

OCCUPIED BANDWIDTH



XMIT 2019.02.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFX	22-Oct-18	22-Oct-21
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	13-Dec-18	13-Dec-19
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	11-Apr-19	11-Apr-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was set to the channels and modes listed in the datasheet.

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.

A reference level offset was found by using a signal generator to inject a known signal into the cable, attenuator, and DC block system. The loss was measured on a spectrum analyzer and used to find the reference level offset.

OCCUPIED BANDWIDTH



TIMTx 2018.09.13 XMM 2019.02.26

EUT: Duo WiFi

Serial Number: 67588

Customer: Ademco, Inc.

Attendees: None

Project: None

Tested by: Andrew Rogstad

Power: 110VAC/60Hz

TEST SPECIFICATIONS

FCC 15.247:2019

Work Order: ADEM0001

Date: 19-Apr-19

Temperature: 23.6 °C

Humidity: 30.3% RH

Barometric Pres.: 1019 mbar

Job Site: MN05

TEST SPECIFICATIONS

Test Method

ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

Configuration #

2

Signature



Value

Limit (>)

Result

Antenna 0

802.11(b) 1 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(b) 11 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(g) 6 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(g) 36 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(g) 54 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(n) MCS0

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(n) MCS7

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

7.573 MHz

8.055 MHz

8.062 MHz

7.848 MHz

7.409 MHz

7.651 MHz

15.343 MHz

15.322 MHz

15.334 MHz

15.744 MHz

15.742 MHz

15.991 MHz

16.085 MHz

16.059 MHz

16.045 MHz

15.967 MHz

16.082 MHz

15.128 MHz

17.553 MHz

17.311 MHz

17.307 MHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

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500 kHz

Pass

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Antenna 1

802.11(b) 1 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(b) 11 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(g) 6 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(g) 36 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(g) 54 Mbps

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(n) MCS0

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

802.11(n) MCS7

Low Channel 1, 2412 MHz

Mid Channel 6, 2437 MHz

High Channel 11, 2462 MHz

8.058 MHz

8.06 MHz

8.058 MHz

7.959 MHz

7.732 MHz

7.499 MHz

15.453 MHz

15.327 MHz

15.129 MHz

15.74 MHz

15.724 MHz

15.734 MHz

16.043 MHz

16.338 MHz

16.047 MHz

16.086 MHz

16.07 MHz

16.083 MHz

17.261 MHz

17.01 MHz

17.301 MHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

500 kHz

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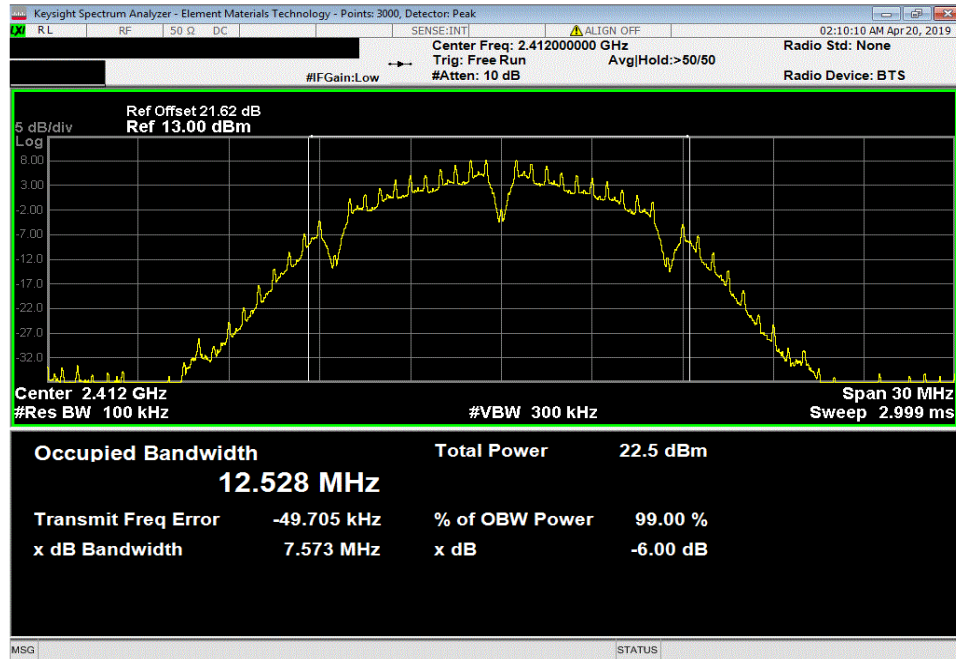
Pass

OCCUPIED BANDWIDTH

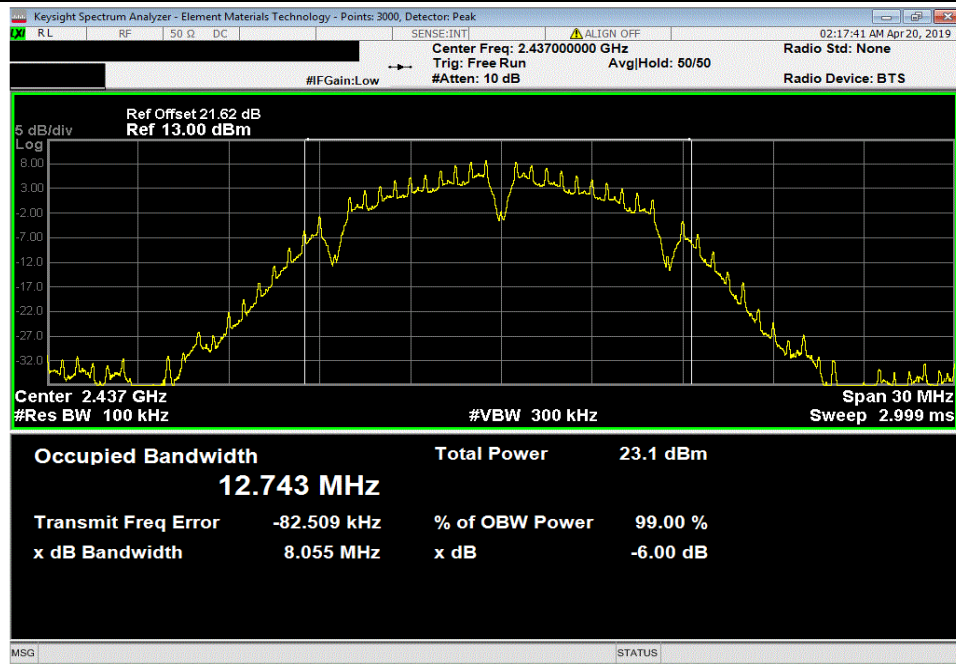


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				7.573 MHz	500 kHz	Pass



Antenna 0, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				8.055 MHz	500 kHz	Pass

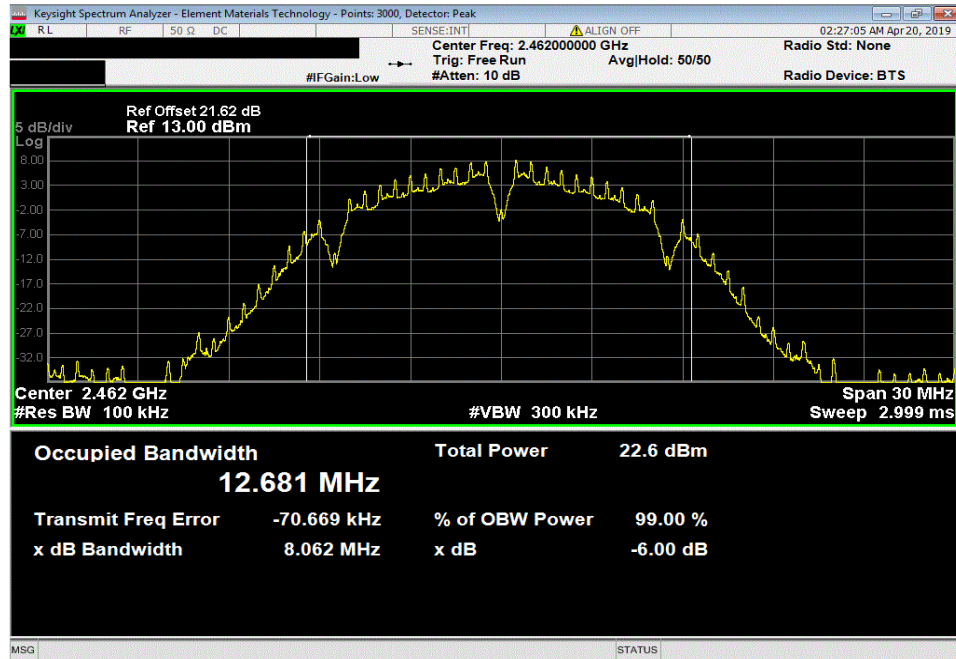


OCCUPIED BANDWIDTH

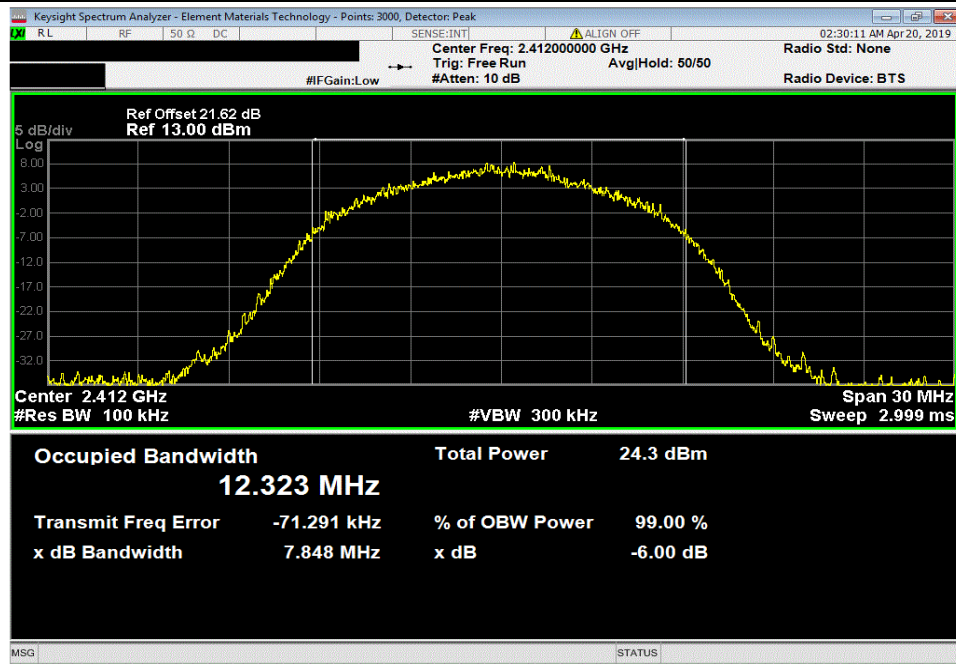


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				8.062 MHz	500 kHz	Pass



Antenna 0, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				7.848 MHz	500 kHz	Pass

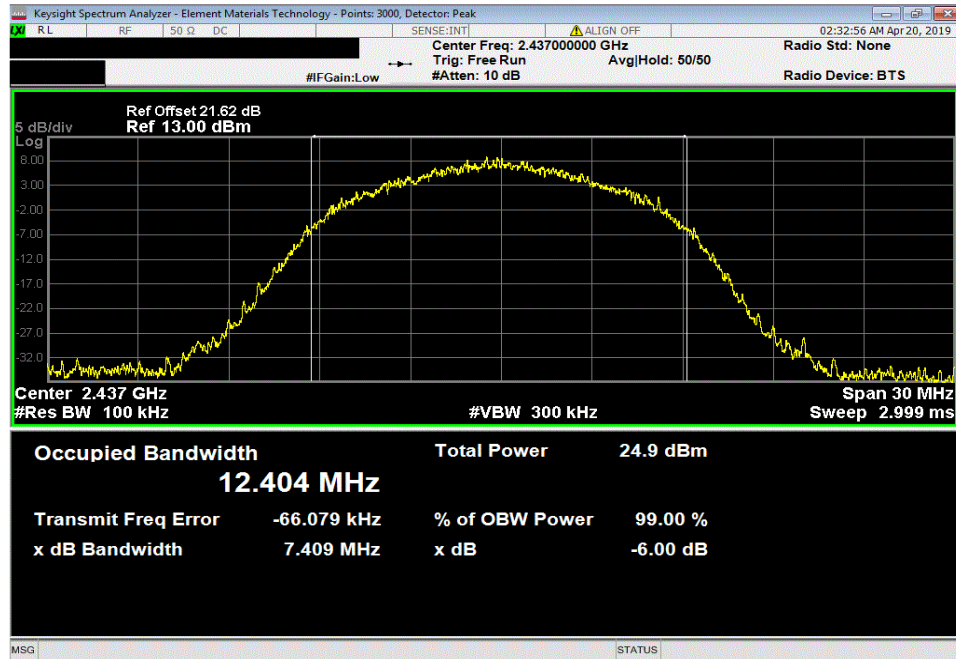


OCCUPIED BANDWIDTH

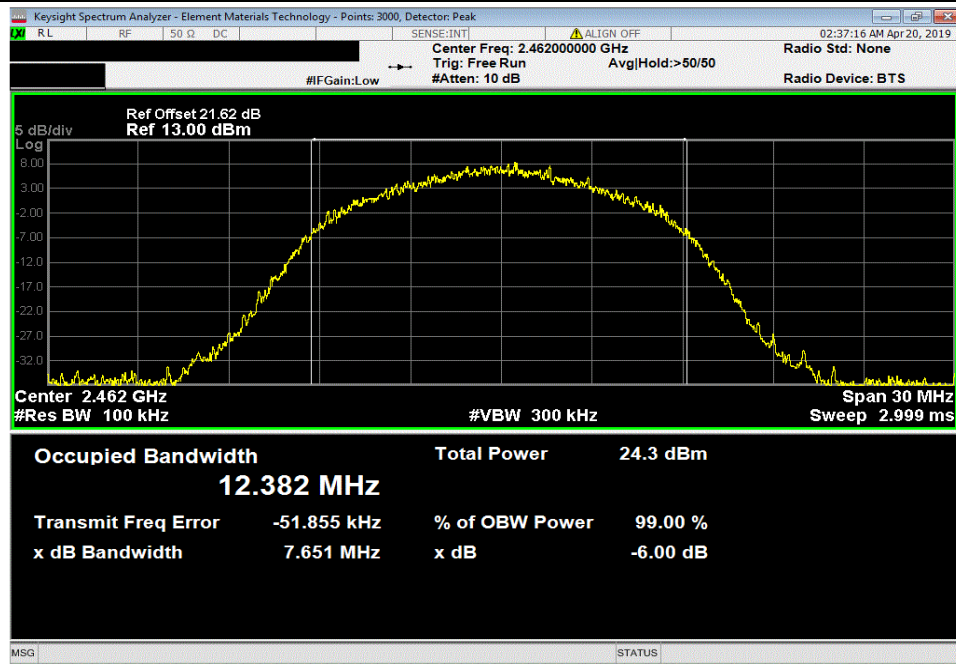


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				7.409 MHz	500 kHz	Pass



Antenna 0, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				7.651 MHz	500 kHz	Pass

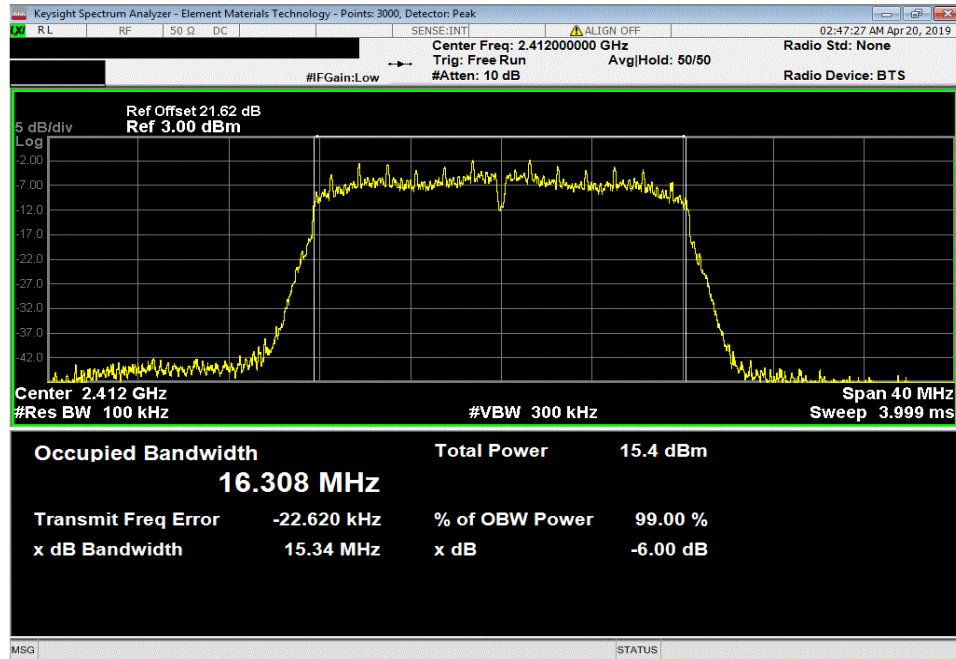


OCCUPIED BANDWIDTH

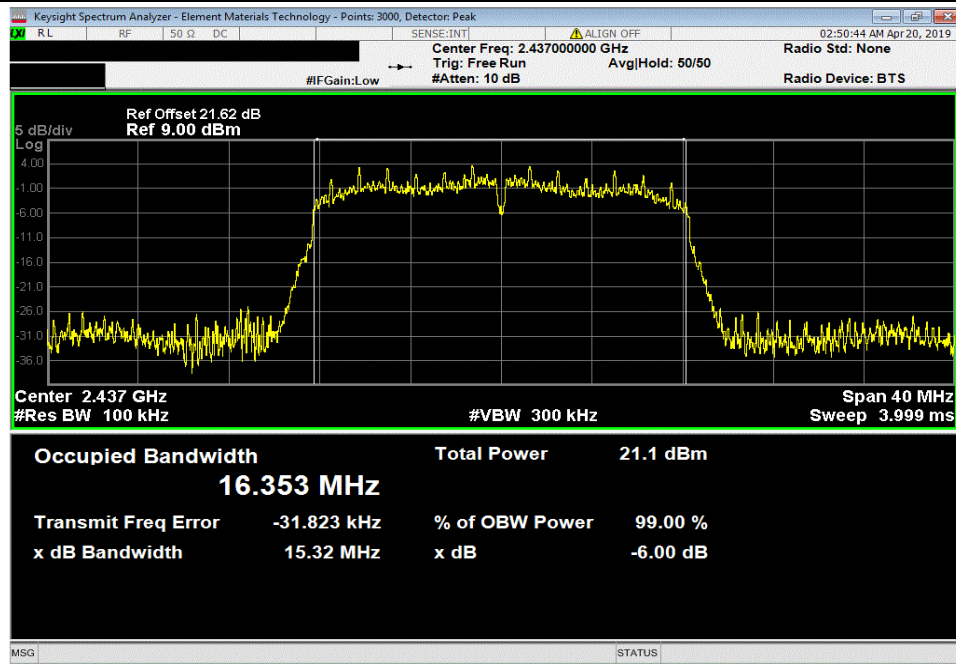


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				15.343 MHz	500 kHz	Pass



Antenna 0, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				15.322 MHz	500 kHz	Pass

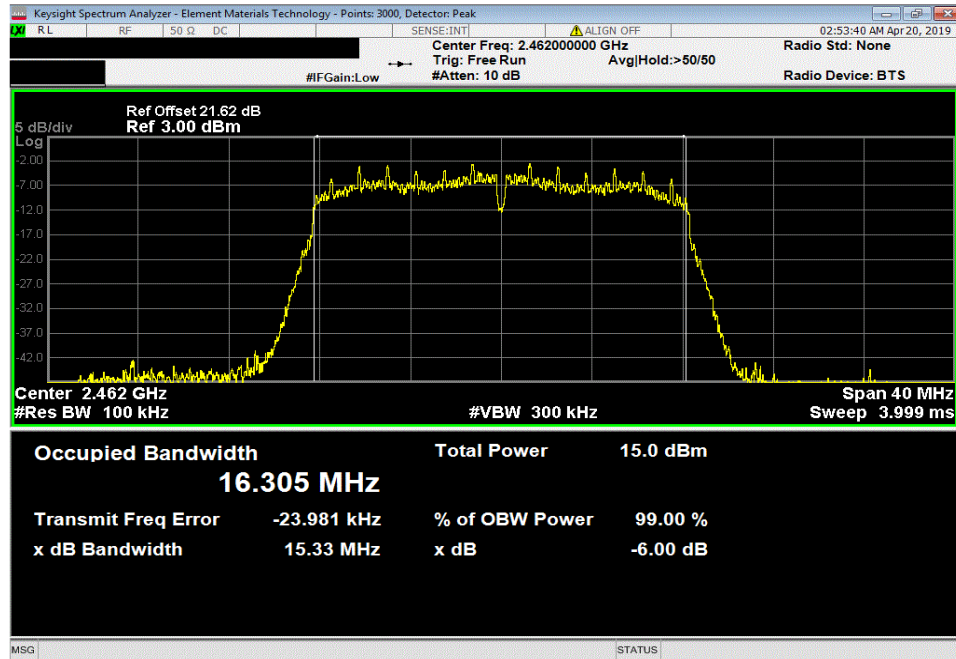


OCCUPIED BANDWIDTH

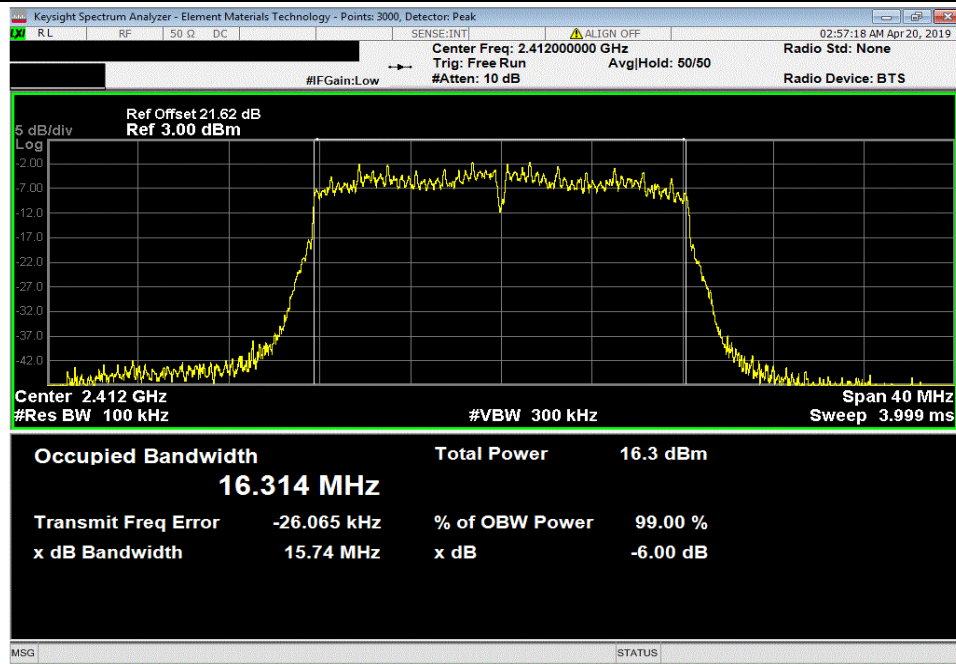


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Antenna 0, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.334 MHz	500 kHz	Pass



Antenna 0, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				15.744 MHz	500 kHz	Pass

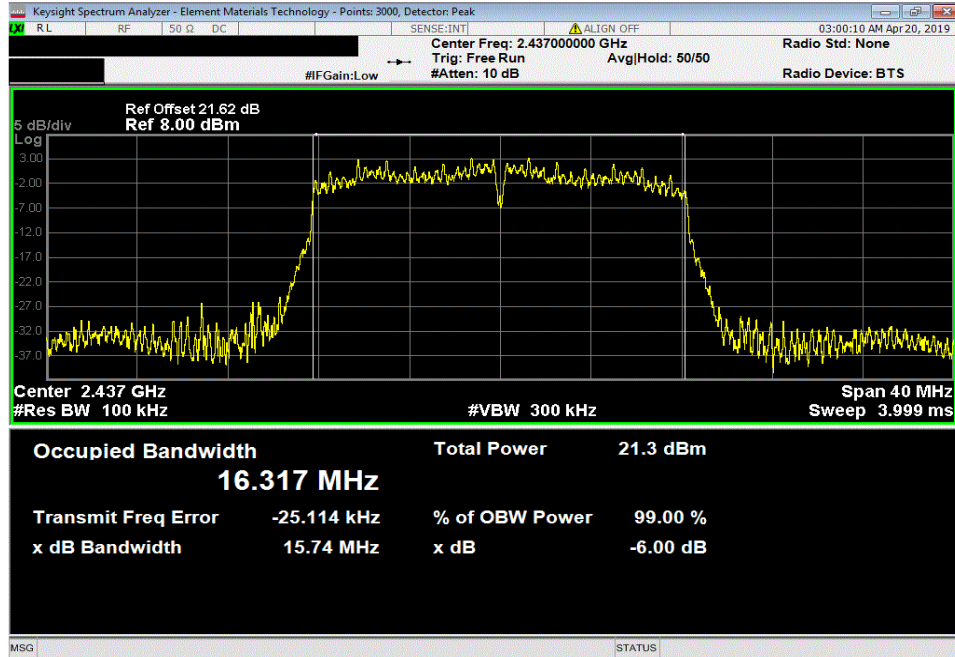


OCCUPIED BANDWIDTH

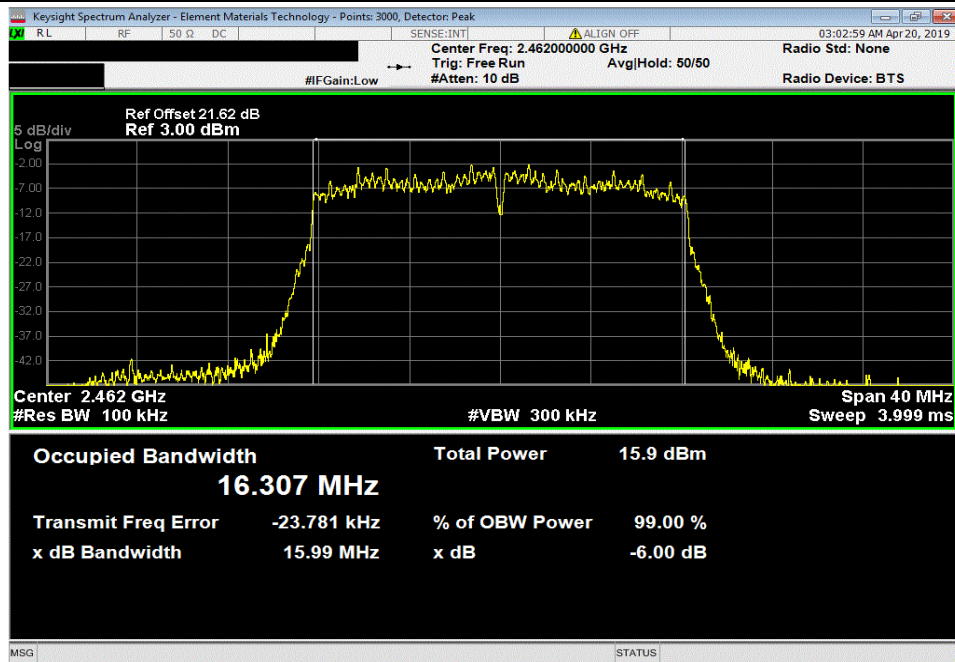


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
	Value	Limit	Result			
		(>)				
	15.742 MHz	500 kHz	Pass			



Antenna 0, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
	Value	Limit	Result			
		(>)				
	15.991 MHz	500 kHz	Pass			

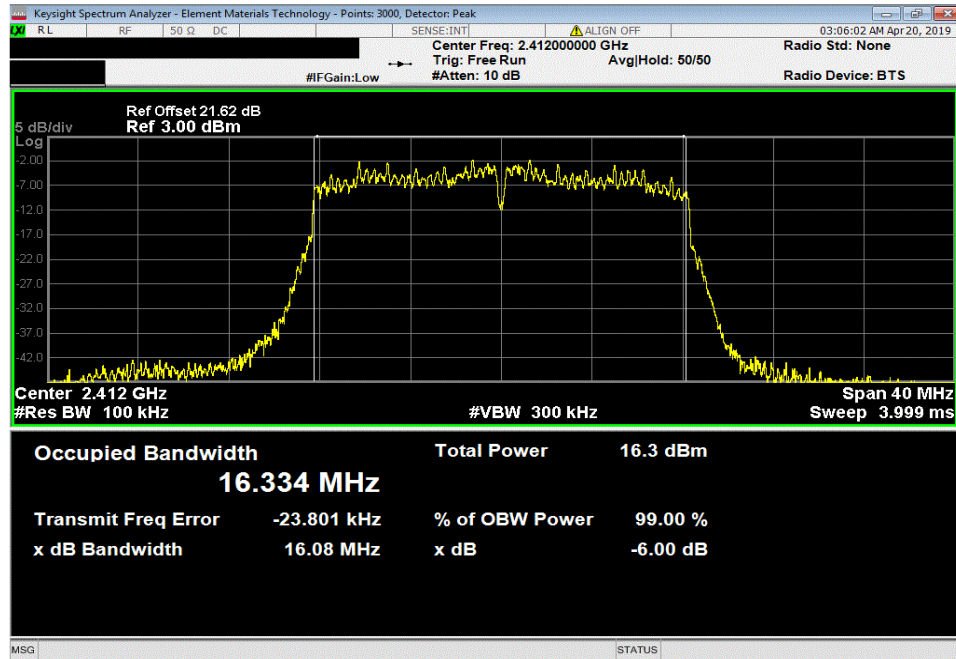


OCCUPIED BANDWIDTH

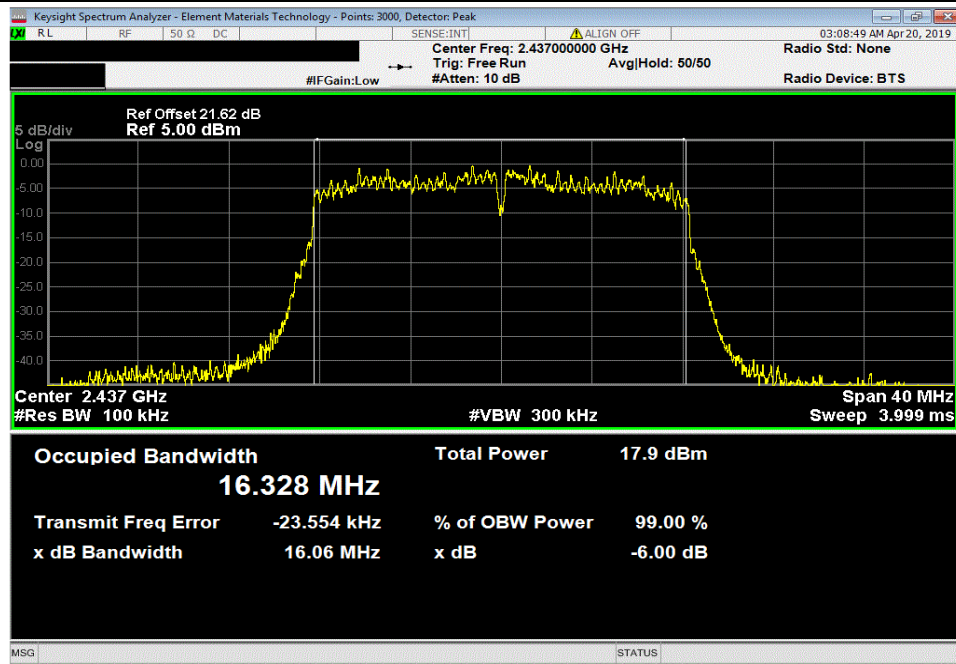


TMTx 2018.09.13 XMt 2019.02.26

Antenna 0, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.085 MHz	500 kHz	Pass



Antenna 0, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.059 MHz	500 kHz	Pass

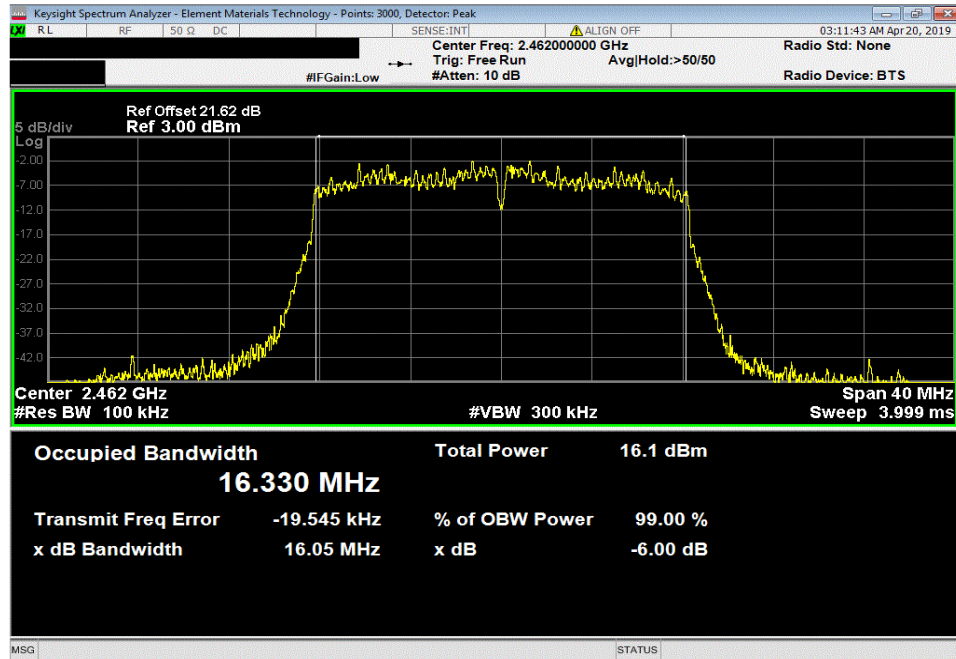


OCCUPIED BANDWIDTH

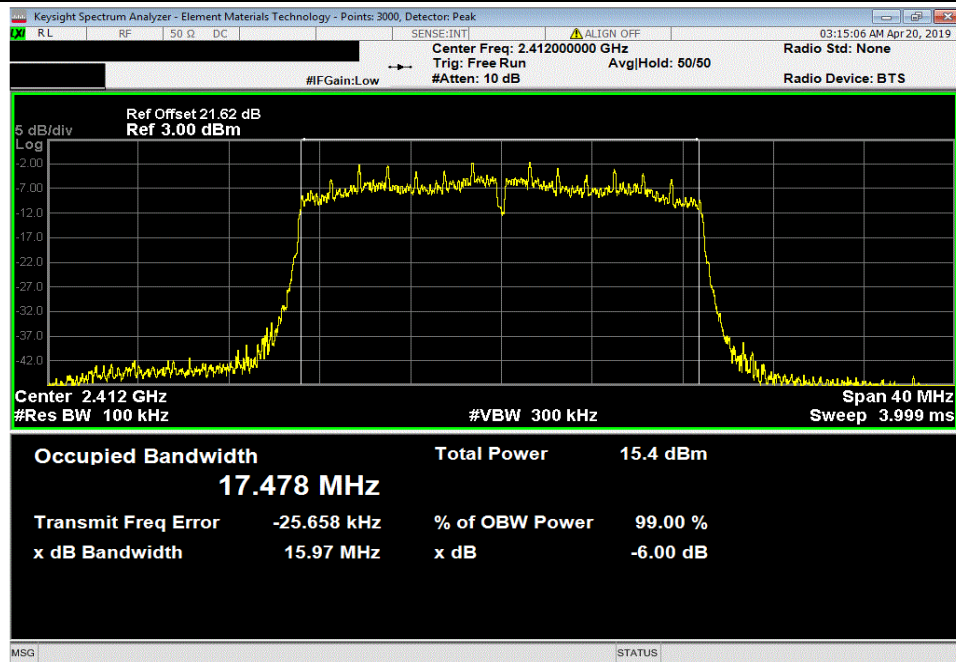


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.045 MHz	500 kHz	Pass



Antenna 0, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				15.967 MHz	500 kHz	Pass

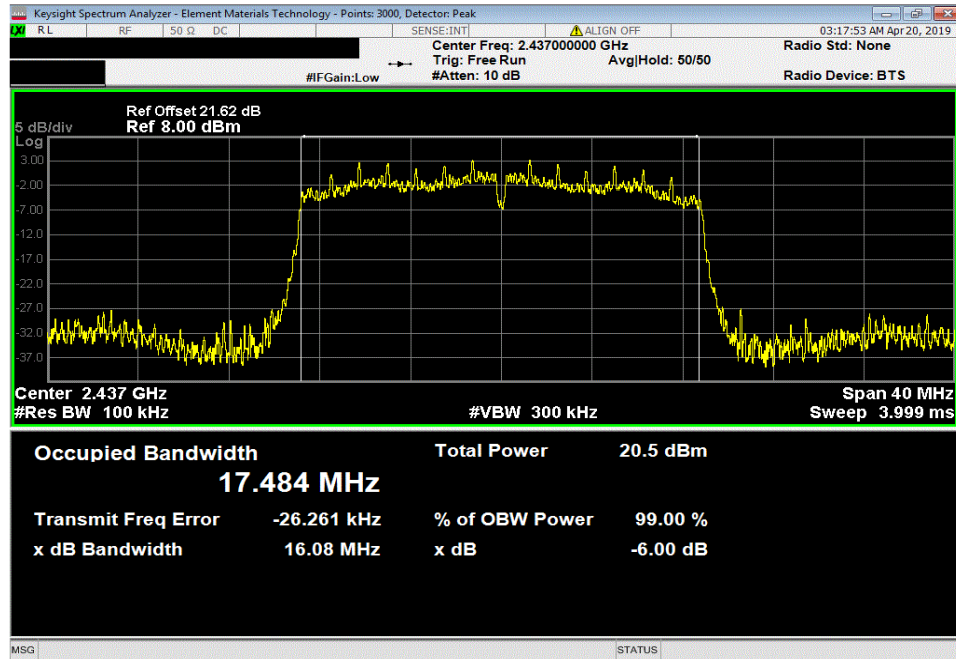


OCCUPIED BANDWIDTH

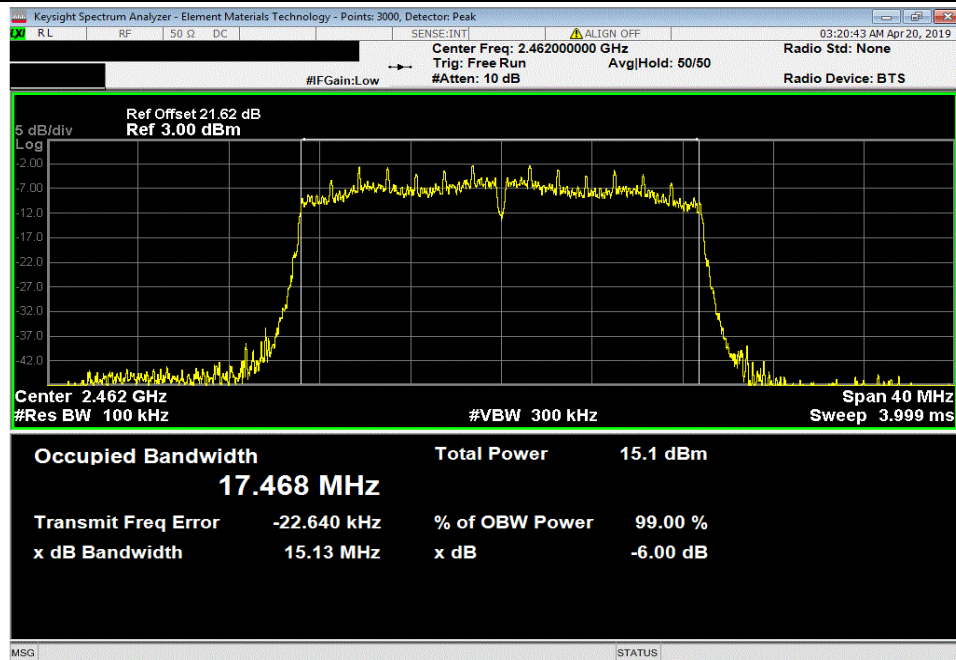


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.082 MHz	500 kHz	Pass



Antenna 0, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.128 MHz	500 kHz	Pass

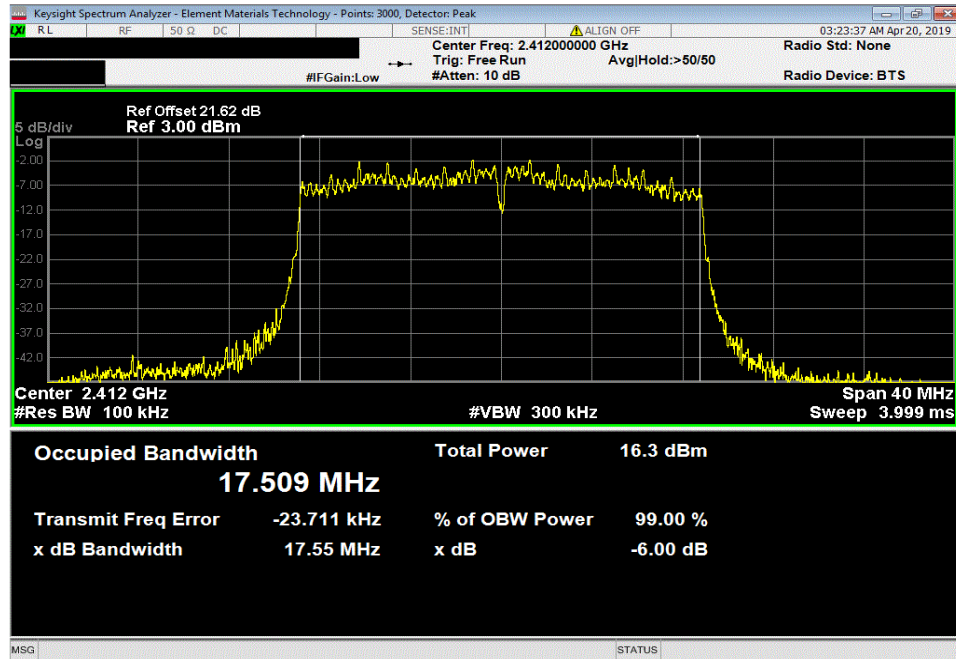


OCCUPIED BANDWIDTH

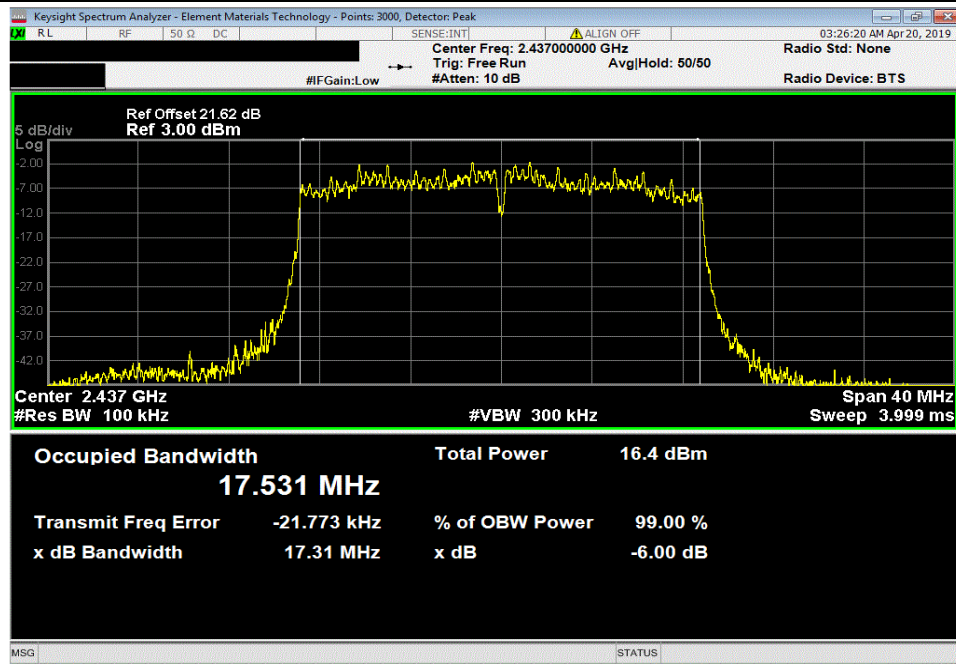


TMTx 2018.09.13 XMt 2019.02.26

Antenna 0, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.553 MHz	500 kHz	Pass



Antenna 0, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.311 MHz	500 kHz	Pass

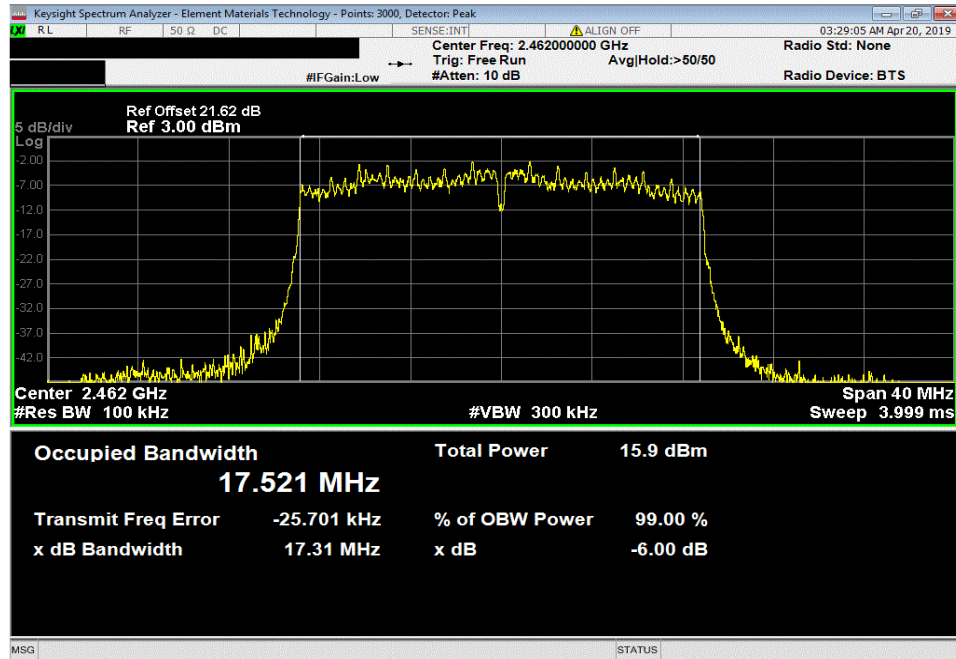


OCCUPIED BANDWIDTH

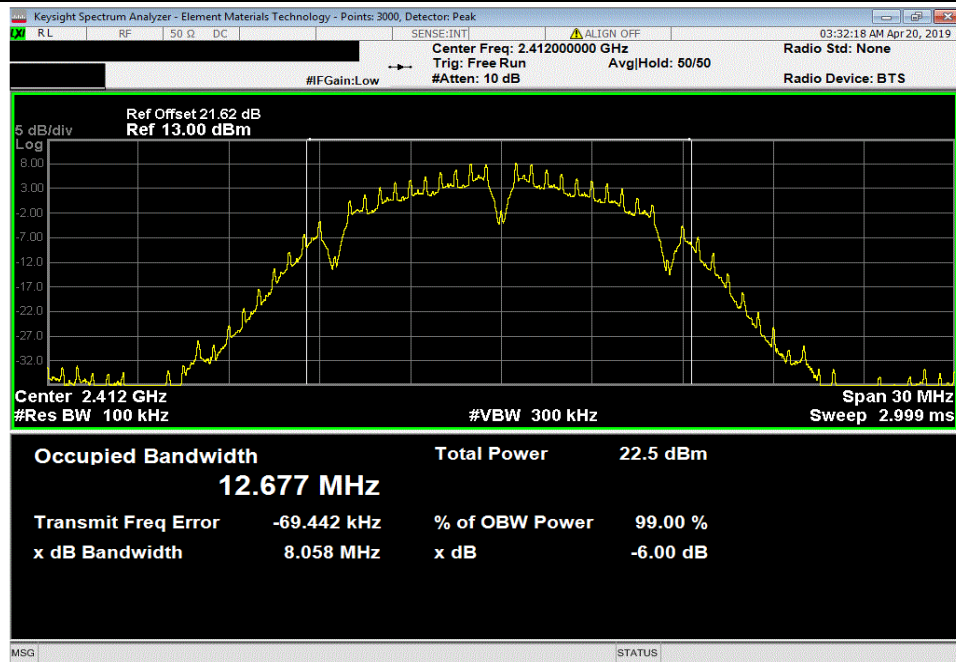


TMTx 2018.09.13 XMI 2019.02.26

Antenna 0, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.307 MHz	500 kHz	Pass



Antenna 1, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				8.058 MHz	500 kHz	Pass

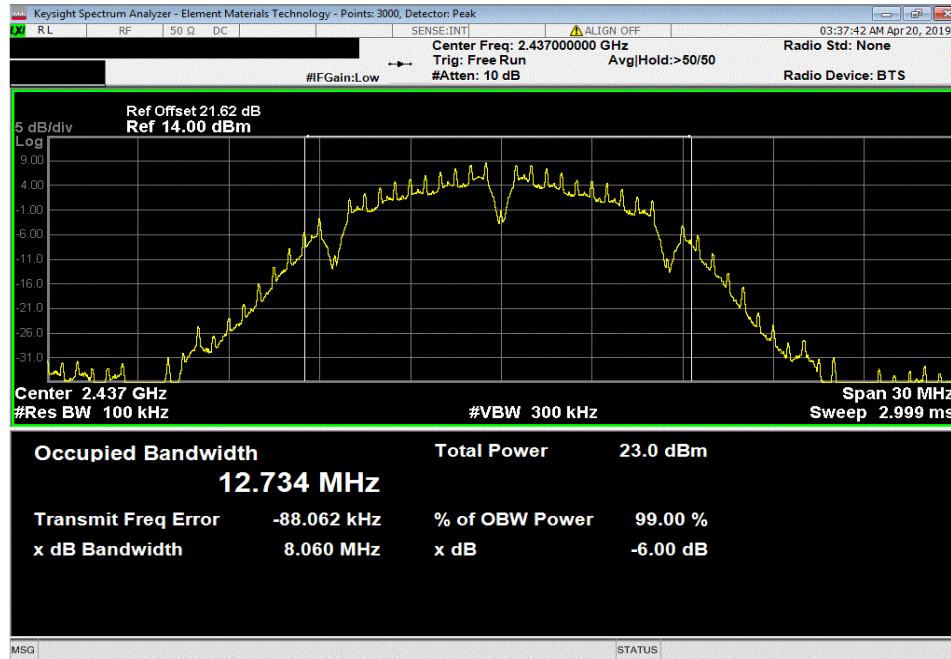


OCCUPIED BANDWIDTH

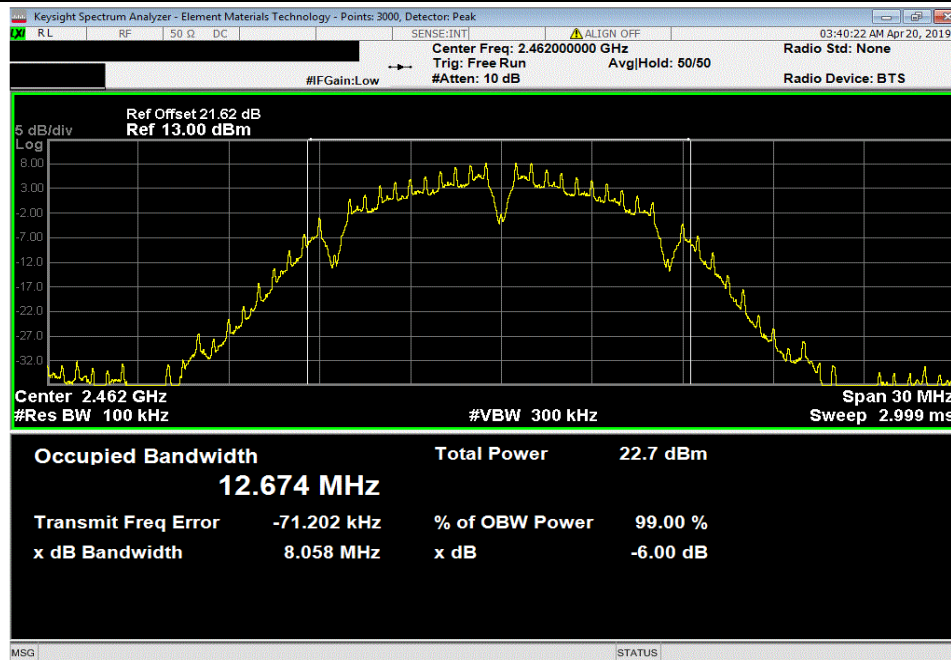


TMTx 2018.09.13 XMI 2019.02.26

Antenna 1, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				8.06 MHz	500 kHz	Pass



Antenna 1, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				8.058 MHz	500 kHz	Pass

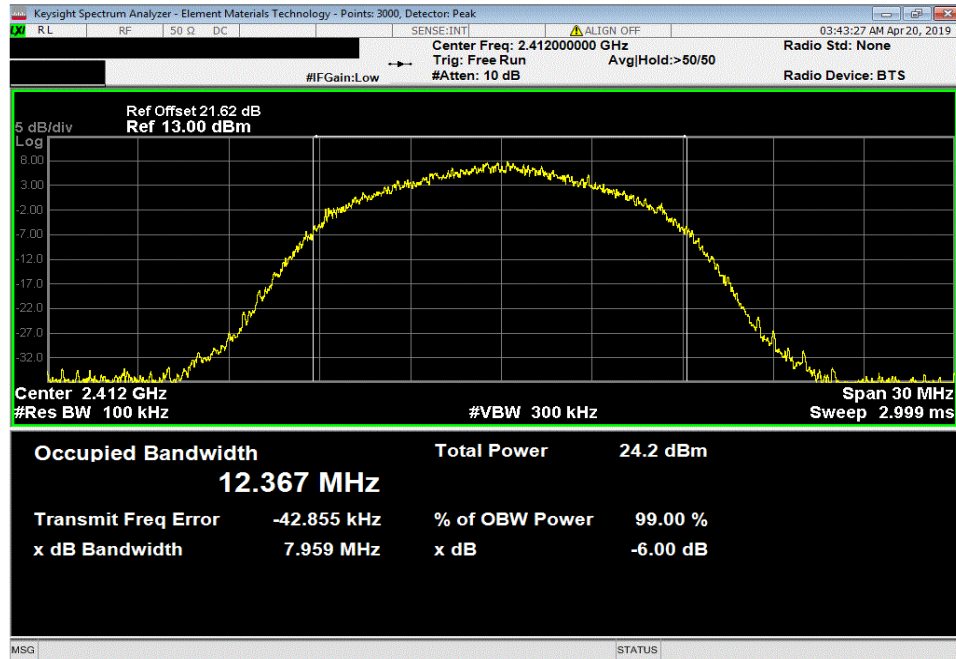


OCCUPIED BANDWIDTH

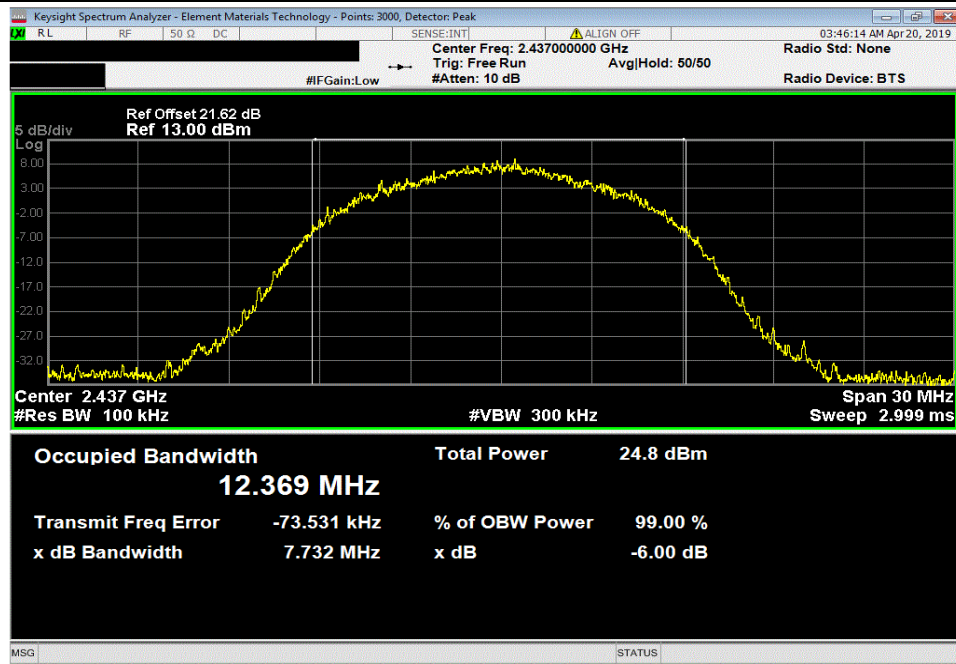


TMTx 2018.09.13 XMt 2019.02.26

Antenna 1, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				7.959 MHz	500 kHz	Pass



Antenna 1, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				7.732 MHz	500 kHz	Pass

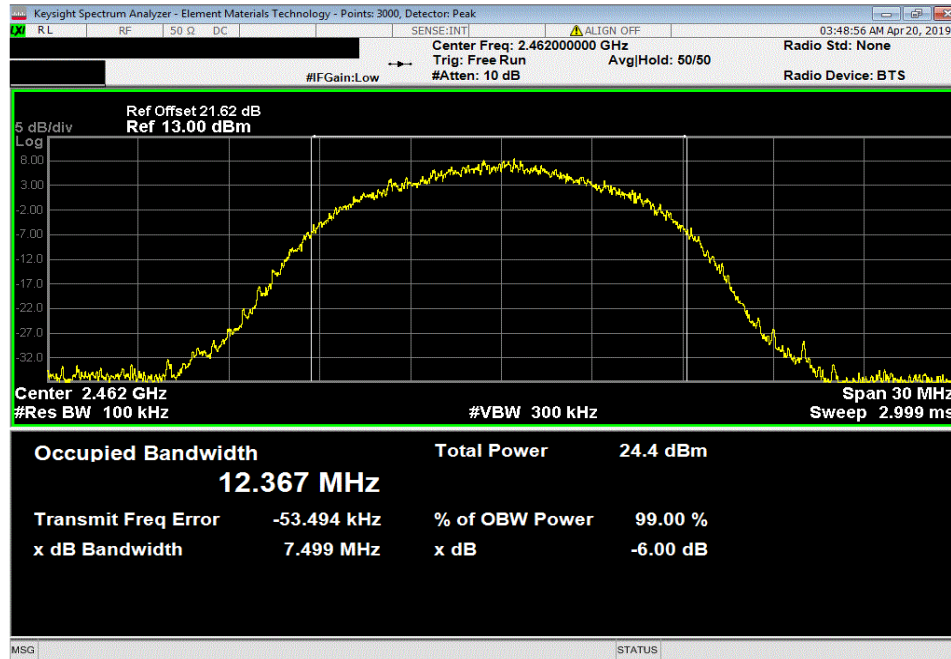


OCCUPIED BANDWIDTH

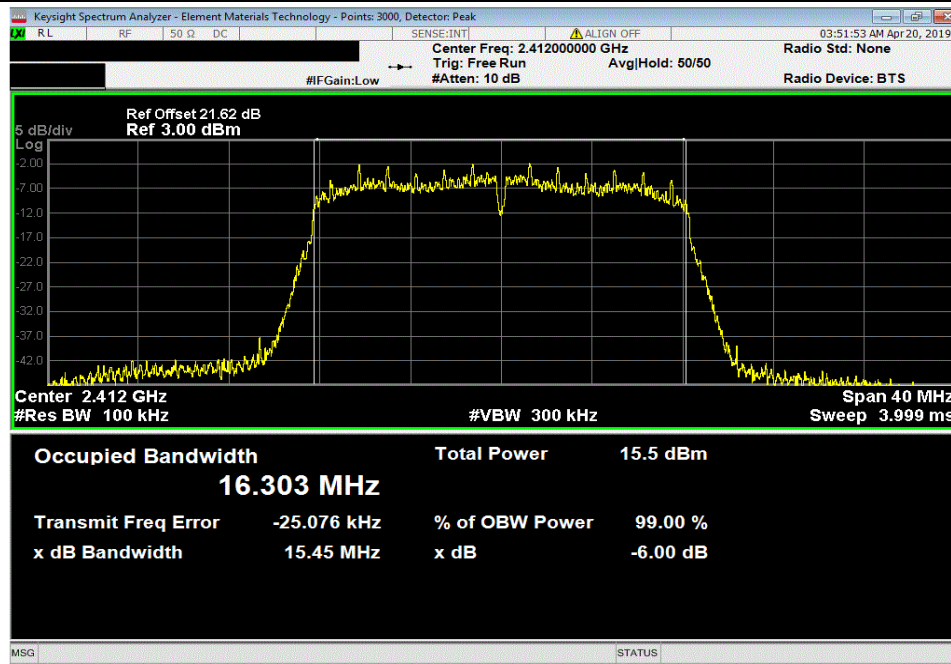


TMTx 2018.09.13 XMI 2019.02.26

Antenna 1, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				7.499 MHz	500 kHz	Pass



Antenna 1, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				15.453 MHz	500 kHz	Pass

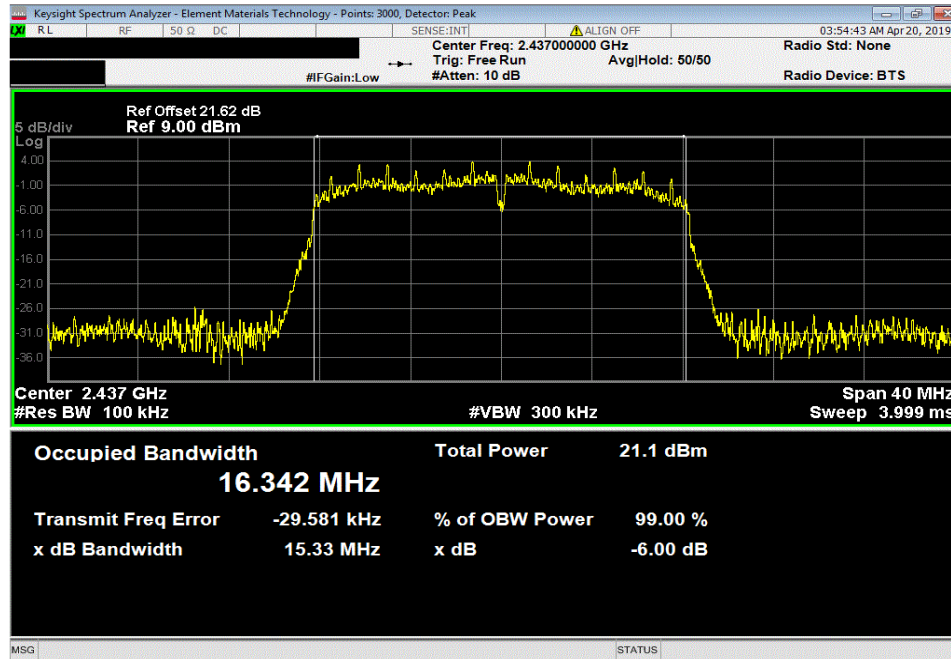


OCCUPIED BANDWIDTH

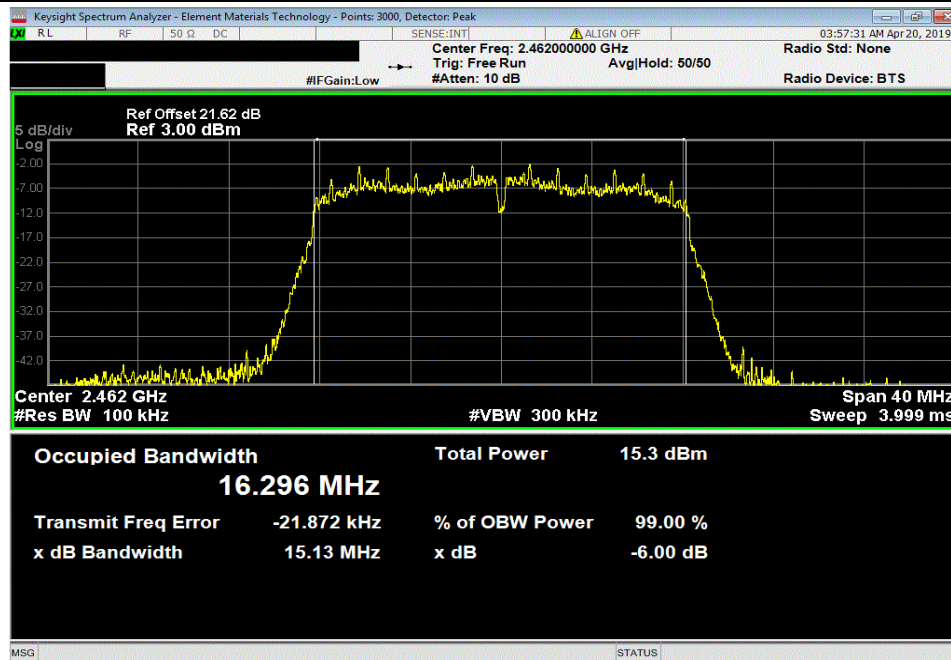


TMTx 2018.09.13 XMI 2019.02.26

Antenna 1, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				15.327 MHz	500 kHz	Pass



Antenna 1, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.129 MHz	500 kHz	Pass

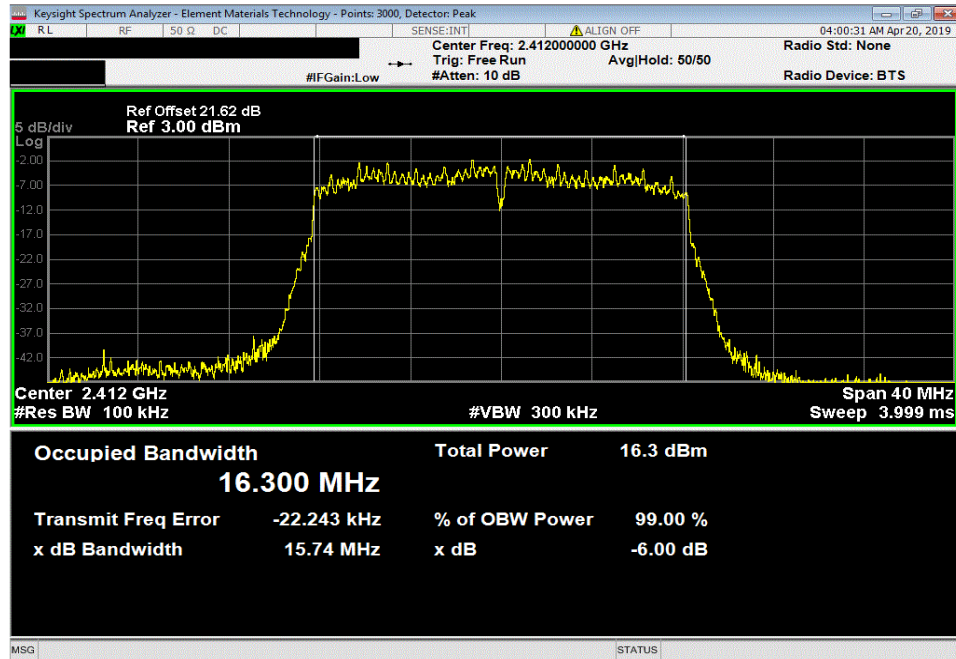


OCCUPIED BANDWIDTH

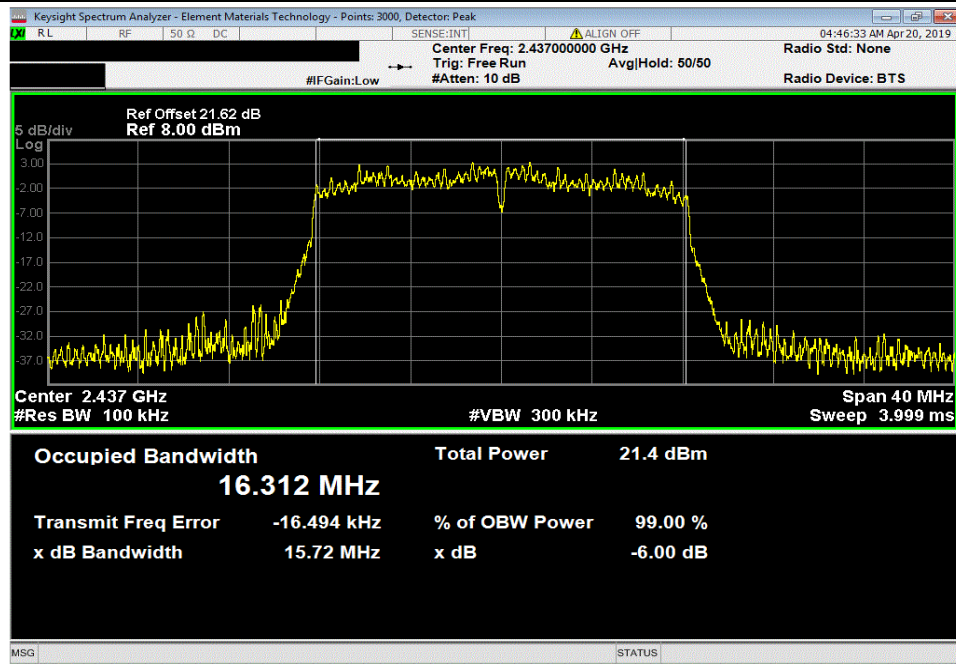


TMTx 2018.09.13 XMI 2019.02.26

Antenna 1, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				15.74 MHz	500 kHz	Pass



Antenna 1, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				15.724 MHz	500 kHz	Pass

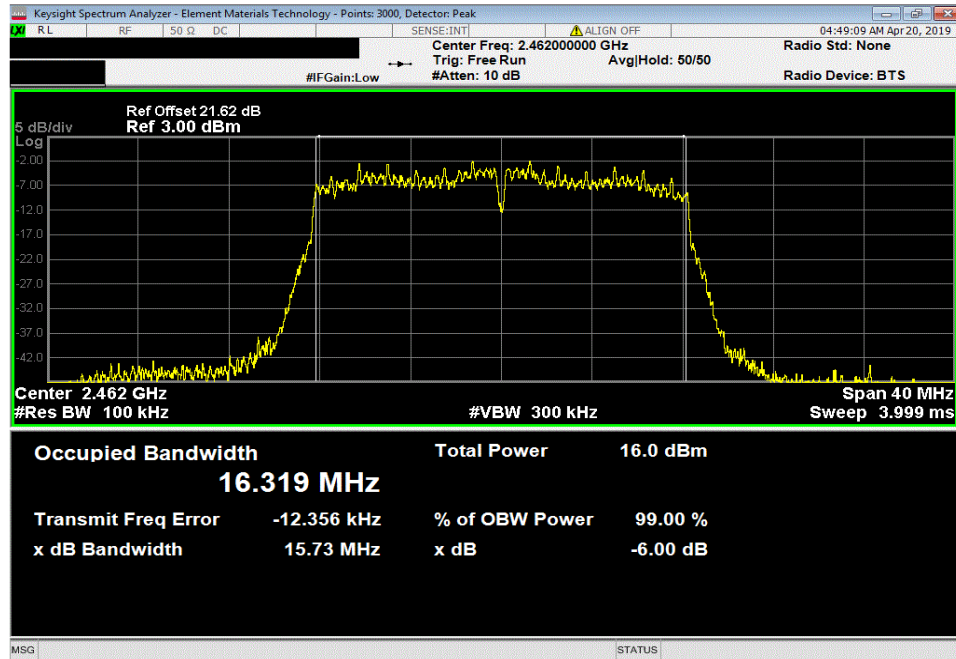


OCCUPIED BANDWIDTH

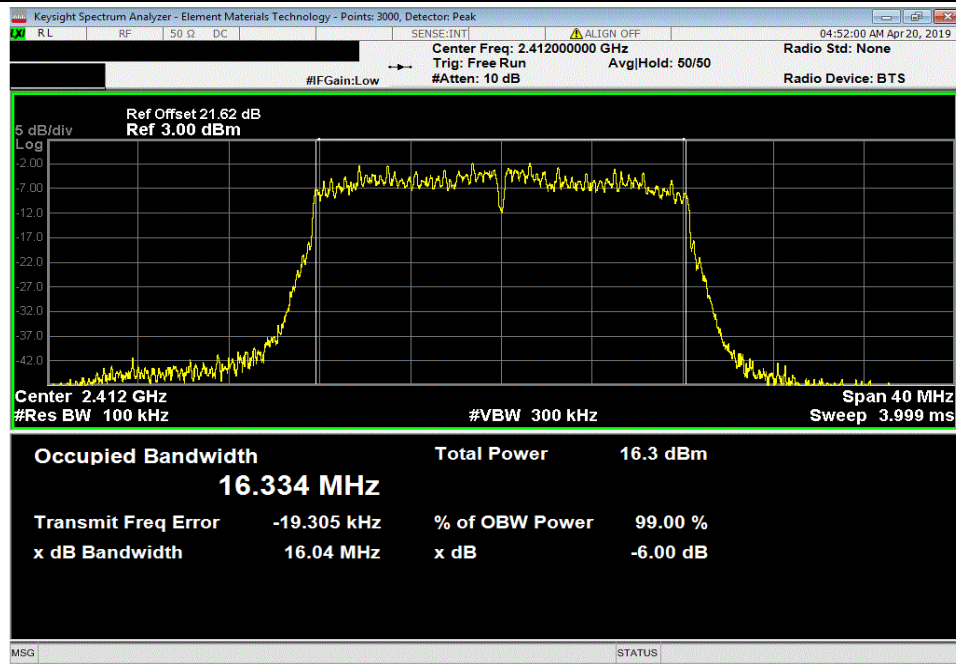


TMTx 2018.09.13 XMt 2019.02.26

Antenna 1, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.734 MHz	500 kHz	Pass



Antenna 1, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.043 MHz	500 kHz	Pass

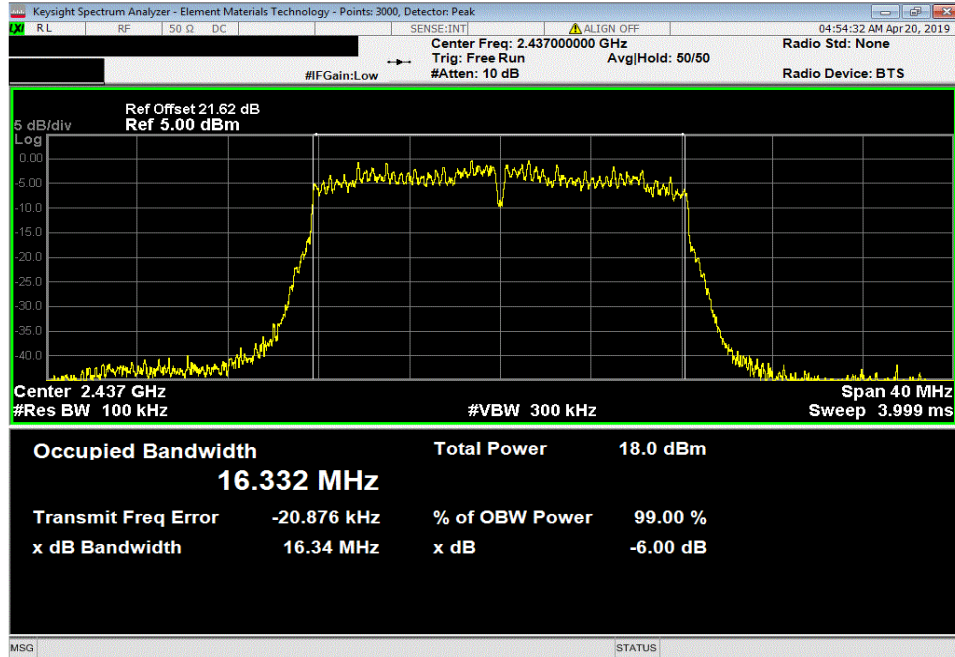


OCCUPIED BANDWIDTH

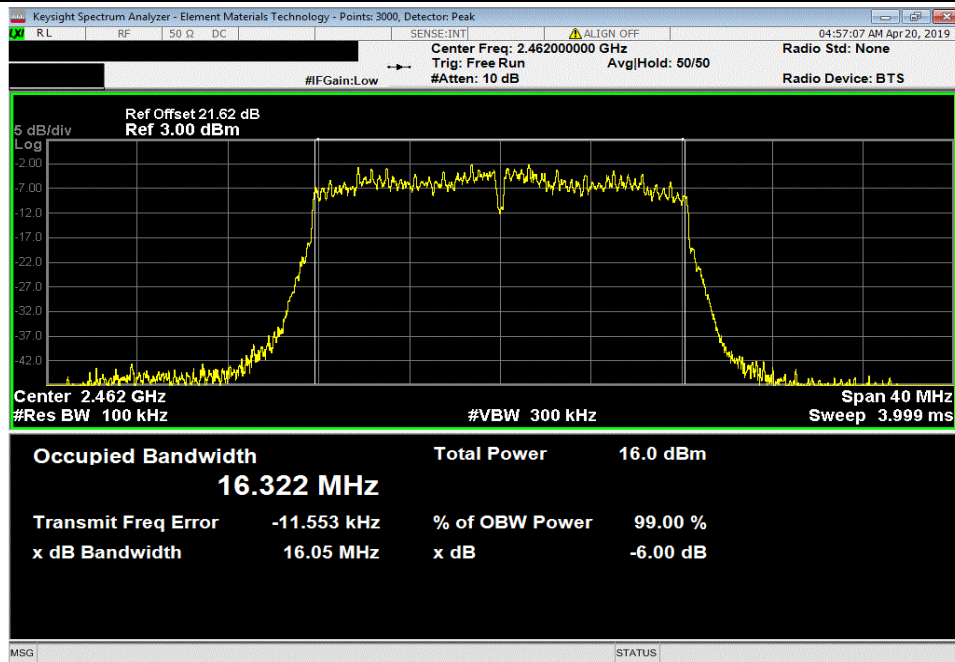


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Antenna 1, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.338 MHz	500 kHz	Pass



Antenna 1, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.047 MHz	500 kHz	Pass

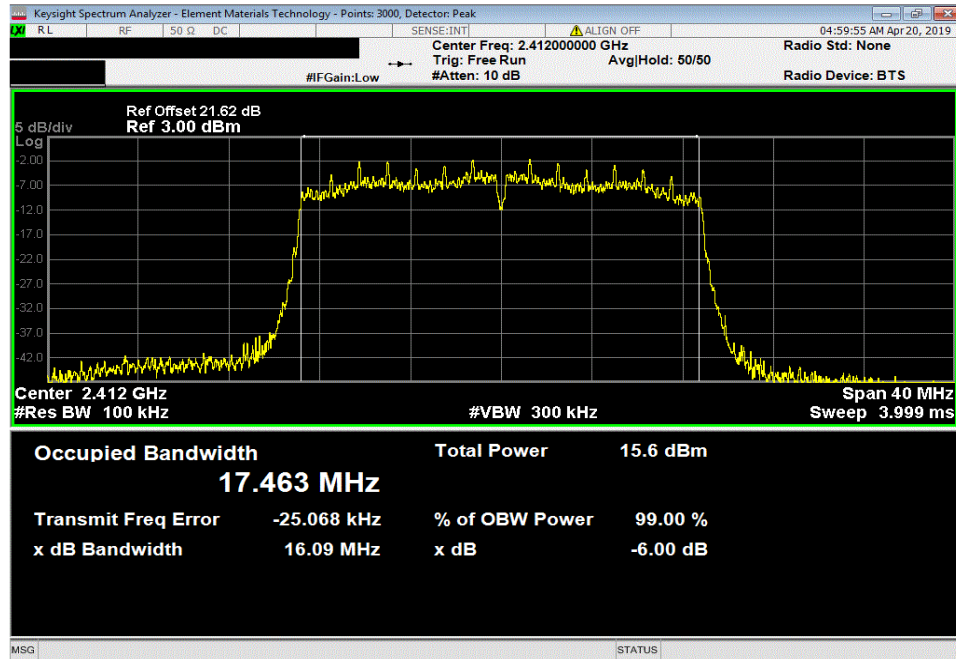


OCCUPIED BANDWIDTH

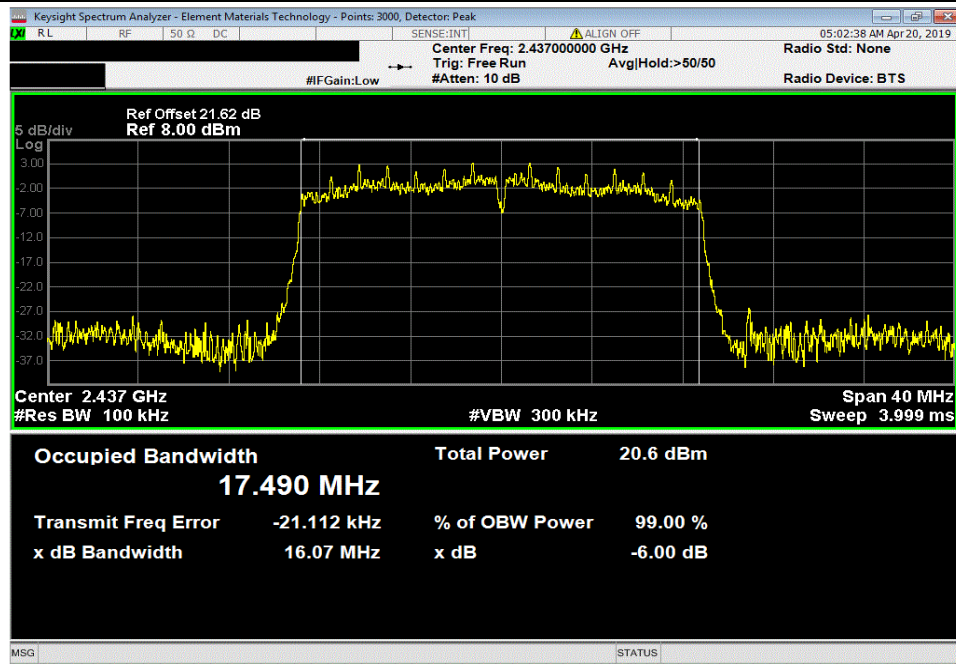


TMTx 2018.09.13 XMt 2019.02.26

Antenna 1, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.086 MHz	500 kHz	Pass



Antenna 1, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.07 MHz	500 kHz	Pass

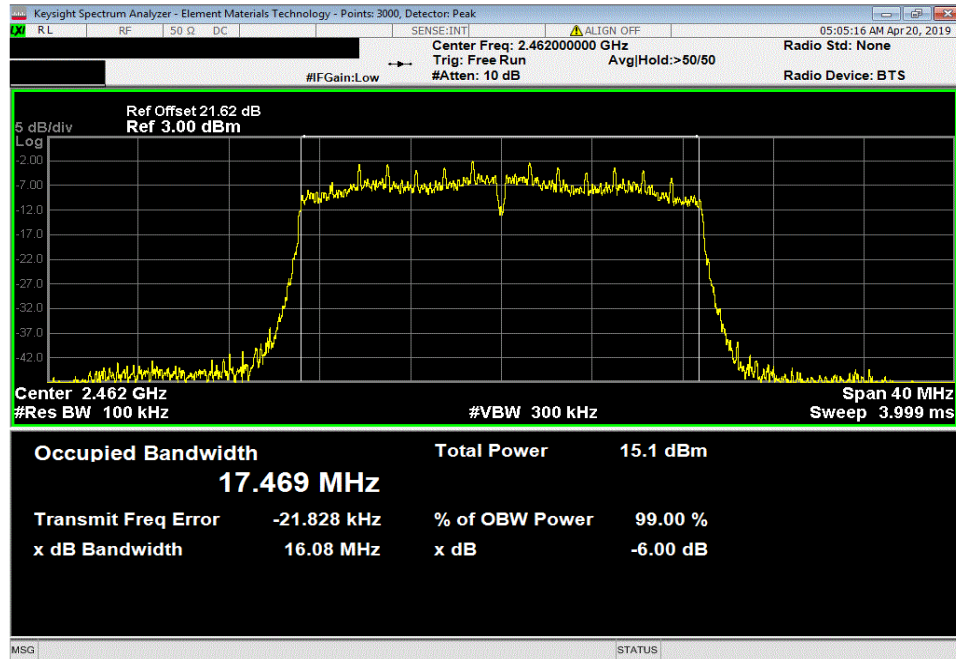


OCCUPIED BANDWIDTH

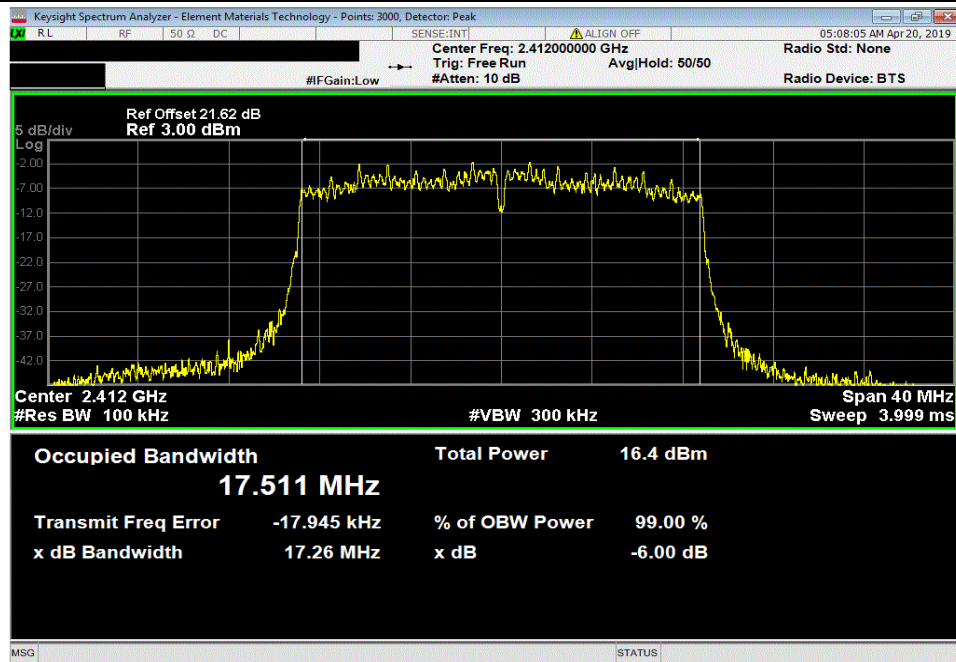


TMTx 2018.09.13 XMI 2019.02.26

Antenna 1, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.083 MHz	500 kHz	Pass



Antenna 1, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.261 MHz	500 kHz	Pass

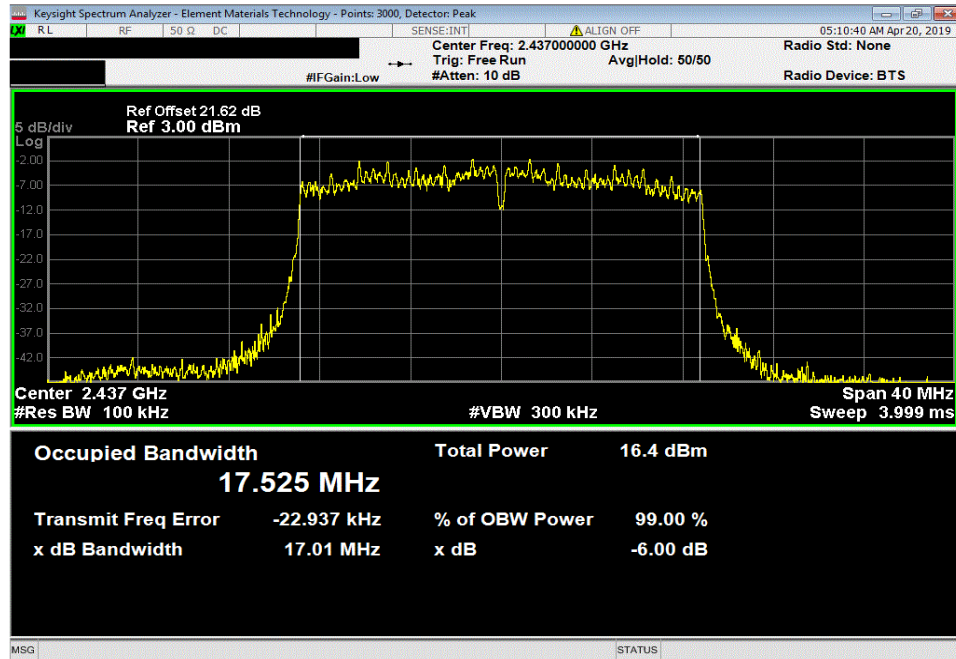


OCCUPIED BANDWIDTH



TMTx 2018.09.13 XMI 2019.02.26

Antenna 1, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
	Value	Limit	Result			
		(>)				
	17.01 MHz	500 kHz	Pass			



Antenna 1, 802.11(n) MCS7, High Channel 11, 2462 MHz						
	Value	Limit	Result			
		(>)				
	17.301 MHz	500 kHz	Pass			

