



# element

**Onity Inc.**

**Passport**

**FCC 15.247:2023**

**902 - 928 MHz FHSS Transceiver**

**Report: ONIT0101.3 Rev. 2, Issue Date: June 30, 2023**



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# CERTIFICATE OF TEST

**Last Date of Test: February 16, 2023**  
**Onity Inc.**  
**EUT: Passport**

## Radio Equipment Testing

### Standards

Specification	Method
FCC 15.247:2023	ANSI C63.10:2013

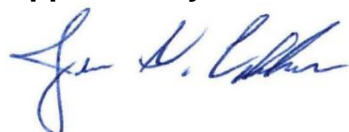
### Results

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	Spurious Radiated Emissions	Yes	Pass	
7.5	Duty Cycle	Yes	Pass	
7.8.2	Carrier Frequency Separation	Yes	Pass	
7.8.3	Number of Hopping Frequencies	Yes	Pass	
7.8.4	Dwell Time	Yes	Pass	
7.8.5	Output Power	Yes	Pass	
7.8.5	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	Emissions Bandwidth	Yes	Pass	
7.8.7	Occupied Bandwidth	Yes	Pass	
7.8.8	Spurious Conducted Emissions	Yes	Pass	
11.10.3	Power Spectral Density	Yes	Pass	

### Deviations From Test Standards

None

### Approved By:



Johnny Candelas, 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



<b>Revision Number</b>	<b>Description</b>	<b>Date (yyyy-mm-dd)</b>	<b>Page Number</b>
01	Updated SN in the Spurious Radiated Emissions and removed 500KHz BW data	2023-06-15	15, 62, 66, 67, 69, 79 – 83
02	Added Power Spectral Density data.	2023-06-30	75-79
	Added Power Spectral Density to COT.	2023-06-30	2
	Removed 500kHZ BW data from the OP data module.	2023-06-30	36-40
	Changed the limits in the band edge compliance - hopping mode to 30 dBc	2023-06-30	50-53

# ACCREDITATIONS AND AUTHORIZATIONS



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## 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.

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## 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.

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## European Union

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

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## United Kingdom

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

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## 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.

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## Singapore

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

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## Israel

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

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## Hong Kong

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

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## Vietnam

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

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## SCOPE

For details on the Scopes of our Accreditations, please visit:

[California](#)

[Minnesota](#)

[Oregon](#)

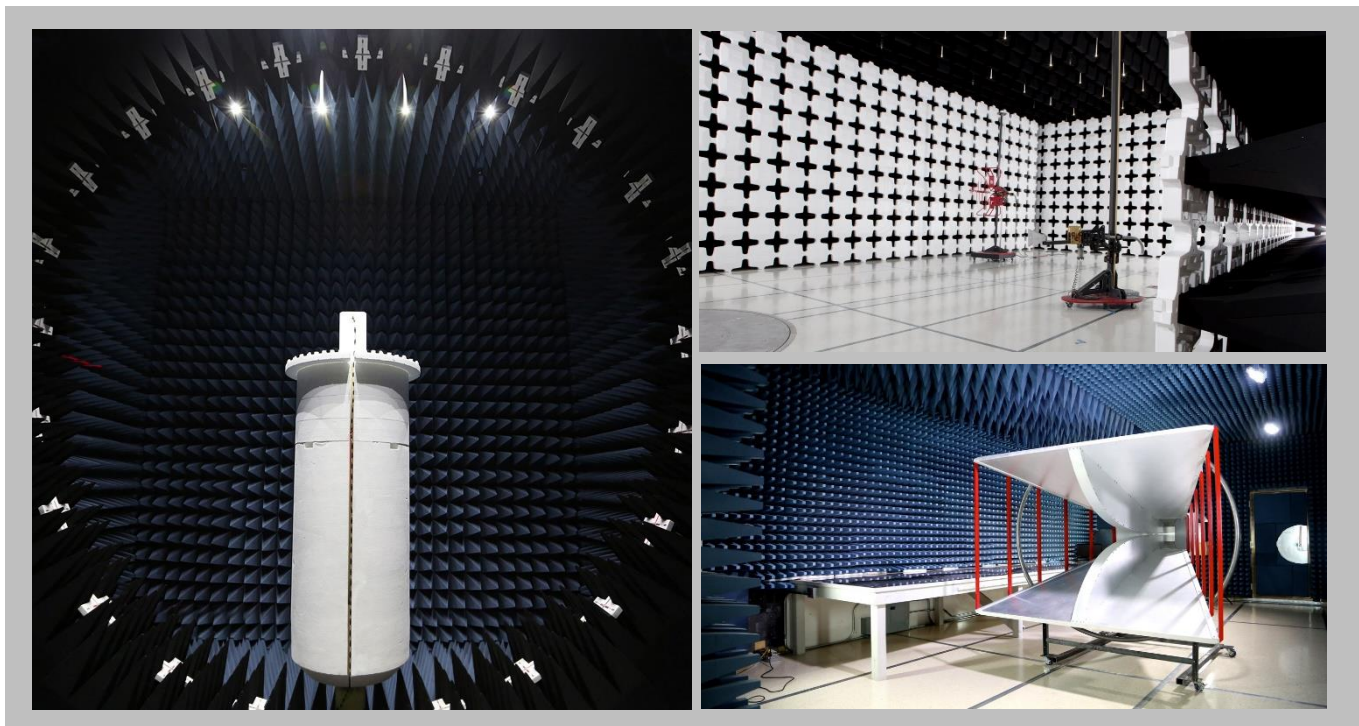
[Texas](#)

[Washington](#)

# FACILITIES



<b>California</b> Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>Minnesota</b> Labs MN01-11 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	<b>Oregon</b> Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 98011 (425)984-6600
<b>A2LA</b>				
Lab Code: 3310.04	Lab Code: 3310.05	Lab Code: 3310.02	Lab Code: 3310.03	Lab Code: 3310.06
<b>Innovation, Science and Economic Development Canada</b>				
2834B-1, 2834B-3	2834E-1, 2834E-3	2834D-1	2834G-1	2834F-1
<b>BSMI</b>				
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
<b>VCCI</b>				
A-0029	A-0109	A-0108	A-0201	A-0110
<b>Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA</b>				
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.

<b>Test</b>	<b>+ MU</b>	<b>- MU</b>
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

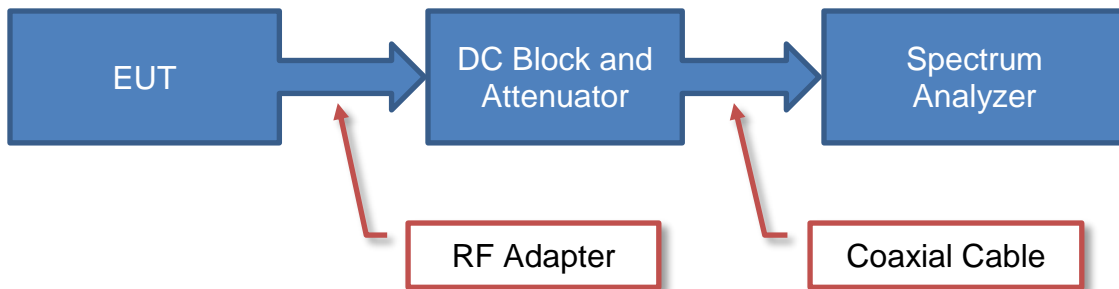
# TEST SETUP BLOCK DIAGRAMS

## 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.

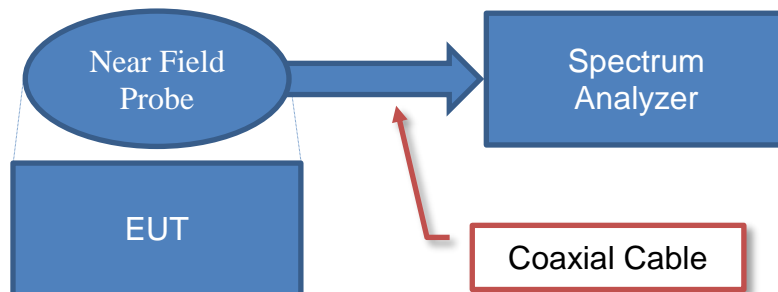
## Antenna Port Conducted Measurements



### Sample Calculation (logarithmic units)

Measured Value	=	Measured Level	+	Reference Level Offset
71.2		42.6		28.6

## Near Field Test Fixture Measurements

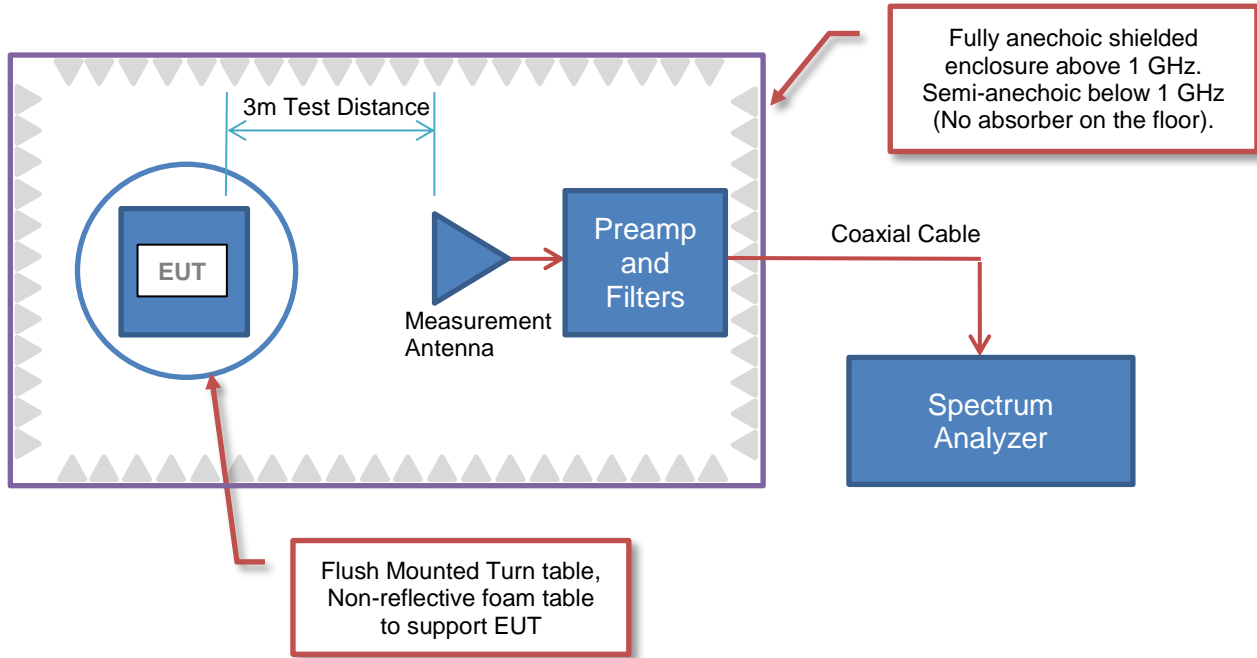


### Sample Calculation (logarithmic units)

Measured Value	=	Measured Level	+	Reference Level Offset
71.2		42.6		28.6

# TEST SETUP BLOCK DIAGRAMS

## Emissions Measurements



## Sample Calculation (logarithmic units)

### Radiated Emissions:

Measured Level (Amplitude)	Factor			Distance Adjustment Factor	External Attenuation	Field Strength
	Antenna Factor	Cable Factor	Amplifier Gain			
42.6	28.6	3.1	40.8	0.0	0.0	33.5

42.6 + 28.6 + 3.1 - 40.8 + 0.0 + 0.0 = 33.5

### Conducted Emissions:

Measured Level (Amplitude)	Factor		External Attenuation	Adjusted Level
	Transducer Factor	Cable Factor		
26.7	0.3	0.1	20.0	47.1

26.7 + 0.3 + 0.1 + 20.0 = 47.1

### Radiated Power (ERP/EIRP) – Substitution Method:

Measured Level into Substitution Antenna (Amplitude dBm)	Substitution Antenna Factor (dBi)	EIRP to ERP (if applicable)	Measured power (dBm ERP/EIRP)
10.0	6.0	2.15	13.9/16.0

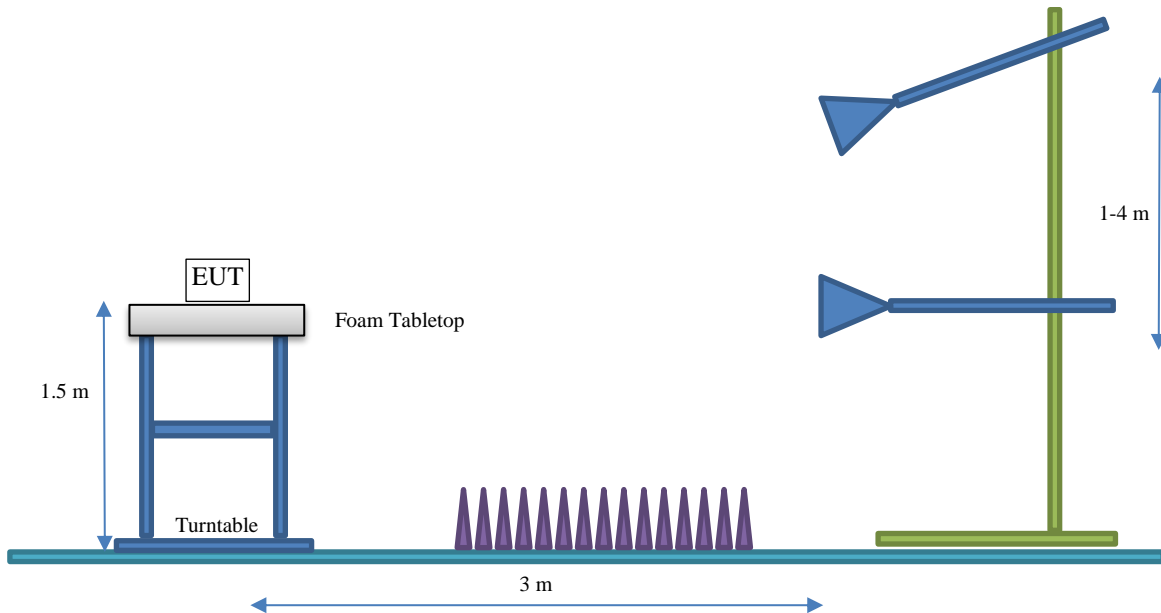
10.0 + 6.0 - 2.15 = 13.9/16.0



# 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

<b>Company Name:</b>	Onity Inc.
<b>Address:</b>	4001 Fairview Industrial Drive
<b>City, State, Zip:</b>	Salem, OR 97302
<b>Test Requested By:</b>	Ali Elmi
<b>EUT:</b>	Passport
<b>First Date of Test:</b>	September 30, 2022
<b>Last Date of Test:</b>	February 16, 2023
<b>Receipt Date of Samples:</b>	September 30, 2022
<b>Equipment Design Stage:</b>	Prototype
<b>Equipment Condition:</b>	No Damage
<b>Purchase Authorization:</b>	Verified

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT:

Electronic door lock - it can be operated by Bluetooth (2.4 GHz) or by LoRaWAN (868 MHz / 915 MHz), which is a Low Power Wide Area (LPWA), long ranging networking protocol designed to wirelessly connect battery operated devices to the internet in regional, national, or global networks.

SF8 500kHz mode/data rate will not be supported in final device per manufacturer.

### Testing Objective:

Seeking to demonstrate compliance under FCC 15.247:2023 for operation in the 902 - 928 MHz Band.

# 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. The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

## ANTENNA GAIN (dBi)

Type	Provided by:	Frequency Range (MHz)	Gain (dBi)
Ceramic Isolated Magnetic Dipole	ethertronics	902 - 928	0.75

The EUT was tested using the power settings provided by the manufacturer which were based upon:

- Test software settings      Test software/firmware installed on EUT:      99.025
- Rated power settings

## SETTINGS FOR ALL TESTS IN THIS REPORT

Channel Bandwidth (kHz)	Modulation Types / Data Rates	Type	Channel	Frequency (MHz)	Power Setting (dBm)
125	CSS / SF10, 0.98 kbps CSS / SF07, 5.47 kbps	Hybrid	0	902.3	22
			32	908.7	
			63	914.9	

# CONFIGURATIONS



## Configuration ONIT0091- 2

Software/Firmware Running During Test	
Description	Version
BLE Firmware	10.0.23
TRFW Tester	None

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Electronic door lock with BLE and LoRaWAN	Onity Inc.	Passport	47155986

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
iPad mini	Apple	MUQW2LL/A	DMPZKMCHLM93

## Configuration ONIT0091- 3

Software/Firmware Running During Test	
Description	Version
TRFW Tester	None
LoRa Firmware	99.0.25

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Electronic door lock with BLE and LoRaWAN	Onity Inc.	Passport	44594524

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
iPad mini	Apple	MUQW2LL/A	DMPZKMCHLM93

## Configuration ONIT0091- 5

Software/Firmware Running During Test	
Description	Version
TRFW Tester	None
LoRa Firmware	99.0.3

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Electronic door lock with BLE and LoRaWAN	Onity Inc.	Passport	44594549

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
iPad mini	Apple	MUQW2LL/A	DMPZKMCHLM93

# MODIFICATIONS



## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2022-09-30	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	2022-09-30	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.
3	2022-09-30	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.
4	2022-09-30	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	2022-09-30	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2022-09-30	Emissions 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.
7	2022-09-30	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.
8	2022-09-30	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.
9	2022-10-03	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.
10	2022-12-16	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.
11	2022-12-16	Number of Hopping Frequencies	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
12	2023-02-16	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.
13	2023-02-16	Band Edge Compliance - Hopping Mode	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 (in no-hop, single channel mode) 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  $10 \cdot \log(1/dc)$ .

RMS measurements taken for a FHSS radio also may have a duty cycle correction subtracted using the formula  $10 \cdot \log(DC)$ , where DC is the worst-case dwell time of the radio while in a hopping mode in a 100 ms period.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Antenna - Biconilog	EMCO	3142B	AXJ	2021-03-03	2023-03-03
Cable	N/A	Bilog Cables	EVA	2022-11-03	2023-11-03
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	2021-11-17	2022-11-17
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	2021-12-09	2022-12-09
Cable	N/A	Double Ridge Horn Cables	EVB	2022-05-03	2023-05-03
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	2022-05-03	2023-05-03
Antenna - Standard Gain	ETS Lindgren	3160-07	AHU	NCR	NCR
Cable	None	Standard Gain Horn Cables	EVF	2022-11-03	2023-11-03
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-08001200-30-10P	PAO	2022-11-03	2023-11-03
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	2022-03-02	2024-03-02

## MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	5.2 dB	-5.2 dB

## FREQUENCY RANGE INVESTIGATED

30 MHz TO 12400 MHz

## POWER INVESTIGATED

Battery

## CONFIGURATIONS INVESTIGATED

ONIT0091-2

## MODES INVESTIGATED

Continuous transmit LoRa, low ch. 0, 902.3MHz, mid ch. 32, 908.7 MHz & high ch. 63, 914.9 MHz. See data comments for bandwidth and spreading factor settings.

# SPURIOUS RADIATED EMISSIONS



EUT:	Passport	Work Order:	ONIT0091
Serial Number:	47155986	Date:	2022-10-03
Customer:	Onity Inc.	Temperature:	22.8°C
Attendees:	Ali Elmi	Relative Humidity:	49.2%
Customer Project:	None	Bar. Pressure (PMSL):	0 mb
Tested By:	Cole Ghizzone	Job Site:	EV01
Power:	Battery	Configuration:	ONIT0091-2

## TEST SPECIFICATIONS

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

## TEST PARAMETERS

Run #:	34	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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## COMMENTS

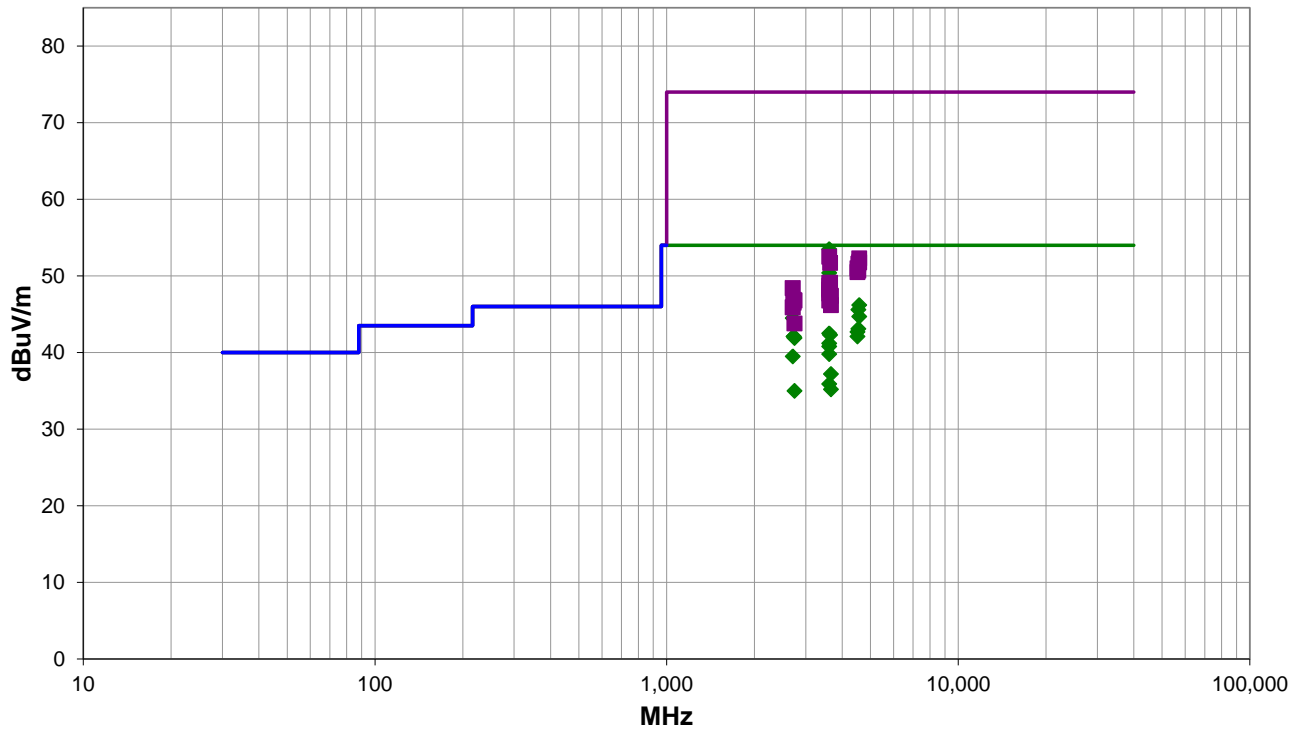
See data comments for EUT orientation. While operating with a spreading factor (SF) of 8, the measured duty cycle was 50.9%, all other data rates operated at > than 98% duty cycle. Any average measurements where the radio was operating with SF = 8 had a duty cycle correction factor (DCCF) added to them.  $DCCF = 10 * \log(1/0.509) = 2.9$

## EUT OPERATING MODES

Continuous transmit LoRa, low ch. 0, 902.3MHz, mid ch. 32, 908.7 MHz & high ch. 63, 914.9 MHz. See data comments for spreading factor settings.

## DEVIATIONS FROM TEST STANDARD

None



Run #: 34

■ PK    ◆ AV    ● QP

# SPURIOUS RADIATED EMISSIONS



## RESULTS - Run #34

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	DCCF (dB)	Polarity/Transducer	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
3609.358	44.9	5.5	1.0	206.0	3.0	0.0	Vert	AV	0.0	50.4	54.0	-3.6	Low Channel, Horizontal,125KHz BW, SF 10
3609.400	42.0	5.5	1.0	208.0	3.0	0.0	Vert	AV	0.0	47.5	54.0	-6.5	Low channel, Vertical,125KHz BW, SF 10
3634.642	41.7	5.5	1.5	9.0	3.0	0.0	Vert	AV	0.0	47.2	54.0	-6.8	Mid Channel, Horizontal,125KHz BW, SF 10
4574.767	37.9	8.3	1.08	209.0	3.0	0.0	Vert	AV	0.0	46.2	54.0	-7.8	High Channel, Horizontal,125KHz BW, SF 10
4543.717	37.4	8.2	2.44	191.0	3.0	0.0	Horz	AV	0.0	45.6	54.0	-8.4	Mid Channel, Horizontal,125KHz BW, SF 10
4574.800	36.4	8.3	1.39	251.0	3.0	0.0	Horz	AV	0.0	44.7	54.0	-9.3	High Channel, Horizontal,125KHz BW, SF 10
2706.967	44.4	0.1	1.5	155.0	3.0	0.0	Vert	AV	0.0	44.5	54.0	-9.5	Low Channel, Horizontal,125KHz BW, SF 10
4543.383	34.9	8.2	1.5	42.0	3.0	0.0	Vert	AV	0.0	43.1	54.0	-10.9	Mid Channel, Horizontal,125KHz BW, SF 10
4511.692	34.5	8.2	1.0	211.0	3.0	0.0	Vert	AV	0.0	42.7	54.0	-11.3	Low Channel, Horizontal,125KHz BW, SF 10
3609.283	37.0	5.5	1.0	7.0	3.0	0.0	Vert	AV	0.0	42.5	54.0	-11.5	Low Channel, Horizontal,125KHz BW, SF 7
3634.925	36.8	5.5	1.32	227.0	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	Mid Channel, Horizontal,125KHz BW, SF 10
4511.808	33.9	8.2	1.5	259.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	Low Channel, Horizontal,125KHz BW, SF 10
2726.258	42.0	0.1	2.38	252.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	Mid Channel, Horizontal,125KHz BW, SF 10
2726.158	42.0	0.1	1.5	150.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	Mid Channel, Horizontal,125KHz BW, SF 10
2744.742	41.7	0.2	1.5	171.0	3.0	0.0	Vert	AV	0.0	41.9	54.0	-12.1	High Channel, Horizontal,125KHz BW, SF 10
3609.292	35.7	5.5	1.0	303.0	3.0	0.0	Horz	AV	0.0	41.2	54.0	-12.8	Low Channel, Horizontal,125KHz BW, SF 10
3609.342	35.3	5.5	1.5	180.0	3.0	0.0	Horz	AV	0.0	40.8	54.0	-13.2	Low Channel, On Side,125KHz BW, SF 10
3609.108	34.3	5.5	1.5	248.0	3.0	0.0	Horz	AV	0.0	39.8	54.0	-14.2	Low channel, Vertical,125KHz BW, SF 10
2707.008	39.4	0.1	1.5	253.0	3.0	0.0	Horz	AV	0.0	39.5	54.0	-14.5	Low Channel, Horizontal,125KHz BW, SF 10
3659.275	31.7	5.5	1.0	1.0	3.0	0.0	Vert	AV	0.0	37.2	54.0	-16.8	High Channel, Horizontal,125KHz BW, SF 10
3609.375	30.4	5.5	1.5	3.0	3.0	0.0	Vert	AV	0.0	35.9	54.0	-18.1	Low Channel, On Side,125KHz BW, SF 10
3659.592	29.7	5.5	1.5	262.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	High Channel, Horizontal,125KHz BW, SF 10
2744.675	34.8	0.2	1.5	254.0	3.0	0.0	Horz	AV	0.0	35.0	54.0	-19.0	High Channel, Horizontal,125KHz BW, SF 10
3609.308	48.0	5.5	1.0	206.0	3.0	0.0	Vert	PK	0.0	53.5	74.0	-20.5	Low Channel, Horizontal,125KHz BW, SF 10
3609.625	47.0	5.5	1.0	208.0	3.0	0.0	Vert	PK	0.0	52.5	74.0	-21.5	Low channel, Vertical,125KHz BW, SF 10
4574.325	44.0	8.3	1.08	209.0	3.0	0.0	Vert	PK	0.0	52.3	74.0	-21.7	High Channel, Horizontal,125KHz BW, SF 10
4574.825	43.5	8.3	1.39	251.0	3.0	0.0	Horz	PK	0.0	51.8	74.0	-22.2	High Channel, Horizontal,125KHz BW, SF 10
3634.517	46.2	5.5	1.5	9.0	3.0	0.0	Vert	PK	0.0	51.7	74.0	-22.3	Mid Channel, Horizontal,125KHz BW, SF 10
4543.433	43.4	8.2	2.44	191.0	3.0	0.0	Horz	PK	0.0	51.6	74.0	-22.4	Mid Channel, Horizontal,125KHz BW, SF 10
4511.700	42.8	8.2	1.0	211.0	3.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0	Low Channel, Horizontal,125KHz BW, SF 10
4543.258	42.5	8.2	1.5	42.0	3.0	0.0	Vert	PK	0.0	50.7	74.0	-23.3	Mid Channel, Horizontal,125KHz BW, SF 10
4511.817	42.3	8.2	1.5	259.0	3.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	Low Channel, Horizontal,125KHz BW, SF 10
3634.708	43.6	5.5	1.32	227.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	Mid Channel, Horizontal,125KHz BW, SF 10
3609.583	43.6	5.5	1.0	7.0	3.0	0.0	Vert	PK	0.0	49.1	74.0	-24.9	Low Channel, Horizontal,125KHz BW, SF 7
3609.167	43.2	5.5	1.0	303.0	3.0	0.0	Horz	PK	0.0	48.7	74.0	-25.3	Low Channel, Horizontal,125KHz BW, SF 10
2706.917	48.3	0.1	1.5	155.0	3.0	0.0	Vert	PK	0.0	48.4	74.0	-25.6	Low Channel, Horizontal,125KHz BW, SF 10
3608.925	42.7	5.5	1.5	180.0	3.0	0.0	Horz	PK	0.0	48.2	74.0	-25.8	Low Channel, On Side,125KHz BW, SF 10
3609.083	42.2	5.5	1.5	248.0	3.0	0.0	Horz	PK	0.0	47.7	74.0	-26.3	Low channel, Vertical,125KHz BW, SF 10
3659.600	41.9	5.5	1.0	1.0	3.0	0.0	Vert	PK	0.0	47.4	74.0	-26.6	High Channel, Horizontal,125KHz BW, SF 10
2725.942	46.8	0.1	2.38	252.0	3.0	0.0	Horz	PK	0.0	46.9	74.0	-27.1	Mid Channel, Horizontal,125KHz BW, SF 10
3608.950	41.3	5.5	1.5	3.0	3.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2	Low Channel, On Side,125KHz BW, SF 10



# SPURIOUS RADIATED EMISSIONS

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	DCCF (dB)	Polarity/Transducer	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2744.625	46.6	0.2	1.5	171.0	3.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2	High Channel, Horizontal, 125KHz BW, SF 10
2725.683	46.4	0.1	1.5	150.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5	Mid Channel, Horizontal, 125KHz BW, SF 10
3660.433	40.7	5.5	1.5	262.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8	High Channel, Horizontal, 125KHz BW, SF 10
2706.983	45.8	0.1	1.5	253.0	3.0	0.0	Horz	PK	0.0	45.9	74.0	-28.1	Low Channel, Horizontal, 125KHz BW, SF 10
2744.617	43.6	0.2	1.5	254.0	3.0	0.0	Horz	PK	0.0	43.8	74.0	-30.2	High Channel, Horizontal, 125KHz BW, SF 10

## CONCLUSION

Pass



Tested By

# DUTY CYCLE



XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

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

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

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

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

# DUTY CYCLE



TbTx 2022.06.03.0 XMI 2022.02.07.0

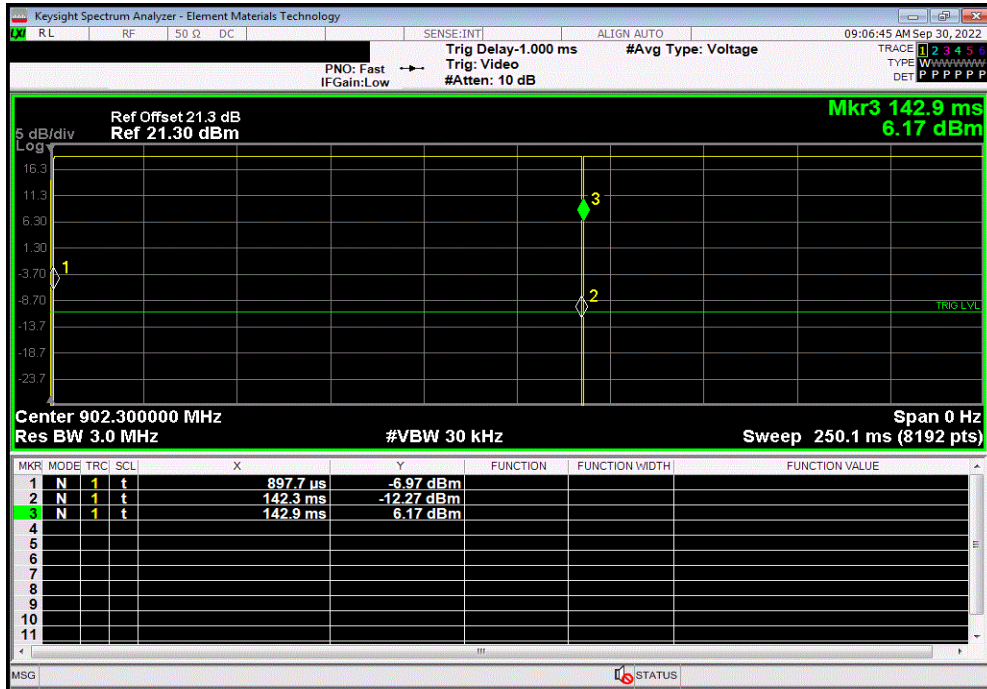
EUT: Passport		Work Order: ONIT0091					
Serial Number: 44594524		Date: 30-Sep-22					
Customer: Onity Inc.		Temperature: 21.8 °C					
Attendees: Ali Elmi		Humidity: 48.3% RH					
Project: None		Barometric Pres.: 1021 mbar					
Tested by: Jeff Alcock		Power: Battery					
Job Site: EV06							
TEST SPECIFICATIONS		Test Method					
FCC 15.247:2022		ANSI C63.10:2013					
COMMENTS							
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable and manufacturers provided SMA patch cable.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	3	Signature					
		Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
Single Channel Mode							
LoRa, 125 kHz BW							
SF 10							
	Ch. 0, 902.3 MHz	141.407 ms	142.017 ms	1	99.6	N/A	N/A
	Ch. 0, 902.3 MHz	N/A	N/A	5	N/A	N/A	N/A
	Ch. 32, 908.7 MHz	141.376 ms	142.414 ms	1	99.3	N/A	N/A
	Ch. 32, 908.7 MHz	N/A	N/A	5	N/A	N/A	N/A
	Ch. 63, 914.9 MHz	141.402 ms	142.349 ms	1	99.3	N/A	N/A
	Ch. 63, 914.9 MHz	N/A	N/A	5	N/A	N/A	N/A
SF 7							
	Ch. 0, 902.3 MHz	17.714 ms	17.887 ms	1	99	N/A	N/A
	Ch. 0, 902.3 MHz	N/A	N/A	5	N/A	N/A	N/A
	Ch. 32, 908.7 MHz	17.707 ms	17.983 ms	1	98.5	N/A	N/A
	Ch. 32, 908.7 MHz	N/A	N/A	5	N/A	N/A	N/A
	Ch. 63, 914.9 MHz	17.715 ms	17.983 ms	1	98.5	N/A	N/A
	Ch. 63, 914.9 MHz	N/A	N/A	5	N/A	N/A	N/A

# DUTY CYCLE

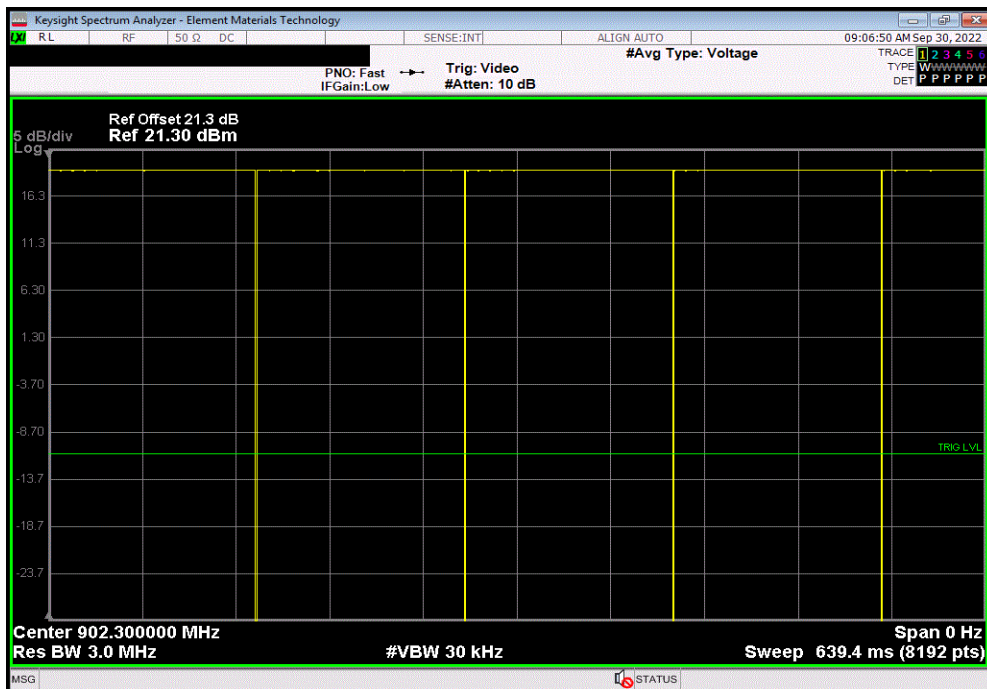


TbTx 2022.06.03.0 XbMz 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
141.407 ms	142.017 ms	1	99.6	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

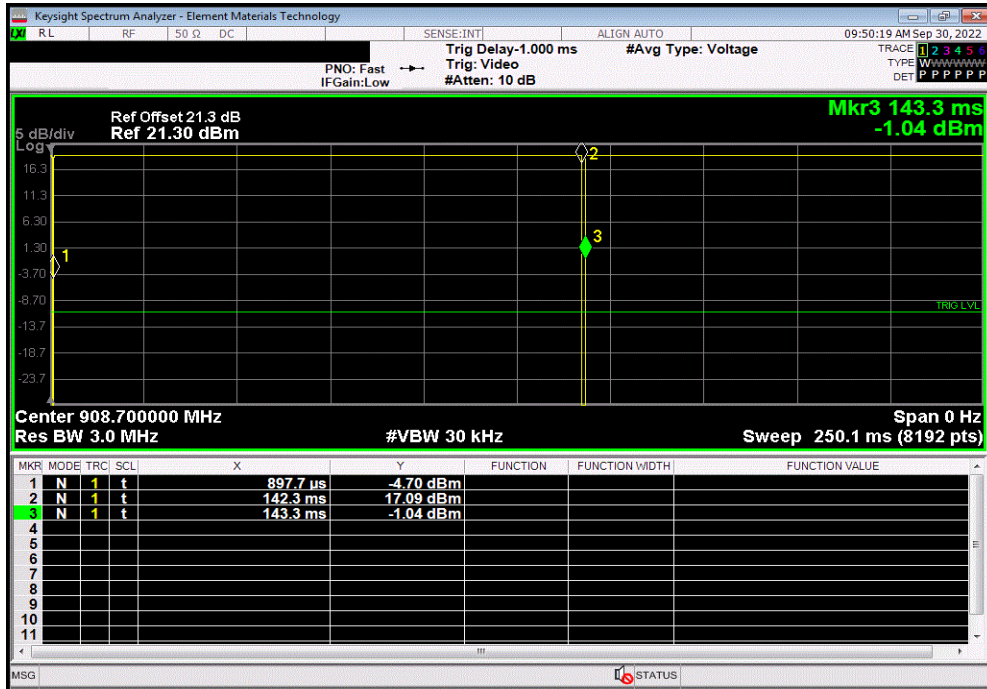


# DUTY CYCLE

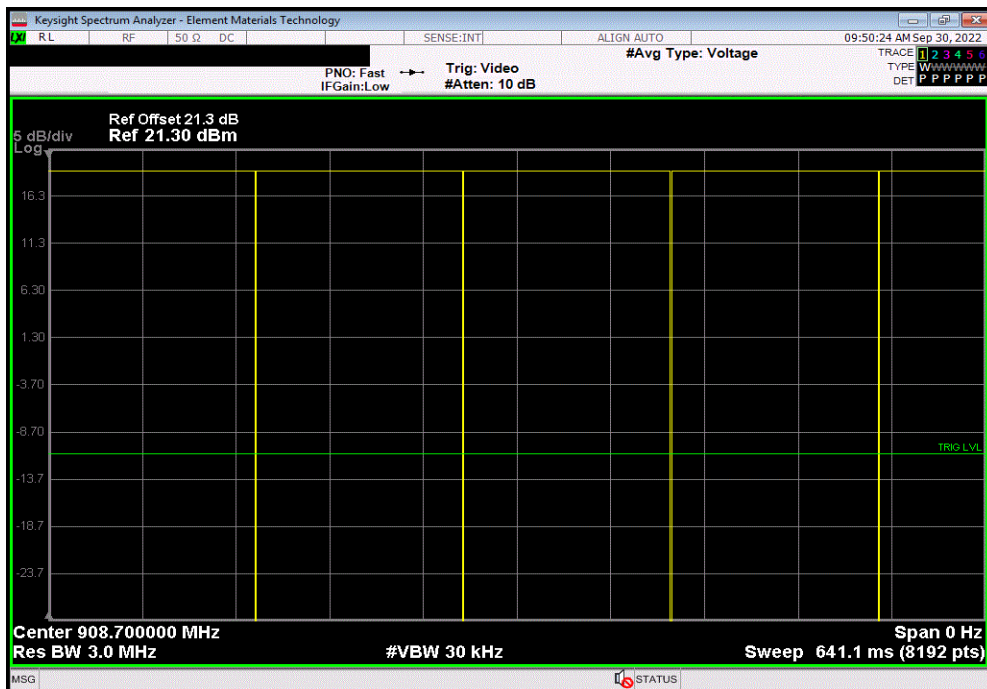


TbTx 2022.06.03.0 XbMz 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
141.376 ms	142.414 ms	1	99.3	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

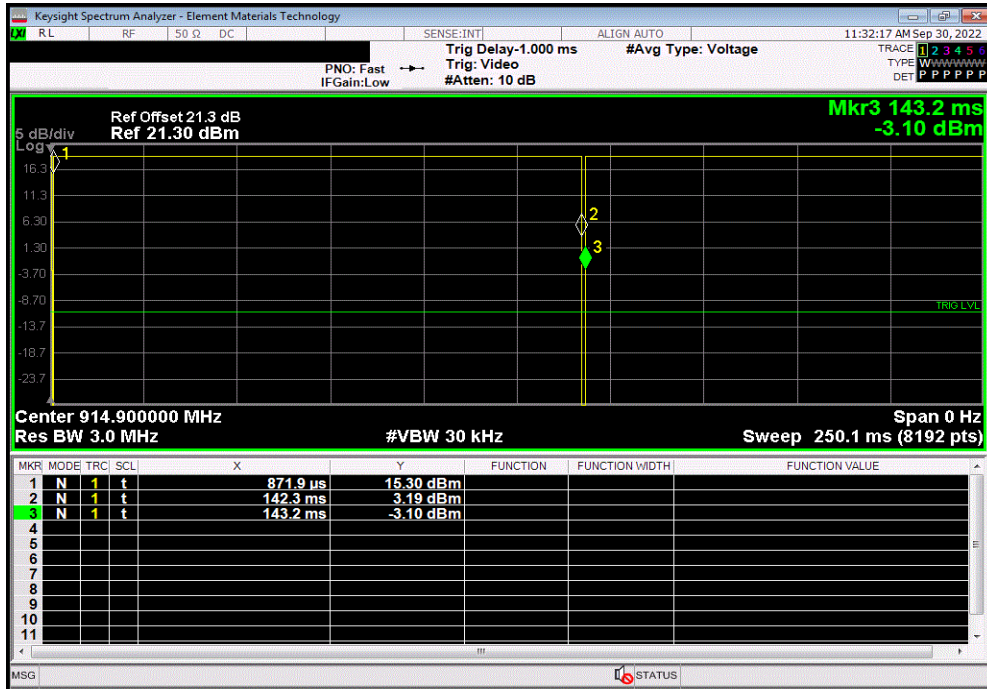


# DUTY CYCLE

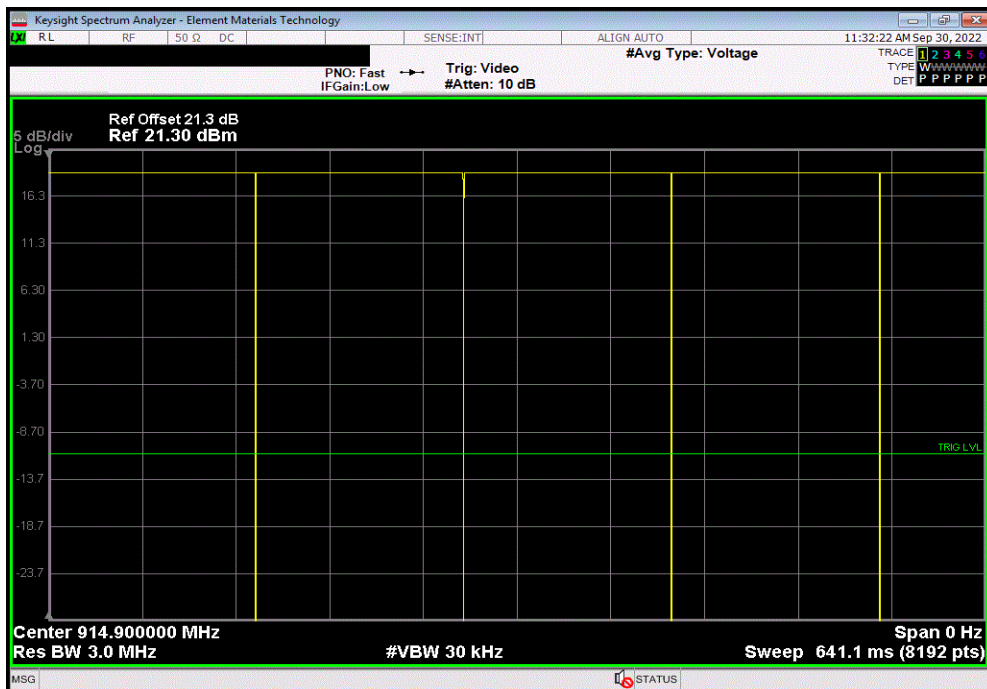


TbTx 2022.06.03.0 XbMz 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
141.402 ms	142.349 ms	1	99.3	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

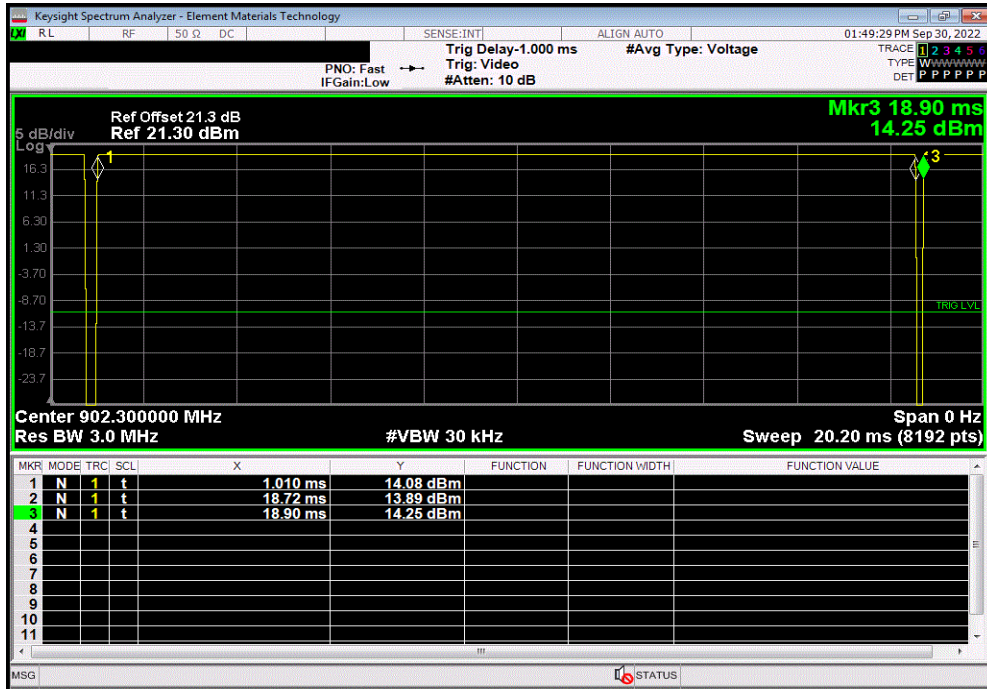


# DUTY CYCLE

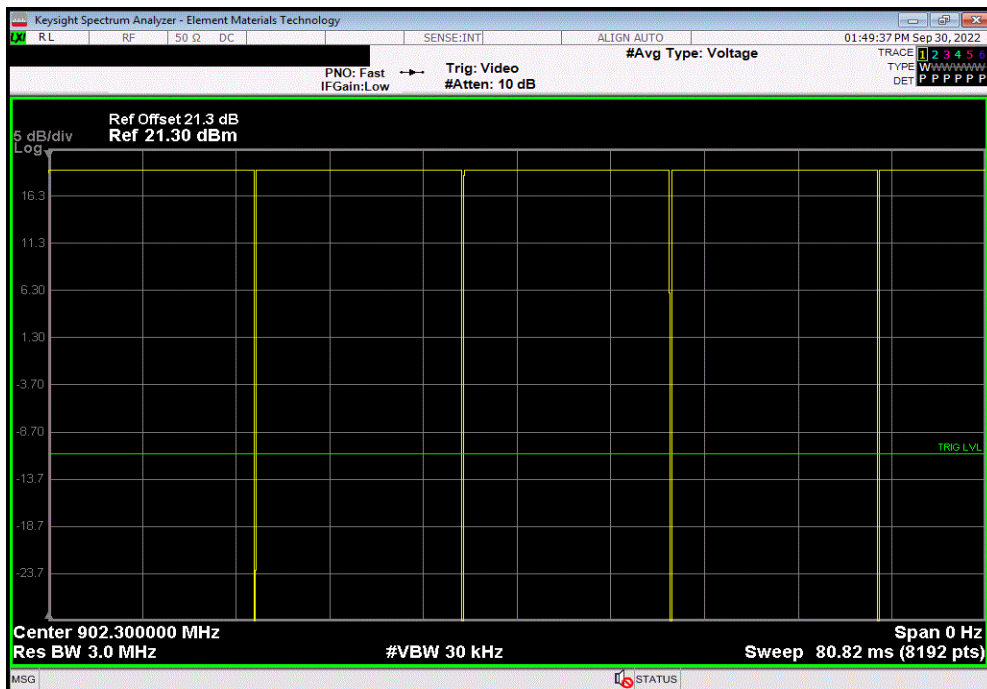


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
17.714 ms	17.887 ms	1	99	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

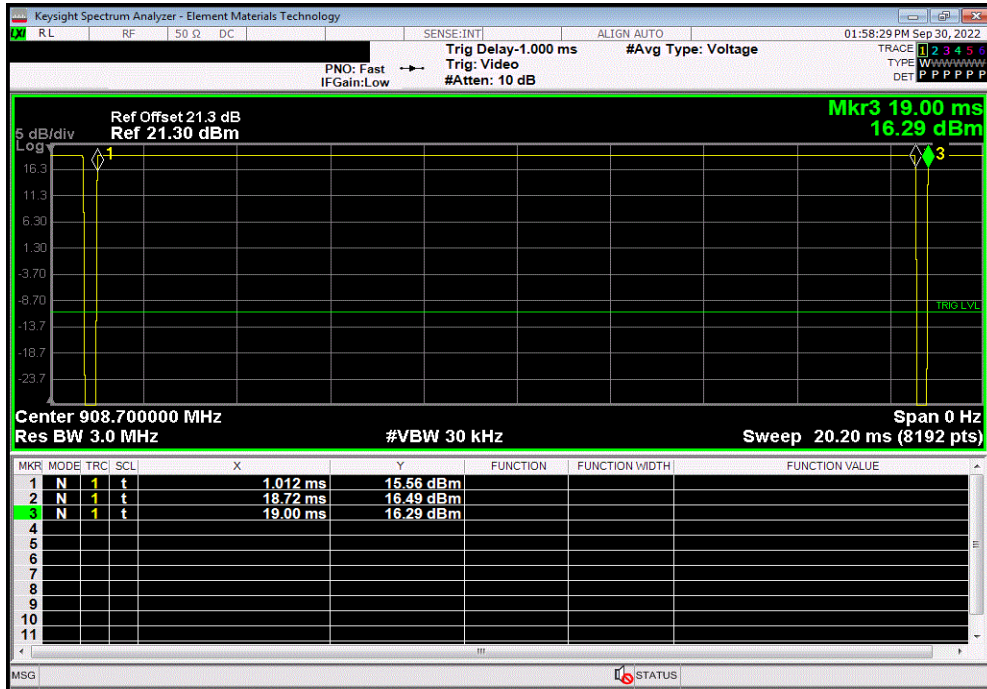


# DUTY CYCLE

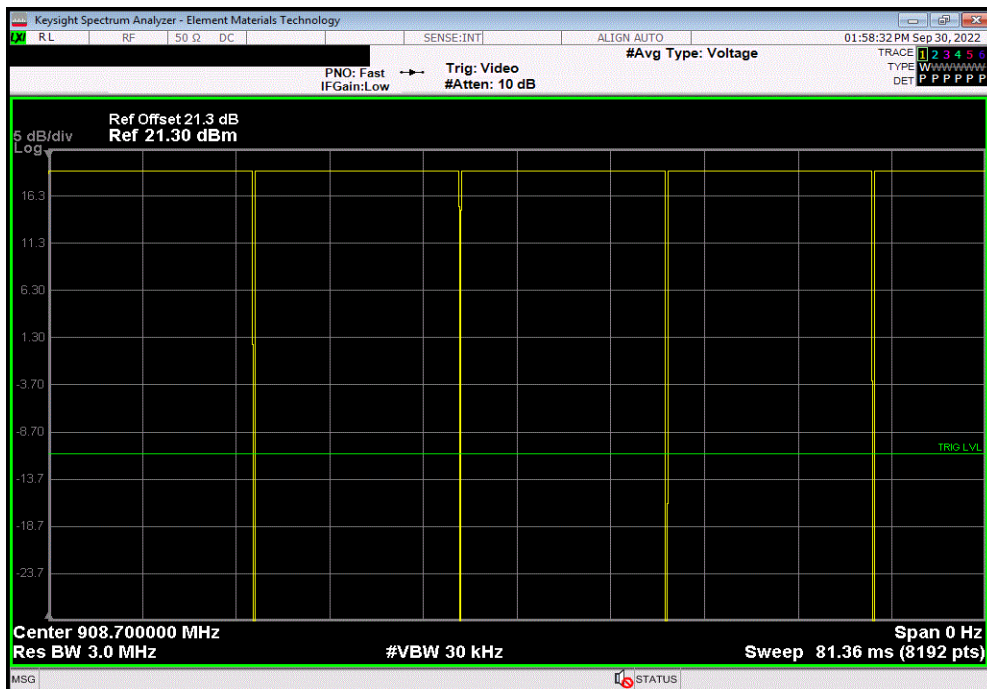


TbTx 2022.06.03.0 XbMz 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
17.707 ms	17.983 ms	1	98.5	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



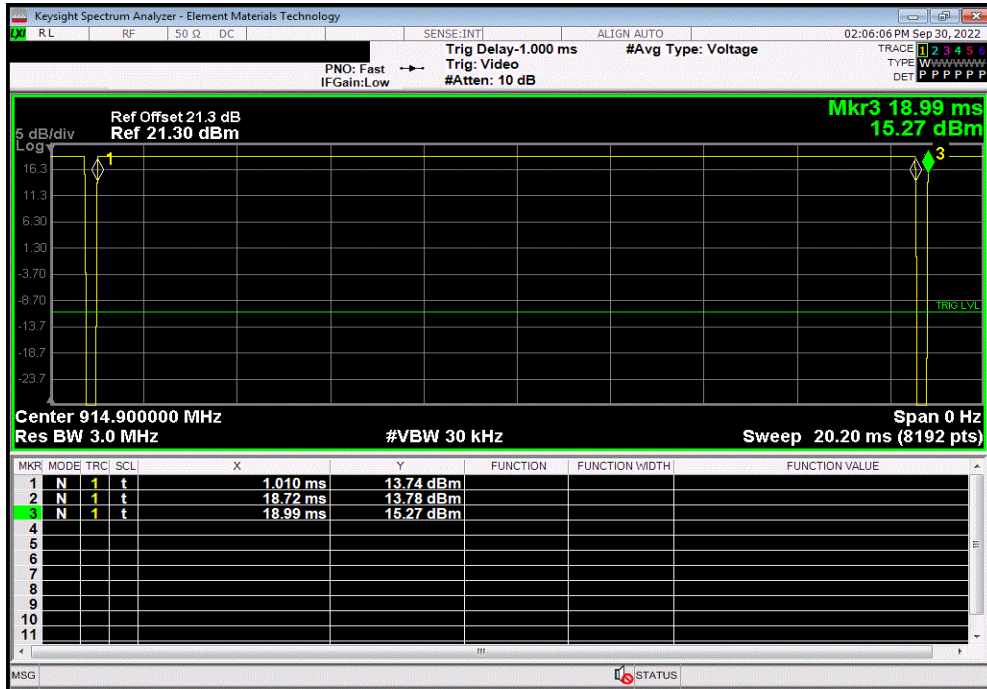


# DUTY CYCLE

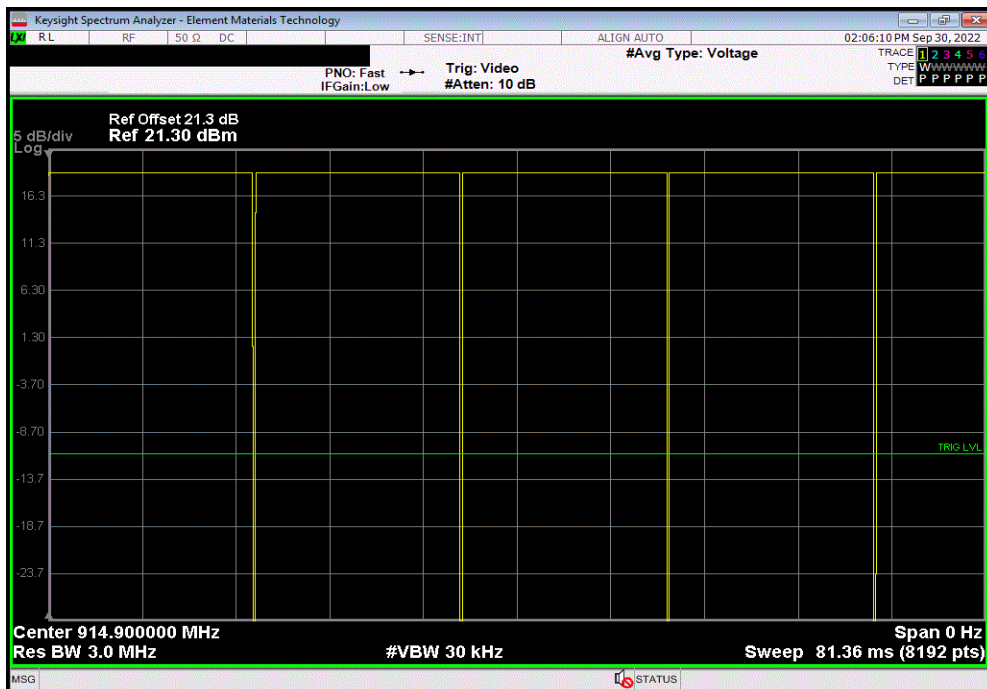


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
17.715 ms	17.983 ms	1	98.5	N/A	N/A	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



# CARRIER FREQUENCY SEPERATION



XMI 2022.12.28.0

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
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2022-12-02	2023-12-02
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02

## TEST DESCRIPTION


The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The channel carrier frequencies in the 902-928 MHz band must be separated by 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. 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 SEPERATION



XMit 2022.12.28.0

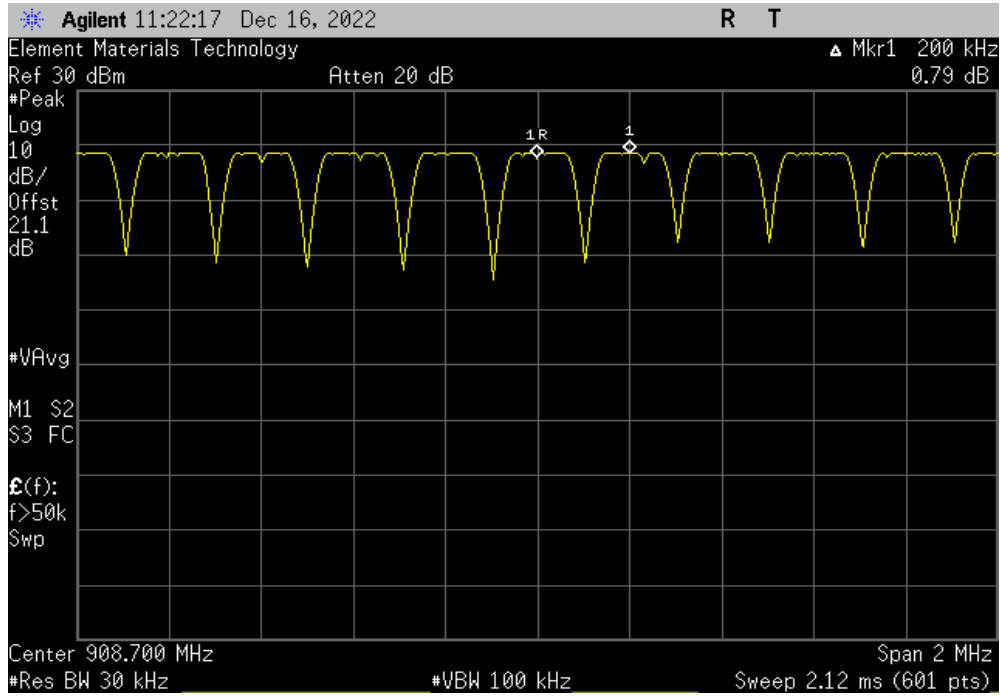
EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594549		Date: 12/16/22	
Customer: Onity Inc.		Temperature: 19.7°C	
Attendees: Ali Elmi		Humidity: 33.6%	
Project: None		Barometric Pres.: 1022 mbar	
Tested by: Jeff Alcoke		Power: Battery	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2020		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable, and manufacturers SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	5	Signature 	
		Value	Limit
Hopping Mode			Result
LoRa, 125 kHz BW			
Ch. 32, 908.7 MHz		200 kHz	≥ 124.7 kHz
			Pass

# CARRIER FREQUENCY SEPERATION



XMI 2022.12.28.0

Hopping Mode, LoRa, 125 kHz BW, Ch. 32, 908.7 MHz			
	Value	Limit	Result
	200 kHz	≥ 124.7 kHz	Pass





# NUMBER OF HOPPING FREQUENCIES

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5182B	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	2022-03-14	2023-03-14
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.


Hybrid radios do not have a minimum number of hopping channels. Measurements collected for radio characterization.

The number of hopping frequencies was measured across the authorized band. The hopping function of the EUT was enabled.

# NUMBER OF HOPPING FREQUENCIES



XMI 2022.02.07.0

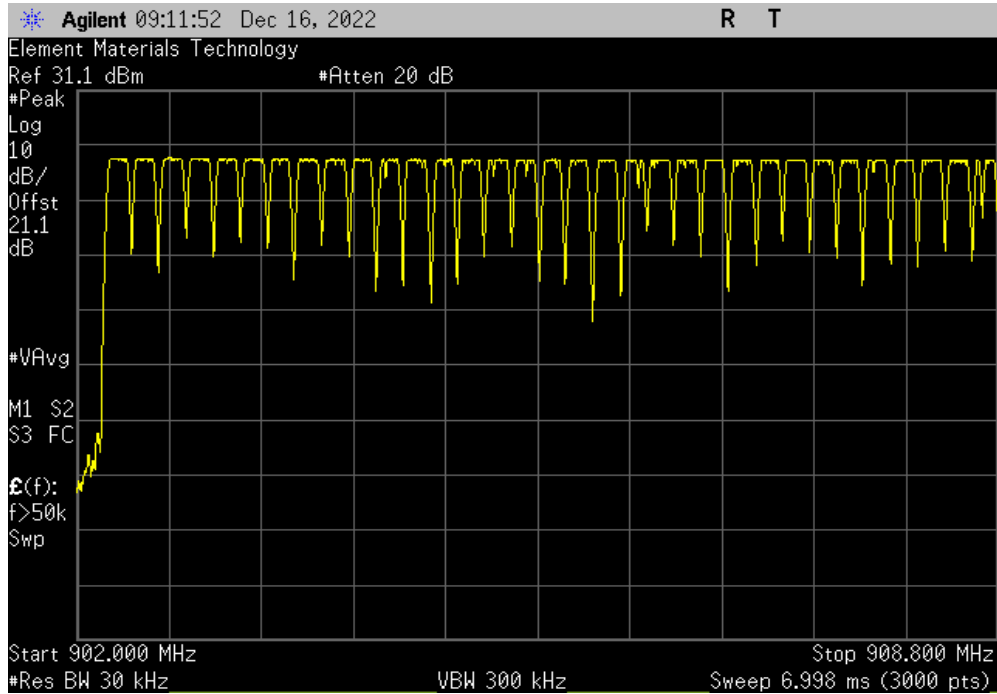
EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594549		Date: 16-Dec-22	
Customer: Onity Inc.		Temperature: 19.6 °C	
Attendees: Ali Elmi		Humidity: 31.7% RH	
Project: None		Barometric Pres.: 1031 mbar	
Tested by: Jeff Alcock		Power: Battery	
Job Site: EV06			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable, and manufacturers SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	5	Signature 	
		Number of Channels	Limit
Hopping Mode	LoRa, 125 kHz BW		Result
	902 - 908.8 MHz	33	N/A
	908.8 - 915 MHz	31	N/A
	Total number of hopping frequencies	64	N/A

# NUMBER OF HOPPING FREQUENCIES

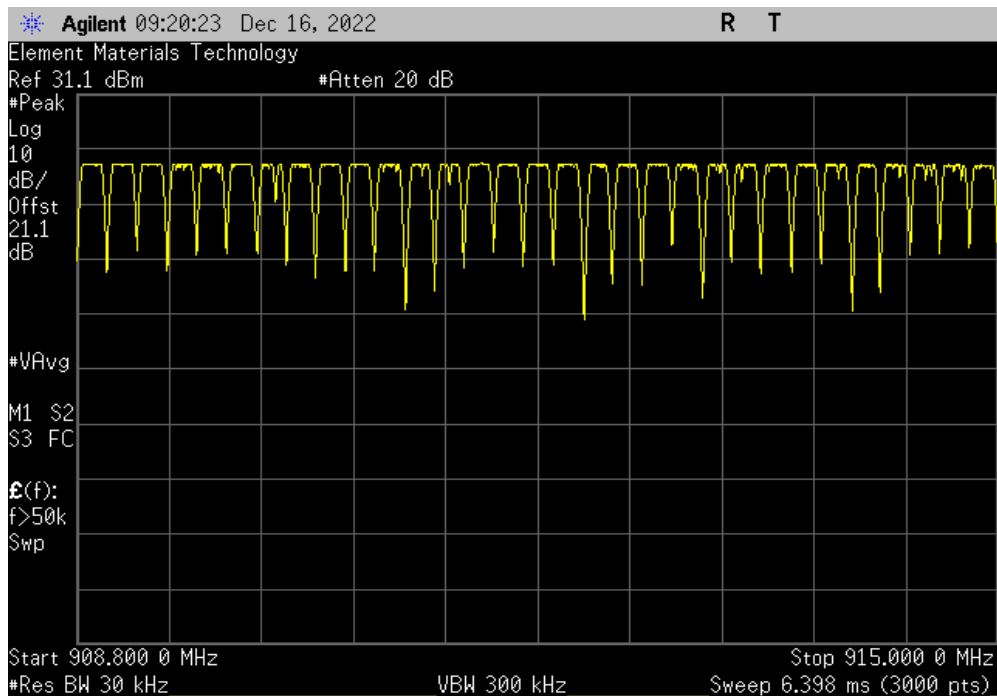


XMI 2022.02.07.0

Hopping Mode, LoRa, 125 kHz BW, 902 - 908.8 MHz				Number of Channels	Limit	Result
				33	N/A	N/A



Hopping Mode, LoRa, 125 kHz BW, 908.8 - 915 MHz				Number of Channels	Limit	Result
				31	N/A	N/A



# DWELL TIME



XMit 2023.02.14.0

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	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	2022-03-14	2023-03-14
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

## 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 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 the EUT, the hopping sequence is limited to an 8 channel set. The limit would be 8 Channels \* 400mS = 3.2 Seconds.



# DWELL TIME



XMtr 2023.02.14.0

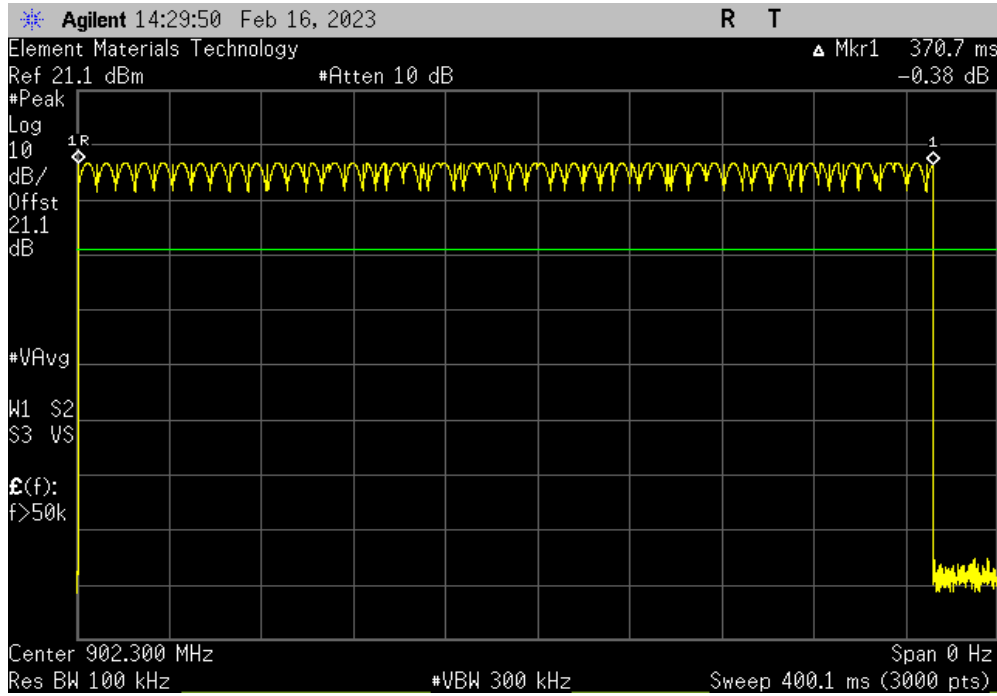
EUT:	Passport	Work Order:	ONIT0091
Serial Number:	44594549	Date:	02/16/23
Customer:	Onity Inc.	Temperature:	17.7°C
Attendees:	Ali Elmi	Humidity:	43.4%
Project:	None	Barometric Pres.:	1009 mbar
Tested by:	Jeff Alcoke	Power:	Battery
		Job Site:	EV06
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable, and manufacturers SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	ONIT0091-5	Signature	
		Pulse Width (mS)	Number of Pulses (#)
		Dwell Time (mS)	Limit (mS)
			Result
Hopping Mode			
LoRa, 125 kHz BW			
SF 10			
Ch. 0, 902.3 MHz			
	Pulse Width	370.7	N/A
	Dwell Time	370.7	1
		N/A	N/A
		N/A	≤ 400
		N/A	N/A
		N/A	Pass
SF 7			
Ch. 0, 902.3 MHz			
	Pulse Width	61.84	N/A
	Dwell Time	61.84	1
		N/A	N/A
		N/A	≤ 400
		N/A	N/A
		N/A	Pass

# DWELL TIME

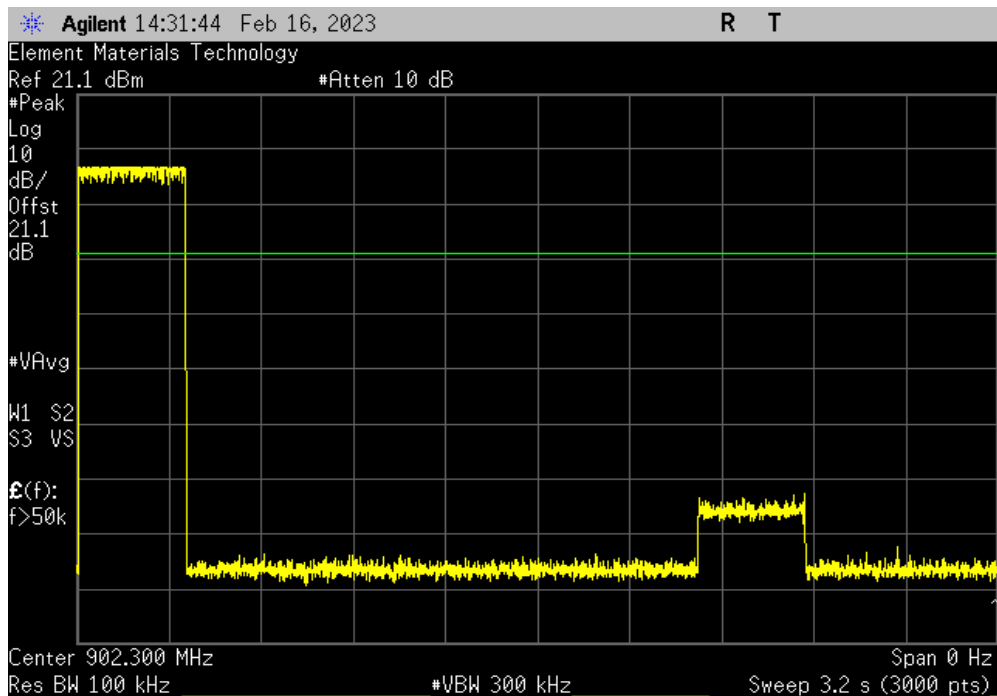


XMI 2023.02.14.0

Hopping Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz, Pulse Width						
	Pulse Width (mS)	Number of Pulses (#)	Dwell Time (mS)	Limit (mS)	Result	
	370.7	N/A	N/A	N/A	N/A	



Hopping Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz, Dwell Time						
	Pulse Width (mS)	Number of Pulses (#)	Dwell Time (mS)	Limit (mS)	Result	
	370.7	1	370.7	≤ 400	Pass	

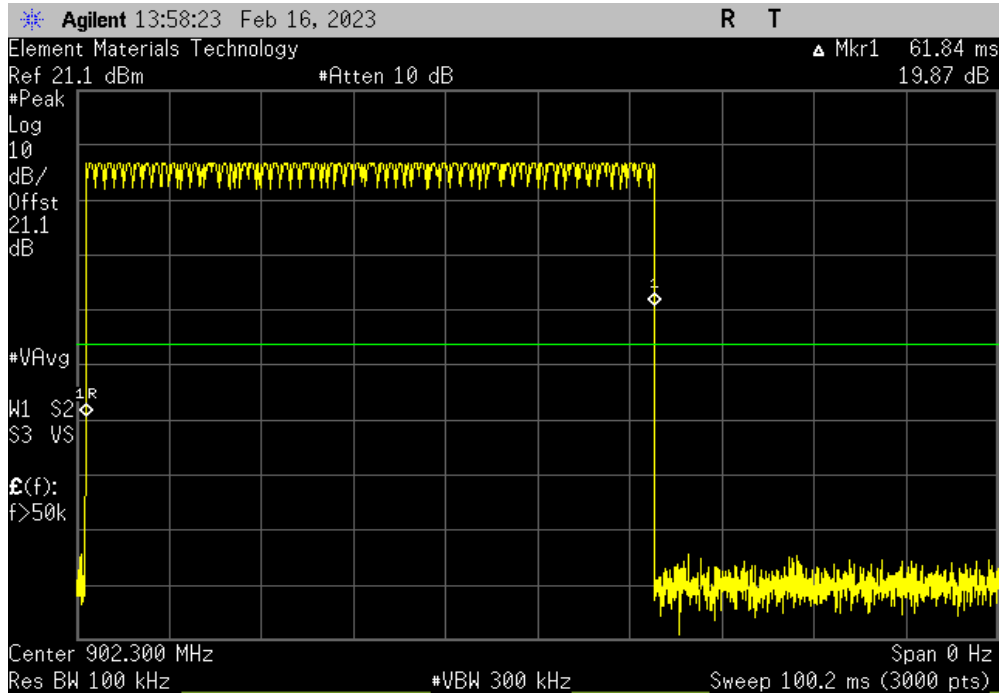


# DWELL TIME

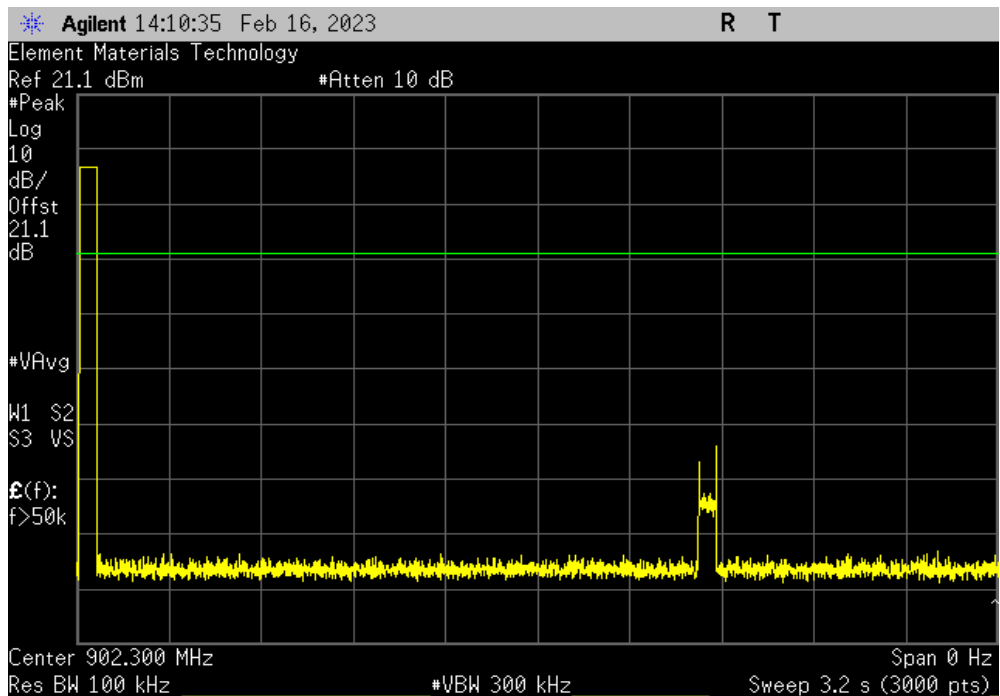


XMI 2023.02.14.0

Hopping Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz, Pulse Width						
	Pulse Width (mS)	Number of Pulses (#)	Dwell Time (mS)	Limit (mS)	Result	
	61.84	N/A	N/A	N/A	N/A	



Hopping Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz, Dwell Time						
	Pulse Width (mS)	Number of Pulses (#)	Dwell Time (mS)	Limit (mS)	Result	
	61.84	1	61.84	≤ 400	Pass	



# OUTPUT POWER



XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	None	10m Test Distance Cable	EVL	2021-11-30	2022-11-30
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding  $[10 \log (1 / D)]$ , where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

# OUTPUT POWER



TbTx 2022.06.03.0 XMR 2022.02.07.0

EUT: Passport	Work Order: ONIT0091
Serial Number: 44594524	Date: 30-Sep-22
Customer: Onity Inc.	Temperature: 21.9 °C
Attendees: Ali Elmi	Humidity: 48.3% RH
Project: None	Barometric Pres.: 1020 mbar
Tested by: Jeff Alcock	Power: Battery
	Job Site: EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2022	ANSI C63.10:2013

**COMMENTS**  
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable and manufacturers provided SMA patch cable.

**DEVIATIONS FROM TEST STANDARD**

None

Configuration #	3	Signature	
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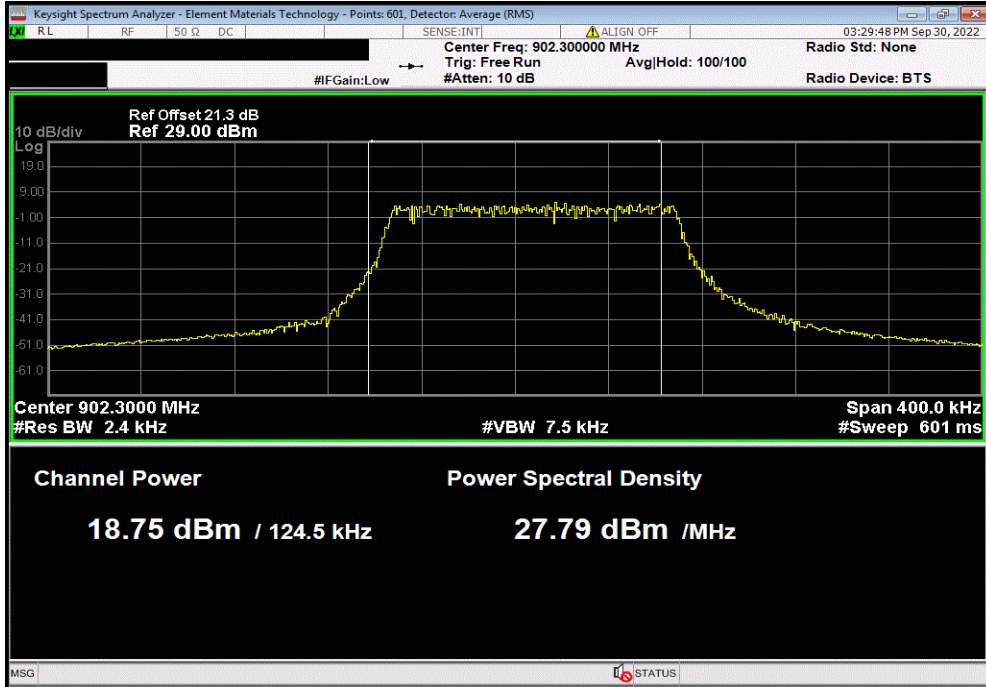
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
Single Channel Mode						
LoRa, 125 kHz BW						
SF 10						
	Ch. 0, 902.3 MHz	18.75	0	18.75	30	Pass
	Ch. 32, 908.7 MHz	18.64	0	18.64	30	Pass
	Ch. 63, 914.9 MHz	18.43	0	18.43	30	Pass
SF 7						
	Ch. 0, 902.3 MHz	18.47	0	18.47	30	Pass
	Ch. 32, 908.7 MHz	18.36	0	18.36	30	Pass
	Ch. 63, 914.9 MHz	18.24	0	18.24	30	Pass

# OUTPUT POWER

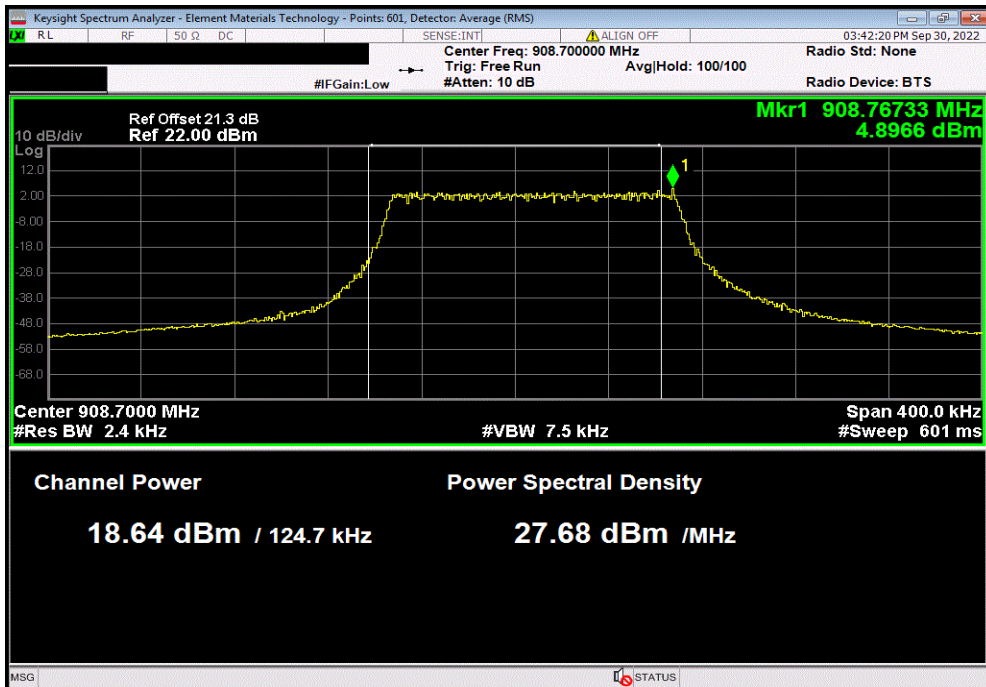


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result		
18.75	0	18.75	30	Pass		



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result		
18.64	0	18.64	30	Pass		

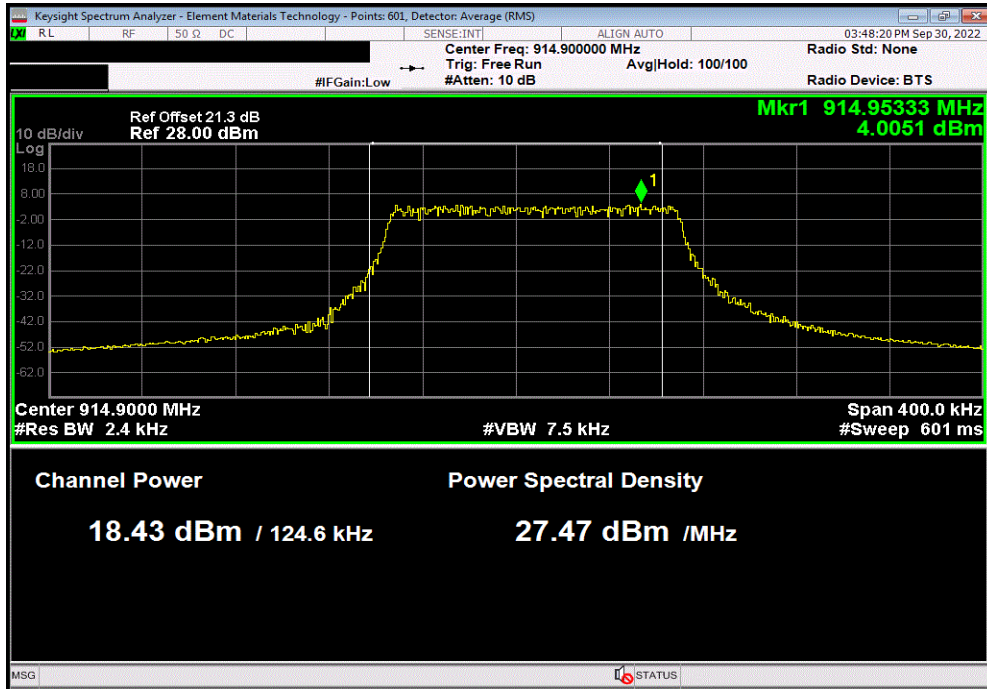


# OUTPUT POWER

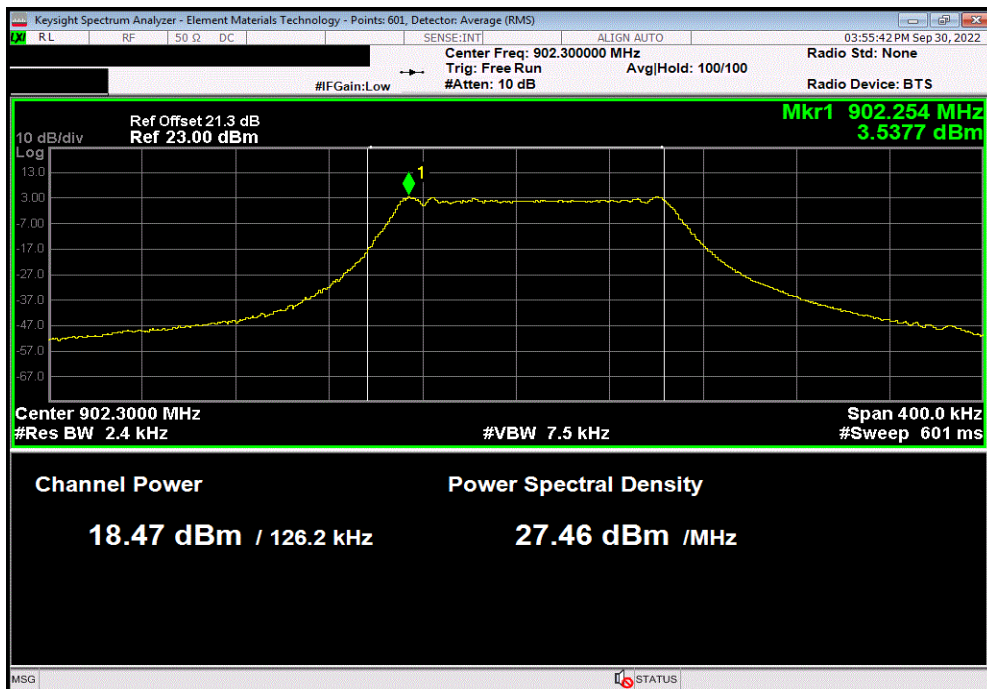


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	18.43	0	18.43	30	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	18.47	0	18.47	30	Pass	

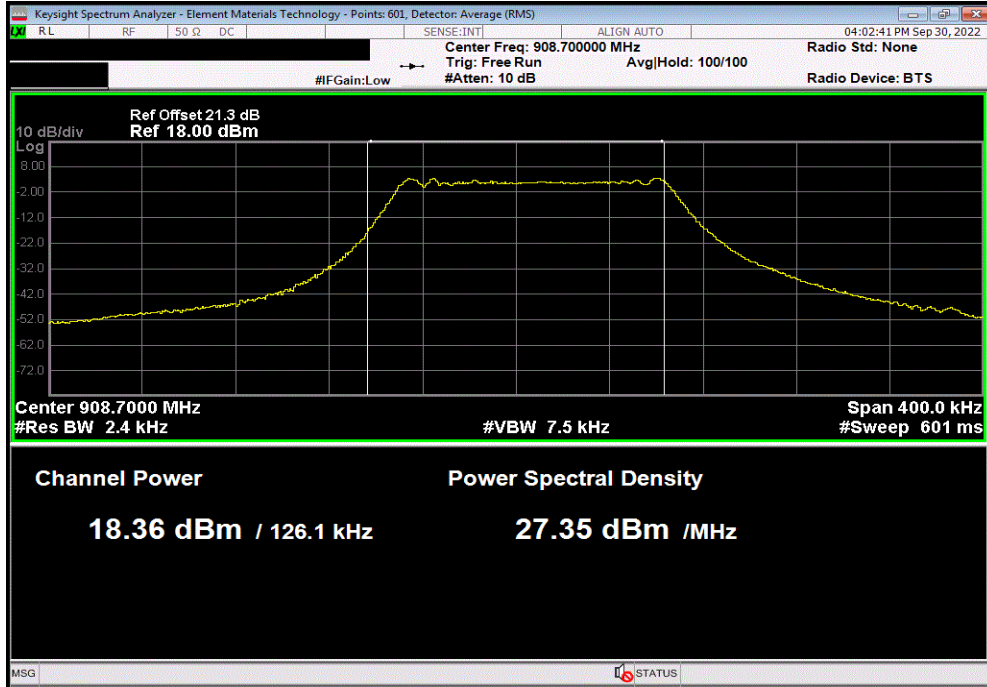


# OUTPUT POWER

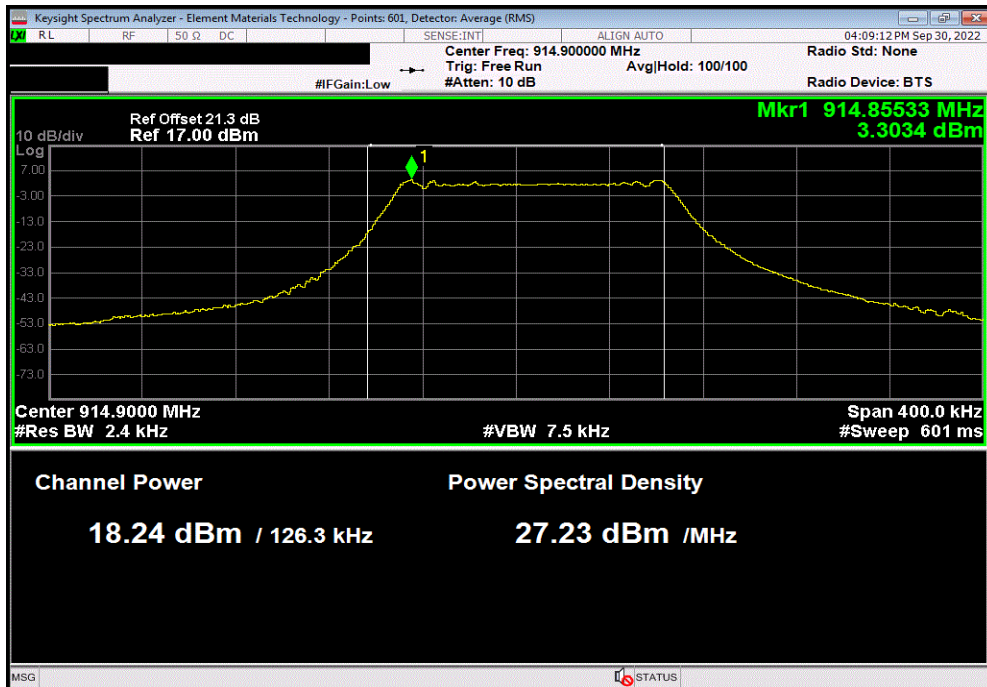


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result		
18.36	0	18.36	30	Pass		



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result		
18.24	0	18.24	30	Pass		





# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding  $[10 \log (1 / D)]$ , where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

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

# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



Tel: 2022.06.03.0 XMI 2022.02.07.0

EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594524		Date: 30-Sep-22	
Customer: Onity Inc.		Temperature: 21.9 °C	
Attendees: Ali Elmi		Humidity: 48.6% RH	
Project: None		Barometric Pres.: 1020 mbar	
Tested by: Jeff Alcock		Job Site: EV06	
Power: Battery			
<b>TEST SPECIFICATIONS</b>			
FCC 15.247:2022		Test Method: ANSI C63.10:2013	
<b>COMMENTS</b>			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable and manufacturers provided SMA patch cable.			
<b>DEVIATIONS FROM TEST STANDARD</b>			
None			
Configuration #	3	Signature	
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)
		Antenna Gain (dBi)	EIRP (dBm)
		EIRP Limit (dBm)	Result

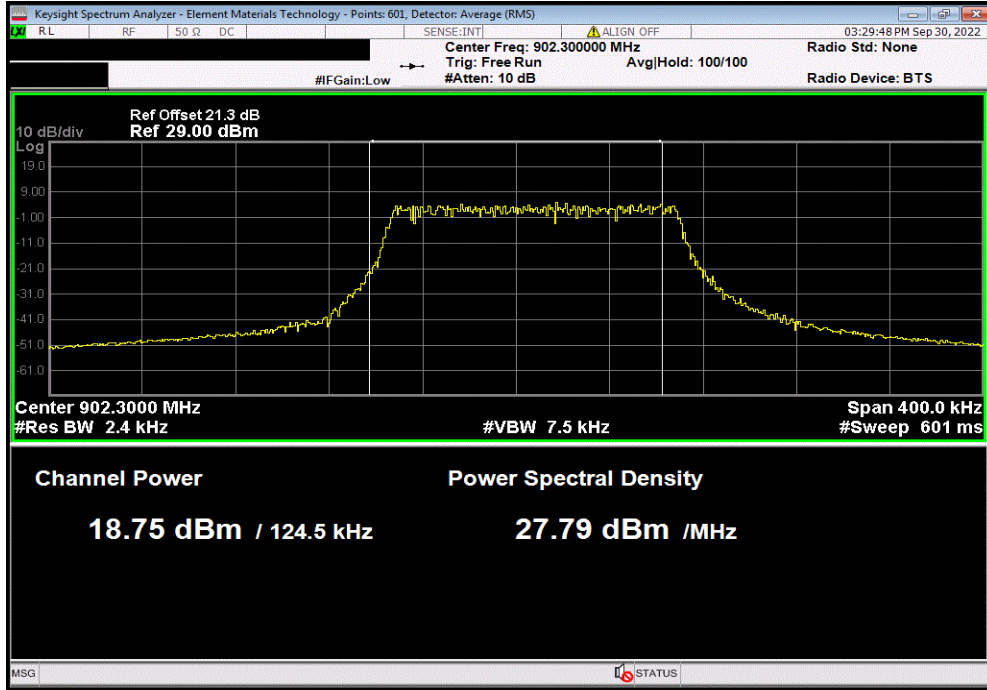
Single Channel Mode							
LoRa, 125 kHz BW							
SF 10							
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
	Ch. 0, 902.3 MHz	18.75	0	0.75	19.5	36	Pass
	Ch. 32, 908.7 MHz	18.64	0	0.75	19.39	36	Pass
	Ch. 63, 914.9 MHz	18.43	0	0.75	19.18	36	Pass
SF 7							
	Ch. 0, 902.3 MHz	18.47	0	0.75	19.22	36	Pass
	Ch. 32, 908.7 MHz	18.36	0	0.75	19.11	36	Pass
	Ch. 63, 914.9 MHz	18.24	0	0.75	18.99	36	Pass

# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

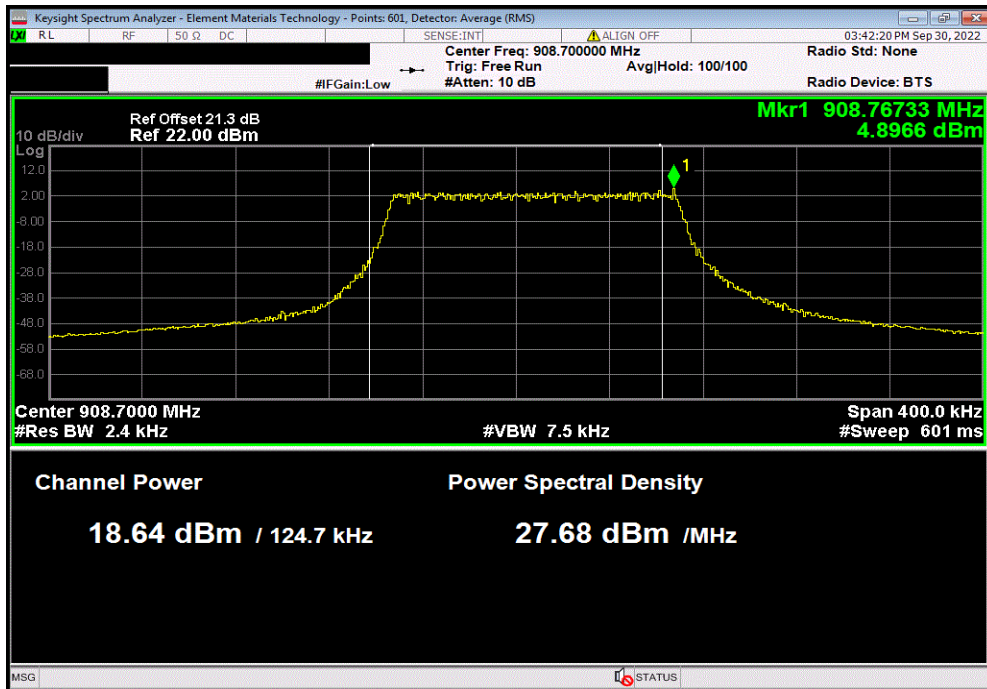


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
18.75	0	0.75	19.5	36	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
18.64	0	0.75	19.39	36	Pass	

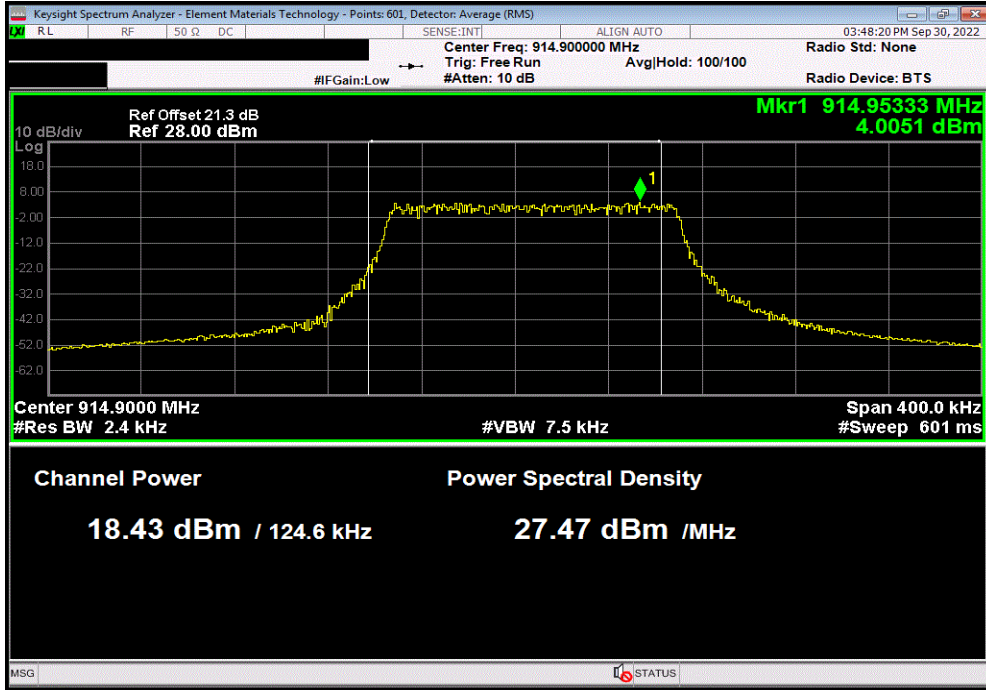


# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

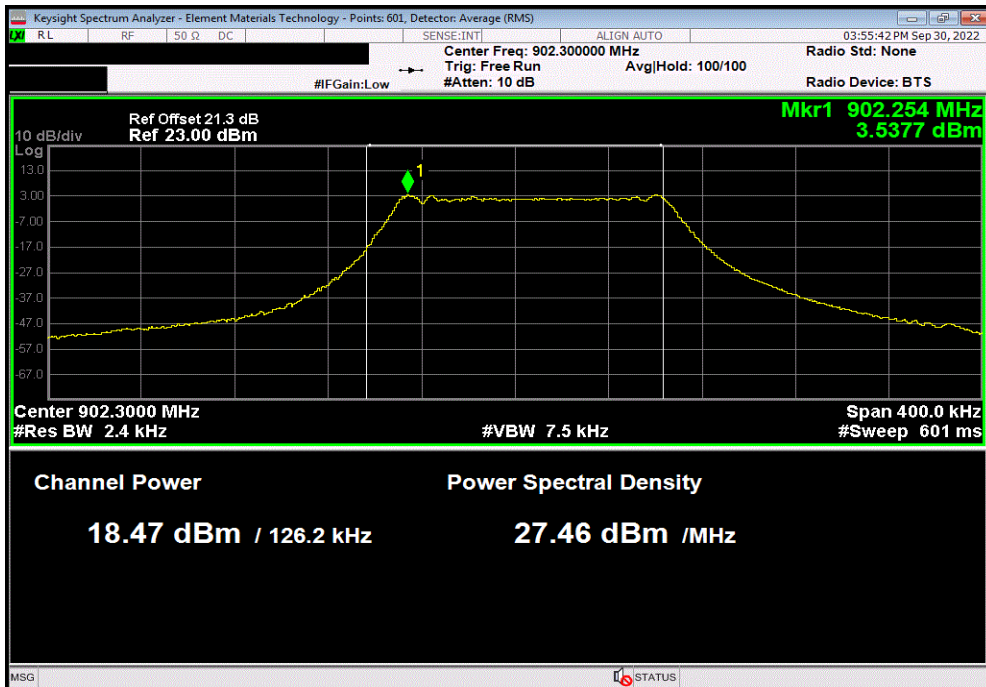


TbTx 2022.06.03.0 XMi 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
18.43	0	0.75	19.18	36	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
18.47	0	0.75	19.22	36	Pass	

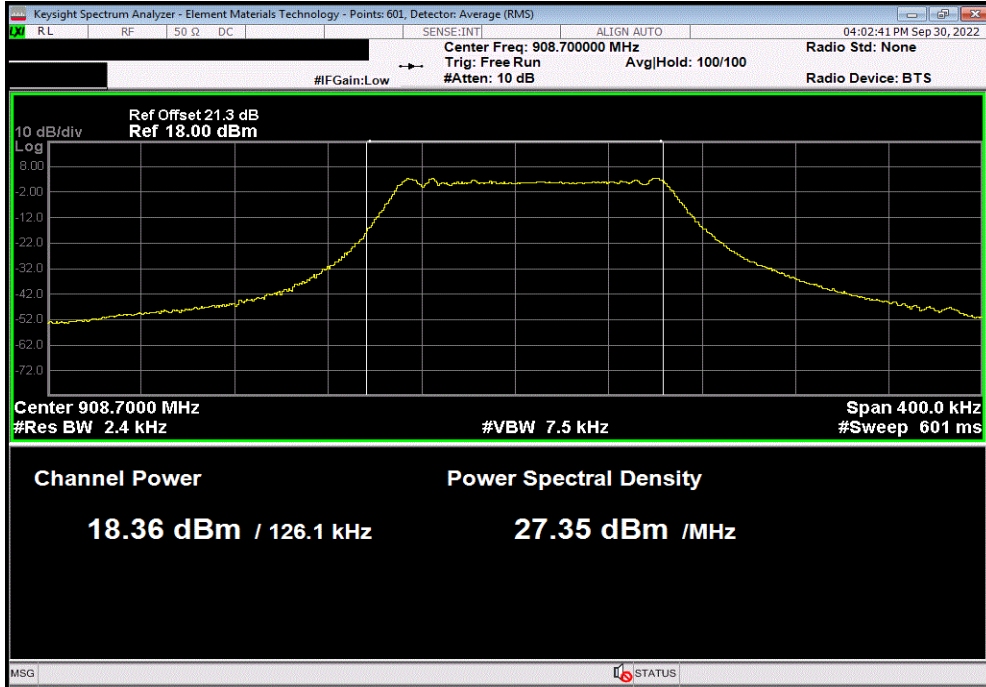


# EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

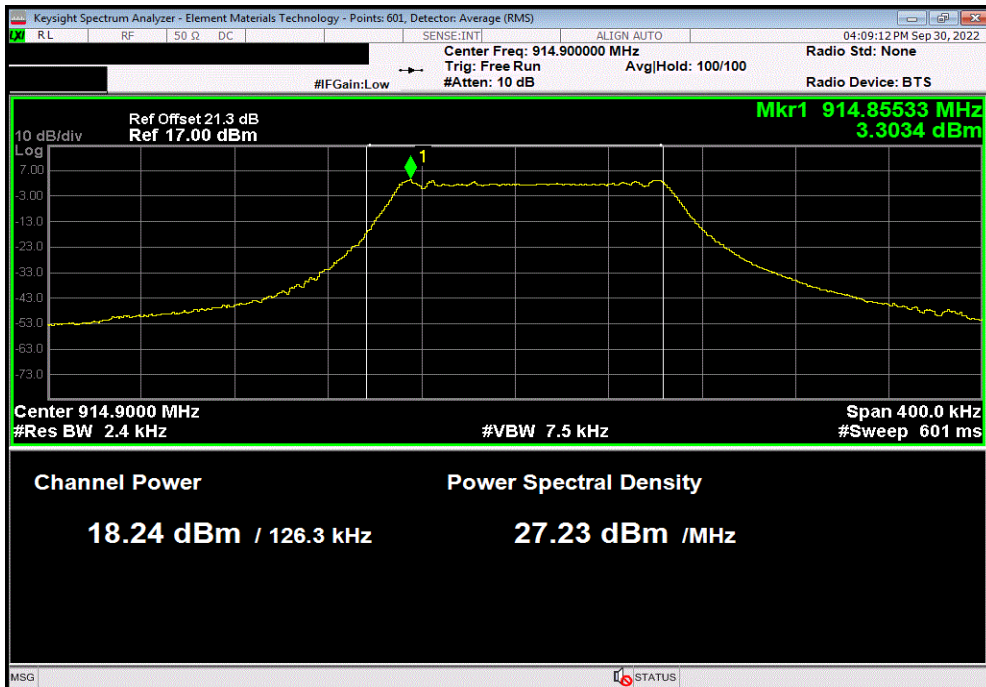


TbTx 2022.06.03.0 XMi 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
18.36	0	0.75	19.11	36	Pass	



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
18.24	0	0.75	18.99	36	Pass	



# BAND EDGE COMPLIANCE



XMit 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

## 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



TbTx 2022.06.03.0 XMt 2022.02.07.0

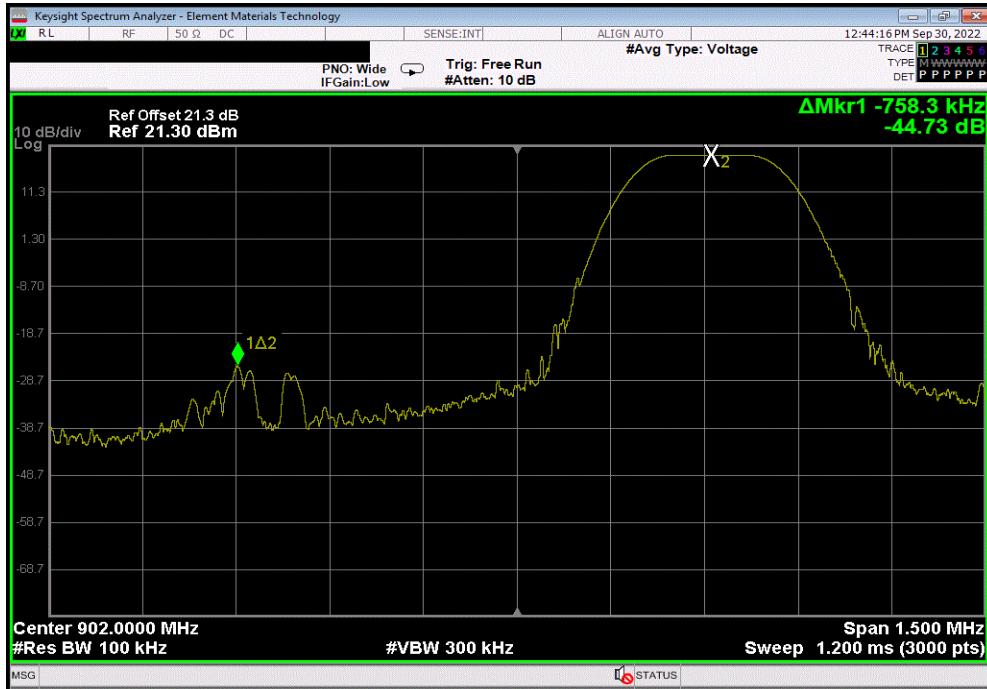
EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594524		Date: 30-Sep-22	
Customer: Onity Inc.		Temperature: 21.8 °C	
Attendees: Ali Elmi		Humidity: 48.6% RH	
Project: None		Barometric Pres.: 1021 mbar	
Tested by: Jeff Alcock		Power: Battery	Job Site: EV06
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable and manufacturers provided SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature	
		Value (dBc)	Limit ≤ (dBc) Result
Single Channel Mode			
LoRa, 125 kHz BW			
SF 10			
	Ch. 0, 902.3 MHz	-44.73	-30 Pass
	Ch. 63, 914.9 MHz	-74.72	-30 Pass
SF 7			
	Ch. 0, 902.3 MHz	-44.3	-30 Pass
	Ch. 63, 914.9 MHz	-75.18	-30 Pass

# BAND EDGE COMPLIANCE

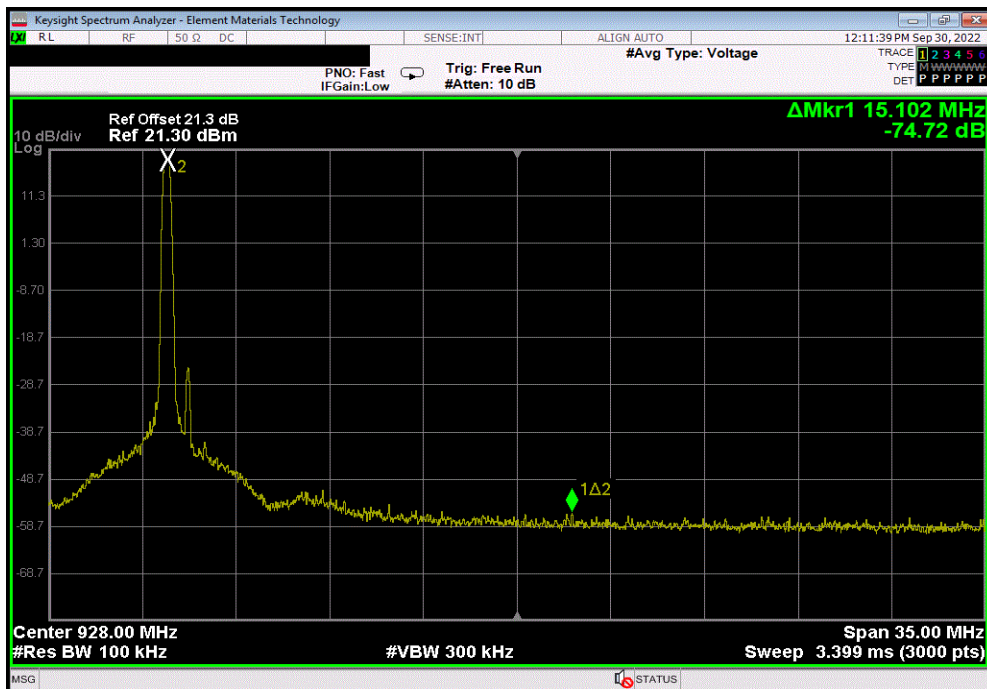


TbTx 2022.06.03.0 XMi 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-44.73	-30	Pass			



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-74.72	-30	Pass			



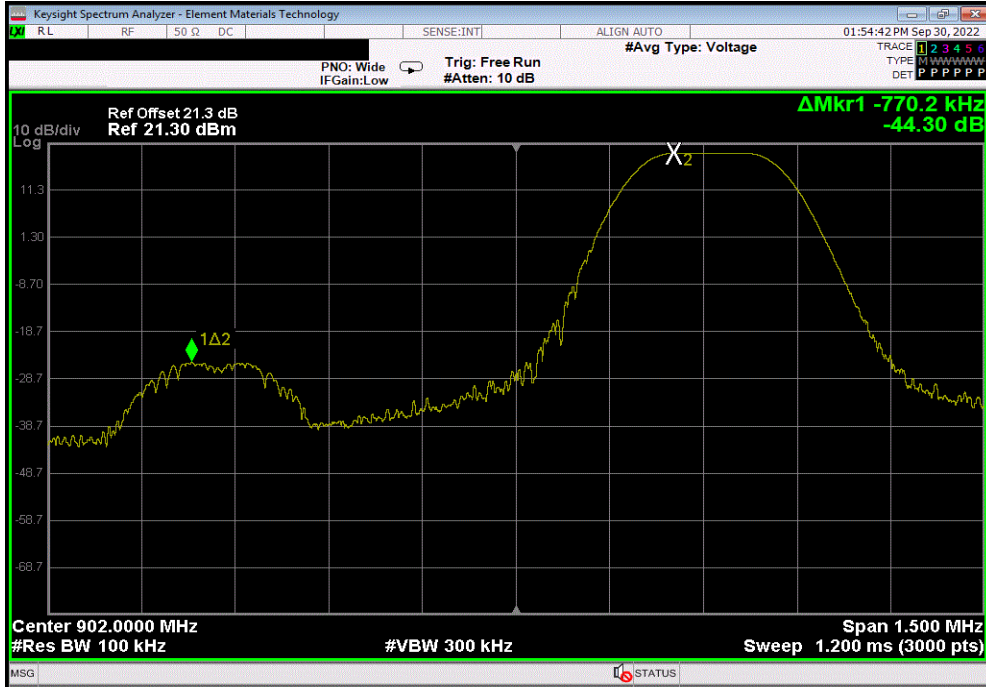


# BAND EDGE COMPLIANCE

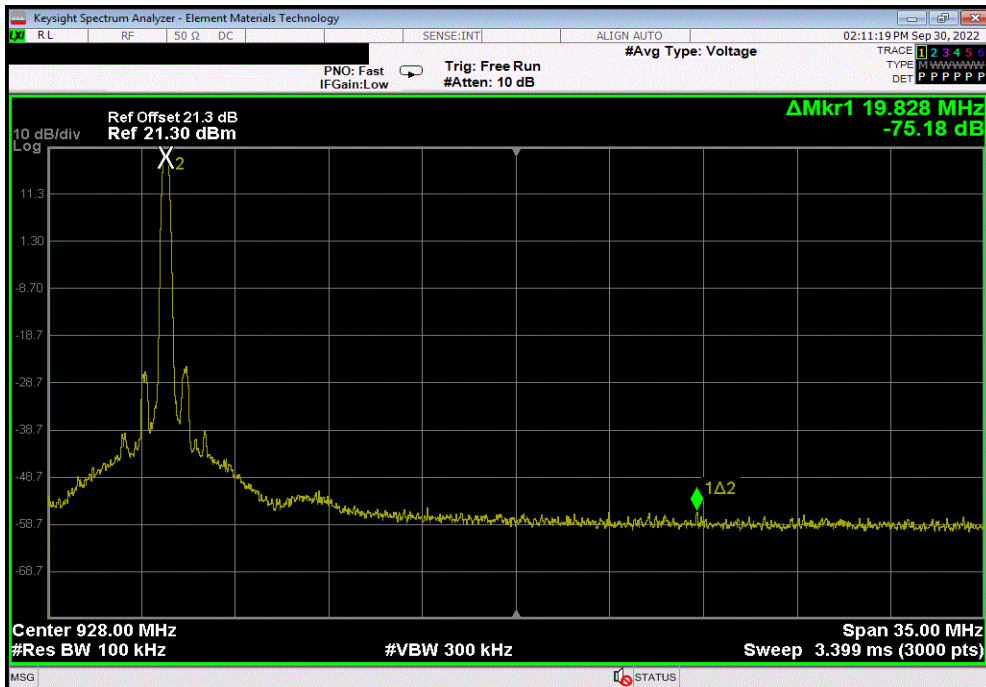


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-44.3	-30	Pass			



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-75.18	-30	Pass			



# BAND EDGE COMPLIANCE - HOPPING MODE



XMit 2023.02.14.0

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	TFU	2022-12-02	2024-12-02
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	2022-03-14	2023-03-14
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2022-01-26	2023-01-26
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAW	2023-02-06	2024-02-06

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to its normal pseudo-random hopping sequence. The EUT was transmitting at the data rate(s) listed in the datasheet.

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

# BAND EDGE COMPLIANCE - HOPPING MODE



XMR 2023.02.14.0

EUT: Passport	Work Order: ONIT0091
Serial Number: None	Date: 02/16/23
Customer: Onity Inc.	Temperature: 18.8°C
Attendees: Ali Elmi	Humidity: 41.6%
Project: None	Barometric Pres.: 1008 mbar
Tested by: Jeff Alcock	Power: Battery
Job Site: EV06	
<b>TEST SPECIFICATIONS</b>	
<b>Test Method</b>	
FCC 15.247:2022	ANSI C63.10:2013
<b>COMMENTS</b>	
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable, and manufacturers SMA patch cable.	
<b>DEVIATIONS FROM TEST STANDARD</b>	
None	
Configuration #	ONIT0091-5
	Signature

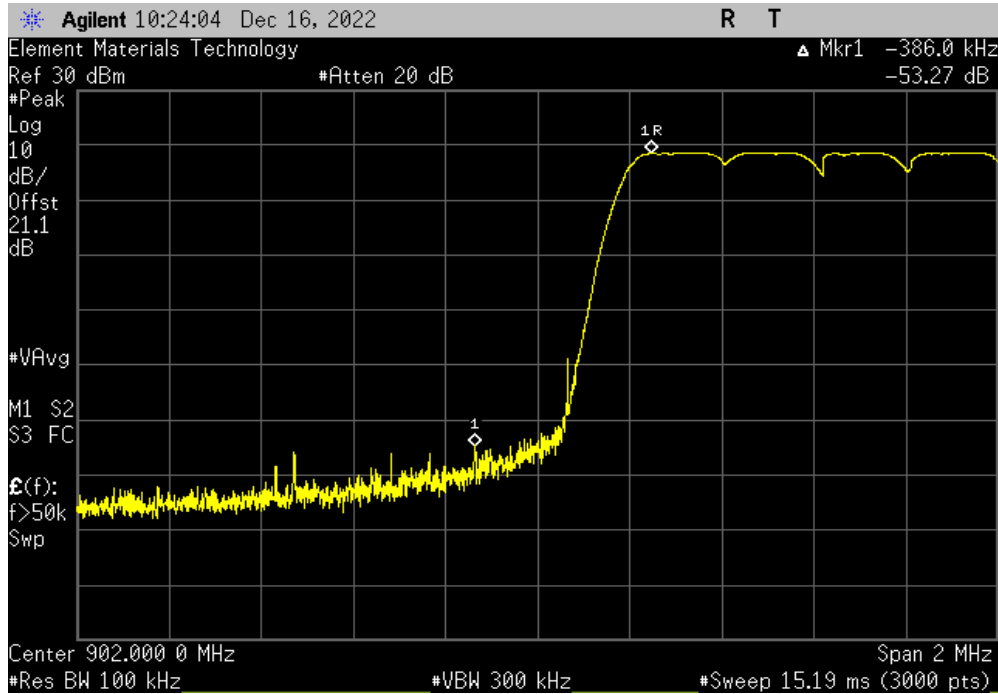
		Value (dBc)	Limit (dBc)	Result
Hopping Mode				
LoRa, 125 kHz BW				
SF 10				
	Ch. 0, 902.3	-53.3	≤ -30	Pass
	Ch. 63, 914.9	-68.3	≤ -30	Pass
SF 7				
	Ch. 0, 902.3	-53.6	≤ -30	Pass
	Ch. 63, 914.9	-68.2	≤ -30	Pass

# BAND EDGE COMPLIANCE - HOPPING MODE

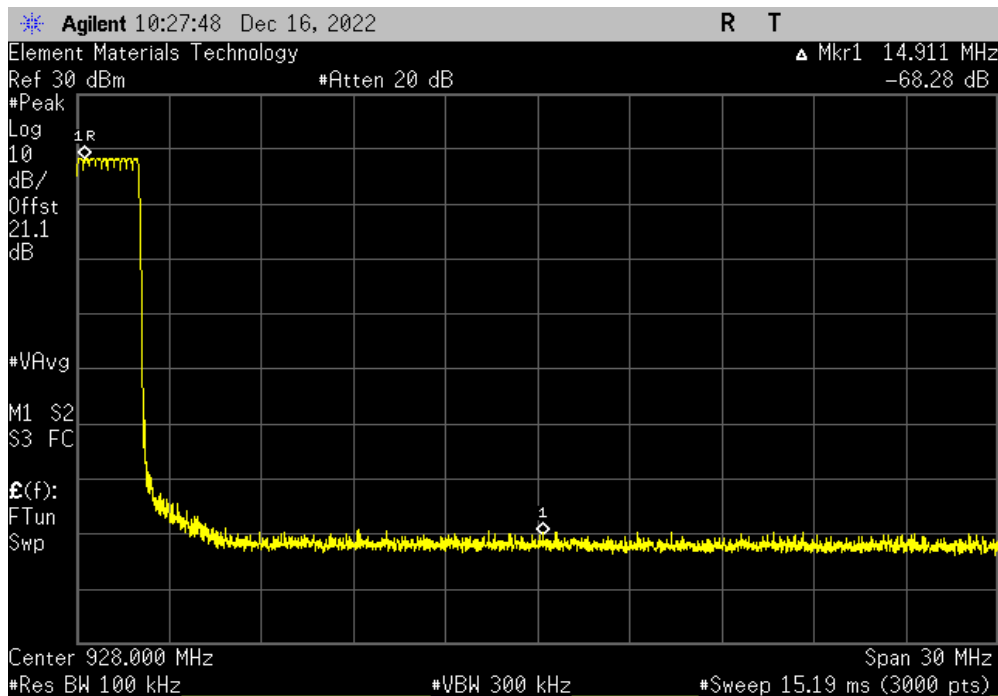


XMI 2023.02.14.0

Hopping Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3						
				Value (dBc)	Limit (dBc)	Result
				-53.3	≤ -30	Pass



Hopping Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9						
				Value (dBc)	Limit (dBc)	Result
				-68.3	≤ -30	Pass

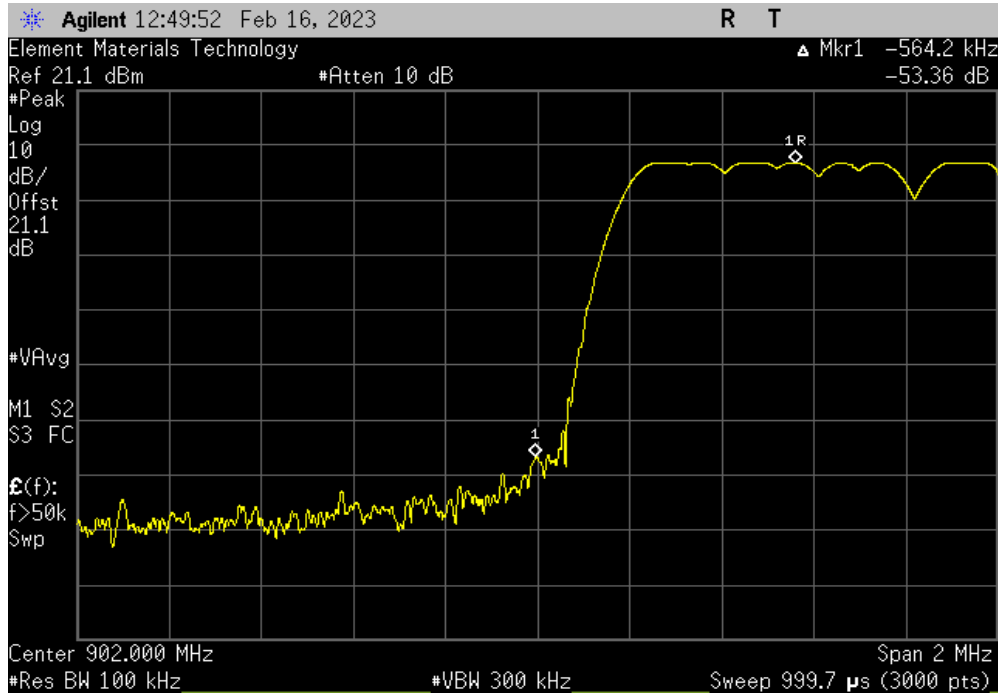


# BAND EDGE COMPLIANCE - HOPPING MODE

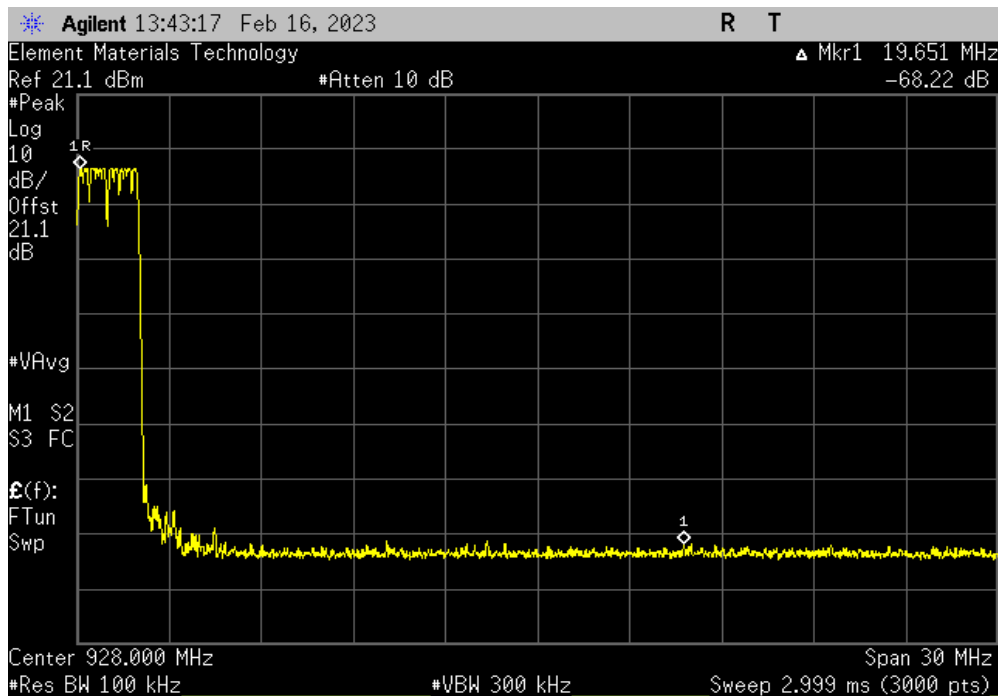


XMI 2023.02.14.0

Hopping Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3				Value (dBc)	Limit (dBc)	Result
				-53.6	≤ -30	Pass



Hopping Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9				Value (dBc)	Limit (dBc)	Result
				-68.2	≤ -30	Pass



# EMISSIONS BANDWIDTH



XMit 2022.12.28.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.


The 20 dB occupied bandwidth was measured with the EUT set to low, medium and high transmit frequencies in the band. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop mode. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

Per FCC KDB 558074 Section 10(b)(3), there is no requirement for hybrid systems to comply with the 500 kHz minimum 6dB bandwidth for DTS devices.

# EMISSIONS BANDWIDTH



TbtTx 2022.06.03.0 XMt 2022.12.28.0

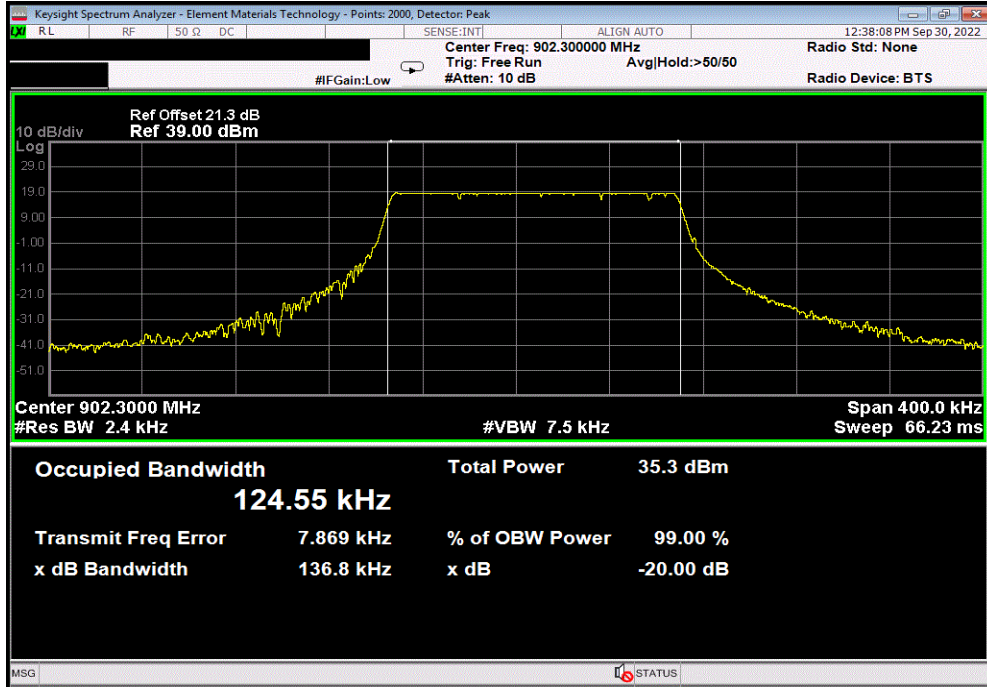
EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594524		Date: 30-Sep-22	
Customer: Onity Inc.		Temperature: 21.8°C	
Attendees: Ali Elmi		Humidity: 48.6%	
Project: None		Barometric Pres.: 1021 mbar	
Tested by: Jeff Alcock		Power: Battery	Job Site: EV06
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable, and manufacturers SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature 	
		Value	Limit
Single Channel Mode			
	LoRa, 125 kHz BW		
	SF 10		
	Ch. 0, 902.3 MHz	136.76 kHz	N/A
	Ch. 32, 908.7 MHz	137.71 kHz	N/A
	Ch. 63, 914.9 MHz	136.844 kHz	N/A
	SF 7		
	Ch. 0, 902.3 MHz	138.307 kHz	N/A
	Ch. 32, 908.7 MHz	139.461 kHz	N/A
	Ch. 63, 914.9 MHz	138.452 kHz	N/A
			Result
			Pass
			Pass
			Pass

# EMISSIONS BANDWIDTH

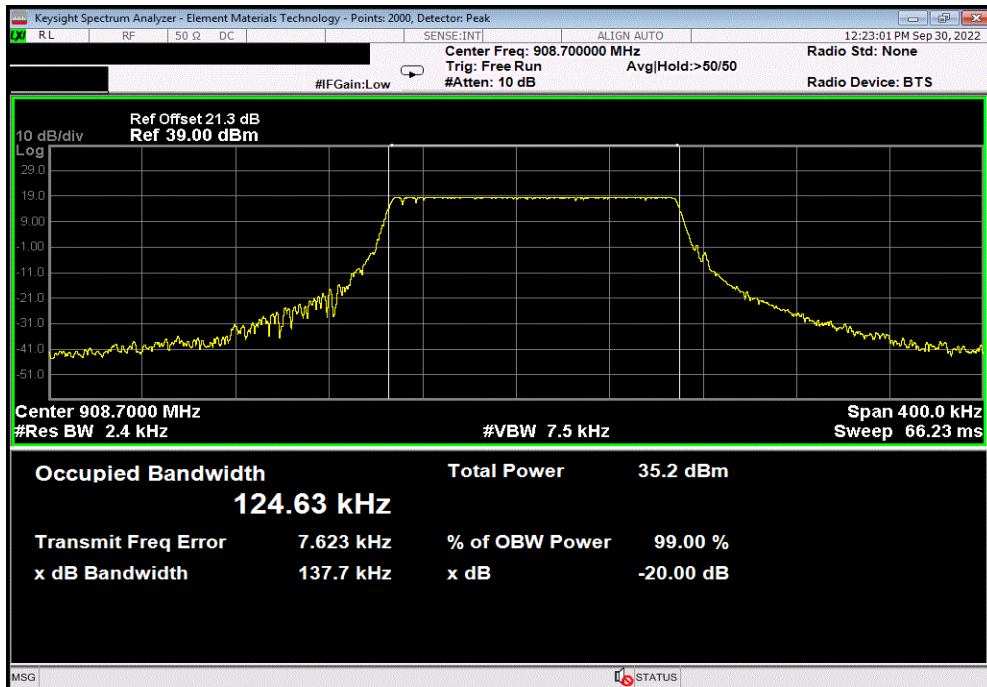


TbTx 2022.06.03.0 XMI 2022.12.28.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
				Value	Limit	Result
				136.76 kHz	N/A	Pass



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz						
				Value	Limit	Result
				137.71 kHz	N/A	Pass



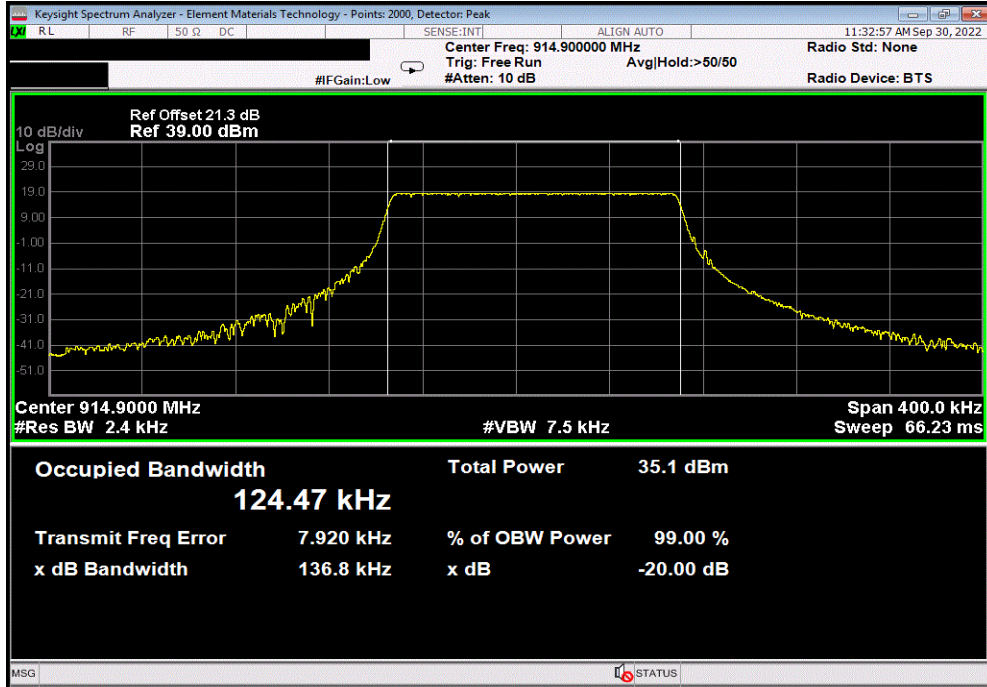


# EMISSIONS BANDWIDTH

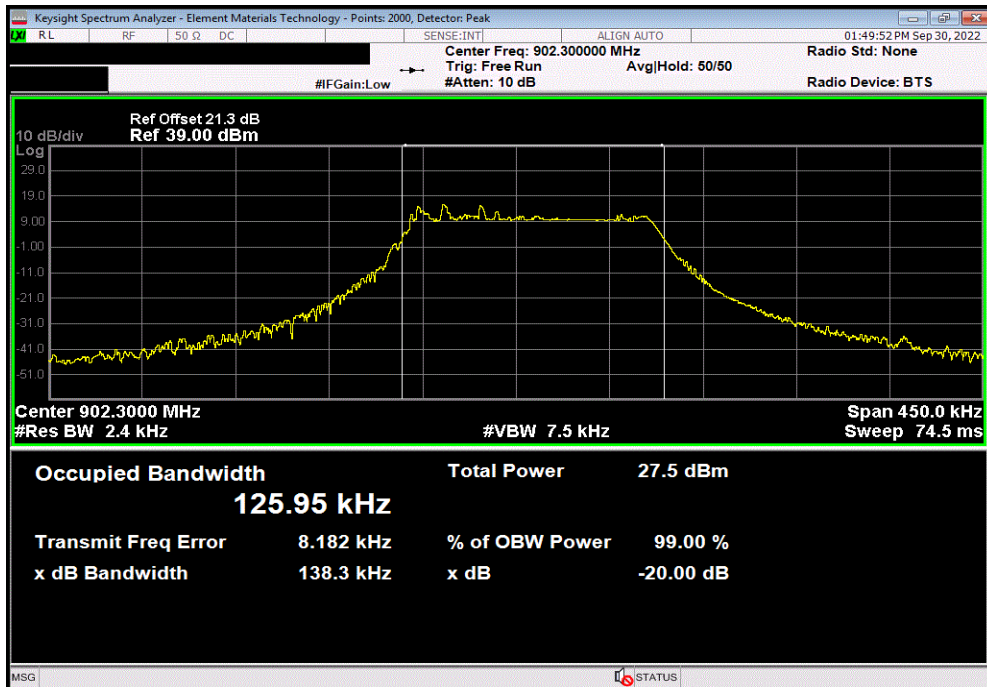


TbTx 2022.06.03.0 XMI 2022.12.28.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
				Value	Limit	Result
				136.844 kHz	N/A	Pass



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
				Value	Limit	Result
				138.307 kHz	N/A	Pass

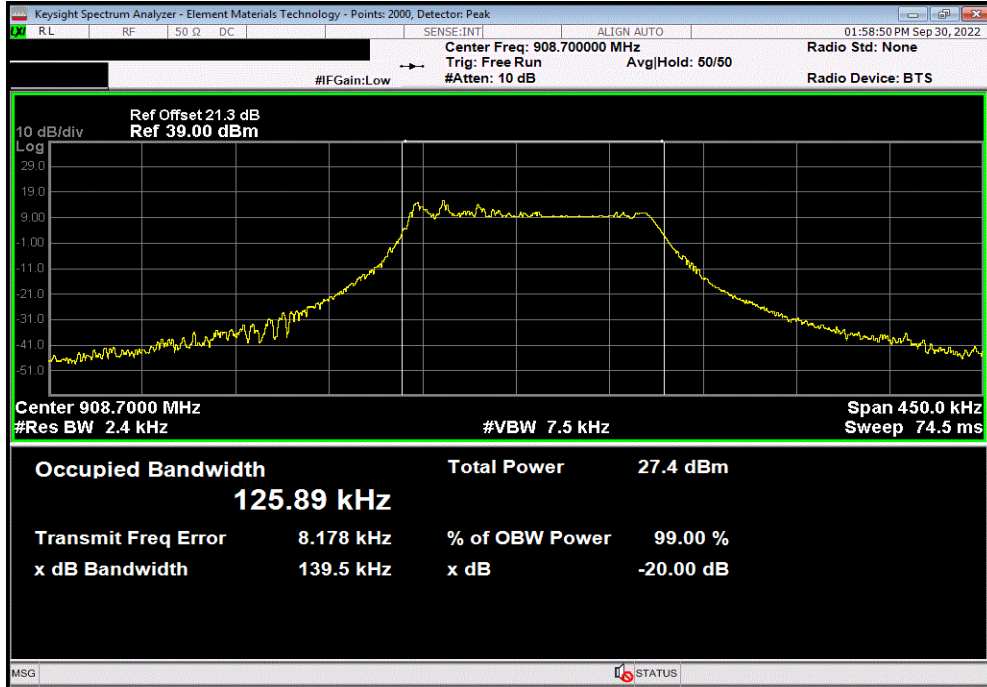


# EMISSIONS BANDWIDTH

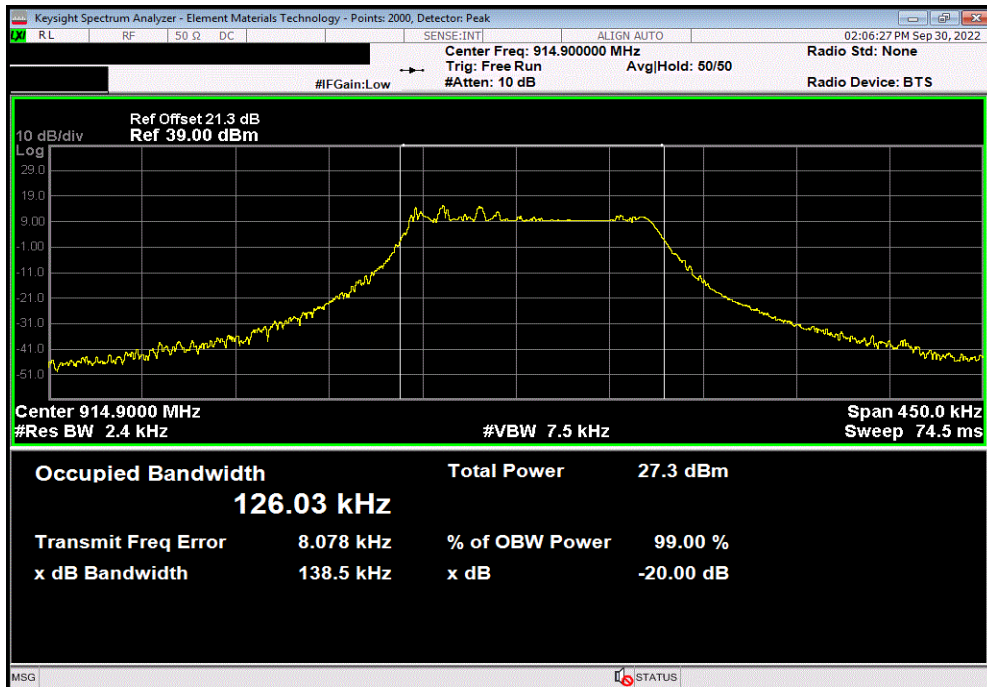


TbTx 2022.06.03.0 XMI 2022.12.28.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz						
				Value	Limit	Result
				139.461 kHz	N/A	Pass



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz						
				Value	Limit	Result
				138.452 kHz	N/A	Pass



# OCCUPIED BANDWIDTH



XMIT 2022.02.07.0

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	TFU	2020-11-20	2022-11-20
Cable	Micro-Coax	UFD150A-1-0720-200200	EVI	2021-12-05	2022-12-05
Attenuator	S.M. Electronics	SA26B-20	AUY	2022-03-15	2023-03-15
Block - DC	Fairview Microwave	SD3379	AMW	2022-03-14	2023-03-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2022-09-08	2023-09-08

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

Per FCC KDB 558074 Section 10(b)(3), there is no requirement for hybrid systems to comply with the 500 kHz minimum 6dB bandwidth for DTS devices.

The 99.0% occupied bandwidth was measured and used to determine the Resolution Bandwidth needed during Output Power measurement.

# OCCUPIED BANDWIDTH



TbTx 2022.06.03.0 XMt 2022.02.07.0

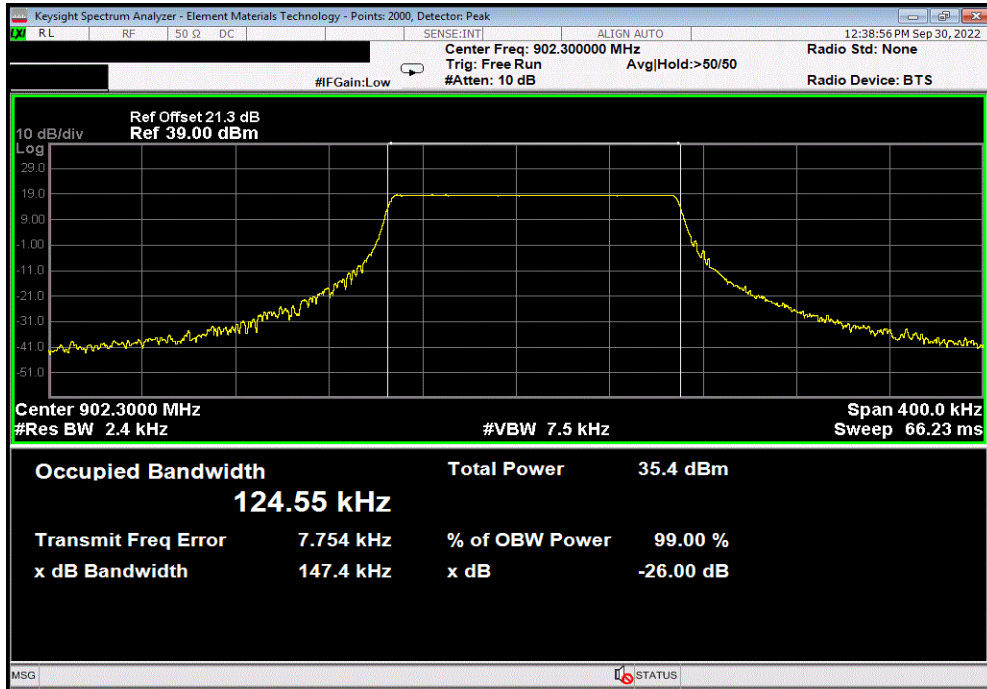
EUT: Passport		Work Order: ONIT0091	
Serial Number: 44594524		Date: 30-Sep-22	
Customer: Onity Inc.		Temperature: 21.8 °C	
Attendees: Ali Elmi		Humidity: 48.6% RH	
Project: None		Barometric Pres.: 1021 mbar	
Tested by: Jeff Alcock		Power: Battery	
Job Site: EV06			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2022		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes: DC Block, 20 dB attenuator, measurement cable and manufacturers provided SMA patch cable.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature	
		Value	Limit
			Result
Single Channel Mode			
LoRa, 125 kHz BW			
SF 10			
	Ch. 0, 902.3 MHz	124.545 kHz	N/A
	Ch. 32, 908.7 MHz	124.673 kHz	N/A
	Ch. 63, 914.9 MHz	124.578 kHz	N/A
SF 7			
	Ch. 0, 902.3 MHz	126.188 kHz	N/A
	Ch. 32, 908.7 MHz	126.091 kHz	N/A
	Ch. 63, 914.9 MHz	126.289 kHz	N/A

# OCCUPIED BANDWIDTH

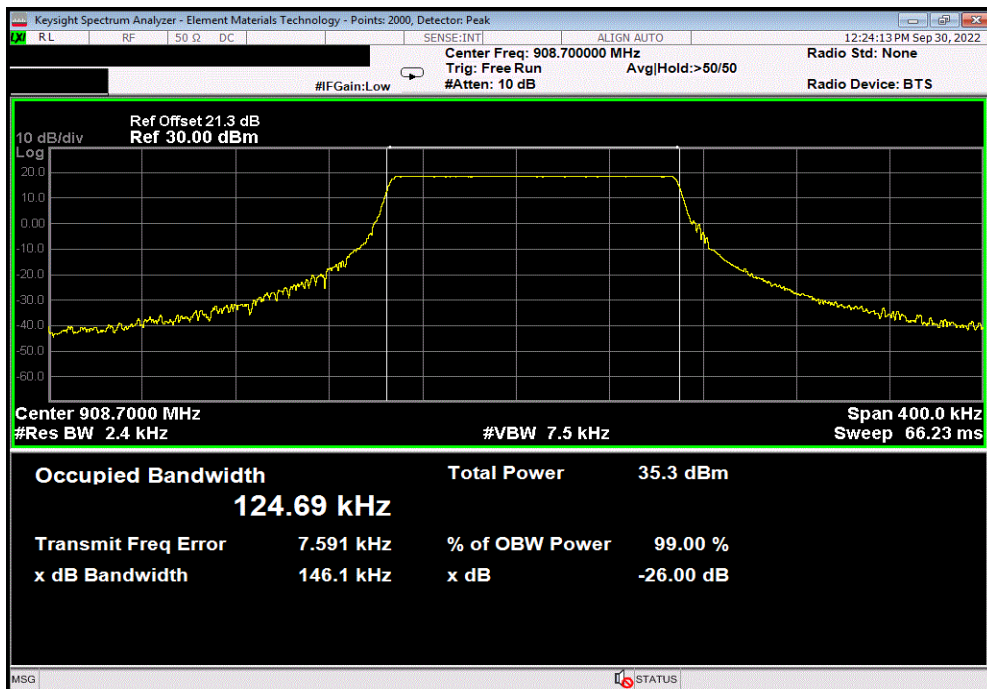


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 0, 902.3 MHz						
				Value	Limit	Result
				124.545 kHz	N/A	N/A



Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 32, 908.7 MHz						
				Value	Limit	Result
				124.673 kHz	N/A	N/A

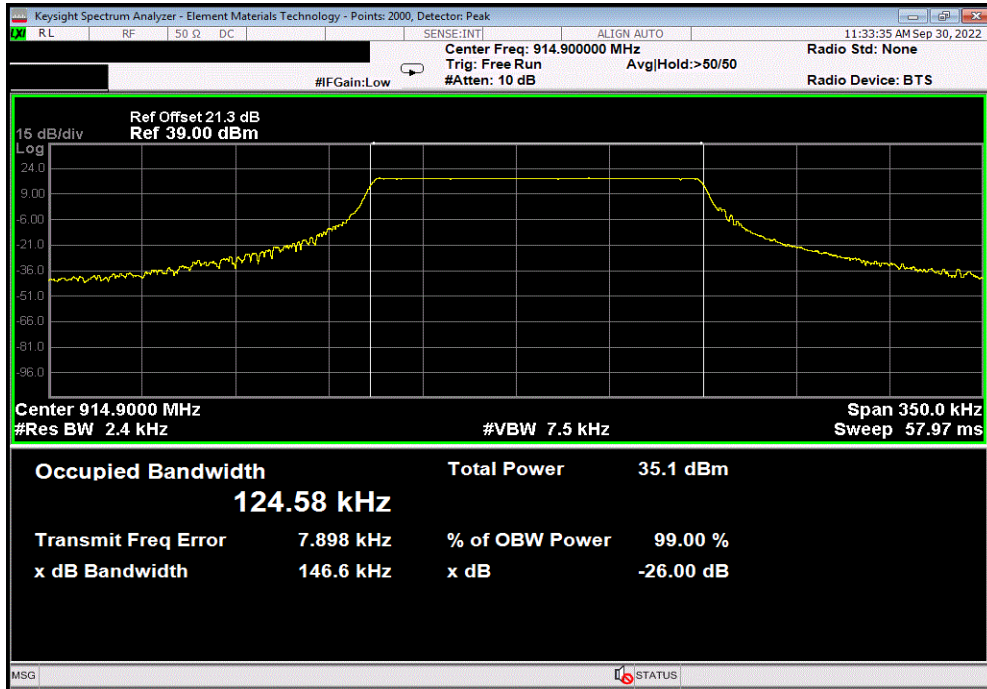


# OCCUPIED BANDWIDTH

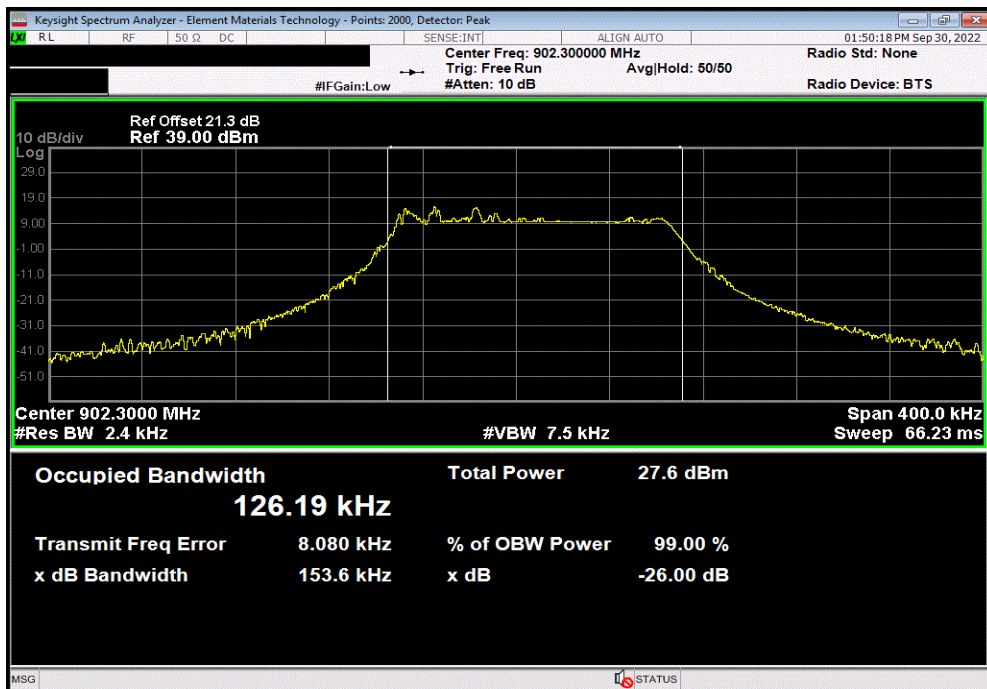


TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 10, Ch. 63, 914.9 MHz						
				Value	Limit	Result
				124.578 kHz	N/A	N/A



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 0, 902.3 MHz						
				Value	Limit	Result
				126.188 kHz	N/A	N/A

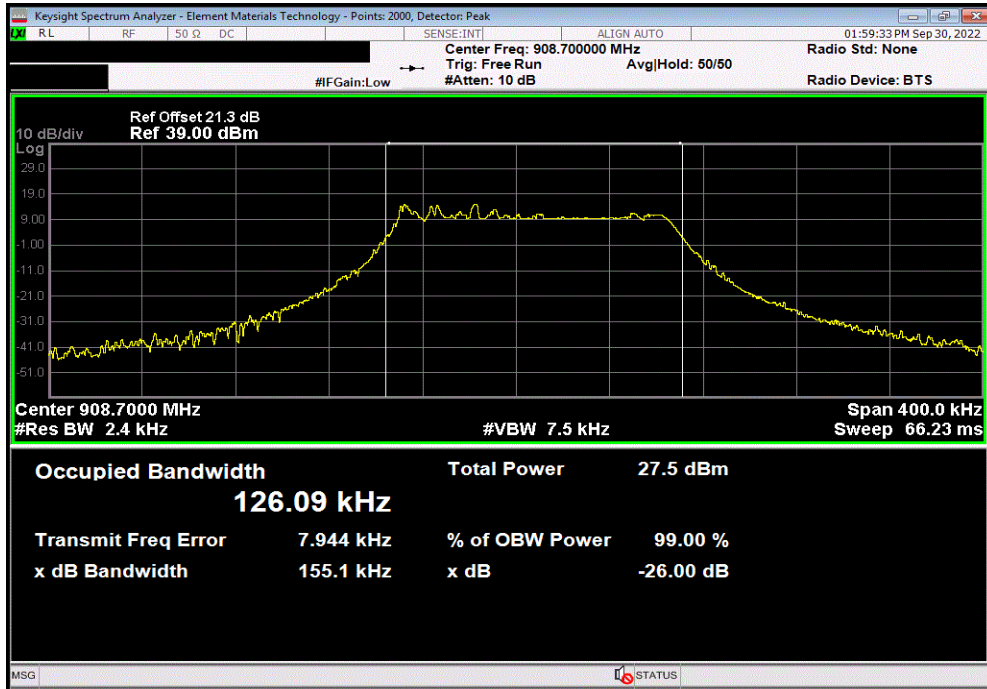


# OCCUPIED BANDWIDTH



TbTx 2022.06.03.0 XMI 2022.02.07.0

Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 32, 908.7 MHz						
				Value	Limit	Result
				126.091 kHz	N/A	N/A



Single Channel Mode, LoRa, 125 kHz BW, SF 7, Ch. 63, 914.9 MHz						
				Value	Limit	Result
				126.289 kHz	N/A	N/A

