CERTIFICATION TEST REPORT

Report Number. : 12802195-E3V3

Applicant	:	Microsoft Corp. One Microsoft Way Redmond, WA 98052
Model	:	1876
FCC ID	:	C3K1876
IC	:	3048A-1876
EUT Description	:	Portable Computing Device
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 2 ISED RSS-GEN ISSUE 5

Date Of Issue:
September 23, 2019

Prepared by:
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NVLAP Lab code: 200065-0

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	8/13/2019	Initial Issue	--
V2	9/5/2019	Section 2: KDB 662911 D01 added Section 5.2: Maximum Output Power Updated Section 5.5: Worst Case description Section 9.2: References updated	Henry Lau
V3	9/23/2019	Section 6: Clause updated	Henry Lau

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Microsoft Corp.
One Microsoft Way
Redmond, WA 98052

EUT DESCRIPTION: Portable Computing Device

MODEL: 1876

SERIAL NUMBER: Conducted: 005764692553
Radiated: 024269592753

DATE TESTED: July 02 – 31, 2019

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

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.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v0502, KDB 662911 D01, RSS-GEN Issue 5, and RSS-247 Issue 2.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, 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	47658 Kato Rd
☐ Chamber A	☐ Chamber D	☒ Chamber I
☐ Chamber B	☐ Chamber E	☒ Chamber J
☐ Chamber C	☐ Chamber F	☐ Chamber K
	☐ Chamber G	☐ Chamber L
	☐ Chamber H	☐ Chamber M

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code 2324A.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

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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

RADIATED EMISSIONS
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

MAINS CONDUCTED EMISSIONS
Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

4.3. MEASUREMENT UNCERTAINTY

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	2.52 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.24 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.37 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.17 dB

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

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5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a Portable Computing Device.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2Tx			
2412 - 2472	802.11b	21.99	158.12
2412 - 2472	802.11g	22.04	159.96
2412 - 2472	802.11n HT20 CDD	22.00	158.49
2422 - 2462	802.11n HT40 CDD	19.50	89.13

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two PIFA antennas, with a maximum gain of:

Frequency (GHz)	Peak Antenna Gain (dBi)	
	(Chain 1)	(Chain 2)
2412 - 2472	0.6	1.2

5.4. SOFTWARE AND FIRMWARE

The operating system installed on the EUT is Windows 10 Pro build 18362.19h1_release.190318-1202.

The Wifi Driver installed on the EUT is version 1.0.630.1.

The test utility software used during testing was QRCT v4.0.00108

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5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, 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 fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, and four configurations with a keyboard at 45 degrees, 90 degrees, 180 degrees, and portrait, it was determined that 45 degrees with keyboard orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in 45 degrees with keyboard orientation.

For all modes, tests were performed with the EUT set at the 2Tx CDD mode with power setting equal to SISO modes as the worst case scenario thus MIMO is representative of SISO.

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Keyboard	Microsoft	EV2BB01A	E2XEV2BB01A00042	DoC
AC/DC Adapter	Microsoft	1706	0C130J02JT396	DoC
Laptop	Lenovo	80S6	YD03NTTF	DoC
AC/DC Adapter	Lenovo	ADLX45NCC3A	N/A	DoC
Ethernet to USB Adapter	Linksys	USB3GIGV1	15710S08405610	DoC
USB Type C to USB Type A Adapter	Amazon Basics	L6LUC021-CS-R	N/A	N/A
USB Type C to Audio Jack	Sony	A1-0231	N/A	N/A
Earphone	Sony	AG1100	N/A	N/A

I/O CABLES (CONDUCTED TEST)

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC	Un-Shielded	0.2	to AC/DC Adapter
2	DC	1	DC	Shielded	1	to Laptop, to EUT
3	USB	1	Type C	Un-Shielded	0.2	USB-C to USB-A Adapter
4	USB	1	Type A	Un-shielded	0.1	USB-A to RJ45 converter
5	Ethernet	1	RJ45	Un-shielded	>3m	Laptop to EUT
6	Antenna	1	SMA	Un-Shielded	0.2	to Analyzer

I/O CABLES (RADIATED AND CONDUCTED EMISSIONS)

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	Type C	Un-shielded	0.2	to AC/DC Adapter
2	DC	1	DC	Shielded	1	to Laptop, to EUT
3	USB	1	Type C	Un-shielded	0.2	USB-C to USB-A Adapter
4	USB	1	Type A	Un-shielded	0.1	USB-A to RJ45 converter
5	Ethernet	1	RJ45	Un-shielded	>3	Laptop to EUT
6	USB	1	Type C	Un-shielded	0.1	USB-C to Audio Jack converter
7	Earphone	1	3.5mm	Un-shielded	1	EUT to earphone

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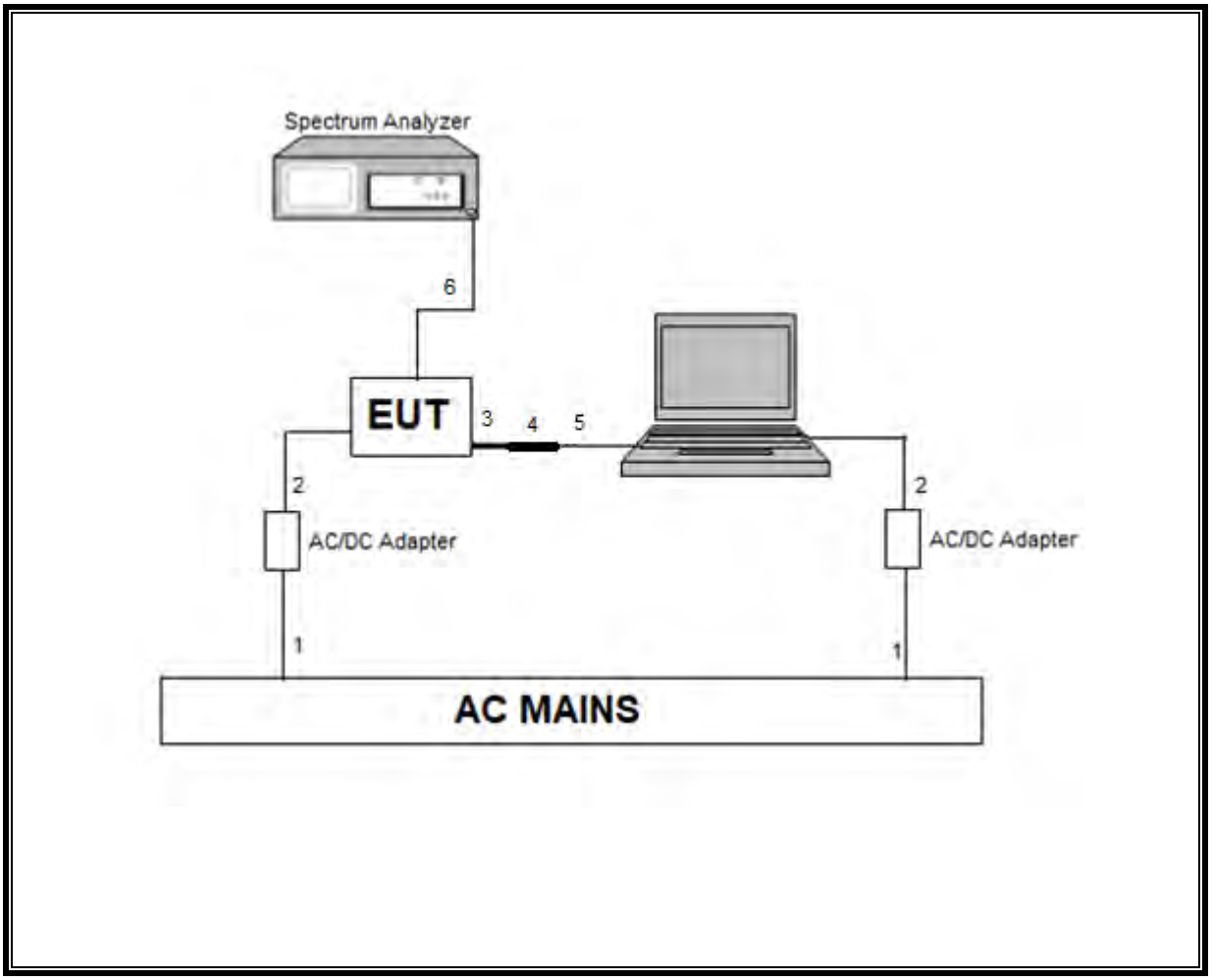
TEST SETUP

The EUT is connected to a test laptop during the tests. Test software exercised the radio card.

CONDUCTED TEST SETUP DIAGRAM



TEST SETUP

For conducted tests, the EUT was connected to a laptop. The test software exercises the radio.

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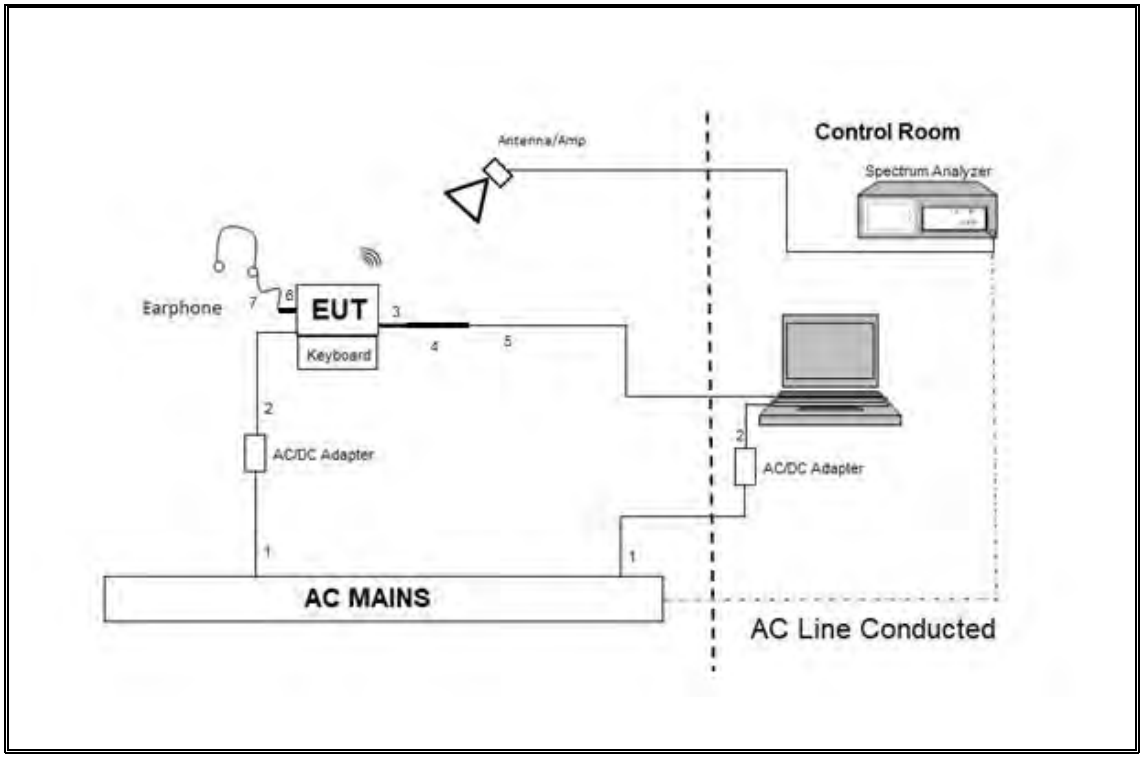
RADIATED AND AC LINE CONDUCTED EMISSIONS SETUP DIAGRAM



TEST SETUP

For radiated tests: EUT is connected to all support equipment. The test software exercises the radio.

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6. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10 Section 11.6

Occupied BW (99%): ANSI C63.10-2013 Section 6.9.3

6 dB BW: ANSI C63.10 Subclause -11.8.1

Output Power: ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

PSD: ANSI C63.10 Subclause -11.10.3 Method AVGPSD-1

Radiated emissions non-restricted frequency bands: ANSI C63.10 Subclause -11.11

Radiated emissions restricted frequency bands: ANSI C63.10 Subclause -11.12.1

Conducted emissions in restricted frequency bands: ANSI C63.10 Subclause -11.12.2

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

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4

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7. 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**	**ID Num**	**Cal Due**	**Last Cal**
Power Meter, P-series single channel	Agilent (Keysight) Technologies	N1911A	T1265	01/29/2020	01/29/2019
Power Sensor, P-series, 50MHz to 18GHz, Wideband	Agilent (Keysight) Technologies	N1921A	T1227	02/05/2020	02/05/2019
Antenna, Passive Loop 30Hz to 1MHz	ELETRO METRICS	EM-6871	PRE0179465	05/31/2020	05/31/2019
Antenna, Passive Loop 100kHz to 30MHz	ELETRO METRICS	EM-6872	PRE0179467	05/31/2020	05/31/2019
Antenna, Horn 1-18GHz	AR	AMPL-ATH1G18	PRE0189055	04/20/2020	04/20/2019
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T862	06/05/2020	06/05/2019
Amplifier, 1 to 18GHz, 35dB	AMPLICAL	AMP1G18-35	T1571	05/28/2020	05/28/2019
Amplifier, 1-18GHz	MITEQ	AFS42-00101800-25-S-42	171460	08/01/2019	08/01/2018
Hybrid Antenna, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	PRE0181575	08/01/2019	08/01/2018
Hybrid Antenna, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	PRE0184971	11/13/2019	11/13/2018
Amplifier, 9kHz to 1GHz, 32 dB	SONOMA INSTRUMENT	310	PRE0180174	06/01/2020	06/01/2019
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	PRE0180175	05/29/2020	05/29/2019
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	PRE0182188	08/29/2019	08/29/2018
Pre-Amp, 18-26.5GHz	Amplical	AMP18G26.5-60	PRE0181238	05/01/2020	05/01/2019
EMI Test Receiver	Rohde & Schwarz	ESW44	PRE0179367	05/16/2020	05/16/2019
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179376	02/14/2020	02/14/2019
Spectrum Analyzer, PSA, 3Hz to 44GHz	Agilent (Keysight) Technologies	E4440A	T200	01/28/2020	01/28/2019
Spectrum Analyzer, PSA, 3Hz to 44GHz	Agilent (Keysight) Technologies	E4440A	PRE0079281	01/29/2020	01/29/2019
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T917	01/24/2020	01/24/2019
AC Line Conducted					
EMI Receiver	Rohde & Schwarz	ESR	T1436	02/14/2020	02/14/2019
LISN for Conducted Emissions CISPR-16	FCC INC.	FCC LISN 50/250	T1310	01/24/2020	01/24/2019
Test Software List					
Radiated Software	UL	UL EMC		Ver 9.5, June 22, 2018	
Antenna Port Software	UL	UL RF		Ver 9.9, June 05, 2019	
AC Line Conducted Software	UL	UL EMC		Ver 9.5, May 26, 2015	

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.

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

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/B Minimum VBW (kHz)
2.4GHz Band						
802.11b	12.210	12.320	0.991	99.11%	0.00	0.010
802.11g	2.025	2.065	0.981	98.06%	0.00	0.010
802.11n HT20	1.890	1.925	0.982	98.18%	0.00	0.010
802.11n HT40	0.9282	0.9776	0.949	94.95%	0.23	1.077

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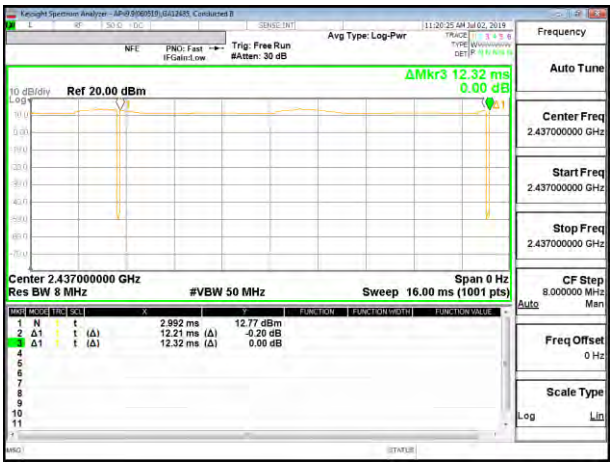
DUTY CYCLE PLOTS



DUTY CYCLE 802.11b MODE

DUTY CYCLE 802.11g MODE

DUTY CYCLE 802.11n HT20 MODE

DUTY CYCLE 802.11n HT40 MODE

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8.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

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8.2.1. 802.11b MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 1 (MHz)	99% Bandwidth Chain 2 (MHz)
Low 1	2412	13.744	13.780
Low 2	2417	14.026	13.987
Mid 6	2437	14.139	13.927
High 10	2457	14.144	14.726
High 11	2462	13.936	14.006
High 12	2467	13.918	13.972
High 13	2472	13.640	13.914

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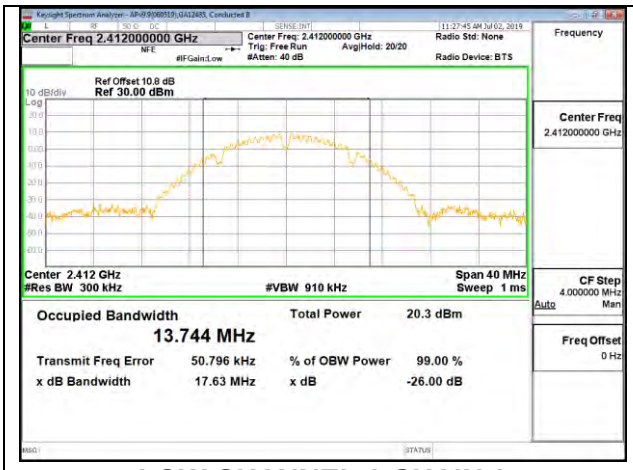
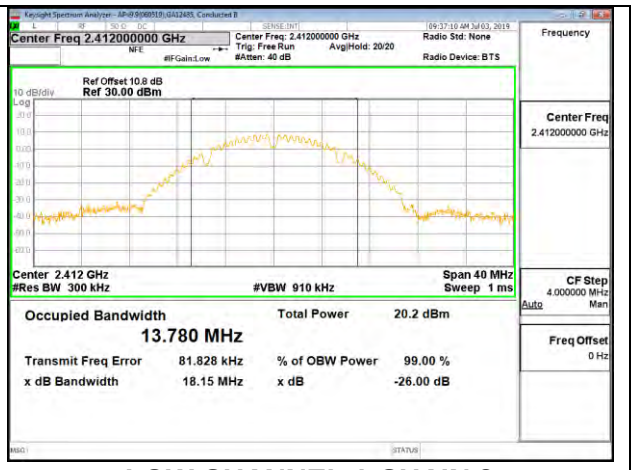
LOW CHANNEL 1

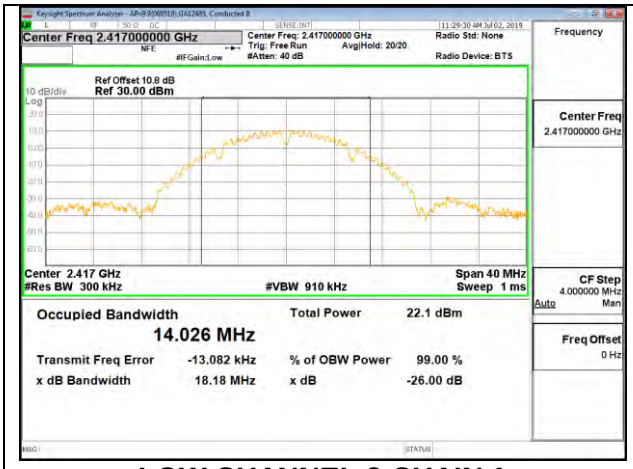


LOW CHANNEL 1 CHAIN 1

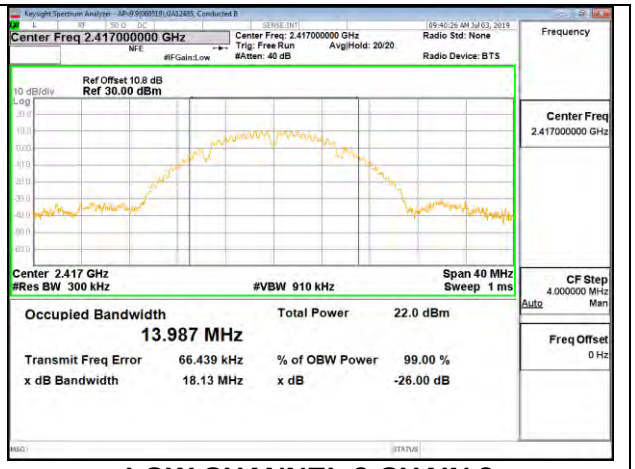


LOW CHANNEL 1 CHAIN 2

LOW CHANNEL 2

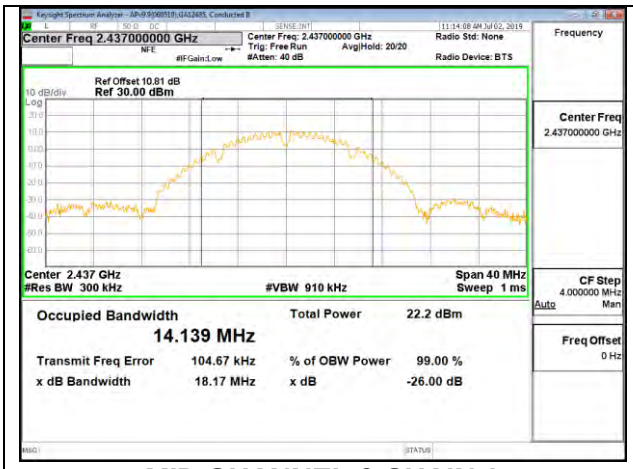


LOW CHANNEL 2 CHAIN 1

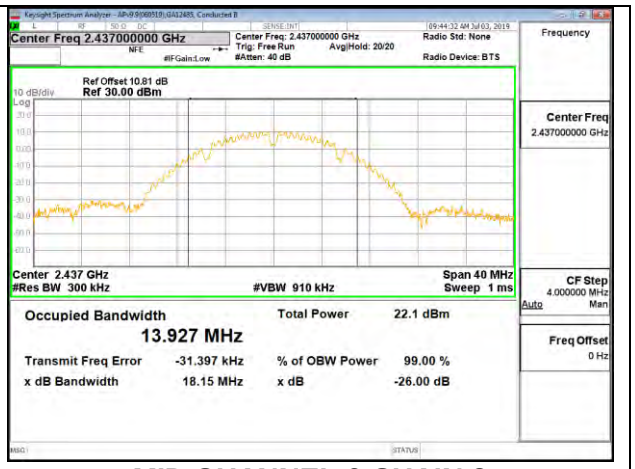


LOW CHANNEL 2 CHAIN 2

MID CHANNEL 6



MID CHANNEL 6 CHAIN 1



MID CHANNEL 6 CHAIN 2

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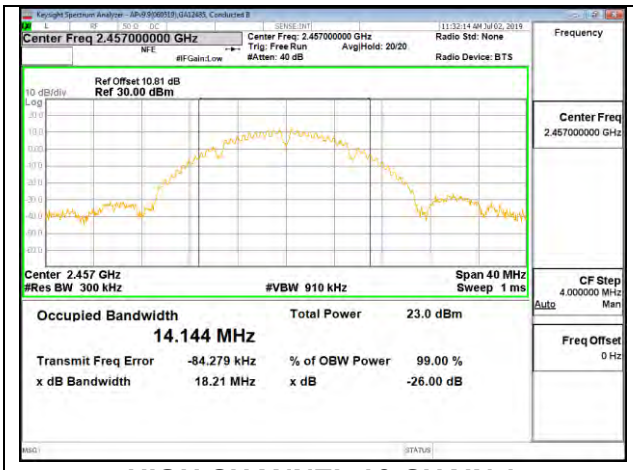
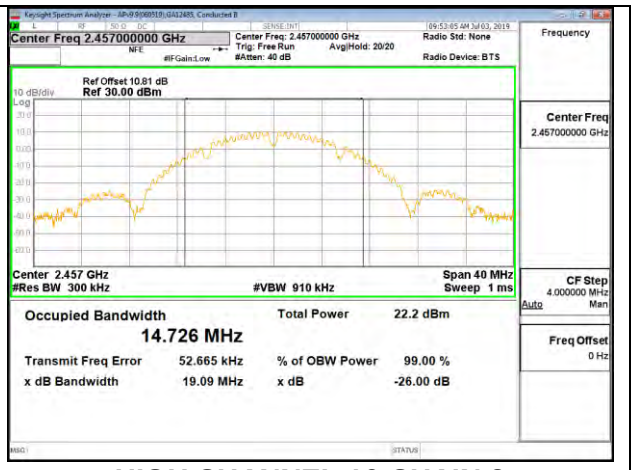
HIGH CHANNEL 10

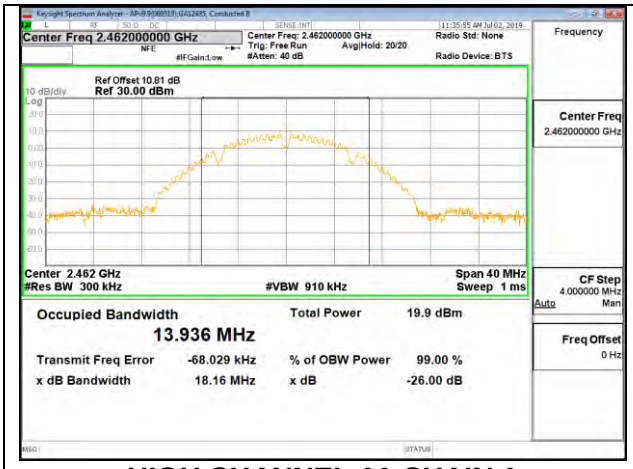


HIGH CHANNEL 10 CHAIN 1

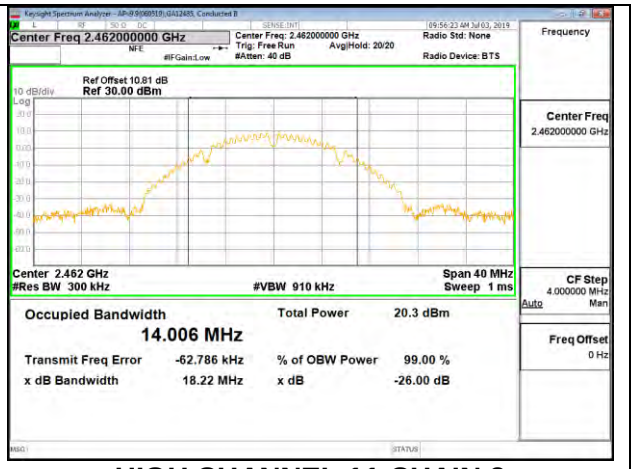


HIGH CHANNEL 10 CHAIN 2

HIGH CHANNEL 11

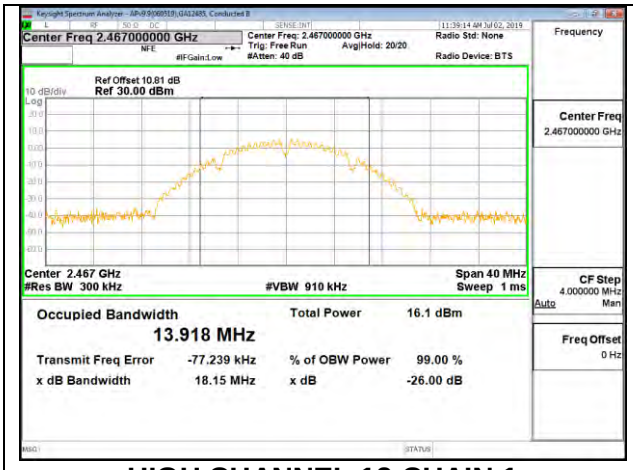


HIGH CHANNEL 11 CHAIN 1

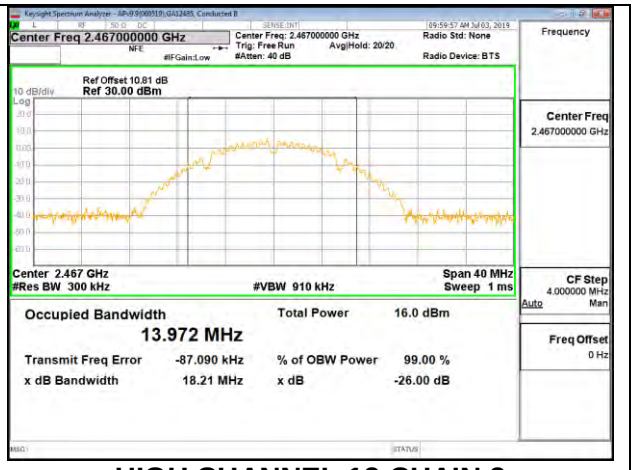


HIGH CHANNEL 11 CHAIN 2

HIGH CHANNEL 12



HIGH CHANNEL 12 CHAIN 1



HIGH CHANNEL 12 CHAIN 2

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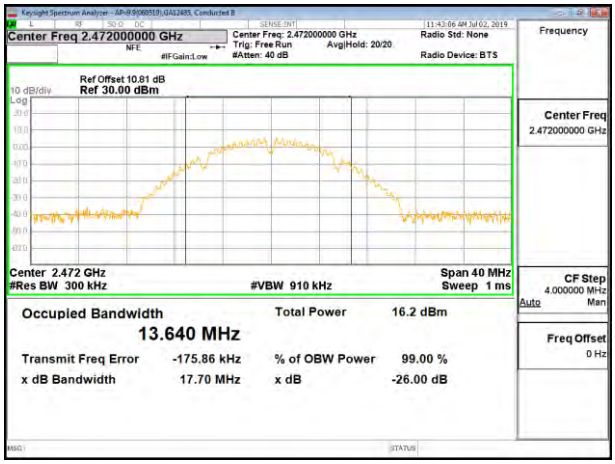
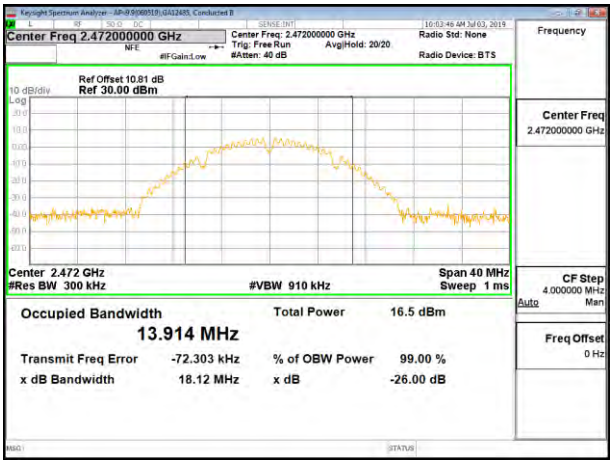
HIGH CHANNEL 13



HIGH CHANNEL 13 CHAIN 1



HIGH CHANNEL 13 CHAIN 2

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8.2.2. 802.11g MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 1 (MHz)	99% Bandwidth Chain 2 (MHz)
Low 1	2412	16.373	16.397
Low 2	2417	16.545	16.549
Mid 6	2437	16.623	16.508
High 10	2457	16.529	16.607
High 11	2462	16.440	16.485
High 12	2467	16.389	16.413
High 13	2472	16.339	16.375

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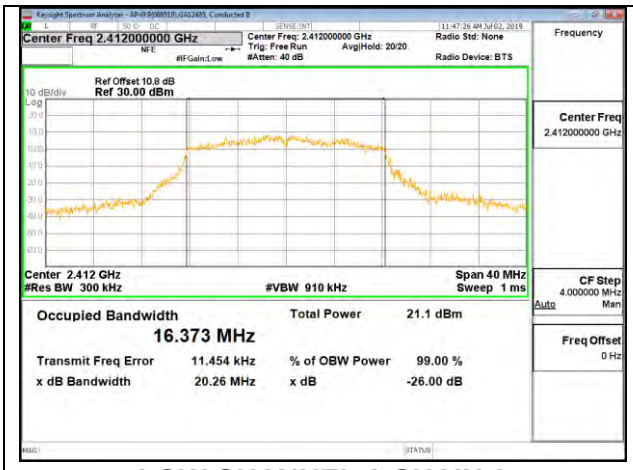
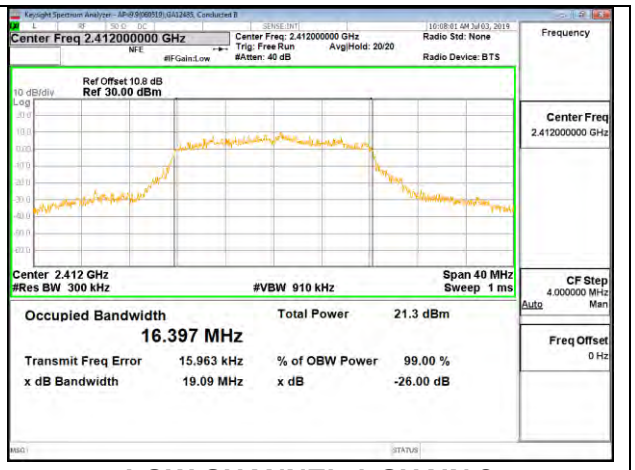
LOW CHANNEL 1

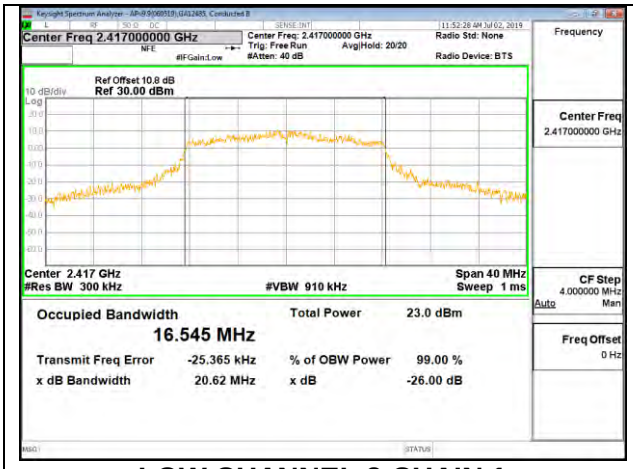


LOW CHANNEL 1 CHAIN 1

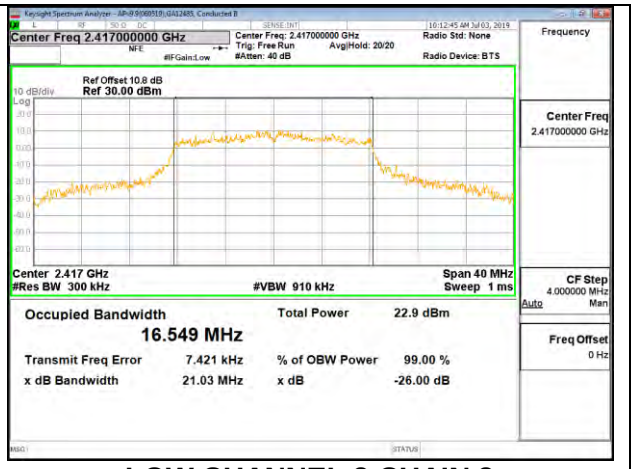


LOW CHANNEL 1 CHAIN 2

LOW CHANNEL 2

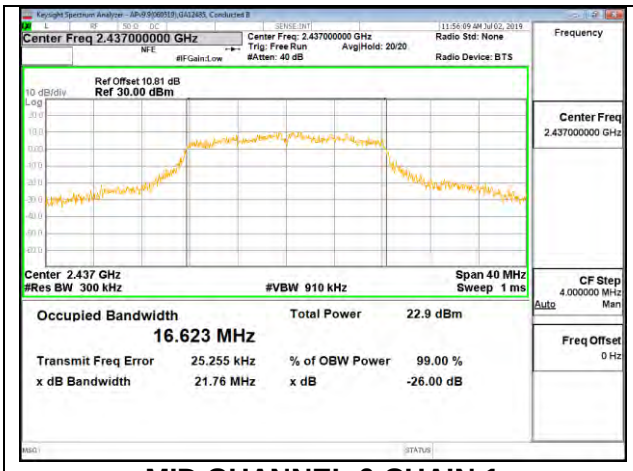


LOW CHANNEL 2 CHAIN 1

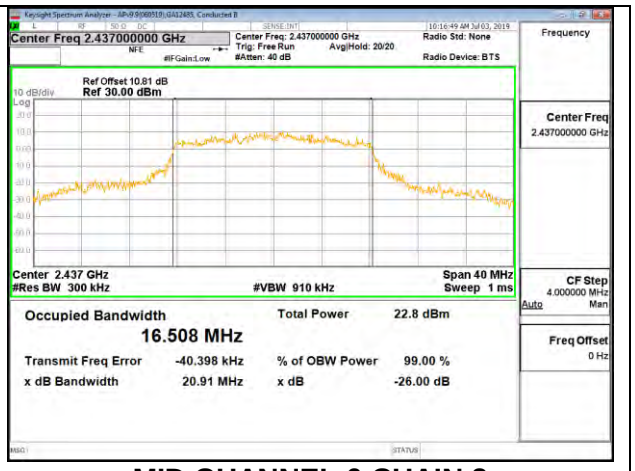


LOW CHANNEL 2 CHAIN 2

MID CHANNEL 6



MID CHANNEL 6 CHAIN 1



MID CHANNEL 6 CHAIN 2

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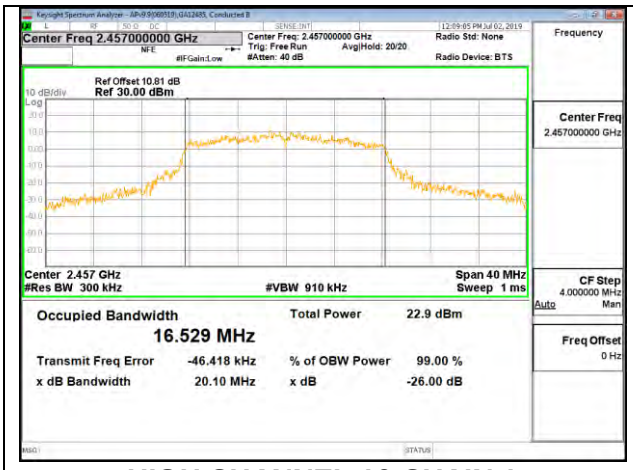
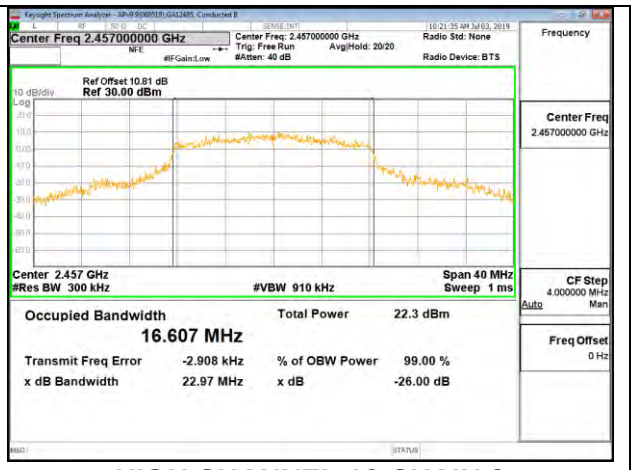
HIGH CHANNEL 10

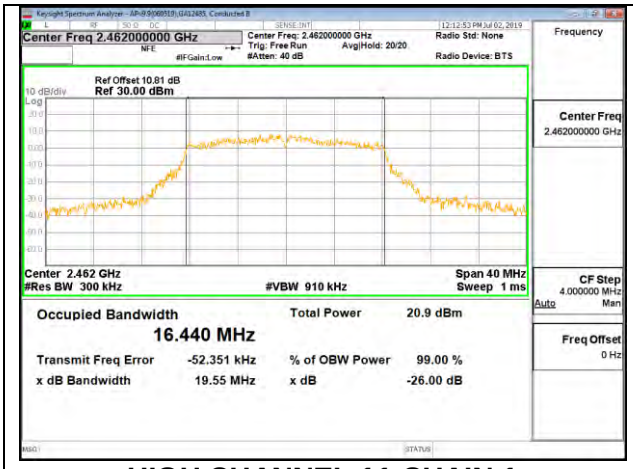


HIGH CHANNEL 10 CHAIN 1

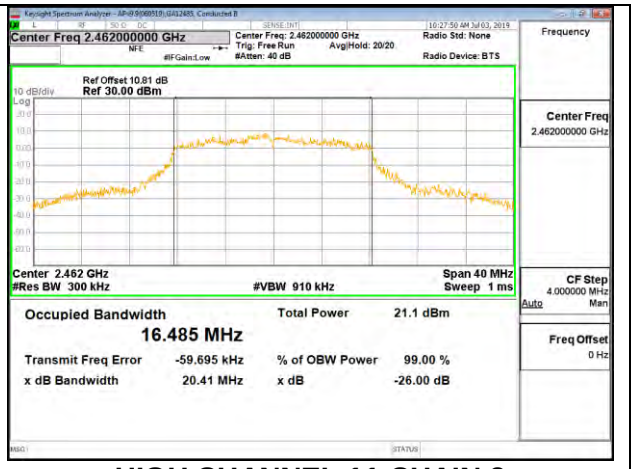


HIGH CHANNEL 10 CHAIN 2

HIGH CHANNEL 11

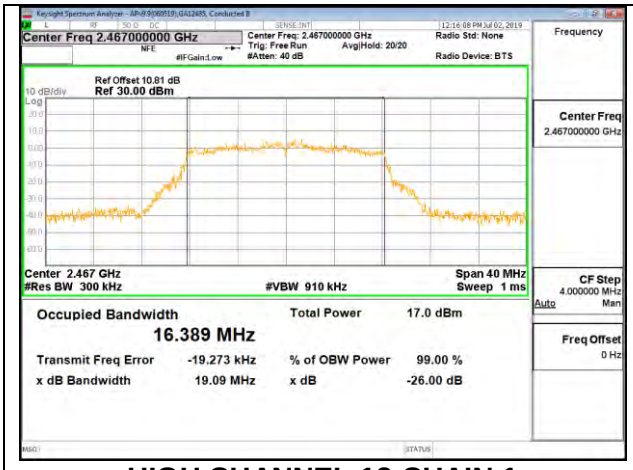


HIGH CHANNEL 11 CHAIN 1

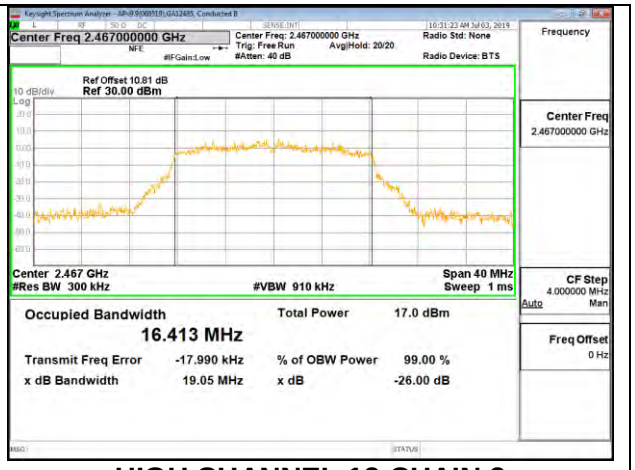


HIGH CHANNEL 11 CHAIN 2

HIGH CHANNEL 12



HIGH CHANNEL 12 CHAIN 1



HIGH CHANNEL 12 CHAIN 2

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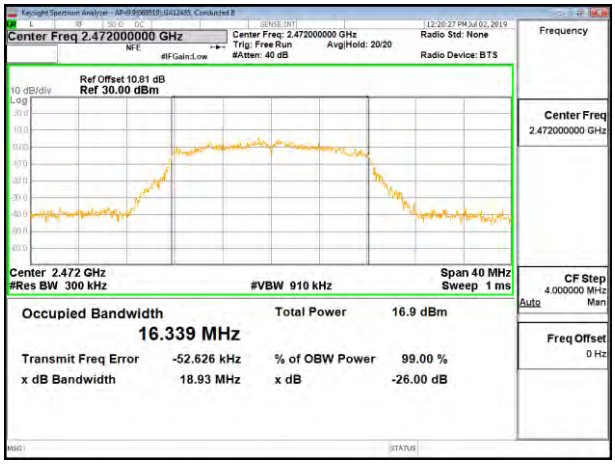
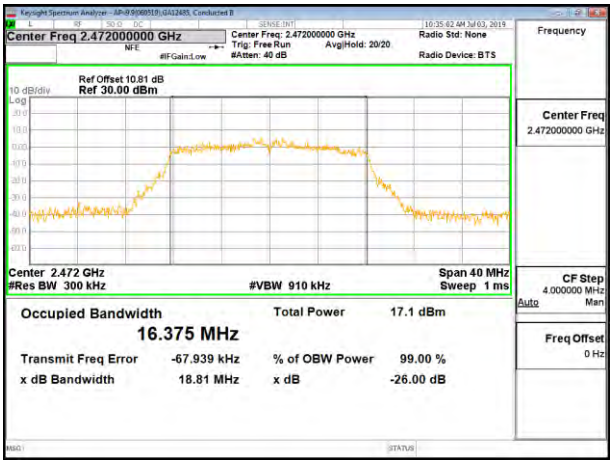
HIGH CHANNEL 13



HIGH CHANNEL 13 CHAIN 1



HIGH CHANNEL 13 CHAIN 2

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8.2.3. 802.11n HT20 MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 1 (MHz)	99% Bandwidth Chain 2 (MHz)
Low 1	2412	17.570	17.580
Low 2	2417	17.698	17.687
Mid 6	2437	17.732	17.706
High 10	2457	17.649	17.803
High 11	2462	17.596	17.711
High 12	2467	17.609	17.581
High 13	2472	17.513	17.503

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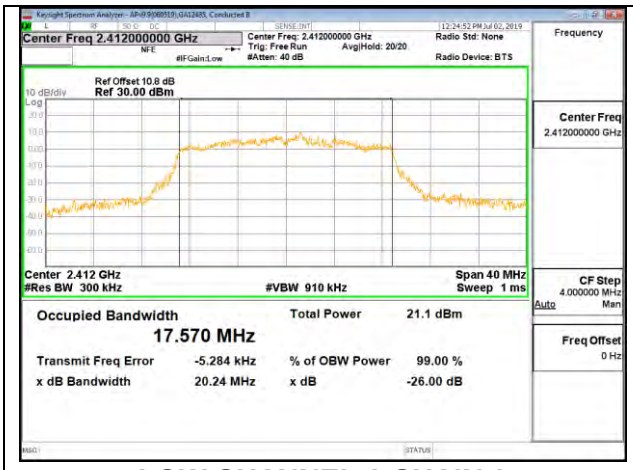
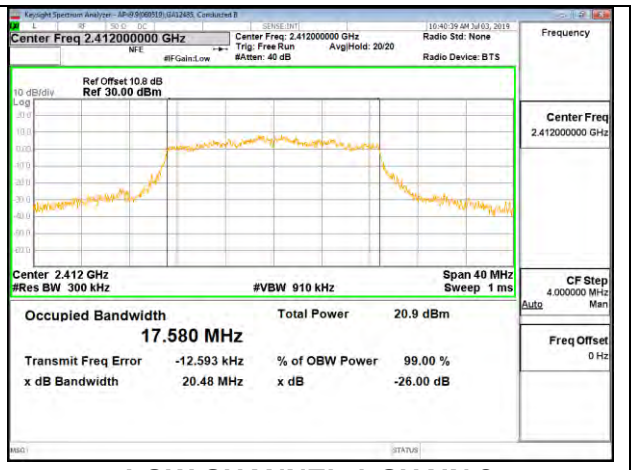
LOW CHANNEL 1

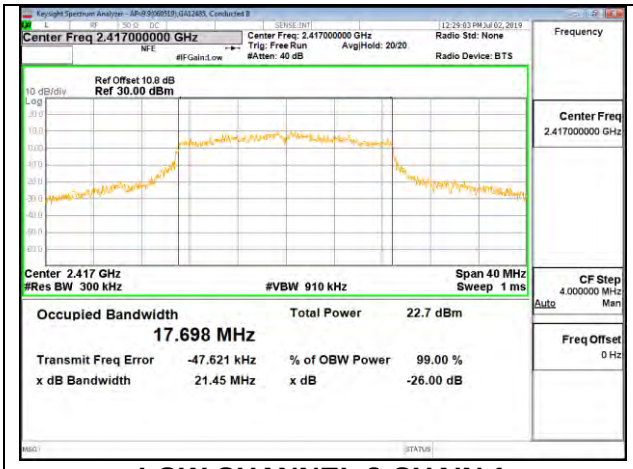


LOW CHANNEL 1 CHAIN 1

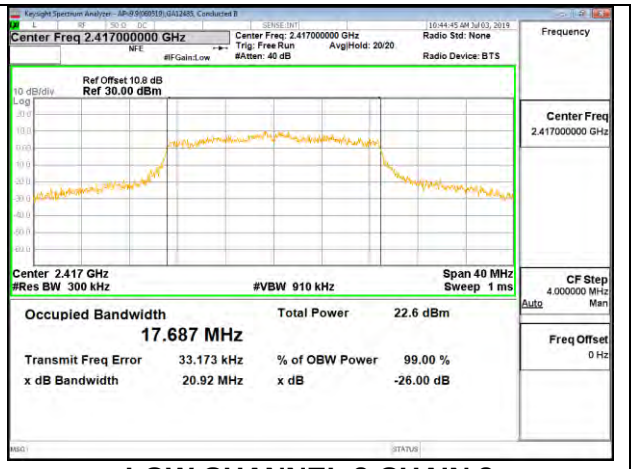


LOW CHANNEL 1 CHAIN 2

LOW CHANNEL 2

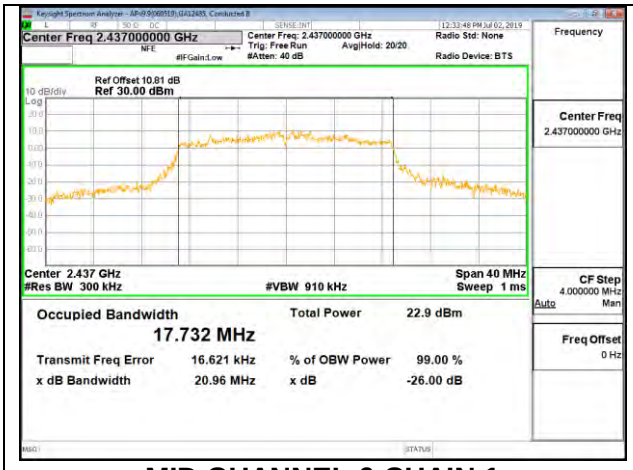


LOW CHANNEL 2 CHAIN 1

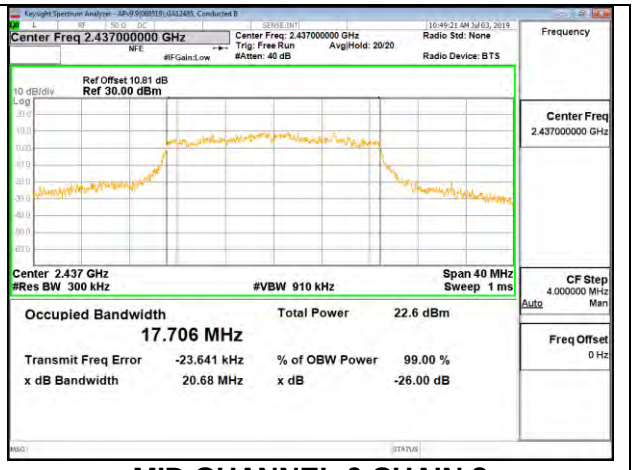


LOW CHANNEL 2 CHAIN 2

MID CHANNEL 6



MID CHANNEL 6 CHAIN 1



MID CHANNEL 6 CHAIN 2

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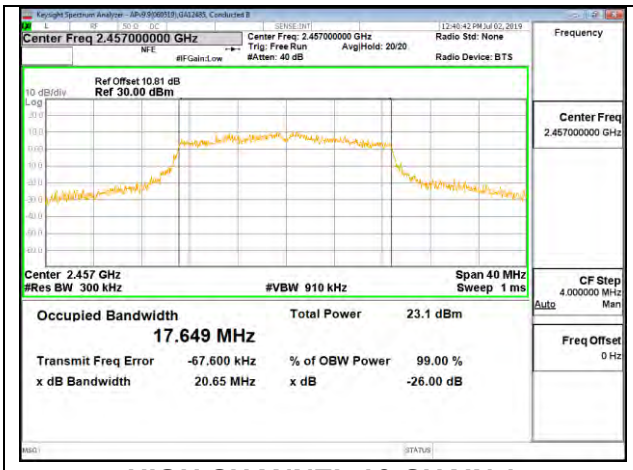
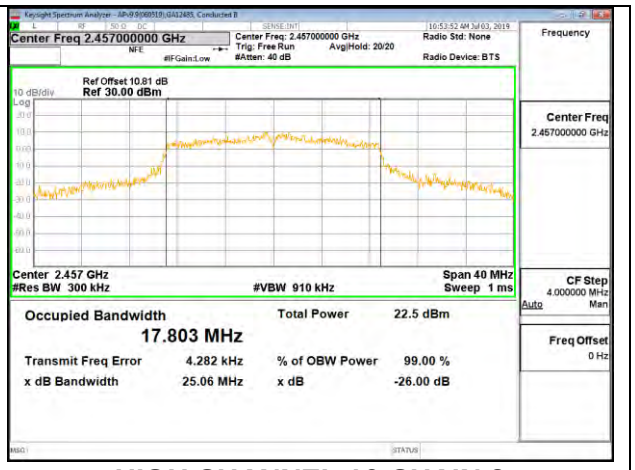
HIGH CHANNEL 10

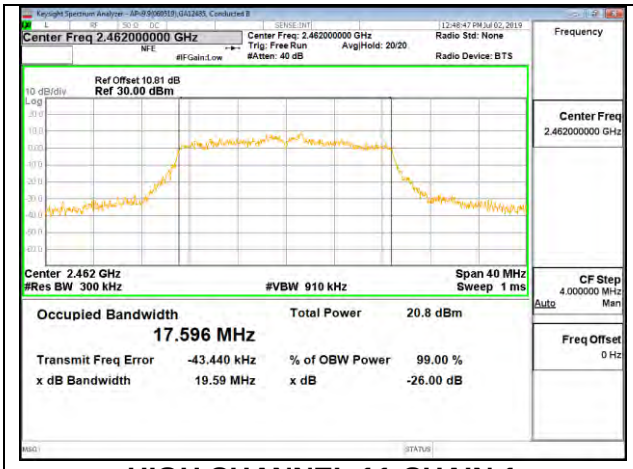


HIGH CHANNEL 10 CHAIN 1

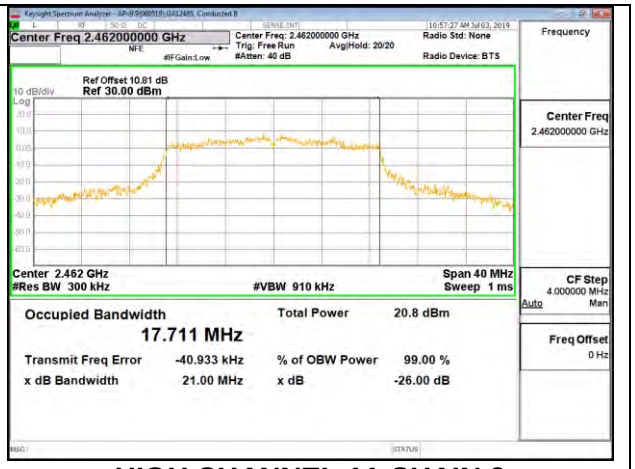


HIGH CHANNEL 10 CHAIN 2

HIGH CHANNEL 11

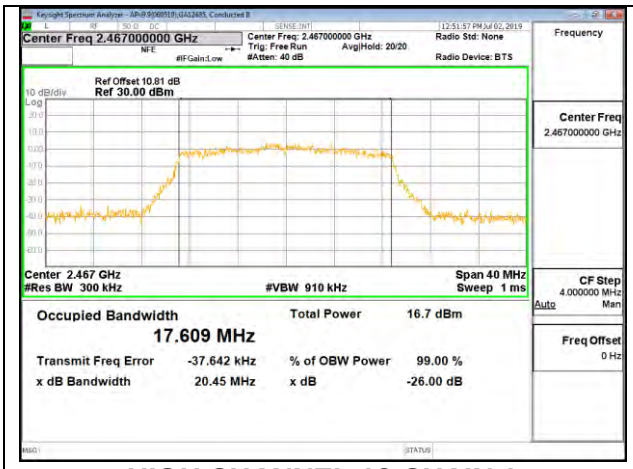


HIGH CHANNEL 11 CHAIN 1

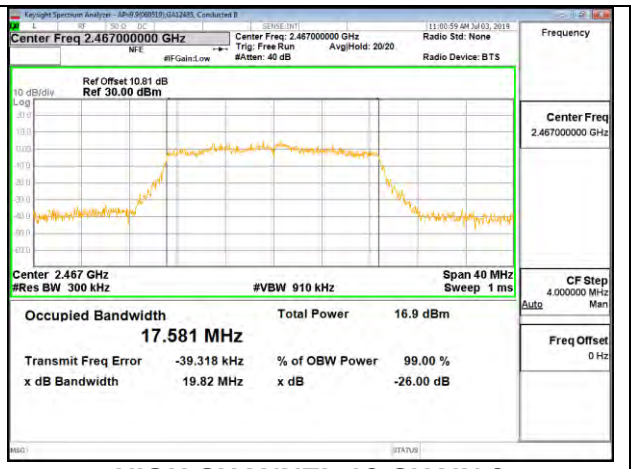


HIGH CHANNEL 11 CHAIN 2

HIGH CHANNEL 12



HIGH CHANNEL 12 CHAIN 1



HIGH CHANNEL 12 CHAIN 2

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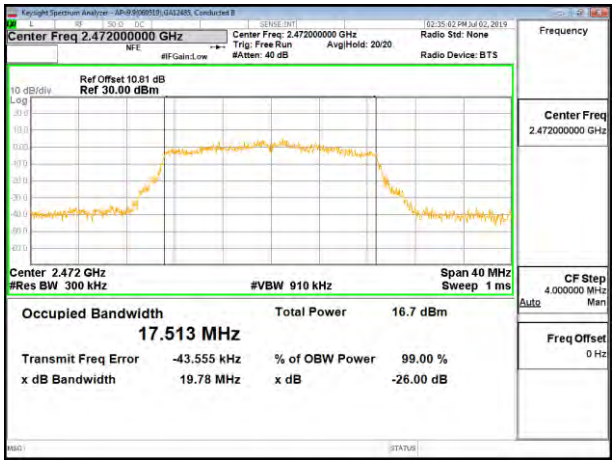
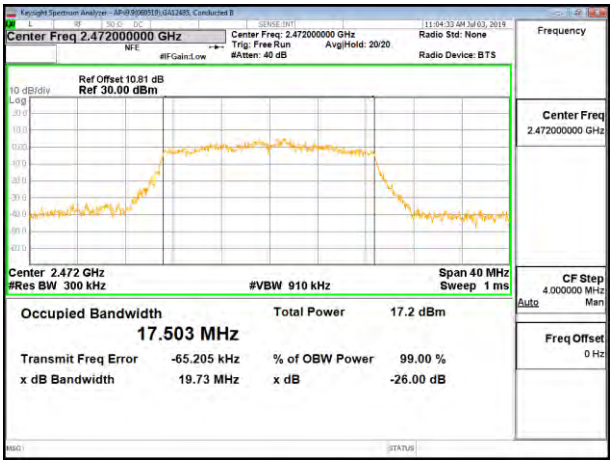
HIGH CHANNEL 13



HIGH CHANNEL 13 CHAIN 1



HIGH CHANNEL 13 CHAIN 2

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8.2.4. 802.11n HT40 MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 1 (MHz)	99% Bandwidth Chain 2 (MHz)
Low 3	2422	36.1040	35.9810
Low 4	2427	35.9612	35.8185
Low 5	2432	35.9938	35.8773
Mid 6	2437	36.1380	36.0700
High 7	2442	35.9090	35.9461
High 8	2447	35.6989	35.9310
High 9	2452	35.6918	35.8519
High 10	2457	35.8900	36.0450
High 11	2462	35.9610	35.9410

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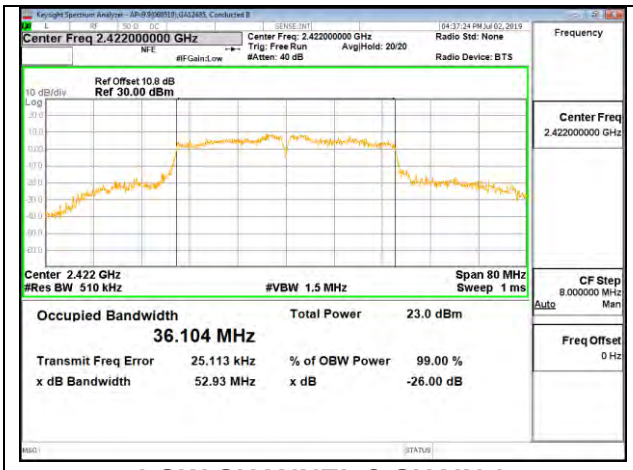
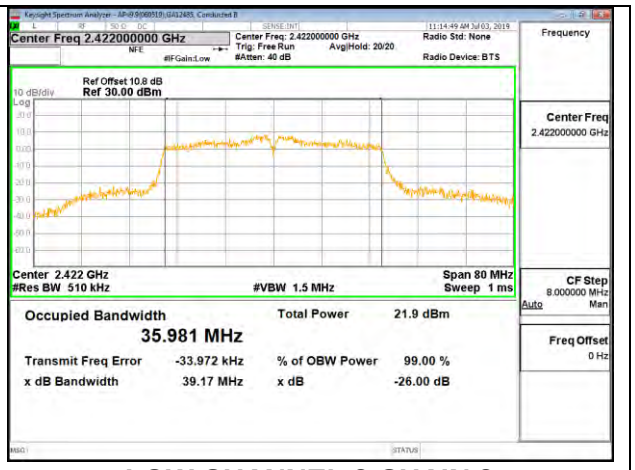
LOW CHANNEL 3

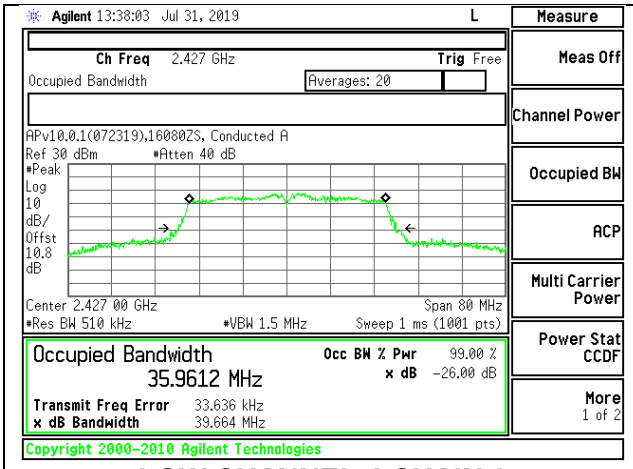


LOW CHANNEL 3 CHAIN 1

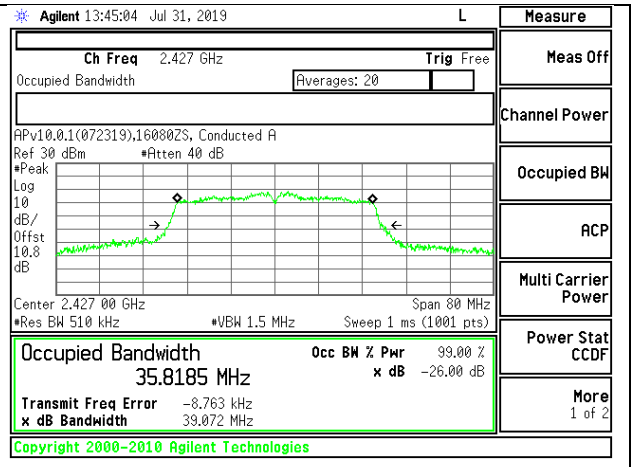


LOW CHANNEL 3 CHAIN 2

LOW CHANNEL 4

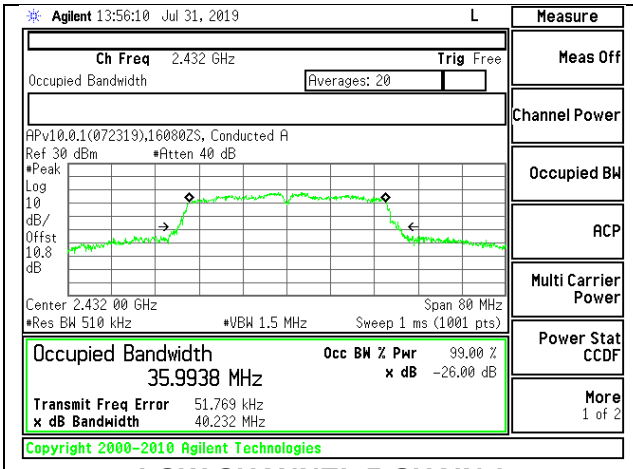


LOW CHANNEL 4 CHAIN 1

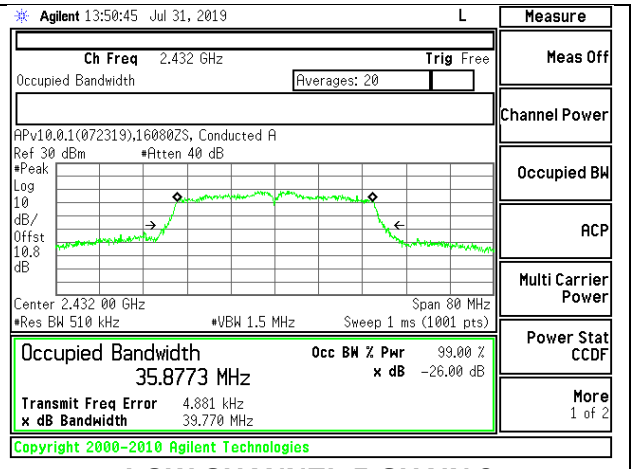


LOW CHANNEL 4 CHAIN 2

LOW CHANNEL 5



LOW CHANNEL 5 CHAIN 1



LOW CHANNEL 5 CHAIN 2

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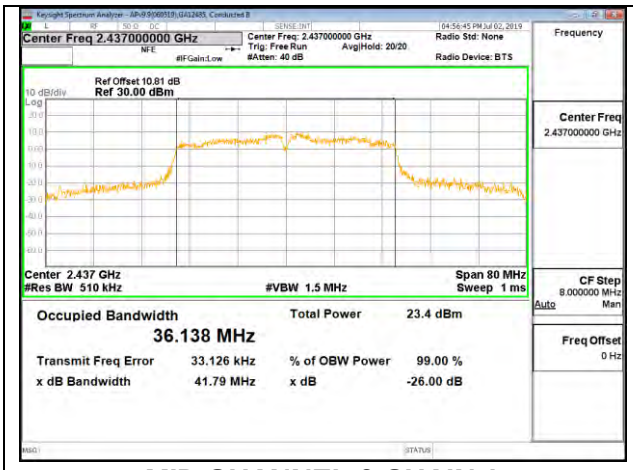
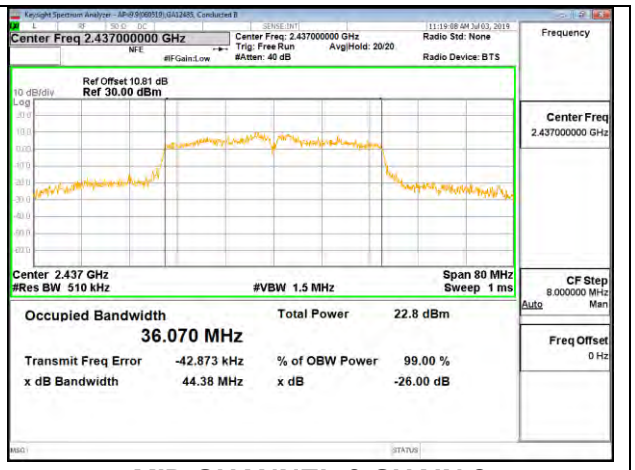
MID CHANNEL 6

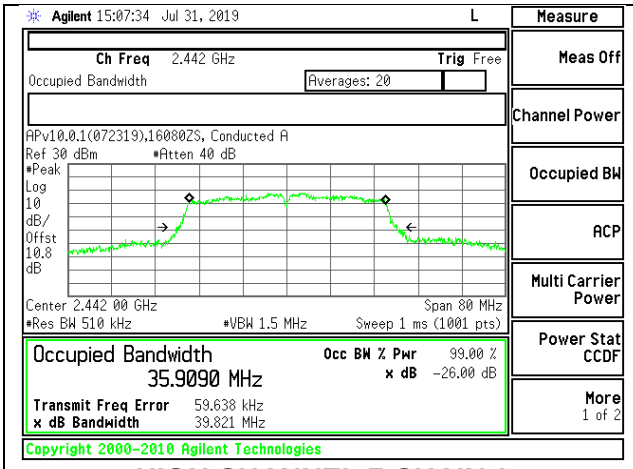


MID CHANNEL 6 CHAIN 1

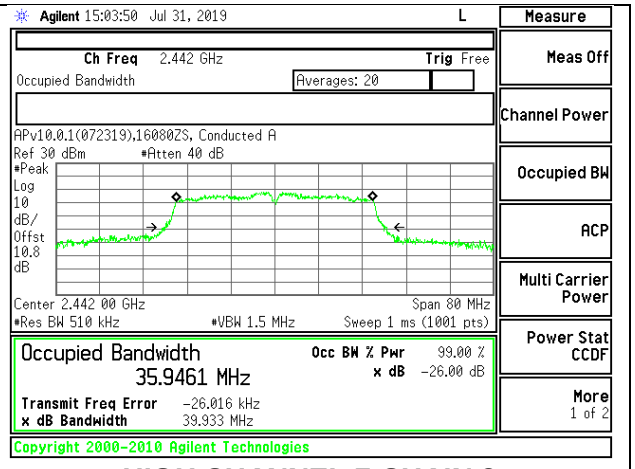


MID CHANNEL 6 CHAIN 2

HIGH CHANNEL 7

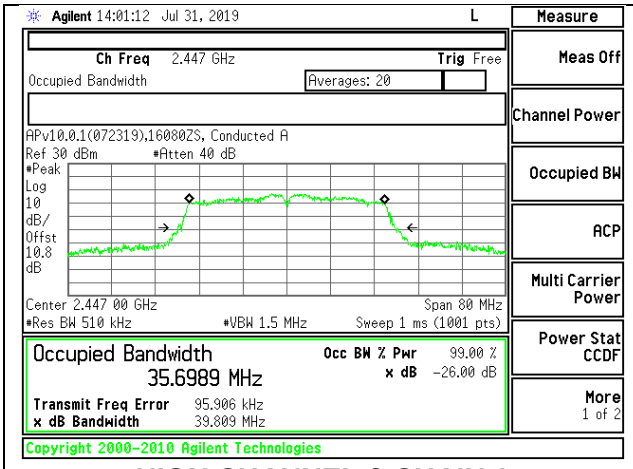


HIGH CHANNEL 7 CHAIN 1

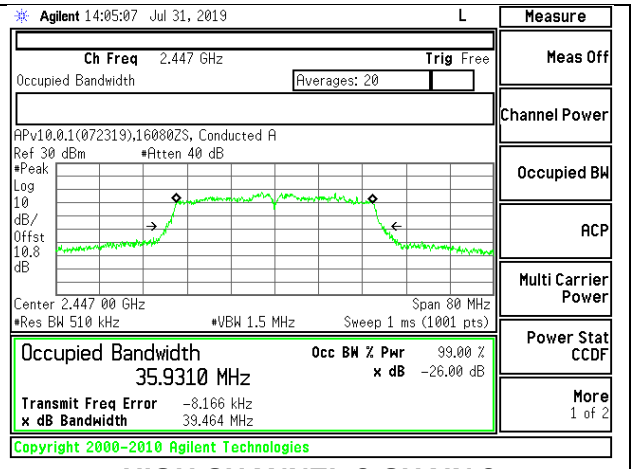


HIGH CHANNEL 7 CHAIN 2

HIGH CHANNEL 8



HIGH CHANNEL 8 CHAIN 1



HIGH CHANNEL 8 CHAIN 2

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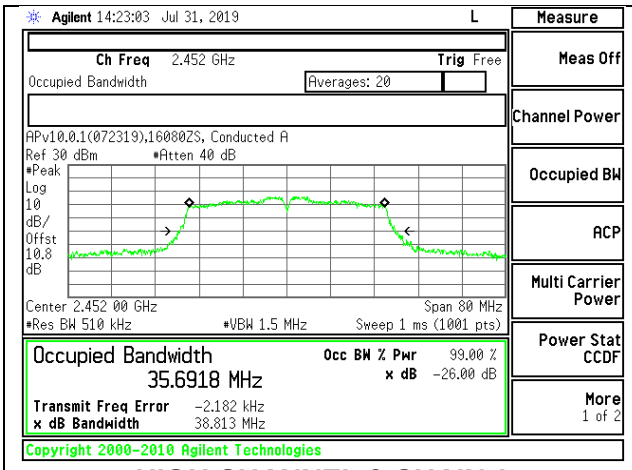
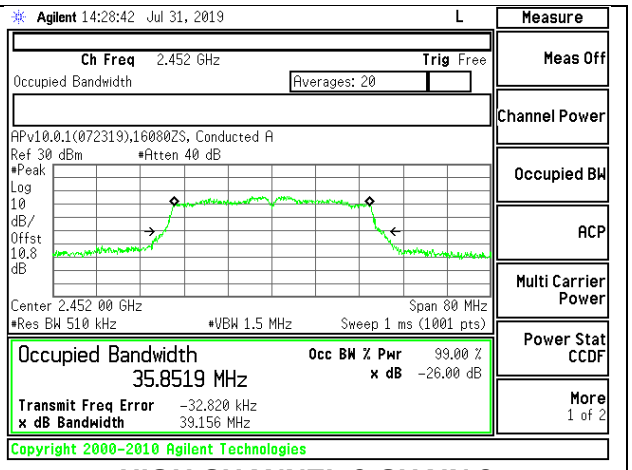
HIGH CHANNEL 9

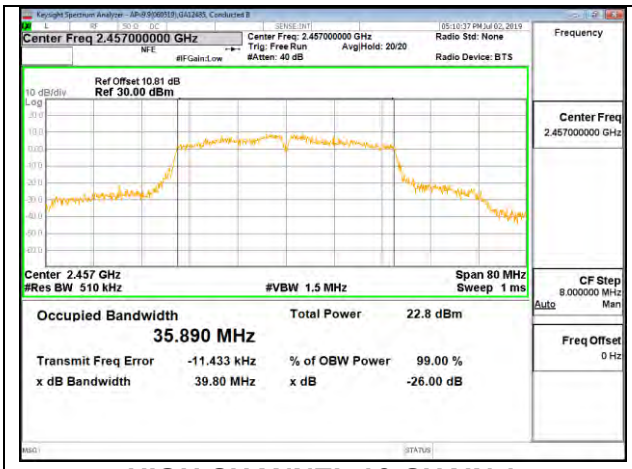


HIGH CHANNEL 9 CHAIN 1

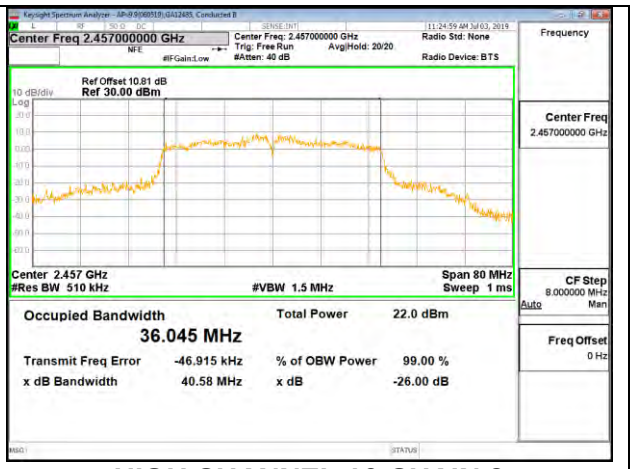


HIGH CHANNEL 9 CHAIN 2

HIGH CHANNEL 10

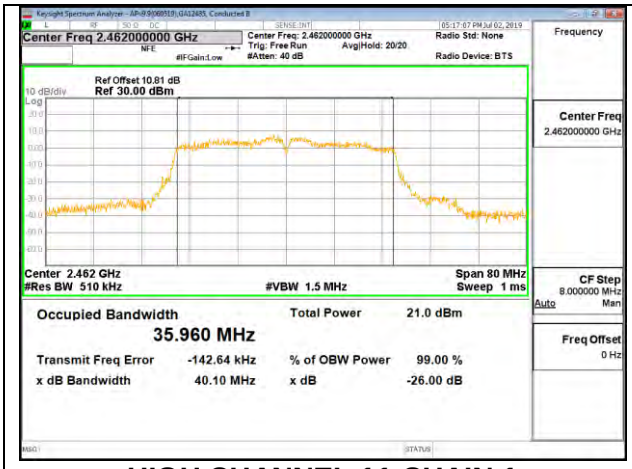


HIGH CHANNEL 10 CHAIN 1

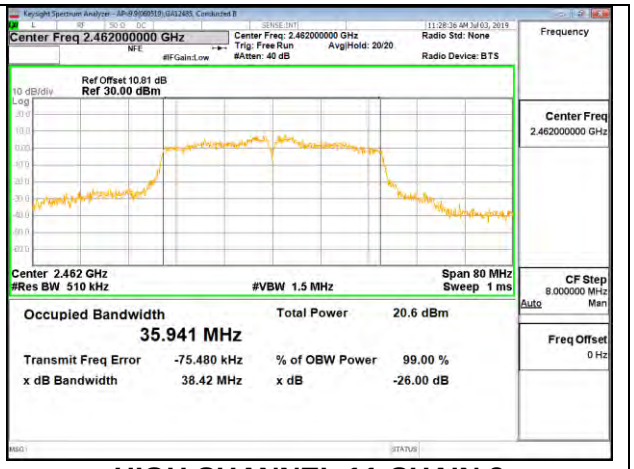


HIGH CHANNEL 10 CHAIN 2

HIGH CHANNEL 11



HIGH CHANNEL 11 CHAIN 1



HIGH CHANNEL 11 CHAIN 2

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8.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

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

RESULTS

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8.3.1. 802.11b MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low 1	2412	8.72	8.48	0.5
Low 2	2417	8.64	8.64	0.5
Mid 6	2437	9.16	8.12	0.5
High 10	2457	8.64	9.20	0.5
High 11	2462	9.68	8.76	0.5
High 12	2467	8.20	8.68	0.5
High 13	2472	9.08	8.64	0.5

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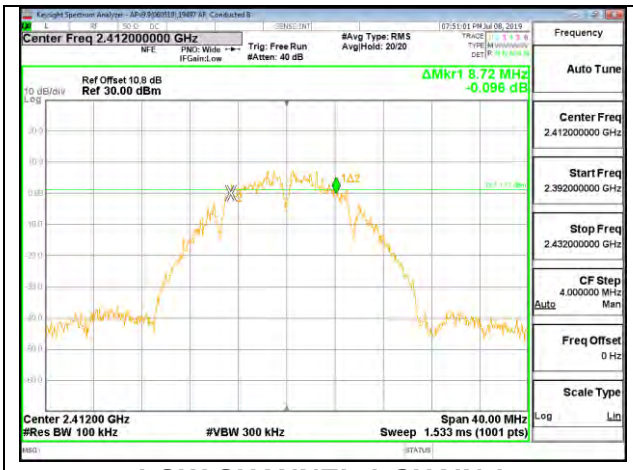
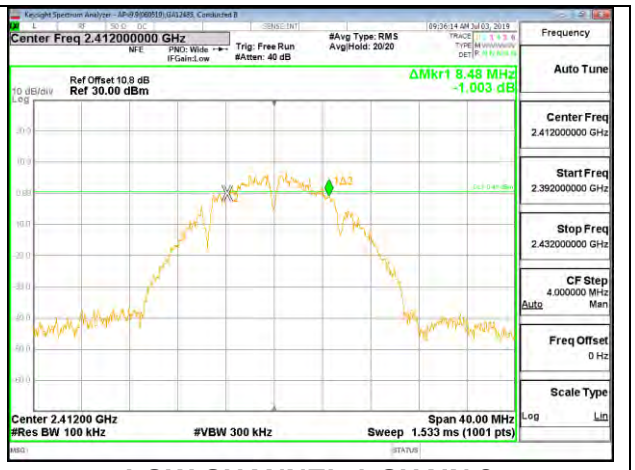
LOW CHANNEL 1

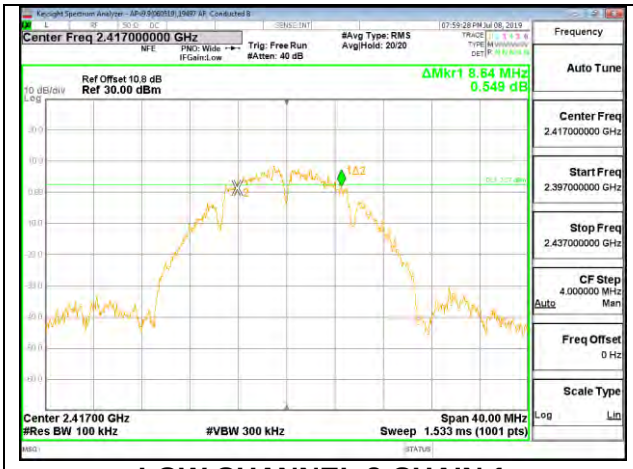


LOW CHANNEL 1 CHAIN 1



LOW CHANNEL 1 CHAIN 2

LOW CHANNEL 2



LOW CHANNEL 2 CHAIN 1

LOW CHANNEL 2 CHAIN 2

MID CHANNEL 6

MID CHANNEL 6 CHAIN 1

MID CHANNEL 6 CHAIN 2

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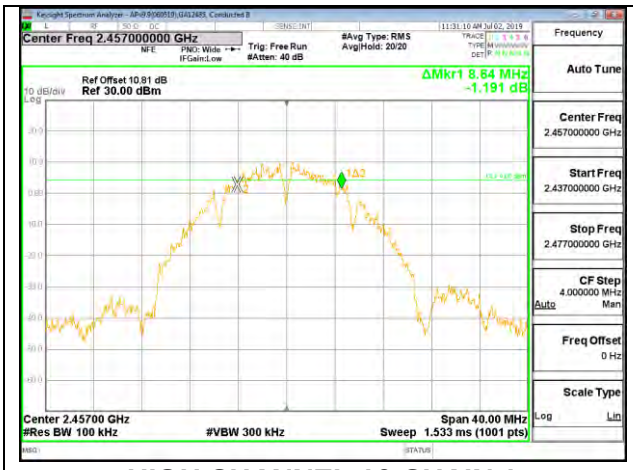
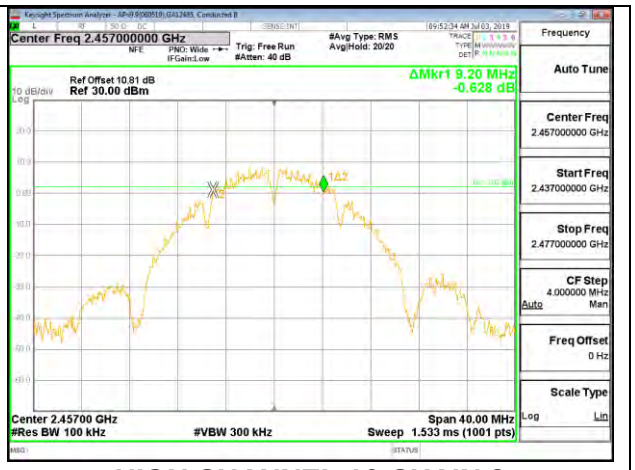
HIGH CHANNEL 10



HIGH CHANNEL 10 CHAIN 1



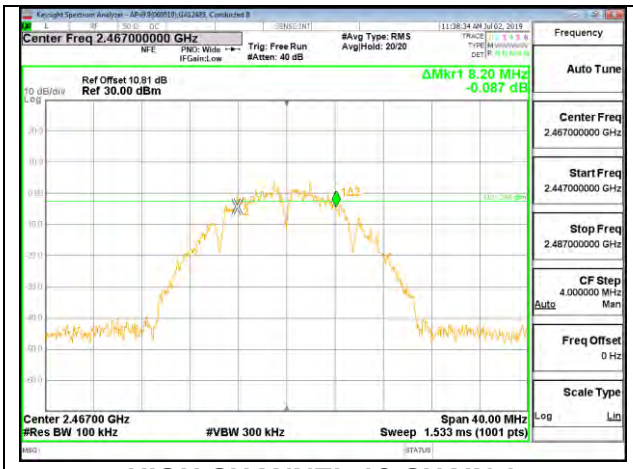
HIGH CHANNEL 10 CHAIN 2

HIGH CHANNEL 11

HIGH CHANNEL 11 CHAIN 1

HIGH CHANNEL 11 CHAIN 2

HIGH CHANNEL 12



HIGH CHANNEL 12 CHAIN 1

HIGH CHANNEL 12 CHAIN 2

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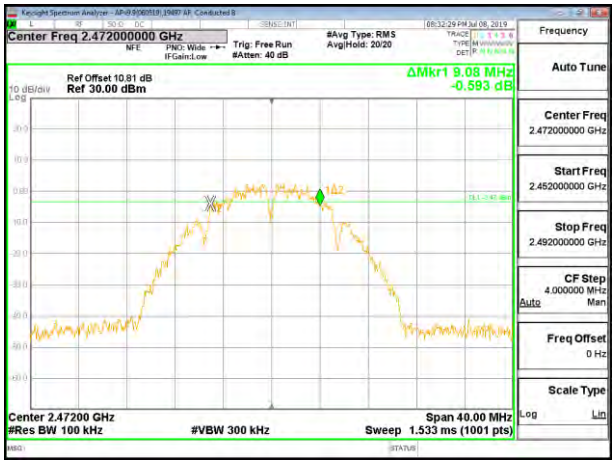
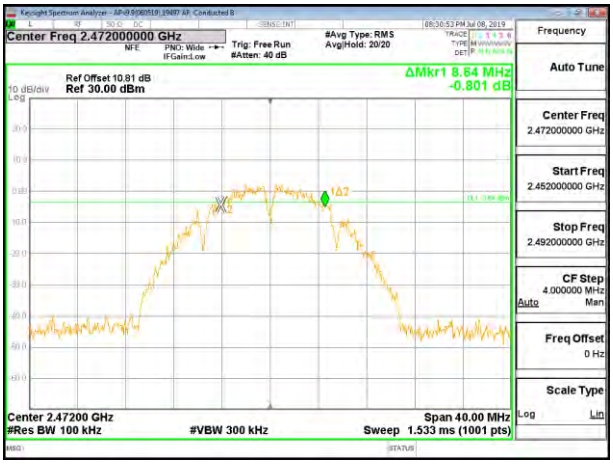
HIGH CHANNEL 13



HIGH CHANNEL 13 CHAIN 1



HIGH CHANNEL 13 CHAIN 2

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8.3.2. 802.11g MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low 1	2412	16.00	16.36	0.5
Low 2	2417	16.36	15.96	0.5
Mid 6	2437	16.36	16.40	0.5
High 10	2457	16.40	16.36	0.5
High 11	2462	16.40	16.36	0.5
High 12	2467	16.16	16.36	0.5
High 13	2472	16.40	16.16	0.5

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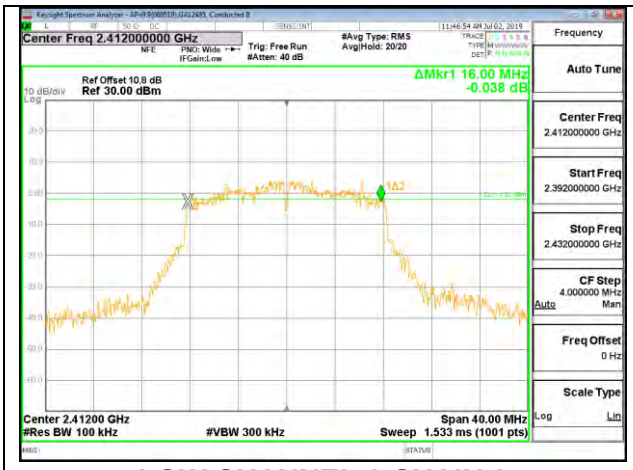
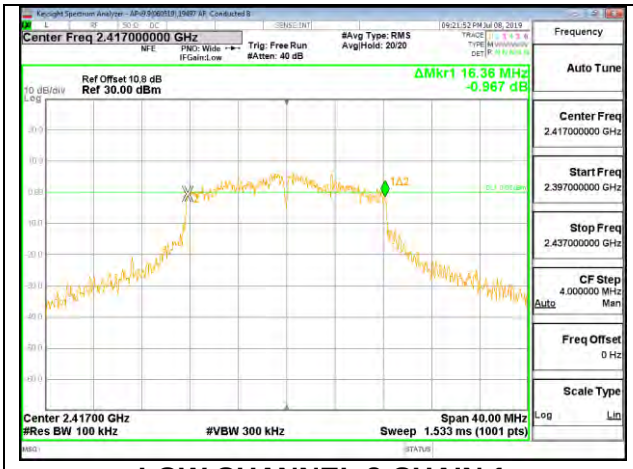
LOW CHANNEL 1



LOW CHANNEL 1 CHAIN 1

LOW CHANNEL 1 CHAIN 2

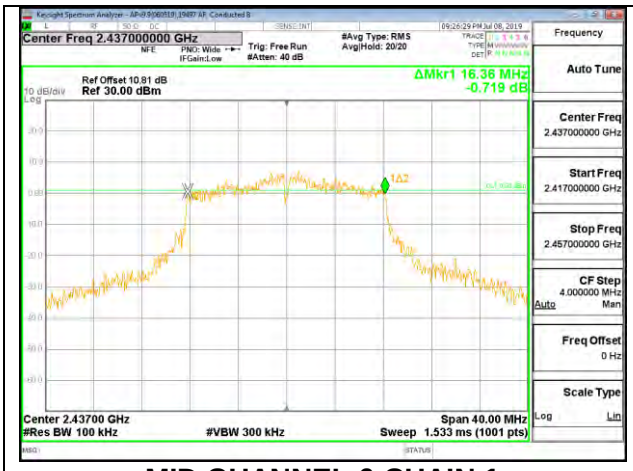
LOW CHANNEL 2



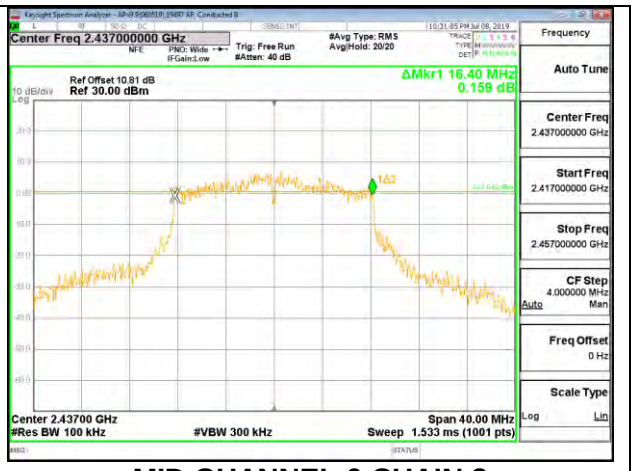
LOW CHANNEL 2 CHAIN 1

LOW CHANNEL 2 CHAIN 2

MID CHANNEL 6



MID CHANNEL 6 CHAIN 1



MID CHANNEL 6 CHAIN 2

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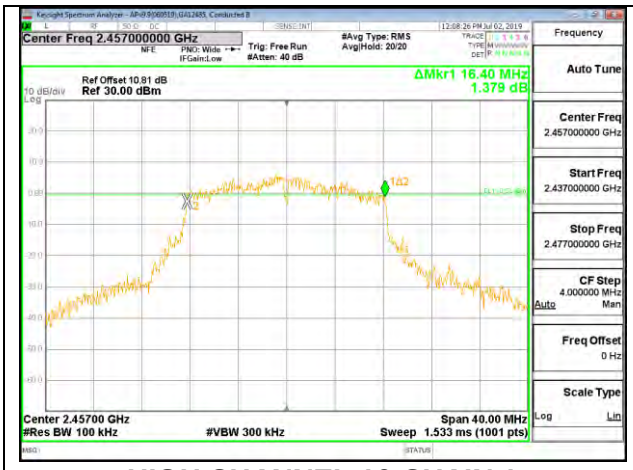
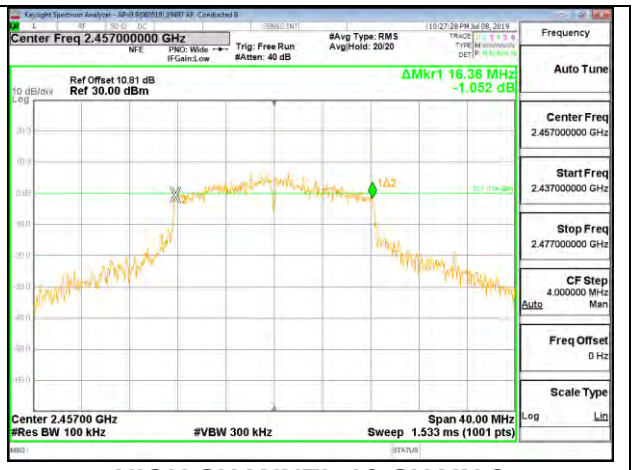
HIGH CHANNEL 10

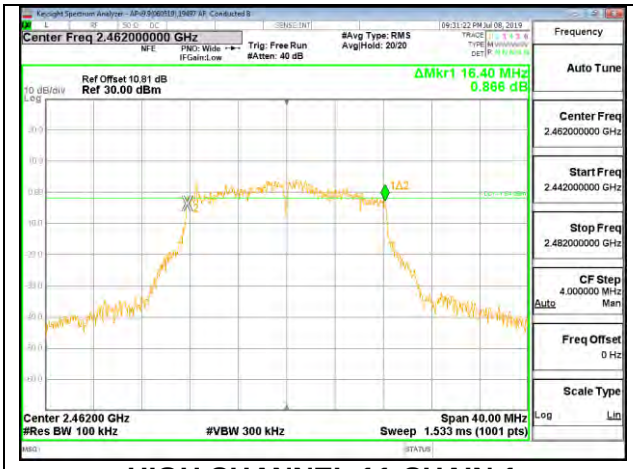


HIGH CHANNEL 10 CHAIN 1

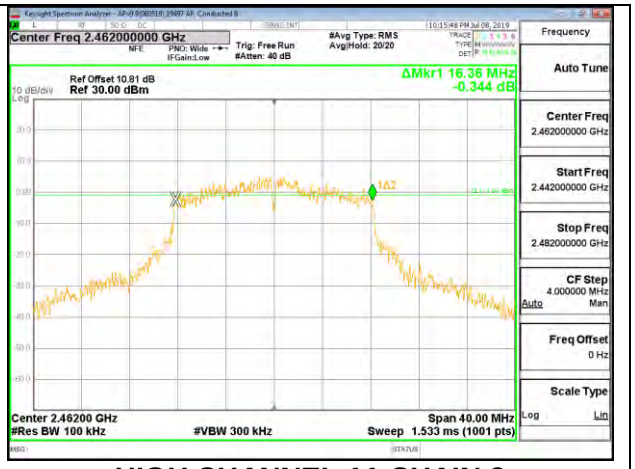


HIGH CHANNEL 10 CHAIN 2

HIGH CHANNEL 11

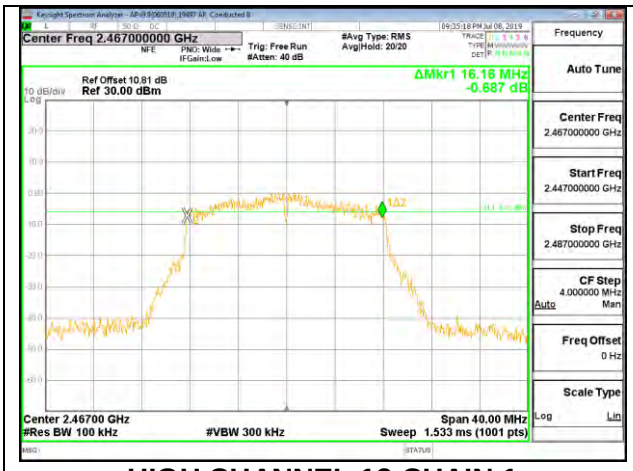


HIGH CHANNEL 11 CHAIN 1



HIGH CHANNEL 11 CHAIN 2

HIGH CHANNEL 12



HIGH CHANNEL 12 CHAIN 1

HIGH CHANNEL 12 CHAIN 2

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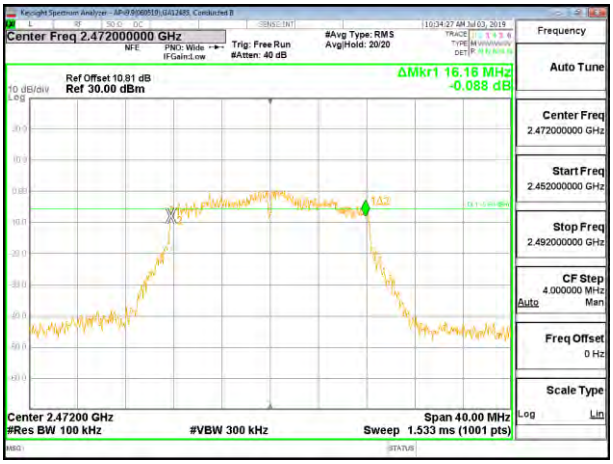
HIGH CHANNEL 13

HIGH CHANNEL 13 CHAIN 1



HIGH CHANNEL 13 CHAIN 2

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8.3.3. 802.11n HT20 MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low 1	2412	17.28	17.28	0.5
Low 2	2417	17.04	17.64	0.5
Mid 6	2437	17.68	16.92	0.5
High 10	2457	17.44	17.64	0.5
High 11	2462	17.24	17.28	0.5
High 12	2467	17.68	17.28	0.5
High 13	2472	17.32	17.40	0.5

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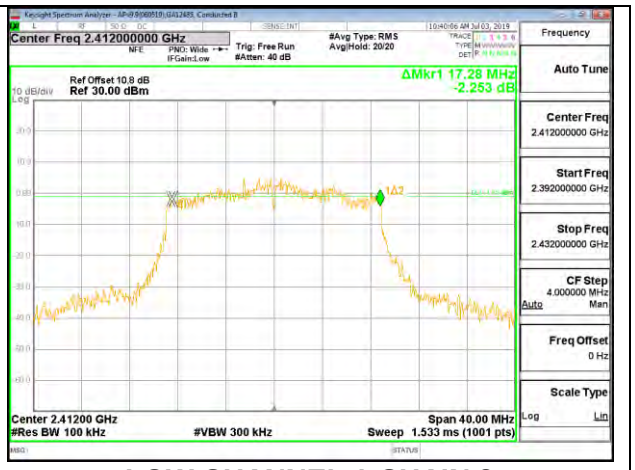
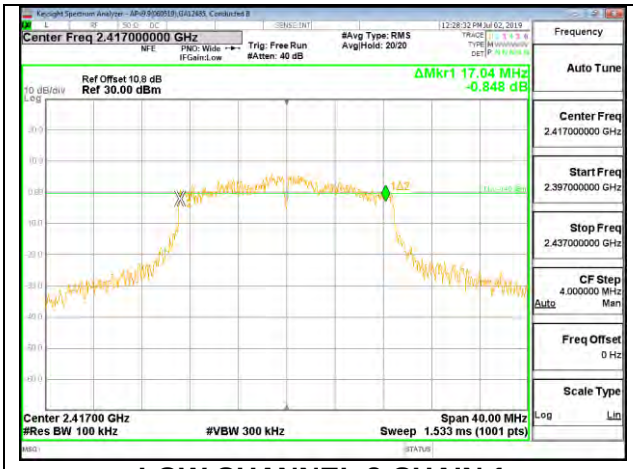
LOW CHANNEL 1

LOW CHANNEL 1 CHAIN 1

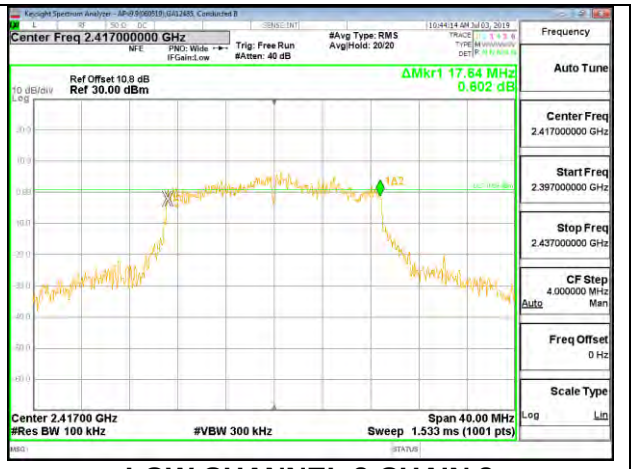


LOW CHANNEL 1 CHAIN 2

LOW CHANNEL 2

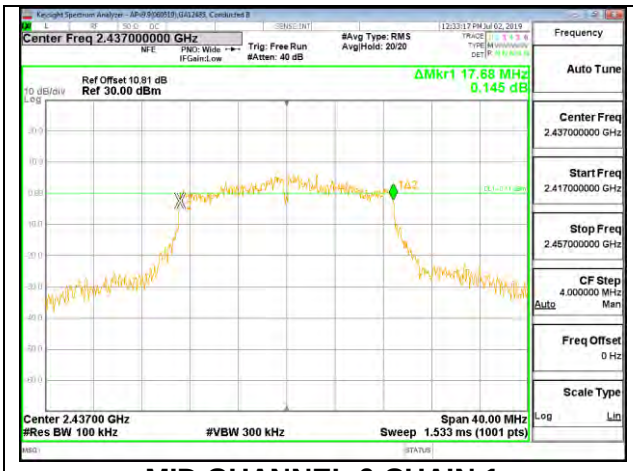


LOW CHANNEL 2 CHAIN 1

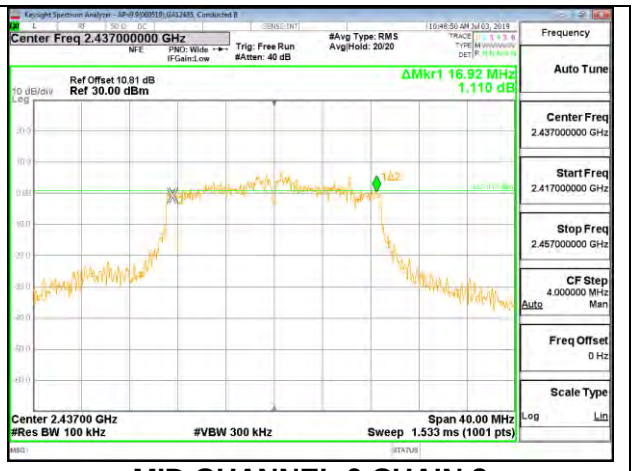


LOW CHANNEL 2 CHAIN 2

MID CHANNEL 6



MID CHANNEL 6 CHAIN 1



MID CHANNEL 6 CHAIN 2

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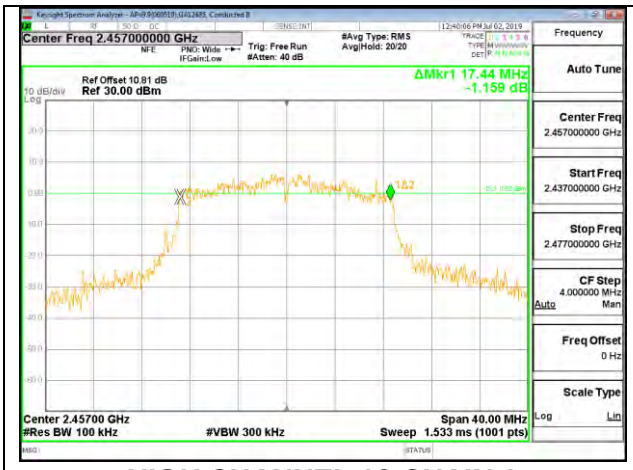
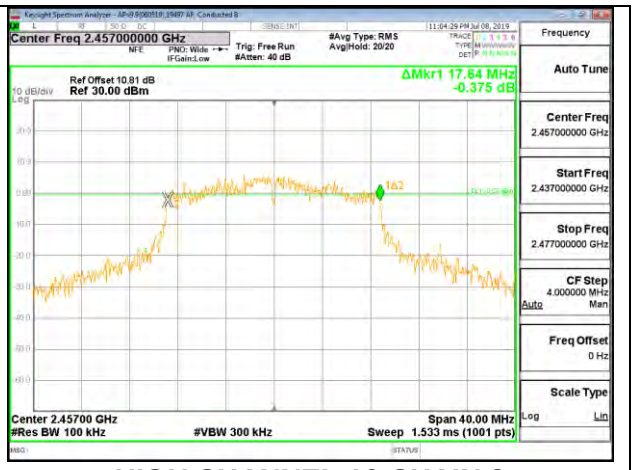
HIGH CHANNEL 10

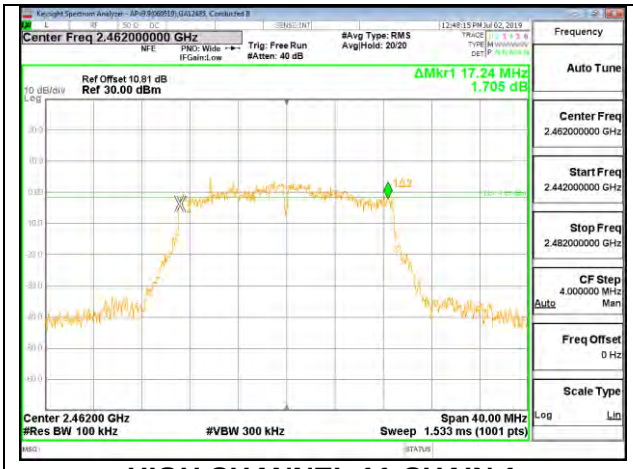


HIGH CHANNEL 10 CHAIN 1

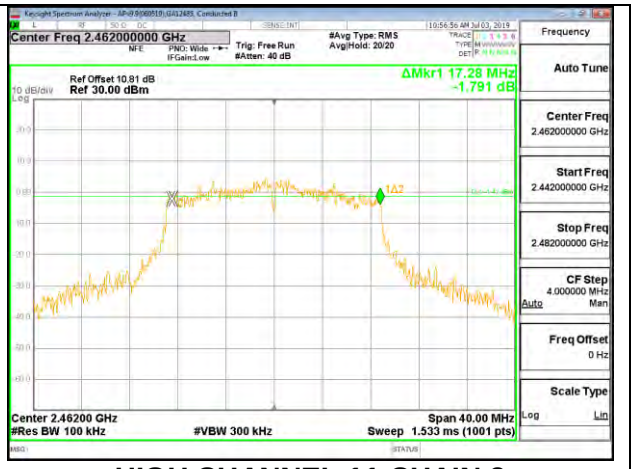


HIGH CHANNEL 10 CHAIN 2

HIGH CHANNEL 11



HIGH CHANNEL 11 CHAIN 1



HIGH CHANNEL 11 CHAIN 2

HIGH CHANNEL 12

HIGH CHANNEL 12 CHAIN 1

HIGH CHANNEL 12 CHAIN 2

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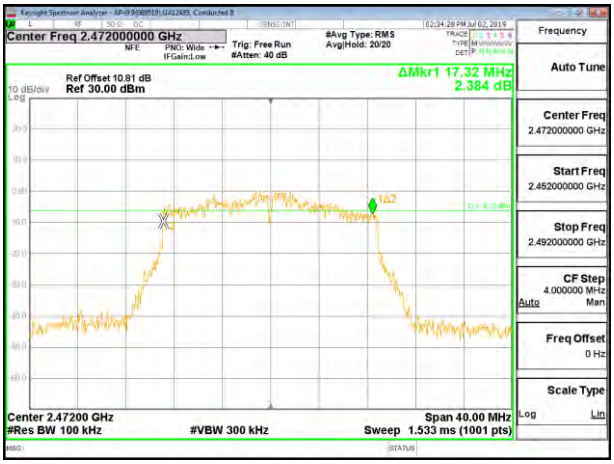
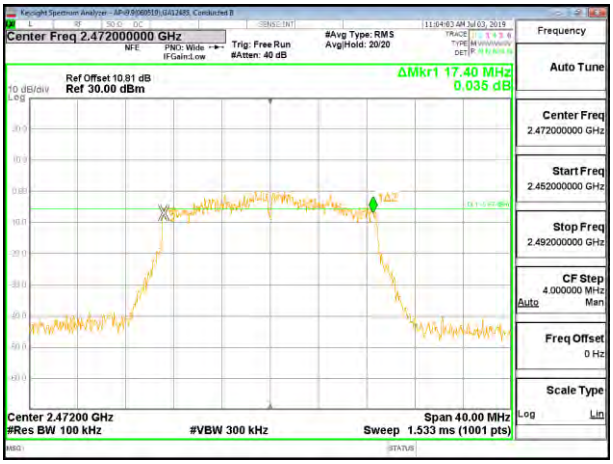
HIGH CHANNEL 13



HIGH CHANNEL 13 CHAIN 1



HIGH CHANNEL 13 CHAIN 2

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8.3.4. 802.11n HT40 MODE

2TX Chain 1 + Chain 2 CDD MODE

Channel	Frequency (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low 3	2422	36.32	35.36	0.5
Low 4	2427	35.20	35.28	0.5
Low 5	2432	36.24	35.20	0.5
Mid 6	2437	35.84	36.00	0.5
High 7	2442	35.52	35.28	0.5
High 8	2447	35.36	35.20	0.5
High 9	2452	35.28	35.28	0.5
High 10	2457	35.20	35.36	0.5
High 11	2462	35.36	35.84	0.5

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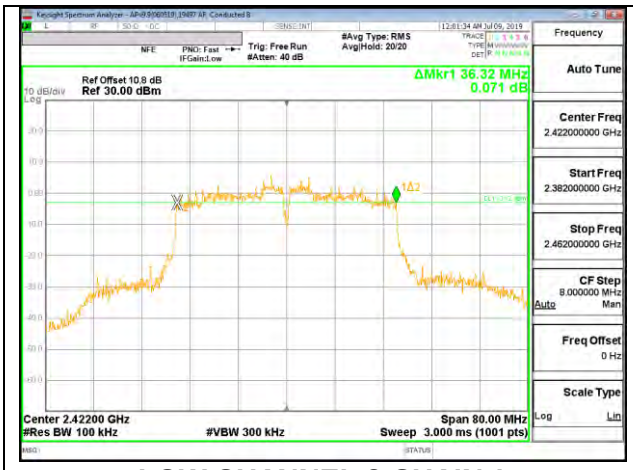
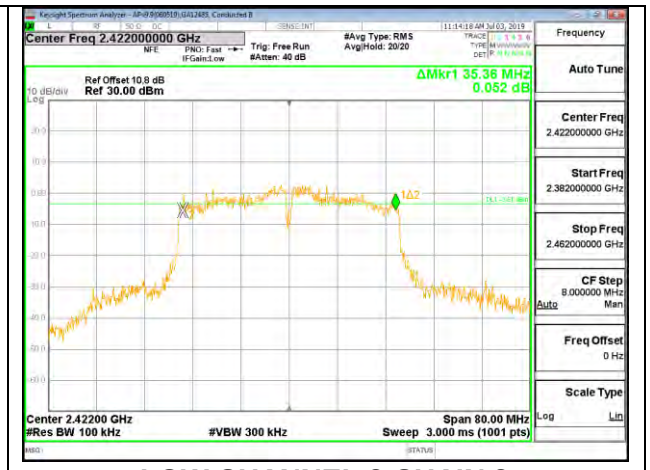
LOW CHANNEL 3

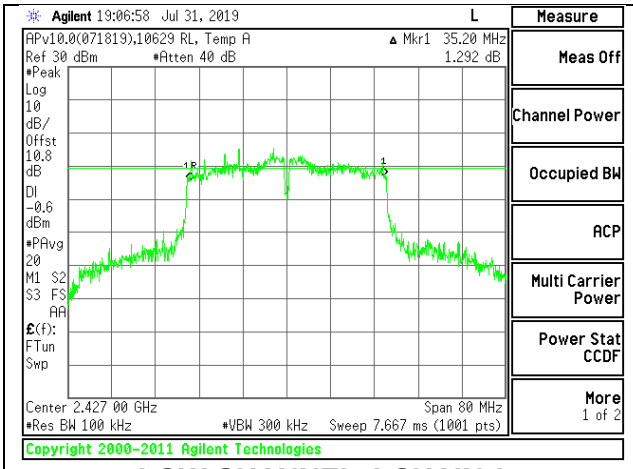


LOW CHANNEL 3 CHAIN 1

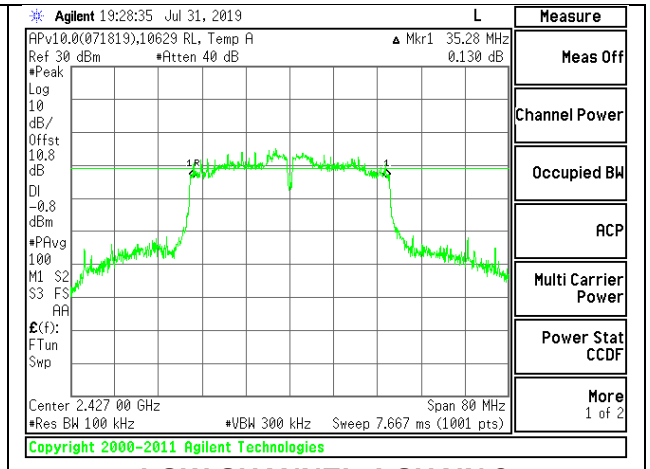


LOW CHANNEL 3 CHAIN 2

LOW CHANNEL 4

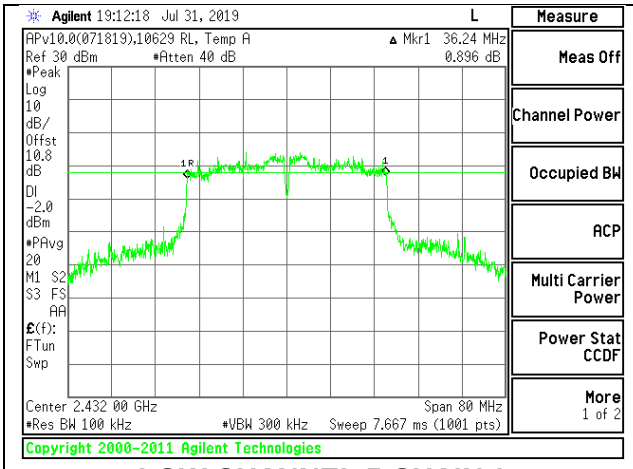


LOW CHANNEL 4 CHAIN 1

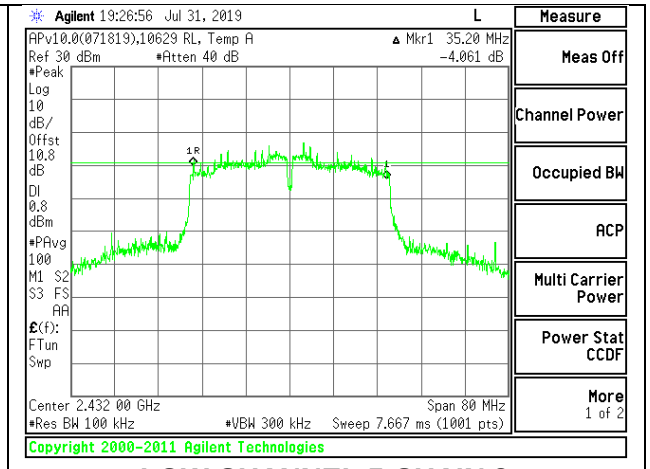


LOW CHANNEL 4 CHAIN 2

LOW CHANNEL 5



LOW CHANNEL 5 CHAIN 1



LOW CHANNEL 5 CHAIN 2

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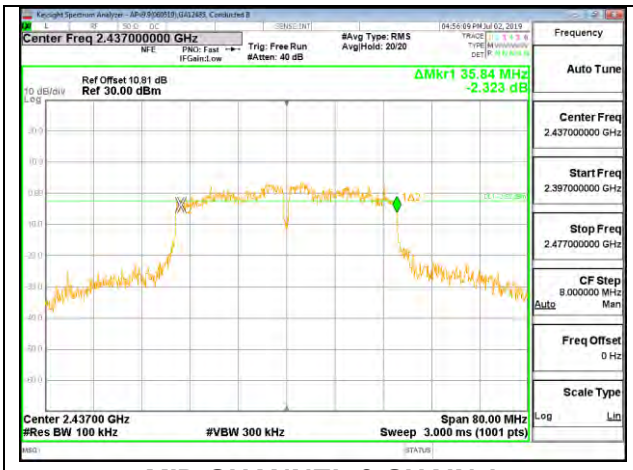
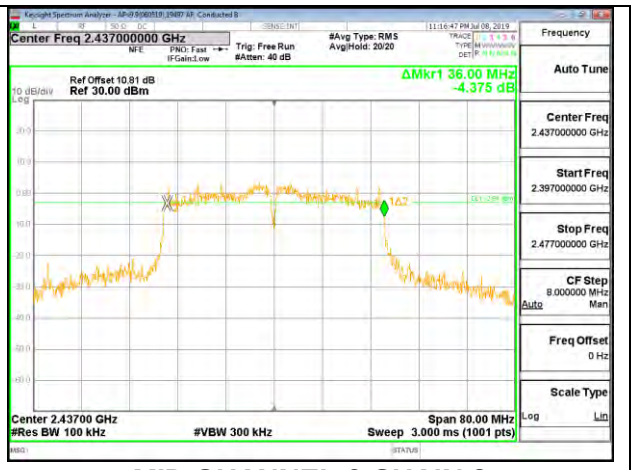
MID CHANNEL 6

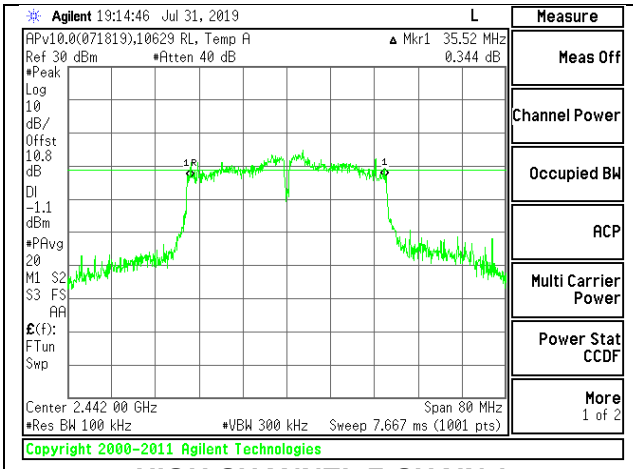


MID CHANNEL 6 CHAIN 1

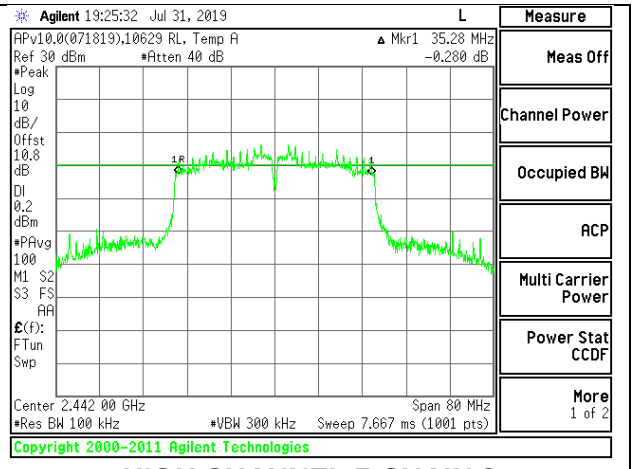


MID CHANNEL 6 CHAIN 2

HIGH CHANNEL 7

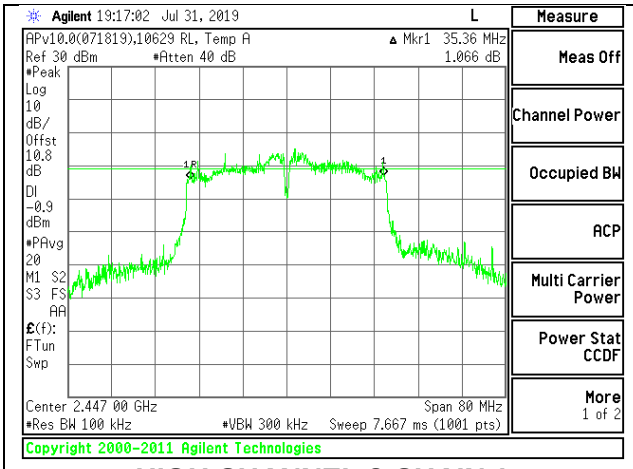


HIGH CHANNEL 7 CHAIN 1

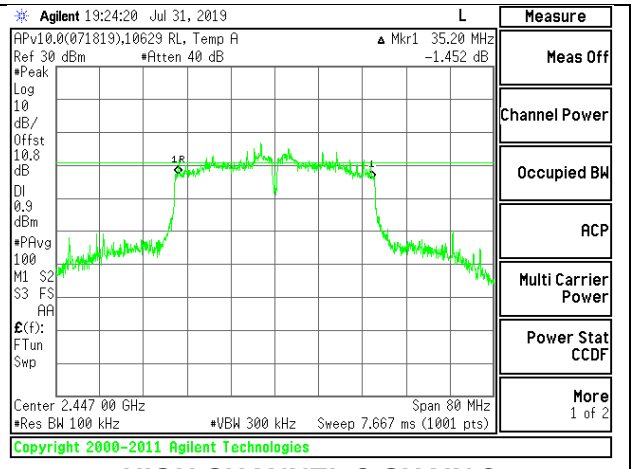


HIGH CHANNEL 7 CHAIN 2

HIGH CHANNEL 8



HIGH CHANNEL 8 CHAIN 1



HIGH CHANNEL 8 CHAIN 2

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