



element

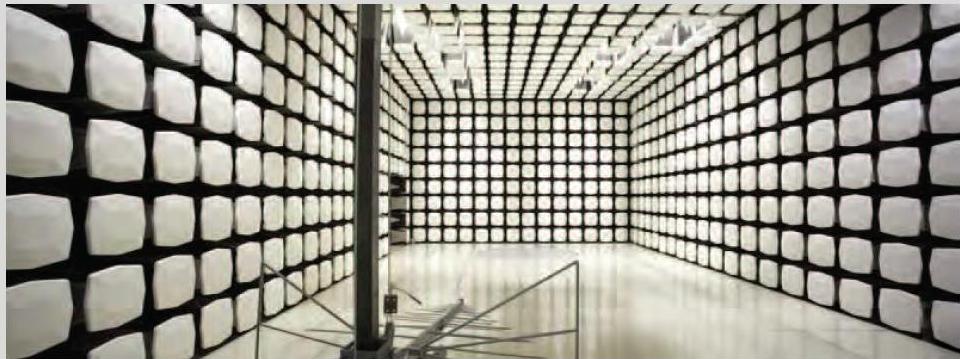
Novidan, Inc.

Indy2 Rechargeable RIC (Right Ear)

FCC 15.247:2022

Bluetooth Low Energy Radio

Report: NOVI0019.2 Rev. 1, Issue Date: October 10, 2022



CERTIFICATE OF TEST



Last Date of Test: January 26, 2022
Novidan, Inc.
EUT: Indy2 Rechargeable RIC

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2022	ANSI C63.10:2013, KDB 558074

Results

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

James Morris, 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
01	Corrected typo in standard. Clarified power settings.	10-10-22	2, 11

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 - Each laboratory is accredited by A2LA to ISO / IEC 17025, and as a product certifier to ISO / IEC 17065 which allows Element to certify transmitters to FCC and IC specifications.

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 – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

United Kingdom

BEIS – Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

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:

[California](#)

[Minnesota](#)

[Oregon](#)

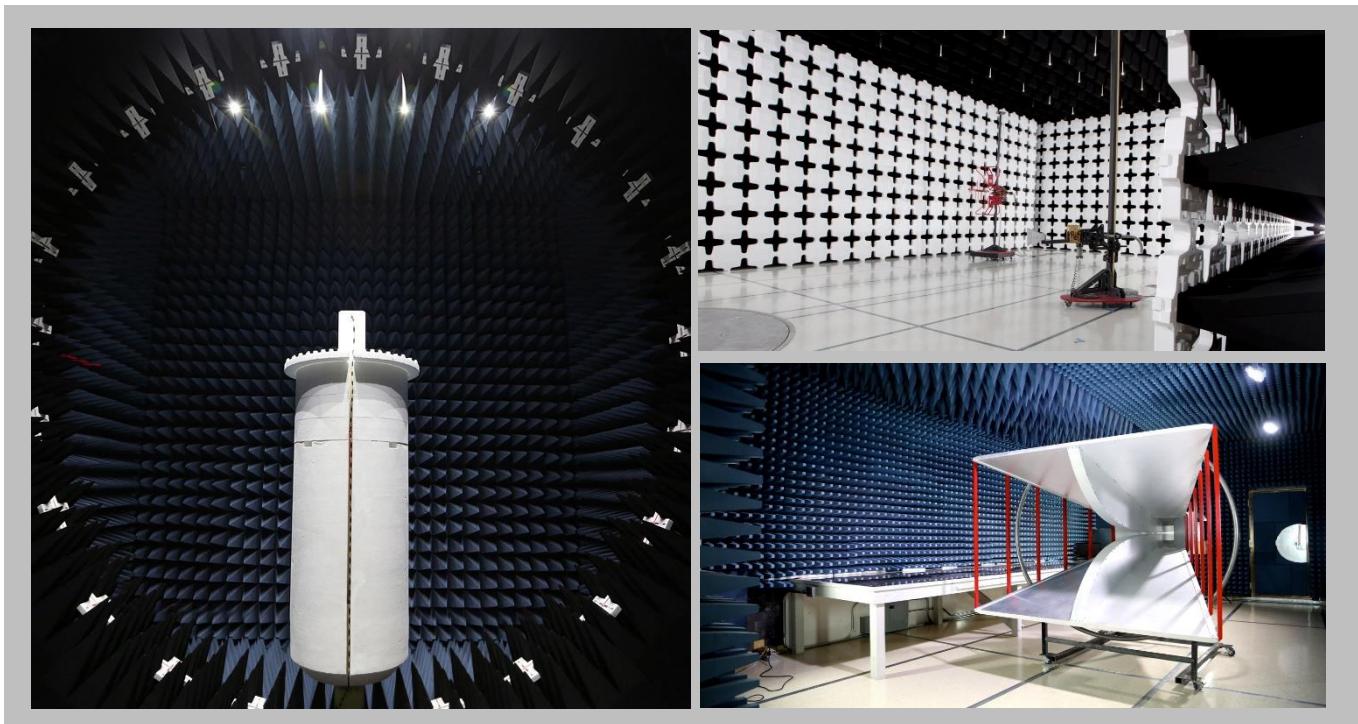
[Texas](#)

[Washington](#)

FACILITIES



California Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-11 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612) 638-5136	Oregon Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120th Ave NE Bothell, WA 98011 (425) 984-6600
A2LA				
Lab Code: 3310.04	Lab Code: 3310.05	Lab Code: 3310.02	Lab Code: 3310.03	Lab Code: 3310.06
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



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 in the table below. A lab specific value may also be found in the applicable test description section. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	3.2 dB	-3.2 dB

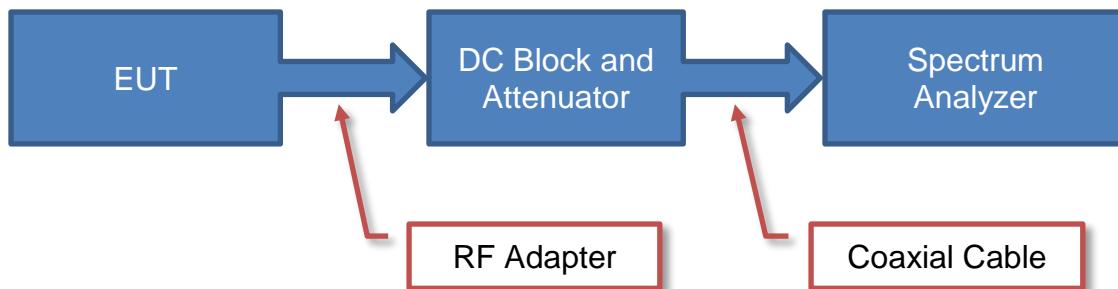
TEST SETUP BLOCK DIAGRAMS

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

Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

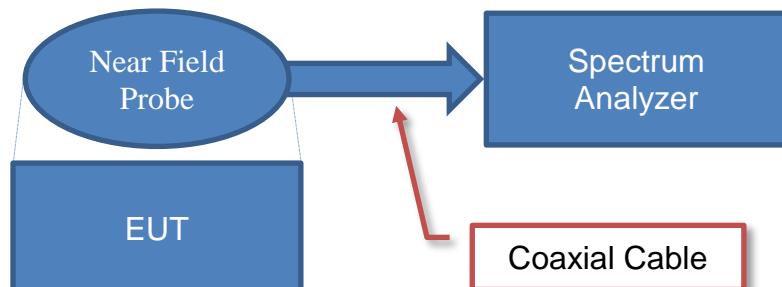
Antenna Port Conducted Measurements



Sample Calculation (logarithmic units)

$$\begin{array}{ccc} \text{Measured} & \text{Measured} & \text{Reference} \\ \text{Value} & = & \text{Level} \\ 71.2 & = & 42.6 \\ & & + \\ & & \text{Level} \\ & & \text{Offset} \\ & & 28.6 \end{array}$$

Near Field Test Fixture Measurements

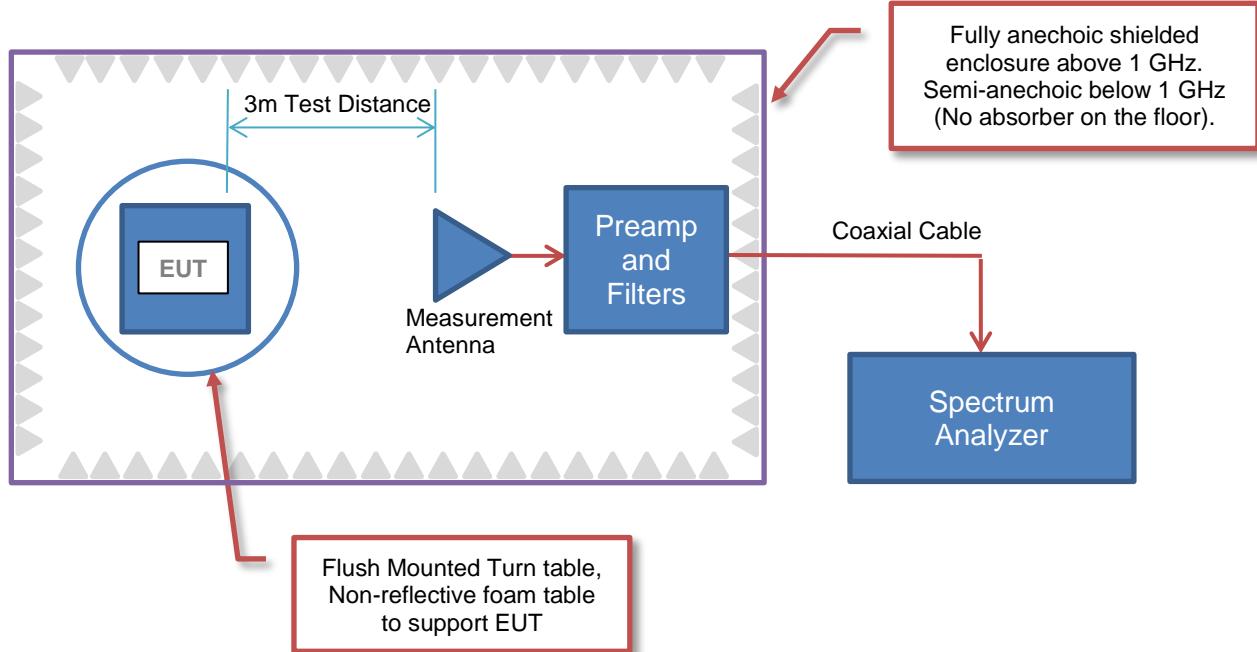


Sample Calculation (logarithmic units)

$$\begin{array}{ccc} \text{Measured} & \text{Measured} & \text{Reference} \\ \text{Value} & = & \text{Level} \\ 71.2 & = & 42.6 \\ & & + \\ & & \text{Level} \\ & & \text{Offset} \\ & & 28.6 \end{array}$$

TEST SETUP BLOCK DIAGRAMS

Emissions Measurements



Sample Calculation (logarithmic units)

Radiated Emissions:

	Factor					
Measured Level (Amplitude)	Antenna Factor	Cable Factor	Amplifier Gain	Distance Adjustment Factor	External Attenuation	Field Strength
42.6	28.6	+	3.1	-	40.8	= 33.5

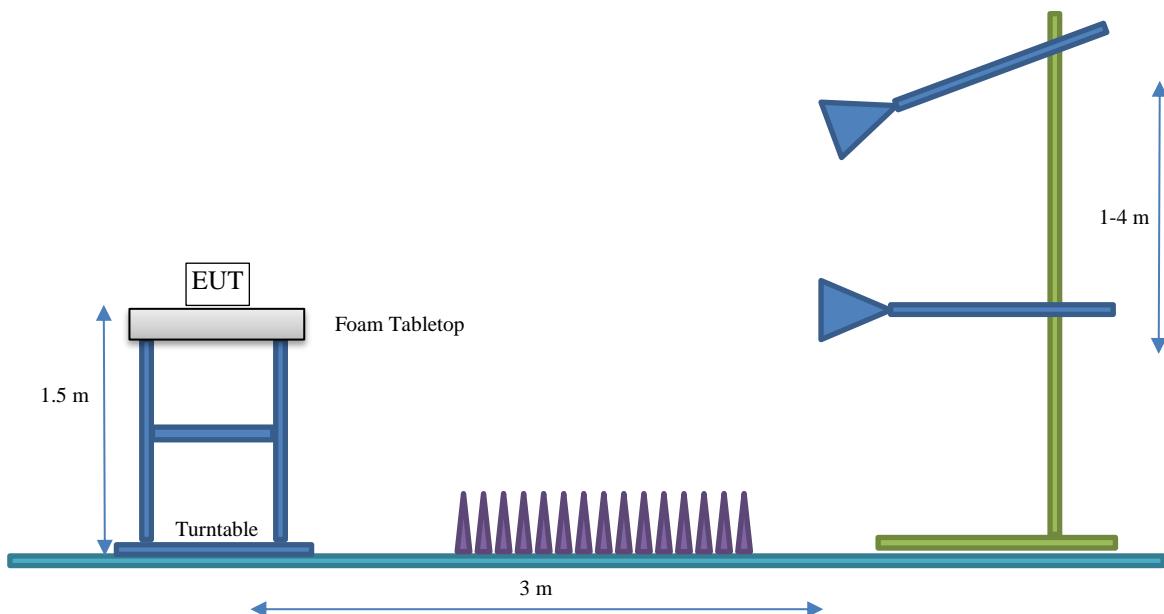
Conducted Emissions:

	Factor			
Measured Level (Amplitude)	Transducer Factor	Cable Factor	External Attenuation	Adjusted Level
26.7	0.3	+	0.1	= 47.1

TEST SETUP BLOCK DIAGRAMS

Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	Novidan, Inc.
Address:	672 Mendelssohn Avenue North
City, State, Zip:	Golden Valley, MN 55427
Test Requested By:	Katie Himes
EUT:	Indy2 Rechargeable RIC (Right Ear)
First Date of Test:	December 29, 2021
Last Date of Test:	January 26, 2022
Receipt Date of Samples:	December 29, 2021
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Rechargeable Hearing Aid
Testing Objective:
To demonstrate compliance of the Bluetooth Low Energy radio to FCC 15.247 requirements.

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information.

ANTENNA GAIN (dBi)

Type	Provided by:	Frequency Range (MHz)	Gain (dBi)
Loop	Novidan, Inc.	2402-2480	-3.92

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

SETTINGS FOR ALL TESTS IN THIS REPORT UNLESS NOTED OTHERWISE

Modulation Types / Data Rates	Type	Channel	Frequency (MHz)	Power Setting
BLE GFSK, 1 Mbps, 2 Mbps	DTS	0 or 37	2402	0 dBm
		20 or 18	2442	0 dBm
		39	2480	0 dBm*

*For Spurious Radiated Emissions testing, additional data was taken at -1 dBm out of an abundance of caution due to proximity to the limit.

CONFIGURATIONS



Configuration NOVI0019- 12

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Hearing Aid	Novidan, Inc.	BMD0014-R	ii004

Configuration NOVI0019- 18

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Hearing Aid	Novidan, Inc.	BMD0014-R	1602636651

Configuration NOVI0019- 19

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Hearing Aid	Novidan, Inc.	BMD0014-R	1602636480

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2021-12-29	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.
2	2021-12-29	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.
3	2021-12-29	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
4	2021-12-29	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.
5	2021-12-29	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.
6	2021-12-29	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	2021-12-29	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.
8	2022-1-26	Spurious Radiated 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



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 within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

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 $10^{\ast}\log(1/dc)$.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	2021-05-21	2022-05-21
Antenna - Biconilog	Ametek	CBL 6141B	AYS	2021-03-09	2023-03-09
Cable	ESM Cable Corp.	Bilog Cables	MNH	2021-10-13	2022-10-13
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2021-10-13	2022-10-13
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2021-09-09	2022-09-09
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2021-09-09	2022-09-09
Antenna - Double Ridge	ETS Lindgren	3115	AJQ	2021-01-25	2023-01-25
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	2021-01-18	2022-01-18
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2021-01-18	2022-01-18
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	NCR
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	2021-03-07	2022-03-07
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2021-01-18	2022-01-18
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2021-01-18	2022-01-18
Filter - High Pass	Micro-Tronics	HPM50108	LFM	2021-09-09	2022-09-09
Attenuator	Fairview Microwave	SA18E-10	TYA	2021-09-09	2022-09-09
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2021-09-09	2022-09-09

SPURIOUS RADIATED EMISSIONS



MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	5.2 dB	-5.2 dB

FREQUENCY RANGE INVESTIGATED

30 MHz TO 26500 MHz

POWER INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

NOVI0019-13

MODES INVESTIGATED

Transmitting Bluetooth Low, Mid, and High Chs (2402, 2442, and 2480 MHz) at 1 or 2 Mbps.

Transmitting Bluetooth Low, Mid, and High Chs (2402, 2442, and 2480 MHz) at 1 or 2 Mbps. Operating at -1 dBm power.

SPURIOUS RADIATED EMISSIONS



EUT:	Indy2 Rechargeable RIC	Work Order:	NOVI0019
Serial Number:	1602636480	Date:	2022-01-26
Customer:	Novidan, Inc.	Temperature:	21.8°C
Attendees:	Katie Himes	Relative Humidity:	13%
Customer Project:	None	Bar. Pressure (PMSL):	1026 mb
Tested By:	Alexis Converse, Kyle McMullan	Job Site:	MN05
Power:	Battery	Configuration:	NOVI0019-19

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	63	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

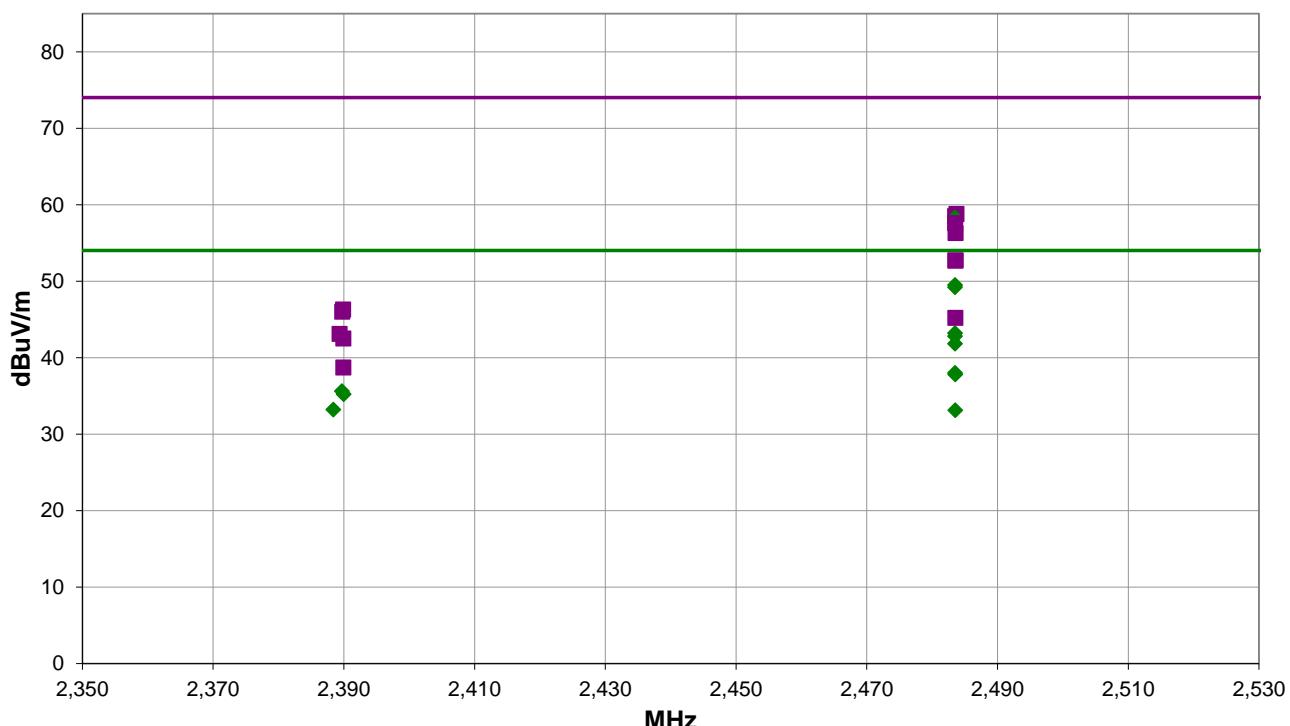
Right ear unit. Test mode is 65% for 1 Mbps and 57% for 2 Mbps. An upward duty cycle correction factor (DCCF) was applied using $DCCF=10*\log(1/\text{duty cycle})$ giving 1.8dB correction for 1 Mbps and 2.4dB correction for 2 Mbps. See comments for EUT position, channel, and datarate.

EUT OPERATING MODES

Transmitting Bluetooth Low, Mid, and High Chs (2402, 2442, and 2480 MHz) at 1 or 2 Mbps. High channel operating at 0 dBm instead of -1 dBm.

DEVIATIONS FROM TEST STANDARD

None



Run #: 63

PK AV QP

SPURIOUS RADIATED EMISSIONS



RESULTS - Run #63

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (ADP)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.508	50.9	-3.8	4.0	66.0	2.4	0.0	Horz	AV	0.0	49.5	54.0	-4.5	EUT on side, 2 Mbps, High Ch
2483.508	50.6	-3.8	1.7	95.0	2.4	0.0	Vert	AV	0.0	49.2	54.0	-4.8	EUT horz, 2 Mbps, High Ch
2483.500	45.2	-3.8	1.5	333.0	1.8	0.0	Vert	AV	0.0	43.2	54.0	-10.8	EUT horz, 1 Mbps, High Ch
2483.508	44.8	-3.8	3.9	178.0	1.8	0.0	Horz	AV	0.0	42.8	54.0	-11.2	EUT on side, 1 Mbps, High Ch
2483.500	43.8	-3.8	1.5	41.0	1.8	0.0	Horz	AV	0.0	41.8	54.0	-12.2	EUT vert, 1 Mbps, High Ch
2483.717	62.6	-3.8	4.0	66.0	0.0	0.0	Horz	PK	0.0	58.8	74.0	-15.2	EUT on side, 2 Mbps, High Ch
2389.900	39.8	-3.5	1.0	127.0	2.4	0.0	Vert	AV	0.0	38.7	54.0	-15.3	EUT horz, 2 Mbps, Low Ch
2483.525	62.3	-3.8	1.7	95.0	0.0	0.0	Vert	PK	0.0	58.5	74.0	-15.5	EUT horz, 2 Mbps, High Ch
2483.508	62.1	-3.8	3.9	178.0	0.0	0.0	Horz	PK	0.0	58.3	74.0	-15.7	EUT on side, 1 Mbps, High Ch
2483.508	40.0	-3.8	2.6	189.9	1.8	0.0	Vert	AV	0.0	38.0	54.0	-16.0	EUT vert, 1 Mbps, High Ch
2483.558	39.8	-3.8	3.5	283.9	1.8	0.0	Vert	AV	0.0	37.8	54.0	-16.2	EUT on side, 1 Mbps, High Ch
2483.517	61.4	-3.8	1.5	333.0	0.0	0.0	Vert	PK	0.0	57.6	74.0	-16.4	EUT horz, 1 Mbps, High Ch
2483.575	60.1	-3.8	1.5	41.0	0.0	0.0	Horz	PK	0.0	56.3	74.0	-17.7	EUT vert, 1 Mbps, High Ch
2389.717	36.7	-3.5	1.4	80.0	2.4	0.0	Horz	AV	0.0	35.6	54.0	-18.4	EUT on side, 2 Mbps, Low Ch
2389.967	36.9	-3.5	1.0	19.9	1.8	0.0	Vert	AV	0.0	35.2	54.0	-18.8	EUT horz, 1 Mbps, Low Ch
2388.383	34.9	-3.5	2.9	70.9	1.8	0.0	Horz	AV	0.0	33.2	54.0	-20.8	EUT on side, 1 Mbps, Low Ch
2483.533	35.1	-3.8	1.5	343.9	1.8	0.0	Horz	AV	0.0	33.1	54.0	-20.9	EUT horz, 1 Mbps, High Ch
2483.542	56.5	-3.8	2.6	189.9	0.0	0.0	Vert	PK	0.0	52.7	74.0	-21.3	EUT vert, 1 Mbps, High Ch
2483.583	56.5	-3.8	3.5	283.9	0.0	0.0	Vert	PK	0.0	52.7	74.0	-21.3	EUT on side, 1 Mbps, High Ch
2389.892	49.8	-3.5	1.0	127.0	0.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	EUT horz, 2 Mbps, Low Ch
2389.758	49.5	-3.5	1.0	19.9	0.0	0.0	Vert	PK	0.0	46.0	74.0	-28.0	EUT horz, 1 Mbps, Low Ch
2483.558	49.0	-3.8	1.5	343.9	0.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8	EUT horz, 1 Mbps, High Ch
2389.342	46.6	-3.5	1.4	80.0	0.0	0.0	Horz	PK	0.0	43.1	74.0	-30.9	EUT on side, 2 Mbps, Low Ch
2389.925	46.0	-3.5	2.9	70.9	0.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5	EUT on side, 1 Mbps, Low Ch

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS



EUT:	Indy2 Rechargeable RIC	Work Order:	NOVI0019
Serial Number:	1602636480	Date:	2022-01-26
Customer:	Novidan, Inc.	Temperature:	22.1°C
Attendees:	Katie Himes	Relative Humidity:	14.8%
Customer Project:	None	Bar. Pressure (PMSL):	1017 mb
Tested By:	Alexis Converse, Kyle McMullan	Job Site:	MN05
Power:	Battery	Configuration:	NOVI0019-19

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	75	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

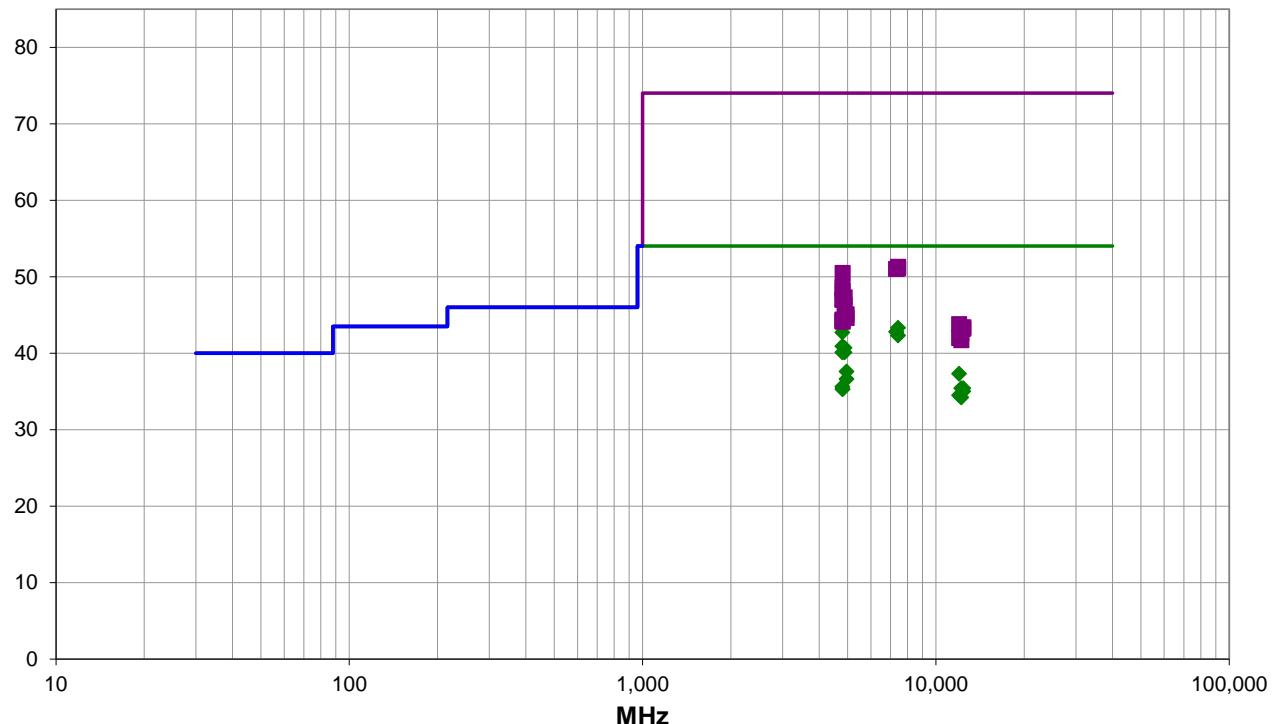
Right ear unit. Test mode is 65% for 1 Mbps and 57% for 2 Mbps. An upward duty cycle correction factor (DCCF) was applied using $DCCF=10\log(1/\text{duty cycle})$ giving 1.8dB correction for 1 Mbps and 2.4dB correction for 2 Mbps. See comments for EUT position, channel, and datarate.

EUT OPERATING MODES

Transmitting Bluetooth Low, Mid, and High Chs (2402, 2442, and 2480 MHz) at 1 or 2 Mbps.

DEVIATIONS FROM TEST STANDARD

None



Run #: 75

■ PK ♦ AV ● QP

SPURIOUS RADIATED EMISSIONS



RESULTS - Run #75

Freq (MHz)	Amplitude (dBuV)	F Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (AD)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4803.558	41.6	2.8	3.6	340.0	1.8	0.0	Horz	AV	0.0	46.2	54.0	-7.8	EUT on side, 1 Mbps, Low Ch
4803.575	39.1	2.8	2.8	220.0	1.8	0.0	Horz	AV	0.0	43.7	54.0	-10.3	EUT vert, 1 Mbps, Low Ch
7439.058	31.5	10.0	2.1	353.0	1.8	0.0	Vert	AV	0.0	43.3	54.0	-10.7	EUT horz, 1 Mbps, High Ch
7325.242	30.7	10.3	1.5	326.9	1.8	0.0	Vert	AV	0.0	42.8	54.0	-11.2	EUT horz, 1 Mbps, Mid Ch
7325.125	30.7	10.3	2.9	232.0	1.8	0.0	Horz	AV	0.0	42.8	54.0	-11.2	EUT on side, 1 Mbps, Mid Ch
4803.583	38.1	2.8	1.5	242.0	1.8	0.0	Vert	AV	0.0	42.7	54.0	-11.3	EUT horz, 1 Mbps, Low Ch
7439.275	30.5	10.0	1.5	33.0	1.8	0.0	Horz	AV	0.0	42.3	54.0	-11.7	EUT on side, 1 Mbps, High Ch
4803.542	36.3	2.8	4.0	272.9	1.8	0.0	Vert	AV	0.0	40.9	54.0	-13.1	EUT on side, 1 Mbps, Low Ch
4883.600	36.0	2.9	2.3	77.0	1.8	0.0	Horz	AV	0.0	40.7	54.0	-13.3	EUT on side, 1 Mbps, Mid Ch
4803.542	35.5	2.8	1.6	84.0	1.8	0.0	Vert	AV	0.0	40.1	54.0	-13.9	EUT vert, 1 Mbps, Low Ch
4883.525	35.4	2.9	2.6	252.0	1.8	0.0	Vert	AV	0.0	40.1	54.0	-13.9	EUT horz, 1 Mbps, Mid Ch
4959.517	32.7	3.1	3.3	229.9	1.8	0.0	Horz	AV	0.0	37.6	54.0	-16.4	EUT on side, 1 Mbps, High Ch
12008.460	35.4	0.1	1.8	203.9	1.8	0.0	Horz	AV	0.0	37.3	54.0	-16.7	EUT on side, 1 Mbps, Low Ch
4959.375	31.7	3.1	2.5	214.9	1.8	0.0	Vert	AV	0.0	36.6	54.0	-17.4	EUT horz, 1 Mbps, High Ch
4803.408	31.0	2.8	1.5	22.0	1.8	0.0	Horz	AV	0.0	35.6	54.0	-18.4	EUT horz, 1 Mbps, Low Ch
12208.510	33.8	-0.2	1.0	131.9	1.8	0.0	Horz	AV	0.0	35.4	54.0	-18.6	EUT on side, 1 Mbps, Mid Ch
12398.450	33.2	0.4	1.4	139.9	1.8	0.0	Horz	AV	0.0	35.4	54.0	-18.6	EUT on side, 1 Mbps, High Ch
4804.633	30.1	2.8	1.5	310.0	2.4	0.0	Vert	AV	0.0	35.3	54.0	-18.7	EUT horz, 2 Mbps, Low Ch
4806.500	30.1	2.8	1.5	304.0	2.4	0.0	Horz	AV	0.0	35.3	54.0	-18.7	EUT on side, 2 Mbps, Low Ch
12398.450	32.8	0.4	2.0	260.0	1.8	0.0	Vert	AV	0.0	35.0	54.0	-19.0	EUT horz, 1 Mbps, High Ch
12008.450	32.6	0.1	1.5	170.0	1.8	0.0	Vert	AV	0.0	34.5	54.0	-19.5	EUT horz, 1 Mbps, Low Ch
12208.440	32.6	-0.2	1.1	23.0	1.8	0.0	Vert	AV	0.0	34.2	54.0	-19.8	EUT horz, 1 Mbps, Mid Ch
7439.083	41.3	10.0	2.1	353.0	0.0	0.0	Vert	PK	0.0	51.3	74.0	-22.7	EUT horz, 1 Mbps, High Ch
7437.783	41.1	10.0	1.5	33.0	0.0	0.0	Horz	PK	0.0	51.1	74.0	-22.9	EUT on side, 1 Mbps, High Ch
7324.908	40.7	10.3	1.5	326.9	0.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0	EUT horz, 1 Mbps, Mid Ch
7326.300	40.7	10.3	2.9	232.0	0.0	0.0	Horz	PK	0.0	51.0	74.0	-23.0	EUT on side, 1 Mbps, Mid Ch
4804.383	47.7	2.8	3.6	340.0	0.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	EUT on side, 1 Mbps, Low Ch
4803.617	45.8	2.8	2.8	220.0	0.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	EUT vert, 1 Mbps, Low Ch
4804.067	45.4	2.8	1.5	242.0	0.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	EUT horz, 1 Mbps, Low Ch
4884.217	44.4	2.9	2.3	77.0	0.0	0.0	Horz	PK	0.0	47.3	74.0	-26.7	EUT on side, 1 Mbps, Mid Ch
4803.683	44.2	2.8	1.6	84.0	0.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	EUT vert, 1 Mbps, Low Ch
4804.167	44.2	2.8	4.0	272.9	0.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	EUT on side, 1 Mbps, Low Ch
4884.133	43.4	2.9	2.6	252.0	0.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	EUT horz, 1 Mbps, Mid Ch
4960.158	42.0	3.1	3.3	229.9	0.0	0.0	Horz	PK	0.0	45.1	74.0	-28.9	EUT on side, 1 Mbps, High Ch
4959.892	41.5	3.1	2.5	214.9	0.0	0.0	Vert	PK	0.0	44.6	74.0	-29.4	EUT horz, 1 Mbps, High Ch
4803.692	41.6	2.8	1.5	310.0	0.0	0.0	Vert	PK	0.0	44.4	74.0	-29.6	EUT horz, 2 Mbps, Low Ch
4802.775	41.4	2.8	1.5	22.0	0.0	0.0	Horz	PK	0.0	44.2	74.0	-29.8	EUT horz, 1 Mbps, Low Ch
4804.167	41.3	2.8	1.5	304.0	0.0	0.0	Horz	PK	0.0	44.1	74.0	-29.9	EUT on side, 2 Mbps, Low Ch
12008.460	43.7	0.1	1.8	203.9	0.0	0.0	Horz	PK	0.0	43.8	74.0	-30.2	EUT on side, 1 Mbps, Low Ch
12399.600	43.0	0.4	1.4	139.9	0.0	0.0	Horz	PK	0.0	43.4	74.0	-30.6	EUT on side, 1 Mbps, High Ch

SPURIOUS RADIATED EMISSIONS



Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (AD ₁)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12398.260	42.8	0.4	2.0	260.0	0.0	0.0	Vert	PK	0.0	43.2	74.0	-30.8	EUT horz, 1 Mbps, High Ch
12208.460	42.8	-0.2	1.0	131.9	0.0	0.0	Horz	PK	0.0	42.6	74.0	-31.4	EUT on side, 1 Mbps, Mid Ch
12009.080	41.9	0.1	1.5	170.0	0.0	0.0	Vert	PK	0.0	42.0	74.0	-32.0	EUT horz, 1 Mbps, Low Ch
12208.470	41.9	-0.2	1.1	23.0	0.0	0.0	Vert	PK	0.0	41.7	74.0	-32.3	EUT horz, 1 Mbps, Mid Ch

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS



EUT:	Indy2 Rechargeable RIC	Work Order:	NOVI0019
Serial Number:	1602636651	Date:	2022-01-26
Customer:	Novidan, Inc.	Temperature:	21.8°C
Attendees:	Katie Himes	Relative Humidity:	13%
Customer Project:	None	Bar. Pressure (PMSL):	1026 mb
Tested By:	Alexis Converse, Kyle McMullan	Job Site:	MN05
Power:	Battery	Configuration:	NOVI0019-18

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	58	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

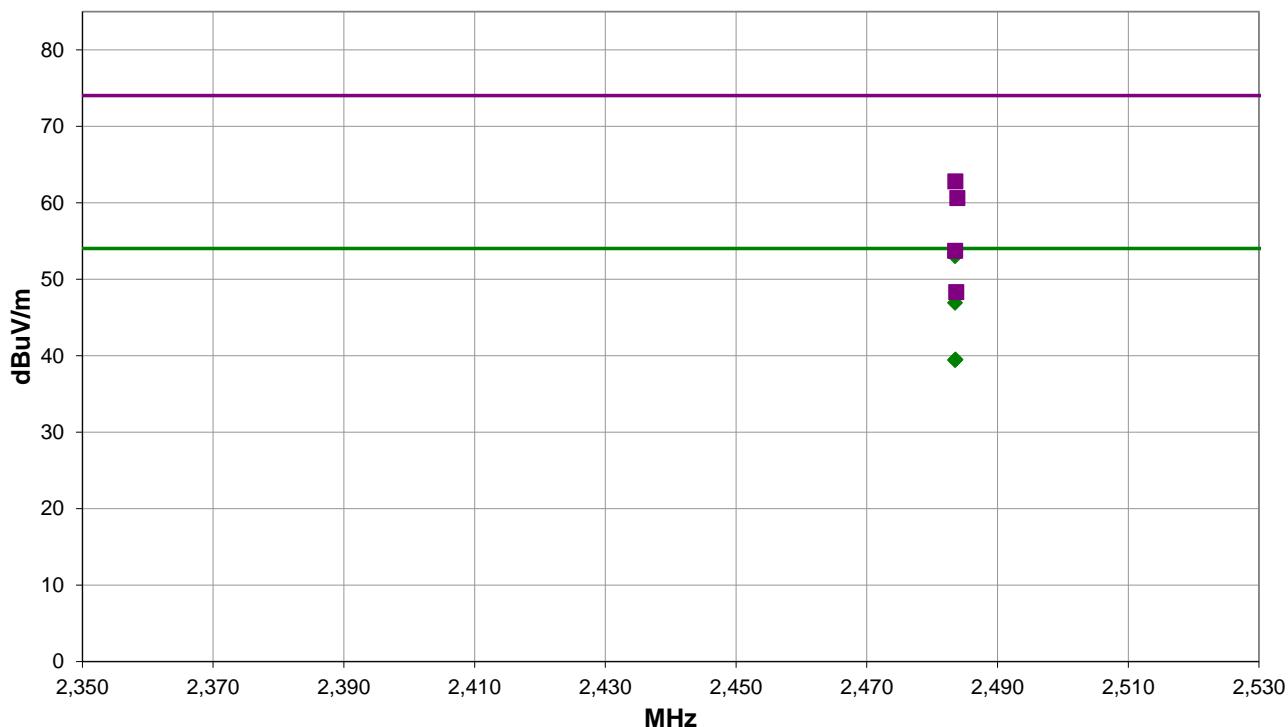
Right ear unit. Test mode is 65% for 1 Mbps and 57% for 2 Mbps. An upward duty cycle correction factor (DCCF) was applied using $DCCF=10*\log(1/\text{duty cycle})$ giving 1.8dB correction for 1 Mbps and 2.4dB correction for 2 Mbps. See comments for EUT position, channel, and datarate.

EUT OPERATING MODES

Transmitting Bluetooth Low, Mid, and High Chs (2402, 2442, and 2480 MHz) at 1 or 2 Mbps. Operating at -1 dBm power instead of 0 dBm.

DEVIATIONS FROM TEST STANDARD

None



Run #: 58

■ PK ♦ AV ● QP

SPURIOUS RADIATED EMISSIONS



RESULTS - Run #58

Freq (MHz)	Amplitude (dBuV)	F Factor (dB/m)	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
2483.508	54.4	-3.8	1.5	228.0	2.4	0.0	Vert	AV	0.0	53.0	54.0	-1.0	2 Mbps, High Ch
2483.500	48.9	-3.8	1.5	229.9	1.8	0.0	Vert	AV	0.0	46.9	54.0	-7.1	1 Mbps, High Ch
2483.533	66.6	-3.8	1.5	228.0	0.0	0.0	Vert	PK	0.0	62.8	74.0	-11.2	2 Mbps, High Ch
2483.850	64.4	-3.8	1.5	229.9	0.0	0.0	Vert	PK	0.0	60.6	74.0	-13.4	1 Mbps, High Ch
2483.593	40.9	-3.8	1.5	4.0	2.4	0.0	Horz	AV	0.0	39.5	54.0	-14.5	2 Mbps, High Ch
2483.500	41.4	-3.8	1.5	232.0	1.8	0.0	Horz	AV	0.0	39.4	54.0	-14.6	1 Mbps, High Ch
2483.517	57.5	-3.8	1.5	232.0	0.0	0.0	Horz	PK	0.0	53.7	74.0	-20.3	1 Mbps, High Ch
2483.683	52.1	-3.8	1.5	4.0	0.0	0.0	Horz	PK	0.0	48.3	74.0	-25.7	2 Mbps, High Ch

CONCLUSION

Pass

Tested By

DUTY CYCLE



XMit 2020.12.30.0

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	TFX	2020-04-28	2023-04-28
Block - DC	Fairview Microwave	SD3379	AMZ	2021-11-05	2022-11-05
Attenuator	S.M. Electronics	SA26B-20	TZP	2021-11-05	2022-11-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

TEST DESCRIPTION

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



TbTx 2021.10.29.2 XMII 2020.12.30.0

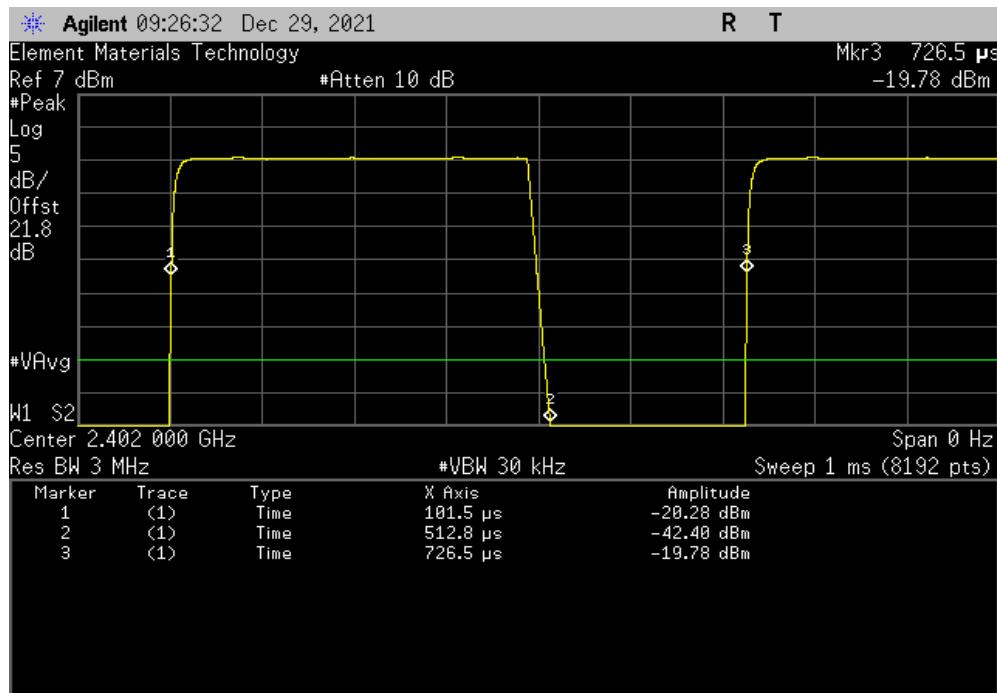
EUT:	Indy2 Rechargeable RIC	Work Order:	NOVI0019				
Serial Number:	ii004	Date:	29-Dec-21				
Customer:	Novidan, Inc.	Temperature:	23.3 °C				
Attendees:	Katie Himes	Humidity:	16.8% RH				
Project:	None	Barometric Pres.:	1020 mbar				
Tested by:	Andrew Rogstad	Power:	Battery				
TEST SPECIFICATIONS		Test Method	ANSI C63.10:2013				
FCC 15.247:2021							
COMMENTS	Reference level offset includes measurement cable, attenuator, DC block, and customer's patch cable.						
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	12	Signature					
		Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
BLE/GFSK 1 Mbps							
Low Channel, 2402 MHz		411.3 us	625 us	1	65.8	N/A	N/A
Low Channel, 2402 MHz		N/A	N/A	5	N/A	N/A	N/A
Mid Channel, 2442 MHz		411 us	624.9 us	1	65.8	N/A	N/A
Mid Channel, 2442 MHz		N/A	N/A	5	N/A	N/A	N/A
High Channel, 2480 MHz		410.5 us	624.9 us	1	65.7	N/A	N/A
High Channel, 2480 MHz		N/A	N/A	5	N/A	N/A	N/A
BLE/GFSK 2 Mbps							
Low Channel, 2402 MHz		1.081 ms	1.875 ms	1	57.6	N/A	N/A
Low Channel, 2402 MHz		N/A	N/A	5	N/A	N/A	N/A
Mid Channel, 2442 MHz		1.081 ms	1.875 ms	1	57.6	N/A	N/A
Mid Channel, 2442 MHz		N/A	N/A	5	N/A	N/A	N/A
High Channel, 2480 MHz		1.081 ms	1.875 ms	1	57.7	N/A	N/A
High Channel, 2480 MHz		N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

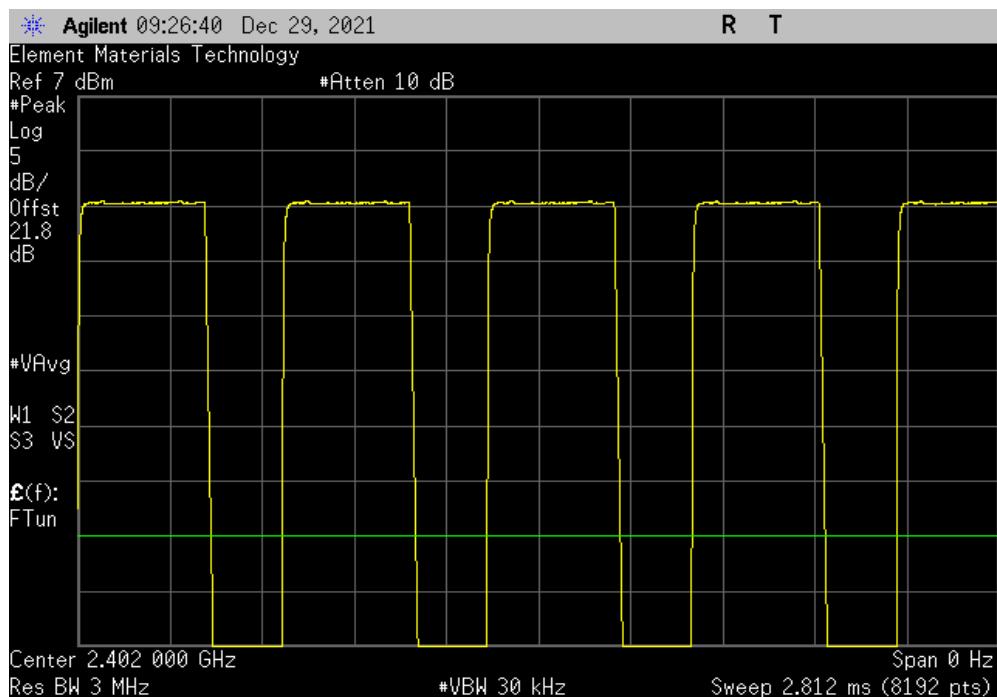


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
411.3 us	625 us	1	65.8	N/A	N/A



BLE/GFSK 1 Mbps, Low Channel, 2402 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
N/A	N/A	5	N/A	N/A	N/A

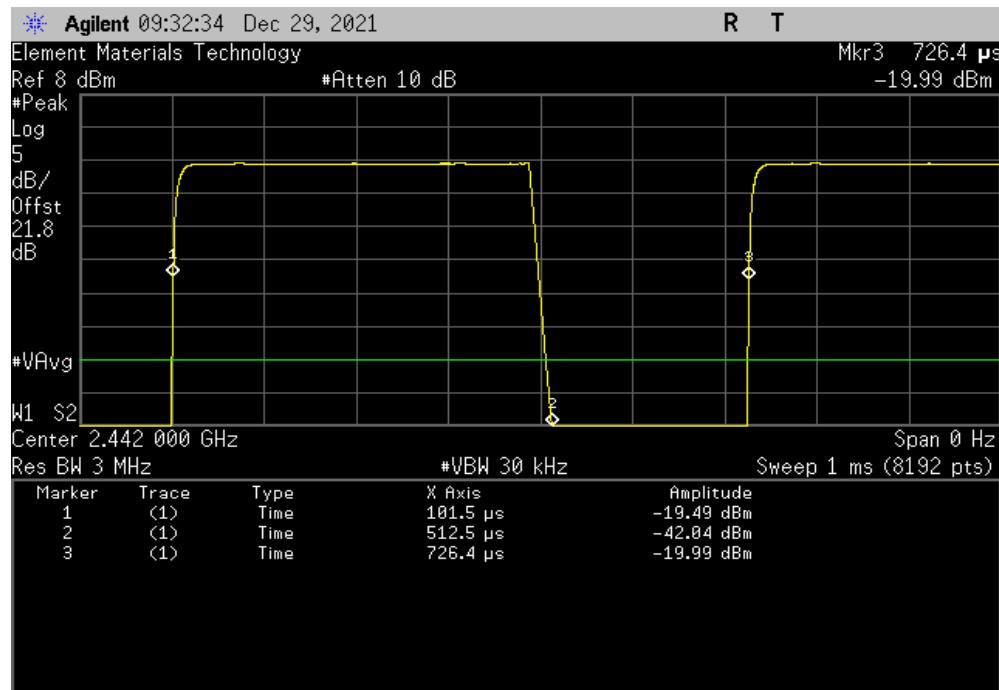


DUTY CYCLE

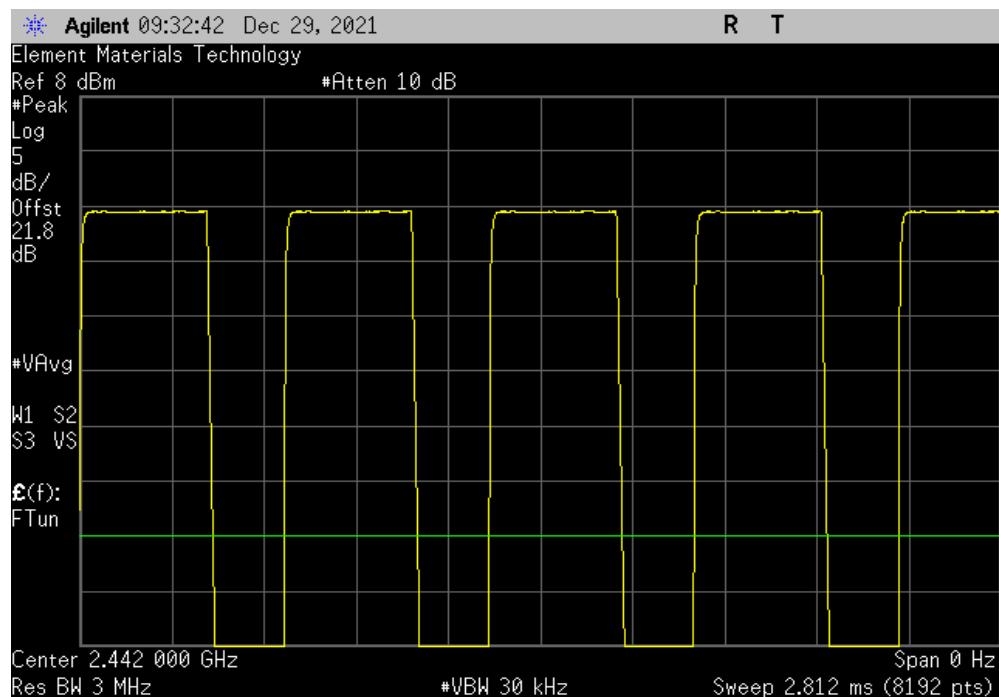


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
411 us	624.9 us	1	65.8	N/A	N/A



BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
N/A	N/A	5	N/A	N/A	N/A

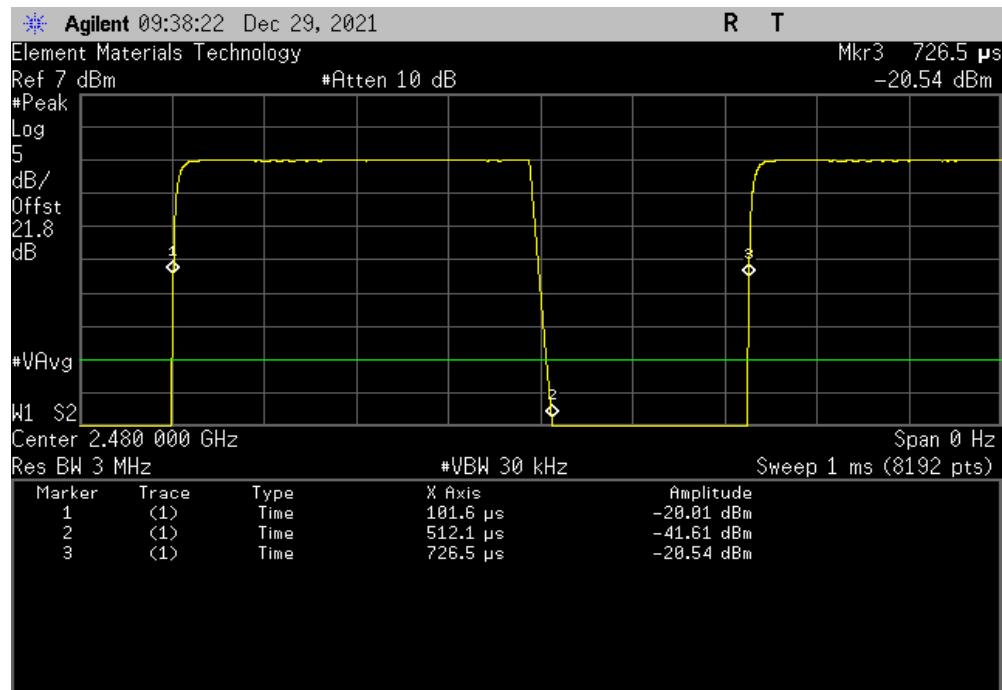


DUTY CYCLE

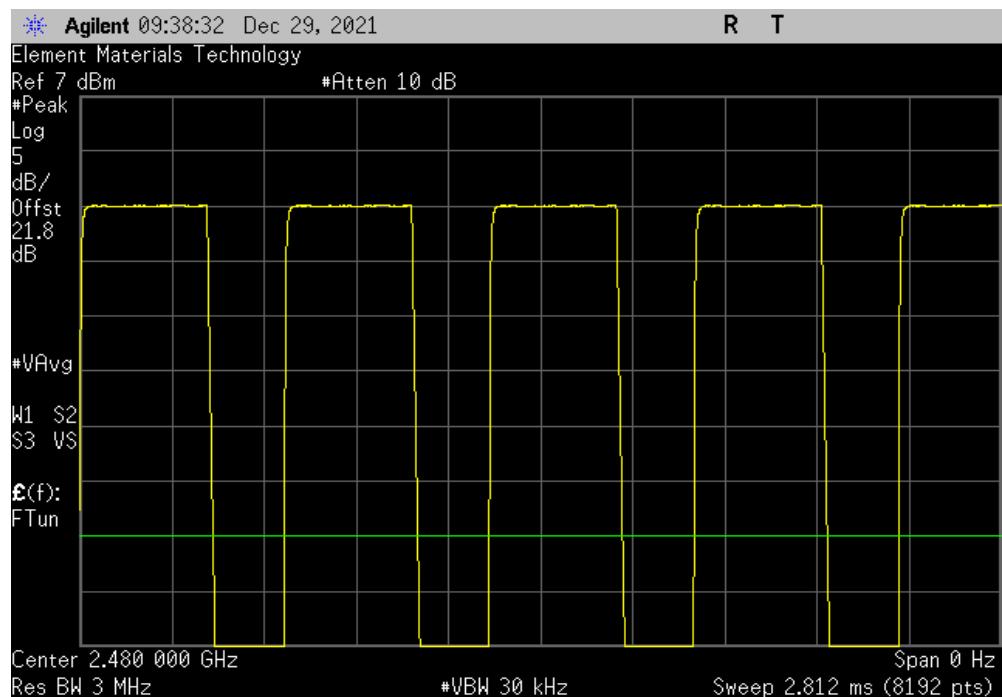


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, High Channel, 2480 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
410.5 us	624.9 us	1	65.7	N/A	N/A



BLE/GFSK 1 Mbps, High Channel, 2480 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
N/A	N/A	5	N/A	N/A	N/A

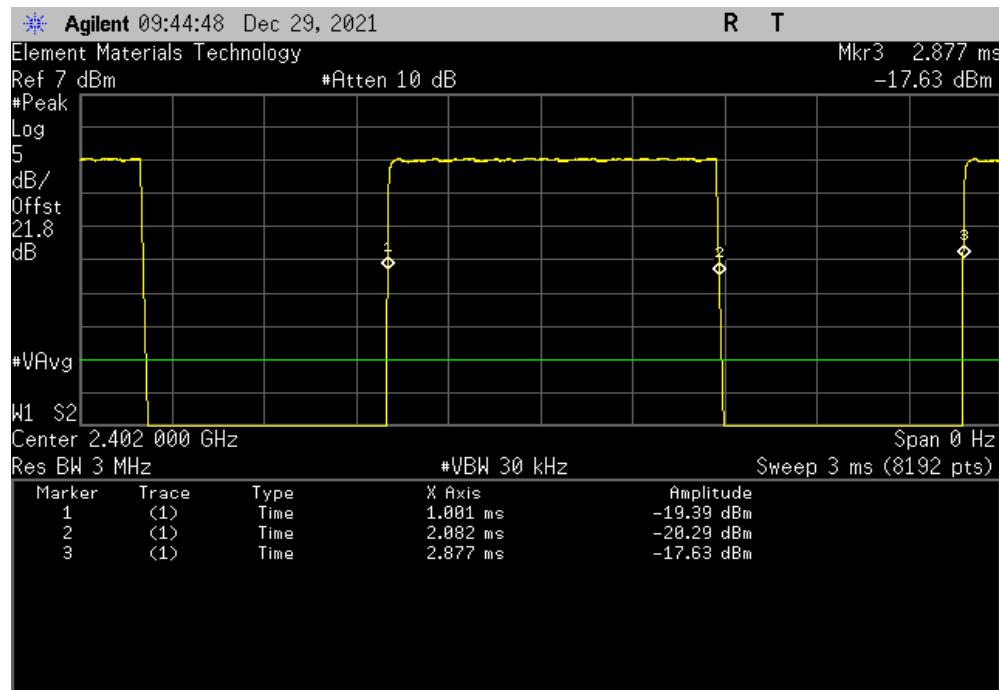


DUTY CYCLE

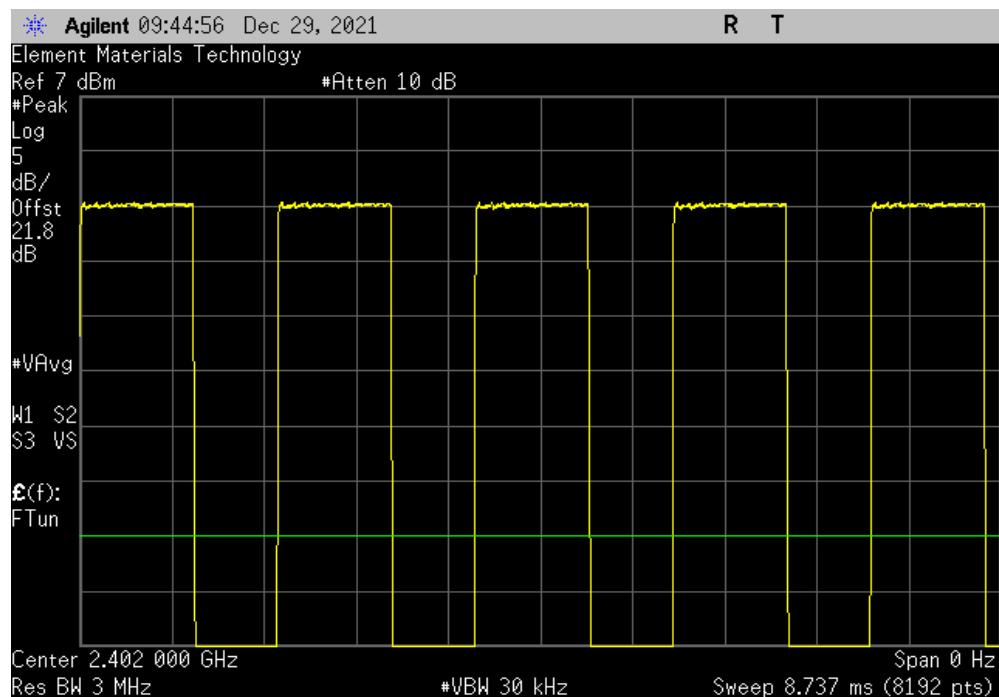


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Low Channel, 2402 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
1.081 ms	1.875 ms	1	57.6	N/A	N/A



BLE/GFSK 2 Mbps, Low Channel, 2402 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
N/A	N/A	5	N/A	N/A	N/A

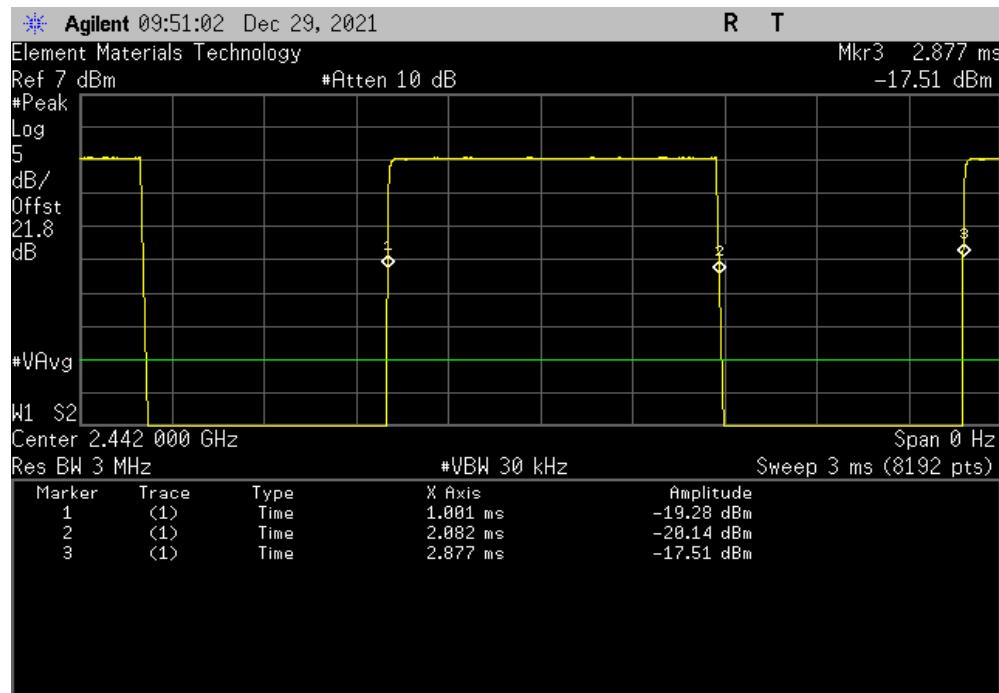


DUTY CYCLE

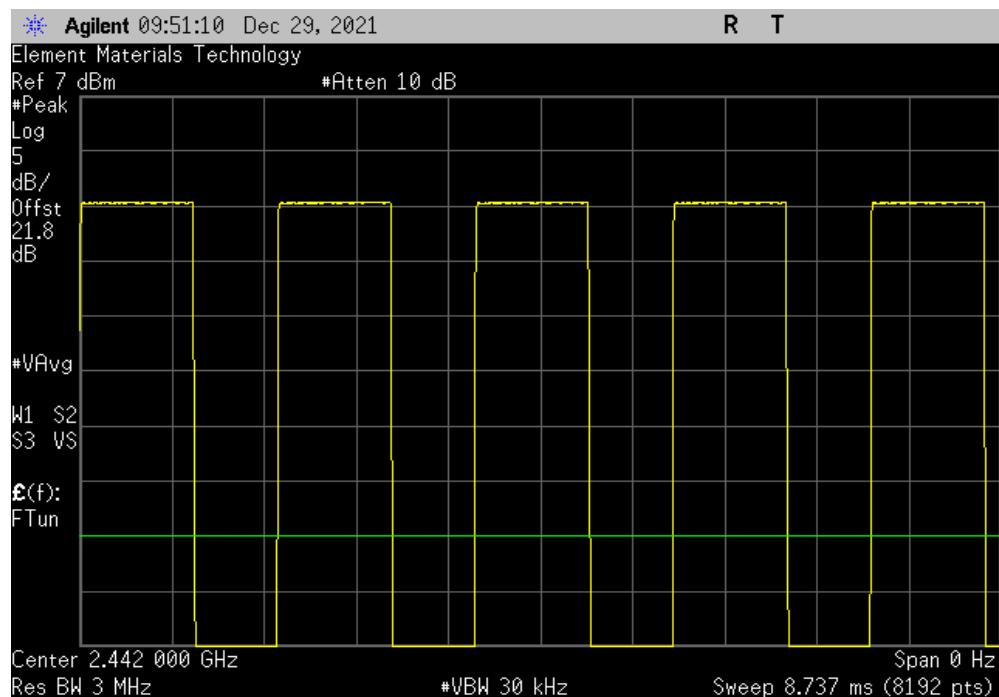


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
1.081 ms	1.875 ms	1	57.6	N/A	N/A



BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
N/A	N/A	5	N/A	N/A	N/A

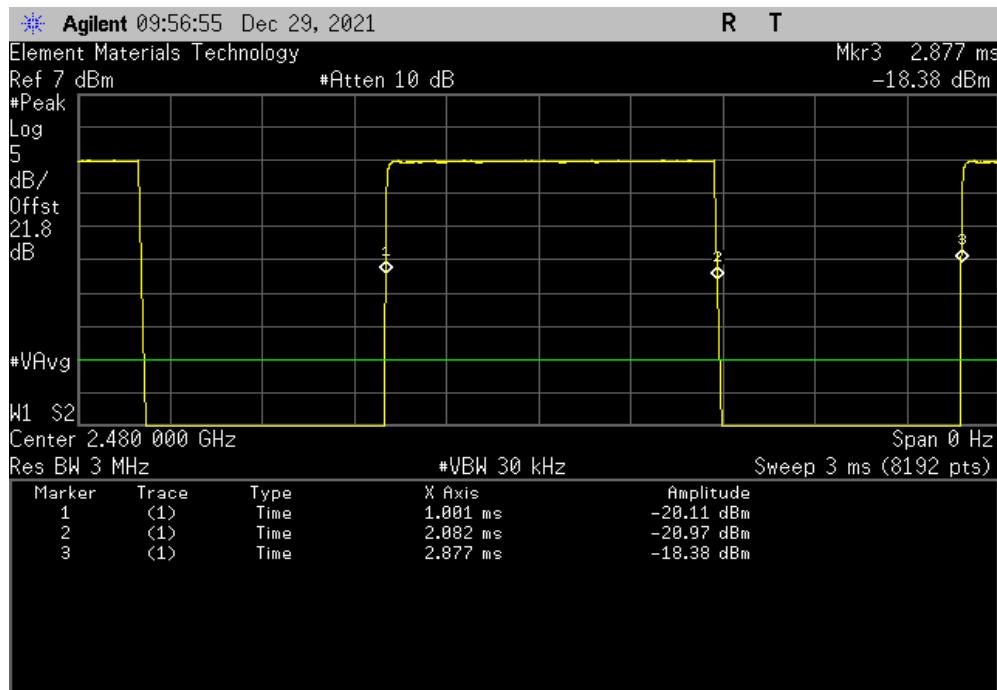


DUTY CYCLE

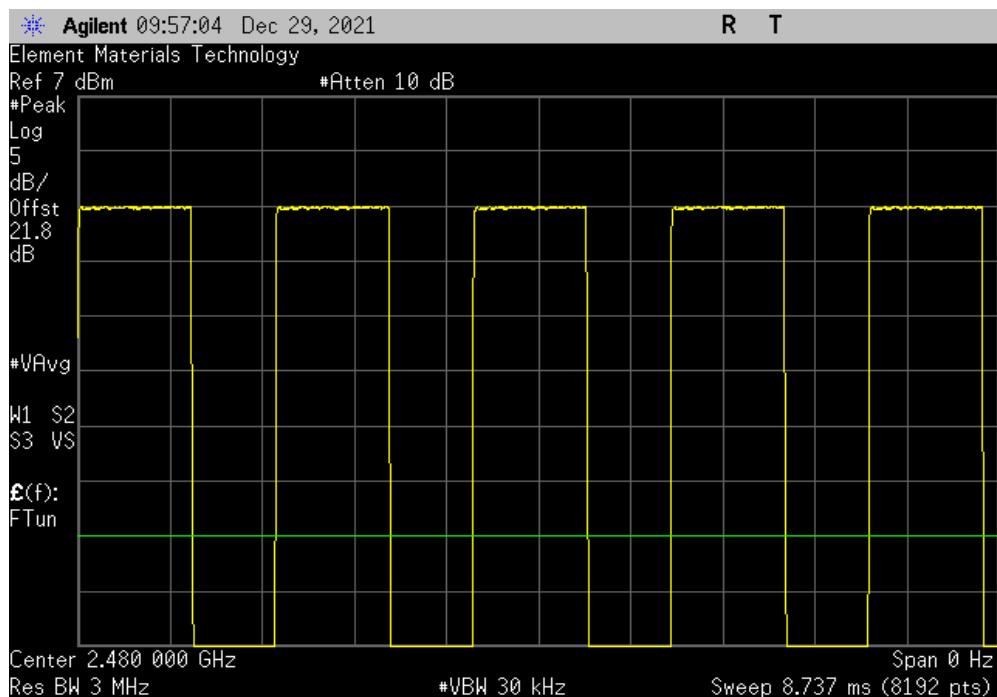


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, High Channel, 2480 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
1.081 ms	1.875 ms	1	57.7	N/A	N/A



BLE/GFSK 2 Mbps, High Channel, 2480 MHz					
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
N/A	N/A	5	N/A	N/A	N/A



DTS BANDWIDTH



XMit 2020.12.30.0

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	TFX	2020-04-28	2023-04-28
Block - DC	Fairview Microwave	SD3379	AMZ	2021-11-05	2022-11-05
Attenuator	S.M. Electronics	SA26B-20	TZP	2021-11-05	2022-11-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

TEST DESCRIPTION

The EUT was set to the channels and modes listed in the datasheet.

The 6dB DTS bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

DTS BANDWIDTH



TbTx 2021.10.29.2

XMI 2020.12.30.0

EUT:	Indy2 Rechargeable RIC		Work Order:	NOVI0019													
Serial Number:	ii004		Date:	29-Dec-21													
Customer:	Novidan, Inc.		Temperature:	23.4 °C													
Attendees:	Katie Himes		Humidity:	16.5% RH													
Project:	None		Barometric Pres.:	1020 mbar													
Tested by:	Andrew Rogstad	Power:	Battery	Job Site:	MN08												
TEST SPECIFICATIONS		Test Method															
FCC 15.247:2021		ANSI C63.10:2013															
COMMENTS																	
Reference level offset includes measurement cable, attenuator, DC block, and customer's patch cable.																	
DEVIATIONS FROM TEST STANDARD																	
None																	
Configuration #	12	Signature		Value	Limit (±)												
BLE/GFSK 1 Mbps																	
<table border="1"> <tr> <td>Low Channel, 2402 MHz</td> <td>666.817 kHz</td> <td>500 kHz</td> <td>Pass</td> </tr> <tr> <td>Mid Channel, 2442 MHz</td> <td>676.075 kHz</td> <td>500 kHz</td> <td>Pass</td> </tr> <tr> <td>High Channel, 2480 MHz</td> <td>671.122 kHz</td> <td>500 kHz</td> <td>Pass</td> </tr> </table>						Low Channel, 2402 MHz	666.817 kHz	500 kHz	Pass	Mid Channel, 2442 MHz	676.075 kHz	500 kHz	Pass	High Channel, 2480 MHz	671.122 kHz	500 kHz	Pass
Low Channel, 2402 MHz	666.817 kHz	500 kHz	Pass														
Mid Channel, 2442 MHz	676.075 kHz	500 kHz	Pass														
High Channel, 2480 MHz	671.122 kHz	500 kHz	Pass														
BLE/GFSK 2 Mbps																	
<table border="1"> <tr> <td>Low Channel, 2402 MHz</td> <td>1.298 MHz</td> <td>500 kHz</td> <td>Pass</td> </tr> <tr> <td>Mid Channel, 2442 MHz</td> <td>1.255 MHz</td> <td>500 kHz</td> <td>Pass</td> </tr> <tr> <td>High Channel, 2480 MHz</td> <td>1.213 MHz</td> <td>500 kHz</td> <td>Pass</td> </tr> </table>						Low Channel, 2402 MHz	1.298 MHz	500 kHz	Pass	Mid Channel, 2442 MHz	1.255 MHz	500 kHz	Pass	High Channel, 2480 MHz	1.213 MHz	500 kHz	Pass
Low Channel, 2402 MHz	1.298 MHz	500 kHz	Pass														
Mid Channel, 2442 MHz	1.255 MHz	500 kHz	Pass														
High Channel, 2480 MHz	1.213 MHz	500 kHz	Pass														

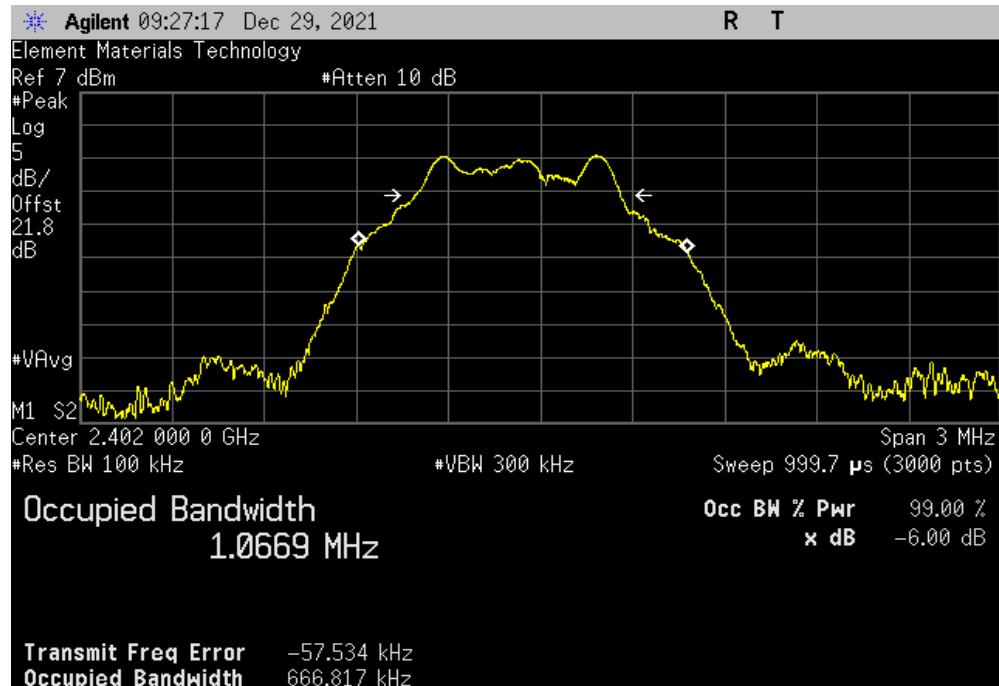
DTS BANDWIDTH



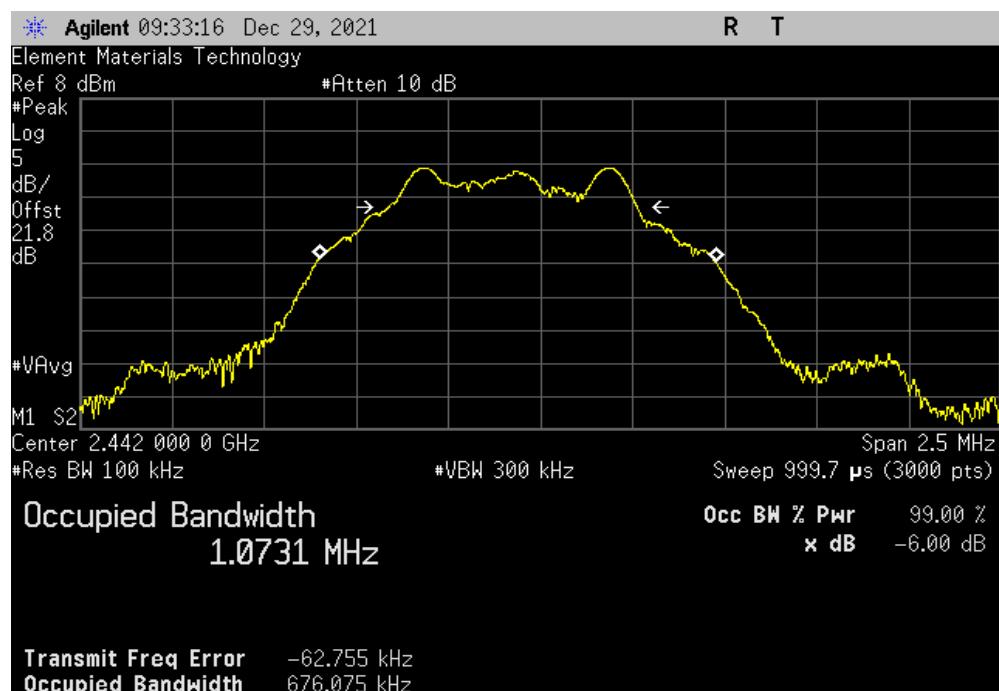
TbtTx 2021.10.29.2

XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz				Limit (≥)	Result
Value	666.817 kHz	500 kHz	Pass		



BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz						
			Limit			
	Value	(\geq)	Result			
	676.075 kHz	500 kHz	Pass			



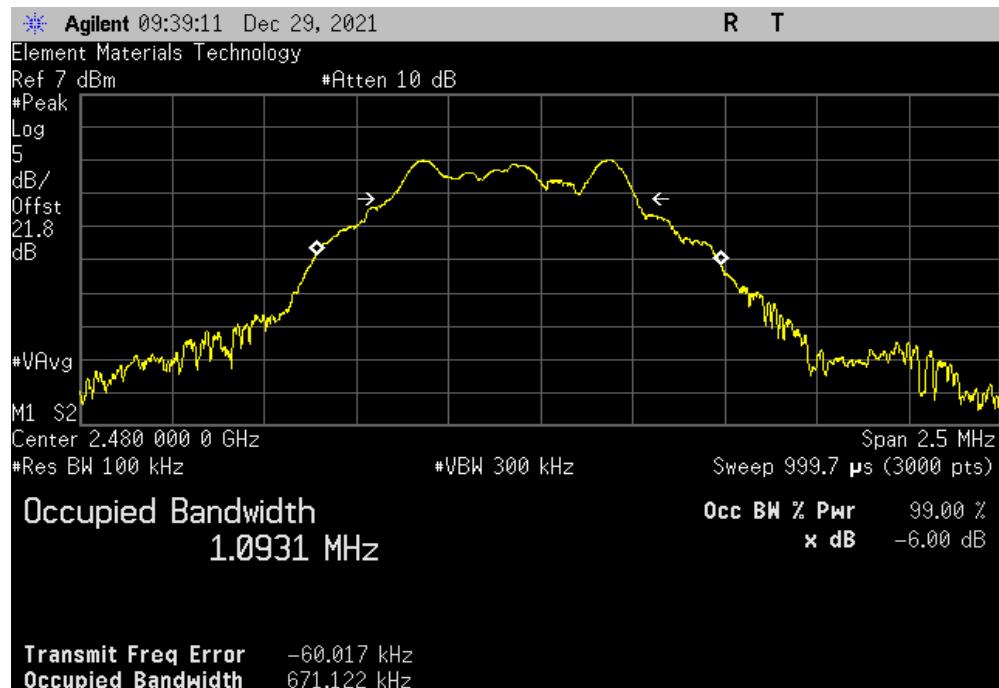
DTS BANDWIDTH



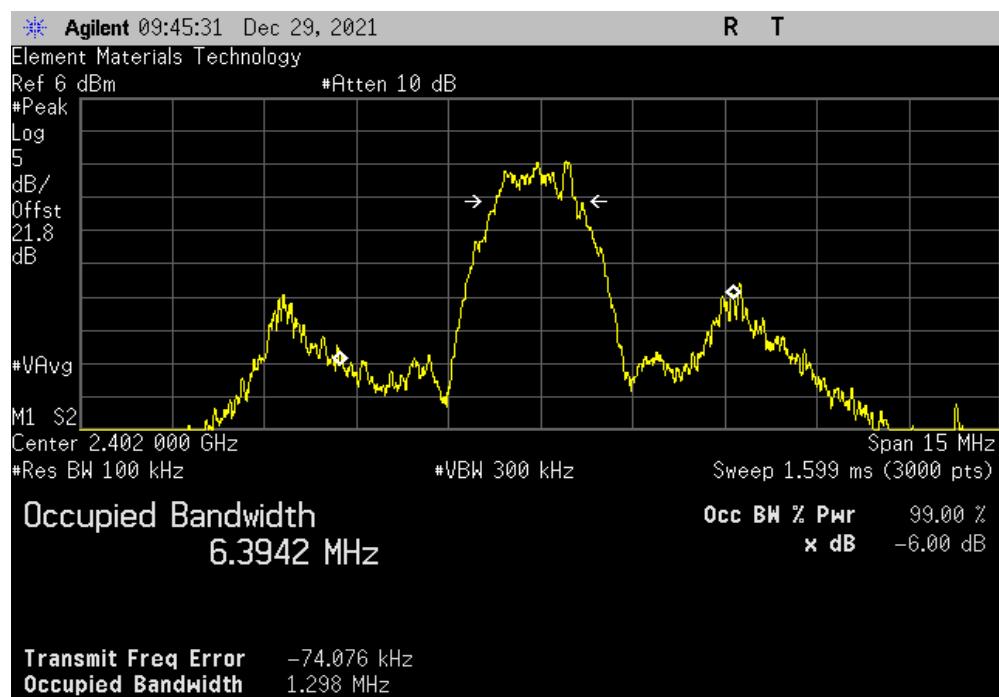
TbtTx 2021.10.29.2

XMit 2020.12.30.0

BLE/GFSK 1 Mbps, High Channel, 2480 MHz						
			Value	Limit (\geq)	Result	
			671.122 kHz	500 kHz	Pass	



BLE/GFSK 2 Mbps, Low Channel, 2402 MHz						
			Limit			
			Value	(\geq)	Result	
			1.298 MHz	500 kHz	Pass	



DTS BANDWIDTH



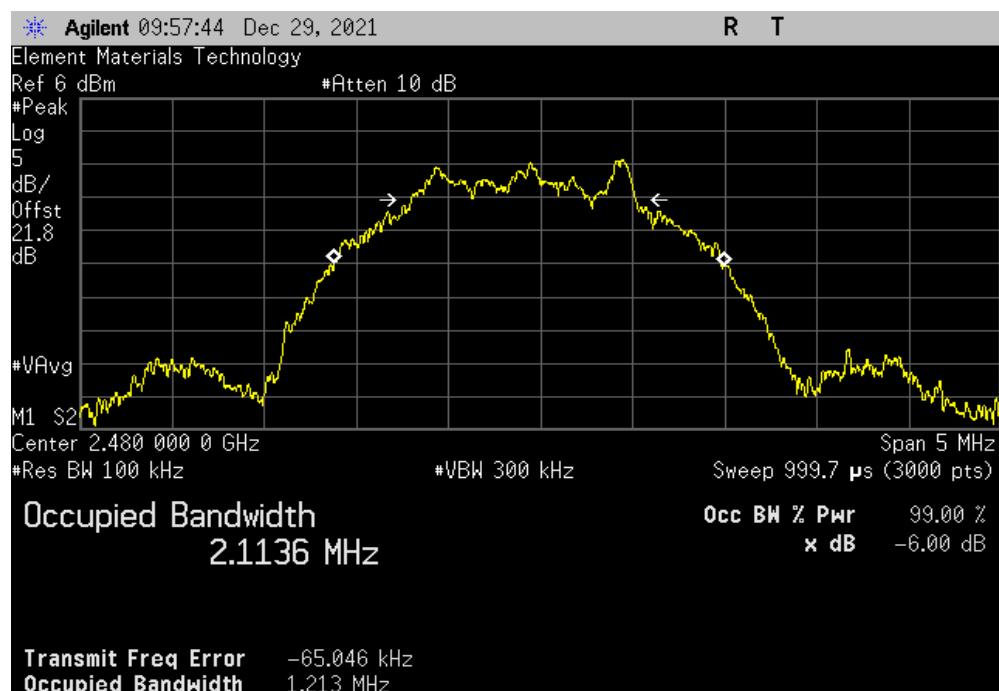
TbtTx 2021.10.29.2

XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz				Limit	Result	
				Value	(\geq)	
				1.255 MHz	500 kHz	Pass



BLE/GFSK 2 Mbps, High Channel, 2480 MHz						
			Limit			
	Value	(\geq)	Result			
	1.213 MHz	500 kHz	Pass			



OUTPUT POWER



XMit 2020.12.30.0

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	TFX	2020-04-28	2023-04-28
Block - DC	Fairview Microwave	SD3379	AMZ	2021-11-05	2022-11-05
Attenuator	S.M. Electronics	SA26B-20	TZP	2021-11-05	2022-11-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

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

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

OUTPUT POWER



TbTx 2021.10.29.2 XMII 2020.12.30.0

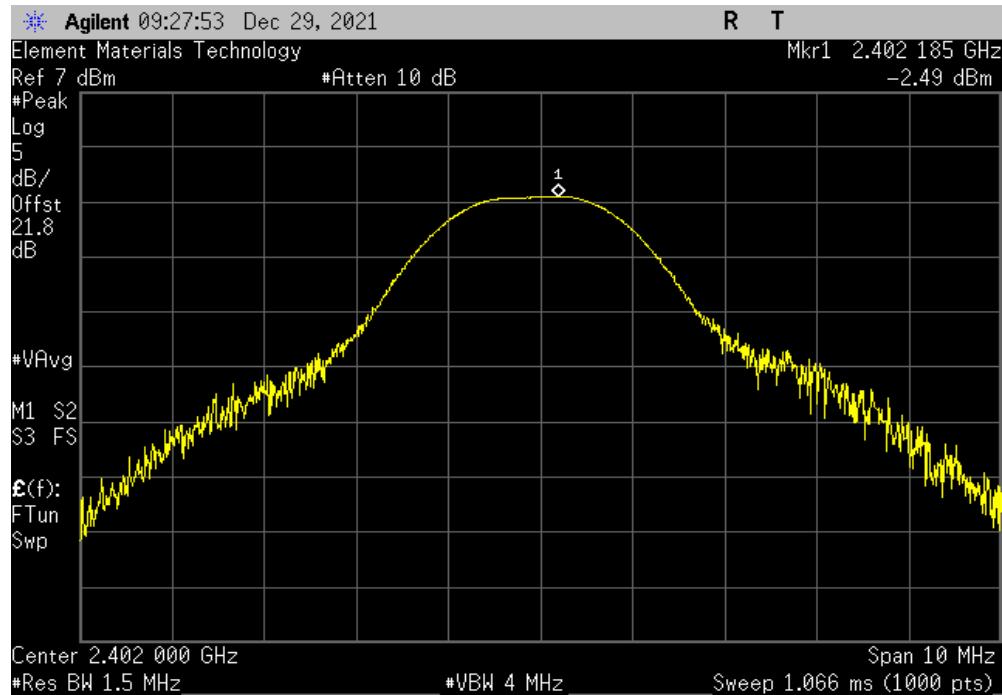
EUT:	Indy2 Rechargeable RIC		Work Order:	NOVI0019	
Serial Number:	ii004		Date:	29-Dec-21	
Customer:	Novidan, Inc.		Temperature:	23.4 °C	
Attendees:	Katie Himes		Humidity:	16.7% RH	
Project:	None		Barometric Pres.:	1020 mbar	
Tested by:	Andrew Rogstad	Power:	Battery	Job Site:	MN08
TEST SPECIFICATIONS		Test Method			
FCC 15.247:2021		ANSI C63.10:2013			
COMMENTS					
Reference level offset includes measurement cable, attenuator, DC block, and customer's patch cable.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	12	Signature			
			Out Pwr (dBm)	Limit (dBm)	Result
BLE/GFSK 1 Mbps			-2.487	30	Pass
		Low Channel, 2402 MHz	-2.401	30	Pass
		Mid Channel, 2442 MHz	-2.377	30	Pass
		High Channel, 2480 MHz	-2.844	30	Pass
BLE/GFSK 2 Mbps			-2.418	30	Pass
		Low Channel, 2402 MHz	-2.377	30	Pass
		Mid Channel, 2442 MHz	-2.81	30	Pass
		High Channel, 2480 MHz			

OUTPUT POWER

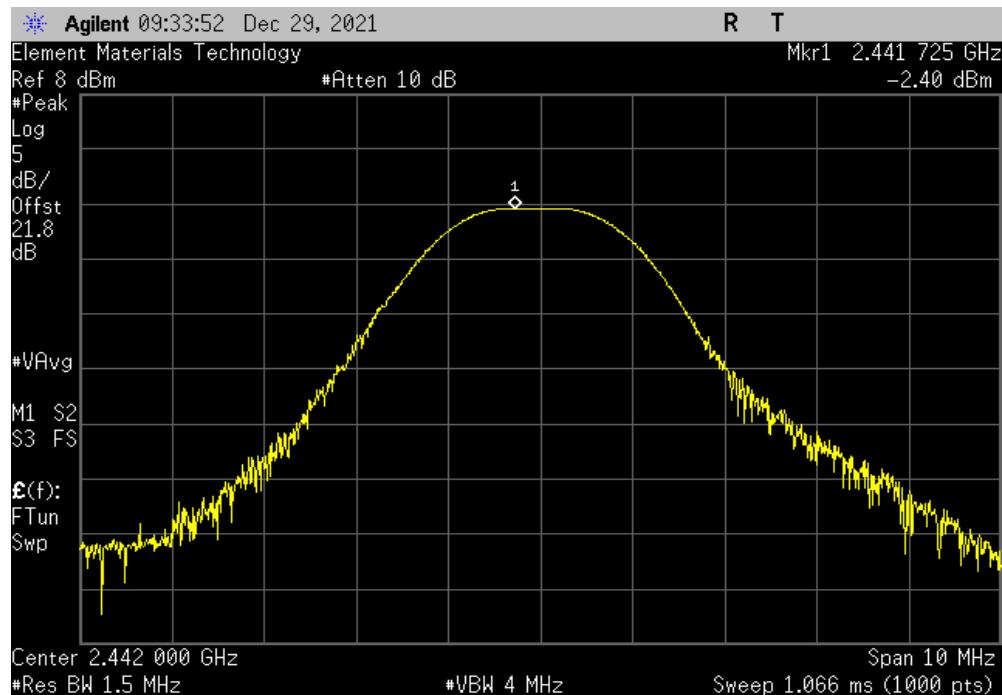


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz			
	Out Pwr (dBm)	Limit (dBm)	Result
	-2.487	30	Pass



BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz			
	Out Pwr (dBm)	Limit (dBm)	Result
	-2.401	30	Pass

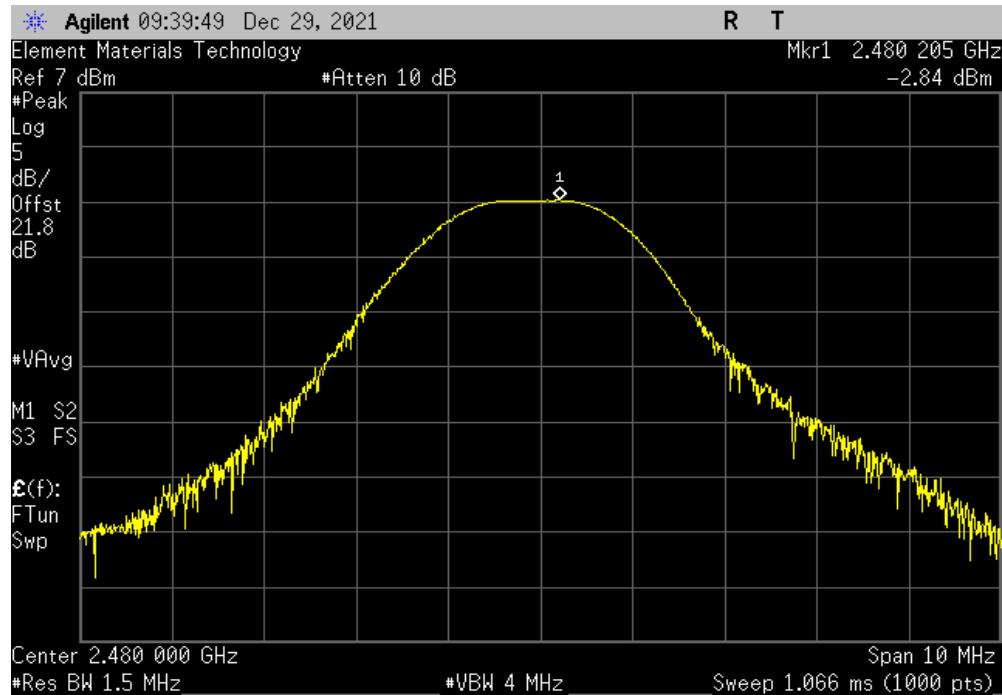


OUTPUT POWER

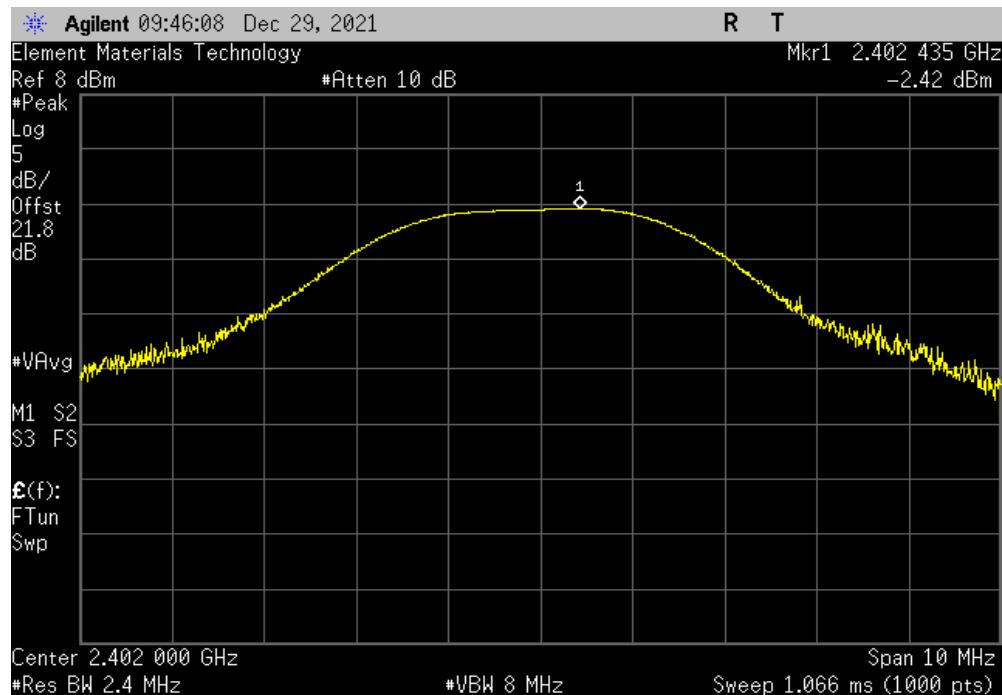


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, High Channel, 2480 MHz			
	Out Pwr (dBm)	Limit (dBm)	Result
	-2.844	30	Pass



BLE/GFSK 2 Mbps, Low Channel, 2402 MHz			
	Out Pwr (dBm)	Limit (dBm)	Result
	-2.418	30	Pass

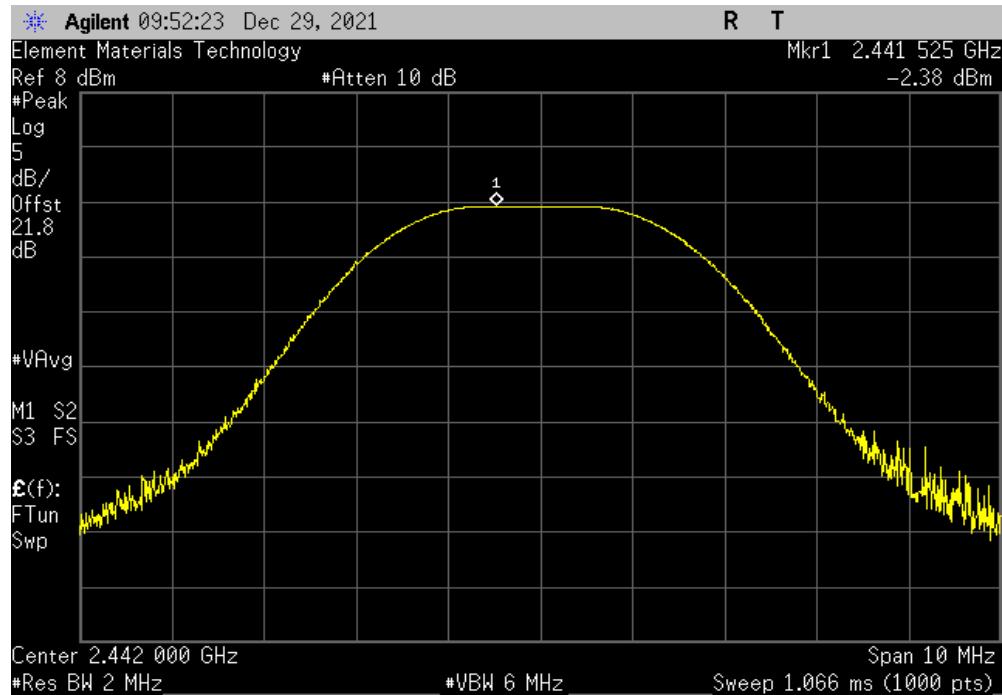


OUTPUT POWER

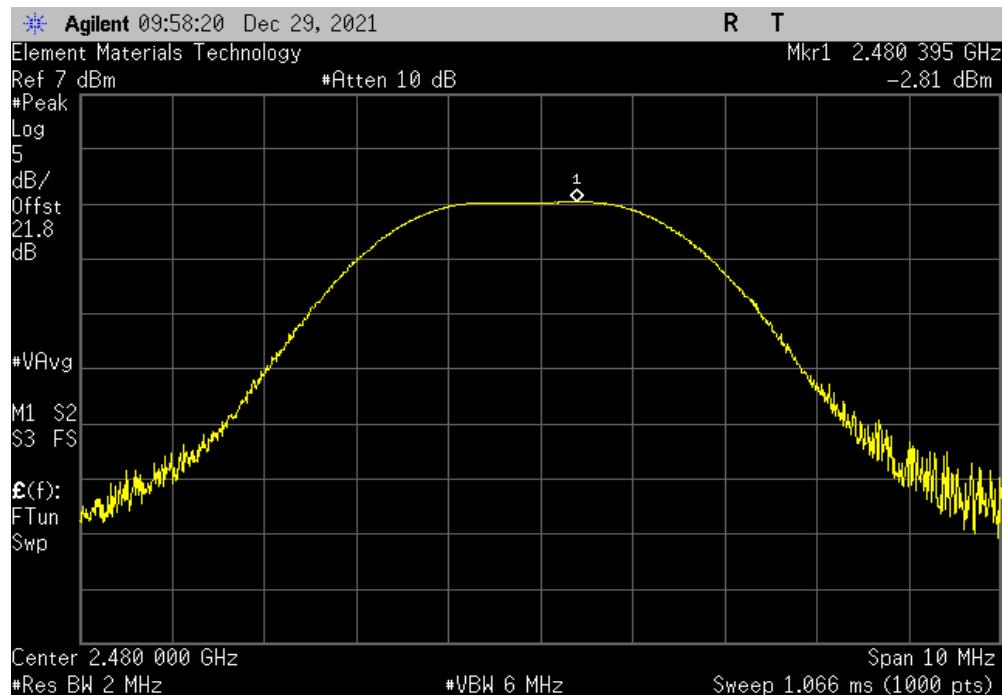


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz			
	Out Pwr (dBm)	Limit (dBm)	Result
	-2.377	30	Pass



BLE/GFSK 2 Mbps, High Channel, 2480 MHz			
	Out Pwr (dBm)	Limit (dBm)	Result
	-2.81	30	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



XMit 2020.12.30.0

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	TFX	2020-04-28	2023-04-28
Block - DC	Fairview Microwave	SD3379	AMZ	2021-11-05	2022-11-05
Attenuator	S.M. Electronics	SA26B-20	TZP	2021-11-05	2022-11-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

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

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

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi)

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TbTx 2021.10.29.2 XMII 2020.12.30.0

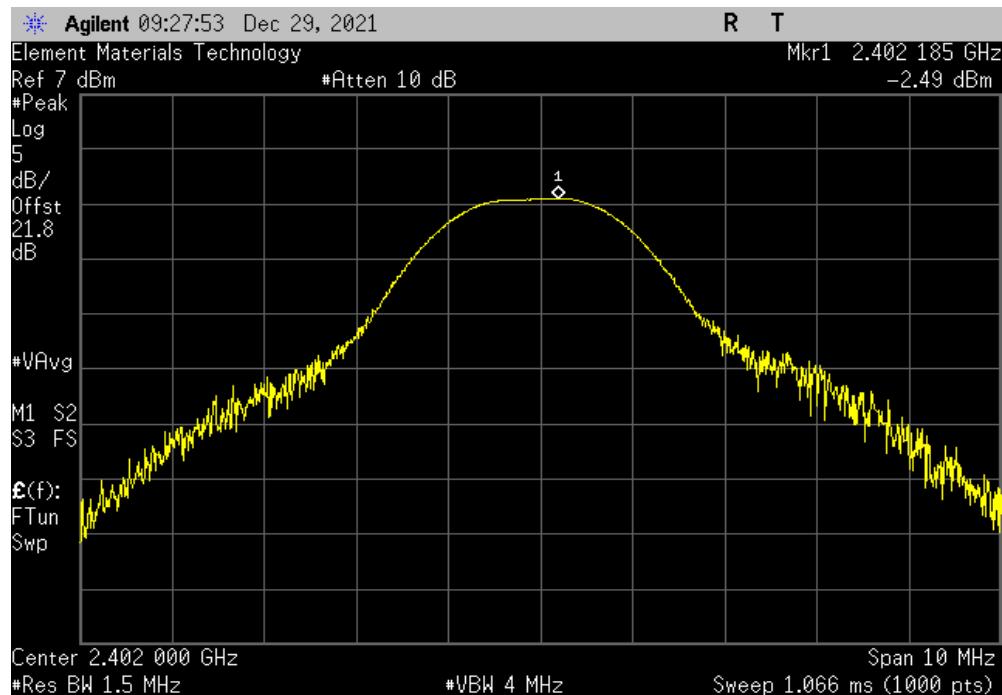
EUT:	Indy2 Rechargeable RIC		Work Order:	NOVI0019			
Serial Number:	ii004		Date:	29-Dec-21			
Customer:	Novidan, Inc.		Temperature:	23.3 °C			
Attendees:	Katie Himes		Humidity:	16.7% RH			
Project:	None		Barometric Pres.:	1020 mbar			
Tested by:	Andrew Rogstad	Power:	Battery	Job Site:	MN08		
TEST SPECIFICATIONS		Test Method					
FCC 15.247:2021		ANSI C63.10:2013					
COMMENTS							
Reference level offset includes measurement cable, attenuator, DC block, and customer's patch cable.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	12	Signature	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
BLE/GFSK 1 Mbps							
Low Channel, 2402 MHz			-2.487	-3.92	-6.407	36	Pass
Mid Channel, 2442 MHz			-2.401	-3.92	-6.321	36	Pass
High Channel, 2480 MHz			-2.844	-3.92	-6.764	36	Pass
BLE/GFSK 2 Mbps							
Low Channel, 2402 MHz			-2.418	-3.92	-6.338	36	Pass
Mid Channel, 2442 MHz			-2.377	-3.92	-6.297	36	Pass
High Channel, 2480 MHz			-2.81	-3.92	-6.73	36	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

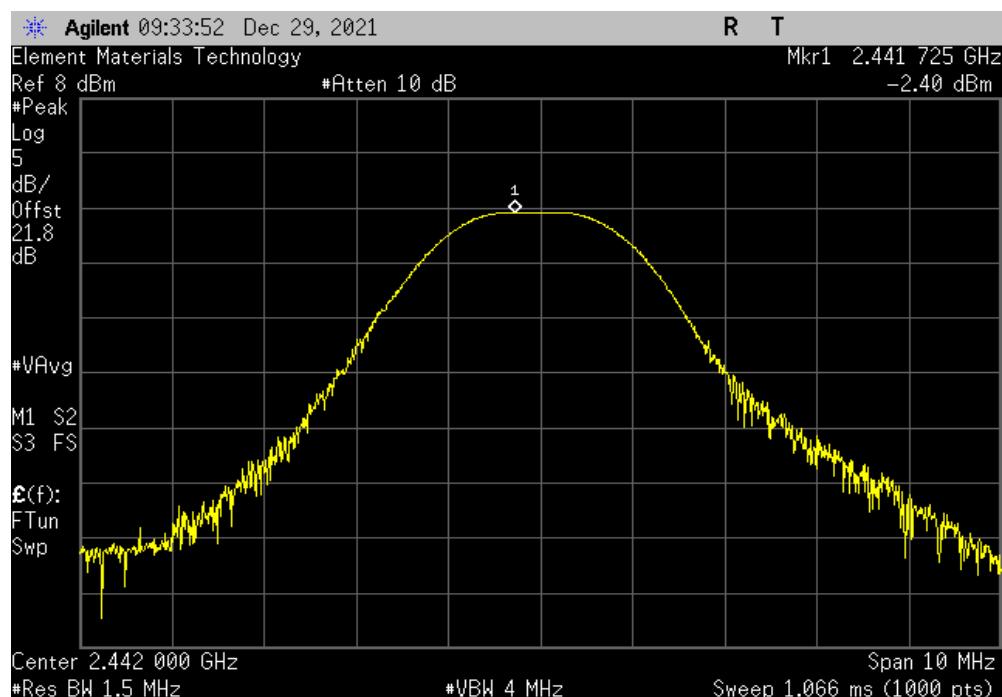


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
-2.487	-3.92	-6.407	36	Pass	



BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
-2.401	-3.92	-6.321	36	Pass	

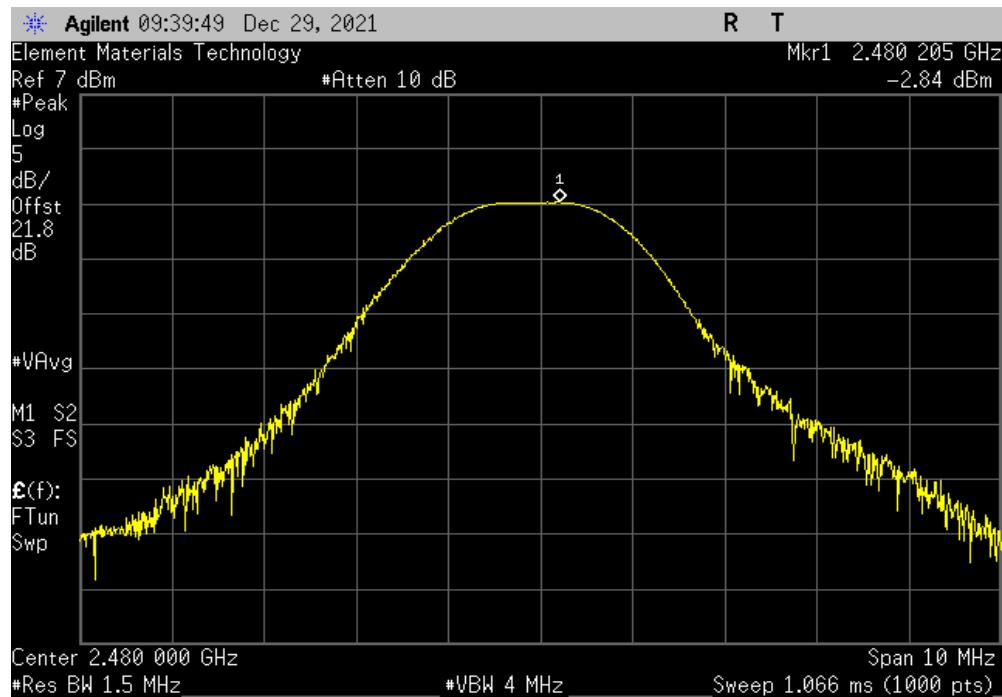


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

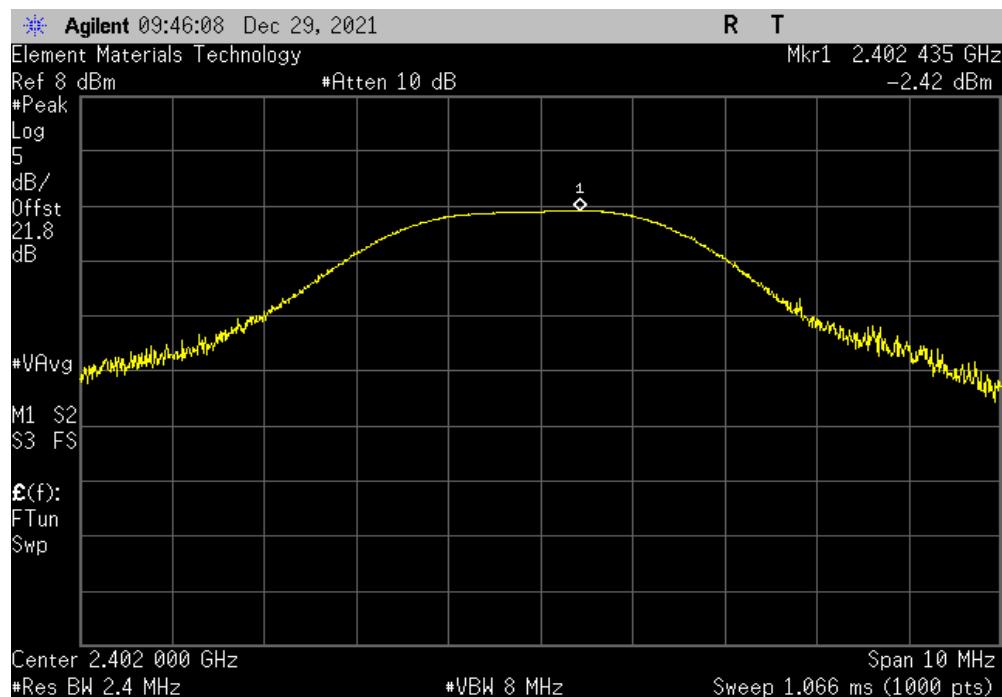


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, High Channel, 2480 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
-2.844	-3.92	-6.764	36	Pass	



BLE/GFSK 2 Mbps, Low Channel, 2402 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
-2.418	-3.92	-6.338	36	Pass	

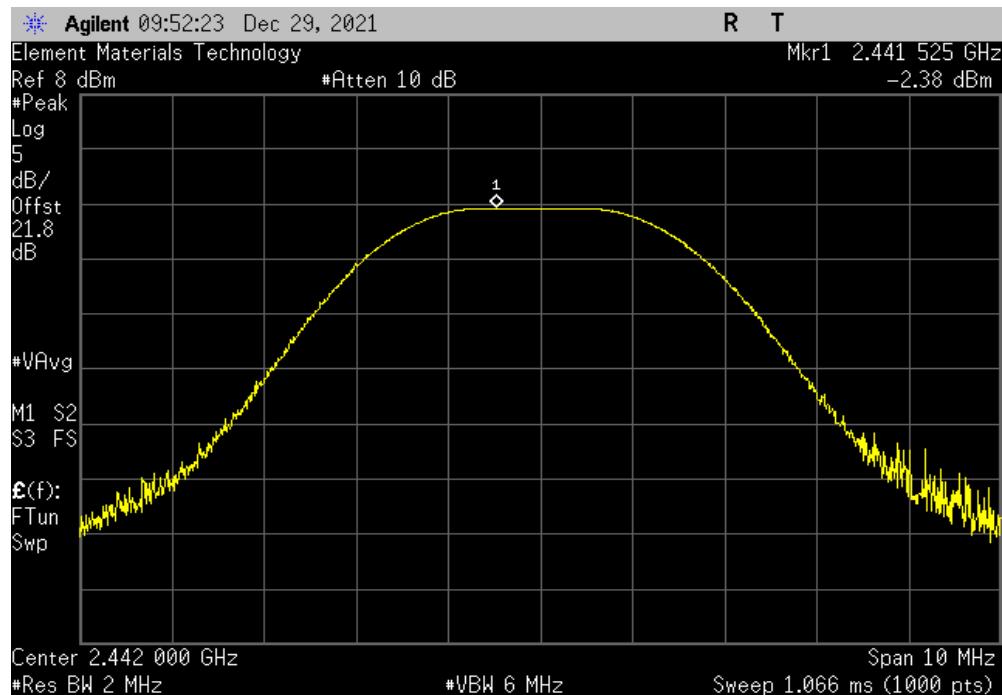


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

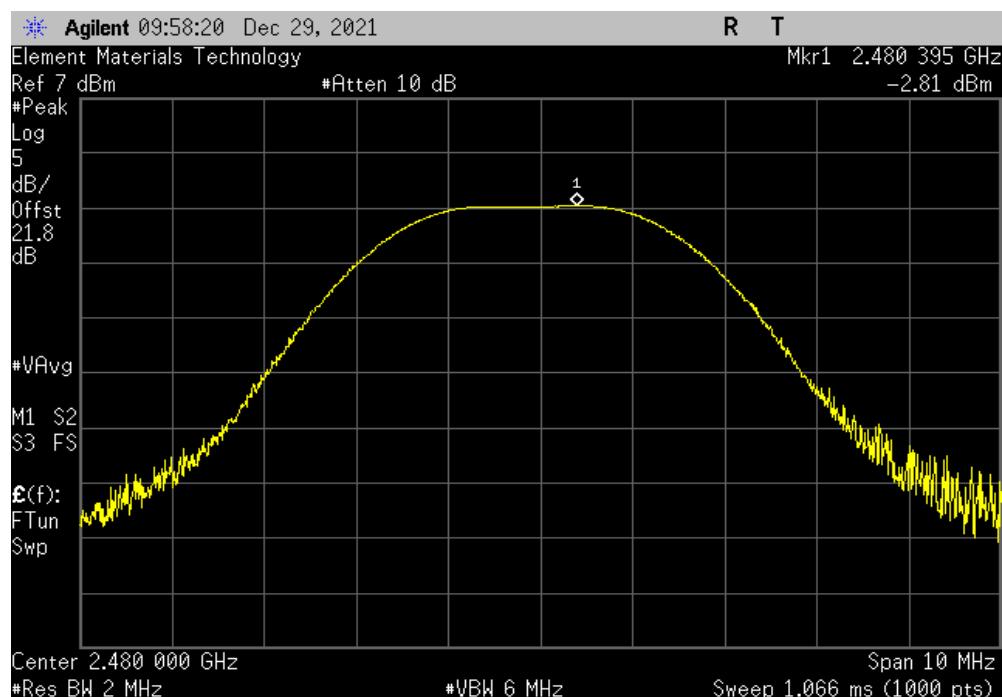


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
-2.377	-3.92	-6.297	36	Pass	



BLE/GFSK 2 Mbps, High Channel, 2480 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
-2.81	-3.92	-6.73	36	Pass	



POWER SPECTRAL DENSITY



XMit 2020.12.30.0

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	TFX	2020-04-28	2023-04-28
Block - DC	Fairview Microwave	SD3379	AMZ	2021-11-05	2022-11-05
Attenuator	S.M. Electronics	SA26B-20	TZP	2021-11-05	2022-11-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

TEST DESCRIPTION

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

TbTx 2021.10.29.2

XMI 2020.12.30.0

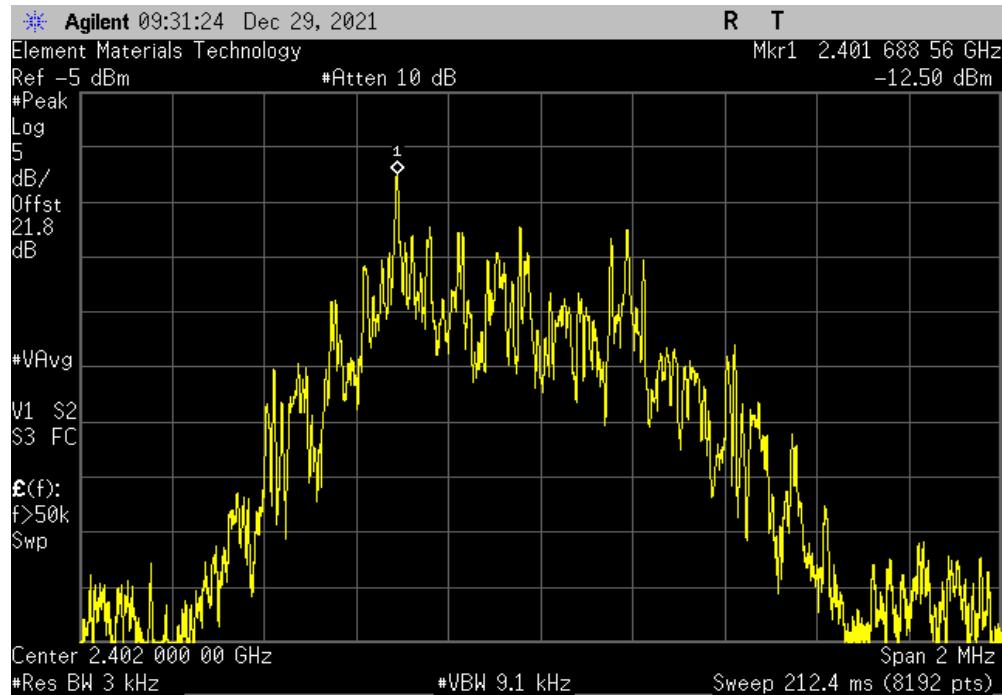
EUT:	Indy2 Rechargeable RIC		Work Order:	NOVI0019	
Serial Number:	ii004		Date:	29-Dec-21	
Customer:	Novidan, Inc.		Temperature:	23.4 °C	
Attendees:	Katie Himes		Humidity:	16.6% RH	
Project:	None		Barometric Pres.:	1020 mbar	
Tested by:	Andrew Rogstad	Power:	Battery	Job Site:	MN08
TEST SPECIFICATIONS		Test Method			
FCC 15.247:2021		ANSI C63.10:2013			
COMMENTS					
Reference level offset includes measurement cable, attenuator, DC block, and customer's patch cable.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	12	Signature			
			Value dBm/3kHz	Limit < dBm/3kHz	Results
BLE/GFSK 1 Mbps			-12.498	8	Pass
		Low Channel, 2402 MHz	-12.205	8	Pass
		Mid Channel, 2442 MHz	-12.697	8	Pass
		High Channel, 2480 MHz			
BLE/GFSK 2 Mbps			-15.199	8	Pass
		Low Channel, 2402 MHz	-14.638	8	Pass
		Mid Channel, 2442 MHz	-15.117	8	Pass
		High Channel, 2480 MHz			

POWER SPECTRAL DENSITY

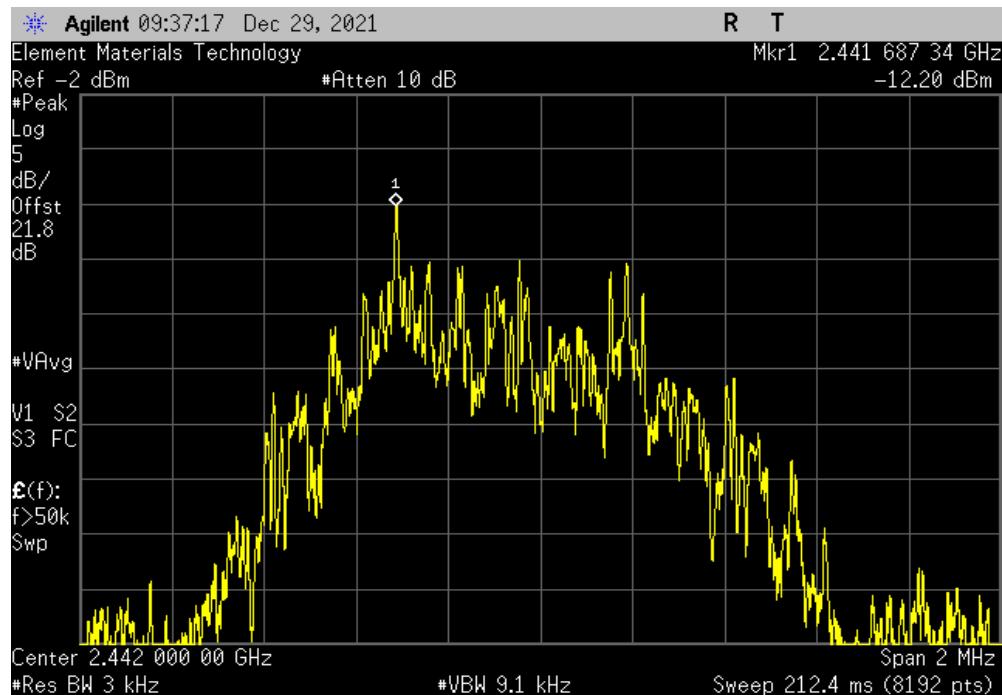


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz			
	Value dBm/3kHz	Limit < dBm/3kHz	Results
	-12.498	8	Pass



BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz			
	Value dBm/3kHz	Limit < dBm/3kHz	Results
	-12.205	8	Pass

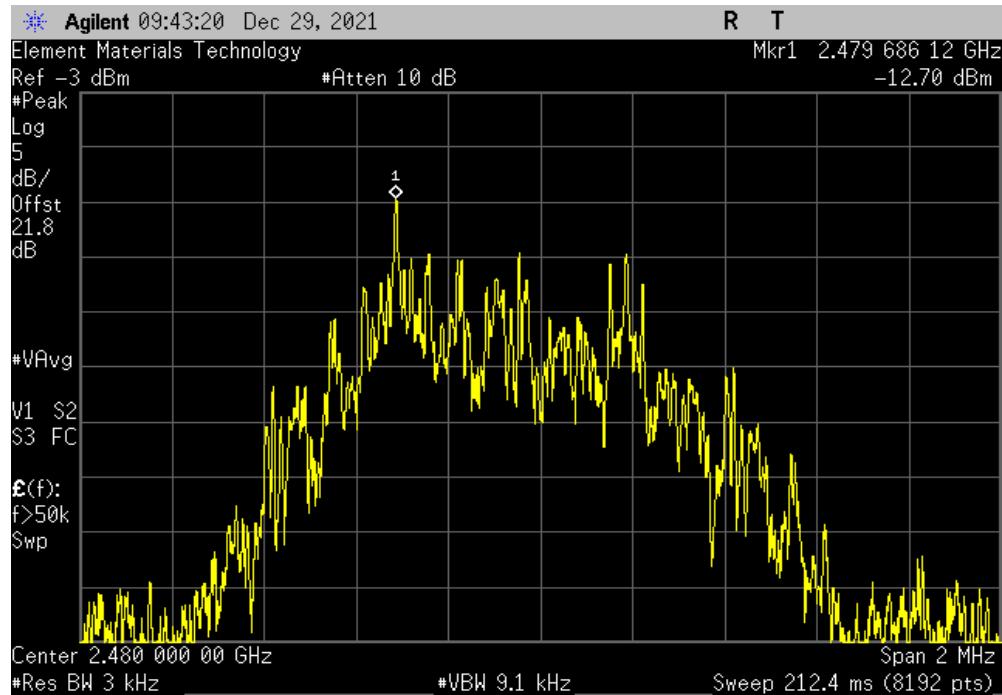


POWER SPECTRAL DENSITY

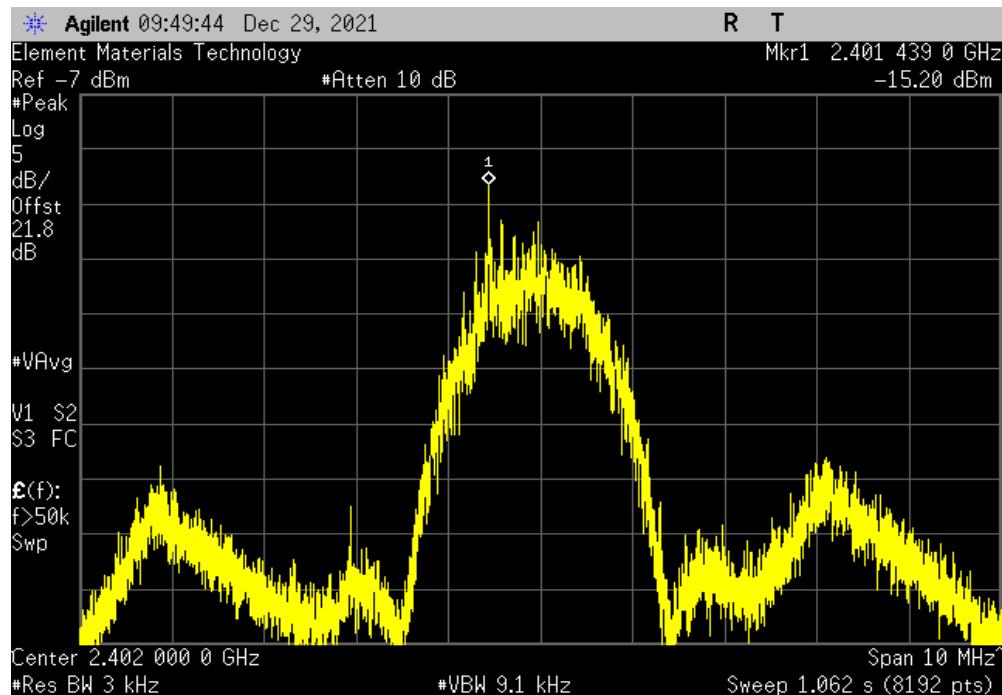


TbTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, High Channel, 2480 MHz			
	Value dBm/3kHz	Limit < dBm/3kHz	Results
	-12.697	8	Pass



BLE/GFSK 2 Mbps, Low Channel, 2402 MHz			
	Value dBm/3kHz	Limit < dBm/3kHz	Results
	-15.199	8	Pass

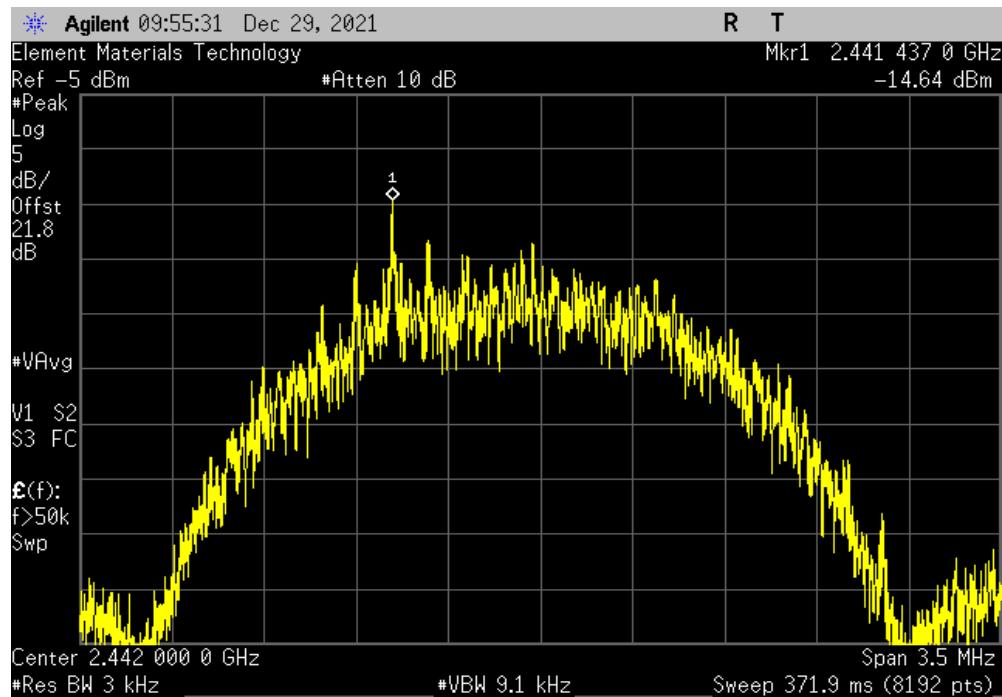


POWER SPECTRAL DENSITY

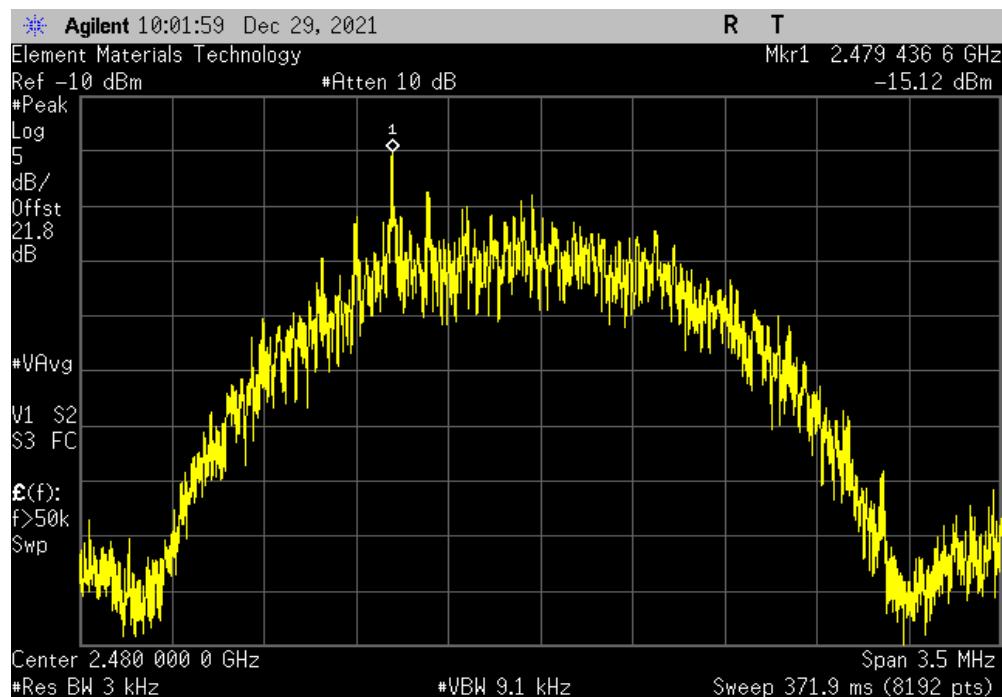


TbTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz			
	Value dBm/3kHz	Limit < dBm/3kHz	Results
	-14.638	8	Pass



BLE/GFSK 2 Mbps, High Channel, 2480 MHz			
	Value dBm/3kHz	Limit < dBm/3kHz	Results
	-15.117	8	Pass



BAND EDGE COMPLIANCE



XMit 2020.12.30.0

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	TFX	2020-04-28	2023-04-28
Block - DC	Fairview Microwave	SD3379	AMZ	2021-11-05	2022-11-05
Attenuator	S.M. Electronics	SA26B-20	TZP	2021-11-05	2022-11-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

TEST DESCRIPTION

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



TbTx 2021.10.29.2

XMI 2020.12.30.0

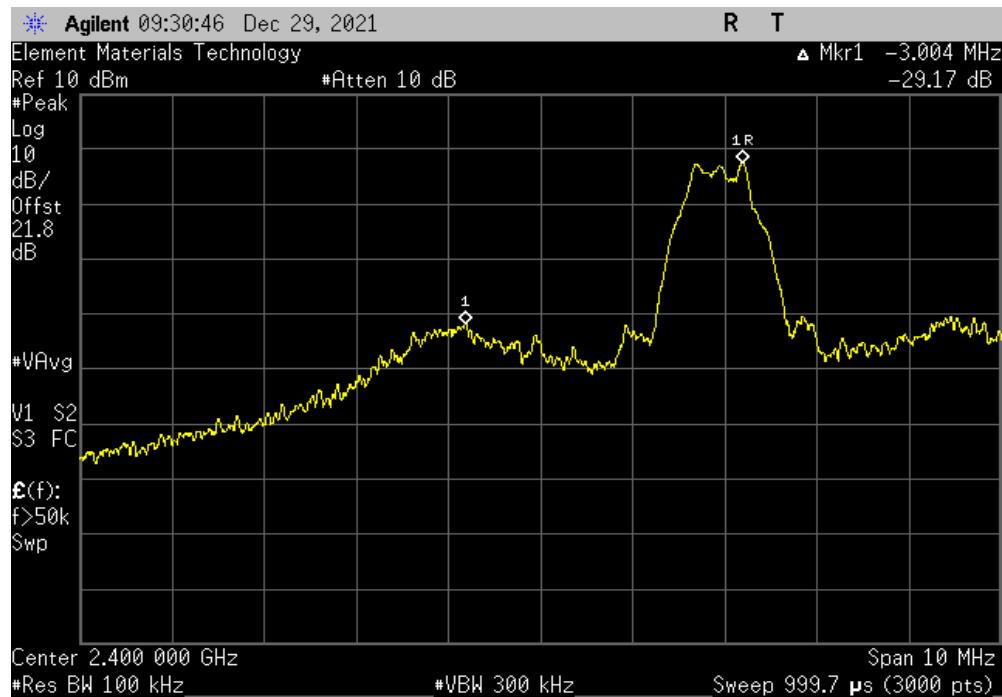
EUT:	Indy2 Rechargeable RIC		Work Order:	NOVI0019	
Serial Number:	ii004		Date:	29-Dec-21	
Customer:	Novidan, Inc.		Temperature:	23.5 °C	
Attendees:	Katie Himes		Humidity:	16.5% RH	
Project:	None		Barometric Pres.:	1020 mbar	
Tested by:	Andrew Rogstad	Power:	Battery	Job Site:	MN08
TEST SPECIFICATIONS		Test Method			
FCC 15.247:2021		ANSI C63.10:2013			
COMMENTS					
Reference level offset includes measurement cable, attenuator, DC block, and customer's patch cable.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	12	Signature			
			Value (dBc)	Limit ≤ (dBc)	Result
BLE/GFSK 1 Mbps			-29.17	-20	Pass
		Low Channel, 2402 MHz	-41.74	-20	Pass
		High Channel, 2480 MHz			
BLE/GFSK 2 Mbps			-21.27	-20	Pass
		Low Channel, 2402 MHz	-39.55	-20	Pass
		High Channel, 2480 MHz			

BAND EDGE COMPLIANCE

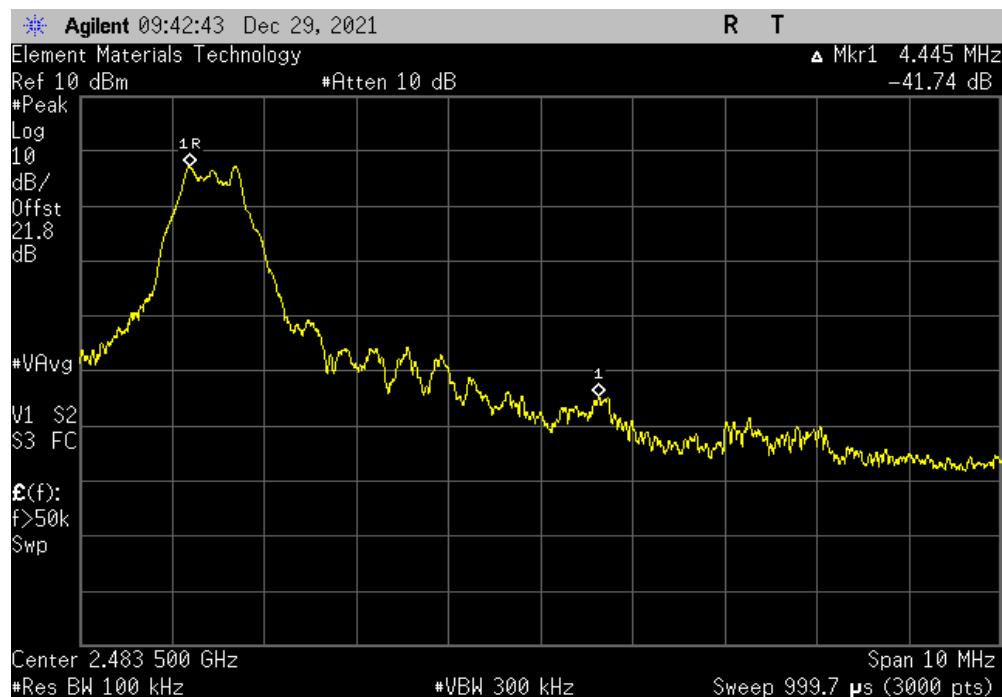


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-29.17	-20	Pass



BLE/GFSK 1 Mbps, High Channel, 2480 MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-41.74	-20	Pass

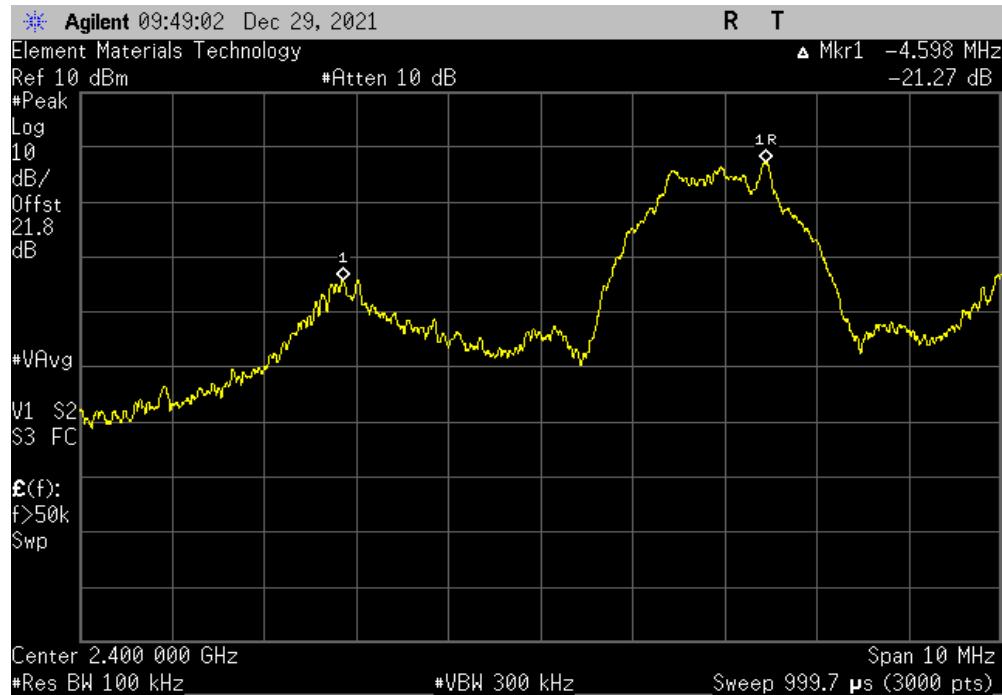


BAND EDGE COMPLIANCE

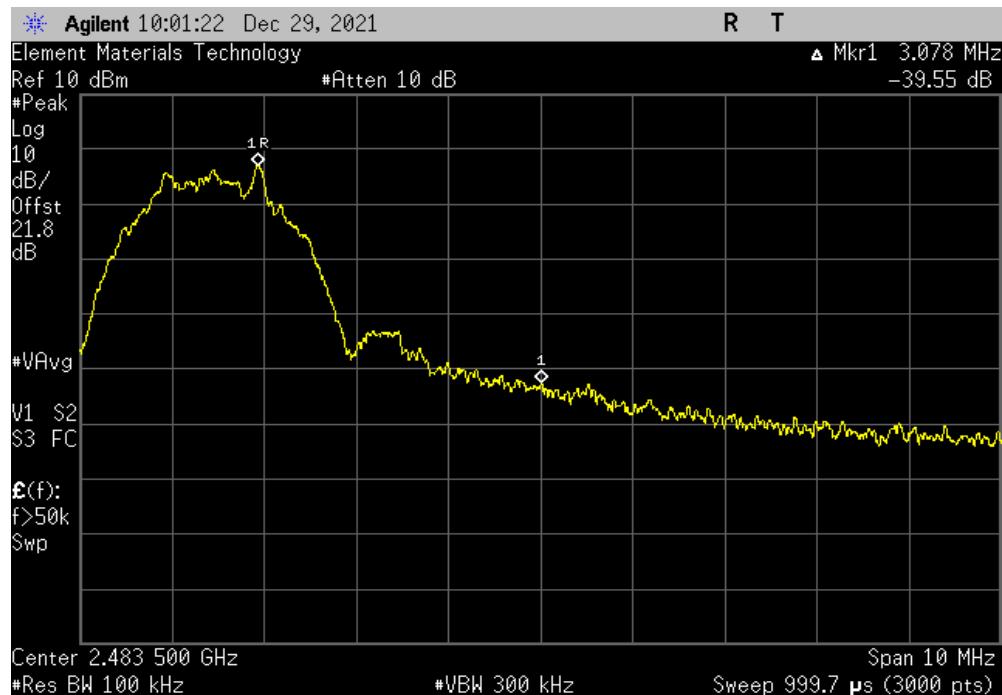


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Low Channel, 2402 MHz		
Value (dBc)	Limit ≤ (dBc)	Result
-21.27	-20	Pass



BLE/GFSK 2 Mbps, High Channel, 2480 MHz		
Value (dBc)	Limit ≤ (dBc)	Result
-39.55	-20	Pass



SPURIOUS CONDUCTED EMISSIONS



XMit 2020.12.30.0

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	TFX	2020-04-28	2023-04-28
Block - DC	Fairview Microwave	SD3379	AMZ	2021-11-05	2022-11-05
Attenuator	S.M. Electronics	SA26B-20	TZP	2021-11-05	2022-11-05
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

TEST DESCRIPTION

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 fundamental was measured with a 100 kHz resolution bandwidth and the highest value was recorded. The rest of the spectrum was then measured with a 100 kHz resolution bandwidth and the highest value was found. The difference between the value found on the fundamental and the rest of the spectrum was compared against the limit to determine compliance.

SPURIOUS CONDUCTED EMISSIONS



TbTx 2021.10.29.2 XMII 2020.12.30.0

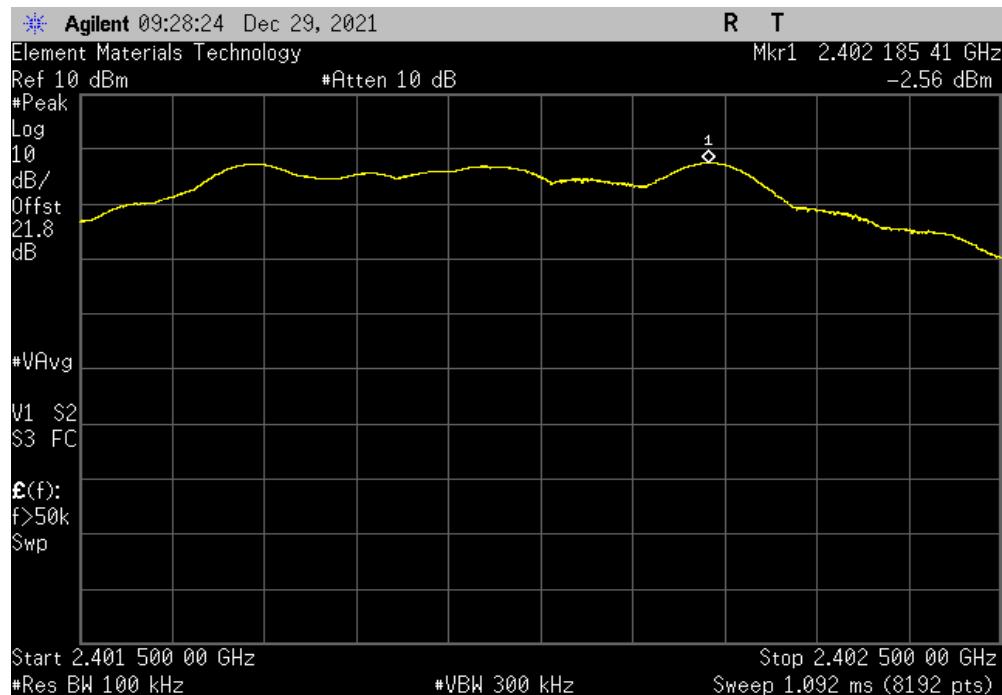
EUT:	Indy2 Rechargeable RIC	Work Order:	NOVI0019																																																		
Serial Number:	ii004	Date:	29-Dec-21																																																		
Customer:	Novidan, Inc.	Temperature:	23.4 °C																																																		
Attendees:	Katie Himes	Humidity:	16.7% RH																																																		
Project:	None	Barometric Pres.:	1020 mbar																																																		
Tested by:	Andrew Rogstad	Power:	Battery																																																		
TEST SPECIFICATIONS		Test Method	ANSI C63.10:2013																																																		
FCC 15.247:2021																																																					
COMMENTS																																																					
Reference level offset includes measurement cable, attenuator, DC block, and customer's patch cable.																																																					
DEVIATIONS FROM TEST STANDARD																																																					
None																																																					
Configuration #	12	Signature																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; width: 15%;">Frequency Range</th><th style="text-align: center; width: 15%;">Measured Freq (MHz)</th><th style="text-align: center; width: 15%;">Max Value (dBc)</th><th style="text-align: center; width: 15%;">Limit ≤ (dBc)</th><th style="text-align: center; width: 15%;">Result</th></tr> </thead> <tbody> <tr><td style="text-align: center;">Fundamental</td><td style="text-align: center;">2402.19</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td></tr> <tr><td style="text-align: center;">30 MHz - 12.5 GHz</td><td style="text-align: center;">2397.3</td><td style="text-align: center;">-39.9</td><td style="text-align: center;">-20</td><td style="text-align: center;">Pass</td></tr> <tr><td style="text-align: center;">12.5 GHz - 25 GHz</td><td style="text-align: center;">24877.9</td><td style="text-align: center;">-46.4</td><td style="text-align: center;">-20</td><td style="text-align: center;">Pass</td></tr> <tr><td style="text-align: center;">Fundamental</td><td style="text-align: center;">2442.18</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td></tr> <tr><td style="text-align: center;">30 MHz - 12.5 GHz</td><td style="text-align: center;">7104.6</td><td style="text-align: center;">-53.4</td><td style="text-align: center;">-20</td><td style="text-align: center;">Pass</td></tr> <tr><td style="text-align: center;">12.5 GHz - 25 GHz</td><td style="text-align: center;">24954.2</td><td style="text-align: center;">-47.23</td><td style="text-align: center;">-20</td><td style="text-align: center;">Pass</td></tr> <tr><td style="text-align: center;">Fundamental</td><td style="text-align: center;">2480.18</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td></tr> <tr><td style="text-align: center;">30 MHz - 12.5 GHz</td><td style="text-align: center;">2487.2</td><td style="text-align: center;">-50.54</td><td style="text-align: center;">-20</td><td style="text-align: center;">Pass</td></tr> <tr><td style="text-align: center;">12.5 GHz - 25 GHz</td><td style="text-align: center;">24754.3</td><td style="text-align: center;">-46.74</td><td style="text-align: center;">-20</td><td style="text-align: center;">Pass</td></tr> </tbody> </table>				Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	Fundamental	2402.19	N/A	N/A	N/A	30 MHz - 12.5 GHz	2397.3	-39.9	-20	Pass	12.5 GHz - 25 GHz	24877.9	-46.4	-20	Pass	Fundamental	2442.18	N/A	N/A	N/A	30 MHz - 12.5 GHz	7104.6	-53.4	-20	Pass	12.5 GHz - 25 GHz	24954.2	-47.23	-20	Pass	Fundamental	2480.18	N/A	N/A	N/A	30 MHz - 12.5 GHz	2487.2	-50.54	-20	Pass	12.5 GHz - 25 GHz	24754.3	-46.74	-20	Pass
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Low Channel, 2402 MHz	Fundamental	2402.19	N/A	N/A	N/A																																																
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Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	24954.2	-47.23	-20	Pass																																																
High Channel, 2480 MHz	Fundamental	2480.18	N/A	N/A	N/A																																																
High Channel, 2480 MHz	30 MHz - 12.5 GHz	2487.2	-50.54	-20	Pass																																																
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BLE/GFSK 2 Mbps																																																					
Low Channel, 2402 MHz	Fundamental	2402.43	N/A	N/A	N/A																																																
Low Channel, 2402 MHz	30 MHz - 12.5 GHz	2397.3	-22.61	-20	Pass																																																
Low Channel, 2402 MHz	12.5 GHz - 25 GHz	24916.1	-47.45	-20	Pass																																																
Mid Channel, 2442 MHz	Fundamental	2442.43	N/A	N/A	N/A																																																
Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	12303.6	-53.12	-20	Pass																																																
Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	24868.8	-46.79	-20	Pass																																																
High Channel, 2480 MHz	Fundamental	2480.44	N/A	N/A	N/A																																																
High Channel, 2480 MHz	30 MHz - 12.5 GHz	2487.2	-47.6	-20	Pass																																																
High Channel, 2480 MHz	12.5 GHz - 25 GHz	24934.4	-45.41	-20	Pass																																																

SPURIOUS CONDUCTED EMISSIONS

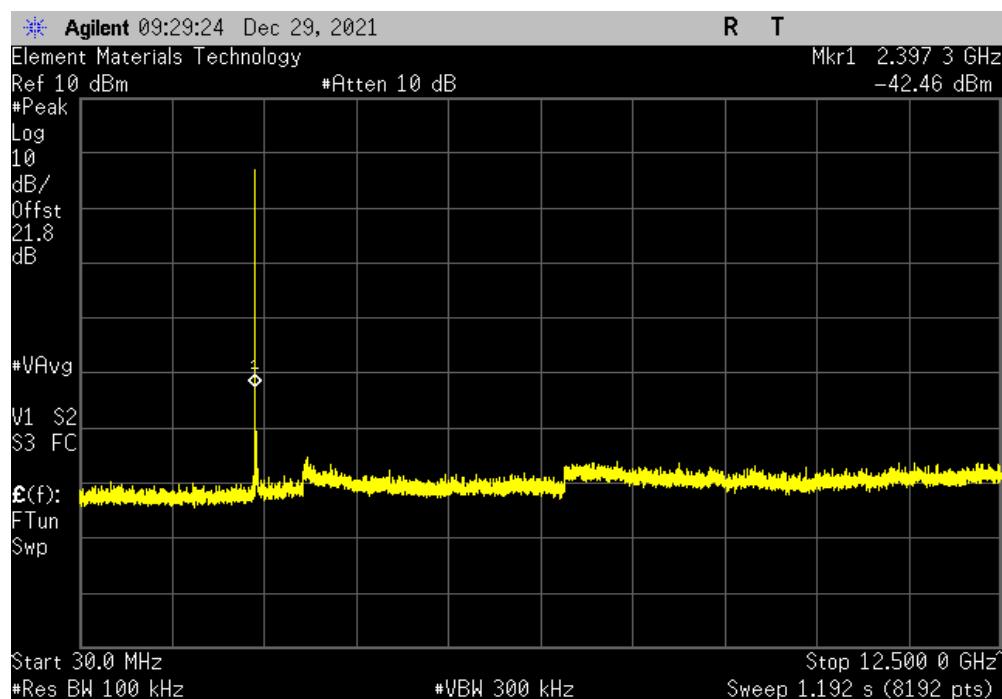


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2402.19	N/A	N/A	N/A	



BLE/GFSK 1 Mbps, Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	2397.3	-39.9	-20	Pass	

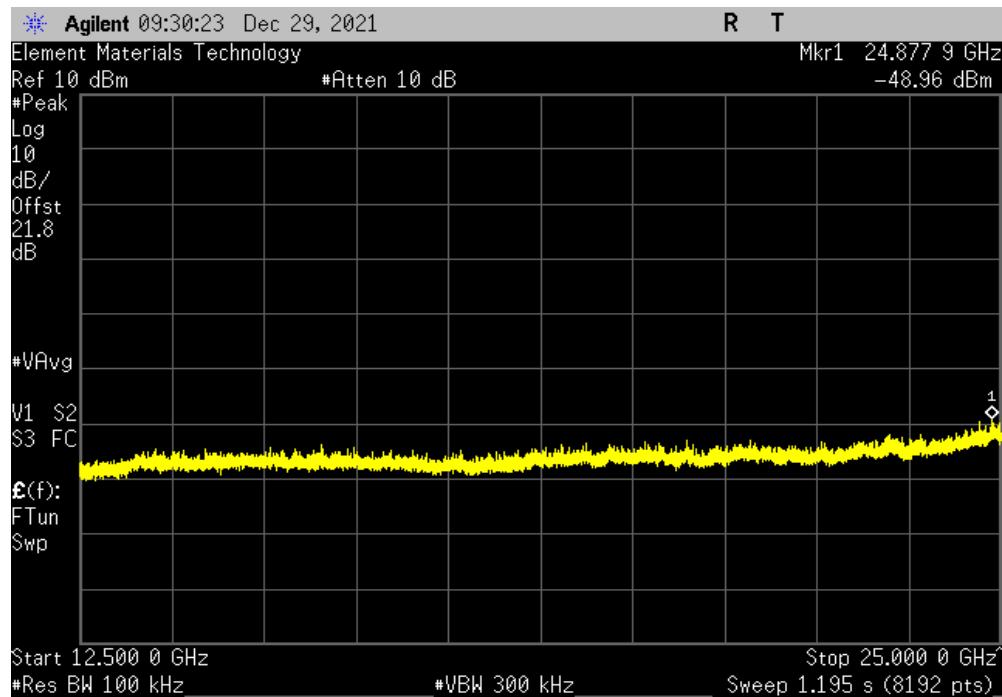


SPURIOUS CONDUCTED EMISSIONS

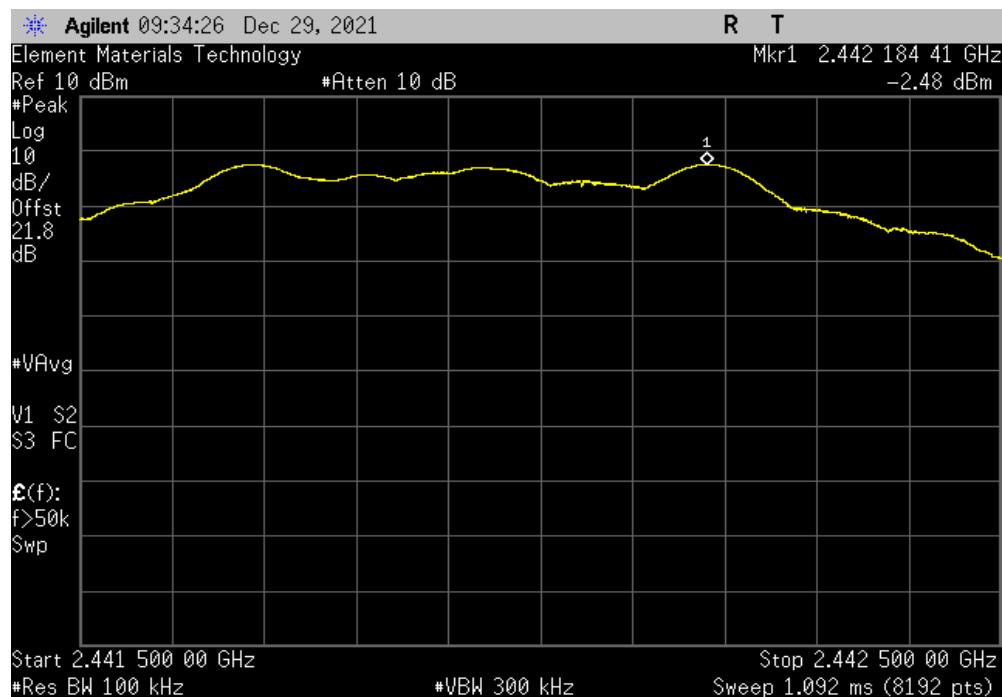


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24877.9	-46.4	-20	Pass	



BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2442.18	N/A	N/A	N/A	

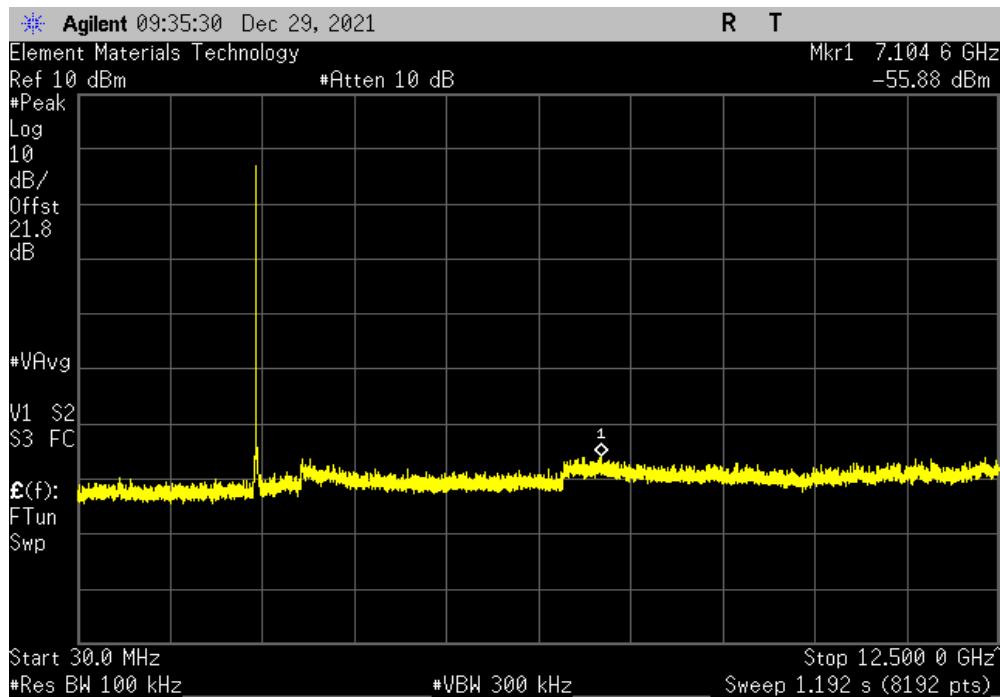


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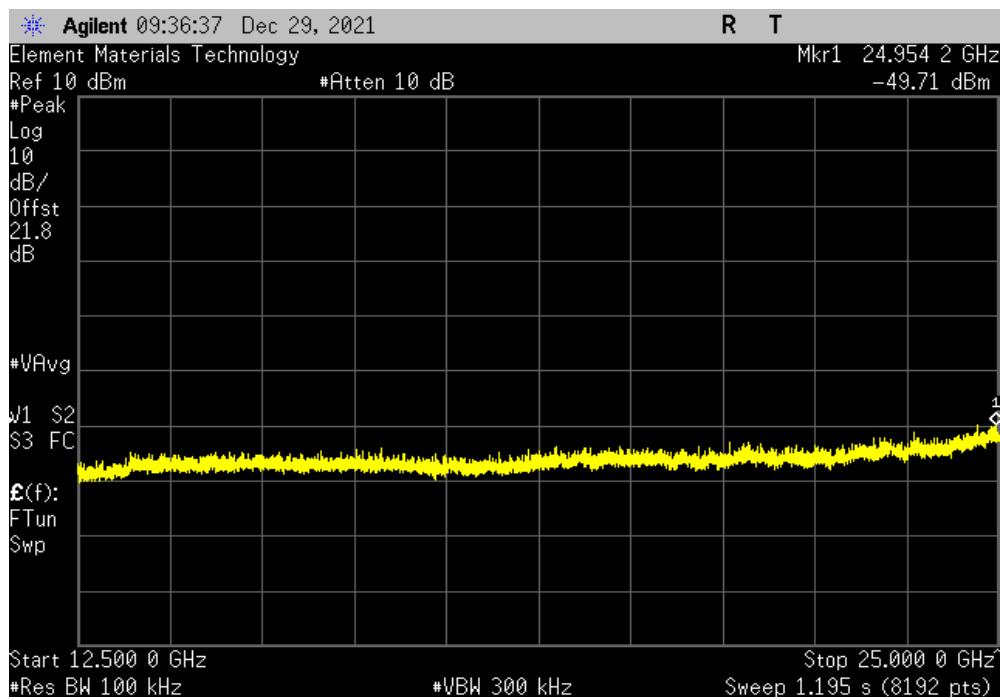


TbTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	7104.6	-53.4	-20	Pass



BLE/GFSK 1 Mbps, Mid Channel, 2442 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24954.2	-47.23	-20	Pass

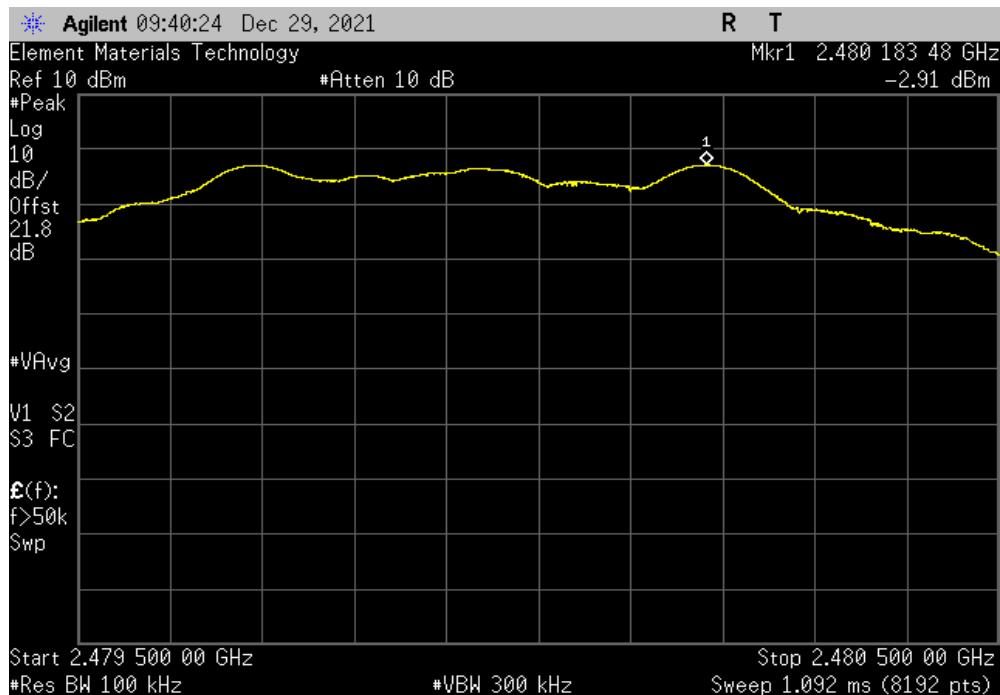


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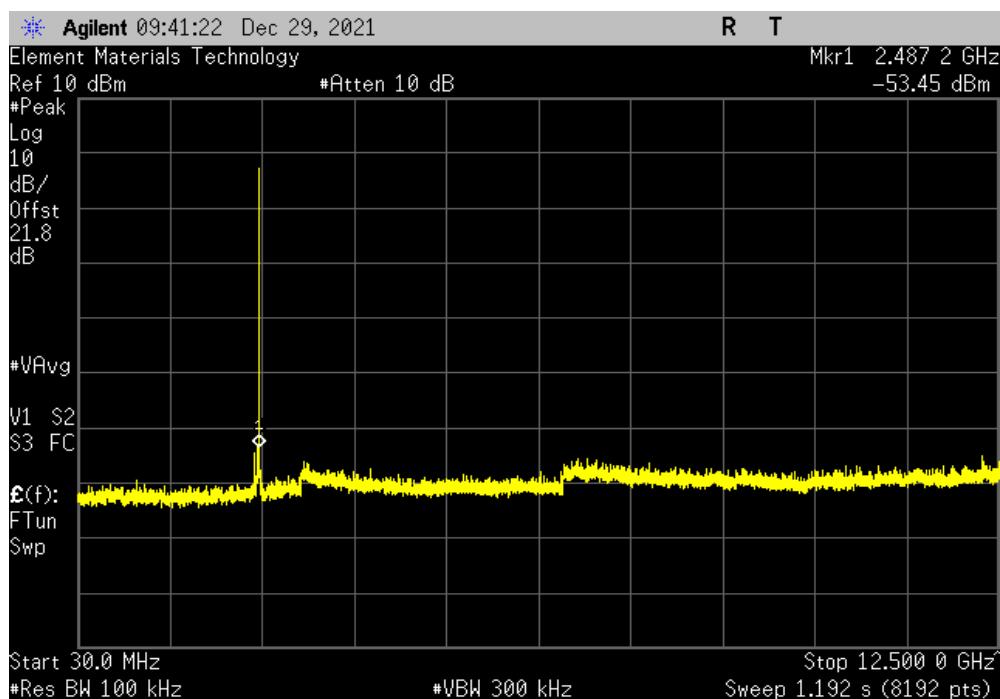


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2480.18	N/A	N/A	N/A	N/A



BLE/GFSK 1 Mbps, High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	2487.2	-50.54	-20	Pass	

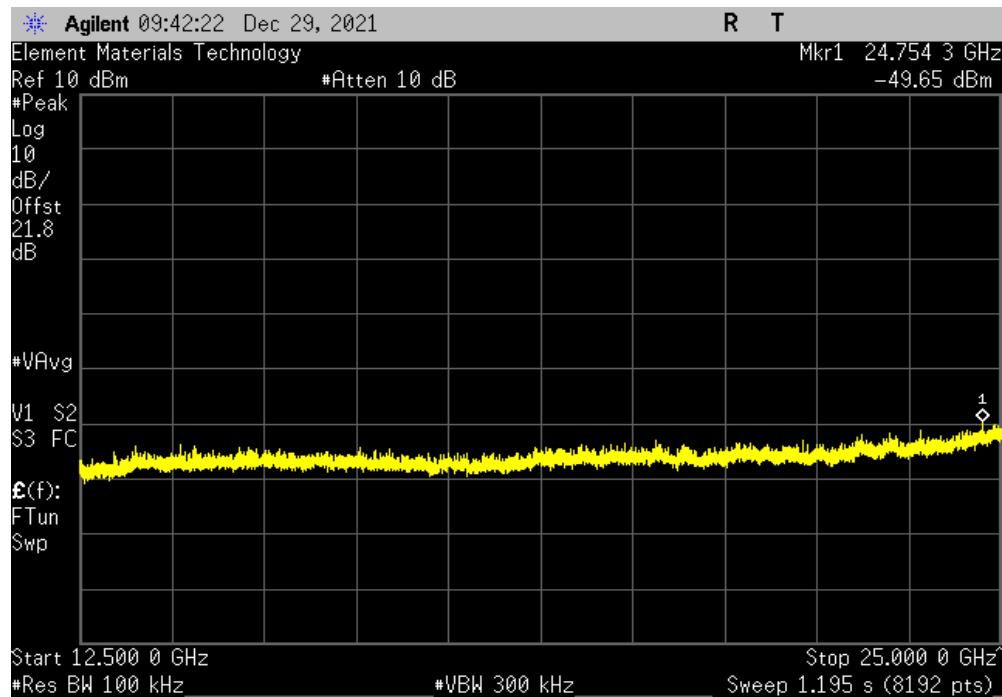


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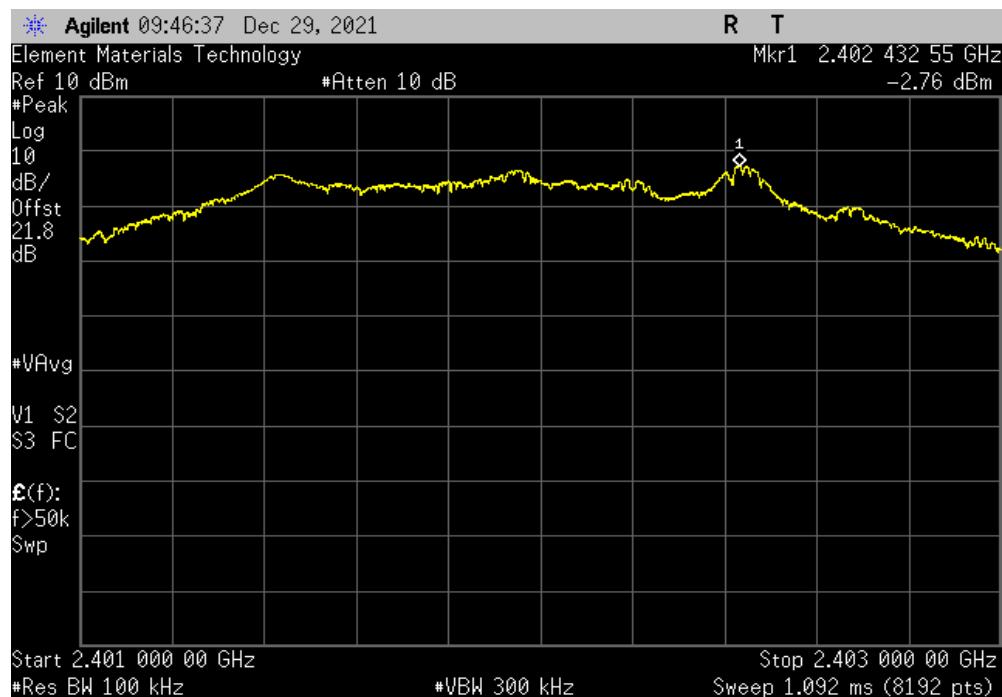


TbITx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 1 Mbps, High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24754.3	-46.74	-20	Pass	



BLE/GFSK 2 Mbps, Low Channel, 2402 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2402.43	N/A	N/A	N/A	N/A

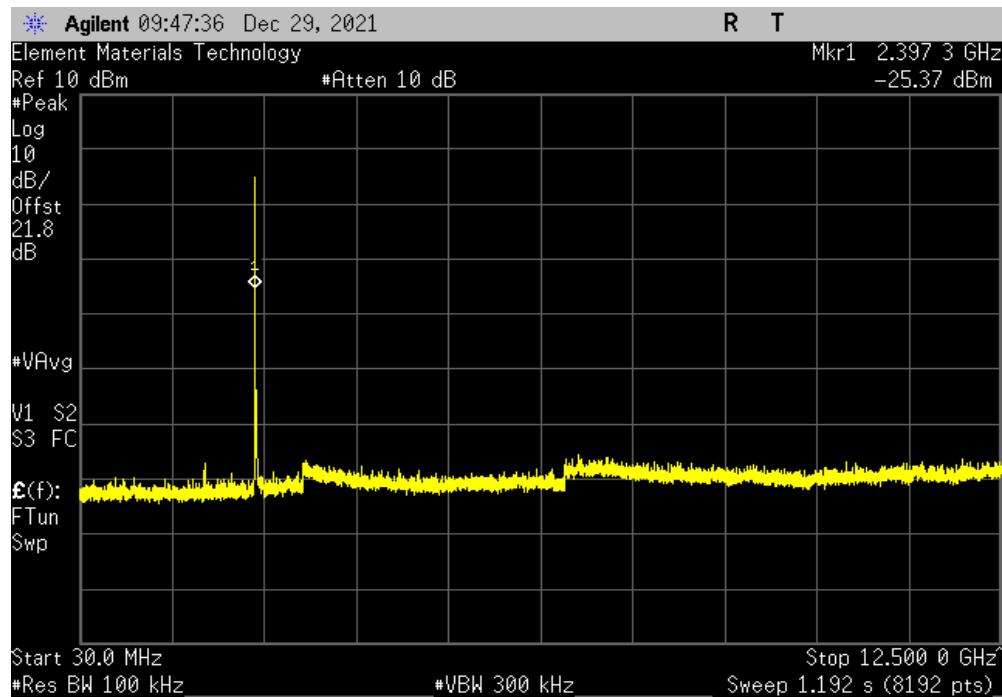


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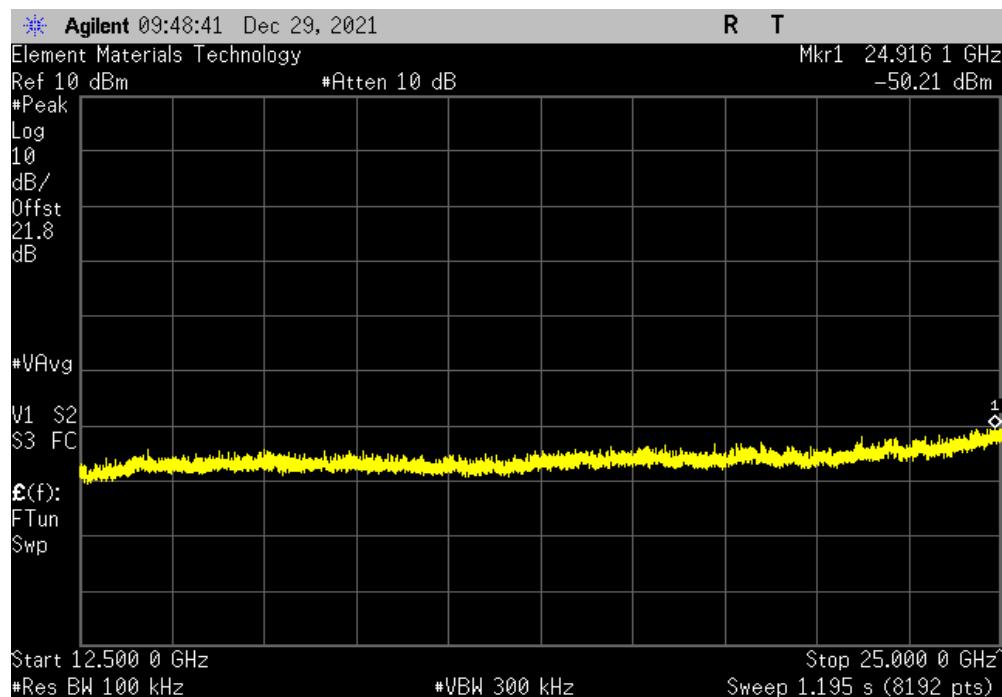


TbTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2397.3	-22.61	-20	Pass



BLE/GFSK 2 Mbps, Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24916.1	-47.45	-20	Pass

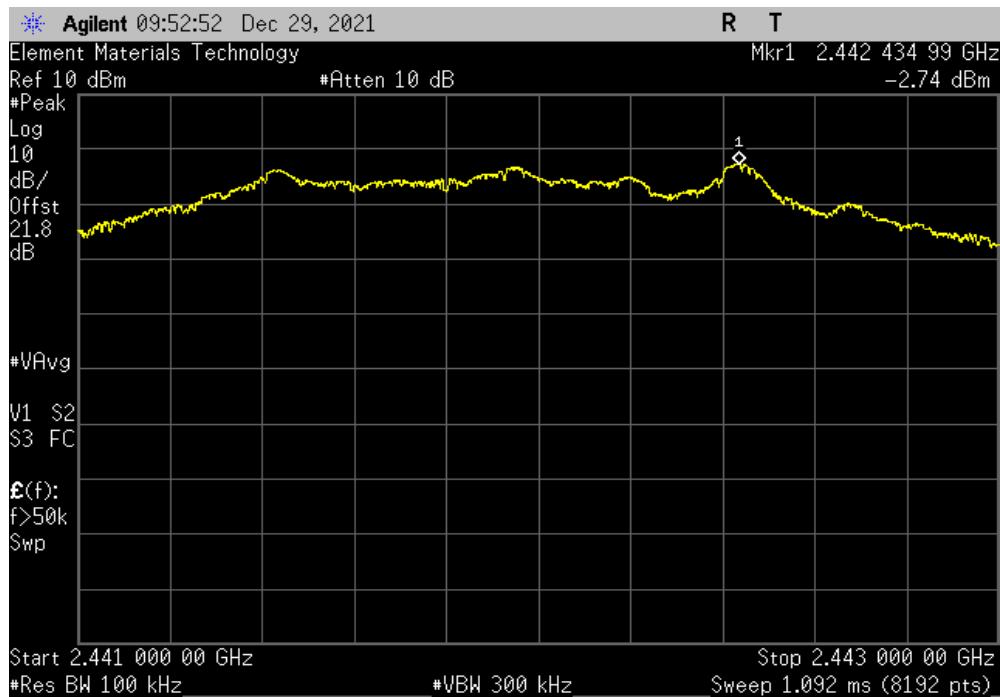


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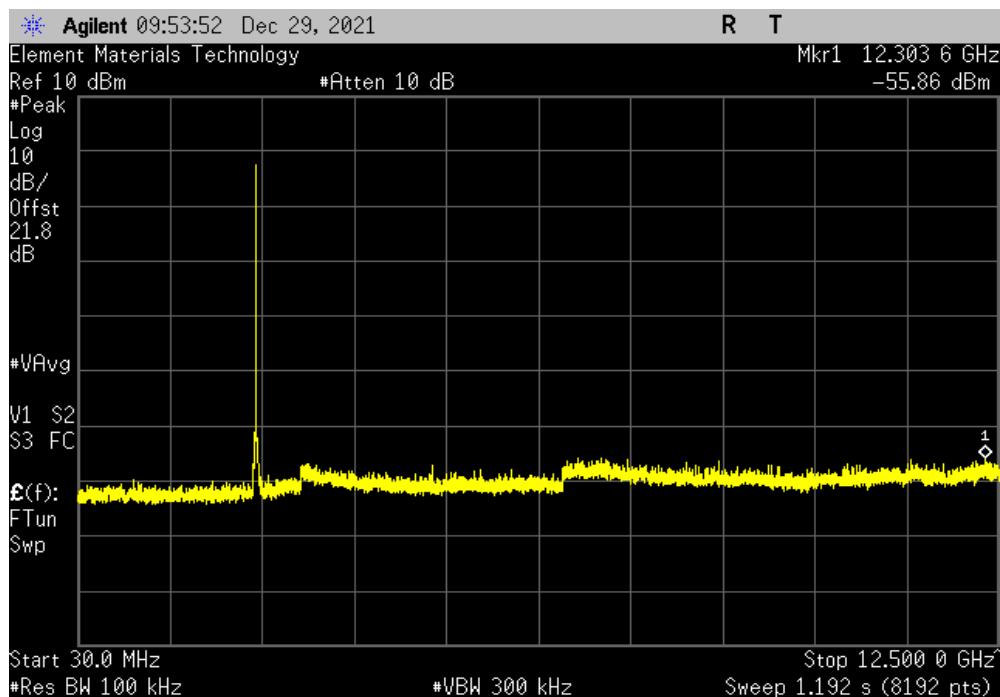


TbITx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2442.43	N/A	N/A	N/A	N/A



BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	12303.6	-53.12	-20	Pass	

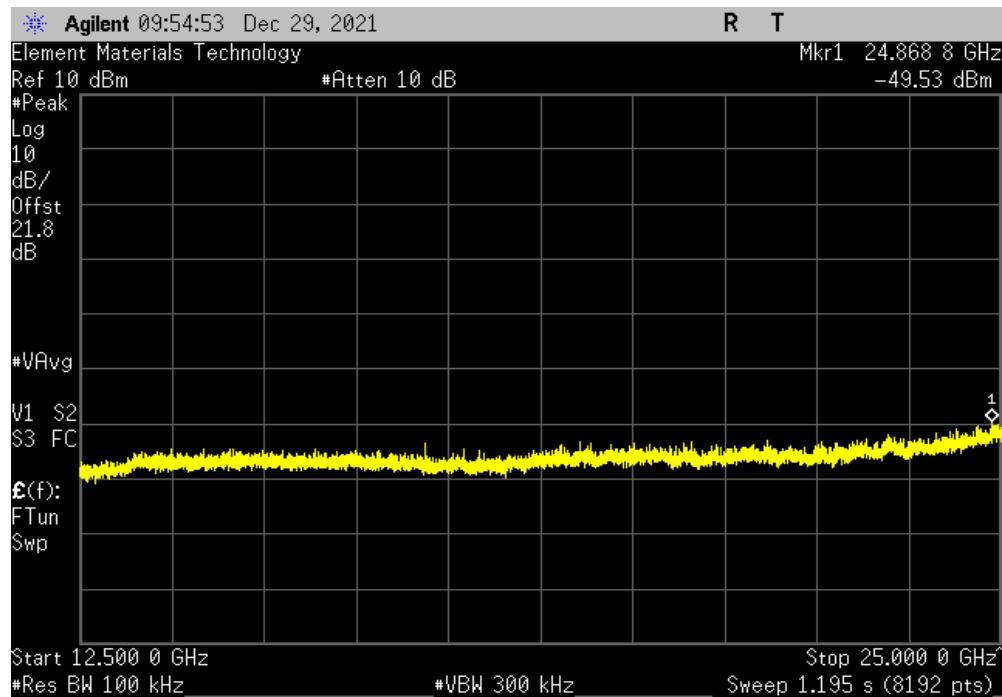


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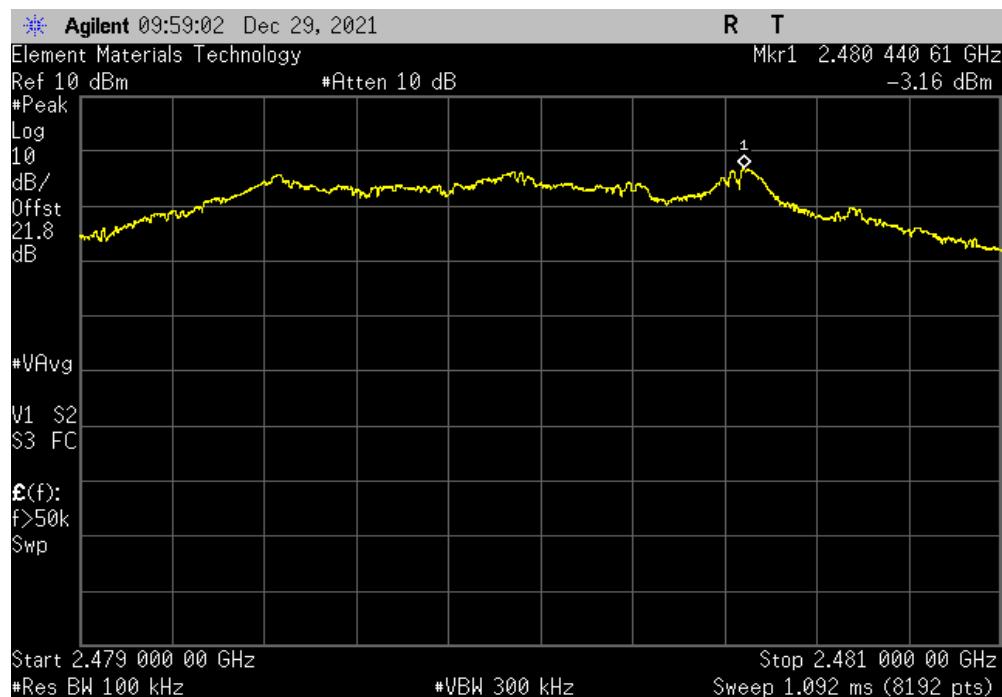


TbITx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, Mid Channel, 2442 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24868.8	-46.79	-20	Pass	



BLE/GFSK 2 Mbps, High Channel, 2480 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2480.44	N/A	N/A	N/A	

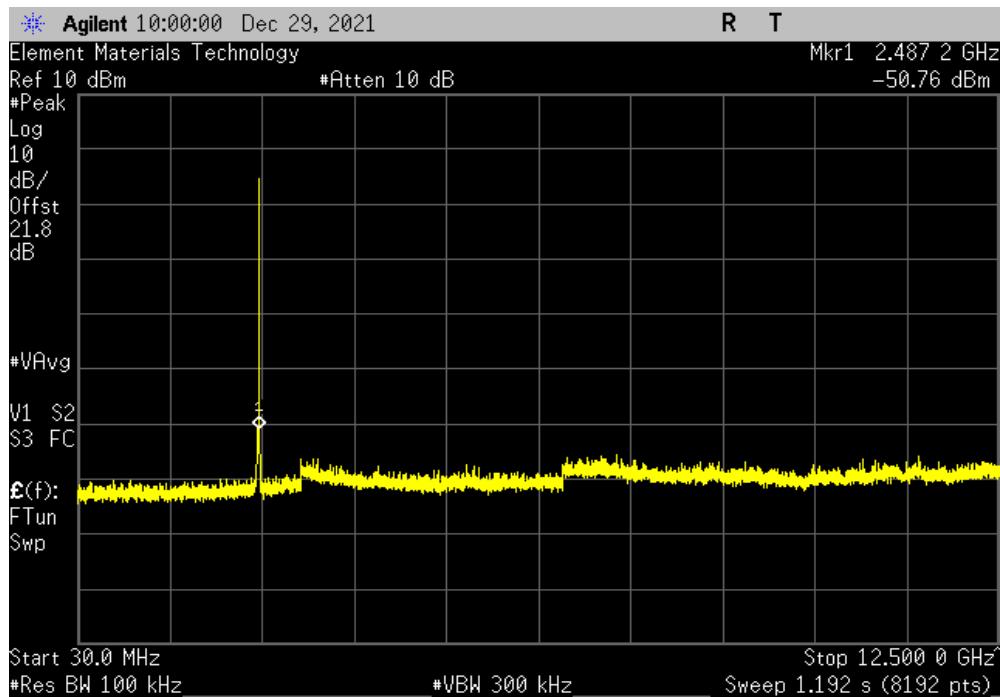


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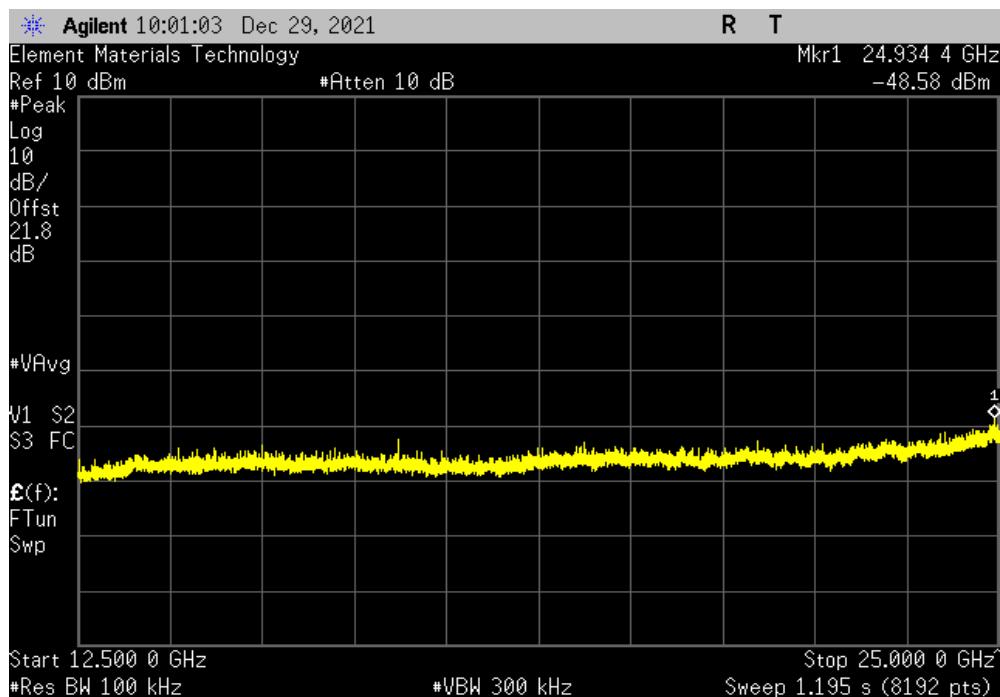


TbtTx 2021.10.29.2 XMit 2020.12.30.0

BLE/GFSK 2 Mbps, High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit \leq (dBc)	Result
30 MHz - 12.5 GHz	2487.2	-47.6	-20	Pass



BLE/GFSK 2 Mbps, High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit \leq (dBc)	Result
12.5 GHz - 25 GHz	24934.4	-45.41	-20	Pass



End of Test Report