CERTIFICATION TEST REPORT

Report Number. : 11988903-E5V2

Applicant	:	Mayfield Robotics 400 Convention Way Redwood City, CA 94063
Model	:	AHR-M8T
FCC ID	:	2AN44-AHR-M8T
EUT Description	:	General Consumer Home Robot
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
June 19, 2018

Prepared by:
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	06/11/18	Initial Release	---
V2	06/19/18	Updated Section 1 Attestation Of Test Result, Date Tested; Updated section 2 Test Methodology. Updated Section 6 Test And Measurement Equipment. Updated Section 7 Measurement Method. Updated Section 8.5 Ouyput Power and PSD. Added Section 8.6 Worst-case co-location	E.Yu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Mayfield Robotics
400 Convention Way
Redwood City, CA 94063

EUT DESCRIPTION: General Consumer Home Robot

MODEL: AHR-M8T

SERIAL NUMBER: RADIATED: 17534007 (MF-001 Rev. A04)
CONDUCTED: 17450531 (MF-001 Rev. A04)

DATE TESTED: October 31, 2017 – June 19, 2018

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Complies

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 the U.S. government.

Approved & Released For
UL Verification Services Inc By:

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Operations Leader
UL Verification Services Inc.

Prepared By:

Eric Yu
Test Engineer
UL Verification Services Inc.

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 14-30, FCC KDB 662911 D01 v02r01, FCC KDB 905462 D02 v02/D03 v01r02/D06 v02, FCC KDB 789033 D02 v2r1, ANSI C63.10-2013

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☒ Chamber A(ISED: 2324B-1)	☐ Chamber D(ISED: 22541-1)
☒ Chamber B(ISED: 2324B-2)	☐ Chamber E(ISED: 22541-2)
☒ Chamber C(ISED: 2324B-3)	☐ Chamber F(ISED: 22541-3)
	☐ Chamber G(ISED: 22541-4)
	☐ Chamber H(ISED: 22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at NVLAP Lab Search.

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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:

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

Parameter	Uncertainty
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 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 general consumer device

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

5.2 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2TX			
5180 - 5240	802.11a	11.79	15.10
5180 - 5240	802.11n HT20	12.68	18.54
5190 - 5230	802.11n HT40	13.78	23.88

5.3 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2TX			
5260 - 5320	802.11a	12.18	16.52
5260 - 5320	802.11n HT20	12.96	19.77
5270 - 5310	802.11n HT40	13.33	21.53

5.6 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2TX			
5500 - 5700	802.11a	13.89	24.49
5500 - 5700	802.11n HT20	14.94	31.19
5510 - 5670	802.11n HT40	15.55	35.89

5.8 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2TX			
5745 - 5825	802.11a	13.87	24.38
5745 - 5825	802.11n HT20	14.91	30.97
5755 - 5795	802.11n HT40	15.33	34.12

List of test reduction

Antenna Port Testing		
Band	**Mode**	**Covered by**
5 GHz band	802.11a 1TX	802.11n HT20 2TX
5 GHz band	802.11a 2TX	802.11n HT20 2TX
5 GHz band	802.11n HT20 1TX	802.11n HT20 2TX
5 GHz band	802.11n HT40 1TX	802.11n HT40 2TX

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integrated antenna, with a maximum gain as follows:

Frequency Band (GHz)	Antenna Gain (dBi)	
	Chain 0	Chain 1
5.2	2.1	2.1
5.3	2.6	2.6
5.5	3.3	3.3
5.8	3.6	3.6

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Windows 10

The test utility software used during testing was RT5x7xQA v1.0.8.0

5.5. WORST-CASE CONFIGURATION AND MODE

For below 1GHz 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.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

The EUT cannot be used in different orientations, Therefore, all final radiated testing was performed with the EUT in typical standing orientation.

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

802.11a mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0

For MIMO modes, the 2TX emission testing was considered as a worst case scenario and was performed at power levels, per transmit chain, greater than or equal to the maximum power in any 1TX mode.

The height of the robot is at 0.51 meters and the highest point of the antennas is at 0.31 meters. Given the measurement antenna height range, 1 meter to 4 meters, and for above 1GHz testing, the boring sight mechanism and beamwidth of the antenna,testing on the floor would prevent capturing full emissions strength. Testing on the floor the antenna would not capture worst case emissions, therefore EUT was tested as table top equipment.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Description	Manufacturer	Model	Serial Number
Laptop	Lenovo	X1 Carbon	R9-0JM36P
AC/DC Adapter	Lenovo	ADL170NDC2A	11S36200317ZZ40077C20J
DC Power Supply	BK Precesion	1550	238D15253
USB ethernet adapter	Cable Matters Inc.	202013	TS3G9FQ7
EUT AC Adapter	DYS	DYS902-190473W	NSN
Monitor	ODROID-VU	GH620A	YXD090TN02-40NMO1

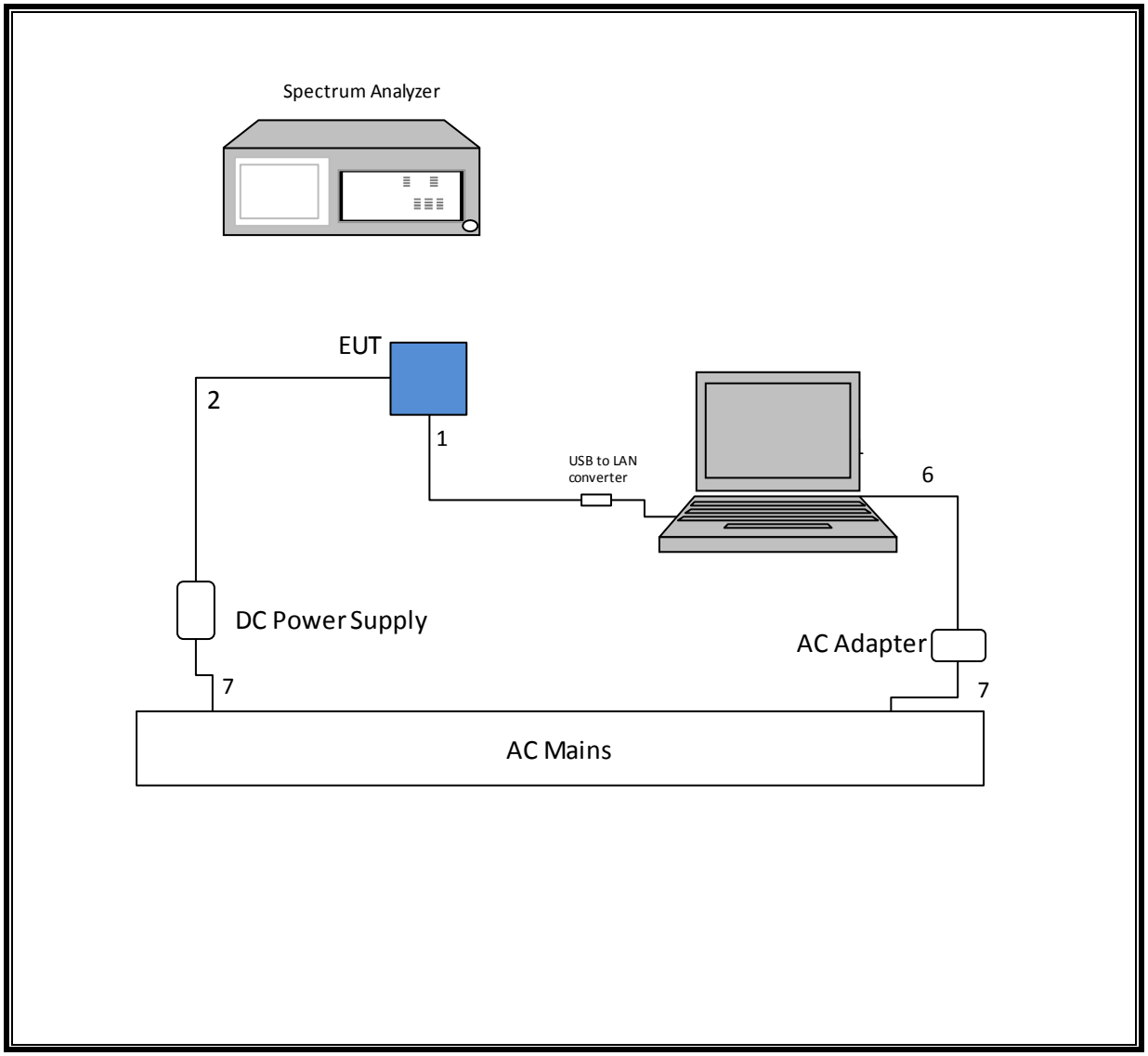
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Ethernet	1	RJ45	unshielded	2.1	
2	DC	1	Header	unshielded	1.85	To EUT from DC P/S
3	DC	1	barrel	unshielded	1.32	To EUT AC adapter
4	AC	1	2-prong	unshielded	1.22	
5	HDMI	1	HDMI	shielded	2.5	
6	DC	1	Barrle	shielded	1.5	To laptop
7	AC	2	3-prong	shielded	1	

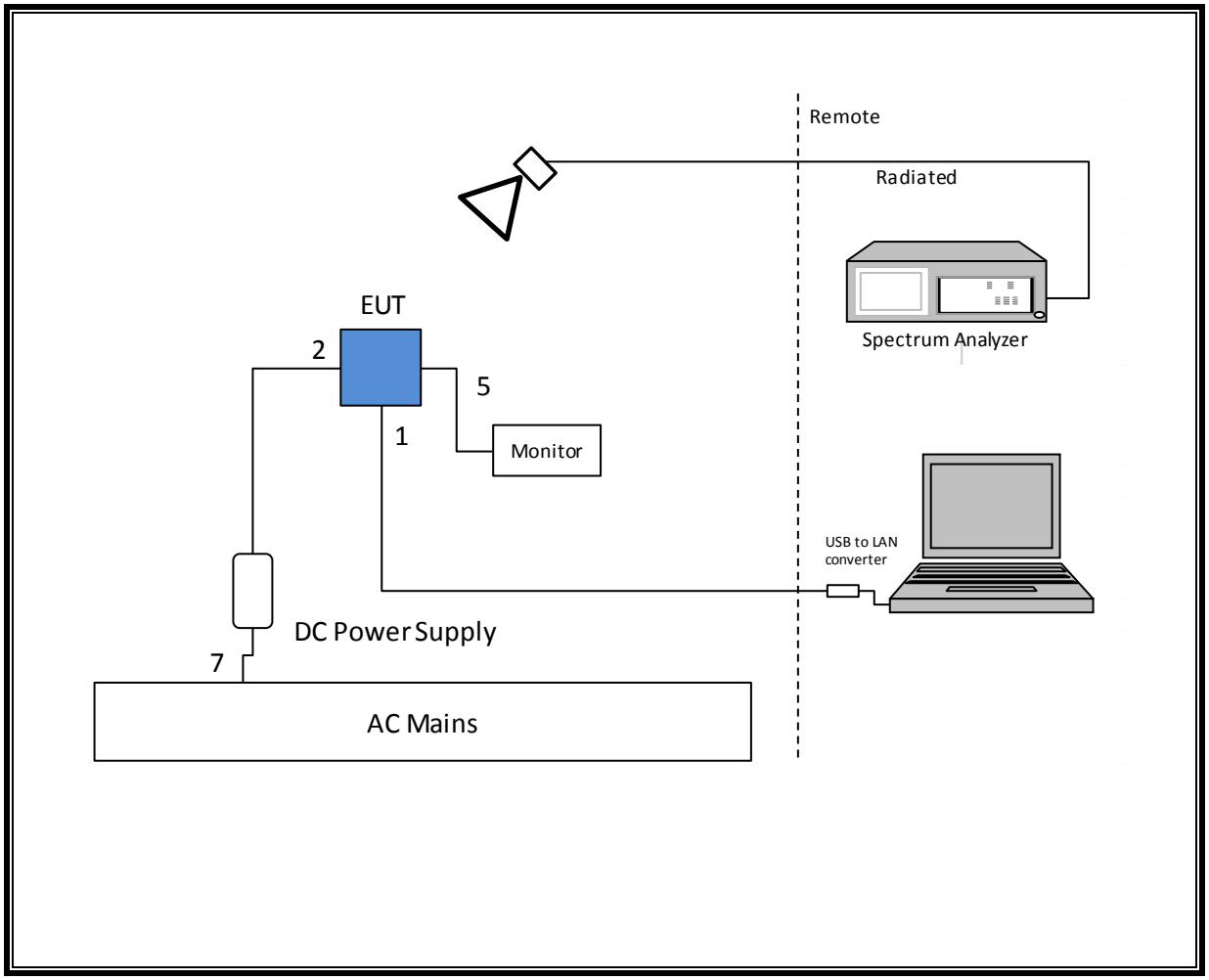
TEST SETUP

The EUT is connected to a test laptop. Test software exercises the radio.

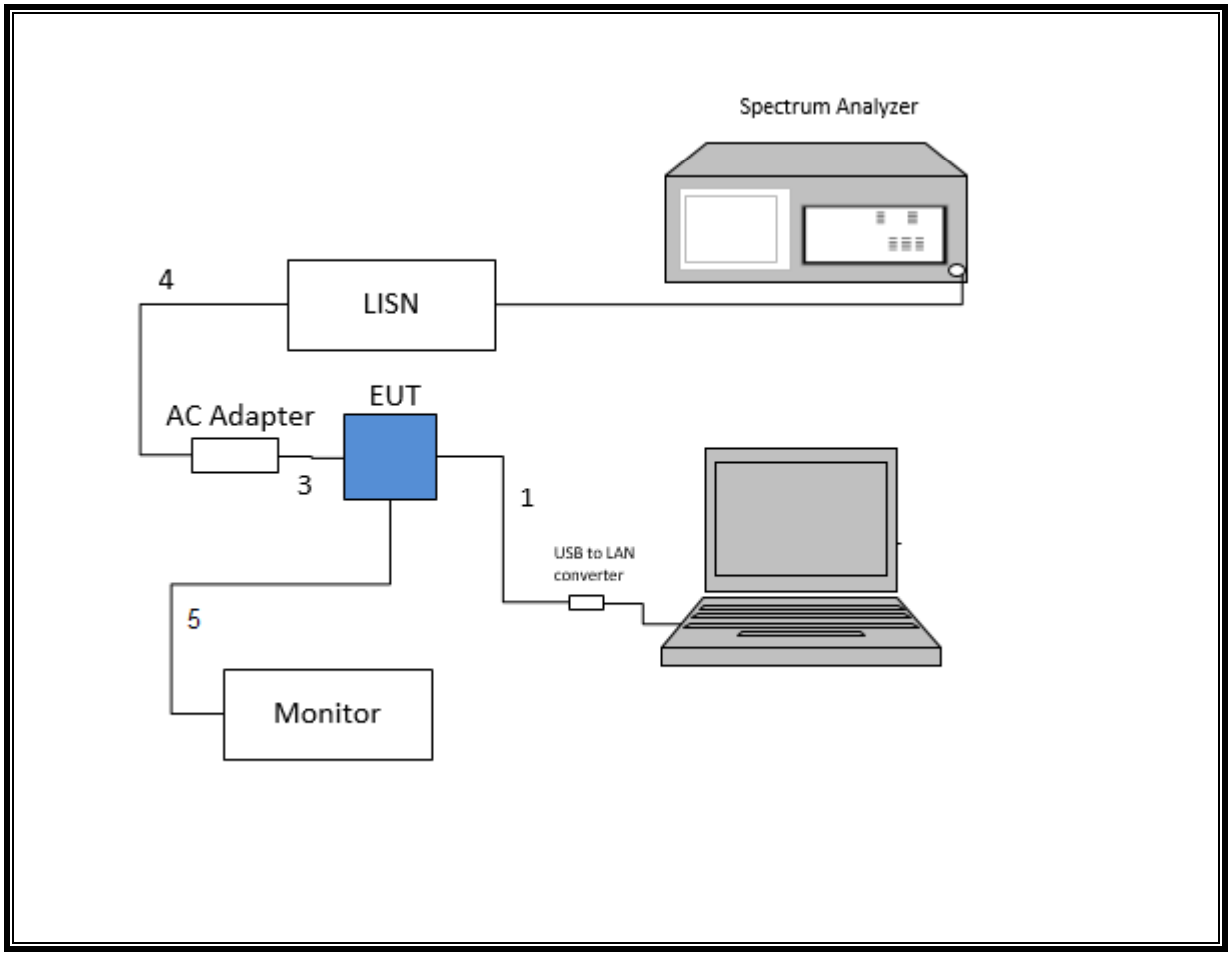
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS



SETUP DIAGRAM FOR LINE CONDUCTED TEST



6. TEST AND MEASUREMENT EQUIPMENT

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

Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
Spectrum Analyzer	Keysight	E4446A	T146	07/17/18	07/17/17
Spectrum Analyzer	Keysight	N9030A	T1466	04/11/18	04/11/17
Antenna, Biconolog, 30MHz – 1GHz	Sunol Sciences	JB1	T130	10/16/18	10/16/17
Antenna, Horn, 1-18GHz	ETS Lindgren	3117	T862	06/09/18	06/09/17
RF Preamplifier, 10kHz - 1GHz	Sonoma	310N	T300	11/10/17	11/10/16
RF Preamplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	T1165	06/24/18	06/24/17
RF Preamplifier, 1 - 8GHz	Miteq	AMF-4D-01000800-30-29P	T1573	06/24/18	06/24/17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	T486	06/24/18	06/24/17
Antenna, Horn, 1-18GHz	ETS Lindgren	3117	T863	06/09/18	06/09/17
RF Preamplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	T493	02/15/18	02/15/17
RF Preamplifier, 1 - 8GHz	Miteq	AMF-4D-01000800-30-29P	T1156	02/15/18	02/15/17
Spectrum Analyzer	Keysight	N9030A	T907	01/23/18	01/23/17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	T485	02/15/18	02/15/17
Antenna, Horn, 1-18GHz	ETS Lindgren	3117	T712	01/30/18	01/30/17
RF Preamplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	T931	06/21/18	06/21/17
Spectrum Analyzer	Keysight	N9030A	T905	01/11/18	01/11/17
Antenna, Horn, 18-26-GHz	ARA	MWH-1826	T89	01/04/18	01/04/17
Antenna, Horn, 26-40-GHz	ARA	MWH-2640	T90	08/25/18	08/25/17
RF Preamplifier, 1-26GHz	Agilent	8449B	T404	07/23/18	07/23/17
Spectrum Analyzer, 40GHz	Keysight	N9030A	T1454	12/15/17	12/15/16
Spectrum Analyzer, 40GHz	Keysight	N9030A	T1450	02/05/19	02/05/18
Power Splitter	Weinschel	1594	T719	N/A	N/A
Power Meter	Keysight	N1911A	T1271	07/17/18	07/17/17
Power Sensor	Keysight	N1921A	T413	06/22/18	06/22/17
EMI Receiver	Rohde & Schwarz	ESR	T1436	01/06/18	01/06/17
LISN	Fischer Custom Communications	FCC-LISN-50/250-25-2-01	T1310	06/15/18	06/15/17

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	v9.5 Dec 01, 2016
Antenna Port Software	UL	UL RF	v7.4.1 Oct 20, 2017

NOTES:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 789033 D02 v2r01, Section B.

26 dB Emission BW: KDB 789033 D02 v2r01, Section C.

99% Occupied BW: KDB 789033 D02 v2r01, Section D.

Conducted Output Power: KDB 789033 D02 v2r01, Section E.3.b (Method PM-G)

Power Spectral Density: KDB 789033 D02 v2r01, Section F

Unwanted emissions in restricted bands: KDB 789033 D02 v2r01, Sections G.1, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v2r01, Sections G.2, G.4, and G.5.

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME, DUTY CYCLE

LIMITS

None; for reporting purposes only.

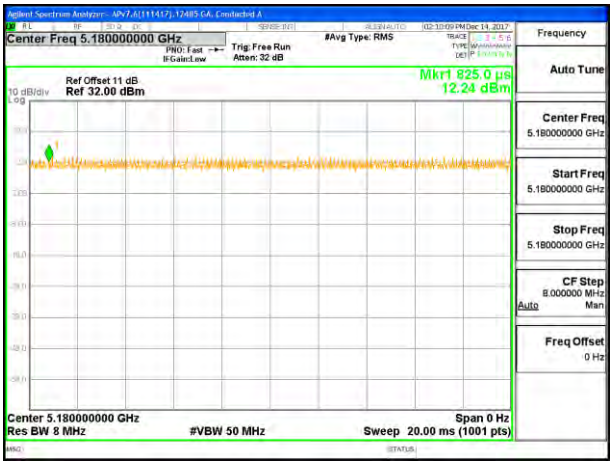
PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

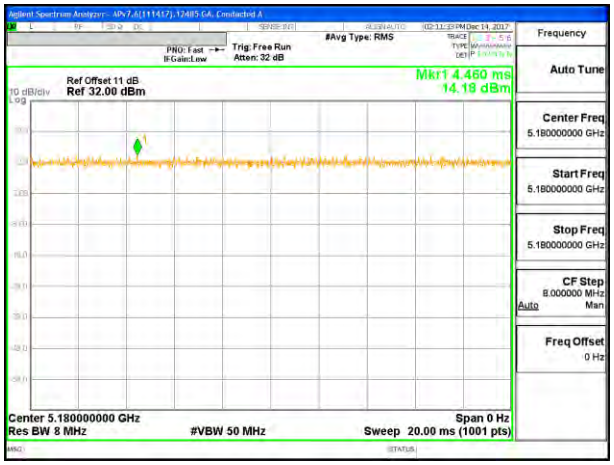
RESULTS

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 2Tx	20.000	20.000	1.000	100.0%	0.00	0.010
802.11n HT20 2Tx	20.000	20.000	1.000	100.0%	0.00	0.010
802.11n HT40 2Tx	20.000	20.000	1.000	100.0%	0.00	0.010

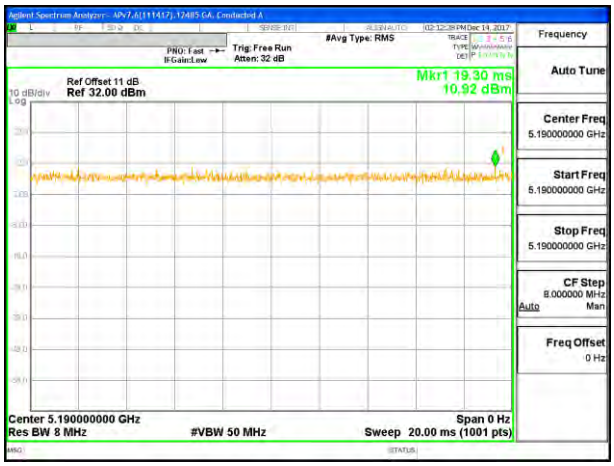
DUTY CYCLE PLOTS



802.11a 2Tx MODE



802.11n HT20 2Tx MODE



802.11n HT40 2Tx MODE

8.2. 26 dB BANDWIDTH

LIMITS

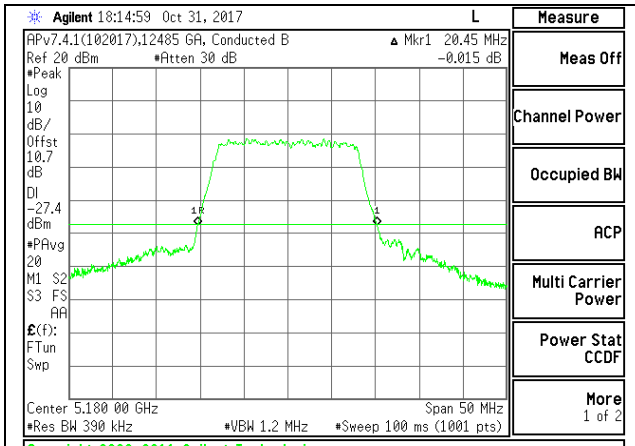
None; for reporting purposes only.

RESULTS

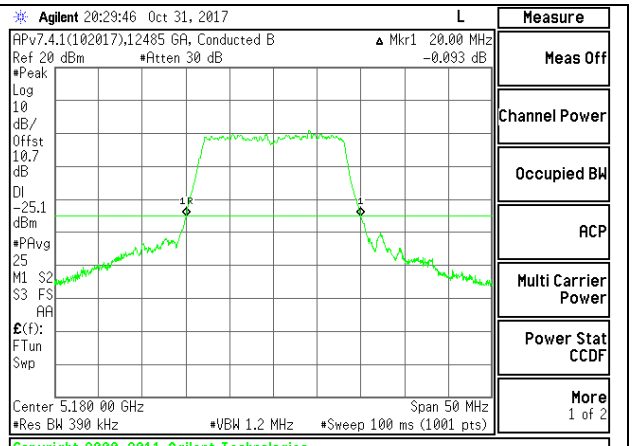
8.2.1. 802.11a 2Tx MODE IN THE 5.2 GHz BAND

Channel	Frequency	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	20.45	20.00
Mid	5200	20.35	20.20
High	5240	20.45	20.50

LOW CHANNEL

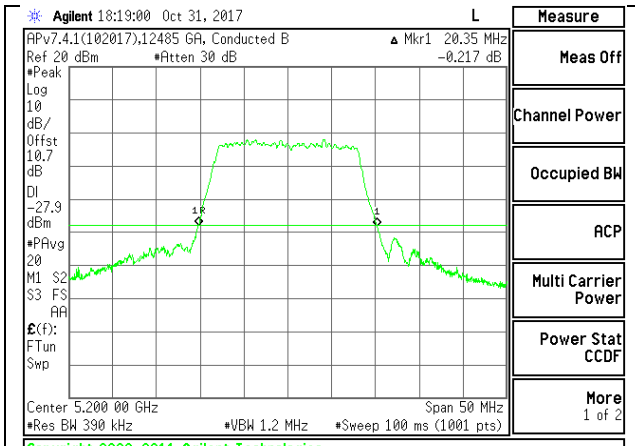


LOW CHANNEL CHAIN 0

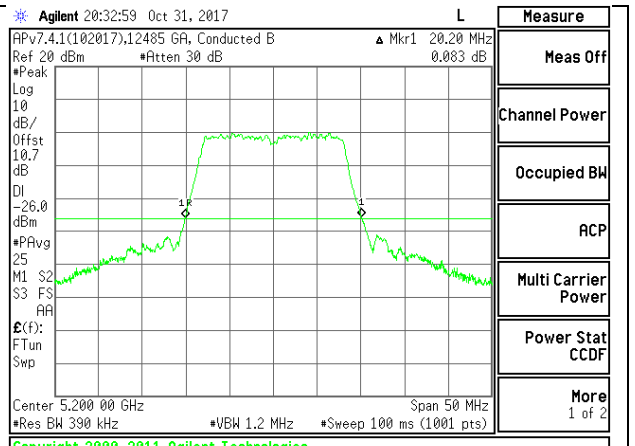


LOW CHANNEL CHAIN 1

MID CHANNEL

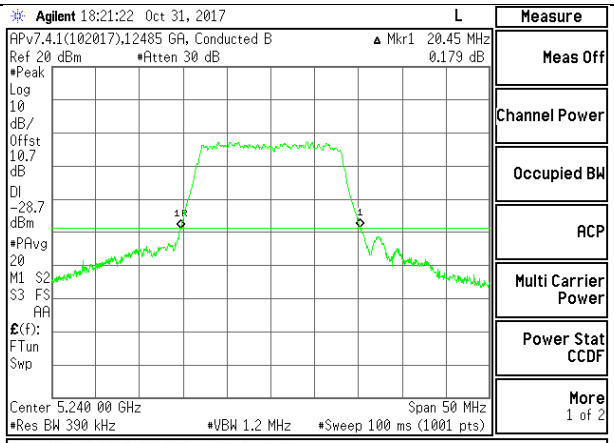


MID CHANNEL CHAIN 0

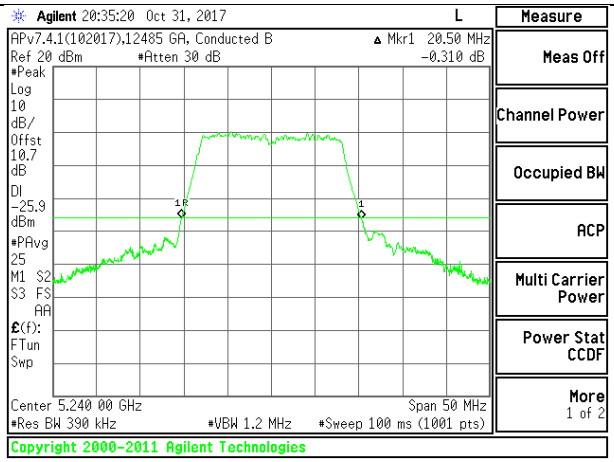


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

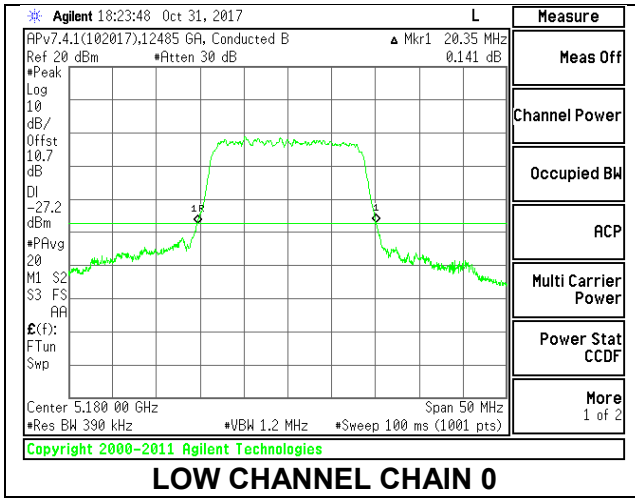


HIGH CHANNEL CHAIN 1

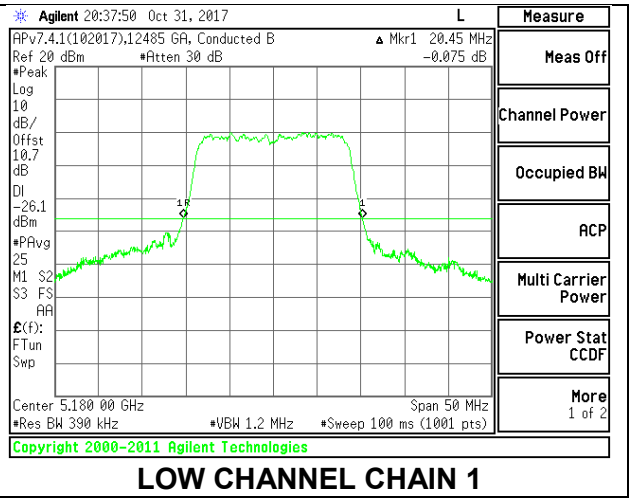
8.2.2. 802.11n HT20 2Tx MODE IN THE 5.2 GHz BAND

Channel	Frequency	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	20.35	20.45
Mid	5200	20.35	20.45
High	5240	20.45	20.20

LOW CHANNEL

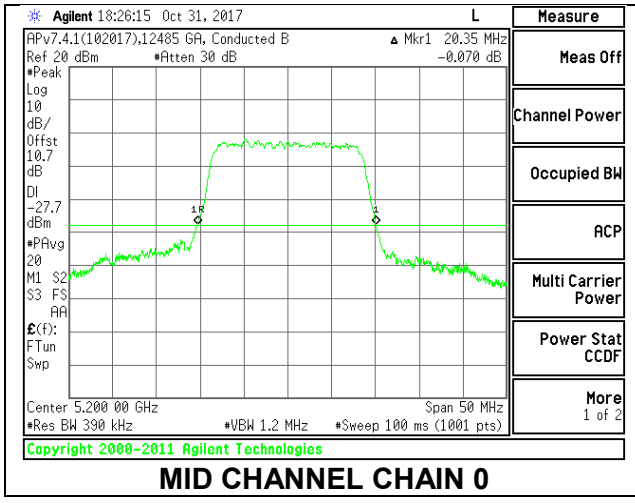


LOW CHANNEL CHAIN 0

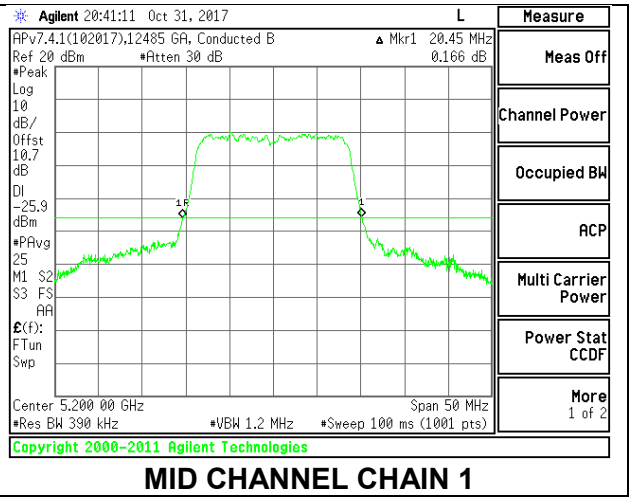


LOW CHANNEL CHAIN 1

MID CHANNEL

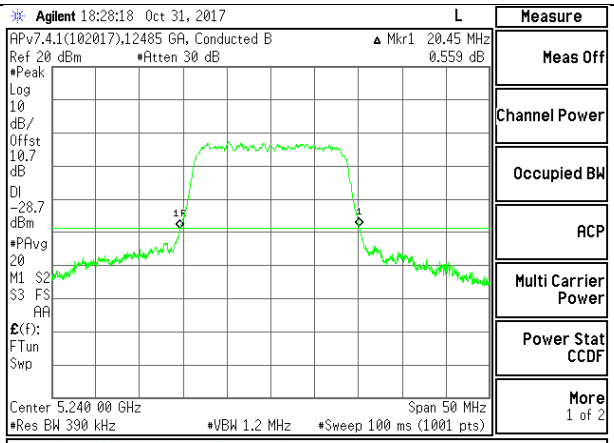


MID CHANNEL CHAIN 0

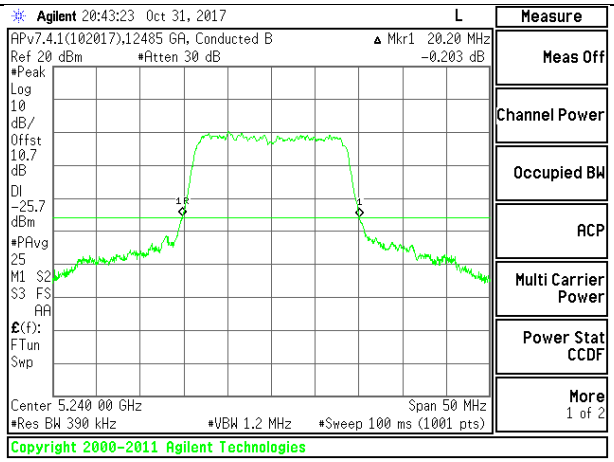


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

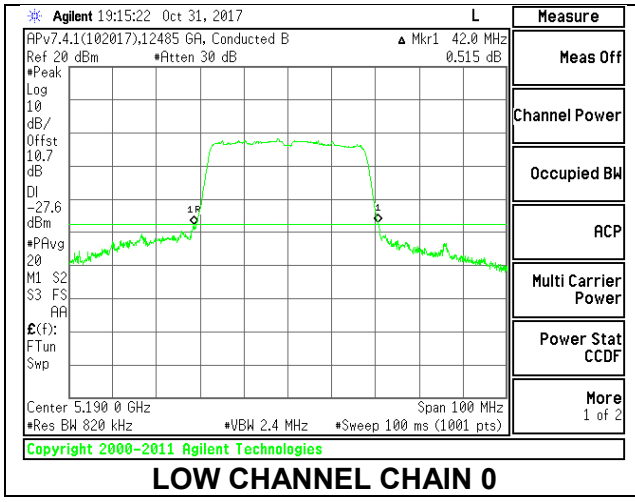


HIGH CHANNEL CHAIN 1

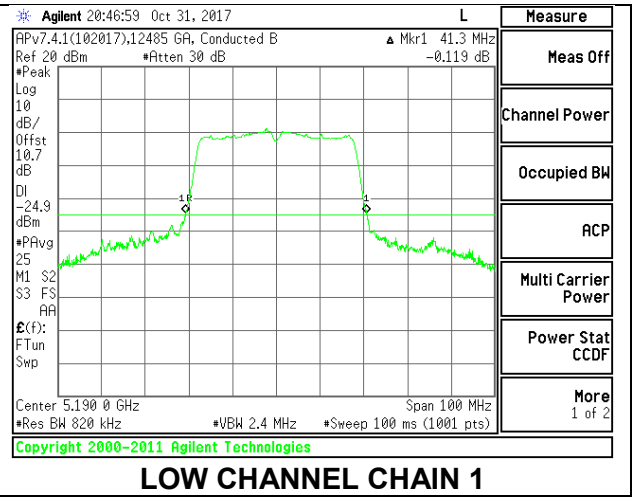
8.2.3. 802.11n HT40 2Tx MODE IN THE 5.2 GHz BAND

Channel	Frequency	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5190	42.00	41.30
High	5230	41.60	41.40

LOW CHANNEL

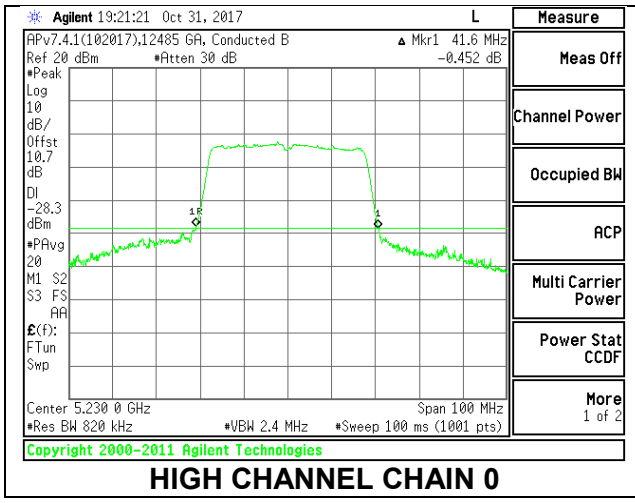


LOW CHANNEL CHAIN 0

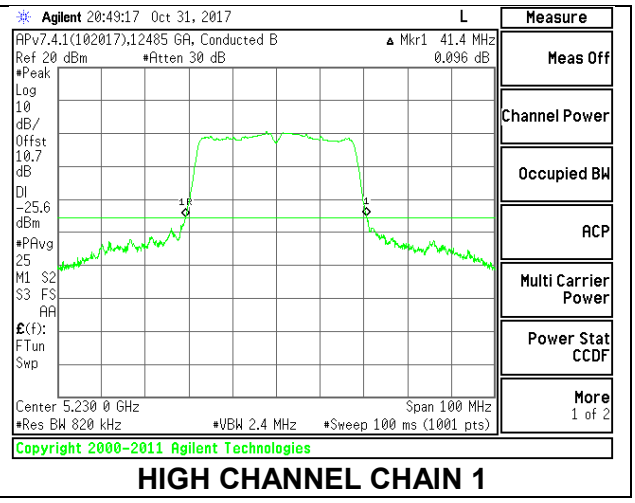


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

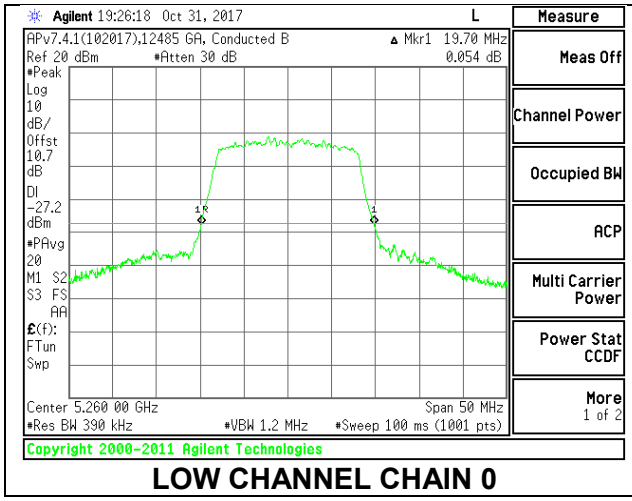


HIGH CHANNEL CHAIN 1

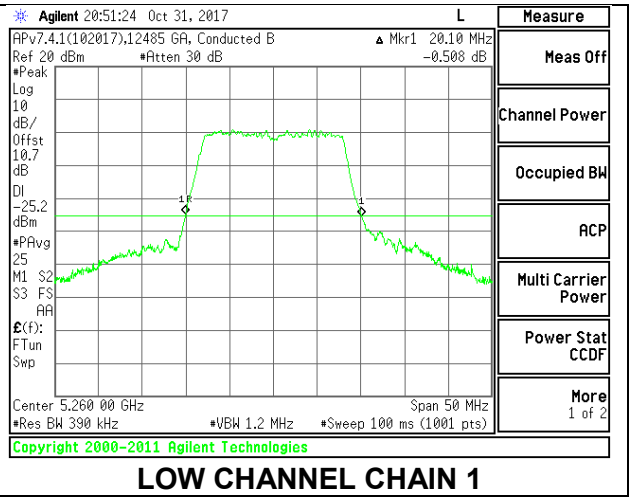
8.2.4. 802.11a 2Tx MODE IN THE 5.3 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5260	19.70	20.10
Mid	5300	19.95	20.40
High	5320	19.90	20.20

LOW CHANNEL

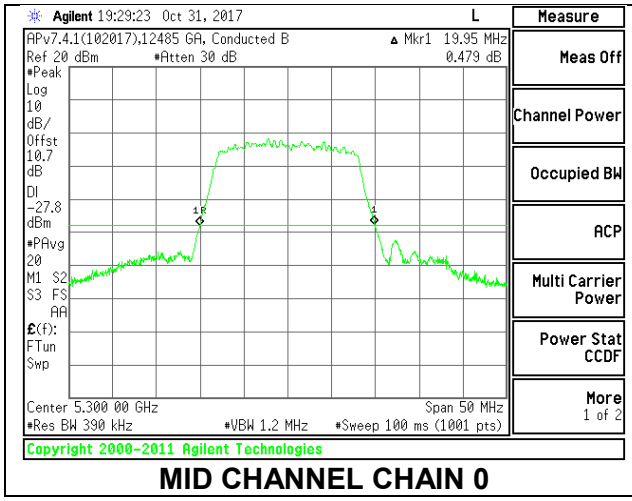


LOW CHANNEL CHAIN 0

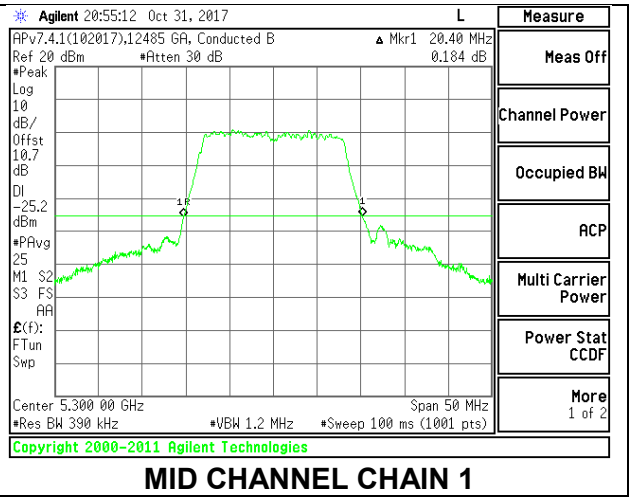


LOW CHANNEL CHAIN 1

MID CHANNEL

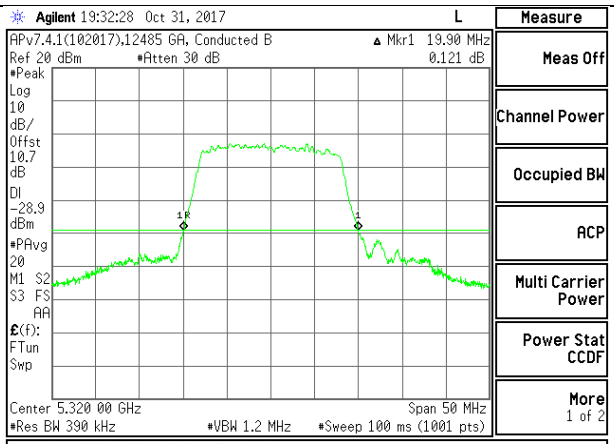


MID CHANNEL CHAIN 0

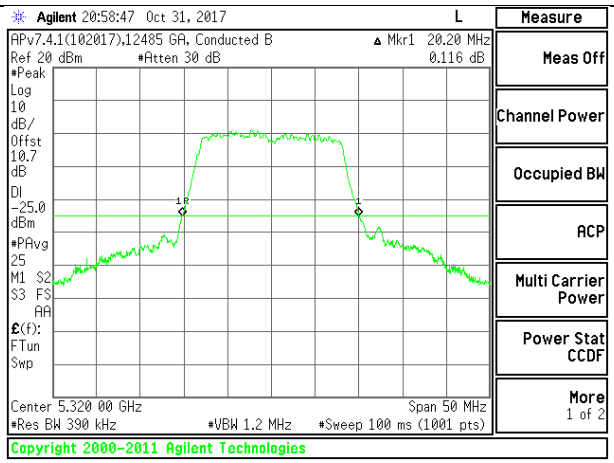


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

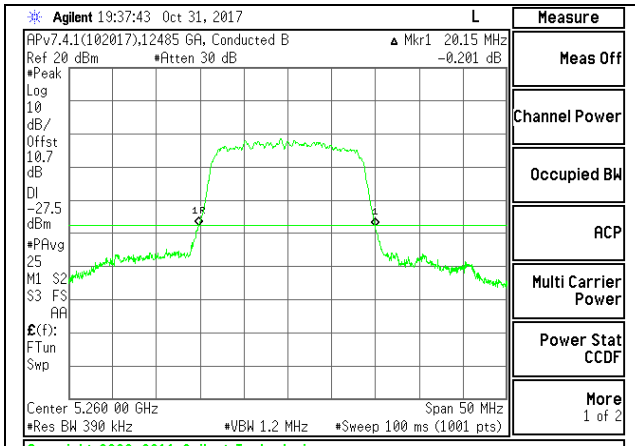


HIGH CHANNEL CHAIN 1

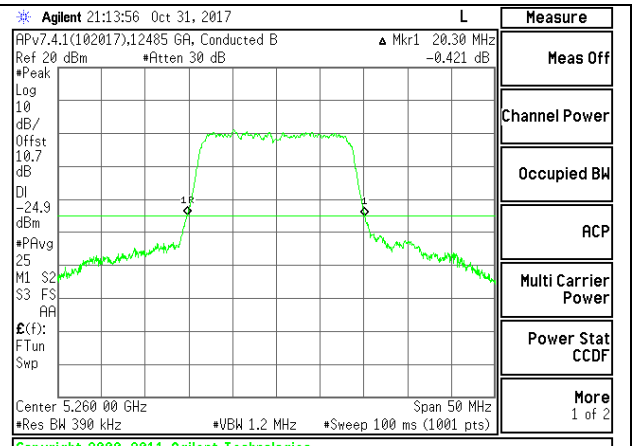
8.2.5. 802.11n HT20 2Tx MODE IN THE 5.3 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5260	20.15	20.30
Mid	5300	20.15	20.20
High	5320	20.15	20.10

LOW CHANNEL

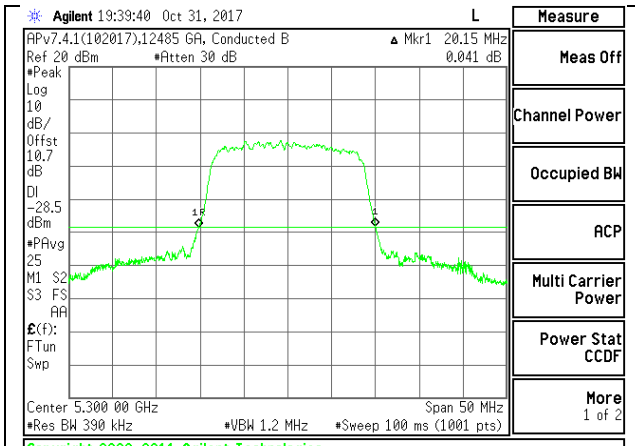


LOW CHANNEL CHAIN 0

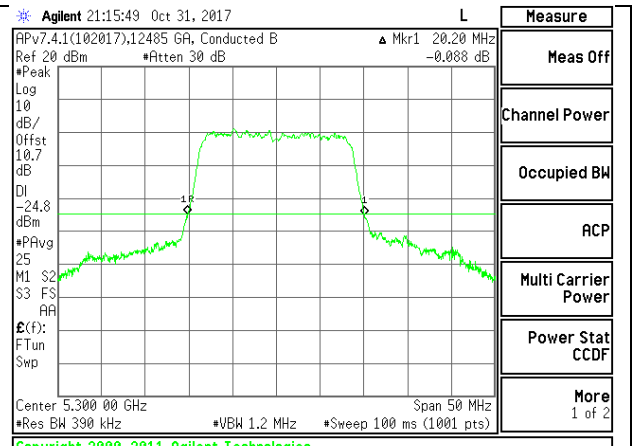


LOW CHANNEL CHAIN 1

MID CHANNEL

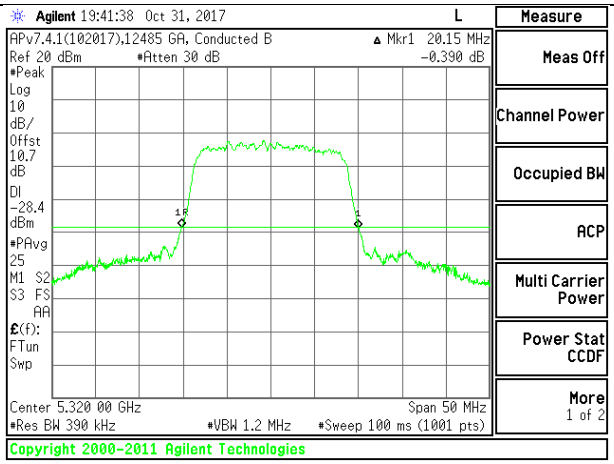


MID CHANNEL CHAIN 0

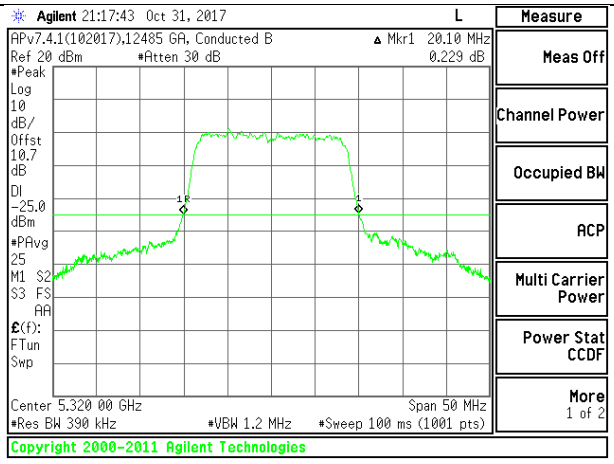


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

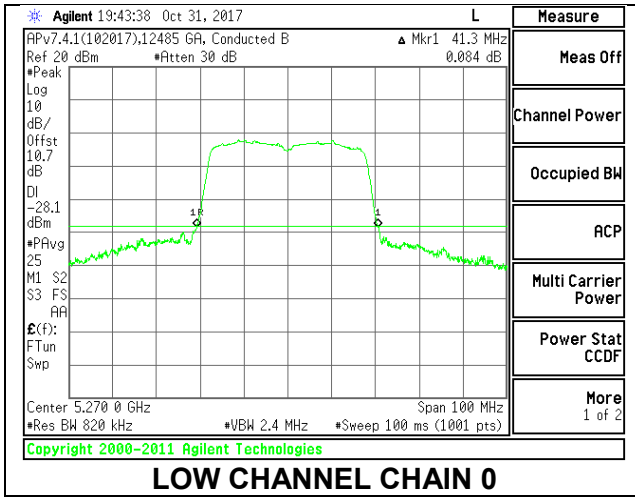


HIGH CHANNEL CHAIN 1

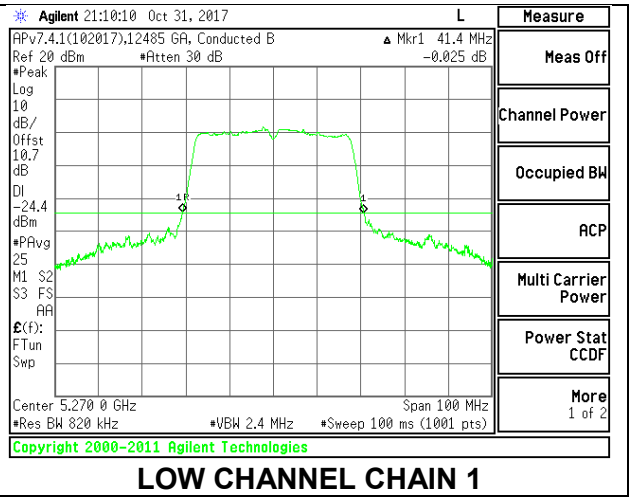
8.2.6. 802.11n HT40 2Tx MODE IN THE 5.3 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5270	41.30	41.40
High	5310	41.30	41.30

LOW CHANNEL

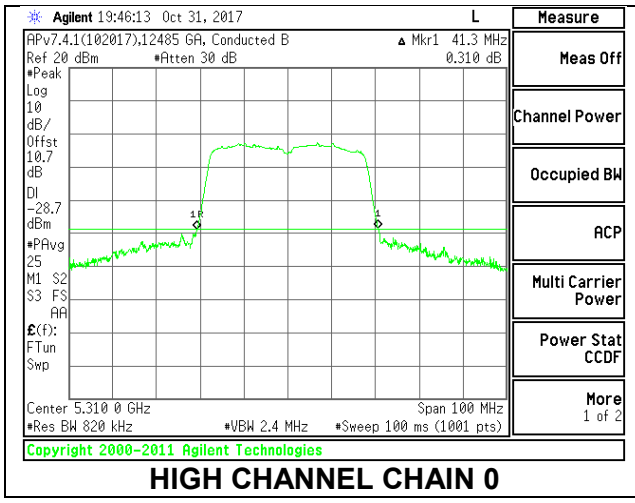


LOW CHANNEL CHAIN 0

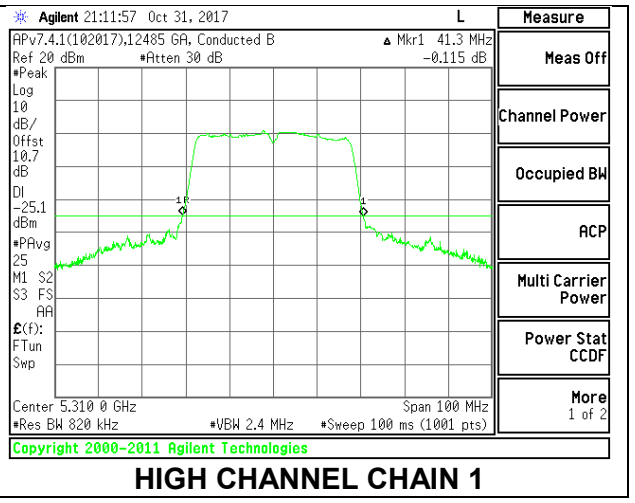


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

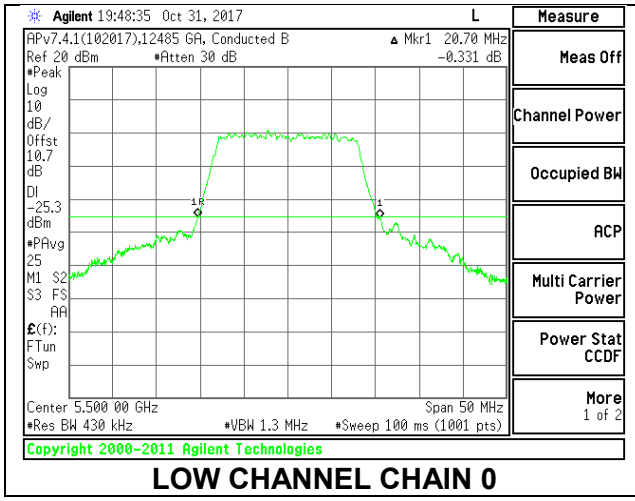


HIGH CHANNEL CHAIN 1

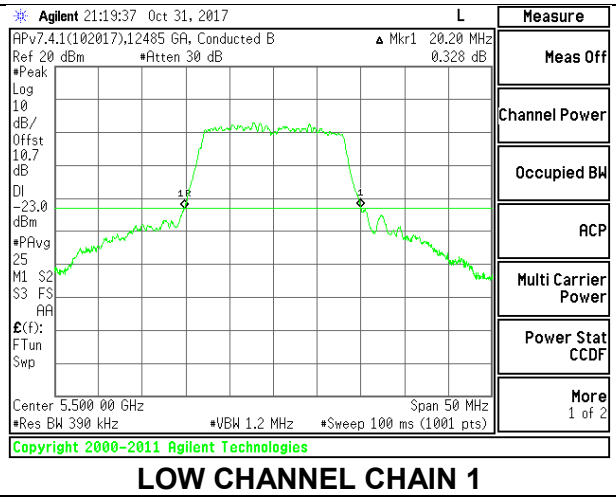
8.2.7. 802.11a 2Tx MODE IN THE 5.6 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5500	20.70	20.20
Mid	5580	19.80	20.25
High	5700	19.85	20.15

LOW CHANNEL

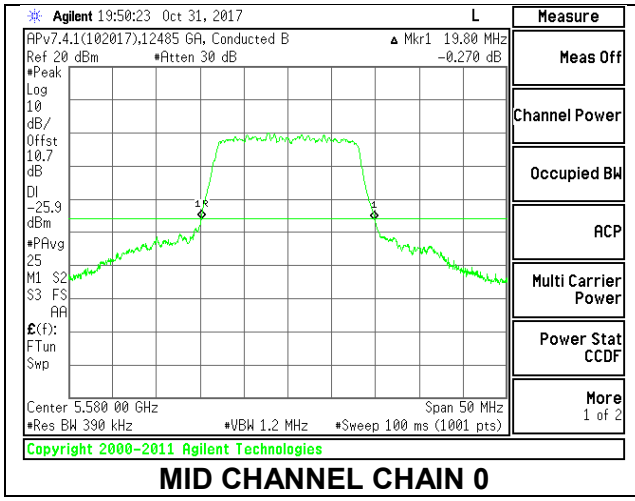


LOW CHANNEL CHAIN 0

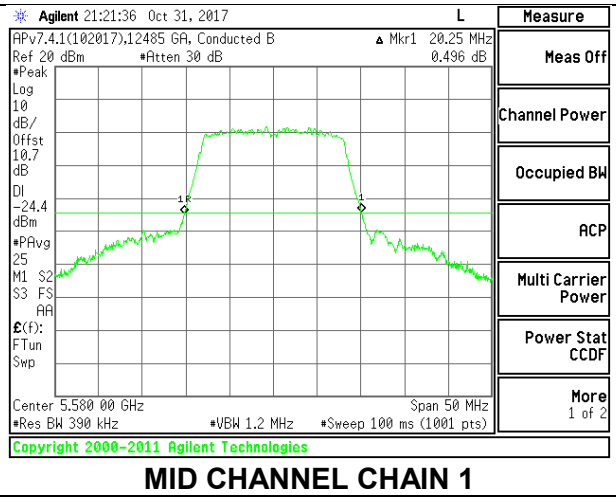


LOW CHANNEL CHAIN 1

MID CHANNEL

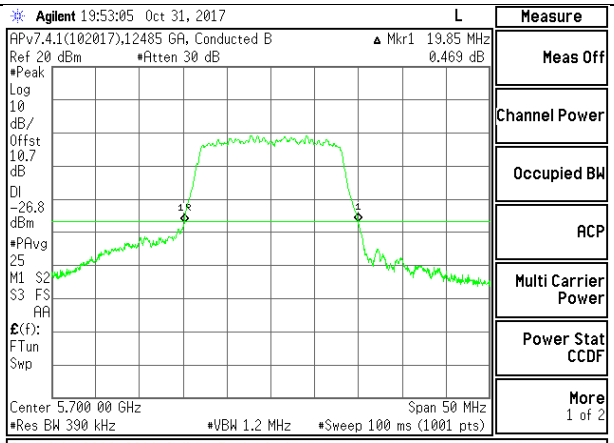


MID CHANNEL CHAIN 0

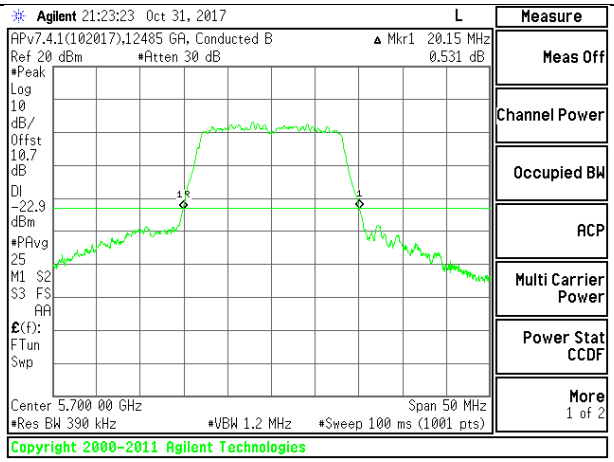


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

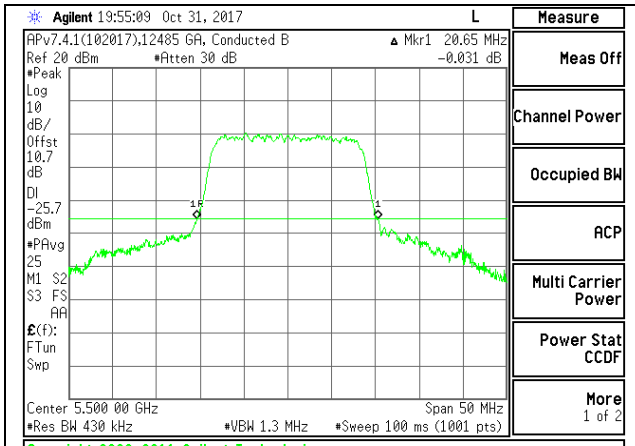


HIGH CHANNEL CHAIN 1

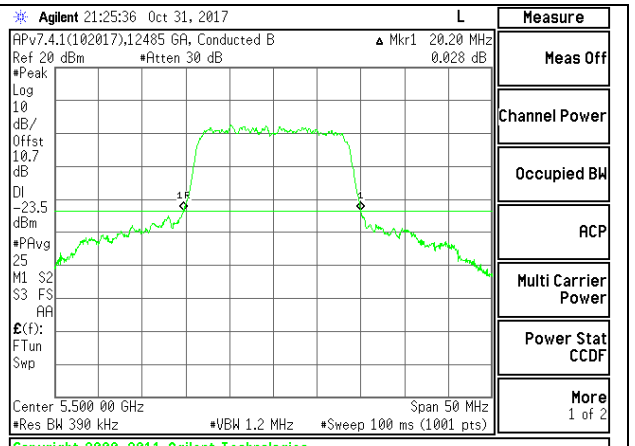
8.2.8. 802.11n HT20 2Tx MODE IN THE 5.6 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5500	20.65	20.20
Mid	5580	20.35	20.20
High	5700	20.45	20.20

LOW CHANNEL

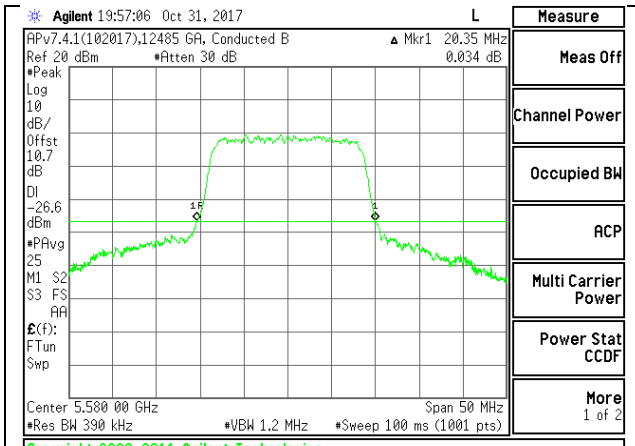


LOW CHANNEL CHAIN 0

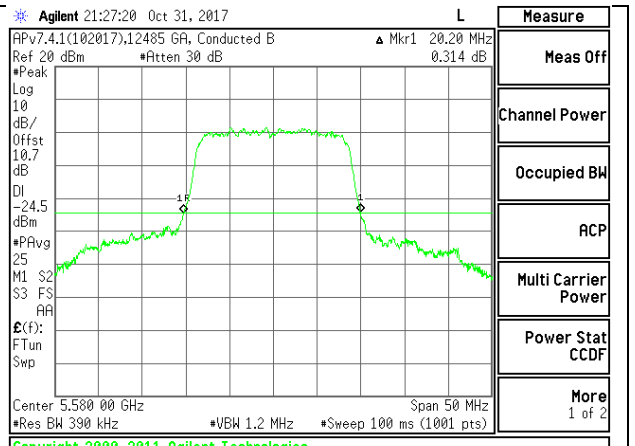


LOW CHANNEL CHAIN 1

MID CHANNEL

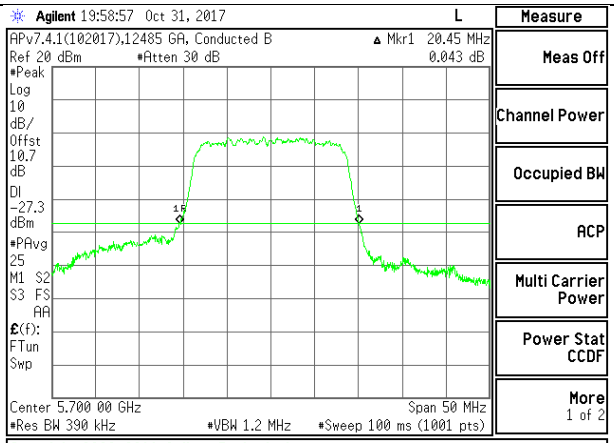


MID CHANNEL CHAIN 0

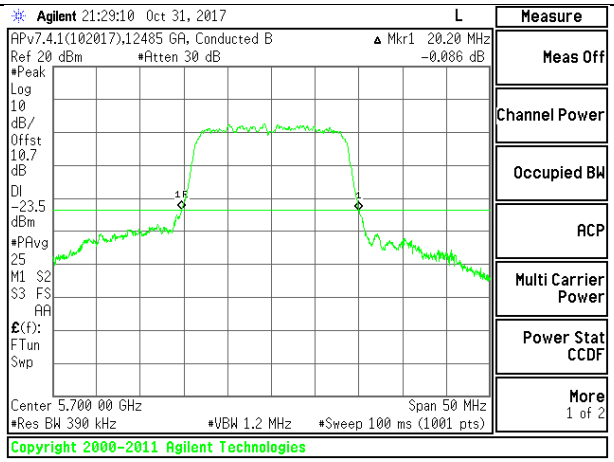


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

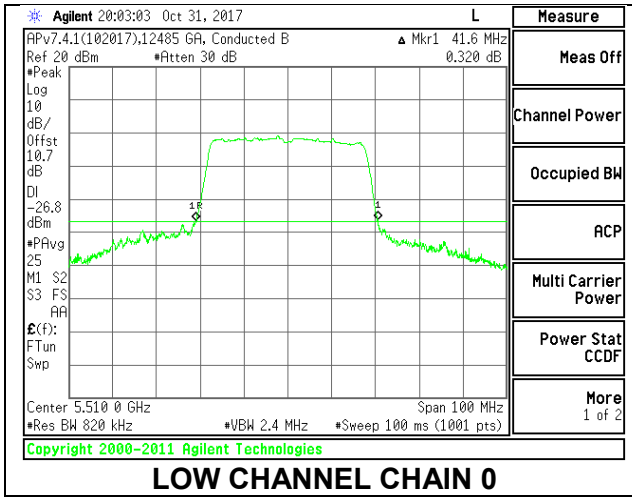


HIGH CHANNEL CHAIN 1

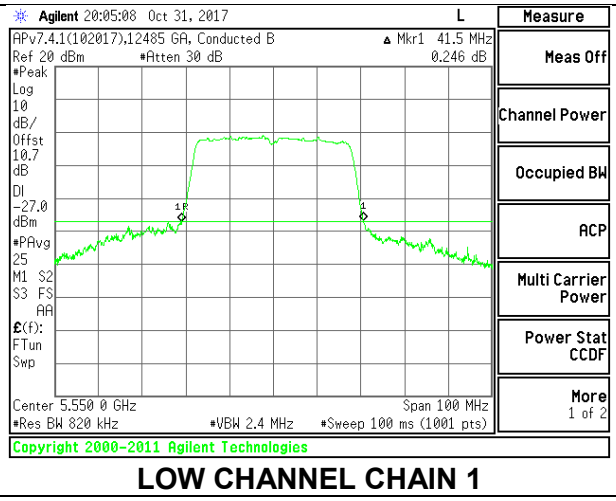
8.2.9. 802.11n HT40 2Tx MODE IN THE 5.6 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5510	41.60	41.50
Mid	5550	41.30	41.30
High	5670	44.60	41.30

LOW CHANNEL

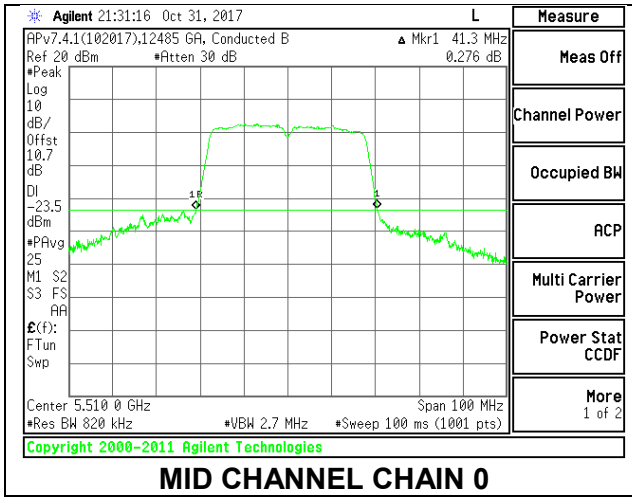


LOW CHANNEL CHAIN 0

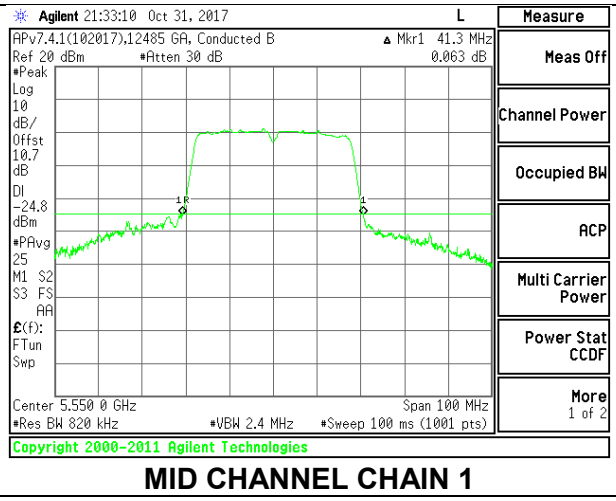


LOW CHANNEL CHAIN 1

MID CHANNEL

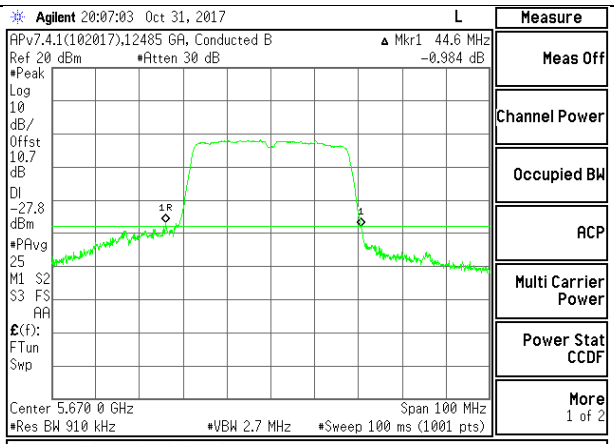


MID CHANNEL CHAIN 0

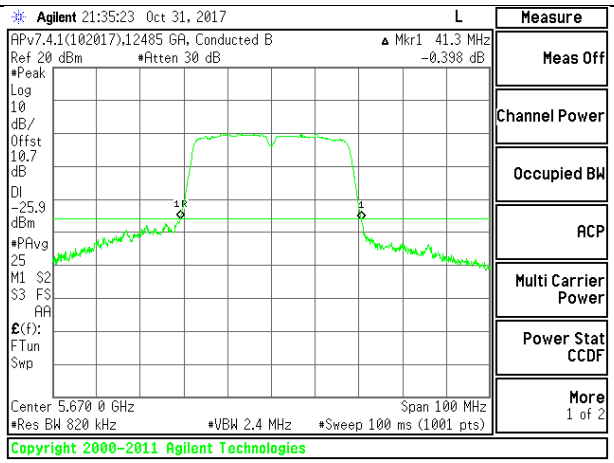


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

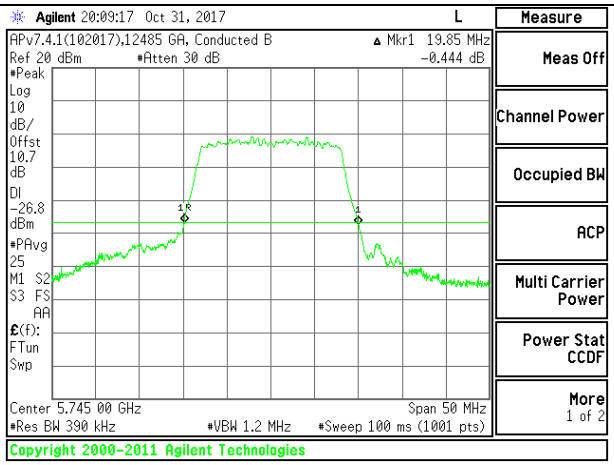


HIGH CHANNEL CHAIN 1

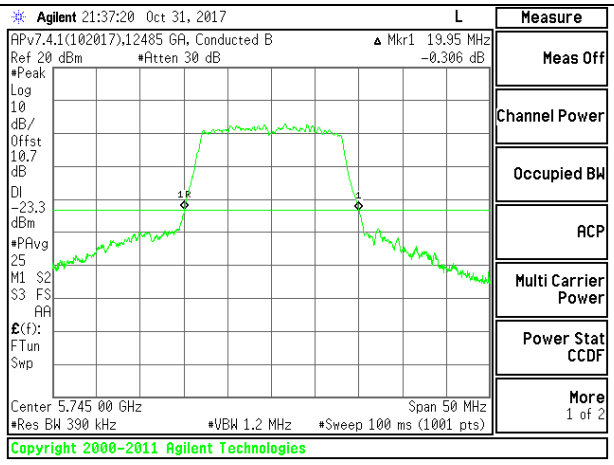
8.2.10. 802.11a 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5745	19.85	19.95
Mid	5785	20.25	20.05
High	5825	19.90	19.85

LOW CHANNEL

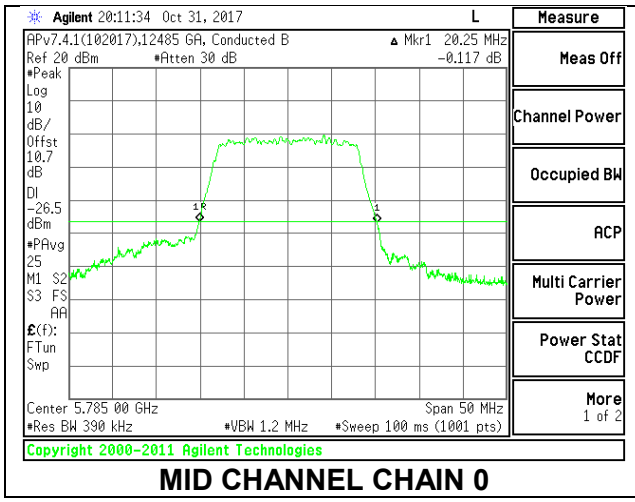


LOW CHANNEL CHAIN 0

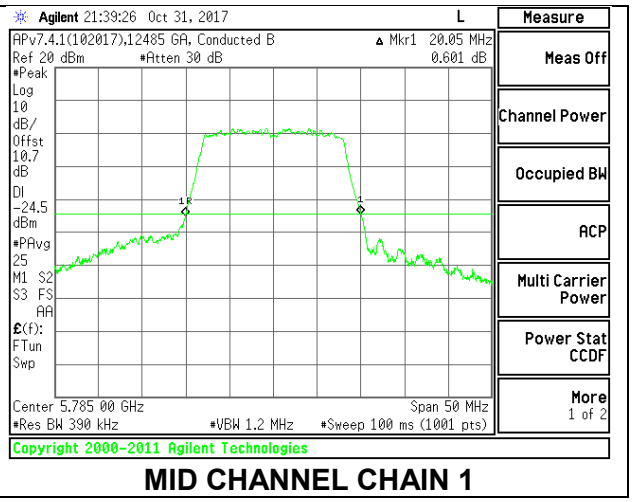


LOW CHANNEL CHAIN 1

MID CHANNEL

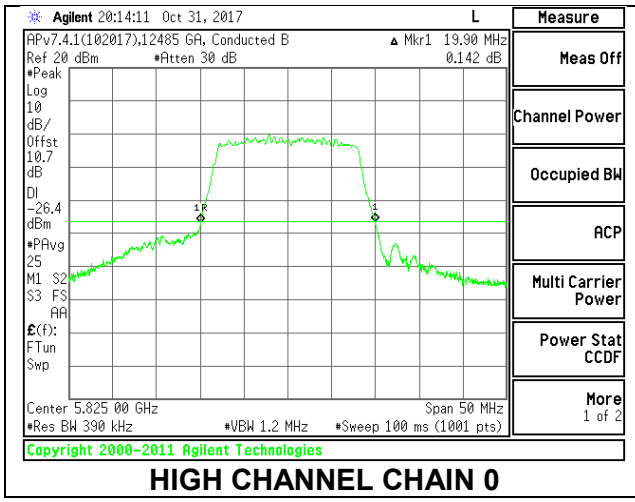


MID CHANNEL CHAIN 0

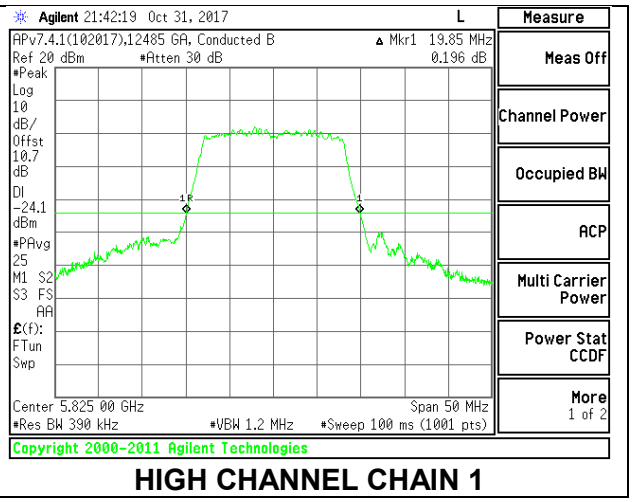


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

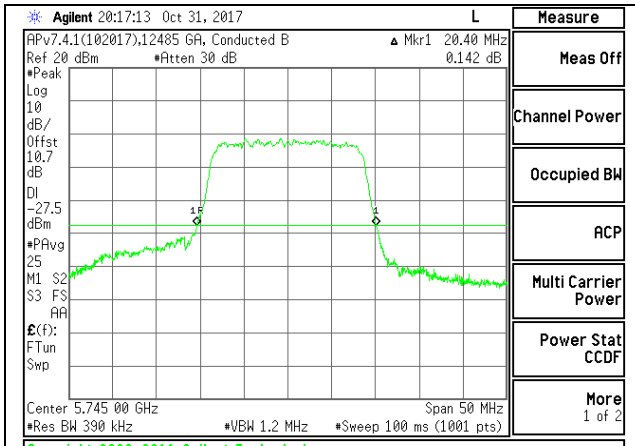


HIGH CHANNEL CHAIN 1

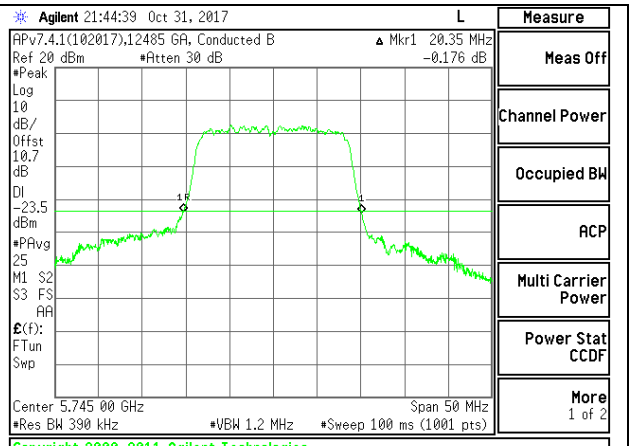
8.2.11. 802.11n HT20 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5745	20.40	20.35
Mid	5785	20.45	20.30
High	5825	20.40	20.25

LOW CHANNEL

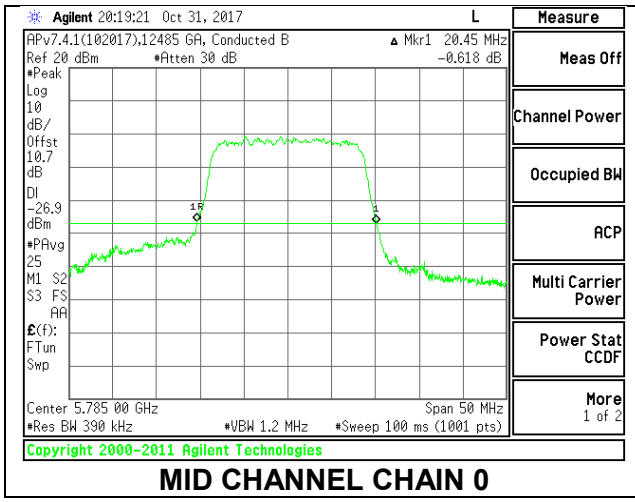


LOW CHANNEL CHAIN 0

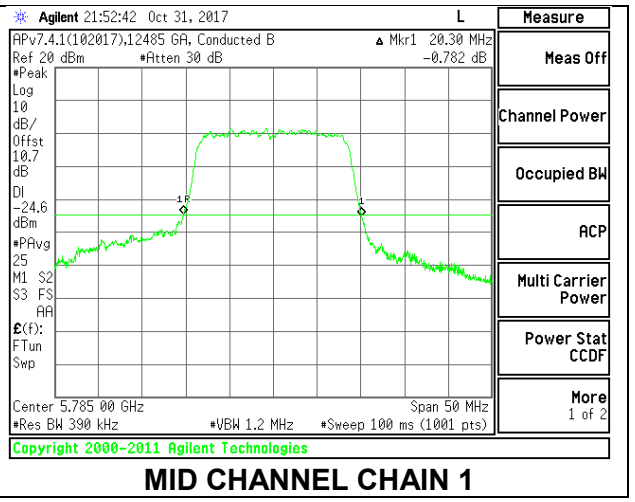


LOW CHANNEL CHAIN 1

MID CHANNEL

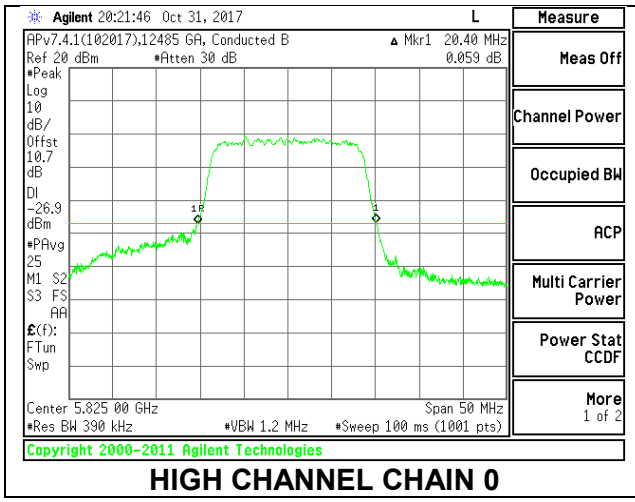


MID CHANNEL CHAIN 0

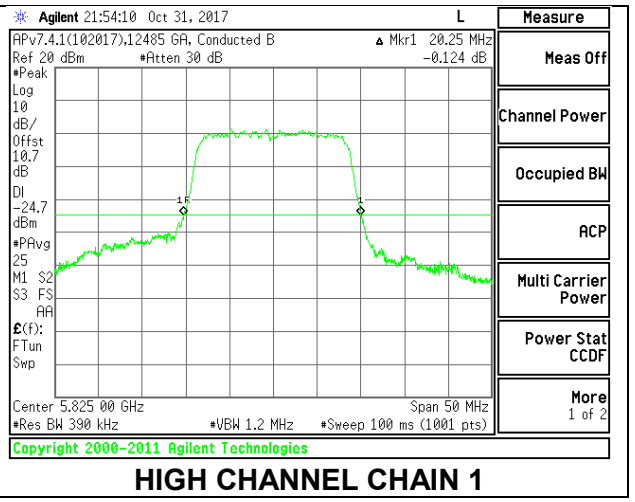


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

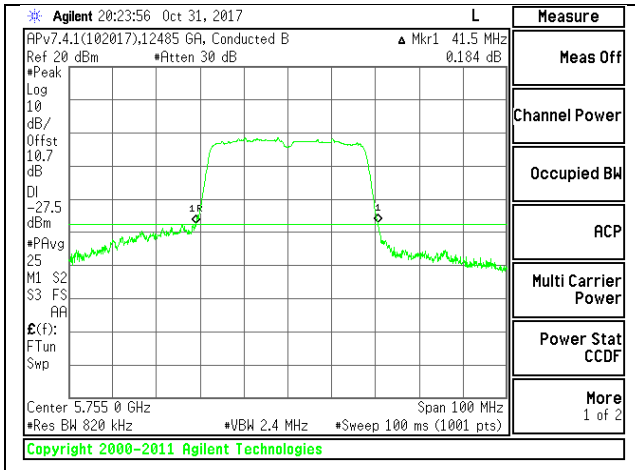


HIGH CHANNEL CHAIN 1

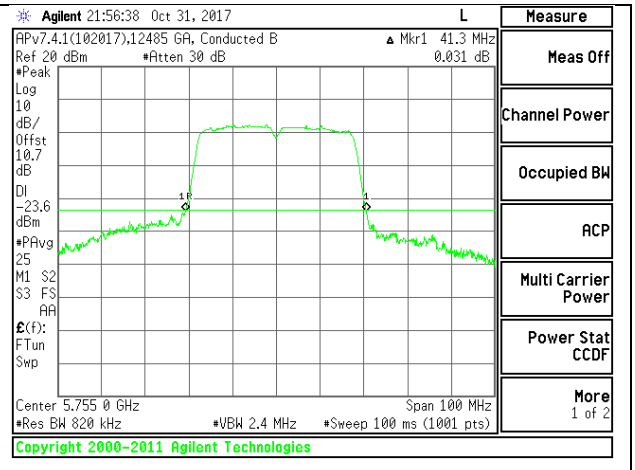
8.2.12. 802.11n HT40 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	26 dB BW CHAIN 0 (MHz)	26 dB BW CHAIN 1 (MHz)
Low	5755	41.50	41.30
High	5795	41.60	41.40

LOW CHANNEL

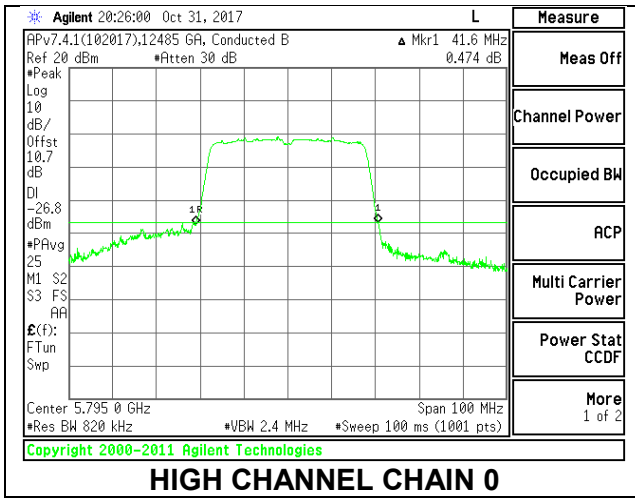


LOW CHANNEL CHAIN 0

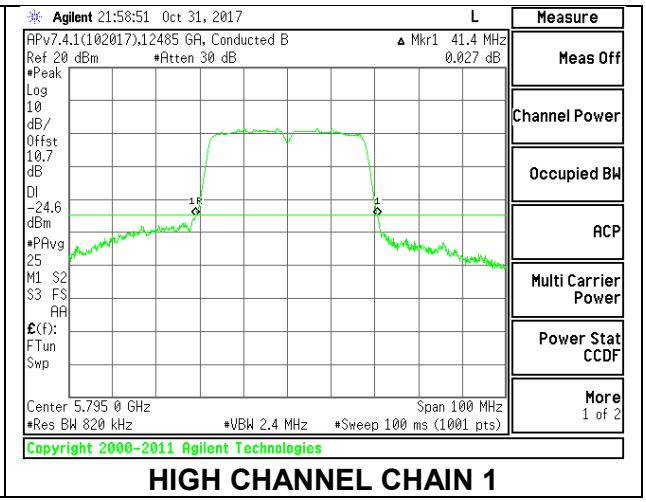


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.3. 99% BANDWIDTH

LIMITS

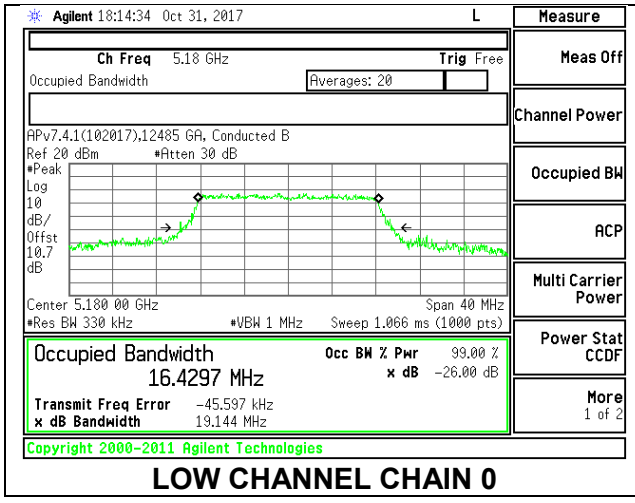
None; for reporting purposes only.

RESULTS

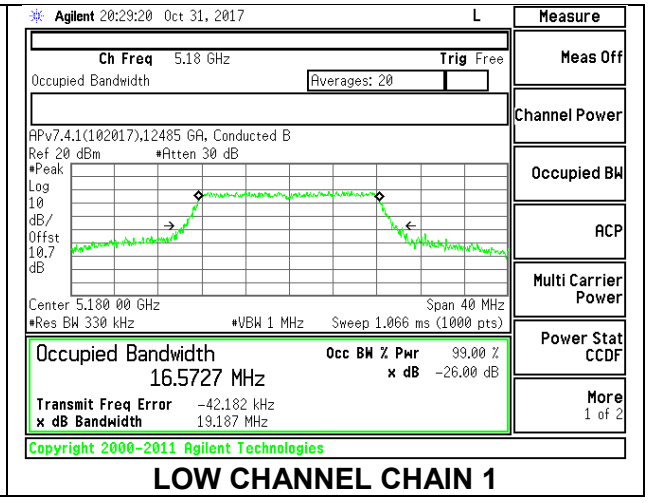
8.3.1. 802.11a 2Tx MODE IN THE 5.2 GHz BAND

Channel	Frequency	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	16.43	16.57
Mid	5200	16.44	16.47
High	5240	16.47	16.54

LOW CHANNEL

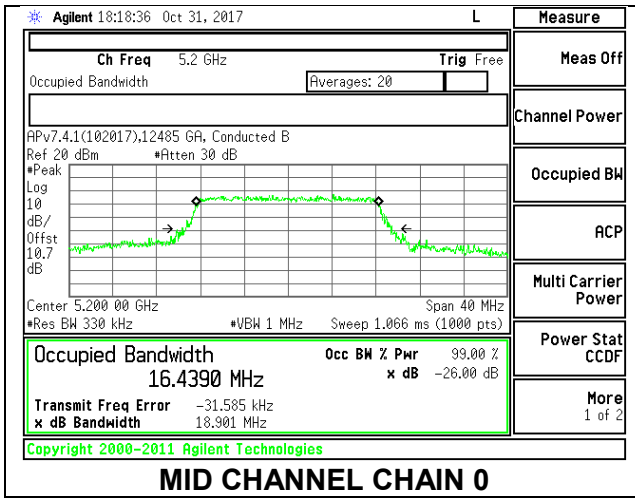


LOW CHANNEL CHAIN 0

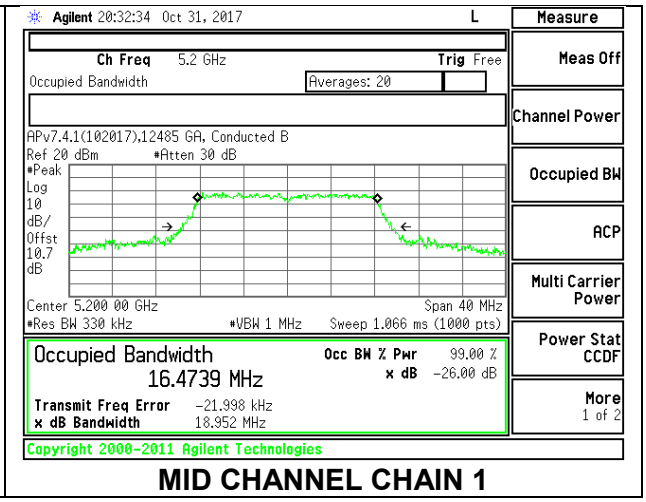


LOW CHANNEL CHAIN 1

MID CHANNEL

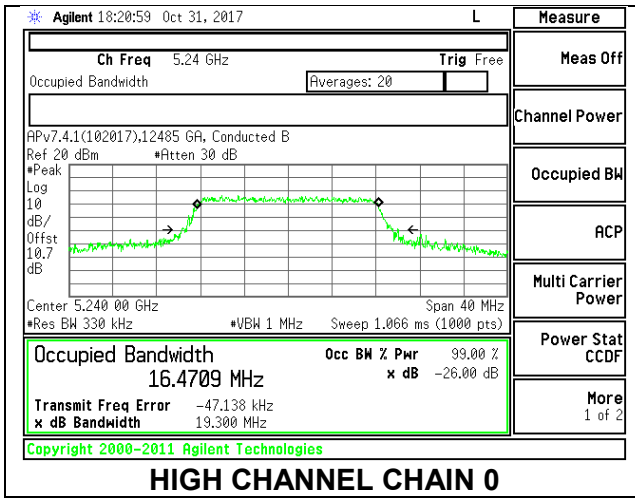


MID CHANNEL CHAIN 0

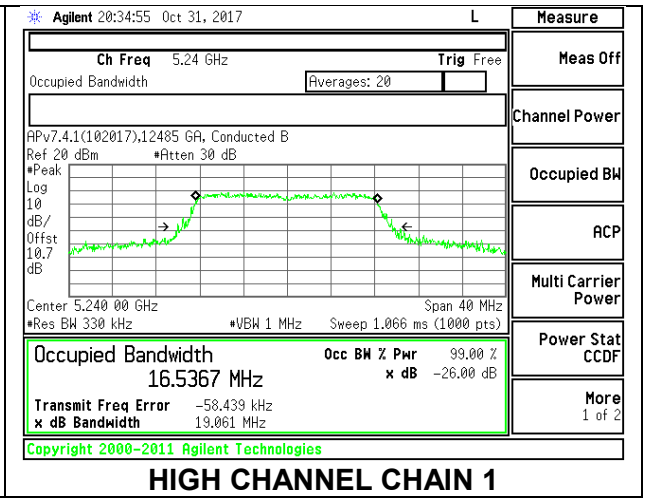


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

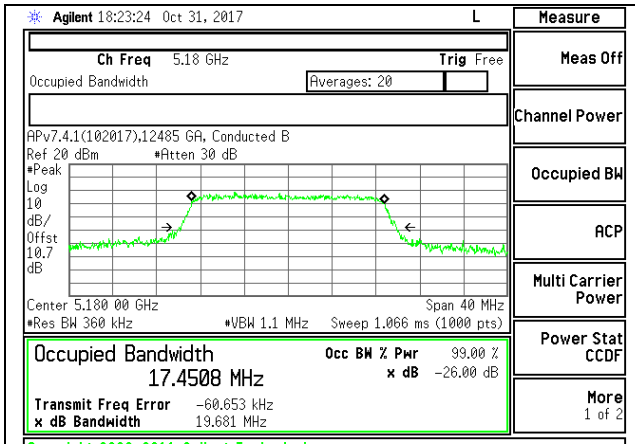


HIGH CHANNEL CHAIN 1

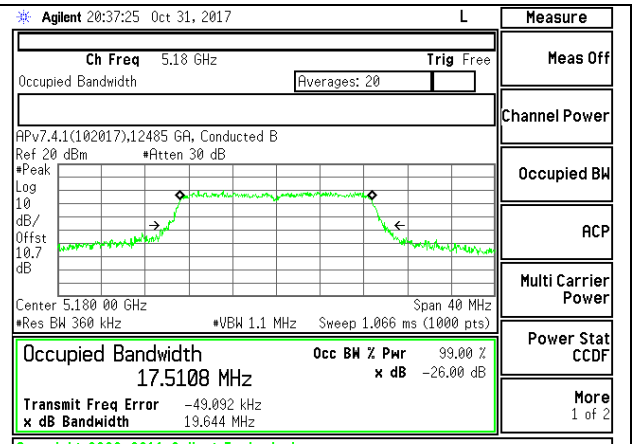
8.3.2. 802.11n HT20 2Tx MODE IN THE 5.2 GHz BAND

Channel	Frequency	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	17.45	17.51
Mid	5200	17.46	17.54
High	5240	17.52	17.50

LOW CHANNEL

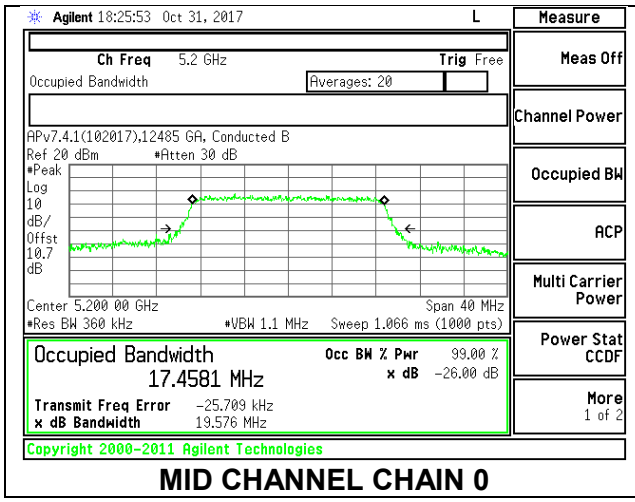


LOW CHANNEL CHAIN 0

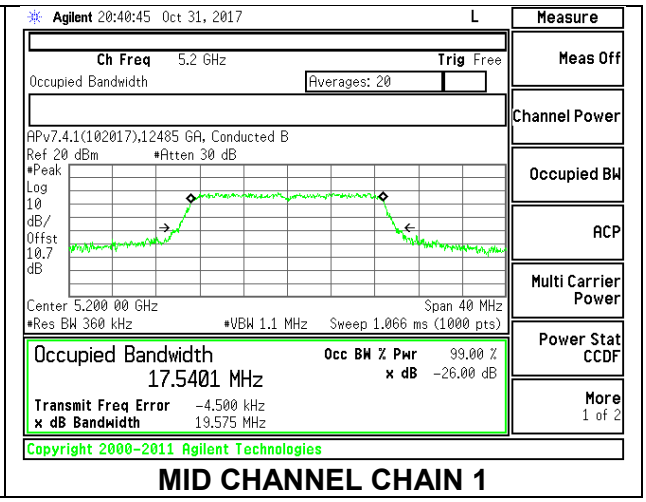


LOW CHANNEL CHAIN 1

MID CHANNEL

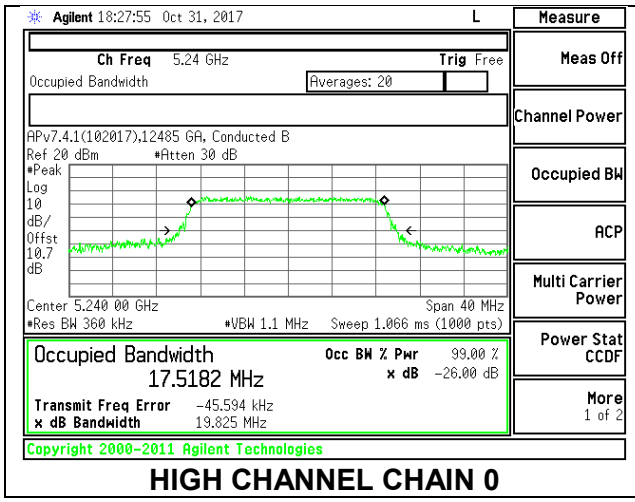


MID CHANNEL CHAIN 0

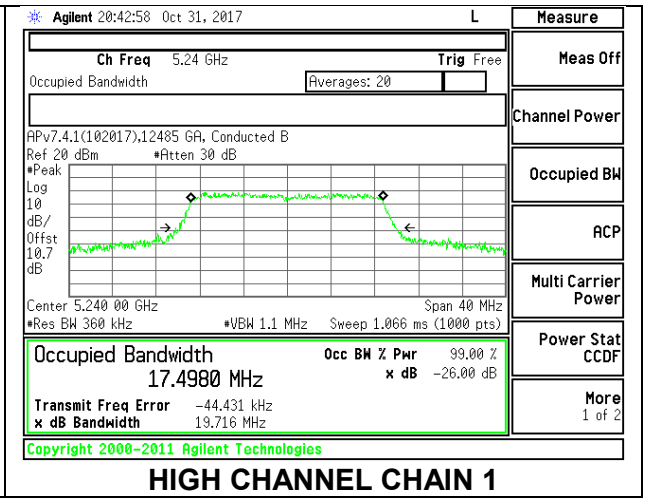


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

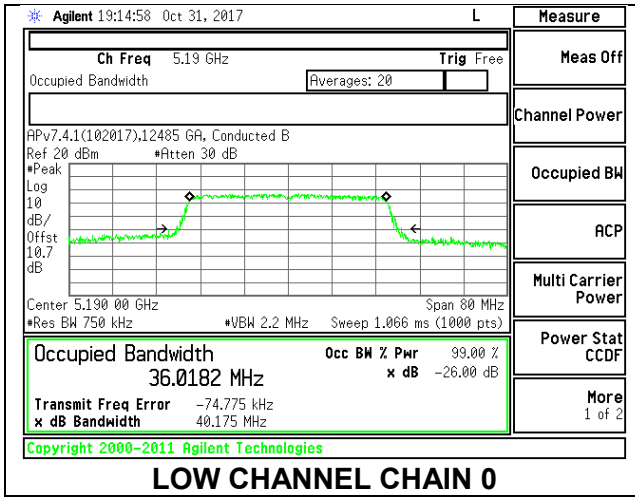


HIGH CHANNEL CHAIN 1

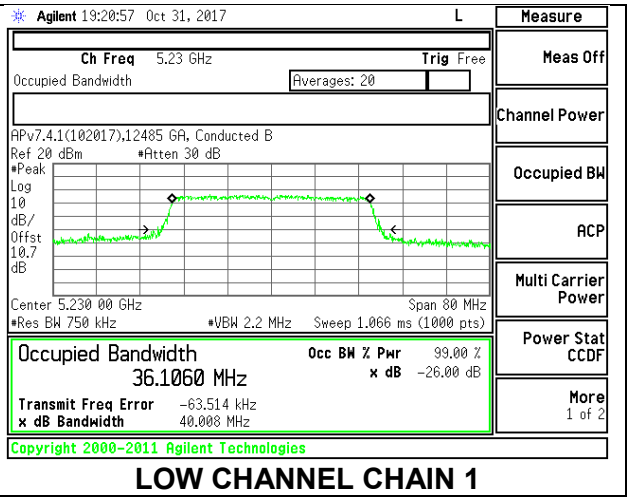
8.3.3. 802.11n HT40 2Tx MODE IN THE 5.2 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5190	36.02	36.11
High	5230	36.03	36.03

LOW CHANNEL

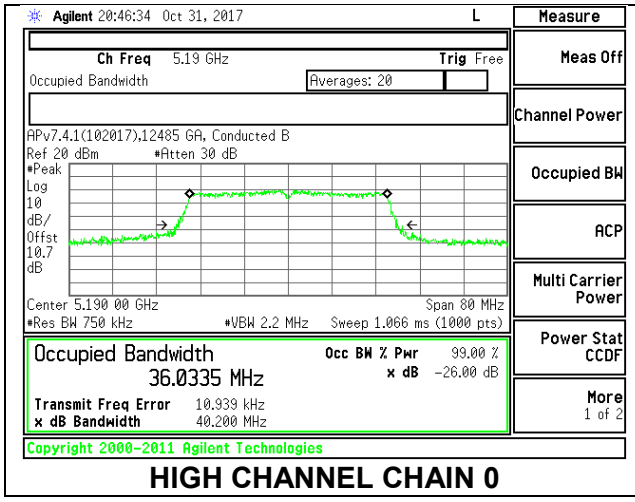


LOW CHANNEL CHAIN 0

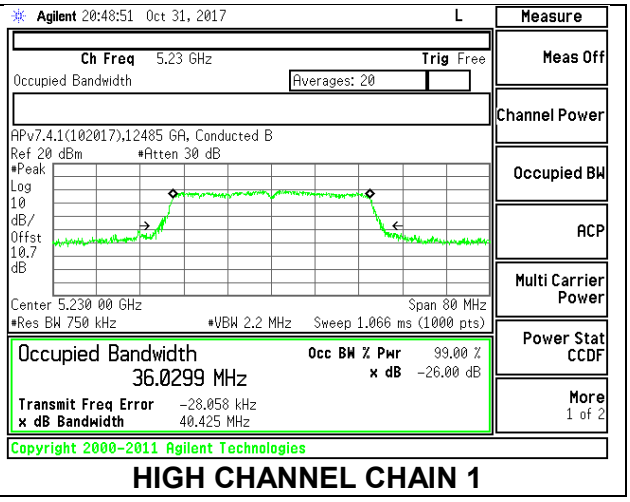


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

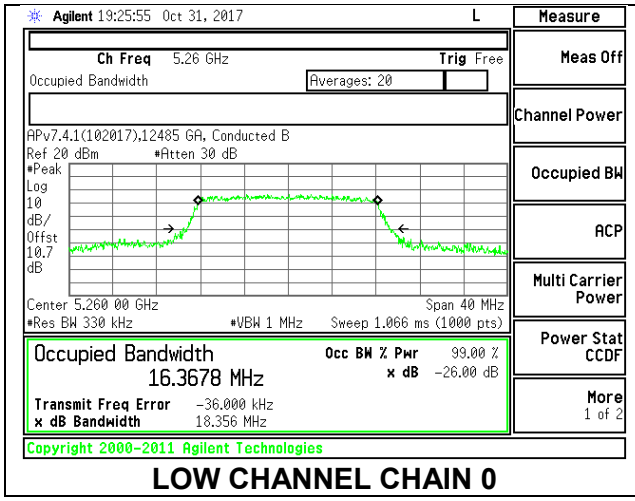


HIGH CHANNEL CHAIN 1

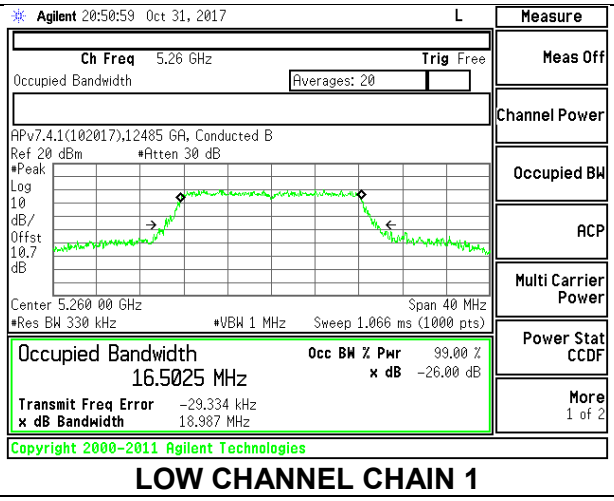
8.3.4. 802.11a MODE 2Tx IN THE 5.3 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5260	16.37	16.50
Mid	5300	16.36	16.47
High	5320	16.40	16.47

LOW CHANNEL

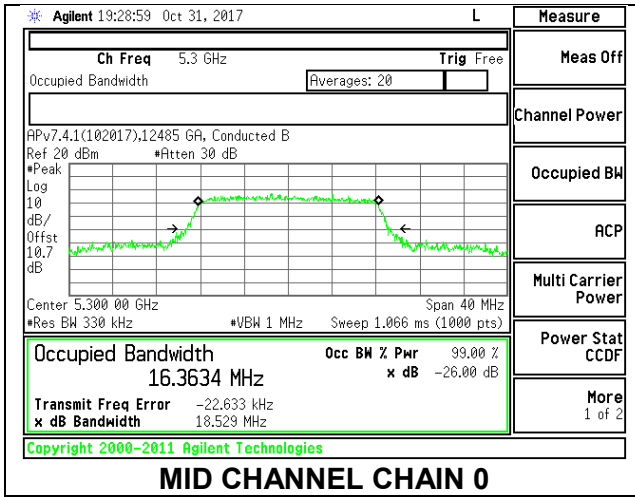


LOW CHANNEL CHAIN 0

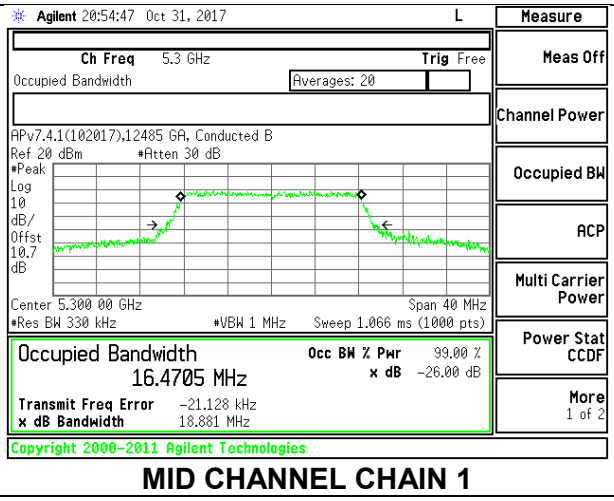


LOW CHANNEL CHAIN 1

MID CHANNEL

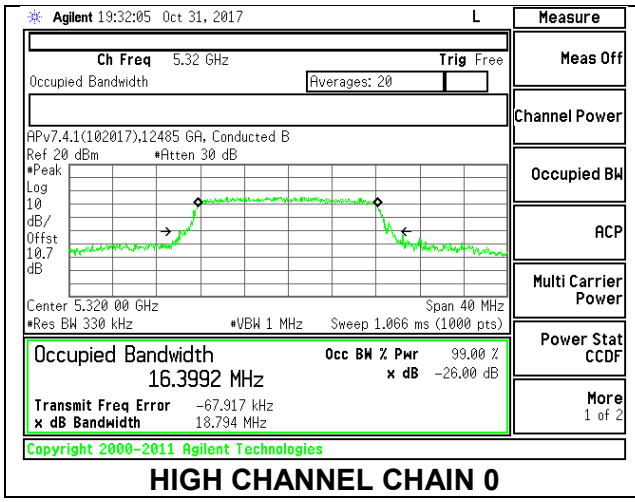


MID CHANNEL CHAIN 0

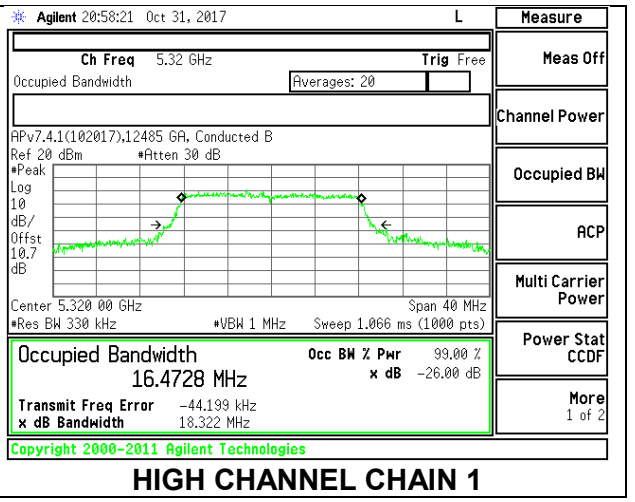


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

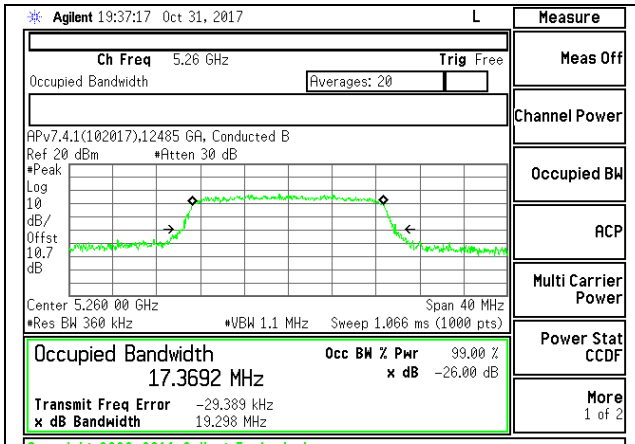


HIGH CHANNEL CHAIN 1

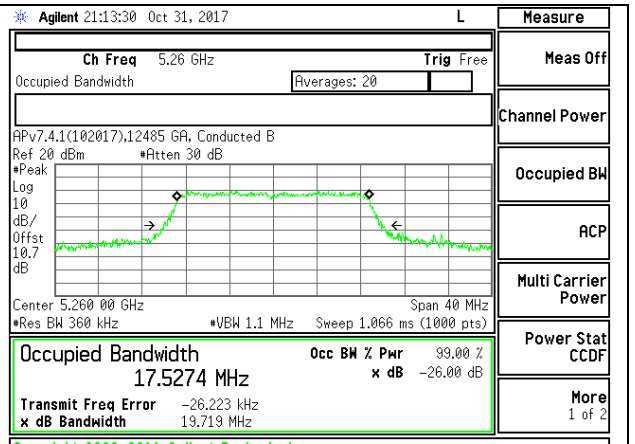
8.3.5. 802.11n HT20 2Tx MODE IN THE 5.3 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5260	17.37	17.53
Mid	5300	17.36	17.49
High	5320	17.40	17.46

LOW CHANNEL

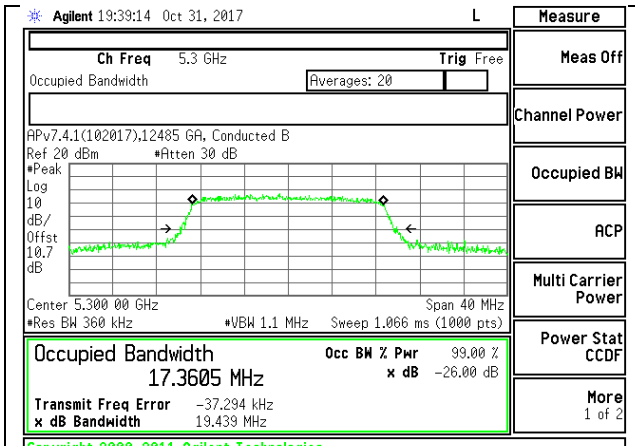


LOW CHANNEL CHAIN 0

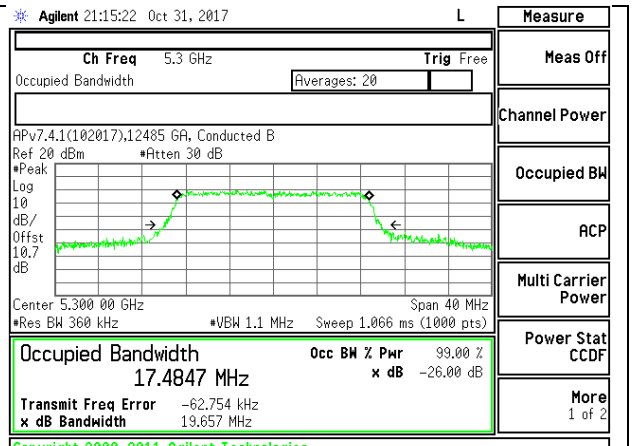


LOW CHANNEL CHAIN 1

MID CHANNEL

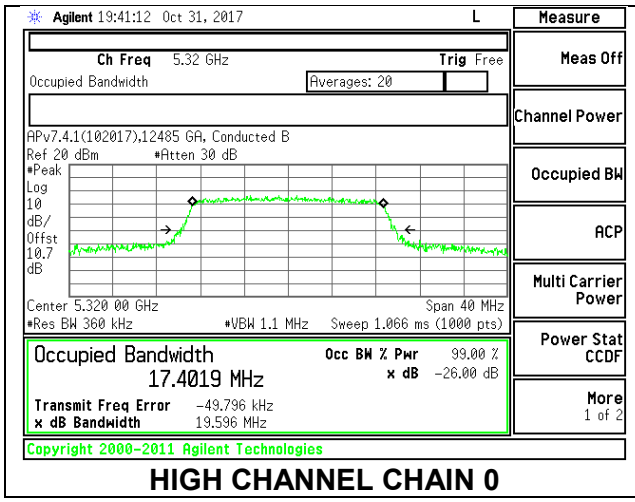


MID CHANNEL CHAIN 0

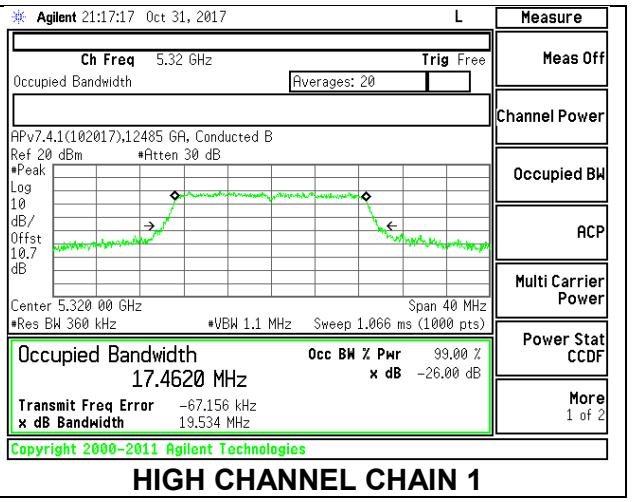


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

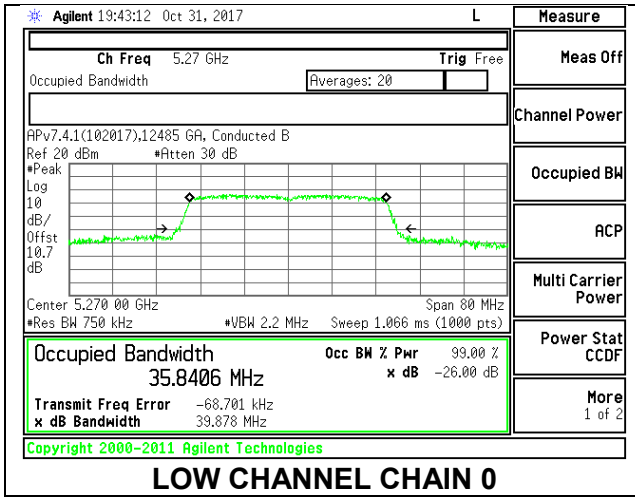


HIGH CHANNEL CHAIN 1

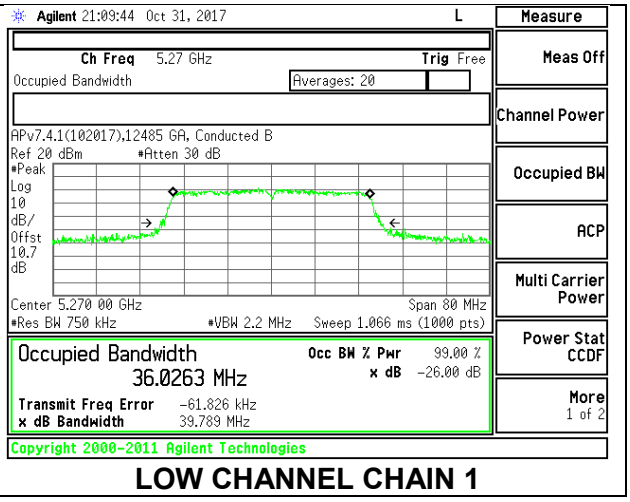
8.3.6. 802.11n HT40 2Tx MODE IN THE 5.3 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5270	35.84	36.03
High	5310	35.84	35.91

LOW CHANNEL

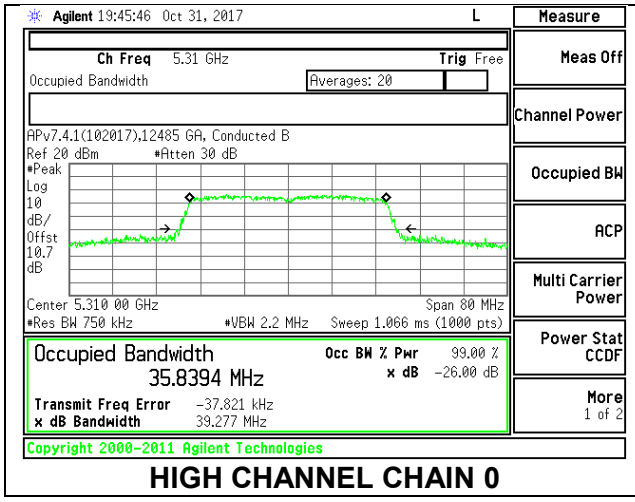


LOW CHANNEL CHAIN 0

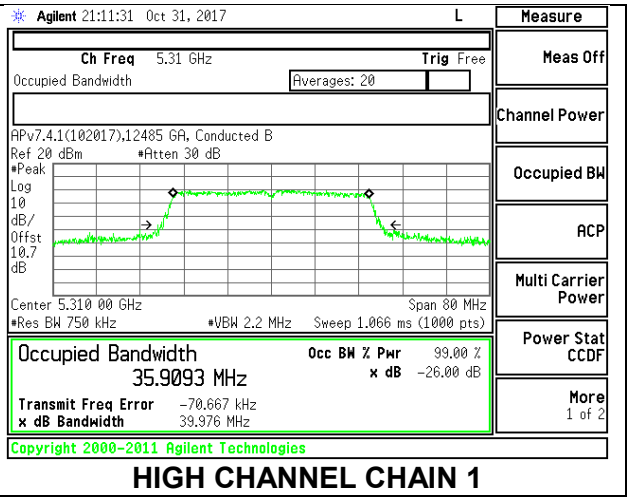


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

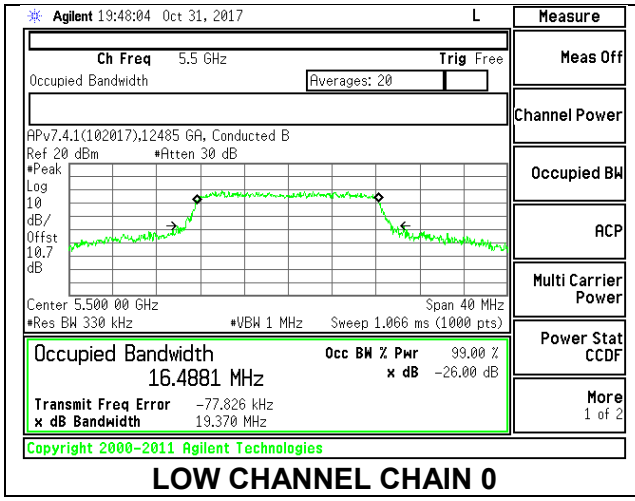


HIGH CHANNEL CHAIN 1

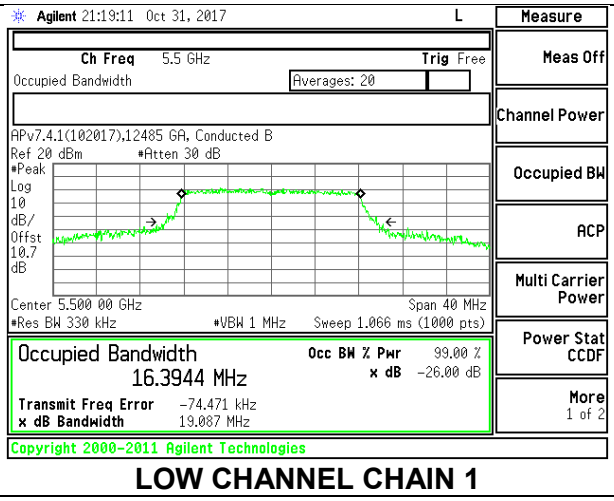
8.3.7. 802.11a 2Tx MODE IN THE 5.6 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5500	16.49	16.39
Mid	5580	16.45	16.41
High	5700	16.42	16.46

LOW CHANNEL

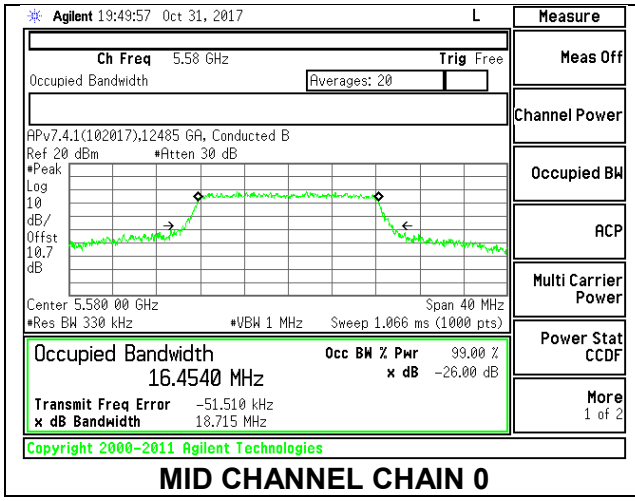


LOW CHANNEL CHAIN 0

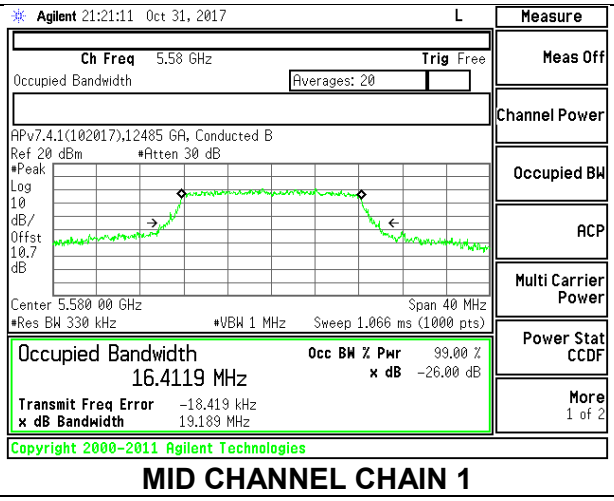


LOW CHANNEL CHAIN 1

MID CHANNEL

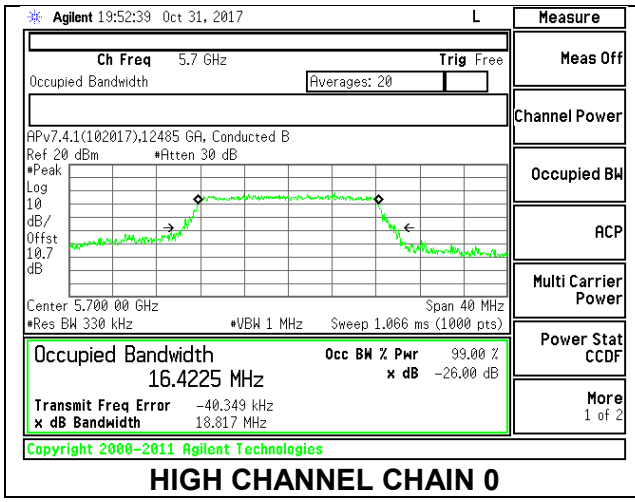


MID CHANNEL CHAIN 0

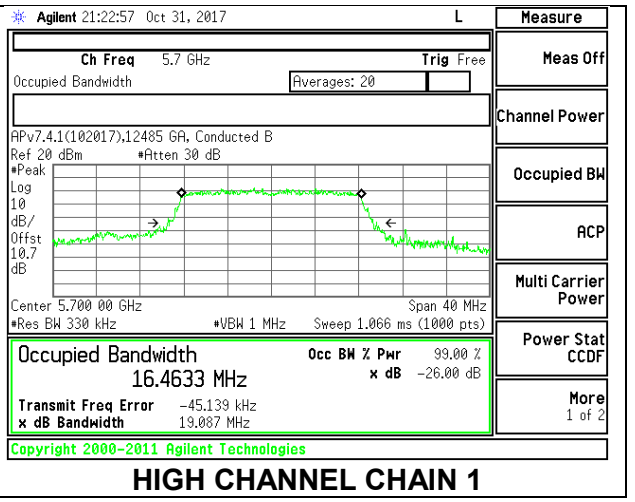


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

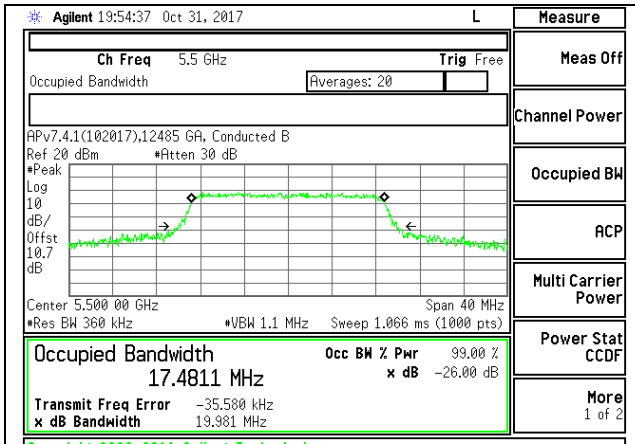


HIGH CHANNEL CHAIN 1

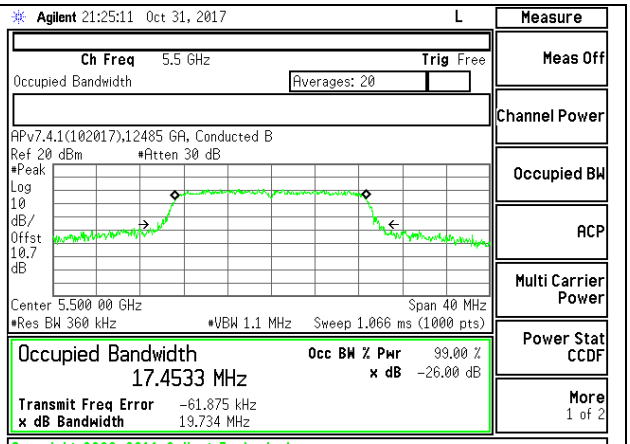
8.3.8. 802.11n HT20 2Tx MODE IN THE 5.6 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5500	17.48	17.45
Mid	5580	17.41	17.43
High	5700	17.39	17.42

LOW CHANNEL

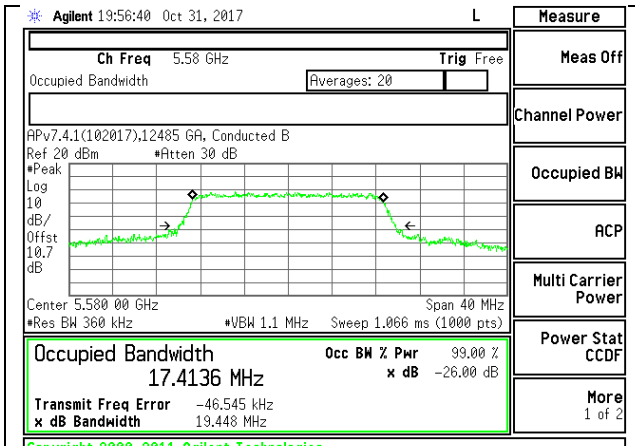


LOW CHANNEL CHAIN 0

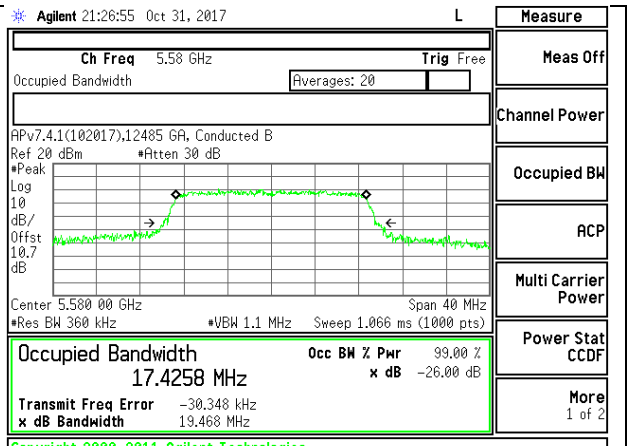


LOW CHANNEL CHAIN 1

MID CHANNEL

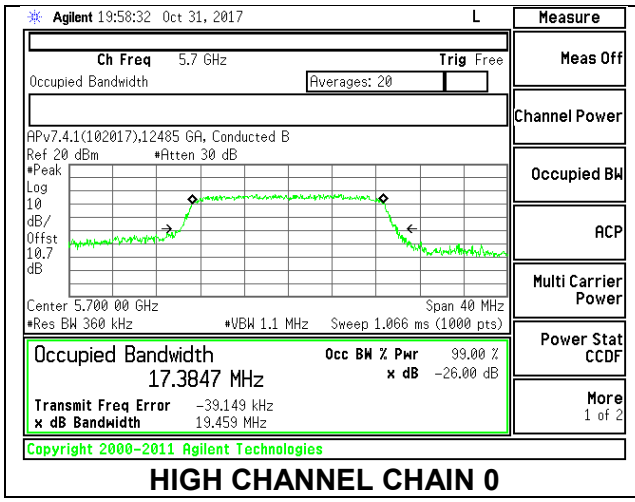


MID CHANNEL CHAIN 0

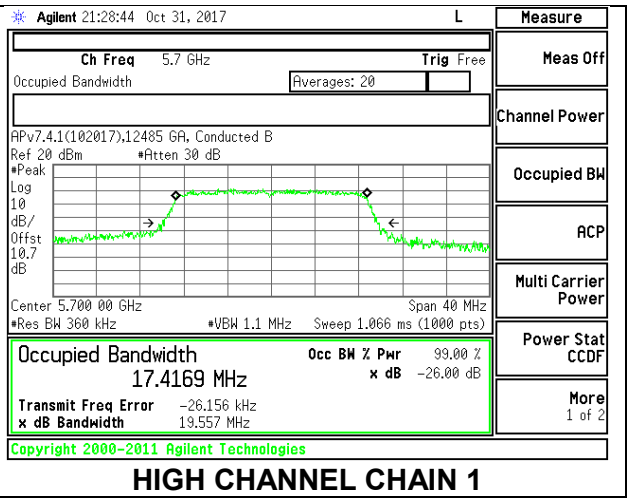


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

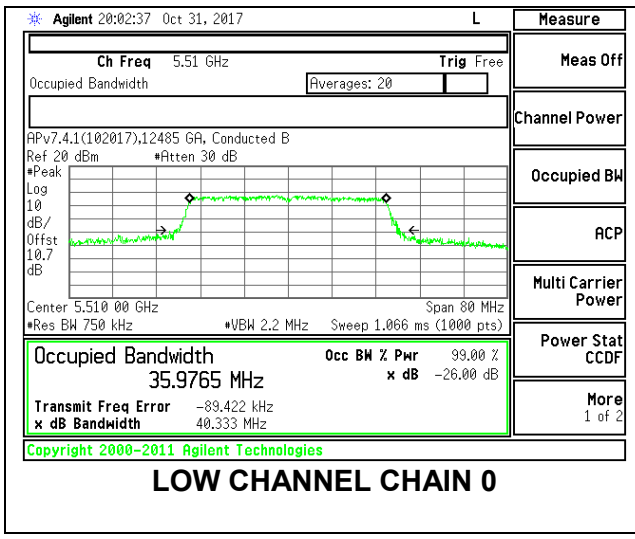


HIGH CHANNEL CHAIN 1

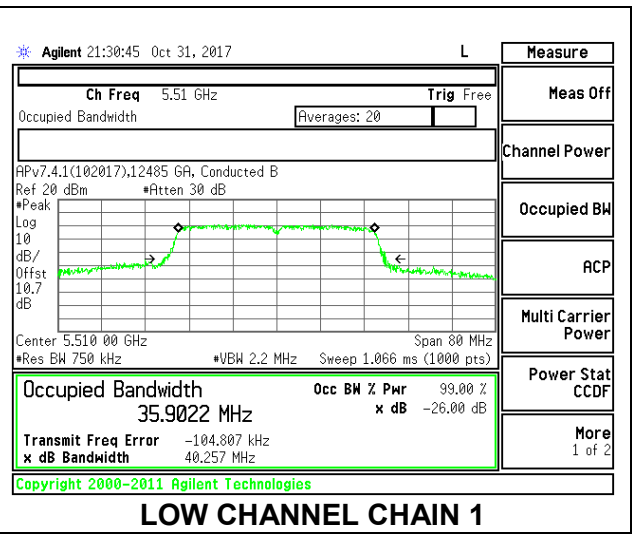
8.3.9. 802.11n HT40 2Tx MODE IN THE 5.6 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5510	35.98	35.90
Mid	5550	35.96	35.95
High	5670	35.92	35.93

LOW CHANNEL

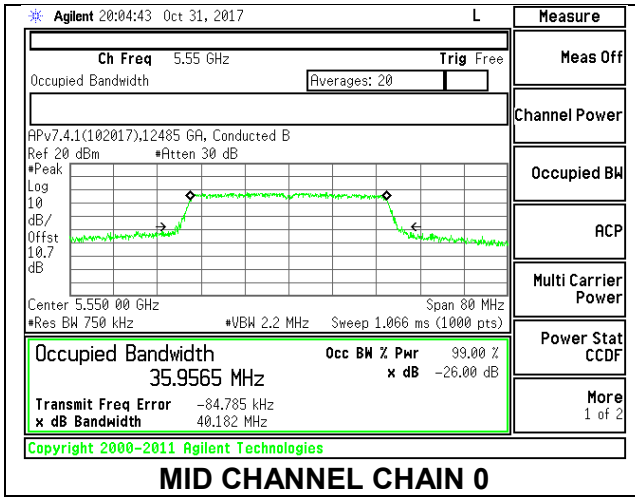


LOW CHANNEL CHAIN 0

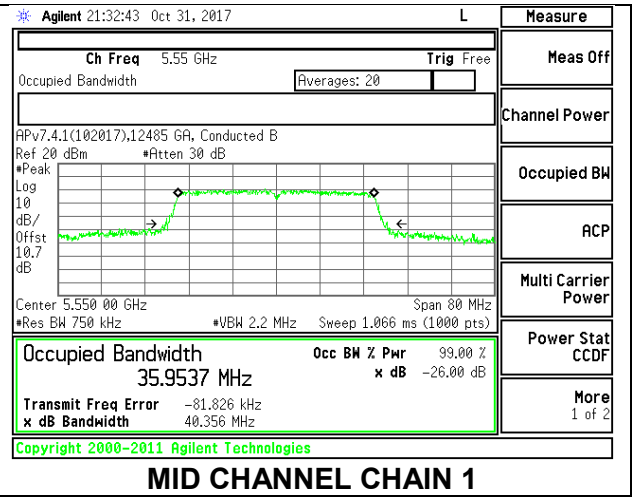


LOW CHANNEL CHAIN 1

MID CHANNEL

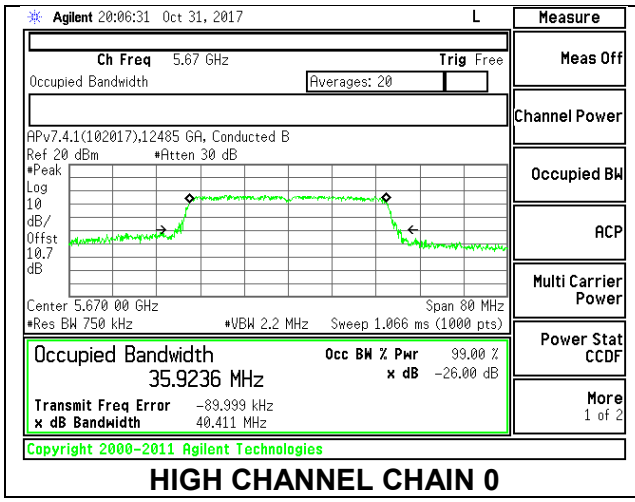


MID CHANNEL CHAIN 0

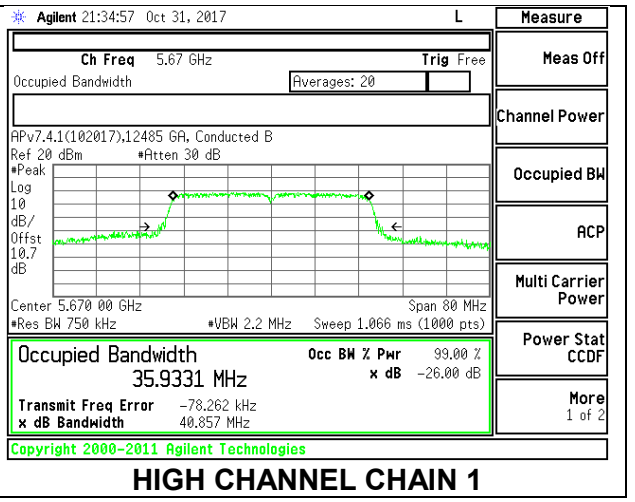


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

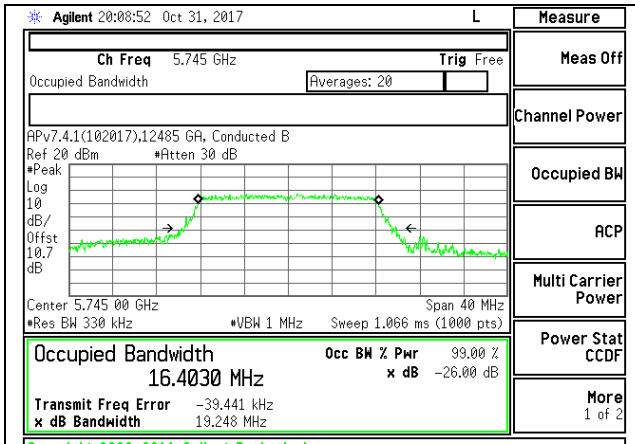


HIGH CHANNEL CHAIN 1

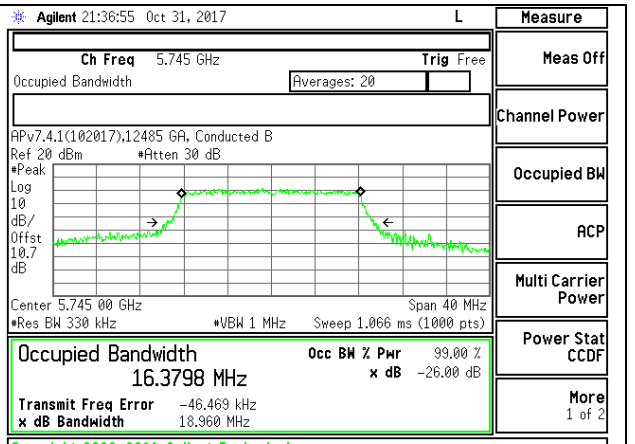
8.3.10. 802.11a MODE 2Tx IN THE 5.8 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5745	16.40	16.38
Mid	5785	16.44	16.47
High	5825	16.44	16.35

LOW CHANNEL

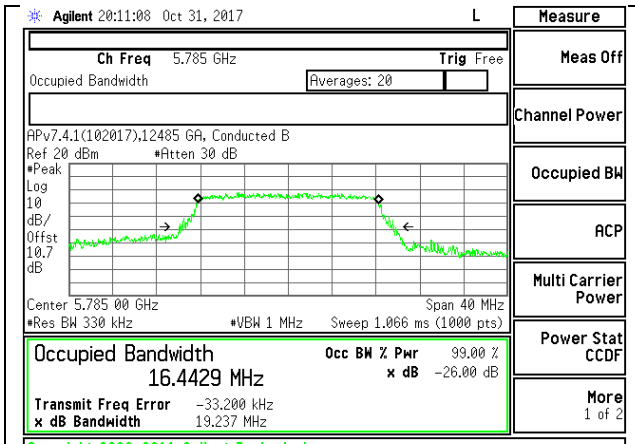


LOW CHANNEL CHAIN 0

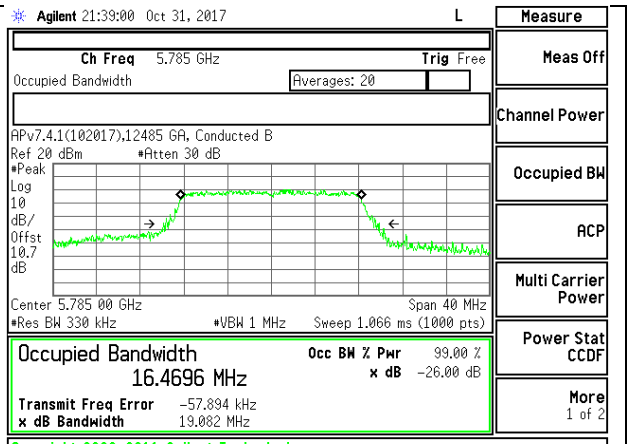


LOW CHANNEL CHAIN 1

MID CHANNEL

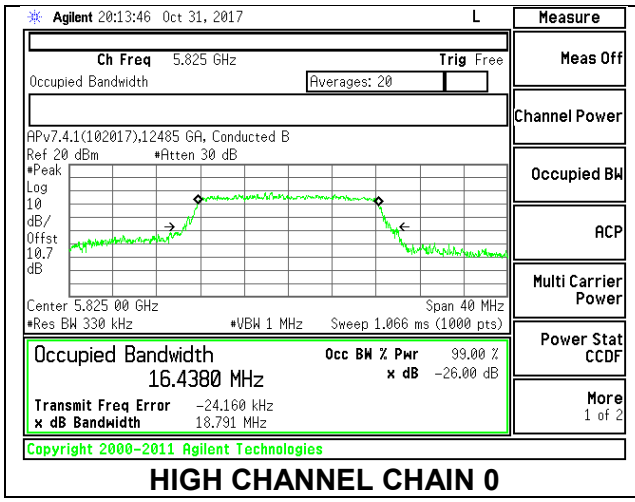


MID CHANNEL CHAIN 0

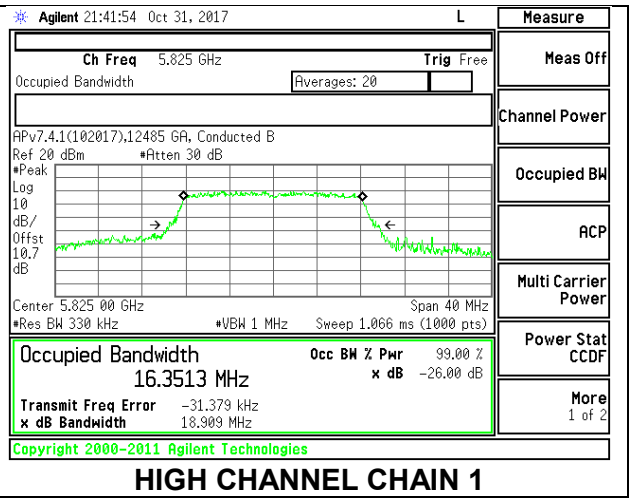


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

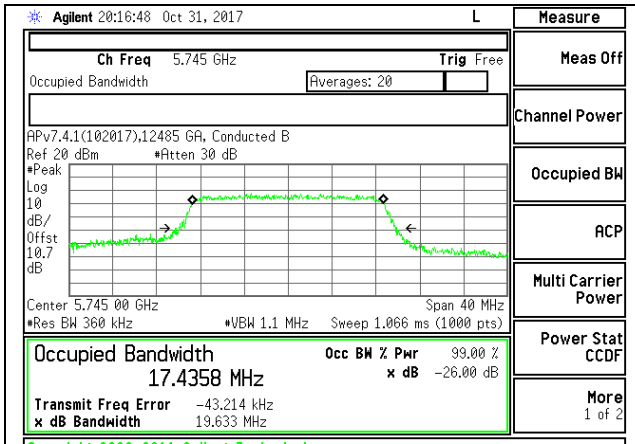


HIGH CHANNEL CHAIN 1

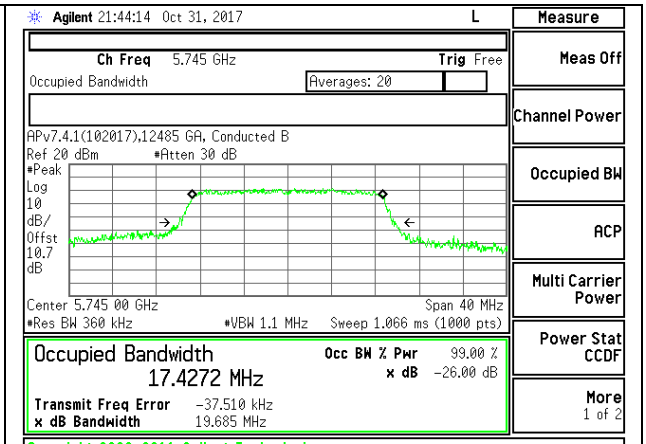
8.3.11. 802.11n HT20 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5745	17.44	17.43
Mid	5785	17.49	17.41
High	5825	17.41	17.45

LOW CHANNEL

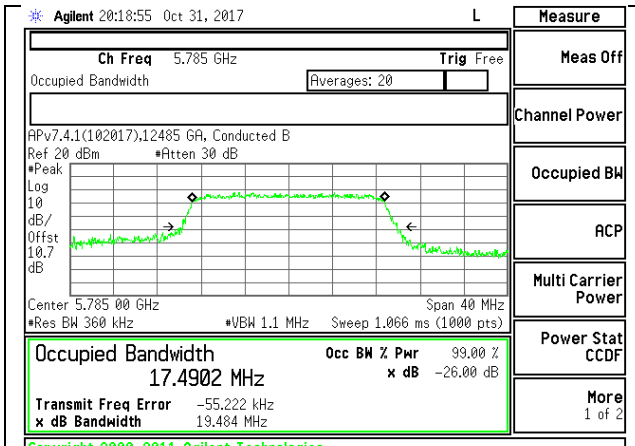


LOW CHANNEL CHAIN 0

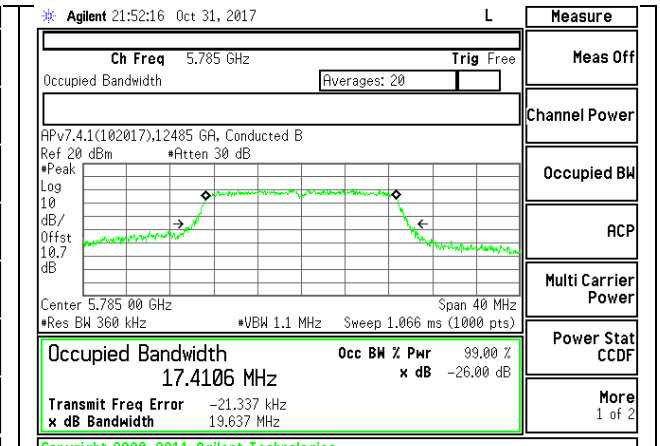


LOW CHANNEL CHAIN 1

MID CHANNEL

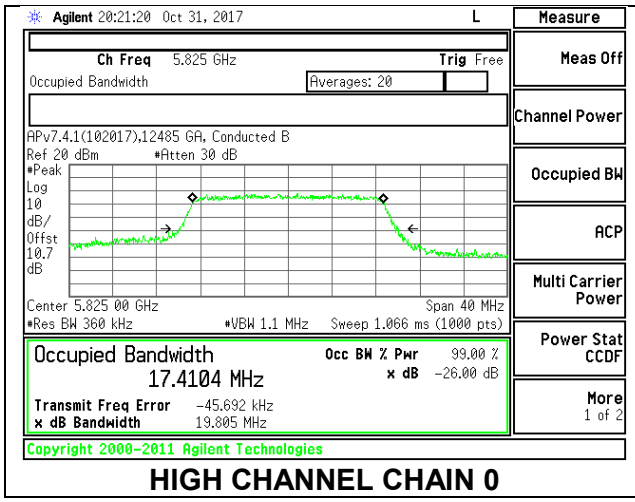


MID CHANNEL CHAIN 0

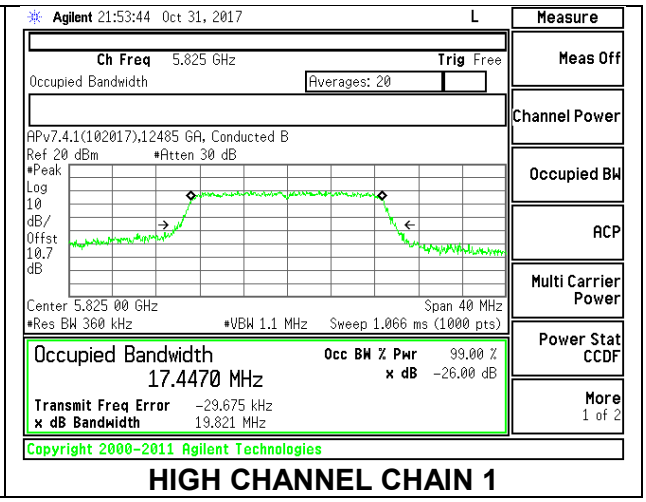


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

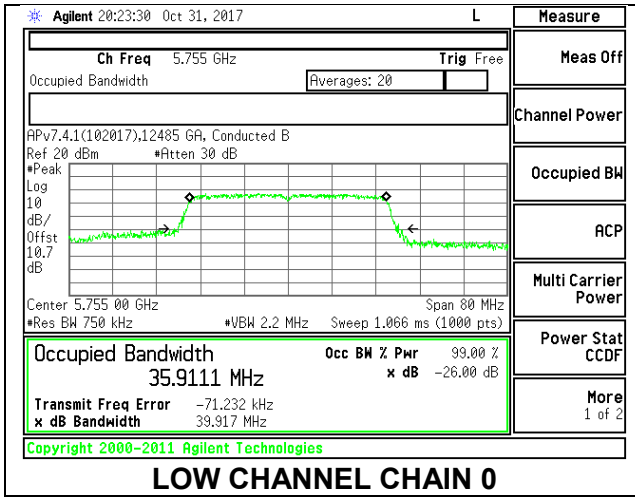


HIGH CHANNEL CHAIN 1

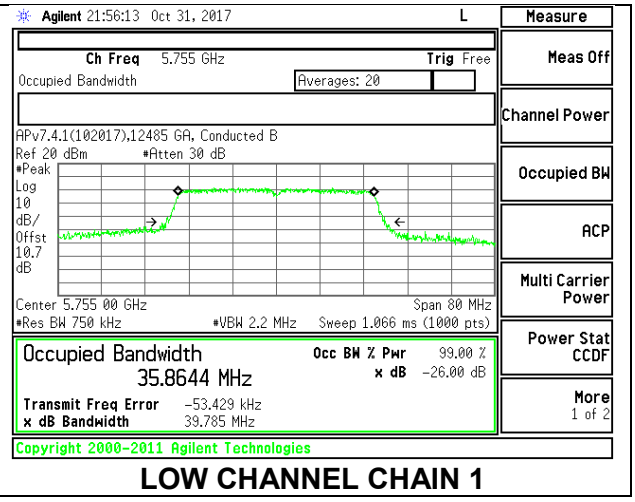
8.3.12. 802.11n HT40 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	99% BW CHAIN 0 (MHz)	99% BW CHAIN 1 (MHz)
Low	5755	35.91	35.86
High	5795	35.95	35.90

LOW CHANNEL

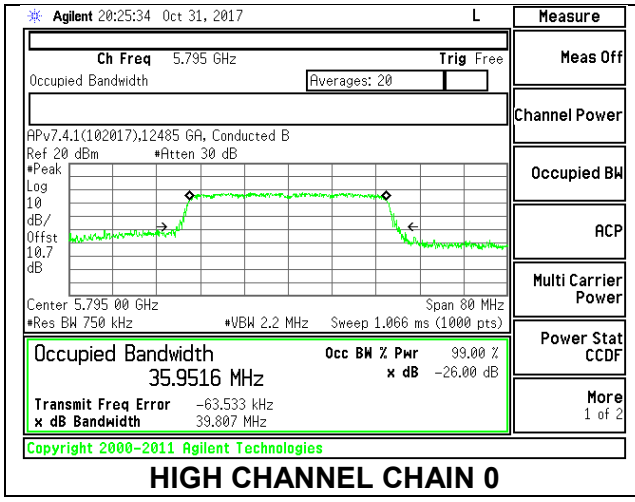


LOW CHANNEL CHAIN 0

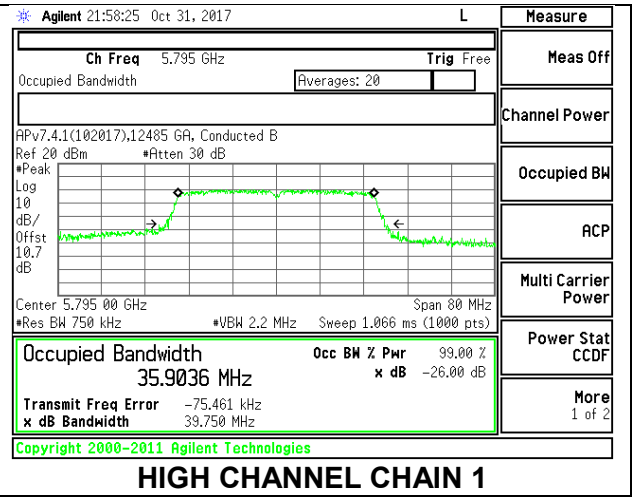


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.4. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

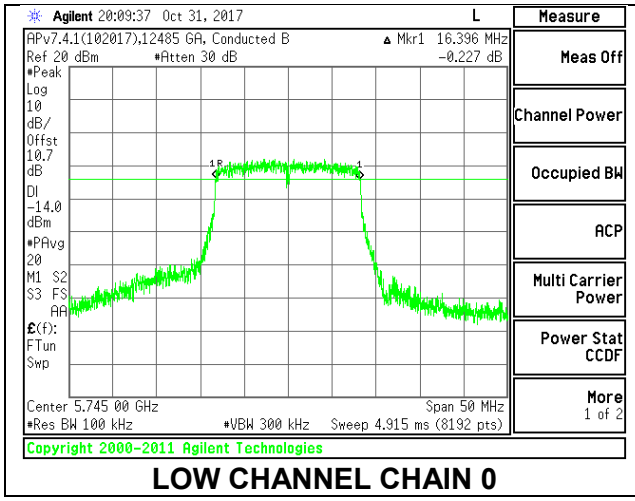
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

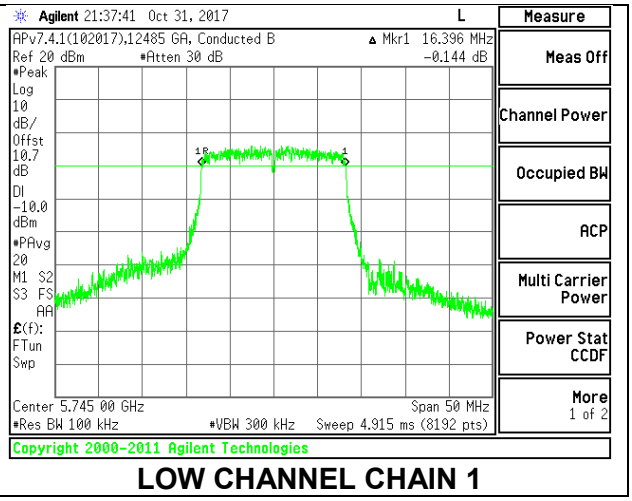
8.4.1. 802.11a 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	6 dB BW CHAIN 0 (MHz)	6 dB BW CHAIN 1 (MHz)	Minimum Limit (MHz)
Low	5745	16.40	16.40	0.5
Mid	5785	16.48	16.39	0.5
High	5825	16.43	16.37	0.5

LOW CHANNEL

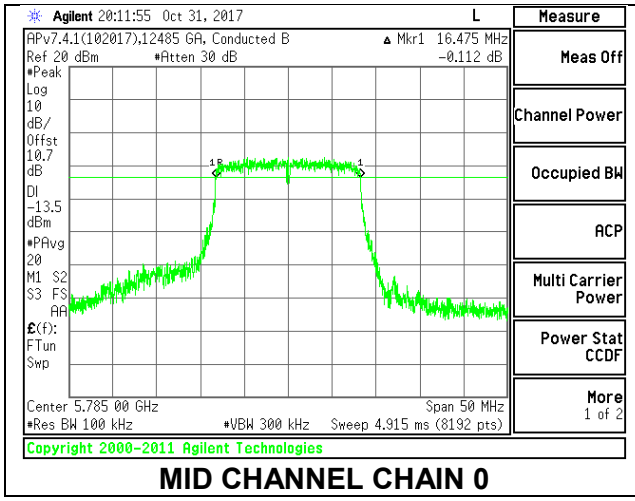


LOW CHANNEL CHAIN 0

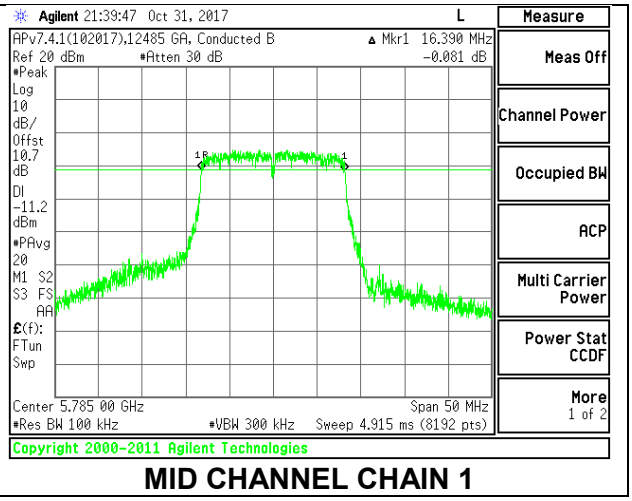


LOW CHANNEL CHAIN 1

MID CHANNEL

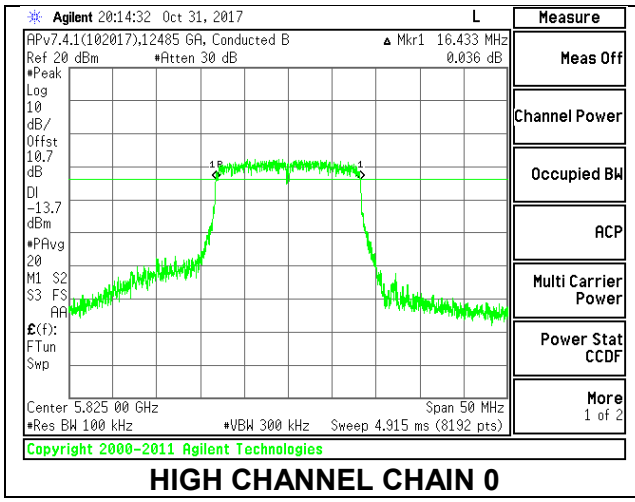


MID CHANNEL CHAIN 0

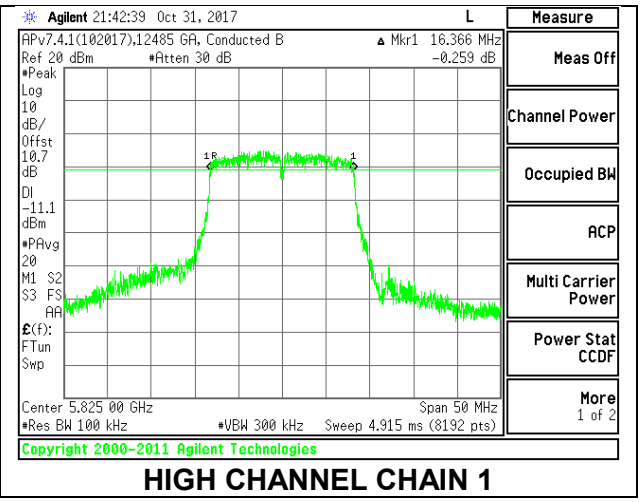


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

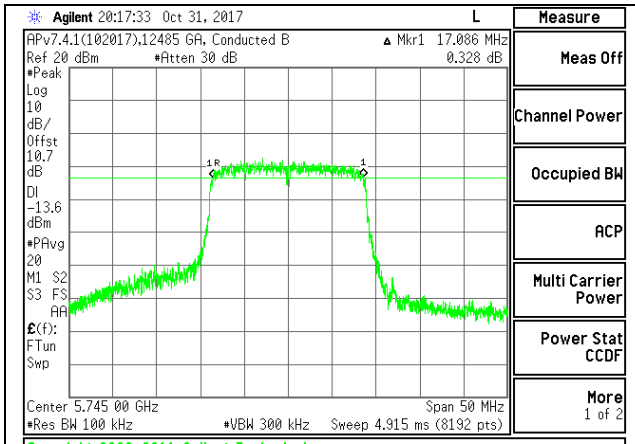


HIGH CHANNEL CHAIN 1

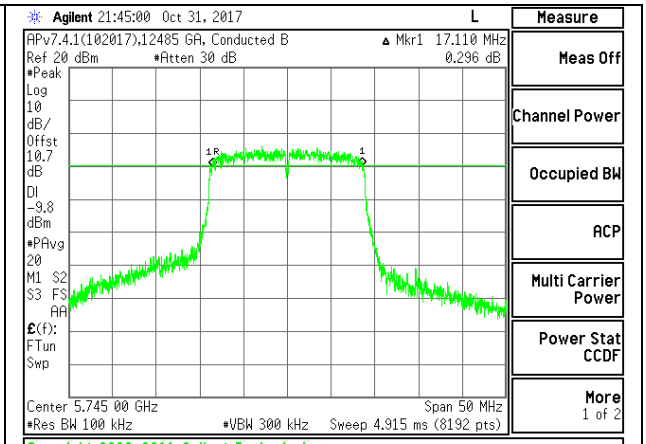
8.4.2. 802.11n HT20 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	6 dB BW CHAIN 0 (MHz)	6 dB BW CHAIN 1 (MHz)	Minimum Limit (MHz)
Low	5745	17.09	17.11	0.5
Mid	5785	17.52	17.60	0.5
High	5825	17.56	17.53	0.5

LOW CHANNEL

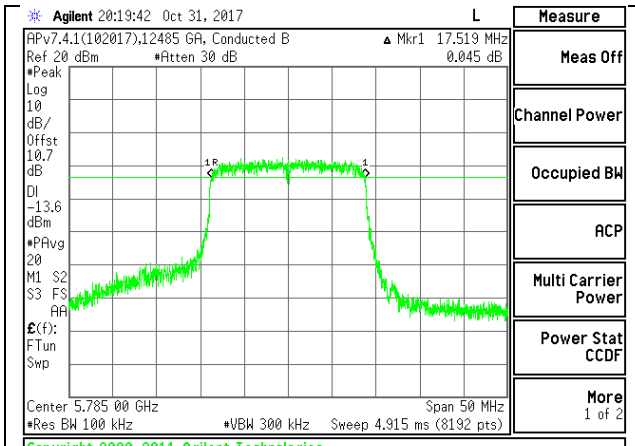


LOW CHANNEL CHAIN 0

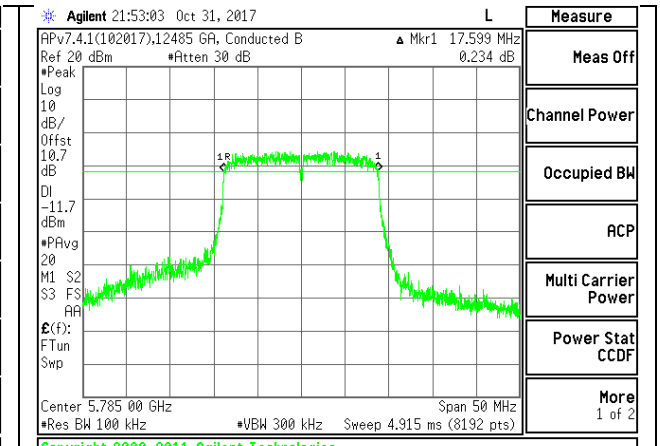


LOW CHANNEL CHAIN 1

MID CHANNEL

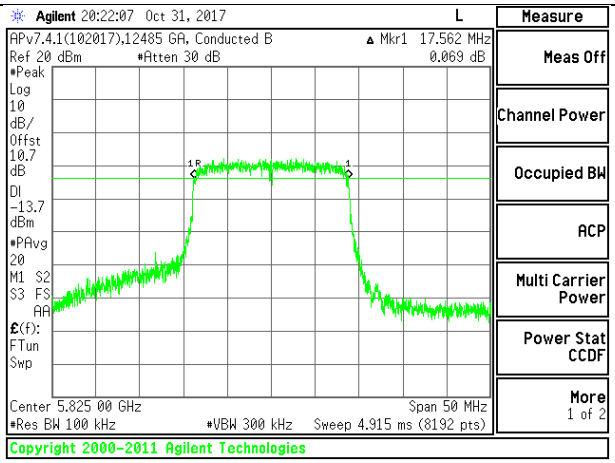


MID CHANNEL CHAIN 0

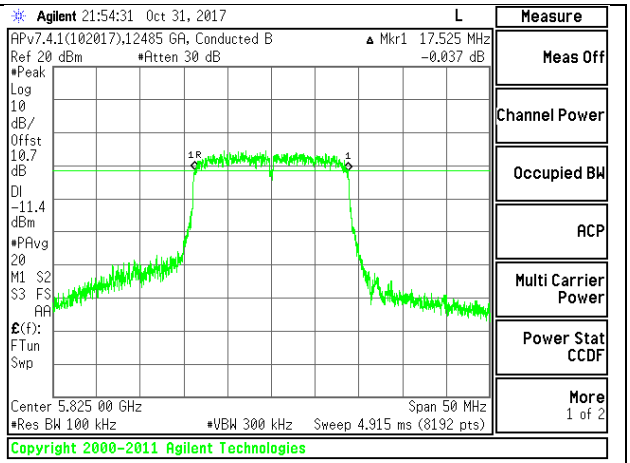


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0

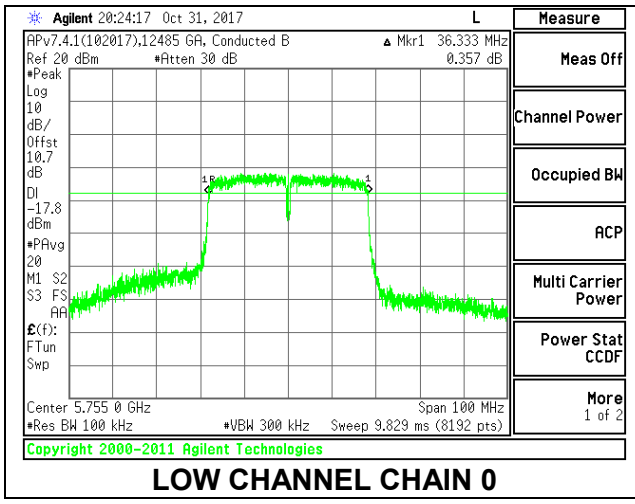


HIGH CHANNEL CHAIN 1

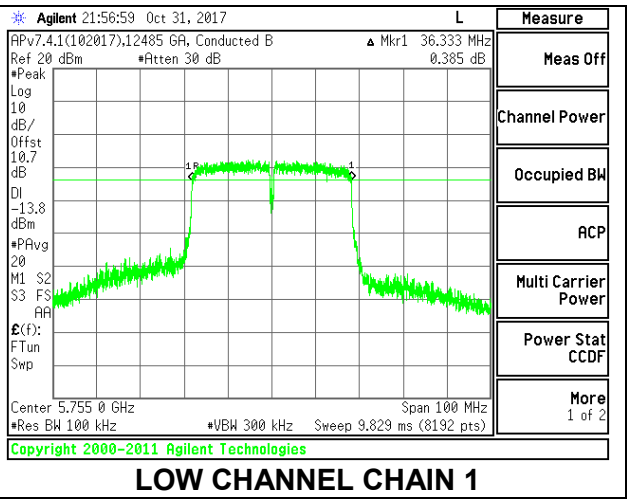
8.4.3. 802.11n HT40 2Tx MODE IN THE 5.8 GHz BAND

Channel	Frequency	6 dB BW CHAIN 0 (MHz)	6 dB BW CHAIN 1 (MHz)	Minimum Limit (MHz)
Low	5755	36.33	36.33	0.5
High	5795	35.86	36.33	0.5

LOW CHANNEL

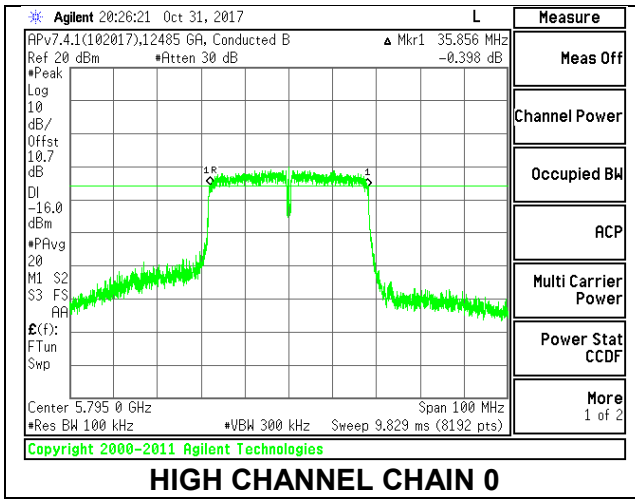


LOW CHANNEL CHAIN 0

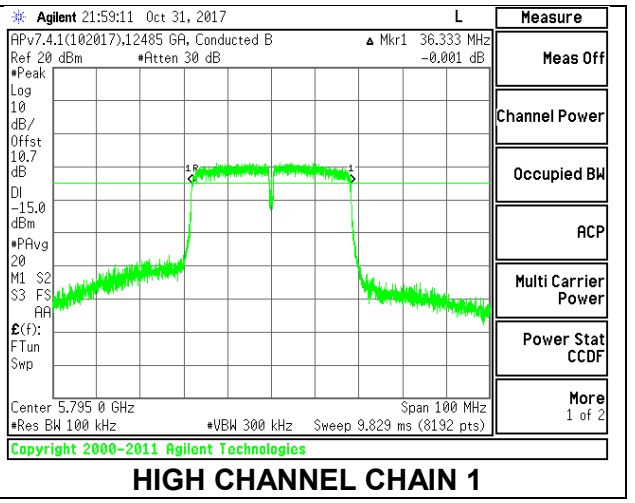


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

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

Bands 5.25-5.35 GHz and 5.47-5.725 GHz
The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Band 5.725-5.85 GHz
The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v2r1, Section E.3.b (Method PM-G).

The measurement method used for power spectral density is KDB 789033 D02 v2r1, Section F

DIRECTIONAL ANTENNA GAIN

For 2 TX:
Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5.2	2.10	2.10	2.10	5.11
5.3	2.60	2.60	2.60	5.61
5.6	3.30	3.30	3.30	6.31
5.8	3.60	3.60	3.60	6.61

RESULTS

8.5.1. 802.11a 2Tx MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	16.43	2.10	5.11
Mid	5200	16.44	2.10	5.11
High	5240	16.47	2.10	5.11

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/1MHz)	ISED eirp PSD Limit (dBm/1MHz)	PSD Limit (dBm/1MHz)
Low	5180	24.00	22.16	20.06	20.06	11.00	10.00	4.89
Mid	5200	24.00	22.16	20.06	20.06	11.00	10.00	4.89
High	5240	24.00	22.17	20.07	20.07	11.00	10.00	4.89

Output Power Results

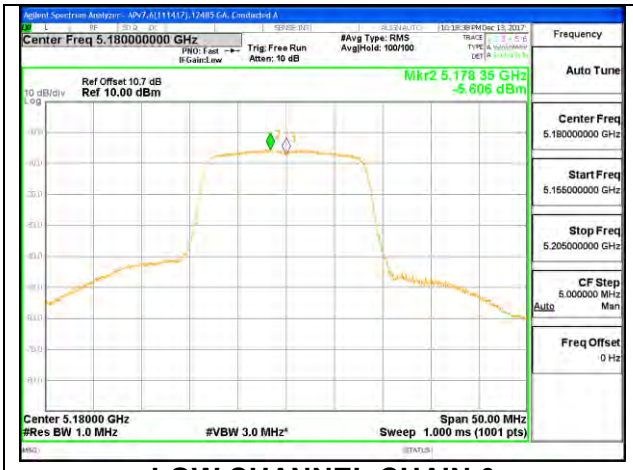
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	5.09	7.11	9.23	20.06	-10.83
Mid	5200	6.12	4.88	8.55	20.06	-11.50
High	5240	9.13	8.40	11.79	20.07	-8.28

PSD Results

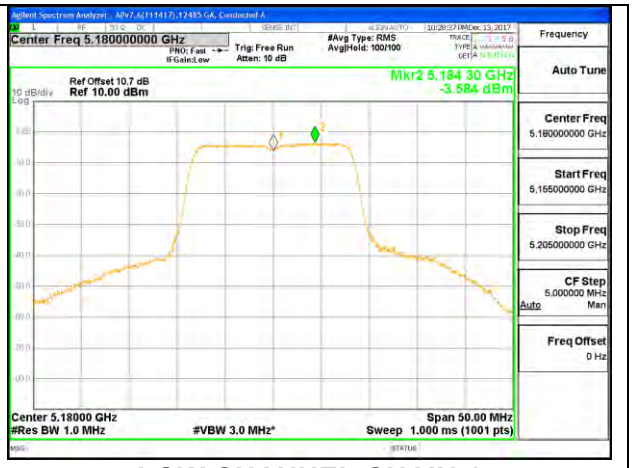
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Chain 1 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5180	-5.06	-3.58	-1.25	4.89	-6.14
Mid	5200	-2.92	-5.47	-1.00	4.89	-5.89
High	5240	-1.32	-1.73	1.50	4.89	-3.39

PSD PLOTS

LOW CHANNEL



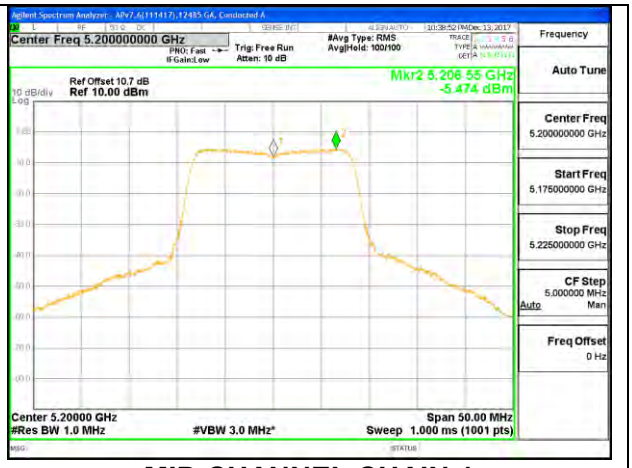
LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL

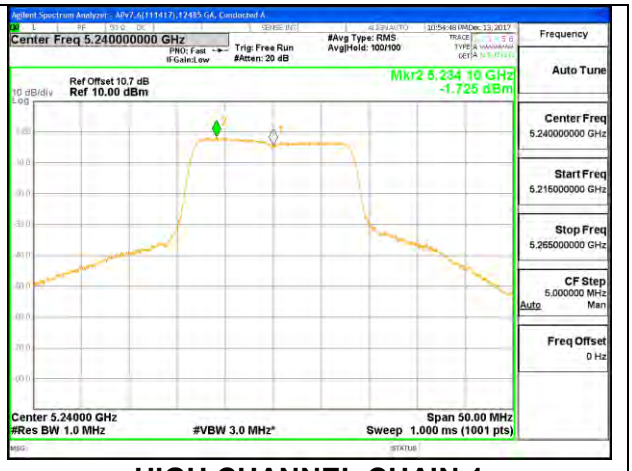
MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

HIGH CHANNEL

HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.2. 802.11n HT20 2Tx MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	17.45	2.10	5.11
Mid	5200	17.46	2.10	5.11
High	5240	17.52	2.10	5.11

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/1MHz)	ISED eirp PSD Limit (dBm/1MHz)	PSD Limit (dBm/1MHz)
Low	5180	24.00	22.42	20.32	20.32	11.00	10.00	4.89
Mid	5200	24.00	22.42	20.32	20.32	11.00	10.00	4.89
High	5240	24.00	22.44	20.34	20.34	11.00	10.00	4.89

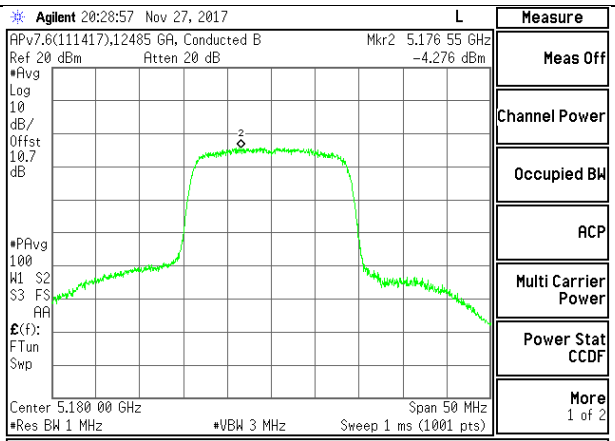
Output Power Results

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	5.69	8.11	10.08	20.32	-10.24
Mid	5200	6.75	5.74	9.28	20.32	-11.04
High	5240	9.93	9.39	12.68	20.34	-7.66

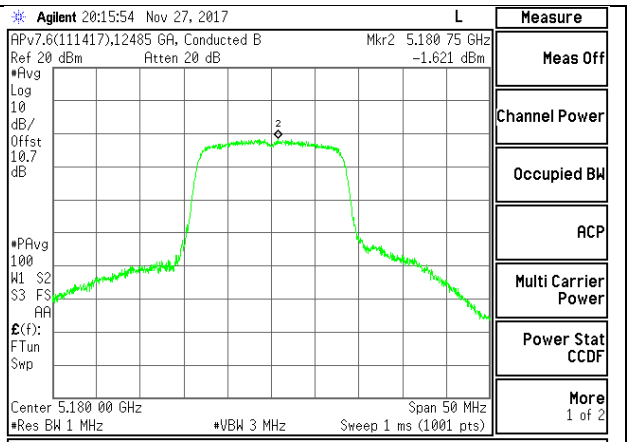
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Chain 1 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5180	-4.28	-1.62	0.26	4.89	-4.63
Mid	5200	-2.79	-4.59	-0.59	4.89	-5.48
High	5240	1.12	-1.65	2.96	4.89	-1.93

LOW CHANNEL

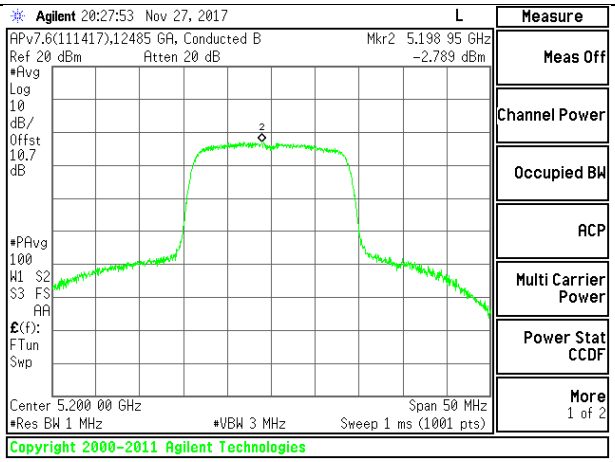


LOW CHANNEL CHAIN 0

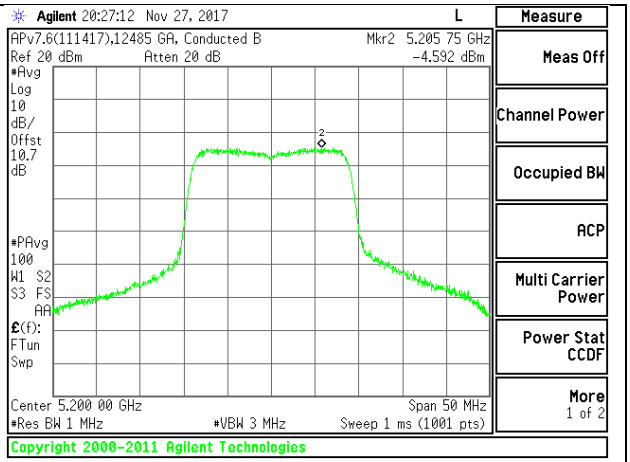


LOW CHANNEL CHAIN 1

MID CHANNEL

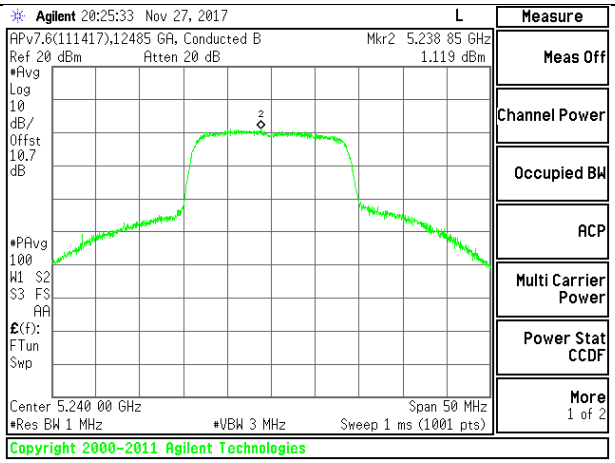


MID CHANNEL CHAIN 0

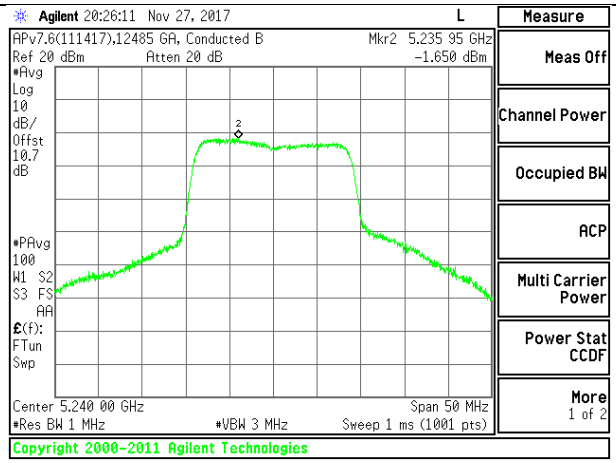


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.3. 802.11n HT40 2Tx MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5190	36.02	2.10	5.11
High	5230	36.03	2.10	5.11

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED EIRP Limit (dBm)	Max ISED Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm/1MHz)	ISED eirp PSD Limit (dBm/1MHz)	PSD Limit (dBm/1MHz)
Low	5190	24.00	23.00	20.90	20.90	11.00	10.00	4.89
High	5230	24.00	23.00	20.90	20.90	11.00	10.00	4.89

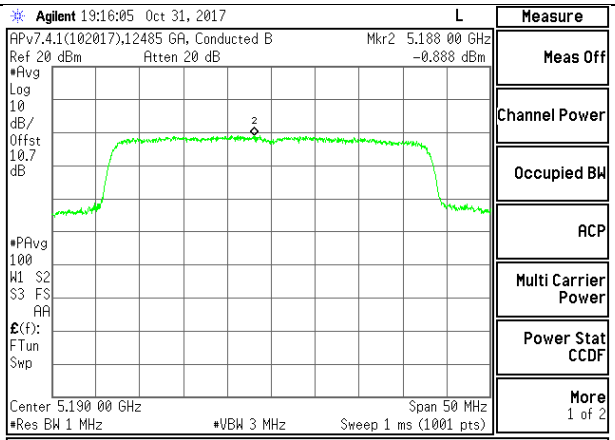
Output Power Results

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	3.44	5.62	7.68	20.90	-13.22
High	5230	10.95	10.59	13.78	20.90	-7.12

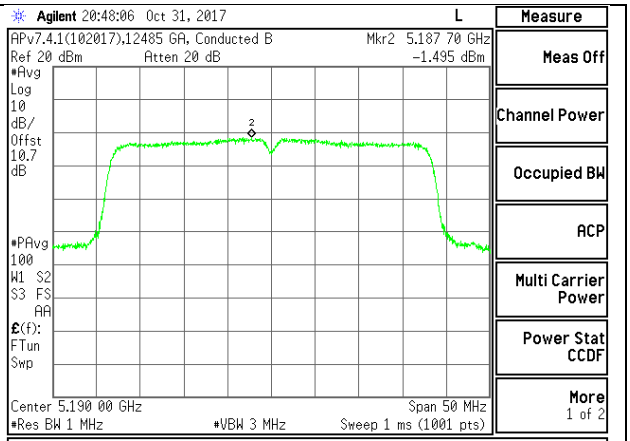
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Chain 1 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5190	-0.89	-1.50	1.83	4.89	-3.06
High	5230	-1.90	-0.82	1.69	4.89	-3.20

LOW CHANNEL

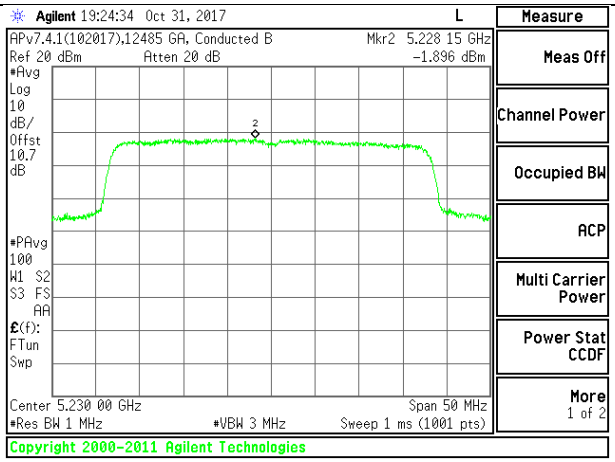


LOW CHANNEL CHAIN 0

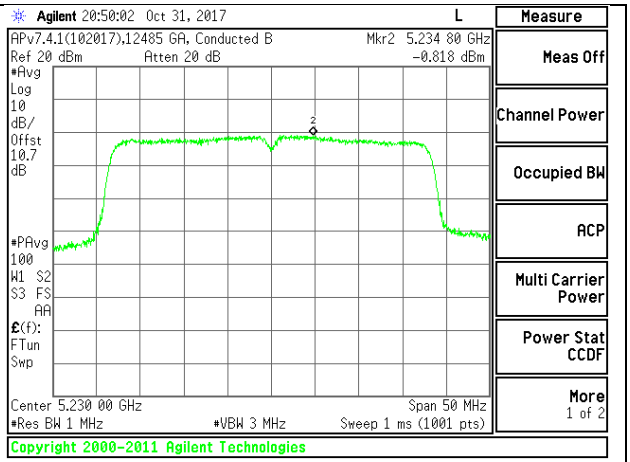


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.4. 802.11a 2Tx 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	20.15	16.37	2.60	5.61
Mid	5300	20.15	16.36	2.60	5.61
High	5320	20.10	16.40	2.60	5.61

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm/1MHz)	ISED PSD Limit (dBm/1MHz)	PPSD Limit (dBm/1MHz)
Low	5260	24.00	23.14	29.14	23.14	11.00	11.00	11.00
Mid	5300	24.00	23.14	29.14	23.14	11.00	11.00	11.00
High	5320	24.00	23.15	29.15	23.15	11.00	11.00	11.00

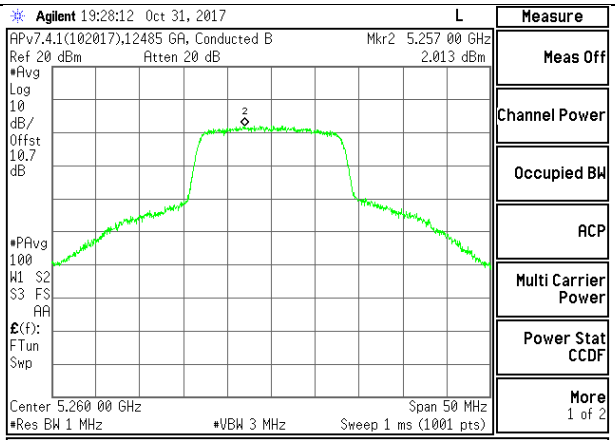
Output Power Results

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	9.53	8.51	12.06	23.14	-11.08
Mid	5300	9.43	7.31	11.51	23.14	-11.63
High	5320	10.16	7.89	12.18	23.15	-10.97

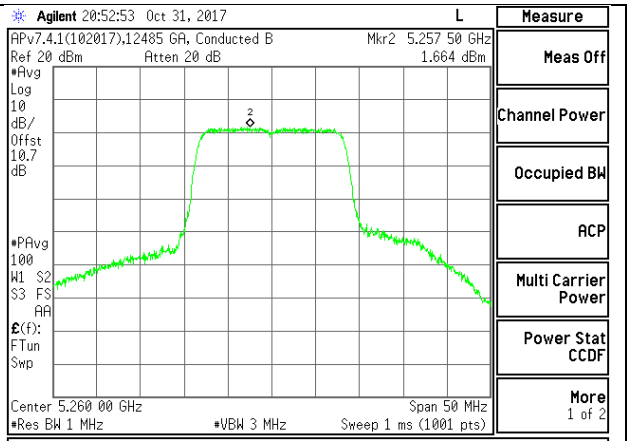
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm/1MHz)	Chain 1 Meas PPSD (dBm/1MHz)	Total Corr'd PPSD (dBm/1MHz)	PPSD Limit (dBm/1MHz)	PPSD Margin (dB)
Low	5260	2.01	1.66	4.85	11.00	-6.15
Mid	5300	1.77	3.13	5.51	11.00	-5.49
High	5320	2.07	1.75	4.92	11.00	-6.08

LOW CHANNEL

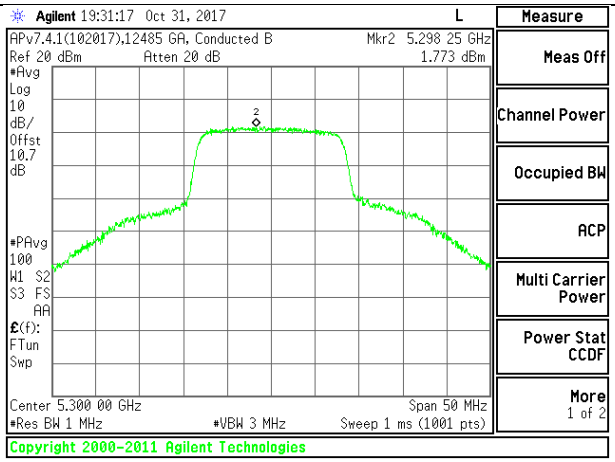


LOW CHANNEL CHAIN 0

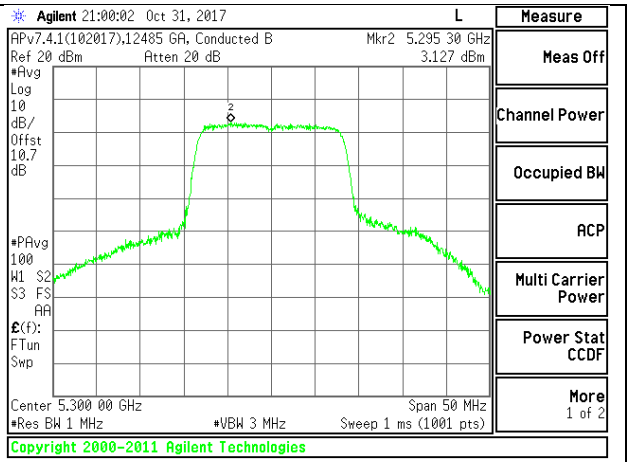


LOW CHANNEL CHAIN 1

MID CHANNEL

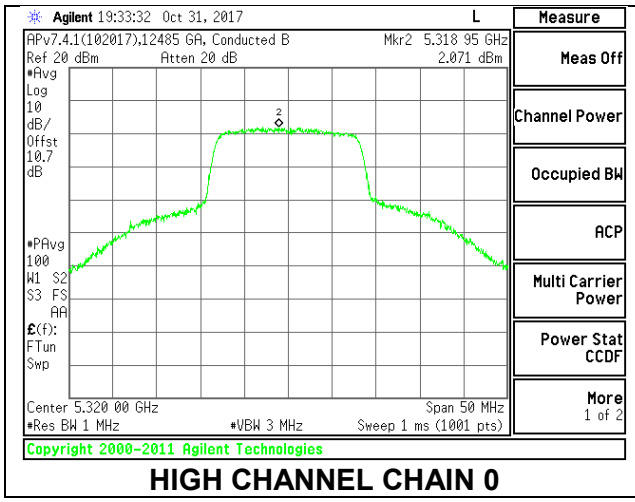


MID CHANNEL CHAIN 0

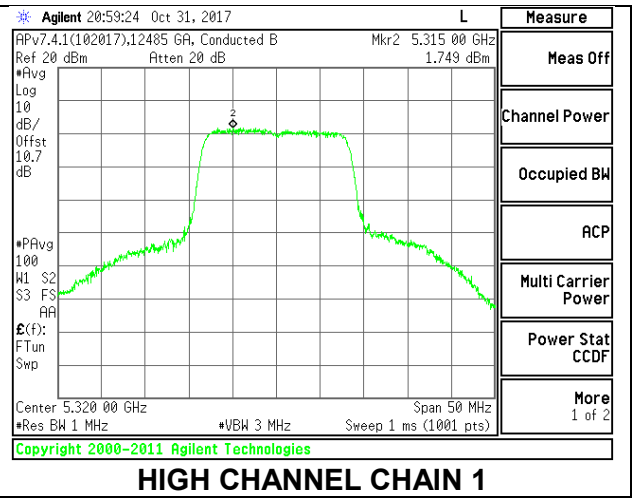


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.5. 802.11n HT20 2Tx 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	20.15	17.37	2.60	5.61
Mid	5300	20.15	17.36	2.60	5.61
High	5320	20.10	17.40	2.60	5.61

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	23.40	29.40	23.40	11.00	11.00	11.00
Mid	5300	24.00	23.40	29.40	23.40	11.00	11.00	11.00
High	5320	24.00	23.41	29.41	23.41	11.00	11.00	11.00

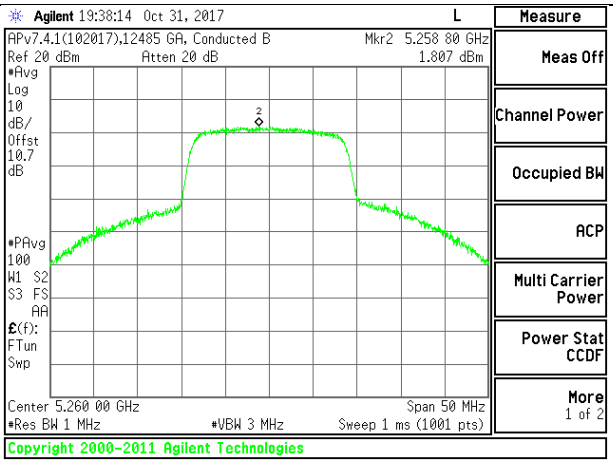
Output Power Results

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	10.40	9.45	12.96	23.40	-10.44
Mid	5300	9.63	8.16	11.97	23.40	-11.43
High	5320	10.52	8.53	12.65	23.41	-10.76

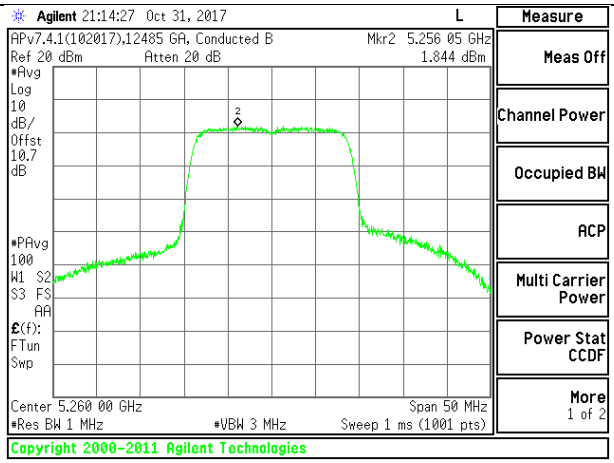
PPSD Results

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	1.81	1.84	4.84	11.00	-6.16
Mid	5300	1.81	1.62	4.73	11.00	-6.27
High	5320	1.64	2.50	5.10	11.00	-5.90

LOW CHANNEL

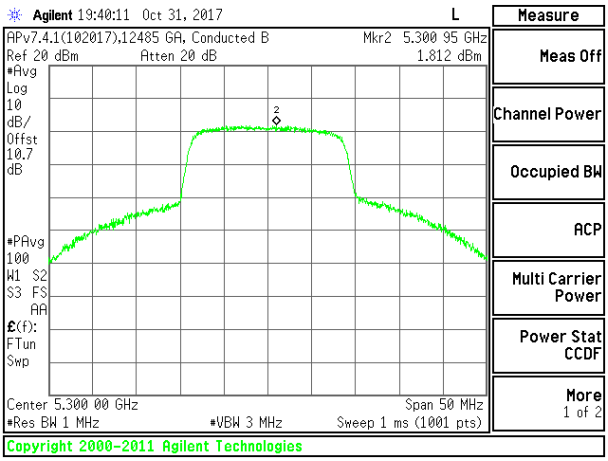


LOW CHANNEL CHAIN 0

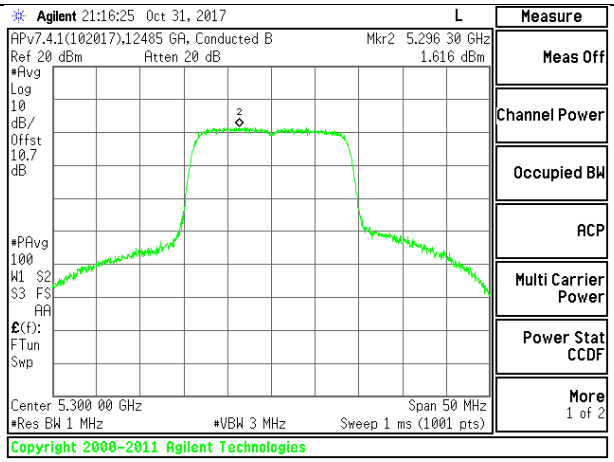


LOW CHANNEL CHAIN 1

MID CHANNEL

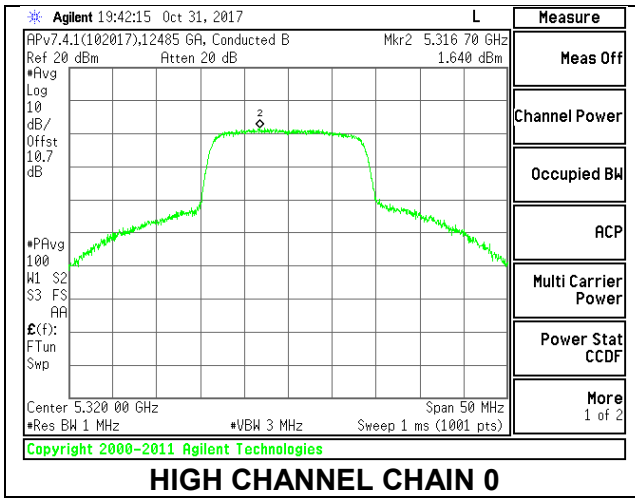


MID CHANNEL CHAIN 0

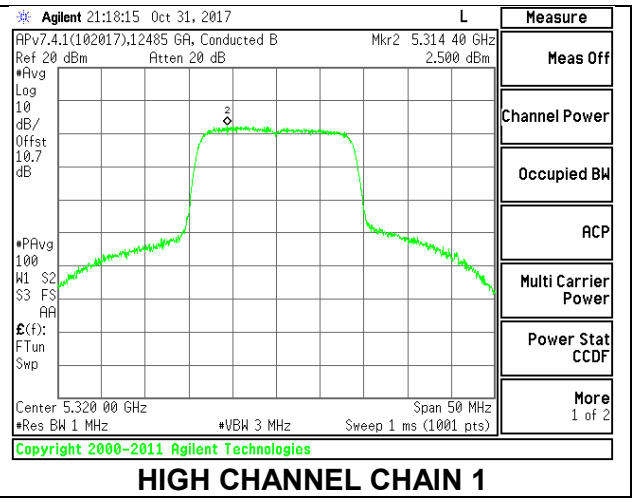


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.6. 802.11n HT40 2Tx 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	41.30	35.84	2.60	5.61
High	5310	41.30	35.84	2.60	5.61

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

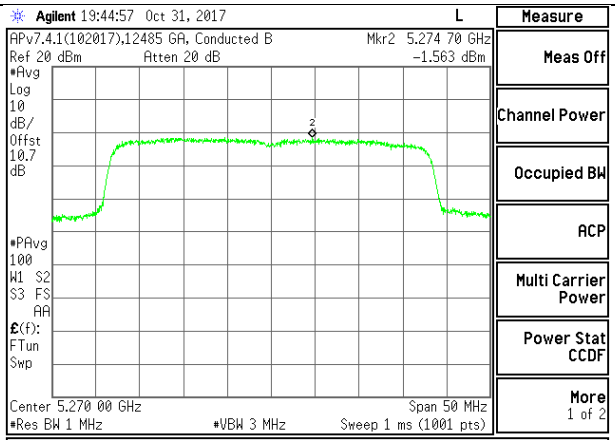
Output Power Results

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	11.33	8.99	13.33	24.00	-10.67
High	5310	6.69	1.87	7.93	24.00	-16.07

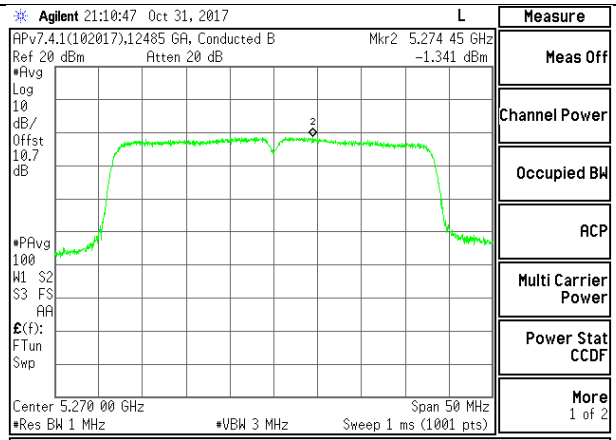
PPSD Results

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	-1.56	-1.34	1.56	11.00	-9.44
High	5310	-0.85	-0.40	2.39	11.00	-8.61

LOW CHANNEL

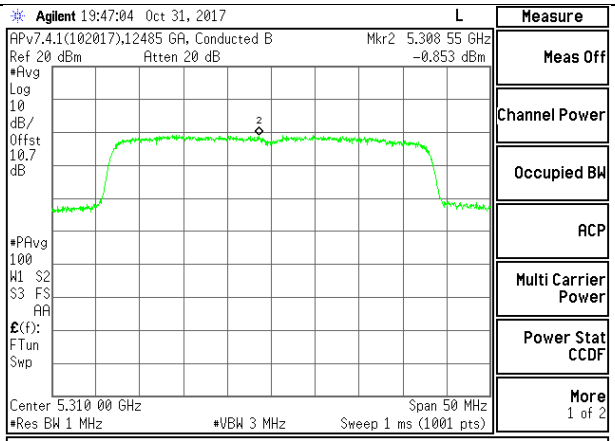


LOW CHANNEL CHAIN 0

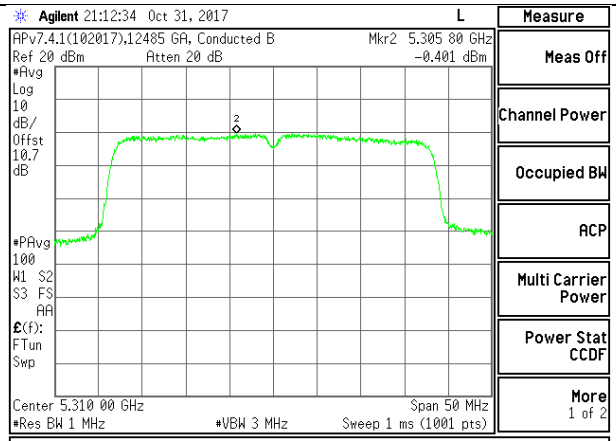


LOW CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.7. 802.11a 2Tx MODE IN THE 5.6 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	20.20	16.39	3.30	6.31
Mid	5580	19.80	16.41	3.30	6.31
High	5700	19.85	16.42	3.30	6.31

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm/1MHz)	ISED PSD Limit (dBm/1MHz)	PPSD Limit (dBm/1MHz)
Low	5500	24.00	23.15	29.15	23.15	10.69	11.00	10.69
Mid	5580	23.97	23.15	29.15	23.15	10.69	11.00	10.69
High	5700	23.98	23.15	29.46	23.15	10.69	11.00	10.69

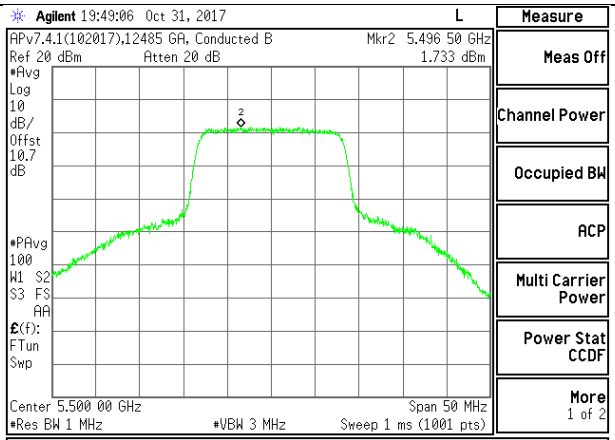
Output Power Results

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	10.86	10.89	13.89	23.15	-9.26
Mid	5580	10.95	10.78	13.88	23.15	-9.27
High	5700	11.20	10.17	13.73	23.15	-9.43

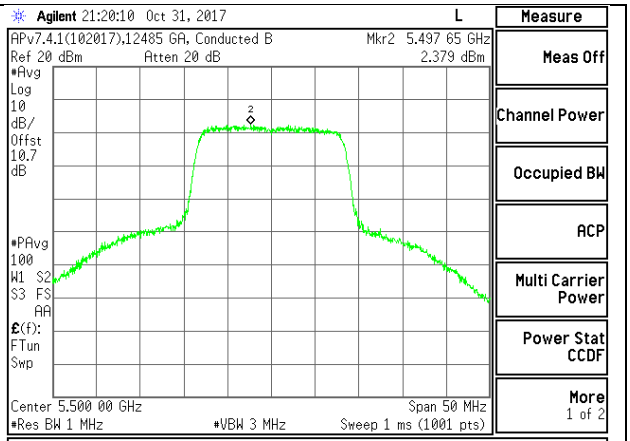
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm/1MHz)	Chain 1 Meas PPSD (dBm/1MHz)	Total Corr'd PPSD (dBm/1MHz)	PPSD Limit (dBm/1MHz)	PPSD Margin (dB)
Low	5500	1.73	2.38	5.08	10.69	-5.61
Mid	5580	2.13	1.89	5.02	10.69	-5.67
High	5700	2.49	2.03	5.28	10.69	-5.41

LOW CHANNEL

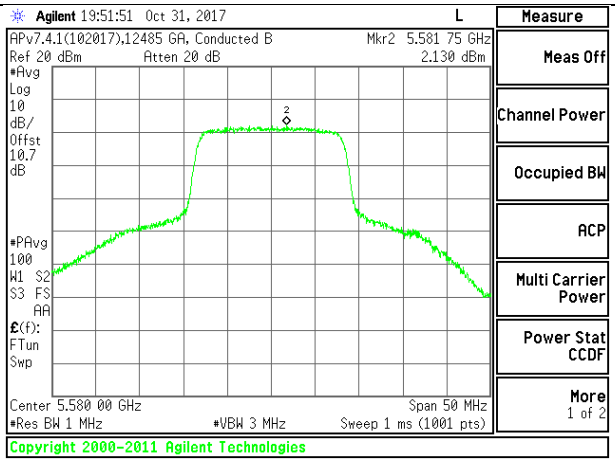


LOW CHANNEL CHAIN 0

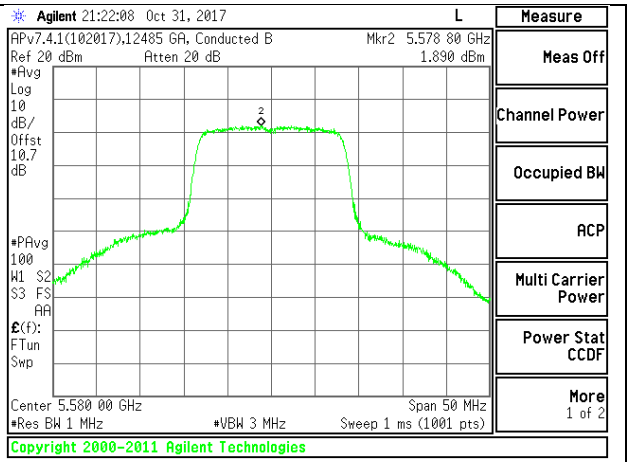


LOW CHANNEL CHAIN 1

MID CHANNEL

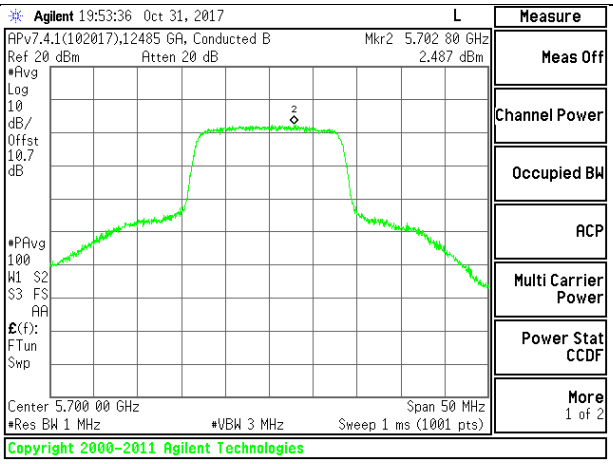


MID CHANNEL CHAIN 0

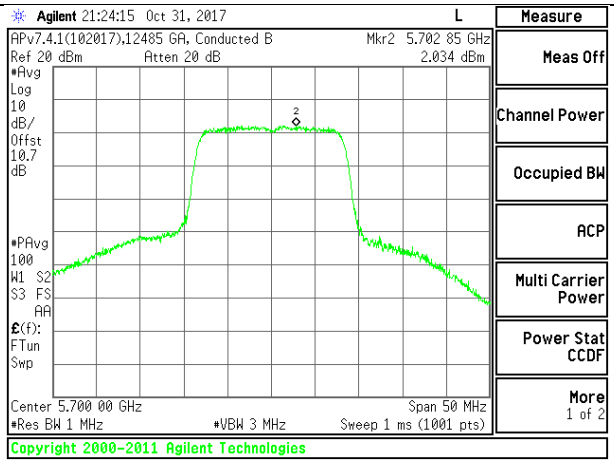


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.8. 802.11n HT20 2Tx MODE IN THE 5.6 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	20.20	17.45	3.30	6.31
Mid	5580	20.20	17.41	3.30	6.31
High	5700	20.20	17.39	3.30	6.31

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	23.42	29.41	23.42	10.69	11.00	10.69
Mid	5580	24.00	23.41	29.40	23.41	10.69	11.00	10.69
High	5700	24.00	23.40	29.46	23.40	10.69	11.00	10.69

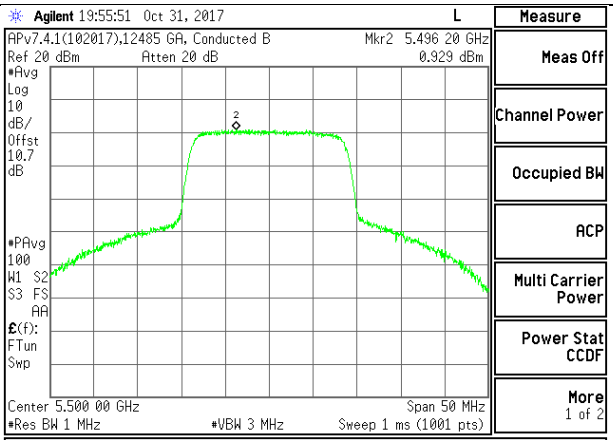
Output Power Results

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	11.80	11.71	14.77	23.42	-8.65
Mid	5580	11.28	10.85	14.08	23.41	-9.33
High	5700	12.38	11.42	14.94	23.40	-8.47

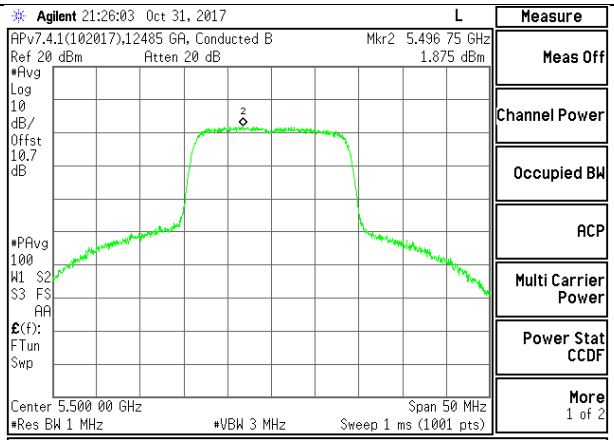
PPSD Results

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	0.93	1.88	4.44	10.69	-6.25
Mid	5580	1.86	1.78	4.83	10.69	-5.86
High	5700	2.28	2.51	5.41	10.69	-5.28

LOW CHANNEL

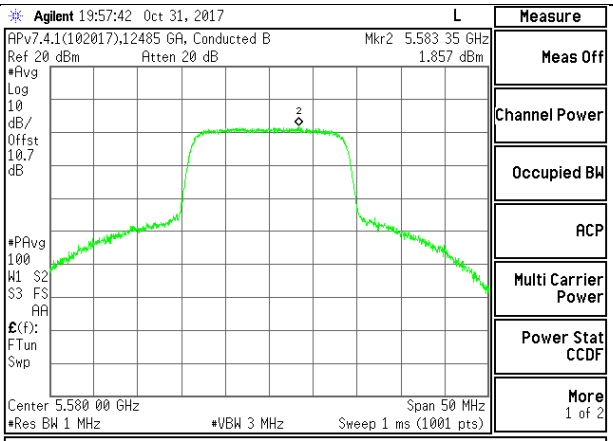


LOW CHANNEL CHAIN 0

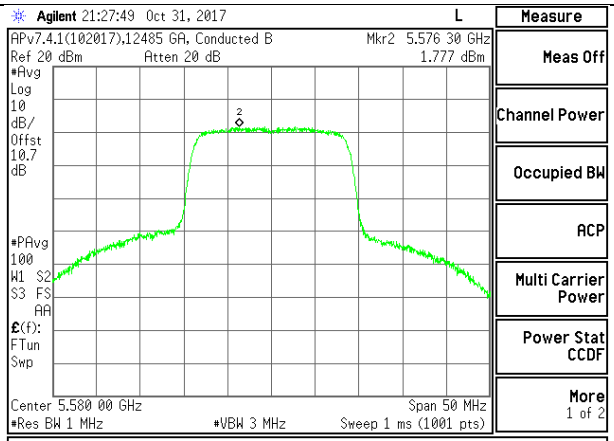


LOW CHANNEL CHAIN 1

MID CHANNEL

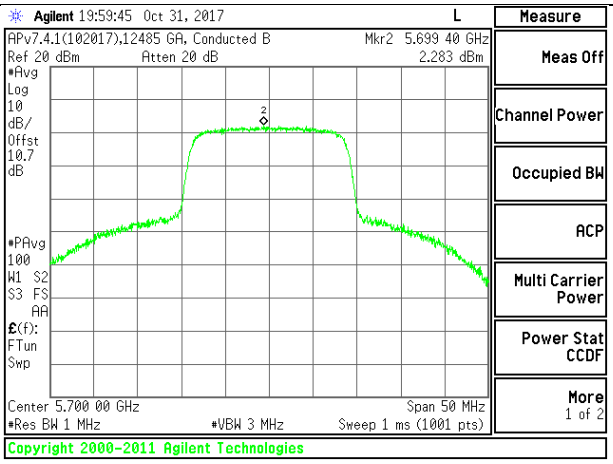


MID CHANNEL CHAIN 0

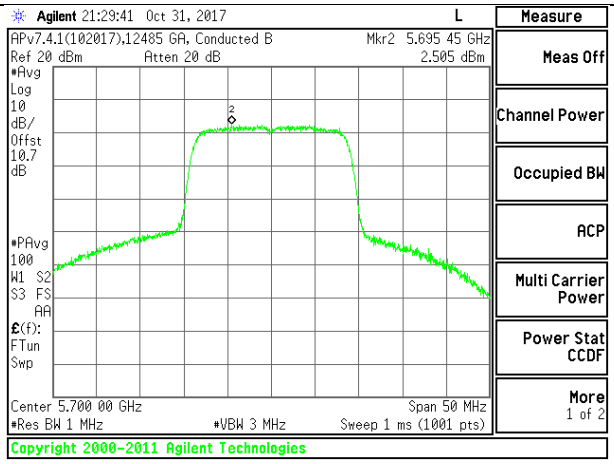


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.9. 802.11n HT40 2Tx MODE IN THE 5.6 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	41.30	35.90	3.30	6.31
Mid	5550	41.30	35.95	3.30	6.31
High	5670	41.30	35.92	3.30	6.31

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	10.69	11.00	10.69
Mid	5550	24.00	24.00	30.00	24.00	10.69	11.00	10.69
High	5670	24.00	24.00	30.00	24.00	10.69	11.00	10.69

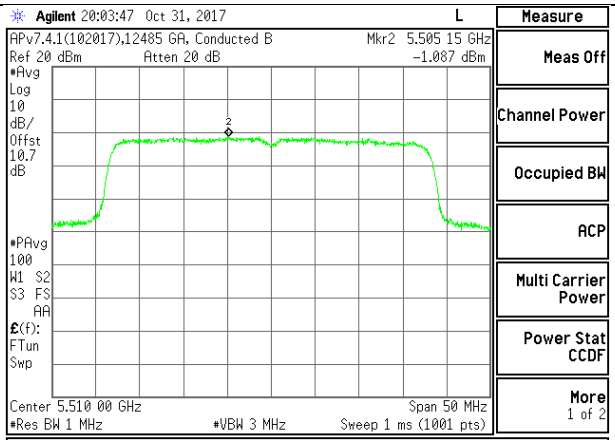
Output Power Results

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	7.47	2.67	8.71	24.00	-15.29
Mid	5550	12.52	12.55	15.55	24.00	-8.45
High	5670	12.30	12.46	15.39	24.00	-8.61

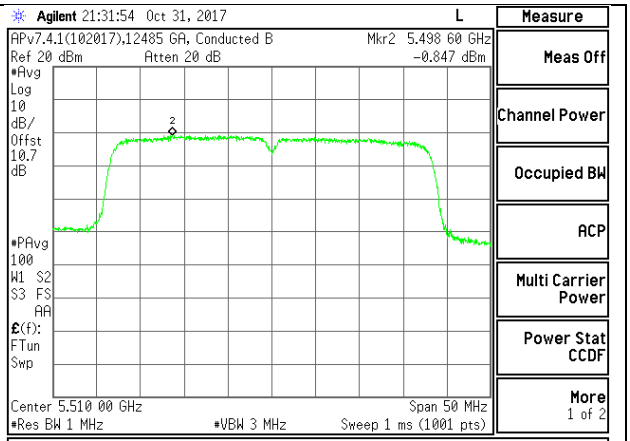
PPSD Results

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	-1.09	-0.85	2.04	10.69	-8.65
Mid	5550	-1.14	-1.21	1.83	10.69	-8.86
High	5670	-1.55	-1.44	1.52	10.69	-9.17

LOW CHANNEL

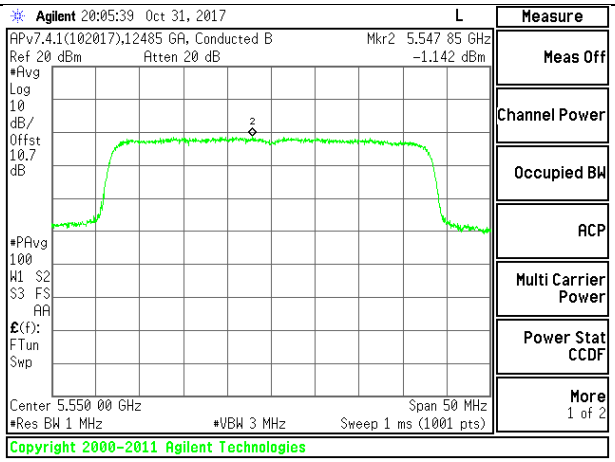


LOW CHANNEL CHAIN 0

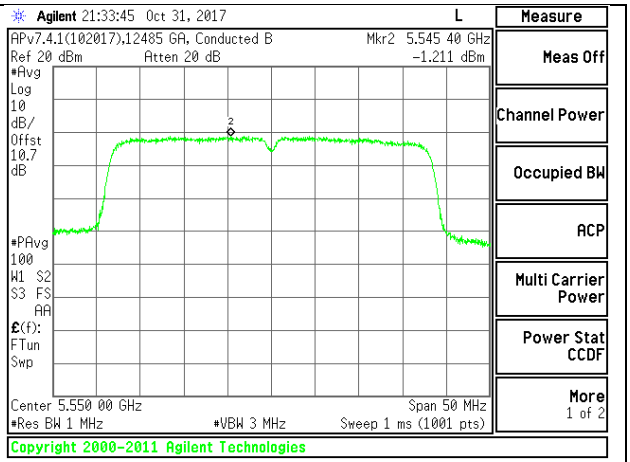


LOW CHANNEL CHAIN 1

MID CHANNEL

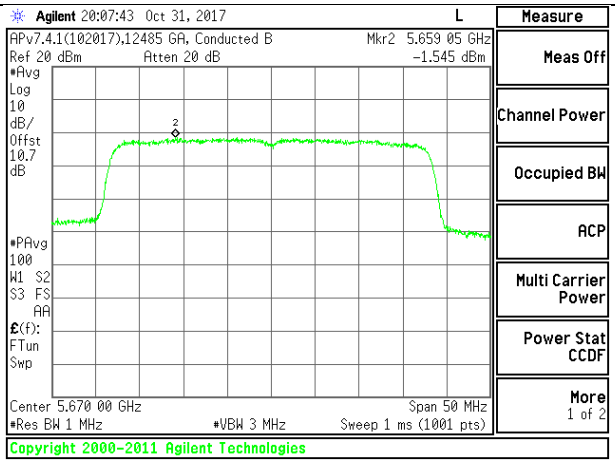


MID CHANNEL CHAIN 0

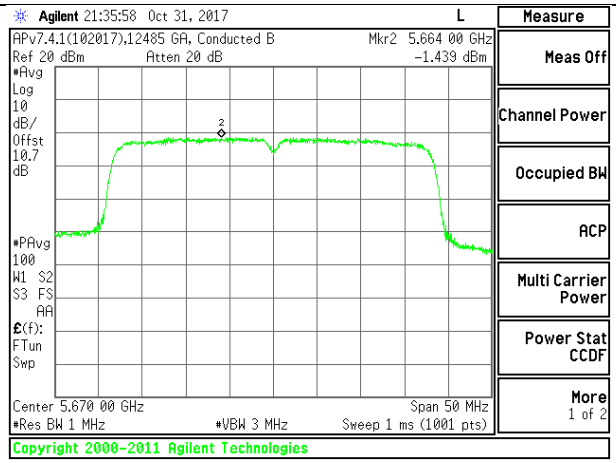


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.10. 802.11a 2Tx MODE IN THE 5.8 GHz BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBm)	Power Limit (dBm)	PSD Limit (dBm/500kHz)
Low	5745	3.60	6.61	30.00	29.39
Mid	5785	3.60	6.61	30.00	29.39
High	5825	3.60	6.61	30.00	29.39

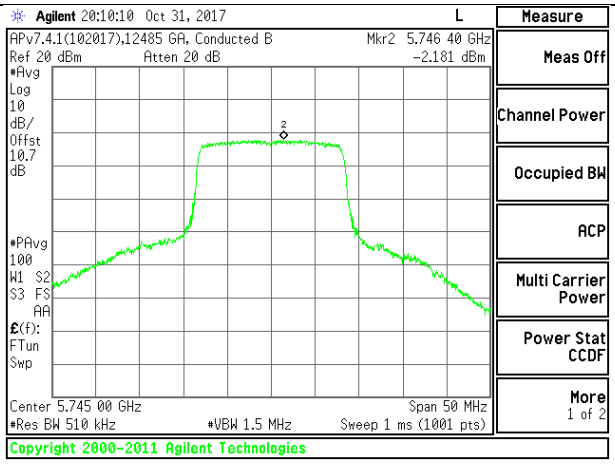
Output Power Results

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	10.71	7.85	12.52	30.00	-17.48
Mid	5785	11.18	10.49	13.86	30.00	-16.14
High	5825	11.05	10.66	13.87	30.00	-16.13

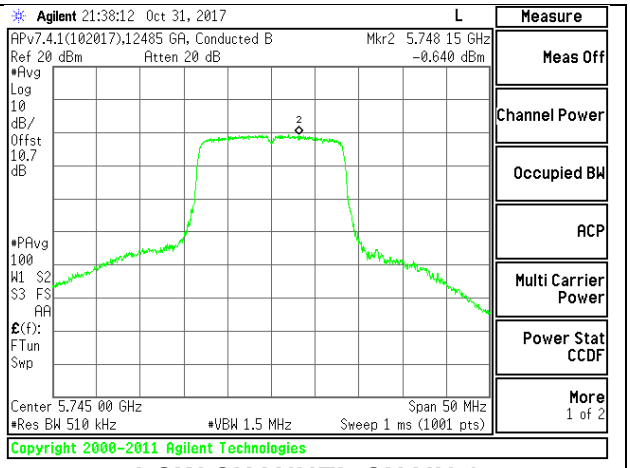
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/500kHz)	Chain 1 Meas PSD (dBm/500kHz)	Total Corr'd PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	PSD Margin (dB)
Low	5745	-2.181	-0.640	1.668	29.39	-27.72
Mid	5785	-0.932	-1.155	1.968	29.39	-27.42
High	5825	-0.532	0.013	2.759	29.39	-26.63

LOW CHANNEL

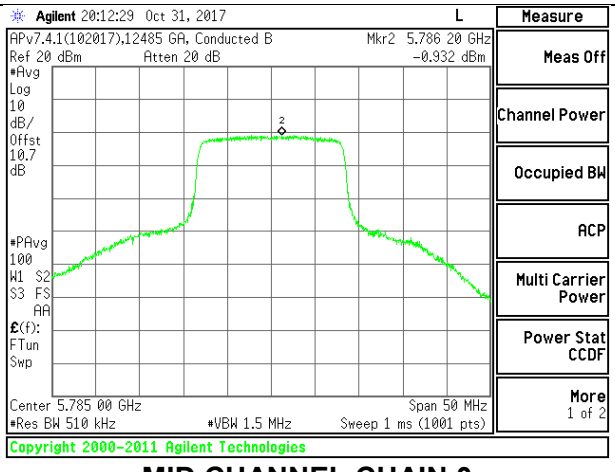


LOW CHANNEL CHAIN 0

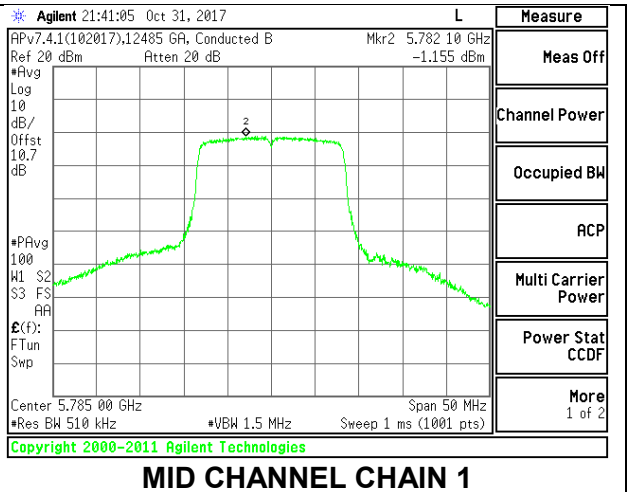


LOW CHANNEL CHAIN 1

MID CHANNEL

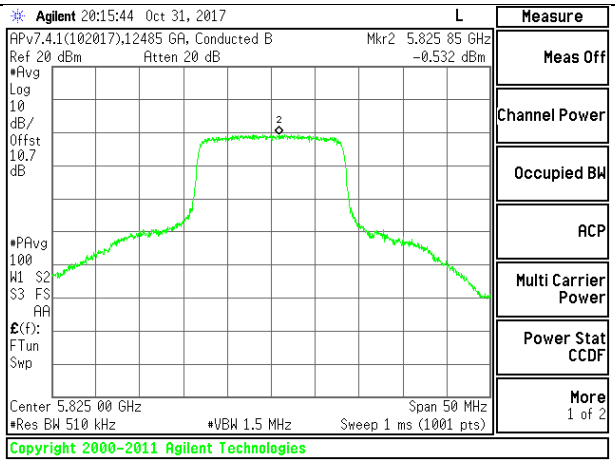


MID CHANNEL CHAIN 0

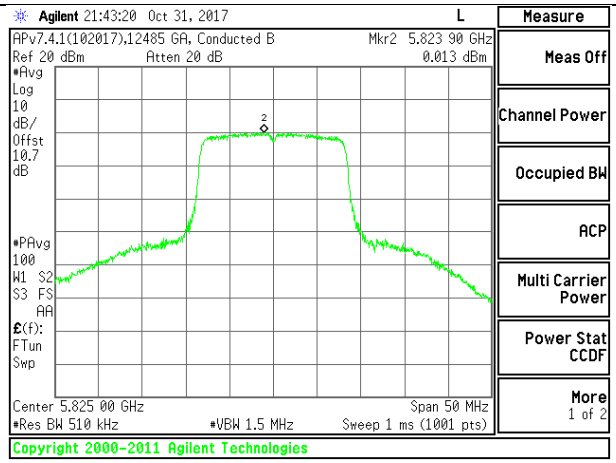


MID CHANNEL CHAIN 1

HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

8.5.11. 802.11n HT20 2Tx MODE IN THE 5.8 GHz BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBm)	Power Limit (dBm)	PSD Limit (dBm/500kHz)
Low	5745	3.60	6.61	30.00	29.39
Mid	5785	3.60	6.61	30.00	29.39
High	5825	3.60	6.61	30.00	29.39

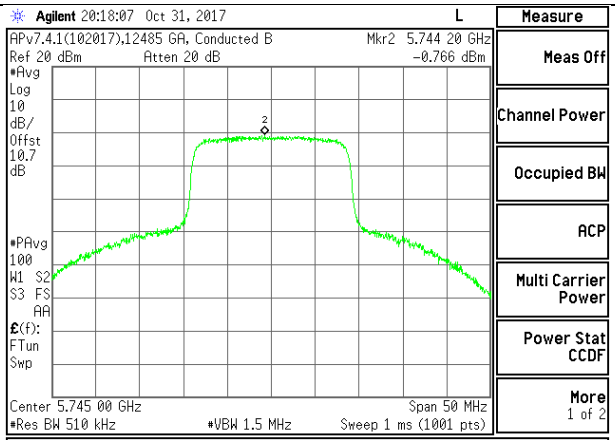
Output Power Results

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	11.07	9.87	13.52	30.00	-16.48
Mid	5785	11.88	11.91	14.91	30.00	-15.09
High	5825	11.59	11.76	14.69	30.00	-15.31

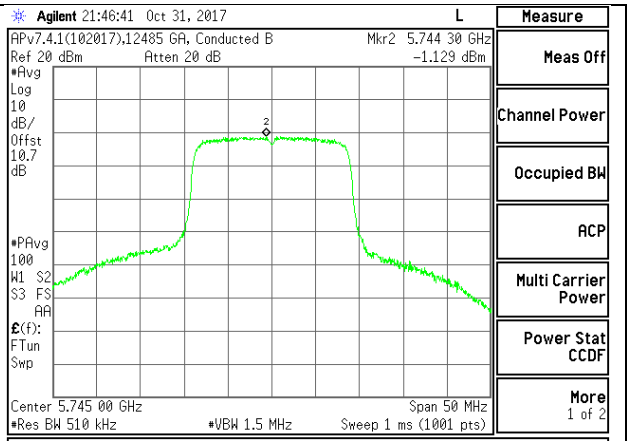
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/500kHz)	Chain 1 Meas PSD (dBm/500kHz)	Total Corr'd PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	PSD Margin (dB)
Low	5745	-0.766	-1.129	2.067	29.39	-27.32
Mid	5785	-1.181	-0.617	2.120	29.39	-27.27
High	5825	-0.667	-1.029	2.166	29.39	-27.22

LOW CHANNEL

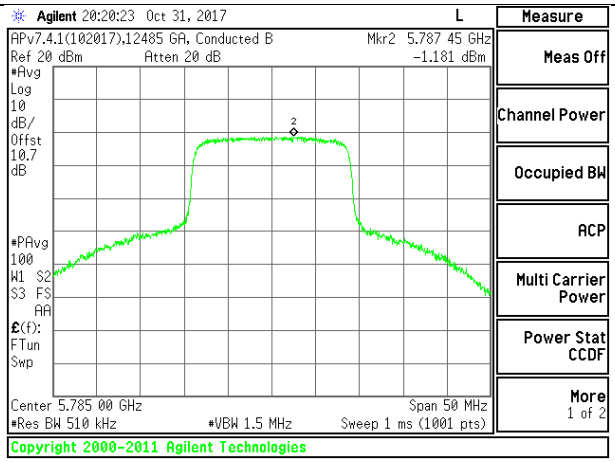


LOW CHANNEL CHAIN 0

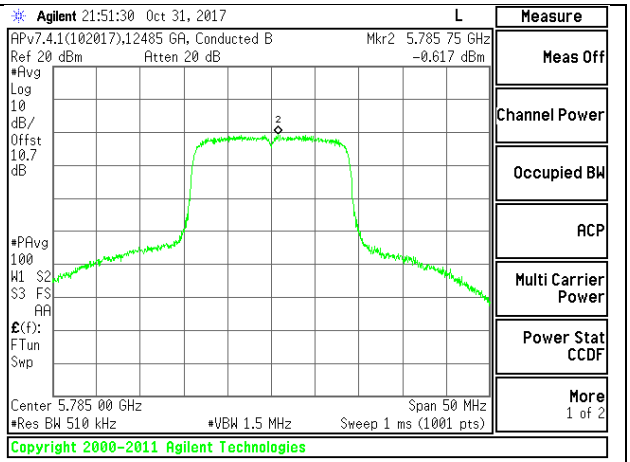


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1