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INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

Notebook with Bluetooth/BLE and 802.11a/b/g/n/ac

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Prepared for

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
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SUWON-CITY, GYEONGGI-DO 443-742, SOUTH KOREA

EUT DESCRIPTION: Notebook with Bluetooth/BLE and 802.11a/b/g/n/ac

MODEL: XE503C12

SERIAL NUMBER: LC11DV2F100191A 01.2014 (CONDUCTED)
LC11DV2F100193A 01.2014 (RADIATED)

DATE TESTED: February 13-27, 2014

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

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.

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Tested By:

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Wise LAB TECHNICIAN
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, ANSI C63.4-2009, RSS-GEN Issue 3, RSS-210 Issue 8.
KDB for 802.11 AC: 644545 D02 Alternative Guidance for 802.11ac v01; 644545 D01 Guidance for IEEE 802.11ac v01r01.

3. FACILITIES AND ACCREDITATION

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

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

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 18000 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 Notebook with Bluetooth/BLE and 802.11a/b/g/n/ac.

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Total Output Power (dBm)	Total Output Power (mW)
5180-5240	802.11a	15.38	34.51
5180-5240	802.11n HT20	14.08	25.59
5190-5230	802.11n HT40	14.15	26.00
5210	802.11ac HT80	9.18	8.28
5260-5320	802.11a	16.64	46.13
5260-5320	802.11n HT20	15.67	36.90
5270-5310	802.11n HT40	14.45	27.86
5290	802.11ac HT80	9.4	8.71
5500-5720	802.11a	16.11	40.83
5500-5720	802.11n HT20	15.38	34.51
5510-5710	802.11n HT40	13.21	20.94
5530-5690	802.11ac HT80	9.52	8.95
5745-5825	802.11a	16.66	46.34
5745-5825	802.11n HT20	15.11	32.43
5755-5795	802.11n HT40	14.11	25.76
5775	802.11ac HT80	8.64	7.31

The transmitter has average conducted output power as follows:

Band (GHz)	Mode	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm) Chain 0	Avg Pwr (dBm) Chain 1
5.2(UNII)	802.11a	6 Mbps	1 Tx	36	5180	11.4	
				40	5200	11.4	
				48	5240	11.5	
			1 Tx	36	5180		11.4
				40	5200		11.4
				48	5240		11.5
			2 Tx	36	5180	11.5	11.4
				40	5200	11.5	11.4

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				48	5240	11.5	11.5
	802.11n(HT20)	MCS0	1 Tx	36	5180	11.5	
				40	5200	11.6	
				48	5240	11.7	
			1 Tx	36	5180		11.4
				40	5200		11.3
				48	5240		11.6
		MCS0	2 Tx	36	5180	11.5	11.4
				40	5200	11.6	11.3
				48	5240	11.7	11.8
	802.11n(HT40)	MCS0	1 Tx	38	5190	8.7	
				46	5230	10.5	
			1 Tx	38	5190		8.5
				46	5230		10.8
		MCS0	2 Tx	38	5190	8.7	8.5
				46	5230	10.6	10.9
	802.11ac(20MHz)	MCS0	1 Tx	36	5180	7.8	
				40	5200	7.8	
				48	5240	8	
			1 Tx	36	5180		8.5
				40	5200		8.4
				48	5240		8.5
			2 Tx	36	5180	7.8	8.5
				40	5200	7.5	8.4
				48	5240	8	8.5
	802.11ac(40MHz)	MCS0	1 Tx	38	5190	7.9	
				46	5230	7.6	
			1 Tx	38	5190		7.9
				46	5230		7.4
			2 Tx	38	5190	7.9	7.9
				46	5230	7.6	7.4
	802.11ac (80MHz)	MCS0	1 Tx	42	5210	6.2	
			1 Tx	42	5210		6.6
		MCS0	2 Tx	42	5210	6.4	6.6
5.3(UNII)	802.11a	6 Mbps	1 Tx	52	5260	12.3	
				60	5300	12.4	
				64	5320	12.5	
			1 Tx	52	5260		12.6
				60	5300		12.8
				64	5320		12.9
			2 Tx	52	5260	12.3	12.6
				60	5300	12.7	12.8
				64	5320	12.5	12.9

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	802.11n(HT20)	MCS0	1 Tx	52	5260	12.3	
				60	5300	12.3	
				64	5320	12.5	
			1 Tx	52	5260		12.4
				60	5300		12.5
				64	5320		12.5
		MCS0	2 Tx	52	5260	12.8	12.8
				60	5300	12.9	12.9
				64	5320	12.9	12.9
	802.11n(HT40)	MCS0	1 Tx	54	5270	10.3	
				62	5310	10.7	
			1 Tx	54	5270		10.4
				62	5310		10.7
		MCS0	2 Tx	54	5270	10.9	10.8
				62	5310	10.8	10.7
	802.11ac(20MHz)	MCS0	1 Tx	52	5260	8.1	
				60	5300	8.4	
				64	5320	8.3	
			1 Tx	52	5260		8.4
				60	5300		8.1
				64	5320		8.2
			2 Tx	52	5260	8.1	8.4
				60	5300	8.4	8.4
				64	5320	8.3	8.2
	802.11ac(40MHz)	MCS0	1 Tx	54	5270	7.9	
				62	5310	8.2	
			1 Tx	54	5270		8.3
				62	5310		7.3
			2 Tx	54	5270	7.9	8.3
				62	5310	8	8.3
	802.11ac (80MHz)	MCS0	1 Tx	58	5290	6.2	
			1 Tx	58	5290		6.2
		MCS0	2 Tx	58	5290	6.7	6.6
5.5(UNII)	802.11a	6 Mbps	1 Tx	100	5500	11.9	
				120	5600	13.5	
				140	5700	11.6	
			1 Tx	100	5500		11.3
				120	5600		13.4
				140	5700		11.3
			2 Tx	100	5500	11.9	11.8
				120	5600	13.5	13.4

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				140	5700	11.6	11.3
	802.11n(HT20)	MCS0	1 Tx	100	5500	11.4	
				120	5600	11.6	
				140	5700	11.6	
			1 Tx	100	5500		11.9
				120	5600		12
				140	5700		12.2
		MCS0	2 Tx	100	5500	11.5	11.9
				120	5600	11.7	12
				140	5700	11.6	12.2
	802.11n(HT40)	MCS0	1 Tx	102	5510	10	
				118	5590	10.5	
				134	5670	10.6	
			1 Tx	102	5510		9.7
				118	5590		10.2
				134	5670		10.1
		MCS0	2 Tx	102	5510	10.4	9.7
				118	5590	10.5	10.4
				134	5670	10.7	10.6
	802.11ac(20MHz)	MCS0	1 Tx	100	5500	7.2	
				116	5580	8	
				140	5700	7.5	
			1 Tx	100	5500		8
				116	5580		7.9
				140	5700		8.3
			2 Tx	100	5500	7	8
				116	5580	8	8
				140	5700	8.4	8.3
	802.11ac(40MHz)	MCS0	1 Tx	134	5670	7.7	
				142	5710	8.5	
			1 Tx	134	5670		8.2
				142	5710		9
		MCS0	2 Tx	134	5670	8.2	8.2
				142	5710	8.5	9
	802.11ac(80MHz)	MCS0	1 Tx	106	5530	5.5	
				138	5690	6	
			1 Tx	106	5530		6.4
				138	5690		6.6
		MCS0	2 Tx	106	5530	6.3	6.9
				138	5690	6.8	7.4
5.8(UNII 4)	802.11a	6 Mbps	1 Tx	149	5745	11	
				153	5765	13.3	

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				157	5785	13.4	
				161	5805	13	
				165	5825	10.6	
			1 Tx	149	5745		11.2
				153	5765		13.5
				157	5785		13.5
				161	5805		13.5
				165	5825		11.3
			2 Tx	149	5745	11.4	11.4
				153	5765	13.7	13.6
				157	5785	13.7	13.6
				161	5805	13	13.5
				165	5825	11.9	11.9
	802.11n(HT20)	MCS0	1 Tx	149	5745	11.6	
				157	5785	11.6	
				161	5805	11.3	
			1 Tx	149	5745		11.9
				157	5785		12.3
				161	5805		12.5
		MCS0	2 Tx	149	5745	11.8	12
				157	5785	12	12.5
				161	5805	11.8	12.7
	802.11n(HT40)	MCS0	1 Tx	151	5755	10.3	
				159	5795	7.6	
			1 Tx	151	5755		10.1
				159	5795		8.5
		MCS0	2 Tx	151	5755	10.4	10.3
				159	5795	8.9	8.8
	802.11ac(20MHz)	MCS0	1 Tx	149	5745	7.5	
				157	5785	7.3	
				165	5825	7.5	
			1 Tx	149	5745		7.6
				157	5785		7.7
				165	5825		7.7
			2 Tx	149	5745	7.5	7.9
				157	5785	8	8.1
				165	5825	7.1	8
	802.11ac(40MHz)	MCS0	1 Tx	151	5755	7	
				159	5795	7.5	
			1 Tx	151	5755		7.6
				159	5795		7.6

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			2 Tx	151	5755	7.5	7.6
				159	5795	7.5	7.8
	802.11ac (80MHz)	MCS0	1 Tx	155	5775	6.3	
			1 Tx	155	5775		6.3
		MCS0	2 Tx	155	5775	6.3	6.3

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5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two FPCB antennas, with a maximum gain of 0.89 dBi for 5150 – 5350MHz; -0.6 for 5470 – 5725MHz; -1.06 dBi for 5785 – 5850MHz.

MAIN Antenna

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
WLAN Antenna (WNC P/N:81.EHD15.GBW) (Customer P/N:BA42-00515A)	Wistron Neweb Corporation	PIFA	113I428W(221) 50 ohm Coaxial. length: 428 mm diameter: 1.13 mm Connector: IPEX	2400-2500MHz -2.60 dBi	2400-2500MHz -0.78 dBi	2400-2500MHz 2.0 max	2400-2500MHz 1.82 dBi
				5150-5350MHz -1.88 dBi	5150-5350MHz 0.89 dBi	5150-5350MHz 2.5 max	5150-5350MHz 2.77 dBi
				5470-5725MHz -3.55 dBi	5470-5725MHz -0.67 dBi	5470-5725MHz 2.5 max	5470-5725MHz 2.88 dBi
				5785-5850MHz -3.99 dBi	5785-5850MHz -1.06 dBi	5785-5850MHz 2.5 max	5785-5850MHz 2.93 dBi

AUX antenna

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and	1E Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
WLAN Antenna (WNC P/N:81.EHD15.GBX) (Customer P/N:BA42-00514A)	Wistron Neweb Corporation	PIFA	113I548G(221) 50 ohm Coaxial. length: 548 mm diameter: 1.13 mm Connector : IPEX	2400-2485MHz -3.08 dBi (peak)	2400-2485MHz -1.30 dBi (peak)	2400-2485MHz 2.0 max	2400-2485MHz 1.78 dBi (peak)
				5150-5350MHz -3.29 dBi (peak)	5150-5350MHz -0.60 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 2.69 dBi (peak)
				5470-5725MHz -3.77 dBi (peak)	5470-5725MHz -0.97 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 2.80 dBi (peak)
				5785-5850MHz -3.97 dBi (peak)	5785-5850MHz -1.12 dBi (peak)	5785-5850MHz 2.5 max	5785-5850MHz 2.85 dBi (peak)

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5.4. 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,Y,Z, it was determined that the X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in the X orientation.

Based on the baseline scan, the worst-case data rates were:

802.11a mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0
802.11ac VHT80mode: MCS0

List of test reduction and modes covering other modes:

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
5180 - 5240	802.11a legacy 1TX	802.11a 2TX CDD
5180 - 5240	802.11HT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5190 - 5230	802.11n HT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5210	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5210	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

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Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
5260 - 5320	802.11a legacy 1TX	802.11a 2TX CDD
5260 - 5320	802.11HT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5270 - 5310	802.11n HT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5290	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5290	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
5500 - 5720	802.11a legacy 1TX	802.11a 2TX CDD
5500 - 5720	802.11HT20 1TX	802.11n HT20 2TX CDD
5500 - 5720	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5510 - 5710	802.11n HT40 1TX	802.11n HT40 2TX CDD
5510 - 5710	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5530-5690	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5530-5690	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

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Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
5745 - 5825	802.11a legacy 1TX	802.11a 2TX CDD
5745 - 5825	802.11HT20 1TX	802.11n HT20 2TX CDD
5745 - 5825	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5755 - 5795	802.11n HT40 1TX	802.11n HT40 2TX CDD
5755 - 5795	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5775	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5775	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	A13-040N1A	CNS440002088DON8 36J00D9	N/A

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1.0m	N/A

TEST SETUP

The EUT is setup as a stand-alone device.

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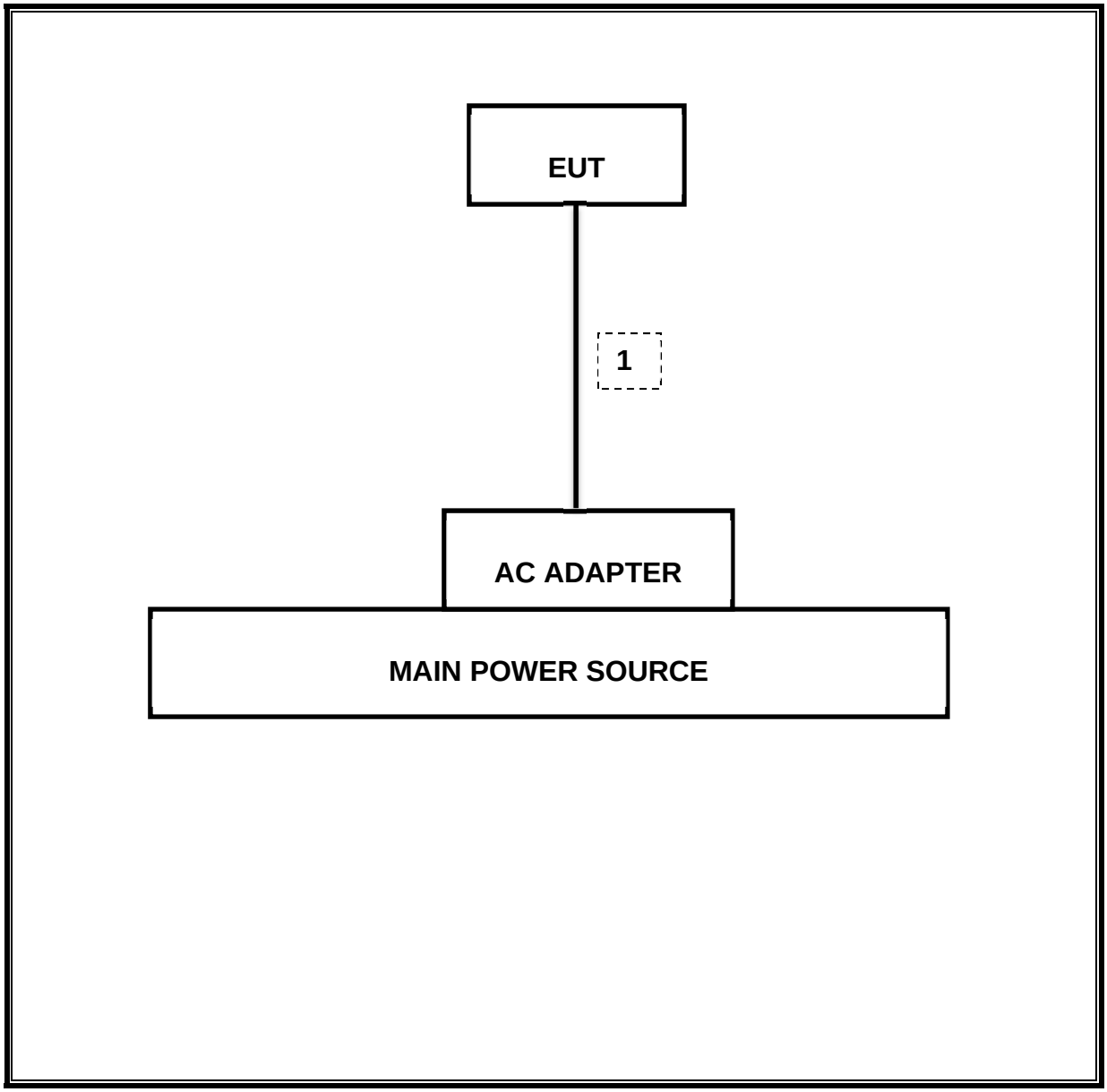
SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/14
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/14
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/14
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/14
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/14
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/14
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/14
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/14
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/14
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/14
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/14
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/14
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/14

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7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)	Occupied Band width (26dB)	N/A	Conducted	Pass	19.6 MHz
15.407 (a)(1)	TX Cond. Power 5.15-2.25	<17dBm or 4+10Log(OBW)		Pass	16.64 dBm
15.407 (a)(2)	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	16.66 dBm
15.407 (a)(3)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		Pass	16.66 dBm
15.407 (a)(5)	PSD	<4dBm for UNII 1 <11dBm for UNII 2-4		Pass	3.90dBm
15.407 (a)(6)	Peak Excursion Ratio	13dB		Pass	10.70 dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	51.21 dBuV
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	50.912 dBuV/m
15.407 (h)(2)	Dynamic Frequency Selection	N/A	Radiated / Conducted	Pass	N/A

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8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

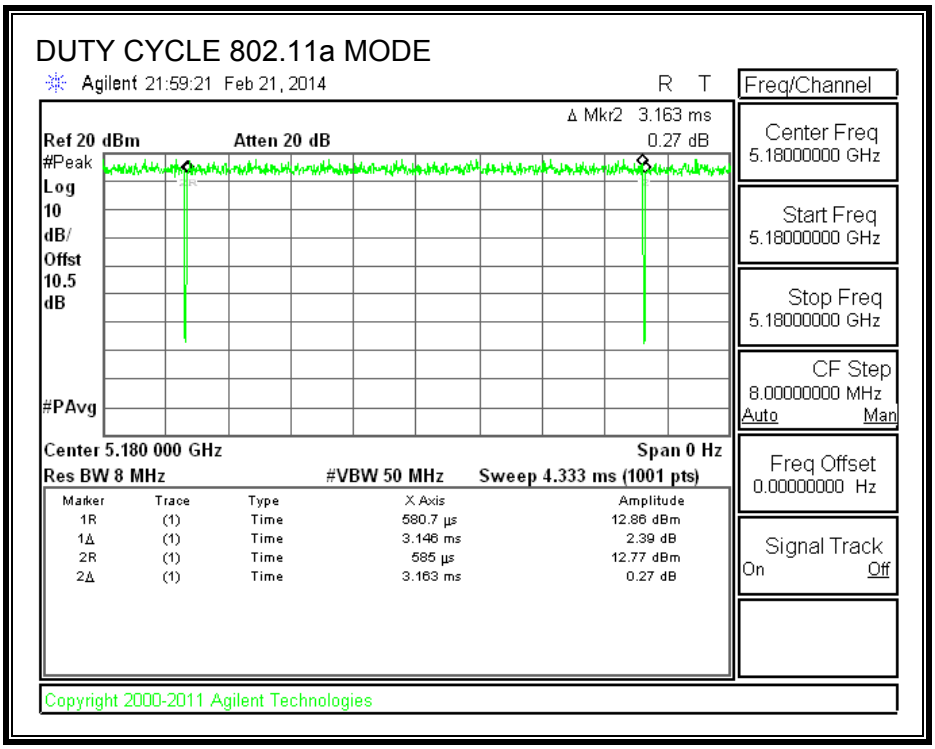
KDB 789033 Zero-Span Spectrum Analyzer Method.

8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	3.15	3.16	0.995	99.5%	0.00	0.010
802.11ac HT80	0.68	0.70	0.982	98.2%	0.00	0.010
802.11n HT20	2.92	2.95	0.989	98.9%	0.00	0.010
802.11n HT40	2.92	2.94	0.993	99.3%	0.00	0.010

8.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a MODE



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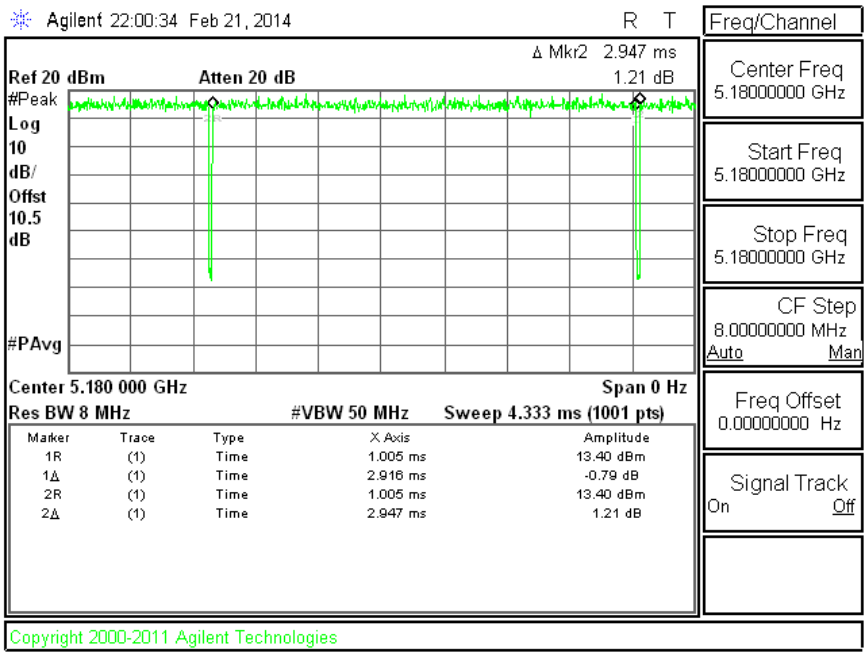
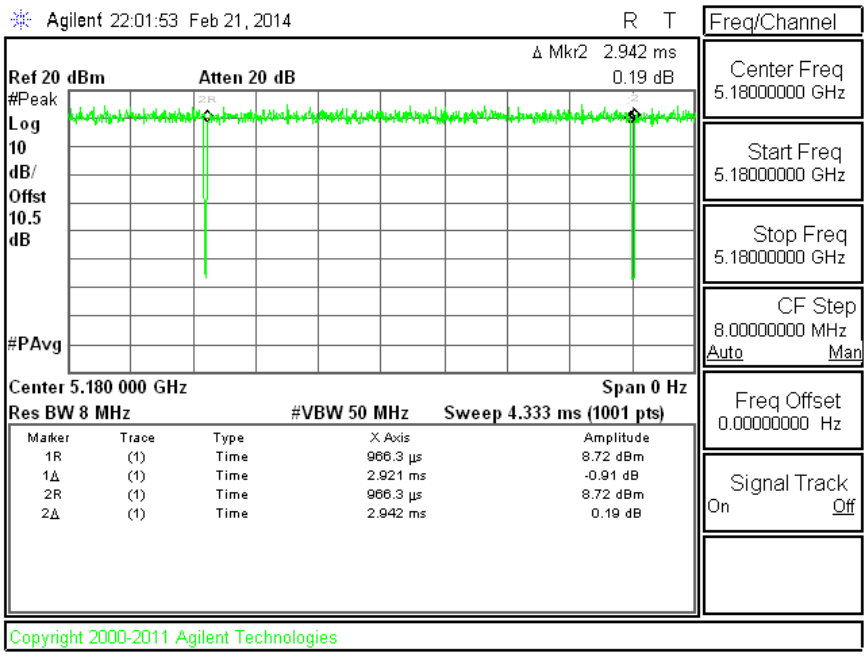
DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



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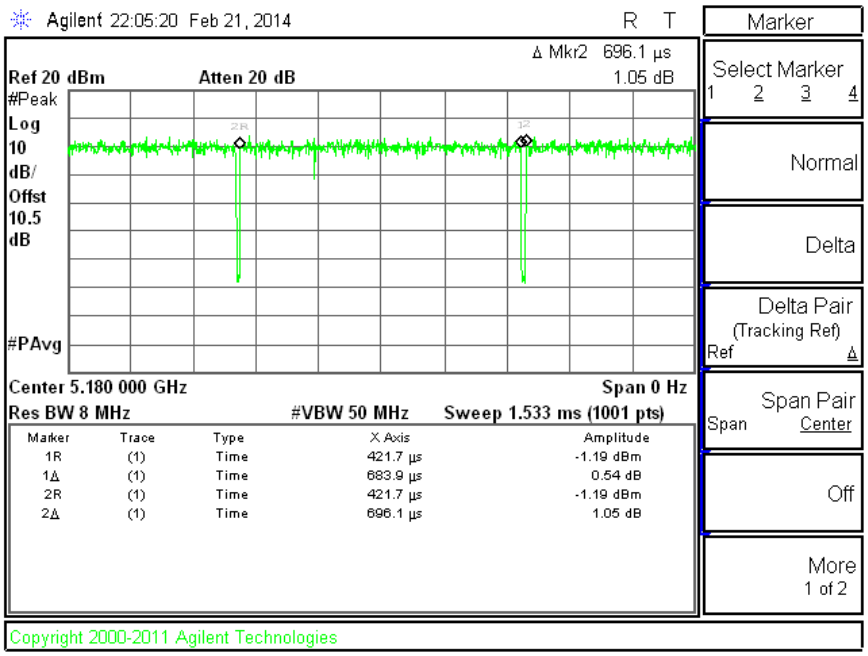
DUTY CYCLE 802.11ac HT80 MODE



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9. MEASUREMENT METHOD

The Duty Cycle is less than 98% and consistent therefore KDB 789033 Method SA-2 is used for .power and PPSD

The Duty Cycle is less than 98% and consistent, KDB 789033 Method AD with Power RMS Averaging and duty cycle correction is used.

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10. ANTENNA PORT TEST RESULTS

10.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.1.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	29.1	22.7
Mid	5200	27.8	19.8
High	5240	29.0	19.9

10.1.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	20.1	20.1
Mid	5200	20.2	20.1
High	5240	20.2	20.1

10.1.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5190	40.6	40.1
High	5230	46.6	40.3

10.1.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5210	159.1	82.5

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10.1.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	30.2	20.0
Mid	5300	31.4	20.1
High	5320	30.3	20.3

10.1.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	20.2	20.1
Mid	5300	20.2	20.1
High	5320	20.2	20.1

10.1.2. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5270	46.9	40.2
High	5310	55.0	40.2

10.1.3. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5290	84.2	81.8

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10.1.4. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	24.5	19.7
Mid	5580	39.4	30.3
High	5700	25.8	20.4

10.1.5. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	20.2	20.0
Mid	5580	20.2	20.0
High	5700	20.0	20.0

10.1.6. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5510	40.5	40.1
Mid	5550	40.5	40.0
High	5670	47.1	40.0

10.1.7. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5530	82.5	82.2
High	5690	82.3	82.2

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10.1.8. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5745	42.0	34.4
Mid	5785	44.5	37.6
High	5825	19.7	24.8

10.1.9. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5745	21.9	20.1
Mid	5785	21.6	20.2
High	5825	20.2	26.3

10.1.10. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5755	46.8	40.5
High	5795	46.7	40.3

10.1.11. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5775	103.0	82.4

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10.1.12. Straddling Channels

802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5720	19.9	20.0

802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5710	40.7	40.2

802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5690	192.9	153.3

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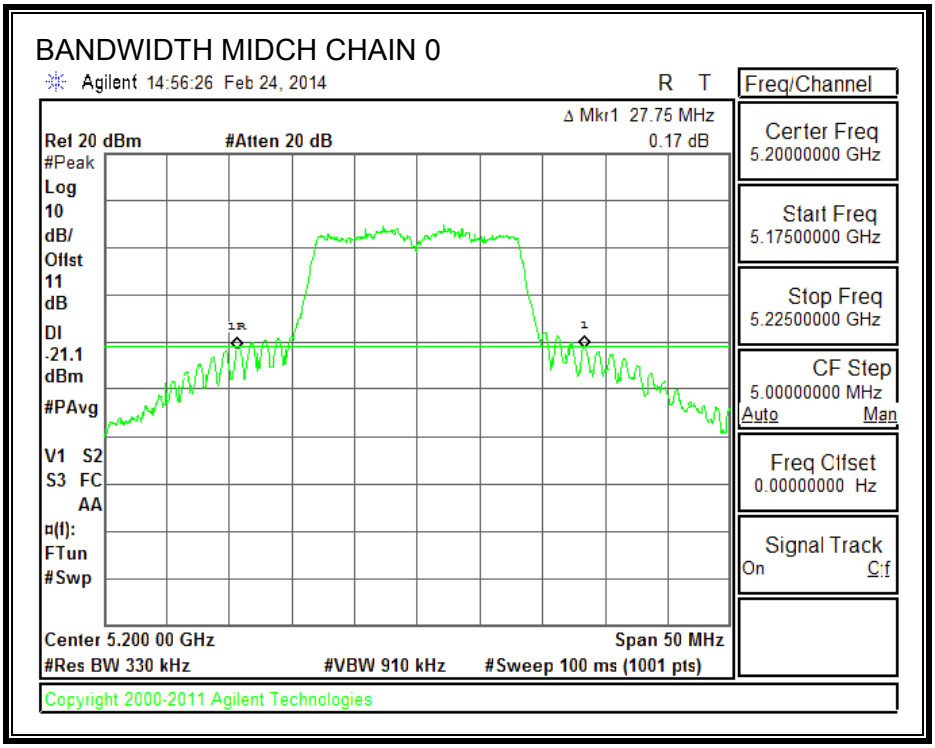
10.1.13. Plots

802.11a 5.2G 26 dB BANDWIDTH



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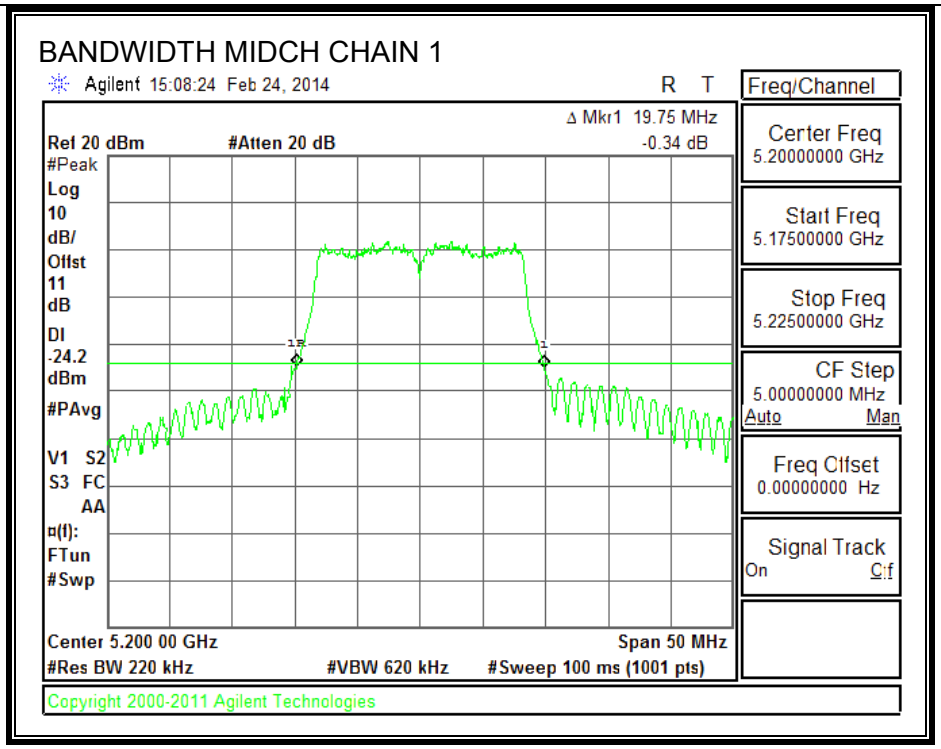
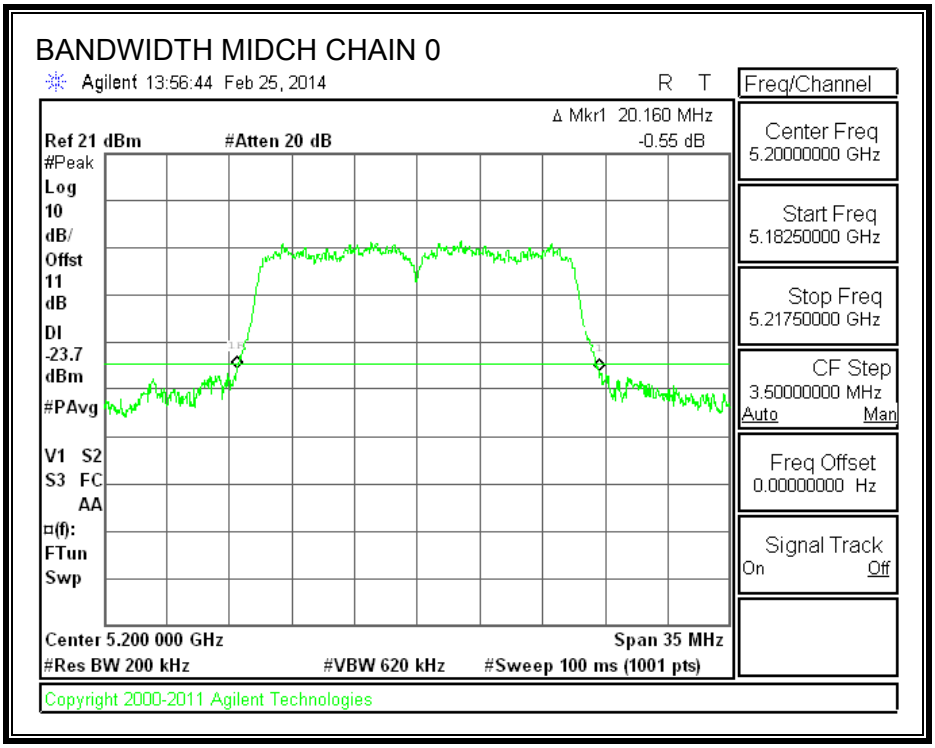


802.11n HT20 5.2G 26 dB BANDWIDTH



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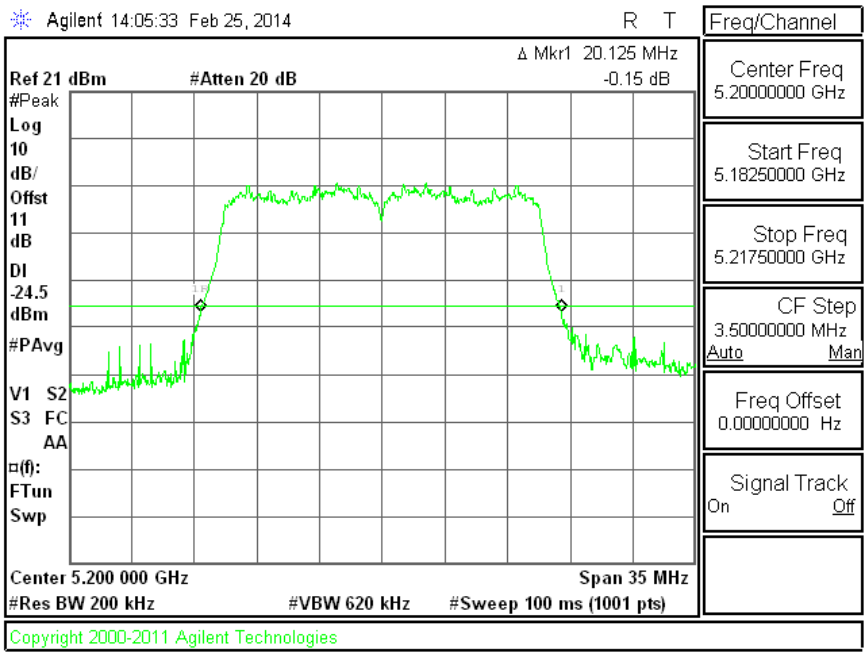
BANDWIDTH MIDCH CHAIN 1



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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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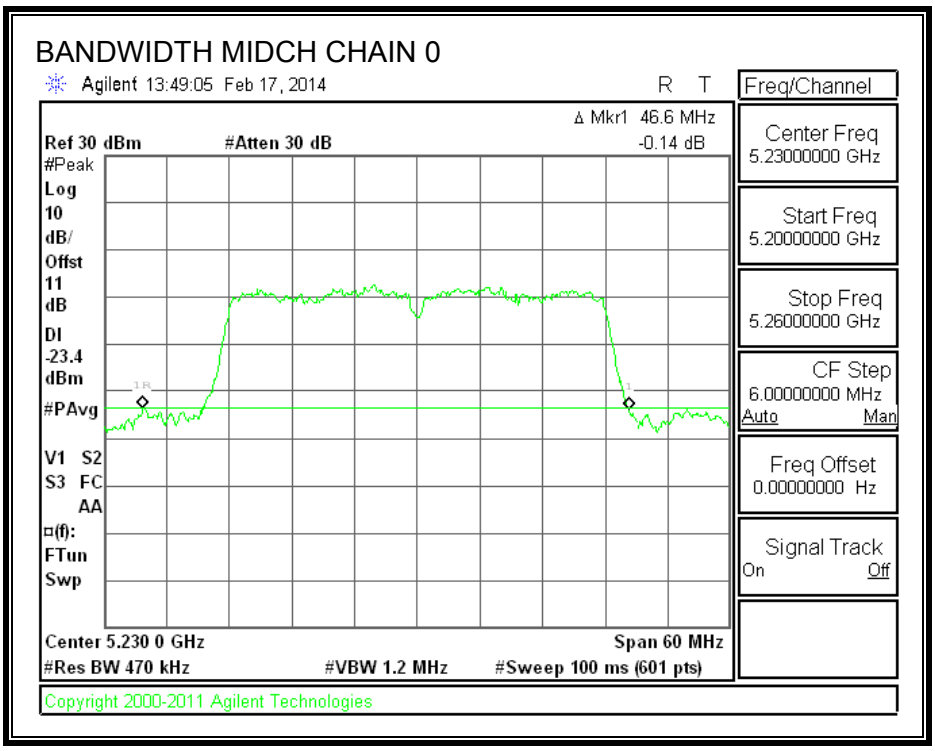
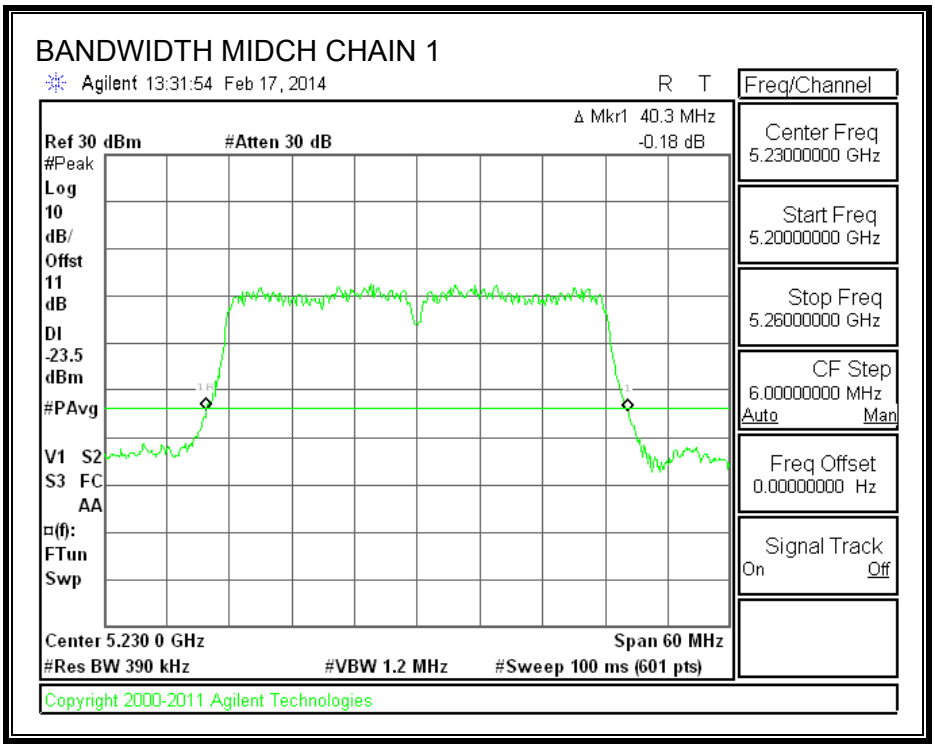
802.11n HT40 5.2G 26 dB BANDWIDTH





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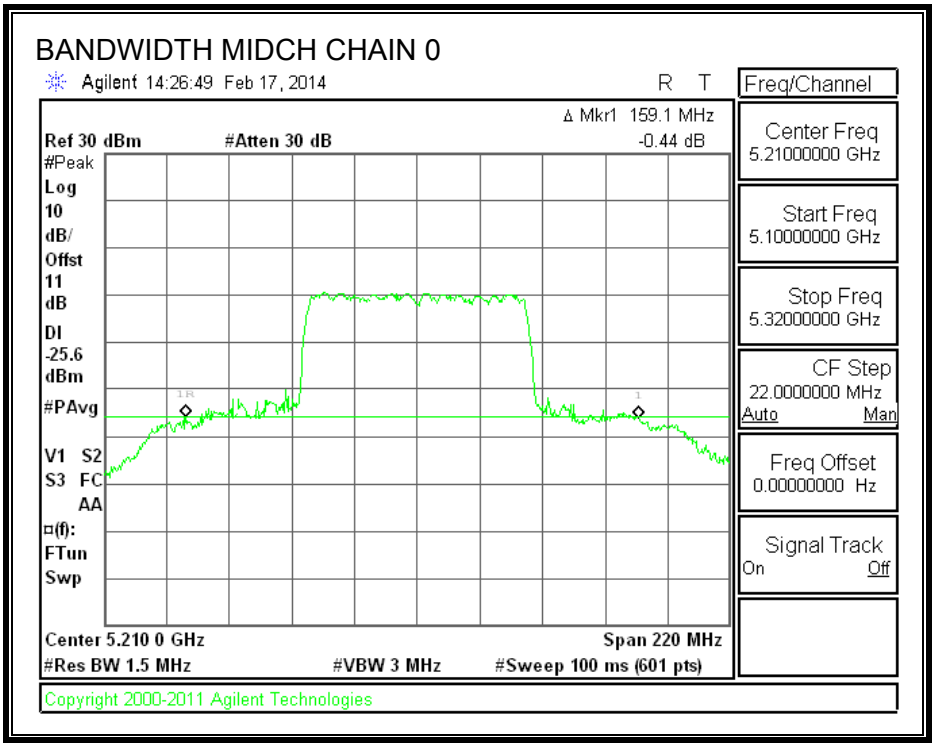
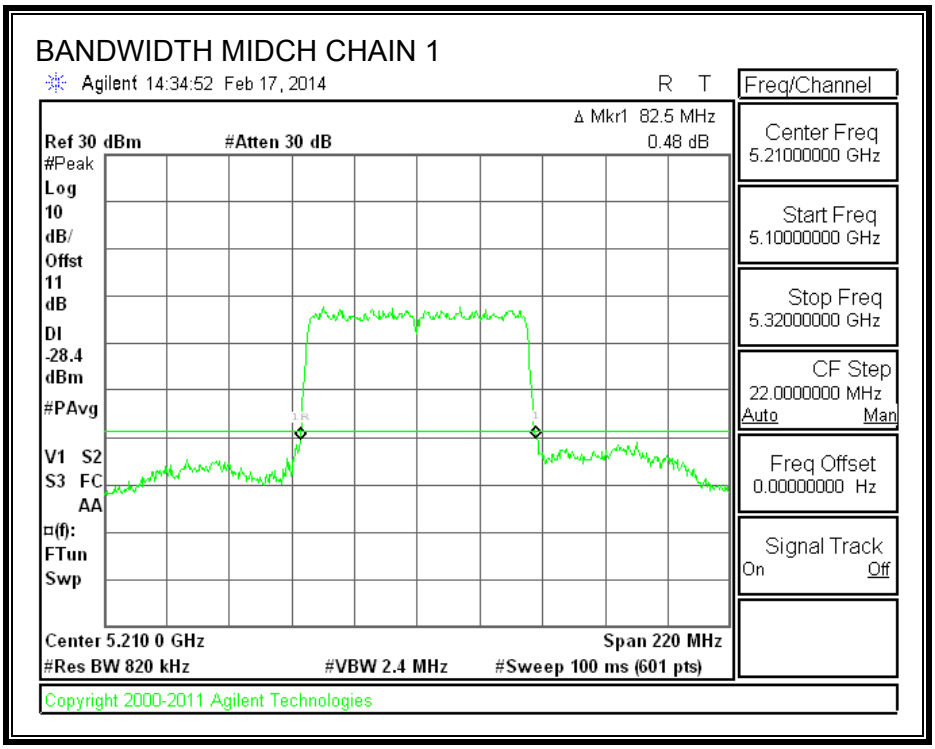
802.11ac HT80 5.2G 26 dB BANDWIDTH





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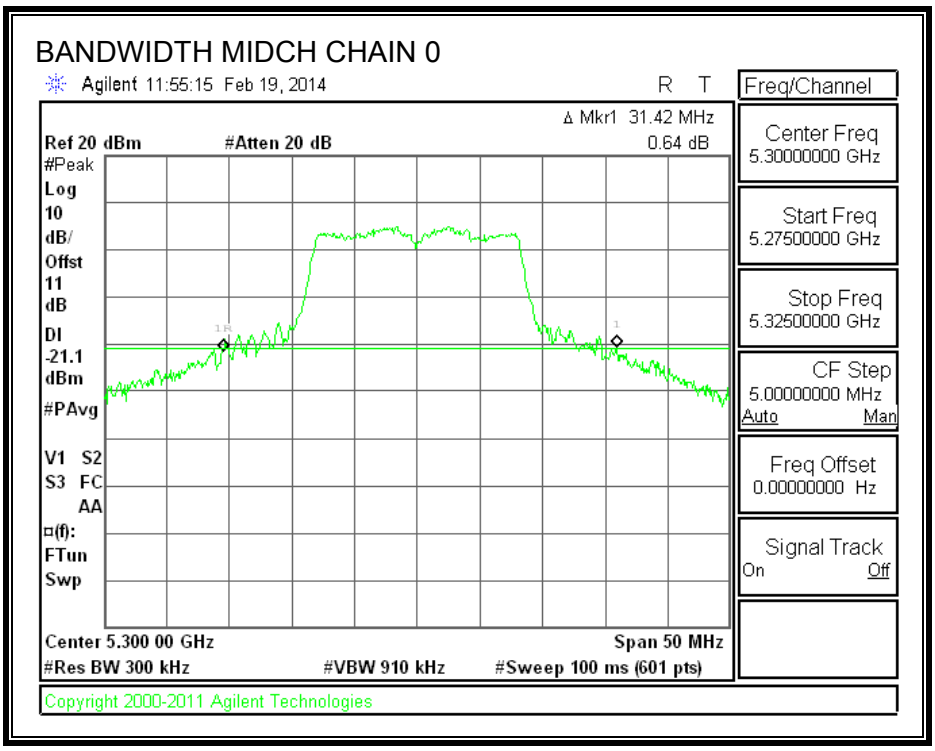
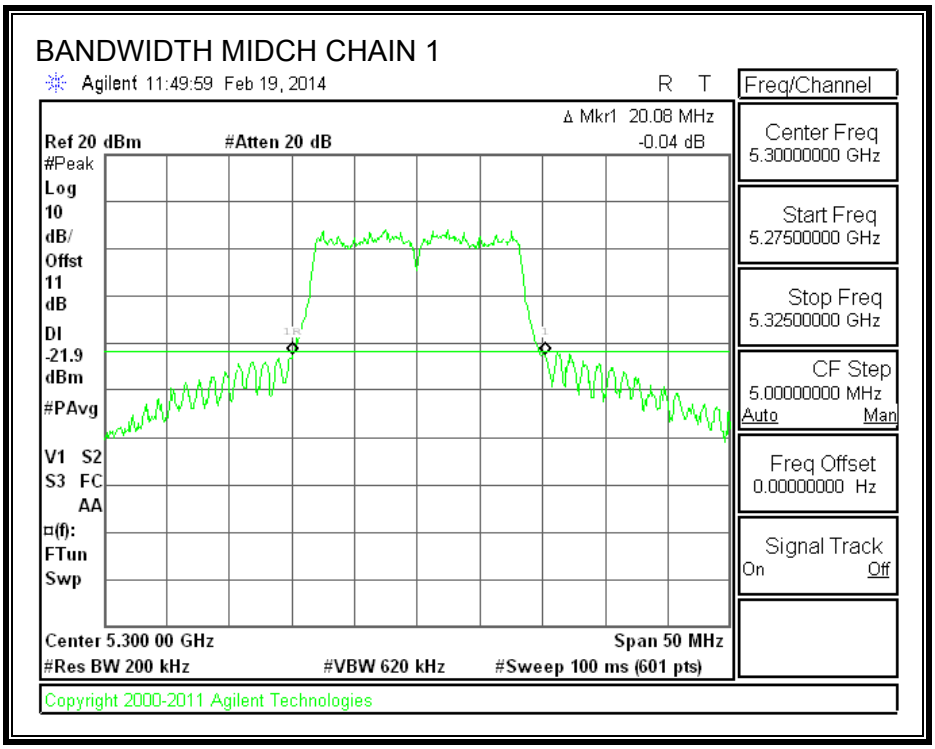
802.11a 5.3G 26 dB BANDWIDTH





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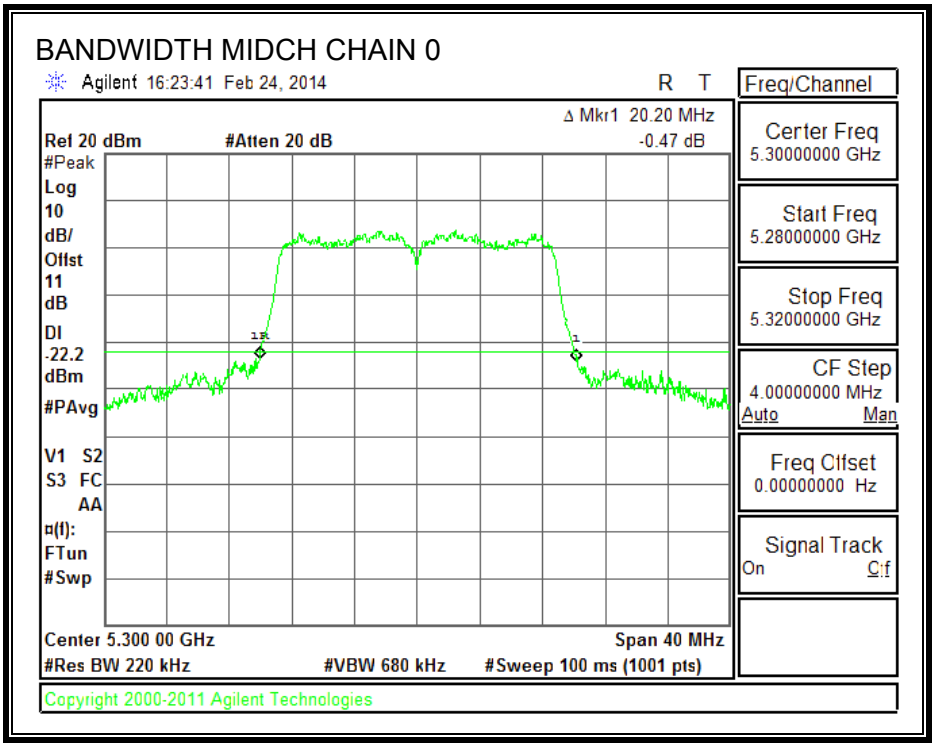
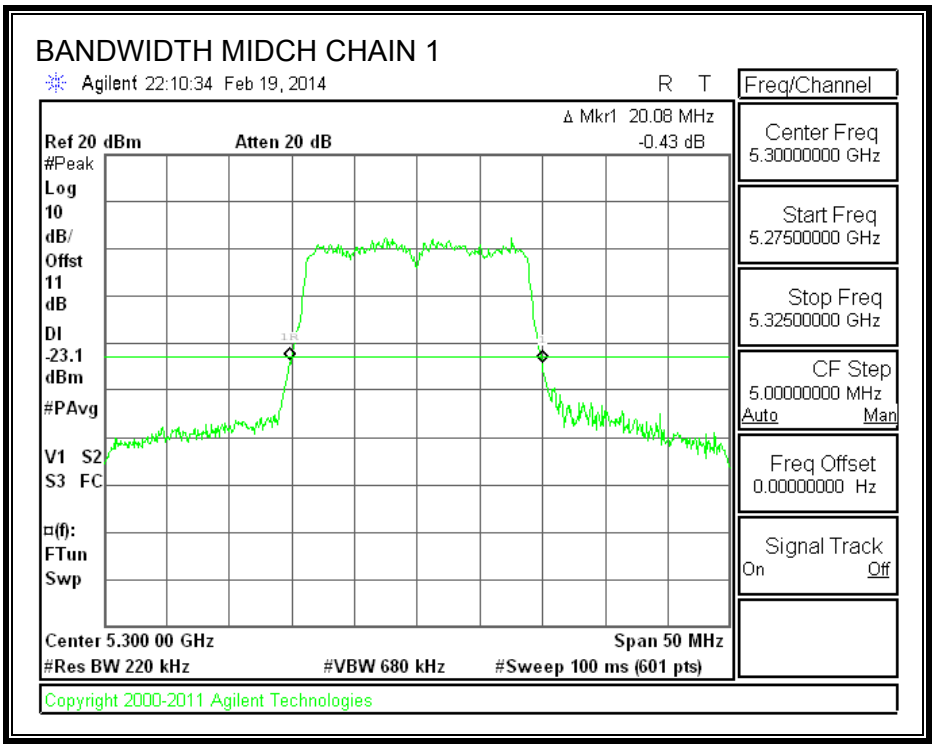
802.11n HT20 5.3G 26 dB BANDWIDTH





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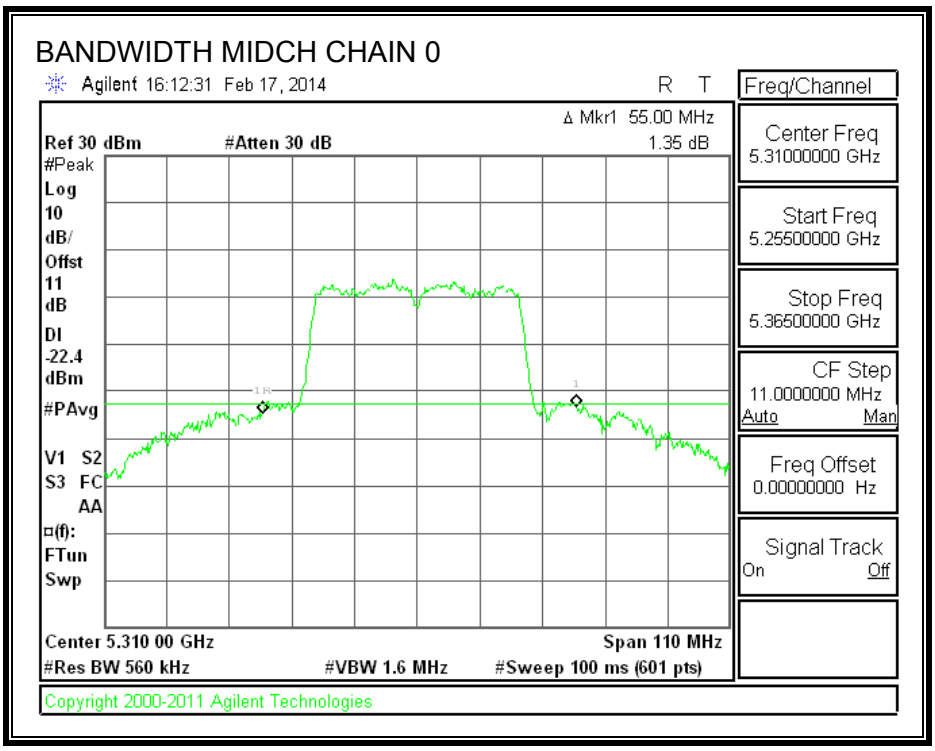
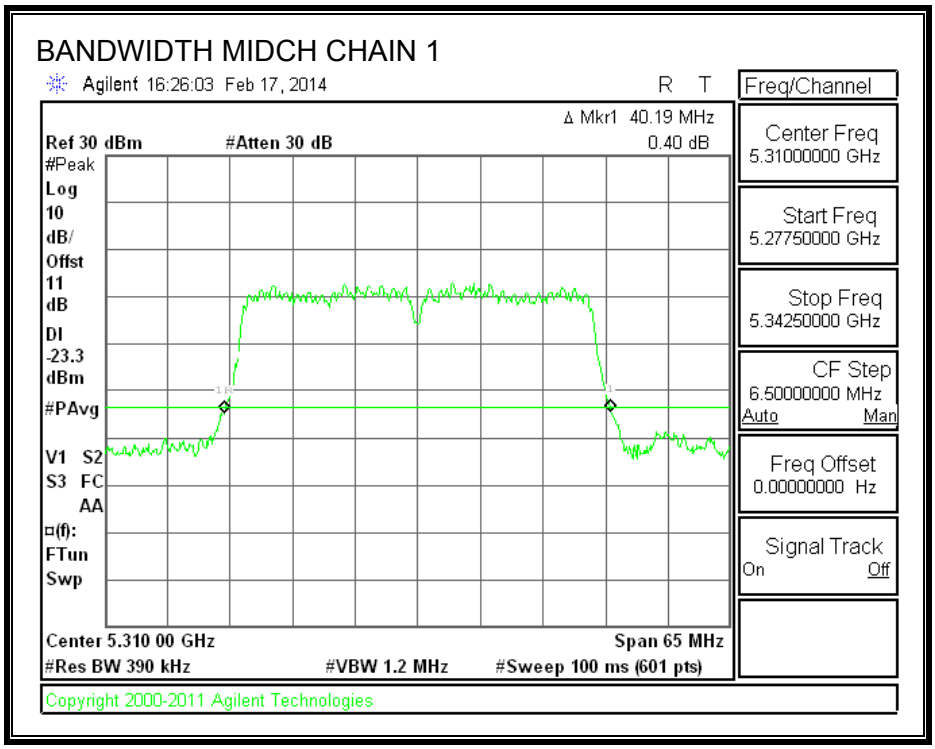
802.11n HT40 5.3G 26 dB BANDWIDTH





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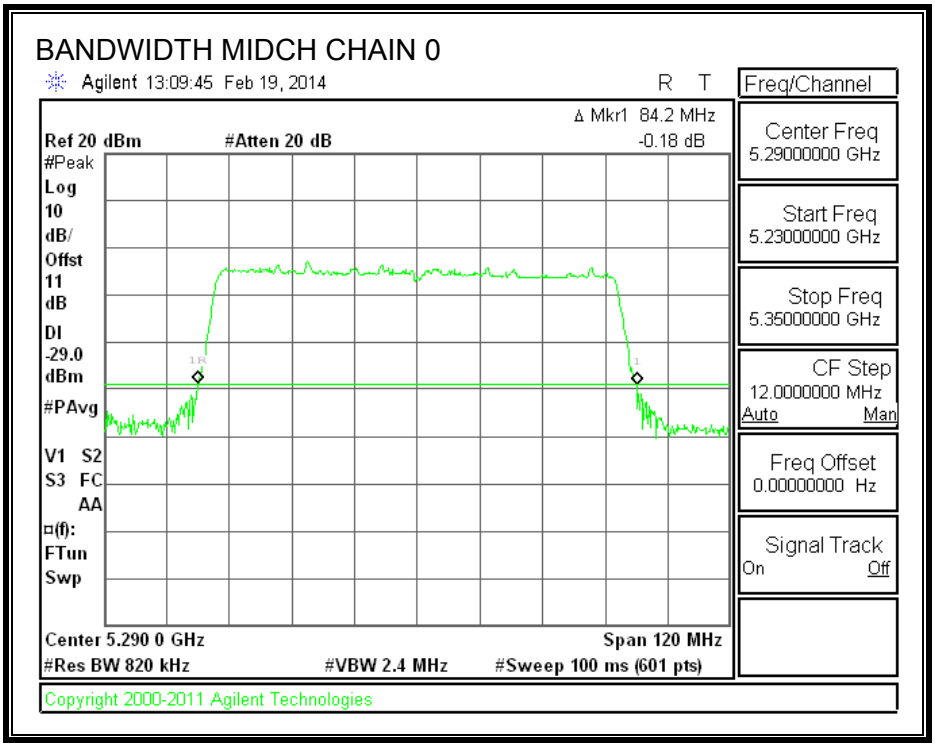
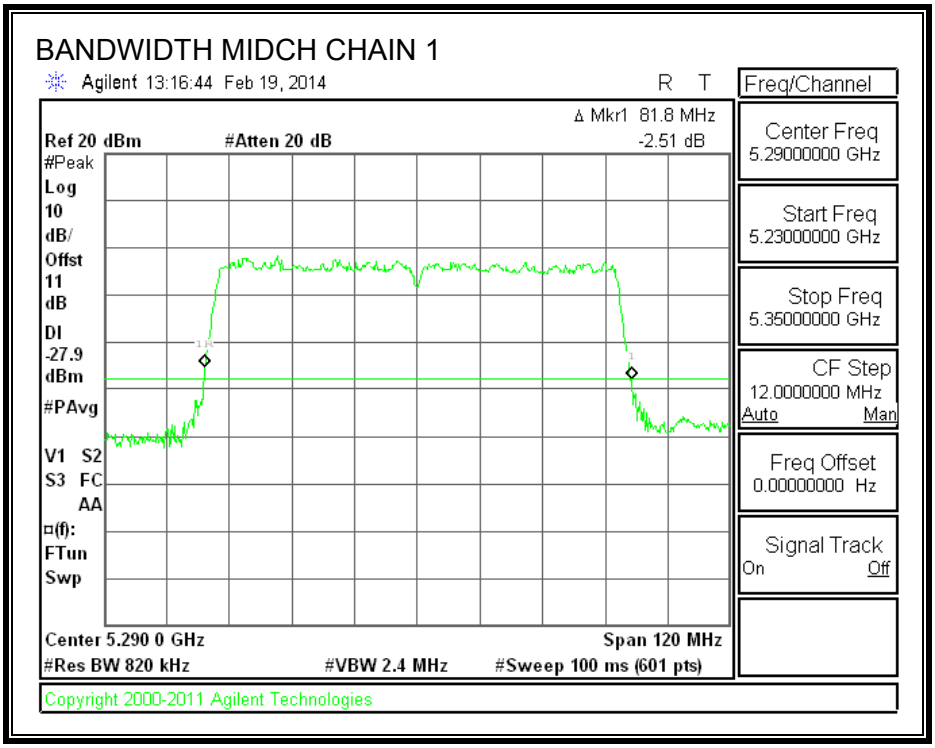
802.11ac HT80 5.3G 26 dB BANDWIDTH





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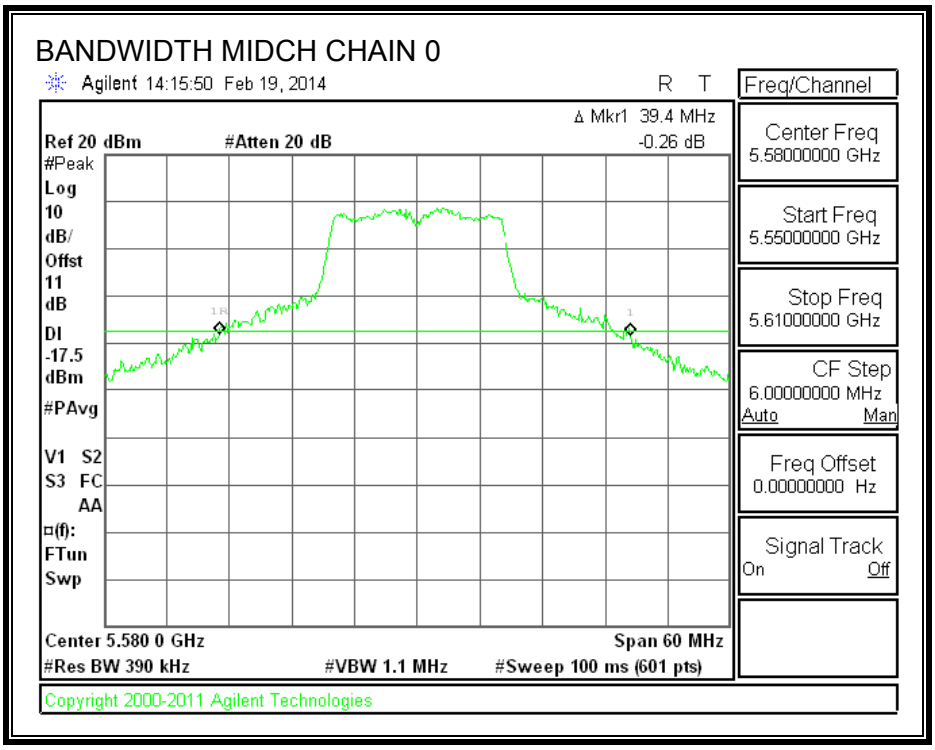
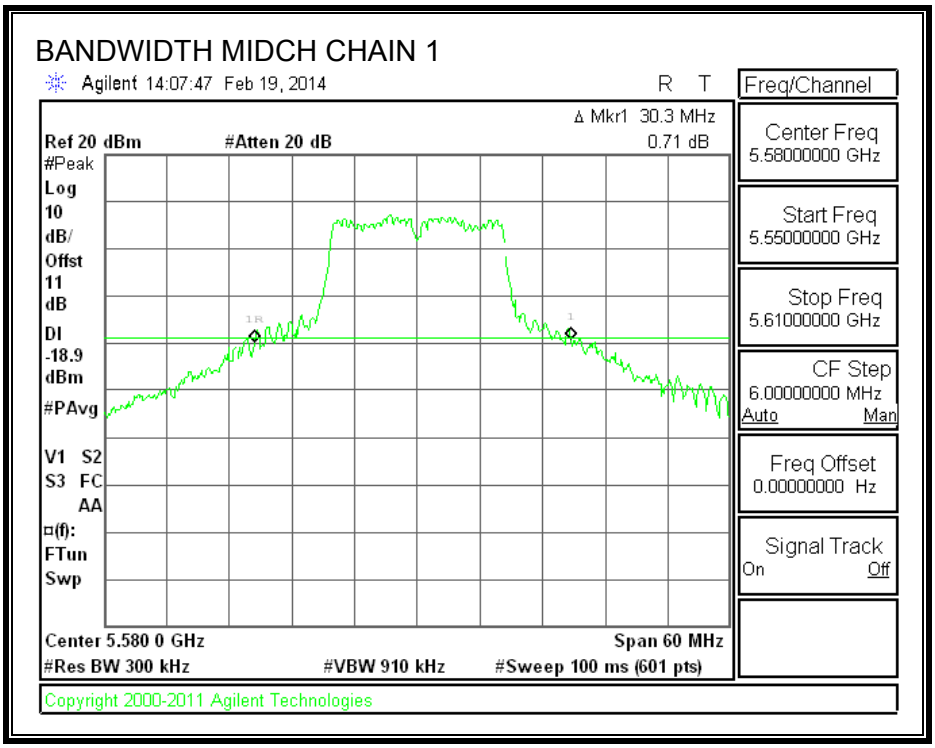
802.11a 5.5G 26 dB BANDWIDTH





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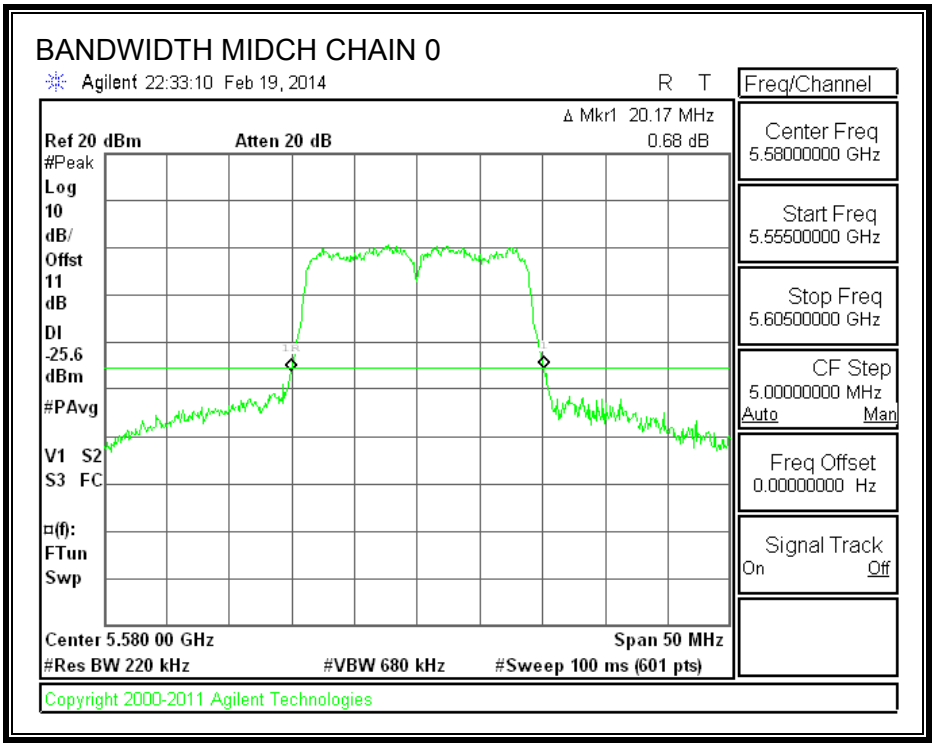
802.11n HT20 5.5G 26 dB BANDWIDTH



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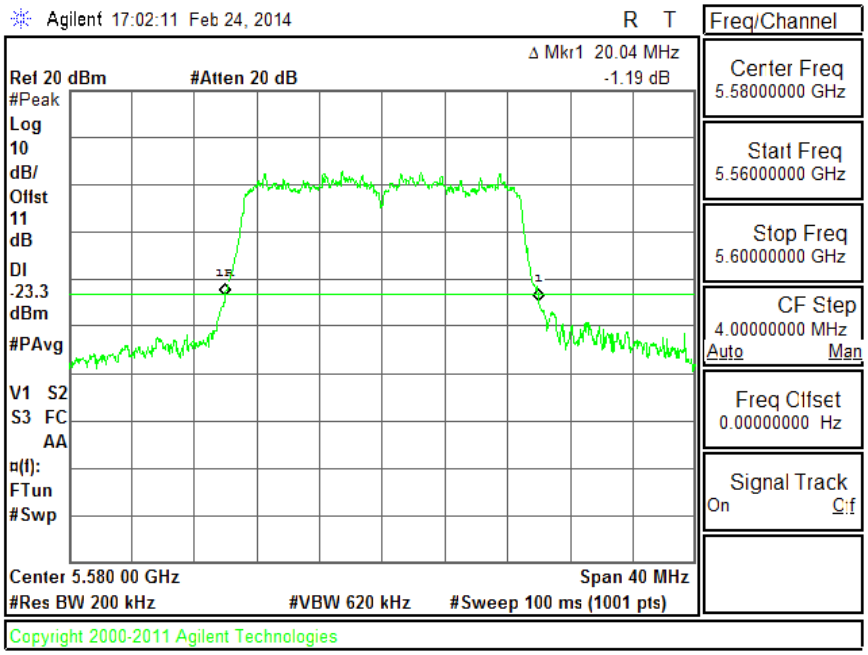
BANDWIDTH MIDCH CHAIN 1



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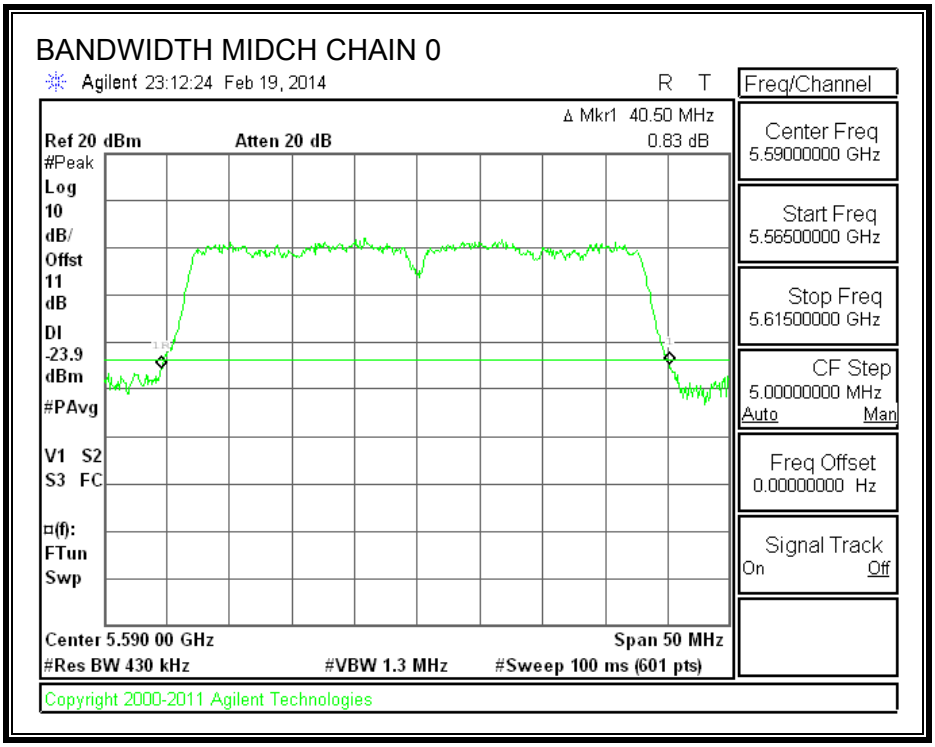
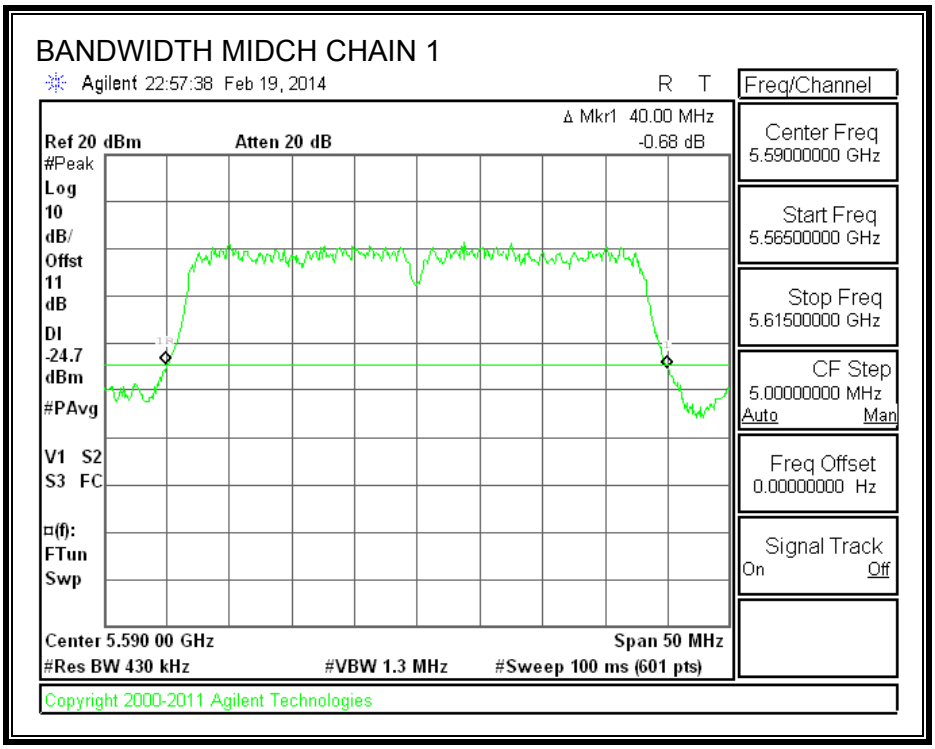
802.11n HT40 5.5G 26 dB BANDWIDTH





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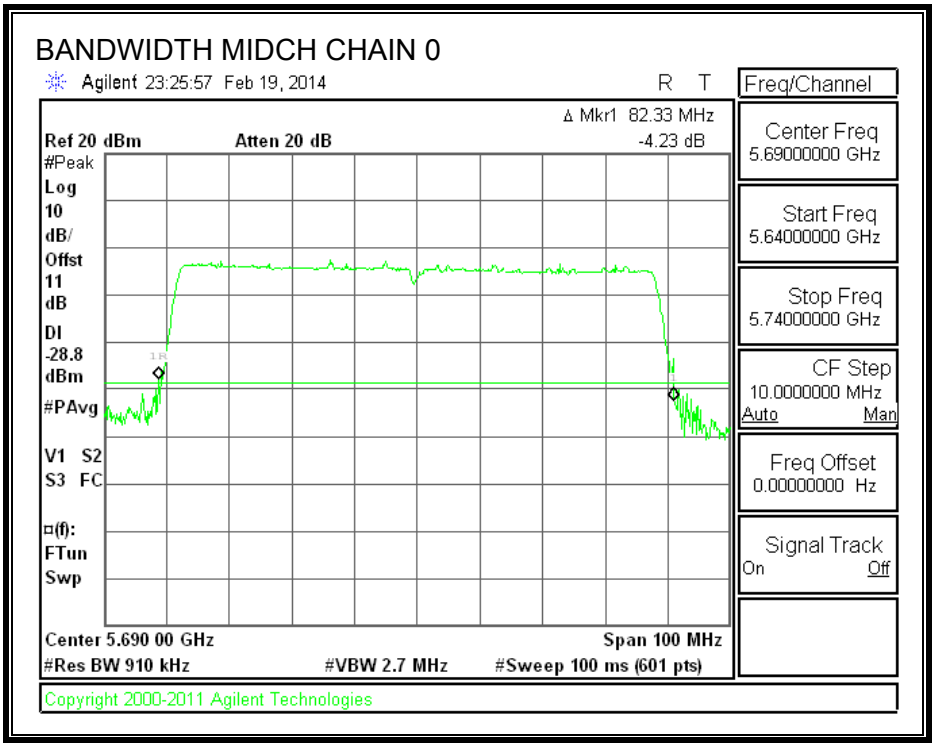
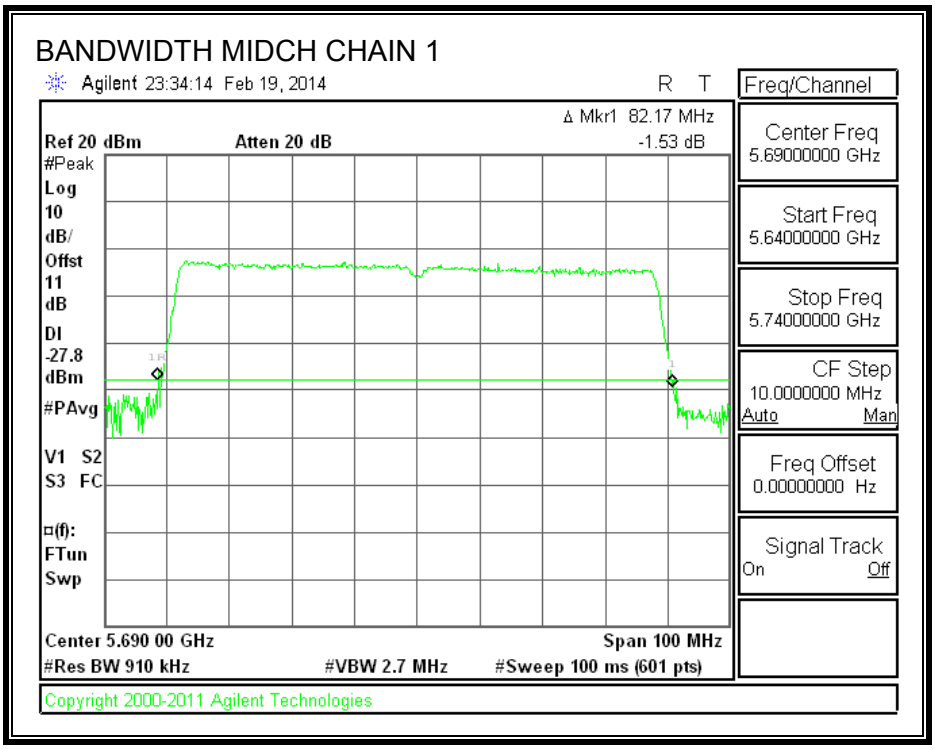
802.11ac HT80 5.5G 26 dB BANDWIDTH





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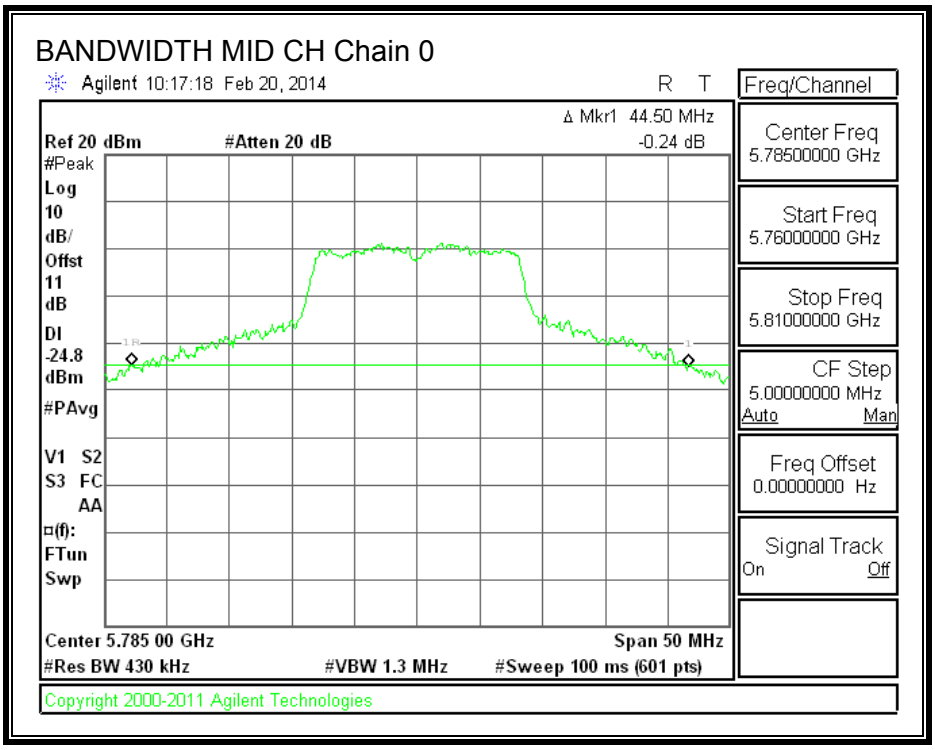
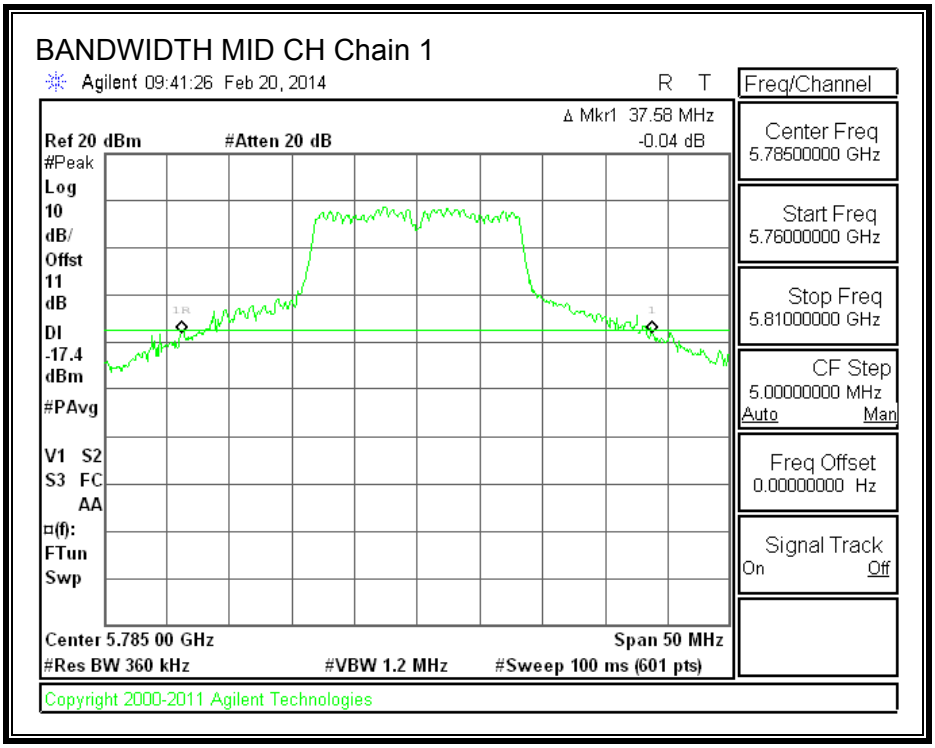
802.11a 5.8G 26 dB BANDWIDTH





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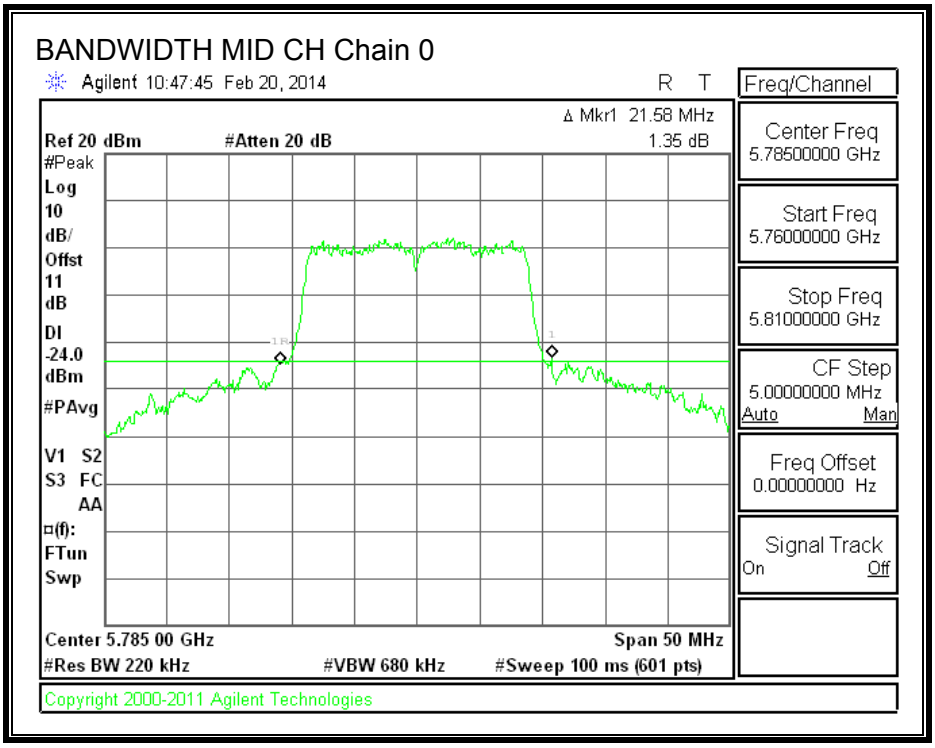
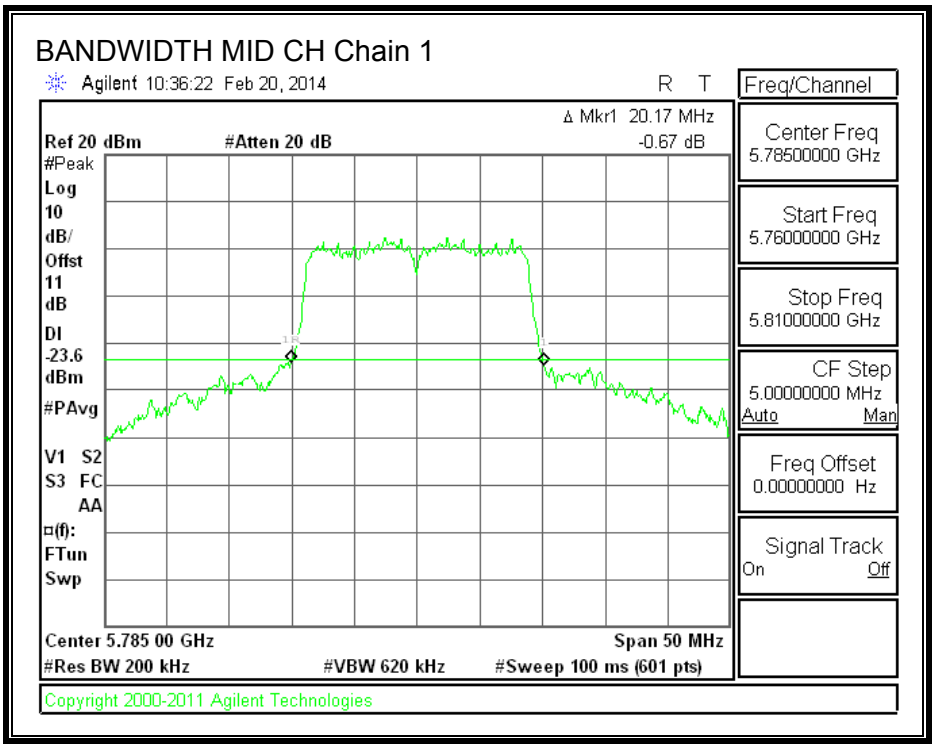
802.11n HT20 5.8G 26 dB BANDWIDTH





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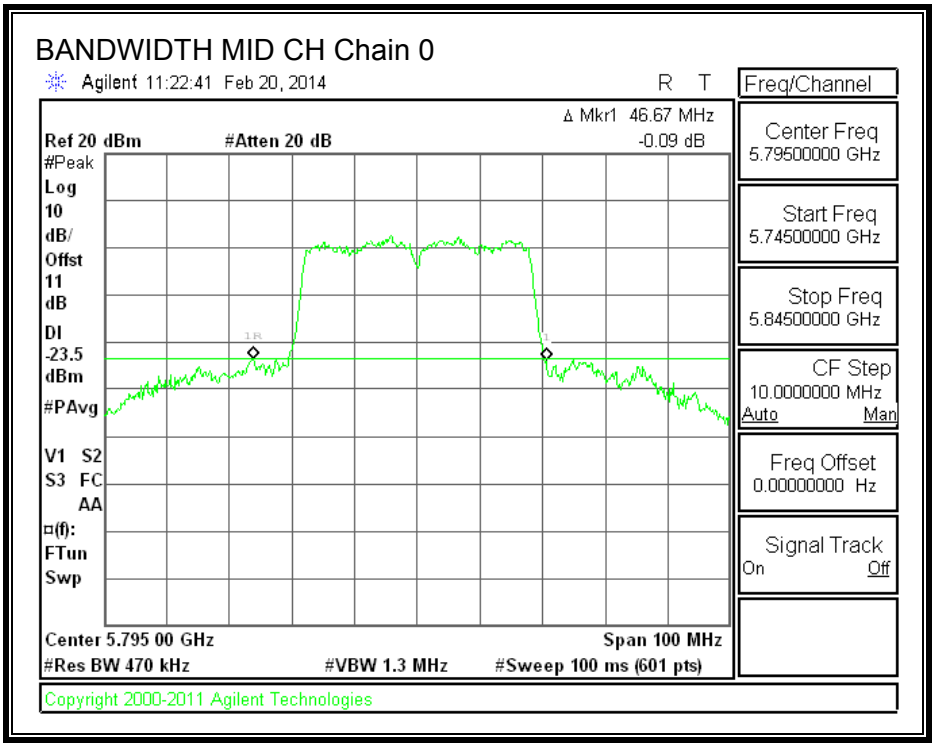
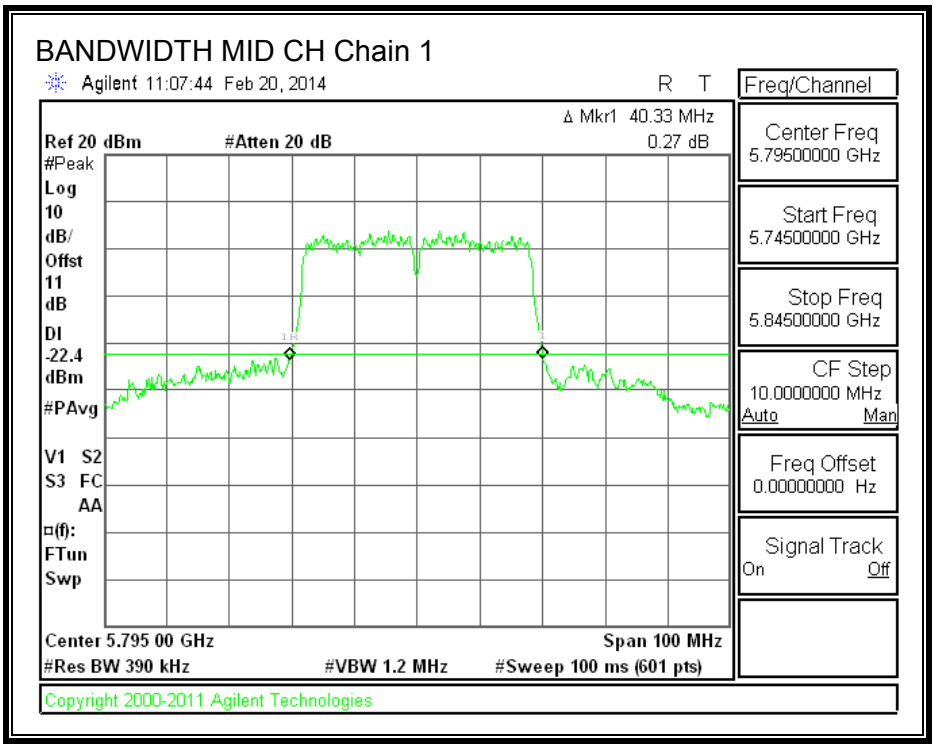
802.11n HT40 5.8G 26 dB BANDWIDTH





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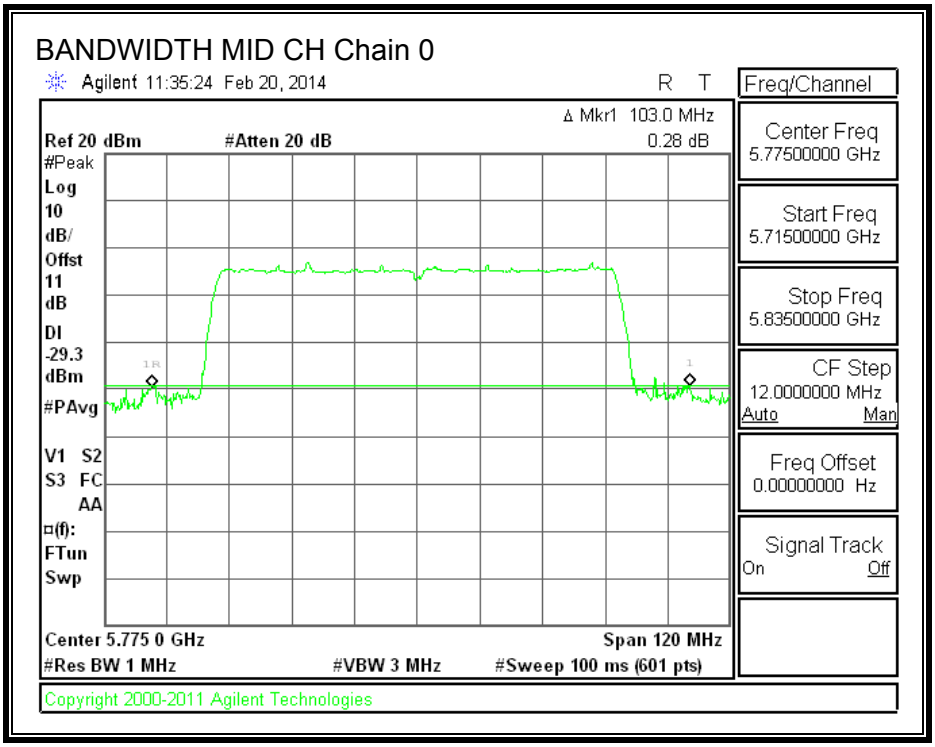
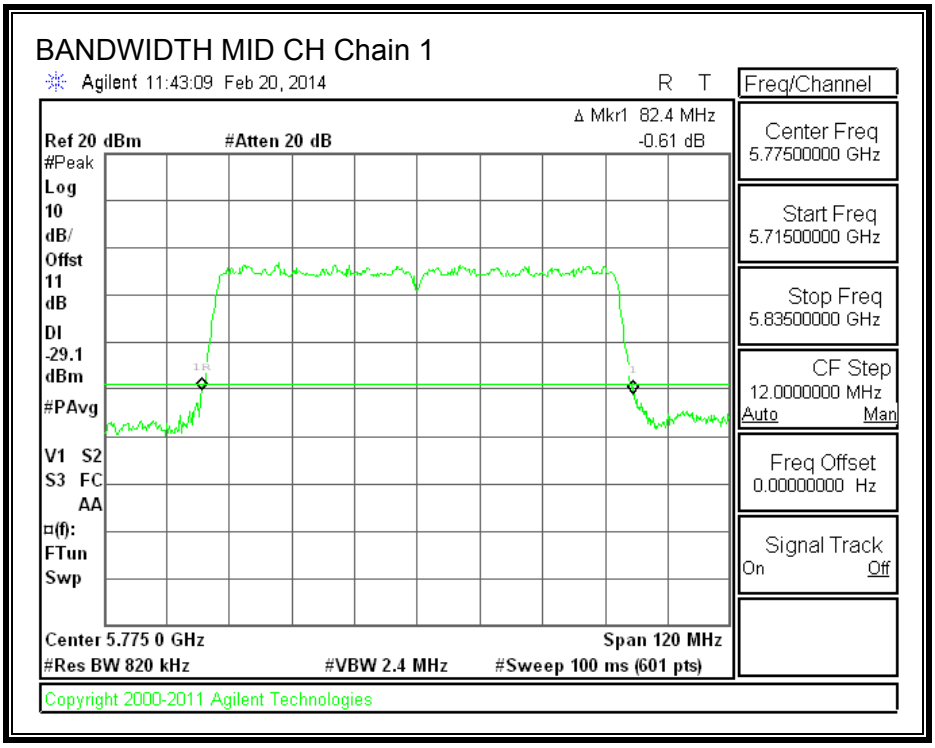
802.11ac HT80 5.8G 26 dB BANDWIDTH





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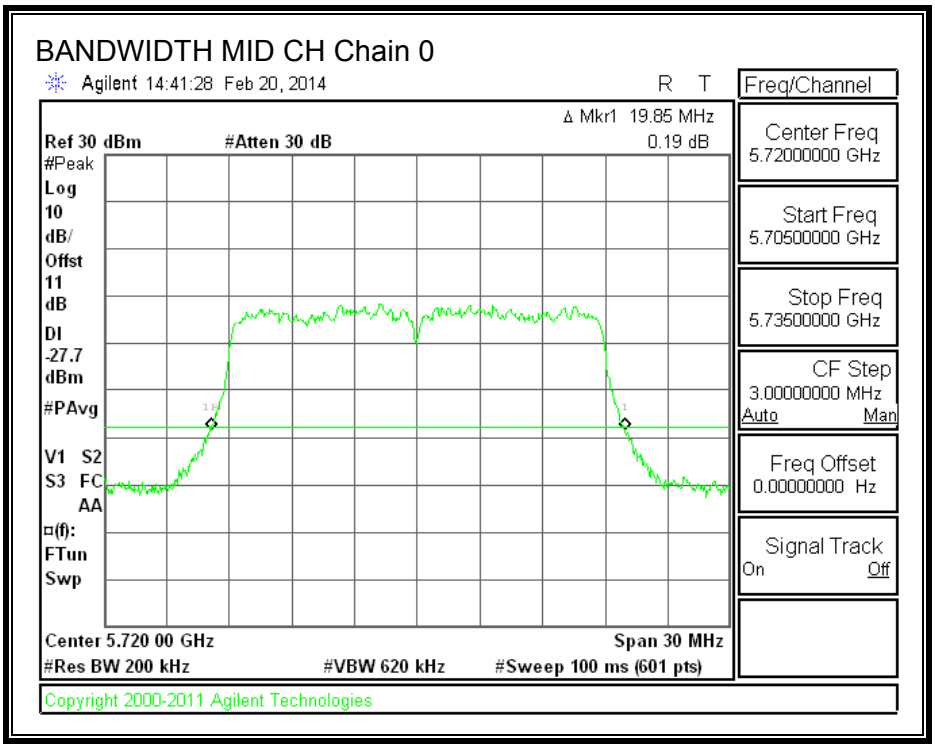
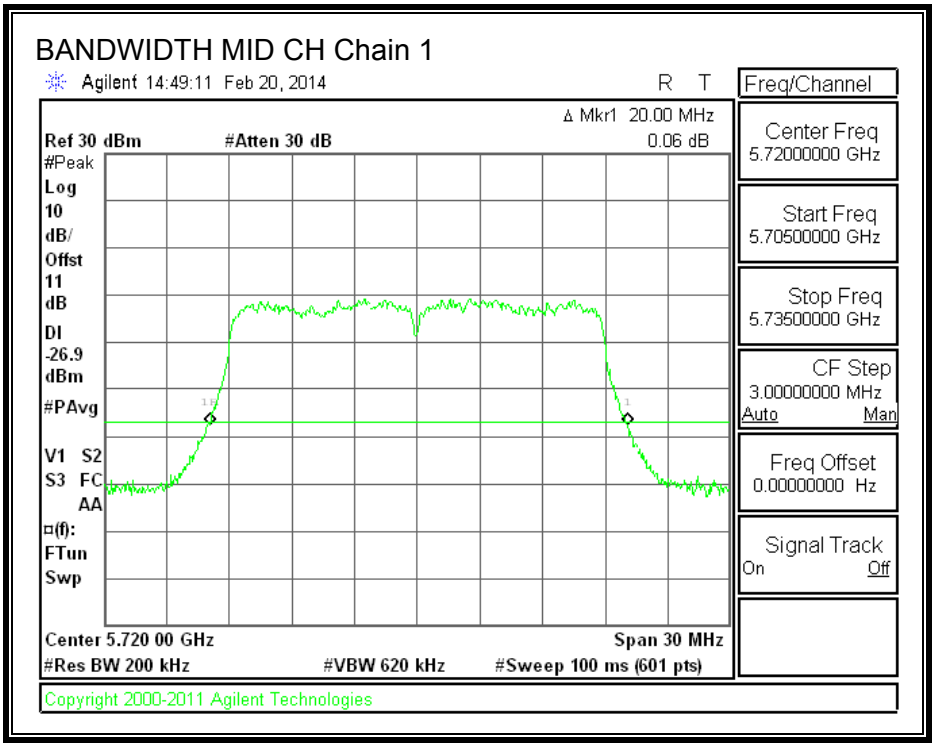
10.1.1. Straddling Channels Plots

802.11n HT20 MODE IN THE 5.5 GHz BAND





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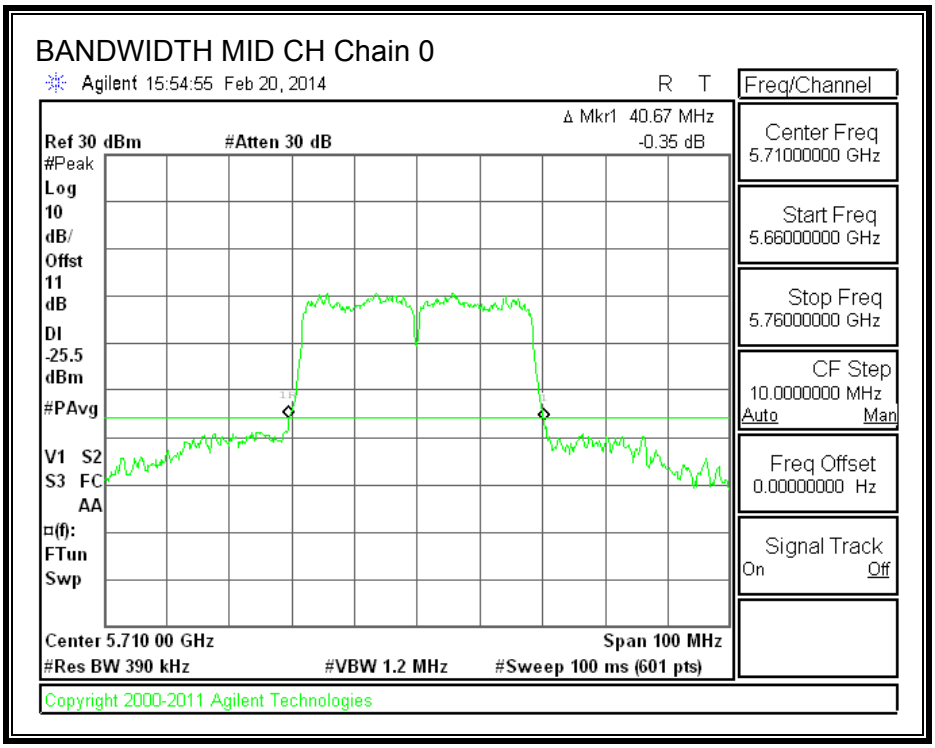
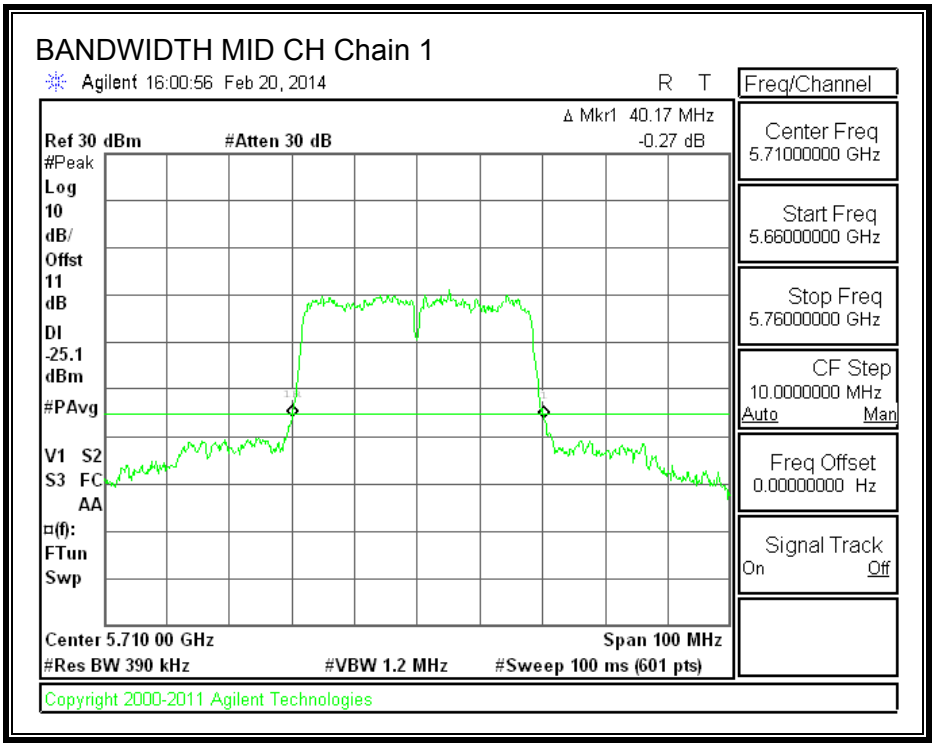
802.11n HT40 MODE IN THE 5.5 GHz BAND





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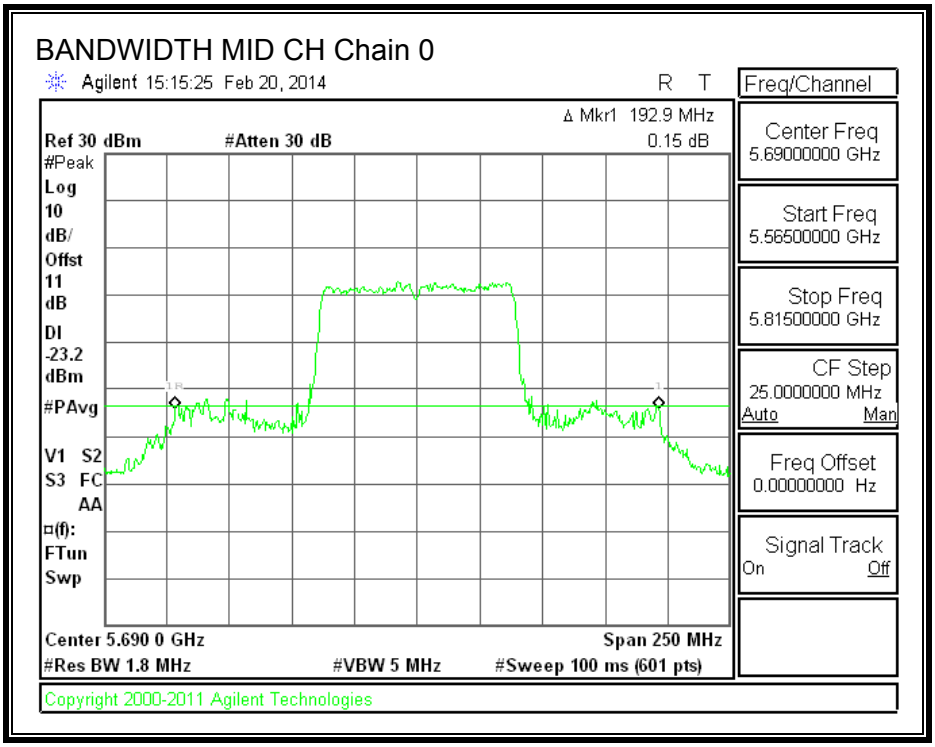
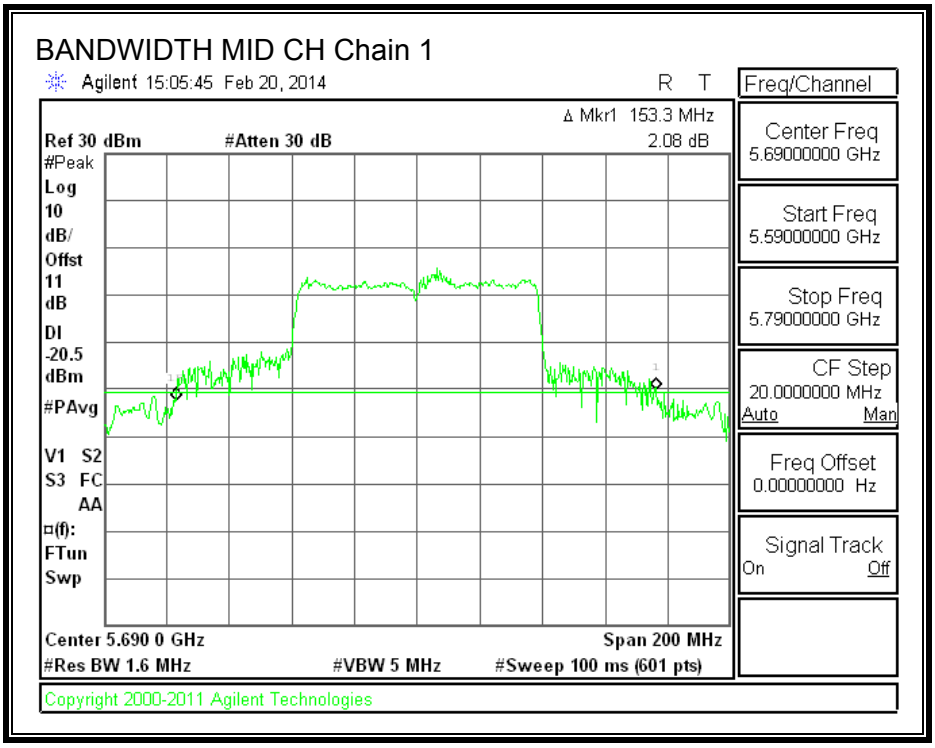
802.11ac HT80 MODE IN THE 5.5 GHz BAND





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10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	16.4	16.2
Mid	5200	16.4	16.4
High	5240	16.4	16.3

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	17.3	17.3
Mid	5200	17.6	17.5
High	5240	17.3	17.5

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5190	35.4	35.2
High	5230	35.1	35.1

10.2.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5210	75.2	74.2

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10.2.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	16.5	16.5
Mid	5300	16.5	16.4
High	5320	16.5	16.4

10.2.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	17.5	17.4
Mid	5300	17.4	17.4
High	5320	17.4	17.5

10.2.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5270	35.2	34.7
High	5310	35.4	35.5

10.2.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5290	75.8	72.7

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10.2.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	16.4	16.4
Mid	5580	16.5	16.4
High	5700	16.8	16.5

10.2.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	17.3	17.4
Mid	5580	17.5	17.4
High	5700	17.4	17.4

10.2.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5510	35.4	35.5
Mid	5550	36.0	35.8
High	5670	35.6	35.4

10.2.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5530	71.7	76.0
High	5690	76.1	76.0

10.2.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5745	16.7	16.5
Mid	5785	16.7	16.6
High	5825	16.5	16.5

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10.2.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5745	17.6	17.6
Mid	5785	17.6	17.6
High	5825	17.6	17.6

10.2.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5755	35.1	35.3
High	5795	35.2	35.3

10.2.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5775	74.2	74.0

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10.2.1. Straddling Channels

802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5720	17.4	17.4

802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5710	35.0	35.3

802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5690	71.5	71.2

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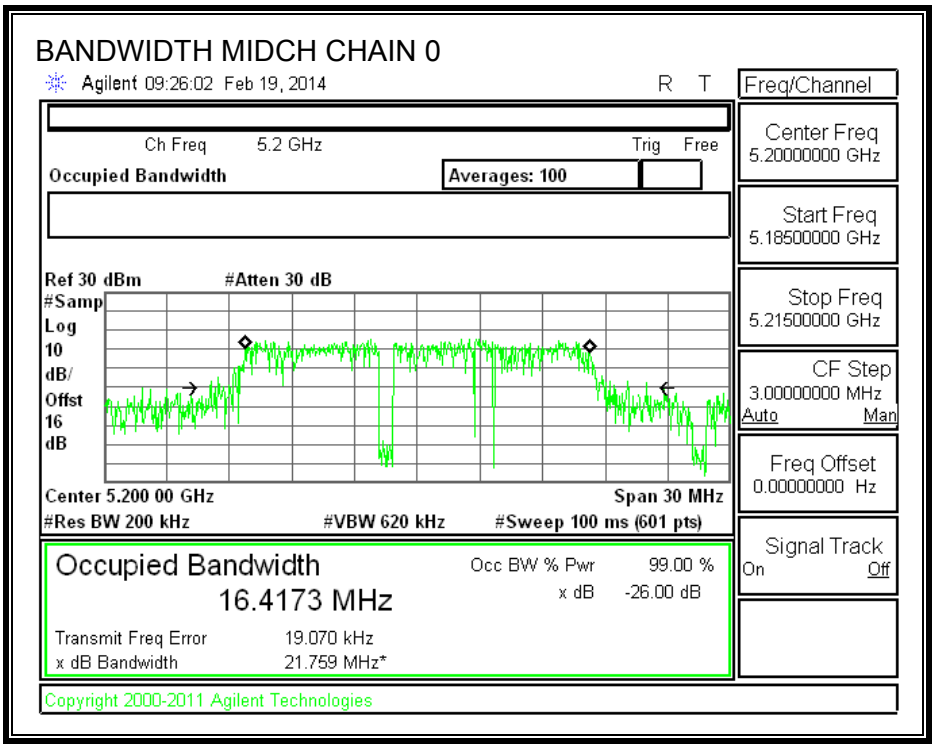
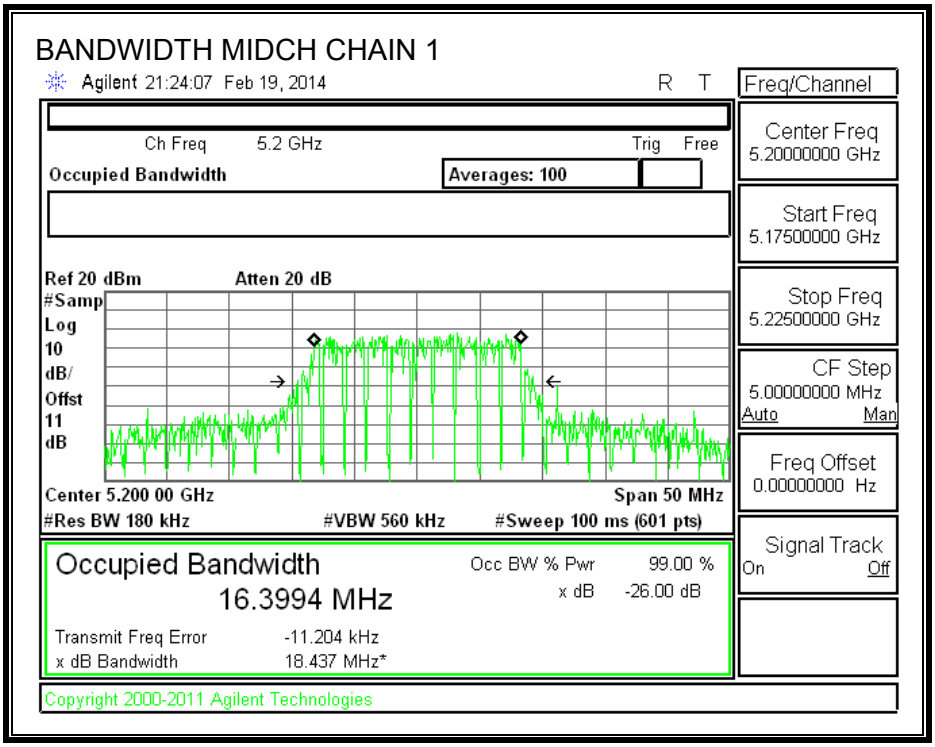
10.2.2. Plots

802.11a 5.2G 99% BANDWIDTH





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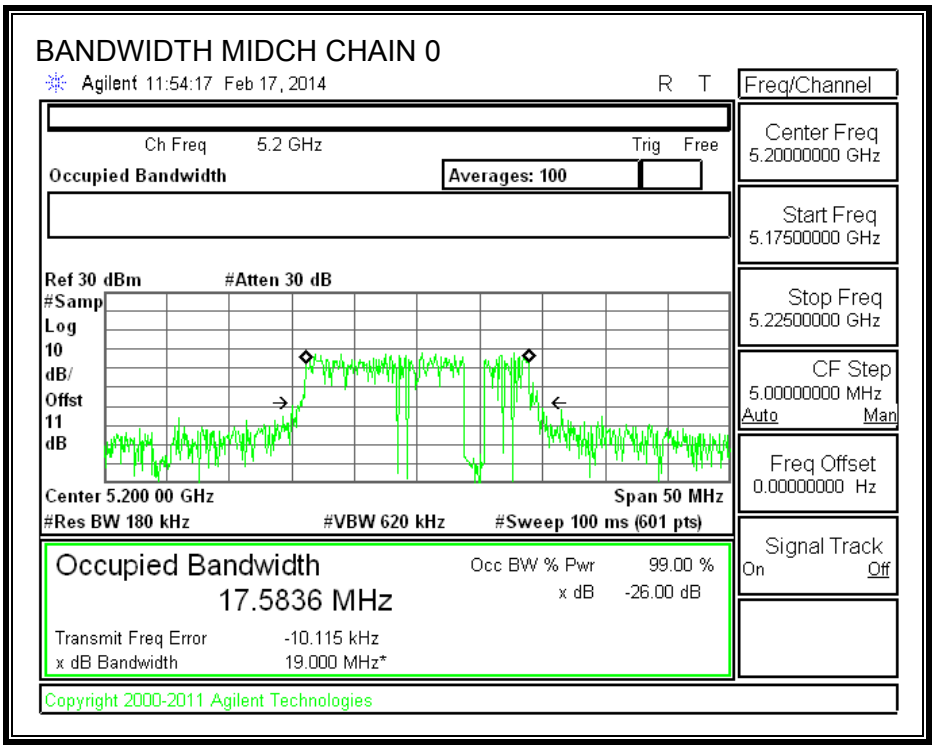
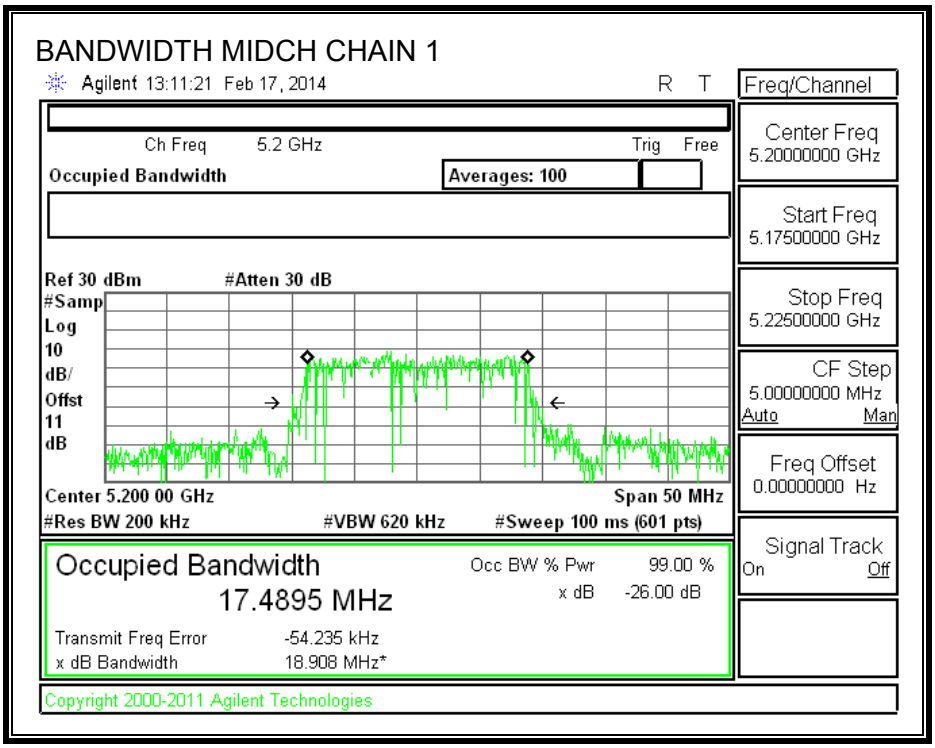
802.11n HT20 5.2G 99% BANDWIDTH





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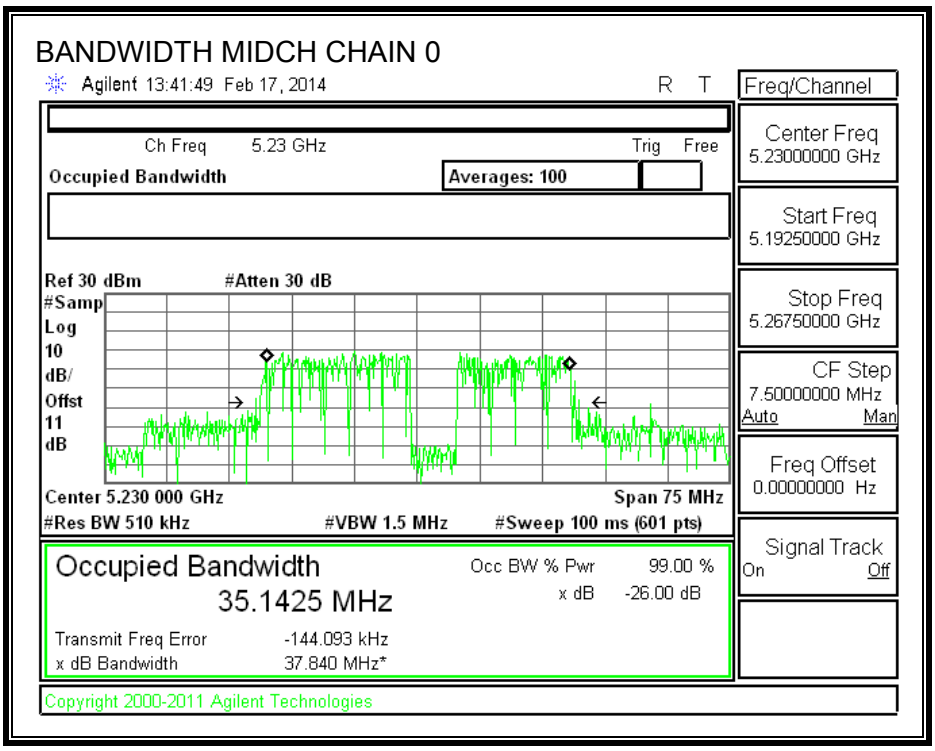
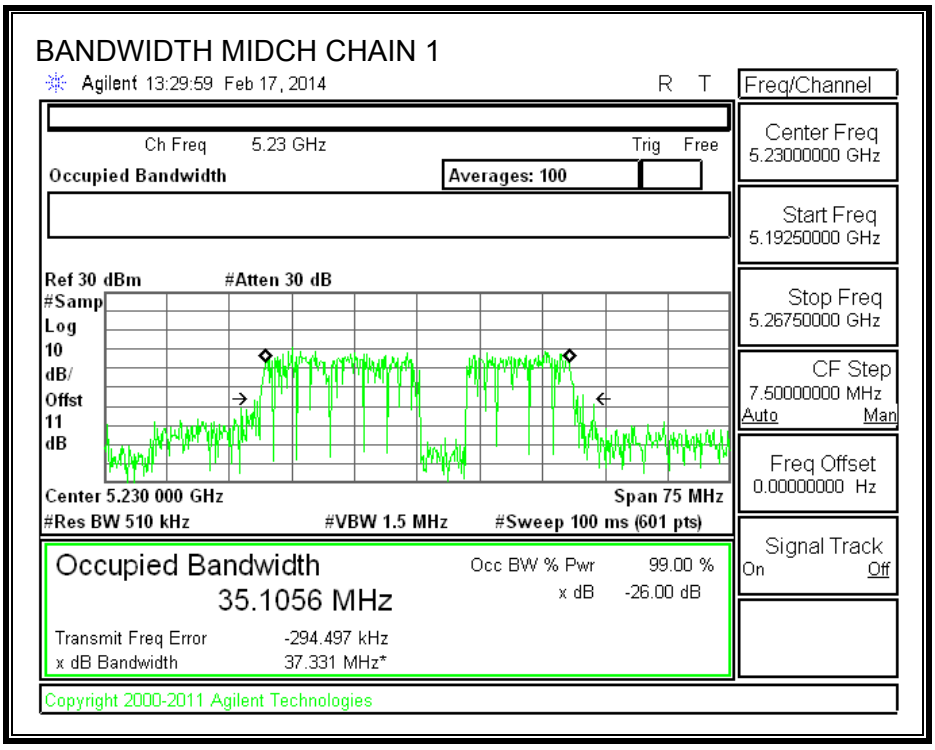
802.11n HT40 5.2G 99% BANDWIDTH





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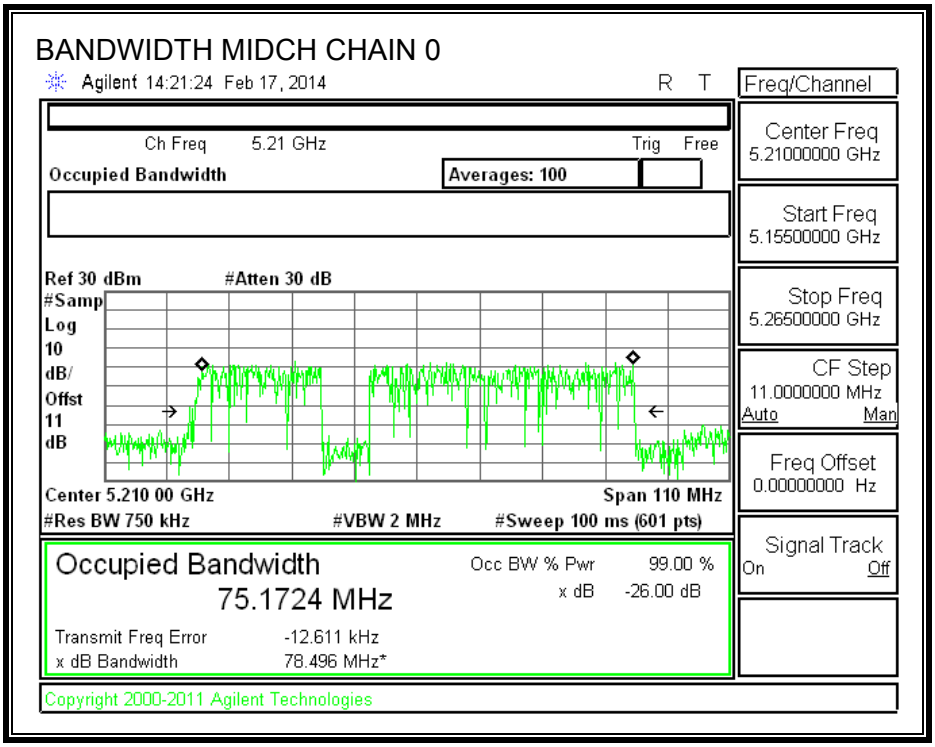
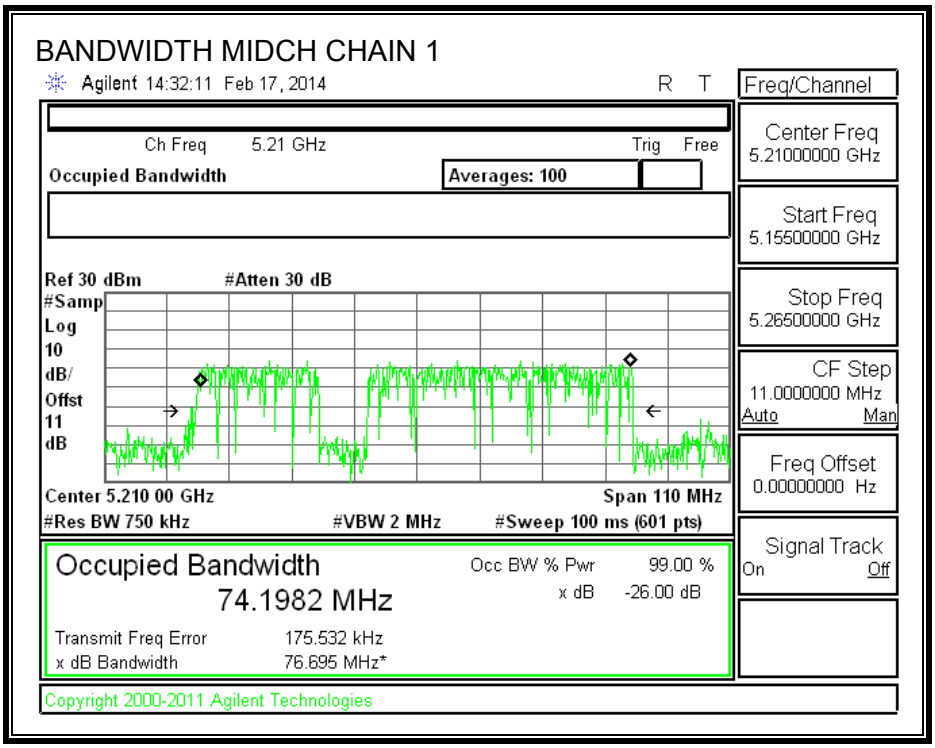
802.11ac HT80 5.2G 99% BANDWIDTH





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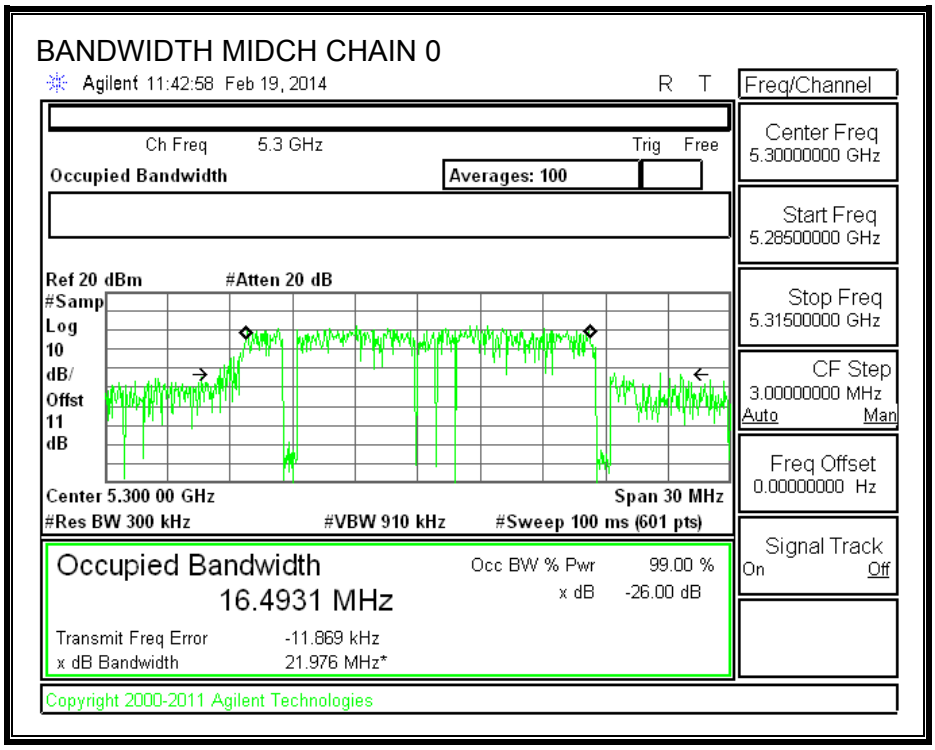
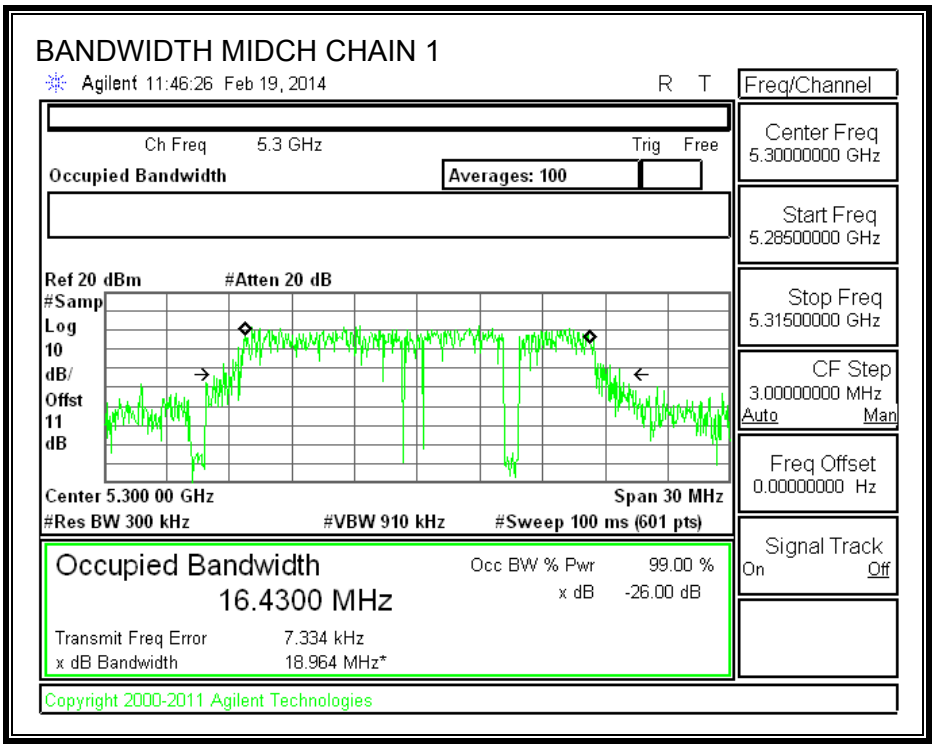
802.11a 5.3G 99% BANDWIDTH





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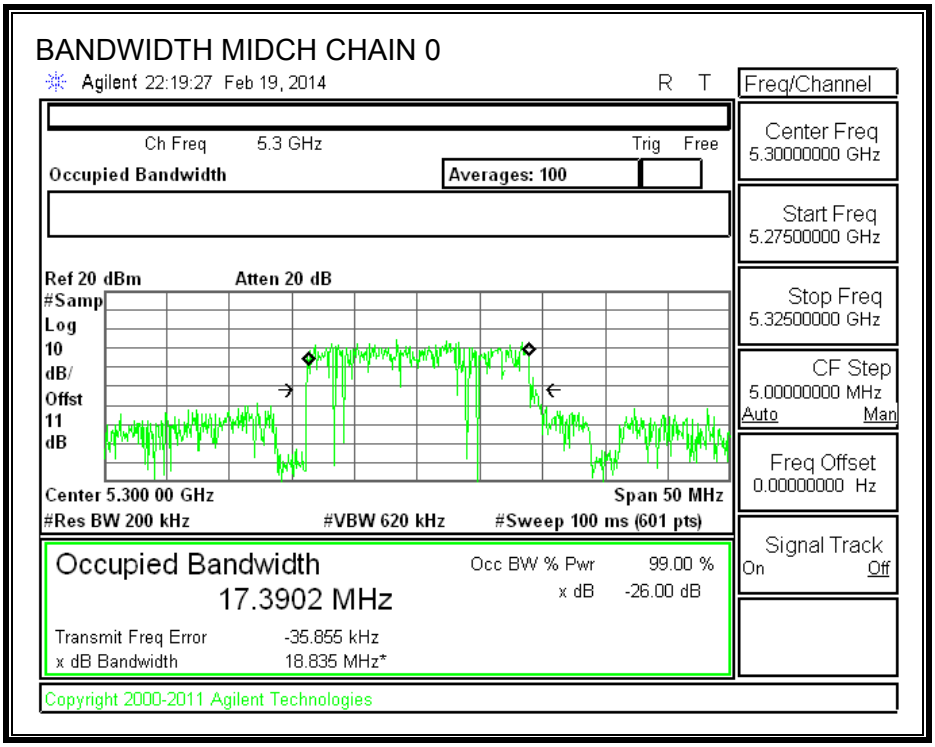
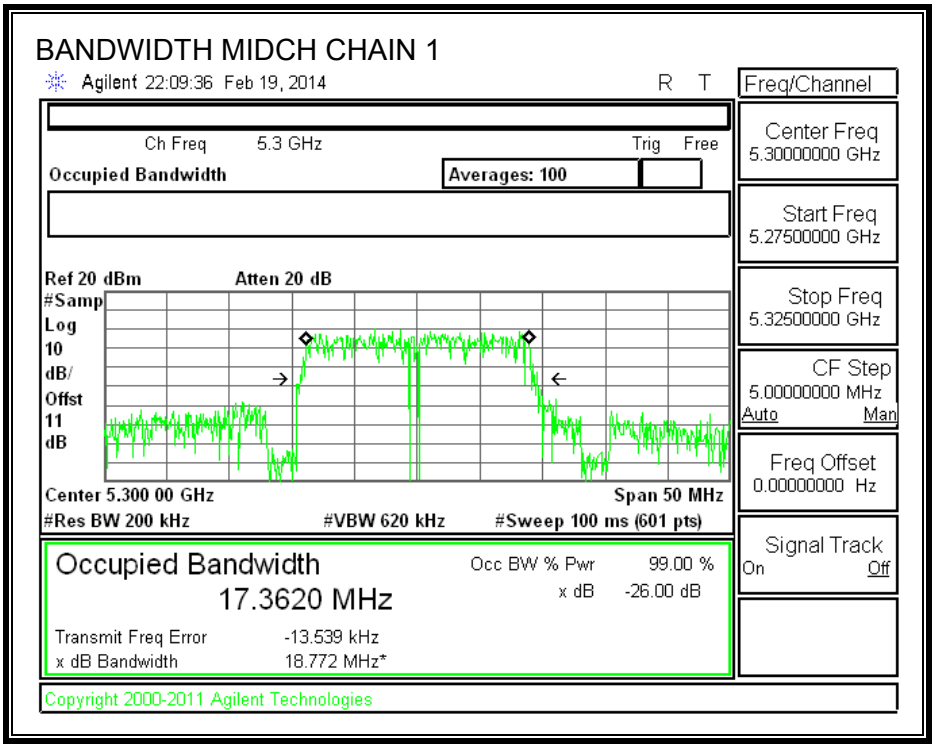
802.11n HT20 5.3G 99% BANDWIDTH





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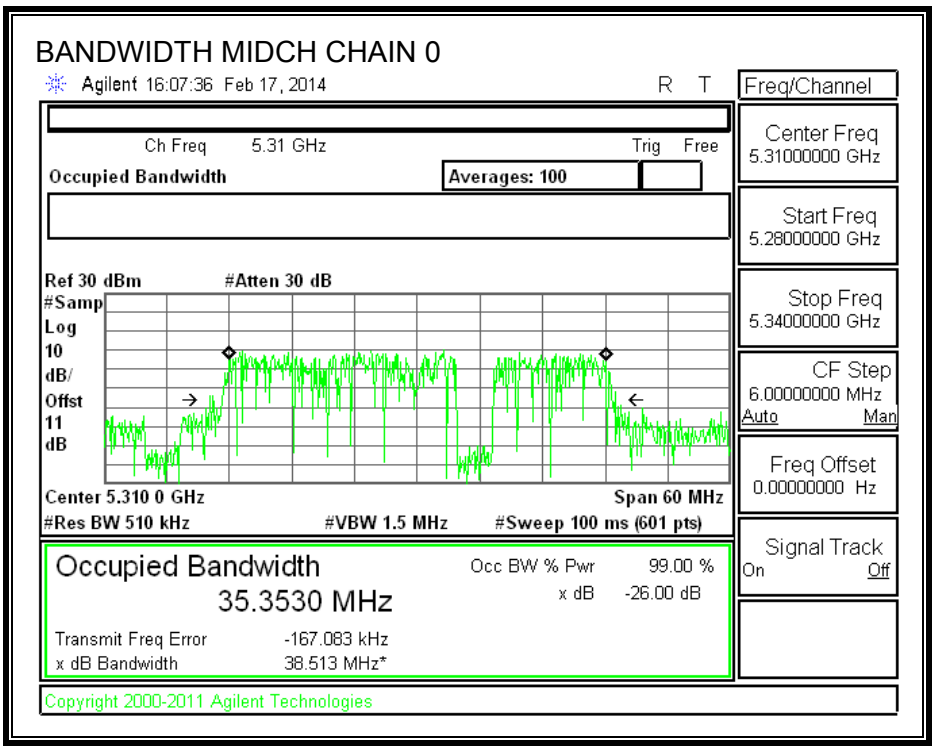

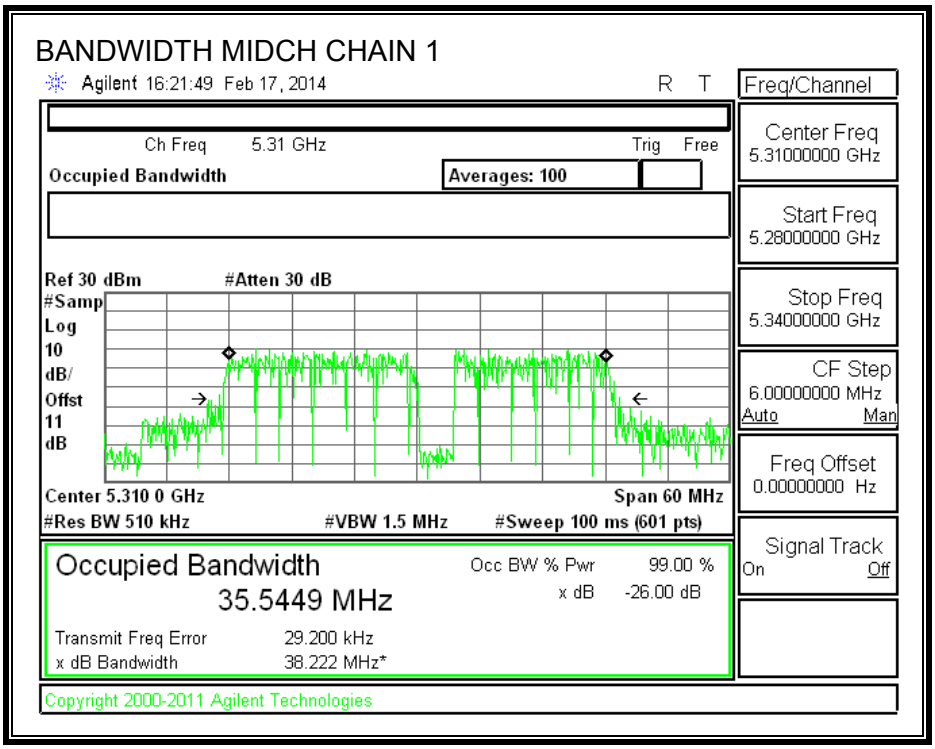

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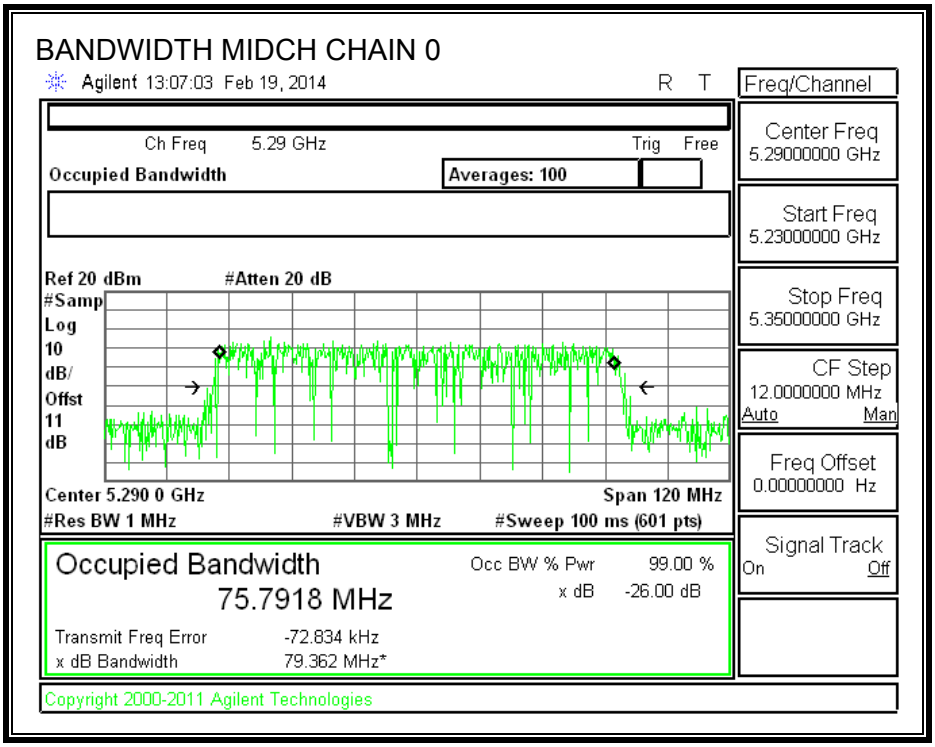
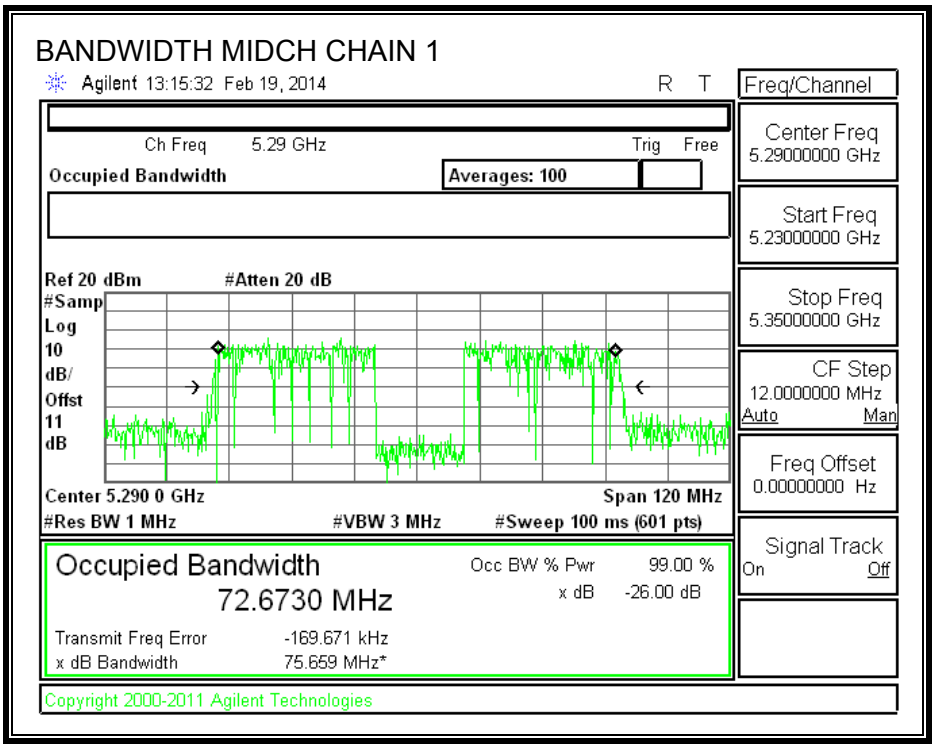
802.11ac HT80 5.3G 99% BANDWIDTH





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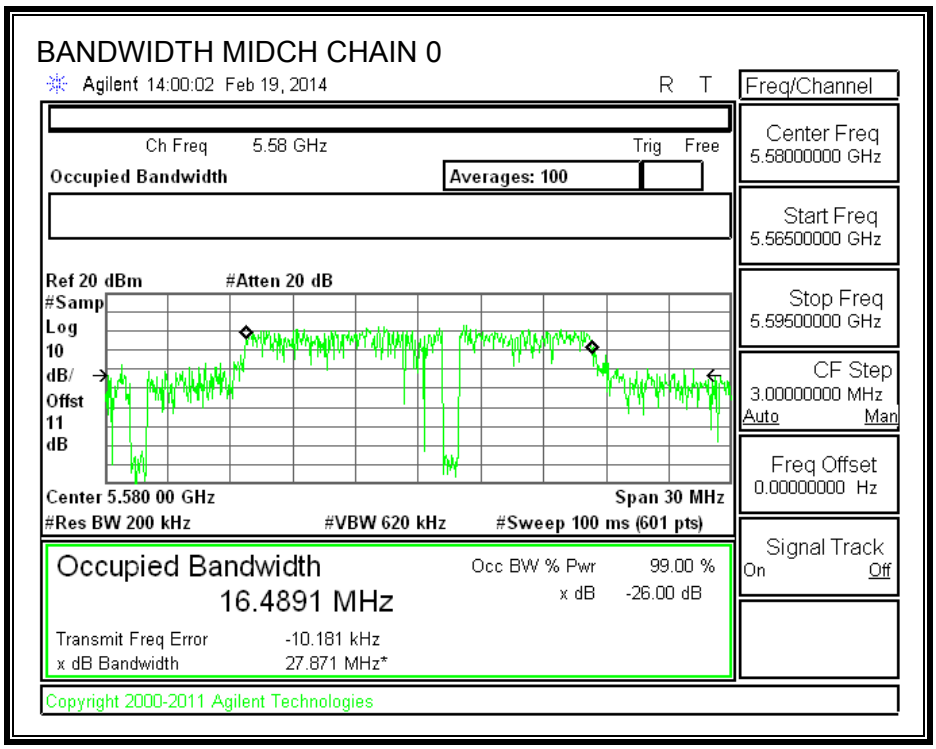
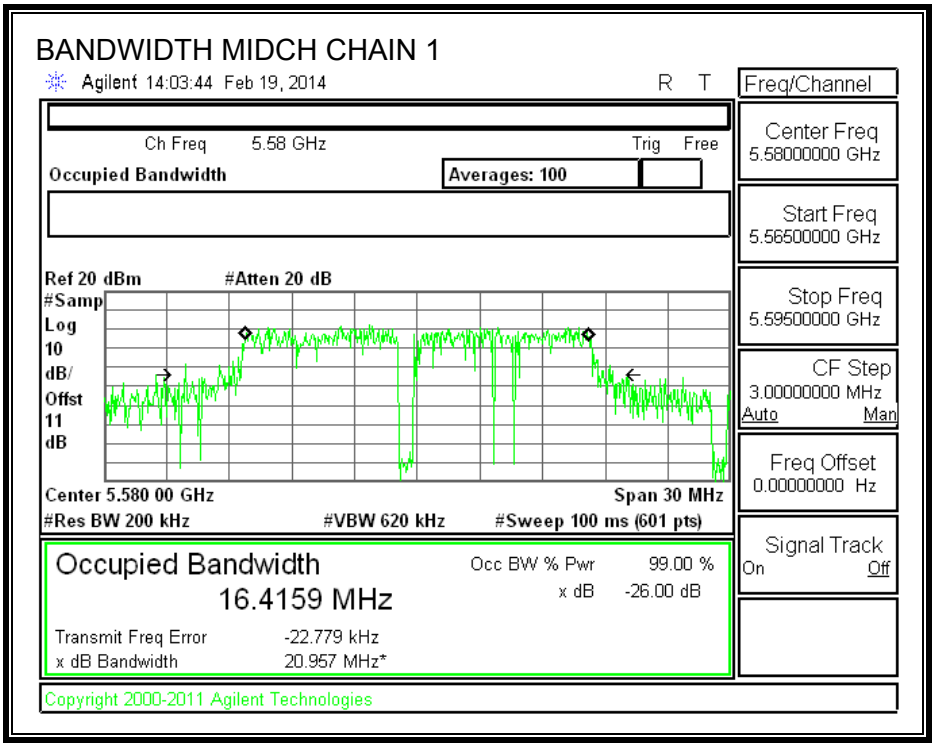
802.11a 5.5G 99% BANDWIDTH





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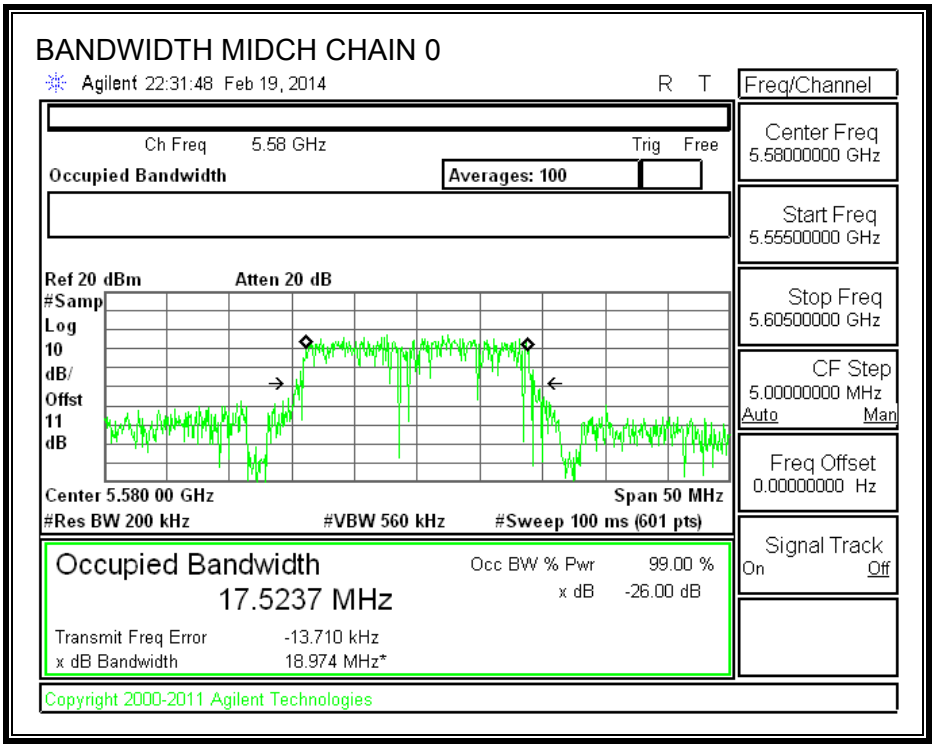

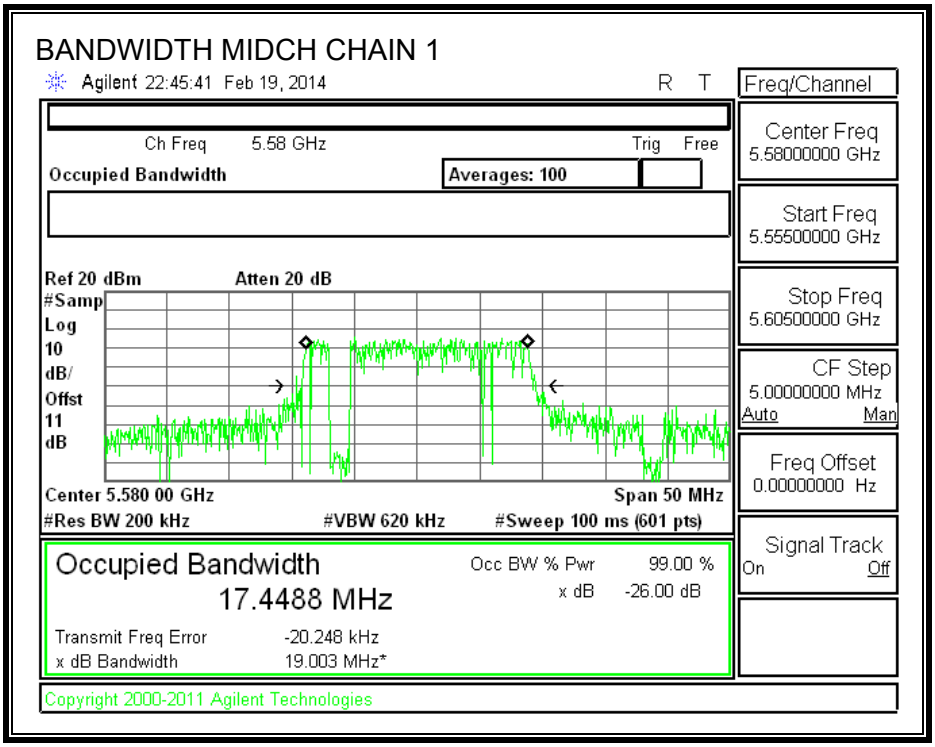

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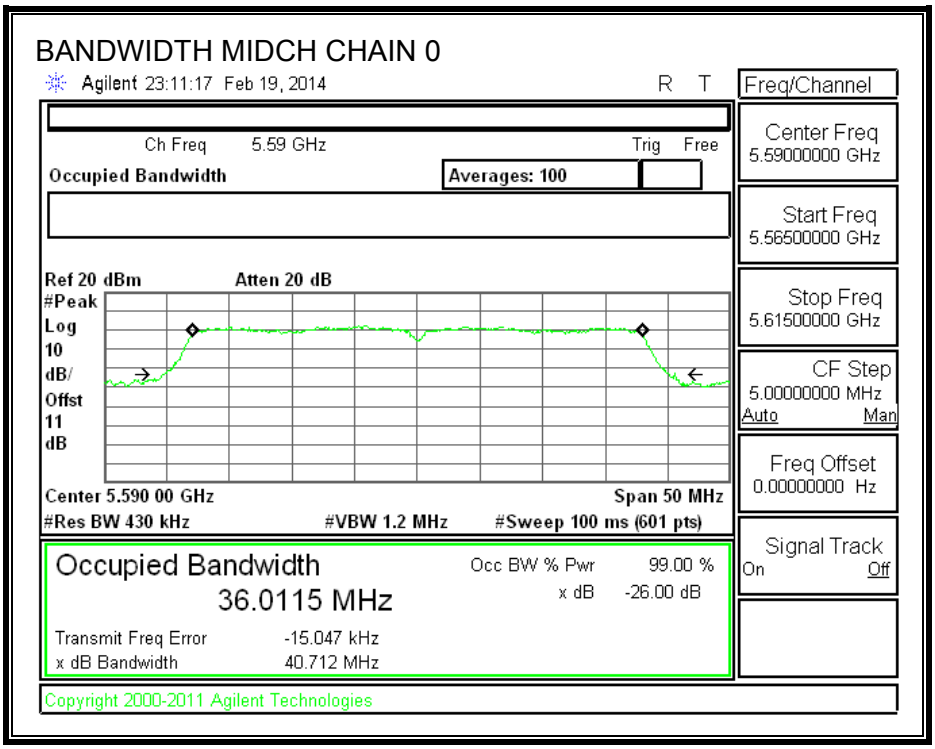

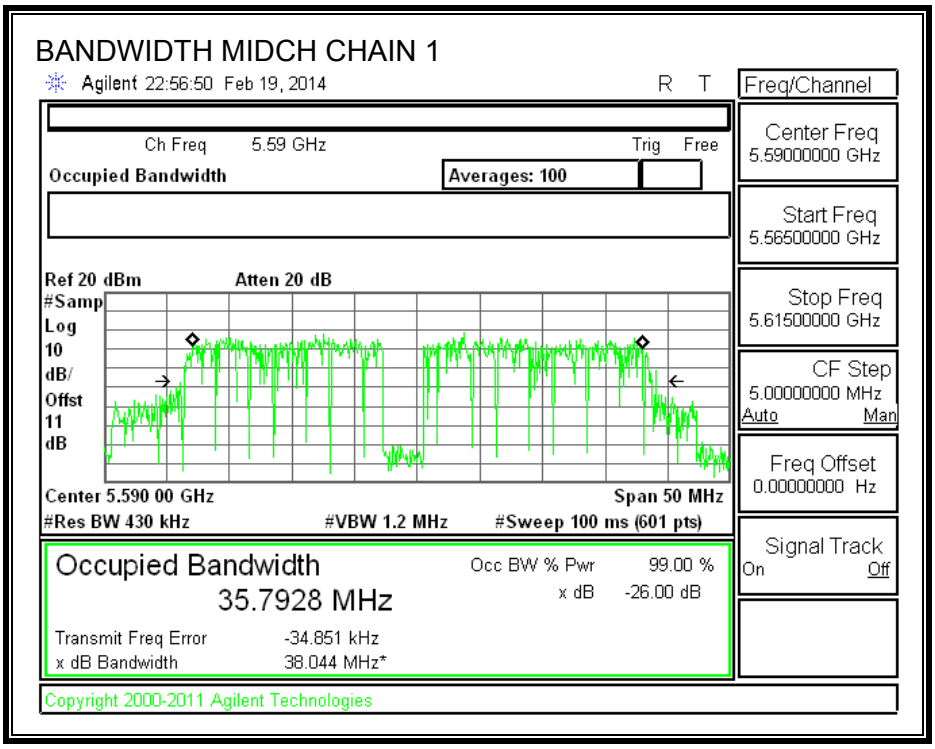

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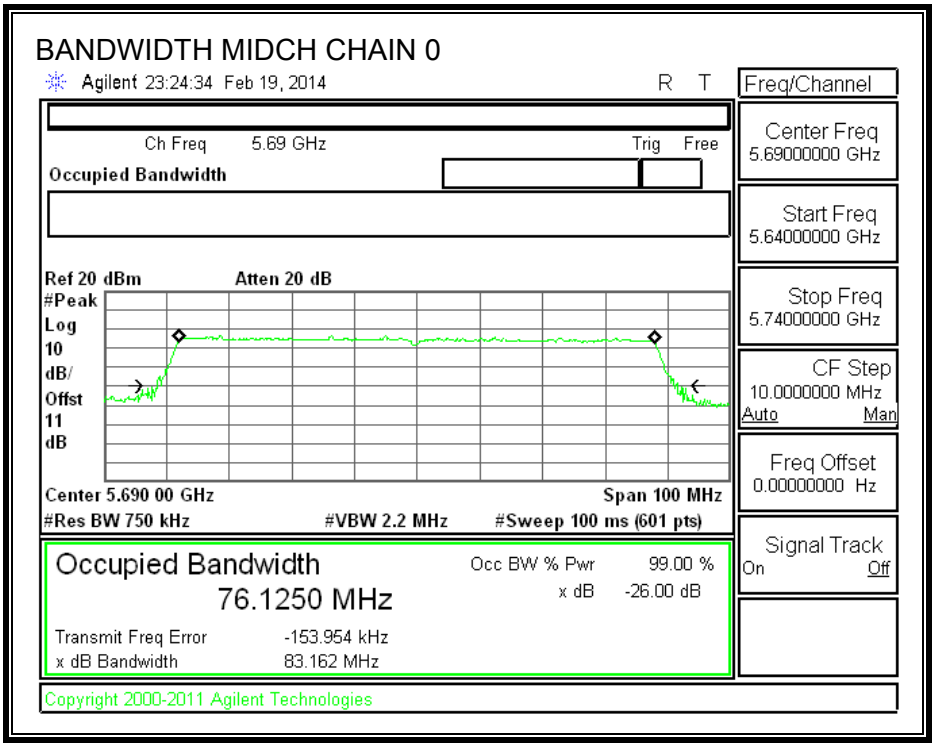

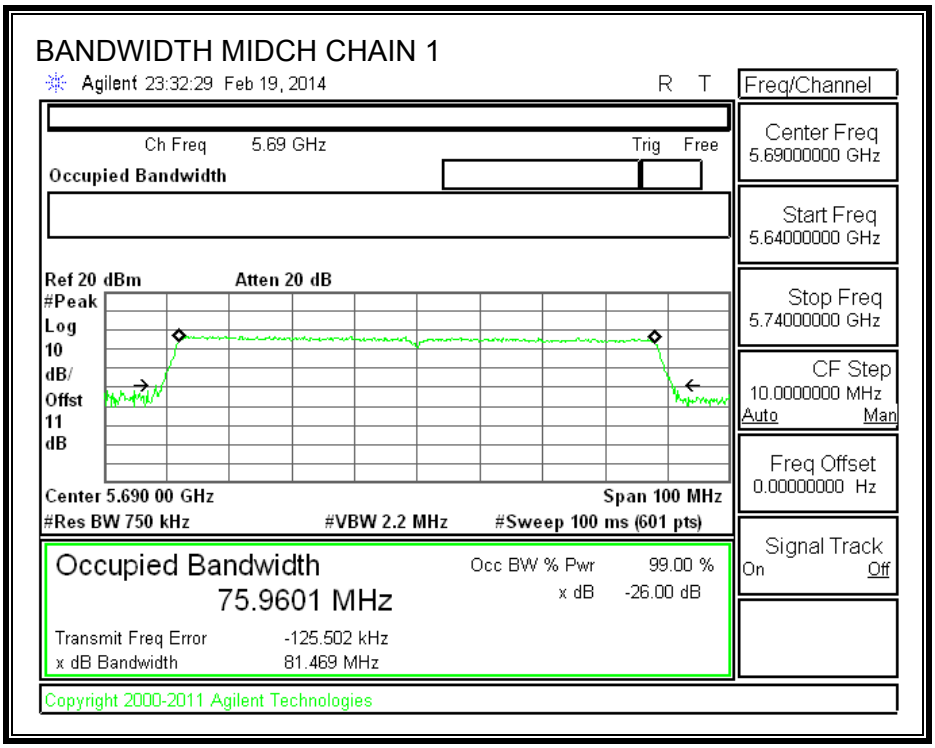

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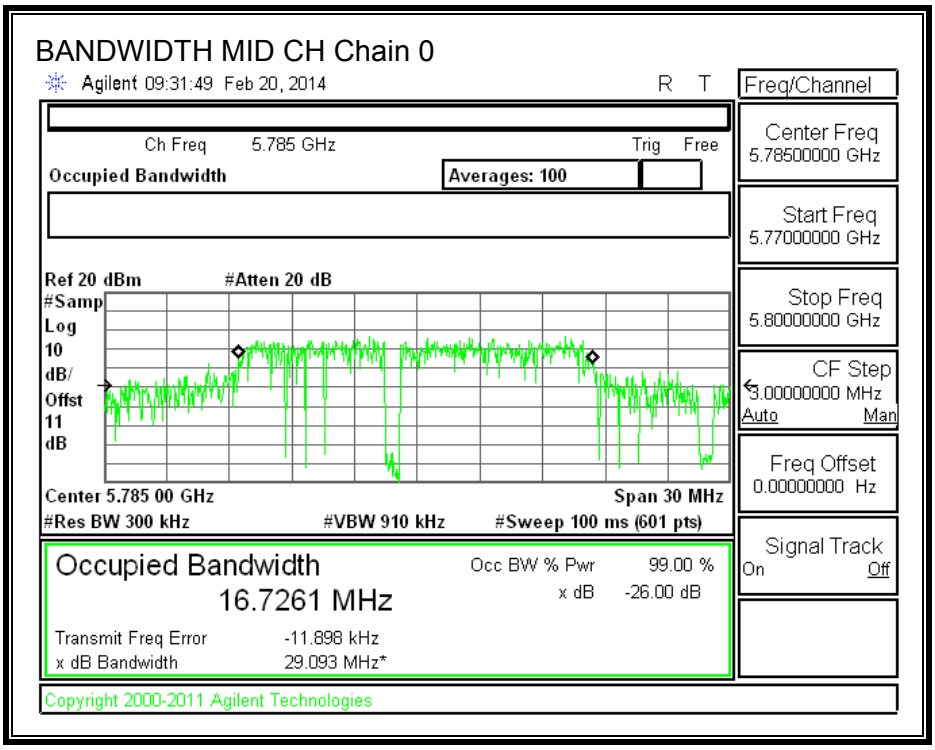
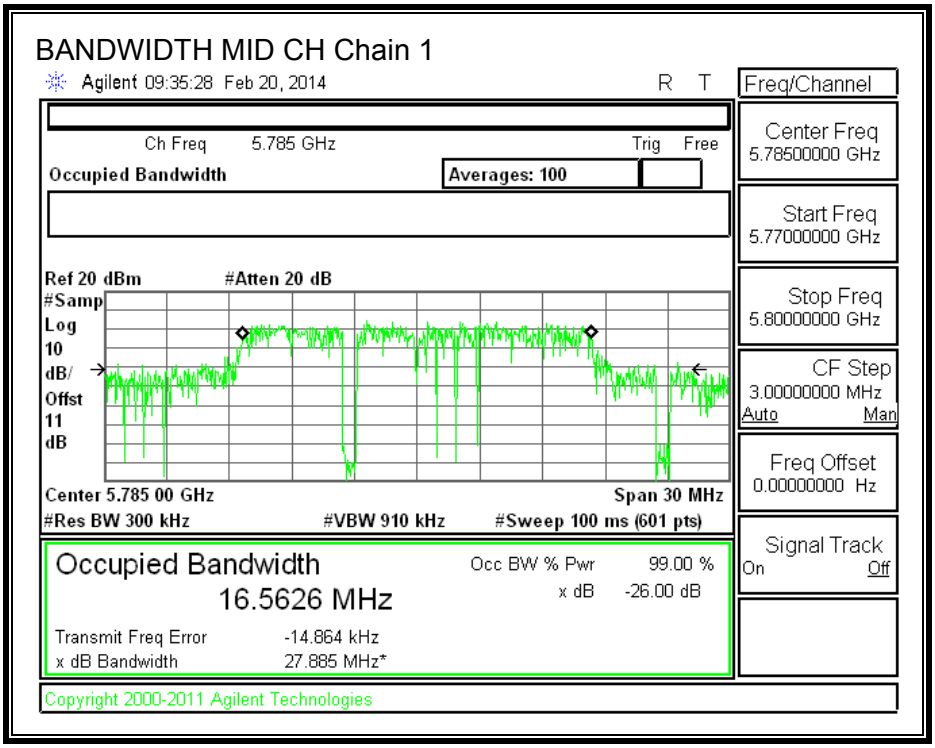
802.11a 5.8G 99% BANDWIDTH





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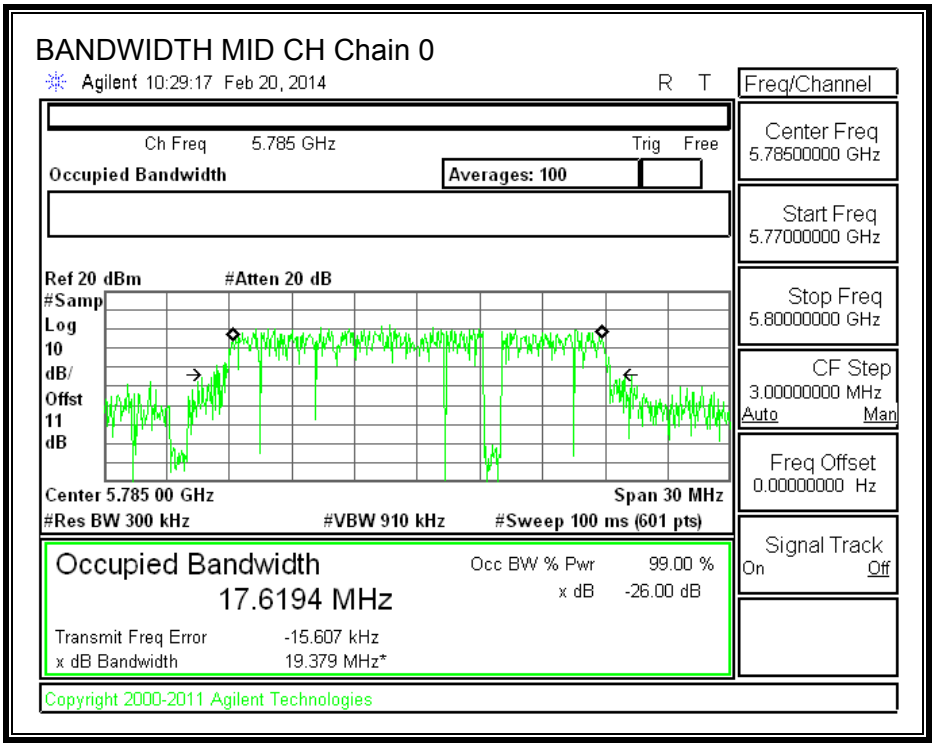

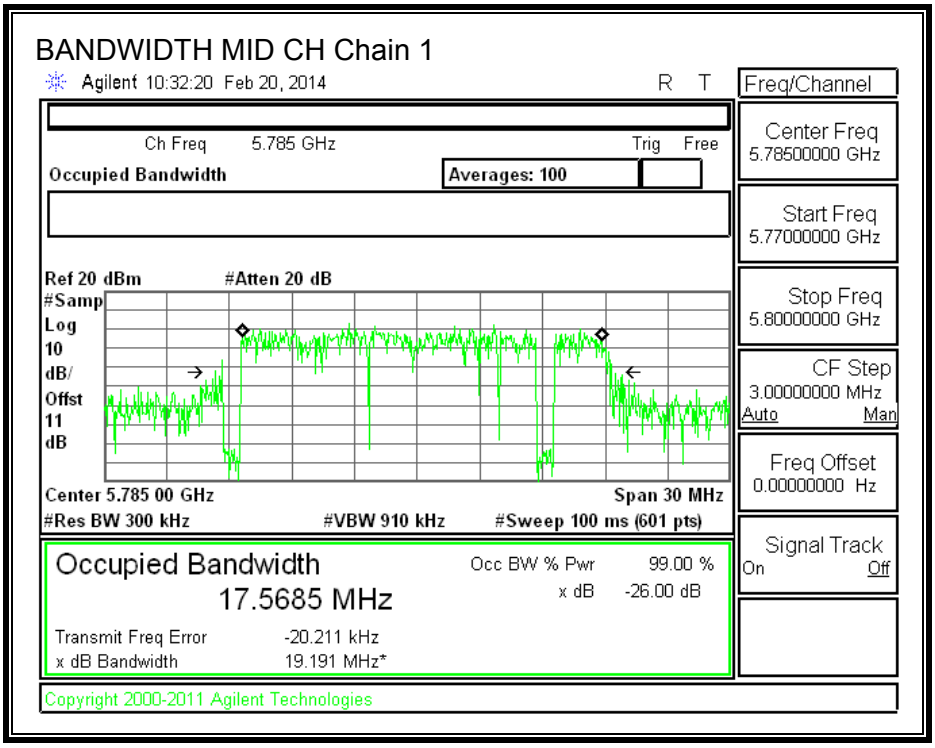

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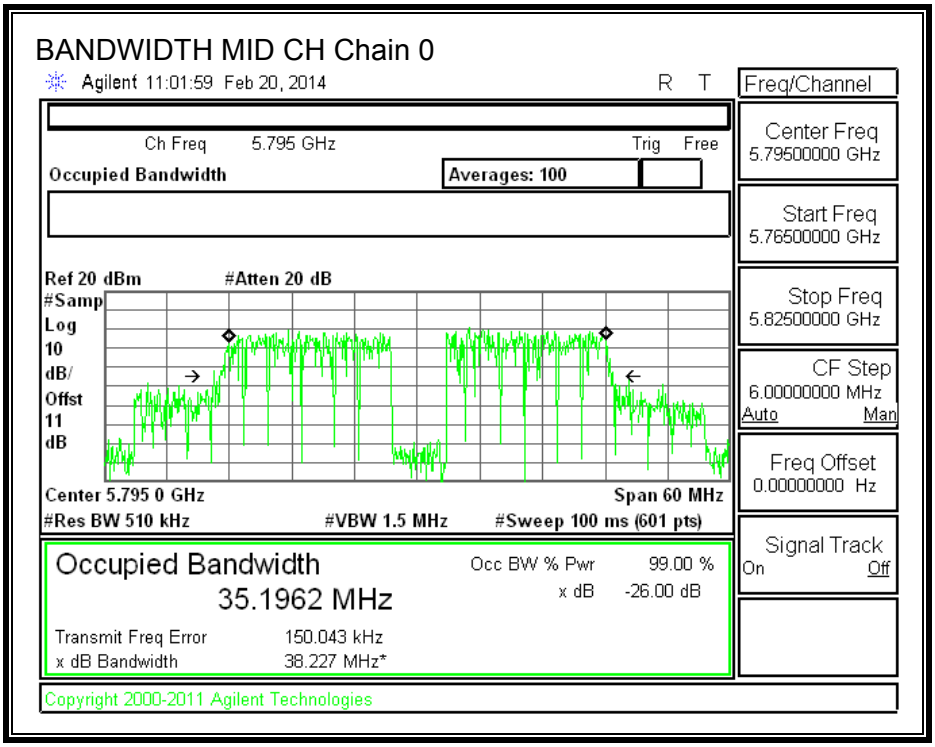

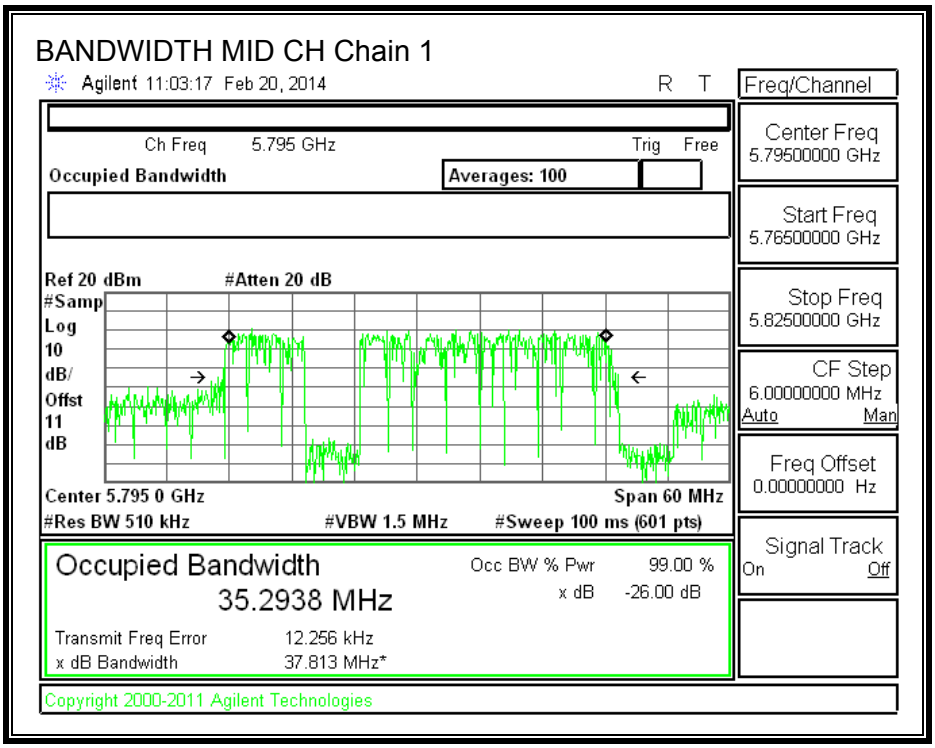

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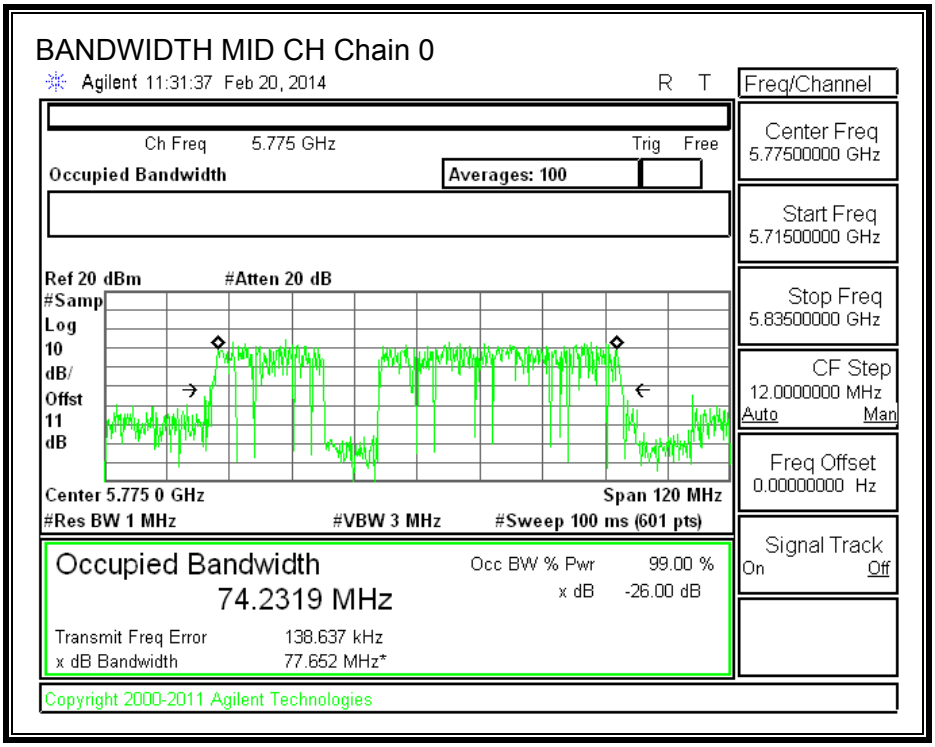

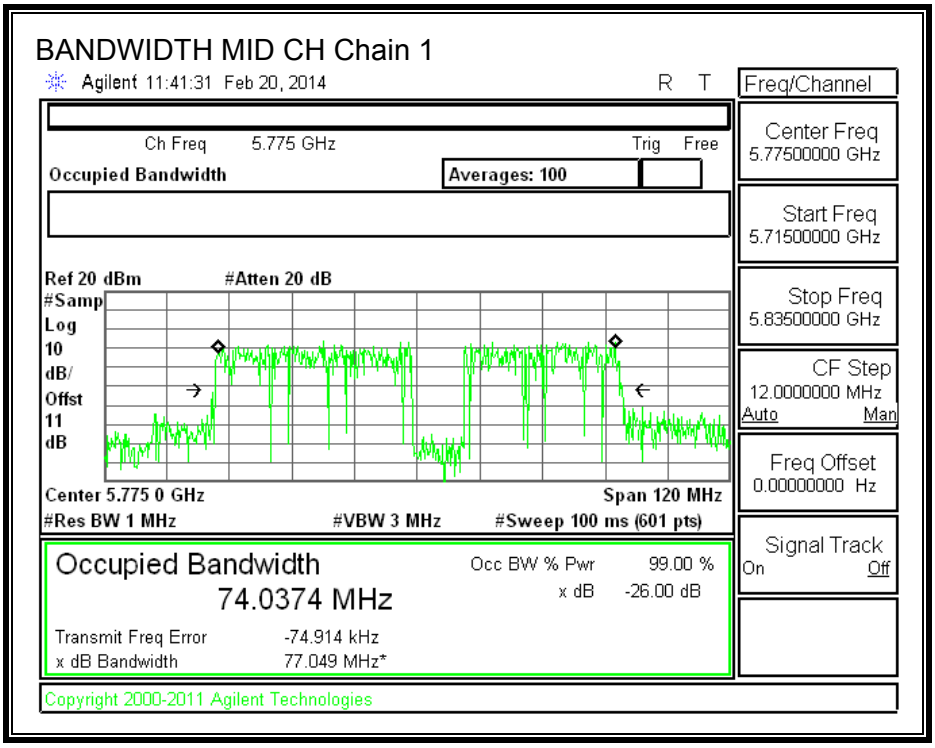

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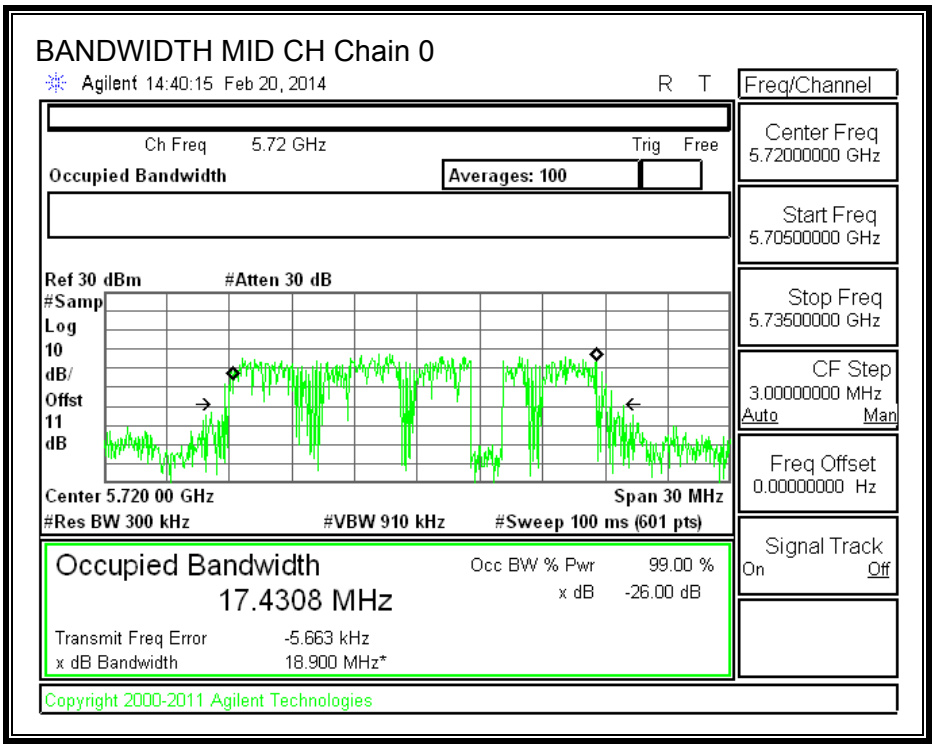
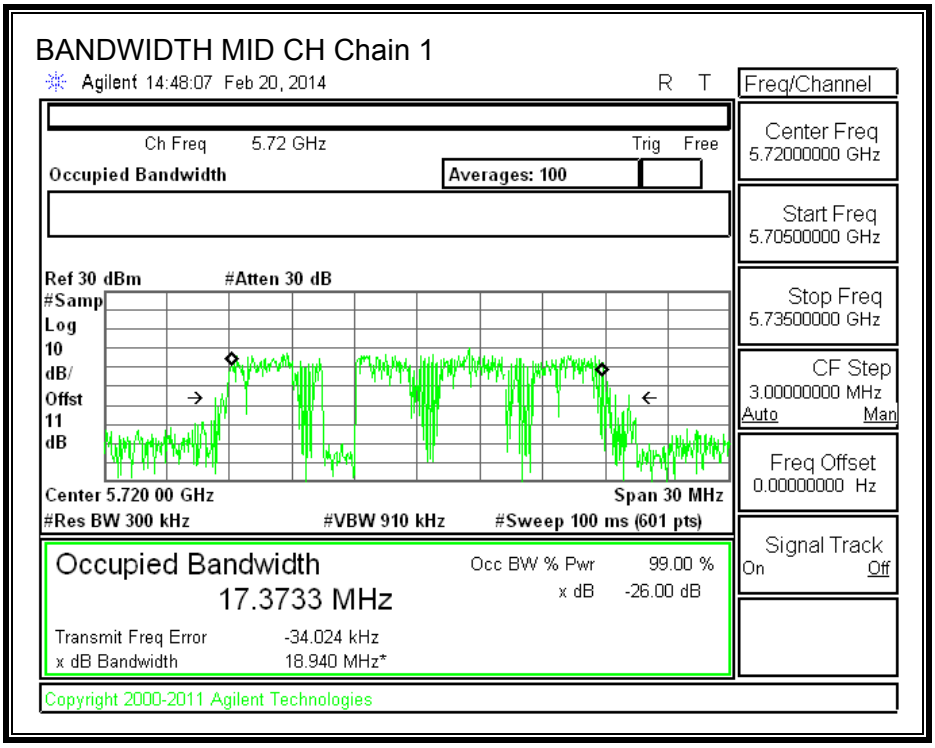
10.2.3. Straddling Channels Plots

802.11n HT20 MODE IN THE 5.5 GHz BAND





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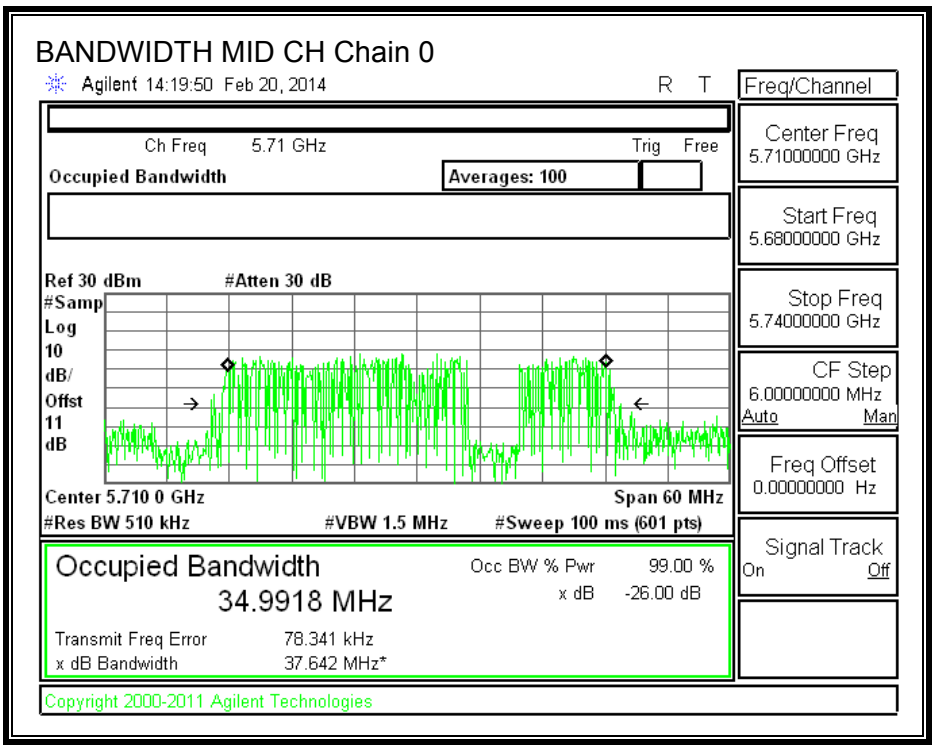
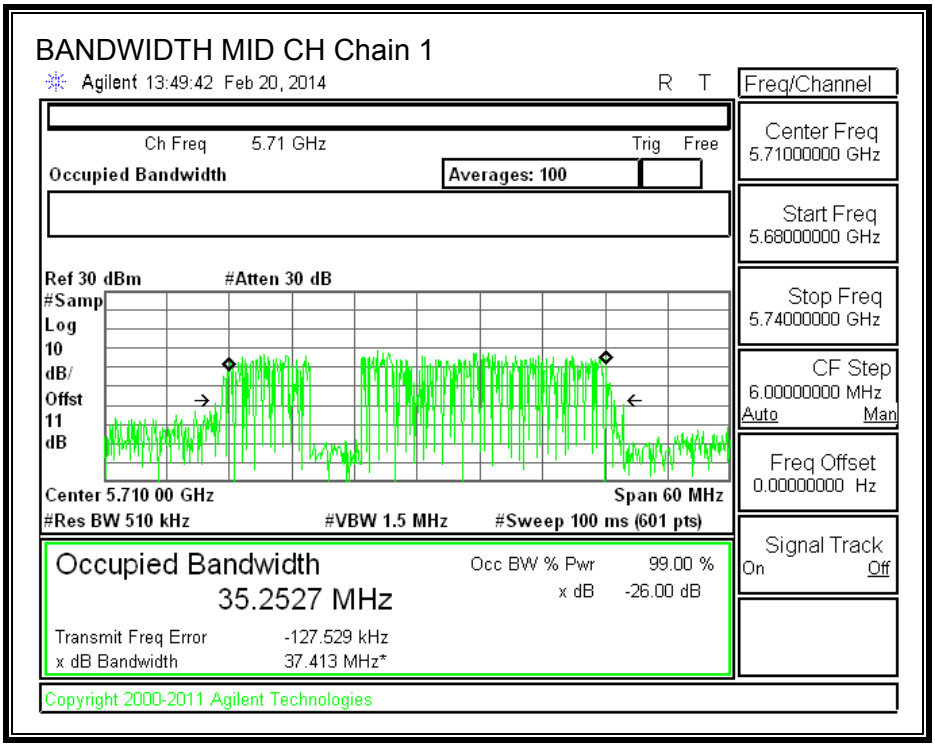
802.11n HT40 MODE IN THE 5.5 GHz BAND





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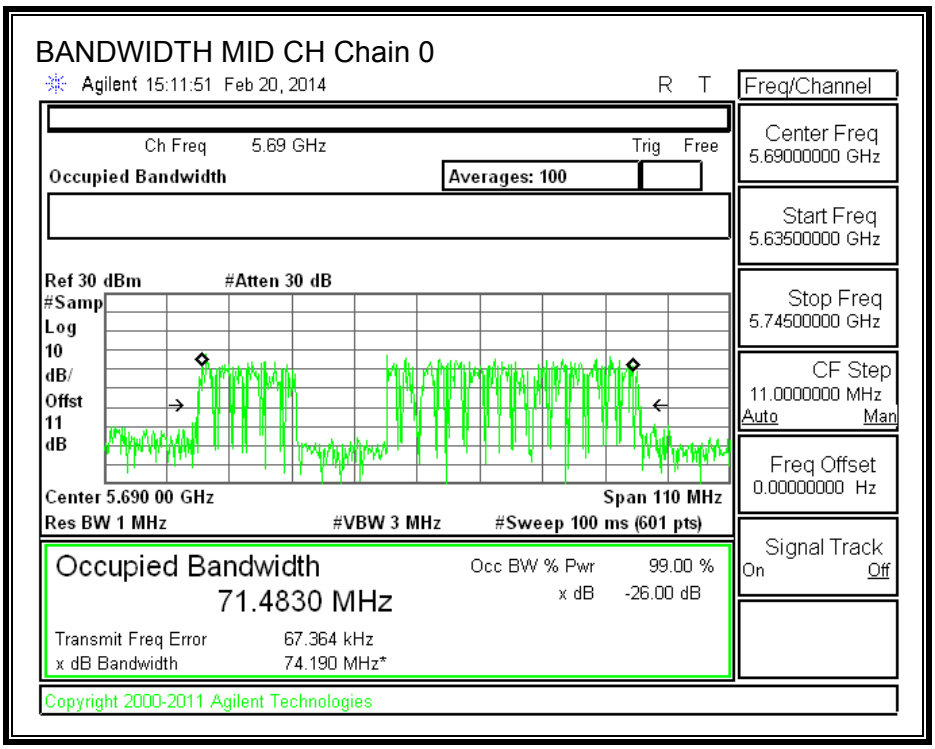
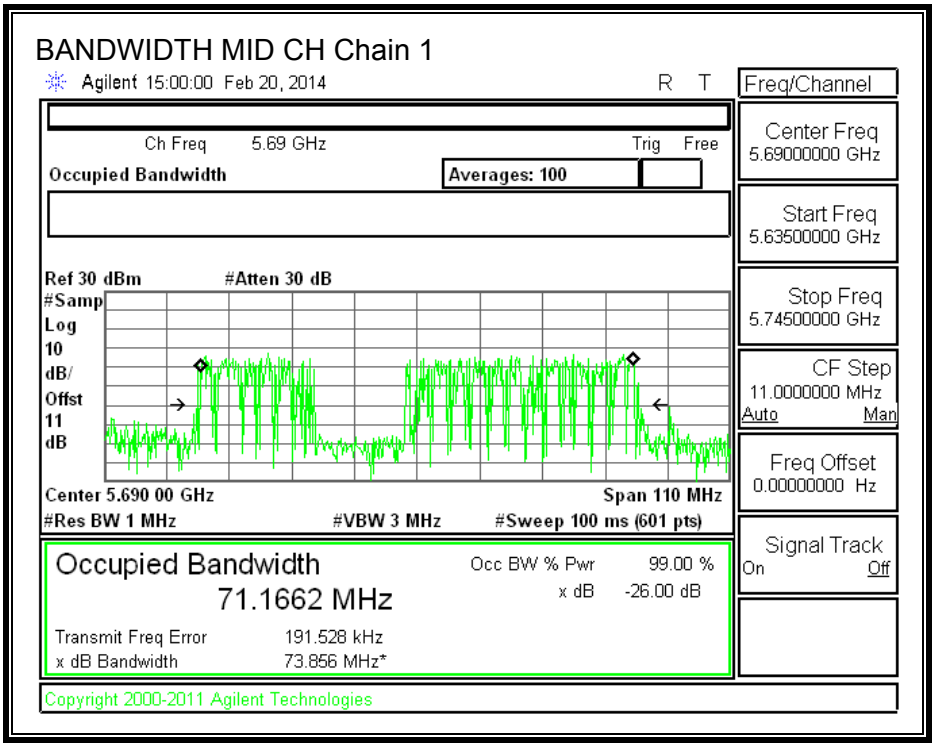
802.11ac HT80 MODE IN THE 5.5 GHz BAND





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10.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

For Power:

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

Band	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
5150 - 5350	0.89	-0.60	0.21
5470 - 5725	-0.67	-0.97	-0.82
5785 - 5850	-1.06	-1.12	-1.09

For PSD

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

Band	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
5150 - 5350	0.89	-0.60	3.19
5470 - 5725	-0.67	-0.97	2.19
5785 - 5850	-1.06	-1.12	1.92

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Test Methodology

RESULTS

10.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	22.7	16.4	0.21	3.19
Mid	5200	19.8	16.4	0.21	3.19
High	5240	19.9	16.4	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5180	17.00	22.14	21.93	17.00	4.00	10.00	4.00
Mid	5200	16.97	22.15	21.94	16.97	4.00	10.00	4.00
High	5240	16.99	22.15	21.94	16.99	4.00	10.00	4.00

Duty Cycle CF (dB)	0.53	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.91	11.62	15.31	17.00	-1.69
Mid	5200	12.22	11.43	15.38	16.97	-1.58
High	5240	12.10	11.02	15.14	16.99	-1.85

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.16	0.24	3.74	4.00	-0.26
Mid	5200	0.18	0.29	3.78	4.00	-0.22
High	5240	0.49	0.23	3.90	4.00	-0.10

Note：Client use original data rate instead of 98% duty cycle data rate for this test item, so duty cycle factor measured and added.

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10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	20.1	17.3	0.21	3.19
Mid	5200	20.2	17.5	0.21	3.19
High	5240	20.2	17.3	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5180	17.00	22.38	22.17	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.43	22.22	17.00	4.00	10.00	4.00
High	5240	17.00	22.38	22.17	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.53	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	10.69	10.17	13.98	17.00	-3.02
Mid	5200	10.86	10.19	14.08	17.00	-2.92
High	5240	10.39	10.15	13.81	17.00	-3.19

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.35	-0.26	3.60	4.00	-0.40
Mid	5200	0.30	-0.35	3.53	4.00	-0.47
High	5240	-0.12	-0.41	3.28	4.00	-0.72

Note：Client use original data rate instead of 98% duty cycle data rate for this test item, so duty cycle factor measured and added.

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10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5190	40.1	35.2	0.21	3.19
High	5230	40.3	35.1	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5190	17.00	23.00	22.79	17.00	4.00	10.00	4.00
High	5230	17.00	23.00	22.79	17.00	4.00	10.00	4.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	8.34	8.20	11.28	17.00	-5.72
High	5230	11.41	10.85	14.15	17.00	-2.85

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-5.10	-5.24	-2.16	4.00	-6.16
Mid	5230	-2.65	-3.20	0.09	4.00	-3.91

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10.3.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5210	82.5	74.2	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5210	17.00	23.00	22.79	17.00	4.00	10.00	4.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5210	6.02	6.32	9.18	17.00	-7.82

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5210	-11.54	-11.46	-8.49	4.00	-12.49

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10.3.5. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	20.0	16.5	0.21	3.19
Mid	5300	20.1	16.4	0.21	3.19
High	5320	20.3	16.4	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.17	29.17	23.17	11.00	11.00	11.00
Mid	5300	24.00	23.15	29.15	23.15	11.00	11.00	11.00
High	5320	24.00	23.15	29.15	23.15	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	13.51	13.71	16.62	23.17	-6.55
Mid	5300	13.76	13.49	16.64	23.15	-6.51
High	5320	13.38	13.72	16.57	23.15	-6.58

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	2.76	2.82	5.80	11.00	-5.20
Mid	5300	3.18	2.59	5.91	11.00	-5.09
High	5320	2.61	3.05	5.85	11.00	-5.15

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10.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	20.1	17.4	0.21	3.19
Mid	5300	20.1	17.4	0.21	3.19
High	5320	20.1	17.4	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.41	29.41	23.41	11.00	11.00	11.00
Mid	5300	24.00	23.41	29.41	23.41	11.00	11.00	11.00
High	5320	24.00	23.41	29.41	23.41	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.80	11.43	15.18	23.41	-8.23
Mid	5300	12.89	11.65	15.32	23.41	-8.08
High	5320	12.89	12.42	15.67	23.41	-7.73

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	2.43	0.32	4.51	11.00	-6.49
Mid	5300	2.22	0.35	4.40	11.00	-6.60
High	5320	2.17	1.30	4.77	11.00	-6.23

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10.3.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5270	40.20	34.7	0.21	3.19
High	5310	40.20	35.5	0.21	3.19

Limits

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

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	11.20	11.16	14.19	24.00	-9.81
Mid	5310	11.50	11.37	14.45	24.00	-9.55

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-2.82	-2.88	0.16	11.00	-10.84
High	5310	-2.54	-2.74	0.37	11.00	-10.63

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10.3.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5290	81.80	72.7	0.21	3.19

Limits

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

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5290	6.26	6.51	9.40	24.00	-14.60

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5290	-11.06	-10.70	-7.87	11.00	-18.87

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10.3.9. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	19.70	16.4	0.21	3.19
Mid	5580	30.30	16.4	0.21	3.19
High	5700	20.40	16.5	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	23.94	23.15	29.15	23.15	11.00	11.00	11.00
Mid	5580	24.00	23.15	29.15	23.15	11.00	11.00	11.00
High	5700	24.00	23.17	29.17	23.17	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.55	11.83	14.70	23.15	-8.44
Mid	5580	13.53	12.62	16.11	23.15	-7.04
High	5700	11.71	11.84	14.78	23.17	-8.39

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.80	0.85	3.84	11.00	-7.16
Mid	5580	3.29	2.61	5.97	11.00	-5.03
High	5700	1.03	1.61	4.34	11.00	-6.66

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10.3.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	20.00	17.3	0.21	3.19
Mid	5580	20.00	17.4	0.21	3.19
High	5700	20.00	17.4	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.38	29.38	23.38	11.00	11.00	11.00
Mid	5580	24.00	23.41	29.41	23.41	11.00	11.00	11.00
High	5700	24.00	23.41	29.41	23.41	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.59	10.13	13.93	23.38	-9.45
Mid	5580	11.52	12.25	14.91	23.41	-8.49
High	5700	11.87	12.82	15.38	23.41	-8.03

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.52	-0.71	2.96	11.00	-8.04
Mid	5580	0.42	1.82	4.19	11.00	-6.81
High	5700	0.82	2.76	4.91	11.00	-6.09

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10.3.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5510	40.1	35.4	0.21	3.19
Mid	5550	40.0	35.8	0.21	3.19
High	5670	40.0	35.4	0.21	3.19

Limits

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

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	10.84	9.45	13.21	24.00	-10.79
Mid	5550	9.85	9.86	12.87	24.00	-11.13
High	5670	9.78	10.20	13.00	24.00	-11.00

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-3.56	-5.44	-1.39	11.00	-12.39
Mid	5550	-3.59	-3.67	-0.62	11.00	-11.62
High	5670	-3.48	-3.33	-0.39	11.00	-11.39

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10.3.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5530	82.20	71.7	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5530	24.00	24.00	30.00	24.00	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	6.19	6.81	9.52	24.00	-14.48

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5530	-11.49	-11.90	-8.68	11.00	-19.68

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10.3.13. 802.11a MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5745	34.4	16.5	0.21	3.19
Mid	5785	37.6	16.6	0.21	3.19
High	5825	19.70	16.5	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	24.00	23.17	29.17	23.17	11.00	11.00	11.00
Mid	5785	24.00	23.20	29.20	23.20	11.00	11.00	11.00
High	5825	23.94	23.17	29.17	23.17	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	12.33	12.70	15.53	23.17	-7.65
Mid	5785	13.67	13.63	16.66	23.20	-6.54
High	5825	11.29	10.90	14.11	23.17	-9.06

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	1.32	1.49	4.42	11.00	-6.58
Mid	5785	3.34	3.33	6.35	11.00	-4.65
High	5825	0.57	0.10	3.35	11.00	-7.65

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10.3.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5745	20.10	17.6	0.21	3.19
Mid	5785	20.20	17.6	0.21	3.19
High	5825	20.20	17.6	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	24.00	23.46	29.46	23.46	11.00	11.00	11.00
Mid	5785	24.00	23.46	29.46	23.46	11.00	11.00	11.00
High	5825	24.00	23.46	29.46	23.46	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	11.93	11.77	14.86	23.46	-8.60
Mid	5785	11.94	11.91	14.93	23.46	-8.52
High	5825	11.59	12.55	15.11	23.46	-8.35

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	0.94	0.93	3.95	11.00	-7.05
Mid	5785	0.66	0.70	3.69	11.00	-7.31
High	5825	0.60	1.27	3.96	11.00	-7.04

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10.3.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5755	40.5	35.1	0.21	3.19
High	5795	40.3	35.2	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5755	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5795	24.00	24.00	30.00	24.00	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	10.87	11.32	14.11	24.00	-9.89
Mid	5795	8.33	7.96	11.16	24.00	-12.84

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-0.33	-2.55	1.71	11.00	-9.29
Mid	5795	-7.04	-7.23	-4.12	11.00	-15.12

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10.3.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5775	82.40	74.2	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5775	24.00	24.00	30.00	24.00	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5775	5.95	5.27	8.64	24.00	-15.36

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5775	-11.53	-12.23	-8.86	11.00	-19.86

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10.3.1. Straddling Channels

802.11 HT20 MODE IN THE 5.5 GHz BAND UNII 3

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5720	14.93	17.4	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5720	22.74	23.41	29.41	22.74	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5720	5.70	7.11	9.47	22.74	-13.27

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5720	-4.13	-2.88	-0.45	11.00	-11.45

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802.11 HT20 MODE IN THE 5.5 GHz BAND UNII 4

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5720	4.92	17.4	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5720	23.92	29.41	29.41	23.92	17.00	17.00	17.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5720	-0.48	1.30	3.51	23.92	-20.41

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5720	-5.34	-3.35	-1.22	17.00	-18.22

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802.11 HT40 MODE IN THE 5.5 GHz BAND UNII 3

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5710	35.34	35.0	0.21	3.19

Limits

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

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5710	8.56	7.92	11.26	24.00	-12.74

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5710	-4.84	-5.43	-2.11	11.00	-13.11

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802.11 HT40 MODE IN THE 5.5 GHz BAND UNII 4

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5710	5.34	35.0	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5710	24.28	30.00	30.00	24.28	17.00	17.00	17.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5710	-1.73	-2.51	0.91	24.28	-23.37

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5710	-5.73	-6.09	-2.90	17.00	-19.90

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802.11 HT80 MODE IN THE 5.5 GHz BAND UNII3

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5690	131.40	71.2	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5690	24.00	24.00	30.00	24.00	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5690	6.03	6.38	9.22	24.00	-14.78

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5690	-10.56	-10.61	-7.57	11.00	-18.57

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802.11 HT80 MODE IN THE 5.5 GHz BAND UNII4

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5690	61.40	71.2	0.21	3.19

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5690	30.00	30.00	30.00	29.79	17.00	17.00	17.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5690	-6.38	-5.97	-3.16	29.79	-32.95

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5690	-10.61	-10.22	-7.40	17.00	-24.40

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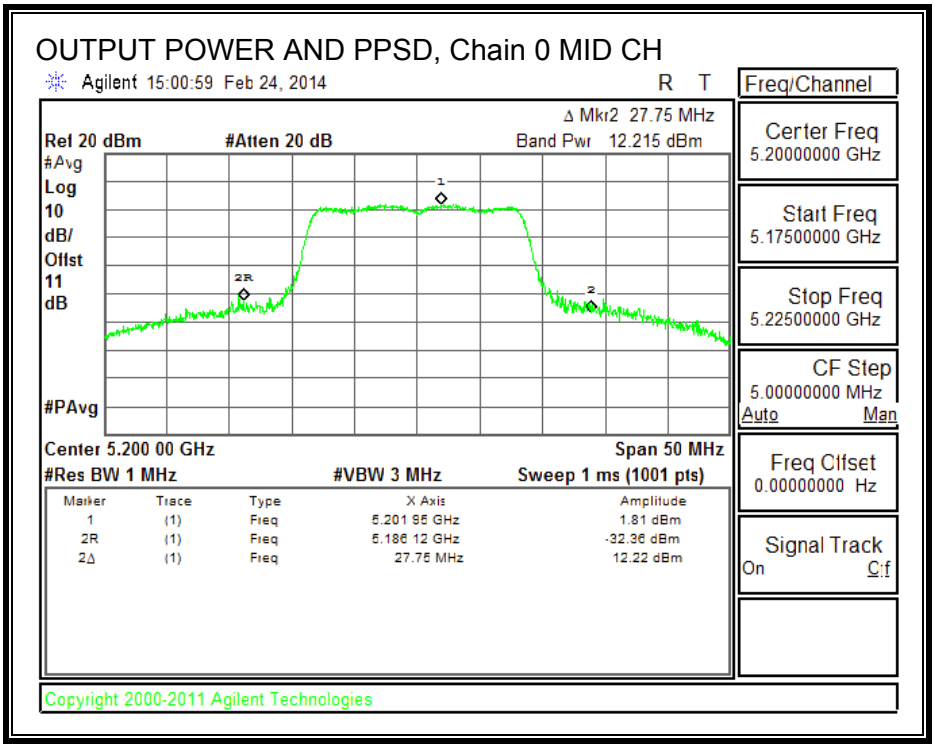
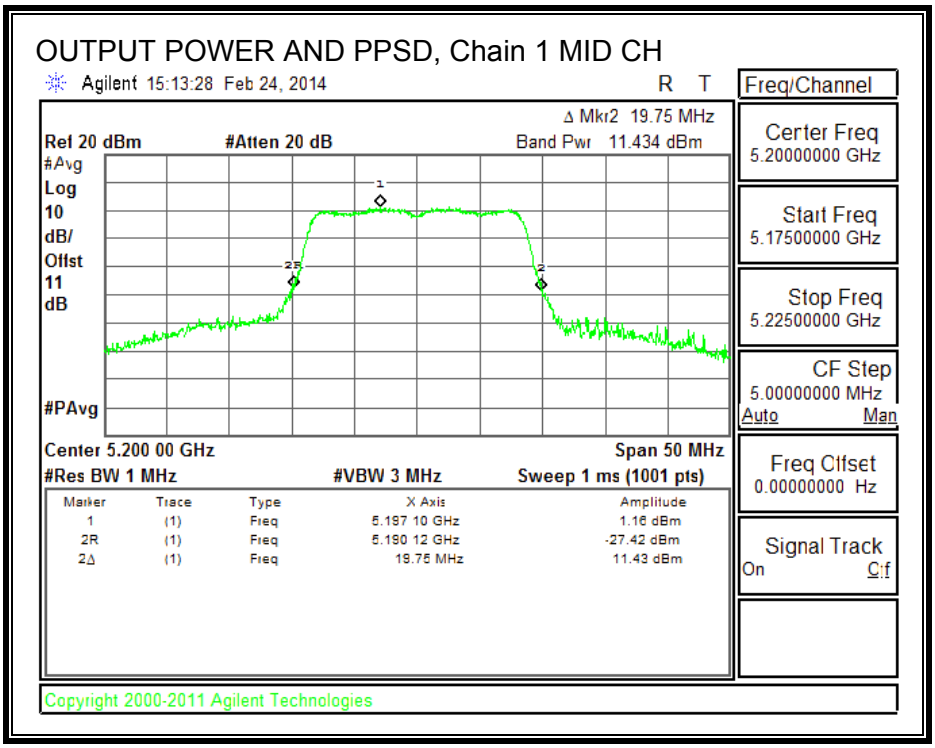
10.3.2. Plots

802.11a 5.2G OUTPUT POWER AND PPSD, Chain 0





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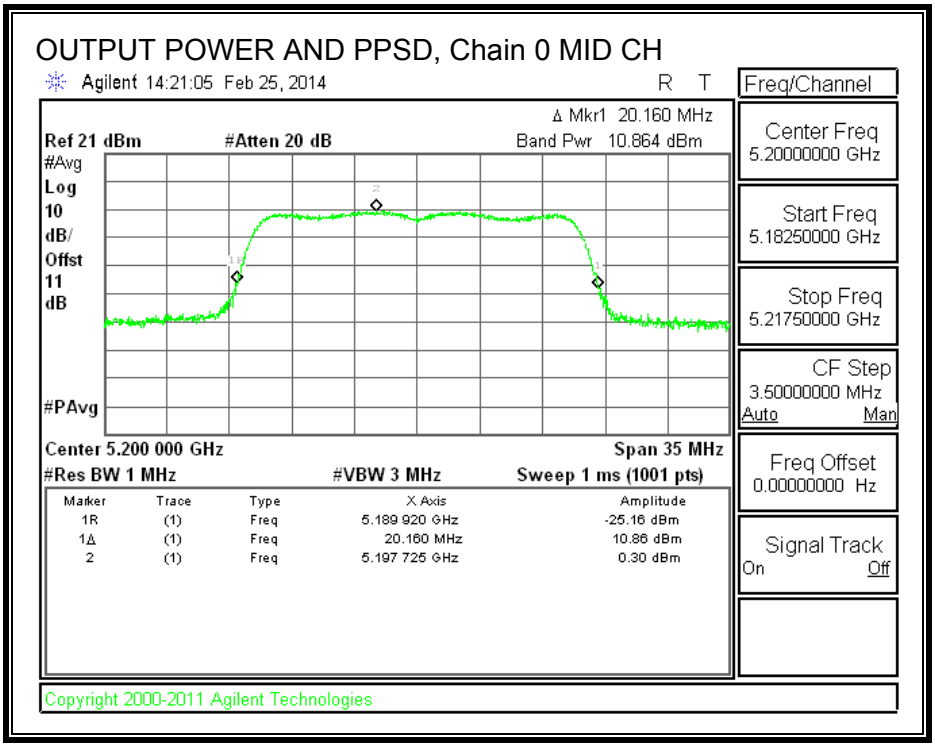
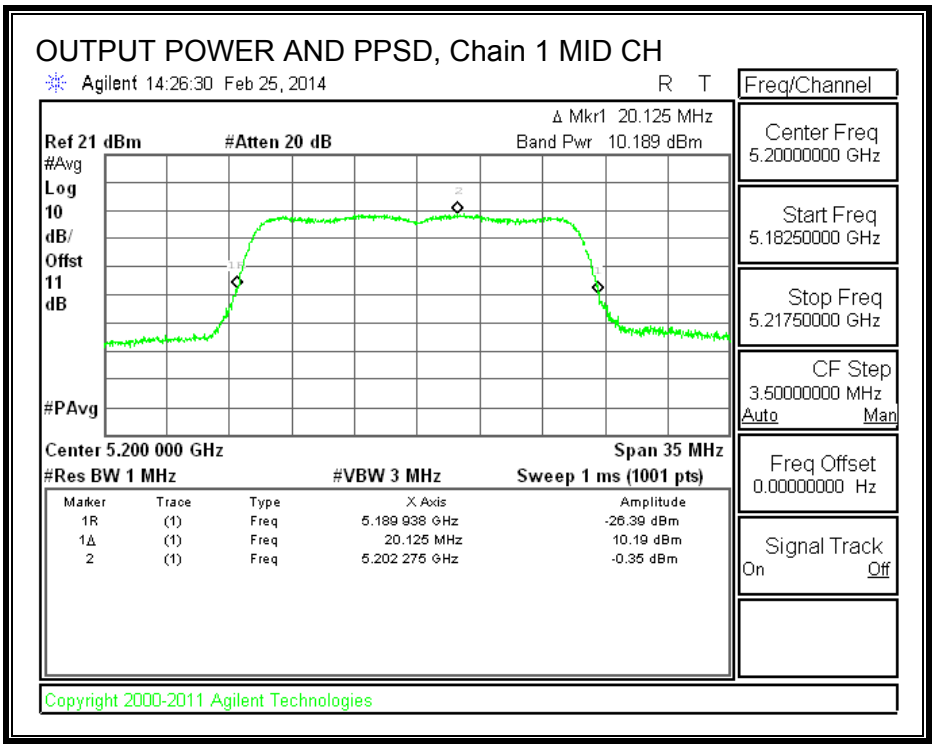
802.11n HT20 5.2G OUTPUT POWER AND PPSD, Chain 0





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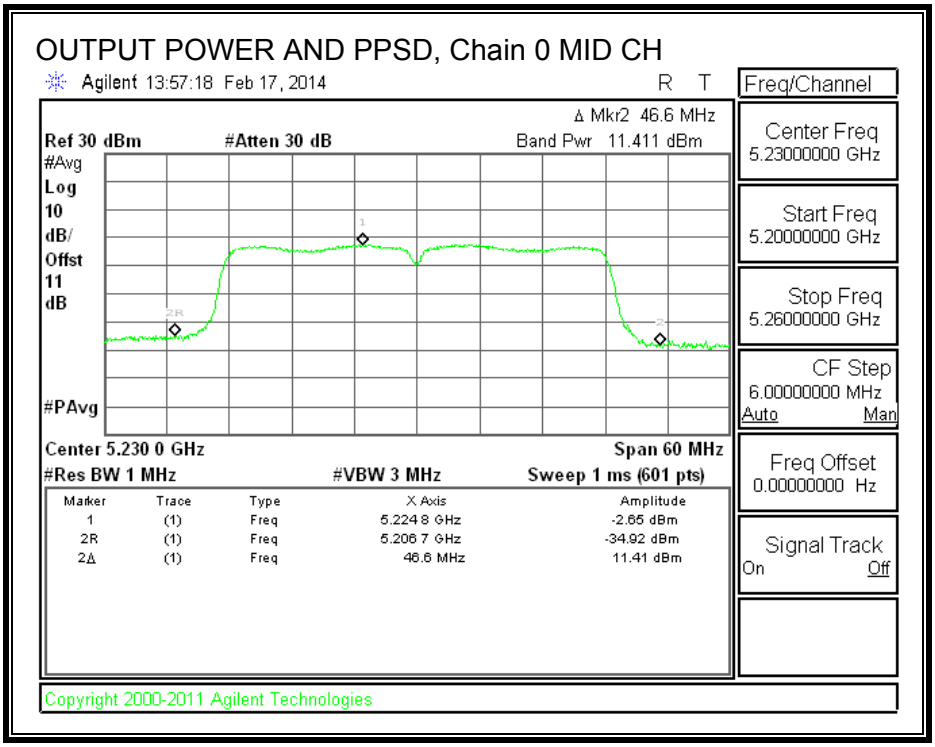
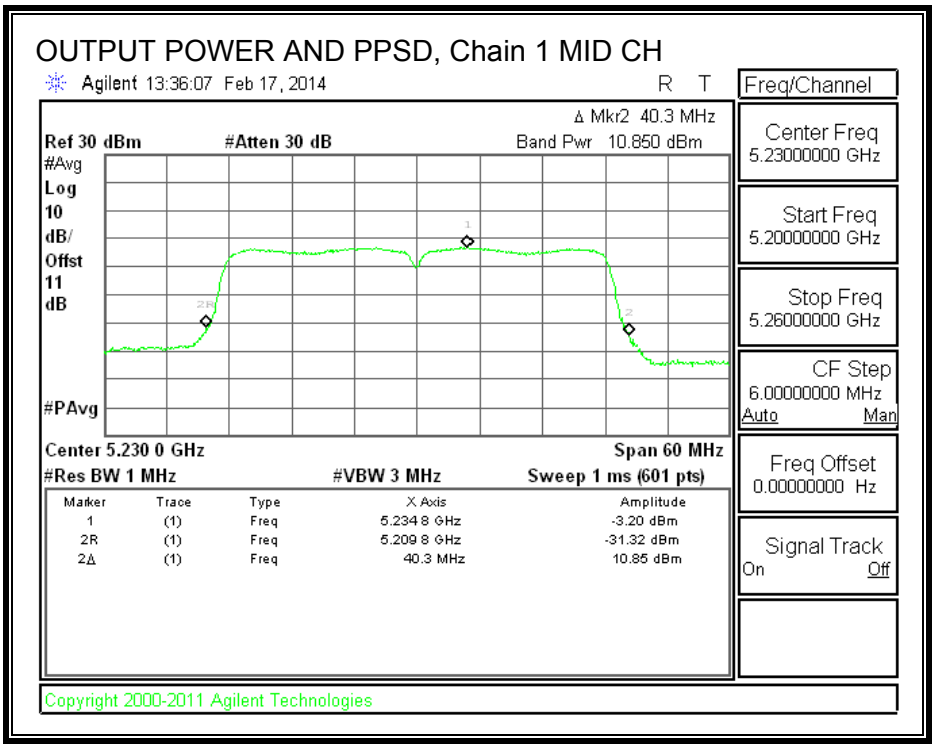
802.11n HT40 5.2G OUTPUT POWER AND PPSD, Chain 0





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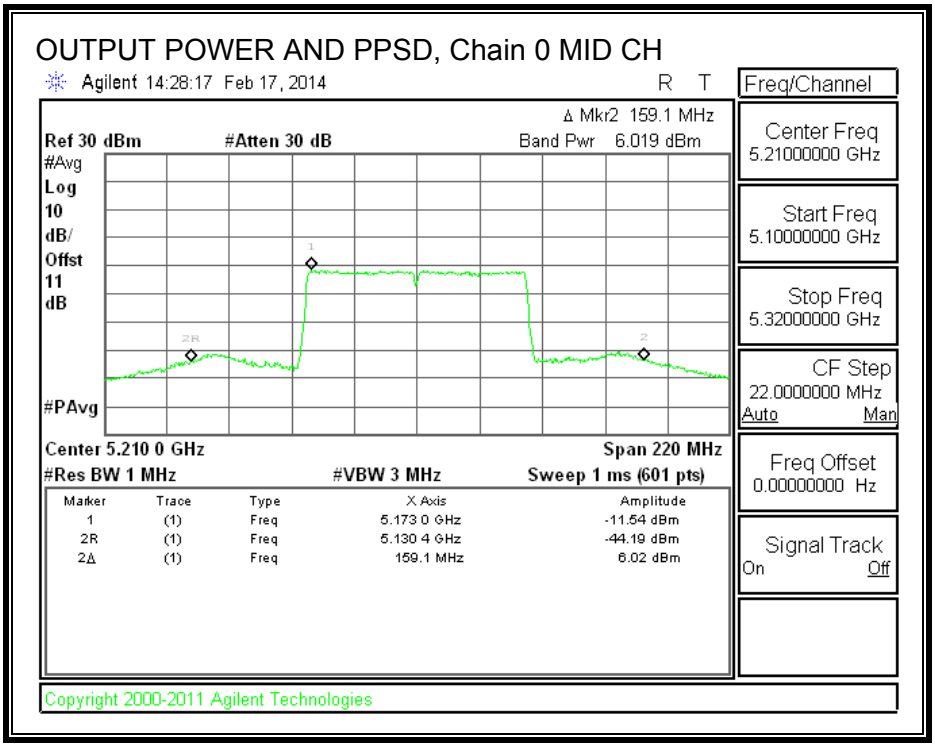
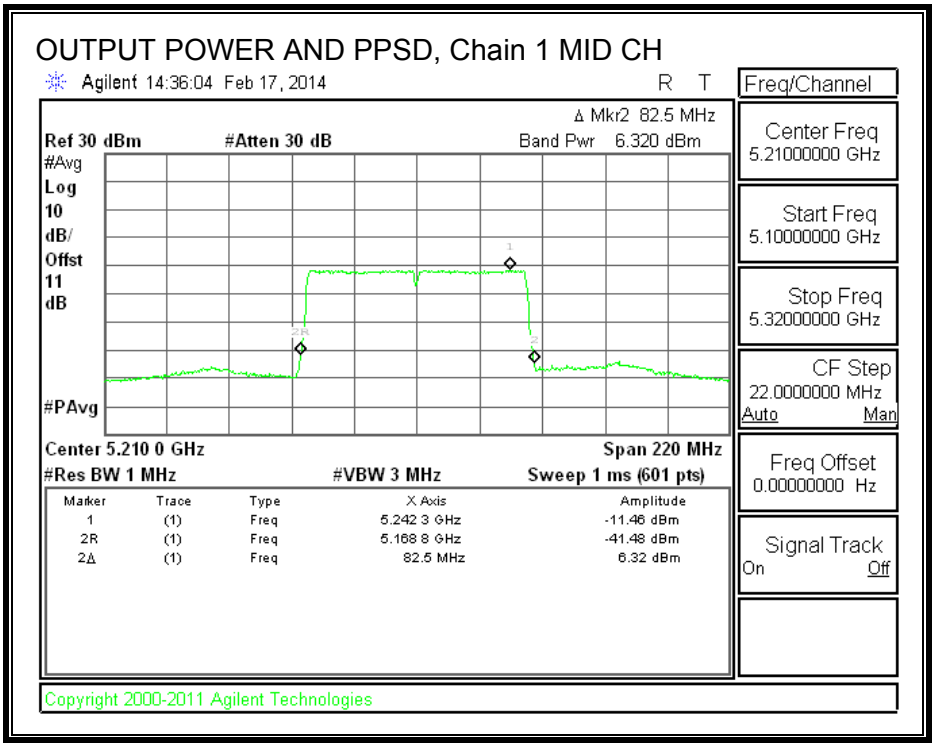
802.11ac HT80 5.2G OUTPUT POWER AND PPSD, Chain 0





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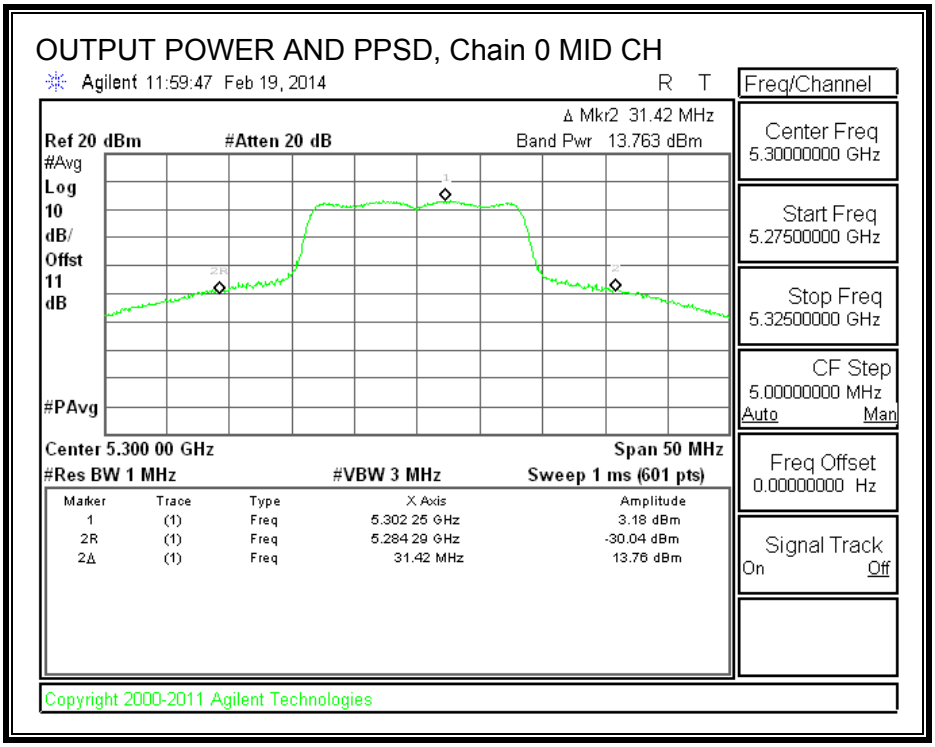
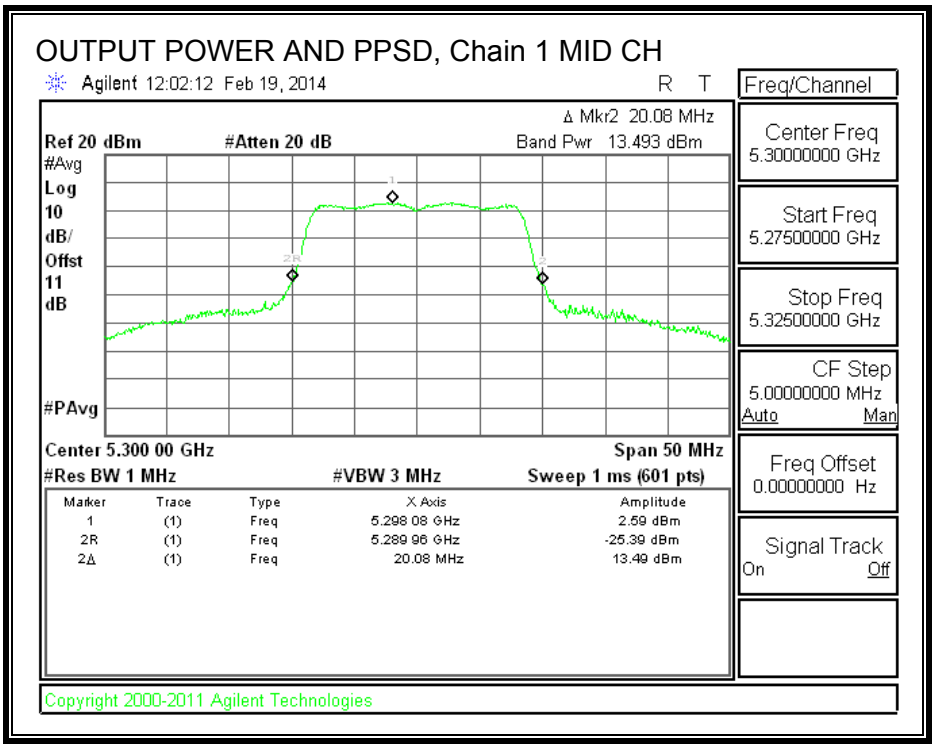
802.11a 5.3G OUTPUT POWER AND PPSD, Chain 0





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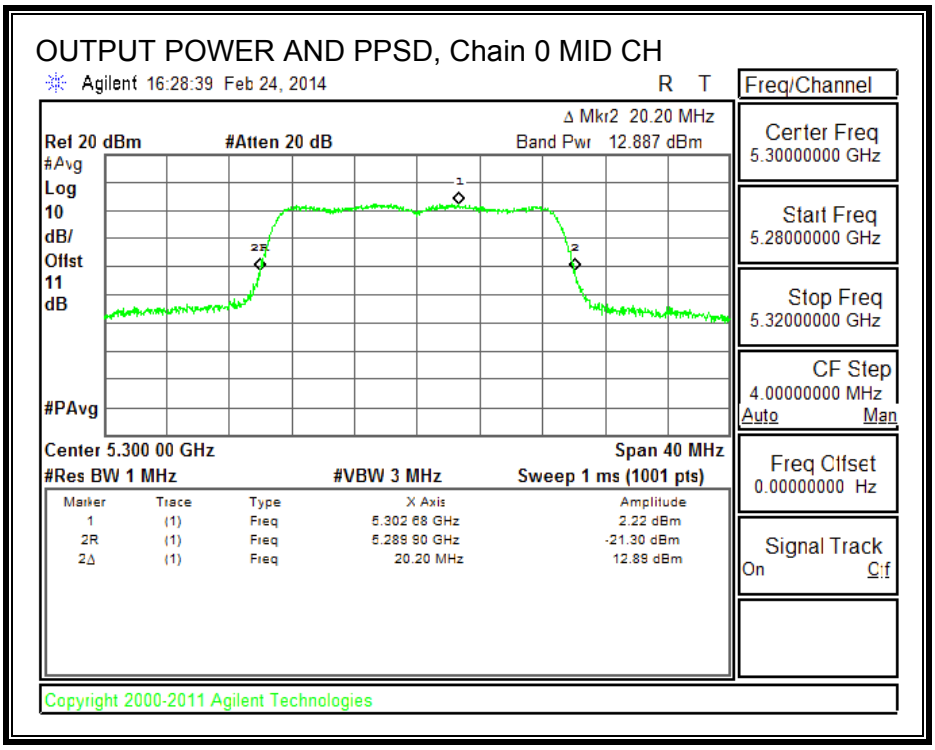
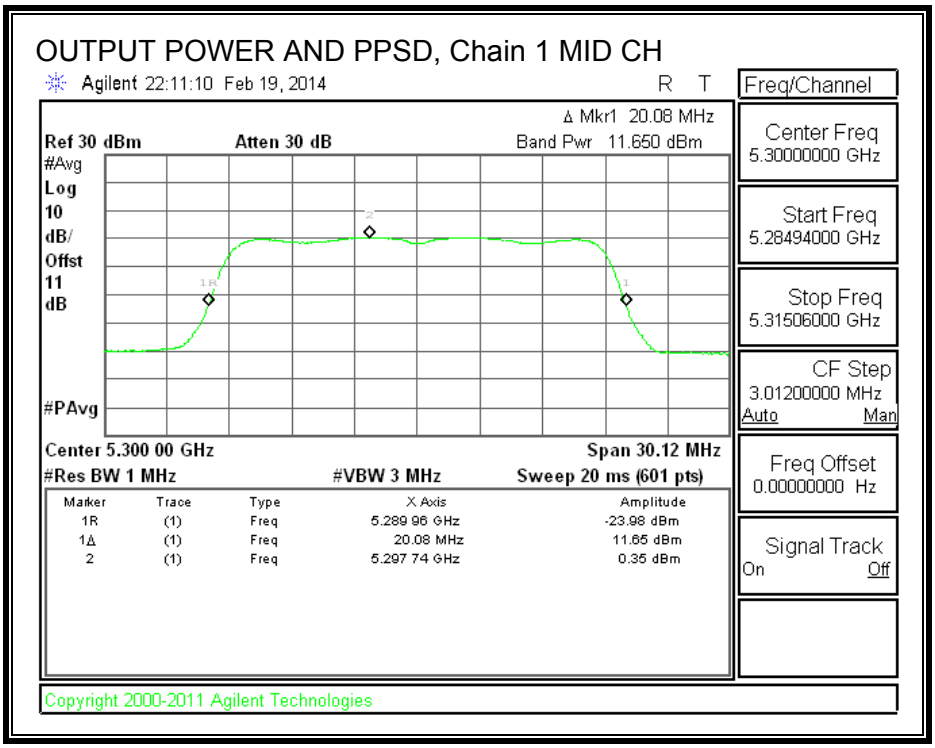
802.11n HT20 5.3G OUTPUT POWER AND PPSD, Chain 0





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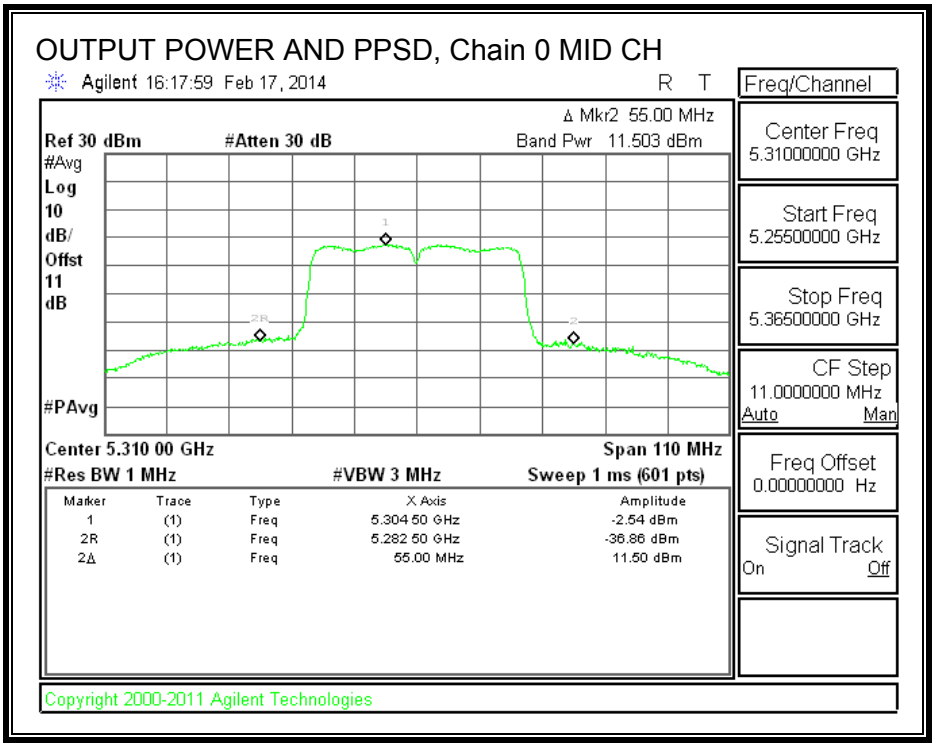
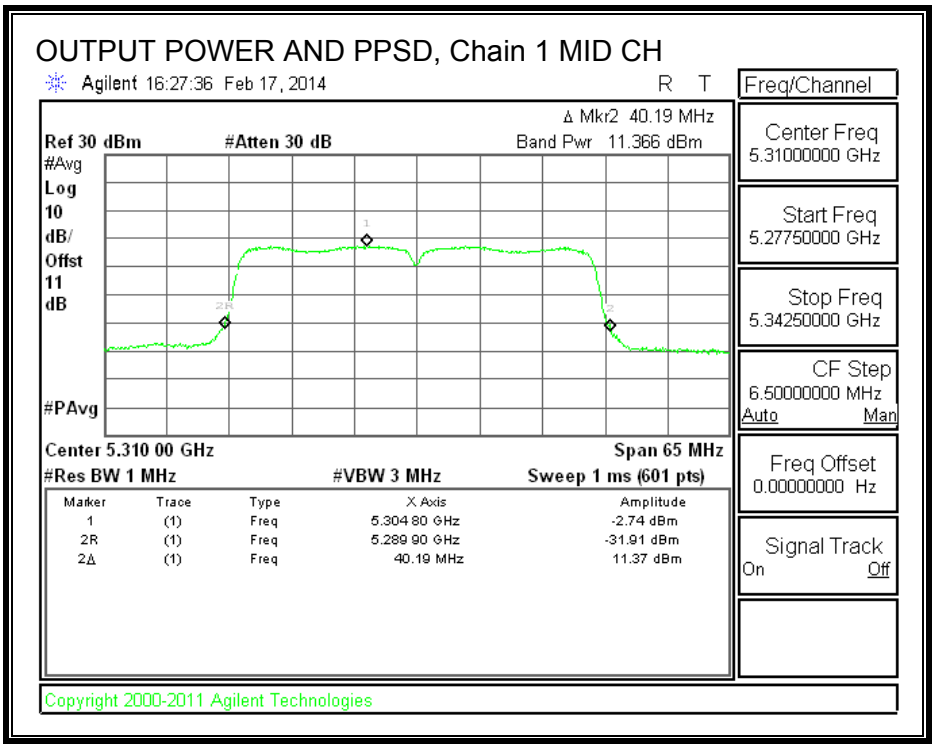
802.11n HT40 5.3G OUTPUT POWER AND PPSD, Chain 0





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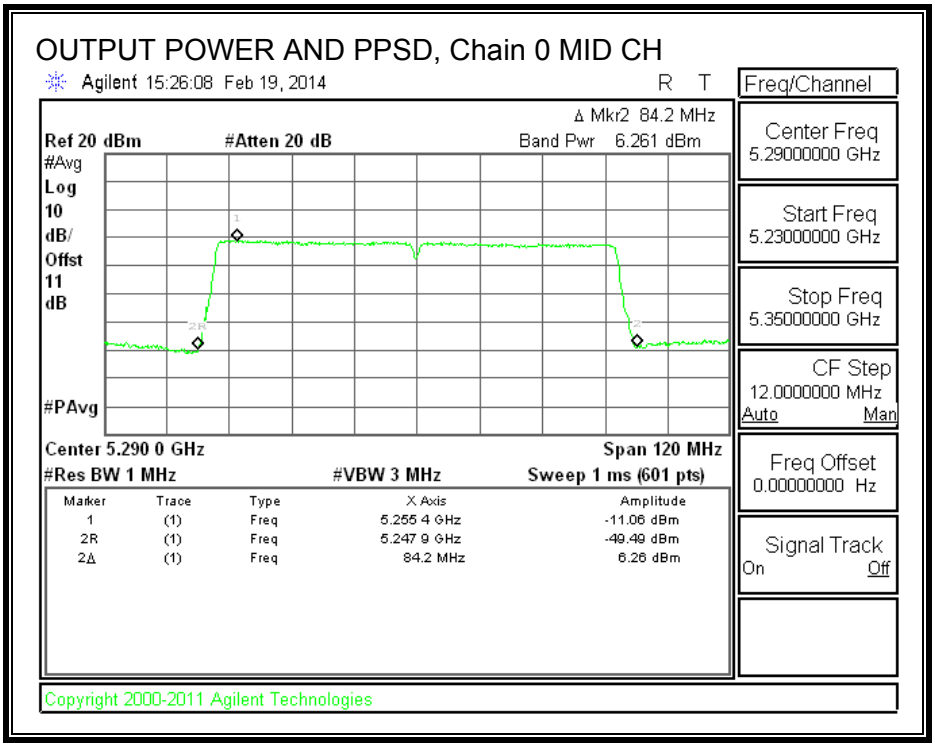
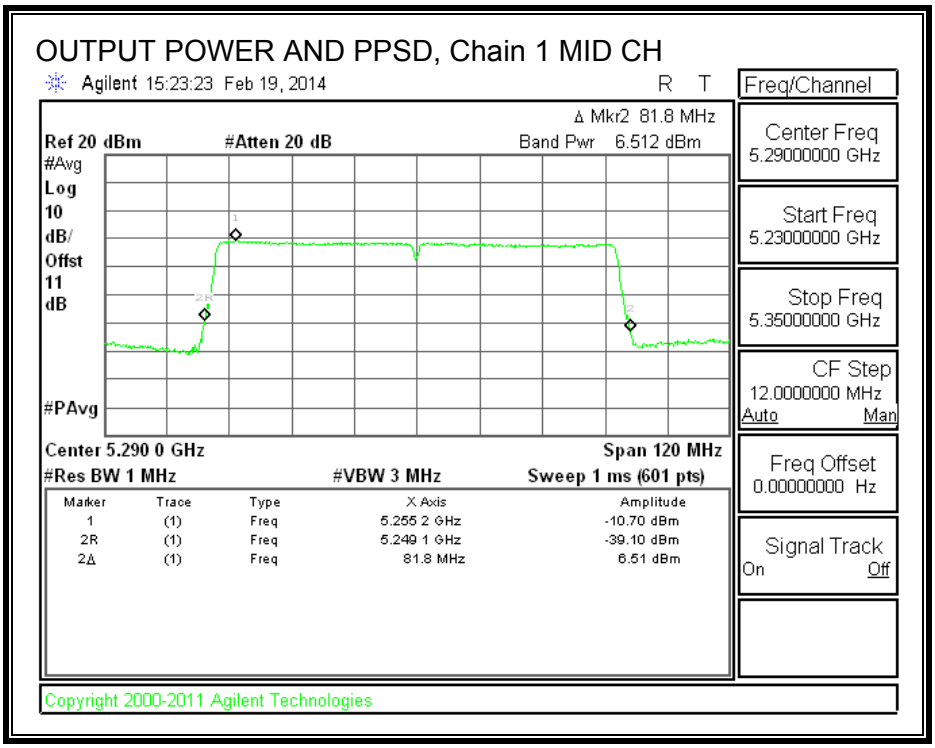
802.11ac HT80 5.3G OUTPUT POWER AND PPSD, Chain 0





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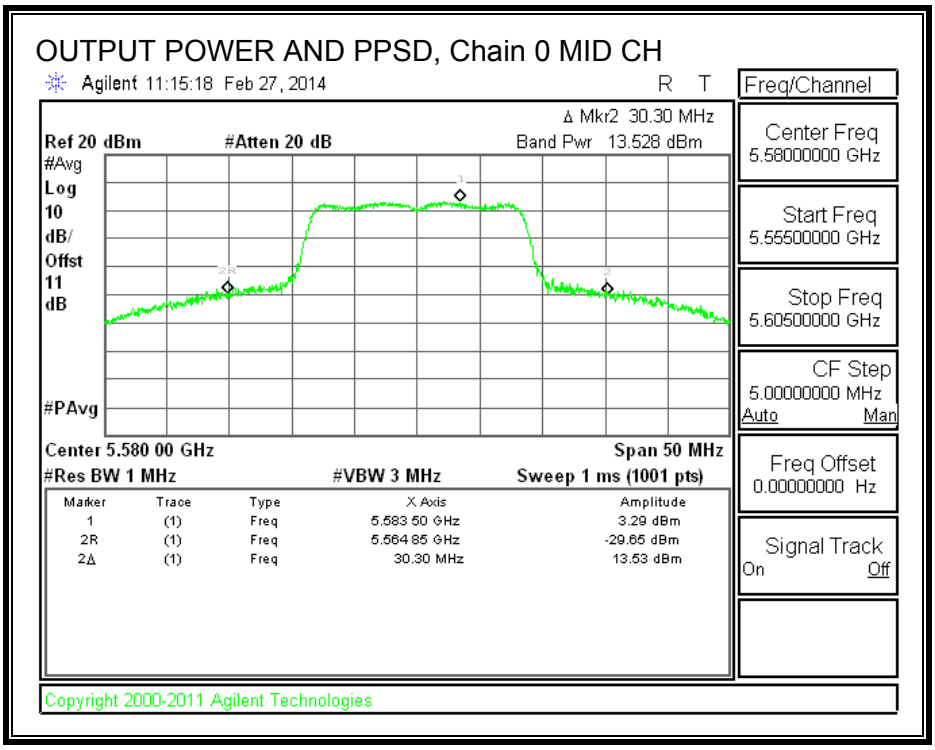
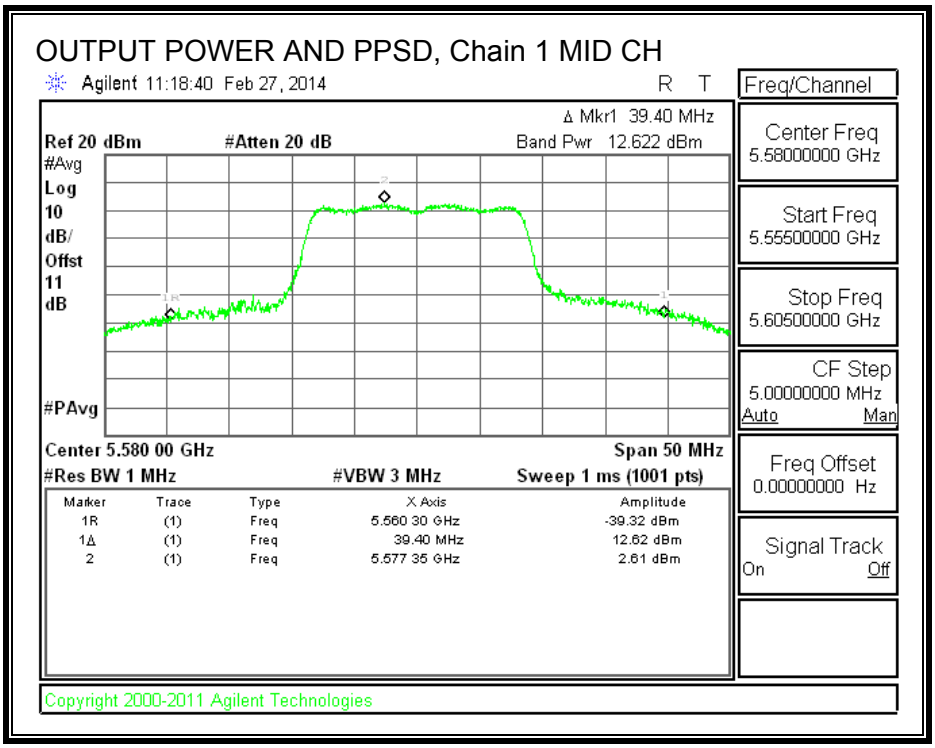
802.11a 5.5G OUTPUT POWER AND PPSD, Chain 0





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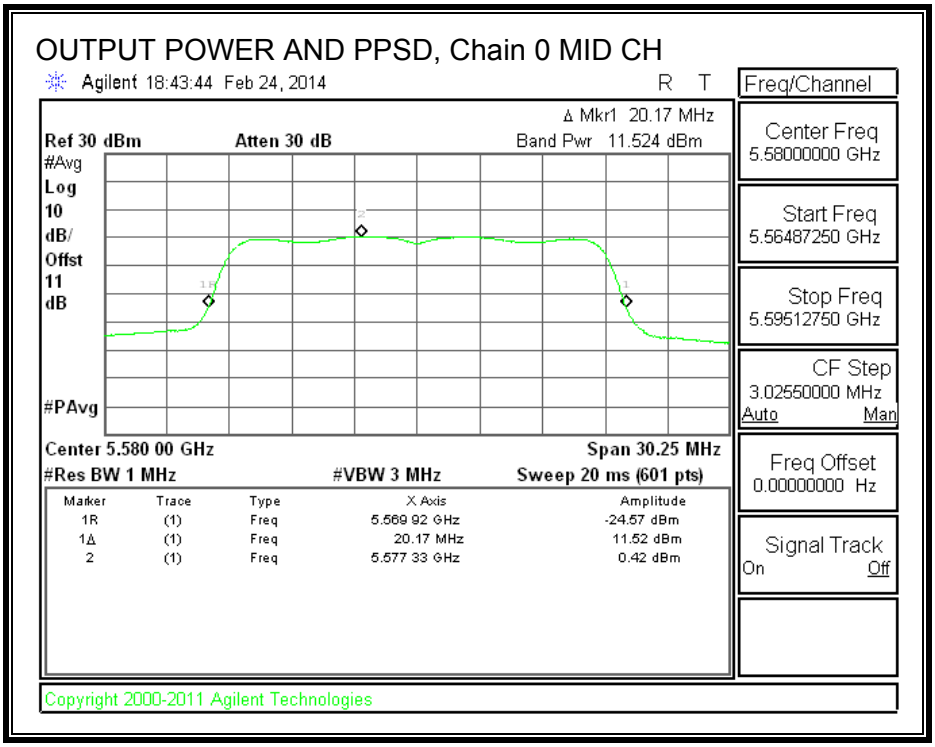
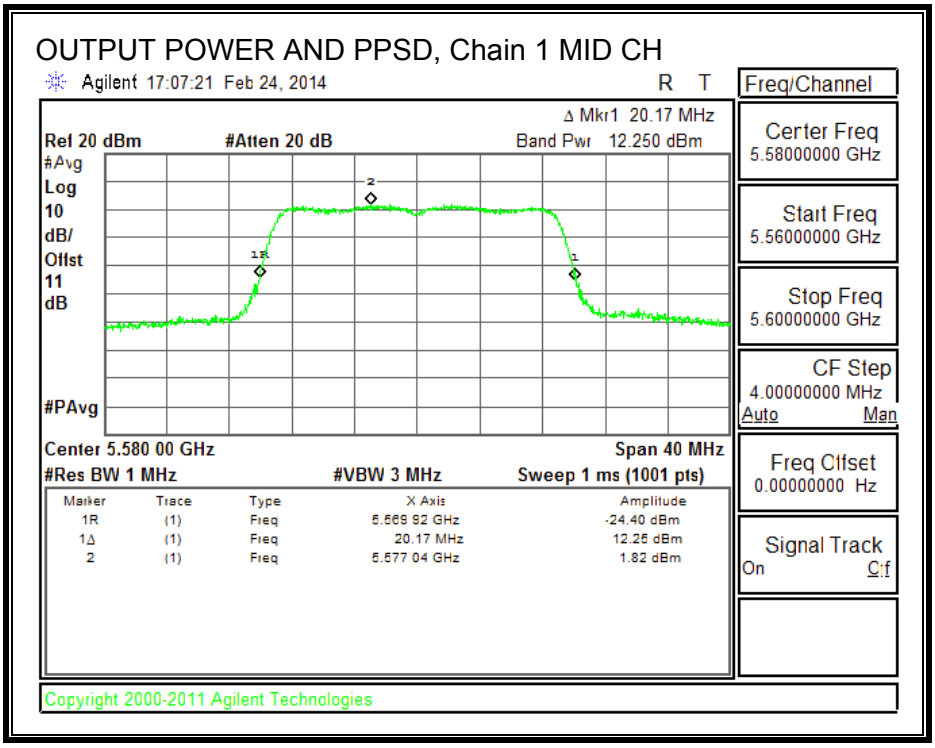
802.11n HT20 5.5G OUTPUT POWER AND PPSD, Chain 0





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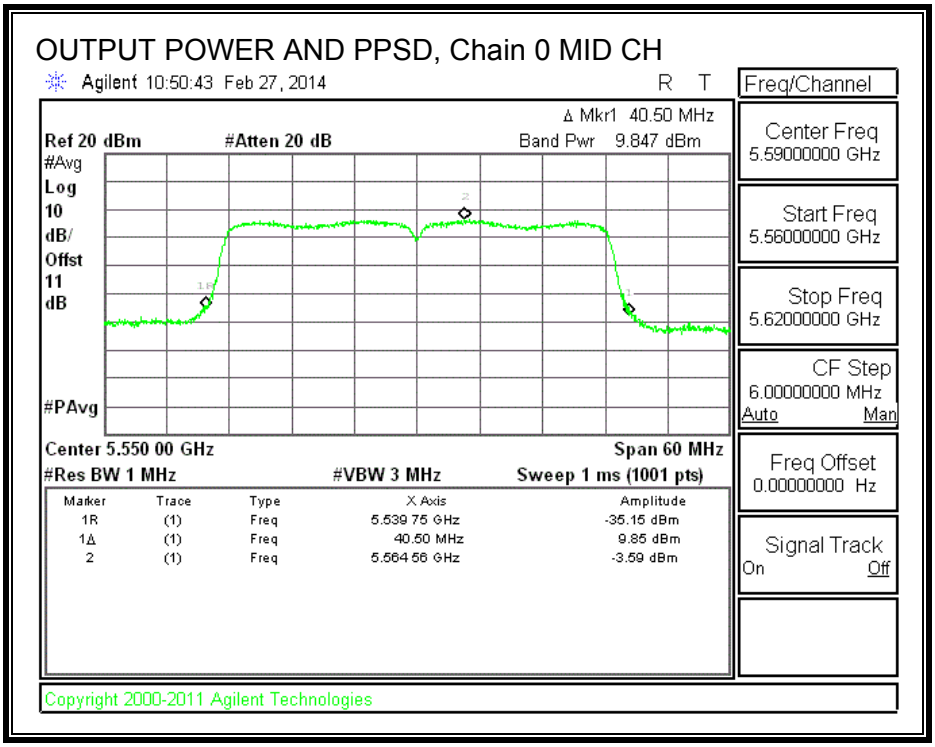
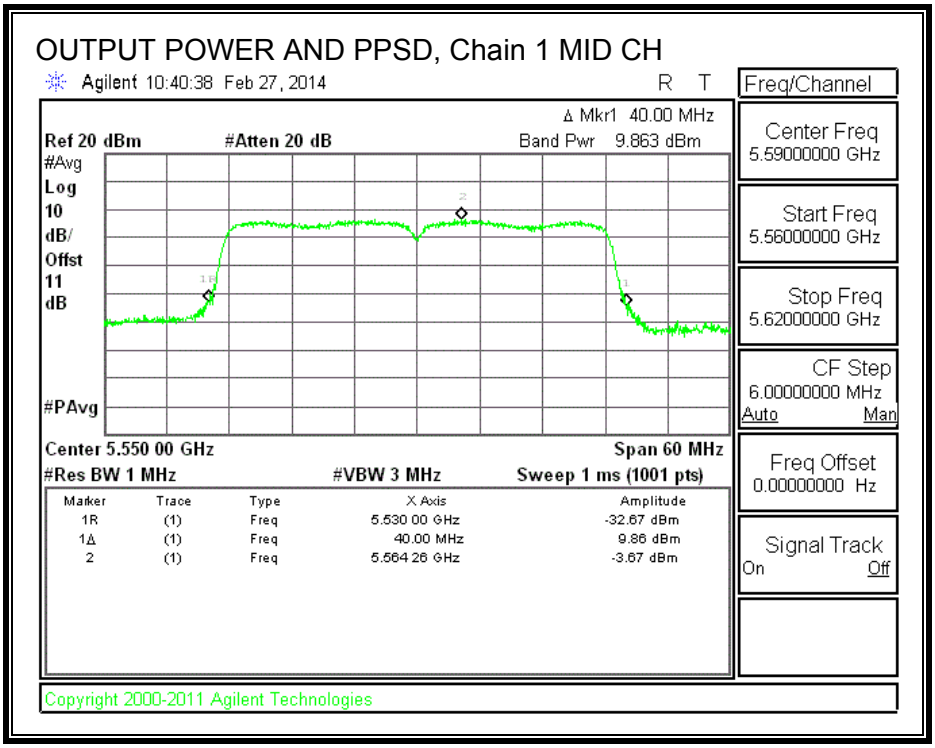
802.11n HT40 5.5G OUTPUT POWER AND PPSD, Chain 0





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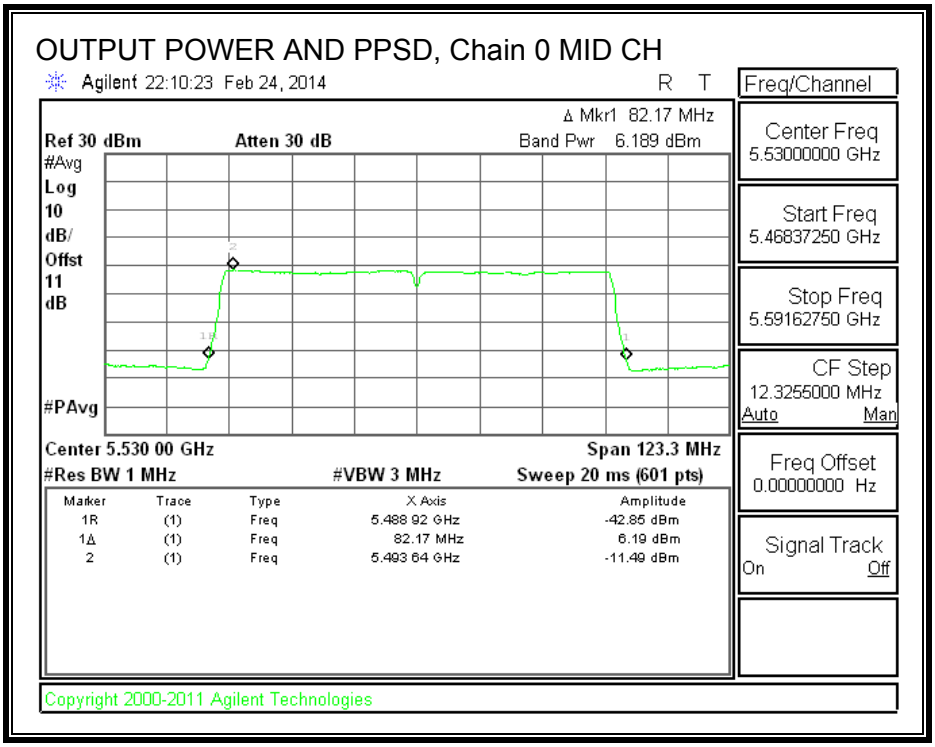
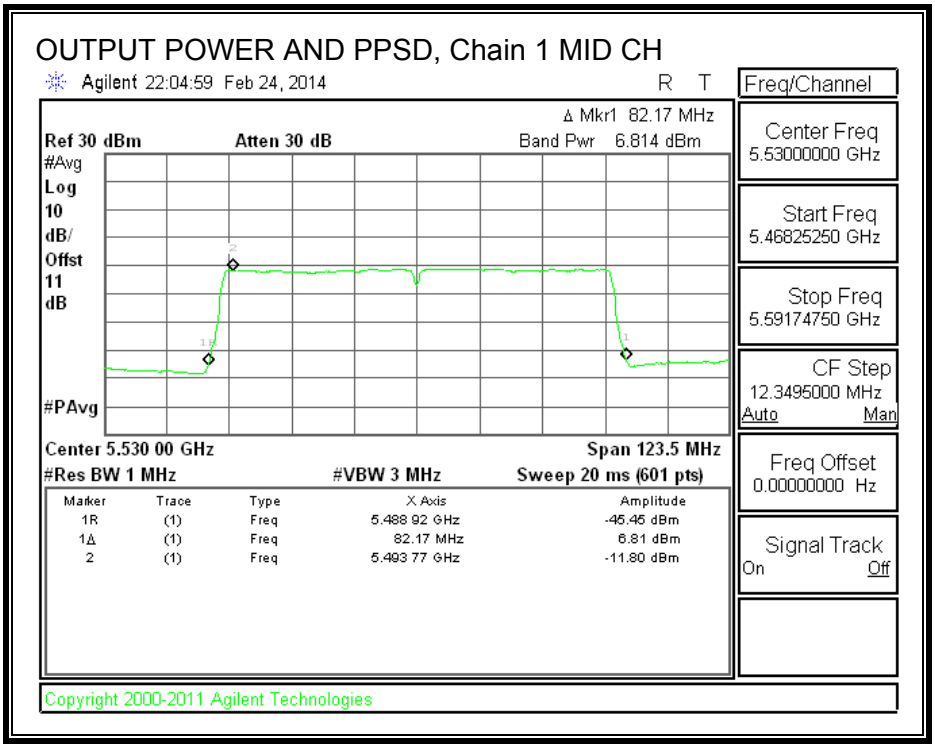
802.11ac HT80 5.5G OUTPUT POWER AND PPSD, Chain 0





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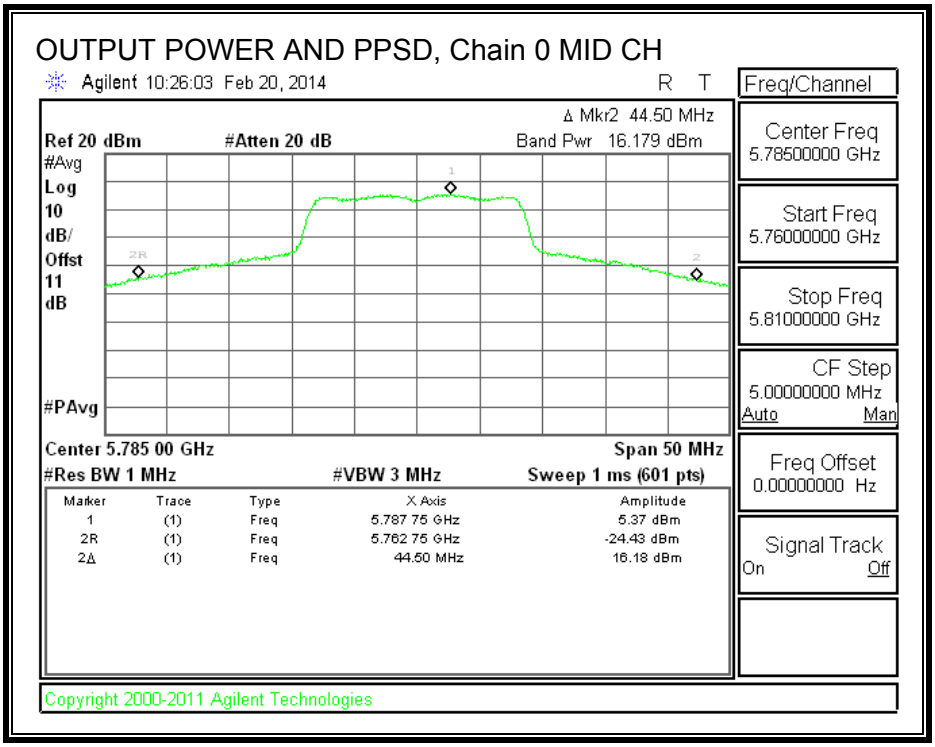
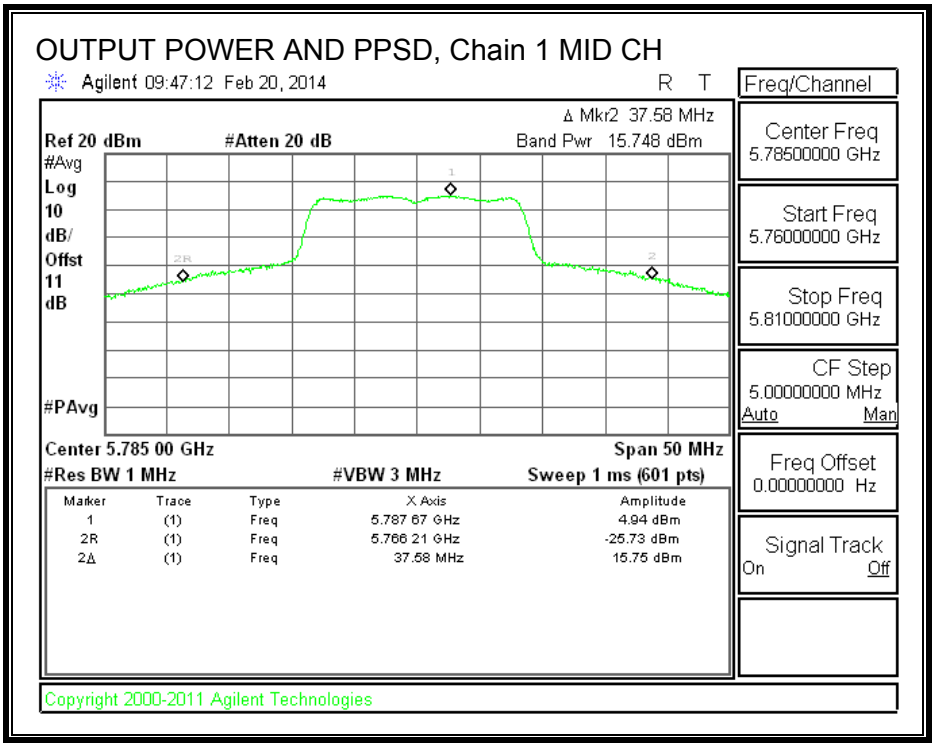
802.11a 5.8G OUTPUT POWER AND PPSD, Chain 0





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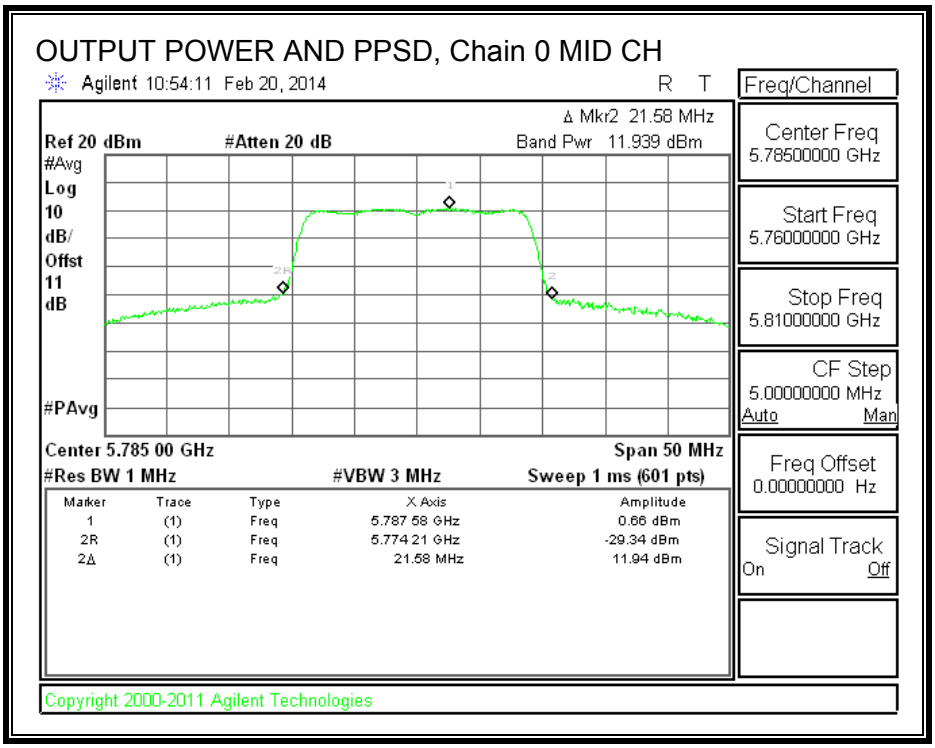
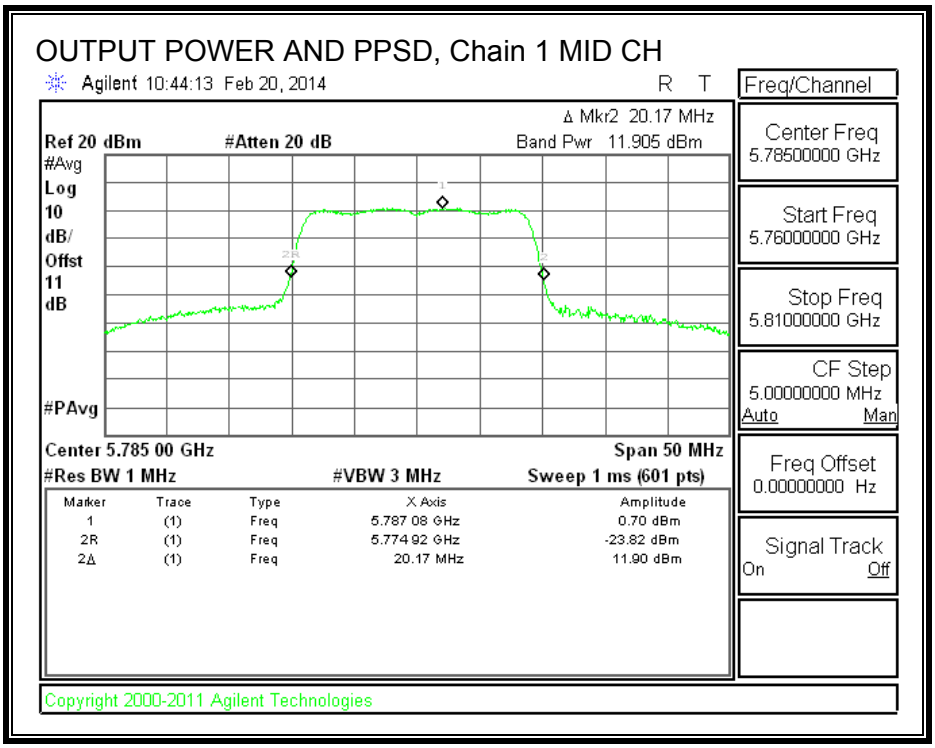
802.11n HT20 5.8G OUTPUT POWER AND PPSD, Chain 0





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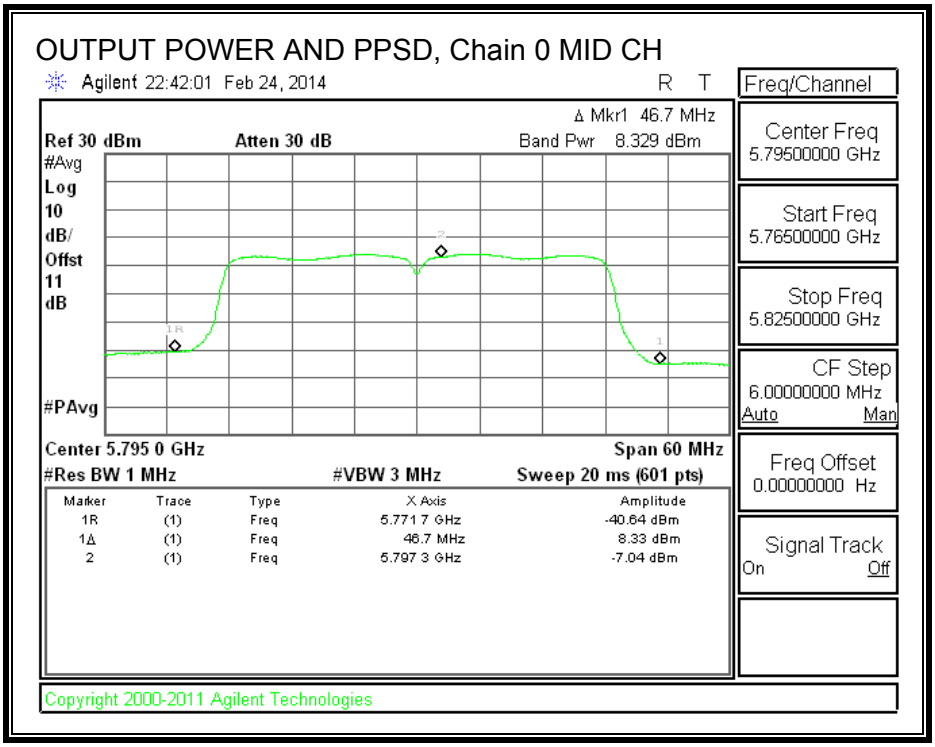
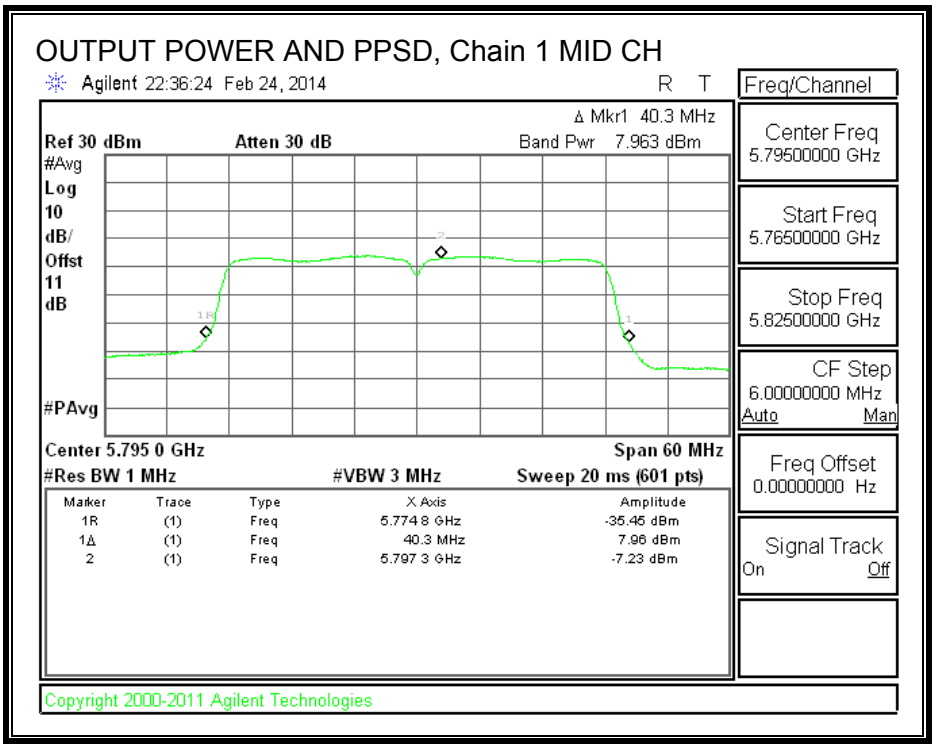
802.11n HT40 5.8G OUTPUT POWER AND PPSD, Chain 0





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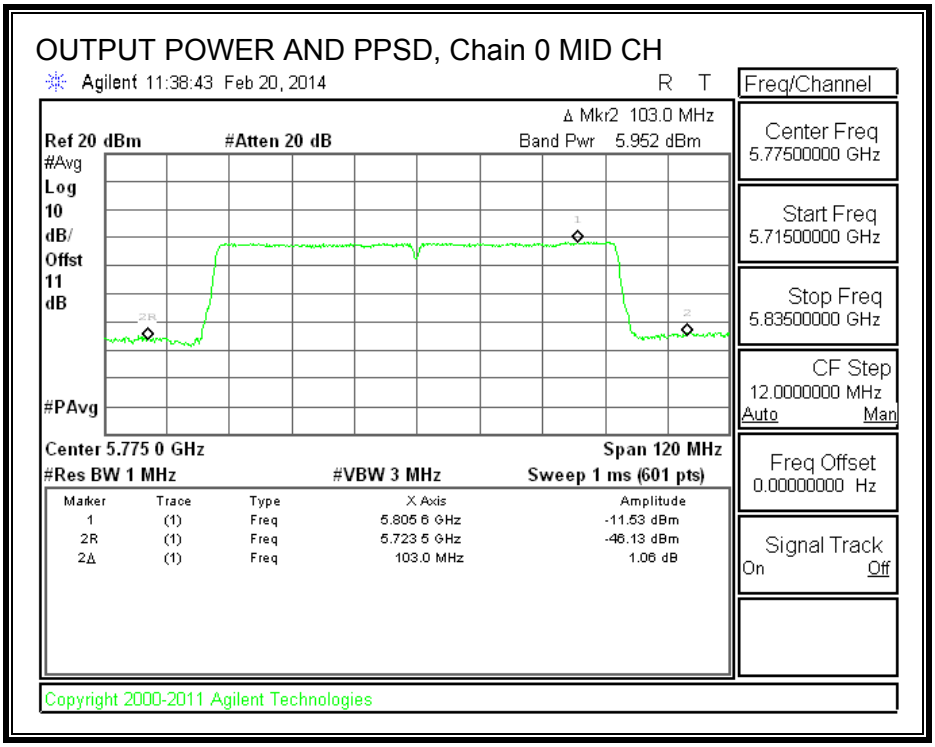
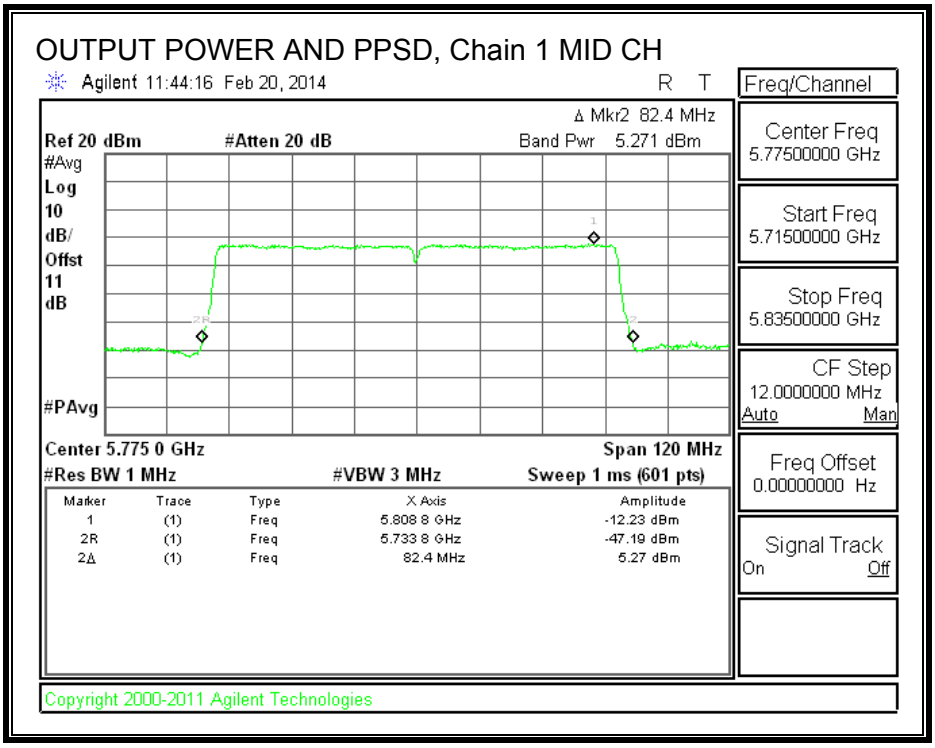
802.11ac HT80 5.8G OUTPUT POWER AND PPSD, Chain 0





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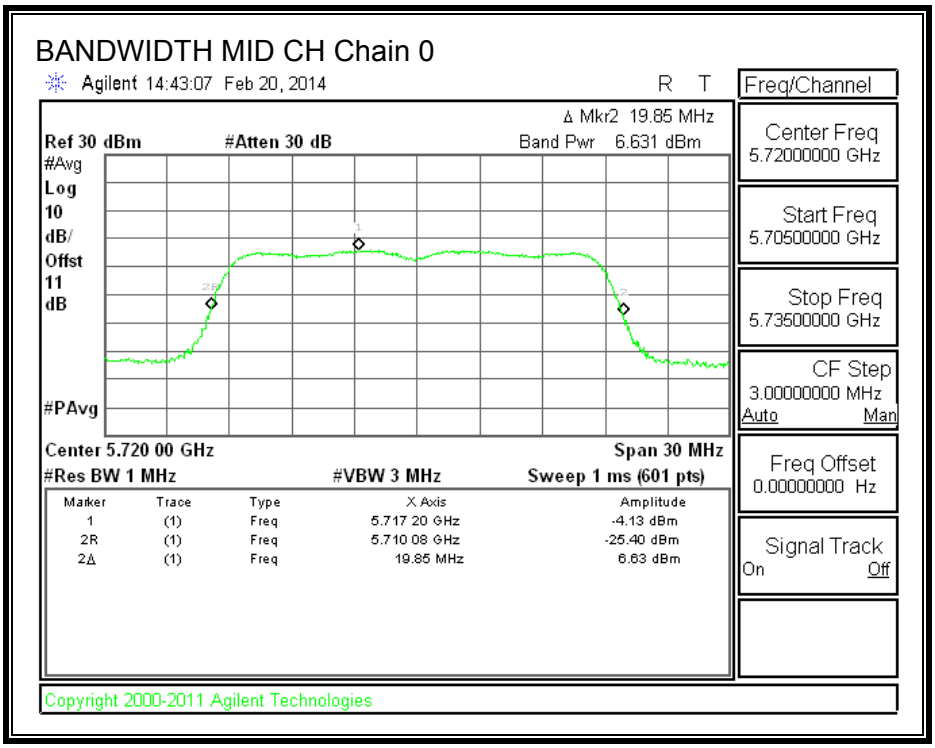
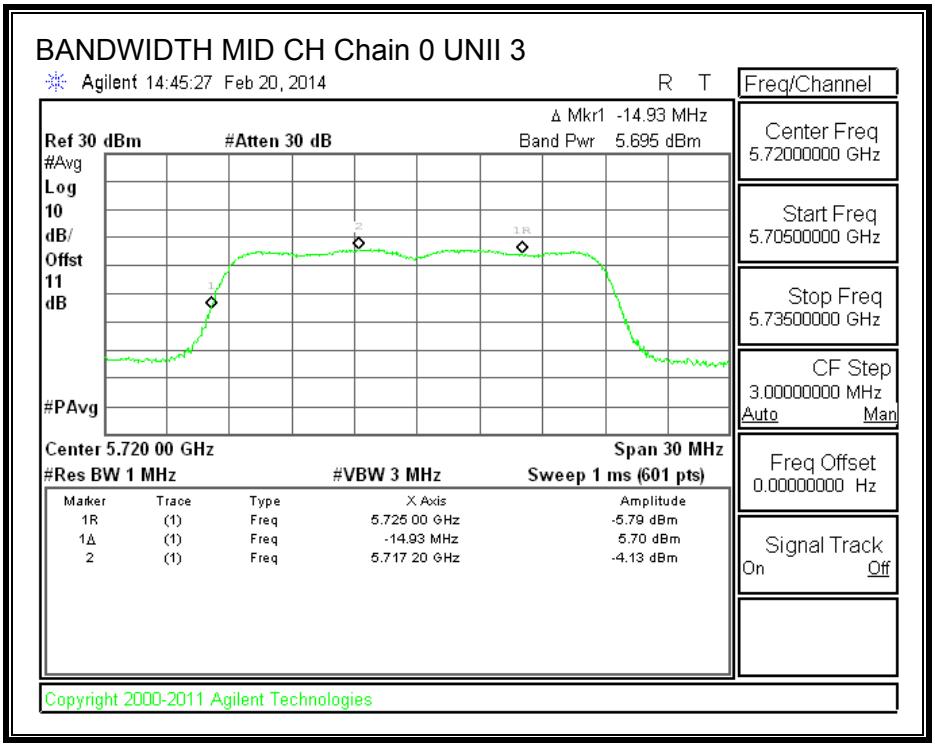
10.3.1. Straddling Channels Plots

802.11 HT20 MODE IN THE 5.5 GHz BAND





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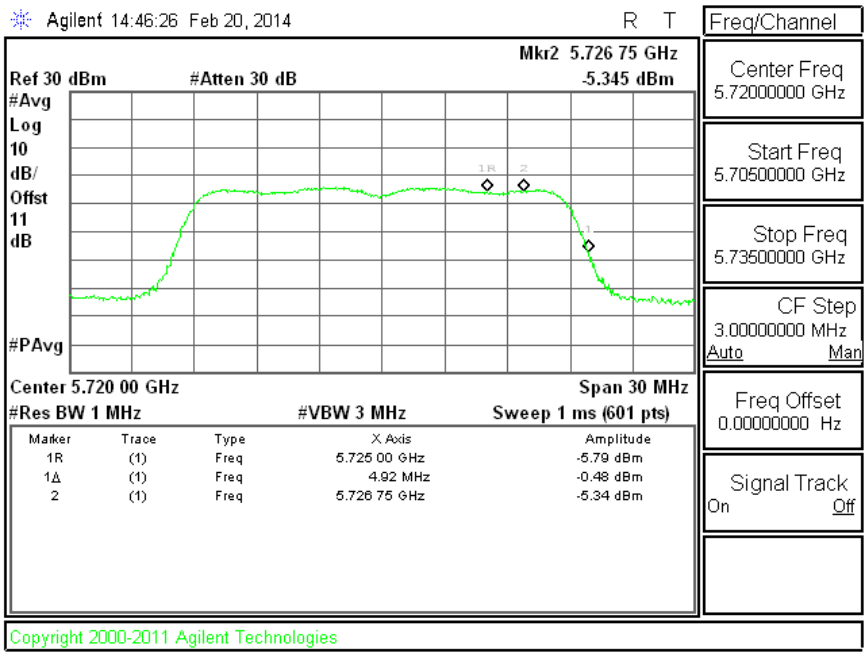
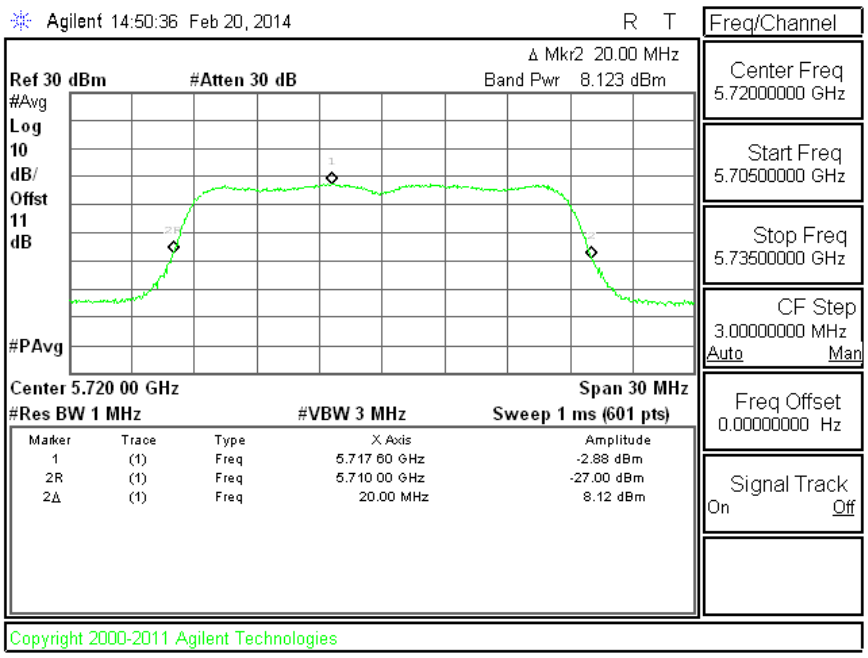
BANDWIDTH MID CH Chain 0 UNII 4



BANDWIDTH MID CH Chain 1



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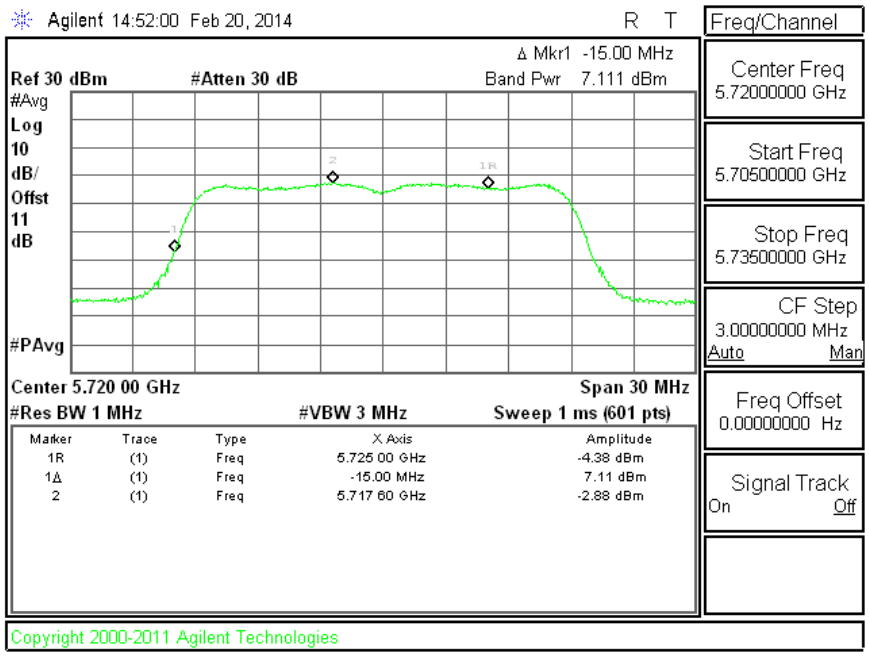
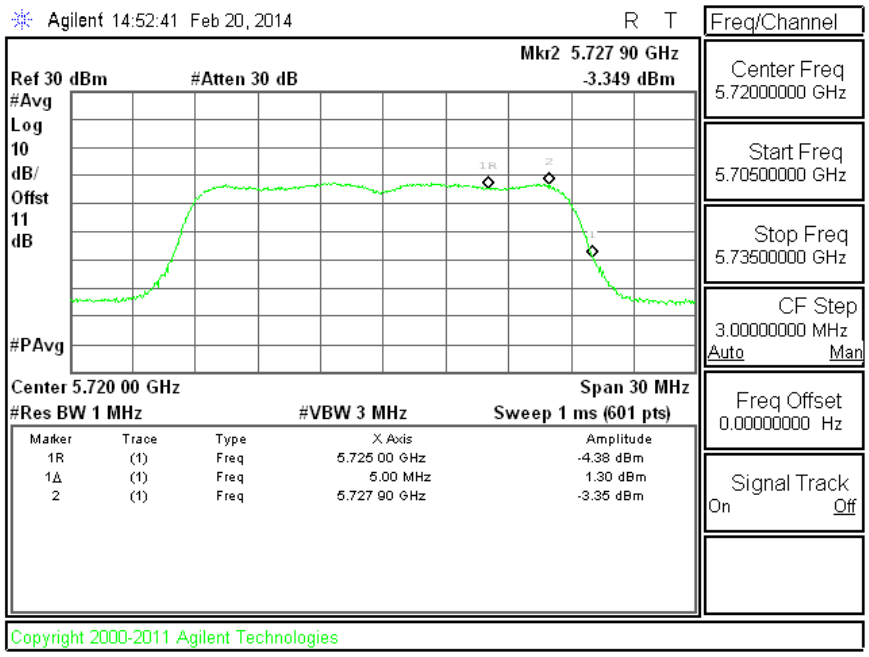
BANDWIDTH MID CH Chain 1 UNII 3



BANDWIDTH MID CH Chain 1 UNII 4



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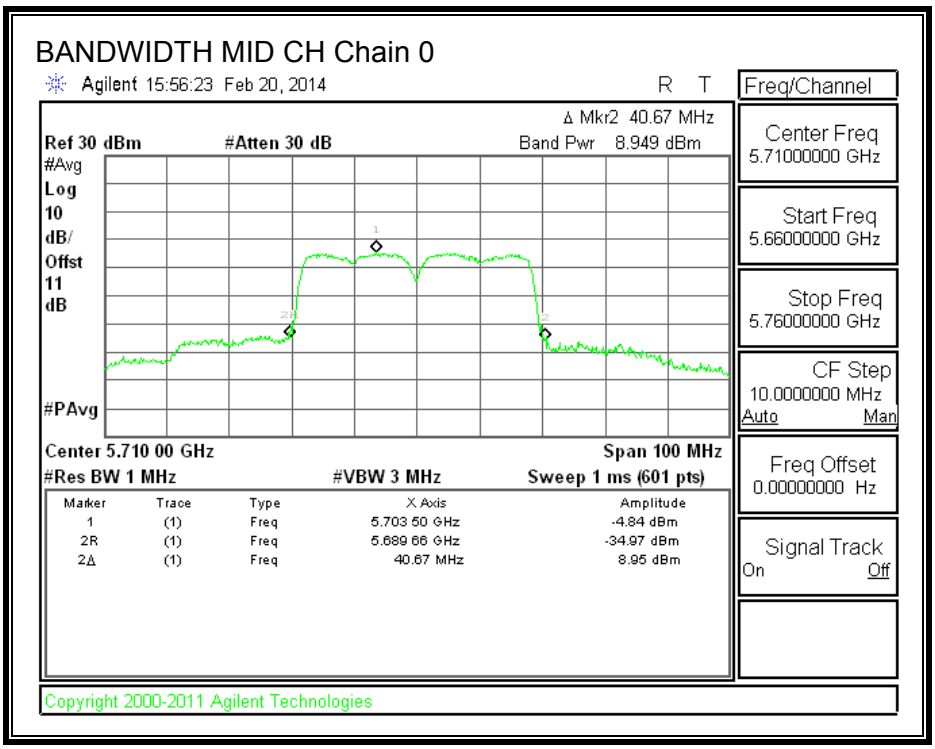
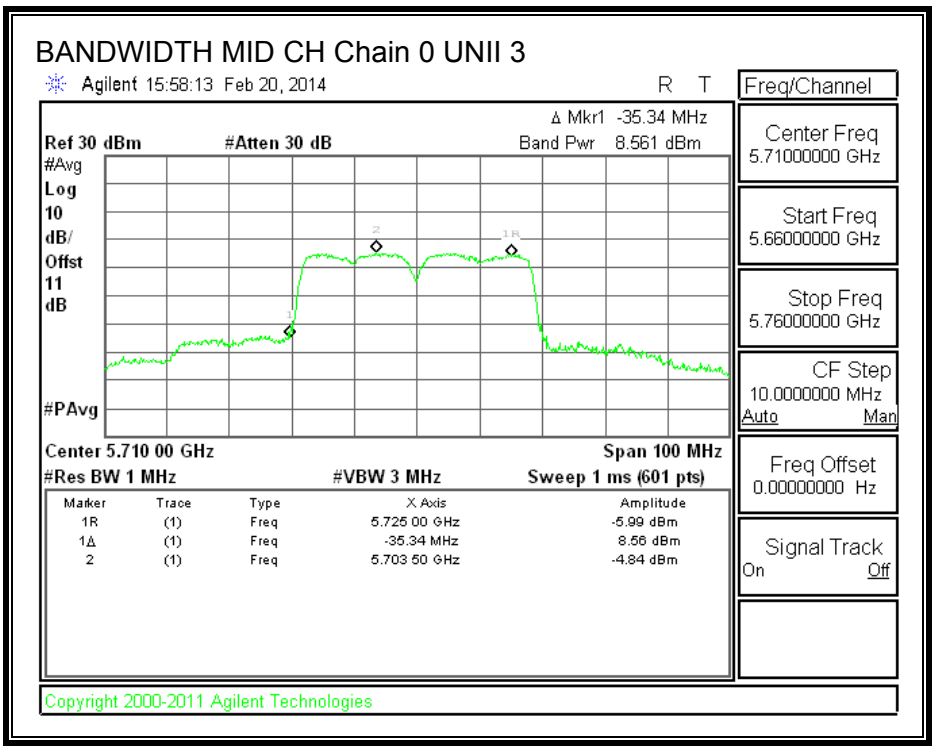
802.11n HT40 MODE IN THE 5.5 GHz BAND





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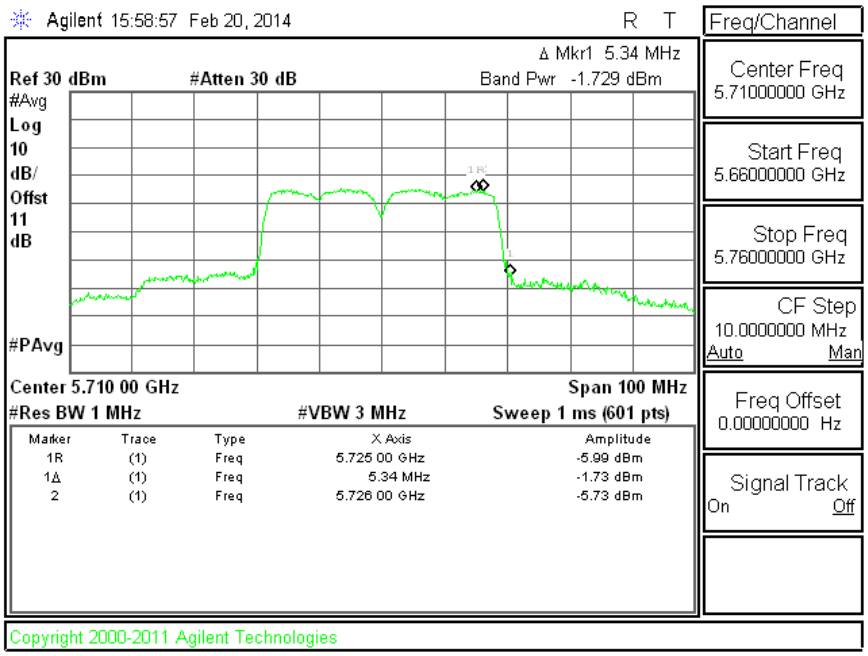
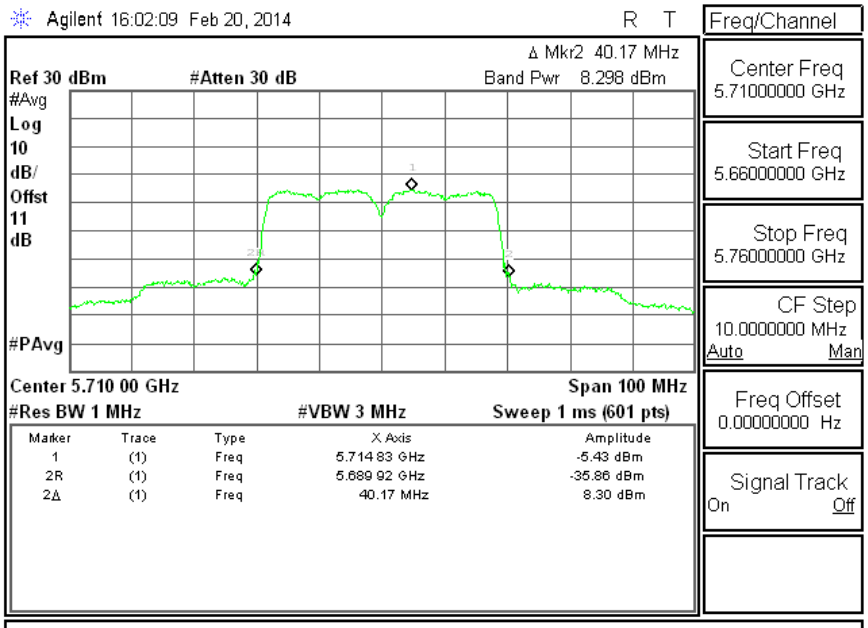
BANDWIDTH MID CH Chain 0 UNII 4



BANDWIDTH MID CH Chain 1



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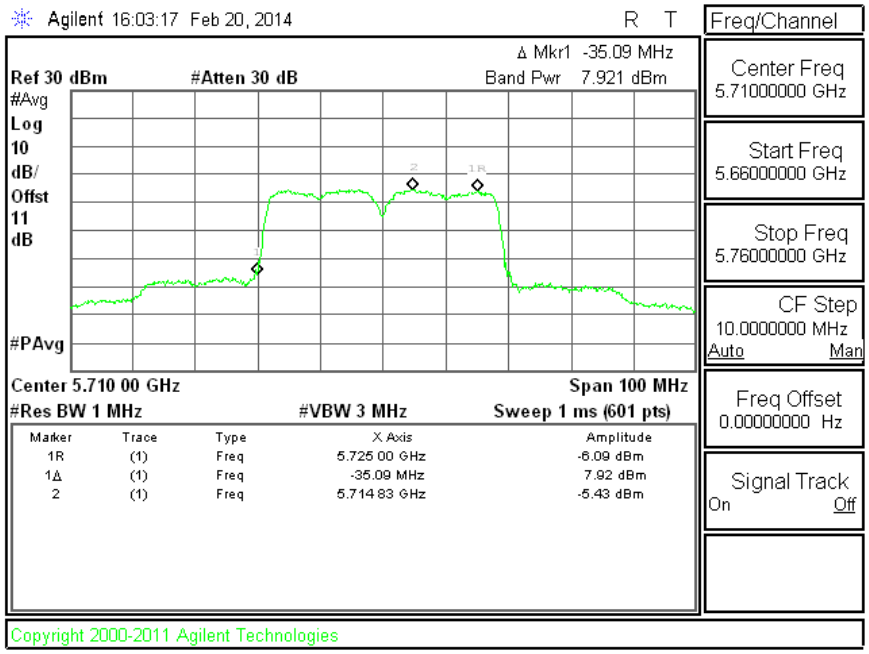
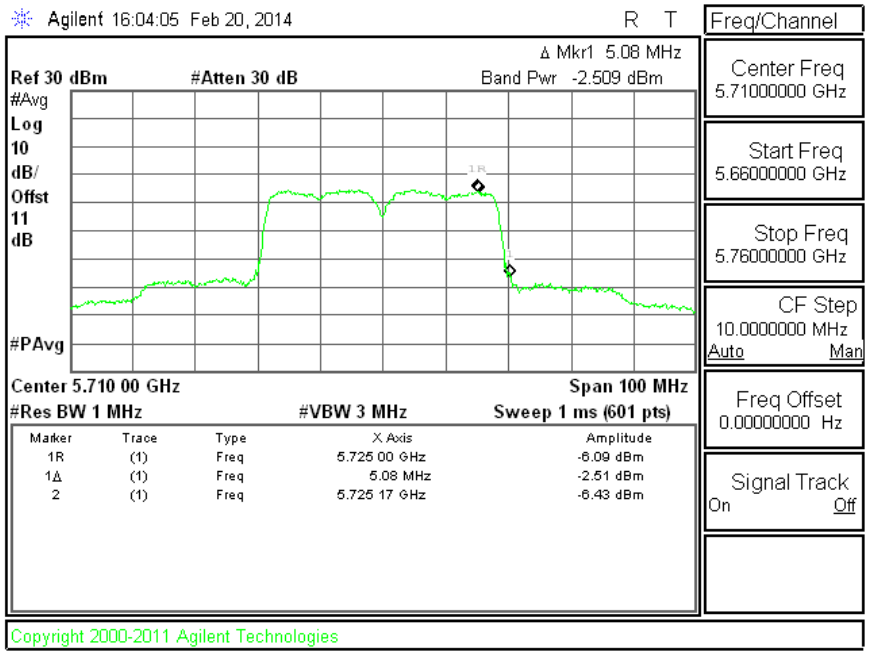
BANDWIDTH MID CH Chain 1 UNII 3



BANDWIDTH MID CH Chain 1 UNII 4



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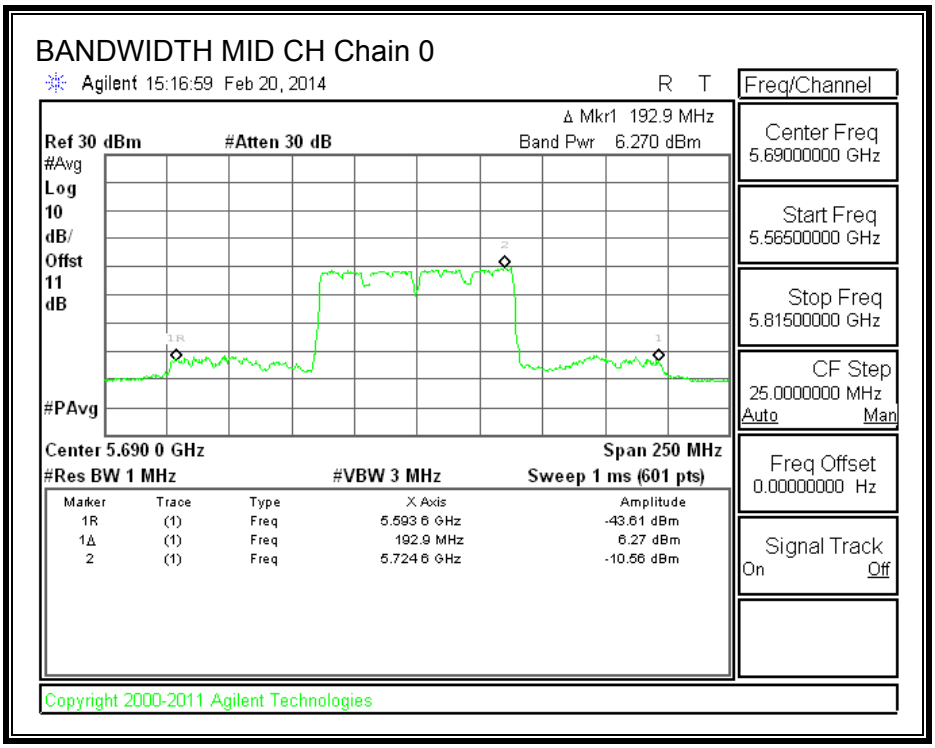
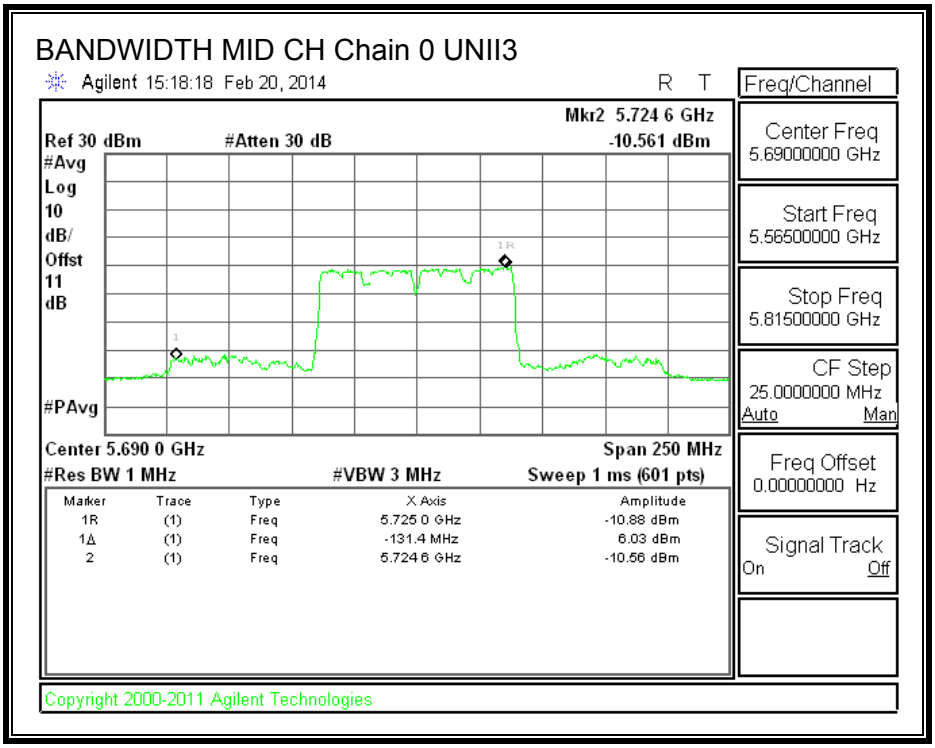
802.11ac HT80 MODE IN THE 5.5 GHz BAND





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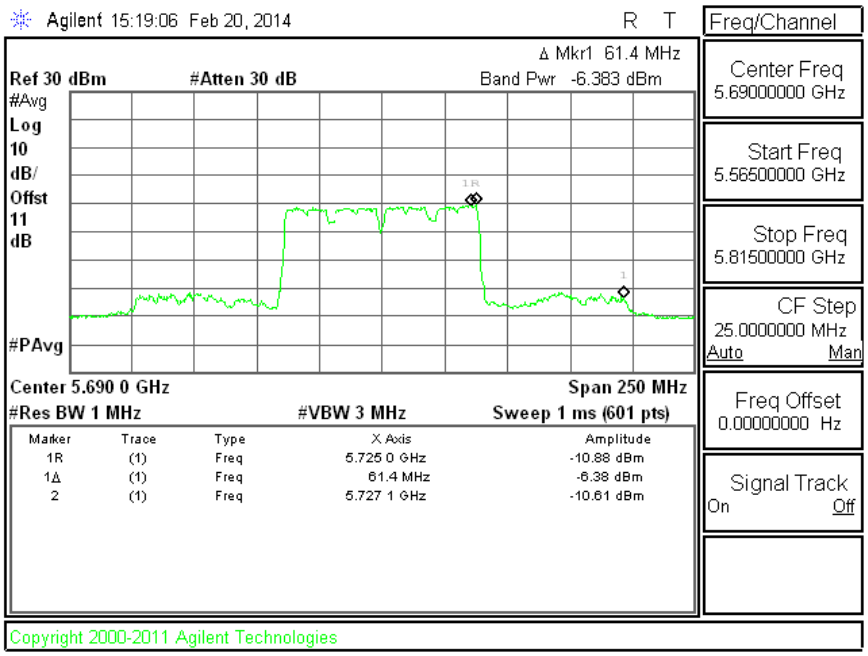
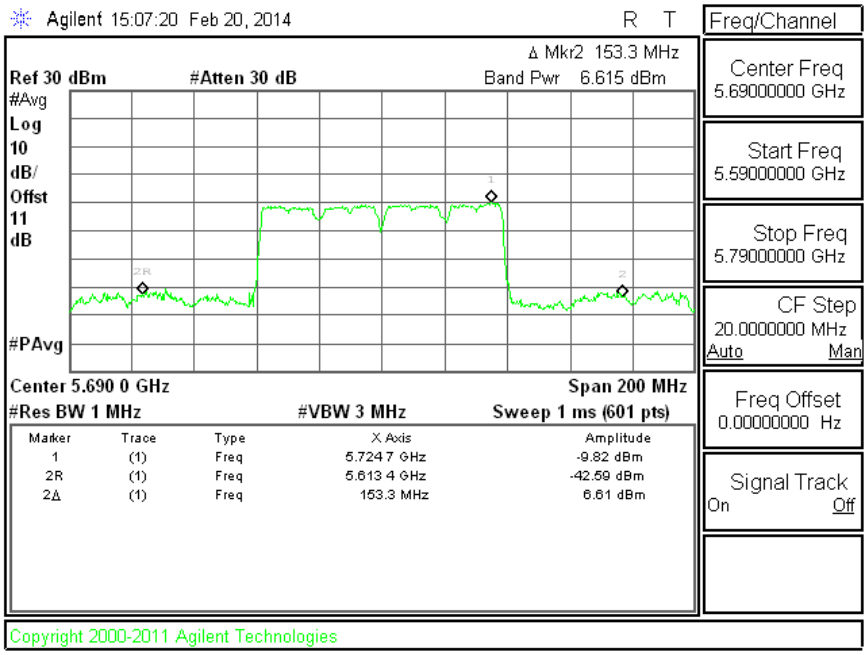
BANDWIDTH MID CH Chain 0 UNII4



BANDWIDTH MID CH Chain 1



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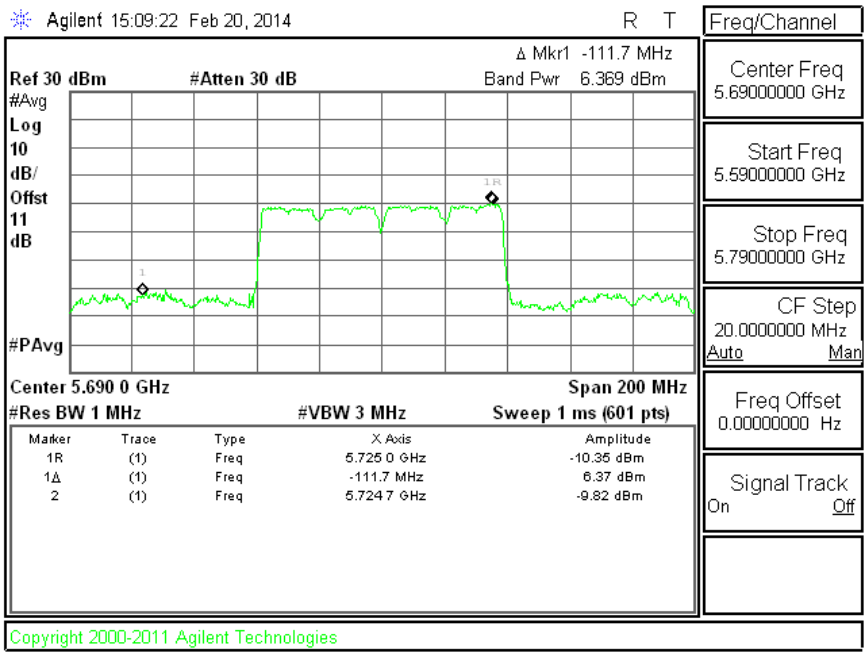
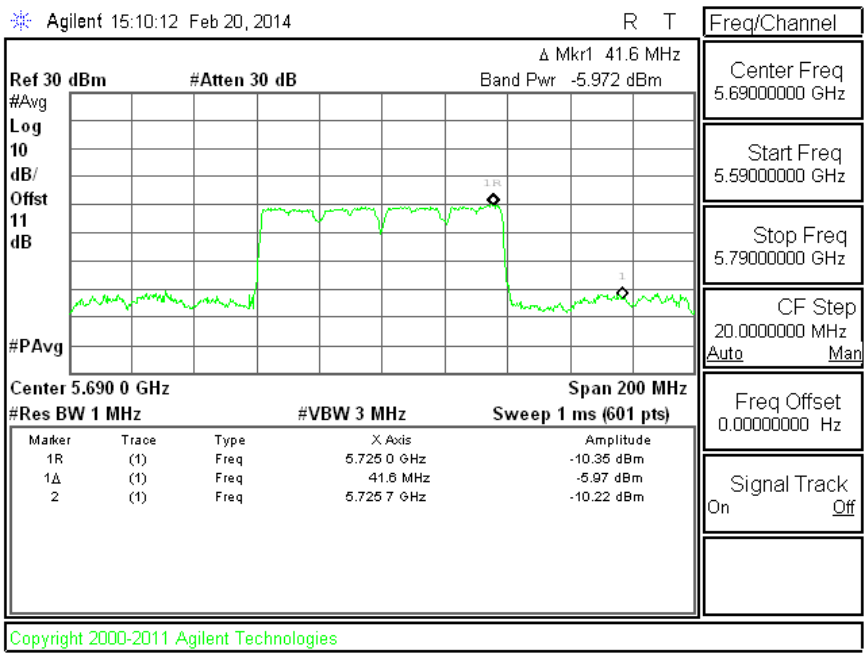
BANDWIDTH MID CH Chain 1 UNII3



BANDWIDTH MID CH Chain 1 UNII4



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10.4. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

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

RESULTS

10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

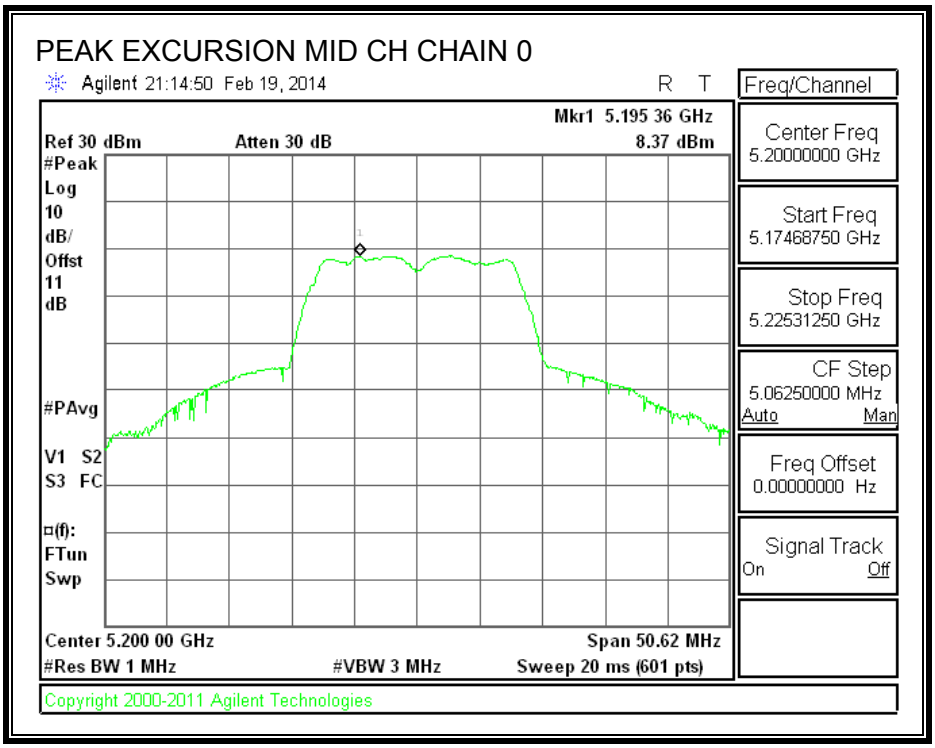
Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	8.37	0.18	0.00	8.19	13	-4.81

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	10.52	0.29	0.00	10.23	13	-2.77

PEAK EXCURSION



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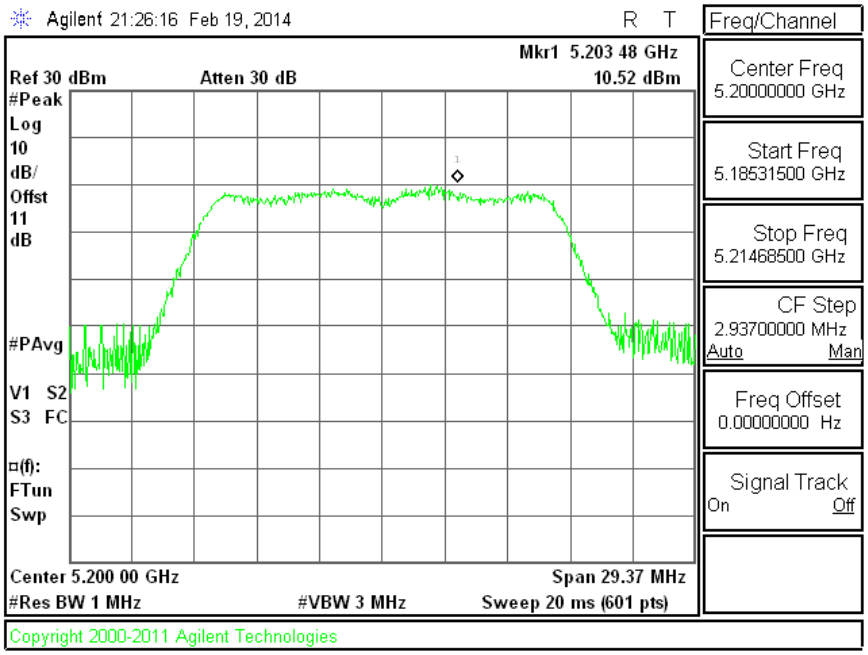
PEAK EXCURSION MID CH CHAIN 1



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10.4.1. 802.11n HT20 MODE IN THE 5.2 GHz BAND

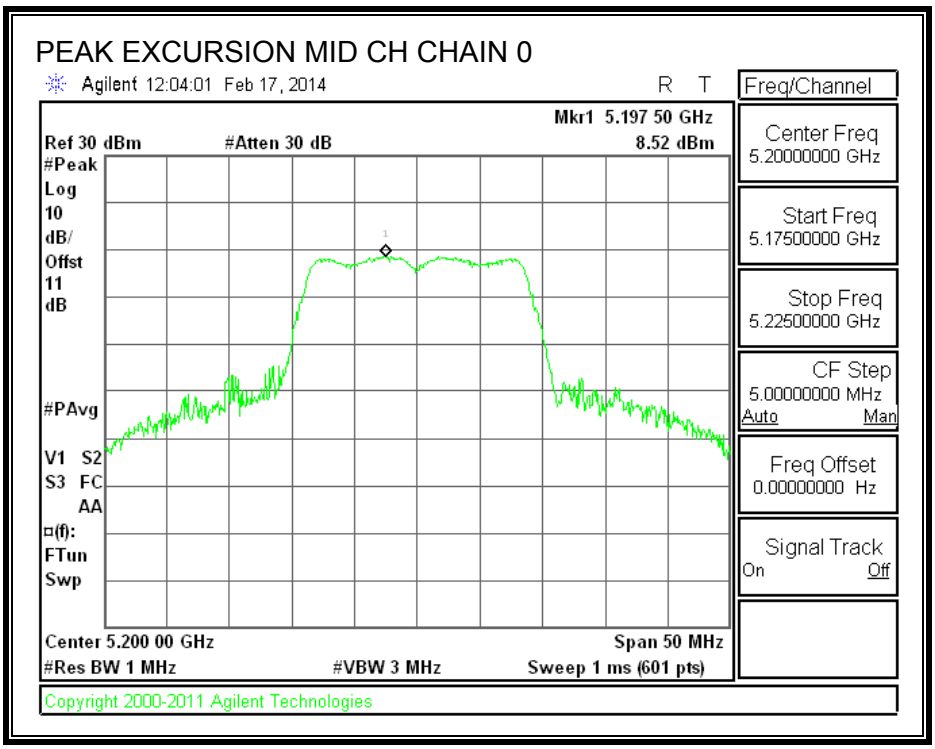
Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	8.52	0.30	0.00	8.22	13	-4.78

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	10.35	-0.35	0.00	10.70	13	-2.30

PEAK EXCURSION



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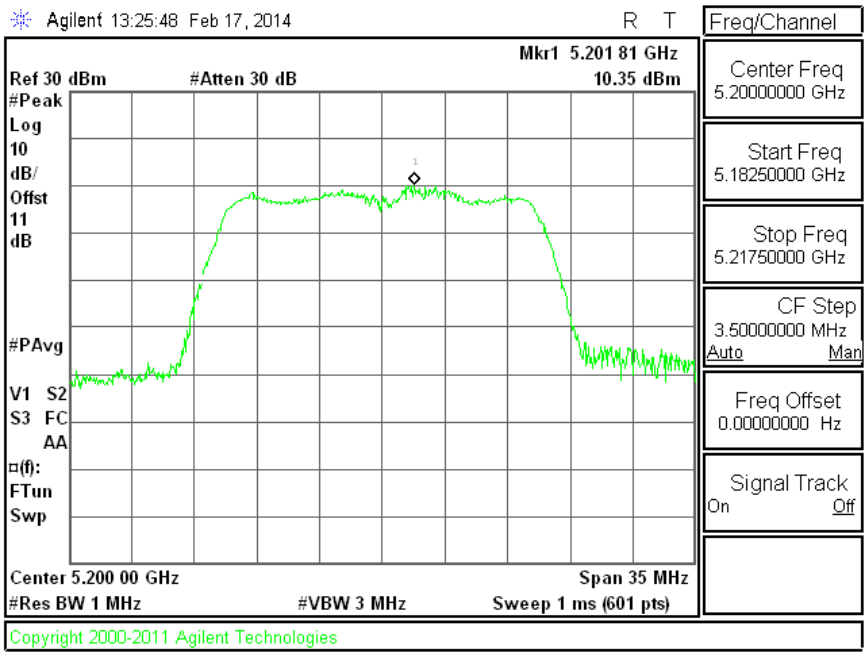
PEAK EXCURSION MID CH CHAIN 1



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10.4.1. 802.11n HT40 MODE IN THE 5.2 GHz BAND

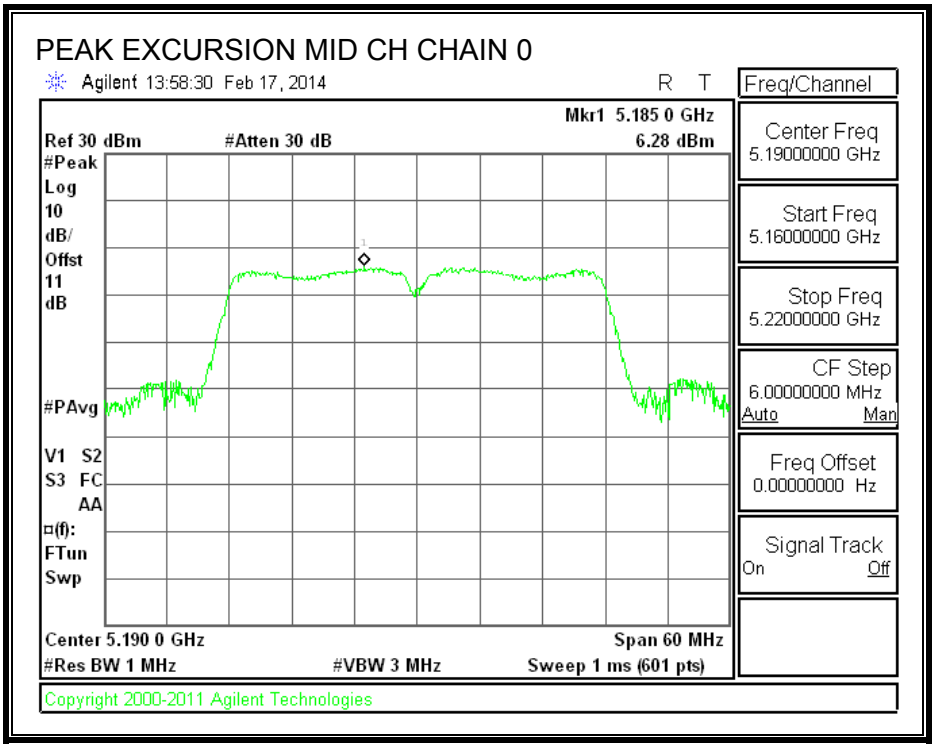
Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	6.280	-2.65	0.00	8.93	13	-4.07

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	5.880	-3.20	0.00	9.08	13	-3.92

PEAK EXCURSION



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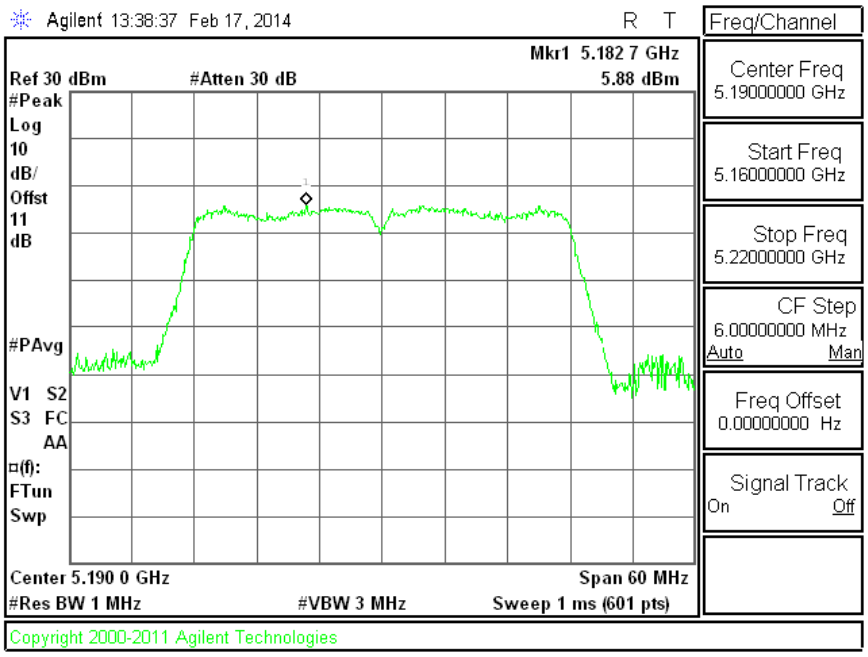
PEAK EXCURSION MID CH CHAIN 1



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10.4.1. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

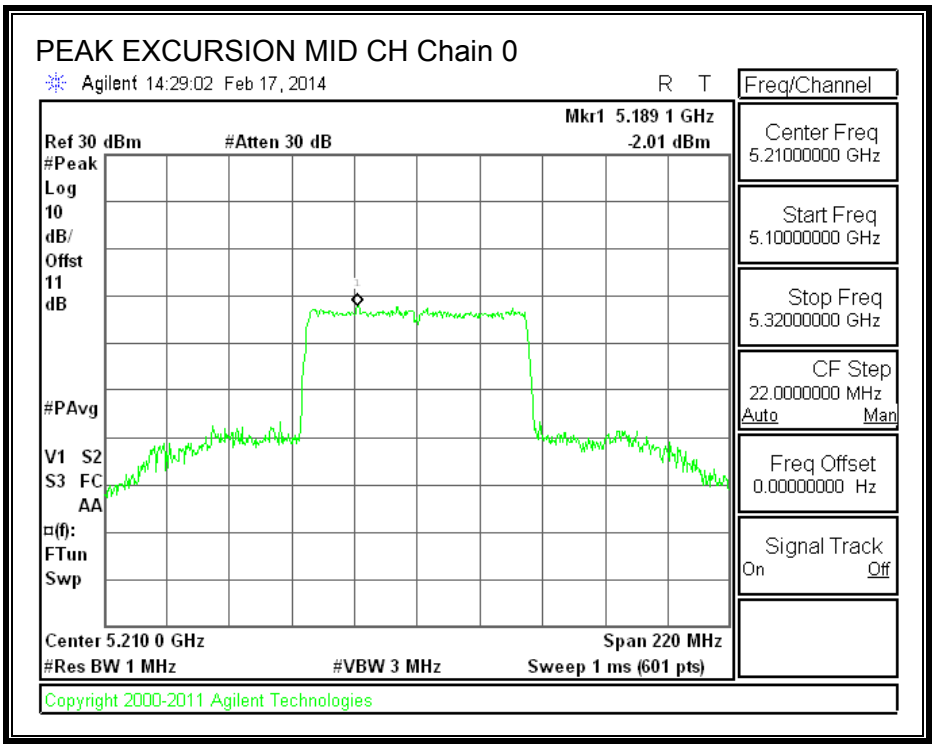
Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5210	-2.020	-11.54	0.00	9.52	13	-3.48

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5210	-2.120	-11.46	0.00	9.34	13	-3.66

PEAK EXCURSION



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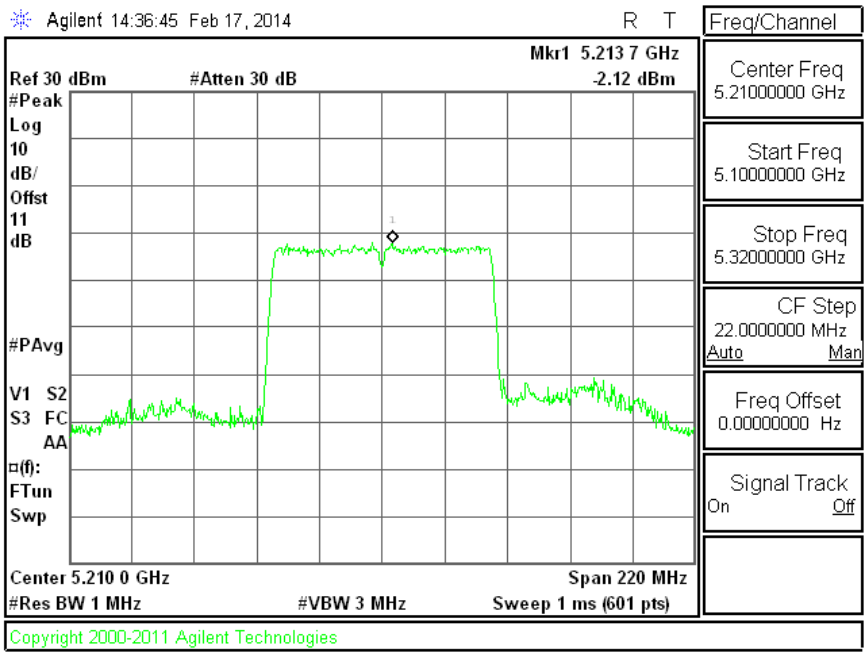
PEAK EXCURSION MID CH Chain 1



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11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

Reference to KDB 789033 UNII part H) 6) d) Method VB:
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements. For this unit all DC = 0dB(duty cycle >98%)

The spectrum from 1GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

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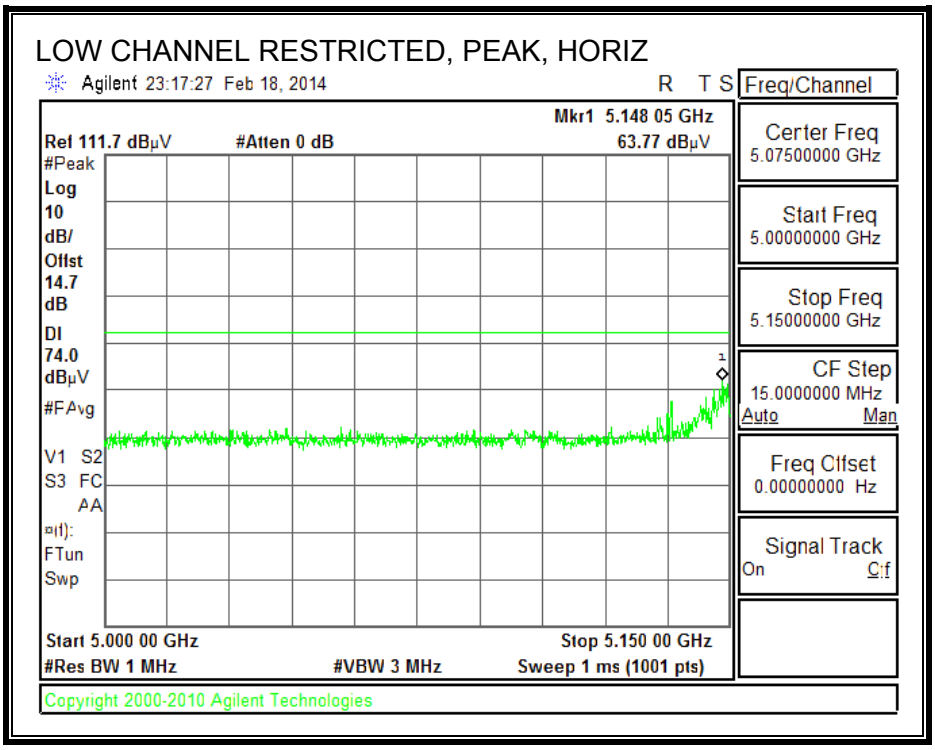
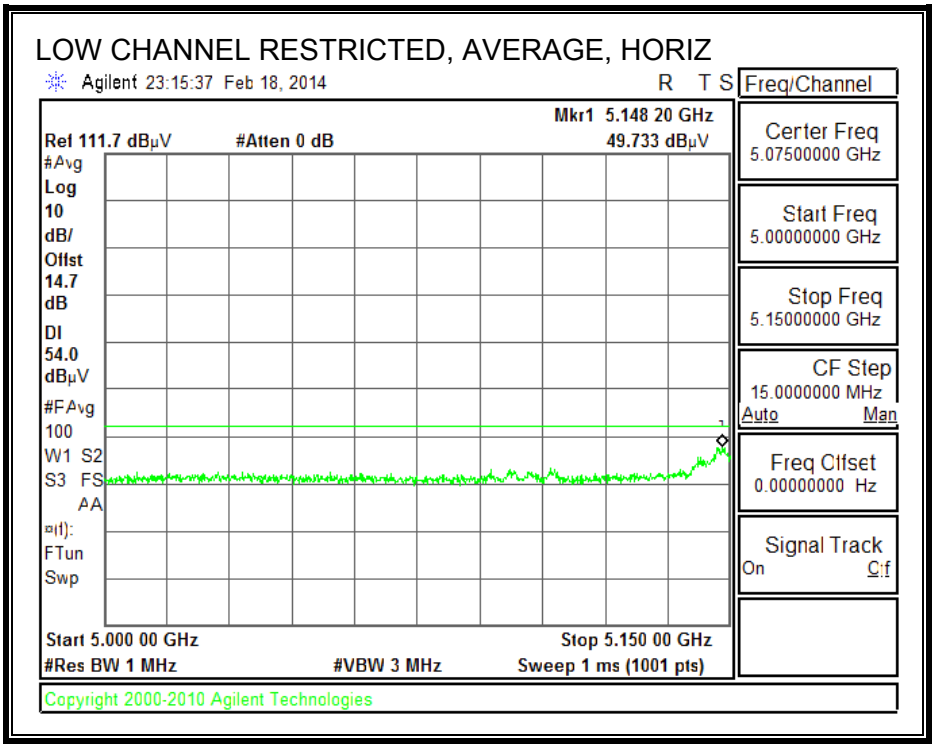
11.1. 5.2 GHz

11.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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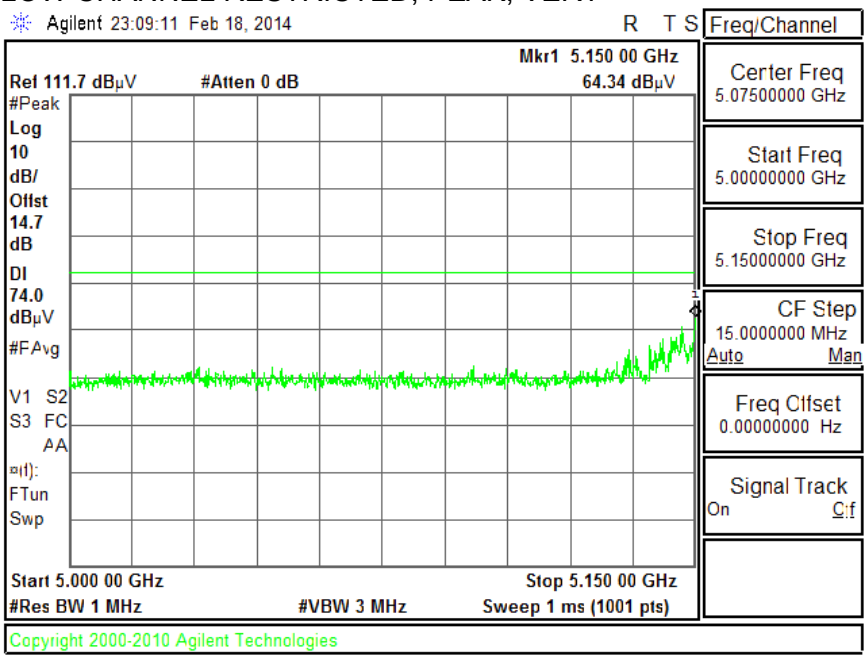
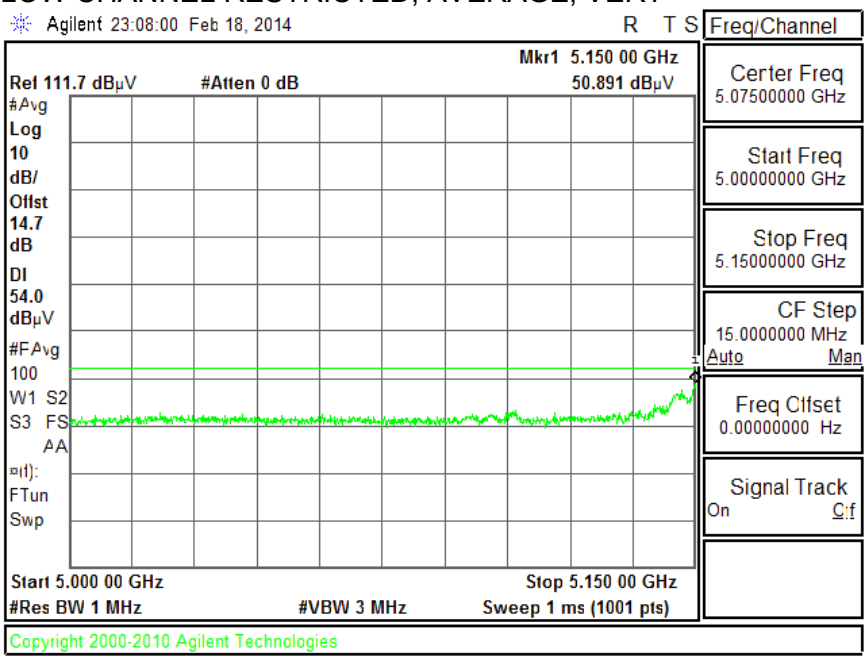
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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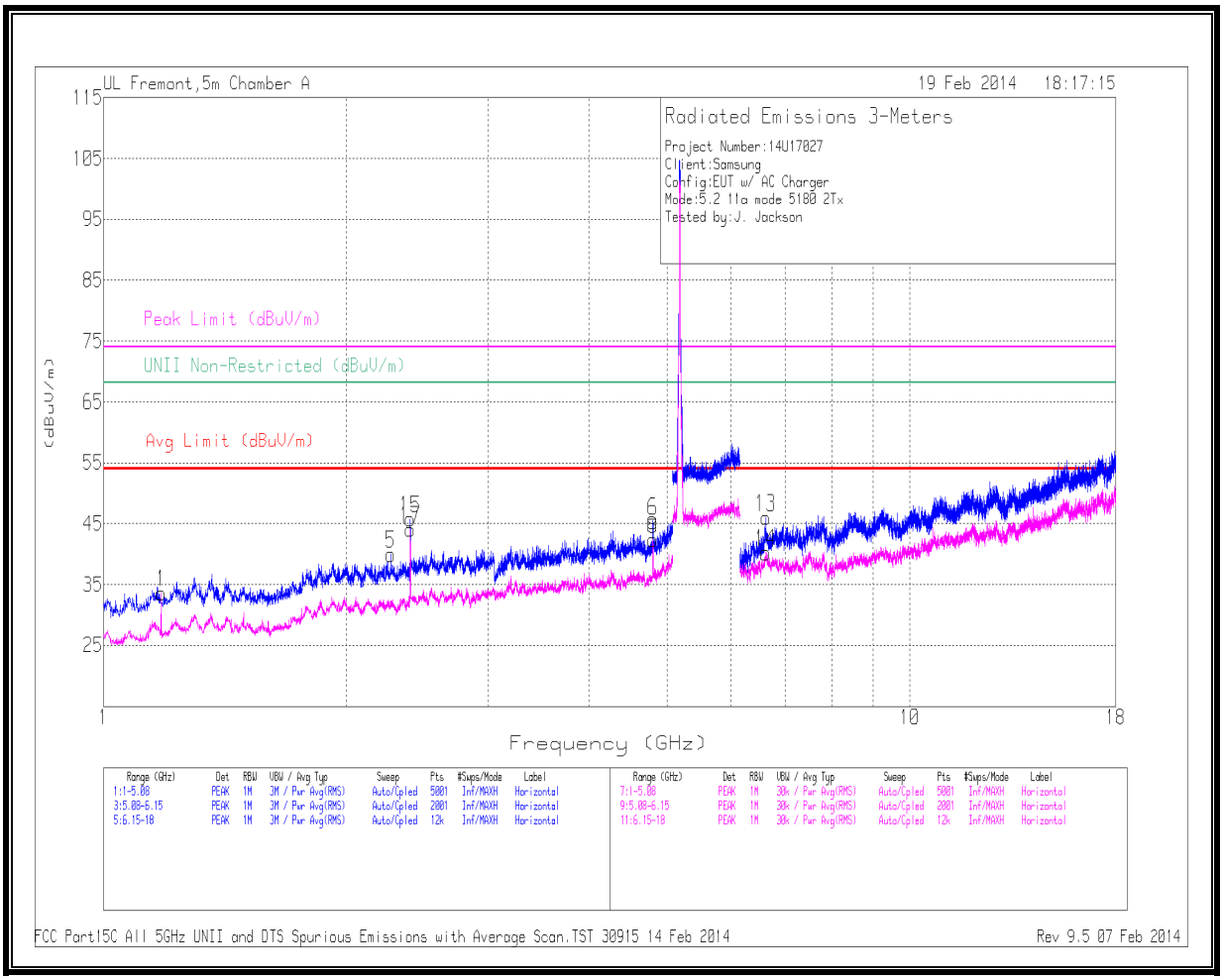
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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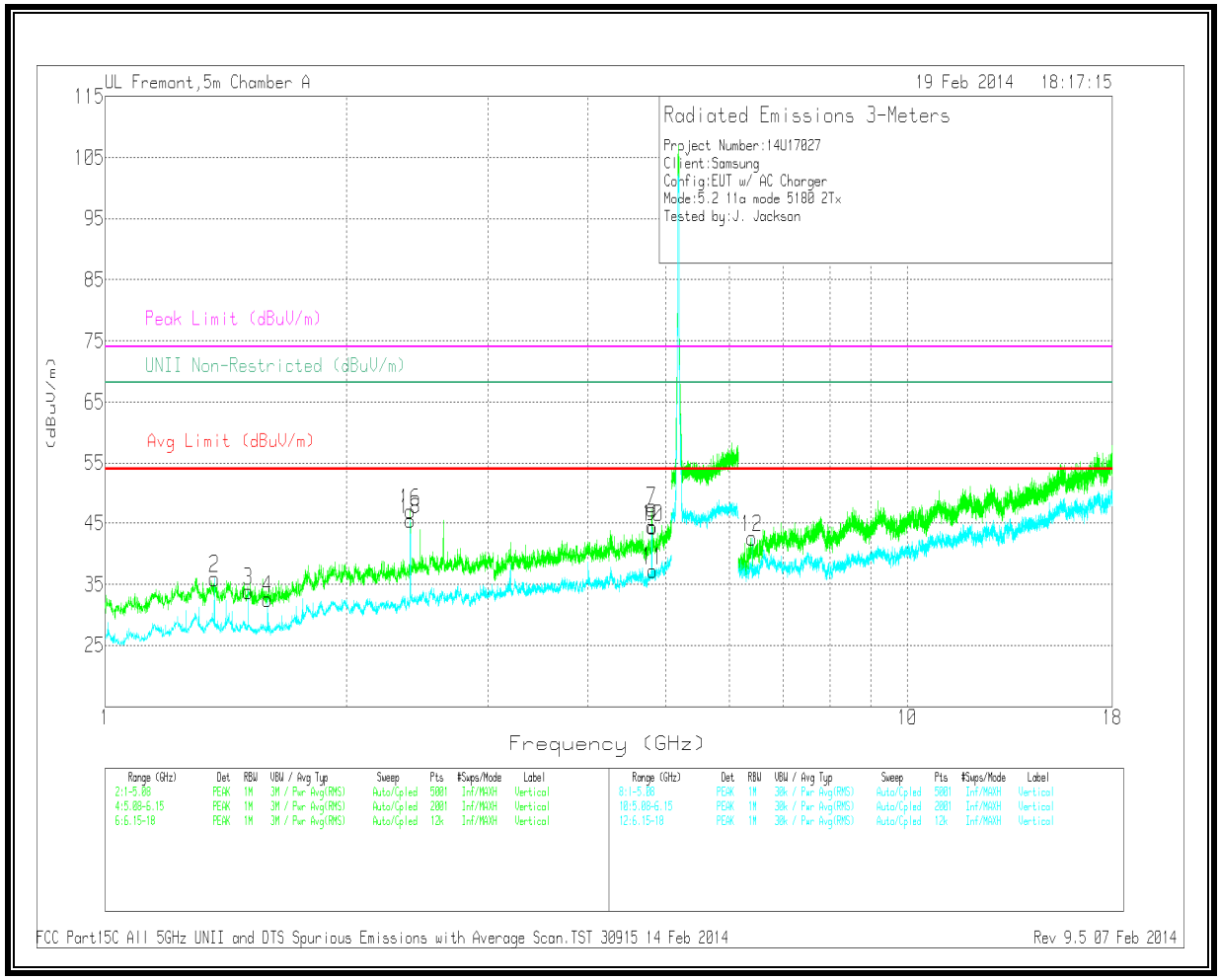
VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 2.271	42.39	PK	31.6	-34	39.99			74	-34.01	68.2	-28.21	0-360	101	H
6	* 4.8	40.72	PK	33.9	-29.2	45.42			74	-28.58	68.2	-22.78	0-360	200	H
7	* 4.8	42.57	PK	33.9	-29.2	47.27			74	-26.73	68.2	-20.93	0-360	101	V
10	* 4.815	39.44	PK	33.9	-29	44.34			74	-29.66	68.2	-23.86	0-360	101	V
1	* 1.179	41.28	Avg	29.2	-36.8	33.68	54	-20.32	-	-	-	-	0-360	200	H
8	* 4.8	37.7	Avg	33.9	-29.2	42.4	54	-11.6	-	-	-	-	0-360	101	H
2	* 1.369	42.84	Avg	30	-36.9	35.94	54	-18.06	-	-	-	-	0-360	101	V
3	* 1.508	40.84	Avg	28.9	-35.9	33.84	54	-20.16	-	-	-	-	0-360	101	V
4	* 1.594	39.89	Avg	28.3	-35.6	32.59	54	-21.41	-	-	-	-	0-360	101	V
9	* 4.8	39.79	Avg	33.9	-29.2	44.49	54	-9.51	-	-	-	-	0-360	101	V
11	* 4.815	32.33	Avg	33.9	-29	37.23	54	-16.77	-	-	-	-	0-360	200	V
15	2.4	47.22	PK	32.1	-33.5	45.82			74	-28.18	68.2	-22.38	0-360	200	H
16	2.4	48.42	PK	32.1	-33.5	47.02			74	-26.98	68.2	-21.18	0-360	101	V
17	2.4	45.5	Avg	32.1	-33.5	44.1	54	-9.9	-	-	-	-	0-360	200	H
18	2.4	46.91	Avg	32.1	-33.5	45.51	54	-8.49	-	-	-	-	0-360	101	V
12	6.4	34.81	Avg	35.5	-27.7	42.61	54	-11.39	-	-	-	-	0-360	100	V
14	6.623	30.67	Avg	35.5	-25.9	40.27	54	-13.73	-	-	-	-	0-360	200	H
13	6.626	36.31	PK	35.5	-25.8	46.01			74	-27.99	68.2	-22.19	0-360	101	H

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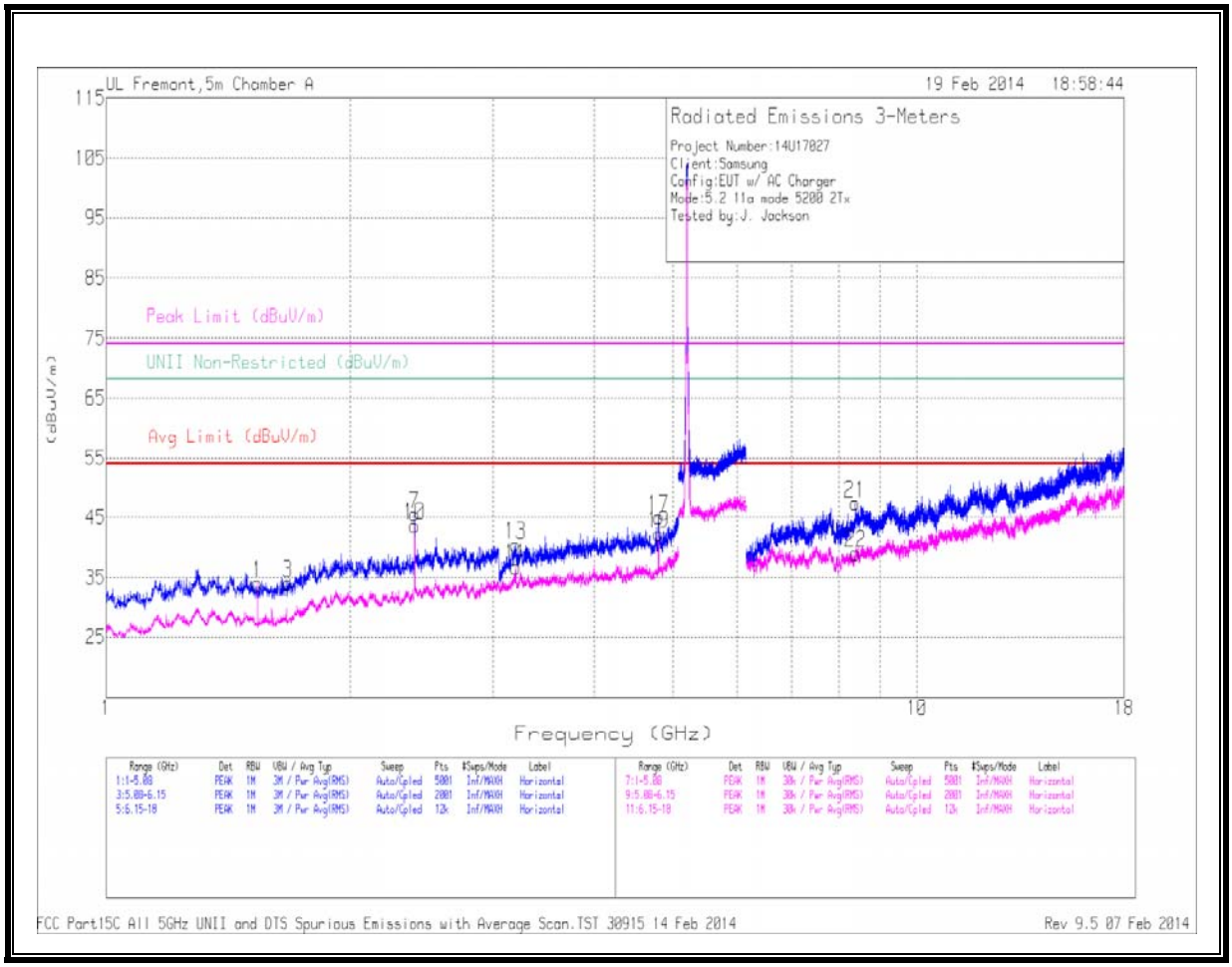
MID CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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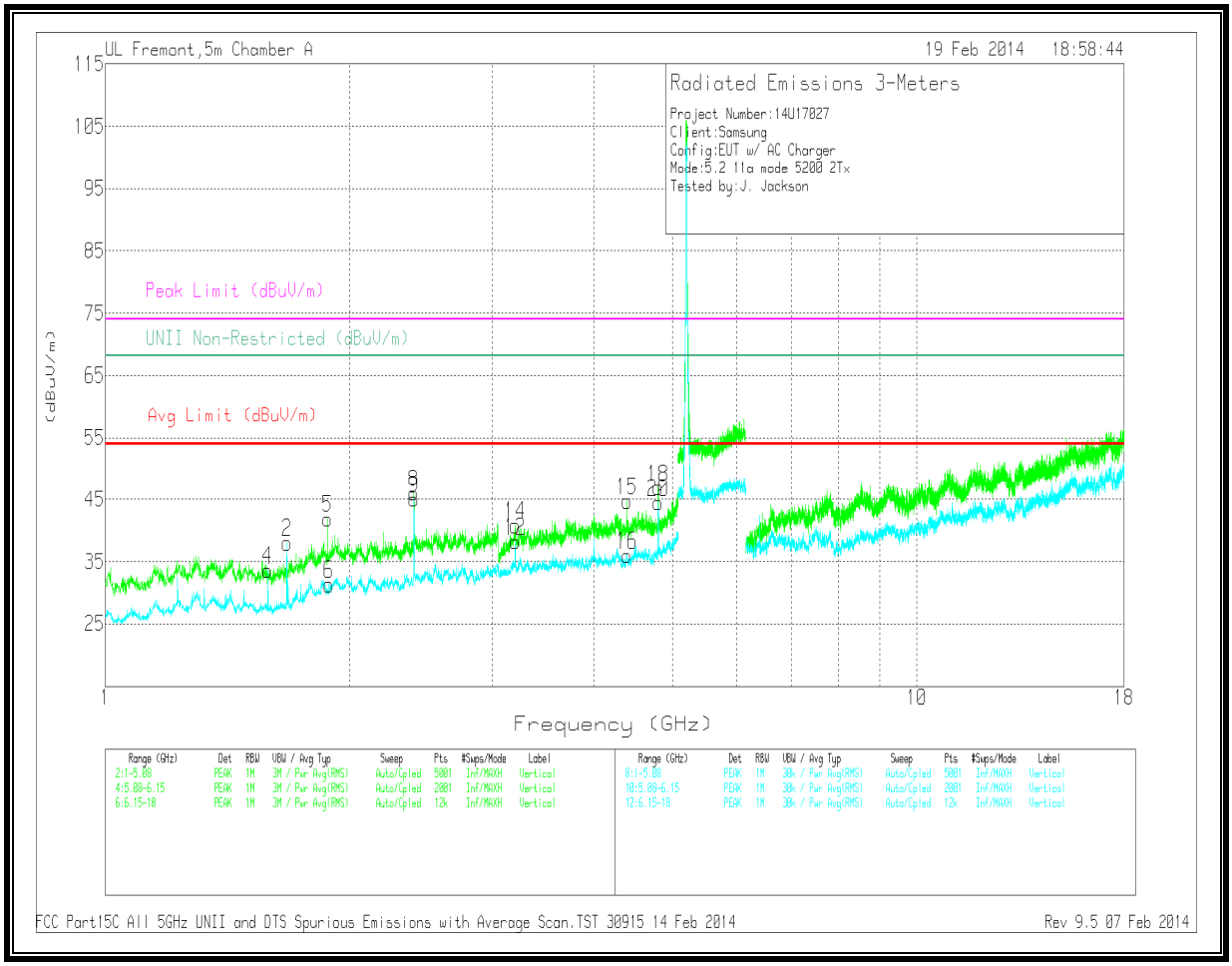
VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 1.675	41.13	PK	29.1	-36.2	34.03			74	-39.97	68.2	-34.17	0-360	200	H
17	* 4.8	40.33	PK	33.9	-29.2	45.03			74	-28.97	68.2	-23.17	0-360	100	H
15	* 4.394	41.24	PK	33.6	-30.1	44.74			74	-29.26	68.2	-23.46	0-360	200	V
18	* 4.8	42.24	PK	33.9	-29.2	46.94			74	-27.06	68.2	-21.26	0-360	200	V
21	* 8.387	37.74	PK	35.7	-26	47.44			74	-26.56	68.2	-20.76	0-360	100	H
1	* 1.537	41.29	Avg	28.7	-36	33.99	54	-20.01	-	-	-	-	0-360	101	H
19	* 4.8	37.59	Avg	33.9	-29.2	42.29	54	-11.71	-	-	-	-	0-360	200	H
2	* 1.675	45.13	Avg	29.1	-36.2	38.03	54	-15.97	-	-	-	-	0-360	101	V
4	* 1.586	40.85	Avg	28.4	-35.6	33.65	54	-20.35	-	-	-	-	0-360	101	V
16	* 4.394	32.51	Avg	33.6	-30.1	36.01	54	-17.99	-	-	-	-	0-360	101	V
20	* 4.8	39.81	Avg	33.9	-29.2	44.51	54	-9.49	-	-	-	-	0-360	101	V
22	* 8.397	29.1	Avg	35.7	-25.8	39	54	-15	-	-	-	-	0-360	100	H
5	1.88	45.38	PK	31.5	-35	41.88			74	-32.12	68.2	-26.32	0-360	100	V
6	1.885	34.65	Avg	31.5	-34.8	31.35	54	-22.65	-	-	-	-	0-360	201	V
8	2.399	47.59	PK	32.1	-33.6	46.09			74	-27.91	68.2	-22.11	0-360	100	V
7	2.4	47.02	PK	32.1	-33.5	45.62			74	-28.38	68.2	-22.58	0-360	200	H
10	2.4	45.07	Avg	32.1	-33.5	43.67	54	-10.33	-	-	-	-	0-360	200	H
9	2.4	46.47	Avg	32.1	-33.5	45.07	54	-8.93	-	-	-	-	0-360	101	V
13	3.197	39.54	PK	33.6	-32.7	40.44			74	-33.56	68.2	-27.76	0-360	100	H
14	3.2	40.01	PK	33.6	-32.8	40.81			74	-33.19	68.2	-27.39	0-360	200	V
11	3.2	35.99	Avg	33.6	-32.8	36.79	54	-17.21	-	-	-	-	0-360	200	H
12	3.2	37.44	Avg	33.6	-32.8	38.24	54	-15.76	-	-	-	-	0-360	201	V

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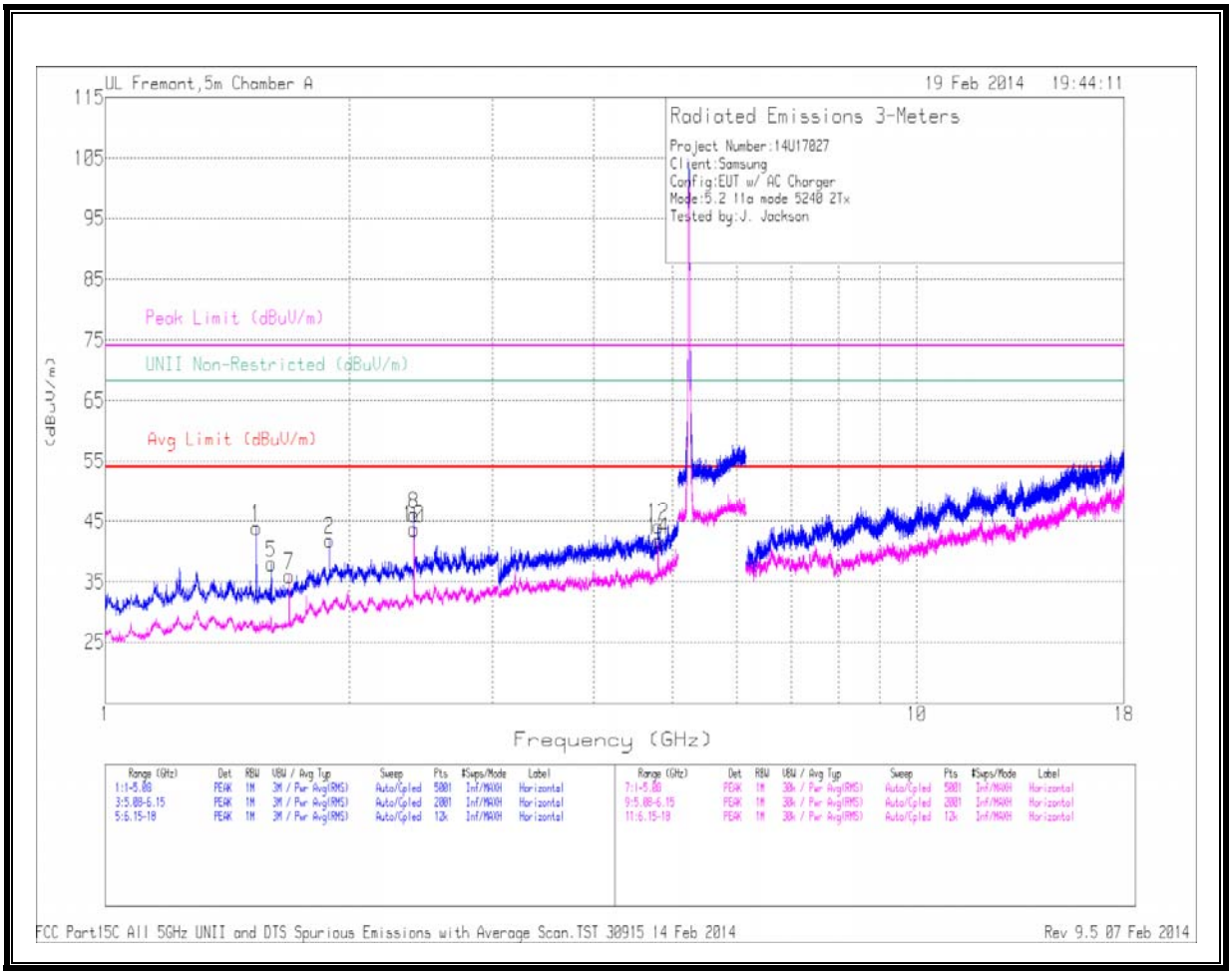
HIGH CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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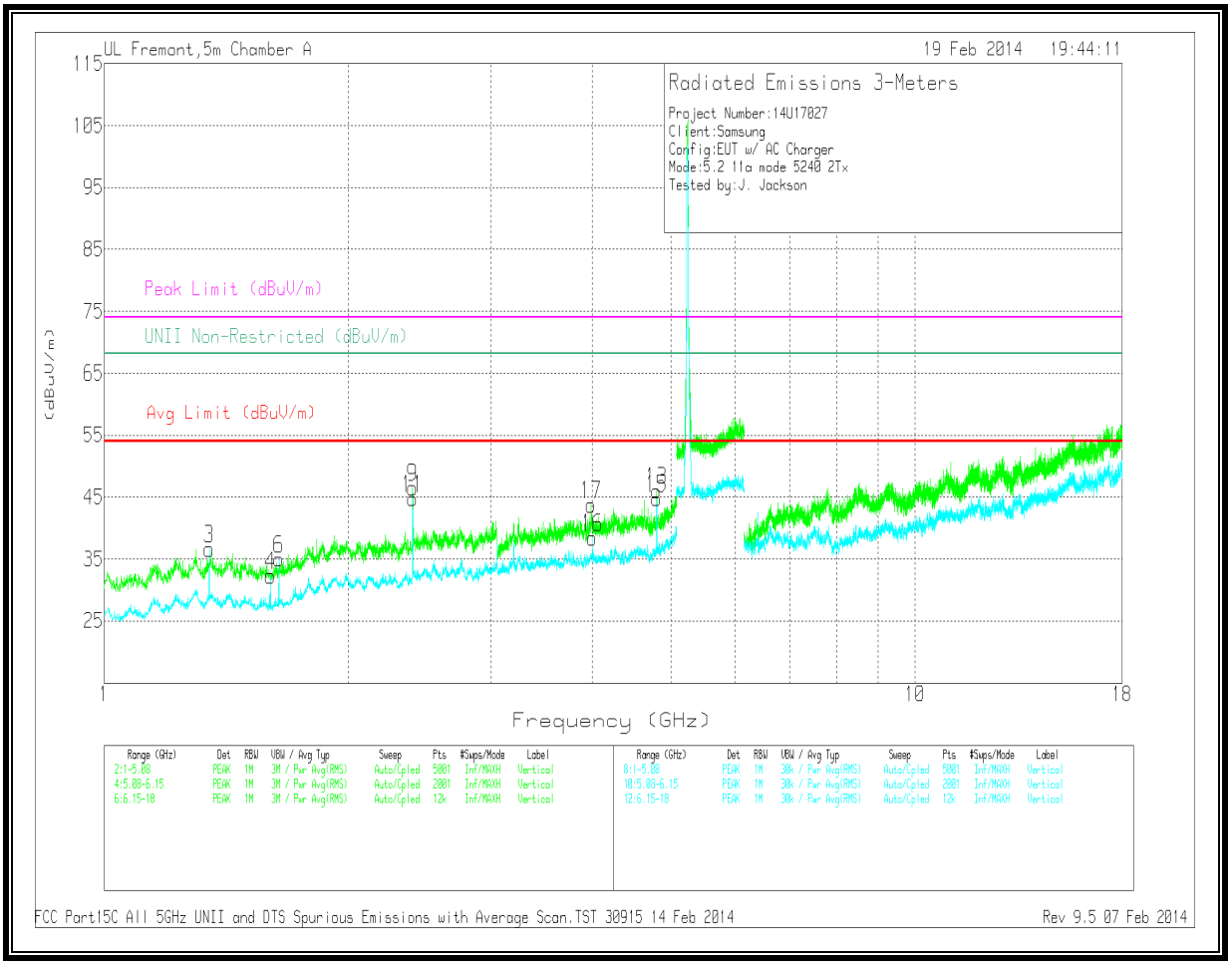
VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.535	51.22	PK	28.7	-36	43.92	54	-10.08	74	-30.08	68.2	-24.28	0-360	200	H
5	* 1.602	45.62	PK	28.3	-35.9	38.02	54	-15.98	74	-35.98	68.2	-30.18	0-360	200	H
12	* 4.8	39.54	PK	33.9	-29.2	44.24	54	-9.76	74	-29.76	68.2	-23.96	0-360	100	H
13	* 4.799	41.39	PK	33.9	-29.2	46.09	54	-7.91	74	-27.91	68.2	-22.11	0-360	201	V
17	* 3.986	40.17	PK	33.8	-30.2	43.77	54	-10.23	74	-30.23	68.2	-24.43	0-360	201	V
7	* 1.685	42.89	Avg	29.2	-36.1	35.99	54	-18.01	-	-	-	-	0-360	200	H
14	* 4.8	37.12	Avg	33.9	-29.2	41.82	54	-12.18	-	-	-	-	0-360	200	H
3	* 1.348	43.23	Avg	30.1	-36.7	36.63	54	-17.37	-	-	-	-	0-360	101	V
4	* 1.603	39.92	Avg	28.3	-35.9	32.32	54	-21.68	-	-	-	-	0-360	101	V
15	* 4.8	40.08	Avg	33.9	-29.2	44.78	54	-9.22	-	-	-	-	0-360	101	V
16	* 4	34.36	Avg	33.8	-29.7	38.46	54	-15.54	-	-	-	-	0-360	101	V
6	1.642	42.31	Avg	28.8	-36.1	35.01	54	-18.99	-	-	-	-	0-360	101	V
2	1.889	44.79	PK	31.6	-34.5	41.89	54	-12.11	74	-32.11	68.2	-26.31	0-360	200	H
8	2.4	47.51	PK	32.1	-33.5	46.11	54	-7.89	74	-27.89	68.2	-22.09	0-360	200	H
9	2.4	47.95	PK	32.1	-33.5	46.55	54	-7.45	74	-27.45	68.2	-21.65	0-360	101	V
10	2.4	45.16	Avg	32.1	-33.5	43.76	54	-10.24	-	-	-	-	0-360	200	H
11	2.4	46.18	Avg	32.1	-33.5	44.78	54	-9.22	-	-	-	-	0-360	101	V

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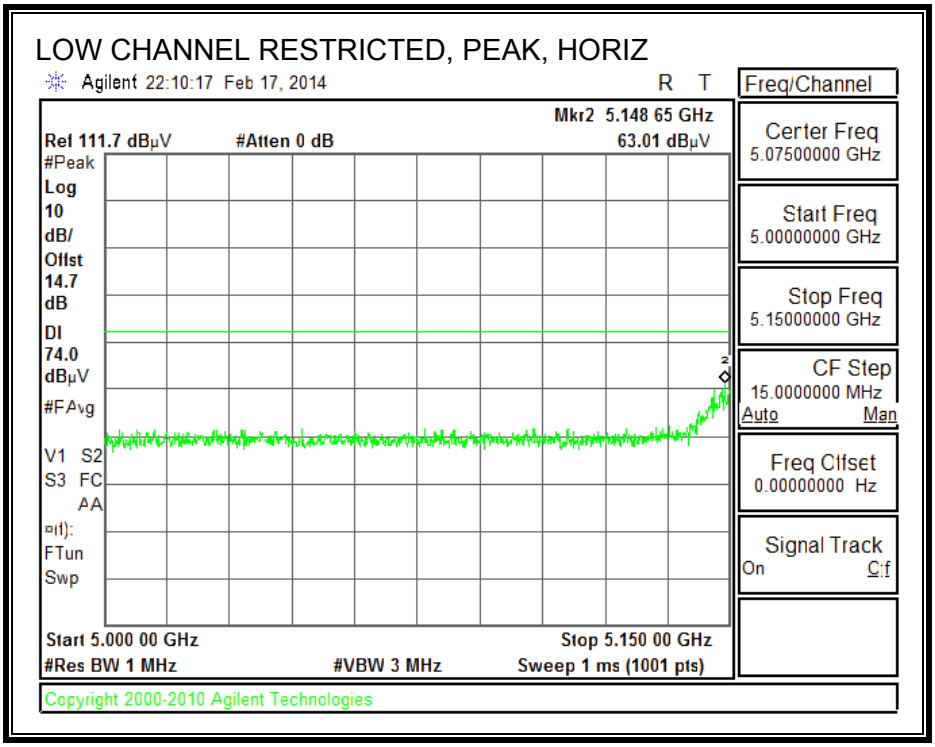
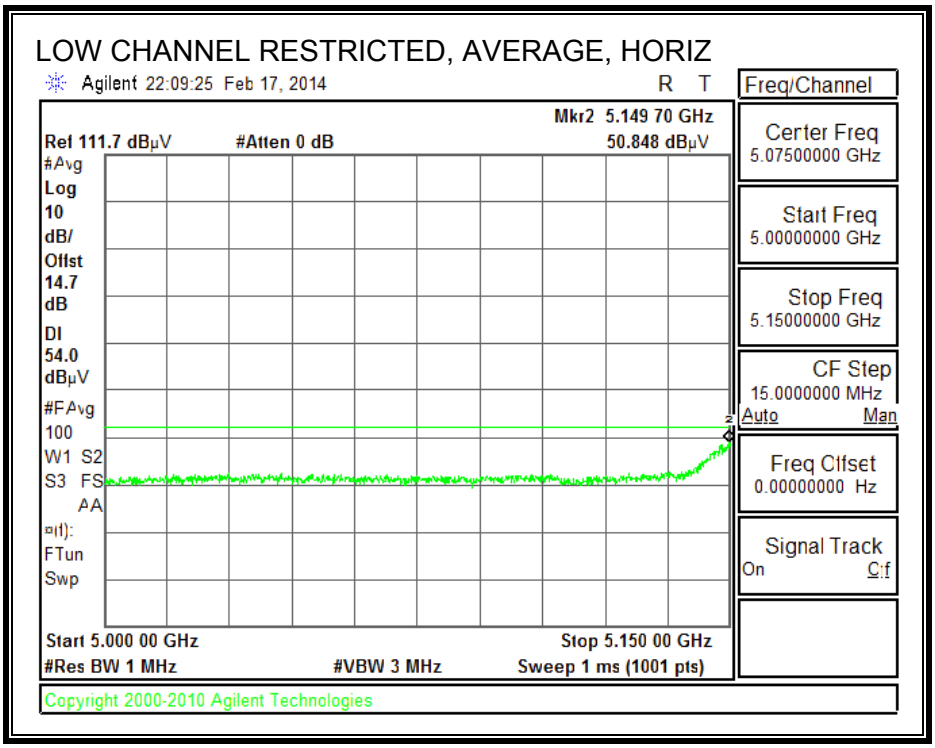
11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)





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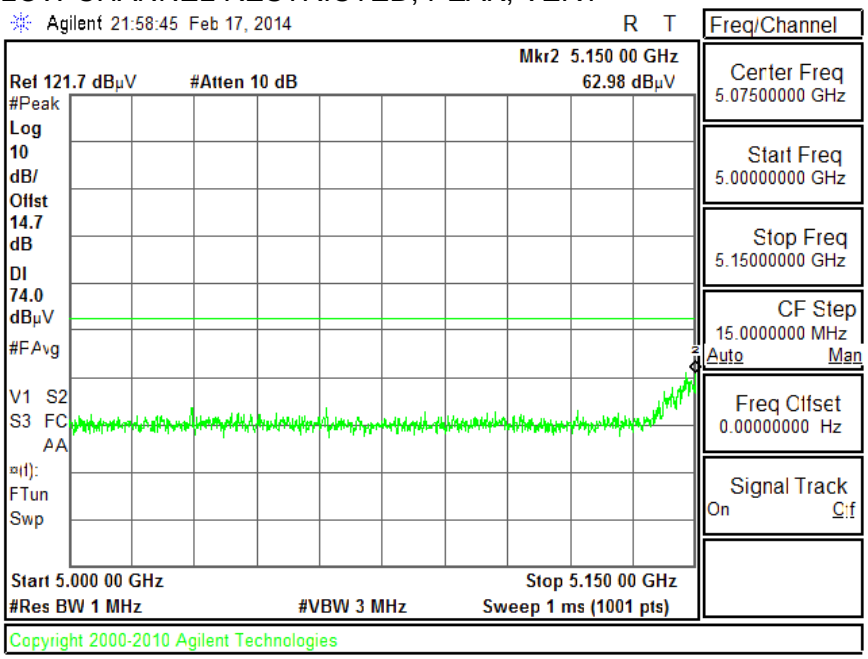
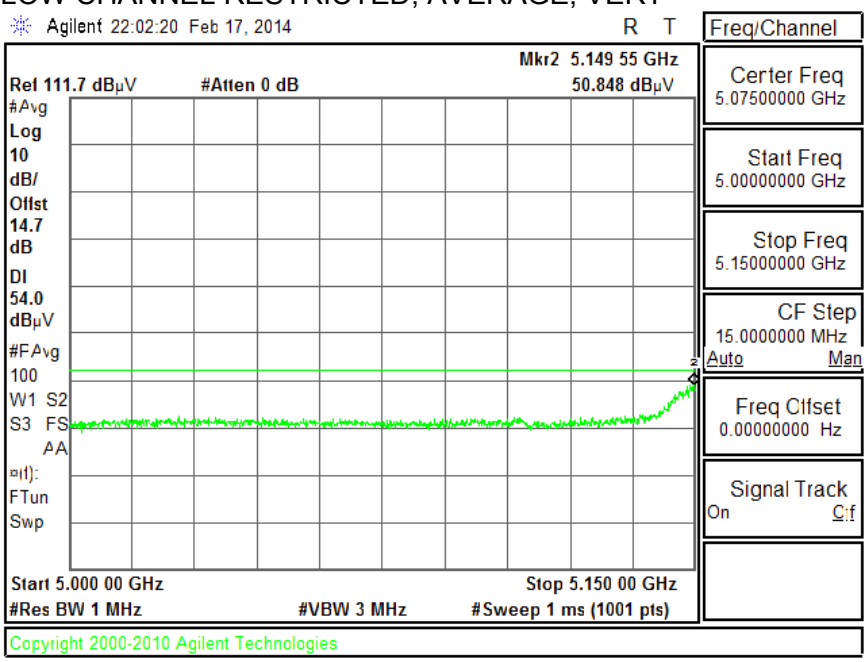
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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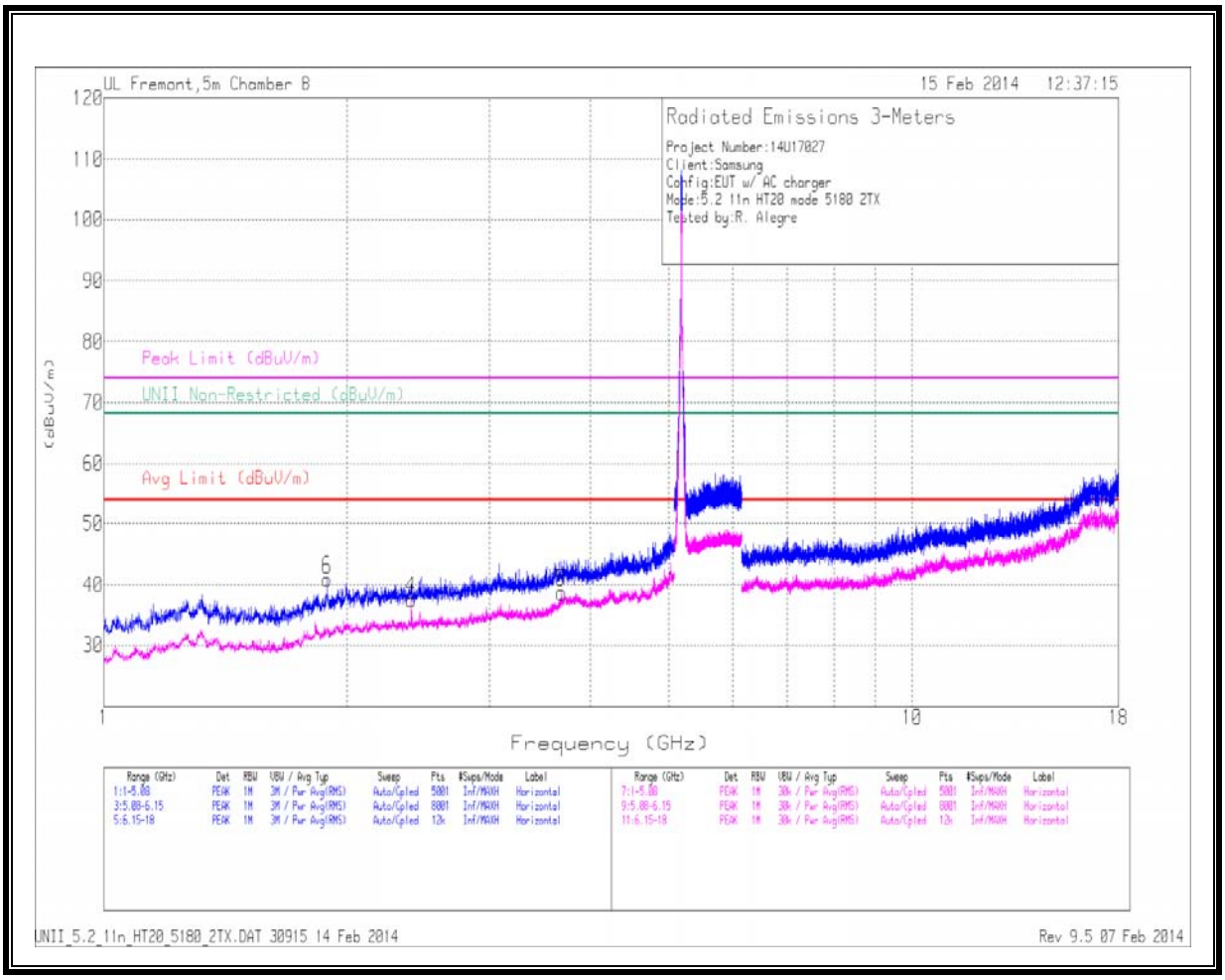
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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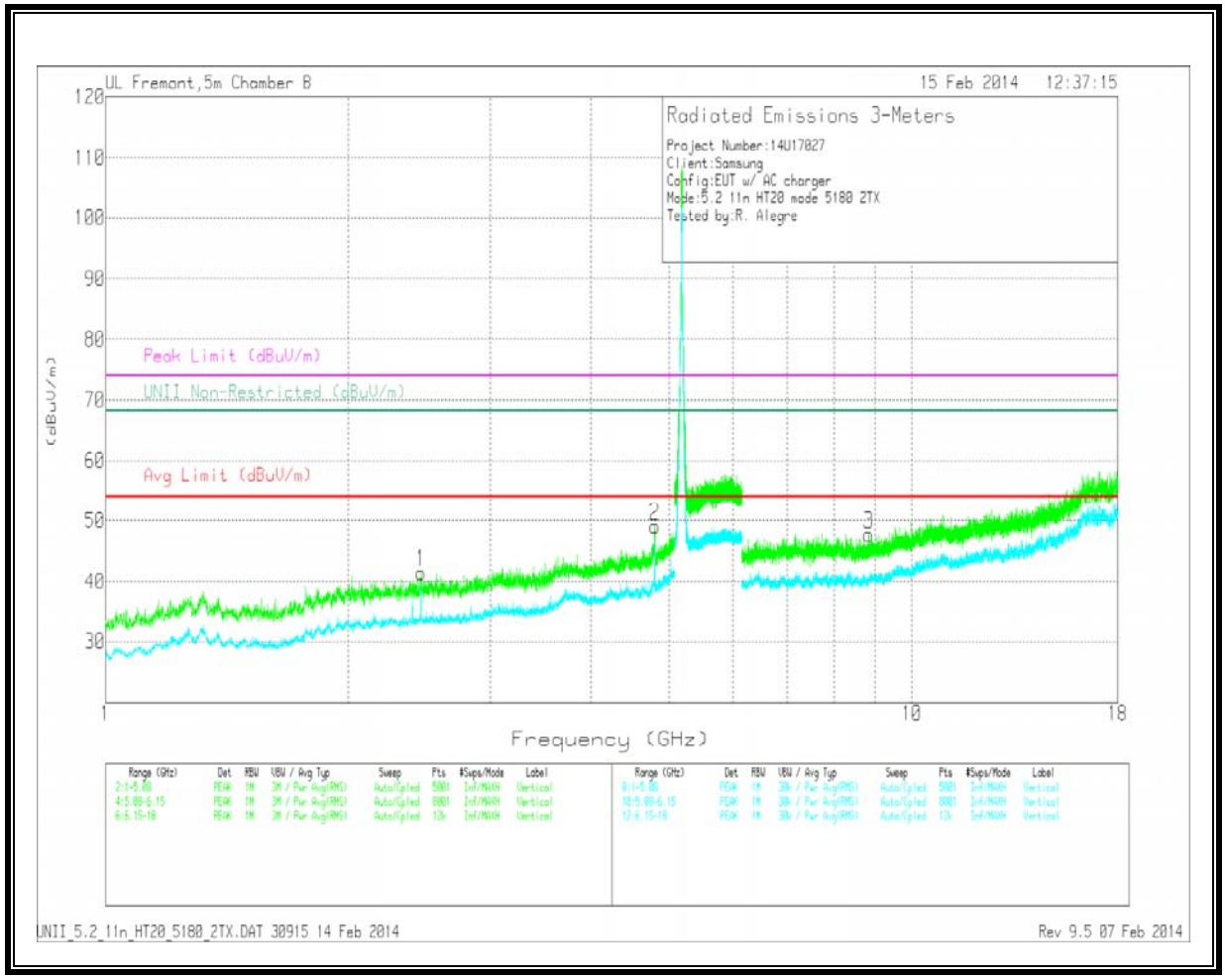
VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.8	43.07	PK	34.1	-28.1	49.07	54	-4.93	74	-24.93	-	-	0-360	201	V
5	* 3.683	34.3	Avg	33.6	-29.2	38.7	54	-15.3	-	-	-	-	0-360	101	H
6	1.889	41.33	PK	31	-31.5	40.83	54	-13.17	74	-33.17	68.2	-27.37	0-360	200	H
4	2.4	36.23	Avg	32.1	-30.8	37.53	54	-16.47	74	-36.47	-	-	0-360	199	H
1	2.461	39.85	PK	32.4	-30.8	41.45	54	-12.55	74	-32.55	68.2	-26.75	0-360	101	V
3	8.838	36.11	PK	36.2	-24.6	47.71	54	-6.29	74	-26.29	68.2	-20.49	0-360	101	V

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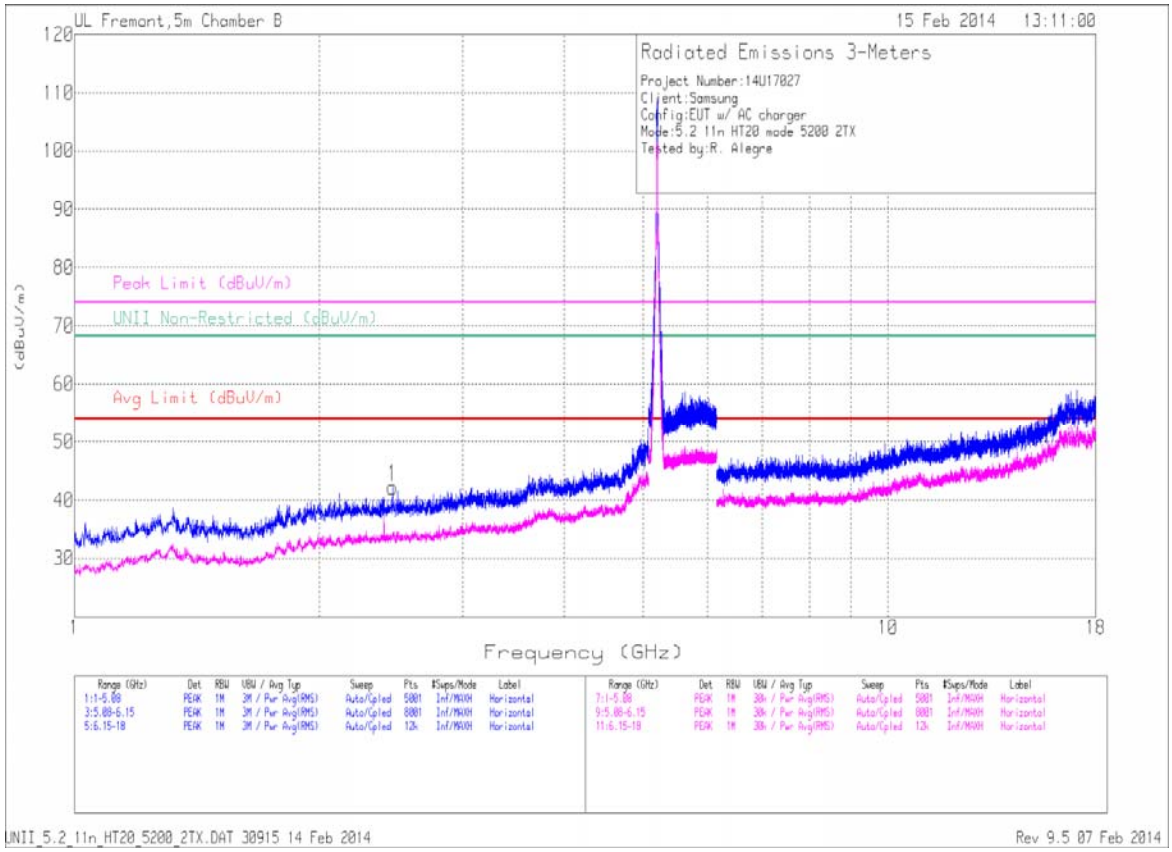
MID CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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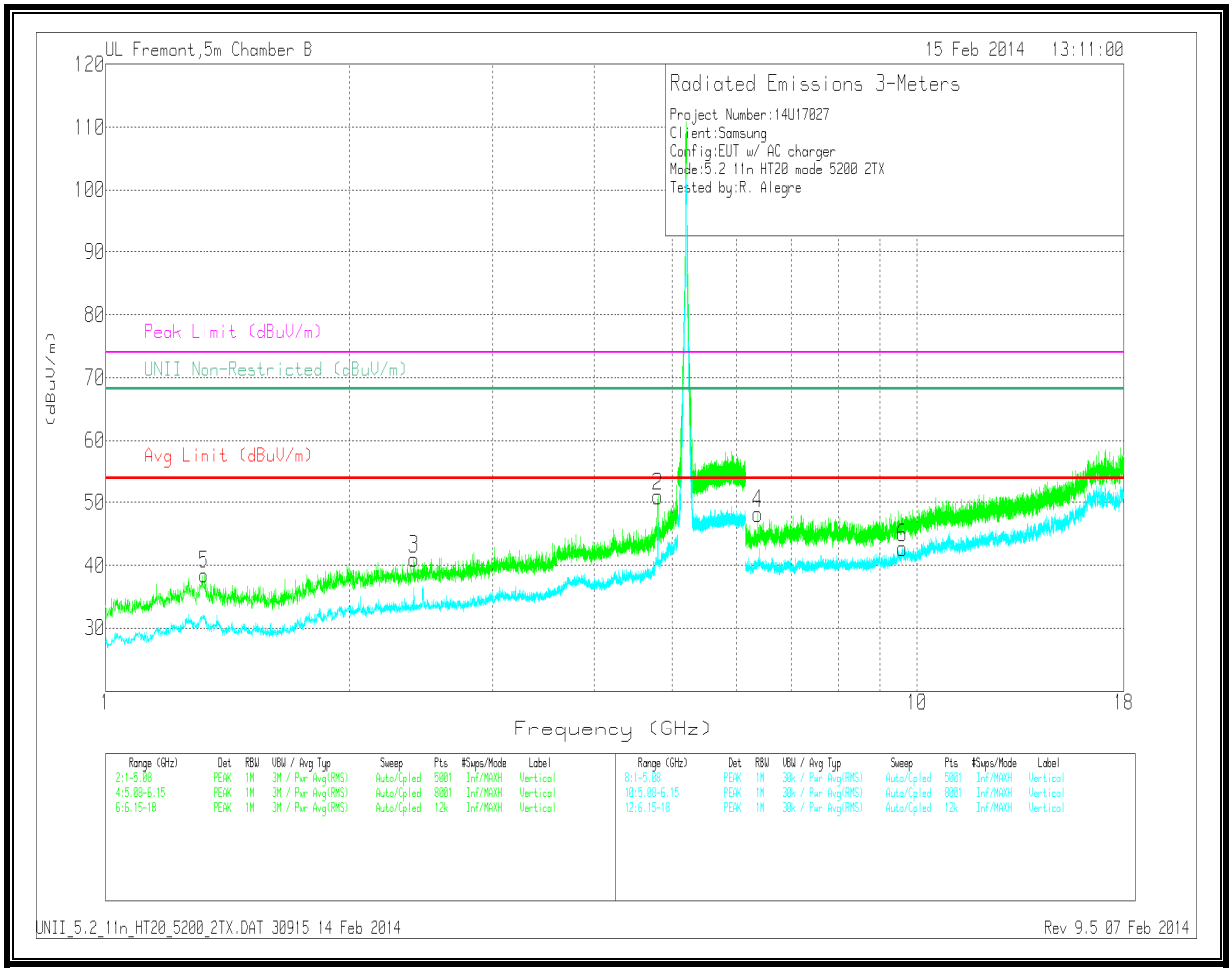
VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.801	45	PK	34.1	-28.1	51	54	-3	74	-23	-	-	0-360	201	V
5	* 1.323	40.04	PK	29.9	-31.4	38.54	54	-15.46	74	-35.46	-	-	0-360	101	V
3	2.4	39.72	PK	32.1	-30.8	41.02	54	-12.98	74	-32.98	68.2	-27.18	0-360	201	V
1	2.46	40.71	PK	32.3	-30.8	42.21	54	-11.79	74	-31.79	68.2	-25.99	0-360	200	H
4	6.368	38.89	PK	35.7	-26.4	48.19	54	-5.81	74	-25.81	68.2	-20.01	0-360	101	V
6	9.592	27.45	Avg	37.3	-22	42.75	54	-11.25	74	-31.25	-	-	0-360	101	V

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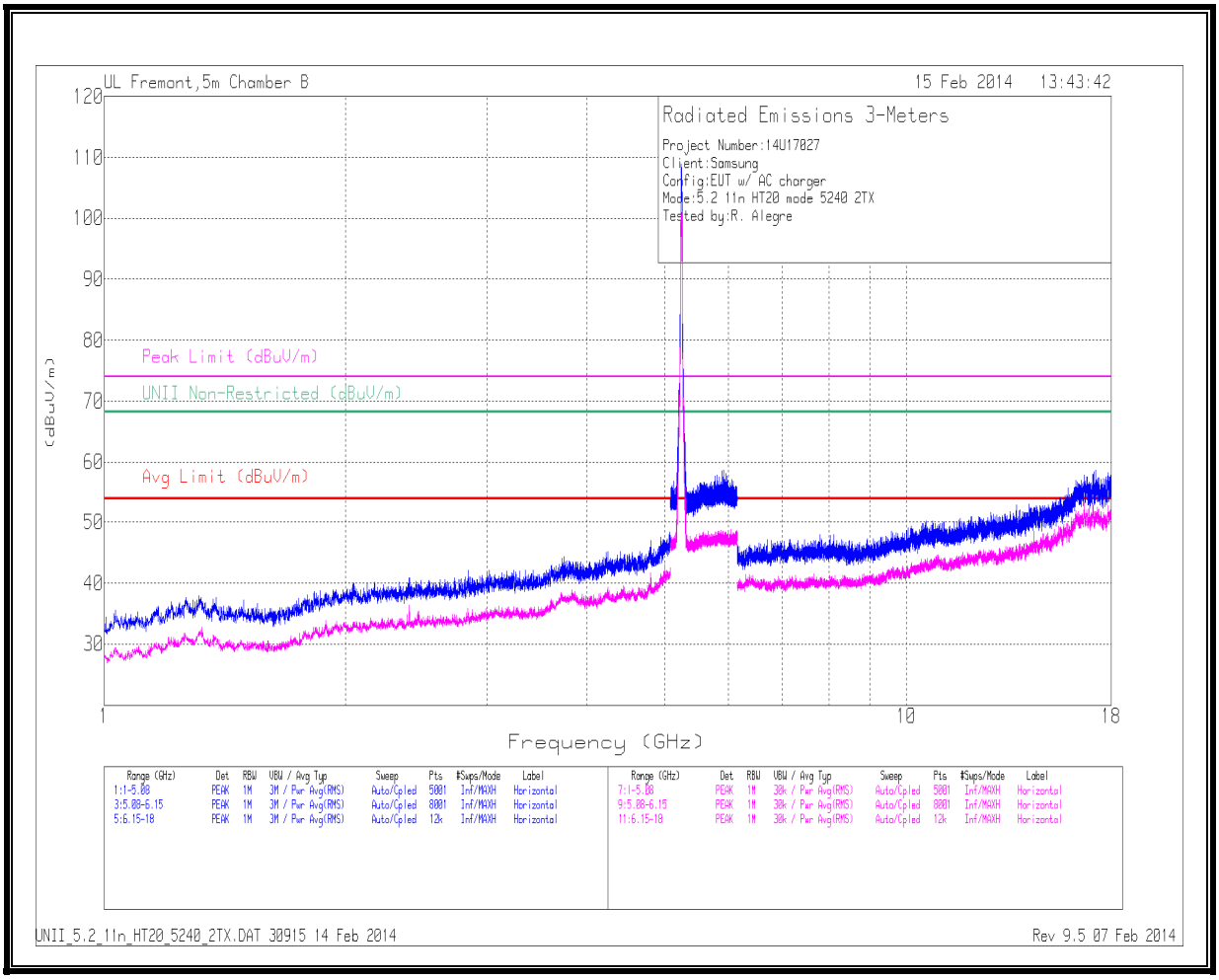
HIGH CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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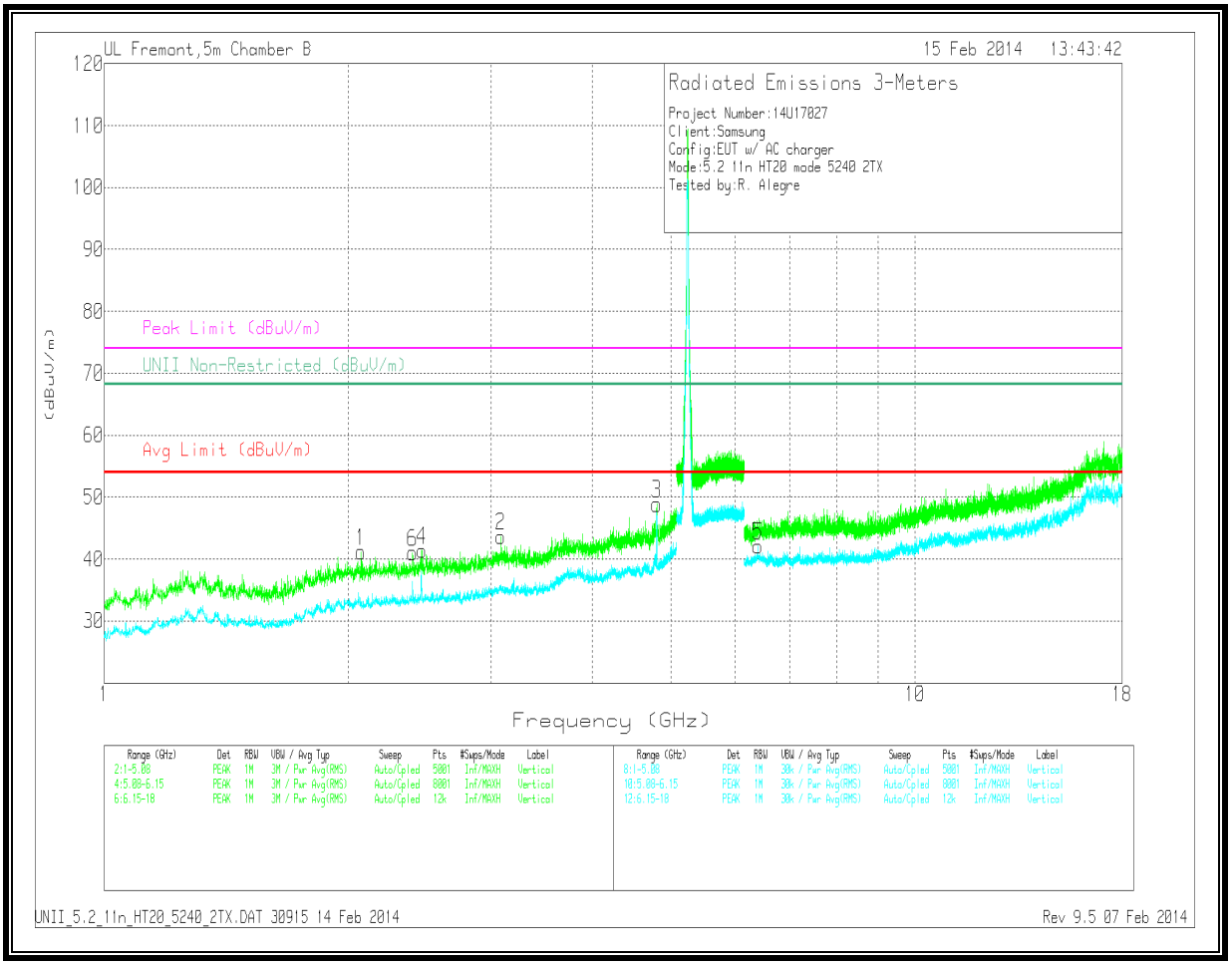
VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.801	42.89	PK	34.1	-28.1	48.89	54	-5.11	74	-25.11	-	-	0-360	201	V
1	2.074	40.6	PK	31.6	-31	41.2	54	-12.8	74	-32.8	68.2	-27	0-360	201	V
6	2.4	39.76	PK	32.1	-30.8	41.06	54	-12.94	74	-32.94	68.2	-27.14	0-360	201	V
4	2.466	39.7	PK	32.4	-30.7	41.4	54	-12.6	74	-32.6	68.2	-26.8	0-360	101	V
2	3.083	39.69	PK	33.3	-29.3	43.69	54	-10.31	74	-30.31	68.2	-24.51	0-360	101	V
5	6.4	32.83	Avg	35.7	-26.4	42.13	54	-11.87	74	-31.87	-	-	0-360	101	V

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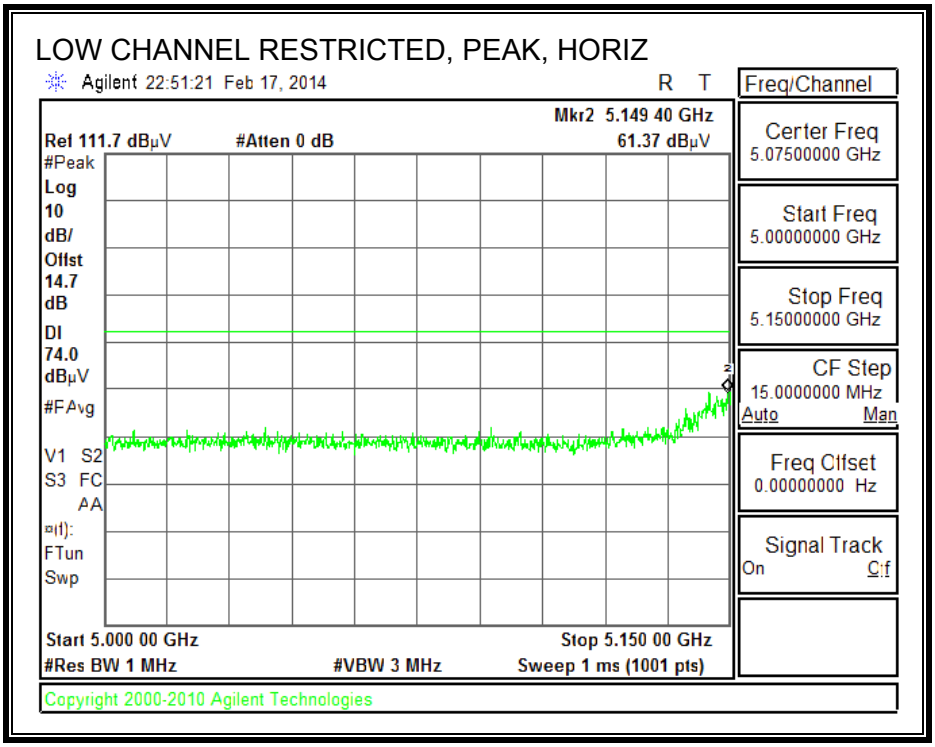
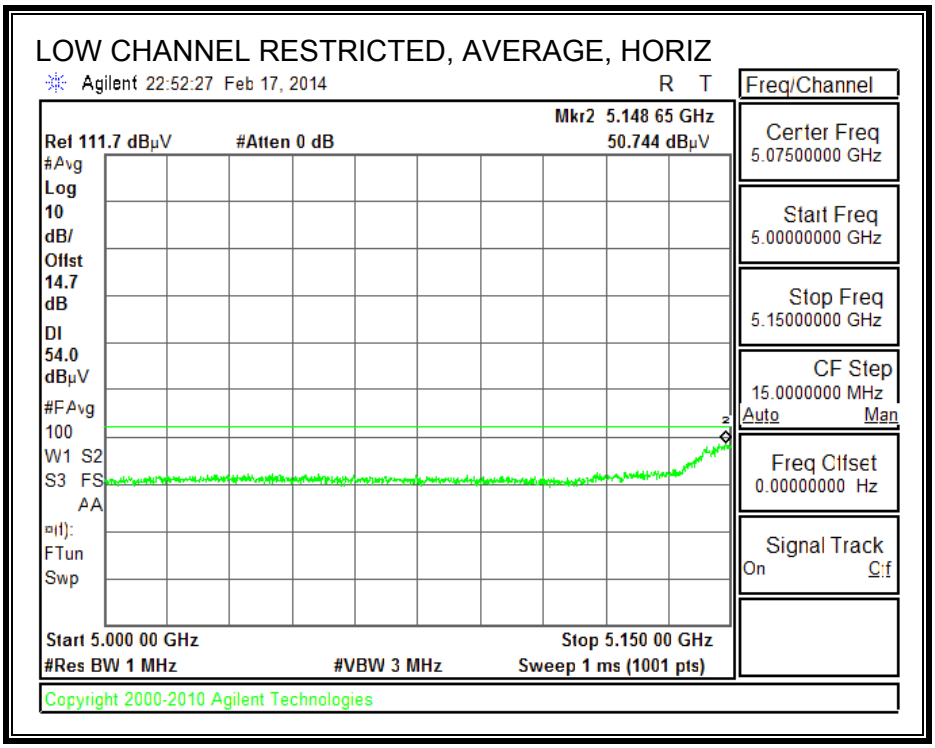
11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL 5190MHz)





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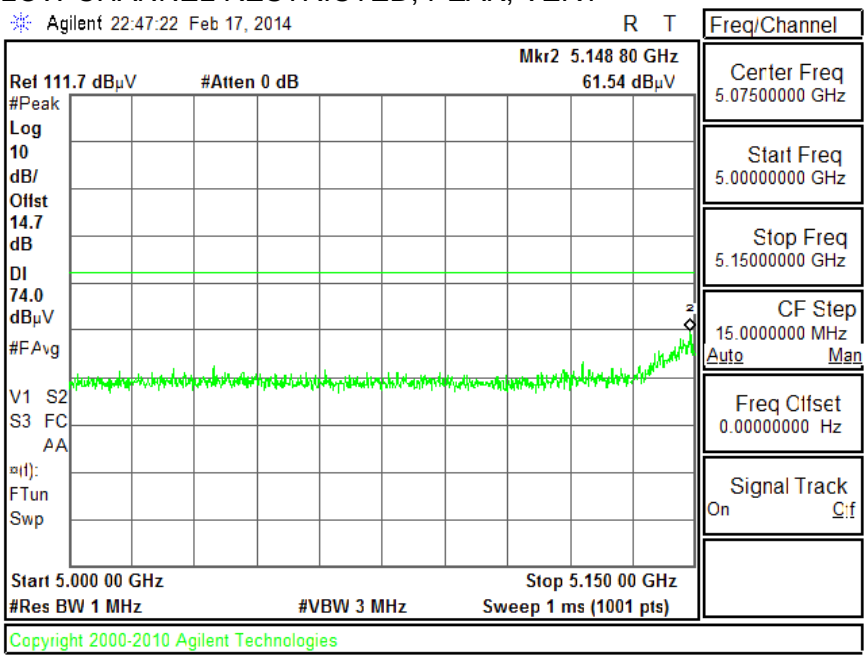
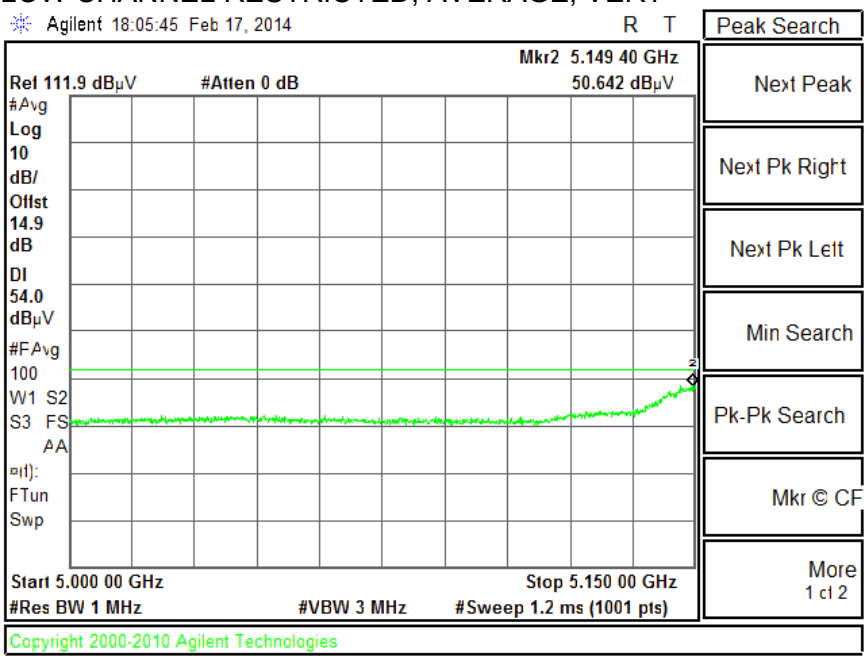
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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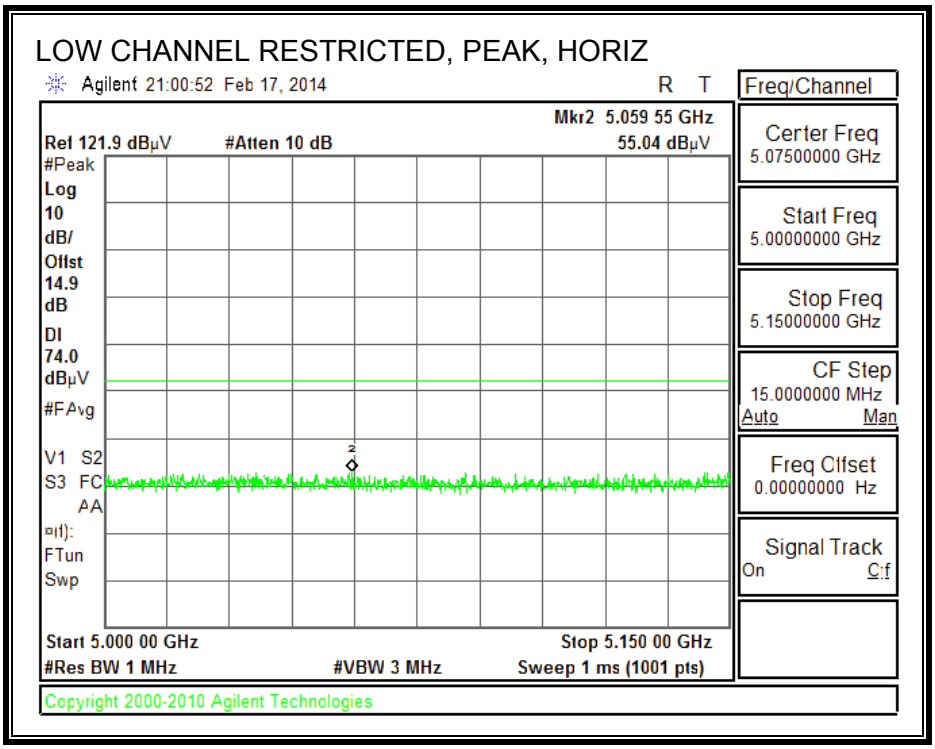
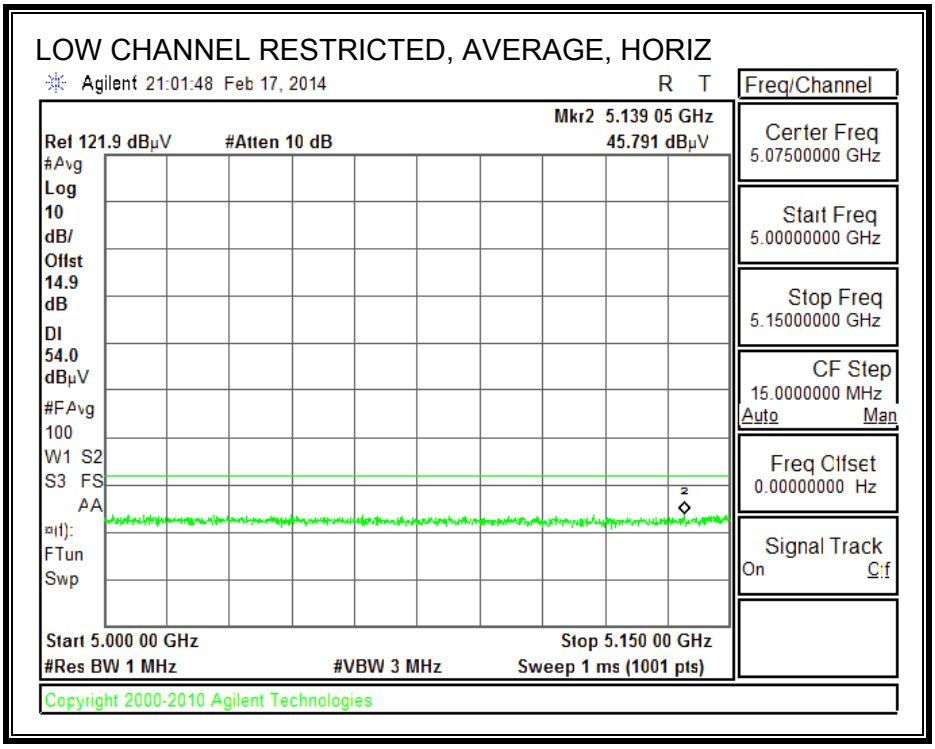
RESTRICTED BANDEDGE (LOW CHANNEL5230MHz)





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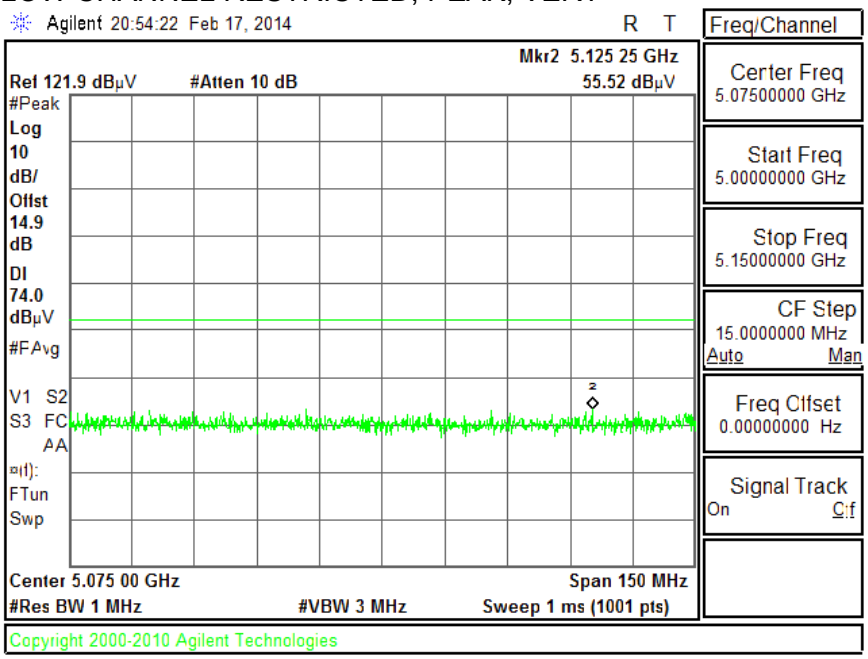
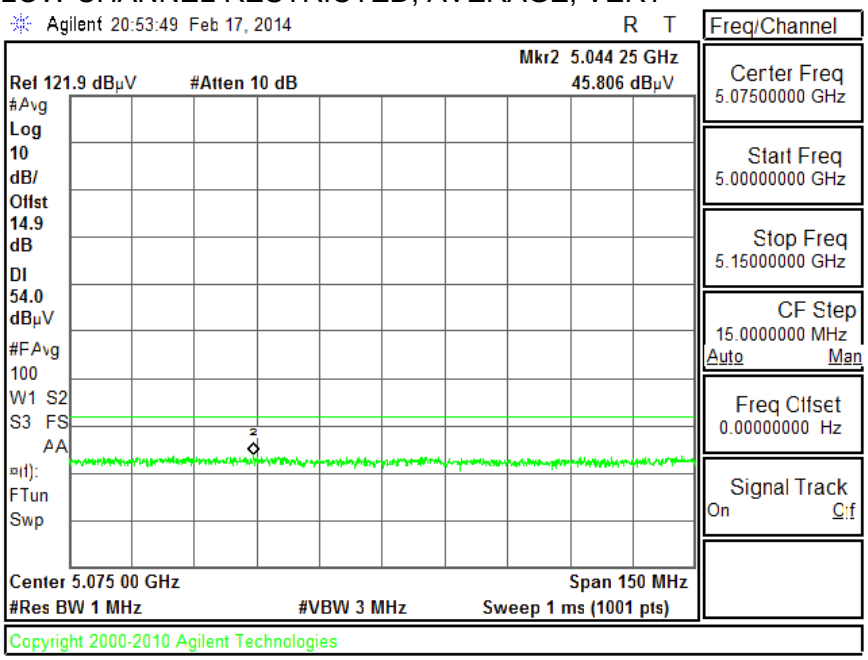
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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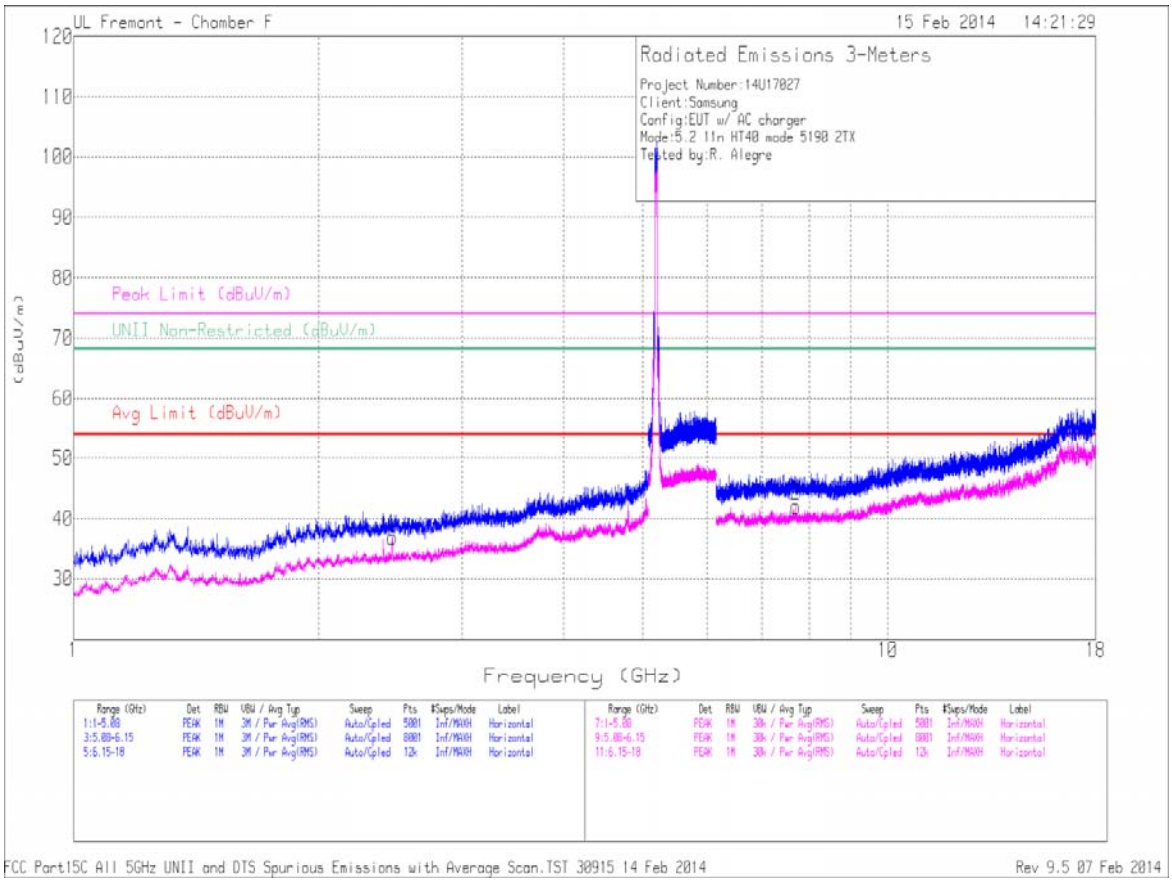
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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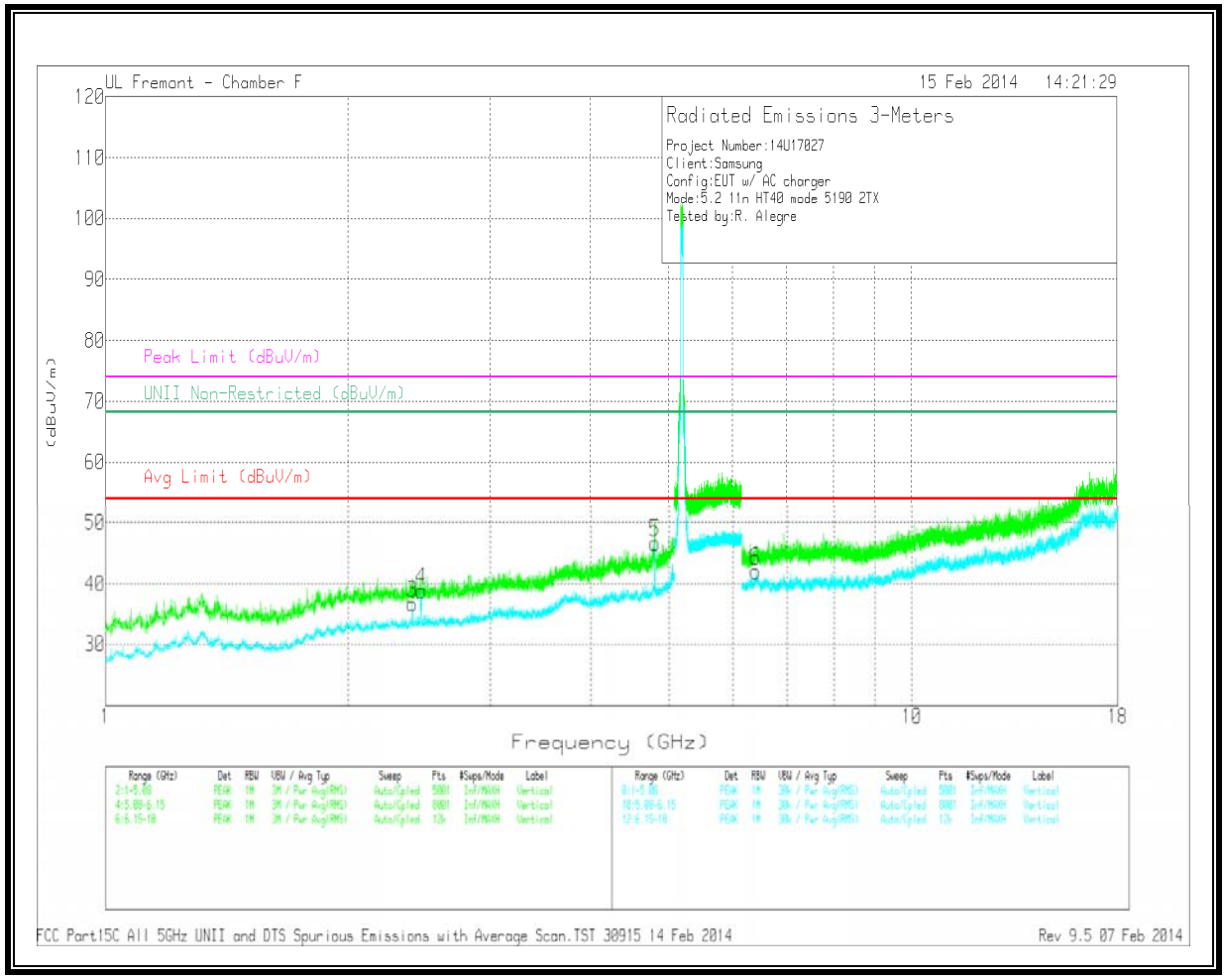
VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.463	35.32	Avg	32.4	-30.8	36.92	54	-17.08	74	-37.08	-	-	0-360	200	H
3	2.4	35.42	PK	32.1	-30.8	36.72	54	-17.28	74	-37.28	-	-	0-360	101	V
4	2.464	37.16	Avg	32.4	-30.7	38.86	54	-15.14	74	-35.14	-	-	0-360	101	V
5	* 4.8	40.67	Avg	34.1	-28.1	46.67	54	-7.33	74	-27.33	-	-	0-360	201	V
2	* 7.71	31.46	Avg	35.9	-25.3	42.06	54	-11.94	74	-31.94	-	-	0-360	101	H
6	6.4	32.77	Avg	35.7	-26.4	42.07	54	-11.93	74	-31.93	-	-	0-360	101	V

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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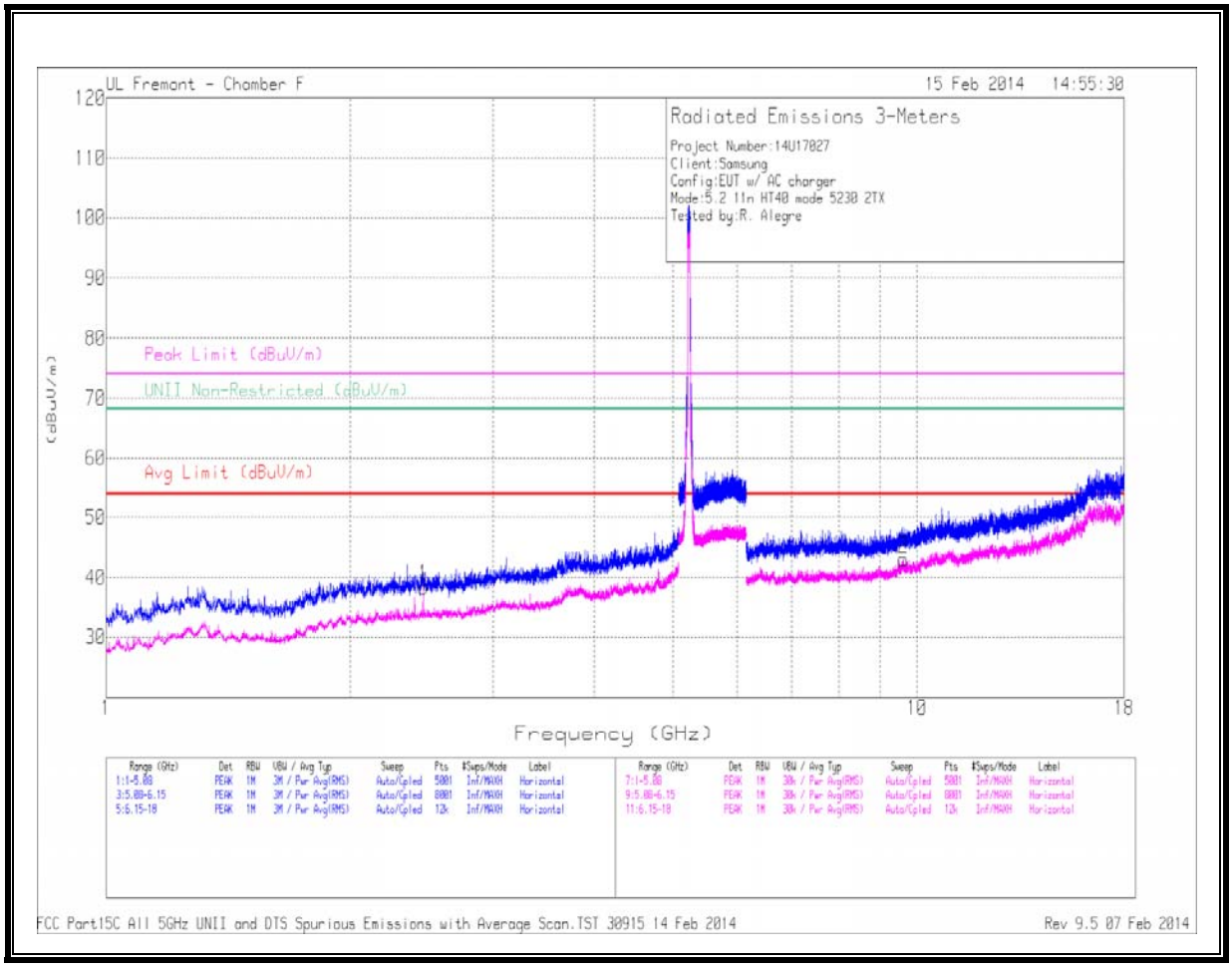
MID CHANNEL
HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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