



element

WatchGuard Video

V300

FCC 15.247:2019

Bluetooth LE Radio

Report # WTVD0027.5



NVLAP LAB CODE: 201049-0



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CERTIFICATE OF TEST

Last Date of Test: November 8, 2019

WatchGuard Video

EUT: V300

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2019	ANSI C63.10:2013, KDB 558074

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for a battery powered EUT.
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied 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	

Deviations From Test Standards

None

Approved By:



Jeremiah Darden, 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. 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
00	None		

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 - 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

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 – Within Element, we have a EU Notified Body validated for the EMCD and RED Directives.

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

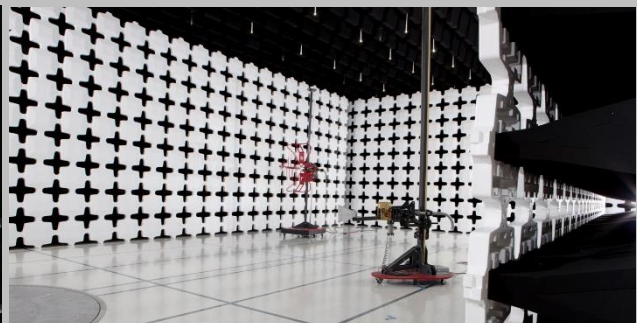
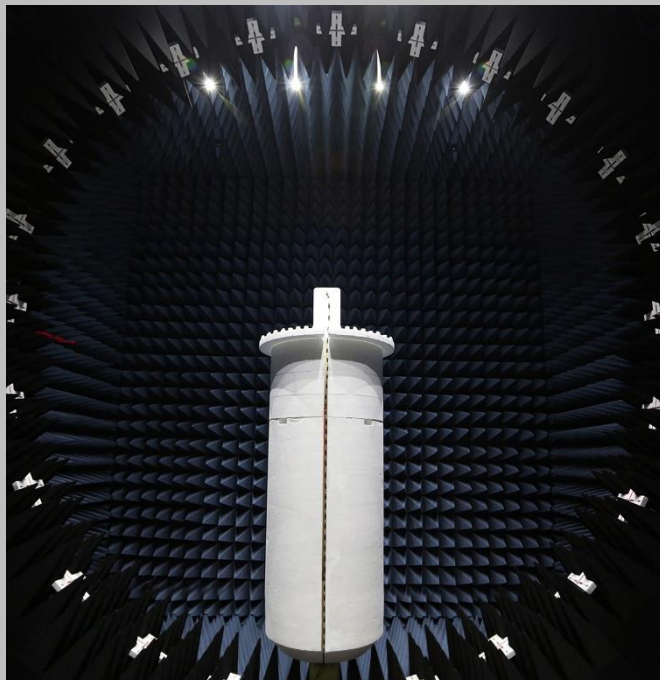
For details on the Scopes of our Accreditations, please visit:

<https://www.nwemc.com/emc-testing-accreditations>

FACILITIES



California Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-10 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
NVLAP				
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
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/RRR, 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.

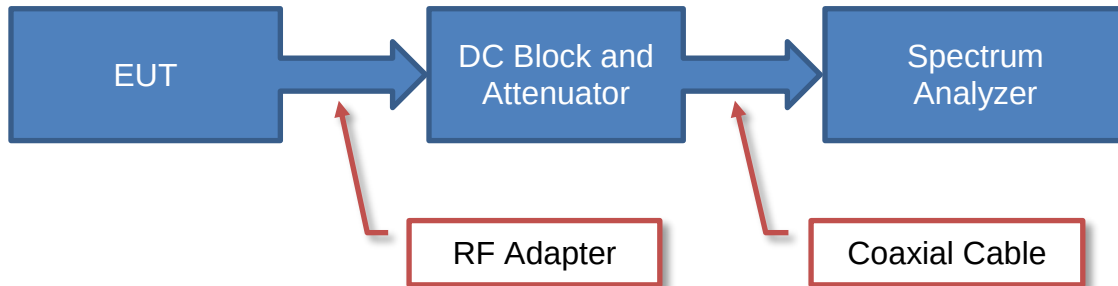
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable 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.

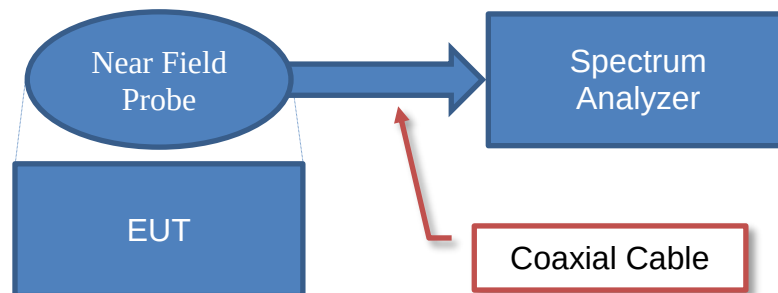
Test	+ MU	- MU
Frequency Accuracy	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

Test Setup Block Diagrams

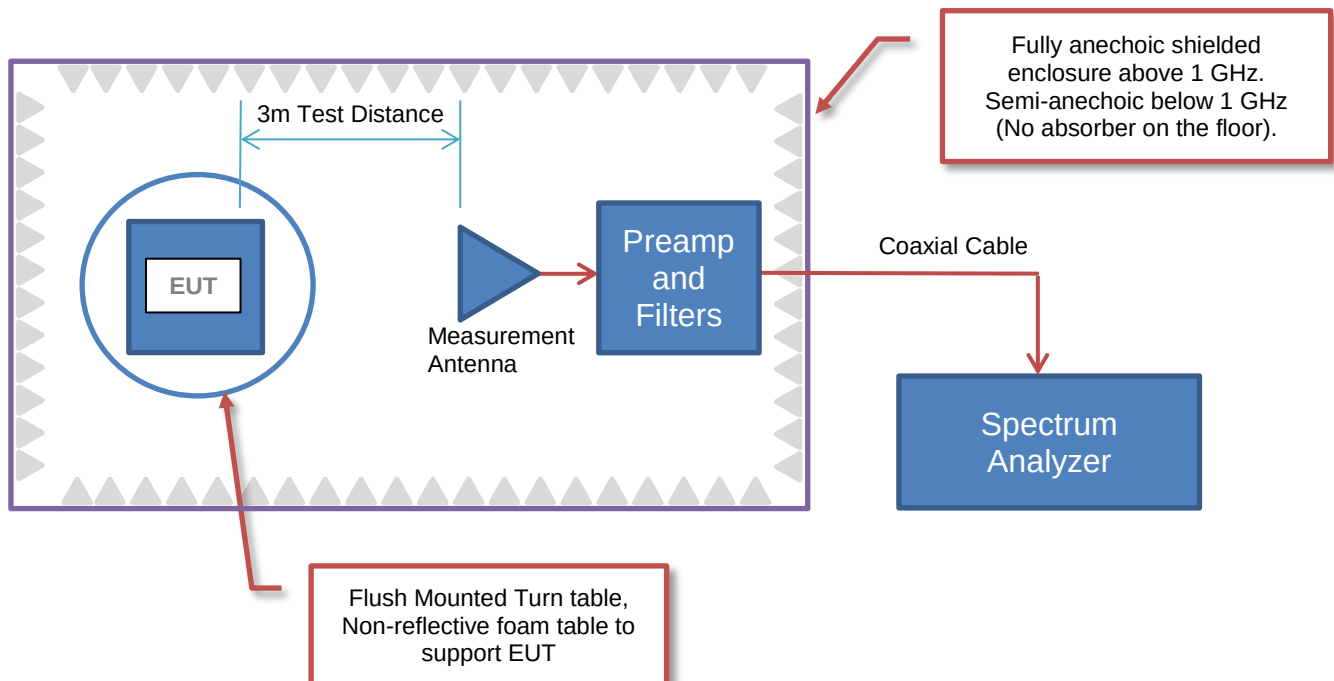
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	WatchGuard Video
Address:	415 East Exchange Pkwy
City, State, Zip:	Allen, TX 75002
Test Requested By:	Navaid Karimi
EUT:	V300
First Date of Test:	November 5, 2019
Last Date of Test:	November 8, 2019
Receipt Date of Samples:	November 4, 2019
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 Camera
Testing Objective:
To demonstrate compliance of the Bluetooth low energy radio to FCC 15.247 requirements.

CONFIGURATIONS



Configuration WTVD0027- 2

Software/Firmware Running during test	
Description	Version
BT Test Firmware	20190925000146

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Body Camera (Radiated Unit)	WatchGuard Video	V300	55

Configuration WTVD0027- 4

Software/Firmware Running during test	
Description	Version
BT Test Firmware	20190925000146

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Body Camera (Direct Connect)	WatchGuard Video	V300	63

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Charging Base	WatchGuard Video	V300 USB Base	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter (Base)	GlobeTek, Inc.	GT-21089-1512-W3	931657108-11
Laptop Computer	Dell	Latitude E5570	3VX20G2
AC/DC Power Adapter (Laptop)	Dell	DA130PE1-00	CN-0JU012-48661-136-JIMY-A04

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power (Base)	No	1m	No	AC Adapter (Base)	Charging Base
AC Power (Laptop)	No	.6m	No	AC Mains	AC/DC Power Adapter (Laptop)
DC Power (Laptop)	No	1m	Yes	AC/DC Power Adapter (Laptop)	Laptop Computer
USB	Yes	1m	Yes	Laptop Computer	Charging Base

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2019-11-05	Spurious Radiated 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.
2	2019-11-08	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.
3	2019-11-08	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	2019-11-08	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	2019-11-08	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	2019-11-08	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	2019-11-08	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	2019-11-08	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.



POWER SETTINGS

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

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types	Position	Frequency (MHz)	Power Setting
BLE	Low Channel	2402	13 (Max)
BLE	Mid Channel	2442	13 (Max)
BLE	High Channel	2480	13 (Max)

SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2019.05.10

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

Transmitting BLE at Low Channel (2402 MHz), Mid Channel (2442 MHz), High Channel (2480 MHz)

Transmitting BLE at Low Channel (2402 MHz) , High Channel (2480 MHz)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

WTVD0027 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 26500 MHz

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
Attenuator	Weinschel Corp	4H-20	AWB	17-Mar-2019	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HGC	17-Mar-2019	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HHV	1-Aug-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	JSDWK42-18004000-60-5P	PAM	20-Sep-2019	12 mo
Antenna - Double Ridge	A.H. Systems, Inc.	SAS-574	AXW	21-Aug-2018	24 mo
Cable	Northwest EMC	18-40GHz	TXE	20-Sep-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	PAL	18-Sep-2019	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AJG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	PAK	18-Sep-2019	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AJF	NCR	0 mo
Cable	Northwest EMC	8-18GHz	TXD	14-May-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAJ	17-Mar-2019	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJL	11-Oct-2018	24 mo
Cable	Northwest EMC	1-8.2 GHz	TXC	14-May-2019	12 mo
Amplifier - Pre-Amplifier	Fairview Microwave	FMAM63001	PAS	24-Jan-2019	12 mo
Antenna - Biconilog	ETS Lindgren	3143B	AYF	10-May-2018	24 mo
Cable	Northwest EMC	RE 9kHz - 1GHz	TXB	1-Aug-2019	12 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	1-Nov-2019	12 mo

TEST DESCRIPTION

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 ANSI C63.10). A preamp and high pass filter (and notch 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.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of $10 \cdot \text{LOG}(\text{dc})$.

SPURIOUS RADIATED EMISSIONS



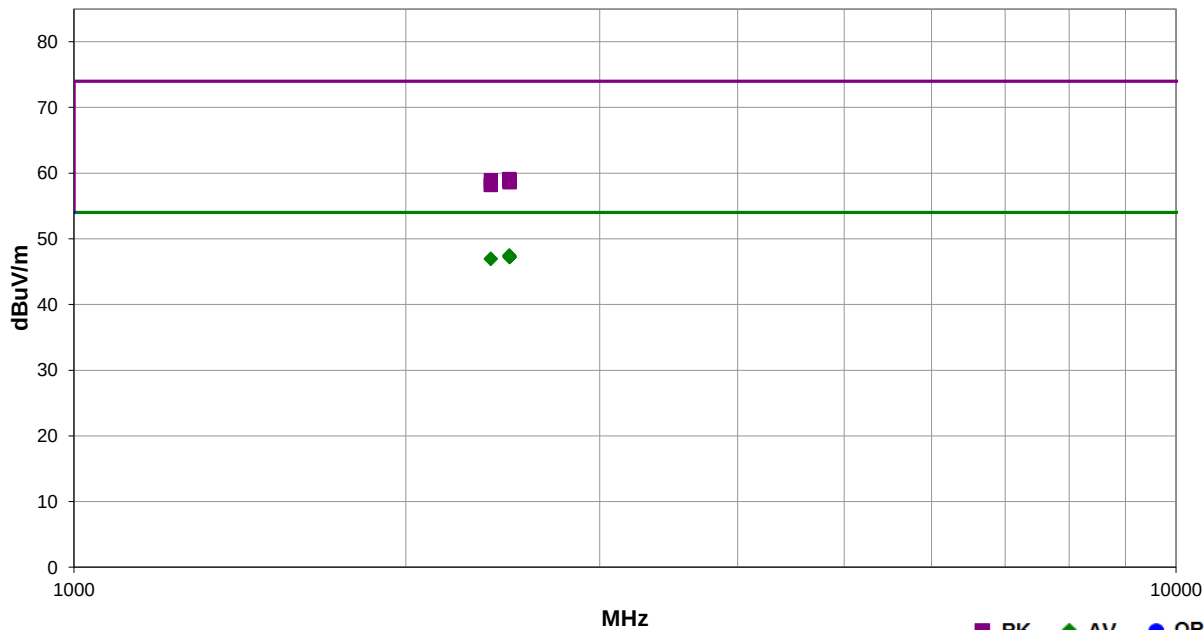
EmR5 2019.08.15.1

PSA-ESCI 2019.05.10

Work Order:	WTVD0027	Date:	5-Nov-2019	<i>Jonathan Kiefer</i>
Project:	None	Temperature:	24 °C	
Job Site:	TX02	Humidity:	49.1% RH	
Serial Number:	55	Barometric Pres.:	1024 mbar	
Tested by: Jonathan Kiefer, Willie Love				
EUT:	V300			
Configuration:	2			
Customer:	WatchGuard Video			
Attendees:	Navaid Karimi			
EUT Power:	Battery			
Operating Mode:	Transmitting BLE at Low Channel (2402 MHz) , High Channel (2480 MHz)			
Deviations:	None			
Comments:	Transmit Band Edge. See table comments for EUT orientation and channel information.			

Test Specifications	Test Method
FCC 15.247:2019	ANSI C63.10:2013

Run #	77	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
2483.967	32.5	-5.0	1.5	141.0	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	EUT Vert, High Ch
2484.613	32.4	-5.0	1.5	319.0	3.0	20.0	Vert	AV	0.0	47.4	54.0	-6.6	EUT Vert, High Ch
2483.710	32.3	-5.0	1.5	105.0	3.0	20.0	Horz	AV	0.0	47.3	54.0	-6.7	EUT Horz, High Ch
2485.180	32.2	-5.0	1.5	321.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	EUT Horz, High Ch
2485.080	32.2	-5.0	1.5	87.9	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	EUT On Side, High Ch
2485.407	32.2	-5.0	1.5	183.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	EUT On Side, High Ch
2389.343	32.4	-5.4	1.5	129.9	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	EUT Vert, Low Ch
2388.640	32.3	-5.4	1.5	186.0	3.0	20.0	Vert	AV	0.0	46.9	54.0	-7.1	EUT Vert, Low Ch
2483.810	44.1	-5.0	1.5	105.0	3.0	20.0	Horz	PK	0.0	59.1	74.0	-14.9	EUT Horz, High Ch
2485.177	43.9	-5.0	1.5	87.9	3.0	20.0	Horz	PK	0.0	58.9	74.0	-15.1	EUT On Side, High Ch
2389.210	44.3	-5.4	1.5	186.0	3.0	20.0	Vert	PK	0.0	58.9	74.0	-15.1	EUT Vert, Low Ch
2484.657	43.8	-5.0	1.5	141.0	3.0	20.0	Horz	PK	0.0	58.8	74.0	-15.2	EUT Vert, High Ch
2485.423	43.8	-5.0	1.5	319.0	3.0	20.0	Vert	PK	0.0	58.8	74.0	-15.2	EUT Vert, High Ch
2483.993	43.8	-5.0	1.5	321.0	3.0	20.0	Vert	PK	0.0	58.8	74.0	-15.2	EUT Horz, High Ch
2484.623	43.6	-5.0	1.5	183.0	3.0	20.0	Vert	PK	0.0	58.6	74.0	-15.4	EUT On Side, High Ch
2388.417	43.6	-5.4	1.5	129.9	3.0	20.0	Horz	PK	0.0	58.2	74.0	-15.8	EUT Vert, Low Ch

SPURIOUS RADIATED EMISSIONS

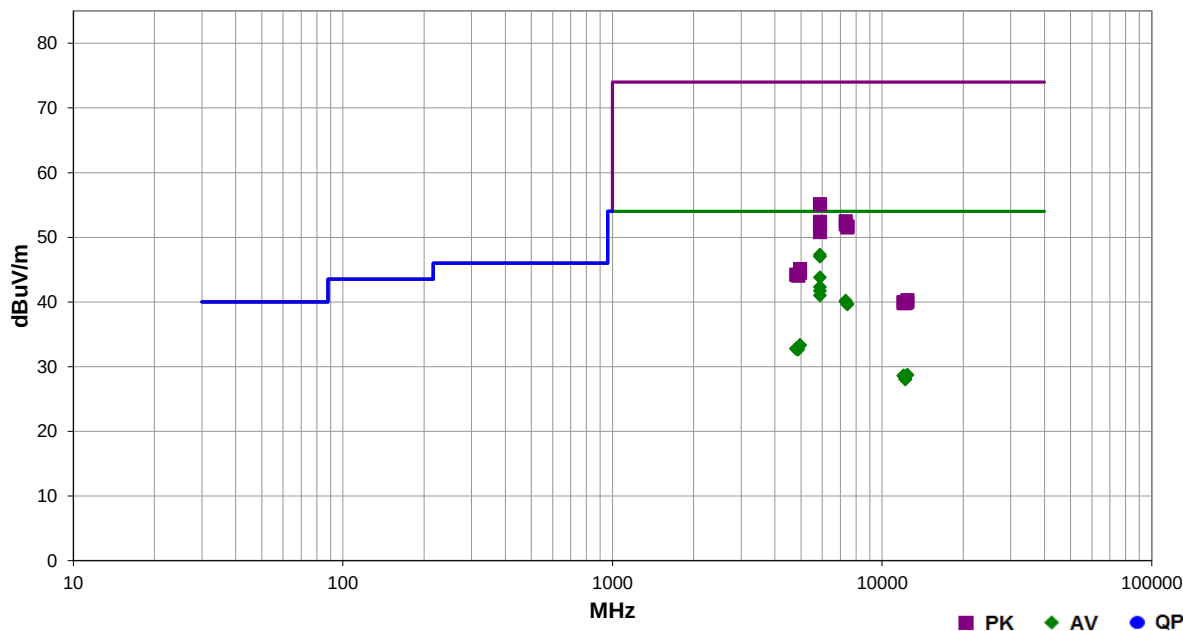


EmiR5 2019.08.15.1 PSA-ESCI 2019.05.10

Work Order:	WTVD0027	Date:	5-Nov-2019	
Project:	None	Temperature:	24 °C	
Job Site:	TX02	Humidity:	49.1% RH	
Serial Number:	55	Barometric Pres.:	1024 mbar	
EUT:	V300	Tested by: Jonathan Kiefer, Willie Love		
Configuration:	2			
Customer:	WatchGuard Video			
Attendees:	Navaid Karimi			
EUT Power:	Battery			
Operating Mode:	Transmitting BLE at Low Channel (2402 MHz), Mid Channel (2442 MHz), High Channel (2480 MHz)			
Deviations:	None			
Comments:	See table comments for EUT orientation and channel information. All harmonics are below the measurement noise floor; therefore no upward correction factor was added to average measurements.			

Test Specifications	Test Method
FCC 15.247:2019	ANSI C63.10:2013

Run #	85	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
5880.050	38.4	8.9	1.5	90.0	3.0	0.0	Vert	AV	0.0	47.3	54.0	-6.7	EUT On Side, High Ch
5880.083	38.1	8.9	1.5	52.9	3.0	0.0	Horz	AV	0.0	47.0	54.0	-7.0	EUT Vert, High Ch
5880.083	34.9	8.9	1.8	151.0	3.0	0.0	Vert	AV	0.0	43.8	54.0	-10.2	EUT Horz, High Ch
5879.892	33.4	8.9	1.5	88.9	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	EUT On Side, High Ch
5880.117	32.8	8.9	3.3	196.9	3.0	0.0	Horz	AV	0.0	41.7	54.0	-12.3	EUT Horz, High Ch
5879.842	32.1	8.9	1.6	360.0	3.0	0.0	Vert	AV	0.0	41.0	54.0	-13.0	EUT Vert, High Ch
7325.200	28.5	11.7	2.5	273.0	3.0	0.0	Vert	AV	0.0	40.2	54.0	-13.8	EUT On Side, Mid Ch
7324.117	28.3	11.7	1.5	13.0	3.0	0.0	Horz	AV	0.0	40.0	54.0	-14.0	EUT Vert, Mid Ch
7441.650	28.0	11.7	1.5	307.0	3.0	0.0	Vert	AV	0.0	39.7	54.0	-14.3	EUT On Side, High Ch
7437.683	27.9	11.7	1.5	145.0	3.0	0.0	Horz	AV	0.0	39.6	54.0	-14.4	EUT Vert, High Ch
5878.150	46.2	8.9	1.5	52.9	3.0	0.0	Horz	PK	0.0	55.1	74.0	-18.9	EUT Vert, High Ch
5878.267	46.2	8.9	1.5	90.0	3.0	0.0	Vert	PK	0.0	55.1	74.0	-18.9	EUT On Side, High Ch
4958.042	28.6	4.7	1.5	360.0	3.0	0.0	Vert	AV	0.0	33.3	54.0	-20.7	EUT On Side, High Ch
4957.933	28.6	4.7	1.5	134.0	3.0	0.0	Horz	AV	0.0	33.3	54.0	-20.7	EUT Vert, High Ch
4882.000	28.6	4.3	1.5	40.9	3.0	0.0	Vert	AV	0.0	32.9	54.0	-21.1	EUT On Side, Mid Ch
4801.867	28.7	4.1	1.5	39.9	3.0	0.0	Horz	AV	0.0	32.8	54.0	-21.2	EUT Vert, Low Ch
4801.650	28.6	4.1	1.5	194.0	3.0	0.0	Vert	AV	0.0	32.7	54.0	-21.3	EUT On Side, Low Ch
4881.858	28.3	4.3	1.5	189.0	3.0	0.0	Horz	AV	0.0	32.6	54.0	-21.4	EUT Vert, Mid Ch

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
7324.750	40.8	11.7	1.5	13.0	3.0	0.0	Horz	PK	0.0	52.5	74.0	-21.5	EUT Vert, Mid Ch
5879.575	43.5	8.9	1.8	151.0	3.0	0.0	Vert	PK	0.0	52.4	74.0	-21.6	EUT Horz, High Ch
5880.767	43.1	8.9	1.5	88.9	3.0	0.0	Horz	PK	0.0	52.0	74.0	-22.0	EUT On Side, High Ch
7324.933	40.3	11.7	2.5	273.0	3.0	0.0	Vert	PK	0.0	52.0	74.0	-22.0	EUT On Side, Mid Ch
7441.592	40.0	11.7	1.5	145.0	3.0	0.0	Horz	PK	0.0	51.7	74.0	-22.3	EUT Vert, High Ch
7441.692	39.8	11.7	1.5	307.0	3.0	0.0	Vert	PK	0.0	51.5	74.0	-22.5	EUT On Side, High Ch
5877.875	42.1	8.9	3.3	196.9	3.0	0.0	Horz	PK	0.0	51.0	74.0	-23.0	EUT Horz, High Ch
5878.367	41.9	8.9	1.6	360.0	3.0	0.0	Vert	PK	0.0	50.8	74.0	-23.2	EUT Vert, High Ch
12398.260	31.0	-2.3	1.5	277.0	3.0	0.0	Horz	AV	0.0	28.7	54.0	-25.3	EUT Vert, High Ch
12398.070	31.0	-2.3	1.5	231.0	3.0	0.0	Vert	AV	0.0	28.7	54.0	-25.3	EUT On Side, High Ch
12009.270	32.1	-3.5	1.5	339.9	3.0	0.0	Vert	AV	0.0	28.6	54.0	-25.4	EUT On Side, Low Ch
12007.890	32.1	-3.5	2.9	174.0	3.0	0.0	Horz	AV	0.0	28.6	54.0	-25.4	EUT Vert, Low Ch
12208.800	31.2	-3.1	1.5	146.0	3.0	0.0	Horz	AV	0.0	28.1	54.0	-25.9	EUT Vert, Mid Ch
12207.730	31.1	-3.1	1.5	7.0	3.0	0.0	Vert	AV	0.0	28.0	54.0	-26.0	EUT On Side, Mid Ch
4959.200	40.4	4.7	1.5	360.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9	EUT On Side, High Ch
4958.108	39.8	4.7	1.5	134.0	3.0	0.0	Horz	PK	0.0	44.5	74.0	-29.5	EUT Vert, High Ch
4805.325	40.1	4.1	1.5	39.9	3.0	0.0	Horz	PK	0.0	44.2	74.0	-29.8	EUT Vert, Low Ch
4806.442	40.1	4.1	1.5	194.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8	EUT On Side, Low Ch
4884.183	39.8	4.3	1.5	40.9	3.0	0.0	Vert	PK	0.0	44.1	74.0	-29.9	EUT On Side, Mid Ch
4882.083	39.8	4.3	1.5	189.0	3.0	0.0	Horz	PK	0.0	44.1	74.0	-29.9	EUT Vert, Mid Ch
12398.840	42.6	-2.3	1.5	277.0	3.0	0.0	Horz	PK	0.0	40.3	74.0	-33.7	EUT Vert, High Ch
12397.660	42.3	-2.3	1.5	231.0	3.0	0.0	Vert	PK	0.0	40.0	74.0	-34.0	EUT On Side, High Ch
12008.550	43.5	-3.5	2.9	174.0	3.0	0.0	Horz	PK	0.0	40.0	74.0	-34.0	EUT Vert, Low Ch
12211.530	43.0	-3.1	1.5	146.0	3.0	0.0	Horz	PK	0.0	39.9	74.0	-34.1	EUT Vert, Mid Ch
12211.950	42.9	-3.1	1.5	7.0	3.0	0.0	Vert	PK	0.0	39.8	74.0	-34.2	EUT On Side, Mid Ch
12009.580	43.3	-3.5	1.5	339.9	3.0	0.0	Vert	PK	0.0	39.8	74.0	-34.2	EUT On Side, Low Ch

DUTY CYCLE



XMIT 2019.09.05

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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

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.

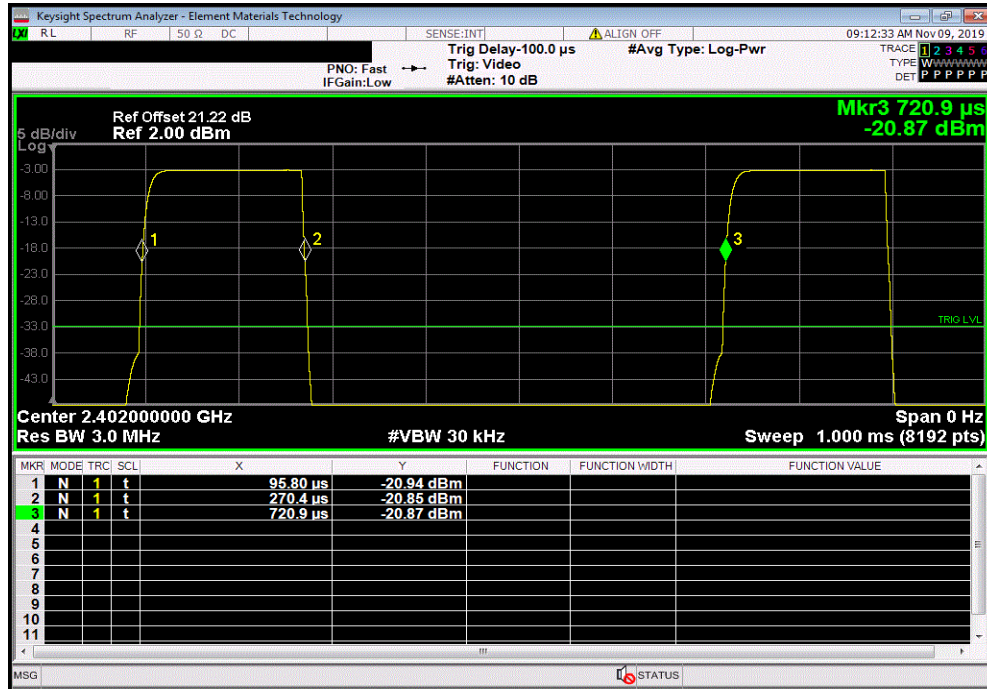
ThiTx 2019.08.30.0 XMIT 2019.09.05

DUTY CYCLE

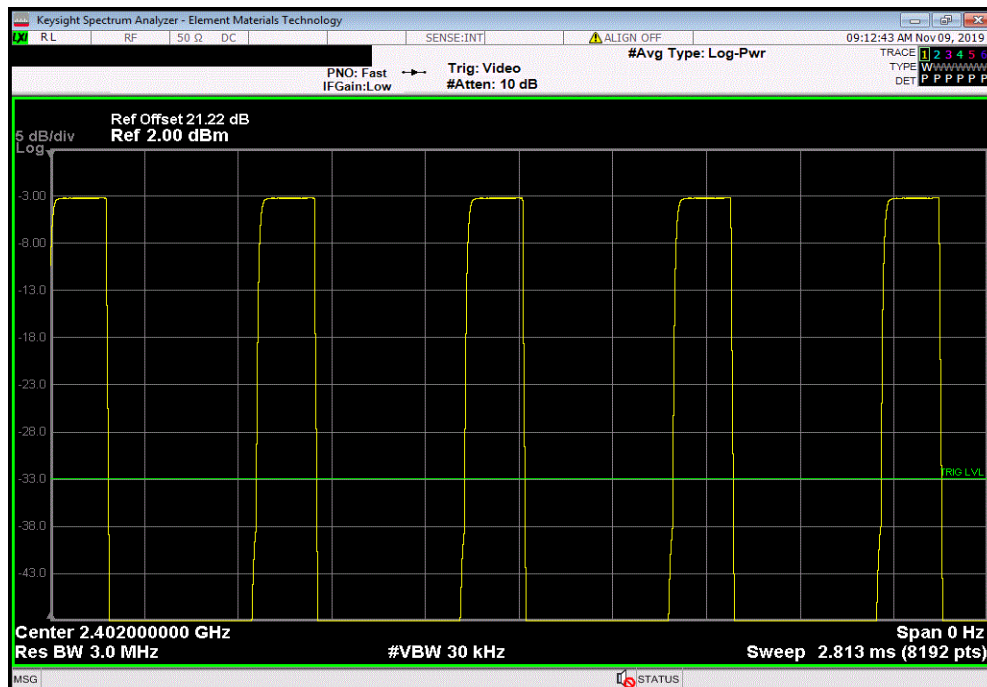


TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Low Channel, 2402 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
174.6 μ s	625.1 μ s	1	27.9	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	

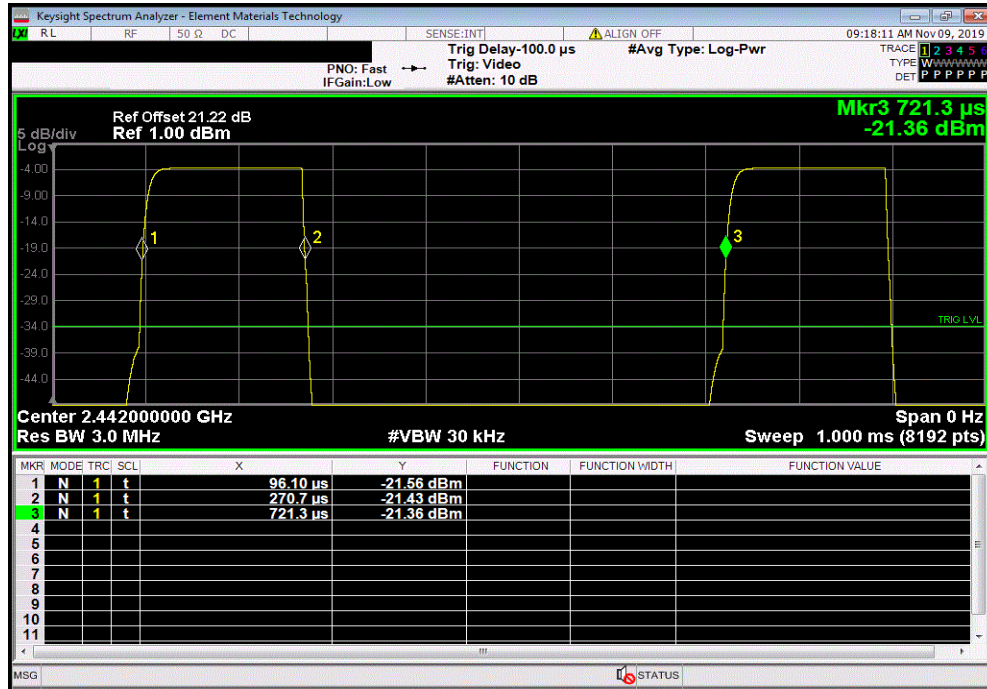


DUTY CYCLE

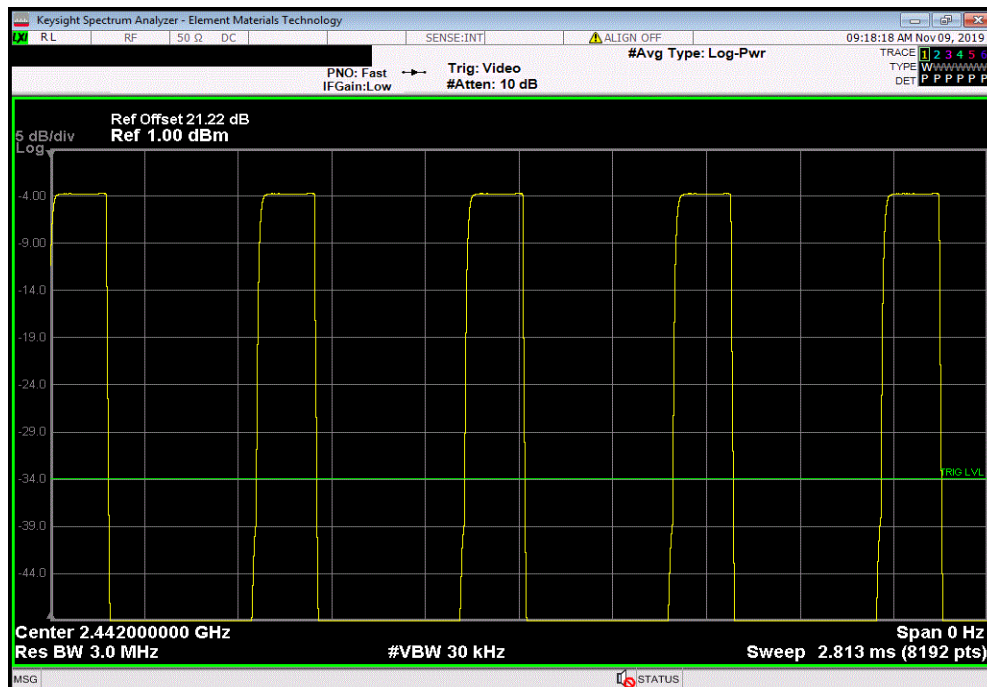


TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Mid Channel, 2442 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
174.6 μ s	625.2 μ s	1	27.9	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	

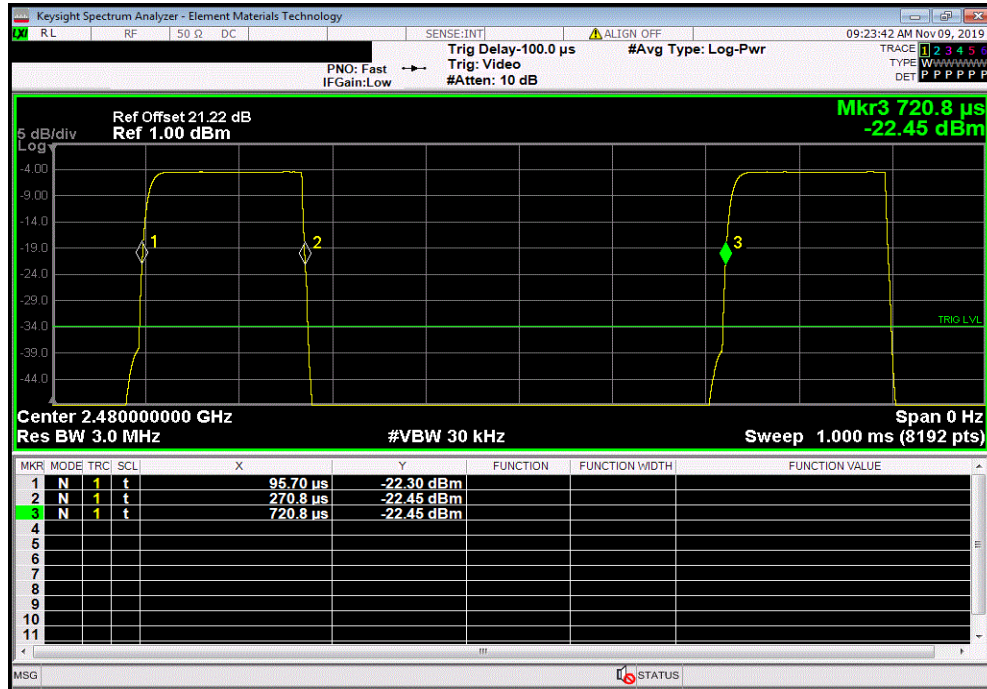


DUTY CYCLE

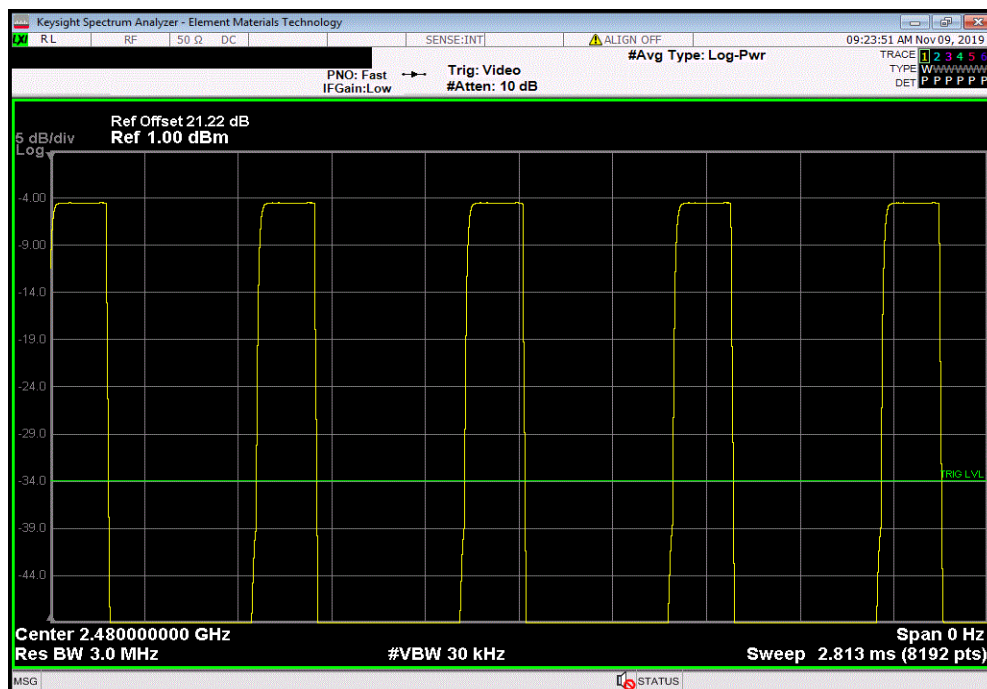


TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK High Channel, 2480 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
175.1 μ s	625.1 μ s	1	28	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 2019.09.05

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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

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



TMTx 2019.08.30.0 XMI 2019.09.05

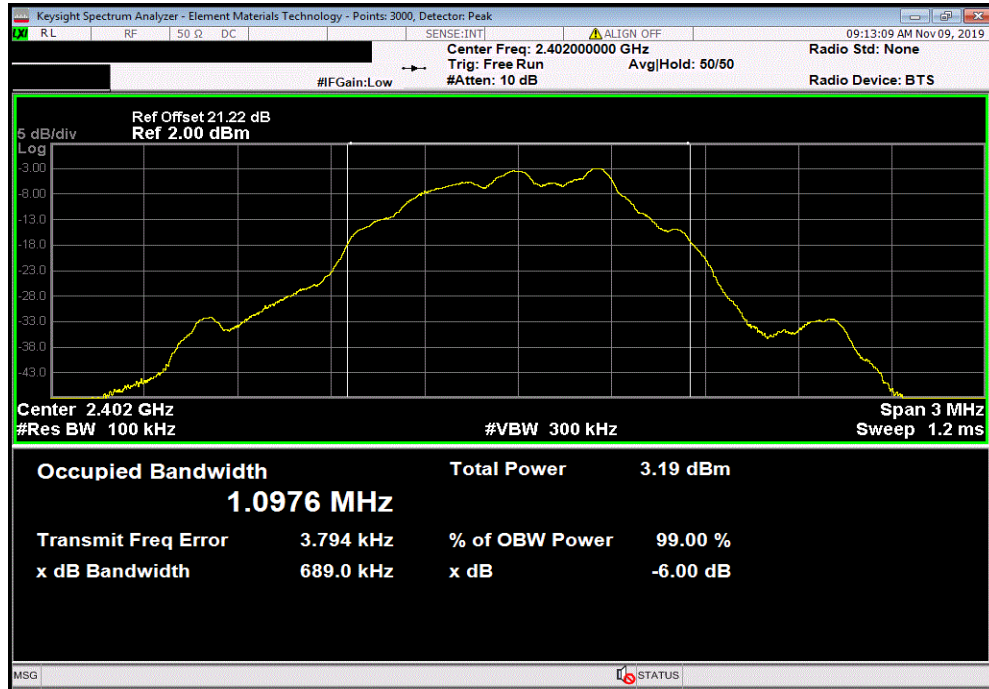
EUT: V300		Work Order: WTVD0027	
Serial Number: 63		Date: 8-Nov-19	
Customer: WatchGuard Video		Temperature: 23.2 °C	
Attendees: Navaid Karimi		Humidity: 26.2% RH	
Project: None		Barometric Pres.: 1035 mbar	
Tested by: Jonathan Kiefer		Power: Battery	
		Job Site: TX09	
TEST SPECIFICATIONS			
FCC 15.247:2019		Test Method	
		ANSI C63.10:2013	
COMMENTS			
Reference Offset 21.22 dB (20dB attenuator+dc block+cable).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	4	Signature <i>Jonathan Kiefer</i>	
		Value	Limit (±)
BLE/GFSK Low Channel, 2402 MHz		689.035 kHz	500 kHz
BLE/GFSK Mid Channel, 2442 MHz		692.705 kHz	500 kHz
BLE/GFSK High Channel, 2480 MHz		687.618 kHz	500 kHz
			Result
			Pass
			Pass
			Pass

OCCUPIED BANDWIDTH

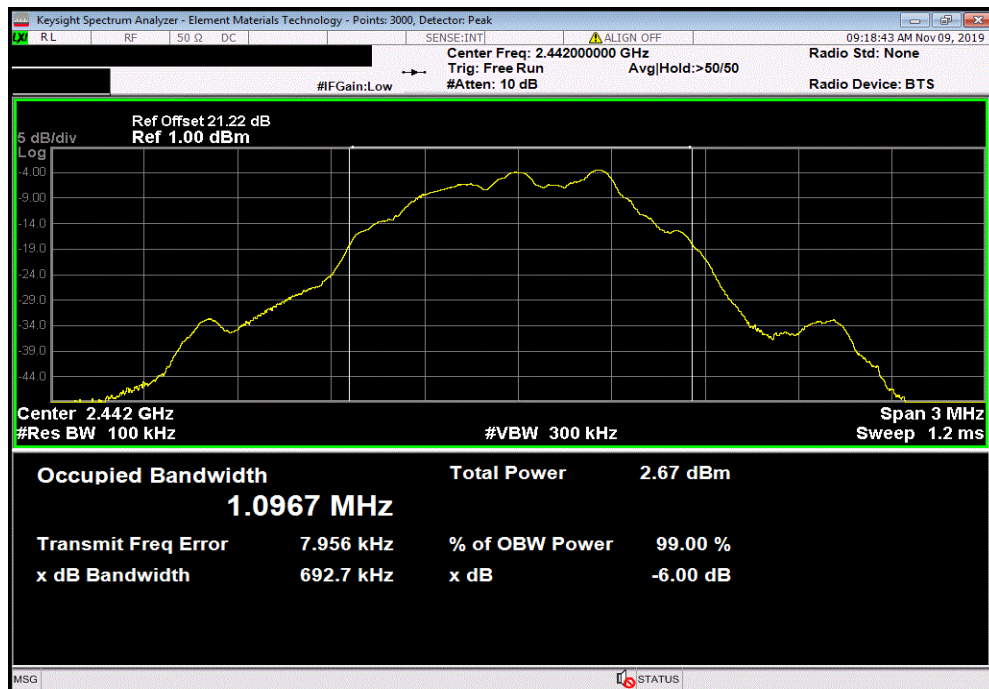


TbTx 2019.08.30.0 XMI 2019.09.05

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



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

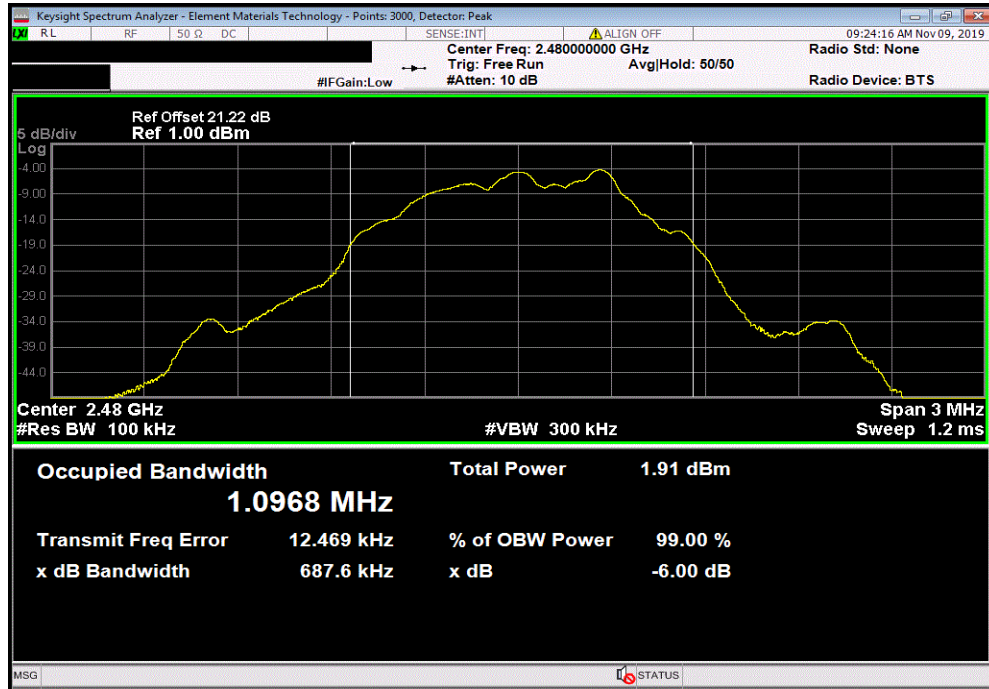


OCCUPIED BANDWIDTH



TbTx 2019.08.30.0 XMI 2019.09.05

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



OUTPUT POWER



XMIT 2019.09.05

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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

TEST DESCRIPTION

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



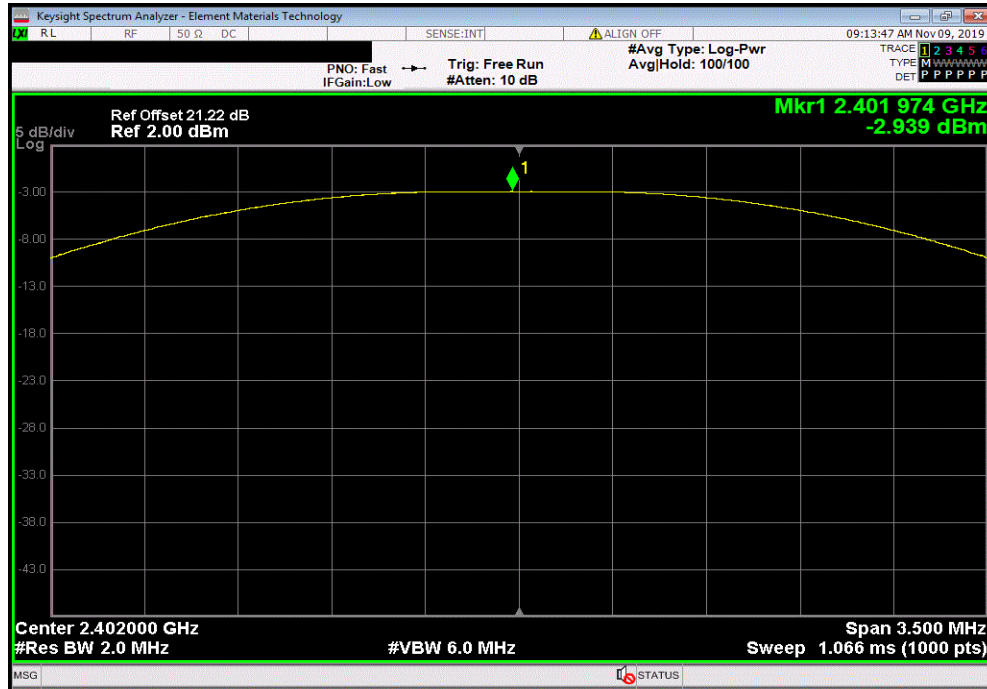
EUT: V300		Work Order: WTVD0027	
Serial Number: 63		Date: 8-Nov-19	
Customer: WatchGuard Video		Temperature: 23.2 °C	
Attendees: Navaid Karimi		Humidity: 26.2% RH	
Project: None		Barometric Pres.: 1035 mbar	
Tested by: Jonathan Kiefer		Job Site: TX09	
Power: Battery			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2019		ANSI C63.10:2013	
COMMENTS			
Reference Offset 21.22 dB (20dB attenuator+dc block+cable).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	4	Signature <i>Jonathan Kiefer</i>	
		Out Pwr (dBm)	Limit (dBm) Result
BLE/GFSK Low Channel, 2402 MHz		-2.939	30 Pass
BLE/GFSK Mid Channel, 2442 MHz		-3.363	30 Pass
BLE/GFSK High Channel, 2480 MHz		-4.024	30 Pass

OUTPUT POWER

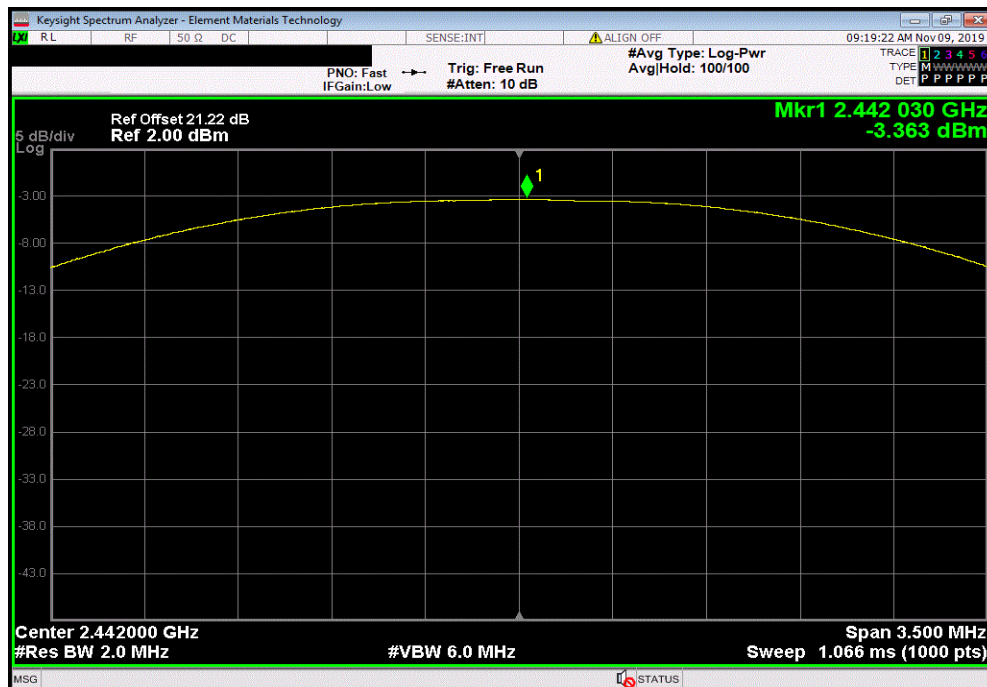


TbTtx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Low Channel, 2402 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				-2.939	30	Pass



BLE/GFSK Mid Channel, 2442 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				-3.363	30	Pass

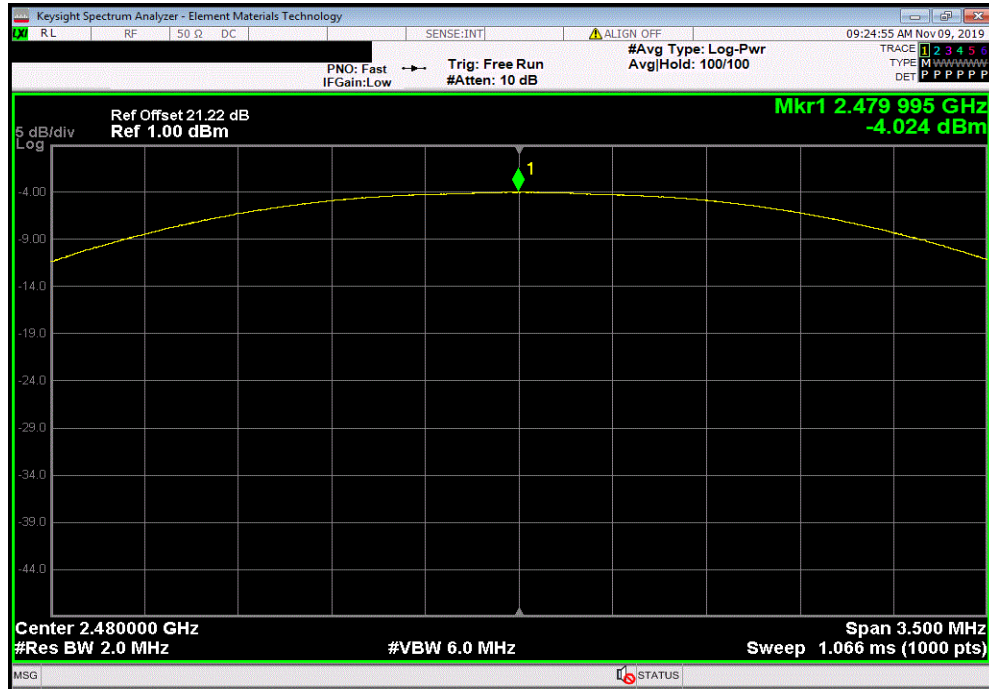


OUTPUT POWER



TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK High Channel, 2480 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				-4.024	30	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



XMI 2019.09.05

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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

TEST DESCRIPTION

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.

The antenna gain was added to the output power to calculate the EIRP.

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



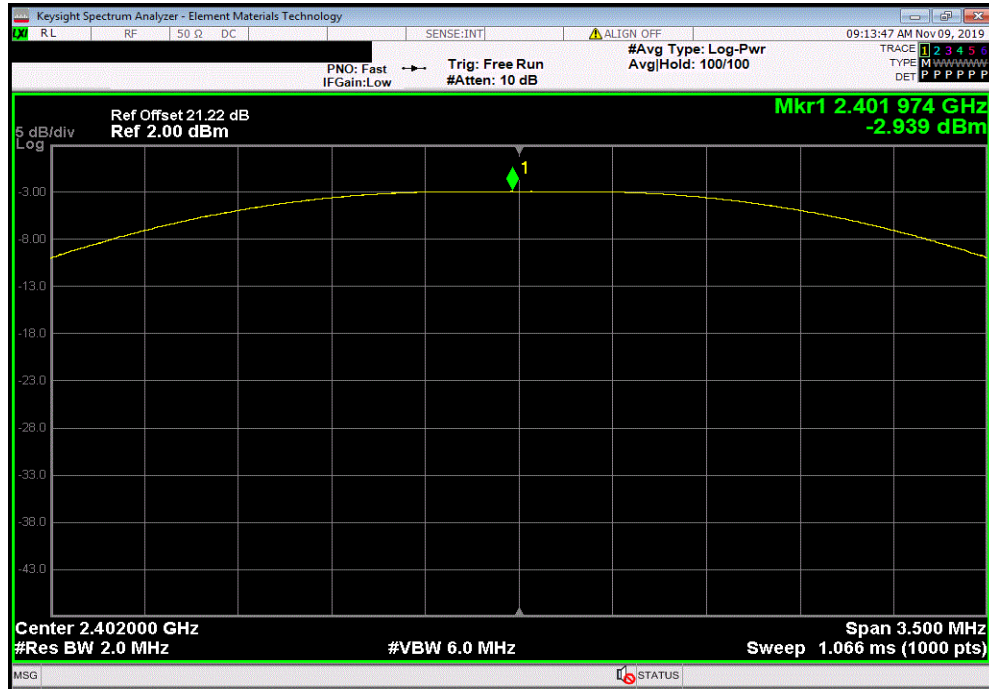
EUT: V300		Work Order: WTVD0027	
Serial Number: 63		Date: 8-Nov-19	
Customer: WatchGuard Video		Temperature: 23.2 °C	
Attendees: Navaid Karimi		Humidity: 26.2% RH	
Project: None		Barometric Pres.: 1035 mbar	
Tested by: Jonathan Kiefer		Power: Battery	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2019		ANSI C63.10:2013	
COMMENTS			
Reference Offset 21.22 dB (20dB attenuator+dc block+cable).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	4	Signature <i>Jonathan Kiefer</i>	
		Out Pwr (dBm)	Antenna Gain (dBi)
BLE/GFSK Low Channel, 2402 MHz		-2.939	1.4
BLE/GFSK Mid Channel, 2442 MHz		-3.363	1.4
BLE/GFSK High Channel, 2480 MHz		-4.024	1.4
		EIRP (dBm)	EIRP Limit (dBm)
		-1.539	36
		-1.963	36
		-2.624	36
			Result
			Pass
			Pass
			Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

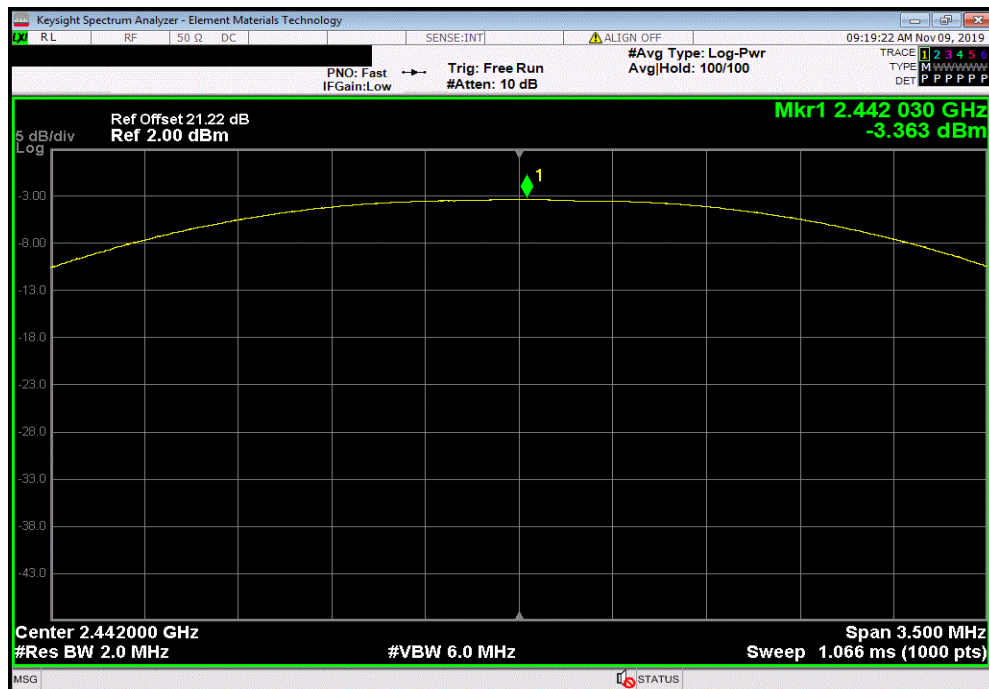


TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Low Channel, 2402 MHz						
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result		
-2.939	1.4	-1.539	36	Pass		



BLE/GFSK Mid Channel, 2442 MHz						
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result		
-3.363	1.4	-1.963	36	Pass		

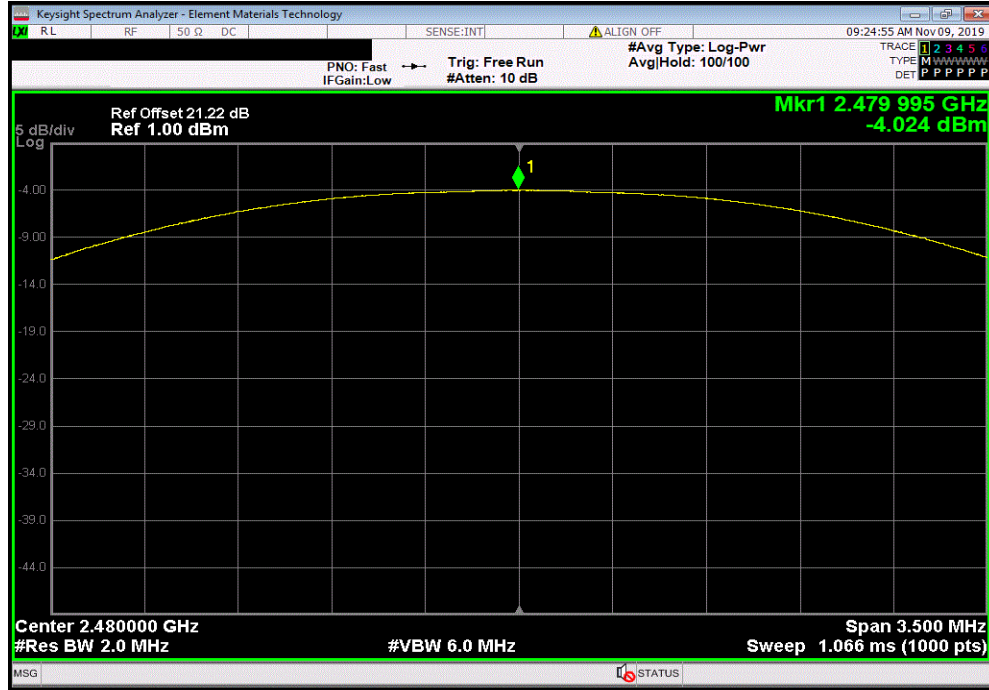


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK High Channel, 2480 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
-4.024	1.4	-2.624	36	Pass	



POWER SPECTRAL DENSITY



XMit 2019.09.05

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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

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



TMTx 2019.08.30.0 XMI 2019.09.05

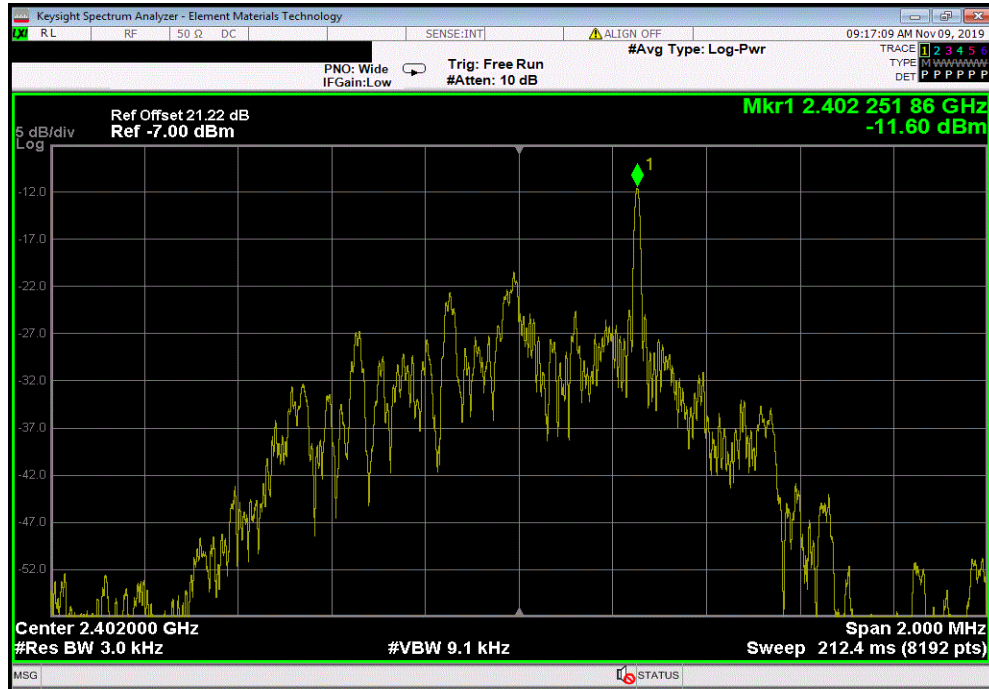
EUT: V300		Work Order: WTV0027	
Serial Number: 63		Date: 8-Nov-19	
Customer: WatchGuard Video		Temperature: 23.2 °C	
Attendees: Navaid Karimi		Humidity: 26.2% RH	
Project: None		Barometric Pres.: 1035 mbar	
Tested by: Jonathan Kiefer		Power: Battery	
		Job Site: TX09	
TEST SPECIFICATIONS			
FCC 15.247:2019		Test Method	
		ANSI C63.10:2013	
COMMENTS			
Reference Offset 21.22 dB (20dB attenuator+dc block+cable).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	4	Signature <i>Jonathan Kiefer</i>	
		Value dBm/3kHz	Limit < dBm/3kHz
BLE/GFSK Low Channel, 2402 MHz		-11.597	8
BLE/GFSK Mid Channel, 2442 MHz		-12.142	8
BLE/GFSK High Channel, 2480 MHz		-12.912	8
			Results
			Pass
			Pass
			Pass

POWER SPECTRAL DENSITY

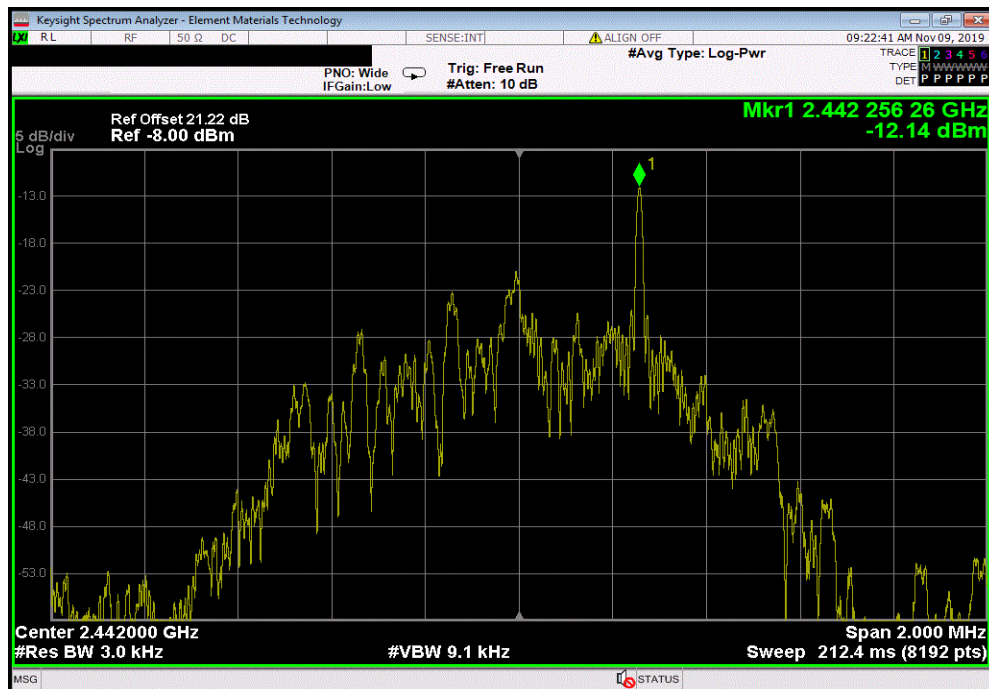


TbTtX 2019.08.30.0 XMt 2019.09.05

BLE/GFSK Low Channel, 2402 MHz						
	Value	Limit				
	dBm/3kHz	< dBm/3kHz	Results			
	-11.597	8	Pass			



BLE/GFSK Mid Channel, 2442 MHz						
	Value	Limit				
	dBm/3kHz	< dBm/3kHz	Results			
	-12.142	8	Pass			

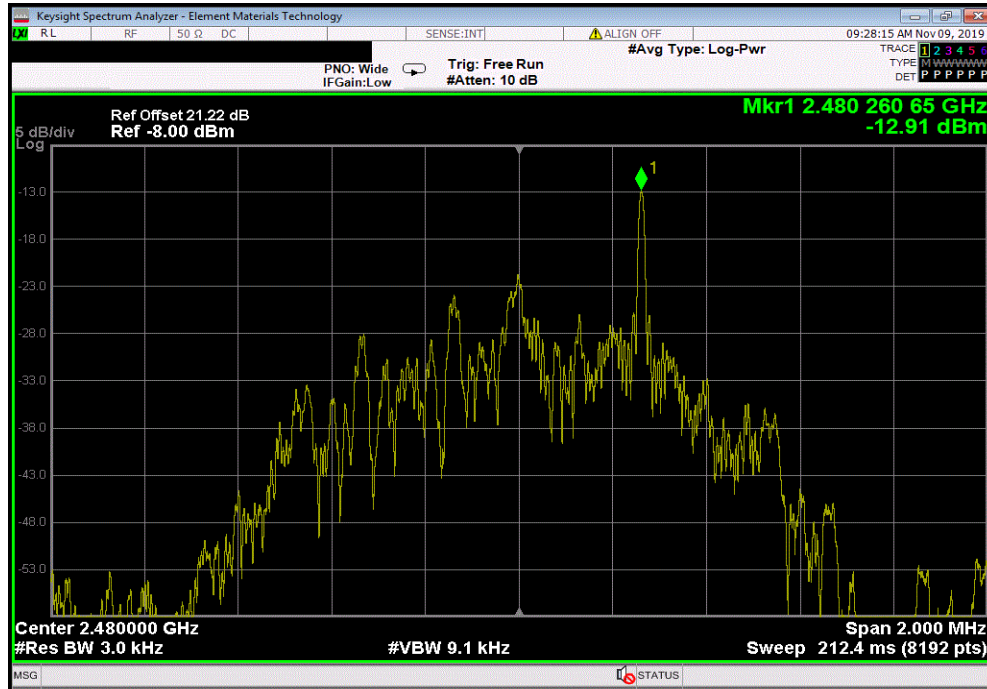


POWER SPECTRAL DENSITY



TbTx 2019.08.30.0 XMt 2019.09.05

BLE/GFSK High Channel, 2480 MHz						
				Value	Limit	Results
				dBm/3kHz	< dBm/3kHz	
				-12.912	8	Pass



BAND EDGE COMPLIANCE



XMM 2019.09.05

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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

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(s) listed in the datasheet.

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

BAND EDGE COMPLIANCE



TMTx 2019.08.30.0 XMI 2019.09.05

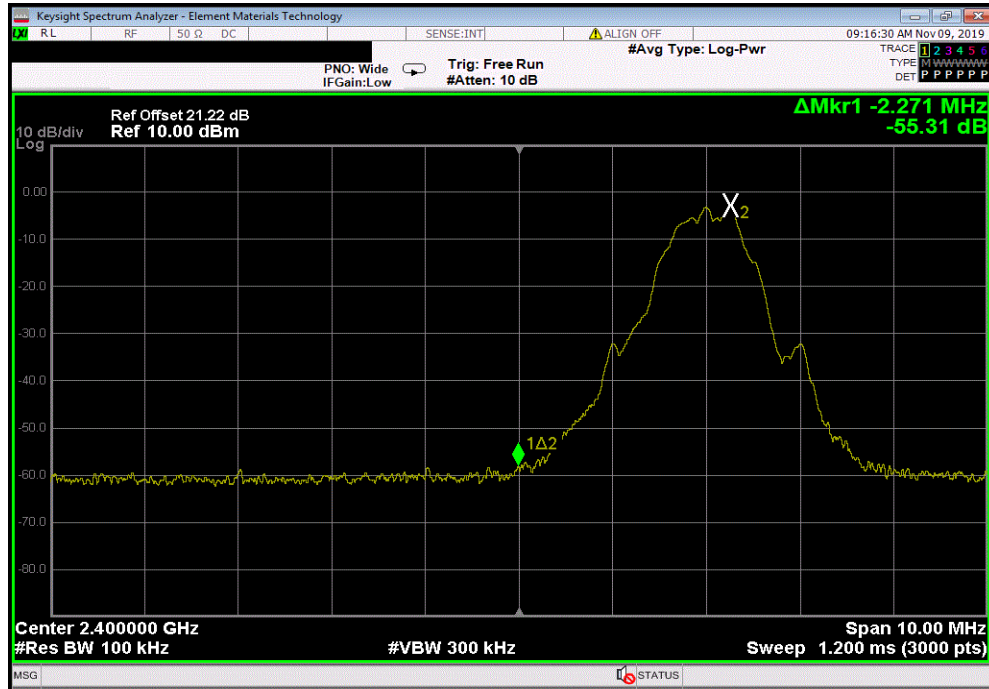
EUT: V300		Work Order: WTV0027	
Serial Number: 63		Date: 8-Nov-19	
Customer: WatchGuard Video		Temperature: 23.2 °C	
Attendees: Navaid Karimi		Humidity: 26.2% RH	
Project: None		Barometric Pres.: 1035 mbar	
Tested by: Jonathan Kiefer		Power: Battery	
		Job Site: TX09	
TEST SPECIFICATIONS			
FCC 15.247:2019		Test Method	
		ANSI C63.10:2013	
COMMENTS			
Reference Offset 21.22 dB (20dB attenuator+dc block+cable).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	4	Signature <i>Jonathan Kiefer</i>	
		Value (dBc)	Limit ≤ (dBc)
BLE/GFSK Low Channel, 2402 MHz		-55.31	-20
BLE/GFSK Mid Channel, 2442 MHz		-54.96	-20
BLE/GFSK High Channel, 2480 MHz		-40.49	-20
			Result
			Pass
			Pass
			Pass

BAND EDGE COMPLIANCE

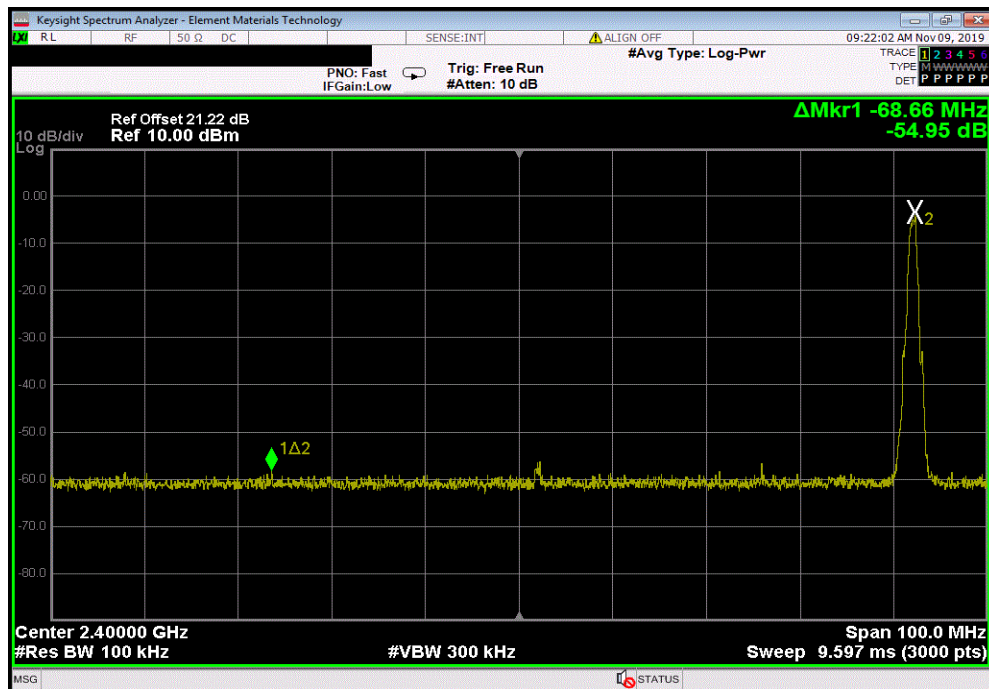


TbTtX 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-55.31	-20	Pass



BLE/GFSK Mid Channel, 2442 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-54.96	-20	Pass

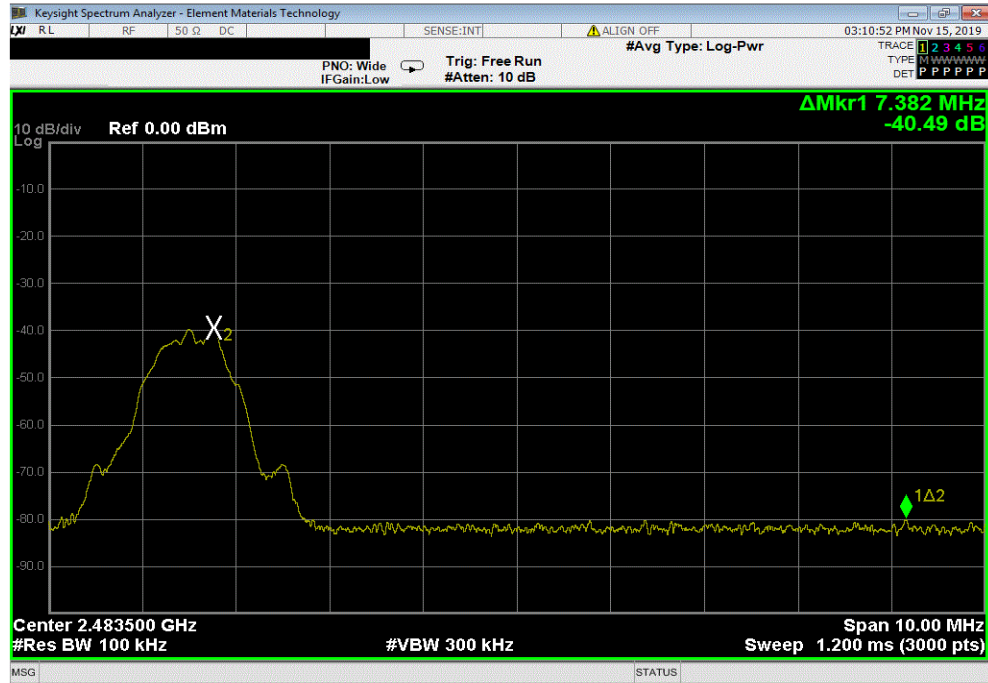


BAND EDGE COMPLIANCE



TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-40.49	-20	Pass



SPURIOUS CONDUCTED EMISSIONS



XMI: 2019.09.05

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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

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



TMTx 2019.08.30.0 XMI 2019.09.05

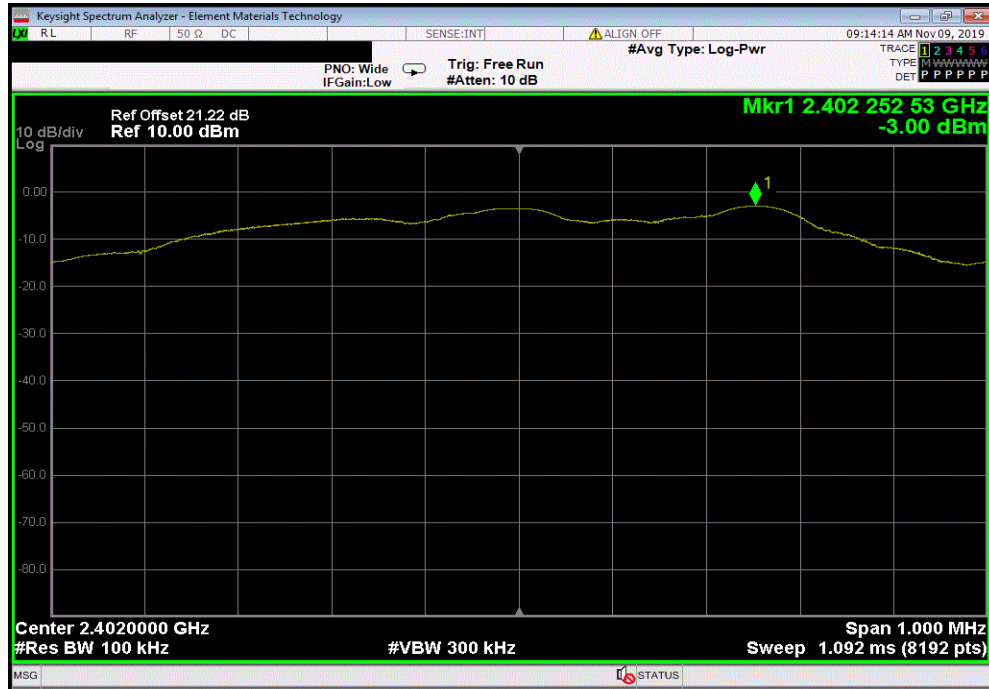
EUT: V300		Work Order: WTVD0027				
Serial Number: 63		Date: 8-Nov-19				
Customer: WatchGuard Video		Temperature: 23.2 °C				
Attendees: Navaid Karimi		Humidity: 26.2% RH				
Project: None		Barometric Pres.: 1035 mbar				
Tested by: Jonathan Kiefer		Power: Battery				
Job Site: TX09						
TEST SPECIFICATIONS						
FCC 15.247:2019		Test Method				
		ANSI C63.10:2013				
COMMENTS						
Reference Offset 21.22 dB (20dB attenuator+dc block+cable).						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	4	Signature <i>Jonathan Kiefer</i>				
		Frequency Range	Measured Freq (MHz)			
			Max Value (dBc)			
			Limit ≤ (dBc)			
			Result			
BLE/GFSK Low Channel, 2402 MHz		Fundamental	2402.25	N/A	N/A	N/A
BLE/GFSK Low Channel, 2402 MHz		30 MHz - 12.5 GHz	3747.71	-51.41	-20	Pass
BLE/GFSK Low Channel, 2402 MHz		12.5 GHz - 25 GHz	23660.11	-48.08	-20	Pass
BLE/GFSK Mid Channel, 2442 MHz		Fundamental	2442.26	N/A	N/A	N/A
BLE/GFSK Mid Channel, 2442 MHz		30 MHz - 12.5 GHz	3884.72	-50.4	-20	Pass
BLE/GFSK Mid Channel, 2442 MHz		12.5 GHz - 25 GHz	23899.71	-48.03	-20	Pass
BLE/GFSK High Channel, 2480 MHz		Fundamental	2480.26	N/A	N/A	N/A
BLE/GFSK High Channel, 2480 MHz		30 MHz - 12.5 GHz	3852.75	-50.29	-20	Pass
BLE/GFSK High Channel, 2480 MHz		12.5 GHz - 25 GHz	23847.82	-47.79	-20	Pass

SPURIOUS CONDUCTED EMISSIONS

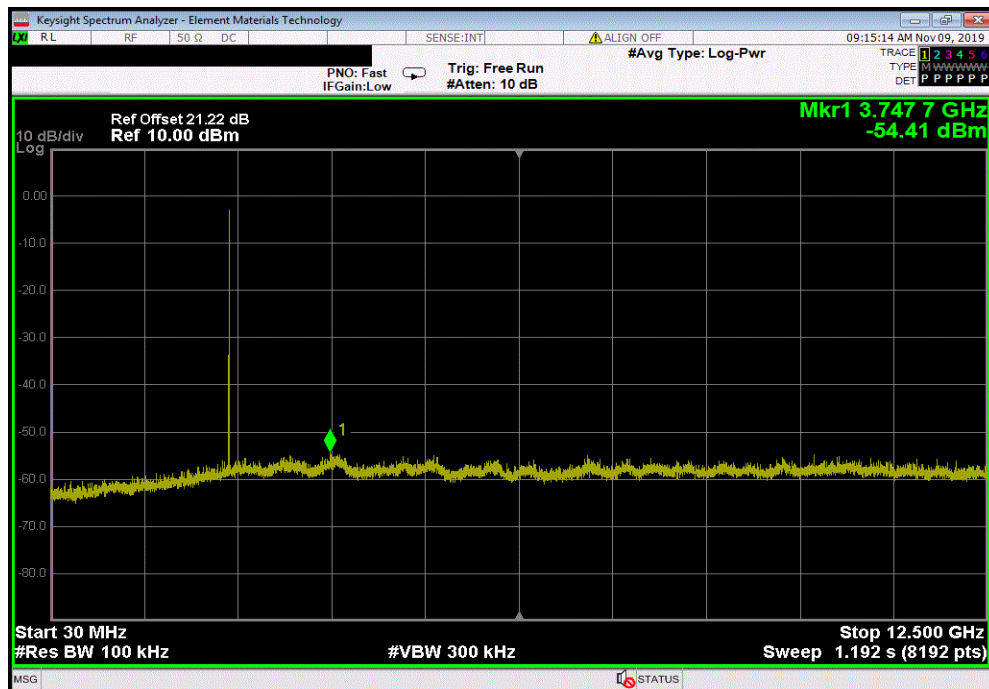


TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2402.25	N/A	N/A	N/A	



BLE/GFSK Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	3747.71	-51.41	-20	Pass	

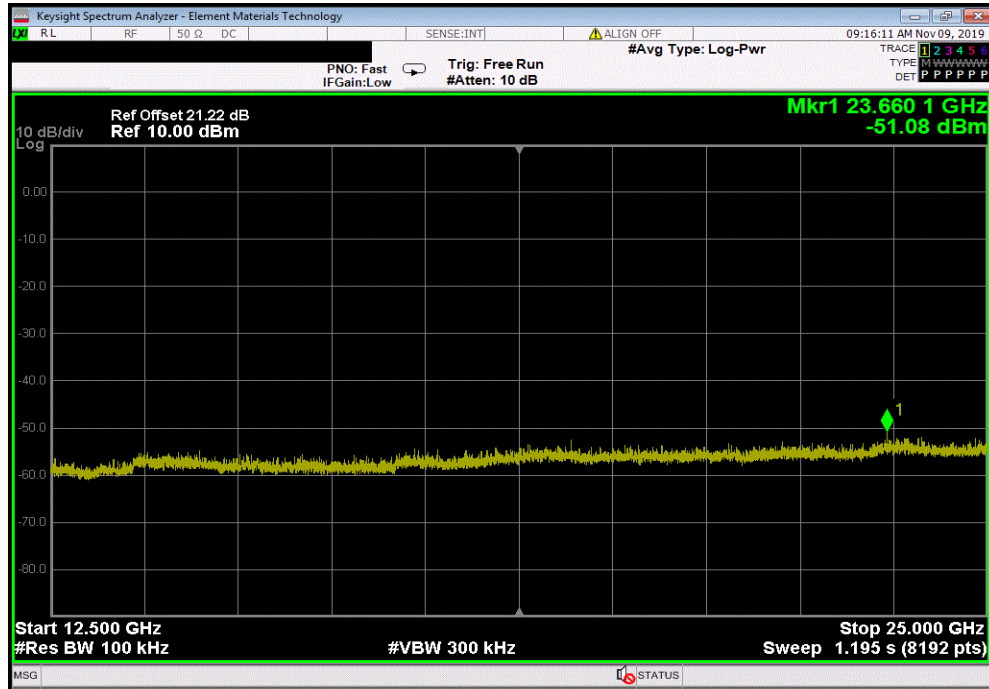


SPURIOUS CONDUCTED EMISSIONS

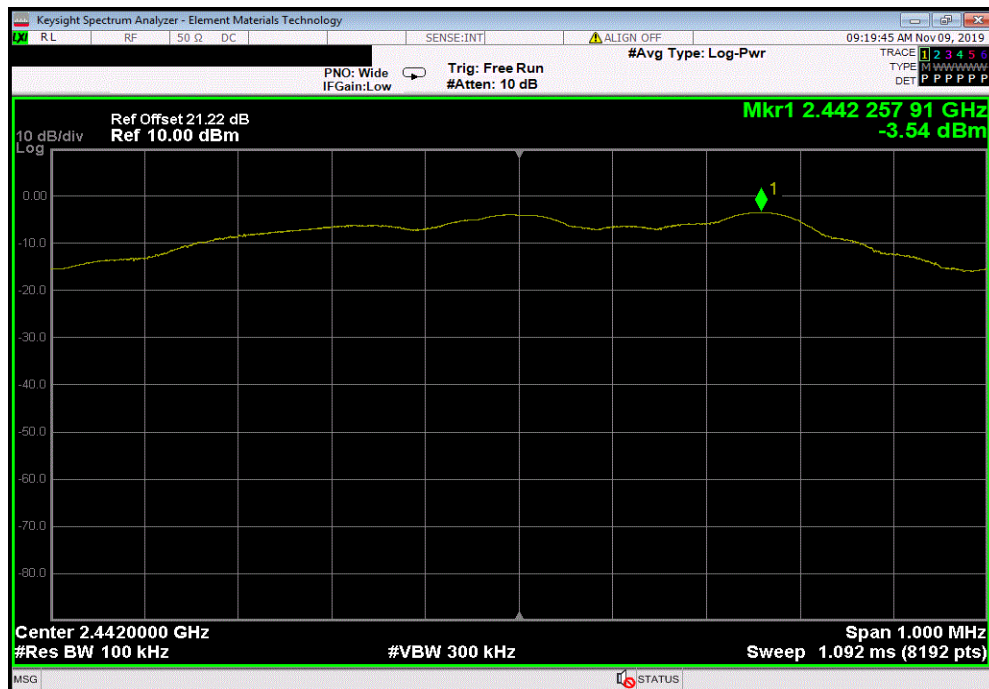


TbTtx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	23660.11	-48.08	-20	Pass	



BLE/GFSK Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2442.26	N/A	N/A	N/A	

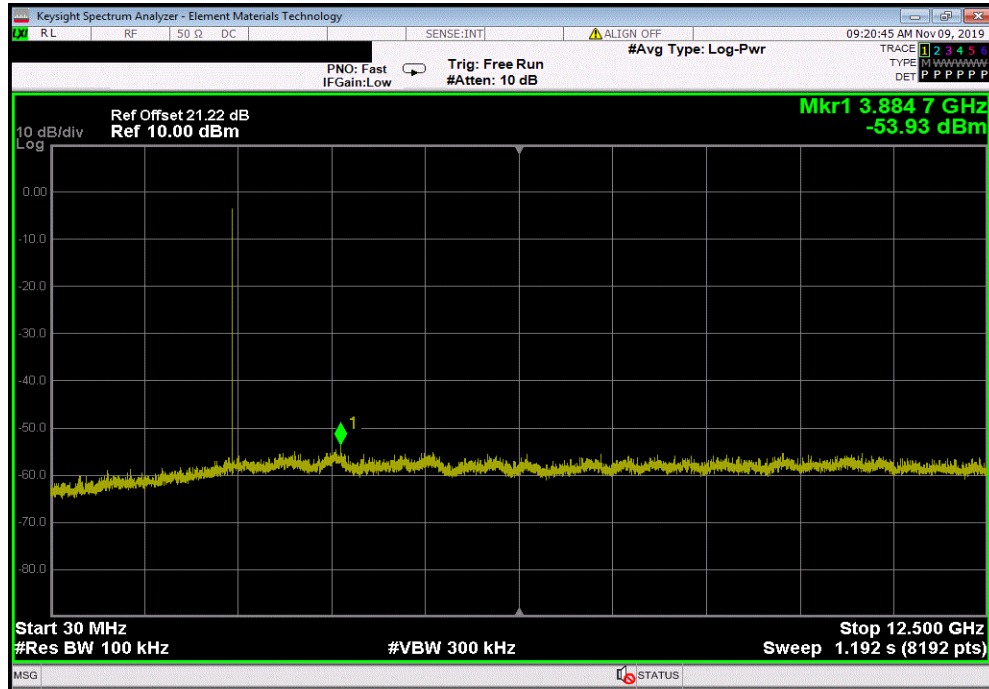


SPURIOUS CONDUCTED EMISSIONS

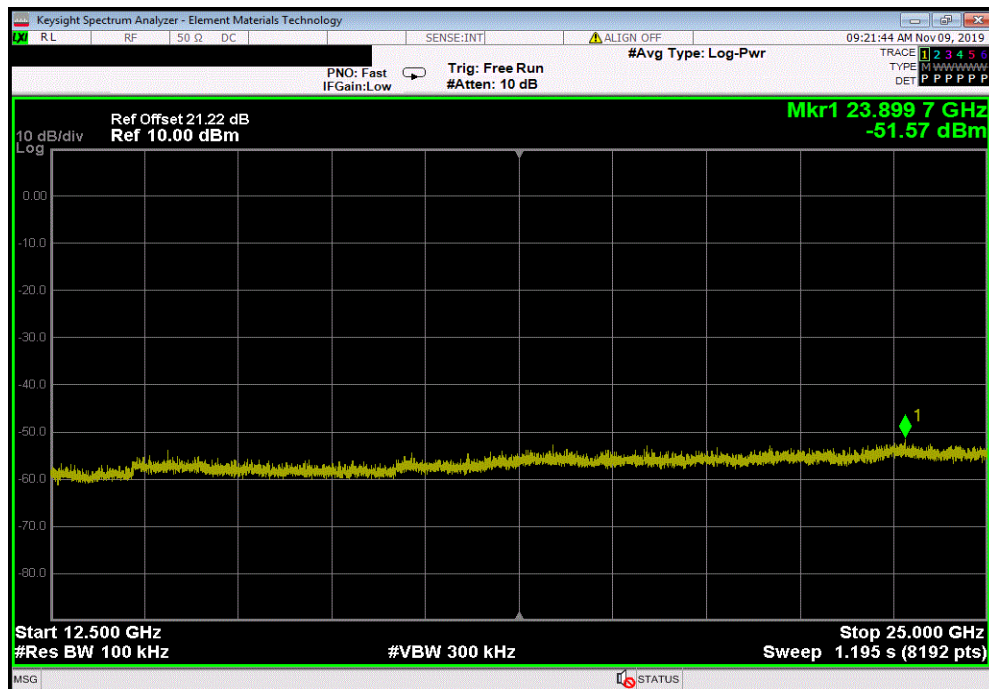


TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	3884.72	-50.4	-20	Pass	



BLE/GFSK Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	23899.71	-48.03	-20	Pass	

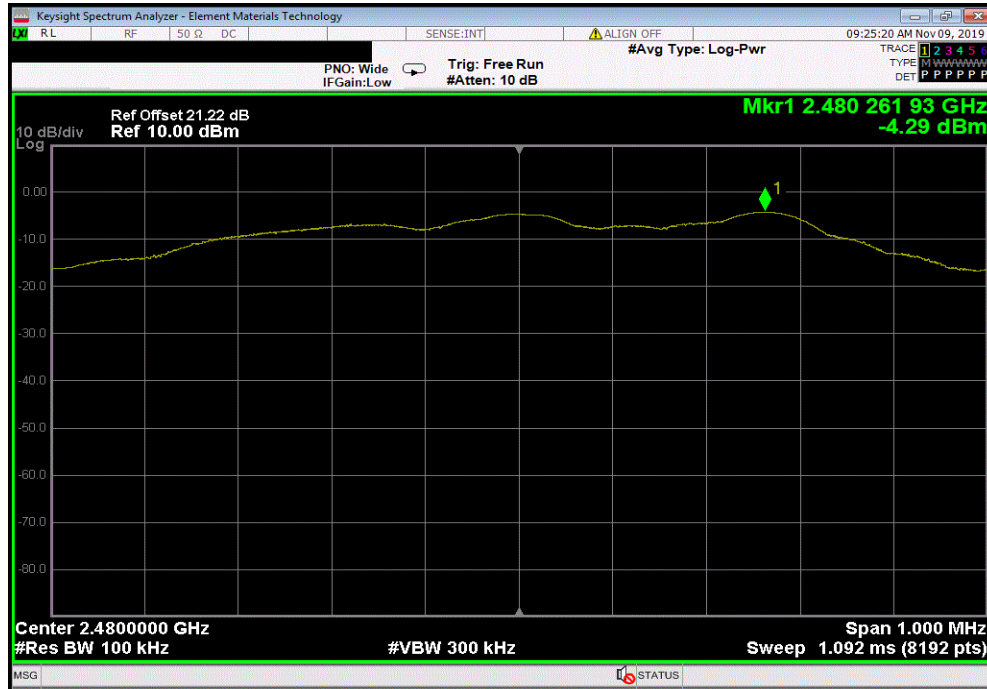


SPURIOUS CONDUCTED EMISSIONS

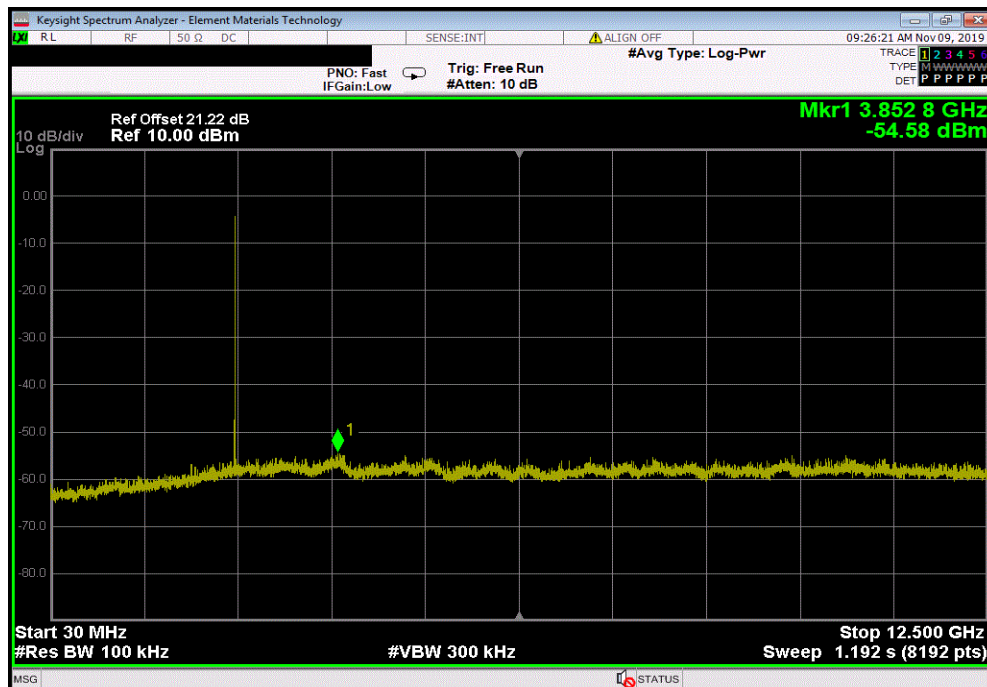


TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK High Channel, 2480 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	2480.26	N/A	N/A	N/A		



BLE/GFSK High Channel, 2480 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz	3852.75	-50.29	-20	Pass		



SPURIOUS CONDUCTED EMISSIONS



TbTx 2019.08.30.0 XMI 2019.09.05

BLE/GFSK High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	23847.82	-47.79	-20	Pass	

