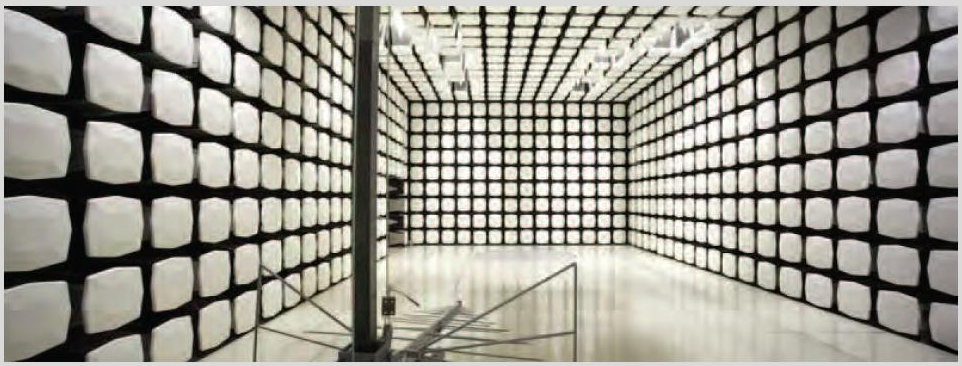
Nike, Inc.

Nike Adapt BB

FCC 15.247:2018
Bluetooth Low Energy Radio

Report # SYNA0268.1



NVLAP LAB CODE: 200630-0

CERTIFICATE OF TEST

Last Date of Test: September 27, 2018
Nike, Inc.
Model: Nike Adapt BB

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2018	ANSI C63.10:2013, KDB 558074

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required - EUT has no power connection to AC except during charging via wireless power transfer.
6.5, 6.6 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9.1.1	Output Power	Yes	Pass	
11.9.1.1	Equivalent Isotropic Radiated Power	Yes	Pass	
11.10.2	Power Spectral Density	Yes	Pass	
11.11	Band Edge Compliance	Yes	Pass	
11.11	Spurious Conducted Emissions	Yes	Pass	

Deviations From Test Standards

None

Approved By:

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). 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

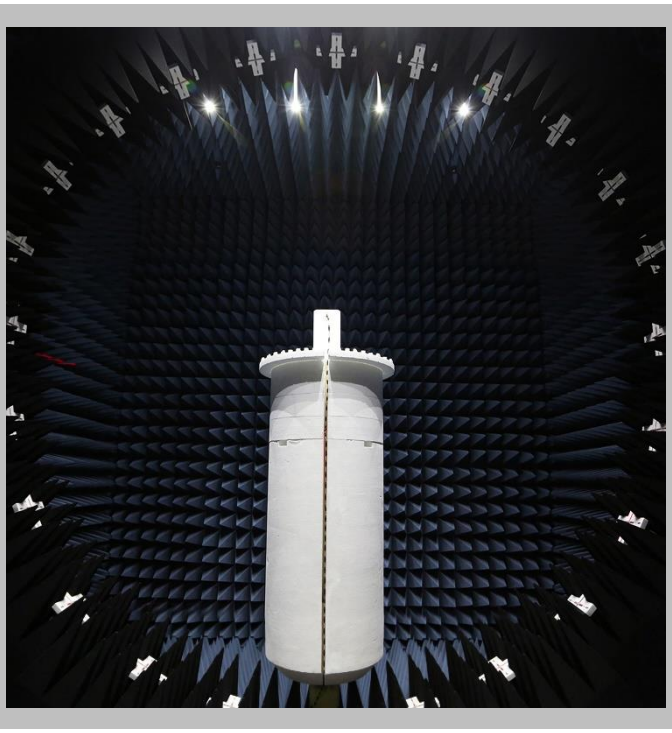
MIC – Recognized by MIC as a CAB for the acceptance of test data.

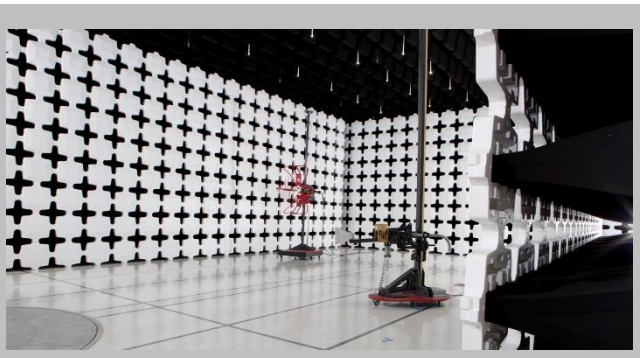
SCOPE

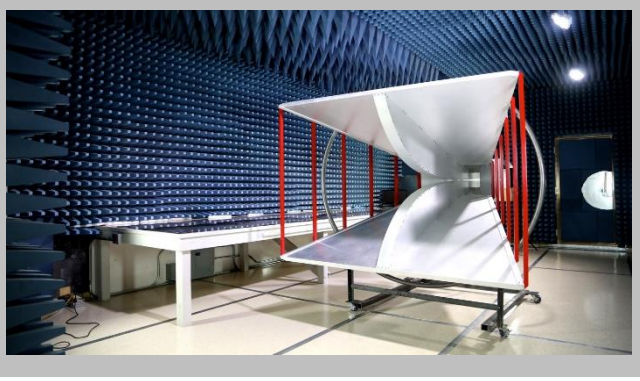
For details on the Scopes of our Accreditations, please visit:
https://www.nwemc.com/emc-testing-accreditations

FACILITIES

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

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.

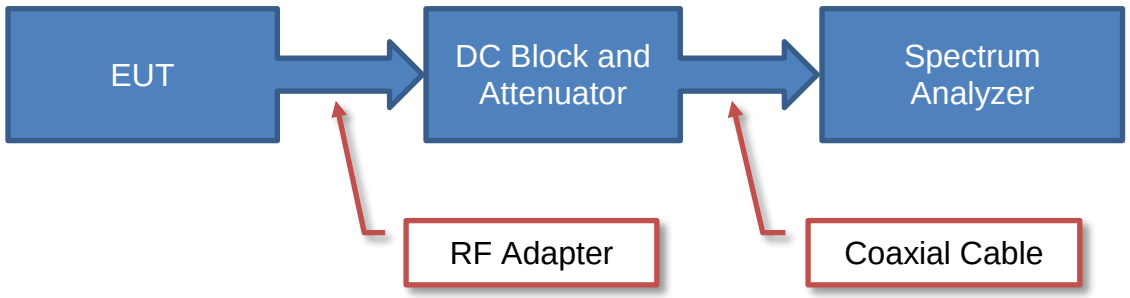
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable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

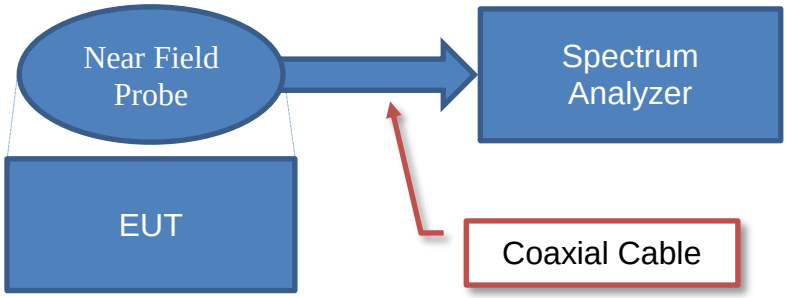
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

Test Setup Block Diagrams

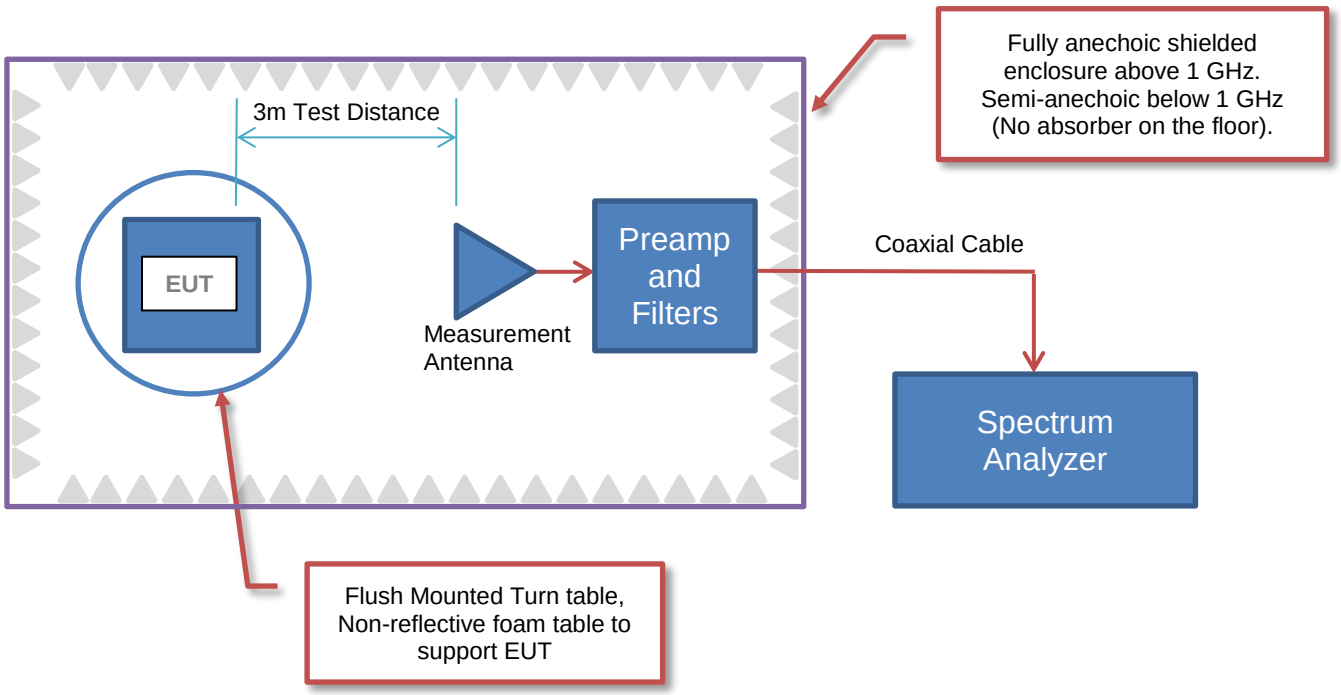
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Nike, Inc.
Address:	One Bowerman Drive
City, State, Zip:	Beaverton, OR 97005
Test Requested By:	Brian Piquette of Synapse Product Development on behalf of Nike, Inc.
Model:	Nike Adapt BB
First Date of Test:	September 27, 2018
Last Date of Test:	September 27, 2018
Receipt Date of Samples:	September 27, 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:
BLE enabled footwear.

Testing Objective:
To demonstrate compliance of the Bluetooth Low Energy radio to FCC 15.247 requirements.

POWER SETTINGS

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

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types / Data Rates	Type	Channel	Frequency (MHz)	Power Setting
BLE	DTS	0	2402	+4
		20	2442	+4
		39	2480	+4

CONFIGURATIONS

Configuration SYNA0268- 1

Software/Firmware Running during test	
Description	**Version**
Putty	0.70
Firmware	Archive_20080810025548

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Right Lace Engine	Nike, Inc.	Nike Adapt BB	1700121R
Left Lace Engine	Nike, Inc.	Nike Adapt BB	1200813L

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Remote Laptop	Microsoft	Surface	046856662454

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
UART to USB	Yes	2.0 m	No	Left or Right lace Engine	Remote Laptop

Configuration SYNA0268- 2

Software/Firmware Running during test	
Description	**Version**
Bigfoot Bench	V2.1.0

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Left Lace Engine	Nike, Inc.	Nike Adapt BB	1200838L
Right Lace Engine	Nike, Inc.	Nike Adapt BB	1700172R

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Remote Laptop	Apple	MacBook Air	None

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2018-09-27	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	2018-09-27	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2018-09-27	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	2018-09-27	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	2018-09-27	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2018-09-27	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	2018-09-27	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	2018-09-27	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 2018.07.27

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 Continuous Tx, GFSK, Low Ch. = 2402 MHz, Mid Ch. = 2442 MHz, High Ch. = 2480 MHz

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

SYNA0268 - 2

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
Cable	ESM Cable Corp.	KMKM-72	EVY	24-Aug-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	24-Aug-2018	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AIV	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	30-Nov-2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AHV	NCR	0 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
Attenuator	Coaxicom	3910-20	AXZ	28-Feb-2018	12 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
Filter - Low Pass	Micro-Tronics	LPM50004	LFD	28-Feb-2018	12 mo
Cable	N/A	Bilog Cables	EVA	25-Jul-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	30-Nov-2017	12 mo
Antenna - Biconilog	EMCO	3142	AXA	24-Oct-2016	24 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	18-Mar-2018	12 mo

TEST DESCRIPTION

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

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

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

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

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

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

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

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

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

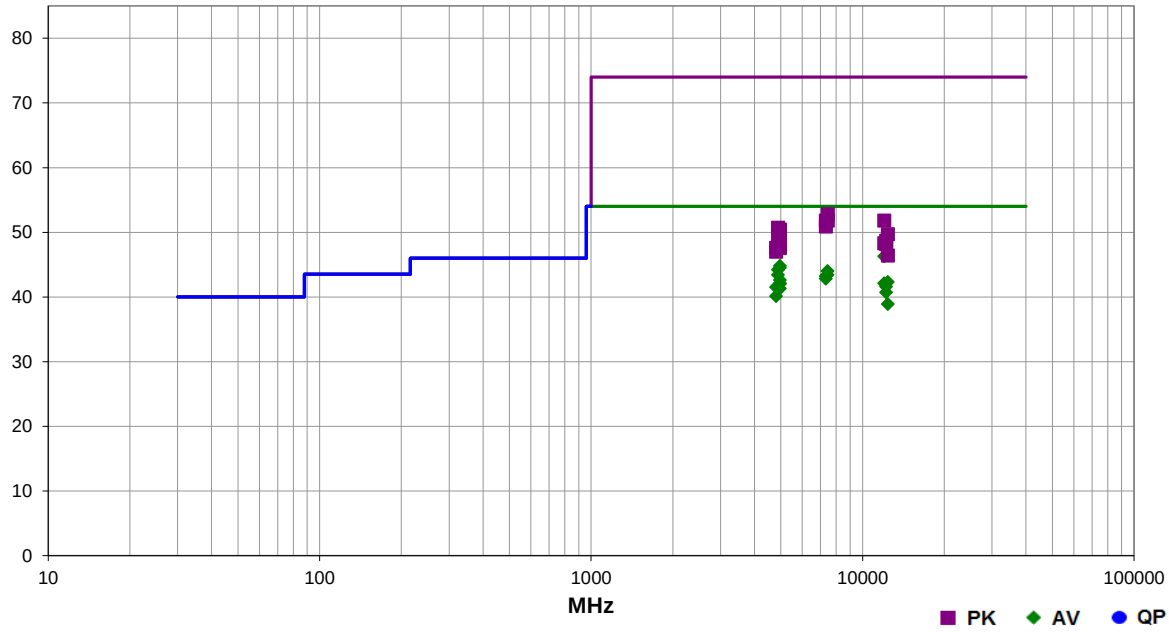
SPURIOUS RADIATED EMISSIONS

EmiR5 2018.07.19.3 PSA-ESCI 2018.07.27

Work Order:	SYNA0268	**Date:**	27-Sep-2018		
Project:	Nike Adapt	**Temperature:**	22.7 °C		
Job Site:	EV01	**Humidity:**	43.7% RH		
Serial Number:	See configuration	**Barometric Pres.:**	1015 mbar	**Tested by:**	Jeff Alcoke
EUT:	Nike Adapt BB				
Configuration:	2				
Customer:	Nike, Inc.				
Attendees:	Phil Meneau and Brian Piquette				
EUT Power:	Battery				
Operating Mode:	BLE Continuous Tx, GFSK, Low Ch. = 2402 MHz, Mid Ch. = 2442 MHz, High Ch. = 2480 MHz				
Deviations:	None				
Comments:	See comments below for Channel and EUT orientation. The provided test software sets the radio to a duty cycle (DC) of 61.1%, a duty cycle correction factor of 2.1 dB was added to the RMS average measurements.				

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

Run #	18	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12008.820	43.2	1.0	3.0	298.0	2.1	0.0	Vert	AV	0.0	46.3	54.0	-7.7	Low Ch. EUT Horz
4959.817	37.5	5.2	1.0	79.0	2.1	0.0	Vert	AV	0.0	44.8	54.0	-9.2	High Ch, EUT Horz
4959.883	37.2	5.2	1.0	108.0	2.1	0.0	Horz	AV	0.0	44.5	54.0	-9.5	High Ch, EUT Horz
4883.850	37.0	5.1	1.0	100.0	2.1	0.0	Vert	AV	0.0	44.2	54.0	-9.8	Mid Ch. EUT Horz
7439.483	28.9	13.0	3.6	163.0	2.1	0.0	Vert	AV	0.0	44.0	54.0	-10.0	High Ch, EUT Horz
4883.758	36.2	5.1	1.0	113.0	2.1	0.0	Horz	AV	0.0	43.4	54.0	-10.6	Mid Ch. EUT Horz
7439.642	28.3	13.0	1.0	360.0	2.1	0.0	Horz	AV	0.0	43.4	54.0	-10.6	High Ch, EUT Horz
7325.525	28.8	12.3	1.0	90.0	2.1	0.0	Vert	AV	0.0	43.2	54.0	-10.8	Mid Ch. EUT Horz
7324.683	28.5	12.2	1.9	5.0	2.1	0.0	Horz	AV	0.0	42.8	54.0	-11.2	Mid Ch. EUT Horz
4959.683	35.3	5.2	2.3	295.0	2.1	0.0	Horz	AV	0.0	42.6	54.0	-11.4	High Ch, EUT Vert
12398.760	39.0	1.2	1.0	43.0	2.1	0.0	Vert	AV	0.0	42.3	54.0	-11.7	High Ch, EUT Horz
4959.917	34.8	5.2	2.4	331.0	2.1	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch, EUT on Side
12008.810	39.0	1.0	1.0	222.0	2.1	0.0	Horz	AV	0.0	42.1	54.0	-11.9	Low Ch. EUT Horz
4959.833	34.7	5.2	2.0	22.0	2.1	0.0	Horz	AV	0.0	42.0	54.0	-12.0	High Ch, EUT on Side
12208.880	38.5	1.0	1.0	246.0	2.1	0.0	Vert	AV	0.0	41.6	54.0	-12.4	Mid Ch. EUT Horz
4803.750	35.6	3.8	1.0	110.0	2.1	0.0	Horz	AV	0.0	41.5	54.0	-12.5	Low Ch., EUT Horz
4959.758	34.0	5.2	1.0	290.0	2.1	0.0	Vert	AV	0.0	41.3	54.0	-12.7	High Ch, EUT Vert
12208.760	37.6	1.0	1.1	39.0	2.1	0.0	Horz	AV	0.0	40.7	54.0	-13.3	Mid Ch. EUT Horz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4803.775	34.2	3.8	1.0	128.0	2.1	0.0	Vert	AV	0.0	40.1	54.0	-13.9	Low Ch., EUT Horz
12398.820	35.6	1.2	1.0	270.0	2.1	0.0	Horz	AV	0.0	38.9	54.0	-15.1	High Ch, EUT Horz
7440.817	39.8	13.0	1.0	360.0	0.0	0.0	Horz	PK	0.0	52.8	74.0	-21.2	High Ch, EUT Horz
7325.542	39.5	12.3	1.0	90.0	0.0	0.0	Vert	PK	0.0	51.8	74.0	-22.2	Mid Ch. EUT Horz
7440.183	38.8	13.0	3.6	163.0	0.0	0.0	Vert	PK	0.0	51.8	74.0	-22.2	High Ch, EUT Horz
12011.140	50.8	1.0	3.0	298.0	0.0	0.0	Vert	PK	0.0	51.8	74.0	-22.2	Low Ch. EUT Horz
7325.150	38.6	12.3	1.9	5.0	0.0	0.0	Horz	PK	0.0	50.9	74.0	-23.1	Mid Ch. EUT Horz
4883.525	45.6	5.1	1.0	100.0	0.0	0.0	Vert	PK	0.0	50.7	74.0	-23.3	Mid Ch. EUT Horz
4959.583	45.2	5.2	1.0	79.0	0.0	0.0	Vert	PK	0.0	50.4	74.0	-23.6	High Ch, EUT Horz
4959.642	45.1	5.2	1.0	108.0	0.0	0.0	Horz	PK	0.0	50.3	74.0	-23.7	High Ch, EUT Horz
12398.570	48.5	1.2	1.0	43.0	0.0	0.0	Vert	PK	0.0	49.7	74.0	-24.3	High Ch, EUT Horz
4883.542	44.5	5.1	1.0	113.0	0.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	Mid Ch. EUT Horz
4960.292	43.9	5.2	2.3	295.0	0.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	High Ch, EUT Vert
4960.150	43.6	5.2	2.0	22.0	0.0	0.0	Horz	PK	0.0	48.8	74.0	-25.2	High Ch, EUT on Side
12208.910	47.7	1.0	1.0	246.0	0.0	0.0	Vert	PK	0.0	48.7	74.0	-25.3	Mid Ch. EUT Horz
12011.150	47.3	1.0	1.0	222.0	0.0	0.0	Horz	PK	0.0	48.3	74.0	-25.7	Low Ch. EUT Horz
4960.100	43.0	5.2	2.4	331.0	0.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	High Ch, EUT on Side
12210.970	47.2	1.0	1.1	39.0	0.0	0.0	Horz	PK	0.0	48.2	74.0	-25.8	Mid Ch. EUT Horz
4804.300	43.8	3.8	1.0	110.0	0.0	0.0	Horz	PK	0.0	47.6	74.0	-26.4	Low Ch., EUT Horz
4960.450	42.4	5.2	1.0	290.0	0.0	0.0	Vert	PK	0.0	47.6	74.0	-26.4	High Ch, EUT Vert
4804.108	43.2	3.8	1.0	128.0	0.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	Low Ch., EUT Horz
12398.960	45.2	1.2	1.0	270.0	0.0	0.0	Horz	PK	0.0	46.4	74.0	-27.6	High Ch, EUT Horz

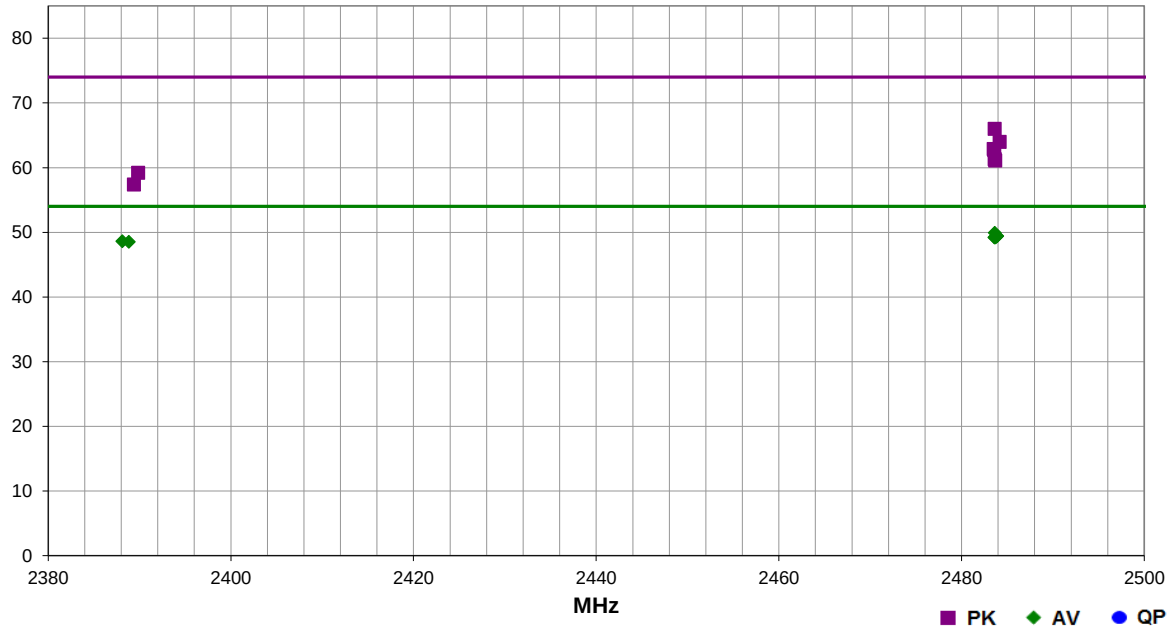
SPURIOUS RADIATED EMISSIONS

EmiR5 2018.07.19.3 PSA-ESCI 2018.07.27

Work Order:	SYNA0268	**Date:**	27-Sep-2018		
Project:	Nike Adapt	**Temperature:**	22.7 °C		
Job Site:	EV01	**Humidity:**	43.7% RH		
Serial Number:	See configuration	**Barometric Pres.:**	1015 mbar	**Tested by:**	Jeff Alcoke
EUT:	Nike Adapt BB				
Configuration:	2				
Customer:	Nike, Inc.				
Attendees:	Phil Meneau and Brian Piquette				
EUT Power:	Battery				
Operating Mode:	BLE Continuous Tx, GFSK, Low Ch. = 2402 MHz, Mid Ch. = 2442 MHz, High Ch. = 2480 MHz				
Deviations:	None				
Comments:	See comments below for Channel and EUT orientation. The provided test software sets the radio to a duty cycle (DC) of 61.1%, a duty cycle correction factor of 2.1 dB was added to the RMS average measurements.				

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

Run #	20	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.650	32.3	-4.5	1.1	278.0	2.1	20.0	Horz	AV	0.0	49.9	54.0	-4.1	High Ch, EUT Horz
2483.870	31.8	-4.5	3.8	208.0	2.1	20.0	Vert	AV	0.0	49.4	54.0	-4.6	High Ch, EUT Horz
2483.917	31.8	-4.5	1.0	274.0	2.1	20.0	Vert	AV	0.0	49.4	54.0	-4.6	High Ch, EUT on Side
2483.590	31.6	-4.5	3.0	339.0	2.1	20.0	Horz	AV	0.0	49.2	54.0	-4.8	High Ch, EUT on Side
2483.737	31.6	-4.5	3.8	150.0	2.1	20.0	Horz	AV	0.0	49.2	54.0	-4.8	High Ch, EUT Vert
2483.637	31.6	-4.5	1.0	267.0	2.1	20.0	Vert	AV	0.0	49.2	54.0	-4.8	High Ch, EUT Vert
2388.127	31.4	-4.9	1.0	358.0	2.1	20.0	Horz	AV	0.0	48.6	54.0	-5.4	Low Ch., EUT Horz
2388.847	31.3	-4.9	1.1	140.0	2.1	20.0	Vert	AV	0.0	48.5	54.0	-5.5	Low Ch., EUT Horz
2483.627	50.5	-4.5	1.1	278.0	0.0	20.0	Horz	PK	0.0	66.0	74.0	-8.0	High Ch, EUT Horz
2484.163	48.4	-4.4	3.8	208.0	0.0	20.0	Vert	PK	0.0	64.0	74.0	-10.0	High Ch, EUT Horz
2483.517	47.4	-4.5	1.0	274.0	0.0	20.0	Vert	PK	0.0	62.9	74.0	-11.1	High Ch, EUT on Side
2483.577	47.2	-4.5	1.0	267.0	0.0	20.0	Vert	PK	0.0	62.7	74.0	-11.3	High Ch, EUT Vert
2483.620	45.8	-4.5	3.0	339.0	0.0	20.0	Horz	PK	0.0	61.3	74.0	-12.7	High Ch, EUT on Side
2483.693	45.6	-4.5	3.8	150.0	0.0	20.0	Horz	PK	0.0	61.1	74.0	-12.9	High Ch, EUT Vert
2389.853	44.1	-4.9	1.0	358.0	0.0	20.0	Horz	PK	0.0	59.2	74.0	-14.8	Low Ch., EUT Horz
2389.380	42.3	-4.9	1.1	140.0	0.0	20.0	Vert	PK	0.0	57.4	74.0	-16.6	Low Ch., EUT Horz

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
Generator - Signal	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	S.M. Electronics	SA26B-20	AUY	16-Apr-18	16-Apr-19
Block - DC	Fairview Microwave	SD3379	AMW	23-Apr-18	23-Apr-19
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19

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 2018.09.04 XMit 2017.12.13

EUT:	Nike Adapt BB			**Work Order:**	SYNA0268
Serial Number:	See configuration			**Date:**	27-Sep-18
Customer:	Nike, Inc.			**Temperature:**	22.2 °C
Attendees:	Phil Meneau and Brian Piquette			**Humidity:**	42.5% RH
Project:	Nike Adapt			**Barometric Pres.:**	1018 mbar
Tested by:	Jeff Alcoke	**Power:**	Battery	**Job Site:**	EV06

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

COMMENTS

Reference level offset includes cable loss from measurement system and simi rigid coax to SMA cable.

DEVIATIONS FROM TEST STANDARD

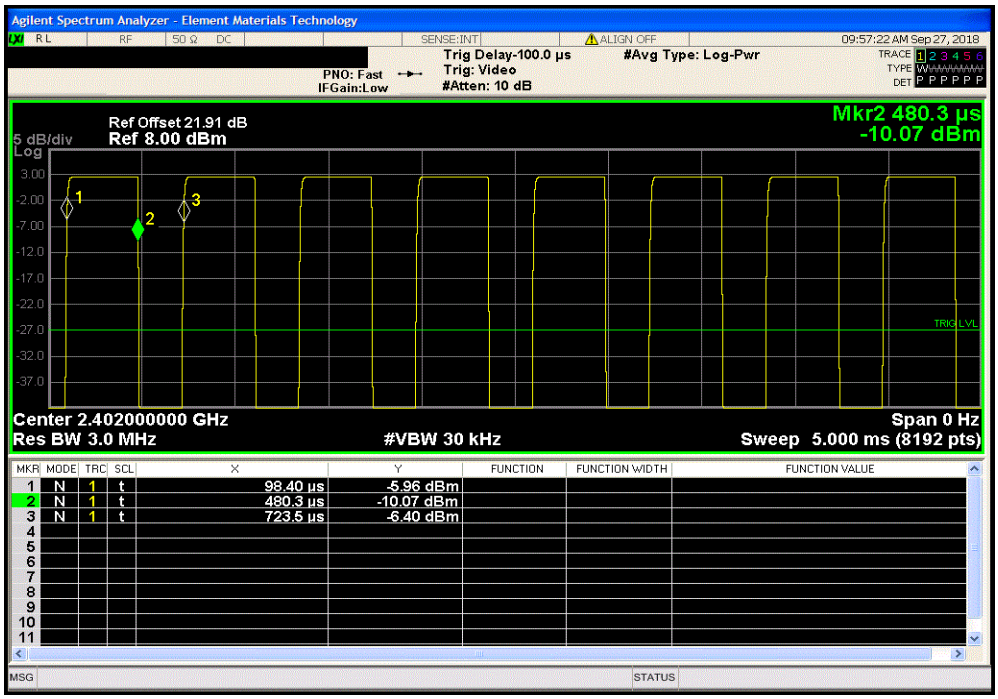
None

Configuration #	1	Signature

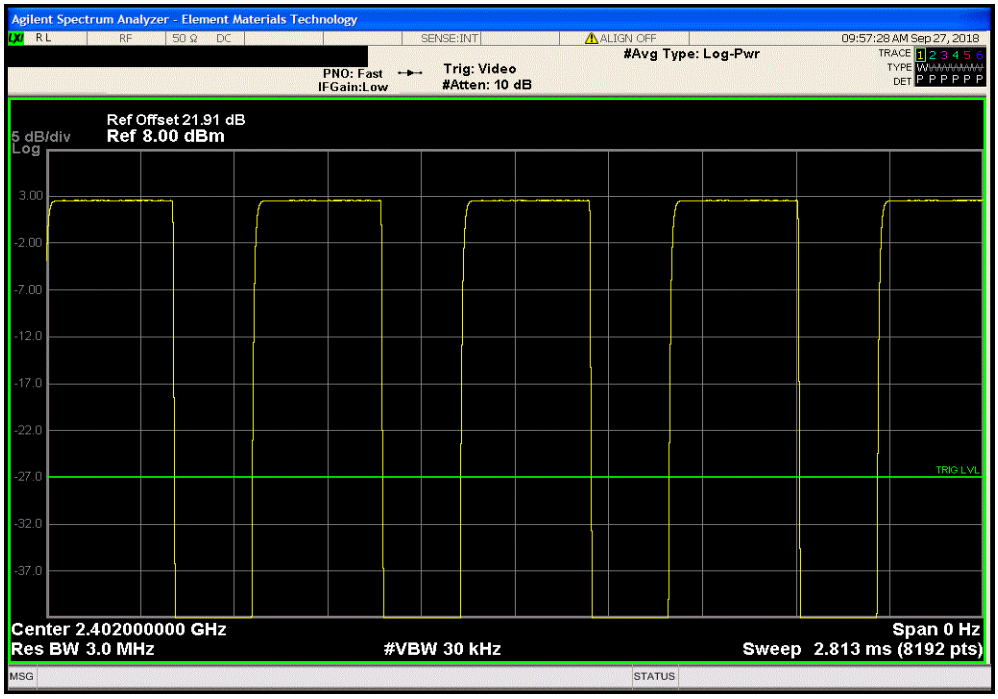
		Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
Left Engine							
	BLE/GFSK Low Channel, 2402 MHz	381.912 us	625.1 us	1	61.1	N/A	N/A
	BLE/GFSK Low Channel, 2402 MHz	N/A	N/A	5	N/A	N/A	N/A
	BLE/GFSK Mid Channel, 2442 MHz	381.844 us	625.4 us	1	61.1	N/A	N/A
	BLE/GFSK Mid Channel, 2442 MHz	N/A	N/A	5	N/A	N/A	N/A
	BLE/GFSK High Channel, 2480 MHz	382.544 us	624.8 us	1	61.2	N/A	N/A
	BLE/GFSK High Channel, 2480 MHz	N/A	N/A	5	N/A	N/A	N/A
Right Engine							
	BLE/GFSK Low Channel, 2402 MHz	382.7 us	624.4 us	1	61.3	N/A	N/A
	BLE/GFSK Low Channel, 2402 MHz	N/A	N/A	5	N/A	N/A	N/A
	BLE/GFSK Mid Channel, 2442 MHz	382.023 us	624.9 us	1	61.1	N/A	N/A
	BLE/GFSK Mid Channel, 2442 MHz	N/A	N/A	5	N/A	N/A	N/A
	BLE/GFSK High Channel, 2480 MHz	382.7 us	625 us	1	61.2	N/A	N/A
	BLE/GFSK High Channel, 2480 MHz	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

Left Engine, BLE/GFSK Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	381.912 us	625.1 us	1	61.1	N/A	N/A

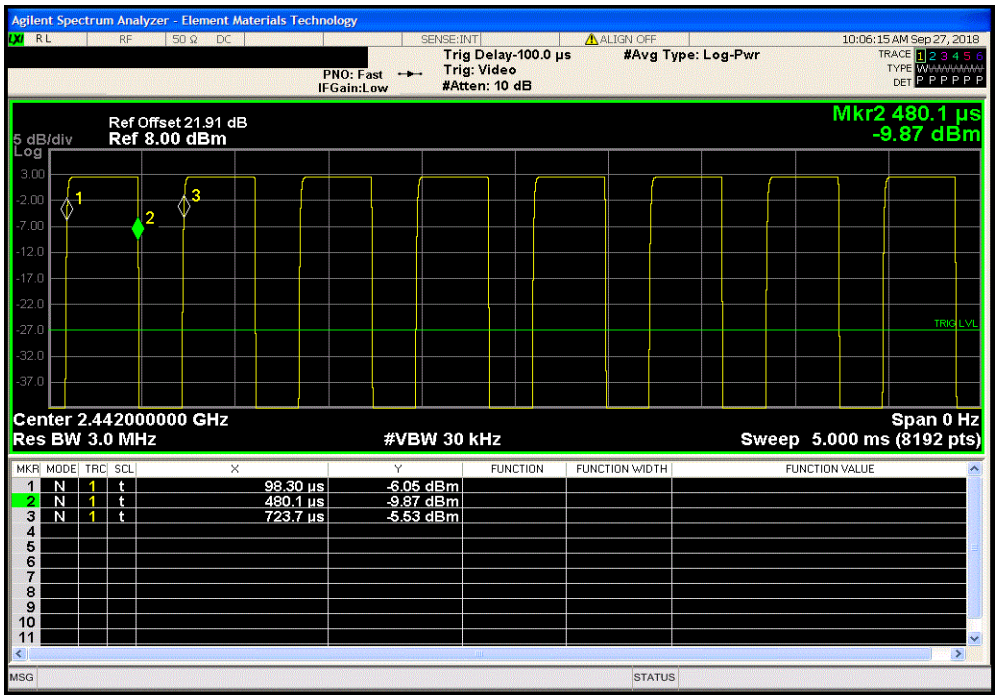


Left Engine, BLE/GFSK Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

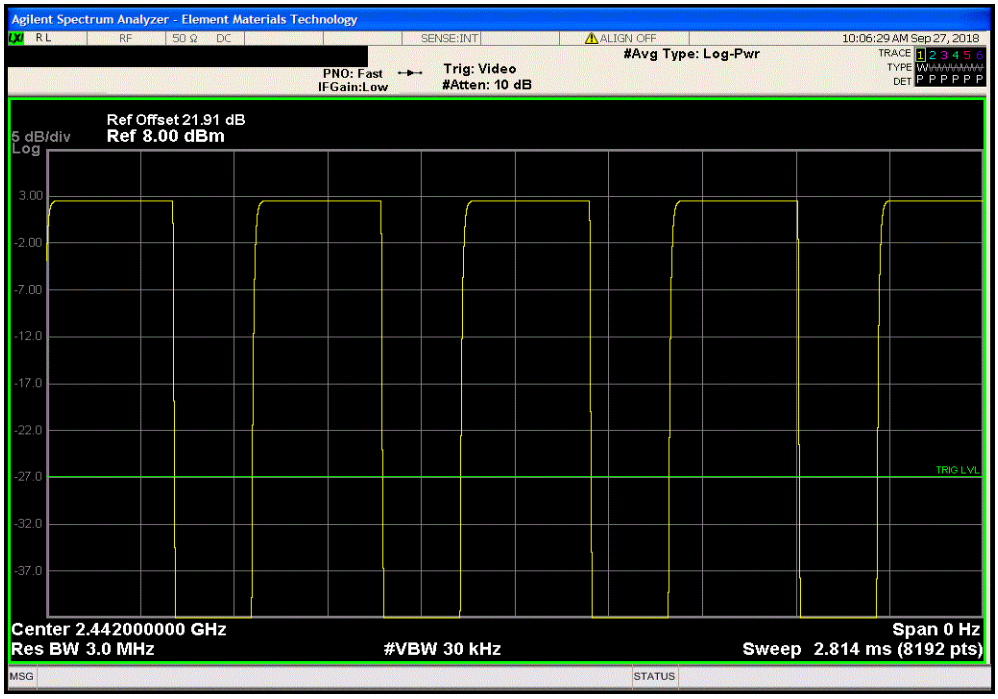


DUTY CYCLE

Left Engine, BLE/GFSK Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	381.844 us	625.4 us	1	61.1	N/A	N/A

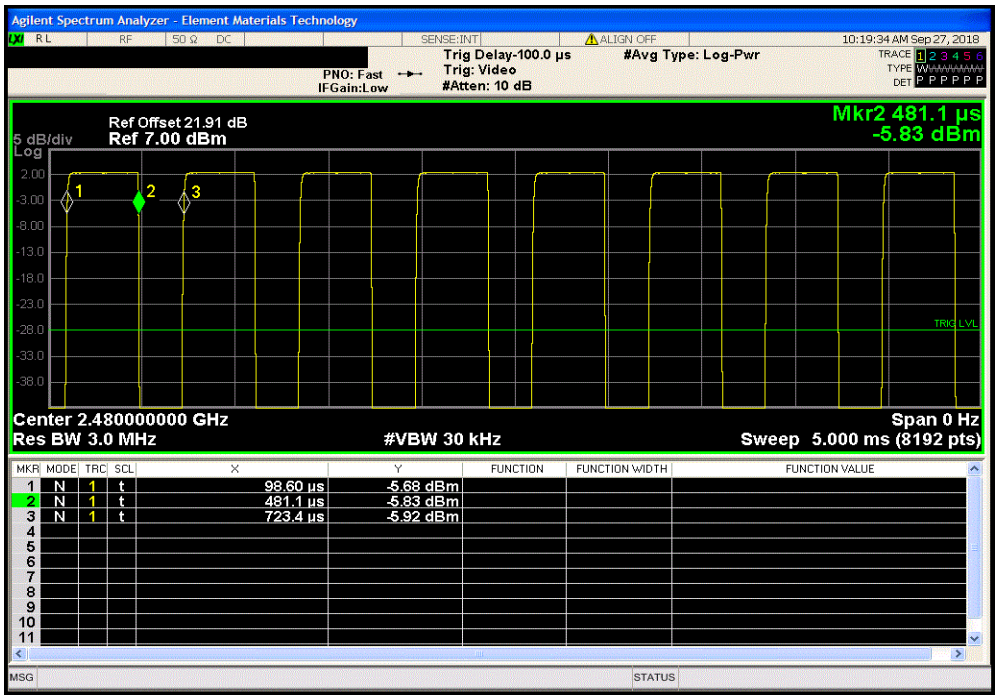


Left Engine, BLE/GFSK Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

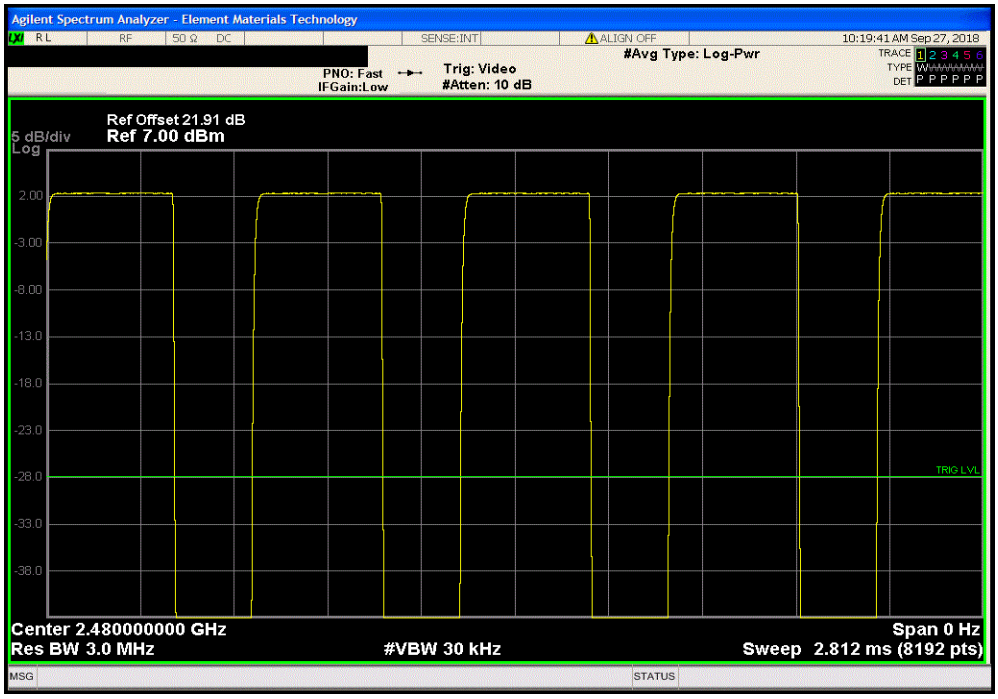


DUTY CYCLE

Left Engine, BLE/GFSK High Channel, 2480 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	382.544 us	624.8 us	1	61.2	N/A	N/A

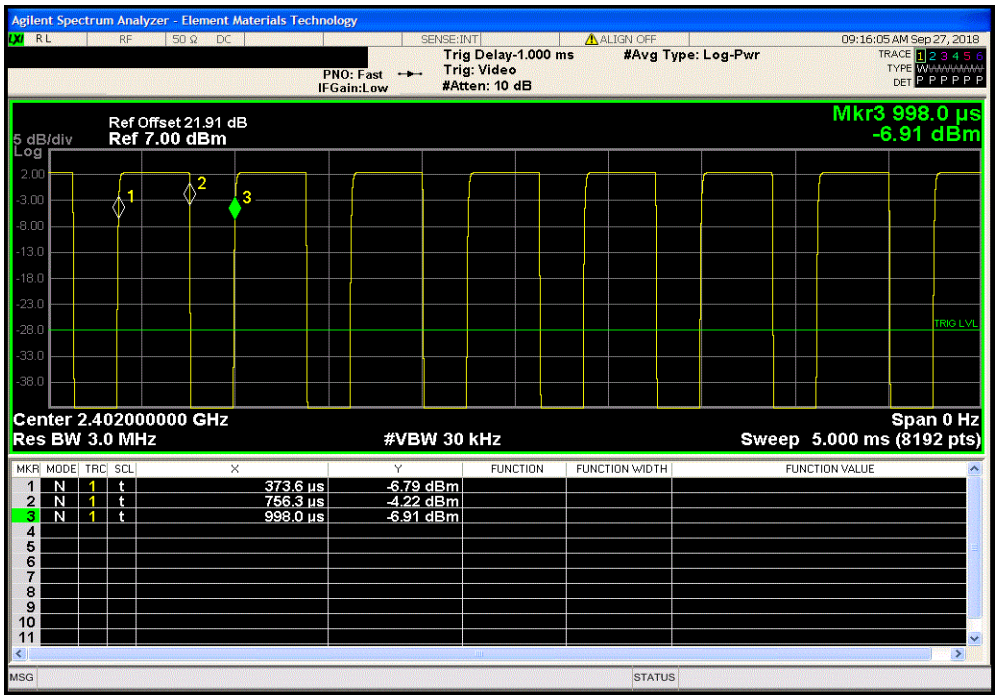


Left Engine, BLE/GFSK High Channel, 2480 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

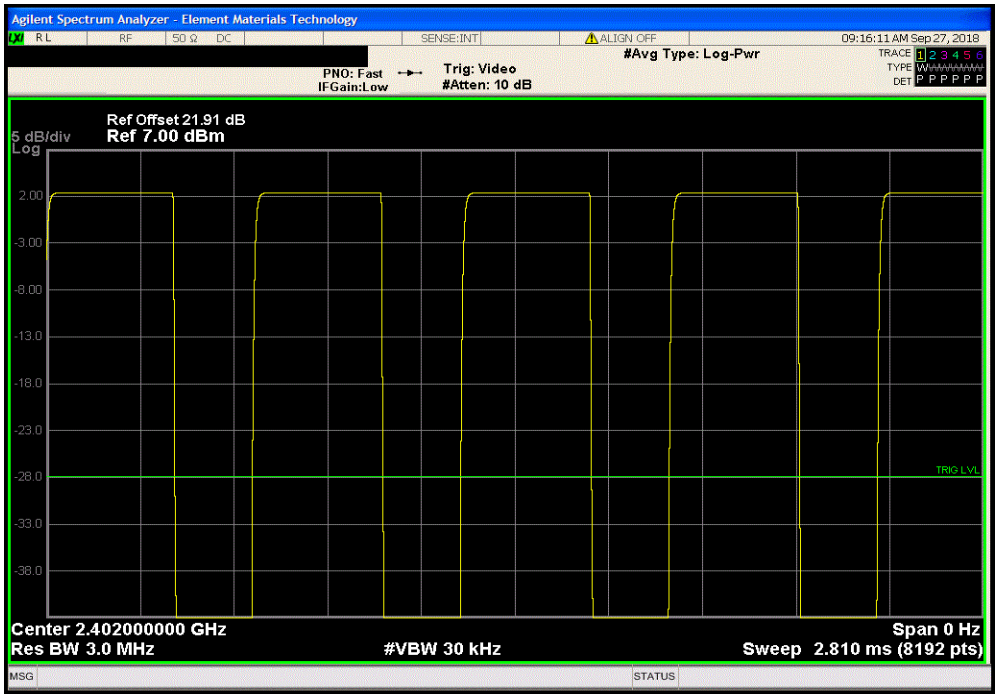


DUTY CYCLE

Right Engine, BLE/GFSK Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	382.7 us	624.4 us	1	61.3	N/A	N/A

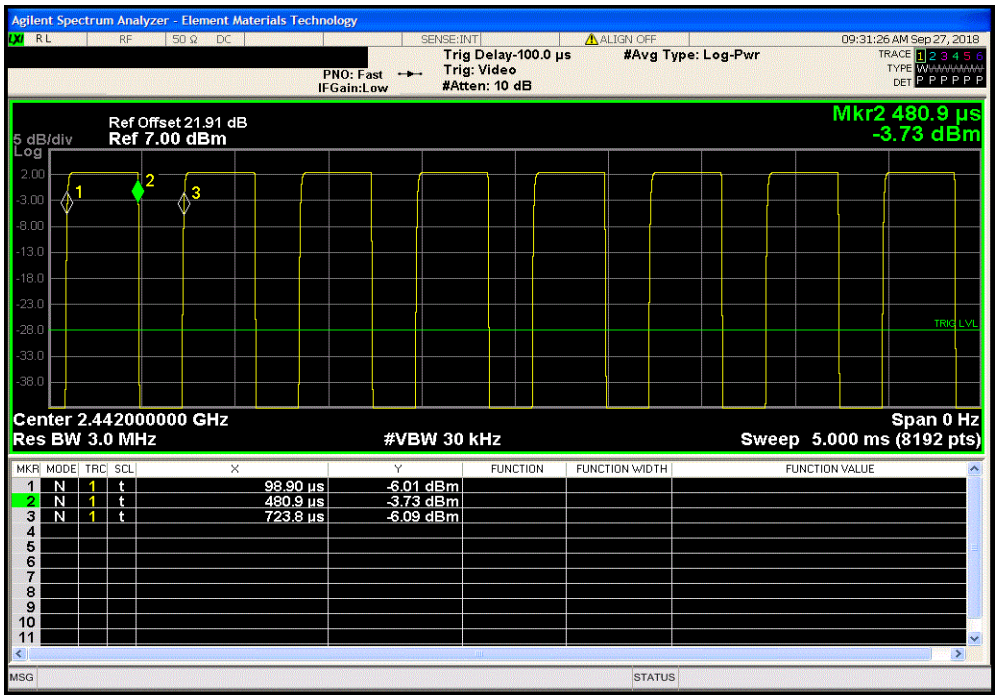


Right Engine, BLE/GFSK Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

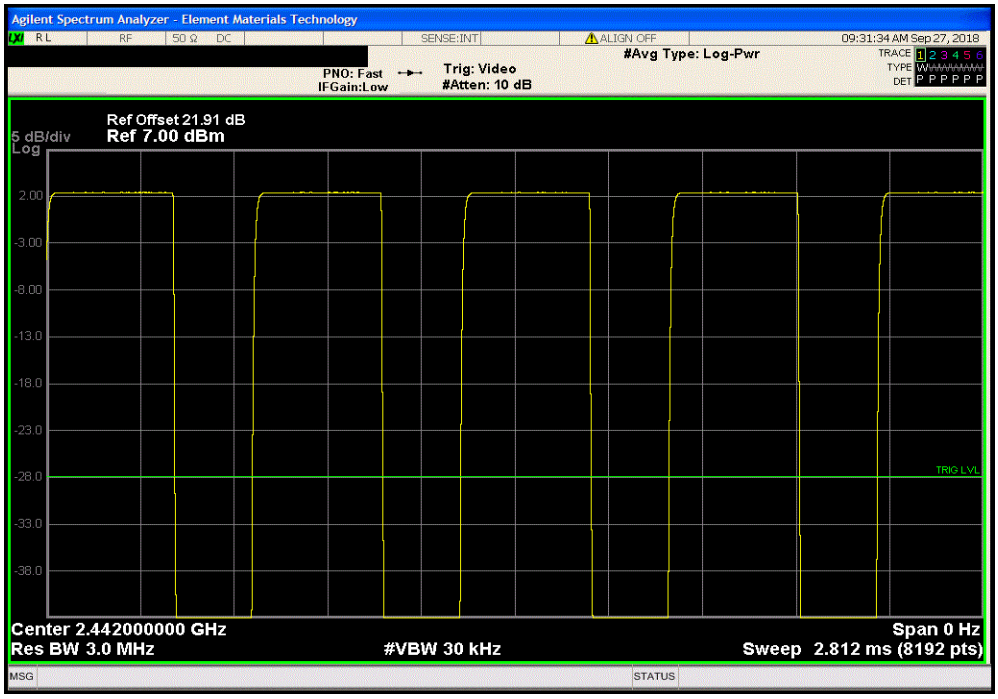


DUTY CYCLE

Right Engine, BLE/GFSK Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	382.023 us	624.9 us	1	61.1	N/A	N/A

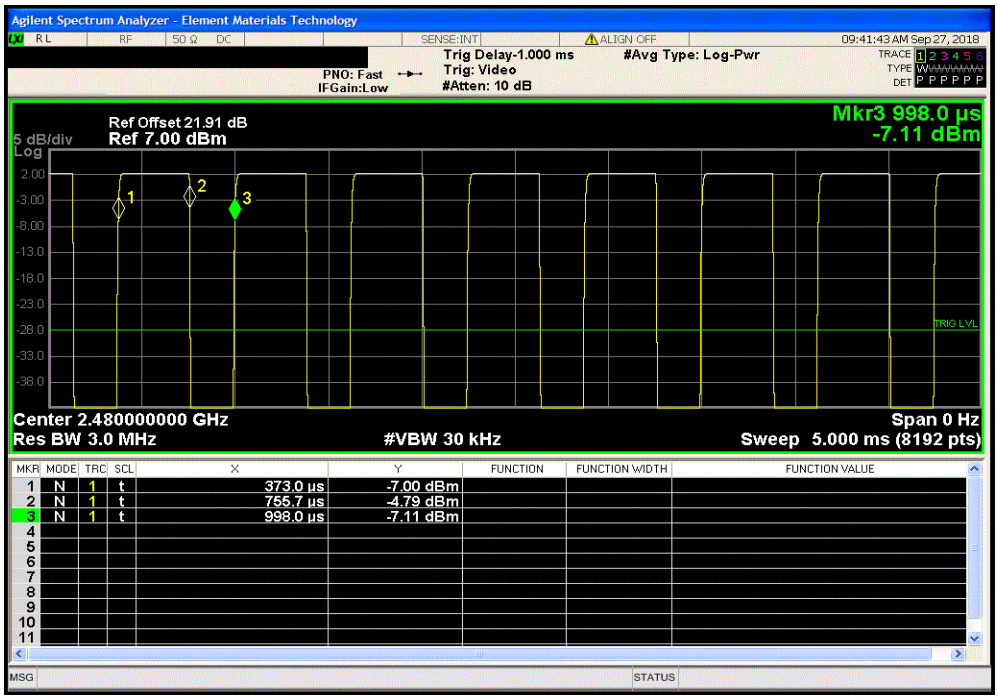


Right Engine, BLE/GFSK Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

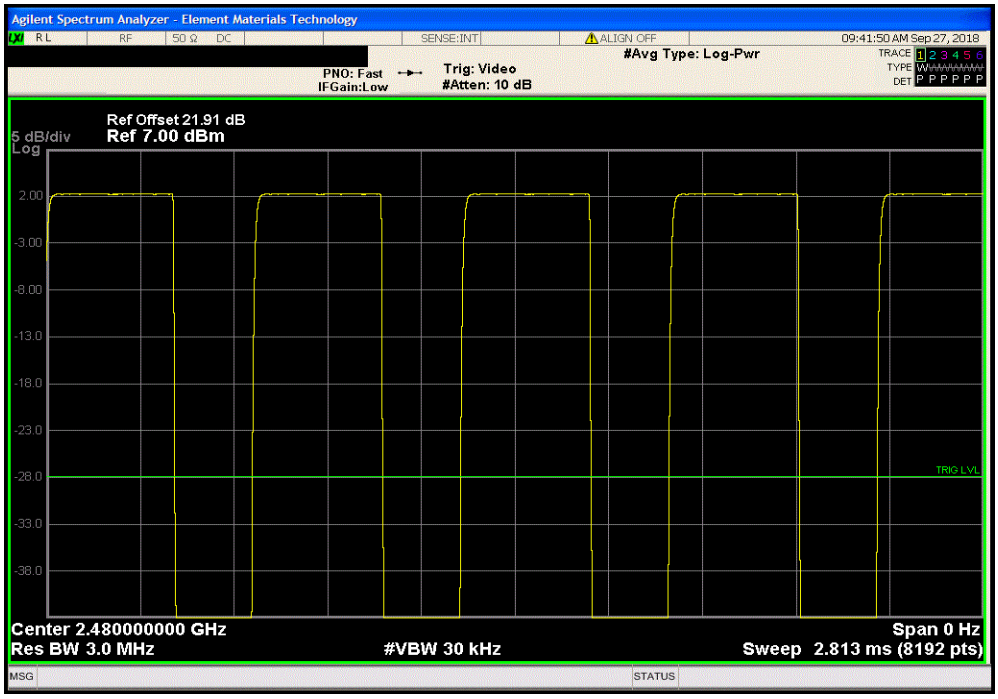


DUTY CYCLE

Right Engine, BLE/GFSK High Channel, 2480 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	382.7 us	625 us	1	61.2	N/A	N/A



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



OCCUPIED BANDWIDTH

XMit 2017.12.13

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	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	S.M. Electronics	SA26B-20	AUY	16-Apr-18	16-Apr-19
Block - DC	Fairview Microwave	SD3379	AMW	23-Apr-18	23-Apr-19
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19

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 2018.09.04 XMit 2017.12.13

EUT:	Nike Adapt BB			**Work Order:**	SYNA0268
Serial Number:	See configuration			**Date:**	27-Sep-18
Customer:	Nike, Inc.			**Temperature:**	22.1 °C
Attendees:	Phil Meneau and Brian Piquette			**Humidity:**	42.1% RH
Project:	Nike Adapt			**Barometric Pres.:**	1018 mbar
Tested by:	Jeff Alcoke	**Power:**	Battery	**Job Site:**	EV06

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

COMMENTS

Reference level offset includes cable loss from measurement system and simi rigid coax to SMA cable.

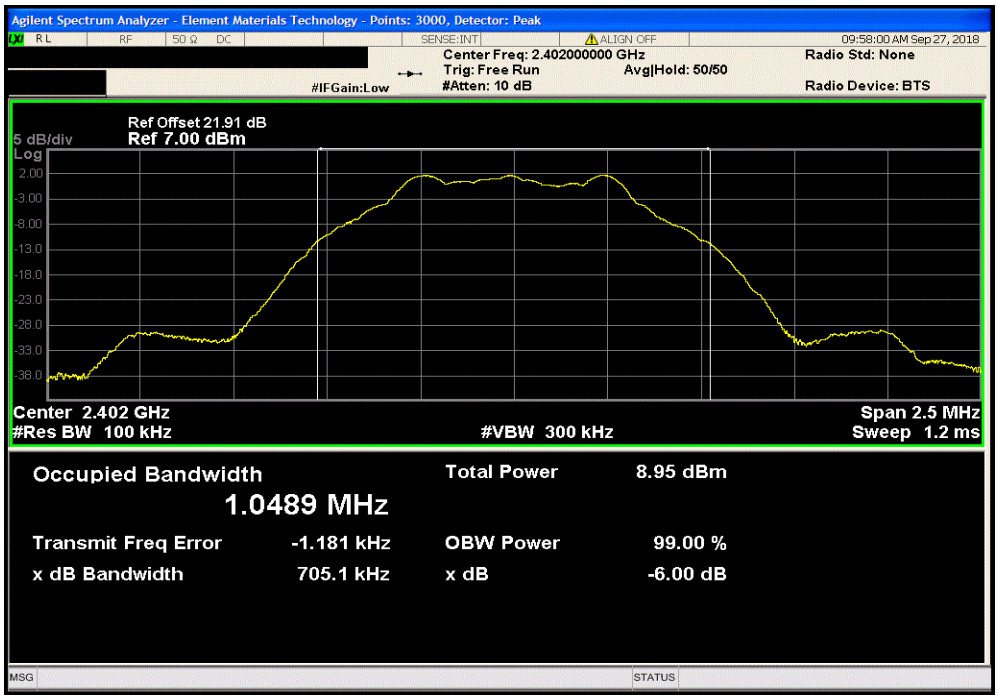
DEVIATIONS FROM TEST STANDARD

None

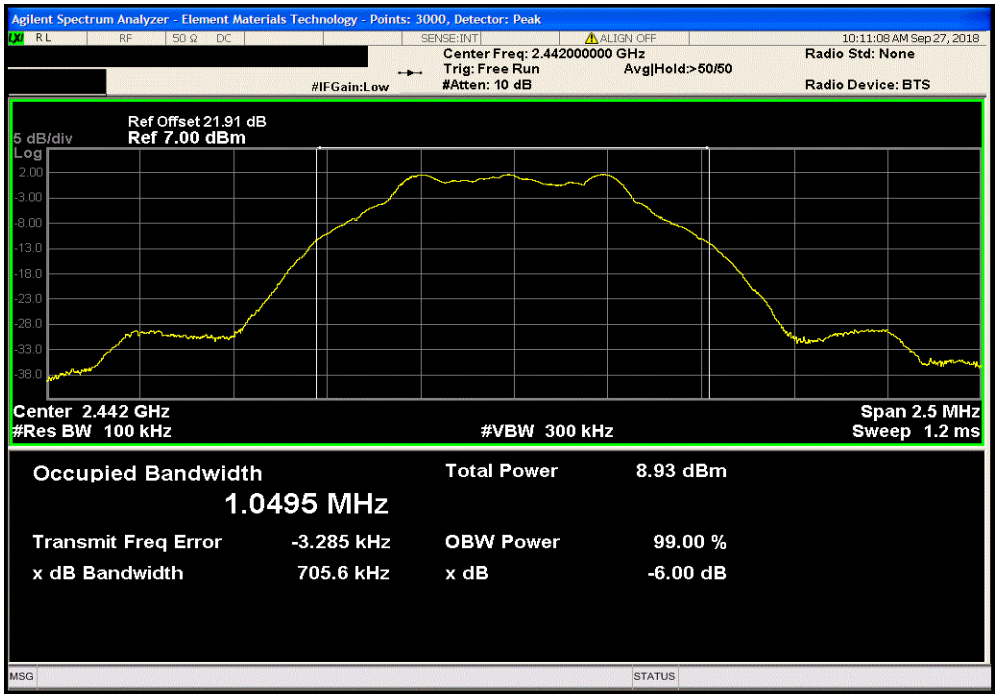
Configuration #	1	Signature

		Value	Limit (≥)	Result
Left Engine				
	BLE/GFSK Low Channel, 2402 MHz	705.067 kHz	500 kHz	Pass
	BLE/GFSK Mid Channel, 2442 MHz	705.591 kHz	500 kHz	Pass
	BLE/GFSK High Channel, 2480 MHz	704.929 kHz	500 kHz	Pass
Right Engine				
	BLE/GFSK Low Channel, 2402 MHz	696.537 kHz	500 kHz	Pass
	BLE/GFSK Mid Channel, 2442 MHz	694.383 kHz	500 kHz	Pass
	BLE/GFSK High Channel, 2480 MHz	709.694 kHz	500 kHz	Pass

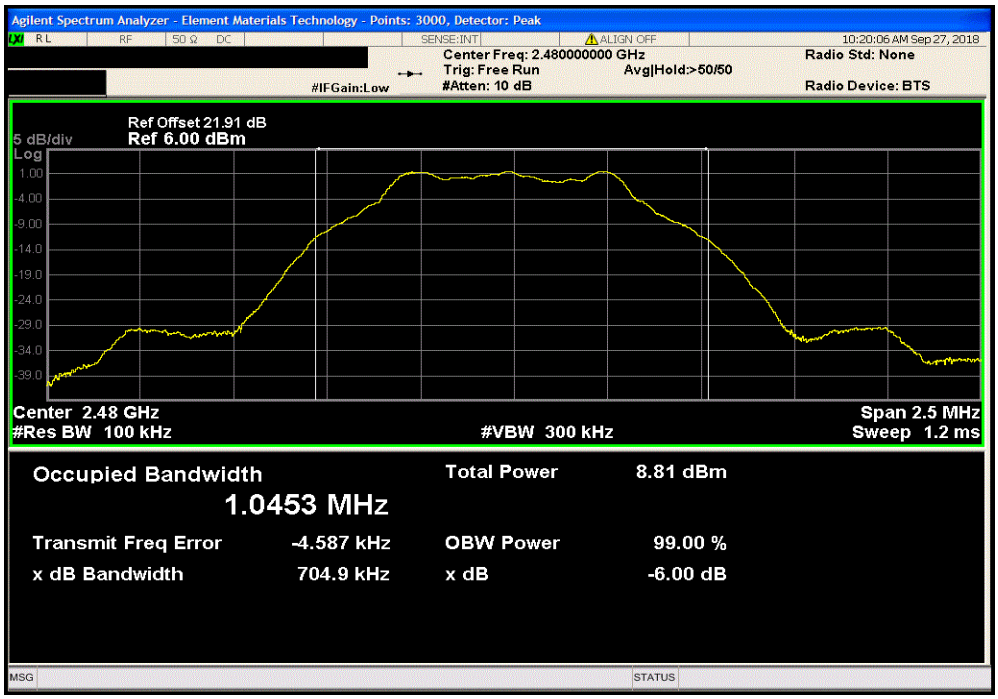
Left Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value	Limit (≥)	Result
				705.067 kHz	500 kHz	Pass



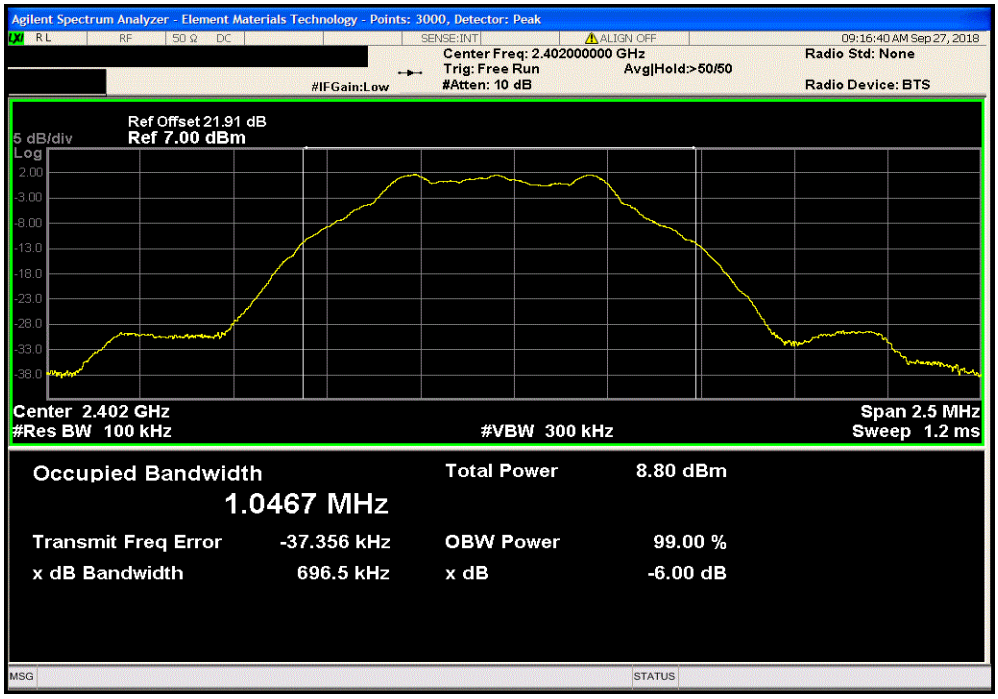
Left Engine, BLE/GFSK Mid Channel, 2442 MHz						
				Value	Limit (≥)	Result
				705.591 kHz	500 kHz	Pass



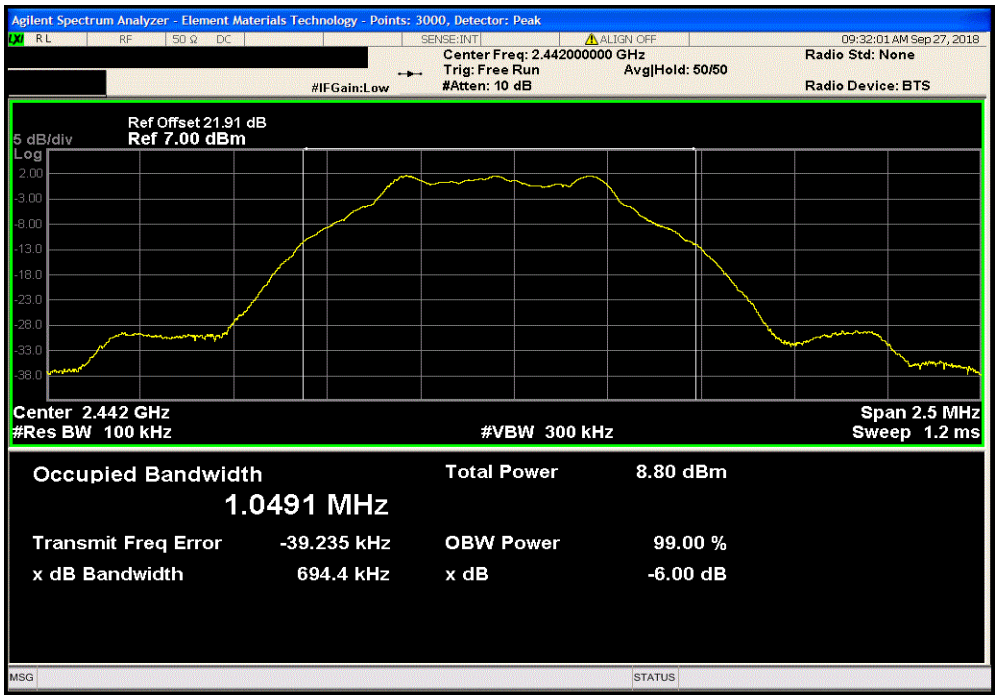
Left Engine, BLE/GFSK High Channel, 2480 MHz						
				Value	Limit (≥)	Result
				704.929 kHz	500 kHz	Pass



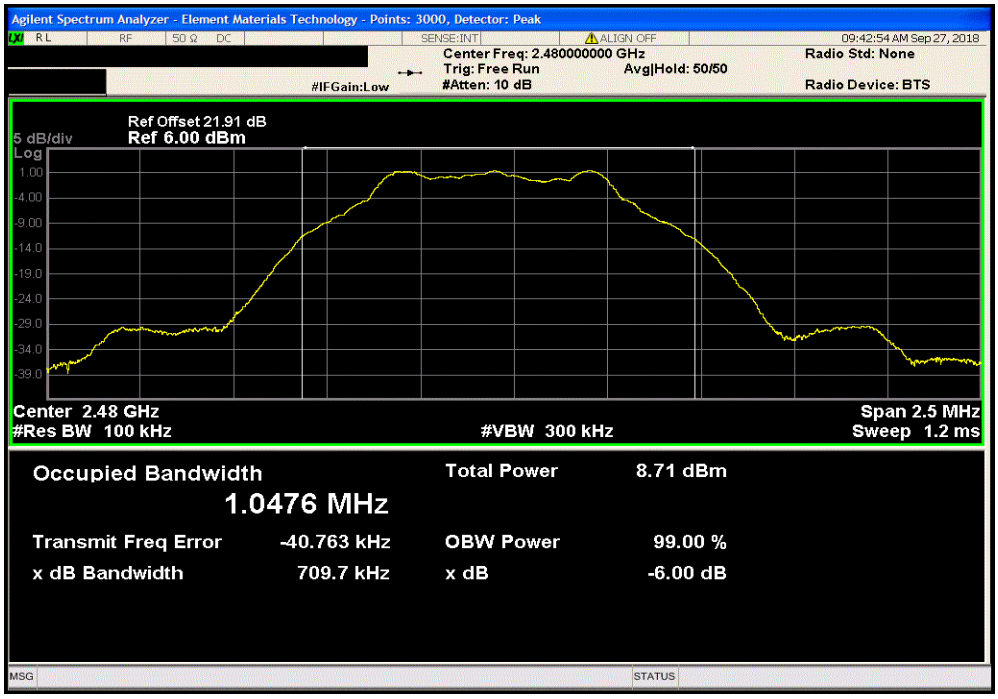
Right Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value	Limit (≥)	Result
				696.537 kHz	500 kHz	Pass



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



Right Engine, BLE/GFSK High Channel, 2480 MHz						
				Value	Limit (≥)	Result
				709.694 kHz	500 kHz	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	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	S.M. Electronics	SA26B-20	AUY	16-Apr-18	16-Apr-19
Block - DC	Fairview Microwave	SD3379	AMW	23-Apr-18	23-Apr-19
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19

TEST DESCRIPTION

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

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

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

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

OUTPUT POWER

element

TbtTx 2018.09.04 XMit 2017.12.13

EUT:	**Nike Adapt BB**			**Work Order:**	**SYNA0268**
Serial Number:	**See configuration**			**Date:**	**27-Sep-18**
Customer:	**Nike, Inc.**			**Temperature:**	**22.2 °C**
Attendees:	**Phil Meneau and Brian Piquette**			**Humidity:**	**42.3% RH**
Project:	**Nike Adapt**			**Barometric Pres.:**	**1018 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**Battery**	**Job Site:**	**EV06**

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

COMMENTS

Reference level offset includes cable loss from measurement system and simi rigid coax to SMA cable.

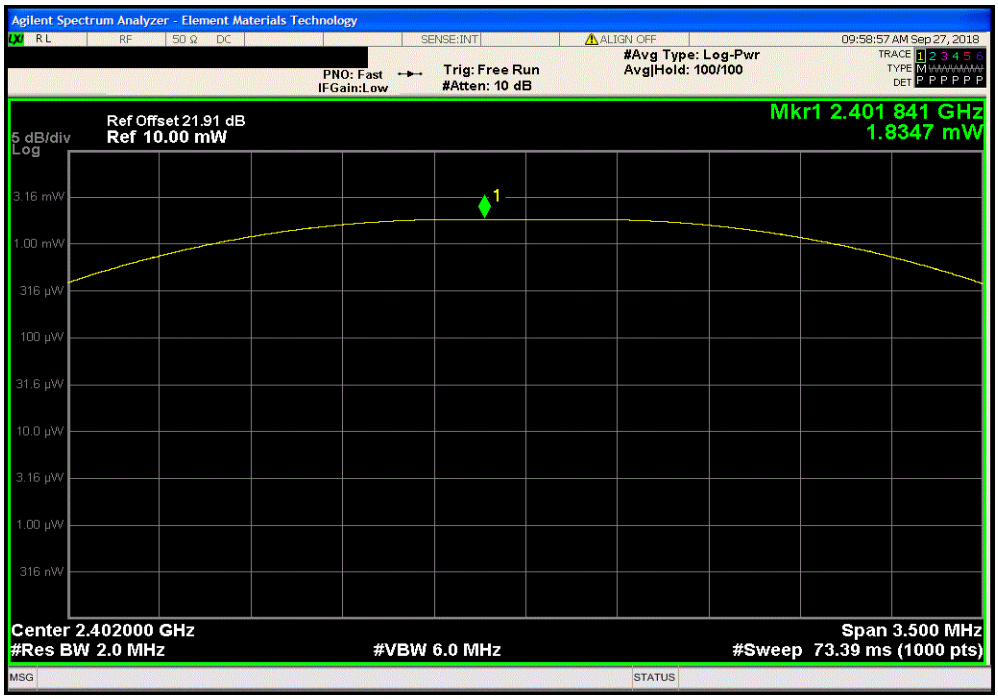
DEVIATIONS FROM TEST STANDARD

None

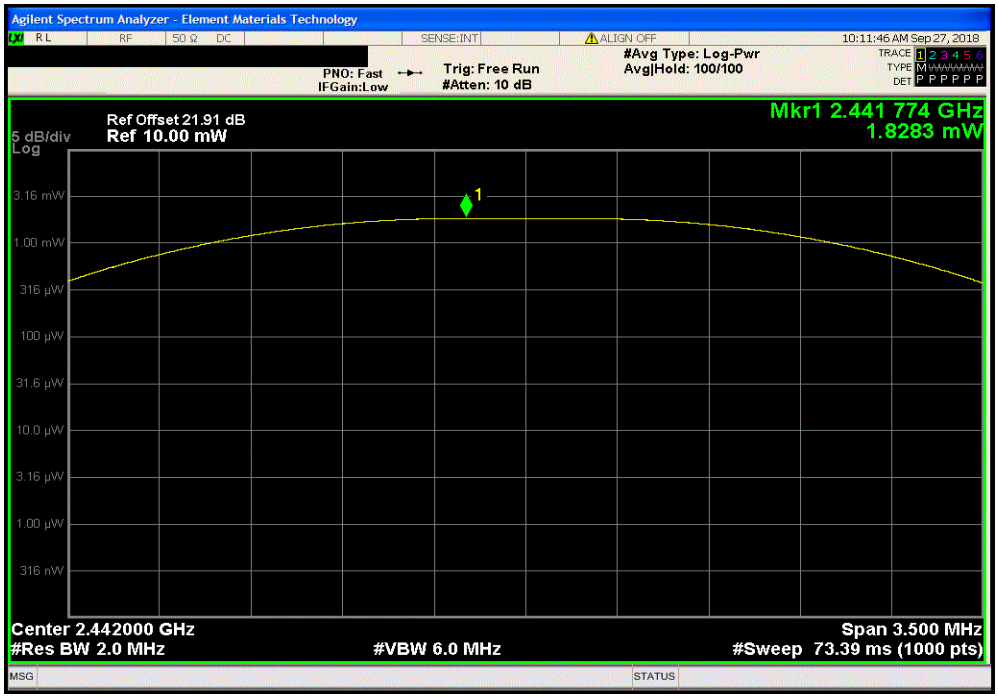
Configuration #	**1**	*Signature*

		Value	**Limit (<)**	**Result**
Left Engine				
	BLE/GFSK Low Channel, 2402 MHz	1.835 mW	1 W	Pass
	BLE/GFSK Mid Channel, 2442 MHz	1.828 mW	1 W	Pass
	BLE/GFSK High Channel, 2480 MHz	1.742 mW	1 W	Pass
Right Engine				
	BLE/GFSK Low Channel, 2402 MHz	1.765 mW	1 W	Pass
	BLE/GFSK Mid Channel, 2442 MHz	1.778 mW	1 W	Pass
	BLE/GFSK High Channel, 2480 MHz	1.709 mW	1 W	Pass

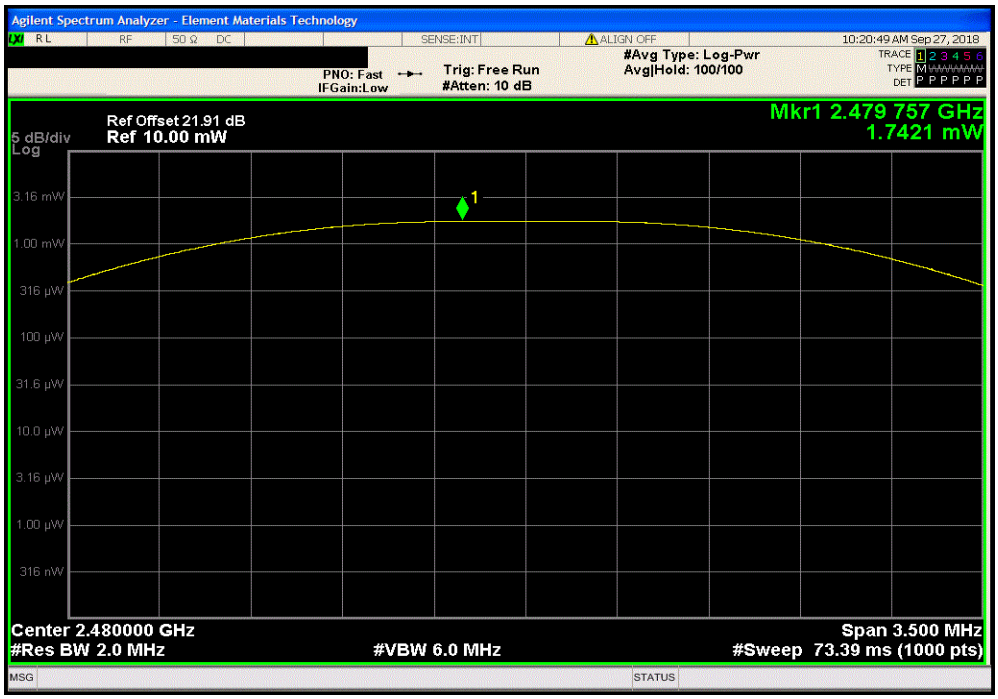
Left Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value	Limit (<)	Result
				1.835 mW	1 W	Pass



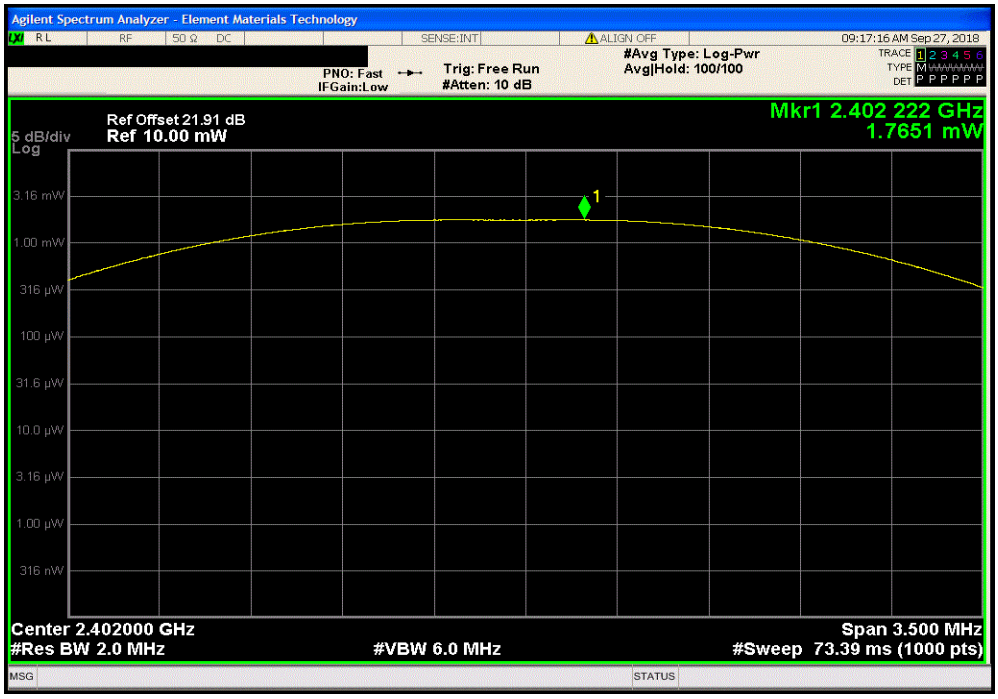
Left Engine, BLE/GFSK Mid Channel, 2442 MHz						
				Value	Limit (<)	Result
				1.828 mW	1 W	Pass



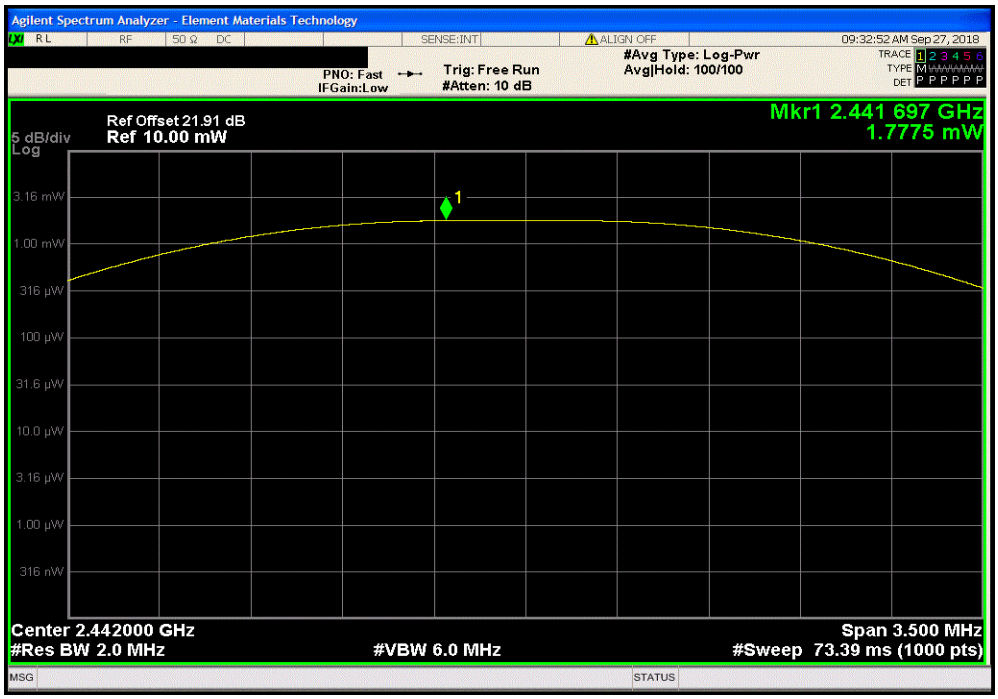
Left Engine, BLE/GFSK High Channel, 2480 MHz						
				Value	Limit (<)	Result
				1.742 mW	1 W	Pass



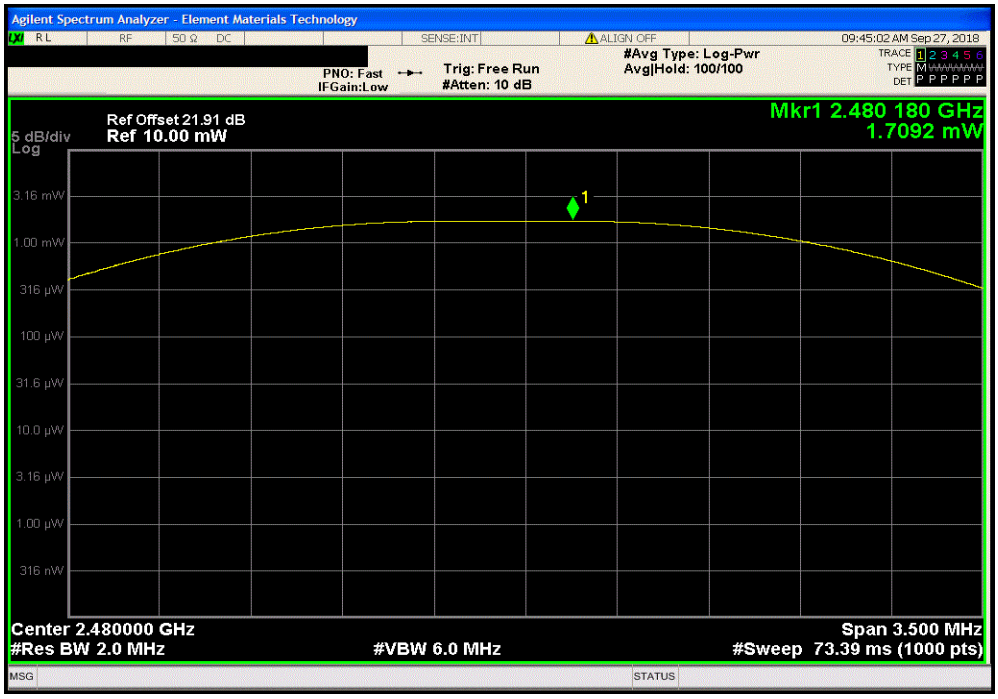
Right Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value	Limit (<)	Result
				1.765 mW	1 W	Pass



Right Engine, BLE/GFSK Mid Channel, 2442 MHz						
				Value	Limit (<)	Result
				1.778 mW	1 W	Pass



Right Engine, BLE/GFSK High Channel, 2480 MHz						
				Value	Limit (<)	Result
				1.709 mW	1 W	Pass



EQUIVALENT ISOTROPIC RATED 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	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	S.M. Electronics	SA26B-20	AUY	16-Apr-18	16-Apr-19
Block - DC	Fairview Microwave	SD3379	AMW	23-Apr-18	23-Apr-19
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19

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.

EIRP = Max Measured Power + Antenna Gain (dBi)

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

EQUIVALENT ISOTROPIC RATED POWER

TbtTx 2018.09.04 XMit 2017.12.13

EUT:	**Nike Adapt BB**			**Work Order:**	**SYNA0268**
Serial Number:	**See configuration**			**Date:**	**27-Sep-18**
Customer:	**Nike, Inc.**			**Temperature:**	**22.2 °C**
Attendees:	**Phil Meneau and Brian Piquette**			**Humidity:**	**42.3% RH**
Project:	**Nike Adapt**			**Barometric Pres.:**	**1018 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**Battery**	**Job Site:**	**EV06**

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

COMMENTS

Reference level offset includes cable loss from measurement system and simi rigid coax to SMA cable.

DEVIATIONS FROM TEST STANDARD

None

Configuration #	**1**	*Signature*

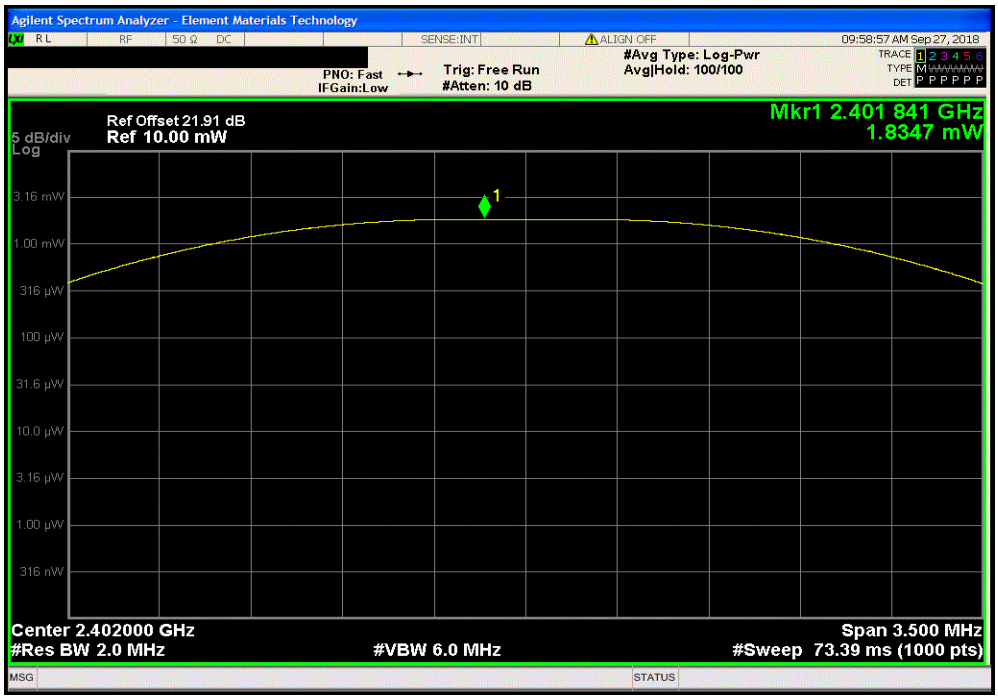
	Value (mW)	Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
Left Engine						
BLE/GFSK Low Channel, 2402 MHz	1.835	2.636	0.000	2.636	≤ 36	Pass
BLE/GFSK Mid Channel, 2442 MHz	1.828	2.620	0.000	2.620	≤ 36	Pass
BLE/GFSK High Channel, 2480 MHz	1.742	2.410	0.000	2.410	≤ 36	Pass
Right Engine						
BLE/GFSK Low Channel, 2402 MHz	1.765	2.467	0.000	2.467	≤ 36	Pass
BLE/GFSK Mid Channel, 2442 MHz	1.778	2.499	0.000	2.499	≤ 36	Pass
BLE/GFSK High Channel, 2480 MHz	1.709	2.327	0.000	2.327	≤ 36	Pass

EQUIVALENT ISOTROPIC RATED POWER

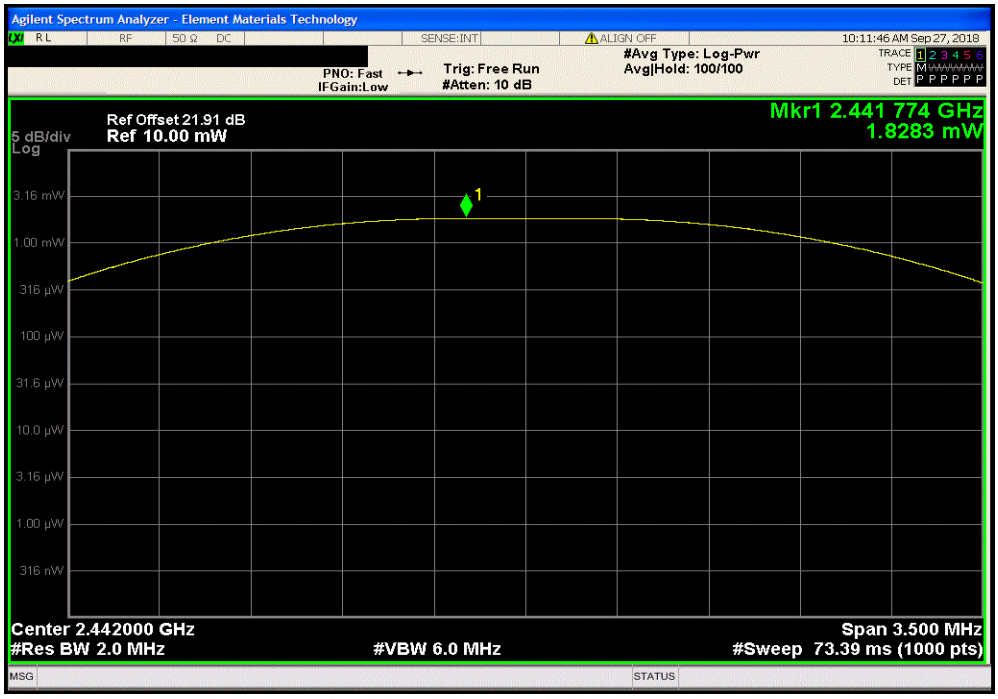
element

TbtTx 2018.09.04 XMit 2017.12.13

Left Engine, BLE/GFSK Low Channel, 2402 MHz						
	Value (mW)	Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
	1.835	2.636	0.00	2.636	≤ 36	Pass



Left Engine, BLE/GFSK Mid Channel, 2442 MHz						
	Value (mW)	Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
	1.828	2.620	0.00	2.620	≤ 36	Pass

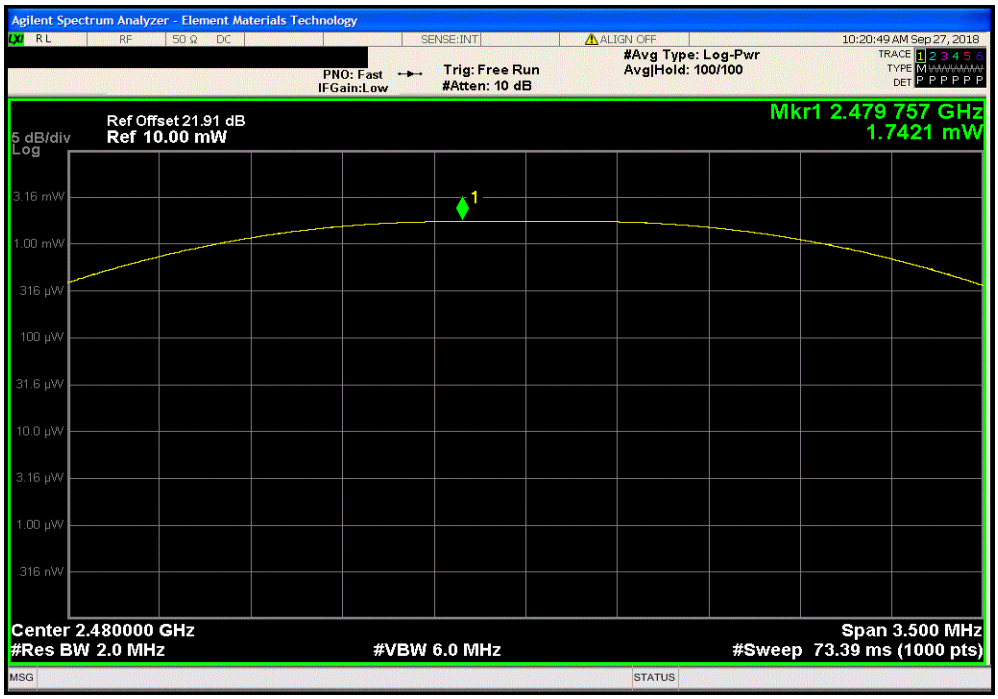


EQUIVALENT ISOTROPIC RATED POWER

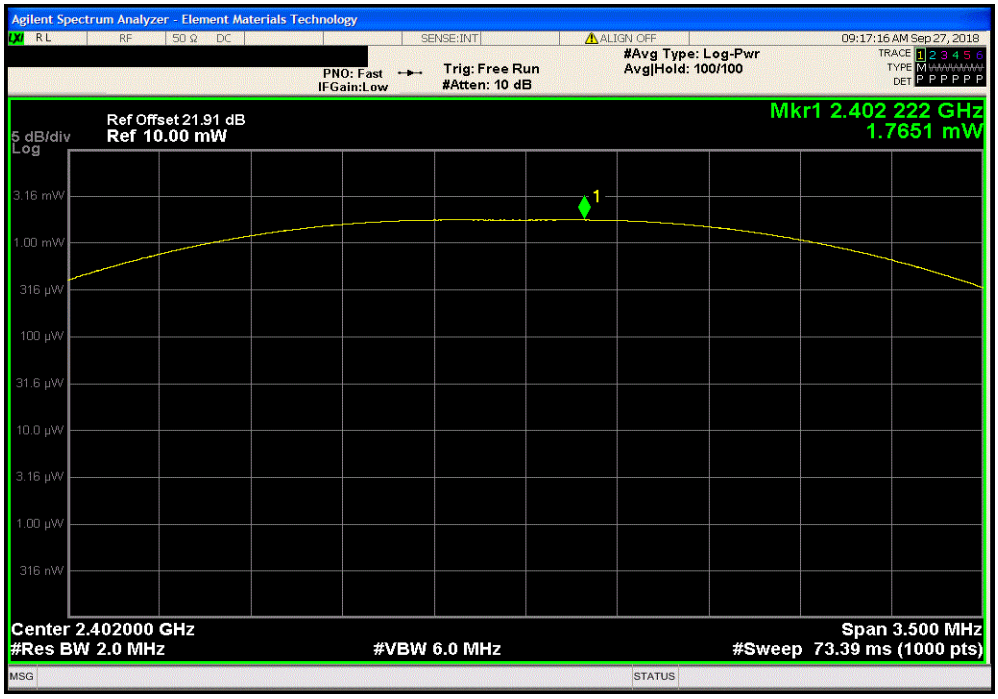
element

TbtTx 2018.09.04 XMit 2017.12.13

Left Engine, BLE/GFSK High Channel, 2480 MHz						
	Value (mW)	Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
	1.742	2.410	0.00	2.410	≤ 36	Pass



Right Engine, BLE/GFSK Low Channel, 2402 MHz						
	Value (mW)	Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
	1.765	2.467	0.00	2.467	≤ 36	Pass

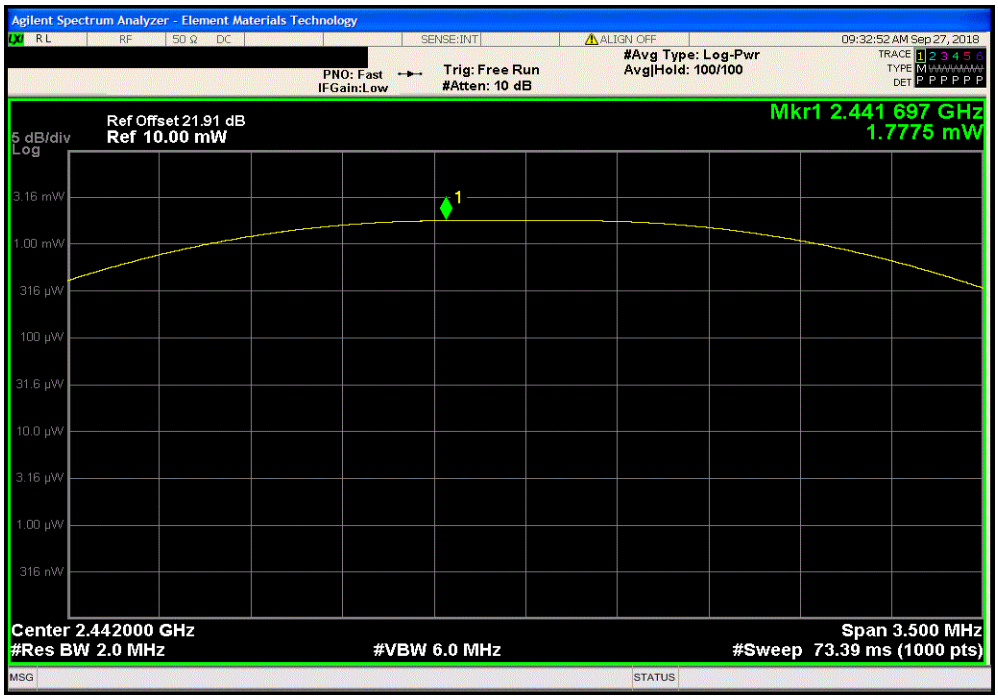


EQUIVALENT ISOTROPIC RATED POWER

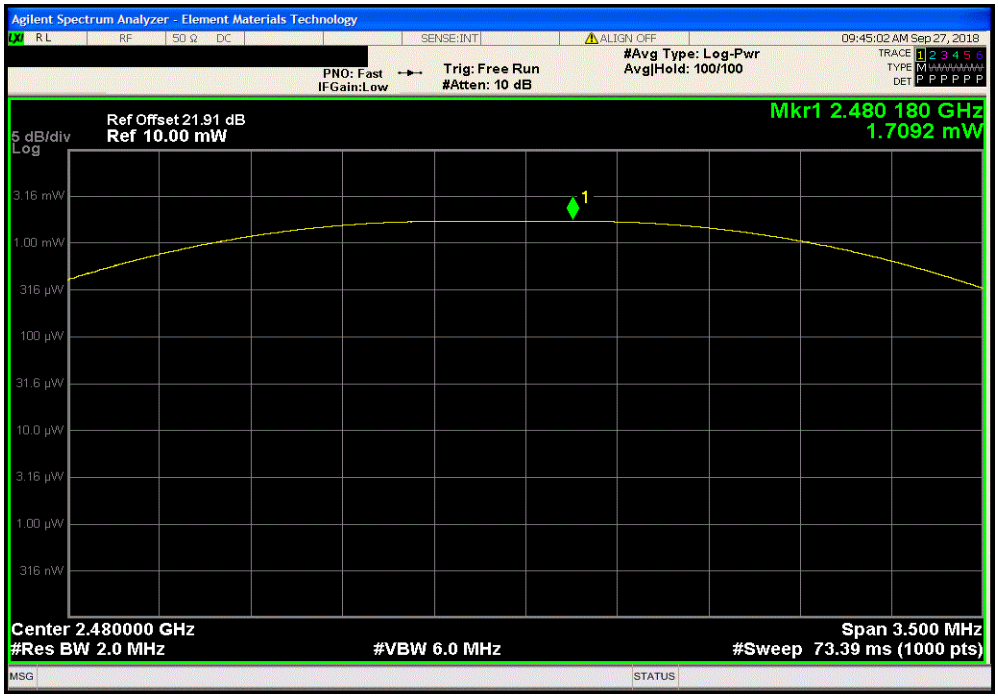
element

TbtTx 2018.09.04 XMit 2017.12.13

Right Engine, BLE/GFSK Mid Channel, 2442 MHz						
	Value (mW)	Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
	1.778	2.499	0.00	2.499	≤ 36	Pass



Right Engine, BLE/GFSK High Channel, 2480 MHz						
	Value (mW)	Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
	1.709	2.327	0.00	2.327	≤ 36	Pass



POWER SPECTRAL DENSITY

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	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	S.M. Electronics	SA26B-20	AUY	16-Apr-18	16-Apr-19
Block - DC	Fairview Microwave	SD3379	AMW	23-Apr-18	23-Apr-19
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19

TEST DESCRIPTION

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

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

POWER SPECTRAL DENSITY

element

TbtTx 2018.09.04 XMit 2017.12.13

EUT:	**Nike Adapt BB**			**Work Order:**	**SYNA0268**
Serial Number:	**See configuration**			**Date:**	**27-Sep-18**
Customer:	**Nike, Inc.**			**Temperature:**	**22.2 °C**
Attendees:	**Phil Meneau and Brian Piquette**			**Humidity:**	**42.3% RH**
Project:	**Nike Adapt**			**Barometric Pres.:**	**1018 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**Battery**	**Job Site:**	**EV06**

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

COMMENTS

Reference level offset includes cable loss from measurement system and simi rigid coax to SMA cable.

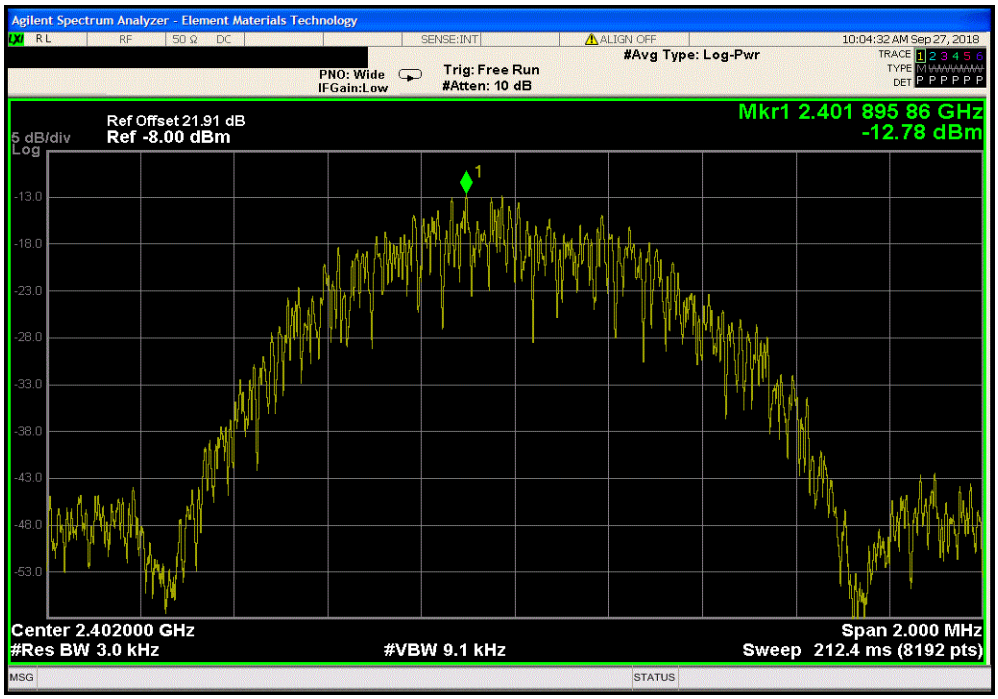
DEVIATIONS FROM TEST STANDARD

None

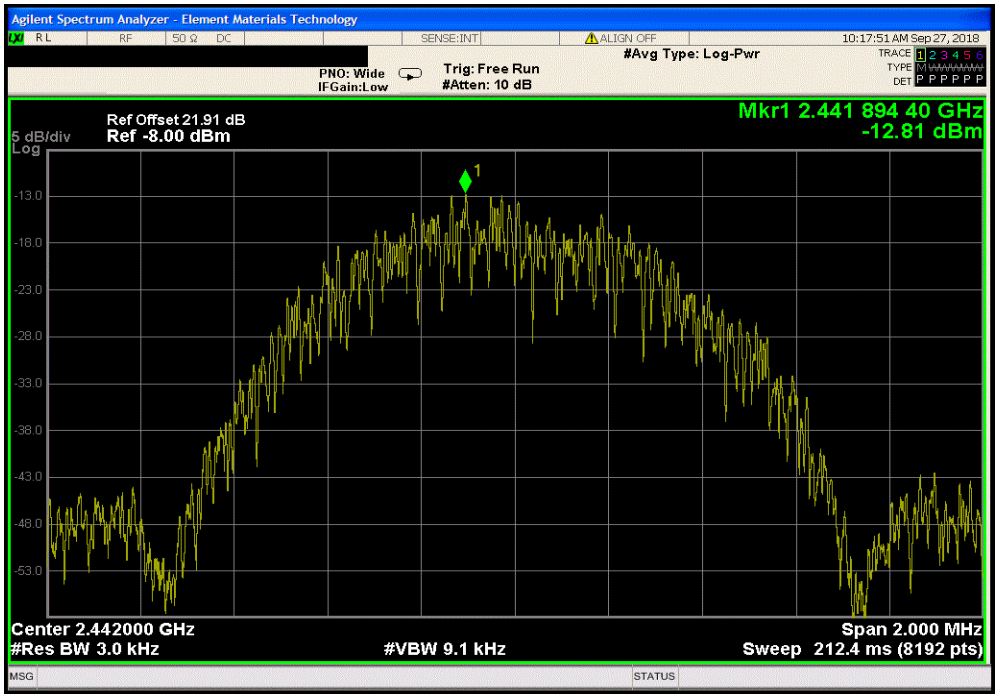
Configuration #	**1**	*Signature*

		Value dBm/3kHz	**Limit < dBm/3kHz**	**Results**
Left Engine				
	BLE/GFSK Low Channel, 2402 MHz	-12.778	8	Pass
	BLE/GFSK Mid Channel, 2442 MHz	-12.815	8	Pass
	BLE/GFSK High Channel, 2480 MHz	-12.997	8	Pass
Right Engine				
	BLE/GFSK Low Channel, 2402 MHz	-12.887	8	Pass
	BLE/GFSK Mid Channel, 2442 MHz	-12.902	8	Pass
	BLE/GFSK High Channel, 2480 MHz	-13.079	8	Pass

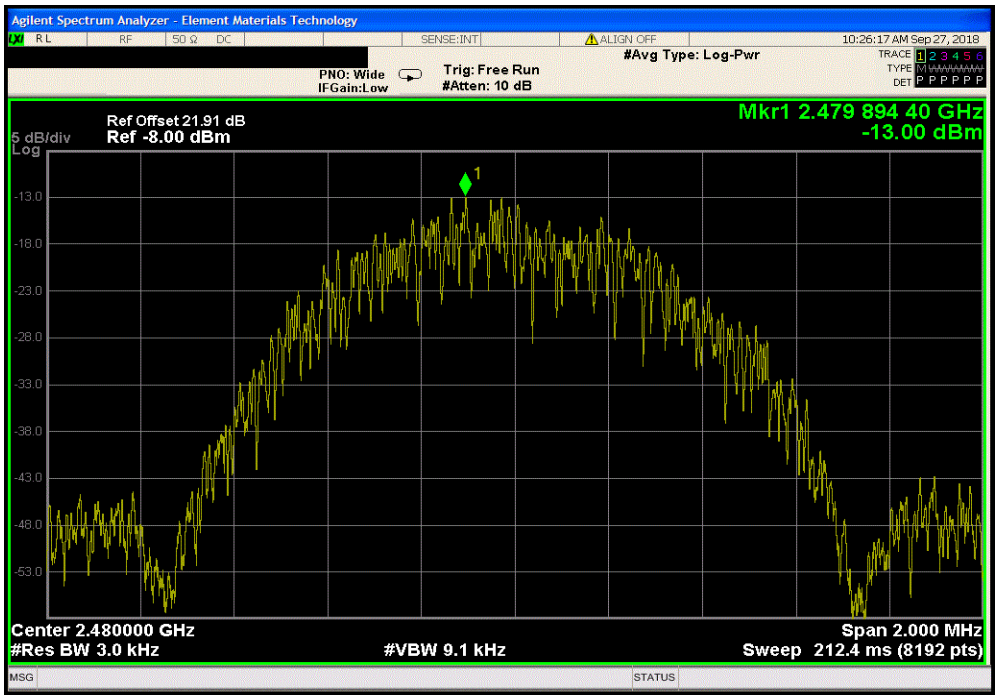
Left Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.778	8	Pass



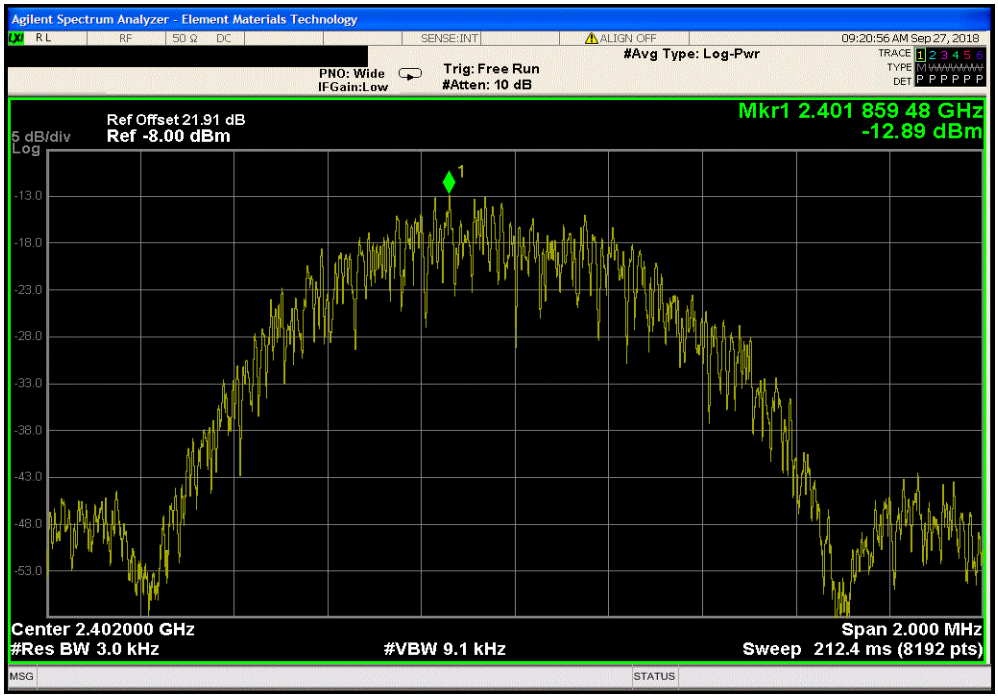
Left Engine, BLE/GFSK Mid Channel, 2442 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.815	8	Pass



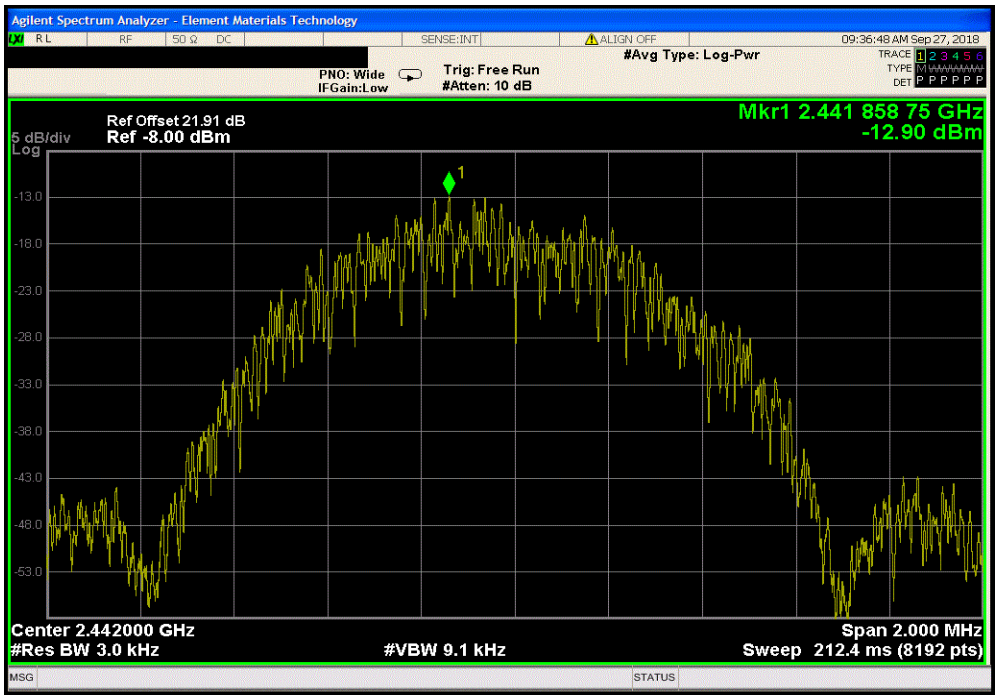
Left Engine, BLE/GFSK High Channel, 2480 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.997	8	Pass



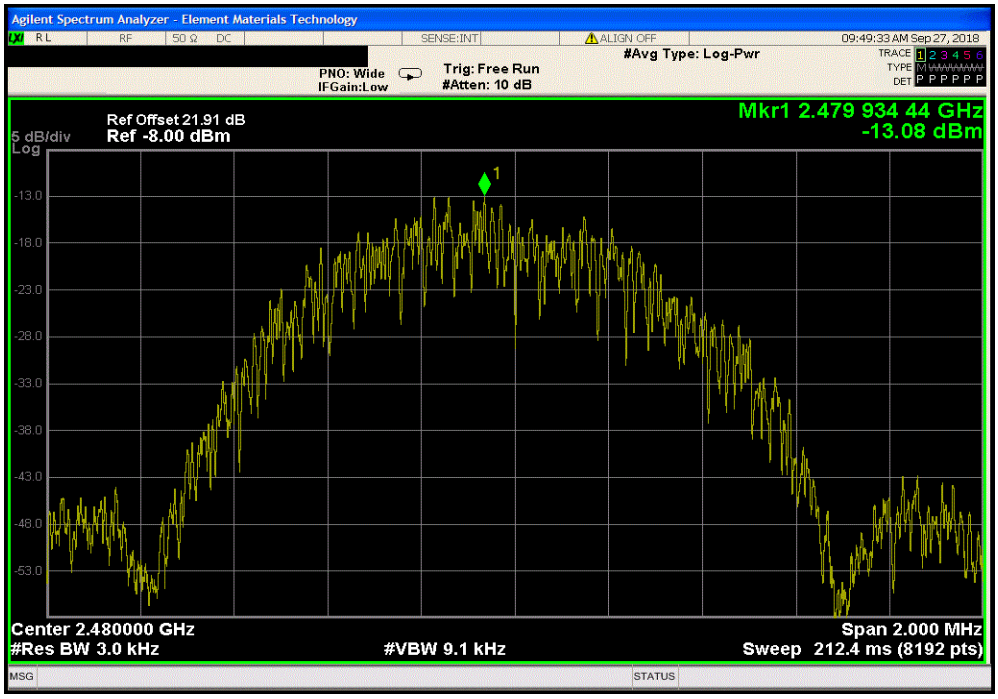
Right Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.887	8	Pass



Right Engine, BLE/GFSK Mid Channel, 2442 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.902	8	Pass



Right Engine, BLE/GFSK High Channel, 2480 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-13.079	8	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
Generator - Signal	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	S.M. Electronics	SA26B-20	AUY	16-Apr-18	16-Apr-19
Block - DC	Fairview Microwave	SD3379	AMW	23-Apr-18	23-Apr-19
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19

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 2018.09.04 XMit 2017.12.13

EUT:	Nike Adapt BB			**Work Order:**	SYNA0268
Serial Number:	See configuration			**Date:**	27-Sep-18
Customer:	Nike, Inc.			**Temperature:**	22.2 °C
Attendees:	Phil Meneau and Brian Piquette			**Humidity:**	42.1% RH
Project:	Nike Adapt			**Barometric Pres.:**	1018 mbar
Tested by:	Jeff Alcoke	**Power:**	Battery	**Job Site:**	EV06

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

COMMENTS

Reference level offset includes cable loss from measurement system and simi rigid coax to SMA cable.

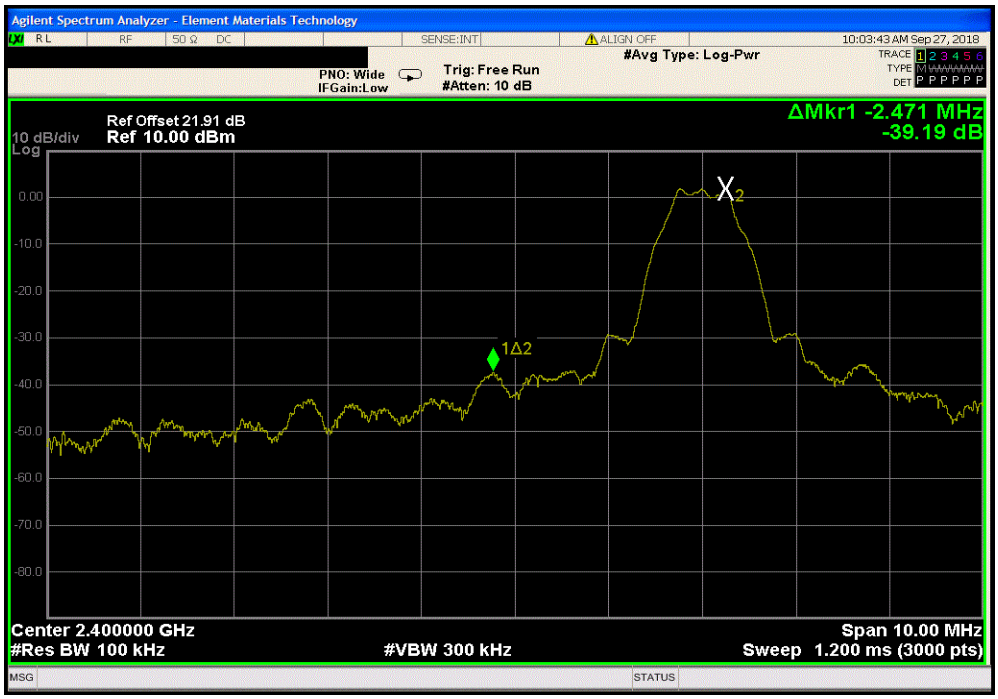
DEVIATIONS FROM TEST STANDARD

None

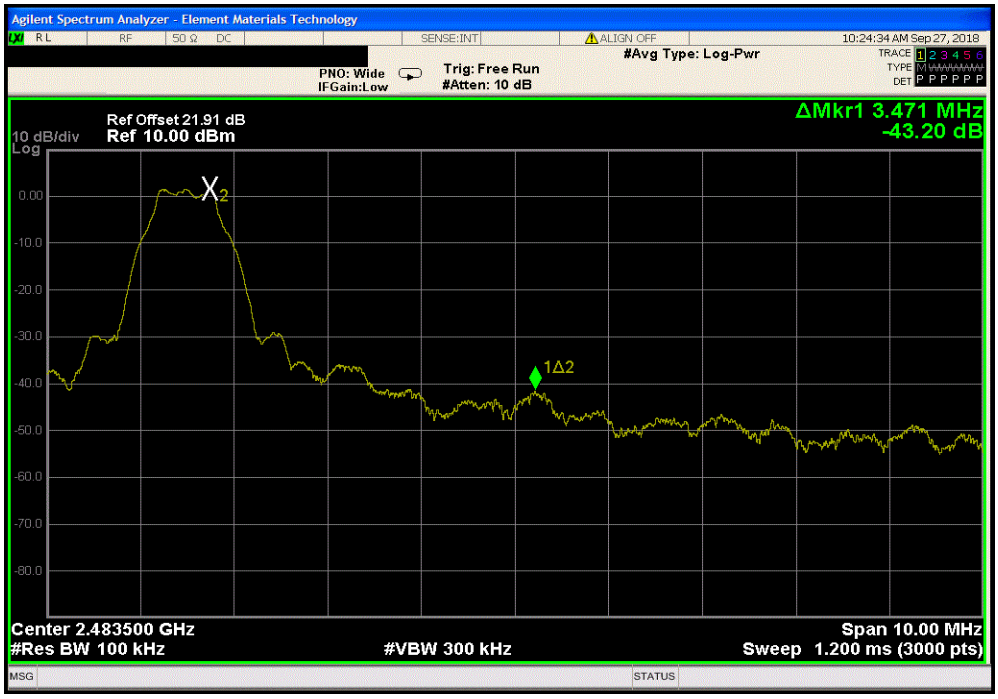
Configuration #	**1**	*Signature*

		Value (dBc)	**Limit ≤ (dBc)**	**Result**
Left Engine				
	BLE/GFSK Low Channel, 2402 MHz	-39.19	-20	Pass
	BLE/GFSK High Channel, 2480 MHz	-43.2	-20	Pass
Right Engine				
	BLE/GFSK Low Channel, 2402 MHz	-39.32	-20	Pass
	BLE/GFSK High Channel, 2480 MHz	-43.96	-20	Pass

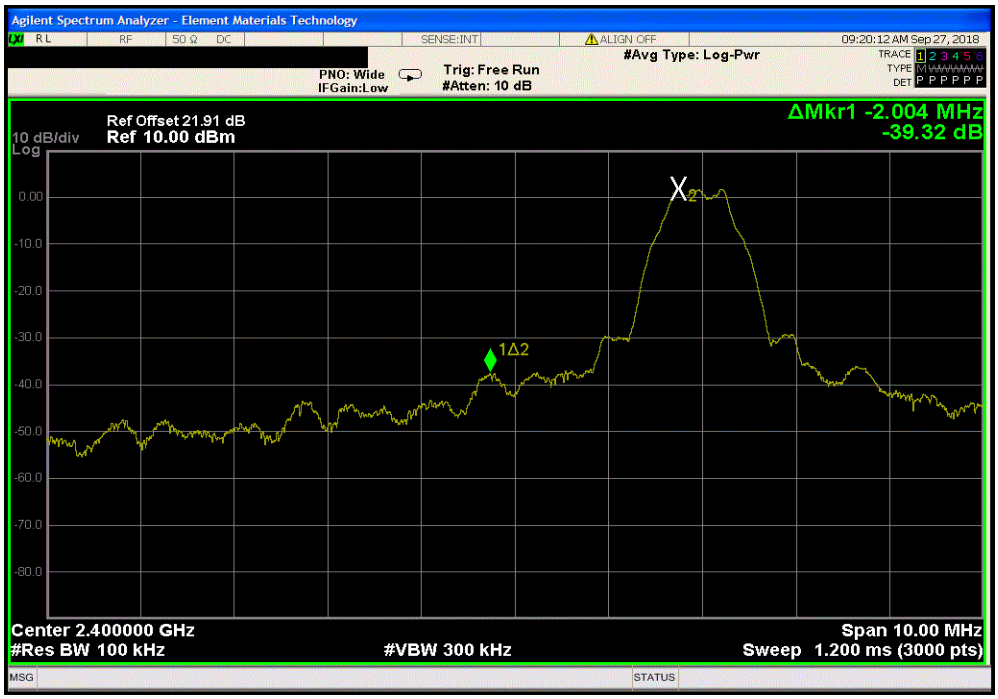
Left Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-39.19	-20	Pass



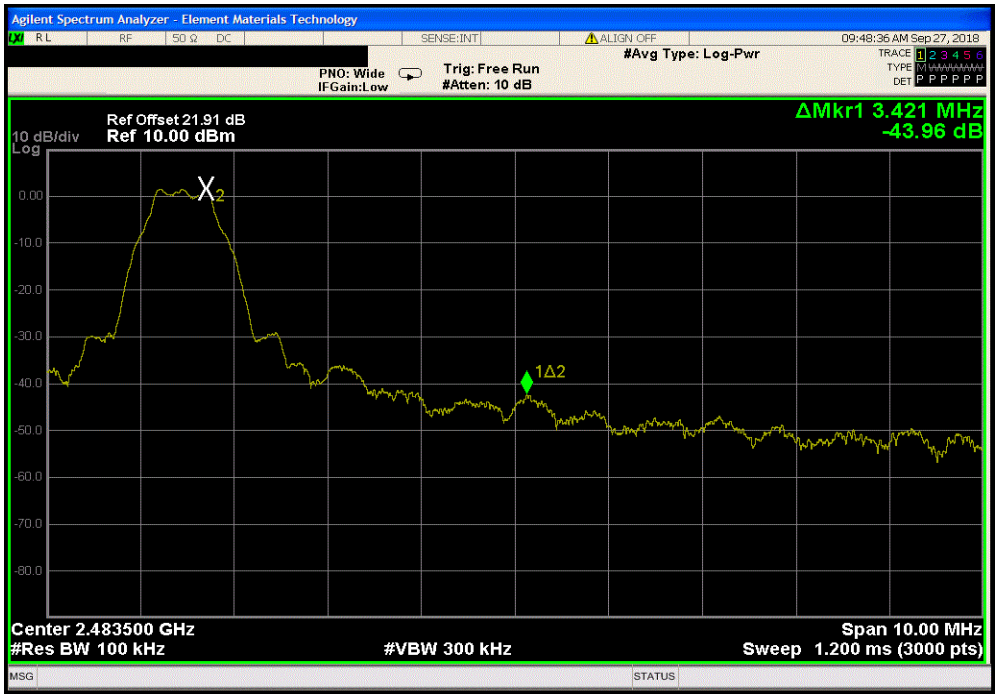
Left Engine, BLE/GFSK High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-43.2	-20	Pass



Right Engine, BLE/GFSK Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-39.32	-20	Pass



Right Engine, BLE/GFSK High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-43.96	-20	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2017.12.13

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TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	S.M. Electronics	SA26B-20	AUY	16-Apr-18	16-Apr-19
Block - DC	Fairview Microwave	SD3379	AMW	23-Apr-18	23-Apr-19
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19

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

element

TbtTx 2018.09.04 XMit 2017.12.13

EUT:	**Nike Adapt BB**			**Work Order:**	**SYNA0268**
Serial Number:	**See configuration**			**Date:**	**27-Sep-18**
Customer:	**Nike, Inc.**			**Temperature:**	**22.2 °C**
Attendees:	**Phil Meneau and Brian Piquette**			**Humidity:**	**42.5% RH**
Project:	**Nike Adapt**			**Barometric Pres.:**	**1018 mbar**
Tested by:	**Jeff Alcoke**	**Power:**	**Battery**	**Job Site:**	**EV06**

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

COMMENTS

Reference level offset includes cable loss from measurement system and simi rigid coax to SMA cable.

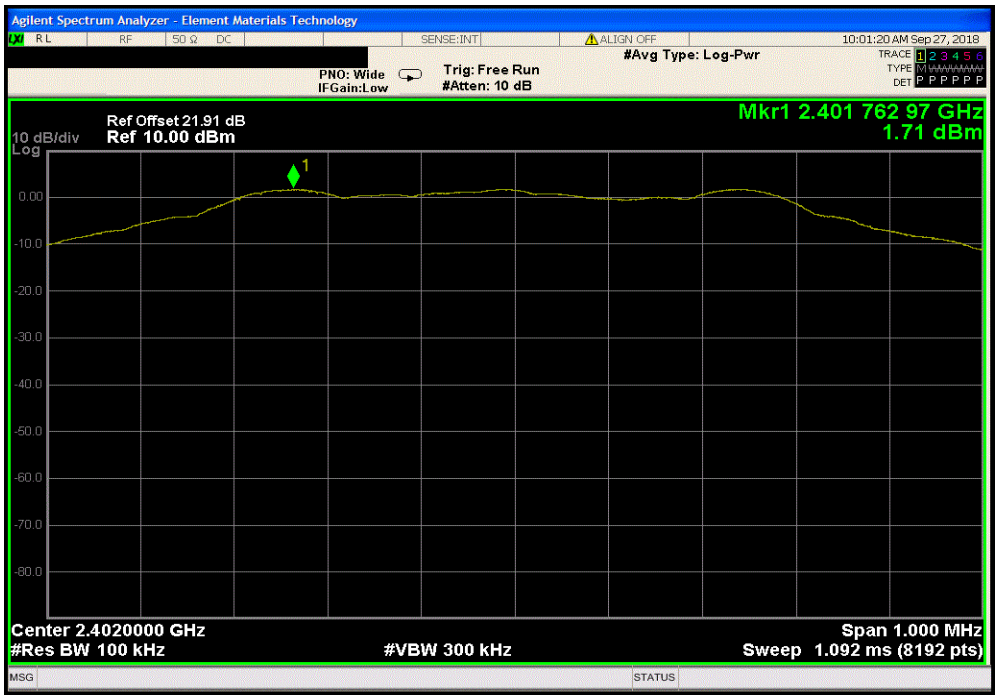
DEVIATIONS FROM TEST STANDARD

None

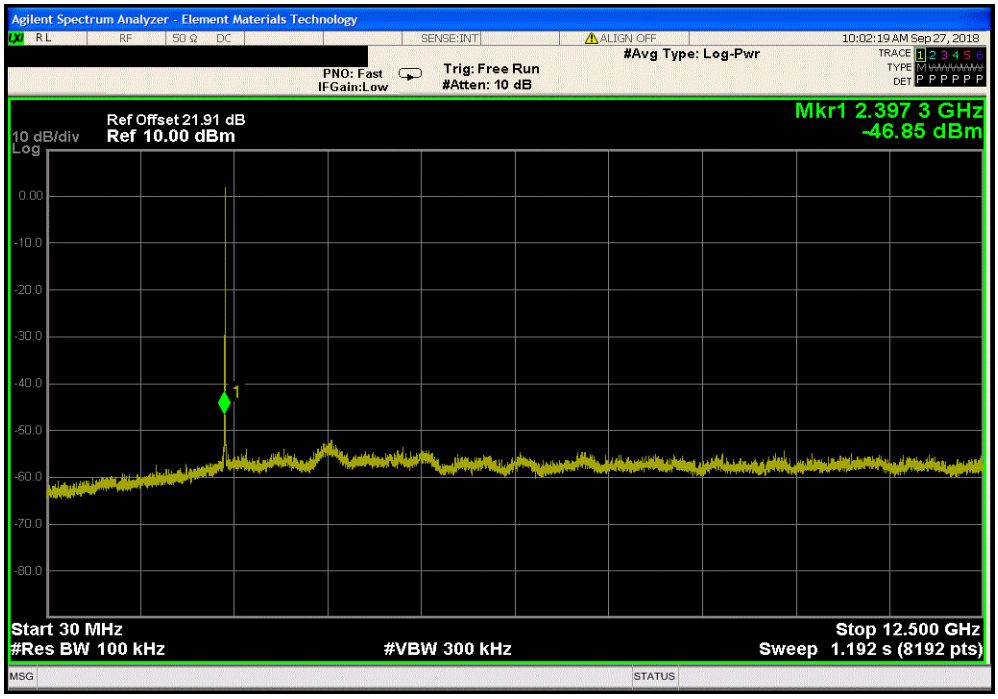
Configuration #	**1**	*Signature*

		Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Left Engine						
	BLE/GFSK Low Channel, 2402 MHz	Fundamental	2401.76	N/A	N/A	N/A
	BLE/GFSK Low Channel, 2402 MHz	30 MHz - 12.5 GHz	2397.34	-48.56	-20	Pass
	BLE/GFSK Low Channel, 2402 MHz	12.5 GHz - 25 GHz	24027.9	-52.47	-20	Pass
	BLE/GFSK Mid Channel, 2442 MHz	Fundamental	2441.74	N/A	N/A	N/A
	BLE/GFSK Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	3709.65	-54.41	-20	Pass
	BLE/GFSK Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	23769.99	-53.22	-20	Pass
	BLE/GFSK High Channel, 2480 MHz	Fundamental	2480.24	N/A	N/A	N/A
	BLE/GFSK High Channel, 2480 MHz	30 MHz - 12.5 GHz	2487.16	-50.77	-20	Pass
	BLE/GFSK High Channel, 2480 MHz	12.5 GHz - 25 GHz	22504.88	-51.93	-20	Pass
Right Engine						
	BLE/GFSK Low Channel, 2402 MHz	Fundamental	2401.73	N/A	N/A	N/A
	BLE/GFSK Low Channel, 2402 MHz	30 MHz - 12.5 GHz	2397.34	-45.49	-20	Pass
	BLE/GFSK Low Channel, 2402 MHz	12.5 GHz - 25 GHz	23400.68	-52.83	-20	Pass
	BLE/GFSK Mid Channel, 2442 MHz	Fundamental	2441.72	N/A	N/A	N/A
	BLE/GFSK Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	3735.53	-53.1	-20	Pass
	BLE/GFSK Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	23930.23	-52.66	-20	Pass
	BLE/GFSK High Channel, 2480 MHz	Fundamental	2479.7	N/A	N/A	N/A
	BLE/GFSK High Channel, 2480 MHz	30 MHz - 12.5 GHz	2487.16	-52.15	-20	Pass
	BLE/GFSK High Channel, 2480 MHz	12.5 GHz - 25 GHz	22430.11	-52.68	-20	Pass

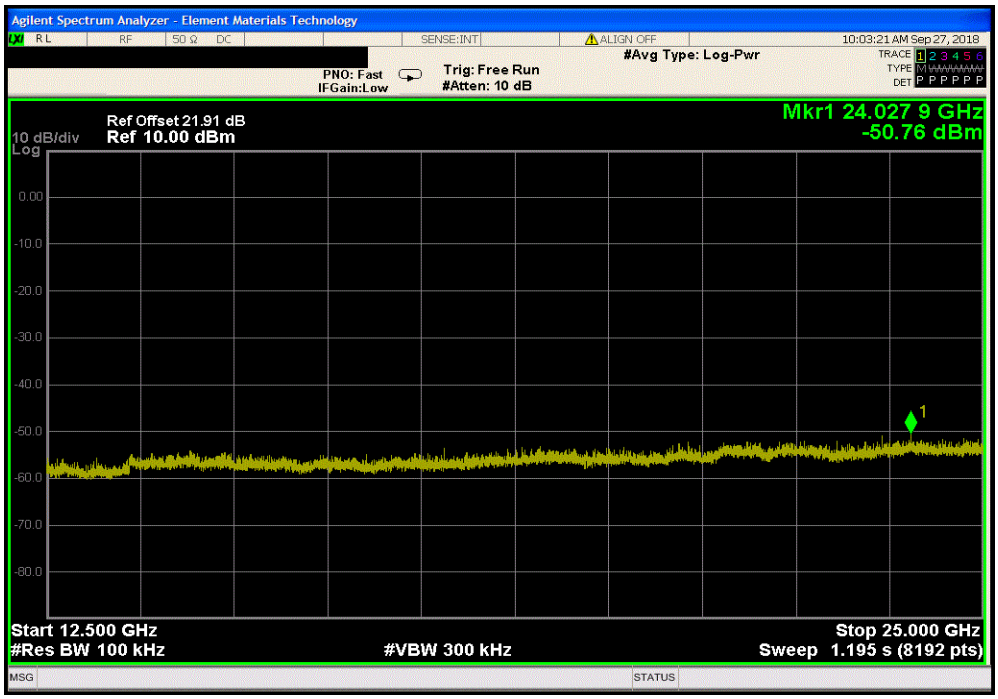
Left Engine, BLE/GFSK Low Channel, 2402 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2401.76	N/A	N/A	N/A



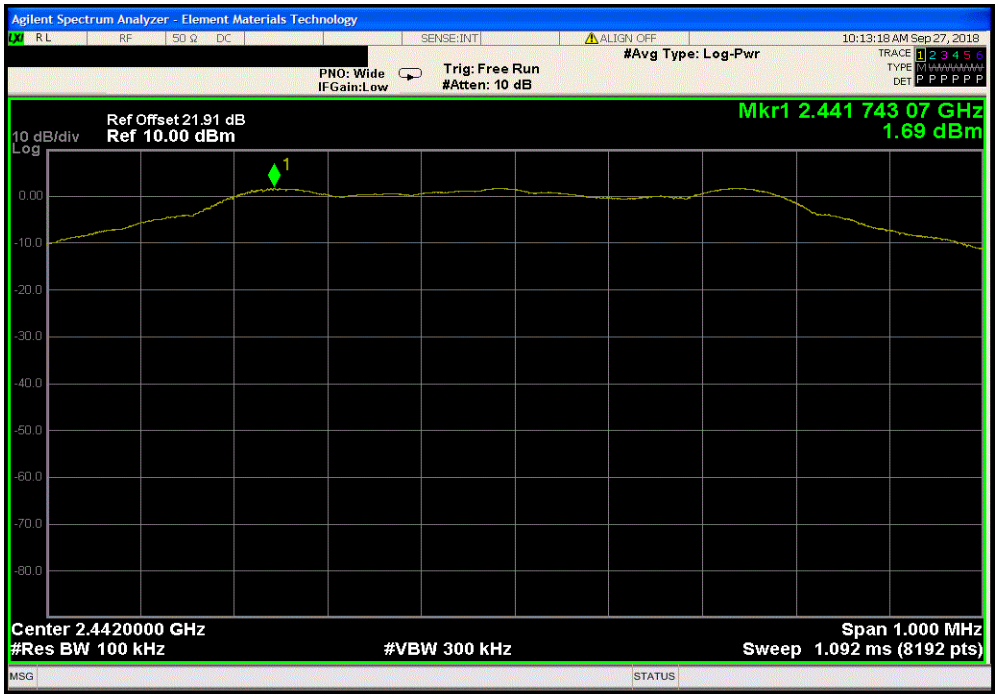
Left Engine, BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2397.34	-48.56	-20	Pass



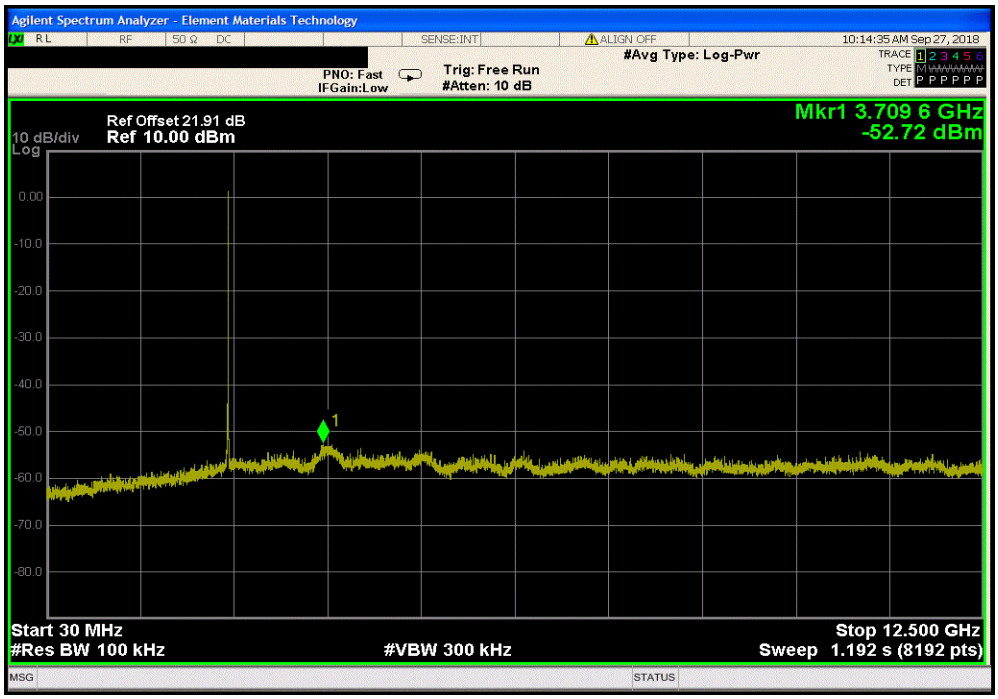
Left Engine, BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24027.9	-52.47	-20	Pass



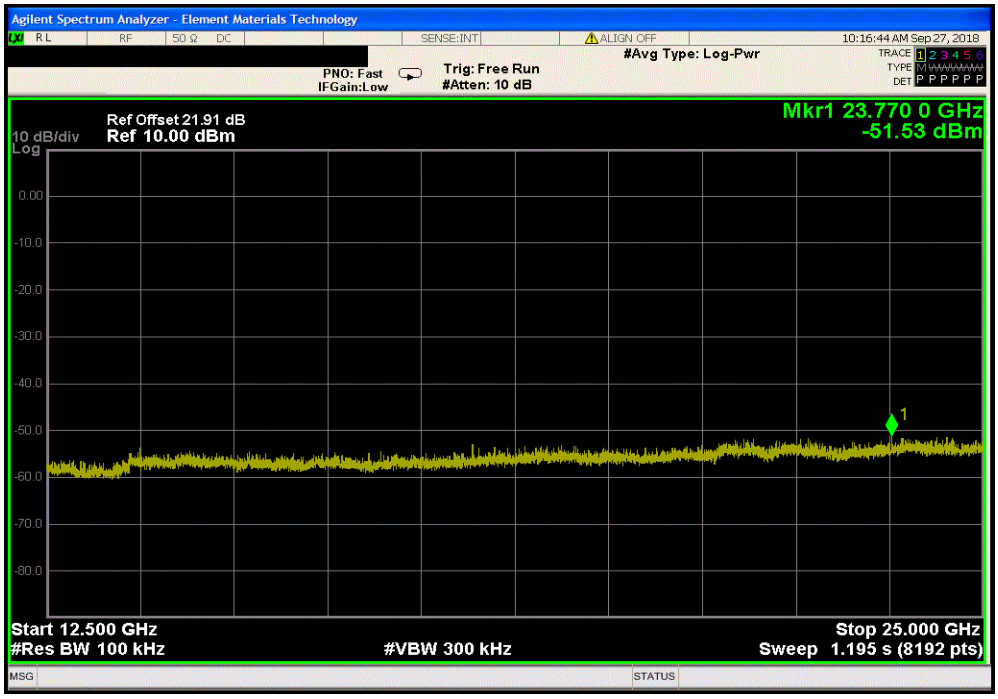
Left Engine, BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2441.74	N/A	N/A	N/A



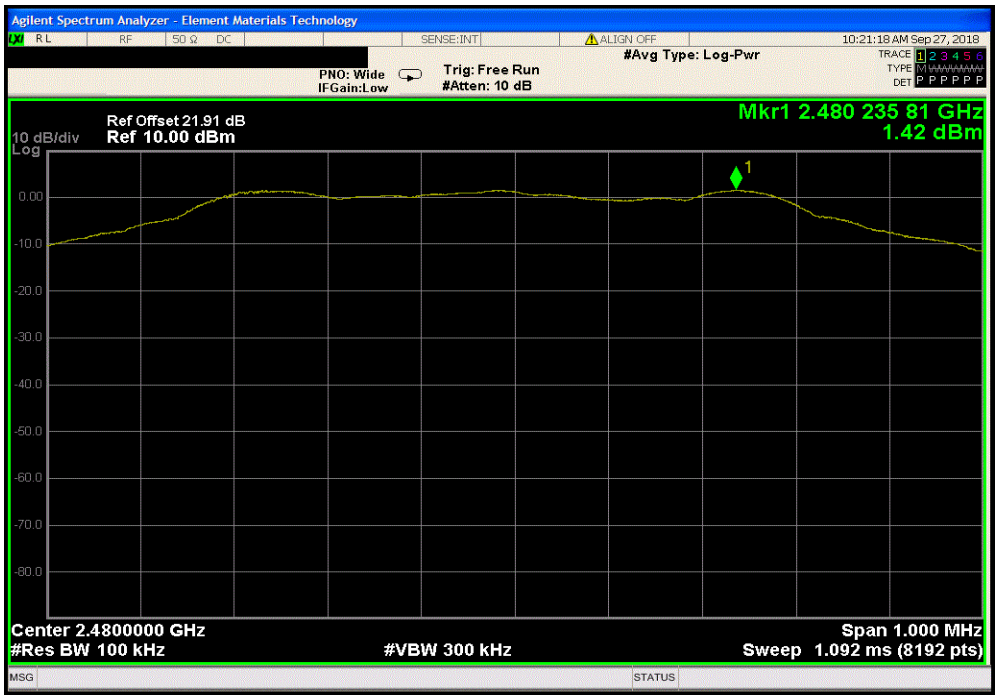
Left Engine, BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3709.65	-54.41	-20	Pass



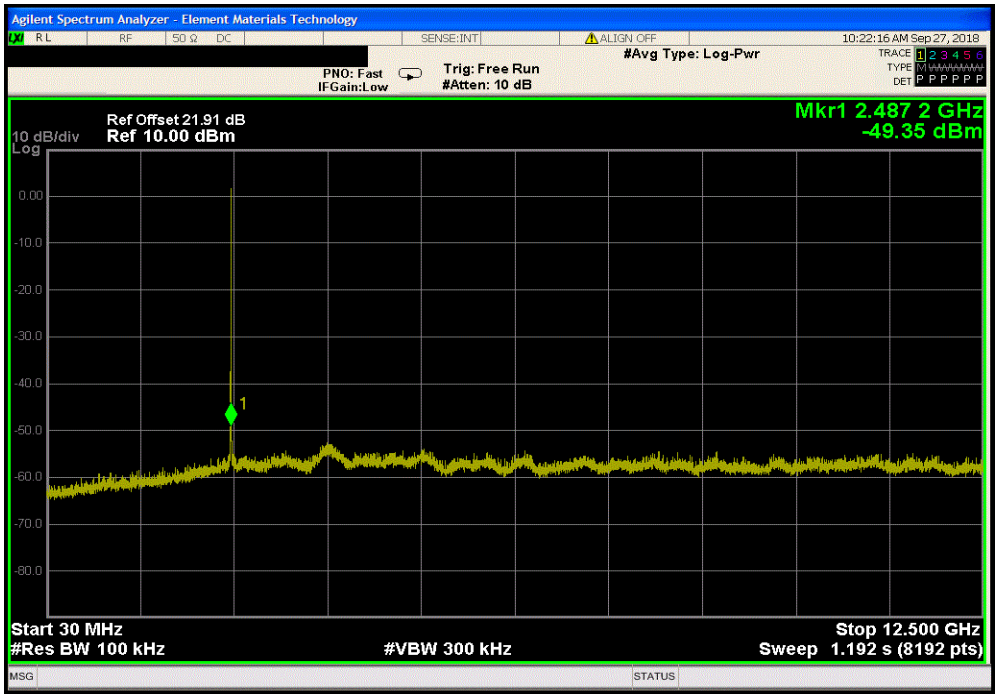
Left Engine, BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	23769.99	-53.22	-20	Pass



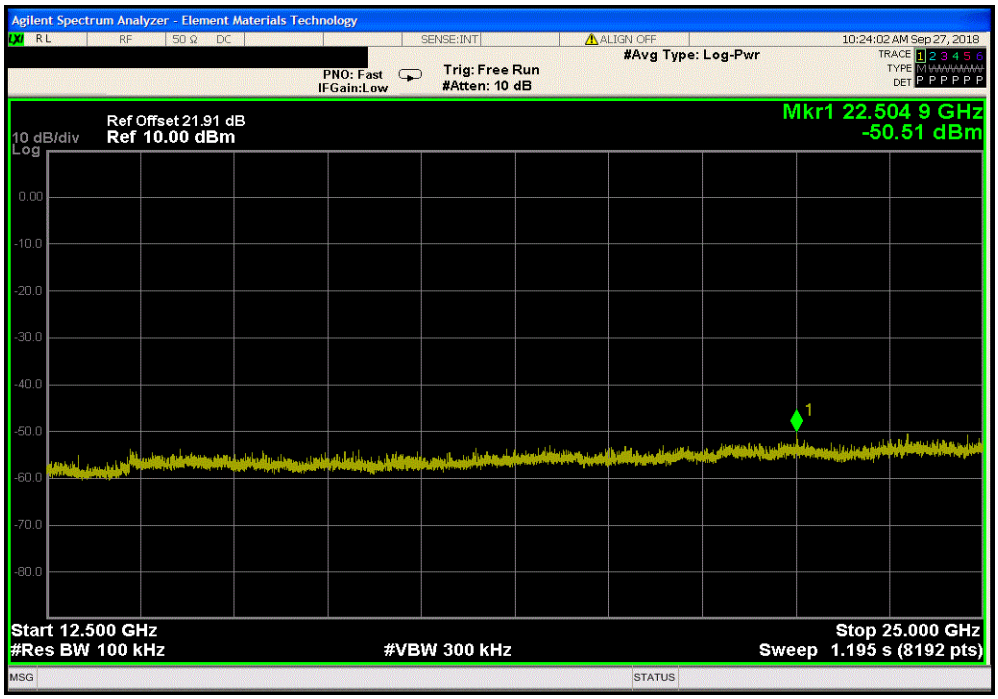
Left Engine, BLE/GFSK High Channel, 2480 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2480.24	N/A	N/A	N/A



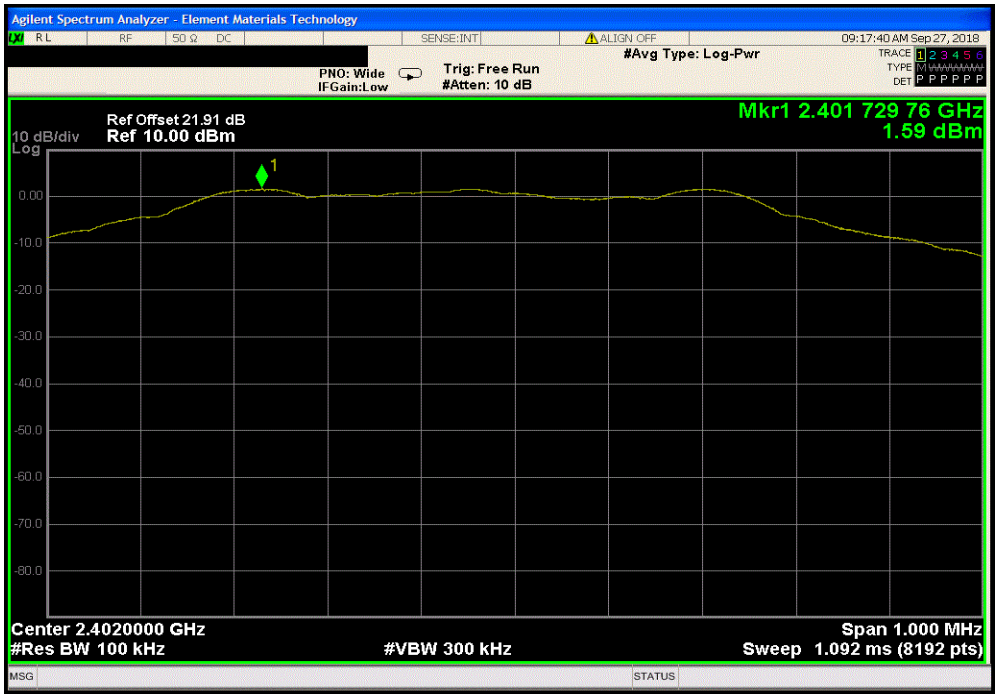
Left Engine, BLE/GFSK High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2487.16	-50.77	-20	Pass



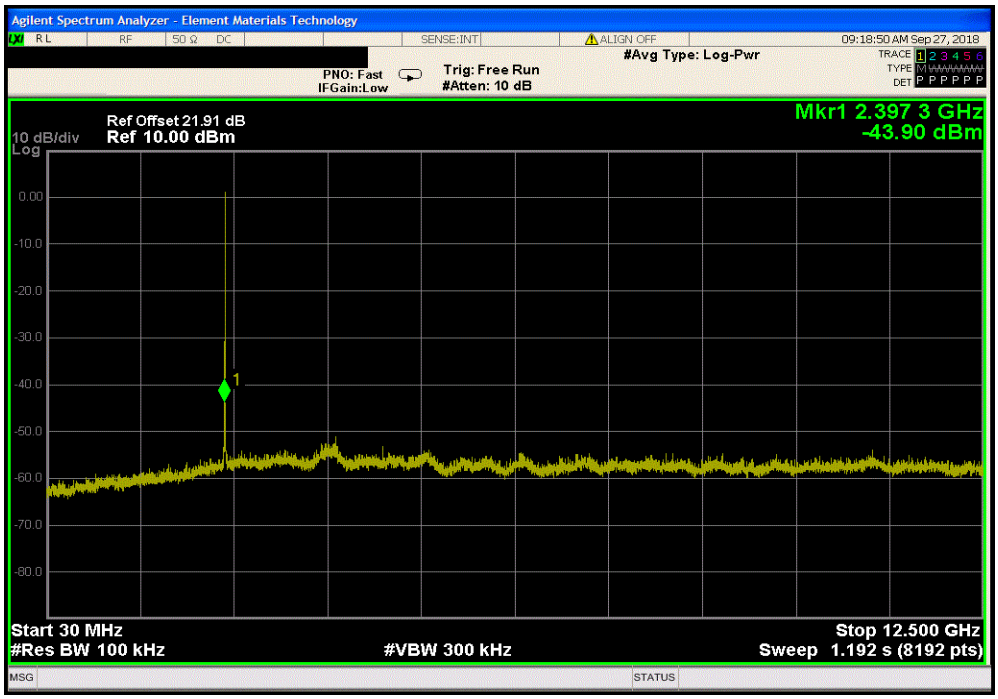
Left Engine, BLE/GFSK High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	22504.88	-51.93	-20	Pass



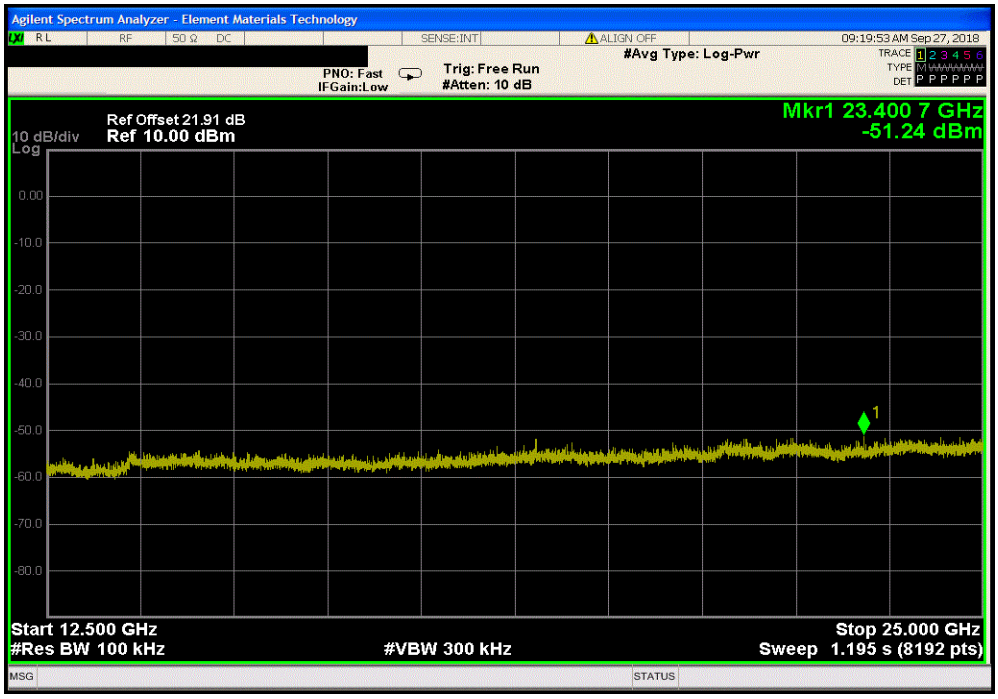
Right Engine, BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2401.73	N/A	N/A	N/A



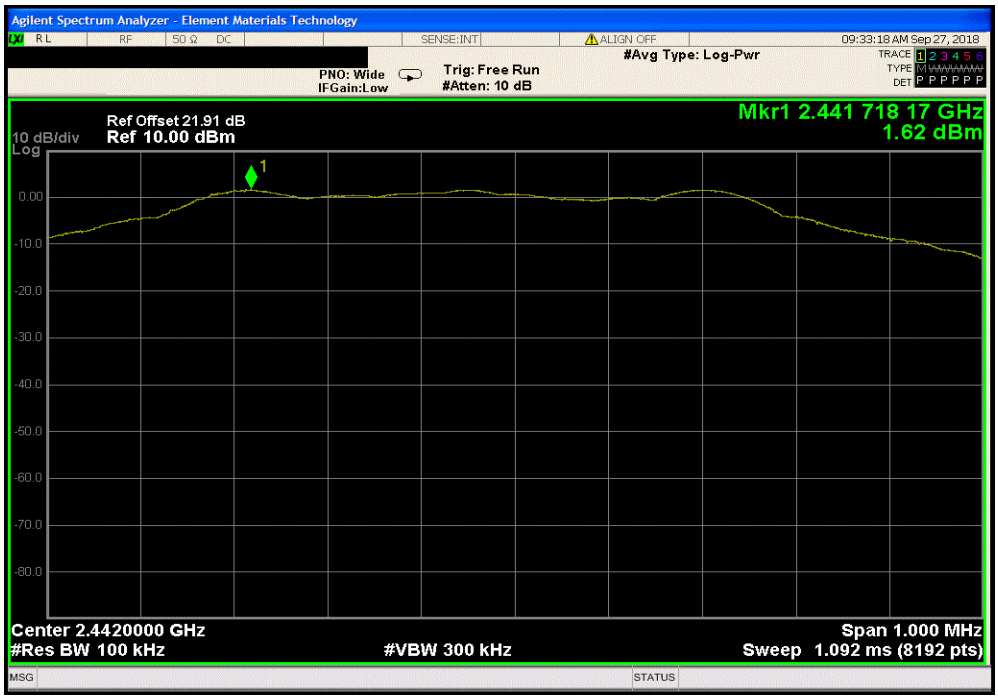
Right Engine, BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2397.34	-45.49	-20	Pass



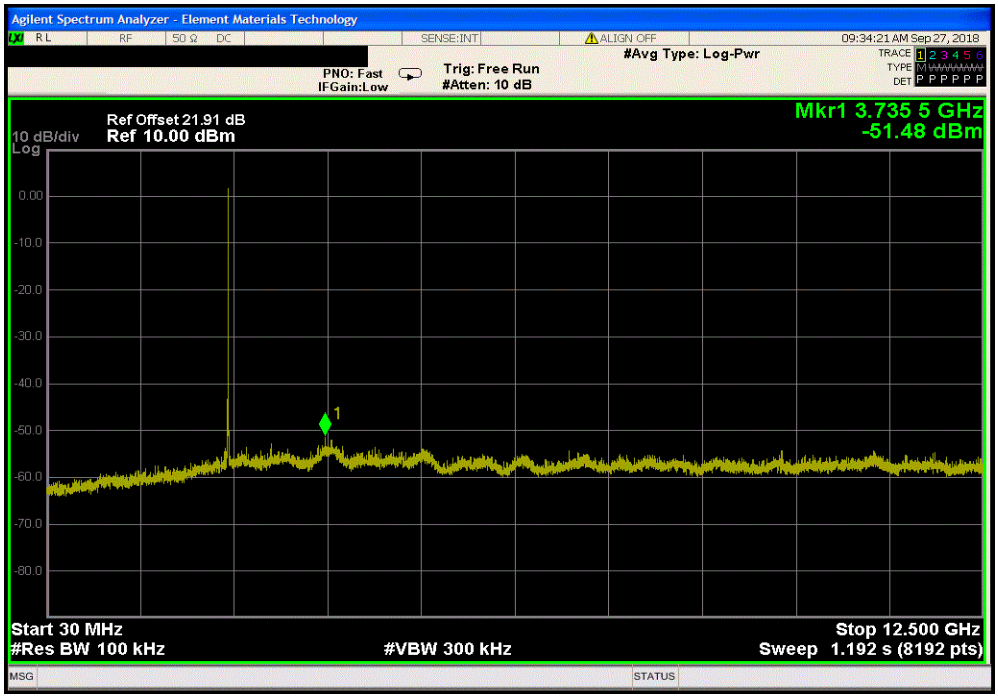
Right Engine, BLE/GFSK Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	23400.68	-52.83	-20	Pass



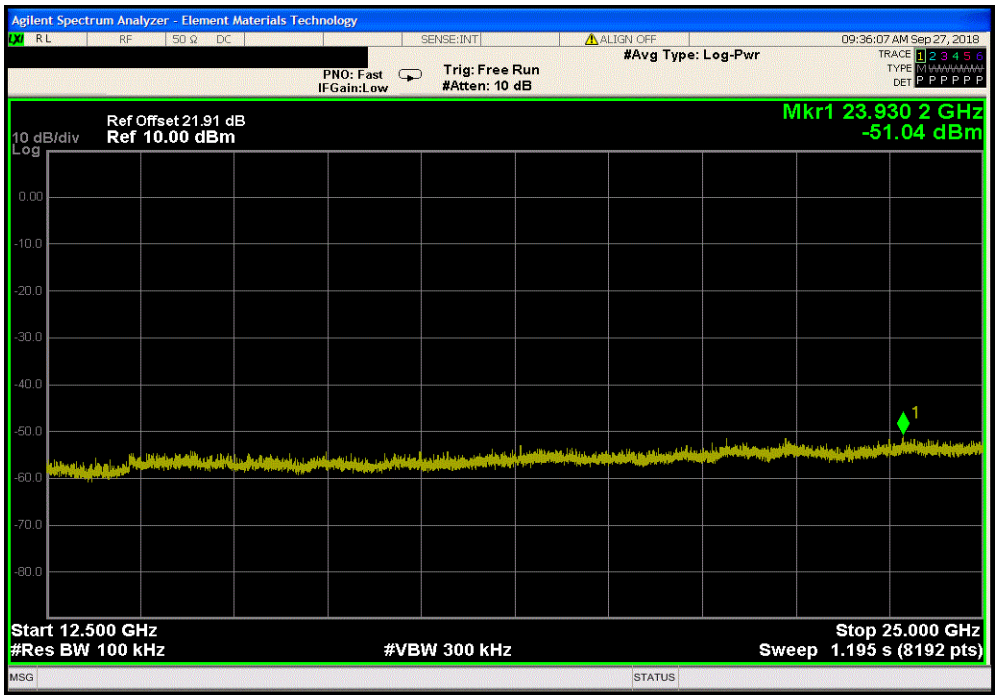
Right Engine, BLE/GFSK Mid Channel, 2442 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2441.72	N/A	N/A	N/A



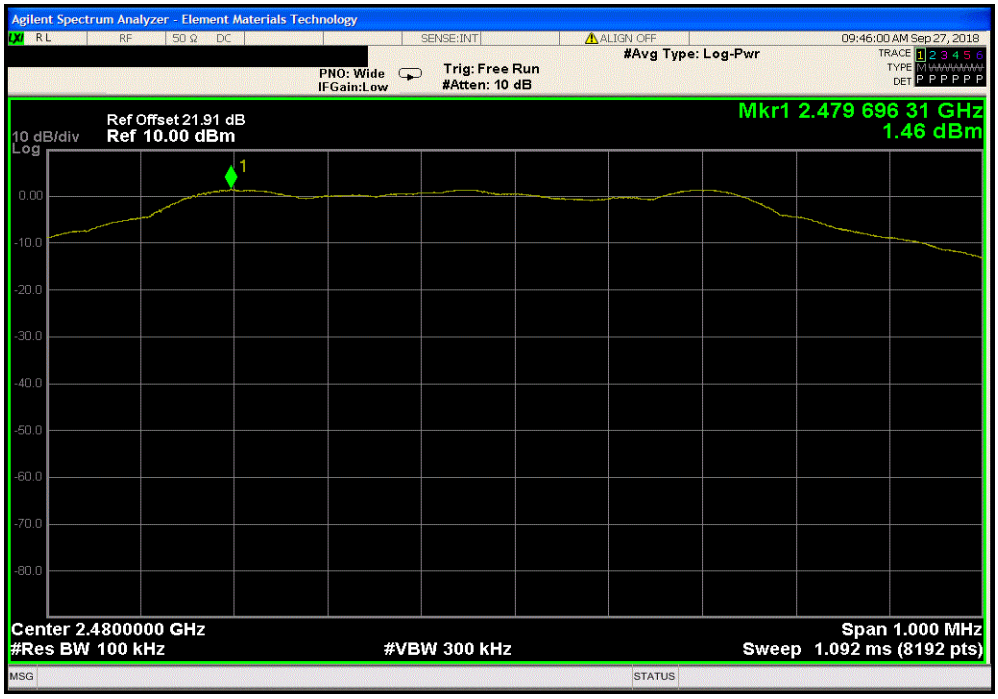
Right Engine, BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3735.53	-53.1	-20	Pass



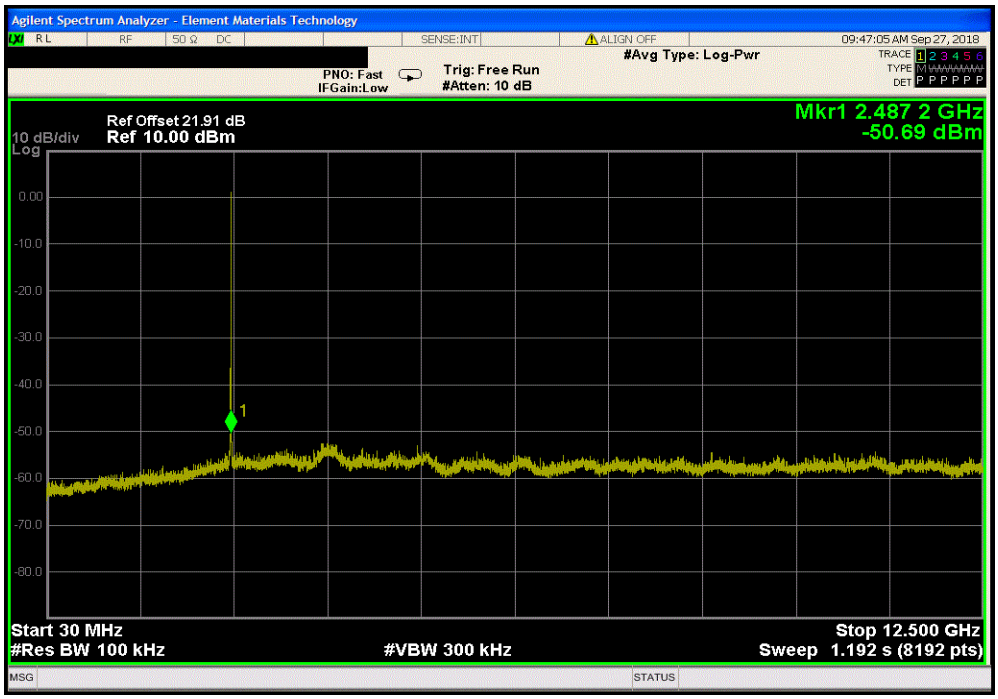
Right Engine, BLE/GFSK Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	23930.23	-52.66	-20	Pass



Right Engine, BLE/GFSK High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2479.7	N/A	N/A	N/A



Right Engine, BLE/GFSK High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2487.16	-52.15	-20	Pass



Right Engine, BLE/GFSK High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	22430.11	-52.68	-20	Pass