

BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)



XMIT 2020.03.25.0

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
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	27-Feb-20	27-Feb-21
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Block - DC	Fairview Microwave	SD3464	ANA	25-Sep-20	25-Sep-21

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of $[-10 \cdot \log(4)]$ dB to account for the device operation as a 4 port MIMO transmitter, as per FCC KDB 622911.

Per section 27.53(h)(1), RSS-170 5.4 & 5.4.2.1 and RSS-139 6.6, the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm $[-13 \text{ dBm} - 10 \log(4)]$ per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

Per 27.53(h)(3), RSS-170 5.4 and RSS-139 6.6, emissions seen up to 1 MHz outside of authorized operating frequency range band edges shall be measured with a RBW of 1% of the measured emission bandwidth (not from part 27 but from TCB Meeting/TCB Correspondence on other testing). Any emission seen to be > 1 MHz further outside the band edges shall be measured with a RBW of 1 MHz. However, a narrower RBW of at least 1% of the emission bandwidth is still allowed provided that the measured power is integrated over the full reference bandwidth of 1 MHz.

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (FRIJ) as the original certification test. The FRIJ antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the original certification testing) and antenna port 4 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraph 5.7.2i.

BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)



TkTx 2020.10.20.0 BETA XMt 2020.03.25.0

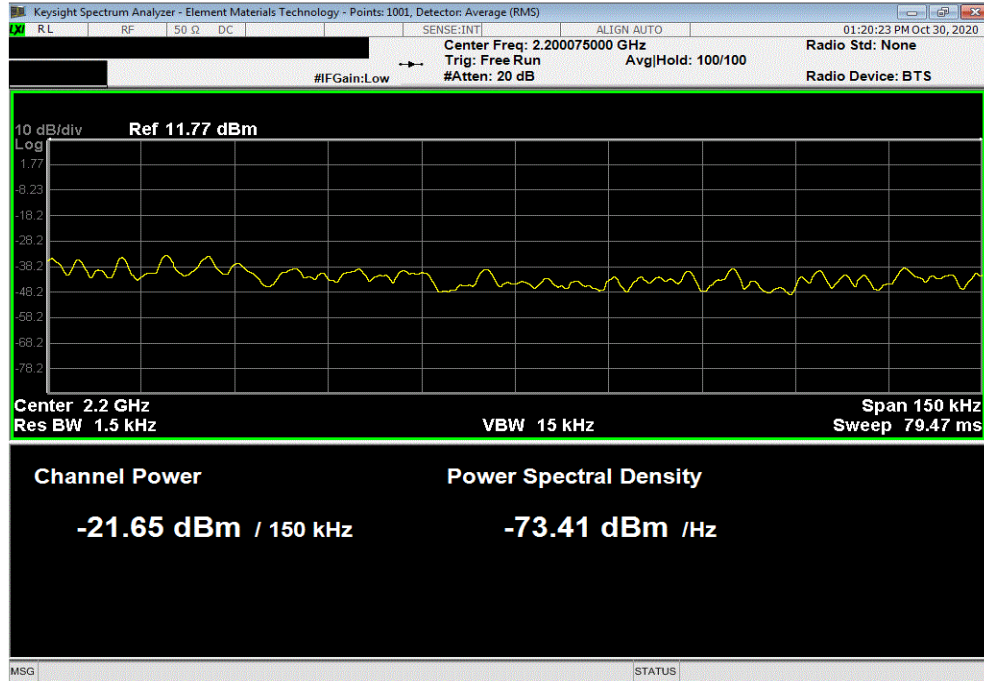
EUT: FRIJ		Work Order: NOKI0019	
Serial Number: YK160800020		Date: 30-Oct-20	
Customer: Nokia Solutions and Networks		Temperature: 22.4 °C	
Attendees: Mitchell Hill, John Rattanaovong		Humidity: 35.7% RH	
Project: None		Barometric Pres.: 1037 mbar	
Tested by: Brandon Hobbs		Power: 54 VDC	
		Job Site: TX05	
TEST SPECIFICATIONS			
FCC 27:2020		Test Method	
RSS-139:2015, RSS-170:2015		ANSI C63.26:2015	
		RSS-139:2015, RSS-170:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. Band n66 carriers are enabled at maximum power (40 watts/carrier). Reference ANSI C63.26 clauses 5.7.2a for measurement guidance.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		Frequency Range	Value (dBm) Limit (dBm) Result
Port 4, Band n66, 2110 MHz - 2200 MHz			
15 MHz Bandwidth			
QPSK Modulation			
	High Channel 2192.5 MHz	1	-21.65 -19 Pass
	High Channel 2192.5 MHz	2	-20.19 -19 Pass
	High Channel 2192.5 MHz	3	-23.91 -19 Pass
	High Channel 2192.5 MHz	4	-23.13 -19 Pass
16-QAM Modulation			
	High Channel 2192.5 MHz	1	-22.28 -19 Pass
	High Channel 2192.5 MHz	2	-21.51 -19 Pass
	High Channel 2192.5 MHz	3	-24.47 -19 Pass
	High Channel 2192.5 MHz	4	-23.14 -19 Pass
64-QAM Modulation			
	High Channel 2192.5 MHz	1	-22.87 -19 Pass
	High Channel 2192.5 MHz	2	-21.48 -19 Pass
	High Channel 2192.5 MHz	3	-25.06 -19 Pass
	High Channel 2192.5 MHz	4	-24.03 -19 Pass
256-QAM Modulation			
	High Channel 2192.5 MHz	1	-23.08 -19 Pass
	High Channel 2192.5 MHz	2	-22.18 -19 Pass
	High Channel 2192.5 MHz	3	-24.91 -19 Pass
	High Channel 2192.5 MHz	4	-24.45 -19 Pass

BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

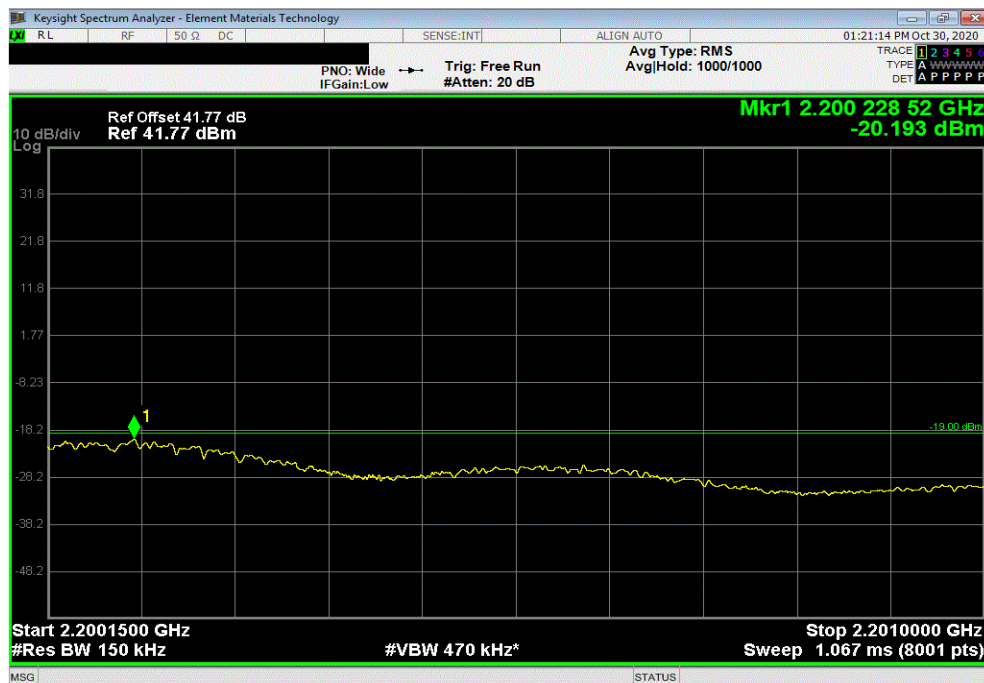


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Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, QPSK Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
	1			-21.65	-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, QPSK Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
	2			-20.19	-19	Pass

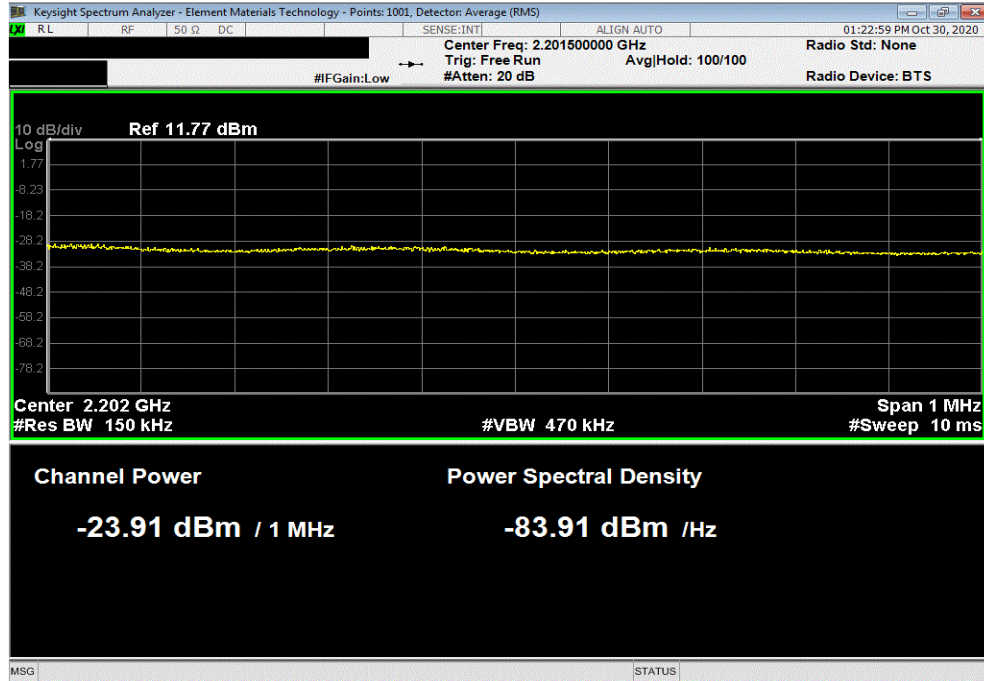


BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

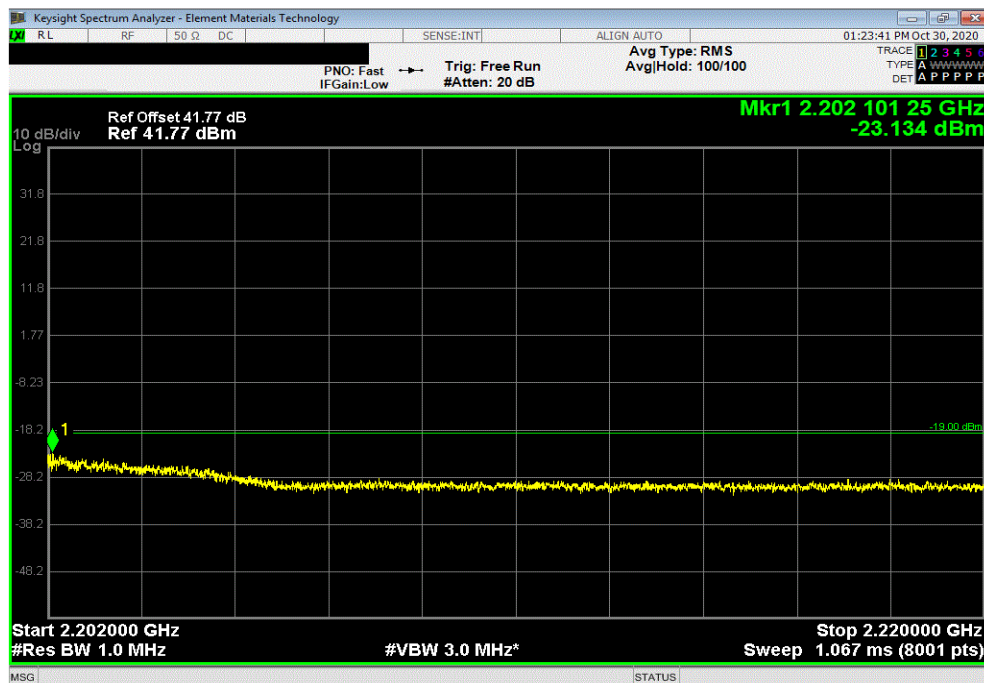


TbTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, QPSK Modulation, High Channel 2192.5 MHz						
Frequency			Value (dBm)		Limit (dBm)	Result
Range						
3			-23.91		-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, QPSK Modulation, High Channel 2192.5 MHz						
Frequency			Value (dBm)		Limit (dBm)	Result
Range						
4			-23.13		-19	Pass

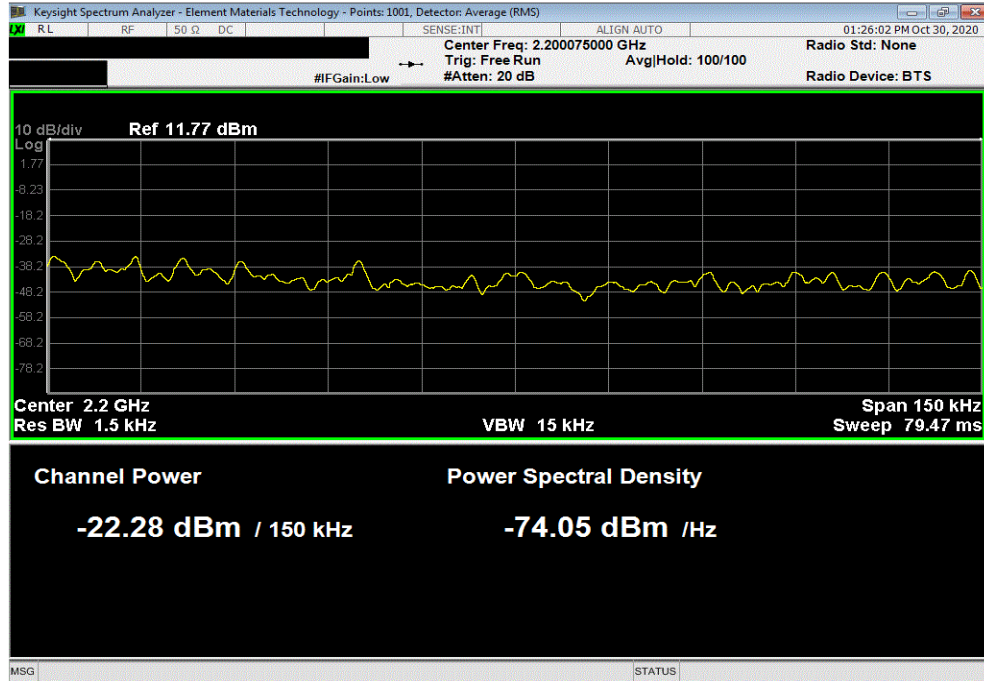


BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

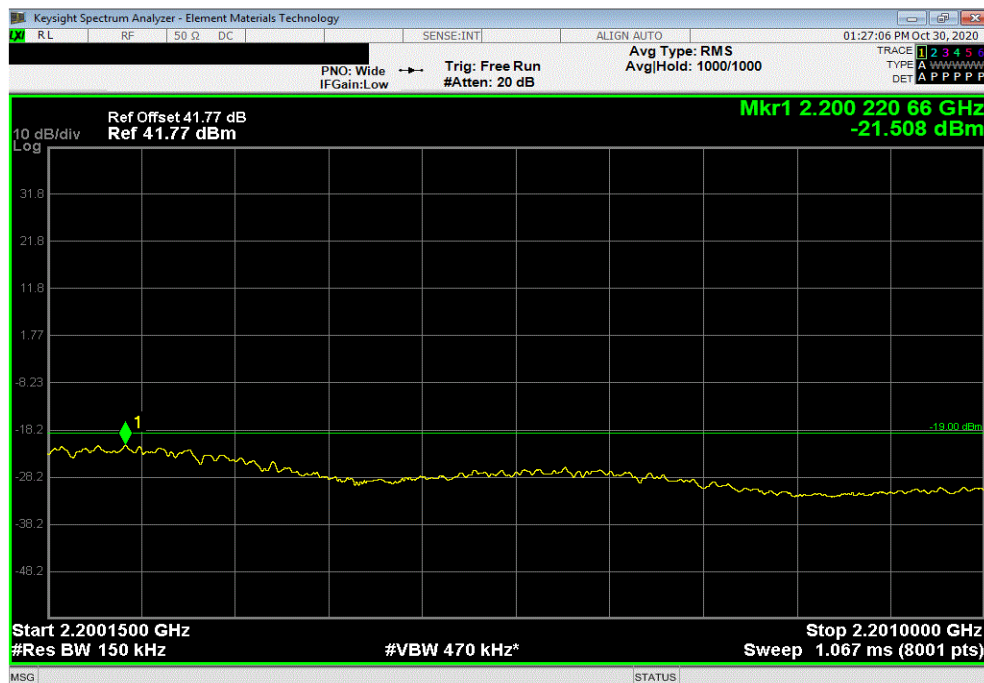


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Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 16-QAM Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
	1			-22.28	-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 16-QAM Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
	2			-21.51	-19	Pass

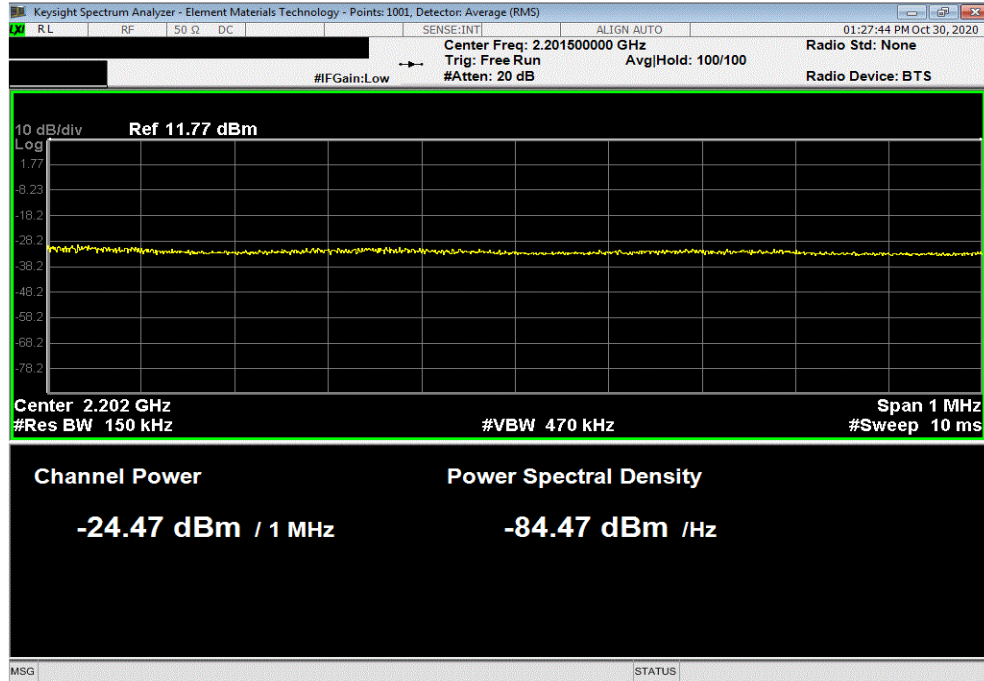


BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

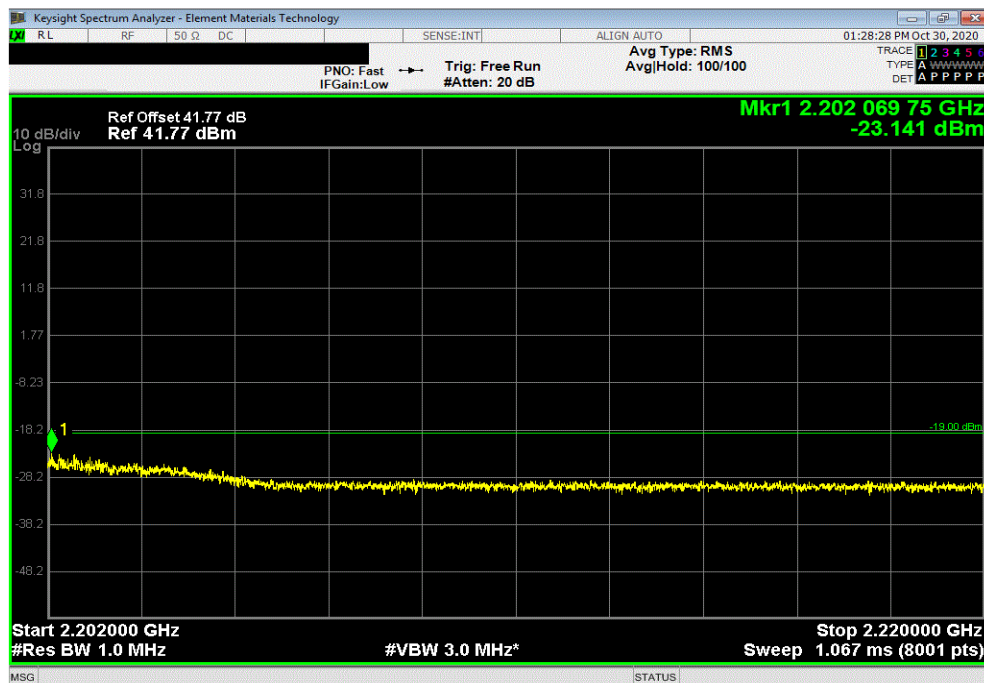


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Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 16-QAM Modulation, High Channel 2192.5 MHz						
Frequency			Value (dBm)		Limit (dBm)	Result
Range						
3			-24.47		-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 16-QAM Modulation, High Channel 2192.5 MHz						
Frequency			Value (dBm)		Limit (dBm)	Result
Range						
4			-23.14		-19	Pass

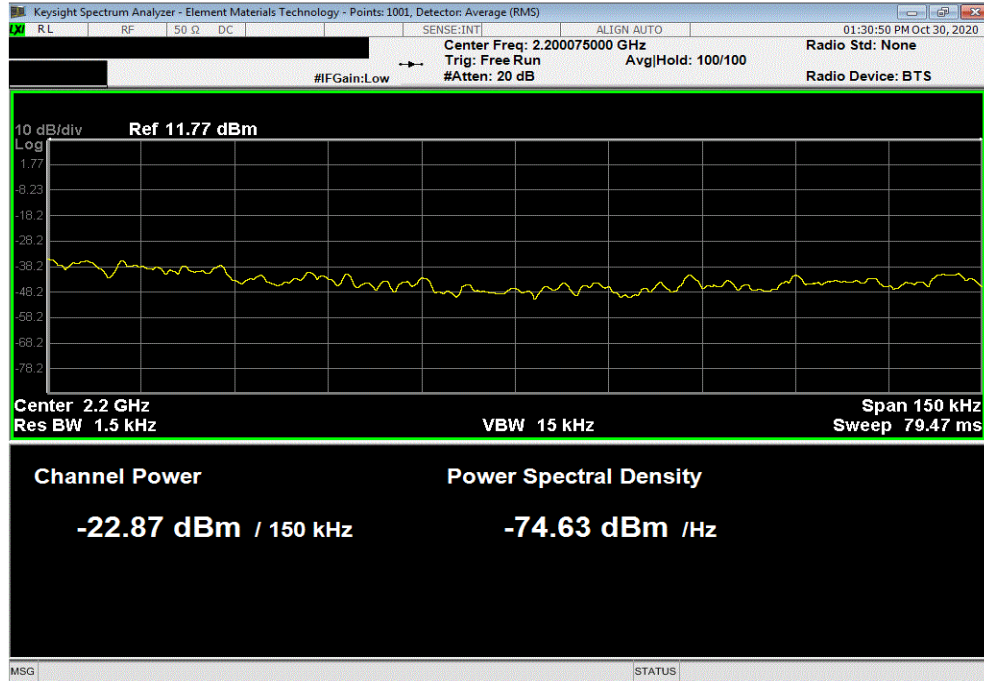


BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

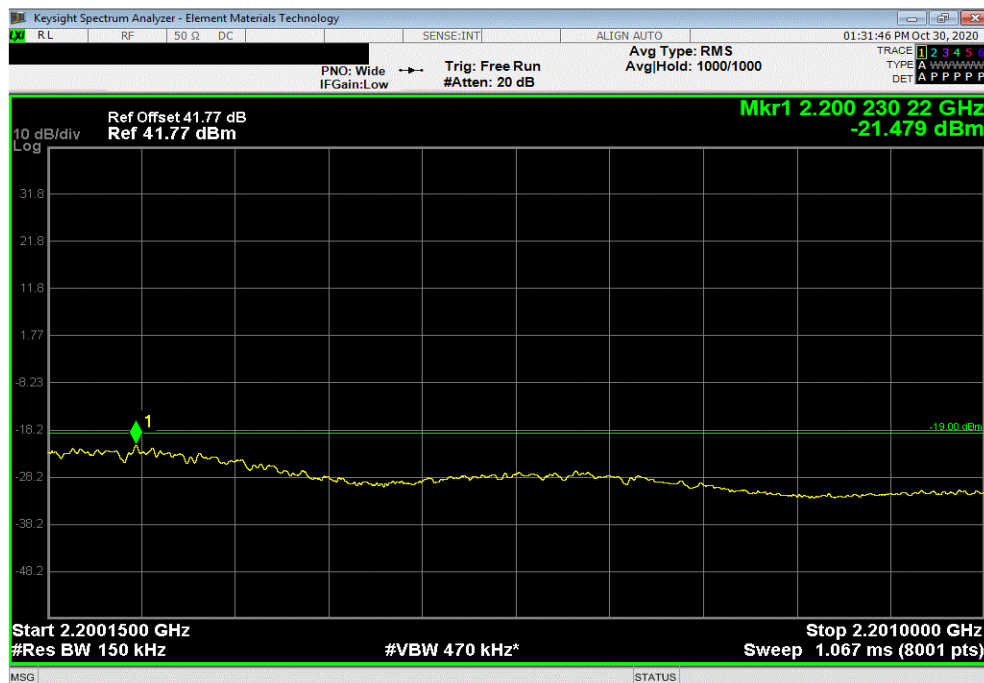


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 64-QAM Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
	1			-22.87	-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 64-QAM Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
	2			-21.48	-19	Pass

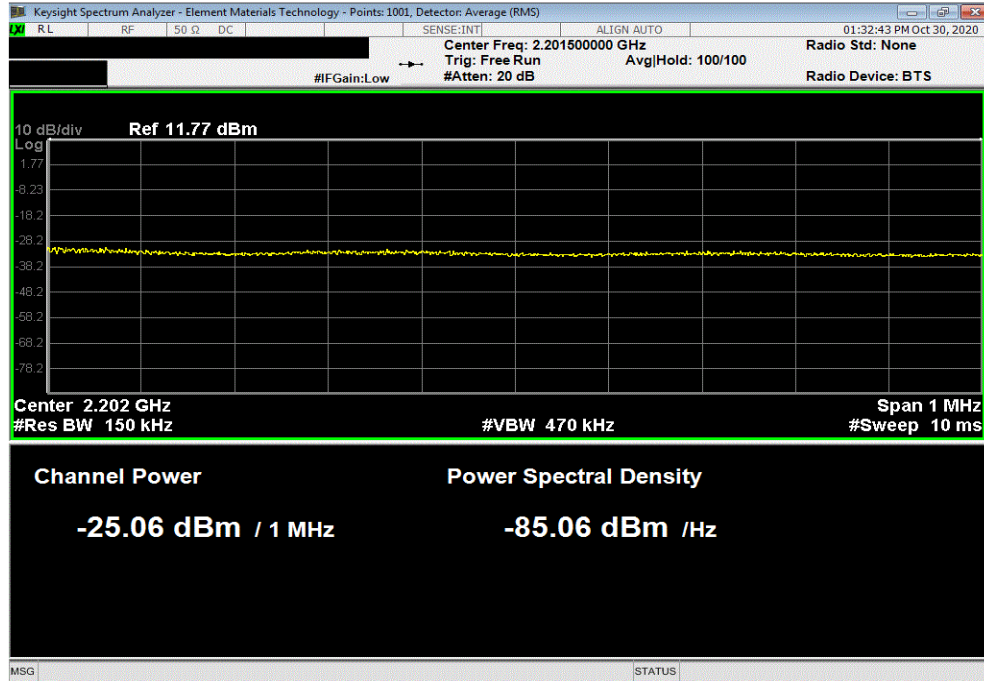


BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

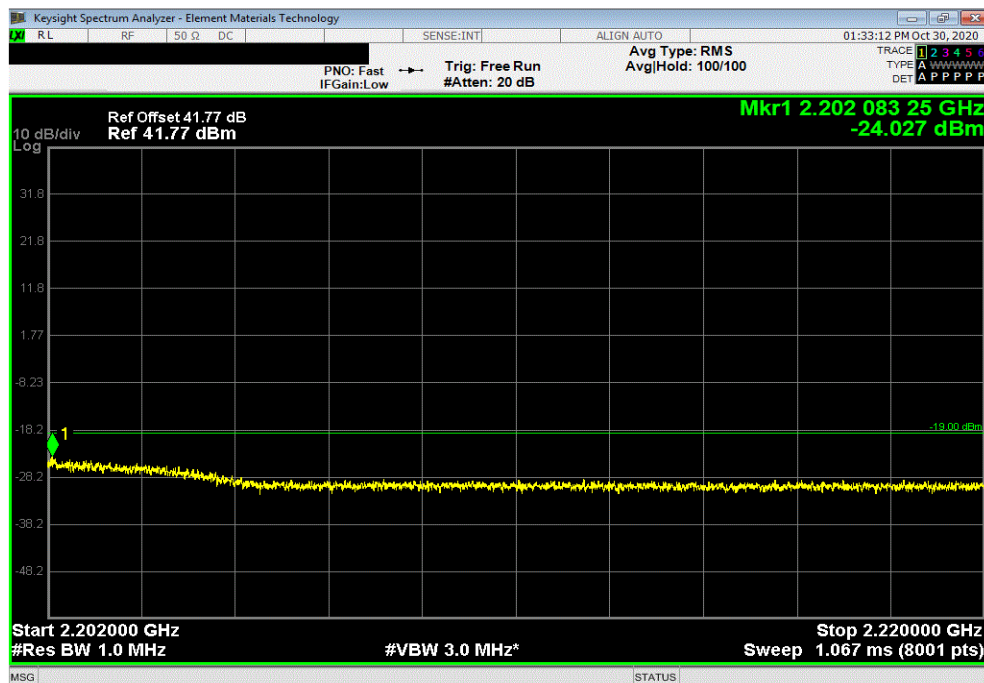


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Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 64-QAM Modulation, High Channel 2192.5 MHz						
Frequency			Value (dBm)		Limit (dBm)	Result
Range						
3			-25.06		-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 64-QAM Modulation, High Channel 2192.5 MHz						
Frequency			Value (dBm)		Limit (dBm)	Result
Range						
4			-24.03		-19	Pass

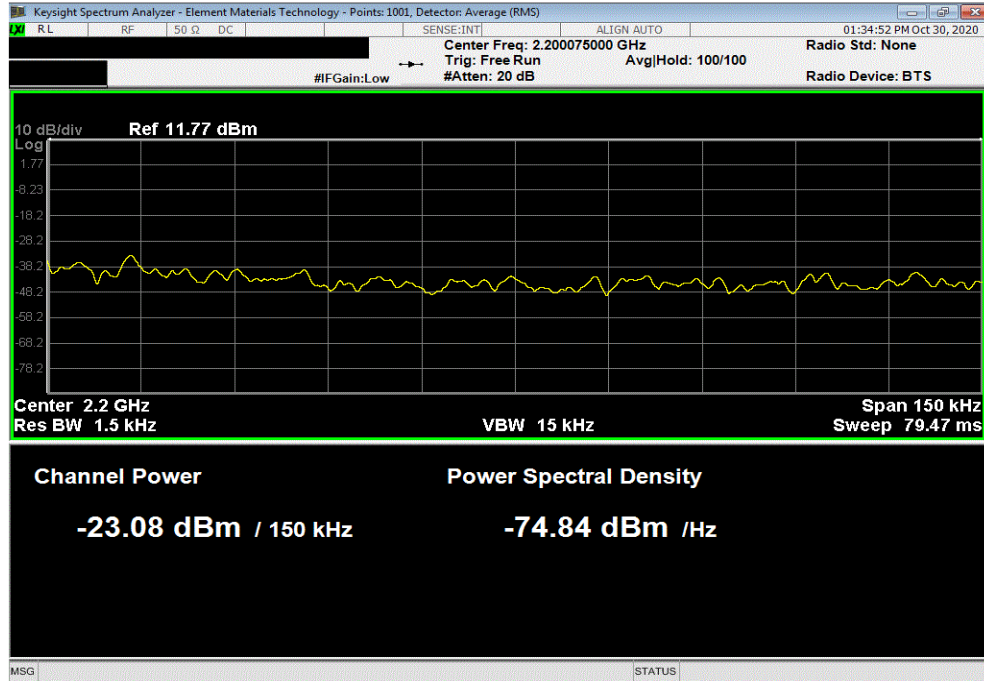


BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

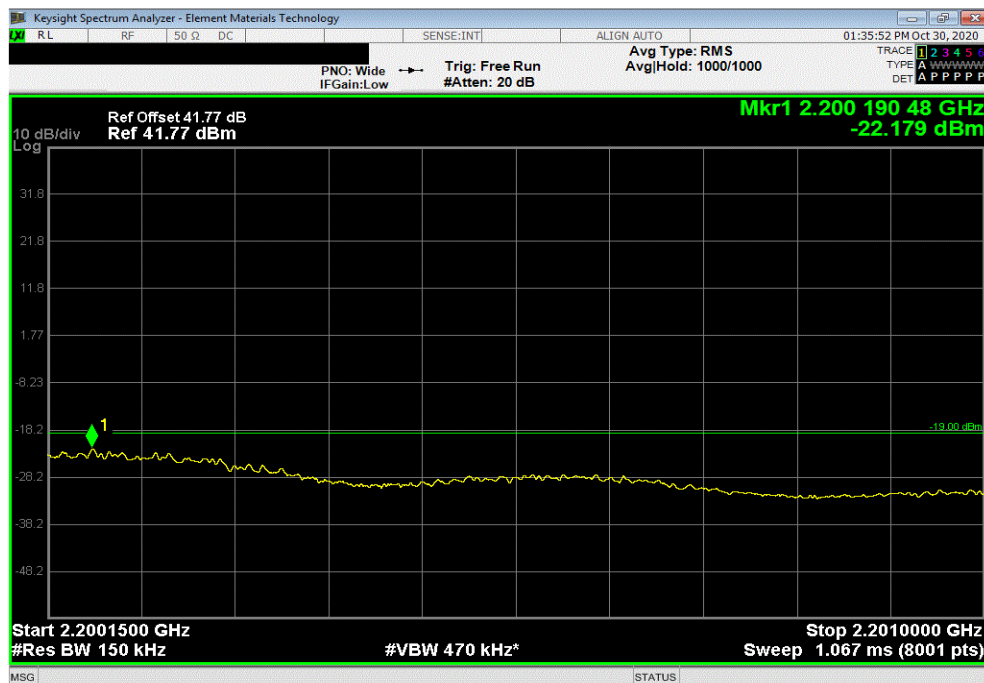


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Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
1				-23.08	-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Channel 2192.5 MHz						
Frequency Range				Value (dBm)	Limit (dBm)	Result
2				-22.18	-19	Pass

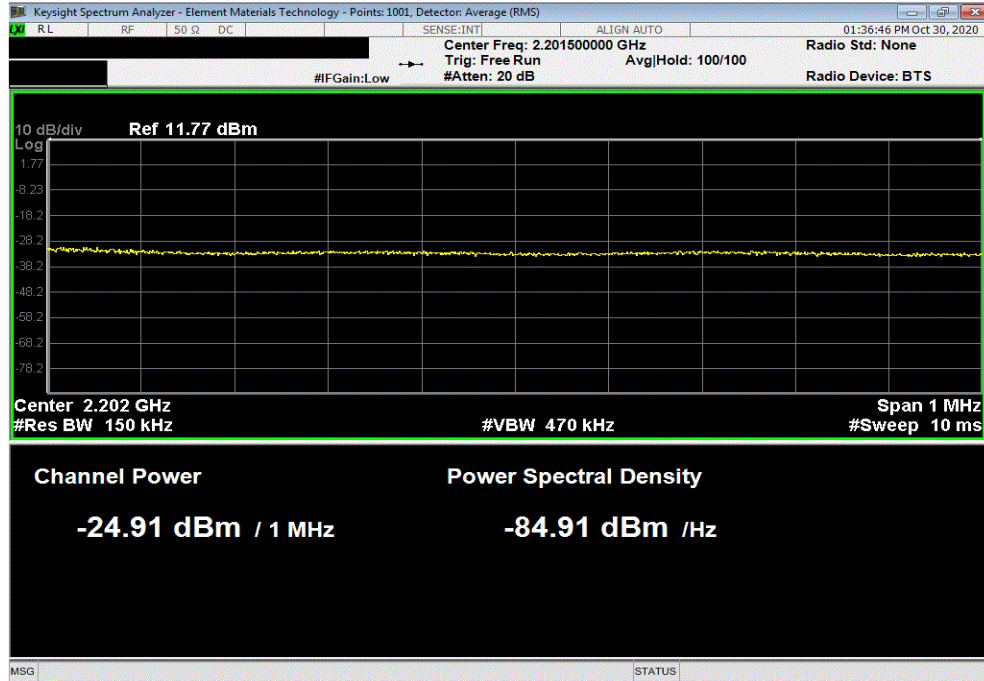


BAND EDGE COMPLIANCE PART 2 (15 MHz HIGH CHANNEL)

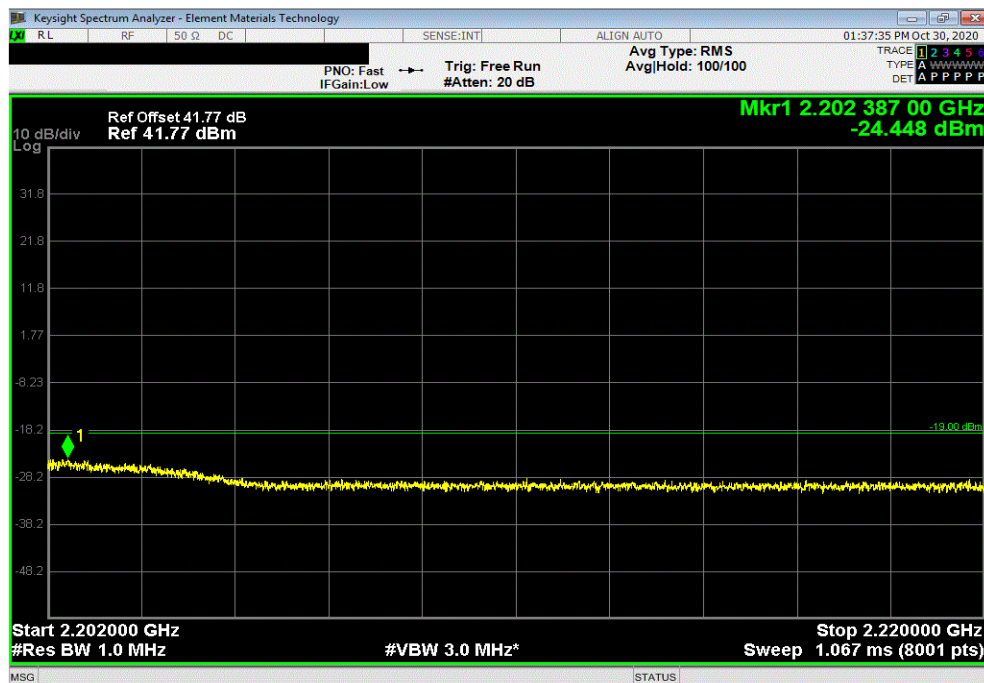


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Channel 2192.5 MHz						
Frequency				Value (dBm)	Limit (dBm)	Result
Range						
3				-24.91	-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Channel 2192.5 MHz						
Frequency				Value (dBm)	Limit (dBm)	Result
Range						
4				-24.45	-19	Pass



SPURIOUS CONDUCTED EMISSIONS



XMIT 2020.03.25.0

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	Agilent	N5173B	TIW	17-Jul-20	17-Jul-23
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	27-Feb-20	27-Feb-21
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Block - DC	Fairview Microwave	SD3464	ANA	25-Sep-20	25-Sep-21

TEST DESCRIPTION

The antenna port spurious emissions were measured at the RF output terminal of the EUT through 4 different attenuation configurations which continues through to the RF input of the spectrum analyzer. Analyzer plots utilizing a resolution bandwidth called out by the client's test plan were made for each modulation type from 9 KHz to 22 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than the limits also called out by the client's test plan shown below.

The measurement methods are detailed in KDB971168 D01v03 section 6 and ANSI C63.26-2015.

Per FCC 2.1057(a)(1) and RSS Gen 6.13, the upper level of measurement is the 10th harmonic of the highest fundamental frequency.

These measurements are for frequency band after the first 1.0 MHz bands immediately outside and adjacent to the frequency block.

Per section FCC 27.53(h)(1), RSS-139 6.6 and RSS-170 5.4 & 5.4.1.2, the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter. RF conducted emissions testing was performed on one port. The FRIJ antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the original certification report) and port 4 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The limit for the 9kHz to 150kHz frequency range was adjusted to -49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to -39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: -39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

SPURIOUS CONDUCTED EMISSIONS



TkTx 2020.10.20.0 BETA XMt 2020.03.25.0

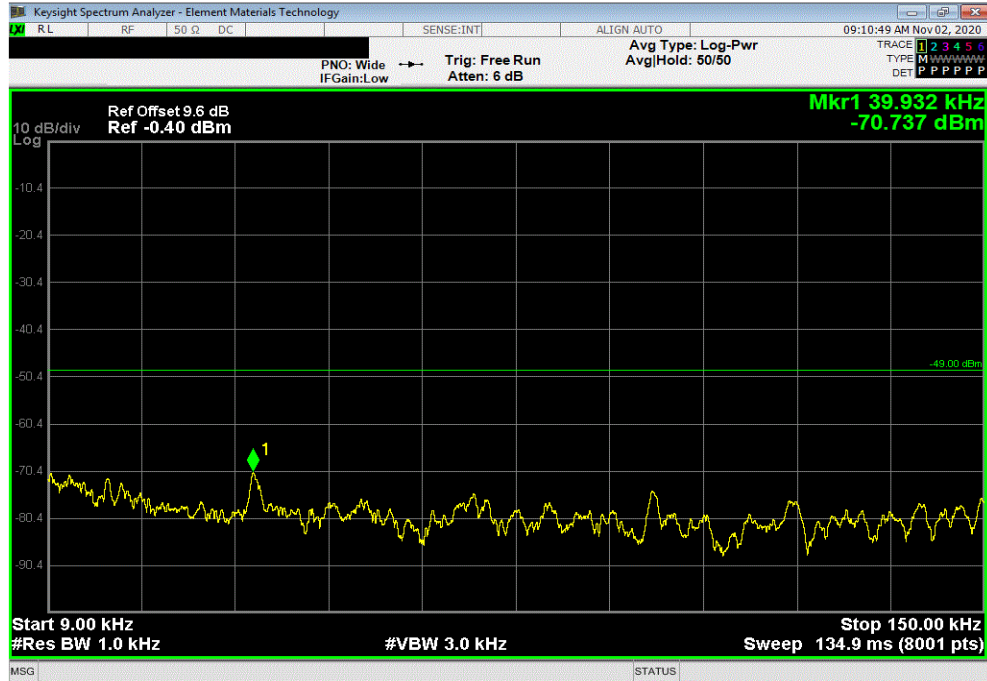
EUT: FRIJ		Work Order: NOKI0019	
Serial Number: YK160800020		Date: 2-Nov-20	
Customer: Nokia Solutions and Networks		Temperature: 22.3 °C	
Attendees: Mitchell Hill, John Rattanavong		Humidity: 36.9% RH	
Project: None		Barometric Pres.: 1026 mbar	
Tested by: Brandon Hobbs		Power: 54 VDC	Job Site: TX05
TEST SPECIFICATIONS		Test Method	
FCC 27:2020		ANSI C63.26:2015	
RSS-139:2015, RSS-170:2015		RSS-139:2015, RSS-170:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. Band n66 carriers are enabled at maximum power (40 watts/carrier).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1,2,3,4	Signature 	
		Frequency Range	Value (dBm) Limit (dBm) Result
Port 4, Band n66, 2110 MHz - 2200 MHz			
5 MHz Bandwidth			
QPSK Modulation			
	Mid Channel 2155 MHz	9 kHz - 150 kHz	-70.74 -49 Pass
	Mid Channel 2155 MHz	150 kHz - 20 MHz	-62.13 -39 Pass
	Mid Channel 2155 MHz	20 MHz - 3 GHz	-23.29 -19 Pass
	Mid Channel 2155 MHz	3 GHz - 10 GHz	-37.55 -19 Pass
	Mid Channel 2155 MHz	10 GHz - 18 GHz	-34.07 -19 Pass
	Mid Channel 2155 MHz	18 GHz - 22 GHz	-24.23 -19 Pass
16-QAM Modulation			
	Mid Channel 2155 MHz	9 kHz - 150 kHz	-71.18 -49 Pass
	Mid Channel 2155 MHz	150 kHz - 20 MHz	-63.55 -39 Pass
	Mid Channel 2155 MHz	20 MHz - 3 GHz	-23.66 -19 Pass
	Mid Channel 2155 MHz	3 GHz - 10 GHz	-38.53 -19 Pass
	Mid Channel 2155 MHz	10 GHz - 18 GHz	-34.68 -19 Pass
	Mid Channel 2155 MHz	18 GHz - 22 GHz	-24.87 -19 Pass
64-QAM Modulation			
	Mid Channel 2155 MHz	9 kHz - 150 kHz	-68.56 -49 Pass
	Mid Channel 2155 MHz	150 kHz - 20 MHz	-63.44 -39 Pass
	Mid Channel 2155 MHz	20 MHz - 3 GHz	-23.30 -19 Pass
	Mid Channel 2155 MHz	3 GHz - 10 GHz	-37.38 -19 Pass
	Mid Channel 2155 MHz	10 GHz - 18 GHz	-34.92 -19 Pass
	Mid Channel 2155 MHz	18 GHz - 22 GHz	-24.42 -19 Pass
256-QAM Modulation			
	Mid Channel 2155 MHz	9 kHz - 150 kHz	-69.95 -49 Pass
	Mid Channel 2155 MHz	150 kHz - 20 MHz	-63.06 -39 Pass
	Mid Channel 2155 MHz	20 MHz - 3 GHz	-24.20 -19 Pass
	Mid Channel 2155 MHz	3 GHz - 10 GHz	-38.44 -19 Pass
	Mid Channel 2155 MHz	10 GHz - 18 GHz	-34.26 -19 Pass
	Mid Channel 2155 MHz	18 GHz - 22 GHz	-24.58 -19 Pass
10 MHz Bandwidth			
256-QAM Modulation			
	Mid Channel 2155 MHz	9 kHz - 150 kHz	-71.05 -49 Pass
	Mid Channel 2155 MHz	150 kHz - 20 MHz	-60.60 -39 Pass
	Mid Channel 2155 MHz	20 MHz - 3 GHz	-24.42 -19 Pass
	Mid Channel 2155 MHz	3 GHz - 10 GHz	-38.08 -19 Pass
	Mid Channel 2155 MHz	10 GHz - 18 GHz	-34.68 -19 Pass
	Mid Channel 2155 MHz	18 GHz - 22 GHz	-24.30 -19 Pass
15 MHz Bandwidth			
256-QAM Modulation			
	Mid Channel 2155 MHz	9 kHz - 150 kHz	-70.36 -49 Pass
	Mid Channel 2155 MHz	150 kHz - 20 MHz	-59.98 -39 Pass
	Mid Channel 2155 MHz	20 MHz - 3 GHz	-24.67 -19 Pass
	Mid Channel 2155 MHz	3 GHz - 10 GHz	-38.32 -19 Pass
	Mid Channel 2155 MHz	10 GHz - 18 GHz	-34.78 -19 Pass
	Mid Channel 2155 MHz	18 GHz - 22 GHz	-24.66 -19 Pass
20 MHz Bandwidth			
256-QAM Modulation			
	Mid Channel 2155 MHz	9 kHz - 150 kHz	-68.60 -49 Pass
	Mid Channel 2155 MHz	150 kHz - 20 MHz	-60.96 -39 Pass
	Mid Channel 2155 MHz	20 MHz - 3 GHz	-24.03 -19 Pass
	Mid Channel 2155 MHz	3 GHz - 10 GHz	-38.29 -19 Pass
	Mid Channel 2155 MHz	10 GHz - 18 GHz	-34.81 -19 Pass
	Mid Channel 2155 MHz	18 GHz - 22 GHz	-24.45 -19 Pass

SPURIOUS CONDUCTED EMISSIONS

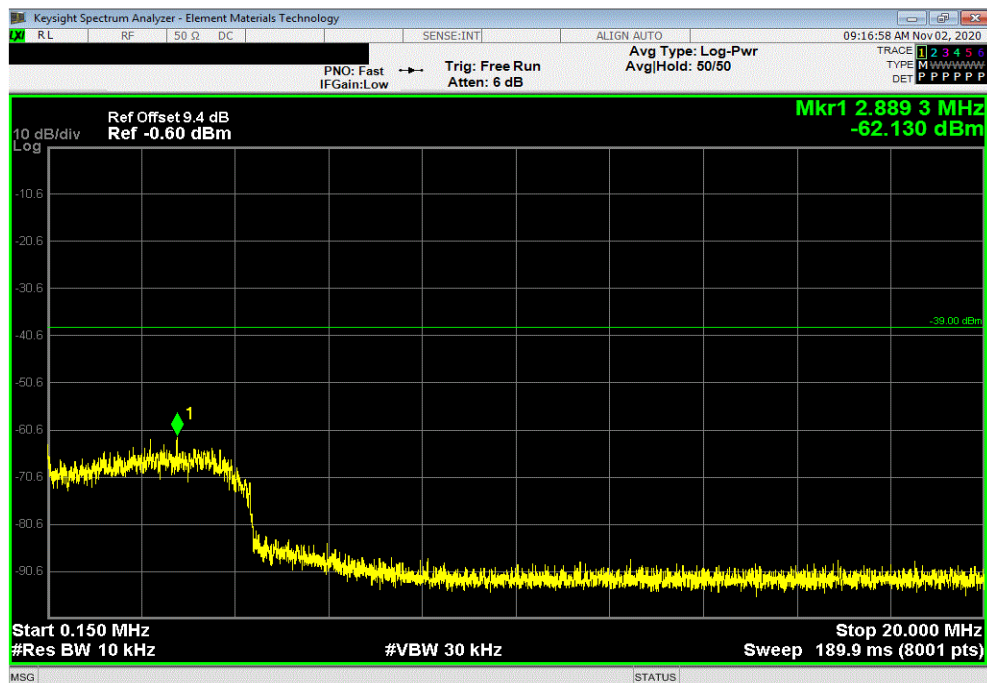


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	
Range					
9 kHz - 150 kHz		-70.74		-49	
				Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	
Range					
150 kHz - 20 MHz		-62.13		-39	
				Pass	

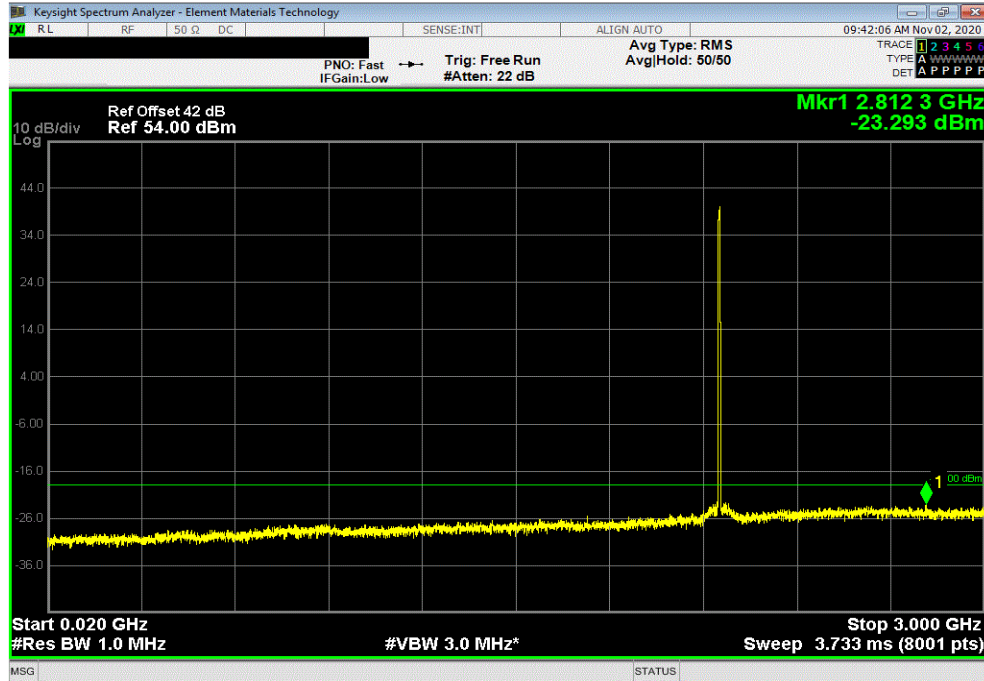


SPURIOUS CONDUCTED EMISSIONS

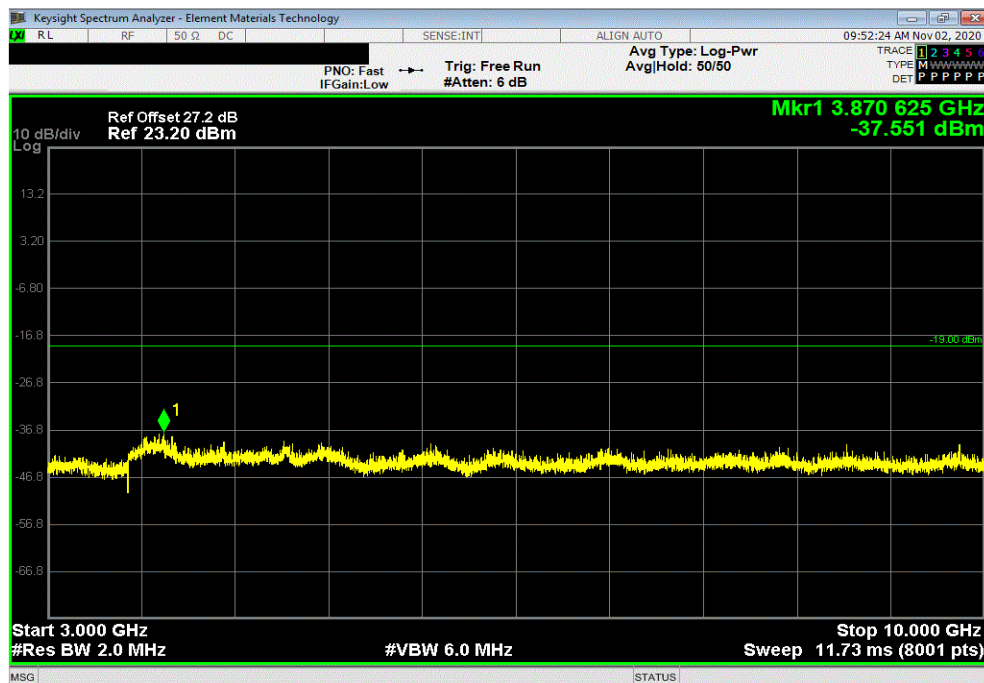


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
20 MHz - 3 GHz		-23.29		-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
3 GHz - 10 GHz		-37.55		-19	Pass

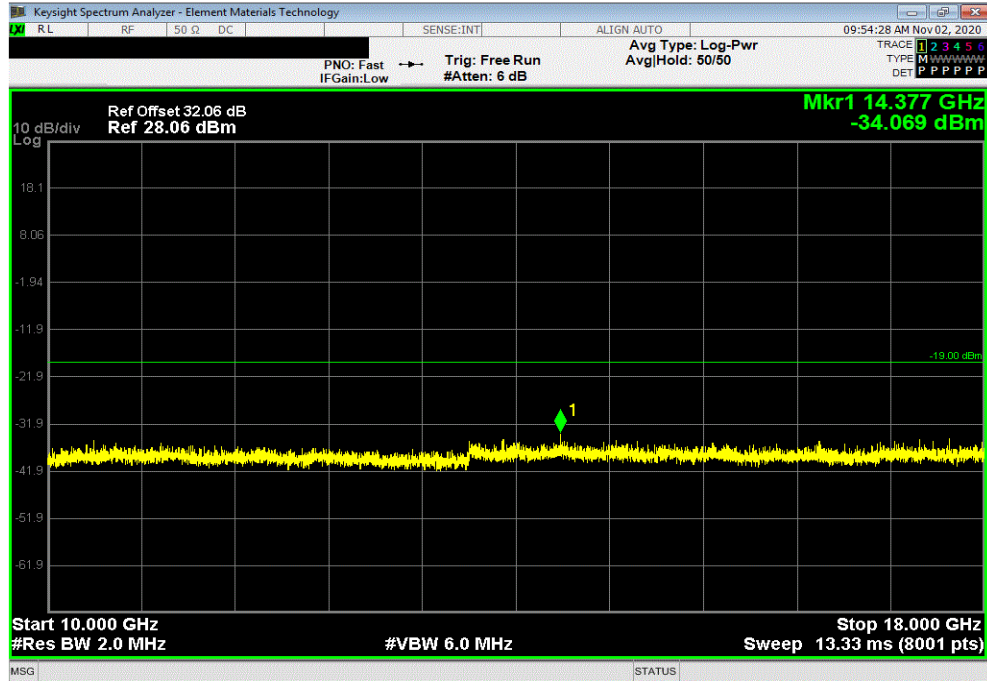


SPURIOUS CONDUCTED EMISSIONS

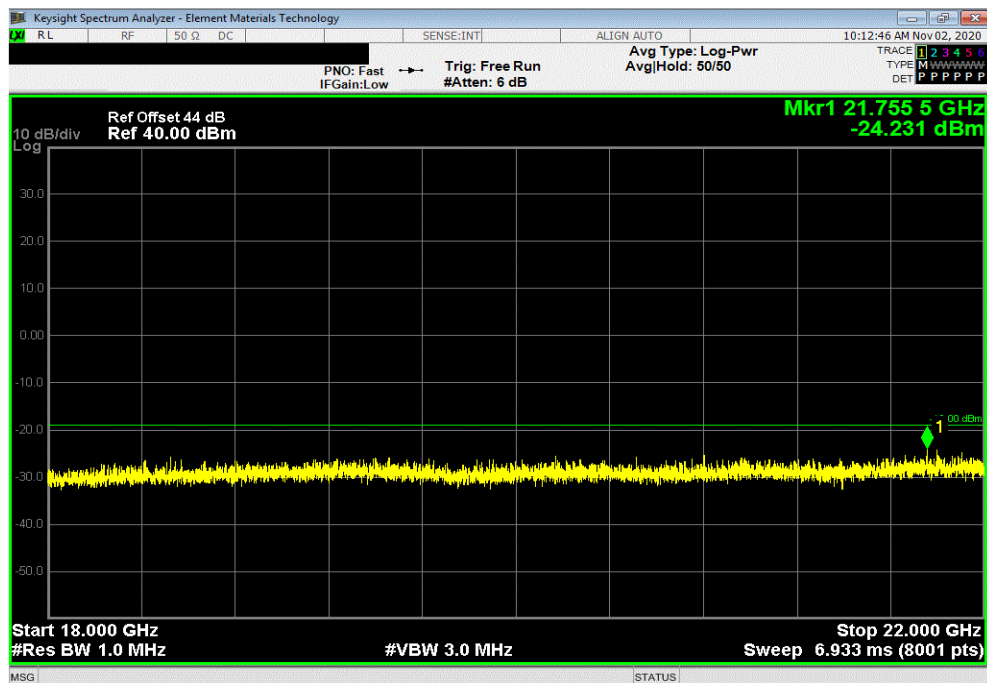


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
10 GHz - 18 GHz		-34.07	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
18 GHz - 22 GHz		-24.23	-19	Pass	

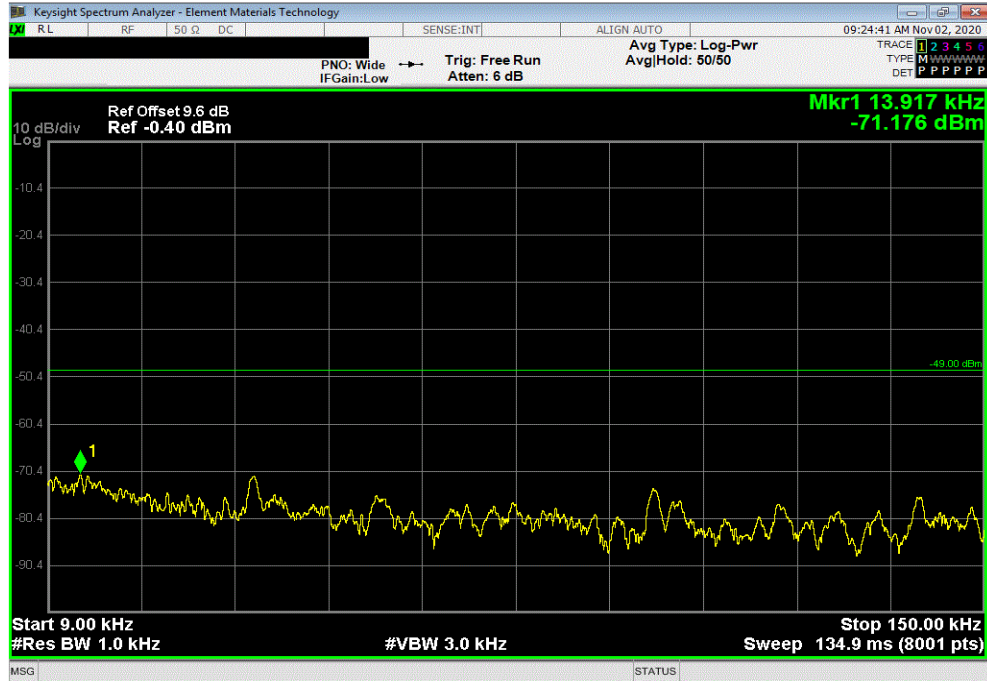


SPURIOUS CONDUCTED EMISSIONS

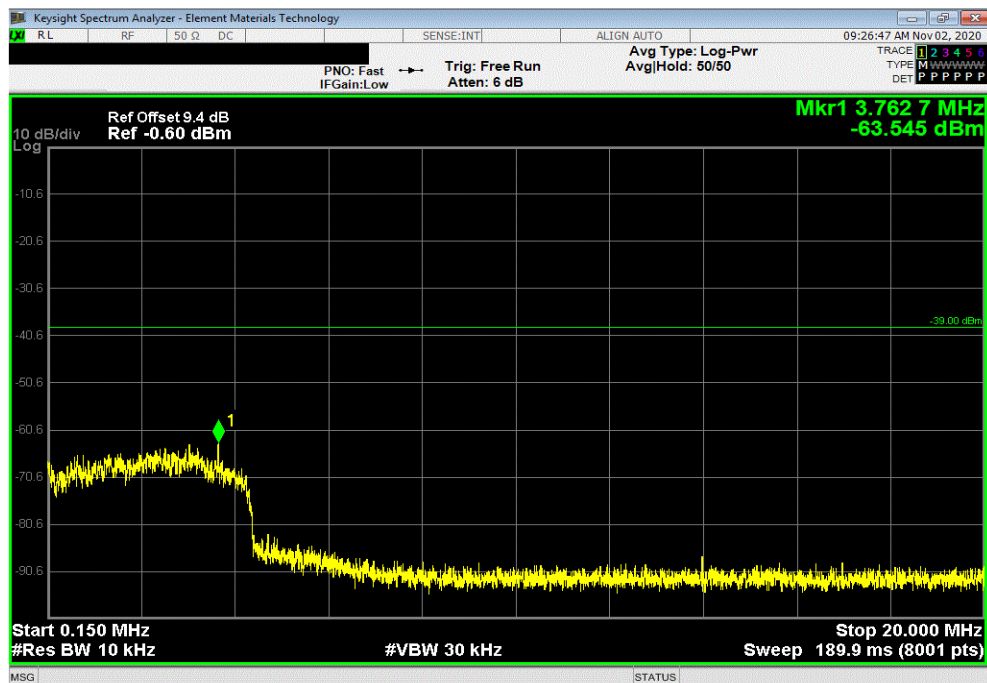


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	
Range					
9 kHz - 150 kHz		-71.18		-49	
				Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	
Range					
150 kHz - 20 MHz		-63.55		-39	
				Pass	

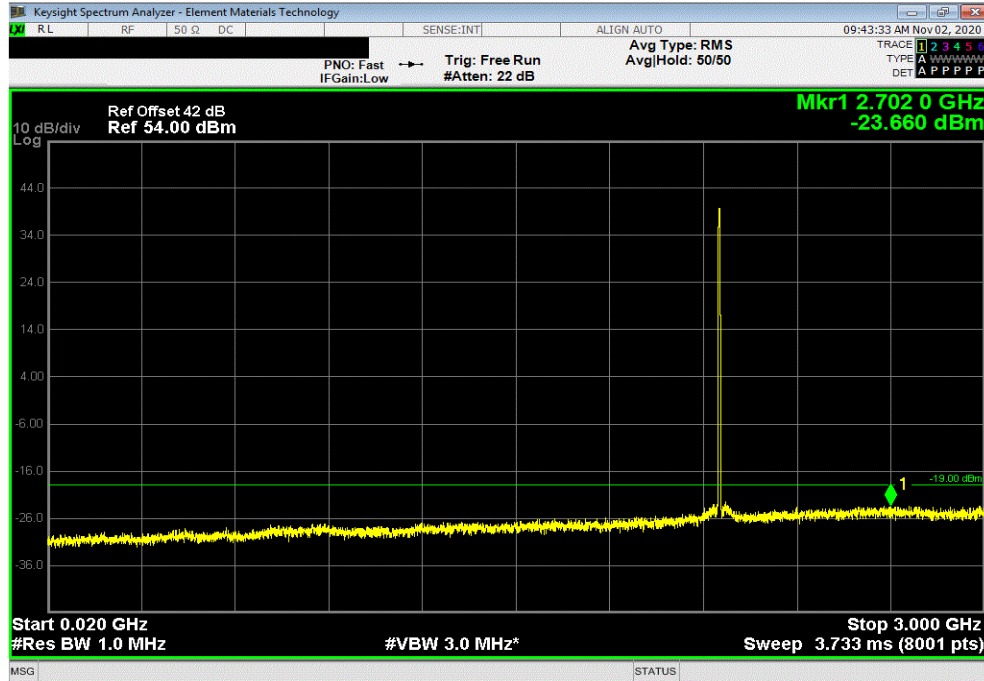


SPURIOUS CONDUCTED EMISSIONS

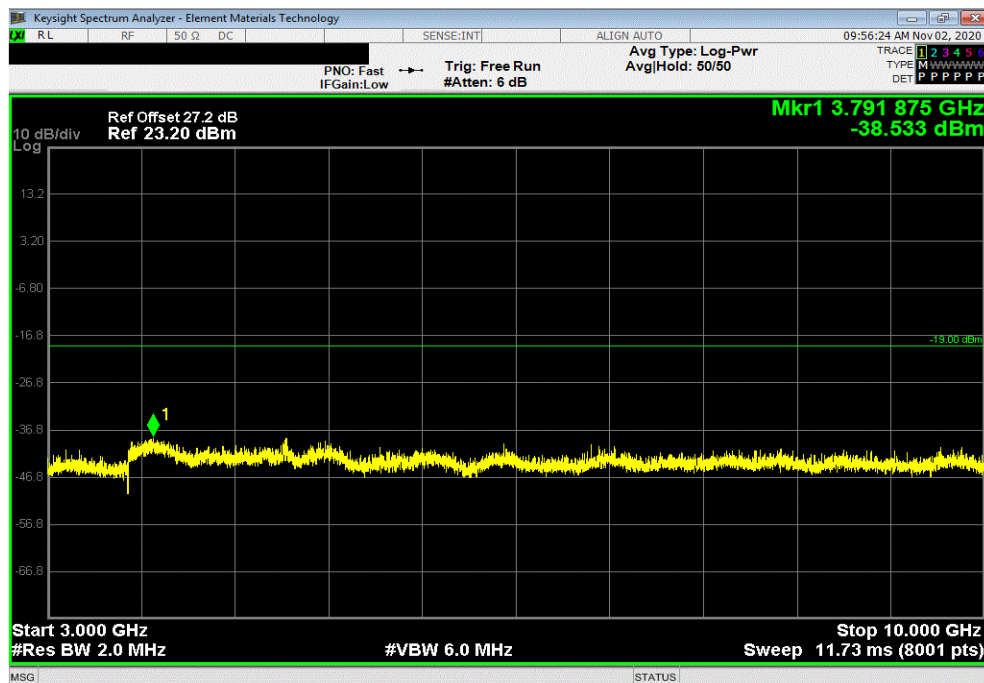


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
20 MHz - 3 GHz		-23.66	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
3 GHz - 10 GHz		-38.53	-19	Pass	

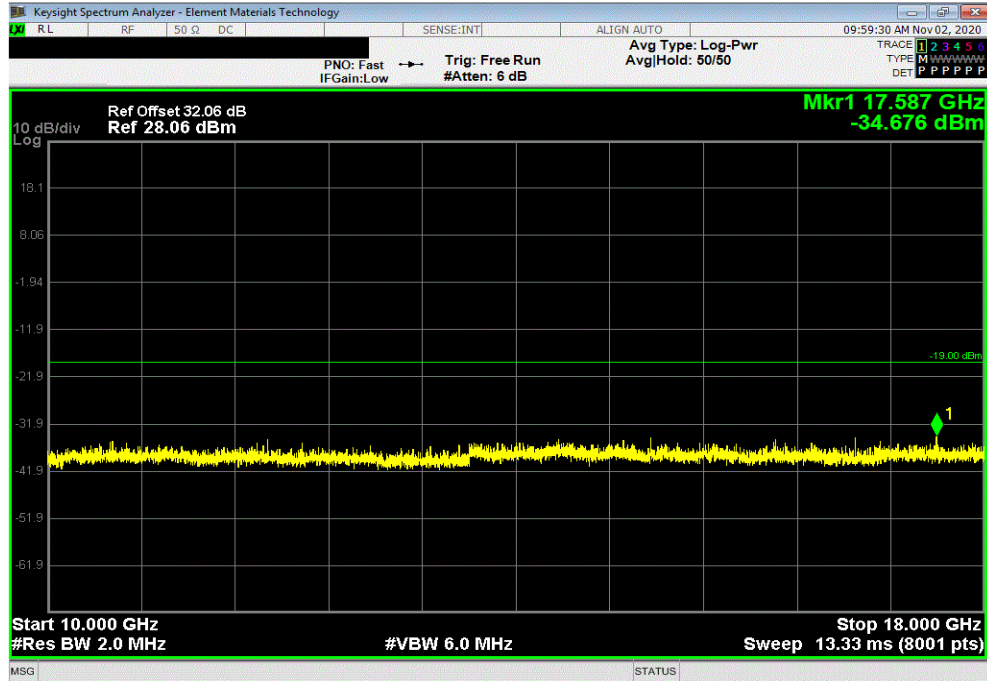


SPURIOUS CONDUCTED EMISSIONS

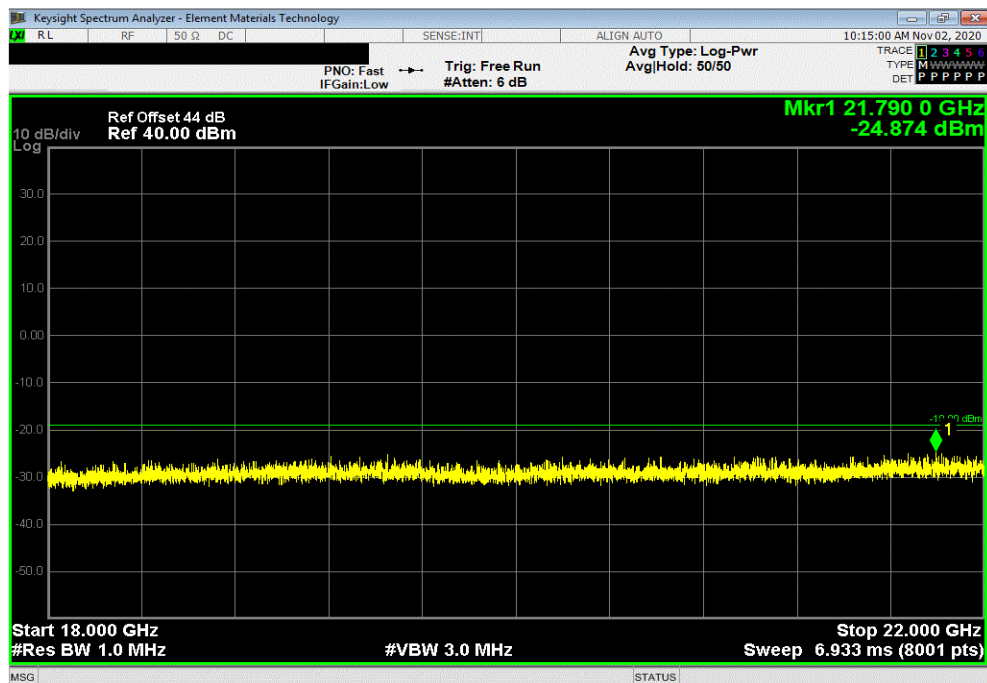


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
10 GHz - 18 GHz	-34.68	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
18 GHz - 22 GHz	-24.87	-19	Pass	

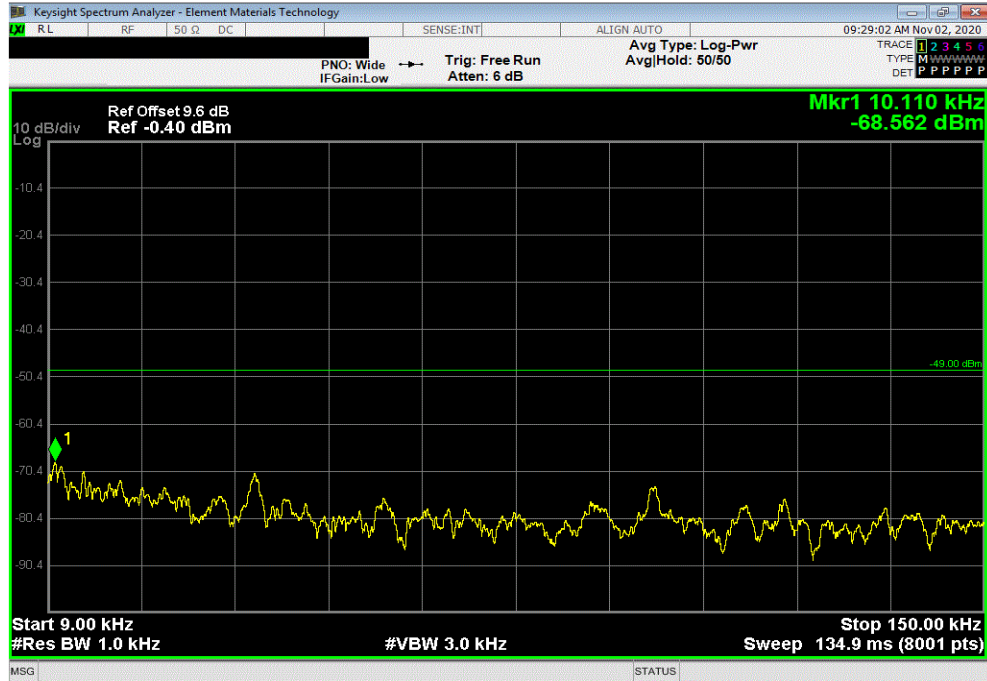


SPURIOUS CONDUCTED EMISSIONS

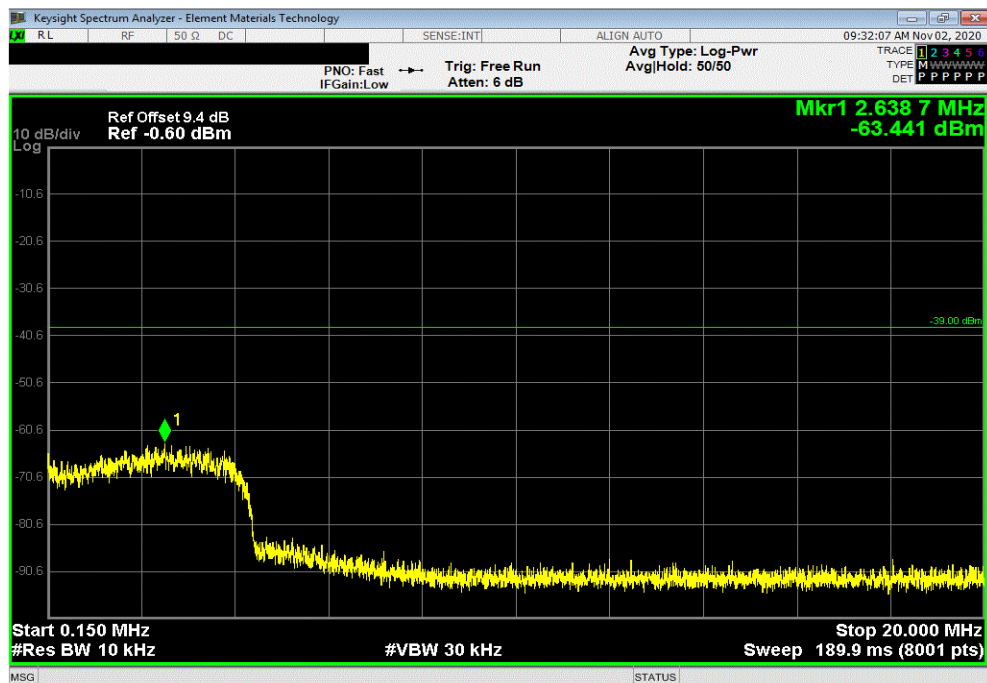


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
9 kHz - 150 kHz		-68.56		-49	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
150 kHz - 20 MHz		-63.44		-39	Pass

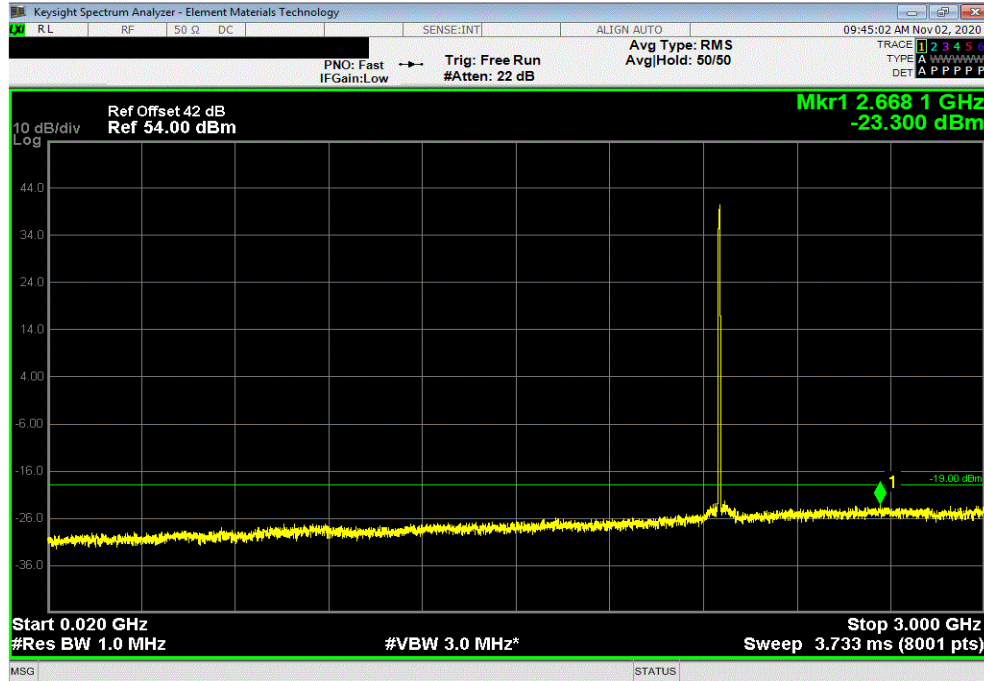


SPURIOUS CONDUCTED EMISSIONS

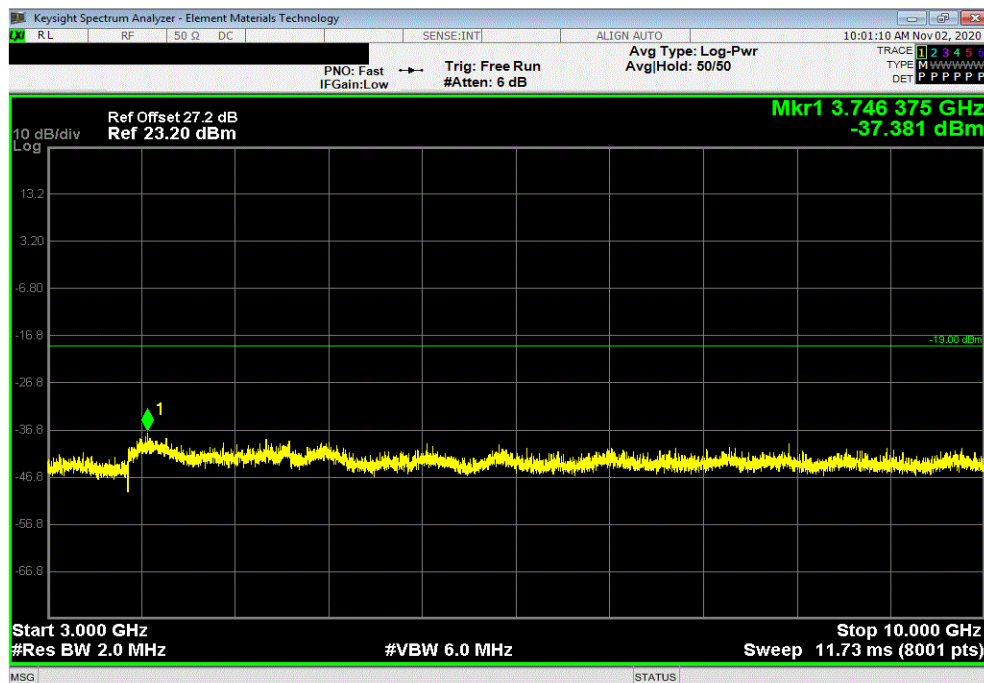


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
20 MHz - 3 GHz		-23.3	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
3 GHz - 10 GHz		-37.38	-19	Pass	

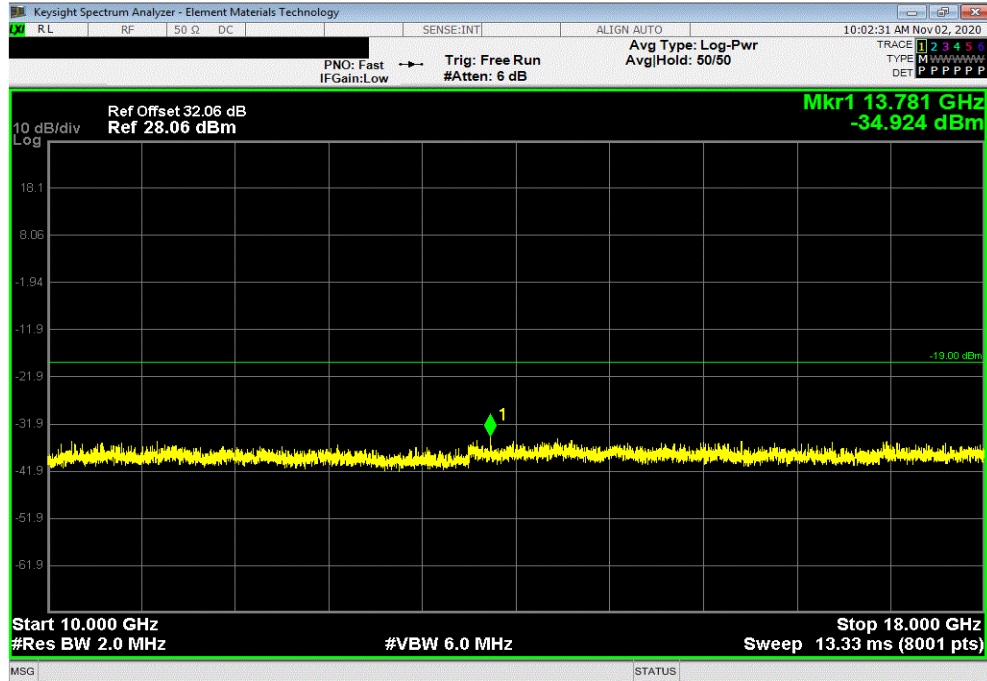


SPURIOUS CONDUCTED EMISSIONS

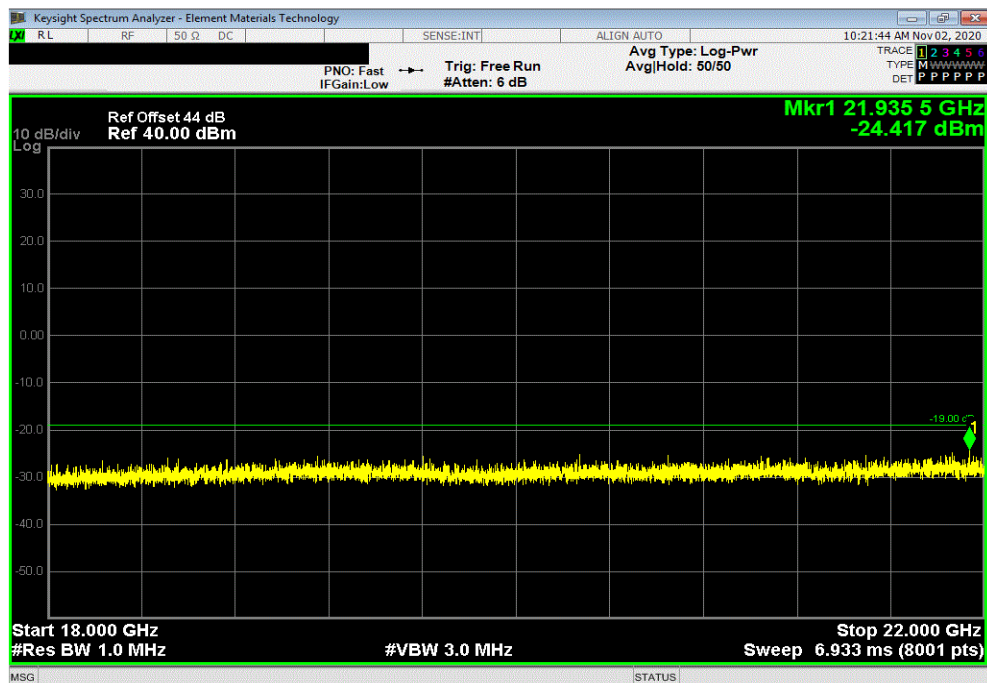


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
10 GHz - 18 GHz		-34.92	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
18 GHz - 22 GHz		-24.42	-19	Pass	

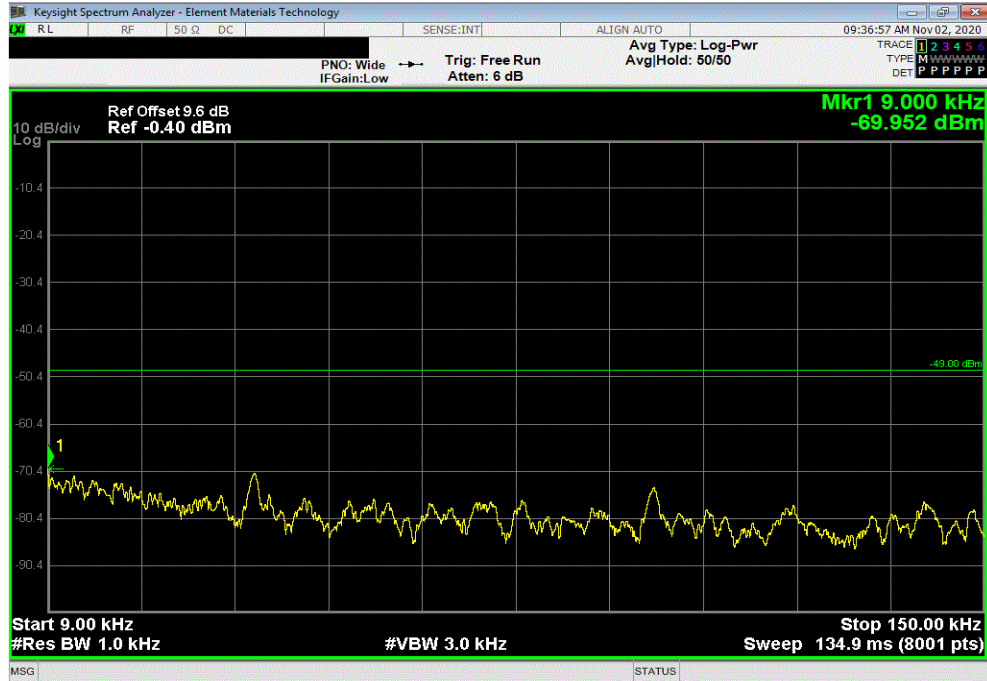


SPURIOUS CONDUCTED EMISSIONS

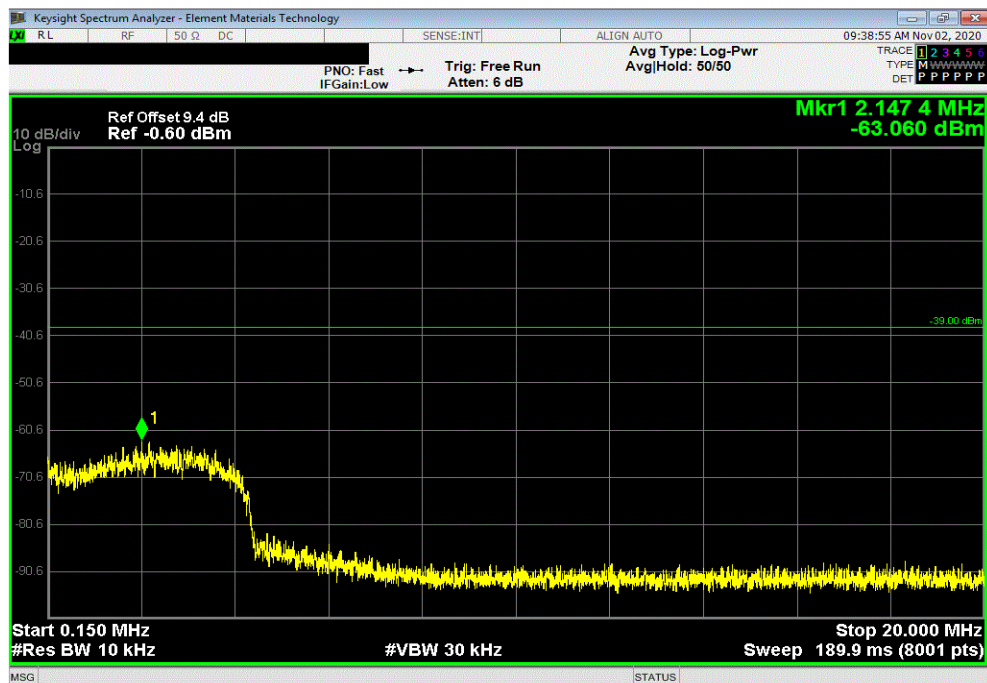


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
9 kHz - 150 kHz		-69.95	-49	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
150 kHz - 20 MHz		-63.06	-39	Pass	

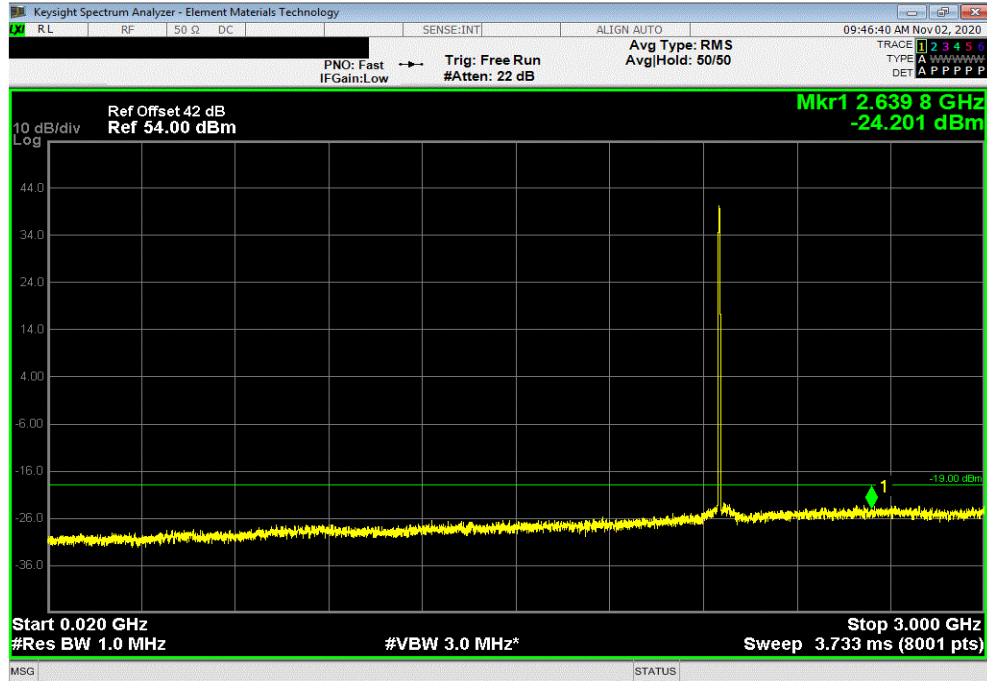


SPURIOUS CONDUCTED EMISSIONS

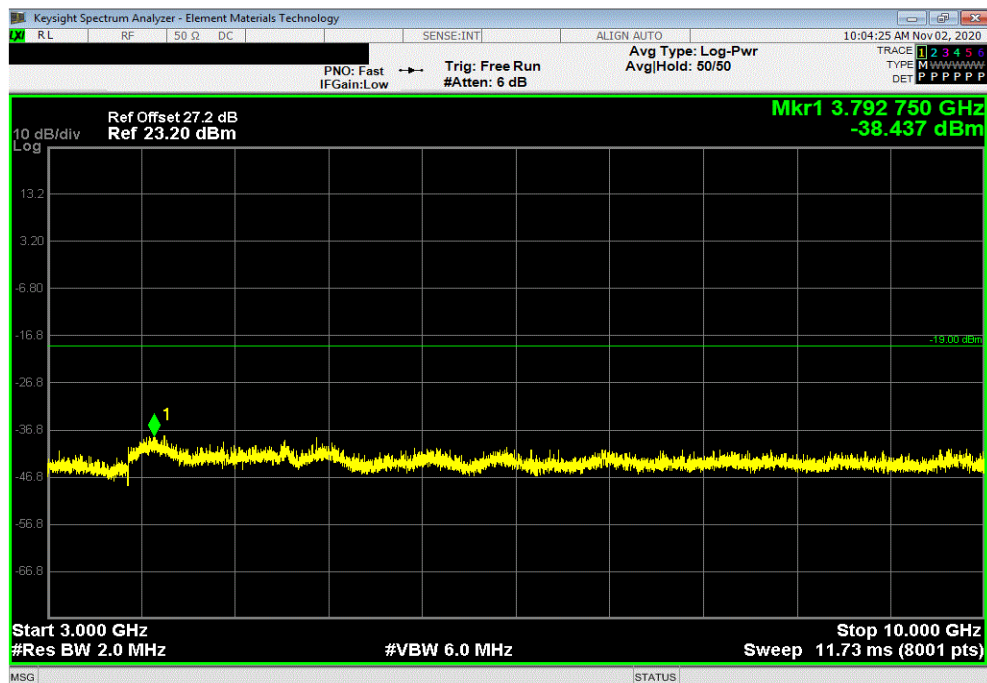


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
20 MHz - 3 GHz		-24.2	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
3 GHz - 10 GHz		-38.44	-19	Pass	

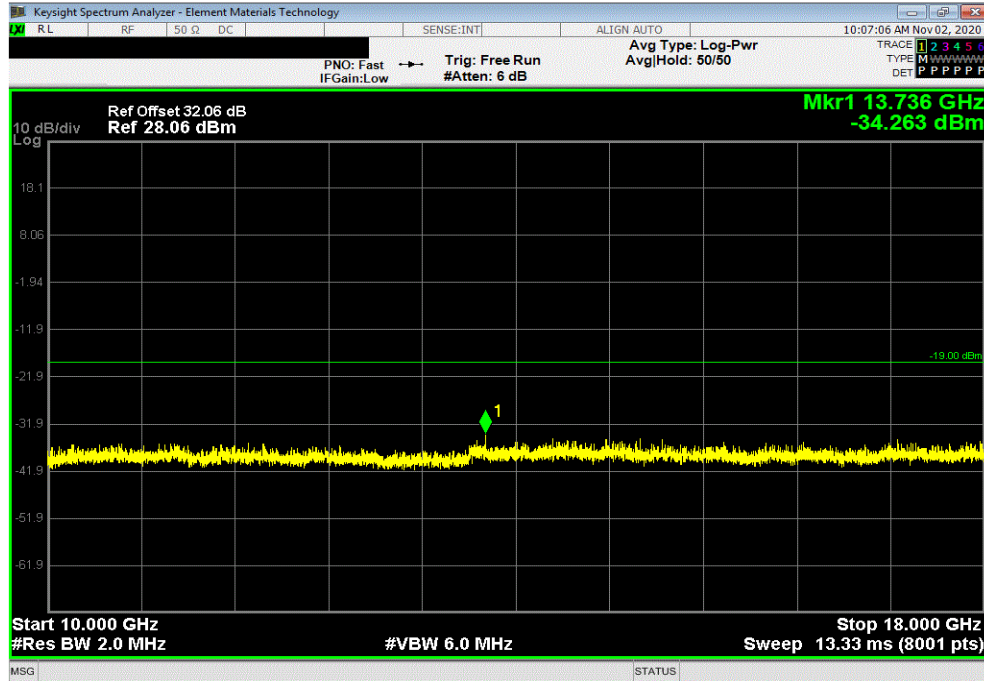


SPURIOUS CONDUCTED EMISSIONS

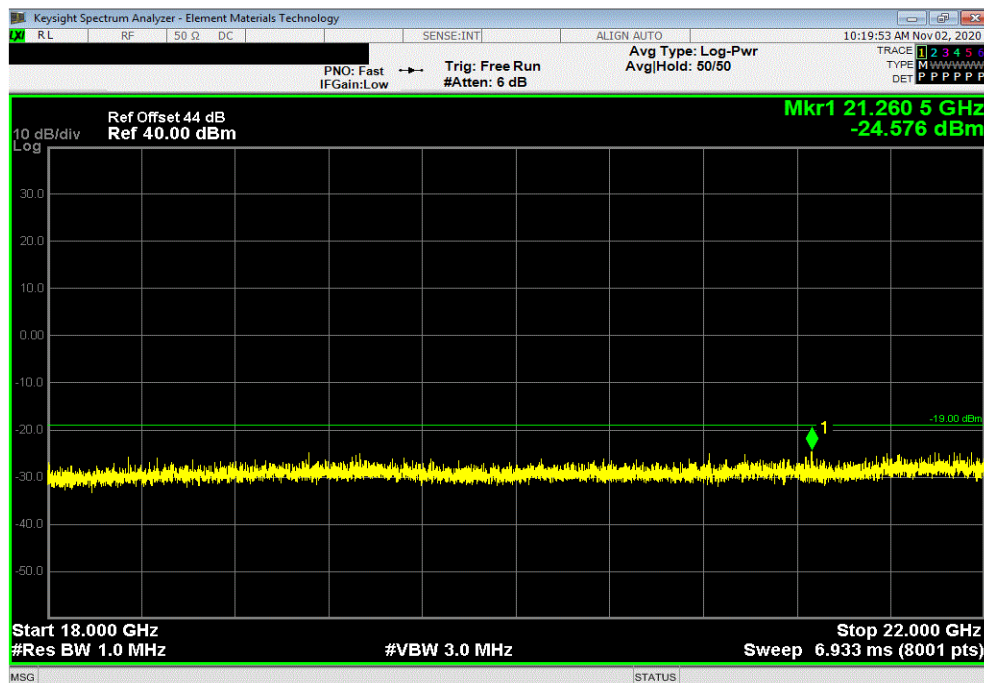


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
10 GHz - 18 GHz		-34.26	-19	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
18 GHz - 22 GHz		-24.58	-19	Pass

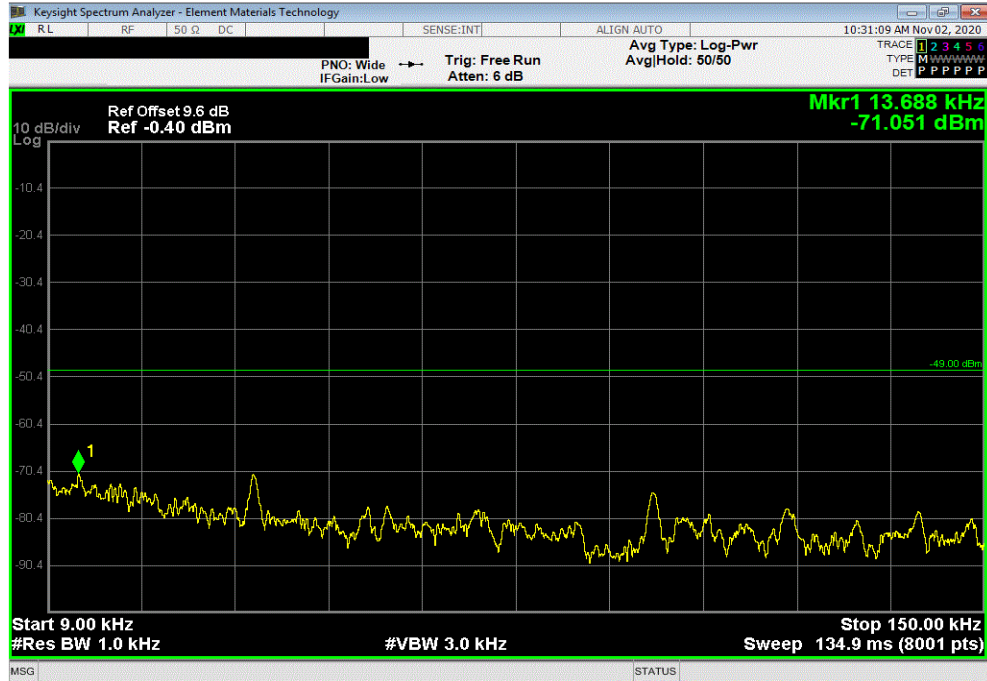


SPURIOUS CONDUCTED EMISSIONS

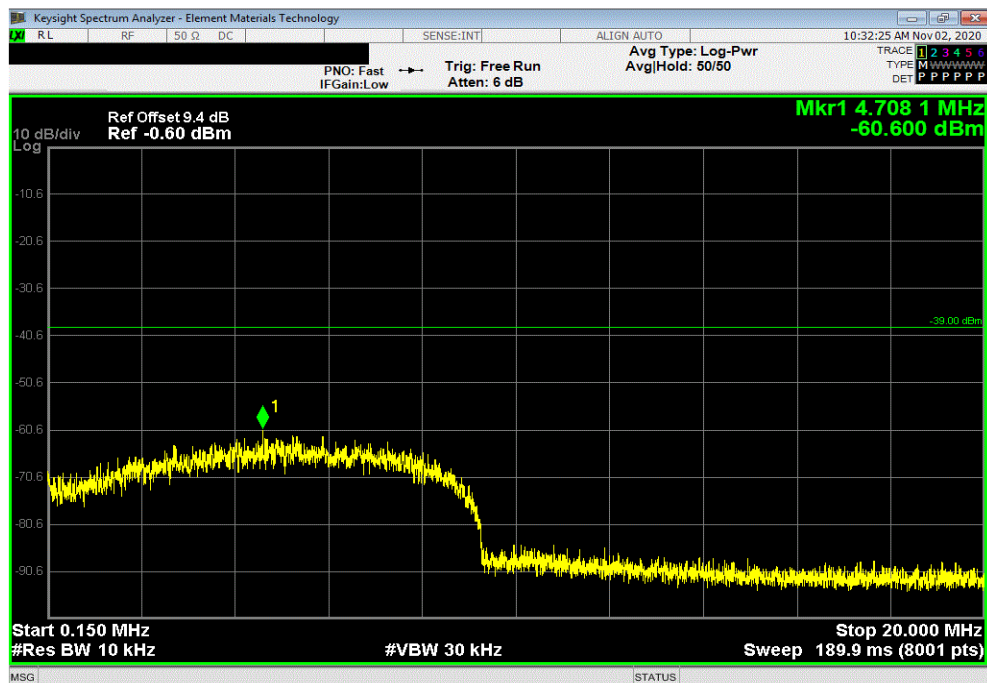


TMTx 2020.10.20.0 BETA XMIT 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	
Range				Result	
9 kHz - 150 kHz		-71.05		-49	
				Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	
Range				Result	
150 kHz - 20 MHz		-60.6		-39	
				Pass	

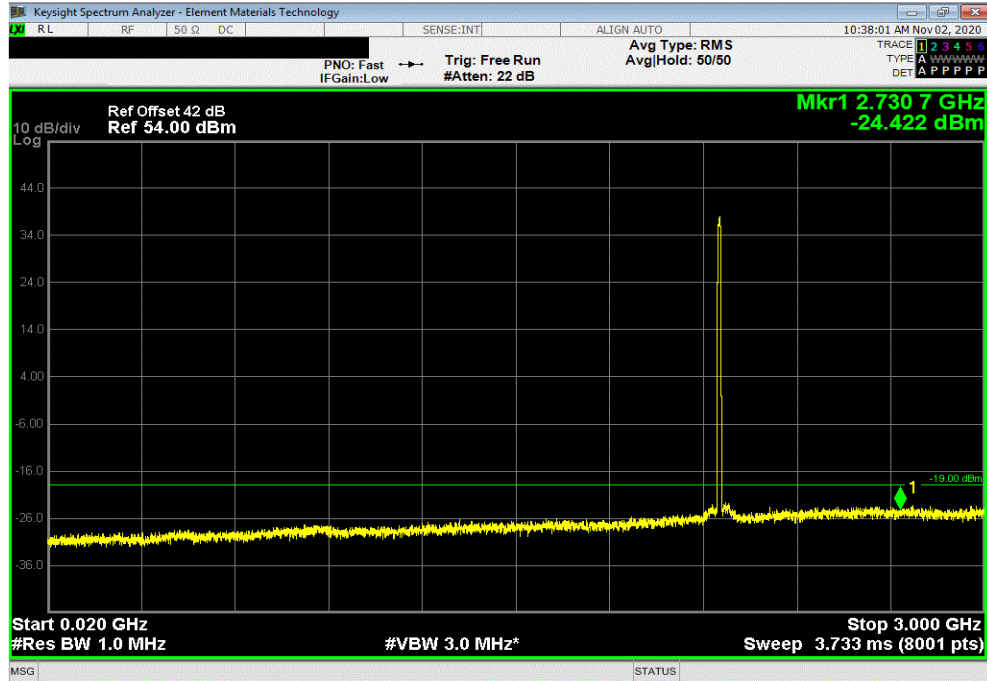


SPURIOUS CONDUCTED EMISSIONS

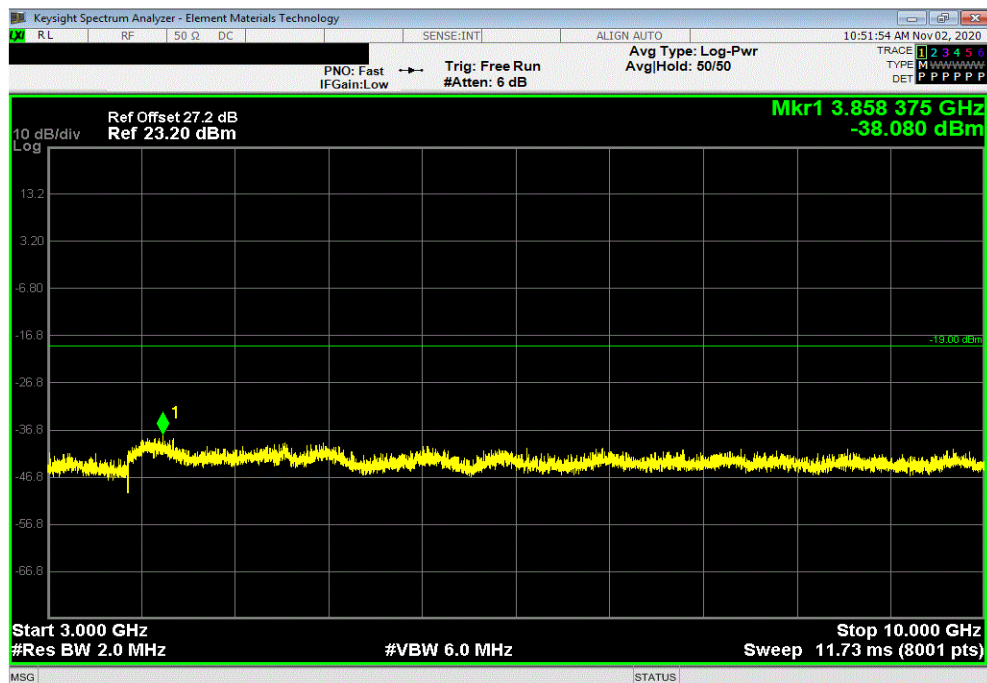


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
20 MHz - 3 GHz		-24.42	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
3 GHz - 10 GHz		-38.08	-19	Pass	

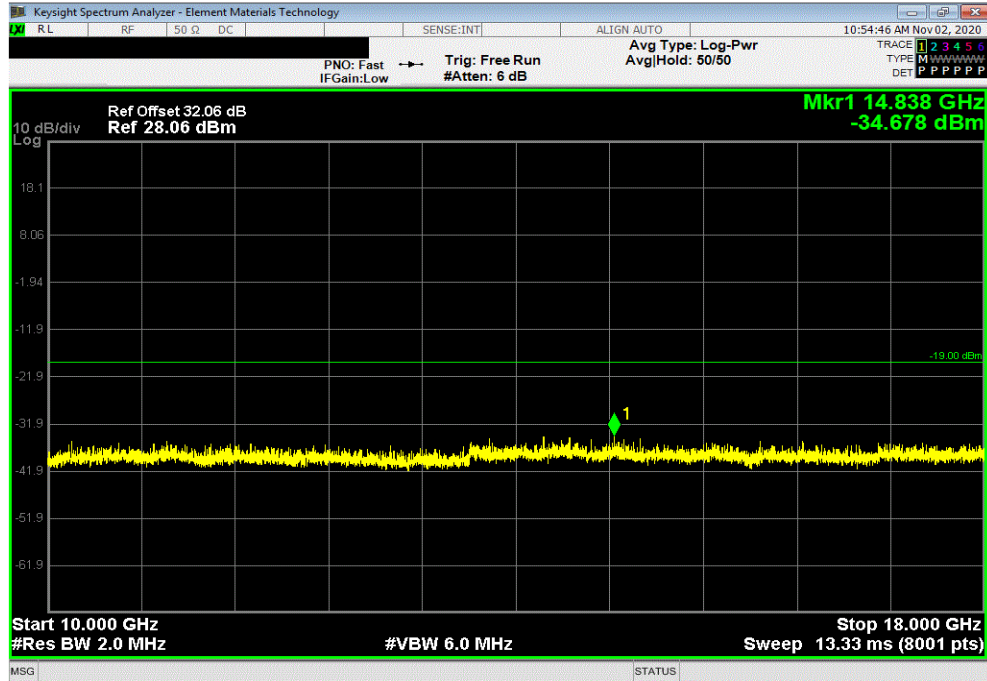


SPURIOUS CONDUCTED EMISSIONS

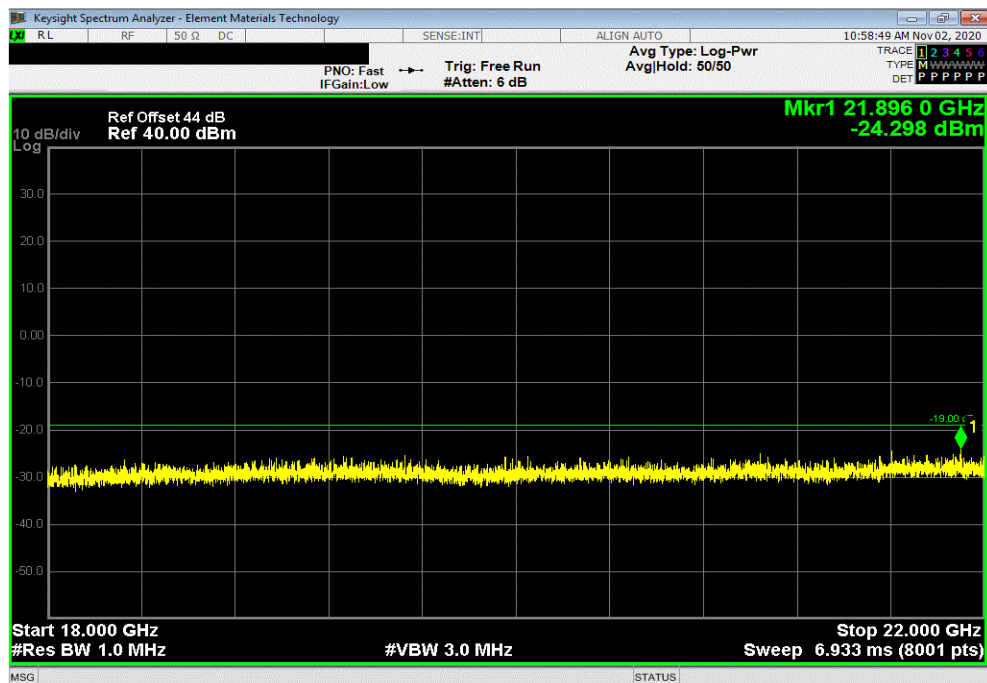


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
10 GHz - 18 GHz	-34.68	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
18 GHz - 22 GHz	-24.3	-19	Pass	

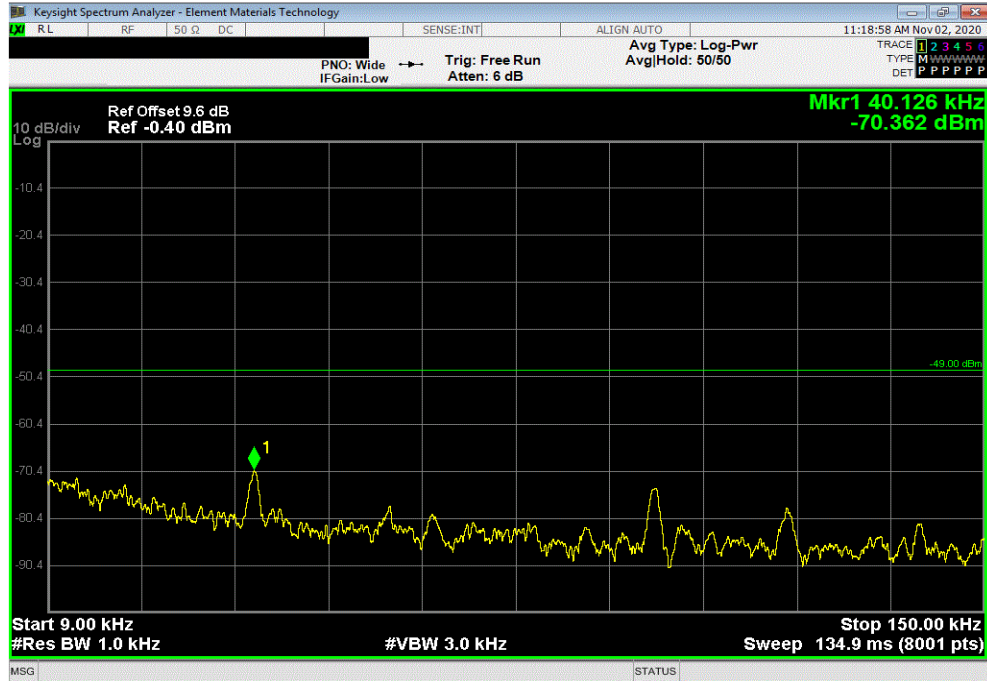


SPURIOUS CONDUCTED EMISSIONS

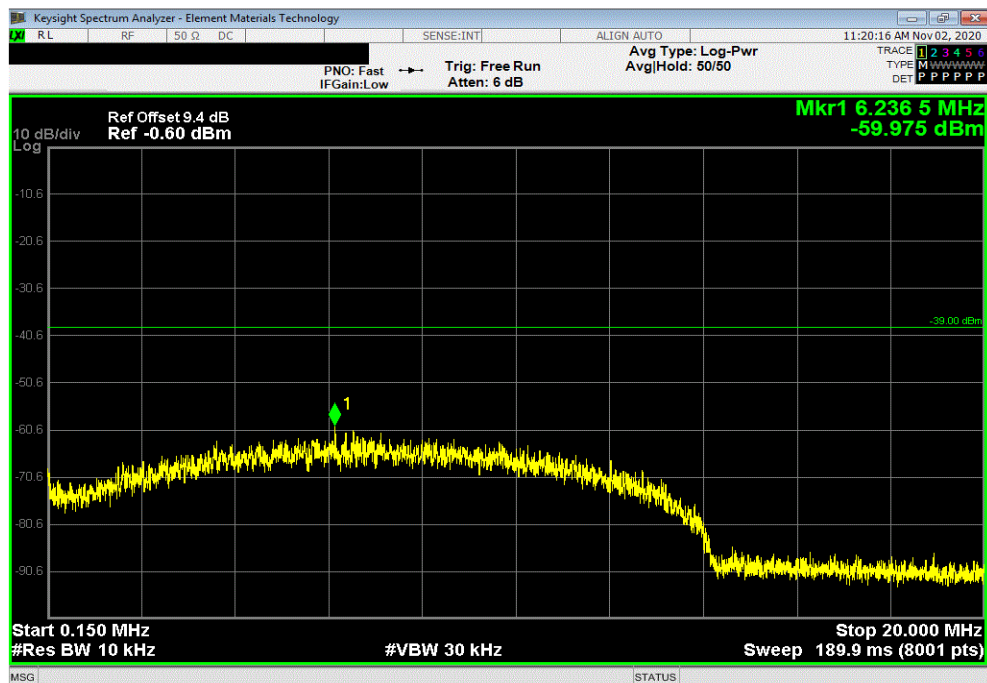


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
9 kHz - 150 kHz		-70.36		-49	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
150 kHz - 20 MHz		-59.98		-39	Pass

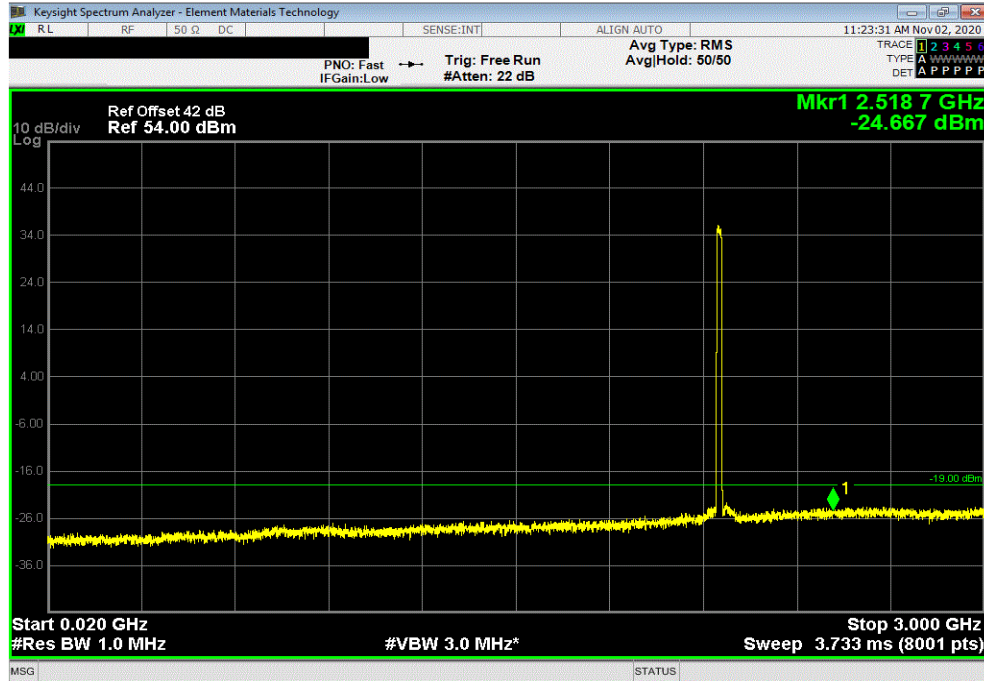


SPURIOUS CONDUCTED EMISSIONS

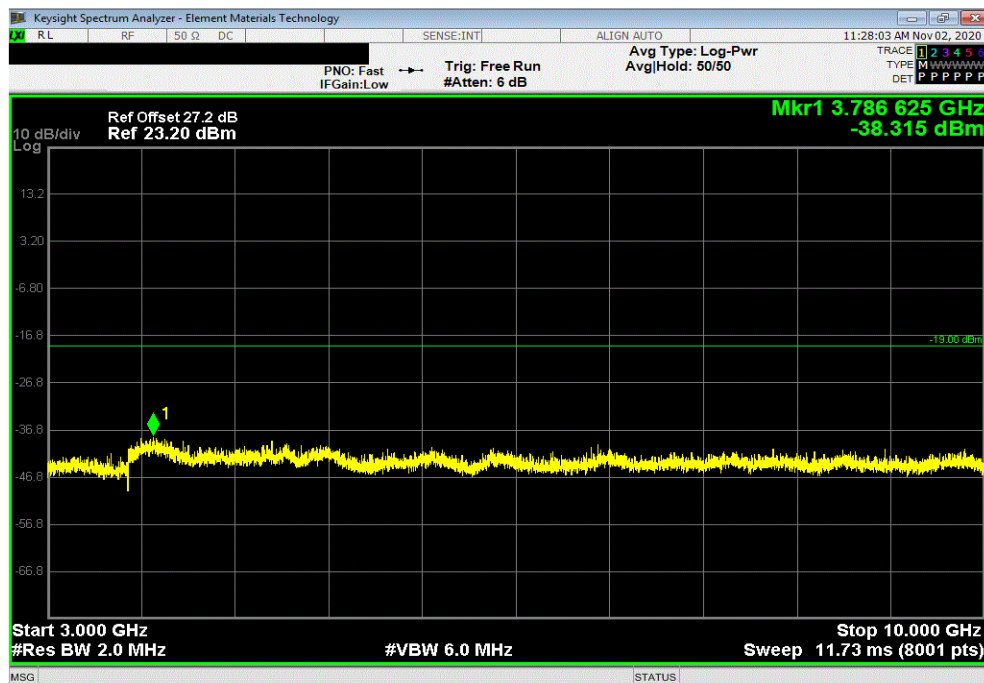


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
20 MHz - 3 GHz		-24.67	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
3 GHz - 10 GHz		-38.32	-19	Pass	

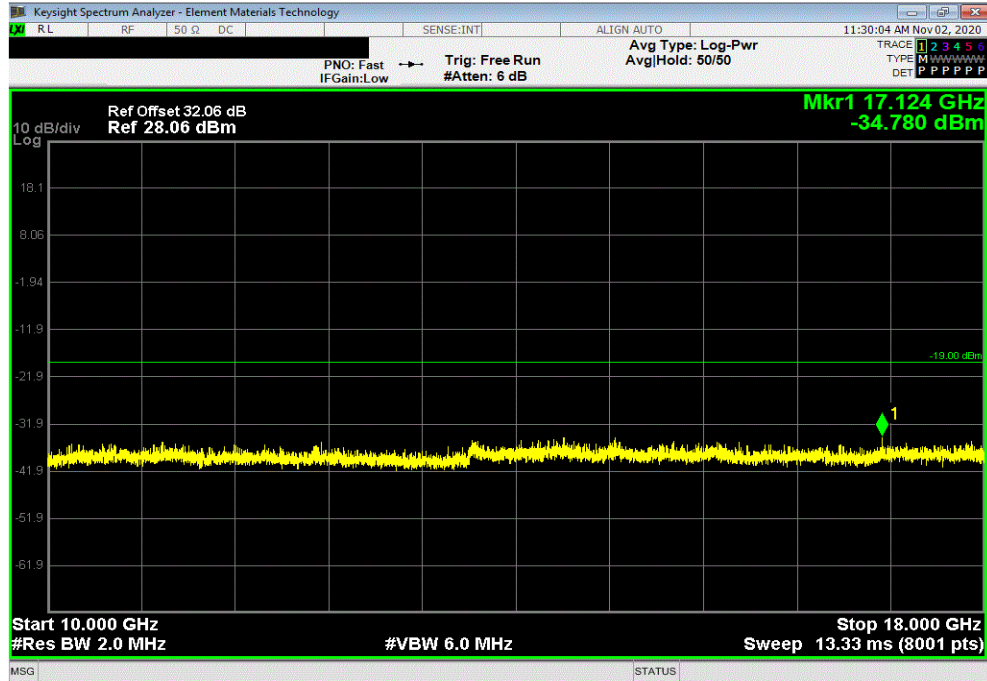


SPURIOUS CONDUCTED EMISSIONS

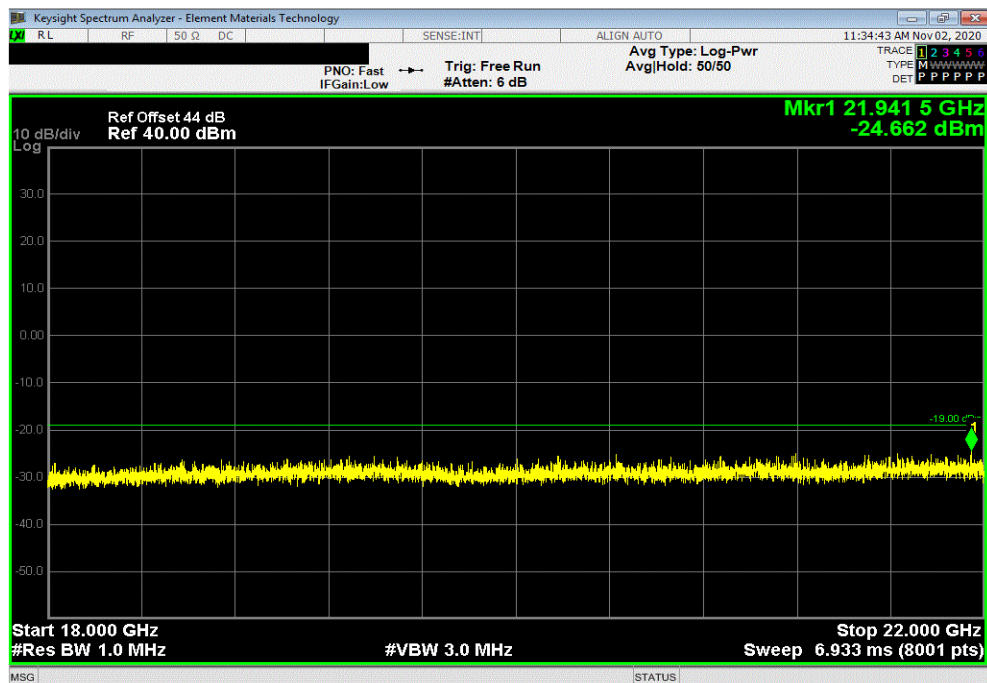


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
10 GHz - 18 GHz	-34.78	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
18 GHz - 22 GHz	-24.66	-19	Pass	

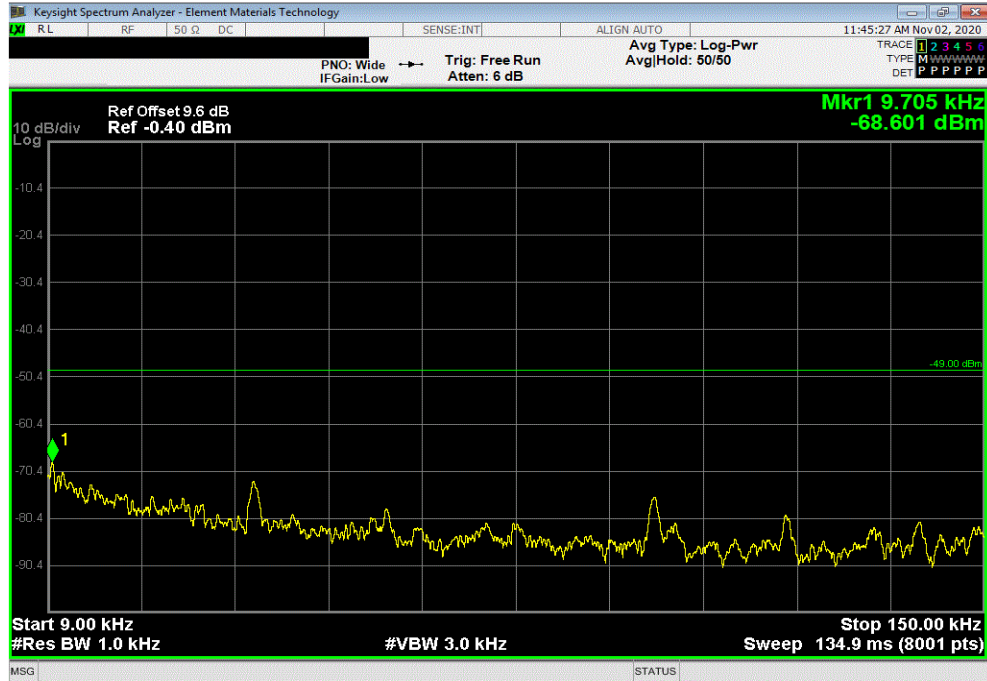


SPURIOUS CONDUCTED EMISSIONS

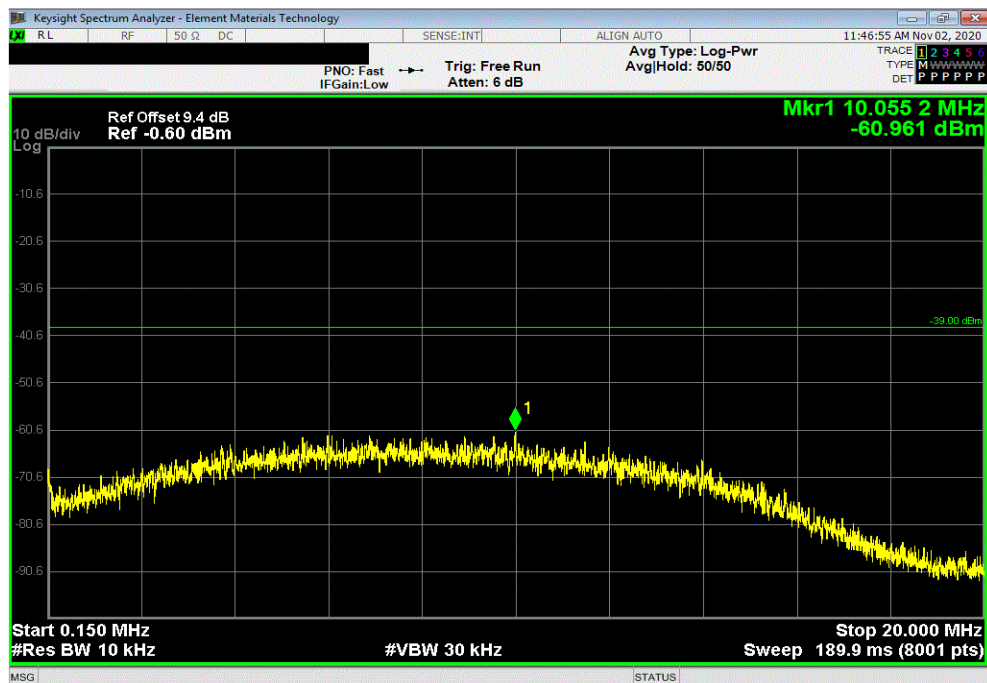


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
9 kHz - 150 kHz		-68.6		-49	Pass



Port 4, Band n66, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency		Value (dBm)		Limit (dBm)	Result
Range					
150 kHz - 20 MHz		-60.96		-39	Pass

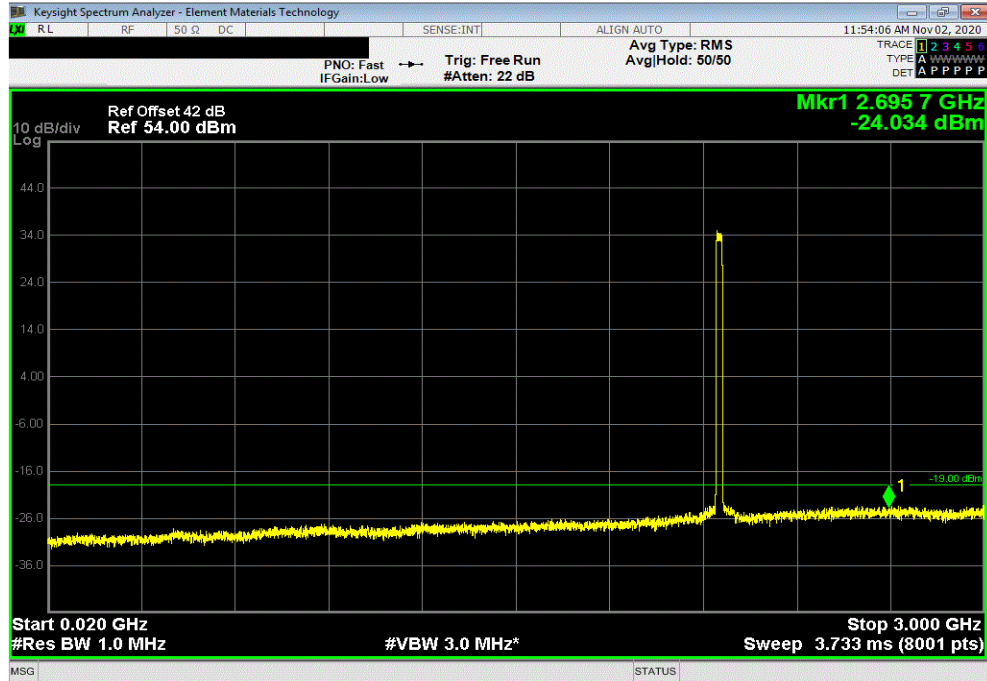


SPURIOUS CONDUCTED EMISSIONS

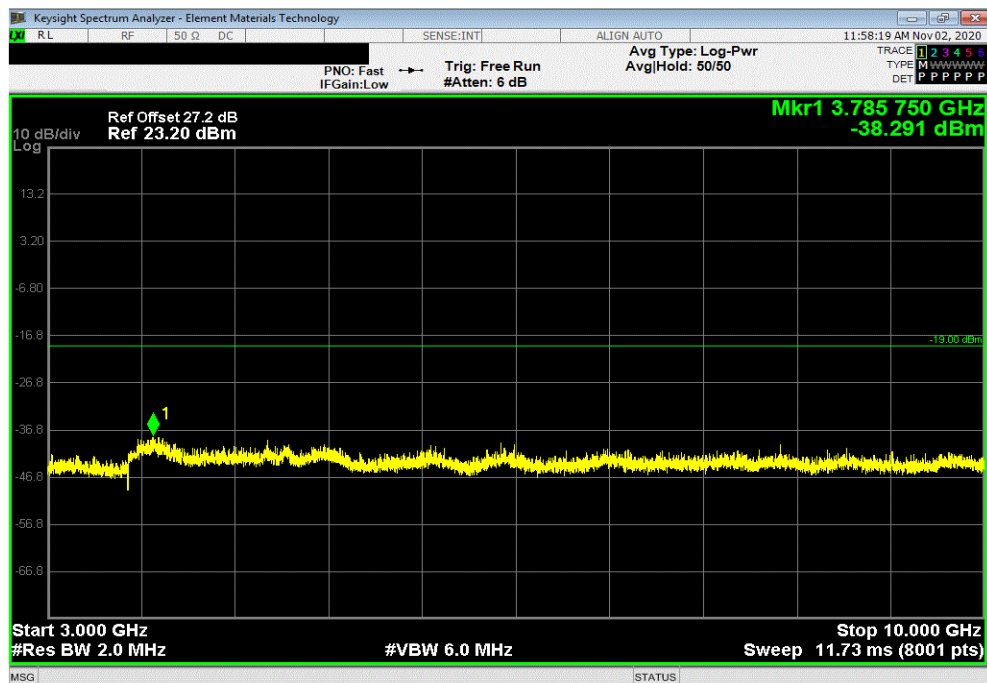


TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
20 MHz - 3 GHz		-24.03	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz					
Frequency Range		Value (dBm)	Limit (dBm)	Result	
3 GHz - 10 GHz		-38.29	-19	Pass	

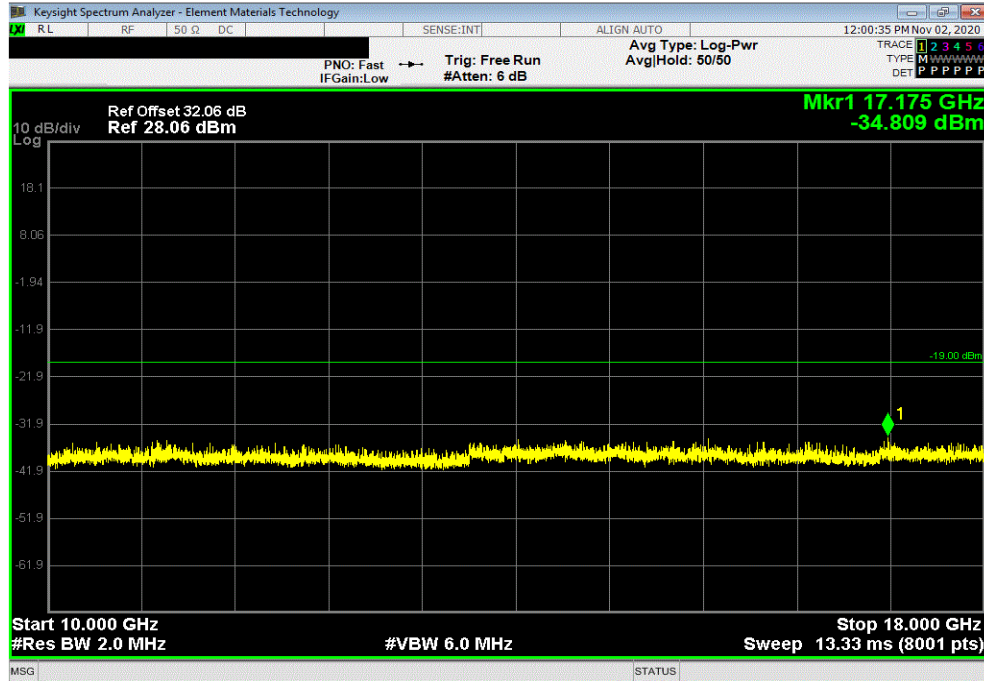


SPURIOUS CONDUCTED EMISSIONS



TbTx 2020.10.20.0 BETA XMI 2020.03.25.0

Port 4, Band n66, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
10 GHz - 18 GHz	-34.81	-19	Pass	



Port 4, Band n66, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel 2155 MHz				
Frequency Range	Value (dBm)	Limit (dBm)	Result	
18 GHz - 22 GHz	-24.45	-19	Pass	

