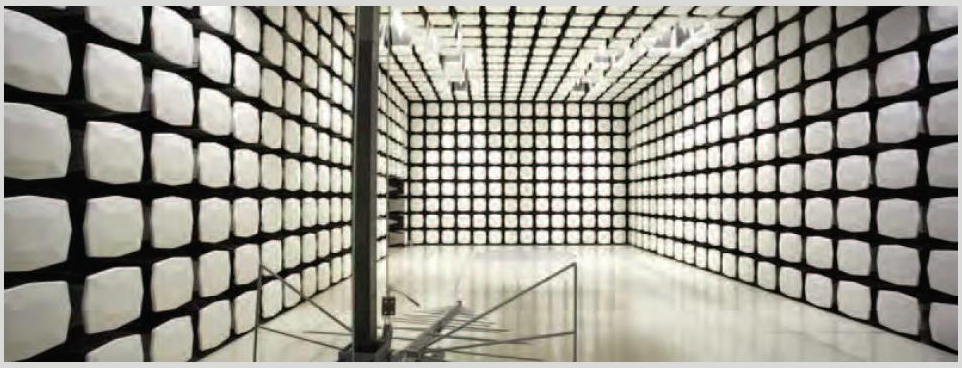
Polaris Industries, Inc.

7 inch

FCC 15.247:2018

902 – 928 MHz Transceiver

Report # POLR0027



NVLAP LAB CODE: 200630-0

CERTIFICATE OF TEST

2017-1-25

Last Date of Test: February 13, 2018
Polaris Industries, Inc.
Model: 7 inch

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2018	ANSI C63.10:2013

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC - Powerline Conducted Emissions	No	N/A	Not required, the device is never connected to AC powerlines.
6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	
7.5	Duty Cycle	Yes	Pass	
7.8.2	Carrier Frequency Separation	Yes	Pass	
7.8.3	Number of Hopping Frequencies	Yes	Pass	
7.8.4	Dwell Time	Yes	Pass	
7.8.5	Output Power	Yes	Pass	
7.8.6	Band Edge Compliance	Yes	Pass	
7.8.6	Band Edge Compliance - Hopping Mode	Yes	Pass	
7.8.7	Occupied Bandwidth	Yes	Pass	
7.8.8	Spurious Conducted Emissions	Yes	Pass	
11.10.2	Power Spectral Density	No	N/A	Not required for FHSS devices.

Deviations From Test Standards

None

Approved By:

Kyle Holgate, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS

2018.2.20

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). Certification chambers and Open Area Test Sites are filed with ISED.

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.

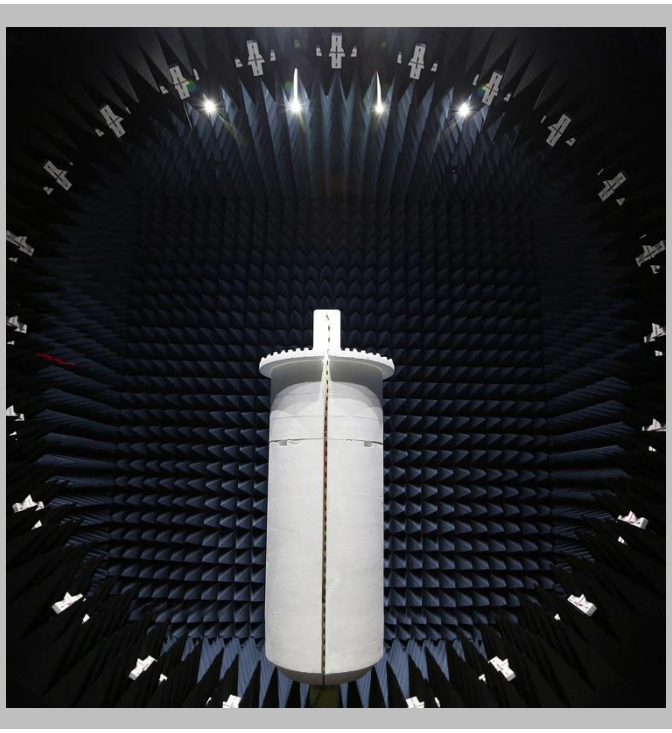
SCOPE

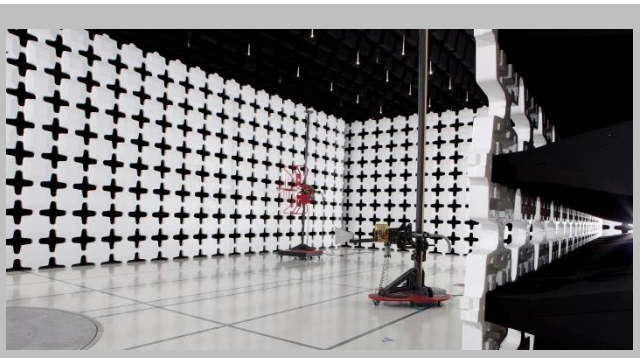
For details on the Scopes of our Accreditations, please visit:
http://portlandcustomer.element.com/ts/scope/scope.htm
http://gsi.nist.gov/global/docs/cabs/designations.html

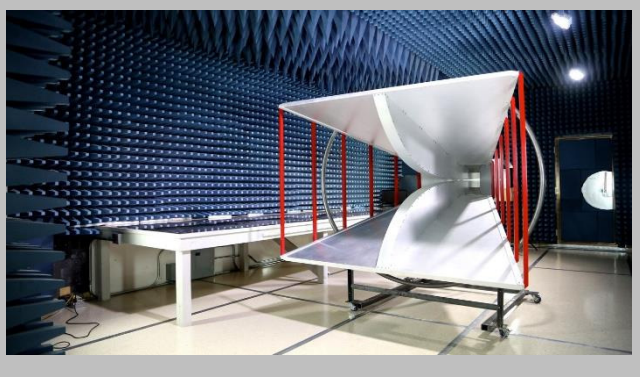
FACILITIES

2017.9.15

California	Minnesota	New York	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 NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	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: 200761-0	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	N/A	2834D-1, 2834D-*2*	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157







MEASUREMENT UNCERTAINTY

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.

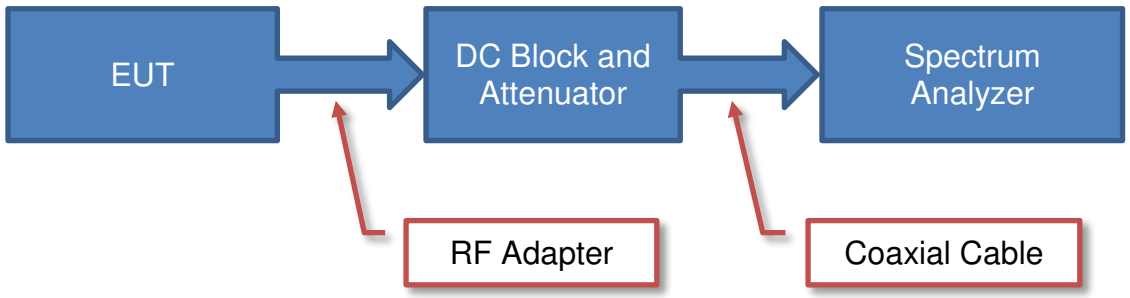
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable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

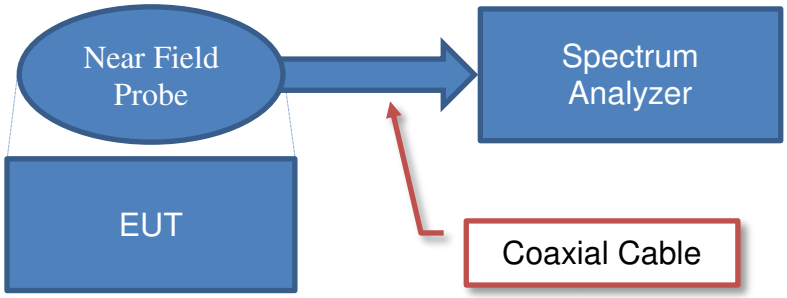
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

Test Setup Block Diagrams

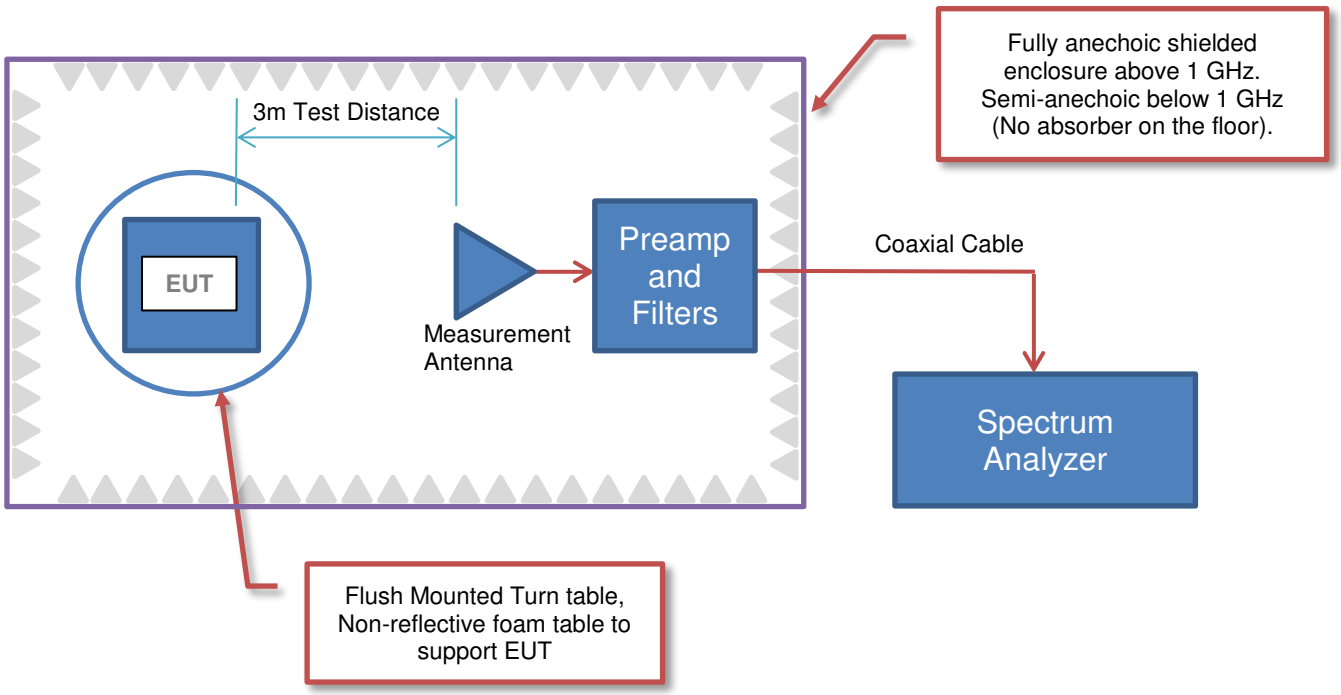
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Polaris Industries, Inc.
Address:	1600 SE 18th Ave.
City, State, Zip:	Battle Ground, WA 98604
Test Requested By:	Kent Stalsberg
Model:	7 inch
First Date of Test:	February 9, 2018
Last Date of Test:	February 13, 2018
Receipt Date of Samples:	February 9, 2018
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Display for use on vehicles which includes a 915 MHz FHSS radio.

Testing Objective:
Seeking to demonstrate compliance of the FHSS radio under FCC 15.247 for operation in the 902 - 928 MHz Band.

CONFIGURATIONS

Configuration POLR0008- 1

Software/Firmware Running during test	
Description	**Version**
TeraTerm	Unknown

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Vehicle Display Unit	Trail Tech	7 inch display	37

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Mobile Load Coil Antenna	Laird	DS-B806896	None
GPS Receiver	Trail Tech	9000-EAA	None
External Whip	Metra	44-GM935B	None
Controller PCB	Trail Tech	577 Connector Board	Unknown
USB Thumb Drive	Unknown	Unknown	Unknown

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Remote Laptop	HP	Elitebook 8460P	T0310381
Linear DC Power Supply	Topward Electric Instruments Co. LTD.	TPS-2000	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Coax (GPS)	Yes	1.6 m	No	Vehicle Display Unit	GPS Receiver
Coax (Mobile Load Antenna)	Yes	3.5 m	No	Vehicle Display Unit	Mobile Load Coil Antenna
Coax (External Whip)	Yes	2.3 m	No	Vehicle Display Unit	External Whip
DC Power	No	0.6 m	No	Vehicle Display Unit	DC Leads
DC Leads	No	3.5 m	No	DC Power	Linear DC Power Supply

CONFIGURATIONS

Configuration POLR0008- 2

Software/Firmware Running during test	
Description	**Version**
TeraTerm	Unknown

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Vehicle Display Unit	Trail Tech	7 inch display	37

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Controller PCB	Trail Tech	577 Connector Board	Unknown
USB Thumb Drive	Unknown	Unknown	Unknown
Remote Laptop	HP	Elitebook 8460P	T0310381
Linear DC Power Supply	Topward Electric Instruments Co. LTD.	TPS-2000	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	No	0.6 m	No	Vehicle Display Unit	DC Leads
DC Leads	No	3.5 m	No	DC Power	Linear DC Power Supply

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2/9/2018	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	2/12/2018	Band Edge Compliance – Hopping Mode	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2/13/2018	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.
4	2/13/2018	Carrier Frequency Separation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	2/13/2018	Number of Hopping Frequencies	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2/13/2018	Dwell Time	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	2/13/2018	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.
8	2/13/2018	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.
9	2/13/2018	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.
10	2/13/2018	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2017.09.18

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

LoRa continuous Tx, Low Channel = 902.5 MHz, Mid Channel = 915 MHz, High Channel = 927.5 MHz

POWER SETTINGS INVESTIGATED

14.0 VDC

CONFIGURATIONS INVESTIGATED

POLR0008 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	12.4 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
Filter - Band Pass/Notch	K&L Microwave	3TNF-500/1000-N/N	HFT	5-Dec-2017	12 mo
Filter - High Pass	Micro-Tronics	HPM50108	HFV	1-Feb-2018	12 mo
Filter - Low Pass	Micro-Tronics	LPM50003	LFB	28-Feb-2018	12 mo
Attenuator	Coaxicom	3910-10	AWX	28-Feb-2018	12 mo
Attenuator	Coaxicom	3910-20	AXZ	28-Feb-2018	12 mo
Cable	None	Standard Gain Horns Cable	EVF	30-Nov-2017	12 mo
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-08001200-30-10P	PAO	30-Nov-2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHU	NCR	0 mo
Cable	N/A	Double Ridge Horn Cables	EVB	29-Nov-2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	29-Nov-2017	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	7-Feb-2018	24 mo
Cable	N/A	Bilog Cables	EVA	30-Nov-2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	30-Nov-2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AXR	30-Jun-2016	24 mo

MEASUREMENT BANDWIDTHS

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

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.

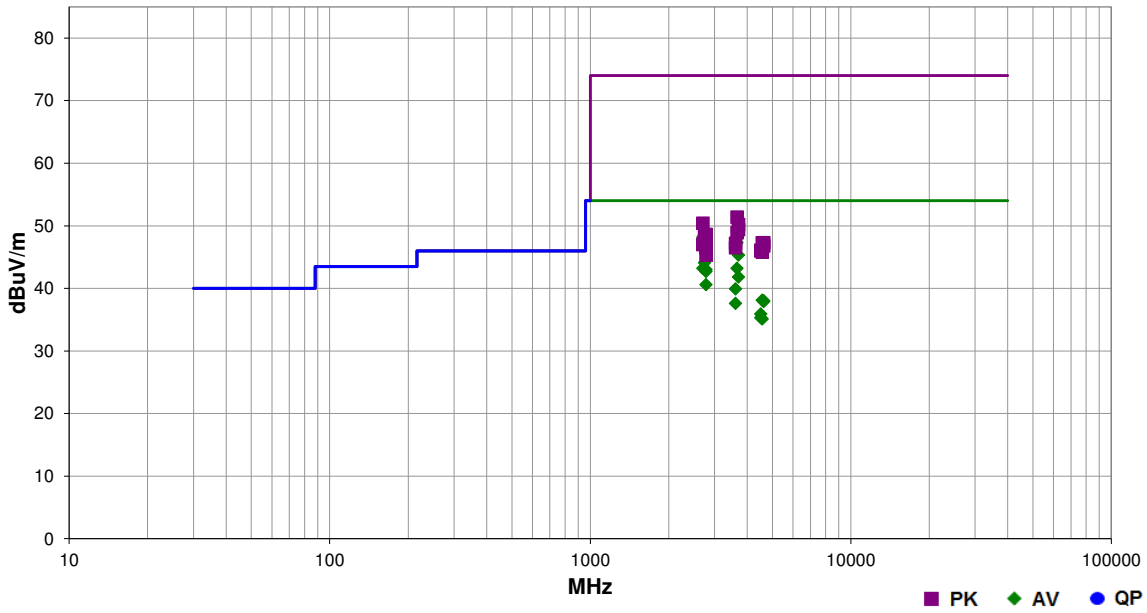
SPURIOUS RADIATED EMISSIONS

EmiR5 2017.09.18.2 PSA-ESCI 2017.09.18

Work Order:	POLR0008	**Date:**	9-Feb-2018		
Project:	None	**Temperature:**	22.8 °C		
Job Site:	EV01	**Humidity:**	35.3% RH		
Serial Number:	37	**Barometric Pres.:**	1029 mbar	**Tested by:**	Jeff Alcoke
EUT:	7 inch				
Configuration:	1				
Customer:	Polaris Industries, Inc.				
Attendees:	Ed Vaynberg				
EUT Power:	14.0 VDC				
Operating Mode:	LoRa continuous Tx, Low Channel = 902.5 MHz, Mid Channel = 915 MHz, High Channel = 927.5 MHz				
Deviations:	None				
Comments:	See comments below for Channel and EUT orientation.				

Test Specifications	**Test Method**
FCC 15.247:2018	ANSI C63.10:2013

Run #	9	**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
2707.467	51.5	-3.3	2.1	60.0	3.0	0.0	Horz	AV	0.0	48.2	54.0	-5.8	Low Channel, EUT on Side
3660.092	44.1	3.2	1.9	74.0	3.0	0.0	Horz	AV	0.0	47.3	54.0	-6.7	Mid Channel, EUT on Side
2745.033	50.2	-3.0	4.0	18.0	3.0	0.0	Vert	AV	0.0	47.2	54.0	-6.8	Mid Channel, EUT Vertical
2782.515	48.4	-2.7	1.0	18.0	3.0	0.0	Vert	AV	0.0	45.7	54.0	-8.3	High Channel, EUT Vertical
2782.590	48.4	-2.7	1.0	354.0	3.0	0.0	Horz	AV	0.0	45.7	54.0	-8.3	High Channel, EUT on Side
2782.570	48.3	-2.7	1.0	297.0	3.0	0.0	Vert	AV	0.0	45.6	54.0	-8.4	High Channel, EUT Horizontal
3710.058	41.6	3.7	1.8	69.0	3.0	0.0	Horz	AV	0.0	45.3	54.0	-8.7	High Channel, EUT on Side
2744.950	47.1	-3.0	1.0	72.0	3.0	0.0	Horz	AV	0.0	44.1	54.0	-9.9	Mid Channel, EUT on Side
2707.450	46.5	-3.3	1.0	258.0	3.0	0.0	Vert	AV	0.0	43.2	54.0	-10.8	Low Channel, EUT Vertical
3660.150	40.0	3.2	1.0	10.0	3.0	0.0	Vert	AV	0.0	43.2	54.0	-10.8	Mid Channel, EUT Vertical
2782.520	45.7	-2.7	1.0	6.0	3.0	0.0	Vert	AV	0.0	43.0	54.0	-11.0	High Channel, EUT on Side
2782.595	45.4	-2.7	1.1	128.0	3.0	0.0	Horz	AV	0.0	42.7	54.0	-11.3	High Channel, EUT Vertical
3709.905	38.1	3.7	2.3	351.0	3.0	0.0	Vert	AV	0.0	41.8	54.0	-12.2	High Channel, EUT Vertical
2782.465	43.3	-2.7	1.0	150.0	3.0	0.0	Horz	AV	0.0	40.6	54.0	-13.4	High Channel, EUT Horizontal
3610.067	37.0	2.9	1.4	303.0	3.0	0.0	Horz	AV	0.0	39.9	54.0	-14.1	Low Channel, EUT on Side
4575.042	33.4	4.7	1.4	78.0	3.0	0.0	Vert	AV	0.0	38.1	54.0	-15.9	Mid Channel, EUT Vertical
4637.550	33.4	4.6	1.3	69.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	High Channel, EUT Vertical
4637.558	33.3	4.6	1.3	41.0	3.0	0.0	Horz	AV	0.0	37.9	54.0	-16.1	High Channel, EUT on Side
3610.040	34.7	2.9	1.0	282.0	3.0	0.0	Vert	AV	0.0	37.6	54.0	-16.4	Low Channel, EUT Vertical
4512.425	31.4	4.5	3.4	360.0	3.0	0.0	Horz	AV	0.0	35.9	54.0	-18.1	Low Channel, EUT on Side
4512.405	30.8	4.5	3.4	338.0	3.0	0.0	Vert	AV	0.0	35.3	54.0	-18.7	Low Channel, EUT Vertical
4575.042	30.4	4.7	1.0	18.0	3.0	0.0	Horz	AV	0.0	35.1	54.0	-18.9	Mid Channel, EUT on Side

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
3660.075	48.2	3.2	1.9	74.0	3.0	0.0	Horz	PK	0.0	51.4	74.0	-22.6	Mid Channel, EUT on Side
2707.525	53.7	-3.3	2.1	60.0	3.0	0.0	Horz	PK	0.0	50.4	74.0	-23.6	Low Channel, EUT on Side
3709.700	46.5	3.7	1.8	69.0	3.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	High Channel, EUT on Side
3709.915	45.7	3.7	2.3	351.0	3.0	0.0	Vert	PK	0.0	49.4	74.0	-24.6	High Channel, EUT Vertical
3659.875	45.7	3.2	1.0	10.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	Mid Channel, EUT Vertical
2782.395	51.3	-2.7	1.0	18.0	3.0	0.0	Vert	PK	0.0	48.6	74.0	-25.4	High Channel, EUT Vertical
2782.410	51.3	-2.7	1.0	354.0	3.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	High Channel, EUT on Side
2744.817	51.5	-3.0	4.0	18.0	3.0	0.0	Vert	PK	0.0	48.5	74.0	-25.5	Mid Channel, EUT Vertical
2782.400	51.1	-2.7	1.0	297.0	3.0	0.0	Vert	PK	0.0	48.4	74.0	-25.6	High Channel, EUT Horizontal
2745.017	50.7	-3.0	1.0	72.0	3.0	0.0	Horz	PK	0.0	47.7	74.0	-26.3	Mid Channel, EUT on Side
4574.908	42.7	4.6	1.4	78.0	3.0	0.0	Vert	PK	0.0	47.3	74.0	-26.7	Mid Channel, EUT Vertical
4637.855	42.7	4.6	1.3	69.0	3.0	0.0	Vert	PK	0.0	47.3	74.0	-26.7	High Channel, EUT Vertical
3610.167	44.3	2.9	1.4	303.0	3.0	0.0	Horz	PK	0.0	47.2	74.0	-26.8	Low Channel, EUT on Side
2707.550	50.3	-3.3	1.0	258.0	3.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	Low Channel, EUT Vertical
4637.483	42.2	4.6	1.3	41.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	High Channel, EUT on Side
2782.505	49.3	-2.7	1.0	6.0	3.0	0.0	Vert	PK	0.0	46.6	74.0	-27.4	High Channel, EUT on Side
2782.430	49.2	-2.7	1.1	128.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	High Channel, EUT Vertical
3610.110	43.6	2.9	1.0	282.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5	Low Channel, EUT Vertical
4512.975	41.6	4.5	3.4	338.0	3.0	0.0	Vert	PK	0.0	46.1	74.0	-27.9	Low Channel, EUT Vertical
4512.408	41.5	4.5	3.4	360.0	3.0	0.0	Horz	PK	0.0	46.0	74.0	-28.0	Low Channel, EUT on Side
4574.658	41.2	4.6	1.0	18.0	3.0	0.0	Horz	PK	0.0	45.8	74.0	-28.2	Mid Channel, EUT on Side
2782.530	48.0	-2.7	1.0	150.0	3.0	0.0	Horz	PK	0.0	45.3	74.0	-28.7	High Channel, EUT Horizontal

DUTY CYCLE

XMit 2017.12.13

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
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	30-May-17	30-May-18
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

DUTY CYCLE

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.6% RH
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

DEVIATIONS FROM TEST STANDARD

None

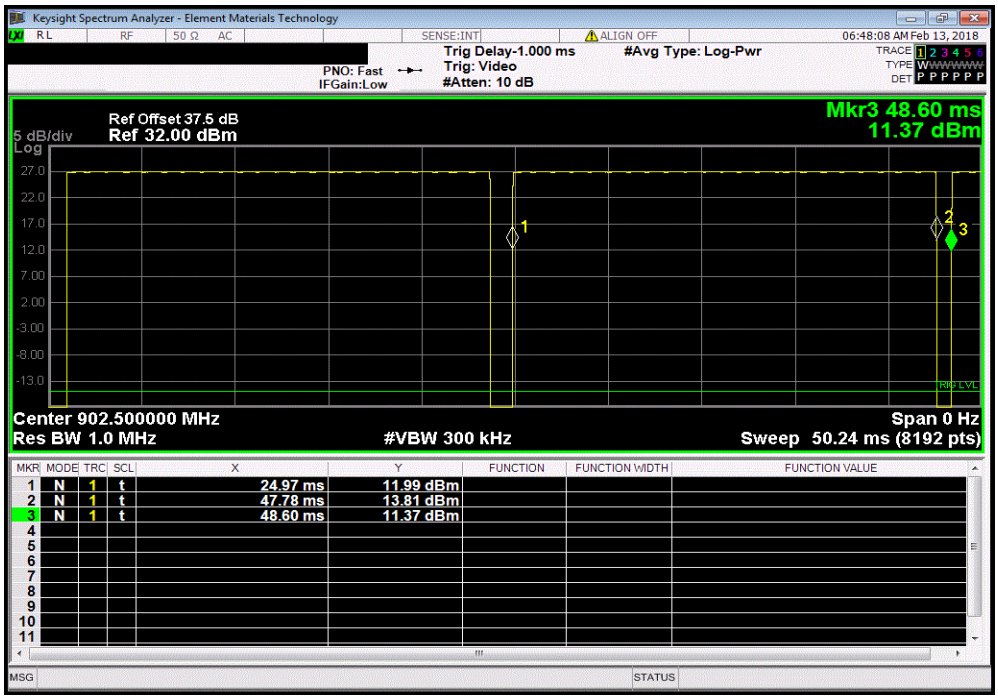
Configuration #	**Unknown**	*Signature*

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
FSK, Single Channel						
Low Channel, 902.5 MHz	22.819 ms	23.635 ms	1	96.5	N/A	N/A
Low Channel, 902.5 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel, 915 MHz	22.807 ms	24.579 ms	1	92.8	N/A	N/A
Mid Channel, 915 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel, 927.5 MHz	22.813 ms	23.622 ms	1	96.6	N/A	N/A
High Channel, 927.5 MHz	N/A	N/A	5	N/A	N/A	N/A

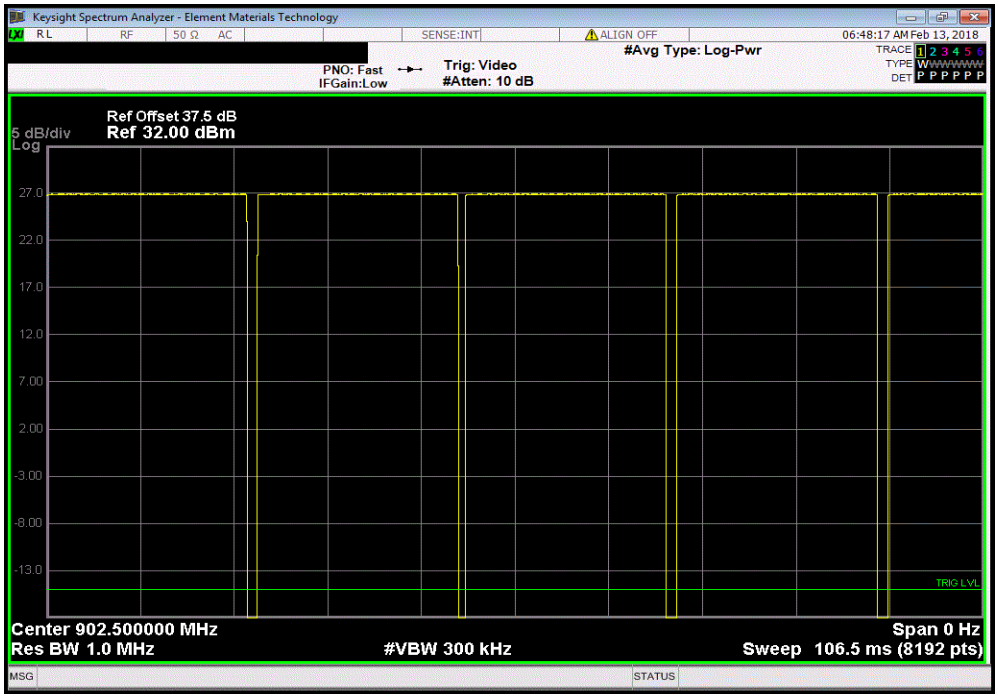
DUTY CYCLE

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, Low Channel, 902.5 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	22.819 ms	23.635 ms	1	96.5	N/A	N/A



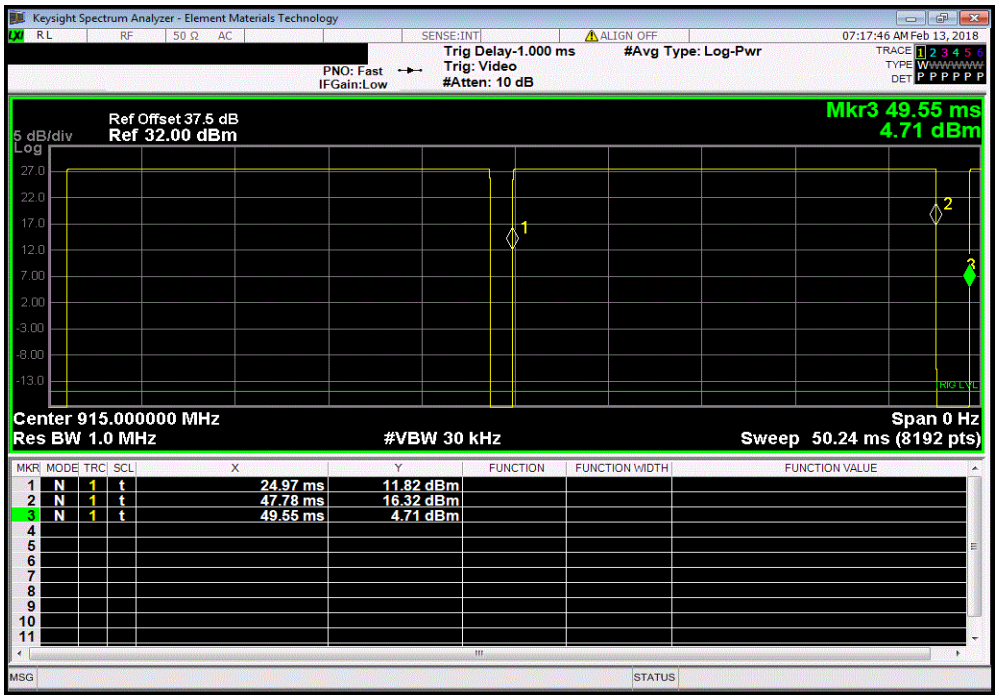
FSK, Single Channel, Low Channel, 902.5 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



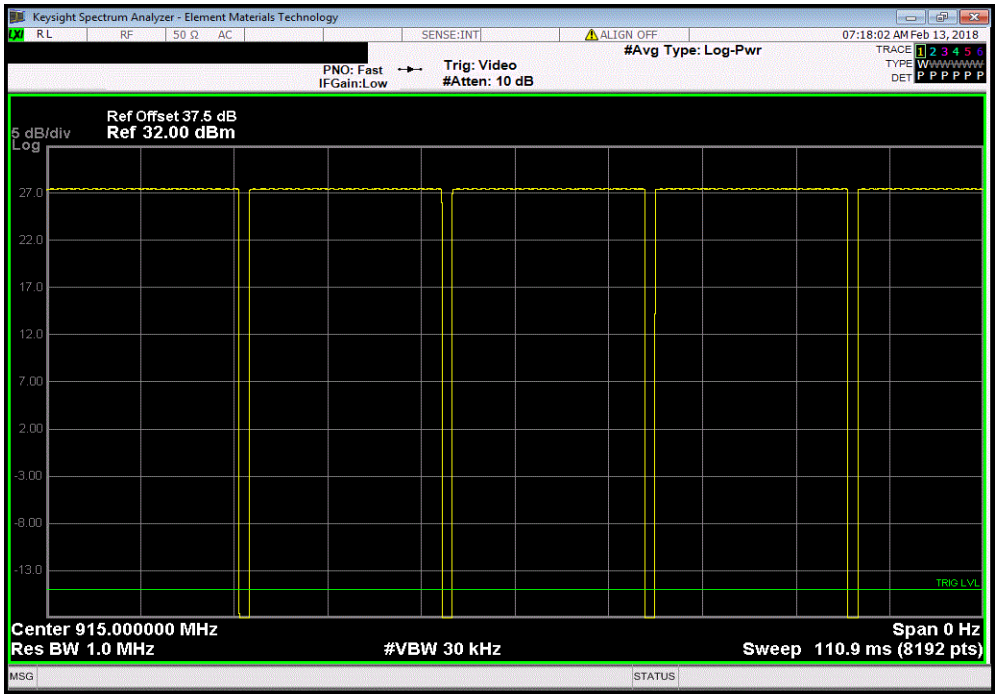
DUTY CYCLE

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, Mid Channel, 915 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	22.807 ms	24.579 ms	1	92.8	N/A	N/A



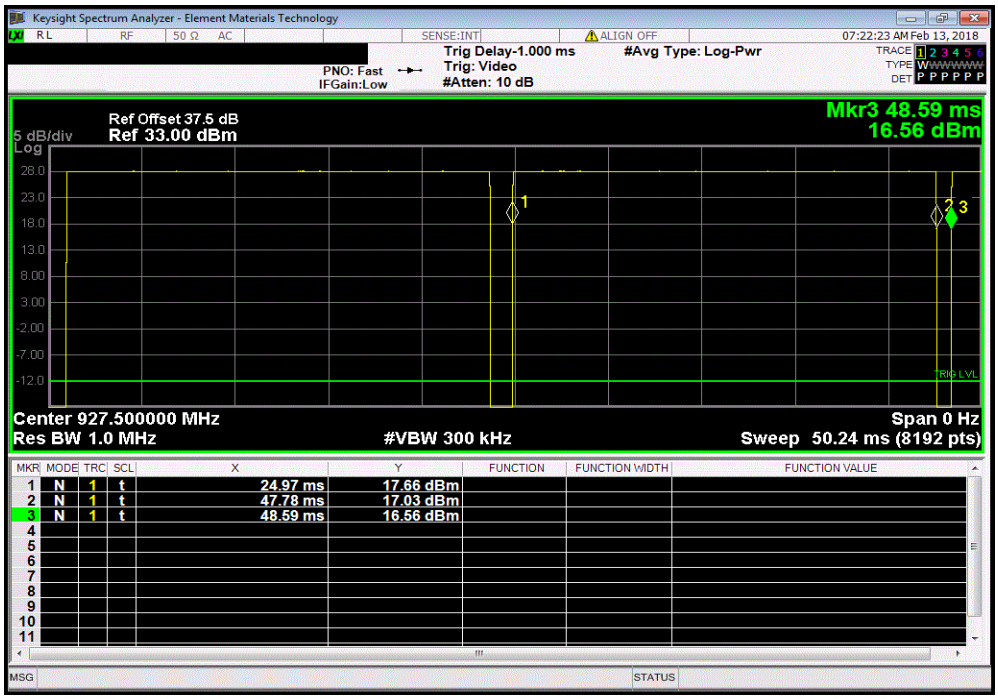
FSK, Single Channel, Mid Channel, 915 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



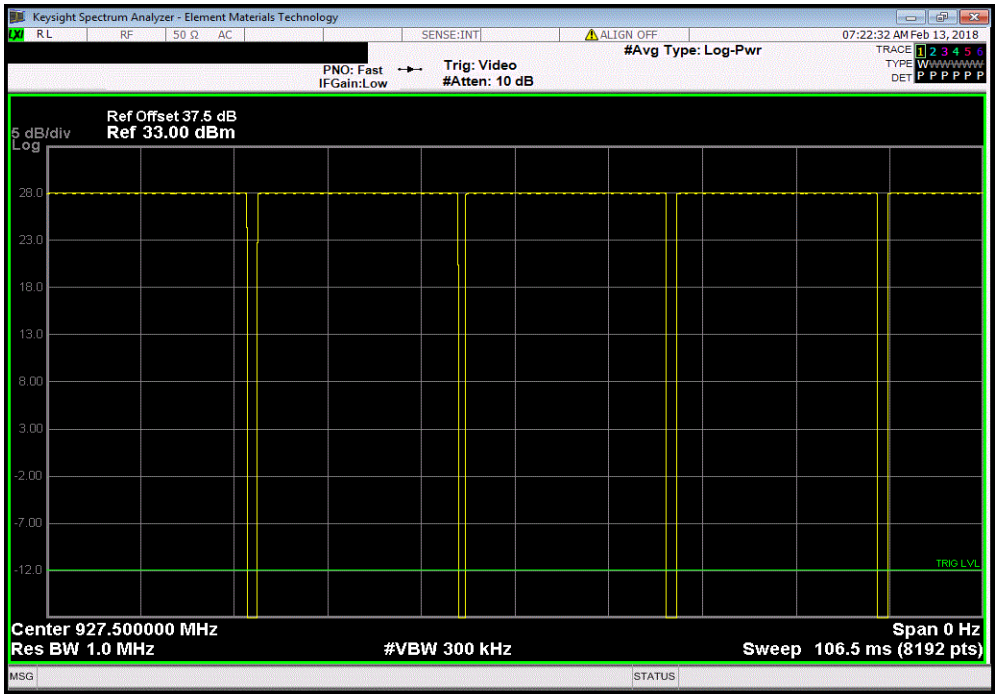
DUTY CYCLE

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, High Channel, 927.5 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	22.813 ms	23.622 ms	1	96.6	N/A	N/A



FSK, Single Channel, High Channel, 927.5 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



CARRIER FREQUENCY SEPARATION

XMit 2017.12.13

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TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The channel carrier frequencies in the 902 - 928 MHz band must be separated by 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

CARRIER FREQUENCY SEPARATION

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.6% RH
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

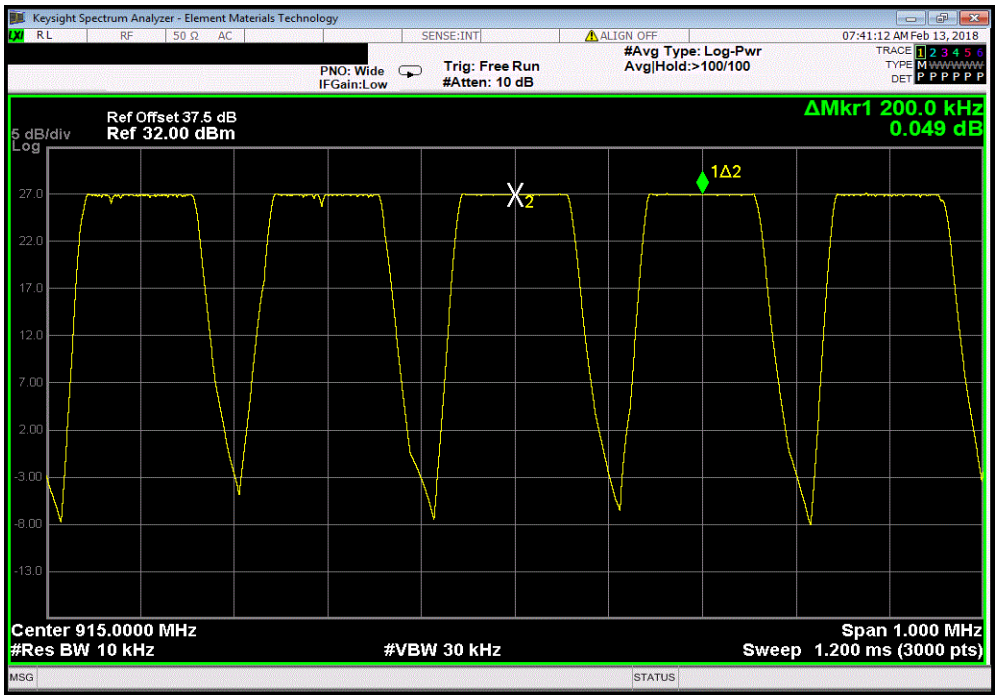
Configuration #	2	Signature

	Value	Limit (≥)	Results
FSK, Hopping			
Mid Channel, 915 MHz	200 kHz	140 kHz	Pass

CARRIER FREQUENCY SEPARATION

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz						
				Value	Limit (≥)	Results
				200 kHz	140 kHz	Pass



NUMBER OF HOPPING FREQUENCIES

XMit 2017.12.13

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TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The number of hopping frequencies was measured across the authorized band. The hopping function of the EUT was enabled.

NUMBER OF HOPPING FREQUENCIES

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22.1 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.7% RH
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

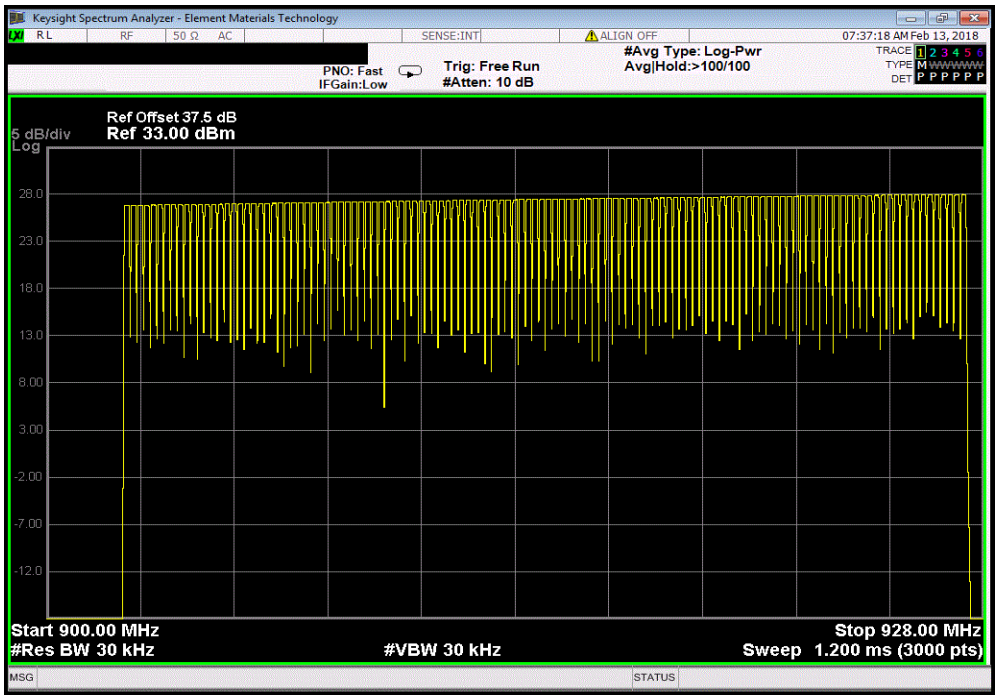
Configuration #	**2**	*Signature*

	Number of Channels	**Limit (≥)**	**Results**
FSK, Hopping			
Mid Channel, 915 MHz	126	50	Pass

NUMBER OF HOPPING FREQUENCIES

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz						
				Number of Channels	Limit (≥)	Results
				126	50	Pass



DWELL TIME

XMit 2017.12.13

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
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	30-May-17	30-May-18
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The average dwell time per hopping channel was measured at one hopping channel in the middle of the authorized band. The hopping function of the EUT was enabled.

The average Dwell Time of any frequency shall not be greater than 0.4 seconds within a 20 second period.

DWELL TIME

XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22.2 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.8% RH
Project:	None			**Barometric Pres.:**	1023 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

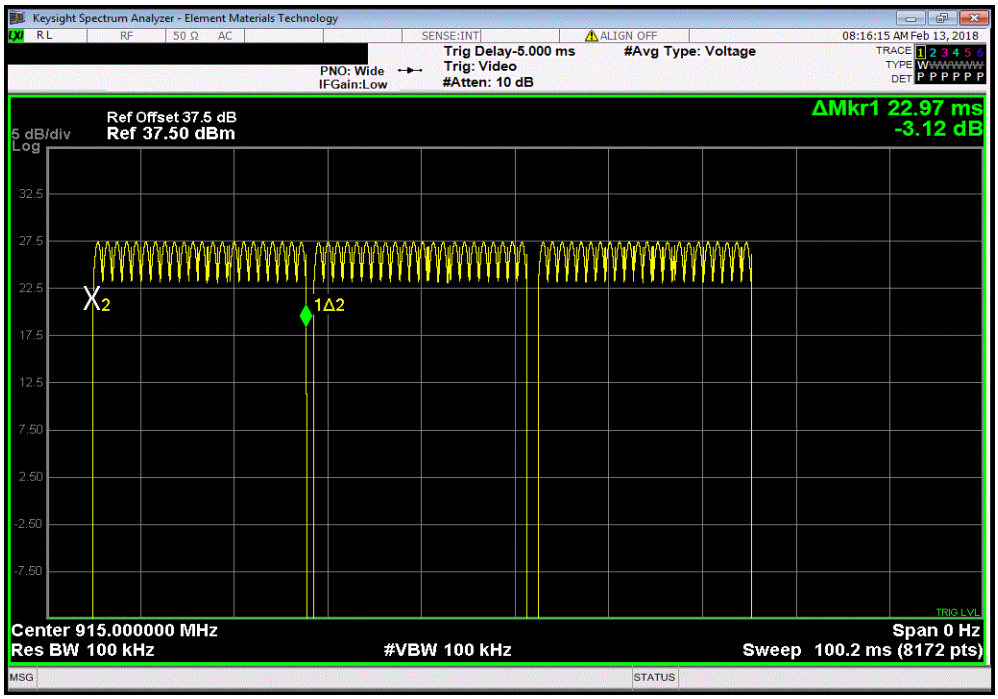
Configuration #	2	*Signature*

		Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
FSK, Hopping								
	Mid Channel, 915 MHz							
	Pulse 1	22.97	-	-	-	-	-	-
	Pulse 2	381.2	-	-	-	-	-	-
	20 sec Duration 1	-	6	0	137.82	-	-	-
	20 sec Duration 2	-	9	0	206.73	-	-	-
	20 sec Duration 3	-	6	0	137.82	-	-	-
	20 sec Duration 4	-	6	1	519.02	-	-	-
	20 sec Duration 5	-	6	0	137.82	-	-	-
	20 sec Duration 6	-	3	1	450.11	-	-	-
	20 sec Duration 7	-	6	1	519.02	-	-	-
	20 sec Duration 8	-	6	1	519.02	-	-	-
	20 sec Duration 9	-	6	0	137.82	-	-	-
	20 sec Duration 10	-	0	2	762.4	-	-	-
	20 sec Duration 11	-	6	0	137.82	-	-	-
	20 sec Duration 12	-	3	0	68.91	-	-	-
	20 sec Duration 13	-	0	2	762.4	-	-	-
	20 sec Duration 14	-	6	0	137.82	-	-	-
	20 sec Duration 15	-	3	1	450.11	-	-	-
	20 sec Duration 16	-	3	0	68.91	-	-	-
	20 sec Duration 17	-	6	0	137.82	-	-	-
	20 sec Duration 18	-	0	1	381.2	-	-	-
	20 sec Duration 19	-	6	1	519.02	-	-	-
	20 sec Duration 20	-	12	0	275.64	-	-	-
	Calculation	-	-	-	-	323.4	≤ 400	Pass

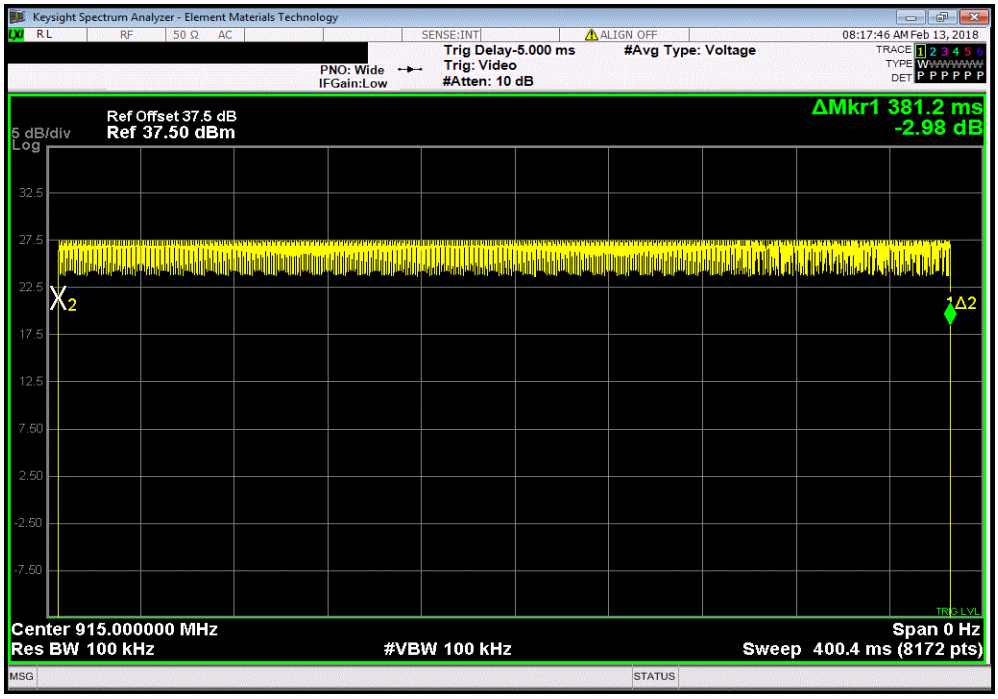
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, Pulse 1						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
22.97	-	-	-	-	-	-



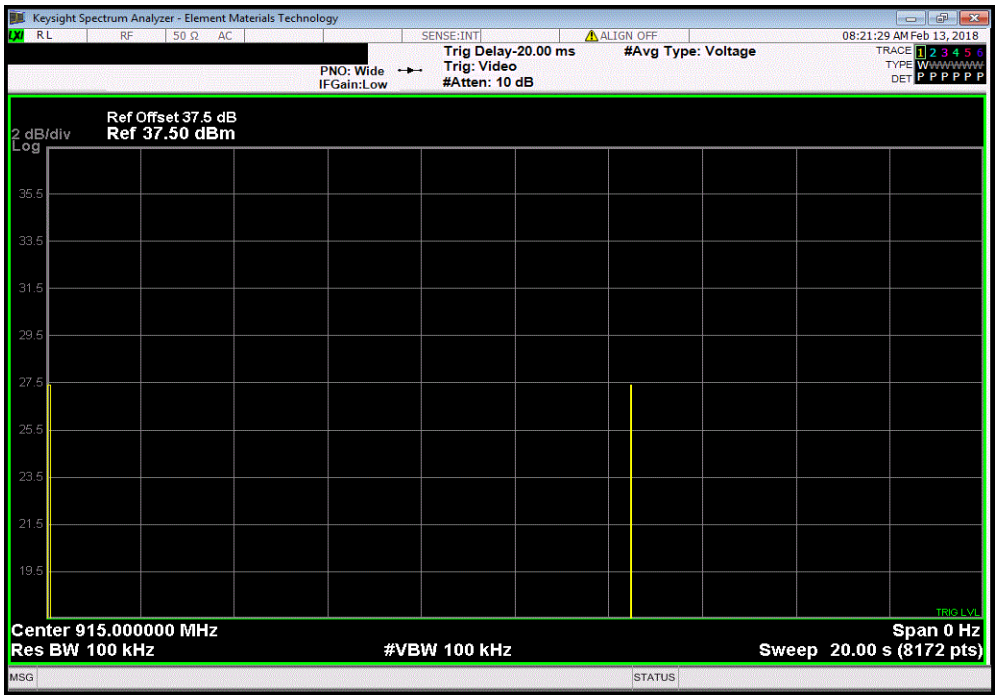
FSK, Hopping, Mid Channel, 915 MHz, Pulse 2						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
381.2	-	-	-	-	-	-



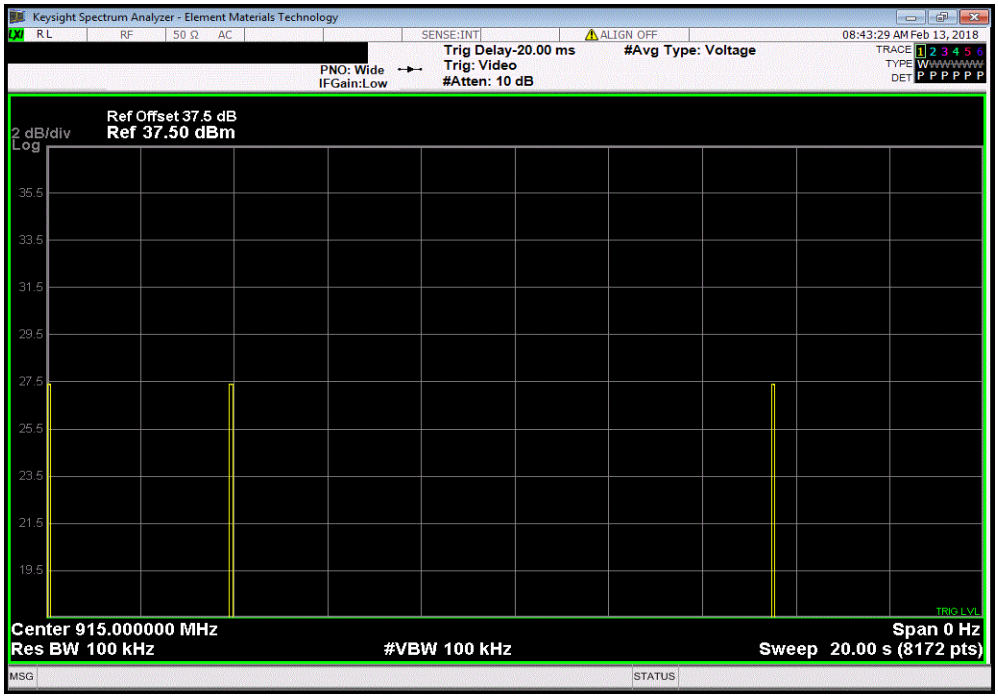
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 1						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	0	137.82	-	-	-



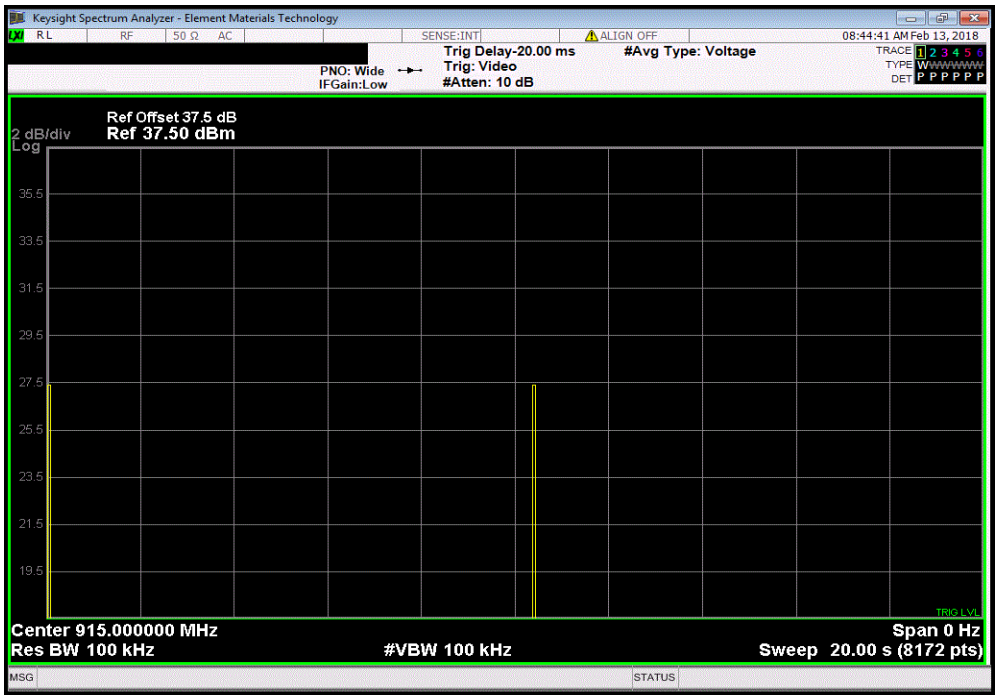
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 2						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	9	0	206.73	-	-	-



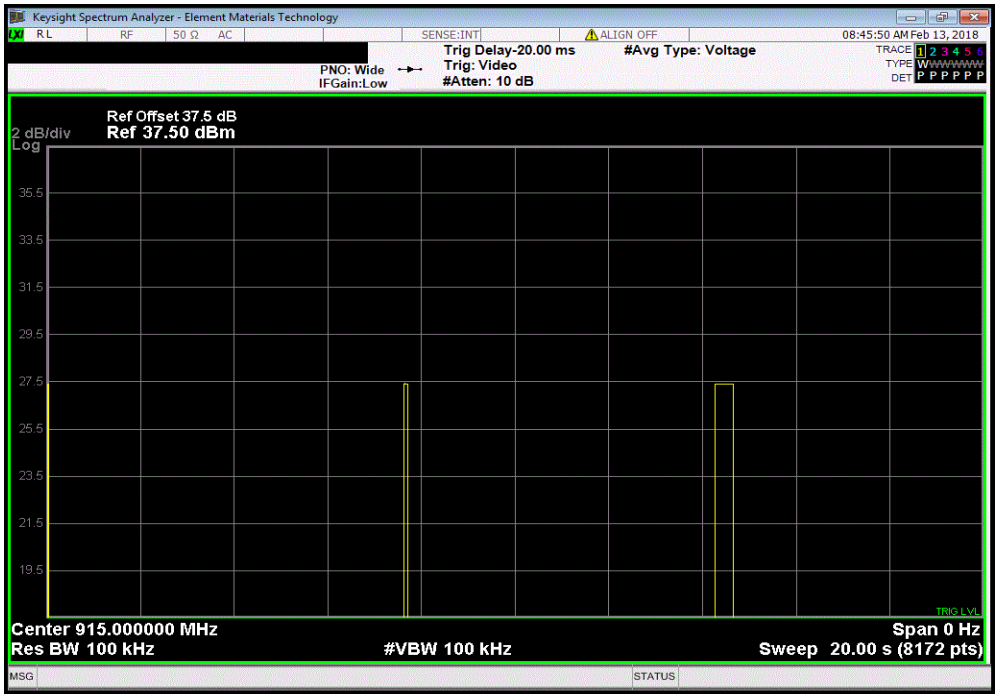
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 3						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	0	137.82	-	-	-



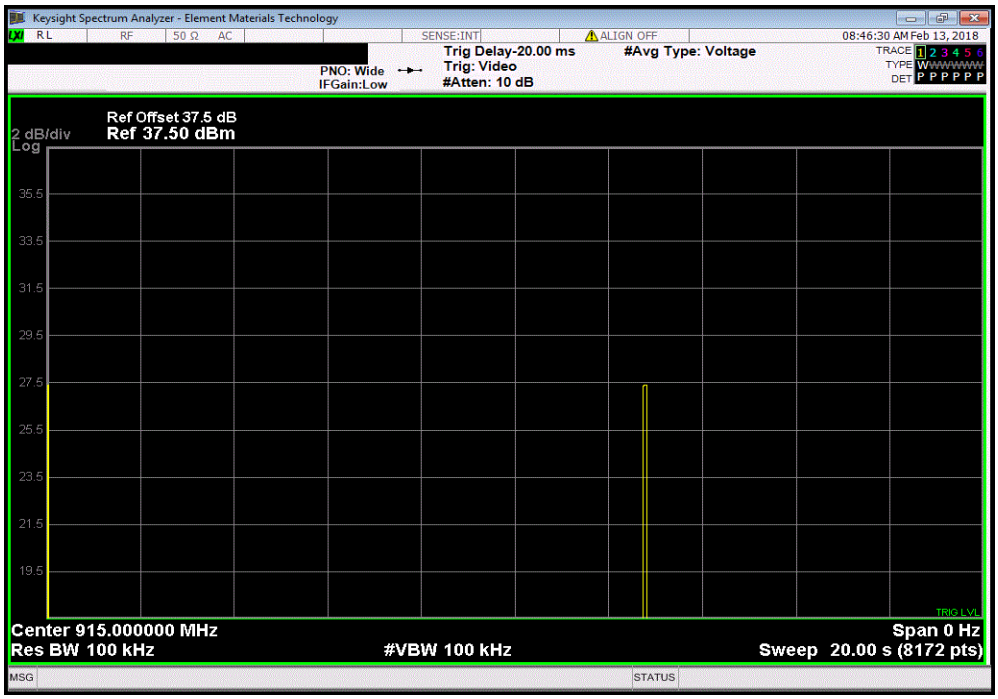
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 4						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	1	519.02	-	-	-



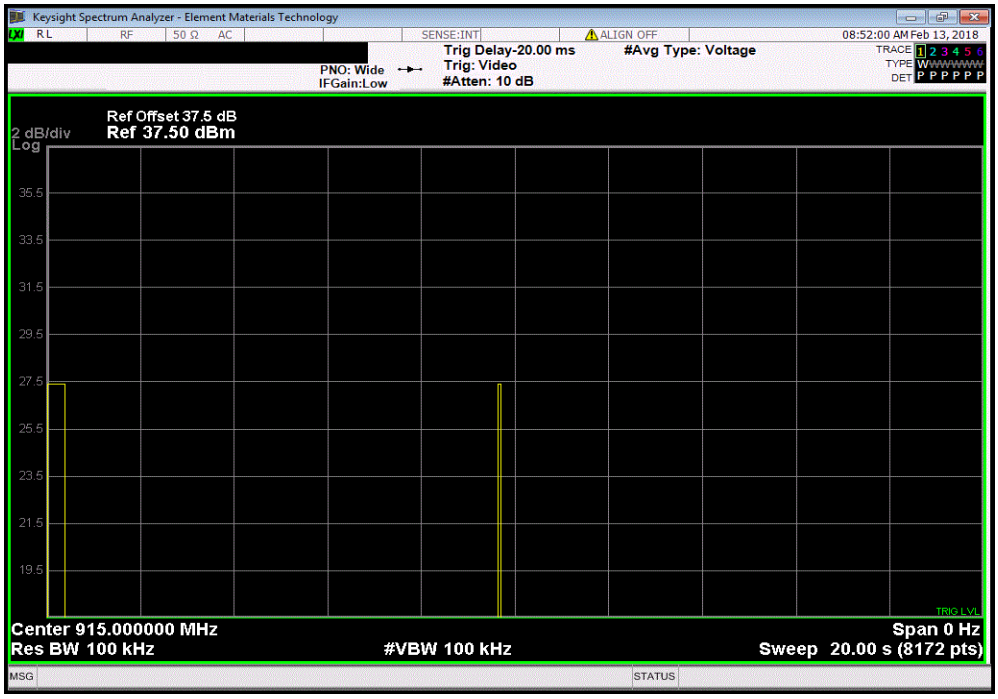
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 5						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	0	137.82	-	-	-



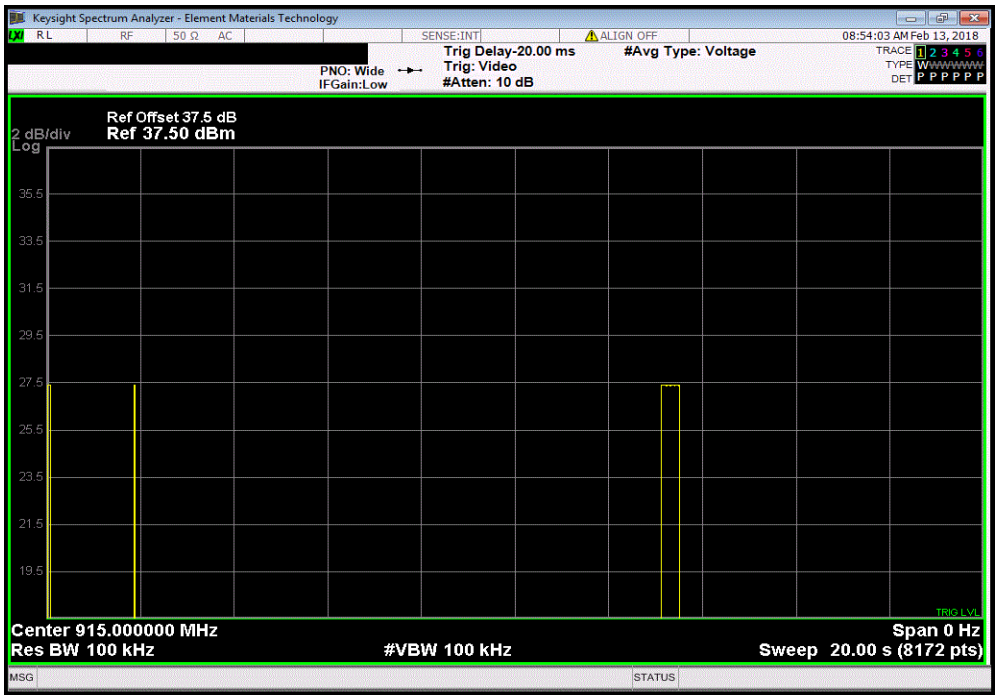
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 6						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	3	1	450.11	-	-	-



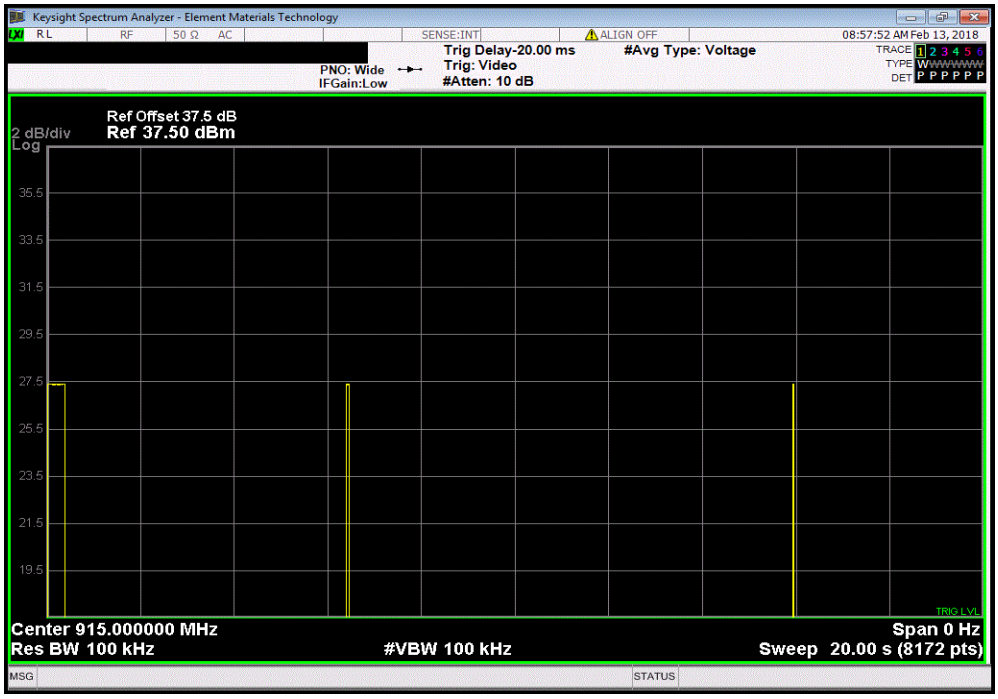
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 7						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	1	519.02	-	-	-



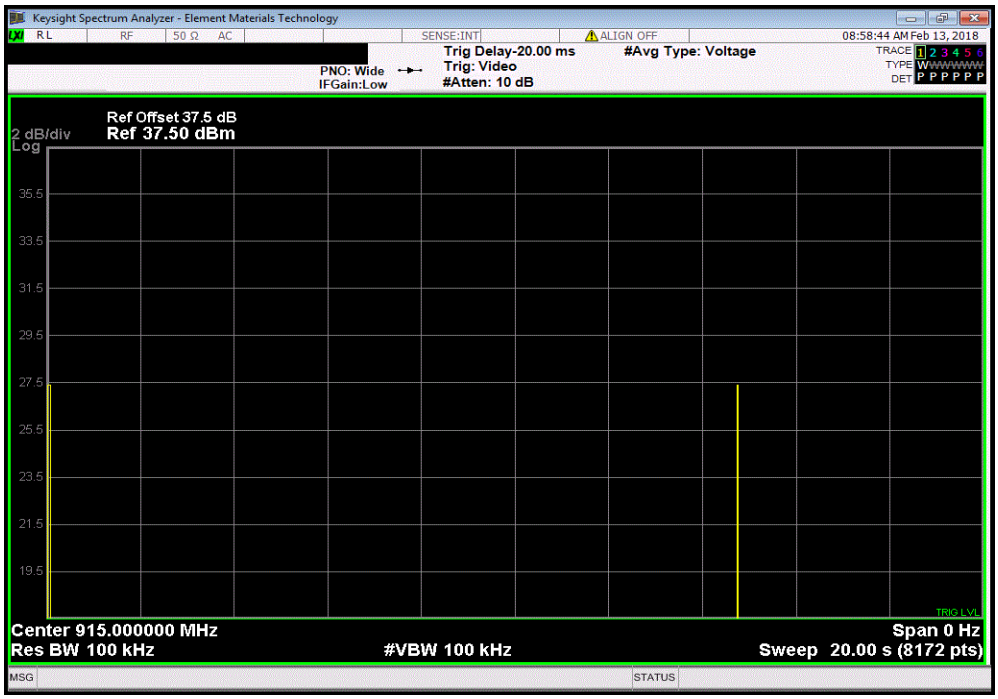
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 8						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	1	519.02	-	-	-



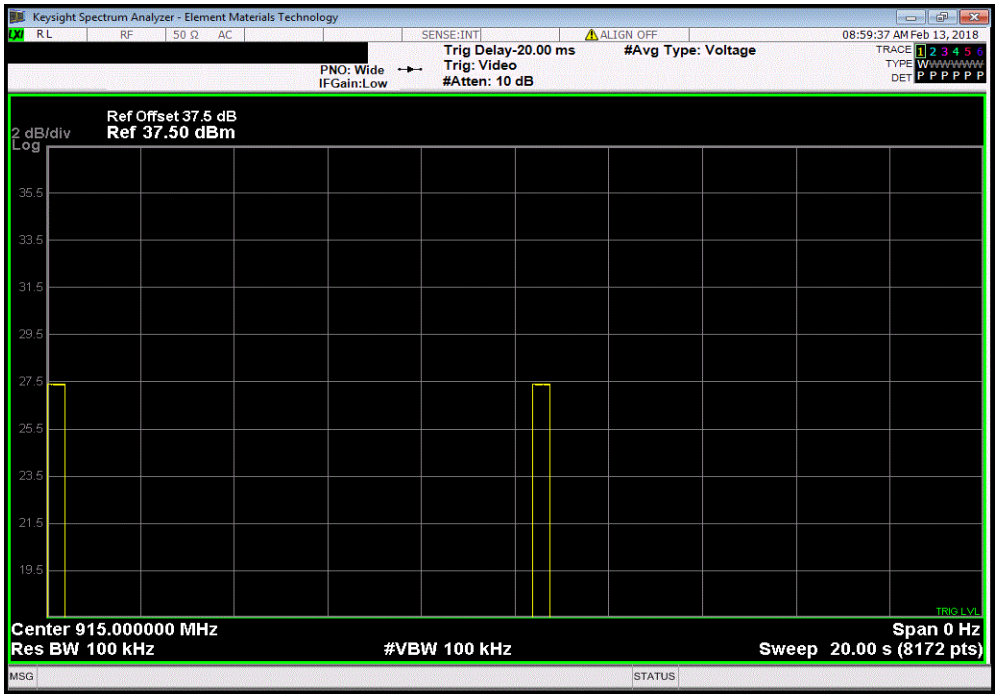
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 9						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	0	137.82	-	-	-



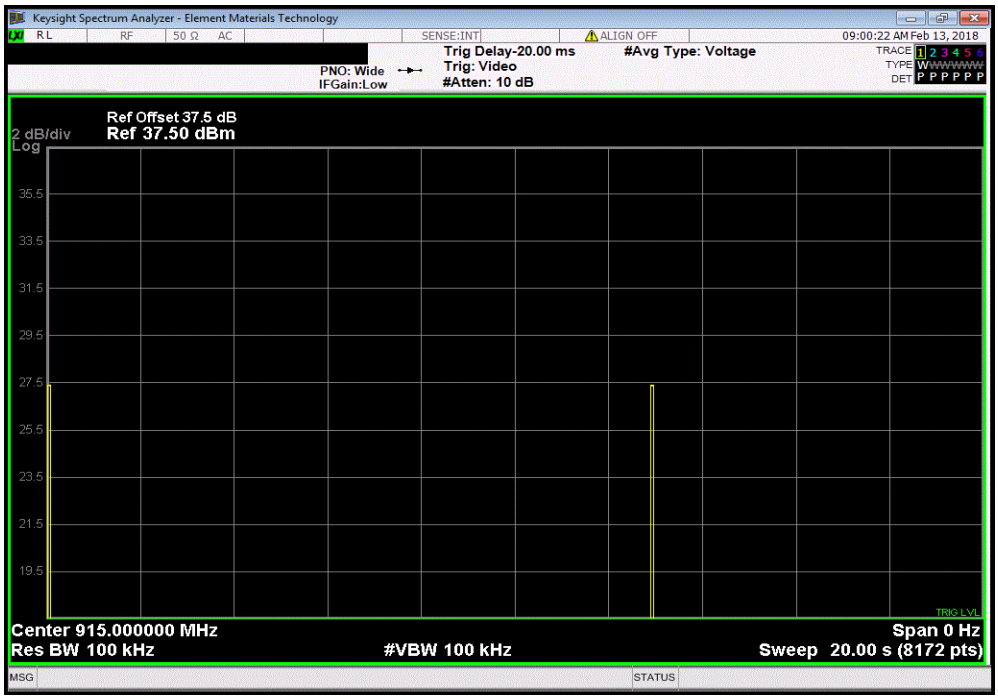
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 10						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	0	2	762.4	-	-	-



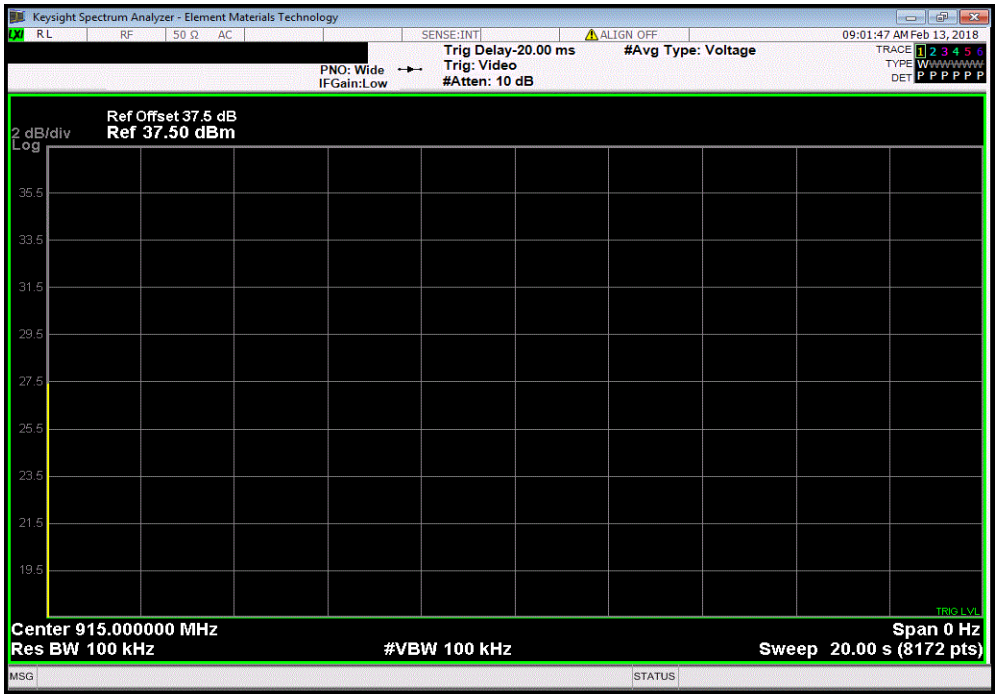
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 11						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	0	137.82	-	-	-



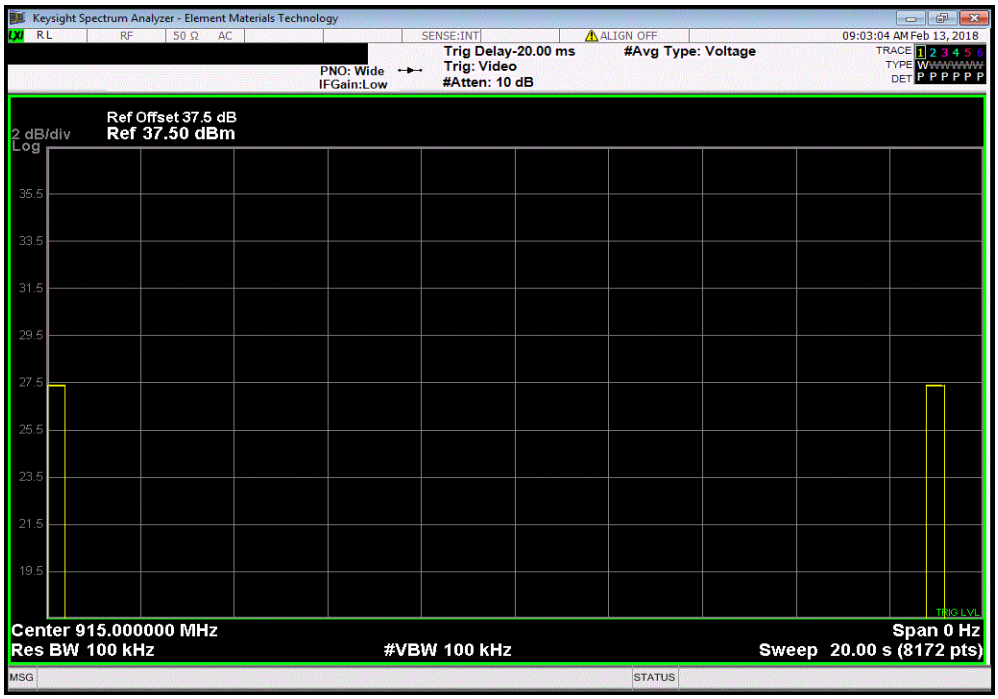
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 12						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	3	0	68.91	-	-	-



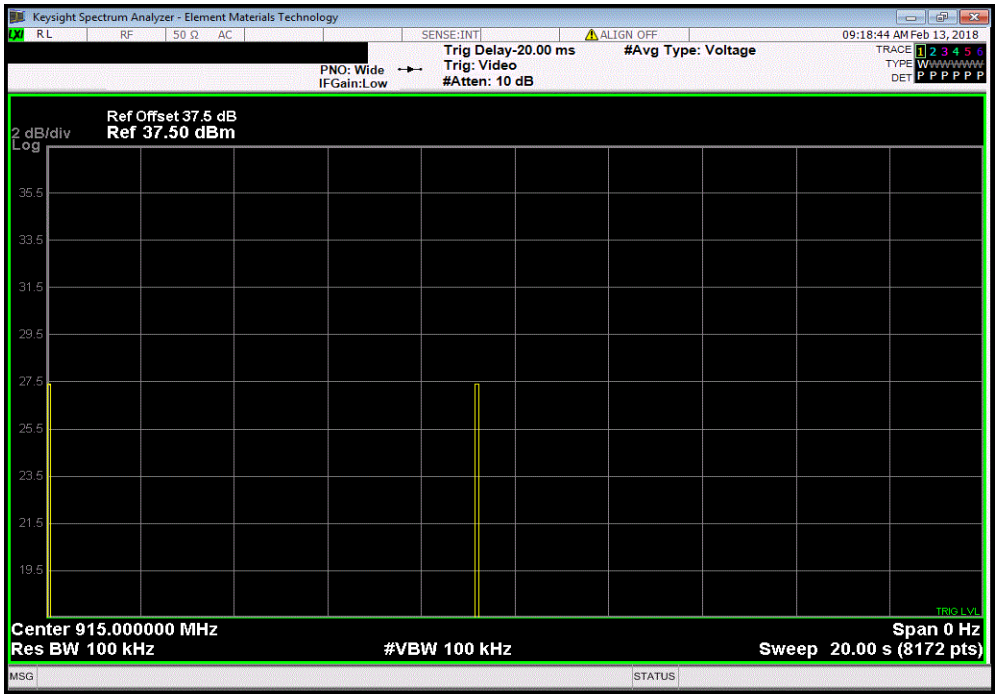
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 13						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	0	2	762.4	-	-	-



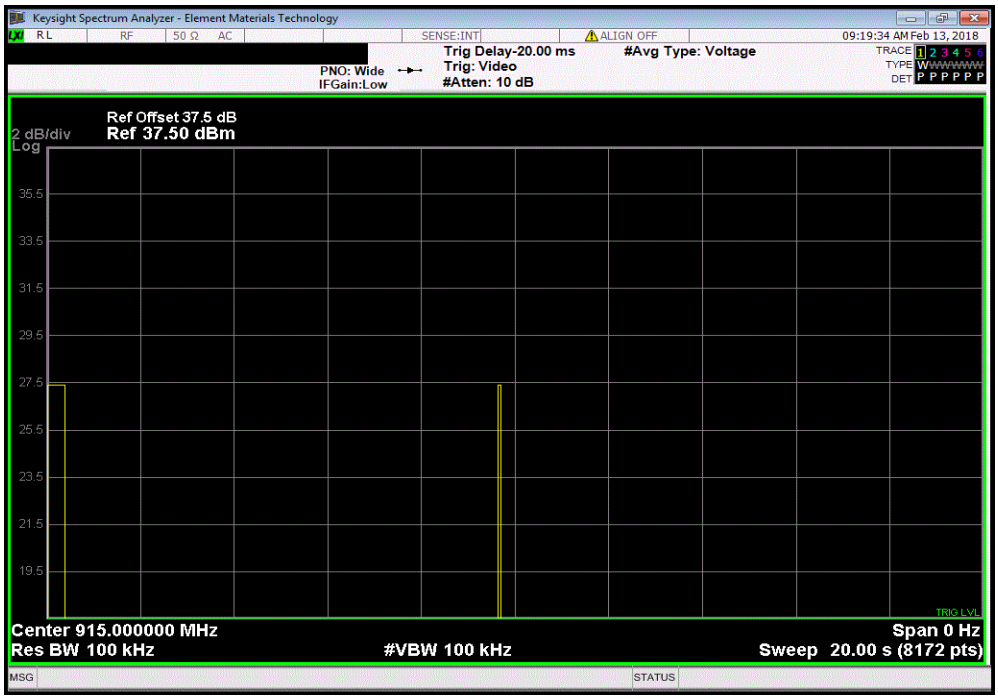
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 14						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	0	137.82	-	-	-



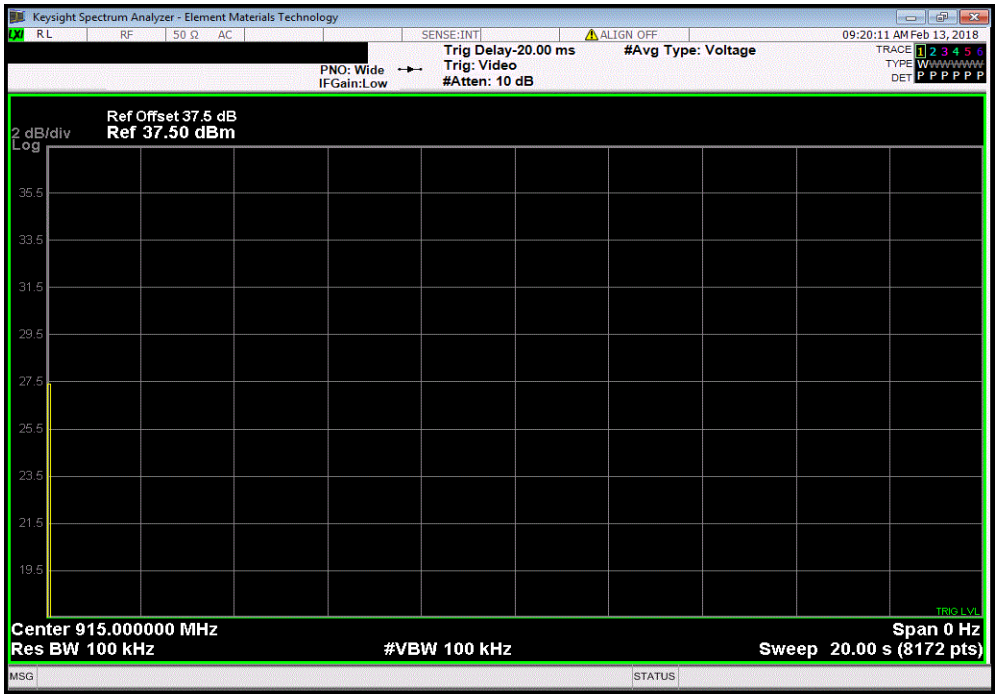
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 15						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	3	1	450.11	-	-	-



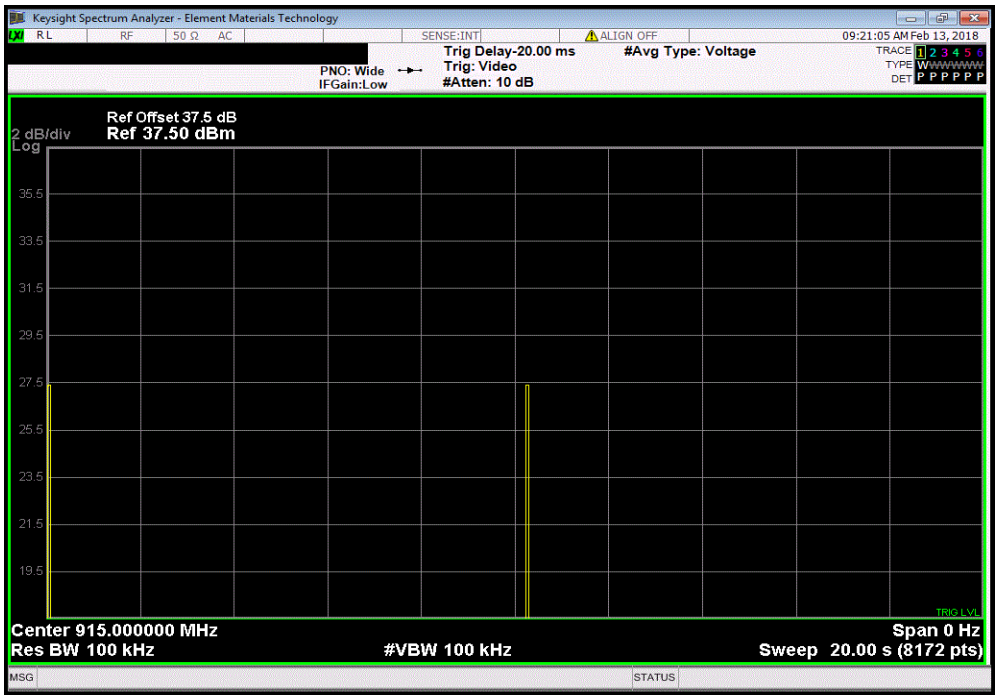
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 16						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	3	0	68.91	-	-	-



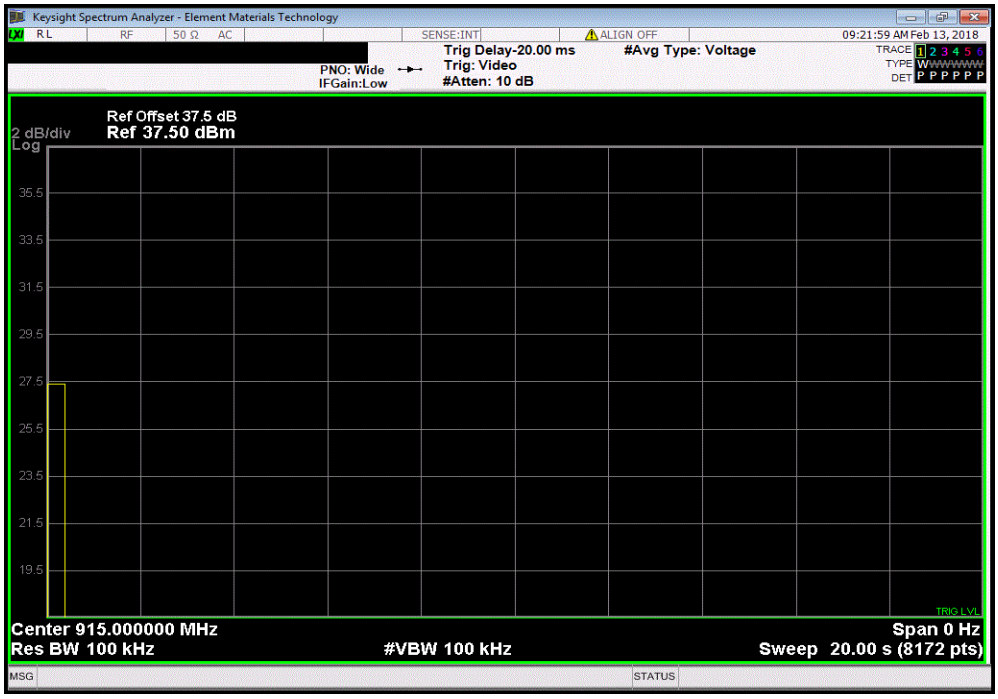
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 17						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	0	137.82	-	-	-



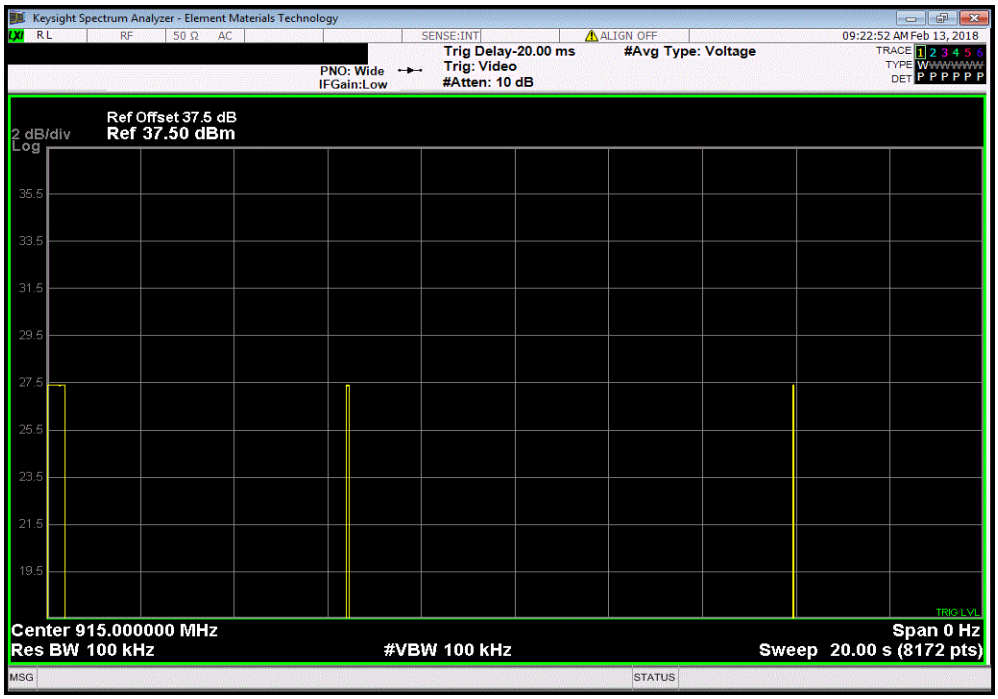
FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 18						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	0	1	381.2	-	-	-



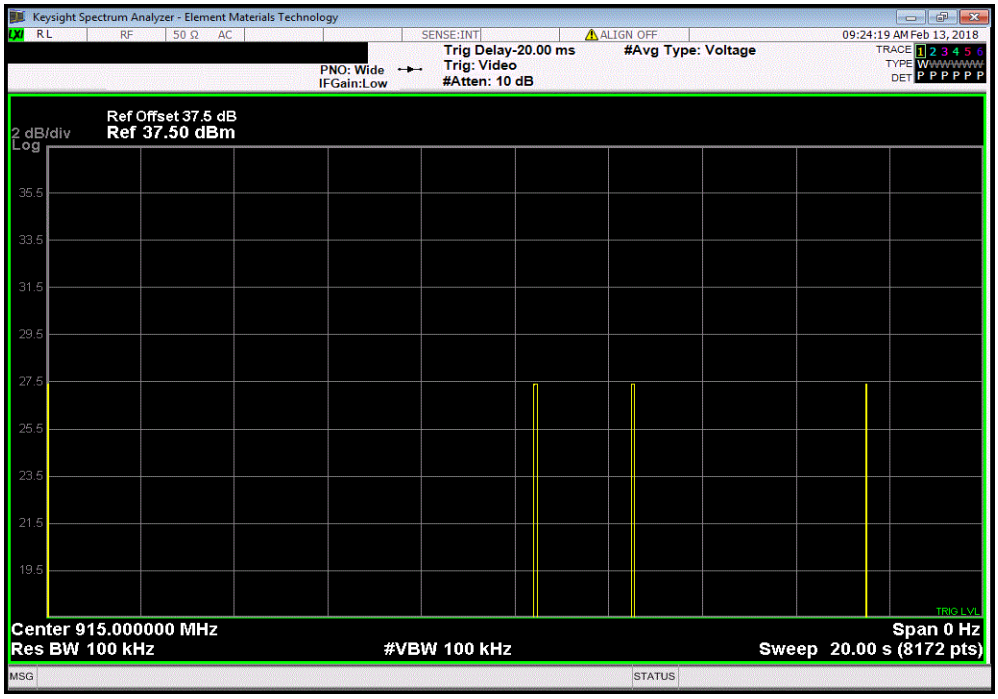
DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 19						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	6	1	519.02	-	-	-



FSK, Hopping, Mid Channel, 915 MHz, 20 sec Duration 20						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	12	0	275.64	-	-	-



DWELL TIME

XMit 2017.12.13

FSK, Hopping, Mid Channel, 915 MHz, Calculation						
Duration (ms)	Count Pulse 1	Count Pulse 2	Dwell Time (ms) 20 sec period	Avg Dwell Time (ms)	Limit (ms)	Result
-	-	-	-	323.4	≤ 400	Pass

OUTPUT POWER

XMit 2017.12.13

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The peak output power was measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting in a no hop mode at the data rate(s) listed in the datasheet.

The method found in ANSI C63.10:2013 Section 7.8.5 was used for a FHSS radio.

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

OUTPUT POWER

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22.2 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.8% RH
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

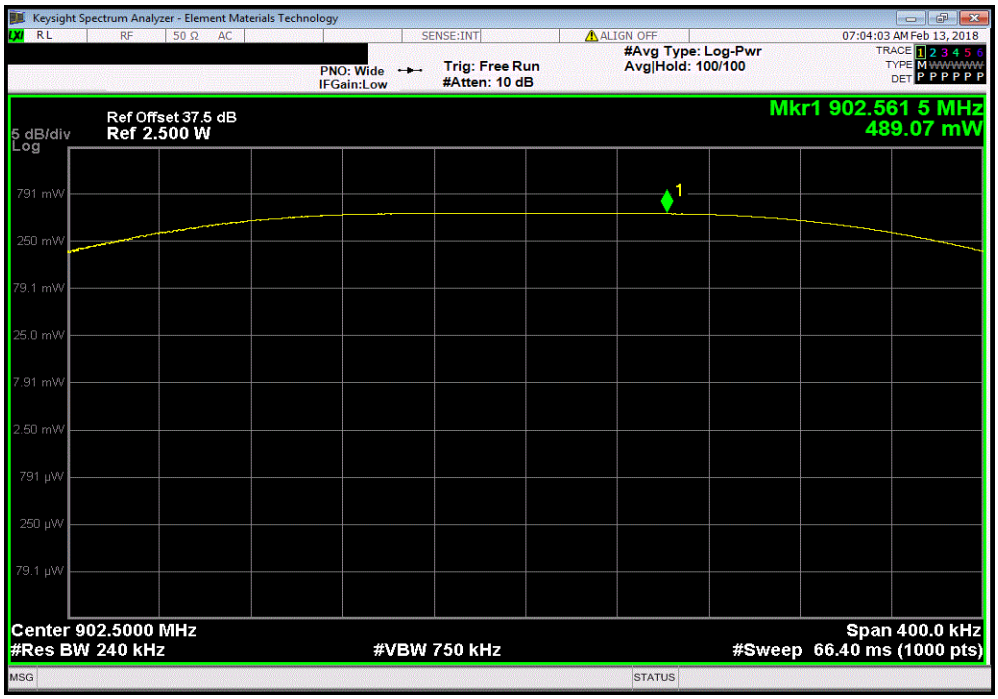
Configuration #	2	Signature

	Value	Limit (<)	Result
FSK, Single Channel			
Low Channel, 902.5 MHz	489.07 mW	1 W	Pass
Mid Channel, 915 MHz	555.87 mW	1 W	Pass
High Channel, 927.5 MHz	633.56 mW	1 W	Pass

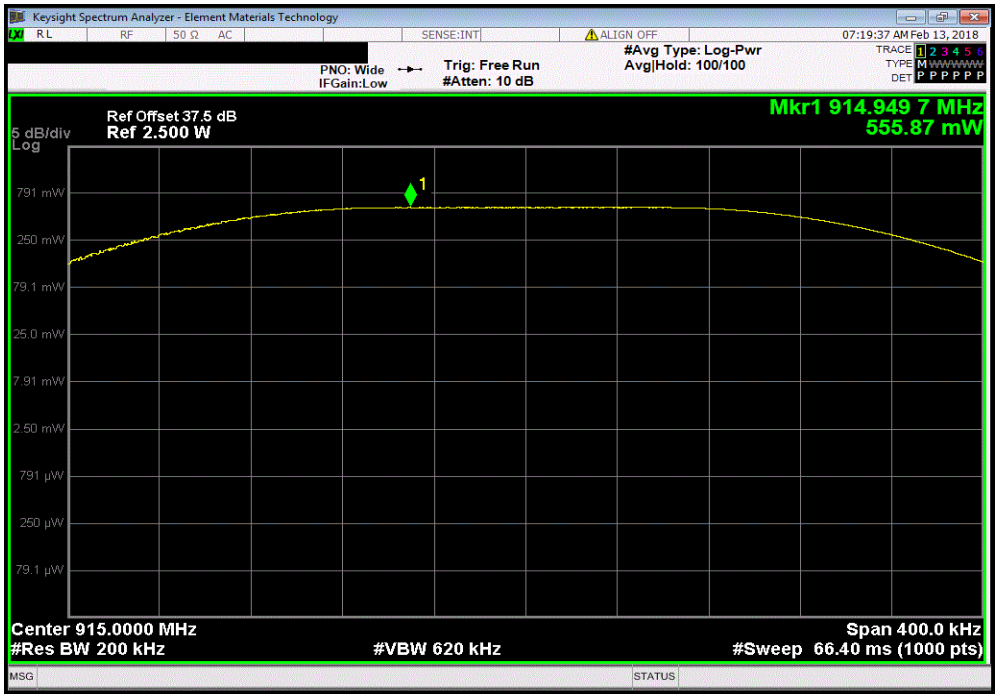
OUTPUT POWER

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, Low Channel, 902.5 MHz						
				Value	Limit (<)	Result
				489.07 mW	1 W	Pass



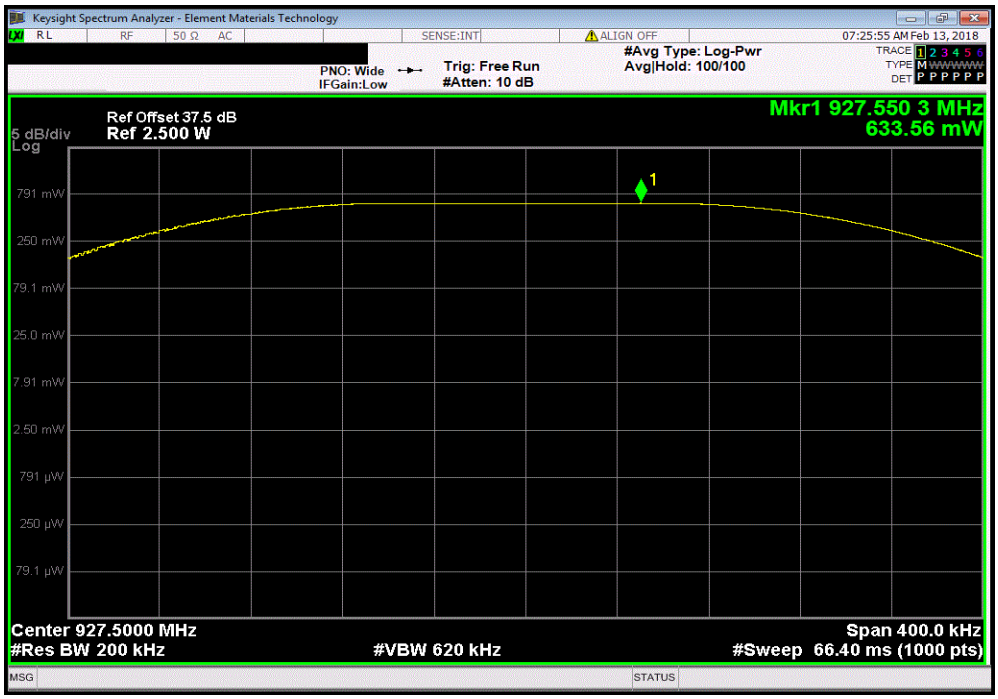
FSK, Single Channel, Mid Channel, 915 MHz						
				Value	Limit (<)	Result
				555.87 mW	1 W	Pass



OUTPUT POWER

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, High Channel, 927.5 MHz						
				Value	Limit (<)	Result
				633.56 mW	1 W	Pass



BAND EDGE COMPLIANCE

XMit 2017.12.13

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
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	30-May-17	30-May-18
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

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 band were measured with the EUT set to low and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet in a no hop mode. The channels closest to the band edges were selected.

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

BAND EDGE COMPLIANCE

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.6% RH
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

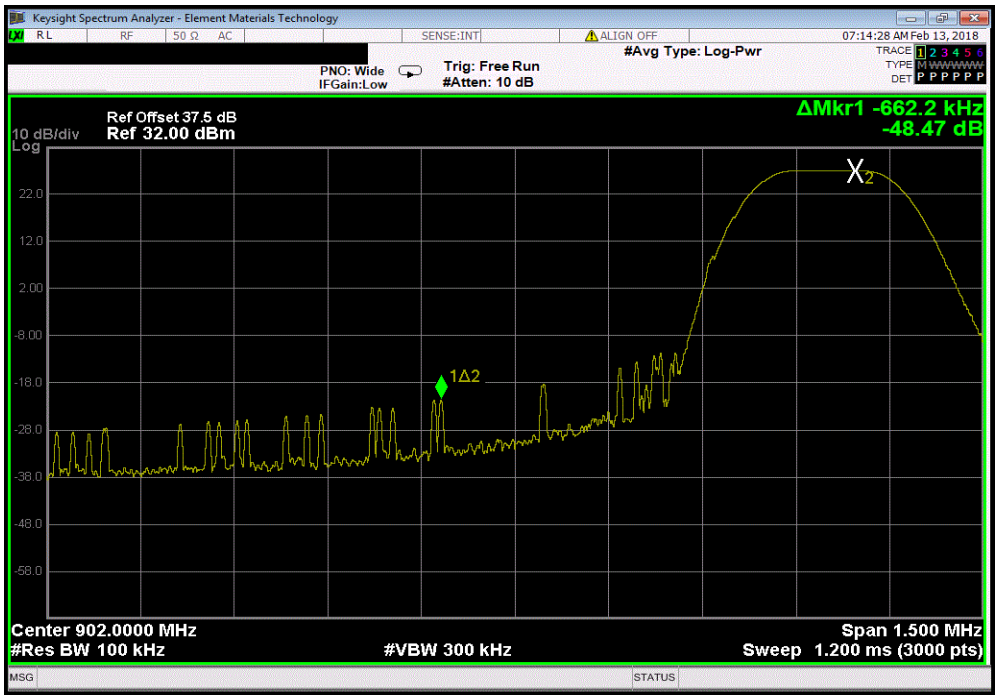
Configuration #	2	*Signature*

	Value (dBc)	**Limit ≤ (dBc)**	**Result**
FSK, Single Channel			
Low Channel, 902.5 MHz	-48.47	-20	Pass
High Channel, 927.5 MHz	-49.81	-20	Pass

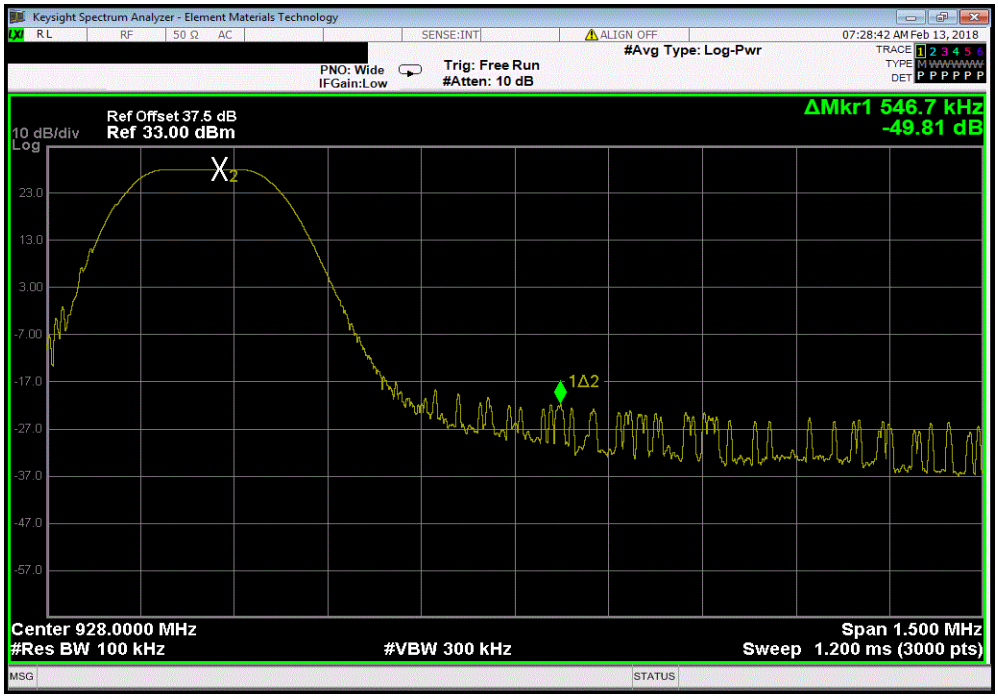
BAND EDGE COMPLIANCE

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, Low Channel, 902.5 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-48.47	-20	Pass



FSK, Single Channel, High Channel, 927.5 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-49.81	-20	Pass



BAND EDGE COMPLIANCE - HOPPING MODE

XMit 2017.12.13

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
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	30-May-17	30-May-18
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

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 band were measured with the EUT set to its normal pseudo-random hopping sequence. 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 - HOPPING MODE

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	12-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	21.8 °C
Attendees:	Ed Vaynberg			**Humidity:**	29.2% RH
Project:	None			**Barometric Pres.:**	1028 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

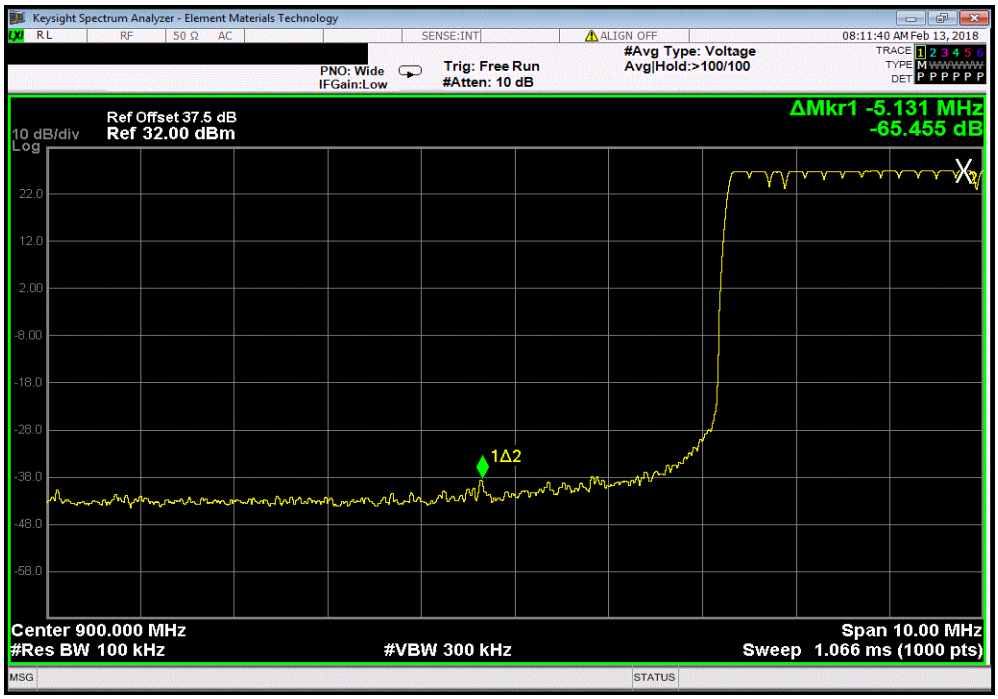
Configuration #	2	*Signature*

	Value (dBc)	**Limit ≤ (dBc)**	**Result**
FSK, Hopping			
Low Channel, 902.5 MHz	-65.46	-20	Pass
High Channel, 927.5 MHz	-54.72	-20	Pass

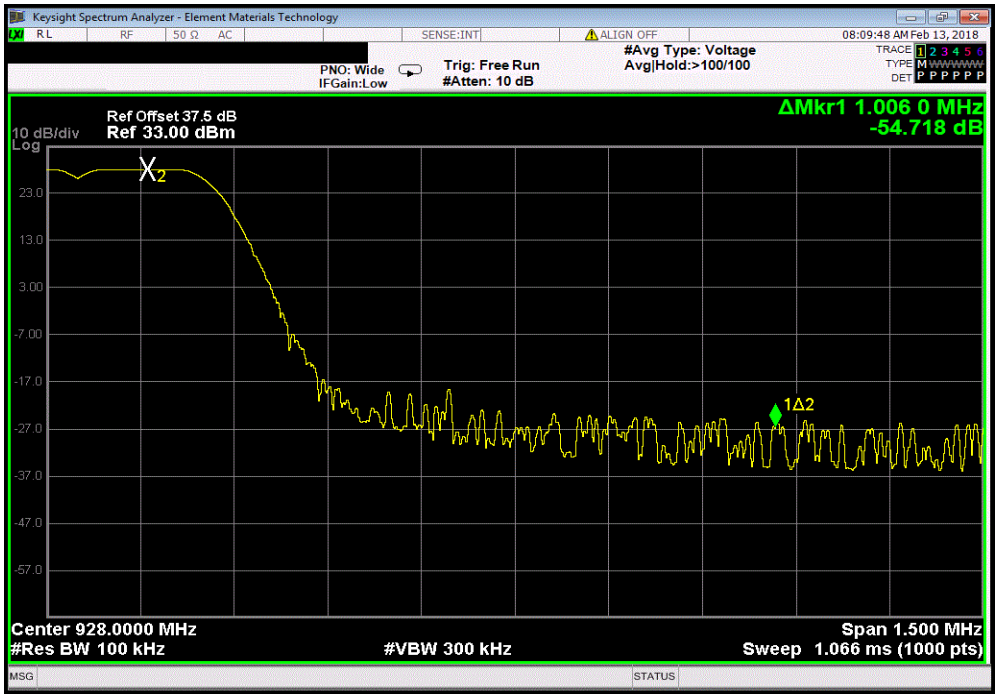
BAND EDGE COMPLIANCE - HOPPING MODE

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Hopping, Low Channel, 902.5 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-65.46	-20	Pass



FSK, Hopping, High Channel, 927.5 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-54.72	-20	Pass



OCCUPIED BANDWIDTH

XMit 2017.12.13

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The 20 dB occupied bandwidth was measured with the EUT set to low, medium and high transmit frequencies in the band. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop mode.

OCCUPIED BANDWIDTH

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22.1 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.7% RH
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

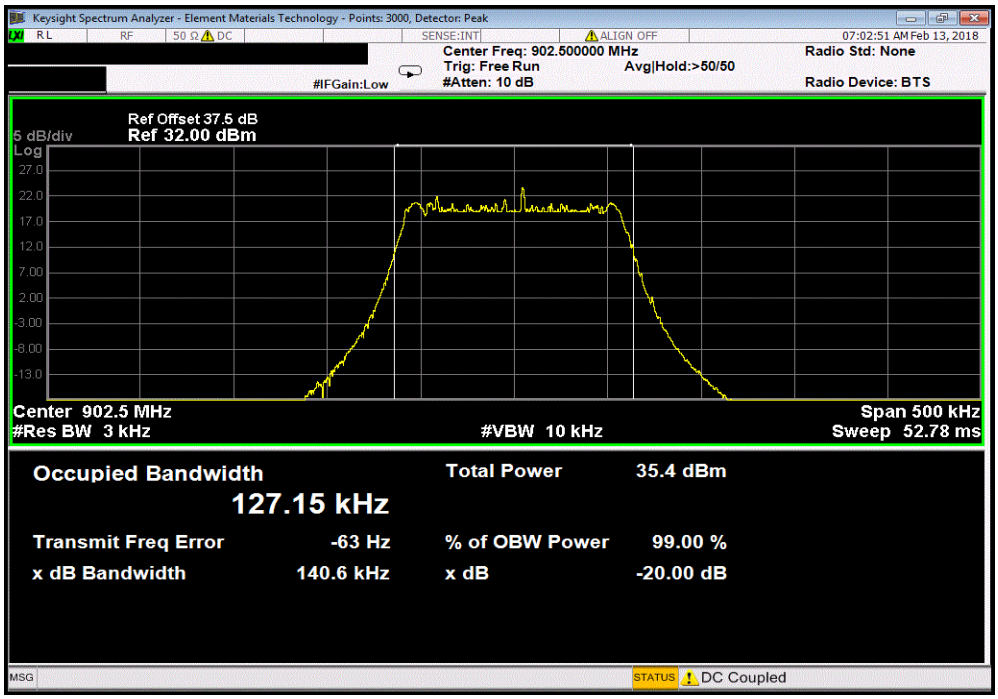
Configuration #	2	Signature

	Value	Limit (≤)	Result
FSK, Single Channel			
Low Channel, 902.5 MHz	140.605 kHz	500 kHz	Pass
Mid Channel, 915 MHz	138.338 kHz	500 kHz	Pass
High Channel, 927.5 MHz	139.968 kHz	500 kHz	Pass

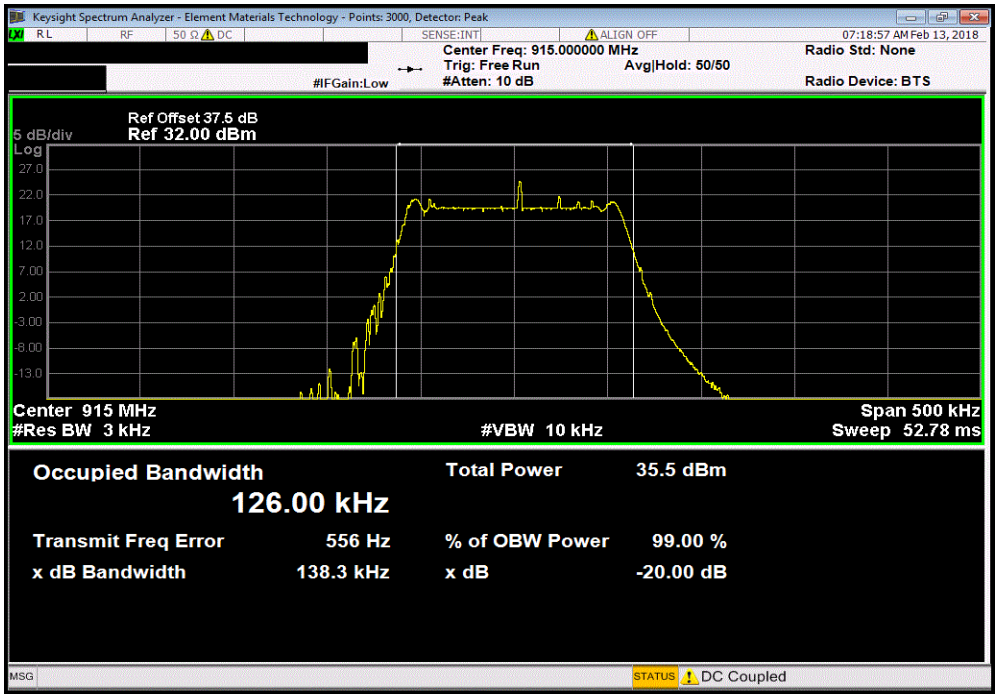
OCCUPIED BANDWIDTH

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, Low Channel, 902.5 MHz						
				Value	Limit (≤)	Result
				140.605 kHz	500 kHz	Pass



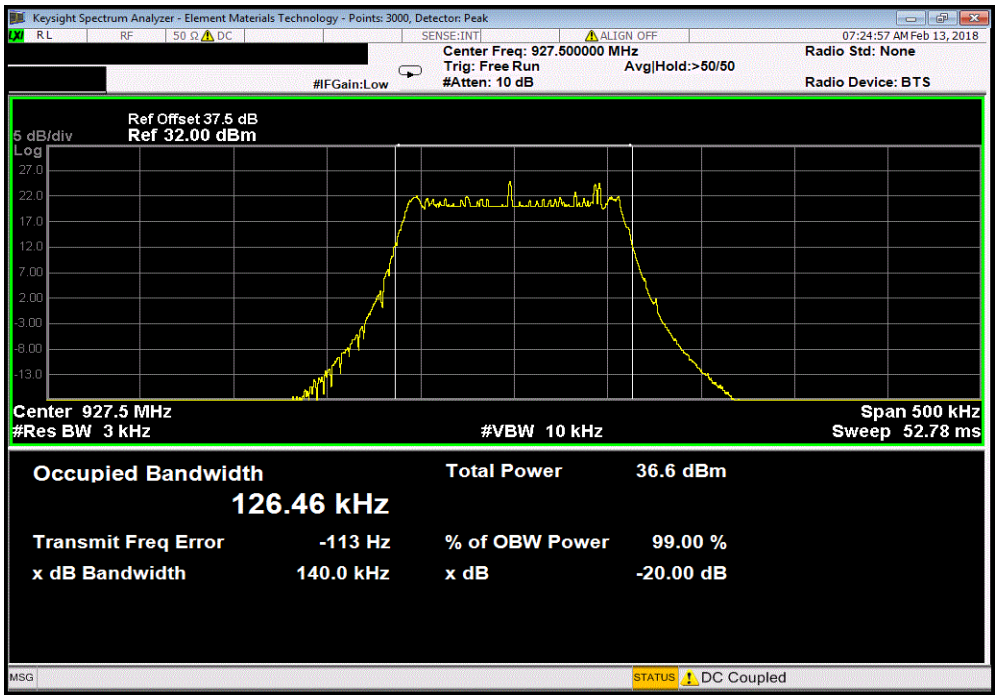
FSK, Single Channel, Mid Channel, 915 MHz						
				Value	Limit (≤)	Result
				138.338 kHz	500 kHz	Pass



OCCUPIED BANDWIDTH

TbtTx 2017.12.14 XMit 2017.12.13

FSK, Single Channel, High Channel, 927.5 MHz						
				Value	Limit (≤)	Result
				139.968 kHz	500 kHz	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2017.12.13

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
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	30-May-17	30-May-18
Generator - Signal	Agilent	N5183A	TID	25-Apr-17	25-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Attenuator	Fairview Microwave	SA26B-10	TWH	15-Apr-17	15-Apr-18
Block - DC	Fairview Microwave	SD3379	AMW	5-Jun-17	5-Jun-18
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	14-Aug-17	14-Aug-18

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 in a no-hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

SPURIOUS CONDUCTED EMISSIONS

TbtTx 2017.12.14 XMit 2017.12.13

EUT:	7 inch			**Work Order:**	POLR0008
Serial Number:	37			**Date:**	13-Feb-18
Customer:	Polaris Industries, Inc.			**Temperature:**	22.2 °C
Attendees:	Ed Vaynberg			**Humidity:**	27.8% RH
Project:	None			**Barometric Pres.:**	1024 mbar
Tested by:	Jeff Alcoke	**Power:**	14.0 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2018	ANSI C63.10:2013

COMMENTS

None

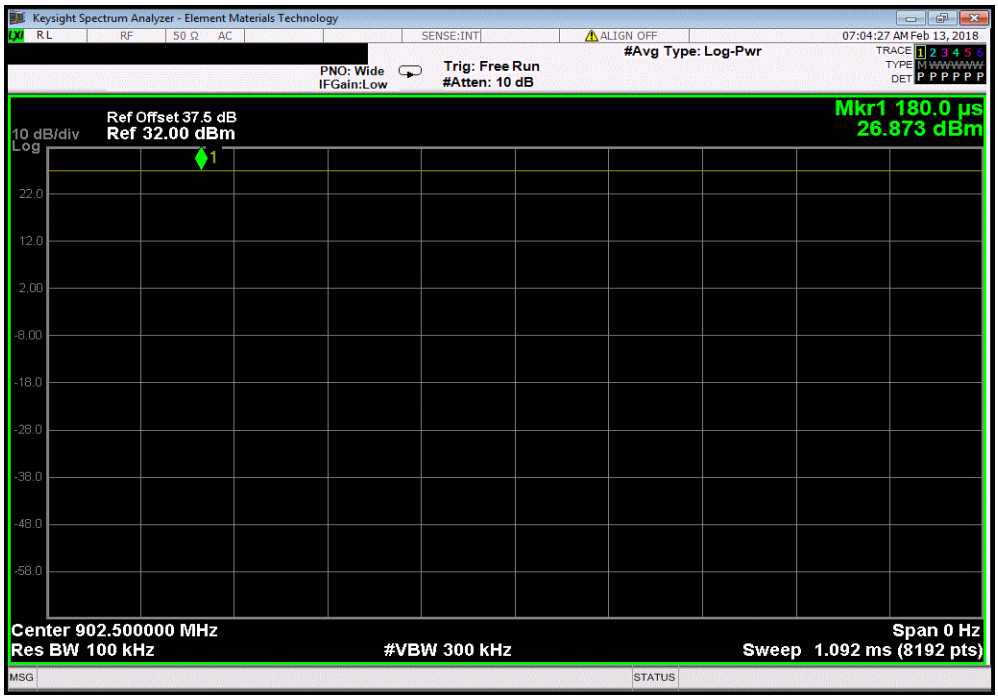
DEVIATIONS FROM TEST STANDARD

None

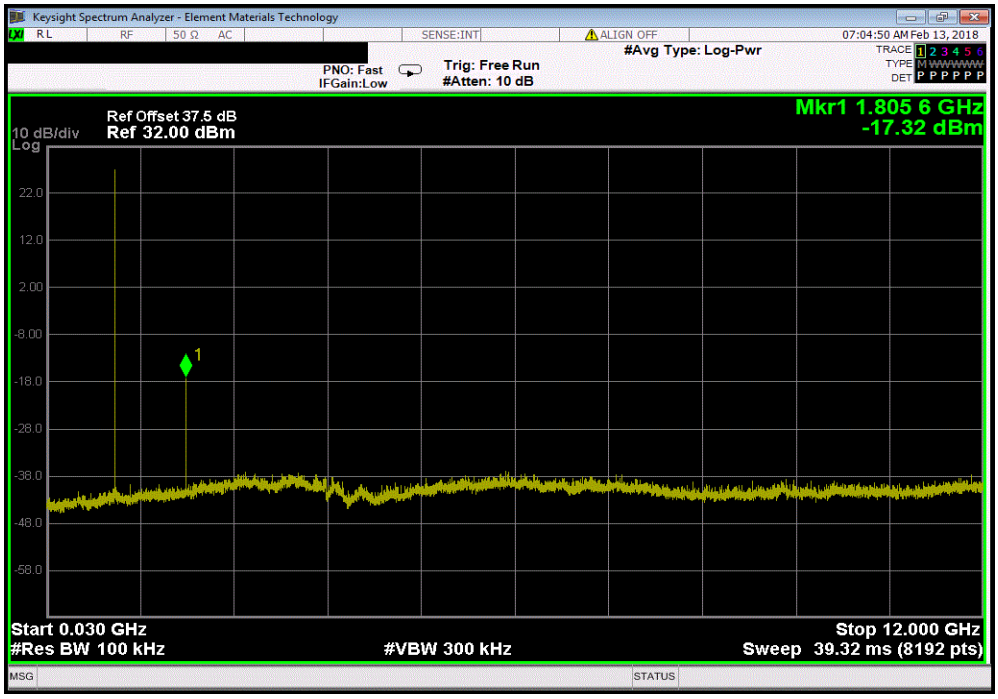
Configuration #	2	*Signature*

	Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
FSK, Single Channel				
Low Channel, 902.5 MHz	Fundamental	N/A	N/A	N/A
Low Channel, 902.5 MHz	30 MHz - 12 GHz	-44.19	-20	Pass
Mid Channel, 915 MHz	Fundamental	N/A	N/A	N/A
Mid Channel, 915 MHz	30 MHz - 12 GHz	-47.25	-20	Pass
High Channel, 927.5 MHz	Fundamental	N/A	N/A	N/A
High Channel, 927.5 MHz	30 MHz - 12 GHz	-49.52	-20	Pass

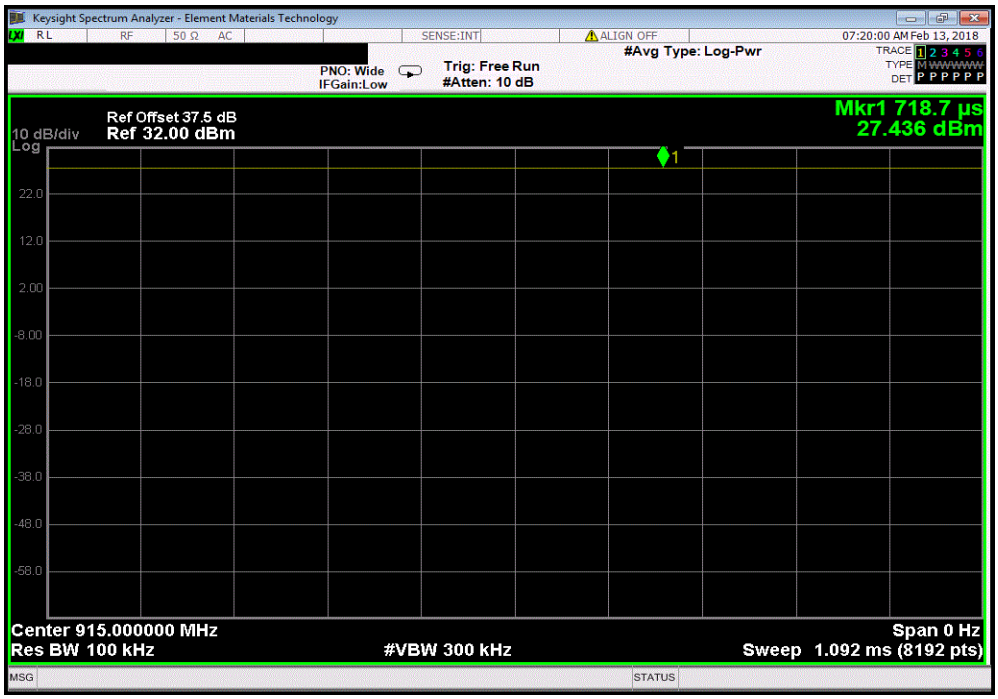
FSK, Single Channel, Low Channel, 902.5 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



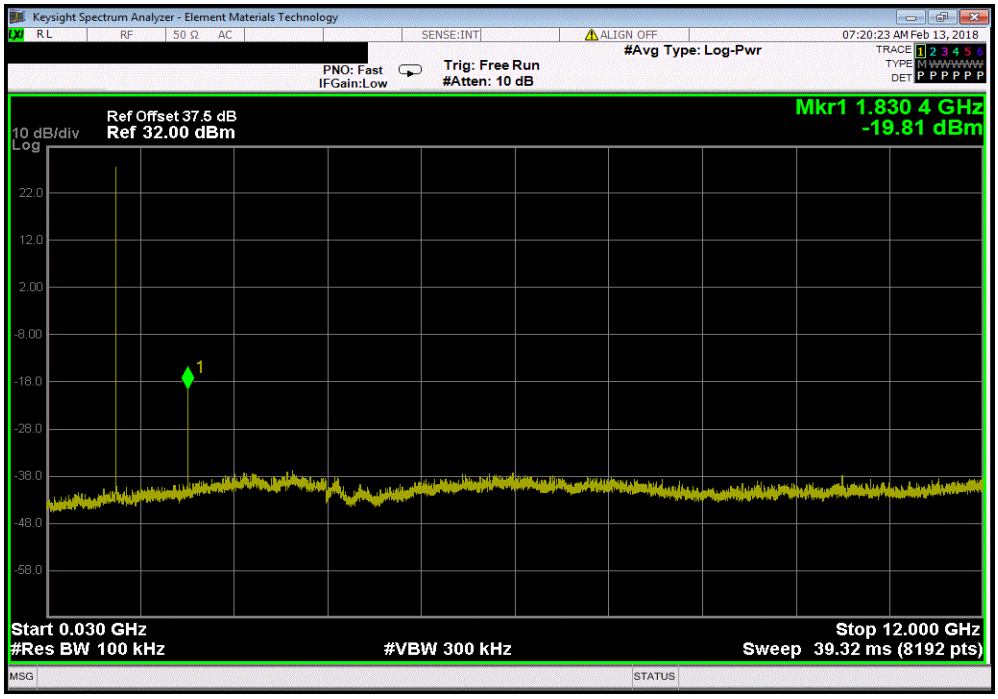
FSK, Single Channel, Low Channel, 902.5 MHz					
Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12 GHz			-44.19	-20	Pass



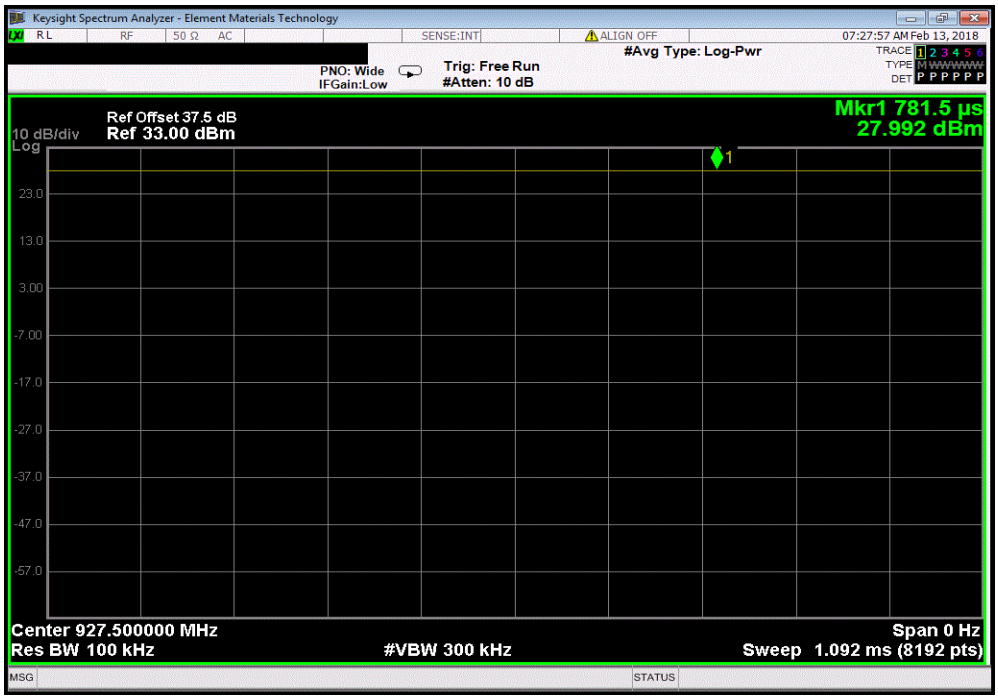
FSK, Single Channel, Mid Channel, 915 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



FSK, Single Channel, Mid Channel, 915 MHz					
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12 GHz		-47.25	-20	Pass	



FSK, Single Channel, High Channel, 927.5 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



FSK, Single Channel, High Channel, 927.5 MHz					
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12 GHz		-49.52	-20	Pass