

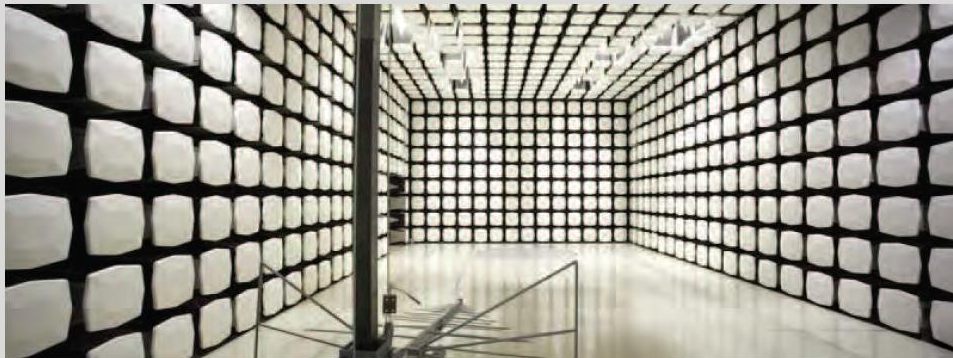


**Sig Sauer, Inc.**  
**Electro-Optics**  
**KILO2400ABS Rangefinder**

**FCC 15.247:2017**

**Bluetooth Radio**

**Report # SIGS0004.2**



NVLAP Lab Code: 200630-0

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# CERTIFICATE OF TEST

Last Date of Test: February 23, 2017

Sig Sauer, Inc.

Electro-Optics

Model: KILO2400ABS Rangefinder

## Radio Equipment Testing

### Standards

Specification	Method
FCC 15.247:2017	ANSI C63.10:2013
	KDB 558074

### Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC – Powerline Conducted Emissions	No	N/A	Not required for a battery powered EUT.
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9.1.1	Output 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:

Kyle Holgate, Operations 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.*



# REVISION HISTORY



Revision Number		Description	Date	Page Number
00		None		



# ACCREDITATIONS AND AUTHORIZATIONS



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## 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** - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Element to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

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## Canada

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

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## European Union

**European Commission** – Validated by the European Commission as a Notified Body under the R&TTE Directive.

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## 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.

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## Singapore

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

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## Israel

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

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## Hong Kong

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

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## Vietnam

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

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## SCOPE

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

<http://portlandcustomer.element.com/ts/scope/scope.htm>

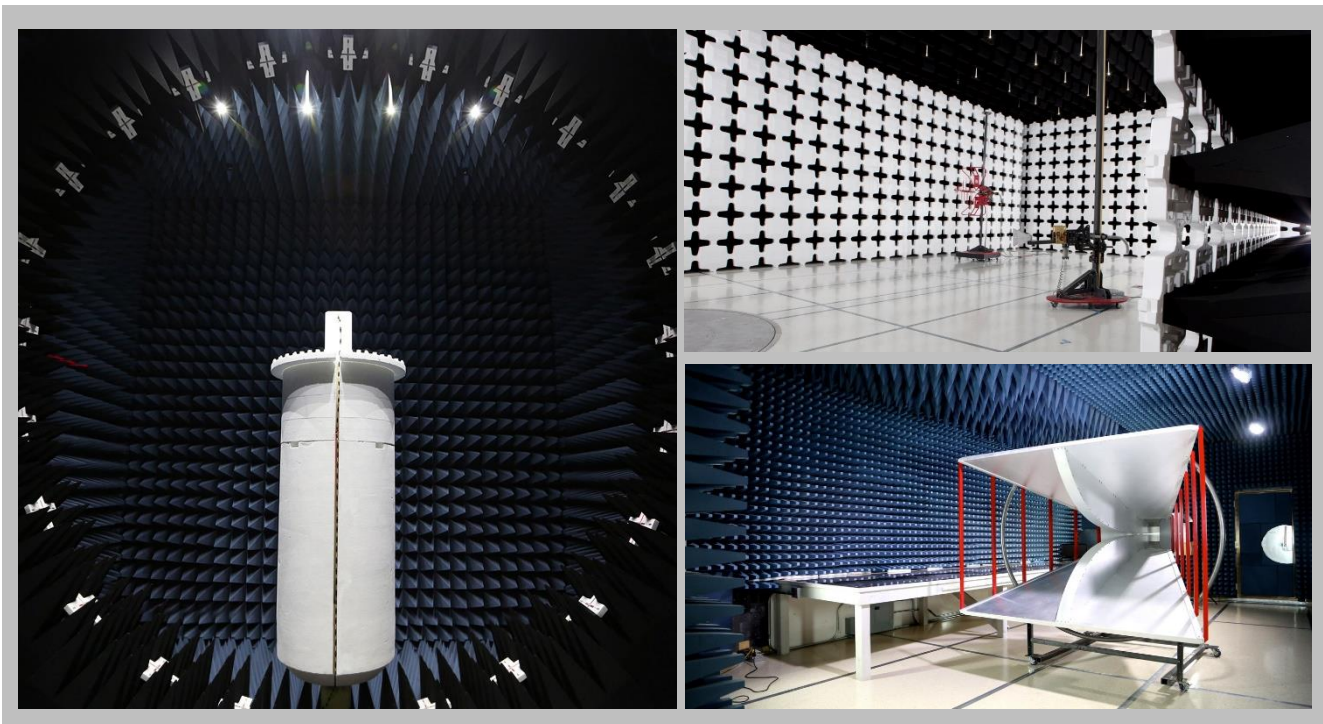
<http://gsi.nist.gov/global/docs/cabs/designations.html>



# FACILITIES



<b>California</b> Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>Minnesota</b> Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	<b>New York</b> Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	<b>Oregon</b> Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 98011 (425)984-6600
<b>NVLAP</b>					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
<b>Innovation, Science and Economic Development Canada</b>					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
<b>BSMI</b>					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
<b>VCCI</b>					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
<b>Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA</b>					
US0158	US0175	N/A	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 included as part of the applicable test description page. 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.

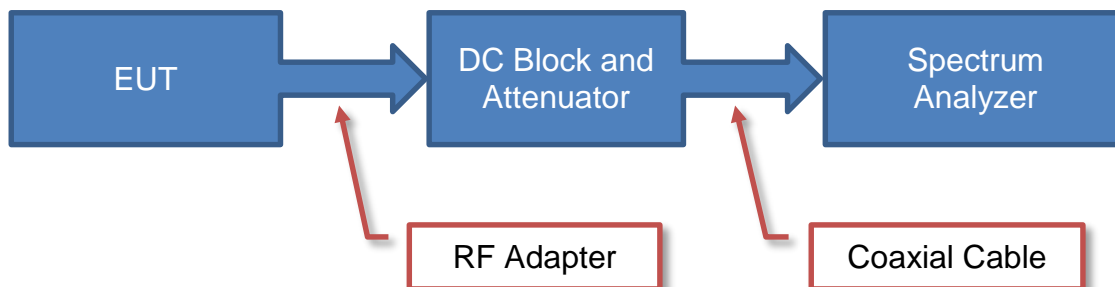
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

<b>Test</b>	<b>+ MU</b>	<b>- MU</b>
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 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)	2.4 dB	-2.4 dB

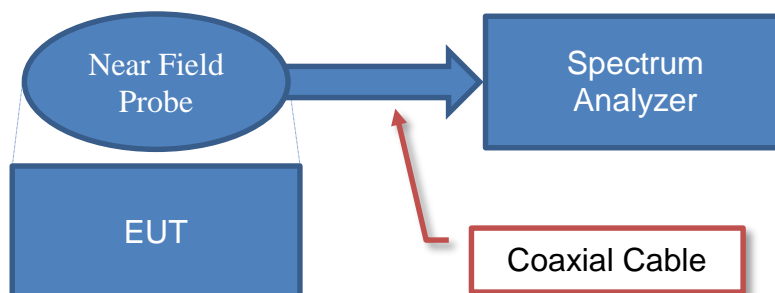


# Test Setup Block Diagrams

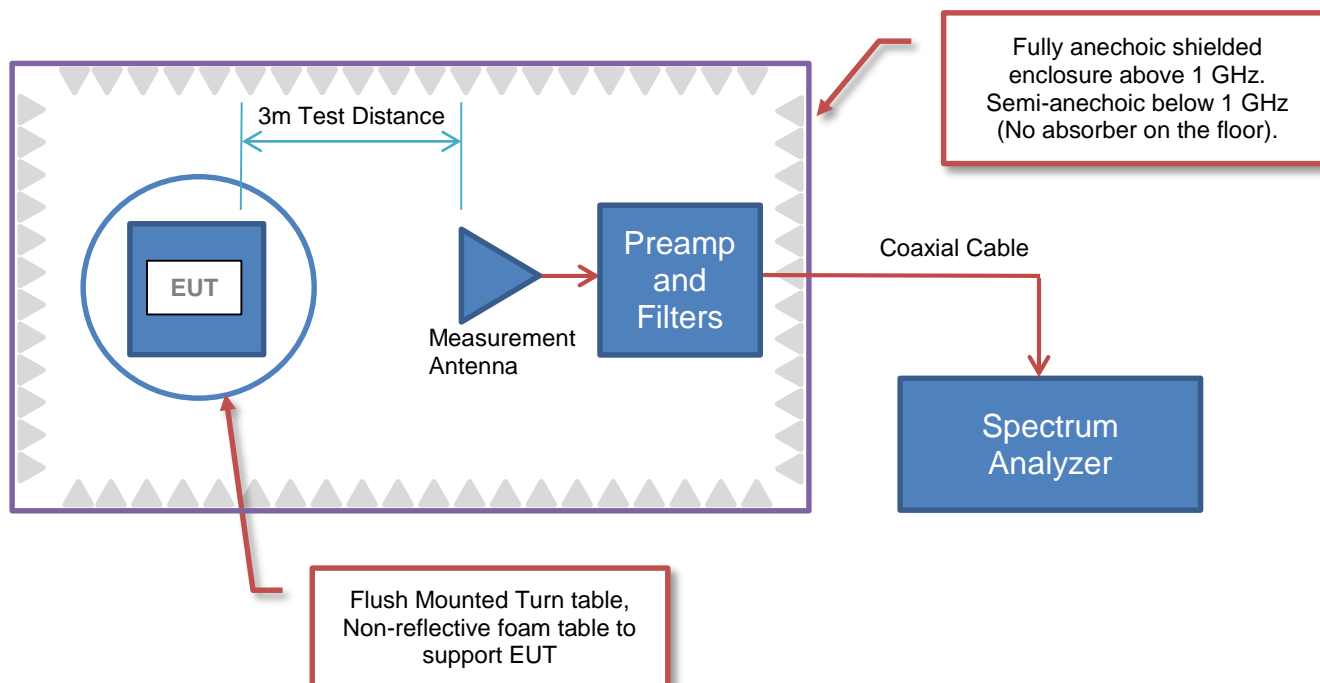
## Antenna Port Conducted Measurements



## Near Field Test Fixture Measurements



## Spurious Radiated Emissions







# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	Sig Sauer, Inc. Electro-Optics
<b>Address:</b>	19861 SW 95 <sup>th</sup> Ave
<b>City, State, Zip:</b>	Tualatin, OR 97062
<b>Test Requested By:</b>	Don Cramer
<b>Model:</b>	KILO2400ABS Rangefinder
<b>First Date of Test:</b>	February 20, 2017
<b>Last Date of Test:</b>	February 23, 2017
<b>Receipt Date of Samples:</b>	February 20, 2017
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage
<b>Purchase Authorization:</b>	Verified

## Information Provided by the Party Requesting the Test

<b>Functional Description of the EUT:</b>
Rangefinder which utilizes a Bluetooth BR/EDR (FHSS) / Low Energy (DTS) radio for communication with smart phone applications.

<b>Testing Objective:</b>
To demonstrate compliance of the Bluetooth LE DTS radio to FCC 15.247 requirements.



# CONFIGURATIONS



## Configuration SIGS0004- 1

Software/Firmware Running during test	
Description	Version
MircoChip ISRT	2.1.29.4784

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Rangefinder	Sig Sauer, Inc. Electro-Optics	None	KILO2400ABS

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
USB to UART conversion board	None	FTDI	FTDI232RL
Laptop (Dell)	Dell	XPS15	JTNZY1
AC/DC Adapter (Dell)	Dell	DA130PM130	CN-06TTY6-48661-435-0LE-A00

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Cable	Yes	1.0m	No	USB to UART conversion board	Laptop (Dell)
AC Power Supply Cable	No	1.0m	No	AC mains	AC/DC Adapter (Dell)
DC Power Cable	Unknown	2.0m	Unknown	AC/DC Adapter (Dell)	Laptop (Dell)

## Configuration SIGS0004- 3

Software/Firmware Running during test	
Description	Version
MircoChip ISRT	2.1.29.4784

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Rangefinder (Radiated)	Sig Sauer, Inc. Electro-Optics	None	000002GA

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
USB to UART conversion board	None	FTDI	FTDI232RL
Laptop (Dell)	Dell	XPS15	JTNZY1



# MODIFICATIONS



## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2/20/2017	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	2/20/2017	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.
3	2/20/2017	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.
4	2/20/2017	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.
5	2/20/2017	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.
6	2/20/2017	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.
7	2/23/2017	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.



# DUTY CYCLE



XMit 2017.01.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	10/27/2015	10/27/2018
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	6/7/2016	6/7/2017
Attenuator	S.M. Electronics	SA26B-20	AUY	6/27/2016	6/27/2017
Block - DC	Fairview Microwave	SD3379	AMQ	6/8/2016	6/8/2017
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

## 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



TbTx 2017.01.27 XMt 2017.01.26

<b>EUT:</b> KILO2400ABS Rangefinder		<b>Work Order:</b> SIGS0004	
<b>Serial Number:</b> KILO2400ABS		<b>Date:</b> 02/20/17	
<b>Customer:</b> Sig Sauer, Inc. Electro-Optics		<b>Temperature:</b> 24.2 °C	
<b>Attendees:</b> Don Cramer		<b>Humidity:</b> 39% RH	
<b>Project:</b> None		<b>Barometric Pres.:</b> 1007 mbar	
<b>Tested by:</b> Brandon Hobbs		<b>Power:</b> Battery (3.0VDC)	
		<b>Job Site:</b> EV06	
<b>TEST SPECIFICATIONS</b>		<b>Test Method</b>	
FCC 15.247:2017		ANSI C63.10:2013	
<b>COMMENTS</b>			
Client provided 3 party software to control radio module.			
<b>DEVIATIONS FROM TEST STANDARD</b>			
None			
<b>Configuration #</b>	1	Signature 	
	<b>Pulse Width</b>	<b>Period</b>	<b>Number of Pulses</b>
BLE/GFSK Low Channel, 2402 MHz	408.5 us	625.1 us	1
BLE/GFSK Low Channel, 2402 MHz	N/A	N/A	5
BLE/GFSK Mid Channel, 2442 MHz	409 us	625.1 us	1
BLE/GFSK Mid Channel, 2442 MHz	N/A	N/A	5
BLE/GFSK High Channel, 2480 MHz	408.5 us	625 us	1
BLE/GFSK High Channel, 2480 MHz	N/A	N/A	5
	<b>Value (%)</b>	<b>Limit (%)</b>	<b>Results</b>
	65.3	N/A	N/A
	N/A	N/A	N/A
	65.4	N/A	N/A
	N/A	N/A	N/A
	65.4	N/A	N/A
	N/A	N/A	N/A

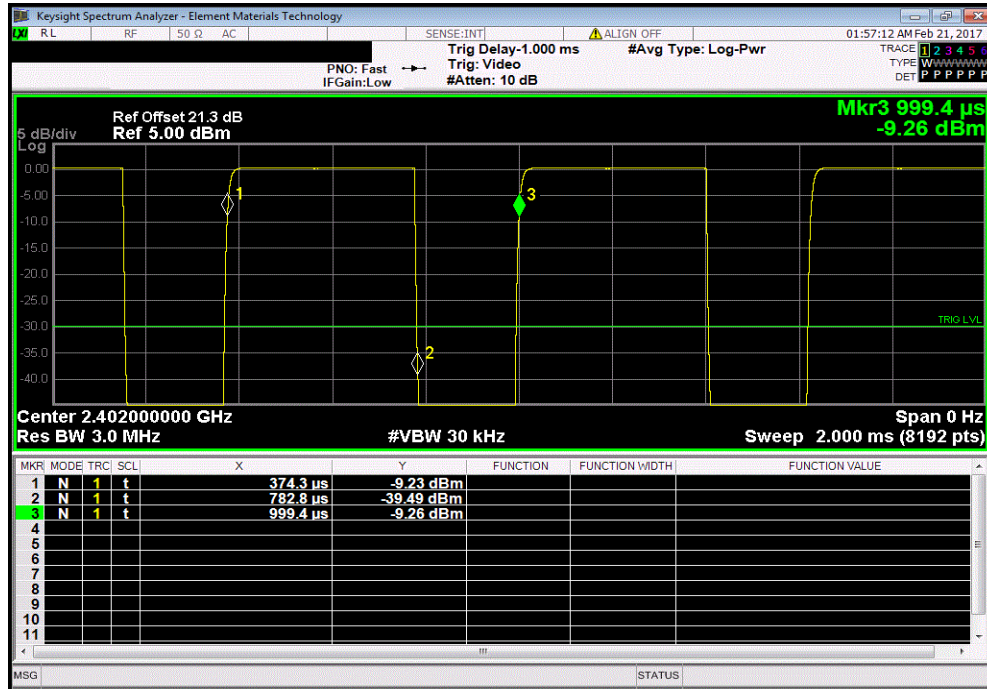


# DUTY CYCLE

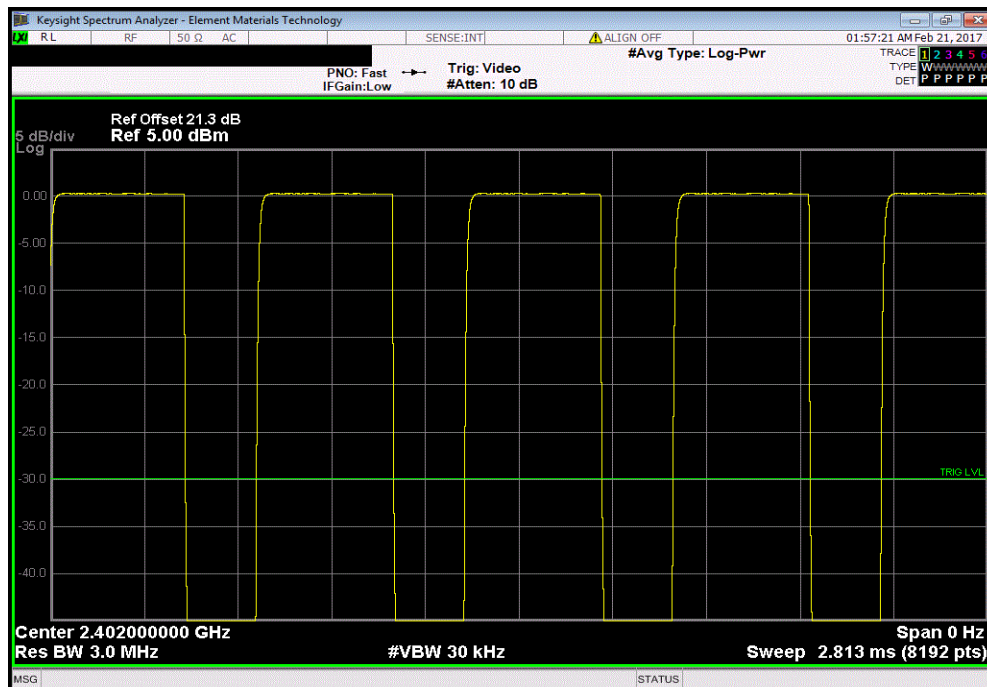


TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
408.5 $\mu$ s	625.1 $\mu$ s	1	65.3	N/A	N/A	



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



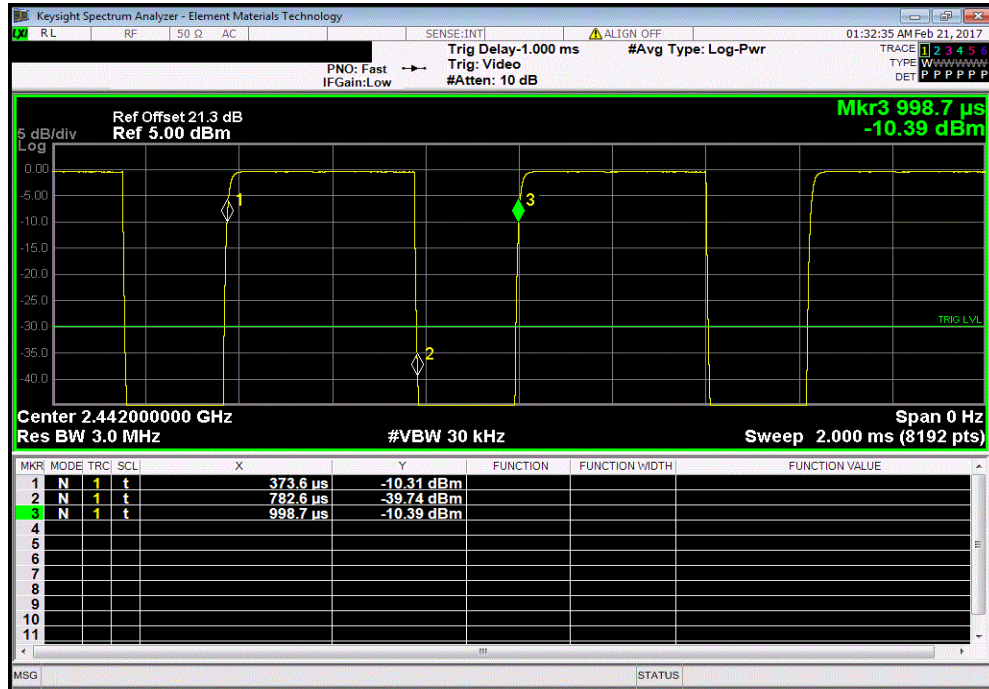


# DUTY CYCLE

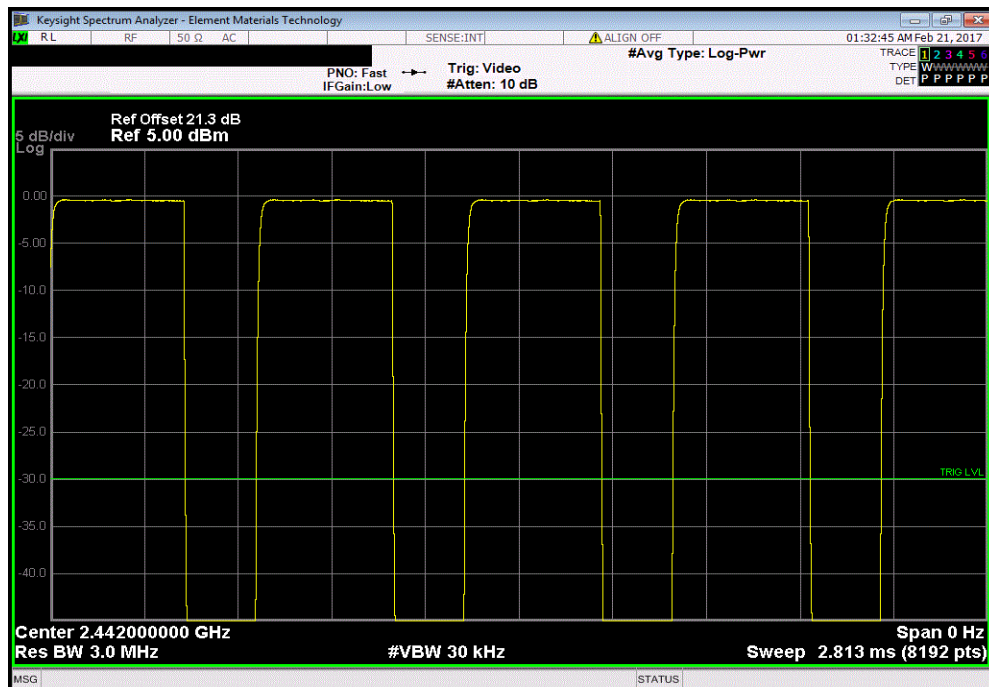


TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK Mid Channel, 2442 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
409 us	625.1 us	1	65.4	N/A	N/A	



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



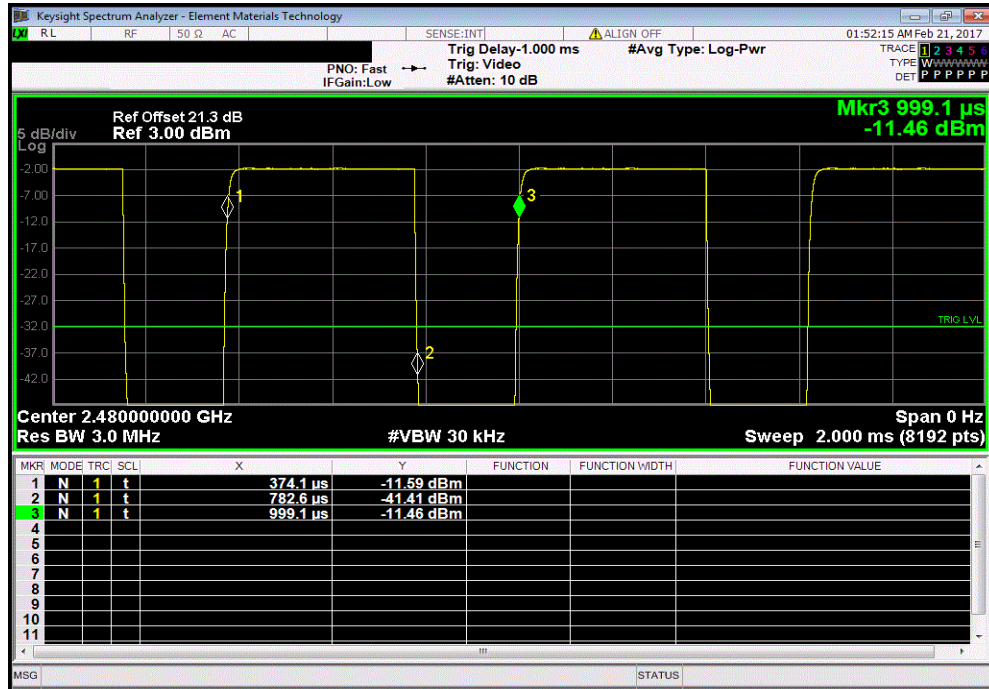


# DUTY CYCLE

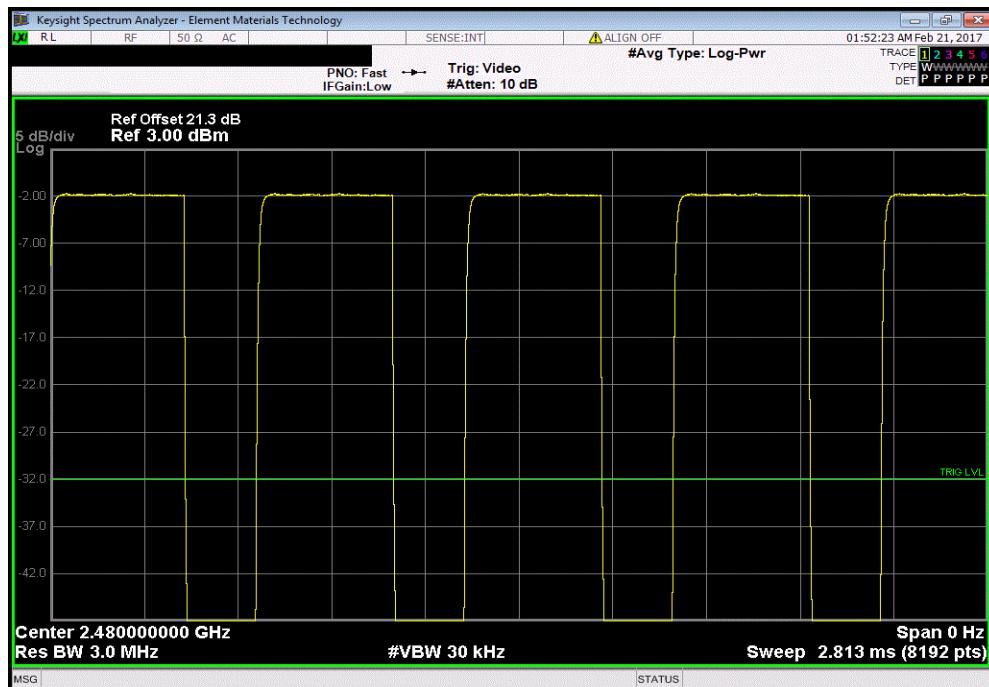


TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
408.5 us	625 us	1	65.4	N/A	N/A	



BLE/GFSK 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 2017.01.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	10/27/2015	10/27/2018
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	6/7/2016	6/7/2017
Attenuator	S.M. Electronics	SA26B-20	AUY	6/27/2016	6/27/2017
Block - DC	Fairview Microwave	SD3379	AMQ	6/8/2016	6/8/2017
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

## 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 occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.



# OCCUPIED BANDWIDTH



TbTx 2017.01.27 XMt 2017.01.26

<b>EUT:</b> KILO2400ABS Rangefinder		<b>Work Order:</b> SIGS0004	
<b>Serial Number:</b> KILO2400ABS		<b>Date:</b> 02/20/17	
<b>Customer:</b> Sig Sauer, Inc. Electro-Optics		<b>Temperature:</b> 24.1 °C	
<b>Attendees:</b> Don Cramer		<b>Humidity:</b> 38.7% RH	
<b>Project:</b> None		<b>Barometric Pres.:</b> 1007 mbar	
<b>Tested by:</b> Brandon Hobbs		<b>Power:</b> Battery (3.0VDC)	
		<b>Job Site:</b> EV06	
<b>TEST SPECIFICATIONS</b>		<b>Test Method</b>	
FCC 15.247:2017		ANSI C63.10:2013	
<b>COMMENTS</b>			
Client provided 3 party software to control radio module.			
<b>DEVIATIONS FROM TEST STANDARD</b>			
None			
<b>Configuration #</b>	1	<i>Signature</i> 	
		<b>Value</b>	<b>Limit (±)</b>
BLE/GFSK Low Channel, 2402 MHz		685.379 kHz	500 kHz
BLE/GFSK Mid Channel, 2442 MHz		681.15 kHz	500 kHz
BLE/GFSK High Channel, 2480 MHz		701.075 kHz	500 kHz
			<b>Result</b>
			Pass
			Pass
			Pass

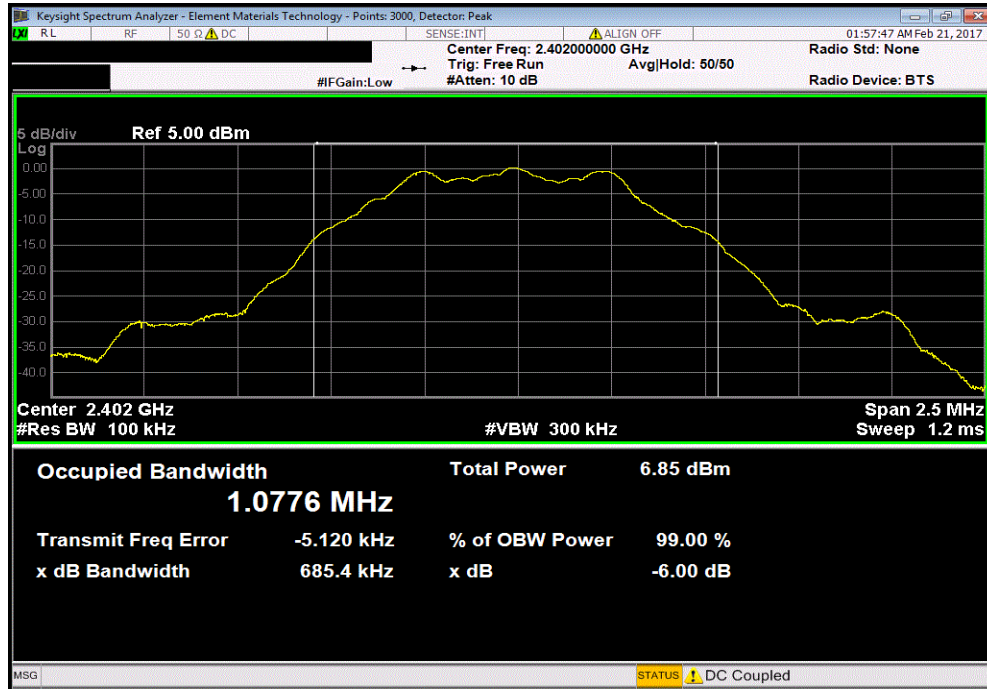


# OCCUPIED BANDWIDTH

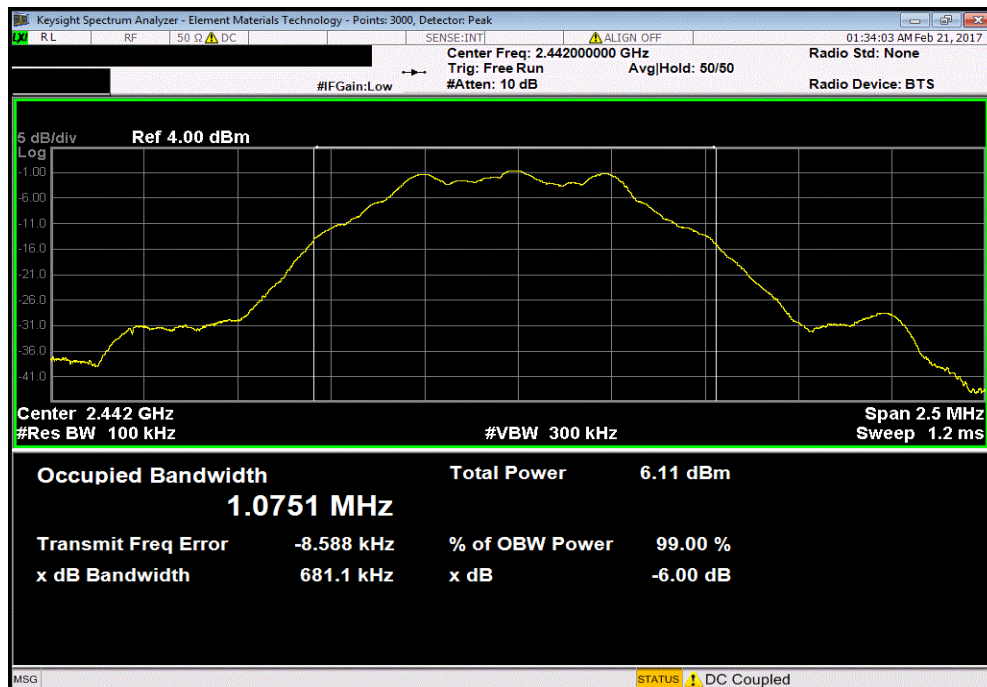


TMTx 2017.01.27 XMI 2017.01.28

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



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



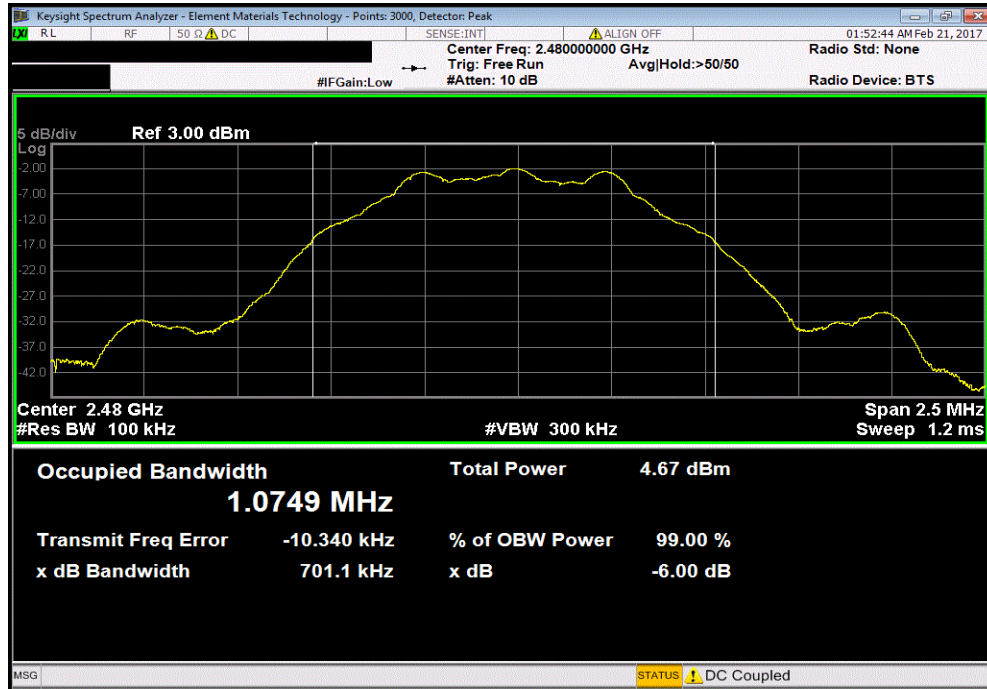


# OCCUPIED BANDWIDTH



TMTx 2017.01.27 XMM 2017.01.28

BLE/GFSK High Channel, 2480 MHz						
Value				Limit	Result	
701.075 kHz				500 kHz	Pass	





# OUTPUT POWER



XMI 2017.01.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	10/27/2015	10/27/2018
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	6/7/2016	6/7/2017
Attenuator	S.M. Electronics	SA26B-20	AUY	6/27/2016	6/27/2017
Block - DC	Fairview Microwave	SD3379	AMQ	6/8/2016	6/8/2017
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

## 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.


**De Facto EIRP Limit:** The EUT meets the de facto EIRP limit of +36 dBm.



# OUTPUT POWER



TbTx 2017.01.27 XMt 2017.01.26

EUT: KILO2400ABS Rangefinder		Work Order: SIGS0004	
Serial Number: KILO2400ABS		Date: 02/20/17	
Customer: Sig Sauer, Inc. Electro-Optics		Temperature: 24.2 °C	
Attendees: Don Cramer		Humidity: 38.8% RH	
Project: None		Barometric Pres.: 1007 mbar	
Tested by: Brandon Hobbs		Power: Battery (3.0VDC)	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2017		ANSI C63.10:2013	
COMMENTS			
Client provided 3 party software to control radio module.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit (<) Result
BLE/GFSK Low Channel, 2402 MHz		1.132 mW	1 W Pass
BLE/GFSK Mid Channel, 2442 MHz		962.42 uW	1 W Pass
BLE/GFSK High Channel, 2480 MHz		716.43 uW	1 W Pass

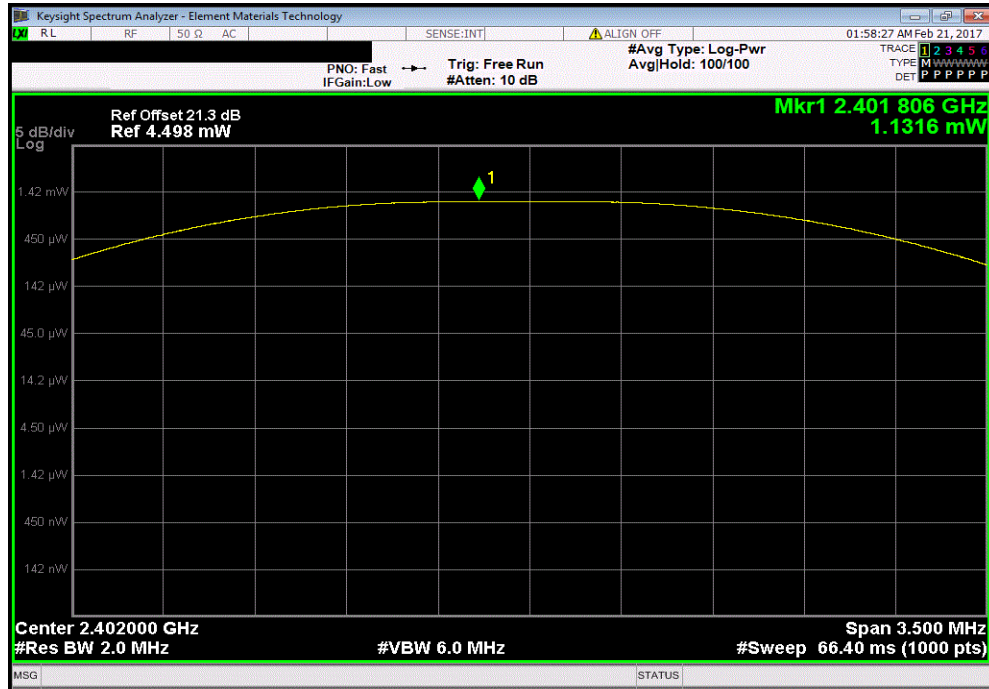


# OUTPUT POWER

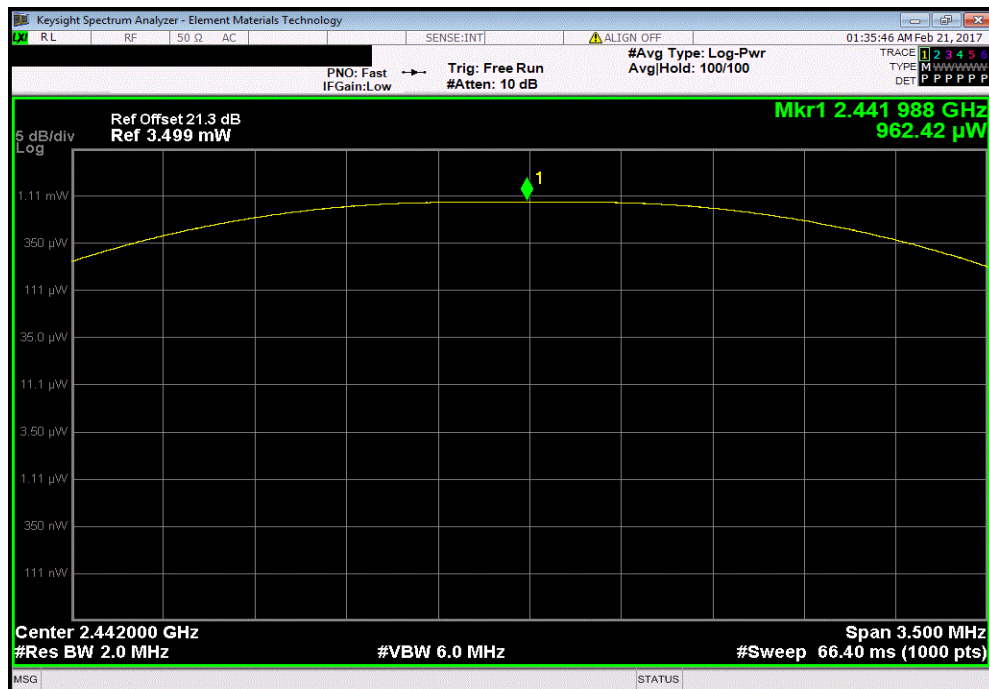


TbTx 2017.01.27 XMI 2017.01.28

BLE/GFSK Low Channel, 2402 MHz						
				Value	Limit (<)	Result
				1.132 mW	1 W	Pass



BLE/GFSK Mid Channel, 2442 MHz						
				Value	Limit (<)	Result
				962.42 $\mu$ W	1 W	Pass



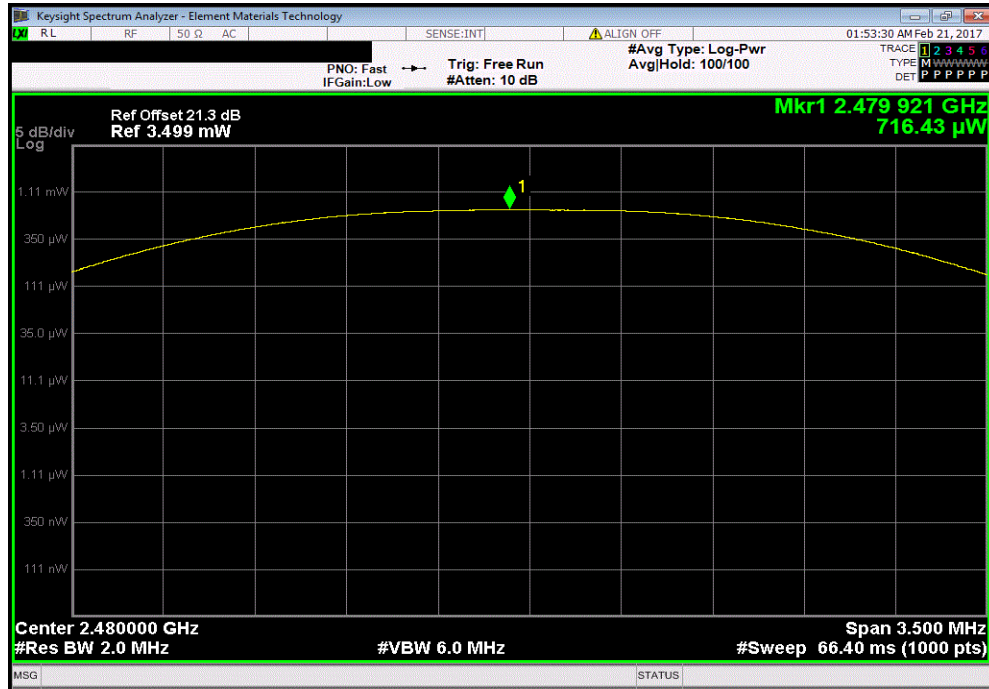


# OUTPUT POWER



TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK High Channel, 2480 MHz						
Value				Limit	Result	
716.43 $\mu$ W				1 W	Pass	





# POWER SPECTRAL DENSITY



XMI 2017.01.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	10/27/2015	10/27/2018
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	6/7/2016	6/7/2017
Attenuator	S.M. Electronics	SA26B-20	AUY	6/27/2016	6/27/2017
Block - DC	Fairview Microwave	SD3379	AMQ	6/8/2016	6/8/2017
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.


Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.



# POWER SPECTRAL DENSITY



TbTx 2017.01.27 XMt 2017.01.26

EUT: KILO2400ABS Rangefinder		Work Order: SIGS0004	
Serial Number: KILO2400ABS		Date: 02/20/17	
Customer: Sig Sauer, Inc. Electro-Optics		Temperature: 24.2 °C	
Attendees: Don Cramer		Humidity: 38.9% RH	
Project: None		Barometric Pres.: 1007 mbar	
Tested by: Brandon Hobbs		Power: Battery (3.0VDC)	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2017		ANSI C63.10:2013	
COMMENTS			
Client provided 3 party software to control radio module.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value dBm/3kHz	Limit < dBm/3kHz
BLE/GFSK Low Channel, 2402 MHz		-13.512	8
BLE/GFSK Mid Channel, 2442 MHz		-14.741	8
BLE/GFSK High Channel, 2480 MHz		-16.299	8
			Results
			Pass
			Pass
			Pass

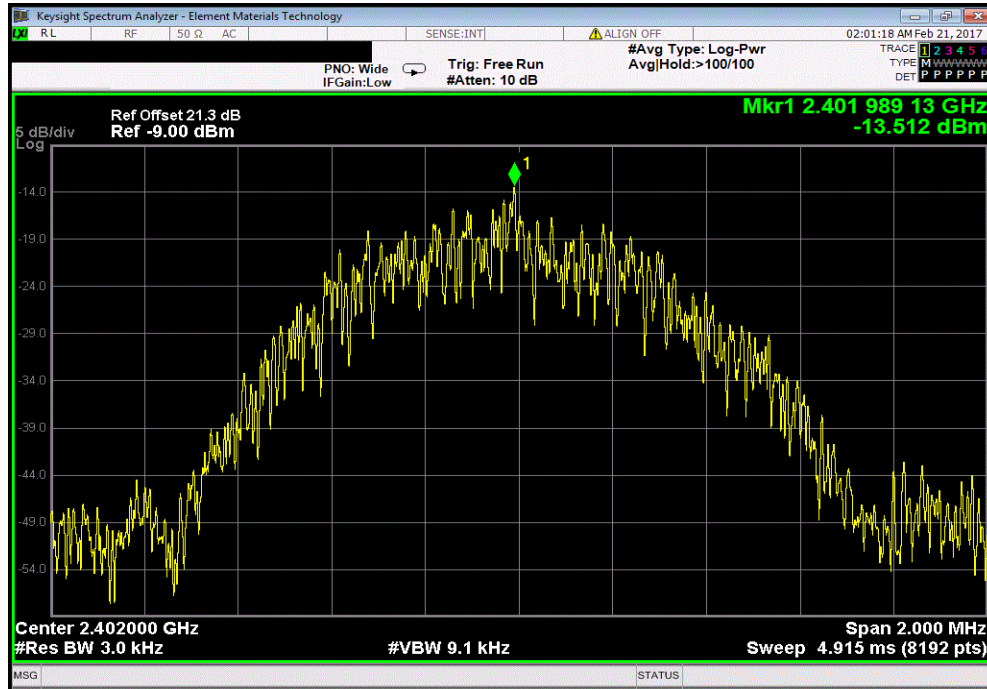


# POWER SPECTRAL DENSITY

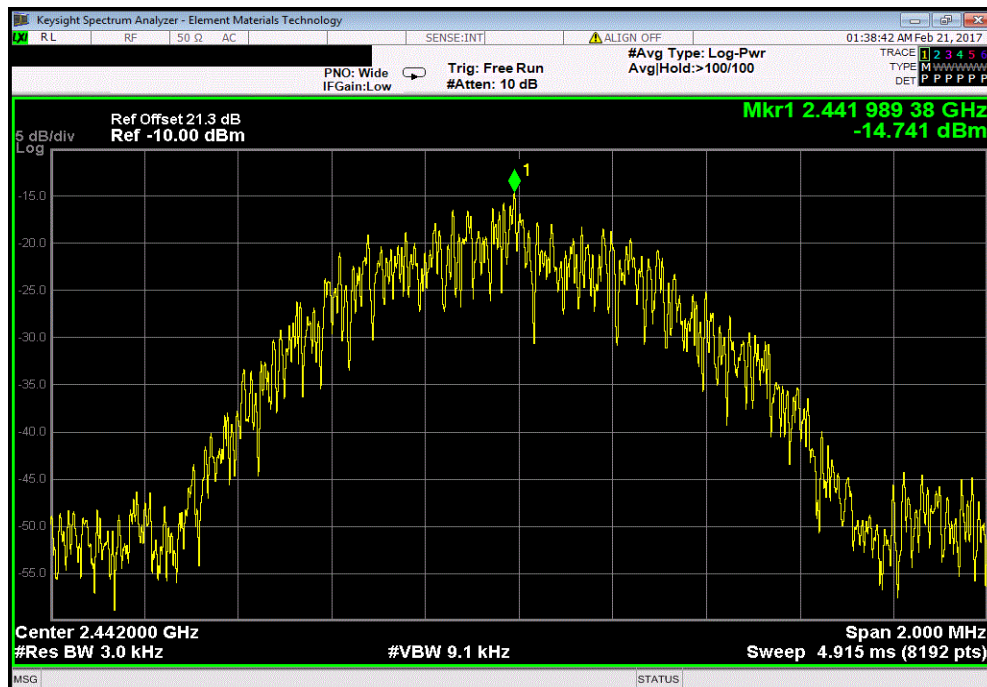


TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK Low Channel, 2402 MHz						
				Value	Limit	Results
				dBm/3kHz	< dBm/3kHz	
				-13.512	8	Pass



BLE/GFSK Mid Channel, 2442 MHz						
				Value	Limit	Results
				dBm/3kHz	< dBm/3kHz	
				-14.741	8	Pass



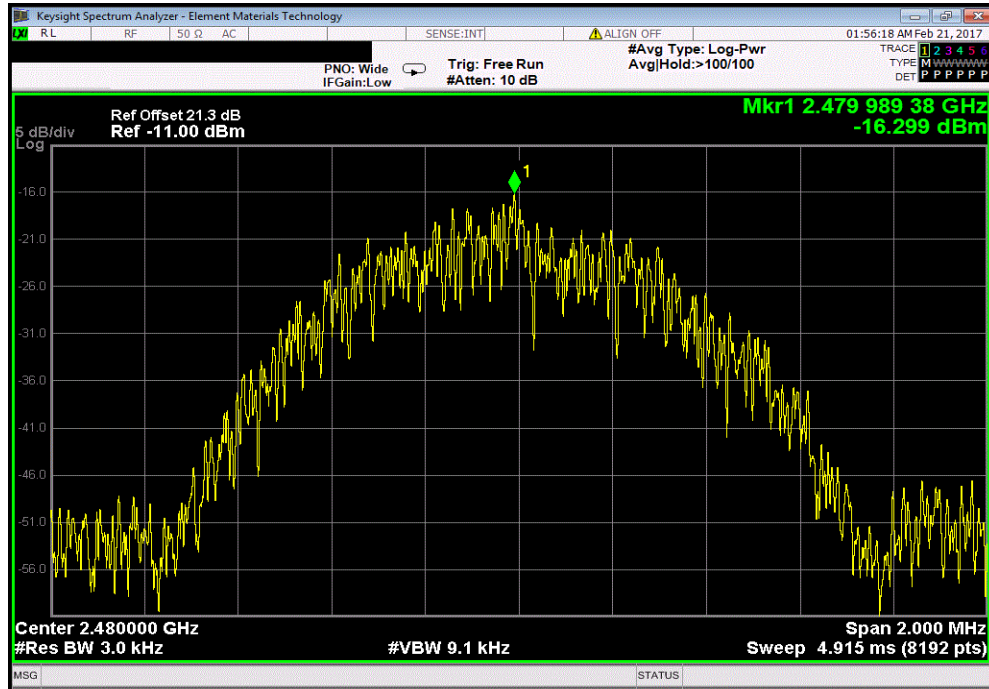


# POWER SPECTRAL DENSITY



TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK High Channel, 2480 MHz						
	Value	Limit				
	dBm/3kHz	< dBm/3kHz	Results			
	-16.299	8	Pass			





# BAND EDGE COMPLIANCE



XMII 2017.01.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	10/27/2015	10/27/2018
Attenuator	S.M. Electronics	SA26B-20	AUY	6/27/2016	6/27/2017
Block - DC	Fairview Microwave	SD3379	AMQ	6/8/2016	6/8/2017
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	6/7/2016	6/7/2017
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

## 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 each available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate listed in the datasheet.


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



# BAND EDGE COMPLIANCE



TbTx 2017.01.27 XMt 2017.01.26

EUT: KILO2400ABS Rangefinder		Work Order: SIGS0004	
Serial Number: KILO2400ABS		Date: 02/20/17	
Customer: Sig Sauer, Inc. Electro-Optics		Temperature: 24.1 °C	
Attendees: Don Cramer		Humidity: 38.7% RH	
Project: None		Barometric Pres.: 1007 mbar	
Tested by: Brandon Hobbs		Power: Battery (3.0VDC)	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2017		ANSI C63.10:2013	
COMMENTS			
Client provided 3 party software to control radio module.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value (dBc)	Limit ≤ (dBc) Result
BLE/GFSK Low Channel, 2402 MHz		-47.92	-20 Pass
BLE/GFSK High Channel, 2480 MHz		-54	-20 Pass

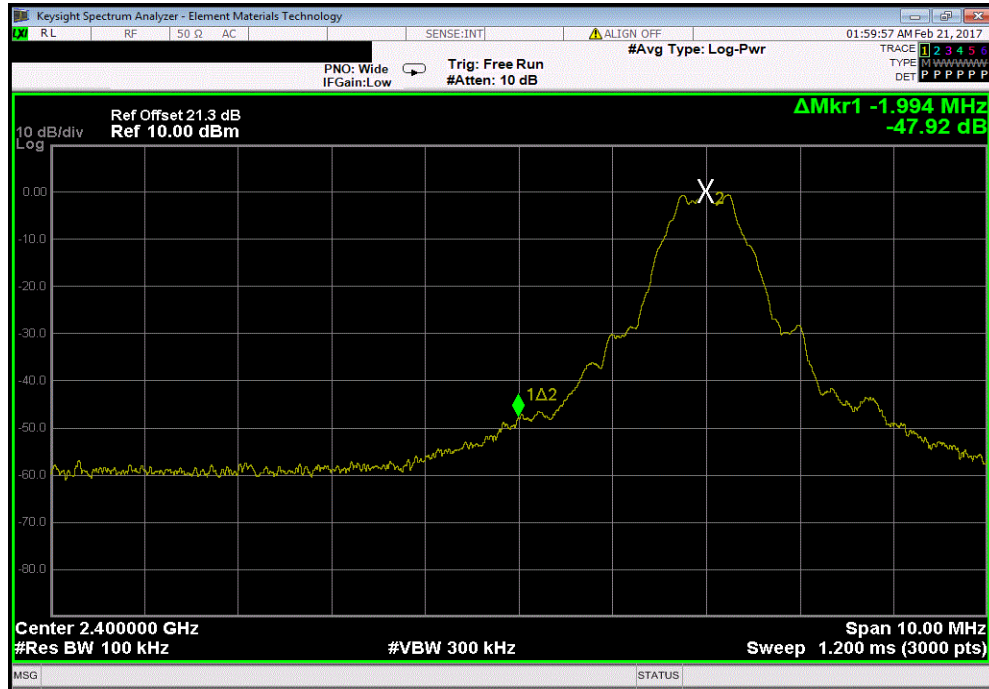


# BAND EDGE COMPLIANCE

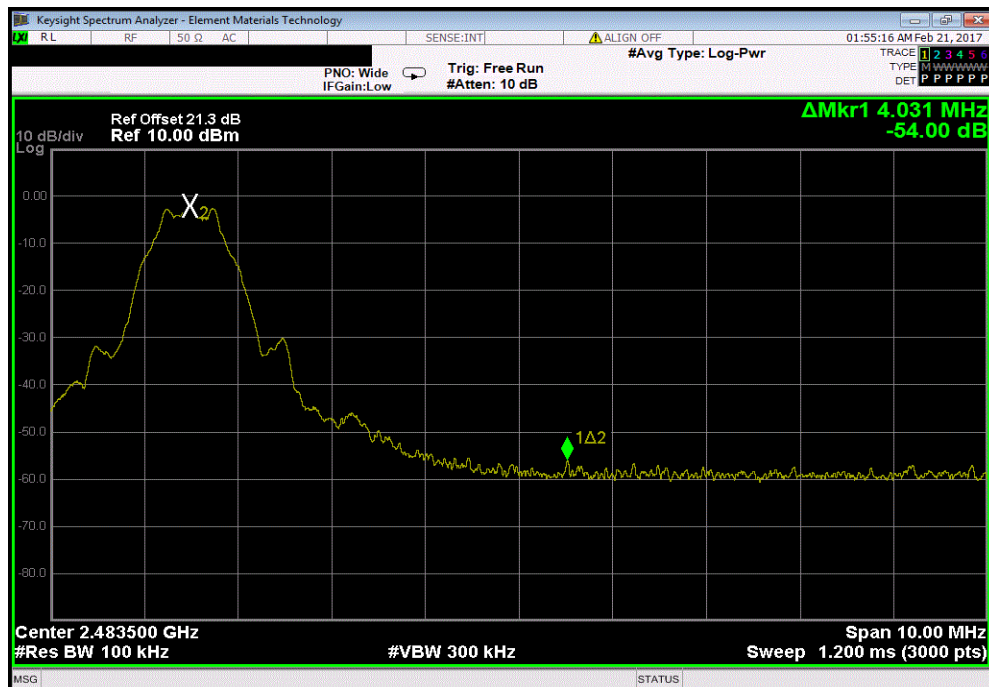


TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-47.92	-20	Pass



BLE/GFSK High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-54	-20	Pass





# SPURIOUS CONDUCTED EMISSIONS



XMit 2017.01.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	10/27/2015	10/27/2018
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	6/7/2016	6/7/2017
Attenuator	S.M. Electronics	SA26B-20	AUY	6/27/2016	6/27/2017
Block - DC	Fairview Microwave	SD3379	AMQ	6/8/2016	6/8/2017
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	8/10/2016	8/10/2017

## 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 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 spectrum was scanned throughout the specified frequency range.



# SPURIOUS CONDUCTED EMISSIONS



TbTx 2017.01.27 XMi 2017.01.26

<b>EUT:</b> KILO2400ABS Rangefinder		<b>Work Order:</b> SIGS0004			
<b>Serial Number:</b> KILO2400ABS		<b>Date:</b> 02/20/17			
<b>Customer:</b> Sig Sauer, Inc. Electro-Optics		<b>Temperature:</b> 24.2 °C			
<b>Attendees:</b> Don Cramer		<b>Humidity:</b> 39% RH			
<b>Project:</b> None		<b>Barometric Pres.:</b> 1007 mbar			
<b>Tested by:</b> Brandon Hobbs		<b>Power:</b> Battery (3.0VDC)			
		<b>Job Site:</b> EV06			
<b>TEST SPECIFICATIONS</b>		<b>Test Method</b>			
FCC 15.247:2017		ANSI C63.10:2013			
<b>COMMENTS</b>					
Client provided 3 party software to control radio module.					
<b>DEVIATIONS FROM TEST STANDARD</b>					
None					
<b>Configuration #</b>	1	Signature 			
		<b>Frequency Range</b>	<b>Max Value (dBc)</b>		
			<b>Limit ≤ (dBc)</b>		
			<b>Result</b>		
BLE/GFSK Low Channel, 2402 MHz		Fundamental	N/A	N/A	
BLE/GFSK Low Channel, 2402 MHz		30 MHz - 12.5 GHz	-52.74	-20	Pass
BLE/GFSK Low Channel, 2402 MHz		12.5 GHz - 25 GHz	-38.72	-20	Pass
BLE/GFSK Mid Channel, 2442 MHz		Fundamental	N/A	N/A	N/A
BLE/GFSK Mid Channel, 2442 MHz		30 MHz - 12.5 GHz	-50.77	-20	Pass
BLE/GFSK Mid Channel, 2442 MHz		12.5 GHz - 25 GHz	-37.19	-20	Pass
BLE/GFSK High Channel, 2480 MHz		Fundamental	N/A	N/A	N/A
BLE/GFSK High Channel, 2480 MHz		30 MHz - 12.5 GHz	-51.03	-20	Pass
BLE/GFSK High Channel, 2480 MHz		12.5 GHz - 25 GHz	-36.15	-20	Pass

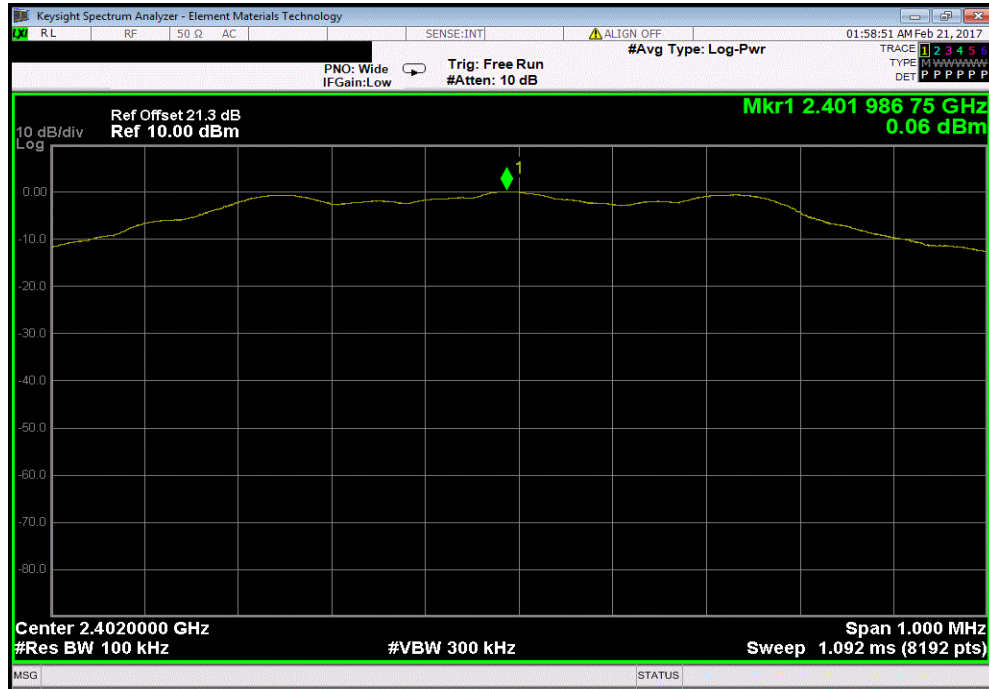


# SPURIOUS CONDUCTED EMISSIONS

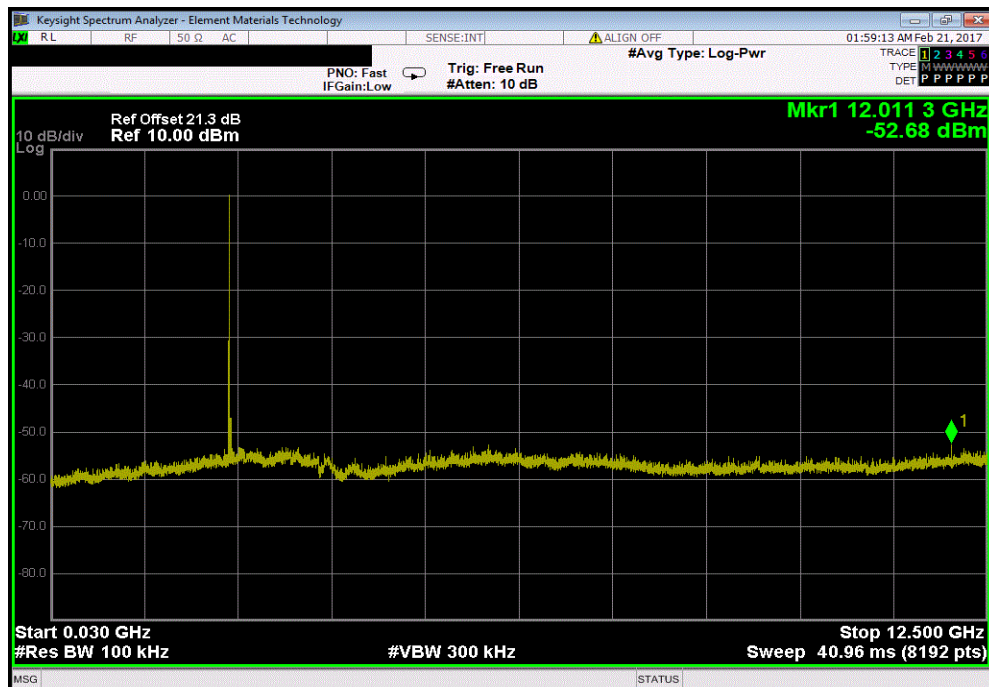


TbTx 2017.01.27 XMI 2017.01.28

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



BLE/GFSK Low Channel, 2402 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-52.74		-20	Pass	



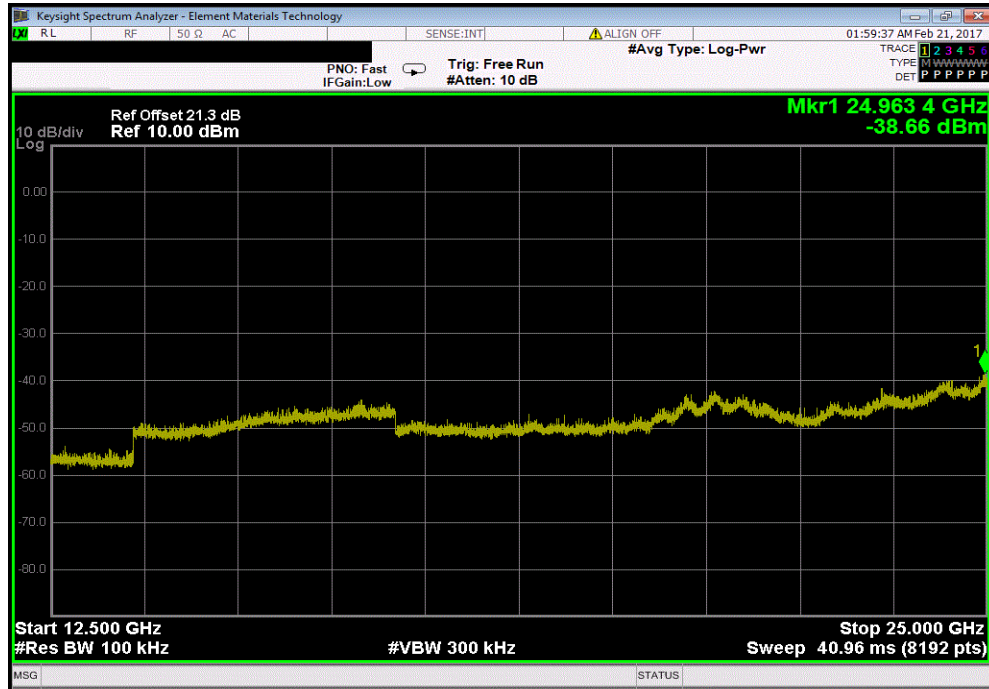


# SPURIOUS CONDUCTED EMISSIONS

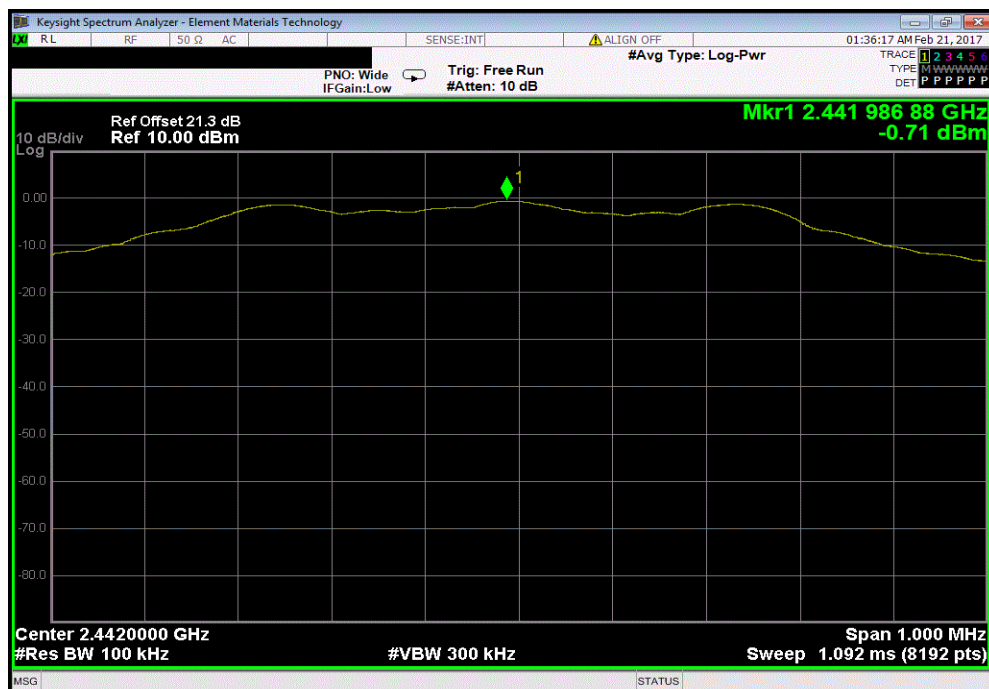


TbTx 2017.01.27 XMI 2017.01.28

BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-38.72	-20	Pass	



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



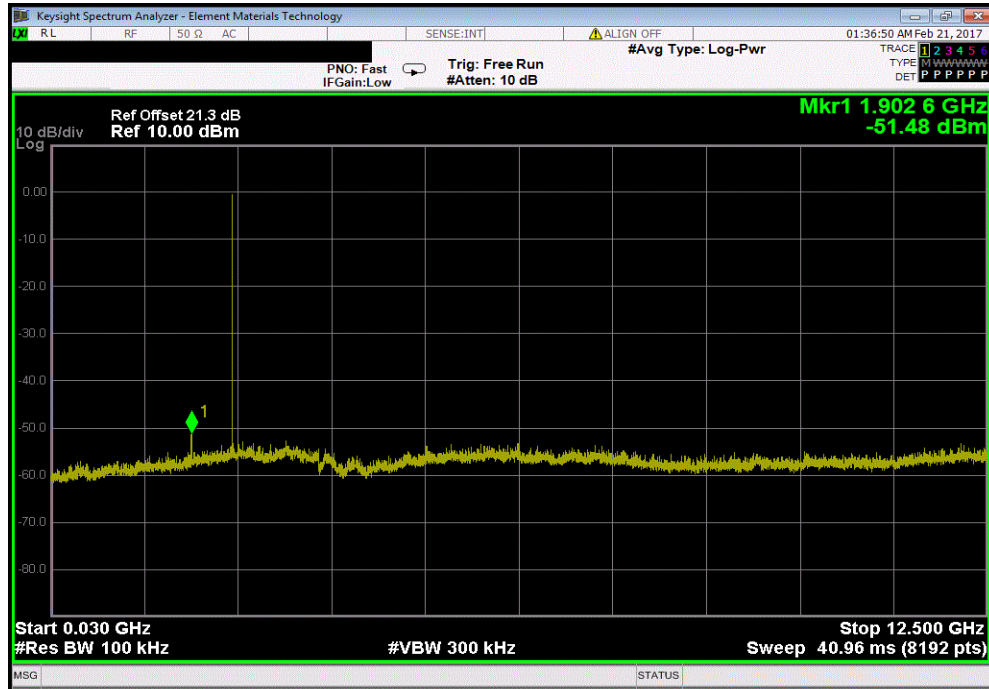


# SPURIOUS CONDUCTED EMISSIONS

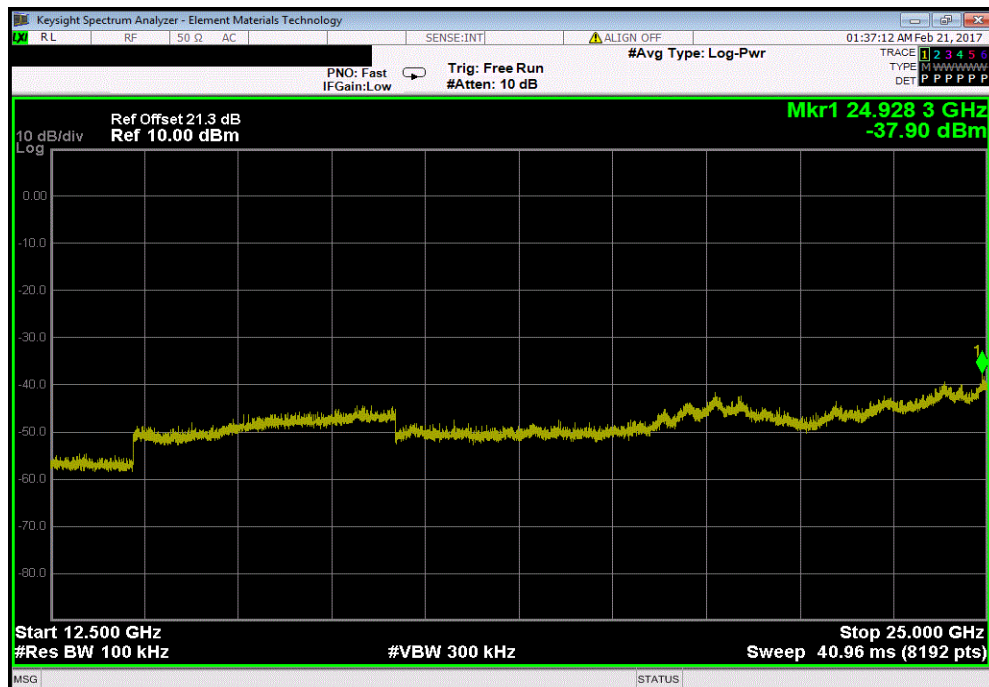


TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-50.77	-20	Pass	



BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-37.19	-20	Pass	



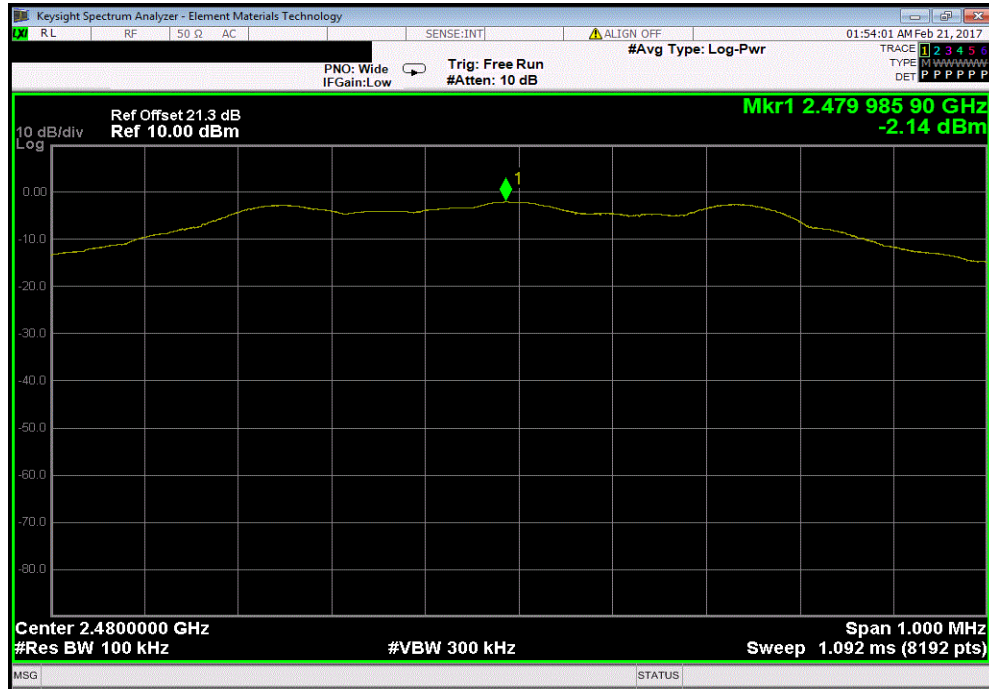


# SPURIOUS CONDUCTED EMISSIONS

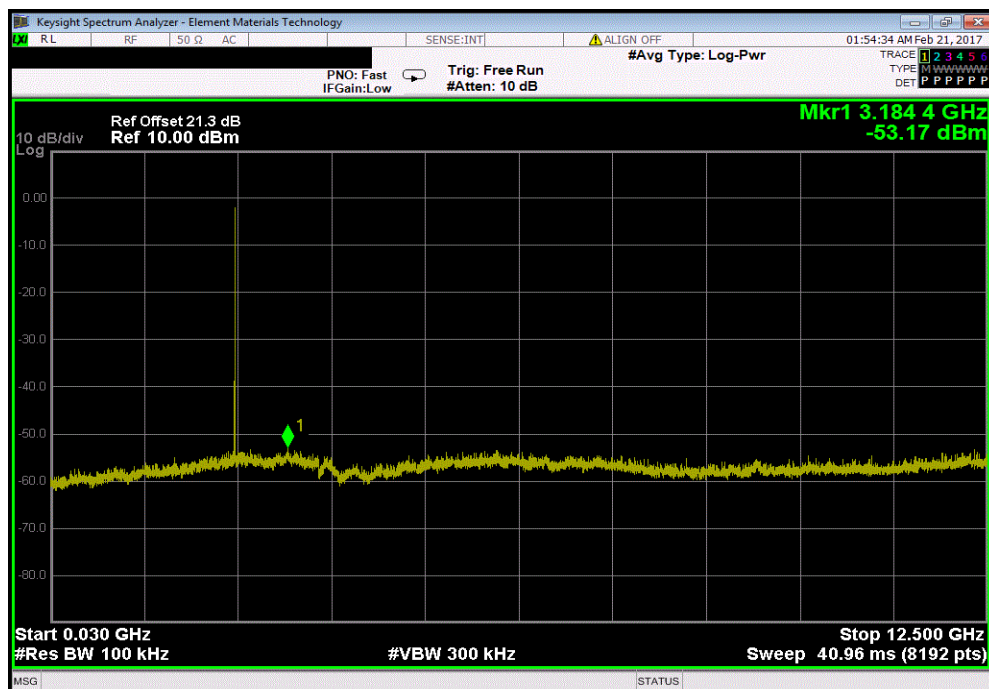


TMTx 2017.01.27 XMI 2017.01.28

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



BLE/GFSK High Channel, 2480 MHz						
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result			
30 MHz - 12.5 GHz	-51.03	-20	Pass			



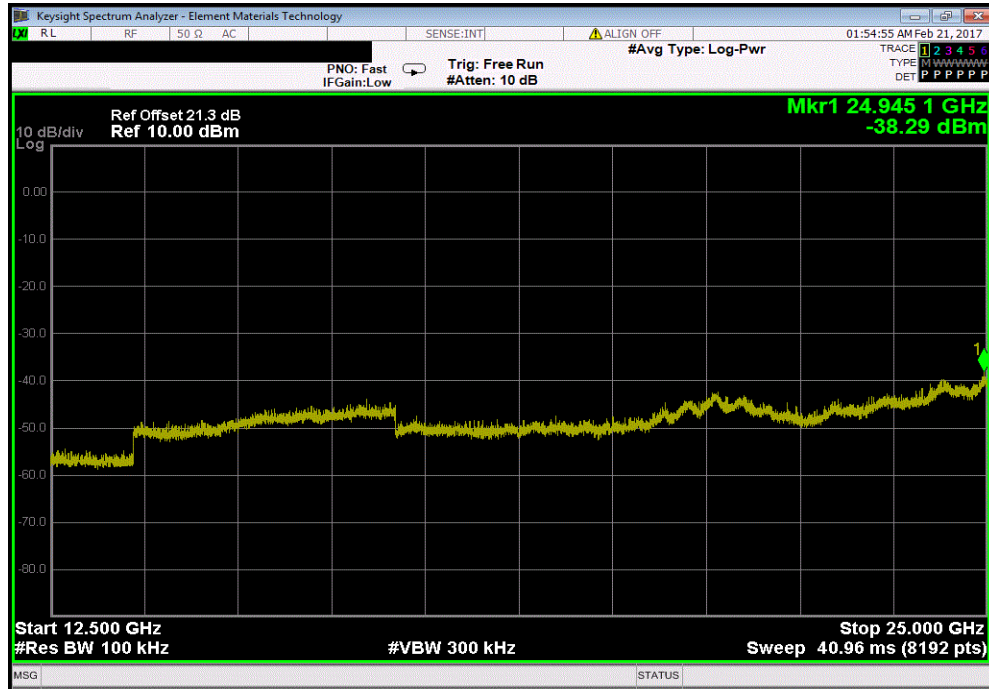


# SPURIOUS CONDUCTED EMISSIONS



TMTx 2017.01.27 XMI 2017.01.28

BLE/GFSK High Channel, 2480 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-36.15	-20	Pass	





# SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2017.01.26

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. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## MODES OF OPERATION

Low Ch.2402 MHz BLE

Mid Ch.2442 MHz BLE

High Ch.2480 MHz BLE

## POWER SETTINGS INVESTIGATED

Battery (3.0VDC)

## CONFIGURATIONS INVESTIGATED

SIGS0004 - 3

## FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26500 MHz
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## SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	4/22/2016	12 mo
Cable	ESM Cable Corp.	KMKM-72	EYV	10/17/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	10/17/2016	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AIV	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AHV	NCR	0 mo
Cable	None	Standard Gain Horns Cable	EVF	2/6/2017	12 mo
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-08001200-30-10P	PAO	2/7/2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHU	NCR	0 mo
Filter - High Pass	Micro-Tronics	HPM50111	HFO	2/6/2017	12 mo
Attenuator	Coaxicom	3910-10	AWX	5/18/2016	12 mo
Attenuator	Coaxicom	3910-20	AXZ	5/18/2016	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	2/3/2016	24 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFD	5/18/2016	12 mo
Cable	N/A	Bilog Cables	EVA	2/6/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	2/6/2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AXR	6/30/2016	24 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	2/6/2017	12 mo
Cable	N/A	Double Ridge Horn Cables	EVB	2/6/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	2/6/2017	12 mo



## TEST DESCRIPTION

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The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSIC63.10). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector  
PK = Peak Detector  
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.


If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.



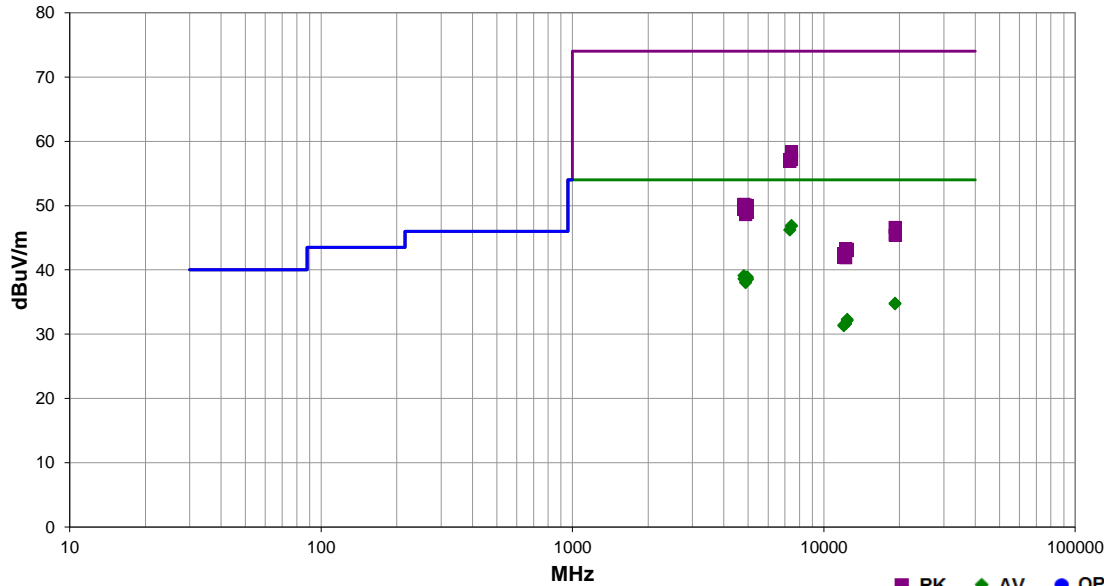
# SPURIOUS RADIATED EMISSIONS



Work Order:	SIGS0004	Date:	02/23/17	<small>EmiR5 2017.01.25</small> <small>PSA-ESCI 2017.01.26</small> 
Project:	None	Temperature:	23.3 °C	
Job Site:	EV01	Humidity:	29.8% RH	
Serial Number:	000002GA	Barometric Pres.:	1028 mbar	
EUT:	KIL02400ABS Rangefinder			Tested by: Brandon Hobbs
Configuration:	3			
Customer:	Sig Sauer, Inc. Electro-Optics			
Attendees:	Don Cramer			
EUT Power:	Battery (3.0VDC)			
Operating Mode:	Continuous Tx, Please reference the data comments for EUT operating mode			
Deviations:	None			
Comments:	Client provided 3rd party software to control radio module. Please reference the data comments for EUT orientation and frequency.			

Test Specifications	Test Method
FCC 15.247:2017	ANSI C63.10:2013

Run #	23	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7440.905	27.5	19.4	1.0	149.0	3.0	0.0	Vert	AV	0.0	46.9	54.0	-7.1	High Ch.2480MHz, BLE, EUT Horz
7440.075	27.4	19.4	1.0	360.0	3.0	0.0	Horz	AV	0.0	46.8	54.0	-7.2	High Ch.2480MHz, BLE, EUT Horz
7326.710	27.3	18.9	1.0	163.0	3.0	0.0	Horz	AV	0.0	46.2	54.0	-7.8	Mid Ch.2442MHz, BLE, EUT Horz
7326.265	27.4	18.8	1.0	298.0	3.0	0.0	Vert	AV	0.0	46.2	54.0	-7.8	Mid Ch.2442MHz, BLE, EUT Horz
4804.085	28.5	10.6	1.0	107.0	3.0	0.0	Horz	AV	0.0	39.1	54.0	-14.9	Low Ch.2402MHz, BLE, EUT Horz
4961.425	27.9	11.0	1.0	211.0	3.0	0.0	Horz	AV	0.0	38.9	54.0	-15.1	High Ch.2480MHz, BLE, EUT Horz
4960.895	27.8	11.0	1.0	175.0	3.0	0.0	Vert	AV	0.0	38.8	54.0	-15.2	High Ch.2480MHz, BLE, EUT Horz
4960.785	27.6	11.0	1.0	114.0	3.0	0.0	Horz	AV	0.0	38.6	54.0	-15.4	High Ch.2480MHz, BLE, EUT On Side
4961.145	27.6	11.0	3.7	110.0	3.0	0.0	Vert	AV	0.0	38.6	54.0	-15.4	High Ch.2480MHz, BLE, EUT On Side
4803.585	28.0	10.6	2.6	360.0	3.0	0.0	Vert	AV	0.0	38.6	54.0	-15.4	Low Ch.2402MHz, BLE, EUT Horz
4961.435	27.5	11.0	1.8	277.0	3.0	0.0	Horz	AV	0.0	38.5	54.0	-15.5	High Ch.2480MHz, BLE, EUT Vertical
4961.445	27.5	11.0	1.0	229.0	3.0	0.0	Vert	AV	0.0	38.5	54.0	-15.5	High Ch.2480MHz, BLE, EUT Vertical
7441.055	39.0	19.4	1.0	360.0	3.0	0.0	Horz	PK	0.0	58.4	74.0	-15.6	High Ch.2480MHz, BLE, EUT Horz
4884.275	27.3	10.8	1.0	237.0	3.0	0.0	Horz	AV	0.0	38.1	54.0	-15.9	Mid Ch.2442MHz, BLE, EUT Horz
4883.560	27.2	10.8	3.6	342.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	Mid Ch.2442MHz, BLE, EUT Horz
7441.195	37.8	19.4	1.0	149.0	3.0	0.0	Vert	PK	0.0	57.2	74.0	-16.8	High Ch.2480MHz, BLE, EUT Horz
7325.160	38.4	18.8	1.0	163.0	3.0	0.0	Horz	PK	0.0	57.2	74.0	-16.8	Mid Ch.2442MHz, BLE, EUT Horz
7327.015	38.0	18.9	1.0	298.0	3.0	0.0	Vert	PK	0.0	56.9	74.0	-17.1	Mid Ch.2442MHz, BLE, EUT Horz
19217.370	33.8	1.0	1.5	352.0	3.0	0.0	Vert	AV	0.0	34.8	54.0	-19.2	Low Ch.2402MHz, BLE, EUT Horz
19217.470	33.7	1.0	1.5	299.0	3.0	0.0	Horz	AV	0.0	34.7	54.0	-19.3	Low Ch.2402MHz, BLE, EUT Horz
12399.550	28.4	3.9	2.7	197.0	3.0	0.0	Vert	AV	0.0	32.3	54.0	-21.7	High Ch.2480MHz, BLE, EUT Horz
12399.110	28.2	3.9	3.5	234.0	3.0	0.0	Horz	AV	0.0	32.1	54.0	-21.9	High Ch.2480MHz, BLE, EUT Horz
12209.300	28.2	3.4	3.9	191.0	3.0	0.0	Horz	AV	0.0	31.6	54.0	-22.4	Mid Ch.2442MHz, BLE, EUT Horz
12209.430	28.2	3.4	1.0	201.0	3.0	0.0	Vert	AV	0.0	31.6	54.0	-22.4	Mid Ch.2442MHz, BLE, EUT Horz



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12010.940	28.2	3.2	1.0	78.0	3.0	0.0	Horz	AV	0.0	31.4	54.0	-22.6	Low Ch.2402MHz, BLE, EUT Horz
12011.060	28.1	3.2	2.7	29.0	3.0	0.0	Vert	AV	0.0	31.3	54.0	-22.7	Low Ch.2402MHz, BLE, EUT Horz
4804.395	39.6	10.6	2.6	360.0	3.0	0.0	Vert	PK	0.0	50.2	74.0	-23.8	Low Ch.2402MHz, BLE, EUT Horz
4882.525	39.3	10.8	3.6	342.0	3.0	0.0	Vert	PK	0.0	50.1	74.0	-23.9	Mid Ch.2442MHz, BLE, EUT Horz
4960.325	39.0	11.0	1.0	229.0	3.0	0.0	Vert	PK	0.0	50.0	74.0	-24.0	High Ch.2480MHz, BLE, EUT Vertical
4959.270	38.9	11.0	1.0	211.0	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	High Ch.2480MHz, BLE, EUT Horz
4959.765	38.7	11.0	1.0	114.0	3.0	0.0	Horz	PK	0.0	49.7	74.0	-24.3	High Ch.2480MHz, BLE, EUT On Side
4959.275	38.6	11.0	1.0	175.0	3.0	0.0	Vert	PK	0.0	49.6	74.0	-24.4	High Ch.2480MHz, BLE, EUT Horz
4960.120	38.4	11.0	3.7	110.0	3.0	0.0	Vert	PK	0.0	49.4	74.0	-24.6	High Ch.2480MHz, BLE, EUT On Side
4803.900	38.8	10.6	1.0	107.0	3.0	0.0	Horz	PK	0.0	49.4	74.0	-24.6	Low Ch.2402MHz, BLE, EUT Horz
4959.950	38.0	11.0	1.8	277.0	3.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	High Ch.2480MHz, BLE, EUT Vertical
4883.615	37.8	10.8	1.0	237.0	3.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	Mid Ch.2442MHz, BLE, EUT Horz
19215.630	45.6	1.0	1.5	352.0	3.0	0.0	Vert	PK	0.0	46.6	74.0	-27.4	Low Ch.2402MHz, BLE, EUT Horz
19214.560	44.4	1.0	1.5	299.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	Low Ch.2402MHz, BLE, EUT Horz
12210.090	39.9	3.4	1.0	201.0	3.0	0.0	Vert	PK	0.0	43.3	74.0	-30.7	Mid Ch.2442MHz, BLE, EUT Horz
12398.690	39.3	3.9	3.5	234.0	3.0	0.0	Horz	PK	0.0	43.2	74.0	-30.8	High Ch.2480MHz, BLE, EUT Horz
12399.440	39.1	3.9	2.7	197.0	3.0	0.0	Vert	PK	0.0	43.0	74.0	-31.0	High Ch.2480MHz, BLE, EUT Horz
12009.750	39.3	3.2	1.0	78.0	3.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5	Low Ch.2402MHz, BLE, EUT Horz
12009.670	38.8	3.2	2.7	29.0	3.0	0.0	Vert	PK	0.0	42.0	74.0	-32.0	Low Ch.2402MHz, BLE, EUT Horz
12210.050	38.5	3.4	3.9	191.0	3.0	0.0	Horz	PK	0.0	41.9	74.0	-32.1	Mid Ch.2442MHz, BLE, EUT Horz




# SPURIOUS RADIATED EMISSIONS



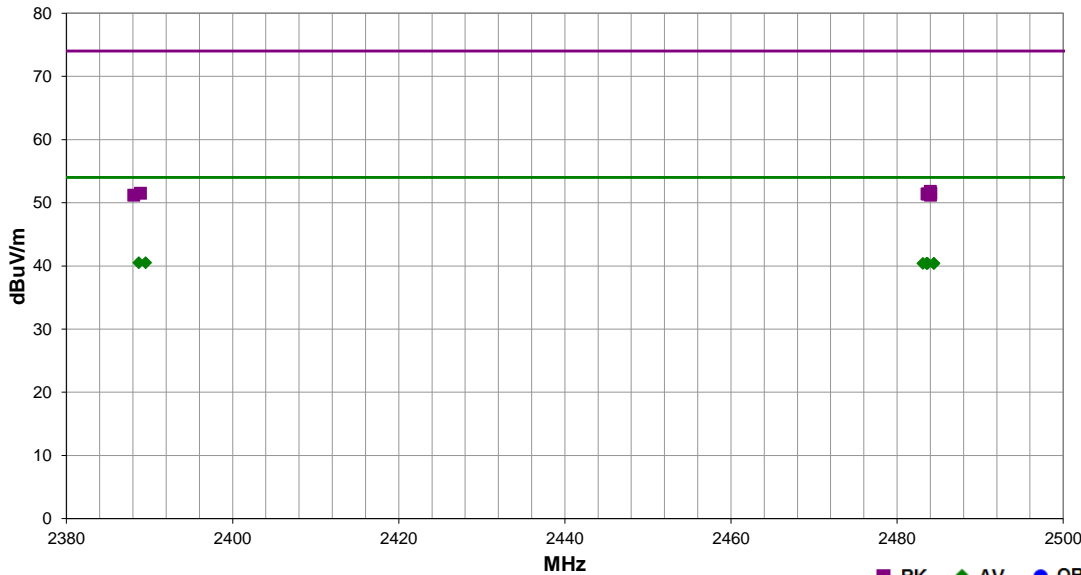
EmiRS 2017.01.25

PSA-ESCI 2017.01.26

Work Order:	SIGS0004	Date:	02/23/17	
Project:	None	Temperature:	23.3 °C	
Job Site:	EV01	Humidity:	29.8% RH	
Serial Number:	000002GA	Barometric Pres.:	1028 mbar	Tested by: Brandon Hobbs
EUT:	KILO2400ABS Rangefinder			
Configuration:	3			
Customer:	Sig Sauer, Inc.			
	Electro-Optics			
Attendees:	Don Cramer			
EUT Power:	Battery (3.0VDC)			
Operating Mode:	Continuous Tx, Please reference the data comments for EUT operating mode			
Deviations:	None			
Comments:	Client provided 3rd party software to control radio module. Please reference the data comments for EUT orientation and frequency.			

Test Specifications	Test Method
FCC 15.247:2017	ANSI C63.10:2013

Run #	27	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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■ PK ◆ AV ● QP

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2388.703	30.6	-0.1	3.3	54.0	3.0	10.0	Horz	AV	0.0	40.5	54.0	-13.5	Low Ch.2402MHz, BLE, EUT Horz
2389.547	30.6	-0.1	1.0	146.0	3.0	10.0	Vert	AV	0.0	40.5	54.0	-13.5	Low Ch.2402MHz, BLE, EUT Horz
2483.690	30.5	-0.1	1.0	335.0	3.0	10.0	Horz	AV	0.0	40.4	54.0	-13.6	High Ch.2480MHz, BLE, EUT Horz
2484.423	30.5	-0.1	1.0	13.0	3.0	10.0	Vert	AV	0.0	40.4	54.0	-13.6	High Ch.2480MHz, BLE, EUT Horz
2483.117	30.5	-0.1	1.0	306.0	3.0	10.0	Horz	AV	0.0	40.4	54.0	-13.6	High Ch.2480MHz, BLE, EUT On Side
2484.450	30.5	-0.1	1.0	251.0	3.0	10.0	Vert	AV	0.0	40.4	54.0	-13.6	High Ch.2480MHz, BLE, EUT On Side
2483.553	30.5	-0.1	1.0	338.0	3.0	10.0	Horz	AV	0.0	40.4	54.0	-13.6	High Ch.2480MHz, BLE, EUT Vertical
2483.577	30.5	-0.1	3.7	62.0	3.0	10.0	Vert	AV	0.0	40.4	54.0	-13.6	High Ch.2480MHz, BLE, EUT Vertical
2484.010	41.9	-0.1	1.0	251.0	3.0	10.0	Vert	PK	0.0	51.8	74.0	-22.2	High Ch.2480MHz, BLE, EUT On Side
2484.073	41.6	-0.1	1.0	338.0	3.0	10.0	Horz	PK	0.0	51.5	74.0	-22.5	High Ch.2480MHz, BLE, EUT Vertical
2388.910	41.6	-0.1	1.0	146.0	3.0	10.0	Vert	PK	0.0	51.5	74.0	-22.5	Low Ch.2402MHz, BLE, EUT Horz
2483.757	41.5	-0.1	1.0	335.0	3.0	10.0	Horz	PK	0.0	51.4	74.0	-22.6	High Ch.2480MHz, BLE, EUT Horz
2483.600	41.5	-0.1	3.7	62.0	3.0	10.0	Vert	PK	0.0	51.4	74.0	-22.6	High Ch.2480MHz, BLE, EUT Vertical
2484.027	41.4	-0.1	1.0	13.0	3.0	10.0	Vert	PK	0.0	51.3	74.0	-22.7	High Ch.2480MHz, BLE, EUT Horz
2484.017	41.3	-0.1	1.0	306.0	3.0	10.0	Horz	PK	0.0	51.2	74.0	-22.8	High Ch.2480MHz, BLE, EUT On Side
2388.103	41.3	-0.1	3.3	54.0	3.0	10.0	Horz	PK	0.0	51.2	74.0	-22.8	Low Ch.2402MHz, BLE, EUT Horz