



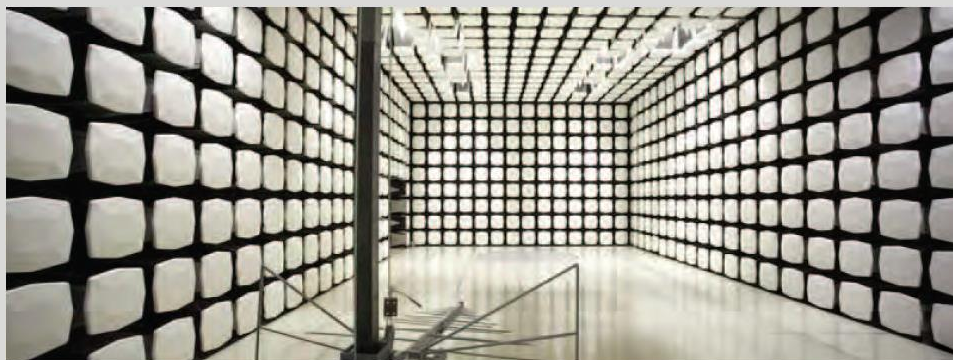
FireHUD Inc. DBA SlateSafety

SLATESAFETY BAND V2

FCC 15.247:2022

Bluetooth LE Radio

Report: FITY0001.1 Rev. 1, Issue Date: August 19, 2022



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CERTIFICATE OF TEST



Last Date of Test: July 21, 2022
FireHUD Inc. DBA SlateSafety
EUT: SLATESAFETY BAND V2

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2022 FCC 15.207:2022	ANSI C63.10:2013, KDB 558074

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	Yes	Pass	
11.6	Duty Cycle	Yes	N/A	Characterization of radio operation.
11.8.2	Occupied Bandwidth	Yes	N/A	
11.8.2	DTS Bandwidth	Yes	Pass	
11.9.1.1	Output Power	Yes	Pass	
11.9.1.1	Equivalent Isotropic Radiated Power	Yes	Pass	
11.10.2	Power Spectral Density	Yes	Pass	
11.11	Band Edge Compliance	Yes	Pass	
11.11	Spurious Conducted Emissions	Yes	Pass	
11.12.1, 11.13.2, 6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	

Deviations From Test Standards

None

Approved By:

Eric Brandon, Department Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY



Revision Number	Description	Date (yyyy-mm-dd)	Page Number
01	Updated last day of testing	2022-08-16	2, 10, 15
01	Added configurations	2022-08-16	13, 14
01	Added data	2022-08-16	96-97

ACCREDITATIONS AND AUTHORIZATIONS



United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Each laboratory is accredited by A2LA to ISO / IEC 17025, and as a product certifier to ISO / IEC 17065 which allows Element to certify transmitters to FCC and IC specifications.

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

European Union

European Commission – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

United Kingdom

BEIS – Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIT / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

For details on the Scopes of our Accreditations, please visit:

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[Washington](#)

FACILITIES



California Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-11 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Oregon Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 98011 (425)984-6600
A2LA				
Lab Code: 3310.04	Lab Code: 3310.05	Lab Code: 3310.02	Lab Code: 3310.03	Lab Code: 3310.06
Innovation, Science and Economic Development Canada				
2834B-1, 2834B-3	2834E-1, 2834E-3	2834D-1	2834G-1	2834F-1
BSMI				
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI				
A-0029	A-0109	A-0108	A-0201	A-0110
Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA				
US0158	US0175	US0017	US0191	US0157



MEASUREMENT UNCERTAINTY



Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found in the table below. A lab specific value may also be found in the applicable test description section. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	3.2 dB	-3.2 dB

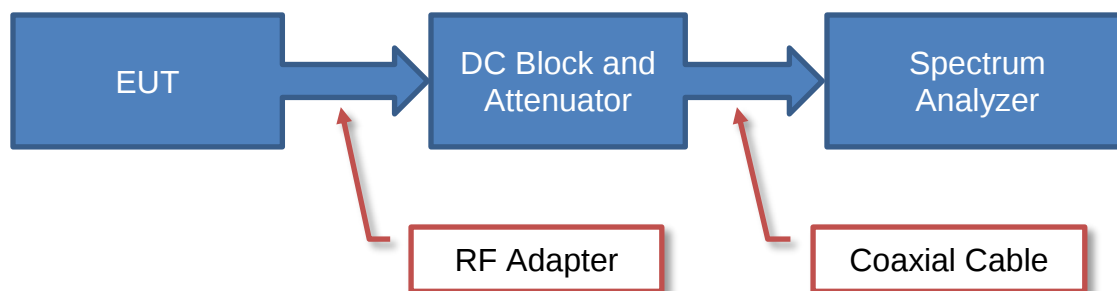
TEST SETUP BLOCK DIAGRAMS

Measurement Bandwidths

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

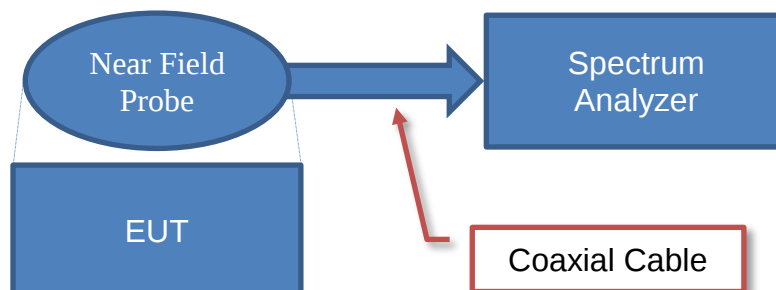
Antenna Port Conducted Measurements



Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

Near Field Test Fixture Measurements

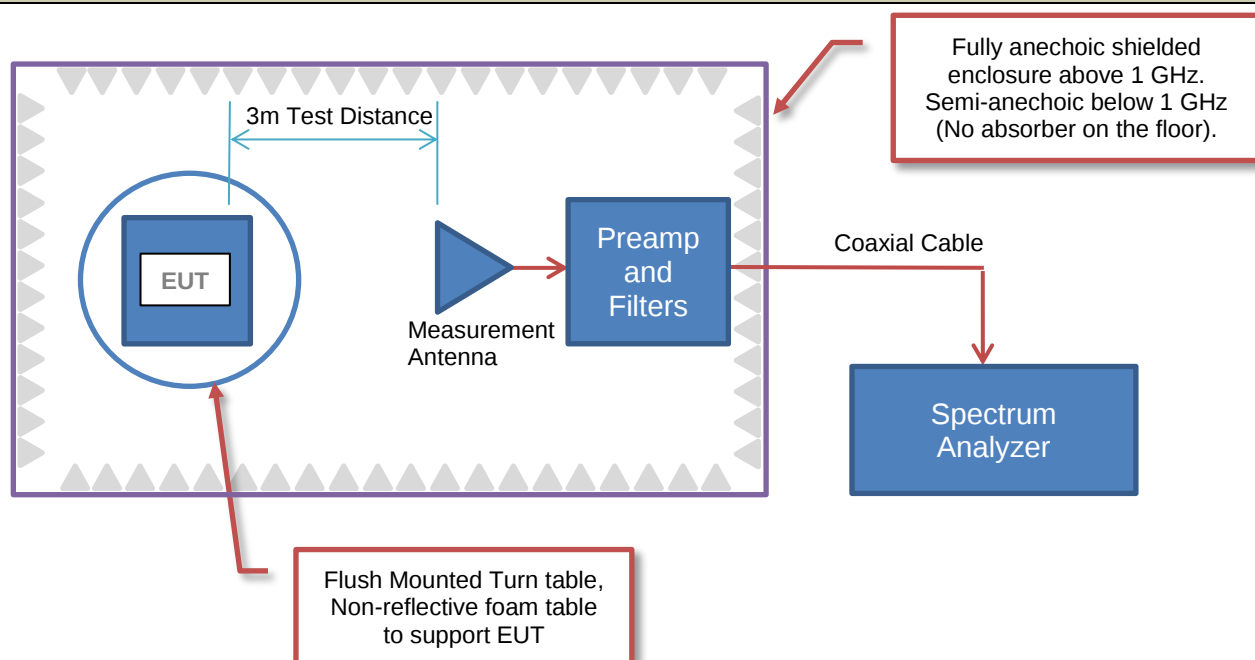


Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

TEST SETUP BLOCK DIAGRAMS

Emissions Measurements



Sample Calculation (logarithmic units)

Radiated Emissions:

Measured Level (Amplitude)	Factor				Distance Adjustment Factor	External Attenuation	Field Strength
	Antenna Factor	Cable Factor	Amplifier Gain				
42.6	28.6	3.1	40.8	+	0.0	0.0	= 33.5

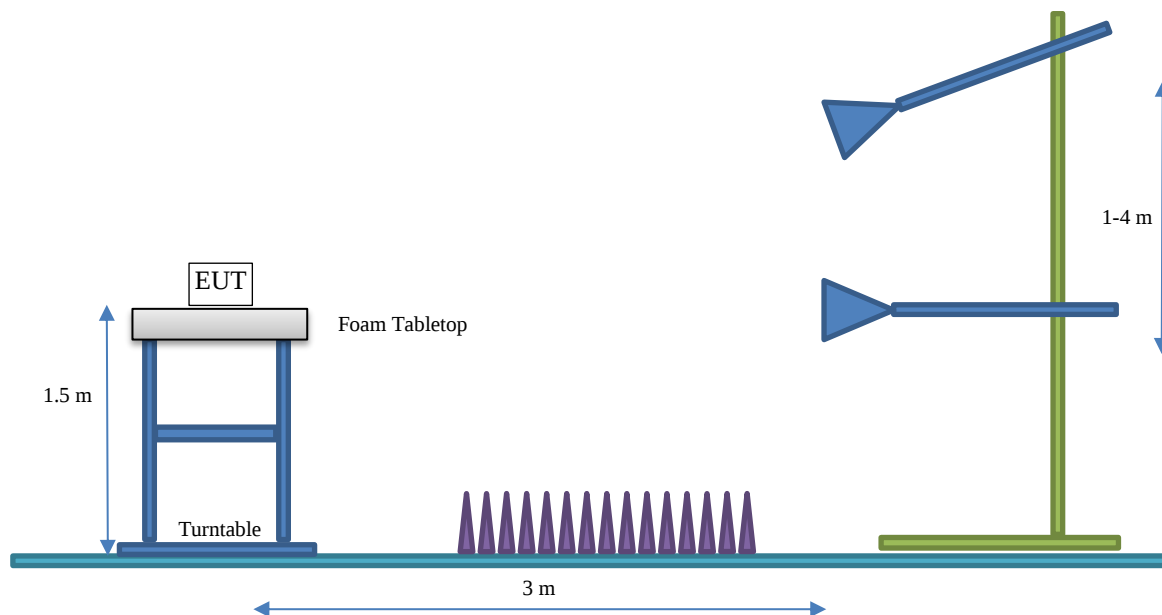
Conducted Emissions:

Measured Level (Amplitude)	Factor			External Attenuation	Adjusted Level
	Transducer Factor	Cable Factor			
26.7	0.3	0.1	+	20.0	= 47.1

TEST SETUP BLOCK DIAGRAMS

Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	FireHUD Inc. DBA SlateSafety
Address:	1701 Oakbrook Dr.
City, State, Zip:	Norcross, GA 30093
Test Requested By:	Tyler Sisk
EUT:	SLATESAFETY BAND V2
First Date of Test:	March 29, 2022
Last Date of Test:	July 21, 2022
Receipt Date of Samples:	March 29, 2022
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

Body worn BLE/LTE device. The BLE chip/radio is nRF52820, using 125kb,1MB, 2MB data rates. The LTE radio is nRF9160 using Cat-M B4/B13 only. The device is worn on the upper arm. The maximum Duty Cycle used in the field in a 30 minute period is 2.369% and in a 100 millisecond period is 10.152% as per the Duty Cycle analysis below:

30 minute assumptions:

- 7 Data Packets sent per minute
- 1 Data Packet opens a legacy advertising window of 2 seconds with interval of 100ms meaning a max of 20 legacy advertisements
- 1 Data Packet also opens a Coded Phy advertising window of 2 seconds with an interval of 100ms meaning max of 20 coded advertisements per Data Packet
- Each advertisement consists of a max of 31 bytes
- A 31 byte legacy advertisement results in 1.128ms of BLE Radio transmit time. A 31 byte coded phy advertisement results in 9.024ms of BLE Radio transmit time (Source: Nordic Online Power Profiler)

30 min calculations:

$$TX\ Time\ / \ min = (1.128\ ms\ / \ Legacy\ Adv \times 20\ Legacy\ Adv\ / \ 1\ Packet + 9.024\ ms\ / \ Coded\ Adv \times 20\ Coded\ Adv\ / \ 1\ Packet) \times 7\ Packets\ / \ 1\ min = 1421.28\ ms\ / \ min$$

$$TX\ Time\ / \ 30\ min = 1421.28ms\ / \ 1\ min \times 1\ min\ / \ 1000\ ms \times 30\ min = 42.638\ seconds\ / \ 30\ min$$

$$BLE\ Radio\ TX\ Duty\ Cycle = 42.638\ s\ / \ 30\ min \times 30\ min\ / \ 1800\ s \times 100\% = 2.369\%$$

100 millisecond assumptions:

- A single 31 byte legacy advertisement sent resulting in 1.128ms of BLE Radio transmit time.
- A single 31 byte coded phy advertisement resulting in 9.024ms of BLE Radio transmit time.

100 ms calculations:

$$TX\ Time\ / \ min = (1.128\ ms\ / \ Legacy\ Adv \times 1\ Legacy\ Adv\ / \ 1\ Packet + 9.024\ ms\ / \ Coded\ Adv \times 1\ Coded\ Adv\ / \ 1\ Packet) \times 1\ Packets\ / \ 100\ ms = 10.152\ ms\ / \ 100\ ms$$

$$BLE\ Radio\ TX\ Duty\ Cycle = 10.152\ ms\ / \ 100\ ms \times 100\% = 10.152\%$$

Testing Objective:

To demonstrate compliance of the Bluetooth radio to FCC 15.247 requirements.

CONFIGURATIONS

Configuration FITY0001- 1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Band V2	DBA StateSafety	Band V2	6563

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
USB Adapter	DSD Tech	None	None
Laptop	Asus Tech Computer Inc	UX433F	JAN0CV13933844A
DC Adapter (Band V2)	ShenZhen LvXiangYuan Technology Co, Ltd.	LX061100U	None
Laptop DC Adapter (connects to Mains)	Uveimetz	MD-A045 02F	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Cable	Yes	3 m	No	Laptop	USB Adapter
Control Cables (2x connected, 4x disconnected)	No	0.29 m	No	USB Adapter	Band V2
DC Power Cable (Band V2)	Yes	1.3 m	No	DC Adapter (Band V2)	Band V2
Laptop DC Cable	No	1.9 m	No	Laptop DC Supply	Laptop

CONFIGURATIONS

Configuration FITY0001- 2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Band V2	DBA StateSafety	Band V2	6563

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
USB Adapter	DSD Tech	None	None

Remote Equipment outside Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Asus Tech Computer Inc	UX433F	JAN0CV13933844A
DC Adapter (Band V2)	ShenZhen LvXiangYuan Technology Co, Ltd.	LX061100U	None
Laptop DC Adapter (connects to Mains)	Uveimetz	MD-A045 02F	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Cable	Yes	3 m	No	Laptop	USB Adapter
Control Cables (2x connected, 4x disconnected)	No	0.29 m	No	USB Adapter	Band V2
DC Power Cable (Band V2)	Yes	1.3 m	No	DC Adapter (Band V2)	Band V2
Laptop DC Cable	No	1.9 m	No	Laptop DC Supply	Laptop

CONFIGURATIONS

Configuration FITY0001- 3

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Band V2	DBA StateSafety	Band V2	6563

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
USB Adapter	DSD Tech	None	None
Laptop	Asus Tech Computer Inc	UX433F	JAN0CV13933844A
DC Adapter (Band V2)	ShenZhen LvXiangYuan Technology Co, Ltd.	LX061100U	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Cable	Yes	3 m	No	Laptop	USB Adapter
Control Cables (2x connected, 4x disconnected)	No	0.29 m	No	USB Adapter	Band V2
DC Power Cable (Band V2)	Yes	1.3 m	No	DC Adapter (Band V2)	Band V2

CONFIGURATIONS

Configuration FITY0001- 5

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
BLE/LTE Device - Band V2	DBA StateSafety	FireHUD	6563

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
USB Adapter	DSD Tech	None	None
Laptop	Asus Tech Computer Inc	UX433F	JAN0CV13933844A
Laptop DC Adapter (connects to Mains)	Uveimetz	MD-A045 02F	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Cable	Yes	3 m	No	Laptop	USB Adapter
Control Cables (2x connected, 4x disconnected)	No	0.29 m	No	USB Adapter	Band V2
Laptop DC Cable	No	1.9 m	No	Laptop DC Supply	Laptop

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2022-03-29	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	2022-03-29	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2022-03-29	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
4	2022-03-29	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	2022-03-29	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2022-03-29	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	2022-03-29	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	2022-03-29	DTS Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
9	2022-04-05	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
10	2022-04-01	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.
11	2022-07-21	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information.

ANTENNA GAIN (dBi)

Type	Provided by:	Frequency Range (MHz)	Gain (dBi)
Chip (WLA.01)	Taoglas	2402-2480	2.5

The EUT was tested using the power settings provided by the manufacturer:

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types / Data Rates	Type	Channel	Frequency (MHz)	Power Setting (Software)
GFSK / 125 kbps	DTS	0	2402	-12
		20	2442	-12
		39	2480	-12
GFSK / 1 Mbps	DTS	0	2402	-4
		20	2442	-4
		39	2480	-4
GFSK / 2 Mbps	DTS	0	2402	-4
		20	2442	-4
		39	2480	-4

CONDUCTED EMISSIONS

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Gauss Instruments	TDEMI 30M	ARS	2022-04-20	2023-04-20
Cable - Conducted Cable Assembly	Northwest EMC	MNC, HGN, TYK	MNCA	2022-03-07	2023-03-07
LISN	Solar Electronics	9252-50-R-24-BNC	LIO	2021-09-26	2022-09-26

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	3.2 dB	-3.2 dB

CONFIGURATIONS INVESTIGATED

FITY0001-3

MODES INVESTIGATED

Transmitting BLE Mid Ch (2442 MHz) 1 Mbps. Charging.
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CONDUCTED EMISSIONS

EUT:	SLATESAFETY BAND V2	Work Order:	FITY0001
Serial Number:	6563	Date:	2022-04-05
Customer:	FireHUD Inc. DBA SlateSafety	Temperature:	23.6°C
Attendees:	Dustin Morris	Relative Humidity:	28%
Customer Project:	None	Bar. Pressure (PMSL):	1001 mb
Tested By:	Christopher Heintzelman	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	FITY0001-3

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.207:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	1	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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COMMENTS

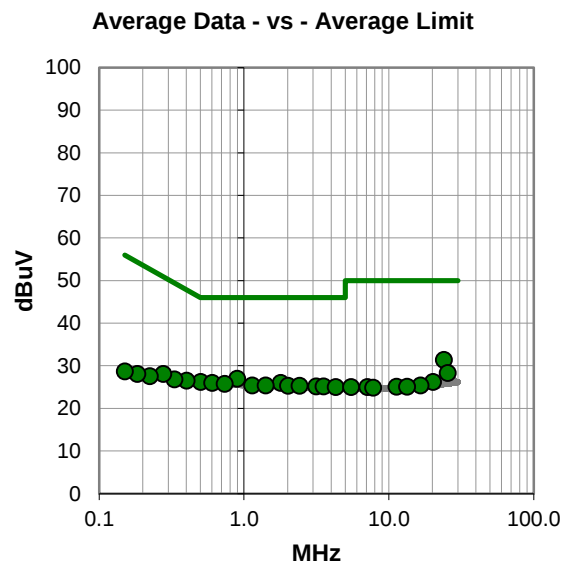
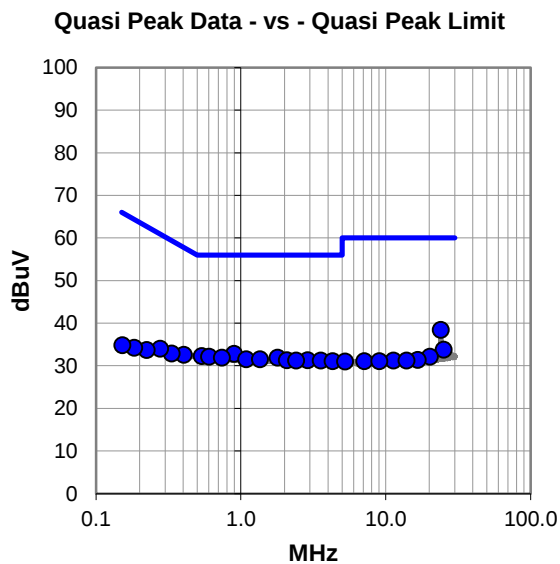
None

EUT OPERATING MODES

Transmitting BLE Mid Ch (2442 MHz) 1 Mbps. Charging.

DEVIATIONS FROM TEST STANDARD

None



CONDUCTED EMISSIONS

RESULTS - Run #1

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
24.000	16.6	21.8	38.4	60.0	-21.6
0.898	12.6	20.2	32.8	56.0	-23.2
0.536	12.1	20.2	32.3	56.0	-23.7
0.602	11.9	20.2	32.1	56.0	-23.9
0.739	11.7	20.2	31.9	56.0	-24.1
1.795	11.6	20.3	31.9	56.0	-24.1
1.087	11.3	20.2	31.5	56.0	-24.5
1.355	11.3	20.2	31.5	56.0	-24.5
2.076	11.0	20.3	31.3	56.0	-24.7
2.883	11.0	20.3	31.3	56.0	-24.7
2.411	10.9	20.3	31.2	56.0	-24.8
3.553	10.8	20.4	31.2	56.0	-24.8
4.290	10.7	20.4	31.1	56.0	-24.9
0.403	12.4	20.2	32.6	57.8	-25.2
25.163	11.9	21.9	33.8	60.0	-26.2
0.333	12.7	20.2	32.9	59.4	-26.5
0.277	13.8	20.2	34.0	60.9	-26.9
20.137	10.6	21.5	32.1	60.0	-27.9
16.652	10.2	21.2	31.4	60.0	-28.6
11.291	10.3	20.9	31.2	60.0	-28.8
13.904	10.2	21.0	31.2	60.0	-28.8
7.103	10.5	20.6	31.1	60.0	-28.9
9.045	10.4	20.7	31.1	60.0	-28.9
0.223	13.5	20.2	33.7	62.7	-29.0
5.226	10.6	20.4	31.0	60.0	-29.0

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
24.000	9.6	21.8	31.4	50.0	-18.6
0.898	6.8	20.2	27.0	46.0	-19.0
0.502	6.0	20.2	26.2	46.0	-19.8
0.602	5.8	20.2	26.0	46.0	-20.0
1.795	5.7	20.3	26.0	46.0	-20.0
0.736	5.6	20.2	25.8	46.0	-20.2
1.137	5.2	20.2	25.4	46.0	-20.6
1.407	5.1	20.3	25.4	46.0	-20.6
2.010	5.0	20.3	25.3	46.0	-20.7
2.413	5.0	20.3	25.3	46.0	-20.7
3.150	4.8	20.4	25.2	46.0	-20.8
3.549	4.8	20.4	25.2	46.0	-20.8
4.288	4.6	20.4	25.0	46.0	-21.0
0.402	6.3	20.2	26.5	47.8	-21.3
25.460	6.3	22.0	28.3	50.0	-21.7
0.330	6.6	20.2	26.8	49.5	-22.7
0.277	7.9	20.2	28.1	50.9	-22.8
20.204	4.7	21.5	26.2	50.0	-23.8
16.584	4.2	21.2	25.4	50.0	-24.6
11.290	4.2	20.9	25.1	50.0	-24.9
13.367	4.1	21.0	25.1	50.0	-24.9
5.493	4.6	20.4	25.0	50.0	-25.0
7.105	4.4	20.6	25.0	50.0	-25.0
0.223	7.4	20.2	27.6	52.7	-25.1
7.773	4.3	20.6	24.9	50.0	-25.1

CONCLUSION

Pass



Tested By

CONDUCTED EMISSIONS

EUT:	SLATESAFETY BAND V2	Work Order:	FITY0001
Serial Number:	6563	Date:	2022-04-05
Customer:	FireHUD Inc. DBA SlateSafety	Temperature:	23.6°C
Attendees:	Dustin Morris	Relative Humidity:	28%
Customer Project:	None	Bar. Pressure (PMSL):	1001 mb
Tested By:	Christopher Heintzelman	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	FITY0001-3

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.207:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	7	Line:	High Line	Add. Ext. Attenuation (dB):	0
--------	---	-------	-----------	-----------------------------	---

COMMENTS

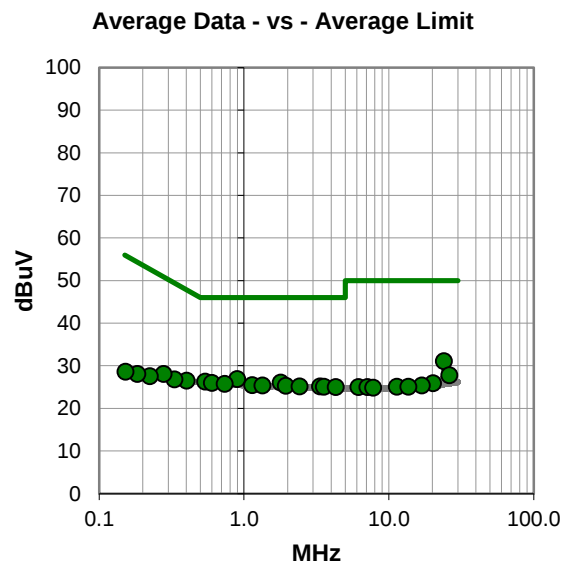
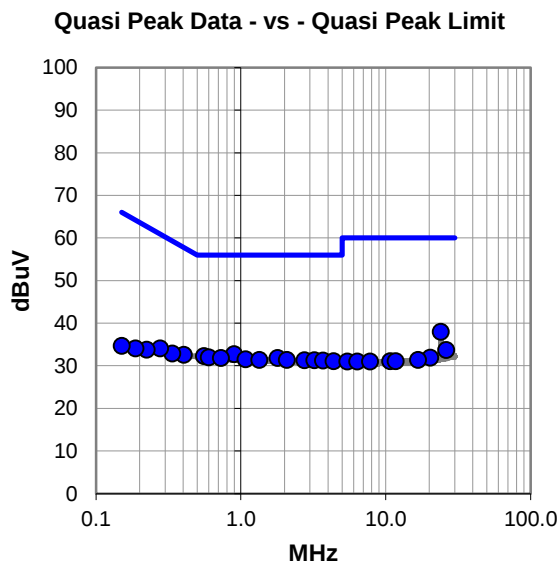
None

EUT OPERATING MODES

Transmitting BLE Mid Ch (2442 MHz) 1 Mbps. Charging.

DEVIATIONS FROM TEST STANDARD

None



CONDUCTED EMISSIONS

RESULTS - Run #7

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
24.000	16.2	21.8	38.0	60.0	-22.0
0.898	12.5	20.2	32.7	56.0	-23.3
0.554	12.1	20.2	32.3	56.0	-23.7
0.599	11.8	20.2	32.0	56.0	-24.0
0.727	11.6	20.2	31.8	56.0	-24.2
1.795	11.5	20.3	31.8	56.0	-24.2
1.076	11.3	20.2	31.5	56.0	-24.5
1.340	11.2	20.2	31.4	56.0	-24.6
2.079	11.1	20.3	31.4	56.0	-24.6
2.747	11.0	20.3	31.3	56.0	-24.7
3.217	10.9	20.4	31.3	56.0	-24.7
3.688	10.8	20.4	31.2	56.0	-24.8
4.358	10.7	20.4	31.1	56.0	-24.9
0.403	12.4	20.2	32.6	57.8	-25.2
26.131	11.7	22.0	33.7	60.0	-26.3
0.336	12.7	20.2	32.9	59.3	-26.4
0.277	13.9	20.2	34.1	60.9	-26.8
20.271	10.4	21.5	31.9	60.0	-28.1
16.719	10.1	21.3	31.4	60.0	-28.6
10.756	10.3	20.8	31.1	60.0	-28.9
11.693	10.2	20.9	31.1	60.0	-28.9
0.223	13.6	20.2	33.8	62.7	-28.9
5.428	10.6	20.4	31.0	60.0	-29.0
6.366	10.5	20.5	31.0	60.0	-29.0
7.773	10.4	20.6	31.0	60.0	-29.0

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
24.000	9.3	21.8	31.1	50.0	-18.9
0.898	6.7	20.2	26.9	46.0	-19.1
0.538	6.1	20.2	26.3	46.0	-19.7
1.795	5.8	20.3	26.1	46.0	-19.9
0.599	5.8	20.2	26.0	46.0	-20.0
0.736	5.6	20.2	25.8	46.0	-20.2
1.139	5.3	20.2	25.5	46.0	-20.5
1.340	5.2	20.2	25.4	46.0	-20.6
1.943	5.0	20.3	25.3	46.0	-20.7
2.413	4.9	20.3	25.2	46.0	-20.8
3.351	4.8	20.4	25.2	46.0	-20.8
3.551	4.7	20.4	25.1	46.0	-20.9
4.288	4.6	20.4	25.0	46.0	-21.0
0.402	6.3	20.2	26.5	47.8	-21.3
26.131	5.8	22.0	27.8	50.0	-22.2
0.330	6.6	20.2	26.8	49.5	-22.7
0.278	7.9	20.2	28.1	50.9	-22.8
20.204	4.4	21.5	25.9	50.0	-24.1
16.922	4.1	21.3	25.4	50.0	-24.6
11.357	4.2	20.9	25.1	50.0	-24.9
13.637	4.1	21.0	25.1	50.0	-24.9
6.165	4.5	20.5	25.0	50.0	-25.0
7.102	4.4	20.6	25.0	50.0	-25.0
0.223	7.4	20.2	27.6	52.7	-25.1
7.773	4.3	20.6	24.9	50.0	-25.1

CONCLUSION

Pass



Tested By

DUTY CYCLE



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	N5171B (EXG)	TEY	2019-12-31	2022-12-31
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Attenuator	Fairview Microwave	SA18S5W-20	RFX	2021-06-02	2022-06-02
Block - DC	Fairview Microwave	SD3379	AMI	2021-08-13	2022-08-13
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2021-04-16	2022-04-16

TEST DESCRIPTION

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

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



TstTx 2021.12.14.1 XMI 2022.02.07.0

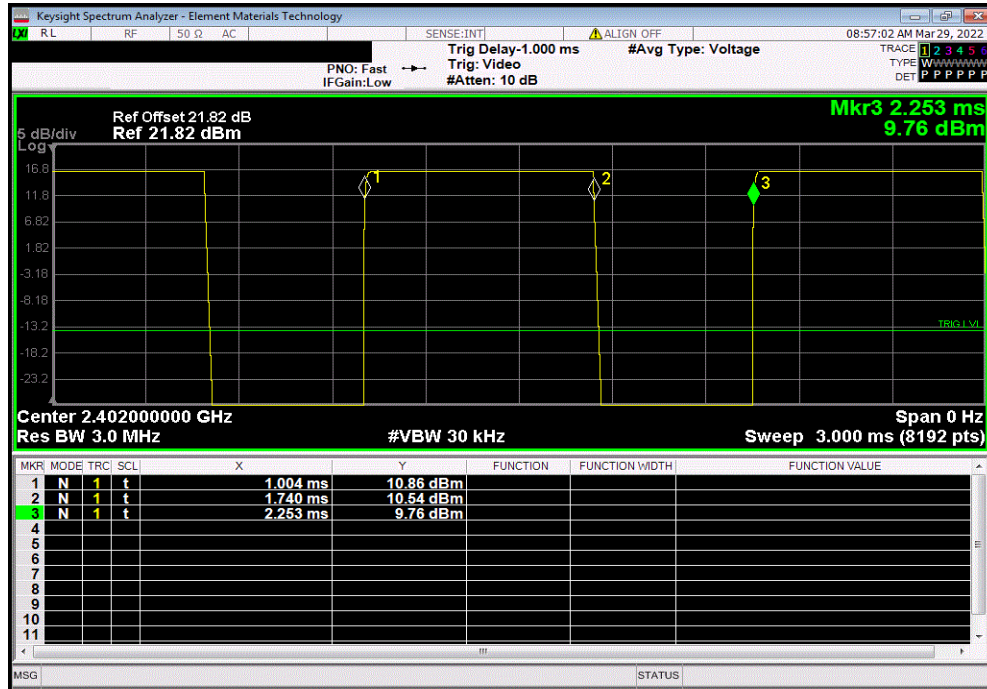
EUT: SLATESAFETY BAND V2		Work Order: FITY0001	
Serial Number: 6563		Date: 29-Mar-22	
Customer: FireHUD Inc. DBA SlateSafety		Temperature: 24.2 °C	
Attendees: Dustin Morris		Humidity: 19.1% RH	
Project: None		Barometric Pres.: 1015 mbar	
Tested by: Andrew Rogstad, Christopher Heintzelman		Power: 110VAC/60Hz	
		Job Site: MN08	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset accounts for measurement cable, DC block, attenuator, and customer's cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
	Pulse Width	Period	Number of Pulses
			Value (%)
			Limit (%)
			Results
BLE/GFSK 125 kbps Low Channel, 2402 MHz	736.47 us	1.249 ms	1
BLE/GFSK 125 kbps Low Channel, 2402 MHz	N/A	N/A	5
BLE/GFSK 125 kbps Mid Channel, 2442 MHz	738.3 us	1.249 ms	1
BLE/GFSK 125 kbps Mid Channel, 2442 MHz	N/A	N/A	5
BLE/GFSK 125 kbps High Channel, 2480 MHz	739.39 us	1.251 ms	1
BLE/GFSK 125 kbps High Channel, 2480 MHz	N/A	N/A	5
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	105.15 us	625.1 us	1
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	N/A	N/A	5
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz	105.617 us	625.1 us	1
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz	N/A	N/A	5
BLE/GFSK 1 Mbps High Channel, 2480 MHz	106.682 us	625.1 us	1
BLE/GFSK 1 Mbps High Channel, 2480 MHz	N/A	N/A	5
BLE/GFSK 2 Mbps Low Channel, 2402 MHz	68.271 us	625.1 us	1
BLE/GFSK 2 Mbps Low Channel, 2402 MHz	N/A	N/A	5
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz	67.417 us	625.1 us	1
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz	N/A	N/A	5
BLE/GFSK 2 Mbps High Channel, 2480 MHz	67.705 us	625 us	1
BLE/GFSK 2 Mbps High Channel, 2480 MHz	N/A	N/A	5

DUTY CYCLE

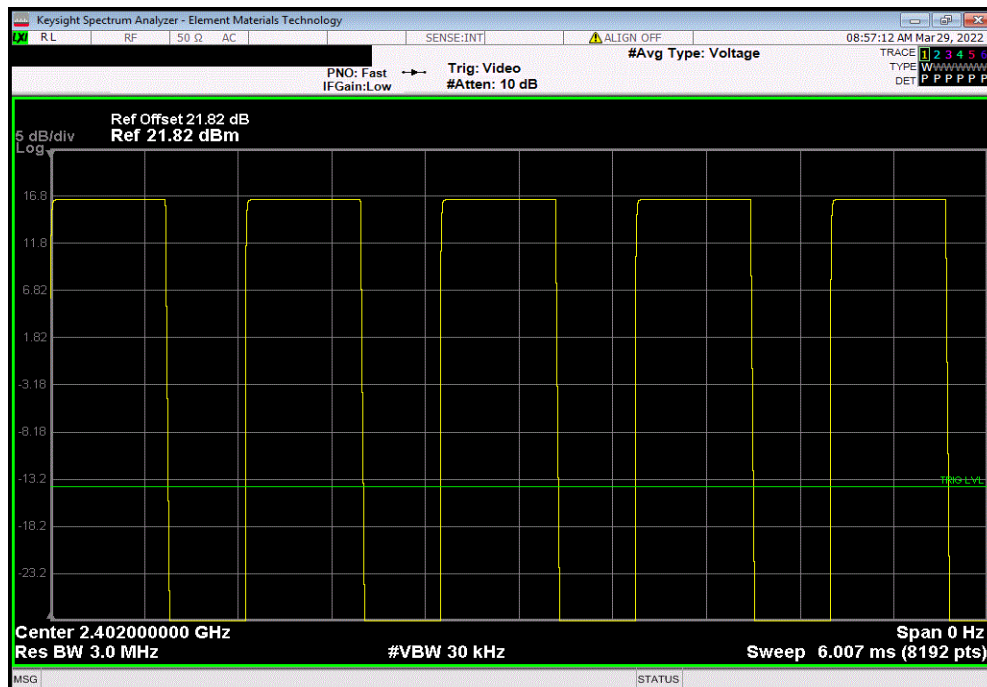


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
736.47 us	1.249 ms	1	59	N/A	N/A	



BLE/GFSK 125 kbps Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

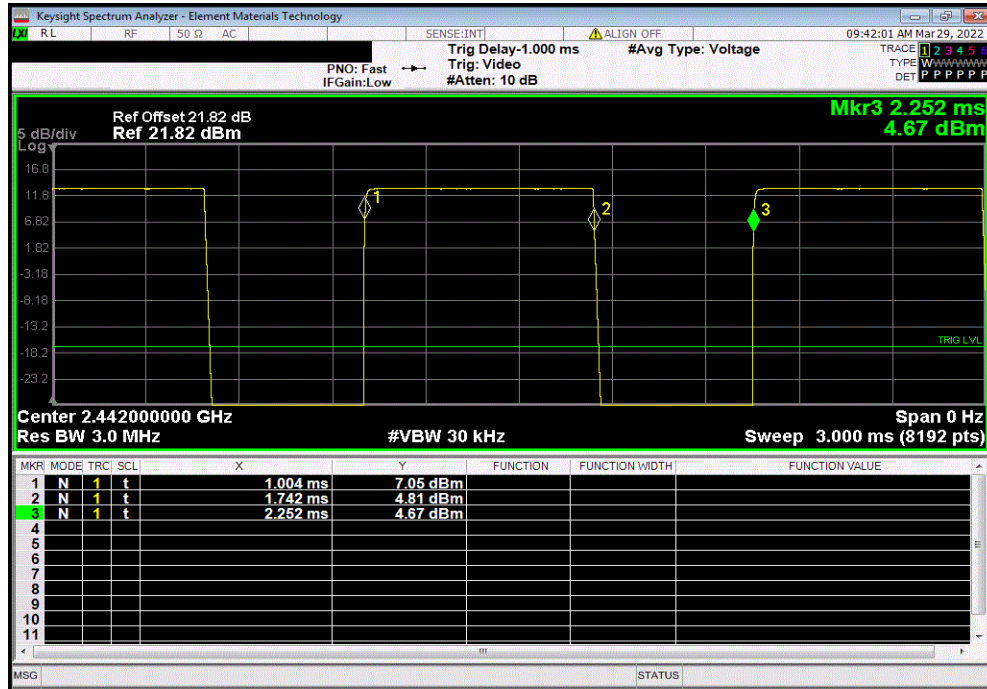


DUTY CYCLE

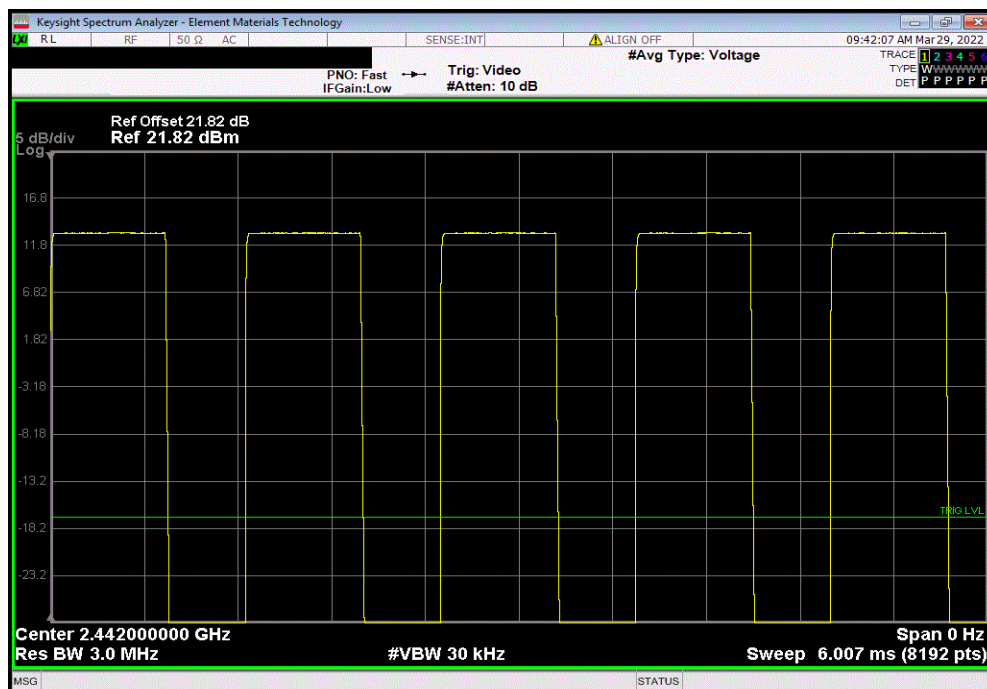


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps Mid Channel, 2442 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
738.3 us	1.249 ms	1	59.1	N/A	N/A	



BLE/GFSK 125 kbps Mid Channel, 2442 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

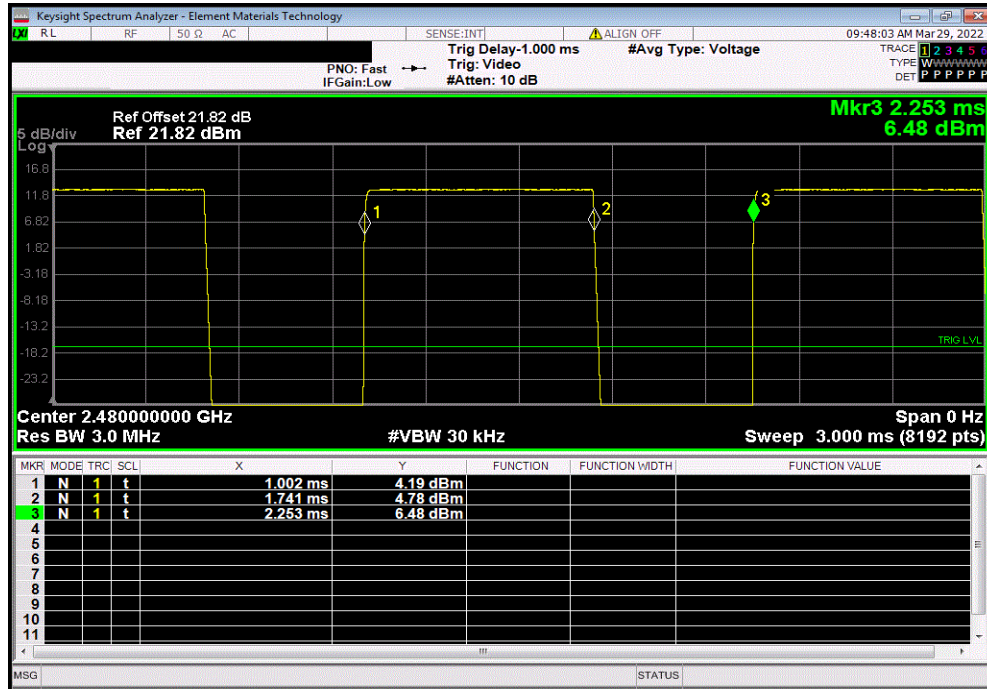


DUTY CYCLE

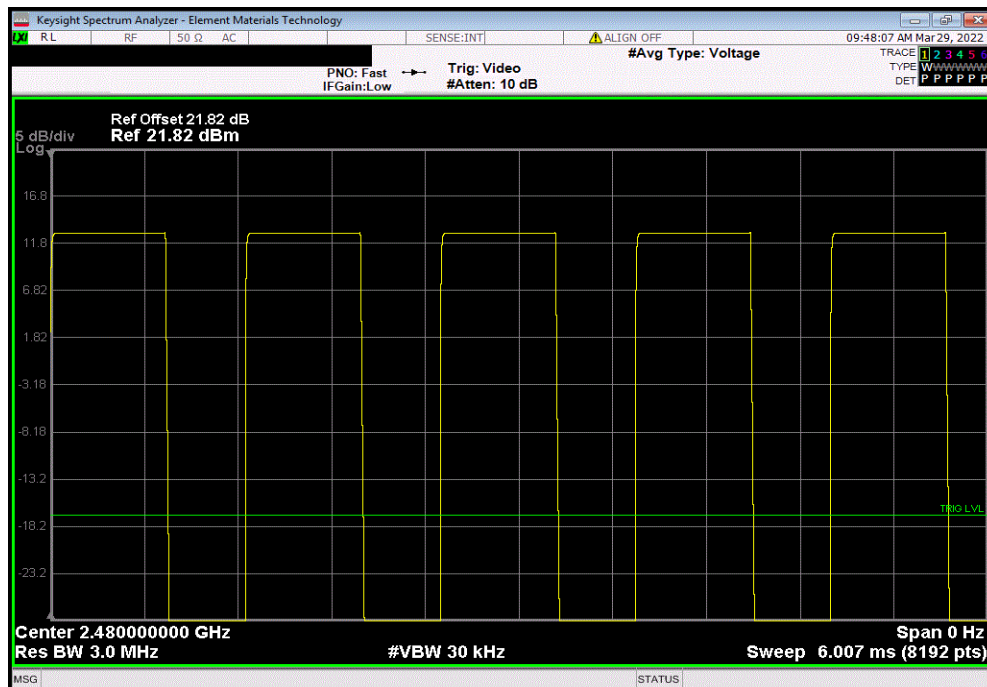


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
739.39 us	1.251 ms	1	59.1	N/A	N/A	



BLE/GFSK 125 kbps High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

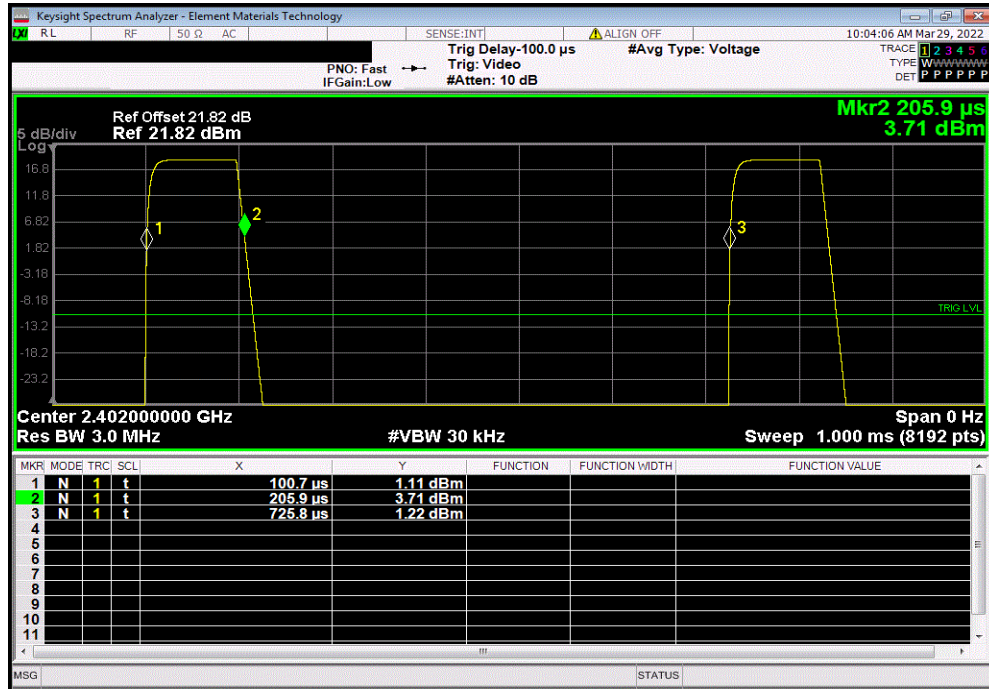


DUTY CYCLE

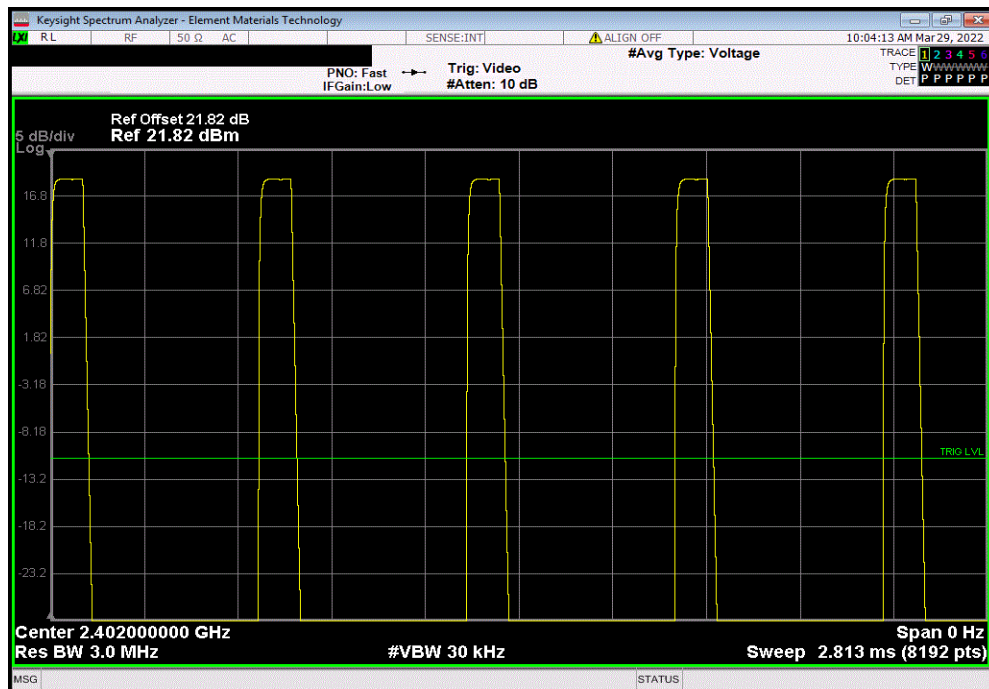


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 1 Mbps Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
105.15 us	625.1 us	1	16.8	N/A	N/A	



BLE/GFSK 1 Mbps Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

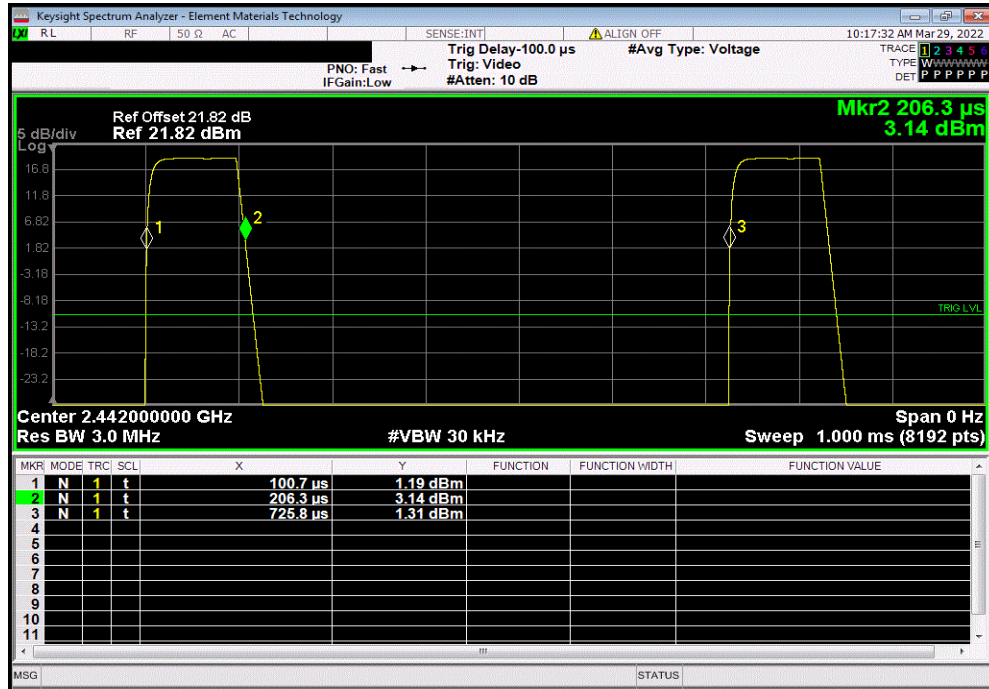


DUTY CYCLE

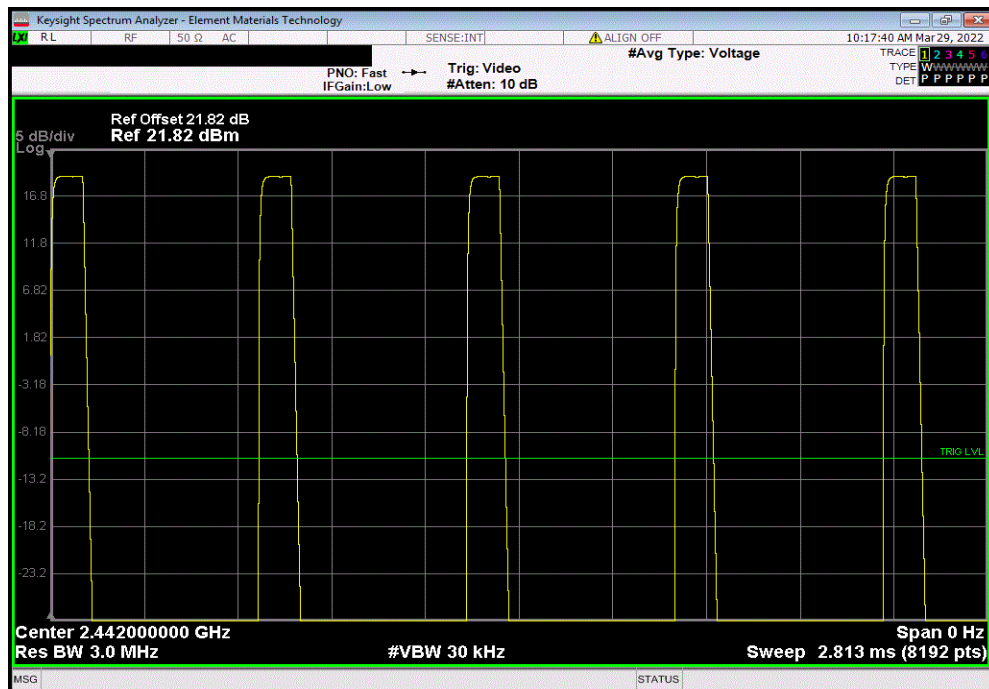


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 1 Mbps Mid Channel, 2442 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
105.617 us	625.1 us	1	16.9	N/A	N/A	



BLE/GFSK 1 Mbps Mid Channel, 2442 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

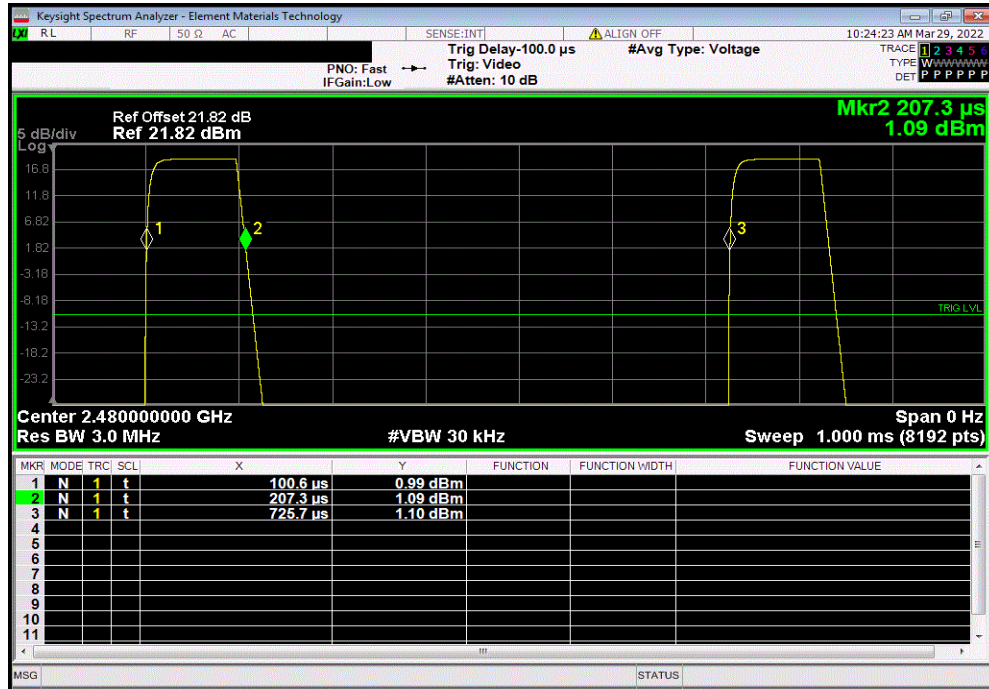


DUTY CYCLE

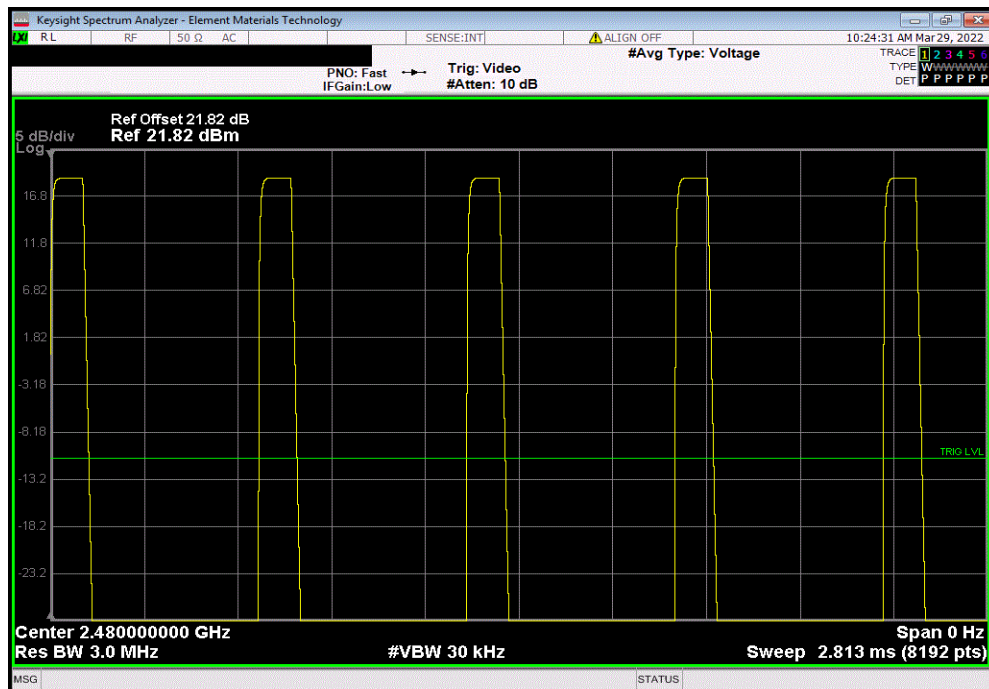


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 1 Mbps High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
106.682 us	625.1 us	1	17.1	N/A	N/A	



BLE/GFSK 1 Mbps High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

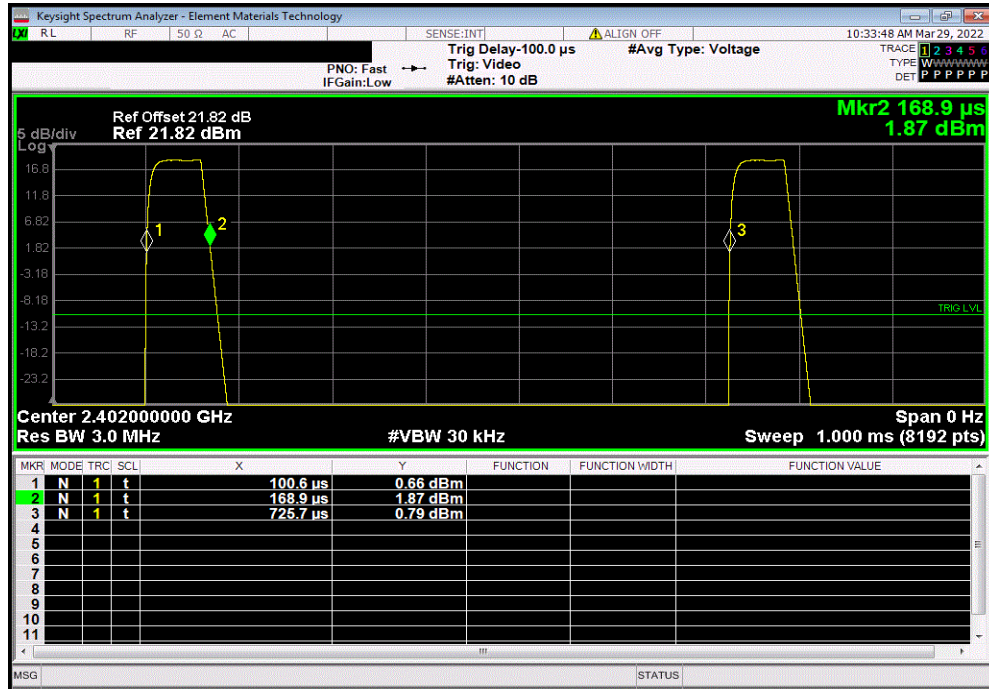


DUTY CYCLE

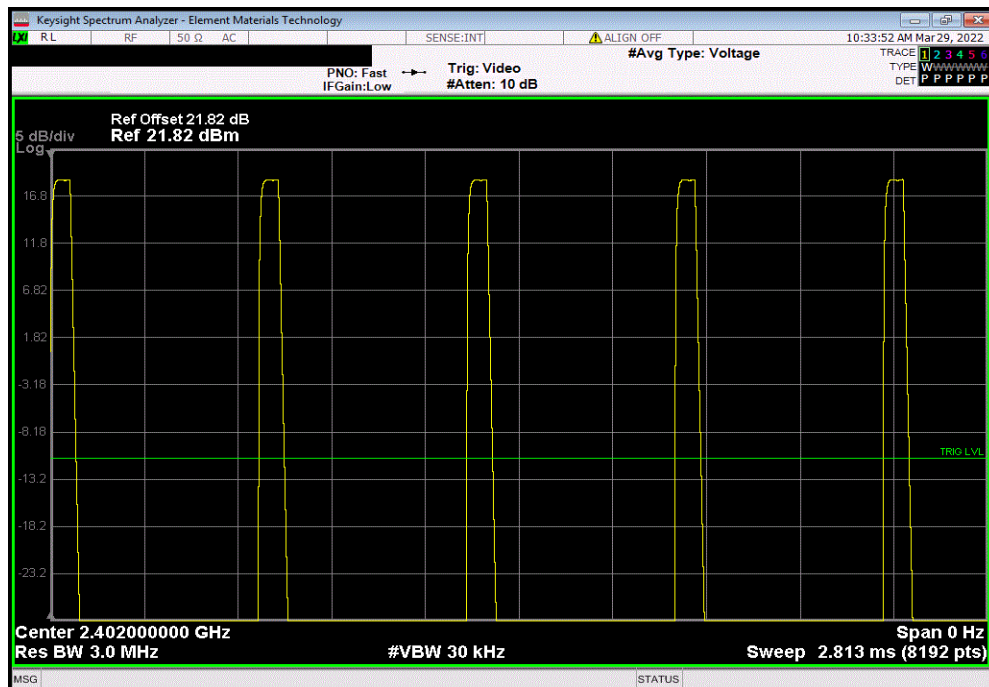


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
68.271 μ s	625.1 μ s	1	10.9	N/A	N/A	



BLE/GFSK 2 Mbps Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



[illegible]

Keysight Spectrum Analyzer - Element Materials Technology

10:47:13 AM Mar 29, 2022

ALIGN OFF

#Avg Type: Voltage

PNO: Fast IFGain:Low Trig: Video #Atten: 10 dB

Ref Offset 21.82 dB
Ref 21.82 dBm

5 dB/div
Log

Center 2.442000000 GHz
Res BW 3.0 MHz

#VBW 30 kHz

Sweep 2.813 ms (8192 pts)

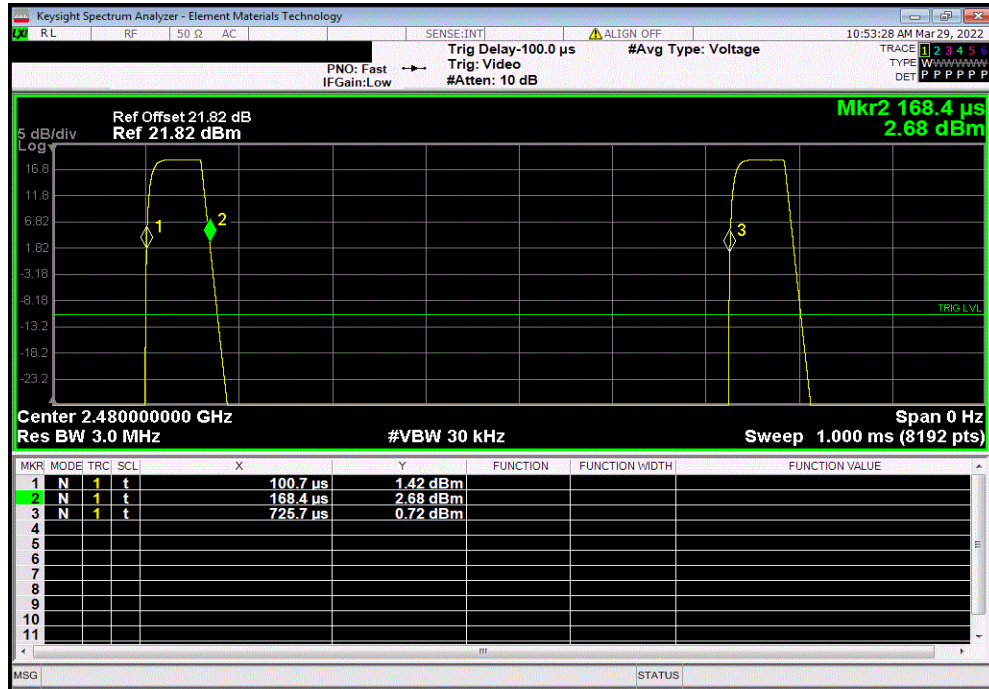
Span 0 Hz

DUTY CYCLE

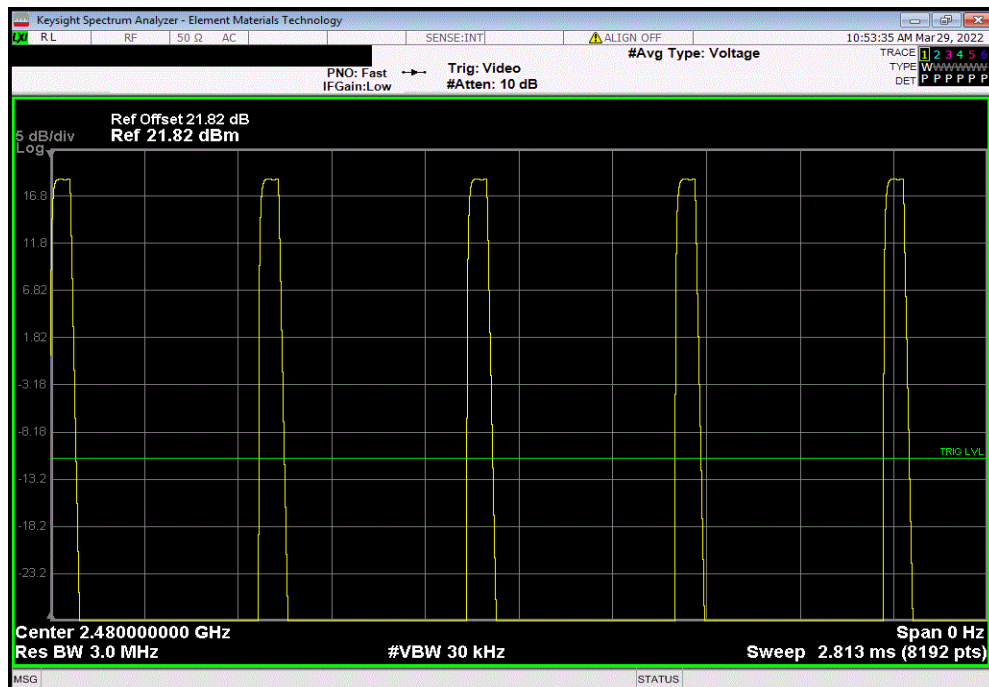


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
67.705 μ s	625 μ s	1	10.8	N/A	N/A	



BLE/GFSK 2 Mbps High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



OCCUPIED BANDWIDTH



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	N5171B (EXG)	TEY	2019-12-31	2022-12-31
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2021-04-16	2022-04-16
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Attenuator	Fairview Microwave	SA18S5W-20	RFX	2021-06-02	2022-06-02
Block - DC	Fairview Microwave	SD3379	AMI	2021-08-13	2022-08-13

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



TSTx 2021.12.14.1 XMR 2022.02.07.0

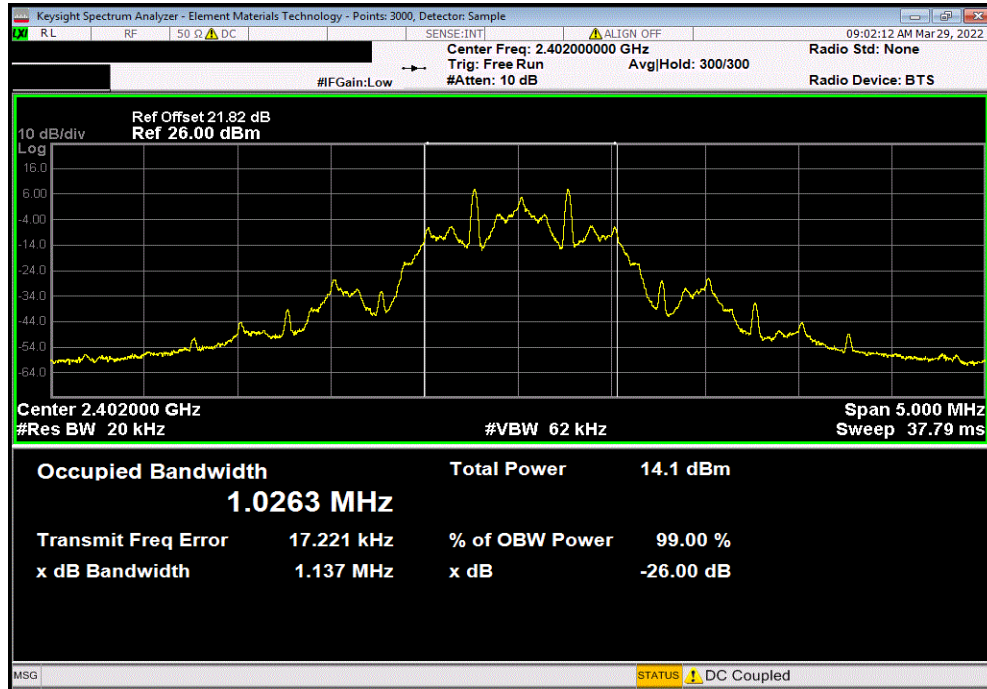
EUT: SLATESAFETY BAND V2		Work Order: FITY0001	
Serial Number: 6563		Date: 29-Mar-22	
Customer: FireHUD Inc. DBA SlateSafety		Temperature: 24.4 °C	
Attendees: Dustin Morris		Humidity: 19.9% RH	
Project: None		Barometric Pres.: 1015 mbar	
Tested by: Andrew Rogstad, Christopher Heintzelman		Power: 110VAC/60Hz	
		Job Site: MN08	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset accounts for measurement cable, DC block, attenuator, and customer's cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature <i>Andrew Rogstad</i>	
		Value	Limit
BLE/GFSK 125 kbps Low Channel, 2402 MHz		1.026 MHz	N/A
BLE/GFSK 125 kbps Mid Channel, 2442 MHz		1.027 MHz	N/A
BLE/GFSK 125 kbps High Channel, 2480 MHz		1.027 MHz	N/A
BLE/GFSK 1 Mbps Low Channel, 2402 MHz		1.04 MHz	N/A
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz		1.032 MHz	N/A
BLE/GFSK 1 Mbps High Channel, 2480 MHz		1.04 MHz	N/A
BLE/GFSK 2 Mbps Low Channel, 2402 MHz		2.036 MHz	N/A
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz		2.049 MHz	N/A
BLE/GFSK 2 Mbps High Channel, 2480 MHz		2.044 MHz	N/A
		Result	N/A

OCCUPIED BANDWIDTH

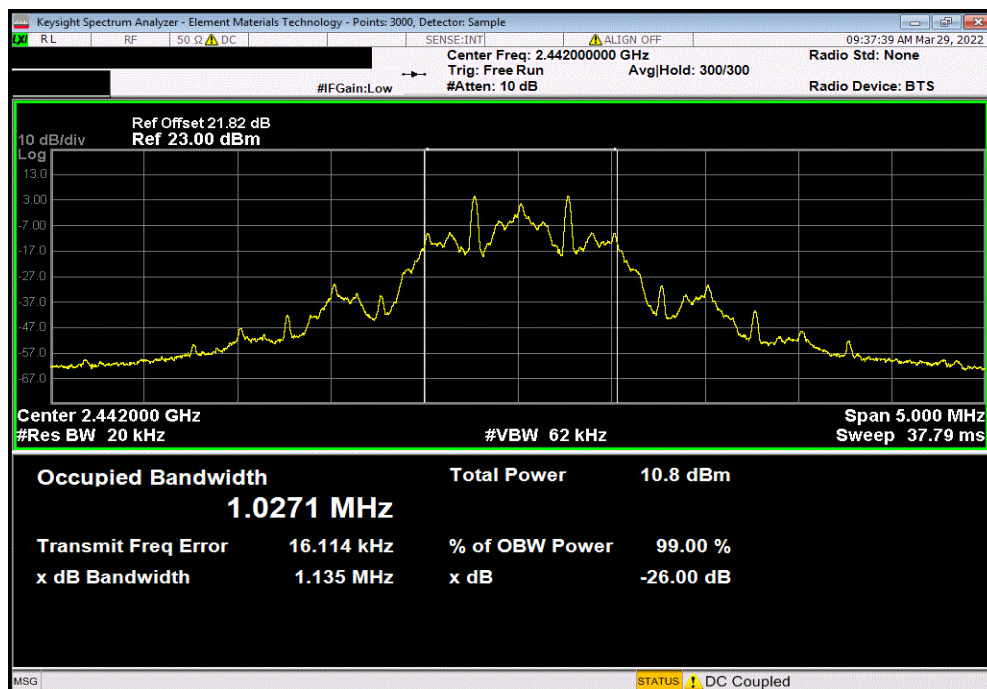


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps Low Channel, 2402 MHz						
				Value	Limit	Result
				1.026 MHz	N/A	N/A



BLE/GFSK 125 kbps Mid Channel, 2442 MHz						
				Value	Limit	Result
				1.027 MHz	N/A	N/A

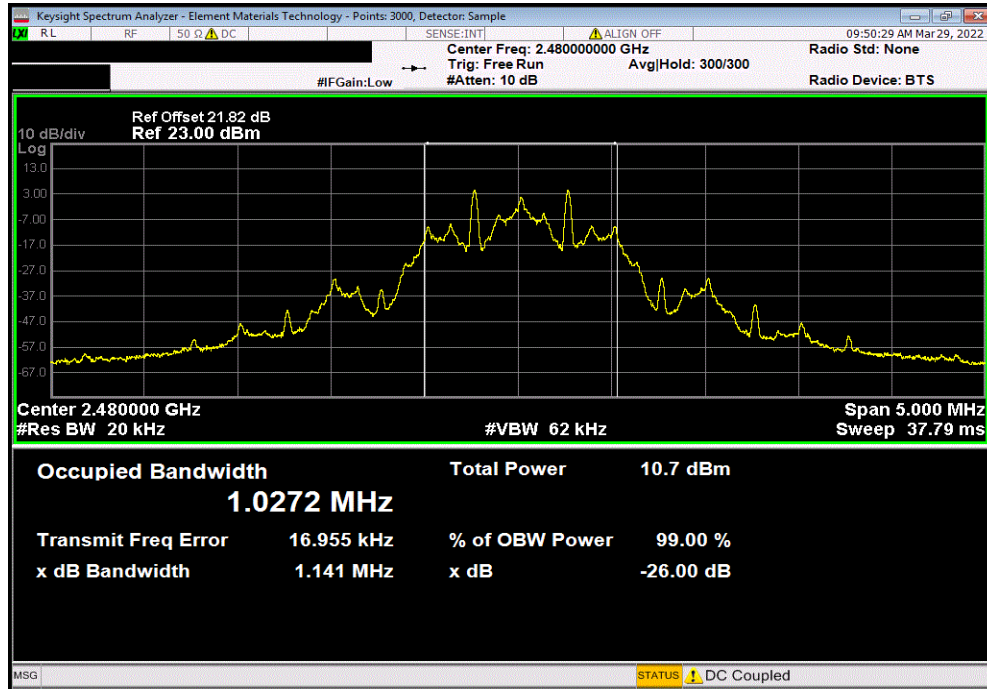


OCCUPIED BANDWIDTH

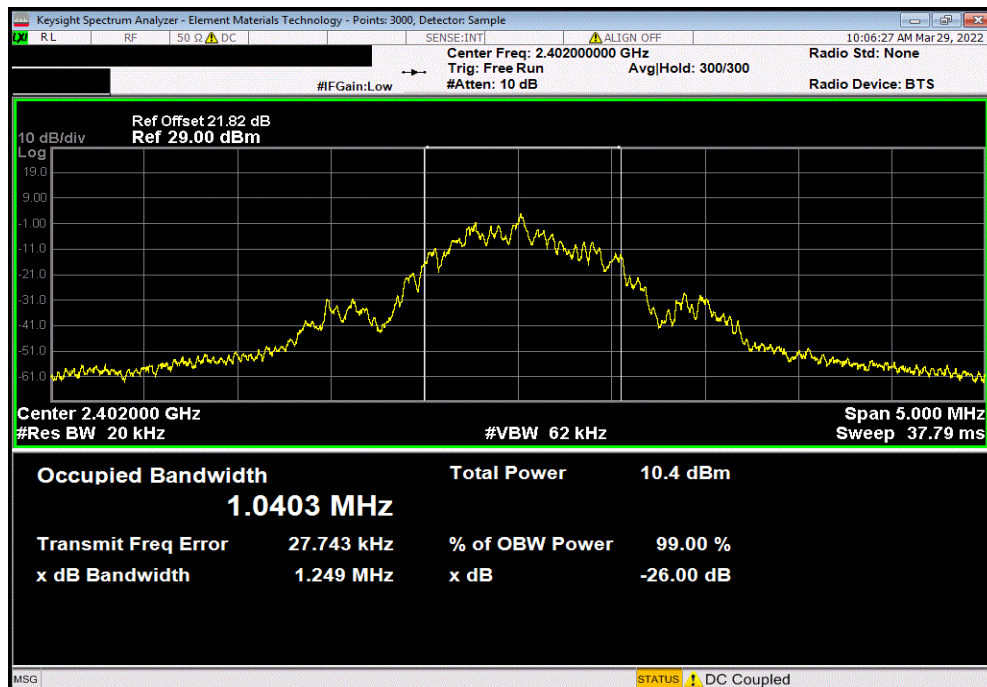


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps High Channel, 2480 MHz						
				Value	Limit	Result
				1.027 MHz	N/A	N/A



BLE/GFSK 1 Mbps Low Channel, 2402 MHz						
				Value	Limit	Result
				1.04 MHz	N/A	N/A

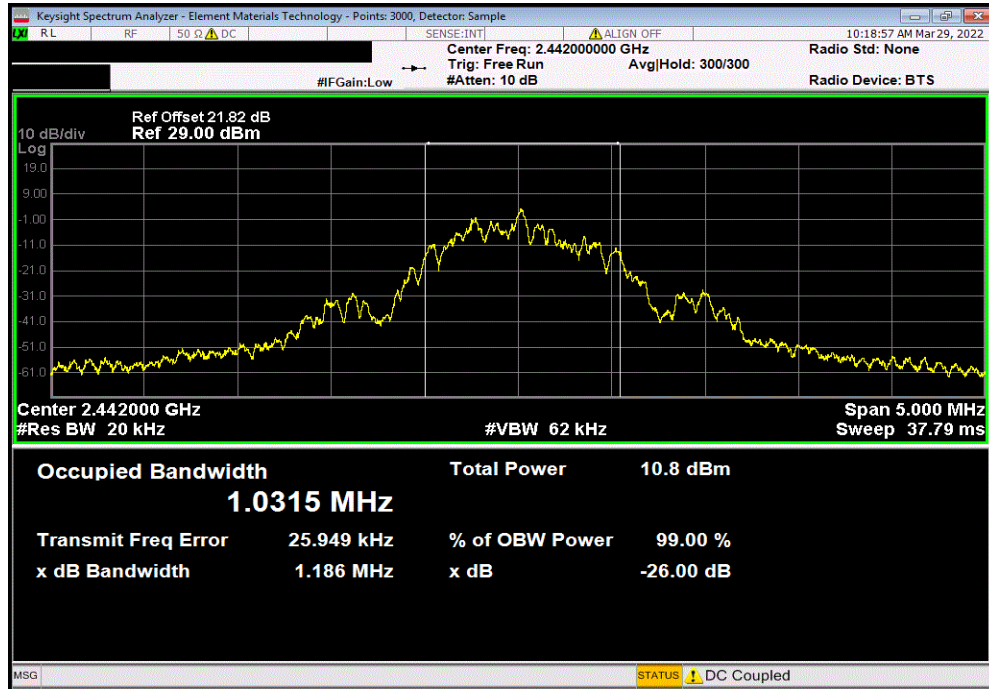


OCCUPIED BANDWIDTH

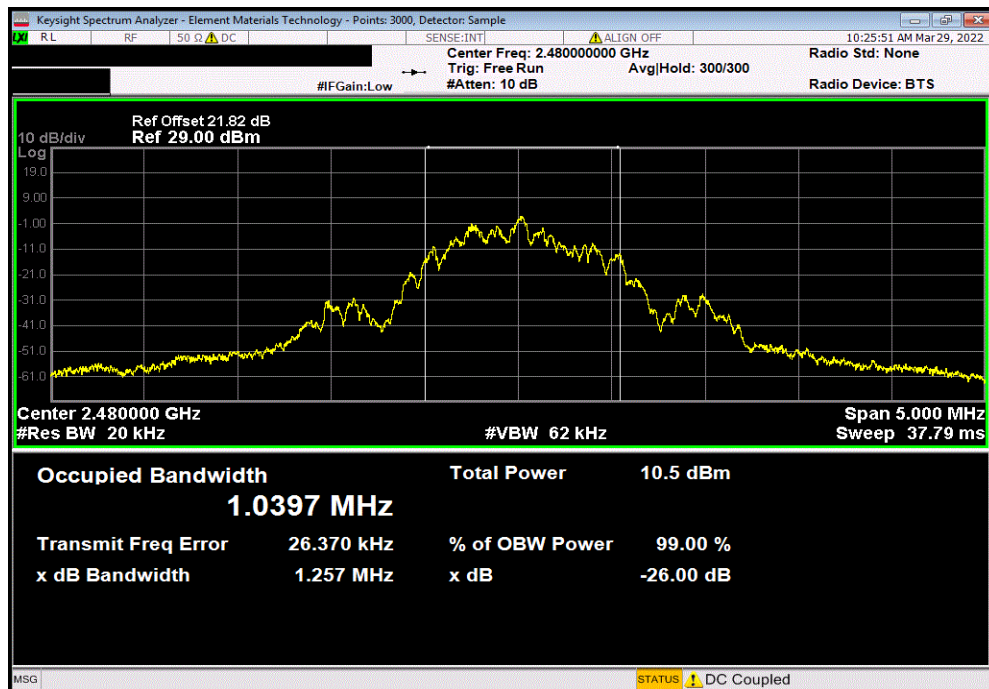


TbTtx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 1 Mbps Mid Channel, 2442 MHz						
				Value	Limit	Result
				1.032 MHz	N/A	N/A



BLE/GFSK 1 Mbps High Channel, 2480 MHz						
				Value	Limit	Result
				1.04 MHz	N/A	N/A

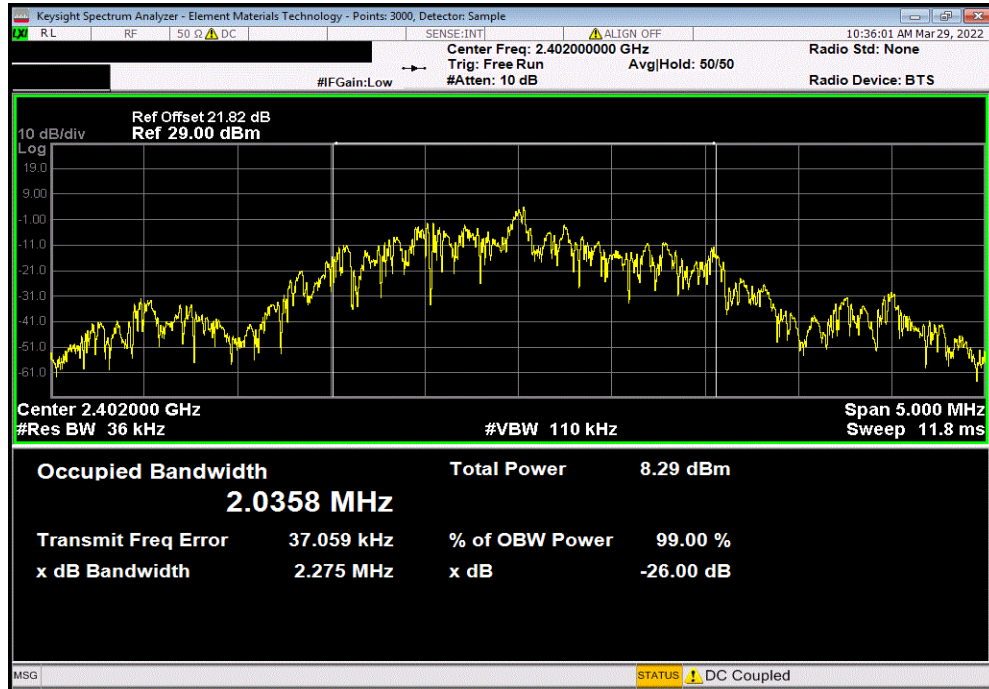


OCCUPIED BANDWIDTH

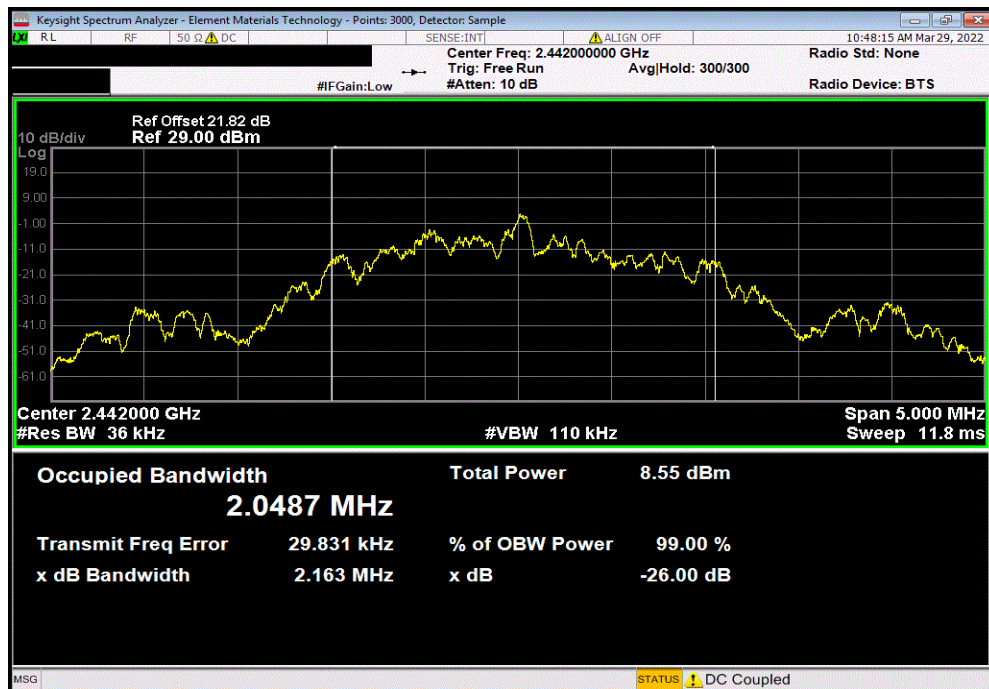


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps Low Channel, 2402 MHz						
				Value	Limit	Result
				2.036 MHz	N/A	N/A



BLE/GFSK 2 Mbps Mid Channel, 2442 MHz						
				Value	Limit	Result
				2.049 MHz	N/A	N/A

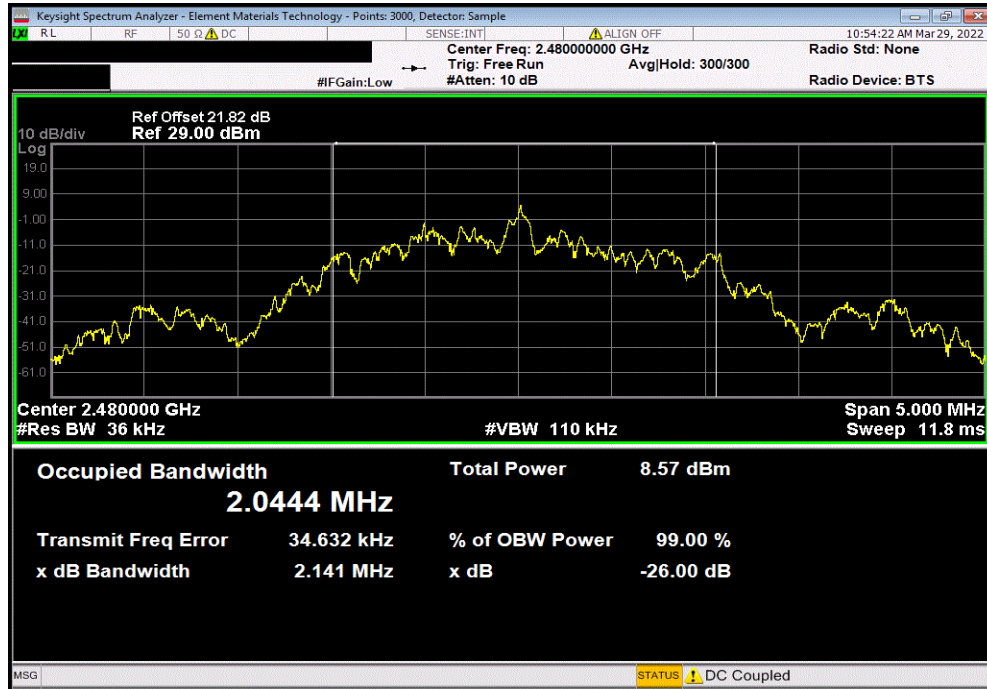


OCCUPIED BANDWIDTH



TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps High Channel, 2480 MHz						
				Value	Limit	Result
				2.044 MHz	N/A	N/A



DTS BANDWIDTH



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	N5171B (EXG)	TEY	2019-12-31	2022-12-31
Cable	Micro-Coax	D150A-1-0720-200	MNL	2021-09-12	2022-09-12
Attenuator	Fairview Microwave	SA18S5W-20	RFX	2021-06-02	2022-06-02
Block - DC	Fairview Microwave	SD3379	AMI	2021-08-13	2022-08-13
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2021-04-16	2022-04-16

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.

From section 11.8.2 in ANSI C63.10:2013, Option 2 was used.

DTS BANDWIDTH



TMTr 2021.12.14.1 XMR 2022.02.07.0

EUT: SLATESAFETY BAND V2		Work Order: FITY0001	
Serial Number: 6563		Date: 29-Mar-22	
Customer: FireHUD Inc. DBA SlateSafety		Temperature: 24.3 °C	
Attendees: Dustin Morris		Humidity: 20% RH	
Project: None		Barometric Pres.: 1015 mbar	
Tested by: Andrew Rogstad, Christopher Heintzelman		Power: 110VAC/60Hz	
		Job Site: MN08	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset accounts for measurement cable, DC block, attenuator, and customer's cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature <i>Andrew Rogstad</i>	

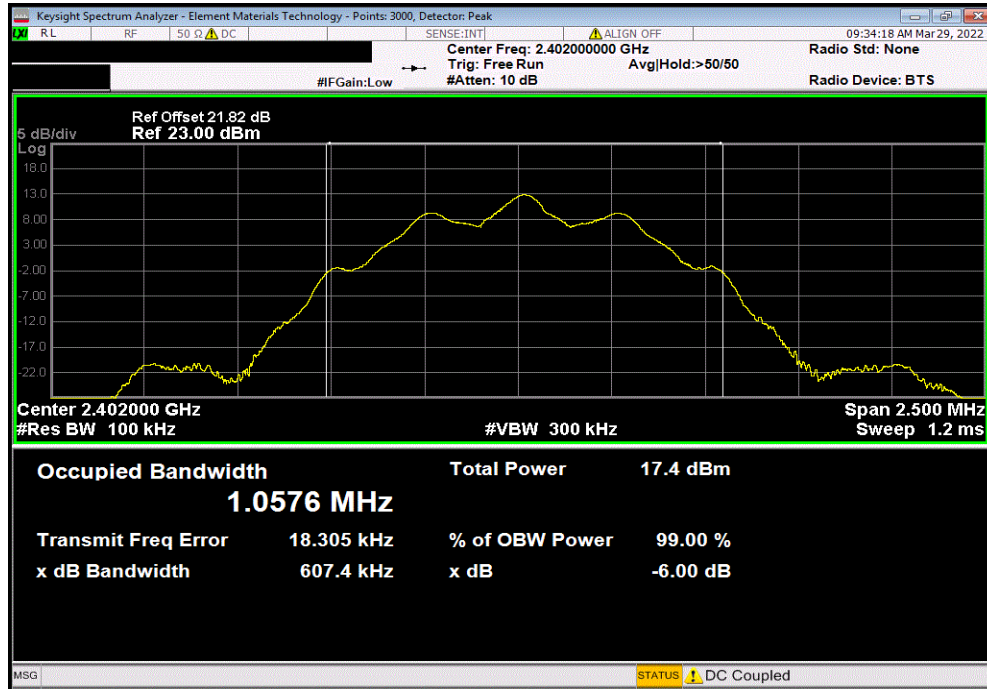
	Value	Limit (±)	Result
BLE/GFSK 125 kbps Low Channel, 2402 MHz	607.42 kHz	500 kHz	Pass
BLE/GFSK 125 kbps Mid Channel, 2442 MHz	608.219 kHz	500 kHz	Pass
BLE/GFSK 125 kbps High Channel, 2480 MHz	608.723 kHz	500 kHz	Pass
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	517.566 kHz	500 kHz	Pass
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz	548.197 kHz	500 kHz	Pass
BLE/GFSK 1 Mbps High Channel, 2480 MHz	557.336 kHz	500 kHz	Pass
BLE/GFSK 2 Mbps Low Channel, 2402 MHz	859.496 kHz	500 kHz	Pass
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz	851.452 kHz	500 kHz	Pass
BLE/GFSK 2 Mbps High Channel, 2480 MHz	852.584 kHz	500 kHz	Pass

DTS BANDWIDTH

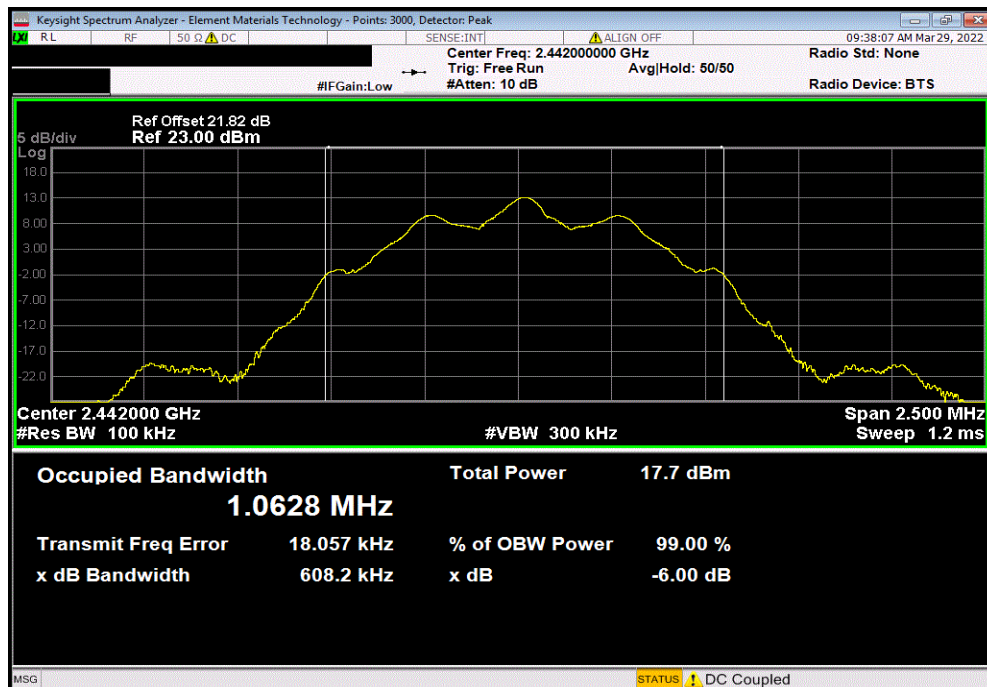


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps Low Channel, 2402 MHz						
				Value	Limit (≥)	Result
				607.42 kHz	500 kHz	Pass



BLE/GFSK 125 kbps Mid Channel, 2442 MHz						
				Value	Limit (≥)	Result
				608.219 kHz	500 kHz	Pass

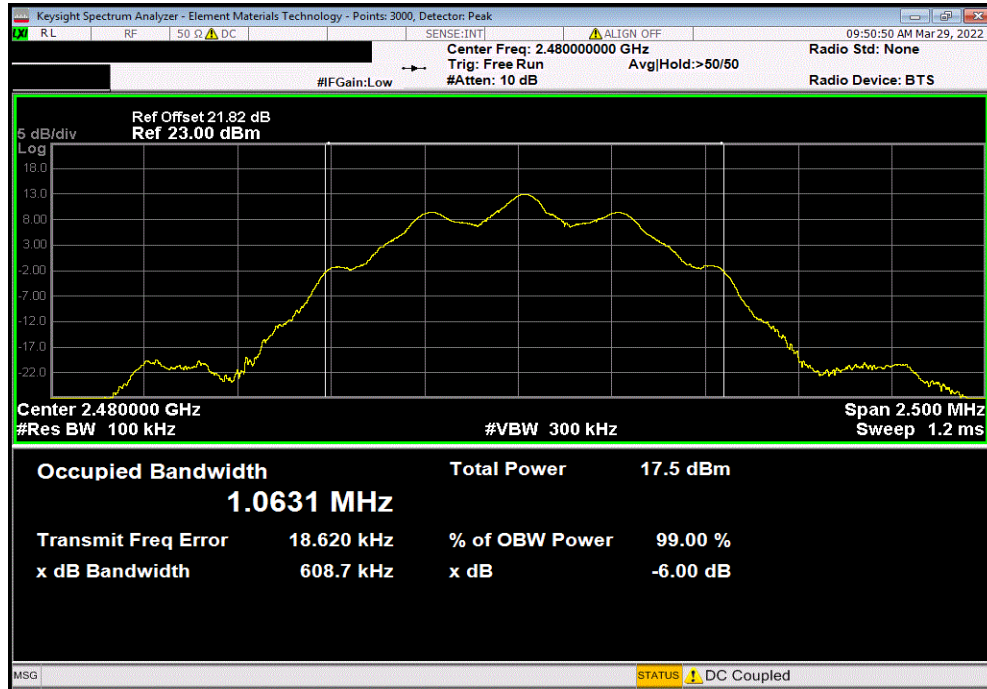


DTS BANDWIDTH

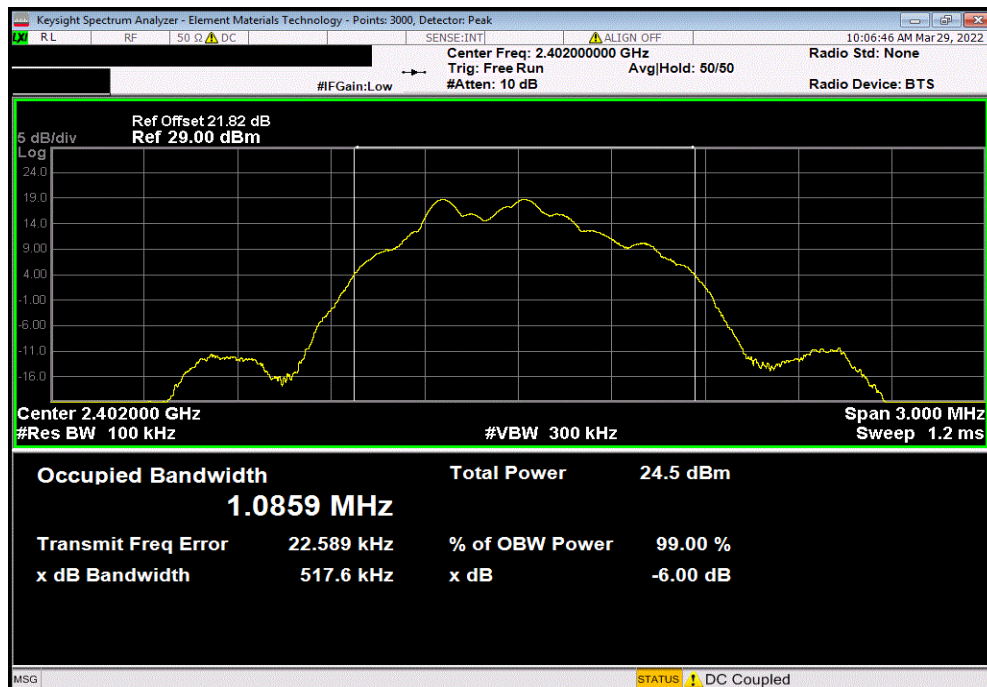


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps High Channel, 2480 MHz						
Value				Limit (≥)	Result	
			608.723 kHz	500 kHz	Pass	



BLE/GFSK 1 Mbps Low Channel, 2402 MHz						
Value				Limit (≥)	Result	
			517.566 kHz	500 kHz	Pass	

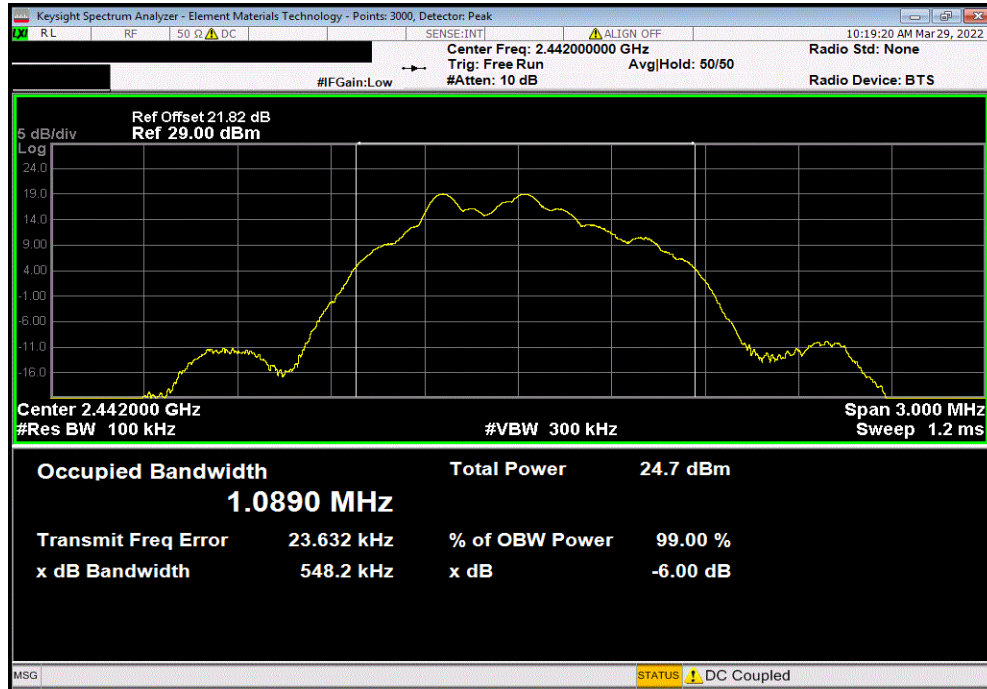


DTS BANDWIDTH

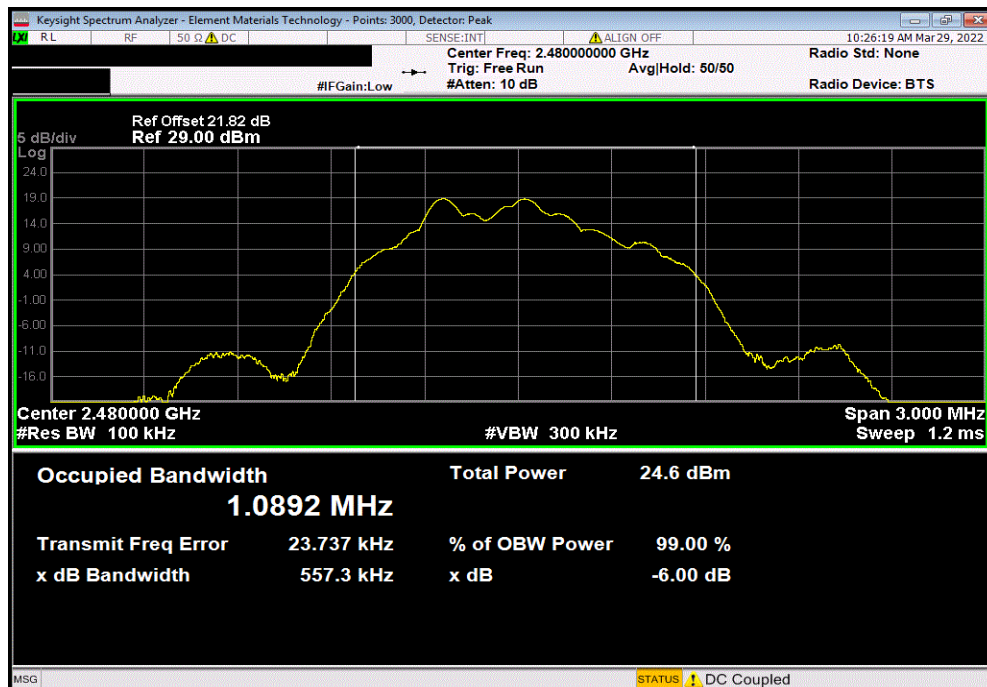


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 1 Mbps Mid Channel, 2442 MHz						
Value				Limit (≥)	Result	
			548.197 kHz	500 kHz	Pass	



BLE/GFSK 1 Mbps High Channel, 2480 MHz						
Value				Limit (≥)	Result	
			557.336 kHz	500 kHz	Pass	

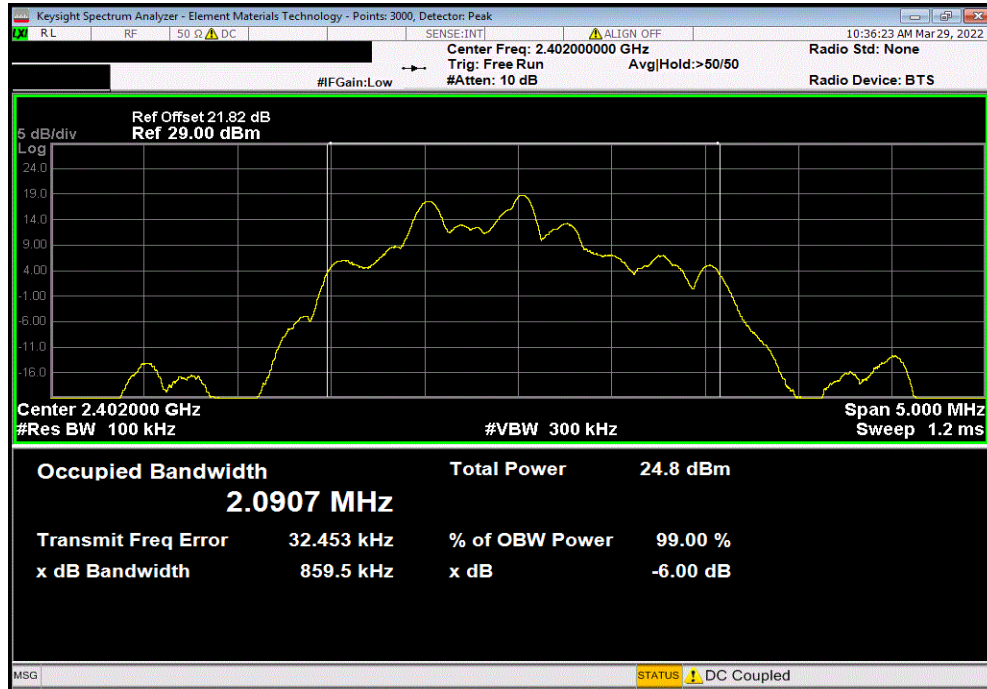


DTS BANDWIDTH

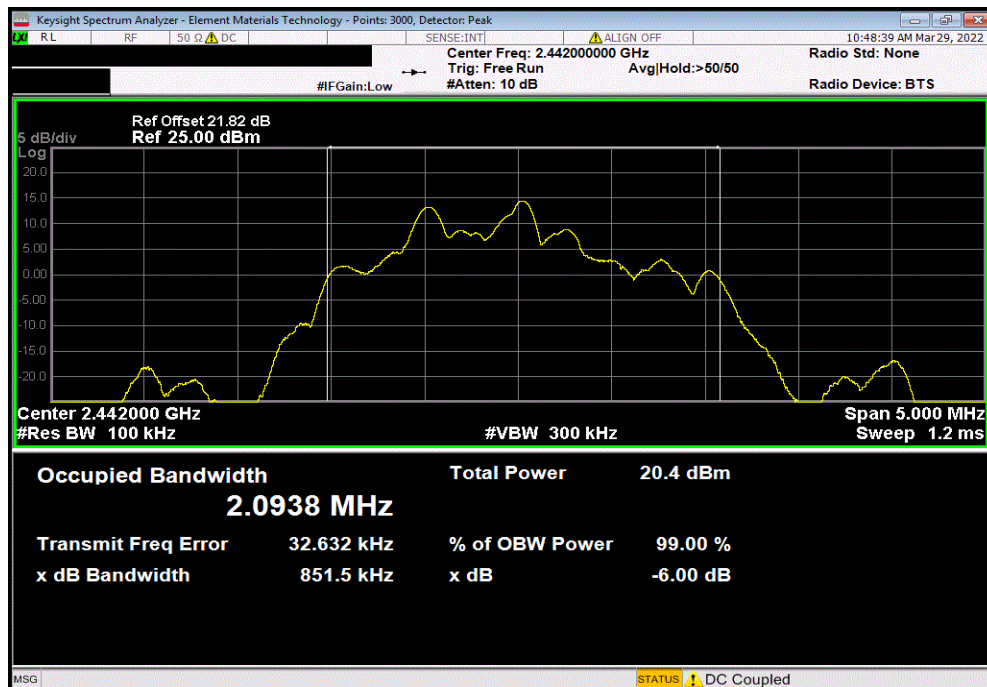


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps Low Channel, 2402 MHz						
				Value	Limit (≥)	Result
				859.496 kHz	500 kHz	Pass



BLE/GFSK 2 Mbps Mid Channel, 2442 MHz						
				Value	Limit (≥)	Result
				851.452 kHz	500 kHz	Pass

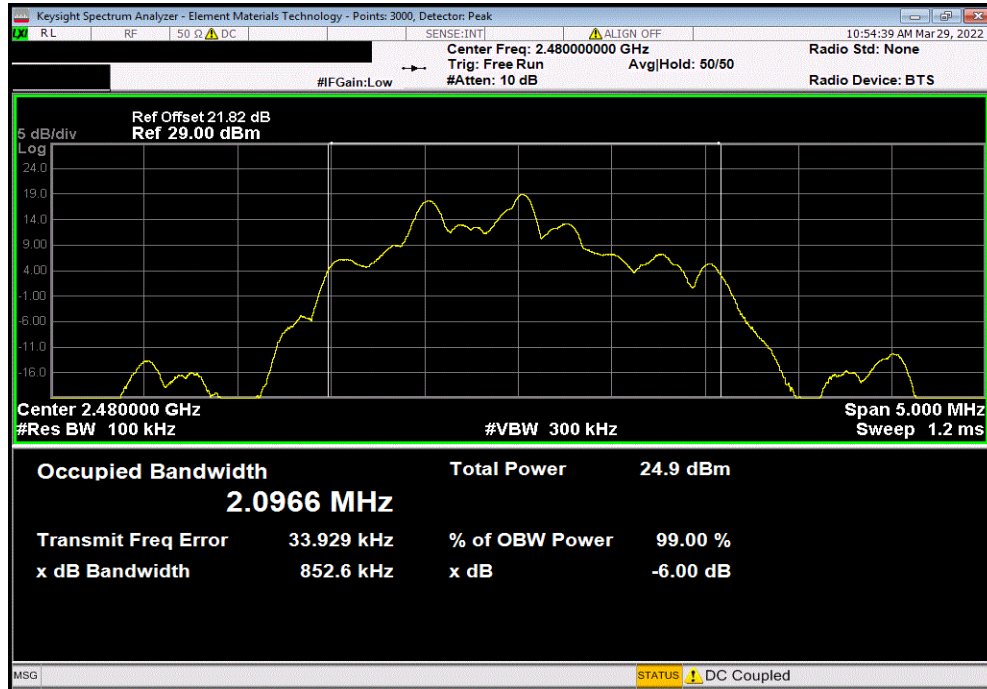


DTS BANDWIDTH



TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps High Channel, 2480 MHz						
Value				Limit	Result	
				(≥)		
852.584 kHz				500 kHz	Pass	



OUTPUT POWER



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	N5171B (EXG)	TEY	2019-12-31	2022-12-31
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Attenuator	Fairview Microwave	SA18S5W-20	RFX	2021-06-02	2022-06-02
Block - DC	Fairview Microwave	SD3379	AMI	2021-08-13	2022-08-13
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2021-04-16	2022-04-16

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.

Prior to measuring peak transmit power the DTS bandwidth (B) was measured.

The method found in ANSI C63.10:2013 Section 11.9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

OUTPUT POWER



TSMTx 2021.12.14.1 XMR 2022.02.07.0

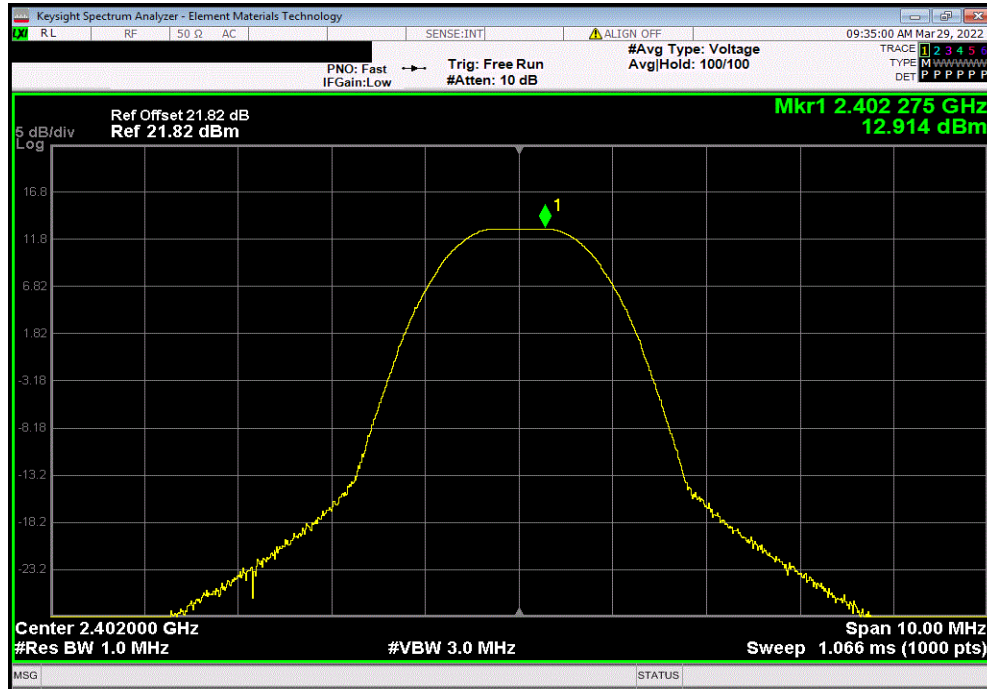
EUT: SLATESAFETY BAND V2		Work Order: FITY0001	
Serial Number: 6563		Date: 29-Mar-22	
Customer: FireHUD Inc. DBA SlateSafety		Temperature: 24.4 °C	
Attendees: Dustin Morris		Humidity: 19.8% RH	
Project: None		Barometric Pres.: 1015 mbar	
Tested by: Andrew Rogstad, Christopher Heintzelman		Power: 110VAC/60Hz	
		Job Site: MN08	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset accounts for measurement cable, DC block, attenuator, and customer's cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature <i>Andrew Rogstad</i>	
		Out Pwr (dBm)	Limit (dBm) Result
BLE/GFSK 125 kbps Low Channel, 2402 MHz		12.914	30 Pass
BLE/GFSK 125 kbps Mid Channel, 2442 MHz		13.195	30 Pass
BLE/GFSK 125 kbps High Channel, 2480 MHz		12.994	30 Pass
BLE/GFSK 1 Mbps Low Channel, 2402 MHz		18.678	30 Pass
BLE/GFSK 1 Mbps Mid Channel, 2442 MHz		18.949	30 Pass
BLE/GFSK 1 Mbps High Channel, 2480 MHz		18.794	30 Pass
BLE/GFSK 2 Mbps Low Channel, 2402 MHz		18.754	30 Pass
BLE/GFSK 2 Mbps Mid Channel, 2442 MHz		18.957	30 Pass
BLE/GFSK 2 Mbps High Channel, 2480 MHz		18.835	30 Pass

OUTPUT POWER

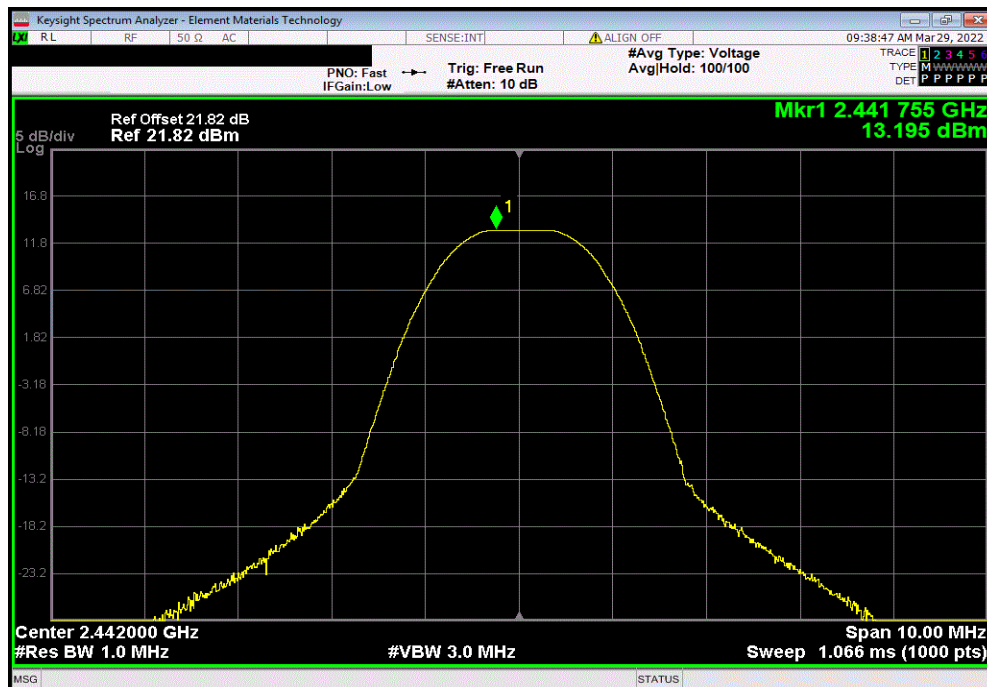


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps Low Channel, 2402 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				12.914	30	Pass



BLE/GFSK 125 kbps Mid Channel, 2442 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				13.195	30	Pass

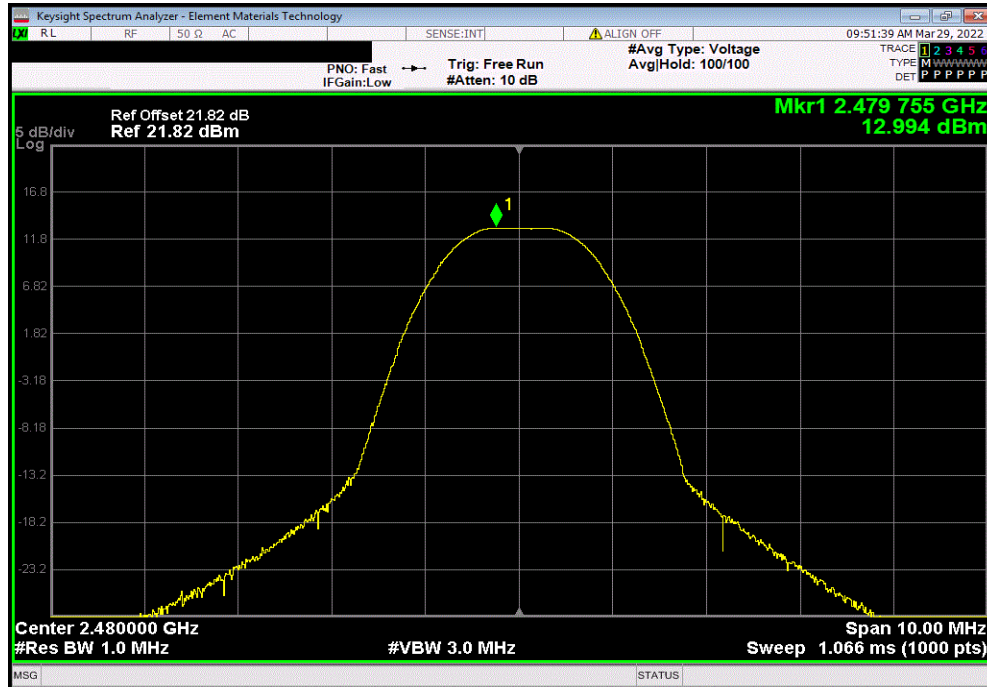


OUTPUT POWER

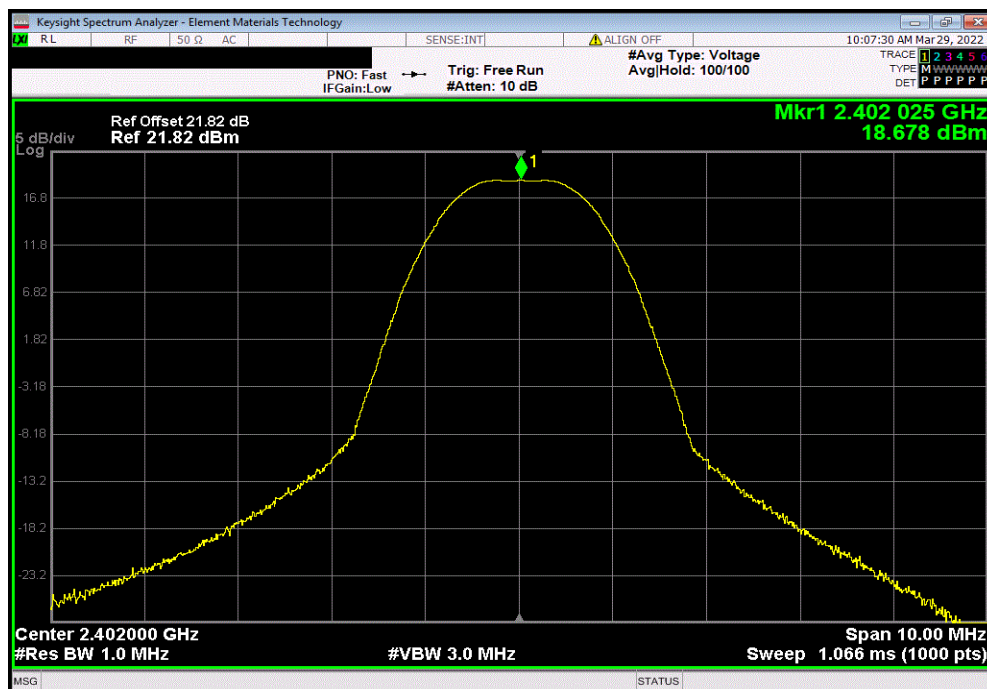


TbTtx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 125 kbps High Channel, 2480 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				12.994	30	Pass



BLE/GFSK 1 Mbps Low Channel, 2402 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				18.678	30	Pass

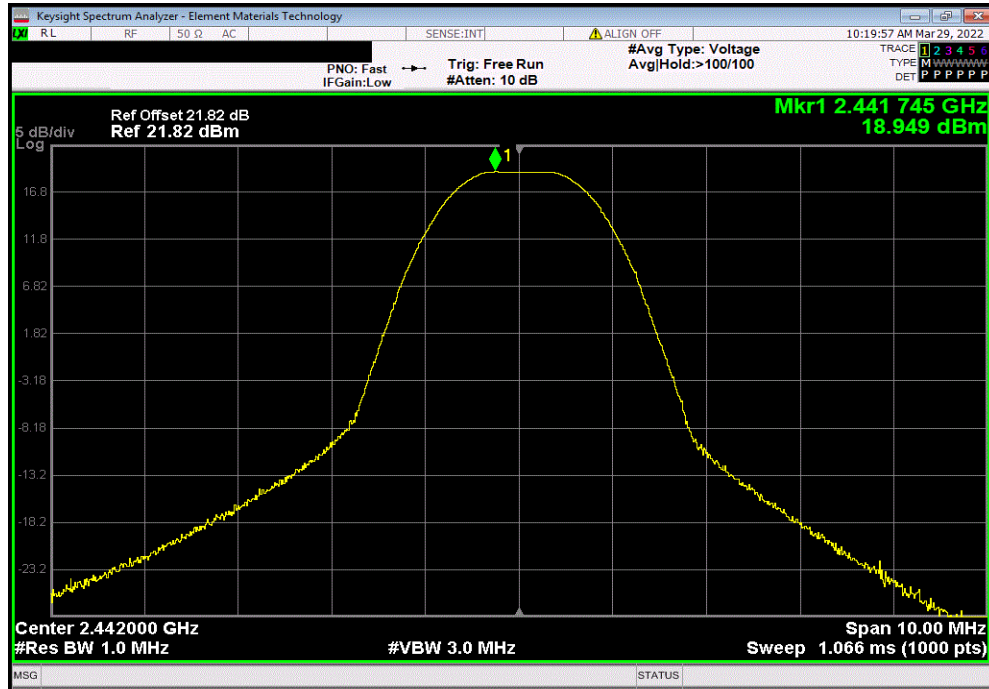


OUTPUT POWER

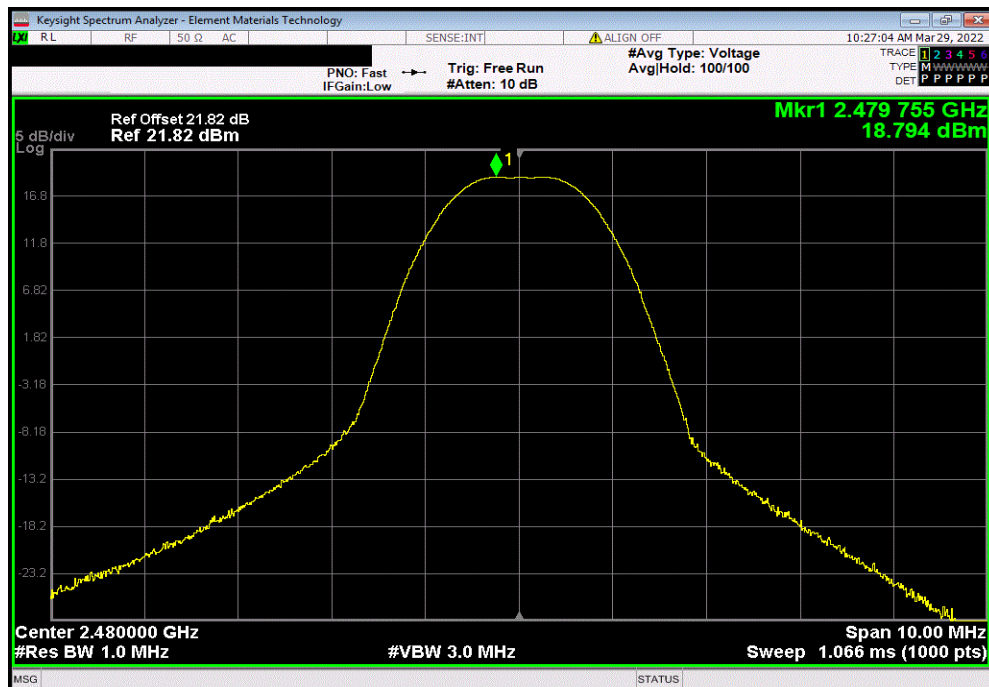


TbTtx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 1 Mbps Mid Channel, 2442 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				18.949	30	Pass



BLE/GFSK 1 Mbps High Channel, 2480 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				18.794	30	Pass

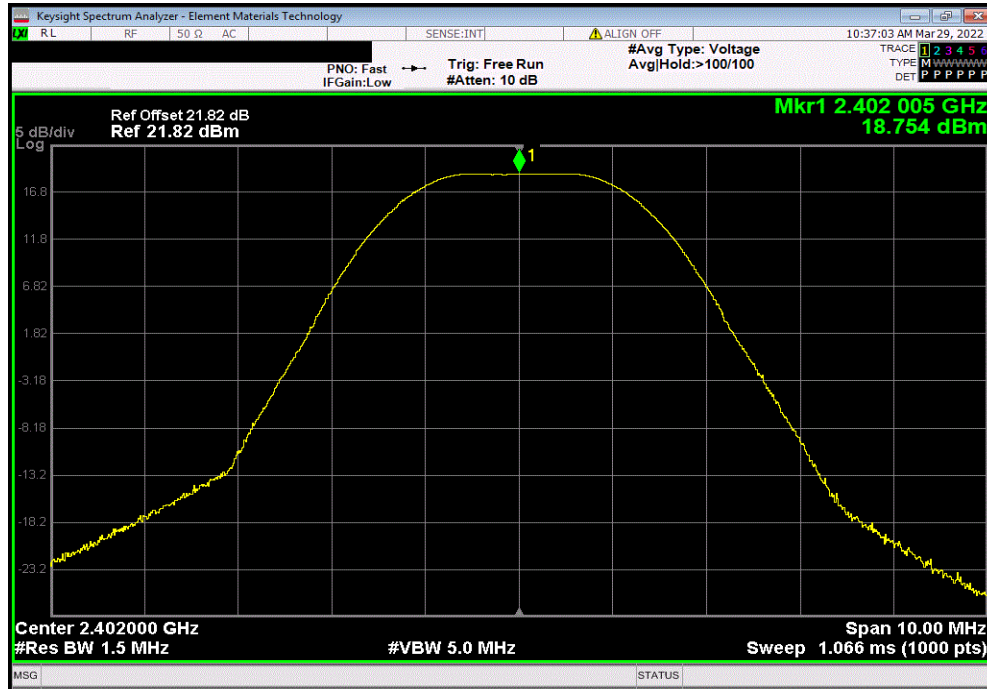


OUTPUT POWER

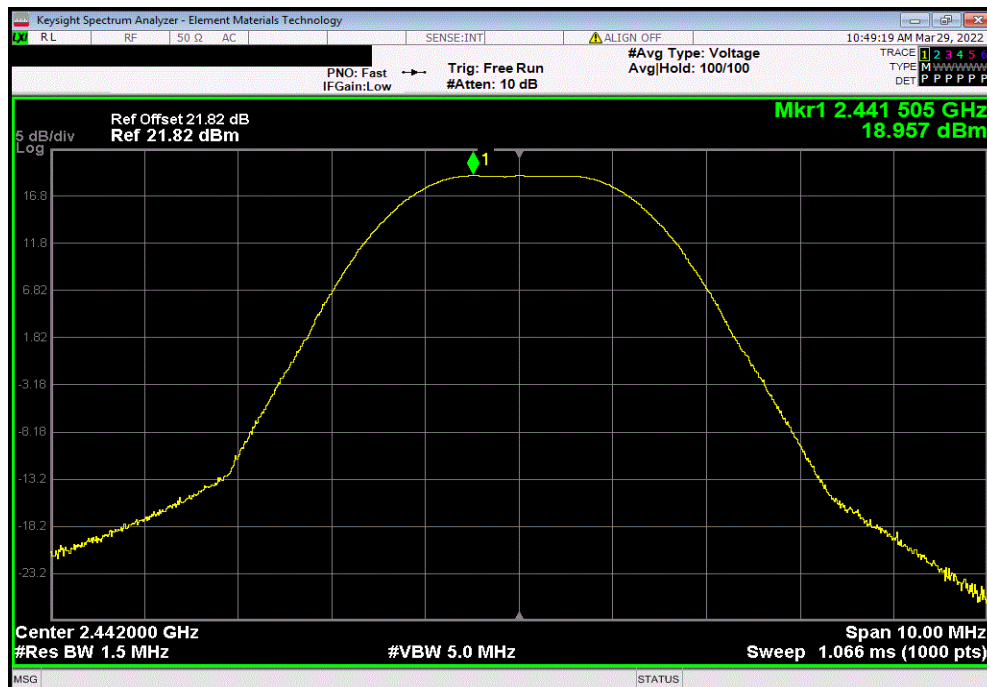


TbTx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps Low Channel, 2402 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				18.754	30	Pass



BLE/GFSK 2 Mbps Mid Channel, 2442 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				18.957	30	Pass



OUTPUT POWER



TbTtx 2021.12.14.1 XMt 2022.02.07.0

BLE/GFSK 2 Mbps High Channel, 2480 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				18.835	30	Pass

