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**CERTIFICATION TEST REPORT** 

FOR

### TABLET DEVICE

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12.1. 12.1.1 12.1.2 12.1.3 12.1.4 12.1.5 12.2. 12.2.1 12.2.3 12.2.4 12.3.1 12.3.2 12.3.3 12.3.4	OVERVIEW LIMITS TEST AND MEASUREMENT SYSTEM SETUP OF EUT (CLIENT MODE) SETUP OF EUT (CLIENT-TO-CLIENT COMMUNICATIONS MODE) DESCRIPTION OF EUT CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH TEST CHANNEL. RADAR WAVEFORM AND TRAFFIC OVERLAPPING CHANNEL TESTS MOVE AND CLOSING TIME. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH TEST CHANNEL RADAR WAVEFORM AND TRAFFIC OVERLAPPING CHANNEL TESTS MOVE AND CLOSING TIME.	575 575 579 582 583 584 584 586 586 586 586 586 588 588 588 588 593 593 593 593 595 595 600

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## **1. ATTESTATION OF TEST RESULTS**

CFR 47 Part 15 Subpart E

COMPANY NAME:	APPLE, INC. 1 INFINITE LOOP CUPERTINO, CA 95014, U.S.	A.		
EUT DESCRIPTION:	TABLET DEVICE			
MODEL:	A1567			
SERIAL NUMBER:	DLXMX08RG4M9 (Conducted	l); DLXMX00VG4MF (Radiated)		
DATE TESTED:	JULY 8, 2014 TO AUGUST 27,	, 2014		
	APPLICABLE STANDARDS	5		
S	STANDARD TEST RESULTS			

UL Verification Services Inc. 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 Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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.

Approved & Released For UL Verification Services Inc. By:

ino de luck

FRANCISCO DEANDA EMC SUPERVISOR UL Verification Services Inc.

Tested By:

ЪĽД

Pass

FRANCISCO GUARNERO EMC ENGINEER UL Verification Services Inc.

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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 KDB 905462 D02, FCC KDB 789033, ANSI C63.10-2009.

# 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	
Chamber A	🛛 Chamber D	
Chamber B	🛛 Chamber E	
Chamber C	🛛 Chamber F	
	🛛 Chamber G	
	🛛 Chamber H	

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <u>http://ts.nist.gov/standards/scopes/2000650.htm</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 a tablet with multimedia functions (music, application support, and video), Cellular GSM/GPRS/EGPRS/CDMA2000 1xRTT/1x Advanced/EVDO Rev.A/EVDO Rev.B /WCDMA /HSPA+/DC-HSDPA/LTE FDD & Carrier Aggregation/TDD/TD-SCDMA radio, IEEE 802.11a/b/g/n/ac radio, and Bluetooth radio. The rechargeable battery is not user accessible.

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### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Note: The output power on covered modes is equal to or less than the one referenced.

#### 5.2GHz Band

Frequency Range	Mode	Output Power	Output Power
(MHz)		(dBm)	(mW)
5180 - 5240	802.11a	17.99	62.95
5181 - 5240	802.11n HT20 SISO	Covered by 802.11a mode	
5181 - 5240	802.11a 2TX CDD	Covered by 802.11	n HT20 2TX CDD Mode
5180 - 5240	802.11n HT20 2TX CDD	19.95	98.86
5180 - 5240	802.11n HT20 2TX STBC/SDM	Covered by 802.11n HT20 2TX CDD Mode	
5190 - 5230	802.11n HT40 SISO	17.93	62.09
5190 - 5230	802.11n HT40 2TX CDD	20.45	110.92
5190 - 5230	802.11n HT40 2TX STBC/SDM	Covered by 802.11n HT40 2TX CDD Mode	
5210	802.11ac VHT80 SISO	13.18	20.80
5210	802.11ac VHT80 2TX CDD	15.16	32.81
5210	802.11ac VHT80 2TX STBC/SDM	Covered by 802.11a	c VHT80 2TX CDD Mode

#### 5.3GHz Band

Frequency Range	Mode	Output Power	Output Power
(MHz)		(dBm)	(mW)
5260 - 5320	802.11a	17.92	61.94
5260 - 5320	802.11n HT20 SISO	Covered by 802.11a mode	
5260 - 5320	802.11a 2TX CDD	Covered by 802.11	n HT20 2TX CDD Mode
5260 - 5320	802.11n HT20 2TX CDD	19.50	89.13
5260 - 5320	802.11n HT20 2TX STBC/SDM	Covered by 802.11n HT20 2TX CDD Mode	
5270 - 5310	802.11n HT40 SISO	17.95	62.37
5270 - 5310	802.11n HT40 2TX CDD	20.08	101.86
5270 - 5310	802.11n HT40 2TX STBC/SDM	Covered by 802.11n HT40 2TX CDD Mode	
5290	802.11ac VHT80 SISO	15.19	33.04
5290	802.11ac VHT80 2TX CDD	17.65	58.21
5290	802.11ac VHT80 2TX STBC/SDM	Covered by 802.11a	c VHT80 2TX CDD Mode

#### 5.6GHz Band

Frequency Range	Mode	Output Power	Output Power
(MHz)		(dBm)	(mW)
5500 - 5700	802.11a	17.99	62.95
5720	802.11a	17.85	60.95
5500 - 5700	802.11n HT20 SISO	Covered b	y 802.11a mode
5720	802.11n HT20 SISO	Covered b	y 802.11a mode
5500 - 5700	802.11a 2TX CDD	Covered by 802.1	1n HT20 2TX CDD Mode
5720	802.11a 2TX CDD	Covered by 802.1	1n HT20 2TX CDD Mode
5500 - 5700	802.11n HT20 2TX CDD	19.75	94.41
5720	802.11n HT20 2TX CDD	19.70	93.33
5500 - 5700	802.11n HT20 2TX STBC/SDM	Covered by 802.1	1n HT20 2TX CDD mode
5720	802.11n HT20 2TX STBC/SDM	Covered by 802.1	1n HT20 2TX CDD mode
5510 - 5670	802.11n HT40 SISO	17.90	61.66
5710	802.11n HT40 SISO	17.87	61.24
5510 - 5670	802.11n HT40 2TX CDD	20.20	104.71
5710	802.11n HT40 2TX CDD	20.18	104.23
5510 - 5670	802.11n HT40 2TX STBC/SDM	Covered by 802.1	1n HT40 2TX CDD mode
5710	802.11n HT40 2TX STBC/SDM	Covered by 802.1	1n HT40 2TX CDD mode
5530-5610	802.11ac VHT80 SISO	18.18	65.77
5690	802.11ac VHT80 SISO	17.92	61.94
5530-5610	802.11ac VHT80 2TX CDD	20.45	110.92
5690	802.11ac VHT80 2TX CDD	20.25	105.93
5530-5610	802.11ac VHT80 2TX STBC/SDM	Covered by 802.11	ac VHT80 2TX CDD mode
5690	802.11ac VHT80 2TX STBC/SDM	Covered by 802.11	ac VHT80 2TX CDD mode

#### 5.8GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5745-5825	802.11a	17.91	61.80
5745-5825	802.11n HT20 SISO	Covered b	y 802.11a mode
5745-5825	802.11a 2TX	Covered by 802.1	1n HT20 2TX CDD Mode
5745-5825	802.11n HT20 2TX CDD	20.49	111.94
5745-5825	802.11n HT20 2TX STBC/SDM	Covered by 80	2.11n HT20 CDD 2TX
5755-5795	802.11n HT40 SISO	16.98	49.89
5755-5795	802.11n HT40 2TX CDD	18.93	78.16
5755-5795	802.11n HT40 2TX STBC/SDM	Covered by 80	2.11n HT40 CDD 2TX
5775	802.11ac VHT80 SISO	13.69	23.39
5775	802.11ac VHT80 2TX CDD	16.18	41.50
5775	802.11ac VHT80 2TX STBC/SDM	Covered by 802	.11ac VHT80 CDD 2TX

Note: The output power on covered modes is equal to or less than one referenced.

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## 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PiFA antenna, with the following maximum gains:

Frequency Band	Anteni	na Gain	Uncorrelated Gain	Correlated Gain
(GHz)	Antenna C	Antenna B	Uncorrelated Gam	Correlated Gam
5.2	2.39	-0.11	1.32	4.24
5.3	2.17	-0.06	1.20	4.14
5.5	3.00	0.16	1.81	4.71
5.8	3.13	-0.82	1.59	4.39

### 5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 12B331.

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### 5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X (Flatbed), Y (Landscape), Z (Portrait), it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X (Flatbed) orientation.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps 802.11g mode: 6 Mbps 802.11n HT20mode: MCS0 802.11a mode: 6 Mbps 802.11n HT20 mode: MCS0 802.11n HT40 mode: MCS0 802.11ac VHT80 mode: MCS0

Radiated emissions for EUT with antenna was performed and passed; therefore, antenna port spurious was not performed.

There are two vendors of the WiFi/Bluetooth radio modules: variant 1 and variant 2. The Wi-Fi/Bluetooth radio modules have the same mechanical outline (e.g., the same package dimension and pin-out layout), use the same on-board antenna matching circuit, have an identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances.

Baseline testing was performed on the two variants to determine the worst case on all conducted power and radiated emissions.

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# 5.6. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List										
Description Manufacturer Model Serial Number FCC ID										
AC/DC adapter	Apple	A1357	N/A	NA						
Earphone	Apple	NA	NA	NA						
Laptop	Apple	A1278	C02HJ0A7DTY4	NA						
DC power supply	Sorensen	XT 15-4	1319A02780	NA						

### I/O CABLES (CONDUCTED TEST)

	I/O Cable List											
Cable	Port	# of identical	Connector	Cable Type	Cable	Remarks						
No		ports	Туре		Length (m)							
1	Antenna	1	SMA	Un-Shielded	0.2	To spectrum Analyzer						
2	USB	1	USB	Shielded	1	N/A						
3	DC	1	DC	Un-shielded	0.8	N/A						

### I/O CABLES (RADIATED ABOVE 1 GHZ)

	I/O Cable List										
CablePort# of identicalConnectorCable TypeCableRemarksNoportsTypeLength (m)											
None u	sed		11 -								

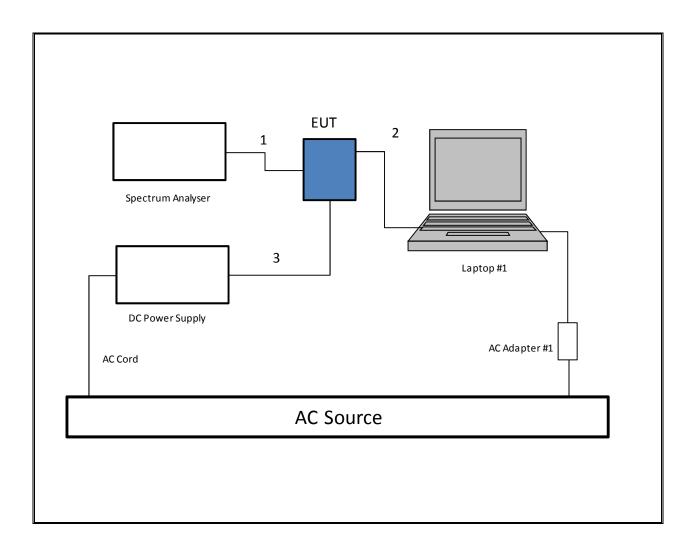
### I/O CABLES (AC POWER CONDUCTED TEST and below 1 GHZ)

	I/O Cable List										
Cable	Cable Port # of identical Connector Cable Type Cable Remarks										
No		Length (m)									
1	AC	1	US115	Un-Shielded	0.8	NA					
2	DC	1	lightning	Un-Shielded	1	NA					
3	Audio	1	Jack	Un-Shielded	0.5	NA					

### TEST SETUP- CONDUCTED PORT

The EUT was tested connected to a host Laptop via USB cable adapter and spectrum analyzer to antenna port. Test software exercised the EUT.

### SETUP DIAGRAM

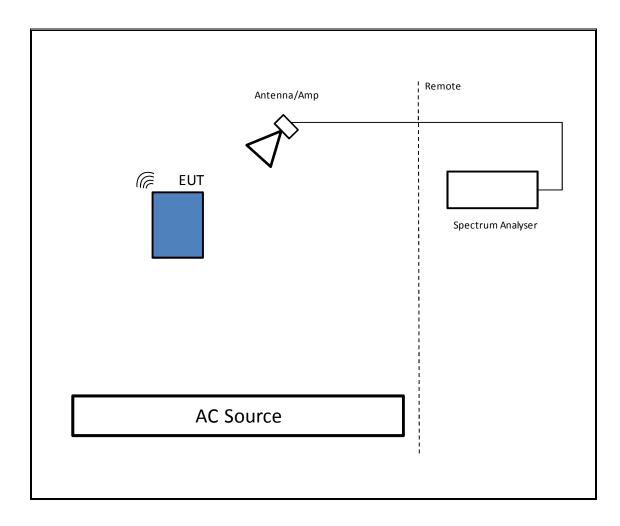


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### **TEST SETUP- RADIATED-ABOVE 1 GHZ**

The EUT was tested battery powered. Test software exercised the EUT.

#### SETUP DIAGRAM



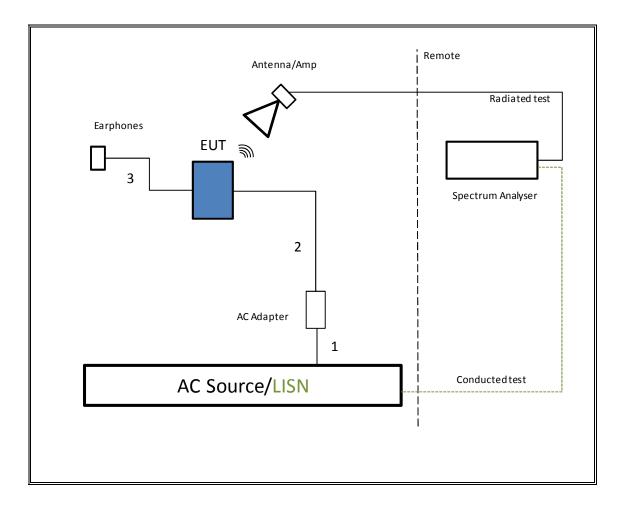
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### **TEST SETUP- BELOW 1GHZ & AC LINE CONDUCTED TESTS**

The EUT was tested with earphones connected and powered by AC adapter. Test software exercised the EUT.

#### SETUP DIAGRAM



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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 EQUIPM	IENT LIST		
Description	Manufacturer	Model	Asset	Cal Due
Antenna, Horn, 18 GHz	ETS Lindgren	3117	F00131	2/18/2015
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	11/28/2014
Antenna, Horn, 40 GHz	ATA	MWH-2040/B	C00981	7/5/2015
Peak / Average Power Sensor	Agilent/HP	N1911A	F00153	3/6/2015
Wideband Power Sensor	Agilent	N1921A	F00361	10/2/2014
Peak Power Meter	Agilent/HP	E9323A	F00025	4/3/2015
Spectrum Analyzer, 44 GHz	Agilent/HP	N9030A	F00129	2/22/2015
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	F00168	3/28/2015
Preamplifier, 1300 MHz	Sonoma	310	F00008	5/27/2015
Preamplifier, 26.5 GHz	Agilent/HP	8449B	F00165	3/25/2015
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	F00092	9/5/2014
LISN, 30 MHz	FCC	LISN-50/250-25-2	C00626	1/14/2015
Peak Power Sensor	Boonton	57006	C01202	07/17/15
Peak Power Meter	Boonton	4541	C01186	07/17/15
Spectrum Analyzer, 44 Ghz	Agilent	N9030A	N/A	05/17/15
Spectrum Analyzer, 40 Ghz	Agilent	8564E	C00951	08/06/15

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## 7. MEASUREMENT METHODS

26 dB Emission BW: KDB 789033 D01 v01r03, Section C.

<u>99% Occupied BW</u>: KDB 789033 D01 v01r03, Section D.

Conducted Output Power: KDB 789033 D01 v01r03, Section E.3.a (Method PM).

Power Spectral Density: KDB 789033 D01 v01r03, Section F.

Peak Excursion: KDB 789033 D01 v01r03, Section G.

Unwanted emissions in restricted bands: KDB 789033 D01 v01r03, Sections H.3, H.4, H.5, and H.6.

Unwanted emissions in non-restricted bands: KDB 789033 D01 v01r03, Sections H.3, H.4, and H.5.

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# 8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

### LIMITS

None; for reporting purposes only.

#### PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

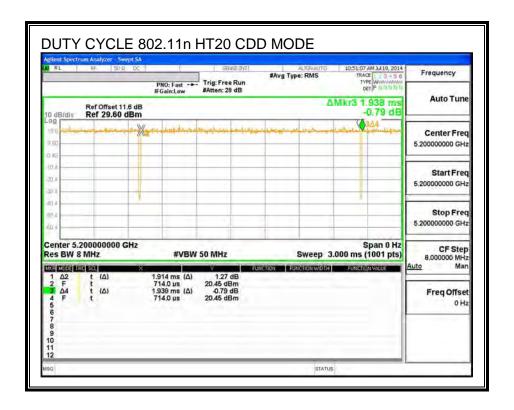
## 8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time	Period	<b>Duty Cycle</b>	Duty	Duty Cycle	1/B
	В		x	Cycle	<b>Correction Factor</b>	Minimum VBW
	(msec)	(msec)	(linear)	(%)	(dB)	(kHz)
802.11a 1TX	2.064	2.085	0.990	98.99%	0.00	0.010
802.11n HT20 CDD	1.914	1.938	0.988	98.76%	0.00	0.010
802.11n HT40 1TX	1.122	1.142	0.982	98.25%	0.00	0.010
802.11n HT40 CDD	1.122	1.142	0.982	98.25%	0.00	0.010
802.11ac VHT80 1TX	0.4600	0.4832	0.952	95.20%	0.21	2.174
802.11ac VHT80 CDD	0.4600	0.4832	0.952	95.20%	0.21	2.174

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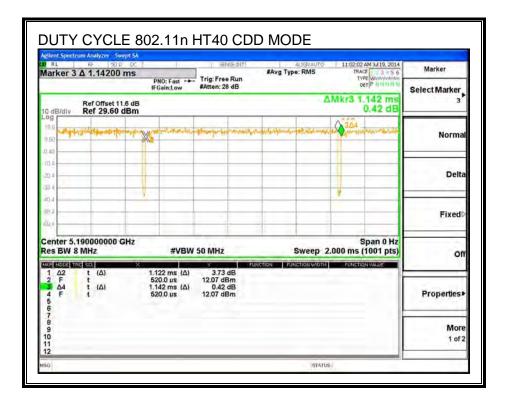
# 8.1. DUTY CYCLE PLOTS

RL	RF 50-9 DC	PNO: Fast	Trig: Free Run	#Avg Type: RMS	10:38:22 AM 3/419, 2014 TRACE 2 3 5 5 TVPE WWWWWWWW DET P	Frequency
0 dB/div	Ref Offset 11.6 dB Ref 29.60 dBm	I+Gain:Low	WALLEN. 20 GD	۵	Mkr3 2.085 ms -0.15 dB	Auto Tune
og		in all and	and and a second	And and a start of the start of	3∆4	and the second second
9.60	1012					Center Freq 5.20000000 GHz
3.40						5.20000000 GH2
in 4						Conserva-
A. 00				-	-	Start Fred 5 20000000 GHz
04					_	5.20000000 GH2
10.4	-					
87.4						Stop Freq
b.(						5.20000000 GHz
Center 5. Res BW 1		#VBW		Sweep 3	Span 0 Hz .000 ms (1001 pts)	CF Step B.000000 MHz Auto Man
1 Δ2 2 F 3 Δ4 4 F 5 6 7 8 9 10 11	t (Δ) t (Δ) t	2.064 ms (Δ) 438.0 us 2.085 ms (Δ) 438.0 us	0.90 dB 20.29 dBm -0.15 dB 20.29 dBm			Freq Offset 0 Hz



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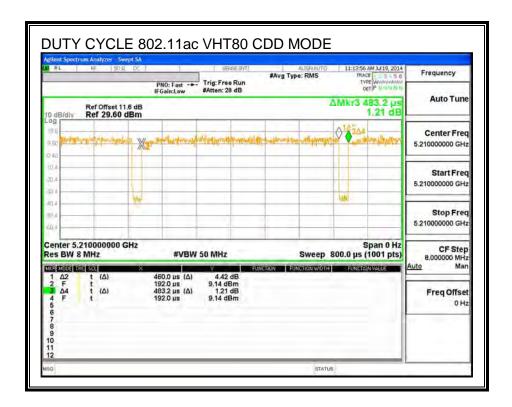
RL	RF. [30]		PNO: Fast -+	Trig: Free Run #Atten: 28 dB	#Avg Typ	alignauto e: RMS	10:59:20 AM 3.419, 2014 TRACE 3 5 6 TYPE WWWWWWWW DET P WWWWWWW	Frequency
0 dB/div	Ref Offset 1 Ref 29.60	1.6 dB					Mkr3 1.142 ms -1.47 dB	Auto Tune
09 19.50 9.60	and an and the	and the second	nte-tageaded	And the second	Animalis Baratana	e qui direra an	3/4 Trans Harrison - 14	Center Free 5.190000000 GH
D 4	_		-					Start Free 5.190000000 GH
0.4 0.4 0.4		-					×	Stop Free 5.190000000 GH
enter 5. es BW 8 1 Δ2 2 F 3 Δ4 4 F 5 6 7 7 8 9 0 0 1 2		* 1. 5 1.	#VBW 122 ms (Δ) 30.0 μs 142 ms (Δ) 30.0 μs	50 MHz 3.30 dB 13.16 dBm -1.47 dB 13.16 dBm		Sweep 2	Span 0 Hz 2.000 ms (1001 pts) Reflection MALUE	CF Ste B.000000 MH <u>Auto</u> Mai Freq Offse 0 H



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RL	RF 30.9 DC	PNO: Fast	Trig: Free Run #Atten: 28 dB	#Avg Type: RMS	11:11:39 AM 3/419, 2014 TRACE 1:2:3:4:5:0 TVPE WWWWWWW DET P 1/14:11	Frequency
0 dB/div	Ref Offset 11.6 di Ref 29.60 dBn		_		ΔMkr3 483.2 µs 0.15 dB	Auto Tune
9.60		er filmer all and a state	-	malessamers?	SA4	Center Fred 5.210000000 GH:
10.4. 10.4 10.4						Start Free 5.210000000 GH
ца 84 4	*					Stop Free 5.210000000 GH
enter 5. es BW i	210000000 GHz 8 MHz	#VBW	50 MHz	Sweep	Span 0 Hz 800.0 µs (1001 pts)	CF Step 8.000000 MH
26 Mode 6 1 Δ2 2 F 3 Δ4 4 F 6 7 8 9 10 12	ate (Δ) t (Δ) t (Δ) t (Δ) t	3 460.0 μs (Δ) 150.1 μs 483.2 μs (Δ) 150.1 μs	0.07 dB 10.31 dBm 0.15 dB 10.31 dBm	NGTEN   FUNCTION WATH	<ul> <li>FUNCTION WALKE</li> </ul>	Auto Mar Freq Offse 0 Hz



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## 9. ANTENNA PORT TEST RESULTS

### 9.1. 802.11a SISO MODE IN THE 5.2 GHz BAND

### 9.1.1. 26 dB BANDWIDTH

### LIMITS

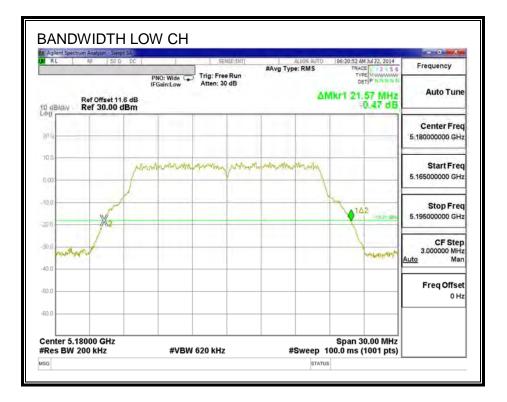
None; for reporting purposes only.

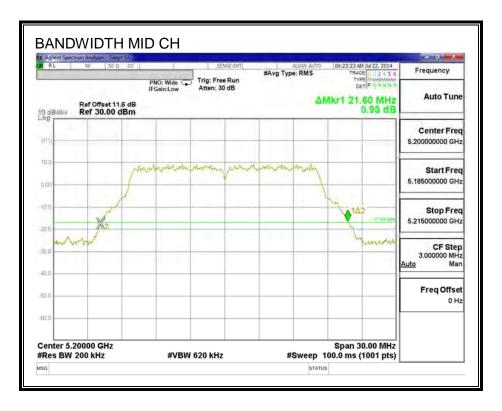
#### **RESULTS**

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5180	21.57
Mid	5200	21.60
High	5240	21.66

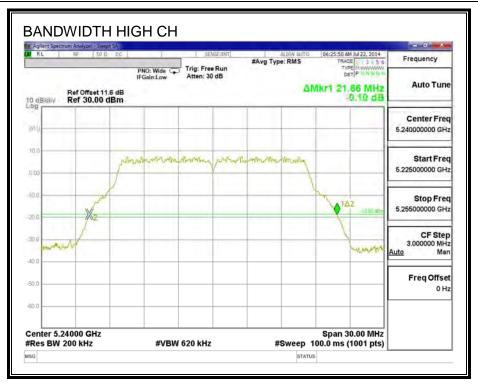
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### 9.1.2. 99% BANDWIDTH

#### **LIMITS**

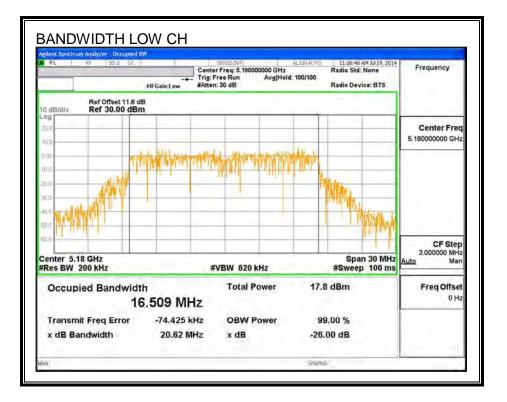
None; for reporting purposes only.

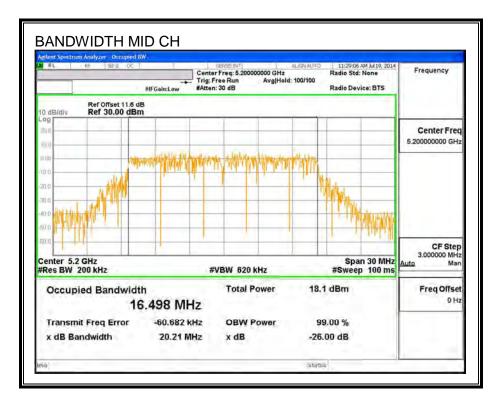
### **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5180	16.509
Mid	5200	16.498
High	5240	16.549

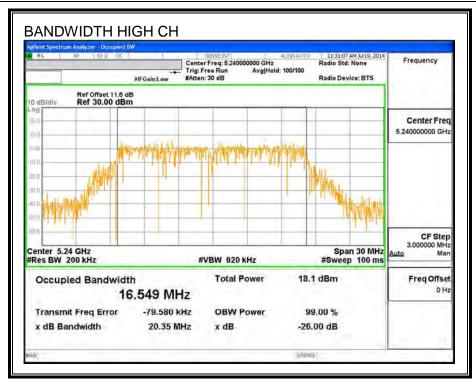
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### 9.1.3. AVERAGE POWER

### LIMITS

None; for reporting purposes only.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

Channel	Frequency	Power	Power
	(MHz)	Antenna B (dBm)	Antenna C (dBm)
low	5180	16.90	16.97
mid	5200	16.95	17.90
high	5240	16.96	17.99

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### 9.1.4. OUTPUT POWER AND PSD

#### LIMITS

### FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### DIRECTIONAL ANTENNA GAIN

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

#### ANTENNA B

Antenna				
Gain				
(dBi)				
-0.109				

### ANTENNA C

Antenna				
Gain				
(dBi)				
2.394				

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#### ANTENNA B Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5180	-0.11	-0.11	24.00	11.00
Mid	5200	-0.11	-0.11	24.00	11.00
High	5240	-0.11	-0.11	24.00	11.00

Duty Cycle CF (dB) 0.00

Included in Calculations of Corr'd Power & PSD

#### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	16.90	16.90	24.00	-7.10
Mid	5200	16.95	16.95	24.00	-7.05
High	5240	16.96	16.96	24.00	-7.04

### **PSD** Results

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	5.94	5.94	11.00	-5.06
Mid	5200	6.10	6.10	11.00	-4.90
High	5240	5.71	5.71	11.00	-5.29

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### ANTENNA C Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5180	2.39	2.39	24.00	11.00
Mid	5200	2.39	2.39	24.00	11.00
High	5240	2.39	2.39	24.00	11.00

Duty Cycle CF (dB) 0.00

Included in Calculations of Corr'd Power & PSD

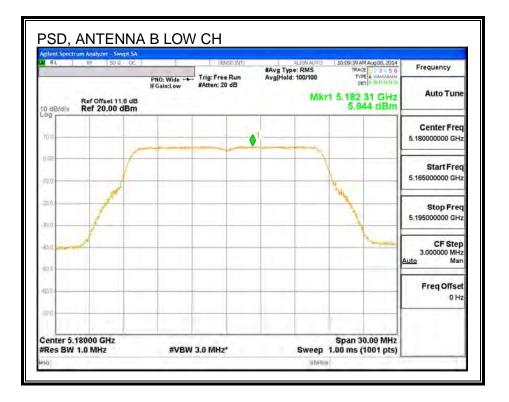
#### **Output Power Results**

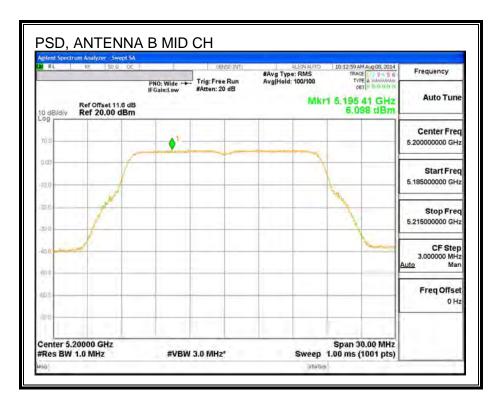
Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	16.97	16.97	24.00	-7.03
Mid	5200	17.90	17.90	24.00	-6.10
High	5240	17.99	17.99	24.00	-6.01

### **PSD Results**

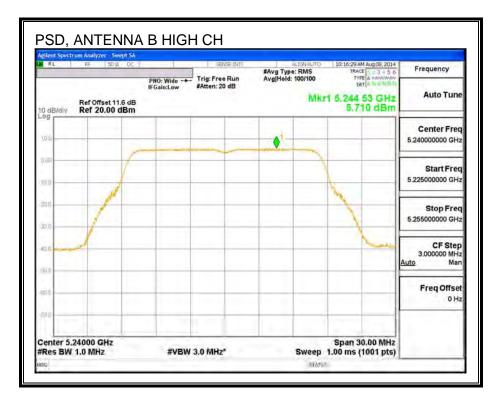
Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	6.15	6.15	11.00	-4.85
Mid	5200	7.40	7.40	11.00	-3.60
High	5240	7.49	7.49	11.00	-3.51

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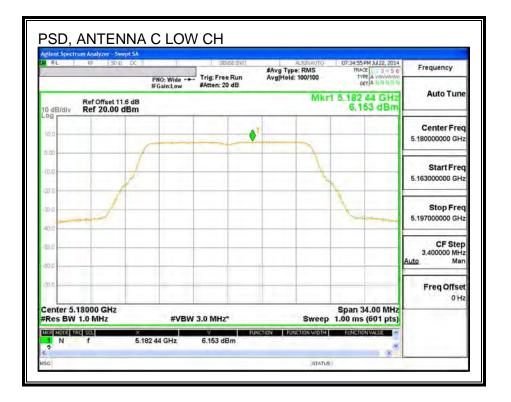


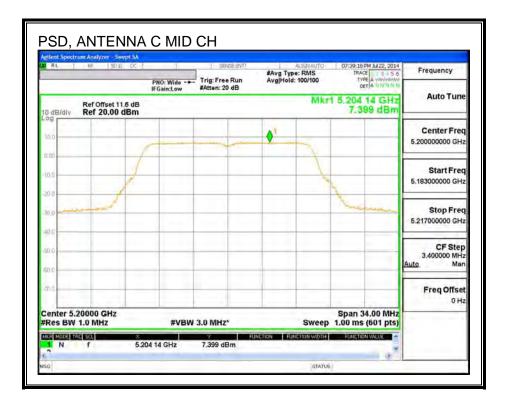


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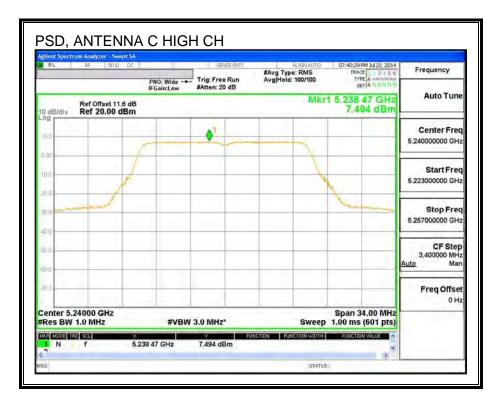


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# 9.2. 802.11n HT20 2Tx CDD MODE IN THE 5.2 GHz BAND

# 9.2.1. 26 dB BANDWIDTH

## <u>LIMITS</u>

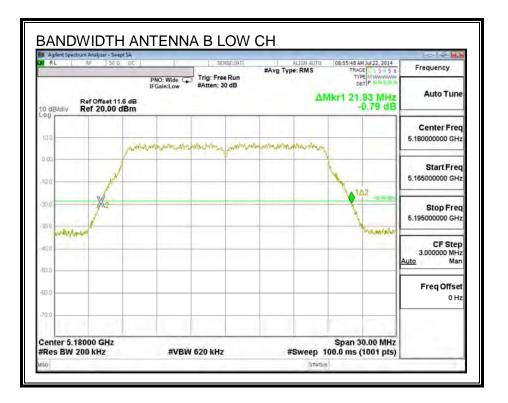
None; for reporting purposes only.

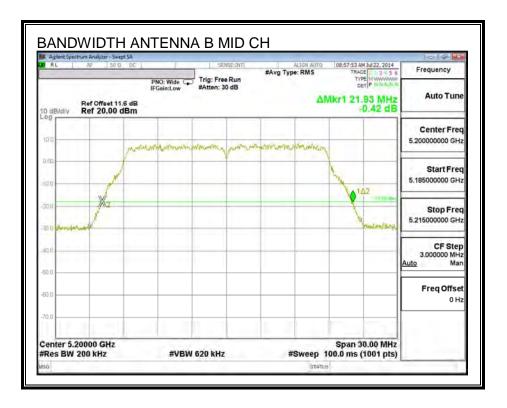
### **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5180	21.93	21.75
Mid	5200	21.93	21.69
High	5240	21.90	21.75

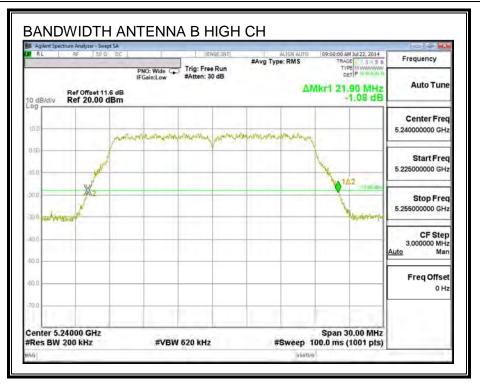
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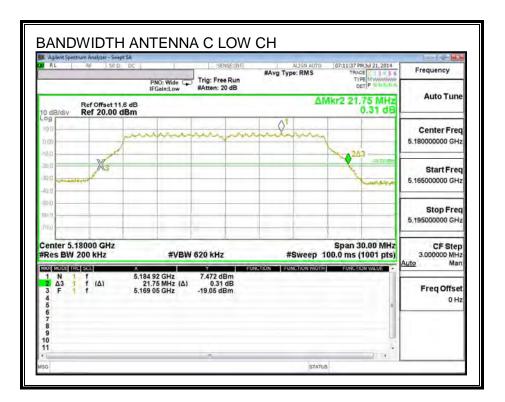




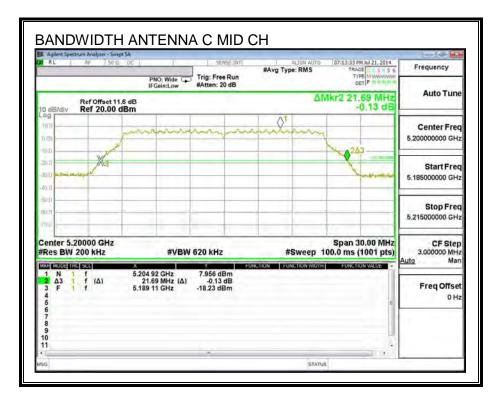
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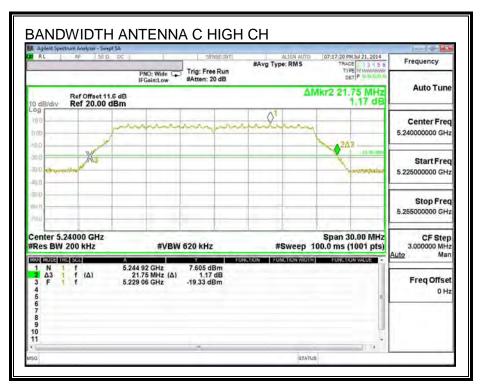


# 26 dB BANDWIDTH, ANTENNA C



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# 9.2.2. 99% BANDWIDTH

# LIMITS

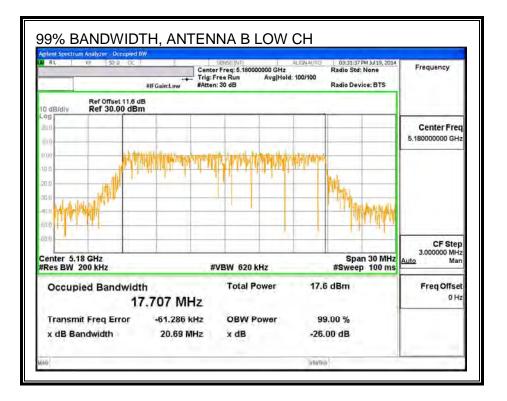
None; for reporting purposes only.

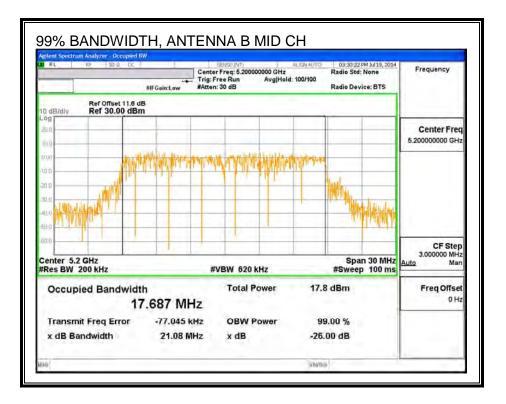
# **RESULTS**

Channel	el Frequency 99% BW		99% BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5180	17.707	17.799
Mid	5200	17.687	17.742
High	5240	17.711	17.629

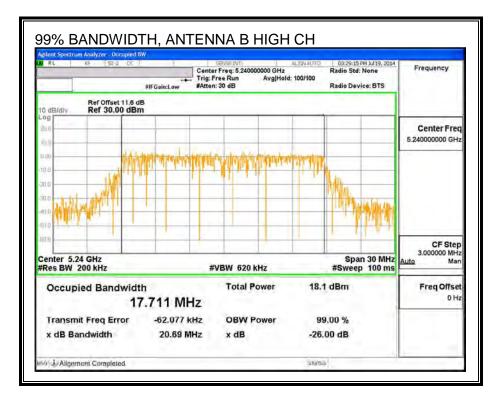
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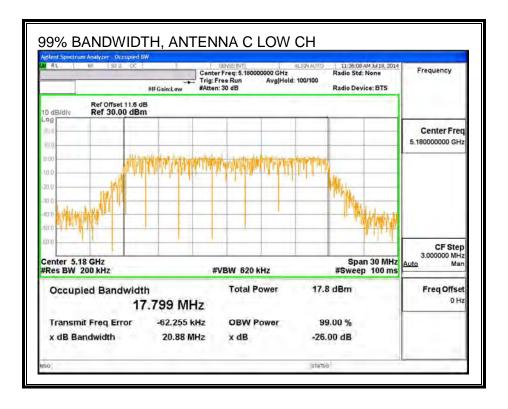




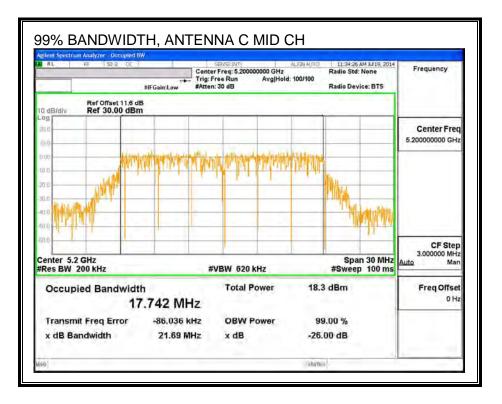
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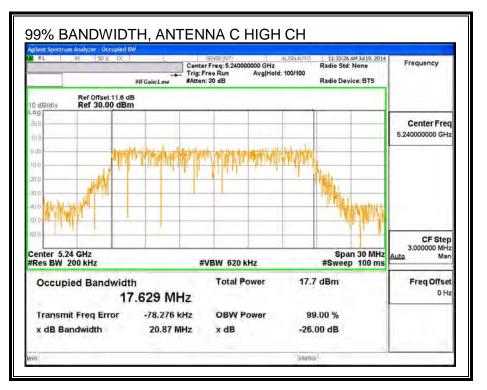


#### 99% BANDWIDTH, ANTENNA C



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# 9.2.4. AVERAGE POWER

## LIMITS

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **RESULTS**

#### Average Power Results

Channel	Frequency	Antenna B	Antenna C	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5180	15.47	15.47	18.48
Mid	5200	16.96	16.92	19.95
High	5240	16.89	16.93	19.92

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# 9.2.5. OUTPUT POWER AND PSD

## **LIMITS**

FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### DIRECTIONAL ANTENNA GAIN

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

Antenna B	Antenna C	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.11	2.39	1.32

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

Antenna B	Antenna C	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.11	2.39	4.24

# **RESULTS**

### Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5180	1.32	4.24	24.00	11.00
Mid	5200	1.32	4.24	24.00	11.00
High	5240	1.32	4.24	24.00	11.00

0.00

Duty Cycle CF (dB)

Included in Calculations of Corr'd Power & PSD

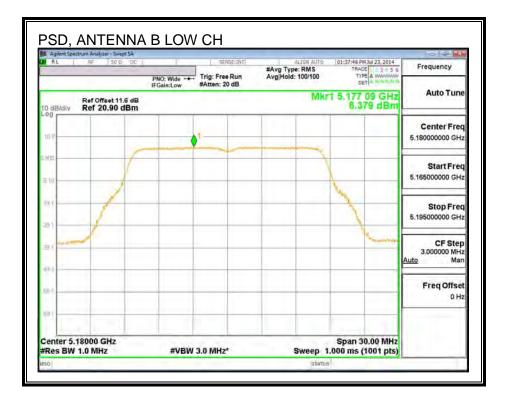
### **Output Power Results**

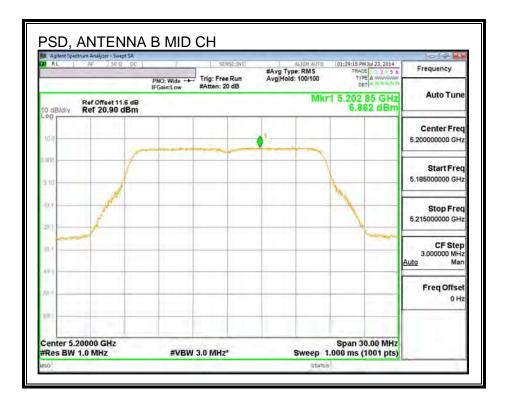
Channel	Frequency	Antenna B	Antenna C	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	15.47	15.47	18.48	24.00	-5.52
Mid	5200	16.96	16.92	19.95	24.00	-4.05
High	5240	16.89	16.93	19.92	24.00	-4.08

### **PSD Results**

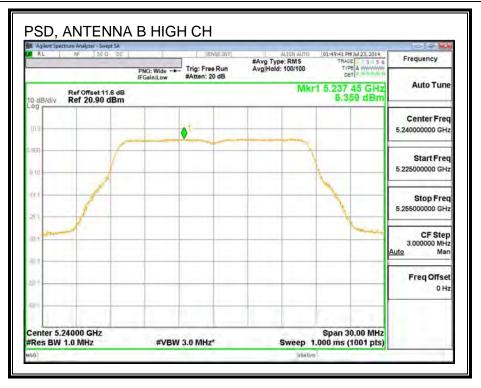
Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	6.38	6.36	9.38	11.00	-1.62
Mid	5200	6.88	6.71	9.80	11.00	-1.20
High	5240	6.36	6.06	9.22	11.00	-1.78

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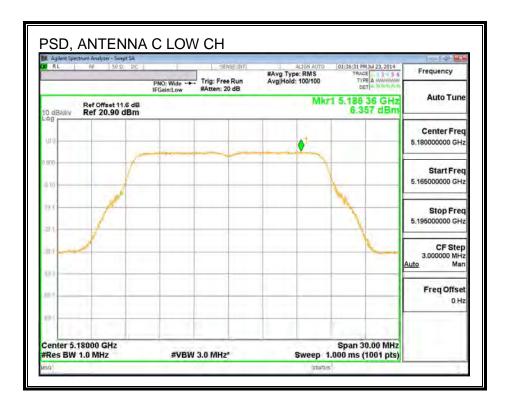




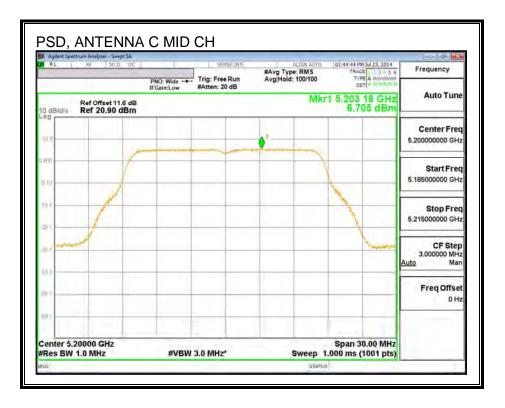
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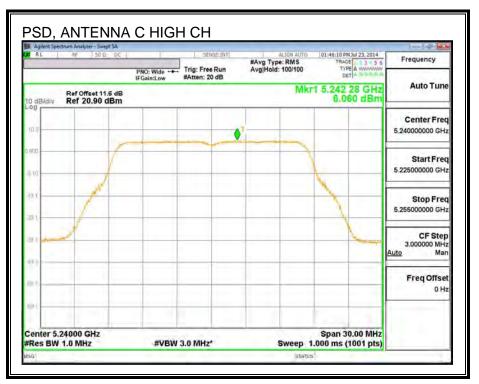


# PSD, ANTENNA C



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# 9.3. 802.11n HT20 2Tx STBC/SDM MODE IN THE 5.2 GHz BAND

Refer to Section 9.2, 802.11n HT20 2TX CDD mode in the 5.2 GHz Band.

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# 9.4. 802.11n HT40 SISO MODE IN THE 5.2 GHz BAND

# 9.4.1. 26 dB BANDWIDTH

## **LIMITS**

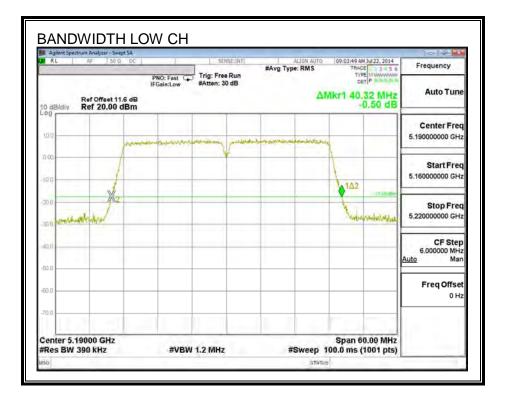
None; for reporting purposes only.

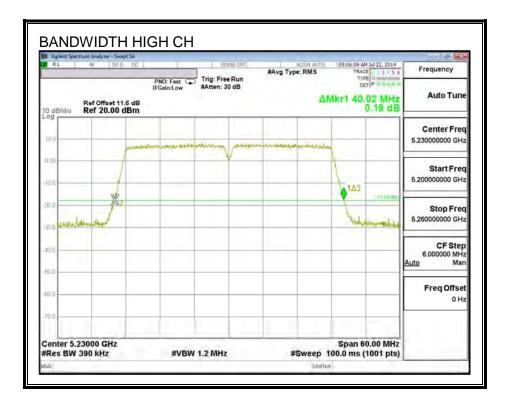
## <u>RESULTS</u>

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5190	40.32
High	5230	40.02

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# 9.4.2. 99% BANDWIDTH

# LIMITS

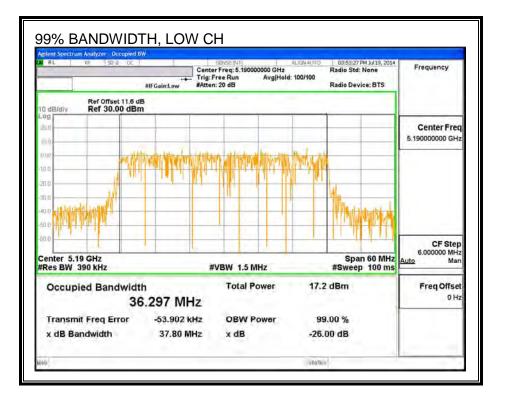
None; for reporting purposes only.

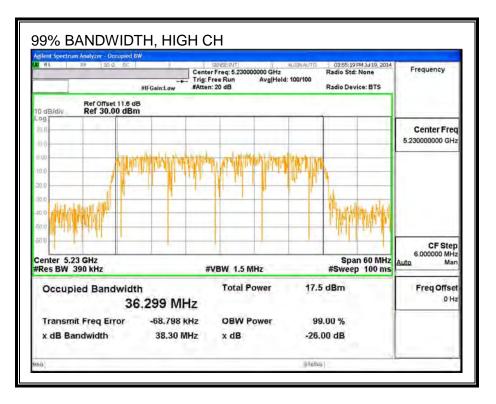
# **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5190	36.297
High	5230	36.299

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# 9.4.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **RESULTS**

Channel	Frequency	Power	Power
	(MHz)	Antenna B (dBm)	Antenna C (dBm)
Low	5190	13.47	13.46
High	5230	16.92	17.93

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# 9.4.4. OUTPUT POWER AND PSD

## **LIMITS**

# FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **DIRECTIONAL ANTENNA GAIN**

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

#### ANTENNA B

Antenna
Gain
(dBi)
-0.109

### ANTENNA C

Antenna	
Gain	
(dBi)	
2.394	

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## **RESULTS**

## **ANTENNA B**

# Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5190	-0.11	-0.11	24.00	11.00
High	5230	-0.11	-0.11	24.00	11.00

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

### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	13.47	13.47	24.00	-10.53
High	5230	16.92	16.92	24.00	-7.08

#### **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	<b>(MHz)</b> 5190	(dBm) -0.41	(dBm) -0.41	(dBm) 11.00	(dB) -11.41

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#### ANTENNA C Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5190	2.39	2.39	24.00	11.00
High	5230	2.39	2.39	24.00	11.00

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

### **Output Power Results**

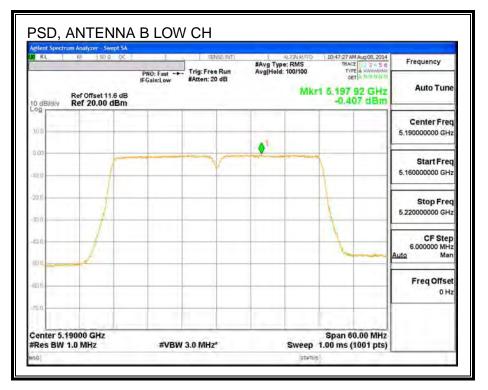
Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	13.46	13.46	24.00	-10.54
High	5230	17.93	17.93	24.00	-6.07

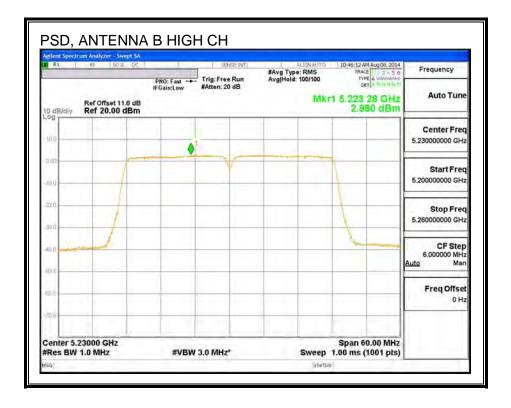
#### **PSD** Results

Channel	Frequency Antenna C		Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	0.68	0.68	11.00	-10.33
High	5230	3.81	3.81	11.00	-7.19

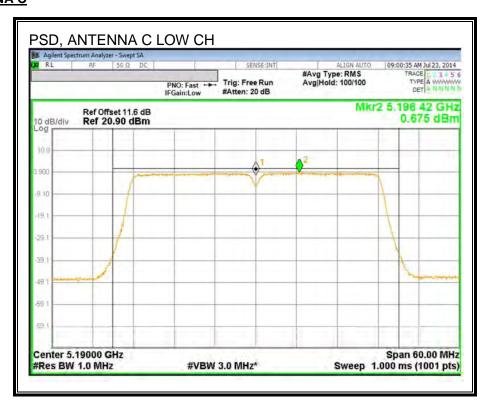
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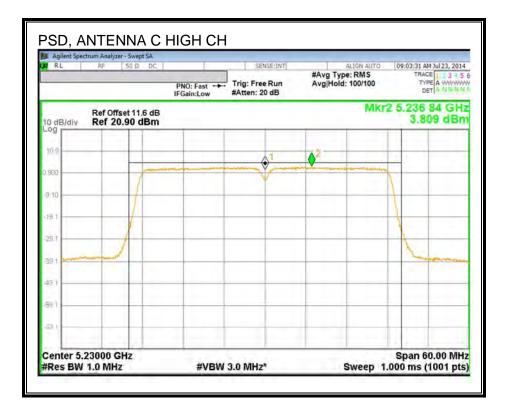
#### PSD, ANTENNA B





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# 9.5. 802.11n HT40 2Tx CDD MODE IN THE 5.2 GHz BAND

# 9.5.1. 26 dB BANDWIDTH

# <u>LIMITS</u>

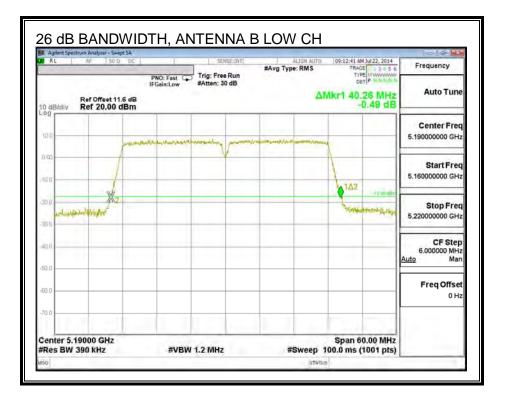
None; for reporting purposes only.

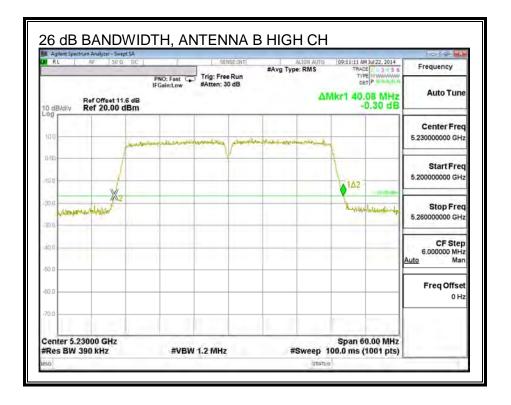
## **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5190	40.26	39.90
High	5230	40.08	39.84

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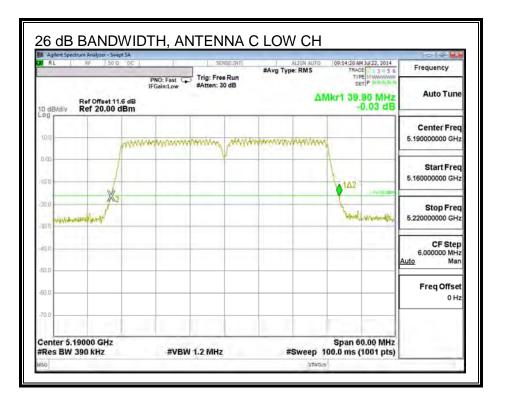
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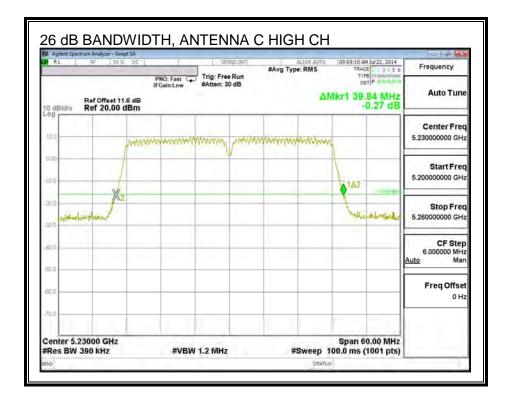




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#### 26 dB BANDWIDTH, ANTENNA C





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# 9.5.2. 99% BANDWIDTH

# LIMITS

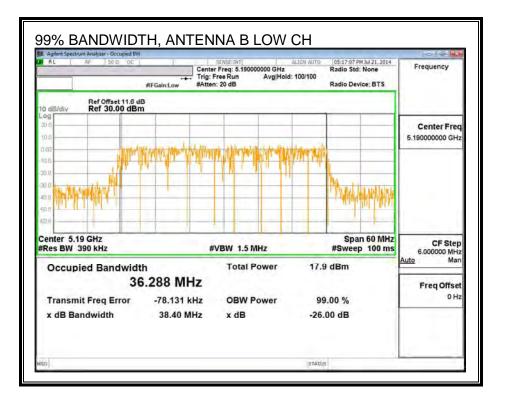
None; for reporting purposes only.

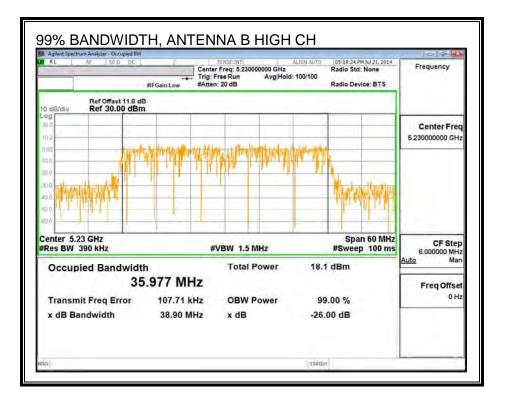
# **RESULTS**

Channel	Frequency	99% BW	99% BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5190	36.288	36.388
High	5230	35.977	36.332

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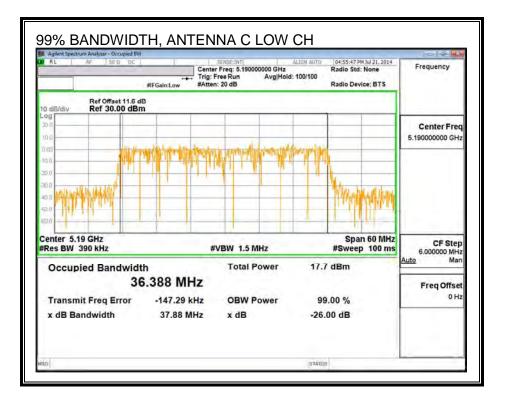
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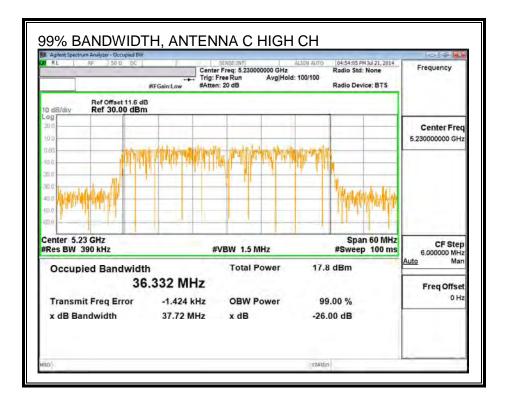




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#### 99% BANDWIDTH, ANTENNA C





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# 9.5.1. AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **RESULTS**

#### **Average Power Results**

Channel	Frequency	Antenna B	Antenna C	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5190	12.39	12.41	15.41
High	5230	16.93	17.90	20.45

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# 9.5.2. OUTPUT POWER AND PSD

# <u>LIMITS</u>

FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **DIRECTIONAL ANTENNA GAIN**

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

Antenna B	Antenna C	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.11	2.39	1.32

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

Antenna B	Antenna C	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.11	2.39	4.24

### Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5190	1.32	4.24	24.00	11.00
High	5230	1.32	4.24	24.00	11.00

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

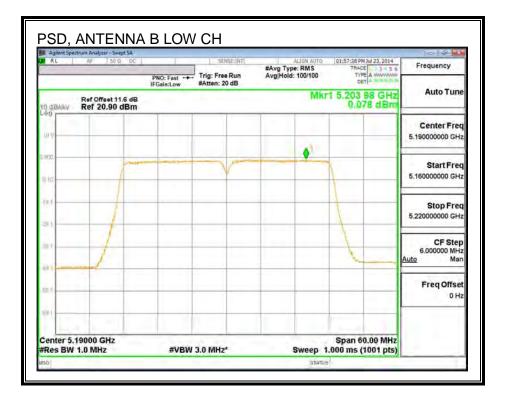
#### **Output Power Results**

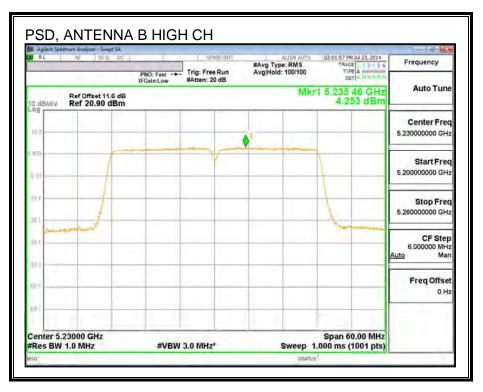
Channel	Frequency	Antenna B	Antenna C	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	12.39	12.41	15.41	24.00	-8.59
High	5230	16.93	17.90	20.45	24.00	-3.55

#### **PSD** Results

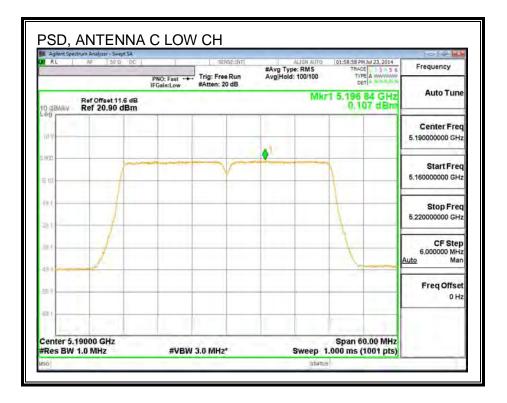
Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5190	0.08	0.11	3.10	11.00	-7.90
High	5230	4.25	3.69	6.99	11.00	-4.01

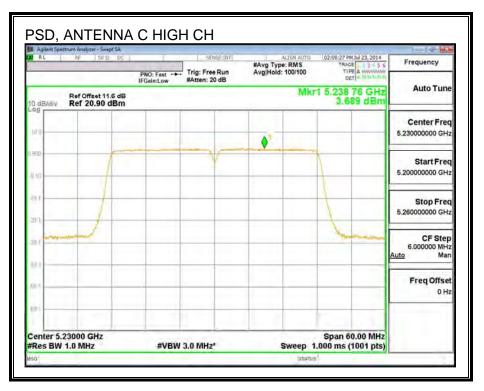
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# 9.6. 802.11n HT40 2Tx STBC/SDM MODE IN THE 5.2 GHz BAND

Refer to Section 9.5, 802.11n HT40 2Tx CDD MODE IN THE 5.2 GHz BAND.

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# 9.7. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

### 9.7.1. 26 dB BANDWIDTH

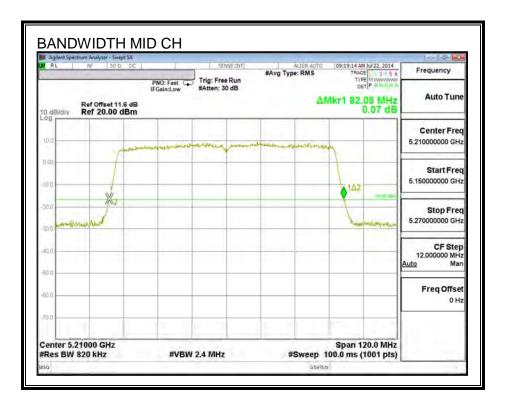
#### <u>LIMITS</u>

None; for reporting purposes only.

### <u>RESULTS</u>

Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Mid	5210	82.08

#### 26 dB BANDWIDTH



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### 9.7.2. 99% BANDWIDTH

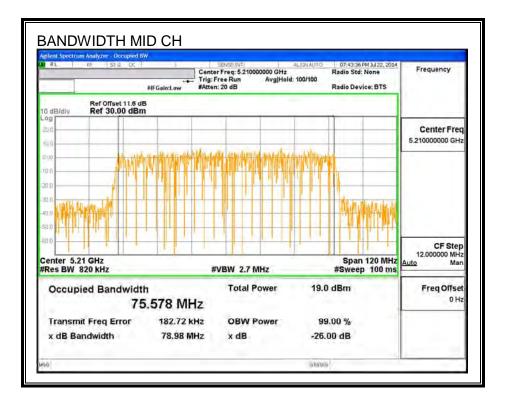
### LIMITS

None; for reporting purposes only.

### **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Mid	5210	75.578

### 99% BANDWIDTH



### 9.7.1. AVERAGE POWER

### **LIMITS**

None; for reporting purposes only.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### <u>RESULTS</u>

Channel	Frequency	Power	Power	
	(MHz)	Antenna B (dBm)	Antenna C (dBm)	
Mid	5210	12.97	12.94	

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# 9.7.2. OUTPUT POWER AND PSD

### LIMITS

### FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

### ANTENNA B

Antenna	
Gain	
(dBi)	
-0.109	

### ANTENNA C

Antenna
Gain
(dBi)
2.394

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# ANTENNA B

Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5210	-0.11	-0.11	24.00	11.00

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

### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	12.97	13.18	24.00	-10.82

#### **PSD** Results

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	-4.30	-4.09	11.00	-15.09

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#### ANTENNA C Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain for Power	Gain for PSD	Limit	Limit
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5210	2.39	2.39	24.00	11.00

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

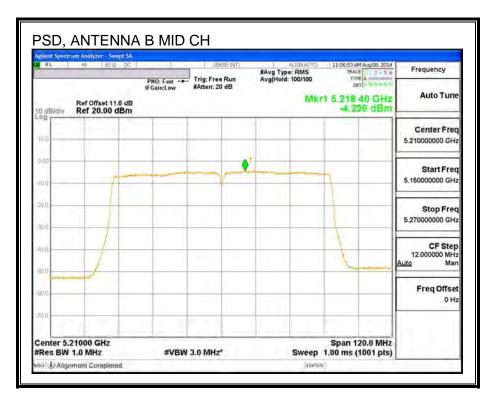
### Output Power Results

Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	12.94	13.15	24.00	-10.85

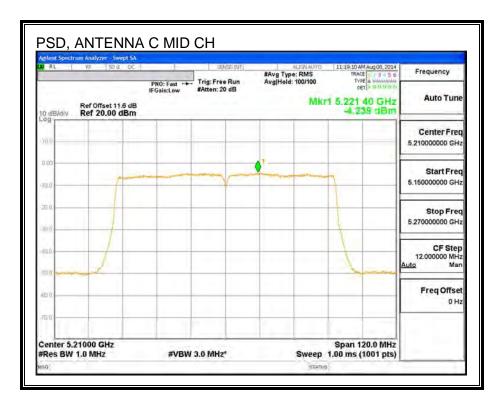
#### PSD Results

Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	-4.24	-4.03	11.00	-15.03

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### PSD, ANTENNA C



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# 9.8. 802.11ac 80MHz 2TX CDD MODE IN THE 5.2 GHz BAND

# 9.8.1. 26 dB BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

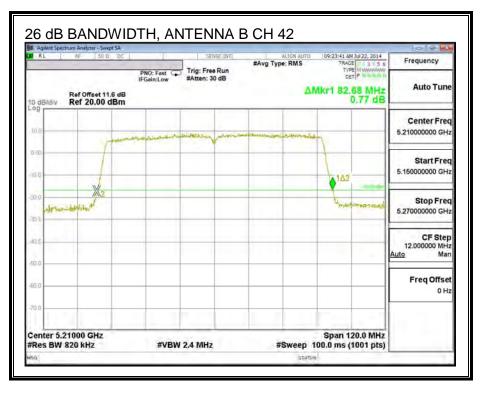
### **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
42	5210	82.68	81.36

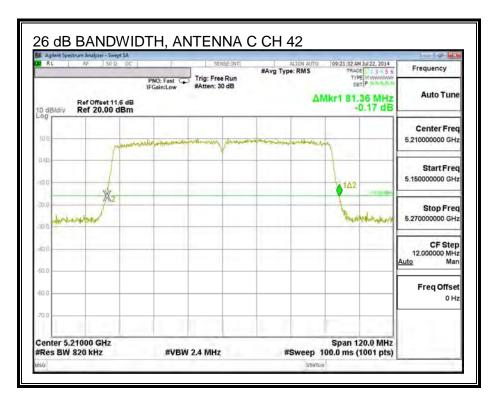
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#### REPORT NO: 14U18207-E12A FCC ID: BCGA1567 26 dB BANDWIDTH, ANTENNA B



### 26 dB BANDWIDTH, ANTENNA C



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### 9.8.2. 99% BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

### **RESULTS**

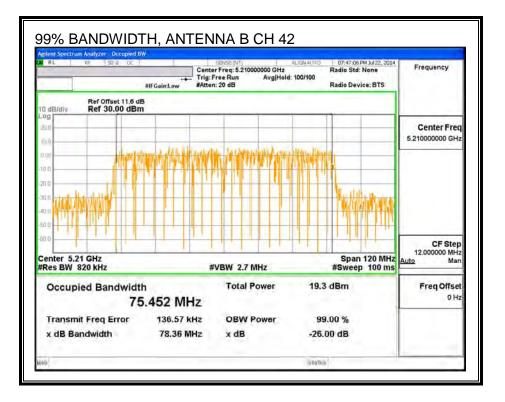
Channel	Frequency	99% BW	99% BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
42	5210	75.452	75.616

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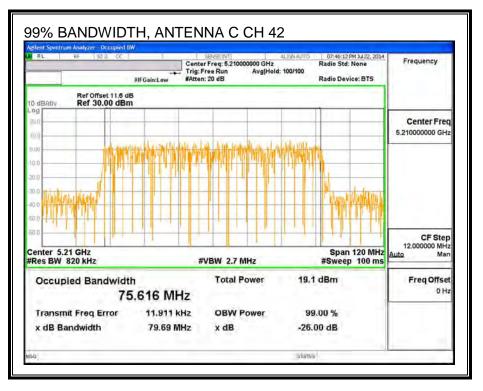
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### 99% BANDWIDTH, ANTENNA C



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### 9.8.3. AVERAGE POWER

### **LIMITS**

None; for reporting purposes only.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **RESULTS**

#### **Average Power Results**

Channel	Frequency	Antenna B	Antenna C	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Mid	5210	12.00	11.87	14.95

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### 9.8.4. OUTPUT POWER AND PSD

### <u>LIMITS</u>

FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### TEST PROCEDURE

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **DIRECTIONAL ANTENNA GAIN**

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

Antenna B	Antenna C	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.11	2.39	1.32

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

Antenna B	Antenna C	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.11	2.39	4.24

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### Antenna Gain and Limits

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5210	1.32	4.24	24.00	11.00

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

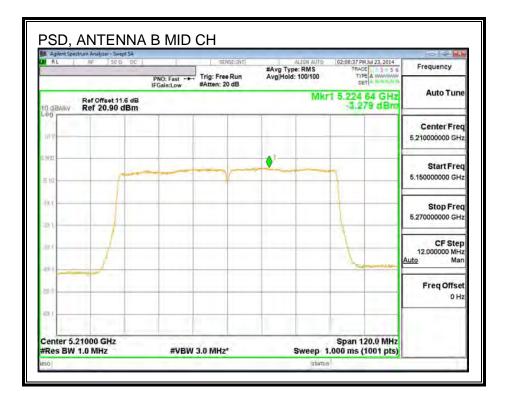
#### **Output Power Results**

Channel	Frequency	Antenna B	Antenna C	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	12.00	11.87	15.16	24.00	-8.84

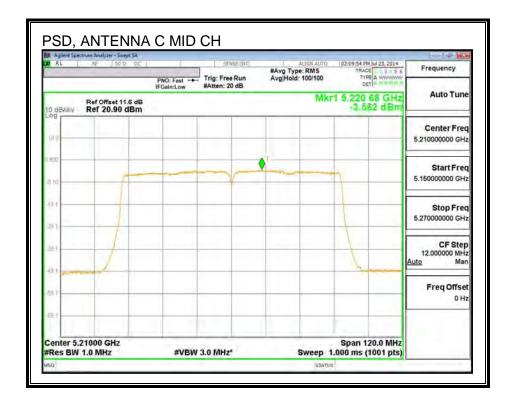
#### **PSD** Results

Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	-3.28	-3.56	-0.19	11.00	-11.19

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#### PSD, ANTENNA C



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# 9.9. 802.11ac 80MHz 2Tx STBC/SDM MODE IN THE 5.2 GHz BAND

Refer to Section 9.5, 802.11ac 80MHz 2TX CDD MODE IN THE 5.2 GHz BAND

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# 9.10. 802.11a SISO MODE IN THE 5.3 GHz BAND

# 9.10.1. 26 dB BANDWIDTH

### <u>LIMITS</u>

None; for reporting purposes only.

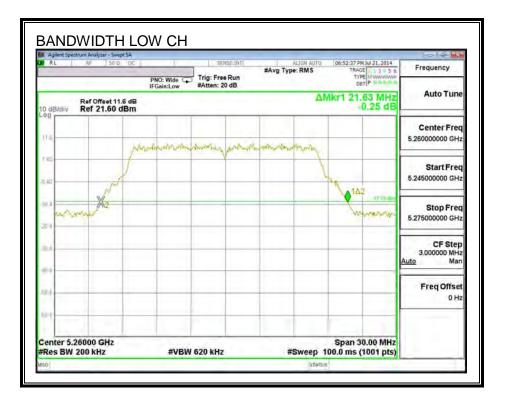
### **RESULTS**

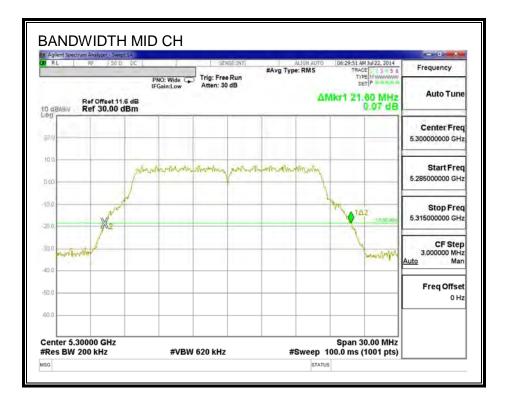
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5260	21.63
Mid	5300	21.60
High	5320	21.57

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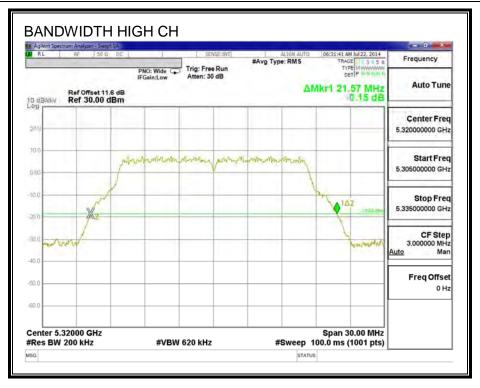
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#### 26 dB BANDWIDTH





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### 9.10.2. 99% BANDWIDTH

### <u>LIMITS</u>

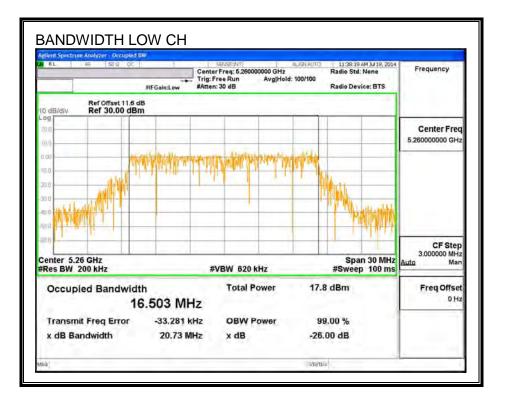
None; for reporting purposes only.

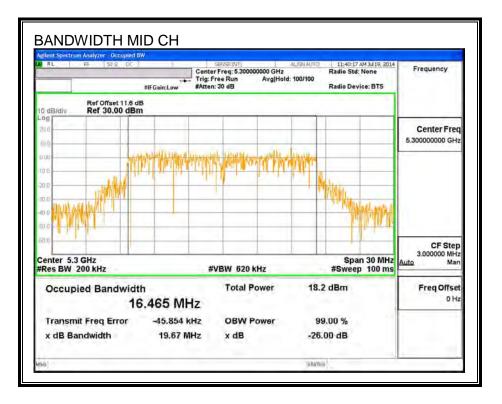
### **RESULTS**

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5260	16.503
Mid	5300	16.465
High	5320	16.478

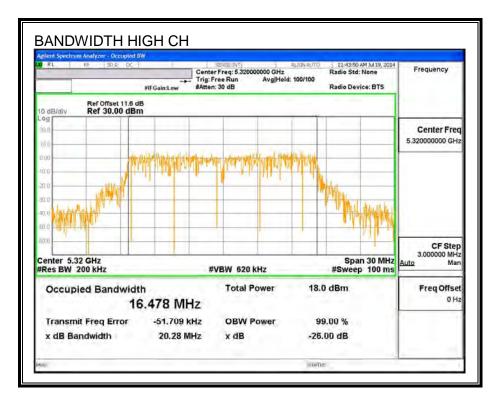
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### 9.10.1.AVERAGE POWER

### **LIMITS**

None; for reporting purposes only.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### **RESULTS**

Channel	Frequency	Power	Power
	(MHz)	Antenna B (dBm)	Antenna C (dBm)
Low	5260	15.99	17.92
Mid	5300	15.92	17.90
High	5320	15.95	16.93

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### 9.10.2. OUTPUT POWER AND PSD

### <u>LIMITS</u>

FCC §15.407 (a) (2)

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

### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

#### ANTENNA B

Antenna
Gain
(dBi)
-0.059

### ANTENNA C

Antenna				
Gain				
(dBi)				
2.173				

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### ANTENNA B

### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5260	21.63	-0.06	24.00	11.00
Mid	5300	21.60	-0.06	24.00	11.00
High	5320	21.57	-0.06	24.00	11.00

0.00

Duty Cycle CF (dB)

Included in Calculations of Corr'd Power & PSD

#### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	15.99	15.99	24.00	-8.01
Mid	5300	15.92	15.92	24.00	-8.08
High	5320	15.95	15.95	24.00	-8.05

#### **PSD** Results

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	4.34	4.34	11.00	-6.66
Mid	5300	3.93	3.93	11.00	-7.08
High	5320	4.18	4.18	11.00	-6.82

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### ANTENNA C Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5260	21.63	2.17	24.00	11.00
Mid	5300	21.60	2.17	24.00	11.00
High	5320	21.57	2.17	24.00	11.00

Duty Cycle CF (dB) 0.00

Included in Calculations of Corr'd Power & PSD

### **Output Power Results**

Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	17.92	17.92	24.00	-6.08
Mid	5300	17.90	17.90	24.00	-6.10
High	5320	16.93	16.93	24.00	-7.07

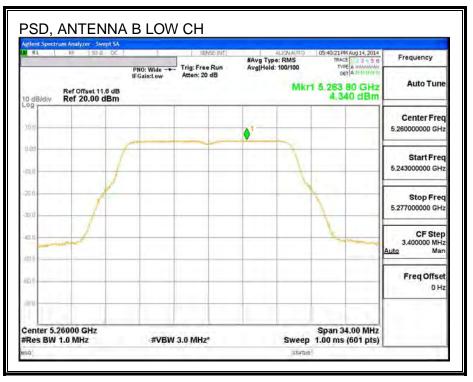
### PSD Results

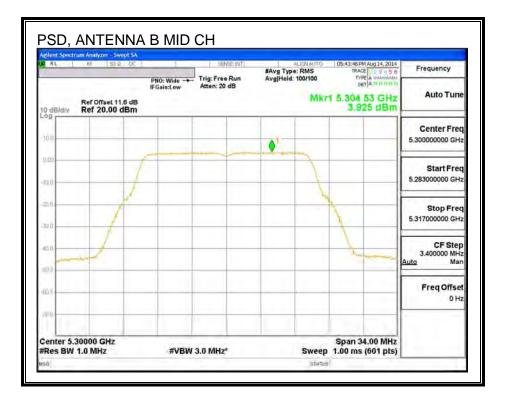
Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	7.73	7.73	11.00	-3.28
Mid	5300	7.21	7.21	11.00	-3.79
High	5320	6.64	6.64	11.00	-4.36

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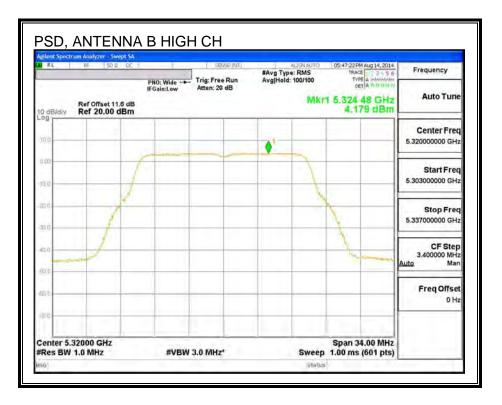
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# PSD ANTENNA B

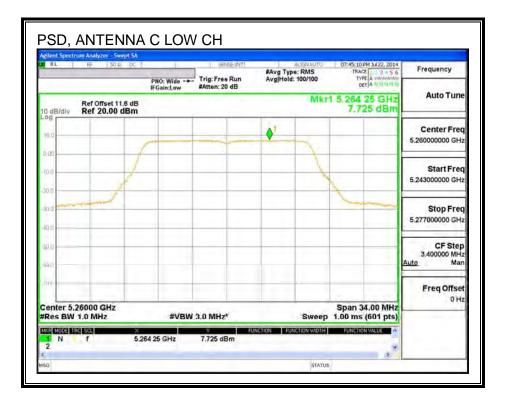


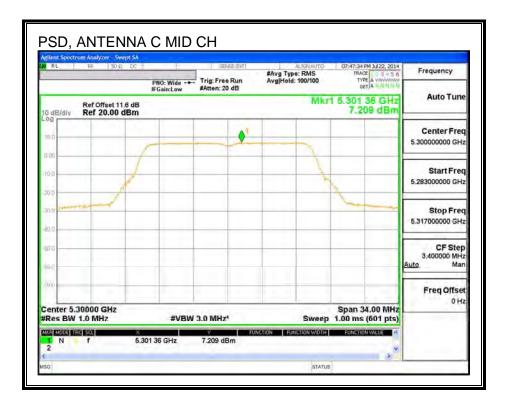


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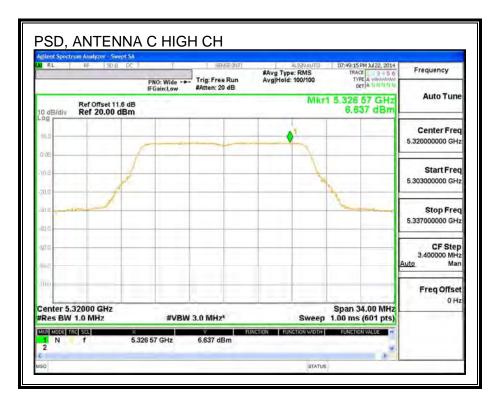


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# 9.11. 802.11n HT20 2Tx CDD MODE IN THE 5.3 GHz BAND

# 9.11.1. 26 dB BANDWIDTH

### <u>LIMITS</u>

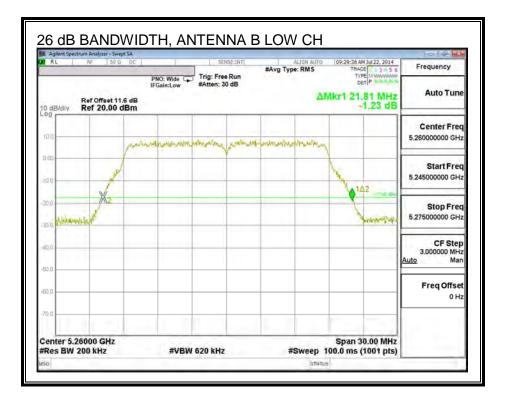
None; for reporting purposes only.

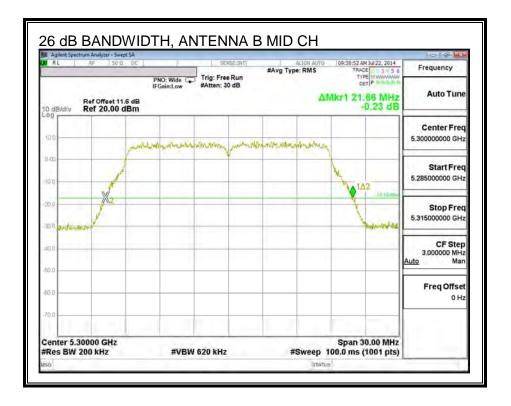
### **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5260	21.81	21.60
Mid	5300	21.66	21.63
High	5320	21.75	21.75

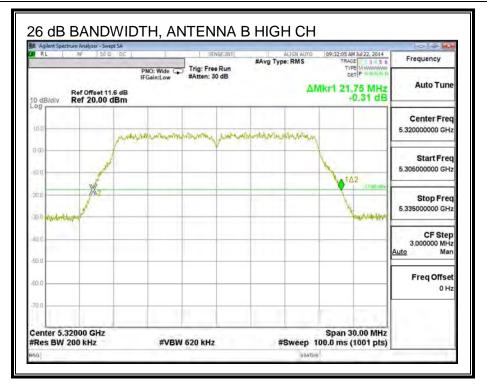
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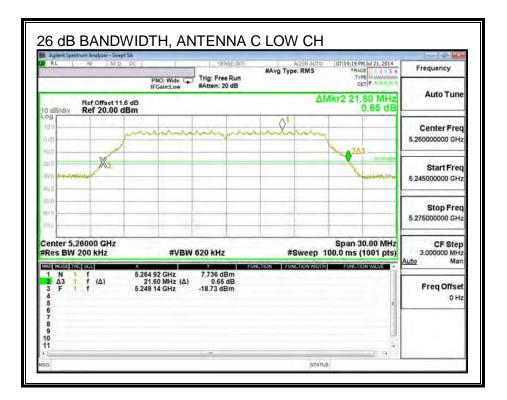




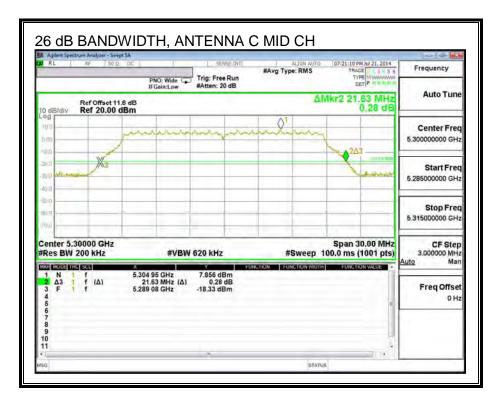
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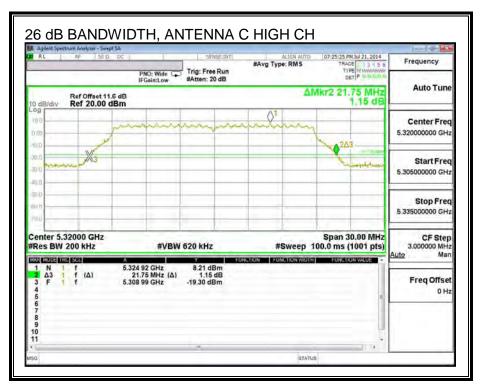


## 26 dB BANDWIDTH, ANTENNA C



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## 9.11.2. 99% BANDWIDTH

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

None; for reporting purposes only.

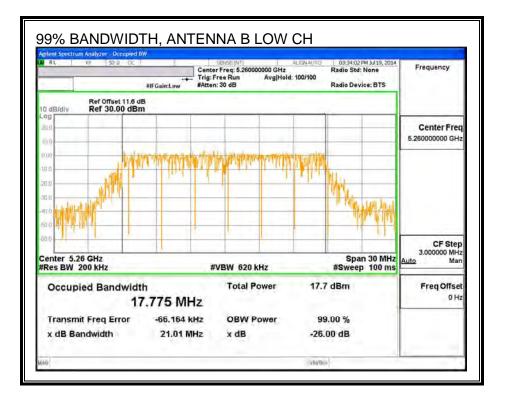
#### **RESULTS**

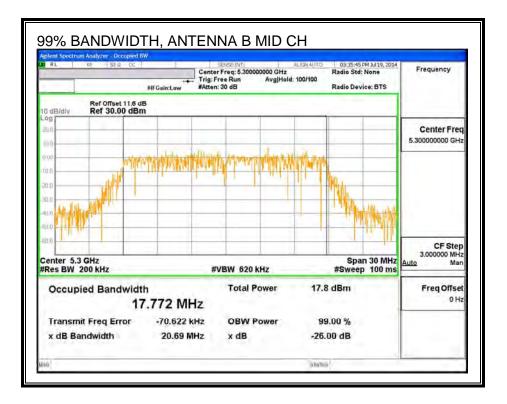
Channel	Frequency	99% BW	99% BW	
		Antenna B	Antenna C	
	(MHz)	(MHz)	(MHz)	
Low	5260	17.775	17.725	
Mid	5300	17.772	17.682	
High	5320	17.653	17.749	

DATE: SEPTEMBER 13, 2014

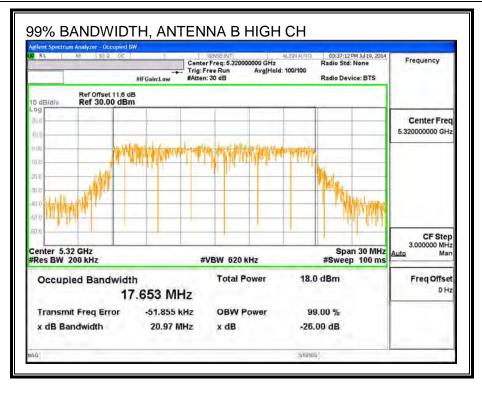
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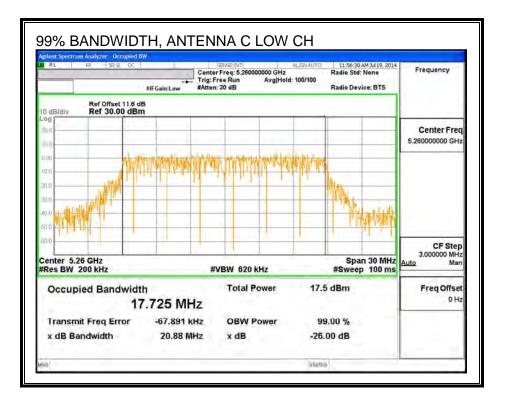




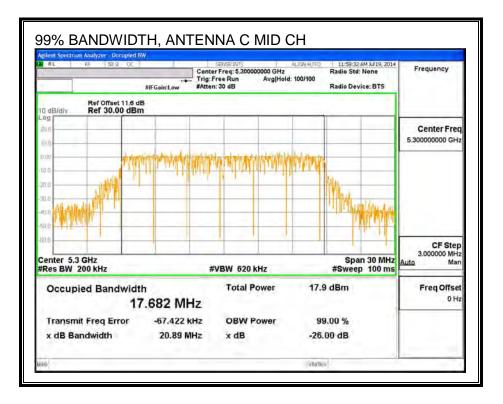
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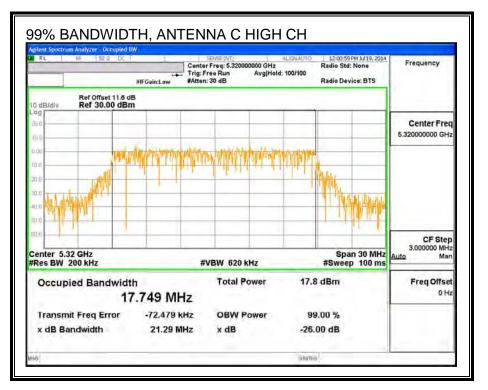


## 99% BANDWIDTH, ANTENNA C



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## 9.11.1.AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

Average Power Results

Channel	Frequency	Antenna B	Antenna C	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5260	15.92	16.92	19.46
Mid	5300	15.95	16.97	19.50
High	5320	15.89	15.94	18.93

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## 9.11.2. OUTPUT POWER AND PSD

## LIMITS

FCC §15.407 (a) (2)

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

#### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

Antenna B	Antenna C	<b>Uncorrelated Chains</b>	
Antenna	Antenna	Directional	
Gain	Gain	Gain	
(dBi)	(dBi)	(dBi)	
-0.06	2.17	1.20	

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

Antenna B	Antenna C	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.06	2.17	4.14

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#### Bandwidth, Antenna Gain and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5260	21.60	1.20	4.14	24.00	11.00
Mid	5300	21.63	1.20	4.14	24.00	11.00
High	5320	21.75	1.20	4.14	24.00	11.00

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

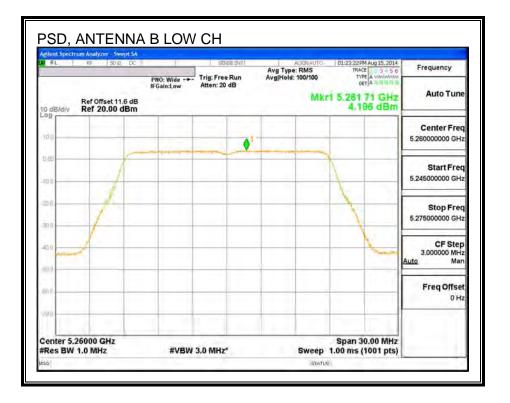
#### **Output Power Results**

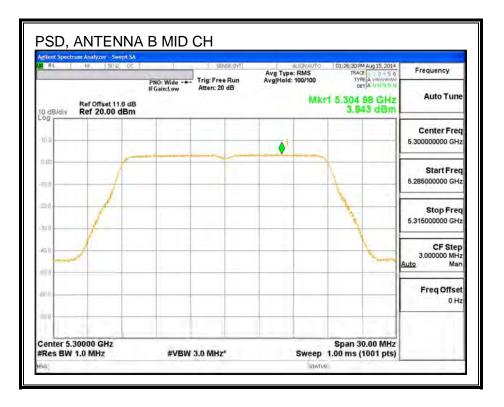
Channel	Frequency	Antenna B Antenna C		Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	15.92	16.92	19.46	24.00	-4.54
Mid	5300	15.95	16.97	19.50	24.00	-4.50
High	5320	15.89	15.94	18.93	24.00	-5.07

## PSD Results

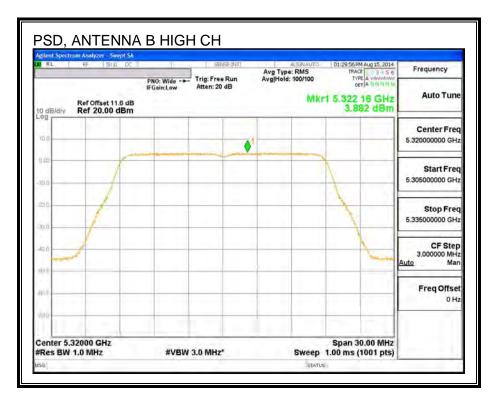
Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	4.20	6.30	8.39	11.00	-2.61
Mid	5300	3.84	6.57	8.43	11.00	-2.57
High	5320	3.88	6.53	8.42	11.00	-2.58

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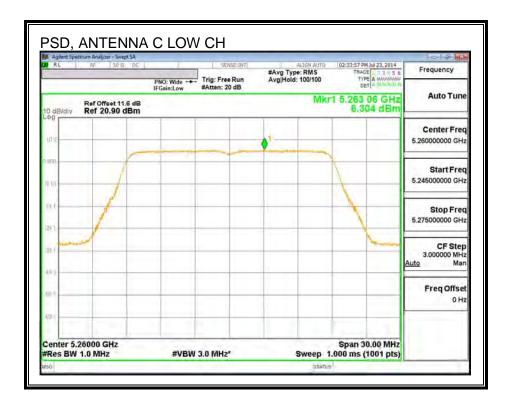




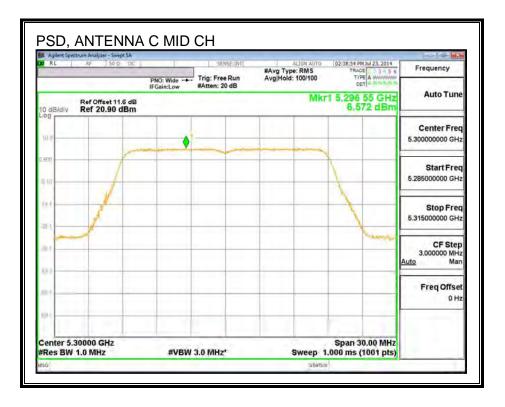
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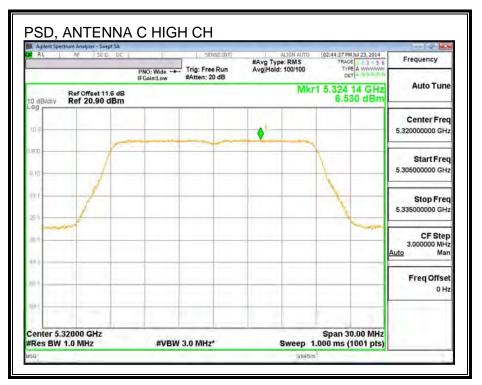


## PSD, ANTENNA C



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## 9.12. 802.11n HT20 2Tx STBC/SDM MODE IN THE 5.3 GHz BAND

Refer to Section 9.11, 802.11n HT20 2Tx CDD MODE IN THE 5.3 GHz BAND

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## 9.13. 802.11n HT40 SISO MODE IN THE 5.3 GHz BAND

## 9.13.1. 26 dB BANDWIDTH

## <u>LIMITS</u>

None; for reporting purposes only.

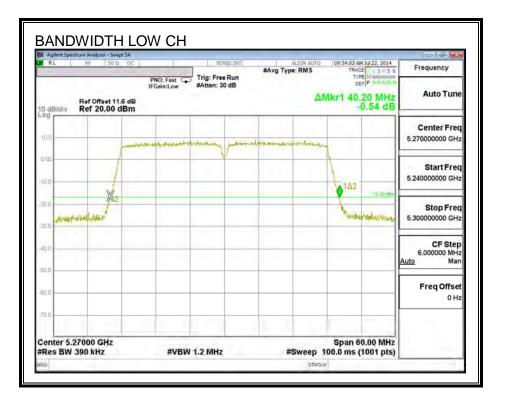
## **RESULTS**

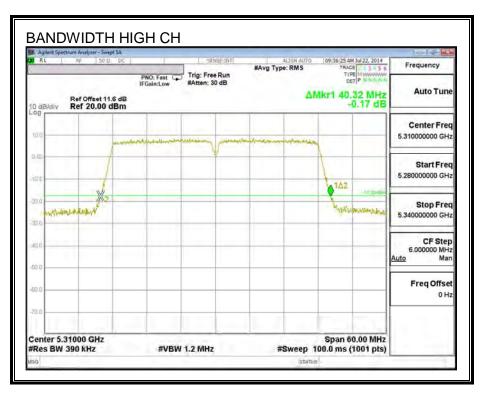
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5270	40.20
High	5310	40.32

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#### 26 dB BANDWIDTH





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## 9.13.2. 99% BANDWIDTH

## <u>LIMITS</u>

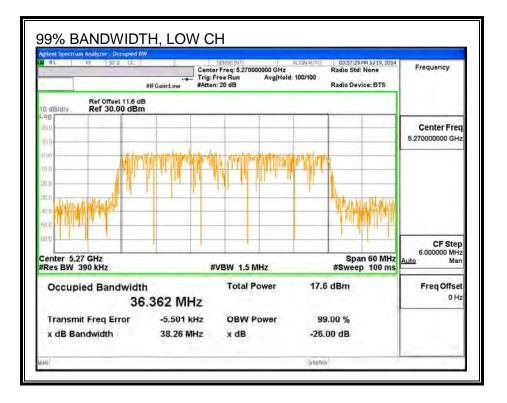
None; for reporting purposes only.

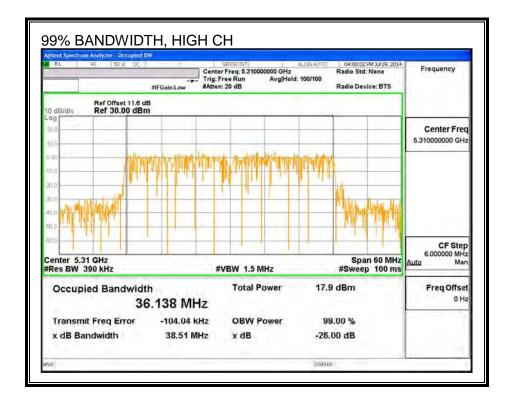
## **RESULTS**

Channel Frequency		99% Bandwidth
(MHz)		(MHz)
Low	5270	36.362
High	5310	36.138

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## 9.13.1.AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

Channel	Frequency	Antenna B Power	Antenna C Power	
	(MHz)	(dBm)	(dBm)	
Low	5270	15.95	17.95	
High	5310	14.87	14.90	

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## 9.13.2. OUTPUT POWER AND PSD

#### LIMITS

FCC §15.407 (a) (2)

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

#### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

#### ANTENNA B



#### ANTENNA C

Antenna				
Gain				
(dBi)				
2.173				

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## ANTENNA B

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5270	40.20	0.06	24.00	11.00
High	5310	40.32	0.06	24.00	11.00

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

#### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	15.95	15.95	24.00	-8.05
High	5310	14.87	14.87	24.00	-9.13

## **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	(MHz) 5270	(dBm) 0.97	(dBm) 0.97	(dBm) 11.00	(dB) -10.03

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## ANTENNA C Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5270	40.20	2.17	24.00	11.00
High	5310	40.32	2.17	24.00	11.00

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

## **Output Power Results**

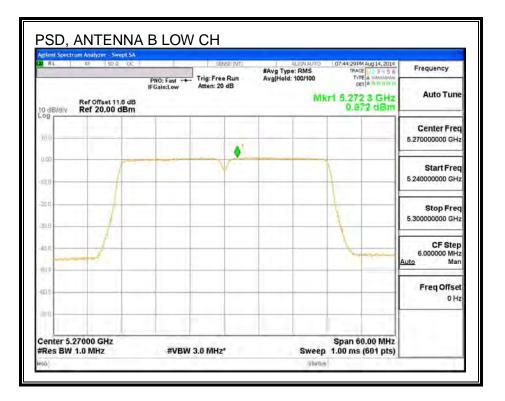
Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	17.95	17.95	24.00	-6.05
High	5310	14.90	14.90	24.00	-9.10

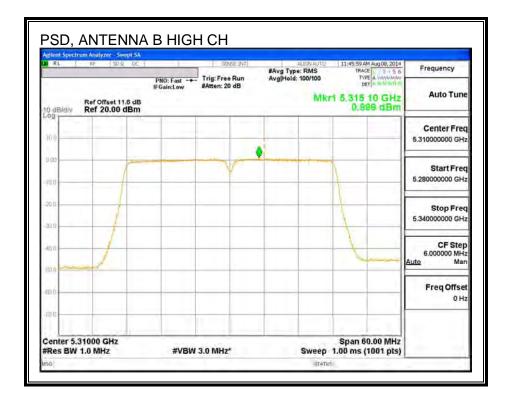
#### **PSD** Results

Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	3.53	3.53	11.00	-7.47
High	5310	0.73	0.73	11.00	-10.28

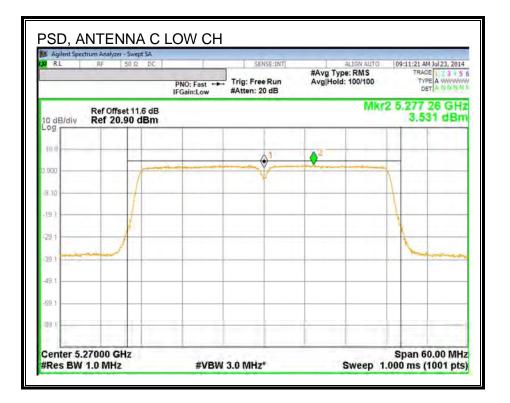
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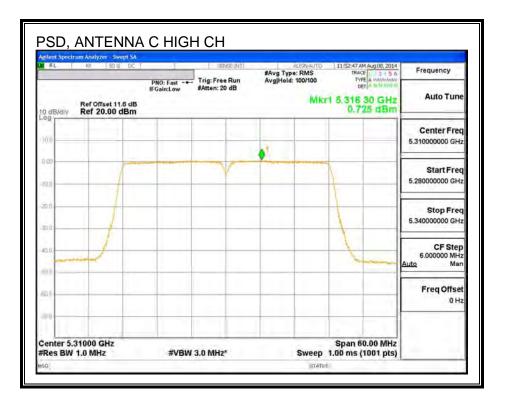
#### PSD, ANTENNA B





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# 9.14. 802.11n HT40 2Tx CDD MODE IN THE 5.3 GHz BAND

## 9.14.1. 26 dB BANDWIDTH

## <u>LIMITS</u>

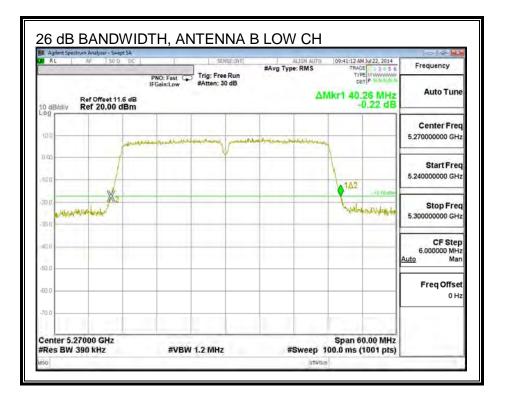
None; for reporting purposes only.

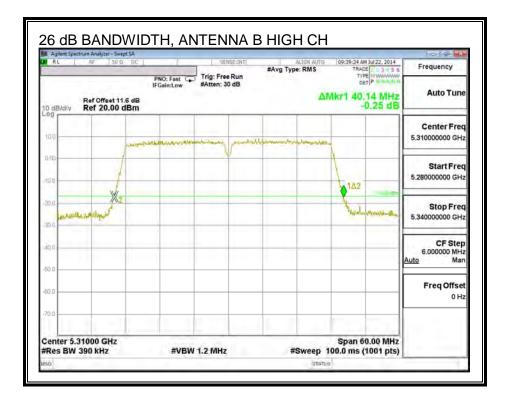
## **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5270	40.26	39.78
High	5310	40.14	40.08

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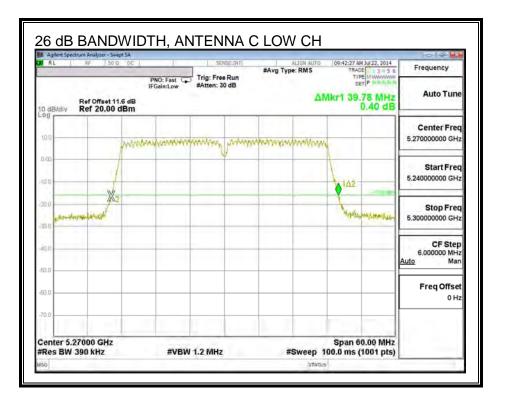
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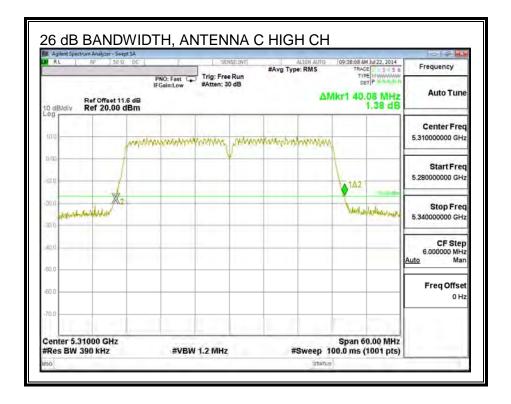




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#### 26 dB BANDWIDTH, ANTENNA C





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## 9.14.2. 99% BANDWIDTH

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

None; for reporting purposes only.

#### **RESULTS**

Channel	Frequency	99% BW	99% BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5270	36.300	36.152
High	5310	36.248	36.136

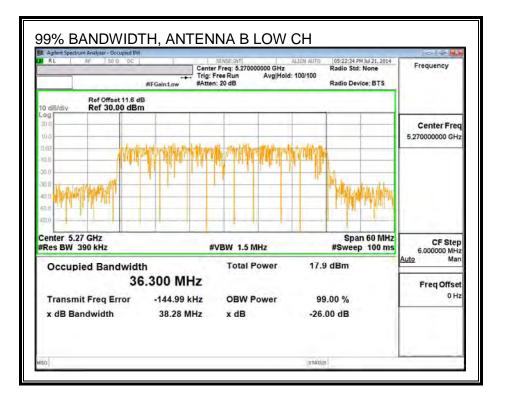
DATE: SEPTEMBER 13, 2014

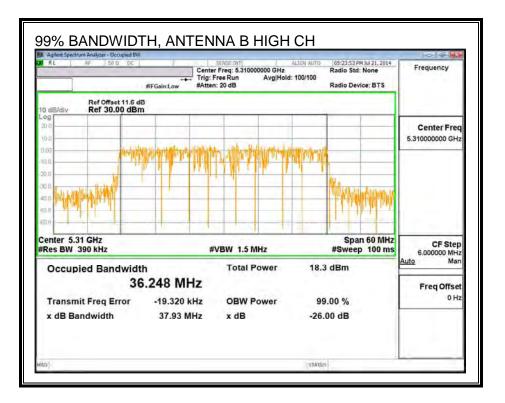
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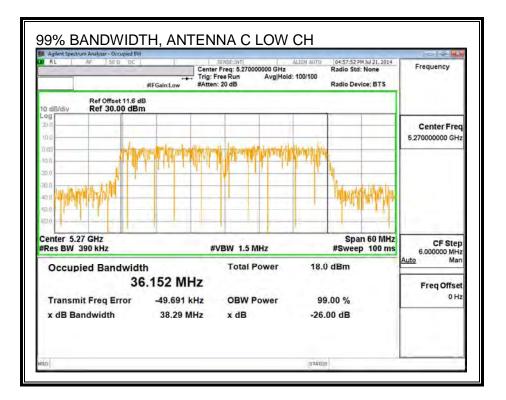
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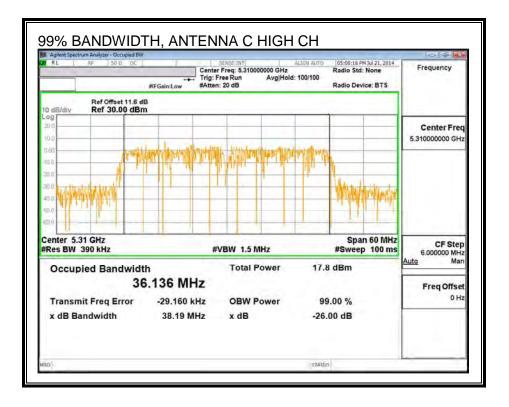




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#### 99% BANDWIDTH, ANTENNA C





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## 9.14.3. AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

#### **Average Power Results**

Channel	Frequency	Antenna B	Antenna C	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5270	16.00	17.93	20.08
High	5310	14.37	14.42	17.41

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## 9.14.4. OUTPUT POWER AND PSD

## LIMITS

FCC §15.407 (a) (2)

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

#### TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### DIRECTIONAL ANTENNA GAIN

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

Antenna B	Antenna C	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.06	2.17	1.20

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

Antenna B	Antenna C	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.06	2.17	4.14

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#### Bandwidth, Antenna Gain and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5270	39.78	1.20	4.14	24.00	11.00
High	5310	40.08	1.20	4.14	24.00	11.00

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

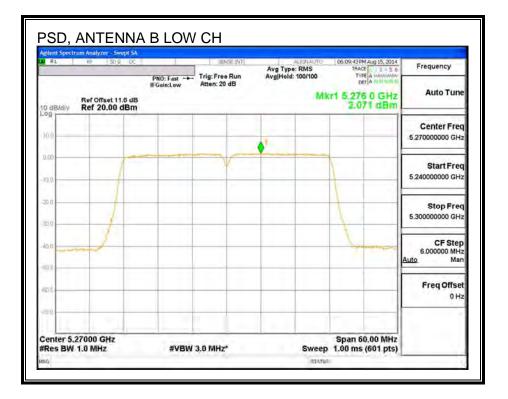
#### **Output Power Results**

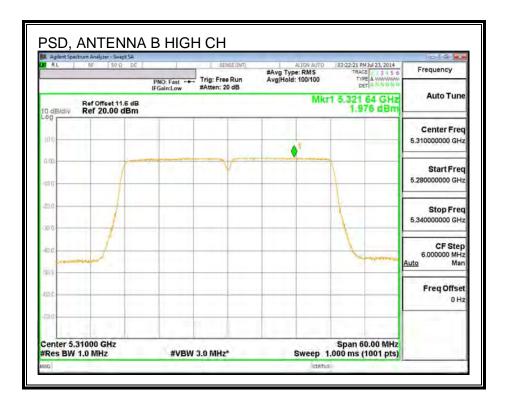
Channel	Frequency	Antenna B	Antenna C	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	16.00	17.93	20.08	24.00	-3.92
High	5310	14.37	14.42	17.41	24.00	-6.59

#### **PSD** Results

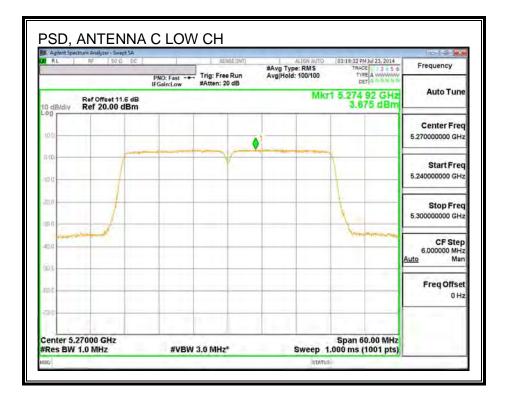
Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	2.07	3.68	5.96	11.00	-5.04
High	5310	1.98	1.45	4.73	11.00	-6.27

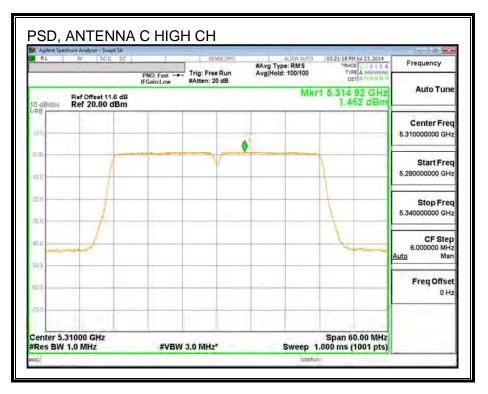
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## 9.15. 802.11n HT40 2Tx STBC/SDM MODE IN THE 5.3 GHz BAND

Refer to Section 9.14, 802.11n HT40 2Tx CDD MODE IN THE 5.3 GHz BAND

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# 9.16. 802.11ac VHT80 SISO MODE IN THE 5.3 GHz BAND

## 9.16.1. 26 dB BANDWIDTH

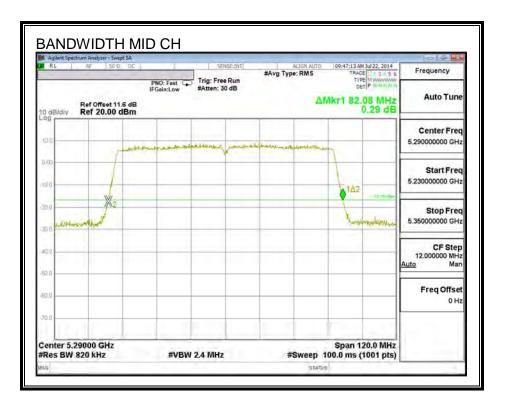
## <u>LIMITS</u>

None; for reporting purposes only.

## <u>RESULTS</u>

Channel	Frequency	26 dB Bandwidth		
	(MHz)	(MHz)		
Mid	5290	82.08		

## 26 dB BANDWIDTH



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## 9.16.2. 99% BANDWIDTH

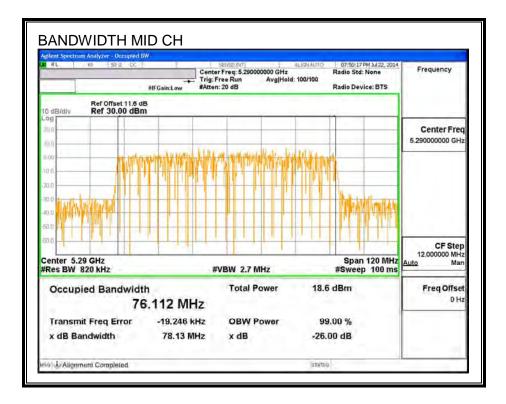
# LIMITS

None; for reporting purposes only.

## <u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Mid	5290	76.112

#### 99% BANDWIDTH



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# 9.16.1.AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

## <u>RESULTS</u>

Channel	Frequency	Antenna B Power	Antenna C Power
	(MHz)	(dBm)	(dBm)
Mid	5290	14.98	14.88

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# 9.16.2. OUTPUT POWER AND PSD

## LIMITS

FCC §15.407 (a) (2)

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

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

## DIRECTIONAL ANTENNA GAIN

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

### ANTENNA B

Antenna
Gain
(dBi)
-0.059

### ANTENNA C

Antenna
Gain
(dBi)
2.173

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# ANTENNA B

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Mid	5290	82.08	-0.06	24.00	11.00

	0.01	
Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD

## **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	14.98	15.19	24.00	-8.81

# **PSD Results**

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-1.01	-0.80	11.00	-11.80

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## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Mid	5290	82.08	2.17	24.00	11.00

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

### **Output Power Results**

Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	14.88	15.09	24.00	-8.91

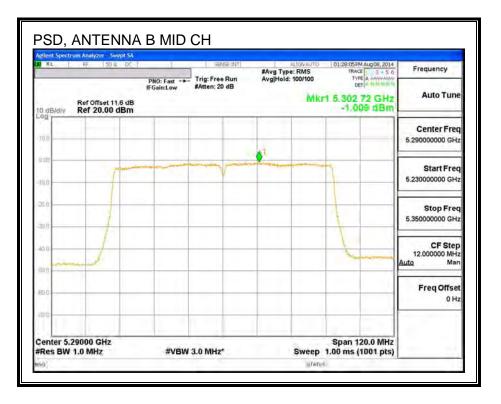
#### **PSD** Results

Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	-0.94	-0.72	11.00	-11.72

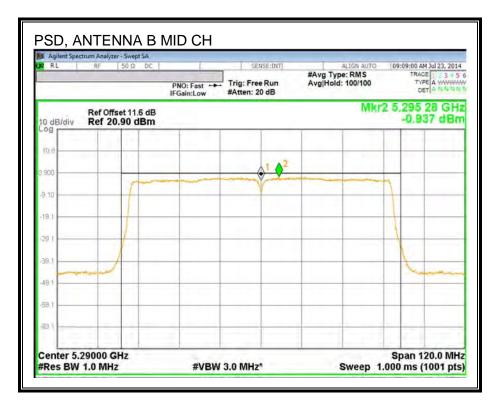
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## PSD, ANTENNA B



## PSD, ANTENNA C



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# 9.17. 802.11ac 80MHz 2TX CDD MODE IN THE 5.3 GHz BAND

# 9.17.1. 26 dB BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

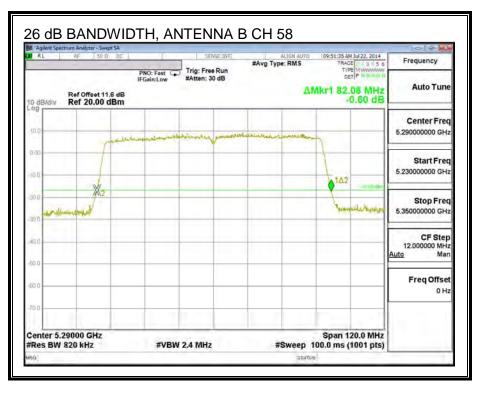
## **RESULTS**

Channel	Frequency	26 dB BW	26 dB BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
58	5290	82.08	81.72

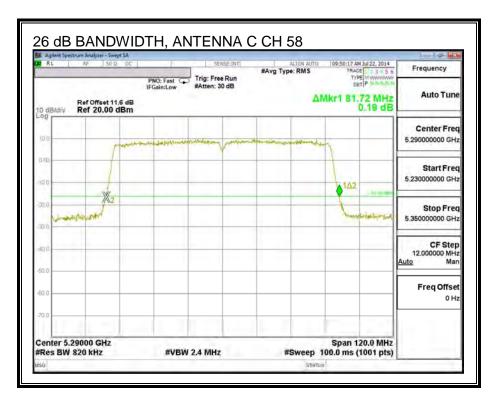
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### REPORT NO: 14U18207-E12A FCC ID: BCGA1567 26 dB BANDWIDTH, ANTENNA B



# 26 dB BANDWIDTH, ANTENNA C



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# 9.17.2. 99% BANDWIDTH

# <u>LIMITS</u>

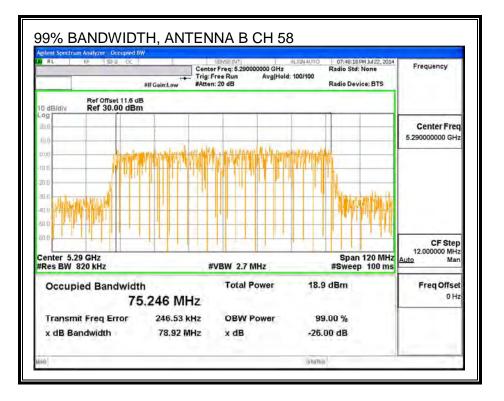
None; for reporting purposes only.

# **RESULTS**

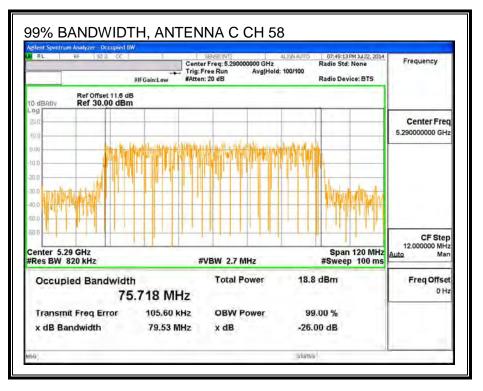
Channel	Frequency	99% BW	99% BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
58	5290	75.246	75.718

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## 99% BANDWIDTH, ANTENNA C



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# 9.17.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

## **RESULTS**

#### **Average Power Results**

Channel	Frequency	Antenna B	Antenna C	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)

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# 9.17.4. OUTPUT POWER AND PSD

## LIMITS

FCC §15.407 (a) (2)

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

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

## **DIRECTIONAL ANTENNA GAIN**

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

Antenna B	Antenna C	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.06	2.17	1.20

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

Antenna B	Antenna C	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
-0.06	2.17	4.14

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## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Mid	5290	81.72	1.20	4.14	24.00	11.00

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

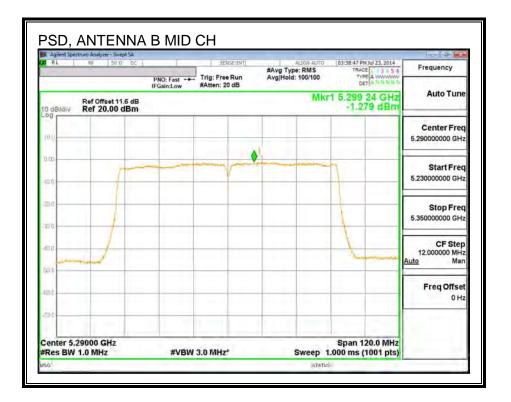
### **Output Power Results**

Channel	Frequency	Antenna B	Antenna C	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	14.38	14.47	17.65	24.00	-6.35

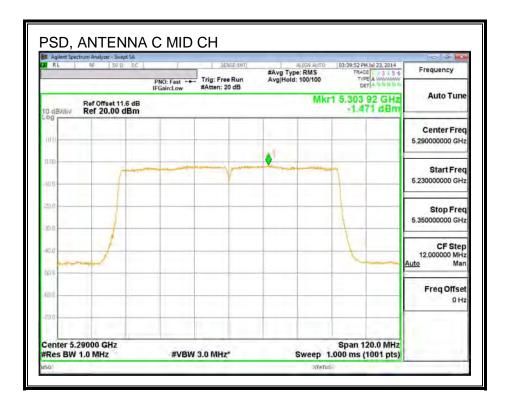
#### **PSD** Results

1	Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
			Meas	Meas	Corr'd	Limit	Margin
			PSD	PSD	PSD		
		(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
	Mid	5290	-1.28	-1.47	1.85	11.00	-9.15

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## PSD, ANTENNA C



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# 9.18. 802.11ac 80MHz 2Tx STBC/SDM MODE IN THE 5.3 GHz BAND

Refer to Section 9.17, 802.11ac 80MHz 2TX CDD MODE IN THE 5.3 GHz BAND

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# 9.19. 802.11a SISO MODE IN THE 5.6 GHz BAND

# 9.19.1. 26 dB BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

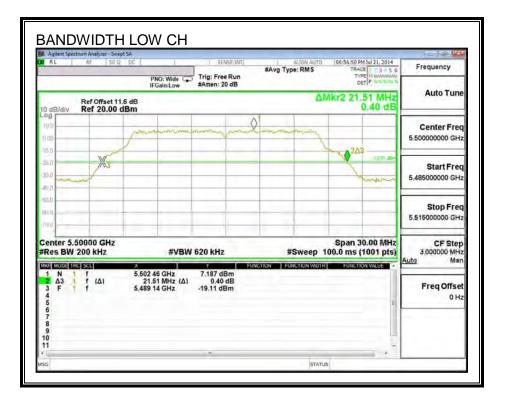
## **RESULTS**

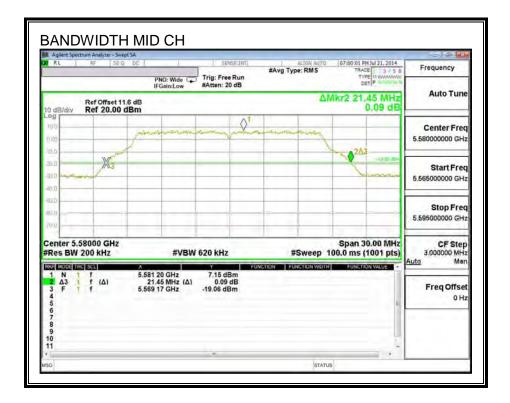
Channel	Frequency	26 dB Bandwidth
	(MHz)	(MHz)
Low	5500	21.51
Mid	5580	21.45
High	5700	21.69
High	5720	21.78

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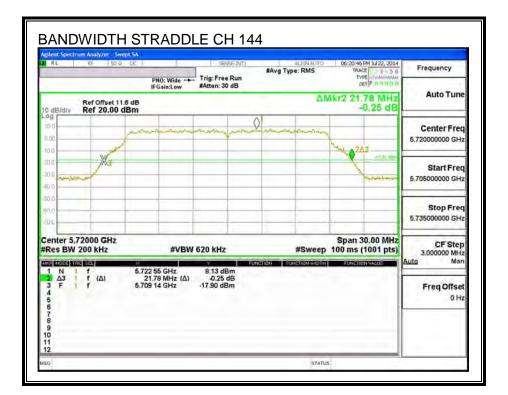
### 26 dB BANDWIDTH





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RL				1					0 4 💌
RL	RF 50	Q DC	_		ISE:INT)	#Avg Type	RMS	07:03:44 PM Jul 21, 2014 TRACE 3 5 6	Frequency
			NO: Wide Gain:Low	#Atten: 20				DET P	
dB/div	Ref Offset 1 Ref 20.00		-				ΔN	kr2 21.69 MHz 0.06 dB	Auto Tune
eg po					01				1.00
ux o		mo	man	minter	Lon	marting	monthly		Center Free 5,70000000 GH;
(0)	-	V					1		5.70000000 GH
00	W	9			-			203	
an more	mar M3		-					withourson	Start Free 5.685000000 GH:
0.0									
0.0	1								
0.0									Stop Free
0.0.8	1	-	-	-		-			5.715000000 GH
00)	1	-		-			-		
enter 5.70	000 GHz						_	Span 30.00 MHz	CF Ster
Res BW 2	00 kHz		#VBW	620 kHz		#S	weep 1	00.0 ms (1001 pts)	3.000000 MH
NR MODE TRC	scu	х		Y		TION   FUNC	TION WOTH	FUNCTION VALUE	Auto Mar
1 N 1 2 A3 1	f (Δ)		9 MHz (A)	7.295 dE					
3 F 1	f	5.689 1		-18.96 dE					Freq Offse
4								E	OH
6									
5 6 7 8 9									
0									
1								-	
G							STATUS		



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# 9.19.2. 99% BANDWIDTH

# LIMITS

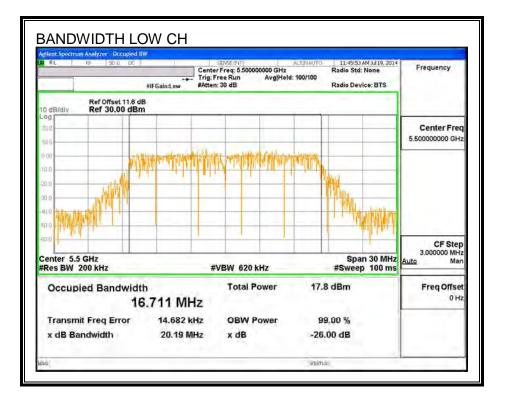
None; for reporting purposes only.

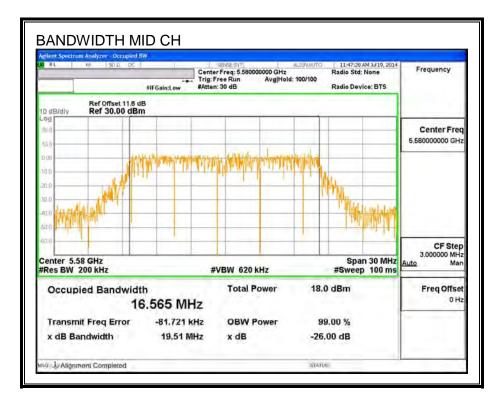
# <u>RESULTS</u>

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5500	16.711
Mid	5580	16.565
High	5700	16.457
High	5720	17.709

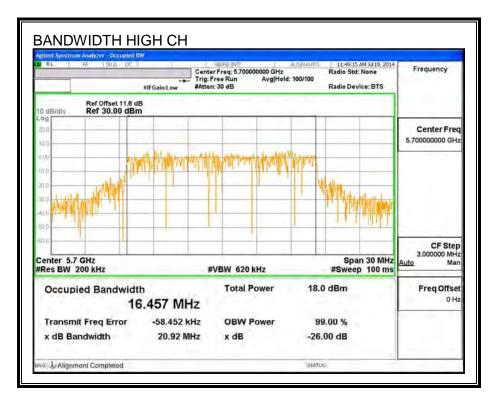
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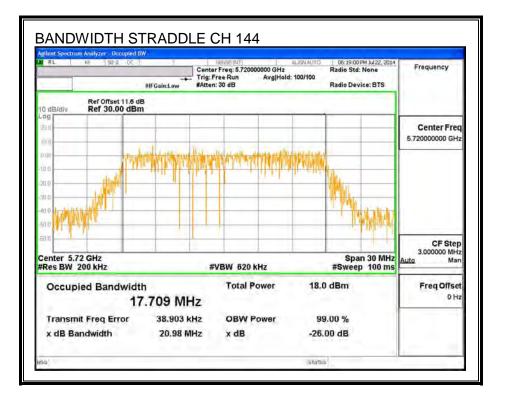
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# 9.19.1.AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

# <u>RESULTS</u>

Channel	Frequency Antenna B Power		Antenna C Power
	(MHz)	(dBm)	(dBm)
Low	5500	16.45	16.90
Mid	5580	16.48	17.99
High	5700	14.98	14.81
High	5720	16.48	17.85

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# 9.19.2. OUTPUT POWER AND PSD

# <u>LIMITS</u>

FCC §15.407 (a) (2)

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

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

## **DIRECTIONAL ANTENNA GAIN**

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

## ANTENNA B

Antenna
Gain
(dBi)
0.155

## ANTENNA C

Antenna
Gain
(dBi)
3.004

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# ANTENNA B

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5500	21.51	0.16	24.00	11.00
Mid	5580	21.45	0.16	24.00	11.00
High	5700	21.69	0.16	24.00	11.00

Duty Cycle CF (dB) 0.00

Included in Calculations of Corr'd Power & PSD

## **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	16.45	16.45	24.00	-7.55
Mid	5580	16.48	16.48	24.00	-7.52
High	5700	14.98	14.98	24.00	-9.02

### **PSD** Results

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	5.16	5.16	11.00	-5.84
Mid	5580	5.25	5.25	11.00	-5.76
High	5700	3.22	3.22	11.00	-7.78

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# ANTENNA C

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Power	PSD
		26 dB	Gain	Limit	Limit
		BW			
	(MHz)	(MHz)	(dBi)	(dBm)	(dBm)
Low	5500	21.51	3.00	24.00	11.00
Mid	5580	21.45	3.00	24.00	11.00
High	5700	21.69	3.00	24.00	11.00

0.00

Duty Cycle CF (dB)

Included in Calculations of Corr'd Power & PSD

### **Output Power Results**

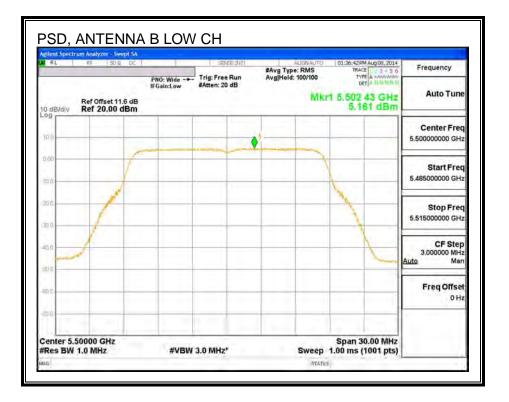
Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	16.90	16.90	24.00	-7.10
Mid	5580	17.99	17.99	24.00	-6.01
High	5700	14.81	14.81	24.00	-9.19

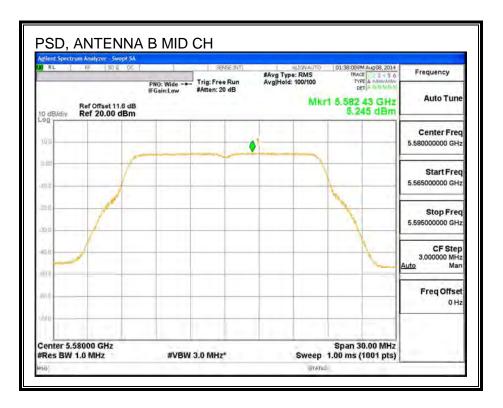
## **PSD** Results

Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	4.98	4.98	11.00	-6.02
Mid	5580	7.18	7.18	11.00	-3.82
High	5700	3.23	3.23	11.00	-7.77

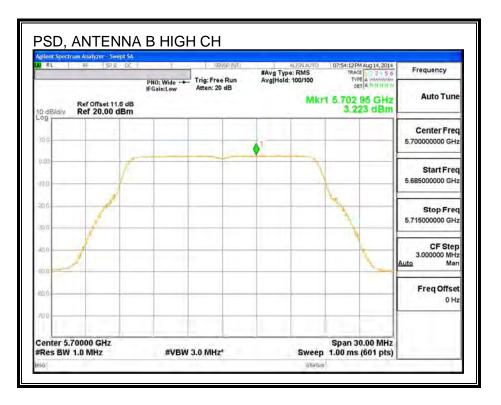
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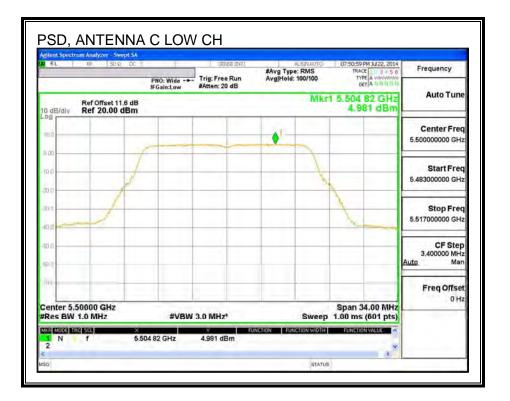


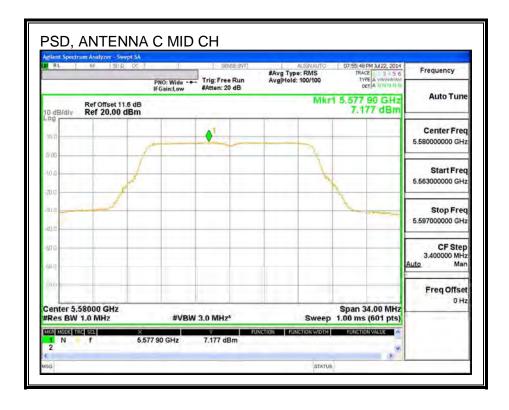
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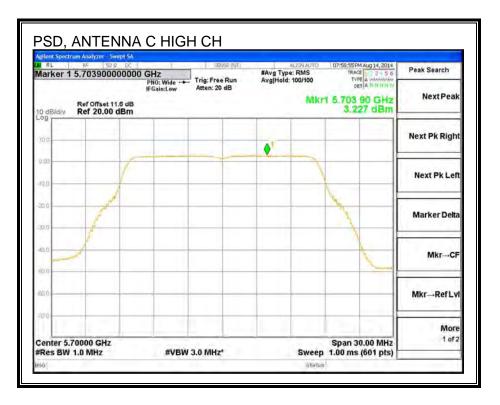
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# PSD, ANTENNA C





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# ANTENNA B STRADDLE CHANNEL 144 RESULTS

### UNII-2C BAND

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	15.89	0.16	0.16	23.01	11.00

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

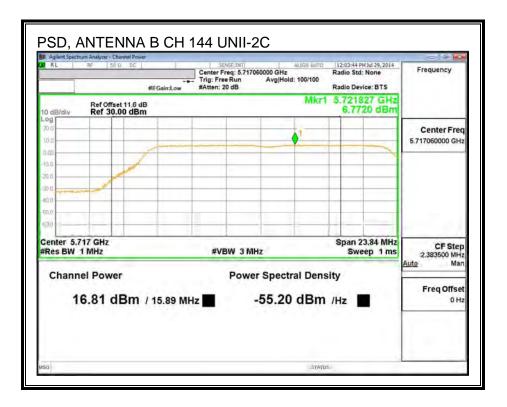
### **Output Power Results**

Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	16.81	16.81	23.01	-6.20

## **PSD** Results

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	6.77	6.77	11.00	-4.23

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## Antenna Gain and Limit

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	0.16	30.00	30.00

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

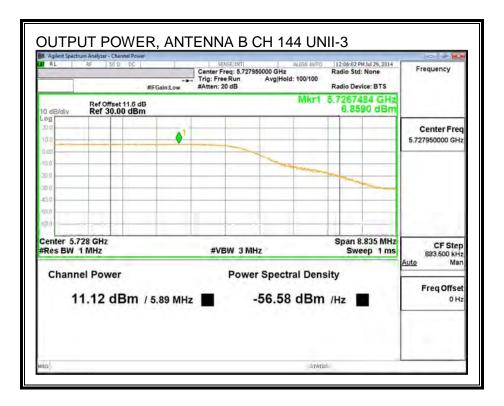
### **Output Power Results**

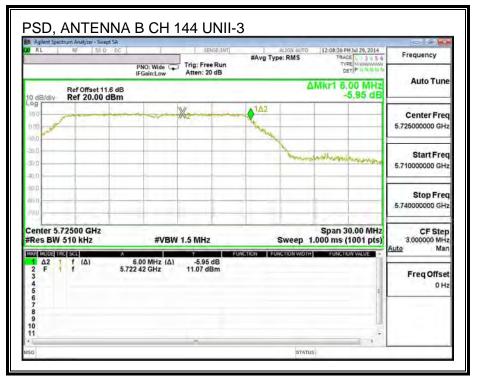
Channel	Frequency	Antenna B	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	11.12	11.12	30.00	-18.88

#### **PSD** Results

Channel	Frequency	Antenna B	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	6.86	6.86	30.00	-23.14

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## UNII-2C BAND

# Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	15.89	3.00	3.00	23.01	11.00

Duty Cycle CE (dB)	0.00	Included in Calculations of Corr'd Power & PSD
Duty Cycle CF (dB)	0.00	included in Calculations of Con a Power & FSD

### **Output Power Results**

Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	15.50	15.50	23.01	-7.51

#### **PSD** Results

Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	5.52	5.52	11.00	-5.48

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RL	RE 50.9	VIFGain:L	Center F Trig: Fre	e Run	55000 GHz Avg Hold	4LJOVAUTO #: 100/100	Radio S	27 PM Aug 08, 2014 Std: None Device: BTS	Frequency
0 dB/div	Ref Offset 1 Ref 20.00					Mkr1		7627 GHz 242 dBm	
		/		<b>●</b> <sup>1</sup>					Center Frec 5.717055000 GH
Center 5.7			#VE	BW 3 MI	Hz		Spar	1 23.84 MHz weep 1 ms	CF Step 2.383500 MH Auto Mar
	el Power 5.50 dB	im / 15.8	э мн			dBm	94	-	Freq Offse 0 H

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## Antenna Gain and Limit

Channel	Frequency	Directional	Power	PSD
		Gain	Limit	Limit
	(MHz)	(dBi)	(dBm)	(dBm)
144	5720	3.00	30.00	30.00

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

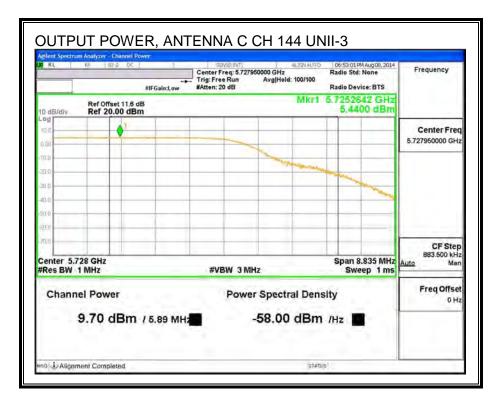
### **Output Power Results**

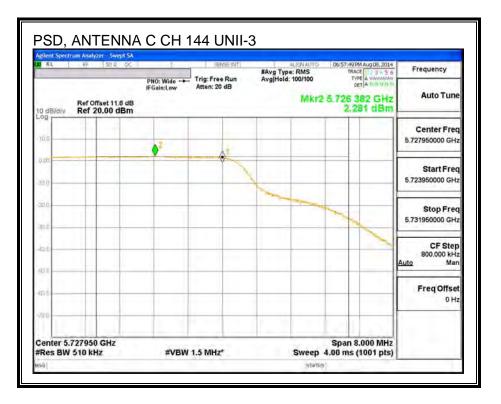
Channel	Frequency	Antenna C	Total	Power	Power
		Meas	Corr'd	Limit	Margin
		Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	9.70	9.70	30.00	-20.30

#### **PSD** Results

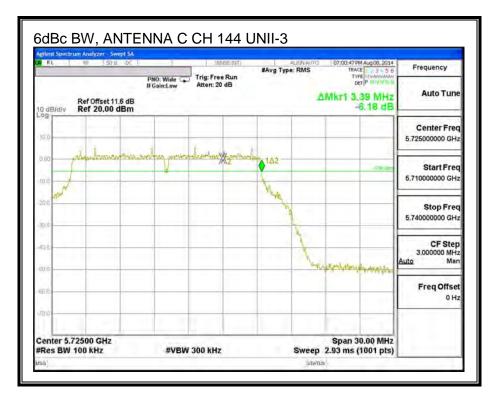
Channel	Frequency	Antenna C	Total	PSD	PSD
		Meas	Corr'd	Limit	Margin
		PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	2.28	-1.29	30.00	-31.29

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# 9.20. 802.11n HT20 2Tx CDD MODE IN THE 5.6 GHz BAND

## 9.20.1. 26 dB BANDWIDTH

#### **LIMITS**

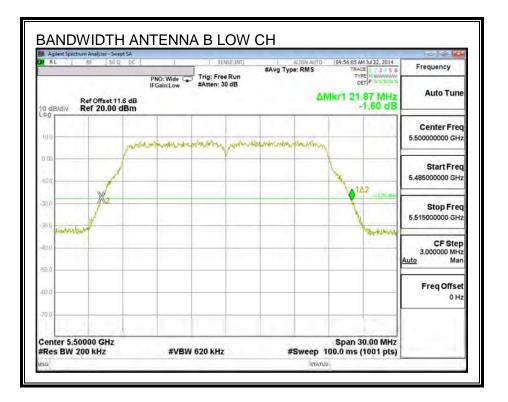
None; for reporting purposes only.

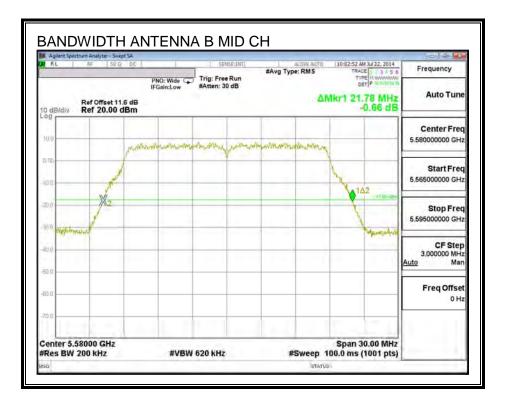
## <u>RESULTS</u>

Channel	Frequency	26 dB BW	26 dB BW
		Antenna B	Antenna C
	(MHz)	(MHz)	(MHz)
Low	5500	21.87	21.66
Mid	5580	21.78	21.90
High	5700	21.78	21.57
High	5720	21.87	21.81

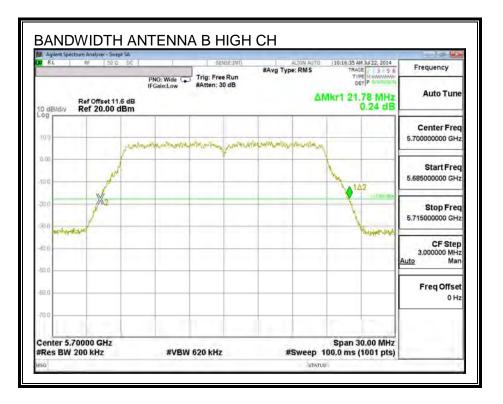
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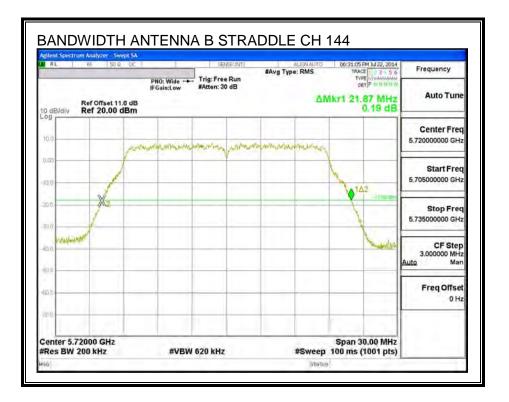
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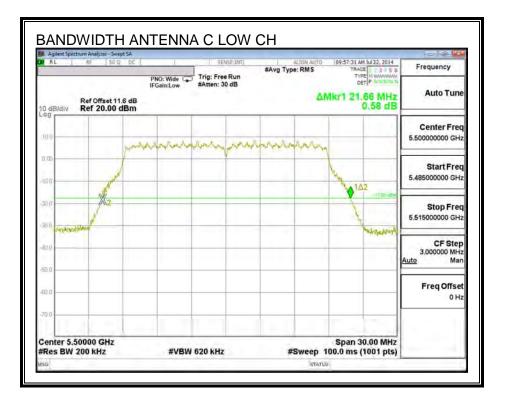


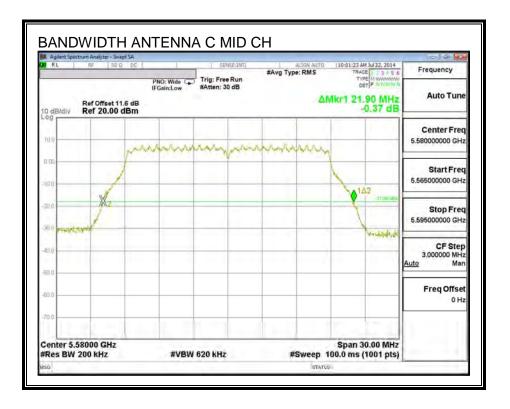
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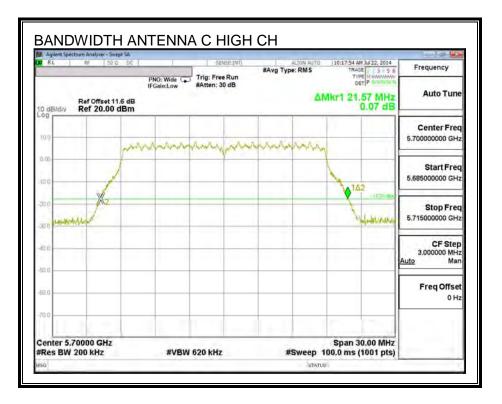


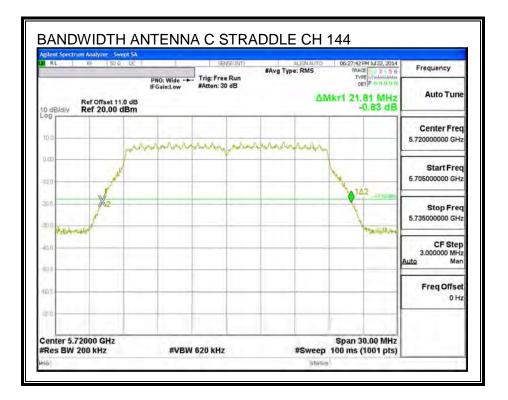
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## 9.20.2. 99% BANDWIDTH

## LIMITS

None; for reporting purposes only.

## <u>RESULTS</u>

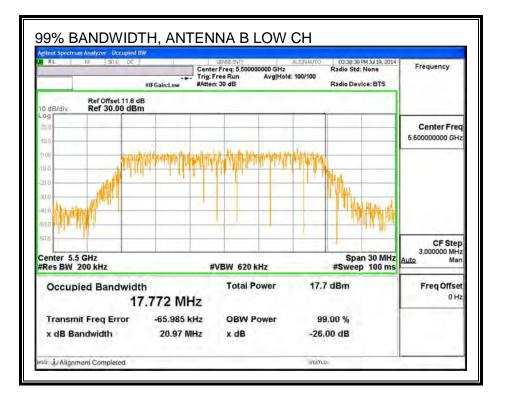
Channel	Frequency	99% BW	99% BW	
		Antenna B	Antenna C	
	(MHz)	(MHz)	(MHz)	
Low	5500	17.772	17.736	
Mid	5580	17.671	17.580	
High	5700	17.772	17.683	
High	5720	17.693	17.723	

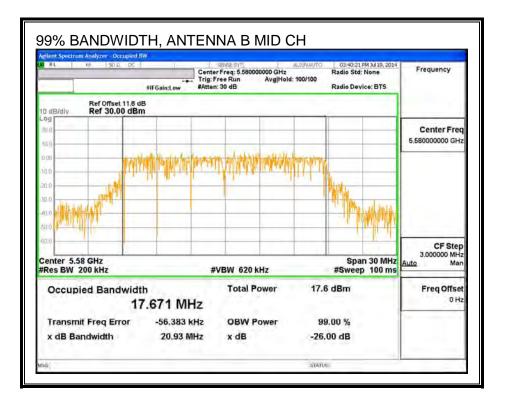
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 UL VERIFICATION SERVICES INC.
 FORM NO: CCSUP4701J

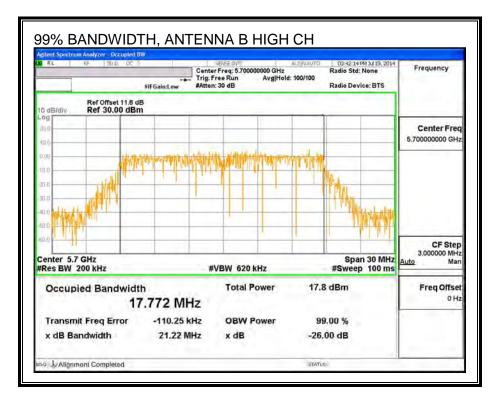
 47173 BENICIA STREET, FREMONT, CA 94538, USA
 TEL: (510) 771-1000
 FAX: (510) 661-0888

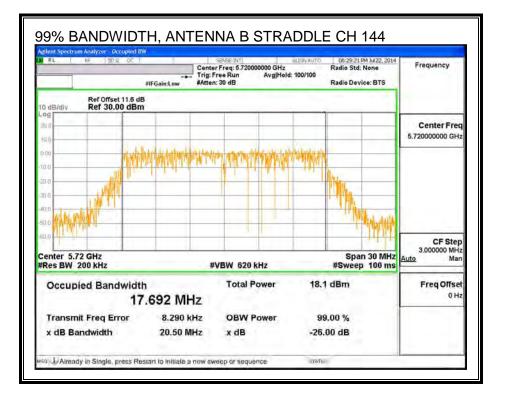
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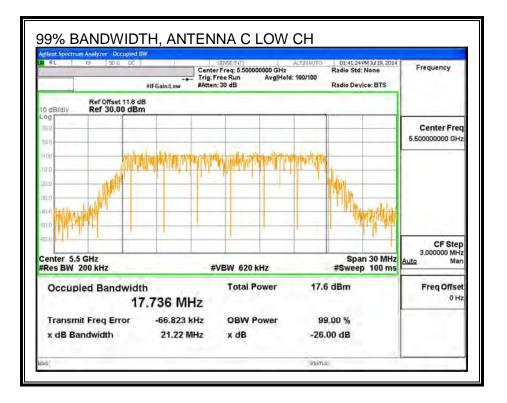


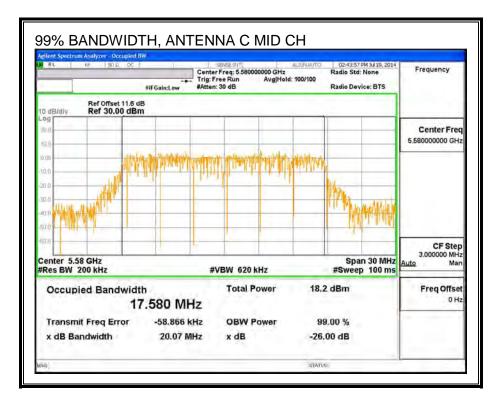
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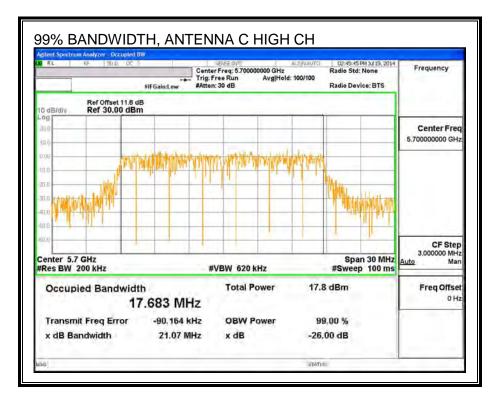


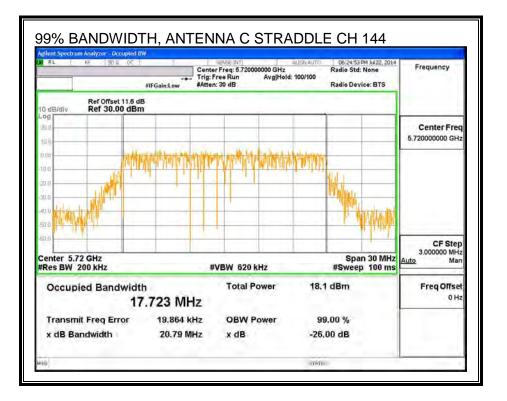
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## 9.20.1. AVERAGE POWER

## **LIMITS**

None; for reporting purposes only.

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

#### Average Power Results

Channel	Frequency	Antenna B	Antenna C	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	15.87	15.90	18.90
Mid	5580	16.48	16.98	19.75
High	5700	13.92	13.95	16.95
High	5720	16.46	16.90	19.70

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## 9.20.2. OUTPUT POWER AND PSD

## <u>LIMITS</u>

FCC §15.407 (a) (2)

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

## TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

The cable assembly insertion loss of 11.6 dB (including 10 dB pad and 1.6 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **DIRECTIONAL ANTENNA GAIN**

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

Antenna B	Antenna C	<b>Uncorrelated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
0.16	3.00	1.81

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

Antenna B	Antenna C	<b>Correlated Chains</b>
Antenna	Antenna	Directional
Gain	Gain	Gain
(dBi)	(dBi)	(dBi)
0.16	3.00	4.71

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#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
Low	5500	21.66	1.81	4.71	24.00	11.00
Mid	5580	21.78	1.81	4.71	24.00	11.00
High	5700	21.57	1.81	4.71	24.00	11.00

Duty Cycle CF (dB) 0.00

Included in Calculations of Corr'd Power & PSD

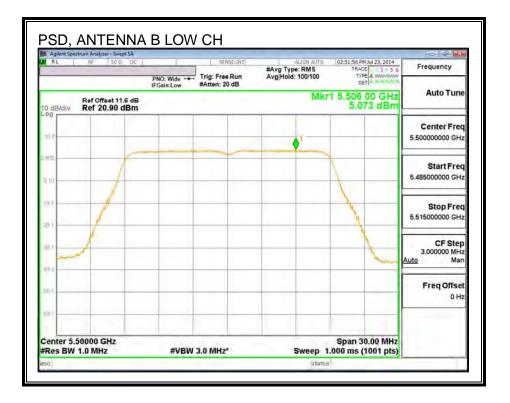
Output Power Results

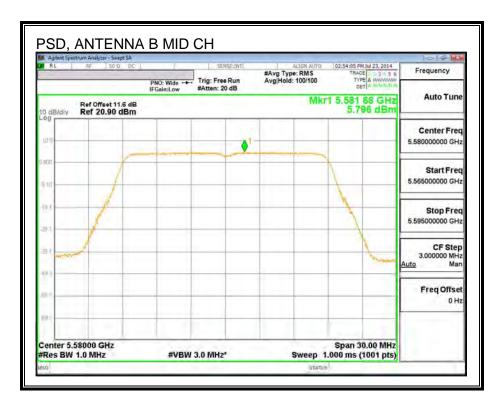
Channel	Frequency	Antenna B	Antenna C	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	15.87	15.90	18.90	24.00	-5.10
Mid	5580	16.48	16.98	19.75	24.00	-4.25
High	5700	13.92	13.95	16.95	24.00	-7.05

#### **PSD** Results

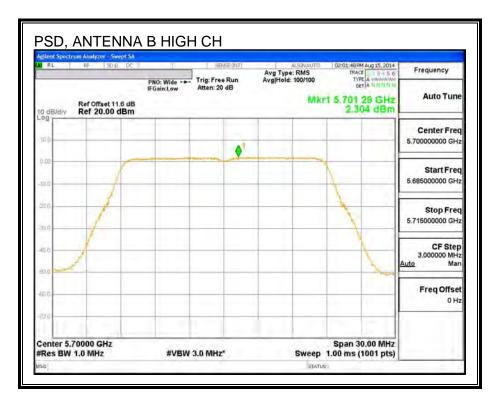
Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	5.07	4.98	8.04	11.00	-2.96
Mid	5580	5.80	5.94	8.88	11.00	-2.12
High	5700	2.30	2.14	5.23	11.00	-5.77

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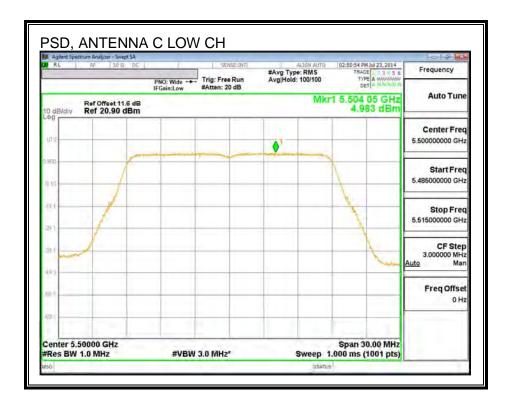




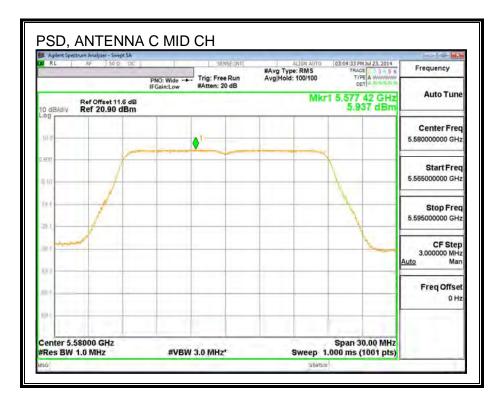
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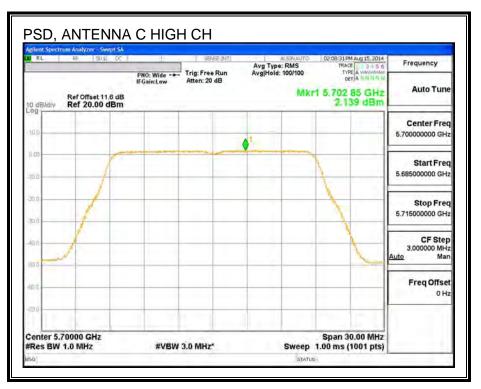


## PSD, ANTENNA C



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#### **STRADDLE CHANNEL 144 RESULTS**

#### UNII-2C BAND

## Bandwidth, Antenna Gain, and Limits

Channel	Frequency	Min	Directional	Directional	Power	PSD
		26 dB	Gain	Gain	Limit	Limit
		BW	for Power	for PSD		
	(MHz)	(MHz)	(dBi)	(dBi)	(dBm)	(dBm)
144	5720	15.91	1.81	4.71	23.02	11.00

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

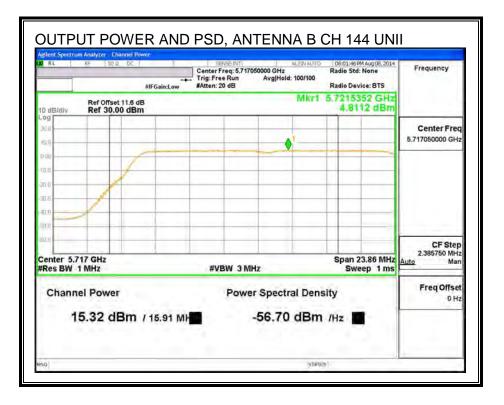
#### **Output Power Results**

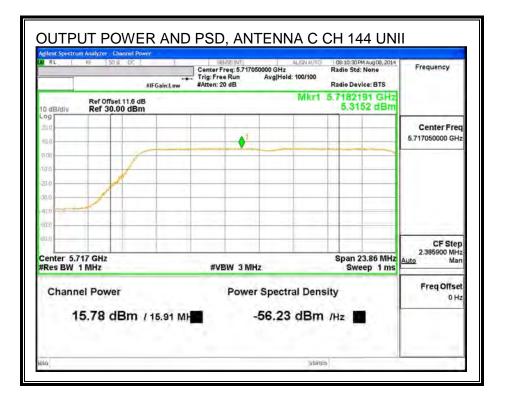
Channel	Frequency	Antenna B	Antenna C	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	15.32	15.78	18.57	23.02	-4.45

#### **PSD Results**

Channel	Frequency	Antenna B	Antenna C	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
144	5720	4.81	5.32	8.08	11.00	-2.92

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