FCC 47 CFR PART 15 SUBPART E
INDUSTRY CANADA RSS-247 ISSUE 1

UNII

CERTIFICATION TEST REPORT

FOR

WCDMA/LTE Tablet + Bluetooth/BLE, DTS/UNII a/b/g/n/ac and ANT+

MODEL NUMBER : SM-T818W

FCC ID: A3LSMT818W
IC ID : 649E-SMT818W

REPORT NUMBER: 16K23786-E4V2

ISSUE DATE: SEP 09, 2016

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ACCREDITED
TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	08/26/16	Initial issue	SungGil Park
V2	09/09/16	Updated DFS section	SungGil Park

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION:	WCDMA/LTE Tablet + Bluetooth/BLE, DTS/UNII a/b/g/n/ac and ANT+
MODEL NUMBER:	SM-T818W
SERIAL NUMBER:	R32H5003EKB, R32H600ZWCH, E0E42AED, E0D836E5 (RADIATED); R32H5003EJN, E0D832E6 (CONDUCTED)
DATE TESTED:	JUL 13, 2016 - AUG 26, 2016

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

UL Korea, Ltd. 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 Korea, Ltd. 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.

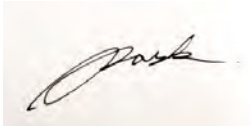
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. 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 IAS, any agency of the Federal Government, or any agency of any government.

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1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMT818T, NII (FCC CFR 47 Part 15E).
And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

1.2. DIFFERENCE

The FCC ID: A3LSMT818W shares the same enclosure and circuit board as FCC ID: A3LSMT818T. The WLAN circuitry and layout are identical between these two units.
The WLAN antennas and surrounding circuitry are the same between these two units.

After confirming through preliminary radiated emissions that the performance of the FCC ID: A3LSMT818T remains representative of FCC ID: A3LSMT818W. The test data of FCC ID: A3LSMT818T being submitted for this application to cover WLAN features.

1.3. SPOT CHECK VERIFICATION DATA

Band		Test Item	Worst Mode	Worst Freq. (MHz)	Worst Bandwidth (MHz)	Test Limit (dBμV/m)	Original Model SM-T818T (FCC ID : A3LSMT818T)	Spot Check Model SM-T818W (FCC ID : A3LSMT818W)	Deviation
							Measured Data(dBμV/m)	Measured Power (dBμV/m)	
UNII-1	5.2GHz	Band Edge	802.11ac	5210.0	80	54(avg)	51.51	50.20	-1.31
		RSE	802.11n	5200.0	20	68.2(peak)	40.12	39.84	-0.28
UNII-2A	5.3GHz	Band Edge	802.11ac	5290.0	80	54(avg)	51.67	50.84	-0.83
		RSE	802.11ac	5290.0	80	68.2(peak)	40.11	39.28	-0.83
UNII-2C	5.5GHz	Band Edge	802.11ac	5530.0	80	54(avg)	51.66	51.98	0.32
		RSE	802.11n	5670.0	40	68.2(peak)	46.95	45.24	-1.71
UNII-3	5.8GHz	Band Edge	802.11n	5755.0	40	-27dBm(peak)	-31.36(dBm)	-33.08(dBm)	-1.72
		RSE	802.11a	5825.0	20	68.2(peak)	45.76	46.60	0.84

Comparison of two models, Deviation is within The EMC Lab Measurement Uncertainty range and all test results are under FCC Technical Limits.

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1.4. REFERENCE DETAIL

Reference application that contains the reused reference data.

Equipment Class	Reference FCC ID	Type Grant/Permissive Change	Reference Application	Folder Test/RF Exposure	Report Tittle / Section
DTS	A3LSMT818T	Grant	16K23624-E1V1	Test	FCC Report DTS WLAN / All sections
			16K23795-S1V1	RF Exposure	FCC Report SAR / Section 9.3, 10.8
DSS	A3LSMT818T	Grant	16K23624-E3V1	Test	FCC Report BT / All sections
			16K23795-S1V1	RF Exposure	FCC Report SAR / Section 9.5, 10.10
NII	A3LSMT818T	Grant	16K23624-E4V1	Test	FCC Report UNII DFS WLAN / All sections (Except DFS)
			16K23795-S1V1	RF Exposure	FCC Report SAR / Section 9.4, 10.9
DXX	A3LSMT818T	Grant	16K23624-E5V1	Test	FCC Report ANT+ / All sections
PCB	A3LSMT818T	Grant	16K23624-E6V1	Test	FCC Report WWAN / All sections for WCDMA B2/B5, LTE B2/B4/B5/B12
			16K23795-S1V1	RF Exposure	FCC Report SAR / Section for WCDMA B2 (9.1, 10.1), WCDMA B5 (9.1, 10.3), LTE B2 (9.2, 10.4), LTE B4 (9.2, 10.5), LTE B5 (9.2, 10.6), LTE B17 (9.2, 10.7)

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033 D02 v01r02, ANSI C63.10-2013 , RSS-247 Issue 1, RSS-GEN Issue 4.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro
☒ Chamber 1
☒ Chamber 2

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at http://www.iasonline.org/PDF/TL/TL-637.pdf.

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

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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	2.32 dB
Radiated Disturbance, Below 1GHz	4.14 dB
Radiated Disturbance, Above 1 GHz	5.97 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 WCDMA/LTE Tablet + Bluetooth/BLE, DTS/UNII a/b/g/n/ac and ANT+.
This test report addresses the NII (UNII) operational mode.

WiFi MIMO Condition

Frequency	Mode	Antenna 1	Antenna 2
2.4 GHz	802.11b	TX / RX	TX / RX
	802.11g	TX / RX	TX / RX
	802.11n	TX / RX	TX / RX
	802.11n MIMO	TX / RX	TX / RX
5 GHz	802.11a	TX / RX	TX / RX
	802.11n	TX / RX	TX / RX
	802.11ac	TX / RX	TX / RX
	802.11n/ac MIMO	TX / RX	TX / RX

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5.2. MAXIMUM OUTPUT POWER

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

Frequency Range [MHz]	Mode	Output Power [dBm]		Output Power [mW]	
		Antenna1	Antenna2	Antenna1	Antenna2
5180 - 5240	802.11a SISO	16.49	16.64	44.61	46.10
	802.11a MIMO	19.50		89.13	
	802.11n HT20 SISO	16.34	16.30	43.00	42.65
	802.11n HT20 MIMO	19.28		84.72	
5190 - 5230	802.11n HT40 SISO	16.85	16.95	48.41	49.49
	802.11n HT40 MIMO	19.91		97.90	
5210	802.11ac VHT80 SISO	15.46	15.32	35.19	34.02
	802.11ac VHT80 MIMO	18.40		69.21	
5260 - 5320	802.11a SISO	16.46	16.42	44.28	43.87
	802.11a MIMO	19.40		87.10	
	802.11n HT20 SISO	16.24	16.92	42.10	49.22
	802.11n HT20 MIMO	19.61		91.32	
5270 - 5310	802.11n HT40 SISO	17.06	17.06	50.82	50.82
	802.11n HT40 MIMO	20.07		101.64	
5290	802.11ac VHT80 SISO	15.49	15.38	35.37	34.49
	802.11ac VHT80 MIMO	18.44		69.86	
5500 - 5720	802.11a SISO	16.92	16.70	49.23	46.78
	802.11a MIMO	19.73		93.97	
	802.11n HT20 SISO	17.19	17.20	52.40	52.43
	802.11n HT20 MIMO	19.97		99.31	
5510 - 5710	802.11n HT40 SISO	17.00	17.00	50.13	50.10
	802.11n HT40 MIMO	20.01		100.23	
5530 - 5690	802.11ac VHT80 SISO	16.18	15.58	41.53	36.11
	802.11ac VHT80 MIMO	18.90		77.64	
5745 - 5825	802.11a SISO	17.38	16.84	54.74	48.27
	802.11a MIMO	20.09		102.09	
	802.11n HT20 SISO	17.07	17.17	50.96	52.11
	802.11n HT20 MIMO	20.00		100.00	
5755 - 5795	802.11n HT40 SISO	17.21	17.13	52.59	51.63
	802.11n HT40 MIMO	20.10		102.33	
5775	802.11ac VHT80 SISO	16.27	16.13	42.40	41.03
	802.11ac VHT80 MIMO	19.21		83.43	

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5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of:

Frequency Range [MHz]	Antenna Gain [dBi]	
	Antenna 1	Antenna 2
UNII 1 5150 – 5250	-2.07	-3.57
UNII 2A 5250 – 5350	-1.12	-3.57
UNII 2C 5470 – 5725	-2.09	-3.57
UNII 3 5725 – 5850	-1.42	-3.57

5.4. List of test reduction and modes covering other modes:

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

UNII 1

5150 - 5250 MHz Authorized Frequency Band (Radiated Testing)		
Frequency Range [MHz]	**Mode**	**Covered by**
5180 - 5240	802.11a legacy 1TX/STBC 2TX	802.11a 2TX CDD
5180 - 5240	802.11HT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11HT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX CDD/Tx BF	802.11n HT20 2TX CDD
5190 - 5230	802.11n HT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11n HT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX CDD/Tx BF	802.11n HT40 2TX CDD
5210	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5210	802.11ac VHT80 2TX STBC/SDM/Tx BF	802.11ac VHT80 2TX CDD

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UNII 2A

5250 - 5350 MHz Authorized Frequency Band (Radiated Testing)		
Frequency Range [MHz]	**Mode**	**Covered by**
5260 - 5320	802.11a legacy 1TX/STBC 2TX	802.11a 2TX CDD
5260 - 5320	802.11HT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11HT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX CDD/Tx BF	802.11n HT20 2TX CDD
5270 - 5310	802.11n HT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11n HT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX CDD/Tx BF	802.11n HT40 2TX CDD
5290	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5290	802.11ac VHT80 2TX STBC/SDM/Tx BF	802.11ac VHT80 2TX CDD

UNII 2C

5470 - 5725 MHz Authorized Frequency Band (Radiated Testing)		
Frequency Range [MHz]	**Mode**	**Covered by**
5500 - 5700	802.11a legacy 1TX/STBC 2TX	802.11a 2TX CDD
5500 - 5700	802.11HT20 1TX	802.11n HT20 2TX CDD
5500 - 5700	802.11HT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5500 - 5700	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5500 - 5700	802.11ac VHT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5500 - 5700	802.11ac VHT20 2TX CDD/Tx BF	802.11n HT20 2TX CDD
5510 - 5690	802.11n HT40 1TX	802.11n HT40 2TX CDD
5510 - 5690	802.11n HT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5510 - 5690	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5510 - 5690	802.11ac VHT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5510 - 5690	802.11ac VHT40 2TX CDD/Tx BF	802.11n HT40 2TX CDD
5530 - 5610	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5530 - 5610	802.11ac VHT80 2TX STBC/SDM/Tx BF	802.11ac VHT80 2TX CDD

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UNII 3

5725 - 5850 MHz Authorized Frequency Band (Radiated Testing)		
Frequency Range [MHz]	**Mode**	**Covered by**
5745 - 5825	802.11a legacy 1TX/STBC 2TX	802.11a 2TX CDD
5745 - 5825	802.11HT20 1TX	802.11n HT20 2TX CDD
5745 - 5825	802.11HT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 2TX STBC/SDM	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 2TX CDD/Tx BF	802.11n HT20 2TX CDD
5755 - 5795	802.11n HT40 1TX	802.11n HT40 2TX CDD
5755 - 5795	802.11n HT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 2TX STBC/SDM	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 2TX CDD/Tx BF	802.11n HT40 2TX CDD
5775	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5775	802.11ac VHT80 2TX STBC/SDM/Tx BF	802.11ac VHT80 2TX CDD

5.5. WORST-CASE CONFIGURATION AND MODE

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

The fundamental of the EUT was investigated in three orthogonal orientations X,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 (2TX CDD)
802.11n HT20mode: MCS0 (2TX CDD)
802.11n HT40mode: MCS0 (2TX CDD)
802.11ac VHT80mode: MCS0 (2TX CDD)

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA12JWE	DK3H518VS/B- E	N/A
Data Cable	SAMSUNG	DG925UWE	N/A	N/A
Earphone	SAMSUNG	EHS64AVFWE	N/A	N/A

I/O CABLES

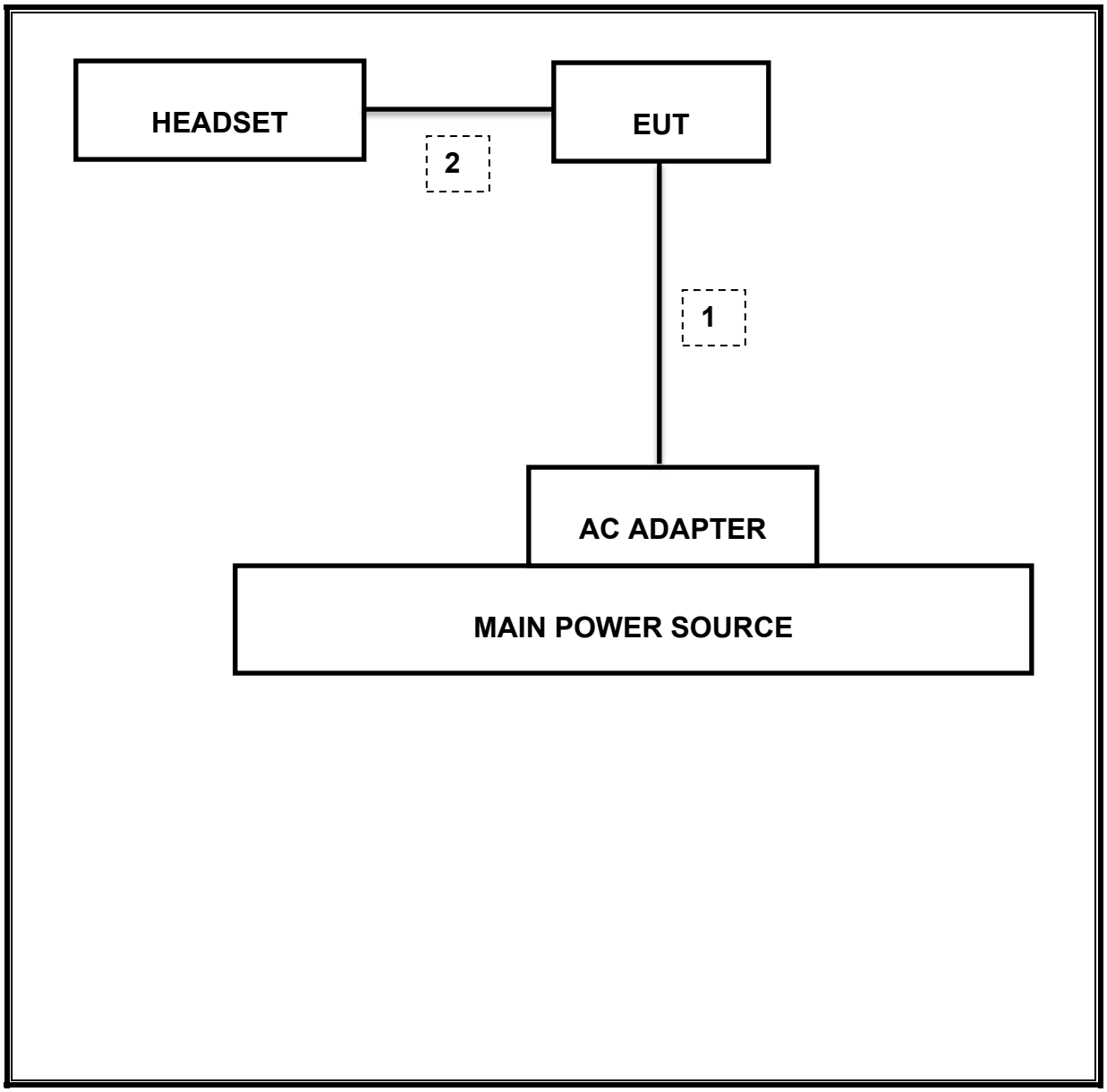
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	0.8m	N/A
2	Audio	1	Mini-Jack	Unshielded	1.0m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests.
Test software in hidden menu exercised the EUT to enable NII mode.

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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**	**S/N**	**Cal Due**
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	11-17-16
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	04-25-17
Antenna, Horn, 18 GHz	ETS	3115	00167211	09-20-16
Antenna, Horn, 18 GHz	ETS	3115	00161451	05-17-17
Antenna, Horn, 18 GHz	ETS	3117	00168724	06-17-17
Antenna, Horn, 18 GHz	ETS	3117	00168717	06-17-17
Antenna, Horn, 40 GHz	ETS	3116C	00166155	11-30-17
Antenna, Horn, 40 GHz	ETS	3116C-PA	00168841	12-15-17
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-17-17
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-16-17
Preamplifier	ETS	3115-PA	00167475	08-17-17
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-16-17
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-17-17
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-16-17
Bluetooth Tester	TESCOM	TC-3000C	3000C000546	08-18-17
Average Power Sensor	R&S	NRZ-Z91	102681	08-16-17
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-17-17
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-17-17
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-16-17
EMI Test Receive, 3 GHz	R&S	ESR3	101832	08-16-17
Attenuator / Switch driver	HP	11713A	3748A04272	N/A
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-17-17
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-16-17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-17-17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-16-17
High Pass Filter 6GHz	Micro-Tronics	HPM17542	009	08-17-17
High Pass Filter 6GHz	Micro-Tronics	HPM17542	016	08-16-17
LISN	R&S	ENV-216	101836	08-16-17
LISN	R&S	ENV-216	101837	08-16-17
Attenuator	PASTERNACK	PE7087-10	A009	08-16-17

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7. SUMMARY TABLE

FCC Part Section	RSS Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.407 (a)	-	Occupied Band width (26dB)	N/A	Conducted	Pass	82.9 MHz
15.407	RSS-247 6.4.1(1)	6dB Band width (5.8Ghz)	500KHz		Pass	2.352 MHz (Straddle)
15.407 (a)(2)	RSS-247 6.2.1(2) 6.2.2(2) 6.2.3(2)	TX Cond. Power 5.15-2.25, 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	20.07 dBm
15.407 (a)(3)	RSS-247 6.2.4(2)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		Pass	20.1 dBm
15.407 (a)(5)	RSS-247 6.2.1(2) 6.2.2(2) 6.2.3(2)	PSD (5.2,5.3,5.5GHz)	<11dBm		Pass	9.96 dBm
15.407 (a)(5)	RSS-247 6.2.4(2)	PSD (5.8GHz)	30dBm per 500kHz		Pass	7.18 dBm
15.207 (a)	RSS-GEN Clause 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	42.21 dBuV (Pk)
15.407 (b) & 15.209	RSS-GEN Clause 7 & 8.9	Radiated Spurious Emission	< 54dBuV/m		Pass	51.67 dBuV/m (Av)
15.407 (h)(2)	RSS-247 6.3	Dynamic Frequency Selection	N/A	Radiated / Condcuted	Pass	N/A

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8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 D02 v01r02 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	1.432	1.530	0.936	93.6%	0.29	0.698
802.11n HT20	1.340	1.438	0.932	93.2%	0.31	0.746
802.11n HT40	0.664	0.761	0.872	87.2%	0.59	1.506
802.11ac VHT80	0.332	0.429	0.774	77.4%	1.11	3.012

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 VHT80 MODE



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9. MEASUREMENT METHOD

KDB 789033 D02 General UNII Test Procedures New Rules v01r02
KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02
KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r01

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.

MIMO Device: KDB 662911 v02r01

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10. ANTENNA PORT TEST RESULTS

10.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407
RSS-247 §6.2.4 (1)

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

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v01r02: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

NOTE

- Calculation for 6dB Bandwidth of UNII-3 Straddle Channel

ex) 802.11a mode
  - Fundamental frequency : 5720MHz
  - 6dB BW : 16.350MHz
  - Starting Frequency of UNII-3 band : 5725MHz
  - 6dB Bandwidth of UNII-3 band Portion
    = (5720 + (16.350 / 2) -5725) = 3.175 MHz

RESULTS

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10.1.1. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Primary	Secondary	
Straddle	5720	2.662	2.659	0.5
Low	5745	15.076	15.135	0.5
Mid	5785	15.099	15.645	0.5
High	5825	15.326	15.130	0.5
Worst		2.659		

10.1.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Chain 0	Chain 1	
Straddle	5720	2.552	2.532	0.5
Low	5745	15.123	15.136	0.5
Mid	5785	15.130	15.085	0.5
High	5825	15.066	15.105	0.5
Worst		2.532		

10.1.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Chain 0	Chain 1	
Straddle	5710	2.551	2.549	0.5
Low	5765	35.105	35.108	0.5
High	5795	35.100	35.108	0.5
Worst		2.549		

10.1.4. 802.11n VHT80 MODE IN THE 5.8 GHz BAND

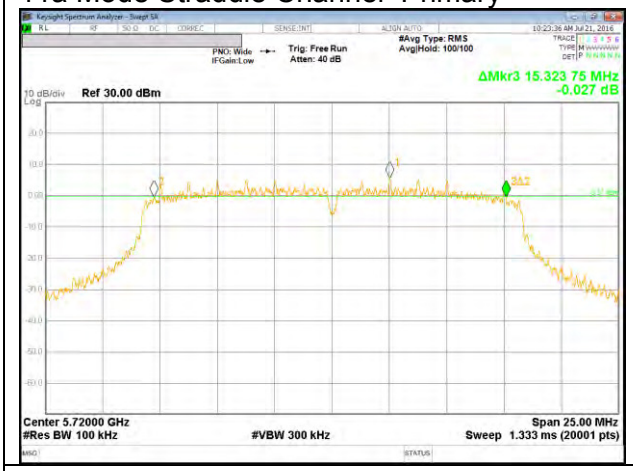
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		Chain 0	Chain 1	
Straddle	5690	2.542	2.545	0.5
Middle	5775	75.090	75.095	0.5
Worst		2.542		

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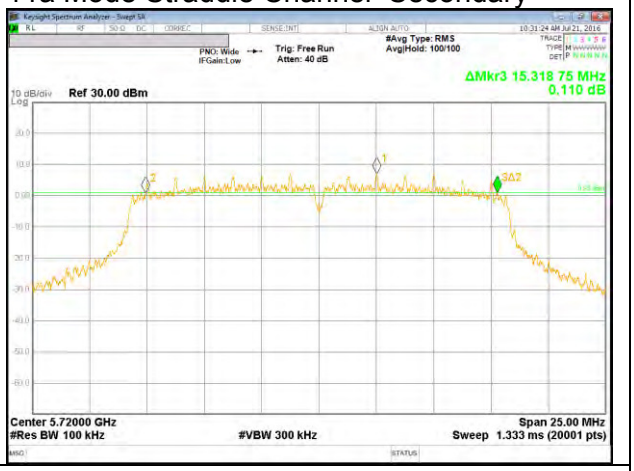
10.1.5. 6 dB BANDWIDTH PLOTS

IEEE 802.11a mode

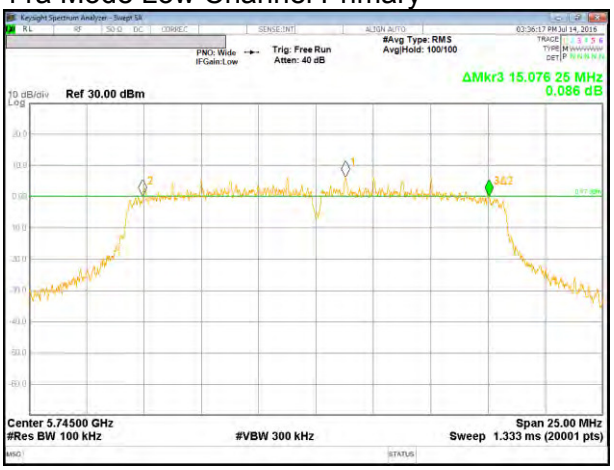
11a Mode Straddle Channel Primary



11a Mode Straddle Channel Secondary



11a Mode Low Channel Primary

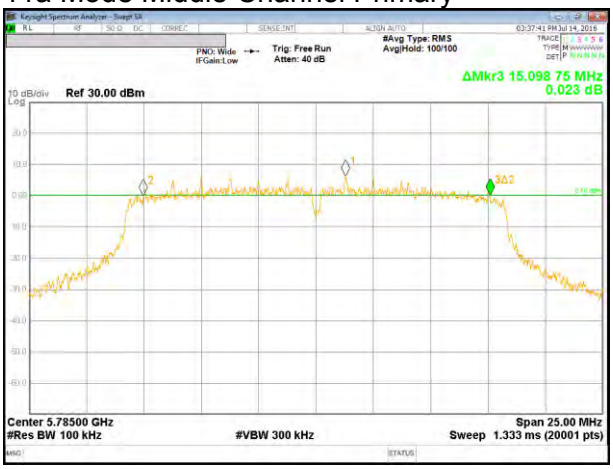


11a Mode Low Channel Secondary



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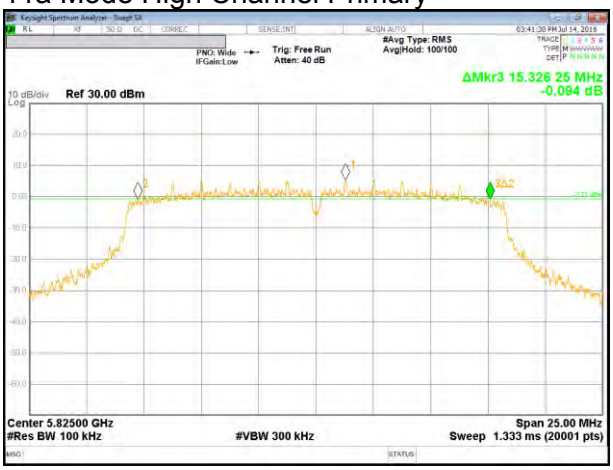
11a Mode Middle Channel Primary



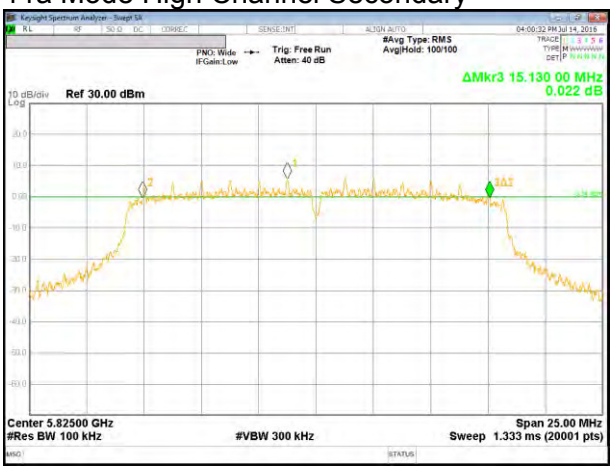
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



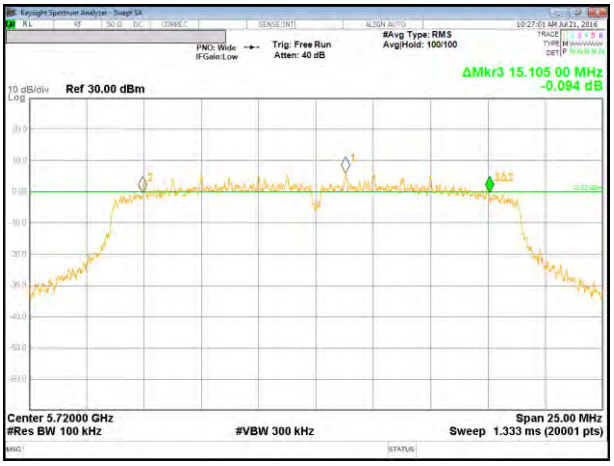
11a Mode High Channel Secondary



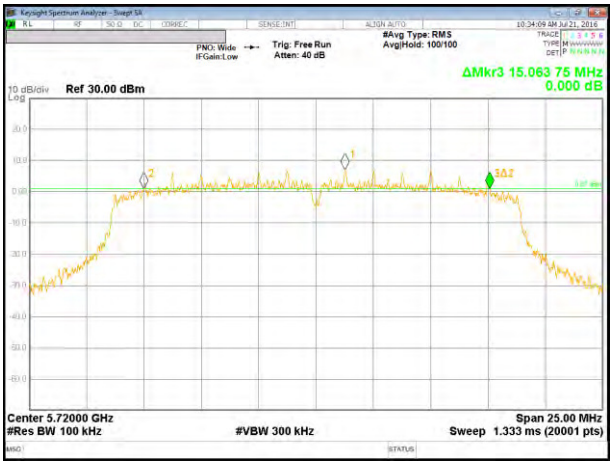
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IEEE 802.11n HT20 mode

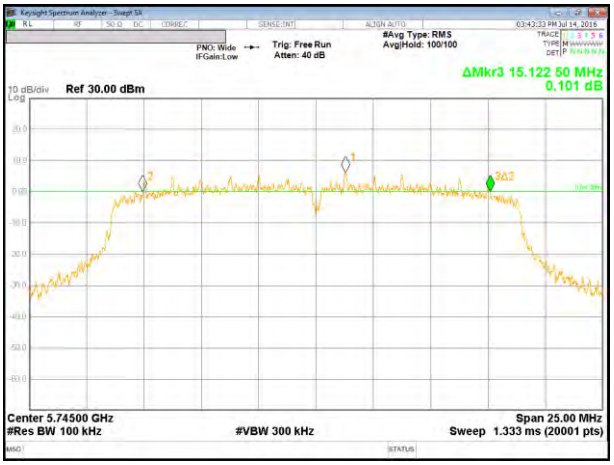
11n HT20 Mode Straddle Channel Chain 0



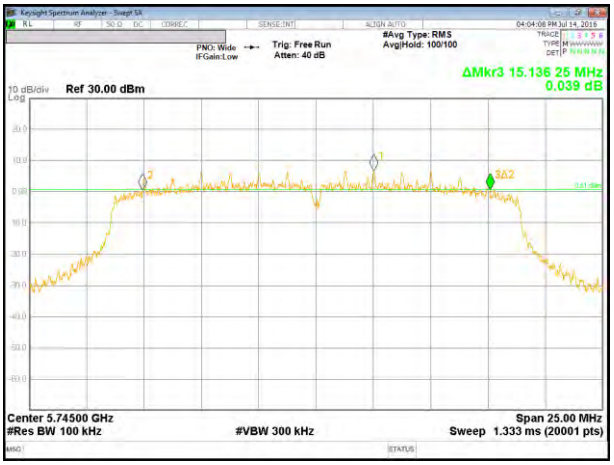
11n HT20 Mode Straddle Channel Chain 1



11n HT20 Mode Low Channel Chain 0

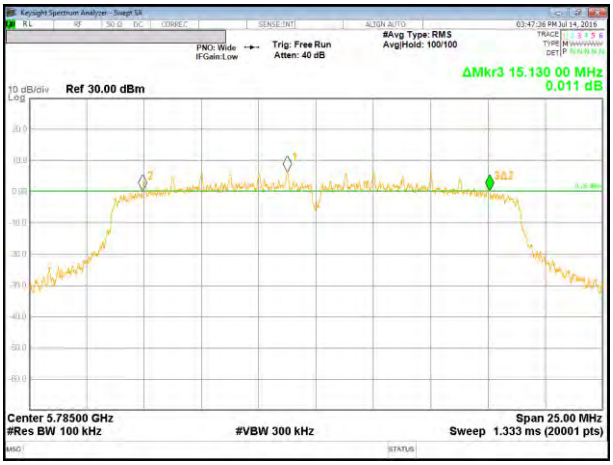


11n HT20 Mode Low Channel Chain 1

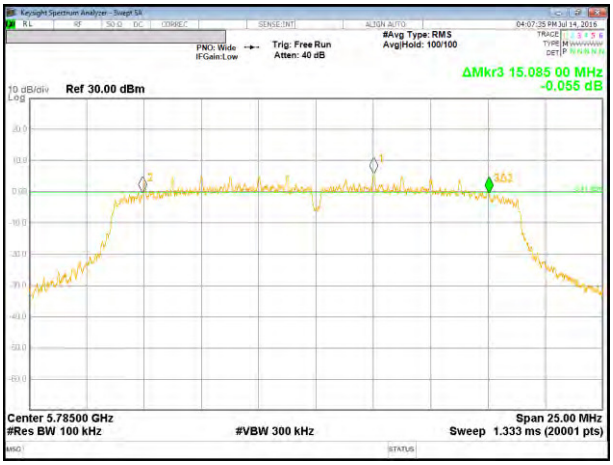


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11n HT20 Mode Middle Channel Chain 0



11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



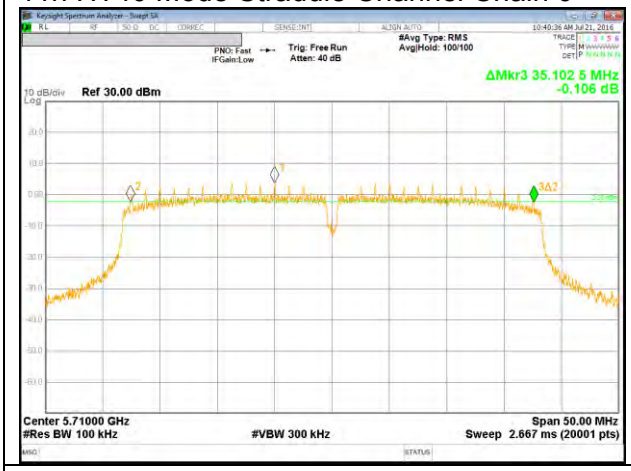
11n HT20 Mode High Channel Chain 1



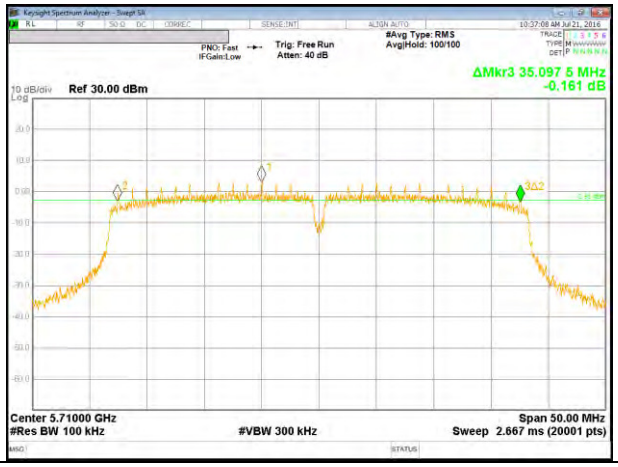
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IEEE 802.11n HT40 mode

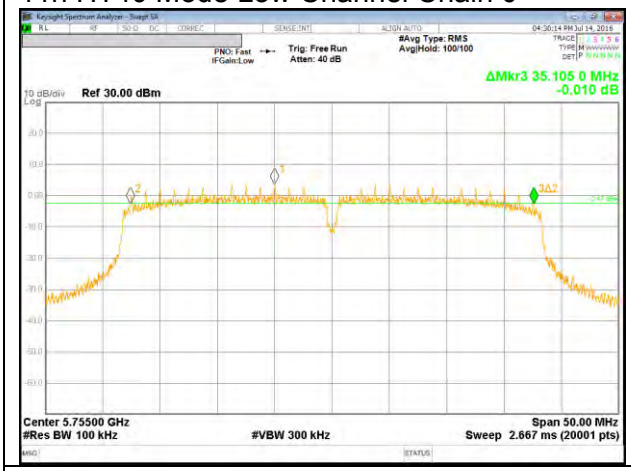
11n HT40 Mode Straddle Channel Chain 0



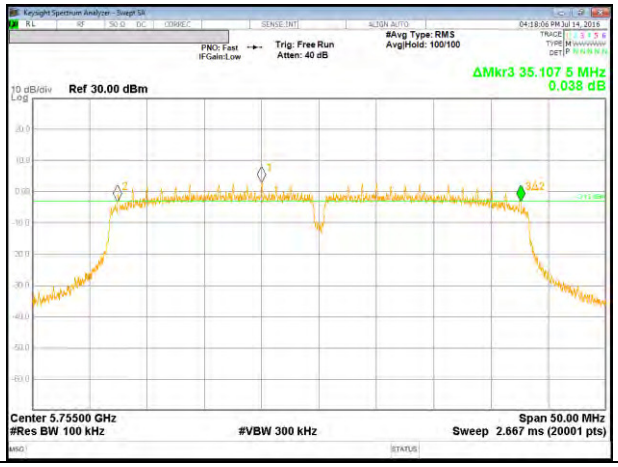
11n HT40 Mode Straddle Channel Chain 1



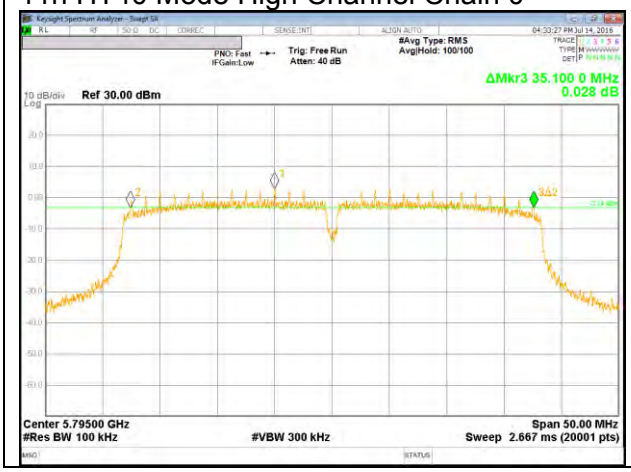
11n HT40 Mode Low Channel Chain 0



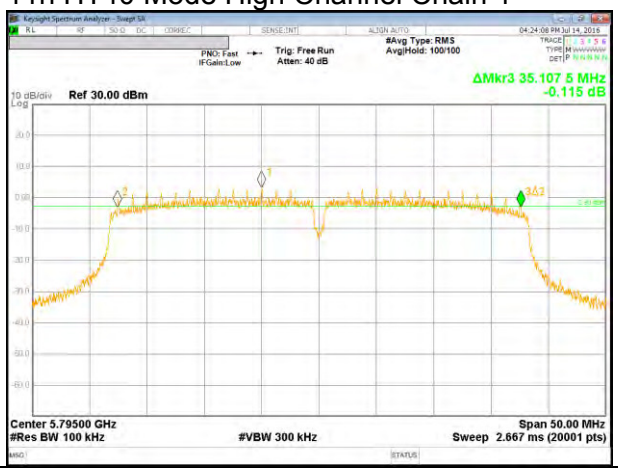
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0



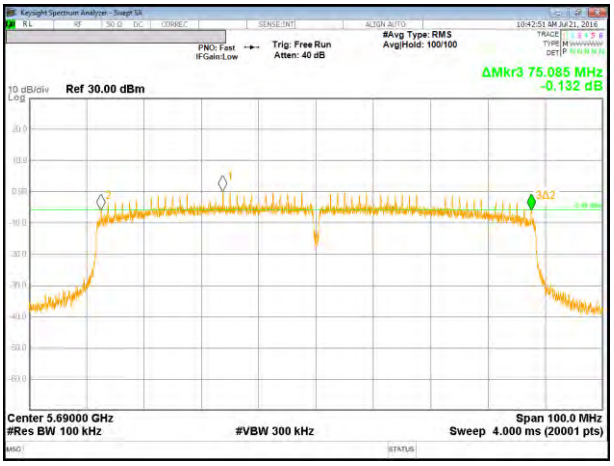
11n HT40 Mode High Channel Chain 1



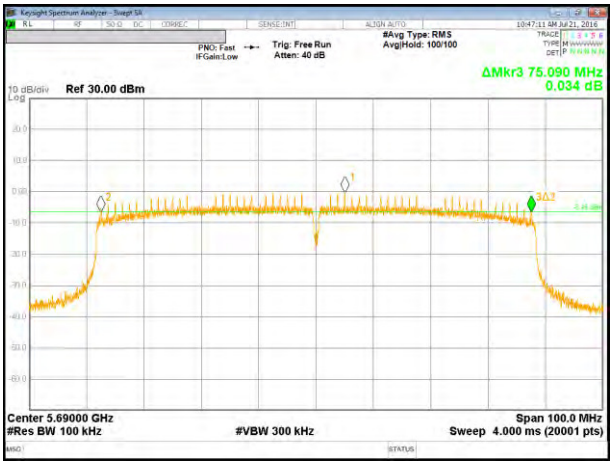
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IEEE 802.11ac VHT80 mode

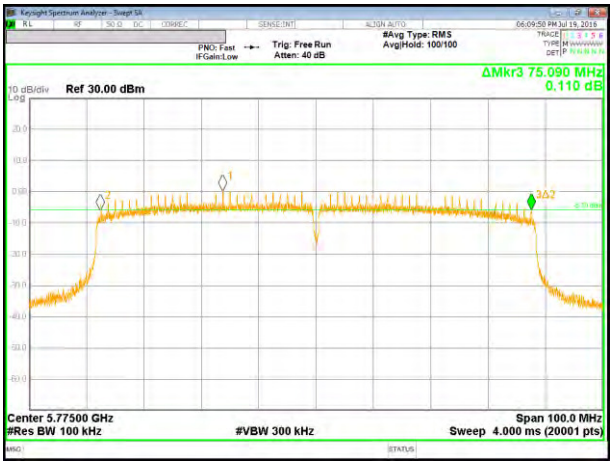
11ac HT80 Mode Straddle Channel Chain 0



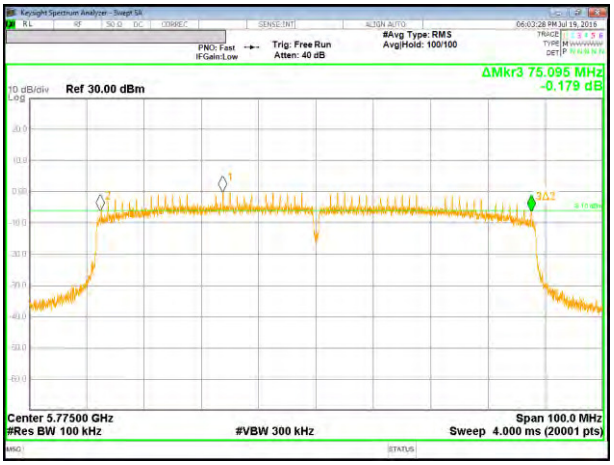
11ac HT80 Mode Straddle Channel Chain 1



11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



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10.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

NOTE

- Calculation for 26dB Bandwidth of UNII-2C and UNII-3 Straddle Channel

ex) 802.11a mode
- Fundamental frequency : 5720MHz
- 26dB BW : 21.00MHz
- Turning Frequency : 5725MHz
- 26dB Bandwidth of UNII-2C band Portion
  = (5725 – (5720 - (21.00 / 2)) = 15.50 MHz
- 26dB Bandwidth of UNII-3 band Portion
  = (5720 + (21.00 / 2) -5725) = 5.50 MHz

RESULTS

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10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Primary	Secondary
Low	5180	18.91	19.47
Mid	5200	18.61	18.44
High	5240	19.57	18.70
Worst		19.57	

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5180	19.74	19.85
Mid	5200	19.67	19.57
High	5240	19.56	19.50
Worst		19.85	

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5190	40.98	40.01
High	5230	39.85	39.98
Worst		40.98	

10.2.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Middle	5210	82.67	82.12
Worst		82.67	

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10.2.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Primary	Secondary
Low	5260	18.91	19.28
Mid	5300	19.13	18.90
High	5320	19.35	18.88
Worst		19.35	

10.2.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5260	19.70	19.98
Mid	5300	19.57	19.66
High	5320	19.79	19.74
Worst		19.98	

10.2.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5270	39.48	39.86
High	5310	40.30	40.05
Worst		40.30	

10.2.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Middle	5290	82.90	81.95
Worst		82.90	

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10.2.1. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Primary	Secondary
Low	5500	18.66	18.66
Mid	5580	18.77	19.53
High	5700	19.21	19.03
Straddle	5720	14.34	14.70
Worst		19.53	

10.2.2. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5500	19.90	19.61
Mid	5580	19.57	19.54
High	5700	19.72	19.66
Straddle	5720	14.87	14.81
Worst		19.90	

10.2.3. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5510	39.72	39.65
Mid	5550	39.83	39.86
High	5670	40.51	40.05
Straddle	5710	34.930	35.091
Worst		40.51	

10.2.4. 802.11ac VHT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5530	82.20	82.71
High	5610	81.55	82.78
Straddle	5690	76.31	76.23
Worst		82.78	

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10.2.5. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Primary	Secondary
Straddle	5720	4.34	4.70
Low	5745	19.48	19.28
Mid	5785	19.24	18.95
High	5825	19.73	19.06
Worst		19.73	

10.2.6. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Straddle	5720	4.87	4.81
Low	5745	19.79	19.57
Mid	5785	20.00	19.70
High	5825	19.93	19.64
Worst		20.00	

10.2.7. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Straddle	5710	4.93	5.09
Low	5755	40.42	39.85
High	5795	39.58	40.14
Worst		40.42	

10.2.8. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

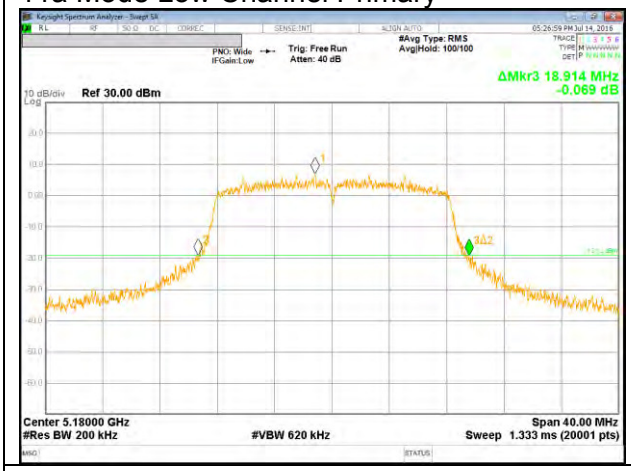
Channel	Frequency [MHz]	26 dB Bandwidth [MHz]	
		Chain 0	Chain 1
Straddle	5690	6.31	6.23
Middle	5775	82.76	82.21
Worst		82.76	

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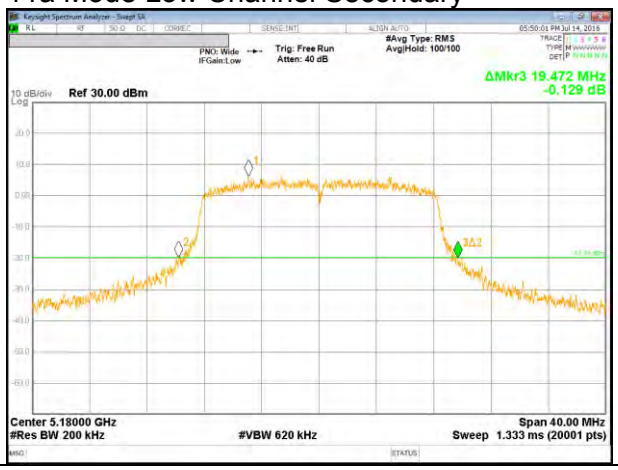
10.2.9. 26 dB BANDWIDTH PLOTS

UNII 5.2 GHz IEEE 802.11a mode

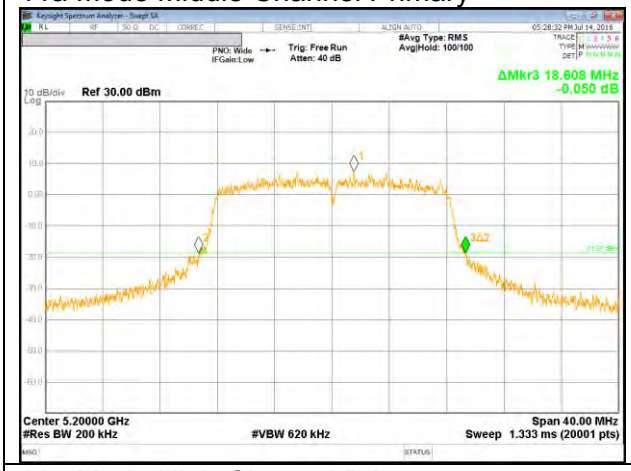
11a Mode Low Channel Primary



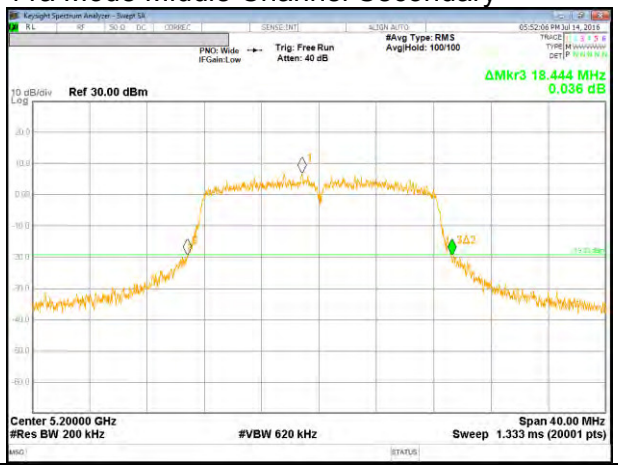
11a Mode Low Channel Secondary



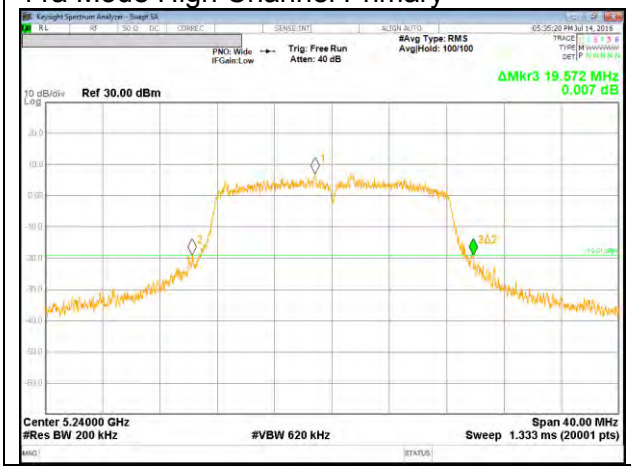
11a Mode Middle Channel Primary



11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary



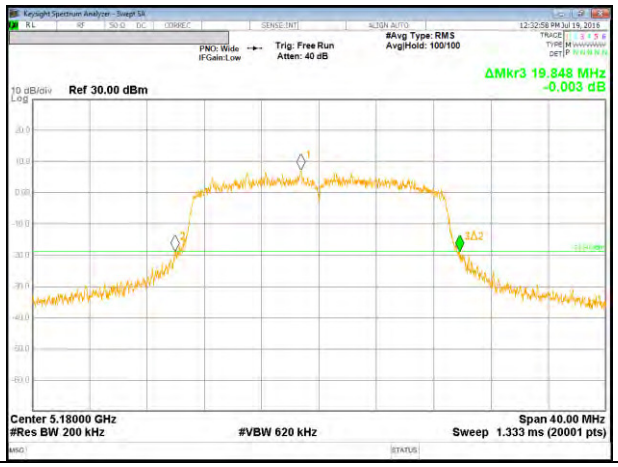
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UNII 5.2 GHz IEEE 802.11n HT20 mode

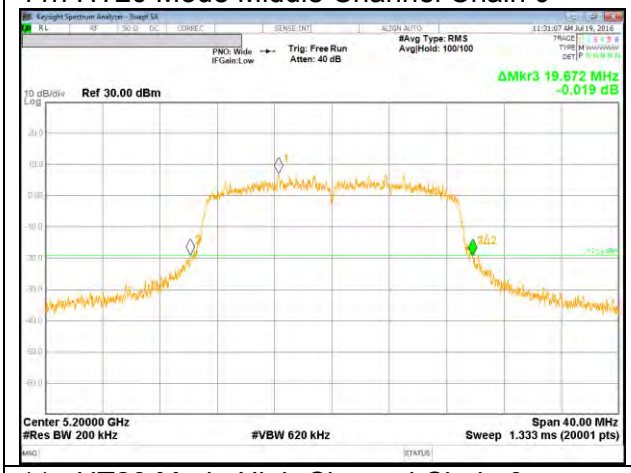
11n HT20 Mode Low Channel Chain 0



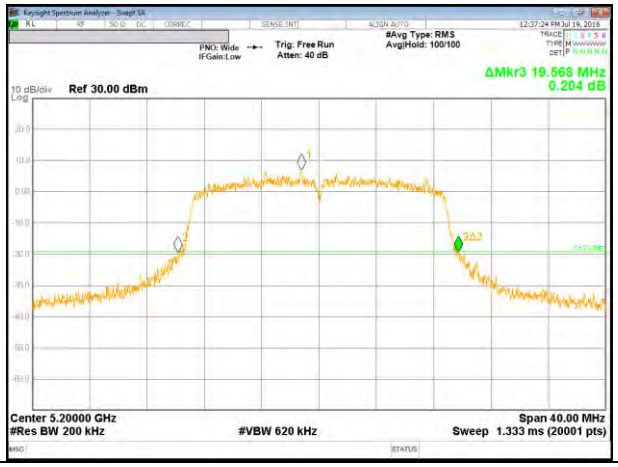
11n HT20 Mode Low Channel Chain 1



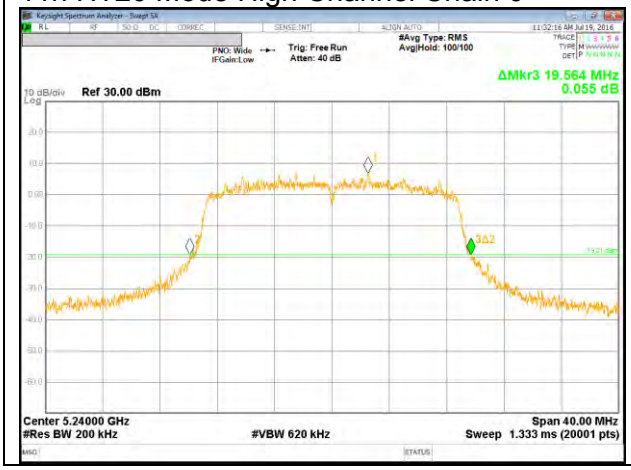
11n HT20 Mode Middle Channel Chain 0



11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



11n HT20 Mode High Channel Chain 1



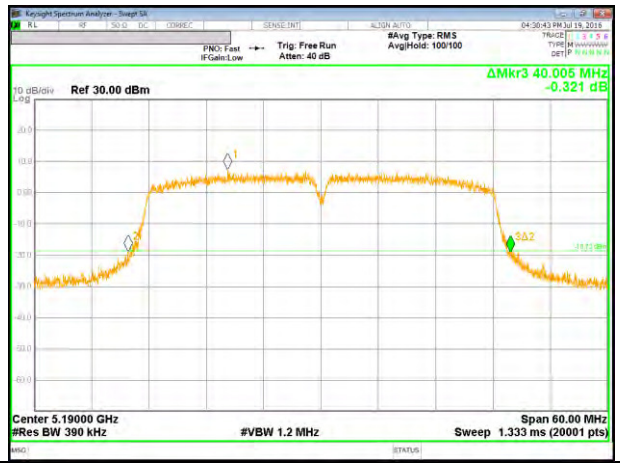
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UNII 5.2 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel Chain 0



11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0



11n HT40 Mode High Channel Chain 1

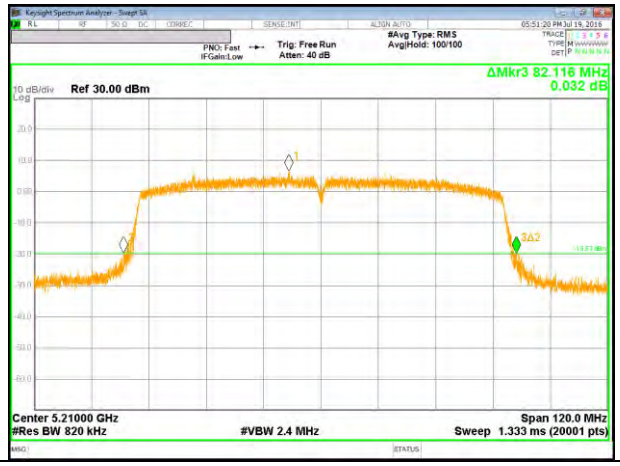


UNII 5.2 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



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UNII 5.3 GHz IEEE 802.11a mode

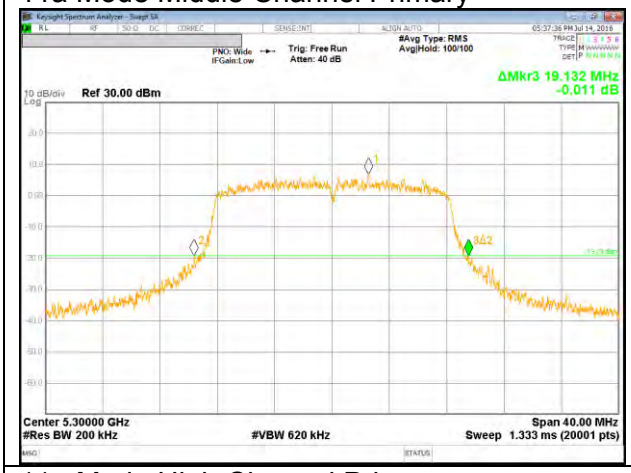
11a Mode Low Channel Primary



11a Mode Low Channel Secondary



11a Mode Middle Channel Primary



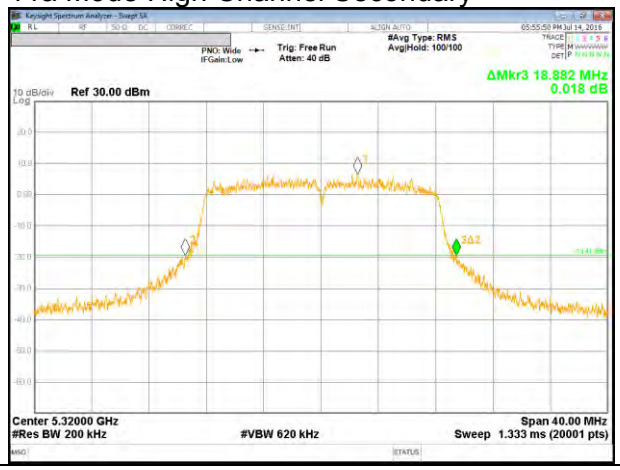
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



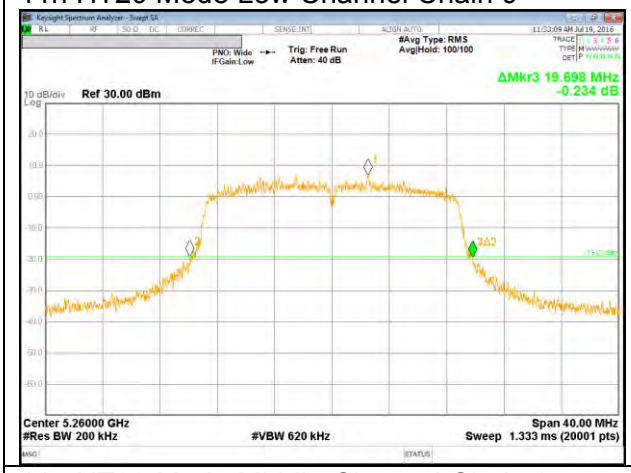
11a Mode High Channel Secondary



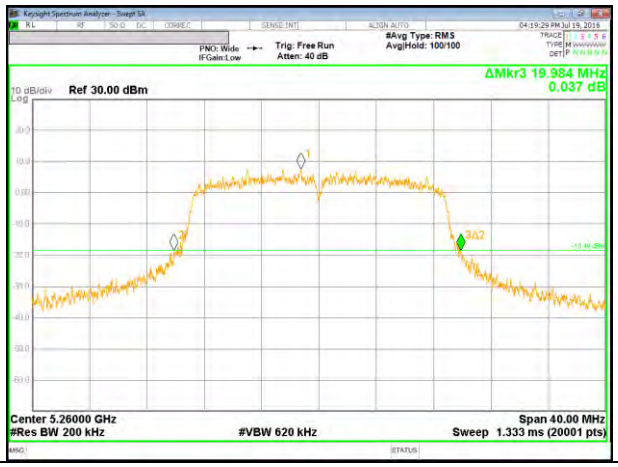
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UNII 5.3 GHz IEEE 802.11n HT20 mode

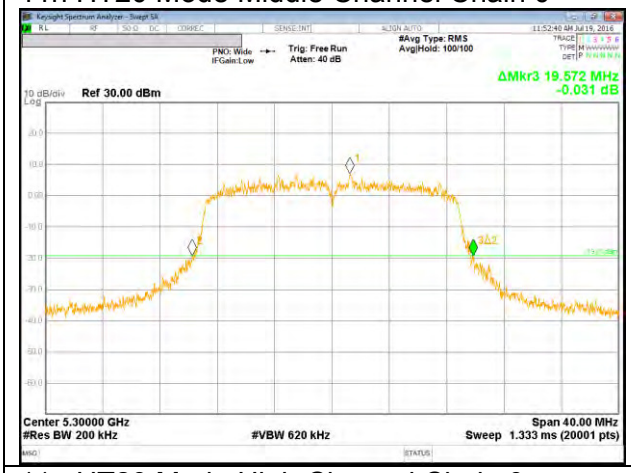
11n HT20 Mode Low Channel Chain 0



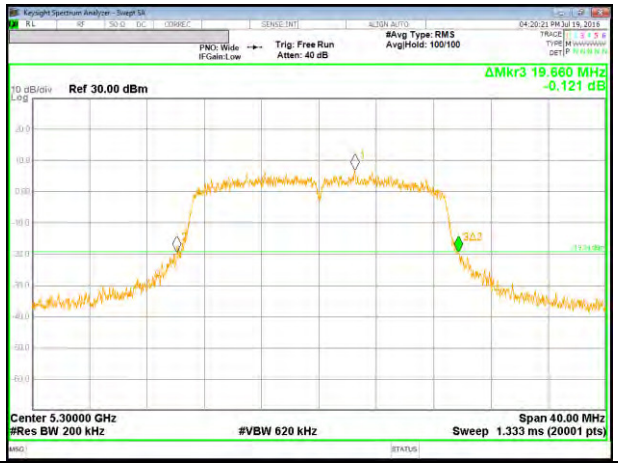
11n HT20 Mode Low Channel Chain 1



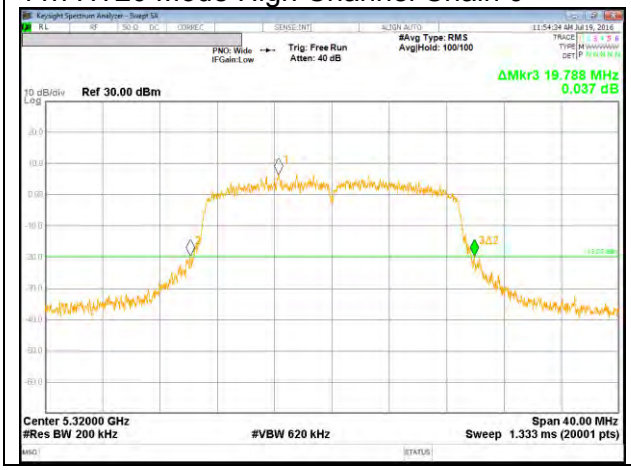
11n HT20 Mode Middle Channel Chain 0



11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



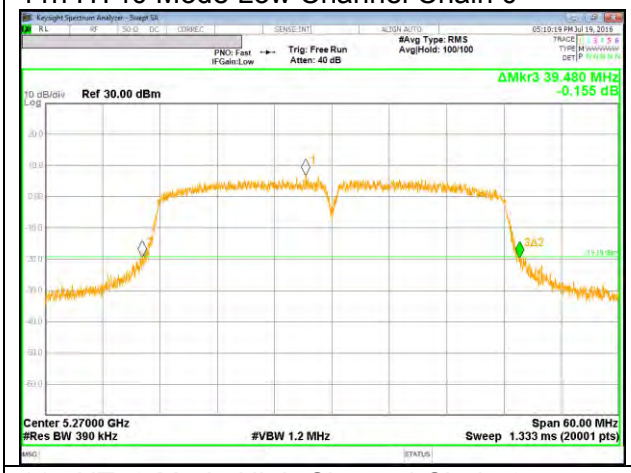
11n HT20 Mode High Channel Chain 1



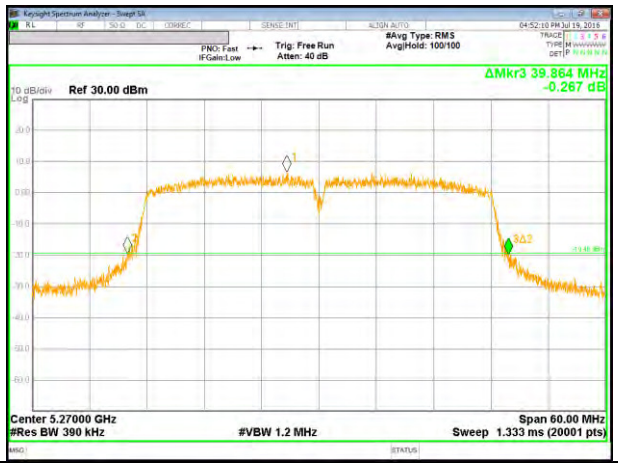
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UNII 5.3 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel Chain 0



11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0



11n HT40 Mode High Channel Chain 1

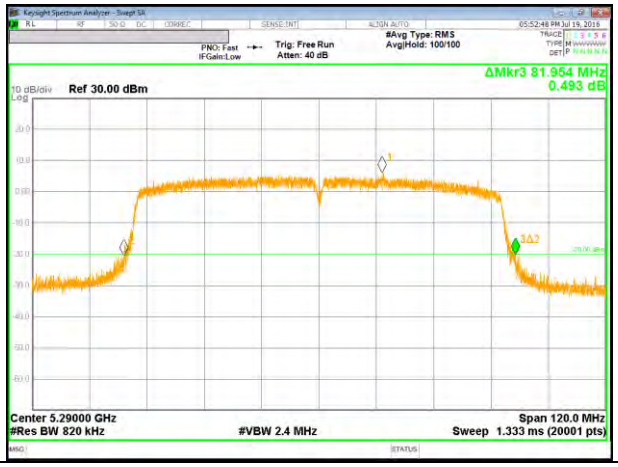


UNII 5.3 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



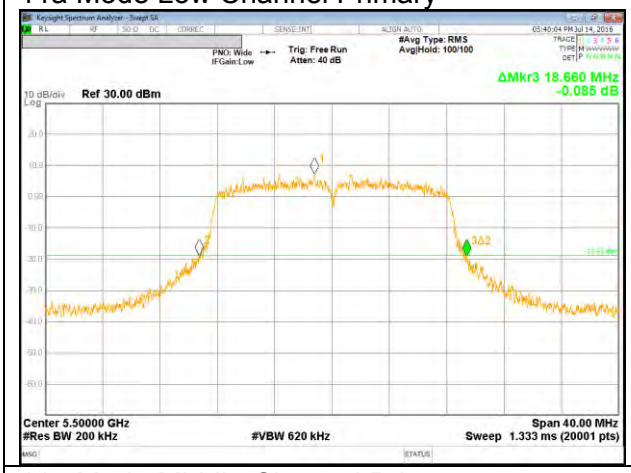
11ac HT80 Mode Middle Channel Chain 1



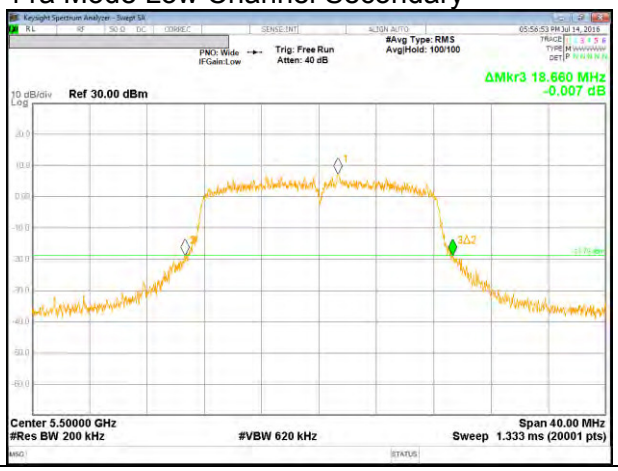
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UNII 5.5 GHz IEEE 802.11a mode

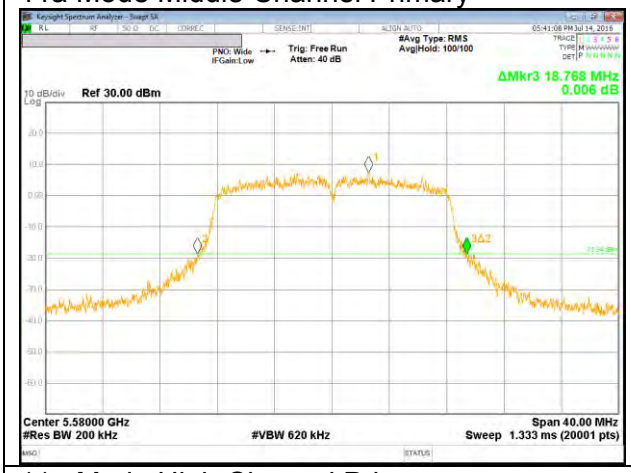
11a Mode Low Channel Primary



11a Mode Low Channel Secondary



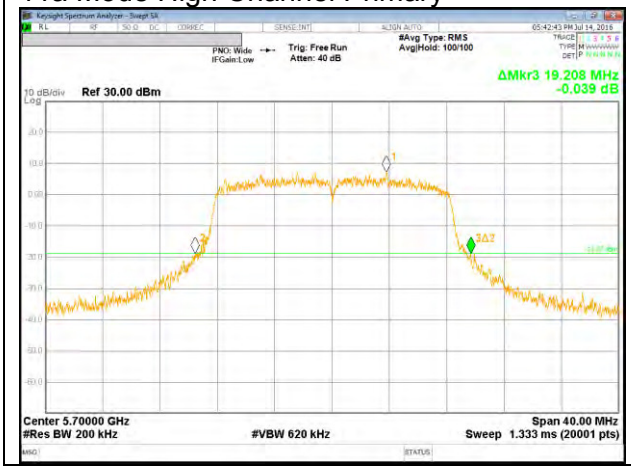
11a Mode Middle Channel Primary



11a Mode Middle Channel Secondary



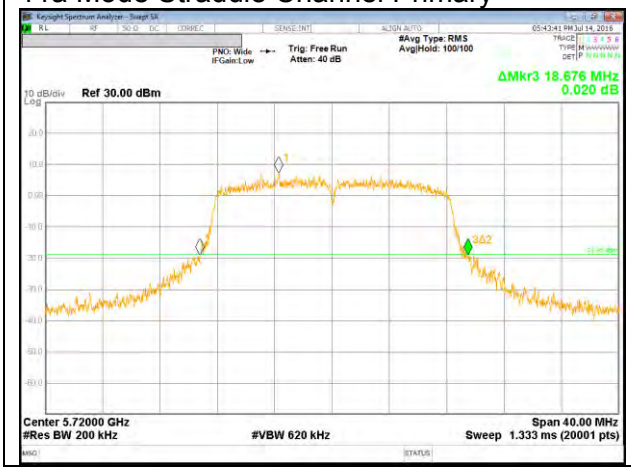
11a Mode High Channel Primary



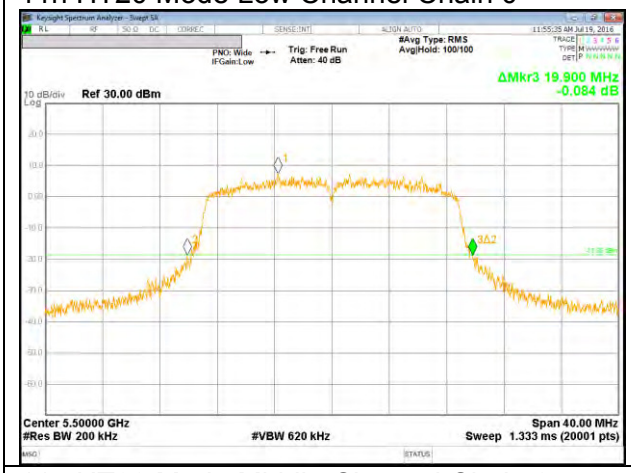
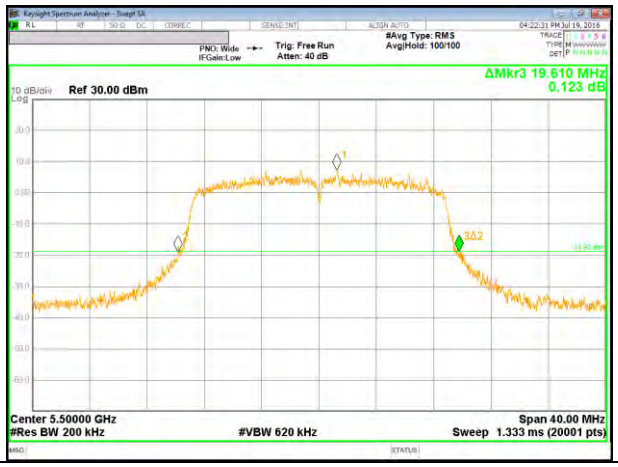
11a Mode High Channel Secondary

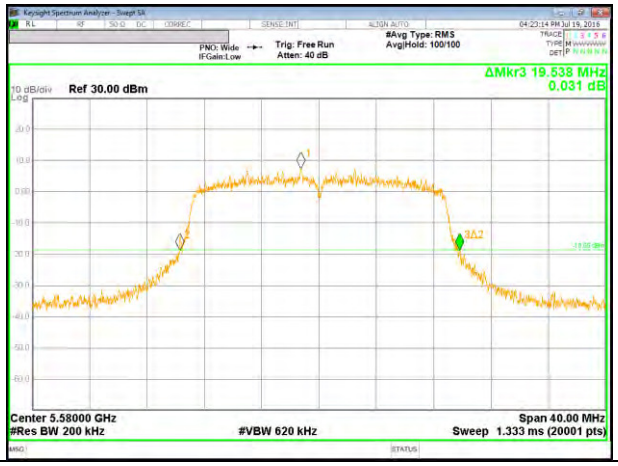


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11a Mode Straddle Channel Primary	11a Mode Straddle Channel Secondary
	

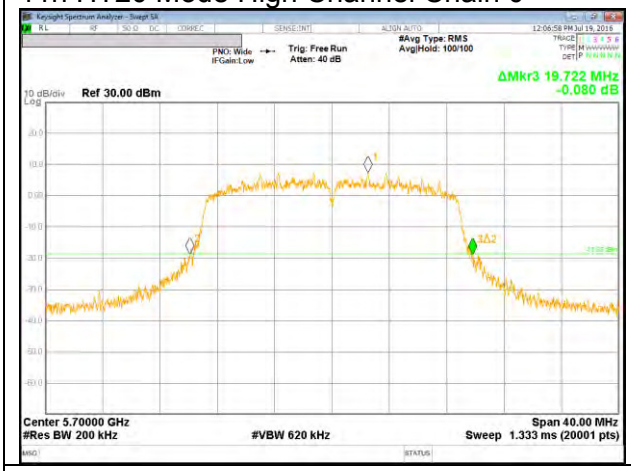
UNII 5.5 GHz IEEE 802.11n HT20 mode

11n HT20 Mode Low Channel Chain 0	11n HT20 Mode Low Channel Chain 1
	

11n HT20 Mode Middle Channel Chain 0	11n HT20 Mode Middle Channel Chain 1
	

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11n HT20 Mode High Channel Chain 0



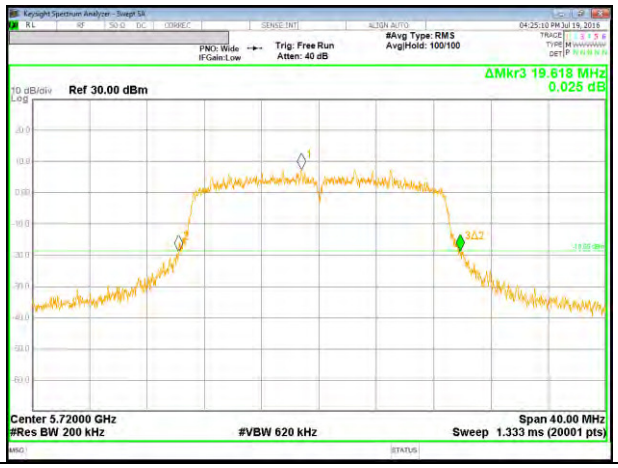
11n HT20 Mode High Channel Chain 1



11n HT20 Mode Straddle Channel Chain 0

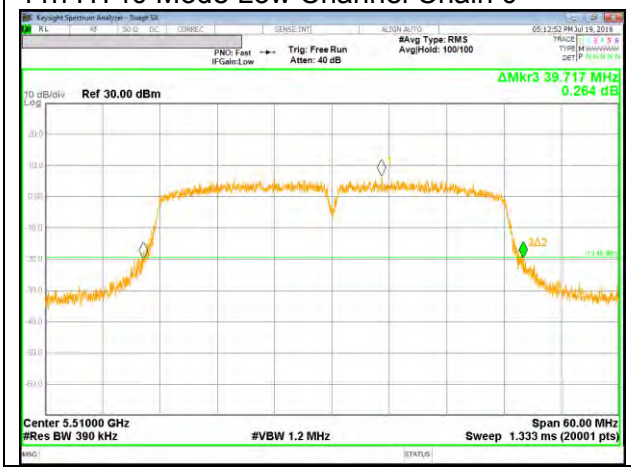


11n HT20 Mode Straddle Channel Chain 1

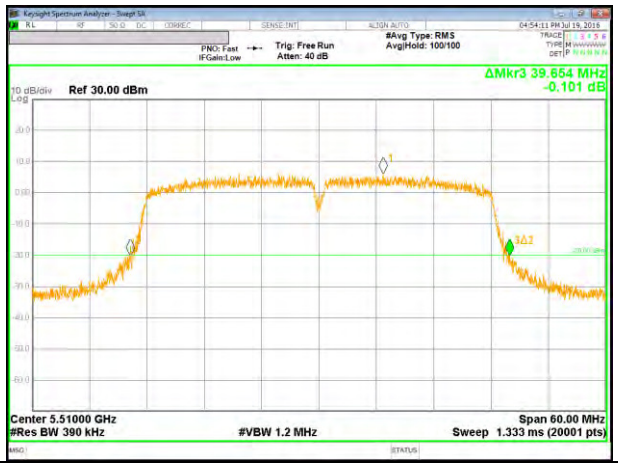


UNII 5.5 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel Chain 0

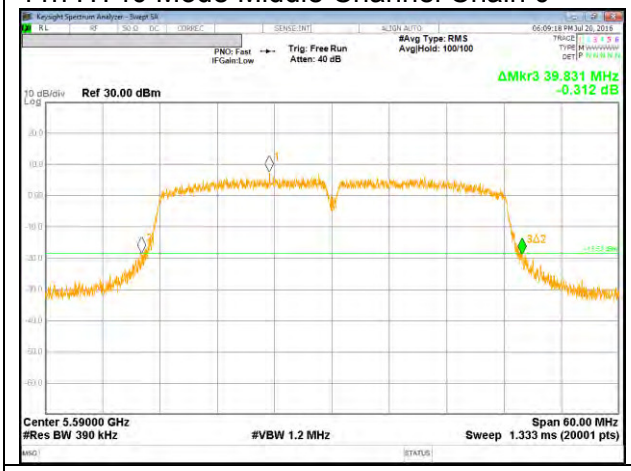


11n HT40 Mode Low Channel Chain 1

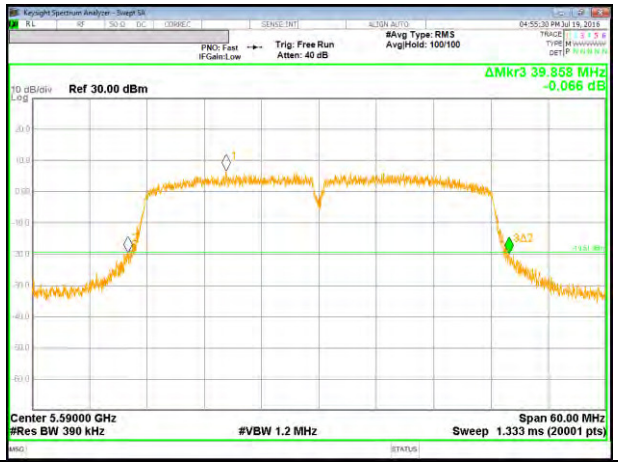


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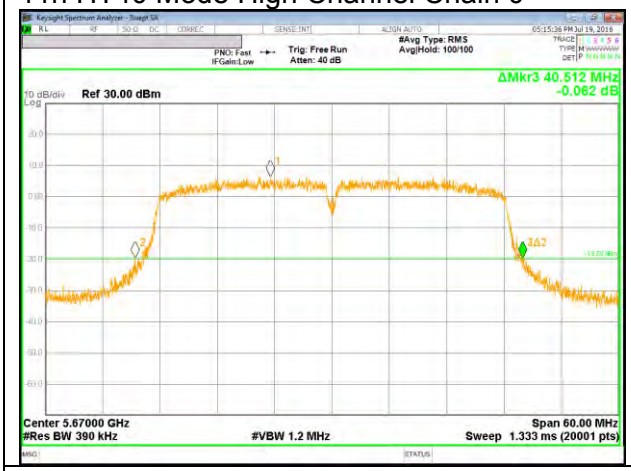
11n HT40 Mode Middle Channel Chain 0



11n HT40 Mode Middle Channel Chain 1



11n HT40 Mode High Channel Chain 0



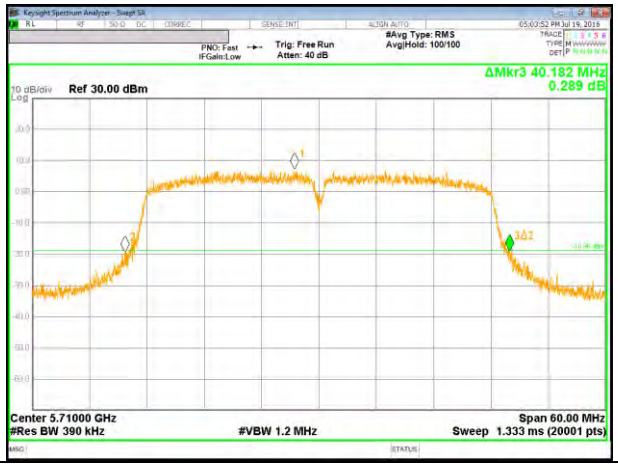
11n HT40 Mode High Channel Chain 1



11n HT40 Mode Straddle Channel Chain 0



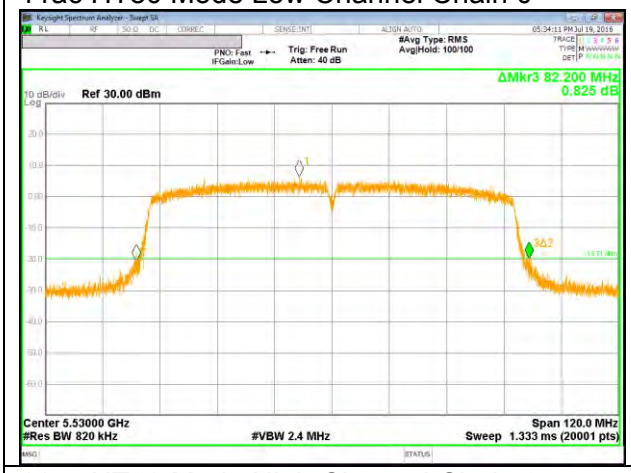
11n HT40 Mode Straddle Channel Chain 1



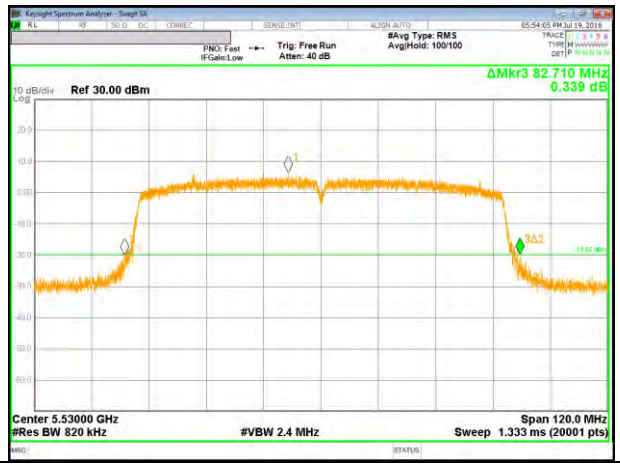
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UNII 5.5 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Low Channel Chain 0



11ac HT80 Mode Low Channel Chain 1



11ac HT80 Mode High Channel Chain 0



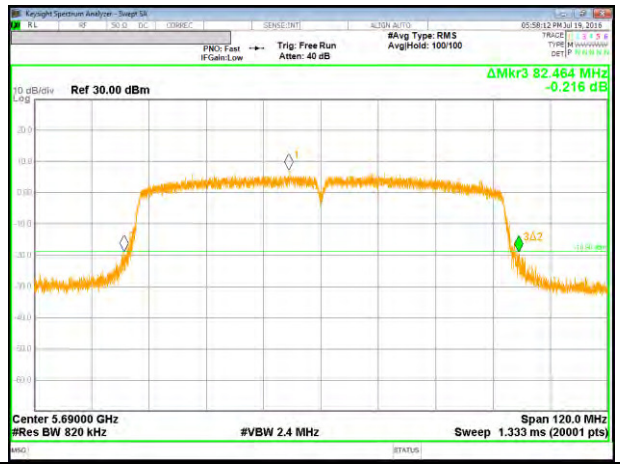
11ac HT80 Mode High Channel Chain 1



11ac HT80 Mode Straddle Channel Chain 0



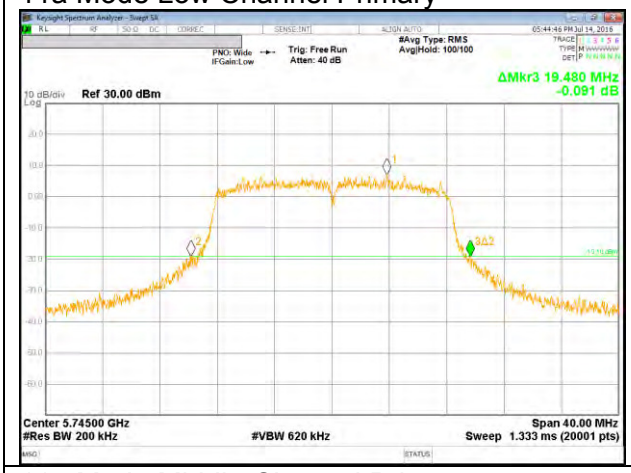
11ac HT80 Mode Straddle Channel Chain 1



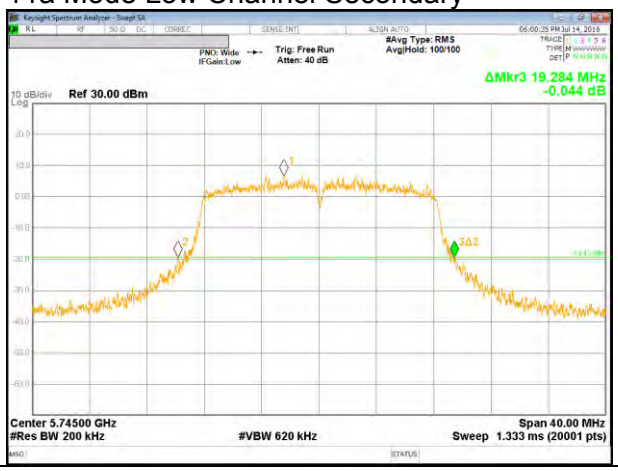
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UNII 5.8 GHz IEEE 802.11a mode

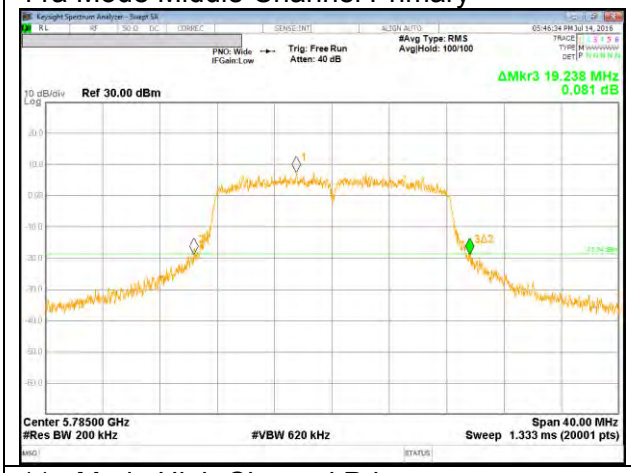
11a Mode Low Channel Primary



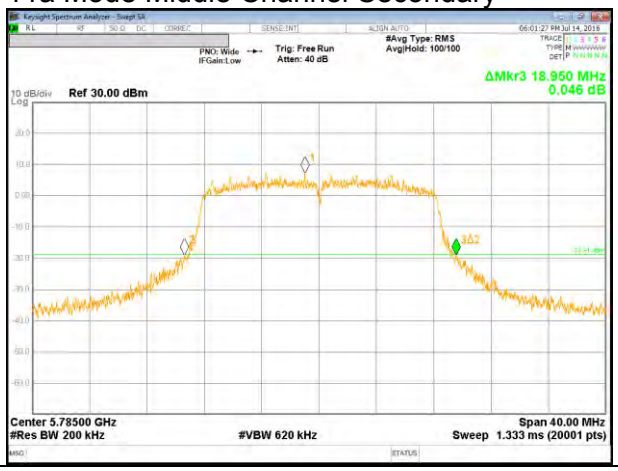
11a Mode Low Channel Secondary



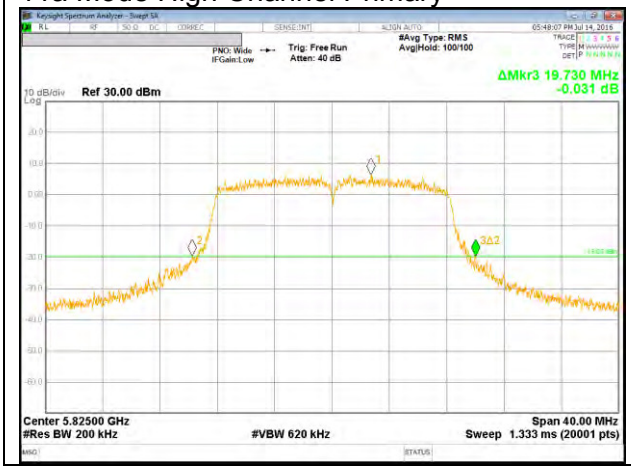
11a Mode Middle Channel Primary



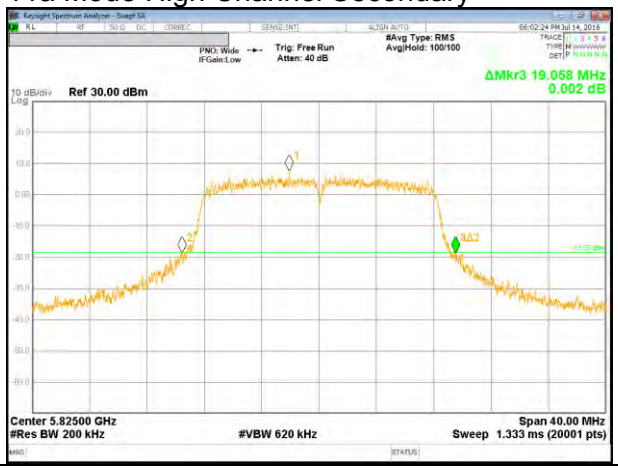
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary



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UNII 5.8 GHz IEEE 802.11n HT20 mode

11n HT20 Mode Low Channel Chain 0



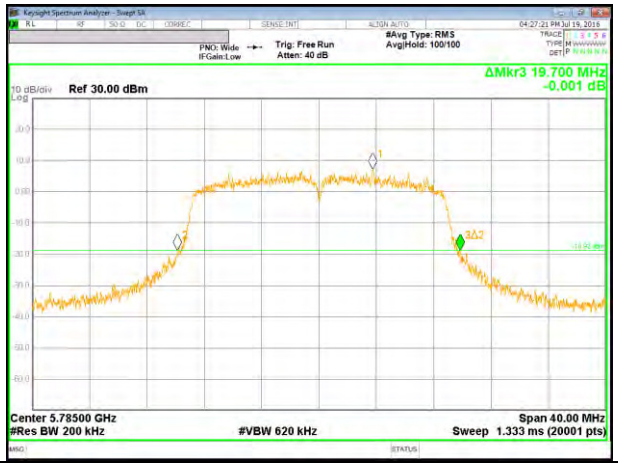
11n HT20 Mode Low Channel Chain 1



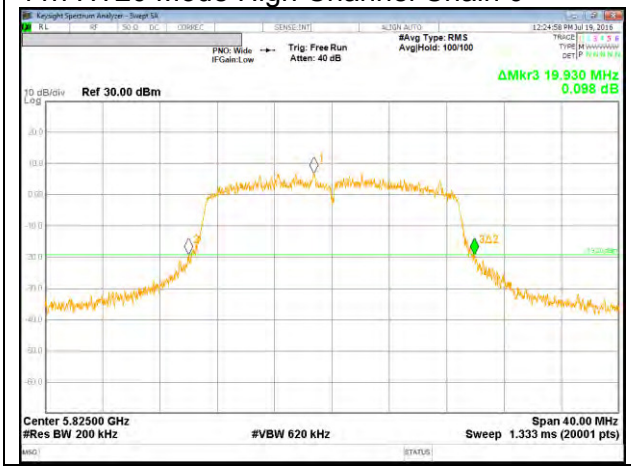
11n HT20 Mode Middle Channel Chain 0



11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



11n HT20 Mode High Channel Chain 1



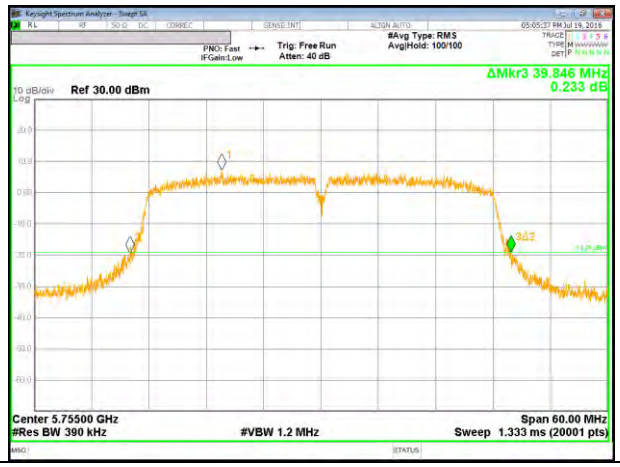
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UNII 5.8 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel Chain 0



11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0



11n HT40 Mode High Channel Chain 1

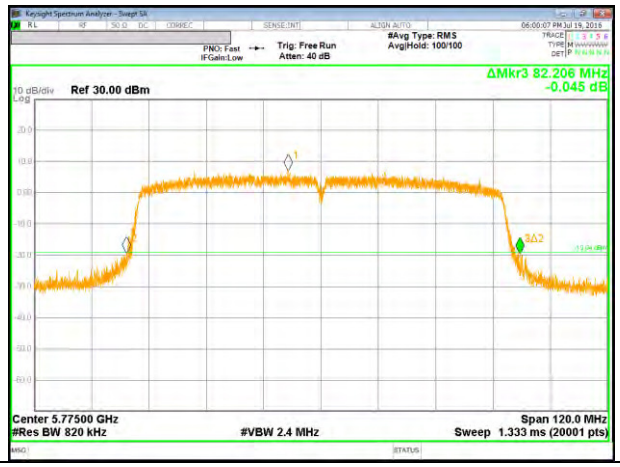


UNII 5.8 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



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10.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

NOTE

- Calculation for 99% Bandwidth of UNII-2C and UNII-3 Straddle Channel

ex) 802.11a mode
- Fundamental frequency : 5720MHz
- 99% BW : 16.459MHz
- Turning Frequency : 5725MHz
- 99% Bandwidth of UNII-2C band Portion
  = (5725 – (5720 - (16.459 / 2)) = 13.229 MHz
- 99% Bandwidth of UNII-3 band Portion
  = (5720 + (16.459 / 2) -5725) = 3.230 MHz

RESULTS

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10.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Primary	Secondary
Low	5180	16.294	16.310
Mid	5200	16.312	16.338
High	5240	16.290	16.357
Worst		16.357	

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5180	17.502	17.495
Mid	5200	17.485	17.468
High	5240	17.436	17.502
Worst		17.502	

10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5190	35.862	35.855
High	5230	35.904	35.802
Worst		35.904	

10.3.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Middle	5210	75.022	74.789
Worst		75.022	

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10.3.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Primary	Secondary
Low	5260	16.354	16.340
Mid	5300	16.283	16.352
High	5320	16.338	16.328
Worst		16.354	

10.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5260	17.446	17.467
Mid	5300	17.490	17.466
High	5320	17.507	17.414
Worst		17.507	

10.3.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5270	35.830	35.862
High	5310	35.880	35.886
Worst		35.886	

10.3.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Middle	5290	75.184	74.903
Worst		75.184	

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10.3.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Primary	Secondary
Low	5500	16.327	16.349
Mid	5580	16.347	16.347
High	5700	16.300	16.337
Straddle	5720	13.183	13.170
Worst		16.349	

10.3.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5500	17.436	17.504
Mid	5580	17.507	17.495
High	5700	17.498	17.513
Straddle	5720	13.722	13.719
Worst		17.513	

10.3.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5510	35.842	35.920
Mid	5550	35.863	35.838
High	5670	35.830	35.836
Straddle	5710	32.914	32.933
Worst		35.920	

10.3.12. 802.11ac VHT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Low	5530	74.985	74.849
High	5610	75.162	75.096
Straddle	5690	72.405	72.452
Worst		75.162	

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10.3.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Primary	Secondary
Straddle	5720	3.183	3.170
Low	5745	16.328	16.325
Mid	5785	16.275	16.340
High	5825	16.339	16.348
Worst		16.348	

10.3.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Straddle	5720	3.722	3.720
Low	5745	17.437	17.447
Mid	5785	17.487	17.478
High	5825	17.483	17.454
Worst		17.487	

10.3.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Straddle	5710	2.913	2.932
Low	5755	35.968	35.845
High	5795	35.920	35.890
Worst		35.968	

10.3.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

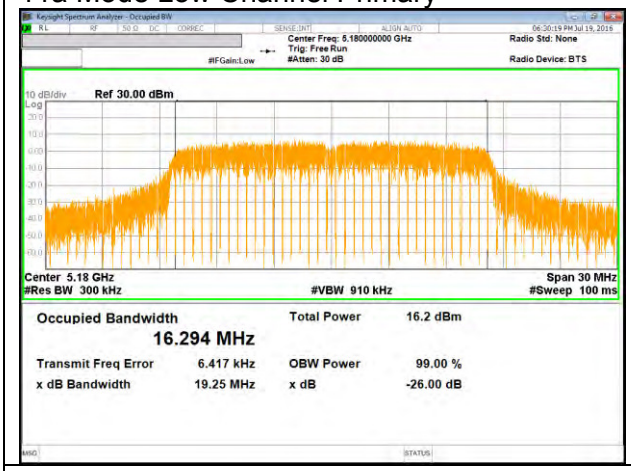
Channel	Frequency [MHz]	99% Bandwidth [MHz]	
		Chain 0	Chain 1
Straddle	5690	2.404	2.452
Middle	5775	74.885	74.791
Worst		74.885	

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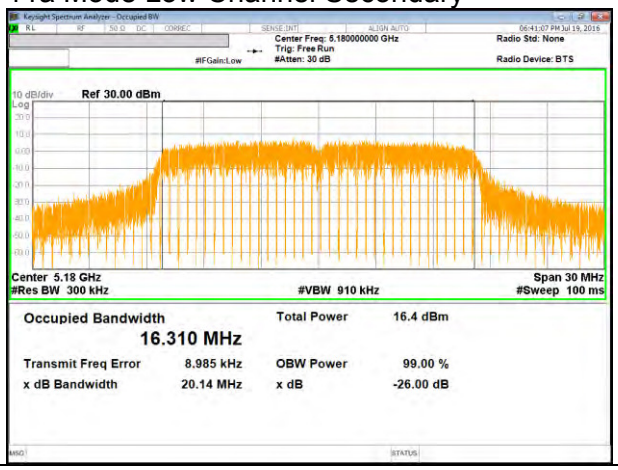
10.3.17. 99% BANDWIDTH PLOTS

UNII 5.2 GHz IEEE 802.11a mode

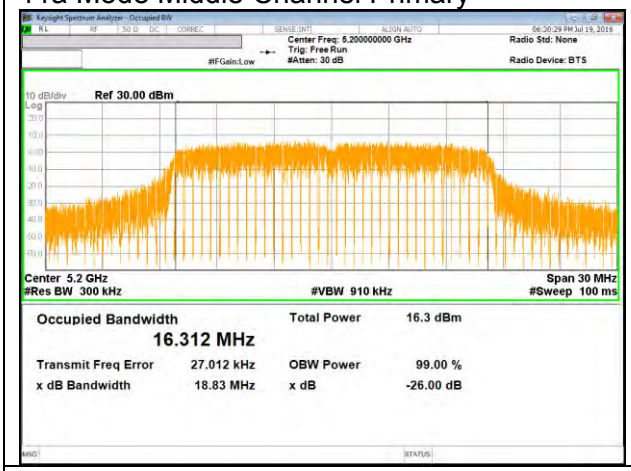
11a Mode Low Channel Primary



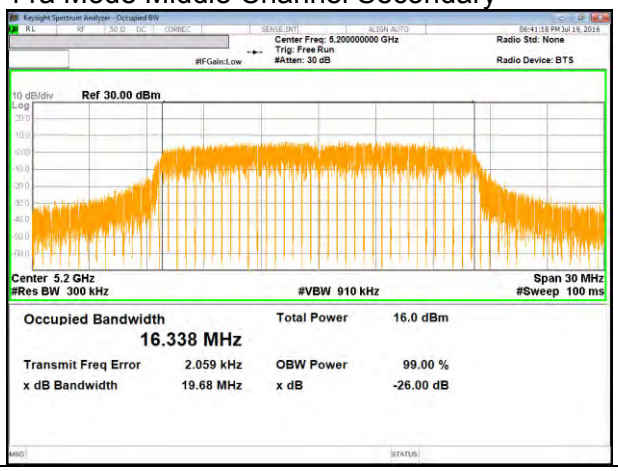
11a Mode Low Channel Secondary



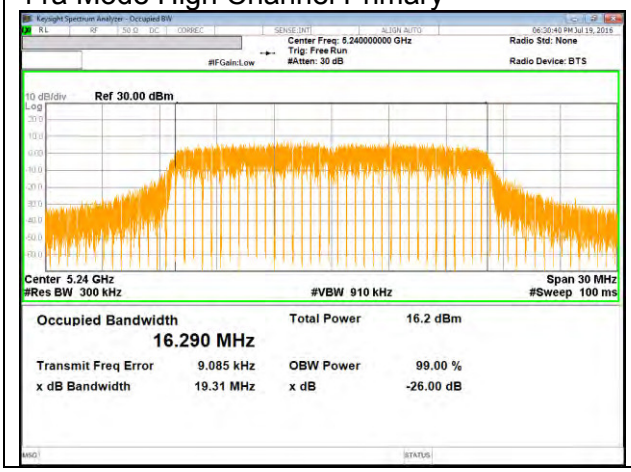
11a Mode Middle Channel Primary



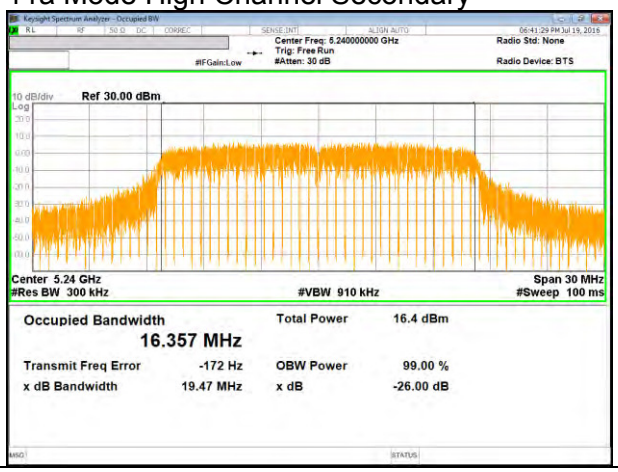
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



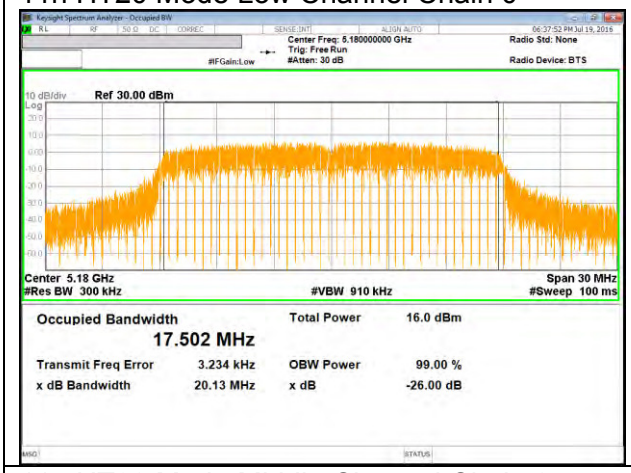
11a Mode High Channel Secondary



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UNII 5.2 GHz IEEE 802.11n HT20 mode

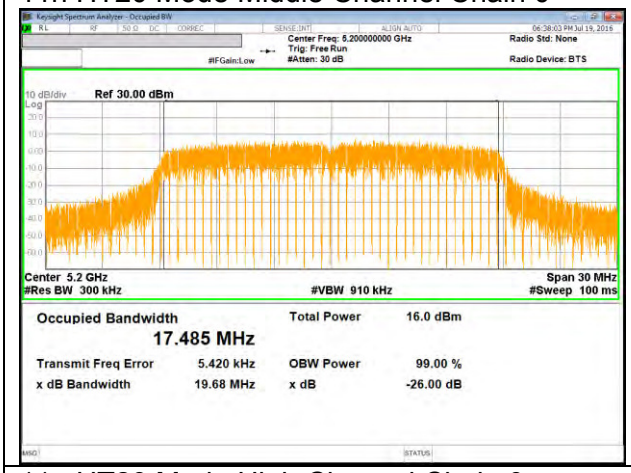
11n HT20 Mode Low Channel Chain 0



11n HT20 Mode Low Channel Chain 1



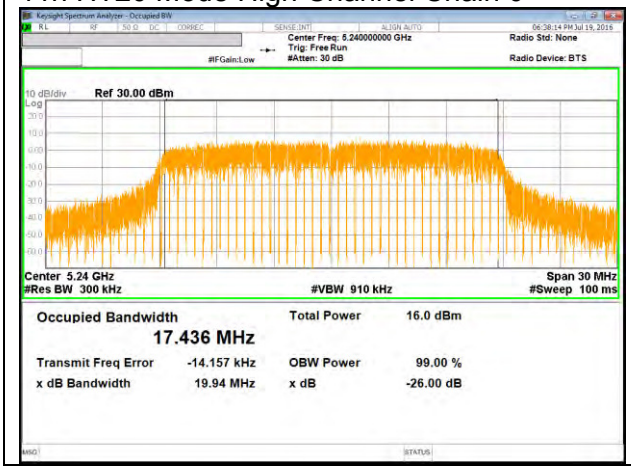
11n HT20 Mode Middle Channel Chain 0



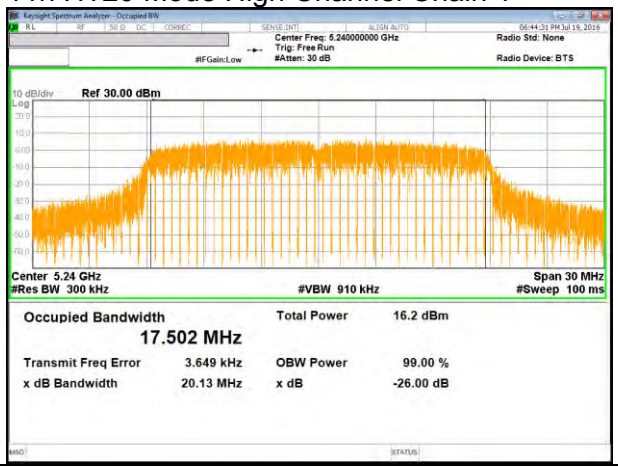
11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



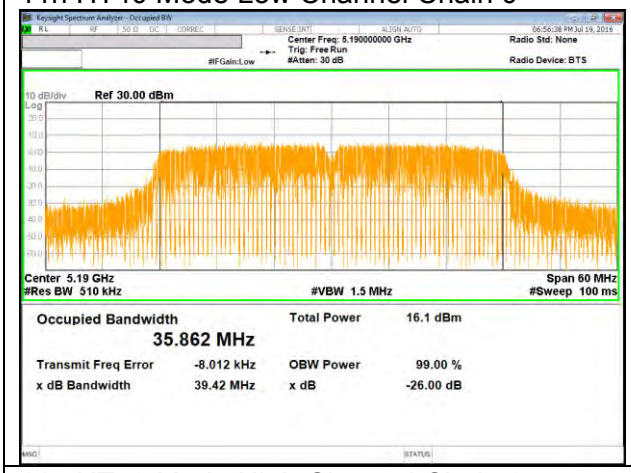
11n HT20 Mode High Channel Chain 1



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UNII 5.2 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel Chain 0



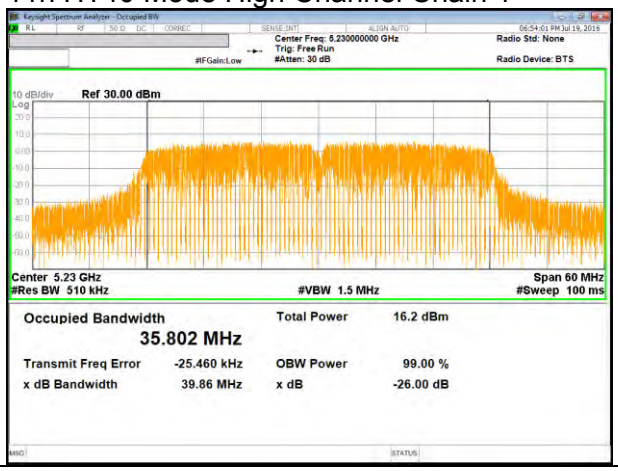
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0



11n HT40 Mode High Channel Chain 1



UNII 5.2 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



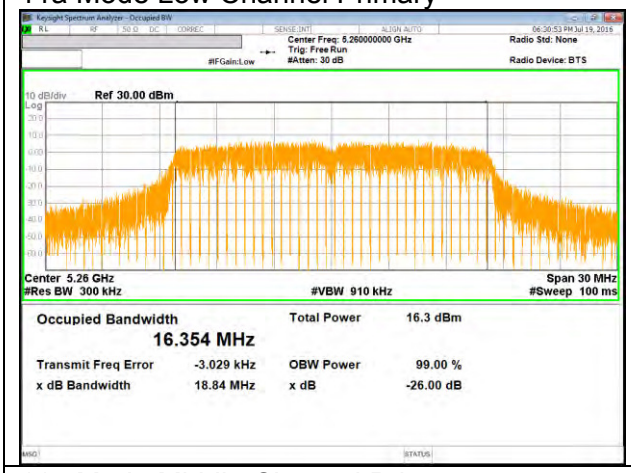
11ac HT80 Mode Middle Channel Chain 1



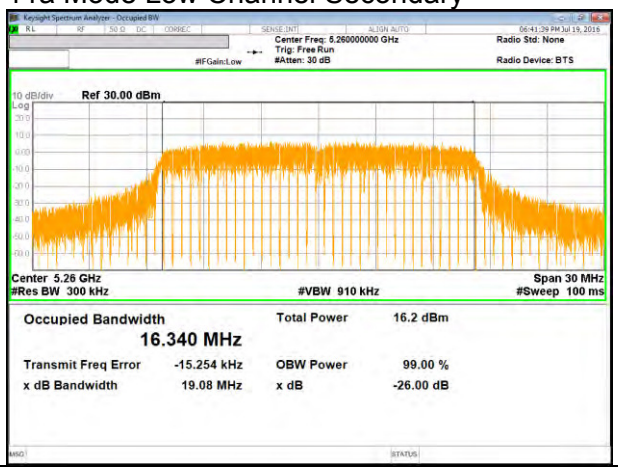
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UNII 5.3 GHz IEEE 802.11a mode

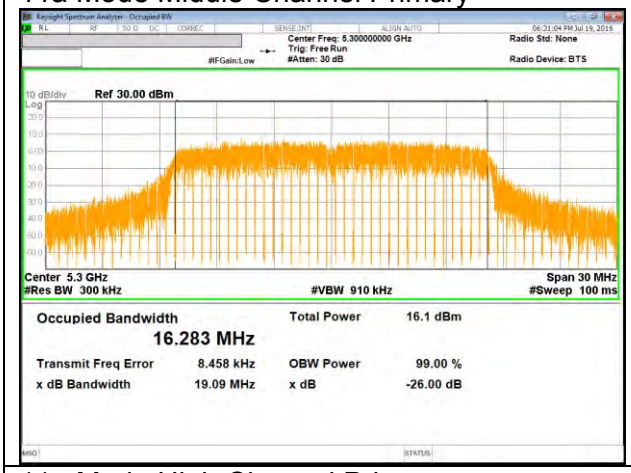
11a Mode Low Channel Primary



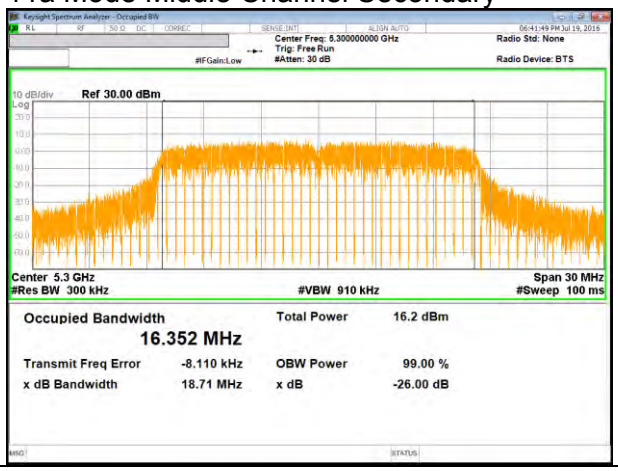
11a Mode Low Channel Secondary



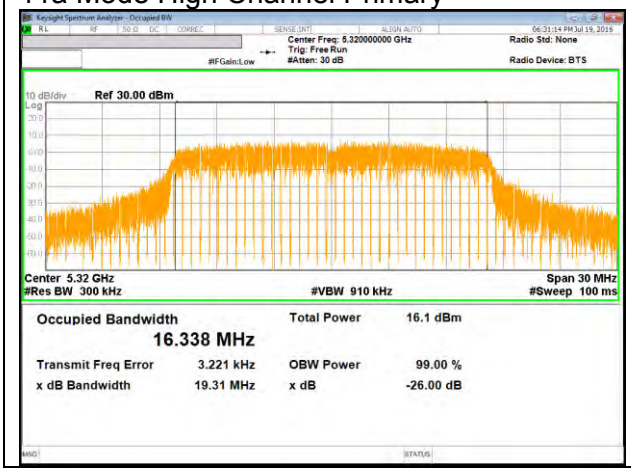
11a Mode Middle Channel Primary



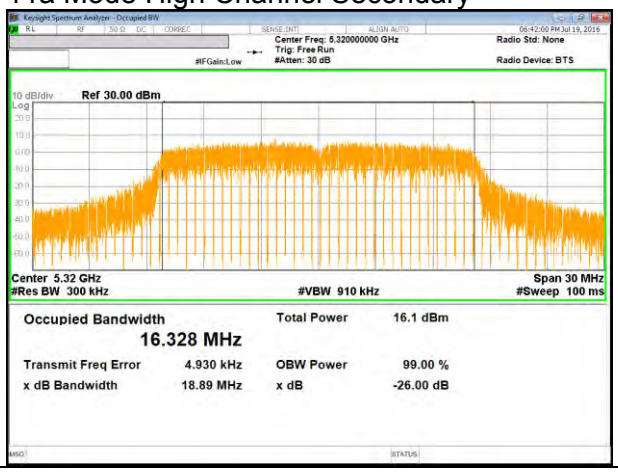
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



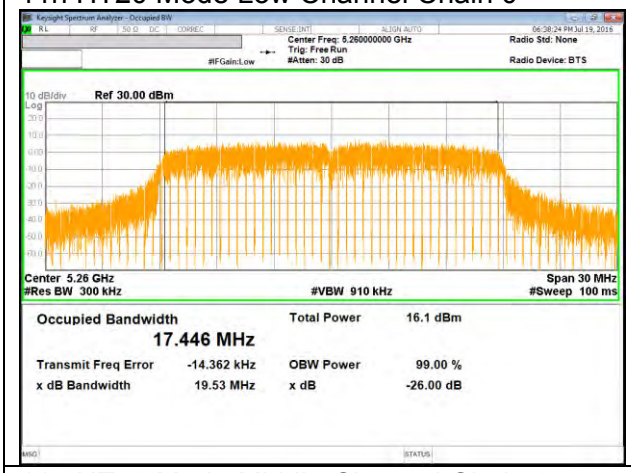
11a Mode High Channel Secondary



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UNII 5.3 GHz IEEE 802.11n HT20 mode

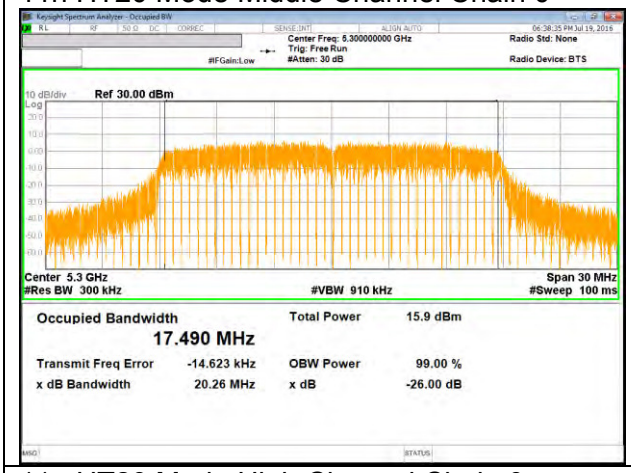
11n HT20 Mode Low Channel Chain 0



11n HT20 Mode Low Channel Chain 1



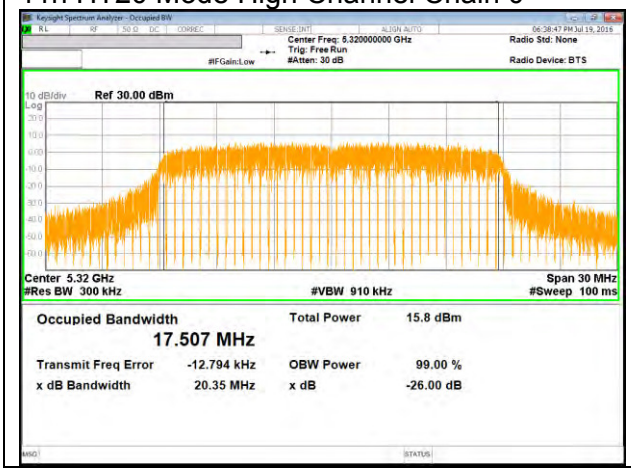
11n HT20 Mode Middle Channel Chain 0



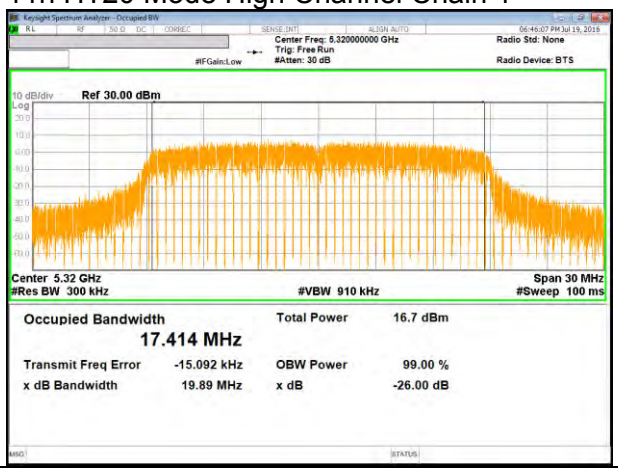
11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0



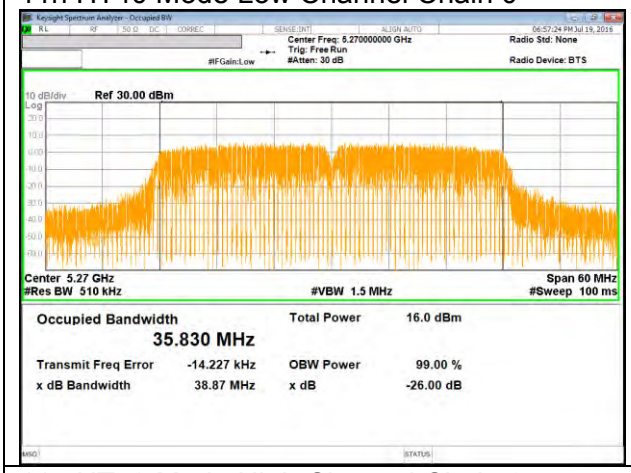
11n HT20 Mode High Channel Chain 1



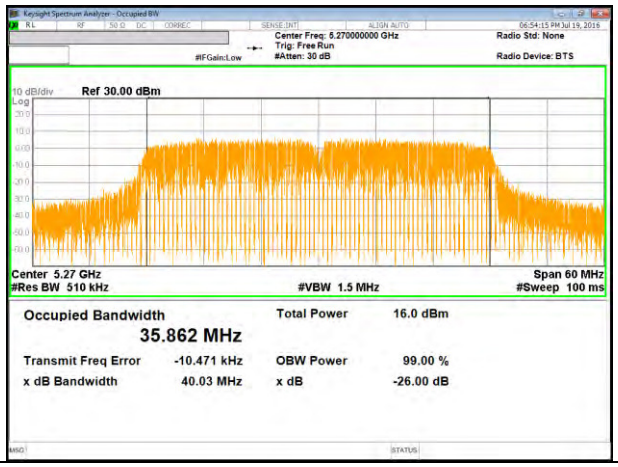
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UNII 5.3 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel Chain 0



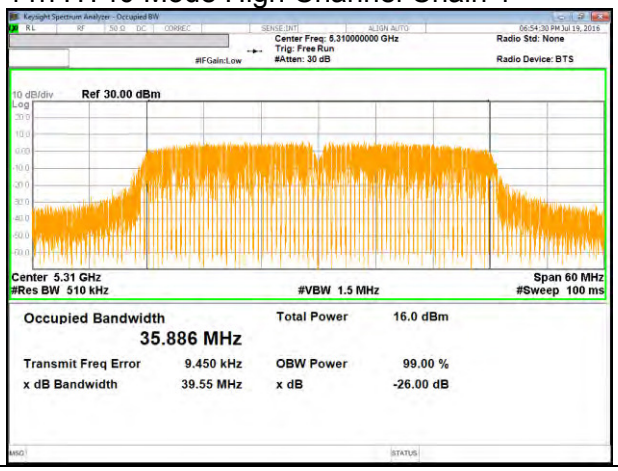
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0



11n HT40 Mode High Channel Chain 1



UNII 5.3 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



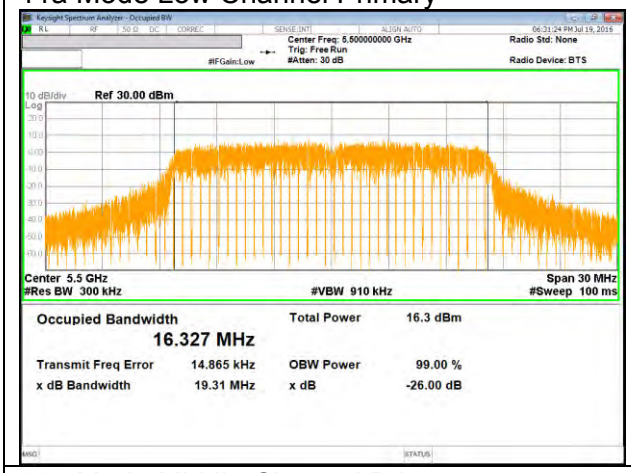
11ac HT80 Mode Middle Channel Chain 1



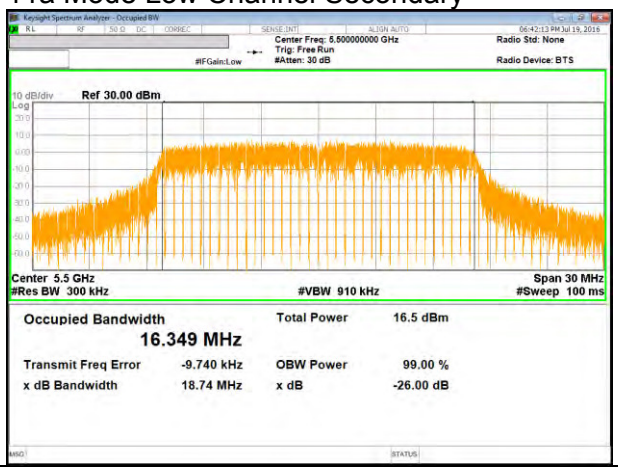
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UNII 5.5 GHz IEEE 802.11a mode

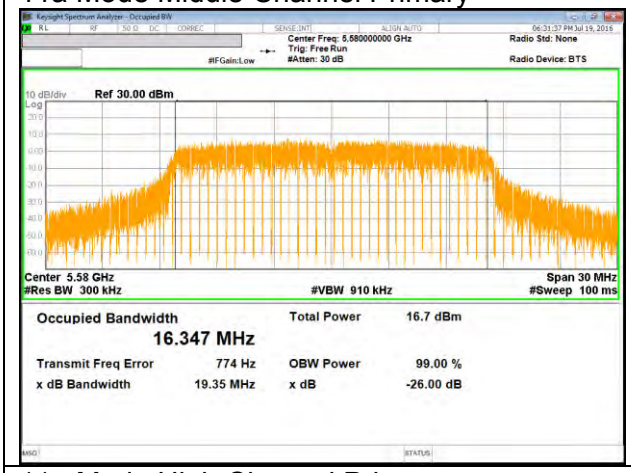
11a Mode Low Channel Primary



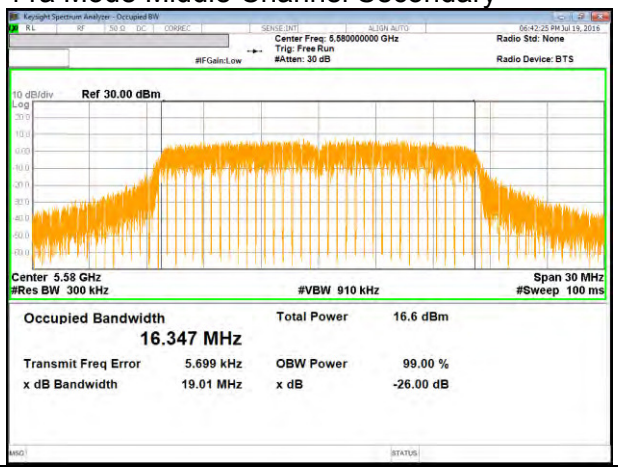
11a Mode Low Channel Secondary



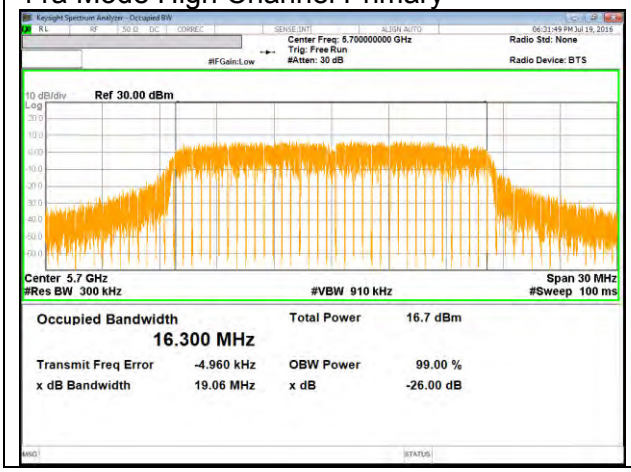
11a Mode Middle Channel Primary



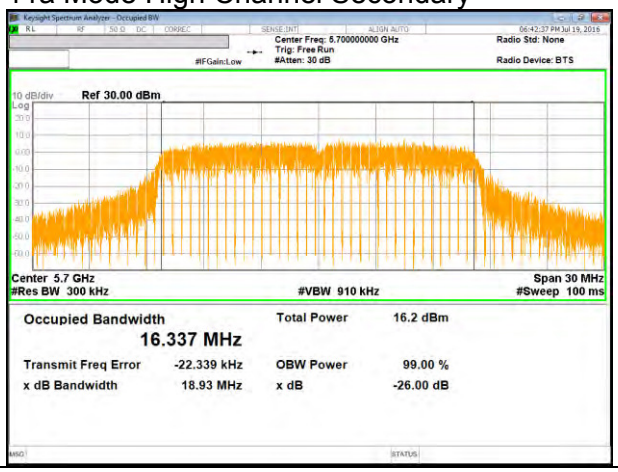
11a Mode Middle Channel Secondary



11a Mode High Channel Primary

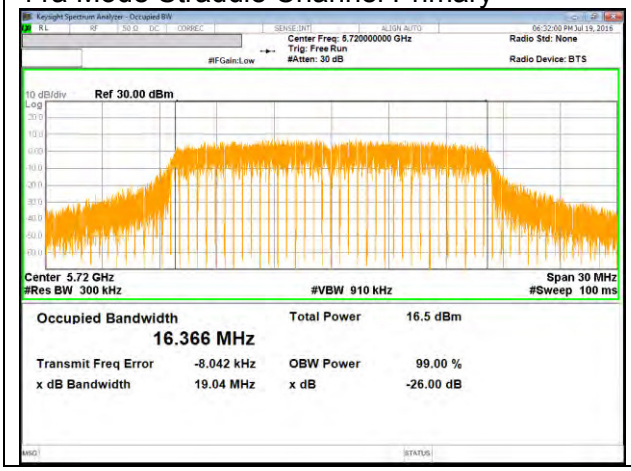


11a Mode High Channel Secondary

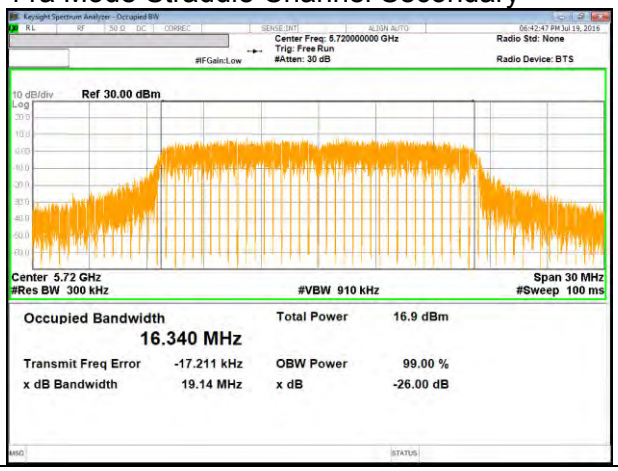


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11a Mode Straddle Channel Primary



11a Mode Straddle Channel Secondary

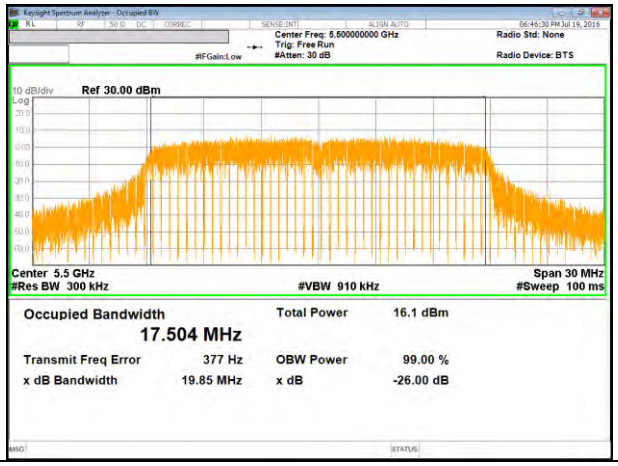


UNII 5.5 GHz IEEE 802.11n HT20 mode

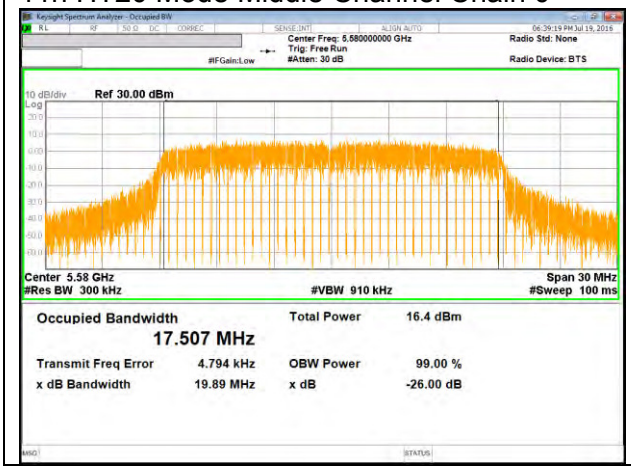
11n HT20 Mode Low Channel Chain 0



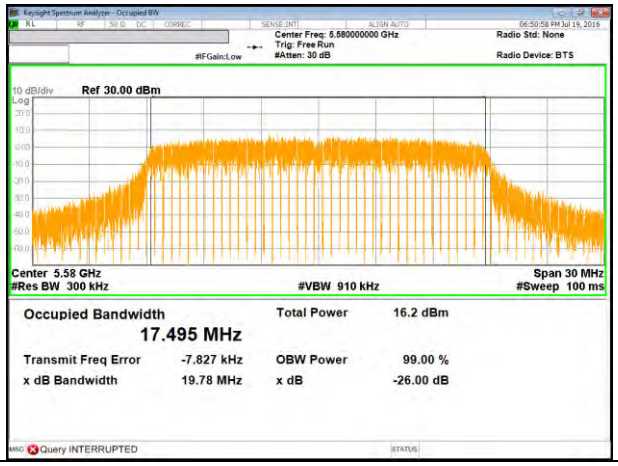
11n HT20 Mode Low Channel Chain 1



11n HT20 Mode Middle Channel Chain 0

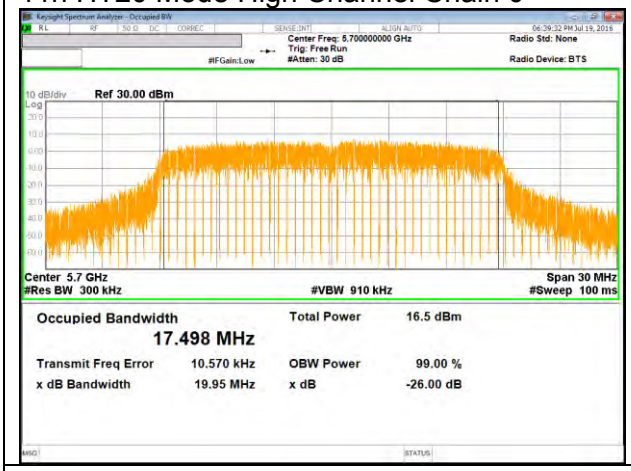


11n HT20 Mode Middle Channel Chain 1

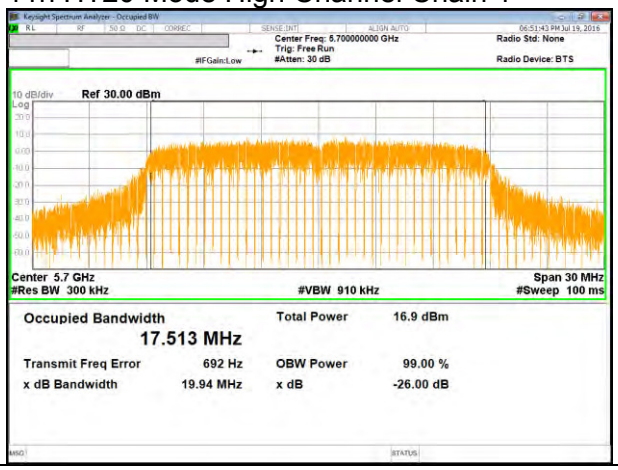


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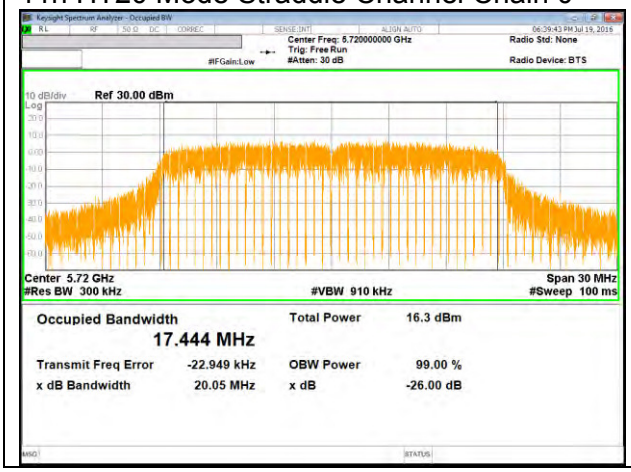
11n HT20 Mode High Channel Chain 0



11n HT20 Mode High Channel Chain 1



11n HT20 Mode Straddle Channel Chain 0

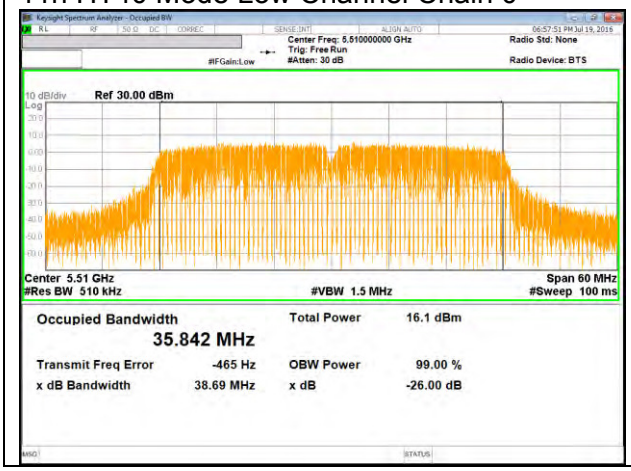


11n HT20 Mode Straddle Channel Chain 1



UNII 5.5 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel Chain 0

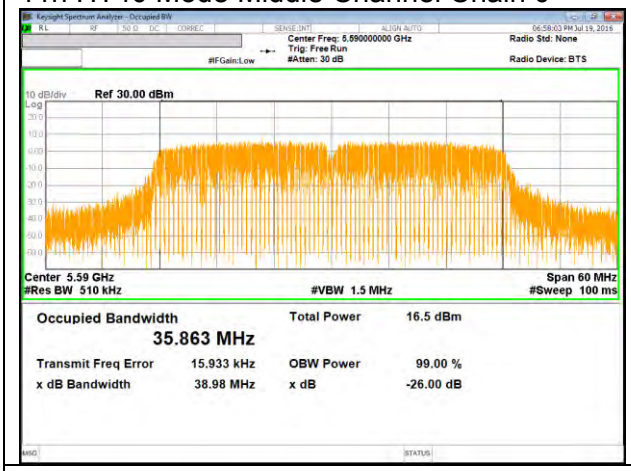


11n HT40 Mode Low Channel Chain 1



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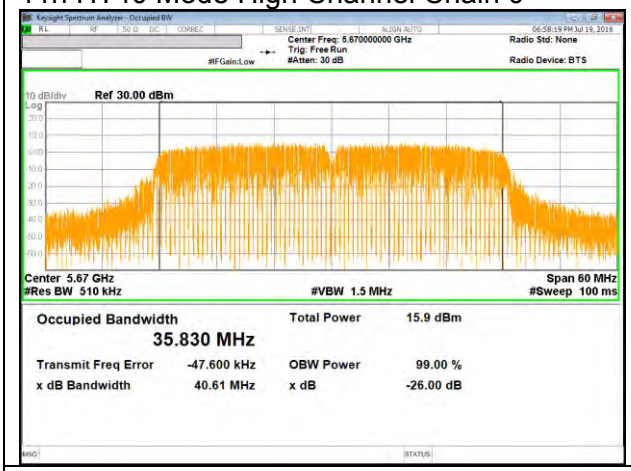
11n HT40 Mode Middle Channel Chain 0



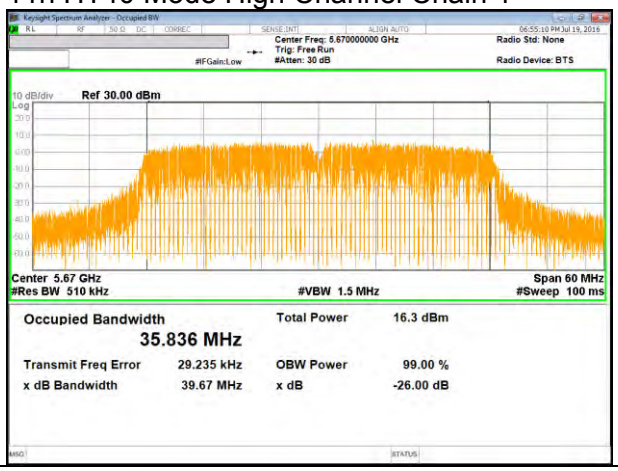
11n HT40 Mode Middle Channel Chain 1



11n HT40 Mode High Channel Chain 0



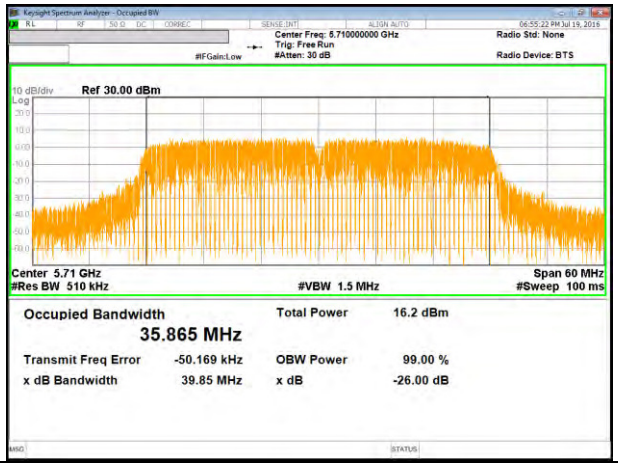
11n HT40 Mode High Channel Chain 1



11n HT40 Mode Straddle Channel Chain 0



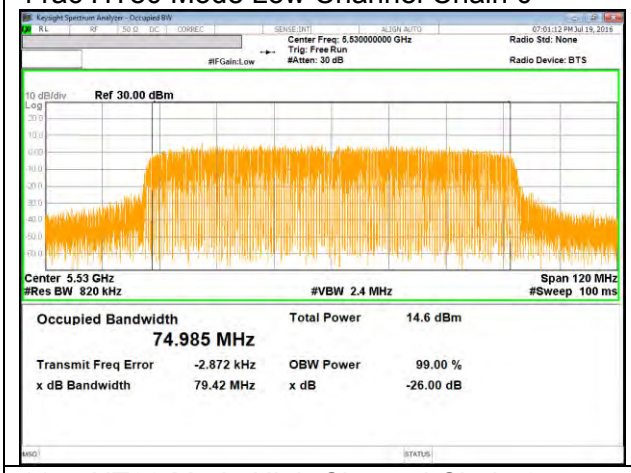
11n HT40 Mode Straddle Channel Chain 1



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UNII 5.5 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Low Channel Chain 0



11ac HT80 Mode Low Channel Chain 1



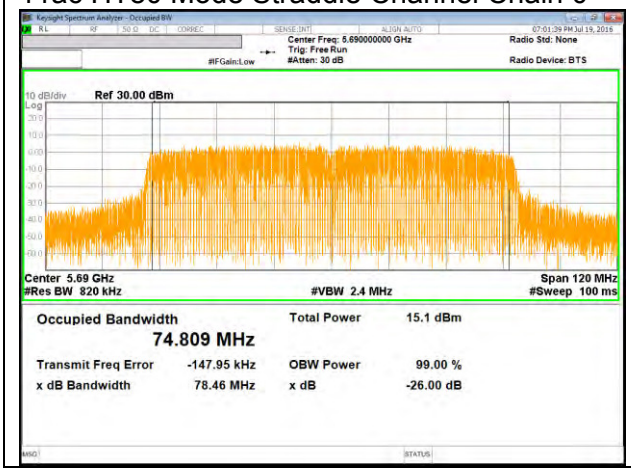
11ac HT80 Mode High Channel Chain 0



11ac HT80 Mode High Channel Chain 1



11ac HT80 Mode Straddle Channel Chain 0



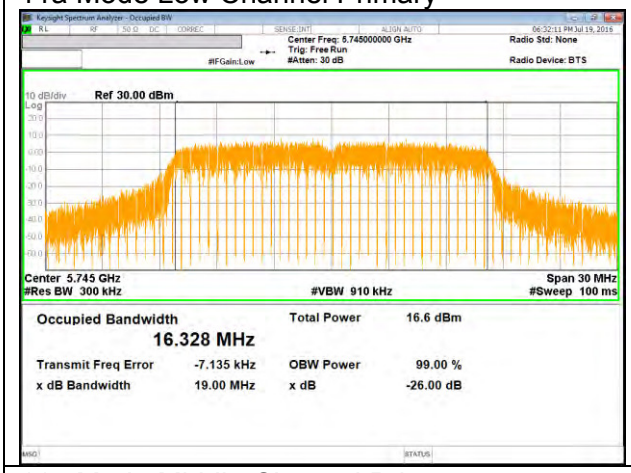
11ac HT80 Mode Straddle Channel Chain 1



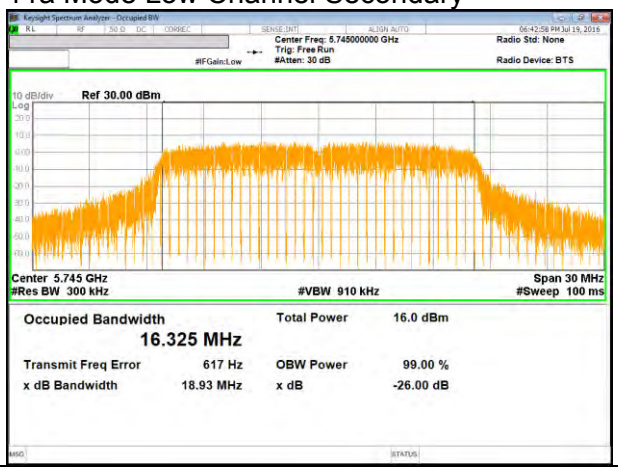
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UNII 5.8 GHz IEEE 802.11a mode

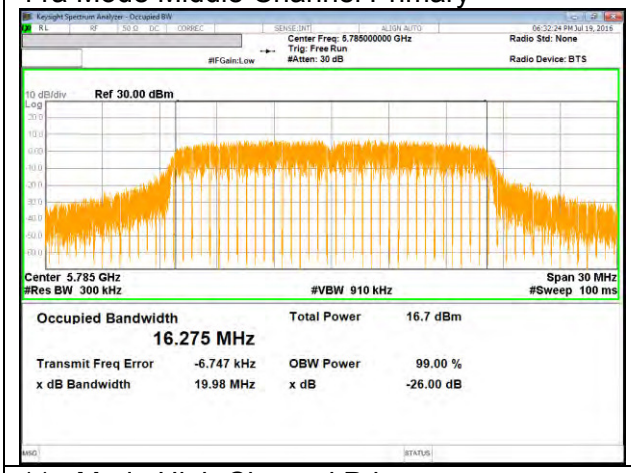
11a Mode Low Channel Primary



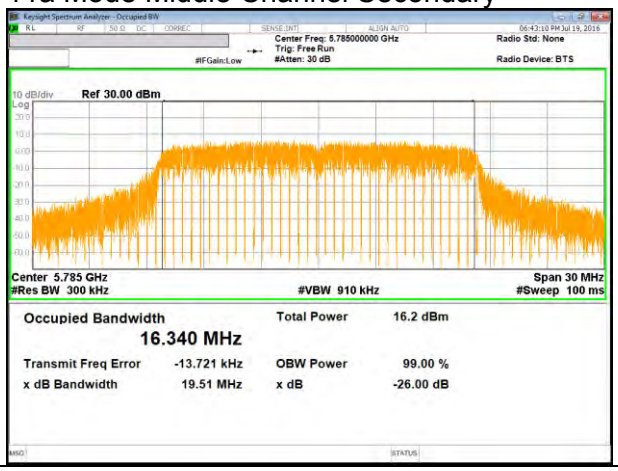
11a Mode Low Channel Secondary



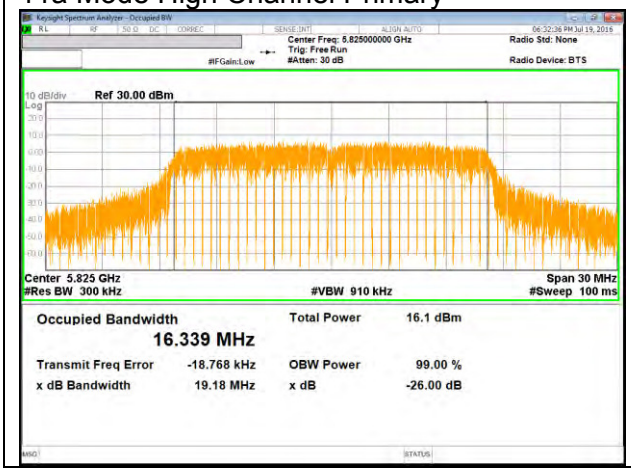
11a Mode Middle Channel Primary



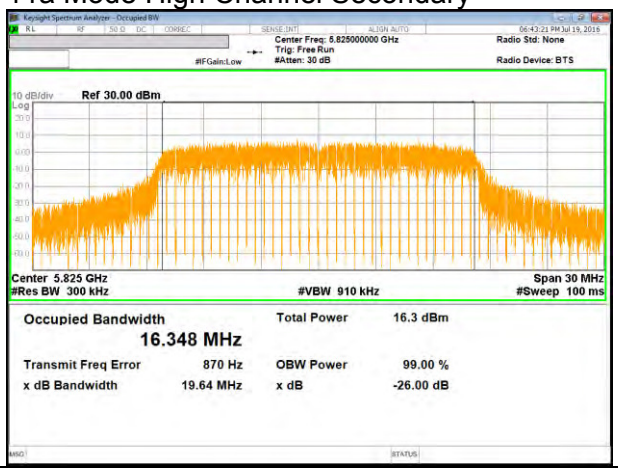
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary



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