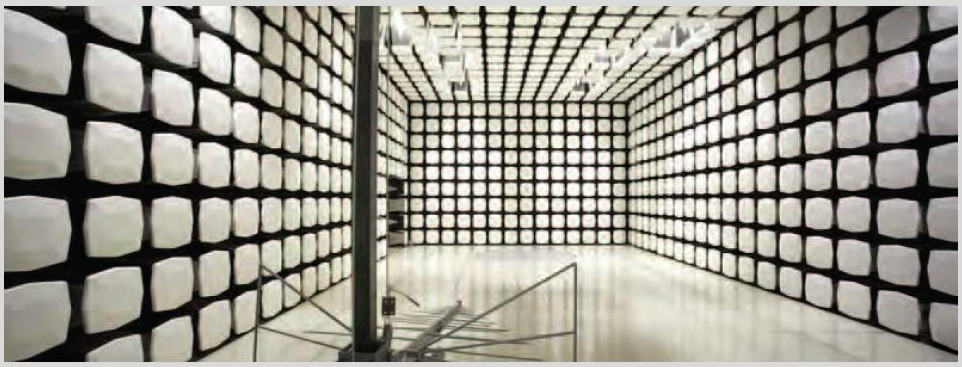
SonicSensory, Inc.

Jonah

FCC 15.247:2019

Bluetooth (FHSS) CSR 8670 Radio

Report # DROP0009.1



NVLAP LAB CODE: 200676-0

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CERTIFICATE OF TEST

Last Date of Test: June 10, 2019
SonicSensory, Inc.
Model: Jonah

Radio Equipment Testing

Standards

Specification	Method
FCC 15.207:2019	ANSI C63.10:2013
FCC 15.247:2019	

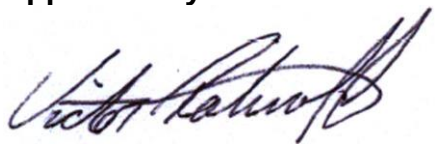
Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	Yes	Pass	
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 Channels	Yes	Pass	
7.8.4	Dwell Time	Yes	Pass	
7.8.5	Output Power	Yes	Pass	
7.8.5	Equivalent Isotropic Radiated 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	

Deviations From Test Standards

None

Approved By:



Victor Ratinoff, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY

Revision Number	Description	Date (yyyy-mm-dd)	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

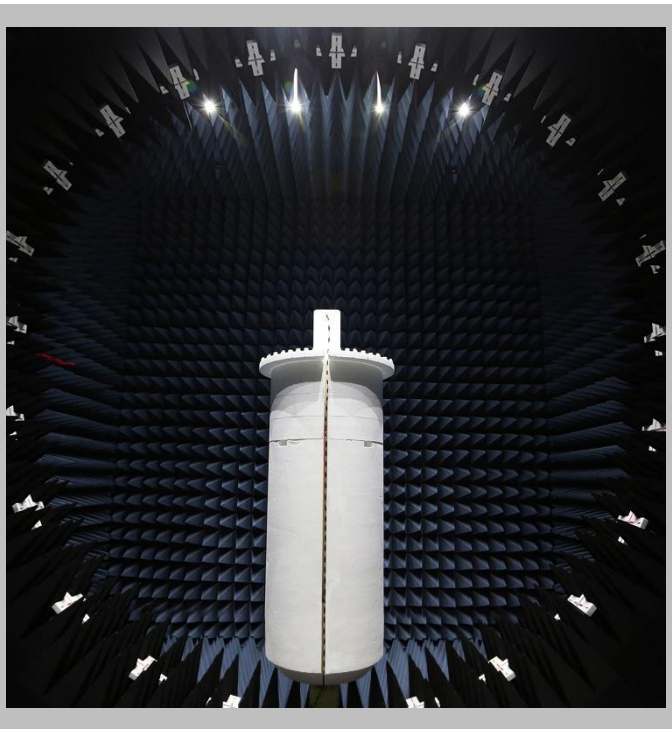
MIC – Recognized by MIC as a CAB for the acceptance of test data.

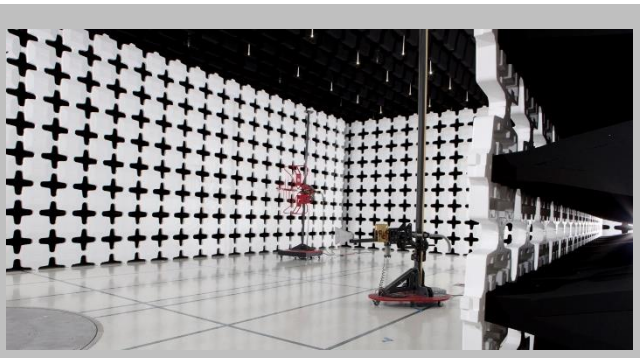
SCOPE

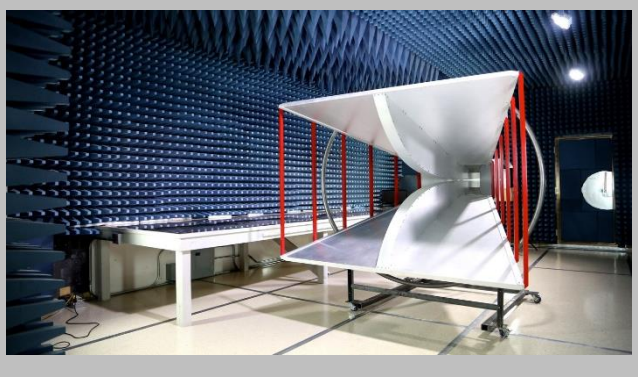
For details on the Scopes of our Accreditations, please visit:
https://www.nwemc.com/emc-testing-accreditations

FACILITIES

California	Minnesota	Oregon	Texas	Washington
Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th Ave NE Bothell, WA 98011 (425)984-6600
NVLAP				
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Innovation, Science and Economic Development Canada				
2834B-1, 2834B-3	2834E-1, 2834E-3	2834D-1	2834G-1	2834F-1
BSMI				
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI				
A-0029	A-0109	A-0108	A-0201	A-0110
Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA				
US0158	US0175	US0017	US0191	US0157







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.

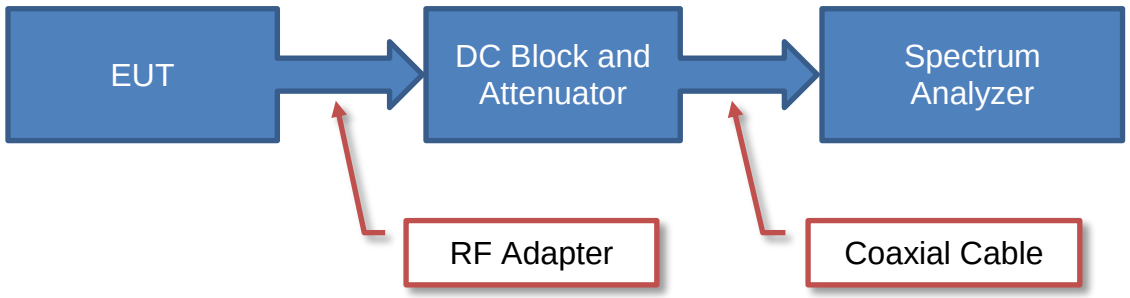
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable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

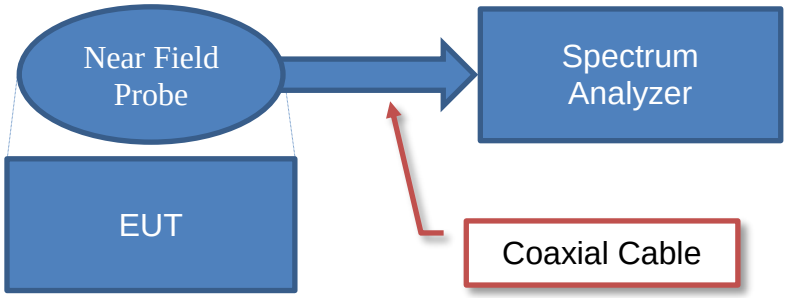
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.1 dB	-5.1 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

Test Setup Block Diagrams

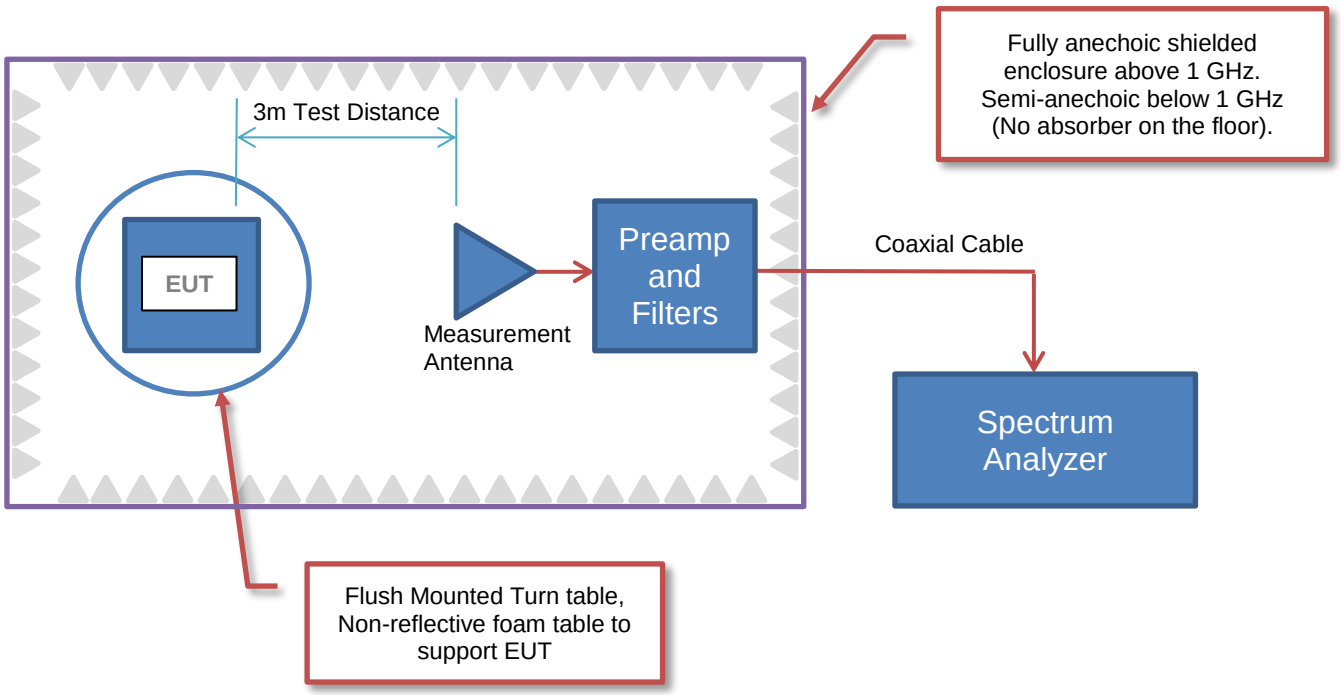
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	SonicSensory, Inc.
Address:	1163 Logan St
City, State, Zip:	Los Angeles, CA 90026
Test Requested By:	Mimi Liu
Model:	Jonah
First Date of Test:	June 6, 2019
Last Date of Test:	June 10, 2019
Receipt Date of Samples:	June 5, 2019
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Jonah is a radio enabled footwear device with audio processing devices and low frequency transducers, which transmit vibrational energy received from multimedia and environmental sources. The transducers are located under the arch area. Jonah comes with built in rechargeable Lithium-ion batteries and custom programmable options via the SonicSensory app.

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

CONFIGURATIONS

Configuration DROP0009- 3

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Jonah	SonicSensory, Inc.	PVT- Jonah	PL191910034

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Power supply	Asian Power Devices	WB-24J12FU	S9510999000058

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	HP	XPS159560	25058299006
USB-SPI Converter	CSR	1324	398772

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC cable	Yes	1.8m	Yes	Power supply	Jonah
Ethernet	No	1.5m	No	Laptop	USB-SPI
Ethernet	Yes	1m	No	USB-SPI	Ribbon
Ribbon	No	0.05m	No	Ethernet	Jonah

Configuration DROP0010- 1

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Jonah	SonicSensory, Inc.	PVT- Jonah	PL1919P10041

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Power supply	Asian Power Devices	WB-24J12FU	S9510999000058

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC cable	Yes	1.8m	Yes	Power supply	Jonah

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2019-06-06	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.
2	2019-06-06	Number of Hopping Channels	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2019-06-06	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.
4	2019-06-06	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	2019-06-06	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2019-06-06	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.
7	2019-06-06	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.
8	2019-06-06	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.
9	2019-06-06	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
10	2019-06-10	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.
11	2019-06-10	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

AC POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Rohde & Schwarz	ESCI	ARG	2018-07-05	2019-07-05
Cable - Conducted Cable Assembly	Northwest EMC	OCP, HFP, AWC	OCPA	2018-10-05	2019-10-05
LISN	Solar Electronics	9252-50-24-BNC	LIA	2019-01-08	2020-01-08

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

CONFIGURATIONS INVESTIGATED

DROP0009-3

MODES INVESTIGATED

CSR Radio: Mid Channel 2440 MHz, 1MHz DH5

AC POWERLINE CONDUCTED EMISSIONS

EUT:	Jonah	Work Order:	DROP0009
Serial Number:	PL1919P10034	Date:	2019-06-10
Customer:	SonicSensory, Inc.	Temperature:	26.6°C
Attendees:	Daniel Quiros	Relative Humidity:	43%
Customer Project:	None	Bar. Pressure:	1015 mb
Tested By:	Mark Baytan	Job Site:	OC06
Power:	110VAC/60Hz	Configuration:	DROP0009-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	11	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

None

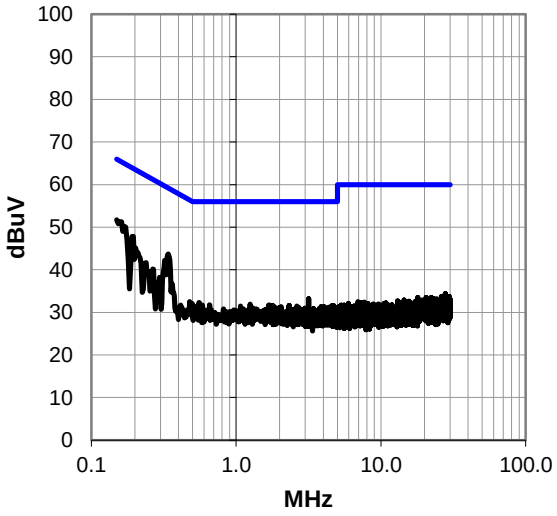
EUT OPERATING MODES

CSR Radio: Mid Channel 2440 MHz, 1MHz DH5

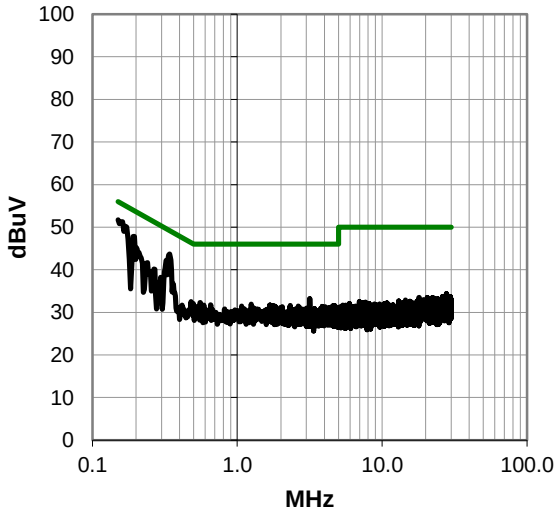
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #11

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	31.4	20.3	51.7	66.0	-14.3
0.340	23.6	20.1	43.7	59.2	-15.5
0.191	27.6	20.2	47.8	64.0	-16.2
0.322	22.1	20.1	42.2	59.7	-17.5
0.240	21.6	20.1	41.7	62.1	-20.4
0.266	20.1	20.1	40.2	61.3	-21.1
0.296	18.1	20.1	38.2	60.4	-22.2
3.168	12.9	20.3	33.2	56.0	-22.8
0.553	12.3	20.0	32.3	56.0	-23.7
0.478	12.5	20.0	32.5	56.4	-23.9
1.251	11.9	20.0	31.9	56.0	-24.1
0.654	11.8	20.0	31.8	56.0	-24.2
0.587	11.7	20.0	31.7	56.0	-24.3
1.676	11.6	20.1	31.7	56.0	-24.3
1.784	11.5	20.1	31.6	56.0	-24.4
2.325	11.5	20.1	31.6	56.0	-24.4
4.612	11.3	20.3	31.6	56.0	-24.4
4.683	11.3	20.3	31.6	56.0	-24.4
1.072	11.5	20.0	31.5	56.0	-24.5
2.631	11.3	20.2	31.5	56.0	-24.5
0.531	11.4	20.0	31.4	56.0	-24.6
3.858	11.1	20.3	31.4	56.0	-24.6
4.746	11.1	20.3	31.4	56.0	-24.6
1.836	11.2	20.1	31.3	56.0	-24.7
2.042	11.2	20.1	31.3	56.0	-24.7
4.049	11.0	20.3	31.3	56.0	-24.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	31.4	20.3	51.7	56.0	-4.3
0.340	23.6	20.1	43.7	49.2	-5.5
0.191	27.6	20.2	47.8	54.0	-6.2
0.322	22.1	20.1	42.2	49.7	-7.5
0.240	21.6	20.1	41.7	52.1	-10.4
0.266	20.1	20.1	40.2	51.3	-11.1
0.296	18.1	20.1	38.2	50.4	-12.2
3.168	12.9	20.3	33.2	46.0	-12.8
0.553	12.3	20.0	32.3	46.0	-13.7
0.478	12.5	20.0	32.5	46.4	-13.9
1.251	11.9	20.0	31.9	46.0	-14.1
0.654	11.8	20.0	31.8	46.0	-14.2
0.587	11.7	20.0	31.7	46.0	-14.3
1.676	11.6	20.1	31.7	46.0	-14.3
1.784	11.5	20.1	31.6	46.0	-14.4
2.325	11.5	20.1	31.6	46.0	-14.4
4.612	11.3	20.3	31.6	46.0	-14.4
4.683	11.3	20.3	31.6	46.0	-14.4
1.072	11.5	20.0	31.5	46.0	-14.5
2.631	11.3	20.2	31.5	46.0	-14.5
0.531	11.4	20.0	31.4	46.0	-14.6
3.858	11.1	20.3	31.4	46.0	-14.6
4.746	11.1	20.3	31.4	46.0	-14.6
1.836	11.2	20.1	31.3	46.0	-14.7
2.042	11.2	20.1	31.3	46.0	-14.7
4.049	11.0	20.3	31.3	46.0	-14.7

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	Jonah	Work Order:	DROP0009
Serial Number:	PL1919P10034	Date:	2019-06-10
Customer:	SonicSensory, Inc.	Temperature:	26.6°C
Attendees:	Daniel Quiros	Relative Humidity:	43%
Customer Project:	None	Bar. Pressure:	1015 mb
Tested By:	Mark Baytan	Job Site:	OC06
Power:	110VAC/60Hz	Configuration:	DROP0009-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	12	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

None

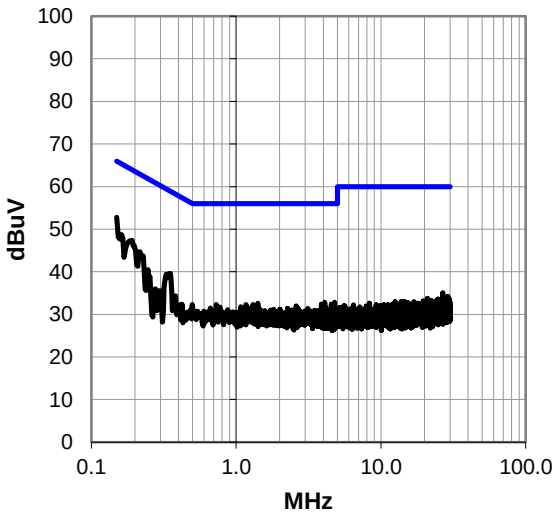
EUT OPERATING MODES

CSR Radio: Mid Channel 2440 MHz, 1MHz DH5

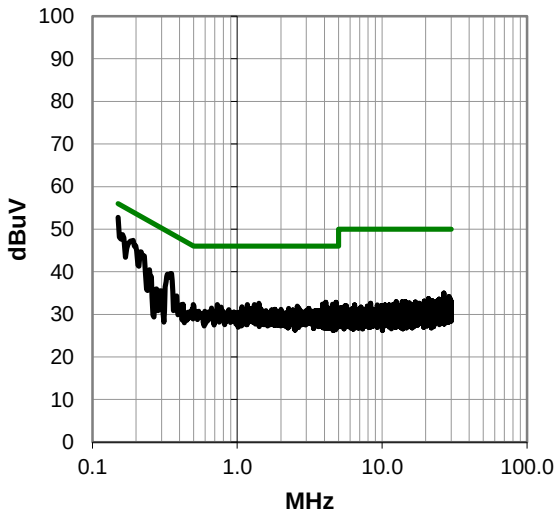
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #12

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	32.5	20.3	52.8	66.0	-13.2
0.191	27.2	20.2	47.4	64.0	-16.6
0.213	24.6	20.1	44.7	63.1	-18.4
0.344	19.5	20.1	39.6	59.1	-19.5
0.247	20.4	20.1	40.5	61.9	-21.4
4.079	12.5	20.3	32.8	56.0	-23.2
4.799	12.5	20.3	32.8	56.0	-23.2
1.411	12.5	20.1	32.6	56.0	-23.4
3.885	12.1	20.3	32.4	56.0	-23.6
4.552	12.1	20.3	32.4	56.0	-23.6
0.728	12.3	20.0	32.3	56.0	-23.7
1.172	12.3	20.0	32.3	56.0	-23.7
1.310	12.3	20.0	32.3	56.0	-23.7
0.497	12.3	20.0	32.3	56.1	-23.8
0.381	14.3	20.0	34.3	58.3	-24.0
2.597	11.7	20.2	31.9	56.0	-24.1
1.075	11.8	20.0	31.8	56.0	-24.2
0.773	11.7	20.0	31.7	56.0	-24.3
1.430	11.5	20.1	31.6	56.0	-24.4
4.183	11.3	20.3	31.6	56.0	-24.4
0.665	11.5	20.0	31.5	56.0	-24.5
2.668	11.3	20.2	31.5	56.0	-24.5
1.239	11.4	20.0	31.4	56.0	-24.6
2.265	11.3	20.1	31.4	56.0	-24.6
3.116	11.1	20.3	31.4	56.0	-24.6
1.818	11.1	20.1	31.2	56.0	-24.8

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	32.5	20.3	52.8	56.0	-3.2
0.191	27.2	20.2	47.4	54.0	-6.6
0.213	24.6	20.1	44.7	53.1	-8.4
0.344	19.5	20.1	39.6	49.1	-9.5
0.247	20.4	20.1	40.5	51.9	-11.4
4.079	12.5	20.3	32.8	46.0	-13.2
4.799	12.5	20.3	32.8	46.0	-13.2
1.411	12.5	20.1	32.6	46.0	-13.4
3.885	12.1	20.3	32.4	46.0	-13.6
4.552	12.1	20.3	32.4	46.0	-13.6
0.728	12.3	20.0	32.3	46.0	-13.7
1.172	12.3	20.0	32.3	46.0	-13.7
1.310	12.3	20.0	32.3	46.0	-13.7
0.497	12.3	20.0	32.3	46.1	-13.8
0.381	14.3	20.0	34.3	48.3	-14.0
2.597	11.7	20.2	31.9	46.0	-14.1
1.075	11.8	20.0	31.8	46.0	-14.2
0.773	11.7	20.0	31.7	46.0	-14.3
1.430	11.5	20.1	31.6	46.0	-14.4
4.183	11.3	20.3	31.6	46.0	-14.4
0.665	11.5	20.0	31.5	46.0	-14.5
2.668	11.3	20.2	31.5	46.0	-14.5
1.239	11.4	20.0	31.4	46.0	-14.6
2.265	11.3	20.1	31.4	46.0	-14.6
3.116	11.1	20.3	31.4	46.0	-14.6
1.818	11.1	20.1	31.2	46.0	-14.8

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2019.05.10

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

MODES OF OPERATION

Low Ch 2402 MHz, Mid Ch 2440 MHz, High Ch 2480 MHz, 2MHz DH5, 2DH5, 3DH5

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

DROP0010 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26000 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA18H-20	TKQ	NCR	0 mo
Cable	Northwest EMC	8-18GHz RE Cables	OCO	10-Jan-2019	12 mo
Cable	Northwest EMC	18-26GHz RE Cables	OCK	19-Dec-2018	12 mo
Cable	Northwest EMC	1-8GHz RE Cables	OCJ	10-Jan-2019	12 mo
Cable	Northwest EMC	10kHz-1GHz RE Cables	OCH	20-Sep-2018	12 mo
Cable	ESM Cable Corp.	KMKM-72	OC1	19-Dec-2018	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HHX	16-Jul-2018	12 mo
Antenna - Biconilog	Teseq	CBL 6141A	AYE	7-Nov-2017	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1402	AOZ	10-Jul-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	10-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	19-Dec-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOF	10-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	10-Jan-2019	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AHT	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHR	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHN	NCR	0 mo
Antenna - Double Ridge	EMCO	3115	AHB	28-Mar-2018	24 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFJ	18-Dec-2018	12 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.

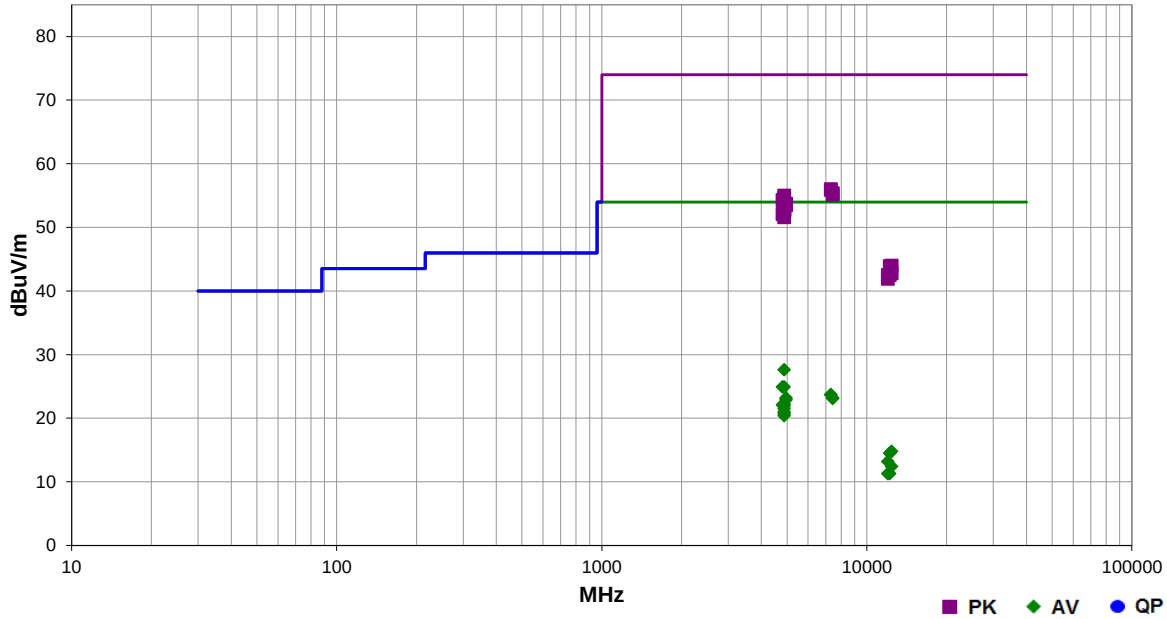
SPURIOUS RADIATED EMISSIONS

EmiR5 2018.09.26 PSA-ESCI 2019.05.10

Work Order:	DROP0010	**Date:**	10-Jun-2019		
Project:	None	**Temperature:**	22.6 °C		
Job Site:	OC10	**Humidity:**	41.9% RH		
Serial Number:	PL1919P10041	**Barometric Pres.:**	1018 mbar	**Tested by:**	Nolan De Ramos
EUT:	Jonah				
Configuration:	1				
Customer:	SonicSensory, Inc.				
Attendees:	Daniel Quiros				
EUT Power:	110VAC/60Hz				
Operating Mode:	Low Ch 2402 MHz, Mid Ch 2440 MHz, High Ch 2480 MHz, 2MHz DH5				
Deviations:	None				
Comments:	Worst Case Duty Cycle: pi/4-DQPSK = 8.70% DCCF = pi/4-DQPSK Tx relaxation of -21.2 dB From Dwell Time: DCCF= 20*LOG (Pulse Width 2.9ms*3(pulses) / 100ms) = -21.2dB				

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

Run #	17	**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
7320.550	37.6	18.4	3.9	75.0	0.0	0.0	Horz	PK	0.0	56.0	74.0	-18.0	Mid Ch, DH5, EUT On Side
7319.020	37.5	18.4	1.0	343.0	0.0	0.0	Vert	PK	0.0	55.9	74.0	-18.1	Mid Ch, DH5, EUT Horz
7441.080	36.9	18.5	2.9	123.0	0.0	0.0	Vert	PK	0.0	55.4	74.0	-18.6	High Ch, DH5, EUT Horz
7441.005	36.6	18.5	1.0	327.0	0.0	0.0	Horz	PK	0.0	55.1	74.0	-18.9	High Ch, DH5, EUT On Side
4880.070	41.7	13.3	1.0	320.0	0.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0	Mid Ch, DH5, EUT Horz
4880.040	41.3	13.3	1.0	20.0	0.0	0.0	Horz	PK	0.0	54.6	74.0	-19.4	Mid Ch, DH5, EUT On Side
4804.000	41.6	12.7	1.0	349.0	0.0	0.0	Vert	PK	0.0	54.3	74.0	-19.7	Low Ch, DH5, EUT Horz
4959.610	40.2	13.5	1.0	7.0	0.0	0.0	Horz	PK	0.0	53.7	74.0	-20.3	High Ch, DH5, EUT On Side
4960.220	40.0	13.5	1.0	298.0	0.0	0.0	Vert	PK	0.0	53.5	74.0	-20.5	High Ch, DH5, EUT Horz
4879.535	39.6	13.3	3.8	360.0	0.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1	Mid Ch, DH5, EUT Horz
4879.930	39.5	13.3	1.0	226.0	0.0	0.0	Vert	PK	0.0	52.8	74.0	-21.2	Mid Ch, DH5, EUT On Side
4879.750	39.5	13.3	1.0	332.0	0.0	0.0	Vert	PK	0.0	52.8	74.0	-21.2	Mid Ch, 2DH5, EUT Horz
4879.750	39.3	13.3	1.0	322.0	0.0	0.0	Vert	PK	0.0	52.6	74.0	-21.4	Mid Ch, DH5, EUT Vert
4879.820	39.2	13.3	1.0	332.0	0.0	0.0	Vert	PK	0.0	52.5	74.0	-21.5	Mid Ch, 3DH5, EUT Horz
4803.950	39.4	12.7	1.0	12.0	0.0	0.0	Horz	PK	0.0	52.1	74.0	-21.9	Low Ch, DH5, EUT On Side
4878.650	38.3	13.3	1.0	141.0	0.0	0.0	Horz	PK	0.0	51.6	74.0	-22.4	Mid Ch, DH5, EUT Vert
4879.950	35.5	13.3	1.0	320.0	-21.2	0.0	Vert	AV	0.0	27.6	54.0	-26.4	Mid Ch, DH5, EUT Horz
4879.975	32.8	13.3	1.0	20.0	-21.2	0.0	Horz	AV	0.0	24.9	54.0	-29.1	Mid Ch, DH5, EUT On Side
4803.985	33.4	12.7	1.0	349.0	-21.2	0.0	Vert	AV	0.0	24.9	54.0	-29.1	Low Ch, DH5, EUT Horz
12399.200	46.7	-2.7	1.0	75.0	0.0	0.0	Vert	PK	0.0	44.0	74.0	-30.0	High Ch, DH5, 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
12199.240	46.4	-2.5	1.0	316.0	0.0	0.0	Vert	PK	0.0	43.9	74.0	-30.1	Mid Ch, DH5, EUT Horz
7319.945	26.5	18.4	3.9	75.0	-21.2	0.0	Horz	AV	0.0	23.7	54.0	-30.3	Mid Ch, DH5, EUT On Side
7320.185	26.5	18.4	1.0	343.0	-21.2	0.0	Vert	AV	0.0	23.7	54.0	-30.3	Mid Ch, DH5, EUT Horz
7439.785	25.9	18.5	1.0	327.0	-21.2	0.0	Horz	AV	0.0	23.2	54.0	-30.8	High Ch, DH5, EUT On Side
4960.010	30.9	13.5	1.0	298.0	-21.2	0.0	Vert	AV	0.0	23.2	54.0	-30.8	High Ch, DH5, EUT Horz
7439.540	25.8	18.5	2.9	123.0	-21.2	0.0	Vert	AV	0.0	23.1	54.0	-30.9	High Ch, DH5, EUT Horz
4959.970	30.6	13.5	1.0	7.0	-21.2	0.0	Horz	AV	0.0	22.9	54.0	-31.1	High Ch, DH5, EUT On Side
12399.220	45.5	-2.7	1.0	116.0	0.0	0.0	Horz	PK	0.0	42.8	74.0	-31.2	High Ch, DH5, EUT On Side
12199.420	45.0	-2.5	1.0	82.0	0.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5	Mid Ch, DH5, EUT On Side
12009.180	46.2	-3.7	1.0	21.0	0.0	0.0	Vert	PK	0.0	42.5	74.0	-31.5	Low Ch, DH5, EUT Horz
4879.920	30.1	13.3	3.8	360.0	-21.2	0.0	Horz	AV	0.0	22.2	54.0	-31.8	Mid Ch, DH5, EUT Horz
4804.020	30.6	12.7	1.0	12.0	-21.2	0.0	Horz	AV	0.0	22.1	54.0	-31.9	Low Ch, DH5, EUT On Side
4880.060	29.8	13.3	1.0	322.0	-21.2	0.0	Vert	AV	0.0	21.9	54.0	-32.1	Mid Ch, DH5, EUT Vert
12010.730	45.6	-3.7	1.0	328.0	0.0	0.0	Horz	PK	0.0	41.9	74.0	-32.1	Low Ch, DH5, EUT On Side
4879.870	29.4	13.3	1.0	226.0	-21.2	0.0	Vert	AV	0.0	21.5	54.0	-32.5	Mid Ch, DH5, EUT On Side
4880.035	28.9	13.3	1.0	141.0	-21.2	0.0	Horz	AV	0.0	21.0	54.0	-33.0	Mid Ch, DH5, EUT Vert
4880.045	29.0	13.3	1.0	332.0	-21.2	0.0	Vert	AV	0.0	20.7	54.0	-33.3	Mid Ch, 2DH5, EUT Horz
4879.955	28.9	13.3	1.0	332.0	-21.2	0.0	Vert	AV	0.0	20.4	54.0	-33.6	Mid Ch, 3DH5, EUT Horz
12399.250	38.7	-2.7	1.0	75.0	-21.2	0.0	Vert	AV	0.0	14.8	54.0	-39.2	High Ch, DH5, EUT Horz
12199.270	38.2	-2.5	1.0	316.0	-21.2	0.0	Vert	AV	0.0	14.5	54.0	-39.5	Mid Ch, DH5, EUT Horz
12010.670	38.1	-3.7	1.0	21.0	-21.2	0.0	Vert	AV	0.0	13.2	54.0	-40.8	Low Ch, DH5, EUT Horz
12399.310	36.6	-2.7	1.0	116.0	-21.2	0.0	Horz	AV	0.0	12.4	54.0	-41.6	High Ch, DH5, EUT On Side
12199.290	37.1	-2.5	1.0	82.0	-21.2	0.0	Horz	AV	0.0	11.3	54.0	-42.7	Mid Ch, DH5, EUT On Side
12010.630	36.2	-3.7	1.0	328.0	-21.2	0.0	Horz	AV	0.0	11.3	54.0	-42.7	Low Ch, DH5, EUT On Side

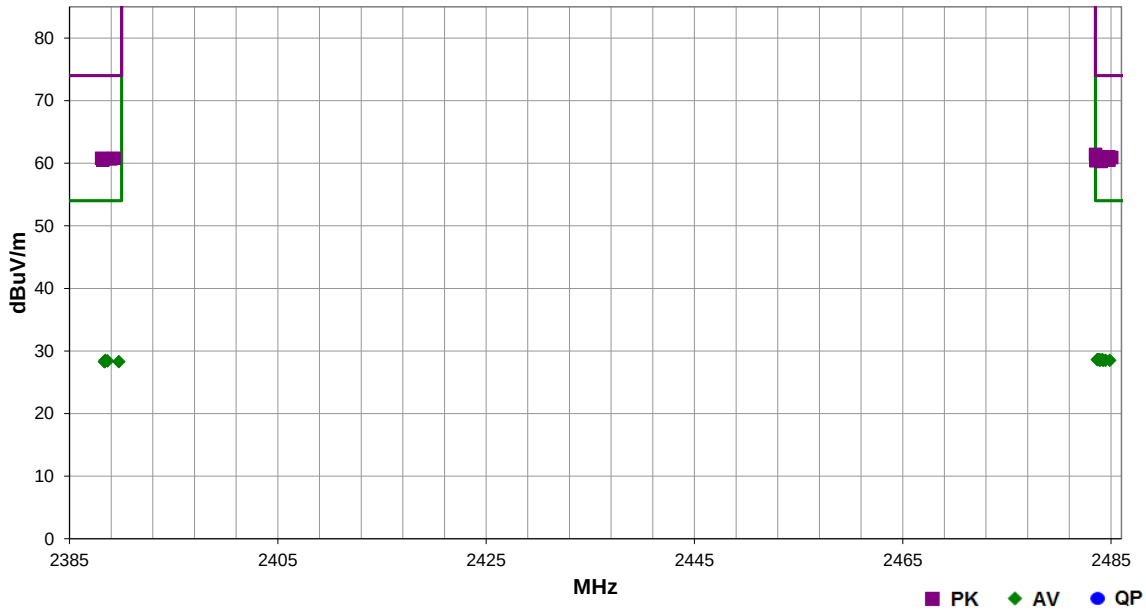
SPURIOUS RADIATED EMISSIONS

EmiR5 2018.09.26 PSA-ESCI 2019.05.10

Work Order:	DROP0010	**Date:**	10-Jun-2019		
Project:	None	**Temperature:**	22.6 °C		
Job Site:	OC10	**Humidity:**	41.9% RH		
Serial Number:	PL1919P10041	**Barometric Pres.:**	1018 mbar	**Tested by:**	Nolan De Ramos
EUT:	Jonah				
Configuration:	1				
Customer:	SonicSensory, Inc.				
Attendees:	Daniel Quiros				
EUT Power:	110VAC/60Hz				
Operating Mode:	Low Ch 2402 MHz, Mid Ch 2440 MHz, High Ch 2480 MHz, 2MHz DH5, 2DH5, 3DH5				
Deviations:	None				
Comments:	Worst Case Duty Cycle: pi/4-DQPSK = 8.70% DCCF = pi/4-DQPSK Tx relaxation of -21.2 dB From Dwell Time: DCCF= 20*LOG (Pulse Width 2.9ms*3(pulses) / 100ms) = -21.2dB				

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

Run #	22	**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
2483.510	38.0	3.4	3.2	12.0	0.0	20.0	Horz	PK	0.0	61.4	74.0	-12.6	High Ch, DH5, EUT Vert
2484.793	37.6	3.4	1.0	246.0	0.0	20.0	Vert	PK	0.0	61.0	74.0	-13.0	High Ch, DH5, EUT Horz
2483.650	37.6	3.4	1.0	246.0	0.0	20.0	Vert	PK	0.0	61.0	74.0	-13.0	High Ch, 2DH5, EUT Horz
2484.100	37.5	3.4	1.0	177.0	0.0	20.0	Horz	PK	0.0	60.9	74.0	-13.1	High Ch, 3DH5, EUT On Side
2485.063	37.5	3.4	1.0	111.0	0.0	20.0	Vert	PK	0.0	60.9	74.0	-13.1	High Ch, DH5, EUT Vert
2388.083	37.6	3.2	1.0	246.0	0.0	20.0	Vert	PK	0.0	60.8	74.0	-13.2	Low Ch, DH5, EUT Horz
2389.280	37.6	3.2	1.0	246.0	0.0	20.0	Vert	PK	0.0	60.8	74.0	-13.2	Low Ch, 2DH5, EUT Horz
2483.897	37.4	3.4	1.0	177.0	0.0	20.0	Horz	PK	0.0	60.8	74.0	-13.2	High Ch, DH5, EUT On Side
2388.267	37.5	3.2	1.0	177.0	0.0	20.0	Horz	PK	0.0	60.7	74.0	-13.3	Low Ch, DH5, EUT On Side
2388.943	37.5	3.2	1.0	246.0	0.0	20.0	Vert	PK	0.0	60.7	74.0	-13.3	Low Ch, 3DH5, EUT Horz
2483.970	37.2	3.4	1.0	246.0	0.0	20.0	Vert	PK	0.0	60.6	74.0	-13.4	High Ch, 3DH5, EUT Horz
2484.793	37.1	3.4	1.0	177.0	0.0	20.0	Horz	PK	0.0	60.5	74.0	-13.5	High Ch, 2DH5, EUT On Side
2388.200	37.3	3.2	1.0	177.0	0.0	20.0	Horz	PK	0.0	60.5	74.0	-13.5	Low Ch, 2DH5, EUT On Side
2483.553	37.0	3.4	1.0	6.0	0.0	20.0	Vert	PK	0.0	60.4	74.0	-13.6	High Ch, DH5, EUT On Side
2484.047	36.9	3.4	1.0	27.0	0.0	20.0	Horz	PK	0.0	60.3	74.0	-13.7	High Ch, DH5, EUT Horz
2483.793	26.4	3.4	1.0	246.0	-21.2	20.0	Vert	AV	0.0	28.6	54.0	-25.4	High Ch, DH5, EUT Horz
2483.753	26.4	3.4	1.0	177.0	-21.2	20.0	Horz	AV	0.0	28.6	54.0	-25.4	High Ch, DH5, EUT On Side
2483.687	26.4	3.4	1.0	6.0	-21.2	20.0	Vert	AV	0.0	28.6	54.0	-25.4	High Ch, DH5, EUT On Side
2483.907	26.4	3.4	3.2	12.0	-21.2	20.0	Horz	AV	0.0	28.6	54.0	-25.4	High Ch, DH5, EUT Vert
2484.243	26.3	3.4	1.0	27.0	-21.2	20.0	Horz	AV	0.0	28.5	54.0	-25.5	High Ch, DH5, EUT Horz
2484.887	26.3	3.4	1.0	111.0	-21.2	20.0	Vert	AV	0.0	28.5	54.0	-25.5	High Ch, DH5, EUT Vert
2388.363	26.3	3.2	1.0	246.0	-21.2	20.0	Vert	AV	0.0	28.3	54.0	-25.7	Low Ch, DH5, 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
2389.737	26.3	3.2	1.0	177.0	-21.2	20.0	Horz	AV	0.0	28.3	54.0	-25.7	Low Ch, DH5, EUT On Side
2484.177	26.4	3.4	1.0	246.0	-21.2	20.0	Vert	AV	0.0	28.6	54.0	-25.8	High Ch, 2DH5, EUT Horz
2483.947	26.3	3.4	1.0	177.0	-21.2	20.0	Horz	AV	0.0	28.5	54.0	-25.9	High Ch, 2DH5, EUT On Side
2388.450	26.5	3.2	1.0	246.0	-21.2	20.0	Vert	AV	0.0	28.5	54.0	-25.9	Low Ch, 2DH5, EUT Horz
2483.880	26.4	3.4	1.0	246.0	-21.2	20.0	Vert	AV	0.0	28.6	54.0	-26.0	High Ch, 3DH5, EUT Horz
2484.483	26.3	3.4	1.0	177.0	-21.2	20.0	Horz	AV	0.0	28.5	54.0	-26.1	High Ch, 3DH5, EUT On Side
2388.363	26.3	3.2	1.0	177.0	-21.2	20.0	Horz	AV	0.0	28.3	54.0	-26.1	Low Ch, 2DH5, EUT On Side
2388.647	26.4	3.2	1.0	246.0	-21.2	20.0	Vert	AV	0.0	28.4	54.0	-26.2	Low Ch, 3DH5, EUT Horz

DUTY CYCLE

XMit 2019.05.15

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
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	13-Jun-18	13-Jun-19
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20

TEST DESCRIPTION

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

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

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

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

CARRIER FREQUENCY SEPARATION

XMit 2019.05.15

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
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	15-Feb-18	15-Feb-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	13-Jun-18	13-Jun-19

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 2400-2483.5MHz band must be separated by 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Or, if the output power is less than 125 mW, the channel separation can be 25 kHz or 2/3 of the 20dB bandwidth. The EUT was operated in pseudorandom hopping mode. The spectrum was scanned across two adjacent peaks. The separation between the peaks of these channels was measured.

CARRIER FREQUENCY SEPARATION

element

TbtTx 2018.09.13 XMit 2019.05.15

EUT:	**Jonah**			**Work Order:**	**DROP0009**
Serial Number:	**PL1919P10034**			**Date:**	**6-Jun-19**
Customer:	**SonicSensory, Inc.**			**Temperature:**	**24.5 °C**
Attendees:	**Daniel Quiros**			**Humidity:**	**47.2% RH**
Project:	**None**			**Barometric Pres.:**	**1016 mbar**
Tested by:	**Salvador Solorzano**	**Power:**	**110VAC/60Hz**	**Job Site:**	**OC13**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

DC Block + 20dB attenuator + Coax Cable + patch cable = 24.07 dB Total Offset

DEVIATIONS FROM TEST STANDARD

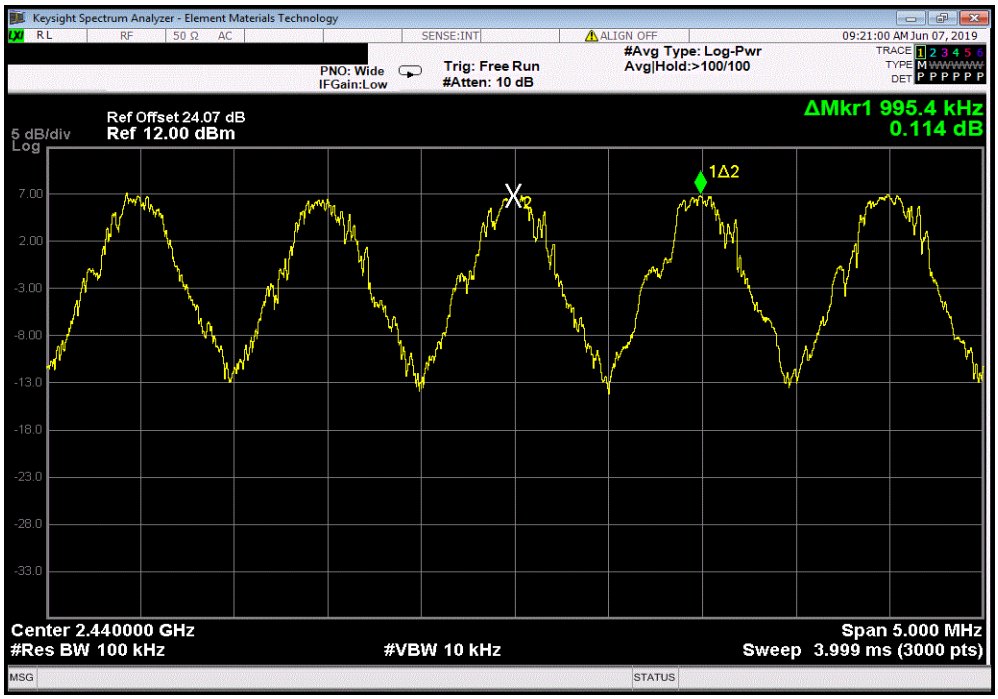
None

Configuration #	**3**	*Signature*

	Value	**Limit (≥)**	**Results**
Hopping Mode (All Channels)			
DH5, GFSK			
Mid Channel, 2440 MHz	1.0 MHz	1 MHz	Pass

CARRIER FREQUENCY SEPARATION

Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2440 MHz						
				Value	Limit (≥)	Results
				1.0 MHz	1 MHz	Pass



NUMBER OF HOPPING FREQUENCIES

XMit 2019.05.15

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
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	13-Jun-18	13-Jun-19
Generator - Signal	Agilent	E8257D	TGU	15-Feb-18	15-Feb-21

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

element

TbtTx 2018.09.13 XMit 2019.05.15

EUT:	**Jonah**			**Work Order:**	**DROP0009**
Serial Number:	**PL1919P10034**			**Date:**	**6-Jun-19**
Customer:	**SonicSensory, Inc.**			**Temperature:**	**24.5 °C**
Attendees:	**Daniel Quiros**			**Humidity:**	**47.2% RH**
Project:	**None**			**Barometric Pres.:**	**1016 mbar**
Tested by:	**Salvador Solorzano**	**Power:**	**110VAC/60Hz**	**Job Site:**	**OC13**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

DC Block + 20dB attenuator + Coax Cable + patch cable = 24.07 dB Total Offset

DEVIATIONS FROM TEST STANDARD

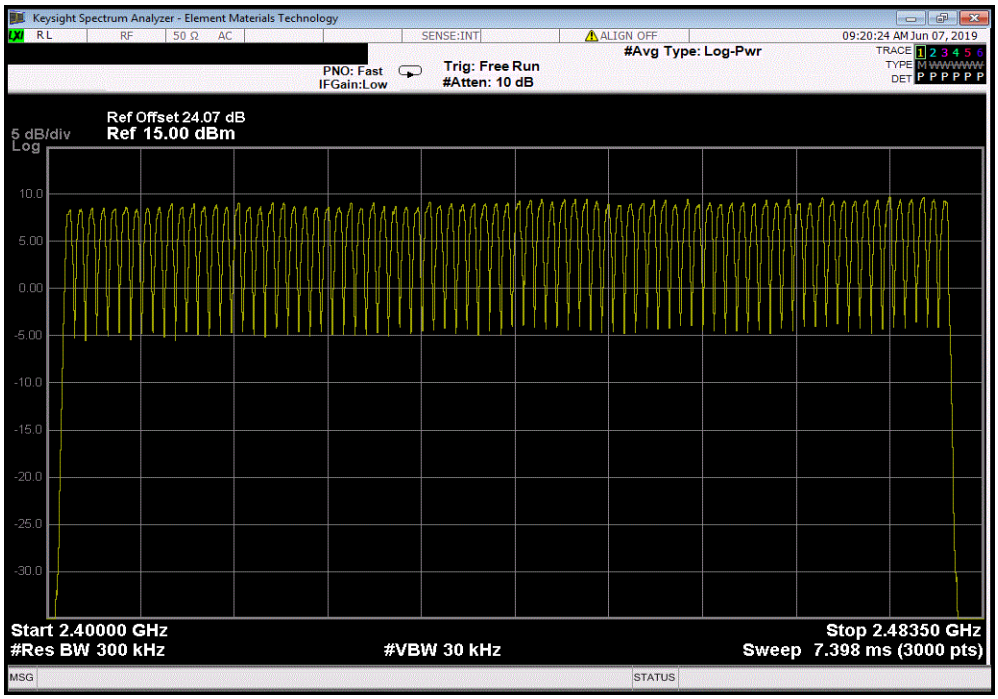
None

Configuration #	**3**	*Signature*

	Number of Channels	**Limit (≥)**	**Results**
Hopping Mode (All Channels)			
DH5, GFSK			
Mid Channel, 2440 MHz	79	15	Pass

NUMBER OF HOPPING FREQUENCIES

Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2440 MHz						
				Number of Channels	Limit (≥)	Results
				79	15	Pass



DWELL TIME

XMit 2019.05.15

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	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	13-Jun-18	13-Jun-19
Generator - Signal	Agilent	E8257D	TGU	15-Feb-18	15-Feb-21

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 dwell time limit is based on the Number of Hopping Channels * 400 mS. For Bluetooth this would be 79 Channels * 400mS = 31.6 Sec.

On Time During 31.6 Sec = Pulse Width * Average Number of Pulses * Scale Factor

- Average Number of Pulses is based on 4 samples.
- Scale Factor = 31.6 Sec / Screen Capture Sweep Time = 31.6 Sec / 6.32 Sec = 5

DWELL TIME

element

TbtTx 2018.09.13 XMit 2019.05.15

EUT:	**Jonah**			**Work Order:**	**DROP0009**
Serial Number:	**PL1919P10034**			**Date:**	**6-Jun-19**
Customer:	**SonicSensory, Inc.**			**Temperature:**	**24.5 °C**
Attendees:	**Daniel Quiros**			**Humidity:**	**47.2% RH**
Project:	**None**			**Barometric Pres.:**	**1016 mbar**
Tested by:	**Salvador Solorzano**	**Power:**	**110VAC/60Hz**	**Job Site:**	**OC13**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

DC Block + 20dB attenuator + Coax Cable + patch cable = 24.07 dB Total Offset

DEVIATIONS FROM TEST STANDARD

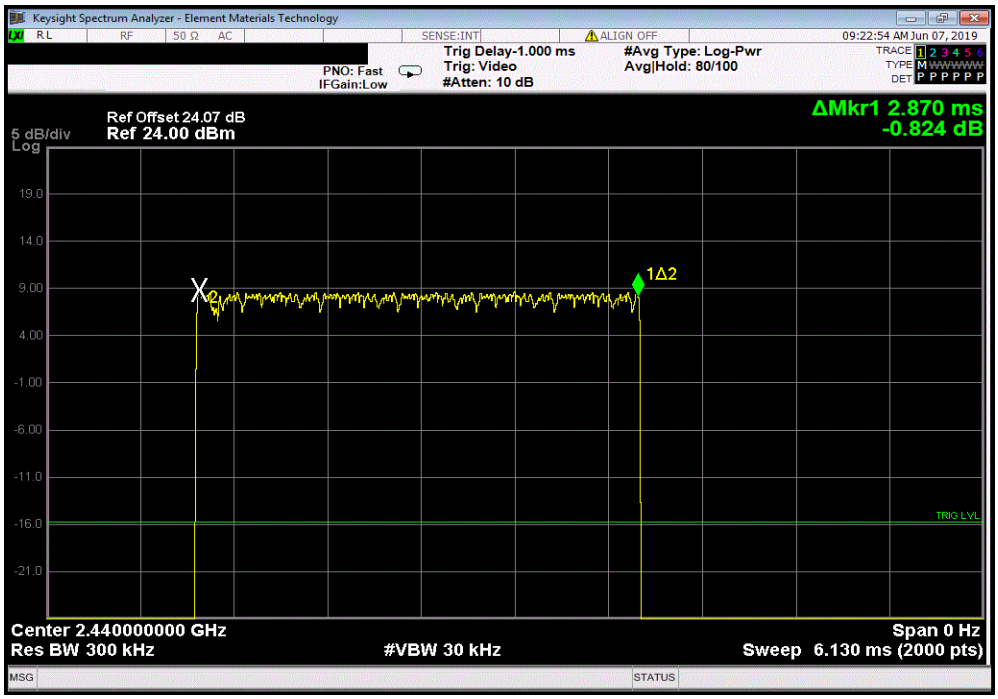
None

Configuration #	**3**	*Signature*

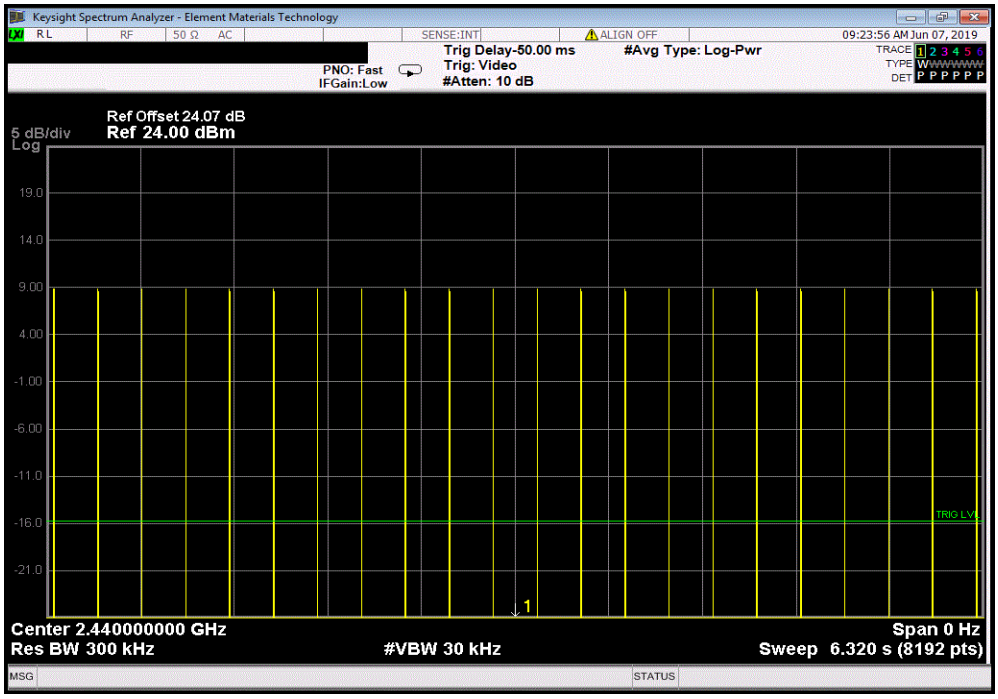
	Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
Hopping Mode (All Channels)							
DH5, GFSK							
Mid Channel, 2441 MHz	2.87	N/A	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	2.87	N/A	22	5	315.7	400	Pass
2DH5, pi/4-DQPSK							
Mid Channel, 2441 MHz	2.889	N/A	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	2.889	N/A	22	5	317.79	400	Pass
3DH5, 8-DPSK							
Mid Channel, 2441 MHz	2.895	N/A	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	N/A	22	N/A	N/A	N/A	N/A	N/A
Mid Channel, 2441 MHz	2.895	N/A	22	5	318.45	400	Pass

DWELL TIME

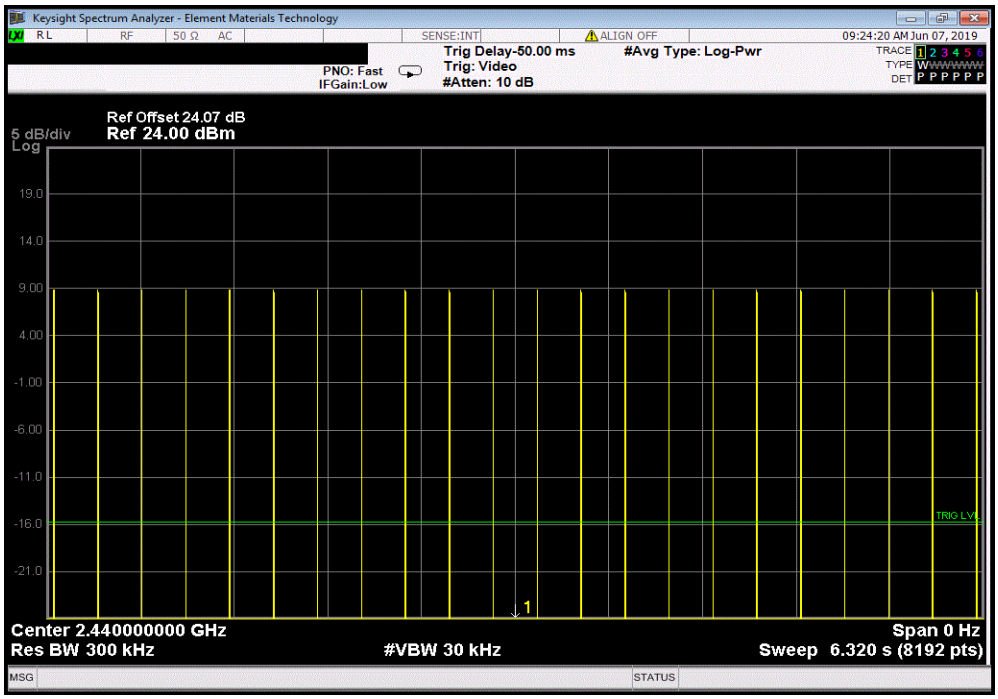
Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
2.87	N/A	N/A	N/A	N/A	N/A	N/A



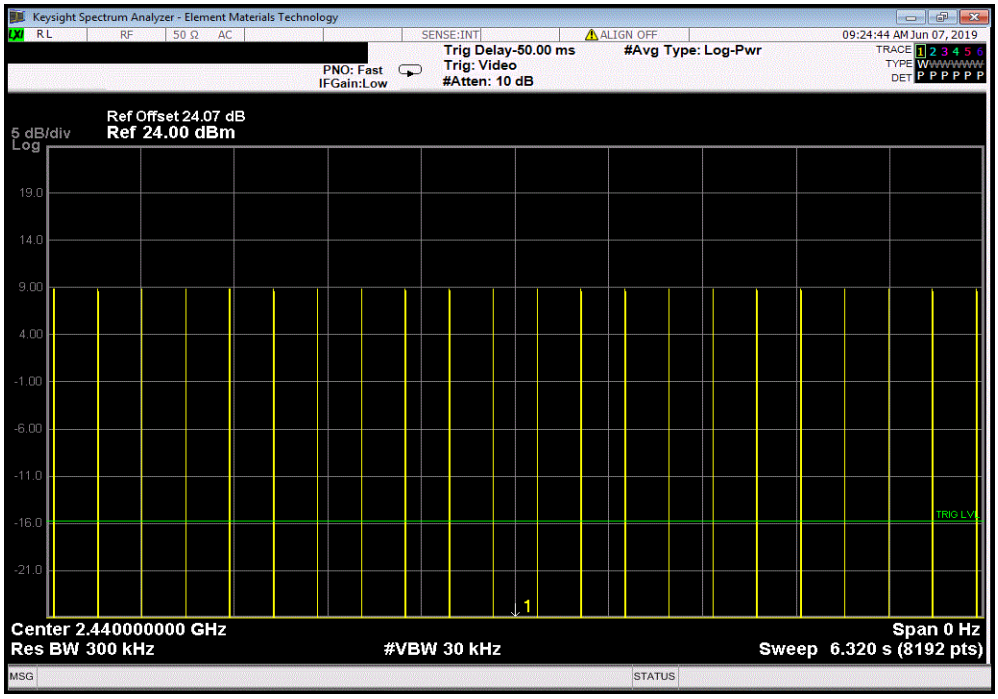
Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A

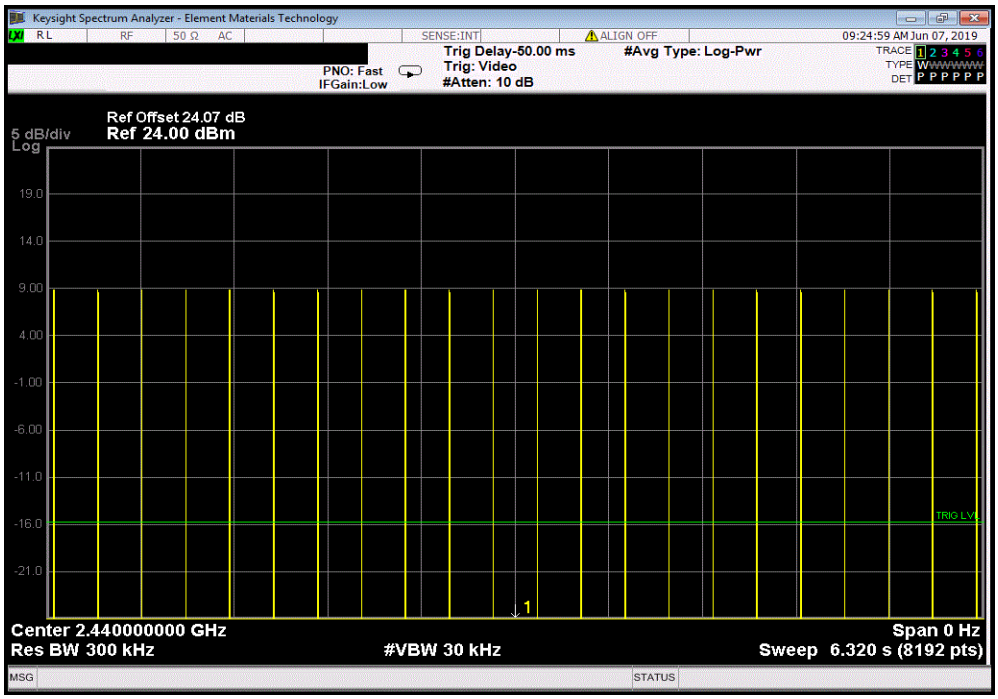


Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



DWELL TIME

Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



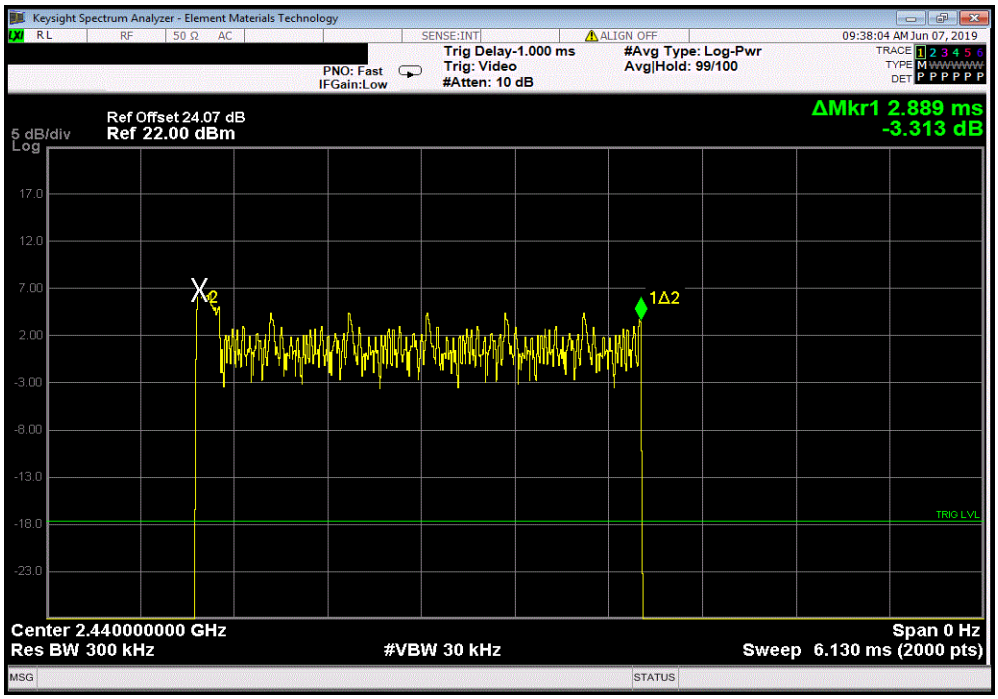
Hopping Mode (All Channels), DH5, GFSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
2.87	N/A	22	5	315.7	400	Pass

Calculation Only

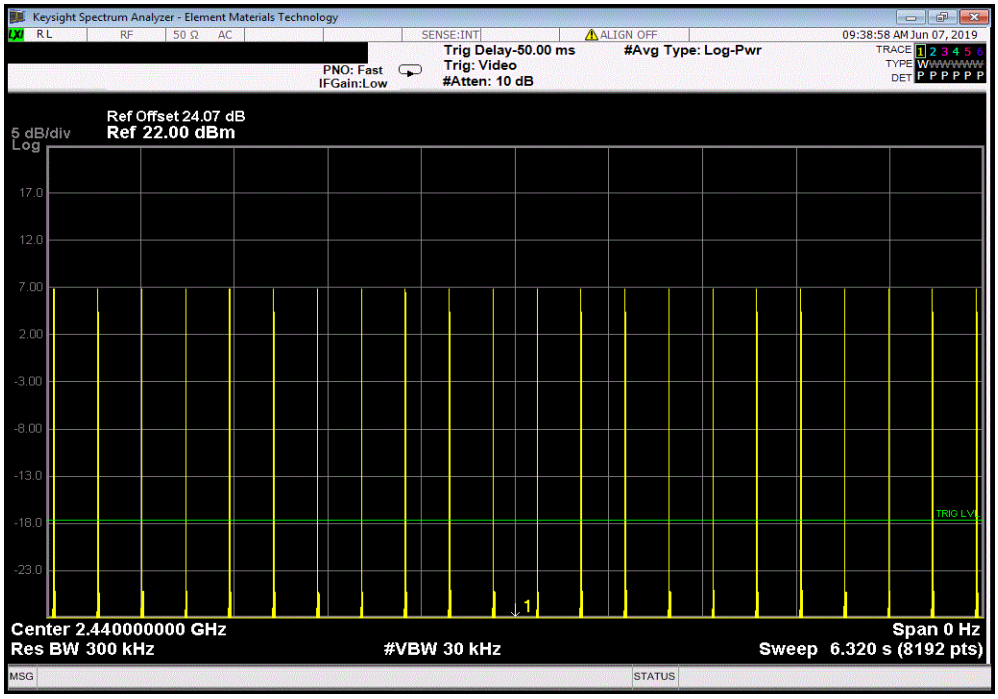
No Screen Capture Required

DWELL TIME

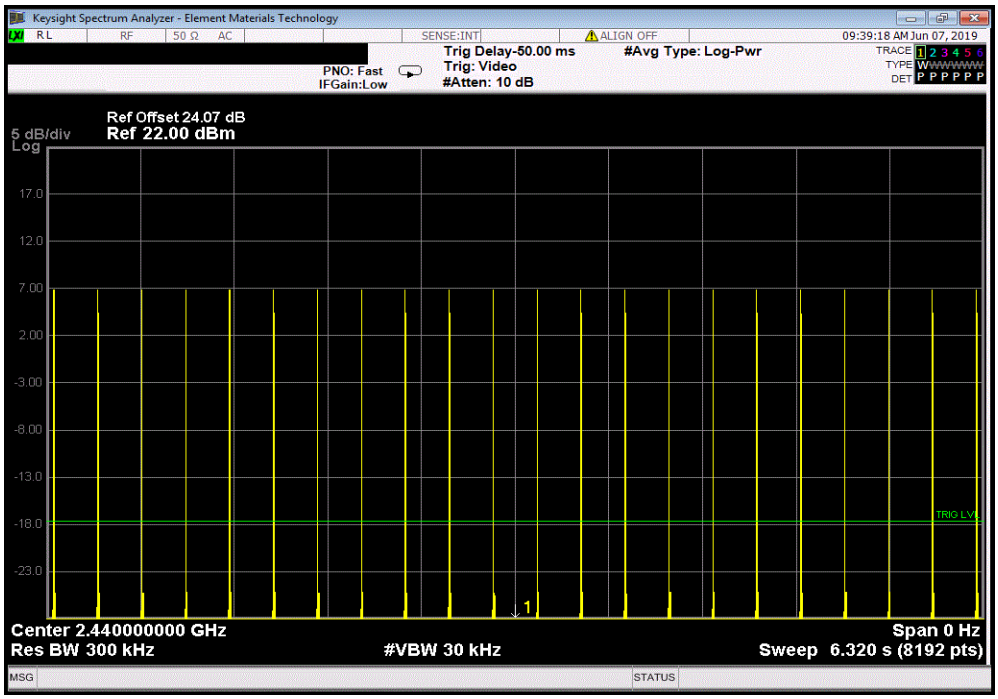
Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
2.889	N/A	N/A	N/A	N/A	N/A	N/A



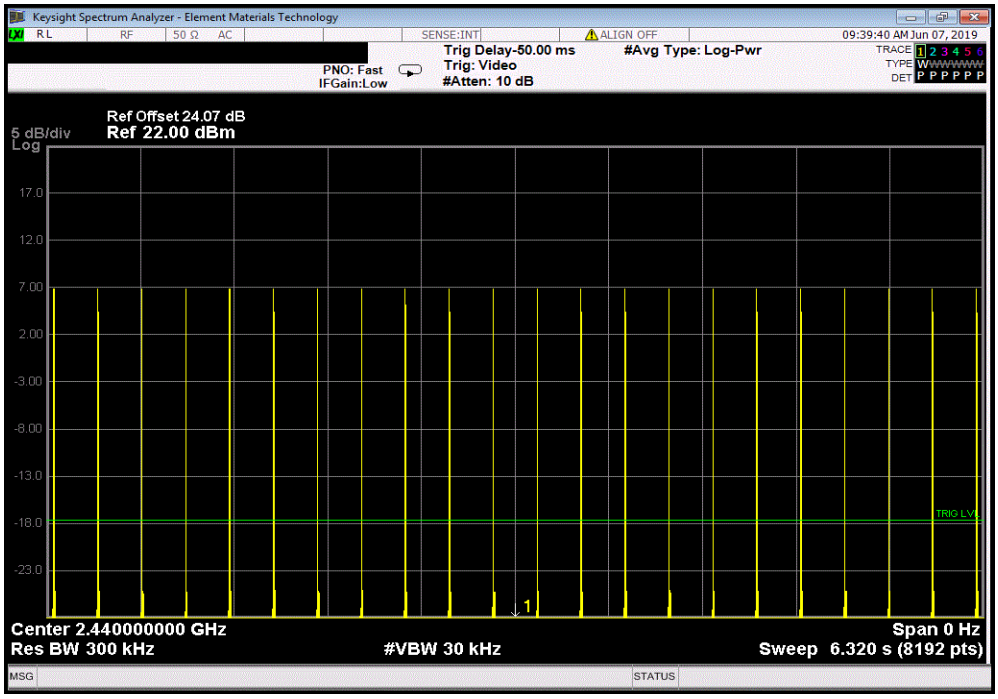
Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A

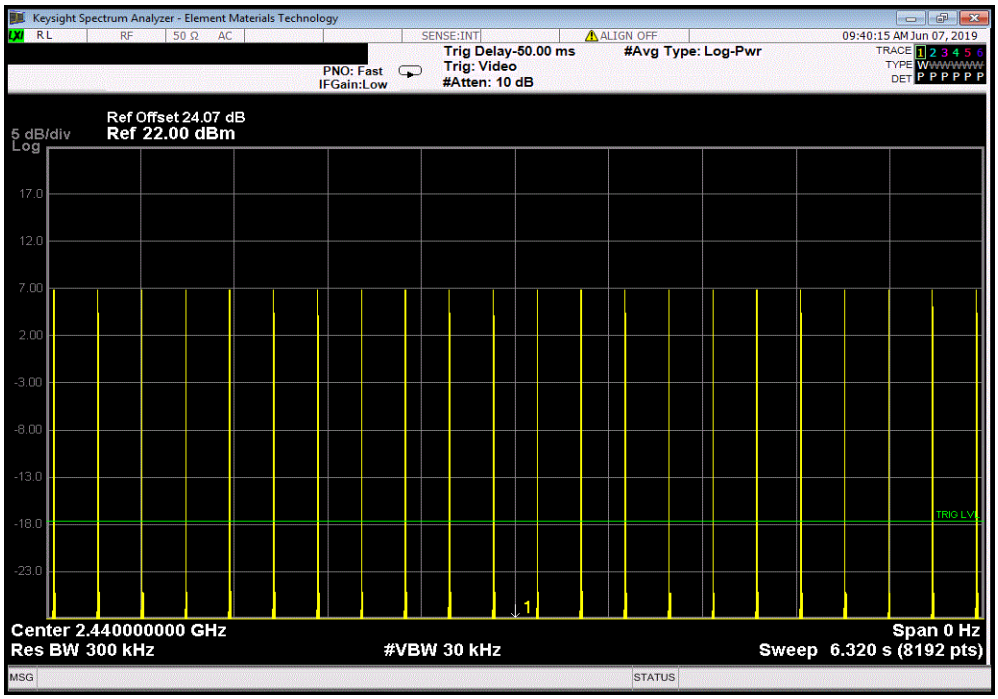


Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



DWELL TIME

Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



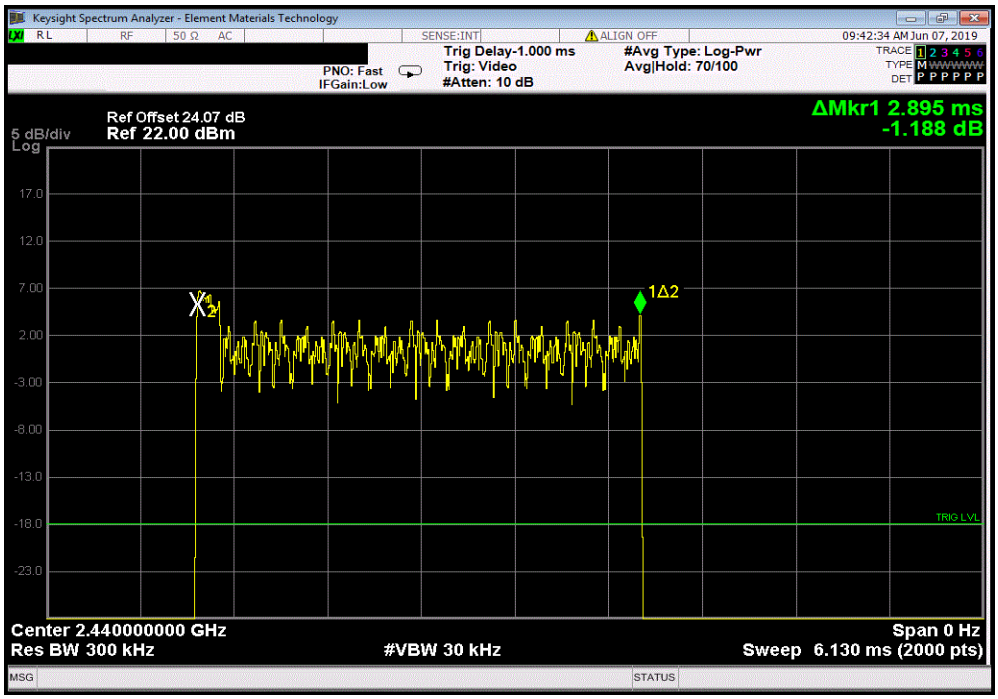
Hopping Mode (All Channels), 2DH5, pi/4-DQPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
2.889	N/A	22	5	317.79	400	Pass

Calculation Only

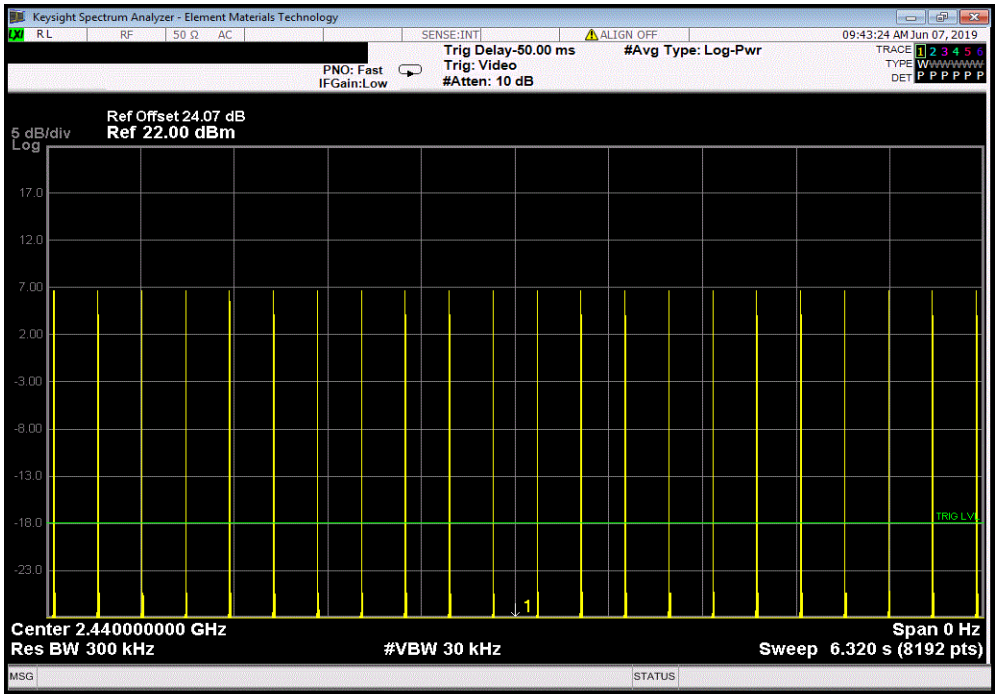
No Screen Capture Required

DWELL TIME

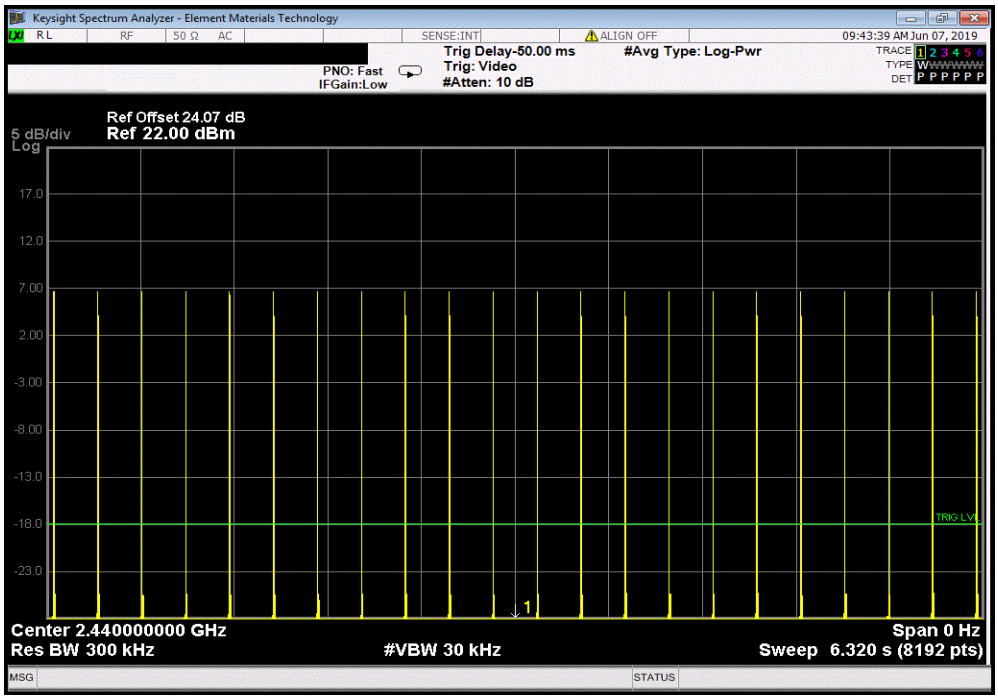
Hopping Mode (All Channels), 3DH5, 8-DPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
2.895	N/A	N/A	N/A	N/A	N/A	N/A



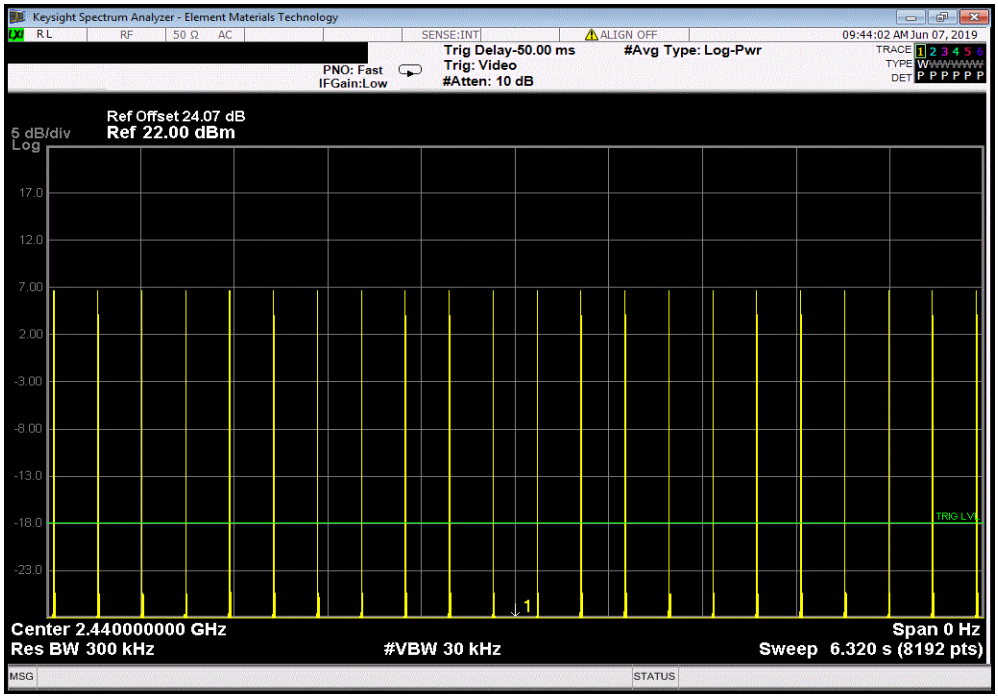
Hopping Mode (All Channels), 3DH5, 8-DPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



Hopping Mode (All Channels), 3DH5, 8-DPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A

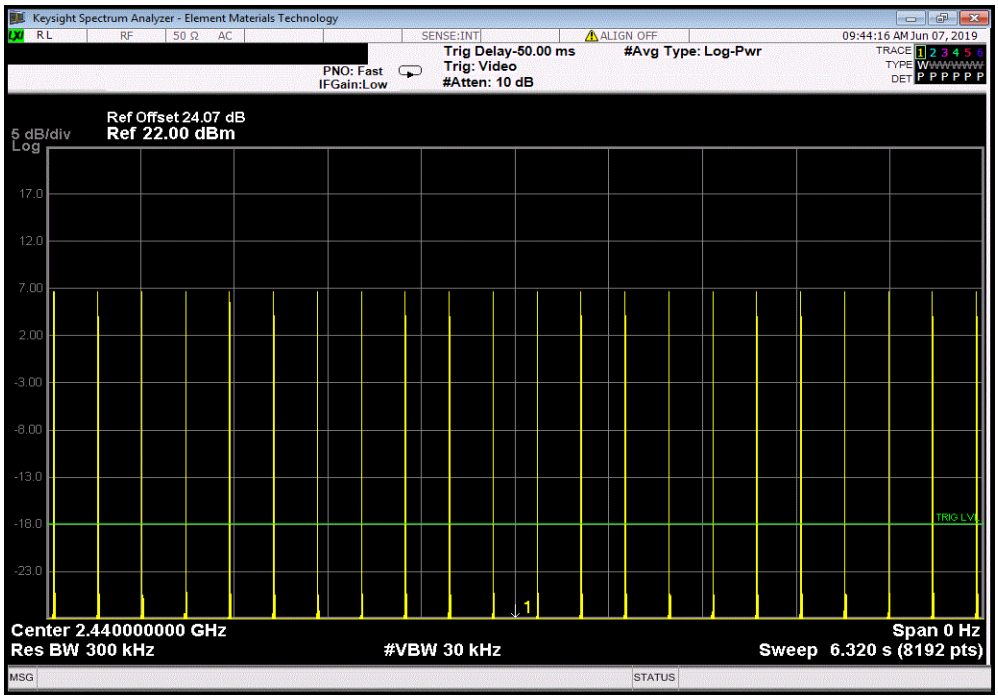


Hopping Mode (All Channels), 3DH5, 8-DPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



DWELL TIME

Hopping Mode (All Channels), 3DH5, 8-DPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	22	N/A	N/A	N/A	N/A	N/A



Hopping Mode (All Channels), 3DH5, 8-DPSK, Mid Channel, 2441 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
2.895	N/A	22	5	318.45	400	Pass

Calculation Only

No Screen Capture Required

OUTPUT POWER

XMit 2019.06.11

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	15-Feb-18	15-Feb-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	2-Jul-19	2-Jul-20

TEST DESCRIPTION

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.

OUTPUT POWER

element

TbtTx 2018.09.13 XMit 2019.06.11

EUT:	**Jonah**			**Work Order:**	**DROP0009**
Serial Number:	**PL1919P10034**			**Date:**	**21-Aug-19**
Customer:	**SonicSensory, Inc.**			**Temperature:**	**23.8 °C**
Attendees:	**Daniel Quiros**			**Humidity:**	**46.7% RH**
Project:	**None**			**Barometric Pres.:**	**1014 mbar**
Tested by:	**Johnny Candelas**	**Power:**	**110VAC/60Hz**	**Job Site:**	**OC13**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

DC Block + 20 dB attenuator + Coax Cable + patch cable = 24.07 dB Total Offset

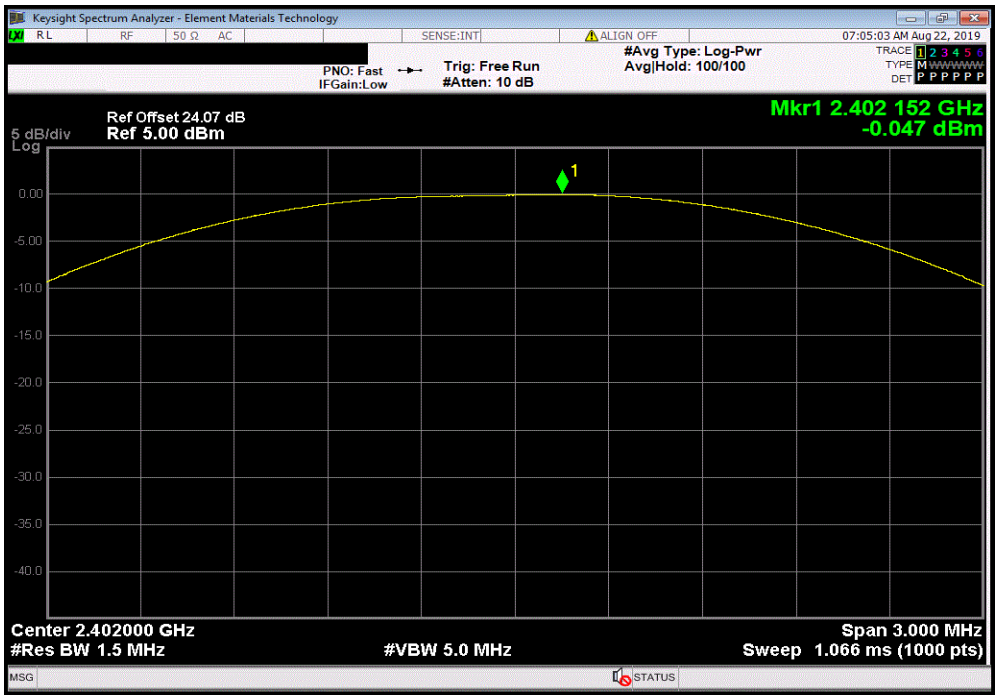
DEVIATIONS FROM TEST STANDARD

None

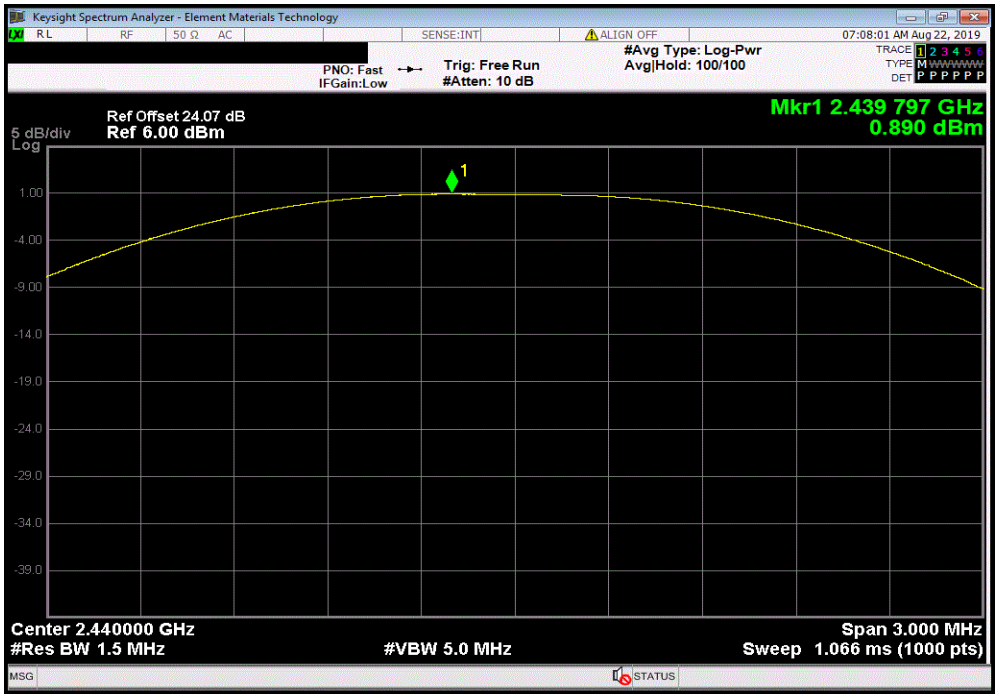
Configuration #	**3**	*Signature*

		Out Pwr (dBm)	**Limit (dBm)**	**Result**
DH5, GFSK				
	Low Channel	-0.047	21	Pass
	Mid Channel	0.89	21	Pass
	High Channel	1.715	21	Pass
2DH5, pi/4-DQPSK				
	Low Channel	-1.043	21	Pass
	Mid Channel	0.299	21	Pass
	High Channel	1.635	21	Pass
3DH5, 8-DPSK				
	Low Channel	-0.638	21	Pass
	Mid Channel	-1.132	21	Pass
	High Channel	0.074	21	Pass

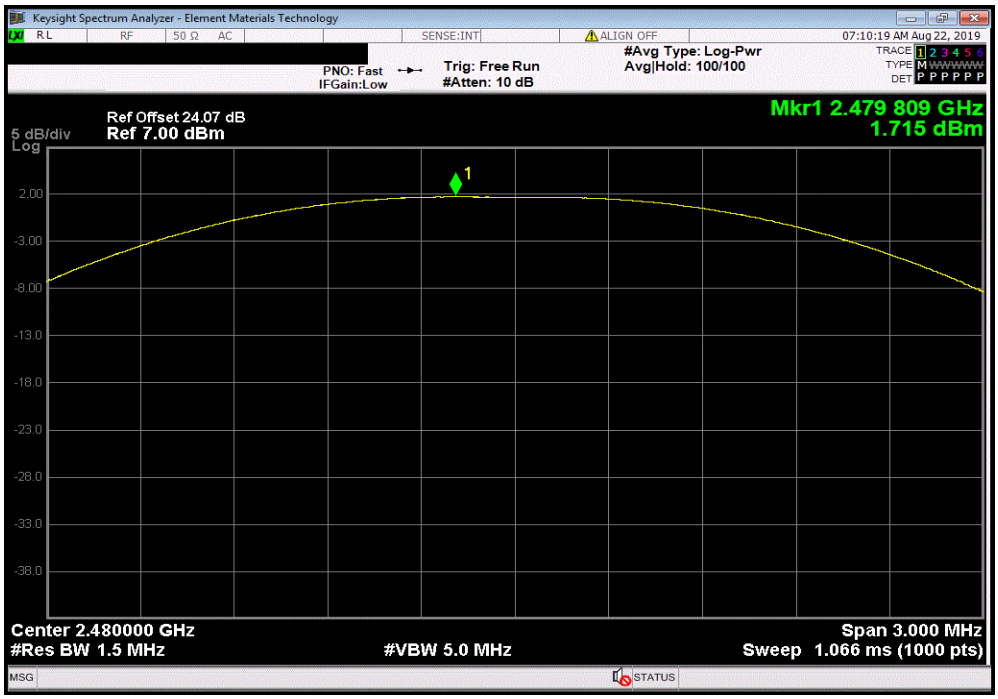
DH5, GFSK, Low Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				-0.047	21	Pass



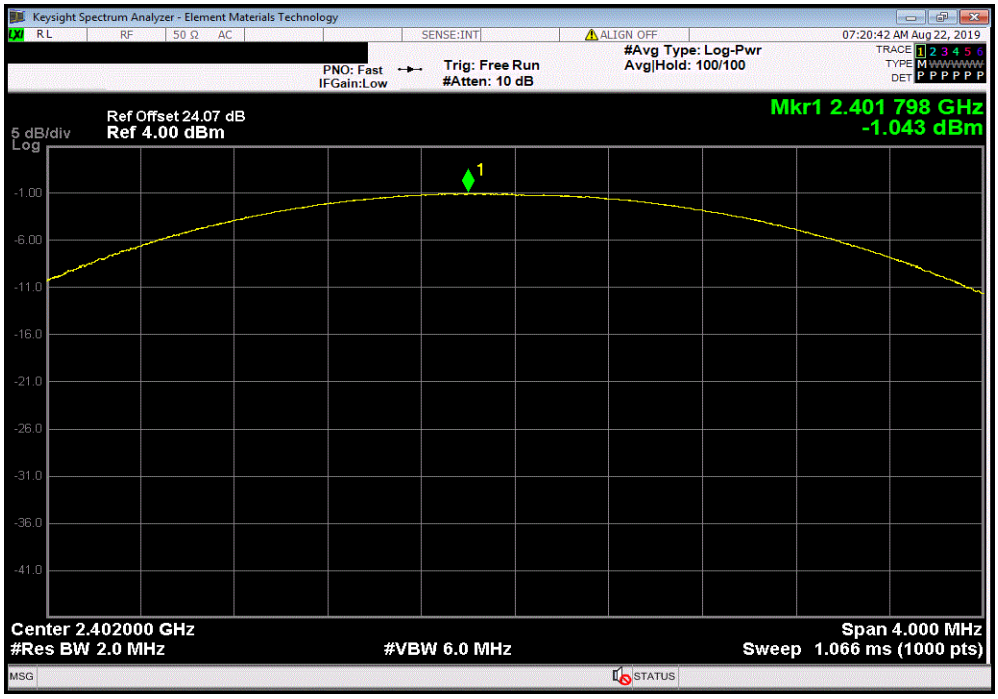
DH5, GFSK, Mid Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				0.89	21	Pass



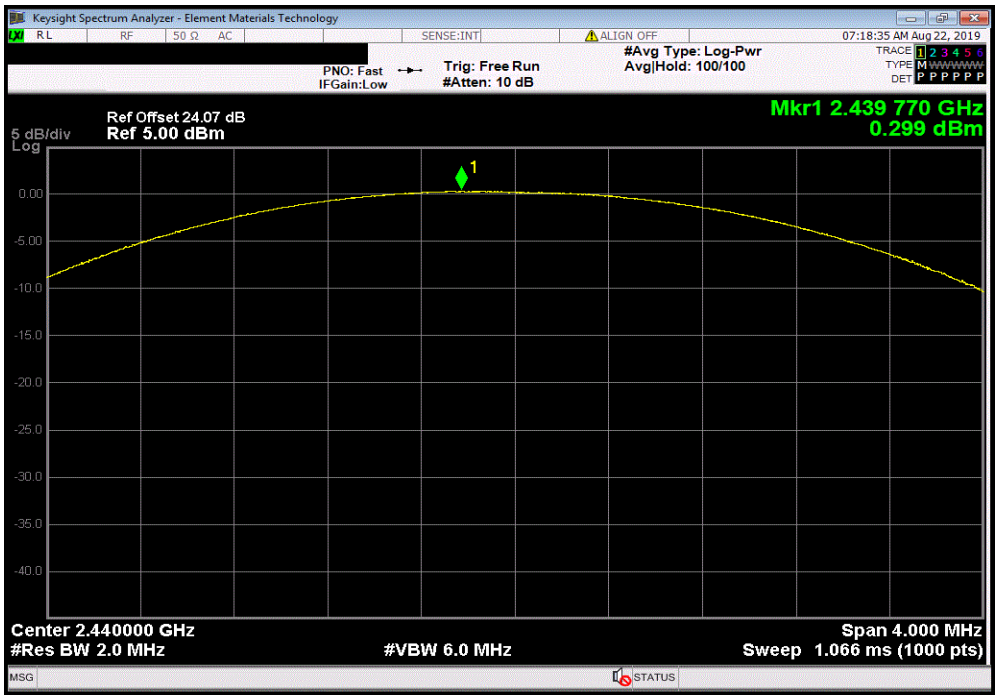
DH5, GFSK, High Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				1.715	21	Pass



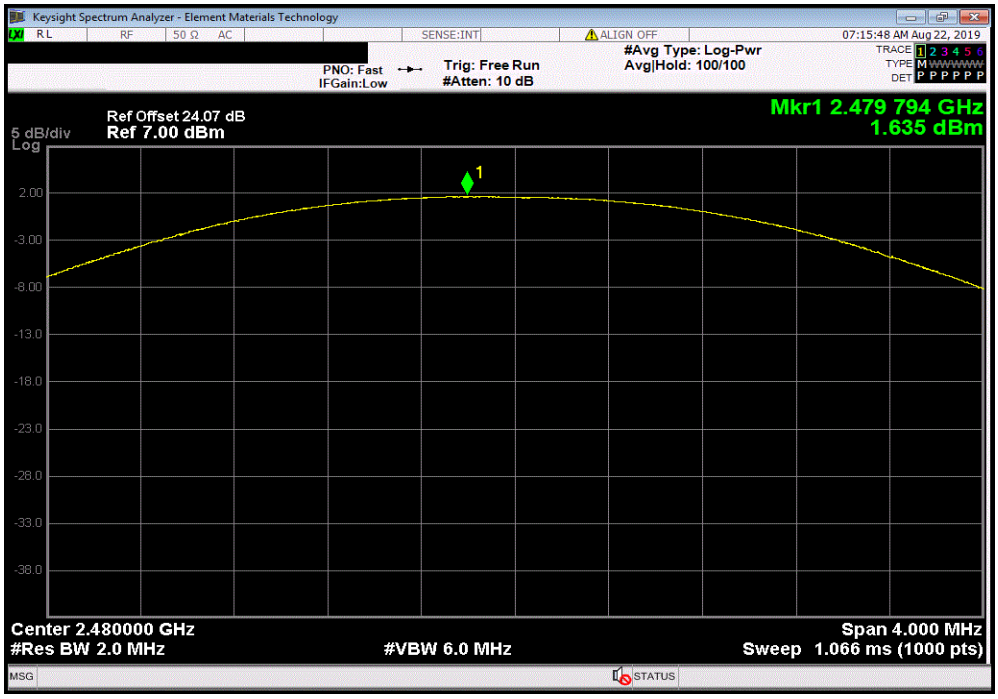
2DH5, pi/4-DQPSK, Low Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				-1.043	21	Pass



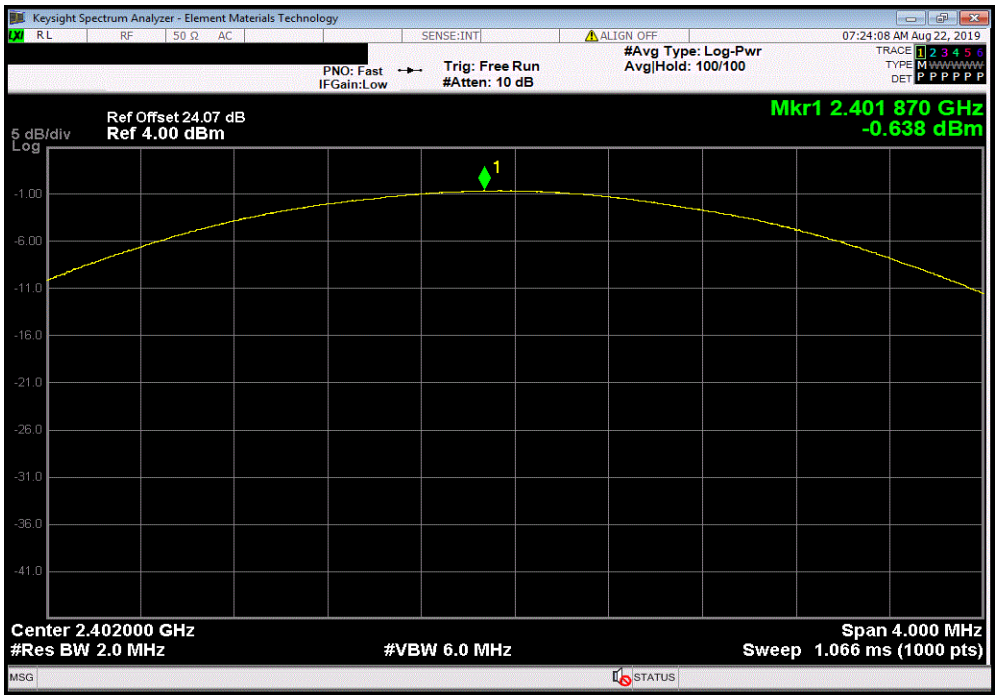
2DH5, pi/4-DQPSK, Mid Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				0.299	21	Pass



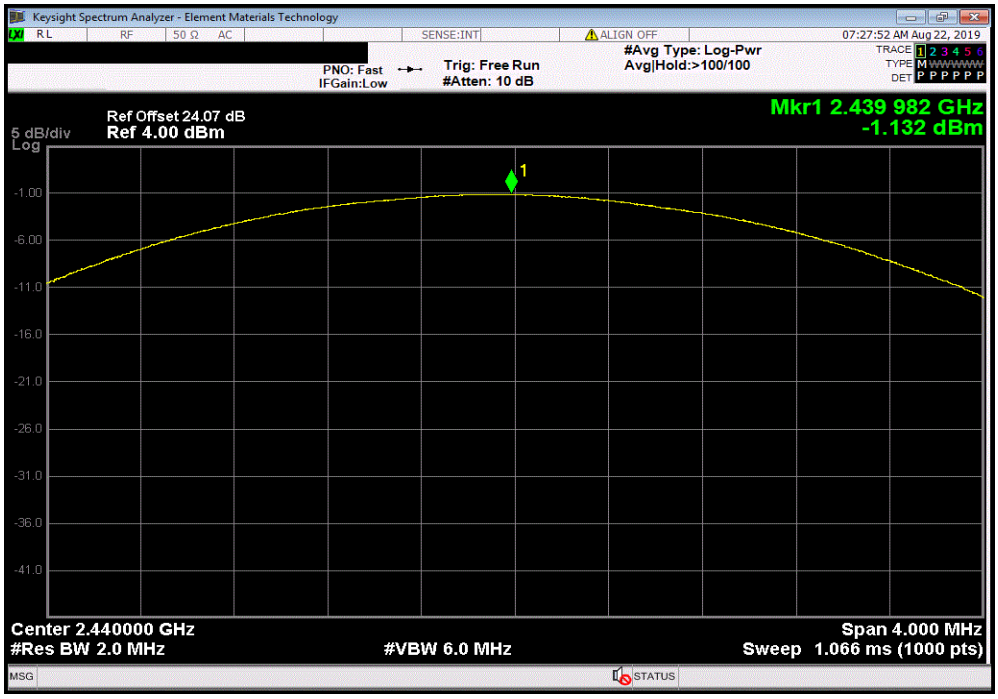
2DH5, pi/4-DQPSK, High Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				1.635	21	Pass



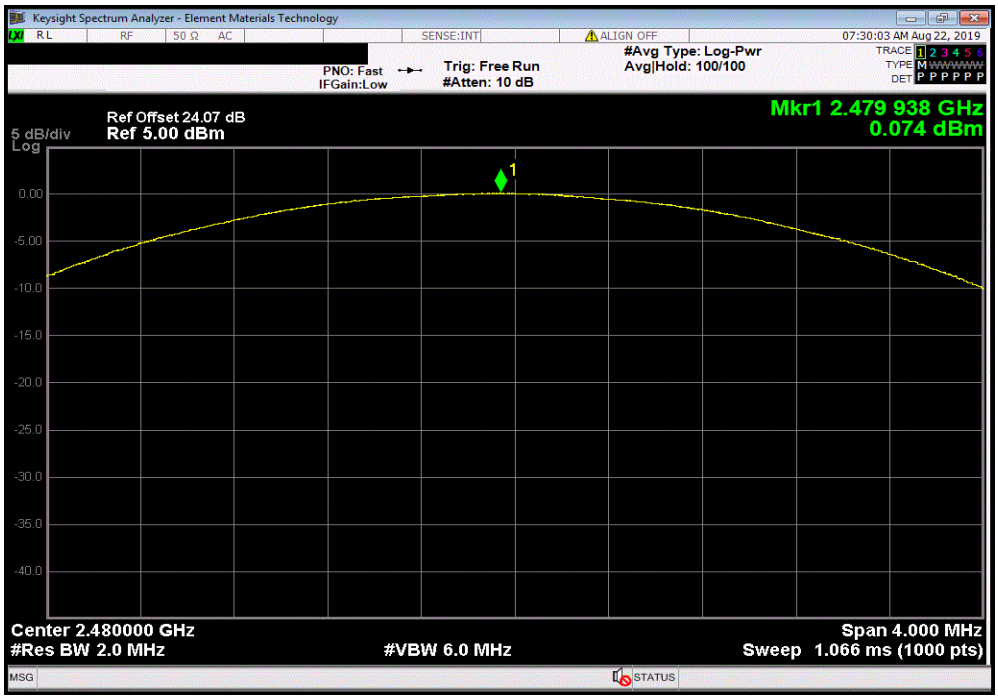
3DH5, 8-DPSK, Low Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				-0.638	21	Pass



3DH5, 8-DPSK, Mid Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				-1.132	21	Pass



3DH5, 8-DPSK, High Channel						
				Out Pwr (dBm)	Limit (dBm)	Result
				0.074	21	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

XMit 2019.06.11

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	2-Jul-19	2-Jul-20
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20
Generator - Signal	Agilent	E8257D	TGU	15-Feb-18	15-Feb-21

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. The radio was operated in the modes as shown in the following data sheets.

Prior to measuring maximum transmit power; the 99% emission bandwidth (B) and the transmission pulse duration (T) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The maximum conducted output power was measured using ANSI C63.10, Method SA-1 (RMS detection with the EUT Transmitting at full power throughout each sweep). Note per ANSI C63.10 continuous transmit is defined as operation > 98% duty Cycle.

The spectrum analyzer settings were set per the guidance as well as the following specifics:

RMS Detector

Trace average 100 traces in power averaging mode.

Power was integrated across “B”, by using the channel power function of the analyzer.

EIRP = Max Measured Power + Antenna gain (dBi)

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

element

TbtTx 2019.08.02 XMit 2019.06.11

EUT:	Jonah			**Work Order:**	DROP0009
Serial Number:	PL1919P10034			**Date:**	21-Aug-19
Customer:	SonicSensory, Inc.			**Temperature:**	23.1 °C
Attendees:	Daniel Quiros			**Humidity:**	45.2% RH
Project:	None			**Barometric Pres.:**	1015 mbar
Tested by:	Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

DC Block + 20 dB attenuator + Coax Cable + patch cable = 24.07 dB Total Offset

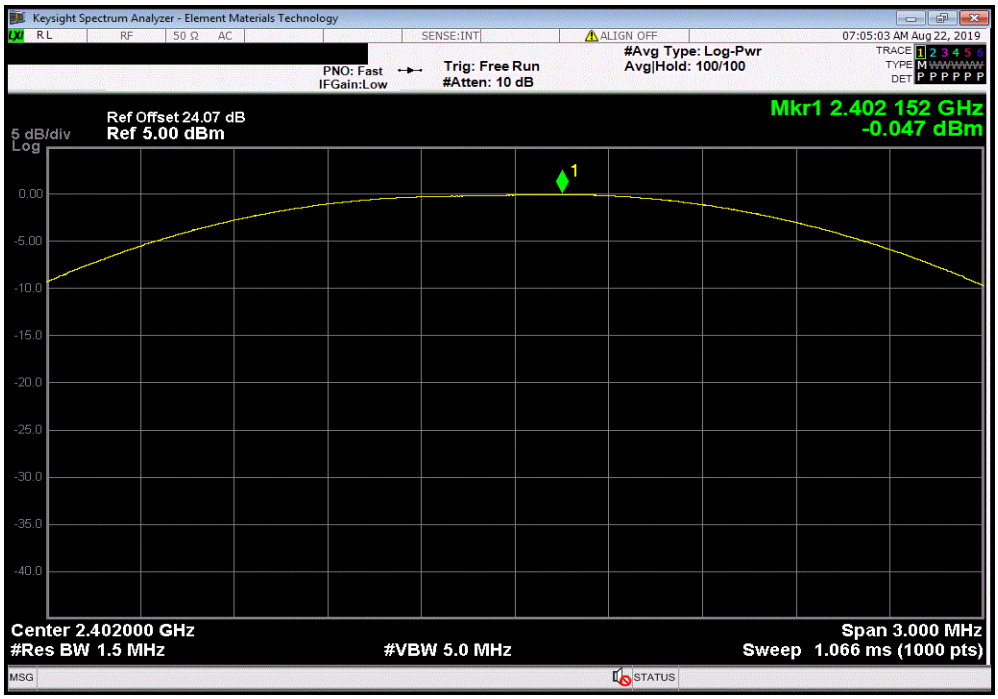
DEVIATIONS FROM TEST STANDARD

None

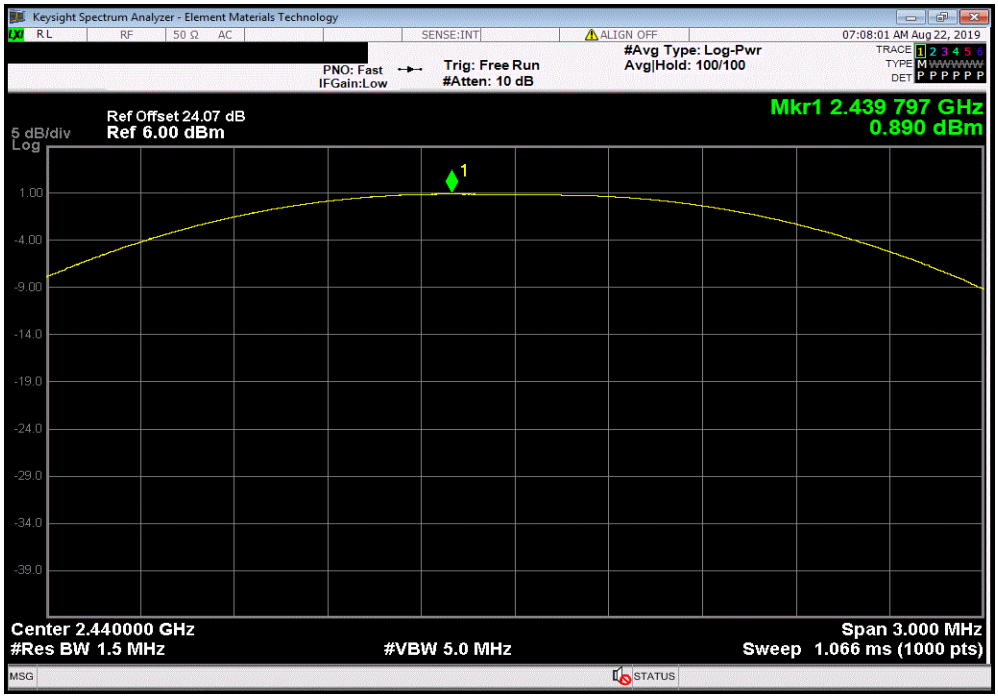
Configuration #	3	*Signature*

		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
DH5, GFSK						
	Low Channel	-0.047	2.9	2.853	27	Pass
	Mid Channel	0.89	2.78	3.67	27	Pass
	High Channel	1.715	3.86	5.575	27	Pass
2DH5, pi/4-DQPSK						
	Low Channel	-1.043	2.9	1.857	27	Pass
	Mid Channel	0.299	2.78	3.079	27	Pass
	High Channel	1.635	3.86	5.495	27	Pass
3DH5, 8-DPSK						
	Low Channel	-0.638	2.9	2.262	27	Pass
	Mid Channel	-1.132	2.78	1.648	27	Pass
	High Channel	0.074	3.86	3.934	27	Pass

DH5, GFSK, Low Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		-0.047	2.9	2.853	27	Pass

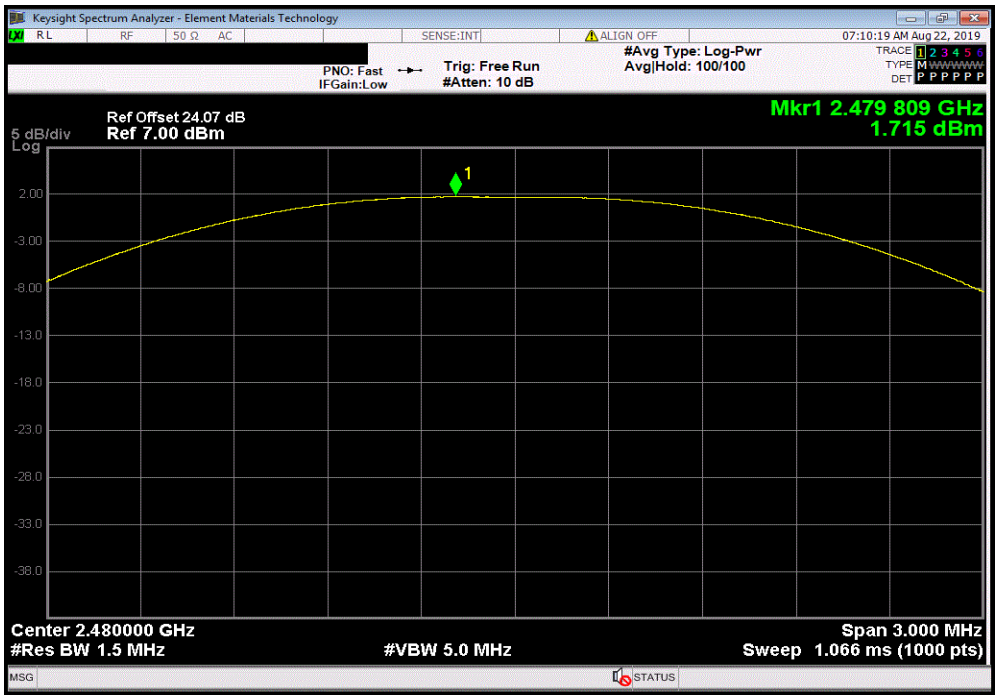


DH5, GFSK, Mid Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		0.89	2.78	3.67	27	Pass

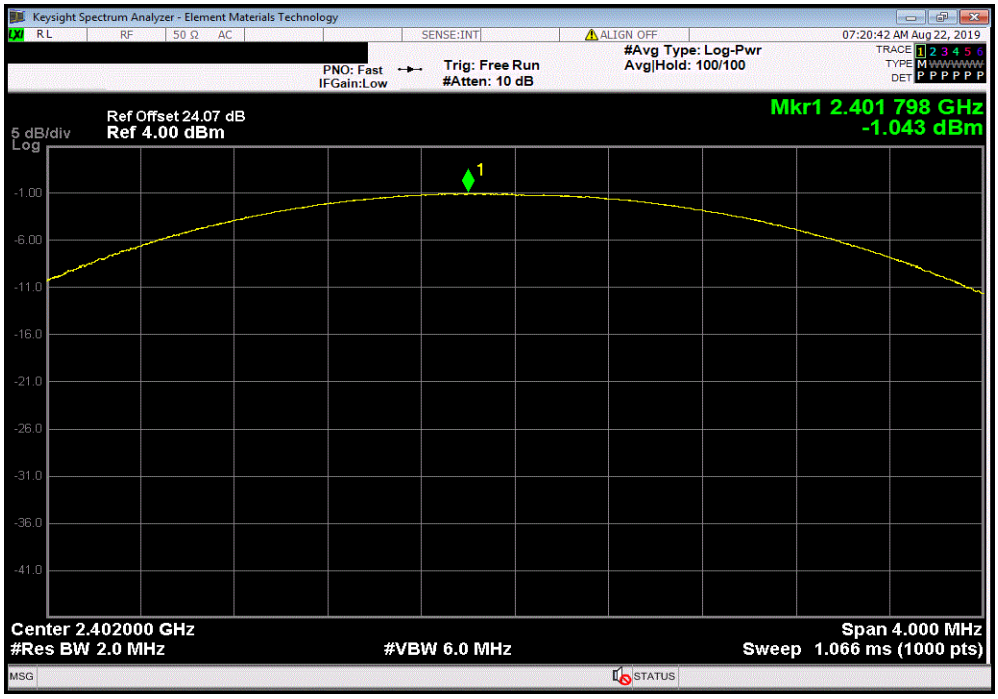


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

DH5, GFSK, High Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		1.715	3.86	5.575	27	Pass



2DH5, pi/4-DQPSK, Low Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		-1.043	2.9	1.857	27	Pass

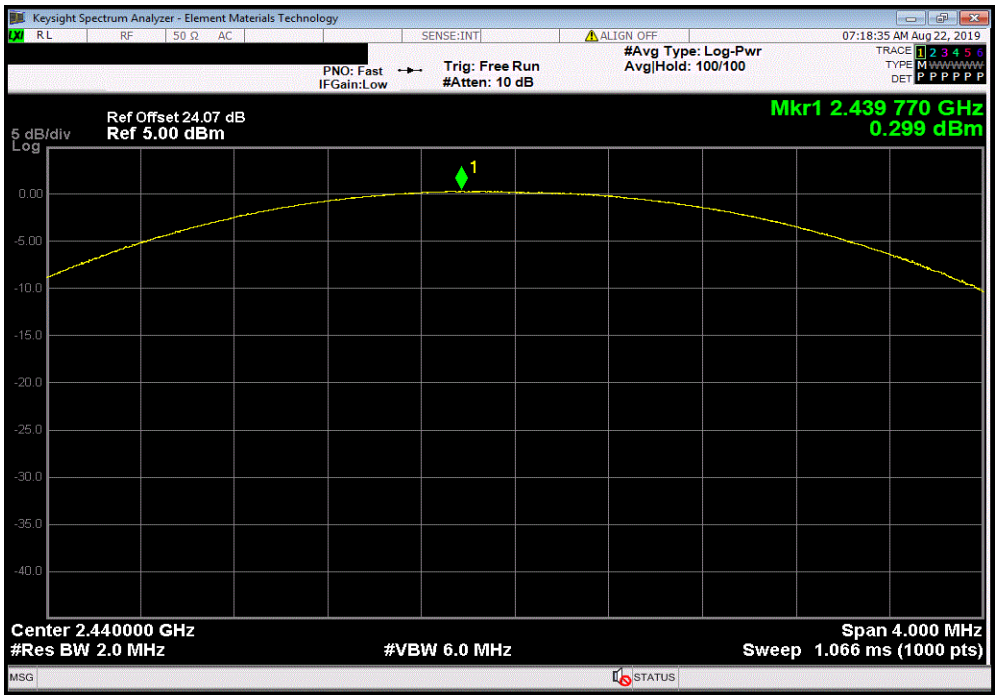


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

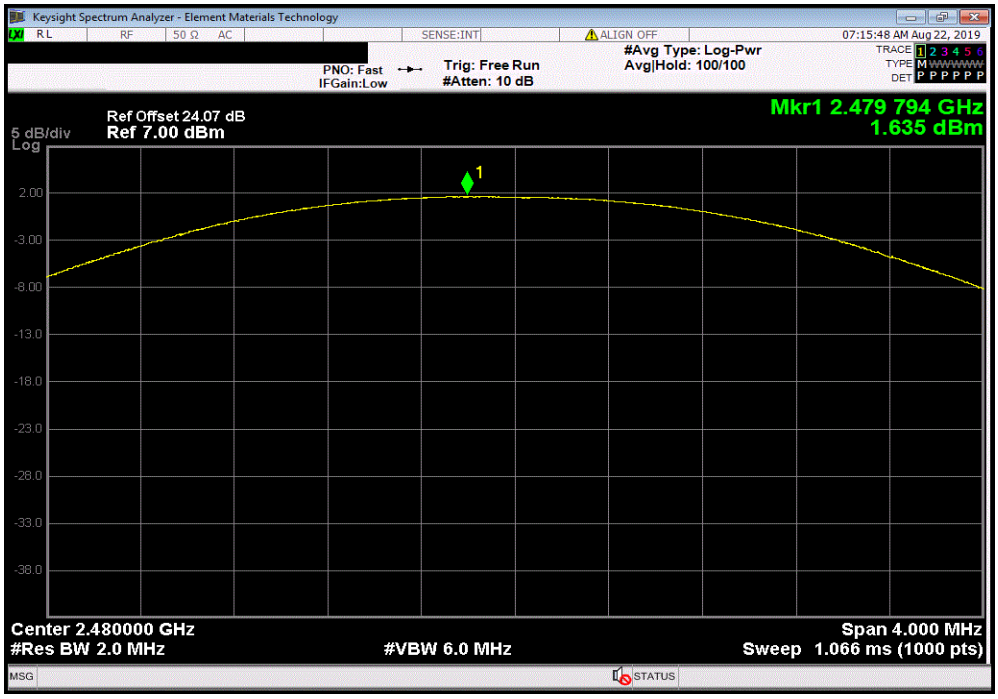
element

TbtTx 2019.08.02 XMit 2019.06.11

2DH5, pi/4-DQPSK, Mid Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		0.299	2.78	3.079	27	Pass

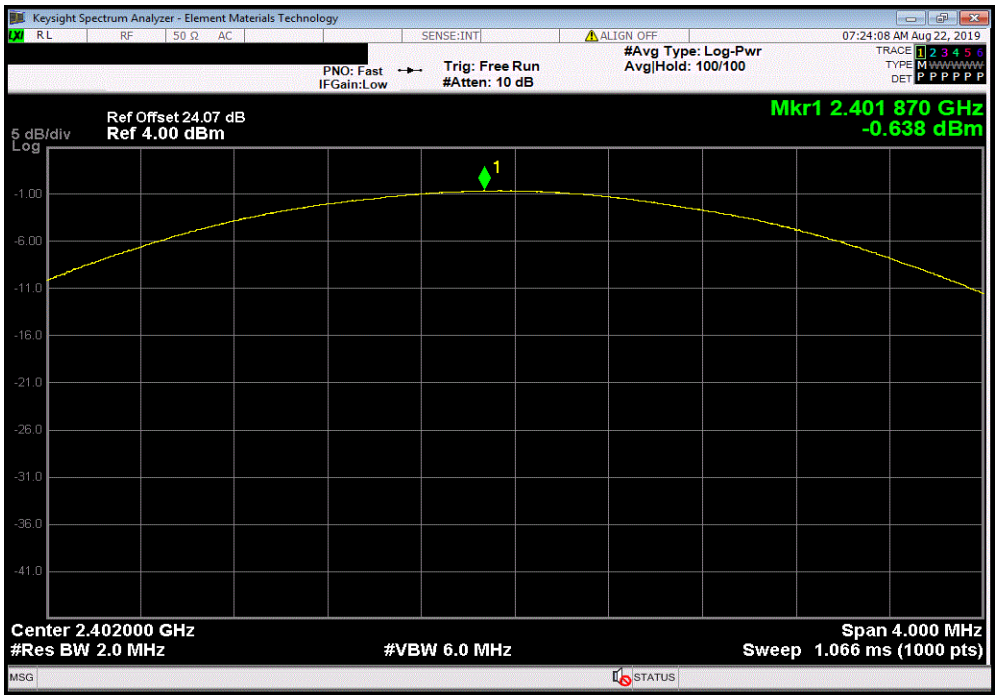


2DH5, pi/4-DQPSK, High Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		1.635	3.86	5.495	27	Pass

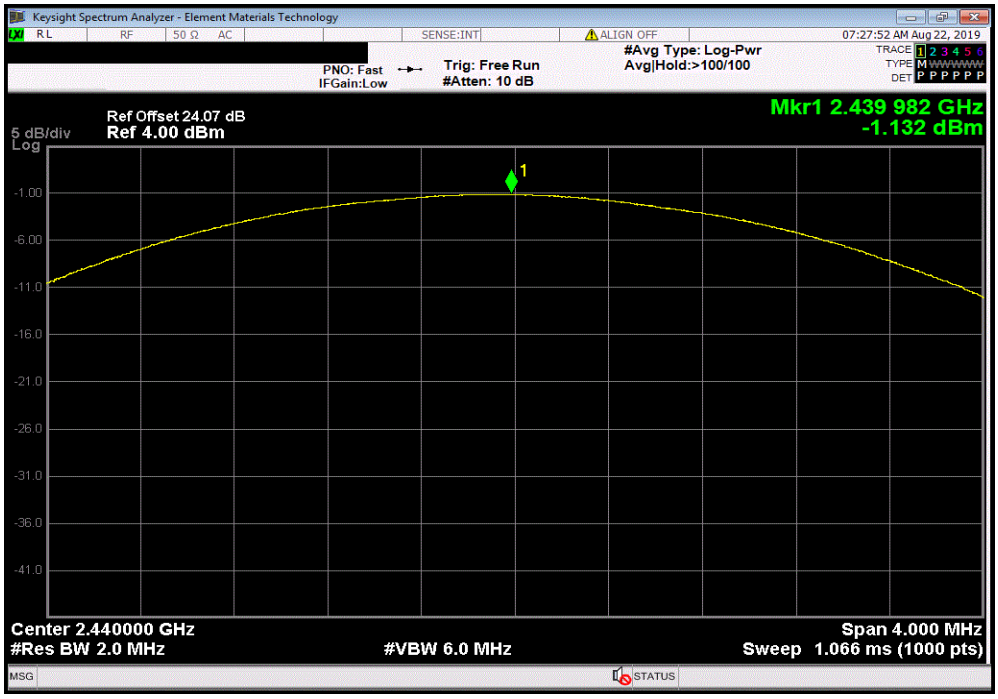


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

3DH5, 8-DPSK, Low Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		-0.638	2.9	2.262	27	Pass

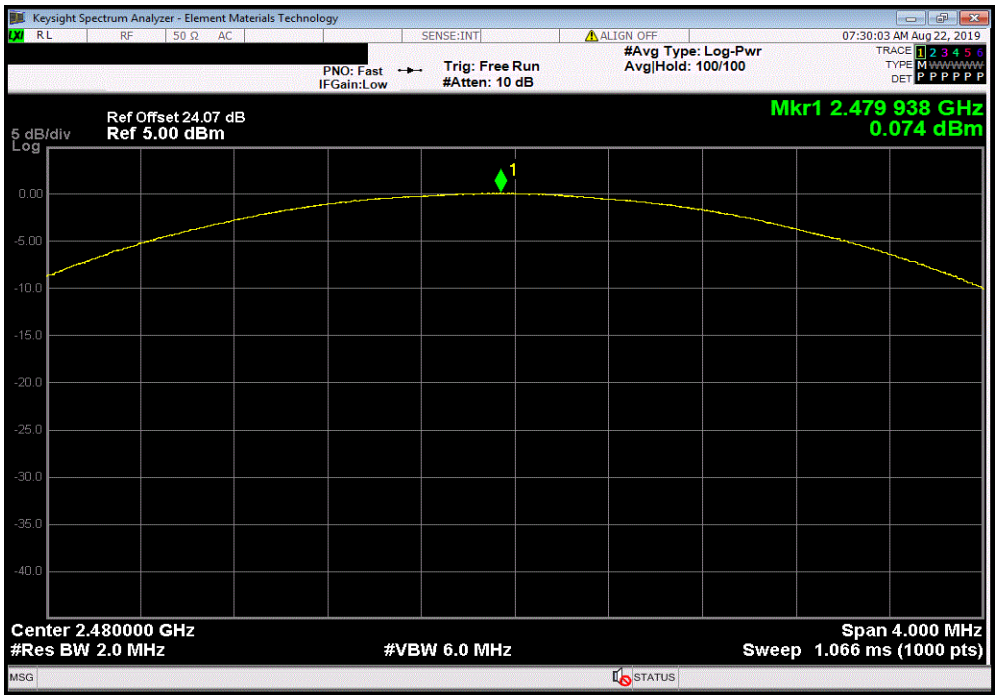


3DH5, 8-DPSK, Mid Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		-1.132	2.78	1.648	27	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

3DH5, 8-DPSK, High Channel						
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
		0.074	3.86	3.934	27	Pass



BAND EDGE COMPLIANCE

XMit 2019.06.11

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E8257D	TGU	15-Feb-18	15-Feb-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	2-Jul-19	2-Jul-20
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized 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 2018.09.13 XMit 2019.06.11

EUT:	**Jonah**			**Work Order:**	**DROP0009**
Serial Number:	**PL1919P10034**			**Date:**	**21-Aug-19**
Customer:	**SonicSensory, Inc.**			**Temperature:**	**22.9 °C**
Attendees:	**Daniel Quiros**			**Humidity:**	**45.6% RH**
Project:	**None**			**Barometric Pres.:**	**1015 mbar**
Tested by:	**Johnny Candelas**	**Power:**	**110VAC/60Hz**	**Job Site:**	**OC13**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

DC Block + 20 dB attenuator + Coax Cable + patch cable = 24.07 dB Total Offset

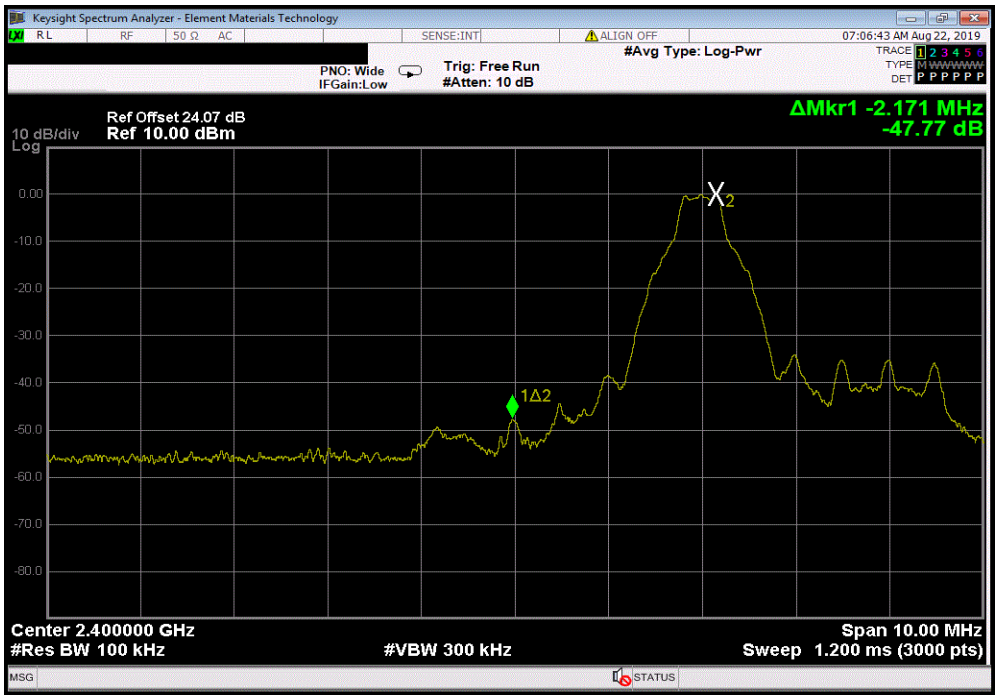
DEVIATIONS FROM TEST STANDARD

None

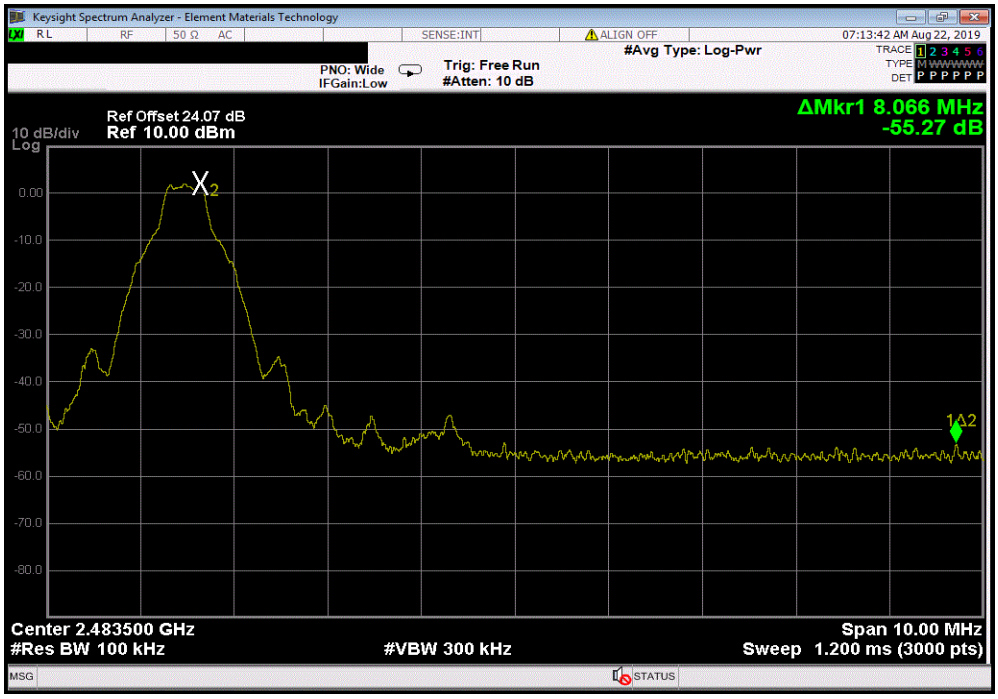
Configuration #	**3**	*Signature*

		Value (dBc)	**Limit ≤ (dBc)**	**Result**
DH5, GFSK				
	Low Channel	-47.77	-20	Pass
	High Channel	-55.27	-20	Pass
2DH5, pi/4-DQPSK				
	Low Channel	-37.44	-20	Pass
	High Channel	-52.64	-20	Pass
3DH5, 8-DPSK				
	Low Channel	-38.11	-20	Pass
	High Channel	-53.43	-20	Pass

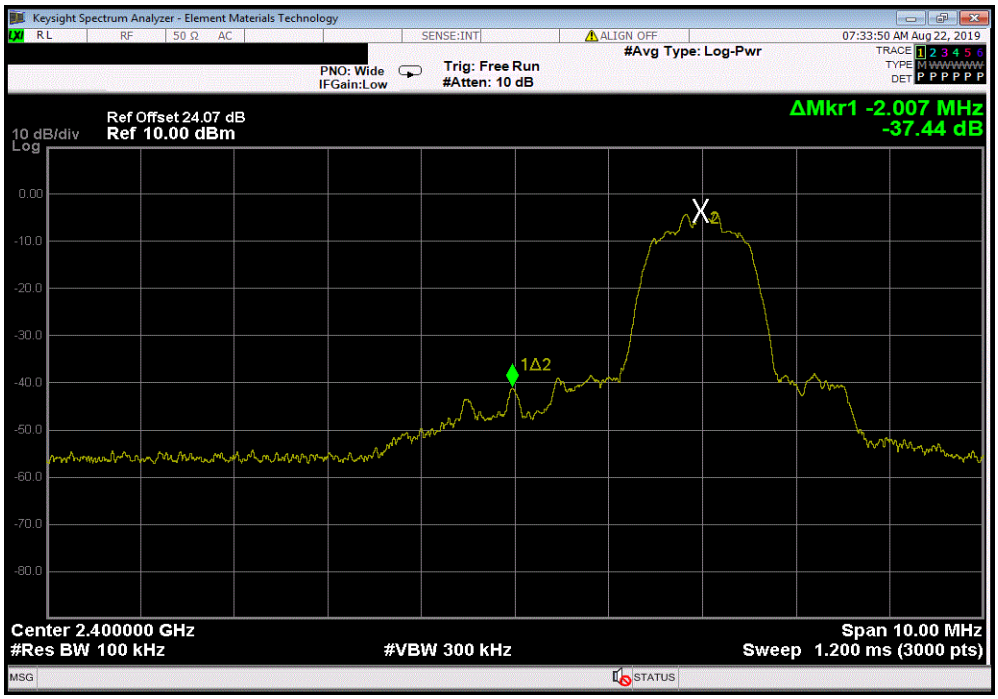
DH5, GFSK, Low Channel						
				Value (dBc)	Limit ≤ (dBc)	Result
				-47.77	-20	Pass



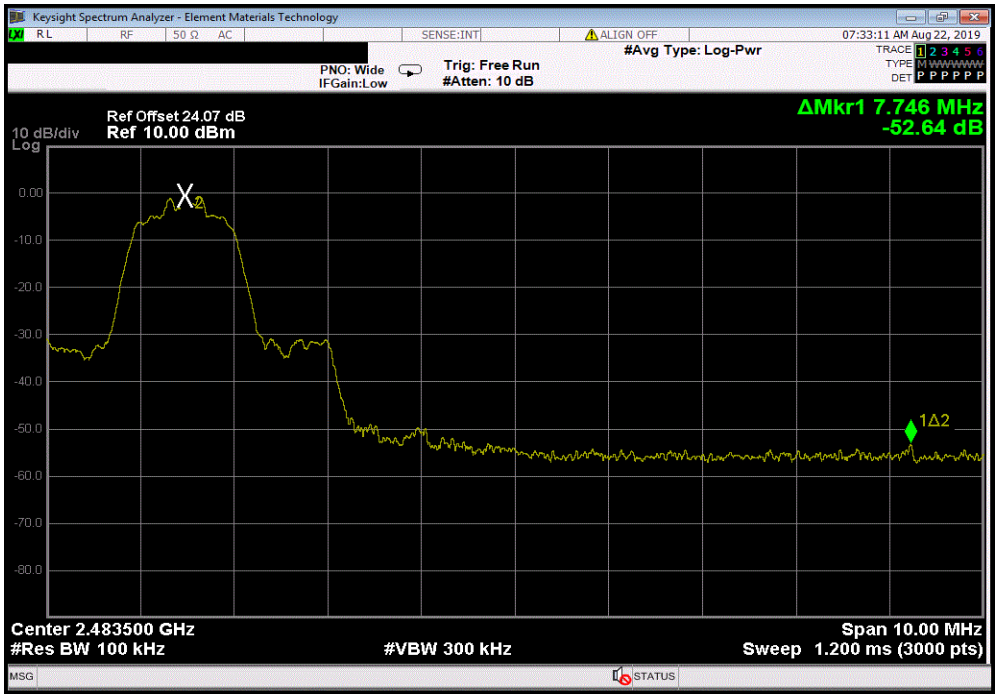
DH5, GFSK, High Channel						
				Value (dBc)	Limit ≤ (dBc)	Result
				-55.27	-20	Pass



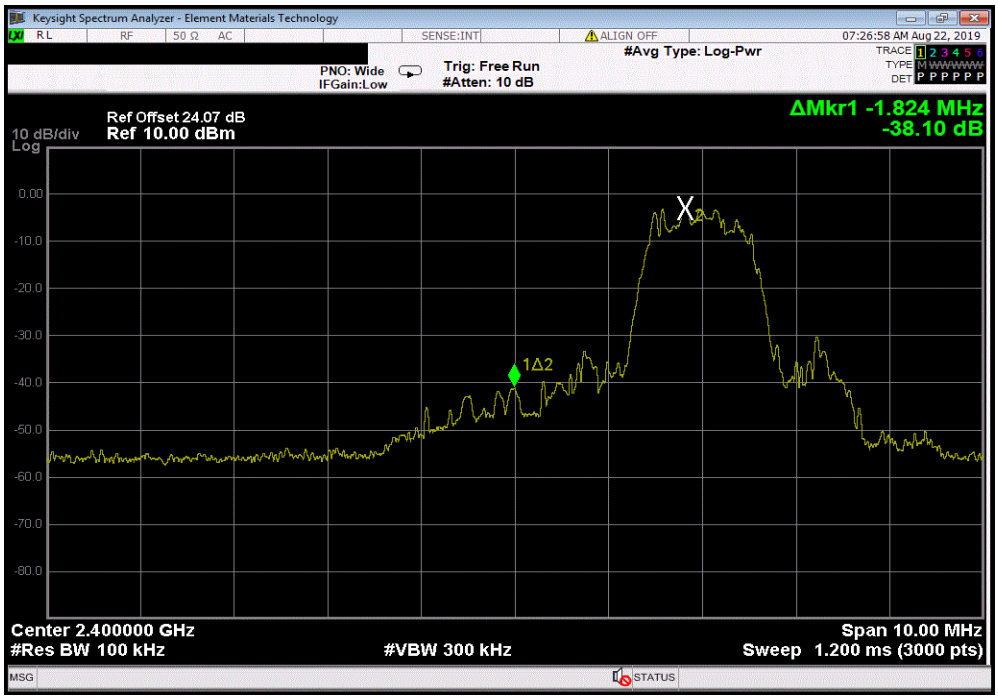
2DH5, pi/4-DQPSK, Low Channel						
				Value (dBc)	Limit ≤ (dBc)	Result
				-37.44	-20	Pass



2DH5, pi/4-DQPSK, High Channel						
				Value (dBc)	Limit ≤ (dBc)	Result
				-52.64	-20	Pass



3DH5, 8-DPSK, Low Channel						
				Value (dBc)	Limit ≤ (dBc)	Result
				-38.11	-20	Pass



3DH5, 8-DPSK, High Channel						
				Value (dBc)	Limit ≤ (dBc)	Result
				-53.43	-20	Pass