

# BAND EDGE COMPLIANCE



XMit 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	Agilent	N5183A	TIK	2019-04-30	2022-04-30
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2021-04-16	2022-04-16
Block - DC	Fairview Microwave	SD3379	AMZ	2020-11-04	2021-11-04
Attenuator	S.M. Electronics	SA26B-20	RFW	2021-02-05	2022-02-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2020-09-14	2021-09-14

## TEST DESCRIPTION

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 each 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.

# BAND EDGE COMPLIANCE



TelTx 2021.03.19.1 XMI 2020.12.30.0

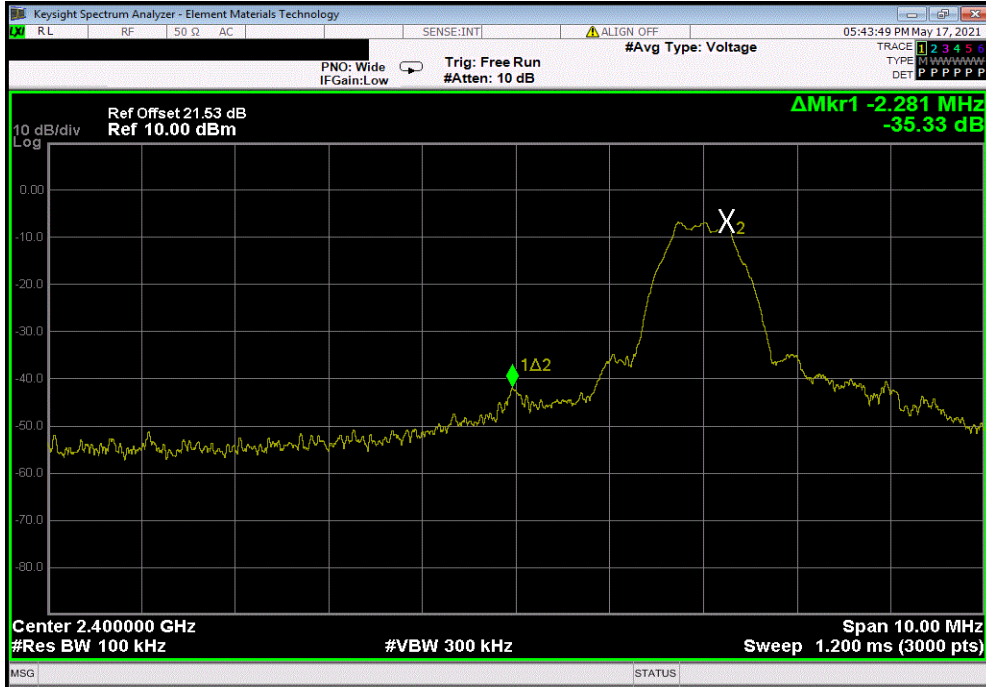
EUT: <b>Evolv AI Power Plus BTE 13 BLE Hearing Aid</b>		Work Order: <b>STAK0238</b>		
Serial Number: <b>210990482</b>		Date: <b>17-May-21</b>		
Customer: <b>Starkey Laboratories, Inc.</b>		Temperature: <b>22.3 °C</b>		
Attendees: <b>John Quach</b>		Humidity: <b>45.6% RH</b>		
Project: <b>None</b>		Barometric Pres.: <b>1023 mbar</b>		
Tested by: <b>Andrew Rogstad</b>	Power: <b>Battery</b>	Job Site: <b>MN08</b>		
<b>TEST SPECIFICATIONS</b>				
FCC 15.247:2021		Test Method: <b>ANSI C63.10:2013</b>		
<b>COMMENTS</b>				
Reference level offset includes measurement cable, attenuator, and DC block.				
<b>DEVIATIONS FROM TEST STANDARD</b>				
None				
Configuration #	1	Signature <i>Andrew Rogstad</i>		
		Value (dBc)	Limit ≤ (dBc)	Result
BLE/GFSK 1 Mbps Low Channel, 2402 MHz		-35.33	-20	Pass
BLE/GFSK 1 Mbps High Channel, 2480 MHz		-43.51	-20	Pass
BLE/GFSK 2 Mbps Low Channel, 2402 MHz		-26.87	-20	Pass
BLE/GFSK 2 Mbps High Channel, 2480 MHz		-41.28	-20	Pass

# BAND EDGE COMPLIANCE



TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 1 Mbps Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-35.33	-20	Pass



BLE/GFSK 1 Mbps High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-43.51	-20	Pass

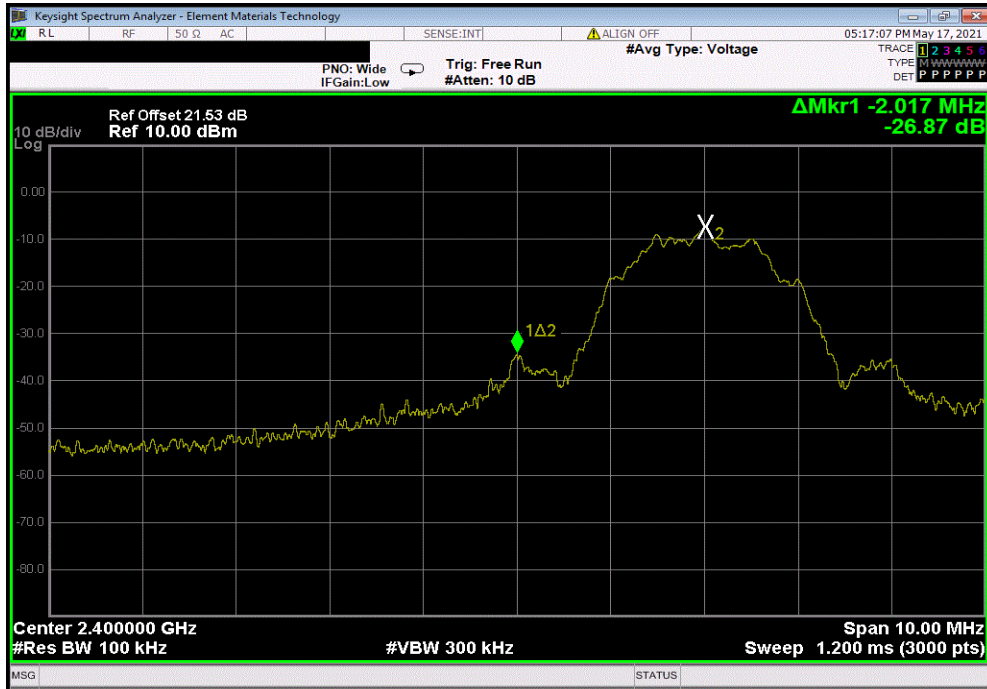


# BAND EDGE COMPLIANCE

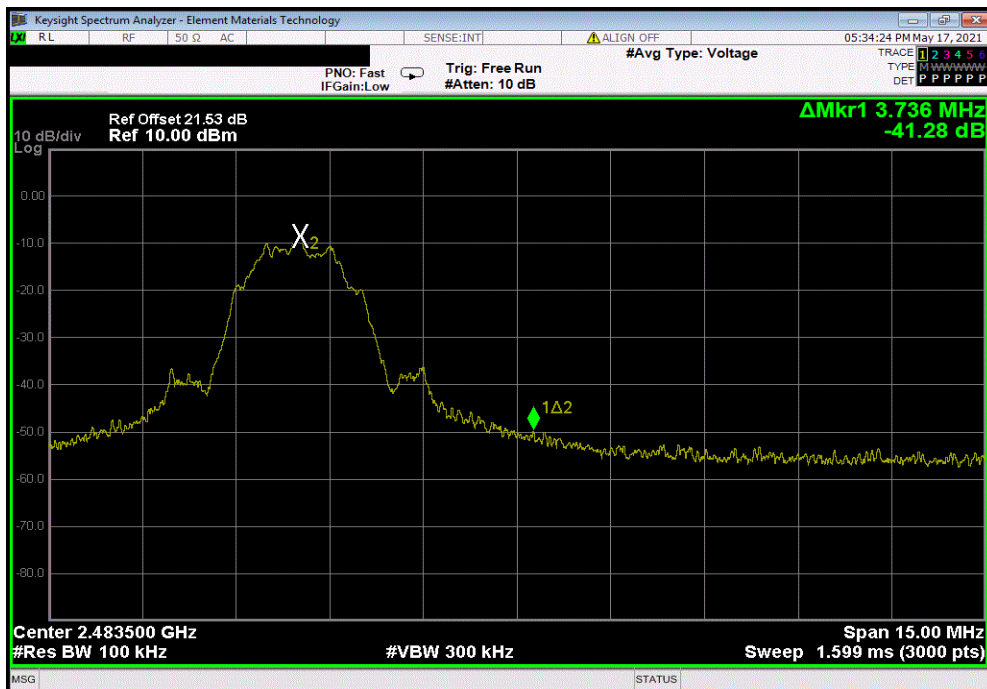


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 2 Mbps Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-26.87	-20	Pass



BLE/GFSK 2 Mbps High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-41.28	-20	Pass



# SPURIOUS CONDUCTED EMISSIONS



XMit 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

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Block - DC	Fairview Microwave	SD3379	AMZ	2020-11-04	2021-11-04
Attenuator	S.M. Electronics	SA26B-20	RFW	2021-02-05	2022-02-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2020-09-14	2021-09-14

## TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the fundamental was measured with a 100 kHz resolution bandwidth and the highest value was recorded. The rest of the spectrum was then measured with a 100 kHz resolution bandwidth and the highest value was found. The difference between the value found on the fundamental and the rest of the spectrum was compared against the limit to determine compliance.

# SPURIOUS CONDUCTED EMISSIONS



Tel: 2021.03.19.1 XM: 2020.12.30.0

EUT: <b>Evolv AI Power Plus BTE 13 BLE Hearing Aid</b>		Work Order: <b>STAK0238</b>
Serial Number: <b>210990482</b>		Date: <b>17-May-21</b>
Customer: <b>Starkey Laboratories, Inc.</b>		Temperature: <b>22.1 °C</b>
Attendees: <b>John Quach</b>		Humidity: <b>44.8% RH</b>
Project: <b>None</b>		Barometric Pres.: <b>1023 mbar</b>
Tested by: <b>Andrew Rogstad</b>	Power: <b>Battery</b>	Job Site: <b>MN08</b>
<b>TEST SPECIFICATIONS</b>		
FCC 15.247:2021		Test Method: <b>ANSI C63.10:2013</b>
<b>COMMENTS</b>		
Reference level offset includes measurement cable, attenuator, and DC block.		
<b>DEVIATIONS FROM TEST STANDARD</b>		
None		
Configuration #	1	Signature <i>Andrew Rogstad</i>

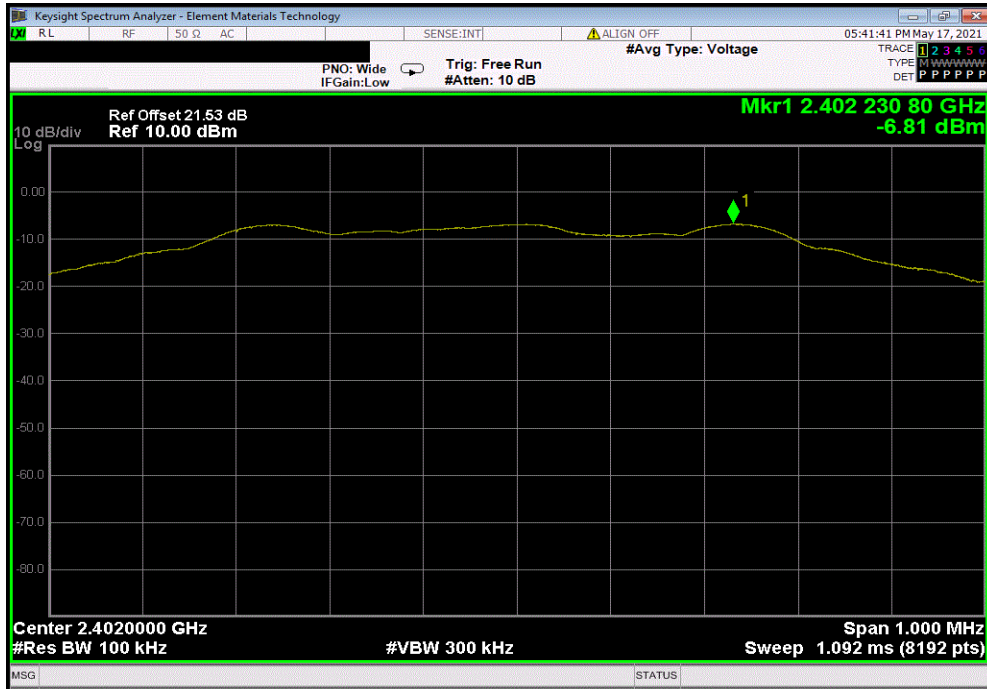
	Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	Fundamental	2402.23	N/A	N/A	N/A
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	30 MHz - 12.5 GHz	12131.58	-42.38	-20	Pass
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	12.5 GHz - 25 GHz	24880.97	-32.63	-20	Pass
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz	Fundamental	2442.02	N/A	N/A	N/A
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	6175.94	-40.08	-20	Pass
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	23907.34	-29.68	-20	Pass
BLE/GFSK 1 Mbps High Channel, 2480 MHz	Fundamental	2480.23	N/A	N/A	N/A
BLE/GFSK 1 Mbps High Channel, 2480 MHz	30 MHz - 12.5 GHz	1875.15	-39.5	-20	Pass
BLE/GFSK 1 Mbps High Channel, 2480 MHz	12.5 GHz - 25 GHz	24839.76	-31.08	-20	Pass
BLE/GFSK 2 Mbps Low Channel, 2402 MHz	Fundamental	2402	N/A	N/A	N/A
BLE/GFSK 2 Mbps Low Channel, 2402 MHz	30 MHz - 12.5 GHz	5580.68	-41.98	-20	Pass
BLE/GFSK 2 Mbps Low Channel, 2402 MHz	12.5 GHz - 25 GHz	24952.69	-32.02	-20	Pass
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz	Fundamental	2442	N/A	N/A	N/A
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	12480.21	-39.26	-20	Pass
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	24966.43	-28.51	-20	Pass
BLE/GFSK 2 Mbps High Channel, 2480 MHz	Fundamental	2480	N/A	N/A	N/A
BLE/GFSK 2 Mbps High Channel, 2480 MHz	30 MHz - 12.5 GHz	2683.55	-41.1	-20	Pass
BLE/GFSK 2 Mbps High Channel, 2480 MHz	12.5 GHz - 25 GHz	24687.16	-30.86	-20	Pass

# SPURIOUS CONDUCTED EMISSIONS

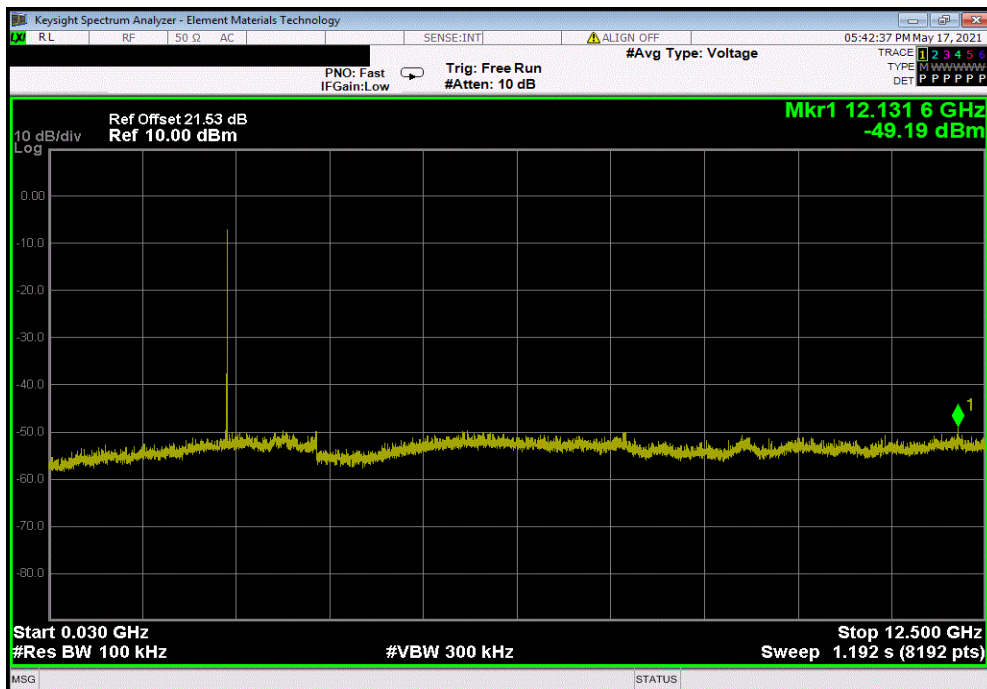


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 1 Mbps Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2402.23	N/A	N/A	N/A	



BLE/GFSK 1 Mbps Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	12131.58	-42.38	-20	Pass	

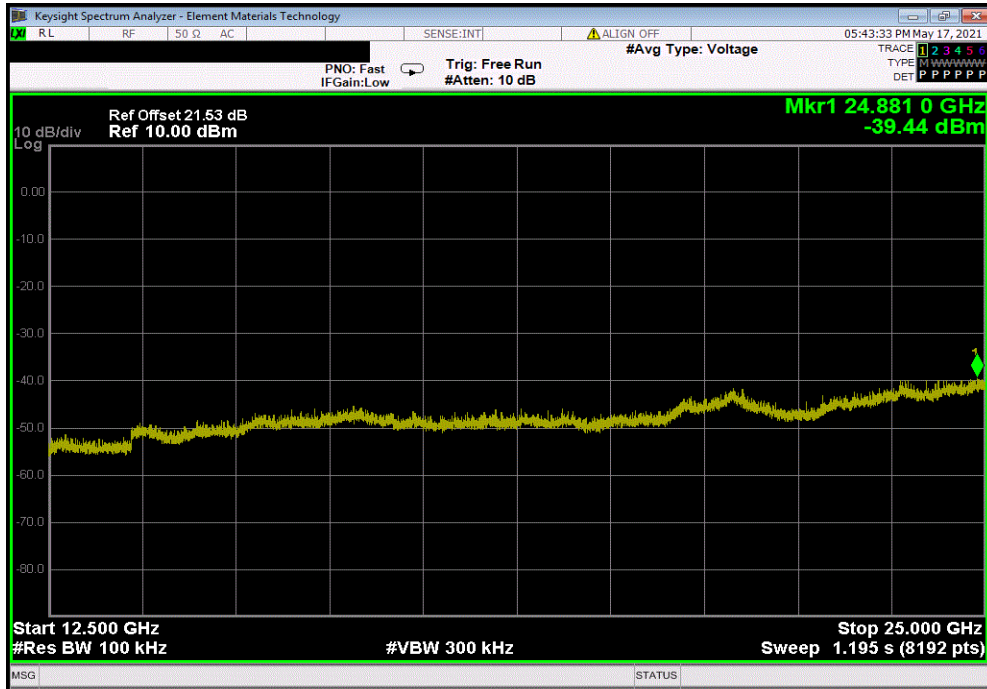


# SPURIOUS CONDUCTED EMISSIONS

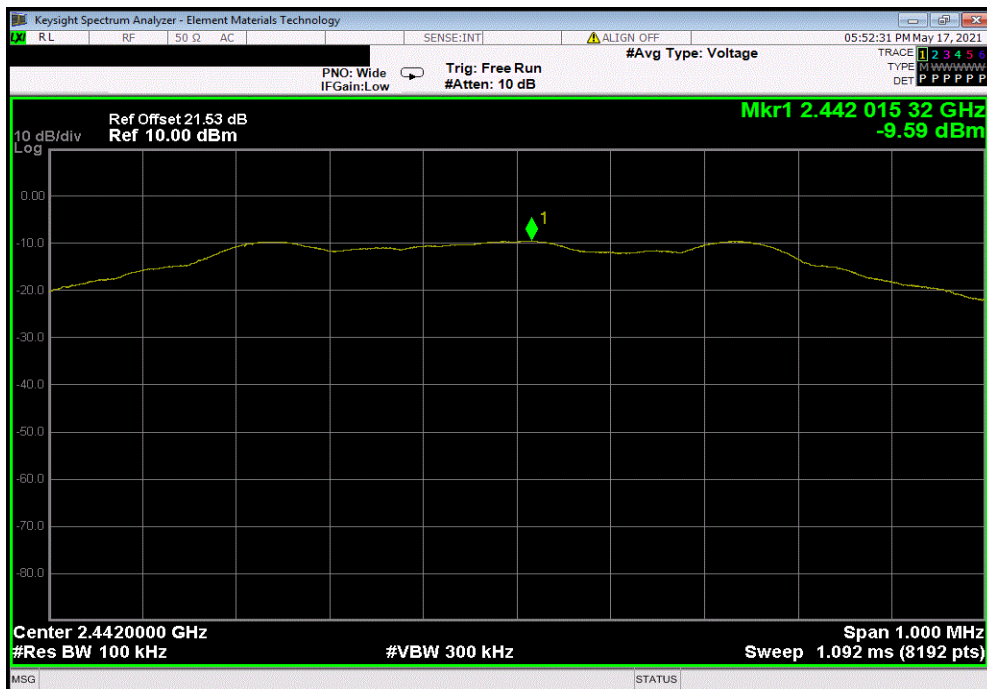


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 1 Mbps Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24880.97	-32.63	-20	Pass	



BLE/GFSK 1 Mbps Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2442.02	N/A	N/A	N/A	



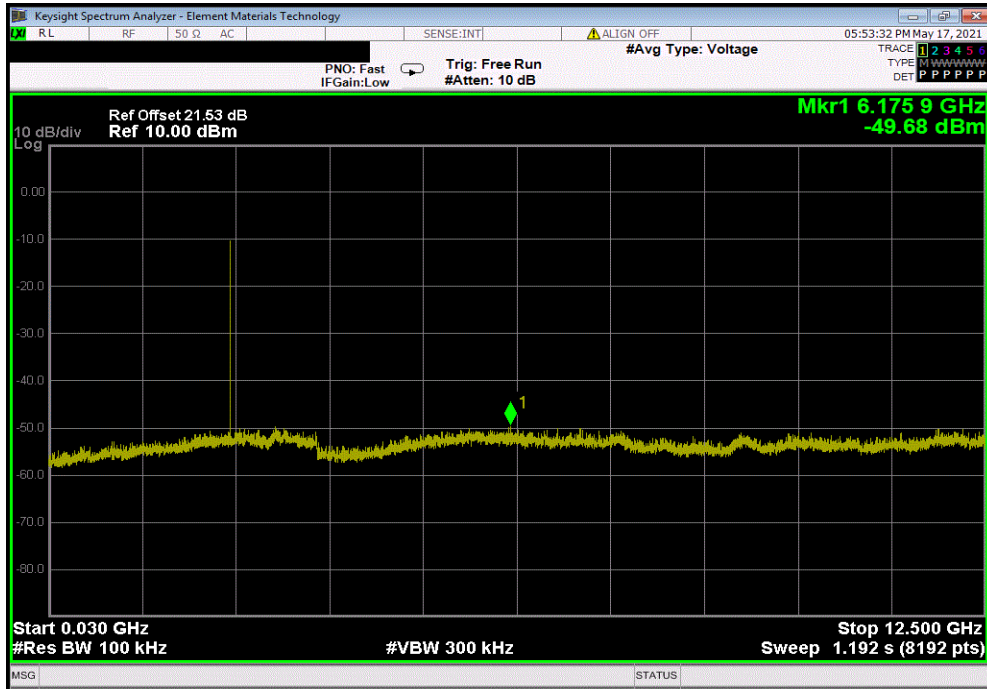


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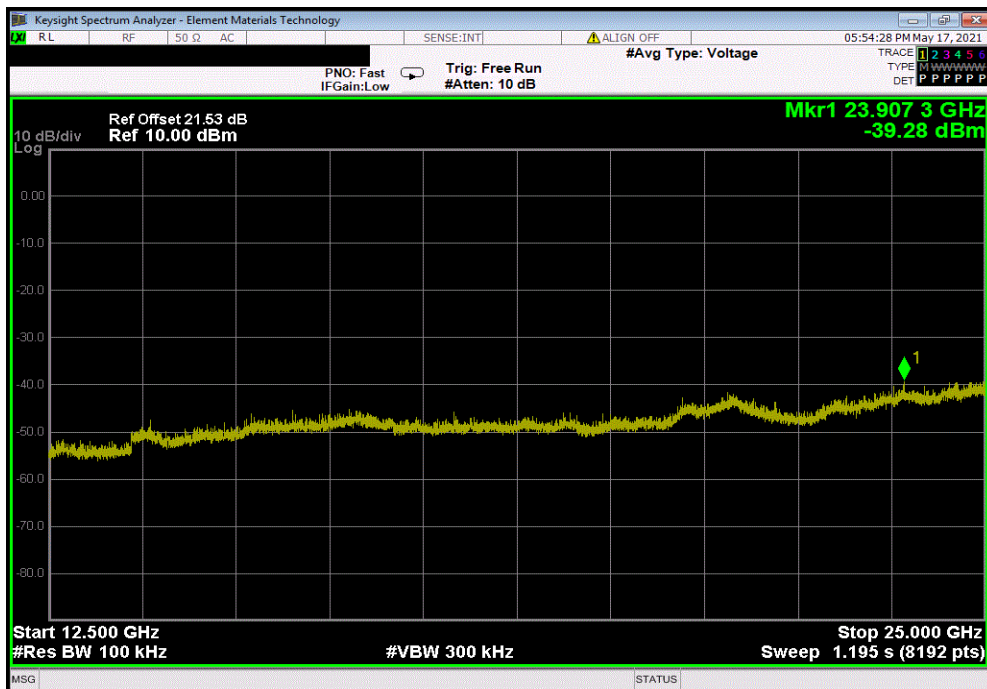


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 1 Mbps Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	6175.94	-40.08	-20	Pass



BLE/GFSK 1 Mbps Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	23907.34	-29.68	-20	Pass

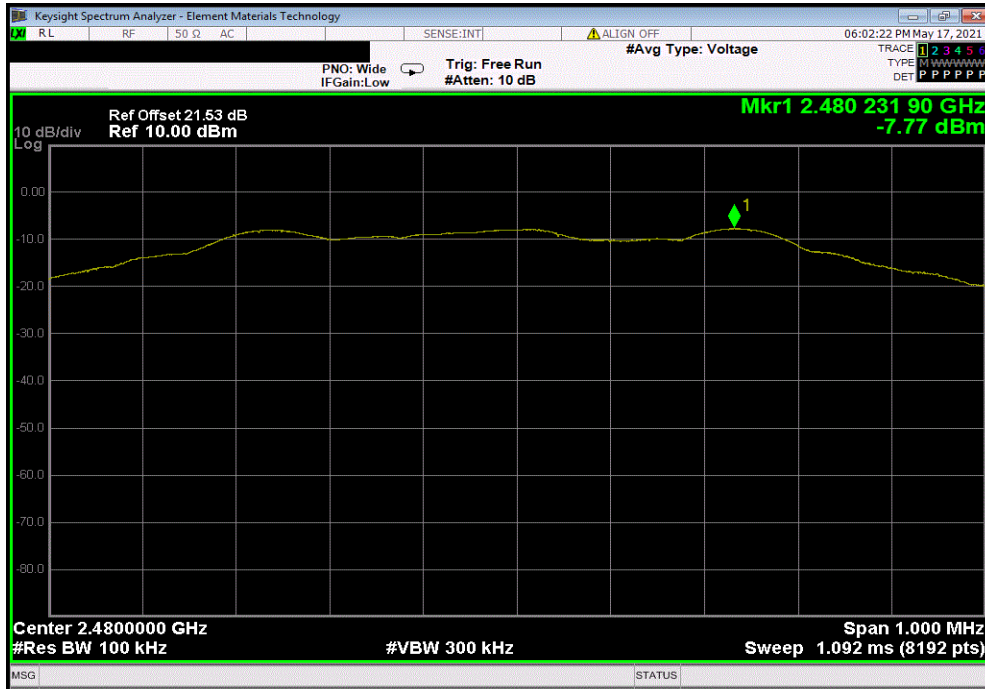


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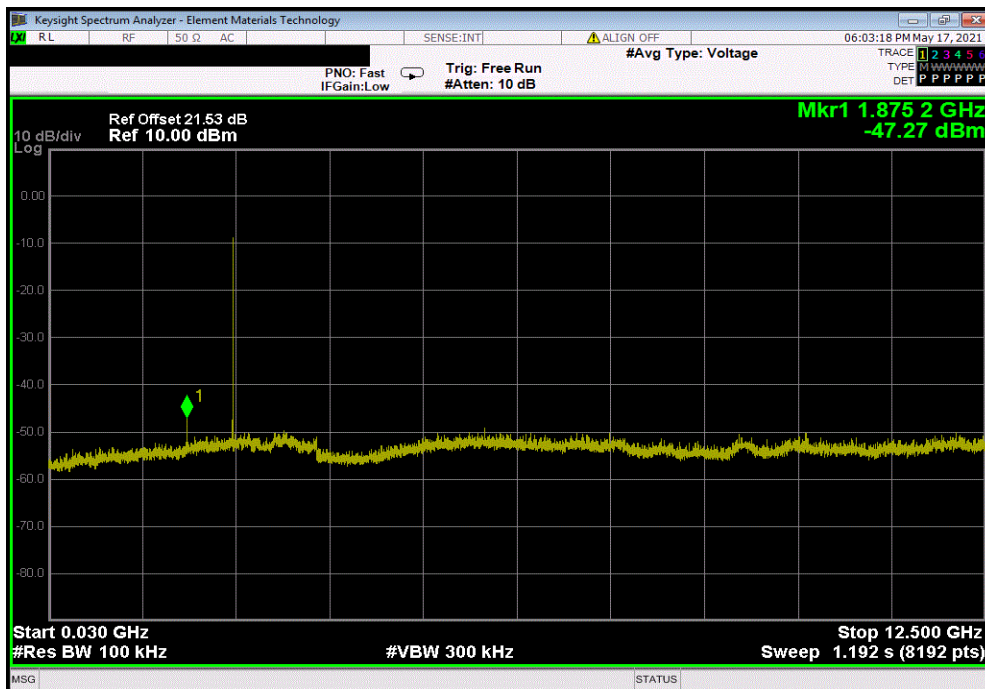


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 1 Mbps High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2480.23	N/A	N/A	N/A	



BLE/GFSK 1 Mbps High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	1875.15	-39.5	-20	Pass	

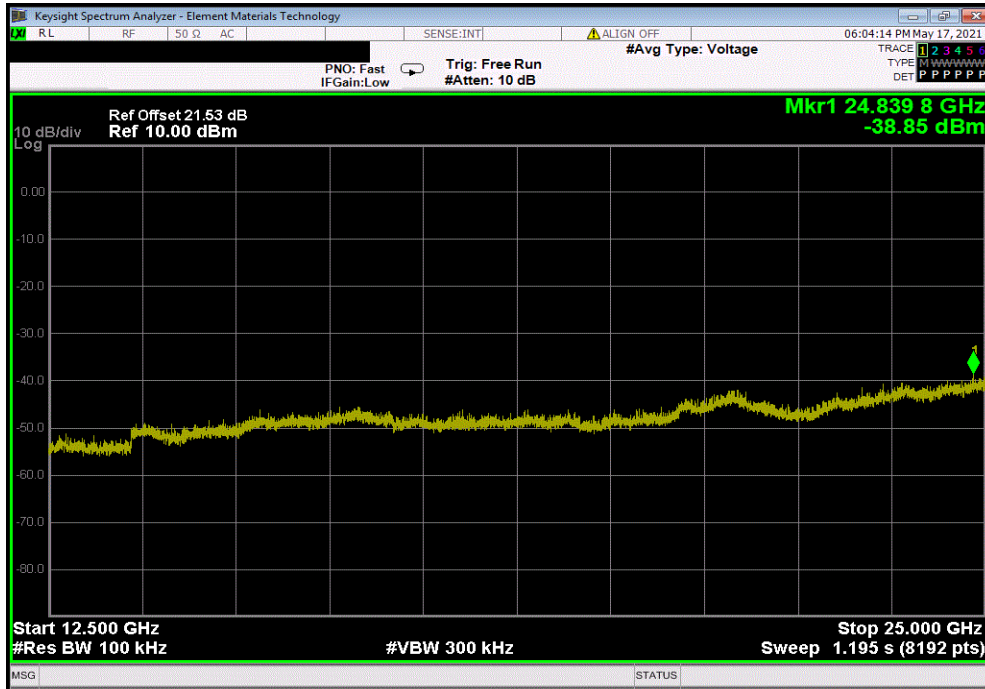


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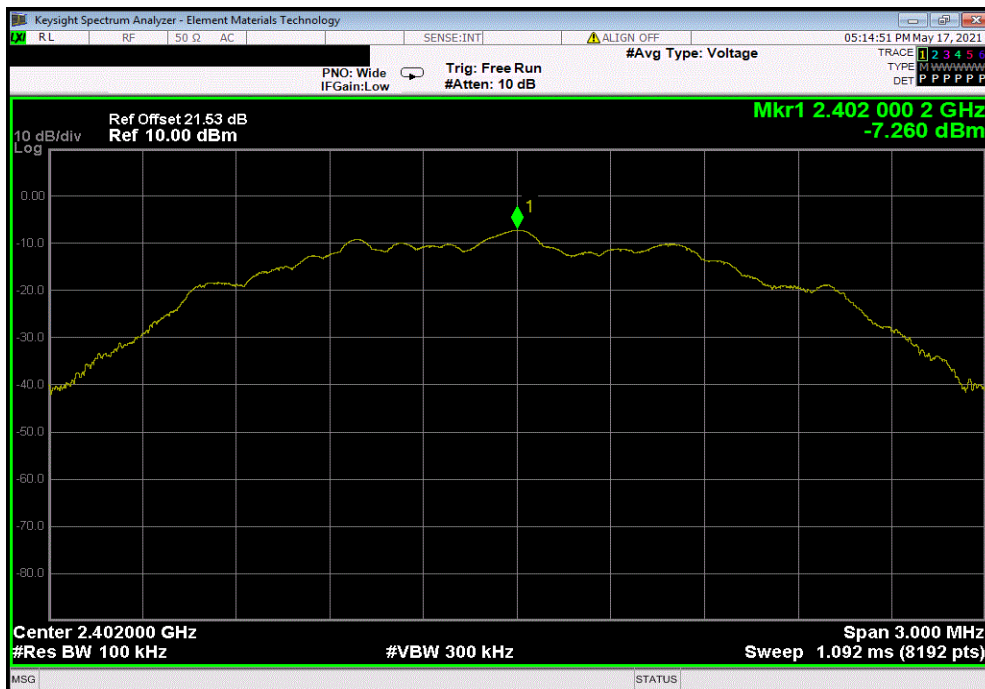


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 1 Mbps High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24839.76	-31.08	-20	Pass	



BLE/GFSK 2 Mbps Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2402	N/A	N/A	N/A	

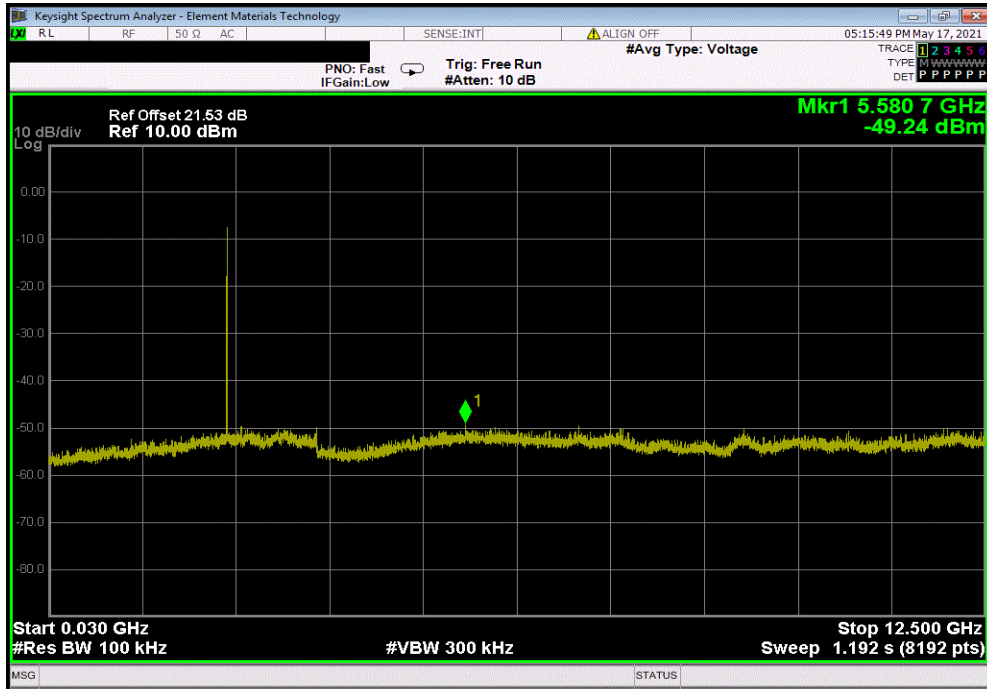


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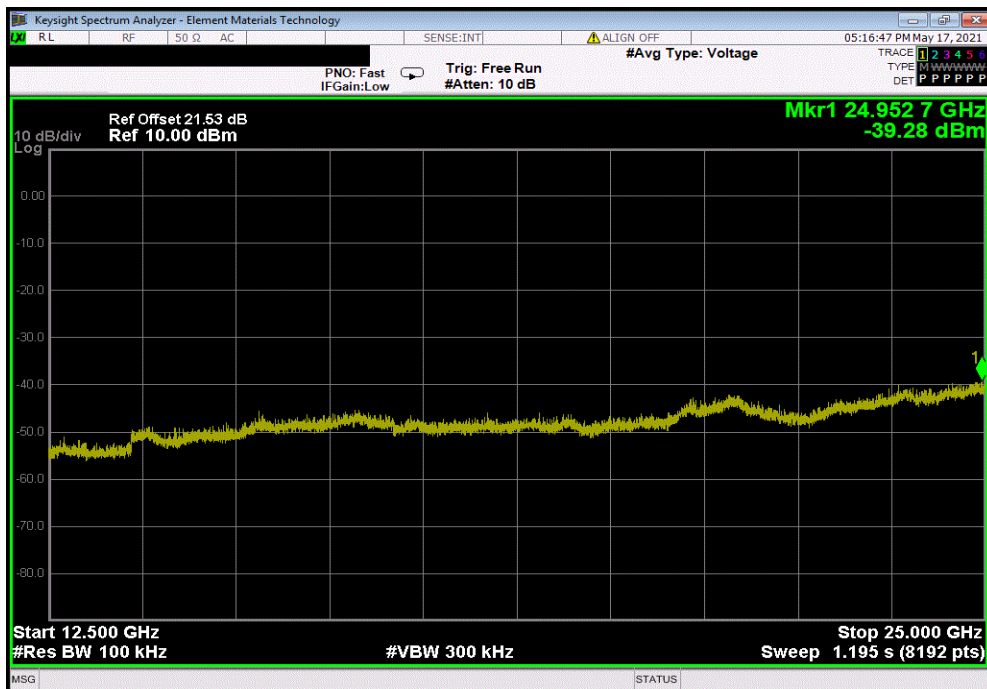


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 2 Mbps Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	5580.68	-41.98	-20	Pass



BLE/GFSK 2 Mbps Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24952.69	-32.02	-20	Pass

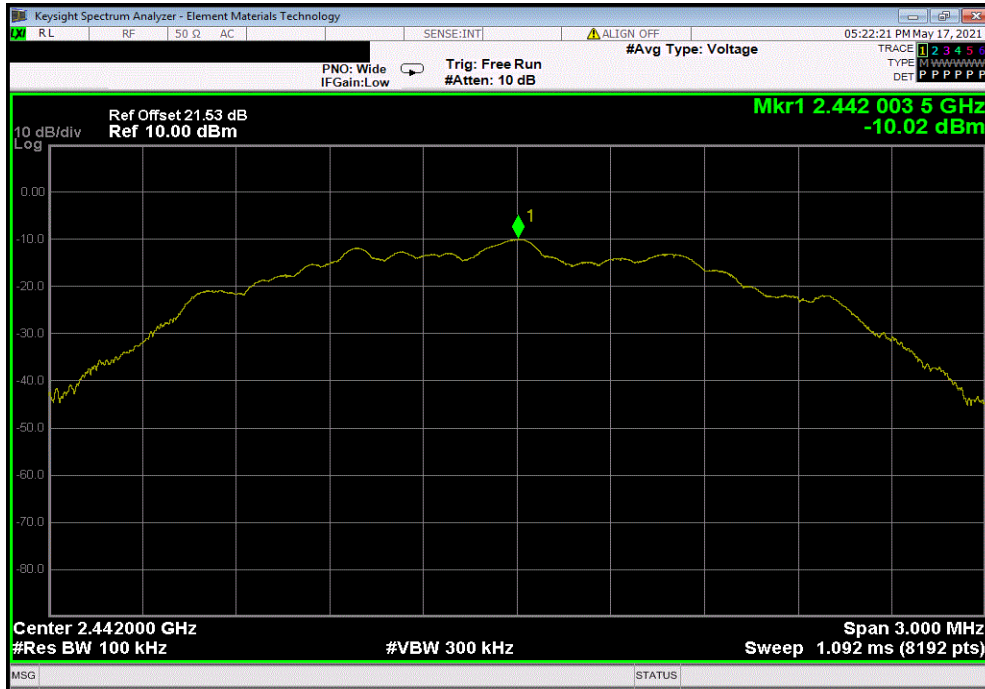


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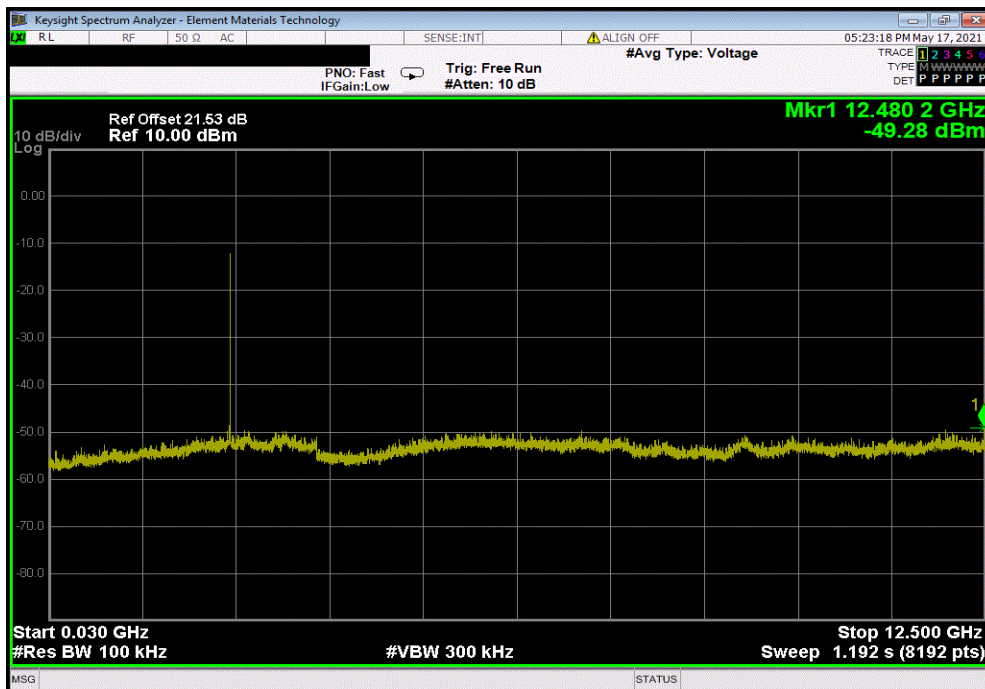


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 2 Mbps Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2442	N/A	N/A	N/A	



BLE/GFSK 2 Mbps Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	12480.21	-39.26	-20	Pass	

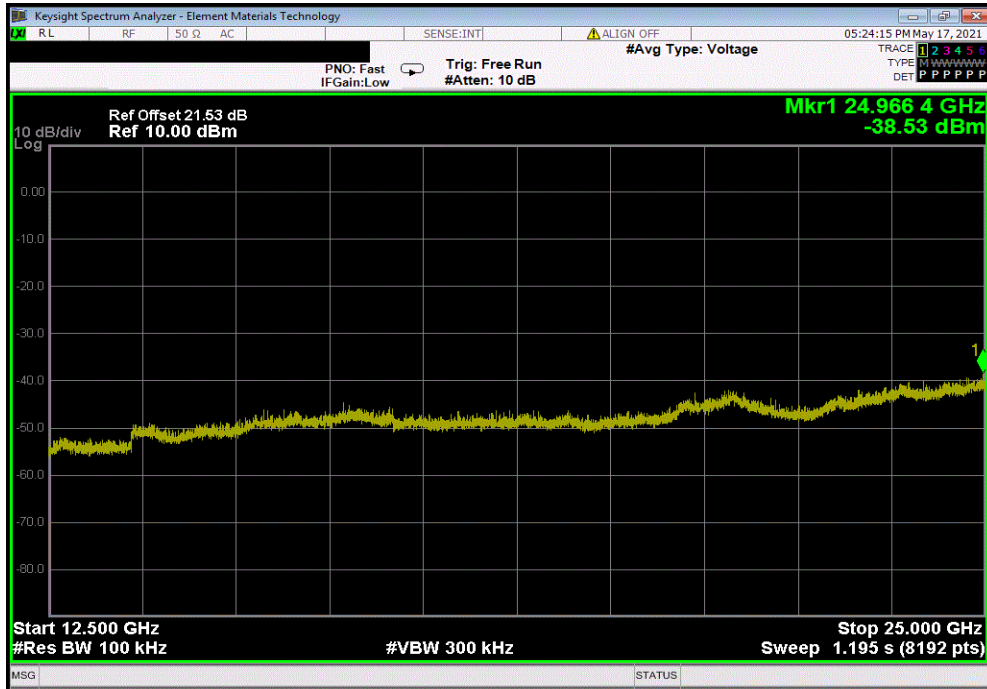


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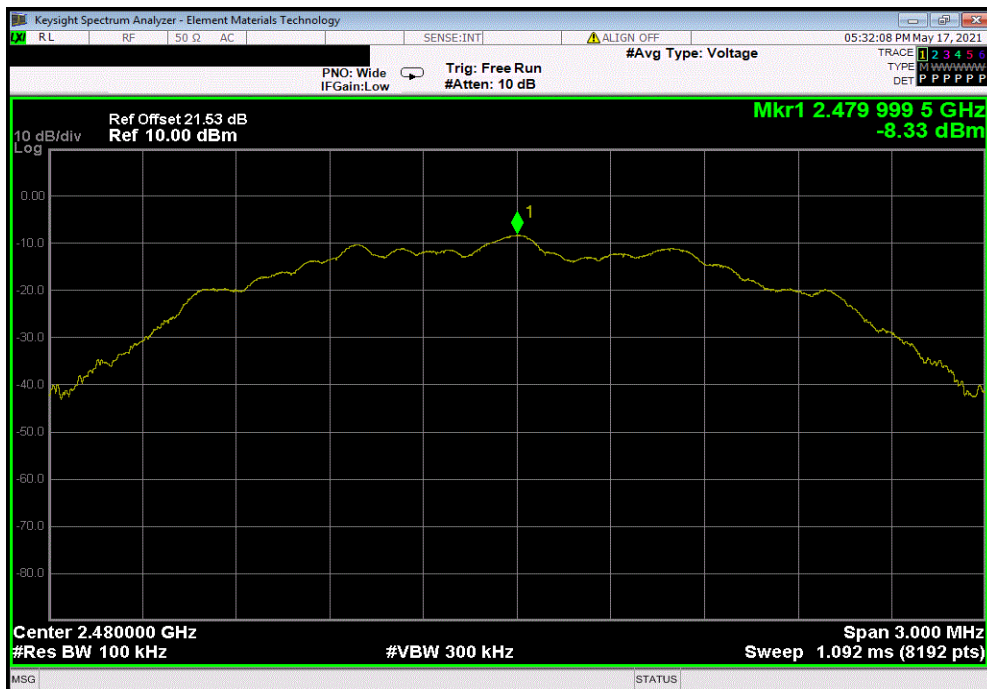


TbTx 2021.03.19.1 XMI 2020.12.30.0

BLE/GFSK 2 Mbps Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24966.43	-28.51	-20	Pass	



BLE/GFSK 2 Mbps High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2480	N/A	N/A	N/A	

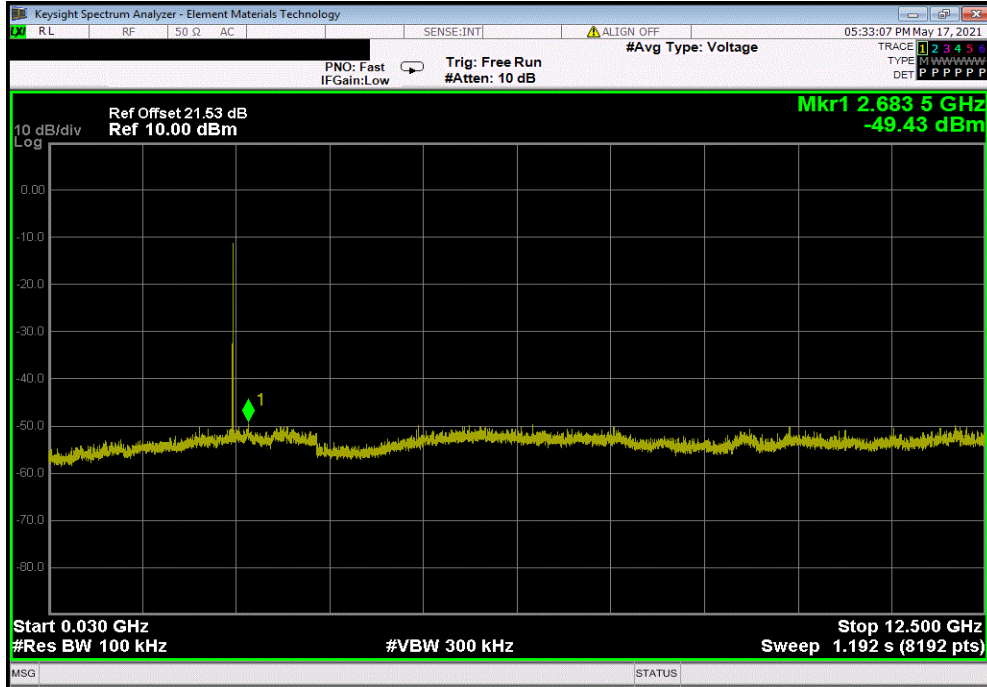


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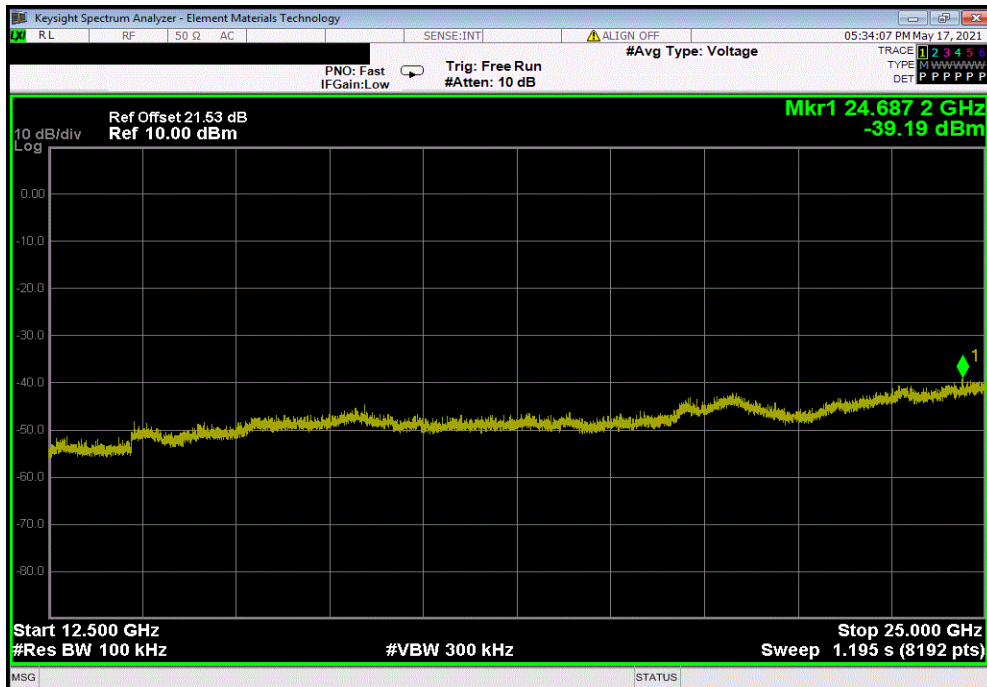


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BLE/GFSK 2 Mbps High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2683.55	-41.1	-20	Pass



BLE/GFSK 2 Mbps High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24687.16	-30.86	-20	Pass



End of Test Report