RADIO TEST REPORT

For

MODEL NO.:1793
FCC ID: C3K1793
IC ID: 3048A-1793

Test Report No. R-TR447-FCCISED-WLAN-1
Issue Date: September 22, 2017

FCC CFR47 Part 15 Subpart C
Innovation, Science and Economic Development
Canada RSS-247 Issue 2

Prepared by
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A2LA ACCREDITED
TESTING CERT #3472.01

1 Record of Revisions

Revision	Date	Section	Page(s)	Summary of Changes	Author/Revised By:
1.0	09/22/2017	All	All	Version 1.0	Daniel Salinas

Table of Contents

Test Report Attestation

Microsoft Corporation
Model: 1793
FCC ID: C3K1793
IC ID: 3048A-1793

Applicable Standards

Specification	Test Result
FCC 47CFR Rule Parts 15.207, 15.209, 15.247	Pass
Innovation, Science and Economic Development Canada RSS-247 Issue 2, RSS-GEN Issue 4	Pass

Microsoft EMC Laboratory attests that the product model identified in this report has been tested to and meets the requirements identified in the above standards. The test results in this report solely pertains to the specific sample tested, under the conditions and operating modes as provided by the customer.

This report shall not be used to claim product certification, approval, or endorsement by A2LA or any agency of any Government. Reproduction, duplication or publication of extracts from this test report is prohibited and requires prior written approval of Microsoft EMC Laboratory.

Written By: Daniel Salinas
Radio Test Lead

Reviewed/ Issued By: Sajay Jose
EMC/RF Compliance Lab Manager

2 Deviations from Standards

None.

3 Facilities and Accreditations

3.1 Test Facility

All test facilities used to collect the test data are located at
Microsoft EMC Laboratory,
17760 NE 67th Ct,
Redmond WA, 98052, USA

3.2 Accreditations

The lab is established and follows procedures as outlined in IEC/ISO 17025 and A2LA accreditation requirements.
A2LA Accredited Testing Certificate Number: 3472.01
FCC Registration Number: US1141
IC Site Registration Numbers: 3048A-3, 3048A-4

3.3 Test Equipment

The site and related equipment are constructed in conformance with the requirements of ANSI C63.4:2014 and other equivalent applicable standards.
Test site requirements for measurements above 1 GHz are in accordance with ANSI C63.4:2014.
ANSI C63.10:2013 and the appropriate KDB test methods were followed.

4 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the product, as specified in ETSI TR 100 028. This represents an expanded uncertainty expressed at 95% confidence level using a coverage factor k=2. These levels are for reference only and not included to determine product compliance.
Expanded uncertainty calculations are available upon request.

Test item	Uncertainty	Unit
Radiated disturbance (30 MHz to 1 GHz)	5.99	dB
Radiated disturbance (1 GHz to 18 GHz)	5.12	dB
Conducted Disturbance at Mains Port	3.31	dB
Uncertainty for Conducted Power test	1.277	dB
Uncertainty for Conducted Spurious emission test	2.742	dB
Uncertainty for Bandwidth test	83	kHz
Uncertainty for DC power test	0.05	%
Uncertainty for test site temperature	0.5	ºC
Uncertainty for test site Humidity	3	%
Uncertainty for time	0.189	%

5 Product Description

Company Name:	Microsoft Corporation
Address:	One Microsoft Way
City, State, Zip:	Redmond, WA 98052-6399
Customer Contact:	Sahithi Kandula
Functional Description of the EUT:	Portable Computing Device with IEEE 802.11a/b/g/n/ac MIMO radio supporting 20/40/80 MHz bandwidths, Bluetooth 4.0 radio, and an additional 802.11n SISO radio supporting 20MHz bandwidth.
Model:	1793
FCC ID:	C3K1793
IC ID:	3048A-1793
Radio under test:	IEEE 802.11 b/g/n MIMO Radio supporting 20 MHz Bandwidth (2.4 GHz- 2.4835 GHz)
Modulation(s):	CCK, BPSK, OFDM, and QAM modulation
Antenna Information:	Integral Antenna. **Manufacturer declared Antenna Gain:** Chain A: 2.81 dBi Chain B: 3.14 dBi
EUT Classification:	DTS
Equipment Design State:	Prototype/Production Equivalent (EV3B)
Equipment Condition:	Good
Test Sample Details:	RF Test Sample 1: Top: 009399572757, Keyboard: 061167772654 RF Test Sample 2: Top: 029010272557, Keyboard: 001201372654 RF Test Sample 3: Top: 028972772557, Keyboard: 001195572654 RF Test Sample 3: Top: 028864772557, Keyboard: 001228172654

5.1 Test Configurations

Test software “WiFi Tool” (V2.7.6/V2.7.5) provided by the customer and “Lab Tool” (V2.0.0.77) from the module vendor was used to program the EUT to transmit continuously.
All modes of operation were investigated initially with full testing performed on the worst-case modes. This report contains data from the following worst-case modes of operation:
802.11b: 1Mbps
802.11g: 6Mbps
802.11n: MCS0

5.2 Environmental Conditions

Ambient air temperature of the test site was within the range of 10 ºC to 40 ºC (50 ºF to 104 ºF) unless the EUT specified testing over a different temperature range. Humidity levels were in the range of 10% to 90% relative humidity. Testing conditions were within tolerance, and any deviations required from the EUT are reported.

5.3 Antenna Requirements

The antennas are permanently attached and there are no provisions for connection to an external antenna.

5.3.1 Antenna Gain

Antenna Gain			
Frequency Band (MHz)	**Chain A MIMO Wi-Fi Antenna Peak Gain (dBi)**	**Chain B Main Antenna Wi-Fi Peak Gain (dBi)**	**Total Antenna Gain (dBi)**
2400 – 2483.5	2.81	3.14	2.98

Simultaneous transmission on both transmit chains was observed to be the worst-case mode of operation for all test cases. Since OFDM transmit signals in CSD modes are correlated only over small bandwidths, and not over the entire signal bandwidth, the combined in-band gain for total power is considered as uncorrelated and calculated using the following formula as specified in KDB 662911 D01 Multiple Transmitter Output v02r01:

Uncorrelated Directional gain = $10\log [(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10})/N_{ANT}]$dBi

In the case that G1 =2.81dBi, G2=3.14dBi:

Uncorrelated Directional gain = $10\log [(10^{G1/10} + 10^{G2/10})/N_{ANT}] = 10\log[(10^{2.81/10} + 10^{3.14/10})/2]$ = 2.98dBi

Since OFDM transmit signals in CSD modes are correlated over small bandwidths, the total gain will influence PSD measurements. The combined gain for PSD is considered to be correlated and calculated using the following formula as specified in KDB 662911 D01 Multiple Transmitter Output v02r01:

Correlated Directional gain = $10\log [(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N_{ANT}]$ dBi

In the case that G1 =2.81dBi, G2=3.14dBi:

Correlated Directional gain = $10\log [(10^{G1/20} + 10^{G2/20})^2/N_{ANT}] = 10\log[(10^{2.81/20} + 10^{3.14/20})^2/2]$ = 5.99dBi

5.4 Equipment Modifications

No modifications were made during testing.

5.5 Dates of Testing

Testing was performed from August 14th 2017 to September 15th 2017.

6 Test Results Summary

Test Description	FCC CFR 47/ ISED Rule Part	Limit	Test Result
Duty Cycle	Reporting & Measurements	Reporting & Measurements Purposes only	N/A
6dB Bandwidth	15.247 (a)(2) RSS-247 [5.2]	≥ 500kHz	Pass
Occupied Bandwidth	Reporting & Measurements	Reporting & Measurements Purposes only	N/A
Output Power	15.247 (b)(3) RSS-247 [5.4]	≤ 1 Watt	Pass
Equivalent Isotropic Radiated Power	RSS-247 [5.4]	≤ 4 Watt	Pass
Power Spectral Density	15.247 (e) RSS-247 [5.2]	≤ 8dBm/3kHz	Pass
Conducted Band Edge/Spurious Emissions	15.247 (d) RSS-247 [5.5]	At least 20dBc	Pass
Radiated Spurious Emissions/ Restricted Band Emissions	15.205, 15.209 RSS-247 [5.5] RSS-Gen [8.9]	FCC CFR 47 15.209 limits RSS-Gen [8.9]	Pass
AC Power Line Conducted Emissions	15.207 RSS-Gen [8.8]	FCC CFR 47 15.207 limits RSS-Gen [8.8]	Pass

7 Test Equipment List

Equipment used for Radiated and Conducted Measurements				
Manufacturer	**Description**	**Model #**	**Asset #**	**Calibration Due**
Rohde & Schwarz	EMI Test Receiver	ESU40	RF-012	4/15/2018
Keysight	Spectrum Analyzer	N9030A	EMC-846	6/10/2018
Rohde & Schwarz	Open Switch and Control Unit	OSP130	RF-249	N/A
Rohde & Schwarz	Open Switch and Control Unit	OSP150	RF-250	N/A
Rohde & Schwarz	Custom Filter Bank	SFUNIT RX	RF-323	N/A
Rohde & Schwarz	Open Switch and Control Unit	OSP130	RF-018	N/A
Rohde & Schwarz	Open Switch and Control Unit	OSP150	RF-019	N/A
Sunol Sciences	Antenna - Broadband Hybrid	JB6	EMC-640	10/27/2017
ETS-Lindgren	Antenna - Double-Ridged Guide	3117	RF-137	3/3/2018
ETS-Lindgren	Antenna - Standard Gain	3160-08	EMC-448	N/A
Rohde & Schwarz	Power Meter	NRP2	RF-025	4/19/2018
Rohde & Schwarz	Power Sensor	NRP-Z81	RF-654	5/16/2018
Rohde & Schwarz	Power Sensor	NRP-Z91	RF-252	4/18/2018
Pasternack	20dB Attenuator	PE7087-20	RF-129	N/A
Pasternack	Attenuator	PE7087-6	RF-564	N/A
Huber & Suhner	RF Cable	SucoFlex 100	RF-350	N/A
Teledyne	RF Cable	57500	EMC-1025	N/A
Huber and Suhner	Cable- SucoFlex 106A		RF-599	N/A
Micro-Coax	RF Cable	UTI Flex	RF-354	N/A
Murata	RF Cable	MXHQ87WA3000	RF-588	N/A

Manufacturer	Description	Model #	Asset #	Calibration Due
Micro-Coax	RF Cable	UFB311A-1-0787-50U50U	EMC-351	N/A
Micro-Coax	RF Cable	UTI Flex	RF-359	N/A
Murata	RF Cable	MXHQ87WA3000	RF-594	N/A
MegaPhase	RF Cable	KB18-S1S1-79	EMC-1042	N/A
Madge Tech	THP Monitor	PRHTemp2000	EMC-681	10/25/2017
Madge Tech	THP Monitor	PRHTemp2000	EMC-679	11/15/2017
Rohde & Schwarz	EMC 32 Test Software	V10.01.0	N/A	N/A

Equipment used for Line Conducted Emissions Measurement				
Manufacturer	**Description**	**Model #**	**Asset #**	**Calibration Due**
Rohde & Schwarz	Analyzer/ Receiver	ESR	EMC-669	5/18/2018
Teseq	EUT LISN	NNB 051	EMC-056	5/19/2018
Micro-Coax	Cable	UFA210A-1-1800-50U50U	EMC-367	8/9/2018
ETS-Lindgren	TILE Profile	Version 7.2.5.7	EMC-985	N/A
Fluke	Multimeter	87V	EMC-052	3/27/2018
MadgeTech	Environmental Monitor	PRHTemp2000	EMC-168	2/10/2018
Chroma	AC Power Source	61602	EMC-055	N/A

Note: Items with Calibration Due data marked as N/A are characterized before test, where applicable.

8 Test Site Description

8.1 Radiated Emissions Test Site

Radiated measurements are performed in a 3m semi-anechoic chamber, which meets NSA requirements for the frequency range of 30MHz to 1000MHz. For measurements above 1 GHz, absorbers are placed on the ground plane between the receiving antenna and the EUT to meet Site VSWR requirements in accordance with ANSI C63.4:2014.

8.1.1 Radiated Measurements in 30 MHz - 1000 MHz

The EUT is positioned on a turntable at a height of 80cm using a non-conducting table. A linearly polarized broadband antenna is positioned at 3m from the EUT periphery. The turntable is rotated 360 degrees and the antenna height varied from 1m to 4m to determine the highest emissions. This is repeated for both horizontal and vertical polarizations of the measurement antenna. All possible orientations of the EUT were investigated for emissions and the vertical standing mode was identified as the worst-case configuration.

8.1.2 Radiated Measurements above 1GHz

The EUT is positioned on a Turntable at a height of 1.5m. A linearly polarized antenna is positioned at 3m from the EUT periphery. Guidelines in ANSI C63.10:2013 were followed with respect to maximizing the emissions. The measurement antenna is set at a fixed 1.5m height while the turntable is rotated 360 degrees and the EUT elevation angle is varied from 0 to 150 degrees to determine the highest emissions. This is repeated for both horizontal and vertical polarizations of the measurement antenna. Measurements above 18GHz were performed at a 3m distance.

8.2 Antenna port conducted measurements

All antenna port conducted measurements were performed on a bench-top setup consisting of a spectrum analyzer, power meter (as necessary), splitters/combiners (as necessary), attenuators, and pre-characterized RF cables.

The correction factors between the EUT and the spectrum analyzer were added internally in the analyzer settings, where applicable. The plots displayed take these correction factors into account.

8.3 Test Setup Diagrams

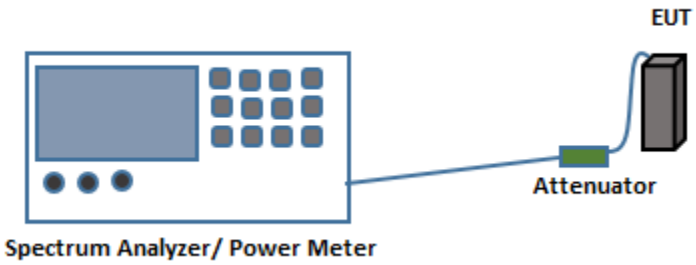


Fig.1. Test Setup for Antenna port conducted measurements

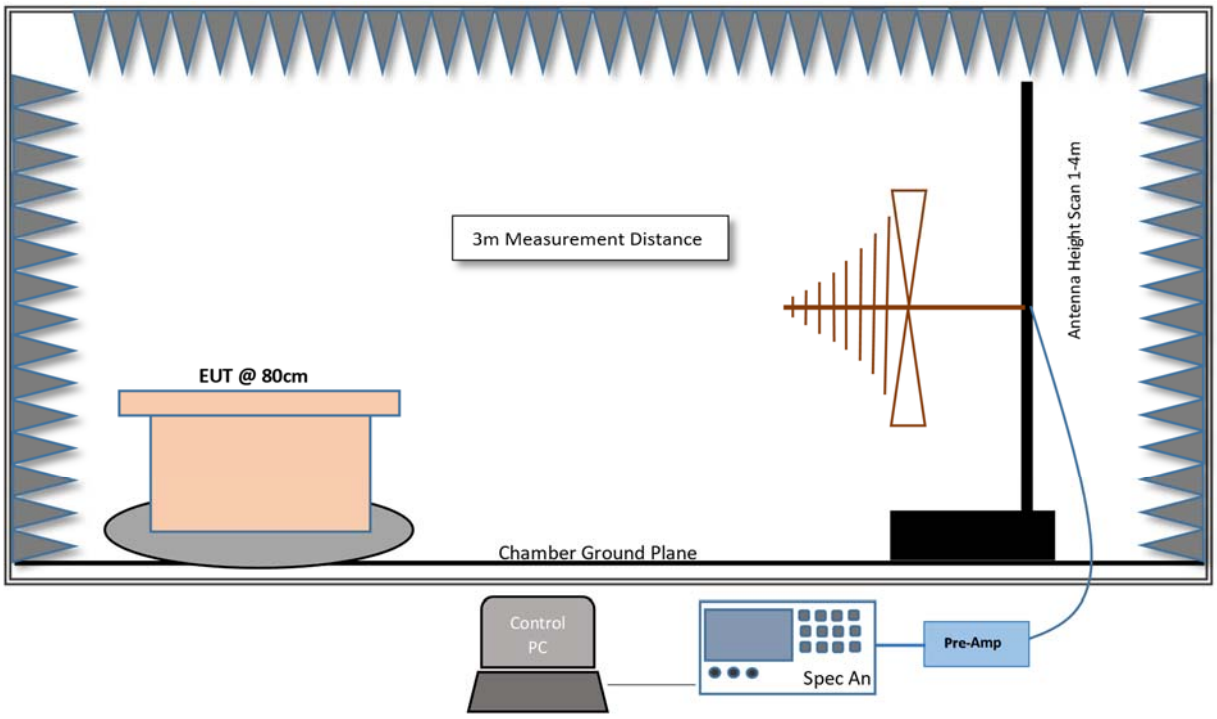


Fig.2. Test Setup for Radiated measurements in 30MHz- 1GHz Range

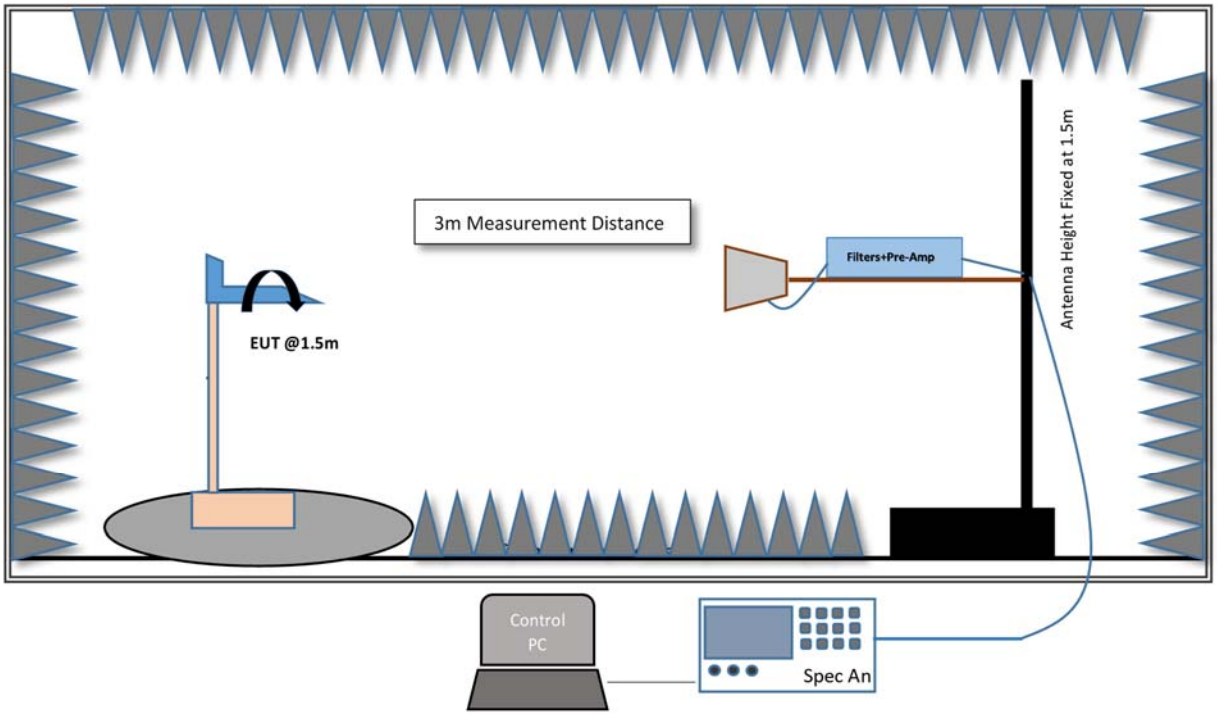


Fig.3. Test Setup for Radiated measurements in 1GHz- 18GHz Range

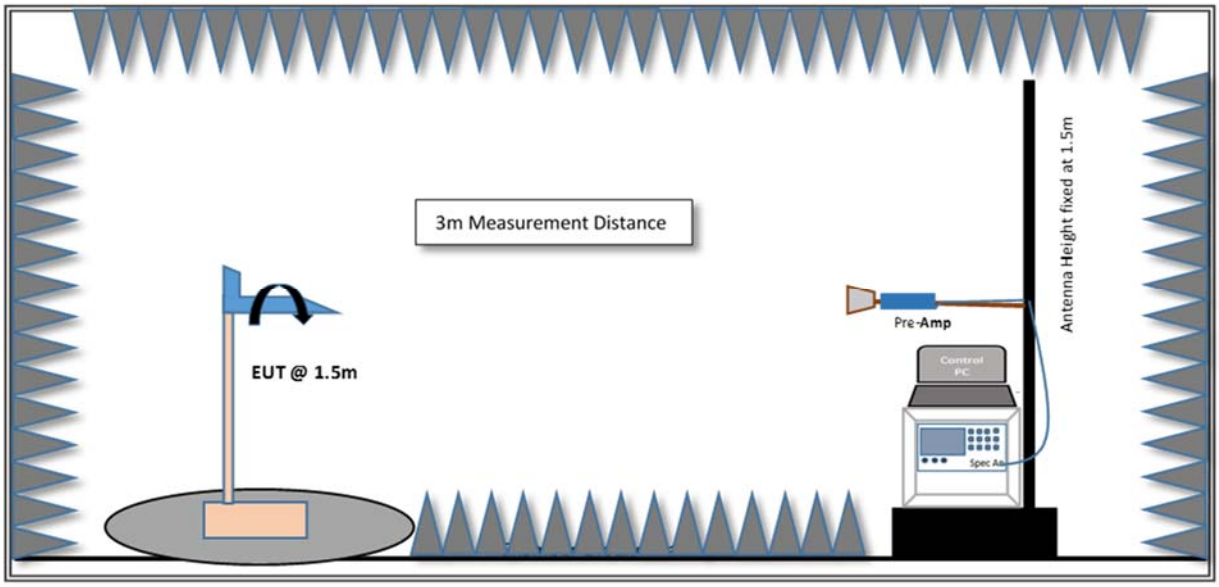


Fig.4. Test Setup for Radiated measurements >18GHz

9 Test Results- Conducted

9.1 Duty Cycle

9.1.1 Test Requirement:

Reporting and measurement purposes only.

9.1.2 Test Method:

Measurements were performed according to the procedure defined in ANSI C63.10: 2013.

Spectrum Analyzer Settings:
RBW ≥ Occupied Bandwidth if possible; otherwise, set RBW to the largest available value
VBW ≥ RBW ≥ Signal Period
Detector = Peak
Span = 0 Hz
Sweep points > 100

9.1.3 Limits:

Reporting and measurement purposes only. Duty Cycles > 98% are considered to have a Duty Cycle Correction Factor = 0 dB.

9.1.4 Test Results:

Mode	Path A/B	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11b	A	18.92	18.96	99.789	0.009
802.11b	B	18.93	18.95	99.211	0.034
802.11g	A	3.145	3.170	99.618	0.017
802.11g	B	3.142	3.169	99.894	0.005
802.11n	A	9.899	9.937	99.148	0.037
802.11n	B	9.899	9.931	99.678	0.014

9.1.5 Test Data:

Figure 9-1. Duty Cycle 802.11b -Path A

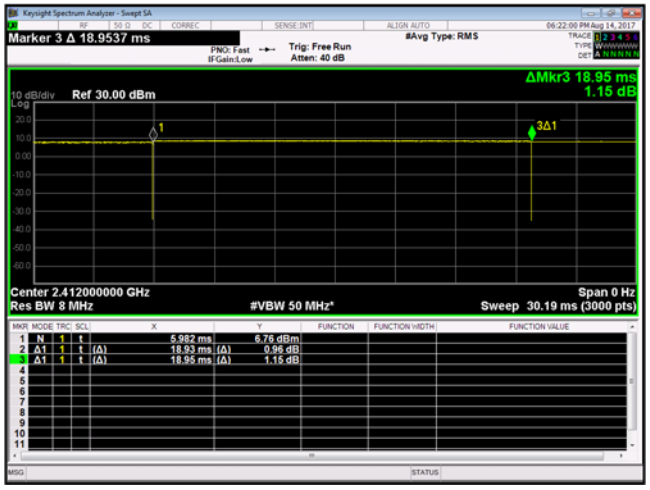


Figure 9-2. Duty Cycle 802.11b- Path B

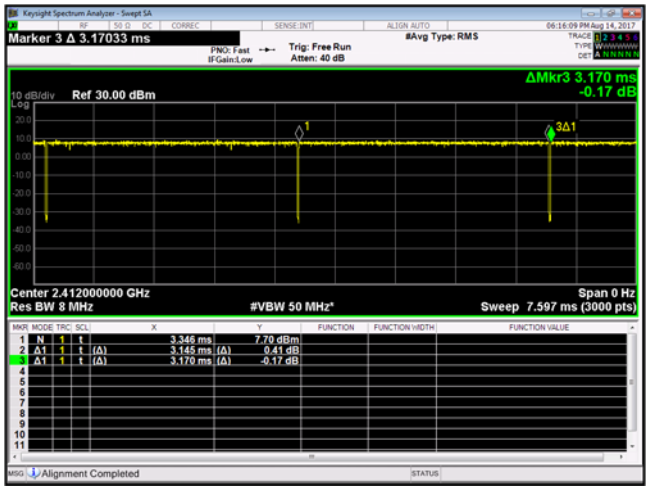


Figure 9-3. Duty Cycle 802.11g- Path A

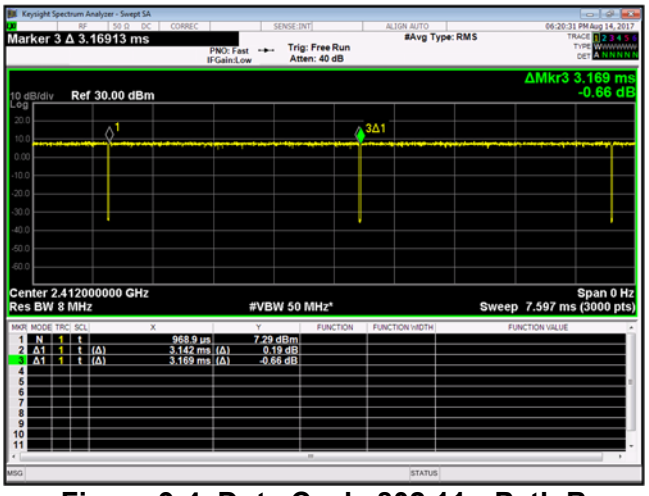


Figure 9-4. Duty Cycle 802.11g-Path B

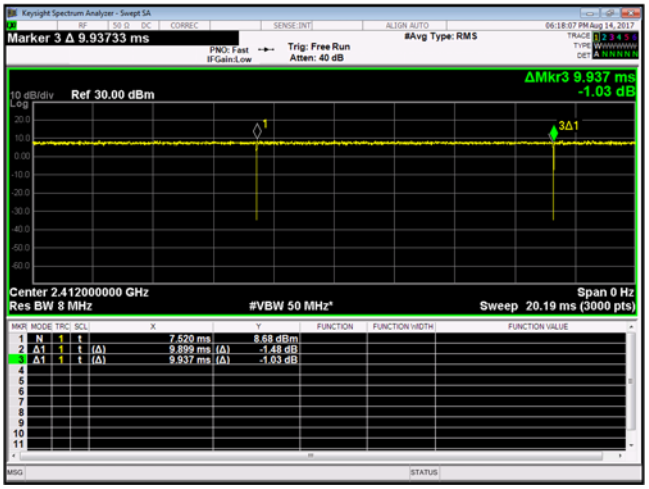


Figure 9-5. Duty Cycle 802.11n -Path A

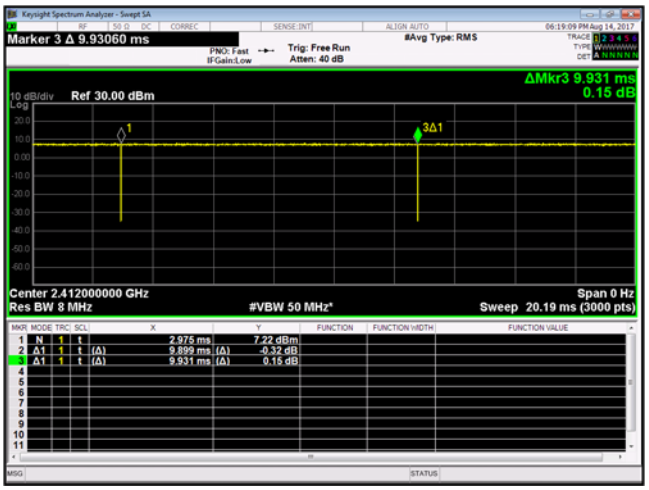


Figure 9-6. Duty Cycle 802.11n -Path B

9.2 DTS Bandwidth

9.2.1 Test Requirement:

FCC CFR 47 Rule Part 15.247 (a)(2)

ISED RSS-247 [5.2]

9.2.2 Test Method:

Measurements were performed according to the procedure defined in KDB 558074- Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 V04 and ANSI C63.10: 2013.

Spectrum Analyzer Settings:
RBW= 100 kHz
VBW≥ 3 × RBW
Detector = Peak
Span = 30MHz
Trace Mode= Max Hold
Sweep time= Auto Couple
The in-built functionality of the Spectrum Analyzer is used to measure the 6-dB bandwidth.

9.2.3 Limits:

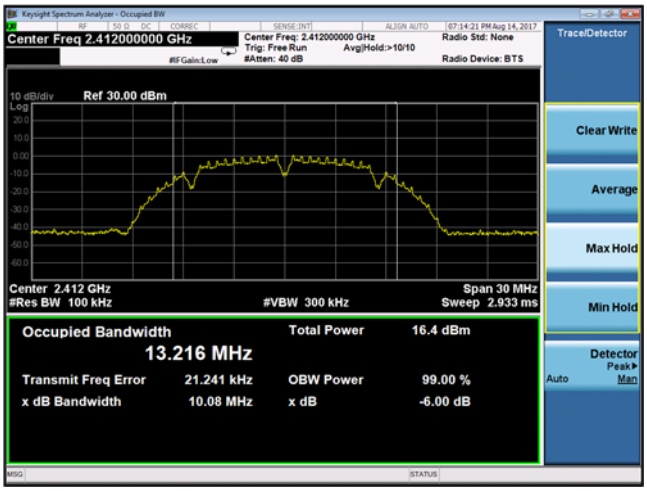
The 6-dB bandwidth shall be at least 500 kHz

9.2.4 Test Results:

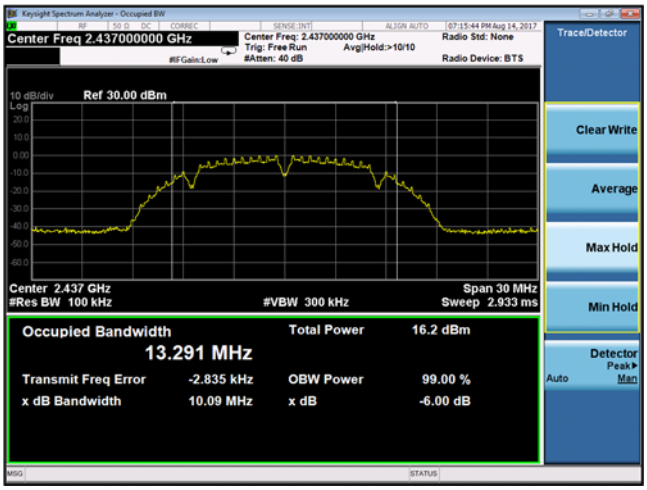
Chain A 802.11b 6-dB Emission Bandwidth				
Channel No.	**Frequency (MHz)**	**6-dB Emission Bandwidth (MHz)**	**Limit (MHz)**	**Result**
1	2412	10.08	≥ 0.5	Pass
6	2437	10.09	≥ 0.5	Pass
10	2457	10.09	≥ 0.5	Pass
11	2462	10.08	≥ 0.5	Pass
12	2467	10.08	≥ 0.5	Pass
13	2472	10.07	≥ 0.5	Pass
Chain A 802.11g 6-dB Emission Bandwidth				
Channel No.	**Frequency (MHz)**	**6-dB Emission Bandwidth (MHz)**	**Limit (MHz)**	**Result**
1	2412	16.35	≥ 0.5	Pass
6	2437	16.37	≥ 0.5	Pass
10	2457	16.38	≥ 0.5	Pass
11	2462	16.36	≥ 0.5	Pass
12	2467	16.38	≥ 0.5	Pass
13	2472	16.38	≥ 0.5	Pass
Chain A 802.11n 6-dB Emission Bandwidth				
Channel No.	**Frequency (MHz)**	**6-dB Emission Bandwidth (MHz)**	**Limit (MHz)**	**Result**
1	2412	17.54	≥ 0.5	Pass
6	2437	17.57	≥ 0.5	Pass
10	2457	17.60	≥ 0.5	Pass
11	2462	17.35	≥ 0.5	Pass
12	2467	17.59	≥ 0.5	Pass
13	2472	17.59	≥ 0.5	Pass

Chain B 802.11b 6-dB Emission Bandwidth				
Channel No.	**Frequency (MHz)**	**6-dB Emission Bandwidth (MHz)**	**Limit (MHz)**	**Result**
1	2412	10.08	≥ 0.5	Pass
6	2437	10.08	≥ 0.5	Pass
10	2457	10.08	≥ 0.5	Pass
11	2462	10.08	≥ 0.5	Pass
12	2467	10.09	≥ 0.5	Pass
13	2472	10.09	≥ 0.5	Pass
Chain B 802.11g 6-dB Emission Bandwidth				
Channel No.	**Frequency (MHz)**	**6-dB Emission Bandwidth (MHz)**	**Limit (MHz)**	**Result**
1	2412	16.38	≥ 0.5	Pass
6	2437	16.39	≥ 0.5	Pass
10	2457	16.36	≥ 0.5	Pass
11	2462	16.39	≥ 0.5	Pass
12	2467	16.35	≥ 0.5	Pass
13	2472	16.36	≥ 0.5	Pass
Chain B 802.11n 6-dB Emission Bandwidth				
Channel No.	**Frequency (MHz)**	**6-dB Emission Bandwidth (MHz)**	**Limit (MHz)**	**Result**
1	2412	17.58	≥ 0.5	Pass
6	2437	17.59	≥ 0.5	Pass
10	2457	17.58	≥ 0.5	Pass
11	2462	17.59	≥ 0.5	Pass
12	2467	17.56	≥ 0.5	Pass
13	2472	17.59	≥ 0.5	Pass

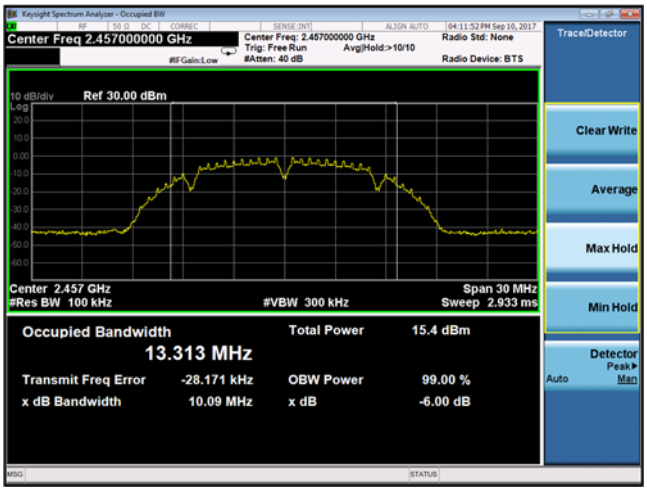
9.2.5 Test Data:



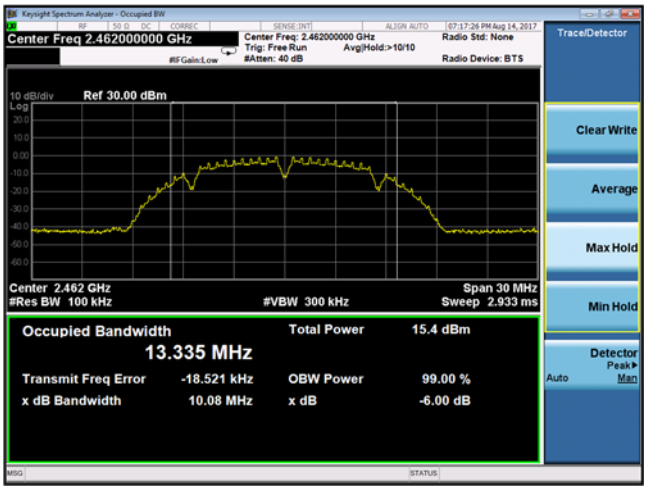
Plot 9-7 Chain A DTS Bandwidth 802.11b mode - Ch.1 (2412 MHz)



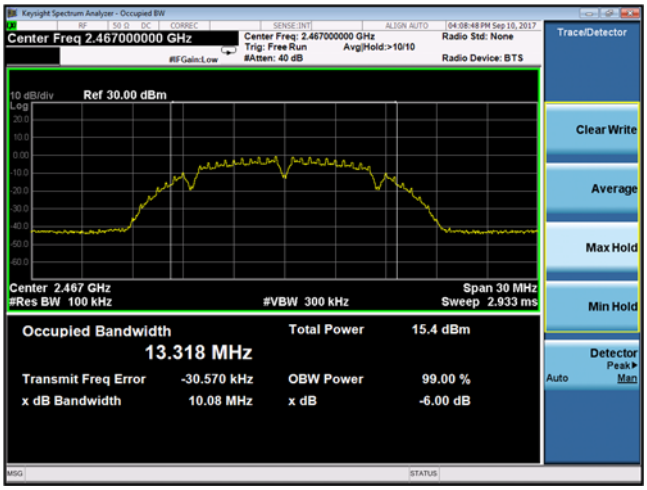
Plot 9-8 Chain A DTS Bandwidth 802.11b mode - Ch.6 (2437 MHz)



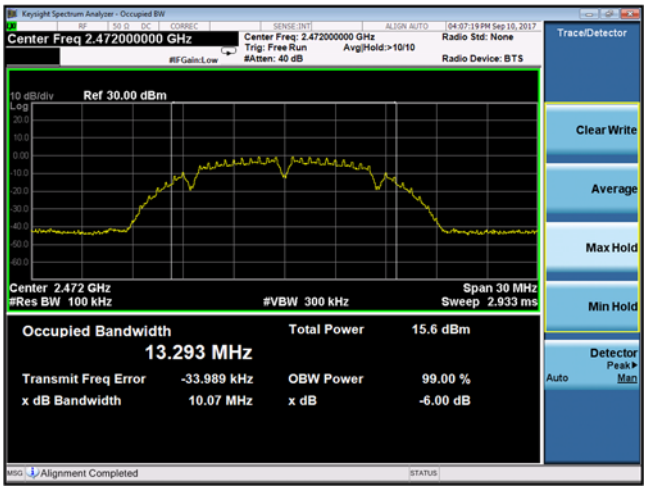
Plot 9-9 Chain A DTS Bandwidth 802.11b mode - Ch.10 (2457 MHz)



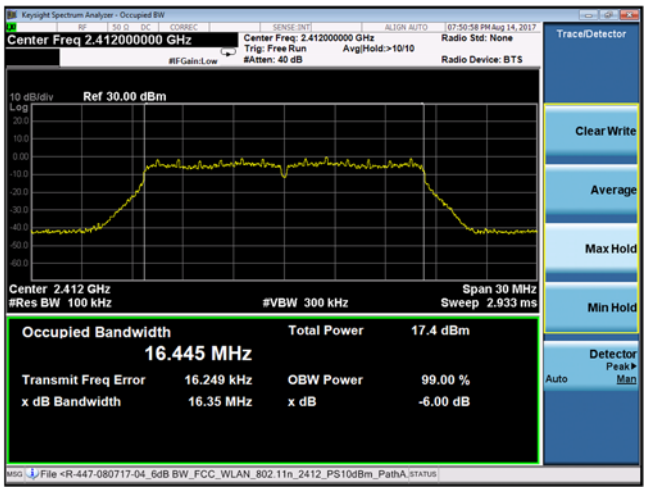
Plot 9-10 Chain A DTS Bandwidth 802.11b mode - Ch.11 (2462 MHz)



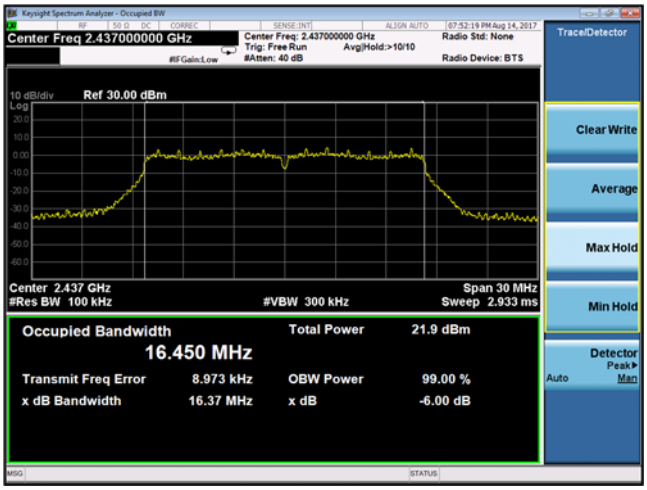
Plot 9-11 Chain A DTS Bandwidth 802.11b mode - Ch.12 (2467 MHz)



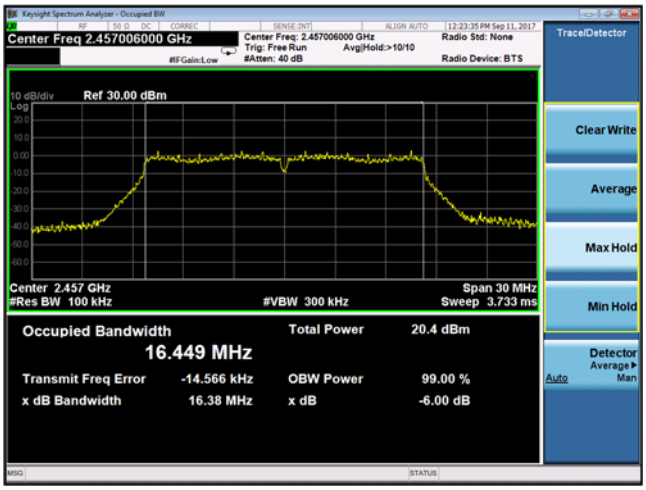
Plot 9-12 Chain A DTS Bandwidth 802.11b mode - Ch.13 (2472 MHz)



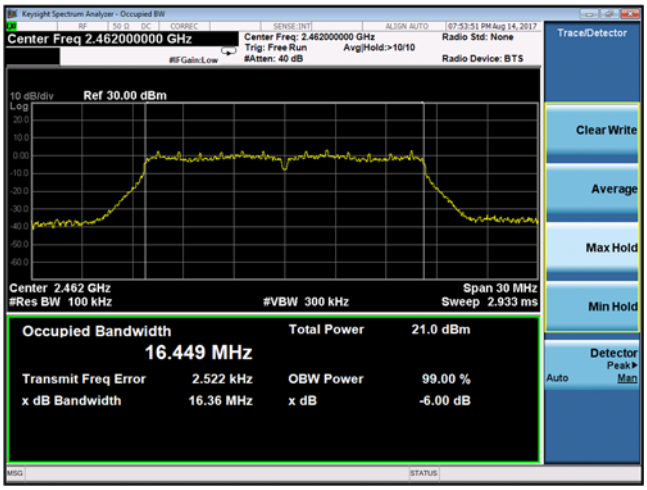
Plot 9-13 Chain A DTS Bandwidth 802.11g mode - Ch.1 (2412 MHz)



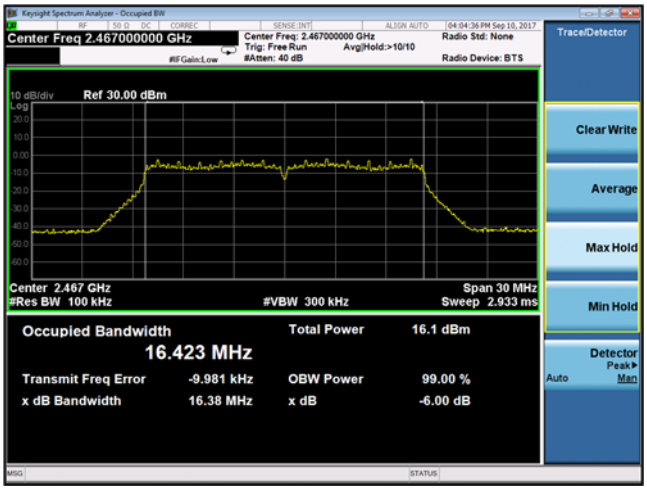
Plot 9-14 Chain A DTS Bandwidth 802.11g mode - Ch.6 (2437 MHz)



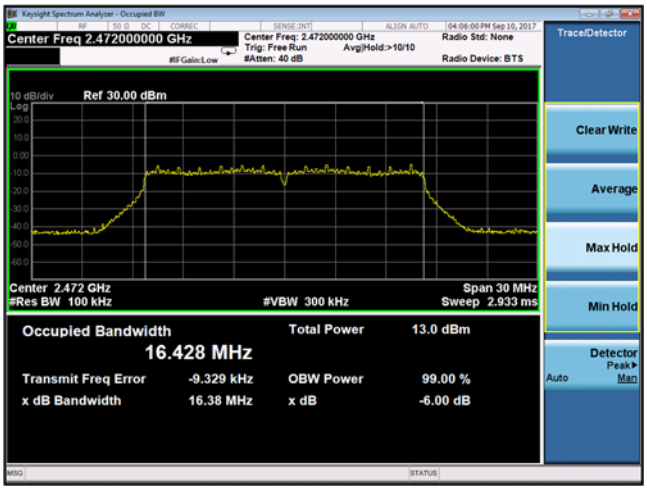
Plot 9-15 Chain A DTS Bandwidth 802.11g mode - Ch.10 (2457 MHz)



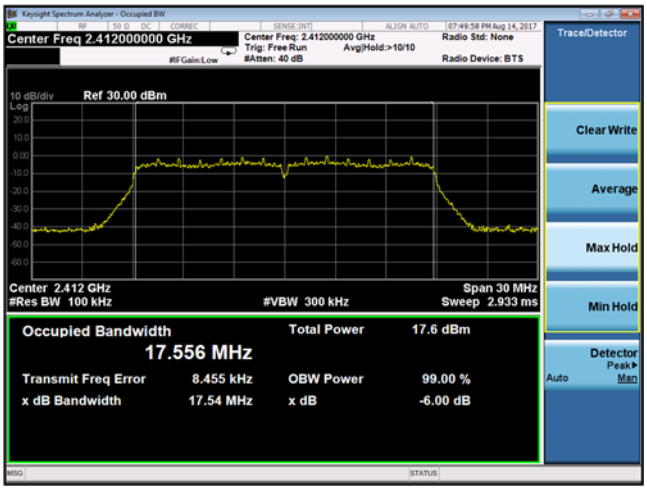
Plot 9-16 Chain A DTS Bandwidth 802.11g mode - Ch.11 (2462 MHz)



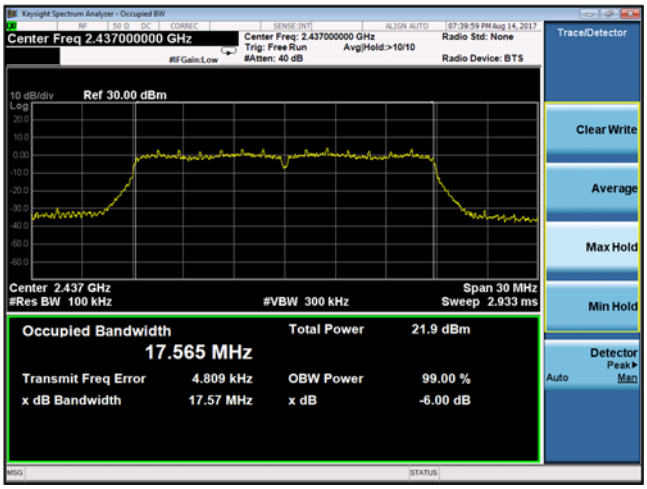
Plot 9-17 Chain A DTS Bandwidth 802.11g mode - Ch.12 (2467 MHz)



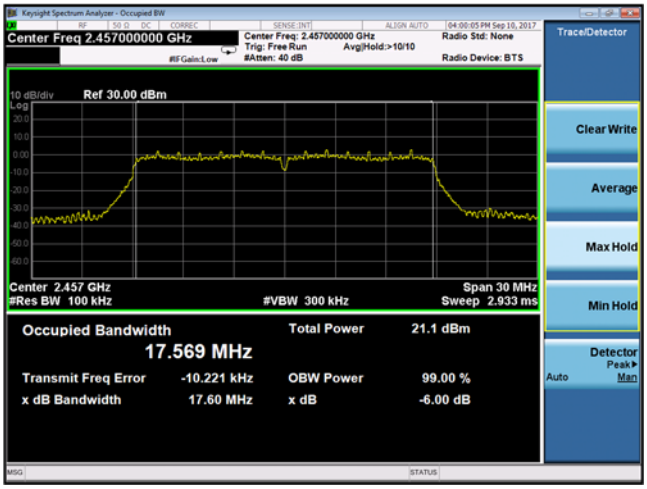
Plot 9-18 Chain A DTS Bandwidth 802.11g mode - Ch.13 (2472 MHz)



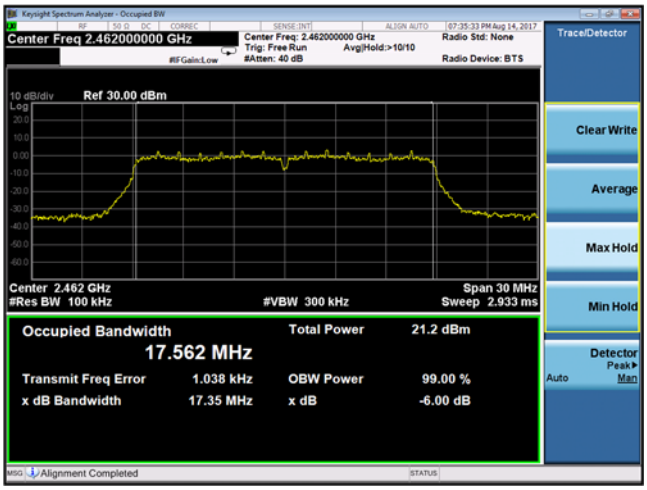
Plot 9-19 Chain A DTS Bandwidth 802.11n mode - Ch.1 (2412 MHz)



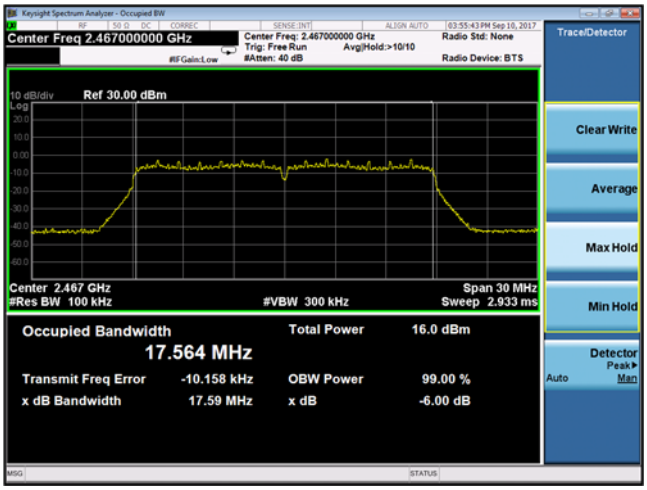
Plot 9-20 Chain A DTS Bandwidth 802.11n mode - Ch.6 (2437 MHz)



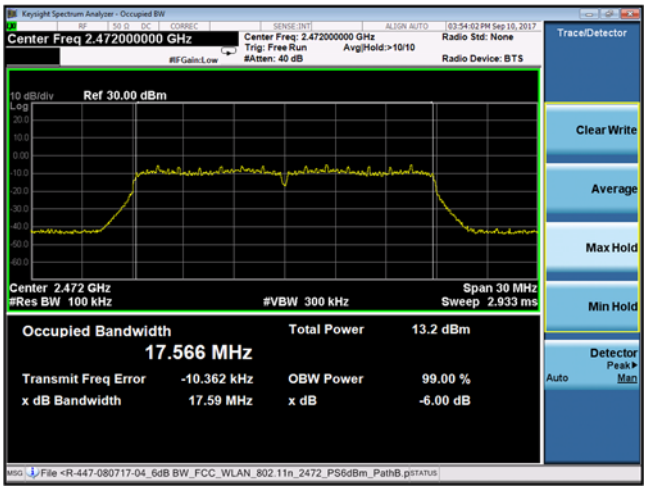
Plot 9-21 Chain A DTS Bandwidth 802.11n mode - Ch.10 (2457 MHz)



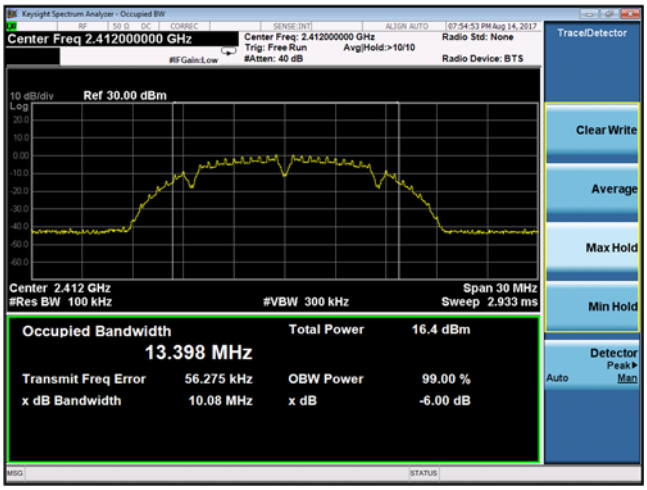
Plot 9-22 Chain A DTS Bandwidth 802.11n mode - Ch.11 (2462 MHz)



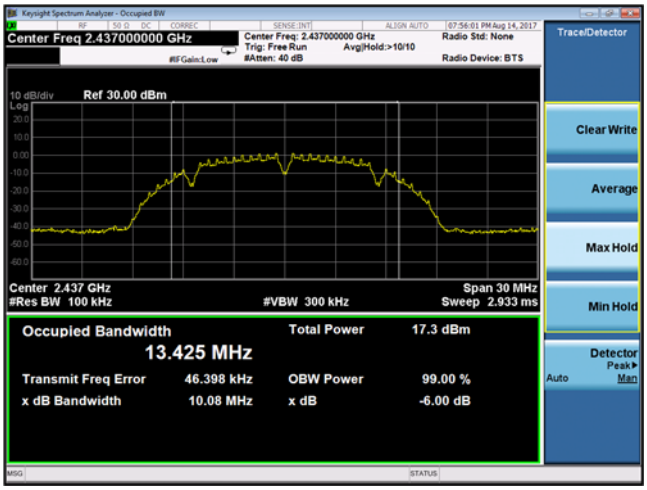
Plot 9-23 Chain A DTS Bandwidth 802.11n mode - Ch.12 (2467 MHz)



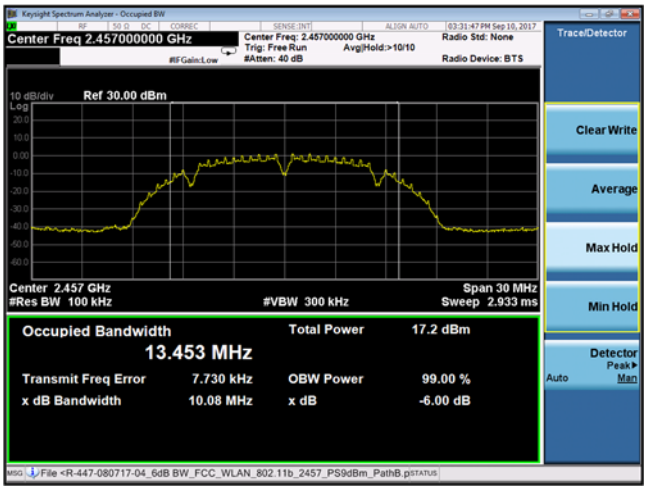
Plot 9-24 Chain A DTS Bandwidth 802.11n mode - Ch.13 (2472 MHz)



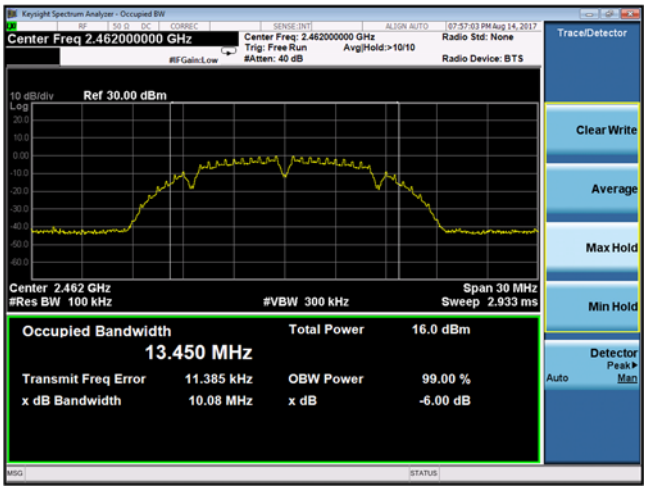
Plot 9-25 Chain B DTS Bandwidth 802.11b mode - Ch.1 (2412 MHz)



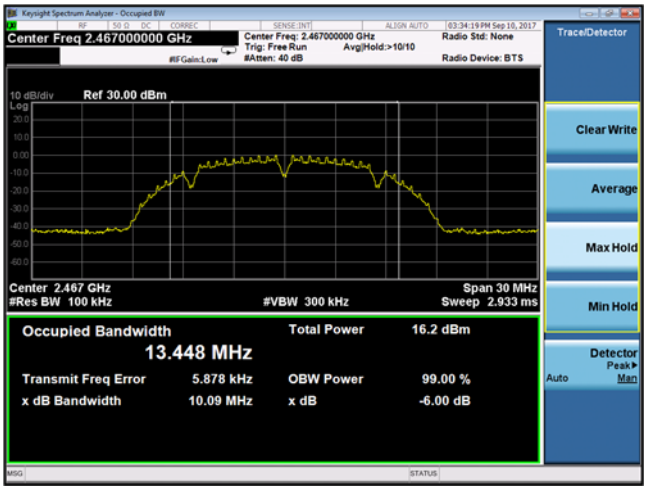
Plot 9-26 Chain B DTS Bandwidth 802.11b mode - Ch.6 (2437 MHz)



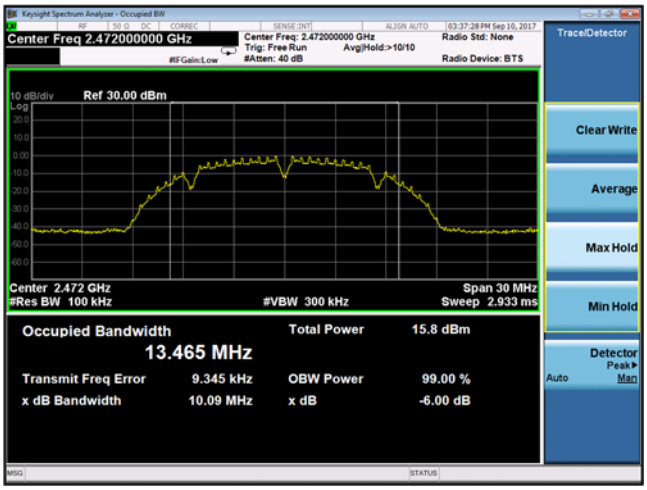
Plot 9-27 Chain B DTS Bandwidth 802.11b mode - Ch.11 (2462 MHz)



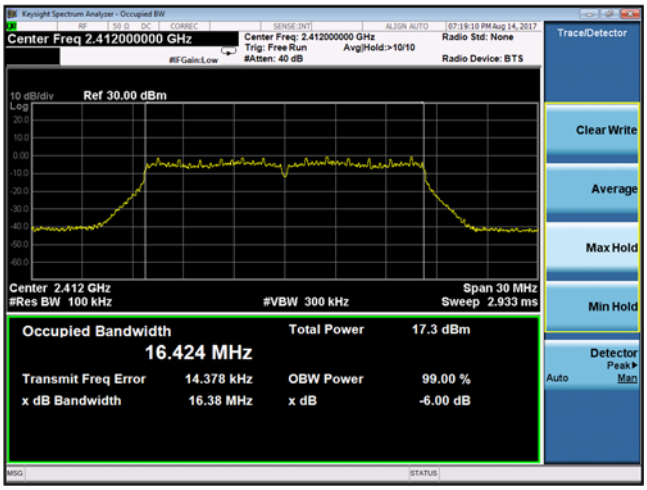
Plot 9-28 Chain B DTS Bandwidth 802.11b mode - Ch.11 (2462 MHz)



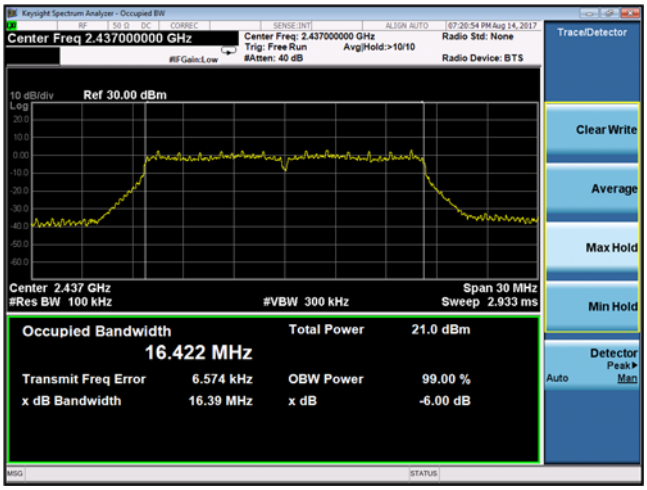
Plot 9-29 Chain B DTS Bandwidth 802.11b mode - Ch.12 (2467 MHz)



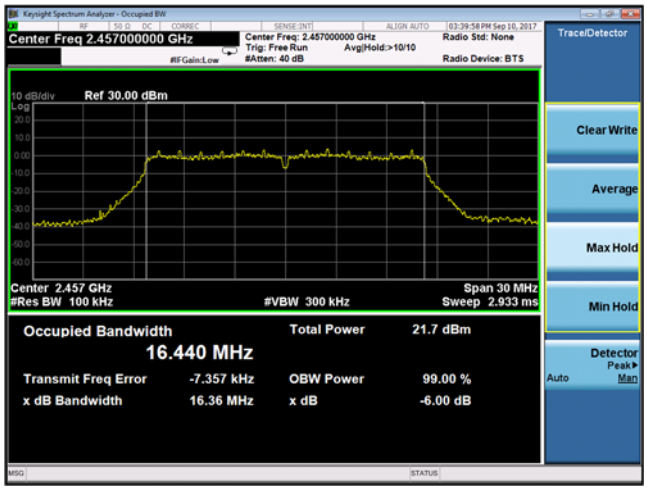
Plot 9-30 Chain B DTS Bandwidth 802.11b mode - Ch.13 (2472 MHz)



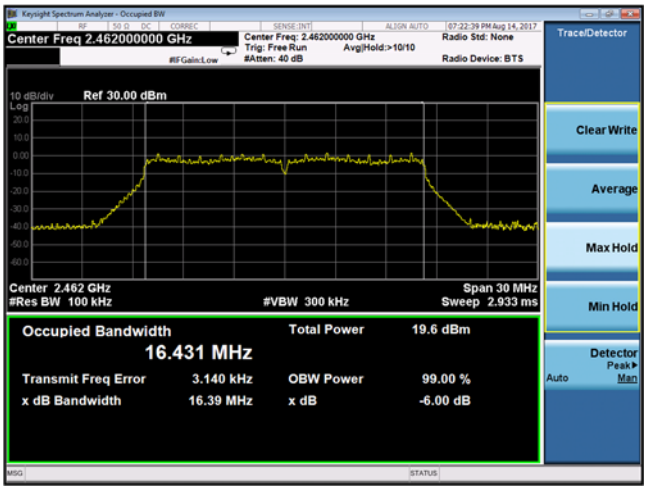
Plot 9-31 Chain B DTS Bandwidth 802.11g mode - Ch.1 (2412 MHz)



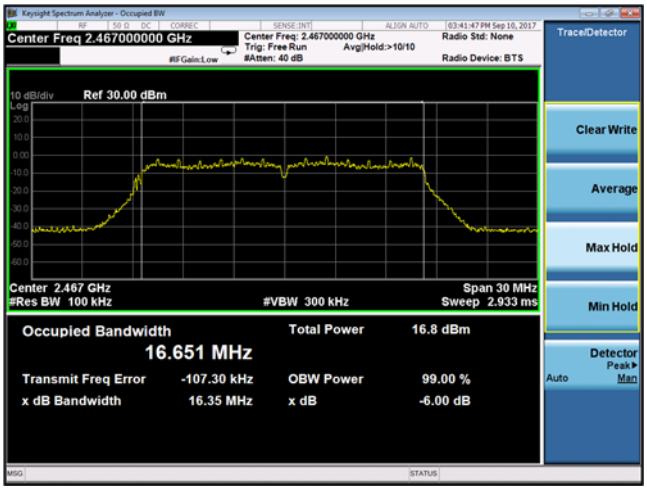
Plot 9-32 Chain B DTS Bandwidth 802.11g mode - Ch.6 (2437 MHz)



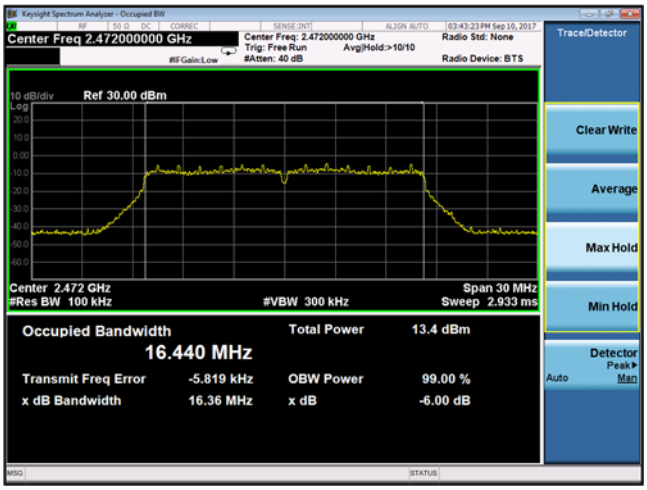
Plot 9-33 Chain B DTS Bandwidth 802.11g mode - Ch.10 (2457 MHz)



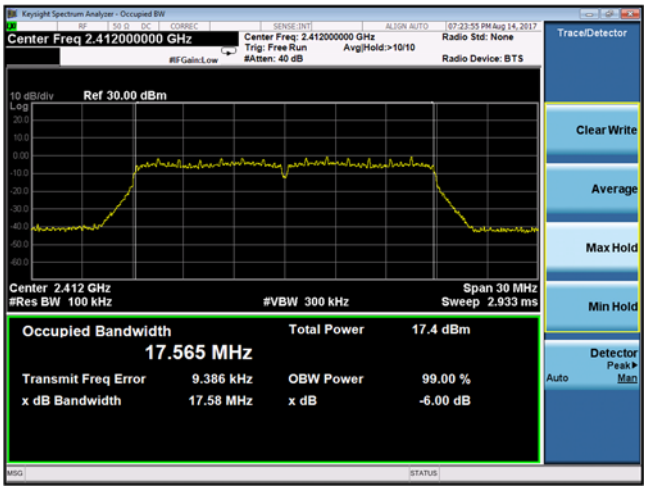
Plot 9-34 Chain B DTS Bandwidth 802.11g mode - Ch.11 (2462 MHz)



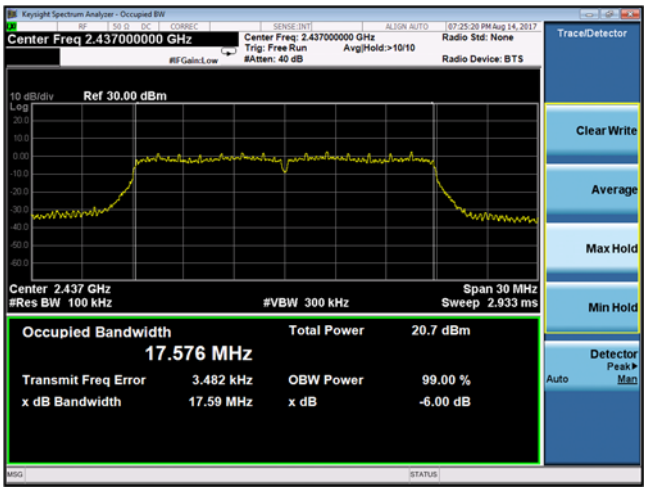
Plot 9-35 Chain B DTS Bandwidth 802.11g mode - Ch.12 (2467 MHz)



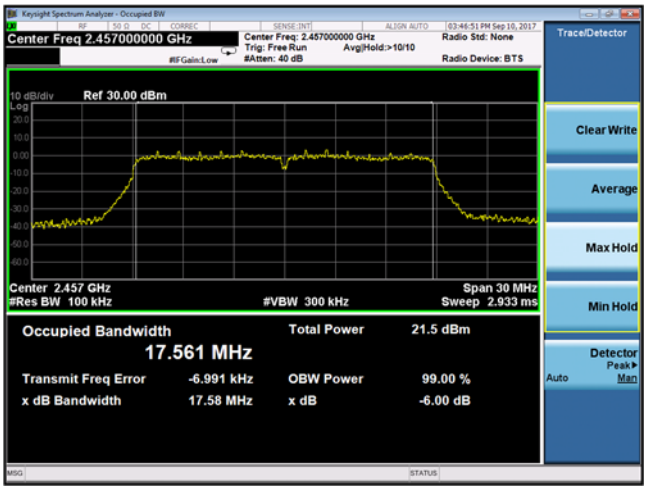
Plot 9-36 Chain B DTS Bandwidth 802.11g mode - Ch.13 (2472 MHz)



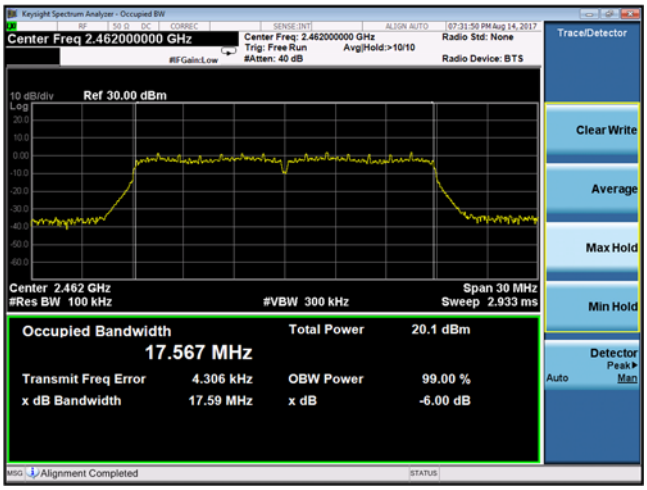
Plot 9-37 Chain B DTS Bandwidth 802.11n mode - Ch.1 (2412 MHz)



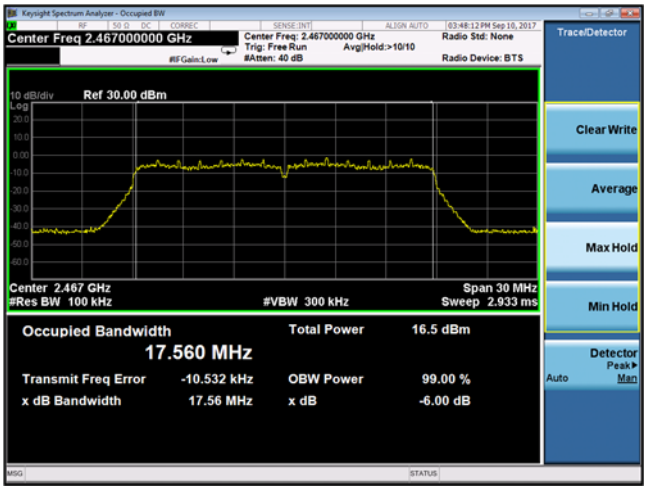
Plot 9-38 Chain B DTS Bandwidth 802.11n mode - Ch.6 (2437 MHz)



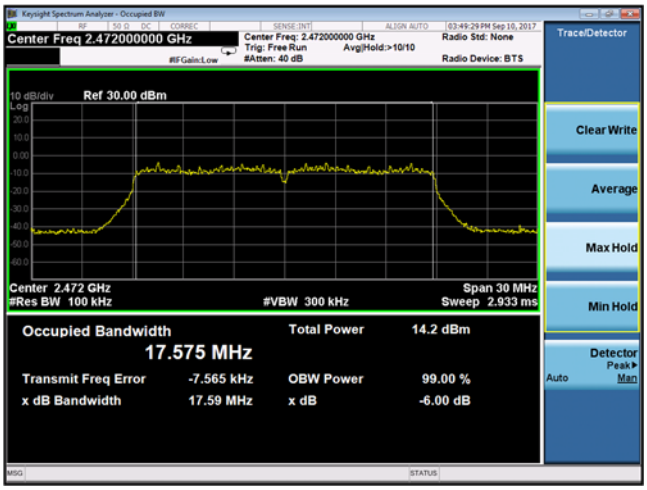
Plot 9-39 Chain B DTS Bandwidth 802.11n mode - Ch.10 (2457 MHz)



Plot 9-40 Chain B DTS Bandwidth 802.11n mode - Ch.11 (2462 MHz)



Plot 9-41 Chain B DTS Bandwidth 802.11n mode - Ch.12 (2467 MHz)



Plot 9-42 Chain B DTS Bandwidth 802.11n mode - Ch.13 (2472 MHz)

9.3 99% Bandwidth

9.3.1 Test Requirement:

The 99% Occupied Channel Bandwidth is the bandwidth that contains 99 % of the power of the signal. This test is performed for reporting and measurement purposes only.

9.3.2 Test Method:

Measurements were performed according to the procedure defined in ANSI C63.10:2013.

Spectrum Analyzer settings:
Set analyzer center frequency to the nominal EUT channel frequency
Span set to between 1.5 and 5.0 times the DTS bandwidth
RBW to: 1% to 5% of the OBW
VBW ≥ 3 RBW
Detector = Peak
Sweep time = auto couple
Trace mode = max hold
Use the 99% power bandwidth function of the instrument.

9.3.3 Limit:

Reporting and measurement purposes only.

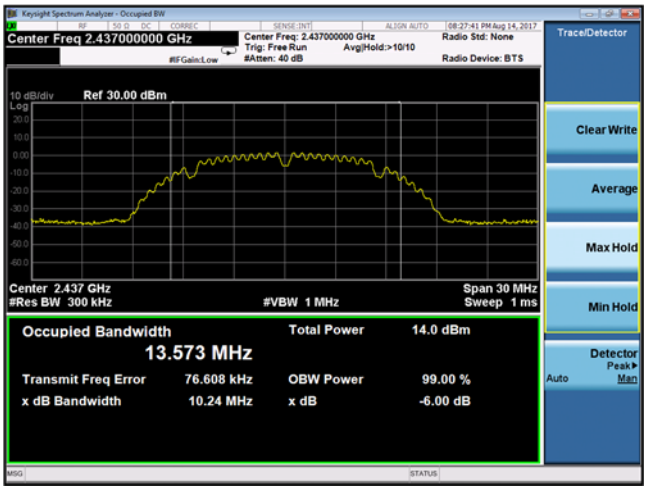
9.3.4 Test Results:

Chain A 802.11b 99% Bandwidth (MHz)		
Channel No.	**Frequency (MHz)**	**99% Bandwidth (MHz)**
1	2412	13.56
6	2437	13.57
10	2457	13.60
11	2462	13.59
12	2467	13.60
13	2472	13.59
Chain A 802.11g 99% Bandwidth (MHz)		
Channel No.	**Frequency (MHz)**	**99% Bandwidth (MHz)**
1	2412	16.78
6	2437	16.77
10	2457	16.78
11	2462	16.76
12	2467	16.77
13	2472	16.76
Chain A 802.11n 99% Bandwidth (MHz)		
Channel No.	**Frequency (MHz)**	**99% Bandwidth (MHz)**
1	2412	17.67
6	2437	17.67
10	2457	17.68
11	2462	17.67
12	2467	17.68
13	2472	17.67

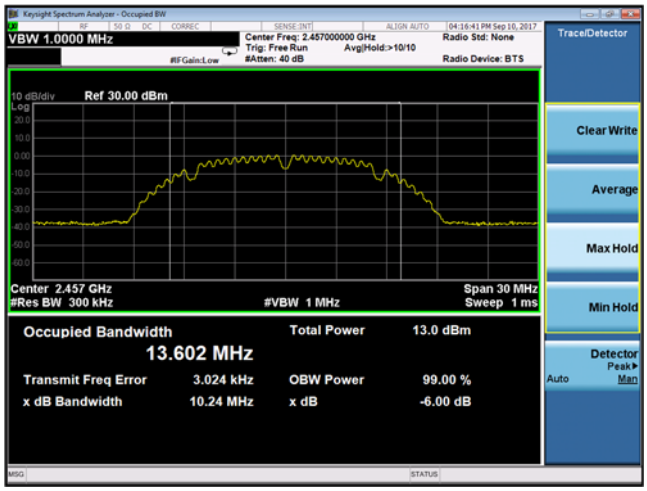
Chain B 802.11b 99% Bandwidth (MHz)		
Channel No.	**Frequency (MHz)**	**99% Bandwidth (MHz)**
1	2412	13.30
6	2437	13.28
10	2457	13.35
11	2462	13.47
12	2467	13.44
13	2472	13.45
Chain B 802.11g 99% Bandwidth (MHz)		
Channel No.	**Frequency (MHz)**	**99% Bandwidth (MHz)**
1	2412	16.66
6	2437	16.66
10	2457	16.66
11	2462	16.65
12	2467	16.65
13	2472	16.65
Chain B 802.11n 99% Bandwidth (MHz)		
Channel No.	**Frequency (MHz)**	**99% Bandwidth (MHz)**
1	2412	17.63
6	2437	17.63
10	2457	17.64
11	2462	17.64
12	2467	17.64
13	2472	17.64

9.3.5 Test Data:

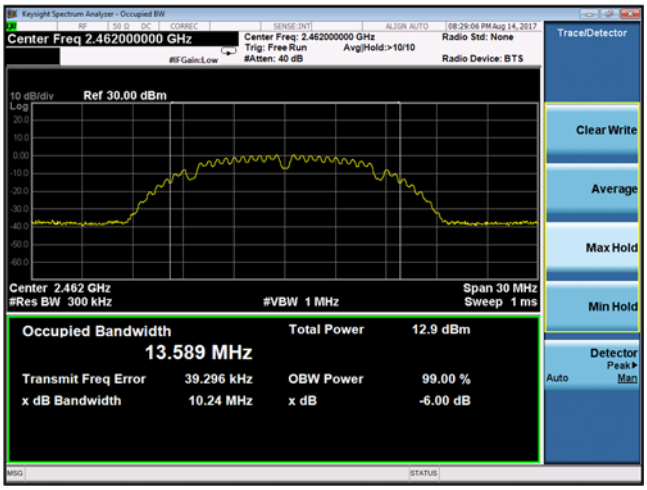
Plot 9-43 Chain A 99% Bandwidth 802.11b - Ch.1 (2412 MHz)



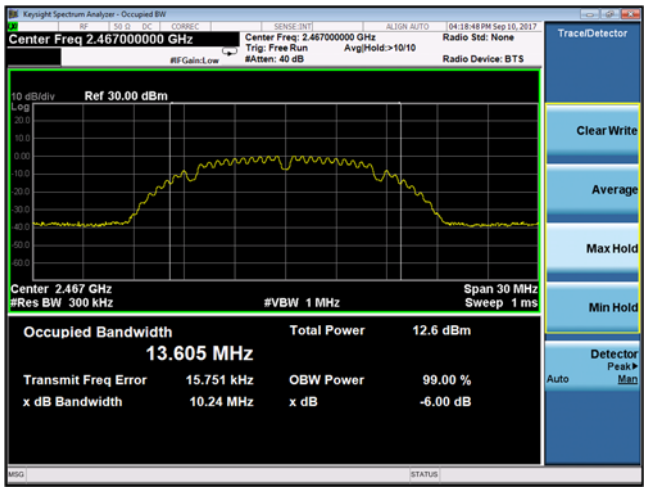
Plot 9-44 Chain A 99% Bandwidth 802.11b - Ch.6 (2437 MHz)



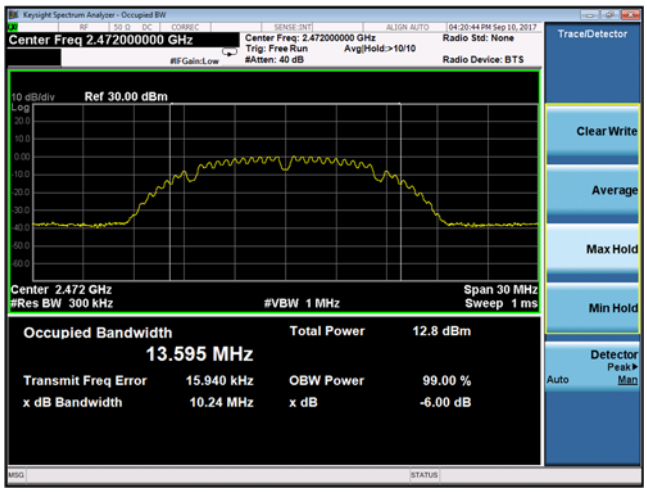
Plot 9-45 Chain A 99% Bandwidth 802.11b - Ch.10 (2457 MHz)



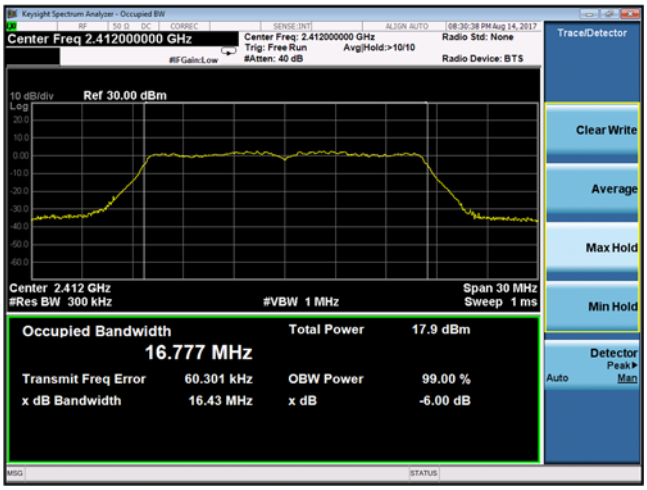
Plot 9-46 Chain A 99% Bandwidth 802.11b - Ch.11 (2462 MHz)



Plot 9-47 Chain A 99% Bandwidth 802.11b - Ch.12 (2467 MHz)

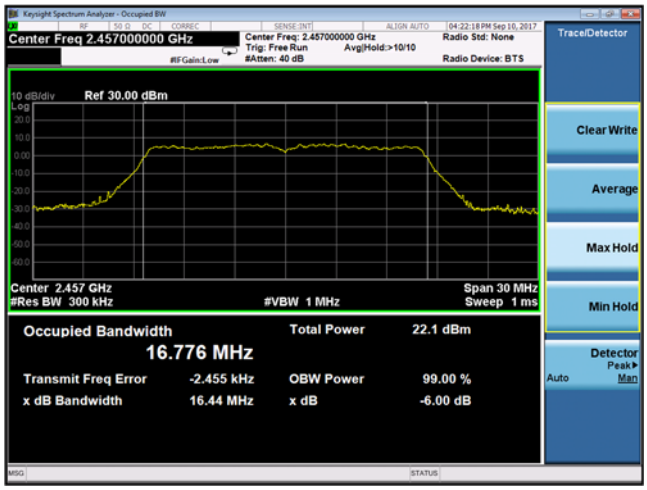


Plot 9-48 Chain A 99% Bandwidth 802.11b - Ch.13 (2472 MHz)

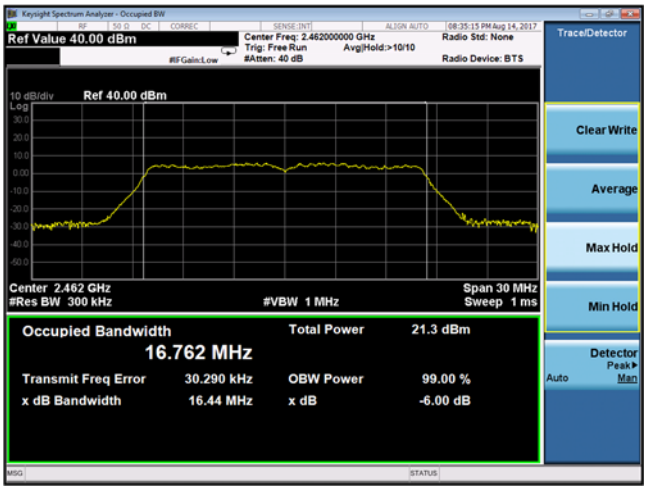


Plot 9-49 Chain A 99% Bandwidth 802.11g - Ch.1 (2412 MHz)

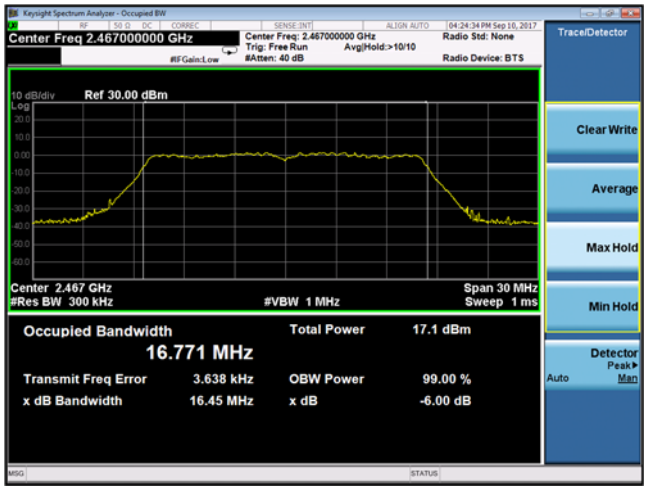
Plot 9-50 Chain A 99% Bandwidth 802.11g - Ch.6 (2437 MHz)



Plot 9-51 Chain A 99% Bandwidth 802.11g - Ch.10 (2457 MHz)



Plot 9-52 Chain A 99% Bandwidth 802.11g - Ch.11 (2462 MHz)

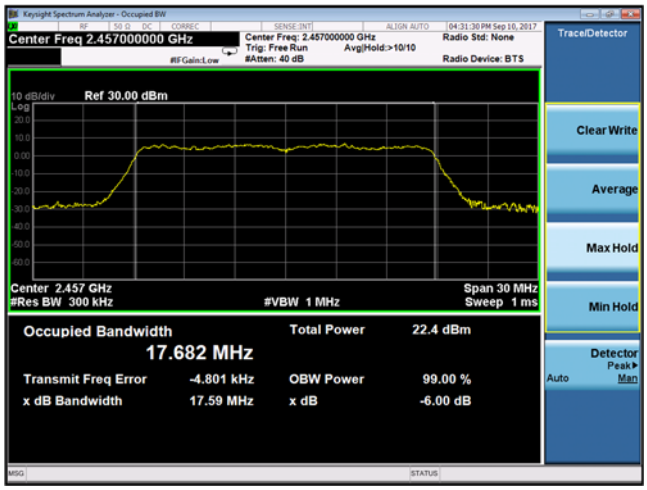


Plot 9-53 Chain A 99% Bandwidth 802.11g - Ch.12 (2467 MHz)

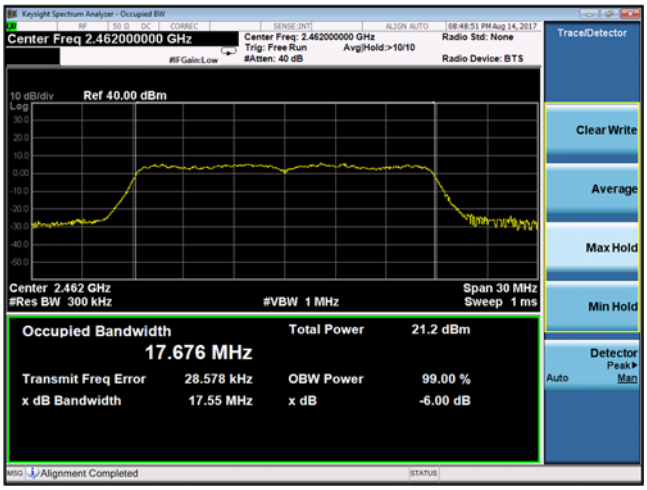
Plot 9-54 Chain A 99% Bandwidth 802.11g - Ch.13 (2472 MHz)

Plot 9-55 Chain A 99% Bandwidth 802.11n - Ch.1 (2412 MHz)

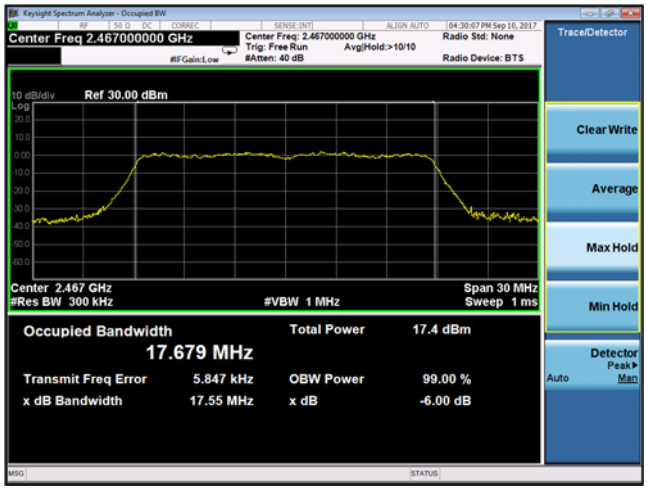
Plot 9-56 Chain A 99% Bandwidth 802.11n - Ch.6 (2437 MHz)



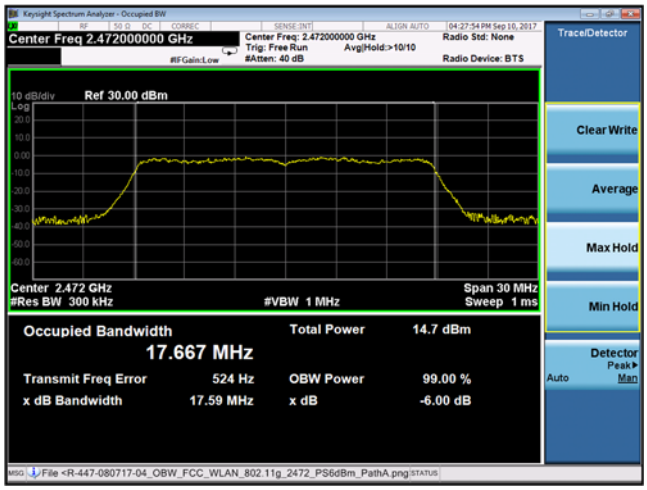
Plot 9-57 Chain A 99% Bandwidth 802.11n - Ch.10 (2457 MHz)



Plot 9-58 Chain A 99% Bandwidth 802.11n - Ch.11 (2462 MHz)



Plot 9-59 Chain A 99% Bandwidth 802.11n - Ch.12 (2467 MHz)



Plot 9-60 Chain A 99% Bandwidth 802.11n - Ch.13 (2472 MHz)