DTS BANDWIDTH - CHAIN 1

XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

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 DTS bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

DTS BANDWIDTH - CHAIN 1

TbtTx 2022.06.03.0 XMit 2022.02.07.0

EUT:	**U8 Hawk**			**Work Order:**	**KYME0068**
Serial Number:	**192F-85E2-1761**			**Date:**	**7-Oct-22**
Customer:	**Kymeta Corp.**			**Temperature:**	**22.5 °C**
Attendees:	**Dean Busch**			**Humidity:**	**43.5% RH**
Project:	**None**			**Barometric Pres.:**	**1025 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**12 VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2022	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

Reference level offset includes: DC Block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

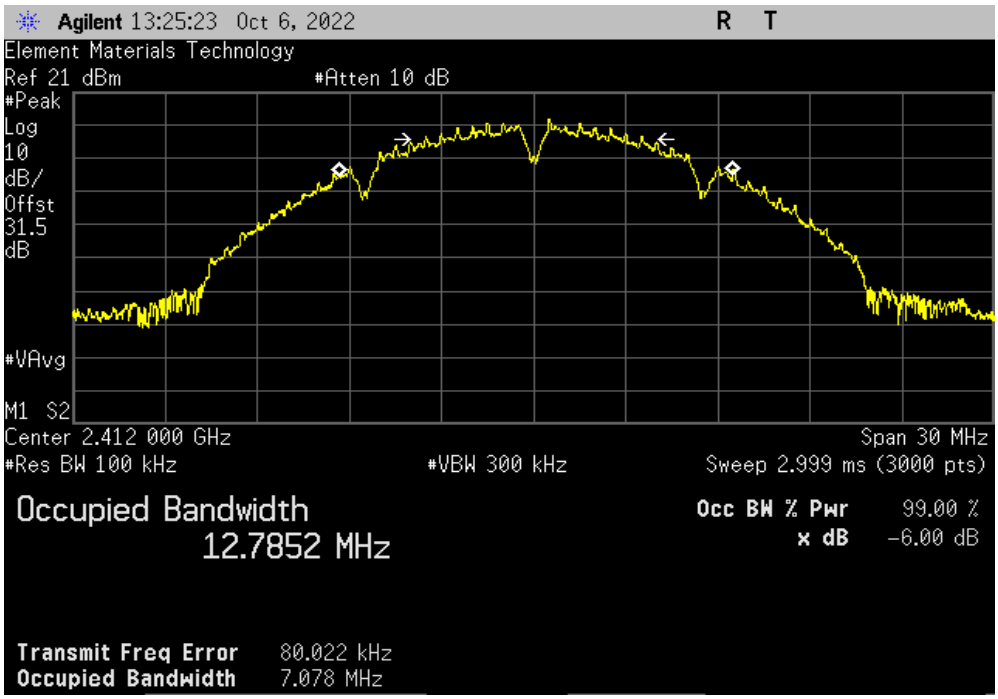
None

Configuration #	**1**	*Signature*

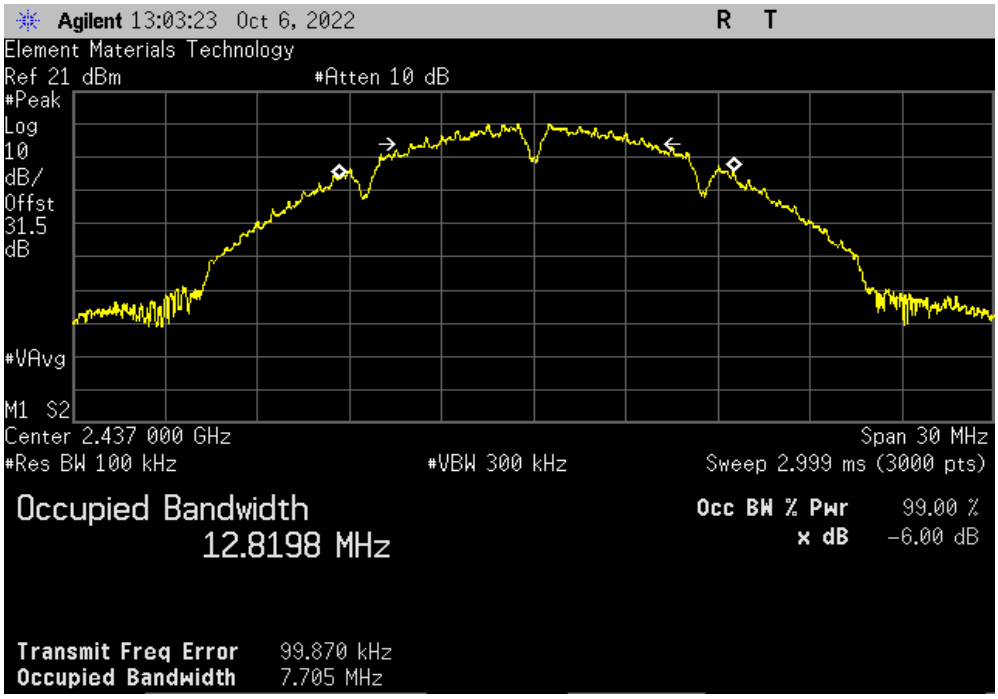
		Value	**Limit (>)**	**Result**
Chain 1				
	CCK, 1 Mbps			
	Low Channel 1, 2412 MHz	7.078 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	7.705 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	6.893 MHz	500 kHz	Pass
	CCK, 11 Mbps			
	Low Channel 1, 2412 MHz	8.068 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	8.036 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	8.039 MHz	500 kHz	Pass
	Legacy OFDM, 6 Mbps			
	Low Channel 1, 2412 MHz	15.856 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	15.078 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	15.552 MHz	500 kHz	Pass
	Legacy OFDM, 36 Mbps			
	Low Channel 1, 2412 MHz	16.418 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	16.422 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	16.429 MHz	500 kHz	Pass
	Legacy OFDM, 54 Mbps			
	Low Channel 1, 2412 MHz	16.481 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	16.461 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	16.48 MHz	500 kHz	Pass
	HT20, MCS0			
	Low Channel 1, 2412 MHz	17.347 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	16.681 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.309 MHz	500 kHz	Pass
	HT20, MCS7			
	Low Channel 1, 2412 MHz	17.758 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.765 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.723 MHz	500 kHz	Pass
	VHT20, MCS0			
	Low Channel 1, 2412 MHz	16.252 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	16.902 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.213 MHz	500 kHz	Pass
	VHT20, MCS8			
	Low Channel 1, 2412 MHz	17.721 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.71 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.751 MHz	500 kHz	Pass
	HE20, MCS0			
	Low Channel 1, 2412 MHz	17.23 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	18.106 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.865 MHz	500 kHz	Pass
	HE20, MCS11			
	Low Channel 1, 2412 MHz	19.08 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	19.006 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	19.137 MHz	500 kHz	Pass

DTS BANDWIDTH - CHAIN 1

Chain 1, CCK, 1 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit (>)	Result
					7.078 MHz	500 kHz	Pass

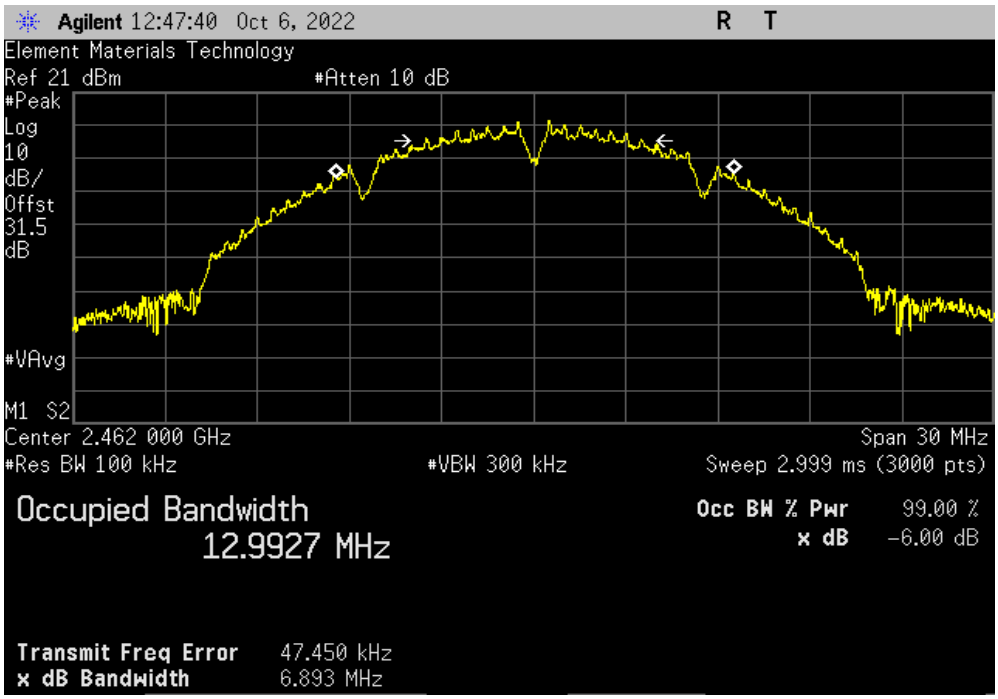


Chain 1, CCK, 1 Mbps, Mid Channel 6, 2437 MHz							
					Value	Limit (>)	Result
					7.705 MHz	500 kHz	Pass

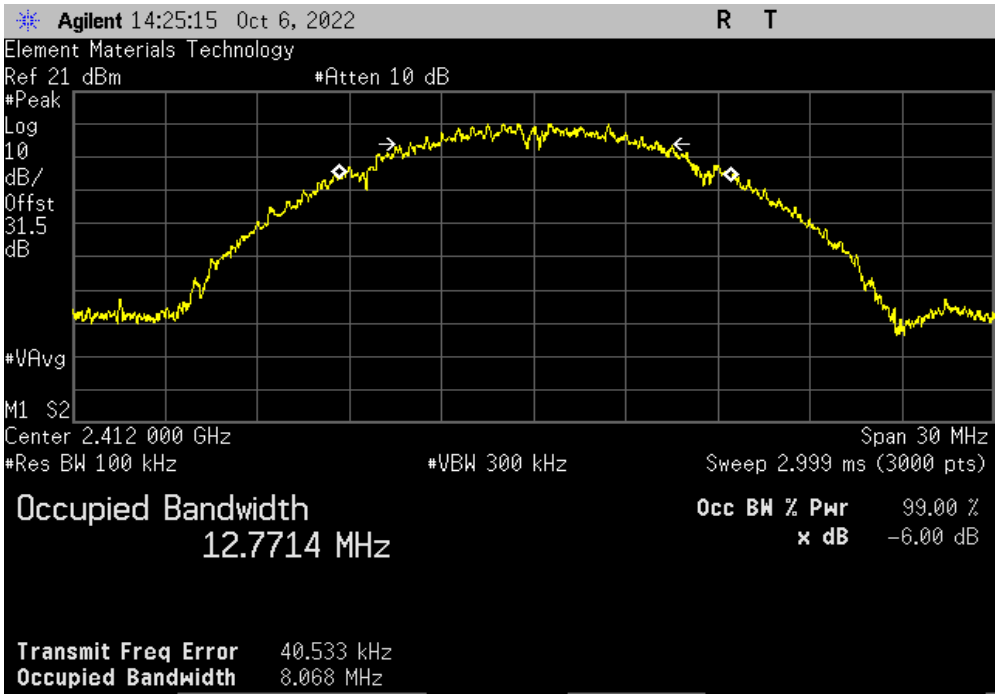


DTS BANDWIDTH - CHAIN 1

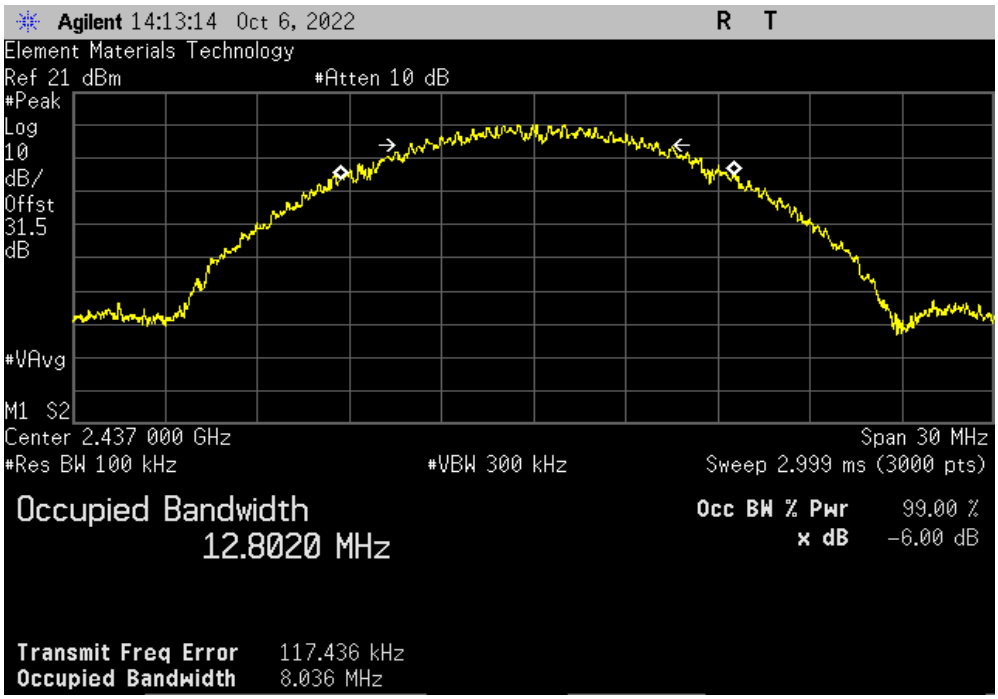
Chain 1, CCK, 1 Mbps, High Channel 11, 2462 MHz							
					Value	Limit (>)	Result
					6.893 MHz	500 kHz	Pass



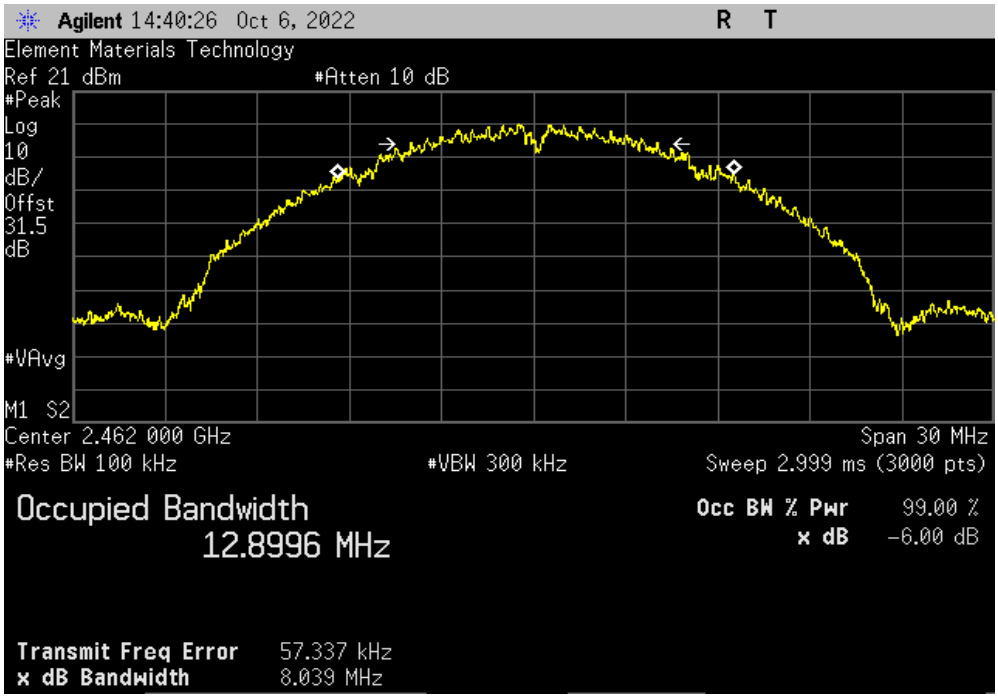
Chain 1, CCK, 11 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit (>)	Result
					8.068 MHz	500 kHz	Pass



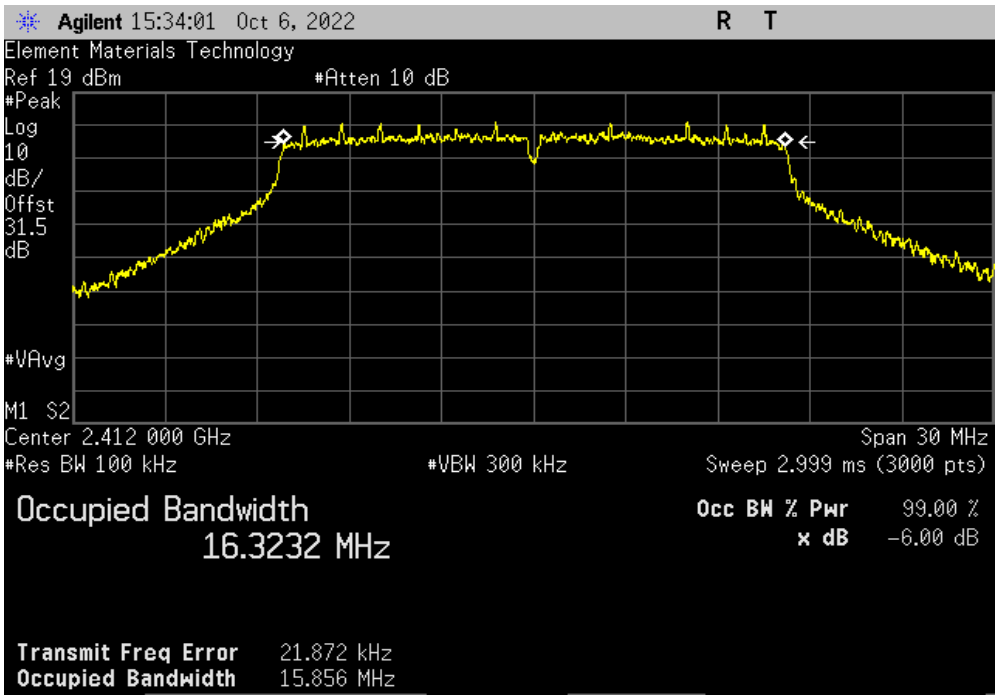
Chain 1, CCK, 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				8.036 MHz	500 kHz	Pass



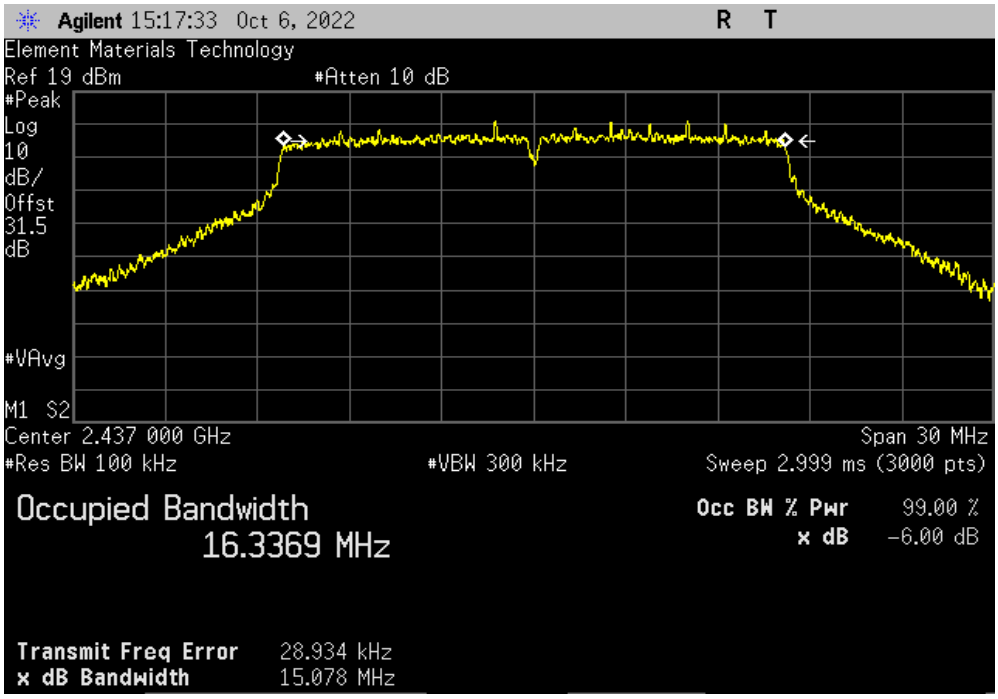
Chain 1, CCK, 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				8.039 MHz	500 kHz	Pass



Chain 1, Legacy OFDM, 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				15.856 MHz	500 kHz	Pass

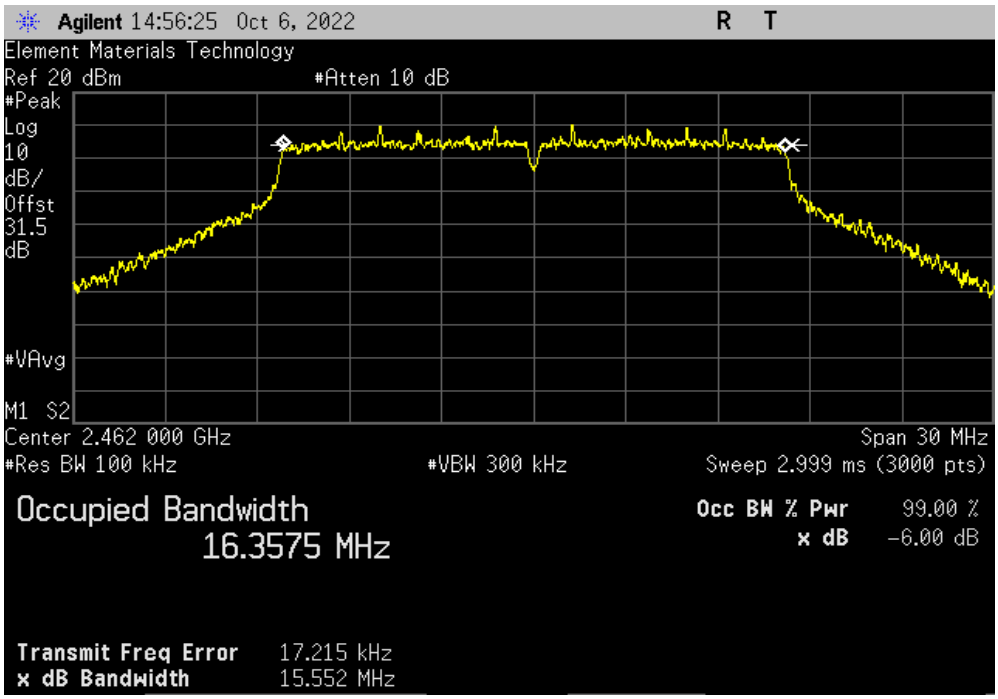


Chain 1, Legacy OFDM, 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				15.078 MHz	500 kHz	Pass

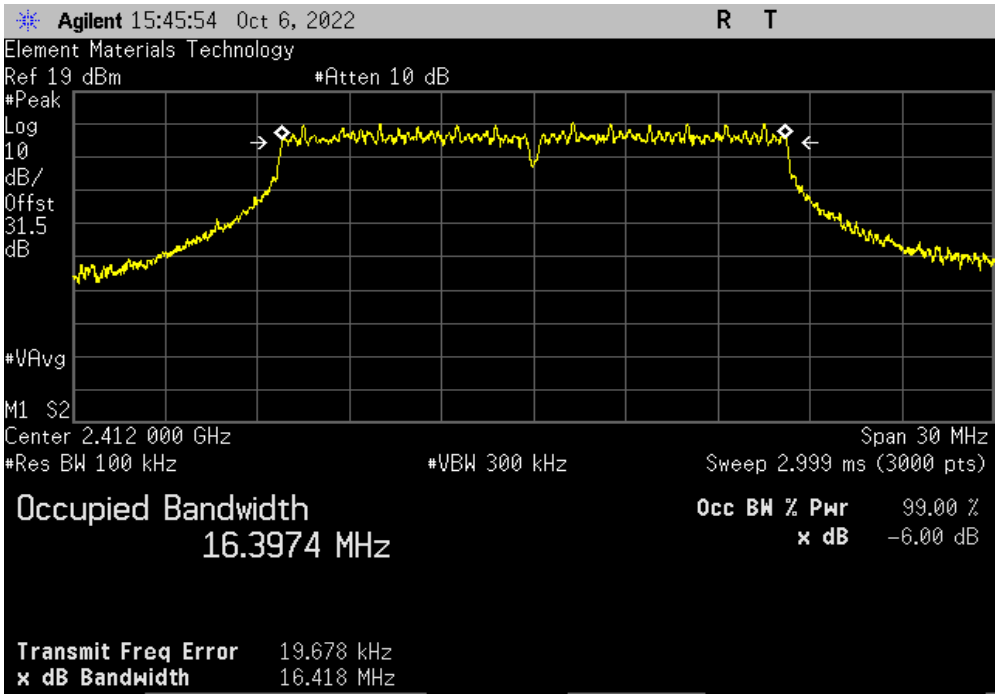


DTS BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.552 MHz	500 kHz	Pass

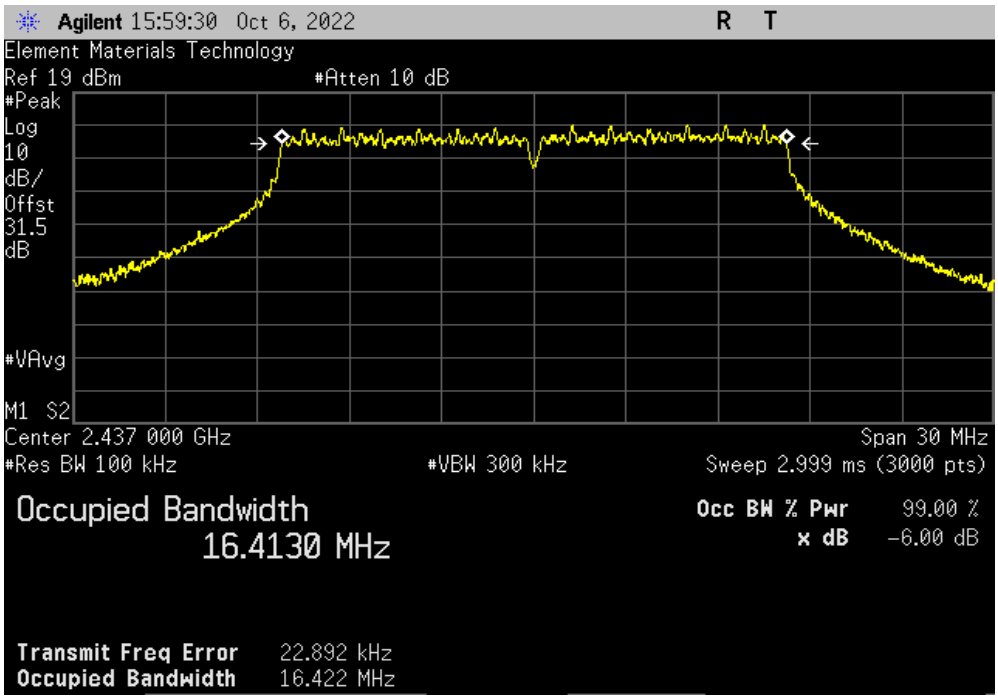


Chain 1, Legacy OFDM, 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.418 MHz	500 kHz	Pass

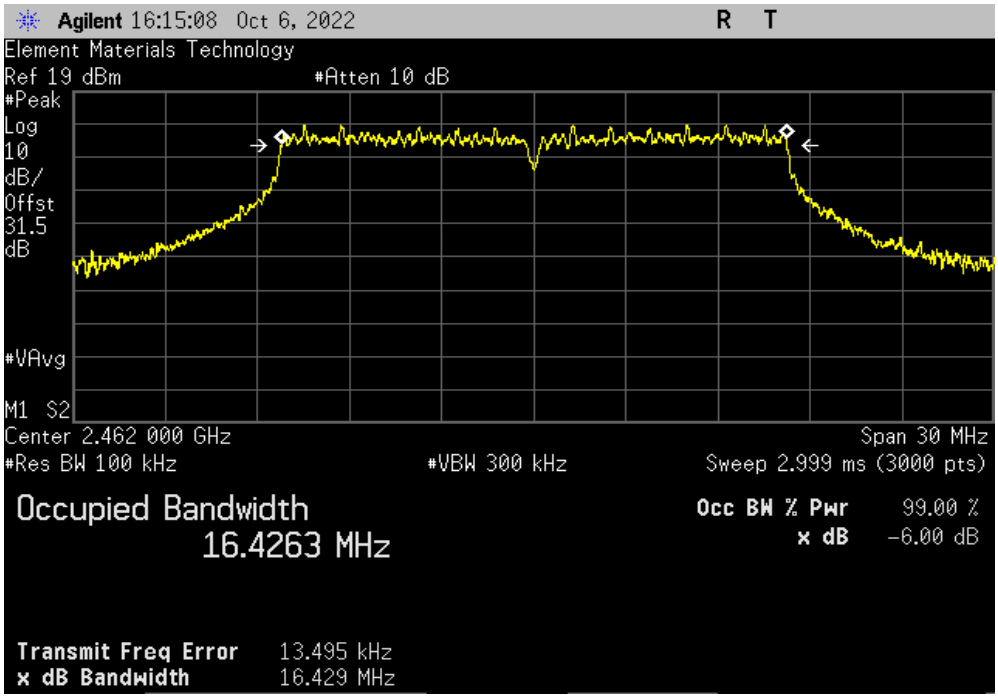


DTS BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.422 MHz	500 kHz	Pass

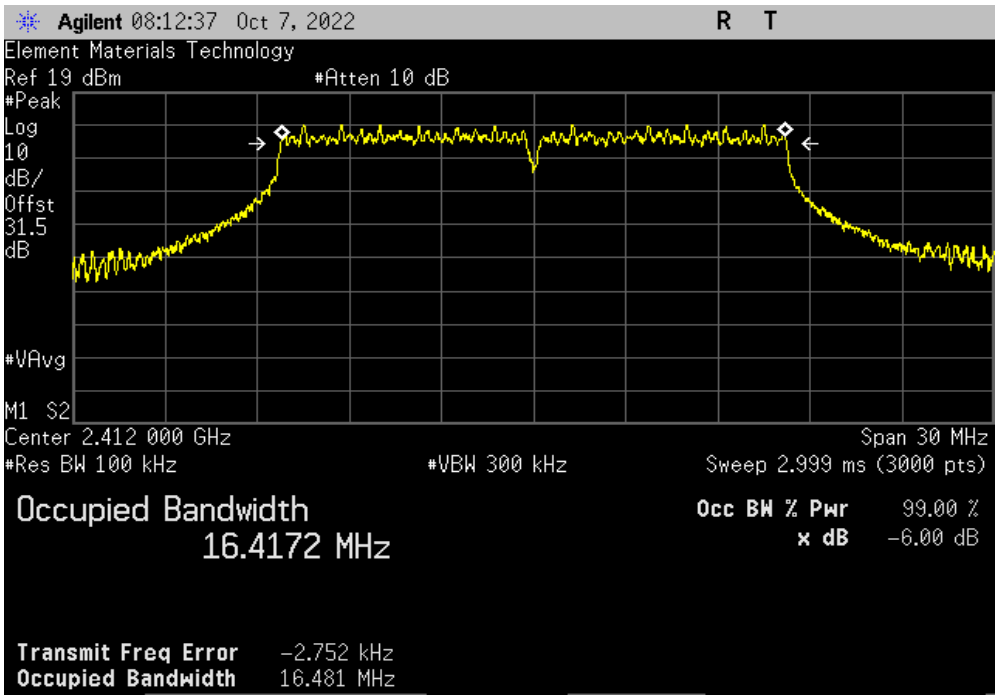


Chain 1, Legacy OFDM, 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.429 MHz	500 kHz	Pass

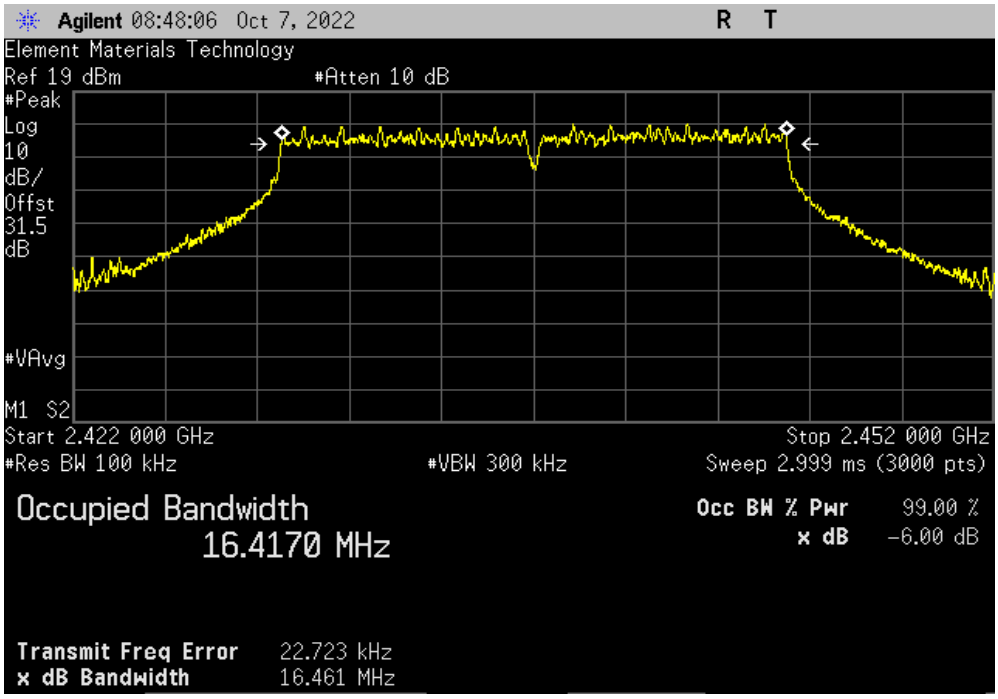


DTS BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.481 MHz	500 kHz	Pass

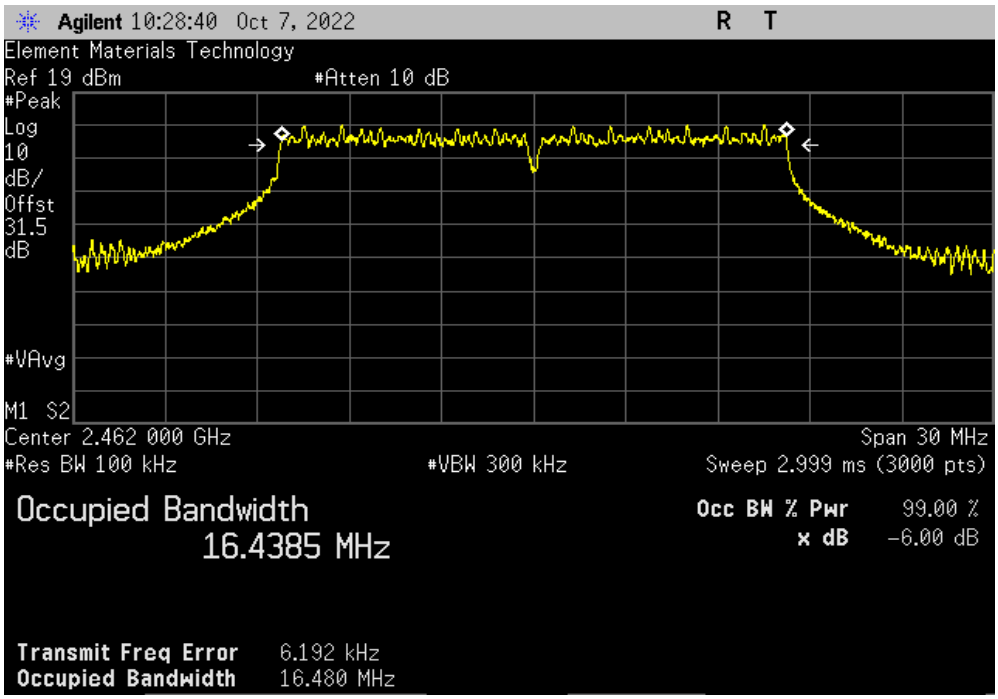


Chain 1, Legacy OFDM, 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.461 MHz	500 kHz	Pass

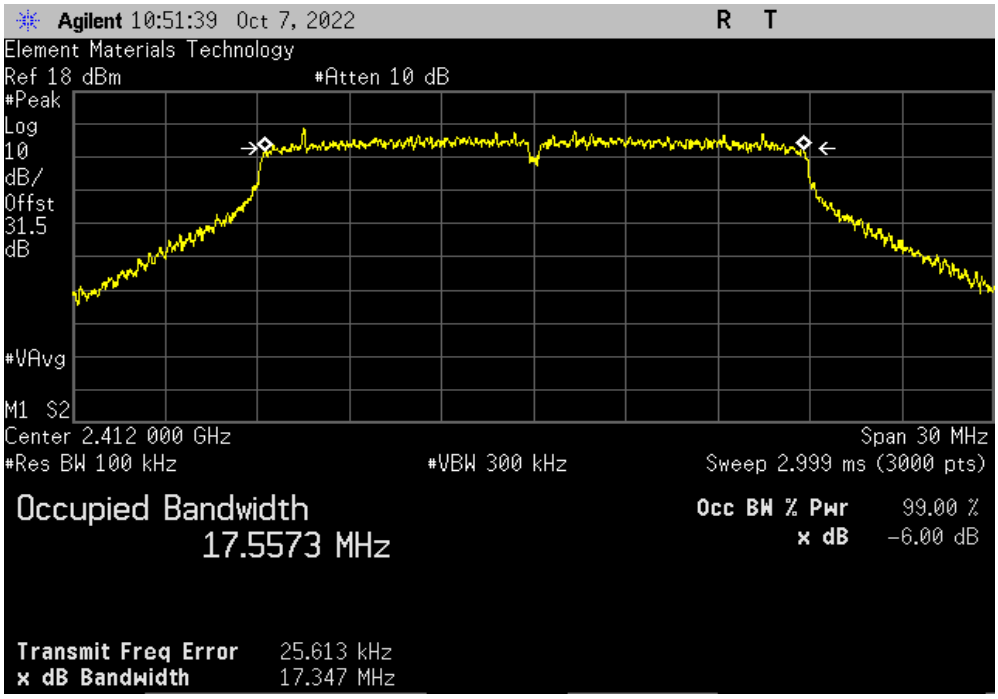


DTS BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.48 MHz	500 kHz	Pass

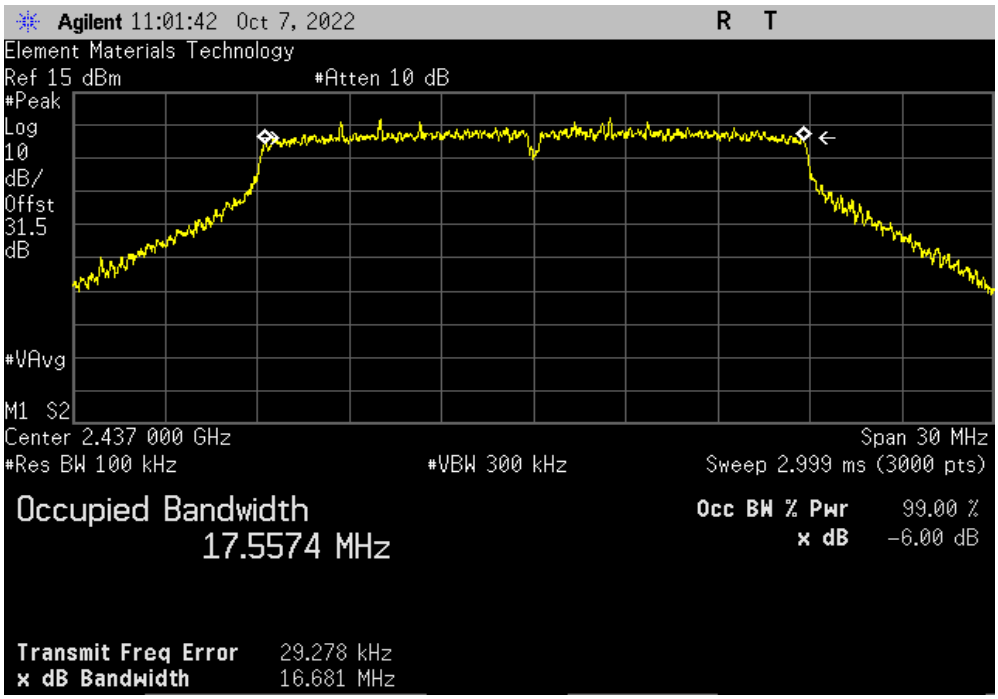


Chain 1, HT20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.347 MHz	500 kHz	Pass

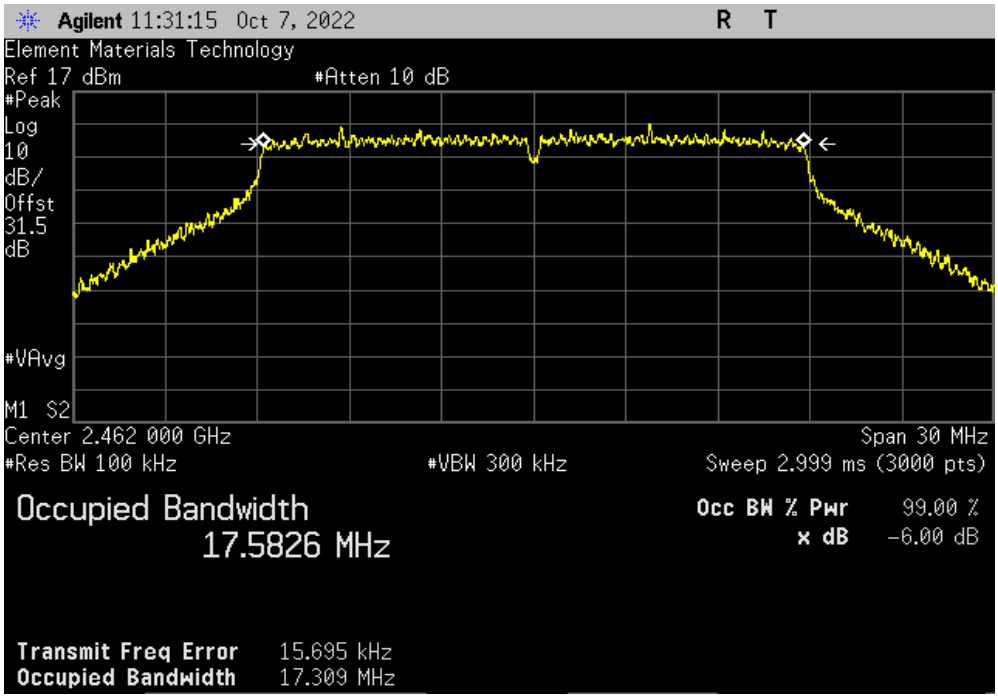


DTS BANDWIDTH - CHAIN 1

Chain 1, HT20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.681 MHz	500 kHz	Pass

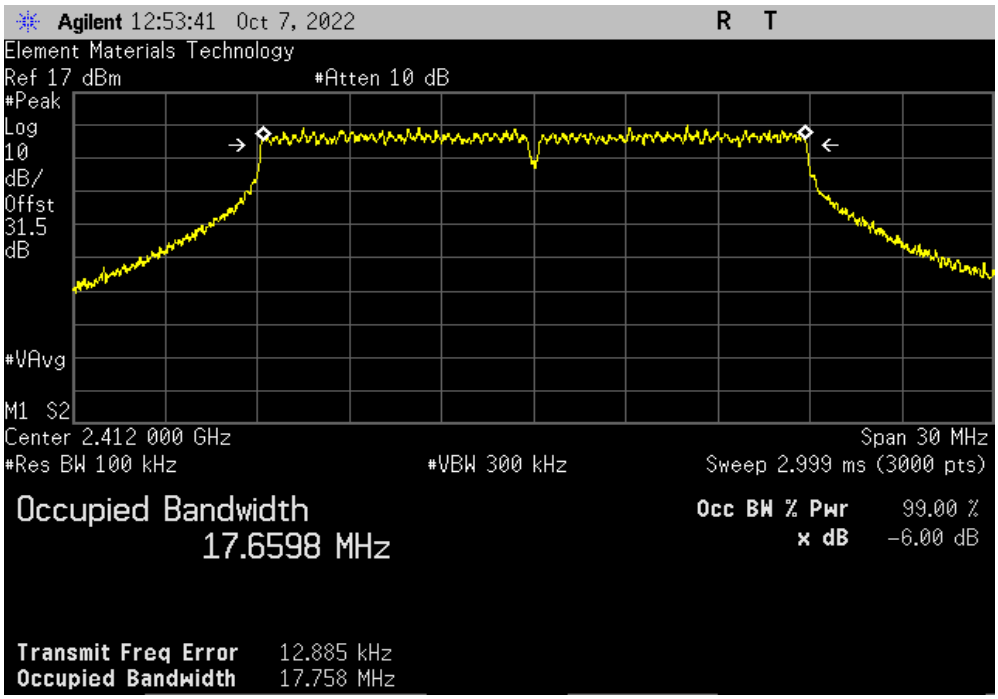


Chain 1, HT20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.309 MHz	500 kHz	Pass

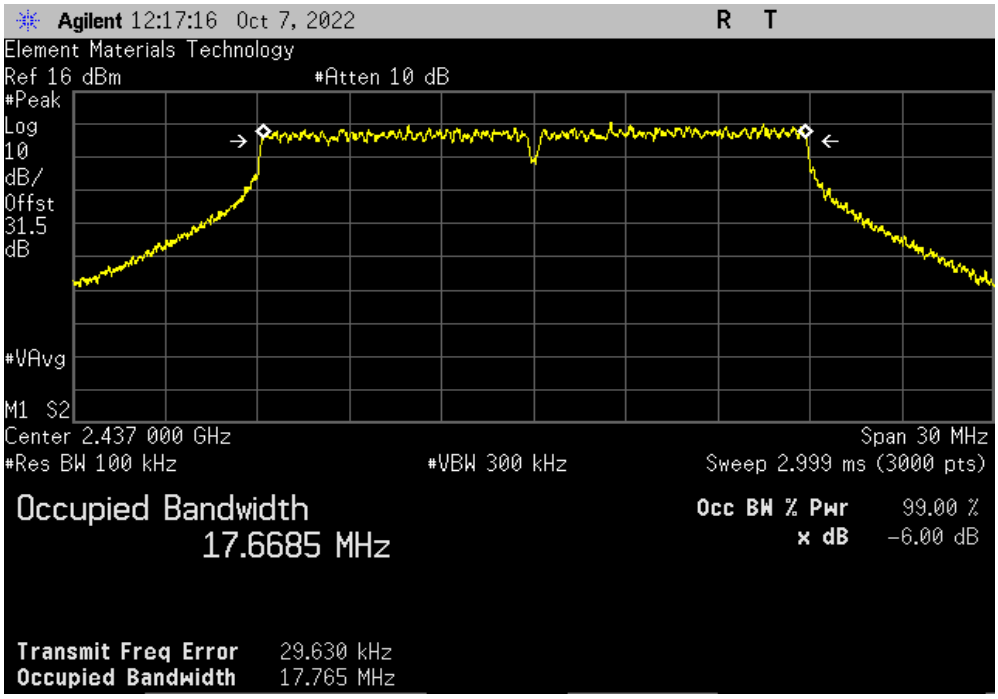


DTS BANDWIDTH - CHAIN 1

Chain 1, HT20, MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.758 MHz	500 kHz	Pass

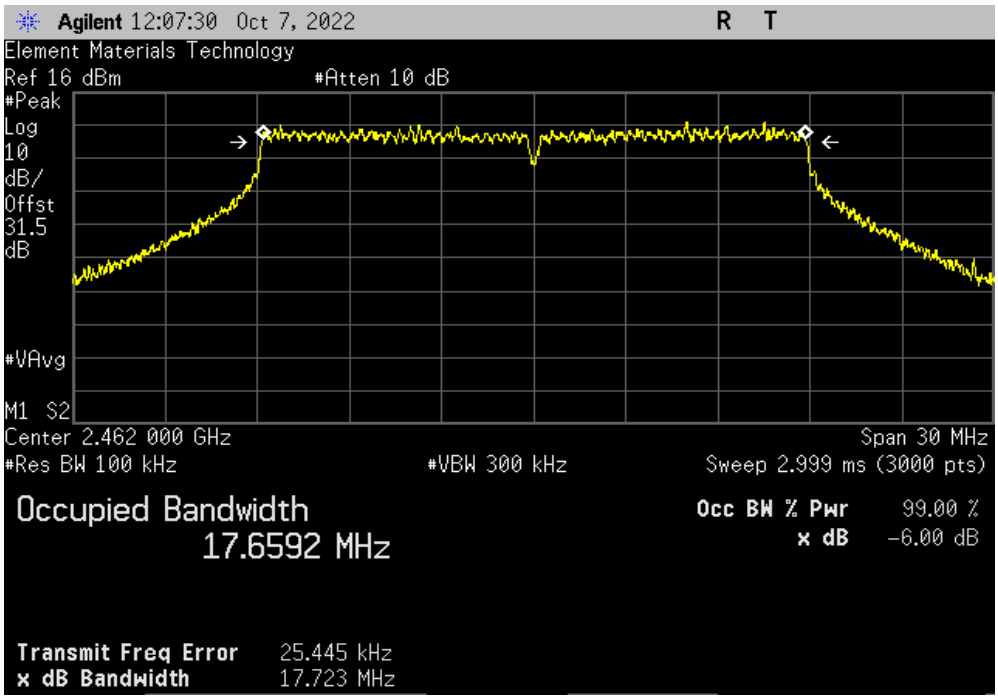


Chain 1, HT20, MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.765 MHz	500 kHz	Pass

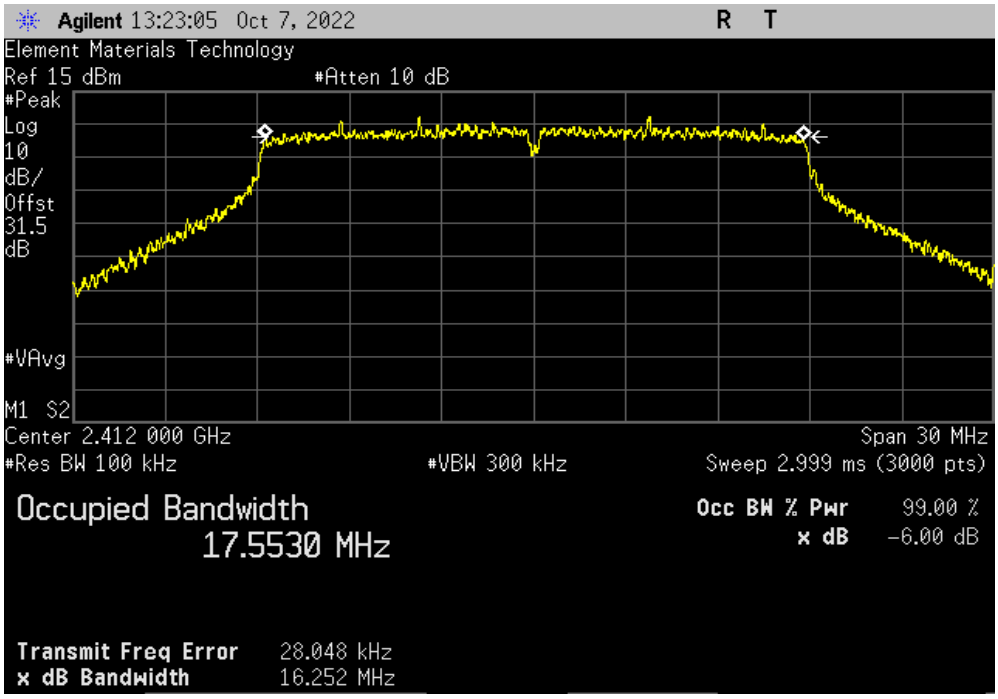


DTS BANDWIDTH - CHAIN 1

Chain 1, HT20, MCS7, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.723 MHz	500 kHz	Pass

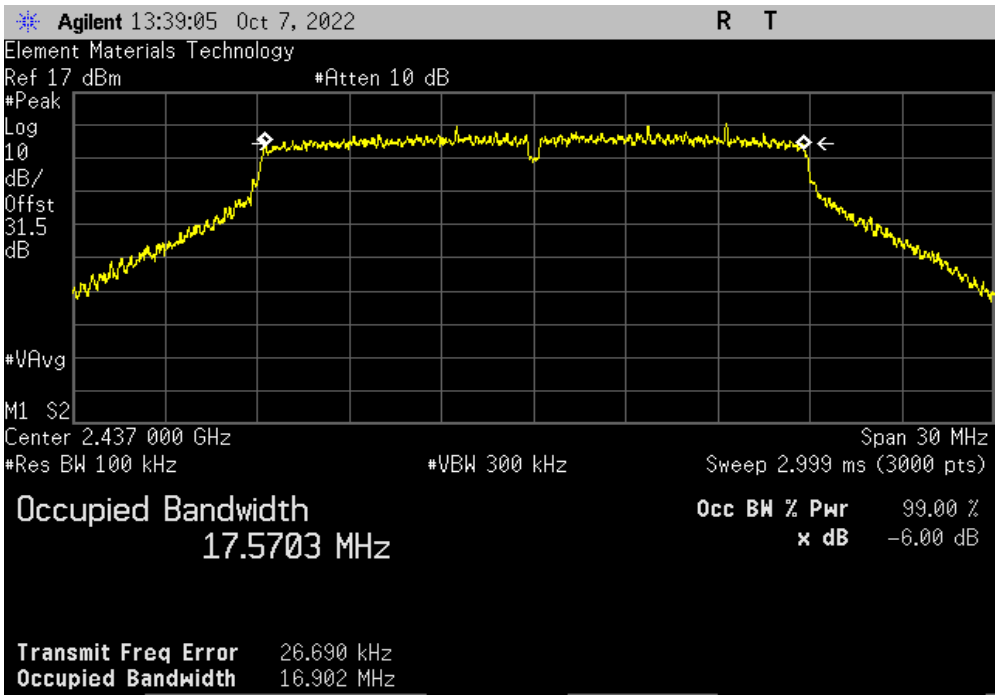


Chain 1, VHT20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.252 MHz	500 kHz	Pass

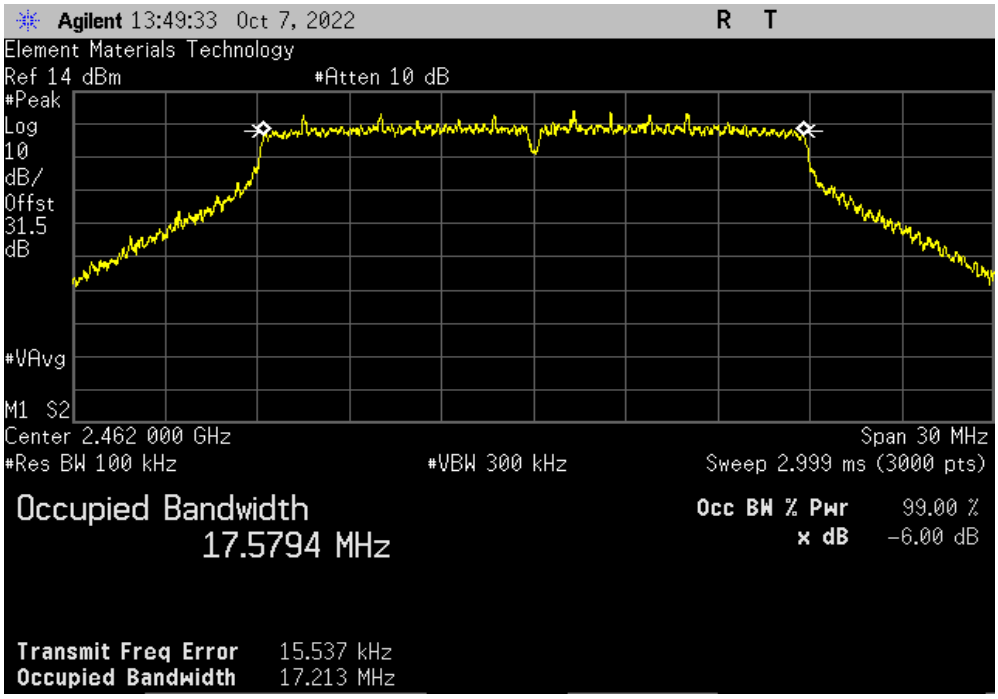


DTS BANDWIDTH - CHAIN 1

Chain 1, VHT20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.902 MHz	500 kHz	Pass

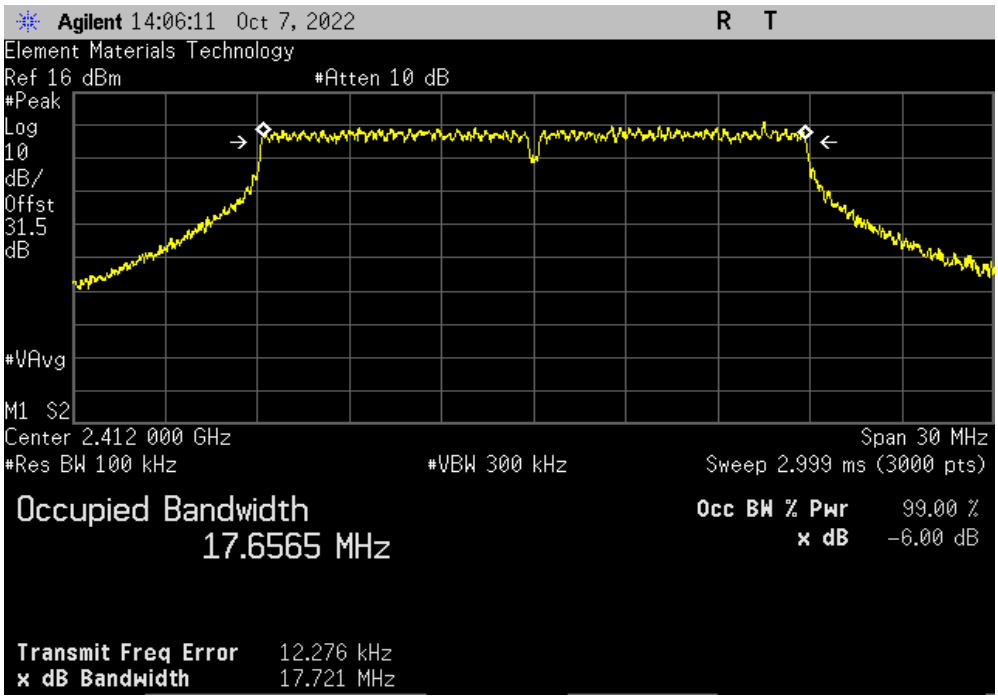


Chain 1, VHT20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.213 MHz	500 kHz	Pass

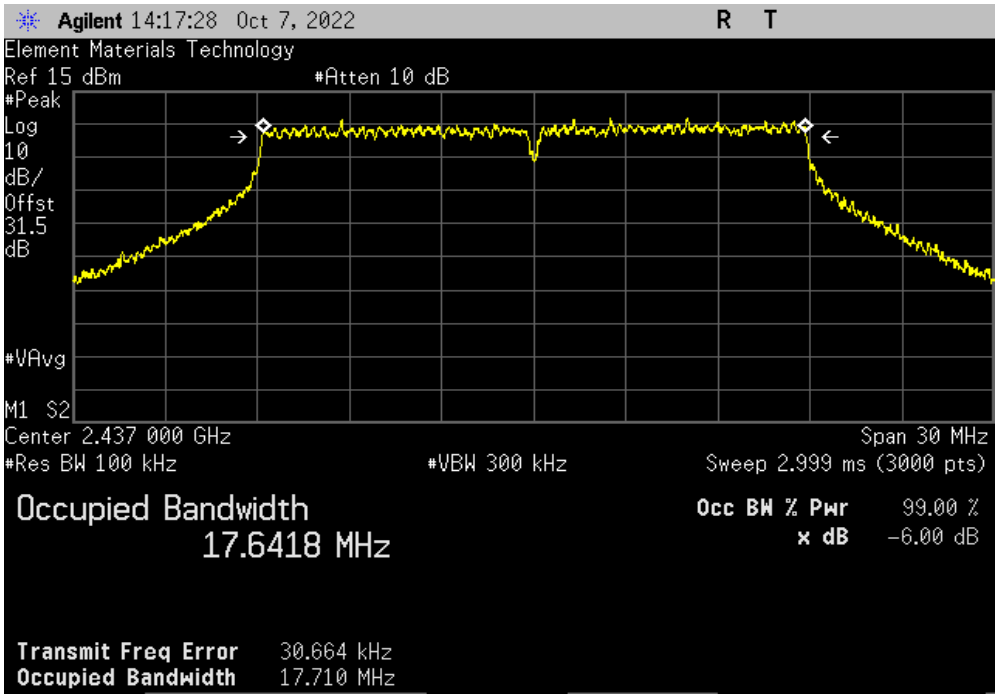


DTS BANDWIDTH - CHAIN 1

Chain 1, VHT20, MCS8, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.721 MHz	500 kHz	Pass

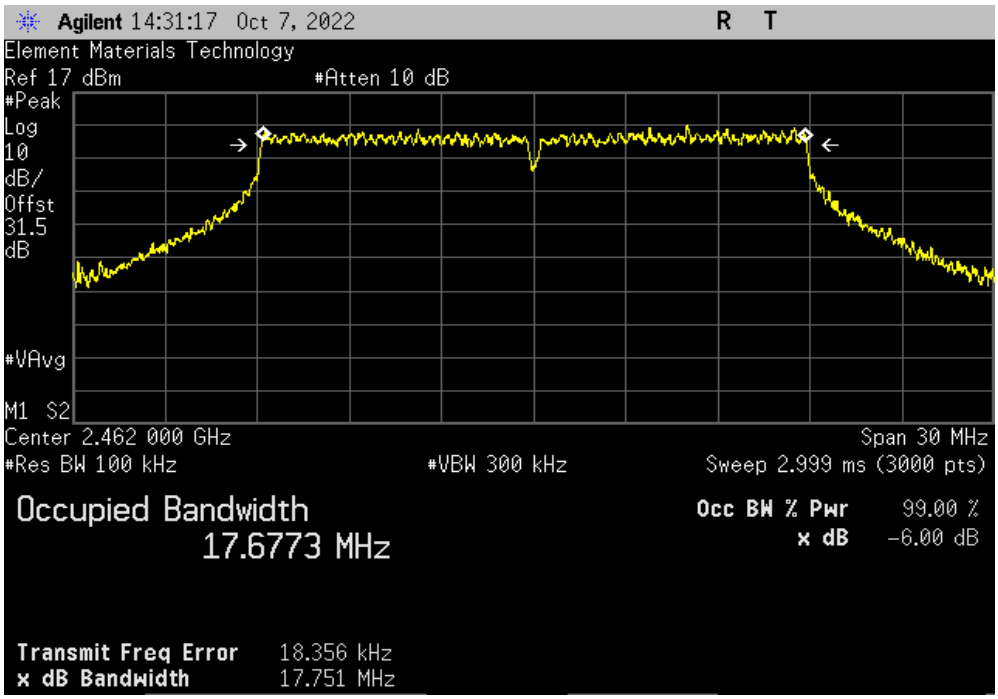


Chain 1, VHT20, MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.71 MHz	500 kHz	Pass

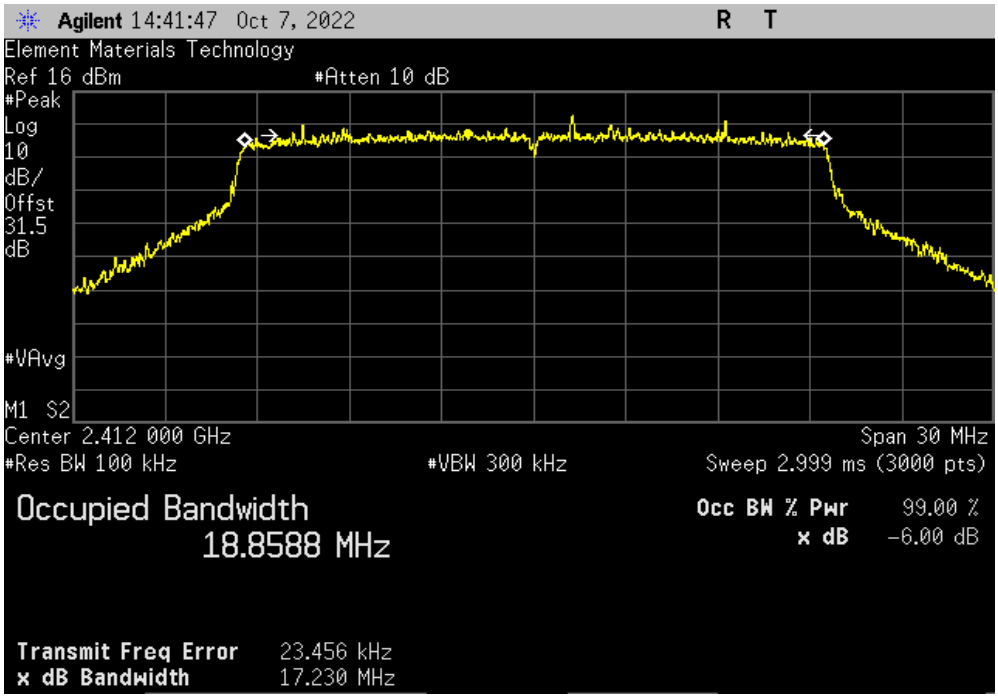


DTS BANDWIDTH - CHAIN 1

Chain 1, VHT20, MCS8, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.751 MHz	500 kHz	Pass

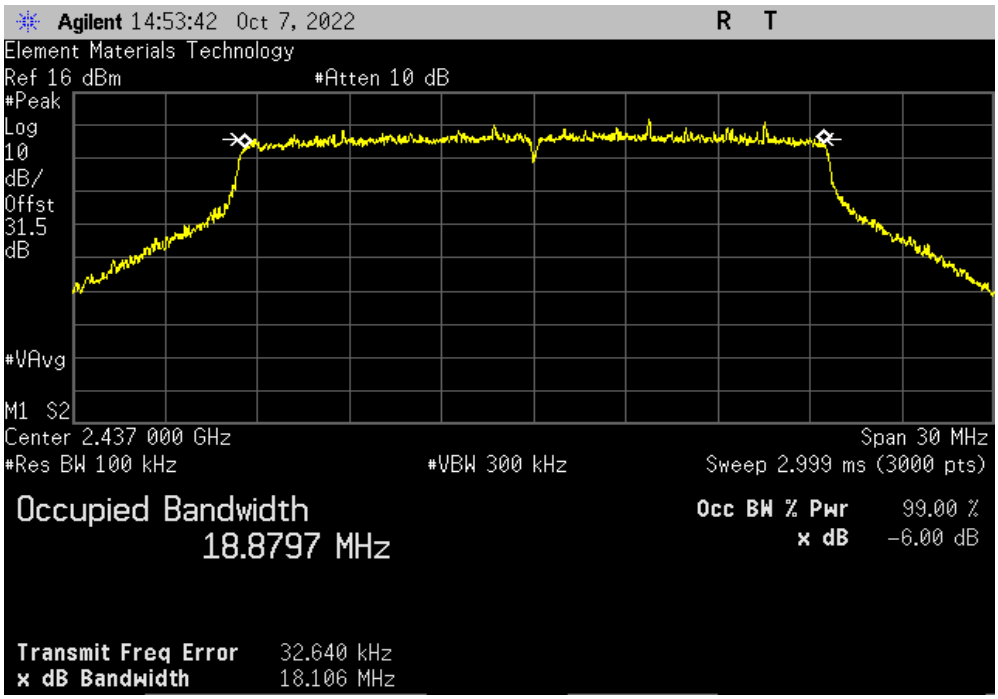


Chain 1, HE20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.23 MHz	500 kHz	Pass

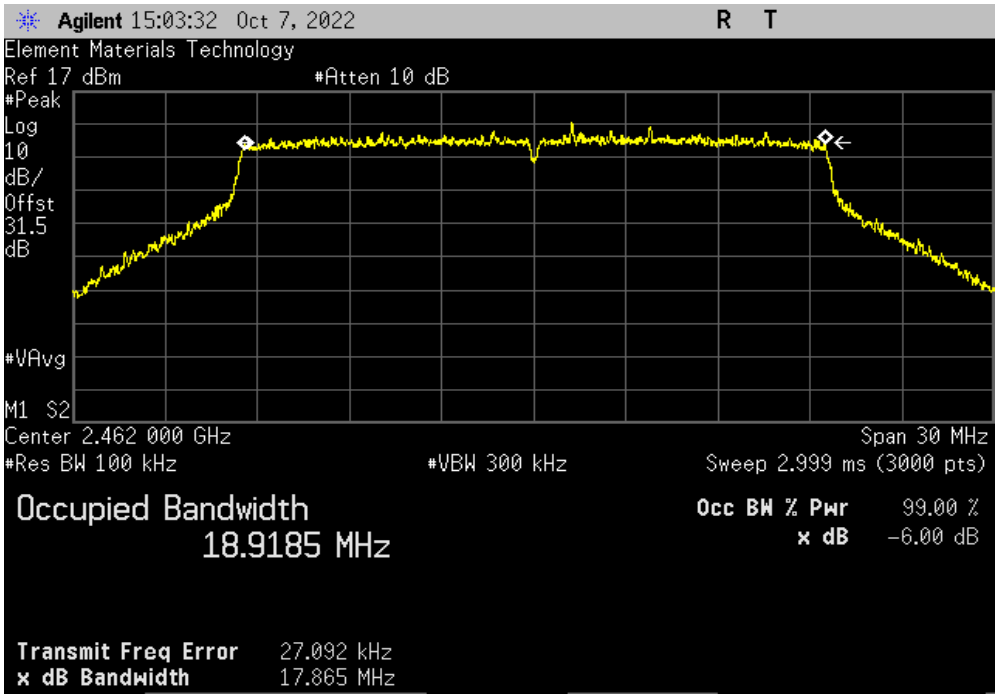


DTS BANDWIDTH - CHAIN 1

Chain 1, HE20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				18.106 MHz	500 kHz	Pass

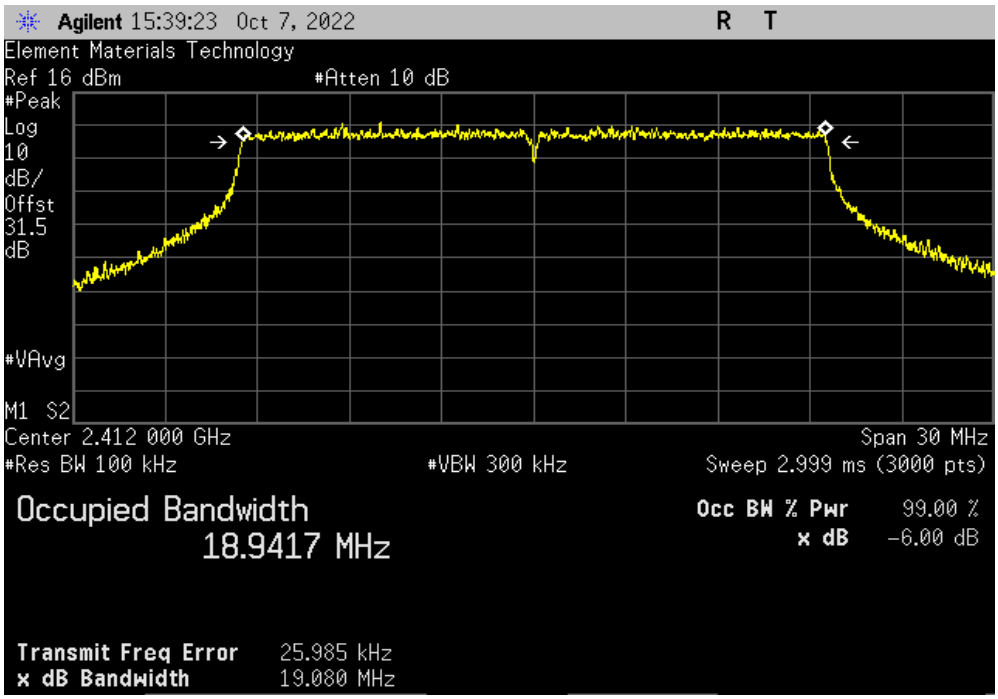


Chain 1, HE20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.865 MHz	500 kHz	Pass

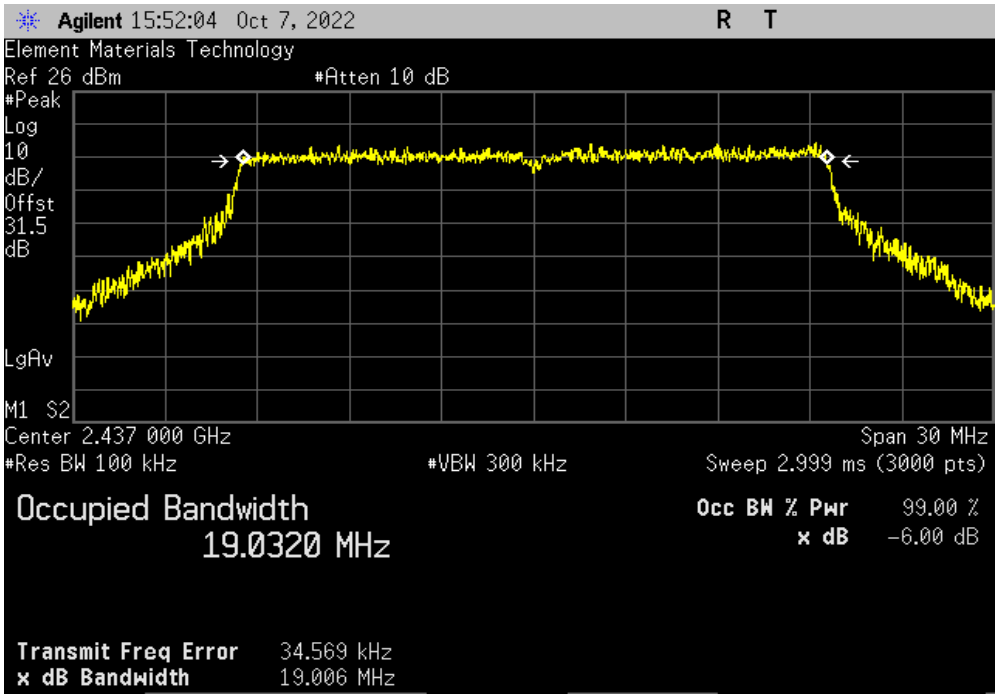


DTS BANDWIDTH - CHAIN 1

Chain 1, HE20, MCS11, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				19.08 MHz	500 kHz	Pass



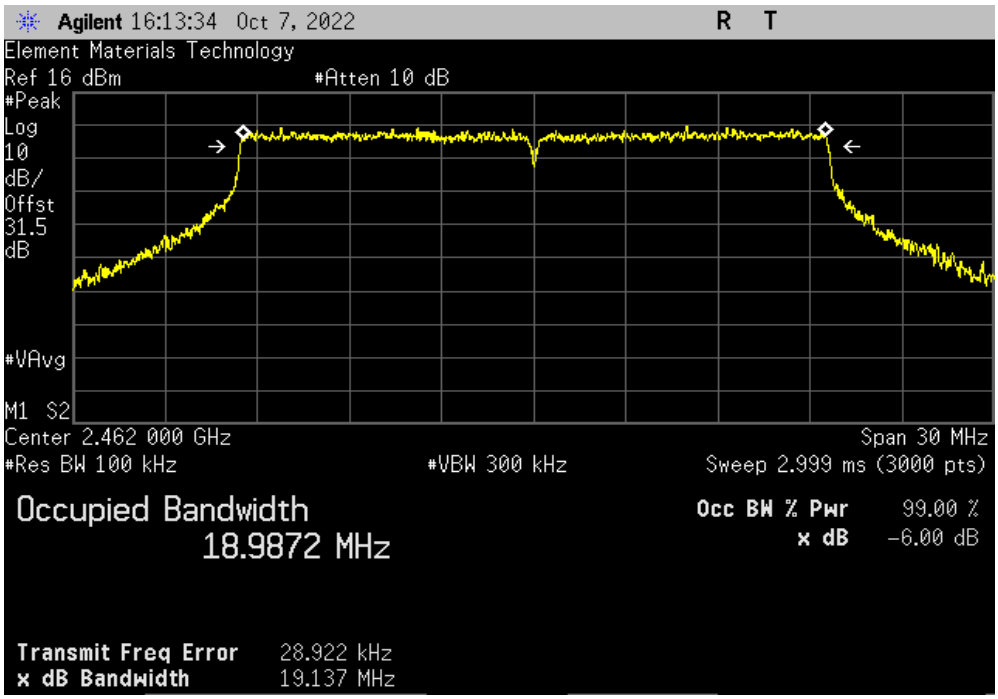
Chain 1, HE20, MCS11, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				19.006 MHz	500 kHz	Pass



DTS BANDWIDTH - CHAIN 1

TbtTx 2022.06.03.0 XMit 2022.02.07.0

Chain 1, HE20, MCS11, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				19.137 MHz	500 kHz	Pass



DTS BANDWIDTH - MIMO

XMit 2023.02.14.0

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 - 2023

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2022-12-02	2023-12-02
Attenuator	S.M. Electronics	SA26B-20	AUY	2023-03-13	2024-03-13
Block - DC	Fairview Microwave	SD3379	AMW	2023-03-13	2024-03-13
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

TEST EQUIPMENT - 2022

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

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 DTS bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

DTS BANDWIDTH - MIMO

element

TbtTx 2022.06.03.0 XMit 2023.02.14.0

EUT:	**U8 Hawk**			**Work Order:**	**KYME0068**
Serial Number:	**See configuration**			**Date:**	**03/15/23**
Customer:	**Kymeta Corp.**			**Temperature:**	**19.7°C**
Attendees:	**Dean Busch and Mike Olsen**			**Humidity:**	**40.5%**
Project:	**None**			**Barometric Pres.:**	**1008 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**12VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

All measurments collected before 2023, were performed on configuration KYME0068-1. Reference level offset includes: DC block, 30 dB attenuation, and measurement cable.

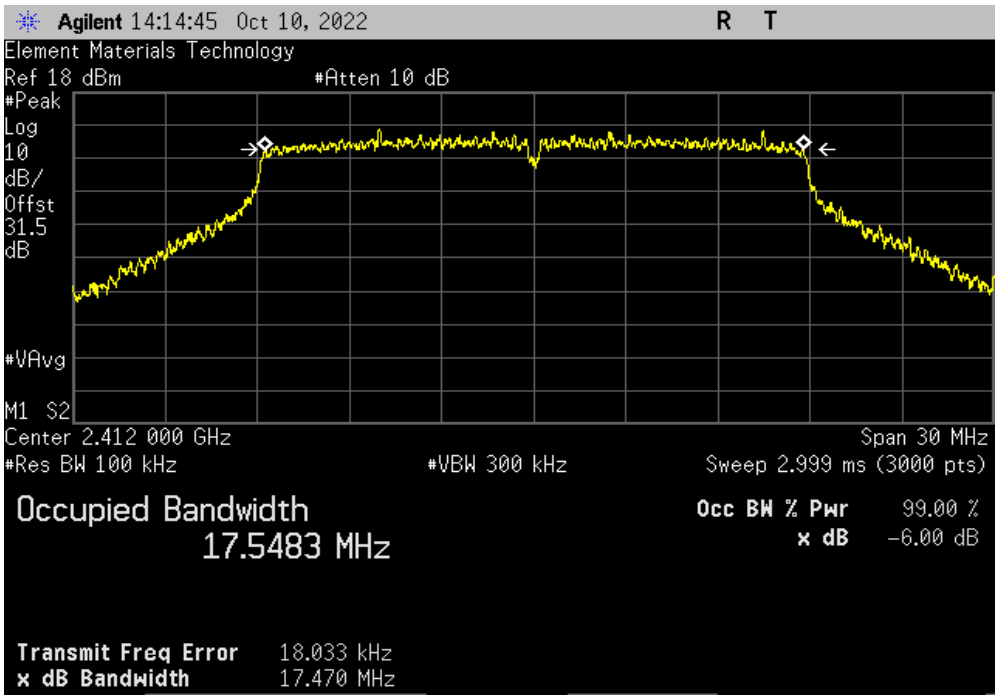
DEVIATIONS FROM TEST STANDARD

None

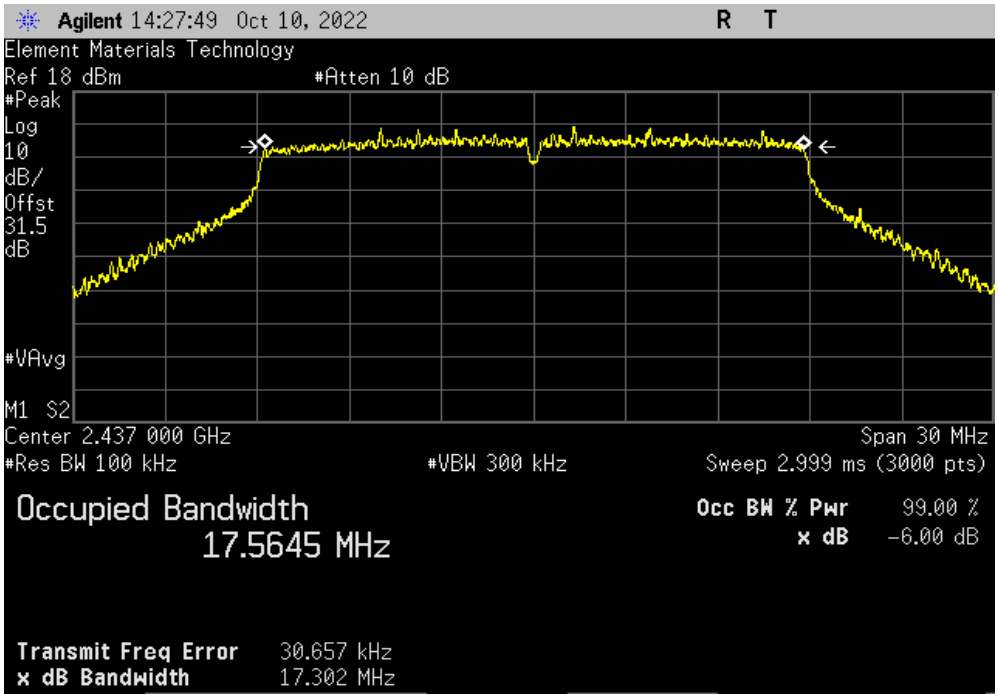
Configuration #	**KYME0068-1** **KYME0068-5**	*Signature*

		Value	Limit (>)	Result
MIMO - Chain 0				
	HT20, MCS8			
	Low Channel 1, 2412 MHz	17.47 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.302 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.593 MHz	500 kHz	Pass
	HT20, MCS15			
	Low Channel 1, 2412 MHz	17.707 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.7 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.741 MHz	500 kHz	Pass
	VHT20, MCS0			
	Low Channel 1, 2412 MHz	15.421 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	16.671 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.076 MHz	500 kHz	Pass
	VHT20, MCS8			
	Low Channel 1, 2412 MHz	17.74 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.741 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.699 MHz	500 kHz	Pass
	HE20, MCS0			
	Low Channel 1, 2412 MHz	16.511 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	16.839 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.795 MHz	500 kHz	Pass
	HE20, MCS11			
	Low Channel 1, 2412 MHz	19.055 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	19.121 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	19.098 MHz	500 kHz	Pass
MIMO - Chain 1				
	HT20, MCS8			
	Low Channel 1, 2412 MHz	16.452 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	16.317 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	16.245 MHz	500 kHz	Pass
	HT20, MCS15			
	Low Channel 1, 2412 MHz	17.727 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.706 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.725 MHz	500 kHz	Pass
	VHT20, MCS0			
	Low Channel 1, 2412 MHz	16.493 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.107 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.053 MHz	500 kHz	Pass
	VHT20, MCS8			
	Low Channel 1, 2412 MHz	17.712 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.741 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	17.715 MHz	500 kHz	Pass
	HE20, MCS0			
	Low Channel 1, 2412 MHz	17.036 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	17.521 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	18.156 MHz	500 kHz	Pass
	HE20, MCS11			
	Low Channel 1, 2412 MHz	19.041 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	19.005 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	19.107 MHz	500 kHz	Pass

MIMO - Chain 0, HT20, MCS8, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.47 MHz	500 kHz	Pass

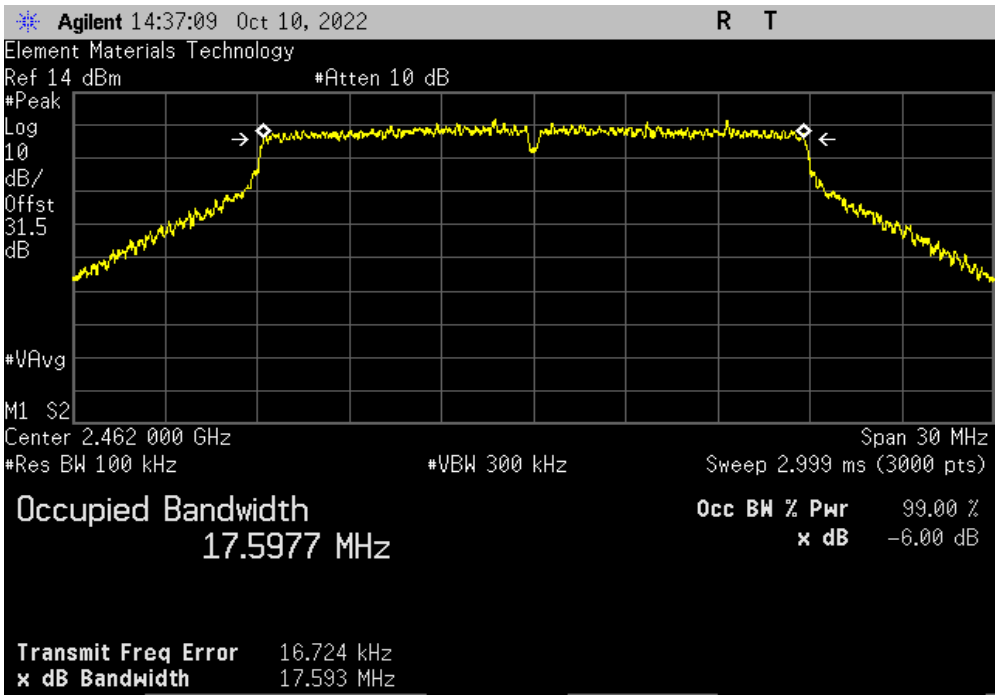


MIMO - Chain 0, HT20, MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.302 MHz	500 kHz	Pass

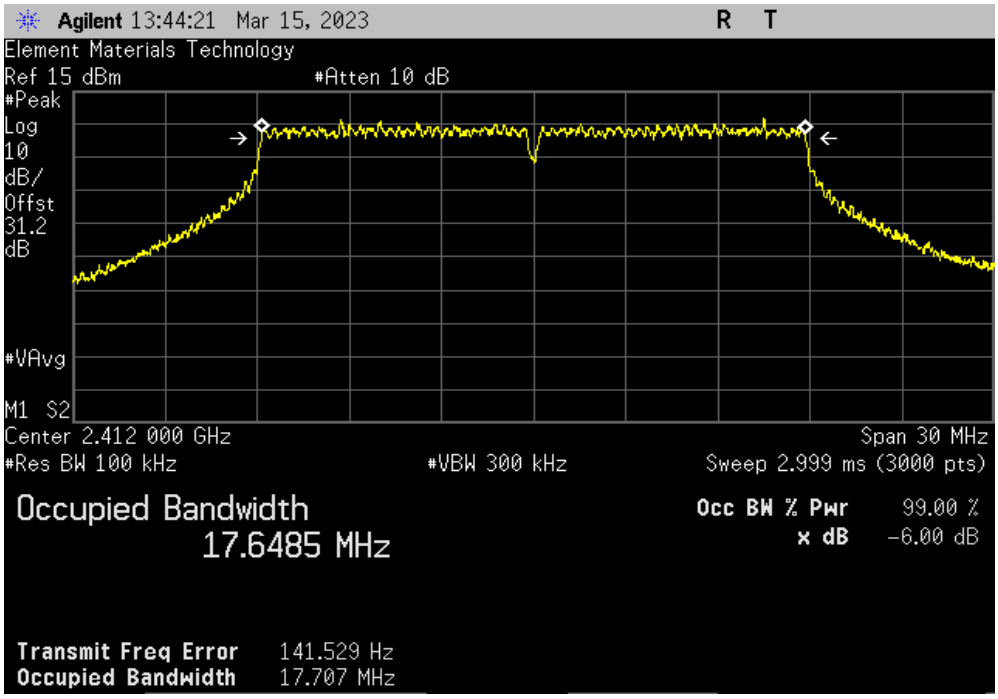


DTS BANDWIDTH - MIMO

MIMO - Chain 0, HT20, MCS8, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.593 MHz	500 kHz	Pass

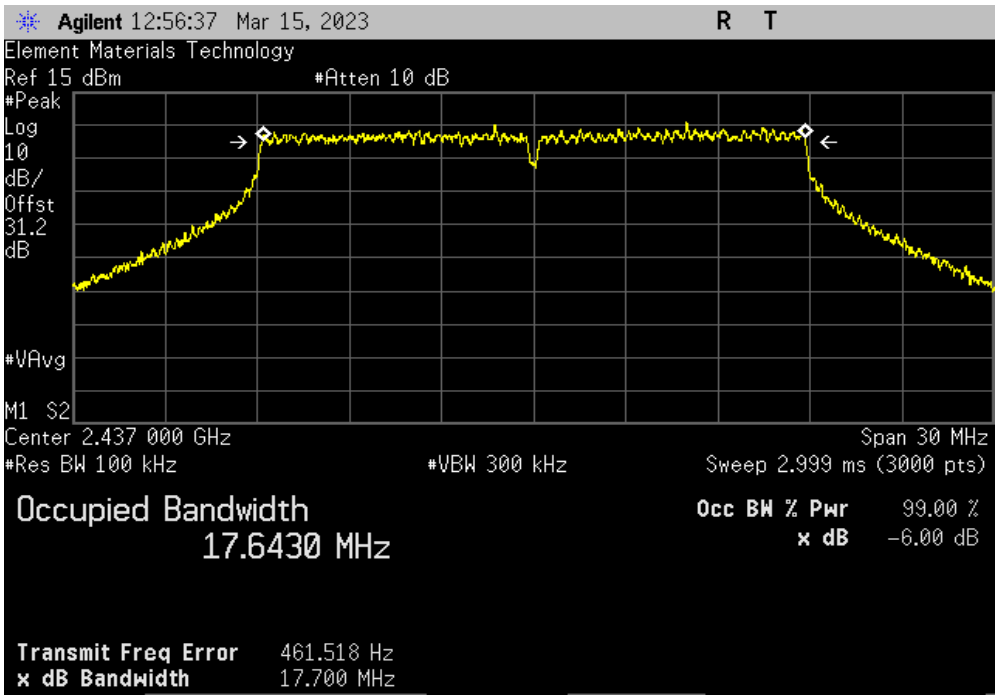


MIMO - Chain 0, HT20, MCS15, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.707 MHz	500 kHz	Pass

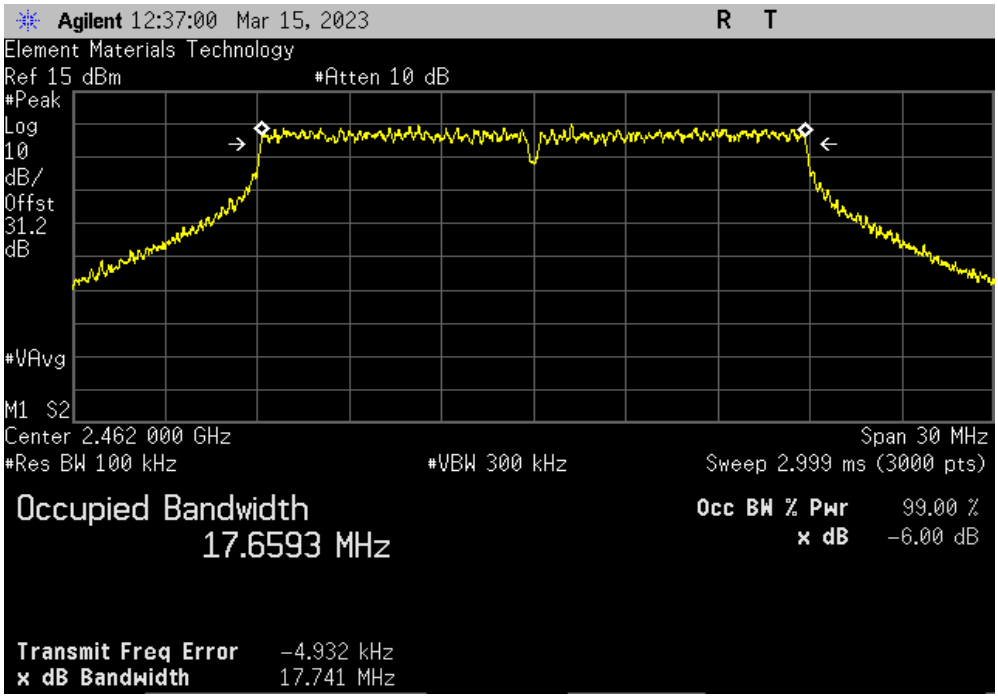


DTS BANDWIDTH - MIMO

MIMO - Chain 0, HT20, MCS15, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.7 MHz	500 kHz	Pass

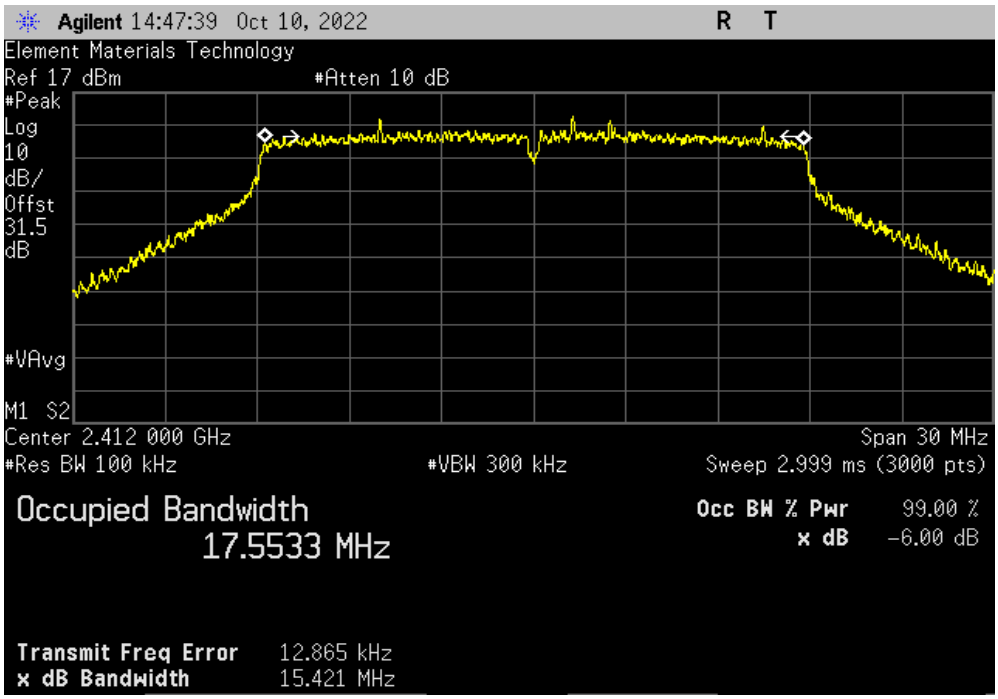


MIMO - Chain 0, HT20, MCS15, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.741 MHz	500 kHz	Pass

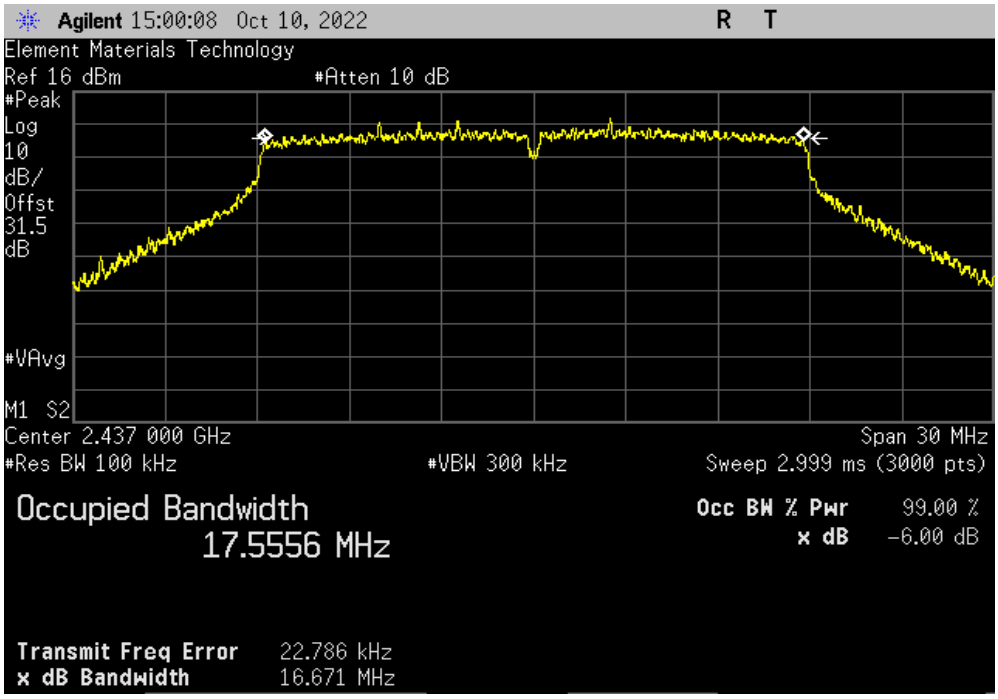


DTS BANDWIDTH - MIMO

MIMO - Chain 0, VHT20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				15.421 MHz	500 kHz	Pass

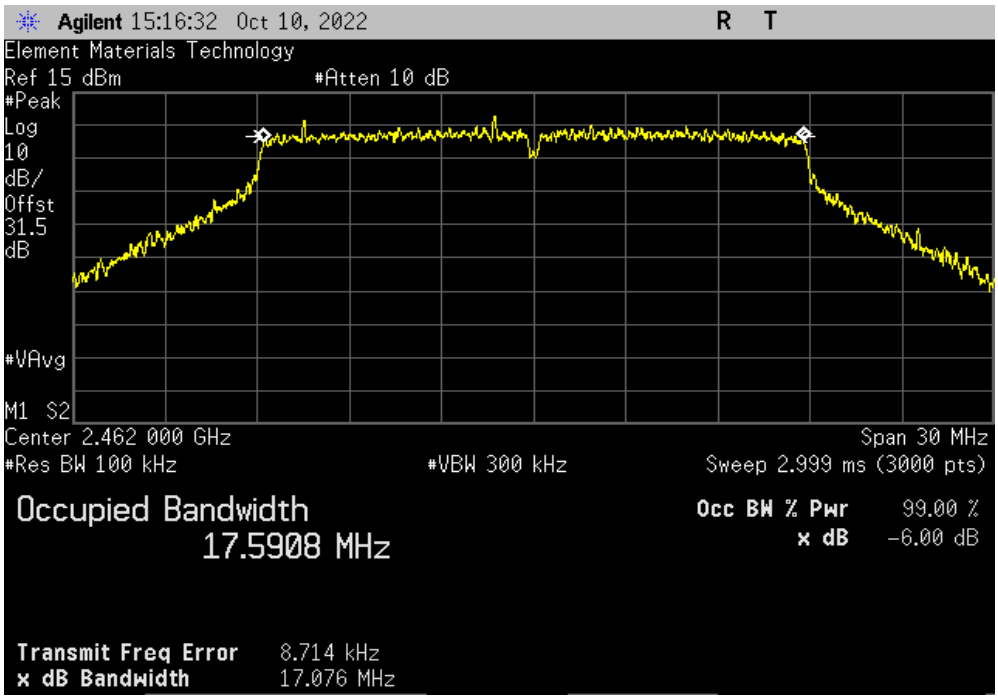


MIMO - Chain 0, VHT20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.671 MHz	500 kHz	Pass

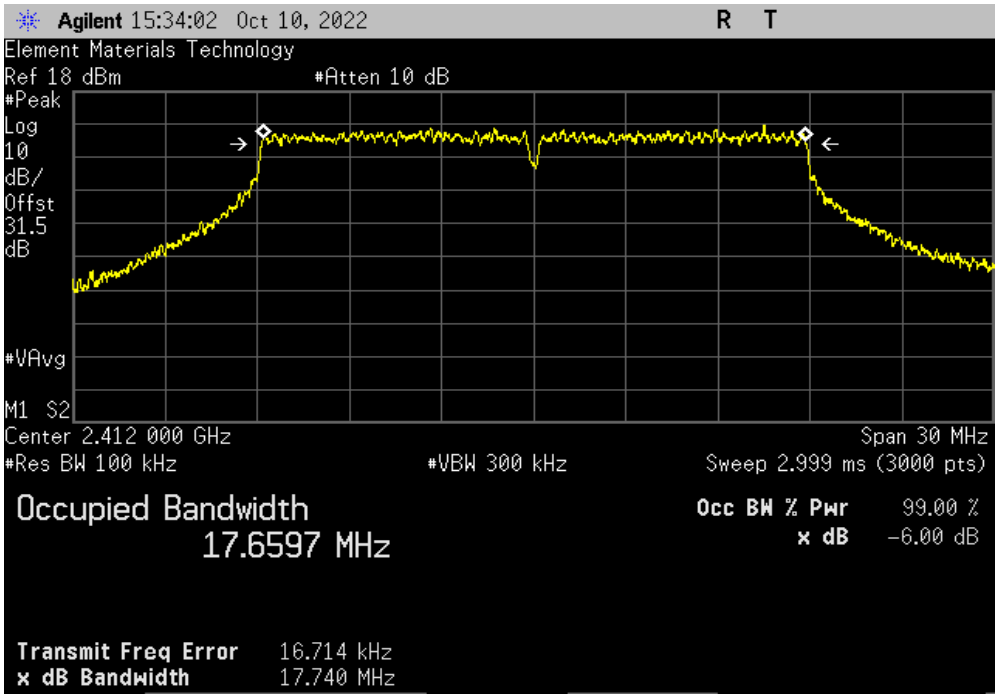


DTS BANDWIDTH - MIMO

MIMO - Chain 0, VHT20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.076 MHz	500 kHz	Pass

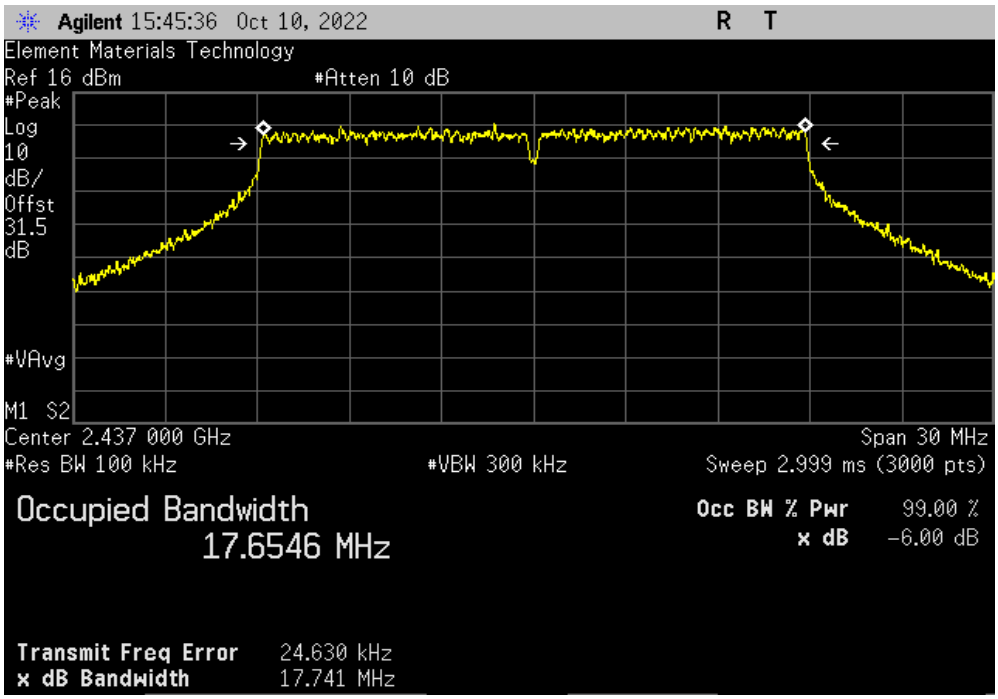


MIMO - Chain 0, VHT20, MCS8, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.74 MHz	500 kHz	Pass

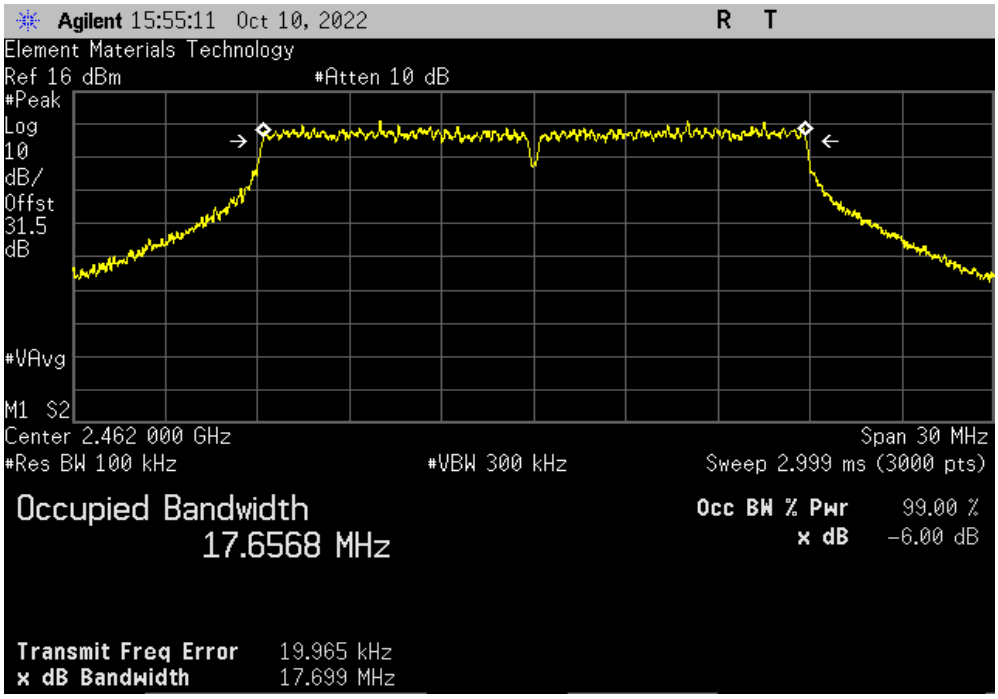


DTS BANDWIDTH - MIMO

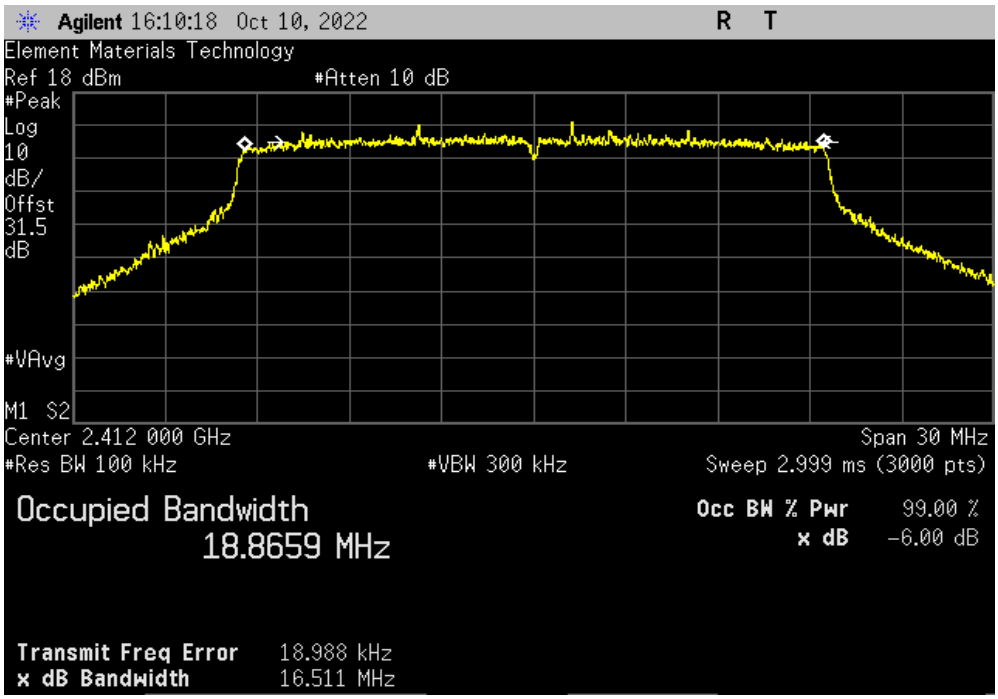
MIMO - Chain 0, VHT20, MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.741 MHz	500 kHz	Pass



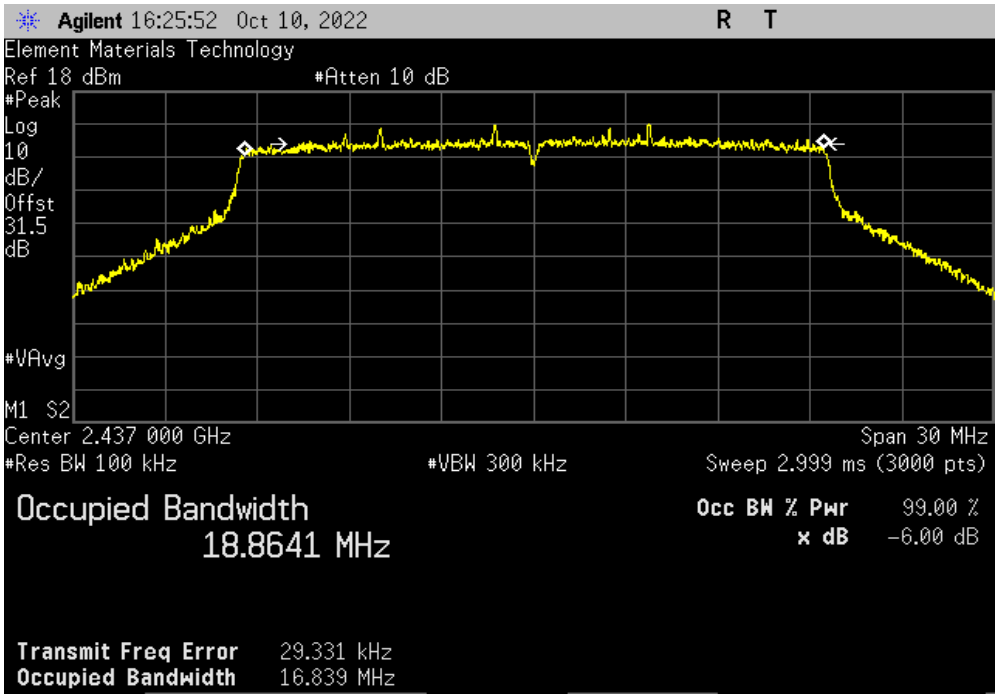
MIMO - Chain 0, VHT20, MCS8, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.699 MHz	500 kHz	Pass



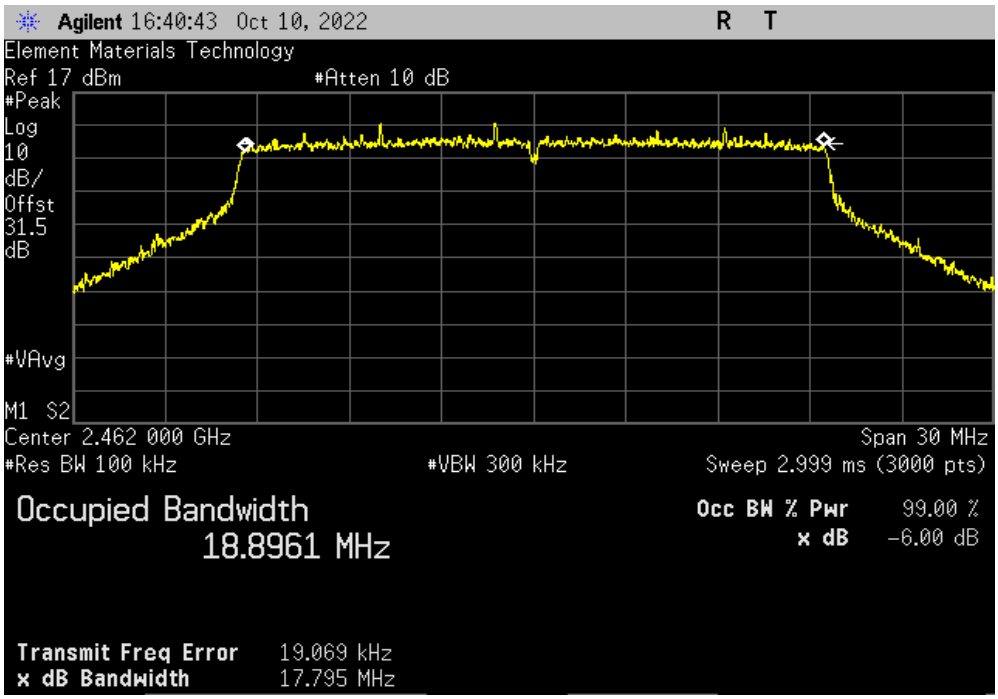
MIMO - Chain 0, HE20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.511 MHz	500 kHz	Pass



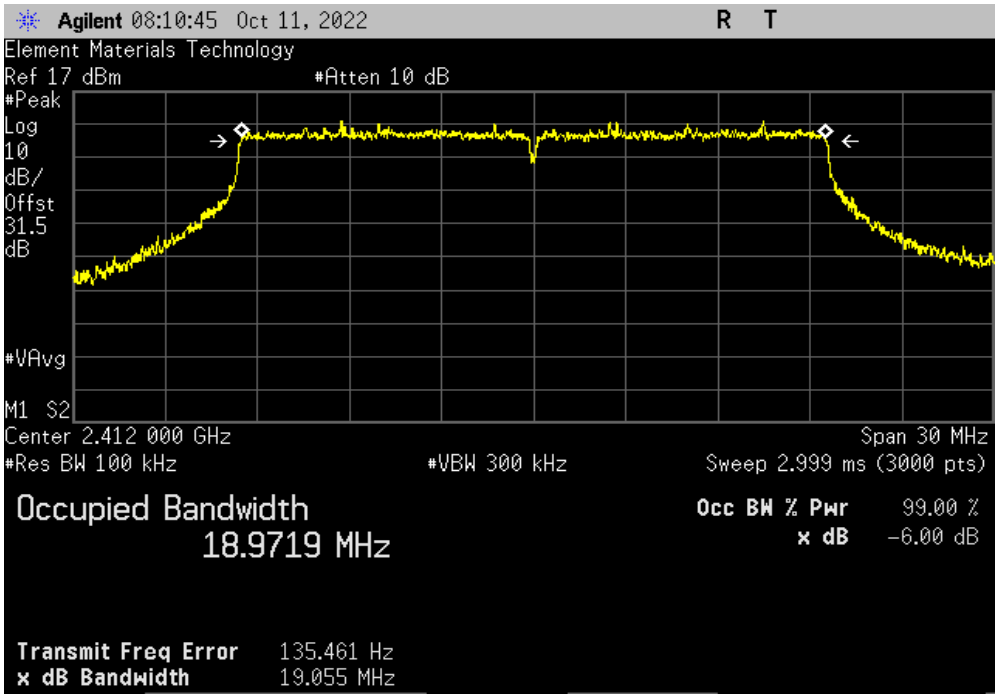
MIMO - Chain 0, HE20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.839 MHz	500 kHz	Pass



MIMO - Chain 0, HE20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.795 MHz	500 kHz	Pass

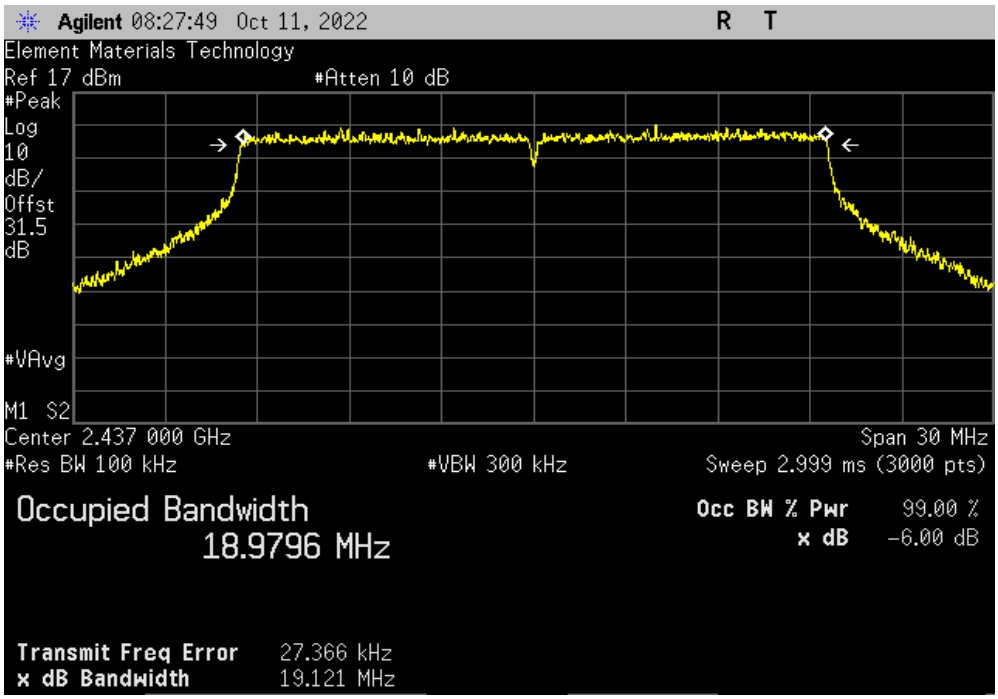


MIMO - Chain 0, HE20, MCS11, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				19.055 MHz	500 kHz	Pass

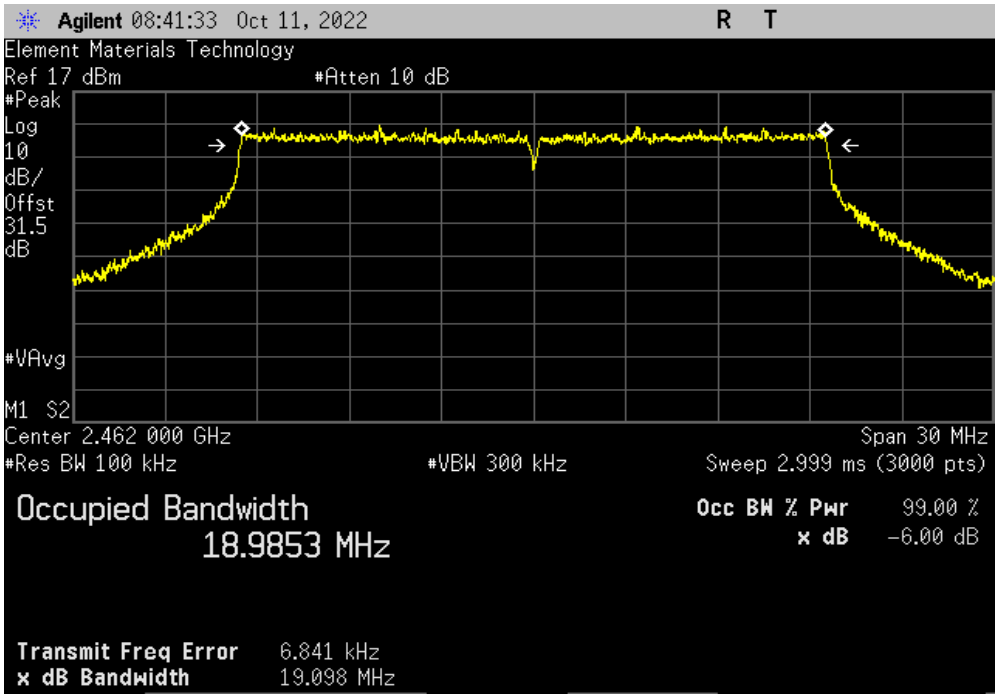


DTS BANDWIDTH - MIMO

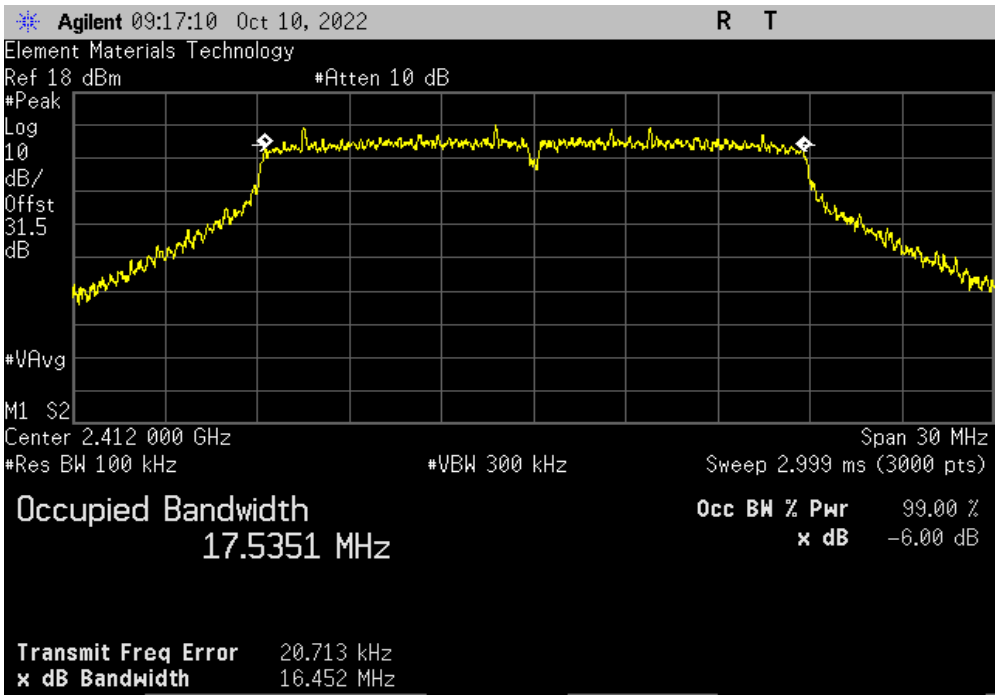
MIMO - Chain 0, HE20, MCS11, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				19.121 MHz	500 kHz	Pass



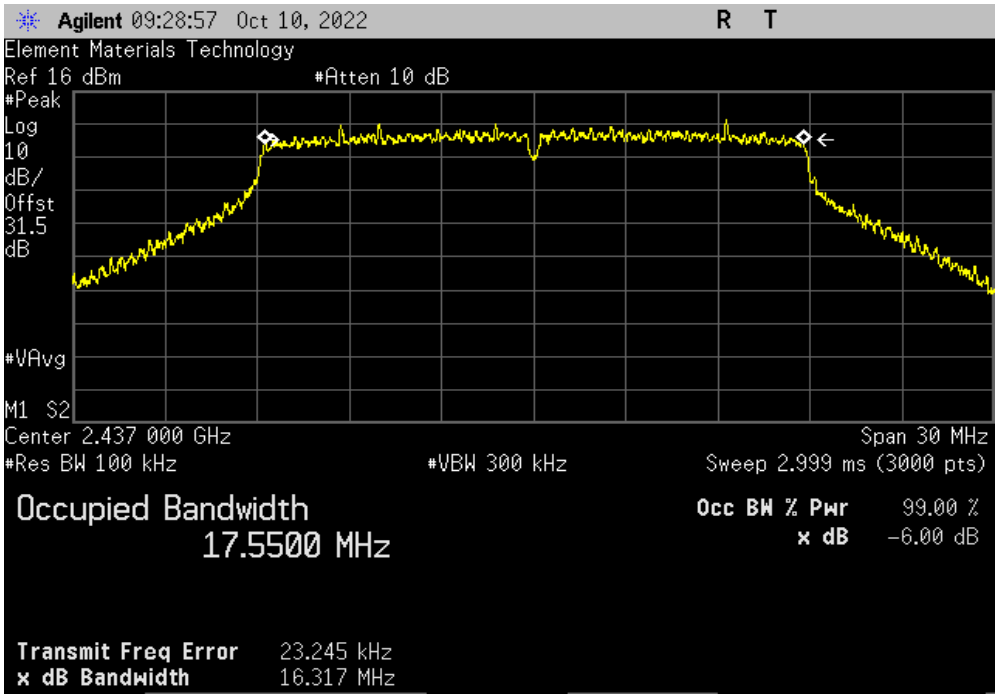
MIMO - Chain 0, HE20, MCS11, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				19.098 MHz	500 kHz	Pass



MIMO - Chain 1, HT20, MCS8, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.452 MHz	500 kHz	Pass

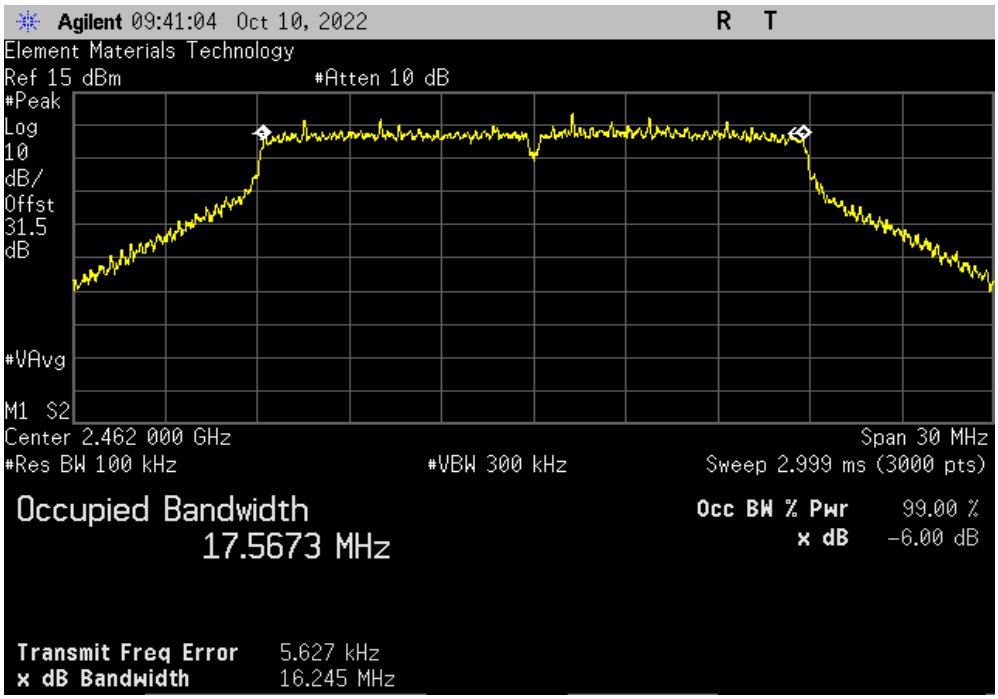


MIMO - Chain 1, HT20, MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.317 MHz	500 kHz	Pass

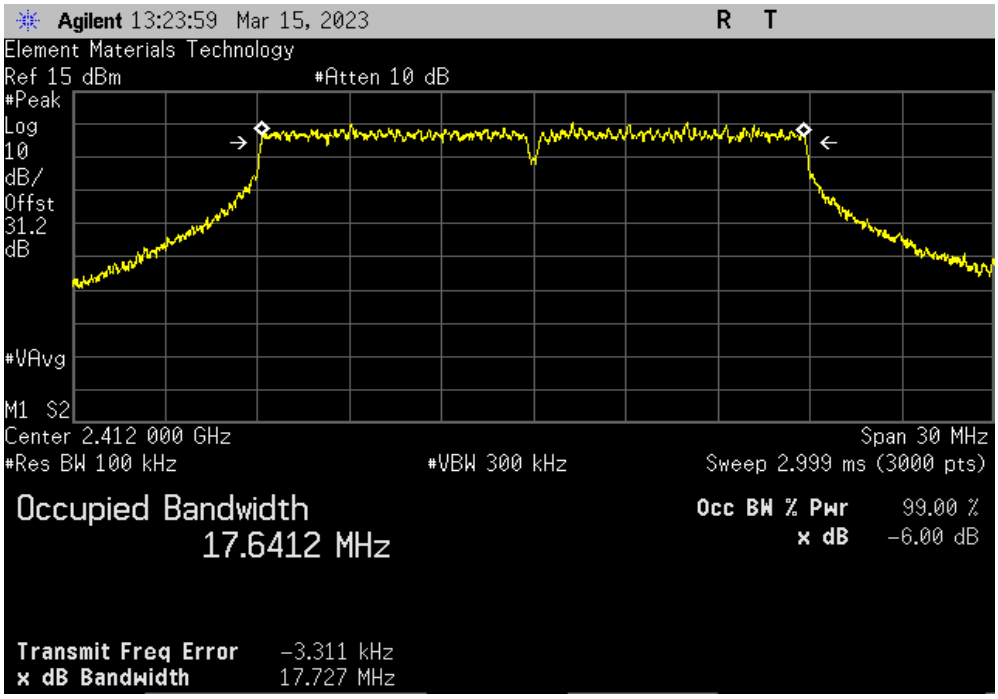


DTS BANDWIDTH - MIMO

MIMO - Chain 1, HT20, MCS8, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.245 MHz	500 kHz	Pass

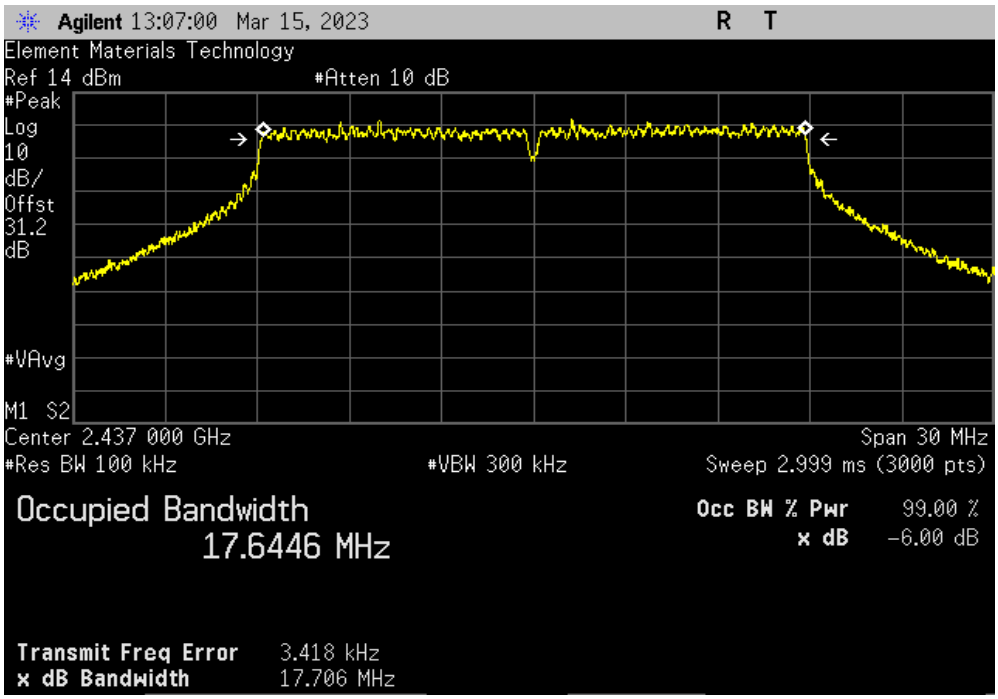


MIMO - Chain 1, HT20, MCS15, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.727 MHz	500 kHz	Pass

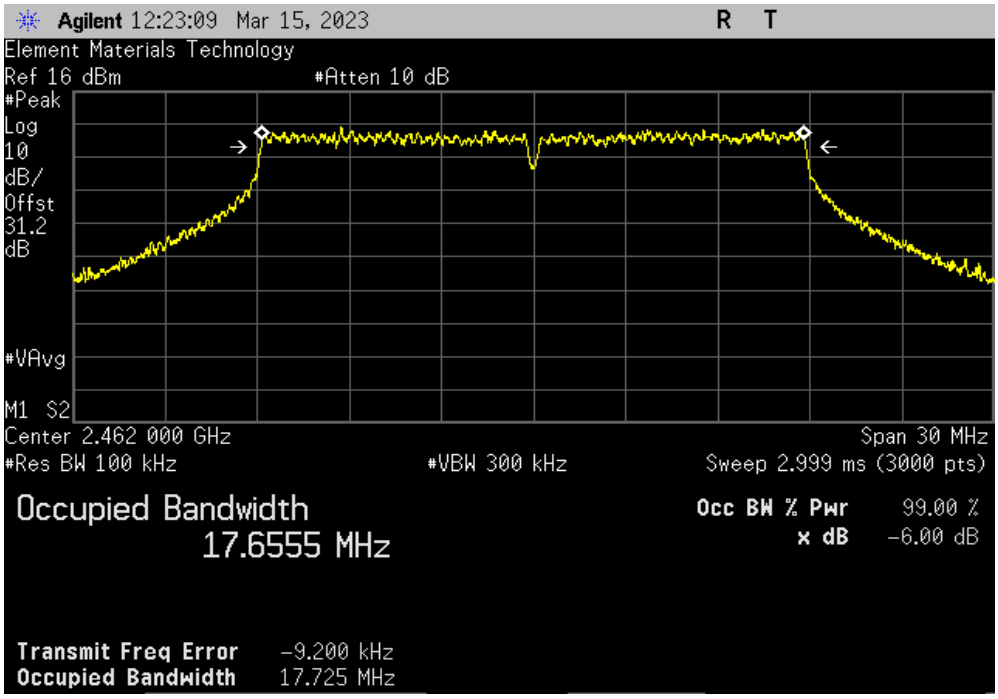


DTS BANDWIDTH - MIMO

MIMO - Chain 1, HT20, MCS15, Mid Channel 6, 2437 MHz							
					Value	Limit (>)	Result
					17.706 MHz	500 kHz	Pass

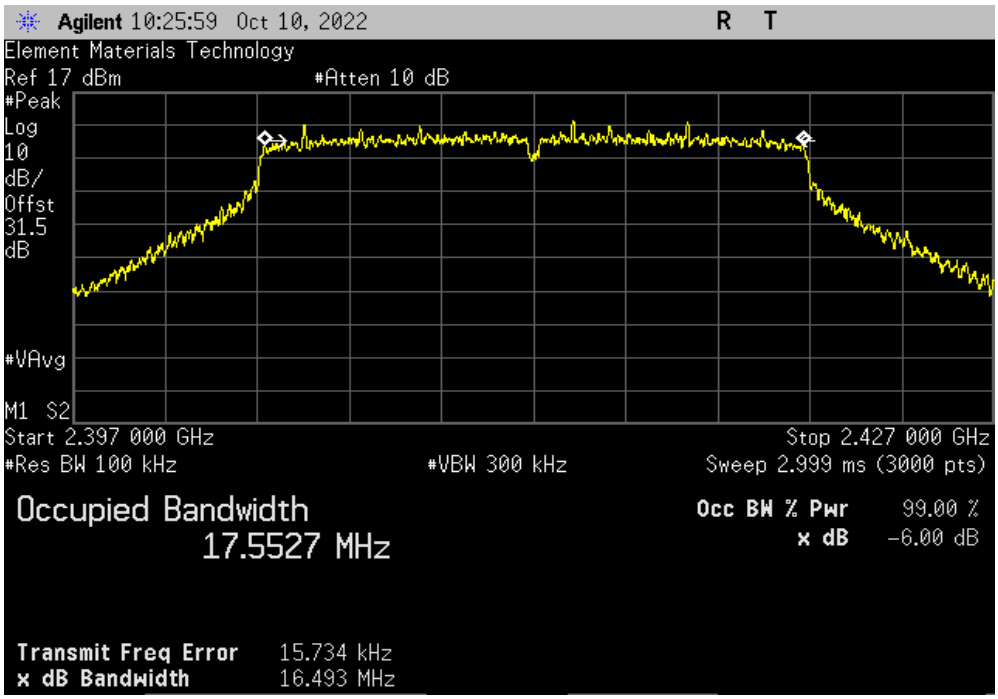


MIMO - Chain 1, HT20, MCS15, High Channel 11, 2462 MHz							
					Value	Limit (>)	Result
					17.725 MHz	500 kHz	Pass

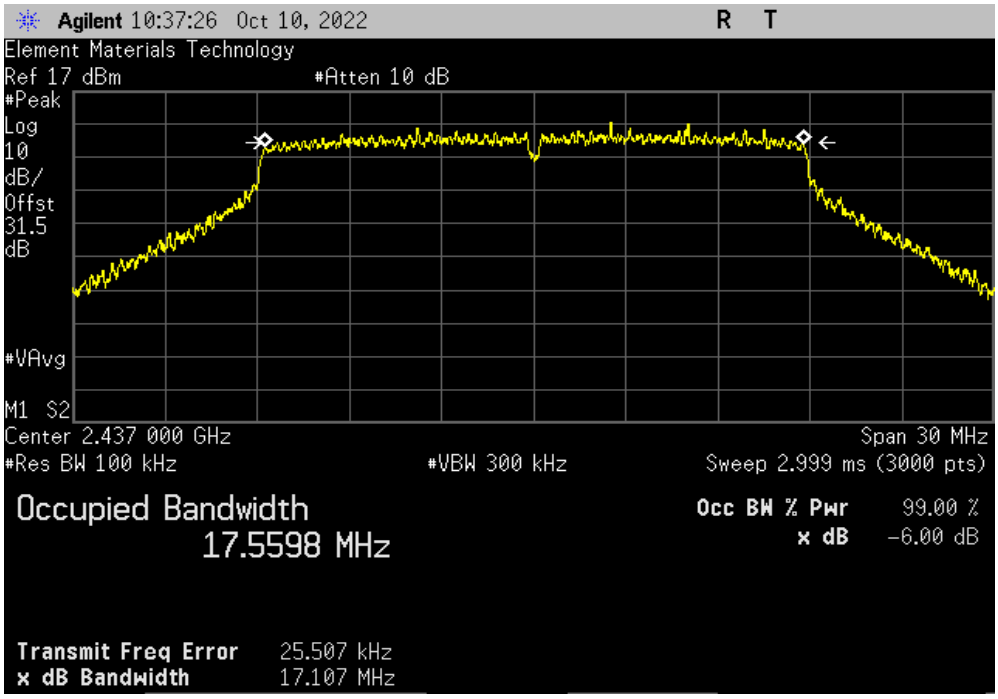


DTS BANDWIDTH - MIMO

MIMO - Chain 1, VHT20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.493 MHz	500 kHz	Pass

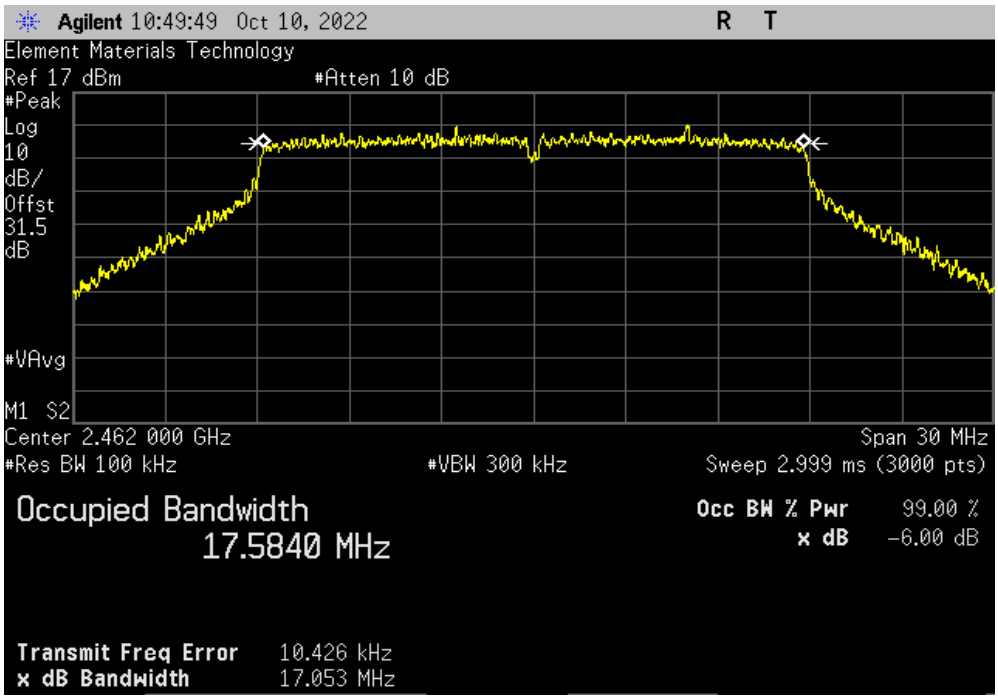


MIMO - Chain 1, VHT20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.107 MHz	500 kHz	Pass

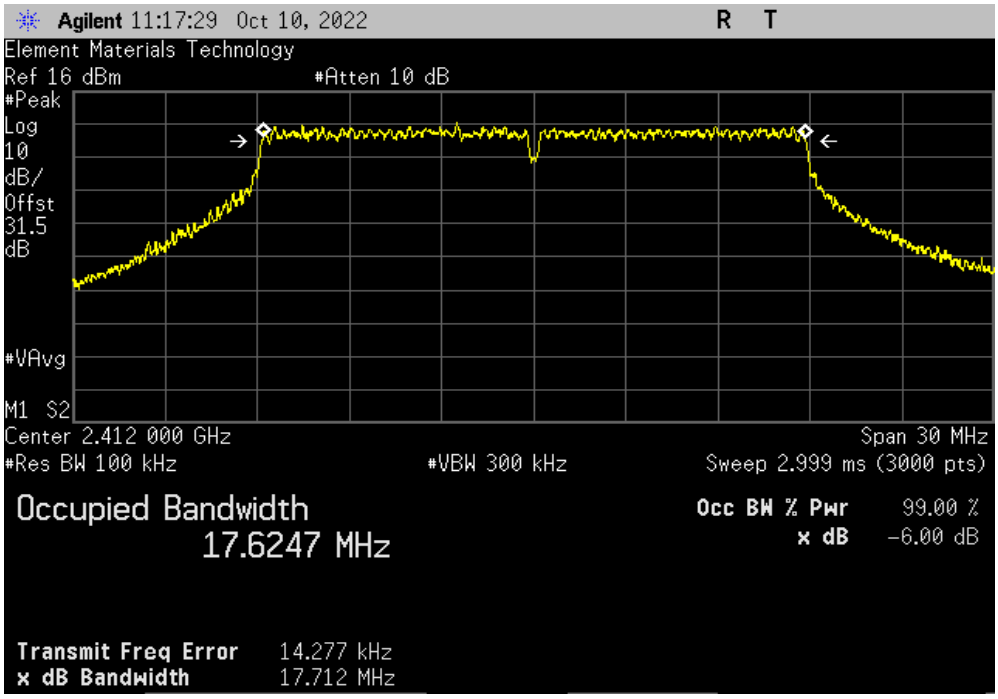


DTS BANDWIDTH - MIMO

MIMO - Chain 1, VHT20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.053 MHz	500 kHz	Pass

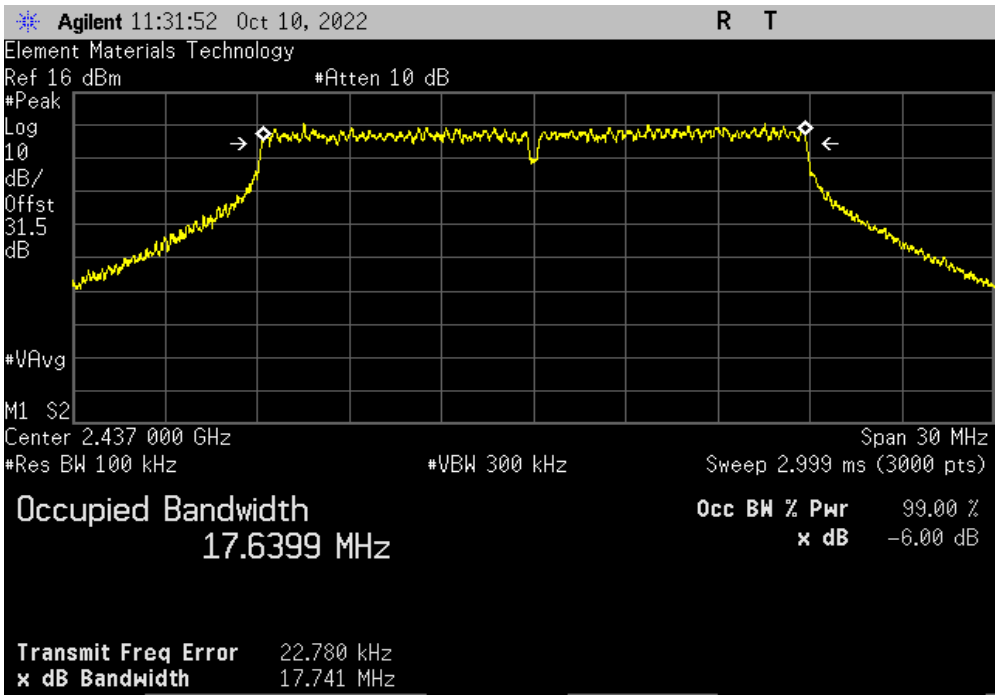


MIMO - Chain 1, VHT20, MCS8, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.712 MHz	500 kHz	Pass

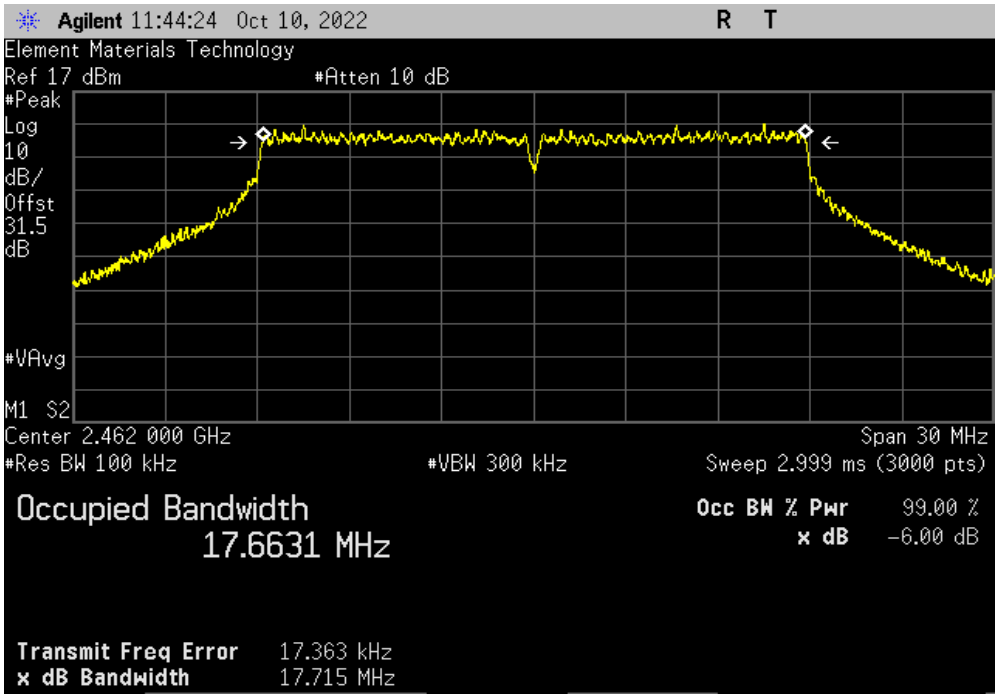


DTS BANDWIDTH - MIMO

MIMO - Chain 1, VHT20, MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.741 MHz	500 kHz	Pass

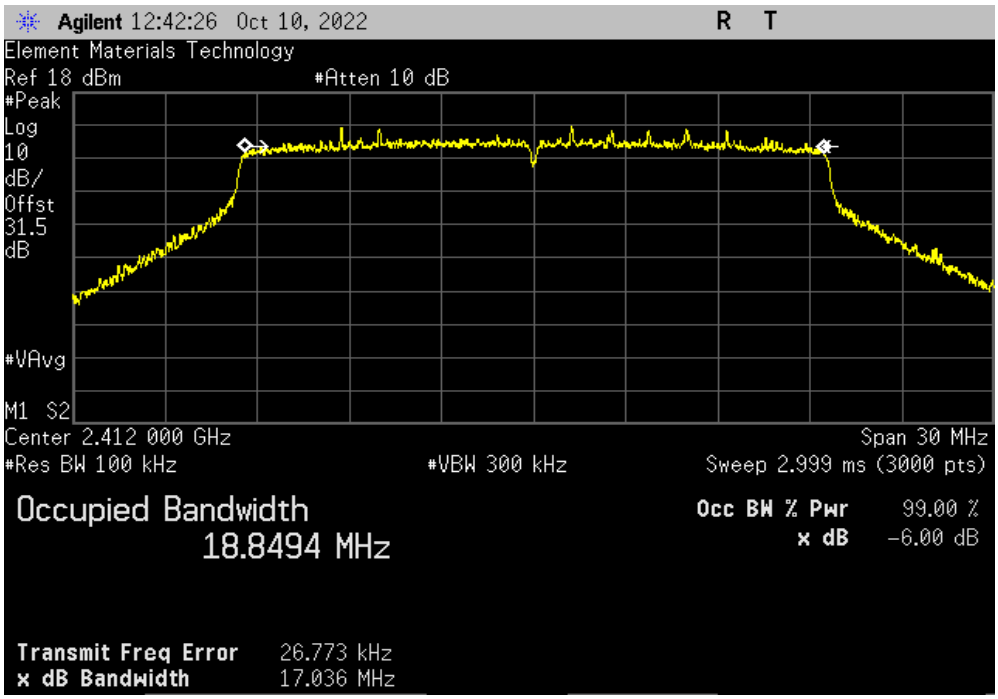


MIMO - Chain 1, VHT20, MCS8, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.715 MHz	500 kHz	Pass

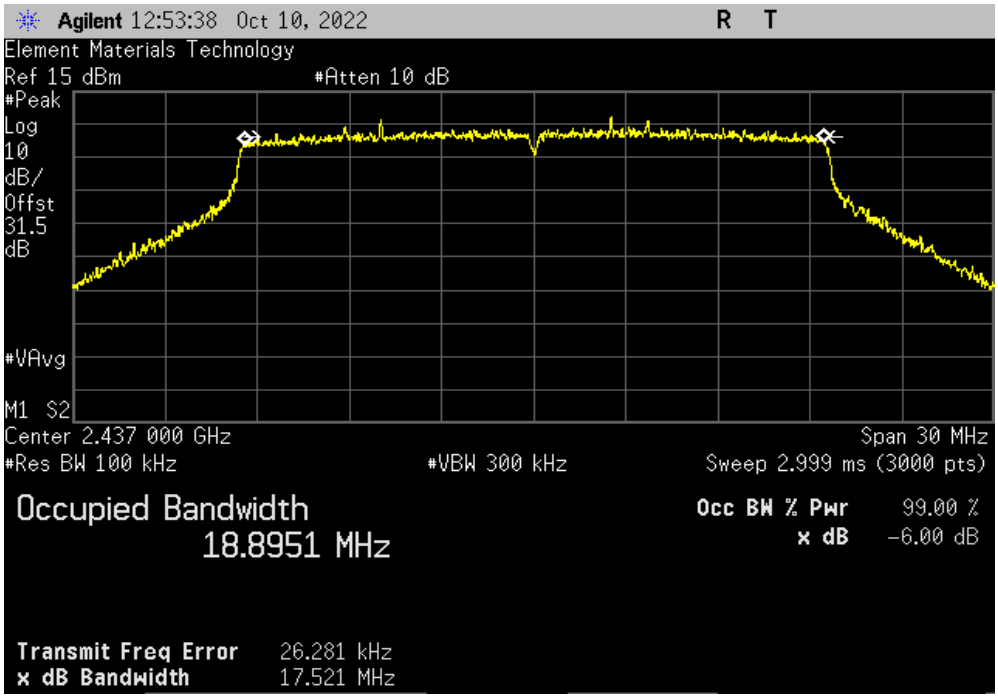


DTS BANDWIDTH - MIMO

MIMO - Chain 1, HE20, MCS0, Low Channel 1, 2412 MHz							
					Value	Limit (>)	Result
					17.036 MHz	500 kHz	Pass

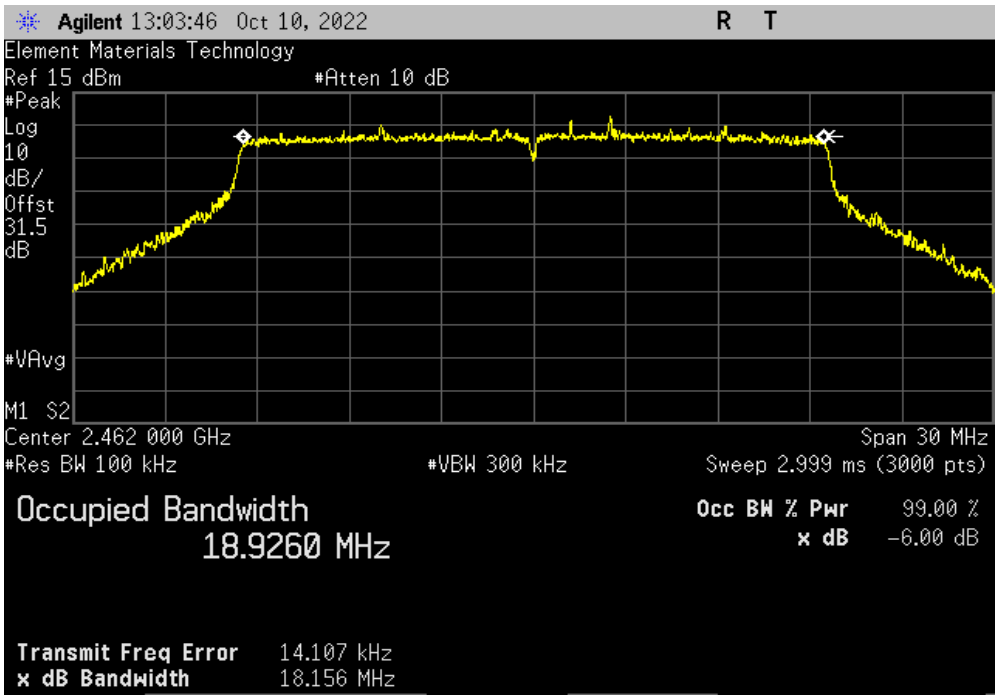


MIMO - Chain 1, HE20, MCS0, Mid Channel 6, 2437 MHz							
					Value	Limit (>)	Result
					17.521 MHz	500 kHz	Pass

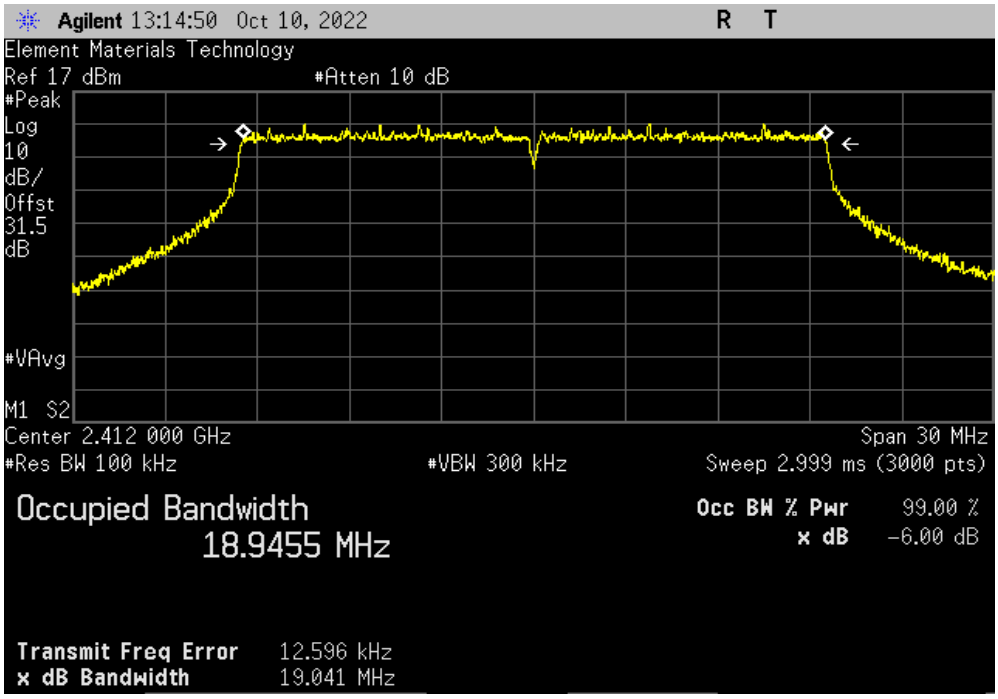


DTS BANDWIDTH - MIMO

MIMO - Chain 1, HE20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				18.156 MHz	500 kHz	Pass

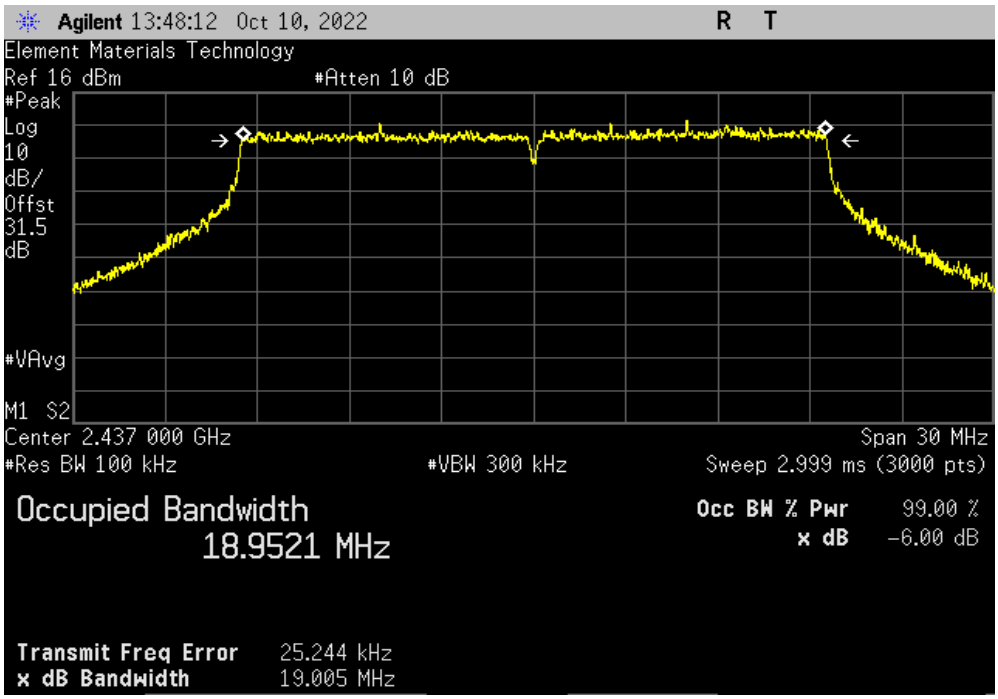


MIMO - Chain 1, HE20, MCS11, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				19.041 MHz	500 kHz	Pass

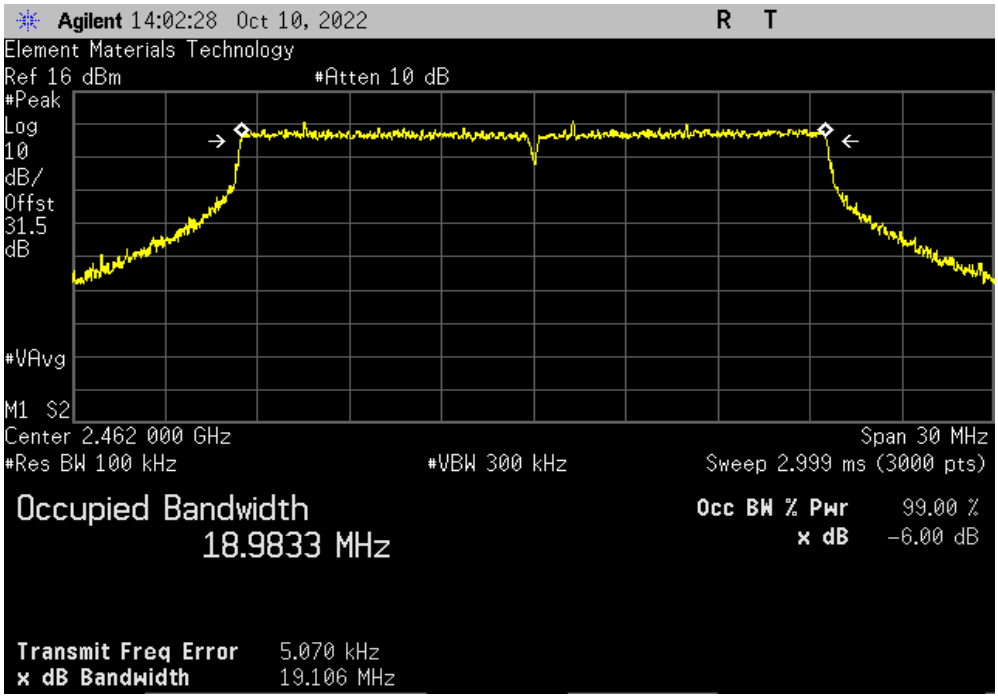


DTS BANDWIDTH - MIMO

MIMO - Chain 1, HE20, MCS11, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				19.005 MHz	500 kHz	Pass



MIMO - Chain 1, HE20, MCS11, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				19.107 MHz	500 kHz	Pass



OCCUPIED BANDWIDTH - CHAIN 0

XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation.

Per ANSI C63.10:2013, 6.9.3, the spectrum analyzer was configured as follows:

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

The resolution bandwidth (RBW) of the spectrum analyzer was set to the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) bandwidth was set to at least 3 times the resolution bandwidth. The analyzer sweep time was set to auto to prevent video filtering or averaging. A sample detector was used unless the device was not able to be operated in a continuous transmit mode, in which case a peak detector was used.

The spectrum analyzer occupied bandwidth measurement function was used to sum the power of the transmission in linear terms to obtain the 99% bandwidth.

OCCUPIED BANDWIDTH - CHAIN 0

TbtTx 2022.06.03.0 XMit 2022.02.07.0

EUT:	U8 Hawk			**Work Order:**	KYME0068
Serial Number:	192F-85E2-1761			**Date:**	6-Oct-22
Customer:	Kymeta Corp.			**Temperature:**	22 °C
Attendees:	Dean Busch			**Humidity:**	44.2% RH
Project:	None			**Barometric Pres.:**	1025 mbar
Tested by:	Jeff Alcoke	**Power:**	12 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2022	ANSI C63.10:2013
RSS-Gen Issue 5:2018+A1:2019+A2:2021	ANSI C63.10:2013

COMMENTS

Reference level offset includes: DC Block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

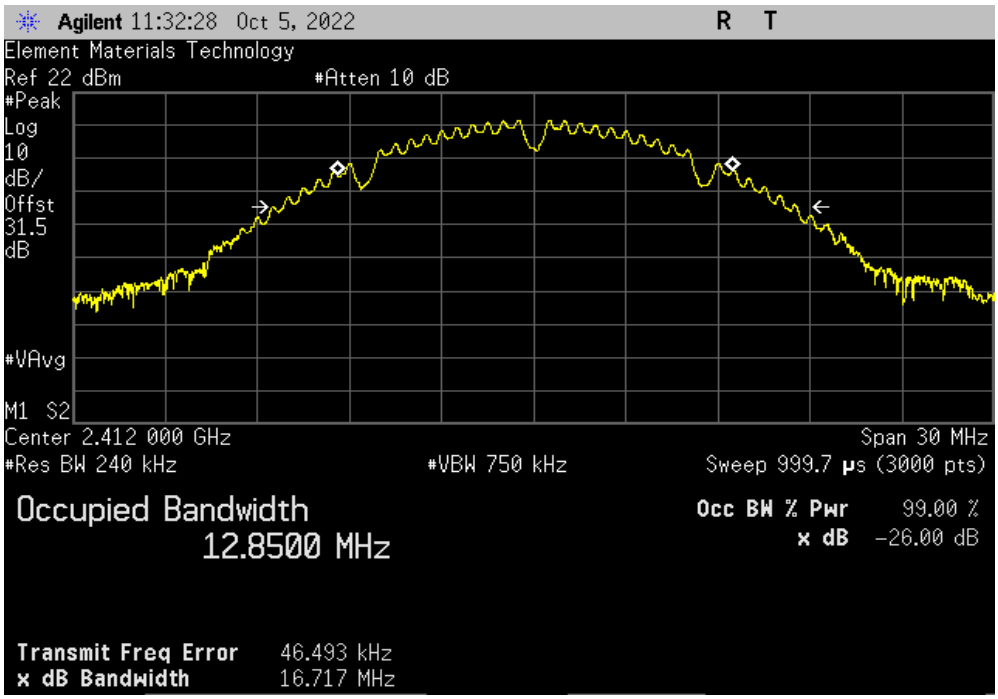
None

Configuration #	1	Signature

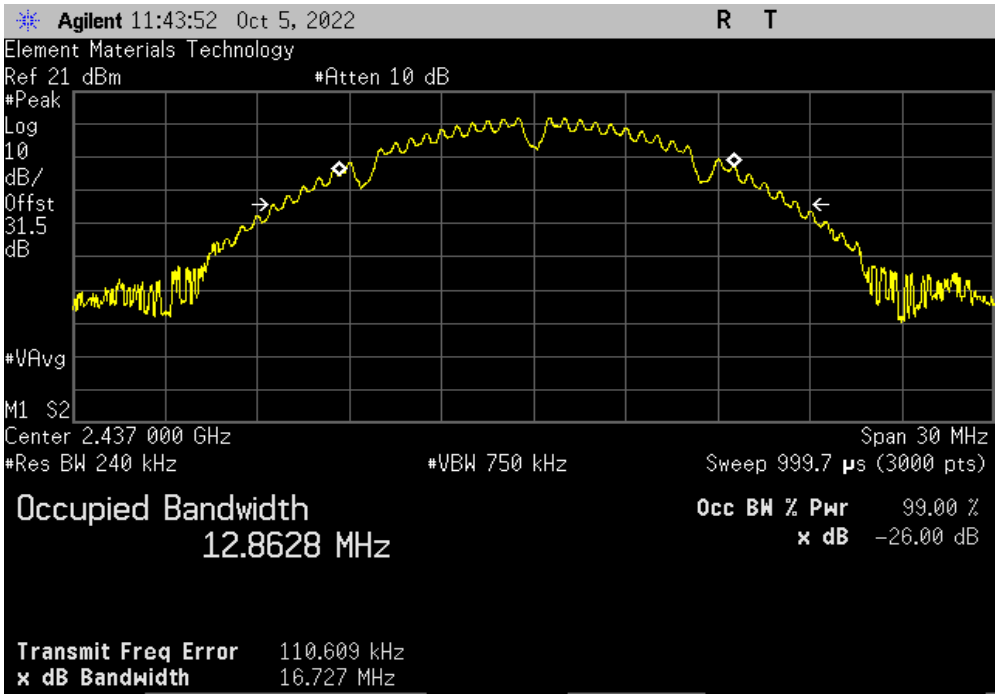
		Value	Limit	Result
Chain 0				
	CCK, 1 Mbps			
	Low Channel 1, 2412 MHz	12.850 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	12.862 MHz	N/A	N/A
	High Channel 11, 2462 MHz	13.024 MHz	N/A	N/A
	CCK, 11 Mbps			
	Low Channel 1, 2412 MHz	12.728 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	12.839 MHz	N/A	N/A
	High Channel 11, 2462 MHz	12.711 MHz	N/A	N/A
	Legacy OFDM, 6 Mbps			
	Low Channel 1, 2412 MHz	16.420 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	16.442 MHz	N/A	N/A
	High Channel 11, 2462 MHz	16.469 MHz	N/A	N/A
	Legacy OFDM, 36 Mbps			
	Low Channel 1, 2412 MHz	16.466 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	16.437 MHz	N/A	N/A
	High Channel 11, 2462 MHz	16.692 MHz	N/A	N/A
	Legacy OFDM, 54 Mbps			
	Low Channel 1, 2412 MHz	16.615 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	16.555 MHz	N/A	N/A
	High Channel 11, 2462 MHz	16.664 MHz	N/A	N/A
	HT20, MCS0			
	Low Channel 1, 2412 MHz	17.621 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.613 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.652 MHz	N/A	N/A
	HT20, MCS7			
	Low Channel 1, 2412 MHz	17.829 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.852 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.839 MHz	N/A	N/A
	VHT20, MCS0			
	Low Channel 1, 2412 MHz	17.243 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.614 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.866 MHz	N/A	N/A
	VHT20, MCS8			
	Low Channel 1, 2412 MHz	17.777 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.785 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.889 MHz	N/A	N/A
	HE20, MCS0			
	Low Channel 1, 2412 MHz	18.902 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	18.896 MHz	N/A	N/A
	High Channel 11, 2462 MHz	18.965 MHz	N/A	N/A
	HE20, MCS11			
	Low Channel 1, 2412 MHz	19.048 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	19.027 MHz	N/A	N/A
	High Channel 11, 2462 MHz	19.059 MHz	N/A	N/A

OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, CCK, 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				12.850 MHz	N/A	N/A

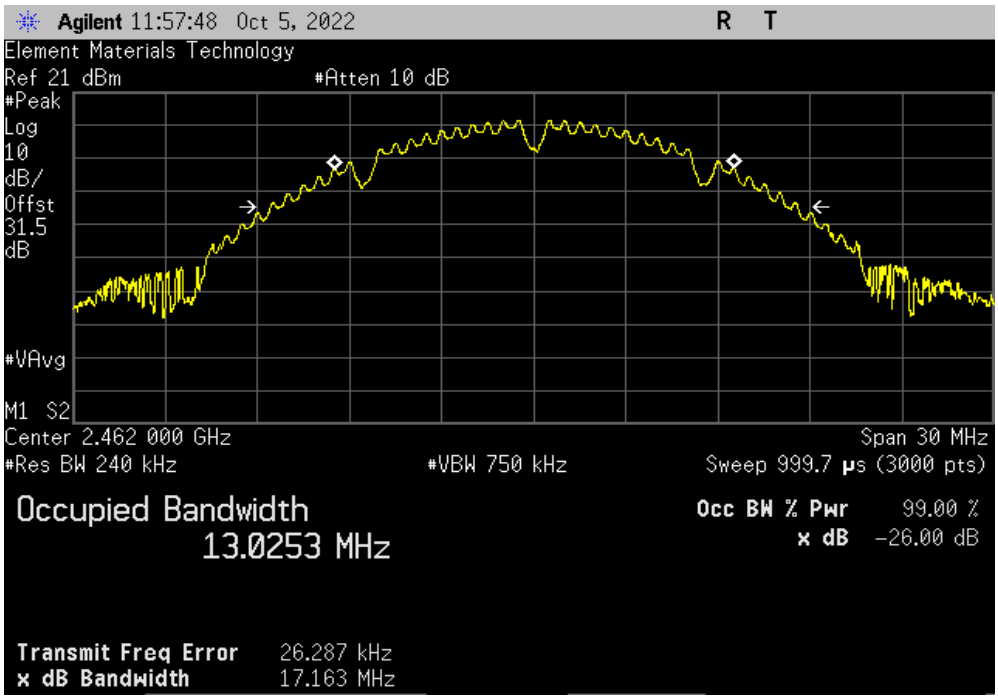


Chain 0, CCK, 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				12.862 MHz	N/A	N/A



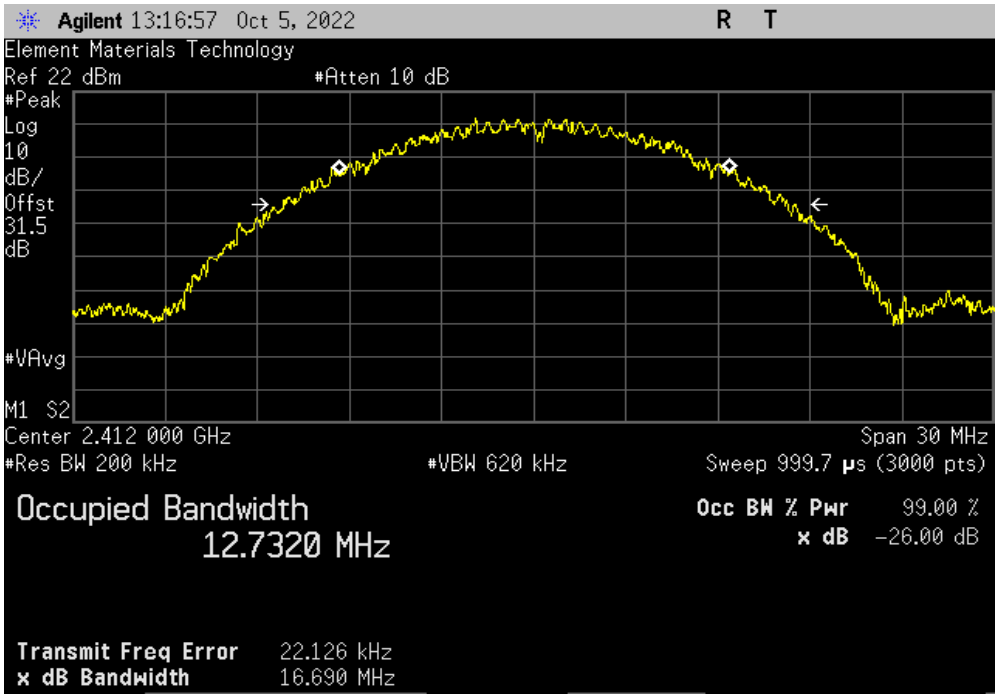
Chain 0, CCK, 1 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				13.024 MHz	N/A	N/A



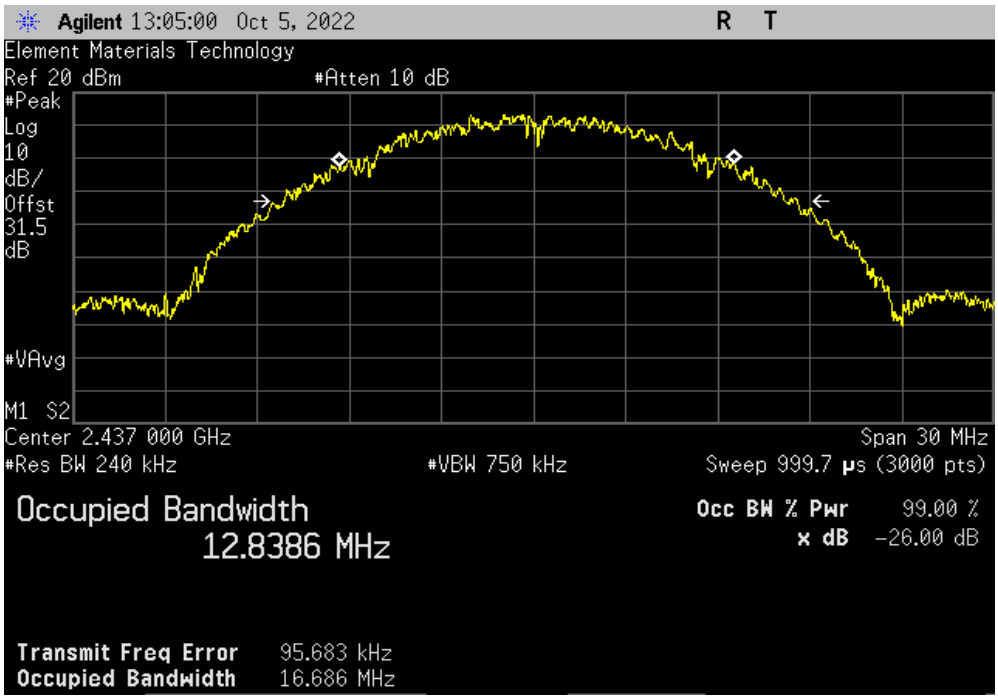
Chain 0, CCK, 11 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				12.728 MHz	N/A	N/A

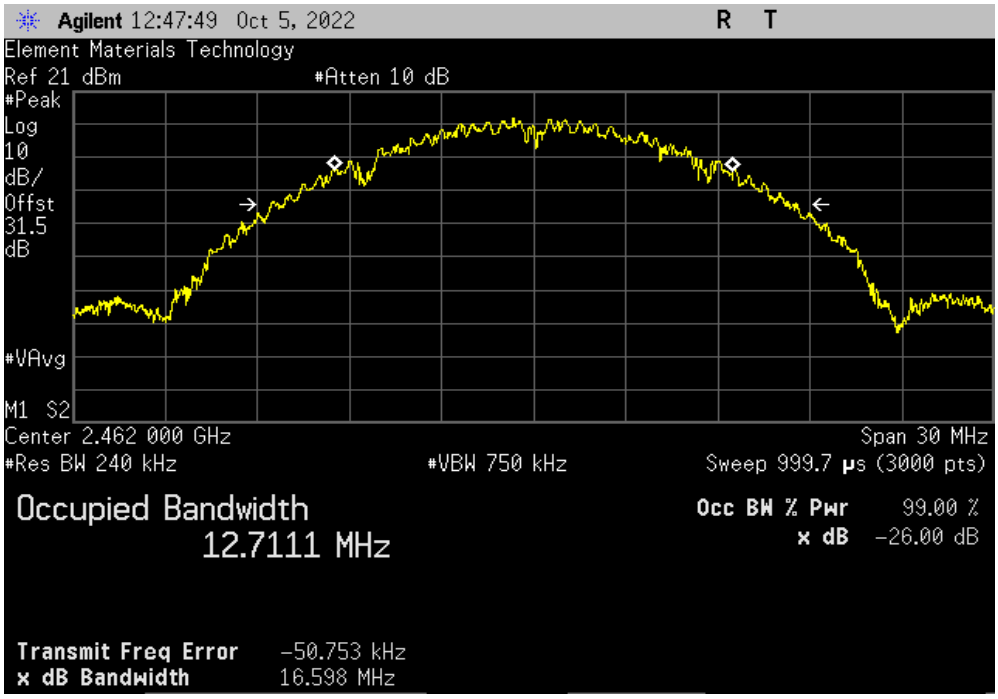


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, CCK, 11 Mbps, Mid Channel 6, 2437 MHz							
					Value	Limit	Result
					12.839 MHz	N/A	N/A

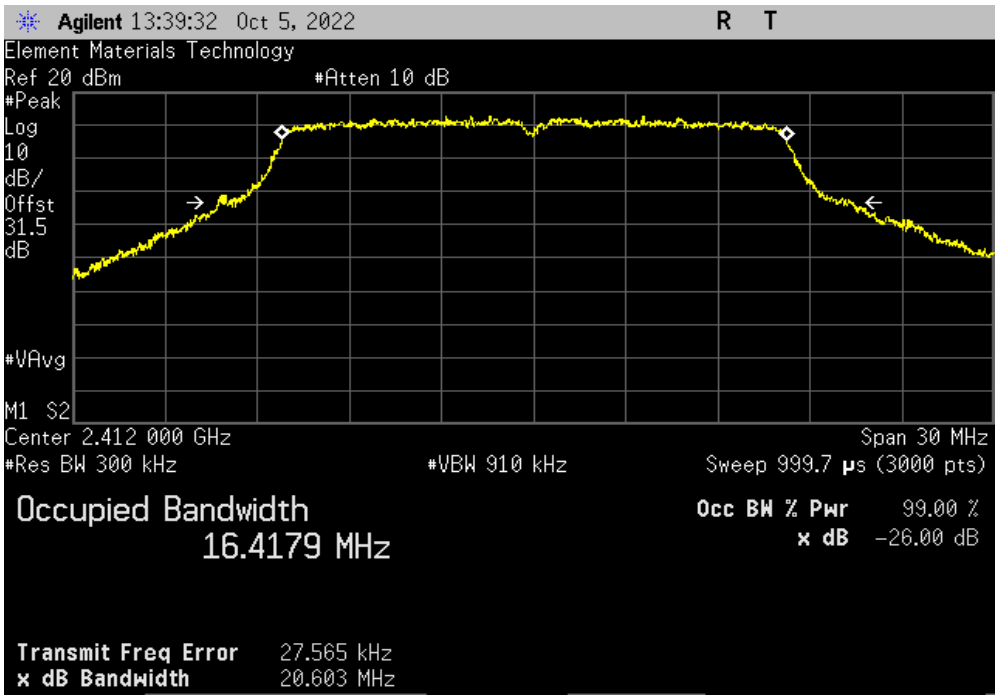


Chain 0, CCK, 11 Mbps, High Channel 11, 2462 MHz							
					Value	Limit	Result
					12.711 MHz	N/A	N/A

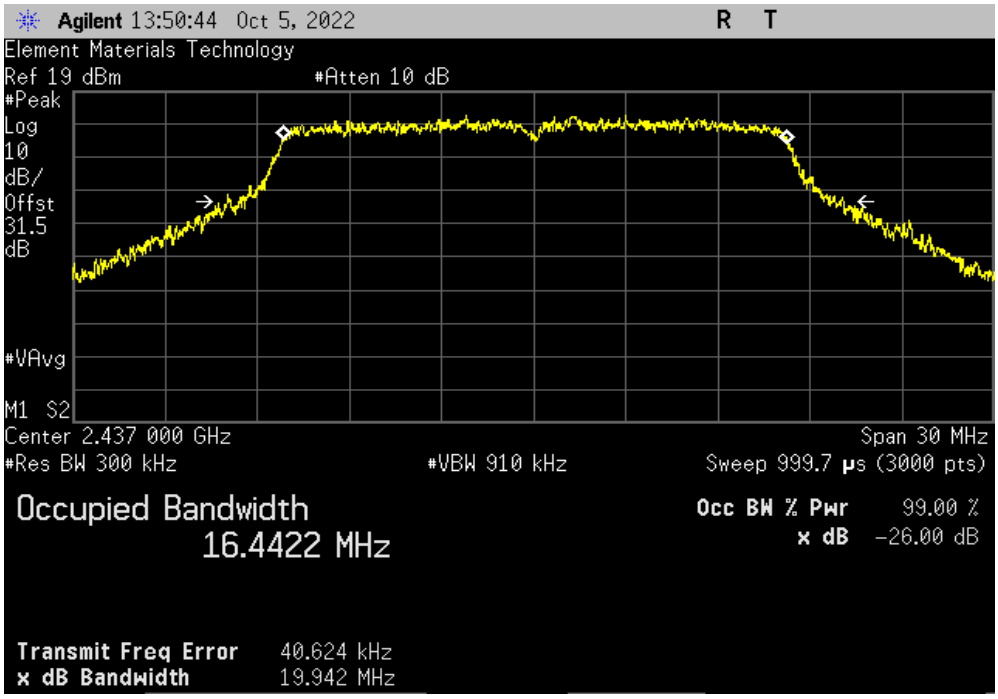


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, Legacy OFDM, 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				16.420 MHz	N/A	N/A

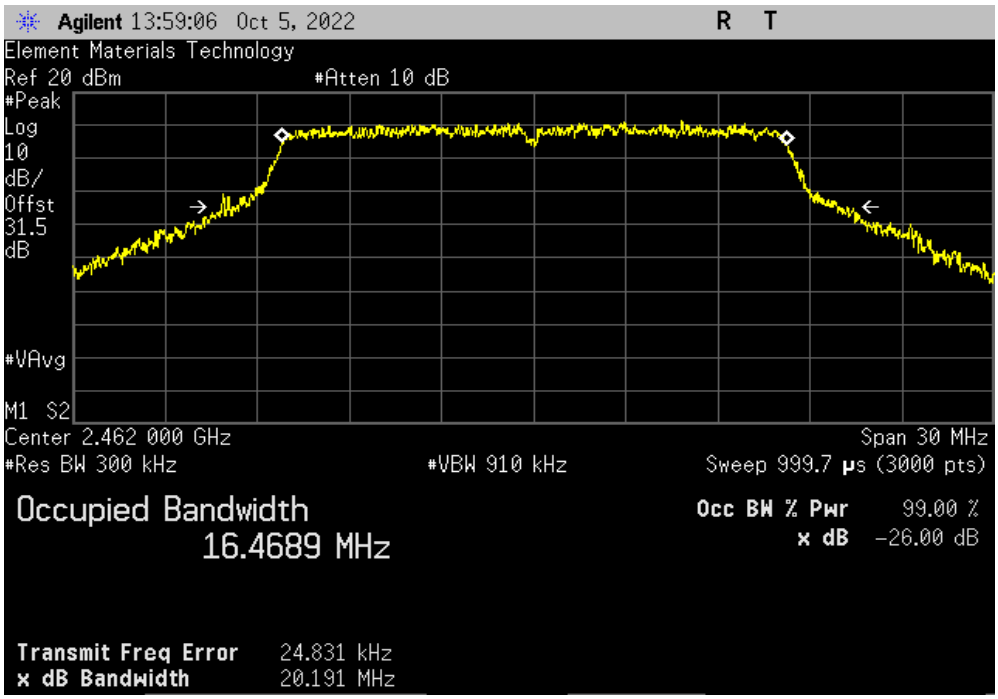


Chain 0, Legacy OFDM, 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				16.442 MHz	N/A	N/A

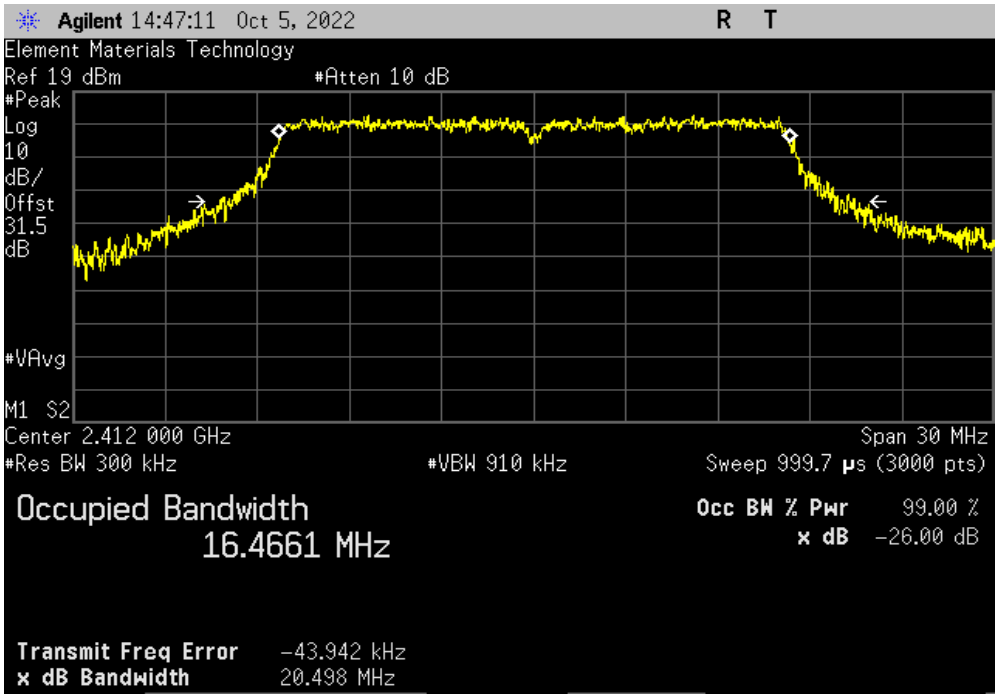


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, Legacy OFDM, 6 Mbps, High Channel 11, 2462 MHz							
					Value	Limit	Result
					16.469 MHz	N/A	N/A

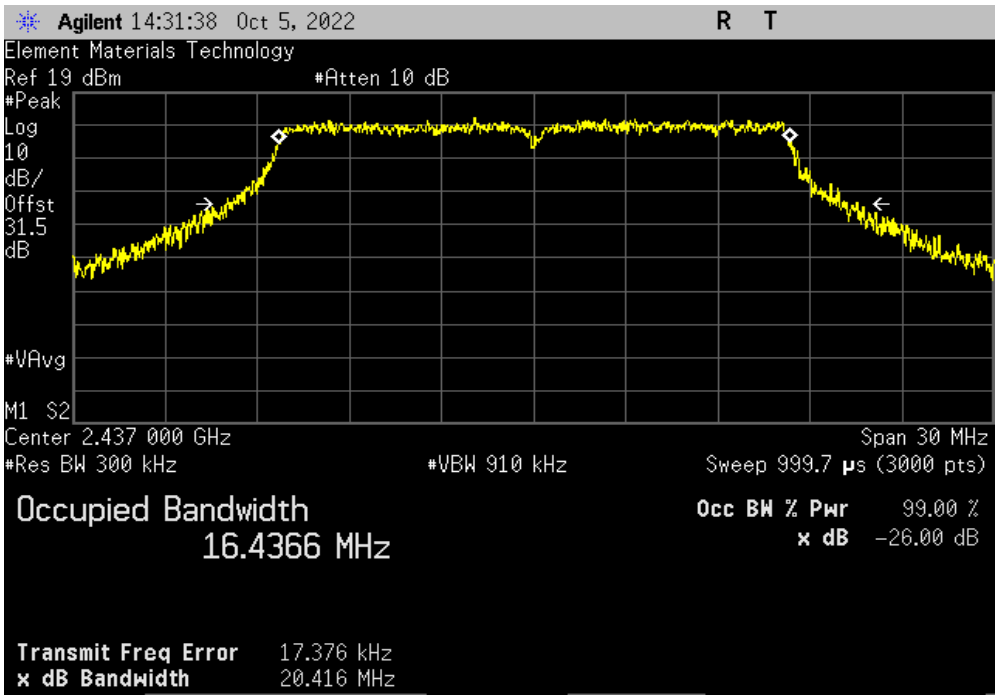


Chain 0, Legacy OFDM, 36 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit	Result
					16.466 MHz	N/A	N/A

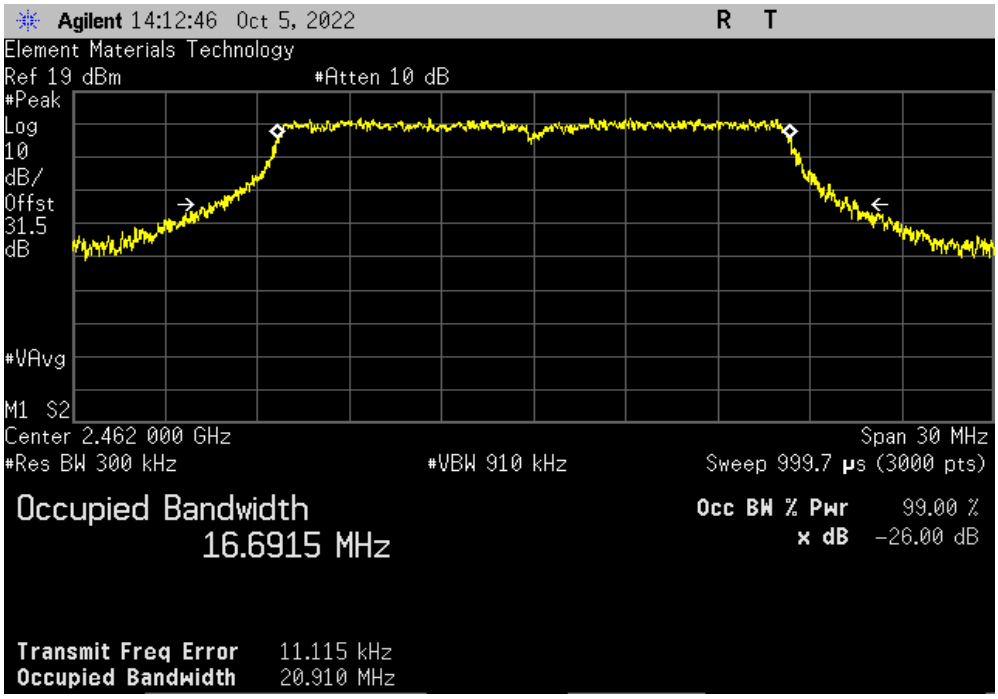


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, Legacy OFDM, 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				16.437 MHz	N/A	N/A

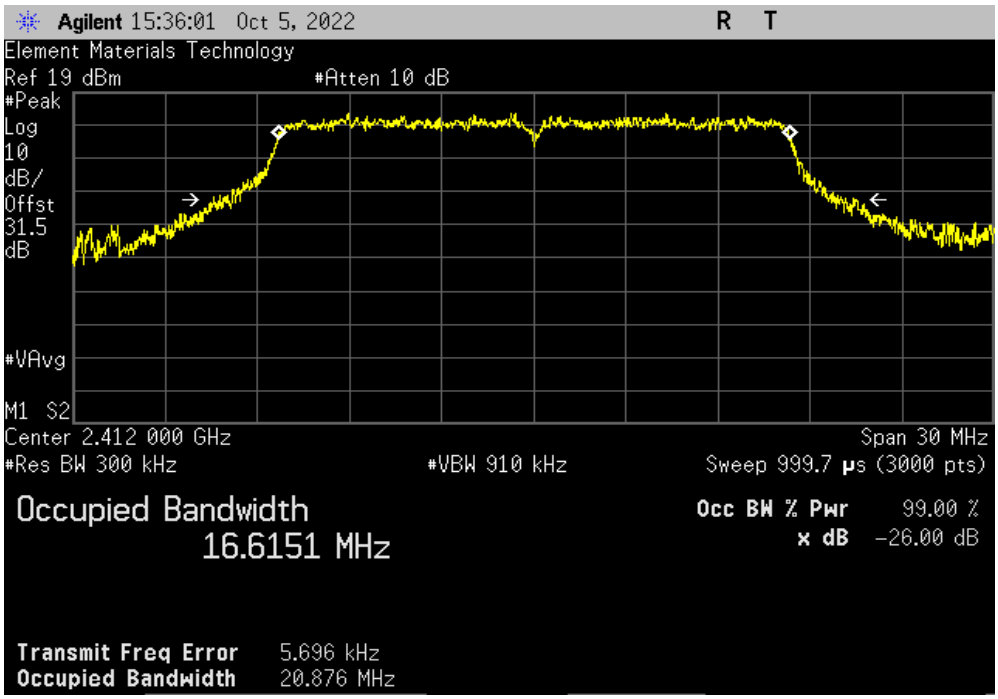


Chain 0, Legacy OFDM, 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit	Result
				16.692 MHz	N/A	N/A

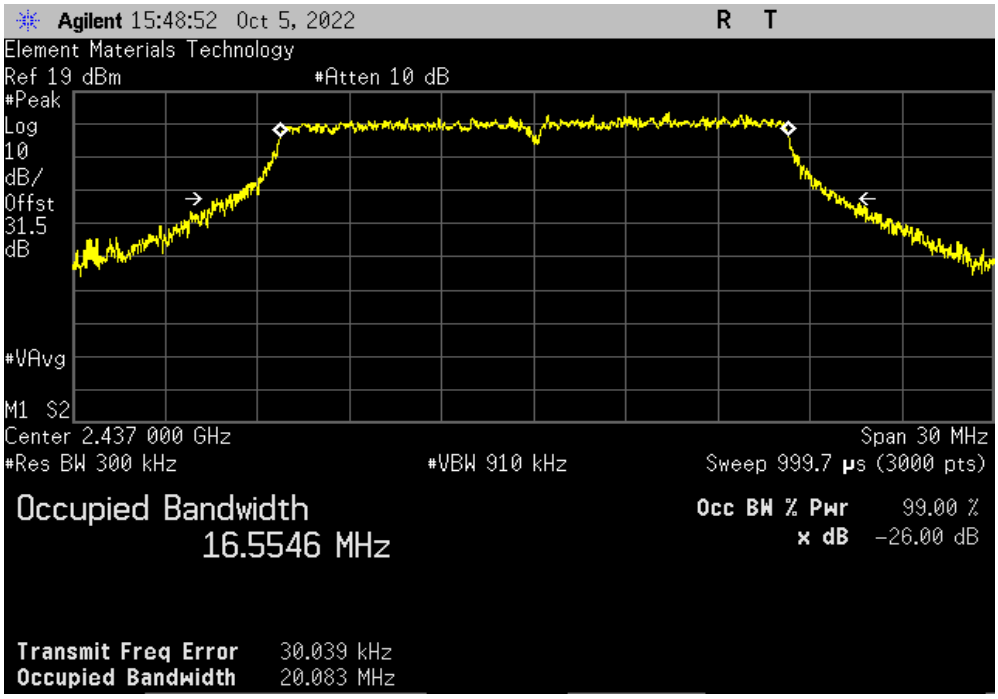


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, Legacy OFDM, 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				16.615 MHz	N/A	N/A

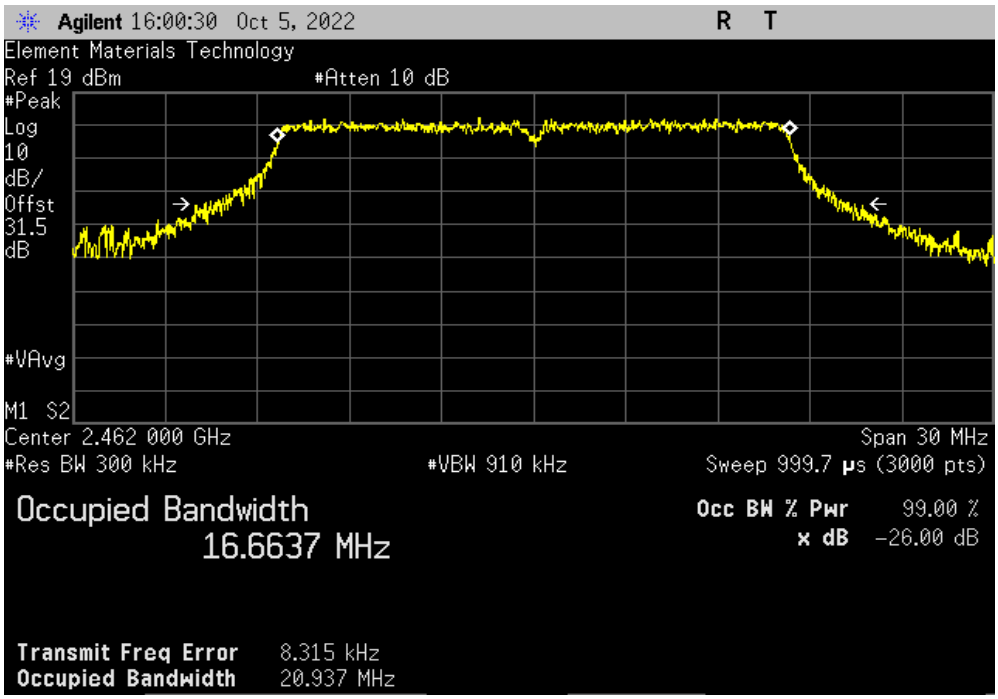


Chain 0, Legacy OFDM, 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				16.555 MHz	N/A	N/A

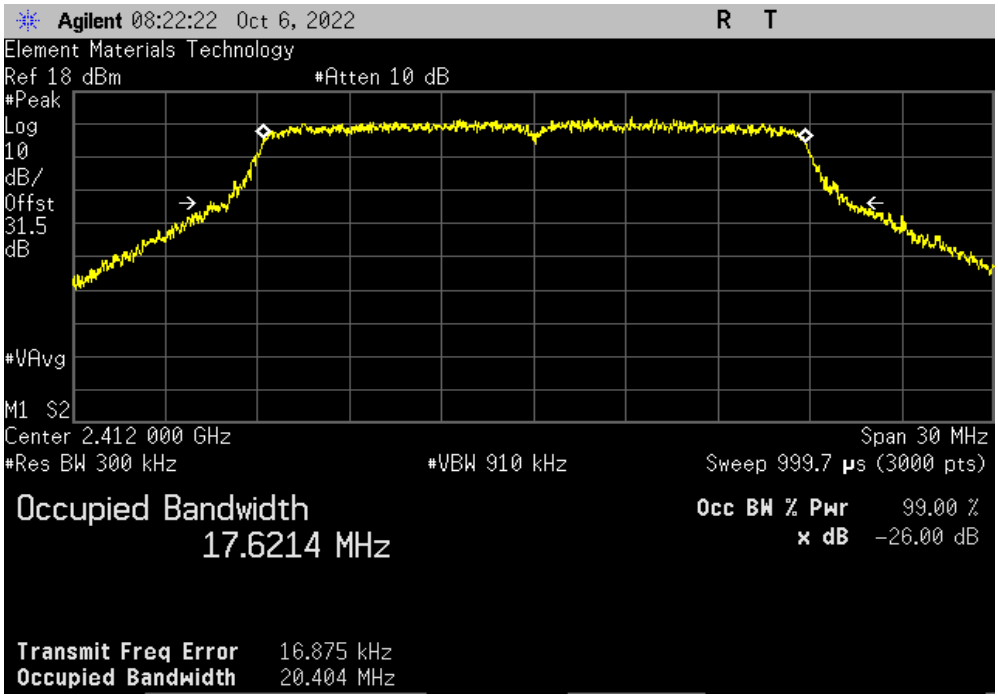


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, Legacy OFDM, 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit	Result
				16.664 MHz	N/A	N/A

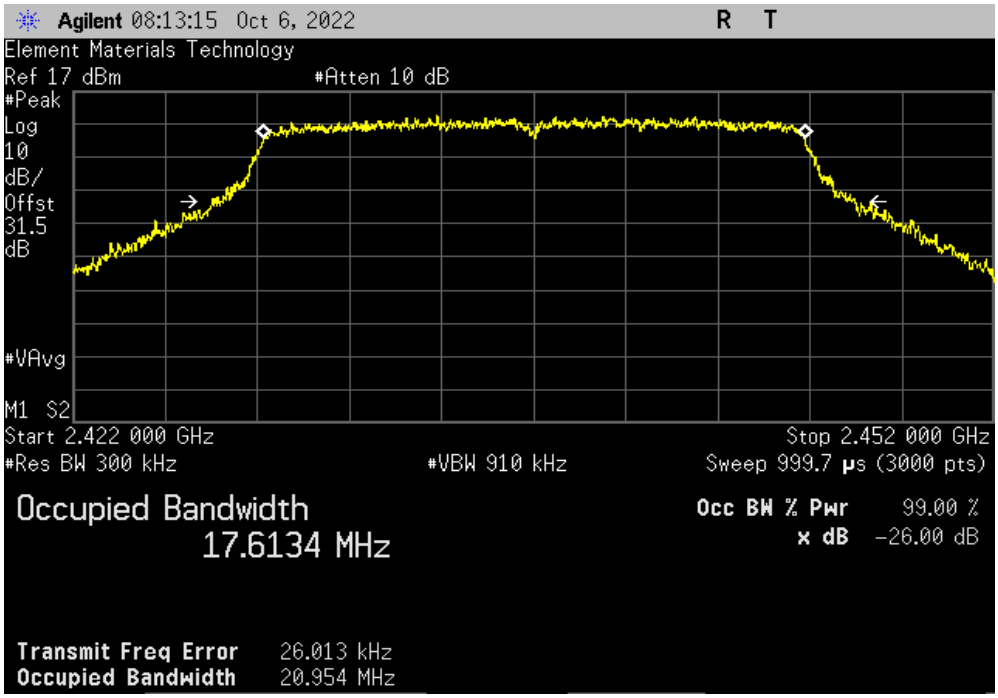


Chain 0, HT20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				17.621 MHz	N/A	N/A

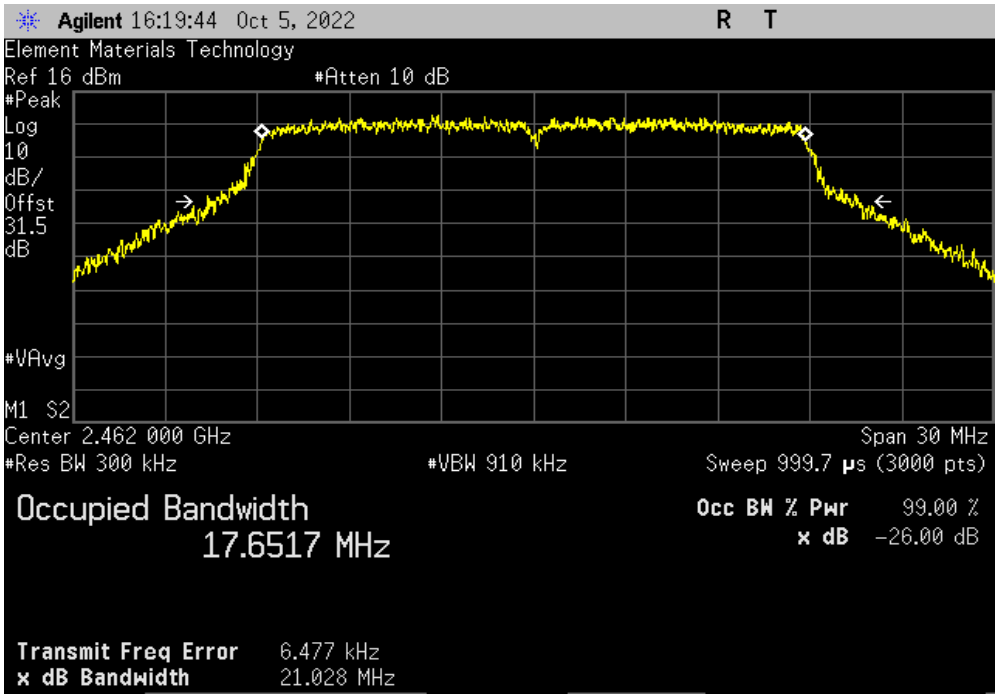


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, HT20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				17.613 MHz	N/A	N/A

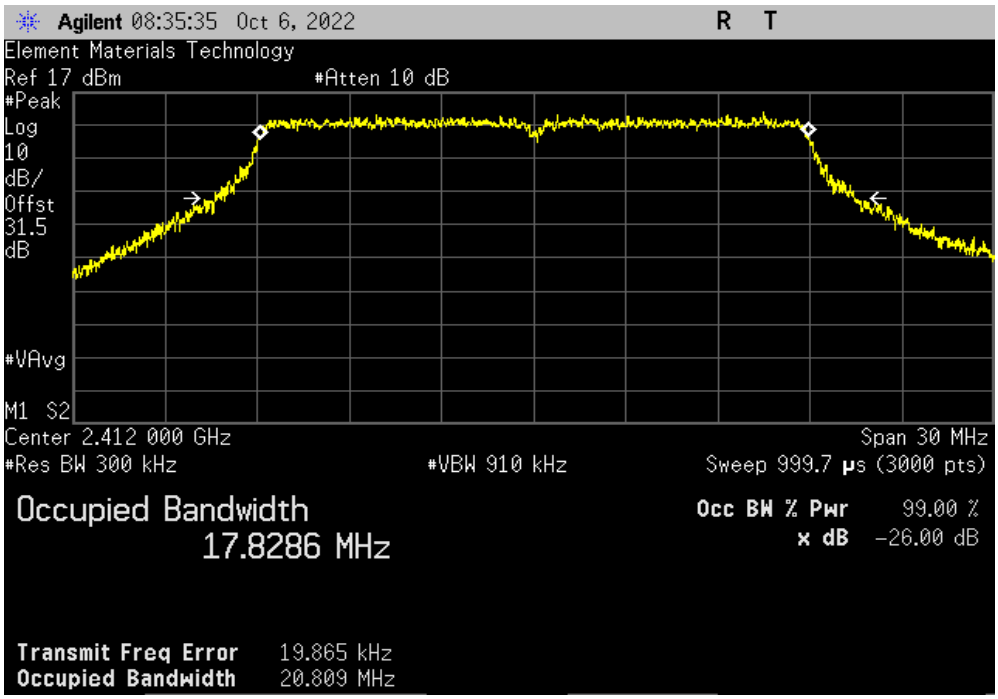


Chain 0, HT20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit	Result
				17.652 MHz	N/A	N/A

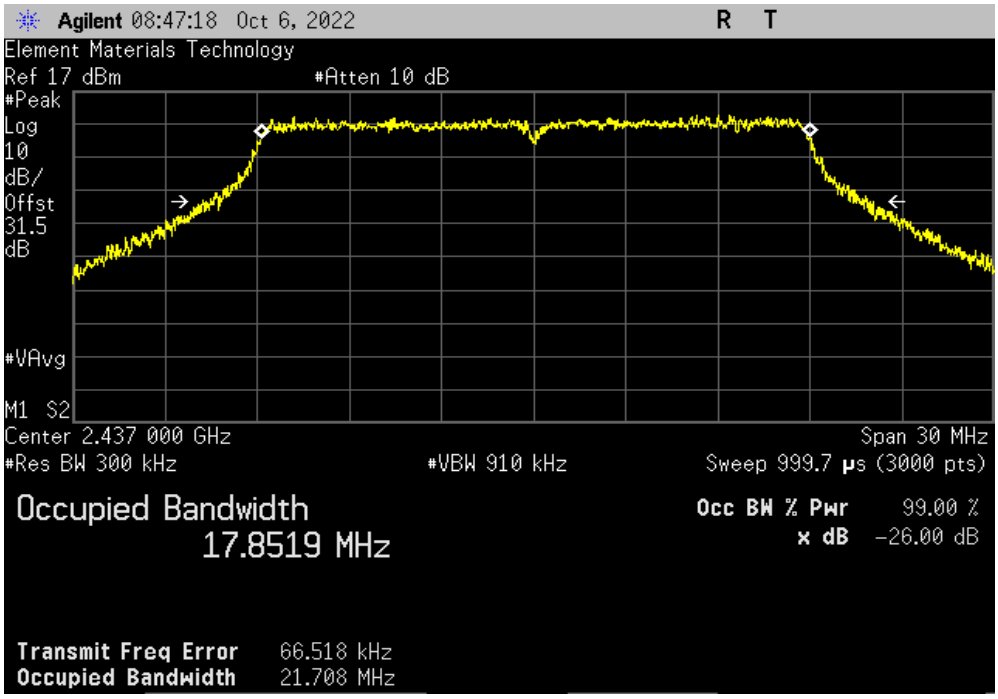


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, HT20, MCS7, Low Channel 1, 2412 MHz							
					Value	Limit	Result
					17.829 MHz	N/A	N/A

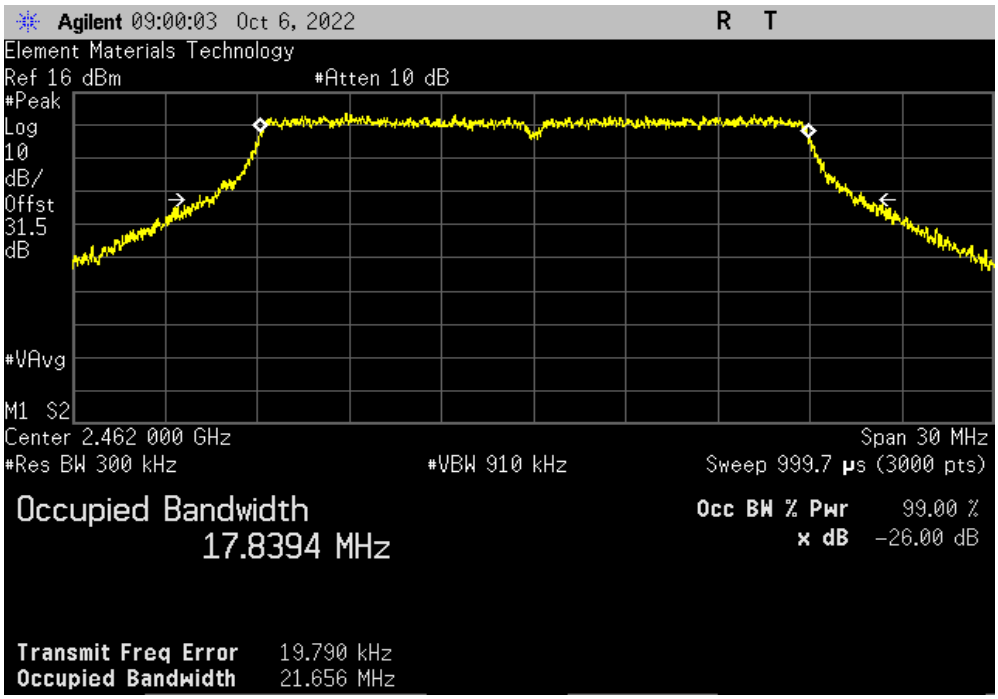


Chain 0, HT20, MCS7, Mid Channel 6, 2437 MHz							
					Value	Limit	Result
					17.852 MHz	N/A	N/A

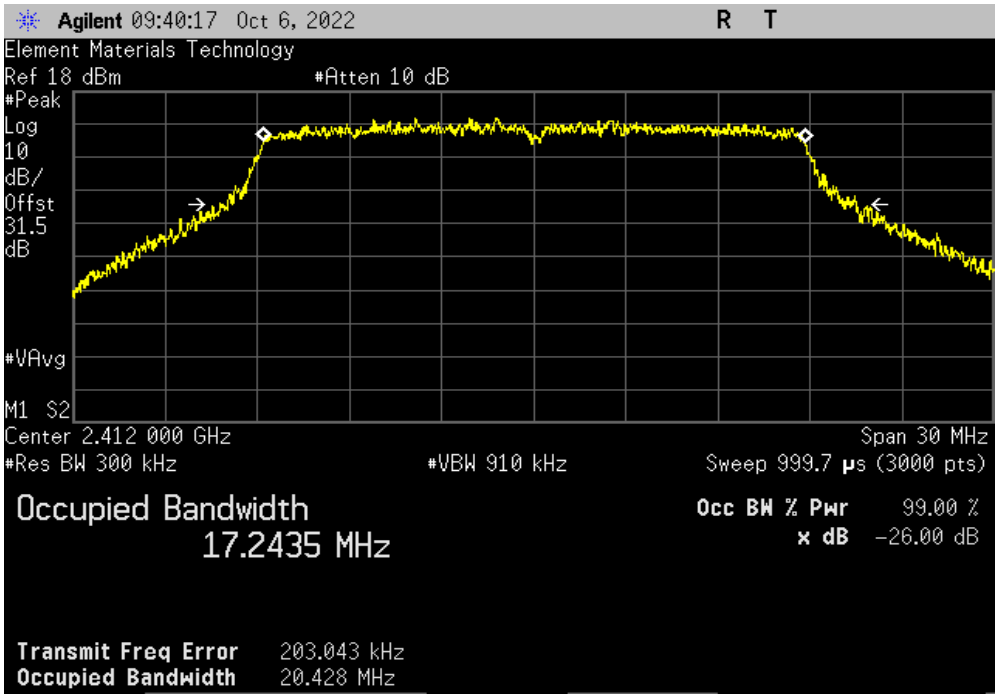


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, HT20, MCS7, High Channel 11, 2462 MHz							
					Value	Limit	Result
					17.839 MHz	N/A	N/A

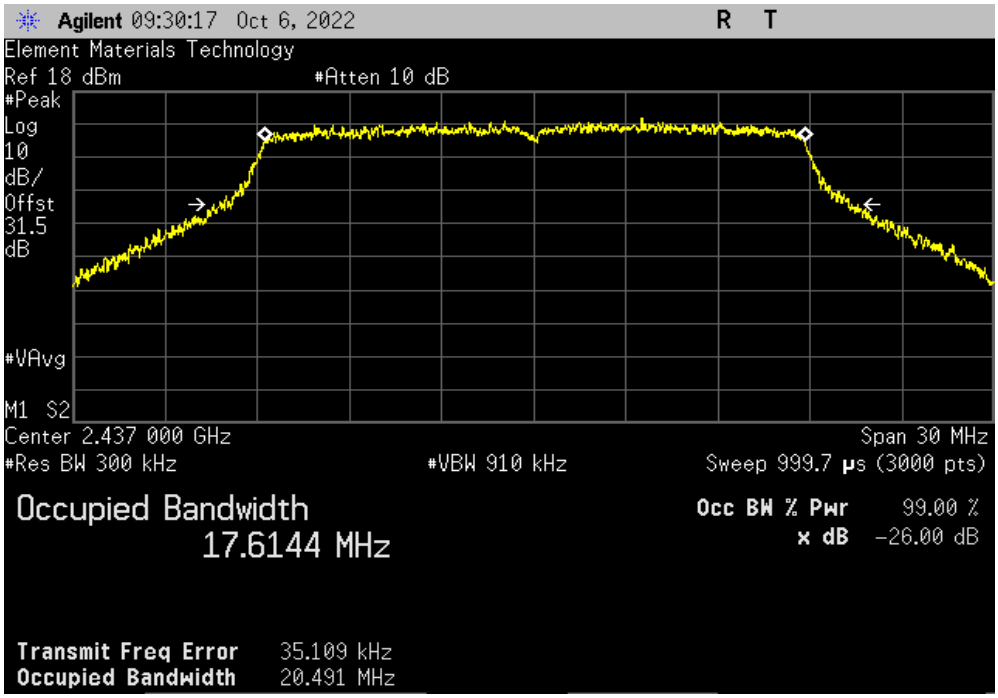


Chain 0, VHT20, MCS0, Low Channel 1, 2412 MHz							
					Value	Limit	Result
					17.243 MHz	N/A	N/A

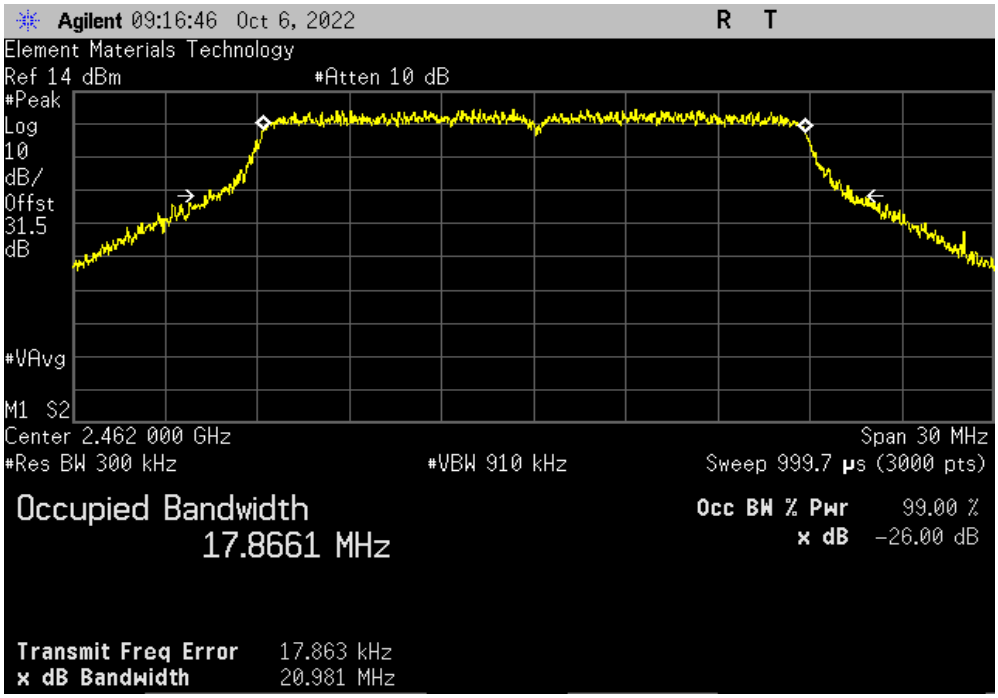


OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, VHT20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				17.614 MHz	N/A	N/A

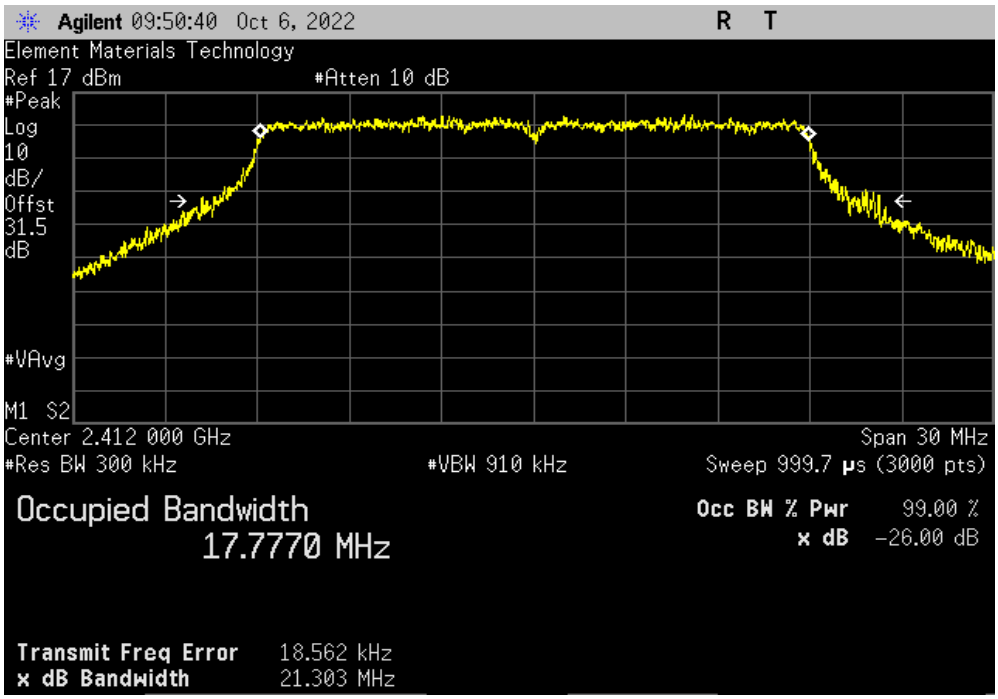


Chain 0, VHT20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit	Result
				17.866 MHz	N/A	N/A

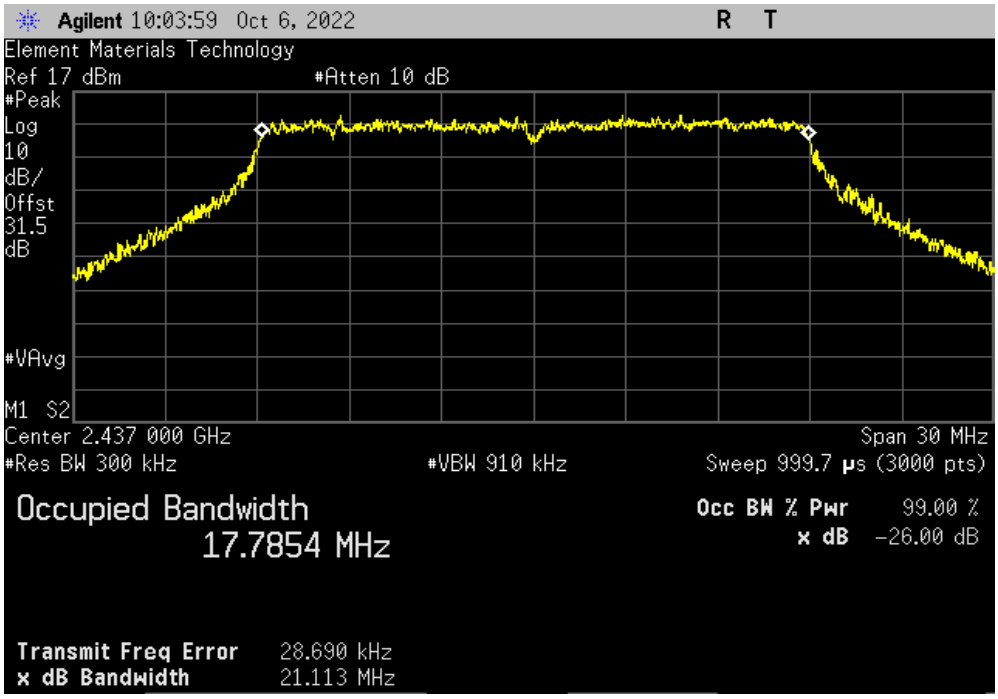


OCCUPIED BANDWIDTH - CHAIN 0

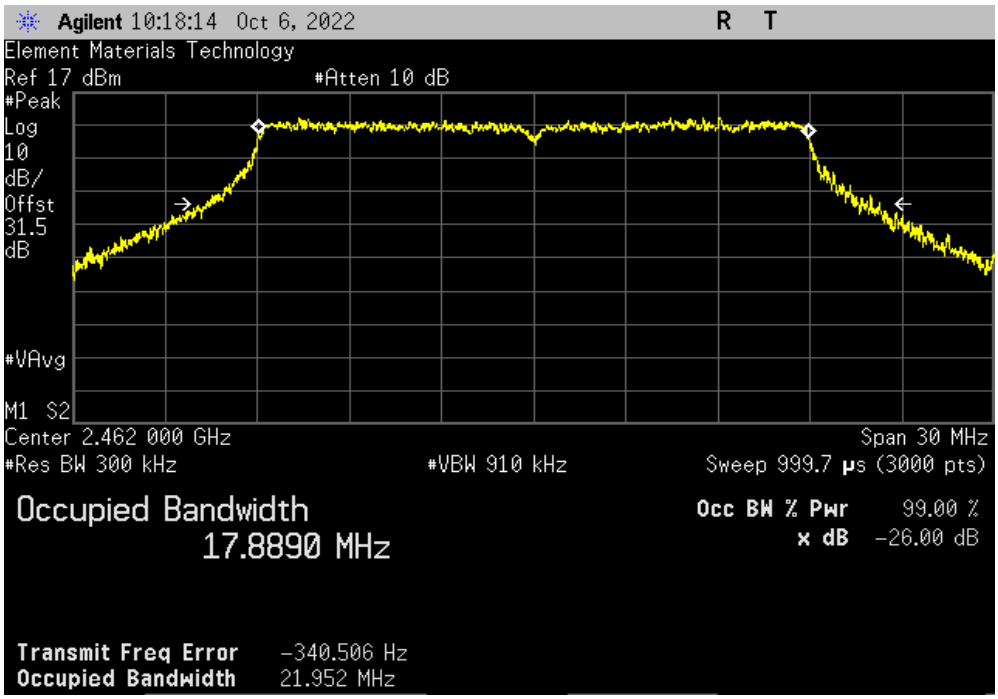
Chain 0, VHT20, MCS8, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				17.777 MHz	N/A	N/A



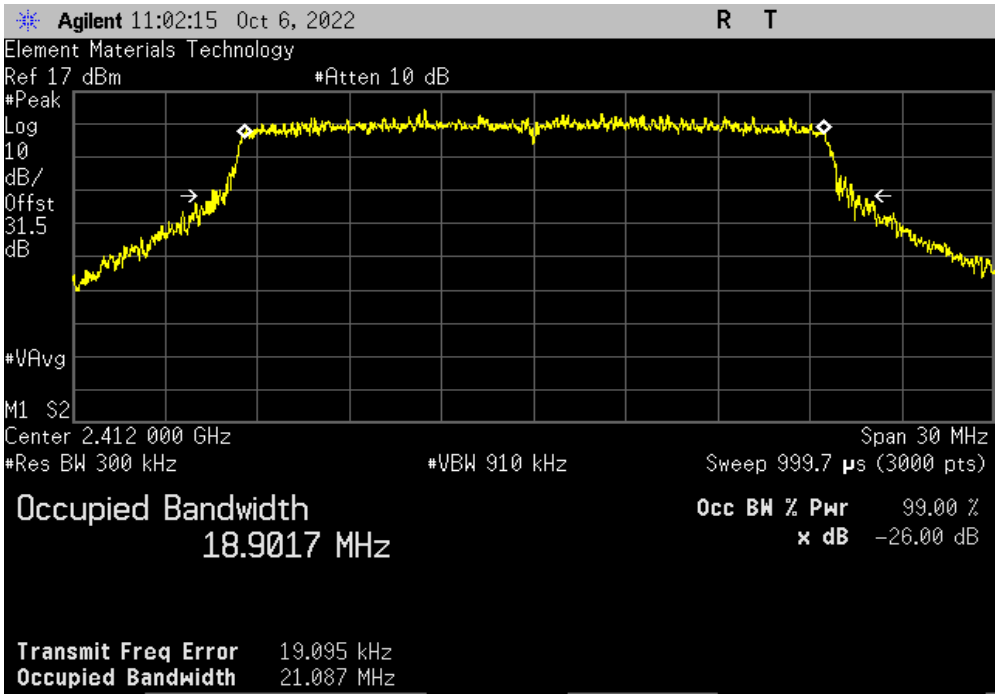
Chain 0, VHT20, MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				17.785 MHz	N/A	N/A



Chain 0, VHT20, MCS8, High Channel 11, 2462 MHz						
				Value	Limit	Result
				17.889 MHz	N/A	N/A

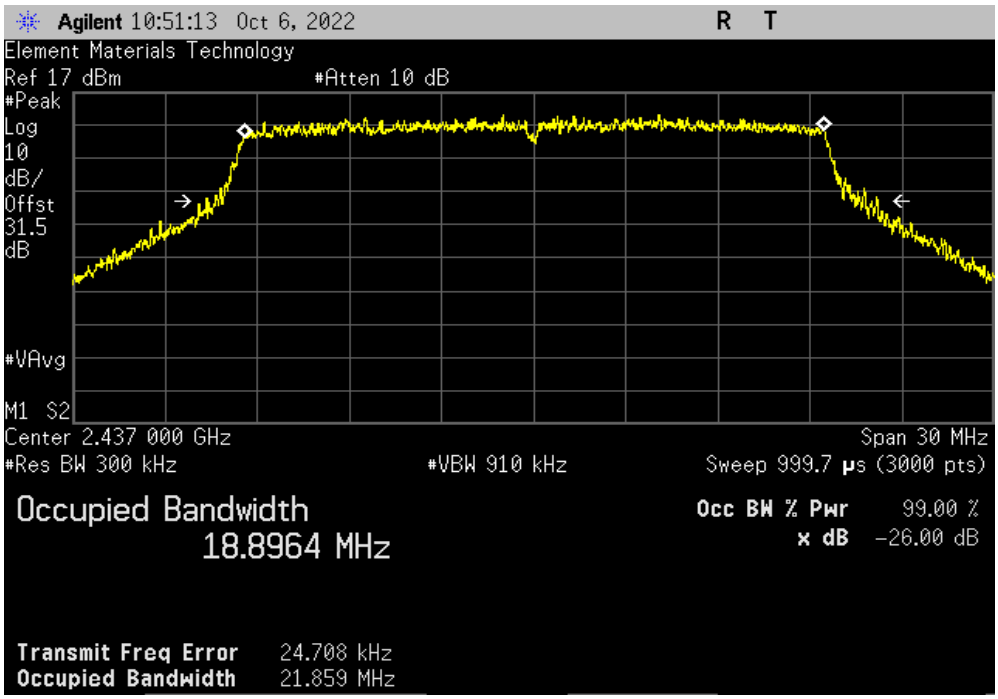


Chain 0, HE20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				18.902 MHz	N/A	N/A

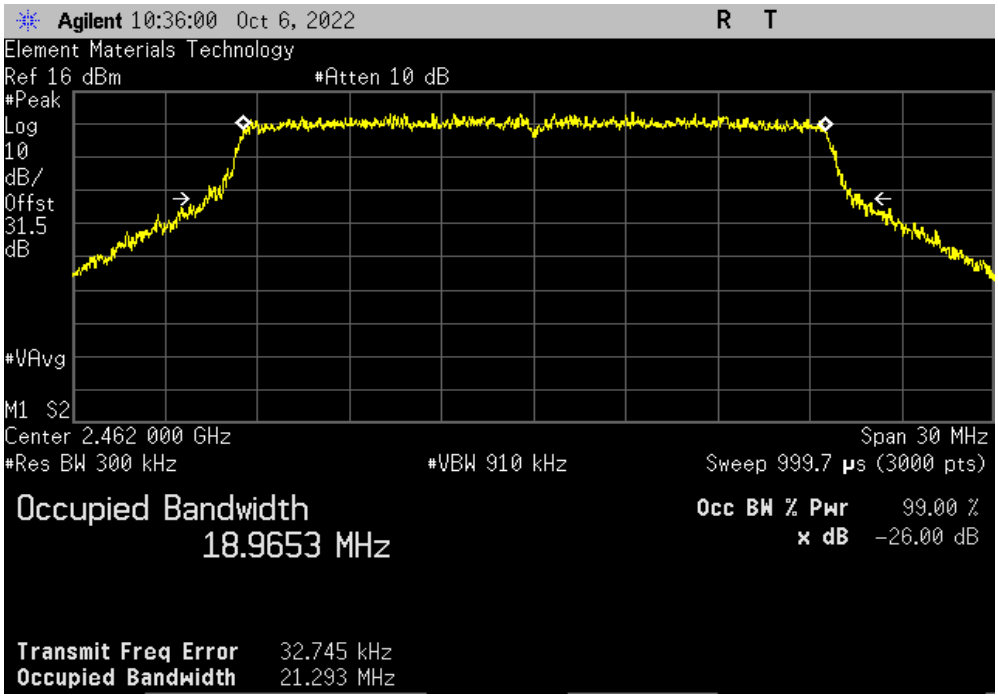


OCCUPIED BANDWIDTH - CHAIN 0

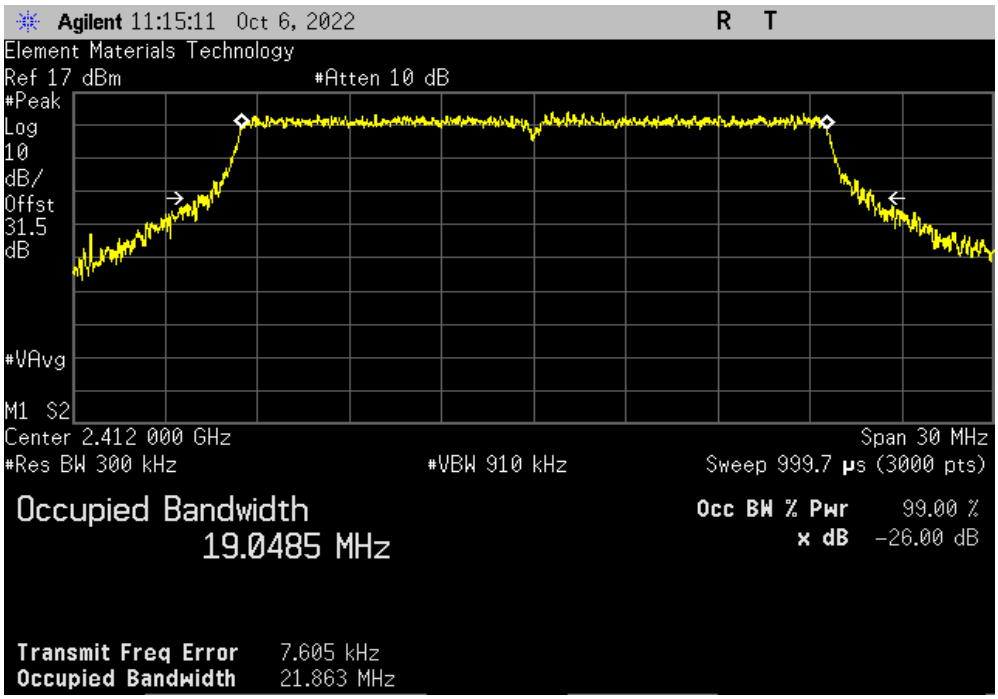
Chain 0, HE20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				18.896 MHz	N/A	N/A



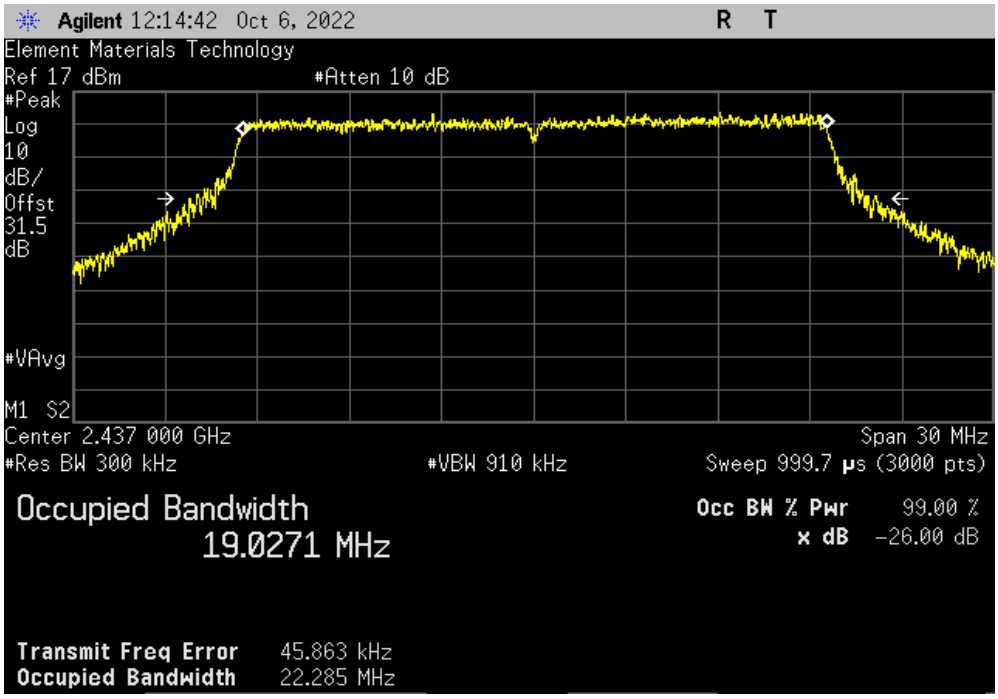
Chain 0, HE20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit	Result
				18.965 MHz	N/A	N/A



Chain 0, HE20, MCS11, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				19.048 MHz	N/A	N/A

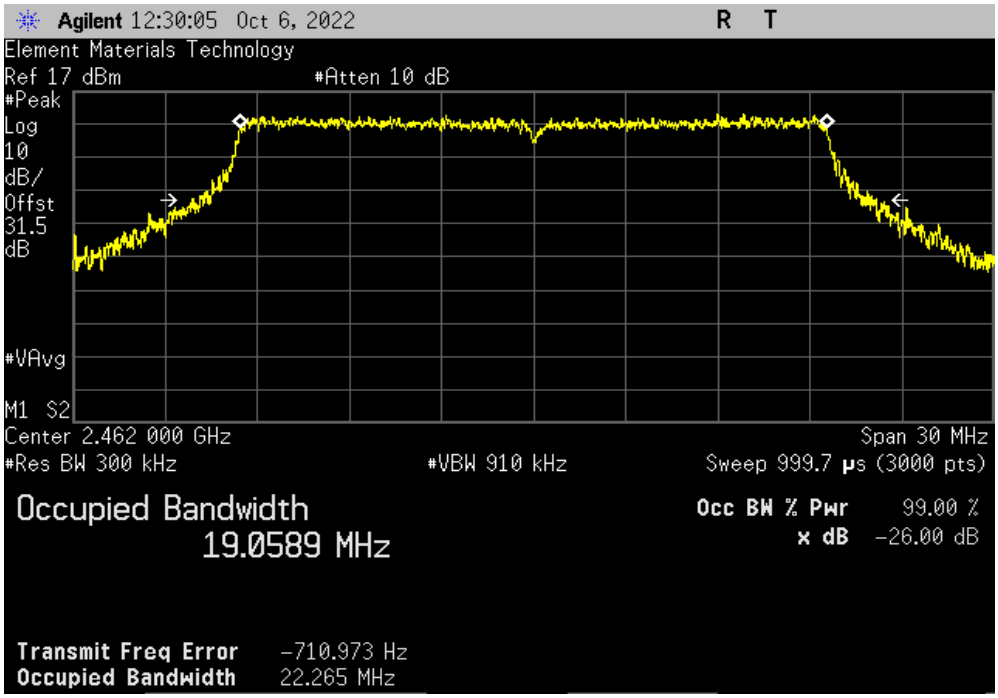


Chain 0, HE20, MCS11, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				19.027 MHz	N/A	N/A



OCCUPIED BANDWIDTH - CHAIN 0

Chain 0, HE20, MCS11, High Channel 11, 2462 MHz						
				Value	Limit	Result
				19.059 MHz	N/A	N/A



OCCUPIED BANDWIDTH - CHAIN 1

XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation.

Per ANSI C63.10:2013, 6.9.3, the spectrum analyzer was configured as follows:

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

The resolution bandwidth (RBW) of the spectrum analyzer was set to the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) bandwidth was set to at least 3 times the resolution bandwidth. The analyzer sweep time was set to auto to prevent video filtering or averaging. A sample detector was used unless the device was not able to be operated in a continuous transmit mode, in which case a peak detector was used.

The spectrum analyzer occupied bandwidth measurement function was used to sum the power of the transmission in linear terms to obtain the 99% bandwidth.

OCCUPIED BANDWIDTH - CHAIN 1

TbtTx 2022.06.03.0 XMit 2022.02.07.0

EUT:	U8 Hawk			**Work Order:**	KYME0068
Serial Number:	192F-85E2-1761			**Date:**	7-Oct-22
Customer:	Kymeta Corp.			**Temperature:**	22.6 °C
Attendees:	Dean Busch			**Humidity:**	43.2% RH
Project:	None			**Barometric Pres.:**	1025 mbar
Tested by:	Jeff Alcoke	**Power:**	12 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2022	ANSI C63.10:2013
RSS-Gen Issue 5:2018+A1:2019+A2:2021	ANSI C63.10:2013

COMMENTS

Reference level offset includes: DC Block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

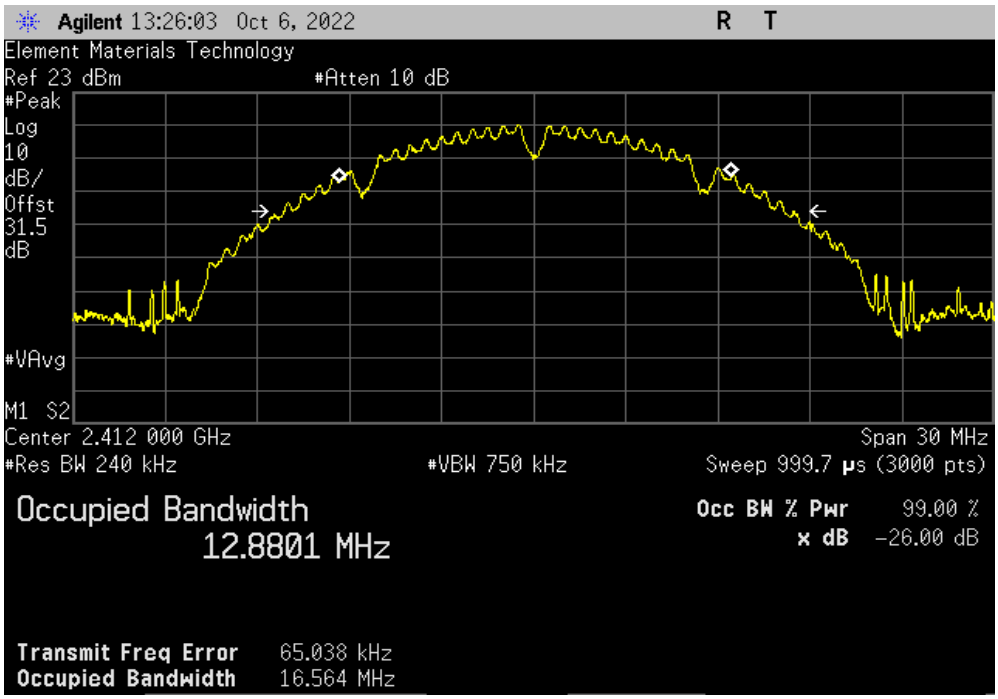
None

Configuration #	1	*Signature*

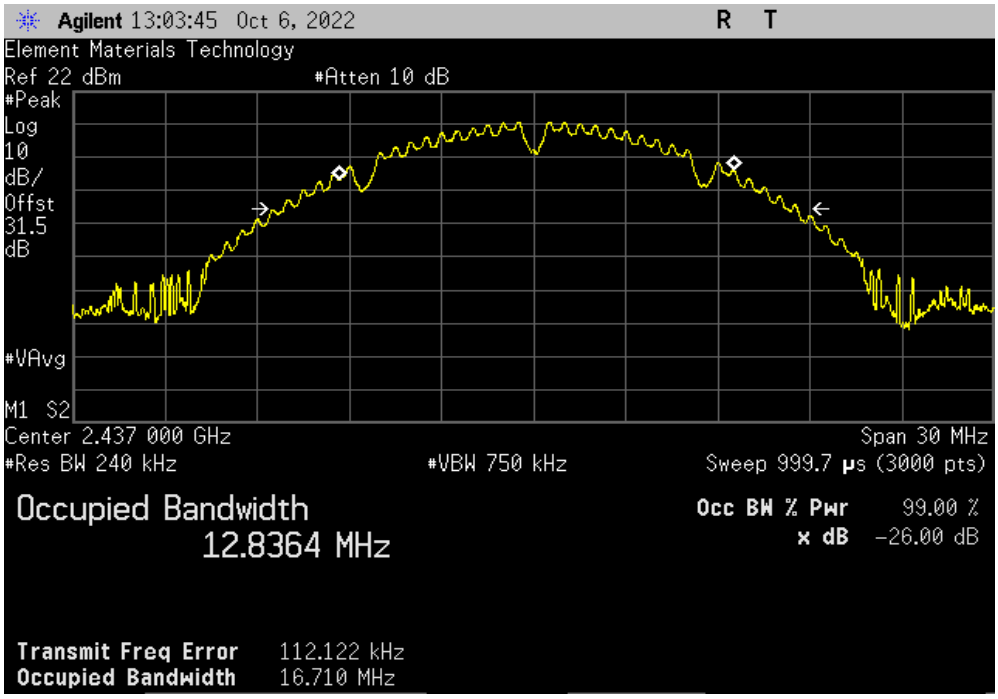
		Value	Limit	Result
Chain 1				
	CCK, 1 Mbps			
	Low Channel 1, 2412 MHz	12.88 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	12.836 MHz	N/A	N/A
	High Channel 11, 2462 MHz	13.022 MHz	N/A	N/A
	CCK, 11 Mbps			
	Low Channel 1, 2412 MHz	12.722 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	12.81 MHz	N/A	N/A
	High Channel 11, 2462 MHz	12.942 MHz	N/A	N/A
	Legacy OFDM, 6 Mbps			
	Low Channel 1, 2412 MHz	16.403 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	16.411 MHz	N/A	N/A
	High Channel 11, 2462 MHz	16.488 MHz	N/A	N/A
	Legacy OFDM, 36 Mbps			
	Low Channel 1, 2412 MHz	16.617 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	16.671 MHz	N/A	N/A
	High Channel 11, 2462 MHz	16.708 MHz	N/A	N/A
	Legacy OFDM, 54 Mbps			
	Low Channel 1, 2412 MHz	16.588 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	16.641 MHz	N/A	N/A
	High Channel 11, 2462 MHz	16.629 MHz	N/A	N/A
	HT20, MCS0			
	Low Channel 1, 2412 MHz	17.602 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.353 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.637 MHz	N/A	N/A
	HT20, MCS7			
	Low Channel 1, 2412 MHz	17.784 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.779 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.886 MHz	N/A	N/A
	VHT20, MCS0			
	Low Channel 1, 2412 MHz	17.544 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.418 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.399 MHz	N/A	N/A
	VHT20, MCS8			
	Low Channel 1, 2412 MHz	17.757 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.794 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.863 MHz	N/A	N/A
	HE20, MCS0			
	Low Channel 1, 2412 MHz	18.901 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	18.916 MHz	N/A	N/A
	High Channel 11, 2462 MHz	18.922 MHz	N/A	N/A
	HE20, MCS11			
	Low Channel 1, 2412 MHz	19.024 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	19.005 MHz	N/A	N/A
	High Channel 11, 2462 MHz	19.034 MHz	N/A	N/A

OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, CCK, 1 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit	Result
					12.88 MHz	N/A	N/A

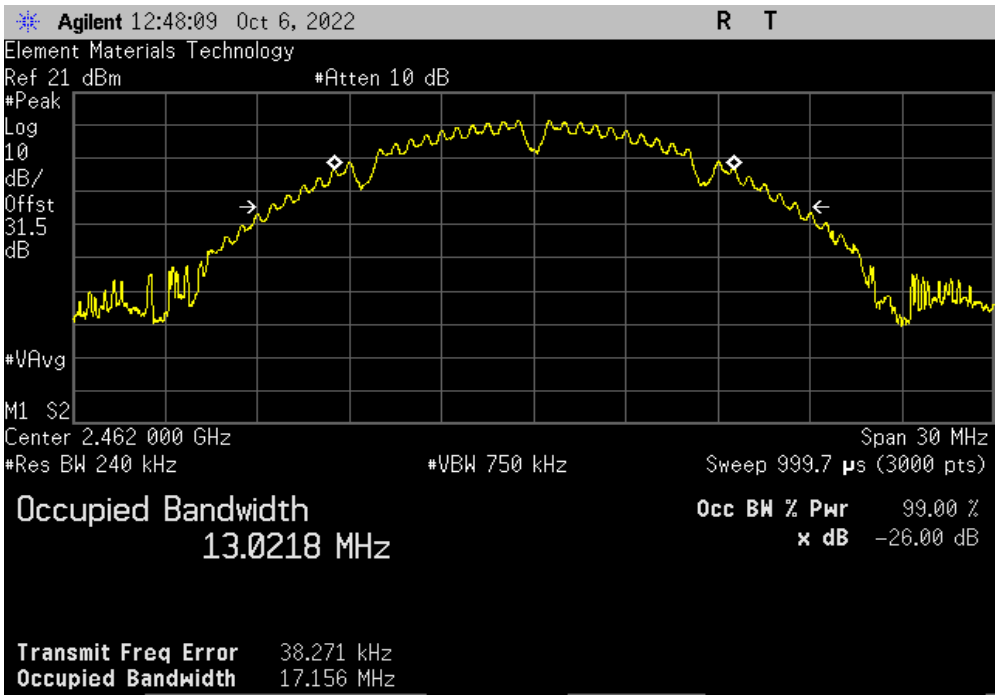


Chain 1, CCK, 1 Mbps, Mid Channel 6, 2437 MHz							
					Value	Limit	Result
					12.836 MHz	N/A	N/A

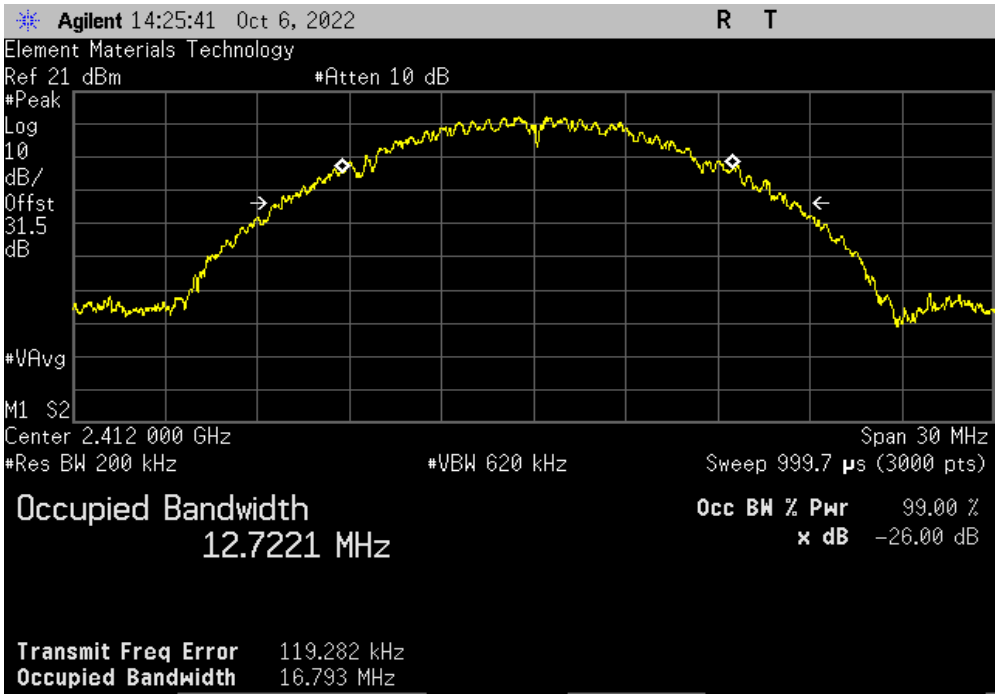


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, CCK, 1 Mbps, High Channel 11, 2462 MHz							
					Value	Limit	Result
					13.022 MHz	N/A	N/A

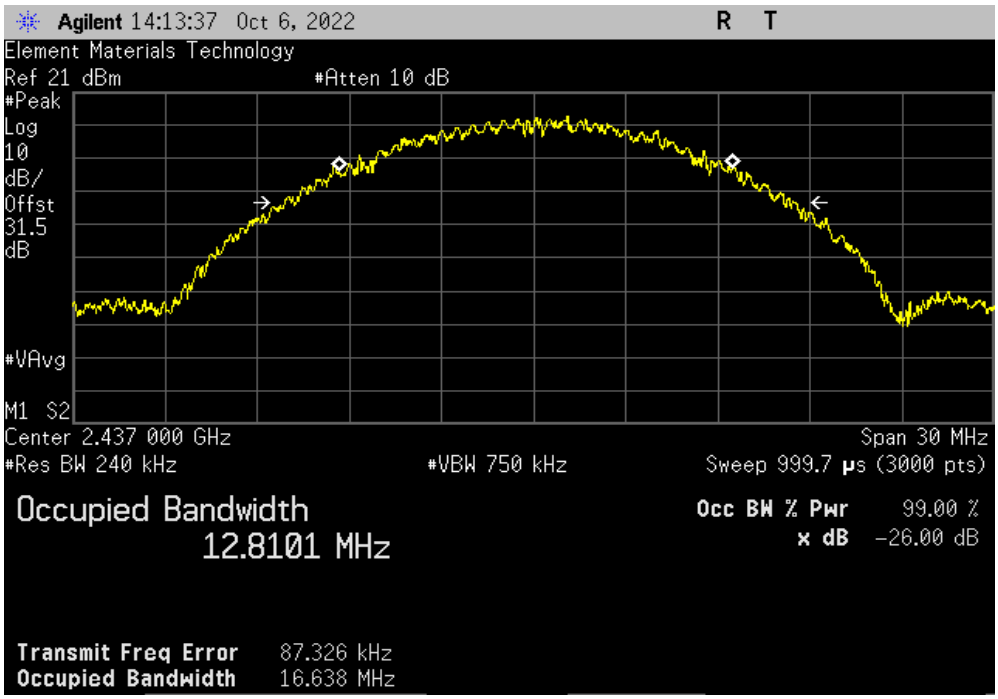


Chain 1, CCK, 11 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit	Result
					12.722 MHz	N/A	N/A

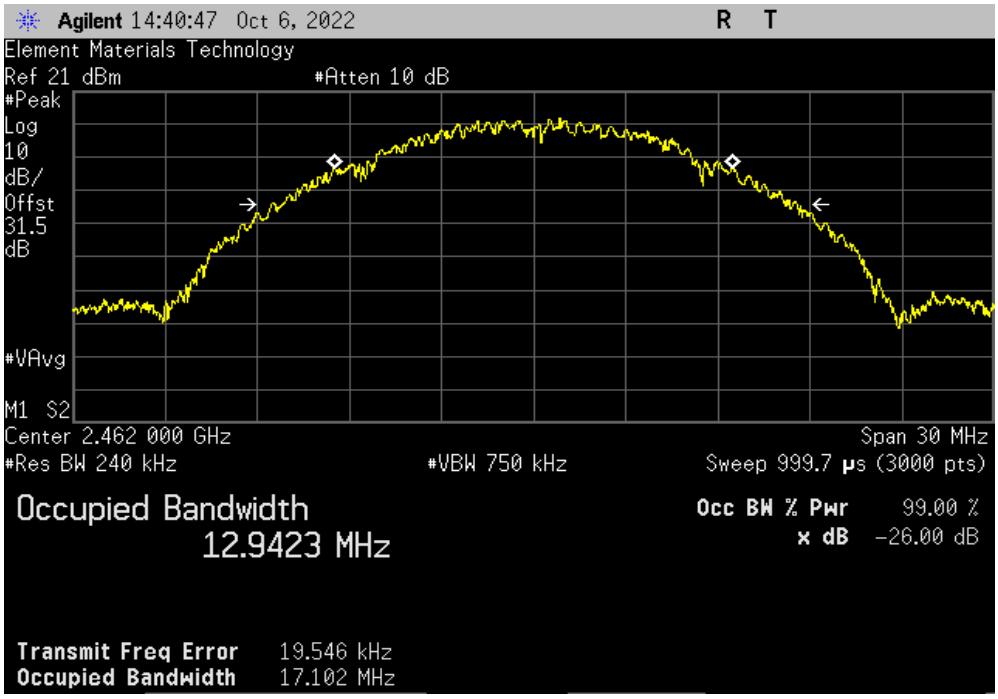


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, CCK, 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				12.81 MHz	N/A	N/A

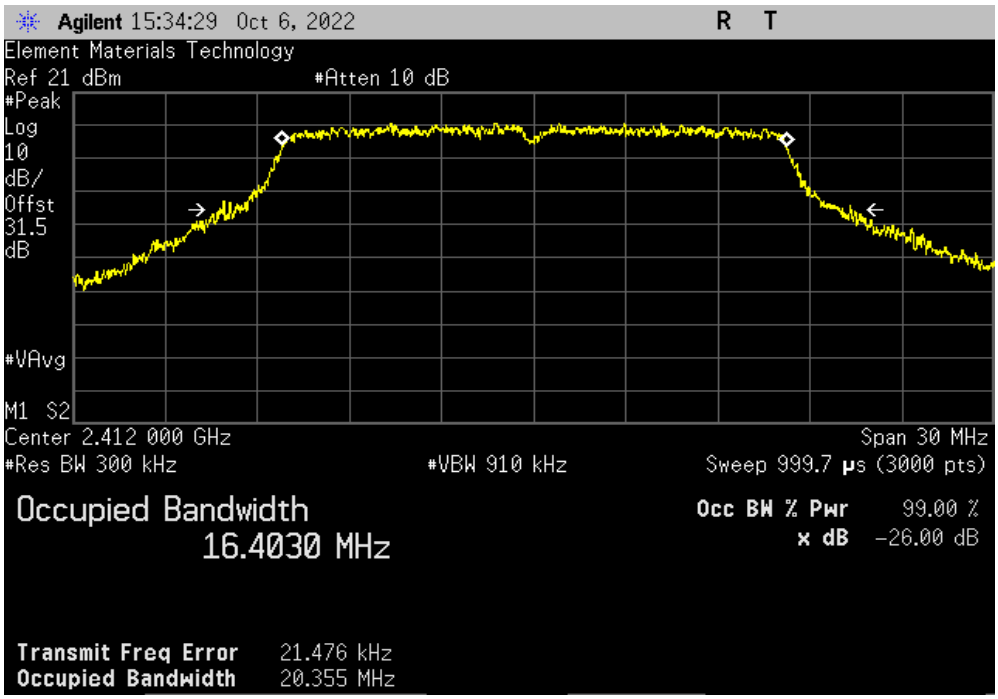


Chain 1, CCK, 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit	Result
				12.942 MHz	N/A	N/A

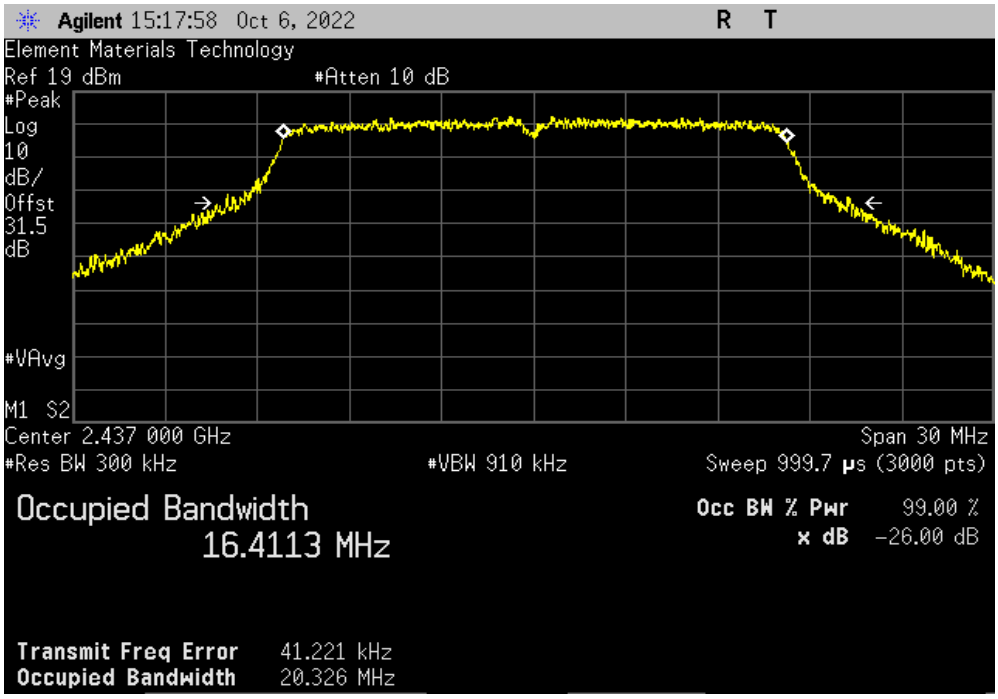


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				16.403 MHz	N/A	N/A

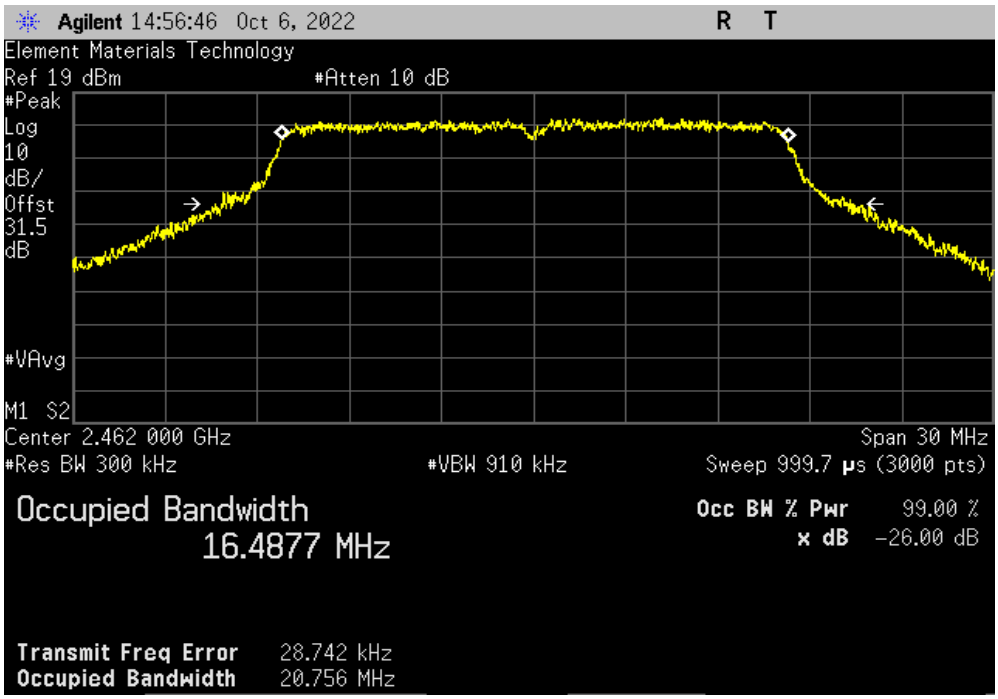


Chain 1, Legacy OFDM, 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				16.411 MHz	N/A	N/A



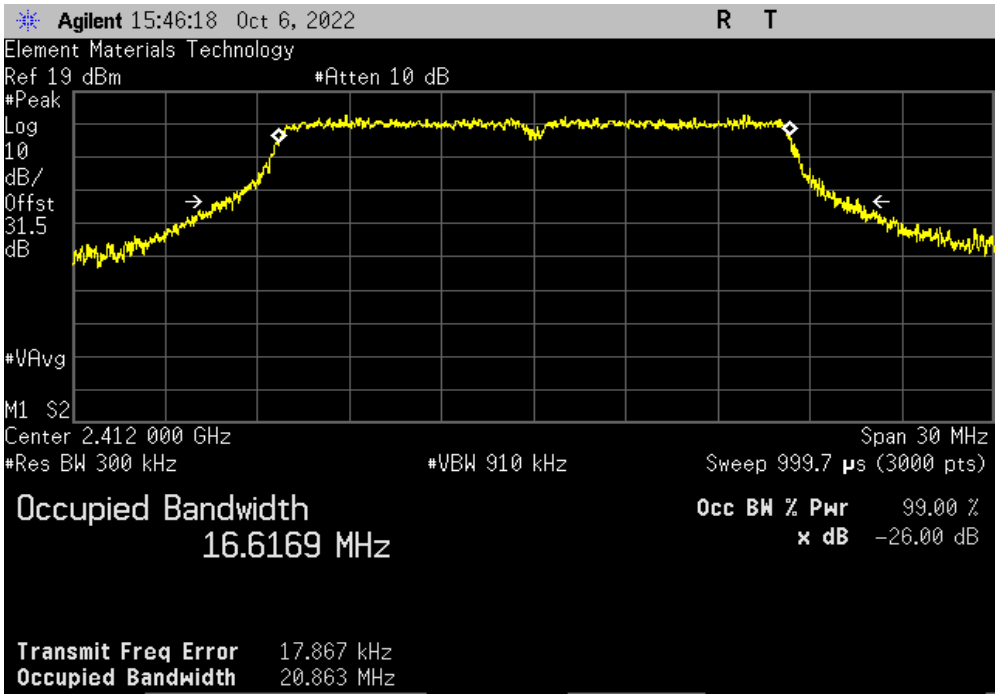
Chain 1, Legacy OFDM, 6 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.488 MHz	N/A	N/A



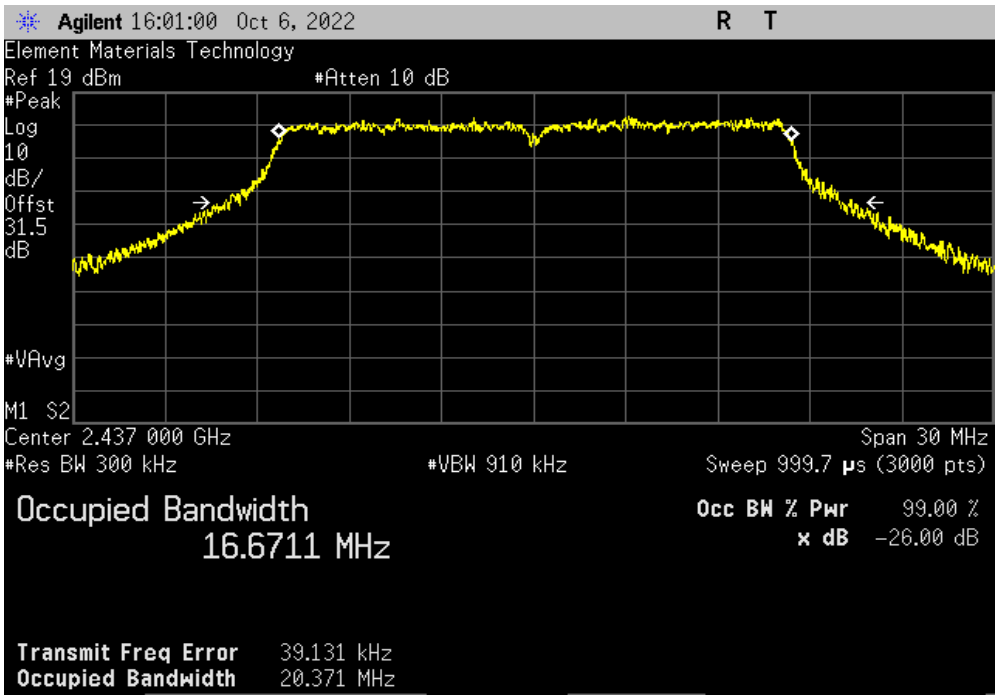
Chain 1, Legacy OFDM, 36 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				16.617 MHz	N/A	N/A

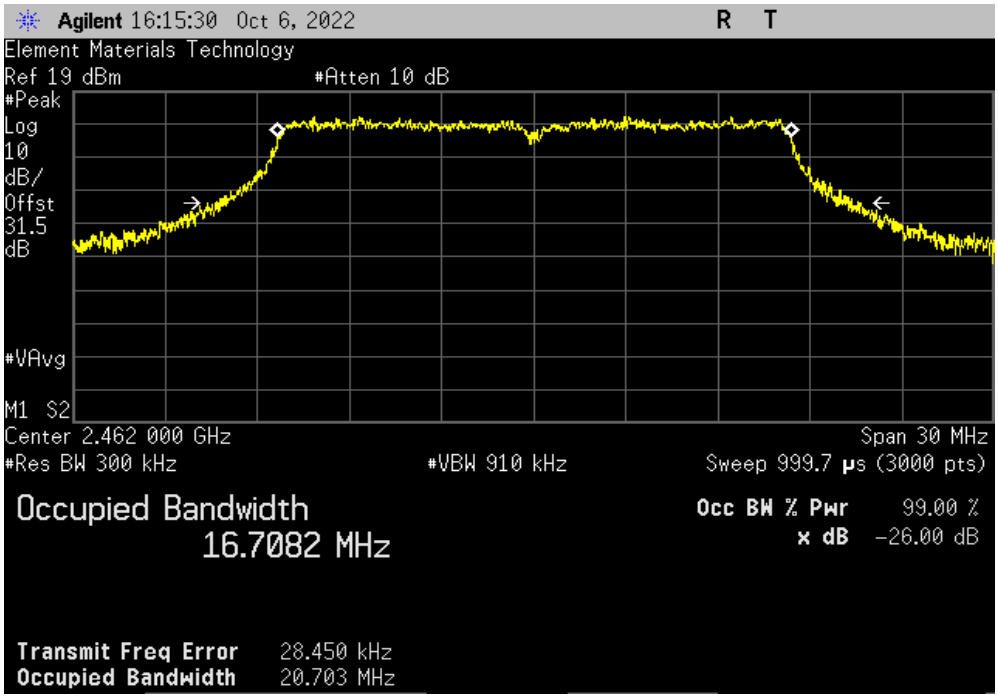


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				16.671 MHz	N/A	N/A

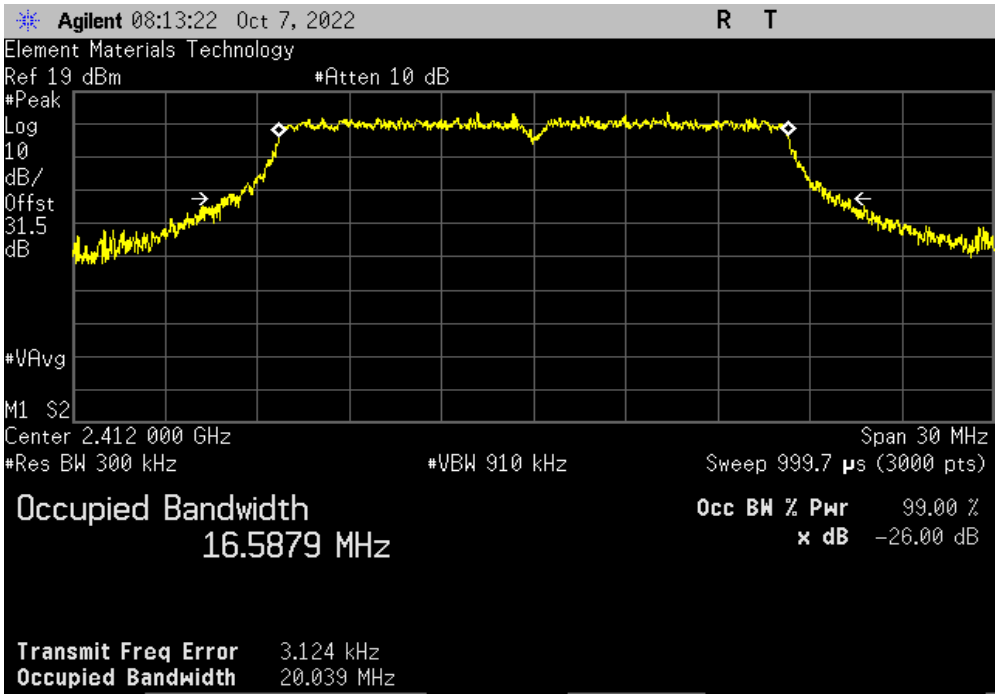


Chain 1, Legacy OFDM, 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit	Result
				16.708 MHz	N/A	N/A

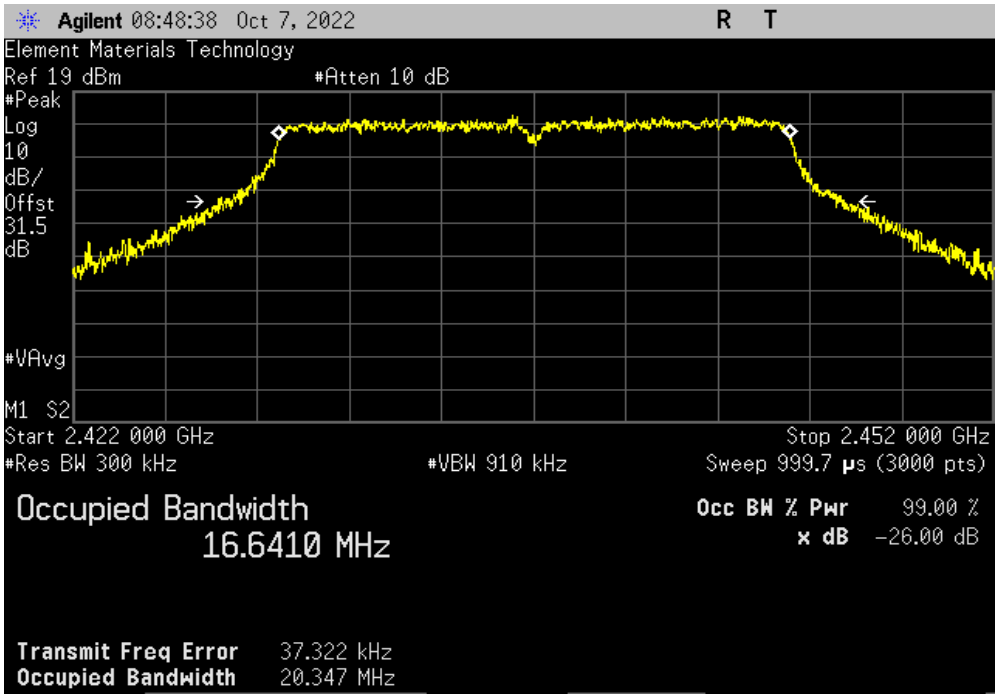


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				16.588 MHz	N/A	N/A

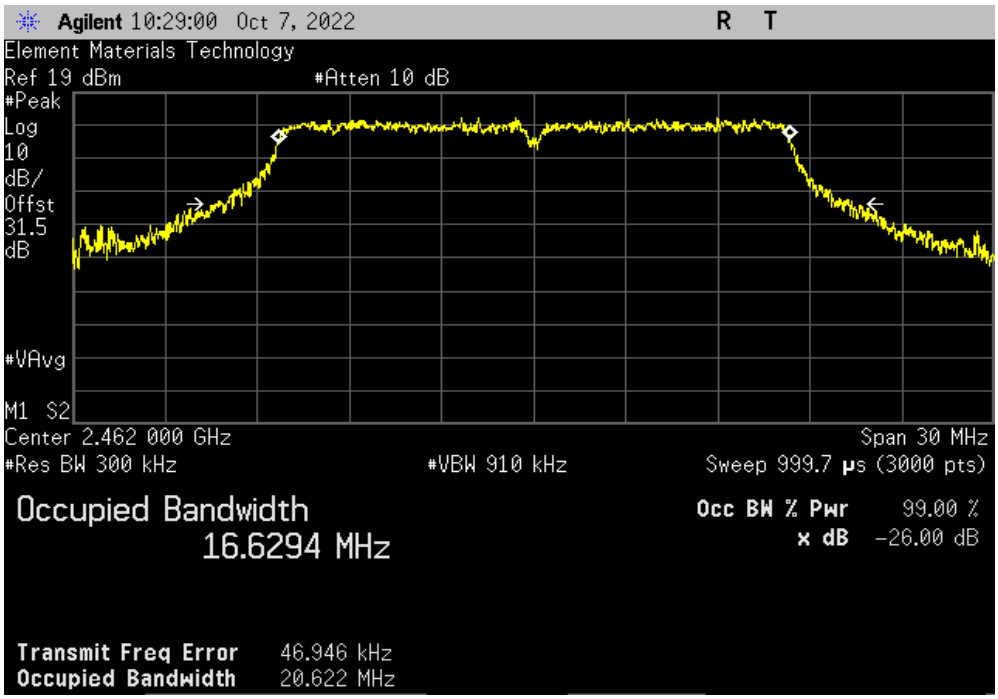


Chain 1, Legacy OFDM, 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				16.641 MHz	N/A	N/A

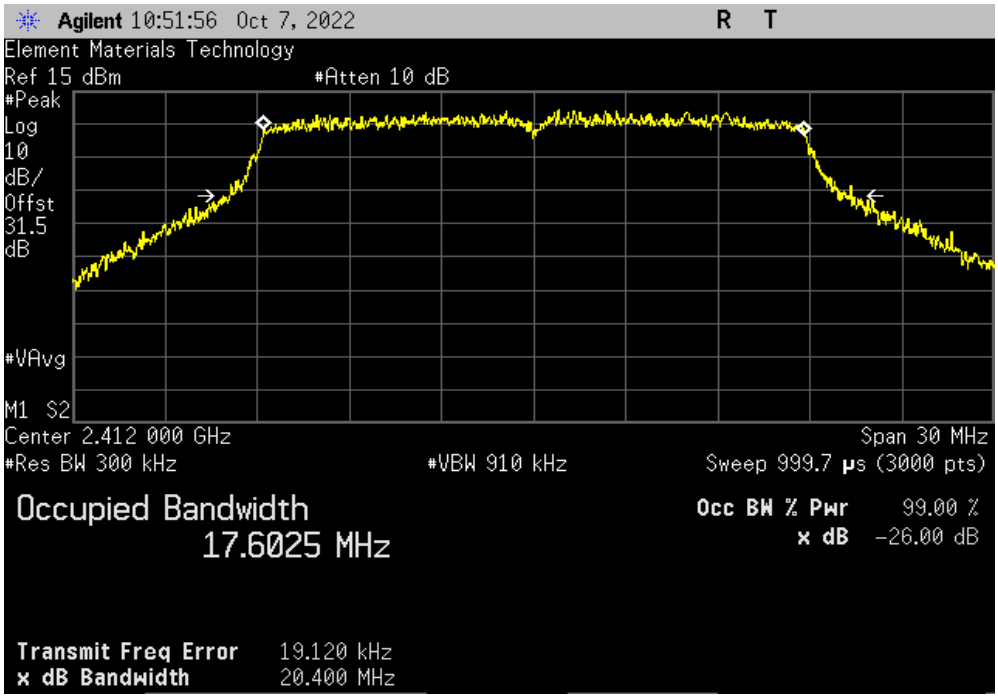


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, Legacy OFDM, 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit	Result
				16.629 MHz	N/A	N/A

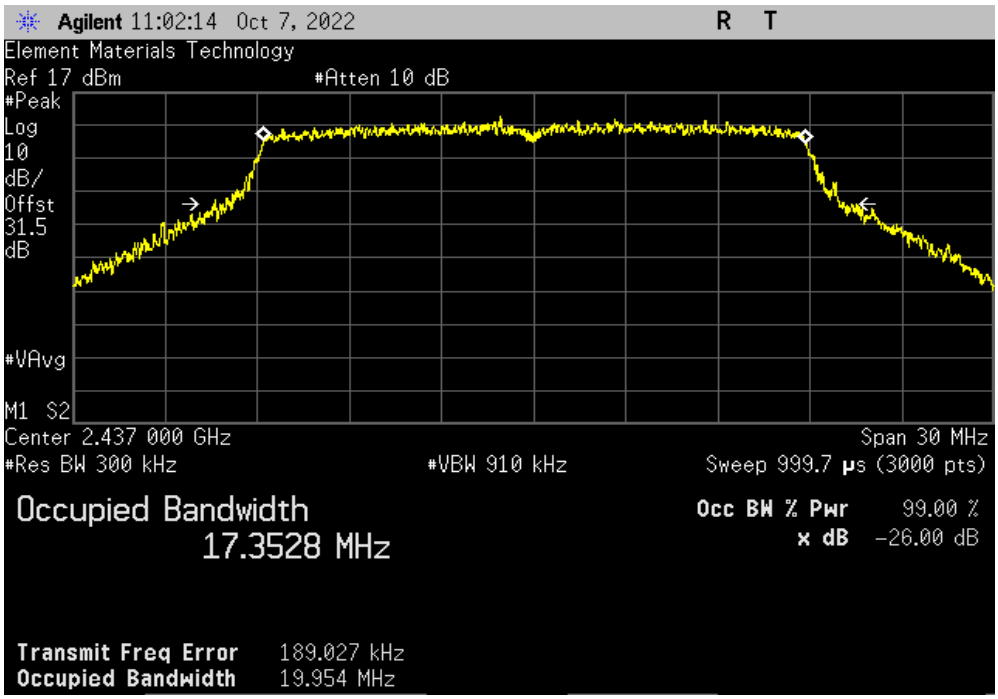


Chain 1, HT20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				17.602 MHz	N/A	N/A

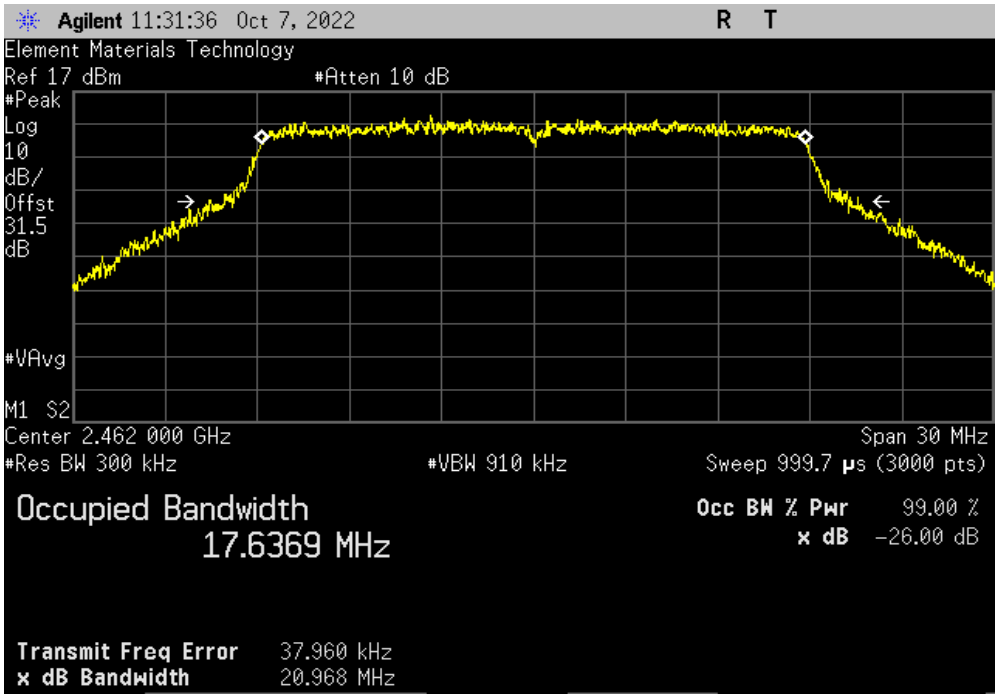


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, HT20, MCS0, Mid Channel 6, 2437 MHz							
					Value	Limit	Result
					17.353 MHz	N/A	N/A

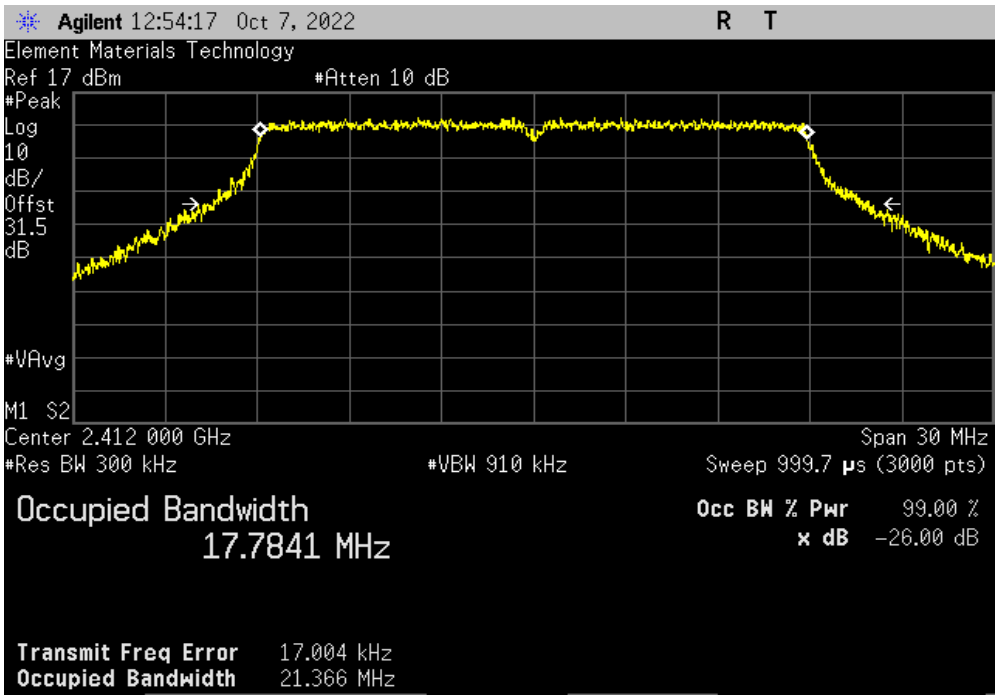


Chain 1, HT20, MCS0, High Channel 11, 2462 MHz							
					Value	Limit	Result
					17.637 MHz	N/A	N/A

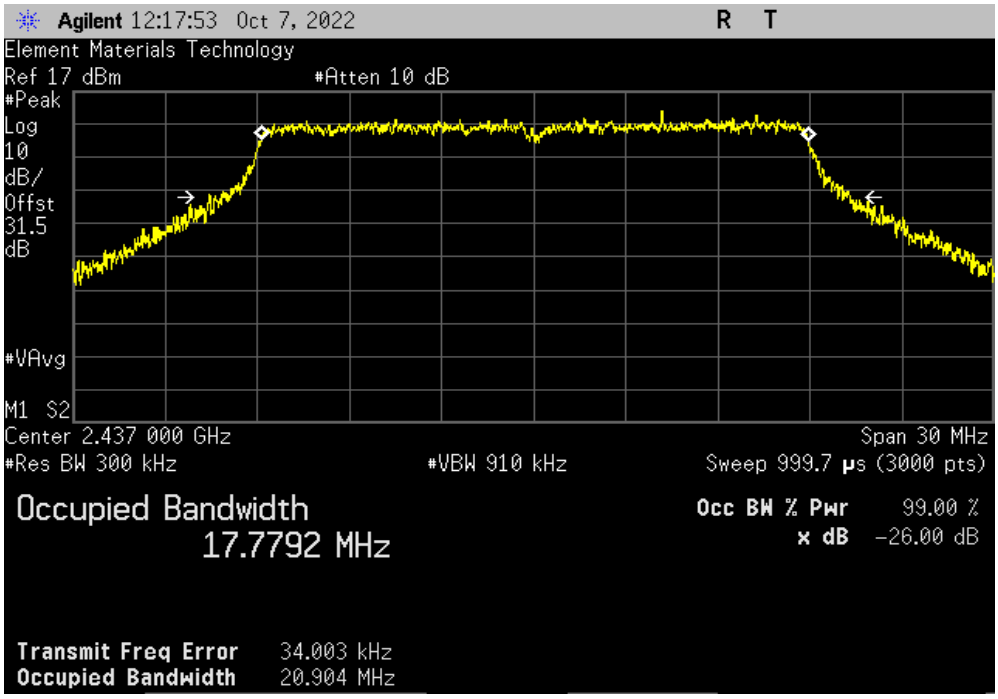


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, HT20, MCS7, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				17.784 MHz	N/A	N/A

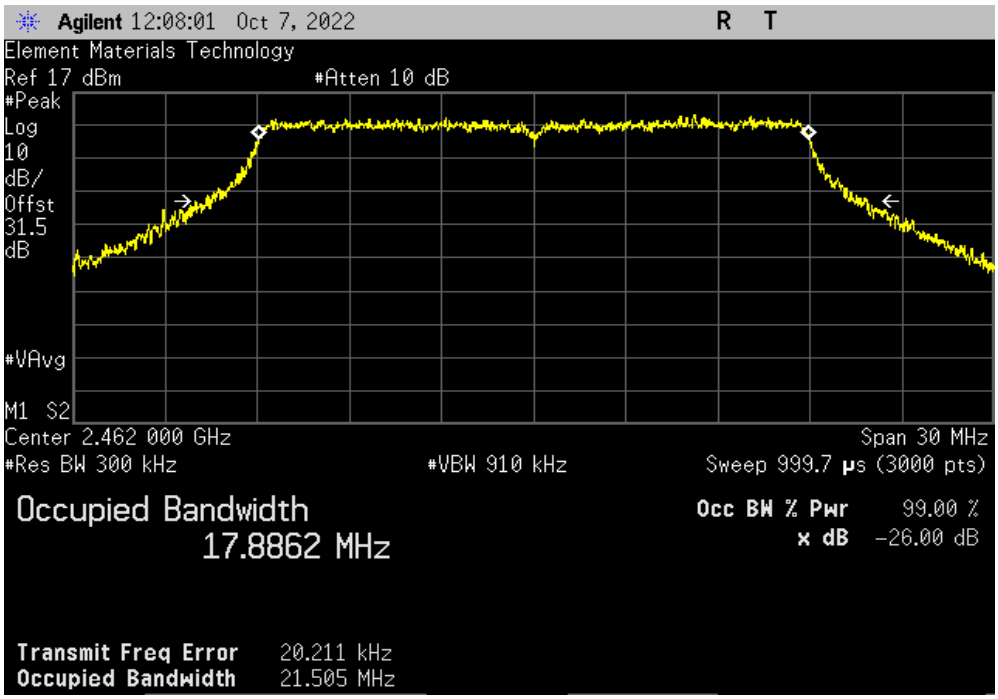


Chain 1, HT20, MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				17.779 MHz	N/A	N/A

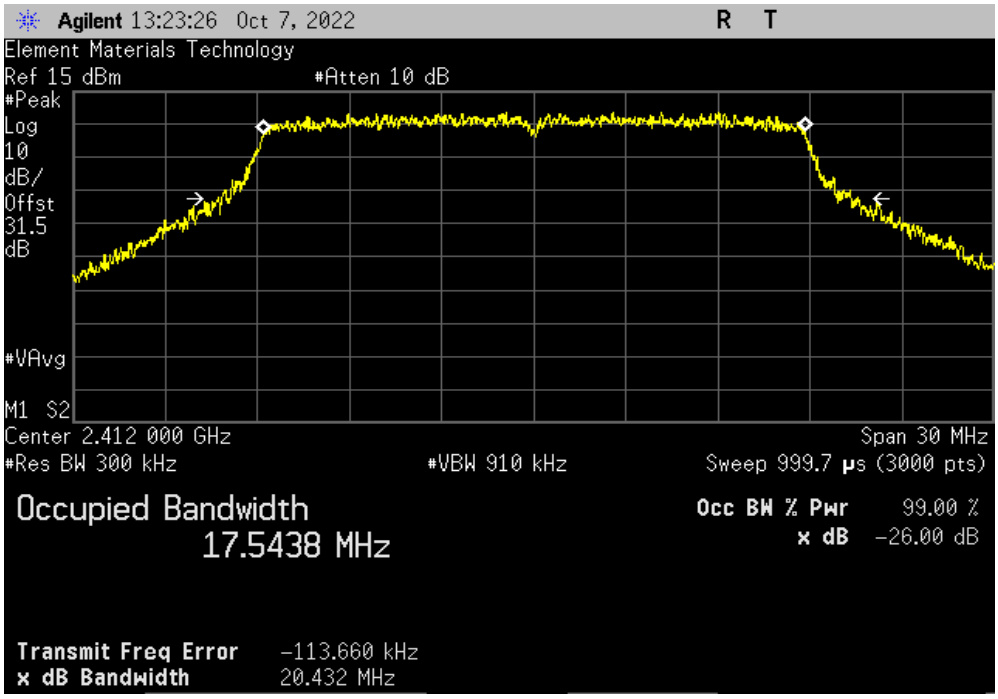


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, HT20, MCS7, High Channel 11, 2462 MHz						
				Value	Limit	Result
				17.886 MHz	N/A	N/A

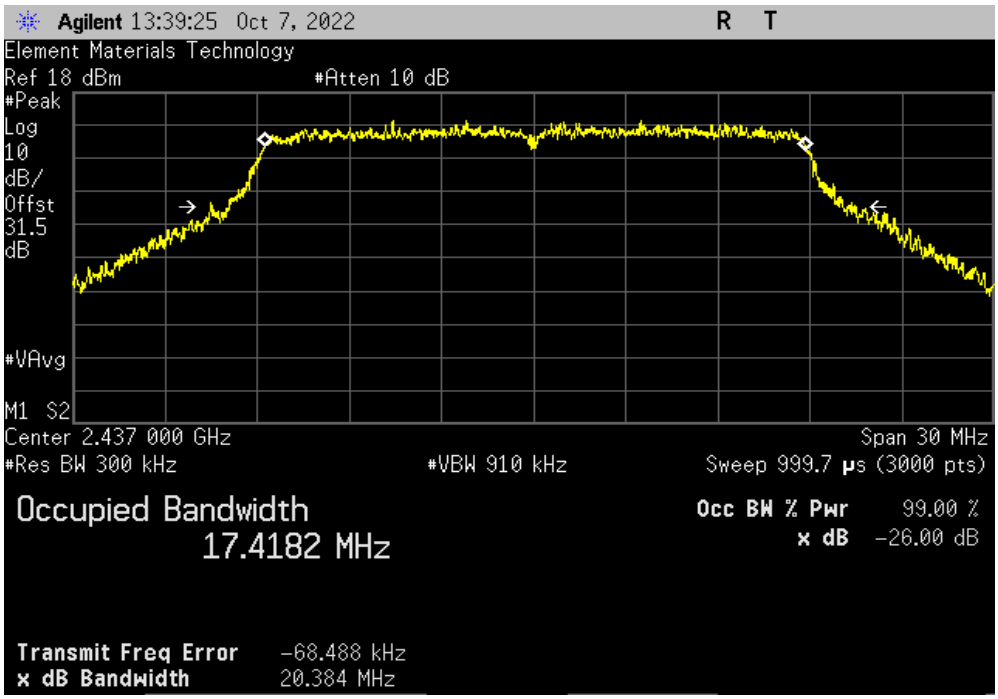


Chain 1, VHT20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				17.544 MHz	N/A	N/A

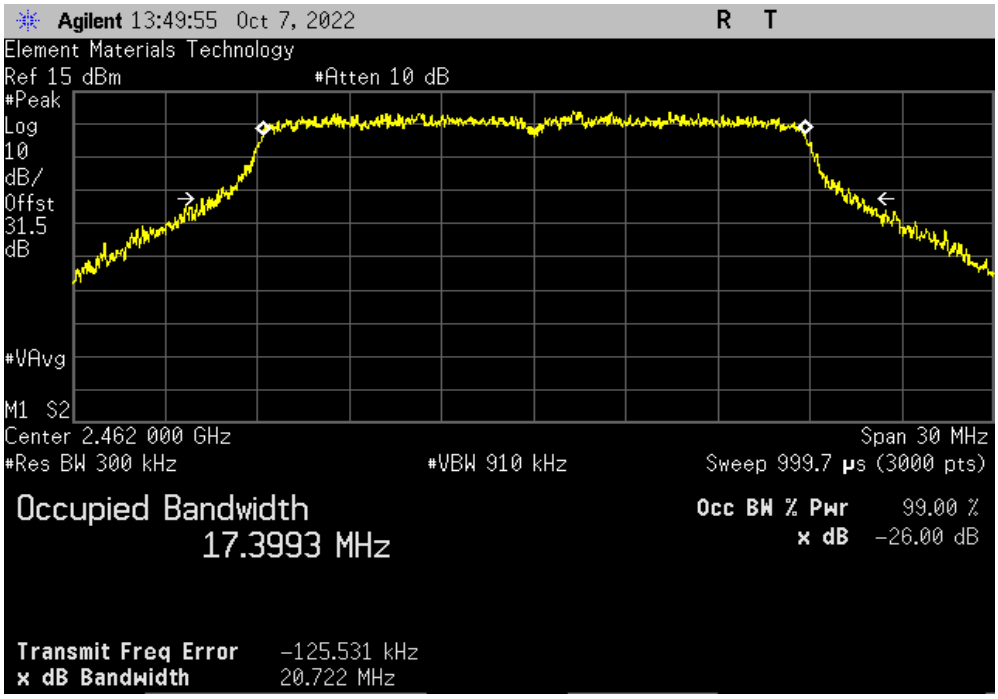


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, VHT20, MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				17.418 MHz	N/A	N/A

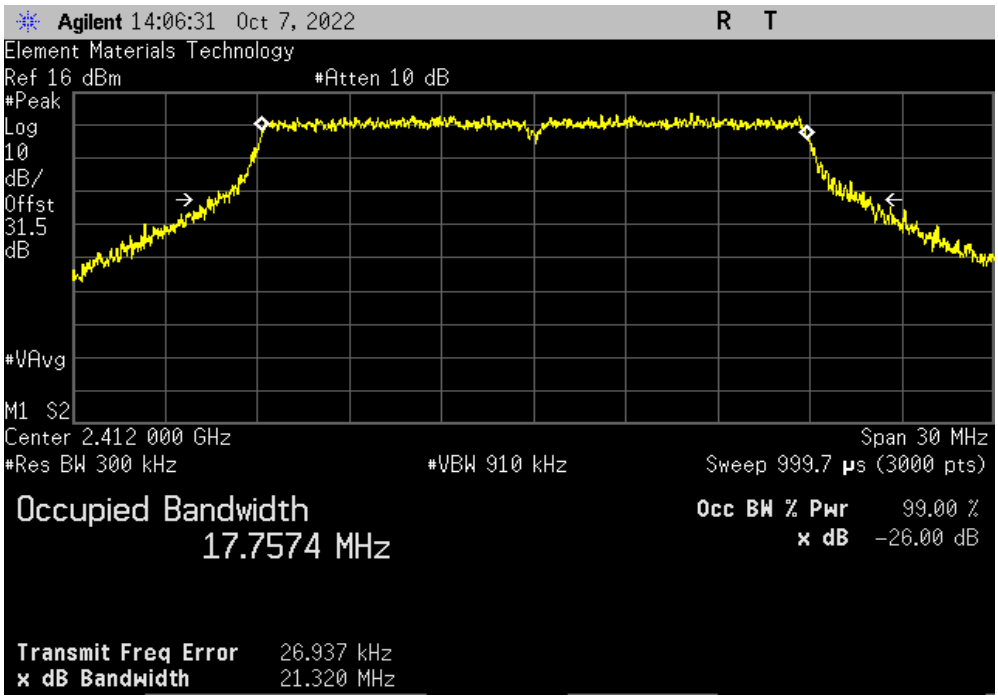


Chain 1, VHT20, MCS0, High Channel 11, 2462 MHz						
				Value	Limit	Result
				17.399 MHz	N/A	N/A

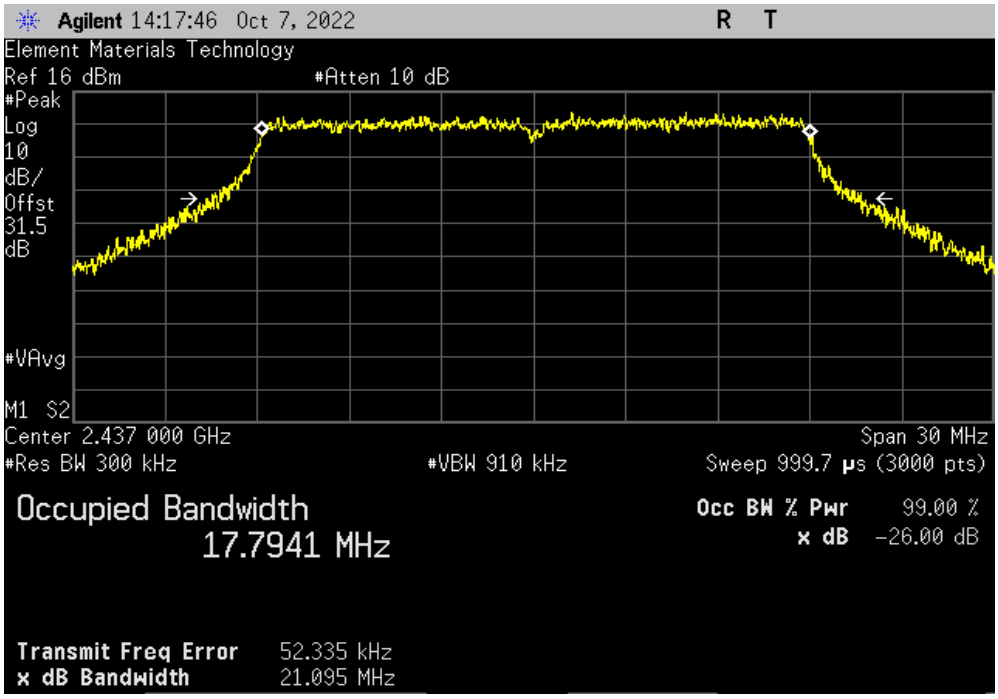


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, VHT20, MCS8, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				17.757 MHz	N/A	N/A

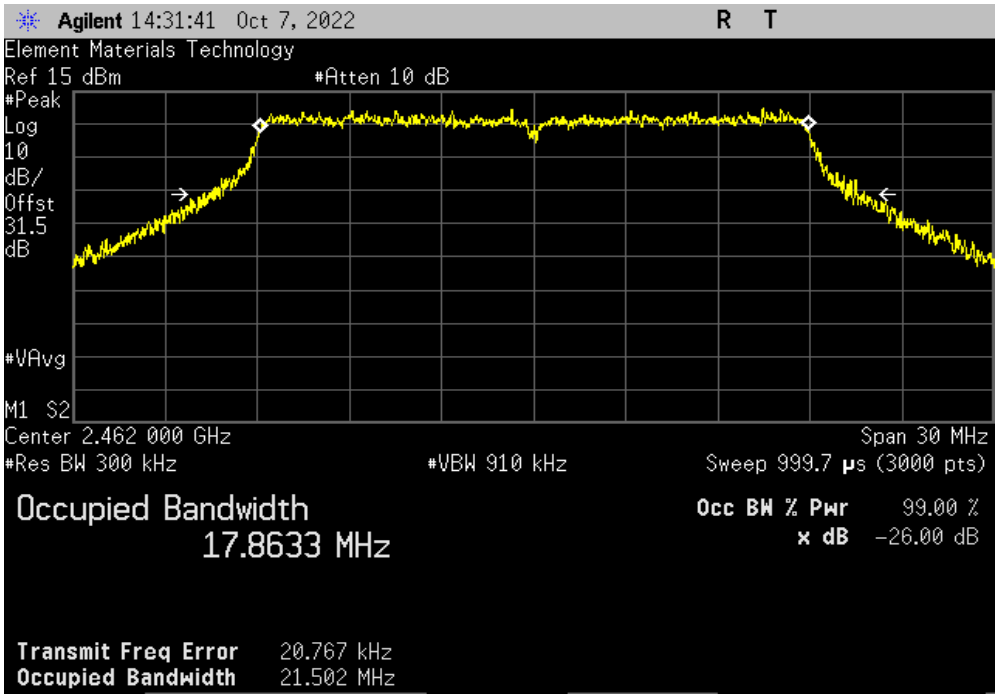


Chain 1, VHT20, MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				17.794 MHz	N/A	N/A

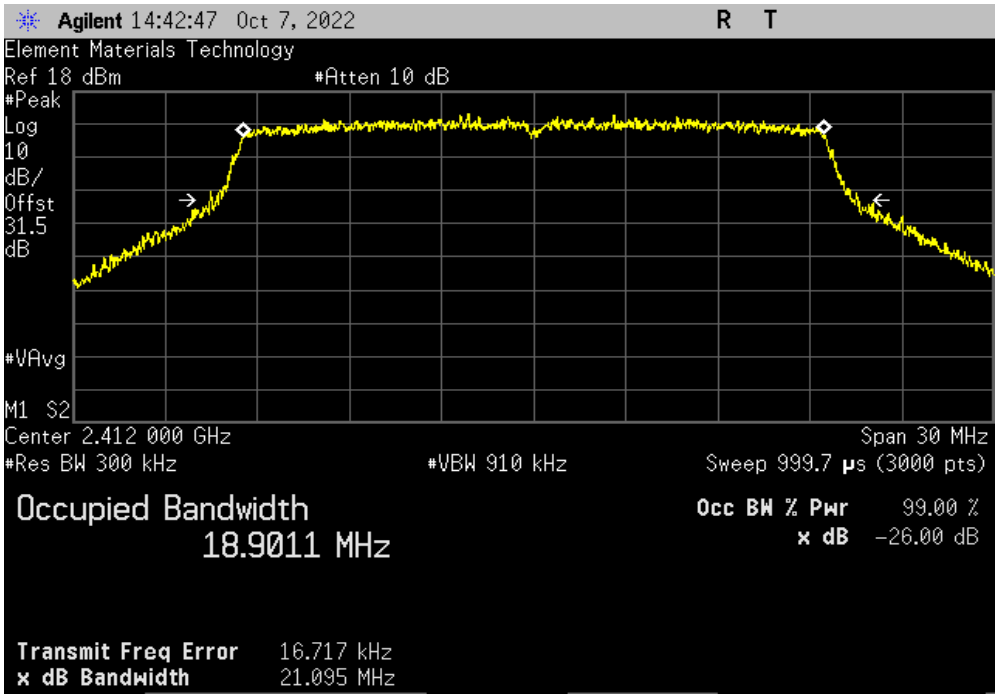


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, VHT20, MCS8, High Channel 11, 2462 MHz						
				Value	Limit	Result
				17.863 MHz	N/A	N/A

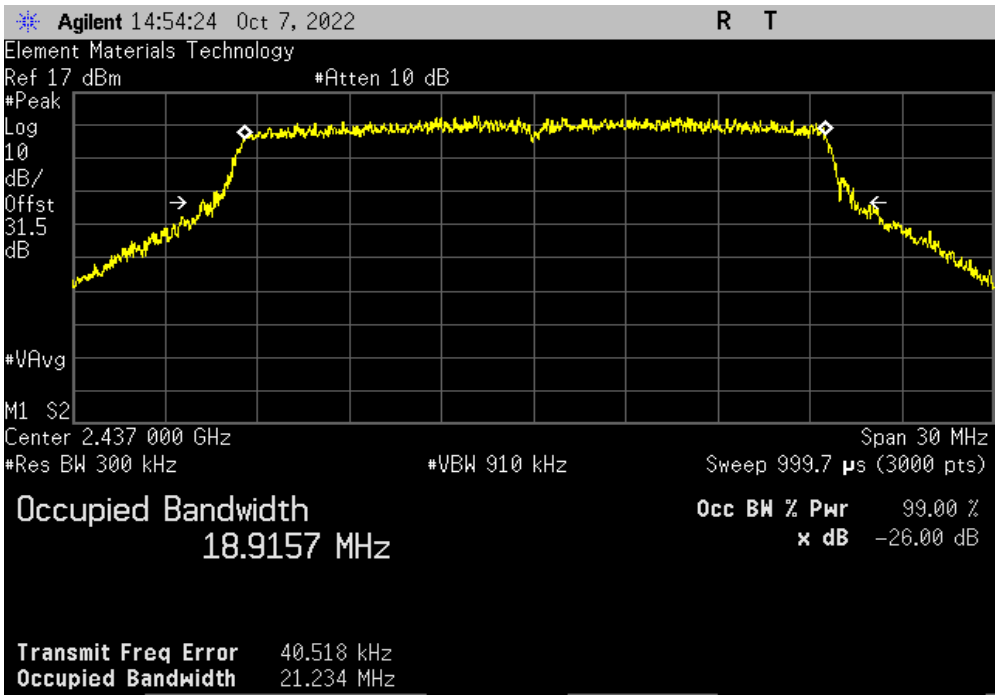


Chain 1, HE20, MCS0, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				18.901 MHz	N/A	N/A

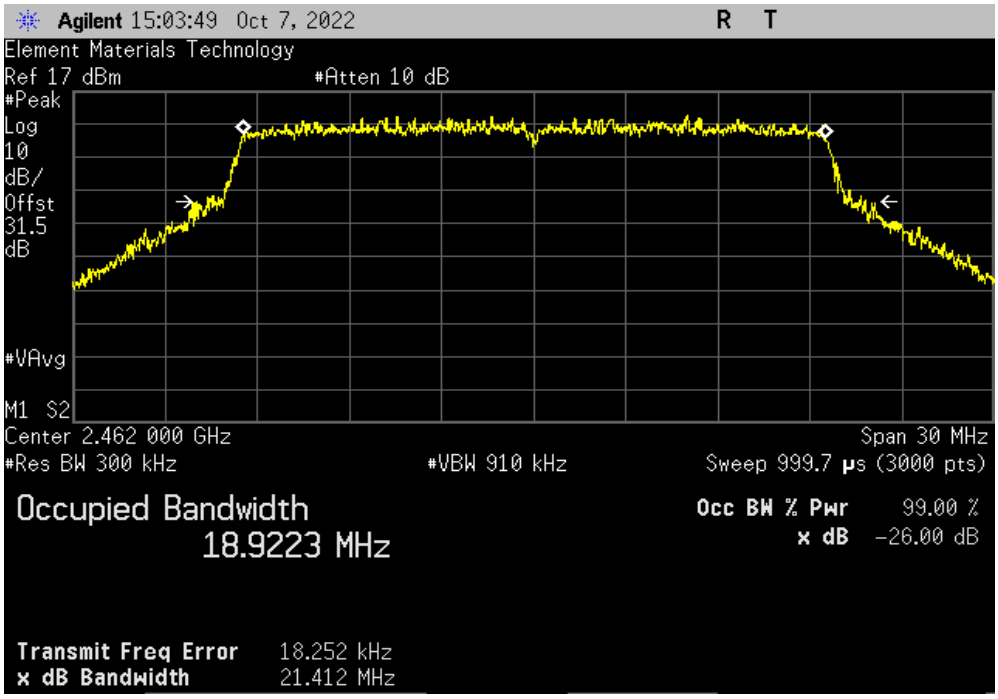


OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, HE20, MCS0, Mid Channel 6, 2437 MHz							
					Value	Limit	Result
					18.916 MHz	N/A	N/A



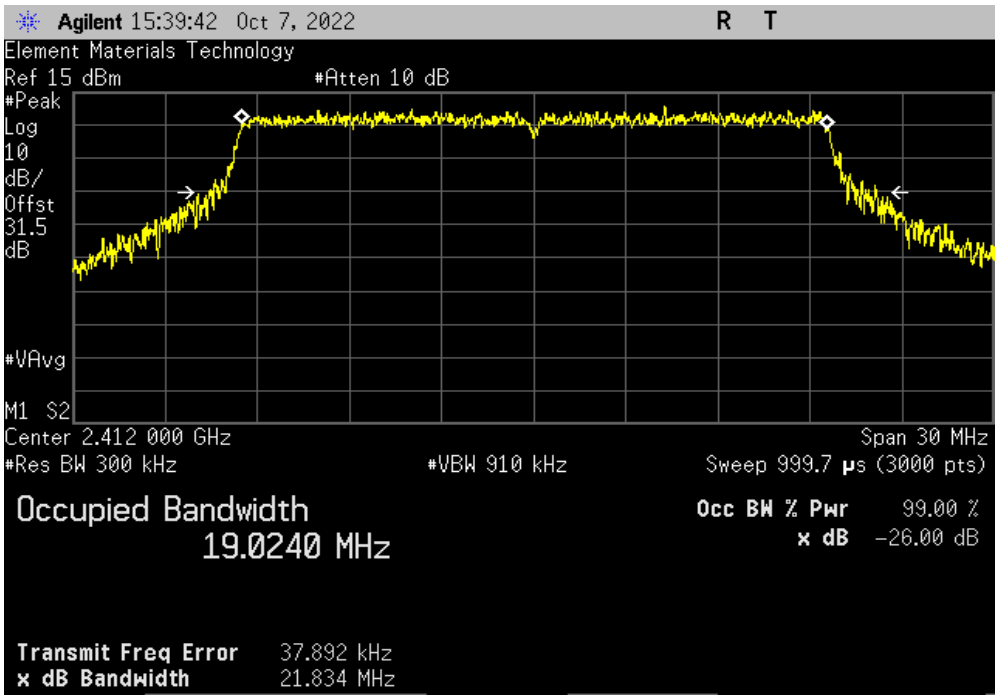
Chain 1, HE20, MCS0, High Channel 11, 2462 MHz							
					Value	Limit	Result
					18.922 MHz	N/A	N/A



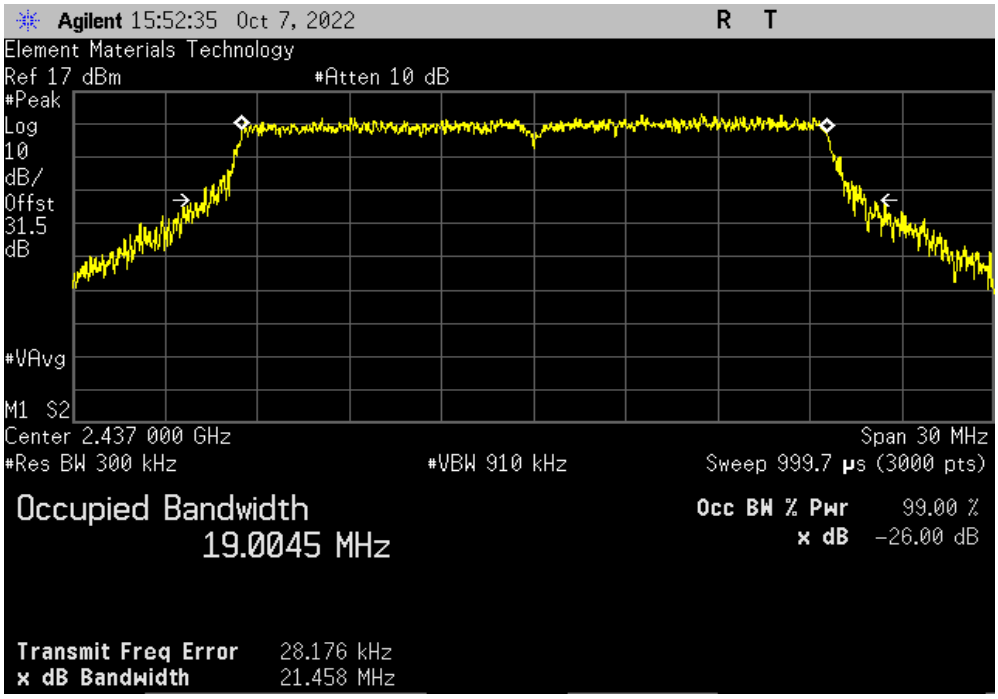
OCCUPIED BANDWIDTH - CHAIN 1

TbtTx 2022.06.03.0 XMit 2022.02.07.0

Chain 1, HE20, MCS11, Low Channel 1, 2412 MHz						
				Value	Limit	Result
				19.024 MHz	N/A	N/A

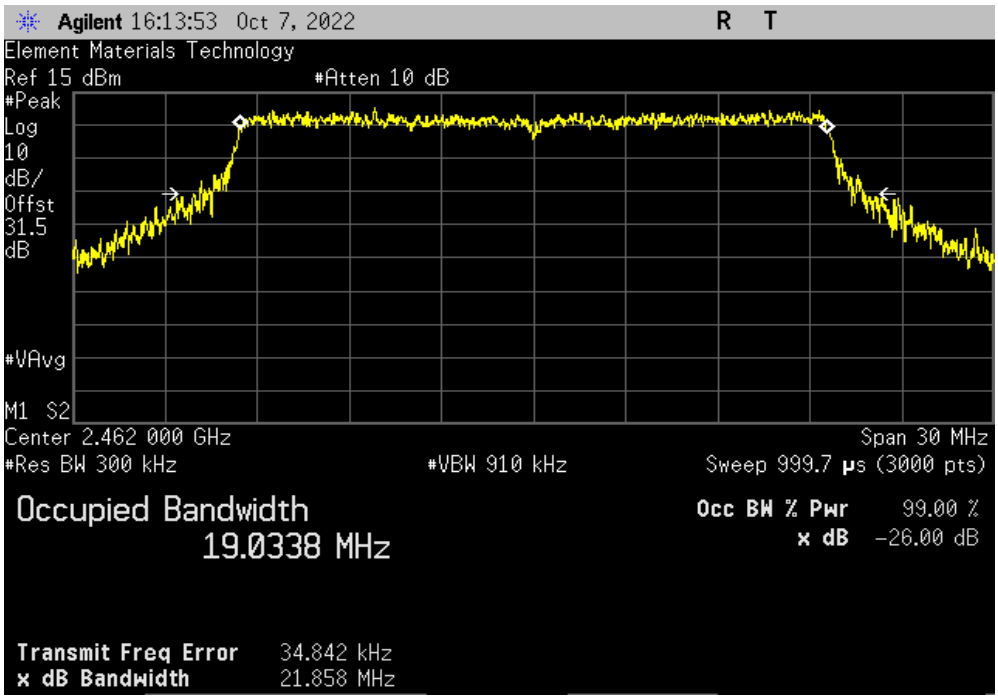


Chain 1, HE20, MCS11, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				19.005 MHz	N/A	N/A



OCCUPIED BANDWIDTH - CHAIN 1

Chain 1, HE20, MCS11, High Channel 11, 2462 MHz						
				Value	Limit	Result
				19.034 MHz	N/A	N/A



OCCUPIED BANDWIDTH - MIMO

XMit 2023.02.14.0

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 - 2023

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2022-12-02	2023-12-02
Attenuator	S.M. Electronics	SA26B-20	AUY	2023-03-13	2024-03-13
Block - DC	Fairview Microwave	SD3379	AMW	2023-03-13	2024-03-13
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

TEST EQUIPMENT - 2022

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation.

Per ANSI C63.10:2013, 6.9.3, the spectrum analyzer was configured as follows:

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

The resolution bandwidth (RBW) of the spectrum analyzer was set to the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) bandwidth was set to at least 3 times the resolution bandwidth. The analyzer sweep time was set to auto to prevent video filtering or averaging. A sample detector was used unless the device was not able to be operated in a continuous transmit mode, in which case a peak detector was used.

The spectrum analyzer occupied bandwidth measurement function was used to sum the power of the transmission in linear terms to obtain the 99% bandwidth.

OCCUPIED BANDWIDTH - MIMO

TbtTx 2022.06.03.0 XMit 2023.02.14.0

EUT:	U8 Hawk			**Work Order:**	KYME0068
Serial Number:	See configuration			**Date:**	03/15/23
Customer:	Kymeta Corp.			**Temperature:**	20.4°C
Attendees:	Dean Busch and Mike Olsen			**Humidity:**	40%
Project:	None			**Barometric Pres.:**	1007 mbar
Tested by:	Jeff Alcoke	**Power:**	12VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

All measurments collected before 2023, were performed on configuration KYME0068-1. Reference level offset includes: DC block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

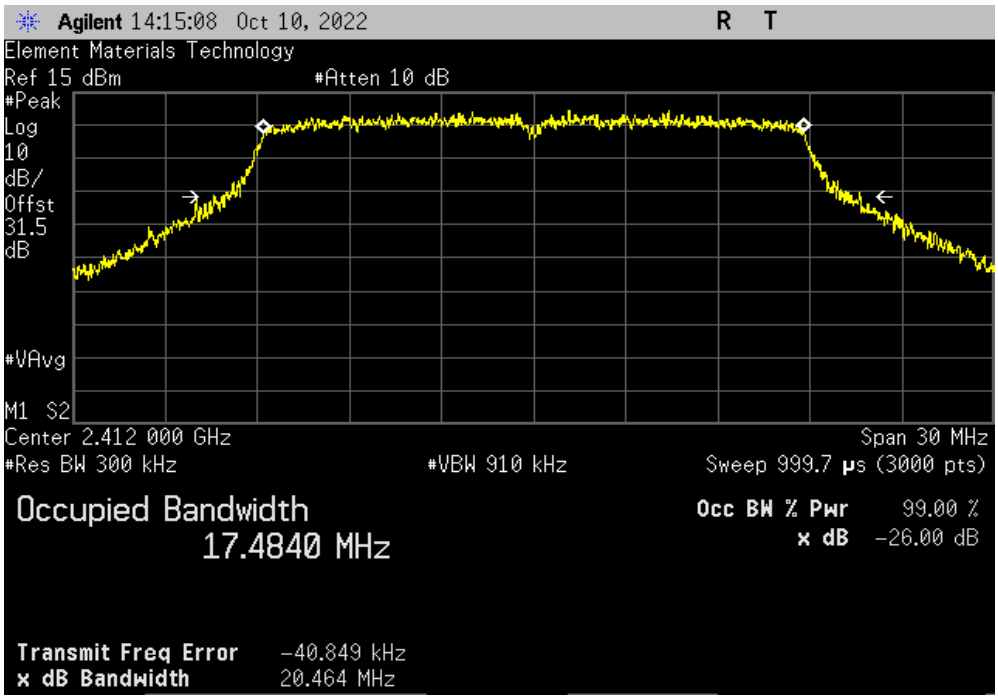
None

Configuration #	KYME0086-1 KYME0068-5	Signature

		Value	Limit	Result
MIMO - Chain 0				
	HT20, MCS8			
	Low Channel 1, 2412 MHz	17.484 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.639 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.693 MHz	N/A	N/A
	HT20, MCS15			
	Low Channel 1, 2412 MHz	17.518 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.862 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.866 MHz	N/A	N/A
	VHT20, MCS0			
	Low Channel 1, 2412 MHz	17.622 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.604 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.664 MHz	N/A	N/A
	VHT20, MCS8			
	Low Channel 1, 2412 MHz	17.763 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.785 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.815 MHz	N/A	N/A
	HE20, MCS0			
	Low Channel 1, 2412 MHz	19.11 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	18.953 MHz	N/A	N/A
	High Channel 11, 2462 MHz	18.976 MHz	N/A	N/A
	HE20, MCS11			
	Low Channel 1, 2412 MHz	19.063 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	19.271 MHz	N/A	N/A
	High Channel 11, 2462 MHz	19.056 MHz	N/A	N/A
MIMO - Chain 1				
	HT20, MCS8			
	Low Channel 1, 2412 MHz	17.471 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.307 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.657 MHz	N/A	N/A
	HT20, MCS15			
	Low Channel 1, 2412 MHz	17.811 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.802 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.851 MHz	N/A	N/A
	VHT20, MCS0			
	Low Channel 1, 2412 MHz	17.643 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.627 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.699 MHz	N/A	N/A
	VHT20, MCS8			
	Low Channel 1, 2412 MHz	17.755 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	17.781 MHz	N/A	N/A
	High Channel 11, 2462 MHz	17.825 MHz	N/A	N/A
	HE20, MCS0			
	Low Channel 1, 2412 MHz	18.938 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	18.923 MHz	N/A	N/A
	High Channel 11, 2462 MHz	18.946 MHz	N/A	N/A
	HE20, MCS11			
	Low Channel 1, 2412 MHz	19.041 MHz	N/A	N/A
	Mid Channel 6, 2437 MHz	19.044 MHz	N/A	N/A
	High Channel 11, 2462 MHz	19.062 MHz	N/A	N/A

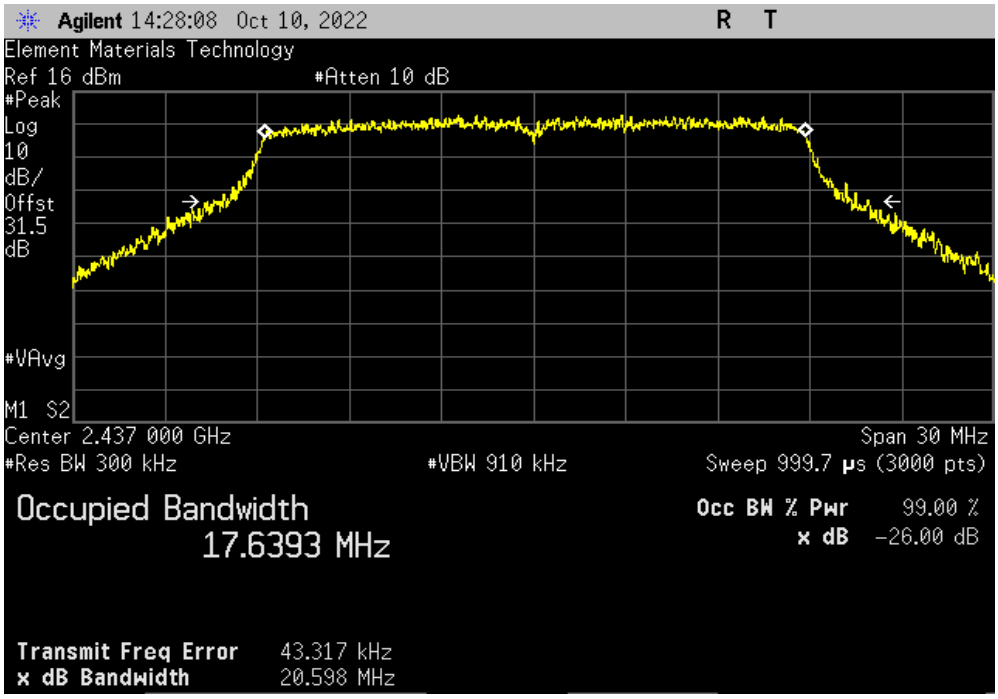
MIMO - Chain 0, HT20, MCS8, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.484 MHz	N/A	N/A



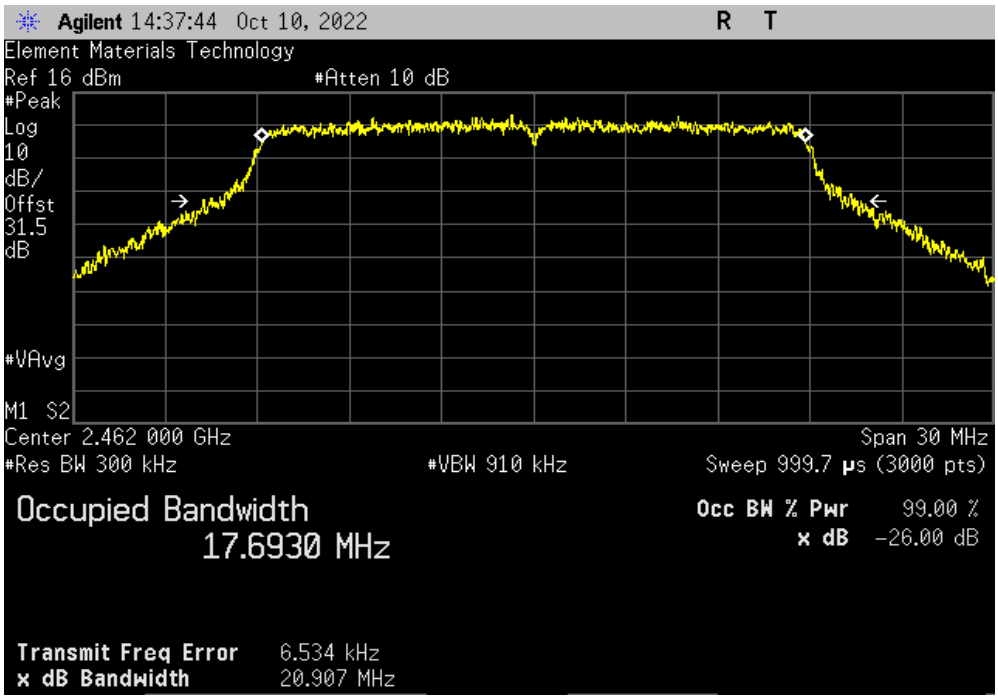
MIMO - Chain 0, HT20, MCS8, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.639 MHz	N/A	N/A



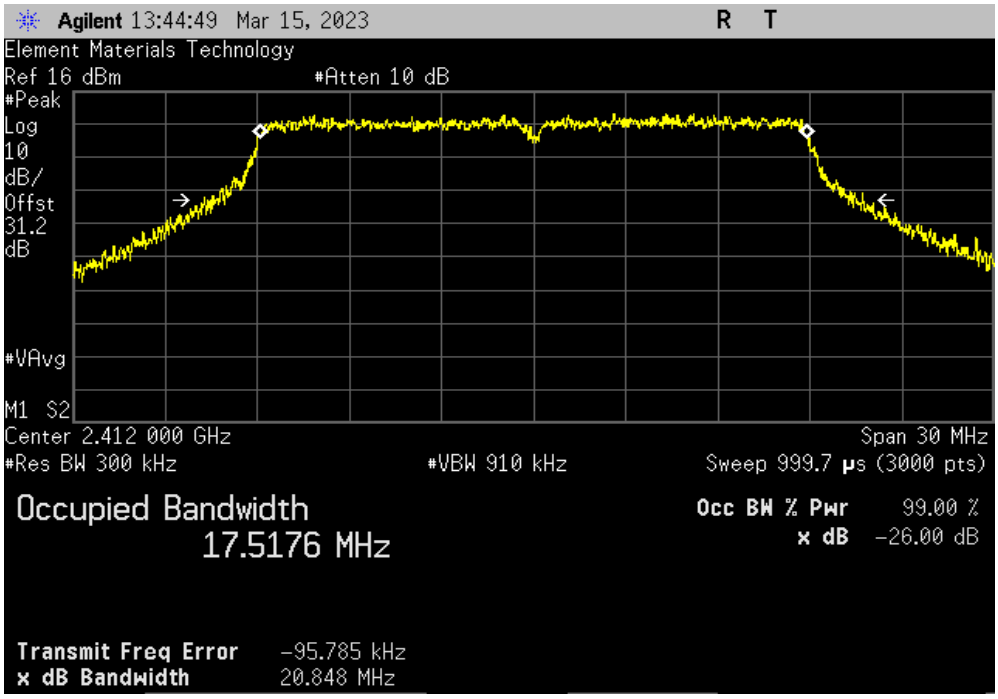
MIMO - Chain 0, HT20, MCS8, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.693 MHz	N/A	N/A



MIMO - Chain 0, HT20, MCS15, Low Channel 1, 2412 MHz

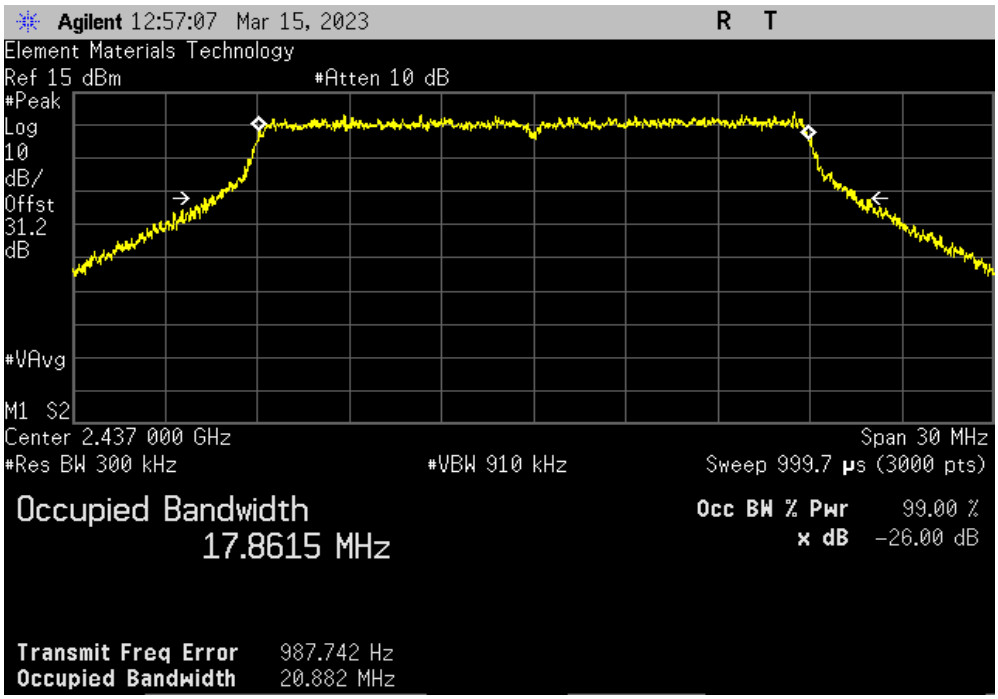
				Value	Limit	Result
				17.518 MHz	N/A	N/A



OCCUPIED BANDWIDTH - MIMO

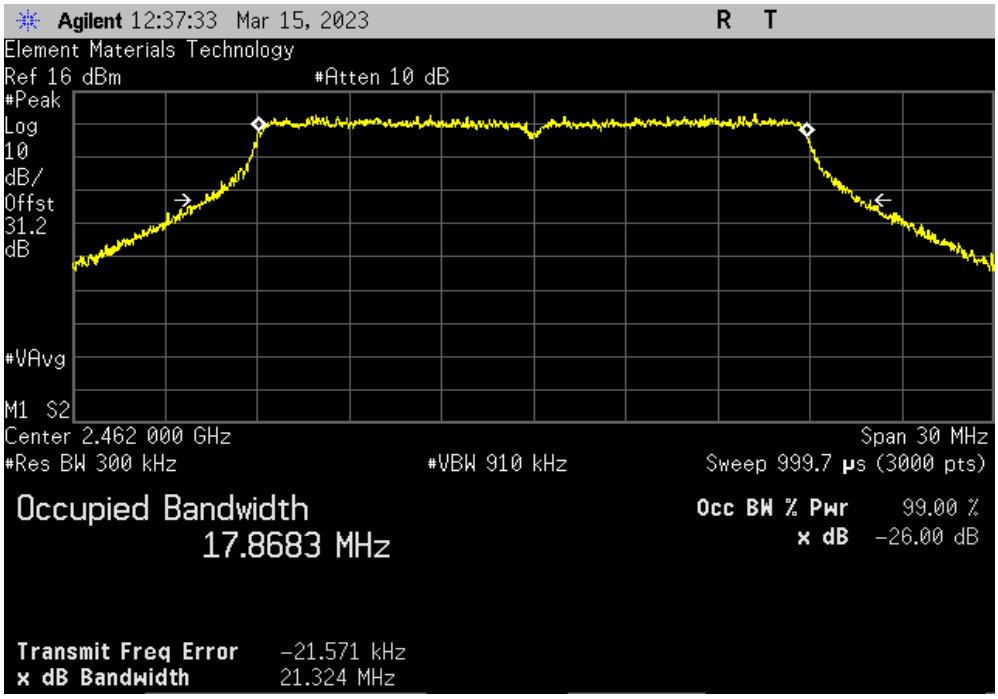
MIMO - Chain 0, HT20, MCS15, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.862 MHz	N/A	N/A



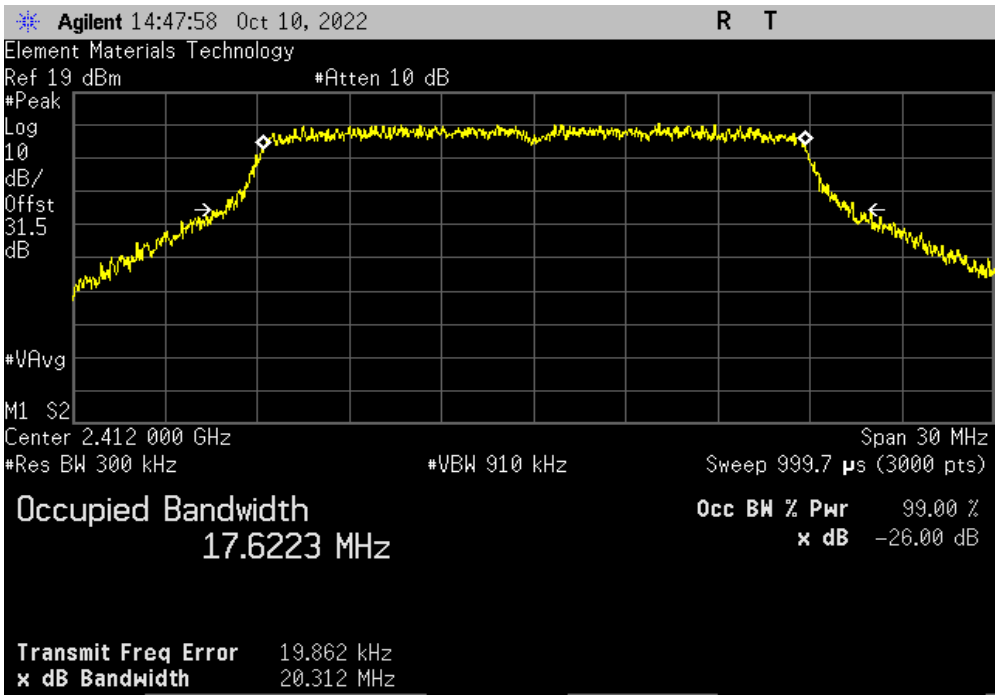
MIMO - Chain 0, HT20, MCS15, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.866 MHz	N/A	N/A



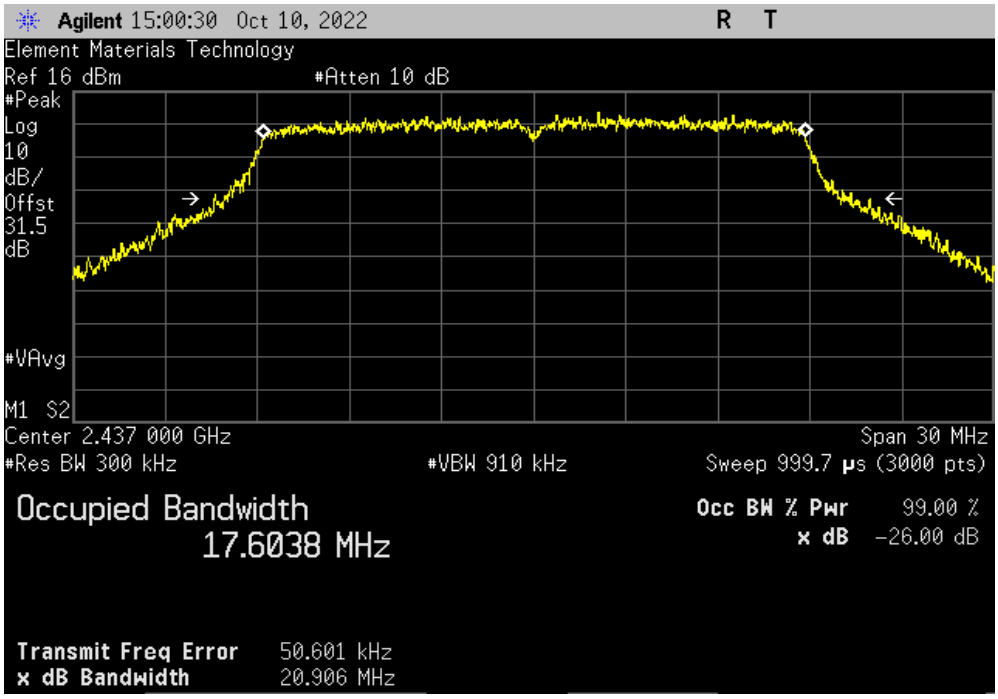
MIMO - Chain 0, VHT20, MCS0, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.622 MHz	N/A	N/A



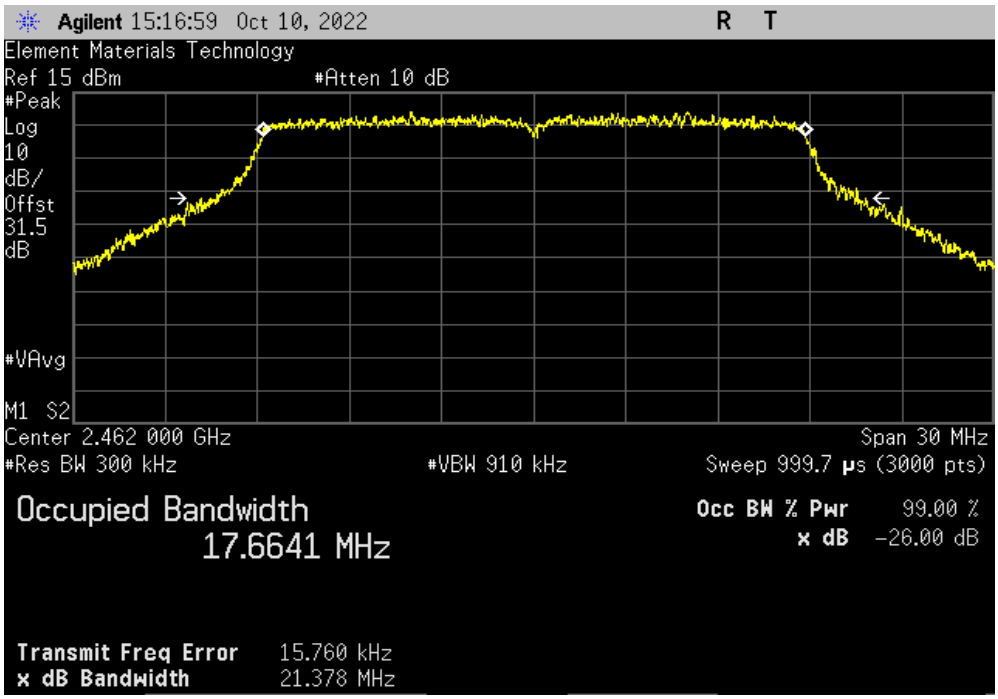
MIMO - Chain 0, VHT20, MCS0, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.604 MHz	N/A	N/A



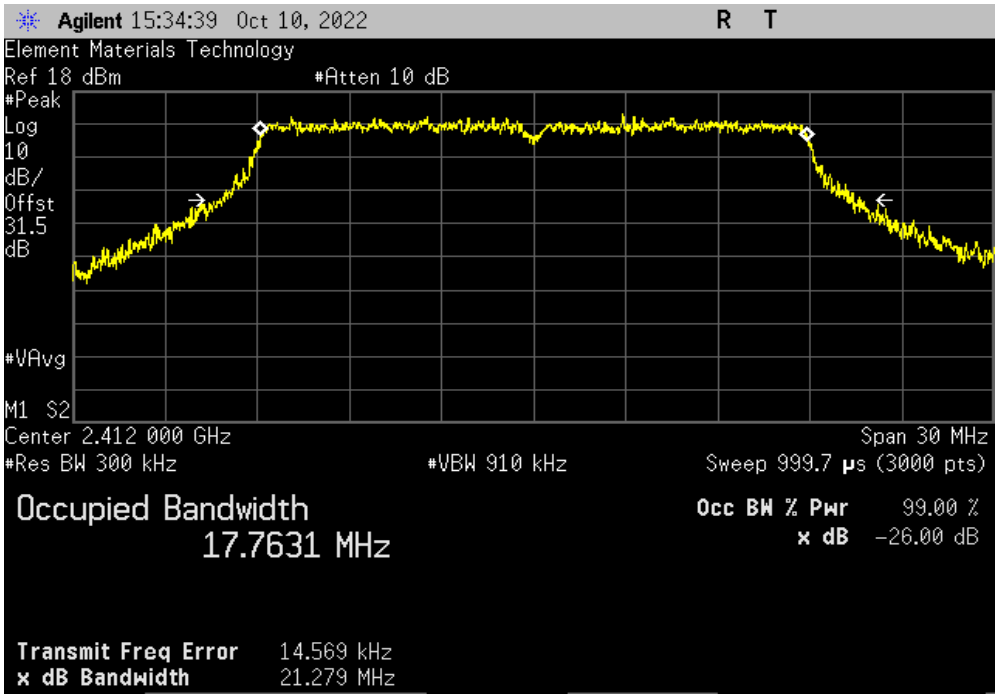
MIMO - Chain 0, VHT20, MCS0, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.664 MHz	N/A	N/A



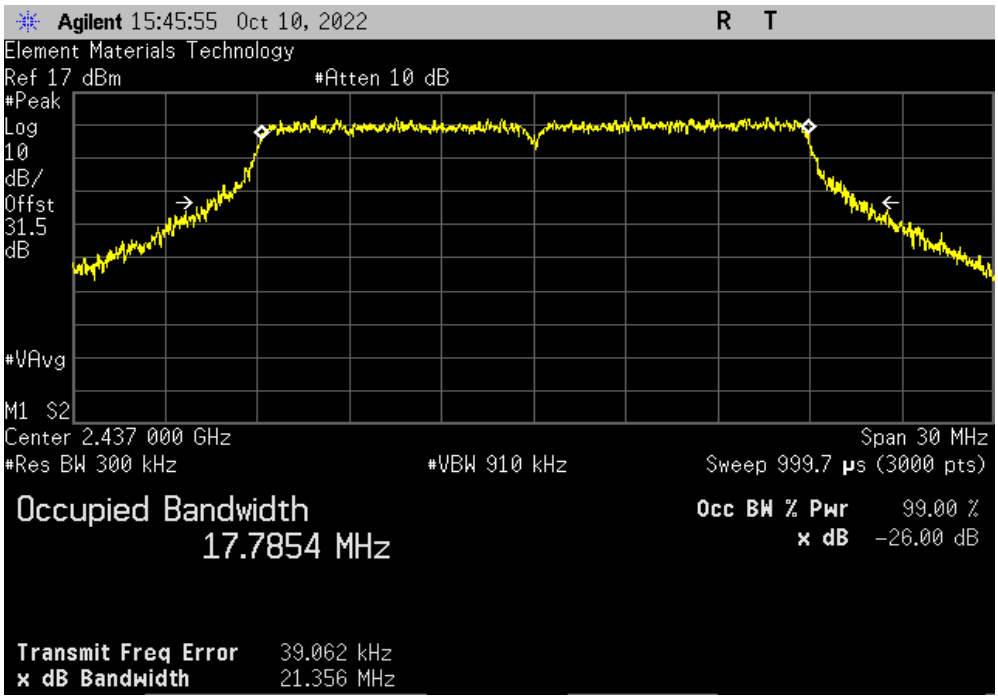
MIMO - Chain 0, VHT20, MCS8, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.763 MHz	N/A	N/A



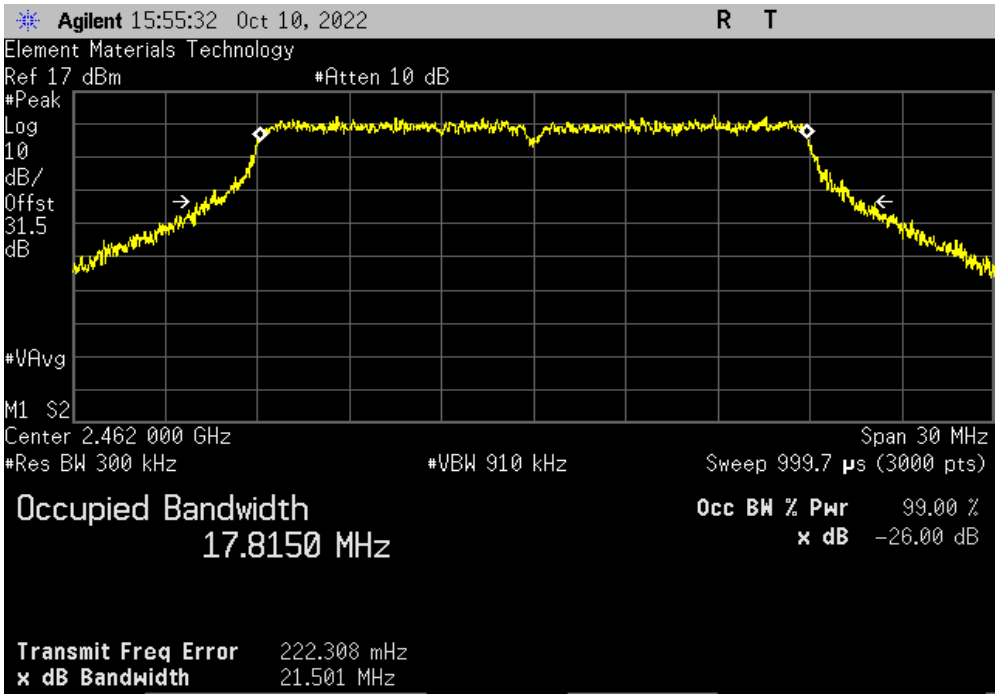
MIMO - Chain 0, VHT20, MCS8, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.785 MHz	N/A	N/A



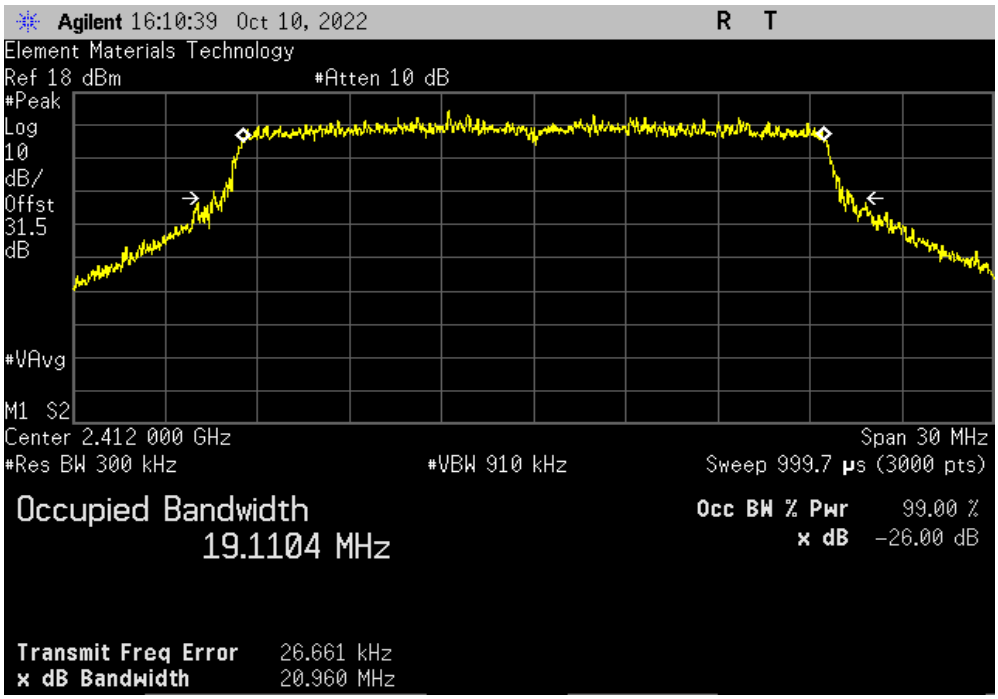
MIMO - Chain 0, VHT20, MCS8, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.815 MHz	N/A	N/A



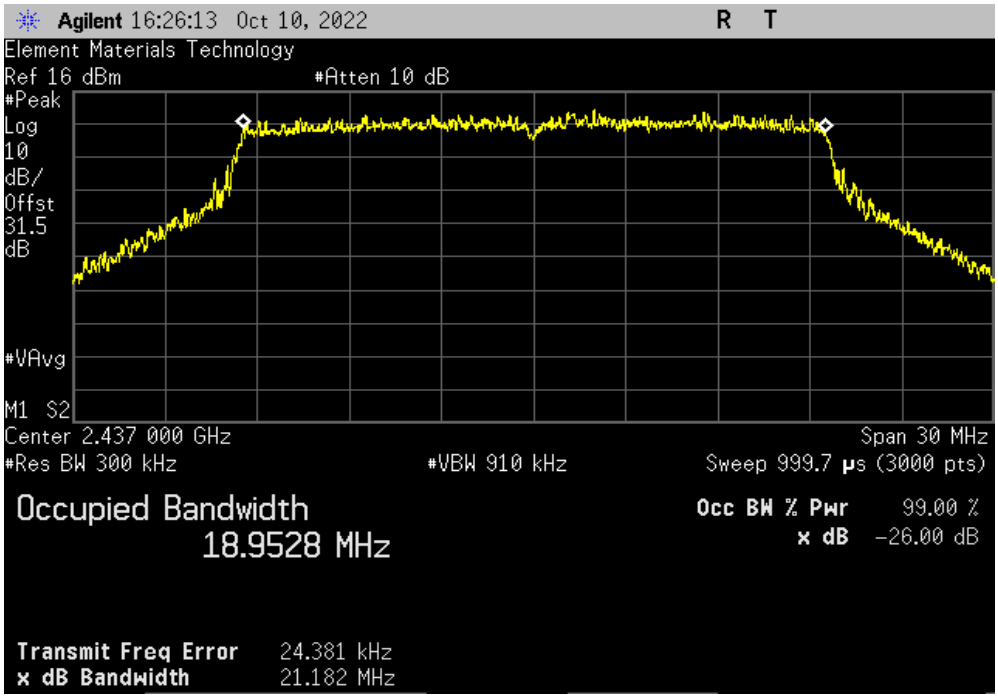
MIMO - Chain 0, HE20, MCS0, Low Channel 1, 2412 MHz

				Value	Limit	Result
				19.11 MHz	N/A	N/A



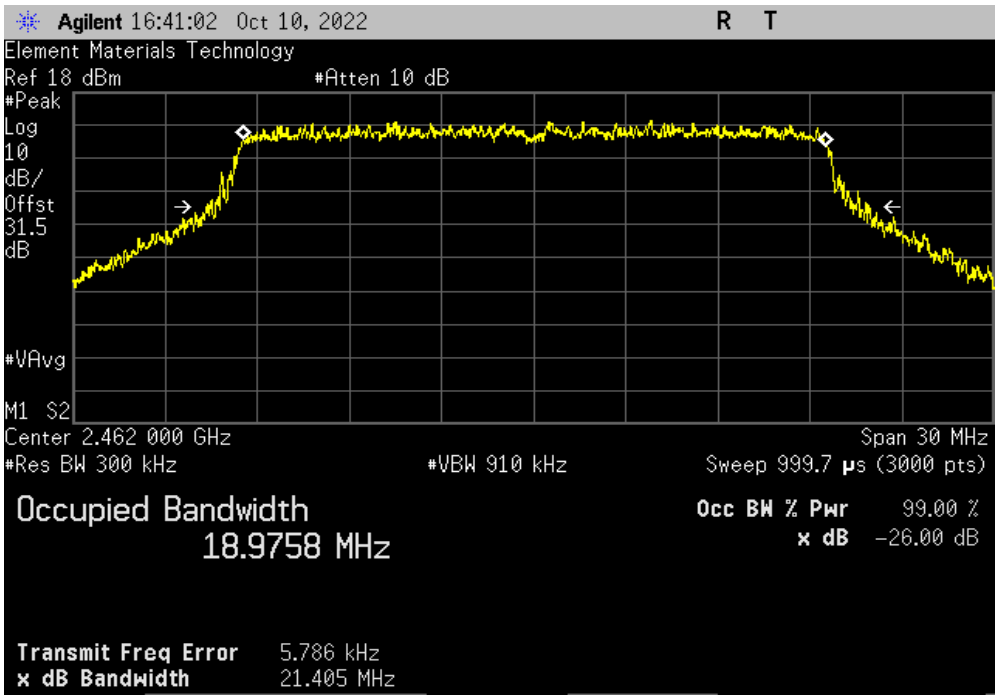
MIMO - Chain 0, HE20, MCS0, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				18.953 MHz	N/A	N/A



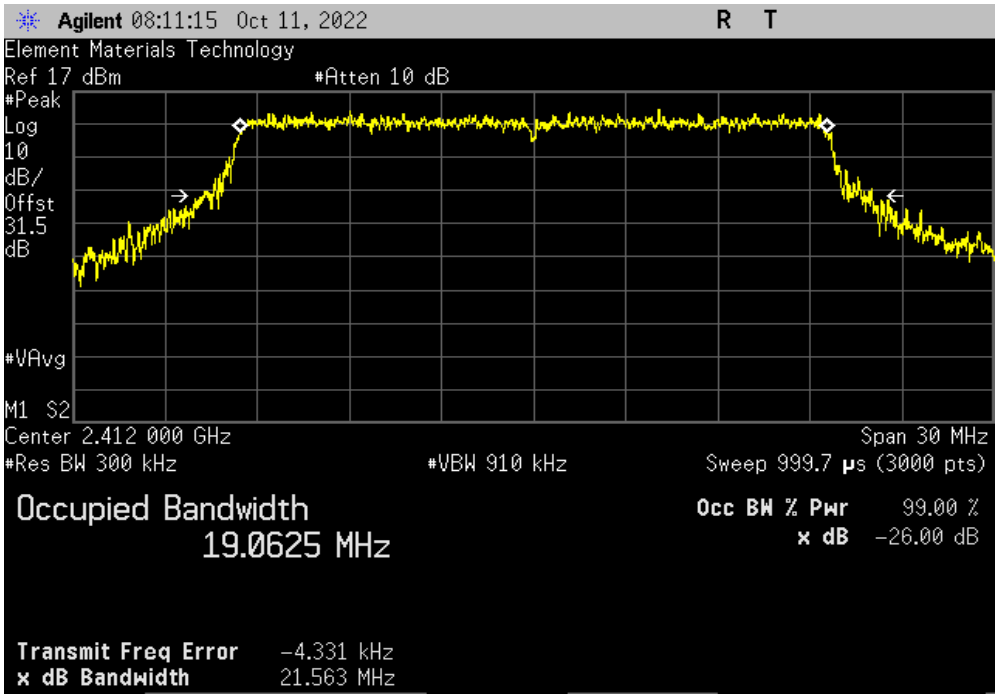
MIMO - Chain 0, HE20, MCS0, High Channel 11, 2462 MHz

				Value	Limit	Result
				18.976 MHz	N/A	N/A



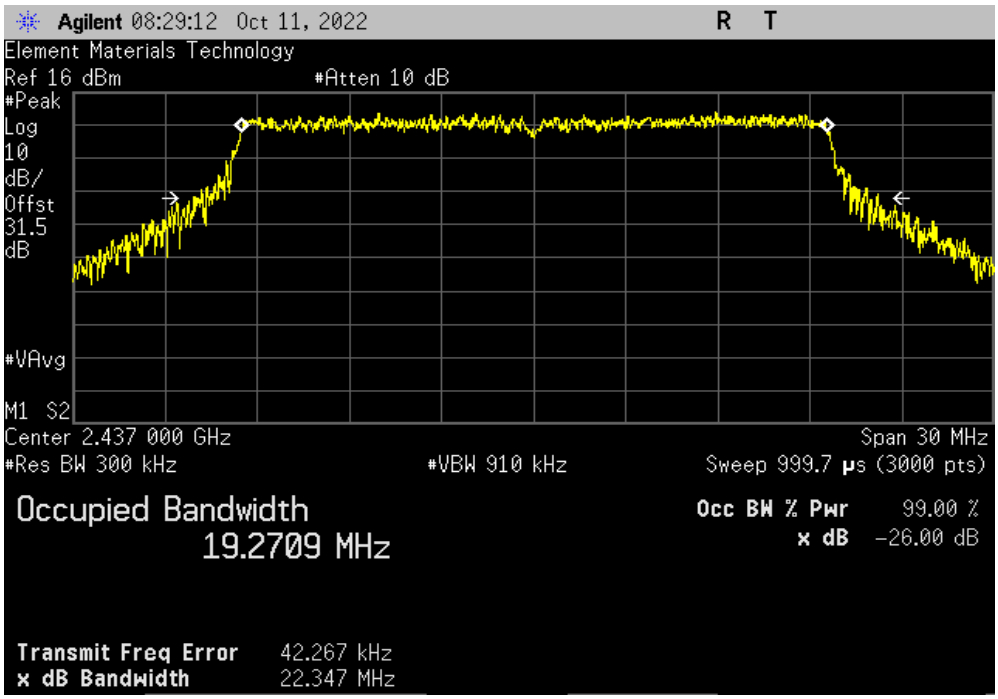
MIMO - Chain 0, HE20, MCS11, Low Channel 1, 2412 MHz

				Value	Limit	Result
				19.063 MHz	N/A	N/A



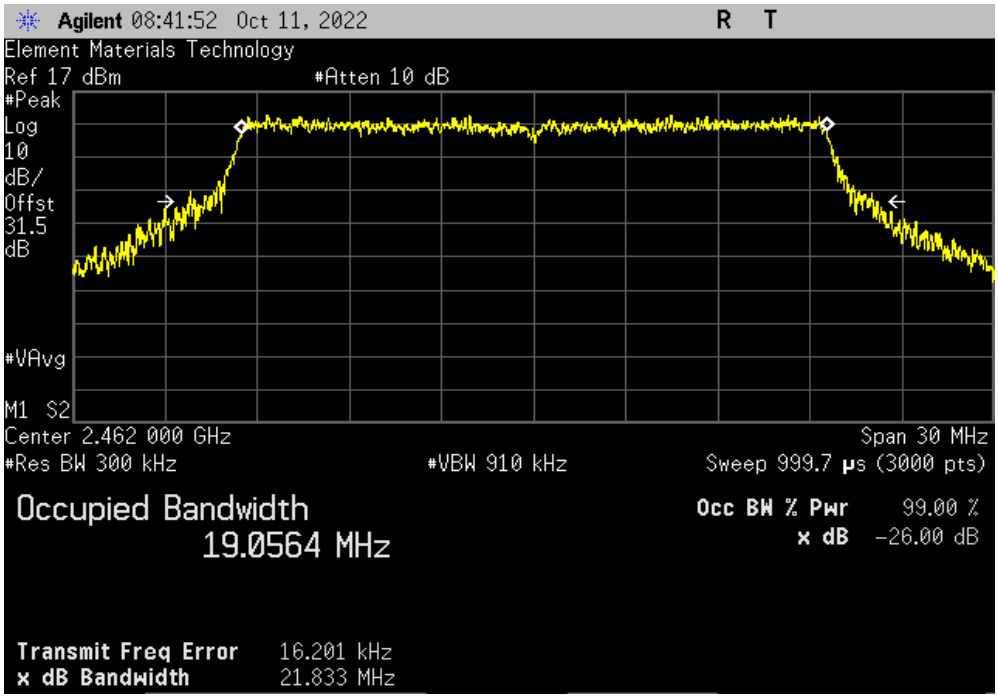
MIMO - Chain 0, HE20, MCS11, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				19.271 MHz	N/A	N/A



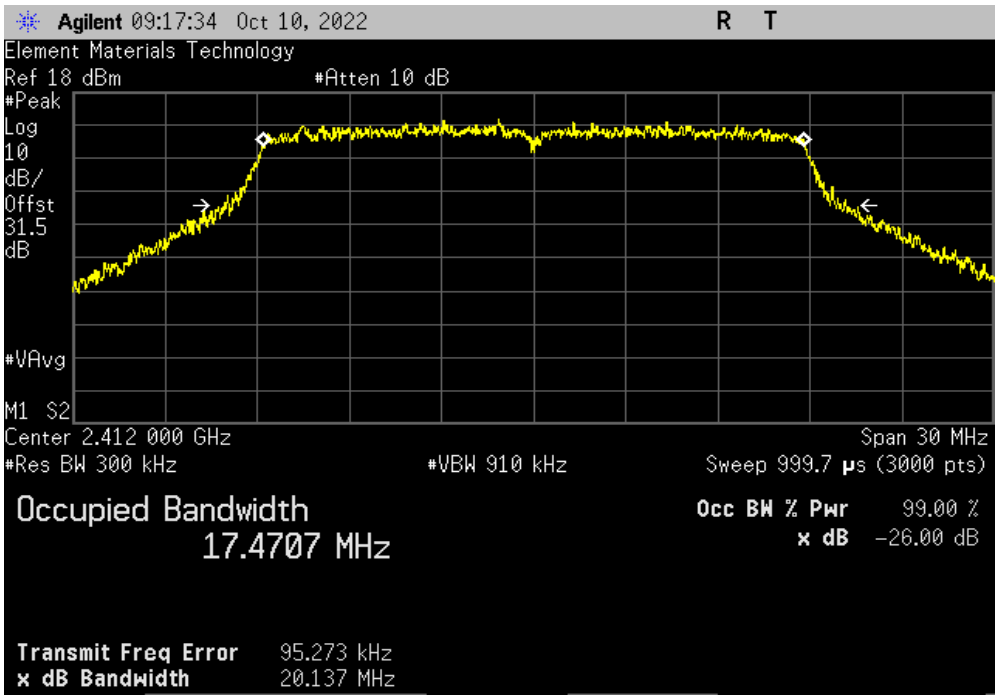
MIMO - Chain 0, HE20, MCS11, High Channel 11, 2462 MHz

				Value	Limit	Result
				19.056 MHz	N/A	N/A



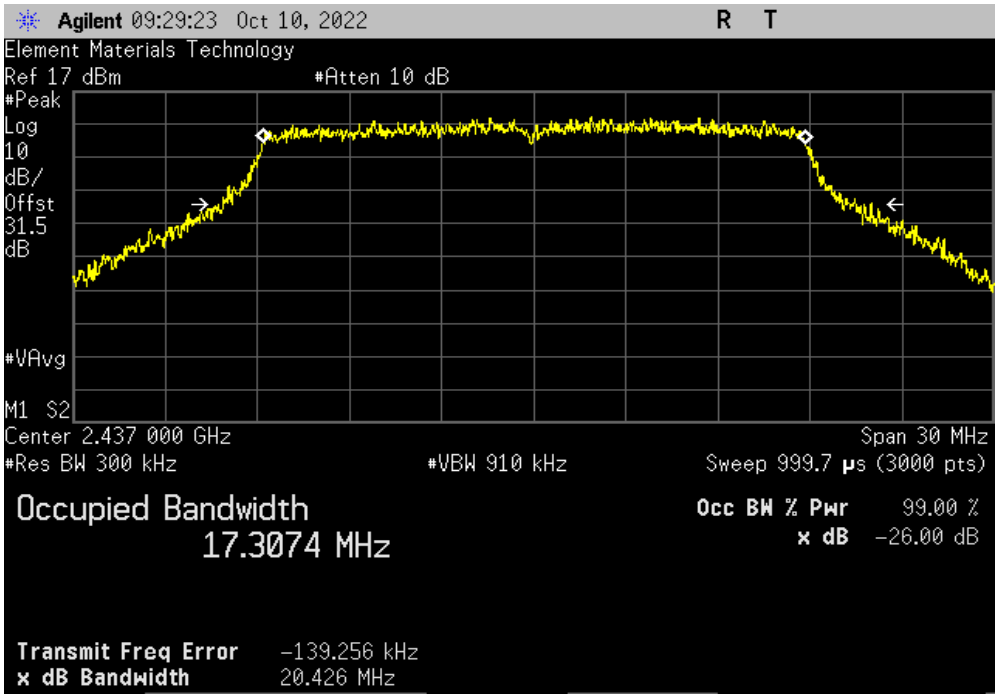
MIMO - Chain 1, HT20, MCS8, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.471 MHz	N/A	N/A



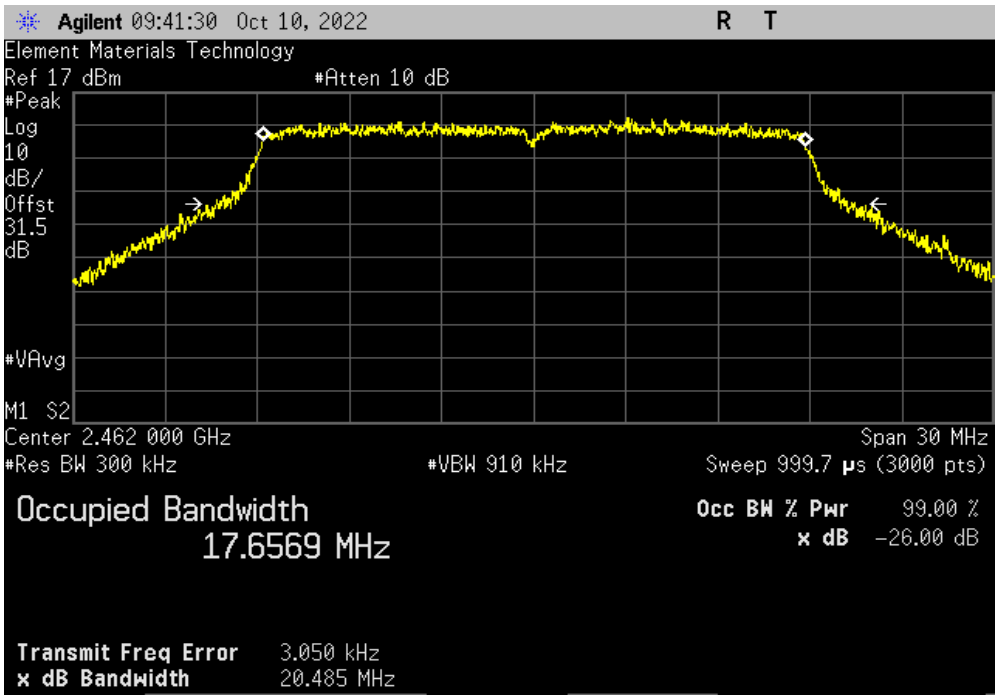
MIMO - Chain 1, HT20, MCS8, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.307 MHz	N/A	N/A



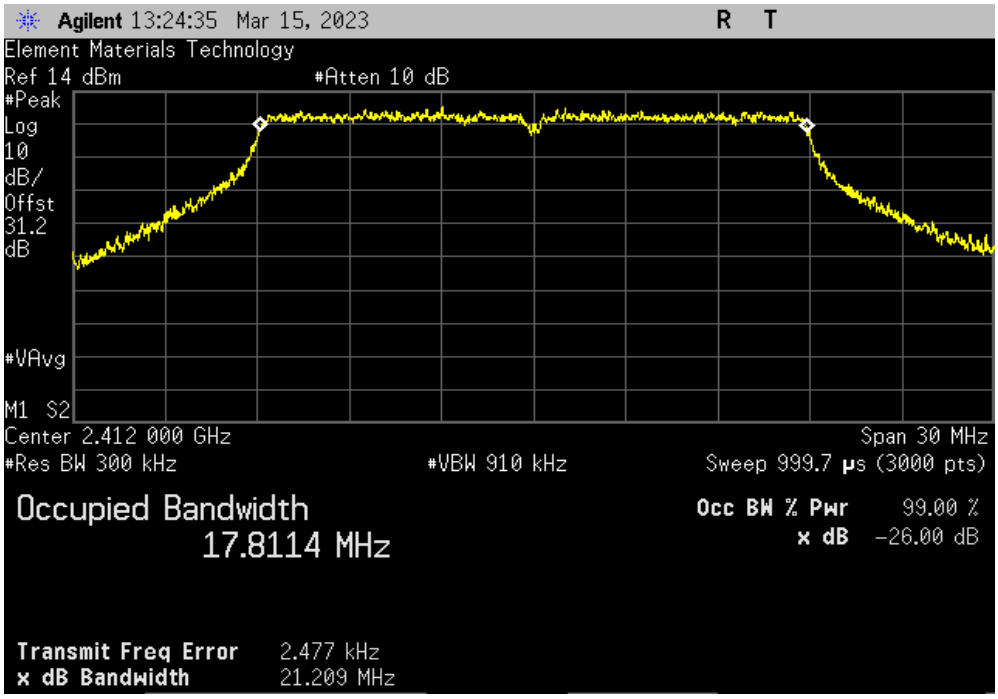
MIMO - Chain 1, HT20, MCS8, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.657 MHz	N/A	N/A



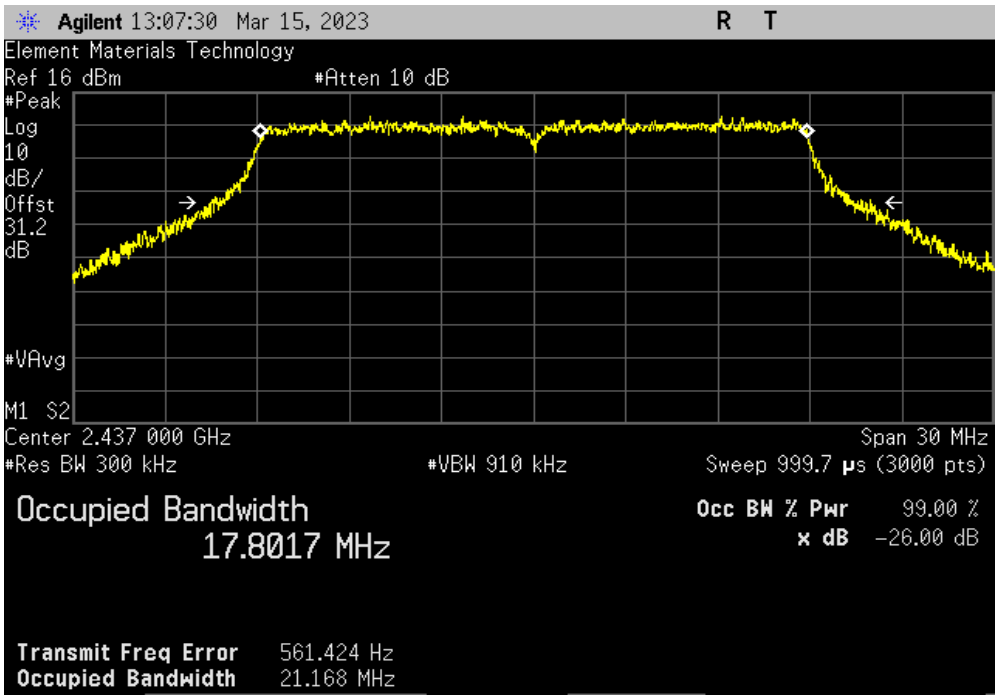
MIMO - Chain 1, HT20, MCS15, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.811 MHz	N/A	N/A



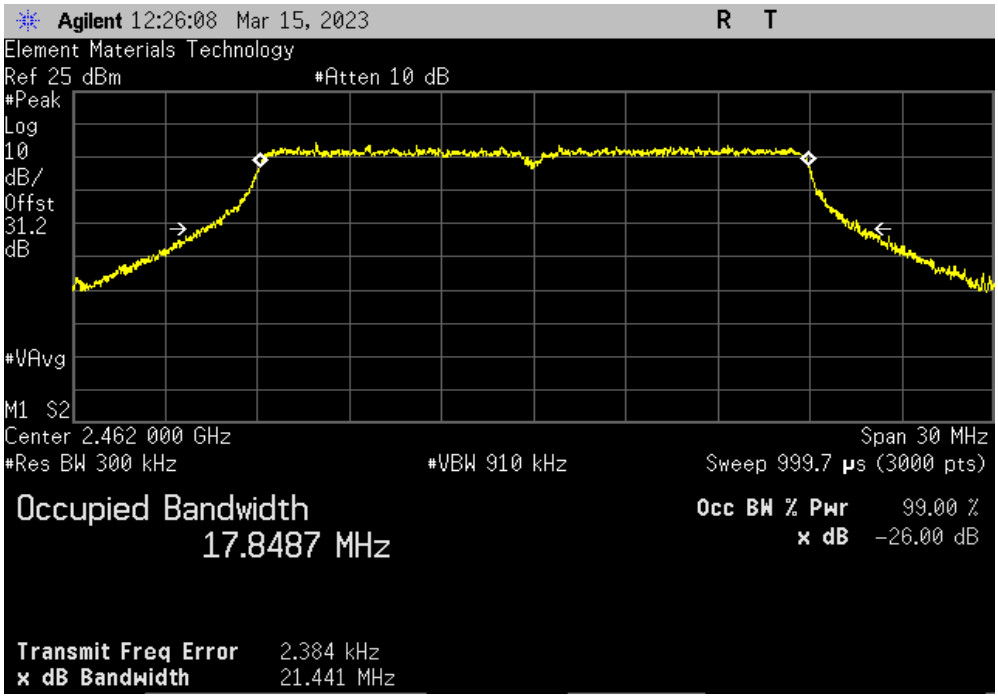
MIMO - Chain 1, HT20, MCS15, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.802 MHz	N/A	N/A



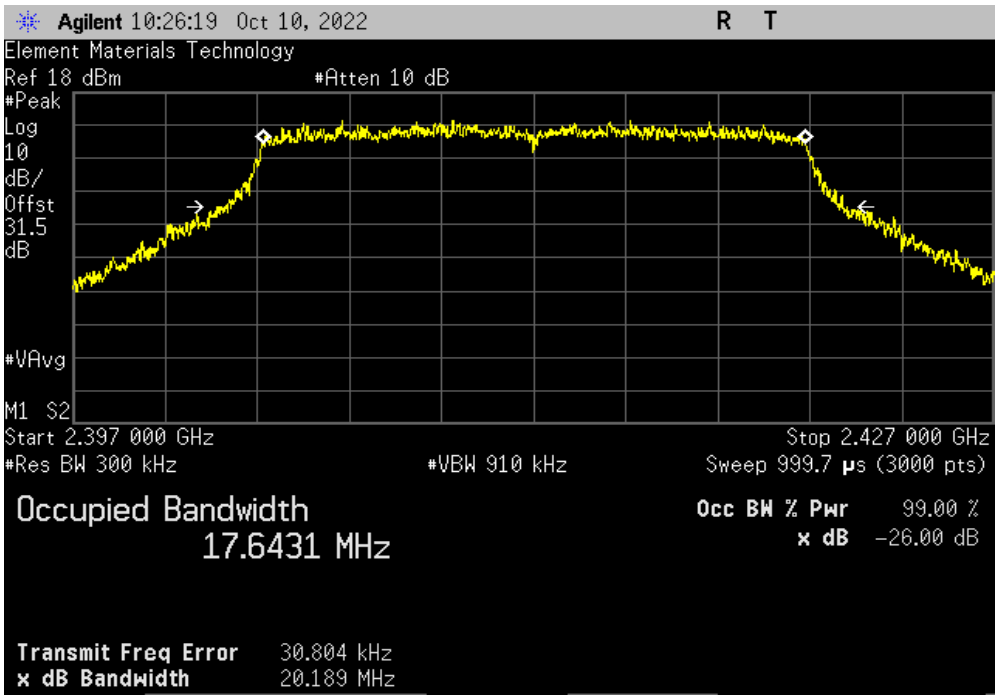
MIMO - Chain 1, HT20, MCS15, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.851 MHz	N/A	N/A



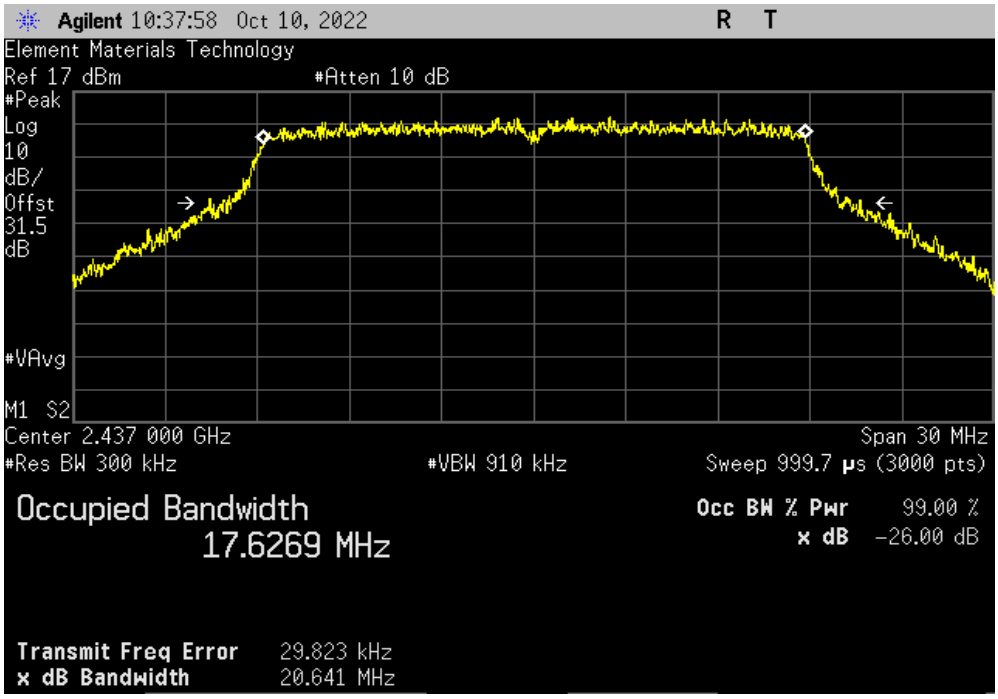
MIMO - Chain 1, VHT20, MCS0, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.643 MHz	N/A	N/A



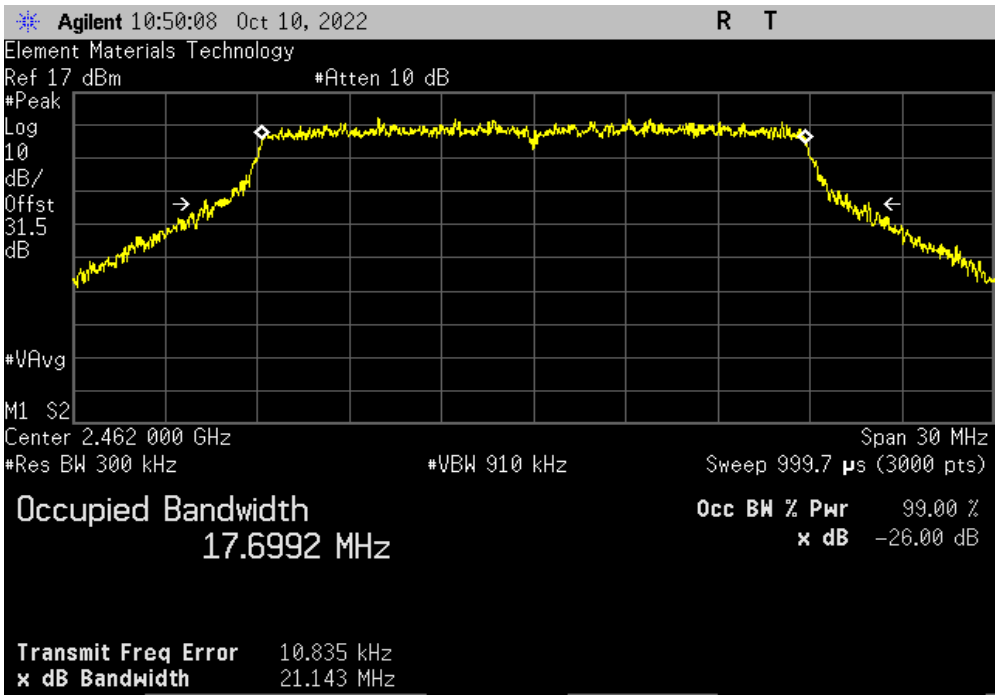
MIMO - Chain 1, VHT20, MCS0, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.627 MHz	N/A	N/A



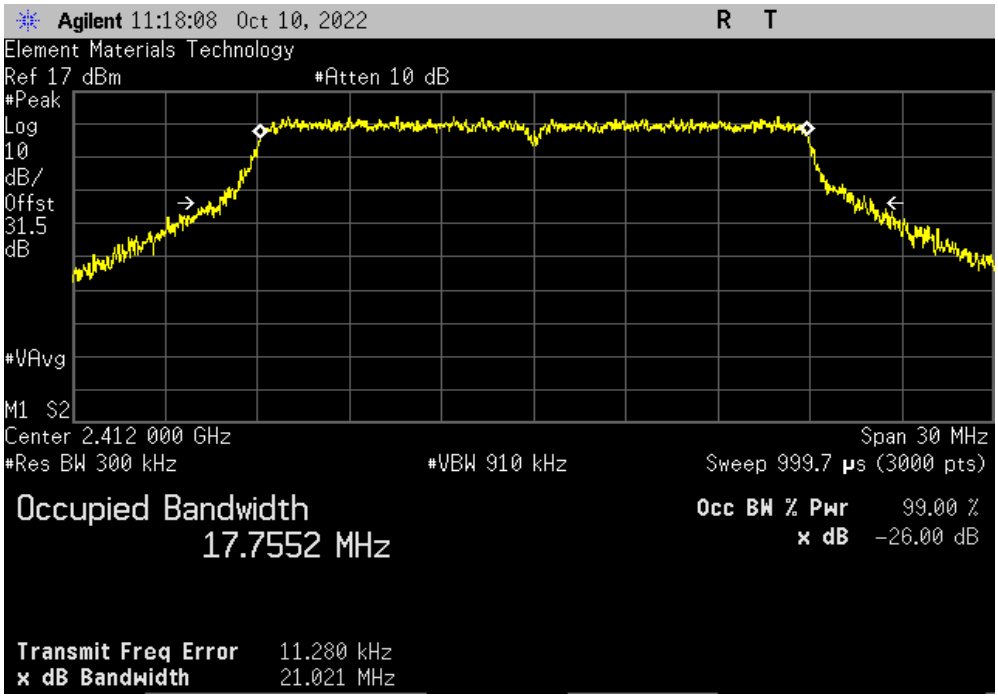
MIMO - Chain 1, VHT20, MCS0, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.699 MHz	N/A	N/A



MIMO - Chain 1, VHT20, MCS8, Low Channel 1, 2412 MHz

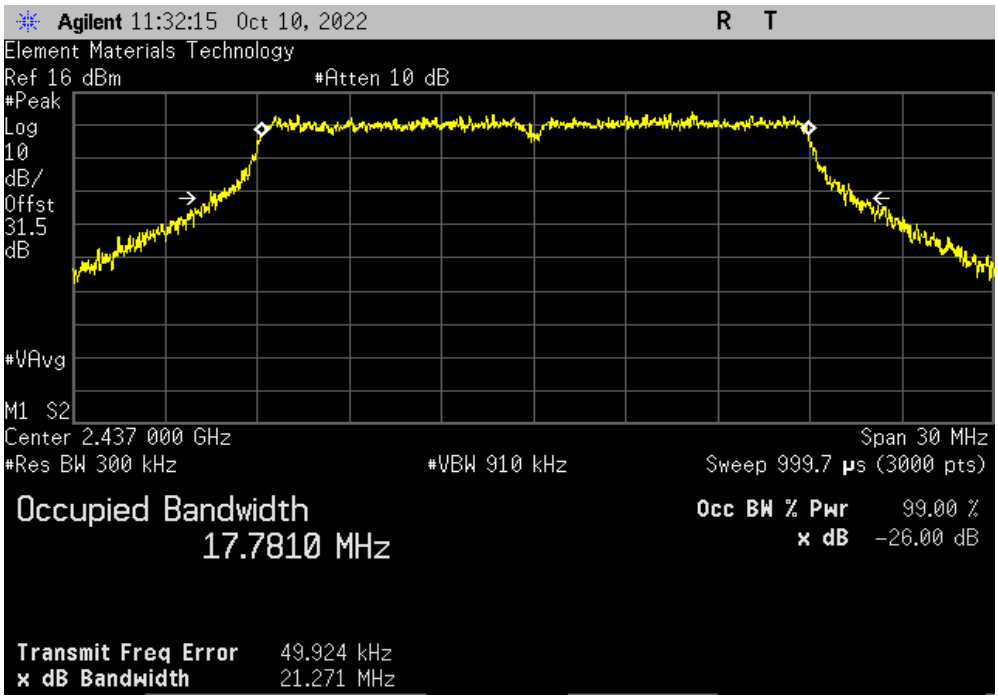
				Value	Limit	Result
				17.755 MHz	N/A	N/A



OCCUPIED BANDWIDTH - MIMO

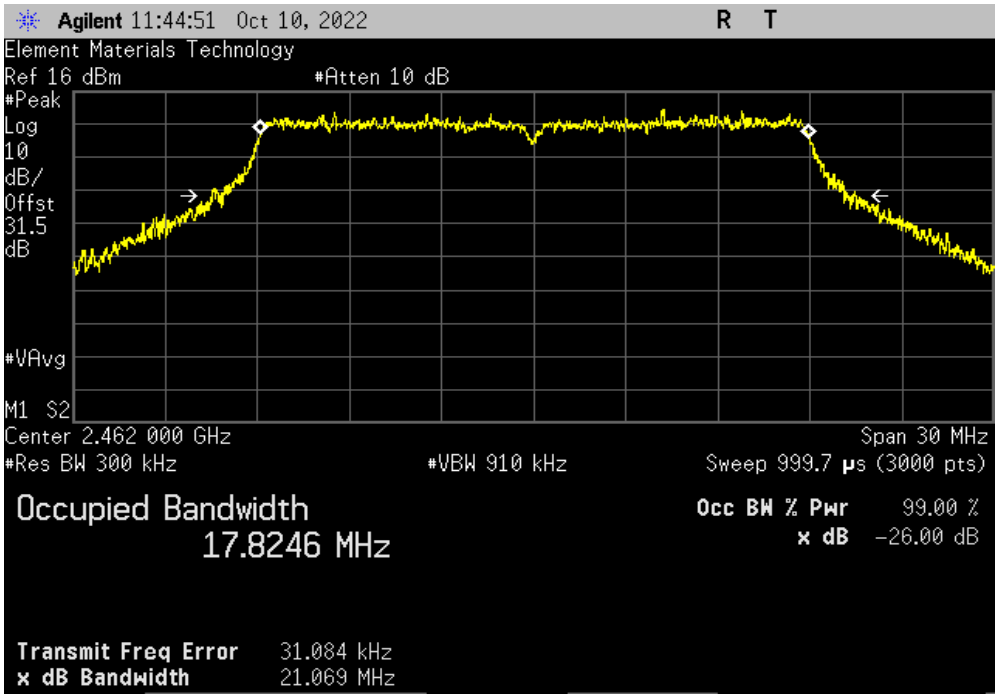
MIMO - Chain 1, VHT20, MCS8, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.781 MHz	N/A	N/A



MIMO - Chain 1, VHT20, MCS8, High Channel 11, 2462 MHz

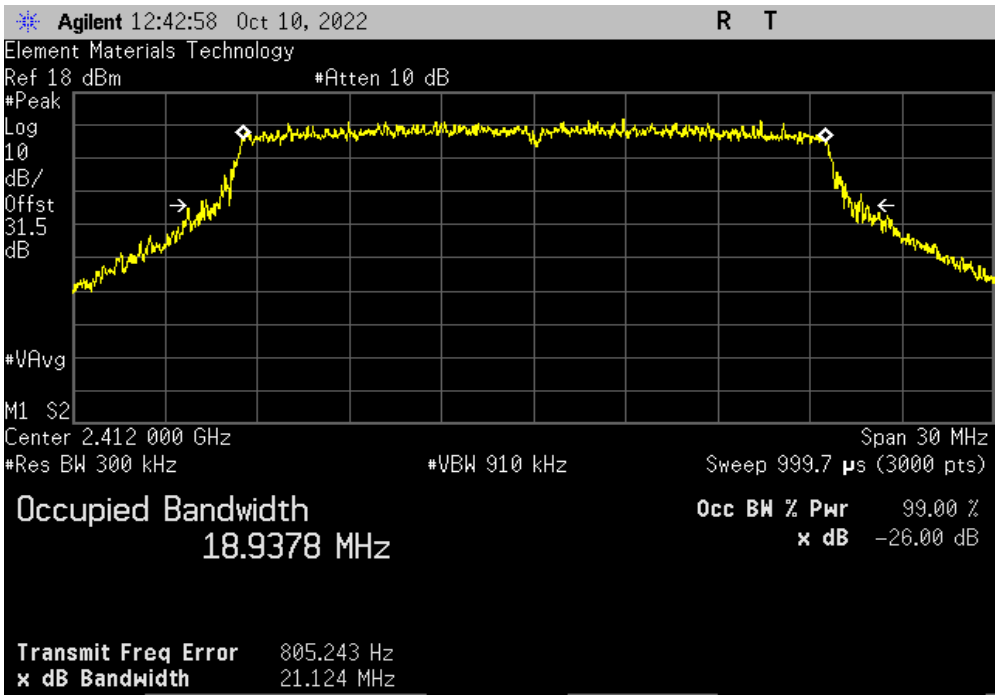
				Value	Limit	Result
				17.825 MHz	N/A	N/A



OCCUPIED BANDWIDTH - MIMO

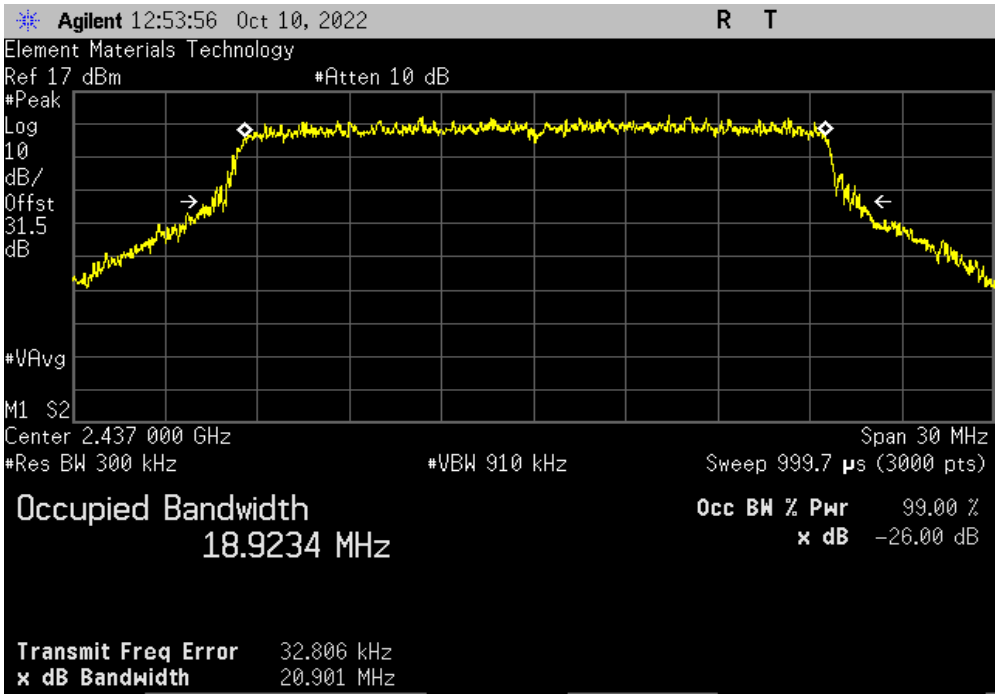
MIMO - Chain 1, HE20, MCS0, Low Channel 1, 2412 MHz

				Value	Limit	Result
				18.938 MHz	N/A	N/A



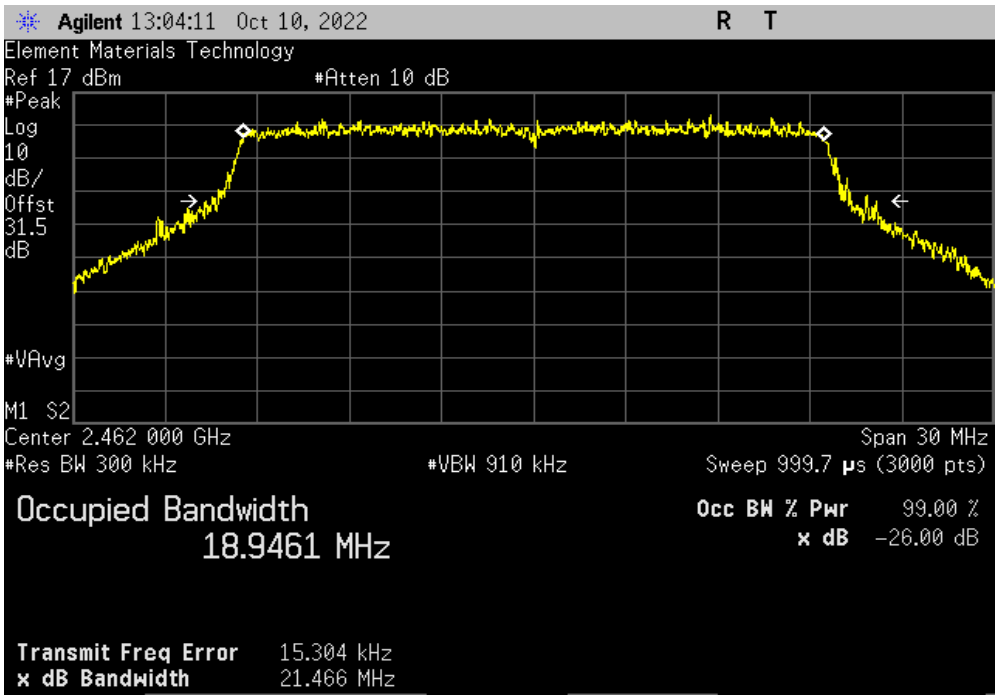
MIMO - Chain 1, HE20, MCS0, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				18.923 MHz	N/A	N/A



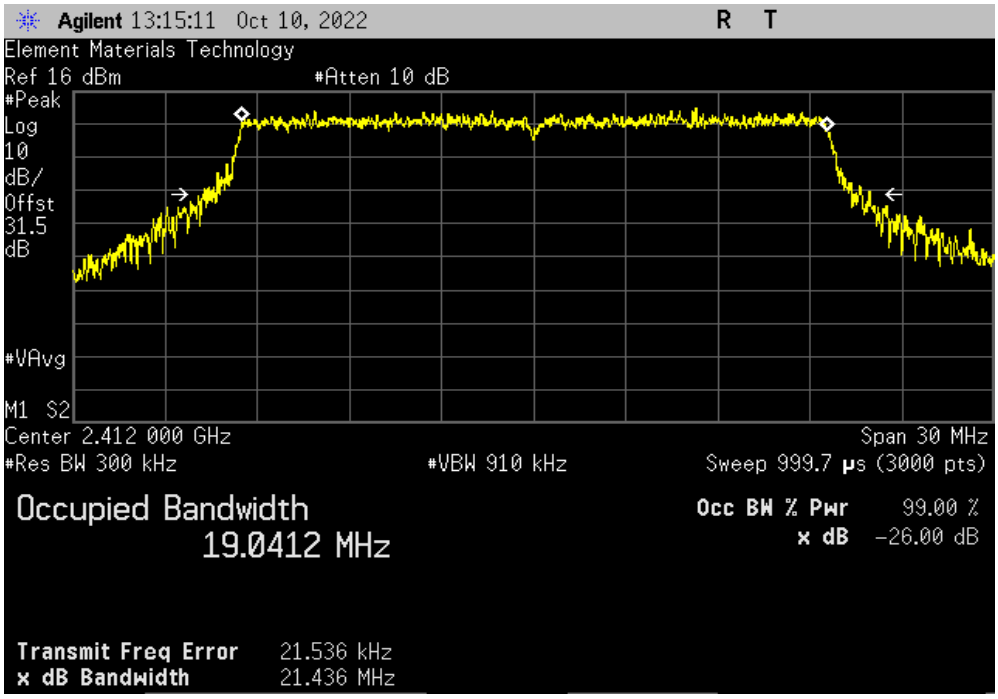
MIMO - Chain 1, HE20, MCS0, High Channel 11, 2462 MHz

				Value	Limit	Result
				18.946 MHz	N/A	N/A



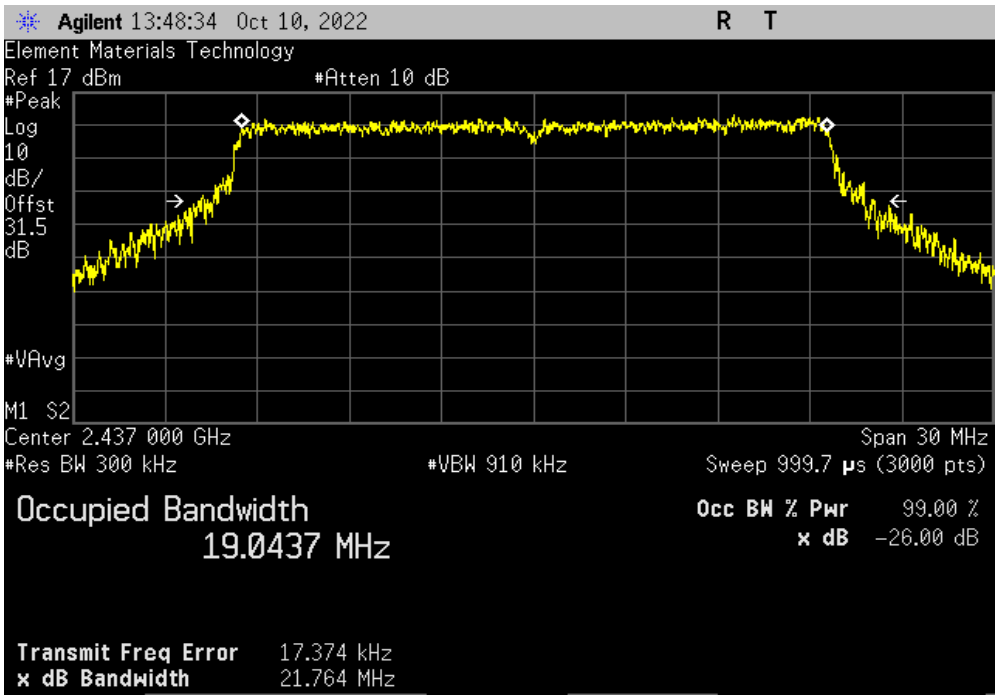
MIMO - Chain 1, HE20, MCS11, Low Channel 1, 2412 MHz

				Value	Limit	Result
				19.041 MHz	N/A	N/A



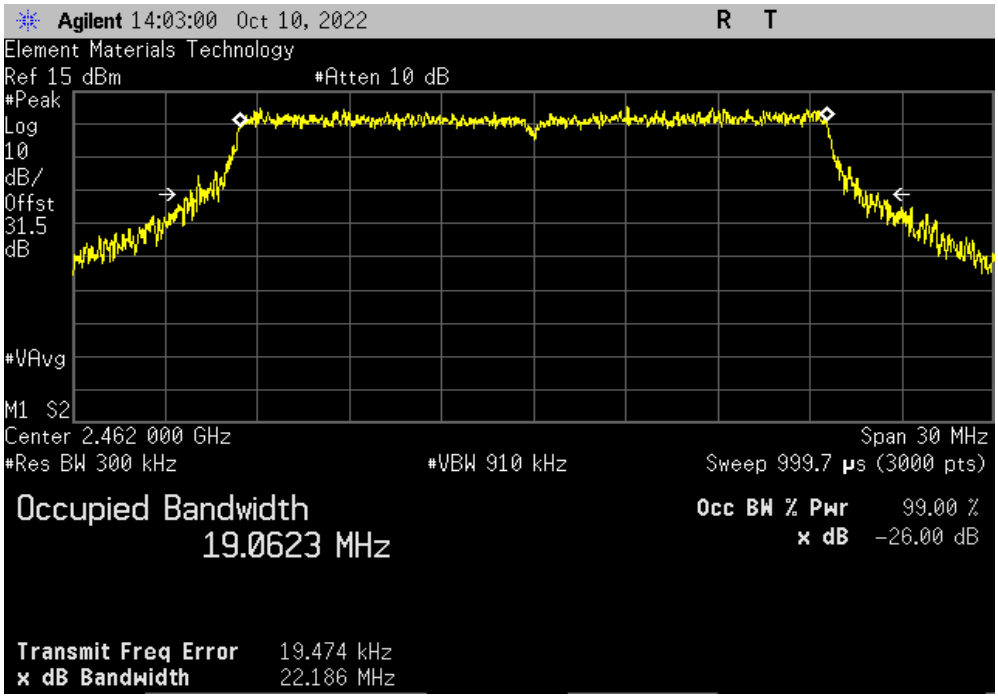
MIMO - Chain 1, HE20, MCS11, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				19.044 MHz	N/A	N/A



MIMO - Chain 1, HE20, MCS11, High Channel 11, 2462 MHz

				Value	Limit	Result
				19.062 MHz	N/A	N/A



OUTPUT POWER - CHAIN 0

XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

OUTPUT POWER - CHAIN 0

element

TbtTx 2022.06.03.0 XMit 2022.02.07.0

EUT:	**U8 Hawk**			**Work Order:**	**KYME0068**
Serial Number:	**192F-85E2-1761**			**Date:**	**6-Oct-22**
Customer:	**Kymeta Corp.**			**Temperature:**	**22.3 °C**
Attendees:	**Dean Busch**			**Humidity:**	**43.8% RH**
Project:	**None**			**Barometric Pres.:**	**1025 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**12 VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2022	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

Reference level offset includes: DC Block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

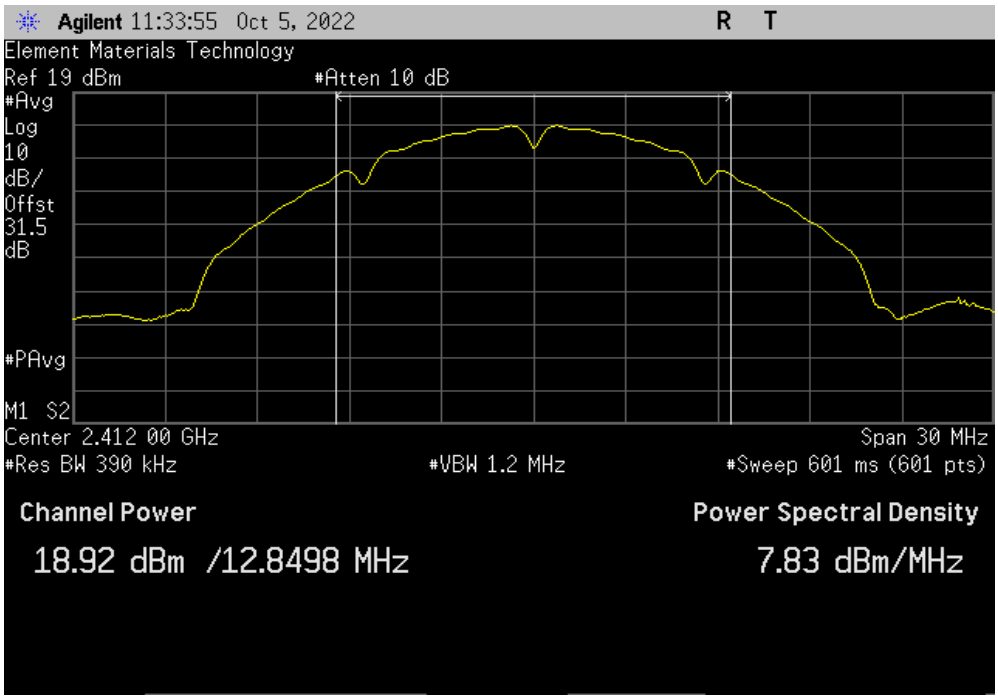
None

Configuration #	**1**	*Signature*

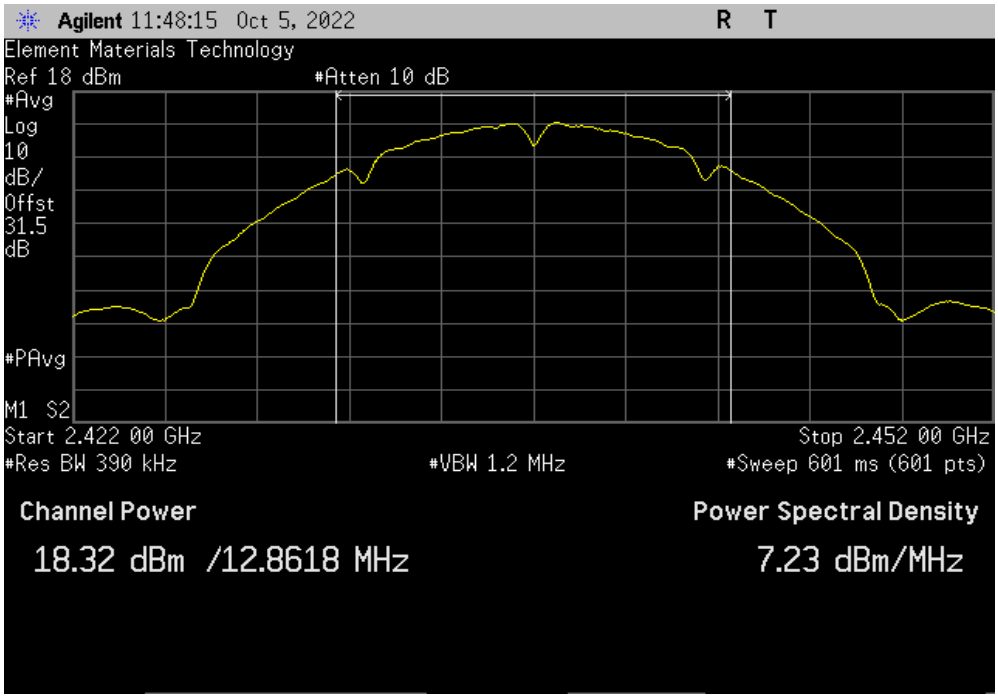
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
Chain 0						
	CCK, 1 Mbps					
	Low Channel 1, 2412 MHz	18.924	2	20.9	30	Pass
	Mid Channel 6, 2437 MHz	18.318	2	20.3	30	Pass
	High Channel 11, 2462 MHz	18.049	2	20.0	30	Pass
	CCK, 11 Mbps					
	Low Channel 1, 2412 MHz	16.17	4.8	21.0	30	Pass
	Mid Channel 6, 2437 MHz	15.605	4.8	20.4	30	Pass
	High Channel 11, 2462 MHz	15.161	4.8	20.0	30	Pass
	Legacy OFDM, 6 Mbps					
	Low Channel 1, 2412 MHz	20.545	0.4	20.9	30	Pass
	Mid Channel 6, 2437 MHz	19.84	0.4	20.2	30	Pass
	High Channel 11, 2462 MHz	19.732	0.4	20.1	30	Pass
	Legacy OFDM, 36 Mbps					
	Low Channel 1, 2412 MHz	19.058	2.3	21.4	30	Pass
	Mid Channel 6, 2437 MHz	18.341	2.4	20.7	30	Pass
	High Channel 11, 2462 MHz	18.1	2.1	20.2	30	Pass
	Legacy OFDM, 54 Mbps					
	Low Channel 1, 2412 MHz	18.312	3.2	21.5	30	Pass
	Mid Channel 6, 2437 MHz	17.638	3.2	20.8	30	Pass
	High Channel 11, 2462 MHz	17.455	3.2	20.7	30	Pass
	HT20, MCS0					
	Low Channel 1, 2412 MHz	18.088	0.3	18.4	30	Pass
	Mid Channel 6, 2437 MHz	17.441	0.3	17.7	30	Pass
	High Channel 11, 2462 MHz	16.976	0.3	17.3	30	Pass
	HT20, MCS7					
	Low Channel 1, 2412 MHz	18.347	0.6	18.9	30	Pass
	Mid Channel 6, 2437 MHz	17.701	0.6	18.3	30	Pass
	High Channel 11, 2462 MHz	17.519	0.6	18.1	30	Pass
	VHT20, MCS0					
	Low Channel 1, 2412 MHz	17.819	0.6	18.4	30	Pass
	Mid Channel 6, 2437 MHz	17.104	0.6	17.7	30	Pass
	High Channel 11, 2462 MHz	17.129	0.6	17.7	30	Pass
	VHT20, MCS8					
	Low Channel 1, 2412 MHz	18.318	0.6	18.9	30	Pass
	Mid Channel 6, 2437 MHz	17.691	0.6	18.3	30	Pass
	High Channel 11, 2462 MHz	17.446	0.6	18	30	Pass
	HE20, MCS0					
	Low Channel 1, 2412 MHz	17.754	0.6	18.4	30	Pass
	Mid Channel 6, 2437 MHz	17.075	0.6	17.7	30	Pass
	High Channel 11, 2462 MHz	16.895	0.6	17.5	30	Pass
	HE20, MCS11					
	Low Channel 1, 2412 MHz	18.36	0.6	19	30	Pass
	Mid Channel 6, 2437 MHz	17.733	0.6	18.3	30	Pass
	High Channel 11, 2462 MHz	17.591	0.6	18.2	30	Pass

OUTPUT POWER - CHAIN 0

Chain 0, CCK, 1 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.924	2.0	20.9	30	Pass

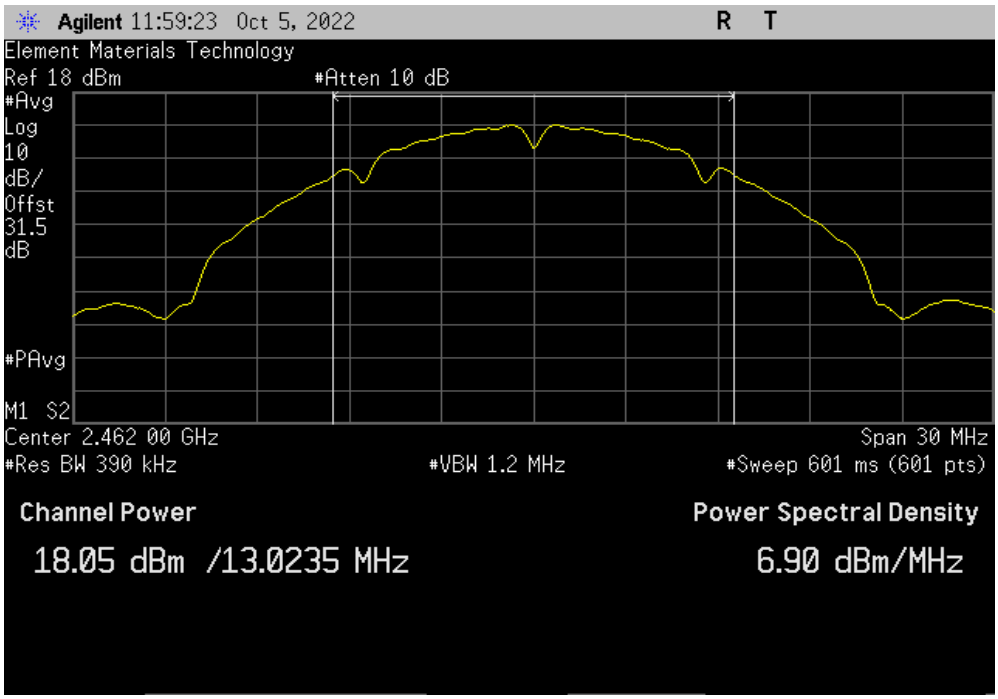


Chain 0, CCK, 1 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.318	2	20.3	30	Pass

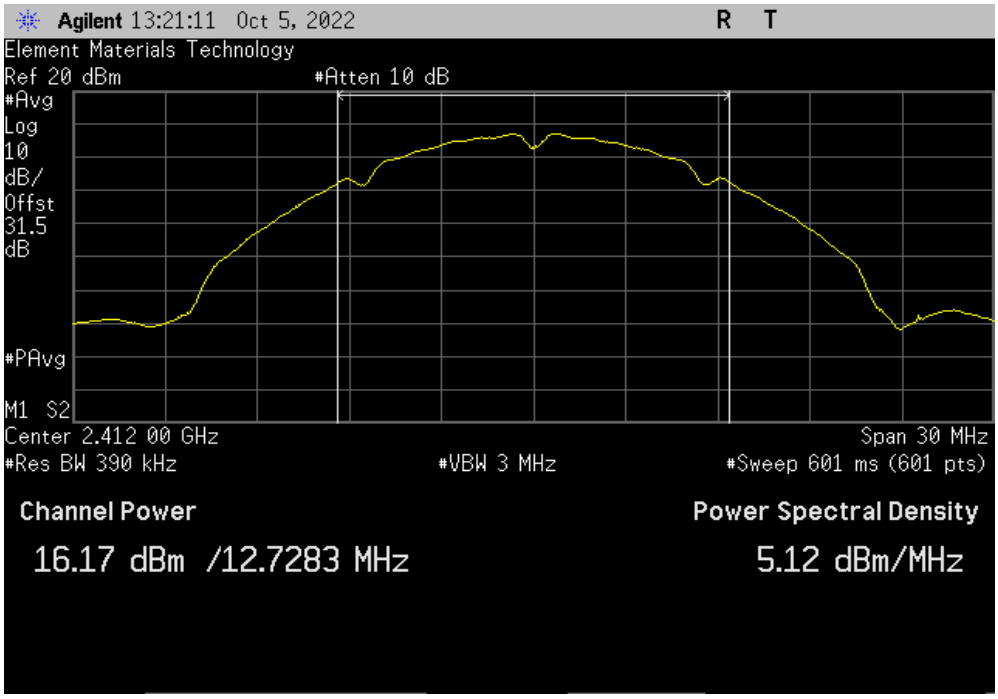


OUTPUT POWER - CHAIN 0

Chain 0, CCK, 1 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.049	2	20.0	30	Pass

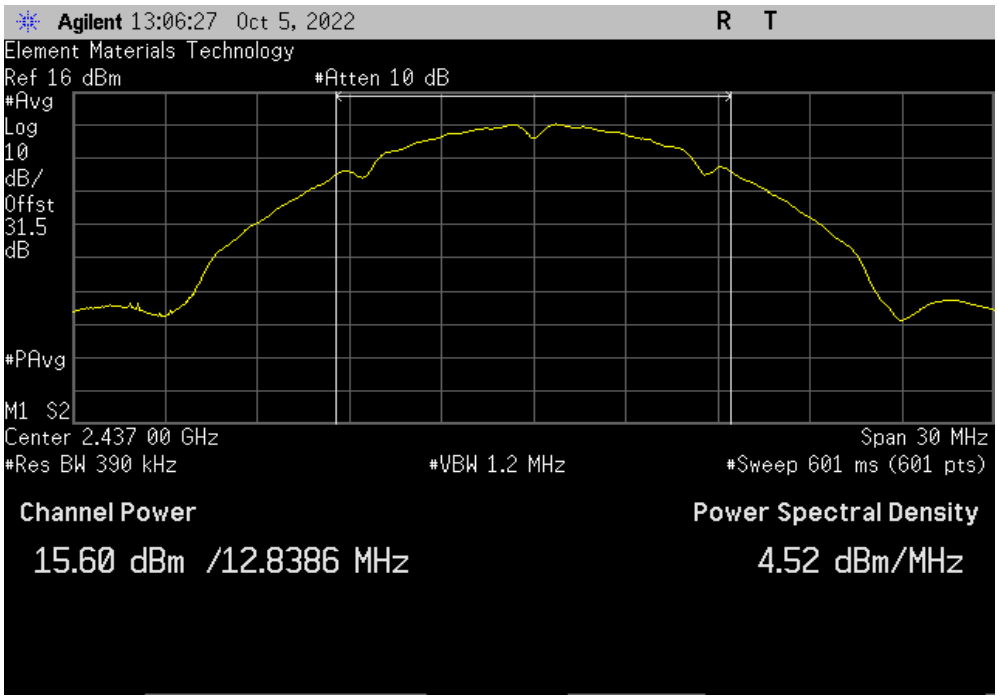


Chain 0, CCK, 11 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.17	4.8	21.0	30	Pass

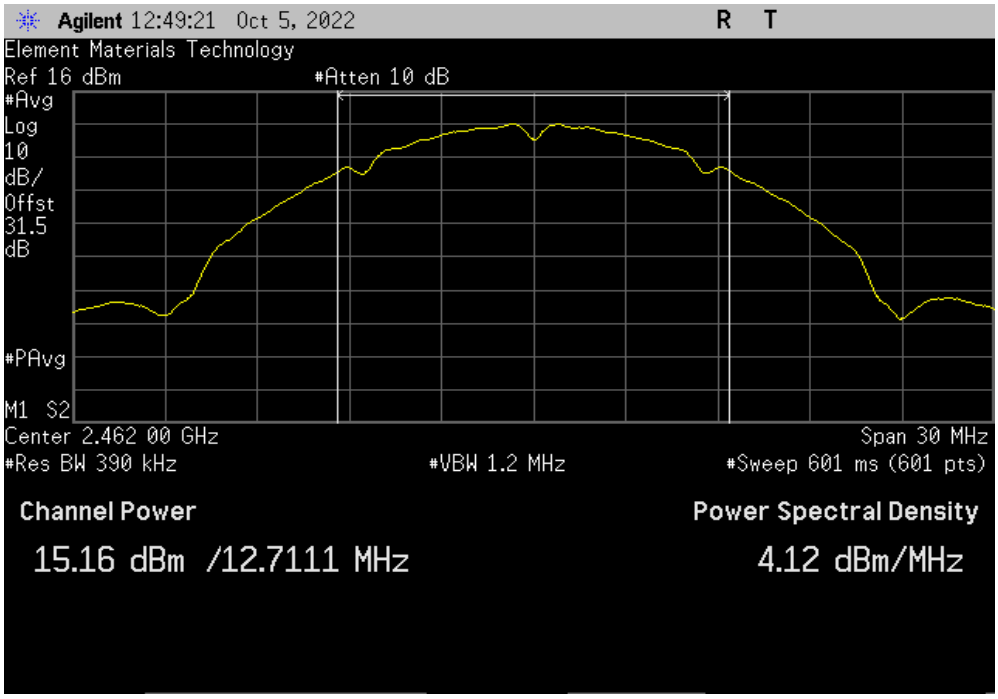


OUTPUT POWER - CHAIN 0

Chain 0, CCK, 11 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.605	4.8	20.4	30	Pass

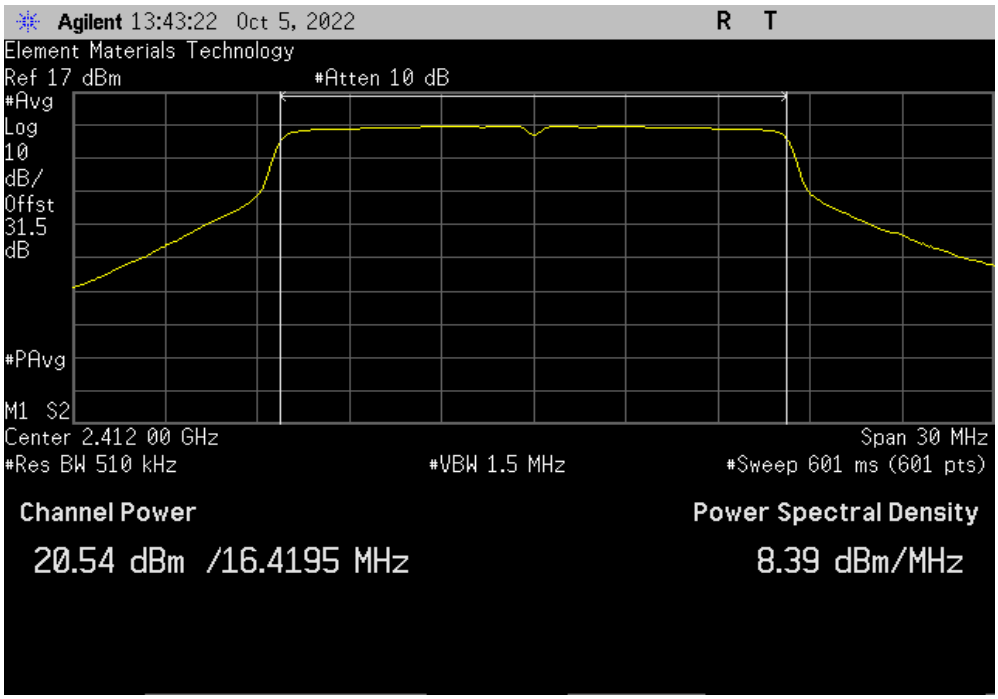


Chain 0, CCK, 11 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.161	4.8	20.0	30	Pass

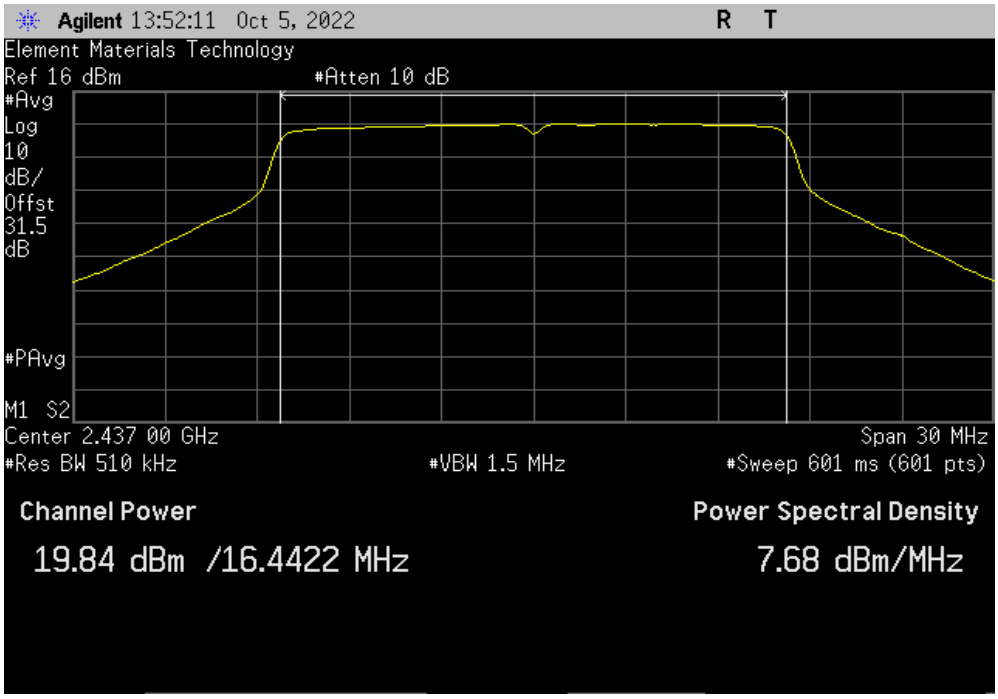


OUTPUT POWER - CHAIN 0

Chain 0, Legacy OFDM, 6 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		20.545	0.4	20.9	30	Pass

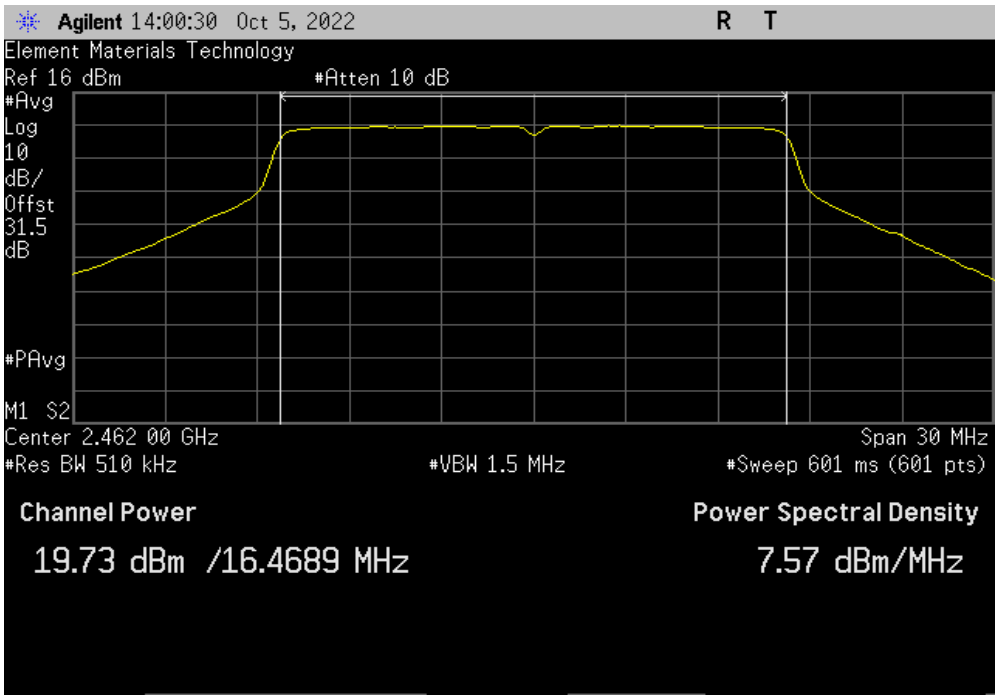


Chain 0, Legacy OFDM, 6 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		19.84	0.4	20.2	30	Pass

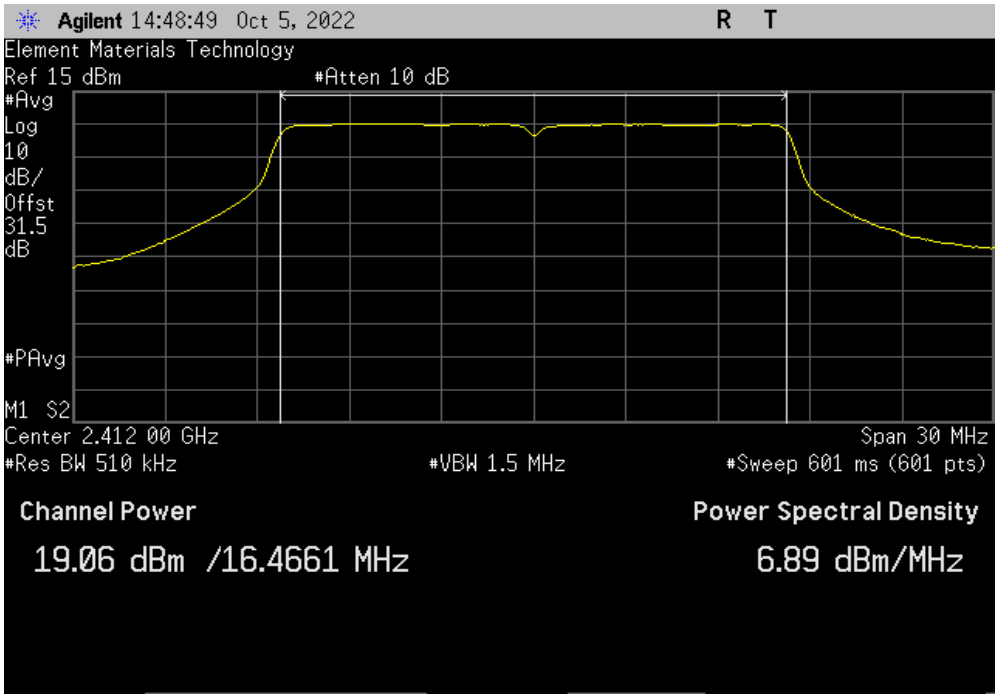


OUTPUT POWER - CHAIN 0

Chain 0, Legacy OFDM, 6 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		19.732	0.4	20.1	30	Pass

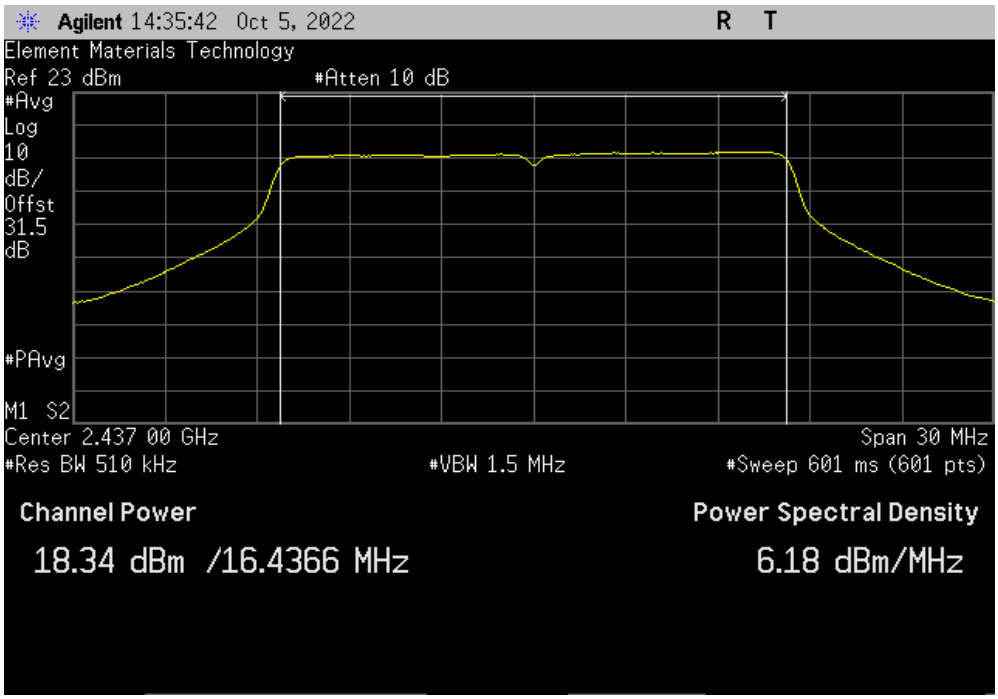


Chain 0, Legacy OFDM, 36 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		19.058	2.3	21.4	30	Pass

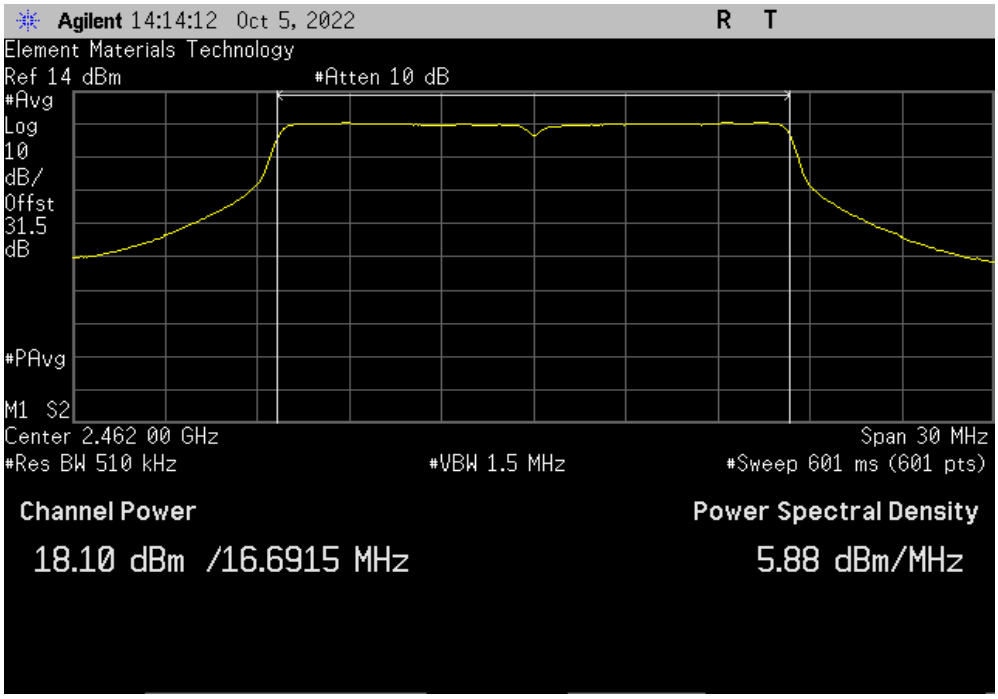


OUTPUT POWER - CHAIN 0

Chain 0, Legacy OFDM, 36 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.341	2.4	20.7	30	Pass

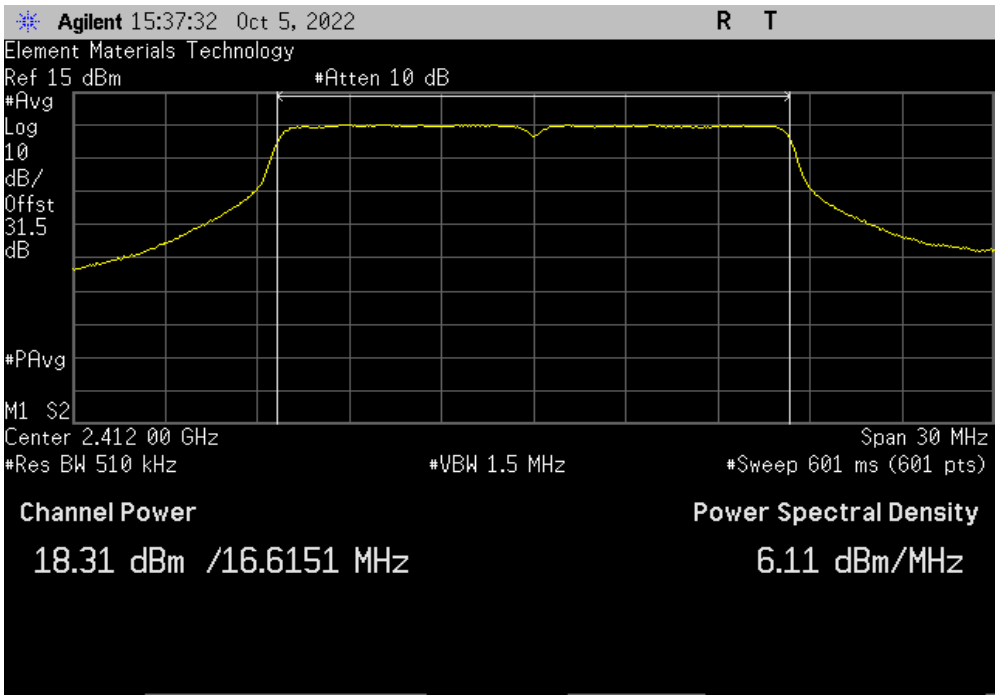


Chain 0, Legacy OFDM, 36 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.1	2.1	20.2	30	Pass

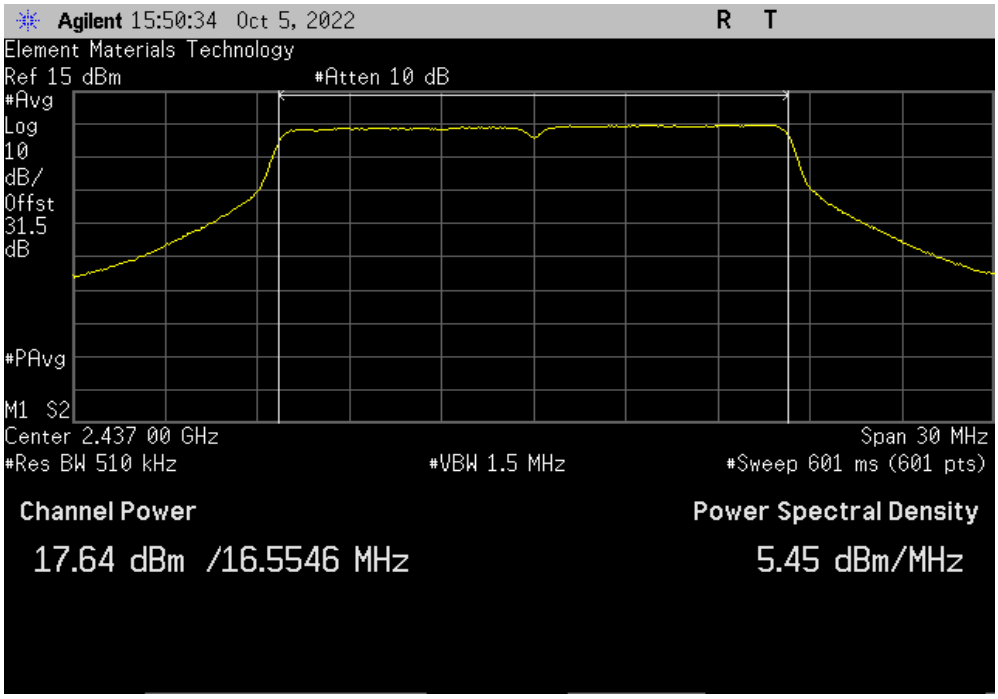


OUTPUT POWER - CHAIN 0

Chain 0, Legacy OFDM, 54 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.312	3.2	21.5	30	Pass

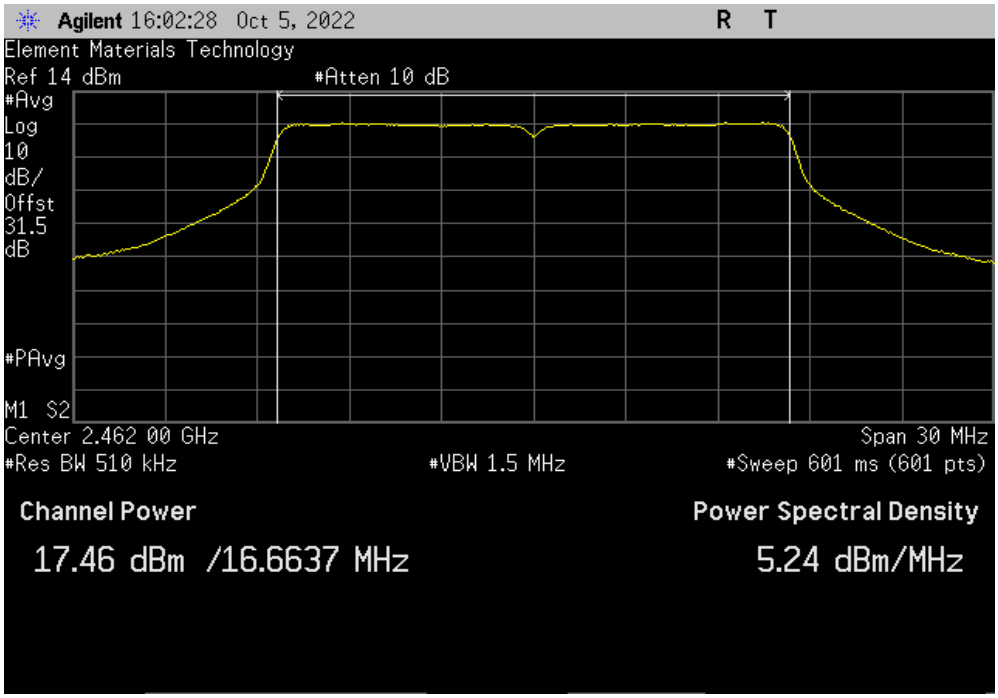


Chain 0, Legacy OFDM, 54 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.638	3.2	20.8	30	Pass

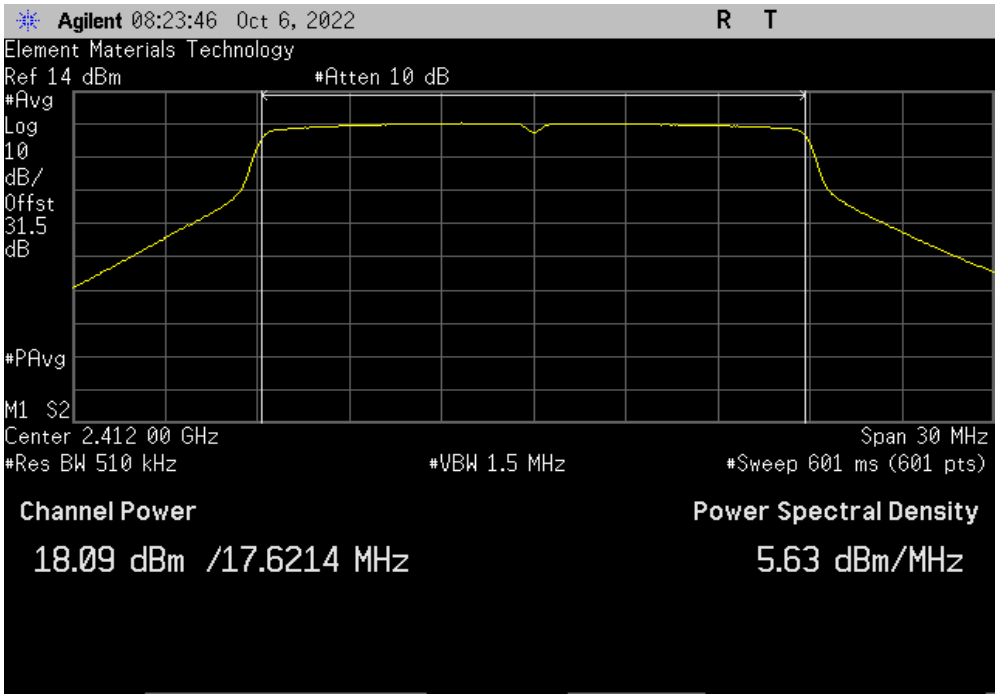


OUTPUT POWER - CHAIN 0

Chain 0, Legacy OFDM, 54 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.455	3.2	20.7	30	Pass

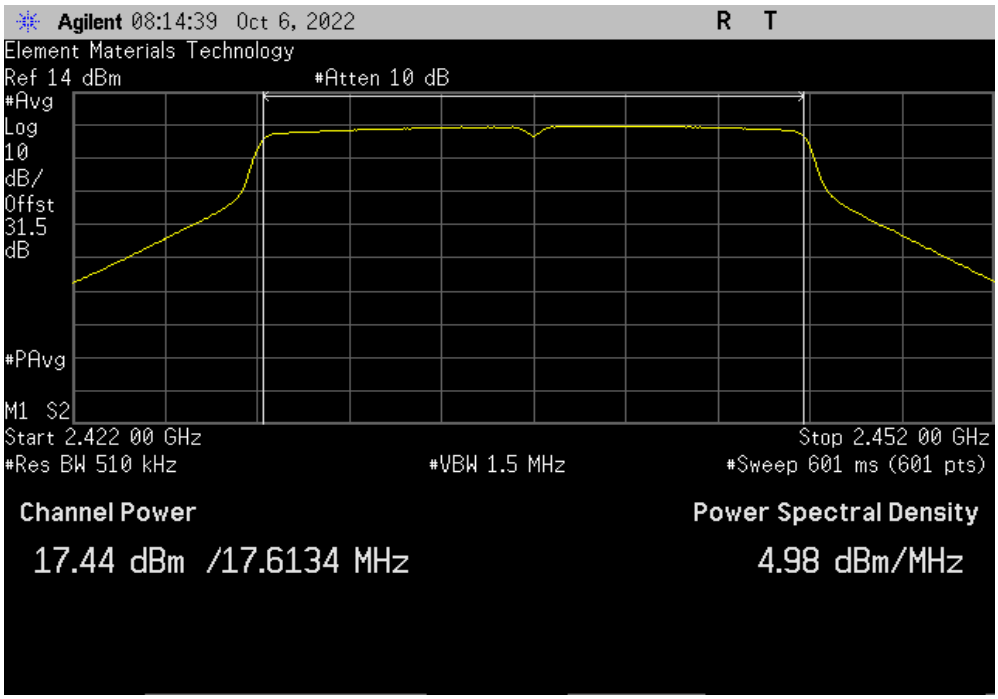


Chain 0, HT20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.088	0.3	18.4	30	Pass

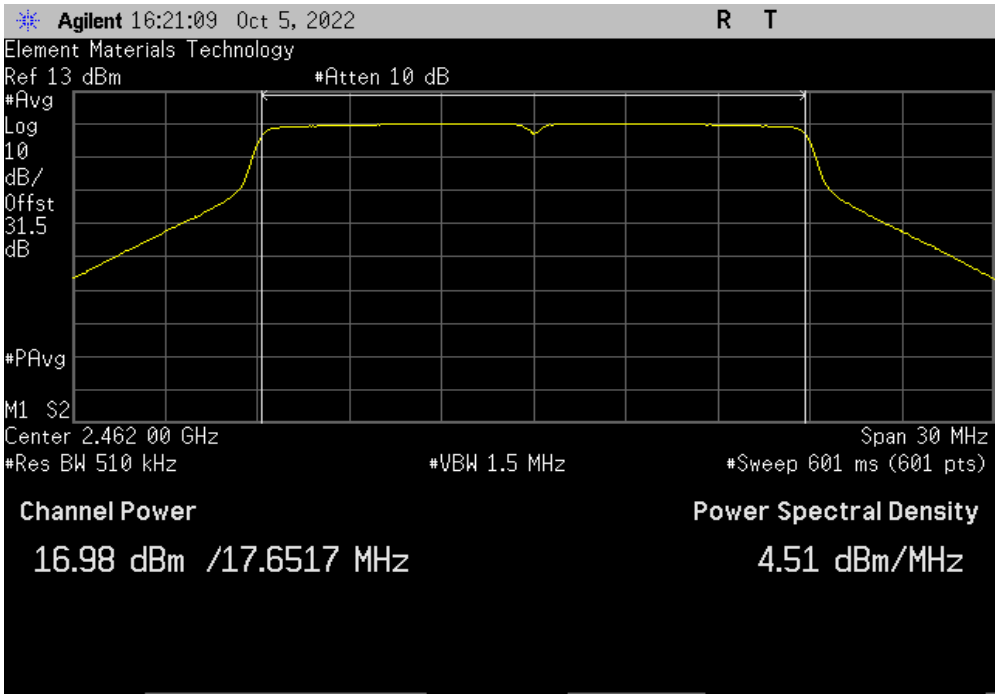


OUTPUT POWER - CHAIN 0

Chain 0, HT20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.441	0.3	17.7	30	Pass

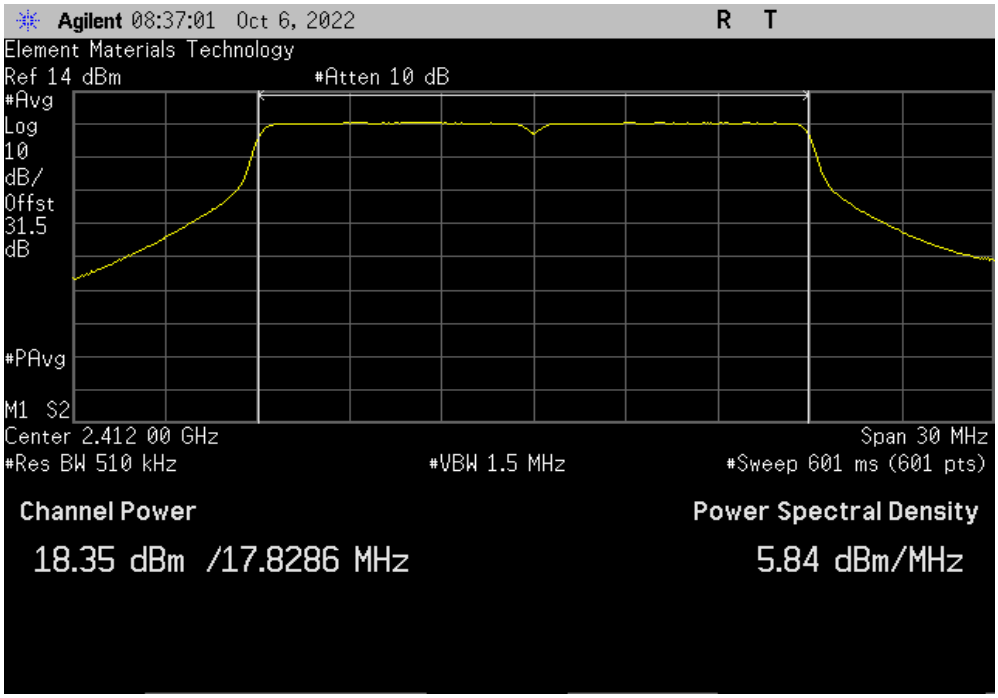


Chain 0, HT20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.976	0.3	17.3	30	Pass

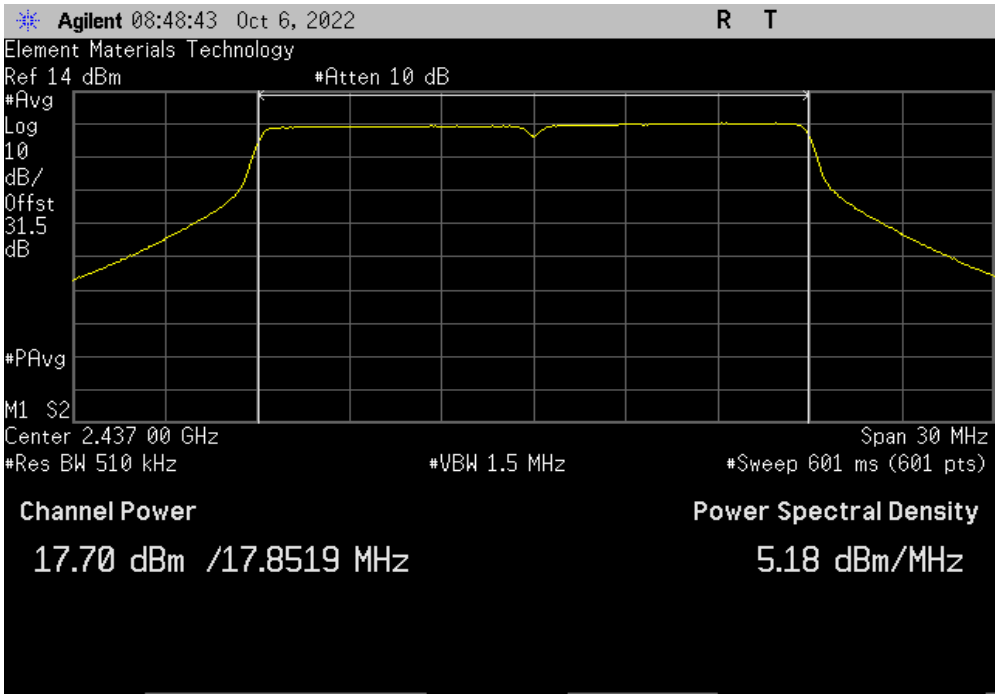


OUTPUT POWER - CHAIN 0

Chain 0, HT20, MCS7, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.347	0.6	18.9	30	Pass

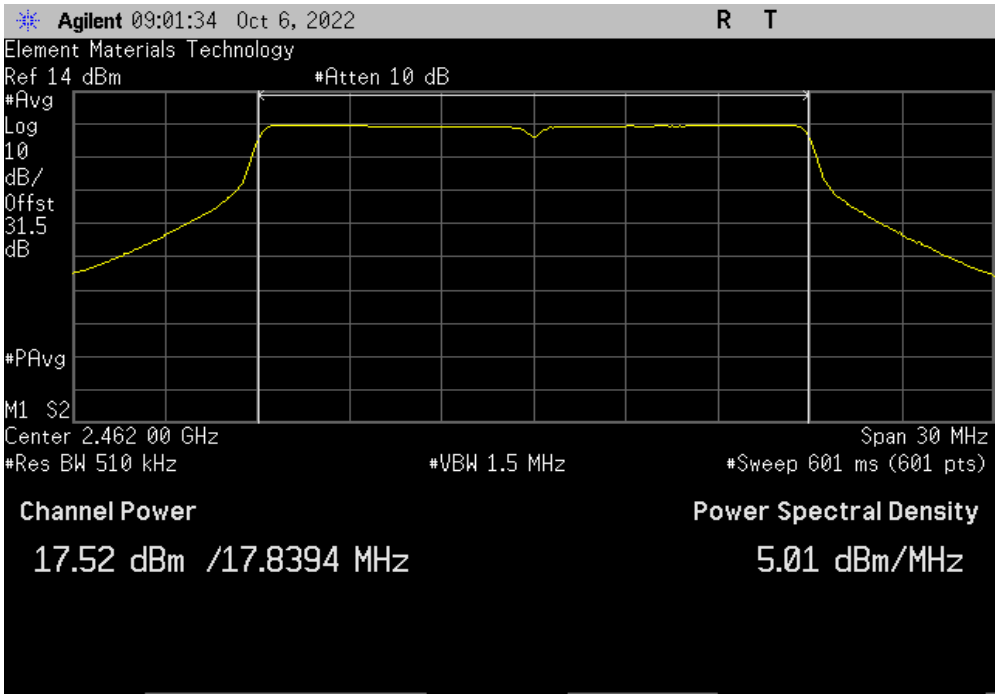


Chain 0, HT20, MCS7, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.701	0.6	18.3	30	Pass

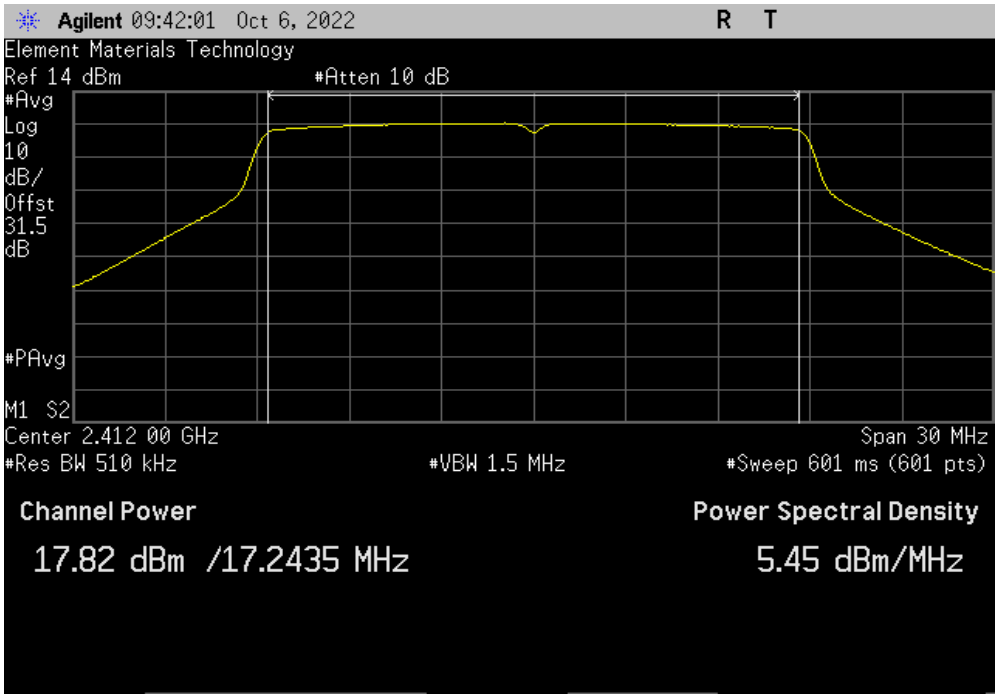


OUTPUT POWER - CHAIN 0

Chain 0, HT20, MCS7, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.519	0.6	18.1	30	Pass

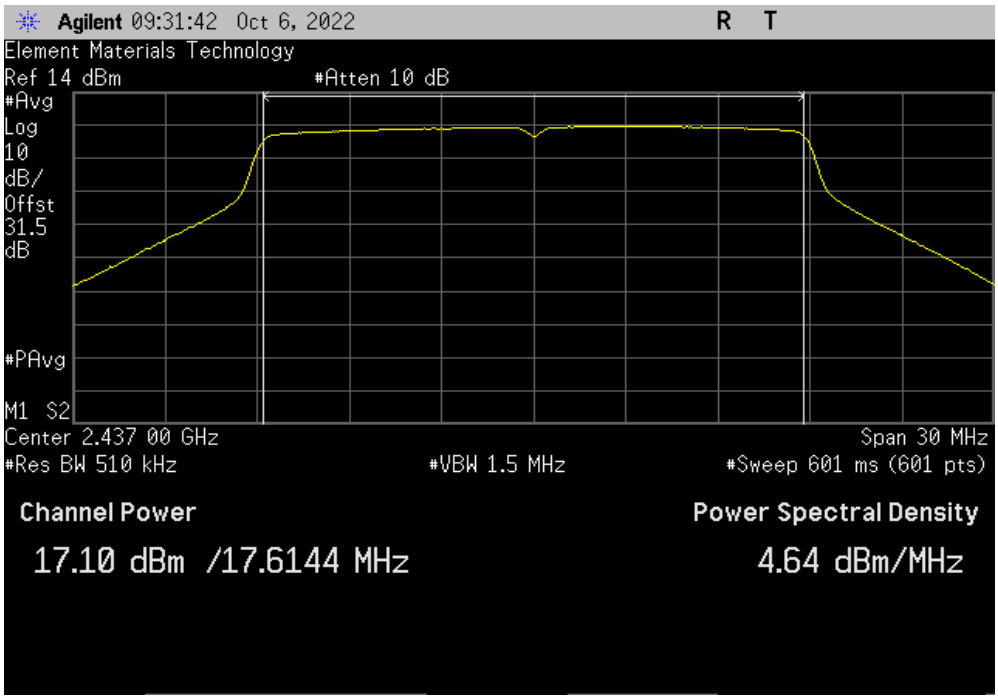


Chain 0, VHT20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.819	0.6	18.4	30	Pass

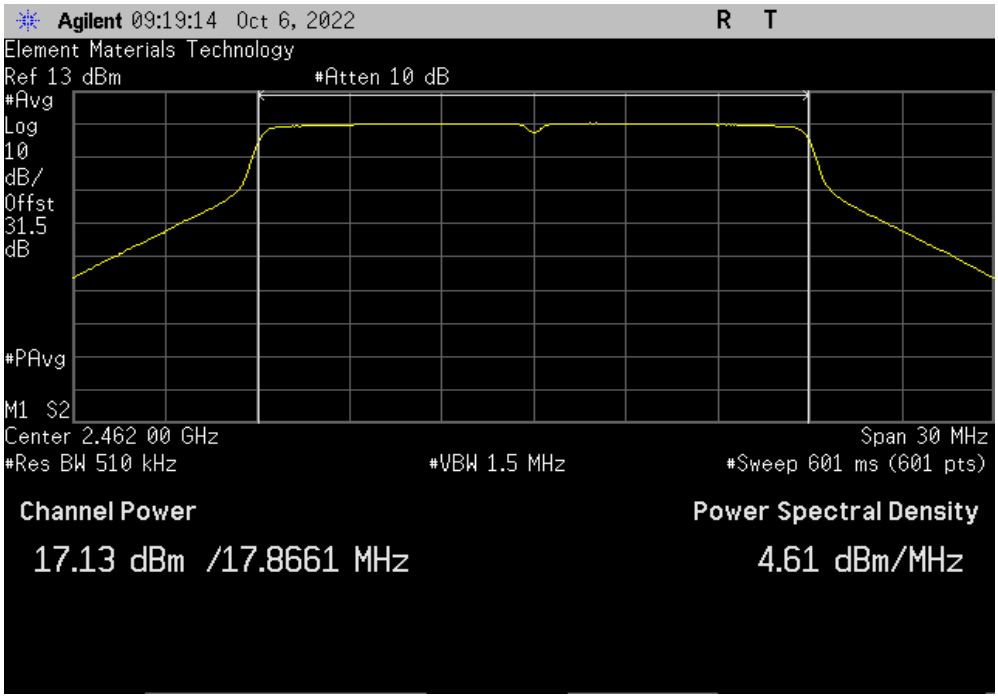


OUTPUT POWER - CHAIN 0

Chain 0, VHT20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.104	0.6	17.7	30	Pass

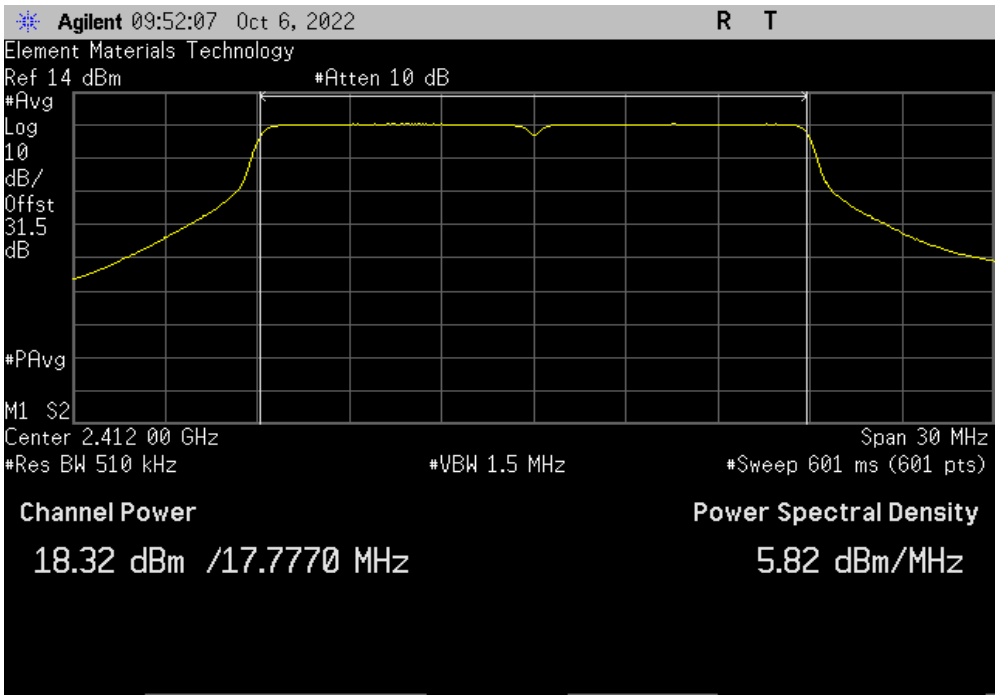


Chain 0, VHT20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.129	0.6	17.7	30	Pass

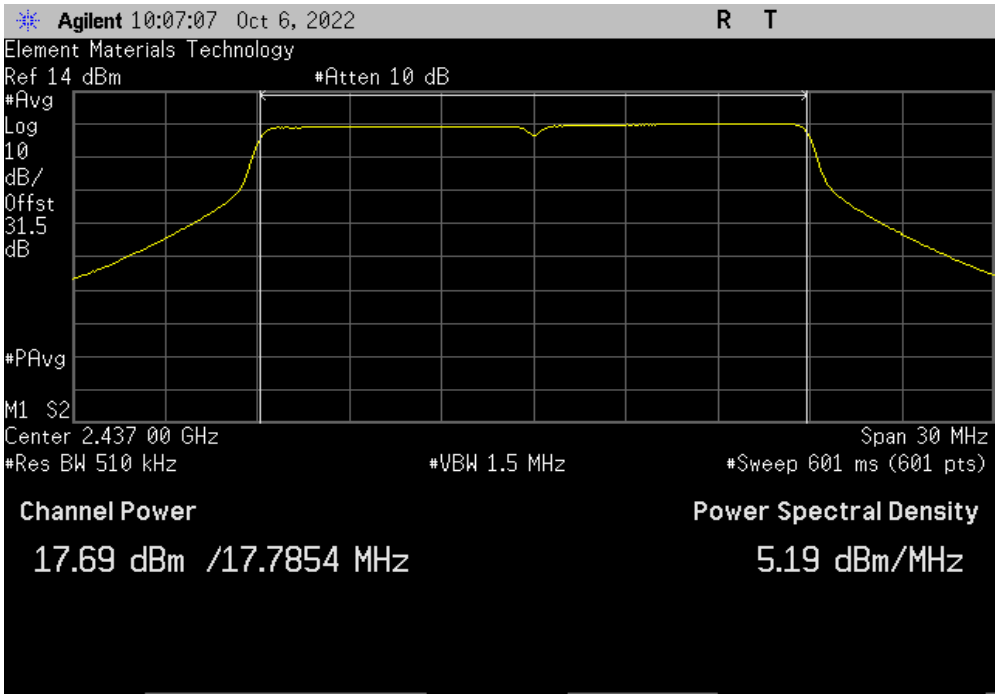


OUTPUT POWER - CHAIN 0

Chain 0, VHT20, MCS8, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.318	0.6	18.9	30	Pass

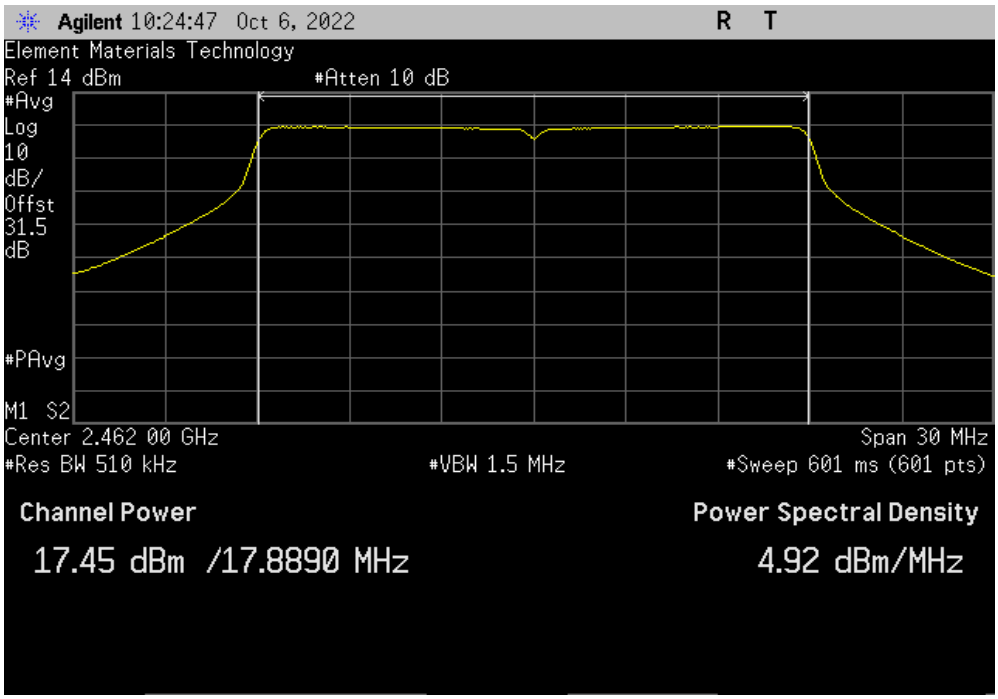


Chain 0, VHT20, MCS8, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.691	0.6	18.3	30	Pass

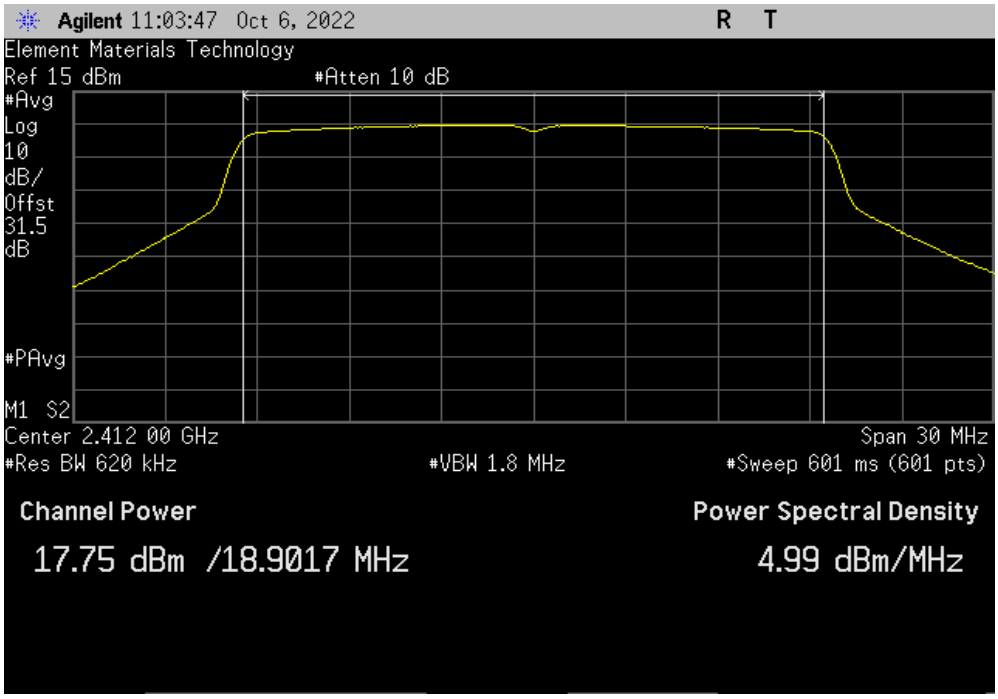


OUTPUT POWER - CHAIN 0

Chain 0, VHT20, MCS8, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.446	0.6	18	30	Pass

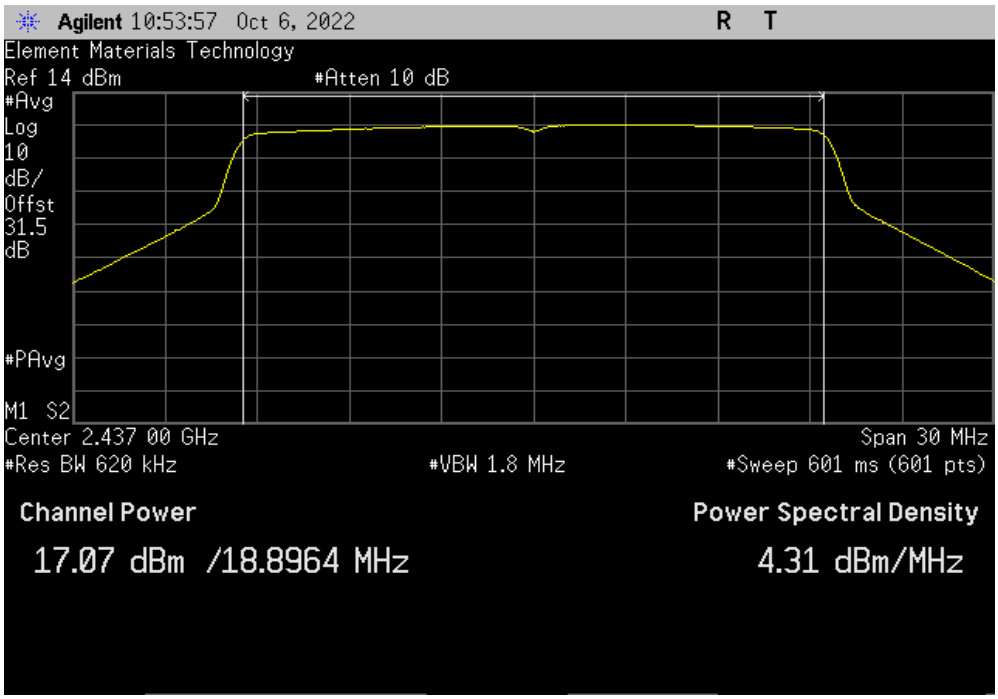


Chain 0, HE20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.754	0.6	18.4	30	Pass

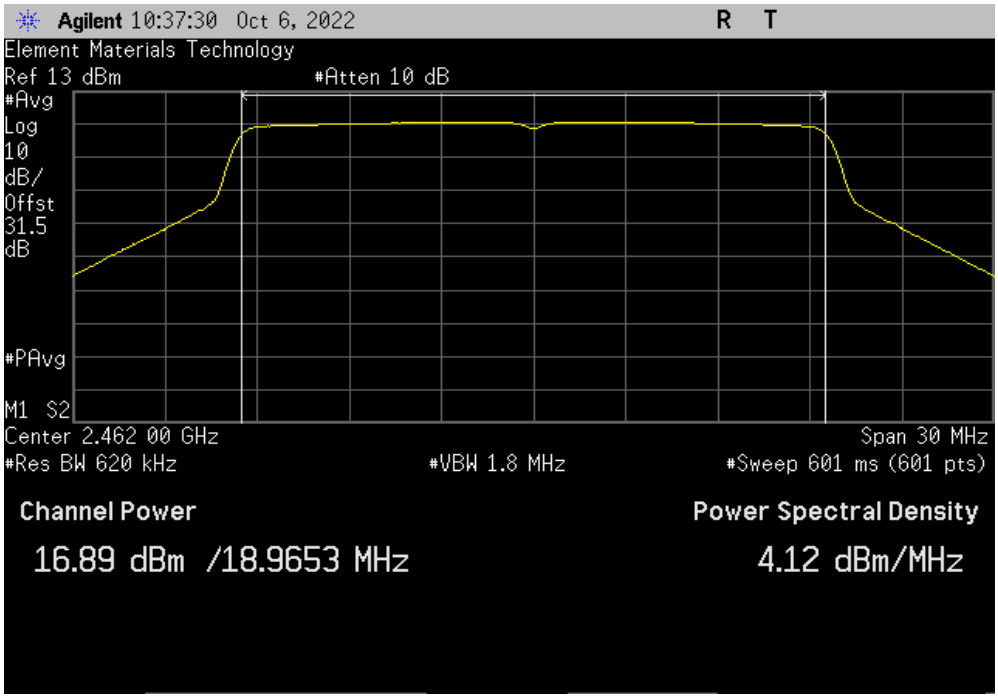


OUTPUT POWER - CHAIN 0

Chain 0, HE20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.075	0.6	17.7	30	Pass

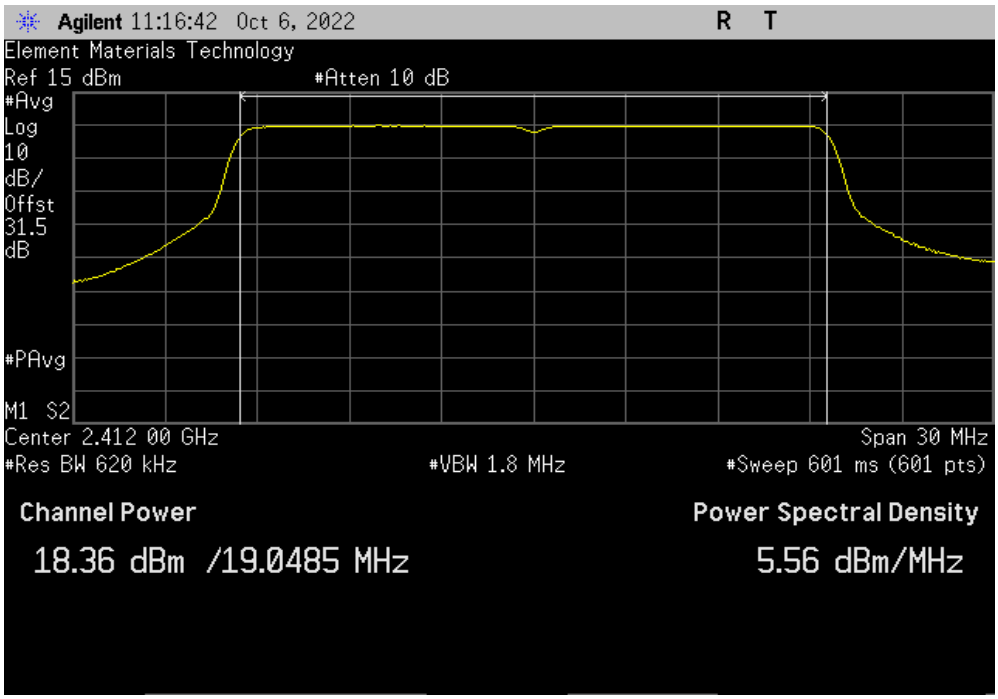


Chain 0, HE20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.895	0.6	17.5	30	Pass

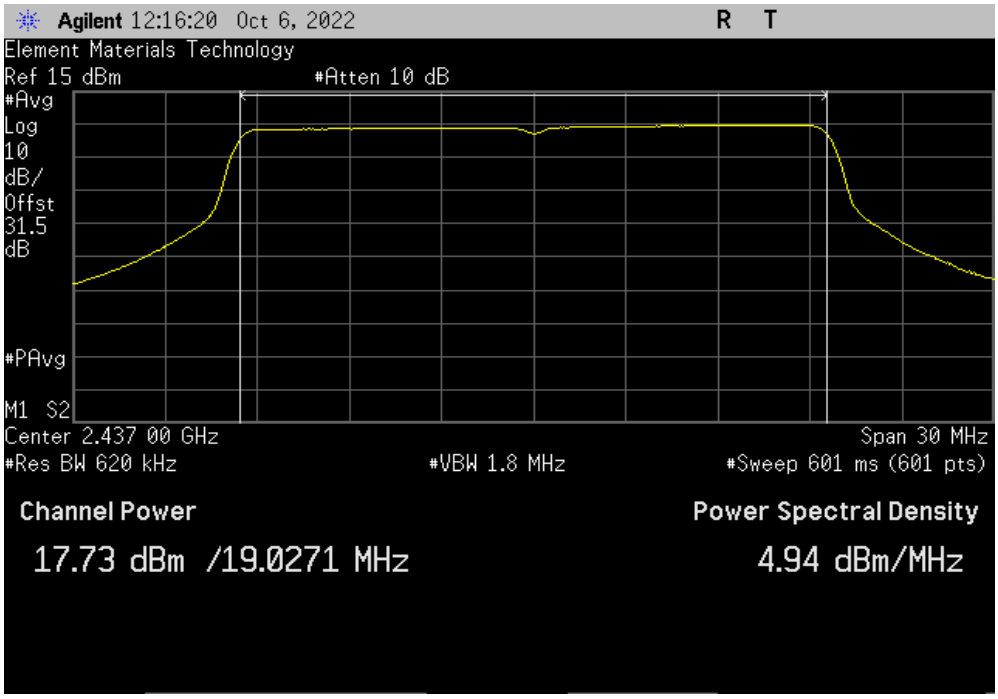


OUTPUT POWER - CHAIN 0

Chain 0, HE20, MCS11, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.36	0.6	19	30	Pass

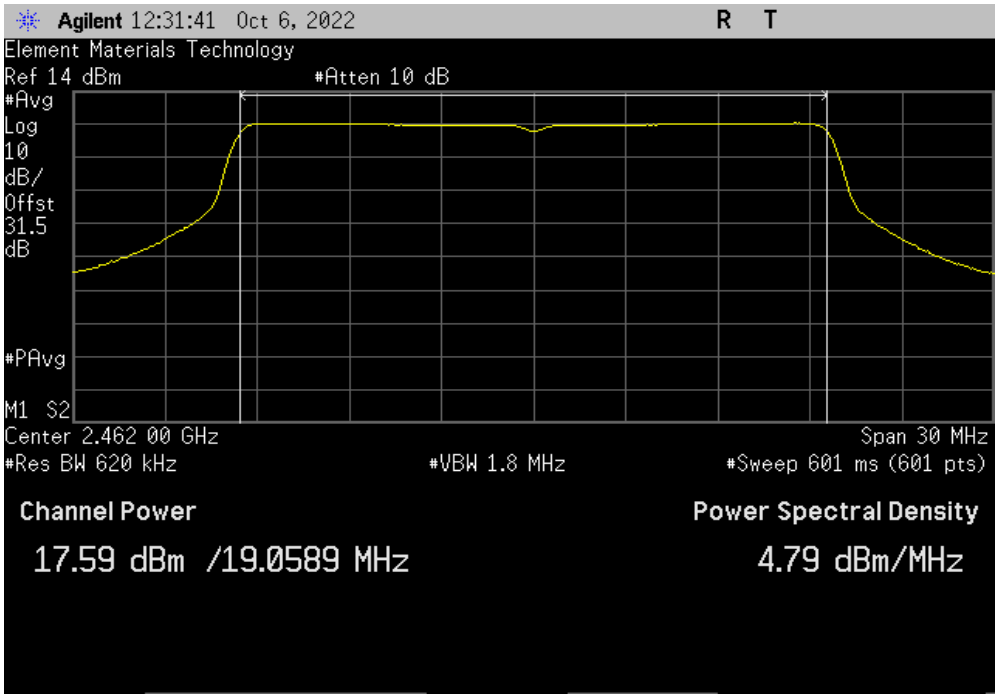


Chain 0, HE20, MCS11, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.733	0.6	18.3	30	Pass



OUTPUT POWER - CHAIN 0

Chain 0, HE20, MCS11, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.591	0.6	18.2	30	Pass



OUTPUT POWER - CHAIN 1

XMit 2022.12.28.0

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 - 2023

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2022-12-02	2023-12-02
Attenuator	S.M. Electronics	SA26B-20	AUY	2023-03-13	2024-03-13
Block - DC	Fairview Microwave	SD3379	AMW	2023-03-13	2024-03-13
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

TEST EQUIPMENT - 2022

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

OUTPUT POWER - CHAIN 1

element

TbtTx 2022.06.03.0 XMit 2022.12.28.0

EUT:	**U8 Hawk**			**Work Order:**	**KYME0068**
Serial Number:	**See configuration**			**Date:**	**03/15/2023**
Customer:	**Kymeta Corp.**			**Temperature:**	**20.3°C**
Attendees:	**Dean Busch and Mike Olsen**			**Humidity:**	**38.2%**
Project:	**None**			**Barometric Pres.:**	**1023 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**12VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

All measurments collected before 2023, were performed on configuration KYME0068-1. Reference level offset includes: DC block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

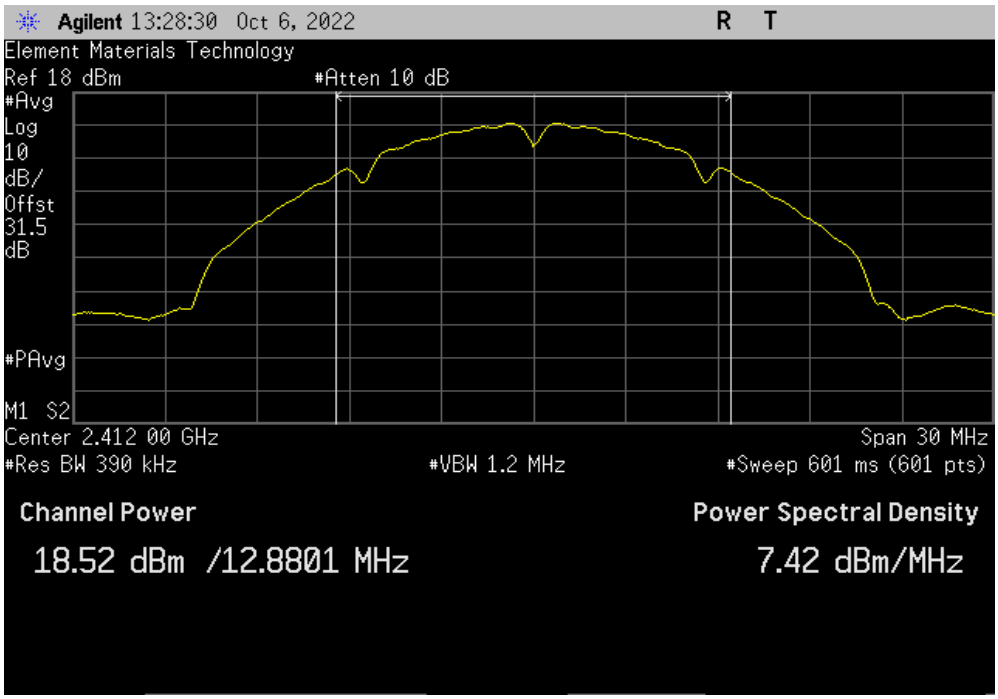
None

Configuration #	**KYME0068-1** **KYME0068-5**	*Signature*

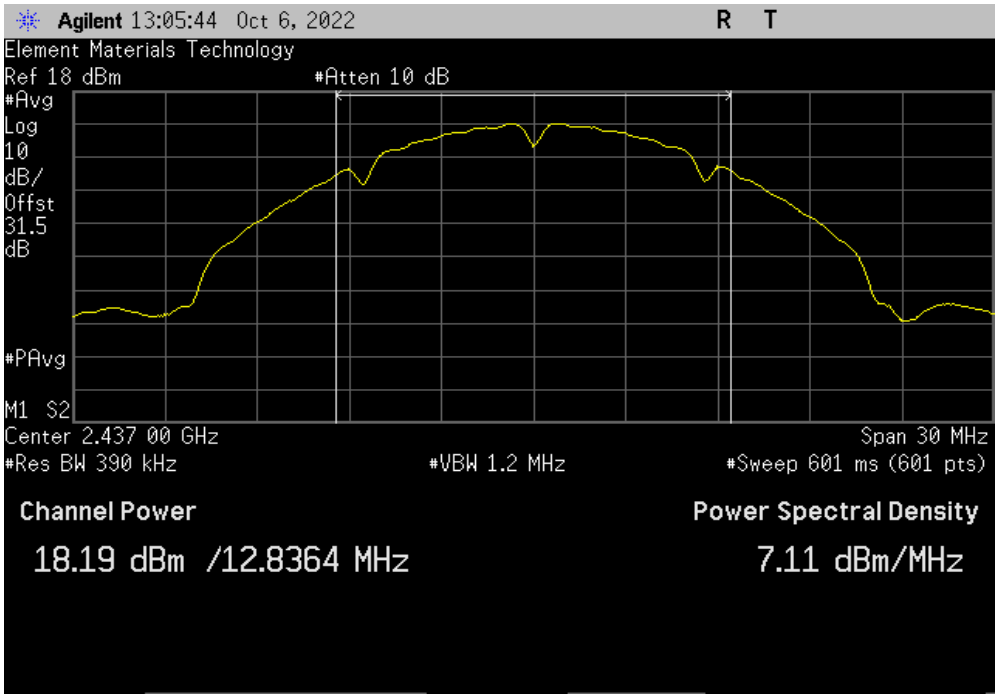
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
Chain 1						
	CCK, 1 Mbps					
	Low Channel 1, 2412 MHz	18.521	2	20.5	30	Pass
	Mid Channel 6, 2437 MHz	18.192	2	20.2	30	Pass
	High Channel 11, 2462 MHz	17.965	2	20.0	30	Pass
	CCK, 11 Mbps					
	Low Channel 1, 2412 MHz	15.831	4.8	20.6	30	Pass
	Mid Channel 6, 2437 MHz	15.516	4.8	20.3	30	Pass
	High Channel 11, 2462 MHz	15.217	4.8	20.0	30	Pass
	Legacy OFDM, 6 Mbps					
	Low Channel 1, 2412 MHz	20.051	0.4	20.5	30	Pass
	Mid Channel 6, 2437 MHz	19.825	0.4	20.2	30	Pass
	High Channel 11, 2462 MHz	19.762	0.4	20.2	30	Pass
	Legacy OFDM, 36 Mbps					
	Low Channel 1, 2412 MHz	18.565	2.3	20.9	30	Pass
	Mid Channel 6, 2437 MHz	18.267	2.3	20.6	30	Pass
	High Channel 11, 2462 MHz	14.973	2.3	17.3	30	Pass
	Legacy OFDM, 54 Mbps					
	Low Channel 1, 2412 MHz	17.708	3.2	20.9	30	Pass
	Mid Channel 6, 2437 MHz	17.498	3.2	20.7	30	Pass
	High Channel 11, 2462 MHz	17.353	3.2	20.6	30	Pass
	HT20, MCS0					
	Low Channel 1, 2412 MHz	17.288	0.6	17.9	30	Pass
	Mid Channel 6, 2437 MHz	16.976	0.6	17.6	30	Pass
	High Channel 11, 2462 MHz	17.095	0.6	17.7	30	Pass
	HT20, MCS7					
	Low Channel 1, 2412 MHz	17.707	0.6	18.3	30	Pass
	Mid Channel 6, 2437 MHz	17.443	0.6	18	30	Pass
	High Channel 11, 2462 MHz	17.515	0.6	18.1	30	Pass
	VHT20, MCS0					
	Low Channel 1, 2412 MHz	17.269	0.6	17.9	30	Pass
	Mid Channel 6, 2437 MHz	17.097	0.6	17.7	30	Pass
	High Channel 11, 2462 MHz	17.066	0.6	17.7	30	Pass
	VHT20, MCS8					
	Low Channel 1, 2412 MHz	17.709	0.6	18.3	30	Pass
	Mid Channel 6, 2437 MHz	17.446	0.6	18	30	Pass
	High Channel 11, 2462 MHz	17.516	0.6	18.1	30	Pass
	HE20, MCS0					
	Low Channel 1, 2412 MHz	17.127	0.6	17.7	30	Pass
	Mid Channel 6, 2437 MHz	16.919	0.6	17.5	30	Pass
	High Channel 11, 2462 MHz	16.979	0.6	17.6	30	Pass
	HE20, MCS11					
	Low Channel 1, 2412 MHz	17.714	0.6	18.3	30	Pass
	Mid Channel 6, 2437 MHz	17.470	0.6	18.1	30	Pass
	High Channel 11, 2462 MHz	16.640	0.6	17.2	30	Pass

OUTPUT POWER - CHAIN 1

Chain 1, CCK, 1 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.521	2	20.5	30	Pass

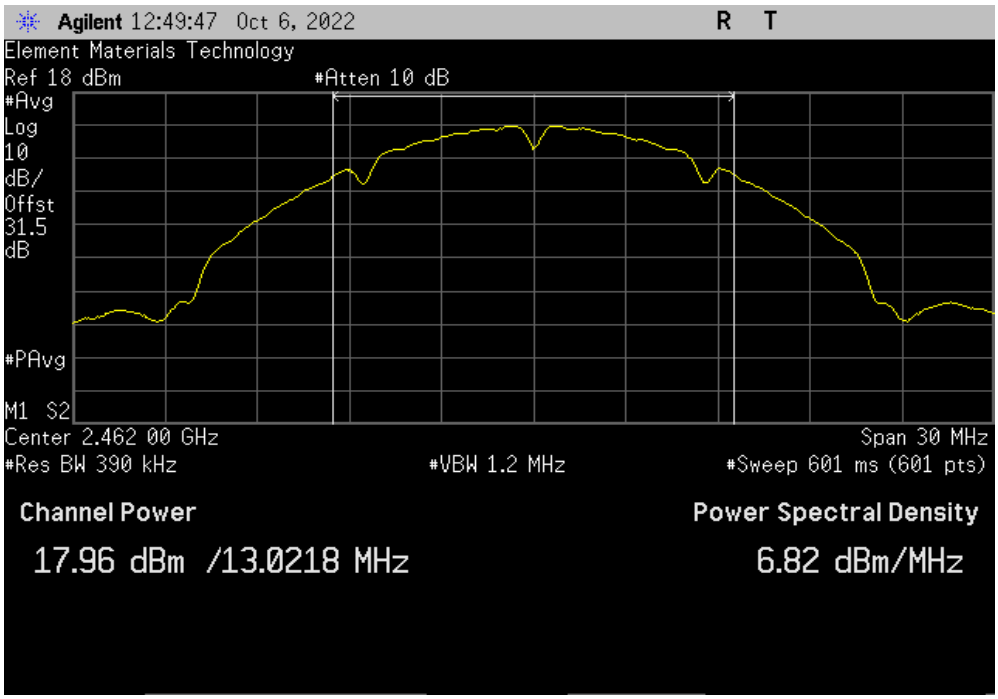


Chain 1, CCK, 1 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.192	2	20.2	30	Pass

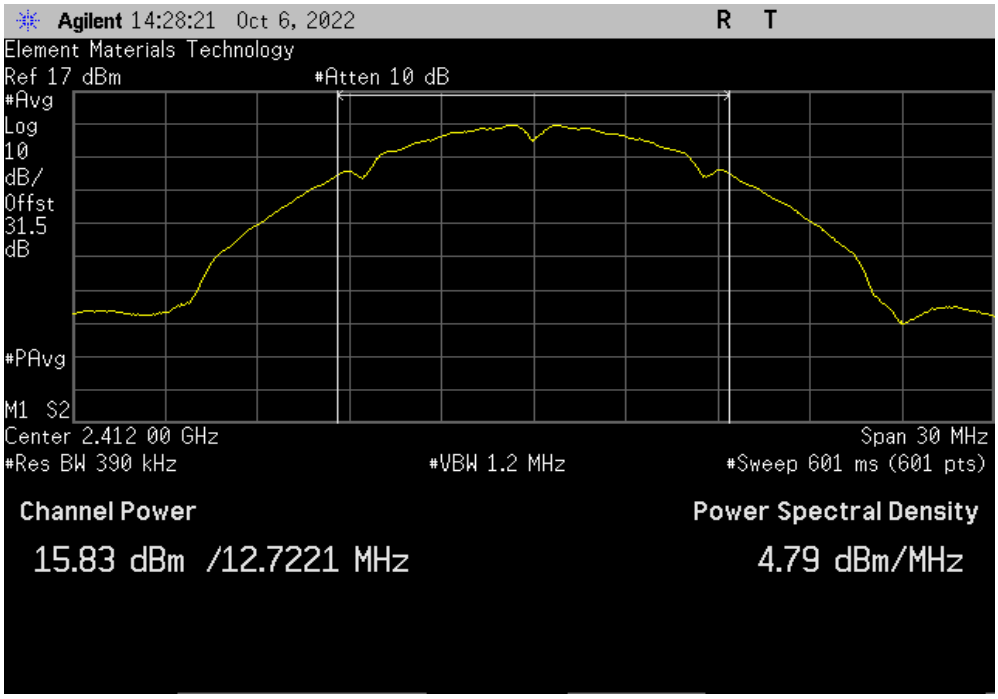


OUTPUT POWER - CHAIN 1

Chain 1, CCK, 1 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.965	2	20.0	30	Pass

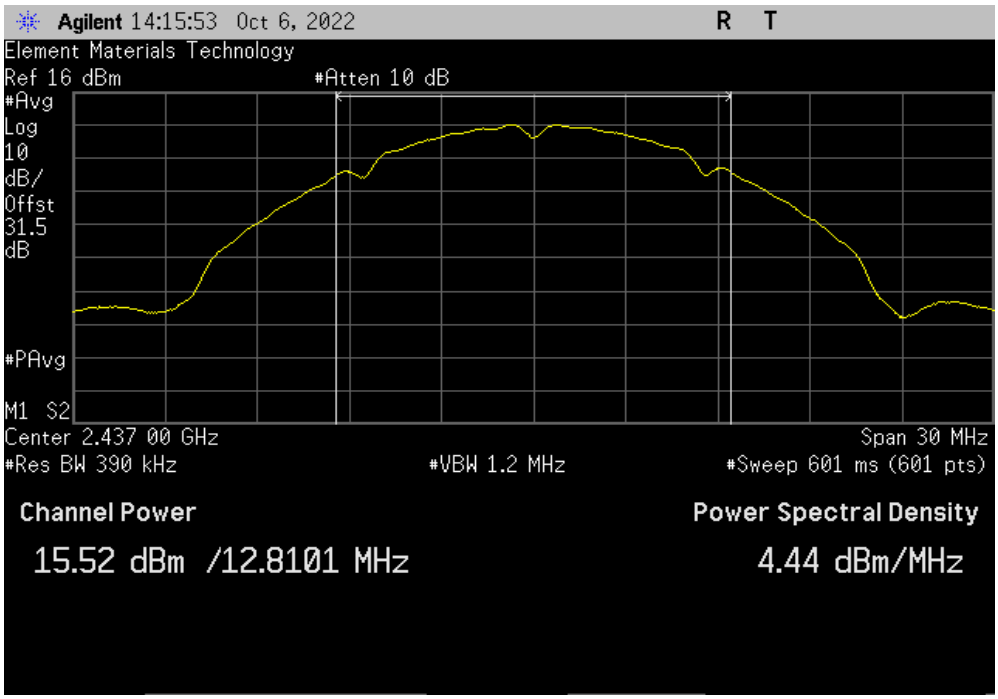


Chain 1, CCK, 11 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.831	4.8	20.6	30	Pass

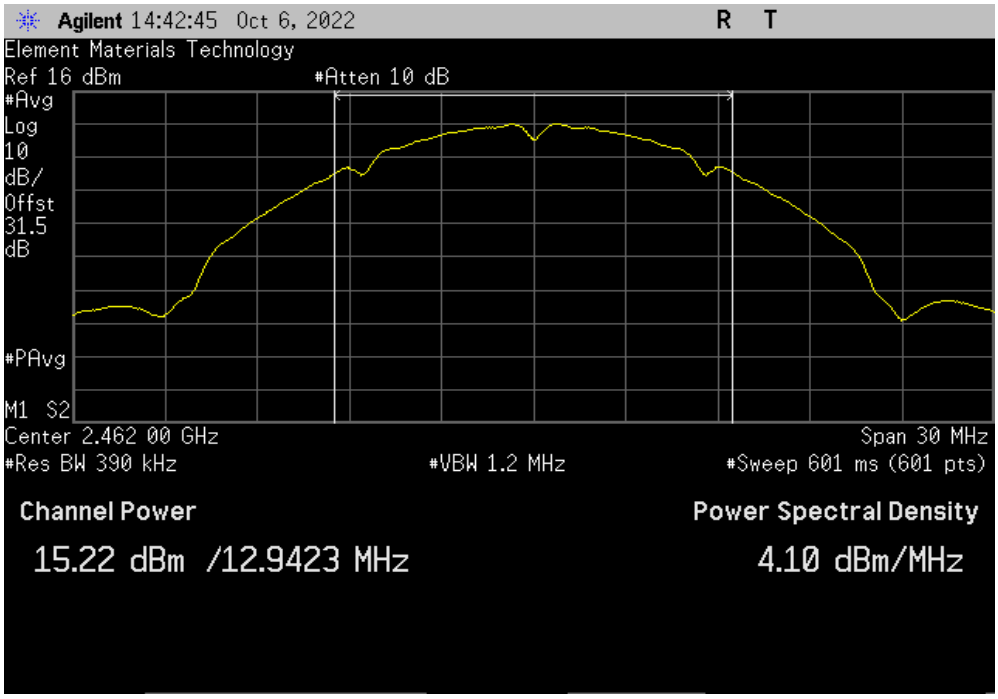


OUTPUT POWER - CHAIN 1

Chain 1, CCK, 11 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.516	4.8	20.3	30	Pass

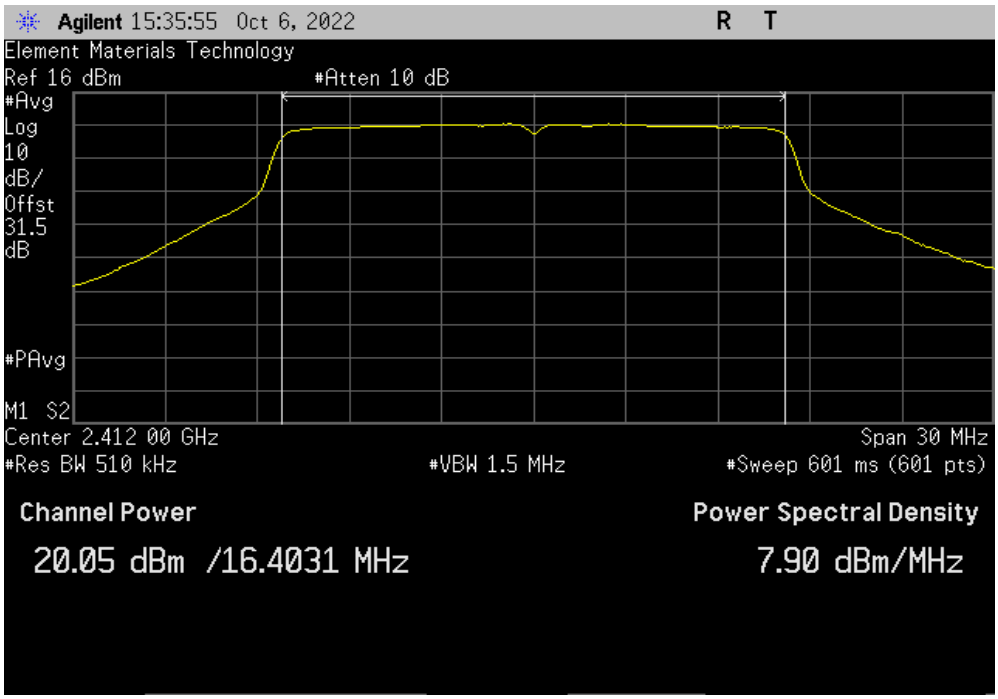


Chain 1, CCK, 11 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.217	4.8	20.0	30	Pass

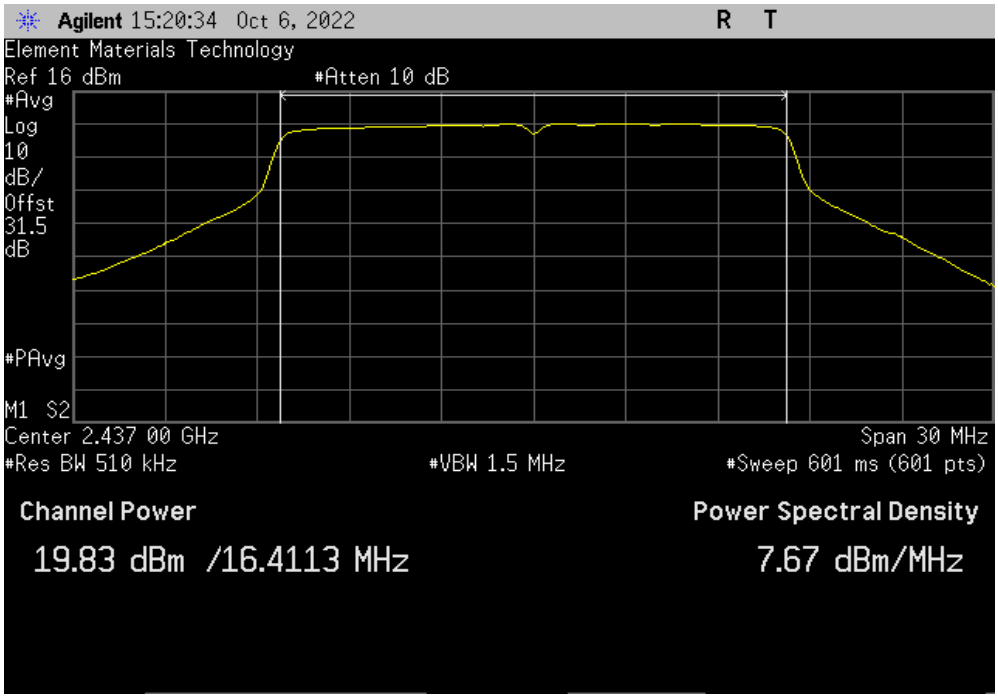


OUTPUT POWER - CHAIN 1

Chain 1, Legacy OFDM, 6 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		20.051	0.4	20.5	30	Pass

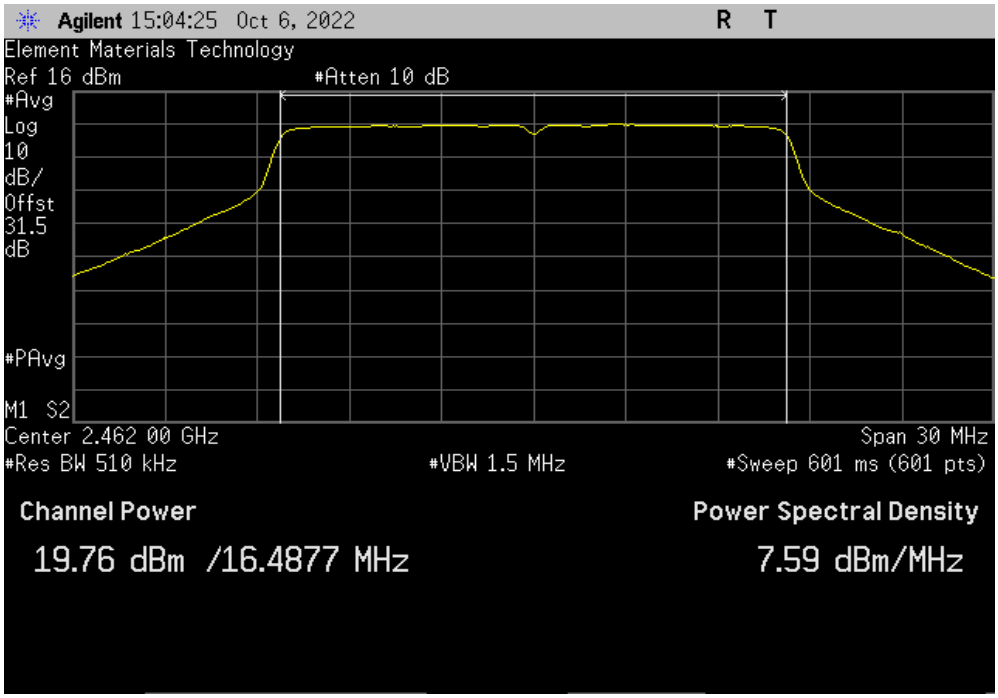


Chain 1, Legacy OFDM, 6 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		19.825	0.4	20.2	30	Pass

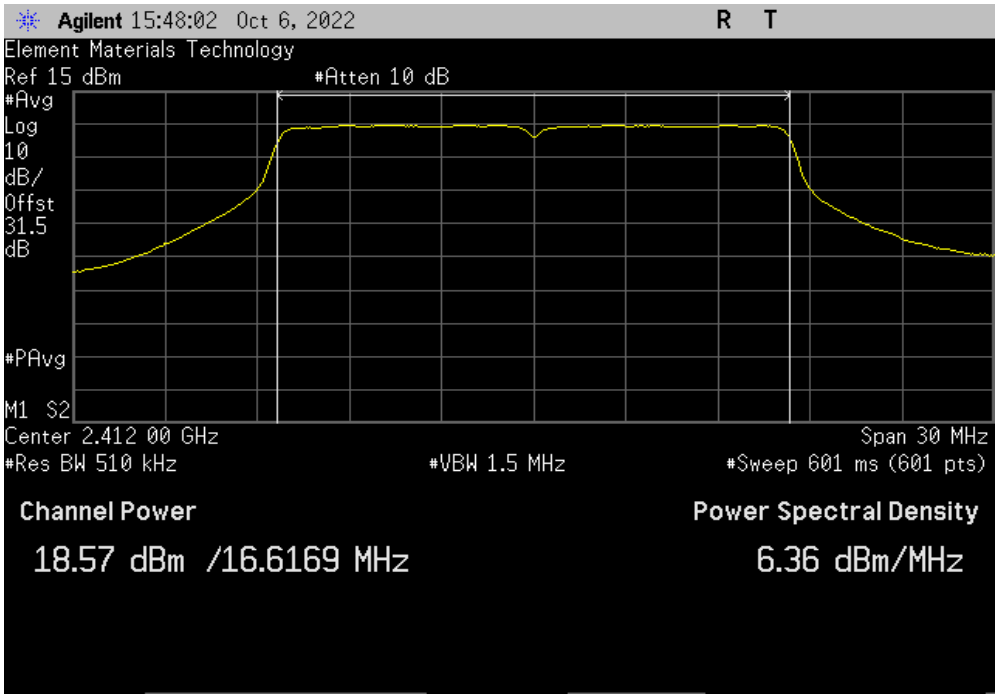


OUTPUT POWER - CHAIN 1

Chain 1, Legacy OFDM, 6 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		19.762	0.4	20.2	30	Pass

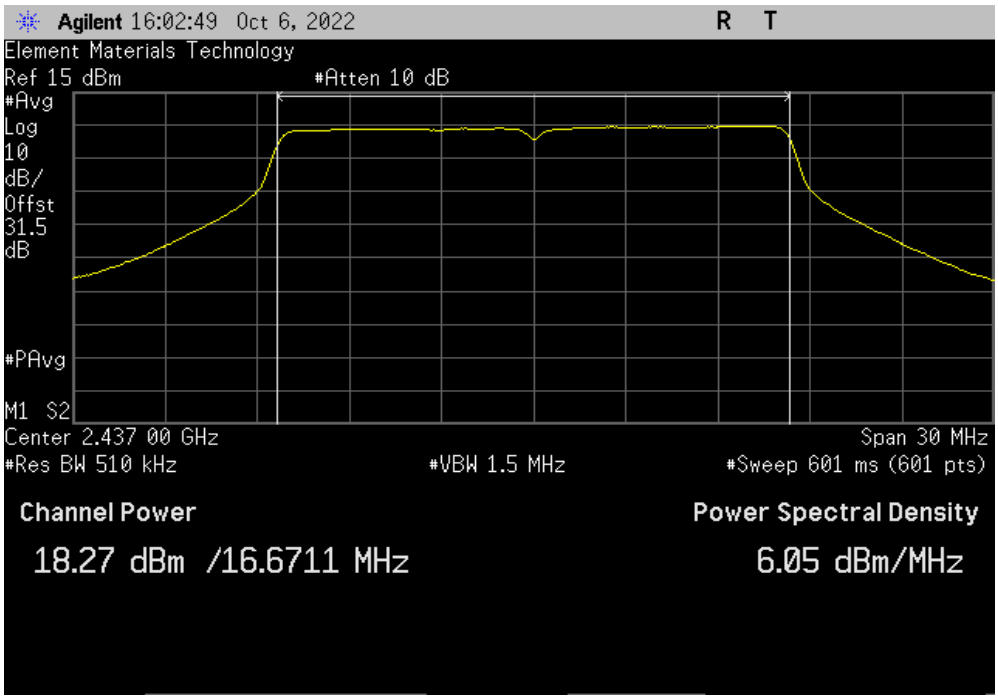


Chain 1, Legacy OFDM, 36 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.565	2.3	20.9	30	Pass

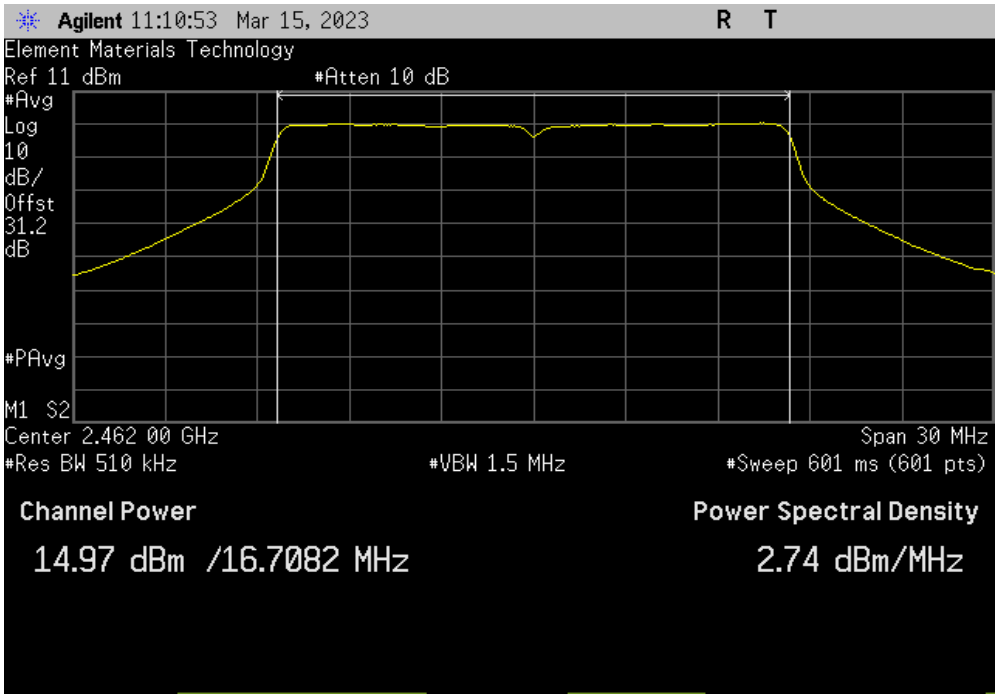


OUTPUT POWER - CHAIN 1

Chain 1, Legacy OFDM, 36 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.267	2.3	20.6	30	Pass

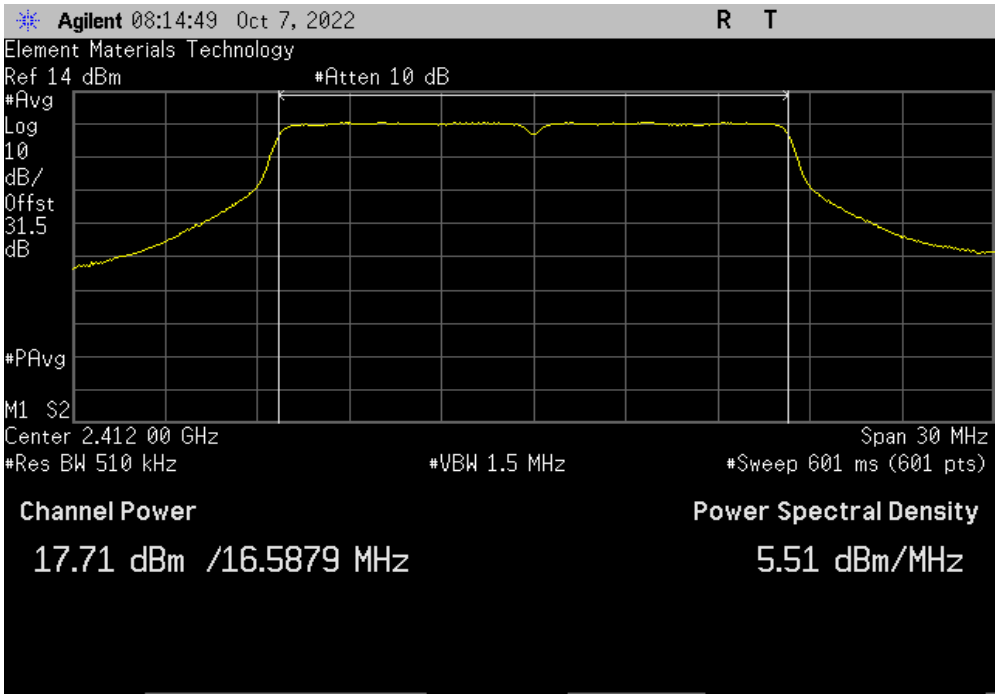


Chain 1, Legacy OFDM, 36 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		14.973	2.3	17.3	30	Pass

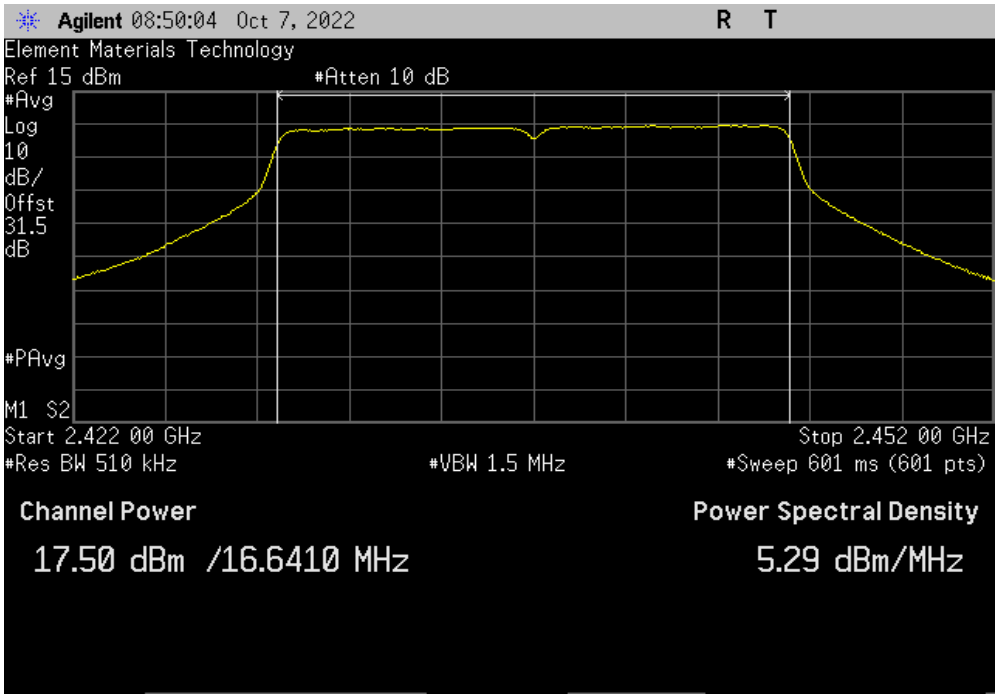


OUTPUT POWER - CHAIN 1

Chain 1, Legacy OFDM, 54 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.708	3.2	20.9	30	Pass

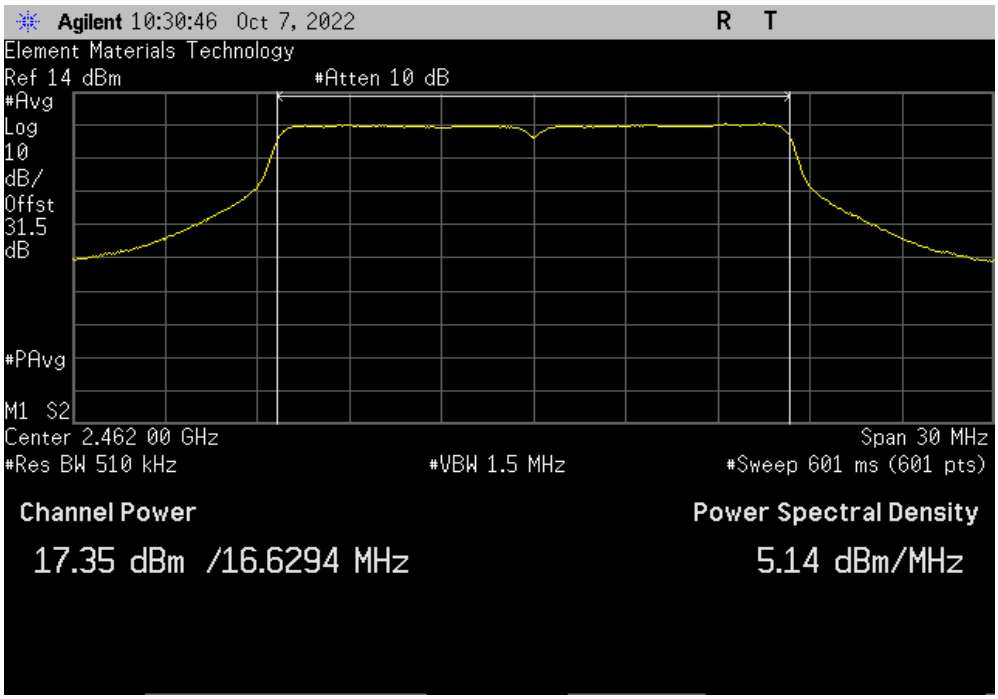


Chain 1, Legacy OFDM, 54 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.498	3.2	20.7	30	Pass

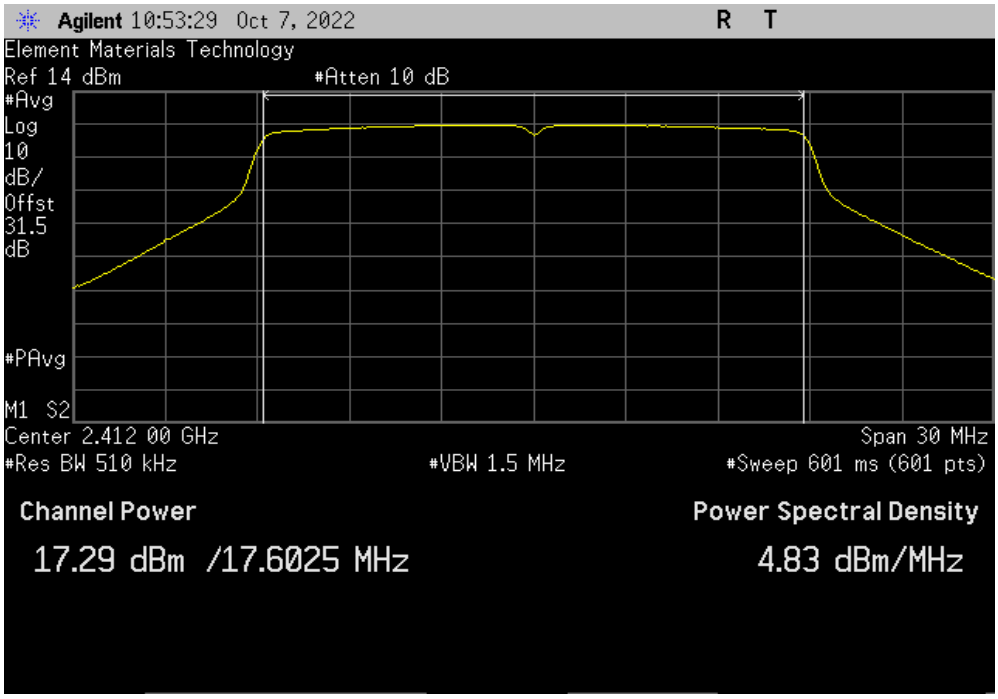


OUTPUT POWER - CHAIN 1

Chain 1, Legacy OFDM, 54 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.353	3.2	20.6	30	Pass

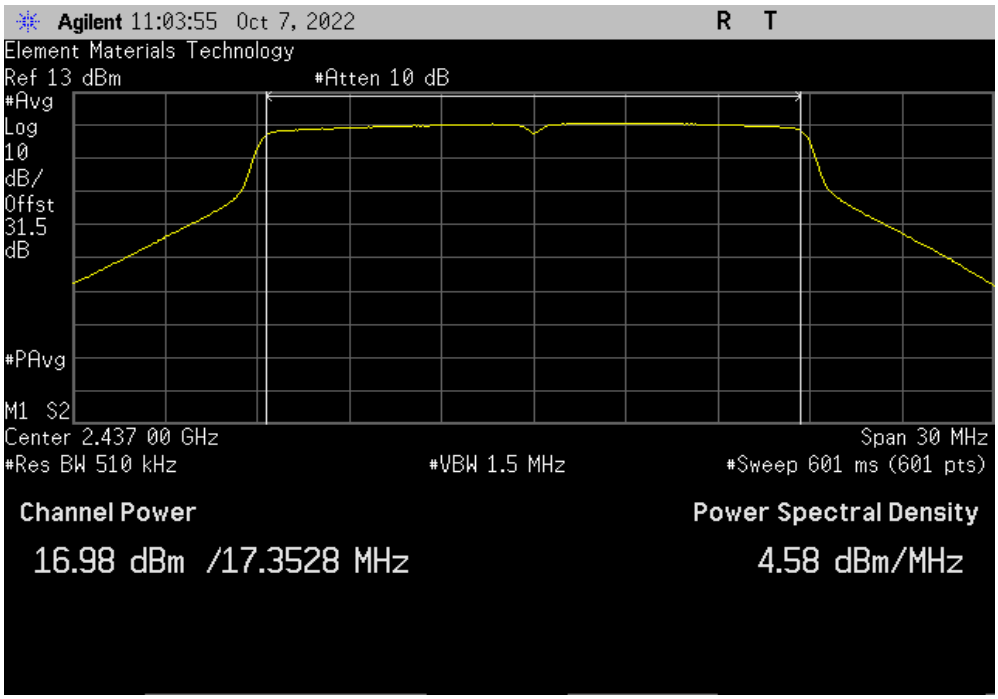


Chain 1, HT20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.288	0.6	17.9	30	Pass

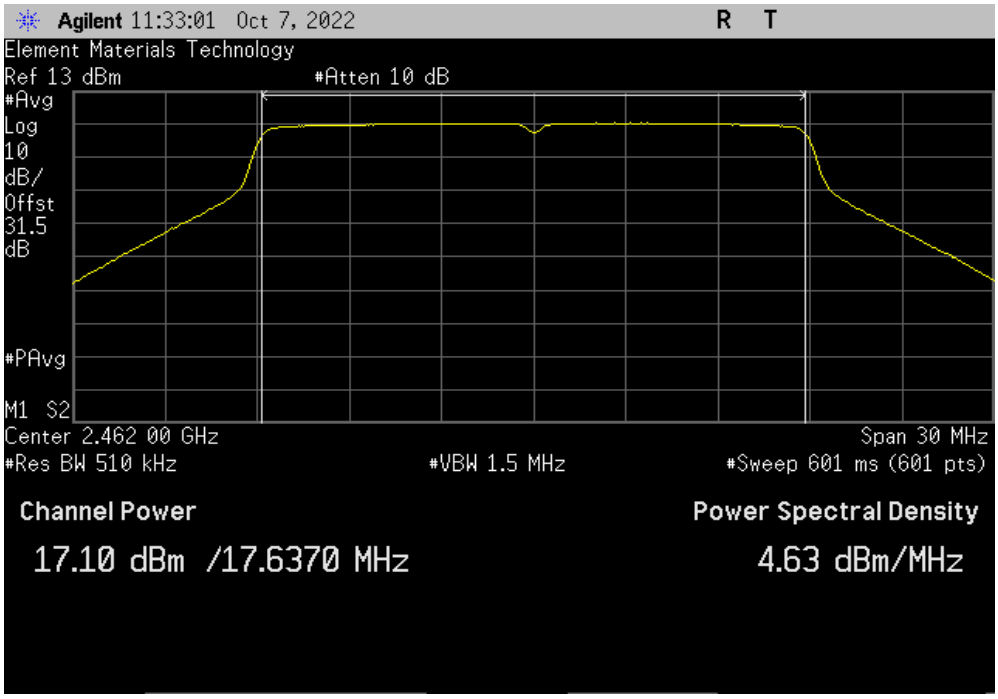


OUTPUT POWER - CHAIN 1

Chain 1, HT20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.976	0.6	17.6	30	Pass

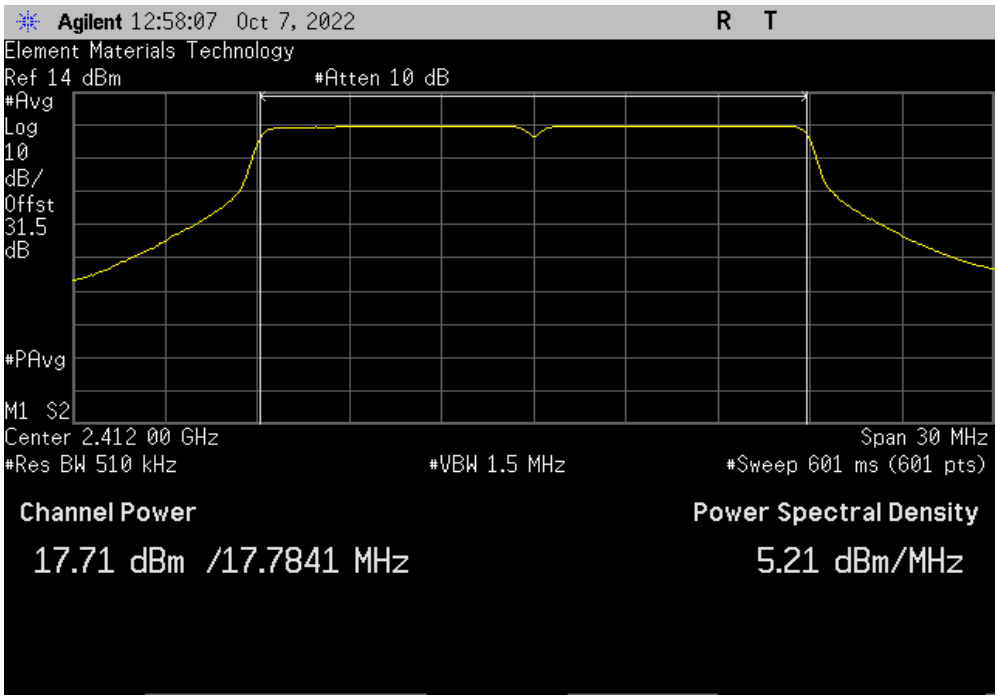


Chain 1, HT20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.095	0.6	17.7	30	Pass

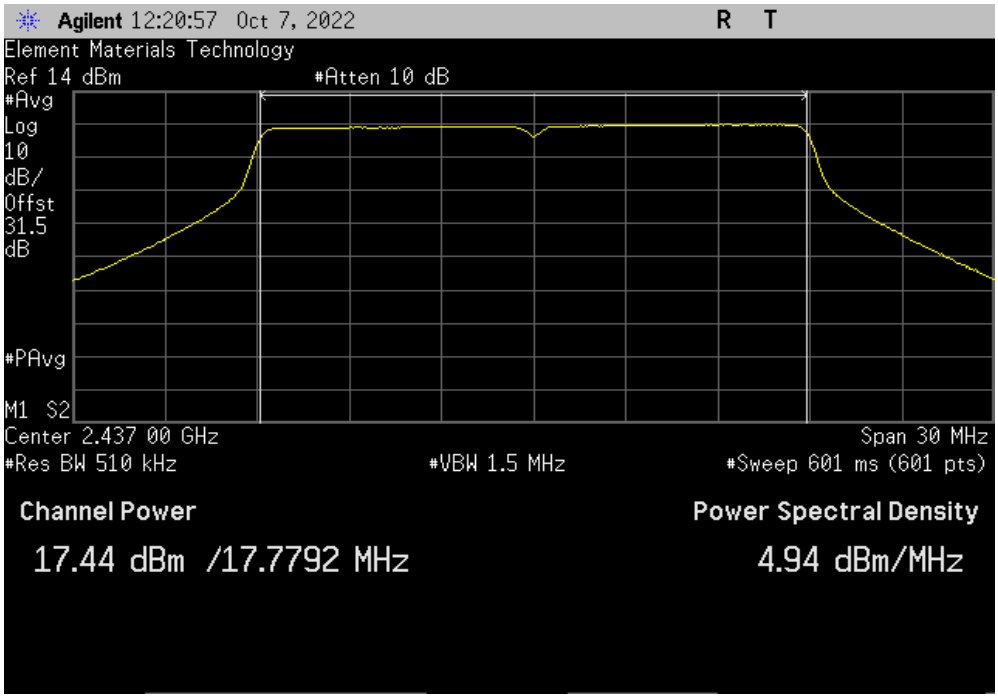


OUTPUT POWER - CHAIN 1

Chain 1, HT20, MCS7, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.707	0.6	18.3	30	Pass

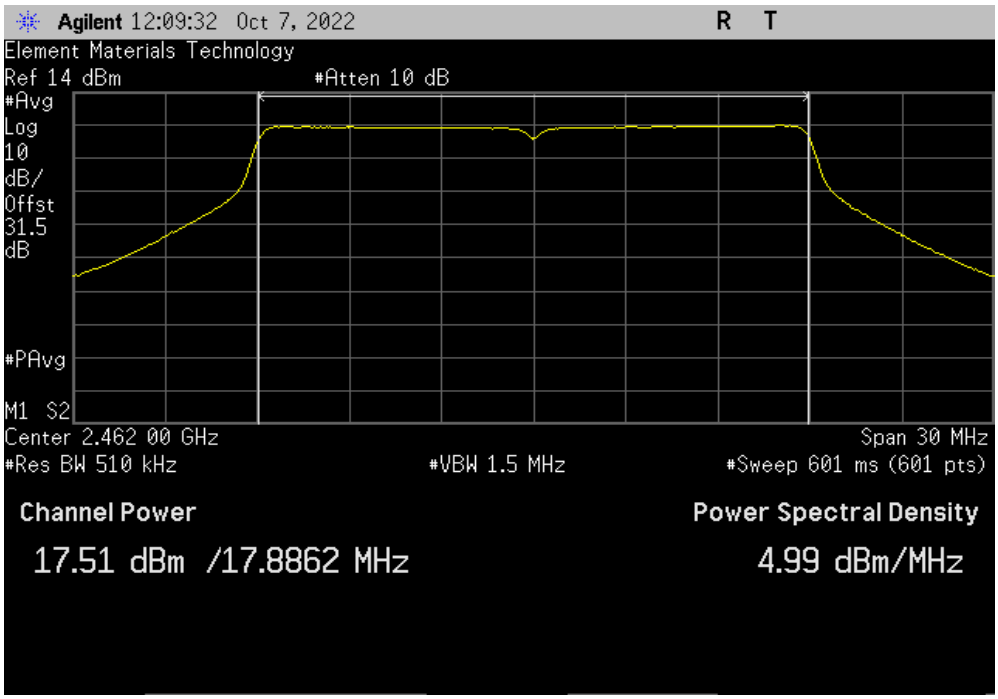


Chain 1, HT20, MCS7, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.443	0.6	18	30	Pass

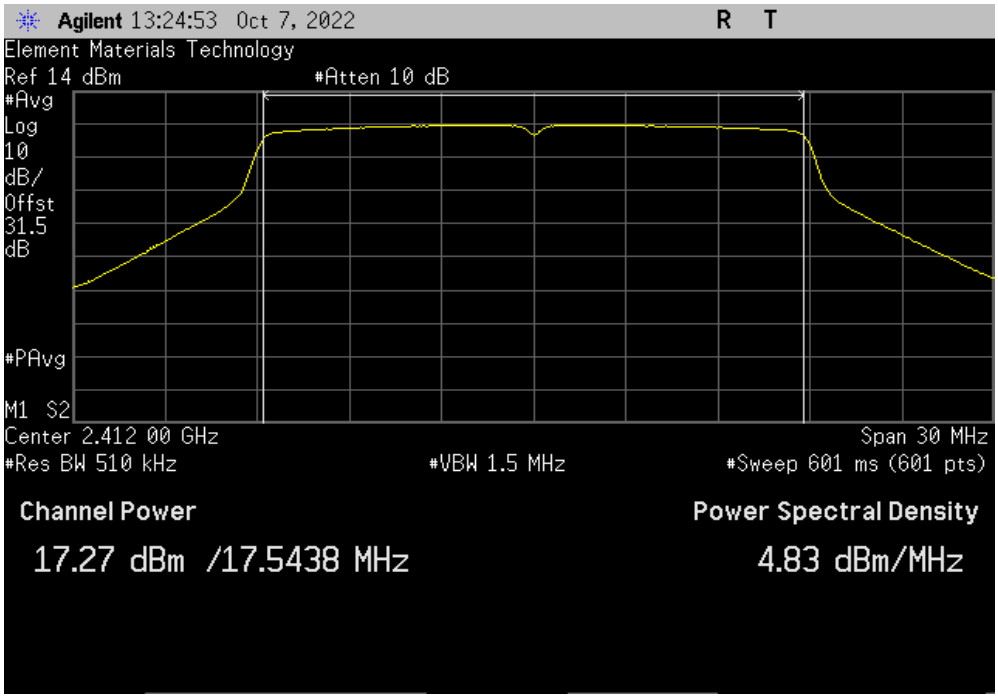


OUTPUT POWER - CHAIN 1

Chain 1, HT20, MCS7, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.515	0.6	18.1	30	Pass

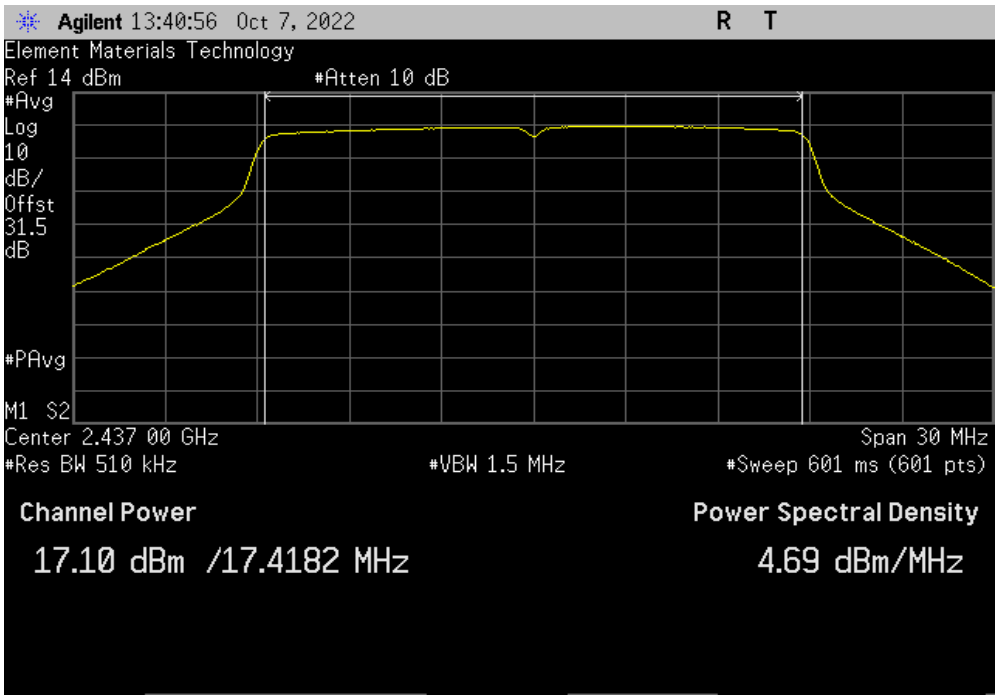


Chain 1, VHT20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.269	0.6	17.9	30	Pass

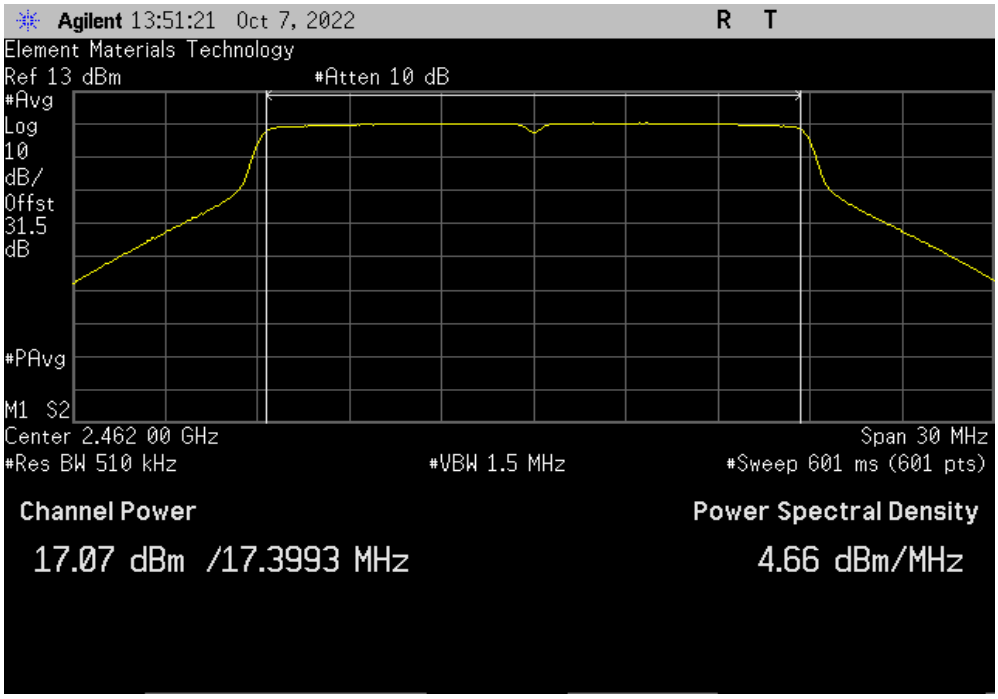


OUTPUT POWER - CHAIN 1

Chain 1, VHT20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.097	0.6	17.7	30	Pass

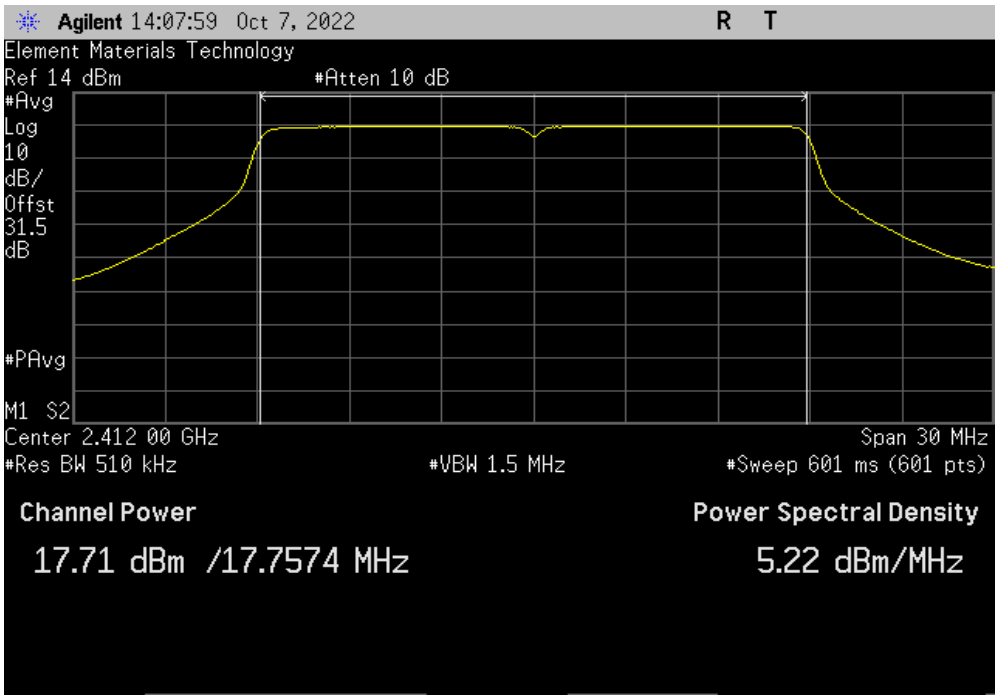


Chain 1, VHT20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.066	0.6	17.7	30	Pass

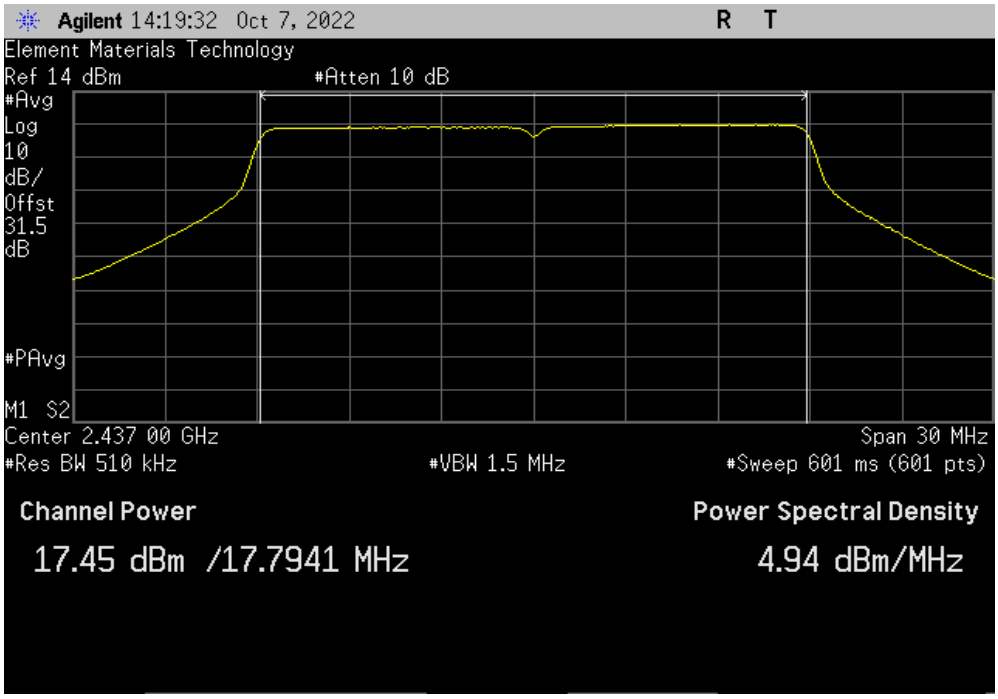


OUTPUT POWER - CHAIN 1

Chain 1, VHT20, MCS8, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.709	0.6	18.3	30	Pass

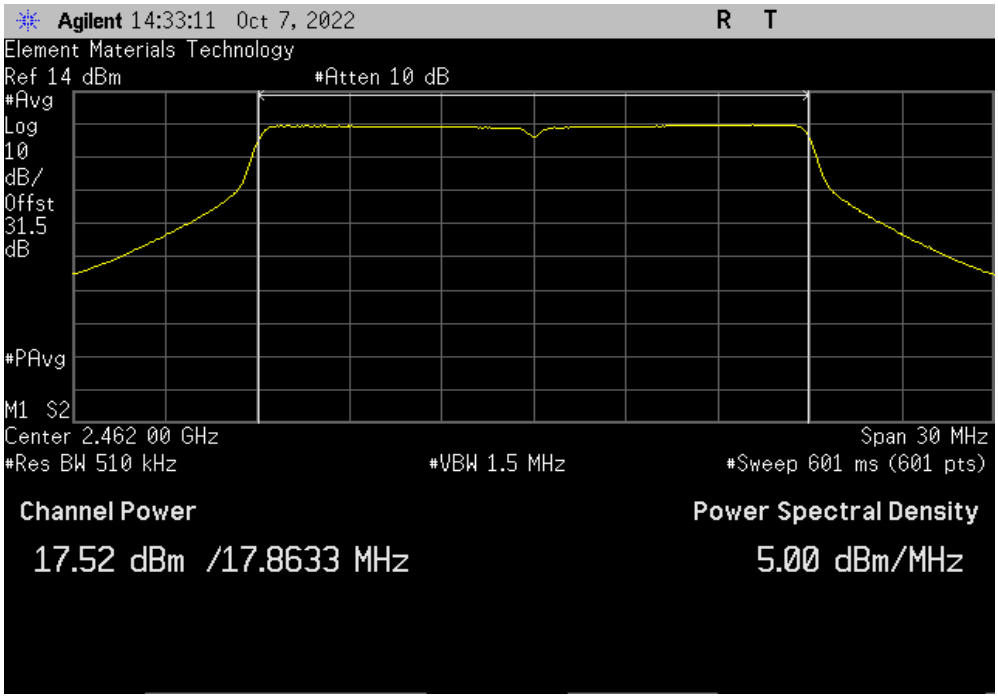


Chain 1, VHT20, MCS8, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.446	0.6	18	30	Pass

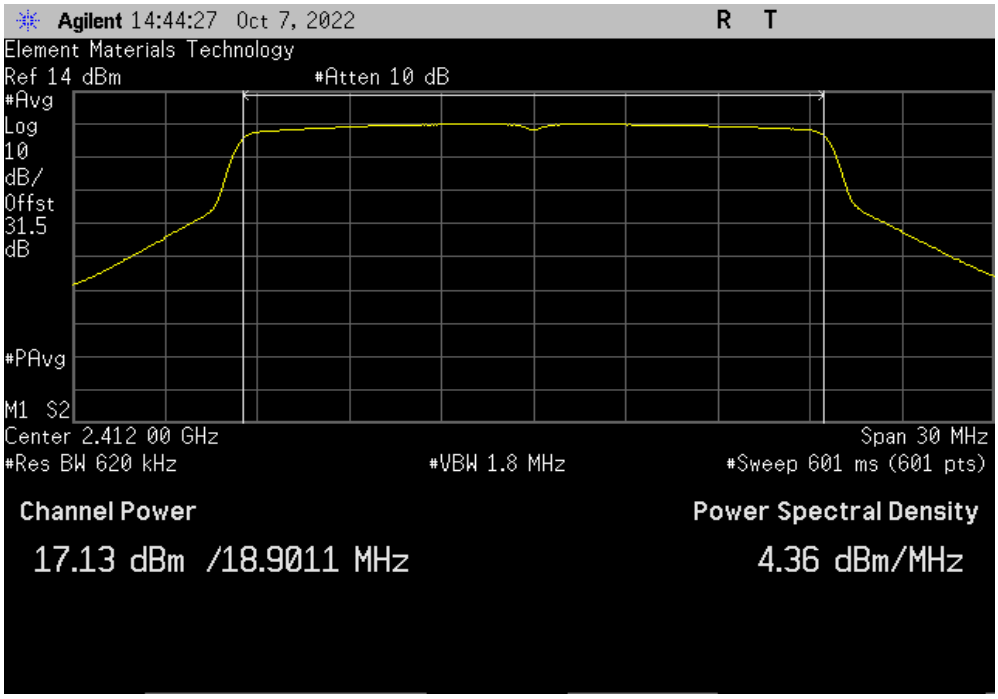


OUTPUT POWER - CHAIN 1

Chain 1, VHT20, MCS8, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.516	0.6	18.1	30	Pass

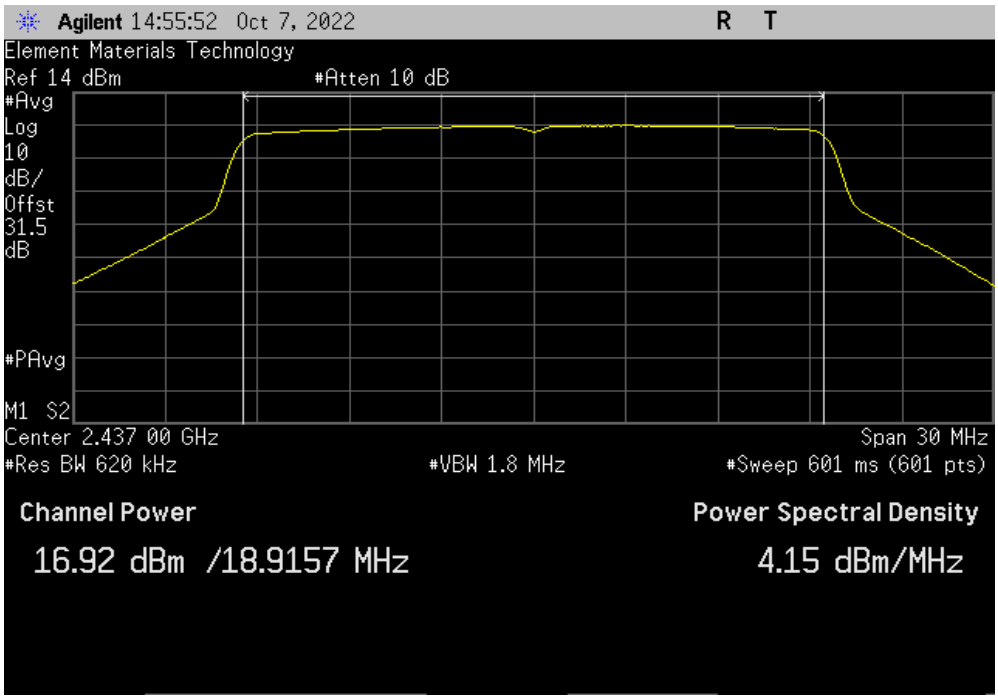


Chain 1, HE20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.127	0.6	17.7	30	Pass

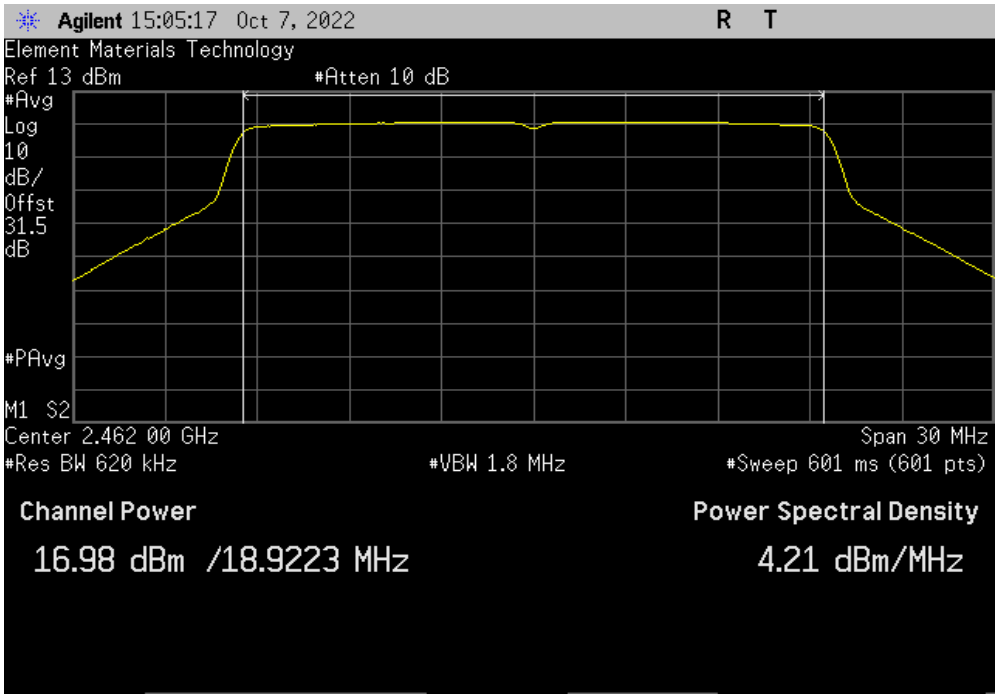


OUTPUT POWER - CHAIN 1

Chain 1, HE20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.919	0.6	17.5	30	Pass

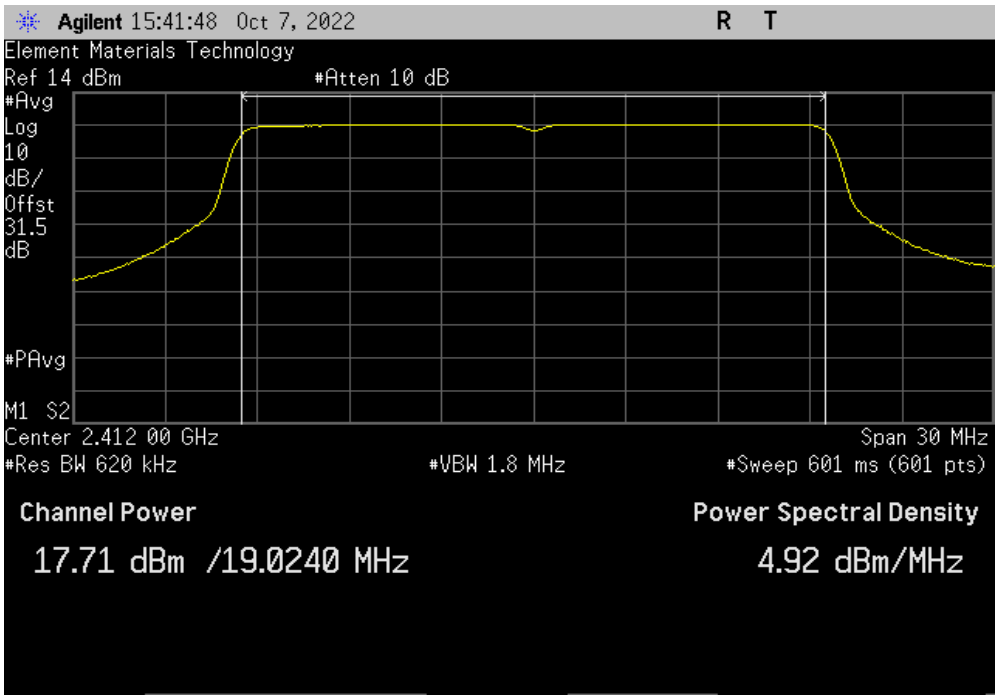


Chain 1, HE20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.979	0.6	17.6	30	Pass

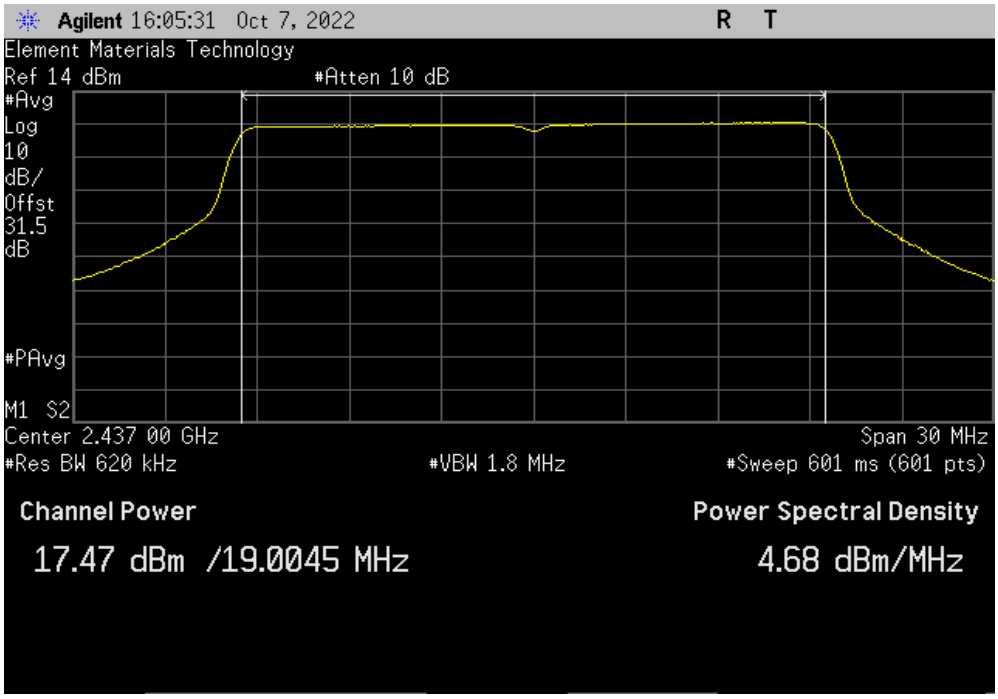


OUTPUT POWER - CHAIN 1

Chain 1, HE20, MCS11, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.714	0.6	18.3	30	Pass

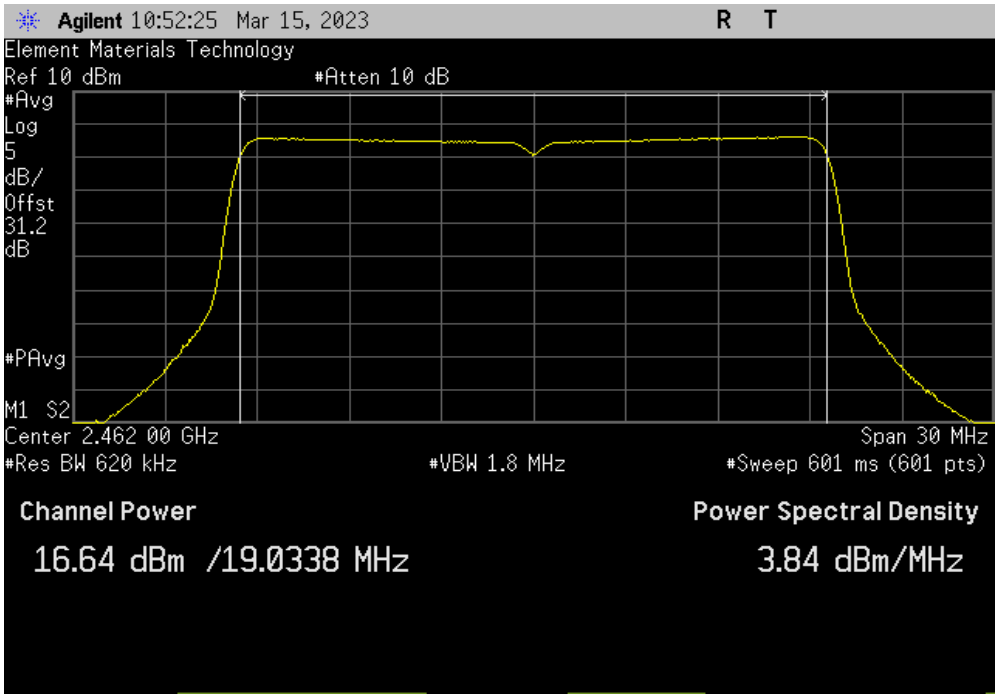


Chain 1, HE20, MCS11, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.47	0.6	18.1	30	Pass



OUTPUT POWER - CHAIN 1

Chain 1, HE20, MCS11, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.64	0.6	17.24	30	Pass



OUTPUT POWER - MIMO

XMit 2023.02.14.0

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 - 2023

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2022-12-02	2023-12-02
Attenuator	S.M. Electronics	SA26B-20	AUY	2023-03-13	2024-03-13
Block - DC	Fairview Microwave	SD3379	AMW	2023-03-13	2024-03-13
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

TEST EQUIPMENT - 2022

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, t the measured power to compute the average power during the actual transmission times.

The measurements from Chain 0 and Chain 1 were taken in dBm, converted to mW, summed in mW, and then converted back to dBm, to determine the total average power.

OUTPUT POWER - MIMO

element

TbtTx 2022.06.03.0 XMit 2023.02.14.0

EUT:	**U8 Hawk**			**Work Order:**	**KYME0068**
Serial Number:	**See configuration**			**Date:**	**03/15/23**
Customer:	**Kymeta Corp.**			**Temperature:**	**20.5°C**
Attendees:	**Dean Busch and Mike Olsen**			**Humidity:**	**39.9%**
Project:	**None**			**Barometric Pres.:**	**1007 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**12VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

All measurments collected before 2023, were performed on configuration KYME0068-1. Reference level offset includes: DC block, 30 dB attenuation, and measurement cable.

Per FCC KDB 662911 Section E), 1), the sum of both indiviual port measurements were compared to the limit as shown in the 2x2 MIMO Power Summing Table below. The port not being measured was terminated with a 50 Ohm terminator.

DEVIATIONS FROM TEST STANDARD

None

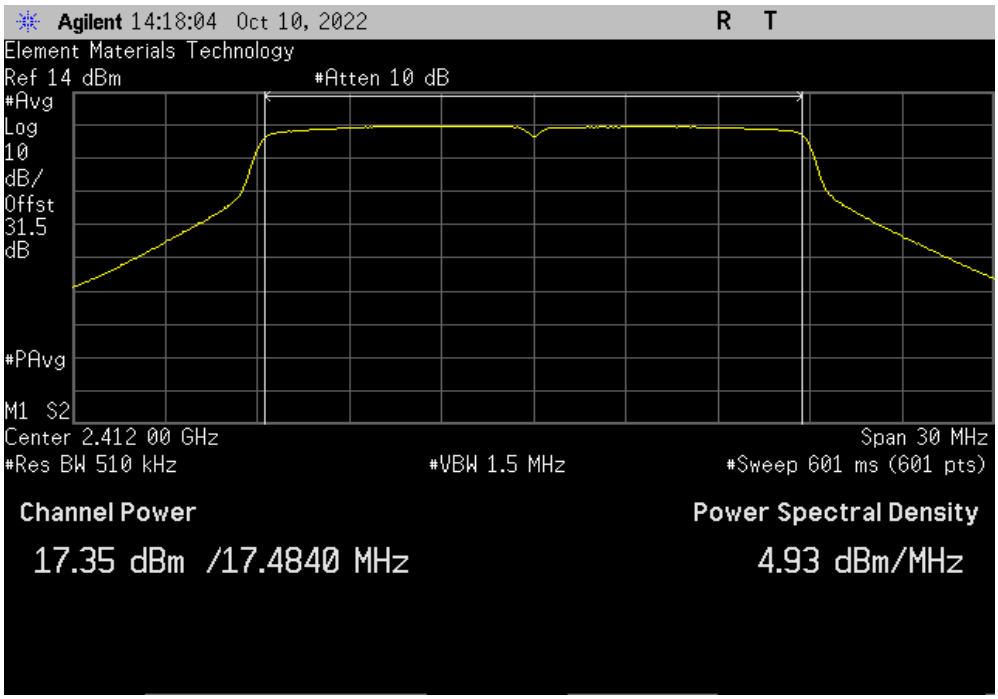
Configuration #	**KYME0068-1** **KYME0068-5**	*Signature*

		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
MIMO - Chain 0						
	HT20, MCS8					
	Low Channel 1, 2412 MHz	17.355	0.6	18	30	Pass
	Mid Channel 6, 2437 MHz	17.219	0.6	17.8	30	Pass
	High Channel 11, 2462 MHz	16.938	0.6	17.5	30	Pass
	HT20, MCS15					
	Low Channel 1, 2412 MHz	17.359	0.6	18	30	Pass
	Mid Channel 6, 2437 MHz	16.504	0.6	17.1	30	Pass
	High Channel 11, 2462 MHz	16.528	0.6	17.1	30	Pass
	VHT20, MCS0					
	Low Channel 1, 2412 MHz	18.043	0.6	18.6	30	Pass
	Mid Channel 6, 2437 MHz	17.216	0.6	17.8	30	Pass
	High Channel 11, 2462 MHz	17.018	0.6	17.6	30	Pass
	VHT20, MCS8					
	Low Channel 1, 2412 MHz	18.535	0.6	19.1	30	Pass
	Mid Channel 6, 2437 MHz	17.821	0.6	18.4	30	Pass
	High Channel 11, 2462 MHz	17.444	0.6	18	30	Pass
	HE20, MCS0					
	Low Channel 1, 2412 MHz	17.95	0.6	18.6	30	Pass
	Mid Channel 6, 2437 MHz	17.132	0.6	17.7	30	Pass
	High Channel 11, 2462 MHz	16.927	0.6	17.5	30	Pass
	HE20, MCS11					
	Low Channel 1, 2412 MHz	18.575	0.6	19.2	30	Pass
	Mid Channel 6, 2437 MHz	17.785	0.6	18.4	30	Pass
	High Channel 11, 2462 MHz	16.546	0.6	17.1	30	Pass
MIMO - Chain 1						
	HT20, MCS8					
	Low Channel 1, 2412 MHz	17.364	0.6	18	30	Pass
	Mid Channel 6, 2437 MHz	17.051	0.6	17.7	30	Pass
	High Channel 11, 2462 MHz	16.979	0.6	17.6	30	Pass
	HT20, MCS15					
	Low Channel 1, 2412 MHz	16.544	0.6	17.1	30	Pass
	Mid Channel 6, 2437 MHz	16.805	0.6	17	30	Pass
	High Channel 11, 2462 MHz	16.543	0.6	16.7	30	Pass
	VHT20, MCS0					
	Low Channel 1, 2412 MHz	17.356	0.6	18	30	Pass
	Mid Channel 6, 2437 MHz	17.105	0.6	17.7	30	Pass
	High Channel 11, 2462 MHz	16.99	0.6	17.6	30	Pass
	VHT20, MCS8					
	Low Channel 1, 2412 MHz	17.81	0.6	18.4	30	Pass
	Mid Channel 6, 2437 MHz	17.476	0.6	18.1	30	Pass
	High Channel 11, 2462 MHz	17.403	0.6	18	30	Pass
	HE20, MCS0					
	Low Channel 1, 2412 MHz	17.178	0.6	17.8	30	Pass
	Mid Channel 6, 2437 MHz	16.913	0.6	17.5	30	Pass
	High Channel 11, 2462 MHz	16.885	0.6	17.5	30	Pass
	HE20, MCS11					
	Low Channel 1, 2412 MHz	17.826	0.6	18.4	30	Pass
	Mid Channel 6, 2437 MHz	17.573	0.6	18.2	30	Pass
	High Channel 11, 2462 MHz	16.61	0.6	17.2	30	Pass

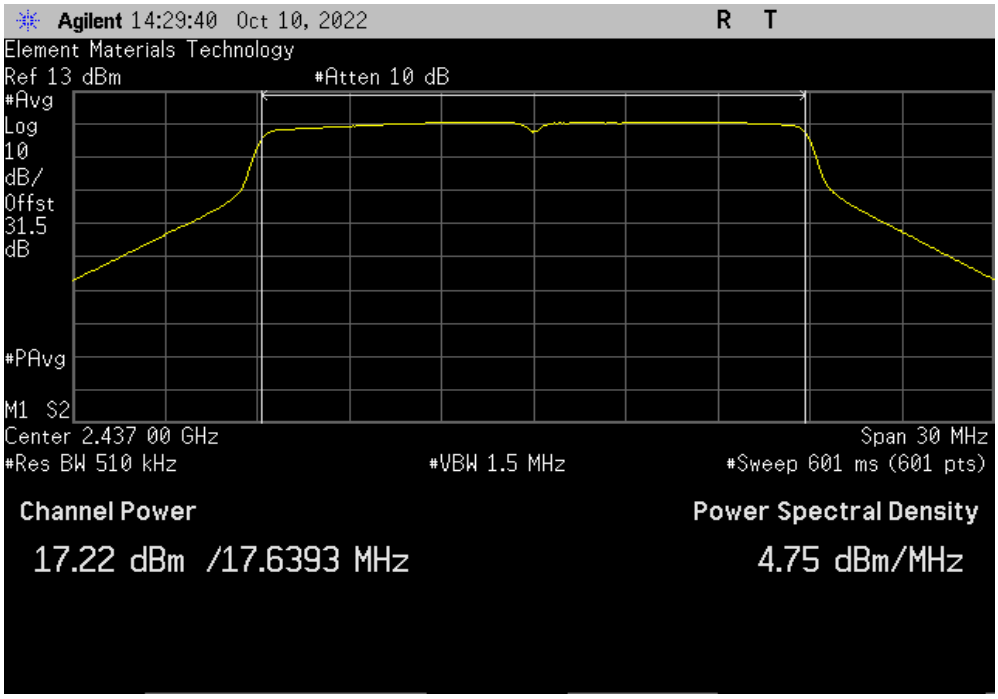
2x2 MIMO, Power Summing Table	Chain 0 Value (mW)	Chain 2 Value (mW)	Summed Value (mW)	Summed value (dBm	Limit (dBm)	Results
HT20, MCS8						
Low Channel 1, 2412 MHz	63.1	63.1	126.2	21.0	30	Pass
Mid Channel 6, 2437 MHz	60.3	58.9	119.1	20.8	30	Pass
High Channel 11, 2462 MHz	56.2	57.5	113.8	20.6	30	Pass
HT20, MCS15						
Low Channel 1, 2412 MHz	63.1	51.3	114.4	20.6	30	Pass
Mid Channel 6, 2437 MHz	51.3	50.1	101.5	20.1	30	Pass
High Channel 11, 2462 MHz	51.6	46.8	98.4	19.9	30	Pass
VHT20, MCS0						
Low Channel 1, 2412 MHz	72.4	63.1	135.5	21.3	30	Pass
Mid Channel 6, 2437 MHz	60.3	58.9	119.1	20.8	30	Pass
High Channel 11, 2462 MHz	57.5	57.5	115.1	20.6	30	Pass
VHT20, MCS8						
Low Channel 1, 2412 MHz	81.3	69.2	150.5	21.8	30	Pass
Mid Channel 6, 2437 MHz	69.2	64.6	133.7	21.3	30	Pass
High Channel 11, 2462 MHz	63.1	63.1	126.2	21.0	30	Pass
HE20, MCS0						
Low Channel 1, 2412 MHz	72.4	60.3	132.7	21.2	30	Pass
Mid Channel 6, 2437 MHz	58.9	56.2	115.1	20.6	30	Pass
High Channel 11, 2462 MHz	56.2	56.2	112.5	20.5	30	Pass
HE20, MCS11						
Low Channel 1, 2412 MHz	83.2	69.2	152.4	21.8	30	Pass
Mid Channel 6, 2437 MHz	69.2	66.1	135.3	21.3	30	Pass
High Channel 11, 2462 MHz	51.3	52.5	103.8	20.2	30	Pass

OUTPUT POWER - MIMO

MIMO - Chain 0, HT20, MCS8, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.355	0.6	18	30	Pass

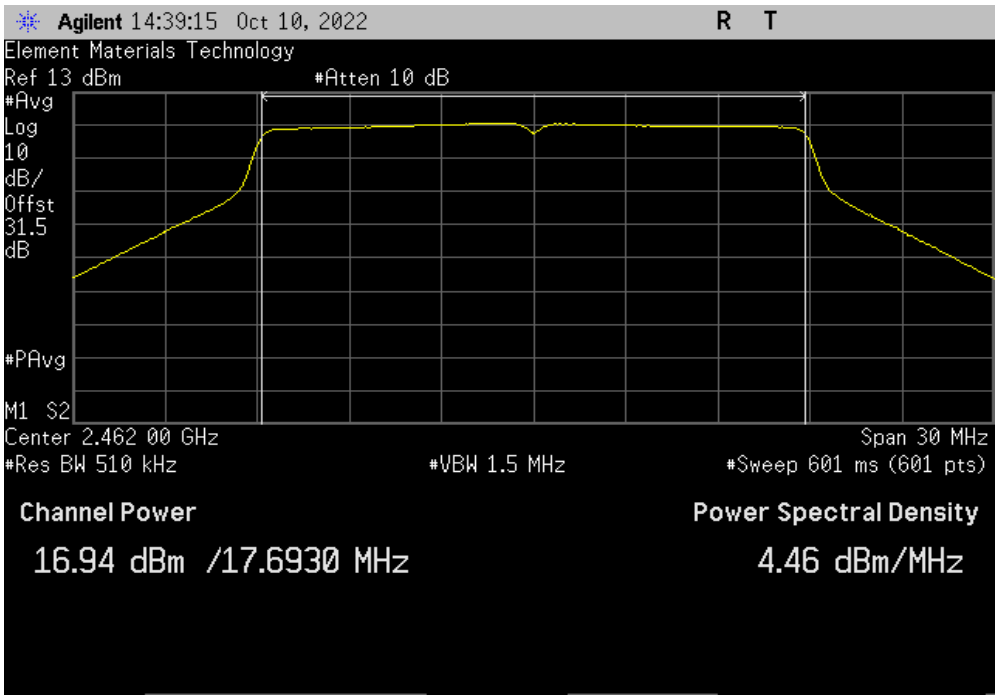


MIMO - Chain 0, HT20, MCS8, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.219	0.6	17.8	30	Pass

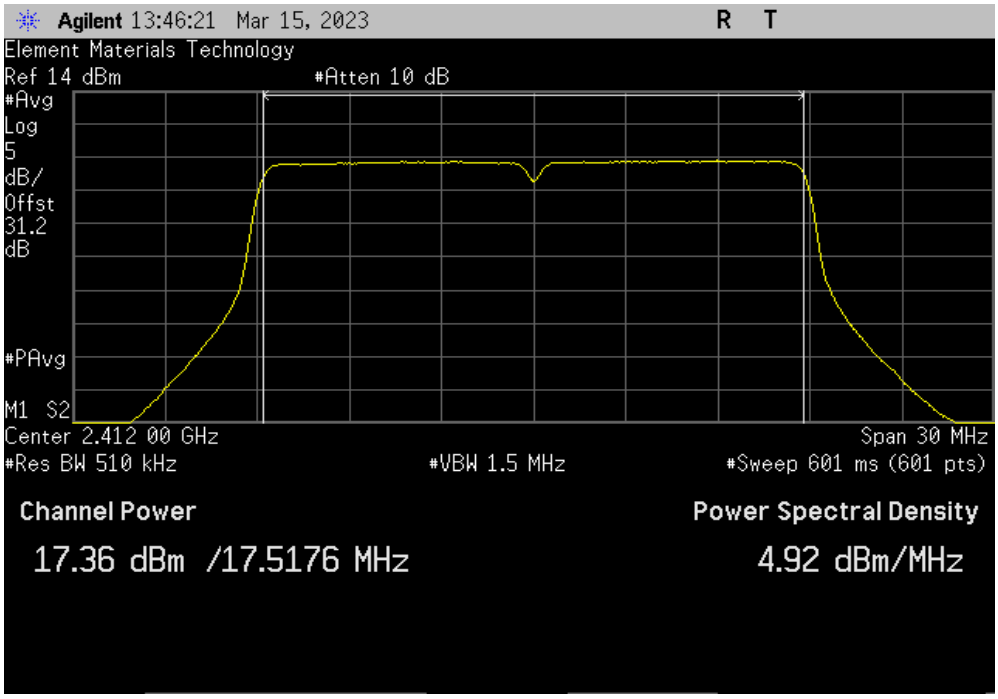


OUTPUT POWER - MIMO

MIMO - Chain 0, HT20, MCS8, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.938	0.6	17.5	30	Pass

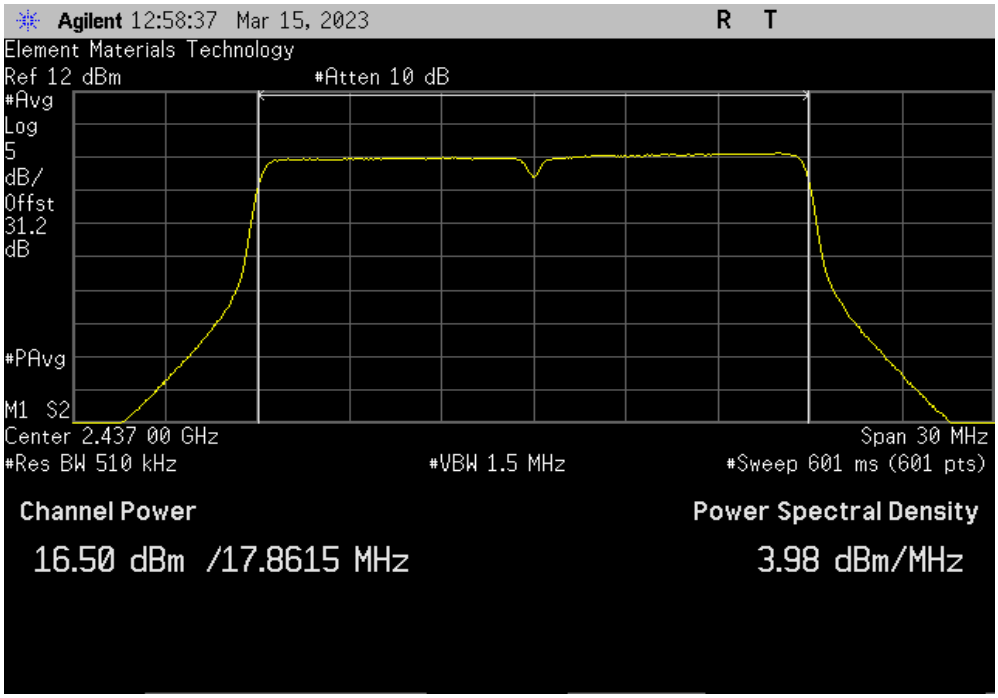


MIMO - Chain 0, HT20, MCS15, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.359	0.6	18	30	Pass

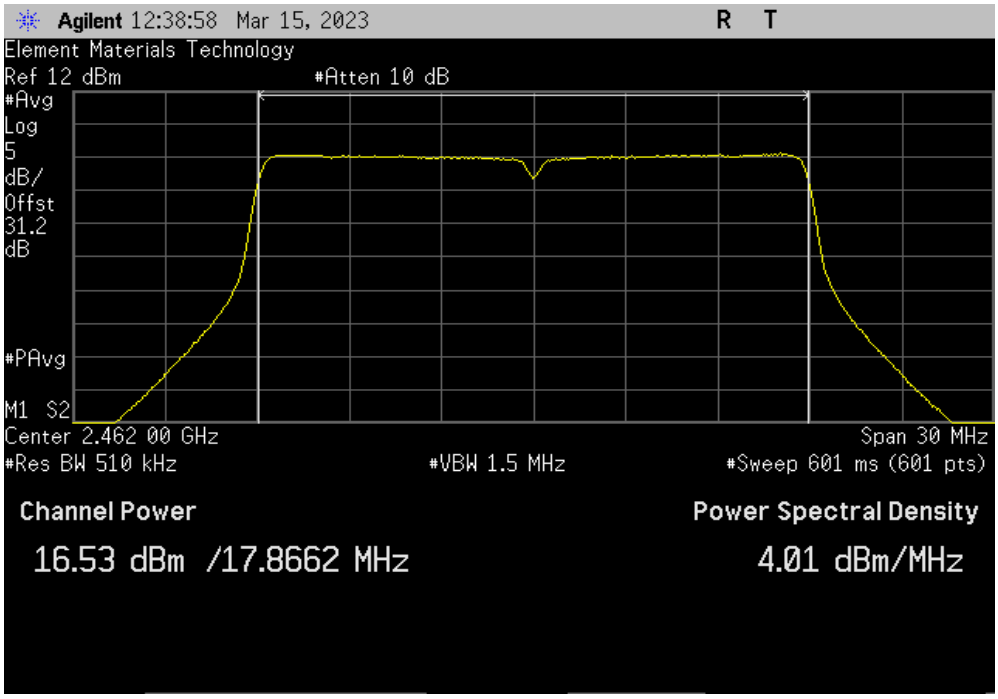


OUTPUT POWER - MIMO

MIMO - Chain 0, HT20, MCS15, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.504	0.6	17.1	30	Pass

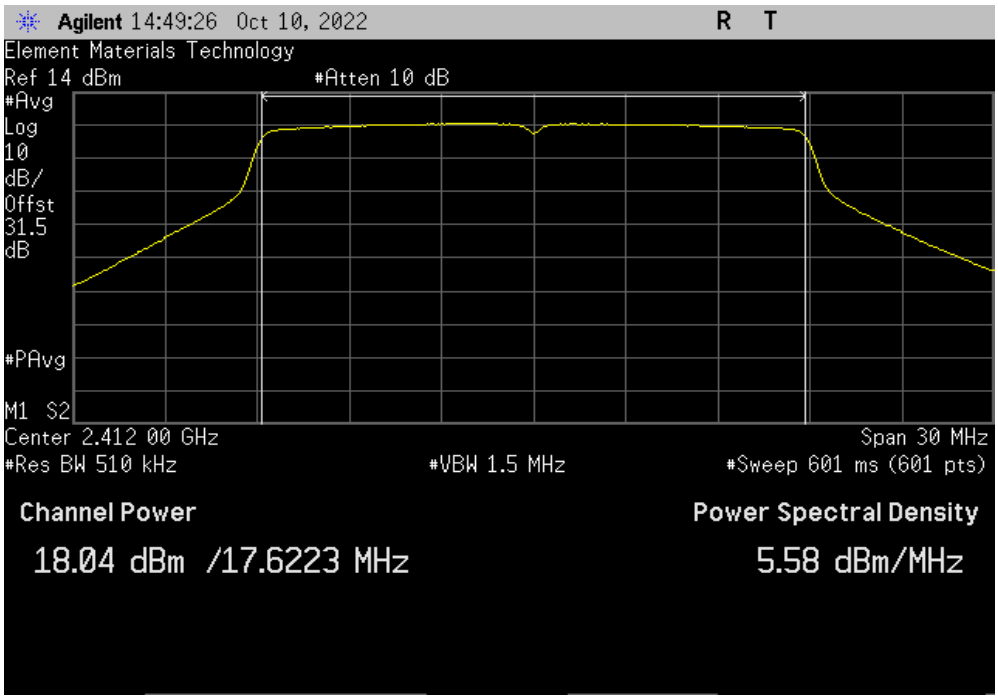


MIMO - Chain 0, HT20, MCS15, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.528	0.6	17.1	30	Pass

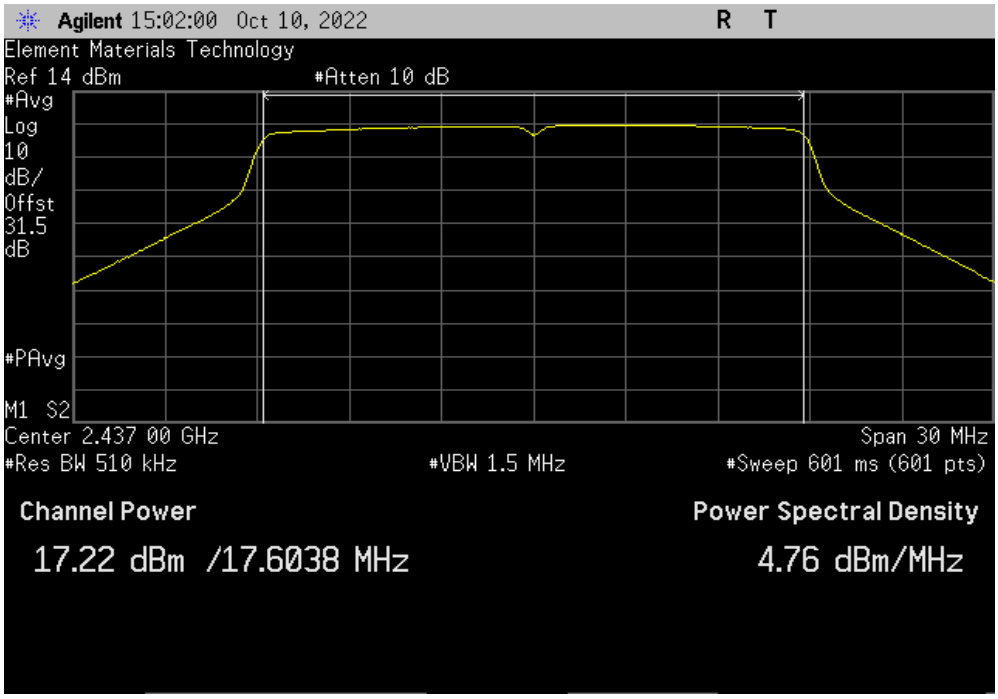


OUTPUT POWER - MIMO

MIMO - Chain 0, VHT20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.043	0.6	18.6	30	Pass

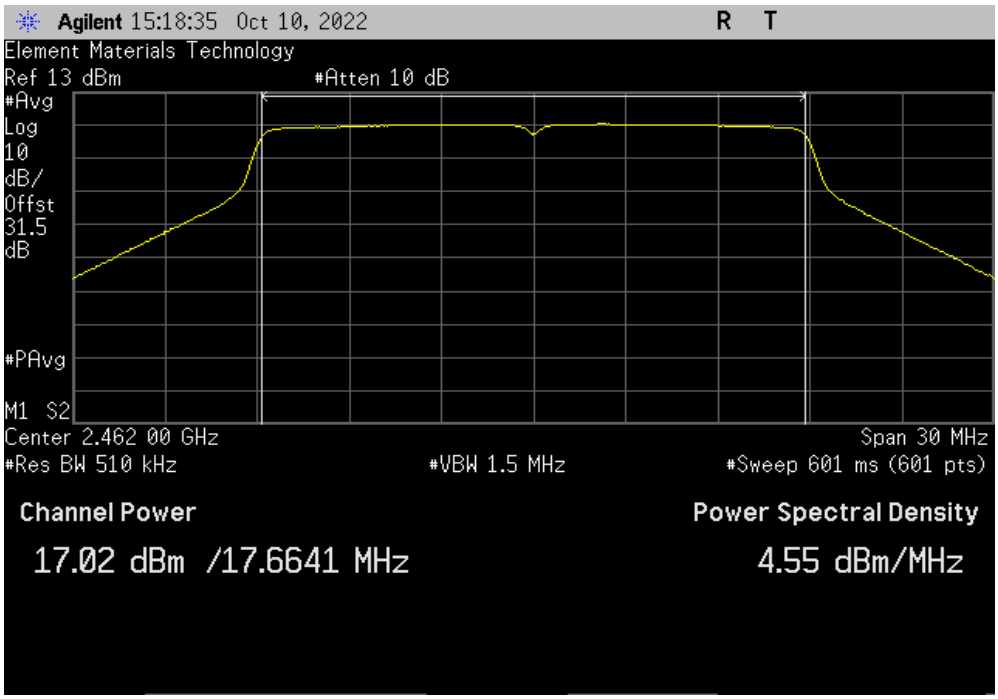


MIMO - Chain 0, VHT20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.216	0.6	17.8	30	Pass

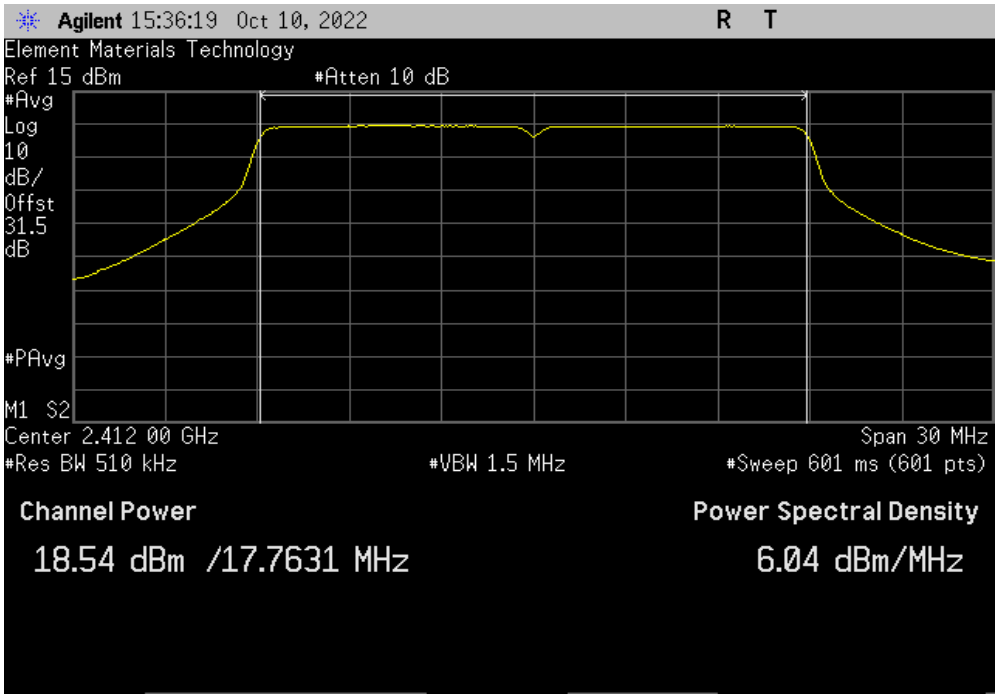


OUTPUT POWER - MIMO

MIMO - Chain 0, VHT20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.018	0.6	17.6	30	Pass

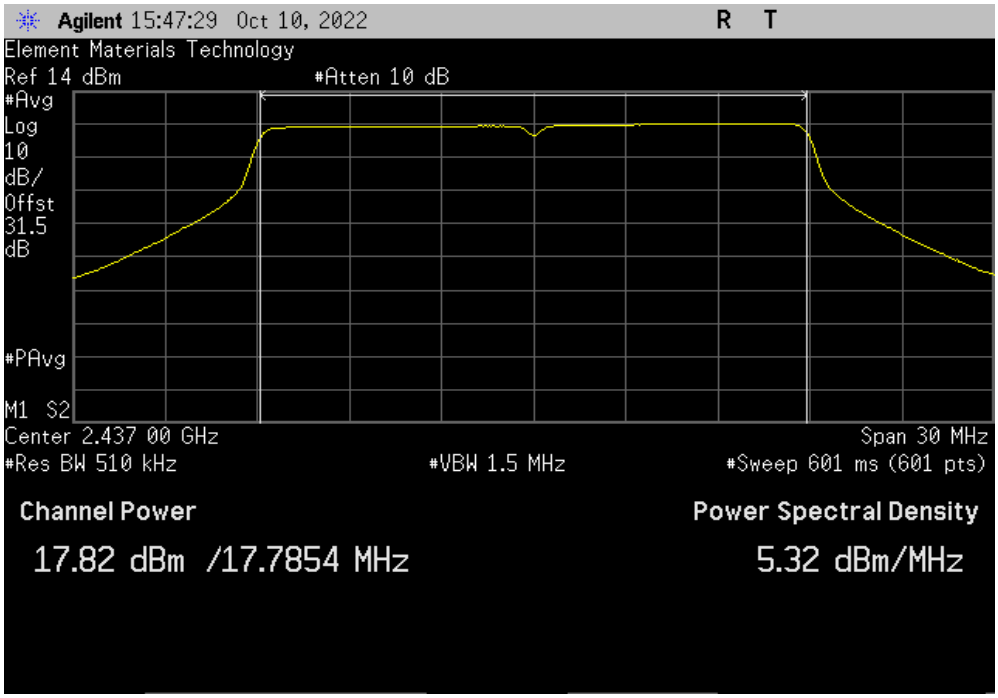


MIMO - Chain 0, VHT20, MCS8, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.535	0.6	19.1	30	Pass

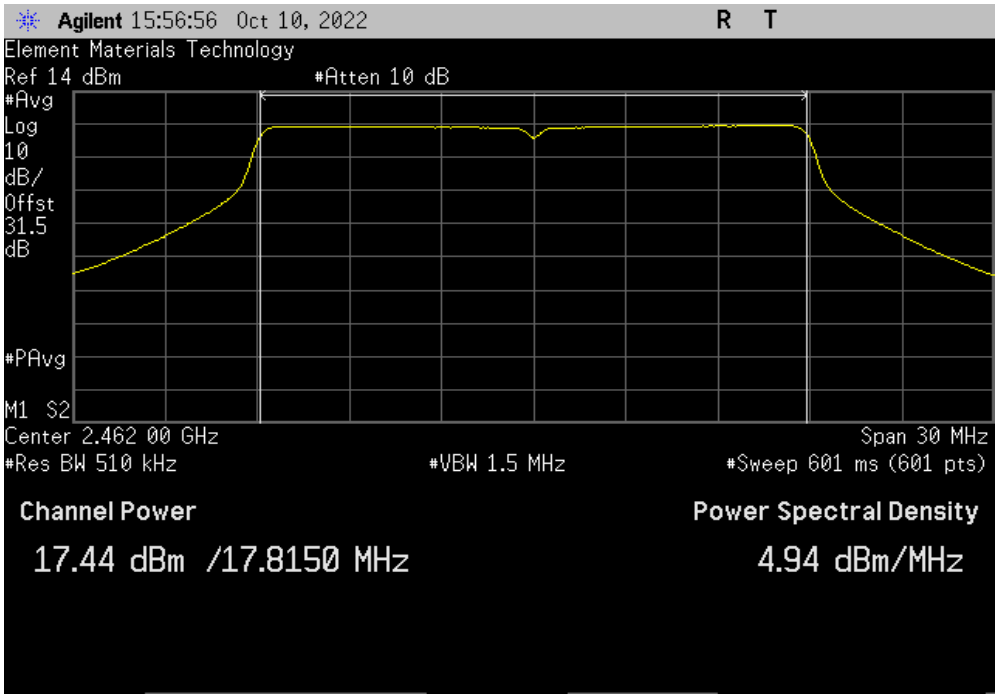


OUTPUT POWER - MIMO

MIMO - Chain 0, VHT20, MCS8, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.821	0.6	18.4	30	Pass

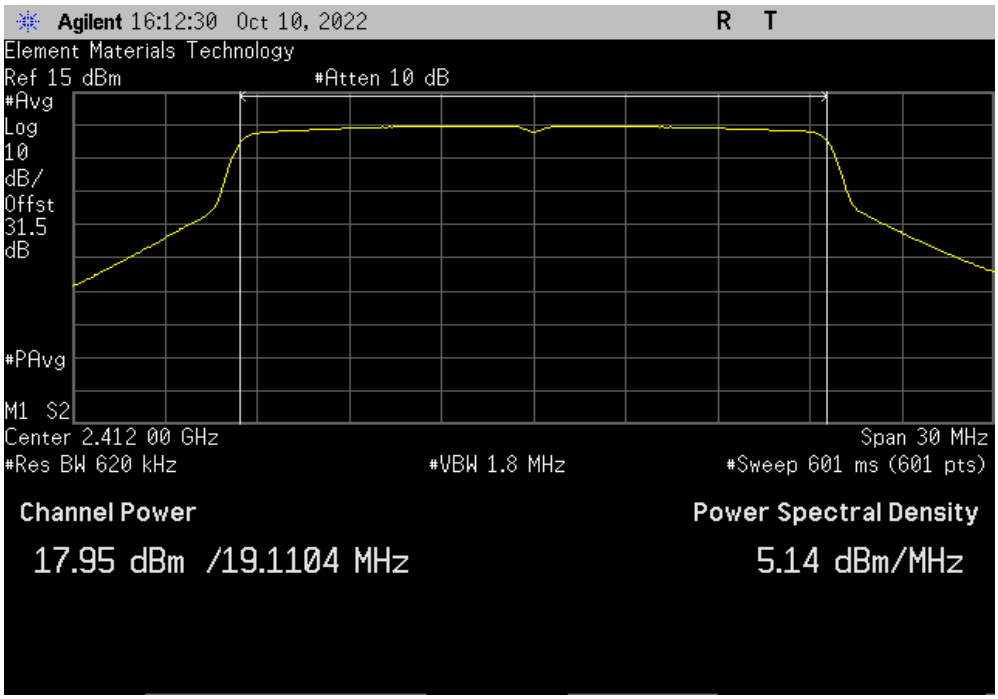


MIMO - Chain 0, VHT20, MCS8, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.444	0.6	18	30	Pass

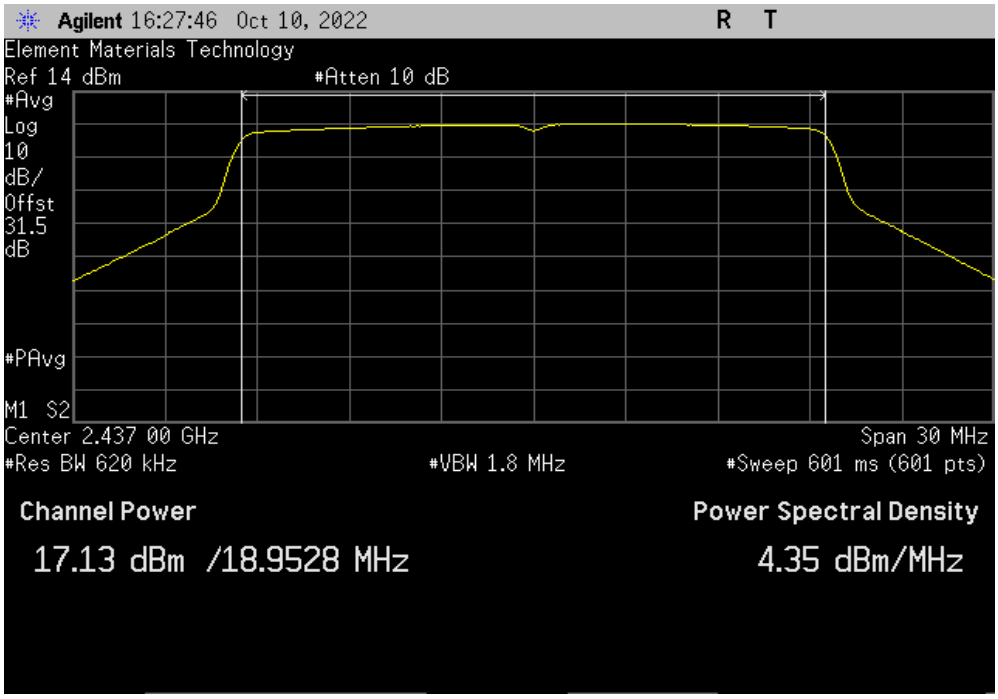


OUTPUT POWER - MIMO

MIMO - Chain 0, HE20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.95	0.6	18.6	30	Pass

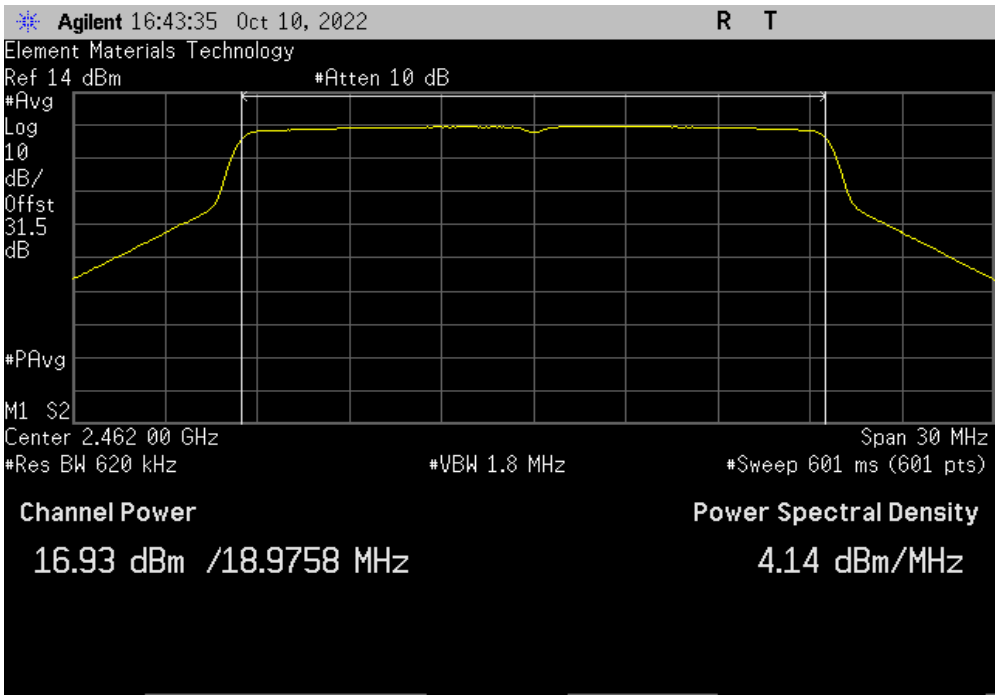


MIMO - Chain 0, HE20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.132	0.6	17.7	30	Pass

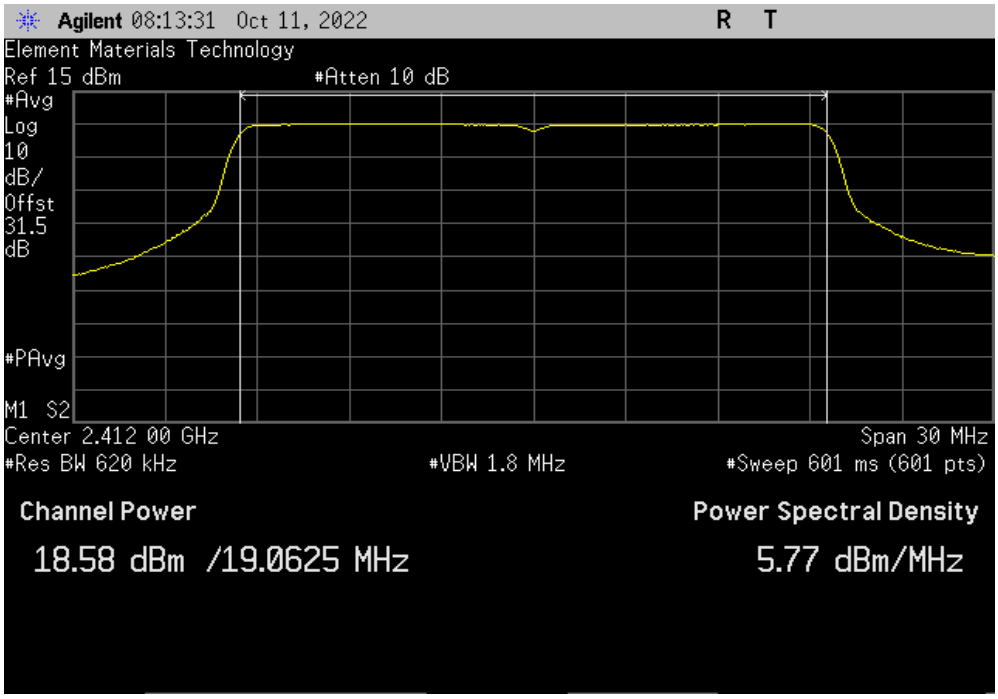


OUTPUT POWER - MIMO

MIMO - Chain 0, HE20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.927	0.6	17.5	30	Pass

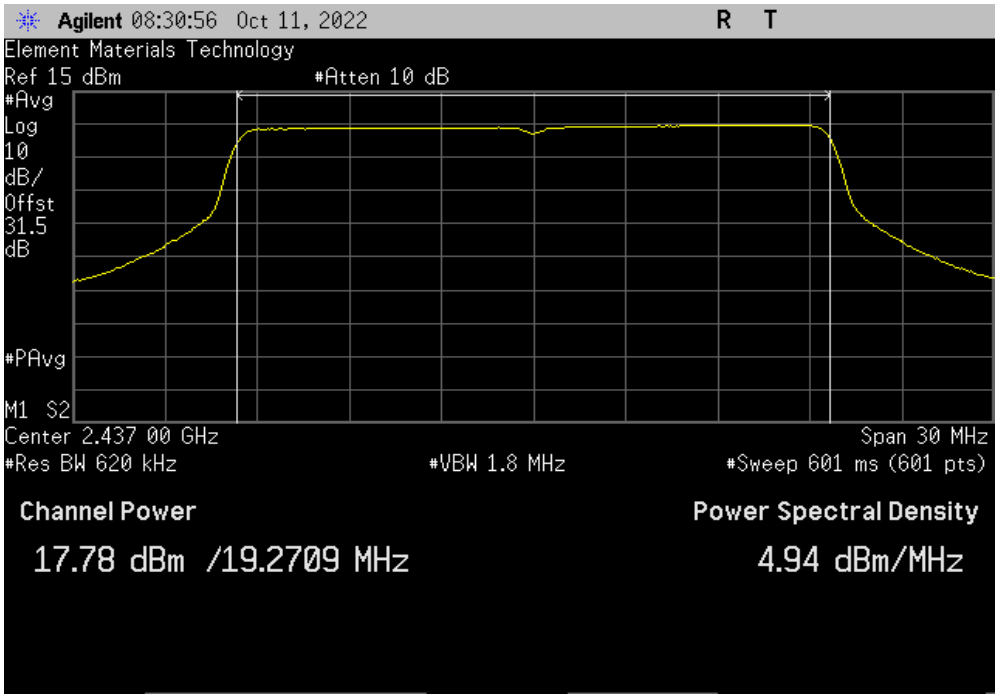


MIMO - Chain 0, HE20, MCS11, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		18.575	0.6	19.2	30	Pass

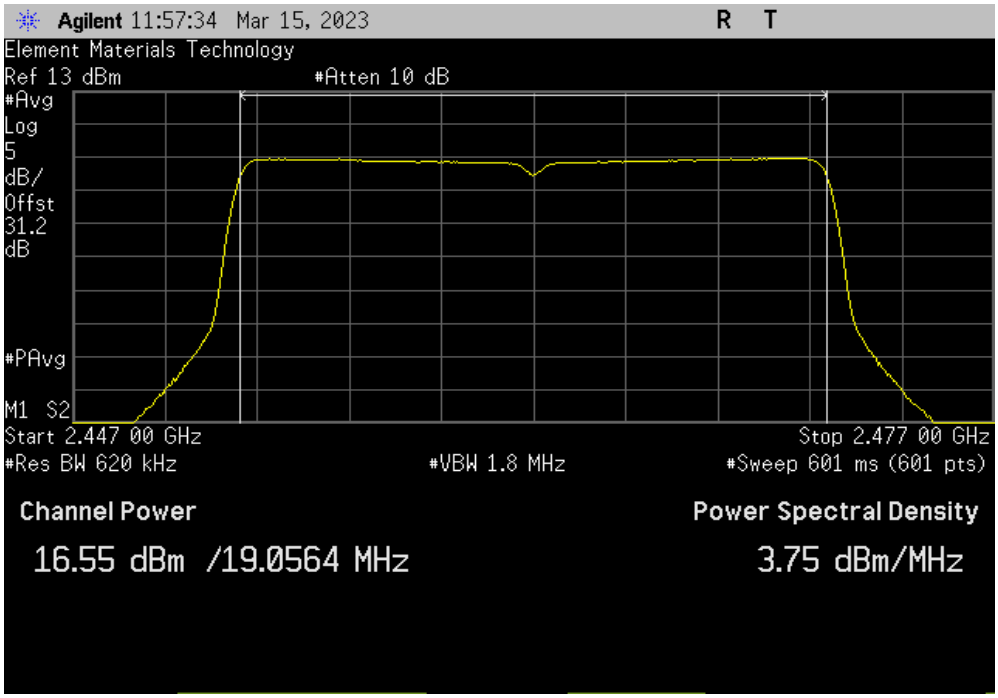


OUTPUT POWER - MIMO

MIMO - Chain 0, HE20, MCS11, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.785	0.6	18.4	30	Pass

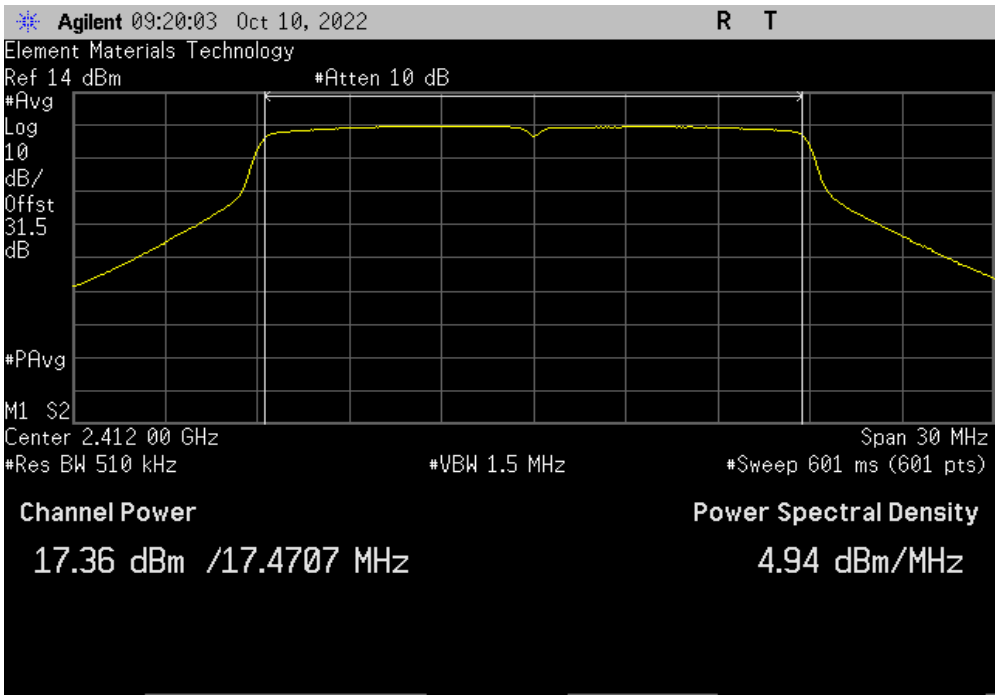


MIMO - Chain 0, HE20, MCS11, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.546	0.6	17.1	30	Pass

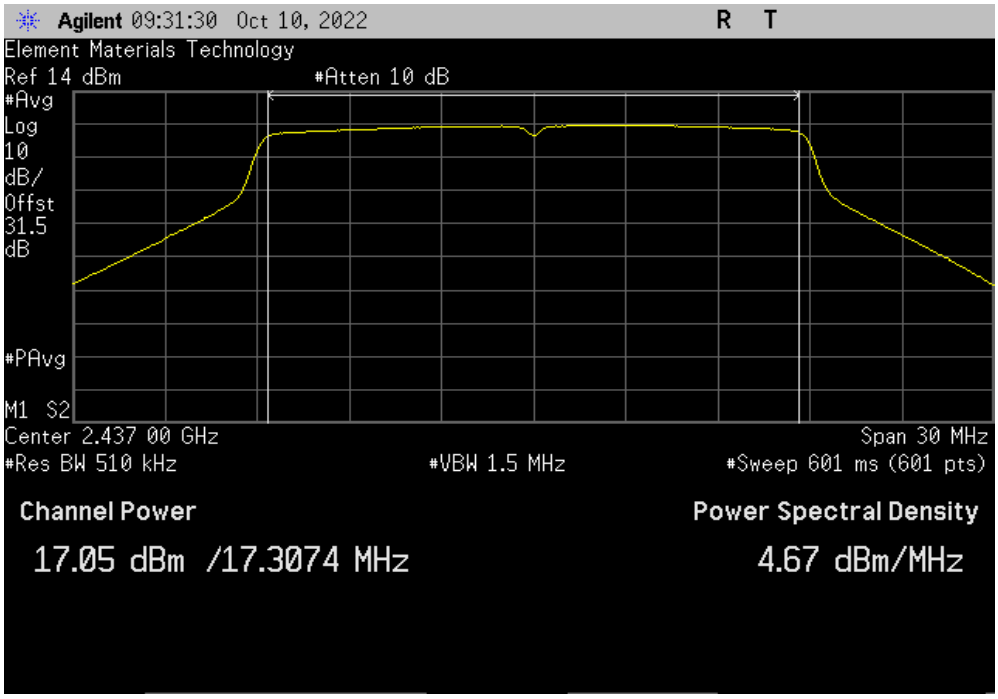


OUTPUT POWER - MIMO

MIMO - Chain 1, HT20, MCS8, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.364	0.6	18	30	Pass

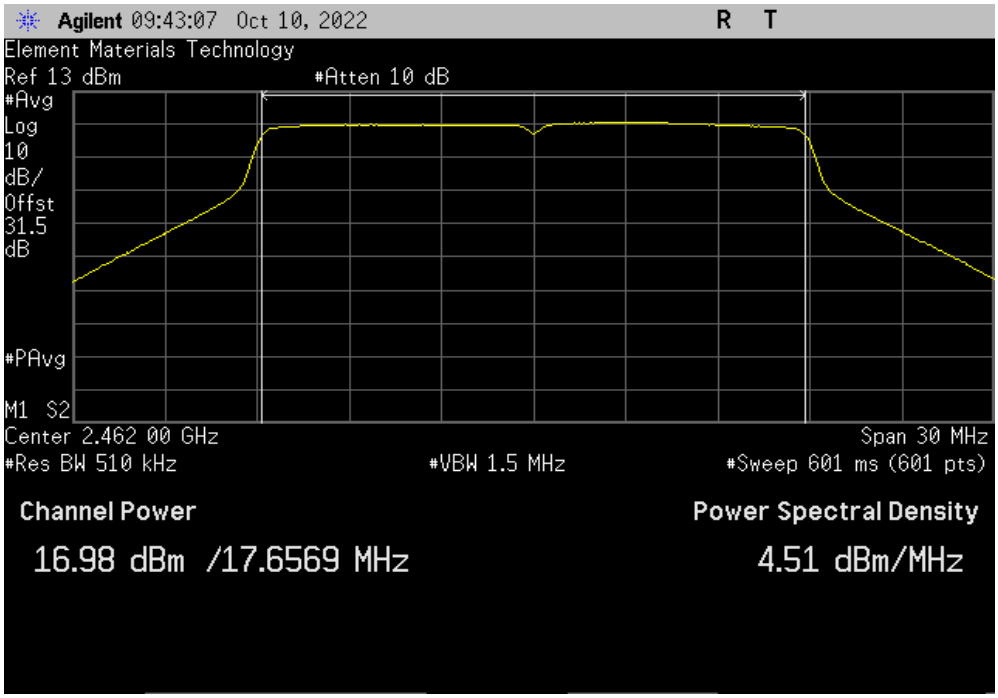


MIMO - Chain 1, HT20, MCS8, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.051	0.6	17.7	30	Pass

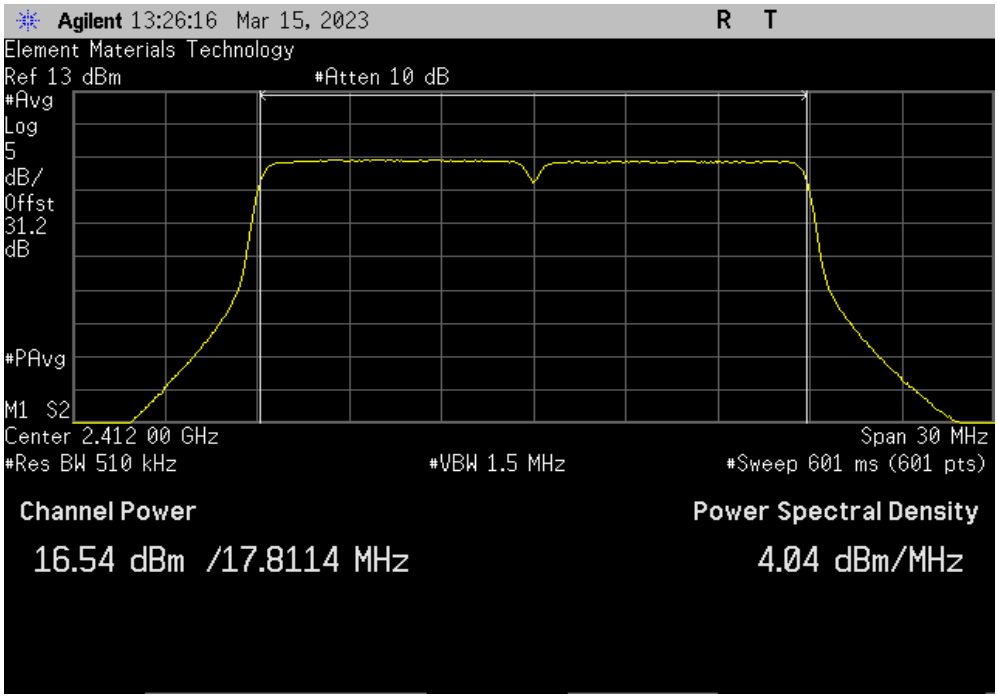


OUTPUT POWER - MIMO

MIMO - Chain 1, HT20, MCS8, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.979	0.6	17.6	30	Pass

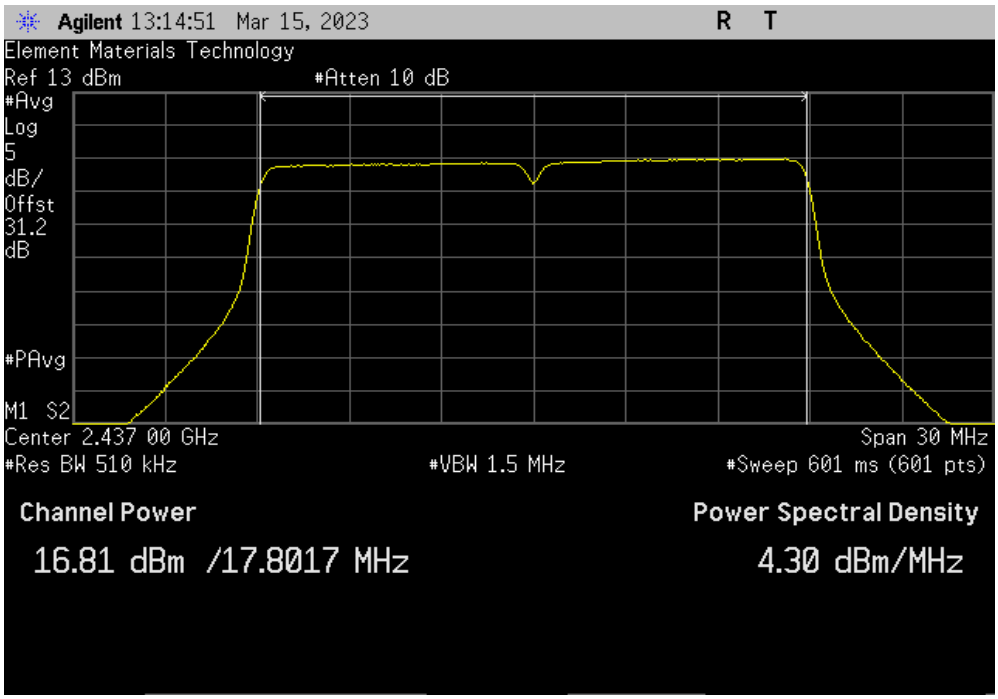


MIMO - Chain 1, HT20, MCS15, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.544	0.6	17.1	30	Pass

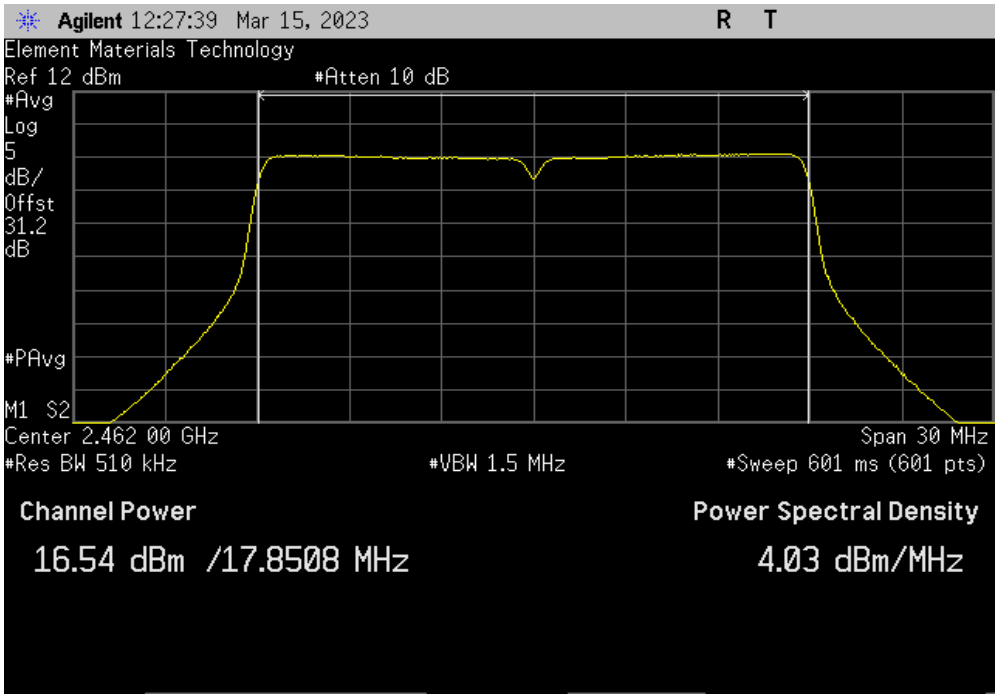


OUTPUT POWER - MIMO

MIMO - Chain 1, HT20, MCS15, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.805	0.6	17	30	Pass

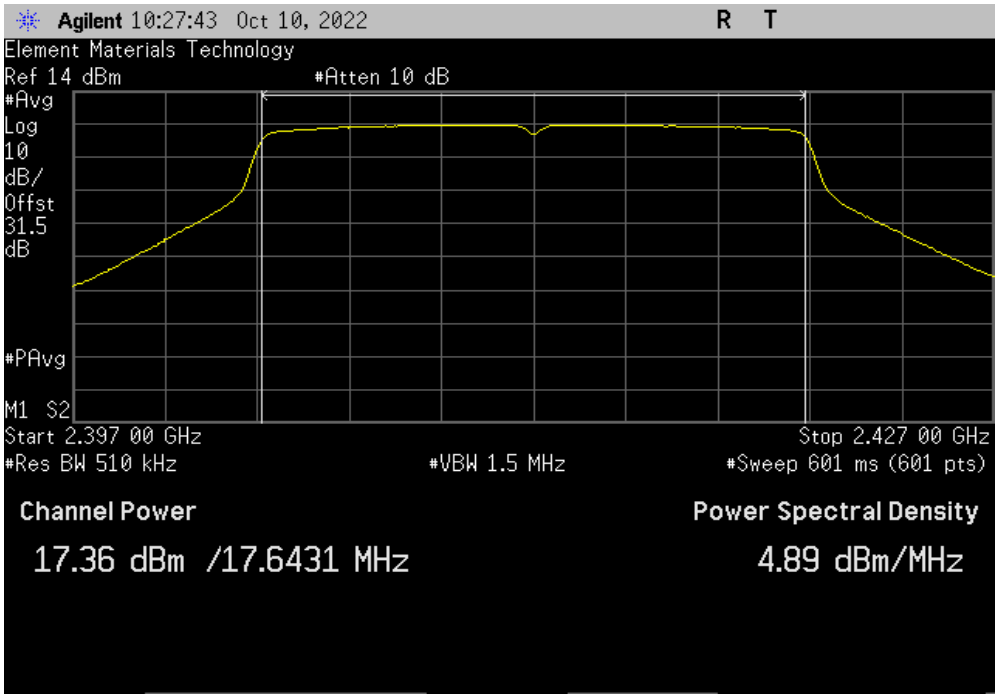


MIMO - Chain 1, HT20, MCS15, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.543	0.6	16.7	30	Pass

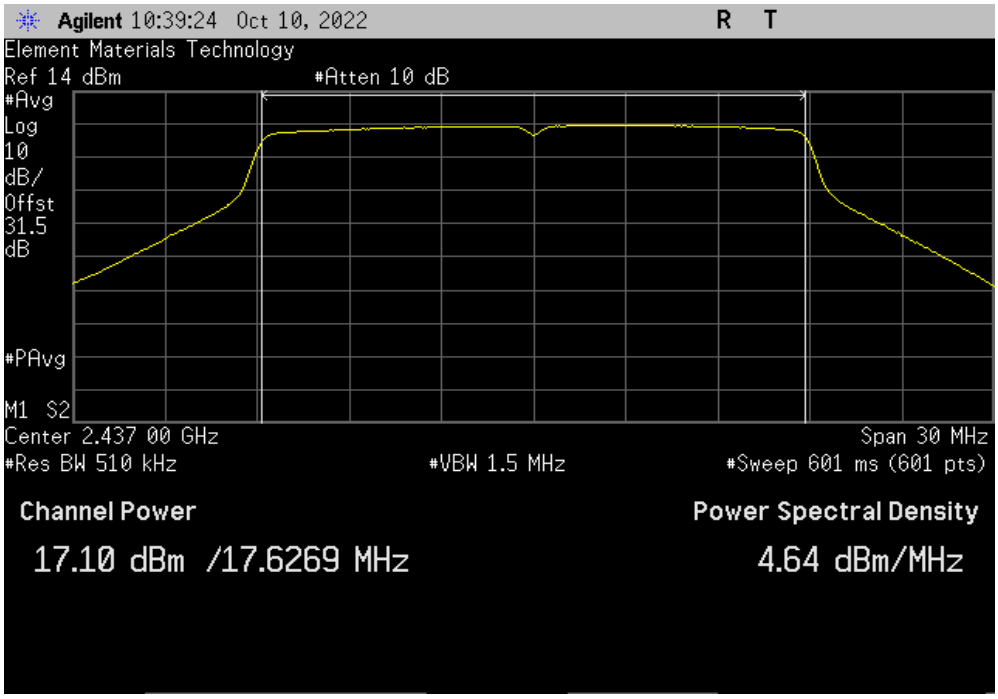


OUTPUT POWER - MIMO

MIMO - Chain 1, VHT20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.356	0.6	18	30	Pass

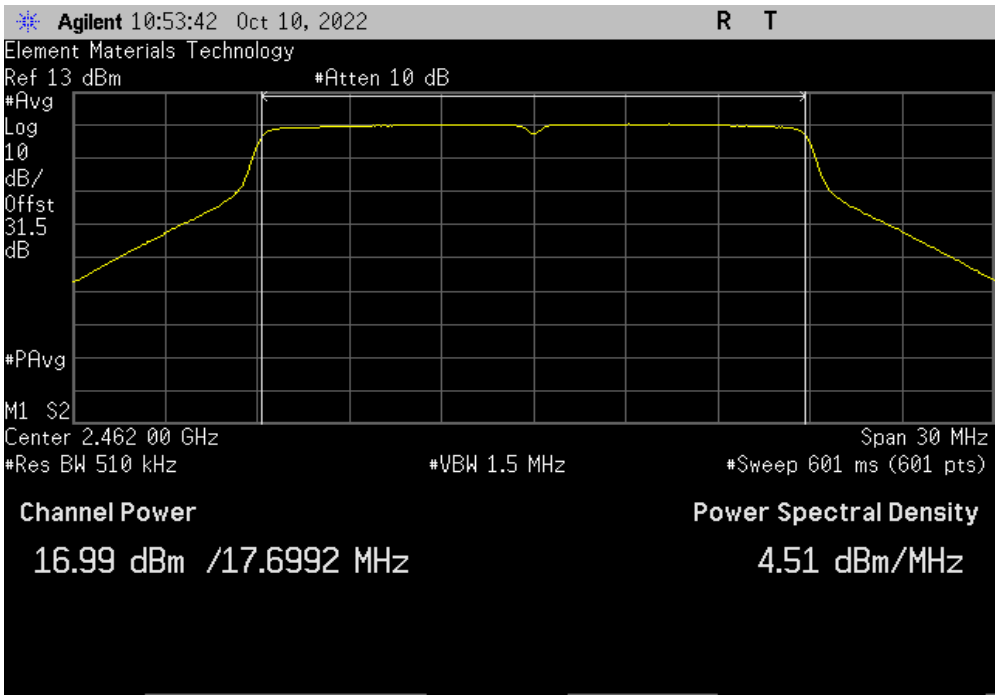


MIMO - Chain 1, VHT20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.105	0.6	17.7	30	Pass

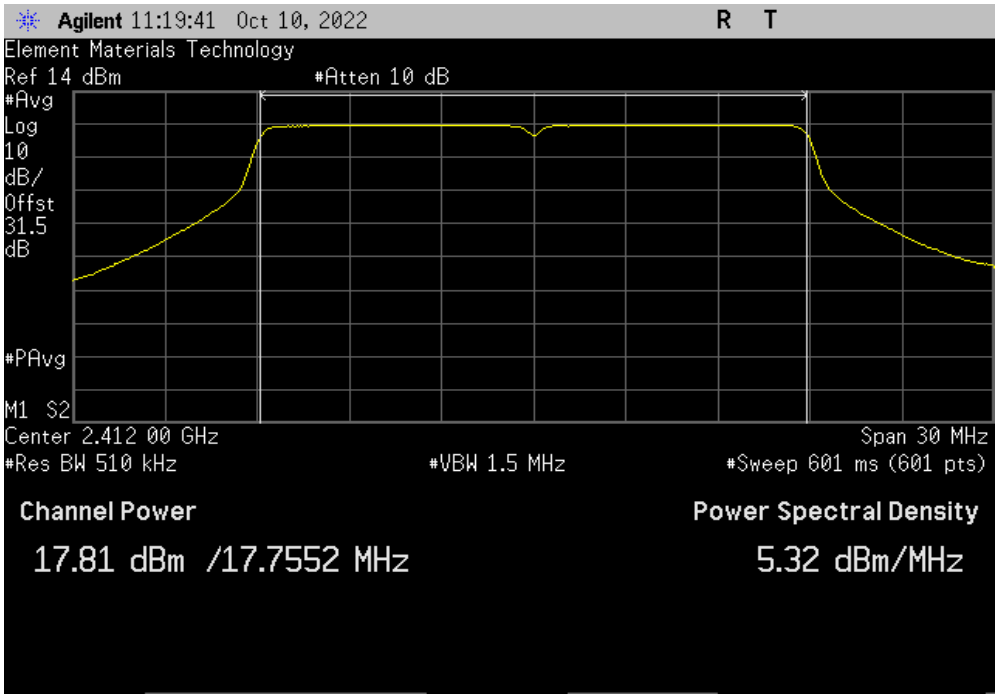


OUTPUT POWER - MIMO

MIMO - Chain 1, VHT20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.99	0.6	17.6	30	Pass

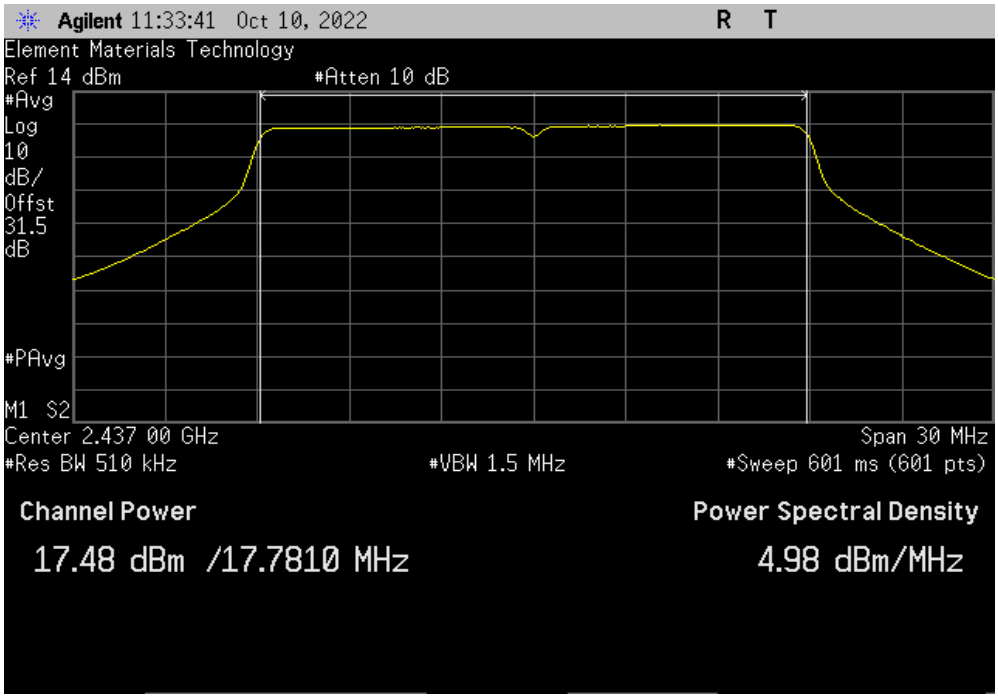


MIMO - Chain 1, VHT20, MCS8, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.81	0.6	18.4	30	Pass

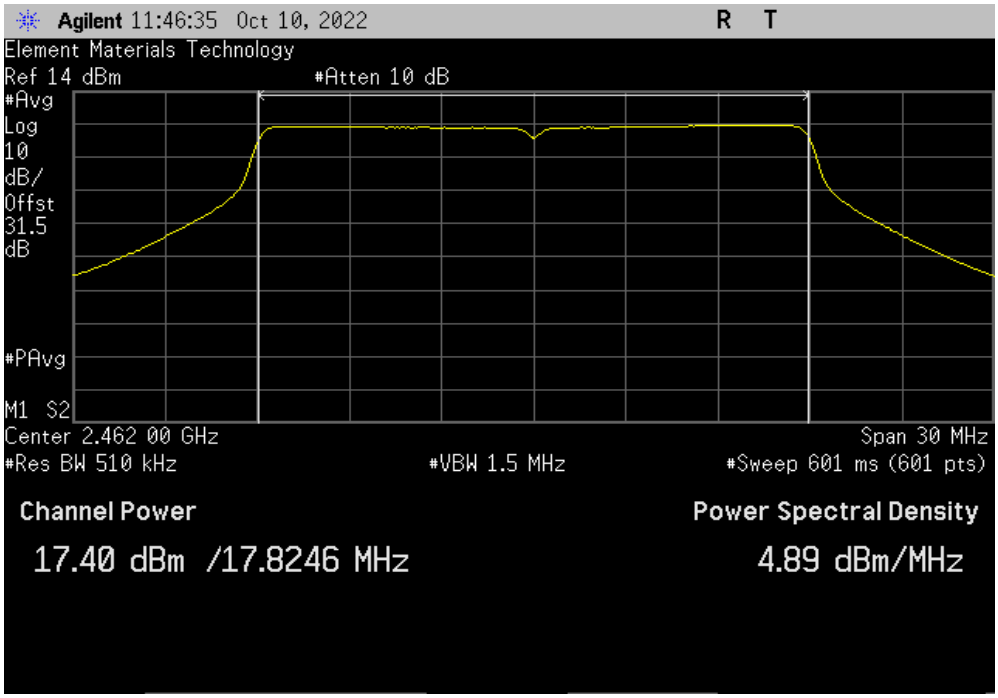


OUTPUT POWER - MIMO

MIMO - Chain 1, VHT20, MCS8, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.476	0.6	18.1	30	Pass

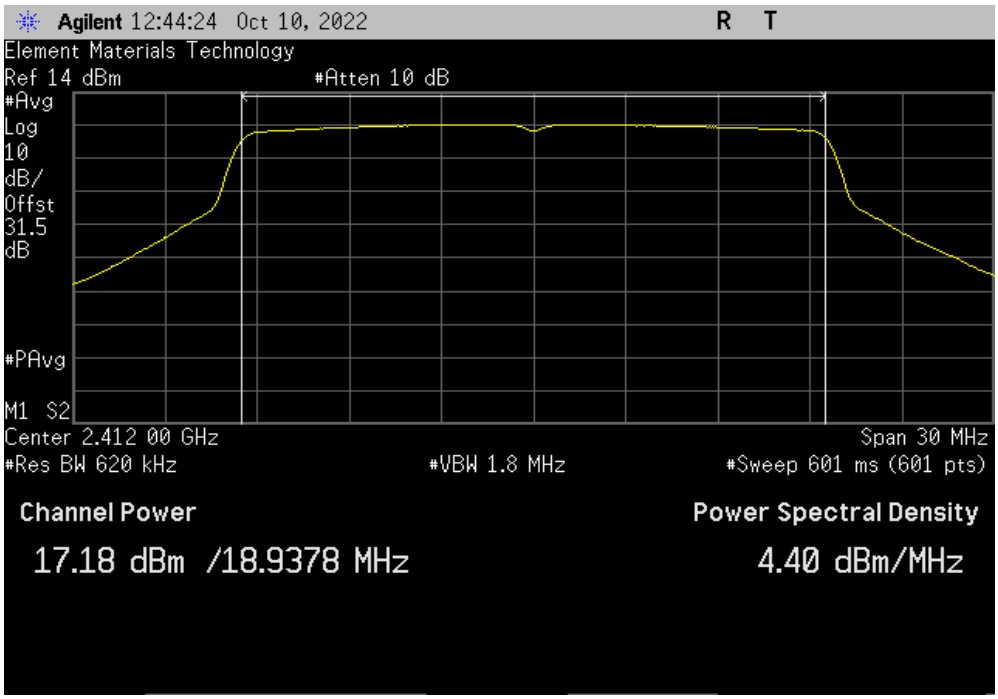


MIMO - Chain 1, VHT20, MCS8, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.403	0.6	18	30	Pass

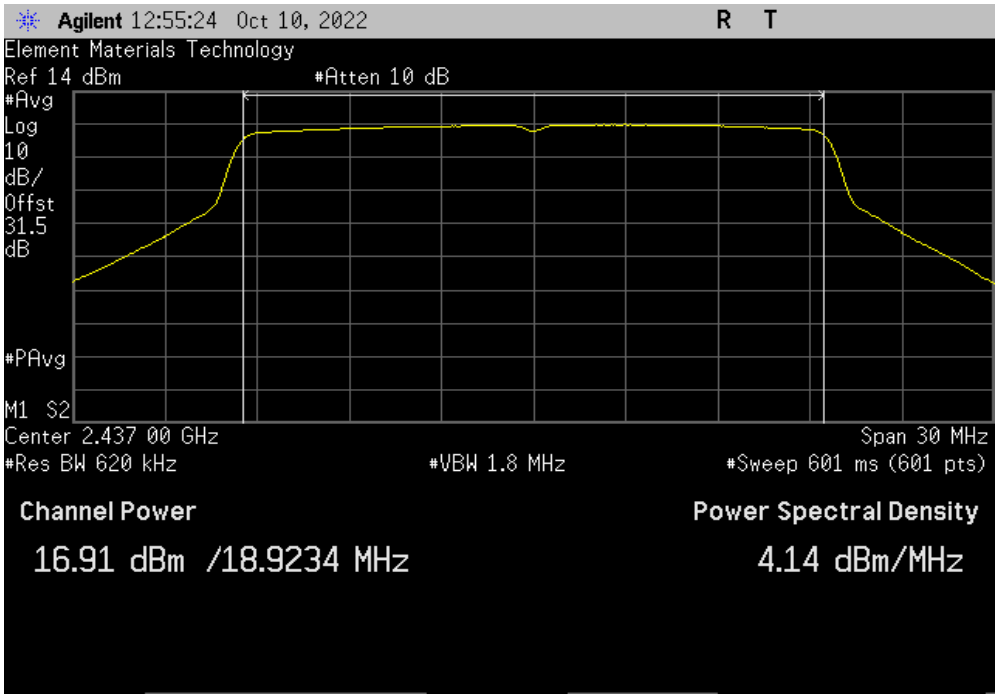


OUTPUT POWER - MIMO

MIMO - Chain 1, HE20, MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.178	0.6	17.8	30	Pass

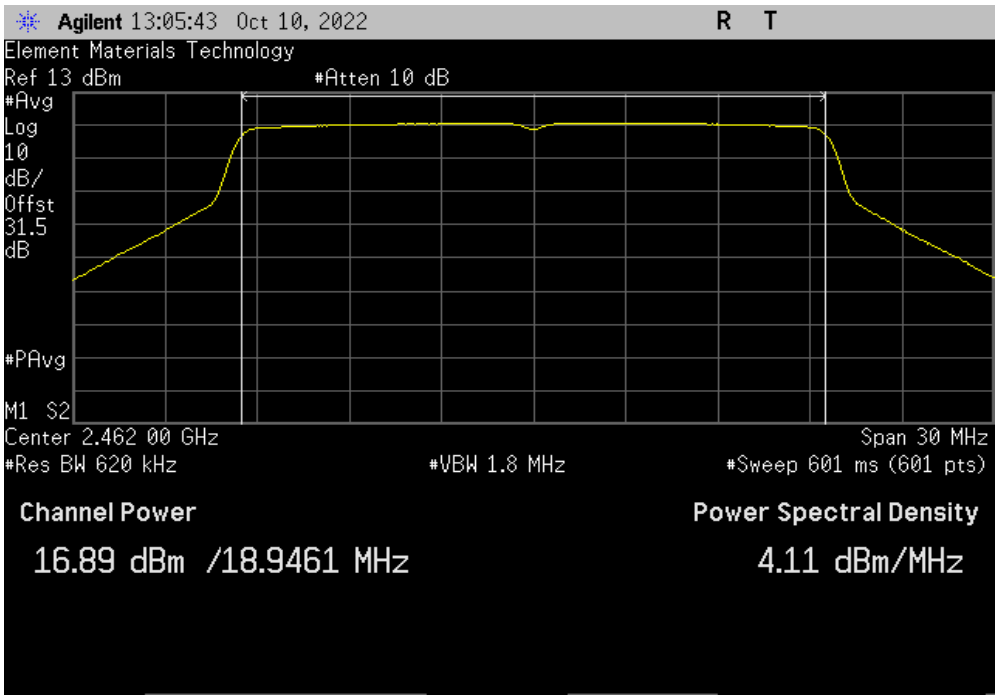


MIMO - Chain 1, HE20, MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.913	0.6	17.5	30	Pass

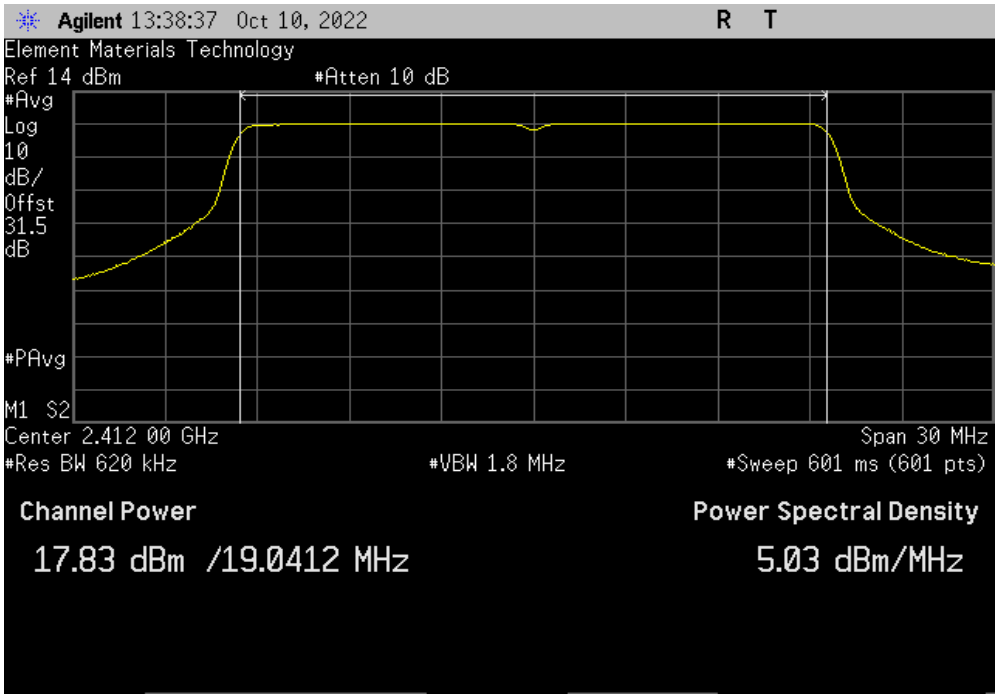


OUTPUT POWER - MIMO

MIMO - Chain 1, HE20, MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.885	0.6	17.5	30	Pass

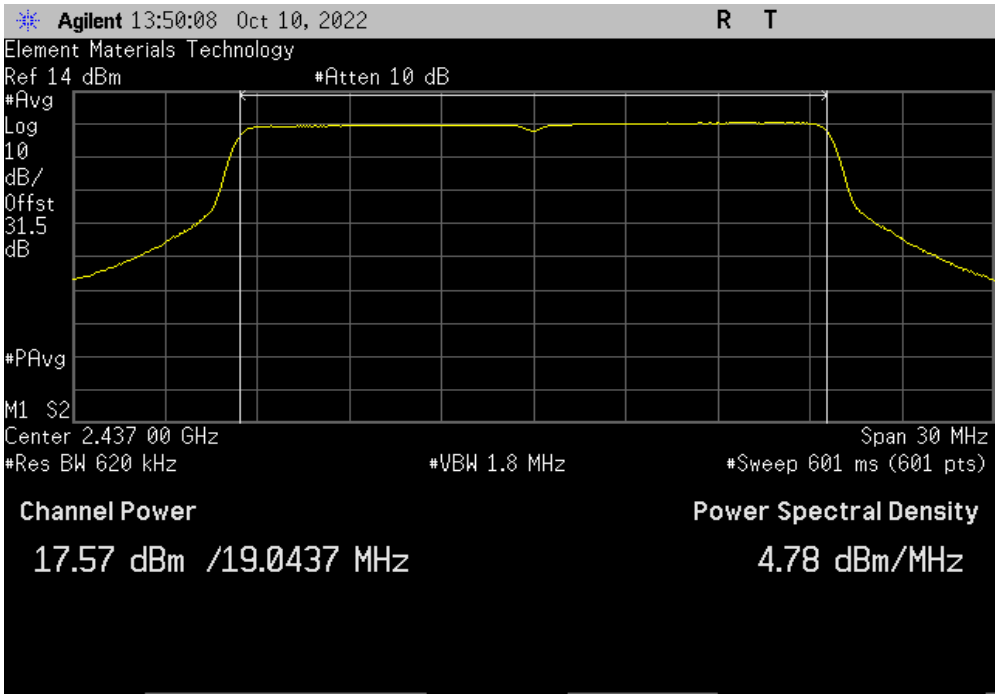


MIMO - Chain 1, HE20, MCS11, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.826	0.6	18.4	30	Pass

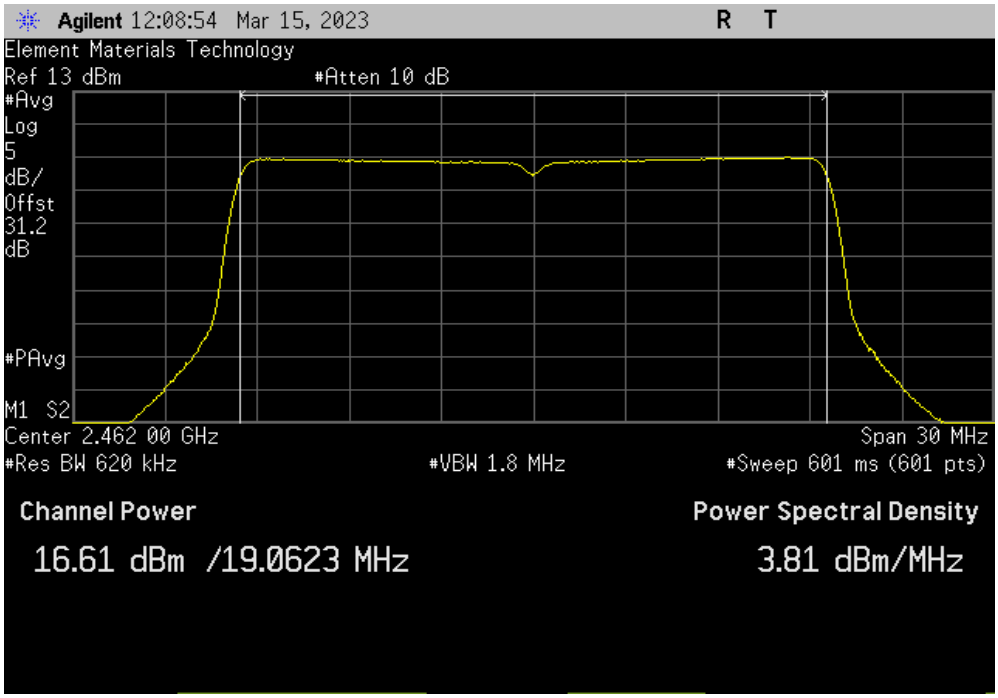


OUTPUT POWER - MIMO

MIMO - Chain 1, HE20, MCS11, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		17.573	0.6	18.2	30	Pass



MIMO - Chain 1, HE20, MCS11, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.61	0.6	17.2	30	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - CHAIN 0

XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi)

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - CHAIN 0

TbtTx 2022.06.03.0 XMit 2022.02.07.0

EUT:	U8 Hawk			**Work Order:**	KYME0068
Serial Number:	192F-85E2-1761			**Date:**	6-Oct-22
Customer:	Kymeta Corp.			**Temperature:**	21.9 °C
Attendees:	Dean Busch			**Humidity:**	44.1% RH
Project:	None			**Barometric Pres.:**	1025 mbar
Tested by:	Jeff Alcoke	**Power:**	12 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2022	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

Reference level offset includes: DC Block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

None

Configuration #	1	Signature

	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
Chain 0							
CCK, 1 Mbps							
Low Channel 1, 2412 MHz	18.924	2	20.9	2.4	23.3	36	Pass
Mid Channel 6, 2437 MHz	18.318	2	20.3	2.4	22.7	36	Pass
High Channel 11, 2462 MHz	18.049	2	20.0	2.4	22.4	36	Pass
CCK, 11 Mbps							
Low Channel 1, 2412 MHz	16.17	4.8	21.0	2.4	23.4	36	Pass
Mid Channel 6, 2437 MHz	15.605	4.8	20.4	2.4	22.8	36	Pass
High Channel 11, 2462 MHz	15.161	4.8	20.0	2.4	22.4	36	Pass
Legacy OFDM, 6 Mbps							
Low Channel 1, 2412 MHz	20.545	0.4	20.9	2.4	23.3	36	Pass
Mid Channel 6, 2437 MHz	19.84	0.4	20.2	2.4	22.6	36	Pass
High Channel 11, 2462 MHz	19.732	0.4	20.1	2.4	22.5	36	Pass
Legacy OFDM, 36 Mbps							
Low Channel 1, 2412 MHz	19.058	2.3	21.4	2.4	23.8	36	Pass
Mid Channel 6, 2437 MHz	18.341	2.4	20.7	2.4	23.1	36	Pass
High Channel 11, 2462 MHz	18.1	2.1	20.2	2.4	22.6	36	Pass
Legacy OFDM, 54 Mbps							
Low Channel 1, 2412 MHz	18.312	3.2	21.5	2.4	23.9	36	Pass
Mid Channel 6, 2437 MHz	17.638	3.2	20.8	2.4	23.2	36	Pass
High Channel 11, 2462 MHz	17.455	3.2	20.7	2.4	23.1	36	Pass
HT20, MCS0							
Low Channel 1, 2412 MHz	18.088	0.3	18.4	2.4	20.8	36	Pass
Mid Channel 6, 2437 MHz	17.441	0.3	17.7	2.4	20.1	36	Pass
High Channel 11, 2462 MHz	16.976	0.3	17.3	2.4	19.7	36	Pass
HT20, MCS7							
Low Channel 1, 2412 MHz	18.347	0.6	18.9	2.4	21.3	36	Pass
Mid Channel 6, 2437 MHz	17.701	0.6	18.3	2.4	20.7	36	Pass
High Channel 11, 2462 MHz	17.519	0.6	18.1	2.4	20.5	36	Pass
VHT20, MCS0							
Low Channel 1, 2412 MHz	17.819	0.6	18.4	2.4	20.8	36	Pass
Mid Channel 6, 2437 MHz	17.104	0.6	17.7	2.4	20.1	36	Pass
High Channel 11, 2462 MHz	17.129	0.6	17.7	2.4	20.1	36	Pass
VHT20, MCS8							
Low Channel 1, 2412 MHz	18.318	0.6	18.9	2.4	21.3	36	Pass
Mid Channel 6, 2437 MHz	17.691	0.6	18.3	2.4	20.7	36	Pass
High Channel 11, 2462 MHz	17.446	0.6	18	2.4	20.4	36	Pass
HE20, MCS0							
Low Channel 1, 2412 MHz	17.754	0.6	18.4	2.4	20.8	36	Pass
Mid Channel 6, 2437 MHz	17.075	0.6	17.7	2.4	20.1	36	Pass
High Channel 11, 2462 MHz	16.895	0.6	17.5	2.4	19.9	36	Pass
HE20, MCS11							
Low Channel 1, 2412 MHz	18.36	0.6	19	2.4	21.4	36	Pass
Mid Channel 6, 2437 MHz	17.733	0.6	18.3	2.4	20.7	36	Pass
High Channel 11, 2462 MHz	17.591	0.6	18.2	2.4	20.6	36	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - CHAIN 1

XMit 2022.12.28.0

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 - 2023

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2022-12-02	2023-12-02
Attenuator	S.M. Electronics	SA26B-20	AUY	2023-03-13	2024-03-13
Block - DC	Fairview Microwave	SD3379	AMW	2023-03-13	2024-03-13
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

TEST EQUIPMENT - 2022

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi)

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - CHAIN 1

element

TbtTx 2022.06.03.0 XMit 2022.12.28.0

EUT:	U8 Hawk			**Work Order:**	KYME0068
Serial Number:	See configuration			**Date:**	03/15/2023
Customer:	Kymeta Corp.			**Temperature:**	20.2°C
Attendees:	Dean Busch and Mike Olsen			**Humidity:**	38.3%
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	12VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

All measurments collected before 2023 were performed on configuration KYME0068-1. Reference level offset includes: DC block, 30 dB attenuation, and measurement cable.

DEVIATIONS FROM TEST STANDARD

None

Configuration #	KYME0068-1 KYME0068-5	Signature

		Avg Cond Pw (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
Chain 1								
	CCK, 1 Mbps							
	Low Channel 1, 2412 MHz	18.521	2	20.5	3.2	23.7	36	Pass
	Mid Channel 6, 2437 MHz	18.192	2	20.2	3.2	23.4	36	Pass
	High Channel 11, 2462 MHz	17.965	2	20.0	3.2	23.2	36	Pass
	CCK, 11 Mbps							
	Low Channel 1, 2412 MHz	15.831	4.8	20.6	3.2	23.8	36	Pass
	Mid Channel 6, 2437 MHz	15.516	4.8	20.3	3.2	23.5	36	Pass
	High Channel 11, 2462 MHz	15.217	4.8	20.0	3.2	23.2	36	Pass
	Legacy OFDM, 6 Mbps							
	Low Channel 1, 2412 MHz	20.051	0.4	20.5	3.2	23.7	36	Pass
	Mid Channel 6, 2437 MHz	19.825	0.4	20.2	3.2	23.4	36	Pass
	High Channel 11, 2462 MHz	19.762	0.4	20.2	3.2	23.4	36	Pass
	Legacy OFDM, 36 Mbps							
	Low Channel 1, 2412 MHz	18.565	2.3	20.9	3.2	24.1	36	Pass
	Mid Channel 6, 2437 MHz	18.267	2.3	20.6	3.2	23.8	36	Pass
	High Channel 11, 2462 MHz	14.973	2.3	17.3	3.2	20.5	36	Pass
	Legacy OFDM, 54 Mbps							
	Low Channel 1, 2412 MHz	17.708	3.2	20.9	3.2	24.1	36	Pass
	Mid Channel 6, 2437 MHz	17.498	3.2	20.7	3.2	23.9	36	Pass
	High Channel 11, 2462 MHz	17.353	3.2	20.6	3.2	23.8	36	Pass
	HT20, MCS0							
	Low Channel 1, 2412 MHz	17.288	0.6	17.9	3.2	21.1	36	Pass
	Mid Channel 6, 2437 MHz	16.976	0.6	17.6	3.2	20.8	36	Pass
	High Channel 11, 2462 MHz	17.095	0.6	17.7	3.2	20.9	36	Pass
	HT20, MCS7							
	Low Channel 1, 2412 MHz	17.707	0.6	18.3	3.2	21.5	36	Pass
	Mid Channel 6, 2437 MHz	17.443	0.6	18.0	3.2	21.2	36	Pass
	High Channel 11, 2462 MHz	17.515	0.6	18.1	3.2	21.3	36	Pass
	VHT20, MCS0							
	Low Channel 1, 2412 MHz	17.269	0.6	17.9	3.2	21.1	36	Pass
	Mid Channel 6, 2437 MHz	17.097	0.6	17.7	3.2	20.9	36	Pass
	High Channel 11, 2462 MHz	17.066	0.6	17.7	3.2	20.9	36	Pass
	VHT20, MCS8							
	Low Channel 1, 2412 MHz	17.709	0.6	18.3	3.2	21.5	36	Pass
	Mid Channel 6, 2437 MHz	17.446	0.6	18.0	3.2	21.2	36	Pass
	High Channel 11, 2462 MHz	17.516	0.6	18.1	3.2	21.3	36	Pass
	HE20, MCS0							
	Low Channel 1, 2412 MHz	17.127	0.6	17.7	3.2	20.9	36	Pass
	Mid Channel 6, 2437 MHz	16.919	0.6	17.5	3.2	20.7	36	Pass
	High Channel 11, 2462 MHz	16.979	0.6	17.6	3.2	20.8	36	Pass
	HE20, MCS11							
	Low Channel 1, 2412 MHz	17.714	0.6	18.3	3.2	21.5	36	Pass
	Mid Channel 6, 2437 MHz	17.470	0.6	18.1	3.2	21.3	36	Pass
	High Channel 11, 2462 MHz	16.640	0.6	17.2	3.2	20.4	36	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - MIMO

XMit 2023.02.14.0

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 - 2023

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2022-12-02	2023-12-02
Attenuator	S.M. Electronics	SA26B-20	AUY	2023-03-13	2024-03-13
Block - DC	Fairview Microwave	SD3379	AMW	2023-03-13	2024-03-13
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

TEST EQUIPMENT - 2022

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-10	AWR	2022-07-05	2023-07-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi)

The measurements from Chain 0 and Chain 1 were taken in dBm, converted to mW, summed in mW, and then converted back to dBm, to determine the total average power.

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - MIMO

element
TbtTx 2022.06.03.0 KMit 2023.02.14.0

EUT:	U8 Hawk			**Work Order:**	KYME0068
Serial Number:	See configuration			**Date:**	03/15/23
Customer:	Kymeta Corp.			**Temperature:**	19.9°C
Attendees:	Dean Busch and Mike Olsen			**Humidity:**	40.3%
Project:	None			**Barometric Pres.:**	1008 mbar
Tested by:	Jeff Alcoke	**Power:**	12VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

COMMENTS

All measurements collected before 2023, were performed on configuration KYME0068-1. Reference level offset includes: DC block, 30 dB attenuation, and measurement cable.

Per FCC KDB 662911 Section E), 1), The Output Power of both chains was converted to linear terms, summed, converted back to log terms. The antenna gain was then added to the summed value and compared to the EIRP limit.

Because the antenna gains are unequal the MIMO antenna gain was derived using the equation in Section F), 2), d), i):
Directional gain = 10 log[(10^(G1 /20) + 10^(G2 /20) + … + 10^(G_n /20))^2 /NANT] dBi = 10*log[((10^(2.4/20) + 10^(3.2/20))^2) / 2] = 5.8 dBi

DEVIATIONS FROM TEST STANDARD

None

Configuration #	KYME0068-1 KYME0068-5	Signature

		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
MIMO - Chain 0								
	HT20, MCS8							
	Low Channel 1, 2412 MHz	17.355	0.6	18	2.4	20.4	36	Pass
	Mid Channel 6, 2437 MHz	17.219	0.6	17.8	2.4	20.2	36	Pass
	High Channel 11, 2462 MHz	16.938	0.6	17.5	2.4	19.9	36	Pass
	HT20, MCS15							
	Low Channel 1, 2412 MHz	17.359	0.6	18.0	2.4	20.4	36	Pass
	Mid Channel 6, 2437 MHz	16.504	0.6	17.1	2.4	19.5	36	Pass
	High Channel 11, 2462 MHz	16.528	0.6	17.1	2.4	19.5	36	Pass
	VHT20, MCS0							
	Low Channel 1, 2412 MHz	18.043	0.6	18.6	2.4	21	36	Pass
	Mid Channel 6, 2437 MHz	17.216	0.6	17.8	2.4	20.2	36	Pass
	High Channel 11, 2462 MHz	17.018	0.6	17.6	2.4	20	36	Pass
	VHT20, MCS8							
	Low Channel 1, 2412 MHz	18.535	0.6	19.1	2.4	21.5	36	Pass
	Mid Channel 6, 2437 MHz	17.821	0.6	18.4	2.4	20.8	36	Pass
	High Channel 11, 2462 MHz	17.444	0.6	18	2.4	20.4	36	Pass
	HE20, MCS0							
	Low Channel 1, 2412 MHz	17.95	0.6	18.6	2.4	21	36	Pass
	Mid Channel 6, 2437 MHz	17.132	0.6	17.7	2.4	20.1	36	Pass
	High Channel 11, 2462 MHz	16.927	0.6	17.5	2.4	19.9	36	Pass
	HE20, MCS11							
	Low Channel 1, 2412 MHz	18.575	0.6	19.2	2.4	21.6	36	Pass
	Mid Channel 6, 2437 MHz	17.785	0.6	18.4	2.4	20.8	36	Pass
	High Channel 11, 2462 MHz	16.546	0.6	17.1	2.4	19.5	36	Pass
MIMO - Chain 1								
	HT20, MCS8							
	Low Channel 1, 2412 MHz	17.364	0.6	18	3.2	21.2	36	Pass
	Mid Channel 6, 2437 MHz	17.051	0.6	17.7	3.2	20.9	36	Pass
	High Channel 11, 2462 MHz	16.979	0.6	17.6	3.2	20.8	36	Pass
	HT20, MCS15							
	Low Channel 1, 2412 MHz	16.544	0.6	17.1	3.2	20.3	36	Pass
	Mid Channel 6, 2437 MHz	16.805	0.6	17.4	3.2	20.6	36	Pass
	High Channel 11, 2462 MHz	16.543	0.6	17.1	3.2	20.3	36	Pass
	VHT20, MCS0							
	Low Channel 1, 2412 MHz	17.356	0.6	18	3.2	21.2	36	Pass
	Mid Channel 6, 2437 MHz	17.105	0.6	17.7	3.2	20.9	36	Pass
	High Channel 11, 2462 MHz	16.99	0.6	17.6	3.2	20.8	36	Pass
	VHT20, MCS8							
	Low Channel 1, 2412 MHz	17.81	0.6	18.4	3.2	21.6	36	Pass
	Mid Channel 6, 2437 MHz	17.476	0.6	18.1	3.2	21.3	36	Pass
	High Channel 11, 2462 MHz	17.403	0.6	18	3.2	21.2	36	Pass
	HE20, MCS0							
	Low Channel 1, 2412 MHz	17.178	0.6	17.8	3.2	21	36	Pass
	Mid Channel 6, 2437 MHz	16.913	0.6	17.5	3.2	20.7	36	Pass
	High Channel 11, 2462 MHz	16.885	0.6	17.5	3.2	20.7	36	Pass
	HE20, MCS11							
	Low Channel 1, 2412 MHz	17.826	0.6	18.4	3.2	21.6	36	Pass
	Mid Channel 6, 2437 MHz	17.573	0.6	18.2	3.2	21.4	36	Pass
	High Channel 11, 2462 MHz	16.61	0.6	17.2	3.2	20.4	36	Pass

2x2 MIMO, Power Summing Table	Chain 0 OP Value (mW)	Chain 1 OP Value (mW)	Summed OP Value (mW)	Summed OP Value (dB)	Summed Ant Gain (dBi)	EIRP Value (dBm)	Limit (dBm)	Results
HT20, MCS8								
Low Channel 1, 2412 MHz	63.1	63.1	126.2	21.0	5.8	26.8	36	Pass
Mid Channel 6, 2437 MHz	60.3	58.9	119.1	20.8	5.8	26.6	36	Pass
High Channel 11, 2462 MHz	56.2	57.5	113.8	20.6	5.8	26.4	36	Pass
HT20, MCS15								
Low Channel 1, 2412 MHz	63.1	51.3	114.4	20.6	5.8	26.4	36	Pass
Mid Channel 6, 2437 MHz	51.3	55.0	106.4	20.3	5.8	26.1	36	Pass
High Channel 11, 2462 MHz	51.6	51.8	103.4	20.1	5.8	25.9	36	Pass
VHT20, MCS0								
Low Channel 1, 2412 MHz	72.4	63.1	135.5	21.3	5.8	27.1	36	Pass
Mid Channel 6, 2437 MHz	60.3	58.9	119.1	20.8	5.8	26.6	36	Pass
High Channel 11, 2462 MHz	57.5	57.5	115.1	20.6	5.8	26.4	36	Pass
VHT20, MCS8								
Low Channel 1, 2412 MHz	81.3	69.2	150.5	21.8	5.8	27.6	36	Pass
Mid Channel 6, 2437 MHz	69.2	64.6	133.7	21.3	5.8	27.1	36	Pass
High Channel 11, 2462 MHz	63.1	63.1	126.2	21.0	5.8	26.8	36	Pass
HE20, MCS0								
Low Channel 1, 2412 MHz	72.4	60.3	132.7	21.2	5.8	27.0	36	Pass
Mid Channel 6, 2437 MHz	58.9	56.2	115.1	20.6	5.8	26.4	36	Pass
High Channel 11, 2462 MHz	56.2	56.2	112.5	20.5	5.8	26.3	36	Pass
HE20, MCS11								
Low Channel 1, 2412 MHz	83.2	69.2	152.4	21.8	5.8	27.6	36	Pass
Mid Channel 6, 2437 MHz	69.2	66.1	135.3	21.3	5.8	27.1	36	Pass
High Channel 11, 2462 MHz	51.3	52.5	103.8	20.2	5.8	26.0	36	Pass