

DUTY CYCLE - 5.8 GHz BAND

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
Power Supply - DC	Topward	TPS-2000	TPD	NCR	NCR
Generator - Signal	Keysight	N5182B	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVK	2021-03-14	2022-03-14
Attenuator	S.M. Electronics	SA26B-20	AUY	2021-03-14	2022-03-14
Block - DC	Fairview Microwave	SD3379	AMW	2021-03-14	2022-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2021-07-06	2022-07-06

TEST DESCRIPTION

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

DUTY CYCLE - 5.8 GHz BAND



TMTx 2021.03.19.1 XMH 2020.12.30.0

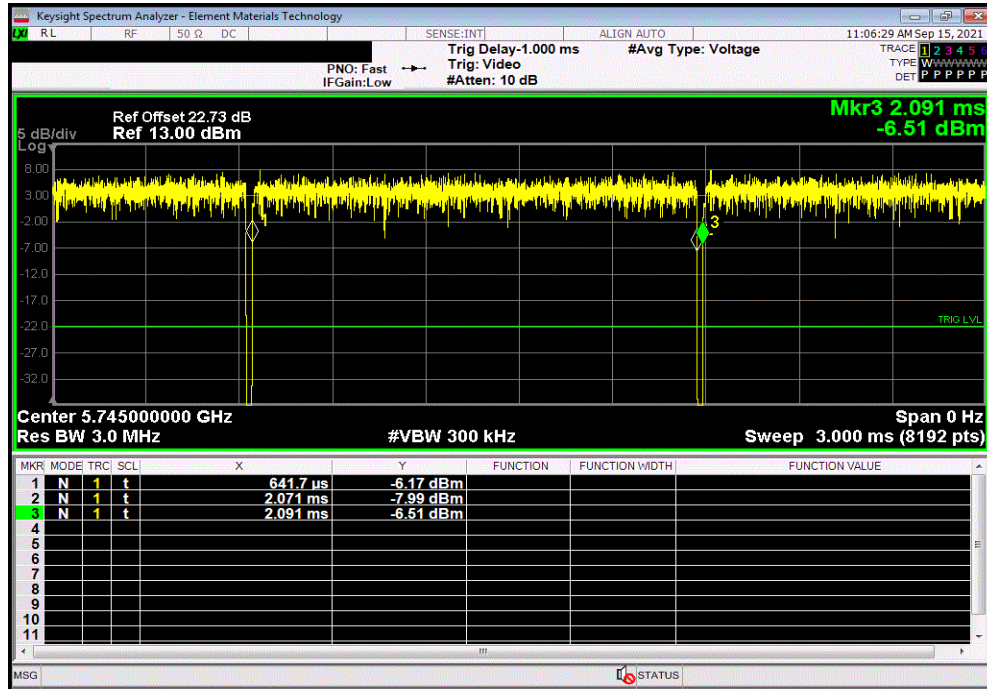
EUT: 43.0536.00				Work Order: A-DE0170			
Serial Number: SN001 00001				Date: 16-Sep-21			
Customer: A-dec, Inc.				Temperature: 22 °C			
Attendees: Ben Meadows				Humidity: 37.3% RH			
Project: None				Barometric Pres.: 1023 mbar			
Tested by: Jeff Alcock		Power: 3.3 VDC		Job Site: EV06			
TEST SPECIFICATIONS		Test Method					
FCC 15.407:2021		ANSI C63.10:2013					
COMMENTS							
Reference level offset includes; DC block, 20 dB attenuator, and measurement cable.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	3	Signature 					
		Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
5725 - 5850 MHz Band							
802.11(a) No HT							
Low Channel, Ch 149 - 5745 MHz							
	6 Mbps	1.429 ms	1.449 ms	1	98.6	N/A	N/A
	6 Mbps	N/A	N/A	6	N/A	N/A	N/A
	36 Mbps	256.7 us	277.1 us	1	92.6	N/A	N/A
	36 Mbps	N/A	N/A	6	N/A	N/A	N/A
	54 Mbps	180.8 us	201.3 us	1	89.8	N/A	N/A
	54 Mbps	N/A	N/A	6	N/A	N/A	N/A
Mid Channel, Ch 157 - 5785 MHz							
	6 Mbps	1.429 ms	1.449 ms	1	98.6	N/A	N/A
	6 Mbps	N/A	N/A	6	N/A	N/A	N/A
	36 Mbps	256.9 us	277.2 us	1	92.7	N/A	N/A
	36 Mbps	N/A	N/A	5	N/A	N/A	N/A
	54 Mbps	180.8 us	201.2 us	1	89.9	N/A	N/A
	54 Mbps	N/A	N/A	5	N/A	N/A	N/A
High Channel, Ch 165 - 5825 MHz							
	6 Mbps	1.429 ms	1.449 ms	1	98.6	N/A	N/A
	6 Mbps	N/A	N/A	5	N/A	N/A	N/A
	36 Mbps	256.8 us	277.3 us	1	92.6	N/A	N/A
	36 Mbps	N/A	N/A	5	N/A	N/A	N/A
	54 Mbps	180.7 us	201.1 us	1	89.9	N/A	N/A
	54 Mbps	N/A	N/A	6	N/A	N/A	N/A
802.11(n/ac) VHT20							
Low Channel, Ch 149 - 5745 MHz							
	MCS0	1.345 ms	1.365 ms	1	98.5	N/A	N/A
	MCS0	N/A	N/A	6	N/A	N/A	N/A
	MCS7	172.717 us	193.445 us	1	89.3	N/A	N/A
	MCS7	N/A	N/A	6	N/A	N/A	N/A
	MCS8 (256-QAM)	152.617 us	173.283 us	1	88.1	N/A	N/A
	MCS8 (256-QAM)	N/A	N/A	6	N/A	N/A	N/A
Mid Channel, Ch 157 - 5785 MHz							
	MCS0	1.345 ms	1.365 ms	1	98.5	N/A	N/A
	MCS0	N/A	N/A	6	N/A	N/A	N/A
	MCS7	172.778 us	193.223 us	1	89.4	N/A	N/A
	MCS7	N/A	N/A	5	N/A	N/A	N/A
	MCS8 (256-QAM)	152.617 us	173.161 us	1	88.1	N/A	N/A
	MCS8 (256-QAM)	N/A	N/A	5	N/A	N/A	N/A
High Channel, Ch 165 - 5825 MHz							
	MCS0	1.344 ms	1.365 ms	1	98.5	N/A	N/A
	MCS0	N/A	N/A	6	N/A	N/A	N/A
	MCS7	172.678 us	193.261 us	1	89.3	N/A	N/A
	MCS7	N/A	N/A	6	N/A	N/A	N/A
	MCS8 (256-QAM)	152.556 us	173.161 us	1	88.1	N/A	N/A
	MCS8 (256-QAM)	N/A	N/A	6	N/A	N/A	N/A
802.11(n/ac) VHT40							
Low Channel, Ch 149/153 - 5755 MHz							
	MCS0	669.233 us	689.017 us	1	97.1	N/A	N/A
	MCS0	N/A	N/A	5	N/A	N/A	N/A
	MCS7	105.567 us	124.917 us	1	84.5	N/A	N/A
	MCS7	N/A	N/A	5	N/A	N/A	N/A
	MCS9 (256-QAM)	90.359 us	108.964 us	1	82.9	N/A	N/A
	MCS9 (256-QAM)	N/A	N/A	5	N/A	N/A	N/A
High Channel, Ch 157/161 - 5795 MHz							
	MCS0	669.283 us	689.203 us	1	97.1	N/A	N/A
	MCS0	N/A	N/A	6	N/A	N/A	N/A
	MCS7	106 us	125.1 us	1	84.7	N/A	N/A
	MCS7	N/A	N/A	5	N/A	N/A	N/A
	MCS9 (256-QAM)	90.303 us	108.743 us	1	83	N/A	N/A
	MCS9 (256-QAM)	N/A	N/A	5	N/A	N/A	N/A
802.11(n/ac) VHT80							
Low Channel, Ch 149-161 - 5775 MHz							
	MCS0	334.3 us	353 us	1	94.7	N/A	N/A
	MCS0	N/A	N/A	5	N/A	N/A	N/A
	MCS9 (256-QAM)	66.544 us	84.758 us	1	78.5	N/A	N/A
	MCS9 (256-QAM)	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE - 5.8 GHz BAND

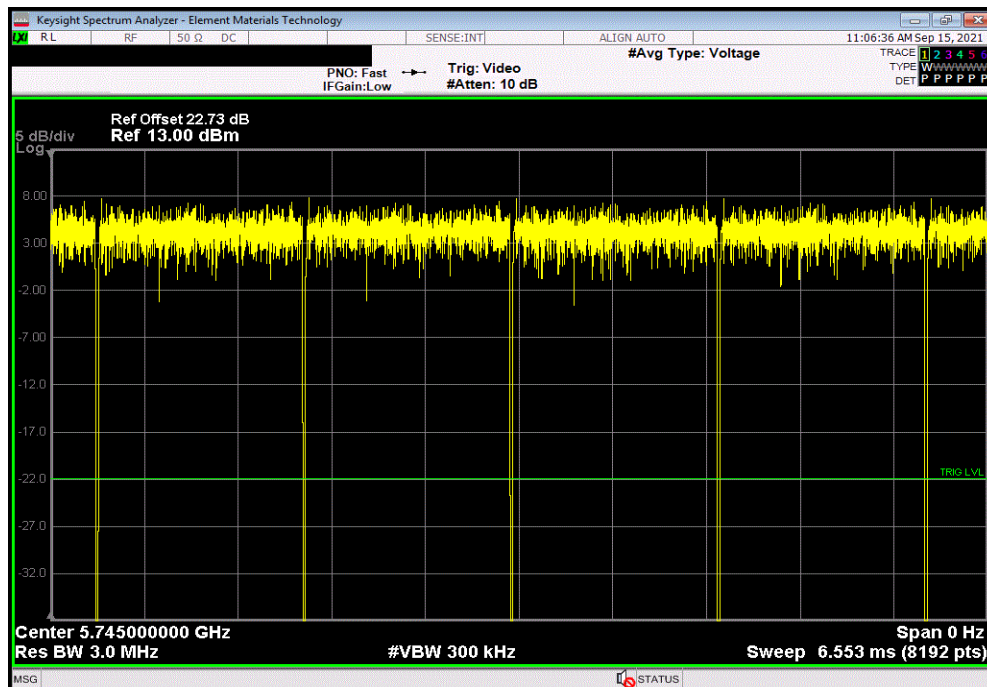


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, Low Channel, Ch 149 - 5745 MHz, 6 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.429 ms	1.449 ms	1	98.6	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, Low Channel, Ch 149 - 5745 MHz, 6 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

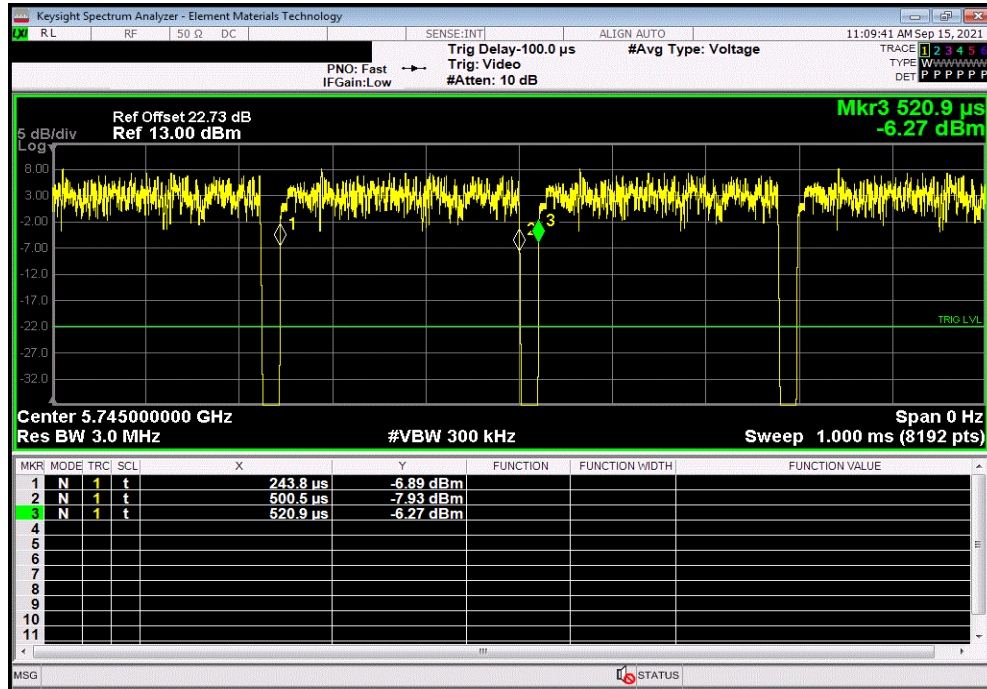


DUTY CYCLE - 5.8 GHz BAND

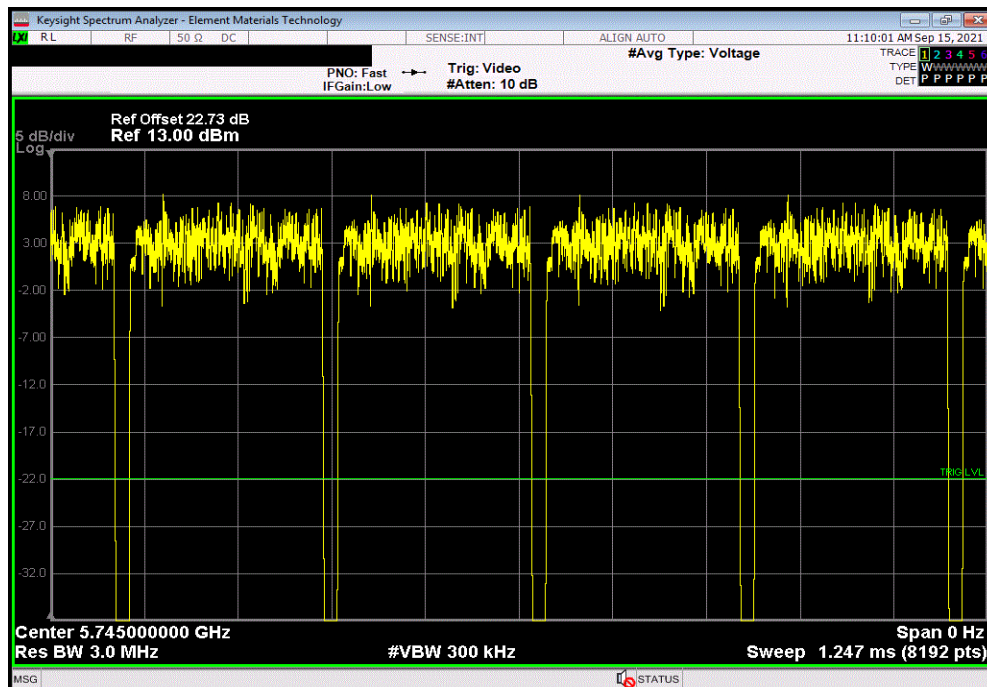


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, Low Channel, Ch 149 - 5745 MHz, 36 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
256.7 μ s	277.1 μ s	1	92.6	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, Low Channel, Ch 149 - 5745 MHz, 36 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

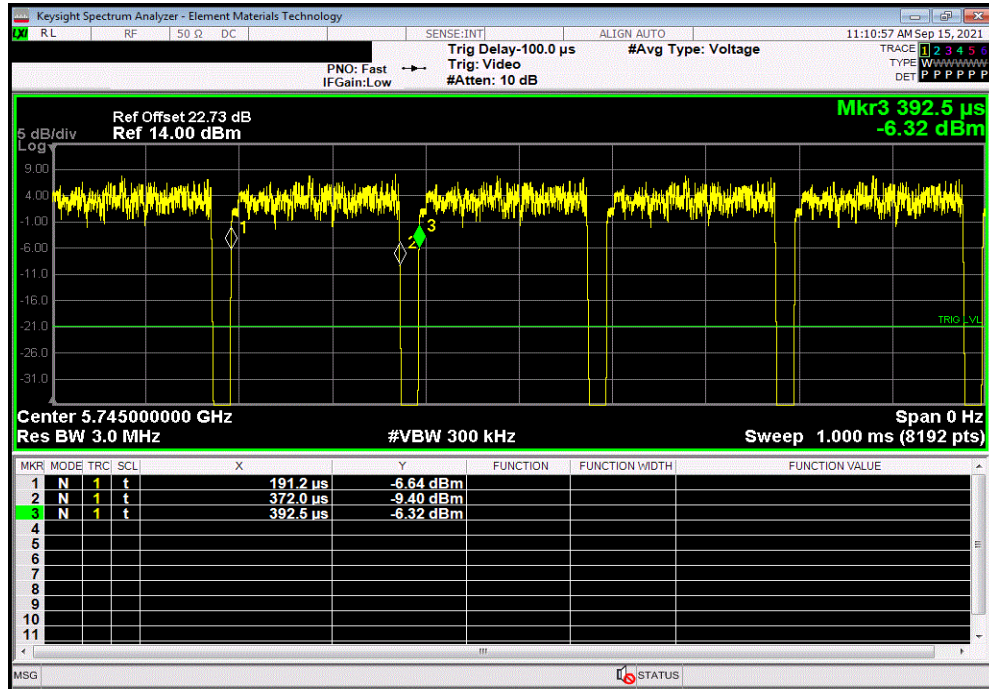


DUTY CYCLE - 5.8 GHz BAND

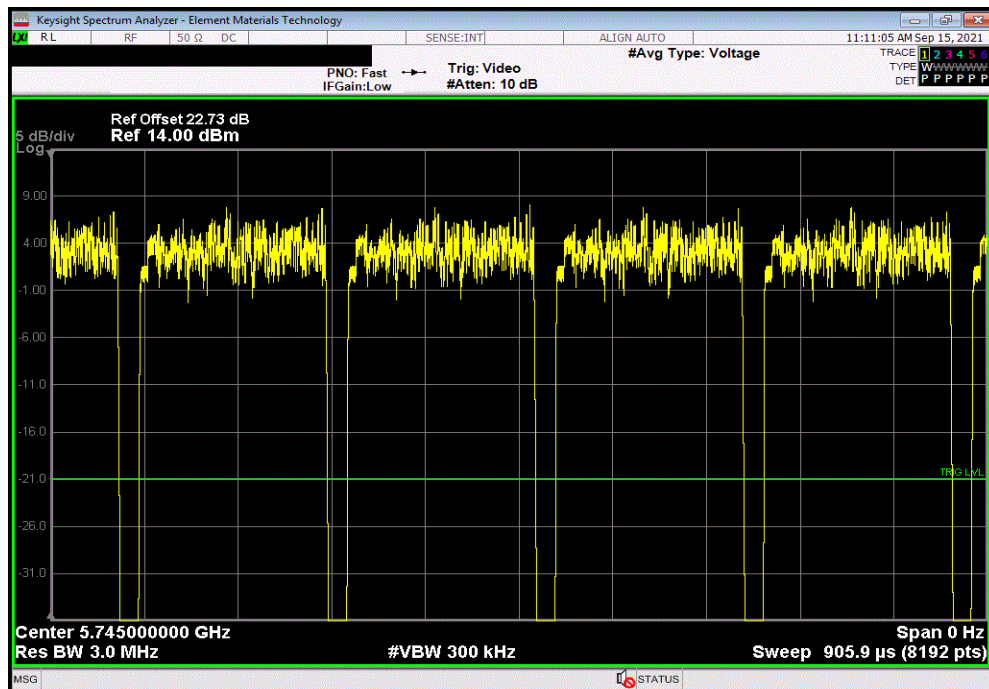


TbTtX 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, Low Channel, Ch 149 - 5745 MHz, 54 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
180.8 μ s	201.3 μ s	1	89.8	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, Low Channel, Ch 149 - 5745 MHz, 54 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

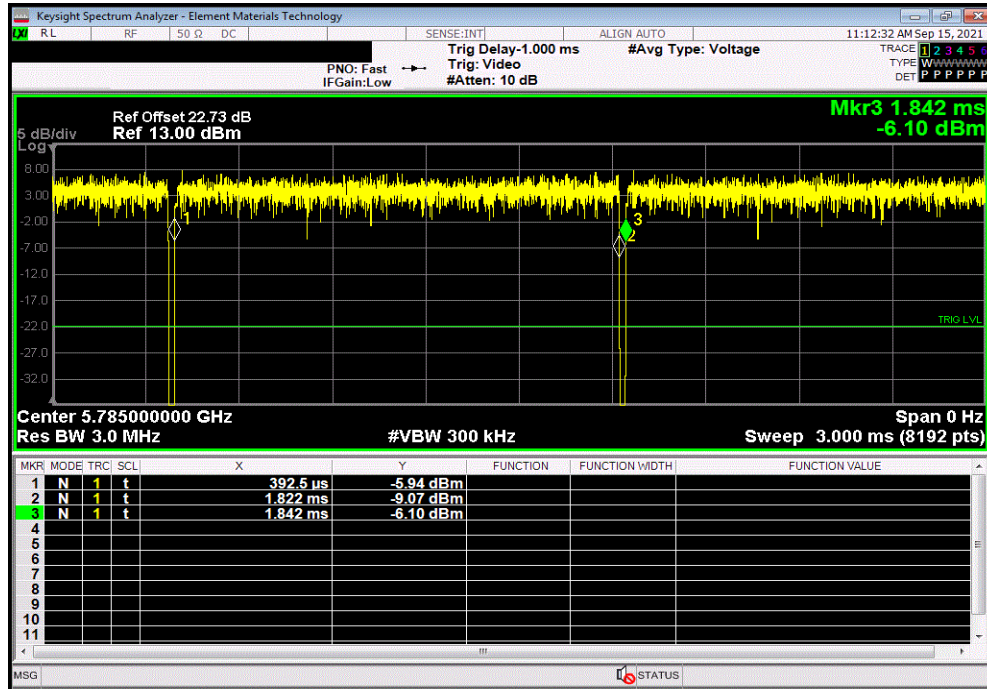


DUTY CYCLE - 5.8 GHZ BAND

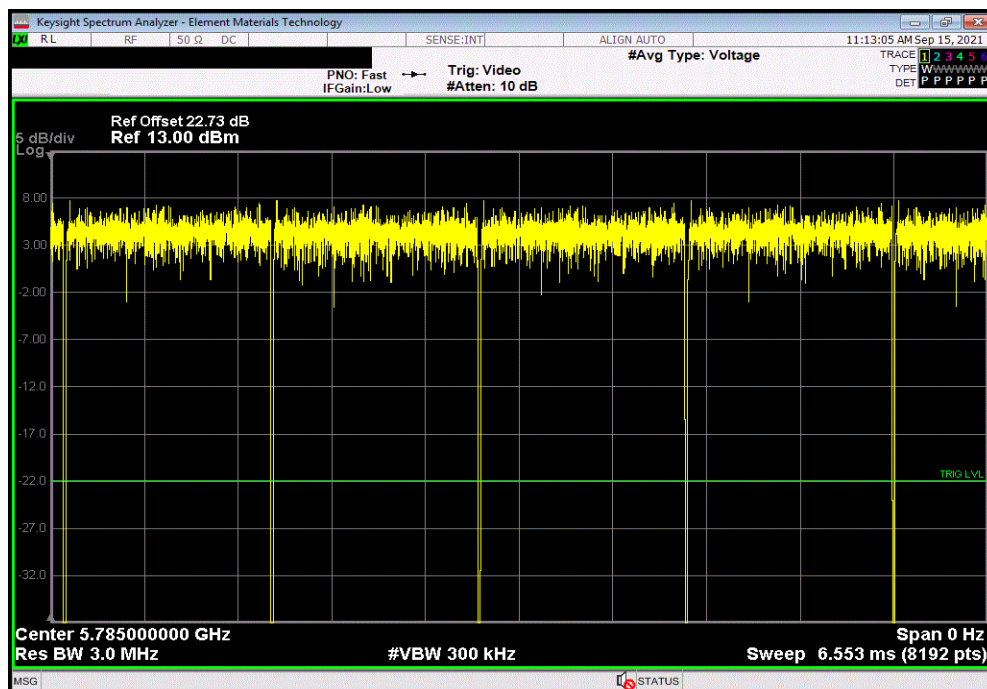


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, Mid Channel, Ch 157 - 5785 MHz, 6 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.429 ms	1.449 ms	1	98.6	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, Mid Channel, Ch 157 - 5785 MHz, 6 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

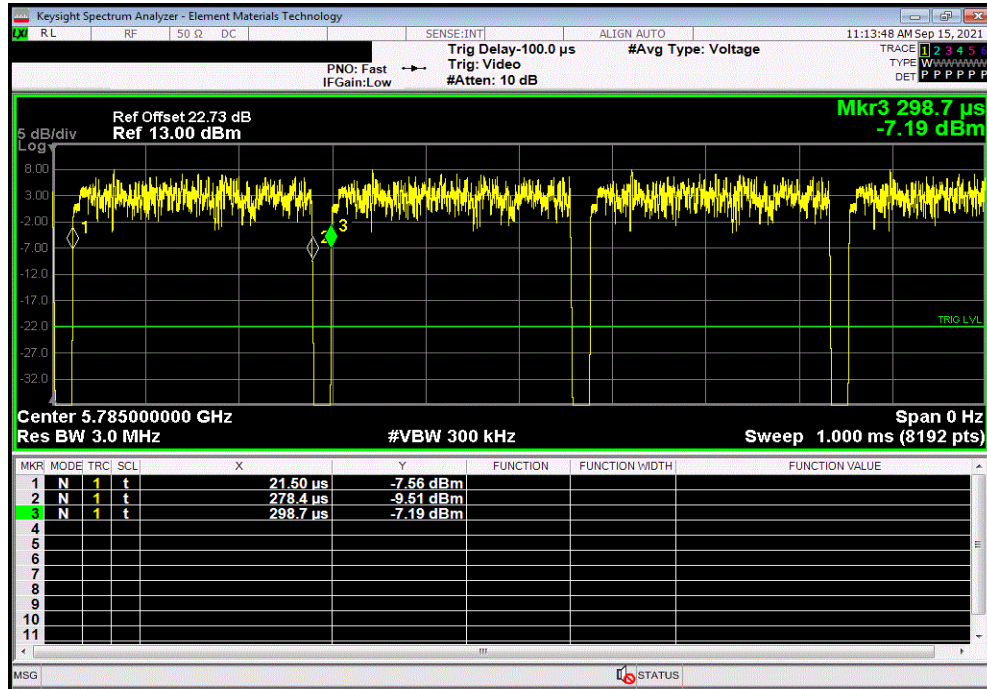


DUTY CYCLE - 5.8 GHz BAND

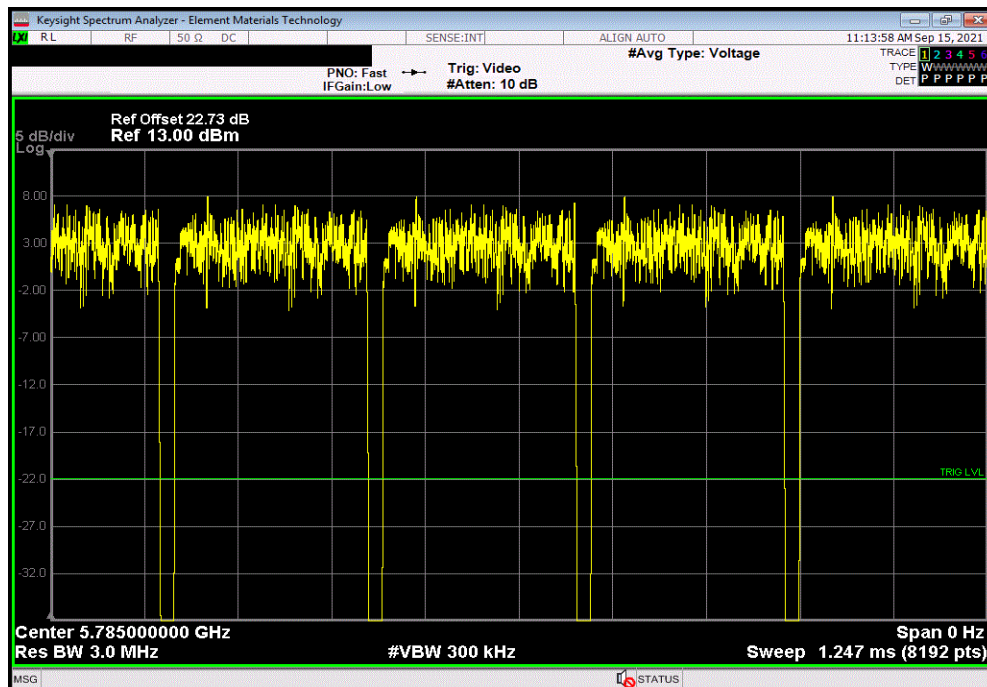


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, Mid Channel, Ch 157 - 5785 MHz, 36 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
256.9 μ s	277.2 μ s	1	92.7	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, Mid Channel, Ch 157 - 5785 MHz, 36 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

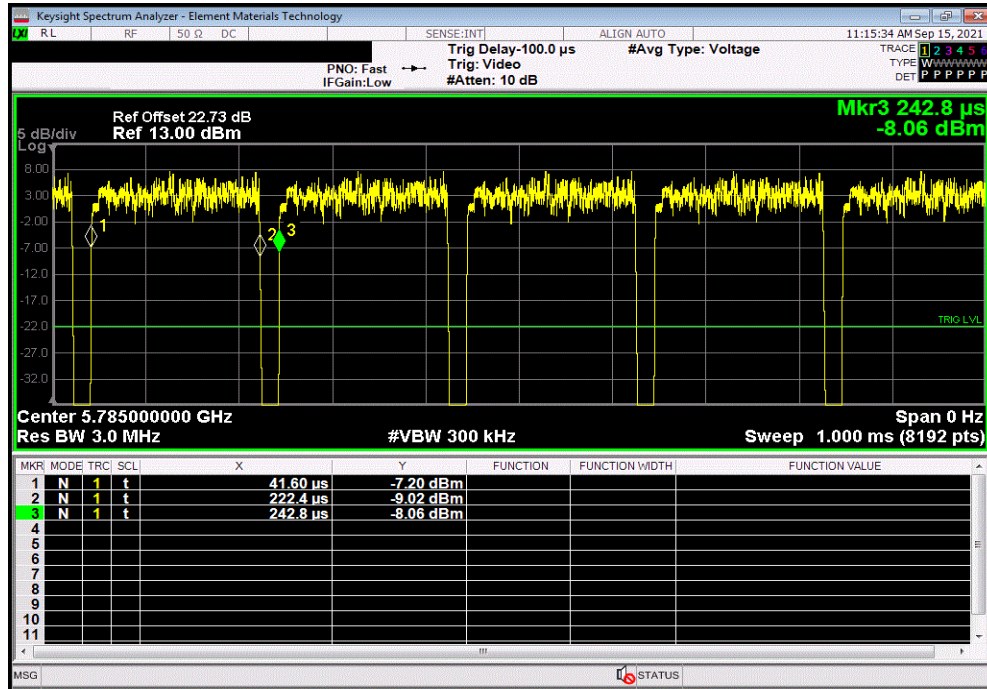


DUTY CYCLE - 5.8 GHZ BAND

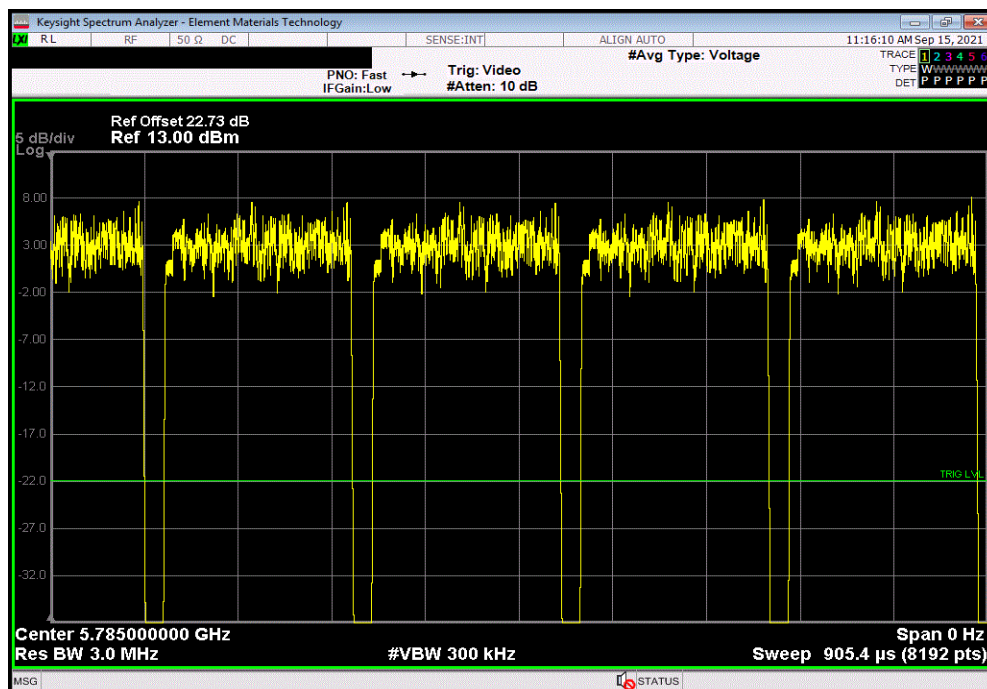


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, Mid Channel, Ch 157 - 5785 MHz, 54 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
180.8 μ s	201.2 μ s	1	89.9	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, Mid Channel, Ch 157 - 5785 MHz, 54 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

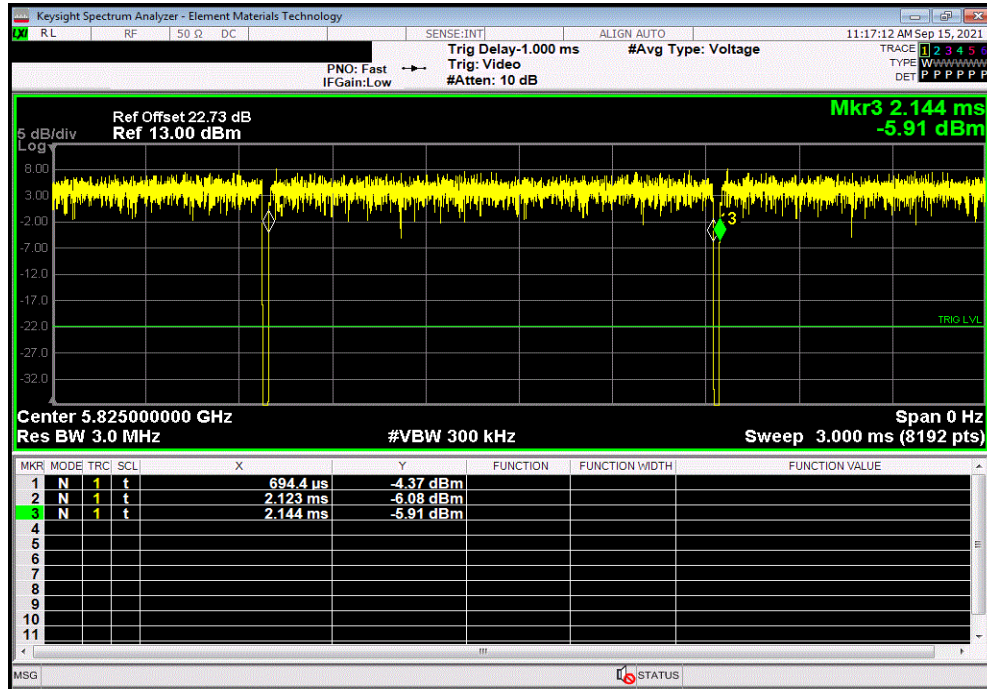


DUTY CYCLE - 5.8 GHZ BAND

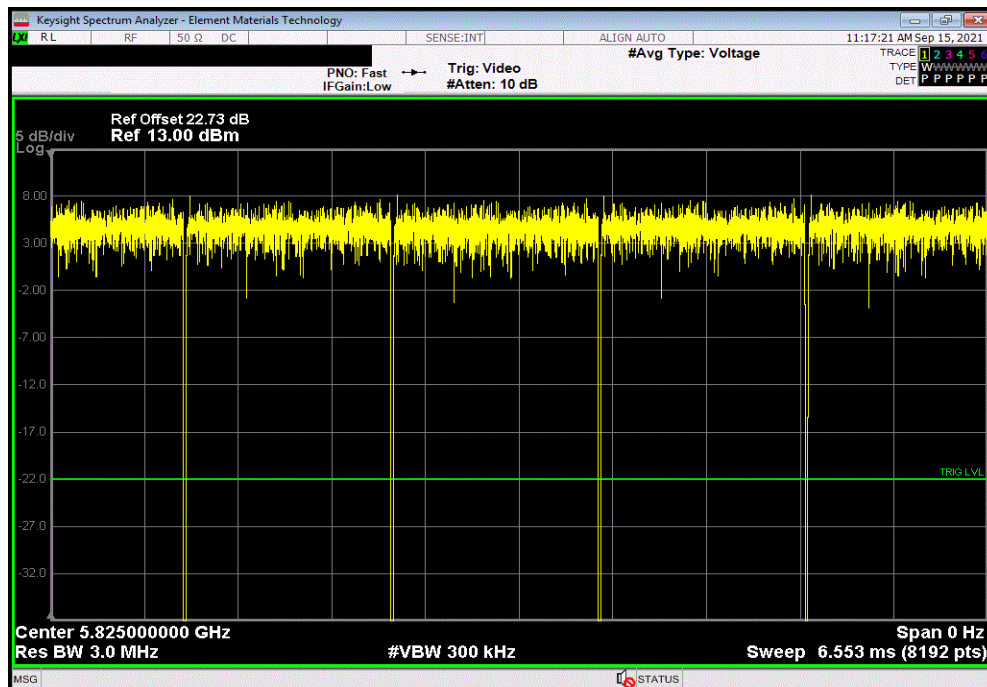


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, High Channel, Ch 165 - 5825 MHz, 6 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.429 ms	1.449 ms	1	98.6	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, High Channel, Ch 165 - 5825 MHz, 6 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

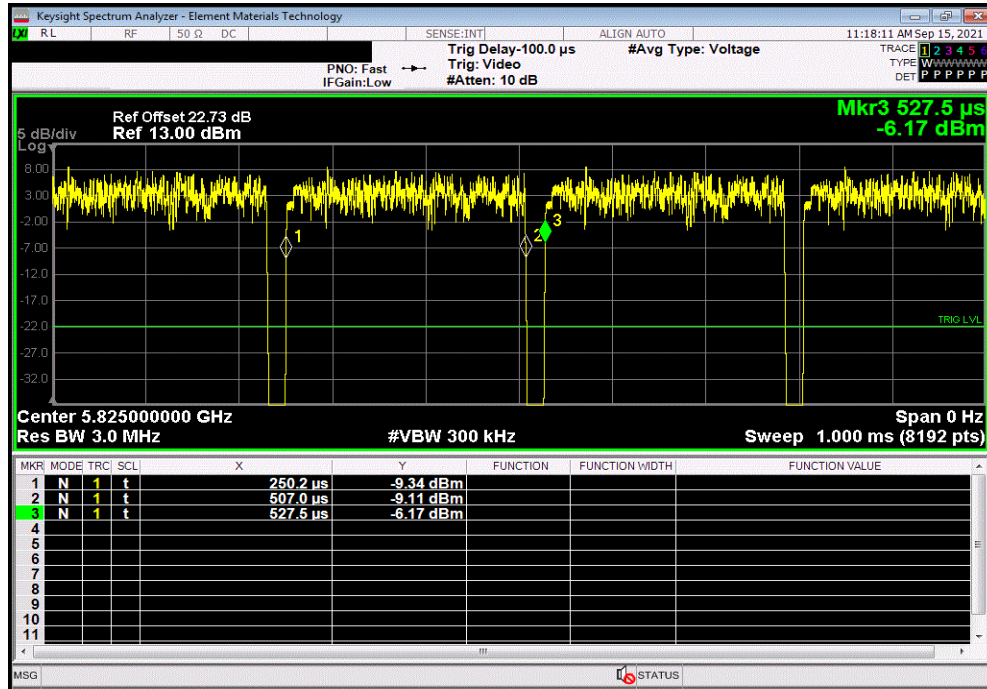


DUTY CYCLE - 5.8 GHz BAND

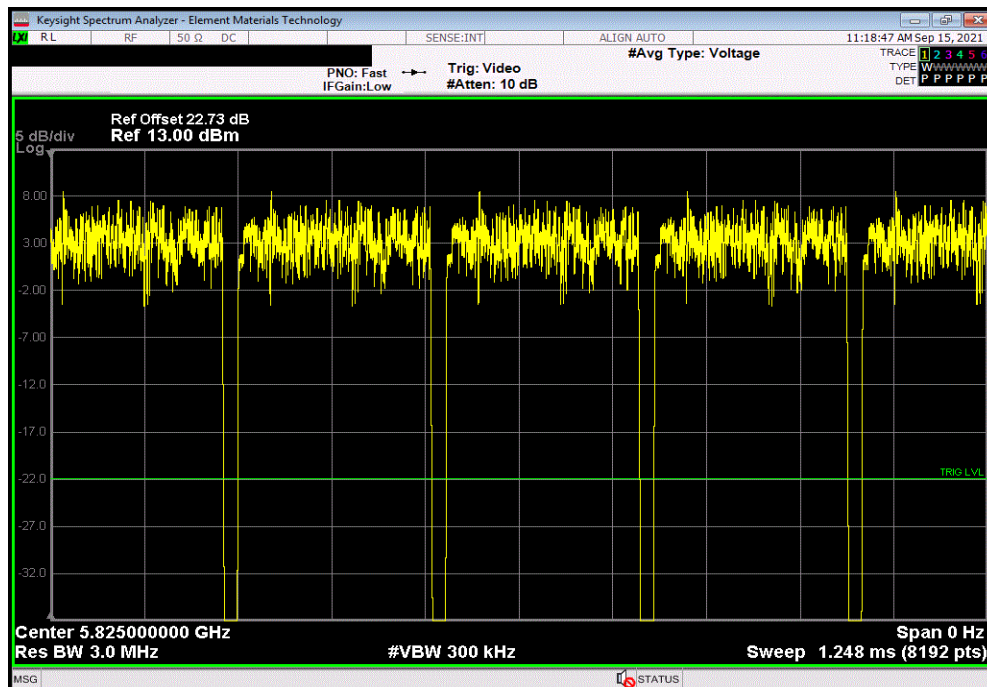


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, High Channel, Ch 165 - 5825 MHz, 36 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
256.8 μ s	277.3 μ s	1	92.6	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, High Channel, Ch 165 - 5825 MHz, 36 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

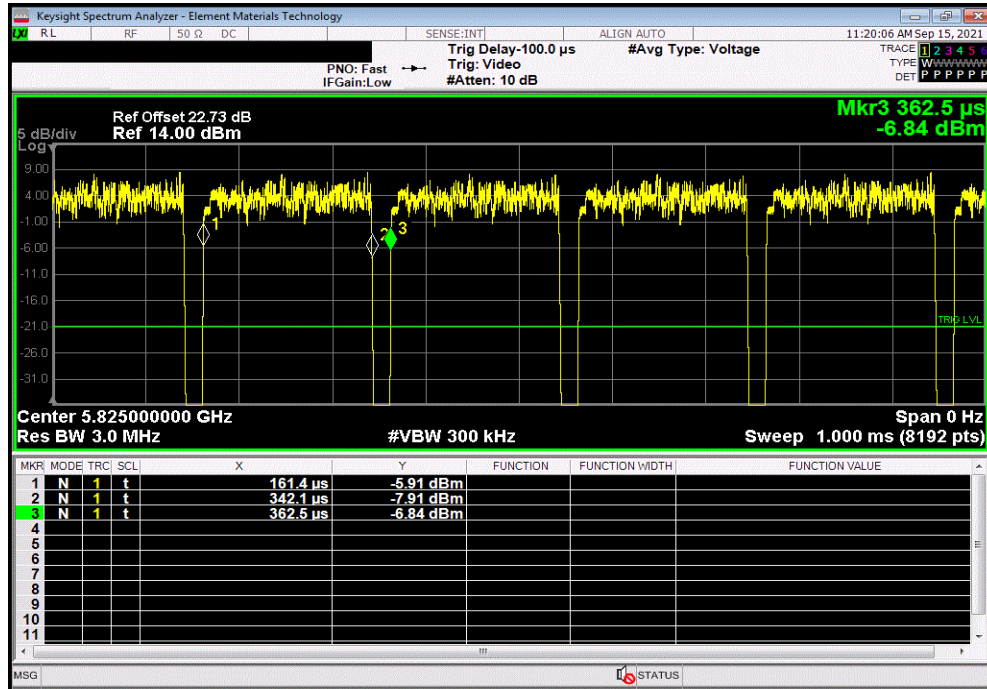


DUTY CYCLE - 5.8 GHz BAND

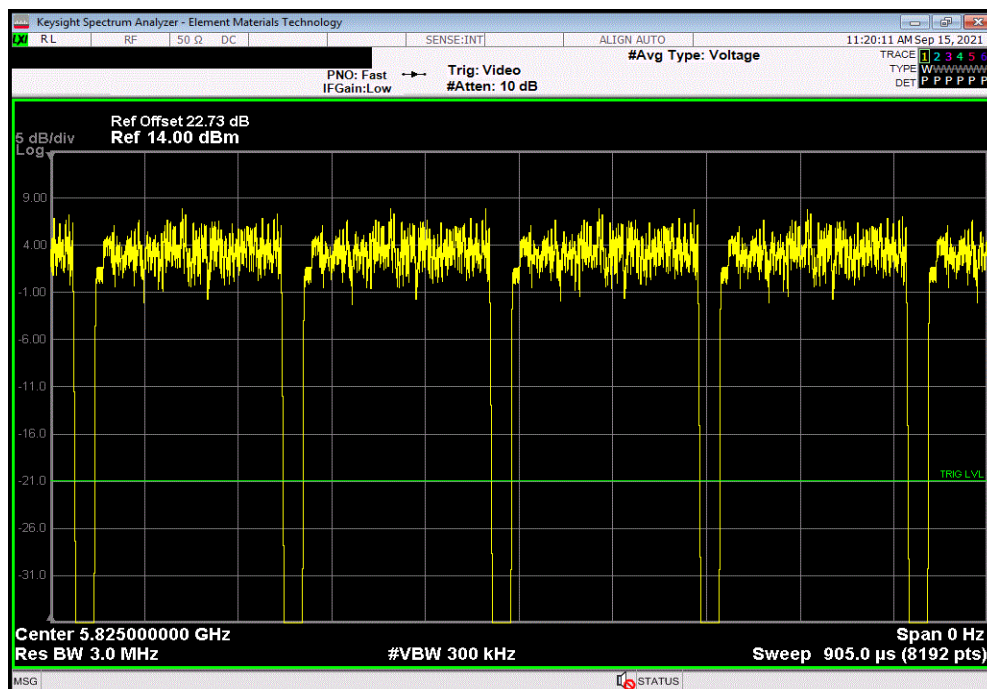


TbTtX 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(a) No HT, High Channel, Ch 165 - 5825 MHz, 54 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
180.7 us	201.1 us	1	89.9	N/A	N/A	



5725 - 5850 MHz Band, 802.11(a) No HT, High Channel, Ch 165 - 5825 MHz, 54 Mbps						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

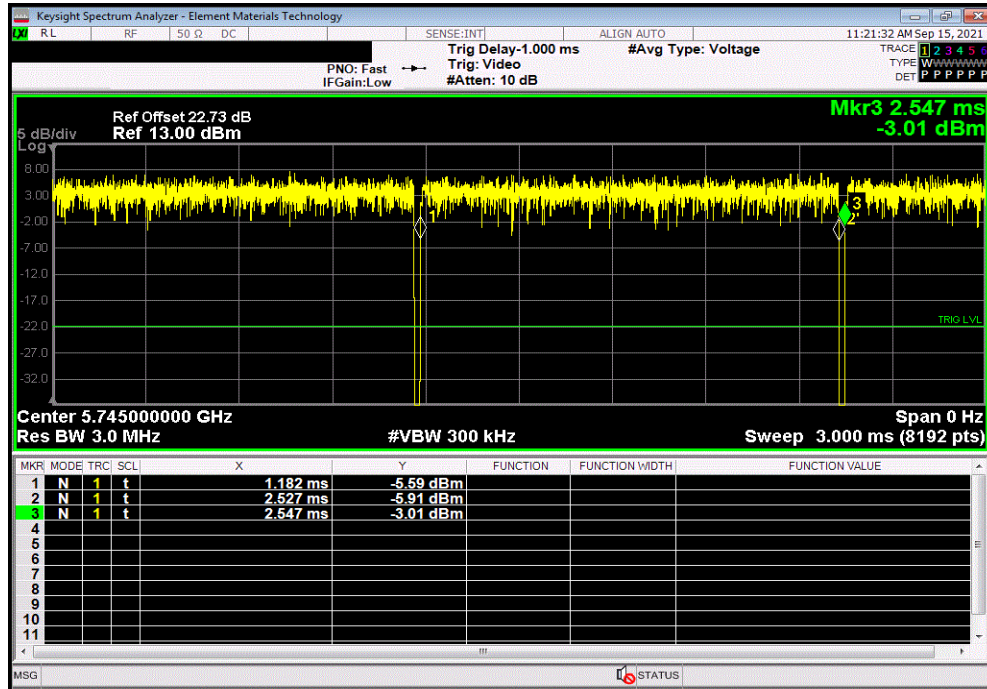


DUTY CYCLE - 5.8 GHz BAND

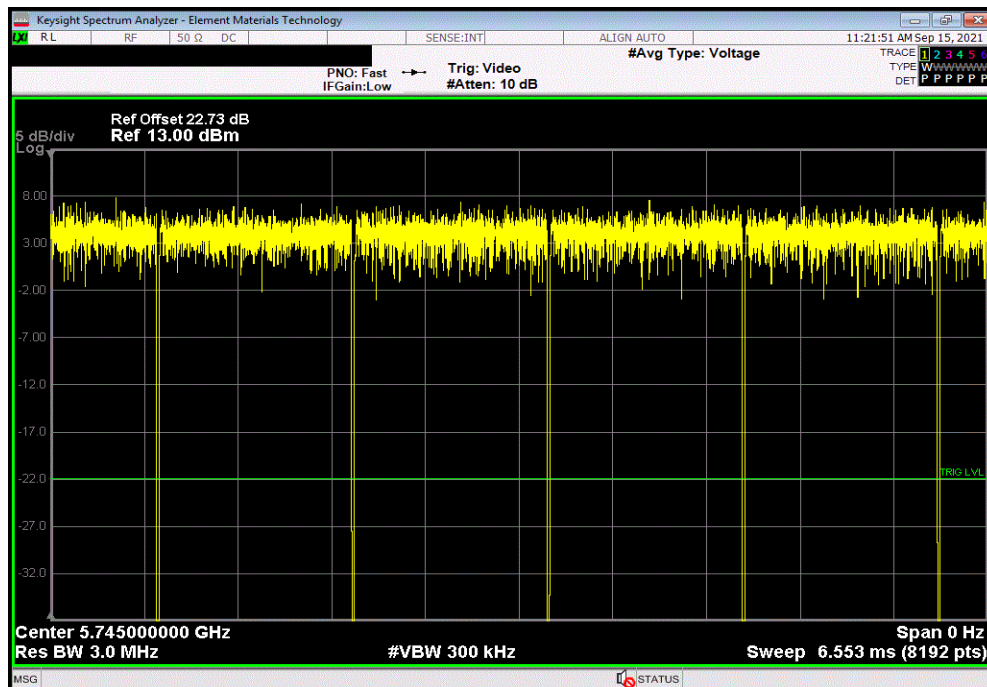


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Low Channel, Ch 149 - 5745 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.345 ms	1.365 ms	1	98.5	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Low Channel, Ch 149 - 5745 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

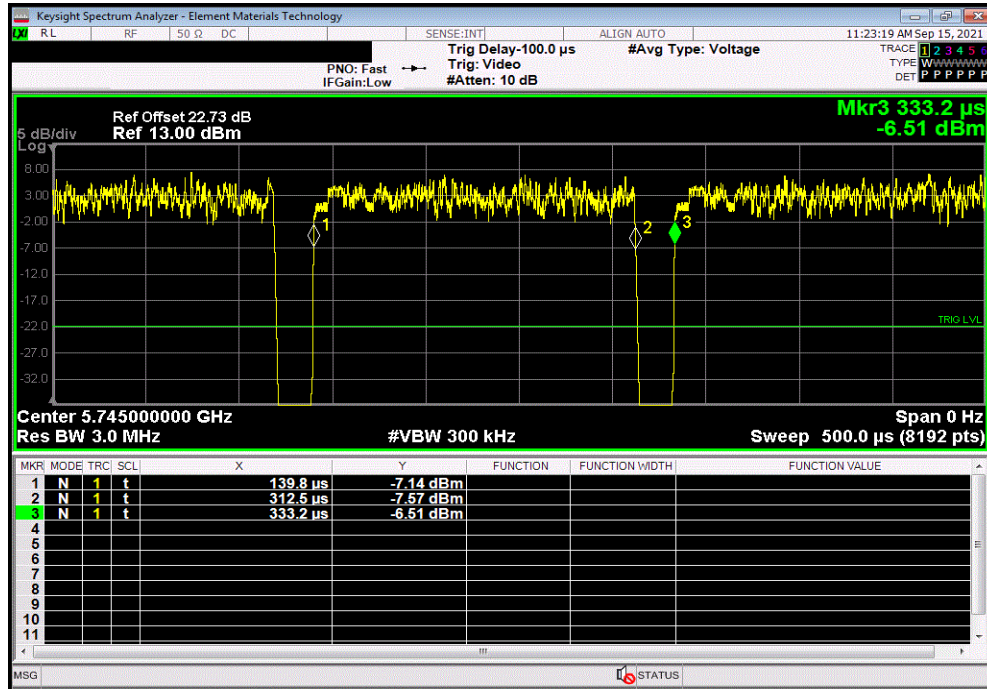


DUTY CYCLE - 5.8 GHz BAND

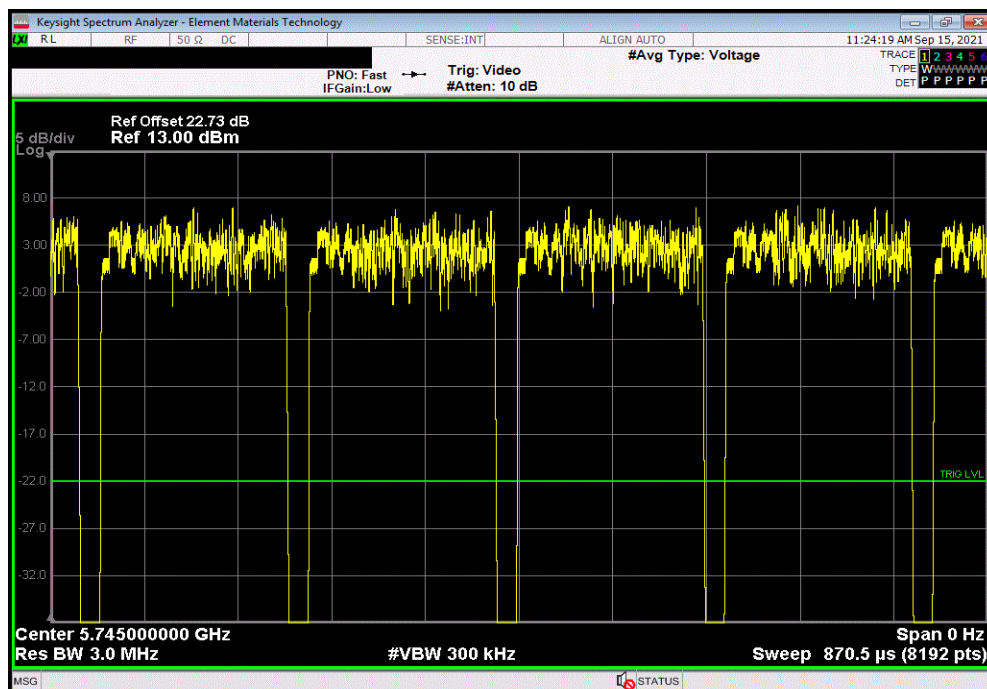


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Low Channel, Ch 149 - 5745 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
172.717 us	193.445 us	1	89.3	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Low Channel, Ch 149 - 5745 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

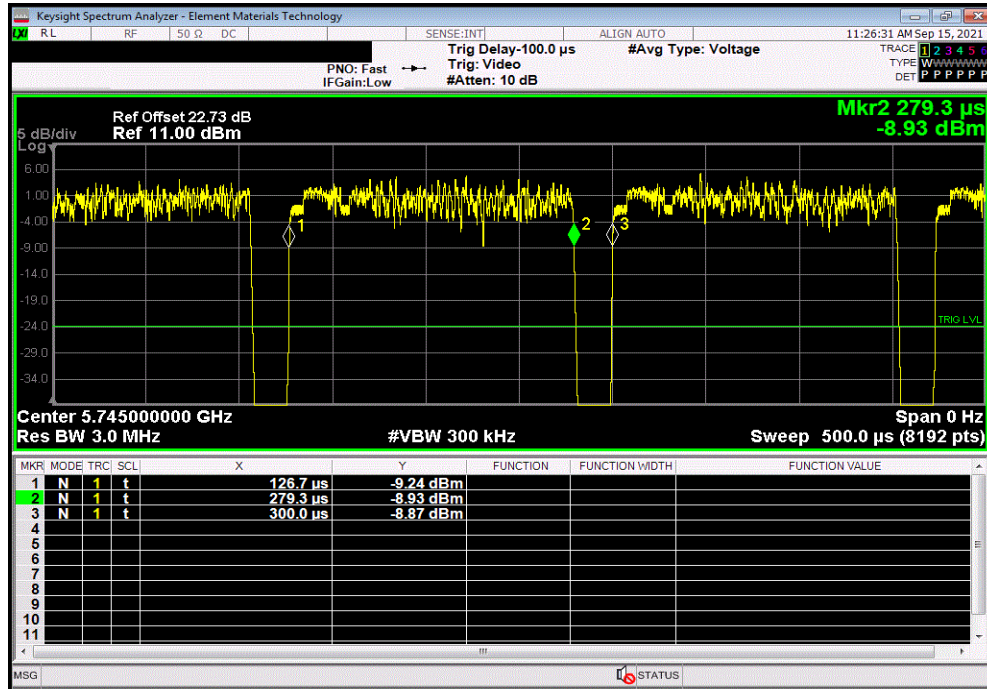


DUTY CYCLE - 5.8 GHZ BAND

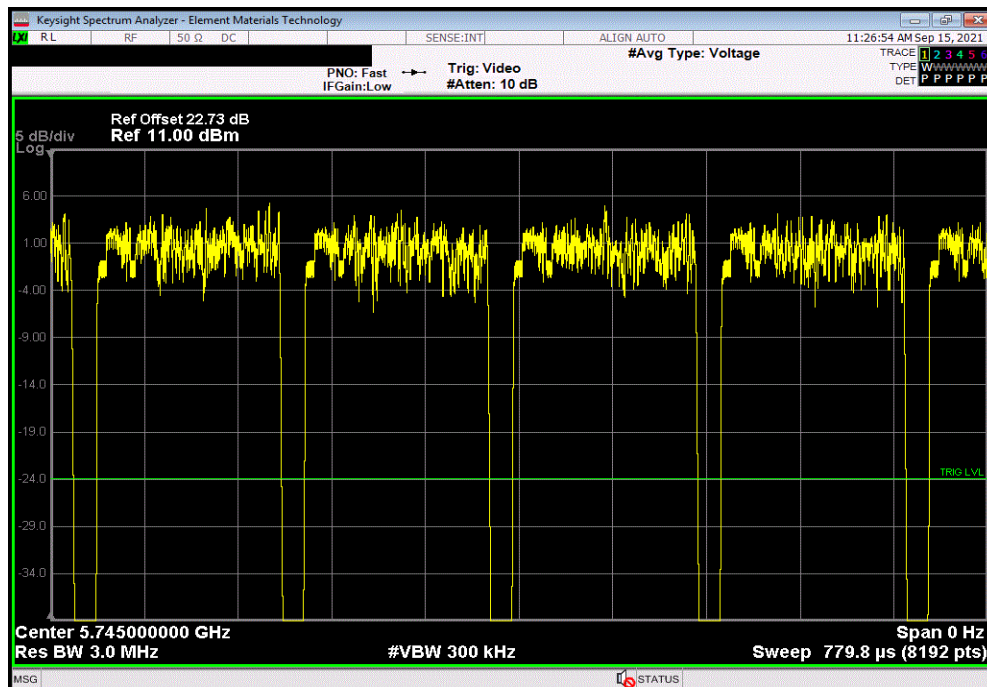


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Low Channel, Ch 149 - 5745 MHz, MCS8 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
152.617 us	173.283 us	1	88.1	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Low Channel, Ch 149 - 5745 MHz, MCS8 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

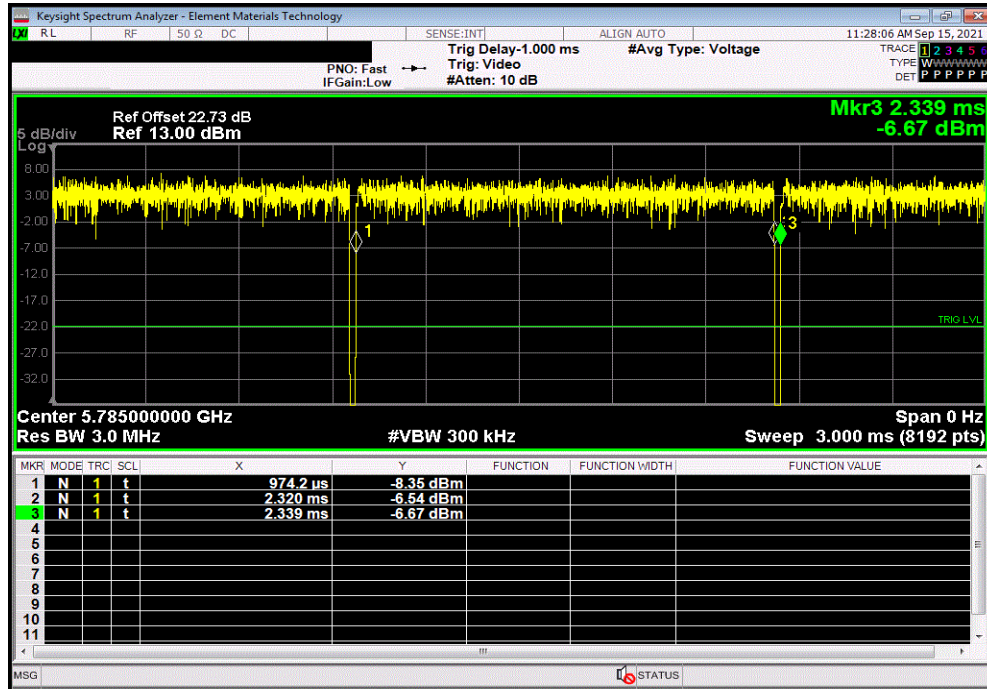


DUTY CYCLE - 5.8 GHz BAND

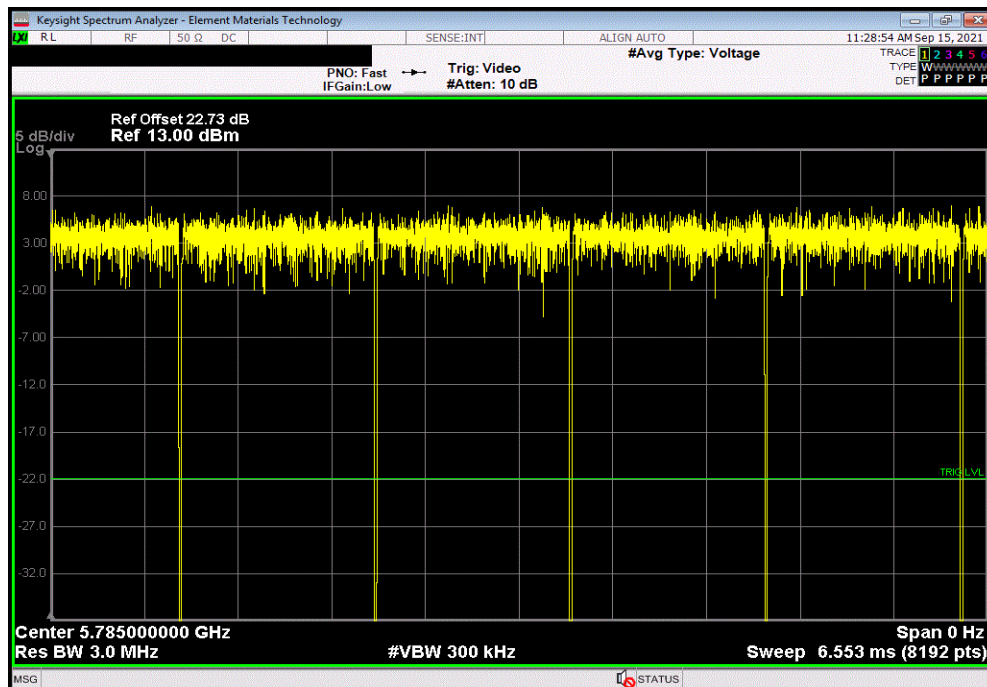


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Mid Channel, Ch 157 - 5785 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.345 ms	1.365 ms	1	98.5	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Mid Channel, Ch 157 - 5785 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

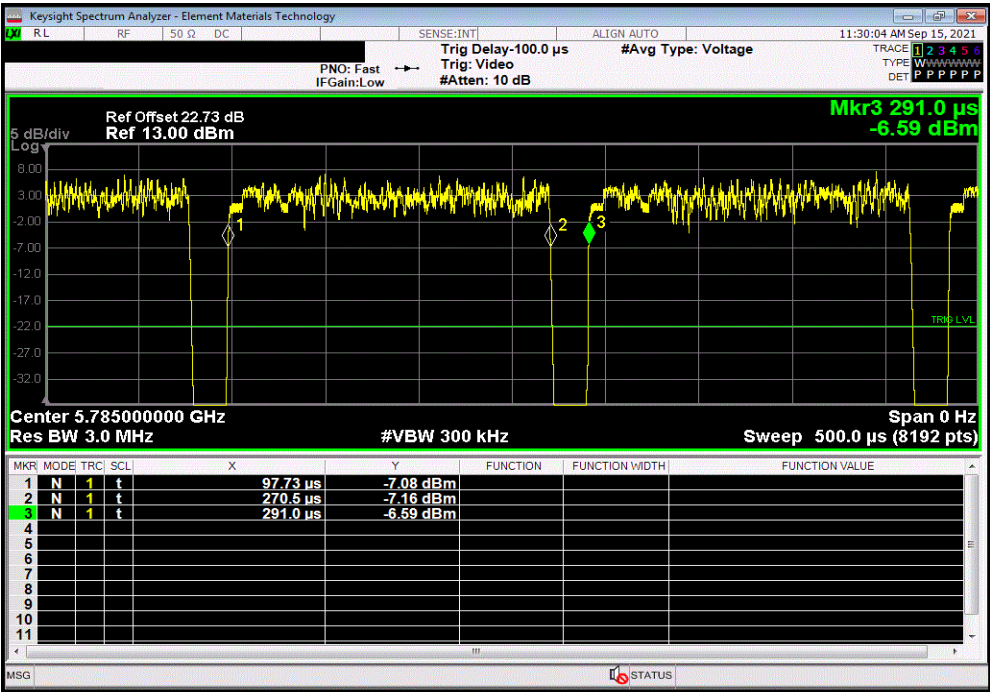


DUTY CYCLE - 5.8 GHZ BAND

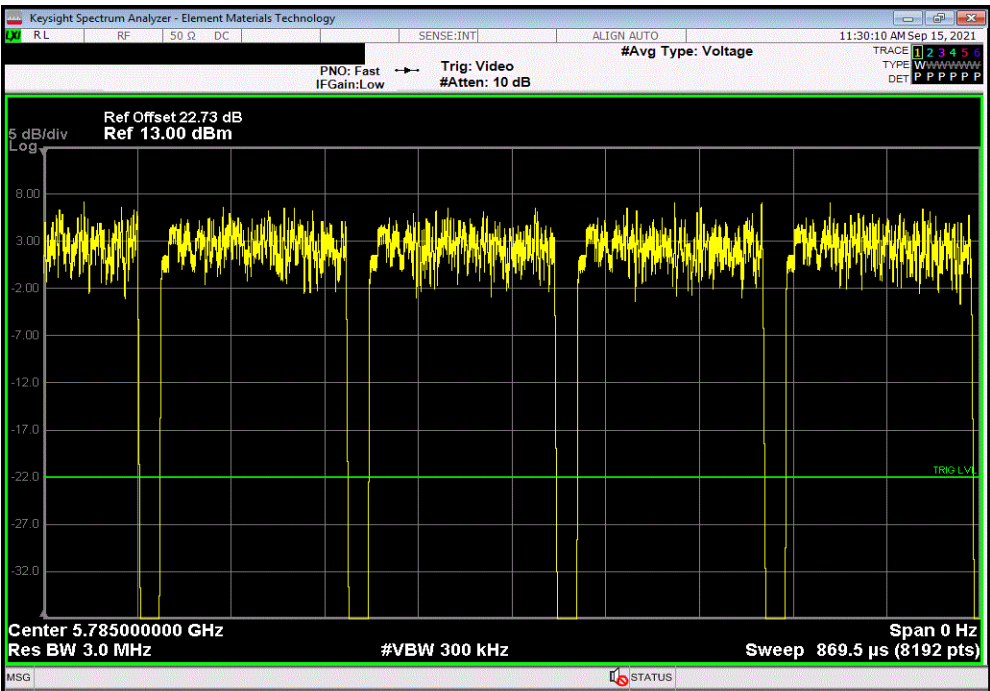


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Mid Channel, Ch 157 - 5785 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
172.778 us	193.223 us	1	89.4	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Mid Channel, Ch 157 - 5785 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

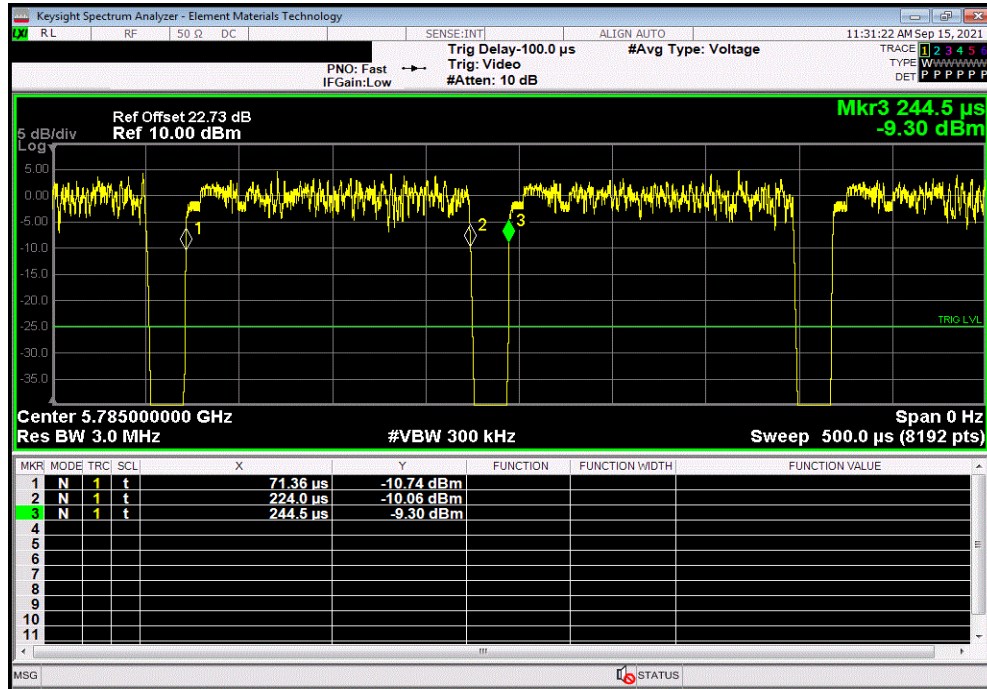


DUTY CYCLE - 5.8 GHz BAND

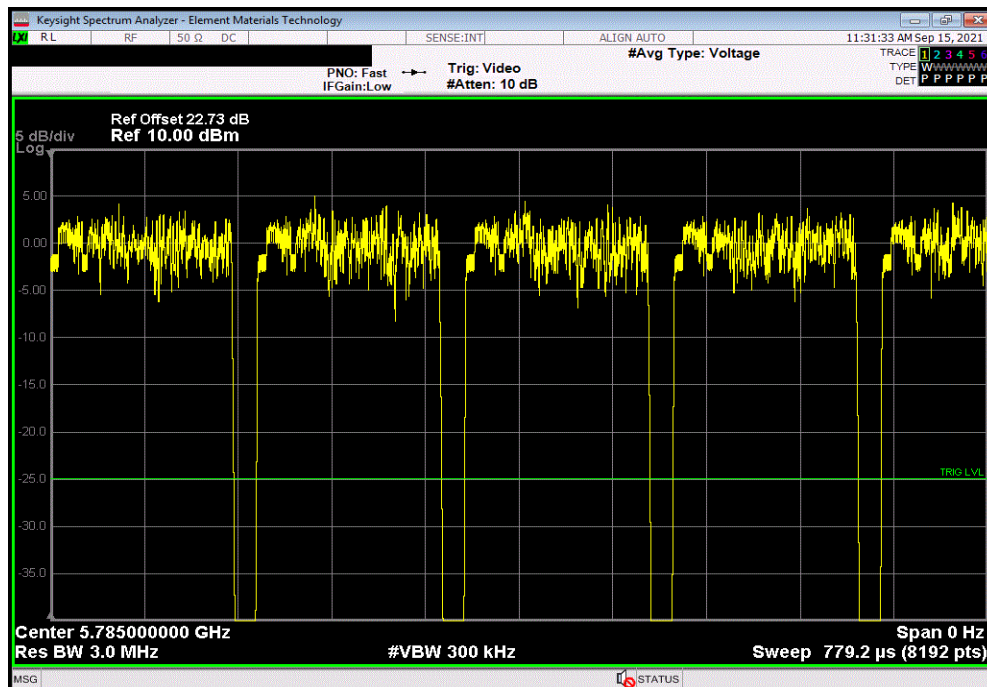


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Mid Channel, Ch 157 - 5785 MHz, MCS8 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
152.617 us	173.161 us	1	88.1	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, Mid Channel, Ch 157 - 5785 MHz, MCS8 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

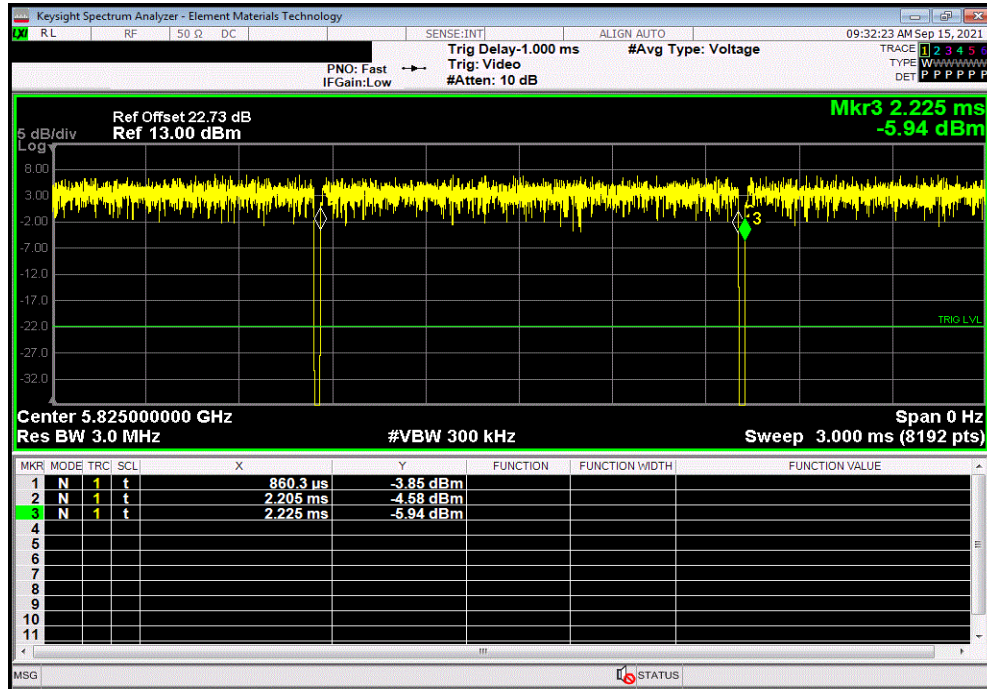


DUTY CYCLE - 5.8 GHz BAND

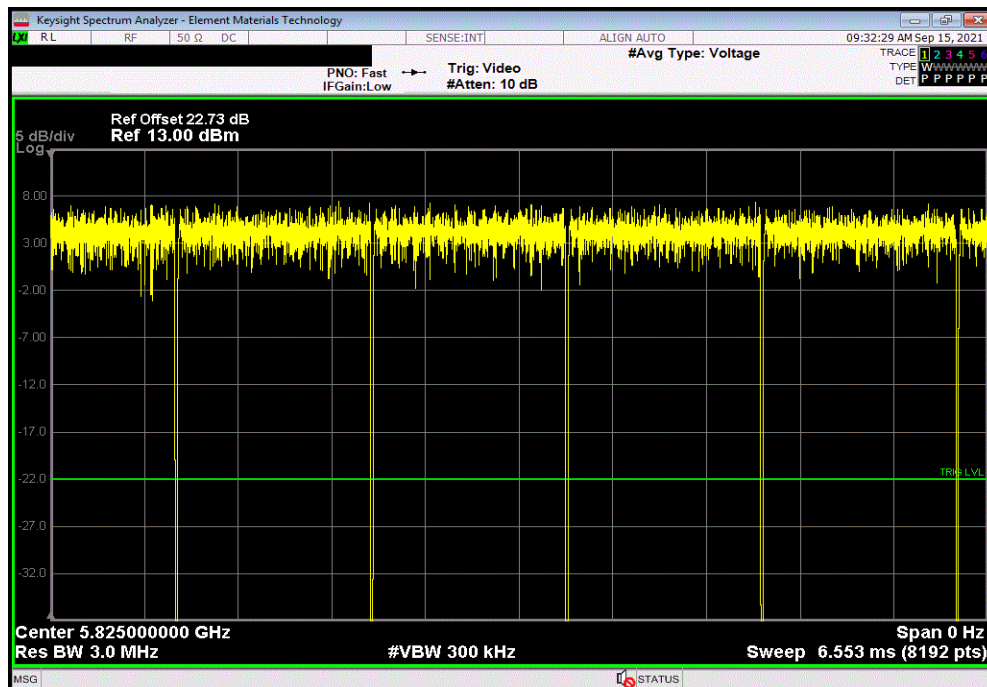


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT20, High Channel, Ch 165 - 5825 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.344 ms	1.365 ms	1	98.5	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, High Channel, Ch 165 - 5825 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

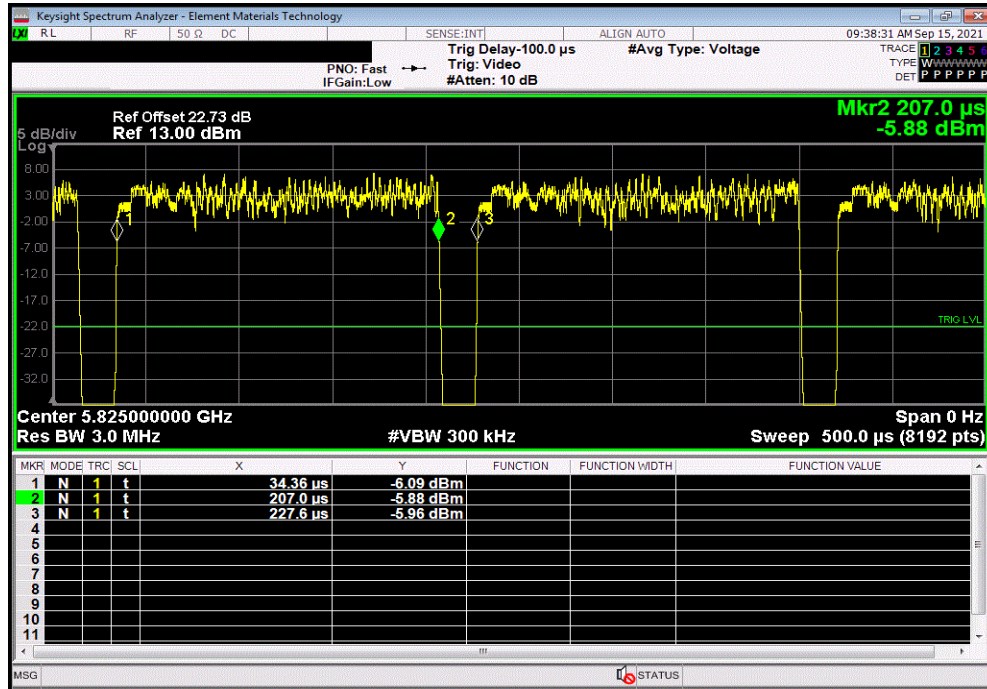


DUTY CYCLE - 5.8 GHz BAND

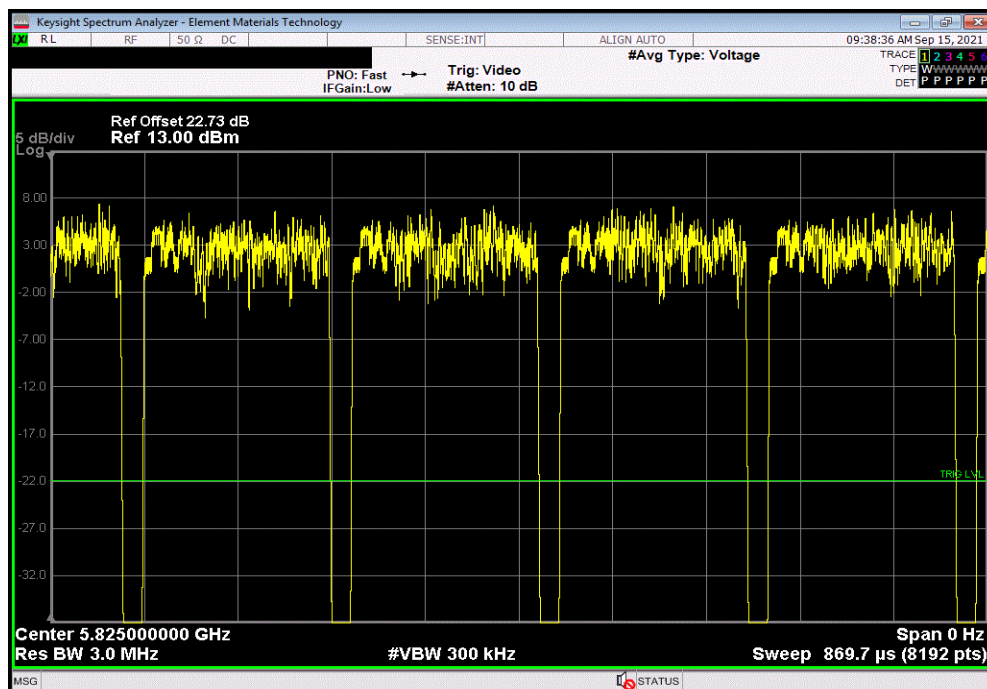


TbTx 2021.03.19.1 XMt 2020.12.30.0

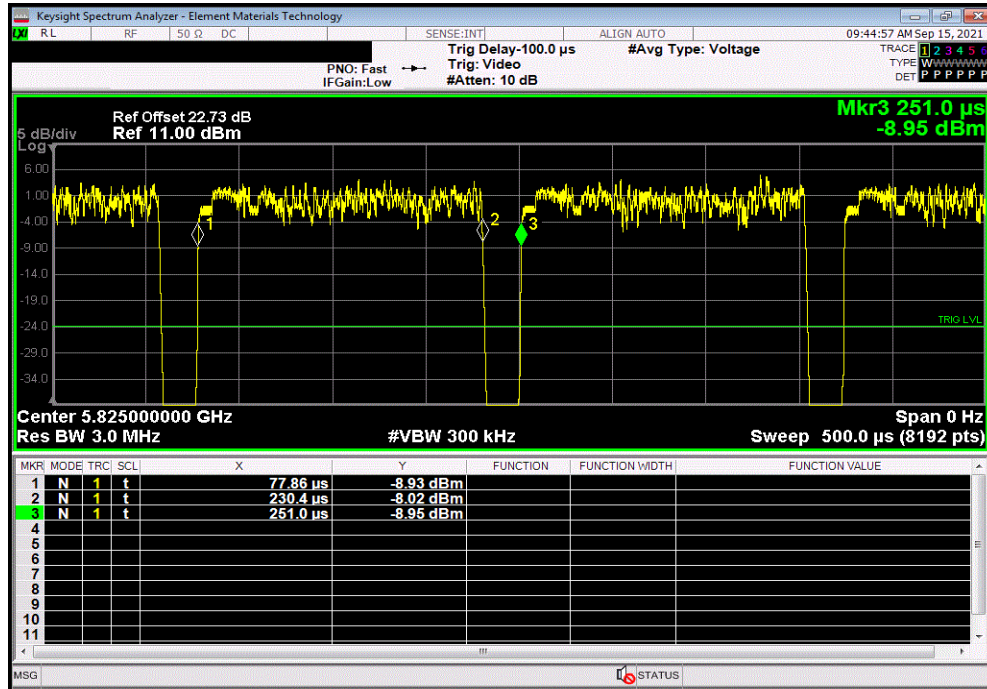
5725 - 5850 MHz Band, 802.11(n/ac) VHT20, High Channel, Ch 165 - 5825 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
172.678 us	193.261 us	1	89.3	N/A	N/A	



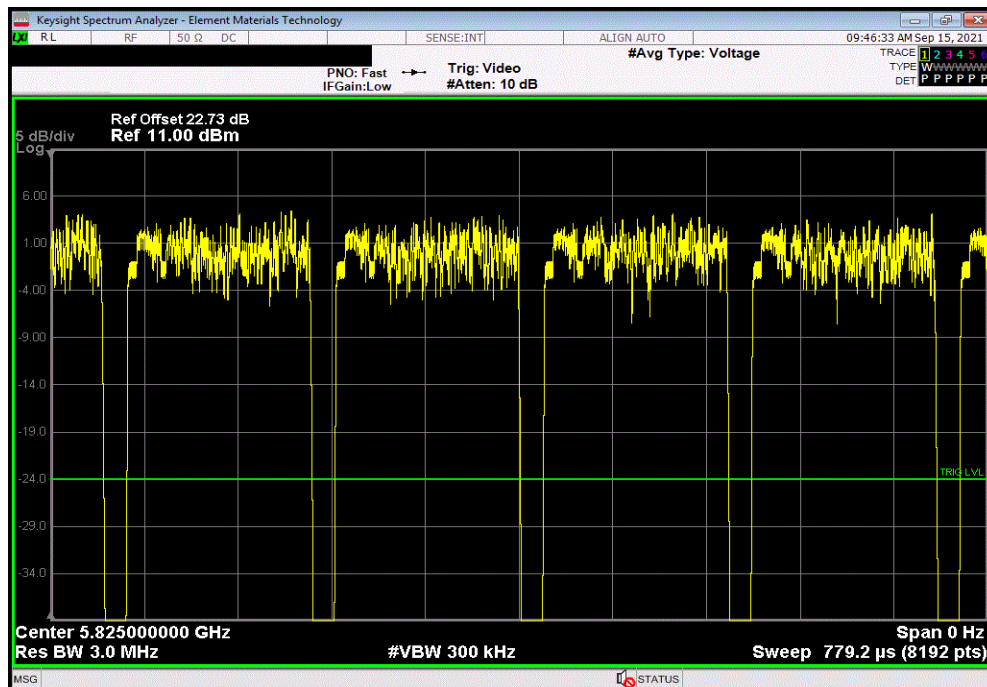
5725 - 5850 MHz Band, 802.11(n/ac) VHT20, High Channel, Ch 165 - 5825 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, High Channel, Ch 165 - 5825 MHz, MCS8 (256-QAM)							
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
	152.556 us	173.161 us	1	88.1	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT20, High Channel, Ch 165 - 5825 MHz, MCS8 (256-QAM)						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A

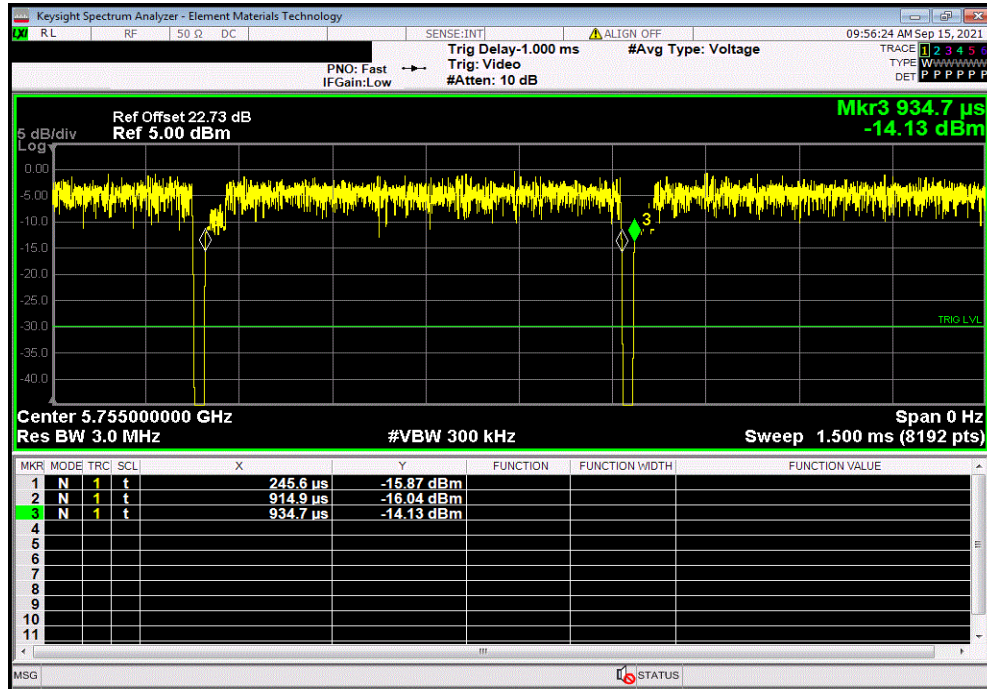


DUTY CYCLE - 5.8 GHz BAND

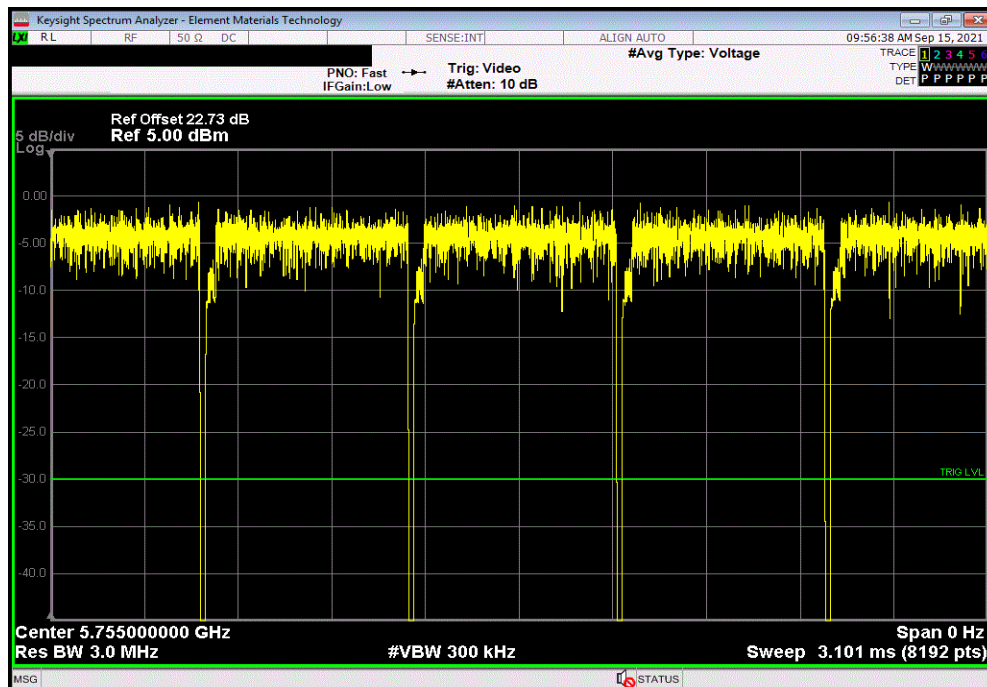


TbTtX 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT40, Low Channel, Ch 149/153 - 5755 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
669.233 us	689.017 us	1	97.1	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT40, Low Channel, Ch 149/153 - 5755 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

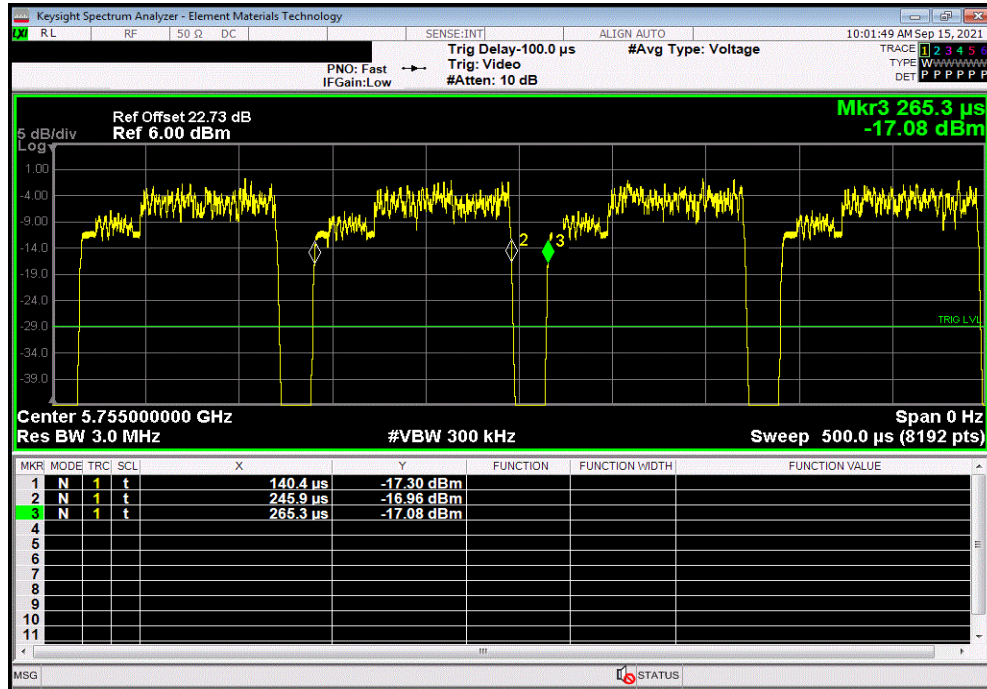


DUTY CYCLE - 5.8 GHz BAND

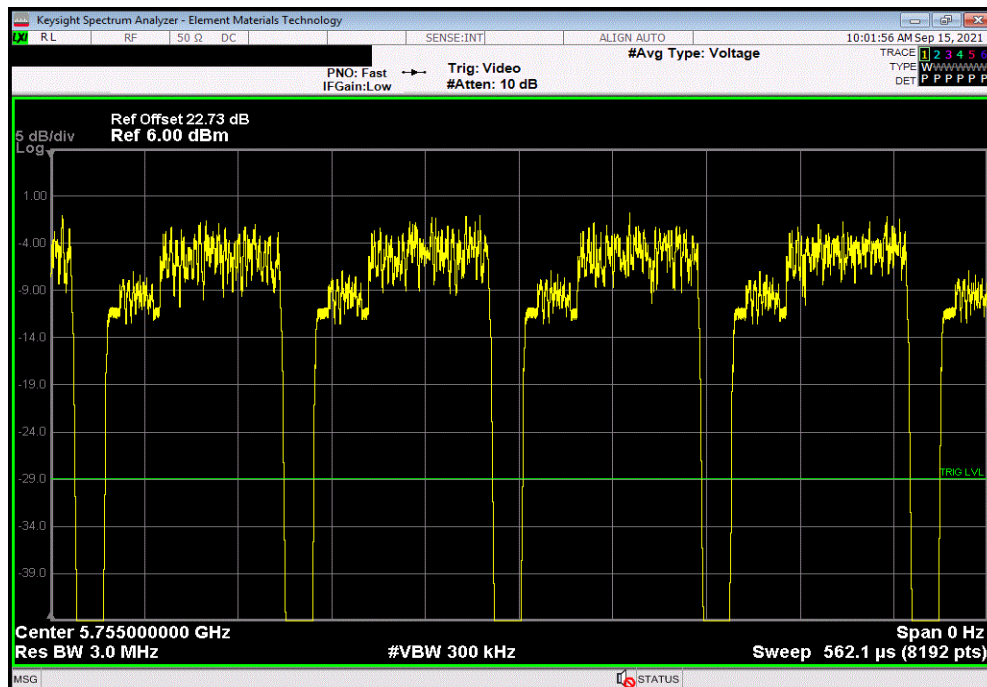


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT40, Low Channel, Ch 149/153 - 5755 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
105.567 μ s	124.917 μ s	1	84.5	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT40, Low Channel, Ch 149/153 - 5755 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

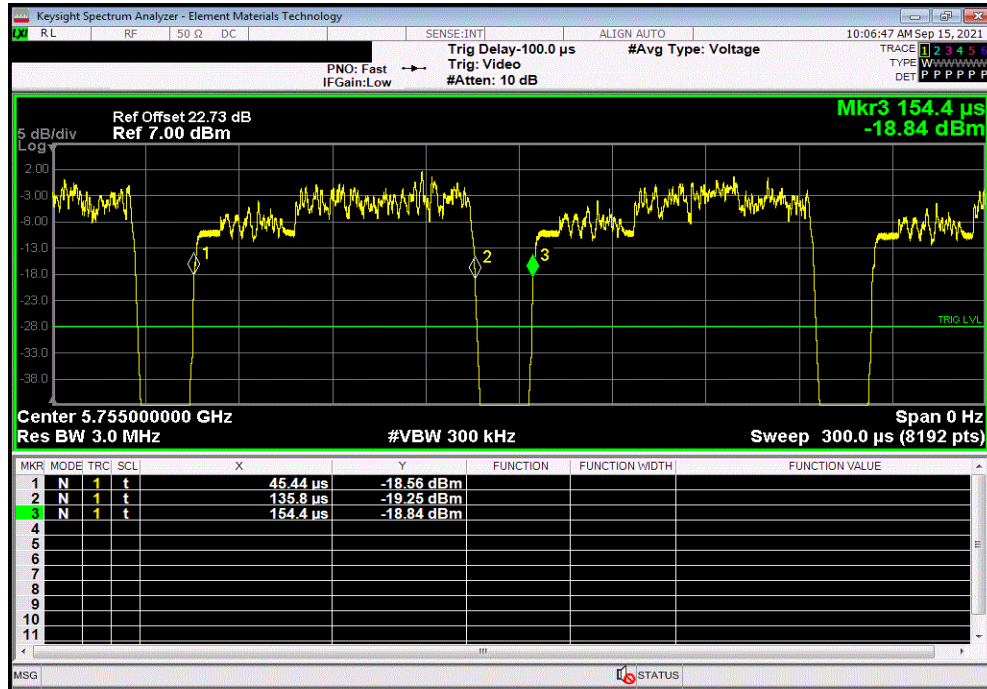


DUTY CYCLE - 5.8 GHz BAND

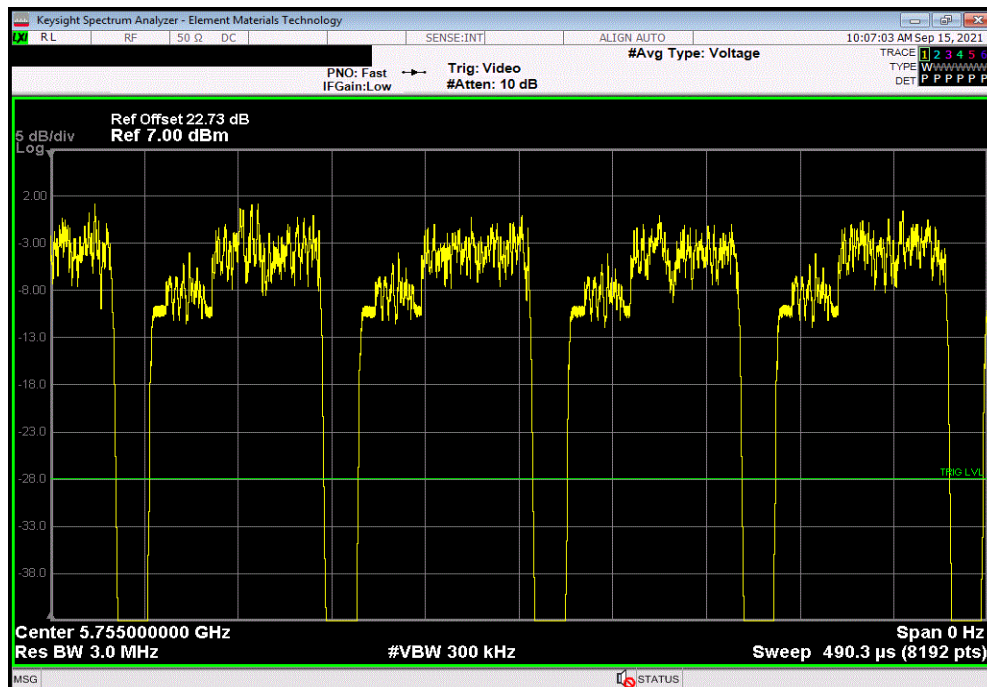


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT40, Low Channel, Ch 149/153 - 5755 MHz, MCS9 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
90.359 μ s	108.964 μ s	1	82.9	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT40, Low Channel, Ch 149/153 - 5755 MHz, MCS9 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

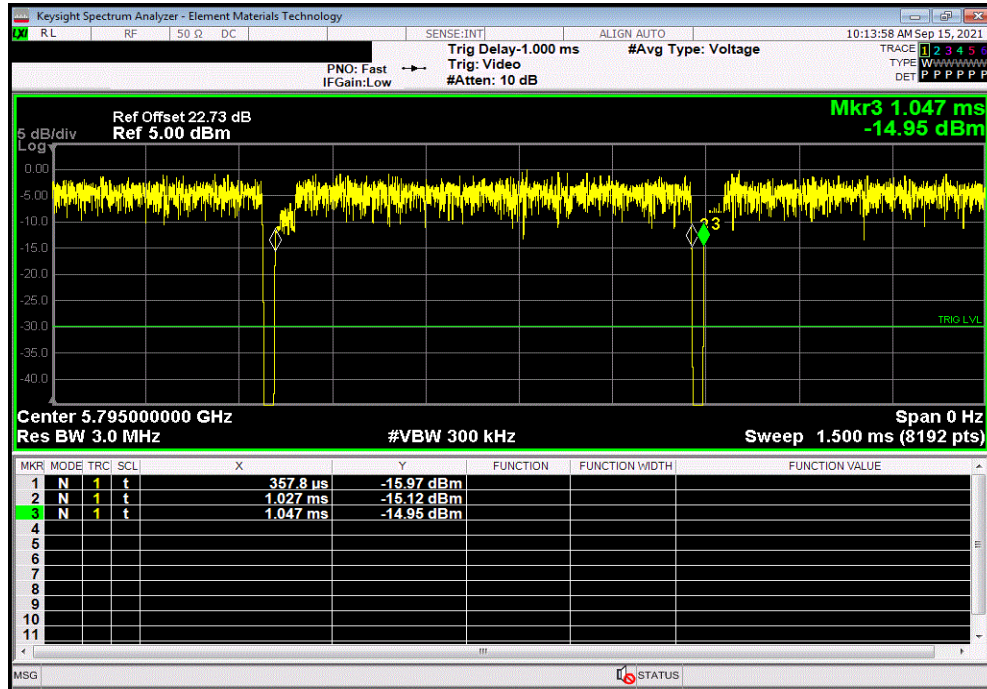


DUTY CYCLE - 5.8 GHz BAND

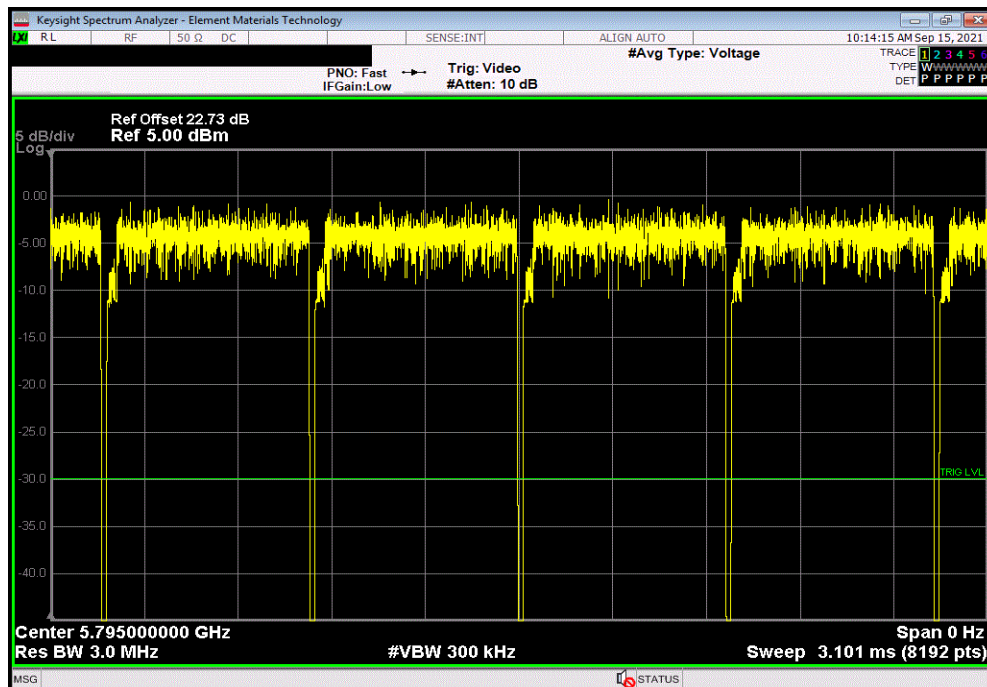


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT40, High Channel, Ch 157/161 - 5795 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
669.283 us	689.203 us	1	97.1	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT40, High Channel, Ch 157/161 - 5795 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

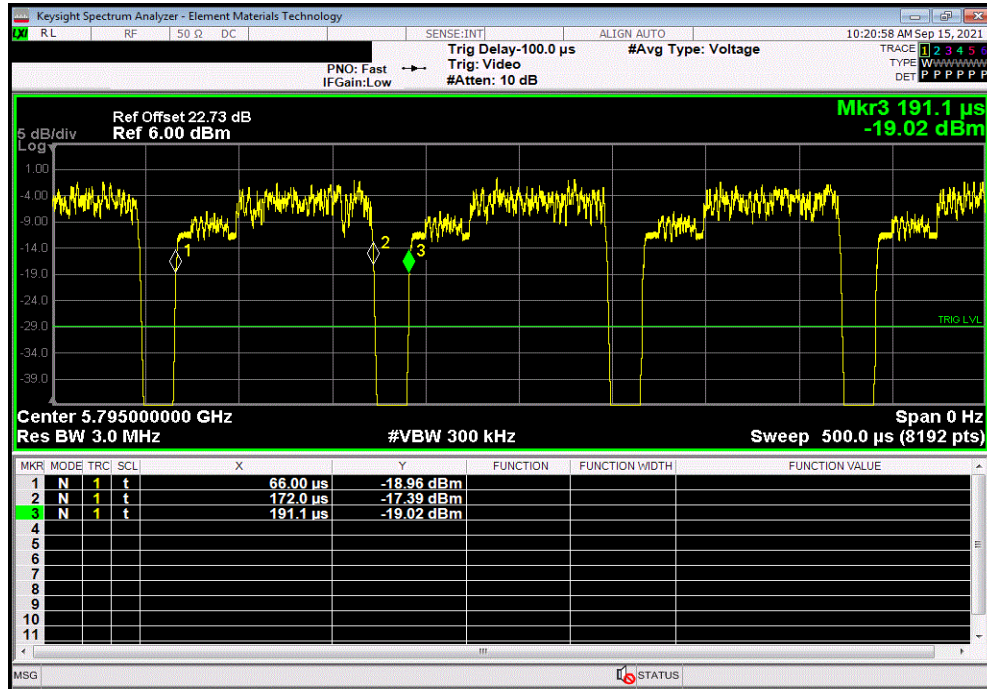


DUTY CYCLE - 5.8 GHz BAND

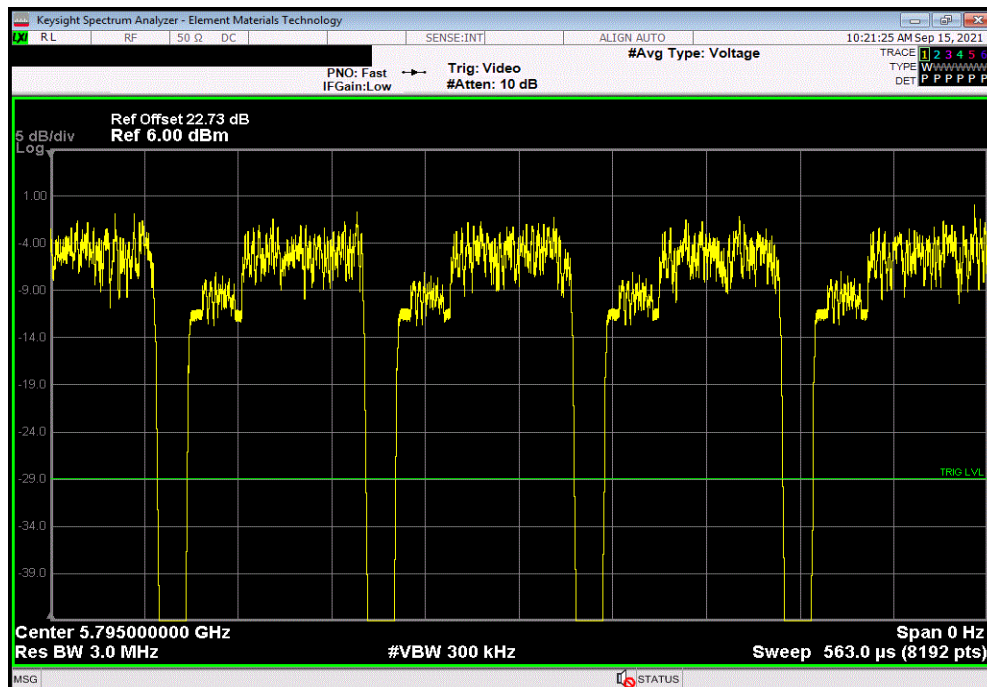


TbTtX 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT40, High Channel, Ch 157/161 - 5795 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
106 μ s	125.1 μ s	1	84.7	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT40, High Channel, Ch 157/161 - 5795 MHz, MCS7						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

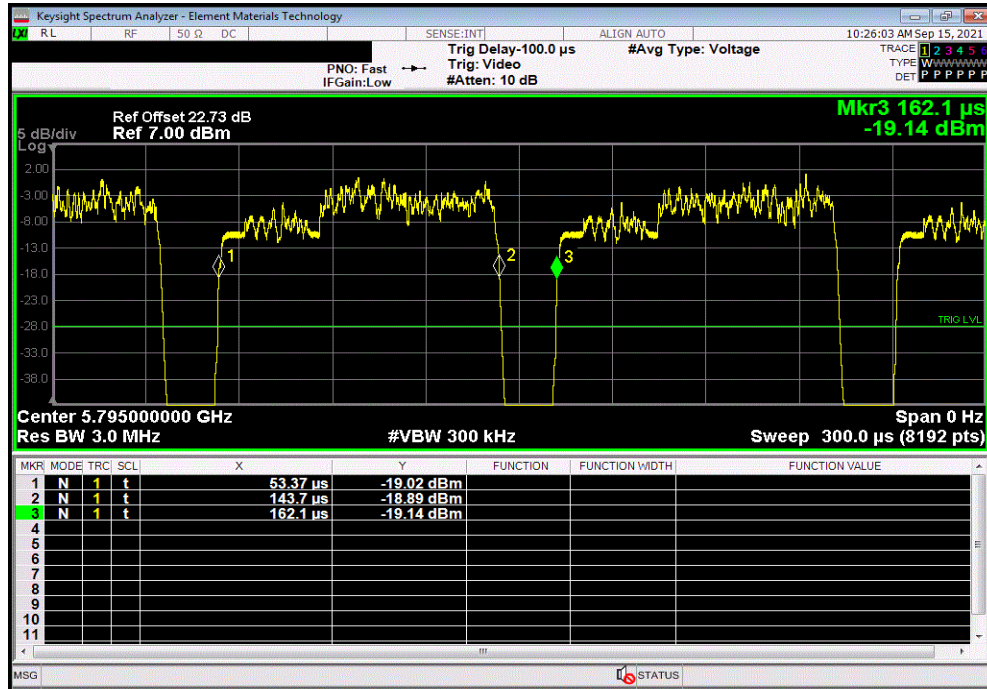


DUTY CYCLE - 5.8 GHz BAND

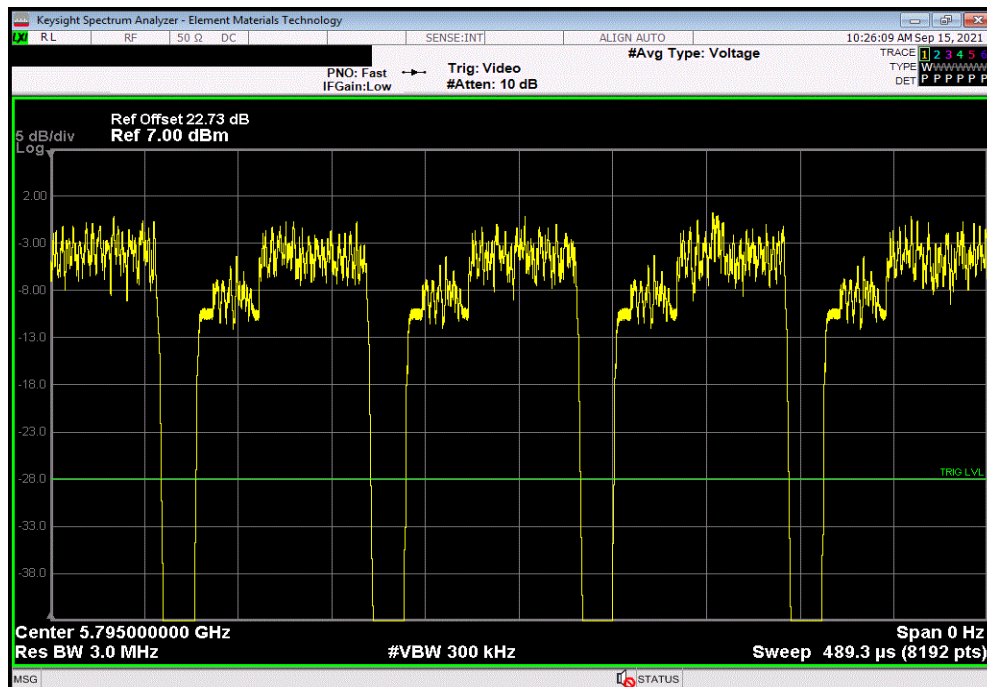


TbTtX 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT40, High Channel, Ch 157/161 - 5795 MHz, MCS9 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
90.303 μ s	108.743 μ s	1	83	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT40, High Channel, Ch 157/161 - 5795 MHz, MCS9 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

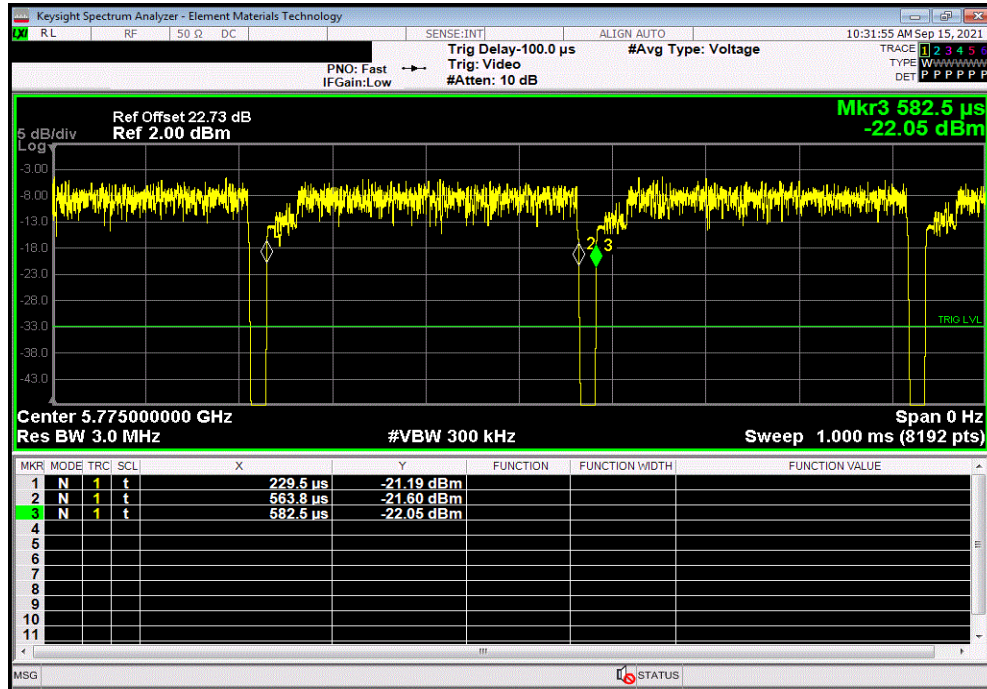


DUTY CYCLE - 5.8 GHz BAND

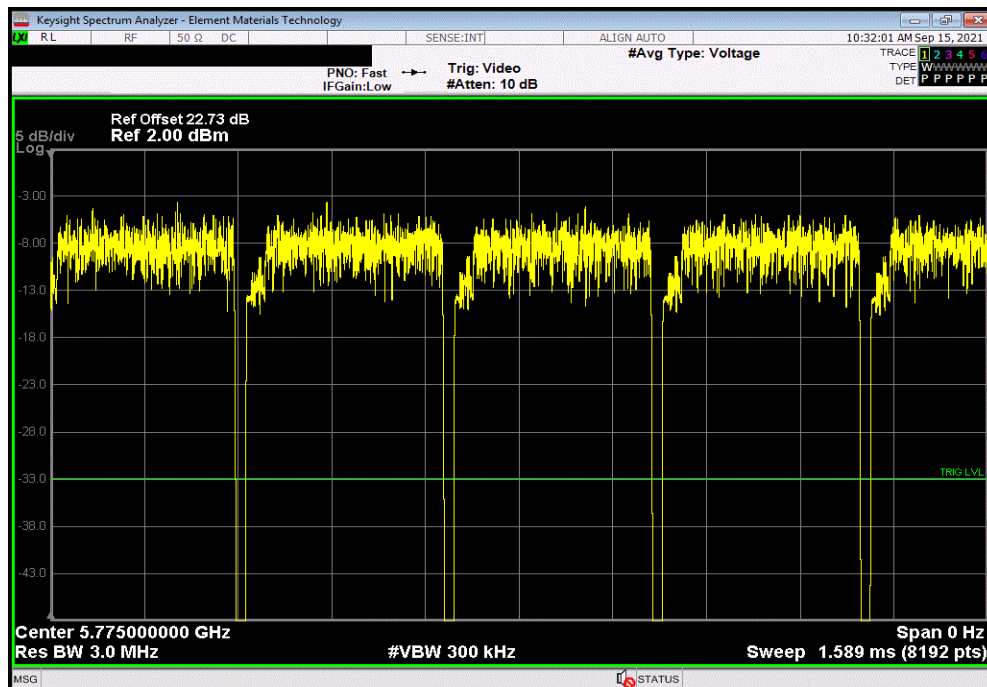


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT80, Low Channel, Ch 149-161 - 5775 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
334.3 us	353 us	1	94.7	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT80, Low Channel, Ch 149-161 - 5775 MHz, MCS0						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

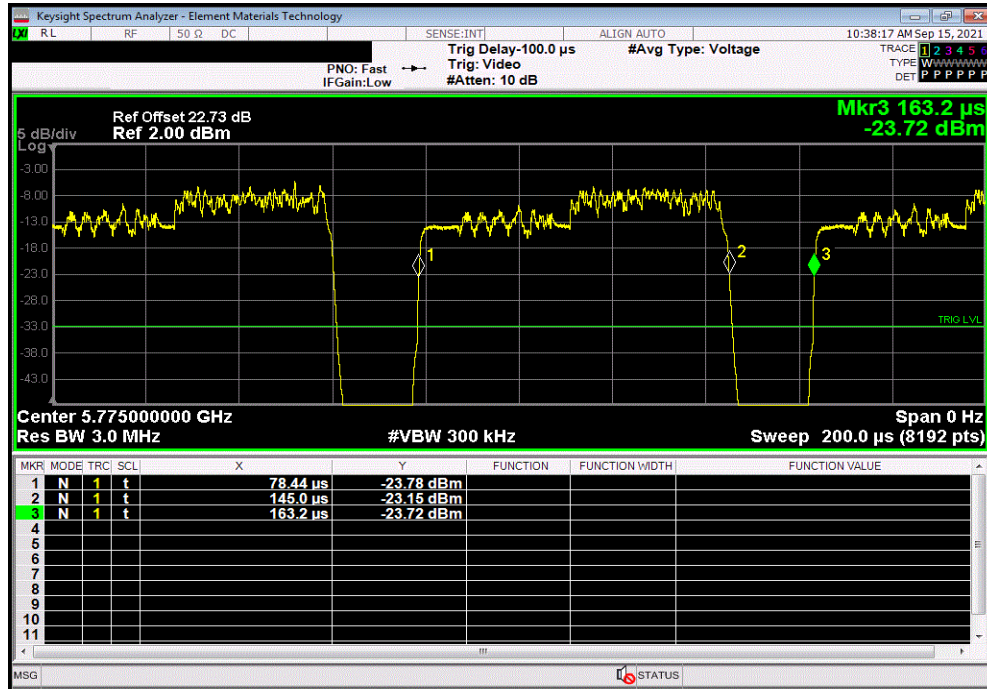


DUTY CYCLE - 5.8 GHz BAND

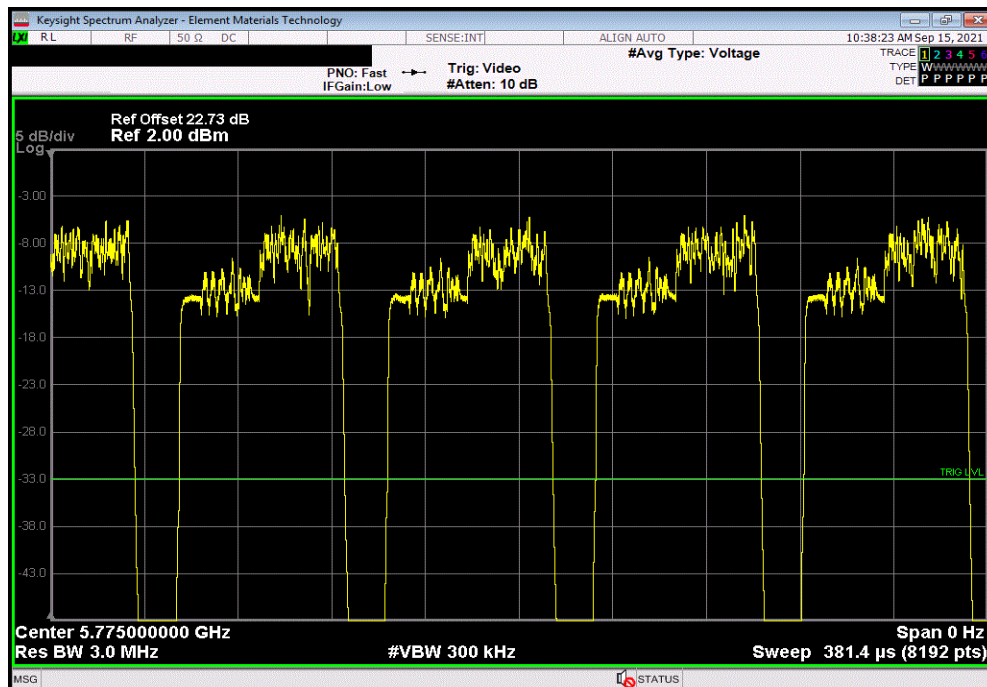


TbTx 2021.03.19.1 XMt 2020.12.30.0

5725 - 5850 MHz Band, 802.11(n/ac) VHT80, Low Channel, Ch 149-161 - 5775 MHz, MCS9 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
66.544 μ s	84.758 μ s	1	78.5	N/A	N/A	



5725 - 5850 MHz Band, 802.11(n/ac) VHT80, Low Channel, Ch 149-161 - 5775 MHz, MCS9 (256-QAM)						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND



XMR 2020.12.30.0

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	EVH	2021-03-14	2022-03-14
Attenuator	S.M. Electronics	SA26B-20	AUY	2021-03-14	2022-03-14
Block - DC	Fairview Microwave	SD3379	AMW	2021-03-14	2022-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFE	2021-04-08	2022-04-08

TEST DESCRIPTION

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

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

Prior to measuring maximum transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The maximum conducted output power was measured using ANSI C63.10:2013, Clause 12.3.2.4, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

- RMS Detector
- Trace average 100 traces in power averaging mode.
- Power was integrated across "B", by using the channel power function of the analyzer.

A duty cycle correction factor was added to the measurement using the results of the formula of $10 \cdot \log(1/D)$ where D is the duty cycle.

MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND



TWtTx 2021.03.19.1 XMR 2020.12.30.0

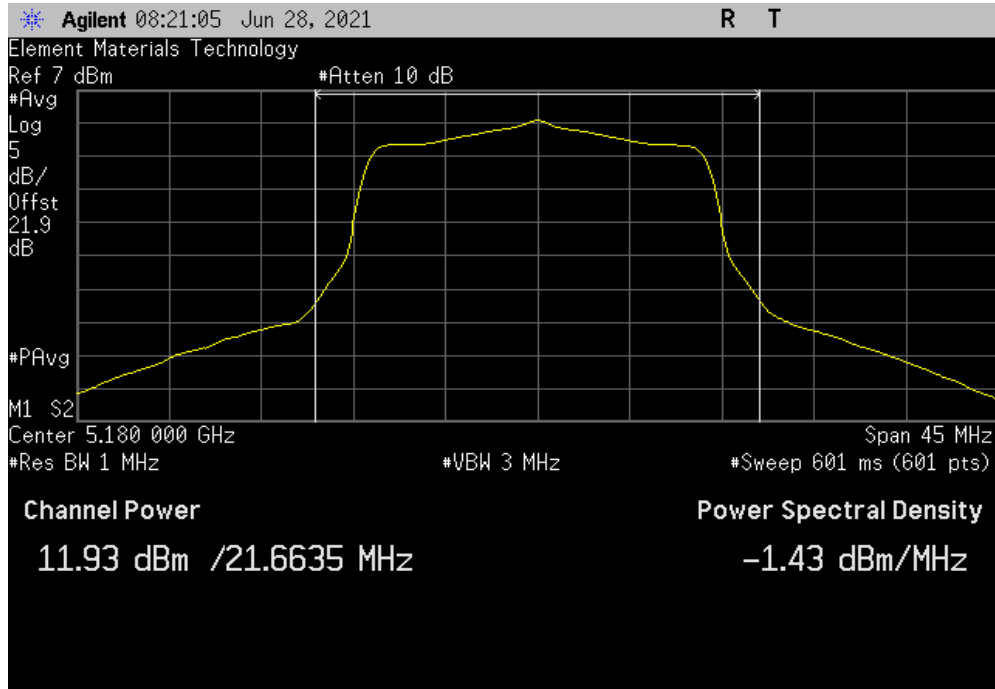
EUT: 43.0536.00		Work Order: A-DE0162				
Serial Number: SN001 00003		Date: 28-Jun-21				
Customer: A-dec, Inc.		Temperature: 25.1 °C				
Attendees: Zach Lyda		Humidity: 48.7% RH				
Project: None		Barometric Pres.: 1006 mbar				
Tested by: Jeff Alcoke		Power: 3.3 VDC via 110VAC/60Hz				
		Job Site: EV06				
TEST SPECIFICATIONS		Test Method				
FCC 15.407:2021		ANSI C63.10:2013				
COMMENTS						
Reference level offset: DC Block, 20 dB attenuator, 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
20 MHz						
802.11(a) 6 Mbps						
	Ch 36, Low Channel 5180 MHz	11.928	0.1	12	24	Pass
	Ch 40, Mid Channel 5200 MHz	11.897	0.1	12	24	Pass
	Ch 48, High Channel 5240 MHz	11.972	0.1	12	24	Pass
802.11(a) 36 Mbps						
	Ch 36, Low Channel 5180 MHz	11.722	0.3	12	24	Pass
	Ch 40, Mid Channel 5200 MHz	11.694	0.3	12	24	Pass
	Ch 48, High Channel 5240 MHz	11.588	0.3	11.9	24	Pass
802.11(a) 54 Mbps						
	Ch 36, Low Channel 5180 MHz	11.77	0.5	12.2	24	Pass
	Ch 40, Mid Channel 5200 MHz	11.631	0.5	12.1	24	Pass
	Ch 48, High Channel 5240 MHz	11.548	0.5	12	24	Pass
802.11(n) MCS0						
	Ch 36, Low Channel 5180 MHz	11.743	0.1	11.8	24	Pass
	Ch 40, Mid Channel 5200 MHz	11.694	0.1	11.8	24	Pass
	Ch 48, High Channel 5240 MHz	11.781	0.1	11.9	24	Pass
802.11(n) MCS7						
	Ch 36, Low Channel 5180 MHz	11.494	0.5	12	24	Pass
	Ch 40, Mid Channel 5200 MHz	11.455	0.5	11.9	24	Pass
	Ch 48, High Channel 5240 MHz	11.261	0.5	11.7	24	Pass
802.11(ac) MCS8 (256-QAM)						
	Ch 36, Low Channel 5180 MHz	9.065	0.5	9.6	24	Pass
	Ch 40, Mid Channel 5200 MHz	8.748	0.5	9.3	24	Pass
	Ch 48, High Channel 5240 MHz	8.794	0.5	9.3	24	Pass
40 MHz						
802.11(n) MCS0						
	Ch 36/40, Low Channel 5190 MHz	7.962	0.1	8.1	24	Pass
	Ch 44/48, High Channel 5230 MHz	7.88	0.1	8	24	Pass
802.11(n) MCS7						
	Ch 36/40, Low Channel 5190 MHz	7.266	0.7	8	24	Pass
	Ch 44/48, High Channel 5230 MHz	7.169	0.7	7.9	24	Pass
802.11(ac) MCS9 (256-QAM)						
	Ch 36/40, Low Channel 5190 MHz	8.206	0.8	9	24	Pass
	Ch 44/48, High Channel 5230 MHz	8.033	0.8	8.8	24	Pass
80 MHz						
802.11(ac) MCS0						
	Ch 36-48, Low Channel 5210 MHz	6.912	0.2	7.1	24	Pass
802.11(ac) MCS9 (256-QAM)						
	Ch 36-48, Low Channel 5210 MHz	6.014	1.1	7.1	24	Pass

MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

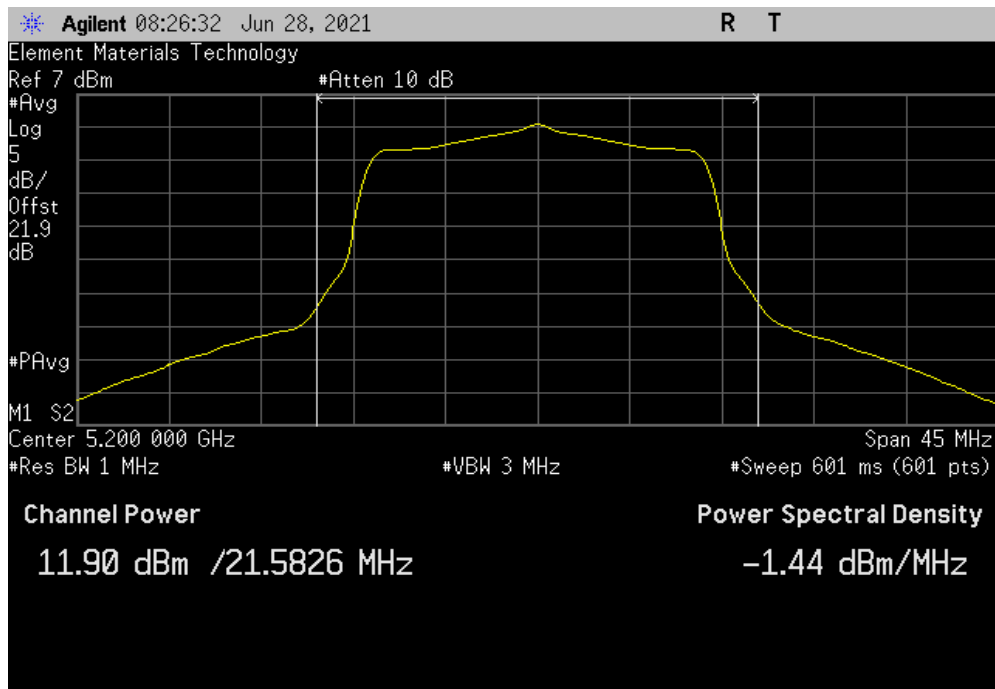


TUTx 2021.03.19.1 XMt 2020.12.30.0

20 MHz, 802.11(a) 6 Mbps, Ch 36, Low Channel 5180 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.928	0.1	12	24	Pass	



20 MHz, 802.11(a) 6 Mbps, Ch 40, Mid Channel 5200 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.897	0.1	12	24	Pass	

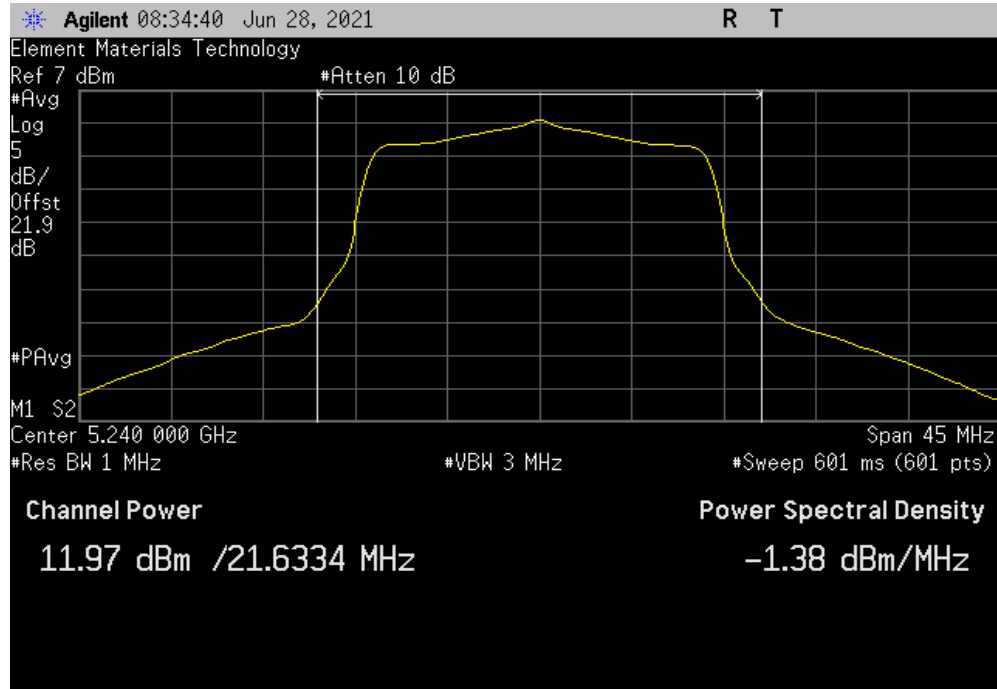


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

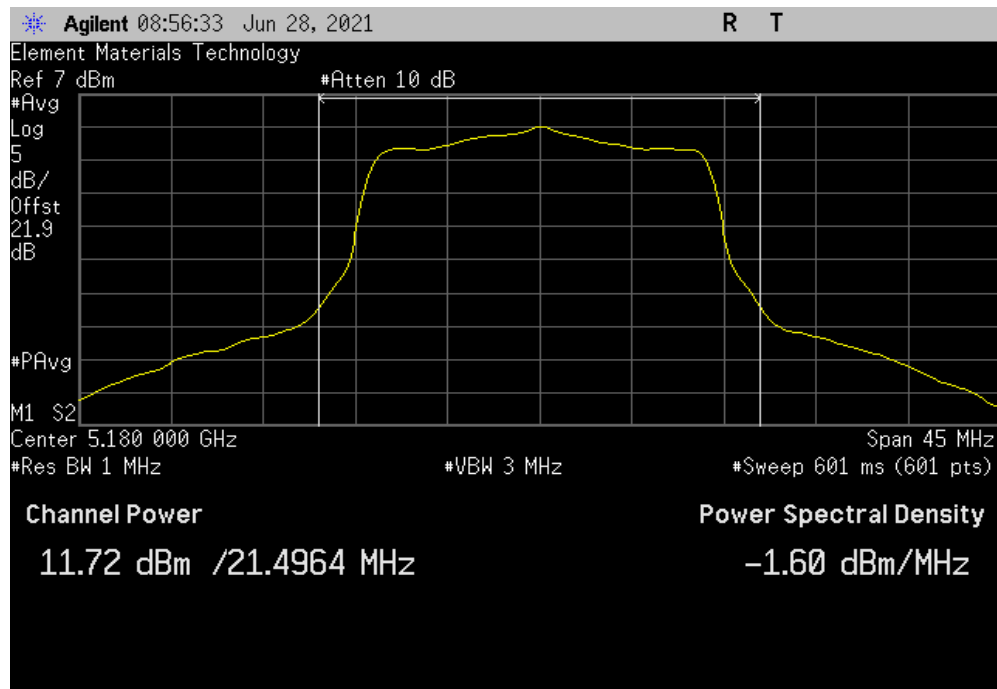


TUTx 2021.03.19.1 XM8 2020.12.30.0

20 MHz, 802.11(a) 6 Mbps, Ch 48, High Channel 5240 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.972	0.1	12	24	Pass	



20 MHz, 802.11(a) 36 Mbps, Ch 36, Low Channel 5180 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.722	0.3	12	24	Pass	

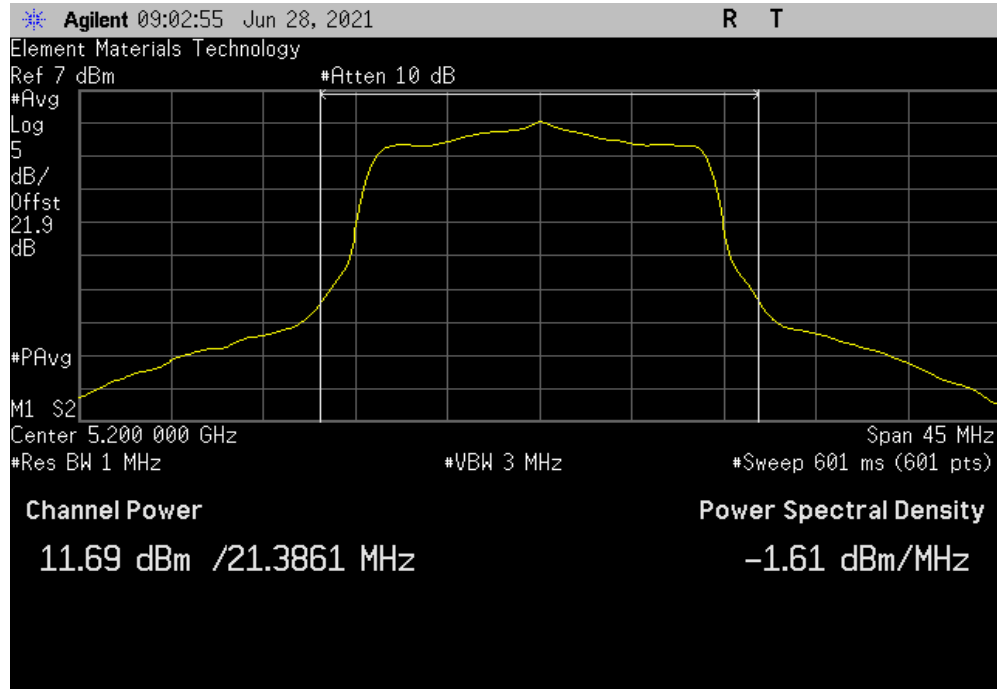


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

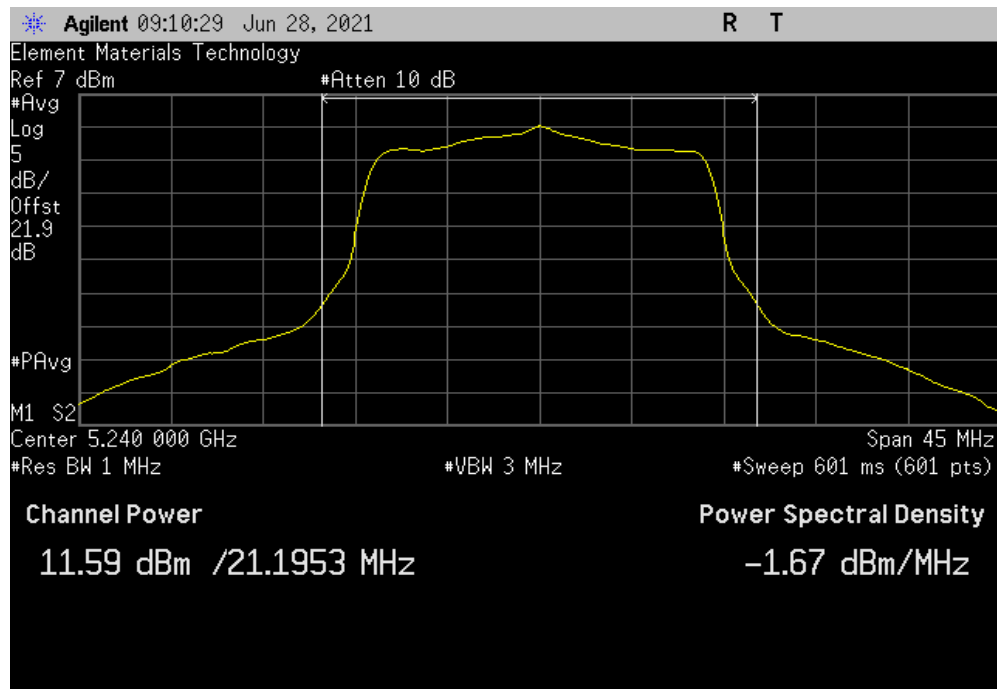


TUTx 2021.03.19.1 XMt 2020.12.30.0

20 MHz, 802.11(a) 36 Mbps, Ch 40, Mid Channel 5200 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.694	0.3	12	24	Pass	



20 MHz, 802.11(a) 36 Mbps, Ch 48, High Channel 5240 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.588	0.3	11.9	24	Pass	

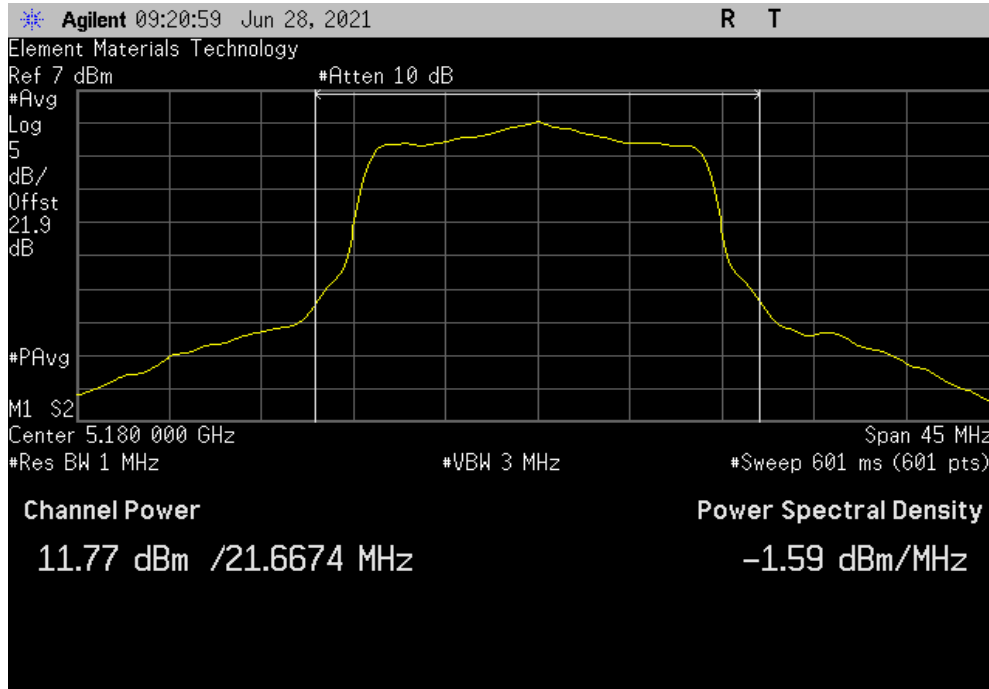


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

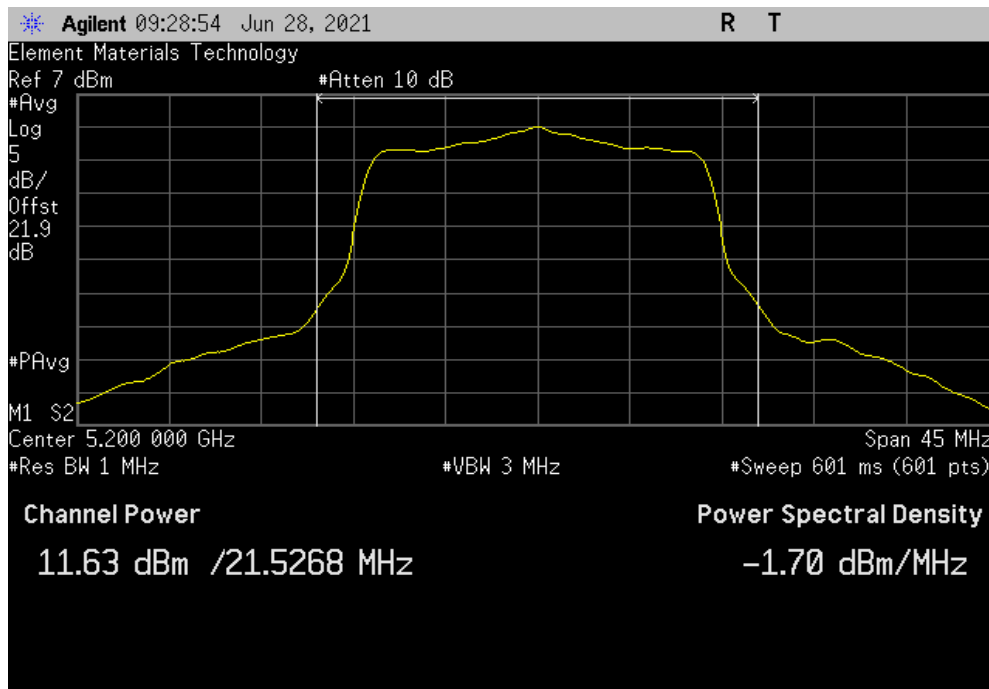


TUTx 2021.03.19.1 XMt 2020.12.30.0

20 MHz, 802.11(a) 54 Mbps, Ch 36, Low Channel 5180 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.77	0.5	12.2	24	Pass	



20 MHz, 802.11(a) 54 Mbps, Ch 40, Mid Channel 5200 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.631	0.5	12.1	24	Pass	

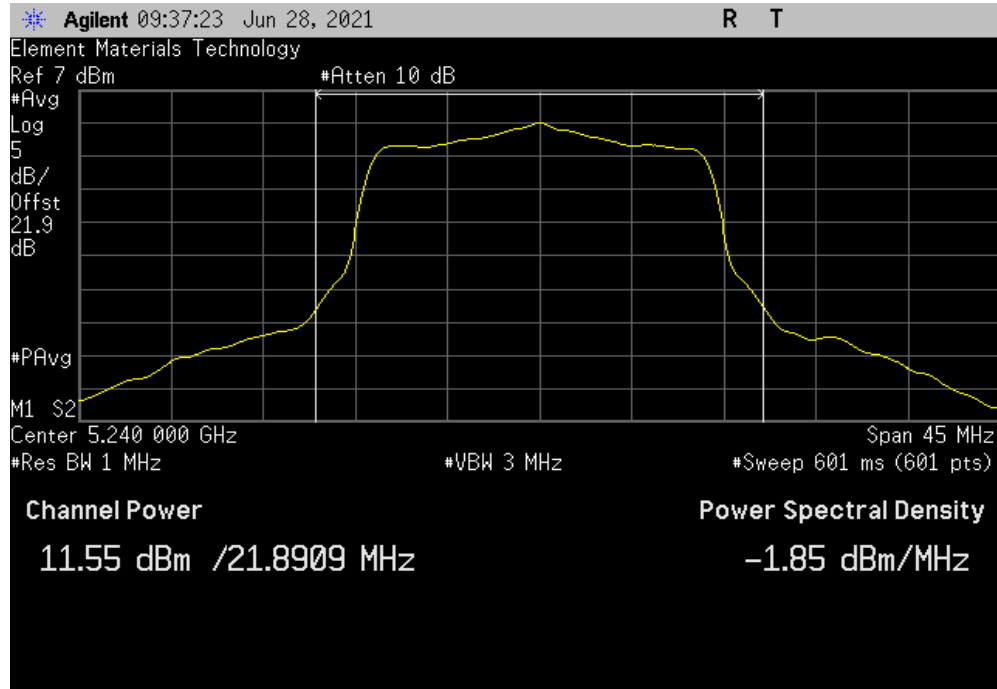


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

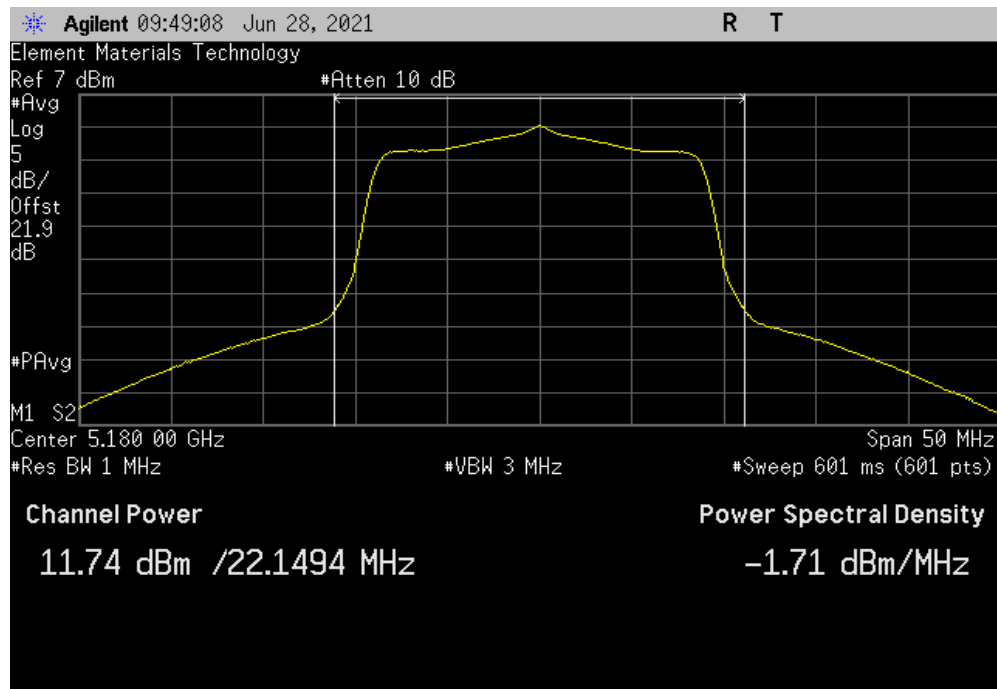


TbTx 2021.03.19.1 XMt 2020.12.30.0

20 MHz, 802.11(a) 54 Mbps, Ch 48, High Channel 5240 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.548	0.5	12	24	Pass	



20 MHz, 802.11(n) MCS0, Ch 36, Low Channel 5180 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.743	0.1	11.8	24	Pass	

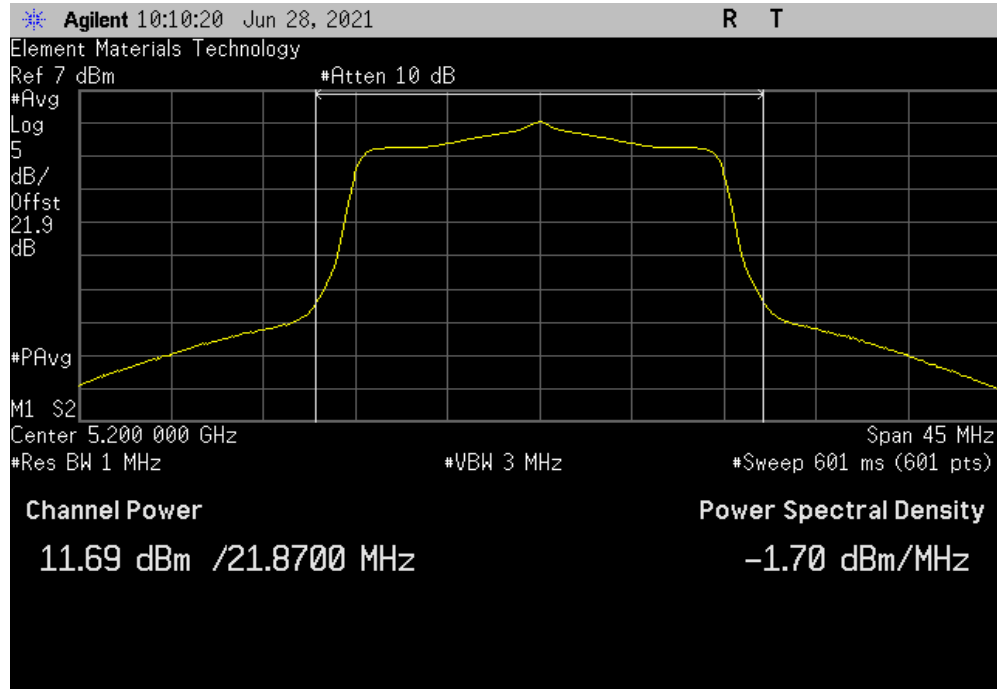


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

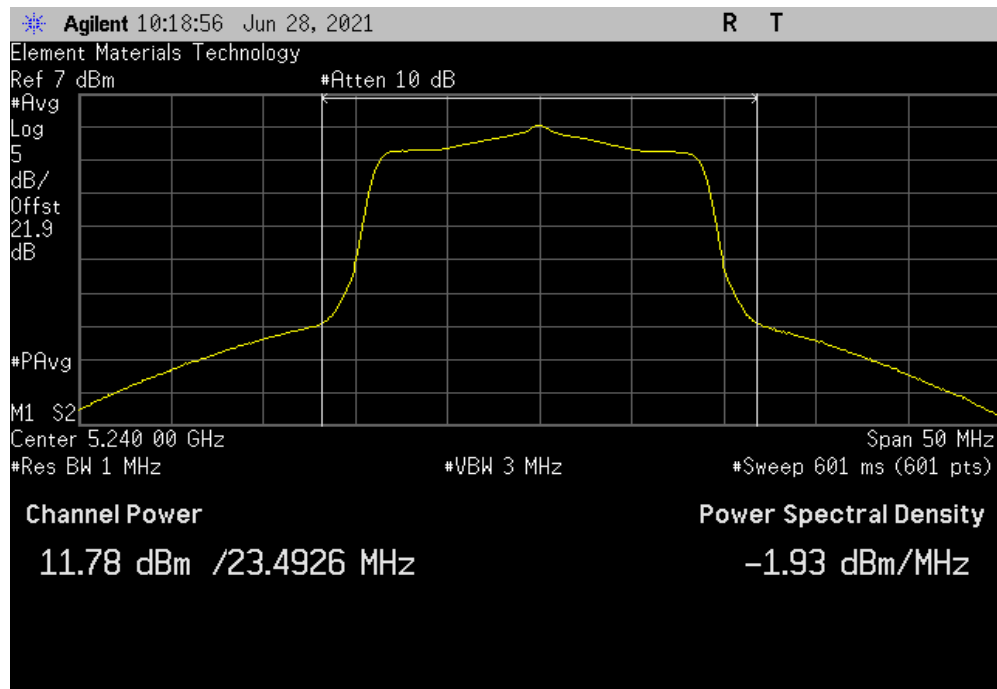


TUTx 2021.03.10.1 XM8 2020.12.30.0

20 MHz, 802.11(n) MCS0, Ch 40, Mid Channel 5200 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.694	0.1	11.8	24	Pass	



20 MHz, 802.11(n) MCS0, Ch 48, High Channel 5240 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.781	0.1	11.9	24	Pass	

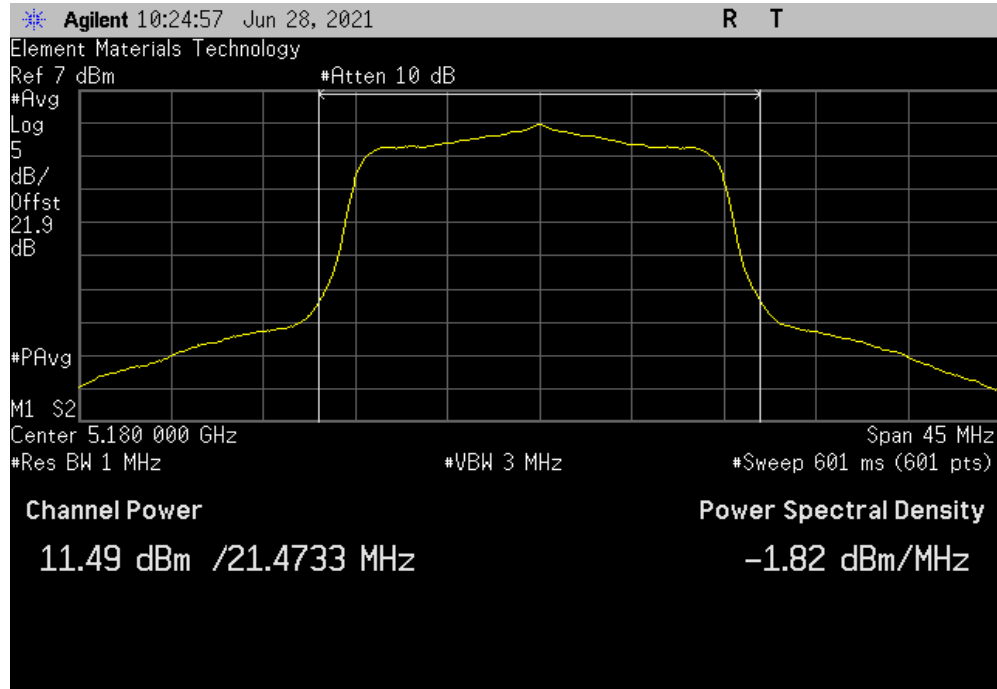


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

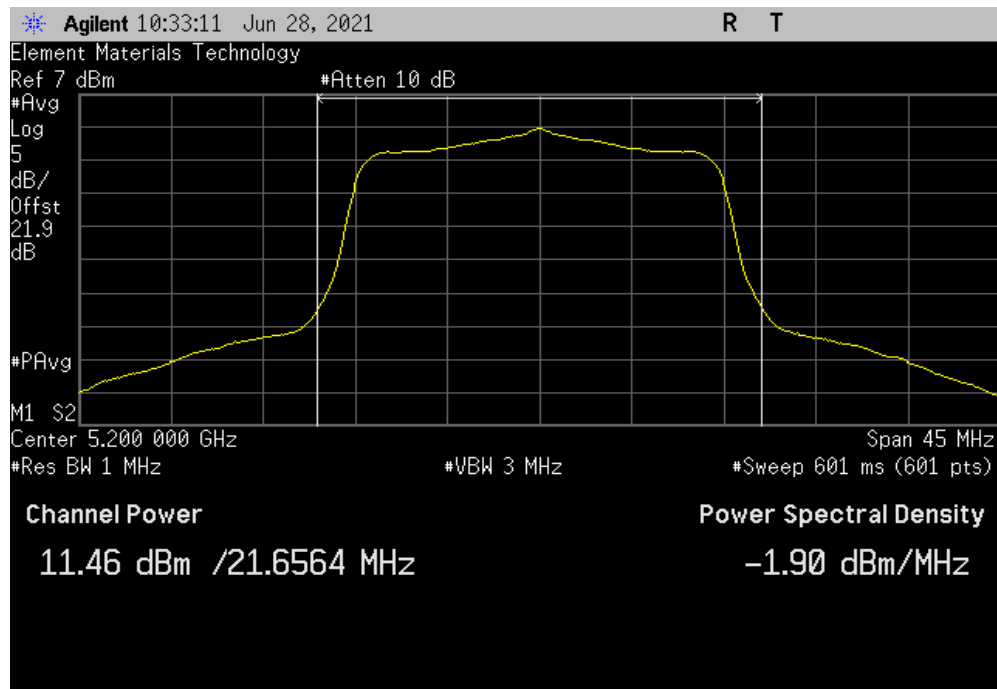


TUTx 2021.03.10.1 XMR 2020.12.30.0

20 MHz, 802.11(n) MCS7, Ch 36, Low Channel 5180 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.494	0.5	12	24	Pass	



20 MHz, 802.11(n) MCS7, Ch 40, Mid Channel 5200 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.455	0.5	11.9	24	Pass	

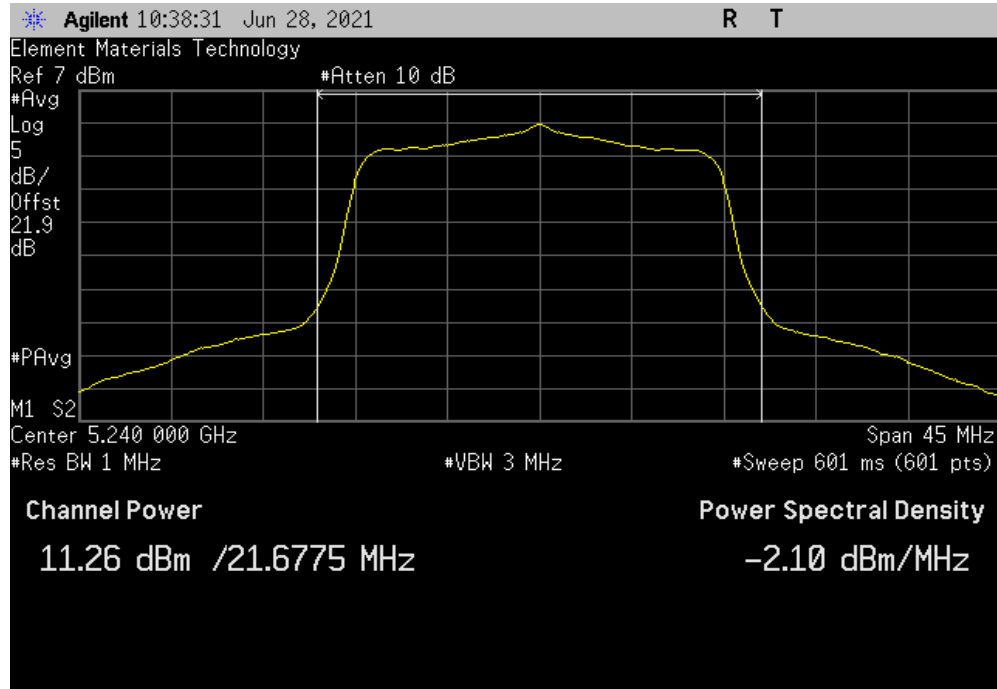


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

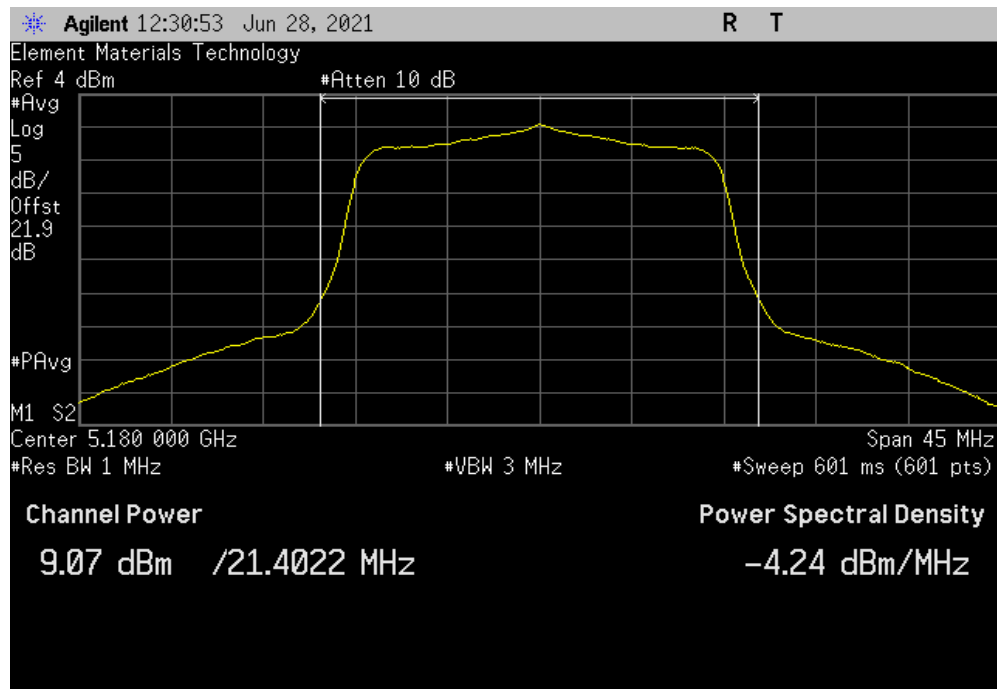


TUTx 2021.03.19.1 XM8 2020.12.30.0

20 MHz, 802.11(n) MCS7, Ch 48, High Channel 5240 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.261	0.5	11.7	24	Pass	



20 MHz, 802.11(ac) MCS8 (256-QAM), Ch 36, Low Channel 5180 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	9.065	0.5	9.6	24	Pass	

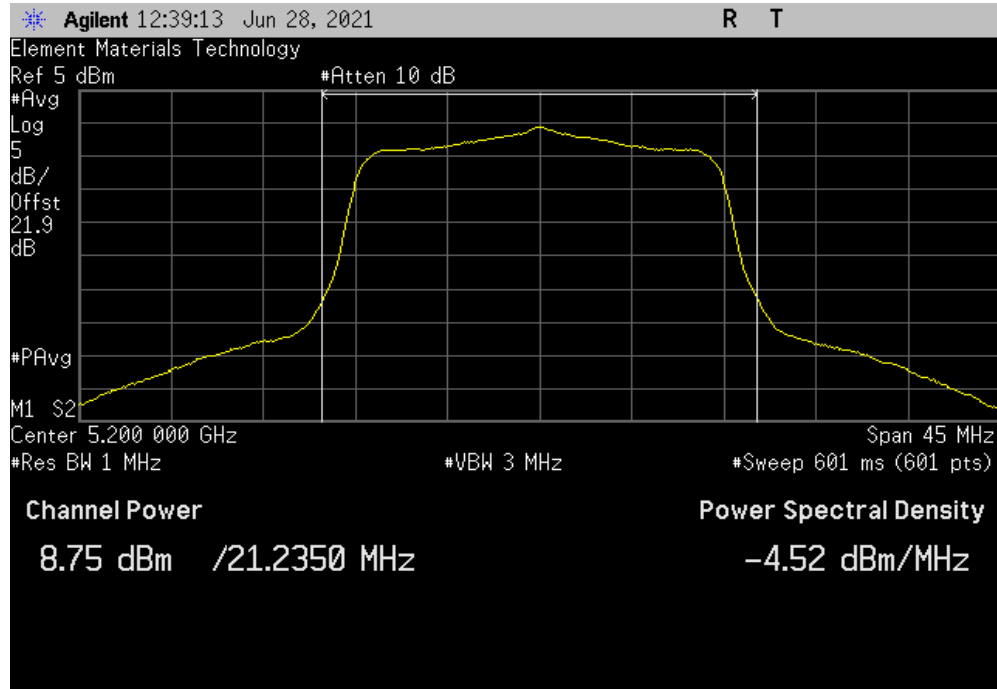


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

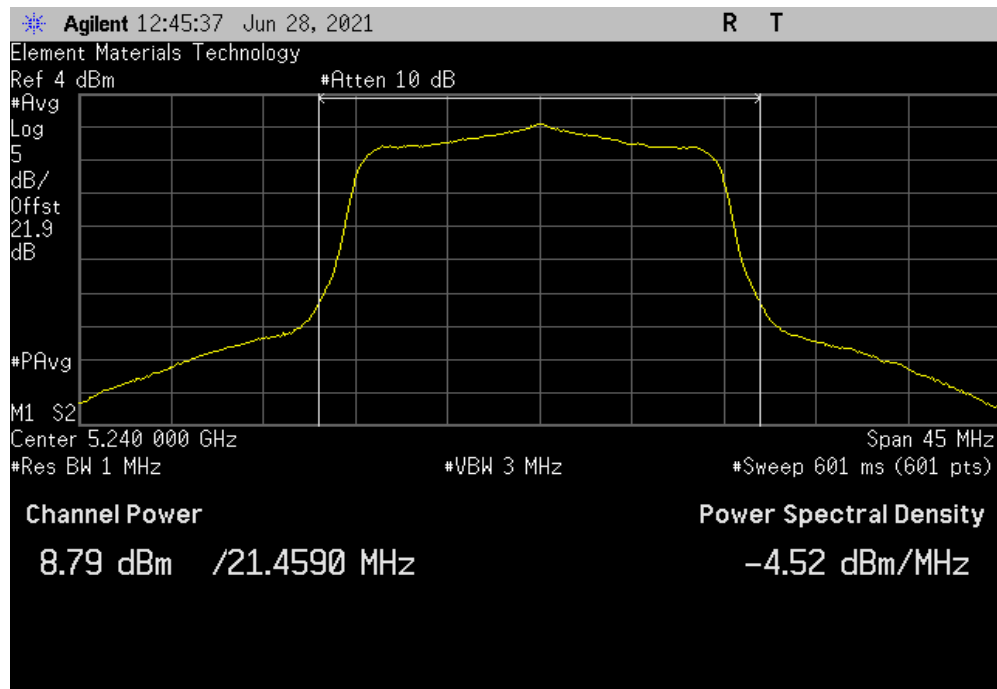


TUTx 2021.03.19.1 XMt 2020.12.30.0

20 MHz, 802.11(ac) MCS8 (256-QAM), Ch 40, Mid Channel 5200 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	8.748	0.5	9.3	24	Pass	



20 MHz, 802.11(ac) MCS8 (256-QAM), Ch 48, High Channel 5240 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	8.794	0.5	9.3	24	Pass	

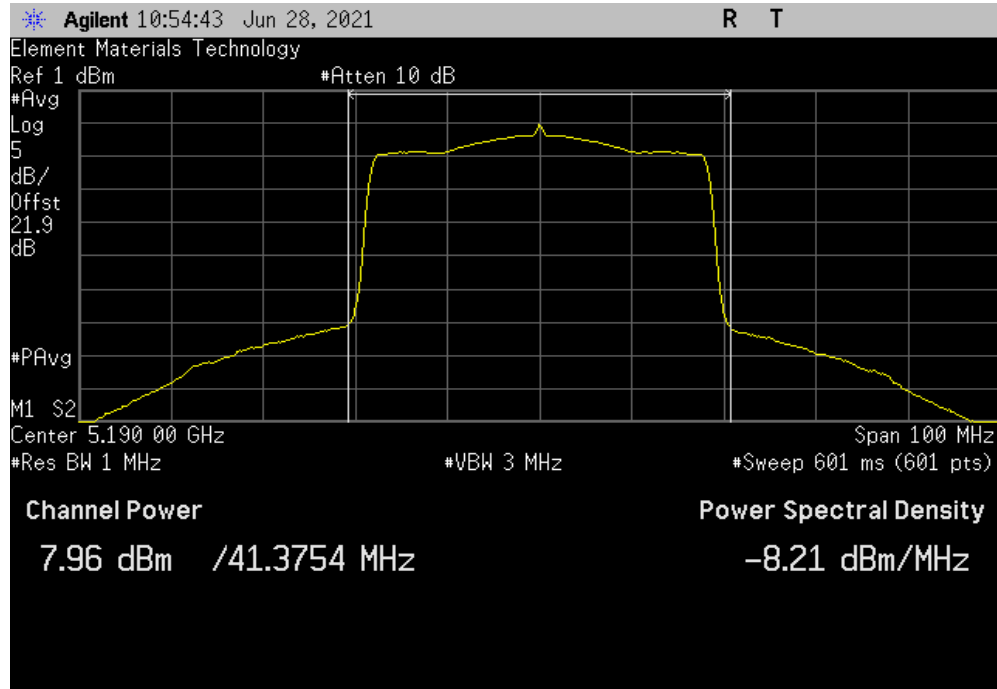


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

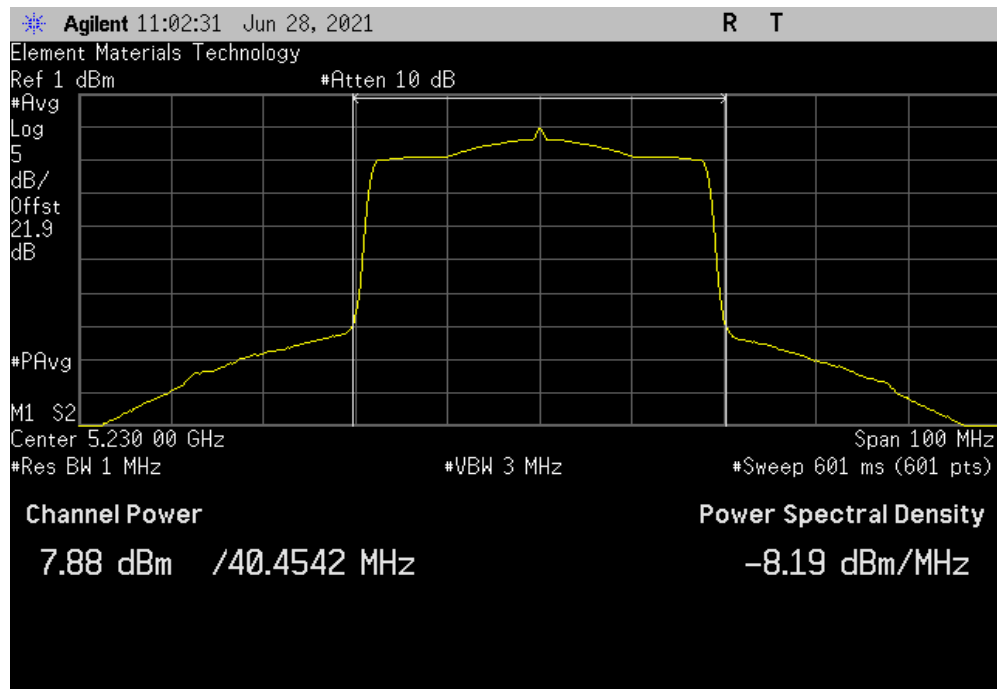


TUTx 2021.03.10.1 XMR 2020.12.30.0

40 MHz, 802.11(n) MCS0, Ch 36/40, Low Channel 5190 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	7.962	0.1	8.1	24	Pass	



40 MHz, 802.11(n) MCS0, Ch 44/48, High Channel 5230 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	7.88	0.1	8	24	Pass	

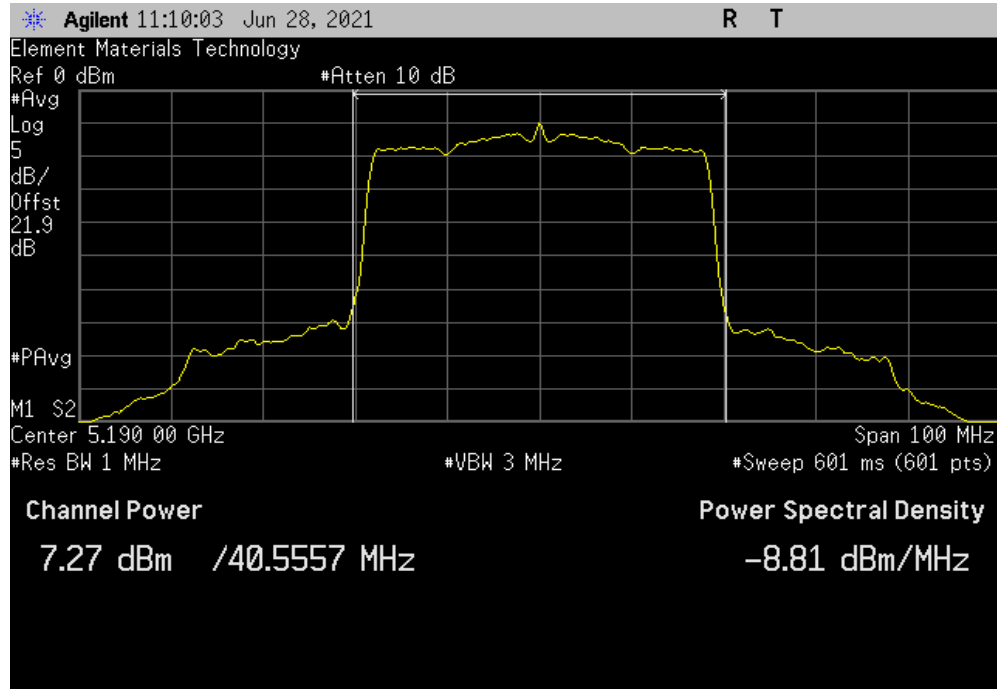


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

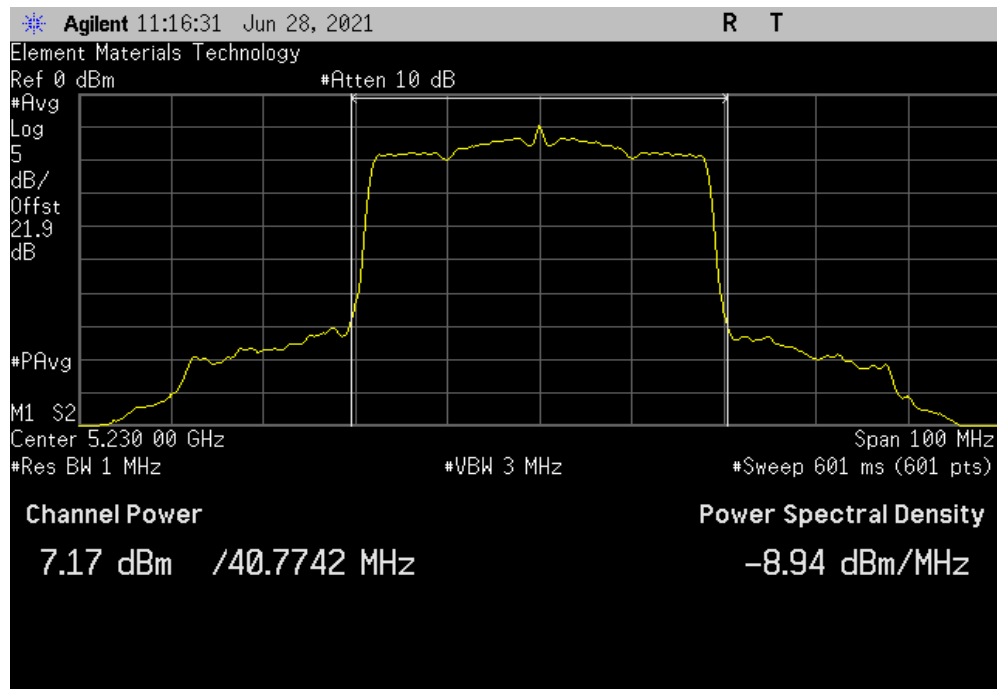


TUTx 2021.03.10.1 XMR 2020.12.30.0

40 MHz, 802.11(n) MCS7, Ch 36/40, Low Channel 5190 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	7.266	0.7	8	24	Pass	



40 MHz, 802.11(n) MCS7, Ch 44/48, High Channel 5230 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	7.169	0.7	7.9	24	Pass	

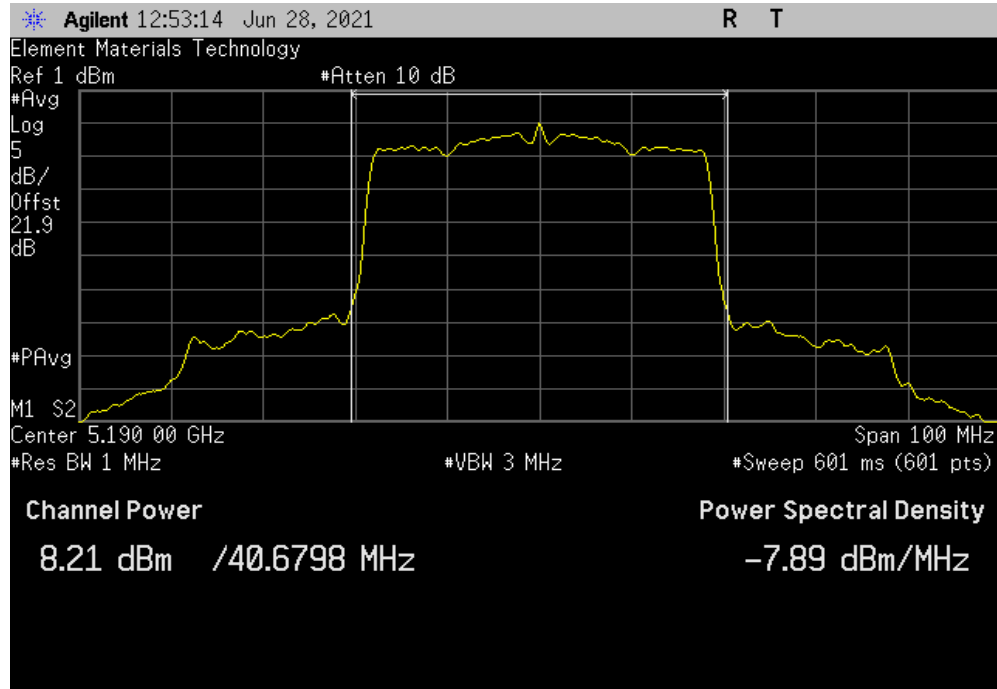


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND

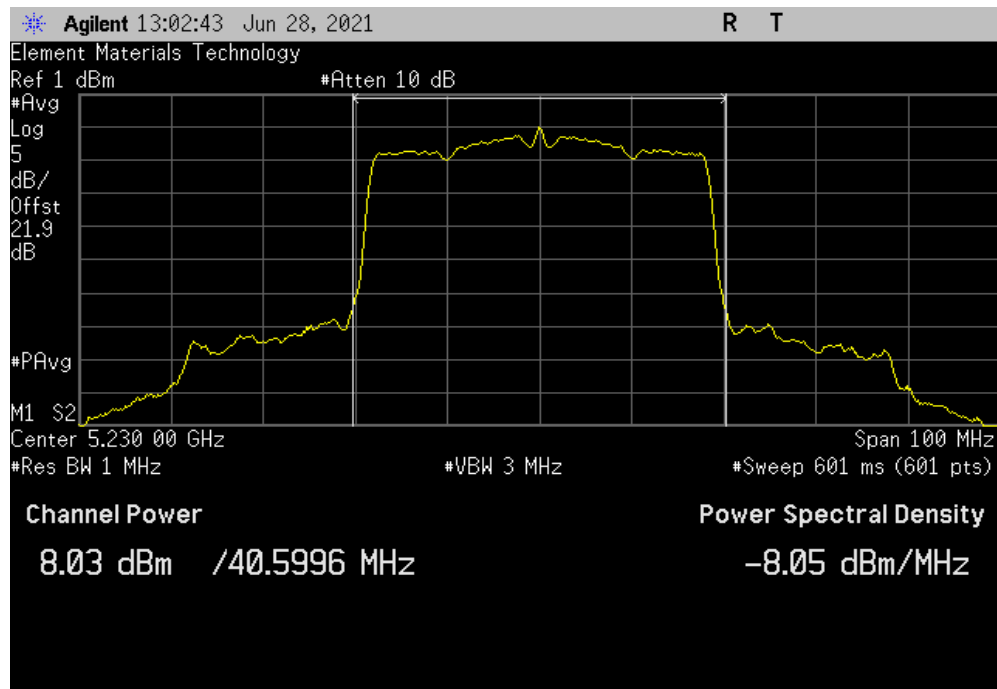


TUTx 2021.03.10.1 XM8 2020.12.30.0

40 MHz, 802.11(ac) MCS9 (256-QAM), Ch 36/40, Low Channel 5190 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	8.206	0.8	9	24	Pass	



40 MHz, 802.11(ac) MCS9 (256-QAM), Ch 44/48, High Channel 5230 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	8.033	0.8	8.8	24	Pass	

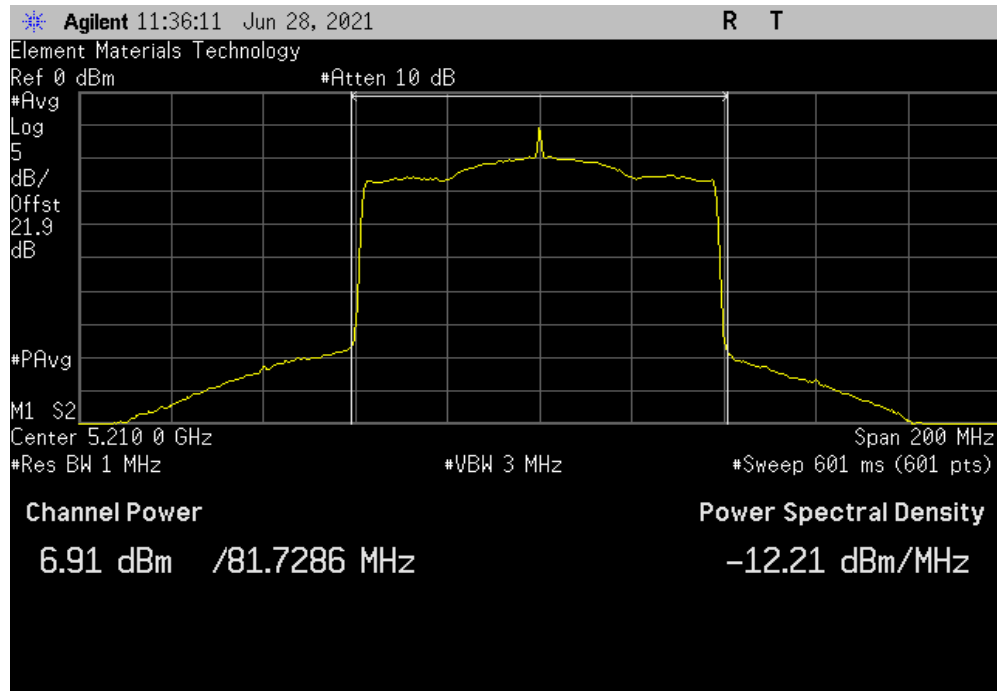


MAXIMUM CONDUCTED OUTPUT POWER - 5.2 GHz BAND



TUTx 2021.03.19.1 XMt 2020.12.30.0

80 MHz, 802.11(ac) MCS0, Ch 36-48, Low Channel 5210 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	6.912	0.2	7.1	24	Pass	



80 MHz, 802.11(ac) MCS9 (256-QAM), Ch 36-48, Low Channel 5210 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	6.014	1.1	7.1	24	Pass	

