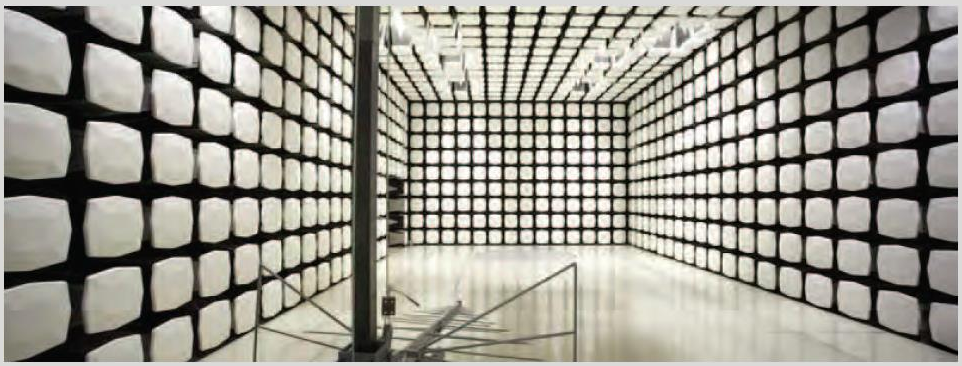
Polaris Industries, Inc.

CCU-2

FCC 15.247:2020

Bluetooth Low Energy (DTS) Radio

Report # POLR0058.1



NVLAP LAB CODE: 200630-0

CERTIFICATE OF TEST

Last Date of Test: January 9, 2020
Polaris Industries, Inc.
EUT: CCU-2

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2020	ANSI C63.10:2013, KDB 558074

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not requested.
11.12.1, 11.13.2, 6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	Yes	N/A	Characterization of radio operation.
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:

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. 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

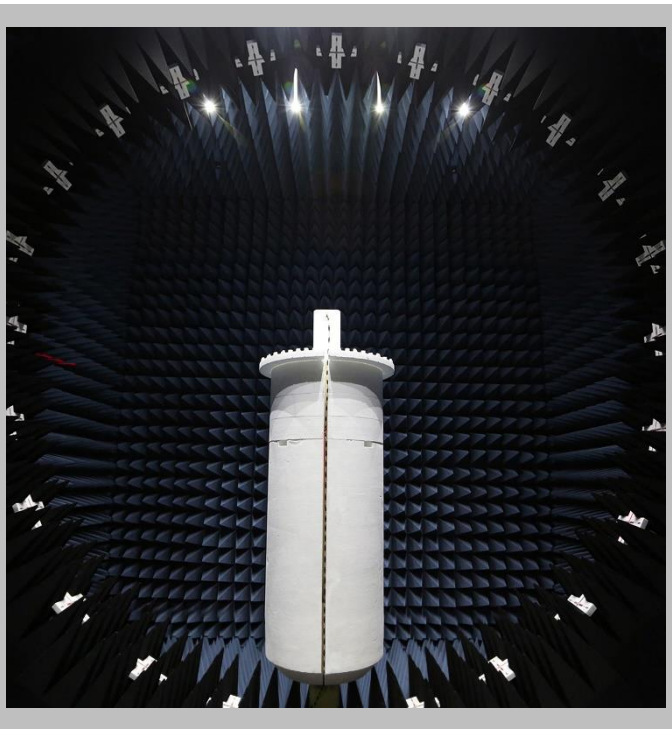
MIC – Recognized by MIC as a CAB for the acceptance of test data.

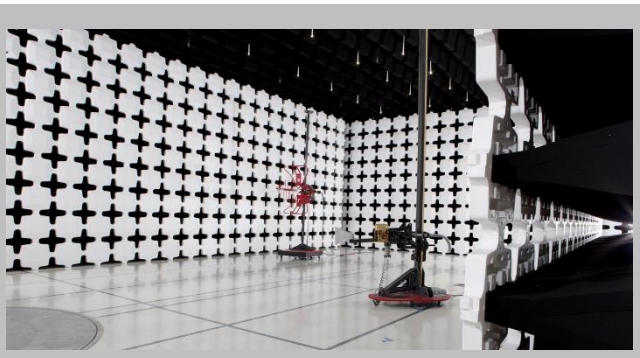
SCOPE

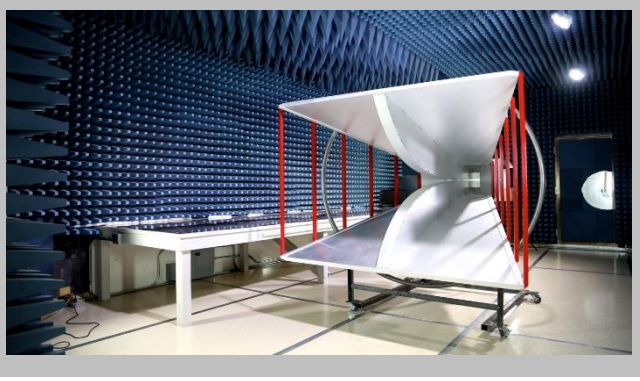
For details on the Scopes of our Accreditations, please visit:
https://www.nwemc.com/emc-testing-accreditations

FACILITIES

California	Minnesota	Oregon	Texas	Washington
Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th 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/RRA, MIC, MOC, NCC, OFCA				
US0158	US0175	US0017	US0191	US0157

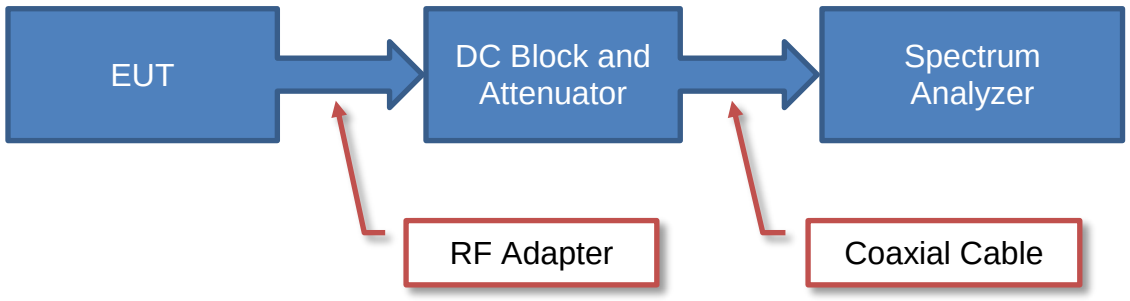




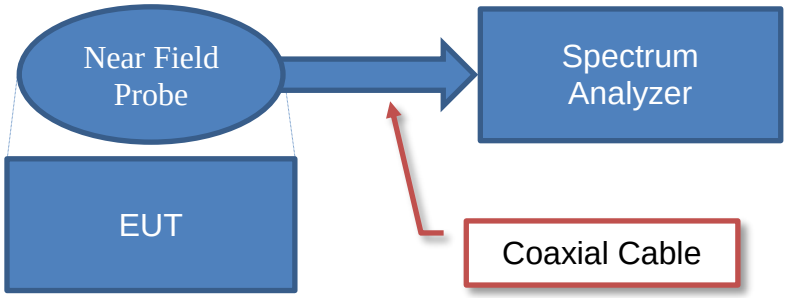


Test Setup Block Diagrams

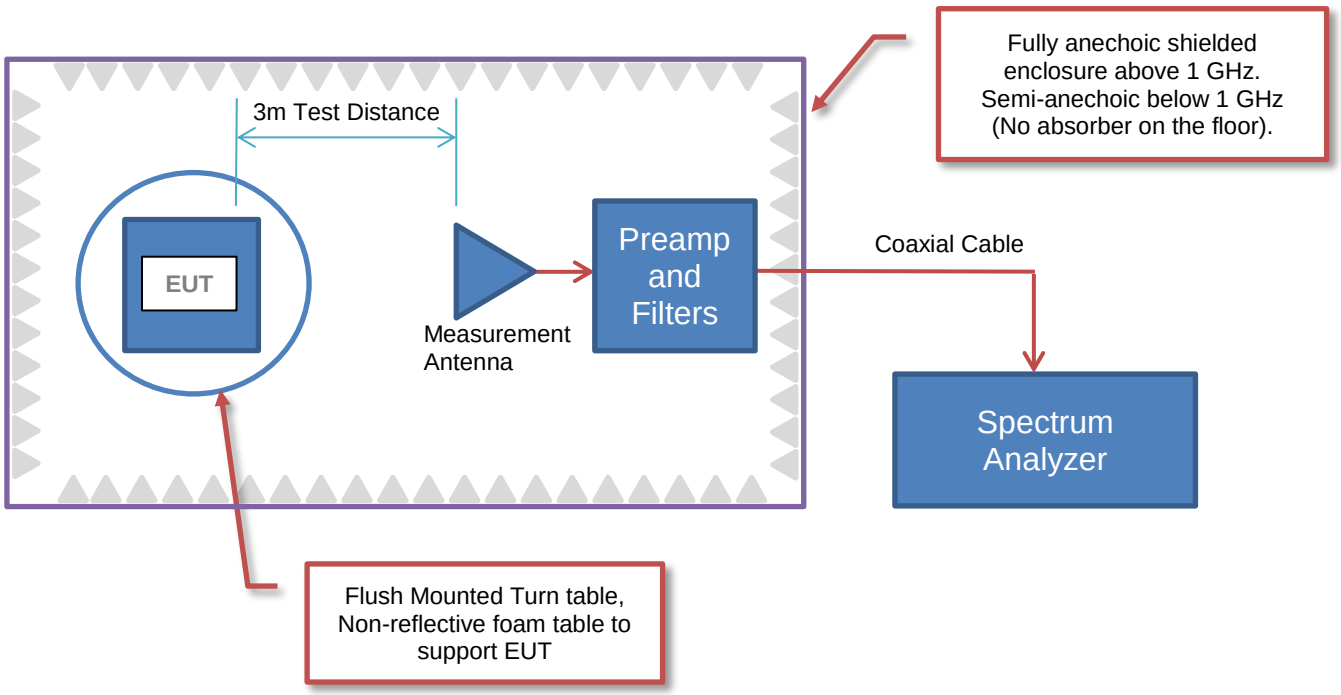
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



MEASUREMENT UNCERTAINTY

element
TMU.2015.07.10

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

PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Polaris Industries, Inc.
Address:	7290 E. Viking Blvd.
City, State, Zip:	WYOMING, WA 55092
Test Requested By:	Wayne Rieger
EUT:	CCU-2
First Date of Test:	January 3, 2020
Last Date of Test:	January 9, 2020
Receipt Date of Samples:	November 20, 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:
Connectivity Control Unit

Testing Objective:
To demonstrate compliance to 15.247 for a DTS radio.

CONFIGURATIONS

Configuration POLR0058- 3

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Connectivity Control Unit	Polaris Industries, Inc.	CCU-2	Unit #10

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Serial to Ethernet Converter	RADMOON	None	11625
AC/DC Adapter Converter	Samsung	None	None
DC Power Supply	Topward Electric Instruments Co.	TPS 2000	TPD

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Lenovo	T430	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB Power Cable	No	.6 m	No	AC/DC Adapter Converter	Ethernet converter
DC Power Leads (14 volt)	No	1.6 m	No	DC Power Supply	Connectivity Control Unit
Serial Cable	No	.8 m	No	Ethernet Converter	Connectivity Control Unit
Ethernet Cat 6	No	10 m	No	Laptop	Ethernet converter
AC Power Cable	No	1.8 m	No	AC Mains	AC Mains

CONFIGURATIONS

Configuration POLR0058- 4

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Connectivity Control Unit	Polaris Industries, Inc.	CCU-2	Regulatory Unit #6

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Lenovo	T430	None
Serial to Ethernet Converter	RADMOON	None	11625
AC/DC Adapter Laptop	Lenovo	41r4538	11S41R4538ZVJ51U05108N
AC/DC Adapter Converter	Samsung	None	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power Cable Laptop	No	1.5m	No	AC mains	AC/DC Adapter (Laptop)
DC Power Cable Laptop	No	2.0m	Yes	AC/DC Adapter (Laptop)	Laptop
Ethernet CAT 5	No	1.0 m	No	Laptop	Ethernet converter
USB Power Cable	No	.6 m	No	AC/DC Adapter Converter	Ethernet converter
DC Power Leads (14 volt)	No	1.6 m	No	DC Power Supply	Connectivity Control Unit
Serial Cable	No	.8 m	No	Ethernet Converter	Connectivity Control Unit

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2019-01-03	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.
2	2019-01-03	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.
3	2019-01-03	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	2019-01-03	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	2019-01-03	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	2020-01-06	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.
7	2020-01-09	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	Type	Channel	Position	Frequency (MHz)	Power Setting
BLE	DTS	0	Low Channel	2402	6
		20	Mid Channel	2442	6
		39	High Channel	2480	6

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

BLE, Tx, Software power setting = 6. See data comments for channel and data rate.

POWER SETTINGS INVESTIGATED

14VDC

CONFIGURATIONS INVESTIGATED

POLR0058 - 3

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26.5 GHz

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	24-Mar-2019	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HFO	18-Nov-2019	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFD	15-Feb-2019	12 mo
Attenuator	Coaxicom	3910-20	AXZ	15-Feb-2019	12 mo
Cable	ESM Cable Corp.	TTBJ141-KMKM-72	EVY	31-Jul-2019	12 mo
Cable	None	Standard Gain Horns Cable	EVF	19-Nov-2019	12 mo
Cable	N/A	Double Ridge Horn Cables	EVB	18-Nov-2019	12 mo
Cable	N/A	Bilog Cables	EVA	18-Nov-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	31-Jul-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	19-Nov-2019	12 mo
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-08001200-30-10P	PAO	19-Nov-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	18-Nov-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	18-Nov-2019	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AIV	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AHV	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHU	NCR	0 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	7-Feb-2018	24 mo
Antenna - Biconilog	Teseq	CBL 6141B	AXR	2-Oct-2018	24 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.

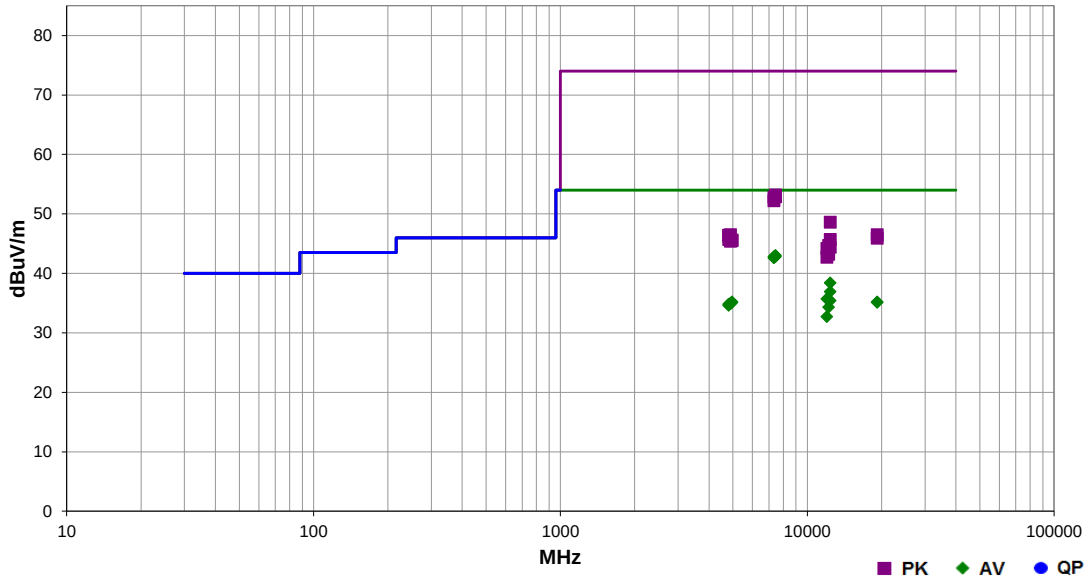
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.08.15.1 PSA-ESCI 2019.05.10

Work Order:	POLR0058	**Date:**	6-Jan-2020		
Project:	None	**Temperature:**	20.8 °C		
Job Site:	EV01	**Humidity:**	41% RH		
Serial Number:	Unit #10	**Barometric Pres.:**	1029 mbar	**Tested by:**	Cole Ghizzone
EUT:	CCU-2				
Configuration:	3				
Customer:	Polaris Industries, Inc.				
Attendees:	Wayne Rieger				
EUT Power:	14VDC				
Operating Mode:	BLE, Tx, Software power setting = 6. See data comments for channel and data rate.				
Deviations:	None				
Comments:	Using worst case EUT orientations determined from BT BDR/EDR testing. See data comments for EUT orientation.				

Test Specifications	**Test Method**
FCC 15.247:2020	ANSI C63.10:2013

Run #	46	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



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
7439.575	28.4	14.6	1.5	127.0	3.0	0.0	Vert	AV	0.0	43.0	54.0	-11.0	High Ch. 39, 2480MHz, BLE, EUT Vertical
7325.675	28.6	14.2	1.5	73.0	3.0	0.0	Vert	AV	0.0	42.8	54.0	-11.2	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
7440.883	28.2	14.6	1.5	243.0	3.0	0.0	Horz	AV	0.0	42.8	54.0	-11.2	High Ch. 39, 2480MHz, BLE, EUT Vertical
7323.700	28.5	14.1	1.5	207.0	3.0	0.0	Horz	AV	0.0	42.6	54.0	-11.4	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
12401.050	28.0	10.4	1.5	74.0	3.0	0.0	Horz	AV	0.0	38.4	54.0	-15.6	High Ch. 39, 2480MHz, BLE, EUT Vertical
12398.790	35.8	1.1	2.69	127.0	3.0	0.0	Horz	AV	0.0	36.9	54.0	-17.1	High Ch. 39, 2480MHz, BLE, EUT Vertical
12008.880	34.7	1.0	1.5	262.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	Low Ch. 0, 2402MHz, BLE, EUT Vertical
12210.930	34.8	0.8	1.53	255.0	3.0	0.0	Vert	AV	0.0	35.6	54.0	-18.4	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
12398.750	34.3	1.1	1.44	254.0	3.0	0.0	Vert	AV	0.0	35.4	54.0	-18.6	High Ch. 39, 2480MHz, BLE, EUT Vertical
19214.820	33.1	2.1	1.55	181.0	3.0	0.0	Vert	AV	0.0	35.2	54.0	-18.8	Low Ch. 0, 2402MHz, BLE, EUT Vertical
4957.825	28.7	6.5	1.5	84.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	High Ch. 39, 2480MHz, BLE, EUT Vertical
19213.830	33.0	2.1	1.55	332.0	3.0	0.0	Horz	AV	0.0	35.1	54.0	-18.9	Low Ch. 0, 2402MHz, BLE, EUT Vertical
4959.792	28.6	6.5	1.5	192.0	3.0	0.0	Vert	AV	0.0	35.1	54.0	-18.9	High Ch. 39, 2480MHz, BLE, EUT Vertical
4884.900	28.5	6.4	1.84	224.0	3.0	0.0	Horz	AV	0.0	34.9	54.0	-19.1	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
4886.392	28.5	6.4	1.91	79.0	3.0	0.0	Vert	AV	0.0	34.9	54.0	-19.1	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
4804.617	29.3	5.5	1.5	314.0	3.0	0.0	Horz	AV	0.0	34.8	54.0	-19.2	Low Ch. 0, 2402MHz, BLE, EUT Vertical
4803.042	29.2	5.4	1.5	76.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	Low Ch. 0, 2402MHz, BLE, EUT Vertical
12211.000	33.5	0.8	1.5	264.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
7439.700	38.6	14.6	1.5	127.0	3.0	0.0	Vert	PK	0.0	53.2	74.0	-20.8	High Ch. 39, 2480MHz, BLE, EUT Vertical
7437.842	38.3	14.6	1.5	243.0	3.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1	High Ch. 39, 2480MHz, BLE, EUT Vertical
7325.667	38.6	14.2	1.5	73.0	3.0	0.0	Vert	PK	0.0	52.8	74.0	-21.2	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
12008.880	31.7	1.0	1.82	271.0	3.0	0.0	Horz	AV	0.0	32.7	54.0	-21.3	Low Ch. 0, 2402MHz, BLE, EUT Vertical
7323.692	38.1	14.1	1.5	207.0	3.0	0.0	Horz	PK	0.0	52.2	74.0	-21.8	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
12400.710	38.2	10.4	1.5	74.0	3.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	High Ch. 39, 2480MHz, BLE, EUT Vertical
4884.558	40.1	6.4	1.84	224.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
19215.620	44.4	2.1	1.55	332.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	Low Ch. 0, 2402MHz, BLE, EUT Vertical
4802.425	41.0	5.4	1.5	76.0	3.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	Low Ch. 0, 2402MHz, BLE, EUT Vertical

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
19213.760	43.8	2.1	1.55	181.0	3.0	0.0	Vert	PK	0.0	45.9	74.0	-28.1	Low Ch. 0, 2402MHz, BLE, EUT Vertical
4803.058	40.3	5.4	1.5	314.0	3.0	0.0	Horz	PK	0.0	45.7	74.0	-28.3	Low Ch. 0, 2402MHz, BLE, EUT Vertical
12398.490	44.6	1.1	2.69	127.0	3.0	0.0	Horz	PK	0.0	45.7	74.0	-28.3	High Ch. 39, 2480MHz, BLE, EUT Vertical
4960.625	39.1	6.5	1.5	84.0	3.0	0.0	Horz	PK	0.0	45.6	74.0	-28.4	High Ch. 39, 2480MHz, BLE, EUT Vertical
4961.592	39.0	6.5	1.5	192.0	3.0	0.0	Vert	PK	0.0	45.5	74.0	-28.5	High Ch. 39, 2480MHz, BLE, EUT Vertical
4885.033	39.0	6.4	1.91	79.0	3.0	0.0	Vert	PK	0.0	45.4	74.0	-28.6	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
12211.020	43.9	0.8	1.53	255.0	3.0	0.0	Vert	PK	0.0	44.7	74.0	-29.3	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
12398.730	43.3	1.1	1.44	254.0	3.0	0.0	Vert	PK	0.0	44.4	74.0	-29.6	High Ch. 39, 2480MHz, BLE, EUT Vertical
12008.980	43.2	1.0	1.5	262.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8	Low Ch. 0, 2402MHz, BLE, EUT Vertical
12209.120	42.4	0.8	1.5	264.0	3.0	0.0	Horz	PK	0.0	43.2	74.0	-30.8	Mid Ch. 20, 2442MHz, BLE, EUT Vertical
12010.840	41.7	1.0	1.82	271.0	3.0	0.0	Horz	PK	0.0	42.7	74.0	-31.3	Low Ch. 0, 2402MHz, BLE, EUT Vertical

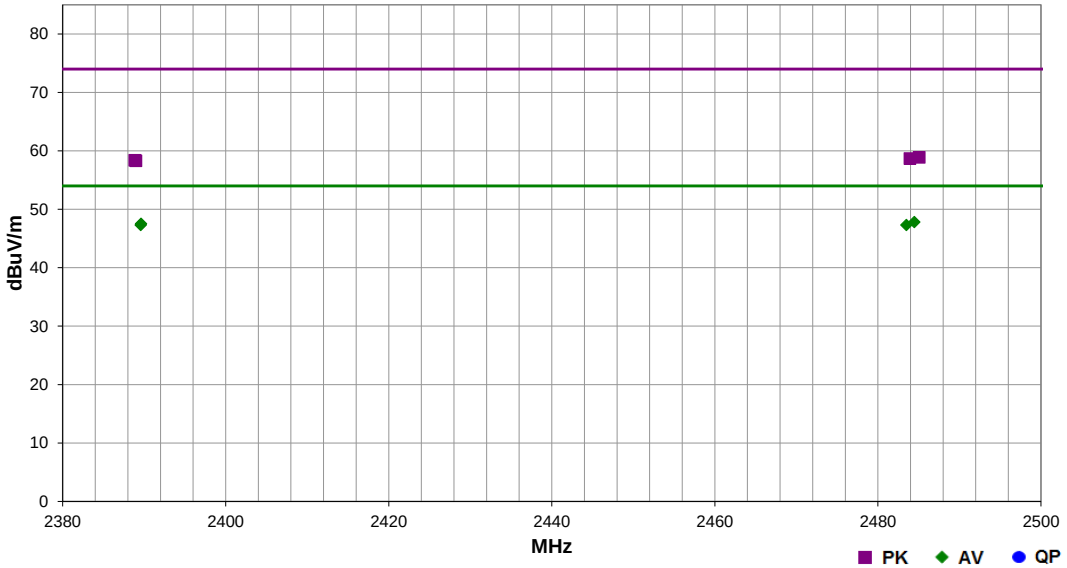
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.08.15.1 PSA-ESCI 2019.05.10

Work Order:	POLR0058	**Date:**	6-Jan-2020		
Project:	None	**Temperature:**	20.8 °C		
Job Site:	EV01	**Humidity:**	41% RH		
Serial Number:	Unit #10	**Barometric Pres.:**	1029 mbar	**Tested by:**	Cole Ghizzone
EUT:	CCU-2				
Configuration:	3				
Customer:	Polaris Industries, Inc.				
Attendees:	Wayne Rieger				
EUT Power:	14VDC				
Operating Mode:	BLE, Tx, Software power setting = 6. See data comments for channel and data rate.				
Deviations:	None				
Comments:	Using worst case EUT orientations determined from BT BDR/EDR testing. See data comments for EUT orientation.				

Test Specifications	**Test Method**
FCC 15.247:2020	ANSI C63.10:2013

Run #	50	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



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
2484.470	31.5	-3.7	1.5	166.0	3.0	20.0	Horz	AV	0.0	47.8	54.0	-6.2	High Ch. 39, 2480MHz, BLE, EUT Vertical
2389.623	31.5	-4.0	1.5	117.0	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	Low Ch. 0, 2402MHz, BLE, EUT Vertical
2389.590	31.3	-4.0	1.5	323.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	Low Ch. 0, 2402MHz, BLE, EUT Horizontal
2483.503	31.1	-3.8	3.13	65.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	High Ch. 39, 2480MHz, BLE, EUT Horizontal
2485.070	42.6	-3.7	1.5	166.0	3.0	20.0	Horz	PK	0.0	58.9	74.0	-15.1	High Ch. 39, 2480MHz, BLE, EUT Vertical
2483.920	42.5	-3.8	3.13	65.0	3.0	20.0	Vert	PK	0.0	58.7	74.0	-15.3	High Ch. 39, 2480MHz, BLE, EUT Horizontal
2388.837	42.4	-4.0	1.5	323.0	3.0	20.0	Vert	PK	0.0	58.4	74.0	-15.6	Low Ch. 0, 2402MHz, BLE, EUT Horizontal
2389.000	42.3	-4.0	1.5	117.0	3.0	20.0	Horz	PK	0.0	58.3	74.0	-15.7	Low Ch. 0, 2402MHz, BLE, EUT Vertical

DUTY CYCLE

XMit 2019.06.11

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

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 test software provided for operation in a fixed, single channel mode allows the EUT to operate continuously at 100% Duty Cycle.

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
Power Supply - DC	Dr. Meter	PS-305DM	TZZ	NCR	NCR
Meter - Multimeter	Tektronix	DMM912	MMH	15-Feb-19	15-Feb-22
Generator - Signal	Keysight	N5182B	TFU	5-Nov-18	5-Nov-21
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	28-Mar-19	28-Mar-20
Block - DC	Fairview Microwave	SD3379	AMW	28-Mar-19	28-Mar-20
Attenuator	S.M. Electronics	SA26B-20	AUY	28-Mar-19	28-Mar-20
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	12-Feb-19	12-Feb-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

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	**CCU-2**			**Work Order:**	**POLR0058**
Serial Number:	**Unit #6**			**Date:**	**3-Jan-20**
Customer:	**Polaris Industries, Inc.**			**Temperature:**	**19.6 °C**
Attendees:	**Wayne Rieger**			**Humidity:**	**43% RH**
Project:	**None**			**Barometric Pres.:**	**1019 mbar**
Tested by:	**Brandon Hobbs**	**Power:**	**14VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2020	ANSI C63.10:2013

COMMENTS

All losses through the measurement path were accounted for. The Power level was set to a client software setting of 6.

DEVIATIONS FROM TEST STANDARD

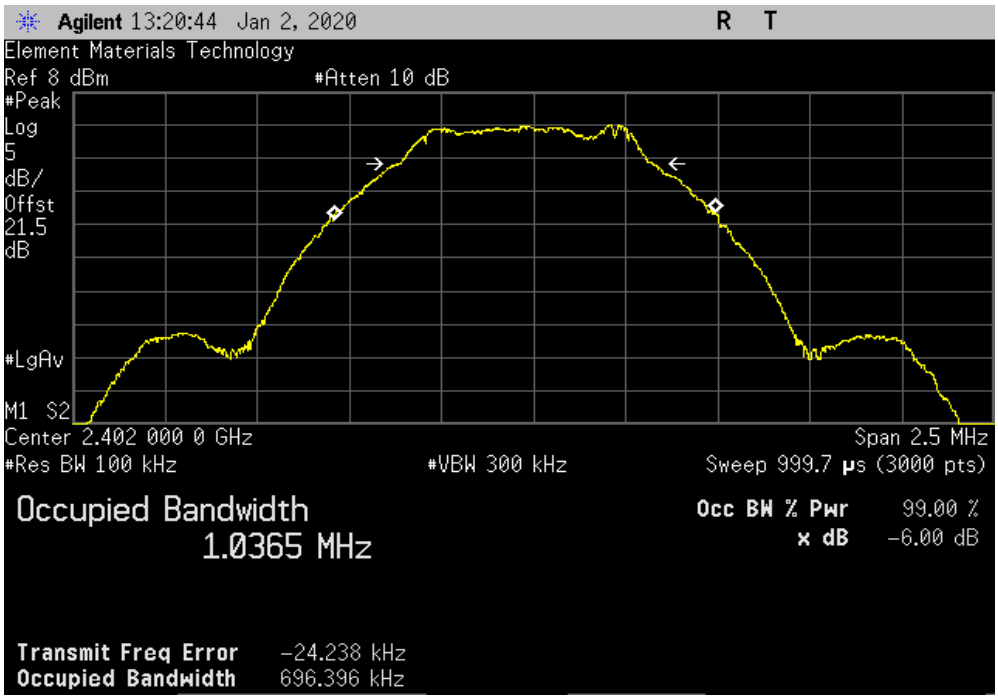
None

Configuration #	**4**	*Signature*

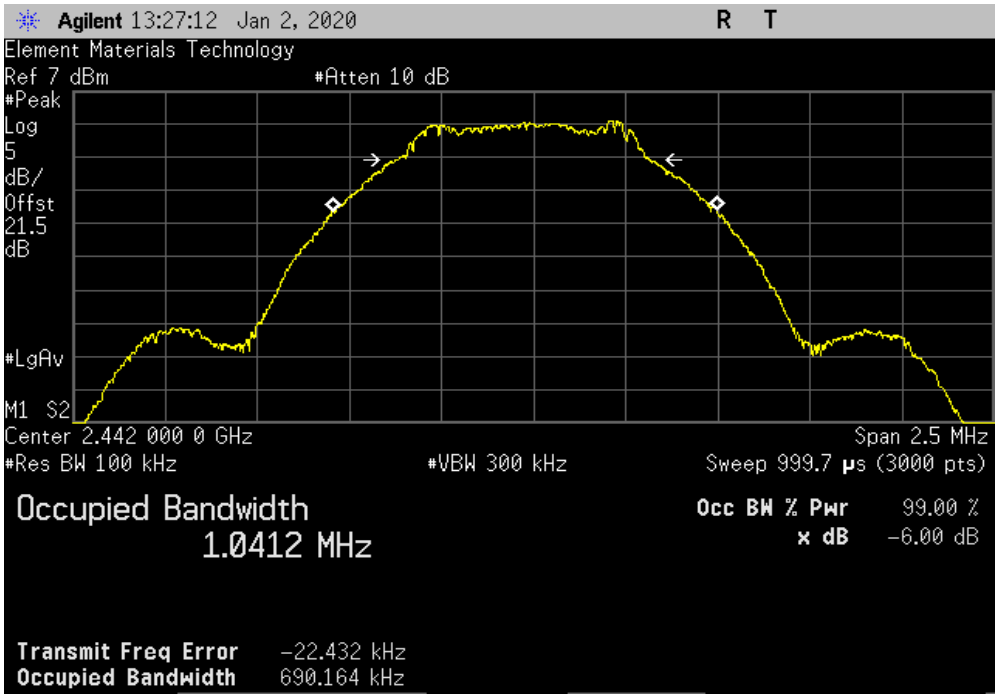
	Value	**Limit (≥)**	**Result**
BLE/GFSK Low Channel, 2402 MHz	696.396 kHz	500 kHz	Pass
BLE/GFSK Mid Channel, 2442 MHz	690.164 kHz	500 kHz	Pass
BLE/GFSK High Channel, 2480 MHz	712.003 kHz	500 kHz	Pass

OCCUPIED BANDWIDTH

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



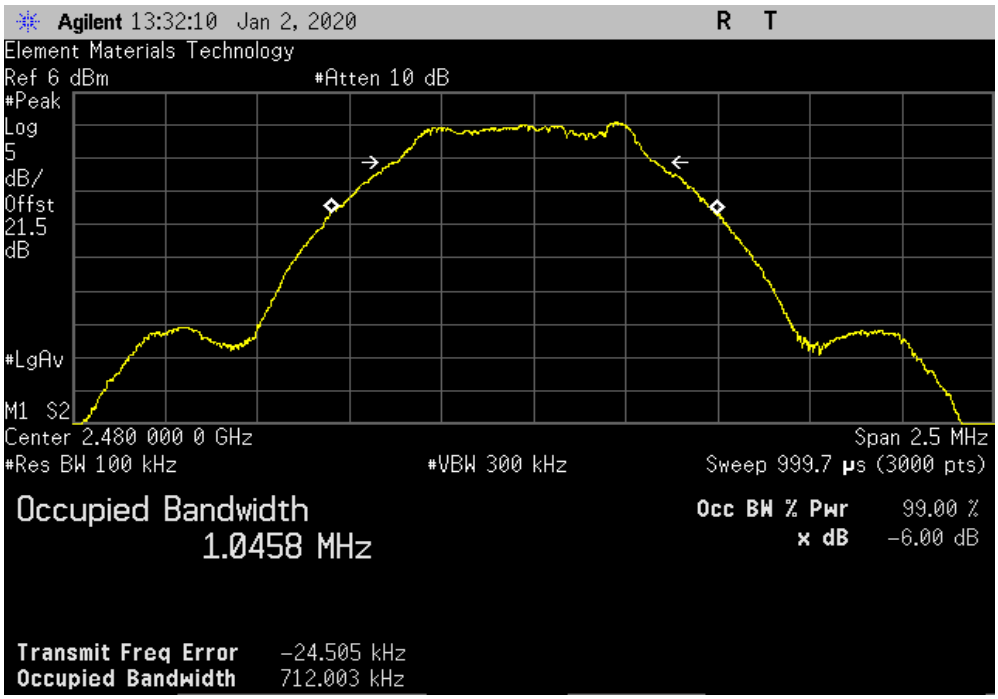
BLE/GFSK Mid Channel, 2442 MHz						
				Value	Limit (≥)	Result
				690.164 kHz	500 kHz	Pass



OCCUPIED BANDWIDTH

TbtTx 2019.08.30.0 XMit 2019.09.05

BLE/GFSK High Channel, 2480 MHz						
				Value	Limit (≥)	Result
				712.003 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
Meter - Multimeter	Tektronix	DMM912	MMH	15-Feb-19	15-Feb-22
Power Supply - DC	Dr. Meter	PS-305DM	TZZ	NCR	NCR
Generator - Signal	Keysight	N5182B	TFU	5-Nov-18	5-Nov-21
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	28-Mar-19	28-Mar-20
Attenuator	S.M. Electronics	SA26B-20	AUY	28-Mar-19	28-Mar-20
Block - DC	Fairview Microwave	SD3379	AMW	28-Mar-19	28-Mar-20
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	12-Feb-19	12-Feb-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

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

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

OUTPUT POWER

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	CCU-2			**Work Order:**	POLR0058
Serial Number:	Unit #6			**Date:**	3-Jan-20
Customer:	Polaris Industries, Inc.			**Temperature:**	19.6 °C
Attendees:	Wayne Rieger			**Humidity:**	43% RH
Project:	None			**Barometric Pres.:**	1019 mbar
Tested by:	Brandon Hobbs	**Power:**	14VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2020	ANSI C63.10:2013

COMMENTS

All losses through the measurement path were accounted for. The Power level was set to a client software setting of 6.

DEVIATIONS FROM TEST STANDARD

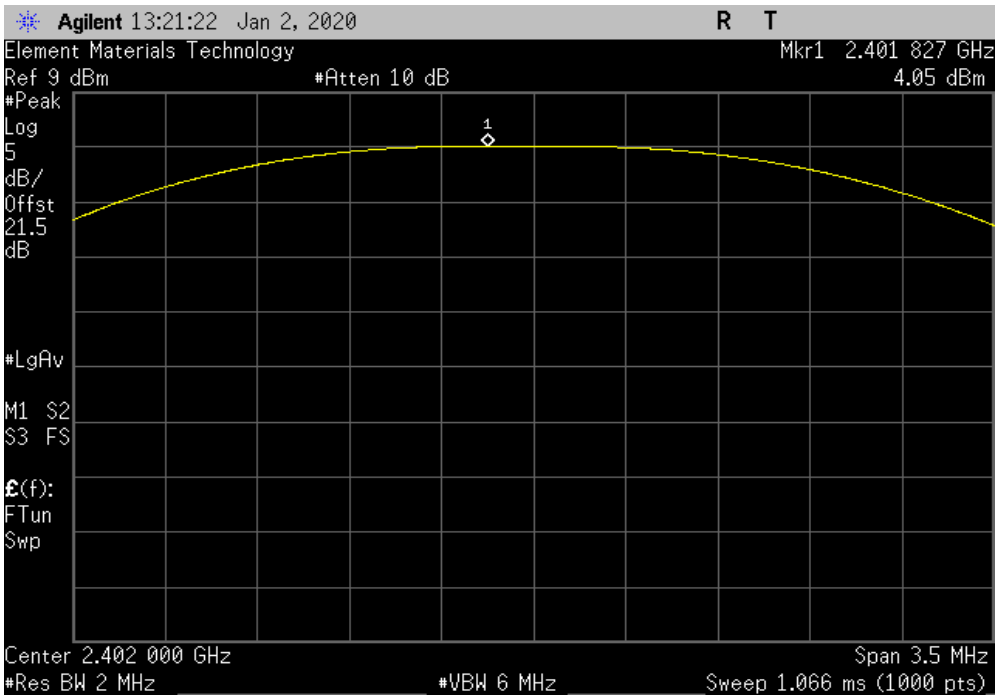
None

Configuration #	4	*Signature*

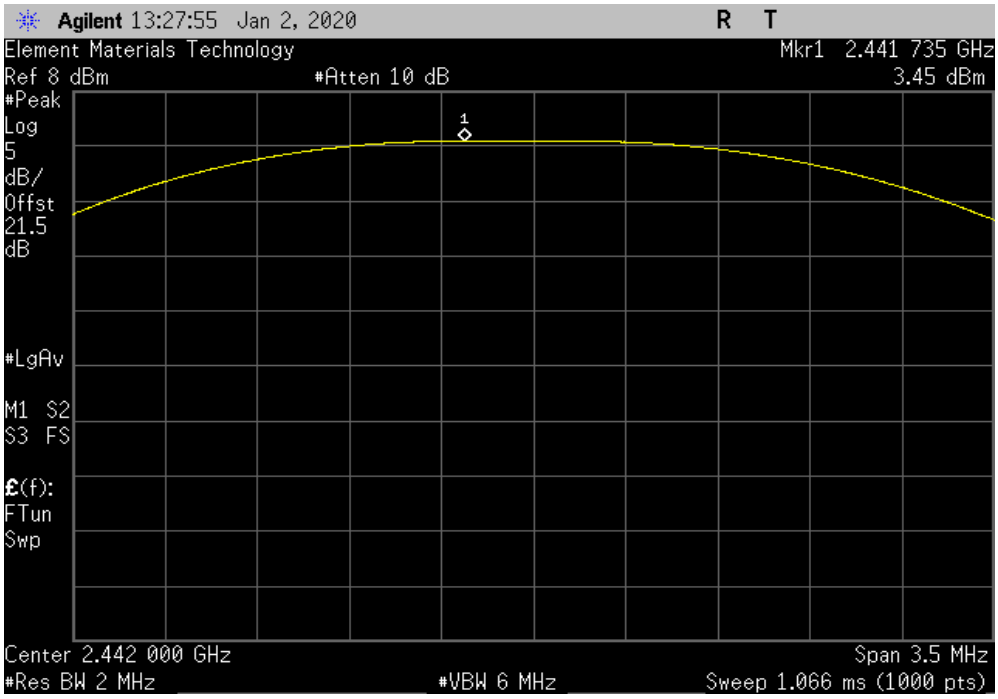
	Out Pwr (dBm)	Limit (dBm)	Result
BLE/GFSK Low Channel, 2402 MHz	4.049	30	Pass
BLE/GFSK Mid Channel, 2442 MHz	3.455	30	Pass
BLE/GFSK High Channel, 2480 MHz	2.275	30	Pass

OUTPUT POWER

BLE/GFSK Low Channel, 2402 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				4.049	30	Pass

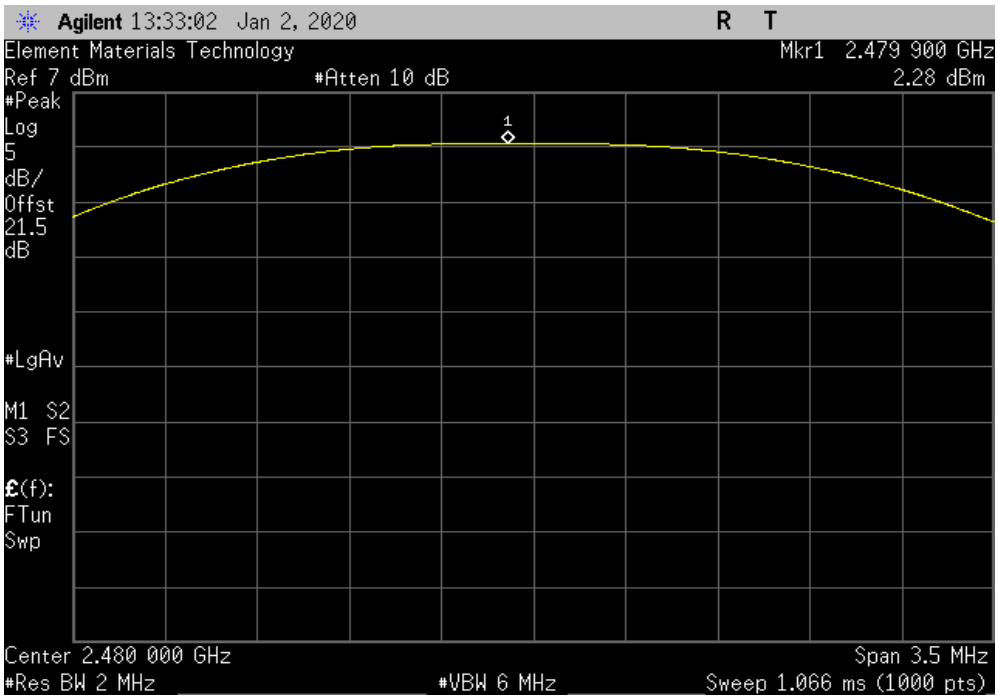


BLE/GFSK Mid Channel, 2442 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				3.455	30	Pass



OUTPUT POWER

BLE/GFSK High Channel, 2480 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				2.275	30	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

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
Generator - Signal	Keysight	N5182B	TFU	5-Nov-18	5-Nov-21
Meter - Multimeter	Tektronix	DMM912	MMH	15-Feb-19	15-Feb-22
Power Supply - DC	Dr. Meter	PS-305DM	TZZ	NCR	NCR
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	12-Feb-19	12-Feb-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	28-Mar-19	28-Mar-20
Attenuator	S.M. Electronics	SA26B-20	AUY	28-Mar-19	28-Mar-20
Block - DC	Fairview Microwave	SD3379	AMW	28-Mar-19	28-Mar-20

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.

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	CCU-2			**Work Order:**	POLR0058
Serial Number:	Unit #6			**Date:**	3-Jan-20
Customer:	Polaris Industries, Inc.			**Temperature:**	19.6 °C
Attendees:	Wayne Rieger			**Humidity:**	43% RH
Project:	None			**Barometric Pres.:**	1020 mbar
Tested by:	Brandon Hobbs	**Power:**	14VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2020	ANSI C63.10:2013

COMMENTS

All losses through the measurement path were accounted for. The Power level was set to a client software setting of 6.

DEVIATIONS FROM TEST STANDARD

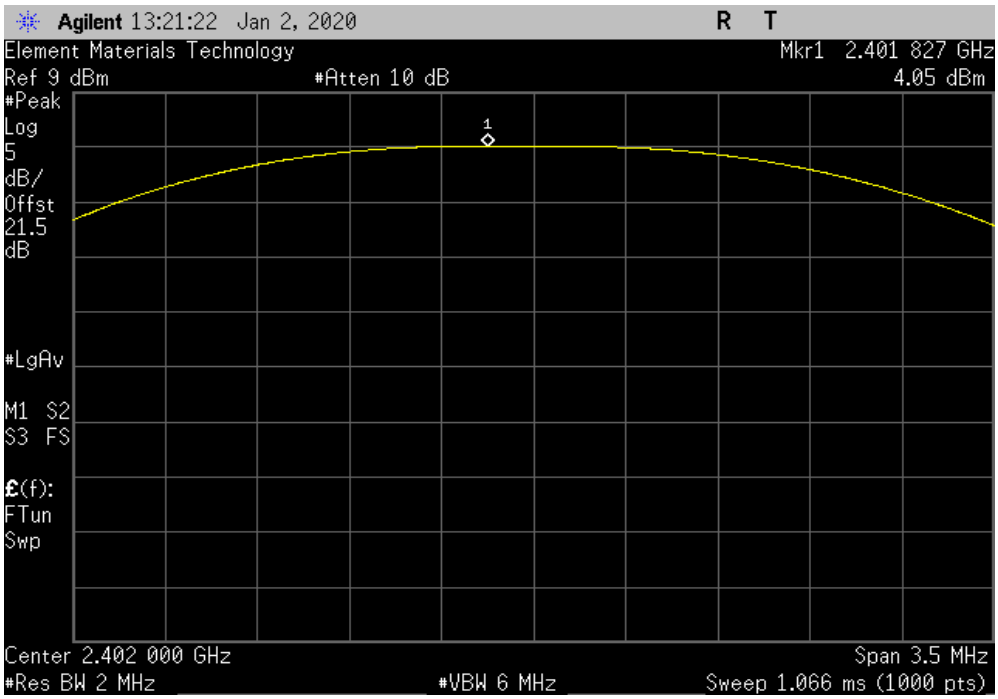
None

Configuration #	4	Signature

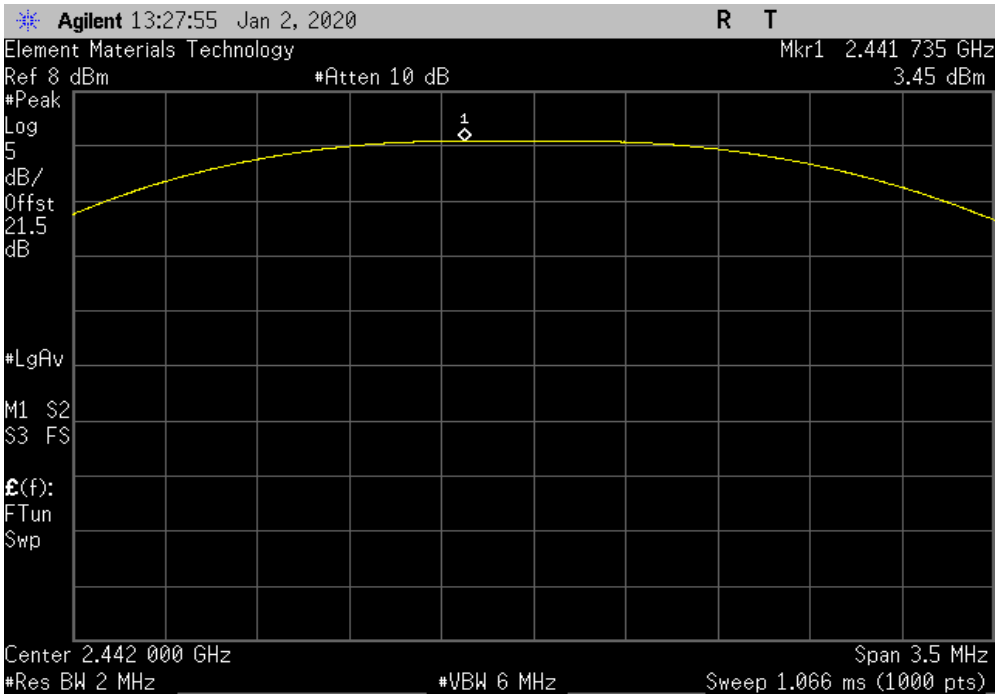
	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
BLE/GFSK Low Channel, 2402 MHz	4.049	0.5	4.549	36	Pass
BLE/GFSK Mid Channel, 2442 MHz	3.455	0.5	3.955	36	Pass
BLE/GFSK High Channel, 2480 MHz	2.275	0.5	2.775	36	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

BLE/GFSK Low Channel, 2402 MHz						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		4.049	0.5	4.549	36	Pass



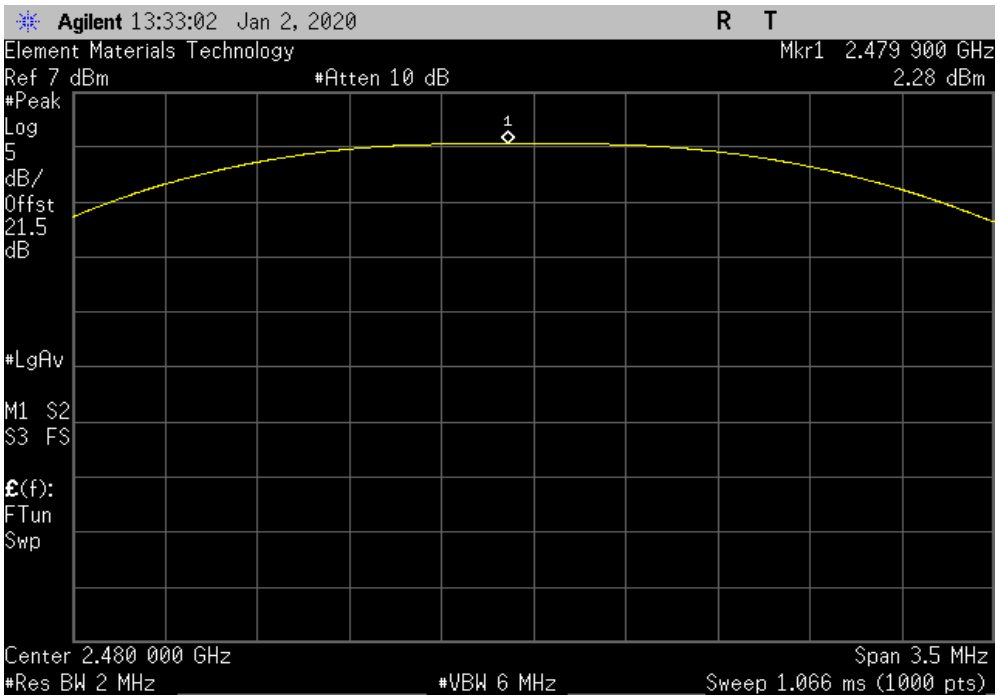
BLE/GFSK Mid Channel, 2442 MHz						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		3.455	0.5	3.955	36	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

TbtTx 2019.08.30.0 XMit 2019.09.05

BLE/GFSK High Channel, 2480 MHz						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		2.275	0.5	2.775	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
Meter - Multimeter	Tektronix	DMM912	MMH	15-Feb-19	15-Feb-22
Power Supply - DC	Dr. Meter	PS-305DM	TZZ	NCR	NCR
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	28-Mar-19	28-Mar-20
Attenuator	S.M. Electronics	SA26B-20	AUY	28-Mar-19	28-Mar-20
Block - DC	Fairview Microwave	SD3379	AMW	28-Mar-19	28-Mar-20
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	12-Feb-19	12-Feb-20
Generator - Signal	Keysight	N5182B	TFU	5-Nov-18	5-Nov-21

TEST DESCRIPTION

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

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

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	**CCU-2**			**Work Order:**	**POLR0058**
Serial Number:	**Unit #6**			**Date:**	**3-Jan-20**
Customer:	**Polaris Industries, Inc.**			**Temperature:**	**19.7 °C**
Attendees:	**Wayne Rieger**			**Humidity:**	**42.9% RH**
Project:	**None**			**Barometric Pres.:**	**1019 mbar**
Tested by:	**Brandon Hobbs**	**Power:**	**14VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2020	ANSI C63.10:2013

COMMENTS

All losses through the measurement path were accounted for. The Power level was set to a client software setting of 6.

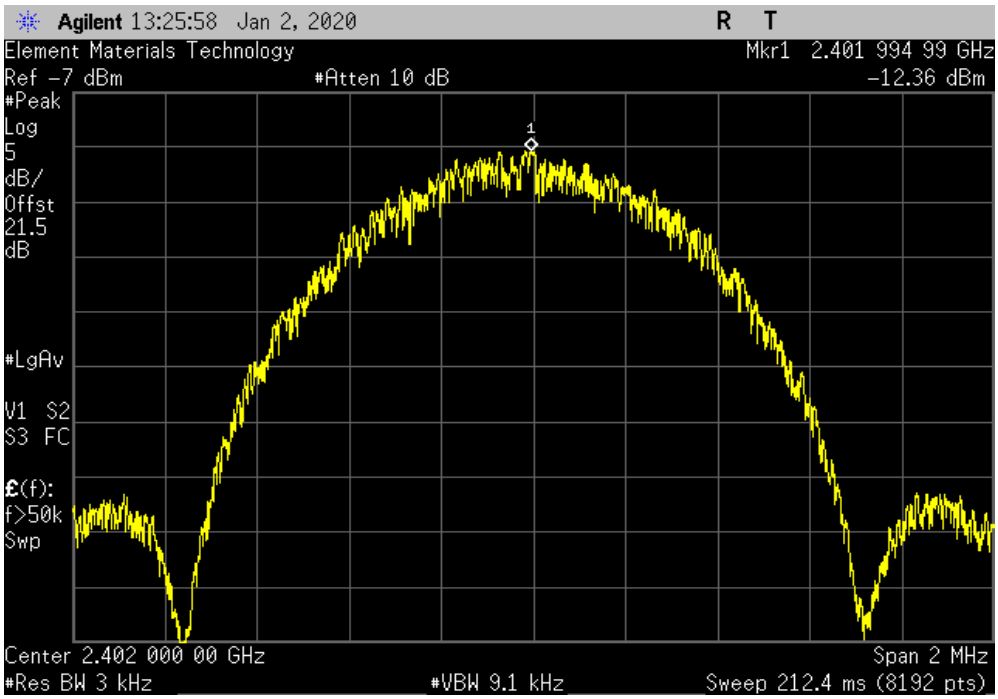
DEVIATIONS FROM TEST STANDARD

None

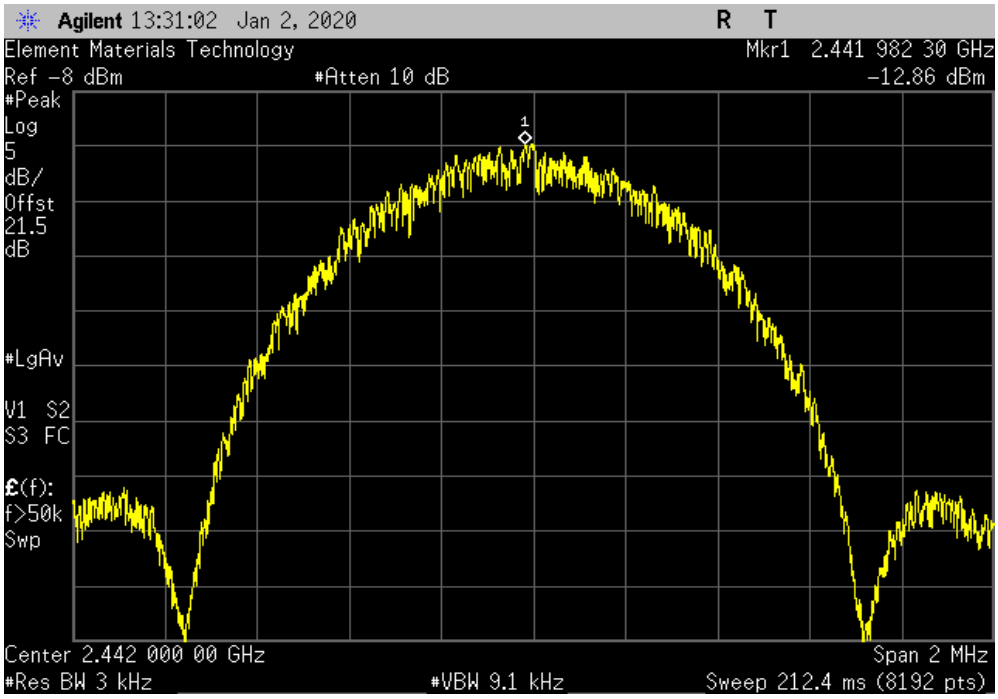
Configuration #	**4**	*Signature*

	Value dBm/3kHz	**Limit < dBm/3kHz**	**Results**
BLE/GFSK Low Channel, 2402 MHz	-12.359	8	Pass
BLE/GFSK Mid Channel, 2442 MHz	-12.86	8	Pass
BLE/GFSK High Channel, 2480 MHz	-14.072	8	Pass

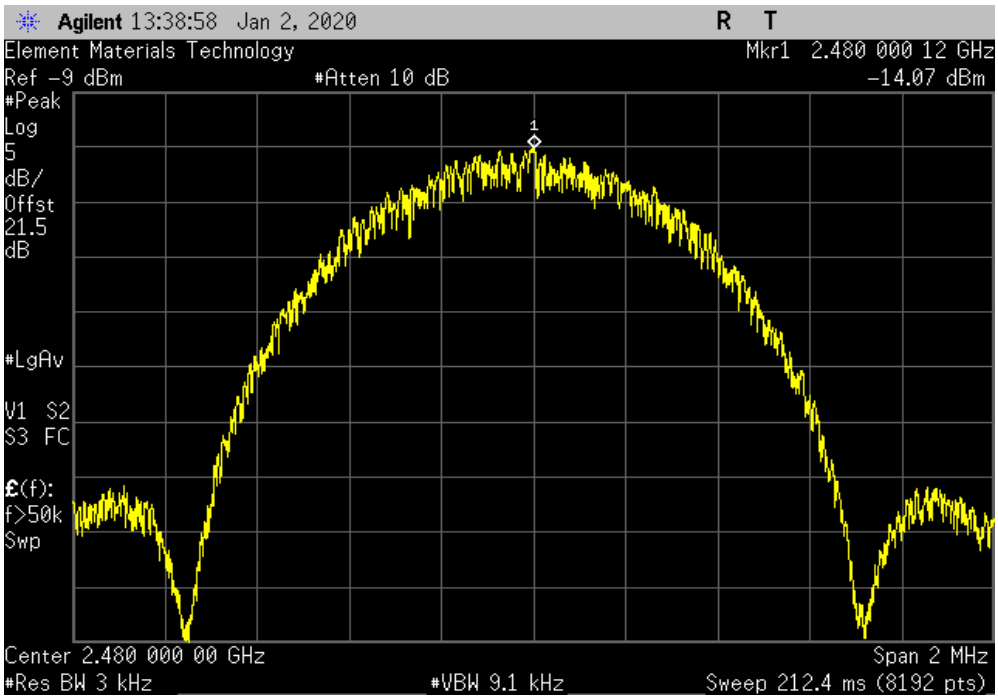
BLE/GFSK Low Channel, 2402 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.359	8	Pass



BLE/GFSK Mid Channel, 2442 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.86	8	Pass



BLE/GFSK High Channel, 2480 MHz							
					Value dBm/3kHz	Limit < dBm/3kHz	Results
					-14.072	8	Pass



BAND EDGE COMPLIANCE

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
Meter - Multimeter	Tektronix	DMM912	MMH	15-Feb-19	15-Feb-22
Generator - Signal	Keysight	N5182B	TFU	5-Nov-18	5-Nov-21
Power Supply - DC	Dr. Meter	PS-305DM	TZZ	NCR	NCR
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	28-Mar-19	28-Mar-20
Attenuator	S.M. Electronics	SA26B-20	AUY	28-Mar-19	28-Mar-20
Block - DC	Fairview Microwave	SD3379	AMW	28-Mar-19	28-Mar-20
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	12-Feb-19	12-Feb-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

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	CCU-2			**Work Order:**	POLR0058
Serial Number:	Unit #6			**Date:**	3-Jan-20
Customer:	Polaris Industries, Inc.			**Temperature:**	19.5 °C
Attendees:	Wayne Rieger			**Humidity:**	43.2% RH
Project:	None			**Barometric Pres.:**	1020 mbar
Tested by:	Brandon Hobbs	**Power:**	14VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2020	ANSI C63.10:2013

COMMENTS

All losses through the measurement path were accounted for. The Power level was set to a client software setting of 6.

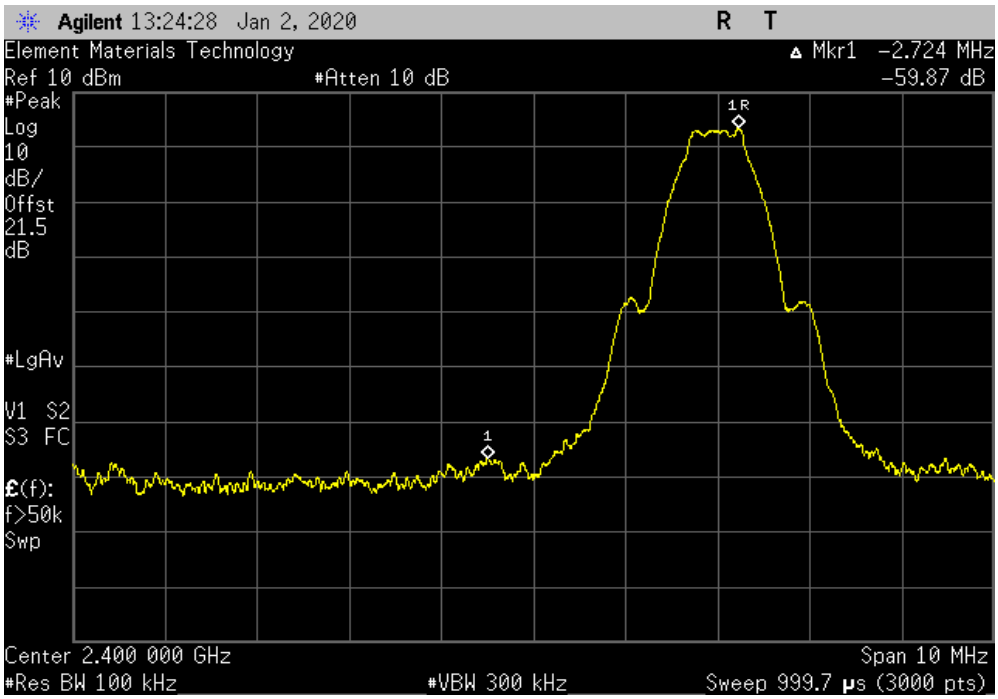
DEVIATIONS FROM TEST STANDARD

None

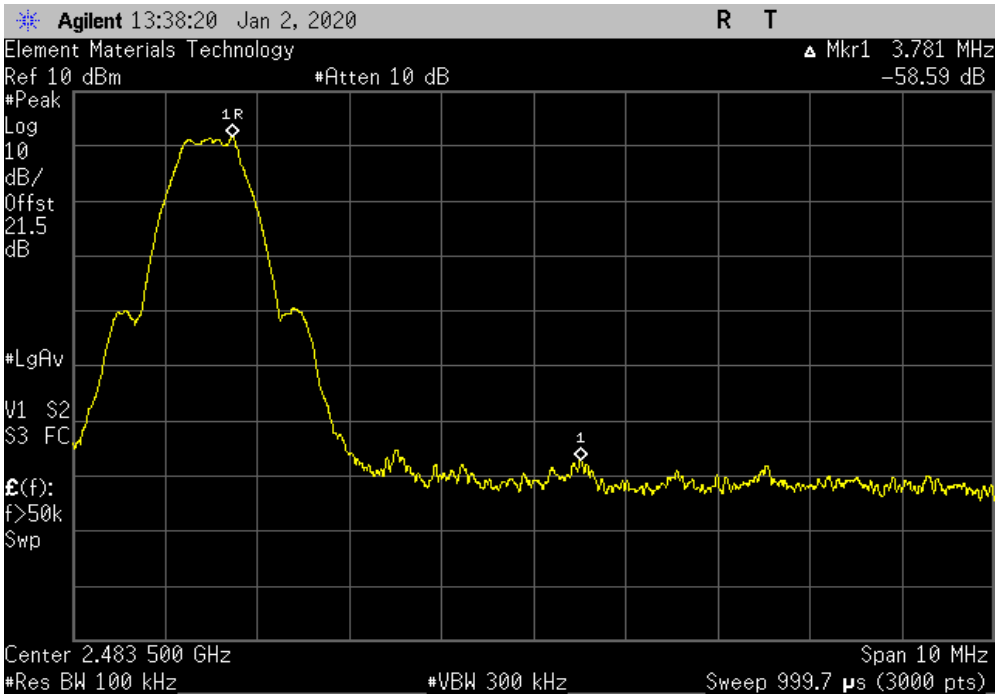
Configuration #	4	Signature

	Value (dBc)	Limit ≤ (dBc)	Result
BLE/GFSK Low Channel, 2402 MHz	-59.87	-20	Pass
BLE/GFSK High Channel, 2480 MHz	-58.59	-20	Pass

BLE/GFSK Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-59.87	-20	Pass



BLE/GFSK High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-58.59	-20	Pass



SPURIOUS CONDUCTED EMISSIONS

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
Power Supply - DC	Dr. Meter	PS-305DM	TZZ	NCR	NCR
Meter - Multimeter	Tektronix	DMM912	MMH	15-Feb-19	15-Feb-22
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	28-Mar-19	28-Mar-20
Attenuator	S.M. Electronics	SA26B-20	AUY	28-Mar-19	28-Mar-20
Block - DC	Fairview Microwave	SD3379	AMW	28-Mar-19	28-Mar-20
Generator - Signal	Keysight	N5182B	TFU	5-Nov-18	5-Nov-21
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	12-Feb-19	12-Feb-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

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	**CCU-2**			**Work Order:**	**POLR0058**
Serial Number:	**Unit #6**			**Date:**	**9-Jan-20**
Customer:	**Polaris Industries, Inc.**			**Temperature:**	**21.5 °C**
Attendees:	**Wayne Rieger**			**Humidity:**	**38.9% RH**
Project:	**None**			**Barometric Pres.:**	**1026 mbar**
Tested by:	**Brandon Hobbs**	**Power:**	**14VDC**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2020	ANSI C63.10:2013

COMMENTS

All losses through the measurement path were accounted for. The Power level was set to a client software setting of 6.

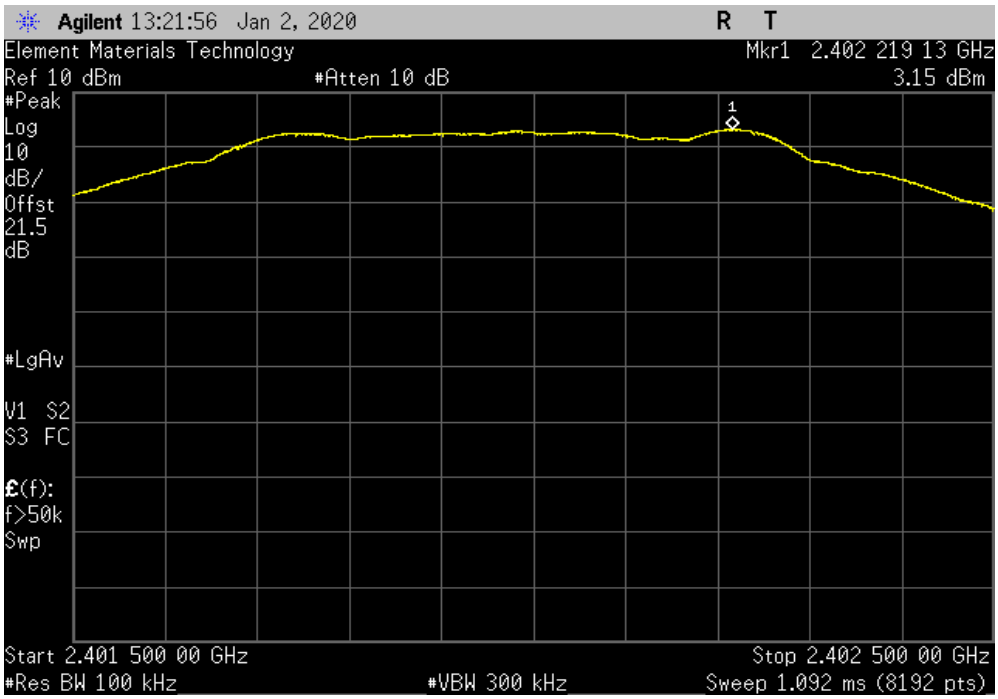
DEVIATIONS FROM TEST STANDARD

None

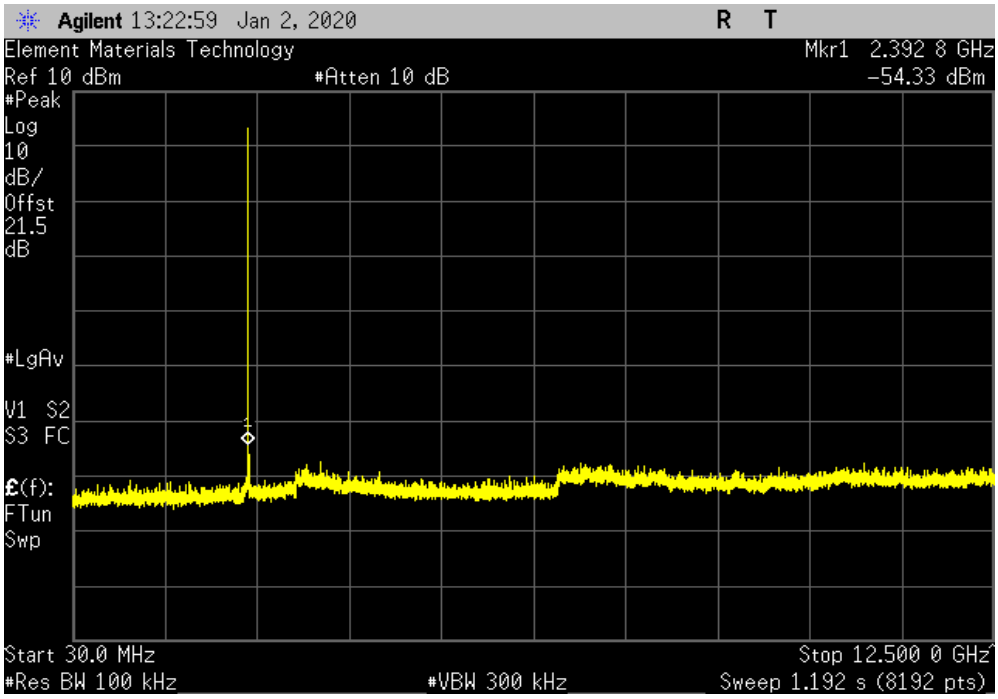
Configuration #	**4**	*Signature*

	Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
BLE/GFSK Low Channel, 2402 MHz	Fundamental	2402.22	N/A	N/A	N/A
BLE/GFSK Low Channel, 2402 MHz	30 MHz - 12.5 GHz	2392.8	-57.48	-20	Pass
BLE/GFSK Low Channel, 2402 MHz	12.5 GHz - 25 GHz	24052.3	-56.58	-20	Pass
BLE/GFSK Mid Channel, 2442 MHz	Fundamental	2442.22	N/A	N/A	N/A
BLE/GFSK Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	12213.8	-60.06	-20	Pass
BLE/GFSK Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	20792.6	-55.96	-20	Pass
BLE/GFSK High Channel, 2480 MHz	Fundamental	2480.22	N/A	N/A	N/A
BLE/GFSK High Channel, 2480 MHz	30 MHz - 12.5 GHz	10403.7	-58.98	-20	Pass
BLE/GFSK High Channel, 2480 MHz	12.5 GHz - 25 GHz	22791.8	-55.21	-20	Pass

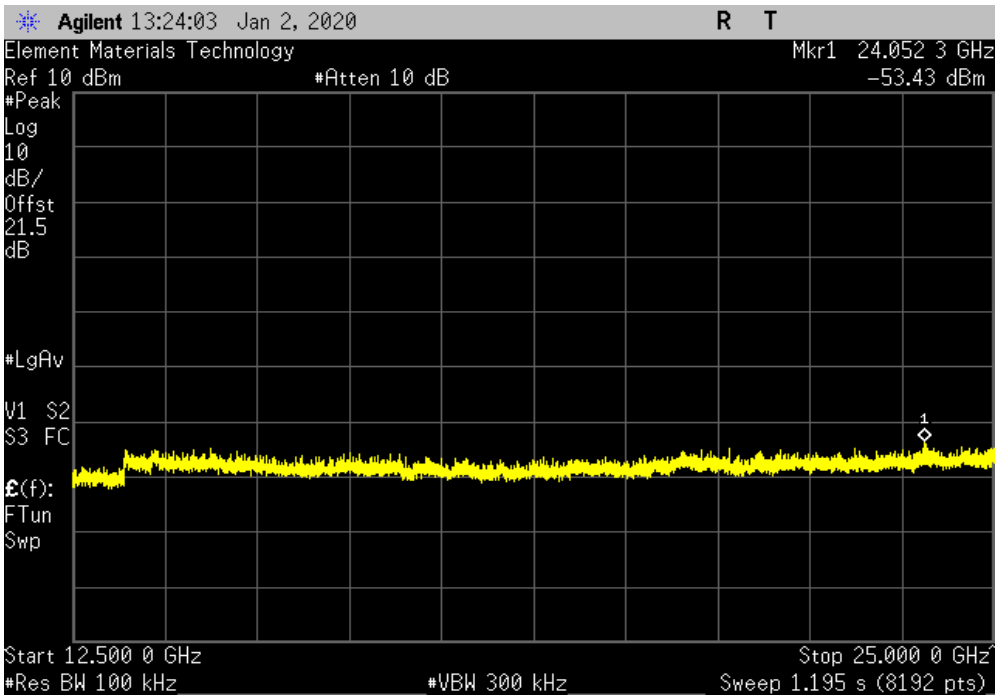
BLE/GFSK Low Channel, 2402 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental		2402.22	N/A	N/A	N/A



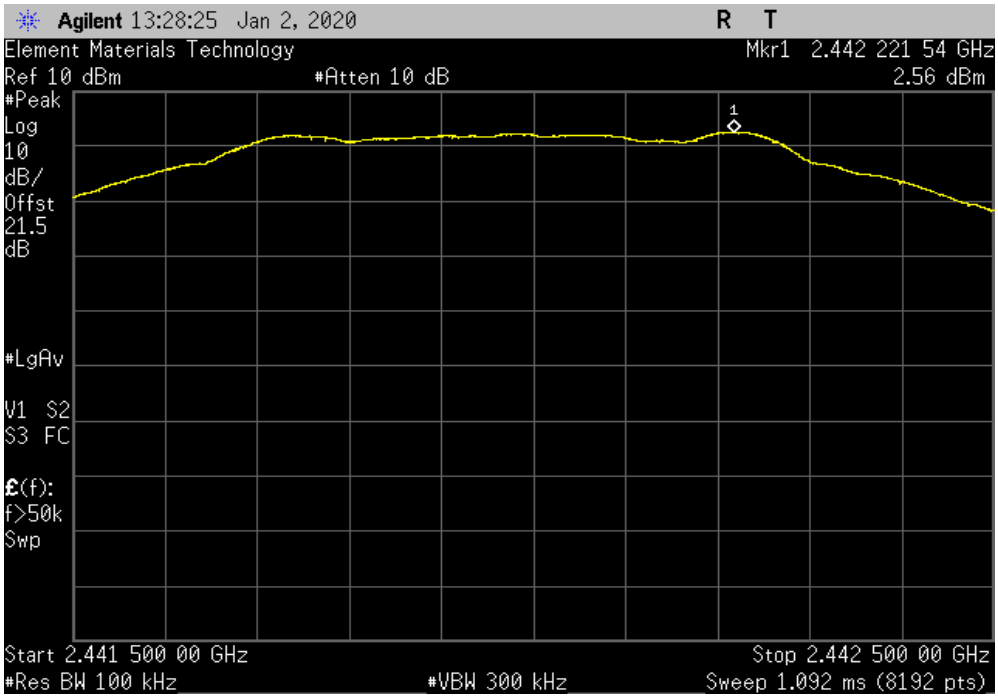
BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2392.8	-57.48	-20	Pass



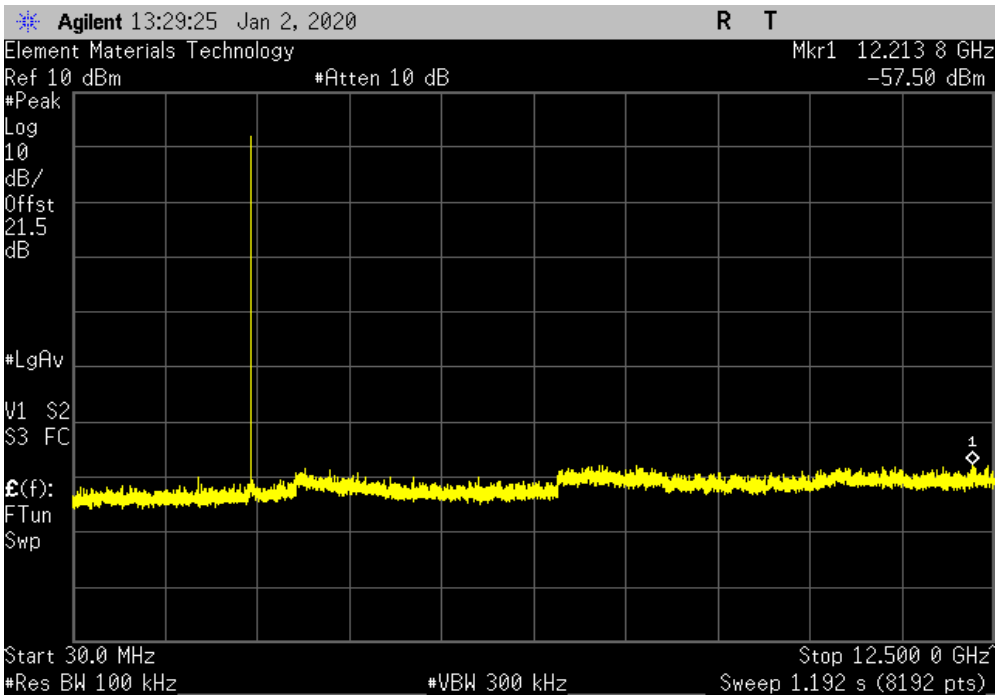
BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	24052.3	-56.58	-20	Pass



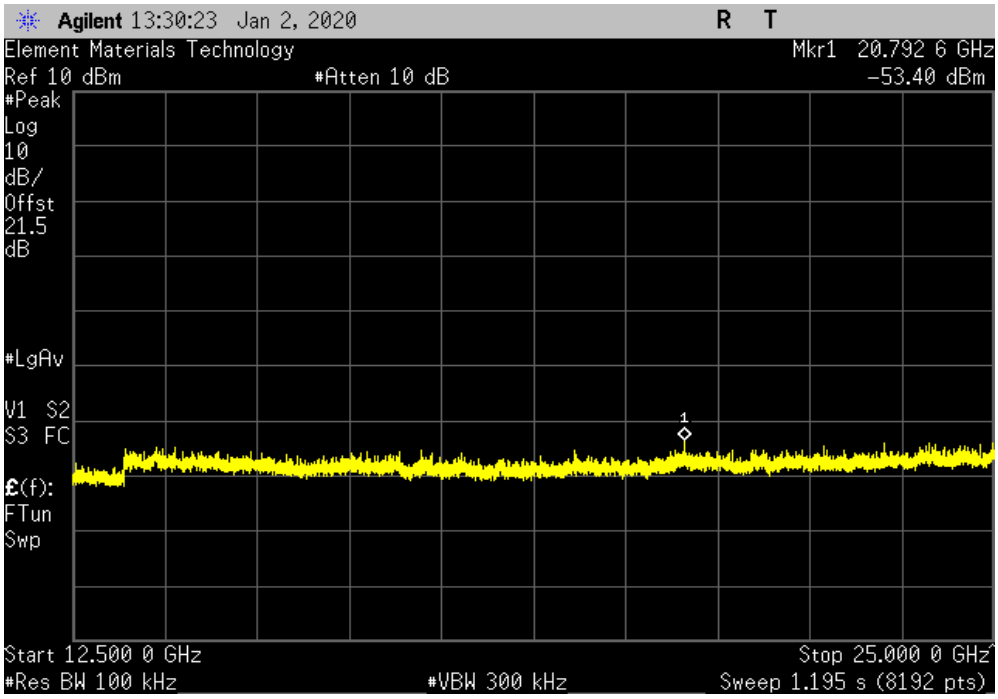
BLE/GFSK Mid Channel, 2442 MHz					
Frequency Range		**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental	2442.22	N/A	N/A	N/A



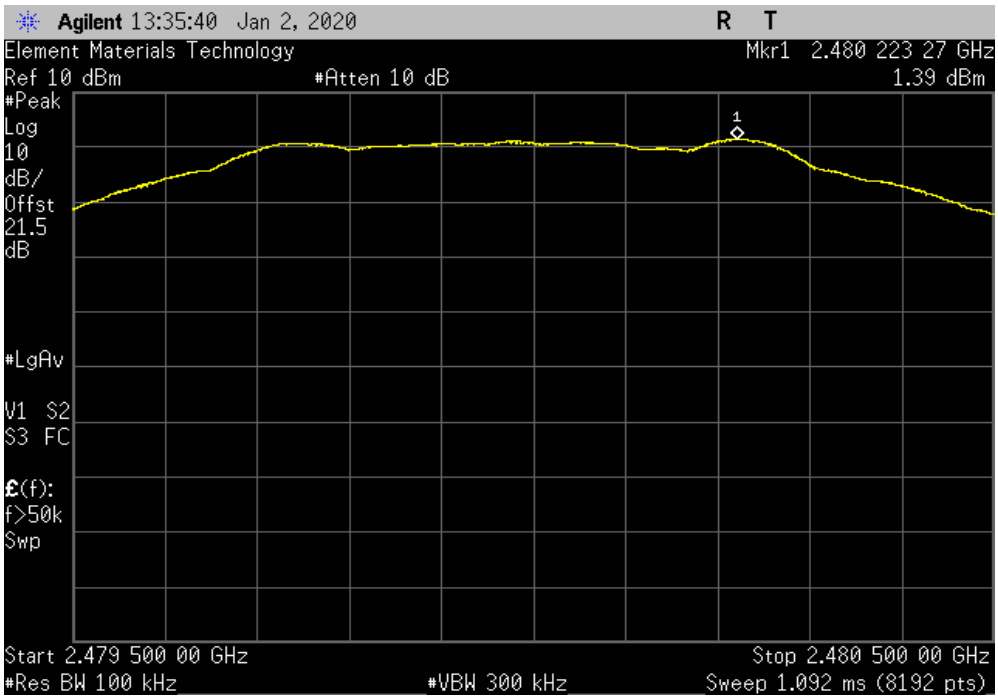
BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	12213.8	-60.06	-20	Pass



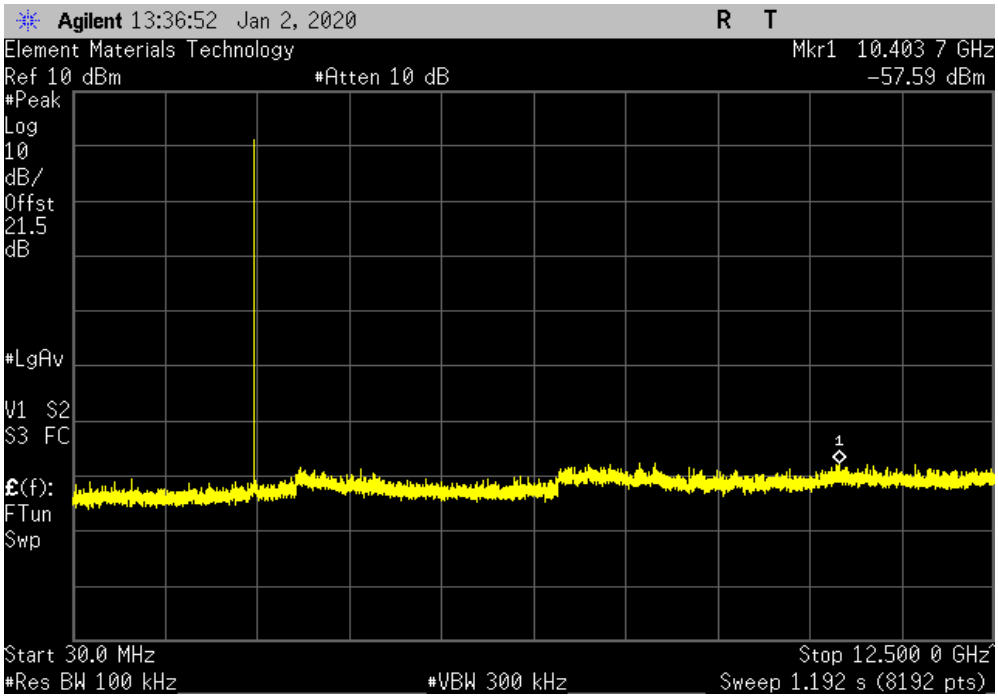
BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	20792.6	-55.96	-20	Pass



BLE/GFSK High Channel, 2480 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2480.22	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	10403.7	-58.98	-20	Pass



BLE/GFSK High Channel, 2480 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	22791.8	-55.21	-20	Pass