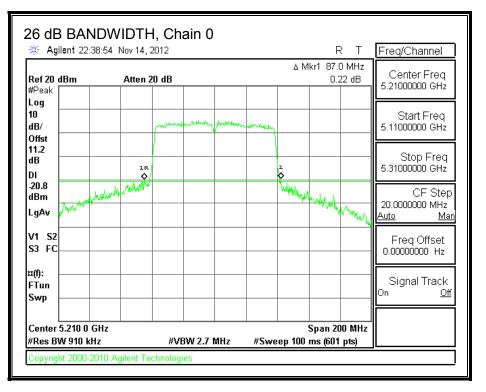
RESULTS

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5210	87.0	82.7

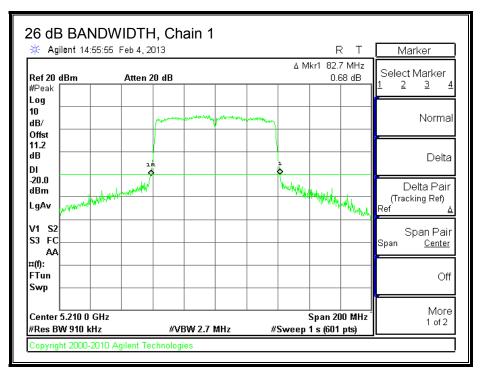
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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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8.8.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

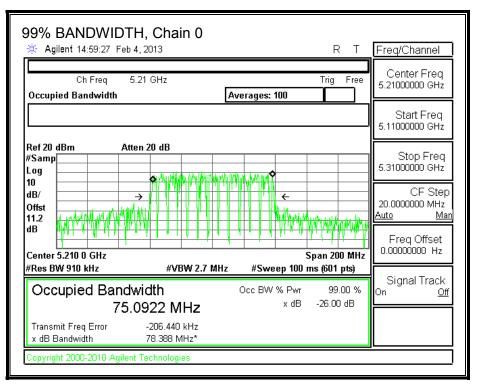
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5210	75.0922	75.1277

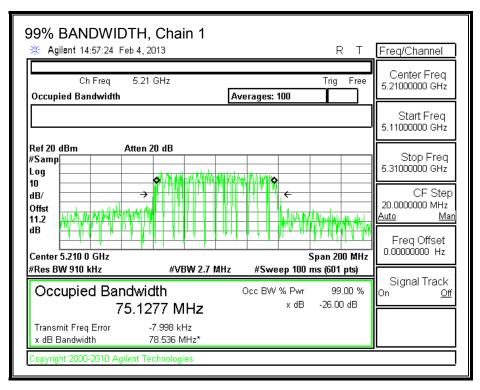
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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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8.8.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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)
5.93	5.75	5.84

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

Chain 0	Chain 1	Correlated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
5.93	5.75	8.85

OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
MID	5210	82.70	75.0922	5.84

Limits

Channel	Frequency	FCC	IC	Max	Power
		Power	EIRP	IC	Limit
		Limit	Limit	Power	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
MID	5210	17.00	23.00	17.16	17.00

Output Power Results

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
MID	5210	13.80	14.10	16.96	17.00	-0.04

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PSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
MID	5210	82.70	75.0922	8.85

Limits

Channel	Frequency	FCC	IC	PSD
		PPSD	eirp	Limit
		Limit	PSD	
			Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
MID	5210	1.15	10.00	1.15

 Duty Cycle CF (dB)
 0.17
 Included in Calculations of PPSD

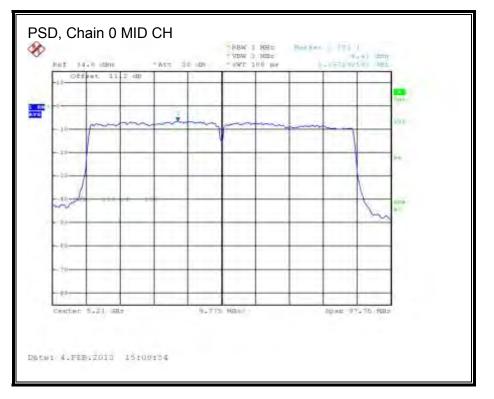
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
MID	5210	-6.41	-6.34	-3.19	1.15	-4.34

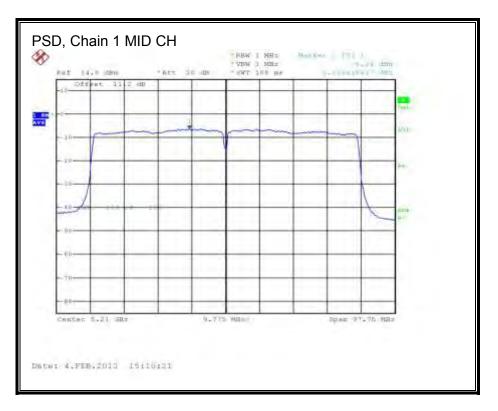
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PSD, Chain 0



PSD, Chain 1



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8.9. 802.11n AC80 BF 2TX MODE, 5.2 GHz BAND

8.9.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

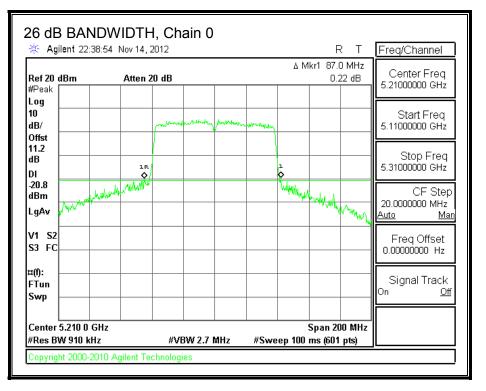
RESULTS

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5210	87.0	82.7

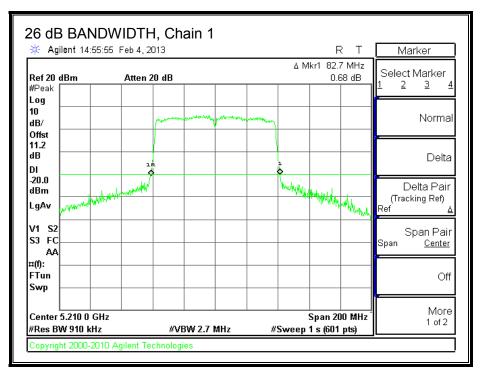
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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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8.9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

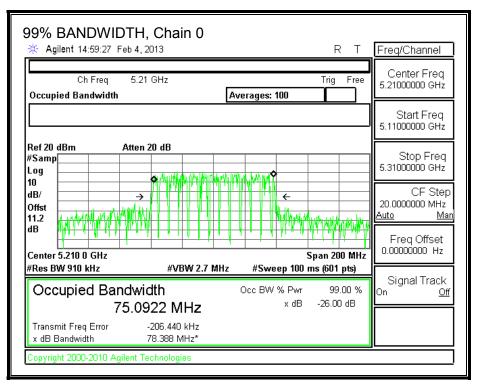
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Mid	5210	75.0922	75.1277

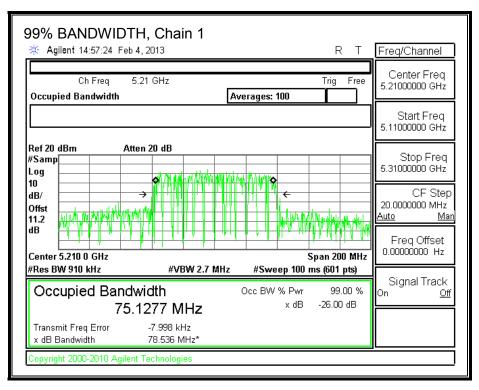
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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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8.9.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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)
5.93	5.75	8.85

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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	5210	82.70	75.1277	8.85

Limits

Channel	Frequency	FCC	IC	Max	Power	FCC	IC	PSD
		Power	EIRP	IC	Limit	PPSD	eirp	Limit
		Limit	Limit	Power		Limit	PSD	
							Limit	
	(MHz)	(dBm)						
Mid	5210	14.15	23.00	14.15	14.15	1.15	10.00	1.15

Duty Cycle CF (dB) 0.17

Output Power Results

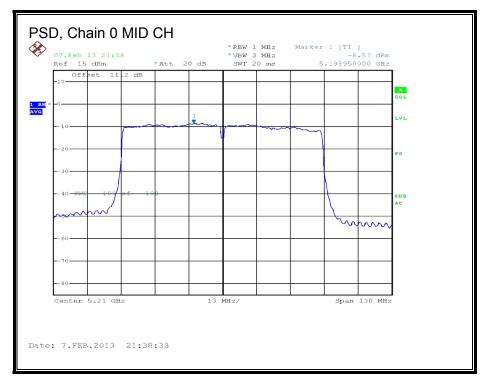
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	11.04	11.06	14.06	14.15	-0.09

PSD Results

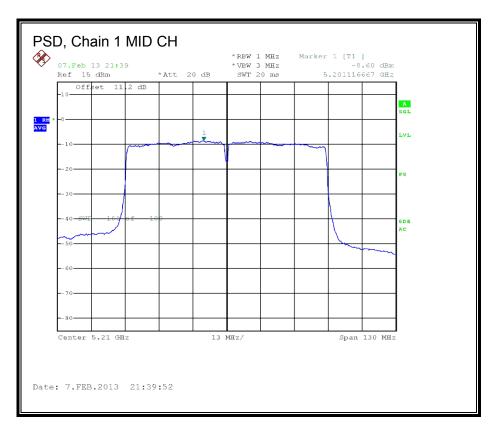
Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	-8.53	-8.60	-5.38	1.15	-6.53

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PSD, Chain 0



PSD, Chain 1



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8.10. 802.11a LEGACY 1TX MODE, 5.3 GHz BAND

8.10.1. 26 dB BANDWIDTH

LIMITS

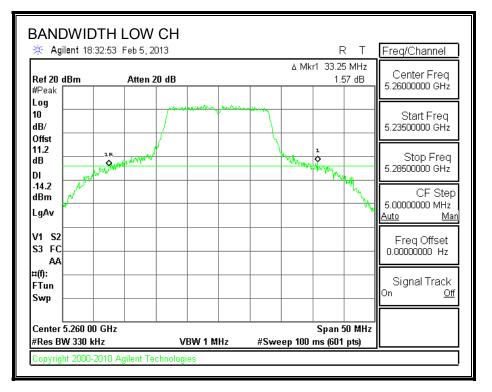
None; for reporting purposes only.

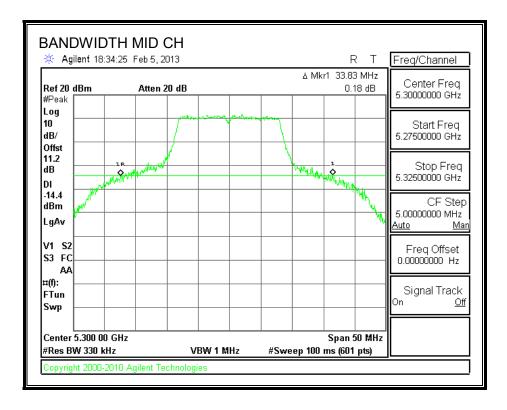
RESULTS

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5260	33.25
Mid	5300	33.83
High	5320	33.00

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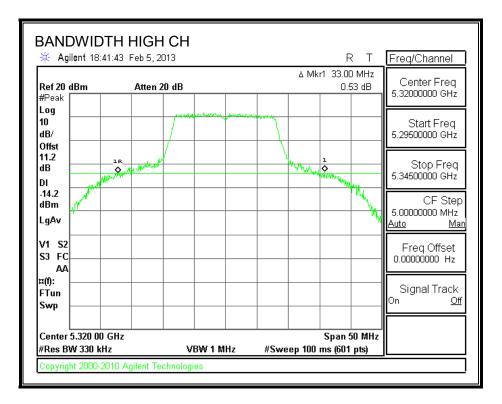
26 dB BANDWIDTH





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8.10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

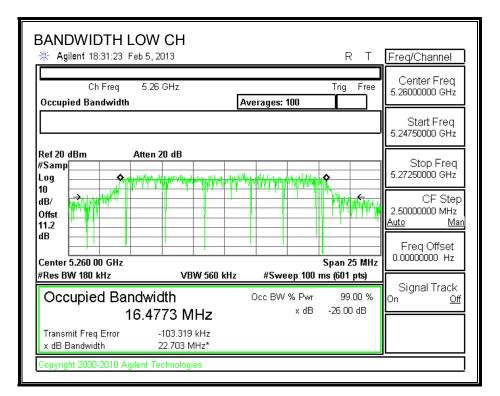
<u>RESULTS</u>

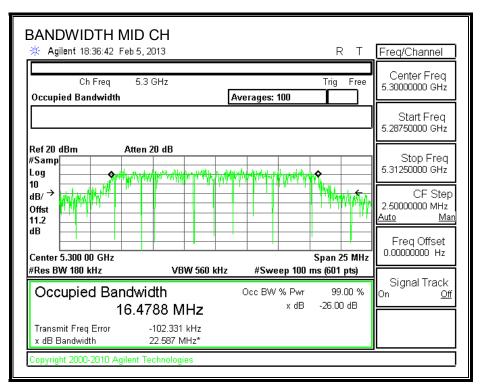
Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5260	16.4773
Mid	5300	16.4788
High	5320	16.4730

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99% BANDWIDTH





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BANDWIDTH HIGH CH	R T	Freq/Channel
Ch Freq 5.32 GHz Occupied Bandwidth	Trig Free Averages: 100	Center Freq 5.32000000 GHz
		Start Freq 5.30750000 GHz
Ref 20 dBm Atten 20 dB #Samp Log		Stop Freq 5.33250000 GHz
dB/ dB/ Offst 11.2		CF Step 2.5000000 MHz <u>Auto Man</u>
Center 5.320 00 GHz #Res BW 180 kHz VBW 560	Span 25 MHz #Sweep 100 ms (601 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwidth 16.4730 MHz	Occ BW % Pwr 99.00 % x dB -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error -100.975 kHz x dB Bandwidth 22.528 MHz*		
Copyright 2000-2010 Agilent Technologies		

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8.10.3. OUTPUT POWER AND PSD

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)
Low	5260	33.25	16.4773	6.12
Mid	5300	33.83	16.4788	6.12
High	5320	33.00	16.4730	6.12

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5260	23.88	23.17	29.17	23.05	10.88	11.00	10.88
Mid	5300	23.88	23.17	29.17	23.05	10.88	11.00	10.88
High	5320	23.88	23.17	29.17	23.05	10.88	11.00	10.88

Duty Cycle CF (dB) 0.00

Output Power Results

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	20.12	20.12	23.05	-2.93
Mid	5300	20.03	20.03	23.05	-3.02
High	5320	20.16	20.16	23.05	-2.89

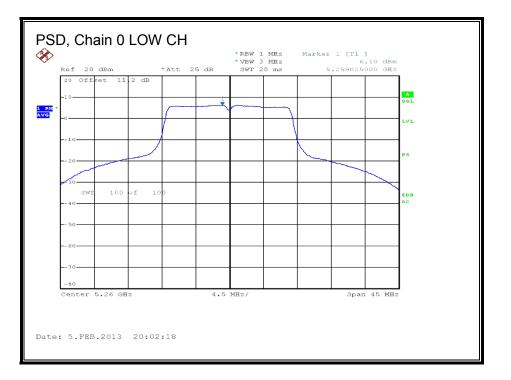
PPSD Results

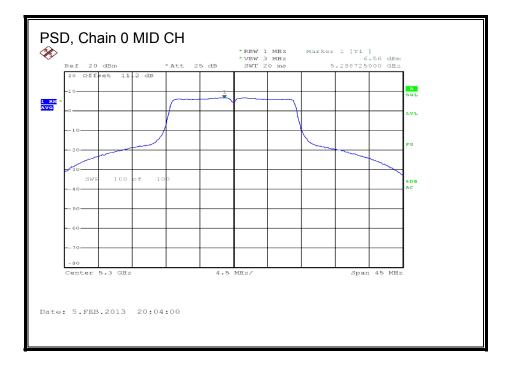
Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	6.10	6.10	10.88	-4.78
Mid	5300	6.56	6.56	10.88	-4.32
High	5320	6.83	6.83	10.88	-4.05

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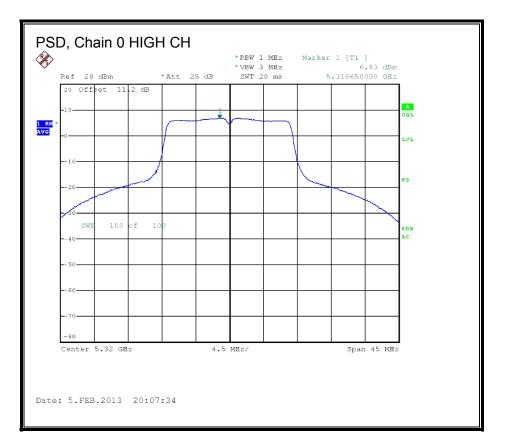
PSD, Chain 0





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8.11. 802.11n HT20 CDD 2TX MODE, 5.3 GHz BAND

8.11.1. 26 dB BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

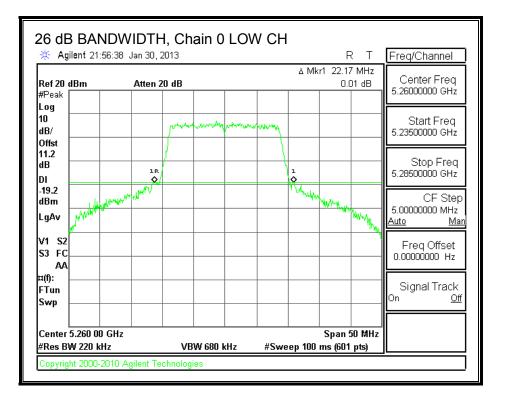
RESULTS

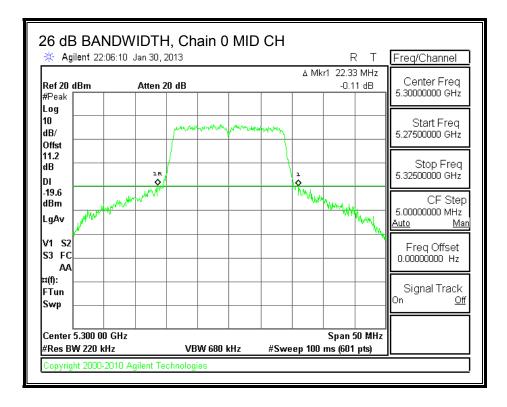
Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5260	22.17	26.08	
Mid	5300	22.33	25.67	
High	5320	22.08	25.25	

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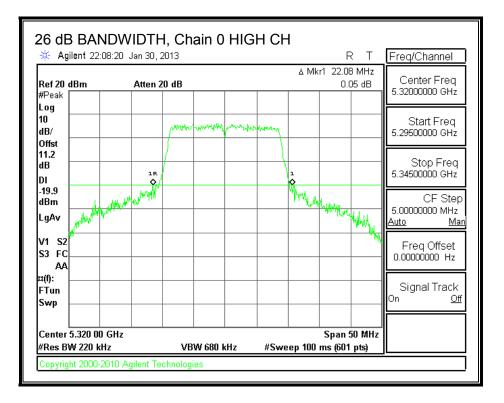
26 dB BANDWIDTH, Chain 0



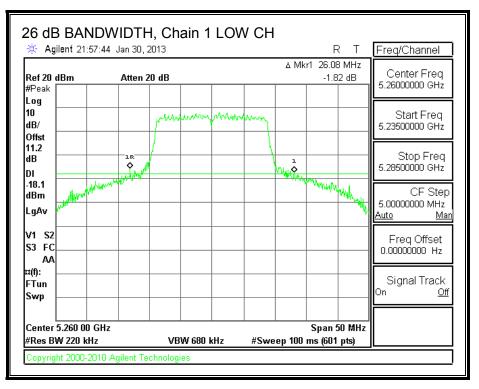


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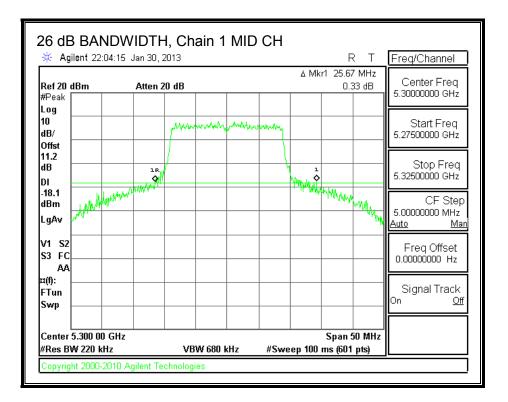


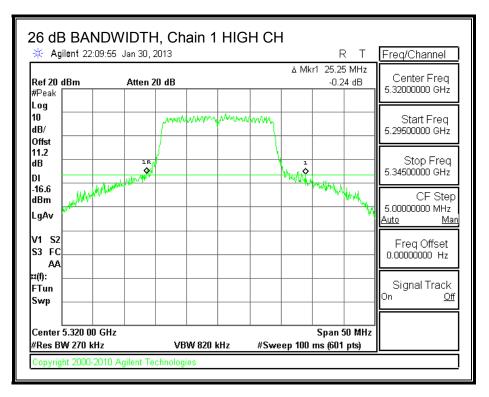
26 dB BANDWIDTH, Chain 1



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8.11.2. 99% BANDWIDTH

LIMITS

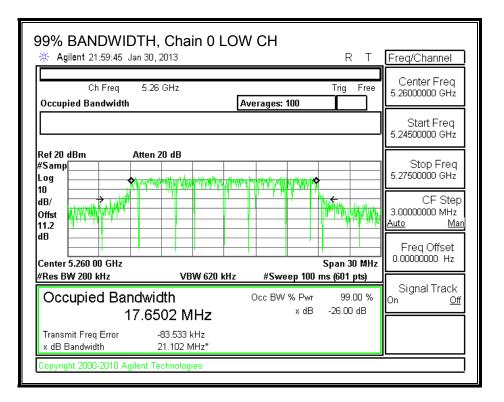
None; for reporting purposes only.

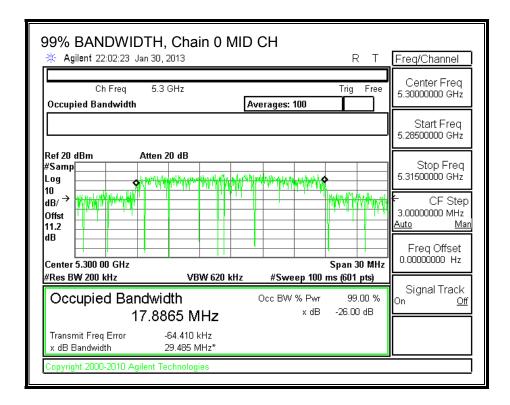
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5260	17.6502	17.6584
Mid	5300	17.8865	17.8522
High	5320	17.6514	17.6585

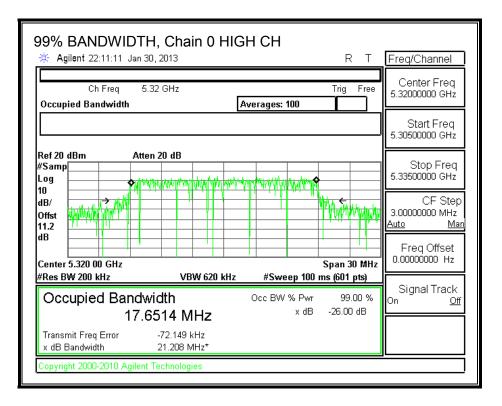
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99% BANDWIDTH, Chain 0

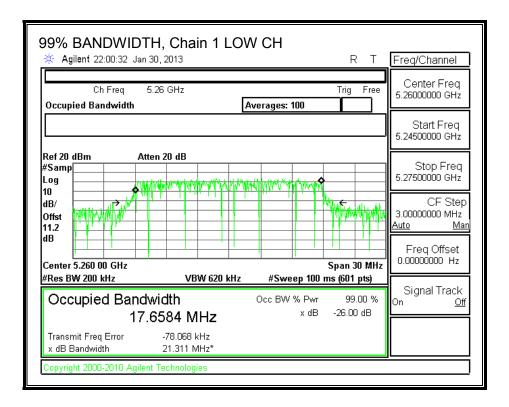




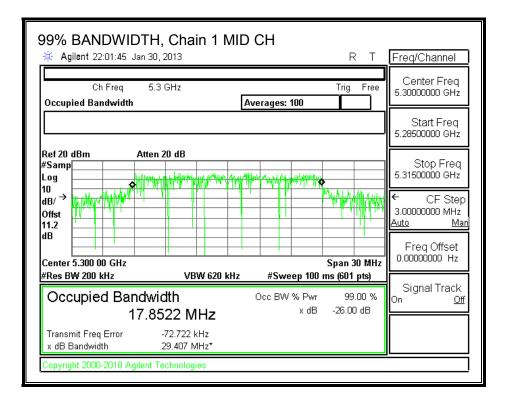
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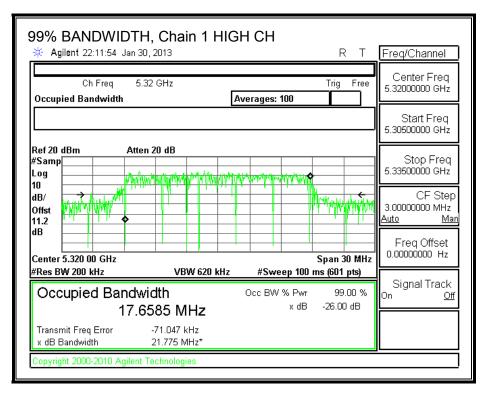


99% BANDWIDTH, Chain 1



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8.11.3. OUTPUT POWER AND PSD

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)
6.12	5.57	5.85

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

Chain 0	Chain 1	Correlated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
6.12	5.57	8.86

OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5260	22.17	17.6502	5.85
Mid	5300	22.33	17.8522	5.85
High	5320	22.08	17.6514	5.85

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5260	24.00	23.47	29.47	23.47
Mid	5300	24.00	23.52	29.52	23.52
High	5320	24.00	23.47	29.47	23.47

Output Power Results

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Devrer	Dever	Devier		
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	19.08	19.01	22.06	23.47	-1.41
Mid	5300	18.91	18.85	21.89	23.52	-1.63
High	5320	18.71	18.42	21.58	23.47	-1.89

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PSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5260	22.17	17.6502	8.86
Mid	5300	22.33	17.8522	8.86
High	5320	22.08	17.6514	8.86

Limits

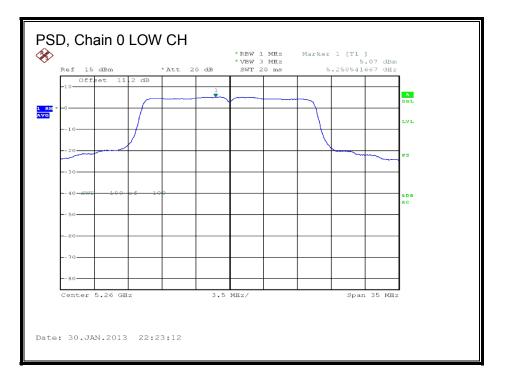
Channel	Frequency	FCC	IC	PSD
		PSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5260	8.14	11.00	8.14
Mid	5300	8.14	11.00	8.14
High	5320	8.14	11.00	8.14

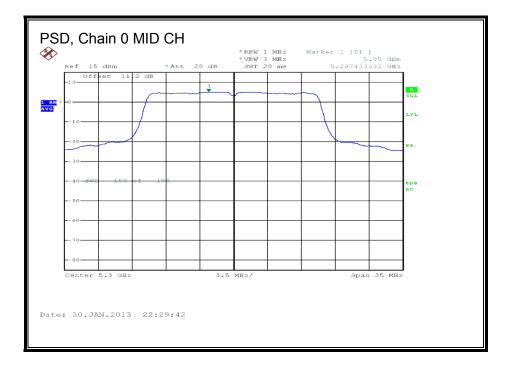
Duty Cycle CF (dB)	0.00	

PSD Results

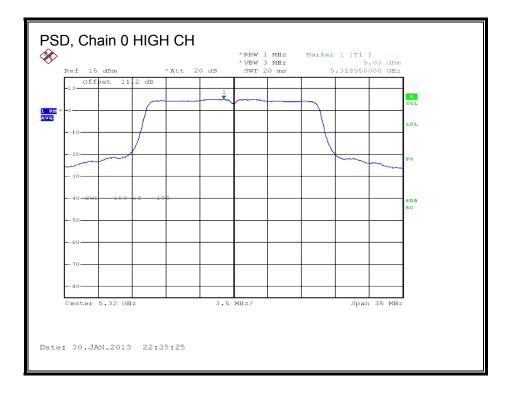
Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	5.07	5.12	8.11	8.14	-0.03
Mid	5300	5.05	5.07	8.07	8.14	-0.07
High	5320	5.03	4.96	8.01	8.14	-0.13

PSD, Chain 0





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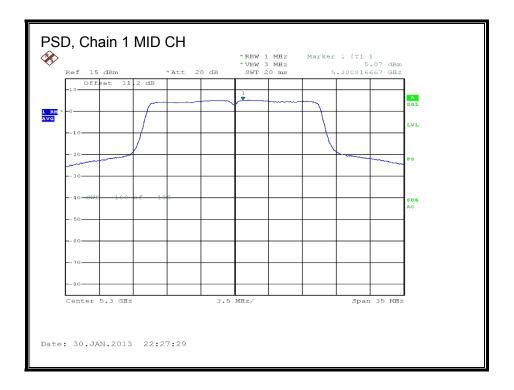


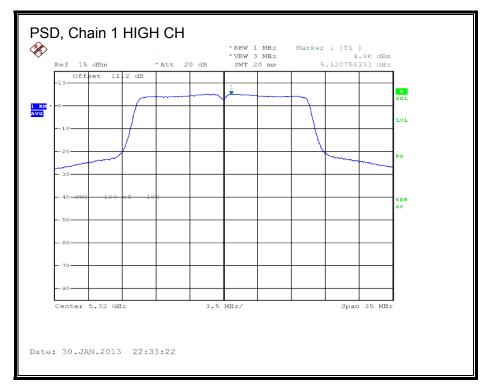
PSD, Chain 1



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8.12. 802.11n HT20 STBC 2TX MODE, 5.3 GHz BAND

8.12.1. 26 dB BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

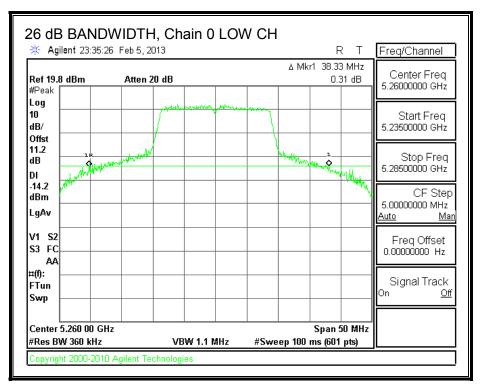
RESULTS

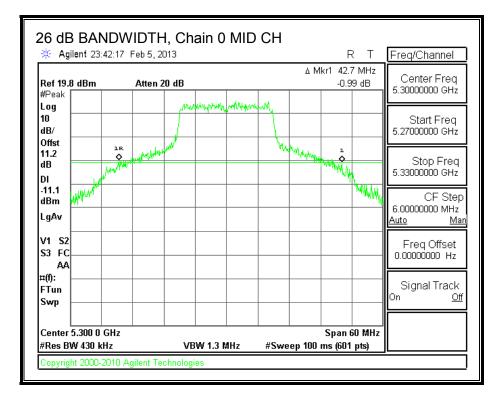
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5260	38.33	36.00
Mid	5300	42.70	41.90
High	5320	38.08	37.17

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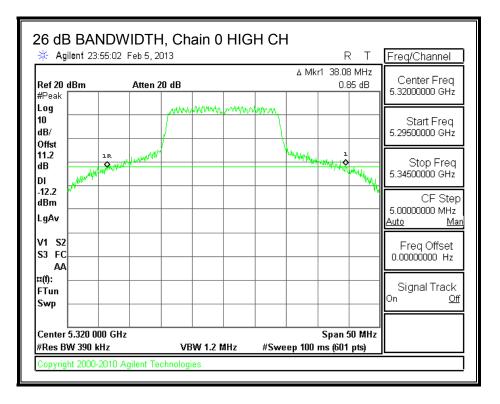
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26 dB BANDWIDTH, Chain 0

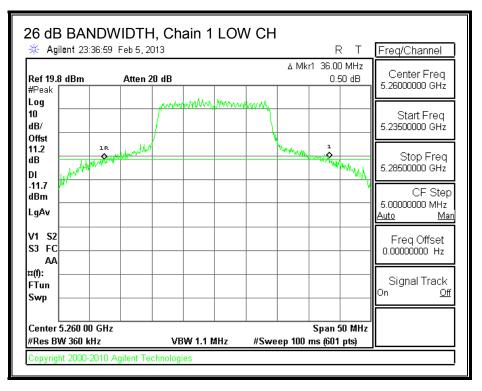




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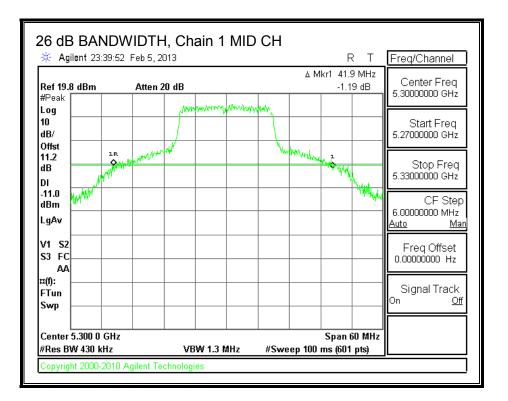


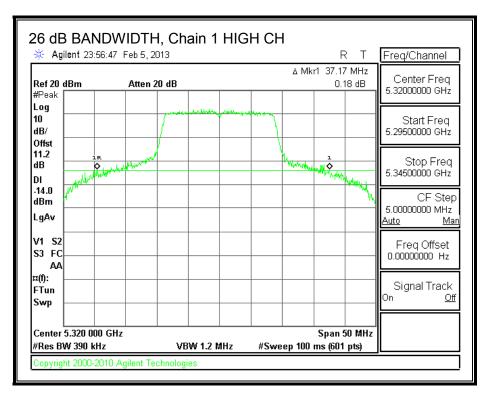
26 dB BANDWIDTH, Chain 1



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8.12.2. 99% BANDWIDTH

LIMITS

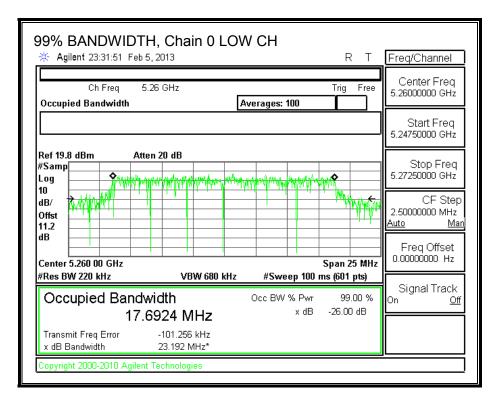
None; for reporting purposes only.

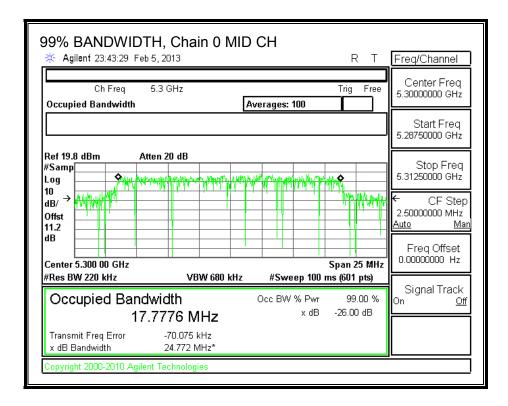
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5260	17.6924	17.6973	
Mid	5300	17.7776	17.7772	
High	5320	17.6914	17.6877	

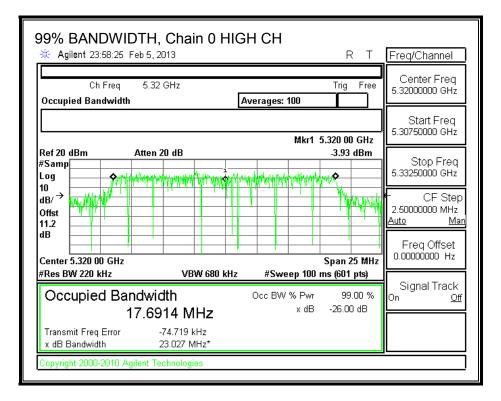
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99% BANDWIDTH, Chain 0

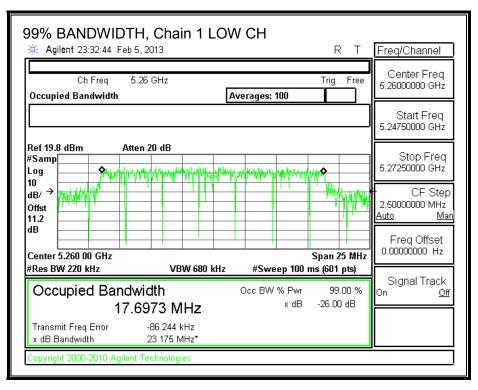




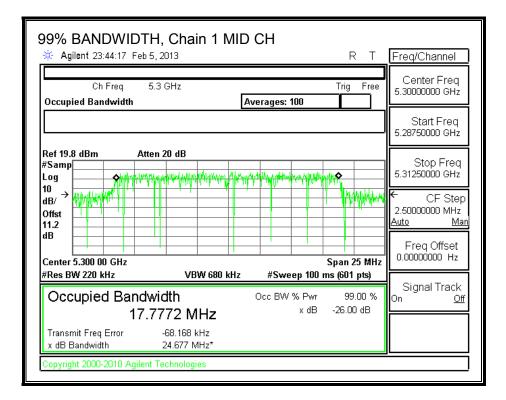
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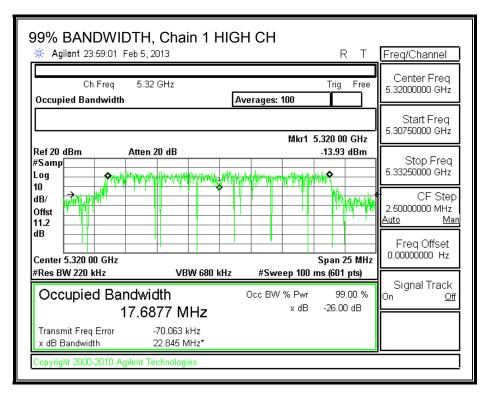


99% BANDWIDTH, Chain 1



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8.12.3. OUTPUT POWER AND PSD

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	Uncorrelated Chains		
Antenna	Antenna	Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
6.12	5.57	5.85		

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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	5260	36.00	17.6924	5.85	
Mid	5300	41.90	17.7772	5.85	
High	5320	37.17	17.6877	5.85	

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5260	24.00	23.48	29.48	23.48
Mid	5300	24.00	23.50	29.50	23.50
High	5320	24.00	23.48	29.48	23.48

Output Power Results

Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
						<i>(</i> 1)
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	20.25	20.05	23.16	23.48	-0.32
Mid	5300	20.43	20.36	23.41	23.50	-0.09
High	5320	20.28	20.13	23.22	23.48	-0.26

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PSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5260	36.00	17.6924	5.85
Mid	5300	41.90	17.7772	5.85
High	5320	37.17	17.6877	5.85

Limits

Channel	Frequency	FCC	IC	PSD
		PSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5260	11.00	11.00	11.00
Mid	5300	11.00	11.00	11.00
High	5320	11.00	11.00	11.00

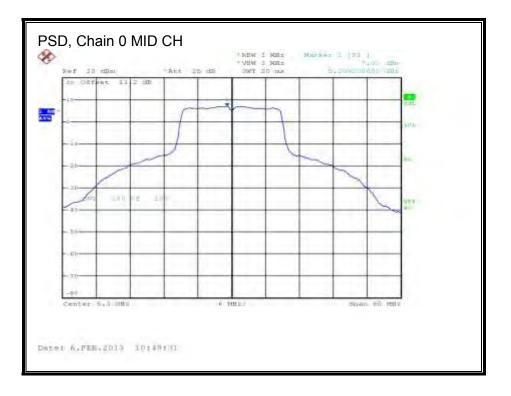
Duty Cycle CE (dB)	0.00	
Duty Cycle CF (dB)	0.00	

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	6.56	6.38	9.48	11.00	-1.52
Mid	5300	7.00	7.18	10.10	11.00	-0.90
High	5320	7.07	6.93	10.01	11.00	-0.99

PSD, Chain 0





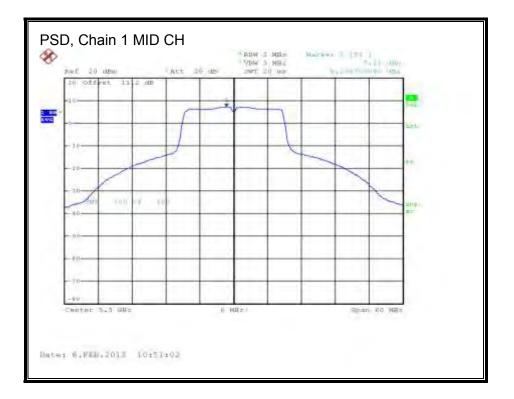
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PSD, Chain 1



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8.13. 802.11n HT40 TX MODE, 5.3 GHz BAND

8.13.1. 26 dB BANDWIDTH

LIMITS

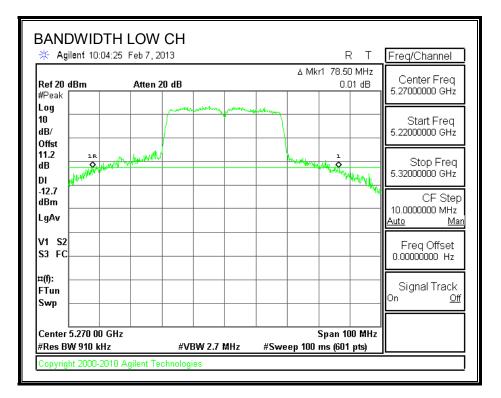
None; for reporting purposes only.

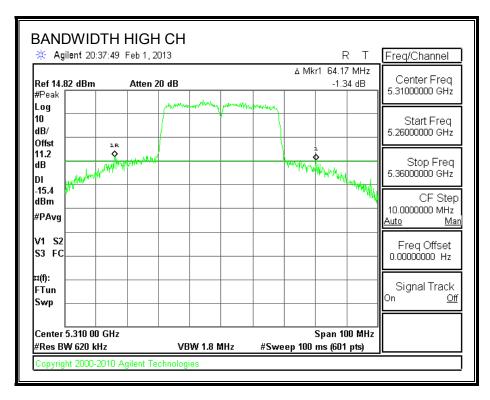
RESULTS

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5270	78.50
High	5310	64.17

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26 dB BANDWIDTH





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8.13.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

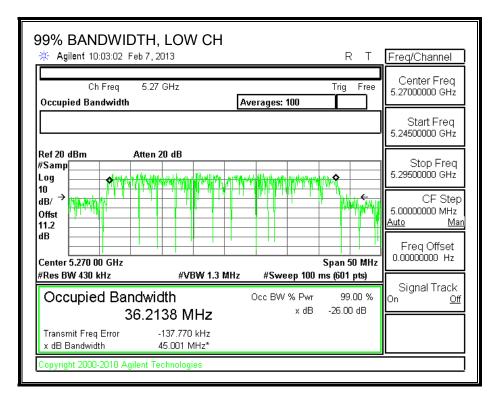
<u>RESULTS</u>

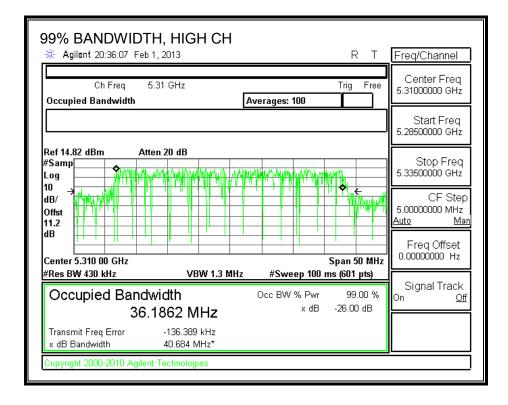
Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5270	36.2138
High	5310	36.1862

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99% BANDWIDTH





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8.13.3. OUTPUT POWER AND PSD

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)
	()	(((4.2.)
Low	5270	78.50	36.2138	6.12

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5270	23.88	24.00	30.00	23.88	10.88	11.00	10.88
High	5310	23.88	24.00	30.00	23.88	10.88	11.00	10.88

Duty Cycle CF (dB) 0.22

Output Power Results

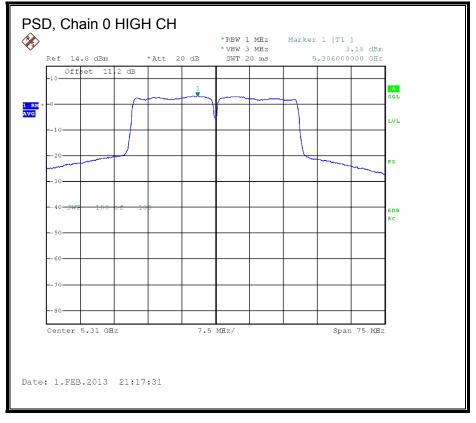
Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	20.36	20.36	23.88	-3.52

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	(MHz) 5270	(dBm) 2.78	(dBm) 3.00	(dBm) 10.88	(dB) -7.88

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PSD, Chain 0





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8.14. 802.11n HT40 CDD 2TX MODE, 5.3 GHz BAND

8.14.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

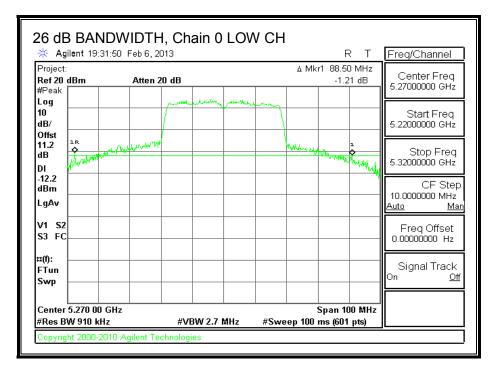
RESULTS

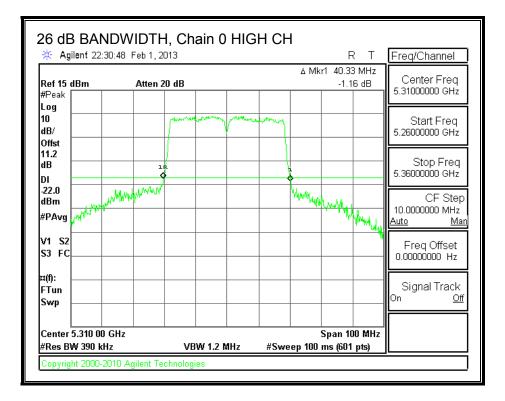
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5270	88.50	88.17
High	5310	40.33	39.67

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26 dB BANDWIDTH, Chain 0

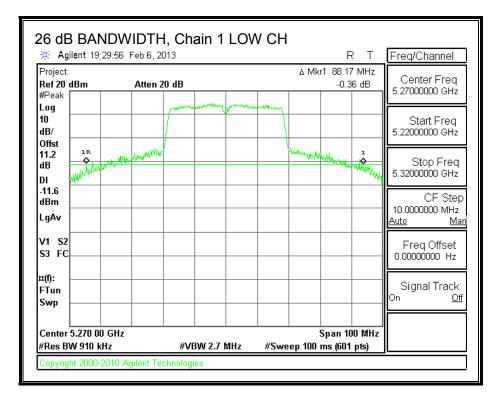


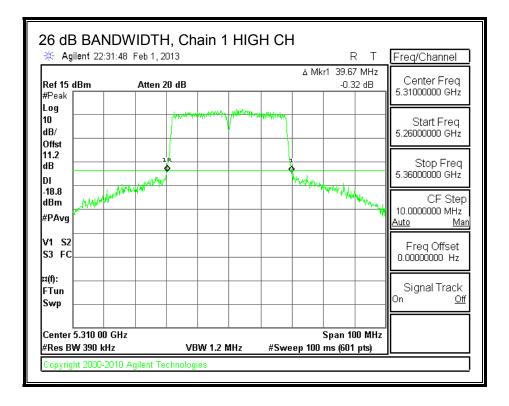


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26 dB BANDWIDTH, Chain 1





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8.14.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

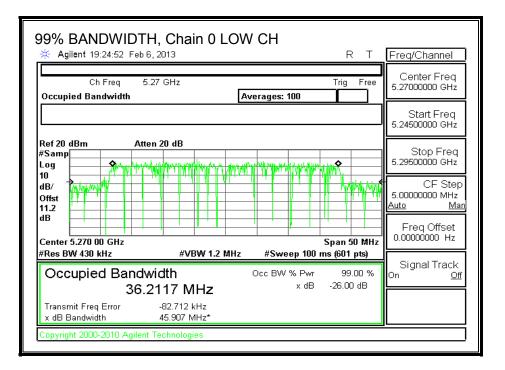
<u>RESULTS</u>

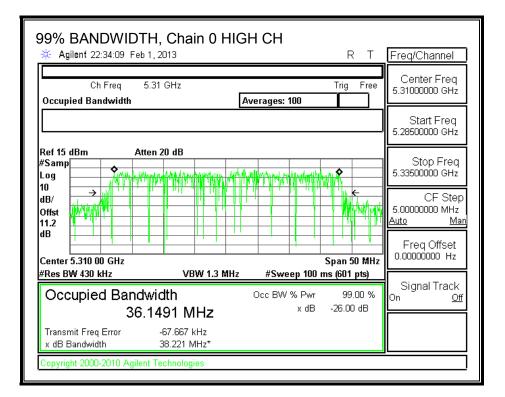
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5270	36.2117	36.2378
High	5310	36.1491	36.1454

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99% BANDWIDTH, Chain 0

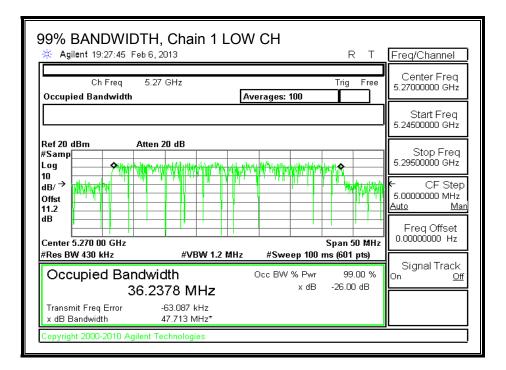


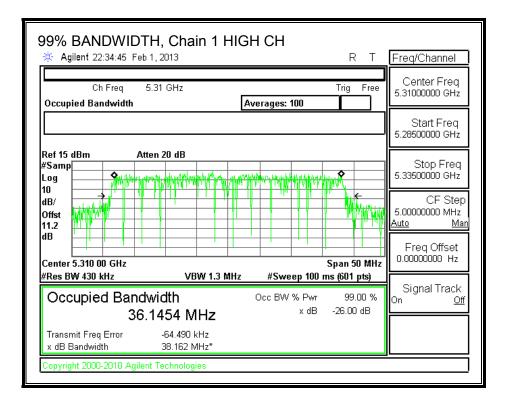


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99% BANDWIDTH, Chain 1





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8.14.3. OUTPUT POWER AND PSD

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)
6.12	5.57	5.85

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

Chain 0	Chain 1	Correlated Chains		
Antenna	Antenna	Directional		
Gain	Gain	Gain		
(dBi)	(dBi)	(dBi)		
6.12	5.57	8.86		

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Uncorrelated	Correlated
		26 dB 99%		Directional	Directional
		BW	BW	Gain Gai	
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5270	88.17	36.2117	5.85	8.86
High	5310	39.67	36.1454	5.85	8.86

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5270	24.00	24.00	30.00	24.00	8.14	11.00	8.14
High	5310	24.00	24.00	30.00	24.00	8.14	11.00	8.14

Duty Cycle CF (dB) 0.22

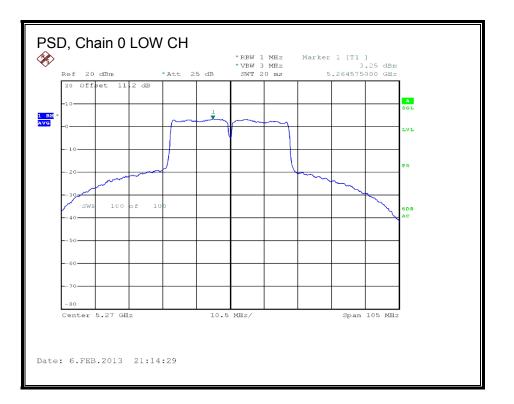
Output Power Results

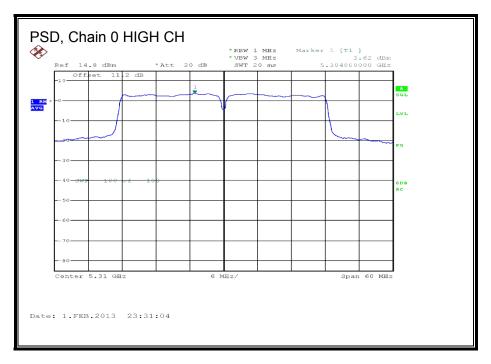
Channel	Frequency	Chain 0 Chain 1		Total	Power	Power	
		Meas Meas		Corr'd	Limit	Margin	
		Power	Power	Power			
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)	
Low	5270	20.12	20.18	23.16	24.00	-0.84	
High	5310	14.61	15.31	17.98	24.00	-6.02	

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
					(al Dura)	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	(MHZ) 5270	(dBm) 3.25	(dBm) 3.29	(dBm) 6.50	(dBm) 8.14	(ав) -1.64

PSD, Chain 0

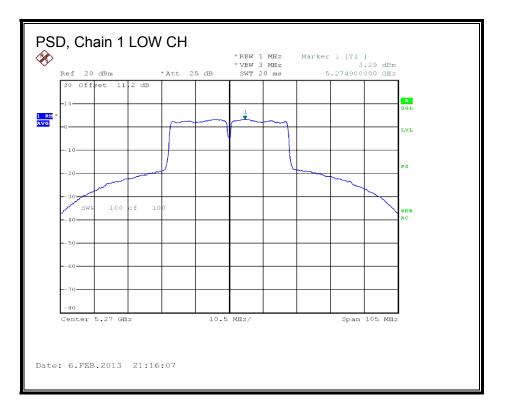


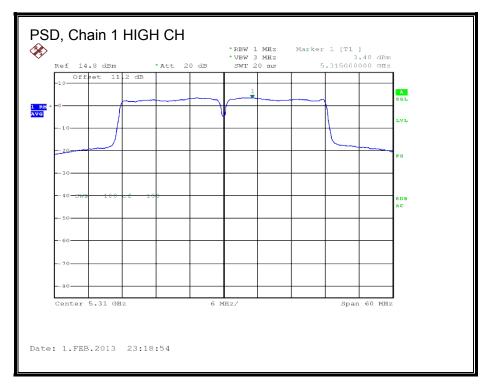


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PSD, Chain 1





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8.15. 802.11n AC40 BF 2TX MODE, 5.3 GHz BAND

8.15.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

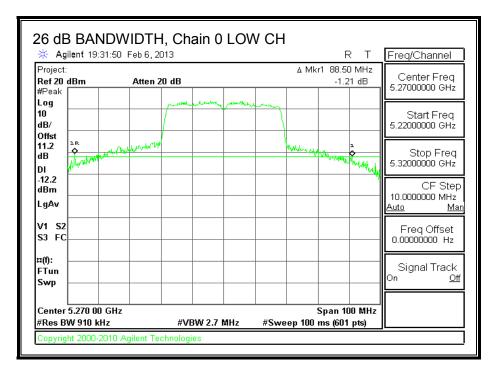
RESULTS

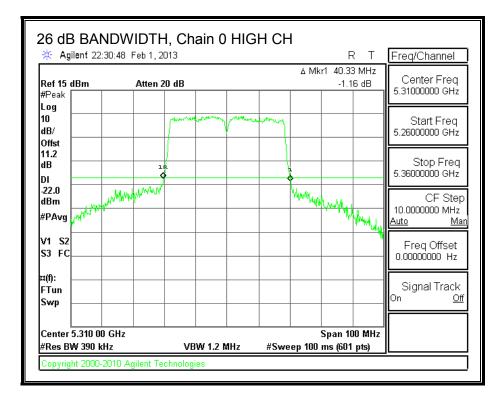
Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5270	88.50	88.17	
High	5310	40.33	39.67	

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26 dB BANDWIDTH, Chain 0

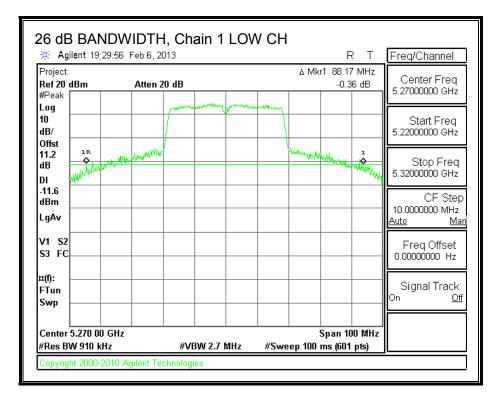


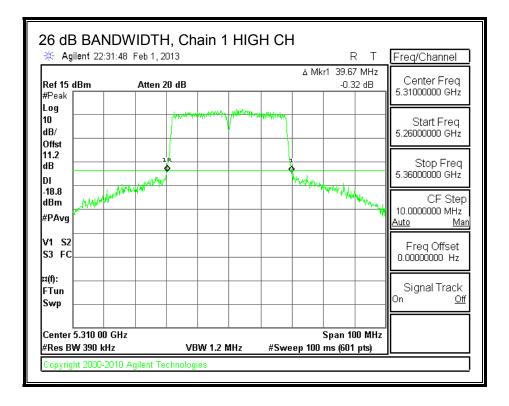


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26 dB BANDWIDTH, Chain 1





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8.15.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

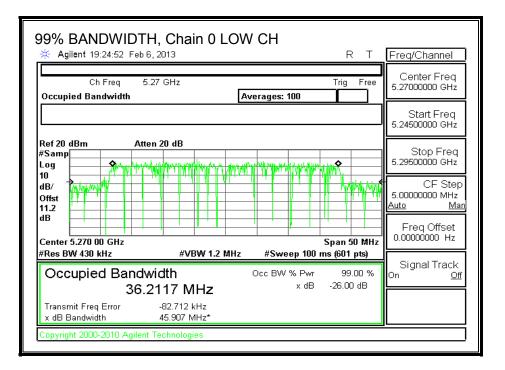
<u>RESULTS</u>

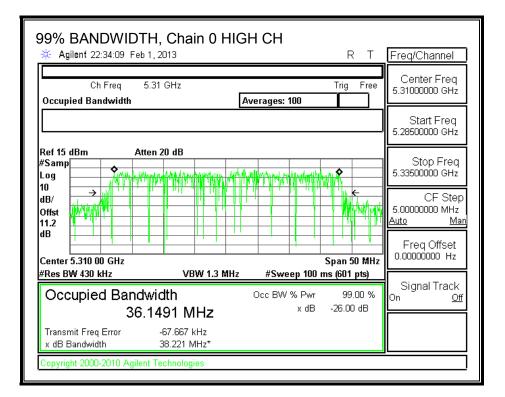
Channel	Frequency	99% BW	99% BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5270	36.2117	36.2378	
High	5310	36.1491	36.1454	

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99% BANDWIDTH, Chain 0

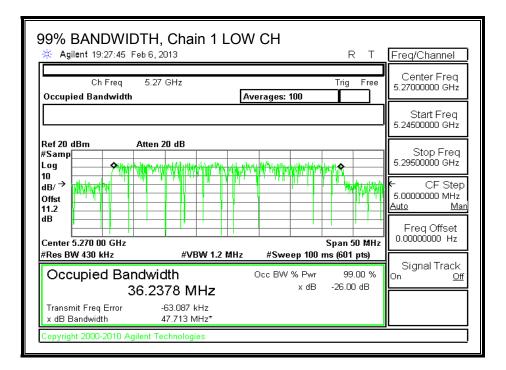


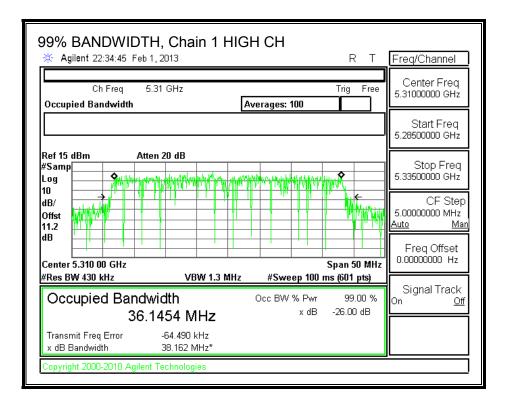


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99% BANDWIDTH, Chain 1





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8.15.3. OUTPUT POWER AND PSD

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)			
6.12	5.57	8.86			

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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	88.17	36.2117	8.86

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5270	21.14	24.00	30.00	21.14	8.14	11.00	8.14
High	5310	21.14	24.00	30.00	21.14	8.14	11.00	8.14

Duty Cycle CF (dB) 0.22

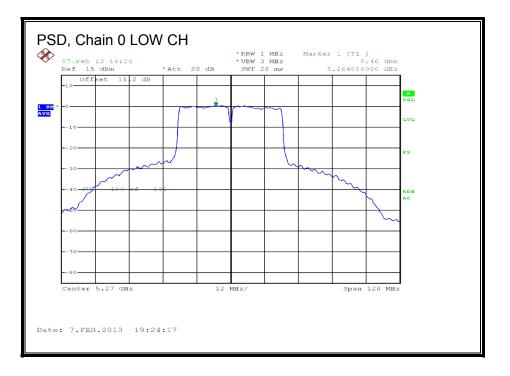
Output Power Results

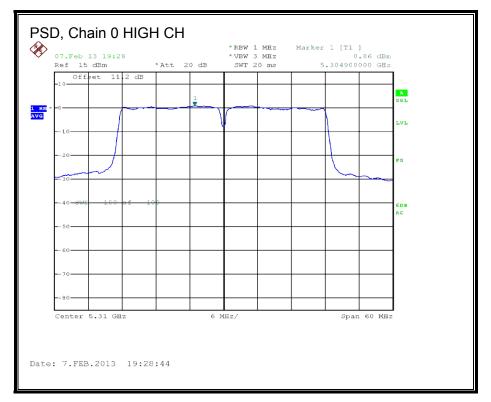
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas Meas		Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	18.03	18.15	21.10	21.14	-0.04
High	5310	15.08	15.80	18.47	21.14	-2.67

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	0.46	0.56	3.74	8.14	-4.40
High	5310	0.86	1.12	4.22	8.14	-3.92

PSD, Chain 0

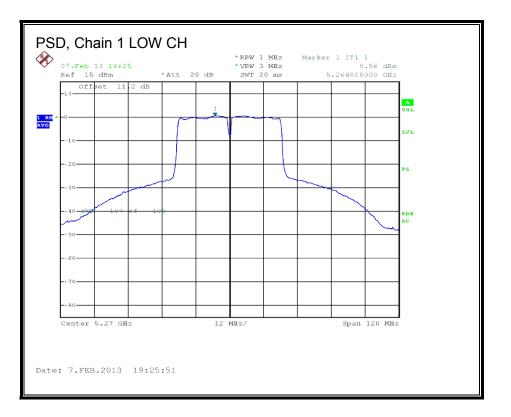




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PSD, Chain 1





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8.16. 802.11a LEGACY 1TX MODE, 5.6 GHz BAND

8.16.1. 26 dB BANDWIDTH

LIMITS

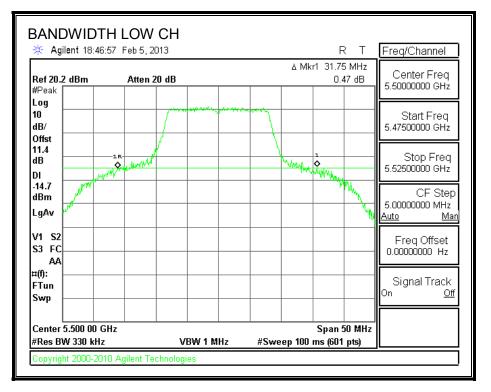
None; for reporting purposes only.

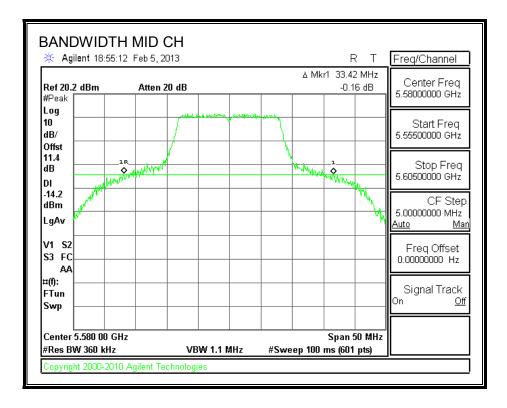
RESULTS

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5500	31.75
Mid	5580	33.42
High	5700	27.33

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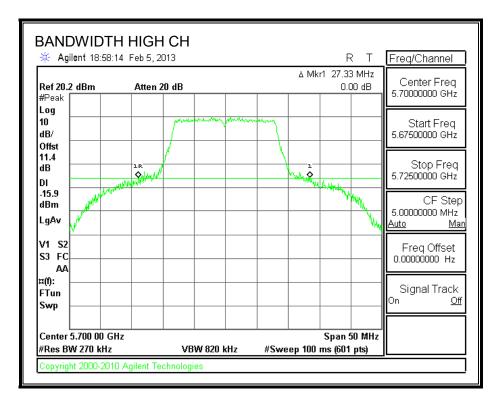
26 dB BANDWIDTH





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8.16.2. 99% BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

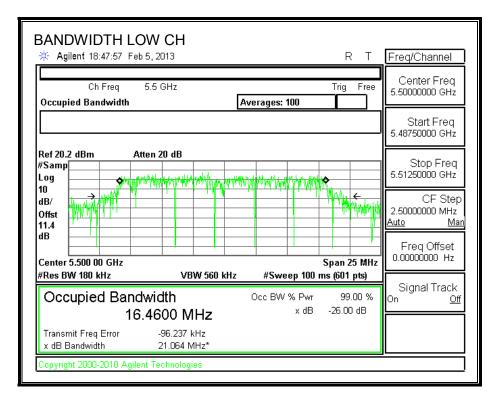
RESULTS

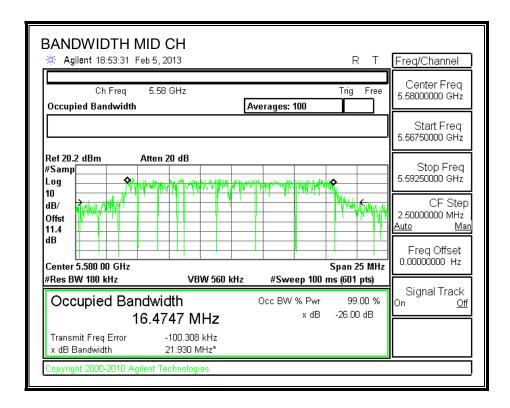
Channel Frequency		99% Bandwidth
	(MHz)	(MHz)
Low	5500	16.4600
Mid	5580	16.4747
High	5700	16.4517

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99% BANDWIDTH





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BANDWIDTH HIGH CH		RT	Freq/Channel
Ch Freq 5.7 GHz Occupied Bandwidth	Averages: 100	Trig Free	Center Freq 5.70000000 GHz
			Start Freq 5.68750000 GHz
Ref 20.2 dBm Atten 20 dB #Samp Log		M	Stop Freq 5.71250000 GHz
dB/			CF Step 2.5000000 MHz <u>Auto Man</u>
dB		Span 25 MHz	Freq Offset 0.00000000 Hz
	3W 560 kHz #Sweep 10 Occ BW % Pv)0 ms (601 pts) vr 99.00 %	Signal Track
Occupied Bandwidth 16.4517 N		W 99.00 % B -26.00 dB	On <u>Off</u>
Transmit Freq Error -101.633 x dB Bandwidth 20.246			
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8.16.3. OUTPUT POWER AND PSD

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	31.75	16.4600	6.61
Mid	5580	33.42	16.4747	6.61
High	5700	27.33	16.4517	6.61

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5500	23.39	23.16	29.16	22.55	10.39	11.00	10.39
Mid	5580	23.39	23.17	29.17	22.56	10.39	11.00	10.39
High	5700	23.39	23.16	29.16	22.55	10.39	11.00	10.39

Duty Cycle CF (dB) 0.00

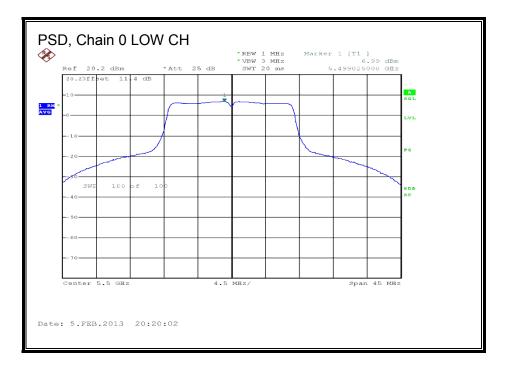
Output Power Results

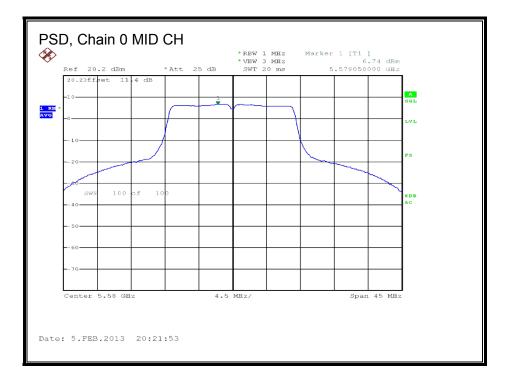
Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	20.03	20.03	22.55	-2.52
Mid	5580	20.12	20.12	22.56	-2.44
High	5700	20.02	20.02	22.55	-2.53

PSD Results

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	6.99	6.99	10.39	-3.40
Mid	5580	6.74	6.74	10.39	-3.65
High	5700	6.87	6.87	10.39	-3.52

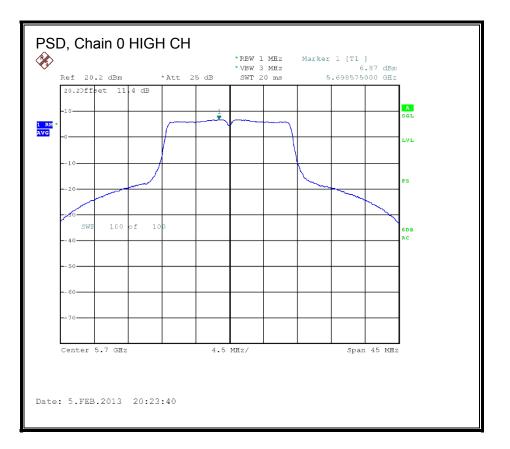
PSD, Chain 0





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8.16.4. 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

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5580	17.58	6.74	0.00	10.84	13	-2.16

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PEAK EXCURSION

	URSION MID	CH	R T	Freq/Channel
Ref 25 dBm #Peak	Atten 30 dB		Mkr1 5.581 53 GHz 17.58 dBm	Center Freq 5.58000000 GHz
Log 10 dB/			www	Start Freq 5.5600000 GHz
Offst 11.2 dB	Whent well		N. W. Markson Mark	Stop Freq 5.6000000 GHz
#PAvg				CF Step 4.0000000 MHz <u>Auto Man</u>
V1 S2 S3 FC				Freq Offset 0.00000000 Hz
¤(f): FTun Swp				Signal Track On <u>Off</u>
Center 5.580 00 (#Res BW 1 MHz		BW 3 MHz	Span 40 MHz Sweep 1 ms (601 pts)	
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8.17. 802.11a LEGACY 1TX MODE, CHANNEL 144, 5.6 GHz BAND

8.17.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

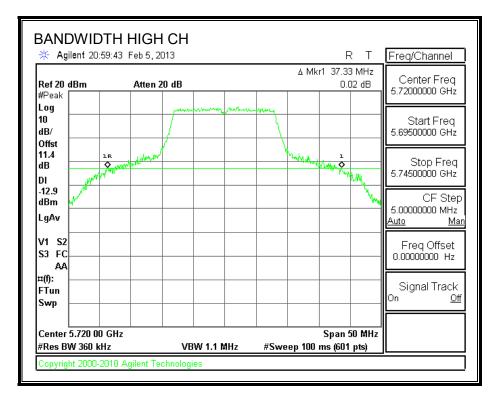
RESULTS

Channel	Frequency	26 dB Bandwidth		
	(MHz)	(MHz)		
High	5720	37.33		

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26 dB BANDWIDTH



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8.17.2. 99% BANDWIDTH

LIMITS

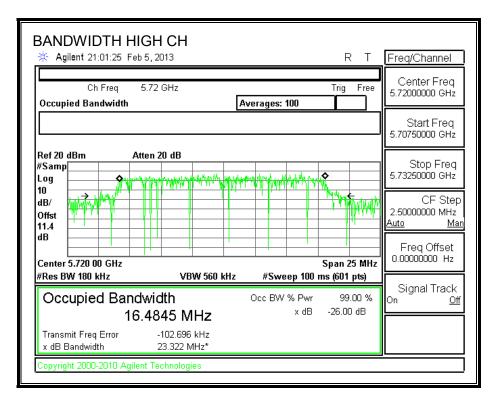
None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency 99% Bandwidth						
	(MHz)	(MHz)					
High	5720	16.4845					

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99% BANDWIDTH



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8.17.3. OUTPUT POWER AND PSD

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

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)
High	5720	23.67	13.2423	6.61

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	24.00	22.22	28.22	22.22	10.39	11.00	10.39

Output Power Results

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	16.06	16.06	22.22	-6.16

PSD Results

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	6.120	6.12	10.39	-4.27

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Limits (FCC), portion in 5.8 GHz UNII 3 band

Bandwidth and Antenna Gain Channel Frequency Min Min Directional 99% 26 dB Gain BW BW (MHz) (MHz) (MHz) (dBi) 5720 3.2423 High 13.67 6.61

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	22.36	16.11	22.11	16.11	10.39	11.00	10.39

Output Power Results

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	9.71	9.71	16.11	-6.40

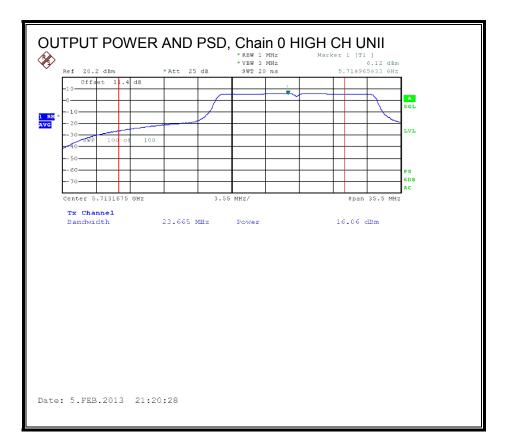
PSD Results

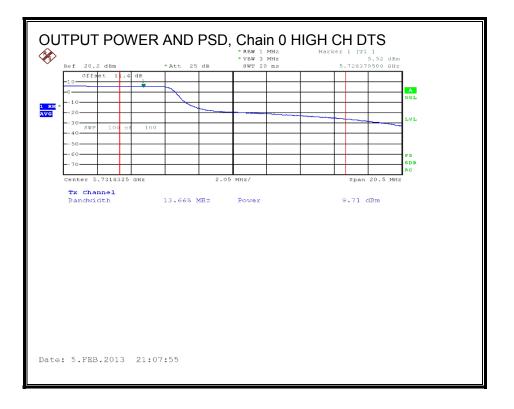
Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	5.520	5.52	10.39	-4.87

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OUTPUT POWER AND PSD, Chain 0





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8.18. 802.11n HT20 CDD 2TX MODE, 5.6 GHz BAND

8.18.1. 26 dB BANDWIDTH

LIMITS

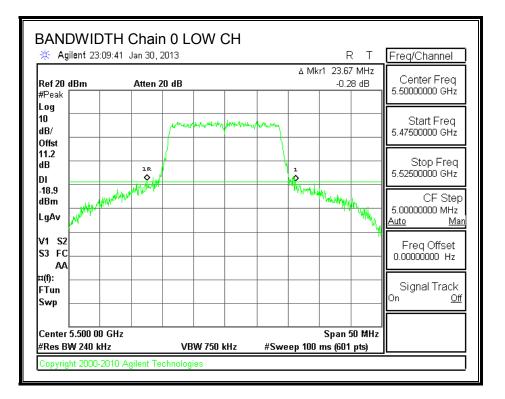
None; for reporting purposes only.

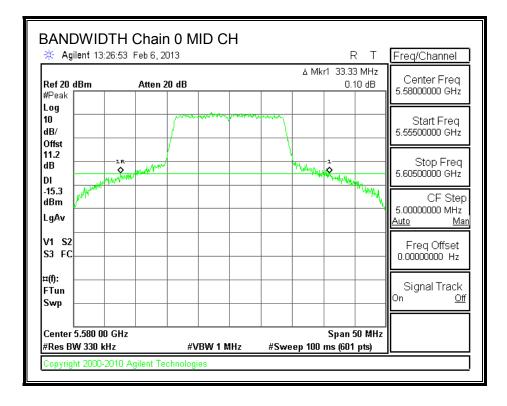
RESULTS

Channel	Frequency	26 dB BW	26 dB BW	
		Chain 0	Chain 1	
	(MHz)	(MHz)	(MHz)	
Low	5500	23.67	28.25	
Mid	5580	33.33	35.42	
High	5700	25.67	28.25	

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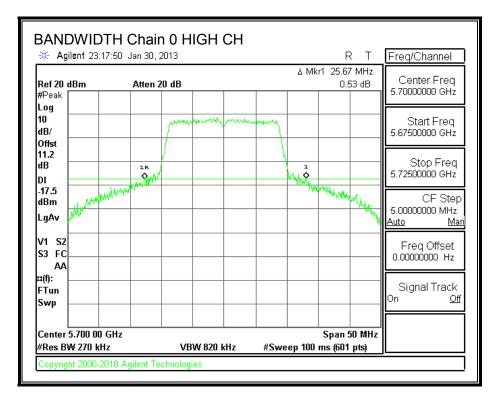
26 dB BANDWIDTH, Chain 0



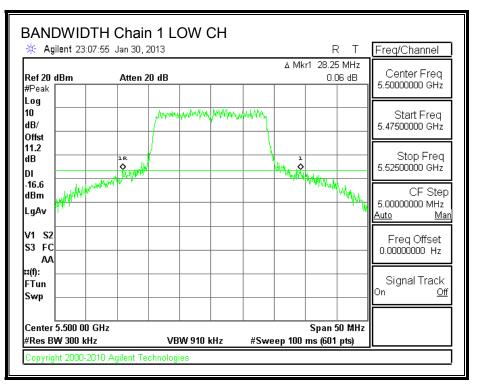


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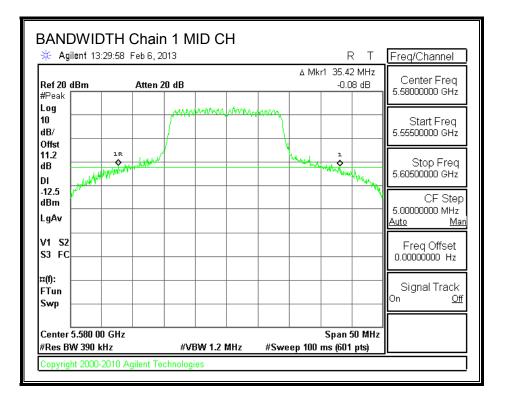
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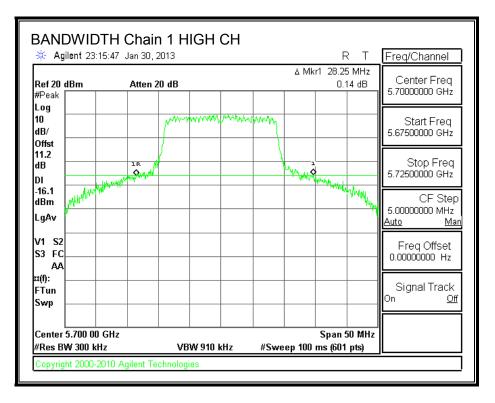


26 dB BANDWIDTH, Chain 1



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8.18.2. 99% BANDWIDTH

LIMITS

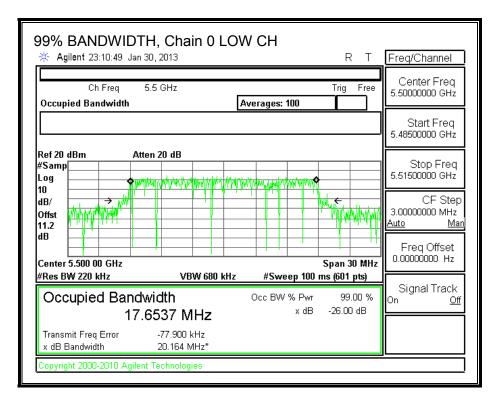
None; for reporting purposes only.

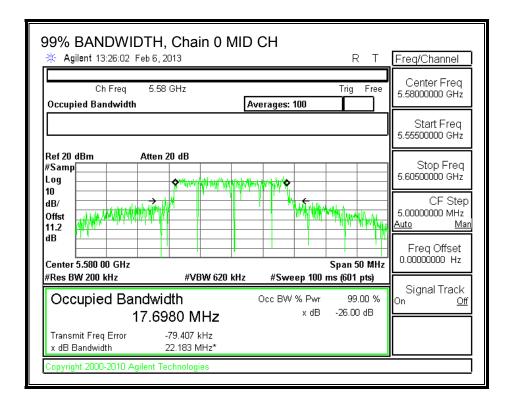
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	17.6537	17.6459
Mid	5580	17.6980	17.7260
High	5700	17.6611	17.6747

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99% BANDWIDTH, Chain 0

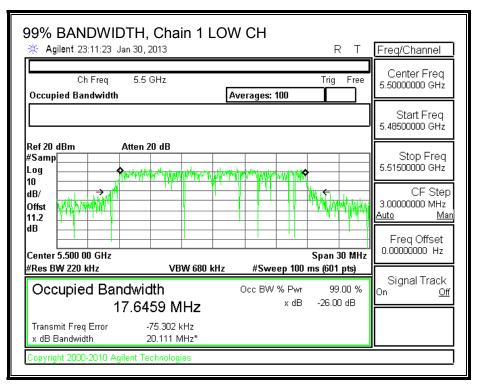




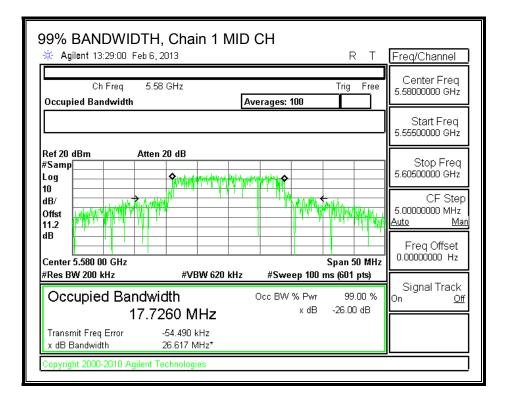
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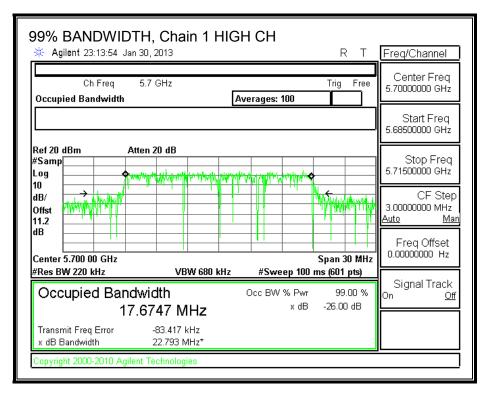
99% BANDWIDTH, Chain 0 HIGI		Freq/Channel
Ch Freq 5.7 GHz	Trig Free verages: 100	Center Freq 5.7000000 GHz
		Start Freq 5.68500000 GHz
Ref 20 dBm Atten 20 dB #Samp Log		Stop Freq 5.71500000 GHz
10 dB/ Offst 11.2 dB	Mut in the start	CF Step 3.0000000 MHz <u>Auto Man</u>
Center 5.700 00 GHz #Res BW 220 kHz VBW 680 kHz	Span 30 MHz #Sweep 100 ms (601 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwidth 17.6611 MHz	Occ BW % Pwr 99.00 % x dB -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error -93.987 kHz x dB Bandwidth 19.963 MHz*		
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99% BANDWIDTH, Chain 1



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8.18.3. OUTPUT POWER AND PSD

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)
6.61	5.77	6.21

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

Chain 0	Chain 1	Correlated Chains	
Antenna	Antenna	Directional	
Gain	Gain	Gain	
(dBi)	(dBi)	(dBi)	
6.61	5.77	9.21	

OUTPUT POWER RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	23.67	17.6459	6.21
Mid	5580	33.33	17.6980	6.21
High	5700	25.67	17.6611	6.21

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5500	23.79	23.47	29.47	23.26
Mid	5580	23.79	23.48	29.48	23.27
High	5700	23.79	23.47	29.47	23.26

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	18.29	18.53	21.42	23.26	-1.83
Mid	5580	17.68	17.42	20.56	23.27	-2.71
High	5700	15.15	15.97	18.59	23.26	-4.67

PSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	23.67	17.6459	9.21
Mid	5580	33.33	17.6980	9.21
High	5700	25.67	17.6611	9.21

Limits

Channel	Frequency	FCC	IC	PSD
		PPSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	7.79	11.00	7.79
Mid	5580	7.79	11.00	7.79
High	5700	7.79	11.00	7.79

Duty Cycle CF (dB) 0.00

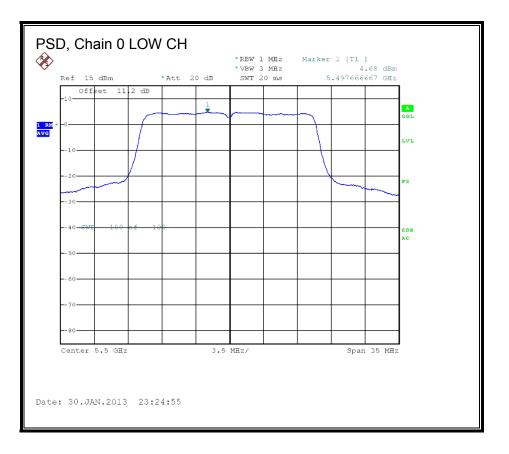
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	4.68	4.73	7.72	7.79	-0.07
Mid	5580	4.58	4.52	7.56	7.79	-0.23
High	5700	4.64	4.78	7.72	7.79	-0.07

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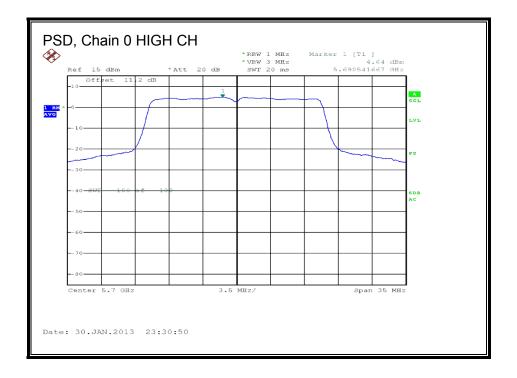
PSD, Chain 0



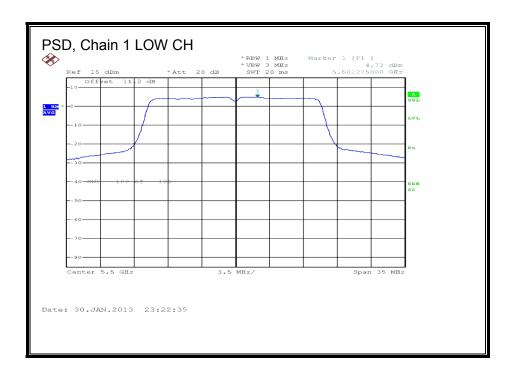


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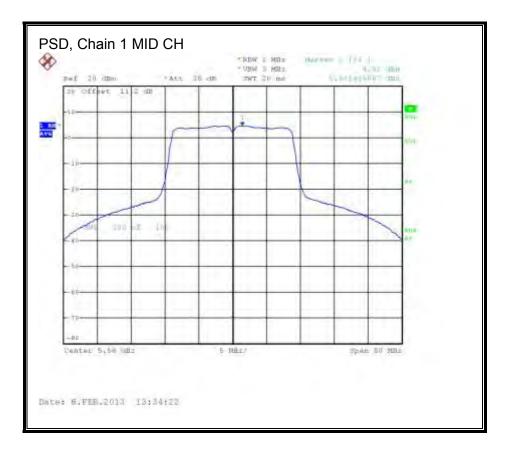


PSD, Chain 1



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8.18.4. 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

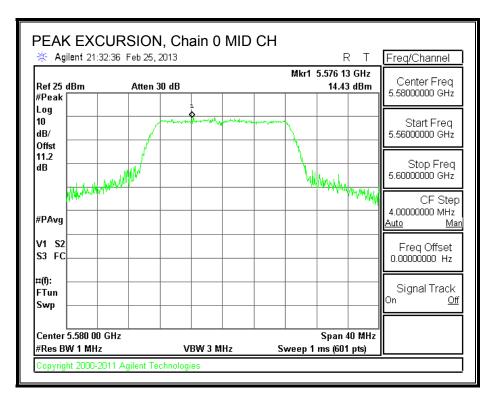
Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5200	14.43	4.58	0.00	9.85	13	-3.15

Chain 1

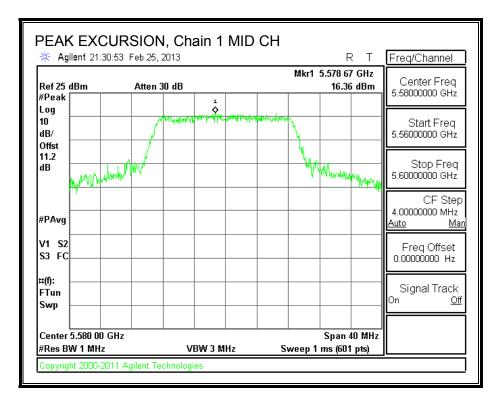
Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5200	16.36	4.52	0.00	11.84	13	-1.16

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PEAK EXCURSION, Chain 0



PEAK EXCURSION, Chain 1



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8.19. 802.11n HT20 CDD 2TX MODE, CHANNEL 144, 5.6 GHz BAND

8.19.1. 26 dB BANDWIDTH- UNII

LIMITS

None; for reporting purposes only.

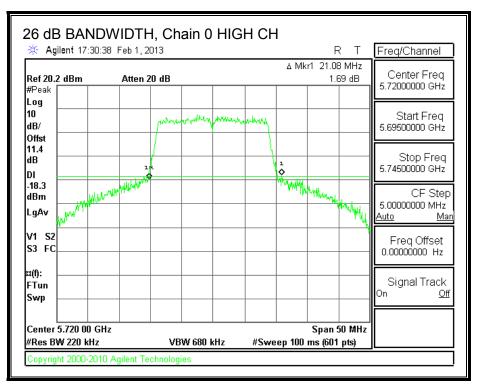
RESULTS

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5720	15.54	19.04

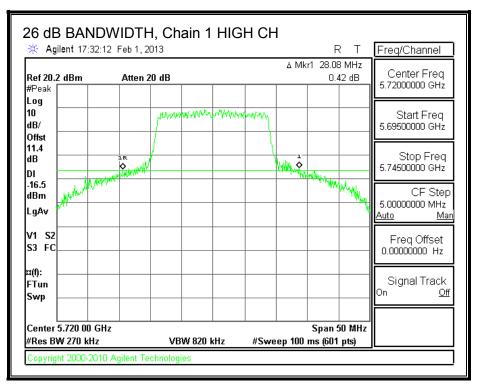
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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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8.19.2. 99% **BANDWIDTH**

LIMITS

None; for reporting purposes only.

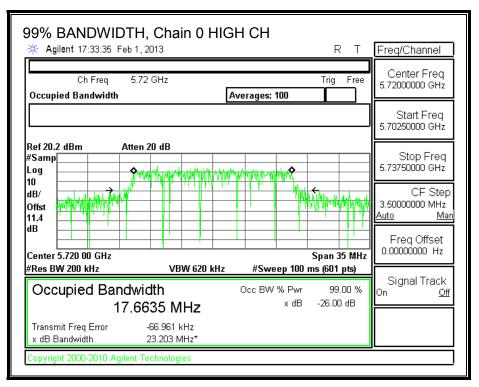
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5720	13.8318	13.8358

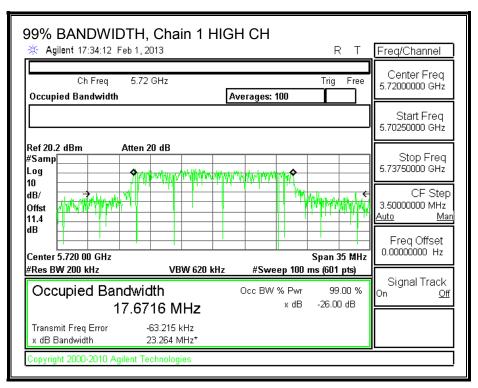
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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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8.19.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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)
6.61	5.77	6.21

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)
6.61	5.77	9.21

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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	5720	15.54	13.8318	9.21	6.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	22.70	22.41	28.41	22.20	7.79	11.00	7.79

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	14.80	14.74	17.78	22.20	-4.42

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	4.670	4.710	7.70	7.79	-0.09

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Limits (FCC), portion in 5.8 GHz UNII 3 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	5.54	3.8318	9.21	6.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5720	18.23	16.83	22.83	16.62	7.79	11.00	7.79

Output Power Results

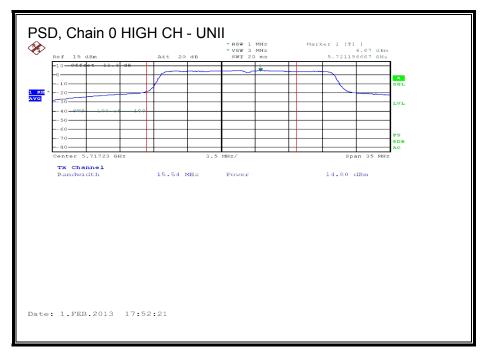
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	9.05	9.08	12.08	16.62	-4.55

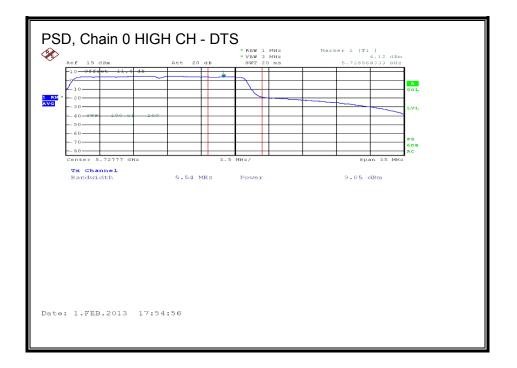
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5720	4.120	4.010	7.08	7.79	-0.71

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PSD, Chain 0

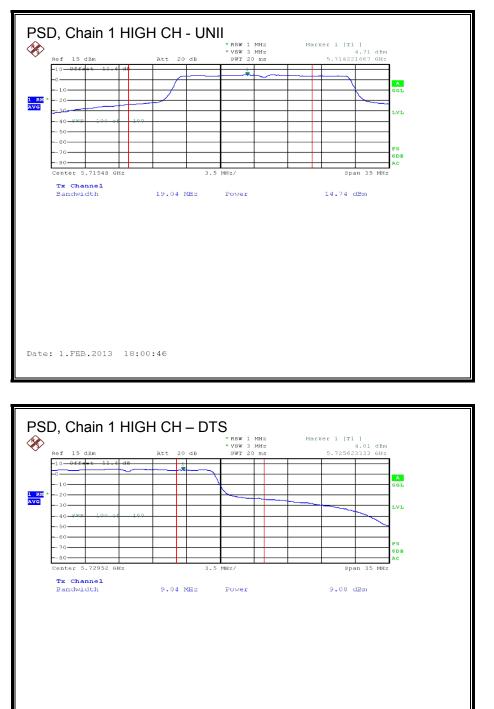




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<u>PSD, Chain 1</u>



Date: 1.FEB.2013 17:59:54

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8.20. 802.11n HT20 STBC 2TX MODE, 5.6 GHz BAND

8.20.1. 26 dB BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

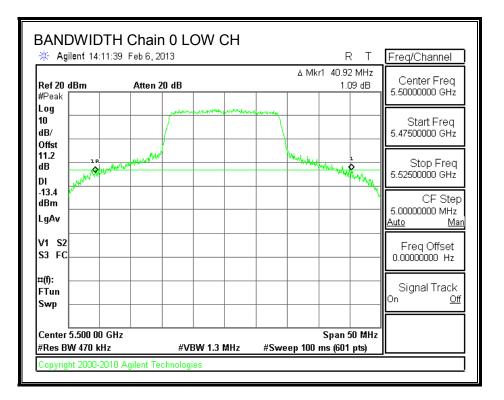
RESULTS

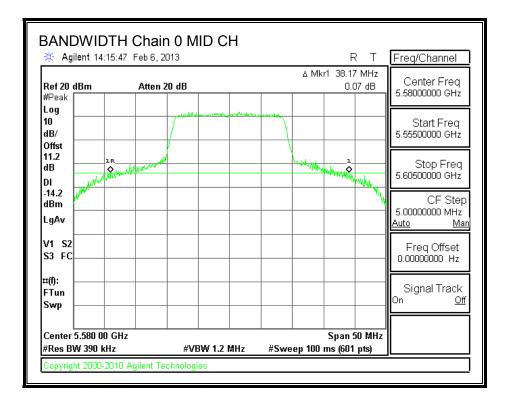
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	40.92	41.17
Mid	5580	38.17	37.75
High	5700	39.00	40.75

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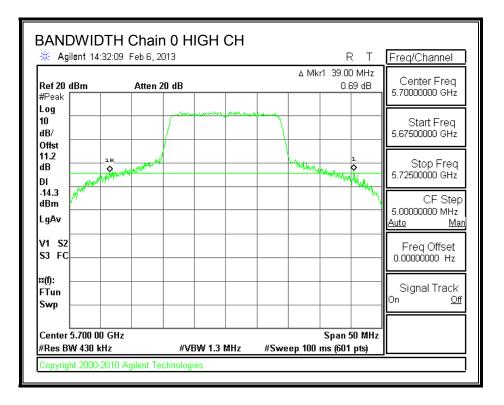
26 dB BANDWIDTH, Chain 0



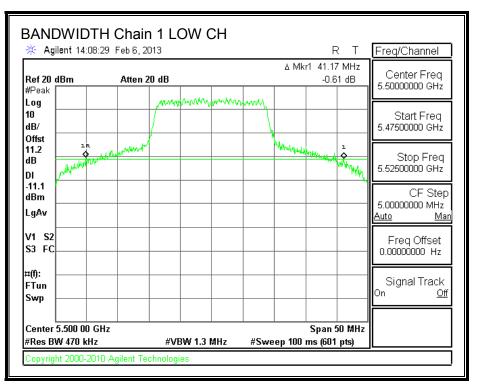


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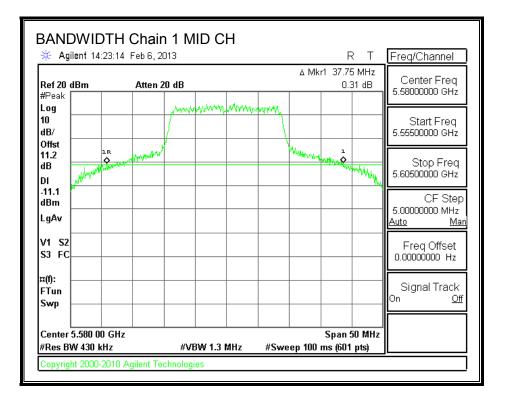
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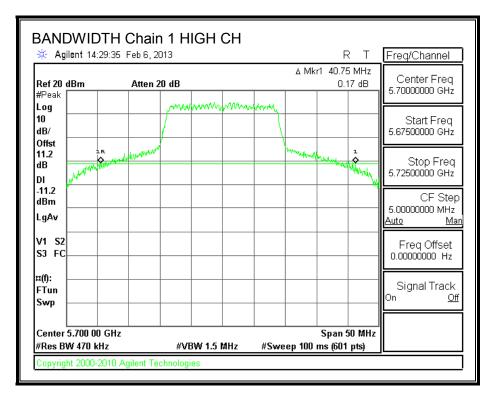


26 dB BANDWIDTH, Chain 1



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8.20.2. 99% BANDWIDTH

LIMITS

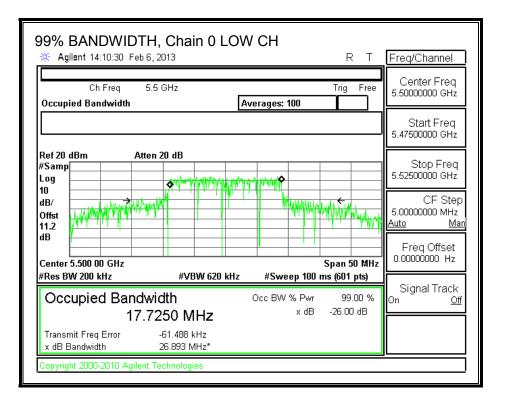
None; for reporting purposes only.

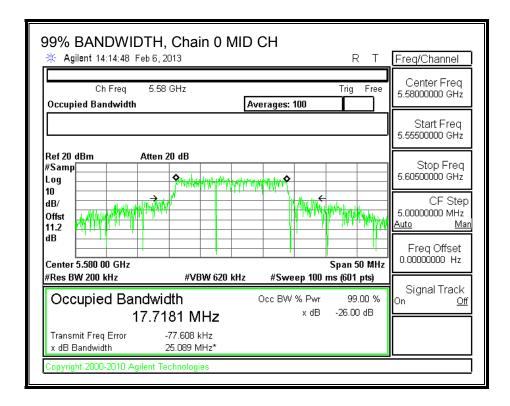
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	17.7250	17.7825
Mid	5580	17.7181	17.7836
High	5700	17.7013	17.7955

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99% BANDWIDTH, Chain 0

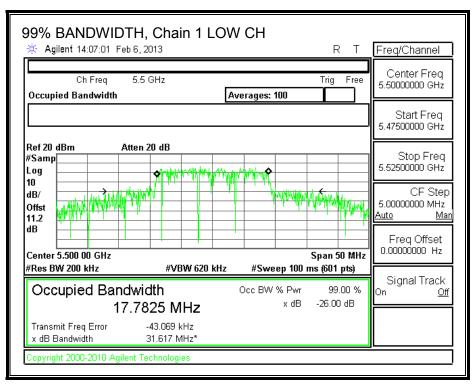




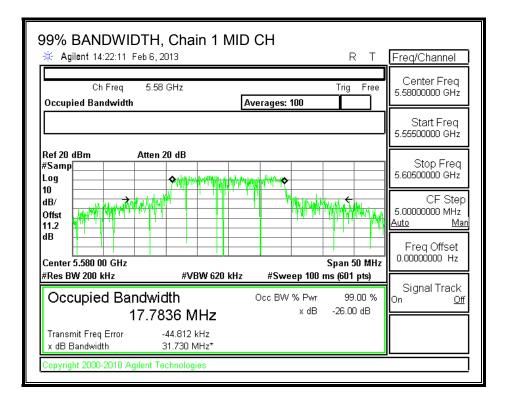
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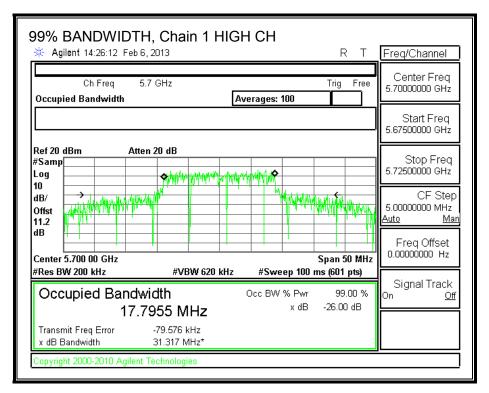
99% BANDWIDTH, (Agilent 14:30:53 Feb 6, 201		Н СН	RT	Freq/Channel
Ch Freq 5.7 Gł Occupied Bandwidth		verages: 100	Trig Free	Center Freq 5.70000000 GHz
				Start Freq 5.67500000 GHz
Ref 20 dBm Atten 20 #Samp Log 10	dB And the state of the state o			Stop Freq 5.72500000 GHz
dB/ Offst 11.2				CF Step 5.0000000 MHz <u>Auto Man</u>
Center 5.700 00 GHz #Res BW 200 kHz	#VBW 620 kHz	#Sweep 100	Span 50 MHz ns (601 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwidt 17.701	h 3 MHz	Occ BW % Pwr x dB		Signal Track On <u>Off</u>
x dB Bandwidth 23.	5.658 kHz .246 MHz*			
Copyright 2000-2010 Agilent Tech	nologies			

99% BANDWIDTH, Chain 1



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8.20.3. OUTPUT POWER AND PSD

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	Uncorrelated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
6.61	5.77	6.21

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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	40.92	17.7250	6.21
Mid	5580	37.75	17.7181	6.21
High	5700	39.00	17.7013	6.21

Limits

Channel	Frequency	FCC	IC	IC	Power
		Power	Power	EIRP	Limit
		Limit	Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5500	23.79	23.49	29.49	23.28
Mid	5580	23.79	23.48	29.48	23.27
High	5700	23.79	23.48	29.48	23.27

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	20.01	20.21	23.12	23.28	-0.15
Mid	5580	20.21	20.19	23.21	23.27	-0.06
High	5700	17.01	17.15	20.09	23.27	-3.18

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PSD RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Low	5500	40.92	17.7250	6.21
Mid	5580	37.75	17.7181	6.21
High	5700	39.00	17.7013	6.21

Limits

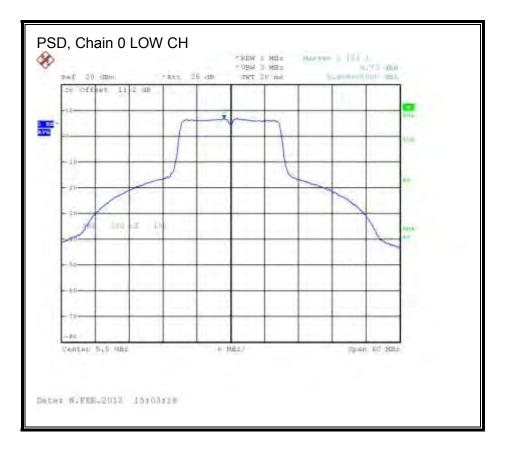
Channel	Frequency	FCC	IC	PSD
		PSD	PSD	Limit
		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	10.79	11.00	10.79
Mid	5580	10.79	11.00	10.79
High	5700	10.79	11.00	10.79

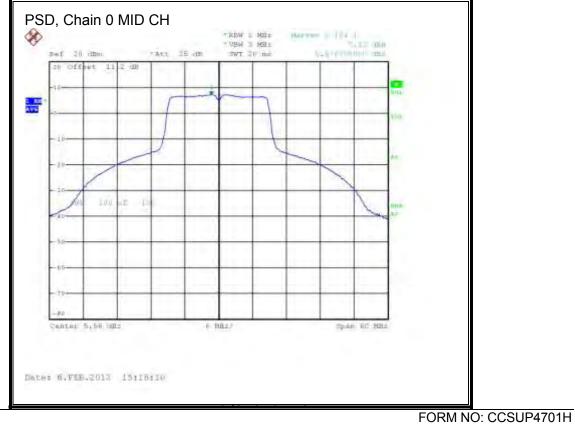
Duty Cycle CF (dB) 0

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	6.73	6.96	9.86	10.79	-0.93
Mid	5580	7.13	7.40	10.28	10.79	-0.51
High	5700	6.72	6.75	9.75	10.79	-1.04

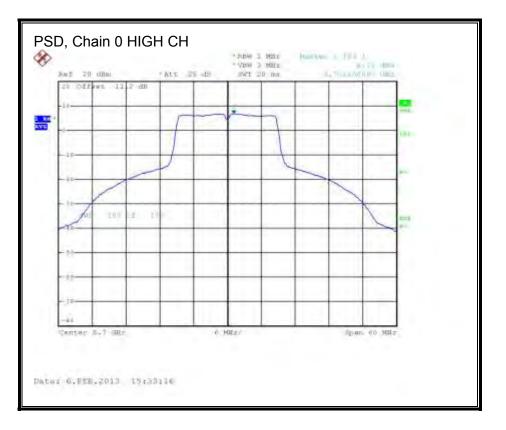
PSD, Chain 0





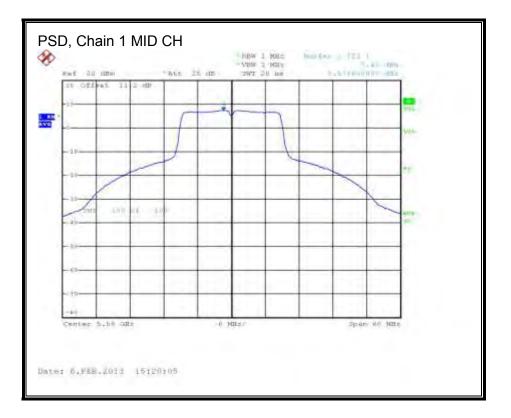
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PSD, Chain 1







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8.20.4. 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

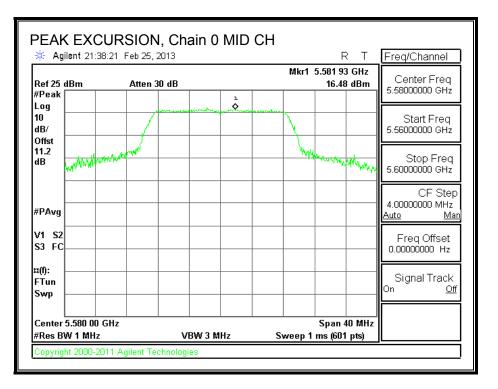
Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5580	16.48	7.13	0.00	9.35	13	-3.65

Chain 1

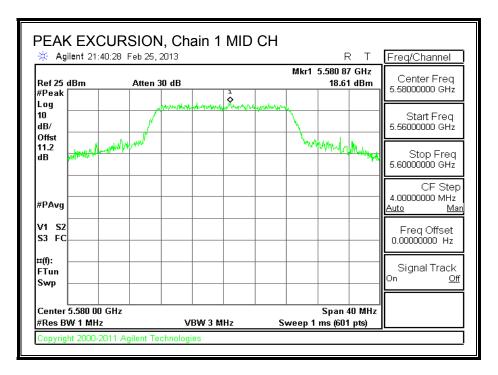
Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5580	18.61	7.40	0.00	11.21	13	-1.79

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PEAK EXCURSION, Chain 0



PEAK EXCURSION, Chain 1



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8.21. 802.11n HT20 STBC 2TX MODE, CHANNEL 144, 5.6 GHz BAND

8.21.1.26 dB BANDWIDTH- UNII

<u>LIMITS</u>

None; for reporting purposes only.

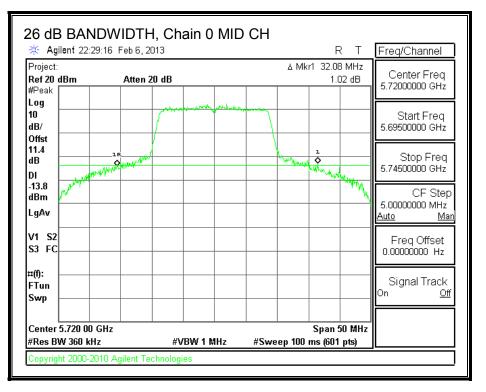
RESULTS

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5720	21.04	22.38

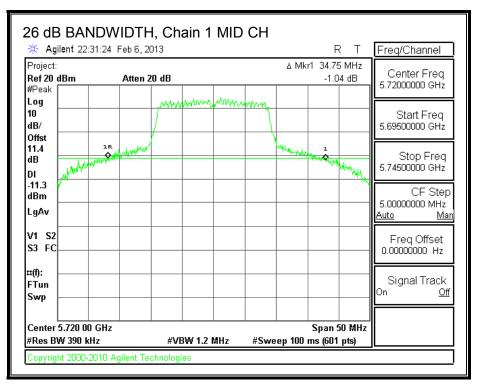
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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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8.21.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

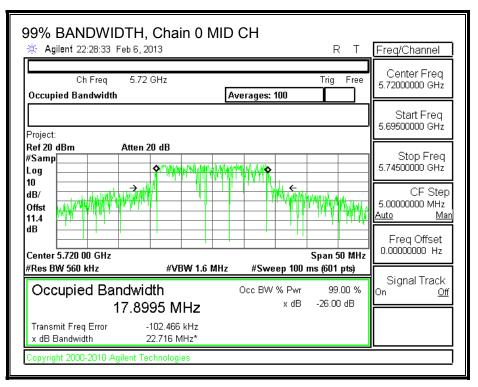
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5720	13.9497	13.8891

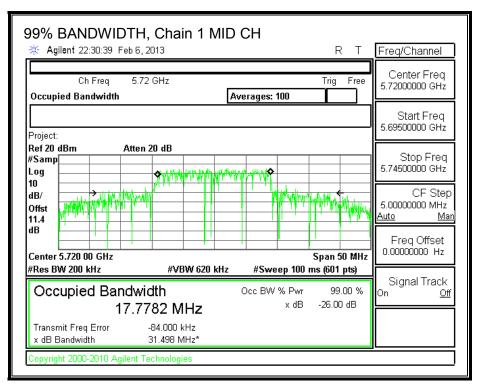
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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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8.21.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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)
6.61	5.77	6.21

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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	5720	21.040	13.8891	6.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5720	24.00	22.43	28.43	22.43	10.79	11.00	10.79

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	5720	16.82	16.92	19.88	22.43	-2.55

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5720	6.770	6.940	9.87	10.79	-0.92

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Limits (FCC), portion in 5.8 GHz UNII 3 band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Uncorrelated
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5710	11.04	3.8891	6.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5710	21.43	16.90	22.90	16.90	10.79	11.00	10.79

Output Power Results

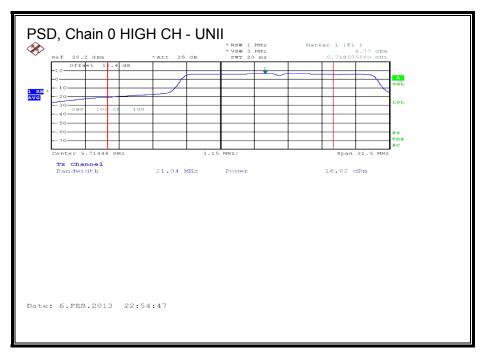
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	10.58	10.68	13.64	16.90	-3.26

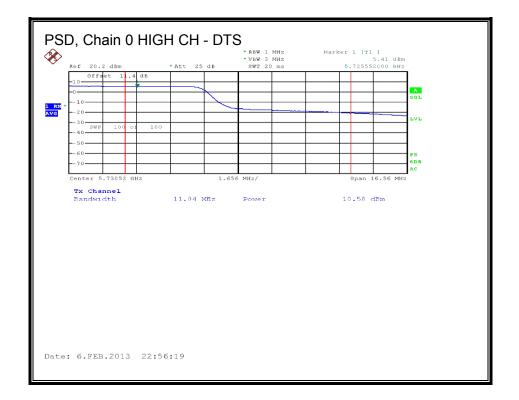
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	5.410	5.670	8.55	10.79	-2.24

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PSD, Chain 0



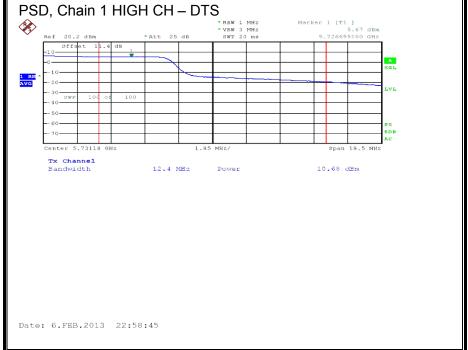


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PSD, Chain 1





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8.22. 802.11n HT40 1TX MODE, 5.6 GHz BAND

8.22.1. 26 dB BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

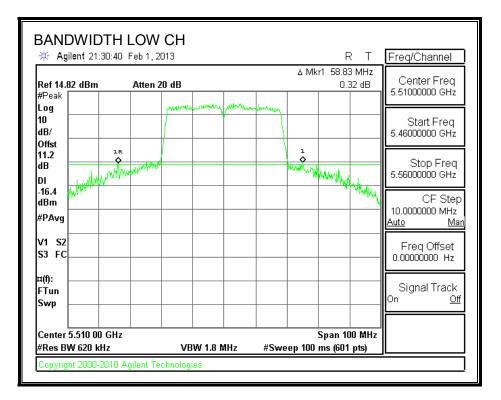
RESULTS

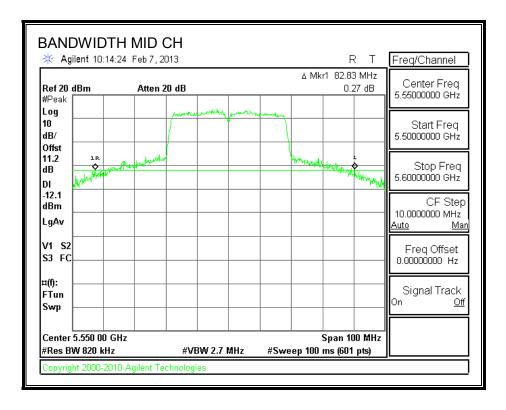
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5510	58.83
Mid	5550	82.83
High	5670	71.67

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26 dB BANDWIDTH





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BANDWIDTH	HIGH CH					
- 🔆 Agilent 21:56:04	Feb 1, 2013			RТ	Freq/Channel	
Ref 14.82 dBm #Peak	Atten 20 dB	when rubranking		67 MHz .29 dB	Center Freq 5.67000000 GHz	
Log 10 dB/ Offst					Start Freq 5.62000000 GHz	
11.2 dB DI	Window -		Mulme Autore	in the second	Stop Freq 5.72000000 GHz	
-13.5 dBm #PAvg					CF Step 10.0000000 MHz <u>Auto Man</u>	
V1 S2 S3 FC					Freq Offset 0.00000000 Hz	
¤(f): FTun Swp					Signal Track On <u>Off</u>	
Center 5.670 00 GHz Span 100 MHz #Res BW 750 kHz VBW 2.2 MHz #Sweep 100 ms (601 pts)						
Copyright 2000-2010 A	Agilent Technologie	S				

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8.22.2. 99% BANDWIDTH

LIMITS

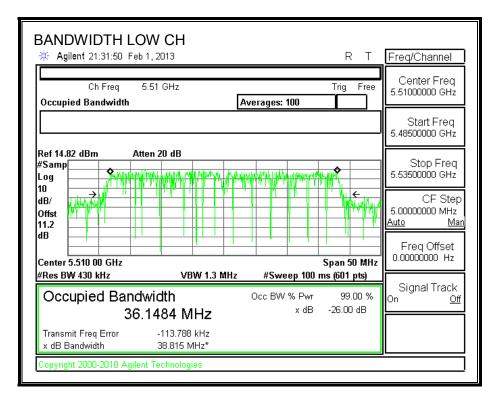
None; for reporting purposes only.

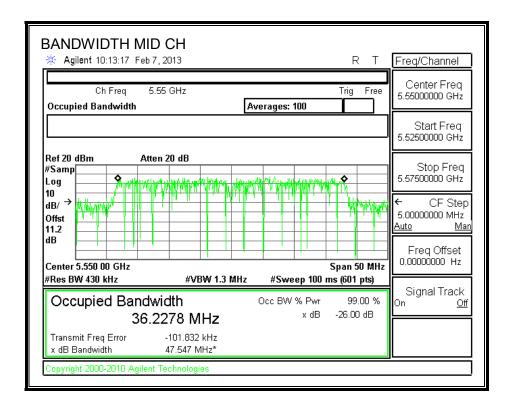
<u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5510	36.1484
Mid	5550	36.2278
High	5670	36.1828

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99% BANDWIDTH





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BANDWIDTH HIGH C * Agilent 21:53:02 Feb 1, 2013		R T	Freq/Channel
Ch Freq 5.67 GH Occupied Bandwidth	z Averages: 100	Trig Free	Center Freq 5.67000000 GHz
			Start Freq 5.64500000 GHz
Ref 14.82 dBm Atten 20 d #Samp Log			Stop Freq 5.69500000 GHz
10			CF Step 5.0000000 MHz <u>Auto Man</u>
Center 5.670 00 GHz		Span 50 MHz	Freq Offset 0.00000000 Hz
^{#Res BW 430 kHz} Occupied Bandwidth	Occ BW %		Signal Track ^{On <u>Off</u>}
	3 MHz ³ 784 kHz 40 MHz*	x dB -26.00 dB	
Copyright 2000-2010 Agilent Techn	ologies		

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8.22.3. OUTPUT POWER AND PSD

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	5510	58.83	36.1484	6.61
Mid	5550	82.83	36.2278	6.61
High	5670	71.67	36.1828	6.61

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5510	23.39	24.00	30.00	23.39	10.39	11.00	10.39
Mid	5550	23.39	24.00	30.00	23.39	10.39	11.00	10.39
High	5670	23.39	24.00	30.00	23.39	10.39	11.00	10.39

Duty Cycle CF (dB) 0.22

Output Power Results

Channel	Frequency	Chain 0	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	17.79	17.79	23.39	-5.60
Mid	5550	20.25	20.25	23.39	-3.14
High	5670	20.10	20.10	23.39	-3.29

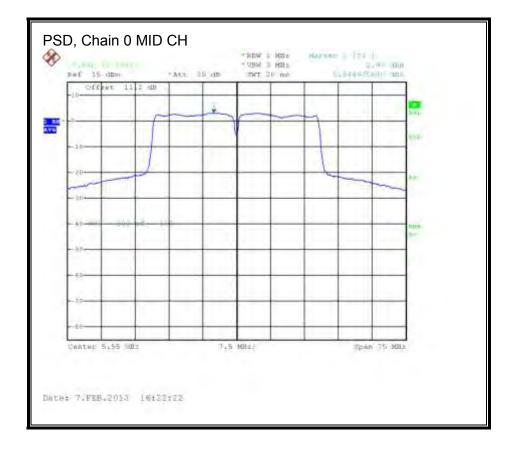
PSD Results

Channel	Frequency	Chain 0	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	2.90	3.12	10.39	-7.27
Mid	5550	2.98	3.20	10.39	-7.19
High	5670	2.84	3.06	10.39	-7.33

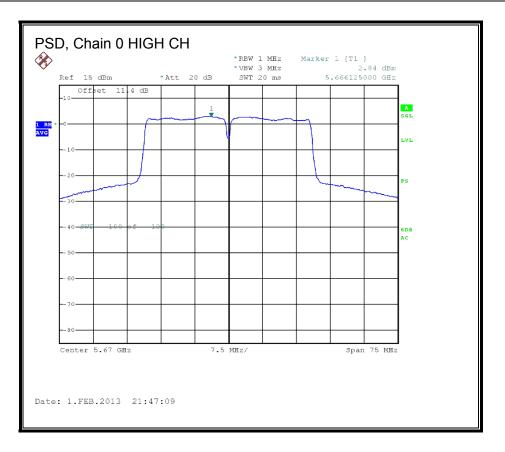
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PSD, Chain 0





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8.22.4. 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

Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5550	13.73	2.98	0.24	10.51	13	-2.49

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PEAK EXCURSION

PEAK EXC				OII				F	хт	Freq/Channel
Ref 25 dBm #Peak	1	Atten 3	0 dB				Mkr1	5.544 (13.73) GHz dBm	Center Freq 5.55000000 GHz
Log 10 dB/	ſ			and your a grant of the	, and the second	1 the state of the	annad	\		Start Freq 5.52000000 GHz
Offst 11.2 dB	Made) Malanarky	handhaan	Stop Freq 5.58000000 GHz
#PAvg										CF Step 6.0000000 MHz <u>Auto Man</u>
V1 S2 S3 FC										Freq Offset 0.00000000 Hz
¤(f): FTun Swp										Signal Track ^{On <u>Off</u>}
Center 5.550 0 GHz Span 60 MHz Res BW 1 MHz VBW 3 MHz Sweep 1 ms (601 pts)										

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8.23. 802.11n HT40 1TX MODE, CHANNEL 142, 5.6 GHz BAND

8.23.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

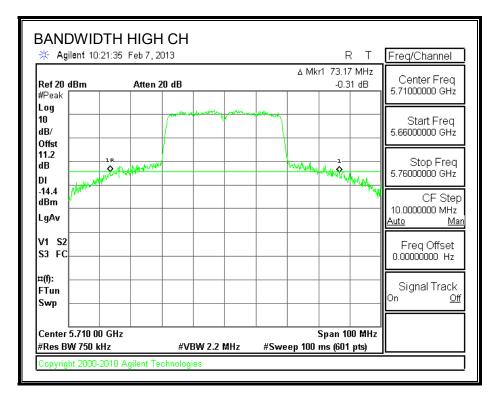
RESULTS

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
High	5710	73.17

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26 dB BANDWIDTH



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8.23.2. 99% **BANDWIDTH**

LIMITS

None; for reporting purposes only.

<u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
High	5710	36.1865

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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 20 dBm Atten 20 dB #Samp Log 10 dB/ Offst 11.2 dB Center 5.710 00 GHz Span 50 MHz #Res BW 430 kHz #VBW 1.3 MHz #Sweep 100 ms (601 pts)	Stop Freq 5.73500000 GHz CF Step 5.00000000 MHz <u>Auto</u> <u>Man</u> Freq Offset 0.00000000 Hz
Occupied Bandwidth Occ BW % Pwr 99.00 % 36.1865 MHz × dB -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error -114.289 kHz x dB Bandwidth 41.788 MHz* Copyright 2000-2010 Agilent Technologies	

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8.23.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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)
High	5710	51.6	33.0932	6.61

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5710	24.00	24.00	30.00	24.00	10.39	11.00	10.39

Duty Cycle CF (dB) 0.22

Output Power Results

Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	16.77	16.99	24.00	-7.01

PSD Results

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	3.050	3.27	10.39	-7.12

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Limits (FCC), portion in 5.8 GHz UNII 3 band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Directional
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
High	5710	21.6	3.0932	6.61

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5710	24.00	15.90	21.90	15.90	10.39	11.00	10.39

Duty Cycle CF (dB) 0.22

Output Power Results

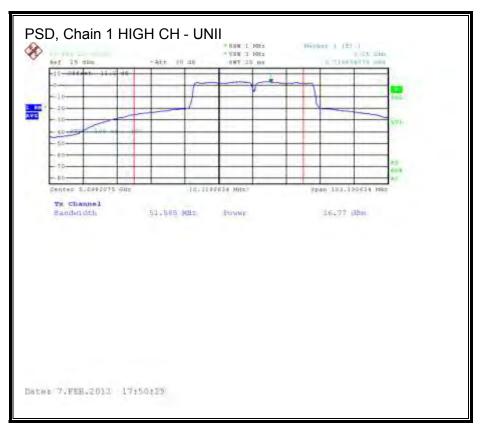
Channel	Frequency	Chain 1	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	3.40	3.62	15.90	-12.28

PSD Results

Channel	Frequency	Chain 1	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	-0.940	-0.72	10.39	-11.11

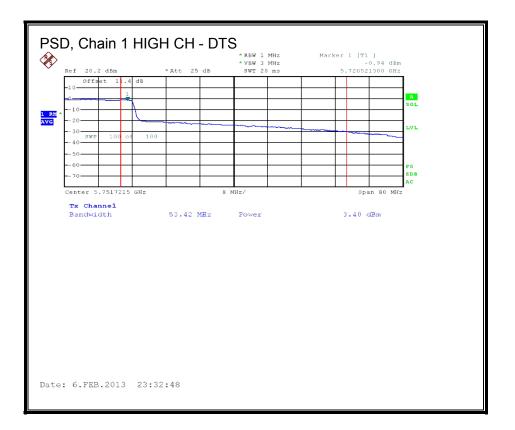
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PSD, Chain 1



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8.24. 802.11n HT40 CDD 2TX MODE, 5.6 GHz BAND

8.24.1. 26 dB BANDWIDTH

LIMITS

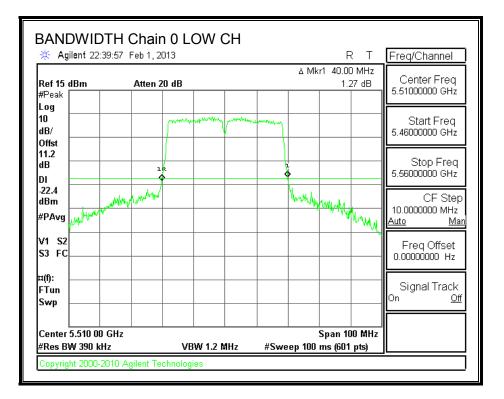
None; for reporting purposes only.

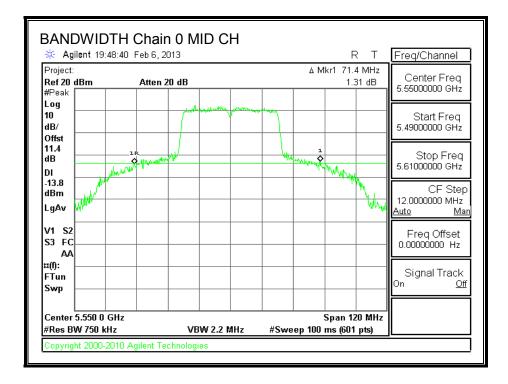
RESULTS

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5510	40.00	39.33
Mid	5550	71.40	75.20
High	5670	40.30	39.50

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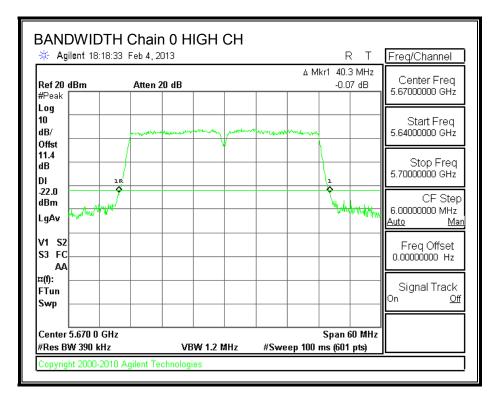
26 dB BANDWIDTH, Chain 0



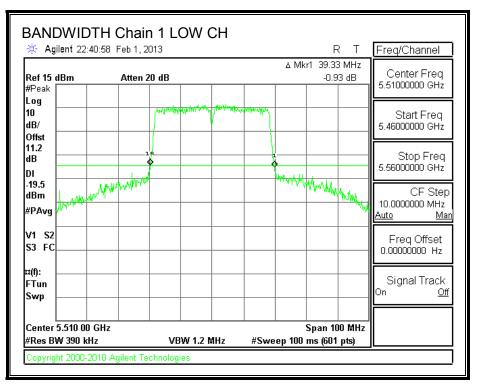


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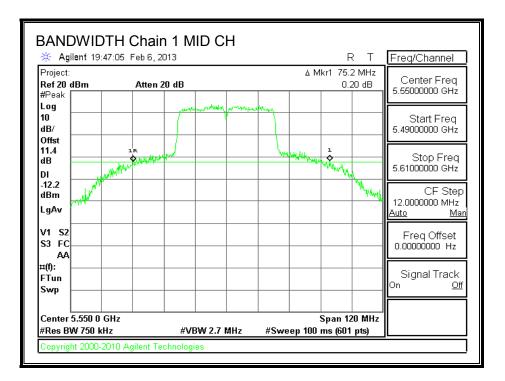
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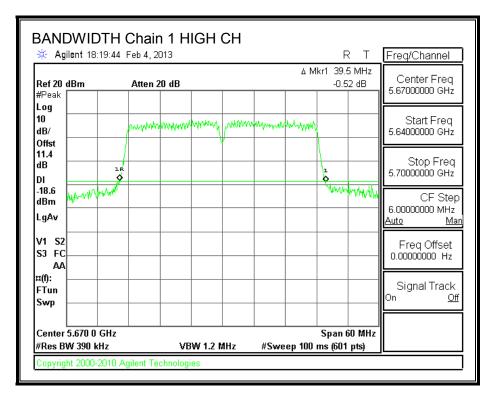


26 dB BANDWIDTH, Chain 1



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8.24.2. 99% **BANDWIDTH**

LIMITS

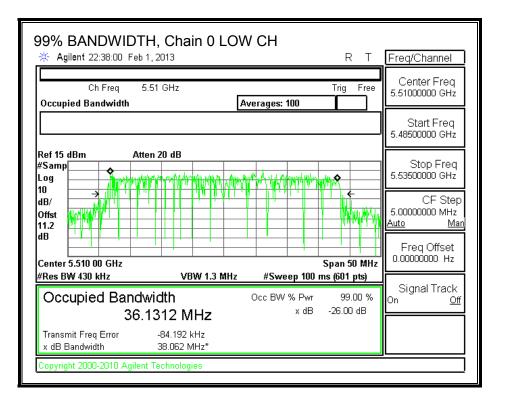
None; for reporting purposes only.

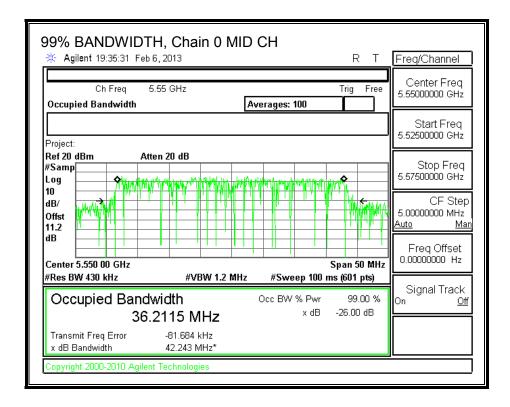
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5510	36.1312	36.1683
Mid	5550	36.2115	36.2298
High	5670	36.1674	36.1513

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99% BANDWIDTH, Chain 0

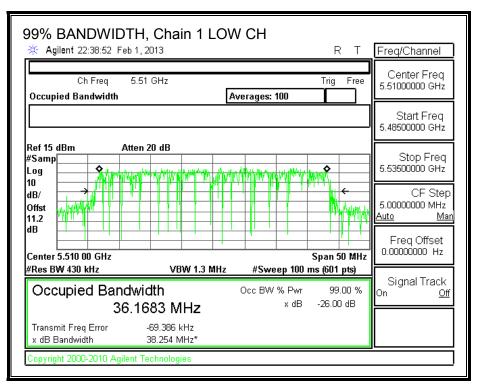




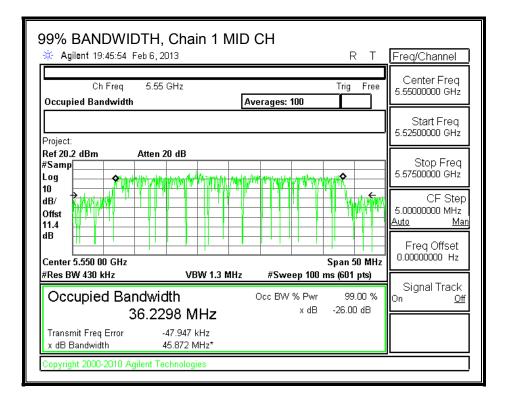
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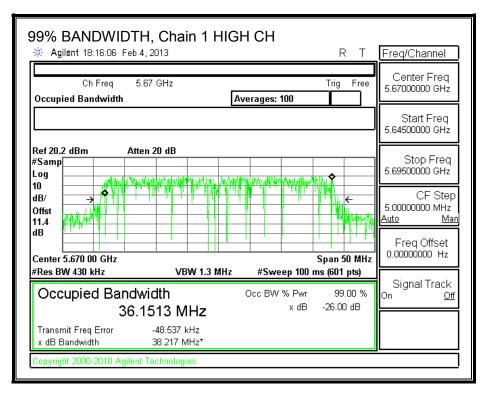
99% BANDWIDTH, Chain 0	HIGH CH	R T	Freq/Channel
Ch Freq 5.67 GHz Occupied Bandwidth	Averages: 100	Trig Free	Center Freq 5.67000000 GHz
			Start Freq 5.64500000 GHz
Ref 20.2 dBm Atten 20 dB #Samp			Stop Freq 5.69500000 GHz CF Step 5.00000000 MHz <u>Auto Man</u> Freq Offset
Center 5.670 00 GHz #Res BW 430 kHz VBW 1.3	MHz #Sweep 100	Span 50 MHz ms (601 pts)	0.00000000 Hz
Occupied Bandwidth 36.1674 MHz	Occ BW % Pwr x dB		Signal Track On <u>Off</u>
Transmit Freq Error -60.911 kHz x dB Bandwidth 38.269 MHz*			
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99% BANDWIDTH, Chain 1



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8.24.3. OUTPUT POWER AND PSD

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)
5.77	6.61	6.21

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

Chain 0	Chain 1	Correlated Chains
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
5.77	6.61	9.21

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min Uncorrelated		Correlated
		26 dB	99%	Directional	Directional
		BW	BW	Gain	Gain
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5510	39.33	36.1312	6.21	9.21
Mid	5550	71.44	36.2115	6.21	9.21
High	5670	39.50	36.1513	6.21	9.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5510	23.79	24.00	30.00	23.79	7.79	11.00	7.79
Mid	5550	23.79	24.00	30.00	23.79	7.79	11.00	7.79
High	5670	23.79	24.00	30.00	23.79	7.79	11.00	7.79

Duty Cycle CF (dB) 0.22

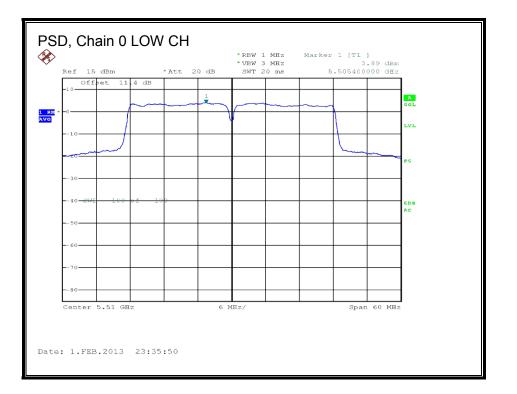
Output Power Results

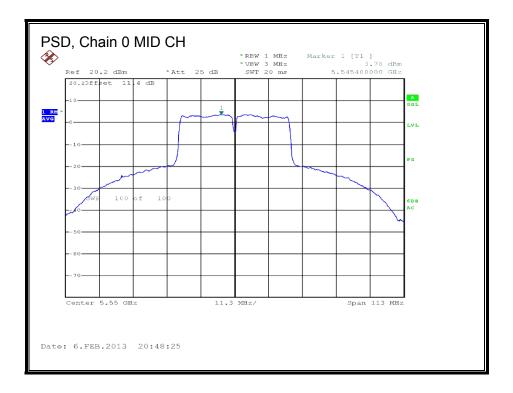
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	14.69	15.31	18.02	23.79	-5.77
Mid	5550	20.12	20.16	23.15	23.79	-0.64
High	5670	20.15	20.12	23.15	23.79	-0.64

PSD Results

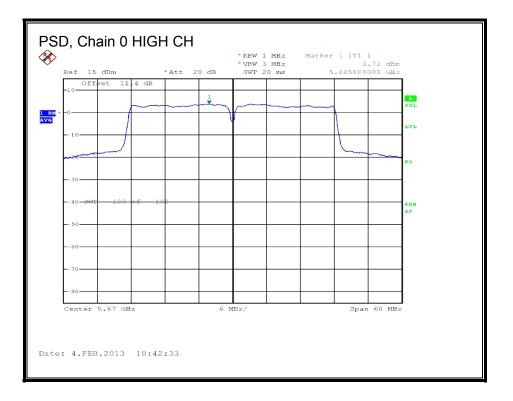
Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	3.89	3.86	7.11	7.79	-0.68
Mid	5550	3.78	3.97	7.11	7.79	-0.68
High	5670	3.72	3.70	6.94	7.79	-0.85

PSD, Chain 0





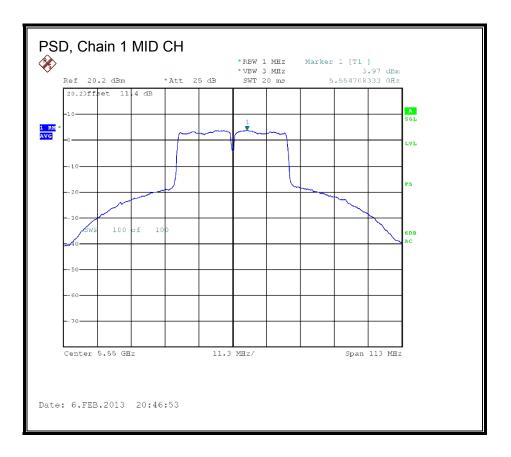
UL CCS FORM NO: CCSUP4701H TEL: (510) 771-1000 47173 BENICIA STREET, FREMONT, CA 94538, USA FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of UL CCS.

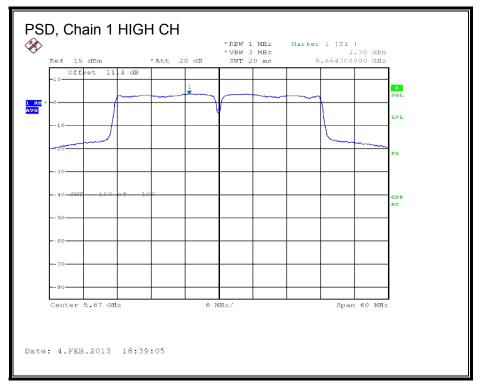


PSD, Chain 1



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8.24.4. 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

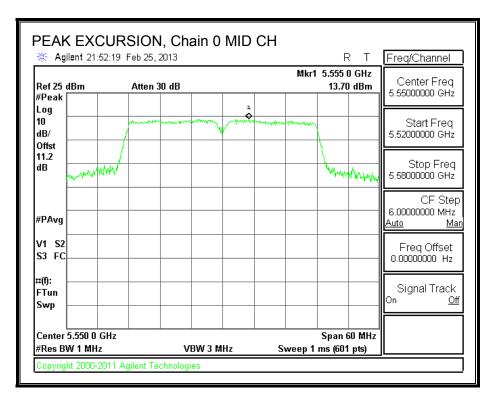
Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5550	13.70	3.78	0.25	9.67	13	-3.33

Chain 1

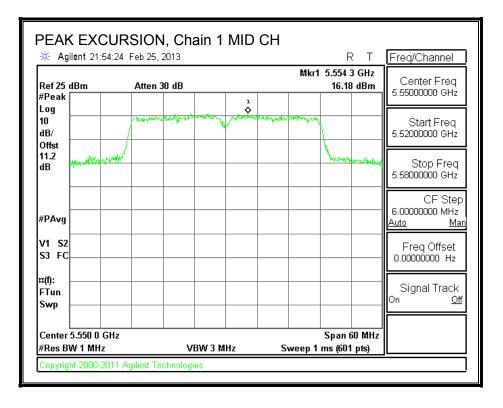
Channel	Frequency	PK Level	PSD	DCCF	Peak Excursion	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
Mid	5550	16.18	3.97	0.25	11.96	13	-1.04

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PEAK EXCURSION, Chain 0



PEAK EXCURSION, Chain 1



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8.25. 802.11n HT40 CDD 2TX MODE, CHANNEL 142, 5.6 GHz BAND

8.25.1.26 dB BANDWIDTH- UNII

LIMITS

None; for reporting purposes only.

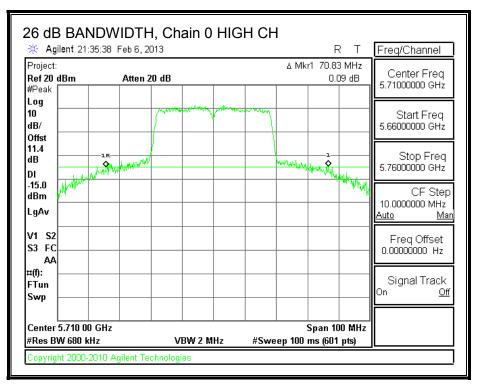
RESULTS

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5710	50.42	54.00

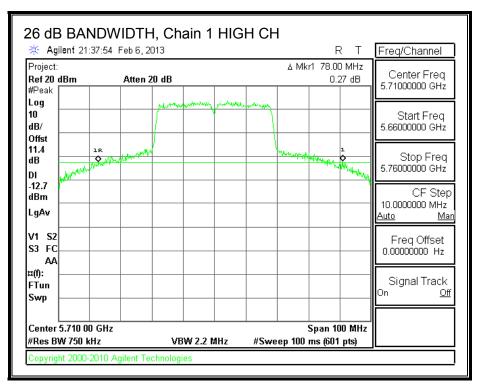
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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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8.25.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

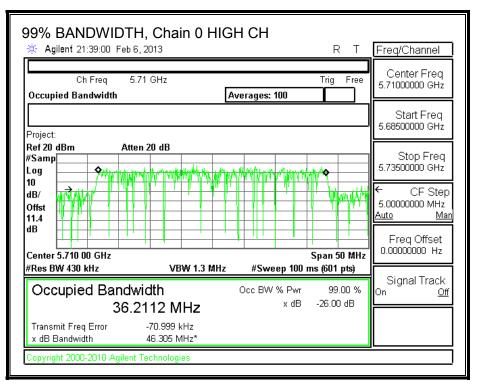
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5710	36.2112	36.2170

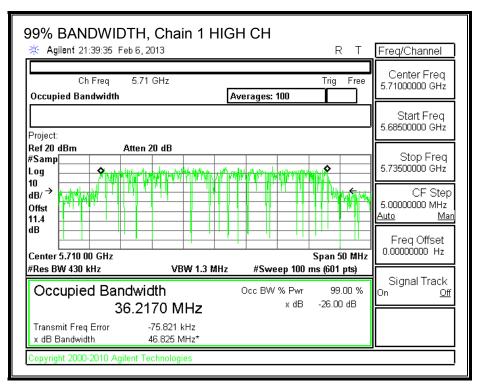
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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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8.25.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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)
6.61	5.77	6.21

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

Chain 0	Chain 1	Correlated Chains	
Antenna	Antenna	Directional	
Gain	Gain	Gain	
(dBi)	(dBi)	(dBi)	
6.61	5.77	9.21	

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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	50.45	33.1056	9.21	6.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5710	23.79	24.00	30.00	23.79	7.79	11.00	7.79

Duty Cycle CF (dB) 0.22

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	5710	17.42	17.36	20.62	23.79	-3.17

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	3.700	3.740	6.95	7.79	-0.84

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Limits (FCC), portion in 5.8 GHz UNII 3 band

Bandwidth and Antenna Gain

Channel	Frequency	Min	in Min Correlated		Uncorrelated	
		26 dB	99%	Gain	Gain	
		BW	BW			
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)	
High	5710	20.4	3.1056	9.21	6.21	

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
High	5710	23.79	15.92	21.92	15.71	7.79	11.00	7.79

Duty Cycle CF (dB) 0.22

Output Power Results

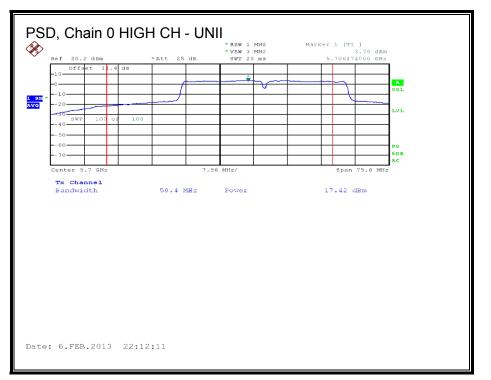
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	6.99	6.95	10.20	15.71	-5.51

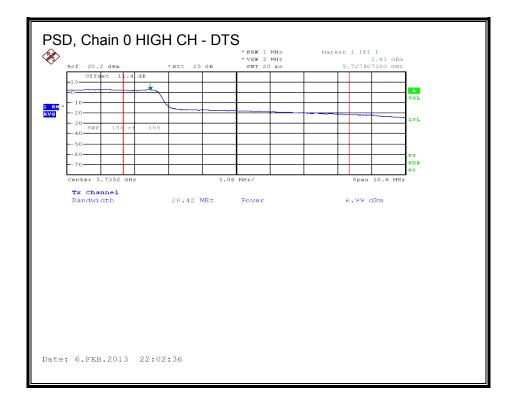
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
High	5710	2.830	2.380	5.84	7.79	-1.95

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PSD, Chain 0

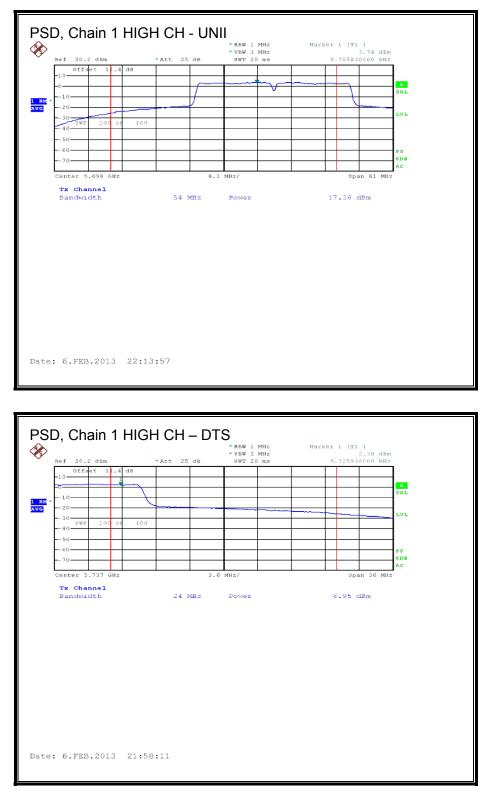




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<u>PSD, Chain 1</u>



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8.26. 802.11n AC40 BF 2TX MODE, 5.6 GHz BAND

8.26.1. 26 dB BANDWIDTH

<u>LIMITS</u>

None; for reporting purposes only.

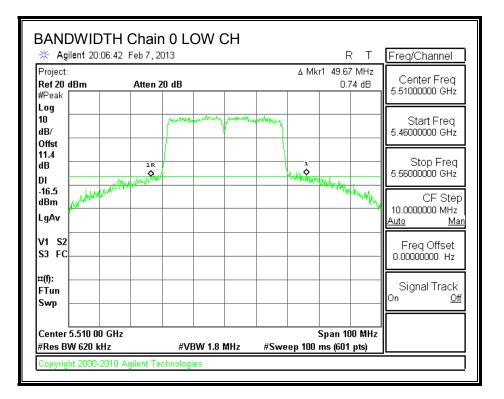
RESULTS

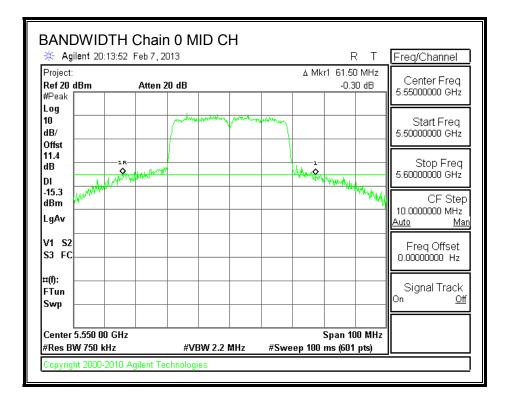
Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5510	49.67	72.17
Mid	5550	61.50	63.17
High	5670	65.17	69.67

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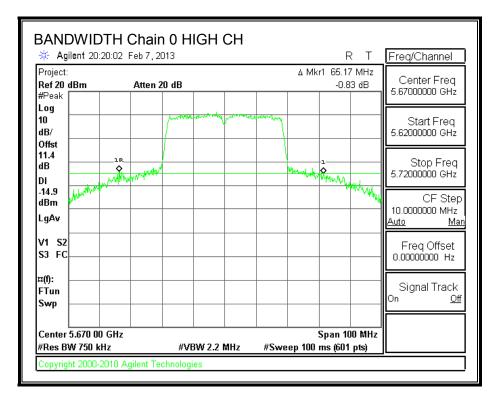
26 dB BANDWIDTH, Chain 0



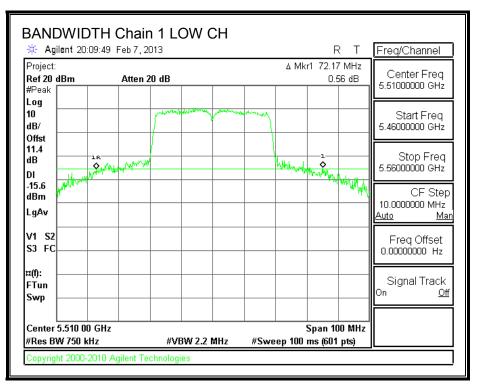


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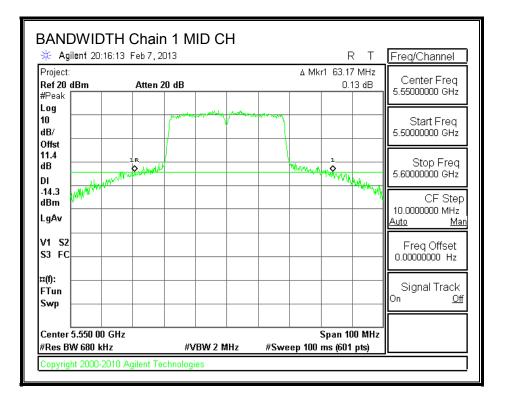
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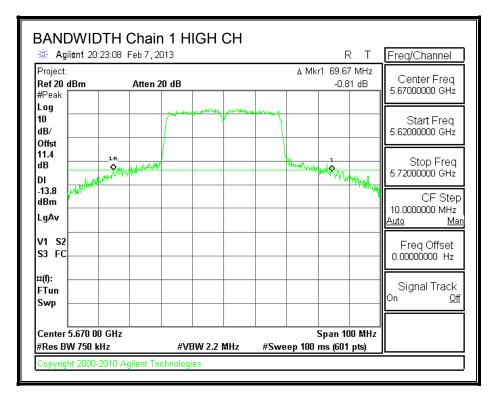


26 dB BANDWIDTH, Chain 1



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8.26.2. 99% BANDWIDTH

LIMITS

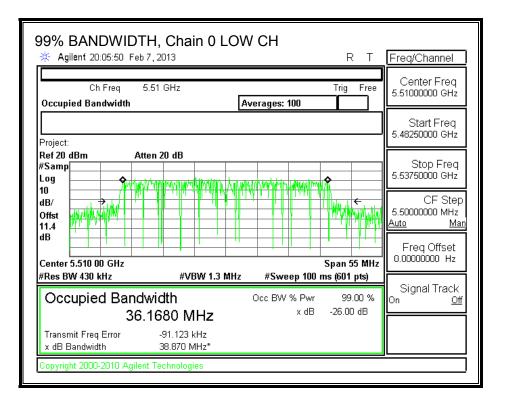
None; for reporting purposes only.

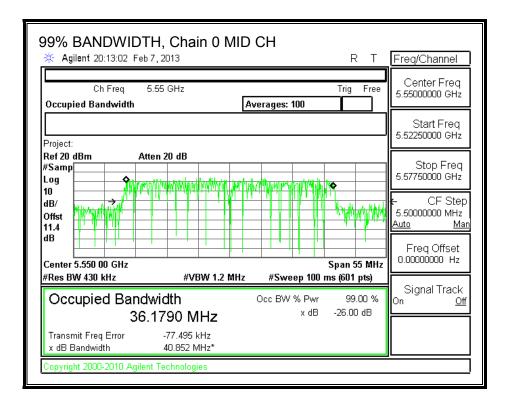
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5510	36.1680	36.2063
Mid	5550	36.1790	36.1805
High	5670	36.1668	36.1870

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99% BANDWIDTH, Chain 0

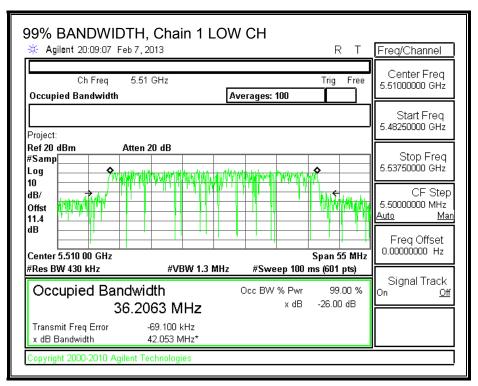




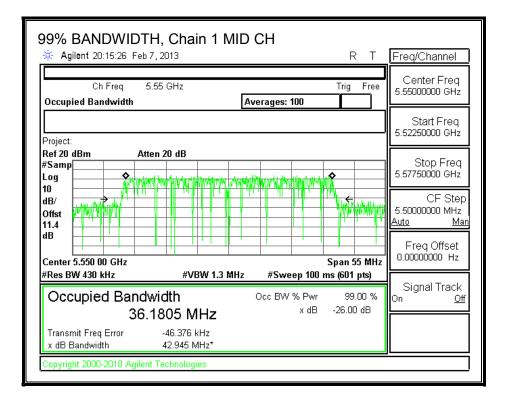
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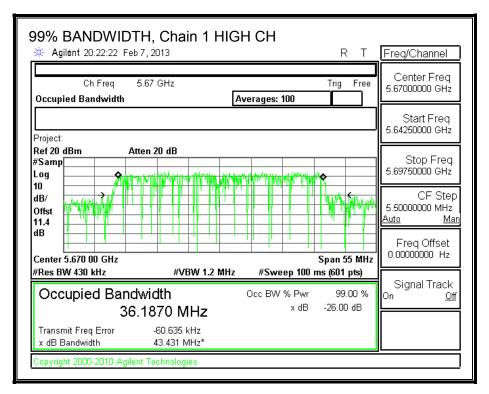
99% BANDWIDTH, Chai	in 0 HIGH CH	RT	Freq/Channel
Ch Freq 5.67 GHz Occupied Bandwidth	Averages: 100	Trig Free	Center Freq 5.67000000 GHz
Project:			Start Freq 5.64250000 GHz
Ref 20 dBm Atten 20 dB #Samp Log	entrantik upperson territor provinsi	A	Stop Freq 5.69750000 GHz
10 dB/ Offst 11.4 dB			CF Step 5.5000000 MHz <u>Auto Man</u>
Center 5.670 00 GHz #Res BW 430 kHz #VE	3W 1.2 MHz #Sweep 100	Span 55 MHz ms (601 pts)	Freq Offset 0.00000000 Hz
Occupied Bandwidth 36.1668 M	Occ BW % Pwr X dB		Signal Track On <u>Off</u>
Transmit Freq Error -67.888 x dB Bandwidth 39.712 v			
Copyright 2000-2010 Agilent Technologi	es		

99% BANDWIDTH, Chain 1



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8.26.3. OUTPUT POWER AND PSD

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 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)
6.61	5.77	9.21

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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	49.67	36.1680	9.21
Mid	5550	61.50	36.1790	9.21
High	5670	65.17	36.1668	9.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5510	20.79	24.00	30.00	20.79	7.79	11.00	7.79
Mid	5550	20.79	24.00	30.00	20.79	7.79	11.00	7.79
High	5670	20.79	24.00	30.00	20.79	7.79	11.00	7.79

Duty Cycle CF (dB) 0.22

Output Power Results

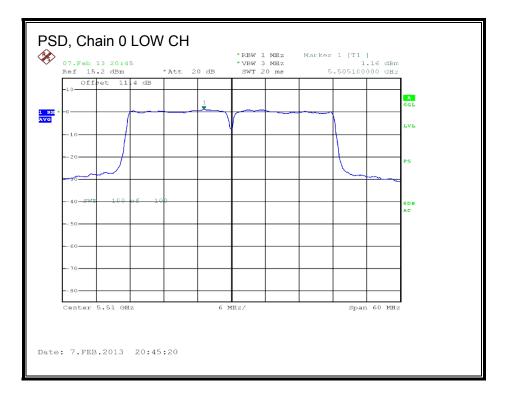
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	13.86	14.71	17.32	20.79	-3.47
Mid	5550	17.78	17.67	20.74	20.79	-0.05
High	5670	17.75	17.65	20.71	20.79	-0.08

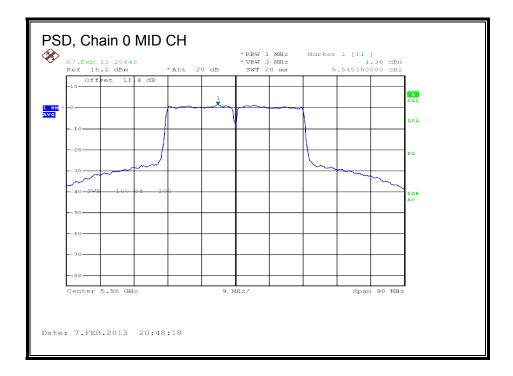
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	1.16	1.10	4.36	7.79	-3.43
Mid	5550	1.36	1.25	4.54	7.79	-3.25
High	5670	0.91	0.85	4.11	7.79	-3.68

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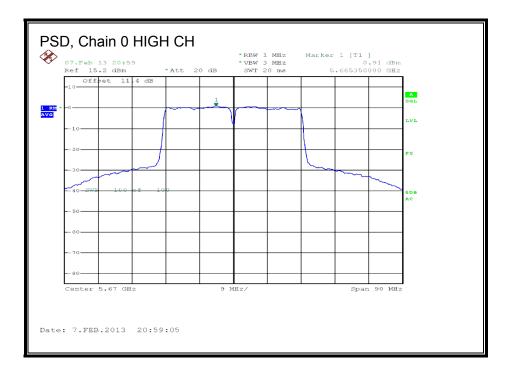
PSD, Chain 0



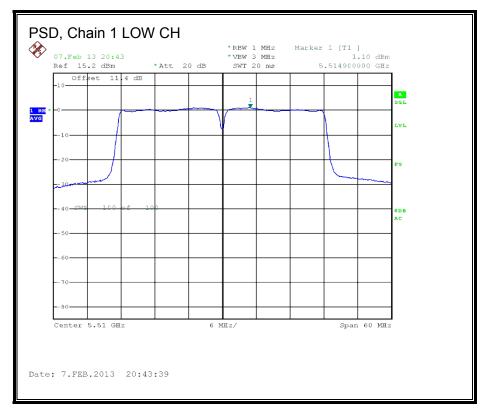


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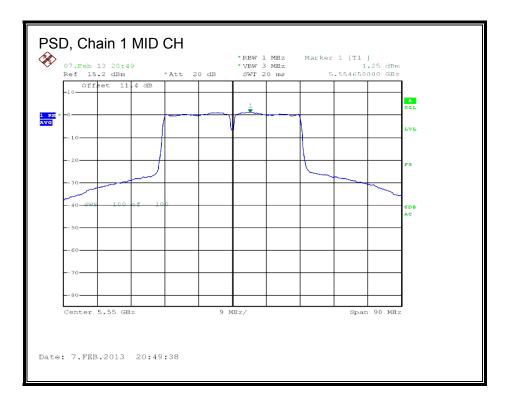
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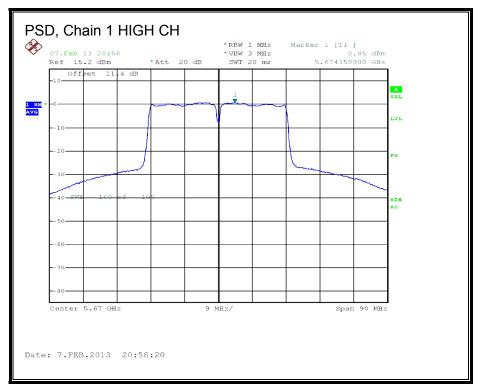


PSD, Chain 1



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8.27. 802.11n AC40 BF 2TX MODE, CHANNEL 142, 5.6 GHz BAND

8.27.1.26 dB BANDWIDTH- UNII

<u>LIMITS</u>

None; for reporting purposes only.

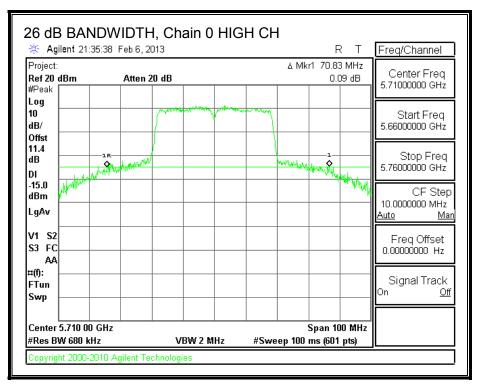
RESULTS

Channel	Frequency	26 dB BW	26 dB BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5710	70.83	78.00

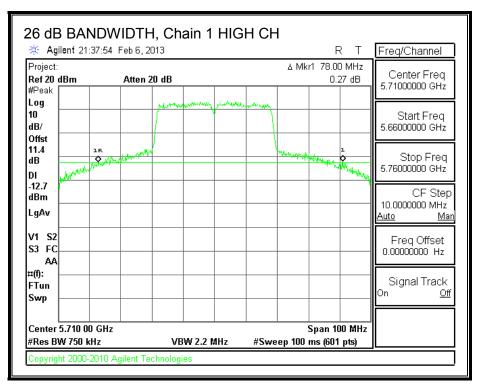
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26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



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8.27.2.99% BANDWIDTH

LIMITS

None; for reporting purposes only.

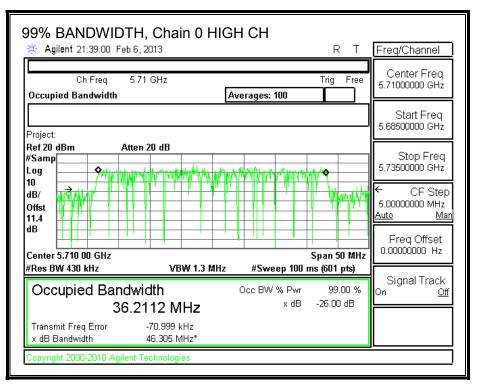
<u>RESULTS</u>

Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
High	5710	36.2112	36.2170

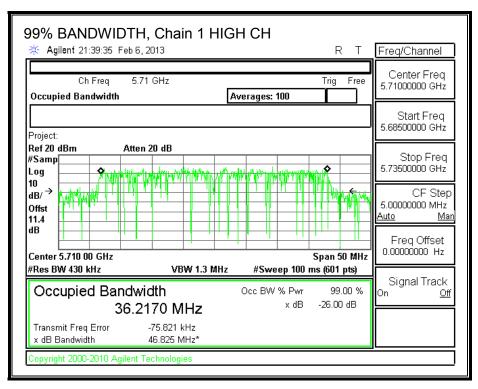
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99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



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8.27.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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)
6.61	5.77	9.21

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RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5710	50.45	33.1056	9.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5710	20.79	24.00	30.00	20.79	7.79	11.00	7.79

Duty Cycle CF (dB) 0.22

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)
	5710	17.42	17.36	20.62	20.79	-0.17

PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	3.700	3.740	6.95	7.79	-0.84

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Limits (FCC), portion in 5.8 GHz UNII 3 band

Bandwidth and Antenna Gain

Channel	Frequency	Min	Min	Correlated
		26 dB	99%	Gain
		BW	BW	
	(MHz)	(MHz)	(MHz)	(dBi)
Mid	5710	20.4	3.1056	9.21

Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5710	20.79	15.92	21.92	12.71	7.79	11.00	7.79

Duty Cycle CF (dB) 0.22

Output Power Results

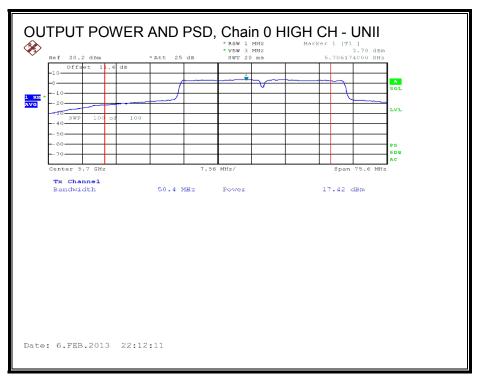
Channel	Frequency	Chain 0	Chain 1	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	6.99	6.95	10.20	12.71	-2.51

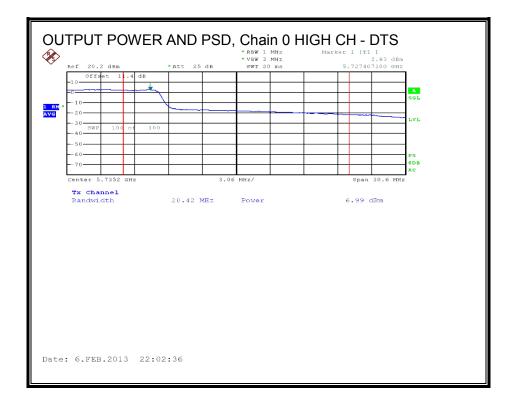
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5710	2.830	2.380	5.84	7.79	-1.95

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OUTPUT POWER AND PSD, Chain 0

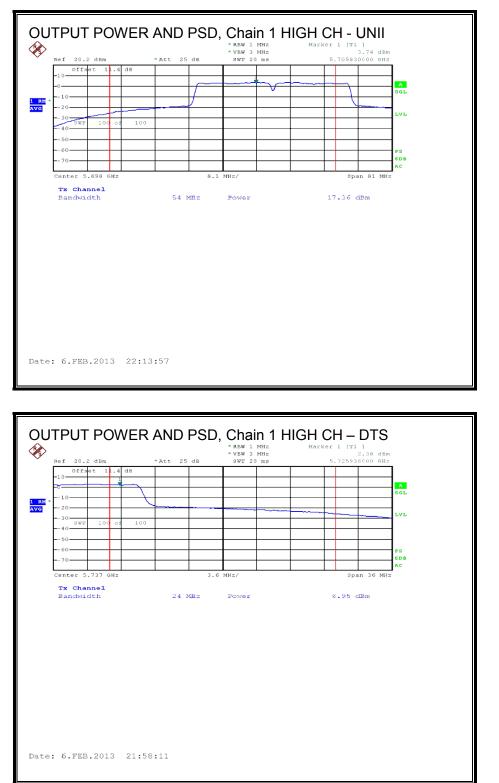




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OUTPUT POWER AND PSD, Chain 1



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9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

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9.2. TRANSMITTER ABOVE 1 GHz

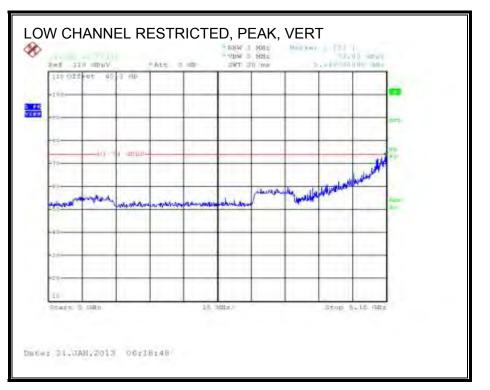
9.2.1. 802.11a LEGACY 1TX MODE, 5.2 GHz BAND

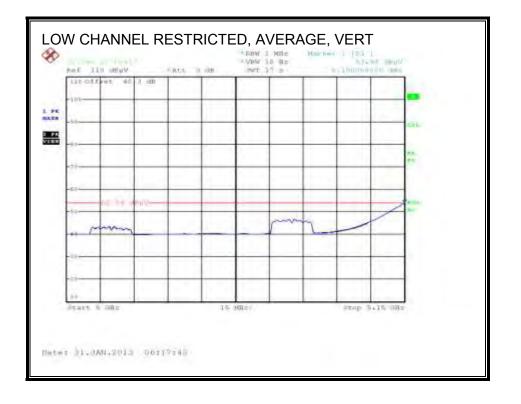
Covered by testing 11n HT20 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

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9.2.2. 802.11n HT20 CDD 2TX MODE, 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

			y Measurem												
ompli	ance Co	ertification (Services, Fro	emont?	5m Ch	amber	Δ								
Compa	ay:		Broadcom (Corpor	ation										
roject	H:		13U14796												
Date:			2/14/2013												
	ngineer:		K. Nguyen			and and									
Configu Mode:	tration:		BCM94360 13a HT20 M					161							
Lust Eg	quipmen	ati													
н	forn 1-	-18GHz	Pre-ar	mplifer	1-26	GHz	Pre-am	pliter	26-40GH	z	н	orn > 18G	Hz	1	Limit
173;	5/N: 171	7 @3m	- T144 N	Miteq 30	08400	931 .	TER Min	eq 26.	ADGHz	• T89;	ARA 18-260	5Hz; 5/N:10	49	+	FCC 15.205
	cable 2	22807700	12 0	able 2	28076	600	20 ⁺ cal	ble 22	2807500	1	HPF	Re	aject Filter		Measurements MHr, VEW-3MHz
3'0	able 220	807700	• 12 ca	able 228	87600	*	20 ^r cab	l o 228	. 07500	HPF	F_7.6GHz	3	1	Averag	ge Measurements IMH2 VBW=10H2
f GHz	Dist (m)	Read Pk dBaV	Read Avg. dBaV	AF dB/m	C1. dB	Amp dB	D Corr dB	Fitr dB		Avg dBaV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
	36 (5180		1-2-2-2	1		1	1222	12	1						
15.540	3.0	40.9	30,7	38.3	13.2	.34.7	0.0	6.7	59.5	49,5	74	54	-14-5	-4.7	V
15.540 Channel	3.0		29.8	39.3	13.2	.34.7	6.0	9.7	58.8	48.4	7.4	54	452	-5.6	н
15.600	3,0	43.6	.53.4	39,1	13.3	.34,6	0.0	6.7	62.1	51.6	74	54	51.9	2.1	V
15.600	3.0	41.5	30.6	39.1	13.3	-34.6	0.0	9.7	59.9	49.1	74	54	-141	4.5	н
Channel 15.720	48 (5240	40.0	28.6	38.8	13.5	.34.0	0.0	0.7	58.2	40.5	74	54	15.0	72	v
15.720	3.0	39.5	29.5	38.8	13.3		0.0	0.7	57.8	47.7	74	54	-16.2	-6.3	H
Rev. 01.3	f Disi Read AF	Measureme Distance to Analyzer R Antenna Fa	Reading	7		Amp D Corr Avg Peak	Average	Corres Field S	ect to 3 mete Strength @ k Field Stre	3 m		Pk Lim Avg Mar	Peak Field Margin vs.	ield Strength Strength Lie Average Lie Peak Limit	nuit nuit
	CL	Cable Loss				HPF	Calculated Peak Field Strength Pk Mar Margan vs. Peak Li High Pass Filter							Prop. office	

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9.2.3. 802.11n HT20 STBC 2TX MODE, 5.2 GHz BAND

Covered by testing 11n HT20 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

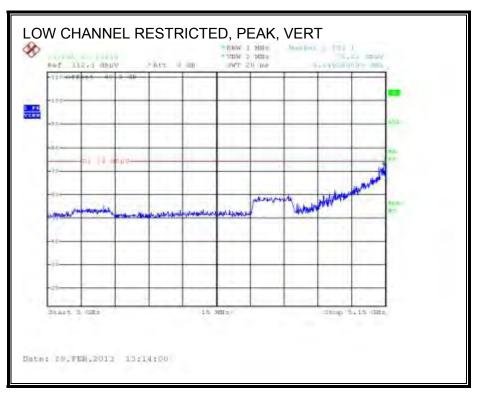
9.2.4. 802.11n HT20 BF 2TX MODE, 5.2 GHz BAND

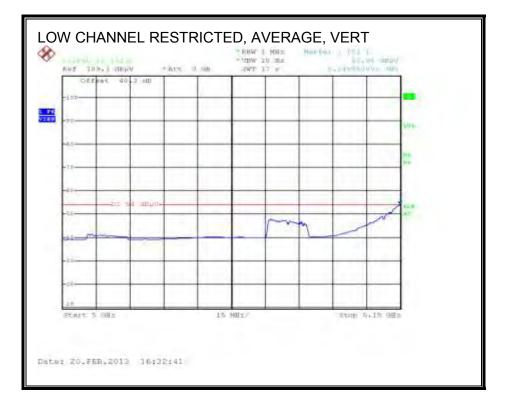
Covered by testing 11n AC20 BF 2TX, total power across the two chains is equal or higher than the power level the device will operate at.

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9.2.5. 802.11n AC20 BF 2TX MODE, 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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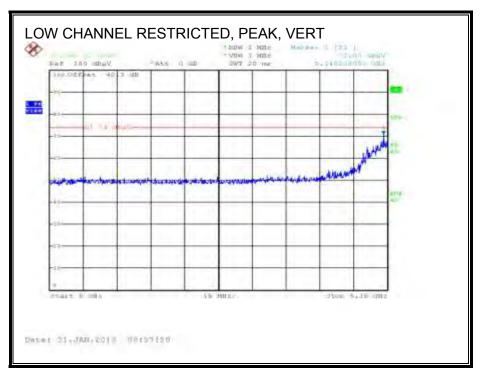
HARMONICS AND SPURIOUS EMISSIONS

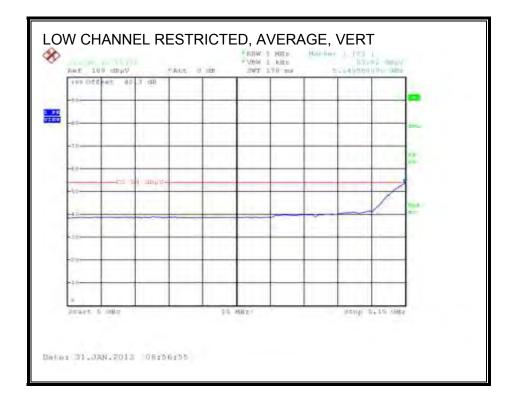
	Horn 1-18GHz Pre-smplifer 1-26GHz Pre-smplifer 26-40GHz Horn > 18GHz Limit T25; 5/H: 6717 @3m T144 Mideq 3008A00931 T185 Mineq 20-40GHz T05 Mineq 20-40GHz T05; ARA 18-26GHz; 5/H: 1049 FC: 15-205 Heregency Cooke 3' cable 22807700 12' cable 22807600 20' cable 22807500 HPF Reject Filter Paik Measurements: RBW=13MHz; VBW=13MHz 3' cable 22807700 12' cable 22807600 20' cable 22807500 HPF Reject Filter Paik Measurements: RBW=13MHz; VBW=10Hz; VBW=10Hz; f Distance Carreet to 3 0.0 0.7 62.5 52.2 74 54 41.1 1.3 V 5540 3.0 44.2 33.6 39.3 13.2 34.7 0.0 0.7 62.5 52.2 74 54 41.1 1.3 V 5540 3.0 44.2 33.6 39.3 13.2 34.6 0.0 0.7 63.5 53.1 74 54 40.0 H 5540 3.0 45.4				Broadcoan 13U14796 2/23/2013 K. Nguyen EUT wir lap Tx 5.2GHz	stop, At	C adap										
T73; SH: 6717 (@)m T444 Mitting 3008.400931 T85 Mitting 20.40GHz T89; ARA 18.28GHz; SN: 1049 FCC 15.205 IP: Cable 22807600 20' cable 22807500 Pack Measurements: RBW=VBW=30MPz 3' cable 22807700 12' cable 22807600 20' cable 22807500 Per Price Peak Measurements: RBW=VBW=30MPz Site 22807700 12' cable 22807600 20' cable 22807500 Peak Measurements: RBW=VBW=30MPz 3' cable 22807700 12' cable 22807600 20' cable 22807500 Peak Measurements: RBW=VBW=30MPz 3' cable 22807600 Peak Measurements: RBW=VBW=30MPz 10' cable 22807600 Peak Measurements: RBW=VBW=30MPz Cable 22807500 Peak Measurements: RBW=VBW=30MPz Cable 22807600 Peak Measurements: RBW=VBW=30MPz Cable 22807500 Peak Measurements: RBW=VBW=30MPz Cable 22807500 Peak Measurements: RBW=VBW=30MPz Cable 22807500 Peak Measurements: RBW=VBW=30MPz Cable 22807500																	

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9.2.6. 802.11n HT40 1TX MODE, 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

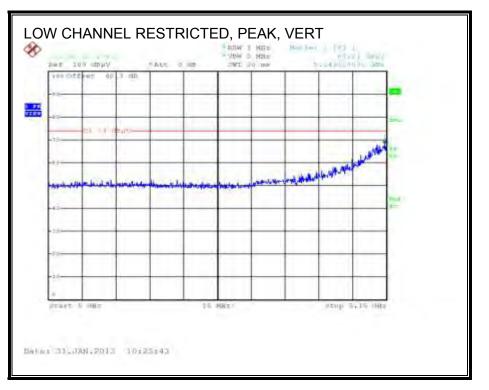
Covered by testing 11n HT40 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

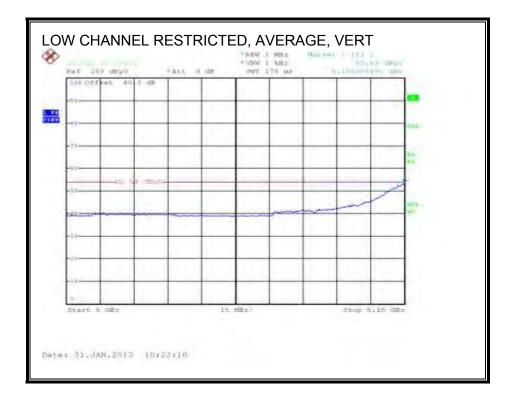
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9.2.7. 802.11n HT40 CDD 2TX MODE, 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

			Broadcom (13U14796 2/20/2013 K. Nguyen BC M94360 Ta 116 HT	0C52 wi	th lapt	top and .	AC adapte	er.							
est Eq	nipmen	<u>t:</u>													-
н	orn 1-	18GHz	Pre-at	mplifer	1.26	GHz	Pre-am	plifer	26-40GH	z	Н	orn > 18G	Hz	1	Limit
1	S/N: 671	1.00	- T144 P	Viteq 30	ORADO	931 .	TB8 Min	eq 26-	40GHz	- T89	ARA 18-260	SHZ; SAN:10	49	-	FCC 15.205 +
	cable 2	2807700	12's	able 2	28076	500	20' cal	ble 22	2807500		HPF	Re	ject Filte		Measurements MHz: VBW+3MHz
3 6	able 22	107700	12 0	ble 228	07600	2	27 cab	le 228	07500 -		-	• R_	001		e Measurements MHz : VBW=10Hz
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBeV/m	Avg dBaV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
haunel. 5,570	38 (5190			39.I	13.2	-34.6	0.0	0.0	55.5	44.1			-18.5	.9,9	
5.570	3.0	37.7	26.3	39.2	13.2	-34.6	0.0	0.0	54.3	43.6	74	54 54	-18.5	10.4	V H
	10 (5230	and the second s				1							-		
5.690	3.0	35.8	26.2	38.9 38.9	13.3	.34.6 -34.6	0.0	0.0	53,4	43.8	74	54	-22.0	10.2	V H
lev. 01.34	9.13												_		
	f Dist	Measureme Distance to	nt Frequenc Antenna	7		Amp D Corr	Preamp (Distance		ct to 3 met	HF.		Avg Lim Pk Lim		ield Strength I Strength Lie	
	Read	Analyzer R				Avg	Average Field Strength (2 1 m. Avg Mar Margin vs. Average Cakulated Peak Field Strength Pic Mar. Margin vs. Peak Li							and the second	tin
	AF CL	Antenna Fa Cable Loss				Peak HPF	Calculate High Pas	1.0.7		ngth		Pk Mar	Marga vs	Peak Limit	
	d.	Cable Loss				HPF	rage Pas	s rate							

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9.2.8. 802.11n HT40 BF 2TX MODE, 5.2 GHz BAND

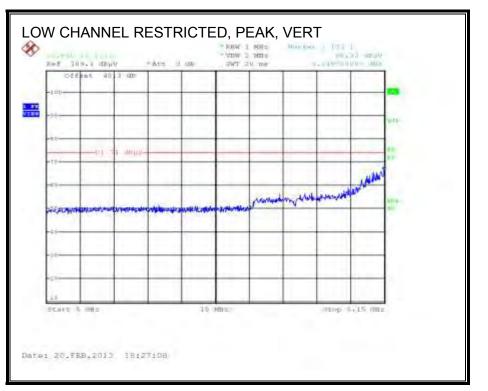
Covered by testing 11n AC40 BF 2TX, total power across the two chains is equal or higher than the power level the device will operate at.

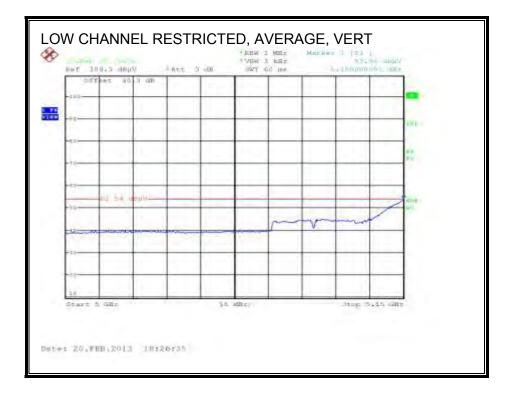
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9.2.9. 802.11n AC40 BF 2TX MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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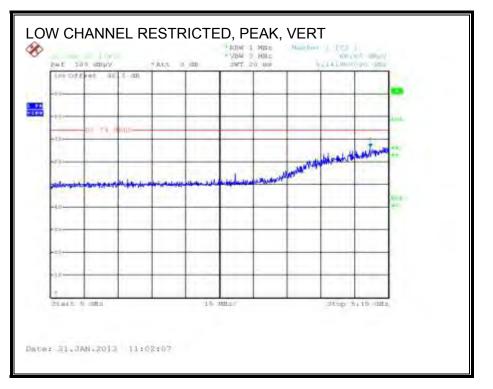
	High	Frequency	Measurem	ent												
ompli			Services, Fr		5m Ch	amber	A									
Configu Mode:			Broadcom (13U14796 2/24/2013 K. Nguyen EUT with L Ts 5.2GHz	aptop, .	AC ad			4								
-		18GHz	Pre-ar	nolifer	1.260	SH7	Pre-am	plifer	26-40GH	7		He	om > 180	Hz	1	Limit
-	S/N: 671		-	liteq 30	100		TER Min	-		-	T89;	ARA 18-260			-	FCC 15.205
3'	cable 22	22807700	-	able 2 ble 228	-	00	20' cal		2807500 97599 •		HPT	HPF 7 65Hz	- Re	iject Filte	RBV Average	Mensurements W=VBW=3MHz ge Measurements MHz VBW=10Hz
f GBz	Dist (m)	Read Pic dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp	D Corr dB	Eltr dB	Peak dBaV/m		vg V/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
hannel	38 (5190	MHz)						on								
\$.870	3,0	35.6	26.2	39.2	13.2	34.8	0.0	0,7	54.1		6,7	74	54	19.0	.8.3	Ý
570	3.0	35.2	26.0	39.2	13.2	-34.6	0.0	0.7	53,7	-44	15	74	54	-20.3	.9.E	н
5.690	3.0	35.2	26.4	38.9	153	.34.6	0.0	0.7	53.0	- 44	1.7	74	84	40.4	.8.3	v
5.690	3.0	35.3	26.6	38.9	13.3	-34.6	0.0	0.7	53.6	44	19	74	54	-29.4	.9.1	H
ev 91.3	9.11															
	f Dist	Measureme Distance to	nt Frequenc Autema	7		Amp D Con	Preamp (Distance		ct to 3 minio	19		2.2	Avg Lin Pk Lim		ield Strength 1 Strength Li	
	Read	Analyzer R				Avg			Strength @						Average Li	nut
	AF	Antenna Fa Cable Loss				Peak HPF	Calculate High Pas		k Field Stre	ngth			Pk Mar	Margin vo	Peak Limit	
		Control as Transport						C. D. Change								

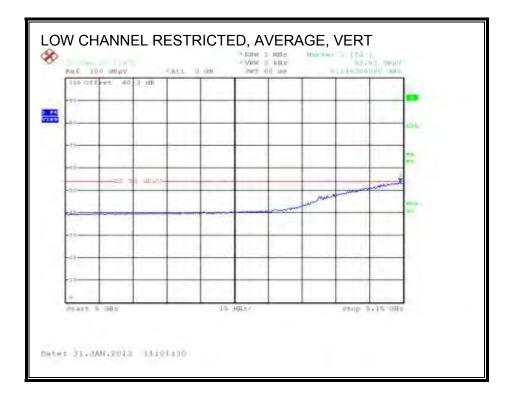
Note: the VBW used for the AVG measurements was 1 kHz. The 10 Hz show tabular data above this note is a typo.

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9.2.10. 802.11n AC80 1TX MODE, 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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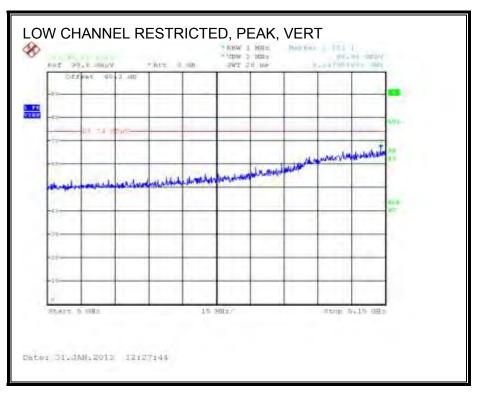
Covered by testing 11n AC80 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

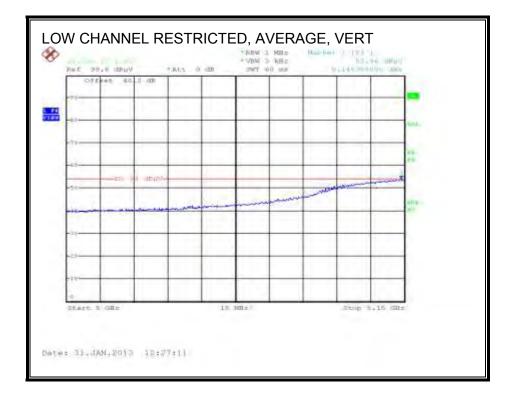
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9.2.11. 802.11n AC80 CDD 2TX MODE, 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





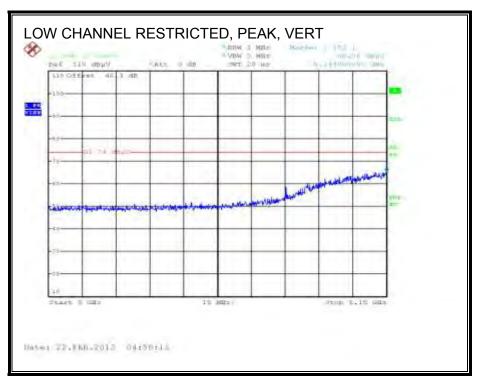
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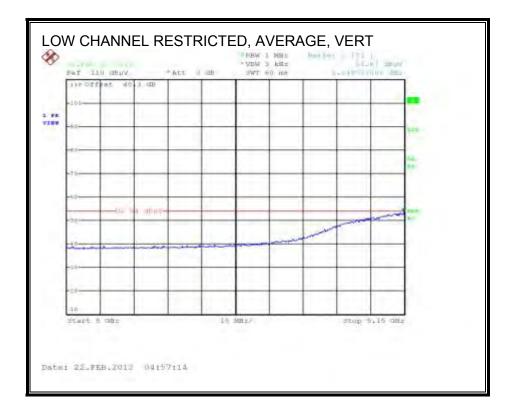
f Dist GHz (m) hannel 42, 5 5.690 3.0 5.690 3.0 ev 01.30 13	dBuV 210MHz 35.9	Read Avg. dBaV 29.5 27.0	dB/m 38.9	CL dB 133 133	Amp dB .34.6 .34.6	D Corr dB 0.0 0.0	Eltr dB 0,0 0.0	Peak dBaV/m 53.5 53.8	Avg dBuV/m 47.0 44.6	Pk Line dBuV/m 74 74	Avg Lim dBuV/m 54 54	Pk Mar dB -20.8 -20.2	Avg Mar dB -7.0 -9.4	Notes (V/H) V H	
T73; S/N: 67	22807700	+ T1441	mplifer Viteq 30 sable 2 sble 228	28076	31 .	TER Mit	ble 22	2807500	• 189	HC ARA 18.260 HPF F_7.63Hz			•	Limit FCC 15.205	1000
Company: Project #: Date: Test Engineer Configuration Mode: Test Equipme		Services, Fr Broadcom 13U14796 1/30/2013 Kris Nguy EUT / Lapi Tx 5/2GHz	en/Dana op	ay Yu			142								

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9.2.12. 802.11n AC80 BF 2TX MODE, 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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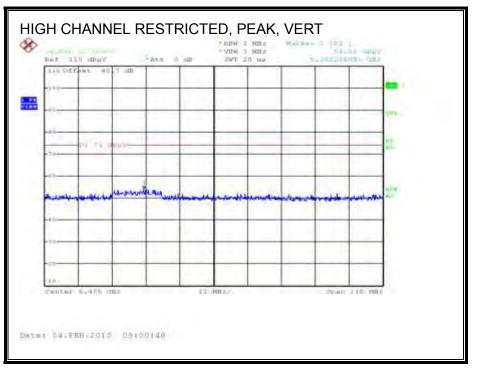
Complia			· Measurem Services, Fr		5m Ch	amber	A												
			Broadcom (13U14796 2/24/2013 K. Nguyen EUT with I Ts 5.2GHz	aptop.	AC ad			a.											
est Eq	ulpmen	e.																	
н	om 1-	18GHz	Pre-ar	mplifer	1-260	GHZ	Pre-am	plifer	26-40GH	Iz		H	e ma	180	Hz		1	Limit	
1.00	5/N: 671		+ 11441	Aiveq 30	OGABD	131 .	TES Min	eq 26-	40GHz		T89;	ARA 18.260	GHE; S	5/N-10	49		+	FCC 15.205	-
		2807700	12' c	able 2	28076	500	20' cal	ble 22	2807500			HPF		Re	ject Filte	er		Measuremen W=VBW=3MF	annes
3.0	able 22	807700	• 12 cz	able 228	07600	-	20' cab	le 228	97500		HPT	F_7 6GH2	•	1		•		ge Measurem 1MHz - VBW=	
f GH2	Dist (m)	dBuV	Read Avg. dBaV	AF dB/m	CL dB	Amp dB	D Cerr dB	Fltr dB	Peak dBuV/m		t∀g uV/m	Pk Lim dBuV/m	1.00	Lim V/m	Pk Mar dB	1000	g Mar dB	Note (V/H	
hannel 8.630 5.630	42 (5210 3.0 3.0	MHz) 38.3 35.1	26.3 26.5	39.0 39.0	13.3 13.3	34.6 -34.6	0.0 0.0	0.7	53.8 53.5		4.7	74 74		14 14	20.2		9.3 9.1	V H	
ev. N.J	1.13																		
	f		ent Frequenc	ė –		Апр	Preamp (and or						Average I				
	Dist Read	Distance to Analyzer R	- Franklin			D-Con Avg			et to 3 miet Streagth @				PkL		Peak Field Margin vs				
	AF	Antenna Fa				Peak			k Field Stre						Margin vs				
	CL	Cable Loss	£1.			HPF	High Pas	s Filter											

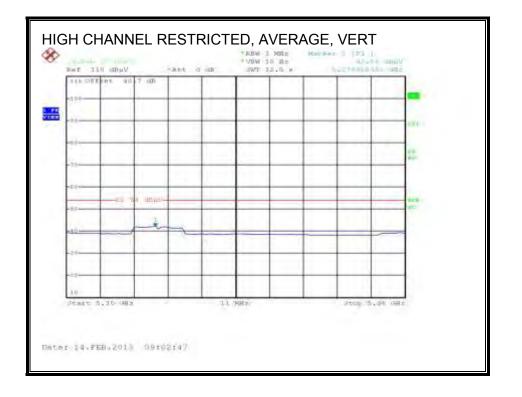
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9.2.13. 802.11a LEGACY 1TX MODE, 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

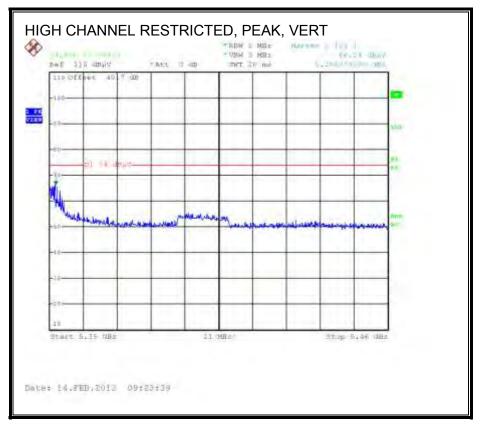
Channel 60

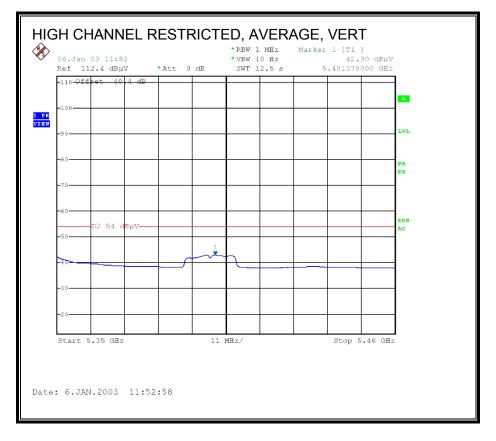




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Channel 64





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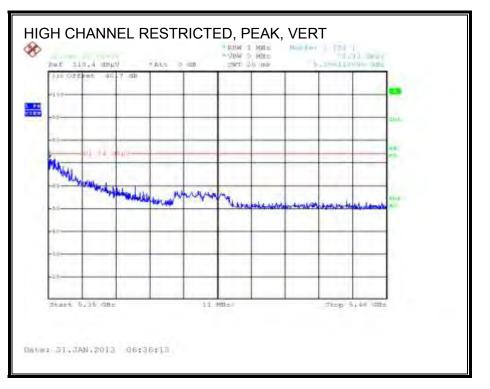
Covered by testing 11n HT20 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

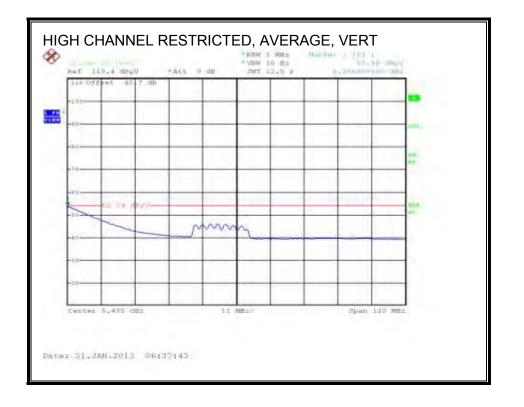
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9.2.14. 802.11n HT20 CDD 2TX MODE, 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)





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ombin	ance Co	ertification :	Services, Fre	emont :	5m Ch	amber	A								
Compa			Broadcom C	Corpara	ation										
Project	W:		13U14796												
Date:	1.1		2/14/2013												
	ngineer:		K. Nguyen	in all		Contract of	-								
	uration:		BCM94360												
Mode:			11n HT20 C	DD M	/ede 27	FX; 5.3 *	GHz Bane	A							
Test Ec	quipmen	1													
H	iom 1-	18GHz	Pre-an	nplifer	1-26	GHz	Pre-am	plifer	26-40GH	z	Hr	orn > 18G	Hz	1	Limit
173;	SIN: 671	7 @3m	T144 N	Witeq 30	108ADO	931 -	TES Mite	leg 26-	40GHz	1 189	ARA 18-260	GHz; S/N:10	49	+	FCC 15.205 .
1.00			<u>A</u> <u>See</u>	-	-	1		-	-	2			2	1	
THR:	QUETCY Cal	bles	-		_	-				a				1	
3.	cable 2	22807700	12' 0	able 2	28076	500	20' cal	ble 22	2807500		HPF	Re	eject Filte	it .	
3.0	cable 22	307790	- 12 cai	able 228	0/600		20° cabl	la 2280	07500 .	HP	F_7 6GHz	1		-	
f	Dist	1000 C 100 C 100	Read Avg.	1.000	CL.	Amp				Avg	Pk Lim	Avg Lim	and the second se	Avg Mar	Notes
GHz	(m)	dBuV	dBaV	dB/m	dB	dB	dB	dB	dBaV/m	dBaV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
	52 (5260	MH2) 40.9	20.9	38.6	13.4	.34.6	0.0	0.7	59.1	48.1	74	54	419	.5.9	v
15.780	3.0	38.4	29,9	38.6	13.4		0.0	0.7	59.1	48.1	74	54	-17.5	-5.9	H
	59 (5300	and the second se	-	Jun	ager .	- Serie			30	-40,4				-0.0	
10.404	3.0	39.5	30.0	38.5	10.7	-36.2	0.0	0.8	63.3	43.8	74	54	-20.7	-10.2	v
18.604	3.0	37.4	27.2	38.5	10.7	-36.2	0.0	0.8	51,2	41.1	74	54	-22.8	-12.9	H
15.900	3.0	39.2	29.6	38.3	13.4		0.0	0.7	57,3	47.5	74	54	36.9	-65	v
15.900	3.0	37.7	27.6	38.3	13,4	.34.5	0.0	0.7	55.6	45.5	74	54	-18.4	-11.5	H
Chimnel 10.640	3.0	41.2	39.6	38.5	10.7	.36.1	0.0	0.8	55.1	46.4	74	54	18.9	.9.6	Y
10.640	3.0	39.5	27.4	38.5	10.7	-36.1	0.0	0.8	53.3	41.2	74	54	-28.7	-12.8	H
15.960	3.0	43.5	32.8	38.2	13.4		0.0	0.7	61.7	50.6	74	51	32.3	3.4	v
15.960	3.0	40.7	30.2	38.2	13.4	345	0.0	6.7	58.6	48.0	74	54	-15.4	-6.0	H
Rev. 01.)	f Dist	Measureme Distance to Analyzer R				10 Care		Correc	set to 3 mete Strength /2			Pk Lim	Peak Field	Field Strength d Strength Lir Average Lir	miz
		1				Avg									
	AF	Actiona Fa				Peak			k Field Stre	ngth		Pk Mar	Margn vs.	Peak Line	
	CL	Cable Loss	6			HPF	High Pass	is Filter	6						

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9.2.15. 802.11n HT20 STBC 2TX MODE, 5.3 GHz BAND

Covered by testing 11n HT20 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

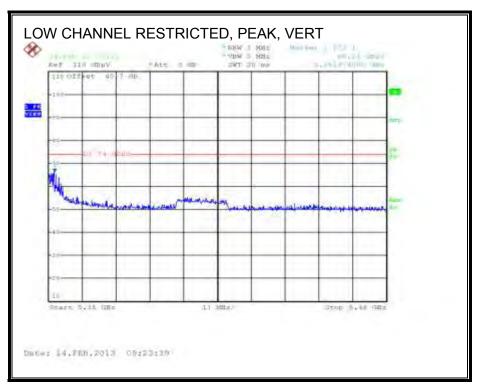
9.2.16. 802.11n HT20 BF 2TX MODE, 5.3 GHz BAND

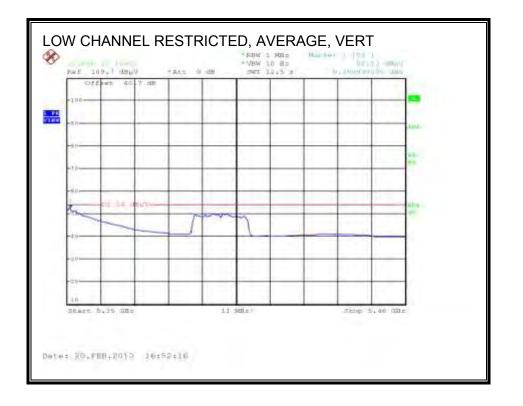
Covered by testing 11n AC20 BF 2TX, total power across the two chains is equal or higher than the power level the device will operate at.

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9.2.17. 802.11n AC20 BF 2TX MODE, 5.3 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





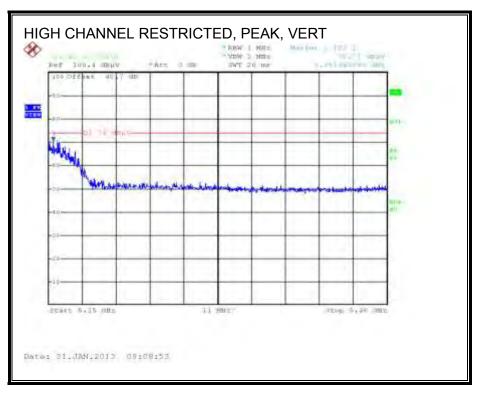
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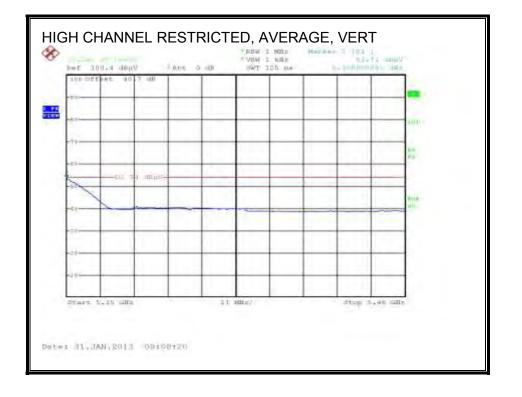
Compar Project Date: Cest En Configu Mode: Lest Eq	N: gineer: ration:		Brosdcom (13U14796 02/23/13 K. Nguyen EUT with h Tx 5.3GHz	iptop, A	C ada										
-		18GHz	Pre-at	nplifer	1.260	2Hz	Pre.am	olifer	26-40GH	a)	He	orn > 180	147	- 1	Limit
-	S/N: 671		_	liteq 30	-	-	TES Min				9; ARA 18-260			+	FCC 15.205 -
3. 0	able 22	22807700	-	able 2	100	500	20° cab		2807600	Н	HPF #_78GHz	R	iject Filter	RBW-	k Measurements iMHz VBW-3MHz ge Measurements 1MHz VBW=10Hz
f	Dist		Read Avg.	AE	CL.	Amp	D Corr	Eltr	Peak	Avg	Pk Lim	Avg Lim	No. 2012 1961		Notes
GHz hannel :	(m) 52 (5260	dBuV Miiz)	dBuV	dB/m	dB	dB	48	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
5,780	3.0	45.4	34.3	38,6	13.4	-34.6	0.0	6.7	63.6	52.3	74	54	-10.4	-1.7	v
5,780	3.0	41.7	33.6	.38.6	13.4	-34.5	0.0	0.7	59.9	51.8	74	54	-14.1	-22	H
hanne? (1,600	3.0	41.3	30.7	38.5	10.7	-36.2	0.0	6.8	55.1	44.5	74	54	-18.9	-9,5	v
0.600	3.0	41.3	30.8	38.5	10.7	-36.2	0.0	6.B	54.9	44.6	74	54	-19.1	-9.4	H
5.900	3.0	35.2	33.6	38.3	11.4	34.5	0.0	6.7	63.1	61.5	74	54	10.9	-2.5	Ŷ
906.9	3,0	43.8	32.9	38.3	13.4	34.5	0.0	0.7	61.7	50,9	74	54	42.3	-3.1	н
hammel (1.6-40	54 (5320 3.9	MIIz) 39.9	28.8	18.5	19.7	.36.1	0.0	0.8	53.8	42.4	74	54	20.2	-114	r
1.640	3.0	38.9	29.3	38.5	10.7	.36.1	0.0	0.8	52.8	43.2	74	54	-21.2	-10.8	H
690	3.0	46.8	35.0	38.9	13.3	34.6	0.0	0.7	65.1	63.3	74	54	8,9	-0.7	Ŷ
5.690	3.0	43.1	32.4	38.9	13.3	-34.6	0.0	0.7	61.4	50.7	74	54	12.6	33	н
ev. 01.30	f Deit	Measureme Distance to Analyzer R Antenna Fa	eading	-		Amp D Corr Avg Peak	Average	Corre Field S	ct to 3 mete Strength (2)	3 m		Pk Lim	Average Fi Peak Field Margin vs. Margin vs.	Strength L Average L	imit
	CL.	Cable Loss				HPF	High Pas					,			

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9.2.18. 802.11n HT40 1TX MODE, 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)





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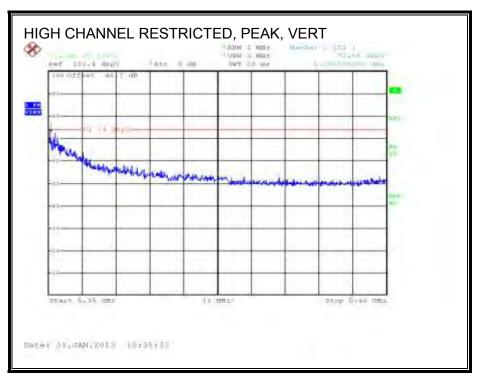
Covered by testing 11n HT40 CDD 2TX, total power across the chains is higher than the power level the device will operate at.

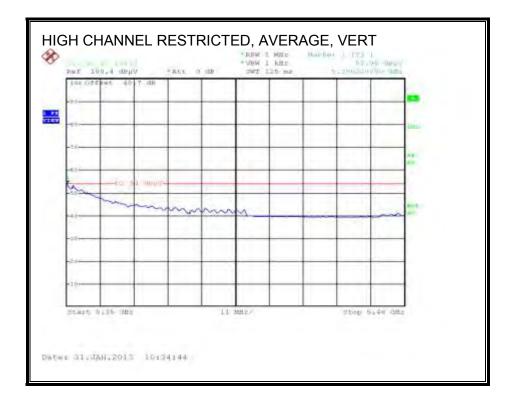
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9.2.19. 802.11n HT40 CDD 2TX MODE, 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)





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Company: Project #: Date: Cest Engineer: Configuration:	Broadcoa 13U1479 2/20/2013	5	tion											
Iode:	K. Nguye EUT with 11a HT40	n Laptop ai												
est Equipment:														
Horn 1-18G	Hz Pre-	amplifer	1-26G	Hz	Pre-am	pliter	26-40GH	z		н	rn > 18G	Hz	1	Limit
173; S/N: 1717 @3	m . T14	Mitteg 300	MA009.	51	TER Min	eq 26-	40GHz	-	T89;	ARA 18-260	5Hz; 5/N:10	19	-	FCC 15.205
3' cable 2280	7700 12	cable 22	28076	00	20 ⁺ cal	ole 22	2807500	Ī.		HPF	Re	ject Filte	r	
3' cable 2280770	• 12	cable 2280	37600	2	20' cab	e 228		U	HPF	7.6GHz	3		-	
and the second second	ad Pic Read Av BuV dBuV	g. AF dB/m	CL 4B	Amp dB	D Corr dB	Fltr dB	Peak dBaV/m	At any	-	Pk Lim dBaV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
unnel 54 (5270 MHz		0.05-00	-0.15	an	00	0.05	d Die V/m	0150 4	/88	abevin	d Din y (m	an	40	(V/H)
5,810 3.0 3	8.9 29.2	38.6	13.4	-34.6	0.0	6,7	57.0	472		74	54	-17,0	-6,7	V
Contraction in the second second	6.3 26.8	38.6	13.4	-34.6	0.0	6.7	54.4	44.1	5	74	54	-19.6	-9.2	н
tannel 62 (5310 Mile) (620 3.0 2	8.3 29.8	38.5	10.7	-36.2	0.0	6.8	52.3	43.	8	74	54	-11.9	-10.4	v
	6.1 26.7	38.5	10.7	-36.2	0.0	0.8	50.0	40.		34	54	-24,0	13.4	B
	9.1 341.3	38.2	13.4	34.5	0.0	9.7	\$6.9	48.	2	74	54	17.1	5.8	- V
5.930 3.0 3	9:0 29.9	38.2	13.4	-34.5	0.0	0.7	56.9	47.	T	.74	54	-17.1	-0.3	н
ey. (1.20)	_		_	_	_			_					_	_
Dist Dist Read Ana AF Ante	attrement Freques ince to Antenna yzer Reading nna Factor le Loss	ky	1	Amp D Corr Avg Peak TPF	Average	Corre Field S d Peal	ct to 3 mete Strength @ k Field Stre	3 m			Pk Lim Avg Mar	Peak Field Margin va	ield Strength I Strength Li Average Li Peak Limit	mit mit

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9.2.20. 802.11n HT40 BF 2TX MODE, 5.3 GHz BAND

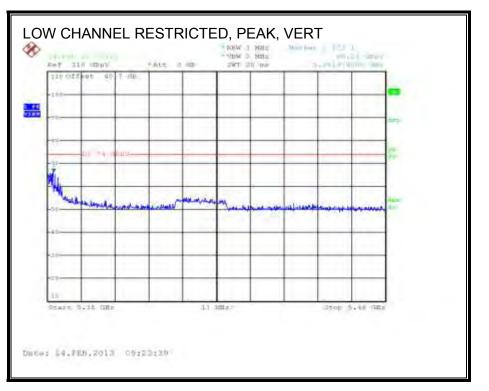
Covered by testing 11n AC40 BF 2TX, total power across the two chains is equal or higher than the power level the device will operate at.

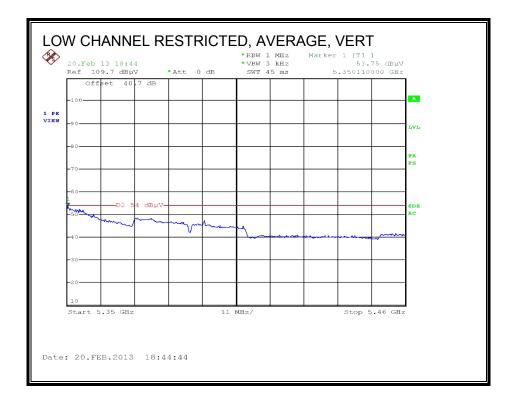
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9.2.21. 802.11n AC40 BF 2TX MODE, 5.3 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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ombus	ance C e	rtification S	Services, Fr	emont :	5m Ca	amber-	Α								
Compan			Breadcon Cor	guration	0										
roject	Mt.		13U14796												
Date:			224/2018												
	igineer:		K. Nguyen	a della	-	-									
Couligu Mode:	ration:		BCM94360CSC Ta Un AC40 h												
Test Eq	pulpmen	¢.													
н	lorn 1-	18GHz	Pre-ar	mplifer	1-26	GHz	Pre-am	plifer	26-40GH	z	Н	orn > 180	Hz	1	Limit
173; 5	S/N: 671	1 @3m	- T144 F	Miteq 30	084005	131 .	TES Min	eq 26-	40GHz	- T89	ARA 18-264	GHz; S/N:10	49	-	FCC 15.205 +
	quency Cal	22897700	12'	cable 2	2907	000	20° ca	ble 2	2807500	Π	HPF	-	Look Cillin	Peak	Measurements
	cable 2	2807700	16.0	aque 1	10014	100		Jie -	1001000		Here	Re	eject Filte		MHz; VBW=3MRz
3.0	able 221	07760	• 12 ca	able 728	07600		20' cabl	la 2280	07500	HP	F_7.6GHz	-			ge Measurements MH2 / VBW=10H2
f	Dist	and the second	Read Avg.		CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim		12.20.00	Avg Mar	Notes
GHz	(m)	dBaV	dBaV	dB/m	dB	dB	dB	dB	dBay/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
Channel 4 15.810	54 (5270	40.7	313	38.6	13.4	-34.6	0.0	0.7	58.8	49.4	74	54	-15.2	4.5	v
15.810	3.0	40.4	31.9	38.6	13.4	34.6	0.0	0.7	58.4	50.0	74	84	15.6	4.0	Ĥ
				1			1	1							
Channel (10.620	62 (5310 3.0	41.5	33.9	38.5	10.7	30.2	6.0	0.8	35.6	47.7	74	.84	384	-63	· v
18.628	3.0	48.9	31.1	38.5	10.7	-36.2	0.0	0.8	54.8	45.6	74	54	-19.2	-9.0	н
15.930	3.0	-41.9	31.1	38.2	13.4	34.5	9.9	9.7	59.8	49.0	74	54	-142	-5.4	v
15,930	3.0	40.3	31.2	38.2	13,4	.34.5	0.0	0.7	58.1	49,1	74	54	-15.9	-4.8	н
Rev: 01.36	11						_								
	ŕ	Measureme	ent Frequency	31		Amp	Preamp (field Strength	
	Dist	Distance to							set to 5 mete					d Strength Lis	
	Read	Analyzer Re	eading			Avg			Strength @					Average Lin	tim
	AF	Antenna Fa	actor			Peak	Calculate	id Peal	k Field Stre	ingth		Pk Mar	Margin vs	Peak Limit	
	CL.	Cable Loss	and the second s			HPF	High Pace	s Filter							

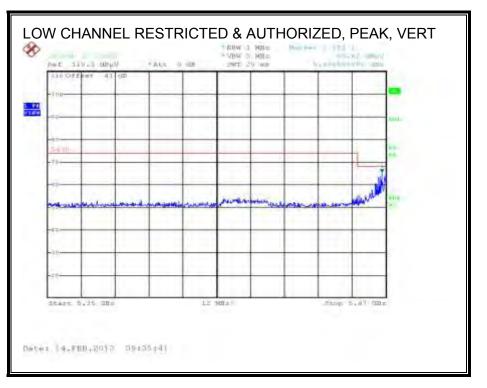
Note: the VBW used for the AVG measurements was 1 kHz. The 10 Hz shown the tabular data above this note is a typo.

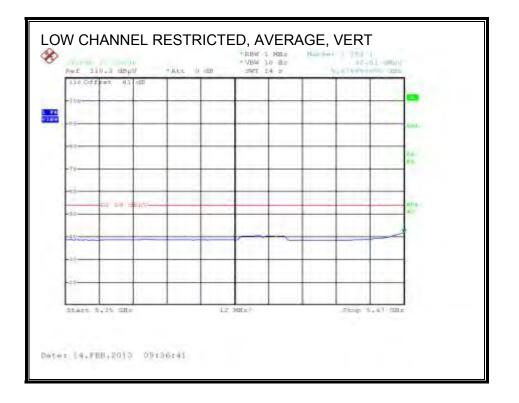
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9.2.22. 802.11a LEGACY 1TX MODE, 5.6 GHz BAND

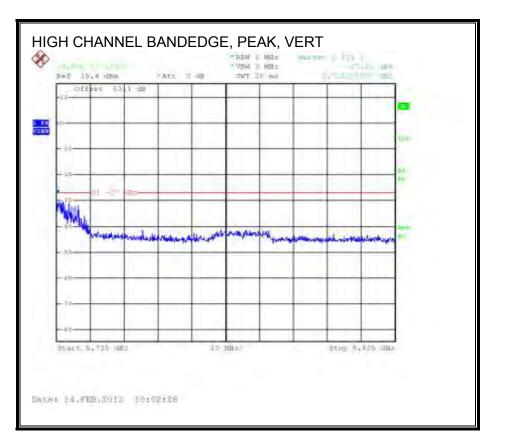
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)



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Covered by testing 11n HT20 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

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9.2.23. 802.11a LEGACY 1TX MODE, CHANNEL 144, 5.6 GHz BAND

BANDEDGE

Not Applicable.

HARMONICS AND SPURIOUS EMISSIONS

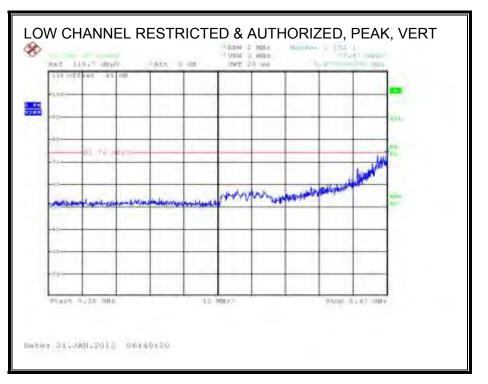
Covered by testing 11n HT20 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

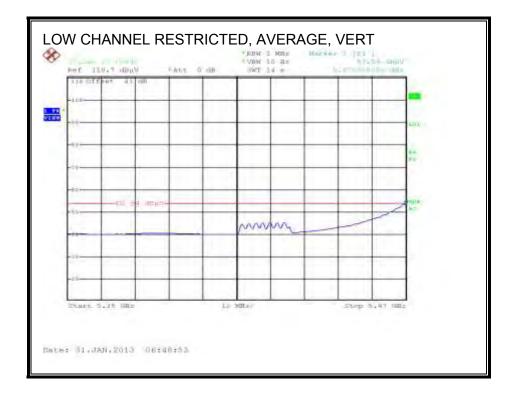
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9.2.24. 802.11n HT20 CDD 2TX MODE, 5.6 GHz BAND

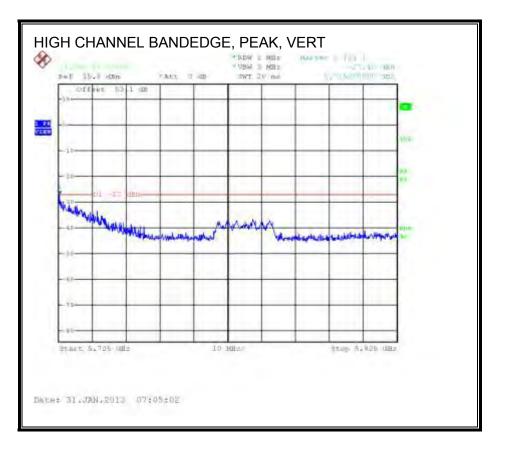
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)



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			Measurem												
Compli	ance Co	rtification	Services, Fr	emont	Sm Cl	amber	Λ								
Confign Mode:	N: ngincer; tration:		Broadcom 13U14796 2/22/2013 Kris N/Dan EUT, Adap HT20-2TX	ter, lap											
	lorn 1	18GHz	Pre-at	nolifer	1.26	GHY	Pre.am	olifer	26-40GH	e)	H	orn > 18G	149	-1	Limit
-	S/N: 671			Aiteq 30			Tha Mit	-		and party	ARA 18-264			-	FCC 15.205
-	cable 2	22807700	_	able 2 able 228			20' cab		2807500 97509 •	HP	HPF 7.69Hz	Re	ject Filte	RBV	Measurements V=VBW=1MHz or Measurements MHz VBW=10Hz
f GHz	Dist (m)	Read Pk dBaV	Read Avg.	AF	CL.	Amp dB	D Corr	Fltr dB	Peak	Avg dBaV/m	Pk Lim dBaV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
	(m) 5500M		abay	0.05/00	an	an	dB	aB	0.050 V/m	abav/m	dBuy/m	al54 V/m	dB	dB	(v/n)
1.000	3.0	39.5	29.6	38.7	10.9	-36.0	0.0	0.7	53.8	44.0	74	54	-10.1	-10.0	v
1.000	3.0	38.9	28.5	38,7	10.9	36.0	0.0	0.7	\$3,2	42.8	74	54	20.8	11.2	Ħ
Channel 11.160	5580ME 3.0	41.0	32.1	38.9	11.0	-36.0	0.0	0.7	55.6	46.7	74	54	-18.4	-7.4	v.
11.160	3.0	39.7	29.5	38.9	11.0	-36,0	0.0	0.7	54.3	46.1	74	54	-19,7	.9.9	'n
Channel	140:570			1		1.	1.000		1						
11.400	3.0	-41.9	31.0	39.1	11.1	35.9	0.0	9.7	56.9	46.9	78	54	47.1	-7.1	v
11.400 Rev 01 3	3.U	36.4	36.7	39.1	11.1	35,9	0.0	0.7	51,4	41.7	74	54	-12.6	-123	н
	ŕ		ent Frequenc	ÿ		Amp	Preamp		1.0					ield Strength	
	Dist	Distance to				12.2			et to 3 mete					Strength Lin	
	Read	Analyzer R				Avg			Strength @					Average Lin	nit
	AF	Antenna Fa Cable Loss				Peak. HPF	Calculate High Pag		k Field Stre	mgui		PK Mar	Marga vs	Peak Limit	

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9.2.25. 802.11n HT20 CDD 2TX MODE, CHANNEL 144, 5.6 GHz BAND

BANDEDGE

Not Applicable.

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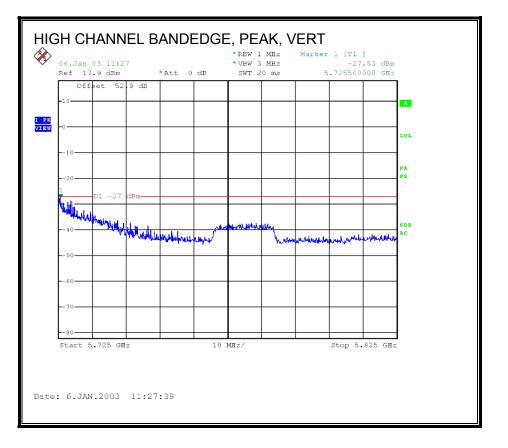
		-	•		ents		
		Limit	FCC 15.205	Measurement	e Measuremen MHz - VBW=10	Notes (V/H)	V H
		1			Averag	g Mar dB	-8.1
		Hz	9	ect Filter	2	Pk Mar A dB	16,4
		n > 18G	12; S/N:104	Rej		Avg Lim dBuV/m	54 54
		Ho	ARA 18.26G	HPF	7 6GH2	Pk Line dBuV/m	74 74
		T	• 189;		HPT	Atg dBuV/m	45,3
		26-40GH	DGHL	807500	7500 .	Peak dBuV/m	57.6 51.5
		plifer	eq 26.4	ble 22	le 2280	Eltr dB	0.7 0.7
A.	el 144	Pre-am	TER Mit	20' cal	20' cab	D Cerr dB	0.0
amber		Hz	31 .	00	4	Amp dB	35,9
m Ch		1-260	184009	28076	07600	CL dB	11.1
emont !	ier, lapt	nplifer	liven 30	able 2	ble 220	AF dB/m	39.1 39.1
Services, Fr	Broadcom 13U14796 2/22/2013 Kris N/Dan EUT, Adapt HT20 2TN (Pre-an	+ T144 N	12' c	• 12 ca	Read Avg. dBaV	30.8 26.5
Frequency rtification (-	1 @3m	2807700	07700	dBuV	42.6 36.4
	t #: ingineer: puration:	Guipmen	5/N: 671	cable 2	cable 22		144:572 3.0 3.0
Comp		-	773		3	f GR	Channe 11.440 11.440

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9.2.26. 802.11n HT20 STBC 2TX MODE, 5.6 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)



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9.2.27. 802.11n HT20 STBC 2TX MODE, CHANNEL 144, 5.6 GHz BAND

Covered by testing 11n HT20 CDD 2TX CHANNEL 144, total power across the two chains is higher than the power level the device will operate at.

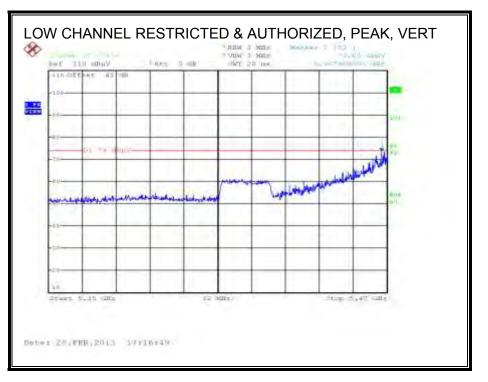
9.2.28. 802.11n HT20 BF 2TX MODE, 5.6 GHz BAND

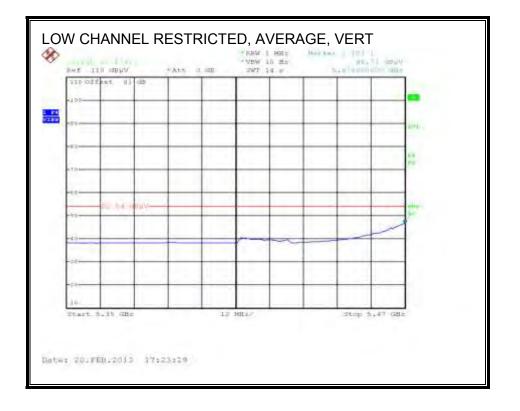
Covered by testing 11n AC20 BF 2TX, total power across the two chains is equal or higher than the power level the device will operate at.

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9.2.29. 802.11n AC20 BF 2TX MODE, 5.6 GHz BAND

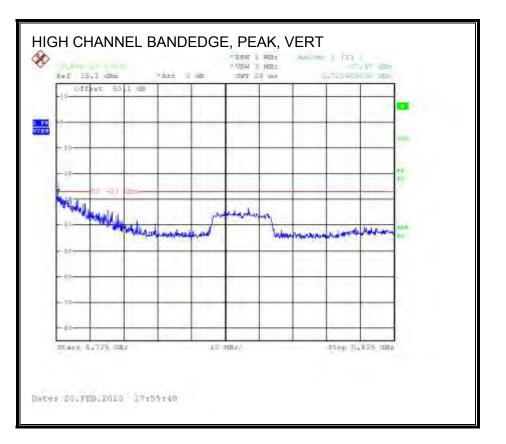
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)



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HARMONICS AND SPURIOUS EMISSIONS

Cumpa Project Date: Fest Er	ny: N: agineer; cration:		Services, Fr Broadcom 13U14796 2/25/2013 Vien Tran ELT / Lapt Tx 5.6GBz	ep / An	tenna											
Tust E	quipmer	<u>it:</u>												_		
-		-18GHz	200	nplifer	_				26-40GH	1 mm		vm > 18G			Limit	_
	S/N: 671		• T144 6	Aiteq 30	084005		TES Min	eq 26-	40GHz	- 18	9; ARA 18-266	SHZ; S/N:10	49	-	FCC 15.205	•
	quenty Ca cable 1	oles 22807700	12' c	able 2	28076	00	20' ca	ble 22	2807500		HPF	Re	ject Filte		k Measurements 1MHz , VBW=3M	
3.4	able 22	807700	• 12 ca	ible 778	107600	•	20' cab	lle 228	07500 .	HE	PF_7.6GHz	3		Aven	ige Measurement iMHz VBW=105	its
f GHz	Dist (m)	dBaV	Read Avg. dBaV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBnV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
.0W CI	LANNEL 3.0	(100), 5500M 39.9	Ha 29.5	38.7	10.9	-36.0	0.0	0.7	54.3	43.8	74	54	-19,8	-10.3	v.	-
1.000	3.0	37.6 (16), 5580MB	28.4	38,7	10.9	36.0	0.0	0.7	51.9	42.7	74	54	22.4	11.5	Ħ	_
1.160	3.0	40.5	31.4	38.9	11.0	-36.0	0.0	0.7	55.1	46.0	74	54	18.9	-8.0	v	
11.160 HIGH CH	3.0 IANNEL	38.7 (140), 5700M	29.1 Hz	38.9	11.0	-30,0	0.0	0.7	53.3	43.7	74	.84	-20,7	10.3		
1.400	3.0	41.1	30.8 29.8	39.1 39.1	11.4	35.9	0.0	0.7	56.1 54.5	45.8	78	54 54	-17.9	-8.2	V H	_
lev pl 3																
	AF	Distance to Analyzer R Antenna Fa	eading actor	ń		Avg Peak	Average Calculate	Corre Field S sd Peal	et to 3 mete Strength @ k Field Stre	3 m.		Pk Lins Avg Mar	Peak Field Margin vs.	ield Strengt I Strength L Average L Peak Limit	timit .	
-	CL.	Automa, ra				HPF	High Pas			ngth		PK Mar	Mangan vs	Peas Luna		

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9.2.30. 802.11n AC20 BF 2TX MODE, CHANNEL 144, 5.6 GHz BAND

BANDEDGE

Not Applicable.

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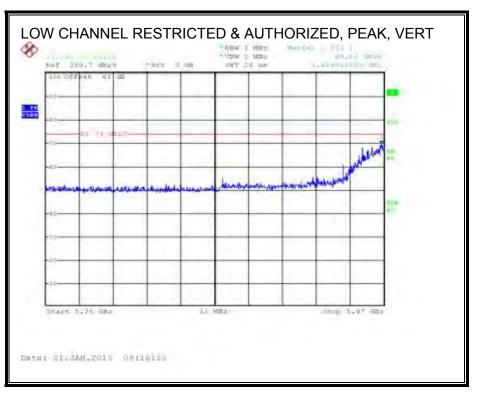
HARMONICS AND SPURIOUS EMISSIONS

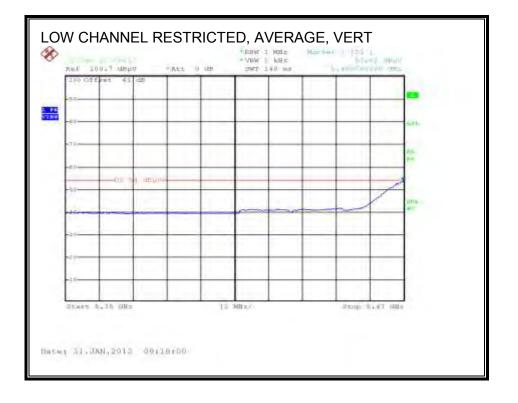
Certification S		remont	5m Ch	1.00										
				amber-	A									
st Equipment:				C20 Tx1	3F 2TX_C	haune	5 144							
neat				_										
1-18GHz	Pre-a	mplife	1-26	GHz	Pre-am	plifer	26-40GH	łz		Ho	orn > 18	GHz	1	Limit
6717 @3m	· T1441	Witeg 30	064800	931 .	TER Mit	eq 26-	4DGHz	•	789;	ARA 18-260	GH2; 5/N-1	049	+	FCC 15.205
le 22807700	12' 0	able 2	2807	600	20' cal	ble 22	2807500	1		HPF	R	eject Fille		Measurements MHz , VBW-3MHz
22807700	12 0	shie 228	607600	4	20' cab	le 228	97500 .		HPT	F_7 6GH2	31		. Avera	ge Measurements 1MHz · VBW=10Hz
and the set of the		1.000	CL	Amp	D Corr	Eltr	Peak		1.00	Pk Lim		10.00	Concerning a series	Notes
		dB/m	dB	dB	dB	dB	dBuV/m	dB	aV/ma	dBuV/m	dBuV/m	dB	dB	(V/H)
.0 43.2	33.4	.19.1	11.1	.35,9	0.0	0.7	\$8,3			74	54	45.7	.15	Ŷ
.0 37.8	27.2	391	111	-35.9	0.0	0.7	52.9	4	2.3	74	54	-21.1	-11.7	н
Measureme	nt Frequenc	é		Апр	Preamp (Dain					Avg Lim	Average I	Field Strengt	h Limir
a property of							and the second second				Pk Lim			
and the second sec														
	C. C							cugus			PK Mill	TATIO BU AR	POR LINE	
	er: n: 1-18GHz 5717 @Gm codes e 22007700 22807700 22807700 22807700 22807700 1 (144), 57204H 1 (144), 57204H 0 43.2 8 37.5 Measureme 1 Distance to advalue Ria Analyzer Ri Antenna Fa	er: Vien Tran n: EUT / Lapi Ts 5.6GHz 1-18GHz Pre-ai 5717 @Om Pre-ai 5717 @Om Pre-ai 5717 @Om Pre-ai 5717 @Om Pre-ai 5717 @Om Pre-ai 12' ci 12' ci	er: Vien Tran n: EUT / Laptop / An Ts 5.6GHz Band unit: 1-18GHz Pre-amplifer 717 @Om Pre-amplifer 7144 Mitten 30 700000 127 cable 2 22807700 127 cable 2 127 cable 228 127 cable 228 128 cable 238 128 cable 238 138 cable	er: Vien Tran n: EUT / Laptop / Antonna Ts 5.6GHz Band lin Ad unit: 1-18GHz Pre-amplifer 1-26 T144 Mineq 3008A00 7000es e 22007700 12' cable 22807600 12' cable 22807600 12' cable 22807600 12' cable 22807600 12' cable 22807600 12' cable 22807600 12' cable 22807600 Measurement Frequency 1.11 Measurement Frequency 1.25 Stance to Antenna ad Analyzer Reading Antenna Factor	er: Vien Tran n: EUT / Laptop / Antenna Ts 5.6GHz Band lin AC20 Tsl nnt: 1-18GHz Pre-amplifer 1-26GHz T144 Mineq 3008A00931 , Cores e 22007700 12' cable 22807600 12' cable 22807600 , 12' ca	et: Vies Tran n: EUT / Laptop / Antenna Tx 5.6GHz Band_lla AC20 TxBF 2TX_C annt: 1-18GHz Pre-amplifer 1-26GHz Pre-am 717 gOm - T144 Mineq 3008A00931 , T88 Min 7000s e 22807700 12' cable 22807600 20' cal 22807700 12' cable 22807600 20' cal 220' cab 12' cable 22807600 20' cal 20' cab 12' cable 22807600 20' cal 12' cable 22807600 20' cal 20' cab 12' cable 22807600 20' cal 20' cab 20' c	er: Vien Tran n: EUT / Laptop / Antenna Ts 5.6GBz Band_lin AC26 TxBF 2TX_Chenne unit: 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer T144 Mineq 3008A00931 . T88 Mineq 26- T144 Mineq 3008A00931 . T88 Mineq 26- T144 Mineq 3008A00931 . T88 Mineq 26- T144 Mineq 2008A00931 . T88 Mineq 26- Codes e 22807700 12' cable 22807600 20' cable 228 20' cable	er: Vies Tran n: EUT / Laptop / Antenna Ts 5.6GHz Band_lin AC20 TxBF 2TX_Chennel 144 annt: 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz T144 Mineq 3008A00931 Pre-amplifer 26-40GHz T144 Mineq 3008A00931 Pre-amplifer 26-40GHz T144 Mineq 3008A00931 Pre-amplifer 26-40GHz T188 Mineq 26-40GHz 20' cable 22807500 20'	er: Vien Tran n: EUT / Laptop / Antenna Ts 5.6GHz Band_lin AC20 TxBF 2TX_Chennel 144 annt: 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 25-40GHz T144 Mineq 3008A00931 Pre-amplifer 25-40GHz T88 Mineq 26-40GHz Pre- T144 Mineq 3008A00931 T88 Mineq 26-40GHz Pre- T88 Mine	et: Vies Tran n: EUT / Laptop / Antenna Ts 5.6GHz Band_Lin AC20 TxBF 2TX_Channel 144 annt: 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz T89 717 gOm • T144 Mineq 3008A00931 • T88 Mineq 26-40GHz • T89 70006 e 22807700 • 12' cable 22807600 20' cable 22807500 12' cable 22807600 • 20' cable 22807500 12' cable 22807600 • 20' cable 22807500 12' cable 22807600 • 12' cable 22807500 12' cable 22807600 • 12' cable 22807500 12' cable 22807600 • 12' cable 22807500 12' cable 22807500 • HFF at Read Pk Read Avg. AF CL Amp D Corr Fhr Peak Avg at Read Pk Read Avg. AF CL Amp D Corr Fhr Peak Avg at BaV dBav dBau dB v/m dBaV/m L(146),5720MHz 0 0.7 52.9 42.3 Measurement Frequency Amp Preamp Gain D Stance to Antenna D Corr Distance Correct to 3 meters at Analyzer Reading Avg Average Field Strength @ 3 m Azemna Factor Peak Field Strength	et: Vies Tran n: EUT / Laptop / Antenna Tx 5.6GHz Band_lla AC20 TxBF 2TX_Chennel 144 annt: 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Hu T144 Mineq 3008A00931 Pre-amplifer 26-40GHz Hu T89: ARA 18-29 T144 Mineq 3008A00931 20' cable 22807600 HPF 22807700 12' cable 22807600 20' cable 22807500 HPF HPF_7 6GHz at Read Pk Read Avg. AF CL Amp D Corr Fhr Peak Avg Pk Lime at Read Pk Read Avg. AF CL Amp D Corr Fhr Peak Avg Pk Lime at Read Pk Read Avg. AF CL Amp D Corr Fhr Peak Avg Pk Lime at Bav dB/m dB	ef: View Tran a: EUT / Laptop / Automa Ts 5.6GHz Band_lin AC20 TxBF 2TX_Channel 144 tent: 1-18GHz Pre-amplifer 1-26GHz Tt8 Mineq 26.40GHz Horn > 18 T144 Mineq 3008A00931 Tt8 Mineq 26.40GHz T89; ARA 18.26GHz; 57k:1 T89; ARA 18.26GHz; 57k:1 T80; Mas dage dage dage dage dage dage dage dage	ef: View Tran a: EUT / Laptop / Anteuna Ts 5.6GHz Band_lin AC20 TxBF 2TX_Channel 144 tent: 1-18GHz 1-18GHz 1-18GHz 1-18GHz T144 Mineq 3008A00931 Pre-amplifer 26-40GHz T144 Mineq 3008A00931 TER Mineq 26-40GHz T188 Mineq 26-40GHz T89, ARA 18-26GHz; S/N:1048 Pre-amplifer 26-40GHz T89, ARA 18-26GHz; S/N:1048 Pre-amplifer 22807500 12' cable 22807500 Mered Avg AF CL Amp D Corr Flir Peak Avg Pk Lim Avg Lim Pk Mar a) dBaV dB'm dB dB dB dB dB dB dB dB dB uV/m dBuV/m dBuV/m dBuV/m dB (144), 5750MHz 3 37.8 27.2 391 11.1 35.9 0.0 0.7 52.9 42.3 74 54 21.3 Measurement Frequency Amp Preamp Gain D Corr Distance Correct to 3 mieters Avg Lim Avg Lim Avg Lim Avg Lim Avg Lim Pack Field Avg Lim Avg Lim Avg Mar Margin ya Astenna Factor Pk Mar Margin ya Pk Mar Margin ya	et: Vien Tran n: EUT / Laptop / Antenna Ts 5.6GBz Band_11n AC20 TxBF 2TX_Channel 144 tent: 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-18GHz 1-182 Mineq 2640GHz 12' cable 22807600 12' cable 22807500 12' cable 22807600 12' cable 22807600 12' cable 22807500 12' cable 22807500 14' cable

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9.2.31. 802.11n HT40 MCS0 1TX MODE, 5.6 GHz BAND

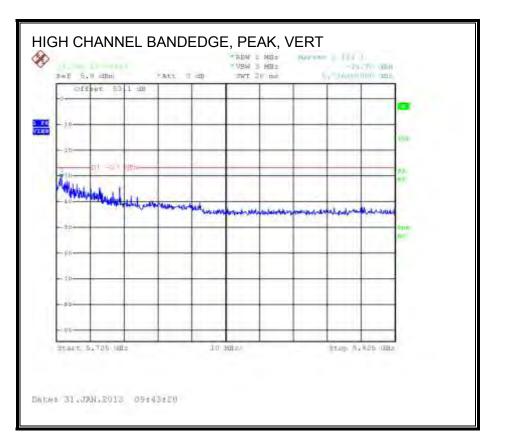
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)



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HARMONICS AND SPURIOUS EMISSIONS

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9.2.32. 802.11n HT40 MCS0 1TX MODE_CHANNEL 142, 5.6 GHz BAND

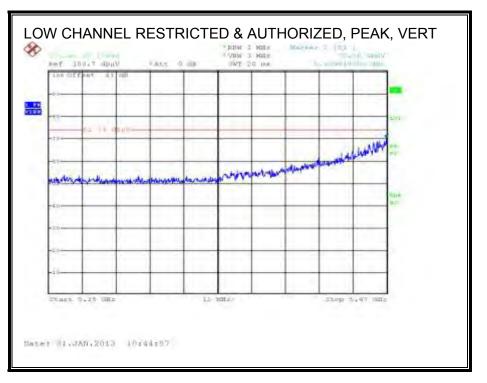
Covered by testing 11n HT40 CDD 2TX, total power across the two chains is higher than the power level the device will operate at.

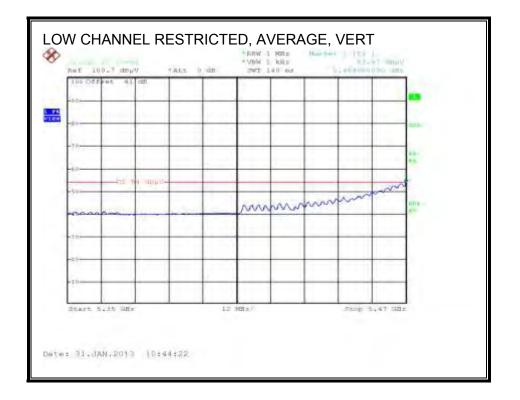
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9.2.33. 802.11n HT40 CDD 2TX MODE, 5.6 GHz BAND

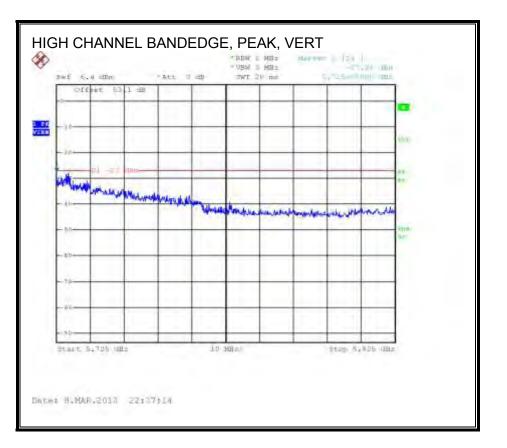
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)



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HARMONICS AND SPURIOUS EMISSIONS

			Measurem												
omplia	ance Co	rtification	Services, Fr	emont	5m Cb	amber	A								
onligu Iode:	N: gineer; ration:		Broadcom (13U14796 2/20/2013 K. Nguyen EUT with L 11n HT40 (aptop a	md AC			d							
	nibmen		P			-								1	15.0
H	orn 1-	18GHz	Pre-at	nplifer	1-26	GHZ	Pre-am	plifer	26-40GH	z	He	orn > 18G	Hz		Limit
	S/N: 671	-	- T144 P	diting 30	08400	931 -	TES Mit	eq 26-4	40GHz	• T89	ARA 18-264	GHz; S/N:10	49	•	FCC 15.205
	cable 2	22807700	12' 0	able 2	28076	300	20 [°] cal	ble 22	2807500		HPF	Re	ject Filte		Measurements
3'0	able 221	807790	12 60	ible 778	07600	•	20' cab	le 2281	07500 •	HP	1_7.6GHz	3		Averag	e Measurements MH2_VBW=3.kH2
f GHz	Dist (m)	Read Pk dBaV	Read Avg. dBaV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBnV/m	Avg dBuV/m	Pk Lim dBaV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
	102 (551			100	100	1.000	-			1000	-	-			
	3.0	37.7	30.2	38.7	10.9	-36.6	0.0	0.7	52.1 53.8	44.6	74	54	-21.9	-9.4	V H
	3.0				1911			441	D D P P				and a	-	v
.020	3.0						0.0	0.7	54.6	45.6	74	54	-19.4	-8.4	н
1.020 hannel			31.2	38.8	11.0	-36.0	0.0		24.0				10.010		
.020 hannel .100 .100	3.0 3.0 3.0	0 MHz) 40.1 38.1	31.2 38.4	38.8 38.8	11.0	-36.0 -30,0	0.0	0.7	52.6	44.9	7.4	.84	31.4	.9.1	Ÿ.
L020 hannel L100 L100 hannel	110 (555 3.0 3.0 134 (567	0 MHz) 40.1 38.1 0 MHz)	38.4	38.8	11.0	-30,0	0.0	0.7	52.6		74	84	31.4	.9.1	Ŷ
1.020 hannel 1.100 1.100 hennil 1.340	3.0 3.0 3.0	0 MHz) 40.1 38.1				and the set of the	and the second s			41.9 43.2 42.1		-			
1.100	110 (555 3.0 3.0 134 (567 3.0 3.0 3.0	0 MHz) 40.1 38.1 0 MHz) 36.7	38.4 28.3	38.8	11.0	30,0	0.0	0.7	52.6 51.6	43.2	74 78	84 54	31.4	.9.1 -10.8	v V

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9.2.34. 802.11n HT40 CDD 2TX MODE, CHANNEL 142 IN THE 5.6 GHz BAND

BANDEDGE

Not Applicable.

HARMONICS AND SPURIOUS EMISSIONS

	form 1- S/N: 671	18GHz 7 @3m	1.1.	mplifer Aireq 30	100		Tes Min		26-40GH	-	T89;		5H2; 574:10		•	Limit FCC 15.205	•
3.	cable 2 cable 22	22807700	-	able 2	100	00	20' cab		2807500		HPF	HPF 7 6GHz	Re	ject Filte	RBW=1	Measurement MHz, VBW=33 ge Measuremer MHz, VBW=31	uts
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp	D Corr dB	Eltr dB	Peak dBuV/m	At	T	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
Thannel 1.420 11.420 tev. 01.3	142 (57) 3,0 3,0 3,0	0 MHz) 37.7 36.2	27.7 26.8	39.1 39.1	11.1 11.1	.35,9 .35,9	0.0 0.0	0.7 0.7	52,7 51.3	42 41		74 74	54 54	413 02.7	422	У Н	
Rev. 01.3	f Dist Read AF CL	Measurem Distance to Analyzer R Anzenna Fo Cuble Los:	leading actor	ŧ		Amp D Corr Avg Peak HPF	Average	Corre Field 9 d Peal	et to 3 mete Streagth @ k Field Stre	ī m	1		Pk Lim Avg Mar	Peak Field Margin ys	ield Strength I Strength Li Average Li Peak Limit	nii nii	

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9.2.35. 802.11n HT40 BF 2TX MODE, 5.6 GHz BAND

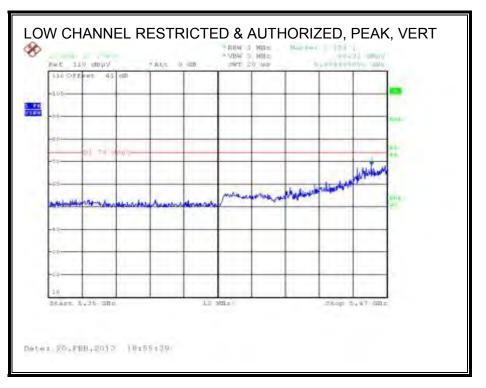
Covered by testing 11n AC40 BF 2TX, total power across the two chains is equal or higher than the power level the device will operate at.

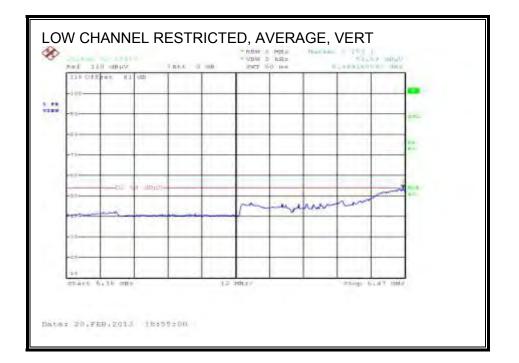
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9.2.36. 802.11n AC40 BF 2TX MODE, 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)

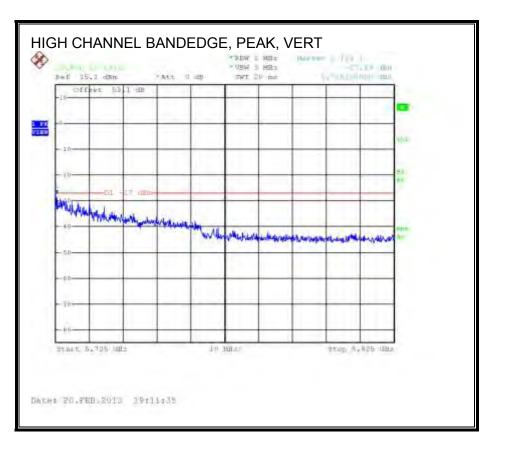




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AUTHORIZED BANDEDGE (HIGH CHANNEL)



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HARMONICS AND SPURIOUS EMISSIONS

GHz (an) Channel 102 (5510 M) 11.020 3.0 11.020 3.0 11.020 3.0 Channel 110 (5550 M) 11.100 3.0 11.100 3.0	8GHz @3m 807700 7760 Read Pk 1 dBaV	12' c	mplifer Aldeq 30 able 2 able 228	08A009 28076	931 .	T28 Mit	eq 26-	26-40GH	N F	T89; 1	Ho ARA 18-266	rn > 18G		1	Limit
H Frequency Cables 3' cable 22807 f Dist R GHz (m) Channel 102 (5510 3) 11.020 3.0 11.020 3.0 11.100 3.0 11.100 3.0	807700 7700 Read Pk 1 dBaV	12° c	able 2	28076		1.000		ADGHz	•	T89;	ARA 18-260	Hz; S/N: 10	49	-	FCC 15.205
3' cable 228 3' cable 22807 f Dist R GHz (m) Channel 102 (5510 M 11.020 3.0 Channel 110 (555 M 11.100 3.0	807700 7700 Read Pk 1 dBaV	17 ca			500	20 ⁺ cal			-					-	
GHz (m) channel 102 (5510 M 1.020 3.0 1.1020 3.0 channel 110 (5550 M 1.100 3.0 (1.100 3.0	dBaV	Read Avg.	_			20° cab		2807500		HPF	HPF 7.69Hz	Re	ject Film	RBW=1	Measurements Mhr : VBW=3MHr ge Measurements MHz : VBW=10Hz
Channel 102 (5510 M (1.020 3.0 (1.020 3.0 (1.020 3.0 Channel 110 (5550 M (1.100 3.0 (1.100 3.0	and the second se	dBaV	AF dB/m	CL dB	Amp	D Corr dB	Fltr dB	Peak dBaV/m		vg V/m	Pk Line dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
11.020 5.0 Channel 110 (5550 M 11.100 3.0 (1.100 3.0	968822	abay	0.05/m	dB	dB	dB	dB	dition y/m	dBe	V/m	dBuy/m	d Bu V/m	dB	dB	(V/H)
hannel 110 (5550 M 1,100 3.0 1,100 3,0	44.0	34.7 31.3	35.7 38.7	10.9	-36.0	0.0	0.7	58.4 55.2		9.1 5.7	74	54 54	-15.6	4.9	V H
1.100 3.0	MHz)					A 12 14									
	39,7	31.7	38.8	11.0	-36.0	0.0	0.7	54.3		6.2 1.3	74	54 84	-10.8	-7.8	V H
hmnif 134 (5670 M			2000		1.1.1.1			1.0.0						TANK .	
1.340 3.0	43.0	33.7	.19.0 .39.0	11.1	35.9	9.0 0.0	0.7	57.9 53.4		8.6 1.8	74	54	-16.1	-5.4 -9.2	V H
ev. 01.39.33															
f M	leasuremen	# Frequence	y)		Amp	Preamp	Gain					Avg Lim	Average I	ield Strength	Lunit
Dist Di	Stance to A	Antenna			D Con	Distance	Corre	ct to 5 mete	HS .			Pk Lins	Peak Field	Strength Li	mir
	Analyzer Re				Avg			Strength @						Average Li	mit
	Antenna Fac Table Loss	tor			Peak	Calculate High Pas		k Field Stre	ngth			Pk Mar	Margin vs	Peak Limit	
CL C	able Loss				HPF	1180 Pas	s ruci								

UL CCS FORM NO: CCSUP4701H 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of UL CCS.

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9.2.37. 802.11n AC40 BF 2TX MODE, CHANNEL 142, 5.6 GHz BAND

BANDEDGE

Not Applicable.

HARMONICS AND SPURIOUS EMISSIONS

	AF	Antenna Fa Cable Loss				Peak	Calculate High Pas		k Field Stre r	ingth			PK Mar	.Margn vs	Peak Line	
	Read	Analyzer R				Avg			Strength @						Average Li	
	f. Dist	Distance to	- Contraction of the Contraction			Amp D Corr		Carre	et to 3 miet				Pk Lim	Peak Field	field Strength d Strength Li	mid
10.000		Mana	. Free				B	net.					Austo	August 1	Call Server	L'ELS
ey. 01.3										-						
1.420	3.0	43.5	34.0	.19.1 39.1	11.1	35,9	0.0	6.7	\$8,5 55,6		9.6	74	54 54	18.5	-4.4	V H
-	1142 (MH		and t						Jane - / m		1.00	5000.000	Signa			11.00
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBaV	AF dB/m	CL dB	Amp dB	D Corr dB	Eltr dB	Peak dBuV/m		trig V/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1	CODIC 20			1010 220	Groot	2	10.000	10 110	-	1	1 100	1) oone	1	-		1MHz VBW=10Hz
3' cable 22807700 3' cable 22807700		-	able 2		500	20' cal		2807500		HE	HPF	Re	ject Filte	RBW-	Measurements MHz VEW-3MHz ge Measurements	
- 14 /14	rquency Ca	oles	1	-	-	-	ators			T			1		1	
173;	S/N: 671	7 @3m	+ T144 B	Aiteq 30	084005	131 .	TER Mit	eq 26-	40GHz		T89;	ARA 18-260	GH2; S/N:10	49	+	FCC 15.205
ł	Hom 1-	18GHz	Pre-ar	nplifer	1-260	SHZ	Pre-am	plifer	26-40GH	Iz		Но	orn > 18G	Hz	I.	Limit
est E	quipmen	t:														
Iode:			Ts 5.6GHz						el 142							
	ngineer: uration:		K. Nguyen EUT with L	anton.	AC ad	anter, a	nd antenn	a.								
ates			2/24/2013													
ompa			Broadcom (13U14796	Corpora	tion											
ompli	iance Co	ertification ?	Services, Fr	emont	5m Ch	amber	Δ									
			Measurem		200											

tabular data above this note is a typo.

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9.3. WORST-CASE BELOW 1 GHz

6 WORST EMISSIONS

Project : 13U14796 Company Name: Broadcom Model / Config: BCM94360CS2 Mode: Tx Worst Case Test By: Vien Tran

Horizontal 30 - 1000MHz

Marker		Meter		T185 Antenna	T64 preamp/cab le loss loop		FCC Part 15B		Height	
No.	Test Frequency	Reading	Detector	Factor (dB)	(dB)	er)	Class B 3m	Margin	[cm]	Polarity
1	85.25	52.75	РК	7.5	-27.1	33.15	40.0	-6.85	300	Horz
3	128.87	50.11	РК	14.1	-26.8	37.41	43.5	-6.09	200	Horz
5	276.68	46.21	PK	13.3	-26	33.51	46.0	-12.49	100	Horz
8	415.29	47.33	РК	16.1	-25.3	38.13	46.0	-7.87	100	Horz
9	443.88	45.80	PK	16.7	-25.1	37.40	46.0	-8.60	200	Horz
15	960.02	31.16	РК	22.7	-22.5	31.36	54.0	-22.64	100	Horz

Vertical 30 - 1000MHz

					T64					
					preamp/cab	dB				
Marker		Meter		T185 Antenna	le loss loop	(uVolts/met	FCC Part 15B		Height	
No.	Test Frequency	Reading	Detector	Factor (dB)	(dB)	er)	Class B 3m	Margin	[cm]	Polarity
16	84.76	52.16	PK	7.5	-27.1	32.56	40.0	-7.44	200	Vert
18	128.87	47.12	PK	14.1	-26.8	34.42	43.5	-9.08	100	Vert
20	275.71	43.83	PK	13.3	-26.1	31.03	46.0	-14.97	200	Vert
23	415.29	39.80	PK	16.1	-25.3	30.60	46.0	-15.40	100	Vert
24	443.88	39.83	PK	16.7	-25.1	31.43	46.0	-14.57	100	Vert
30	966.80	30.62	PK	22.8	-22.8	30.62	54.0	-23.38	100	Vert

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Av - Average detector

CAV - CISPR Average detector

RMS - RMS detection

CRMS - CISPR RMS detection

PK1 - KDB 789033 v01r02 G)5) Method: Peak

AD1 - KDB 789033 v01r02 G)6) Method: AD Primary Power Average

VB1 - KDB 789033 v01r02 G)6) Method: VB Alternative Reduced Video

PK2 - KDB558074 v02 10.2.3.2/8.1.1 Method: Maximum Peak

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

MAv2 - KDB558074 v02 10.2.3.3/8.2.2 Option 2 Slow Sweep RMS Average

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10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted I	Limit (dBuV)
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

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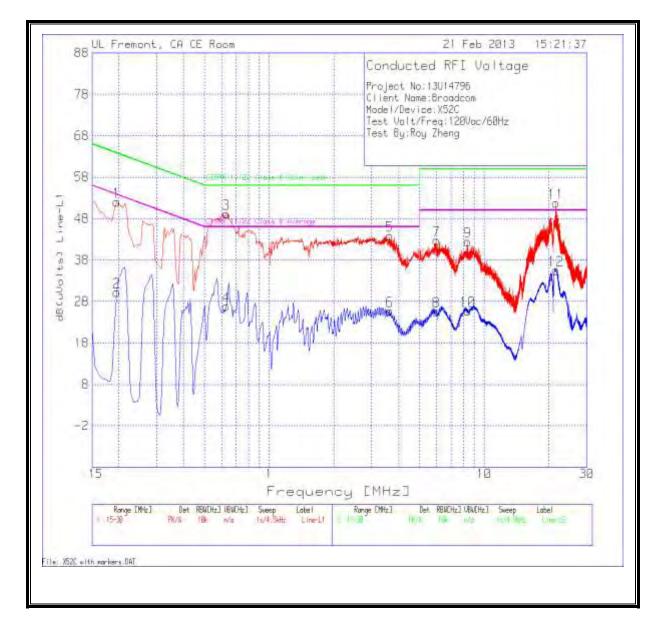
RESULTS

<u>6 WORST EMISSIONS</u>

Project No: 13U4796 Client Name: Broadcom Model/Device: BCM94350C32 Test Volt/Freq: 120Vac/60H2 Reading Detector L1/DZ Bussian Test Volt/Freq: 120Vac/60H2 B3.7XT B Quasi- Margin B Average Margin In-e1.15: Detector L1.TXT (dB) (dB) U/Usin B Quasi- Margin B Average Margin In-e1.15: S1.88 PK 0.1 0 51.98 63.8 -11.82 - - 0.195 30.16 Av 0.1 0 30.26 - - 53.8 -23.54 0.6315 26.73 Av 0.1 0 26.83 - - 46 -19.17 3.6375 43.58 PK 0.2 0.1 25.72 - - 46 -20.28 6.0045 25.42 Av 0.1 0.1 42.44 60 -17.2 - -										
Model/Device: BCM94360CS2 ITest Volt/Freq: IZOVac/60Hz Test By: Roy Zheng CISPR B Quasi- B Quasi- Detector CISPR I1/22 Class B Quasi- LIN-11.15-30MHz CISPR I1/22 Class B Average Margin Margin Line-11.15-30MHz Detector L1.TXT (dB) (dB) dB(uvolts) peak Margin B Average Margin 0.195 30.16 Av 0.1 0 51.98 63.8 - <t< td=""><td>Project No:</td><td></td><td>13U14796</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Project No:		13U14796							
Test Volt/Freq: 120Vac/60Hz Roy Zheng Test By: Roy Zheng Test By: Roy Zheng Test By: CispR 11/22 class B Quasi- peak CispR B Quasi- peak CispR Margin CispR B Average Margin Line-L1.15-30MHz 0 51.98 63.8 -11.82 - - 0.195 30.16 Av 0.1 0 51.98 63.8 -11.82 - 0.6315 49.11 PK 0.1 0 26.83 - - 46 -19.17 3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 42.6 PK 0.1 0.1 25.62 - 50 -24.38 8.394 42.24 PK 0.1 0.1 25.72 - - 50 -24.38 8.394 25.52 Av 0.1 0.1 25.62 - 50 -24.28 11.5655 35.07 Av	Client Nam	e:	Broadcom	1						
Test By: Roy Zheng Test Prequency Meter L74 IL L2 Cables 11/22 Class CISPR Inter-L1.5-30MHz Detector L1.TXT (BB) (BB) (B(uvolts)) peak Margin B Average Margin 0.195 51.88 PK 0.1 0 51.98 63.8 -11.82 - - 0.195 30.16 Av 0.1 0 30.26 - - 53.8 -23.54 0.6315 26.73 Av 0.1 0 26.83 - - 46 -19.17 3.6375 25.42 Av 0.2 0.1 43.88 56 -12.12 - - 6.0045 25.42 Av 0.1 0.1 42.8 60 -17.2 - - 46 -20.28 8.394 42.24 PK 0.1 0.1 42.44 60 -17.56 - - - 10.155 35.07 Av <	Model/Dev	ice:	BCM94360CS2	1						
Test Meter Prequency Detector T24 IL L1.TXT (dB) LC Cables (B3.TXT) CISPR BQuasi- peak CISPR Margin CISPR 11/22 Class B Average Uine-L1.15 - 30MHz 0 0 51.98 63.8 -11.82 - 0.195 51.88 PK 0.1 0 30.26 - - 53.8 - 0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 3.6375 25.42 Av 0.2 0.1 25.73 - 46 -12.12 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 25.42 Av 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 25.62 - - 50 -24.28 21.5655 35.07 Av 0.3 0.2 35.77 - <td< td=""><td>Test Volt/Fr</td><td>req:</td><td>120Vac/60Hz</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Test Volt/Fr	req:	120Vac/60Hz	1						
Test Prequency Meter Reading Detector LC Cables 18.3.TXT (dB) 11/22 Class B Quasi- (dB) CLSPR peak LC Cables Margin Margin Margin Margin Margin Une-L1.15 - 30UHz 0 51.98 63.8 -11.82 - - - 0.195 30.16 Av 0.1 0 30.26 - - 53.8 -22.54 0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 3.6375 25.42 Av 0.2 0.1 43.88 56 -12.12 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 466 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 8.394 42.24 PK 0.3 0.2 31.57 - 50 -24.28 11.5655 31.23 PK 0.3 0.2	Test By:		Roy Zheng	1						
Test Frequency Meter Reading Detector LC Cables (B8,3TXT (B8) 11/22 Class B Quasi- (B8,0V015) CISPR peak 11/22 Class B Average Margin Une-L1.15-30MHz Detector U.11XT (B8) (d8) 040(v015) peak Margin B.Average Margin 0.195 51.88 PK 0.1 0 51.98 63.8 -11.82 - - 0.195 30.16 Av 0.1 0 30.26 - - 53.8 -22.54 0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 466 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6.0045 51.23 Av 0.3 0.2 31.73 60 -8.27 - - 11.6555 51.23 PK 0.3 0										
Test Frequency Meter Reading Detector T24 IL L1TXT (dB) 18.3.TXT (dB) B Quasi- peak Margin 11/22 Class B Average Margin Line-L1.15-30MHz 0 51.98 63.8 -11.82 - - 0.195 30.16 Av 0.1 0 30.26 - - 53.8 -23.54 0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 0.6315 26.73 Av 0.1 0 26.83 - - 466 -19.17 3.6375 45.88 PK 0.2 0.1 43.88 56 -12.12 - - 6.0045 25.42 Av 0.1 0.1 25.72 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 25.72 - - 50 -24.28 21.5655 35.07 Av 0.3 0.2 51.73 60 -8.27<			T	<u>ا</u>			1 1			
Frequency In-e-L1.15-30MHz Detector L1.TXT (dB) (dB) dB(uVolts) peak Margin B Average Margin 0.195 51.88 PK 0.1 0 51.98 63.8 -11.82 - - 0.195 30.16 Av 0.1 0 30.26 - - 53.8 -22.54 0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 0.6315 26.73 Av 0.1 0 26.83 - - 466 -19.17 3.6375 25.42 Av 0.2 0.1 25.72 - - - 6.0045 42.6 PK 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.3 0.2 51.73 60 -17.56 - - 21.5655 51.23 PK 0.3 0.2 35.57 - -	1	1		'	LC Cables		-	l		
Line-Li 15 - 30MHz Line Li 15 - 1 Line Line Line Line Line Line Line Line	Test	Meter		T24 IL	1&3.TXT		B Quasi-	l	11/22 Class	
0.195 51.88 PK 0.1 0 51.98 63.8 -11.82 . . 0.195 30.16 Av 0.1 0 30.26 - - 53.8 -23.54 0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 3.6375 43.58 PK 0.2 0.1 43.88 56 -12.12 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6.0045 25.42 Av 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 25.72 - - 50 -44.83 21.5655 51.23 PK 0.3 0.2 35.57 - 50	Frequency	Reading	Detector	L1.TXT (dB)	(dB)	dB(uVolts)	peak	Margin	B Average	Margin
0.195 30.16 Av 0.1 0 30.26 - - 53.8 -23.54 0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 0.6315 26.73 Av 0.1 0 26.83 - - 46 -19.17 3.6375 43.58 PK 0.2 0.1 43.88 56 -12.12 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6.0045 25.42 Av 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 25.72 - - 50 -44.28 21.5655 51.23 PK 0.3 0.2 55.77 - 50 <		1								
0.6315 49.11 PK 0.1 0 49.21 56 -6.79 - - 0.6315 26.73 Av 0.1 0 26.83 - - 46 -19.17 3.6375 43.58 PK 0.2 0.1 43.88 56 -12.12 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6 6.0045 25.42 Av 0.1 0.1 42.8 60 -17.26 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 25.72 - - 50 -24.28 21.5655 51.23 PK 0.3 0.2 35.57 - - 50 -14.43 Line-L2.15-55 35.07 Av 0.1 0		51.88	РК	0.1	0		63.8	-11.82	-	-
0.6315 26.73 Av 0.1 0 26.83 - - 46 -19.17 3.6375 43.58 PK 0.2 0.1 43.88 56 -12.12 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6.0045 25.42 Av 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 25.72 - - 50 -24.28 21.5655 51.23 PK 0.3 0.2 35.57 - - 50 -14.43 Une-L2.15 - 30MHz - - 53.8 -25.96 - - - - - - - - - - - - - - -	0.195	30.16	Av	0.1	-	30.26	-	-	53.8	-23.54
3.6375 43.58 PK 0.2 0.1 43.88 56 -12.12 - - 3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6.0045 25.42 Av 0.1 0.1 42.48 60 -17.56 - - 6.0045 25.42 Av 0.1 0.1 42.44 60 -17.56 - - 8.394 42.24 PK 0.1 0.1 25.72 - - 50 -24.38 8.394 25.52 Av 0.1 0.1 25.72 - - 50 -24.28 21.5655 51.23 PK 0.3 0.2 35.57 - - 50 -14.43 Line-L2.15-30MHz - - - 53.8 -25.96 0.5055 48.99 PK 0.1 0 47.97 - - - - - </td <td>0.6315</td> <td>49.11</td> <td>РК</td> <td>0.1</td> <td>0</td> <td>49.21</td> <td>56</td> <td>-6.79</td> <td>-</td> <td>-</td>	0.6315	49.11	РК	0.1	0	49.21	56	-6.79	-	-
3.6375 25.42 Av 0.2 0.1 25.72 - - 46 -20.28 6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6.0045 25.42 Av 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 42.44 60 -17.56 - - 8.394 25.52 Av 0.1 0.1 25.72 - - 50 -24.38 21.5655 51.23 PK 0.3 0.2 51.73 60 -8.27 - - 21.5655 35.07 Av 0.3 0.2 35.57 - - 50 -14.43 Line-L2.15-30MHz - - - 50 -14.43 - - - 0.14.33 - - - 0.14.33 - - - - 0.14.43	0.6315	26.73	Av	0.1	0	26.83	-	-	46	-19.17
6.0045 42.6 PK 0.1 0.1 42.8 60 -17.2 - - 6.0045 25.42 Av 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 42.44 60 -17.56 - - 8.394 25.52 Av 0.1 0.1 25.72 - - 50 -24.28 21.5655 35.07 Av 0.3 0.2 35.57 - - 50 -14.43 Line-L2.15-30MHz - - 50 -14.43 - - - 0.195 27.74 Av 0.1 0 49.5 63.8 -14.3 - - - 0.5055 48.99 PK 0.1 0 49.09 56 -6.91 - - - 0.5055 31.69 Av 0.1 0 31.79 - - 46 -15.79 3.534	3.6375	43.58	РК	+ +		43.88	56	-12.12	-	-
6.0045 25.42 Av 0.1 0.1 25.62 - - 50 -24.38 8.394 42.24 PK 0.1 0.1 42.44 60 -17.56 - - 8.394 25.52 Av 0.1 0.1 25.72 - - 50 -24.28 21.5655 51.23 PK 0.3 0.2 51.73 60 -8.27 - - - 21.5655 51.23 PK 0.3 0.2 35.57 - - 50 -14.43 Line-L2.15 - 30MHz - - 53.8 -14.3 - - 53.8 -25.96 0.195 27.74 Av 0.1 0 27.84 - - 53.8 -25.96 0.5055 31.69 Av 0.1 0 31.79 - - 46 -14.21 0.9375 30.11 Av 0.1 0.1 45.81 56 -10	3.6375	25.42	Av	0.2	0.1	25.72	-	-	46	-20.28
8.394 42.24 PK 0.1 0.1 42.44 60 -17.56 - - 8.394 25.52 Av 0.1 0.1 25.72 - - 50 -24.28 21.5655 51.23 PK 0.3 0.2 51.73 60 -8.27 - - 21.5655 35.07 Av 0.3 0.2 35.57 - - 50 -14.43 Line-L2.15 - 30MHz - - 53.8 -25.96 - 0.195 27.74 Av 0.1 0 27.84 - - 53.8 -25.96 0.5055 48.99 PK 0.1 0 49.09 56 -6.91 - - - 0.5055 31.69 Av 0.1 0 31.79 - - 46 -14.21 0.9375 30.11 Av 0.1 0 30.21 - - - - - - - <	6.0045	42.6	РК	0.1	0.1	42.8	60	-17.2	-	-
8.394 25.52 Av 0.1 0.1 25.72 - - 50 -24.28 21.5655 51.23 PK 0.3 0.2 51.73 60 -8.27 - - 21.5655 35.07 Av 0.3 0.2 35.57 - - 50 -14.43 Line-L2.15-30MHz	6.0045	25.42	Av	0.1	0.1	25.62	-	-	50	-24.38
ODST DADE PK OLA OLA DATA DAT	8.394		PK		0.1	42.44		-17.56	-	-
21.5655 35.07 Av 0.3 0.2 35.57 - - 50 -14.43 Line-L2 .15 - 30MHz - <td>8.394</td> <td>25.52</td> <td>Av</td> <td>0.1</td> <td>0.1</td> <td>25.72</td> <td>-</td> <td>-</td> <td>50</td> <td>-24.28</td>	8.394	25.52	Av	0.1	0.1	25.72	-	-	50	-24.28
Line-L2 .15 - 30MHz PK 0.1 0 49.5 63.8 -14.3 - - 0.195 27.74 Av 0.1 0 27.84 - - 53.8 -25.96 0.5055 48.99 PK 0.1 0 49.09 56 -6.91 - - 0.5055 31.69 Av 0.1 0 31.79 - - 46 -14.21 0.9375 45.71 PK 0.1 0 45.81 56 -10.19 - - 0.9375 30.11 Av 0.1 0 30.21 - - 46 -15.79 3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 42.59 PK 0.1 0.1 26.8 - - 50	21.5655	51.23	РК	0.3	0.2	51.73	60	-8.27	-	-
0.195 49.4 PK 0.1 0 49.5 63.8 -14.3 - - 0.195 27.74 Av 0.1 0 27.84 - - 53.8 -25.96 0.5055 48.99 PK 0.1 0 49.09 56 -6.91 - - 0.5055 31.69 Av 0.1 0 31.79 - - 46 -14.21 0.9375 45.71 PK 0.1 0 45.81 56 -10.19 - - 0.9375 30.11 Av 0.1 0 30.21 - - 46 -15.79 3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 26.6 Av 0.1 0.1 26.8 - - 50	21.5655	35.07	Av	0.3	0.2	35.57	-	-	50	-14.43
0.195 27.74 Av 0.1 0 27.84 - - 53.8 -25.96 0.5055 48.99 PK 0.1 0 49.09 56 -6.91 - - 0.5055 31.69 Av 0.1 0 31.79 - - 46 -14.21 0.9375 45.71 PK 0.1 0 45.81 56 -10.19 - - 0.9375 30.11 Av 0.1 0 30.21 - - 46 -15.79 3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 26.6 Av 0.1 0.1 42.79 60 -17.21 - - 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 <		1	- .		<u> </u>		• • •		·	
0.135 27.174 AV 0.1 0 49.09 56 -6.91 - - - 0.5055 31.69 Av 0.1 0 31.79 - - 46 -14.21 0.9375 45.71 PK 0.1 0 45.81 56 -10.19 - - 0.9375 45.71 PK 0.1 0 45.81 56 -10.19 - - 0.9375 30.11 Av 0.1 0 30.21 - - 46 -15.79 3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 42.59 PK 0.1 0.1 42.79 60 -17.21 - - 21.759 47.25 PK 0.3 0.2 47.75 60 -1	0.195	49.4	РК	+ +		49.5			-	
0.5055 31.69 Av 0.1 0 31.79 - - 46 -14.21 0.9375 45.71 PK 0.1 0 45.81 56 -10.19 - - 0.9375 30.11 Av 0.1 0 30.21 - - 46 -15.79 3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 42.59 PK 0.1 0.1 42.79 60 -17.21 - - 8.907 26.6 Av 0.1 0.1 26.8 - - 50 -23.2 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50	0.195	27.74	Av	0.1	0	27.84	-	-	53.8	-25.96
0.9375 45.71 PK 0.1 0 45.81 56 -10.19 - - 0.9375 30.11 Av 0.1 0 30.21 - - 46 -15.79 3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 42.59 PK 0.1 0.1 42.79 60 -17.21 - - 8.907 26.6 Av 0.1 0.1 26.8 - - 50 -23.2 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51	0.5055	48.99	РК	0.1	0	49.09	56	-6.91	-	
0.9375 30.11 Av 0.1 0 30.21 - - 46 -15.79 3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 42.59 PK 0.1 0.1 42.79 60 -17.21 - - 8.907 26.6 Av 0.1 0.1 26.8 - - 50 -23.2 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51	0.5055	31.69	Av	0.1	0	31.79	-	-	46	-14.21
3.534 43.72 PK 0.1 0.1 43.92 56 -12.08 - - 3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 42.59 PK 0.1 0.1 42.79 60 -17.21 - - 8.907 26.6 Av 0.1 0.1 26.8 - - 50 -23.2 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51	0.9375		PK	0.1	_	45.81	56	-10.19	-	
3.534 24.45 Av 0.1 0.1 24.65 - - 46 -21.35 8.907 42.59 PK 0.1 0.1 42.79 60 -17.21 - - 8.907 26.6 Av 0.1 0.1 26.8 - - 50 -23.2 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51	0.9375	30.11	Av	0.1	0	30.21	-	-	46	-15.79
8.907 42.59 PK 0.1 0.1 42.79 60 -17.21 - - 8.907 26.6 Av 0.1 0.1 26.8 - - 50 -23.2 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51	3.534	43.72	РК	0.1	0.1	43.92	56	-12.08	-	-
8.907 26.6 Av 0.1 0.1 26.8 - - 50 -23.2 21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51 PK - Peak detector QP - Quasi-Peak detector	3.534	24.45	Av	0.1	0.1	24.65	-	-	46	-21.35
21.759 47.25 PK 0.3 0.2 47.75 60 -12.25 - - 21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51 PK - Peak detector QP - Quasi-Peak detector	8.907	42.59	РК	0.1	0.1	42.79	60	-17.21	-	-
21.759 27.99 Av 0.3 0.2 28.49 - - 50 -21.51 PK - Peak detector QP - Quasi-Peak detector	8.907	26.6	Av	0.1	0.1	26.8	-	-	50	-23.2
PK - Peak detector QP - Quasi-Peak detector	21.759	47.25	РК	0.3	0.2	47.75	60	-12.25	-	-
QP - Quasi-Peak detector	21.759	27.99	Av	0.3	0.2	28.49	-	-	50	-21.51
QP - Quasi-Peak detector										
Av - Average detector	QP - Quasi-F	Peak detect	or							
	Av - Averag	e detector								

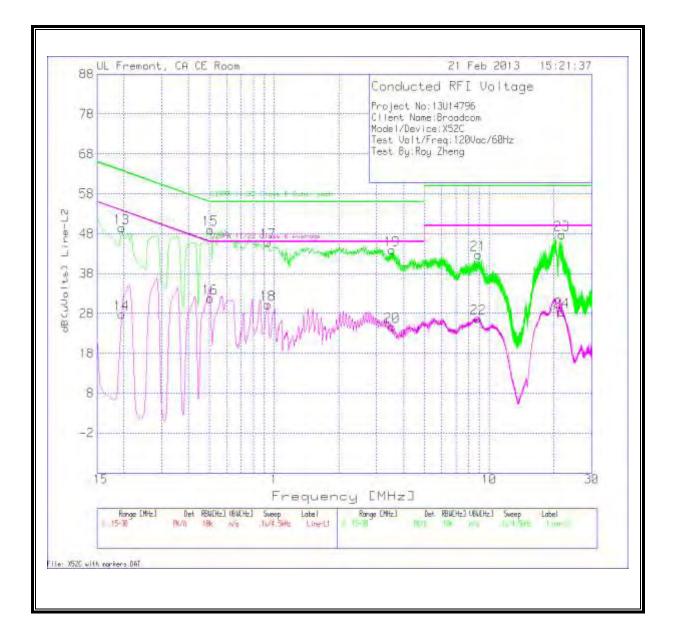
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LINE 1 RESULTS



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LINE 2 RESULTS



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11. DYNAMIC FREQUENCY SELECTION

11.1. OVERVIEW

11.1.1. LIMITS

INDUSTRY CANADA

IC RSS-210 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-210 Issue 7 A9.4 (b) (ii) Channel Availability Check Time: ...

Additional requirements for the band 5600-5650 MHz: Until further notice, devices subject to this Section shall not be capable of transmitting in the band 5600-5650 MHz, so that Environment Canada weather radars operating in this band are protected.

RSS-210 Issue 7 A9.4 (b) (iv) **Channel closing time:** the maximum channel closing time is 260 ms.

FCC

§15.407 (h) and FCC 06-96 APPENDIX "COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVCIES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION".

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Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operatio	nal Mode	
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational	Mode	
	Master	Client	Client
		(without DFS)	(with DFS)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes

Table 3: Interference Threshold values, Master or Client incorporating In-ServiceMonitoring

Maximum Transmit Power	Value
	(see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver as Note 2: Throughout these test procedures an addition of the test transmission waveforms to account for var will ensure that the test signal is at or above the dete response.	nal 1 dB has been added to the amplitude riations in measurement equipment. This

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Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 milliseconds +
	approx. 60 milliseconds
	over remaining 10 second
	period

The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:

For the Short pulse radar Test Signals this instant is the end of the *Burst*.

For the Frequency Hopping radar Test Signal, this instant is the end of the last radar burst generated.

For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission.

The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate channel changes (an aggregate of approximately 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Table 5 – Short Pulse Radar Test Waveforms

Radar	Pulse Width	PRI	Pulses	Minimum	Minimum
Туре	(Microseconds)	(Microseconds)		Percentage of	Trials
-				Successful	
				Detection	
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (I	Radar Types 1-4)			80%	120

Table 6 – Long Pulse Radar Test Signal

			<u> </u>				
Radar Waveform	Bursts	Pulses per Burst	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Minimum Percentage of Successful	Minimum Trials
						Detection	
5	8-20	1-3	50-100	5-20	1000- 2000	80%	30

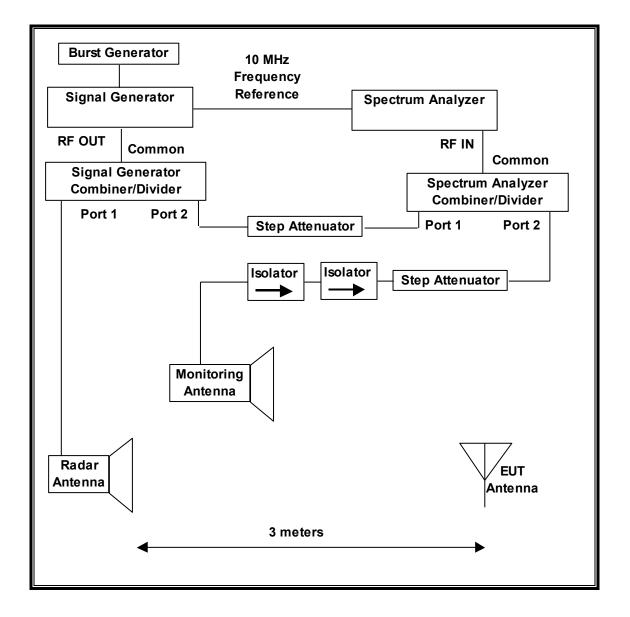
Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform	Pulse Width (µsec)	PRI (µsec)	Burst Length (ms)	Pulses per Hop	Hopping Rate (kHz)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	300	9	.333	70%	30

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11.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



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SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at runtime.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from F_L to F_H for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

SYSTEM CALIBRATION

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

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ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

TEST AND MEASUREMENT EQUIPMENT

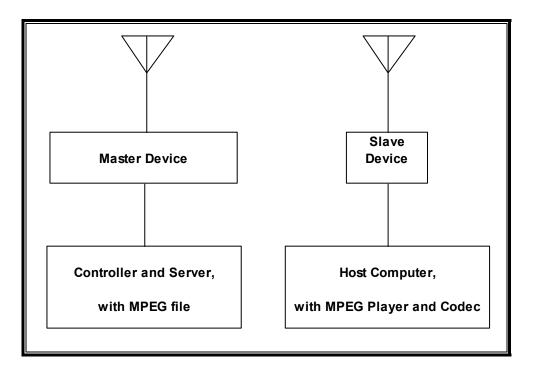
The following test and measurement equipment was utilized for the DFS tests documented in this report:

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	Serial Number	Cal Due	
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/18/13	
Vector Signal Generator, 20GHz	Agilent / HP	E8267C	C01066	11/20/13	

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11.1.3. SETUP OF EUT (CLIENT MODE)

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

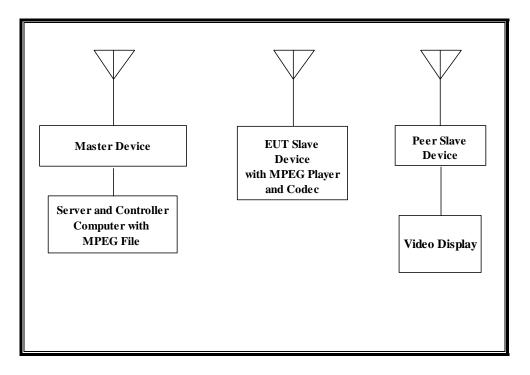
The following support equipment was utilized for the DFS tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST						
Description	Manufacturer	Model	Serial Number	FCC ID		
N600 Wireless Dual Band Router	Netgear	WNDR3400	2BK311730FF6B	PY309300116		
AC Adapter (AP)	Netgear	FA-1201500SJA / FA-1201500SUA	4F105116T10209045B	DoC		
Notebook PC (Controller/Server)	HP	Pavilion zv6000	CND5290401	DoC		
AC Adapter	HP	PA-1121-12HD	58B240ALLRK0HU	DoC		
Notebook PC (Host)	Lenovo	0679	CBU4473193	DoC		
AC Adapter (Host PC)	Lite On	PA-1650-56LC	11S36001615ZZ400	DoC		

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11.1.4. SETUP OF EUT (CLIENT-TO-CLIENT COMMUNICATIONS MODE)

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

The following support equipment was utilized for the DFS tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST						
Description	Manufacturer	Model	Serial Number	FCC ID		
N600 Wireless Dual Band Router	Netgear	WNDR3400	2BK311730FF6B	PY309300116		
AC Adapter (AP)	Netgear	FA-1201500SJA / FA-1201500SUA	4F105116T1020904 5B	DoC		
Notebook PC (Controller/Server)	HP	Pavilion zv6000	CND5290401	DoC		
AC Adapter (Controller/Server PC)	HP	PA-1121-12HD	58B240ALLRK0HU	DoC		
Notebook PC (EUT Host)	Apple	MacBook Air A1465	C02JF8GSDRV6	DoC		
AC Adapter (Host PC)	Lite On Technology	PA-1450-8	C0623350GF4F6V 7AR	DoC		
Apple TV	Apple	A1427	DY3J8RZ3DRHN	BCGA1427		
Video Display	Coby Electronics	LEDVD1596	LGWH4XXXT07T0 2S01	DoC		

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11.1.5. DESCRIPTION OF EUT

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

The EUT is a Slave Device without radar detection capability.

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 29.26 dBm EIRP in the 5250-5350 MHz band and 29.42 dBm EIRP in the 5470-5725 MHz band.

The highest gain antenna assembly consists of 2 antennas with individual gains of 6.12 dBi, and 5.57 dBi in the 5250-5350 MHz band and 5.77 dBi and 6.61 dBi in the 5470-5725 MHz band. The lowest gain antenna assembly consists of 2 antennas with individual gains of 5.27 dBi and 5.89 dBi in the 5250-5350 MHz band and 4.93 dBi, and 5.21 dBi in the 5470-5725 MHz band.

Two identical antennas are utilized to meet the diversity and MIMO operational requirements.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is -64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides margin to the limit.

The EUT uses two transmitter/receiver chains, each connected to an antenna to perform radiated tests.

WLAN traffic exceeding the transmitter minimum activity ratio of 30% is generated by streaming the compressed video file "6 ½ Magic Hours" from the Master to the Slave in full motion video using the Microsoft Media Player version 11.0.5721.5280 for Standard Client mode and Quick Time Media Player version 10.2 (603.6) for Client to Client Communications mode..

TPC is required since the maximum EIRP is greater than 500 mW (27 dBm).

The EUT utilizes the 802.11a/n architecture. Two nominal channel bandwidths are implemented: 20 MHz and 40 MHz.

The software installed in the access point is Linux revision 5.22.84.0.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS

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The Master Device is a Netgear N600 Dual Band Router, FCC ID: PY309300116. The DFS software installed in the Master Device is Linux revision 5.22.84.0. The minimum antenna gain for the Master Device is 2.73 dBi.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm.

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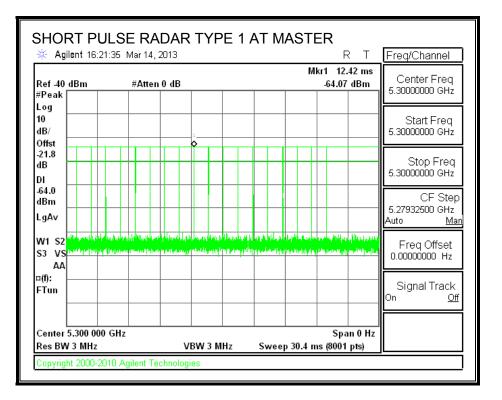
11.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

11.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5300 MHz.

11.2.2. RADAR WAVEFORM AND TRAFFIC

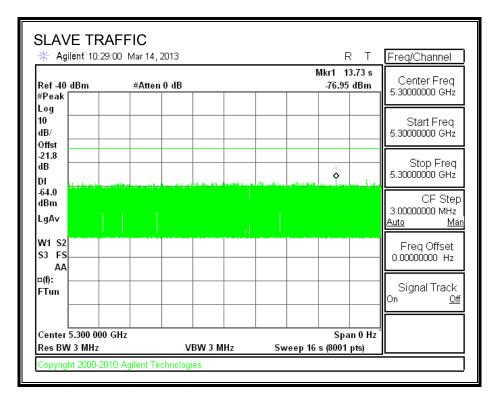
RADAR WAVEFORM



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TRAFFIC



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11.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

```
Aggregate Transmission Time = (Number of analyzer bins showing transmission) * (dwell time per bin)
```

The observation period over which the FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

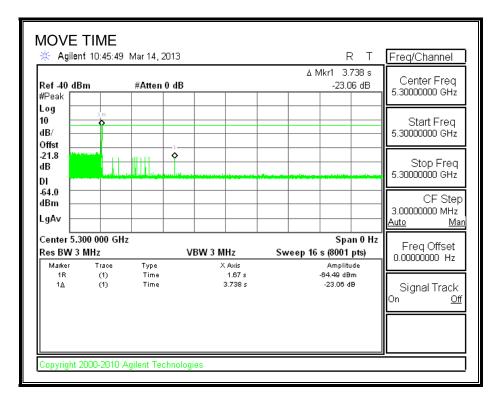
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Agency	Channel Move Time	Limit
	(sec)	(sec)
FCC / IC	3.738	10

Agency	Aggregate Channel Closing Transmission Time	Limit
	(msec)	(msec)
FCC	18.0	60
IC	28.0	260

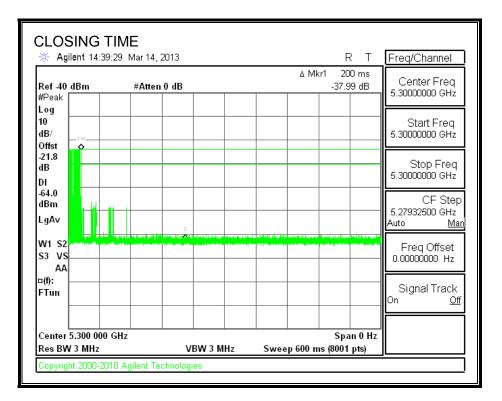
MOVE TIME



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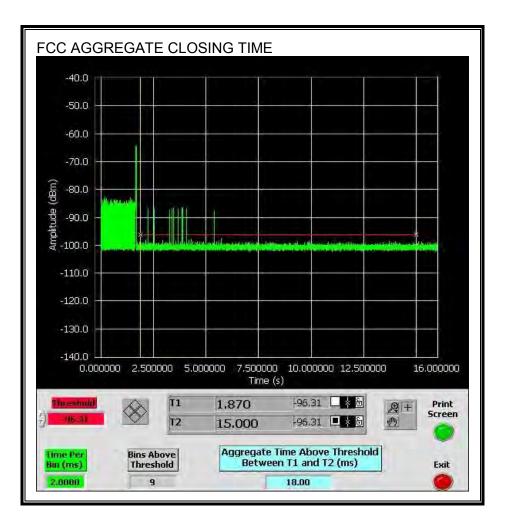
CHANNEL CLOSING TIME



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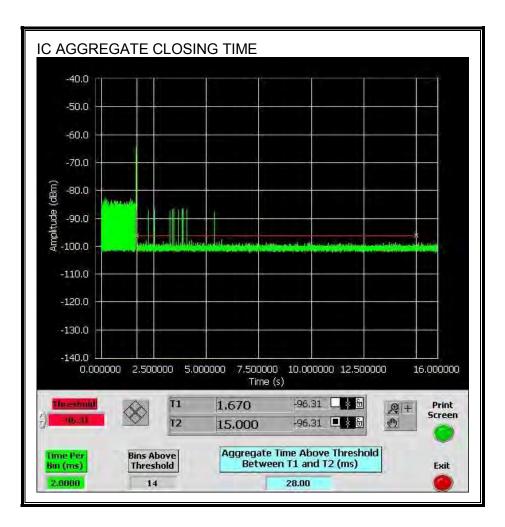
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the FCC aggregate monitoring period.



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Only intermittent transmissions are observed during the IC aggregate monitoring period.



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11.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

11.3.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5310 MHz.

11.3.2. RADAR WAVEFORM AND TRAFFIC

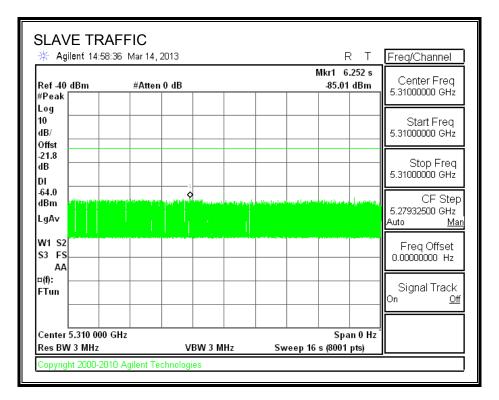
RADAR WAVEFORM

SHORT P				TYF	PE 1 /	AT M	ASTE	ER F	кт	Freq/Channel
Ref -40 dBm #Peak		#Atten	0 dB				M	kr1 22. -63.97		Center Freq 5.31000000 GHz
Log 10 dB/ Offst							1			Start Freq 5.3100000 GHz
dB							Ť			Stop Freq 5.3100000 GHz
64.0 IBm ₋gA∨										CF Step 5.27932500 GHz Auto Man
N1 S2 Willow 53 VS										Freq Offset 0.00000000 Hz
-Tun										Signal Track On <u>Off</u>
Center 5.310 00 Res BW 3 MHz	00 GHz		v	BW 3 M	 Hz	Swee	o 30.4 m	•	n0Hz pts)	

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TRAFFIC



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11.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.3.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

```
Aggregate Transmission Time = (Number of analyzer bins showing transmission) * (dwell time per bin)
```

The observation period over which the FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

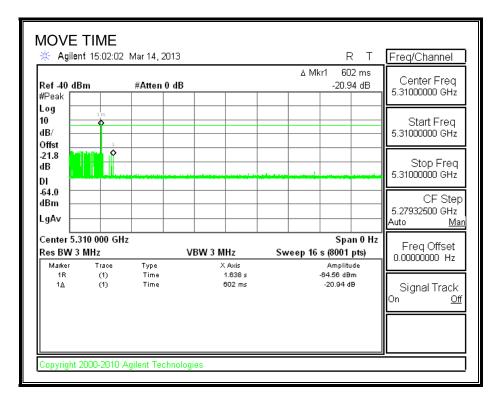
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Agency	Channel Move Time	Limit
	(sec)	(sec)
FCC / IC	0.602	10

Agency	Aggregate Channel Closing Transmission Time	Limit
	(msec)	(msec)
FCC	6.0	60
IC	30.0	260

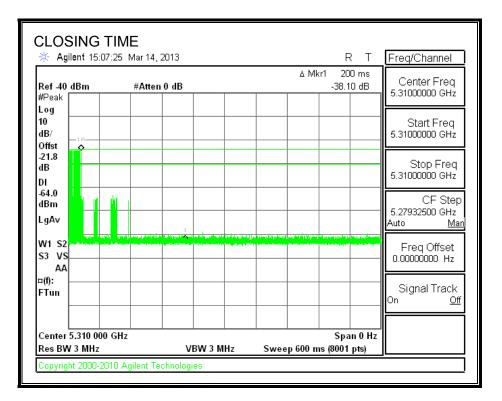
MOVE TIME



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CHANNEL CLOSING TIME

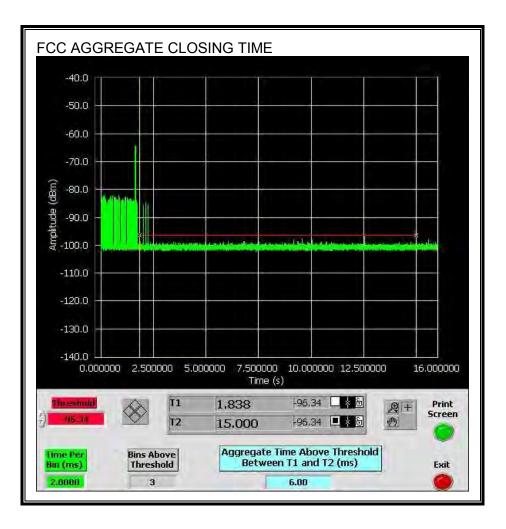


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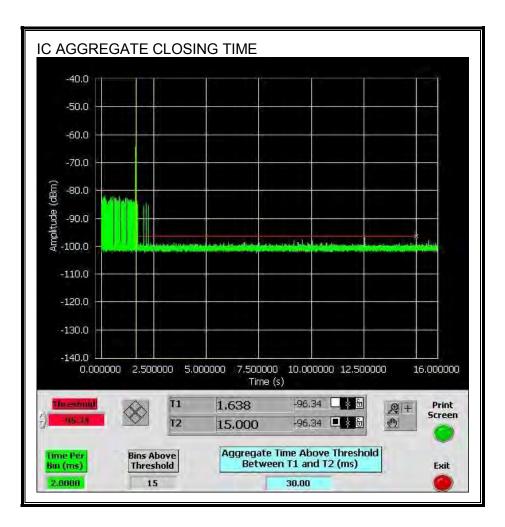
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the FCC aggregate monitoring period.



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Only intermittent transmissions are observed during the IC aggregate monitoring period.

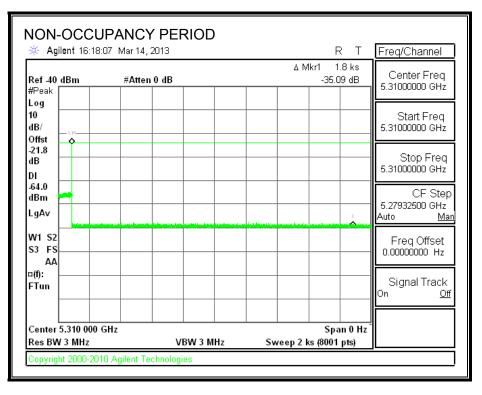


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11.3.5. NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.



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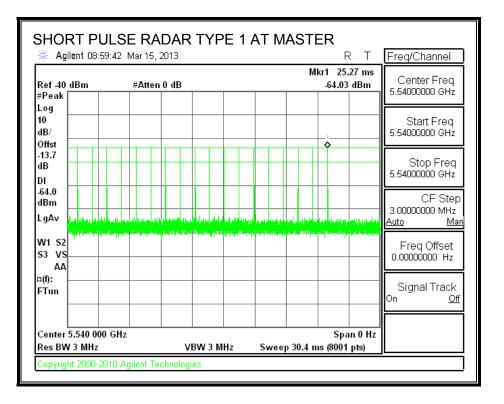
11.4. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 20 MHz BANDWIDTH

11.4.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5540 MHz.

11.4.2. RADAR WAVEFORM AND TRAFFIC

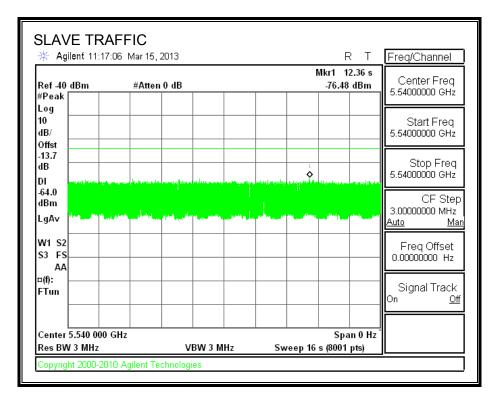
RADAR WAVEFORM



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TRAFFIC



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11.4.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.4.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

```
Aggregate Transmission Time = (Number of analyzer bins showing transmission) * (dwell time per bin)
```

The observation period over which the FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

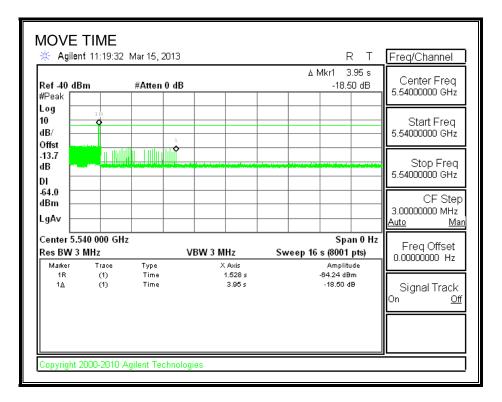
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Agency	Channel Move Time	Limit
	(sec)	(sec)
FCC / IC	3.950	10

Agency	Aggregate Channel Closing Transmission Time	Limit
	(msec)	(msec)
FCC	58.0	60
IC	100.0	260

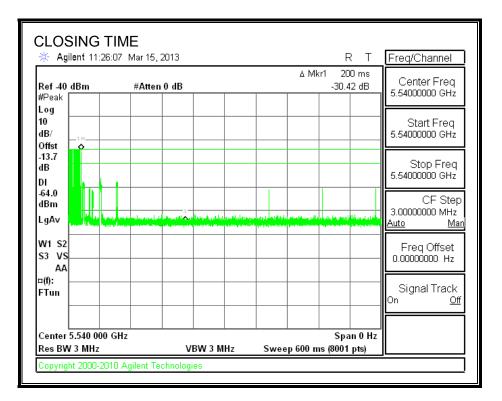
MOVE TIME



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CHANNEL CLOSING TIME

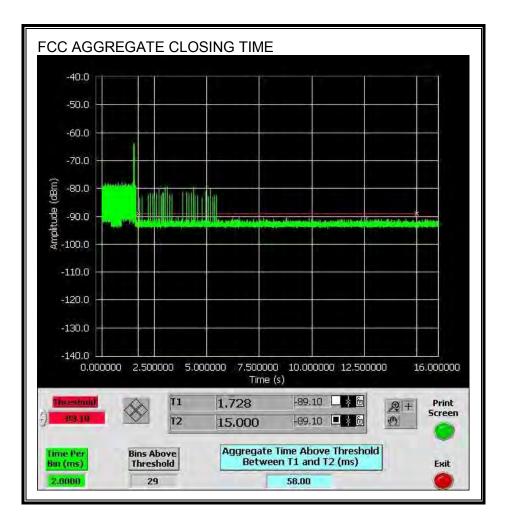


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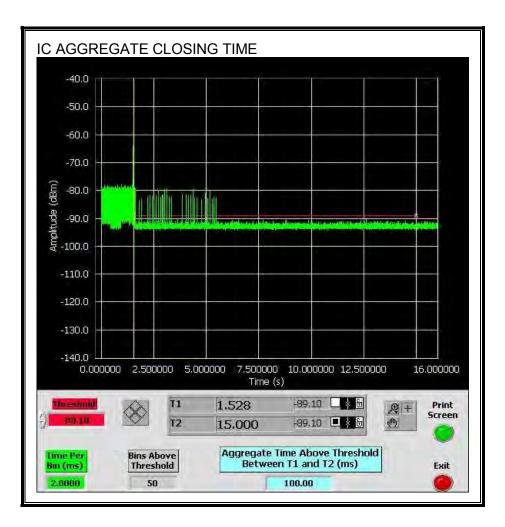
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the FCC aggregate monitoring period.



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Only intermittent transmissions are observed during the IC aggregate monitoring period.



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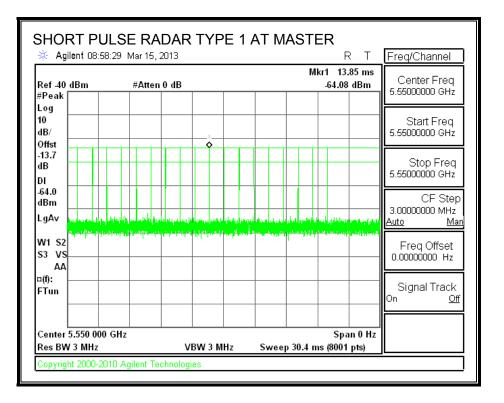
11.5. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 40 MHz BANDWIDTH

11.5.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5540 MHz.

11.5.2. RADAR WAVEFORM AND TRAFFIC

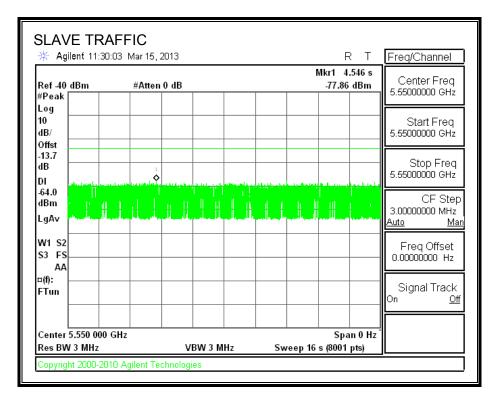
RADAR WAVEFORM



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TRAFFIC



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11.5.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.5.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

```
Aggregate Transmission Time = (Number of analyzer bins showing transmission) * (dwell time per bin)
```

The observation period over which the FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

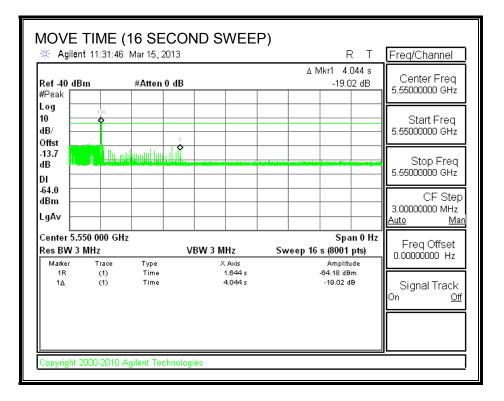
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Agency	Channel Move Time	Limit
	(sec)	(sec)
FCC / IC	4.032	10

Agency	Aggregate Channel Closing Transmission Time	Limit
	(msec)	(msec)
FCC	29.0	60
IC	61.0	260

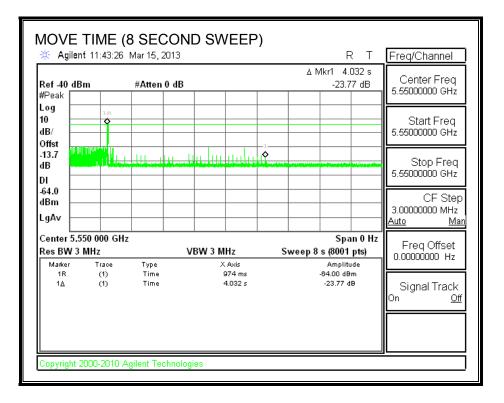
MOVE TIME (16 SECOND SWEEP)



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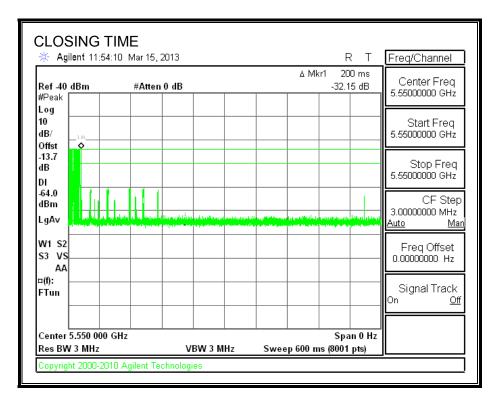
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MOVE TIME (8 SECOND SWEEP)



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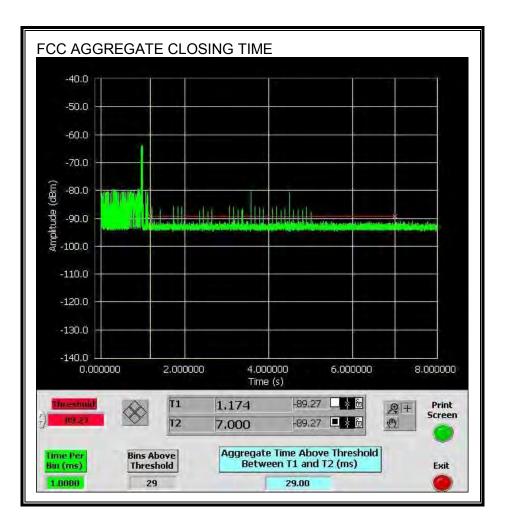
CHANNEL CLOSING TIME



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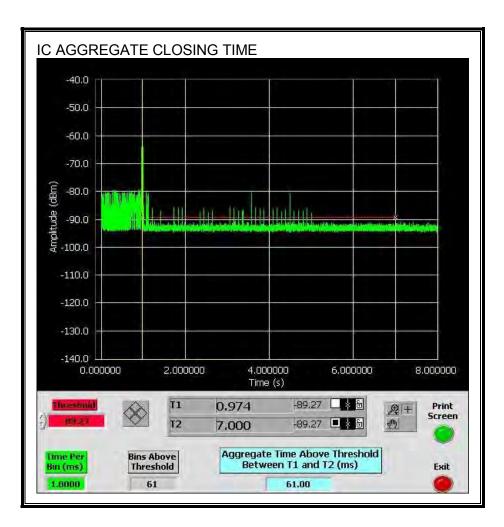
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the FCC aggregate monitoring period.



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Only intermittent transmissions are observed during the IC aggregate monitoring period.



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