RSS-210, RSS GEN, FCC PART 15, SUBPART B and C
TEST REPORT

for

COMPACT HANDHELD TRANSMITTER

MODEL: OTX-418-IND-MS-SEA01

Prepared for

LINX TECHNOLOGIES
159 ORT LANE
MERLIN, OREGON 97532

Prepared by: ___ Thomas Szynal

THOMAS SZYNAL

Approved by: Kyle Fujimoto

KYLE FUJIMOTO

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DATE: FEBRUARY 25, 2019

	REPORT BODY	APPENDICES					TOTAL
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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested: Compact Handheld Transmitter
Model: OTX-418-IND-MS-SEA01
S/N: N/A

Product Description: The EUT is a handeld remote control.

Modifications: The EUT was not modified in order to meet the specifications.

Customer: Linx Technologies
159 Ort Lane
Merlin, Oregon 97532

Test Dates: February 25 and 26; and March 22, 2019

Test Specifications covered by accreditation:

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231,
RSS-210 Issue 9 (2017), and RSS-Gen Issue 5 (2018)

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Test Procedures: ANSI C63.4: 2014 and ANSI C63.10: 2013

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 9 kHz – 4180 MHz (Transmitter and Digital portion)	Complies with the limits of RSS-210, RSS-Gen; the **Class B** limits of CFR Title 47 Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.231 Highest Reading in Relation to Spec Limit: 72.29 dBuV @ 418.00 MHz (*U = 3.19)
2	Conducted RF Emissions, 150 kHz to 30 MHz	This test was not performed because the EUT operates on battery power and does not connect to the AC mains.

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Compact Handheld Transmitter, Model: OTX-418-IND-MS-SEA01. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the RSS-210, RSS-Gen and the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Linx Technologies

Joel Krawczyk	Senior Regulatory Engineer

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
Tom Szynal	Test Technician

2.4 Date Test Sample was Received

The test sample was received on February 24, 2019.

2.5 Disposition of the Test Sample

The test sample has not been returned to Linx Technologies as of the date of this test report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
DNF	Do Not Fit
URC	Universal Remote Control

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this emissions Test Report.

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices
RSS-210, Issue 9	License-Exempt Radio Apparatus: Category I Equipment
RSS-GEN, Issue 5	General Requirements for Compliance of Radio Apparatus

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The Compact Handheld Transmitter Model: OTX-418-IND-MS-SEA01 (EUT) was tested as a stand alone unit.

The EUT was continously transmitting at 418 MHz.

The X orientation is when the EUT is parallel to the ground. The Y orientation is when the EUT is perpendicular to the ground mounted vertically. The Z orientation is when the EUT is perpendicular to the ground mounted horizontally. The final radiated data for the EUT was taken in the mode described.

Fresh batteries were inserted into the EUT prior to the testing.

The final radiated data for the EUT as was taken in the mode described above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

The EUT had no external cables.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
COMPACT HANDHELD TRANSMITTER	LINX TECHNOLOGIES	OTX-418-IND-MS-SEA01	N/A	OJM-OTX-XXX-CPMSA

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver 20Hz – 26.5GHz	Keysight	N9038A	MY51210150	July 26, 2018	1 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	July 27, 2017	2 Year
Preamplifier	Com-Power	PAM-118A	551024	May 10, 2018	2 Year
Loop Antenna	Com-Power	AL-130R	121090	February 05, 2019	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 22, 2018	2 Year
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

For frequencies 1 GHz and below: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

For frequencies above 1 GHz: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was not grounded.

7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 RF Emissions

7.1.1 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit.

The fundamental and harmonic frequencies above 1 GHz were averaged by a "duty cycle correction factor", derived from 20 Log (dwell time / 100ms). This duty cycle correction factor was then subtracted from the peak reading. There were no non-transmitter related spurious emissions detected above 1 GHz.

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna
30 MHz to 1 GHz	120 kHz	Combilog Antenna
1 GHz to 4.18 GHz	1 MHz	Horn Antenna

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Radiated Emissions Test (Continued)

The EUT was tested at a 3-meter test distance from 9 kHz to 4.18 GHz.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.231 (a) for radiated emissions. Please see Appendix E for the data sheets.

7.1.2 RF Emissions Test Results

Table 1 RADIATED EMISSION RESULTS
Compact Handheld Transmitter
Model: OTX-418-IND-MS-SEA01

Frequency MHz	Average Corrected Reading* dBuV/m	Average Specification Limit dBuV/m	Delta (Cor. Reading – Spec. Limit) dB
418 (H) (X-Axis)	72.29	80.28	-7.99
418 (V) (Z-Axis)	70.41	80.28	-9.87
418 (V) (Y-Axis)	70.38	80.28	-9.90
3344 (H) (Y-Axis)	50.17	60.28	-10.11
3344 (V) (Z-Axis)	49.38	60.28	-10.90
3344 (H) (X-Axis)	47.84	60.28	-12.44

Notes:

(H) Horizontal
(V) Vertical

* The complete emissions data is given in Appendix E of this report.

7.2 Bandwidth of the Fundamental

The -20 dB bandwidth was checked using the EMI Receiver to see that the emissions were wholly within the 0.25% of the operating frequency centered on the fundamental frequency. The RBW was set to 30 kHz and the VBW and set to 100 kHz. A plot of the -20 dB bandwidth is located in Appendix E.

Test Results:

The EUT complies with the requirements of CFR Title 47, Part 15, Subpart C, section 15.231 [c] for the -20 dB bandwidth of the fundamental. The EUT has a -20 dB bandwidth that lies wholly within the 0.25% of the operating frequency centered on the fundamental frequency.

7.3 Transmit Timeout

The transmit timeout test was performed using the EMI Receiver to make sure the transmission coming from the transmitter would cease within 5 seconds after the activation. A Plot of the transmission duration is located in Appendix E.

Test Results:

The EUT complies with the requirement of CFR Title 47, Part 15, Subpart C, section 15.231 [c] for the Transmit Timeout less than 5 seconds.

7.4 Fundamental Field Strength (Duty Cycle Calculations)

The Peak Transmit Radiated Field Strength was measured at a 3-meter test distance. The EMI Receiver was used to obtain the final test data. The final qualification data sheets are located in Appendix E.

Where

n is the number of pulses of duration *t*1
m is the number of pulses of duration *t*2
ξ is the number of pulses of duration *tx*
T is the period of the pulse train or 100 ms if the pulse train length is greater than 100 ms

The duty cycle is exactly the same as in the Compatible Electronics, Inc. test report **B60303B1.**

8. CONCLUSIONS

The Compact Handheld Transmitter, Model: OTX-418-IND-MS-SEA01 (EUT), as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP TESTING
NVLAP LAB CODE 200528-0

ilac-MRA

For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025.
For the most up-to-date version of our scopes and certificates please visit http://celectronics.com/quality/scope/

Quote from ISO-ILAC-IAF Communiqué on 17025:
"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirement

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.231 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

No modifications were made to the EUT during the testing.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

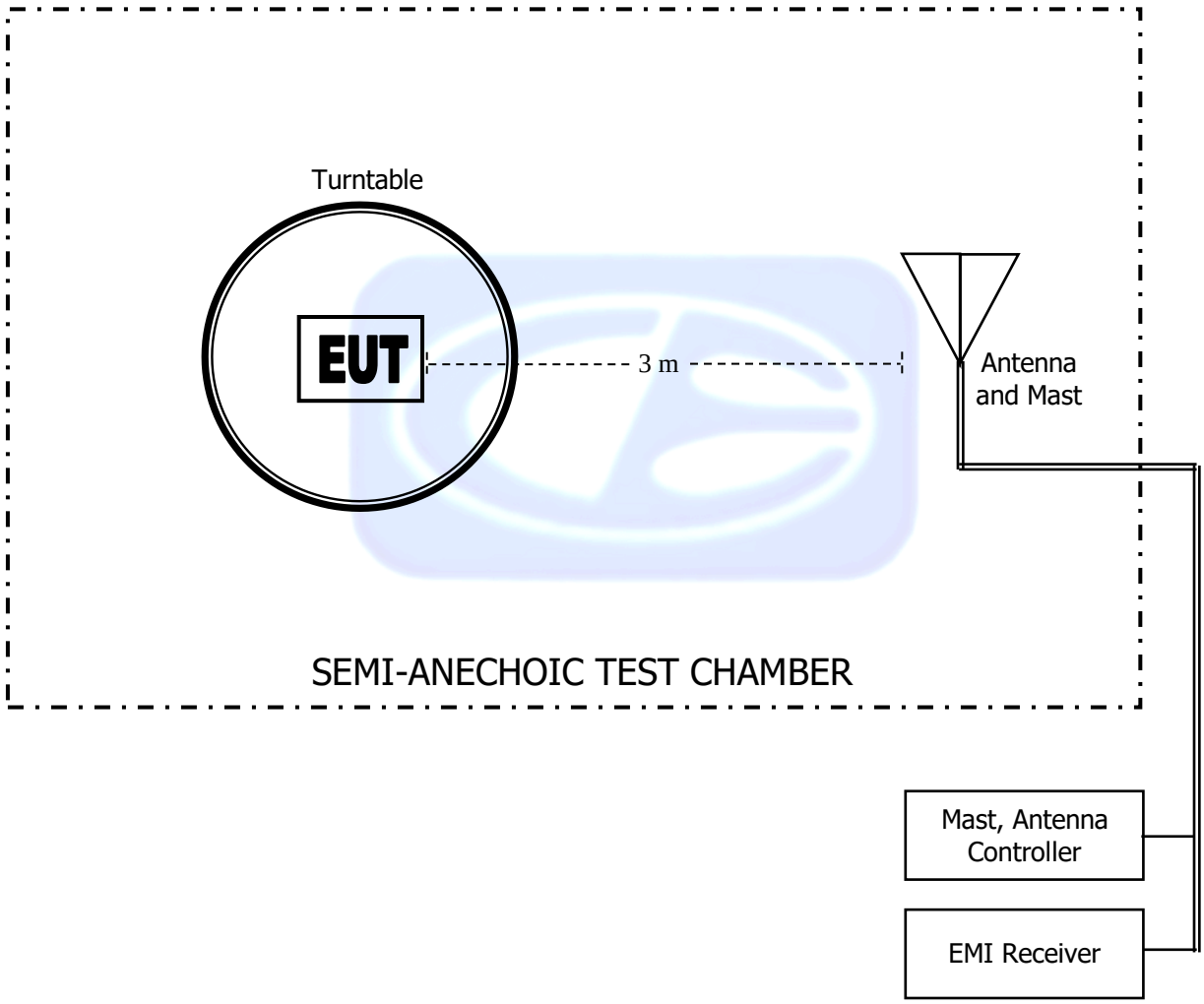
Compact Handheld Transmitter
Model: OTX-418-IND-MS-SEA01
S/N: N/A

There are no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COM-POWER AL-130R

LOOP ANTENNA

S/N: 121090

CALIBRATION DATE: FEBRUARY 05, 2019

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-35.4	16.1
0.01	-35.9	15.6
0.02	-36.7	14.8
0.03	-35.9	15.6
0.04	-36.4	15.1
0.05	-37.0	14.4
0.06	-36.9	14.6
0.07	-37.1	14.4
0.08	-37.1	14.3
0.09	-36.9	14.5
0.1	-37.3	14.1
0.2	-37.3	14.1
0.3	-37.4	14.0
0.4	-37.4	14.0
0.5	-37.2	14.2
0.6	-37.2	14.2
0.7	-37.2	14.2
0.8	-37.3	14.2
0.9	-37.2	14.3
1	-37.0	14.5
2	-36.9	14.5
3	-36.9	14.5
4	-36.8	14.7
5	-36.9	14.6
6	-36.9	14.6
7	-36.9	14.6
8	-36.9	14.6
9	-36.9	14.6
10	-36.6	14.8
15	-36.9	14.5
20	-36.6	14.9
25	-38.5	13.0
30	-38.5	12.9

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61060

CALIBRATION DATE: JULY 27, 2017

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	23.80	200	14.10
35	24.00	250	15.30
40	24.70	300	17.70
45	22.90	350	17.70
50	22.10	400	19.00
60	17.60	450	21.30
70	12.70	500	21.00
80	11.20	550	22.30
90	13.10	600	23.40
100	14.40	650	22.90
120	15.30	700	24.60
125	15.00	750	24.50
140	12.80	800	25.40
150	16.50	850	26.40
160	12.90	900	27.20
175	14.30	950	27.80
180	14.50	1000	26.80

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: FEBRUARY 22, 2018

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.71	10.0	40.08
1.5	25.46	10.5	40.75
2.0	29.26	11.0	41.78
2.5	27.95	11.5	41.02
3.0	29.03	12.0	40.32
3.5	29.70	12.5	40.96
4.0	30.71	13.0	40.29
4.5	31.62	13.5	39.48
5.0	33.23	14.0	39.89
5.5	35.07	14.5	42.75
6.0	34.43	15.0	40.98
6.5	34.98	15.5	38.54
7.0	36.75	16.0	39.40
7.5	37.10	16.5	39.40
8.0	37.66	17.0	41.74
8.5	39.29	17.5	42.58
9.0	37.75	18.0	44.68
9.5	38.23		

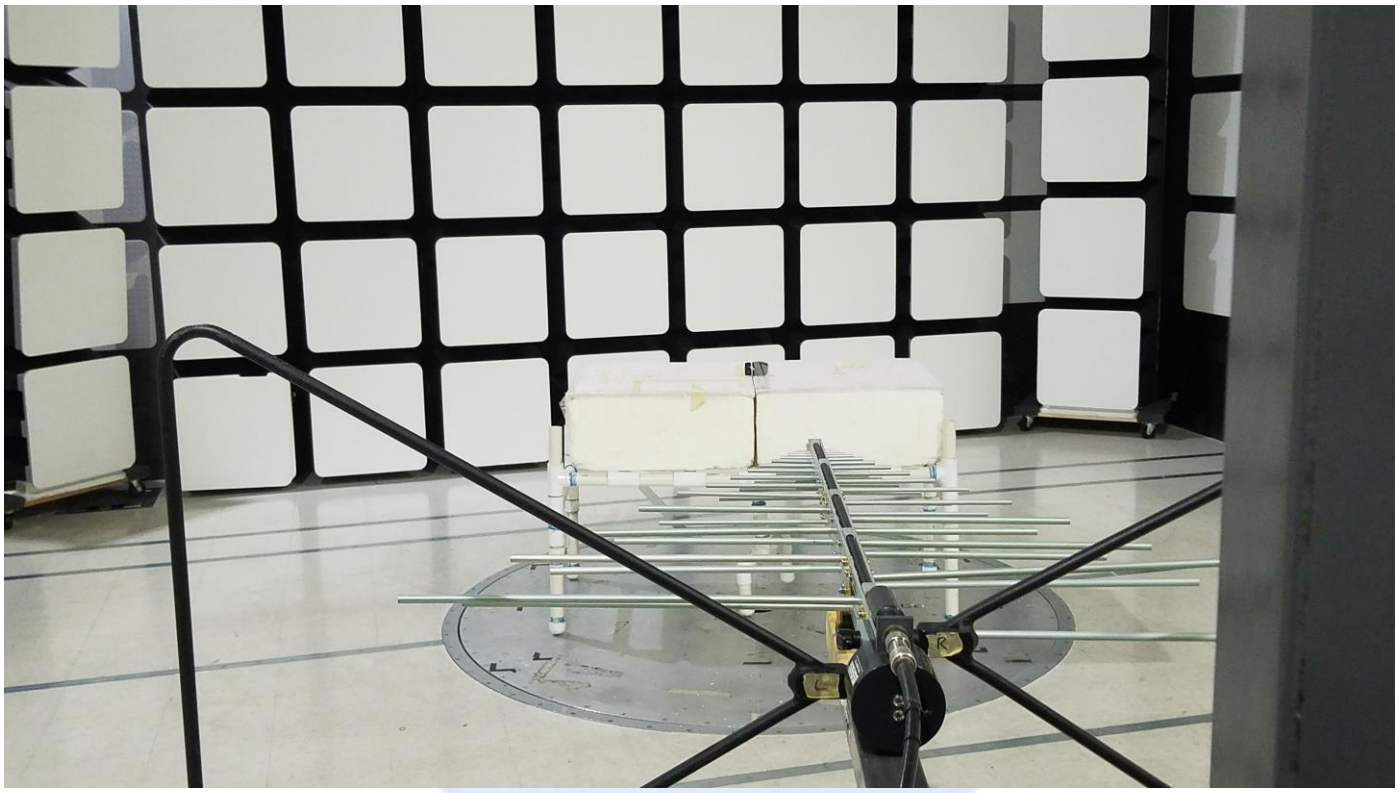
COM-POWER PA-118

PREAMPLIFIER

S/N: 551024

CALIBRATION DATE: MAY 10, 2018

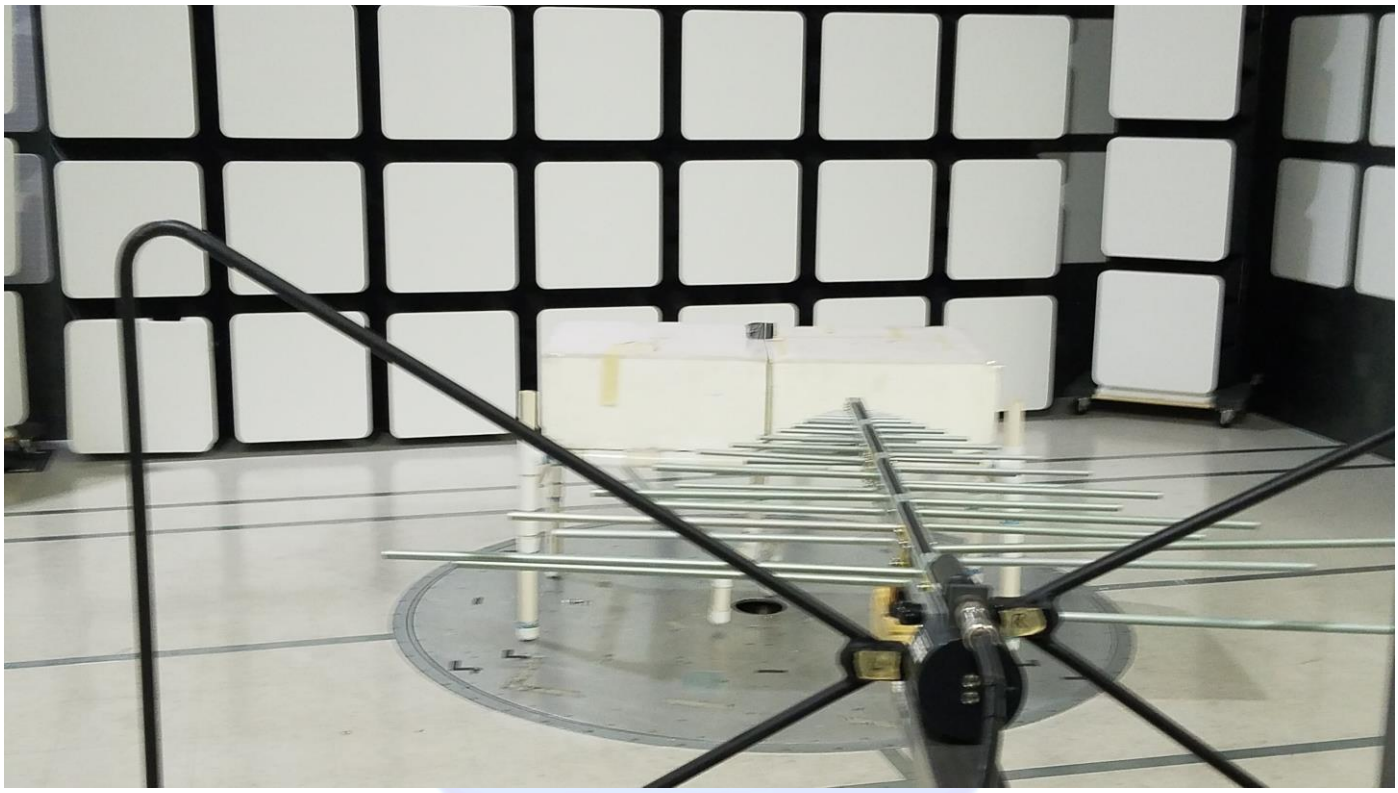
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.99	6.0	39.01
1.1	39.77	6.5	39.00
1.2	39.02	7.0	39.69
1.3	39.44	7.5	38.96
1.4	39.64	8.0	38.57
1.5	40.23	8.5	39.17
1.6	40.17	9.0	38.82
1.7	40.23	9.5	39.30
1.8	39.48	10.0	38.90
1.9	39.85	11.0	38.86
2.0	39.99	12.0	39.87
2.5	40.38	13.0	39.55
3.0	40.64	14.0	38.92
3.5	40.68	15.0	39.33
4.0	40.87	16.0	39.60
4.5	40.04	17.0	40.28
5.0	39.54	18.0	39.58
5.5	39.58		



FRONT VIEW

LINX TECHNOLOGIES
COMPACT HANDHELD TRANSMITTER
MODEL: OTX-418-IND-MS-SEA01
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

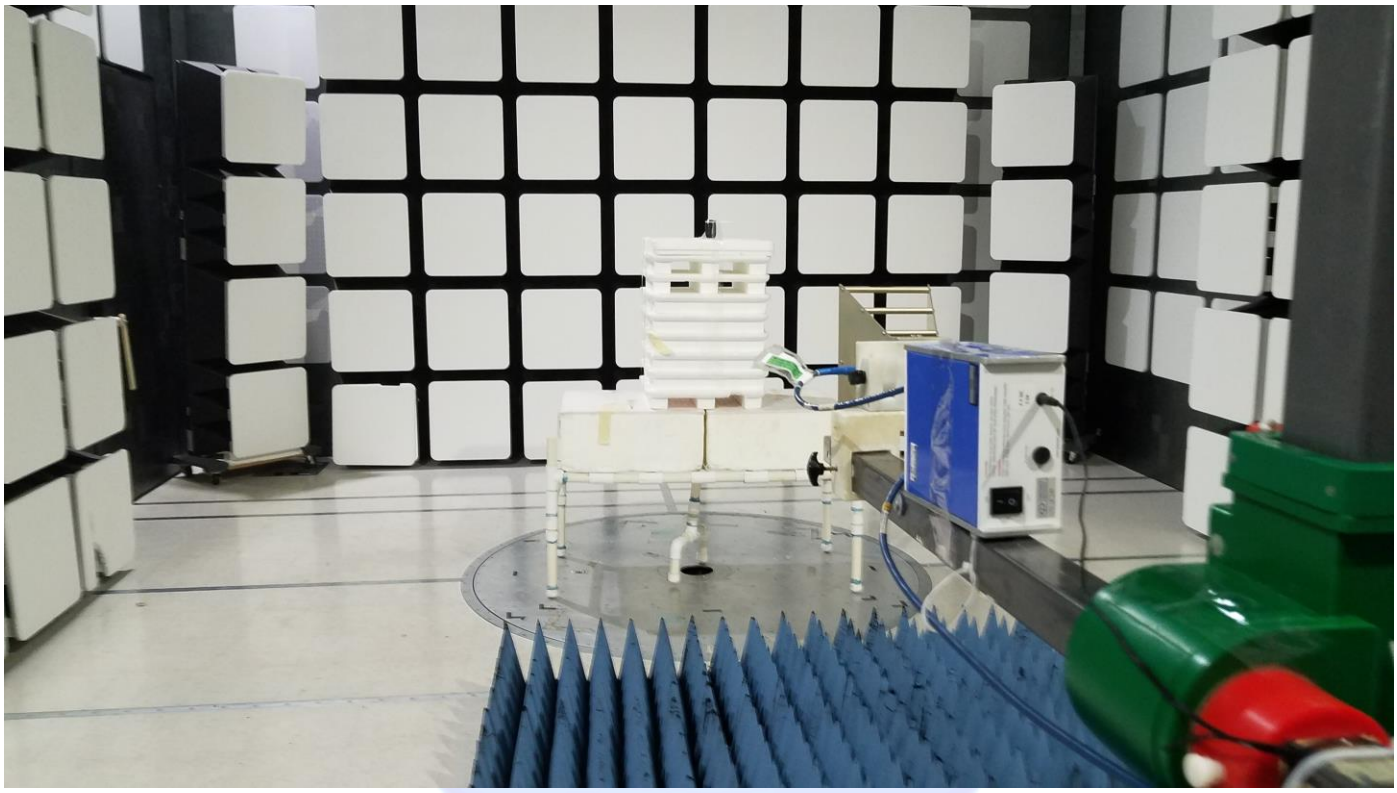
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

LINX TECHNOLOGIES
COMPACT HANDHELD TRANSMITTER
MODEL: OTX-418-IND-MS-SEA01
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

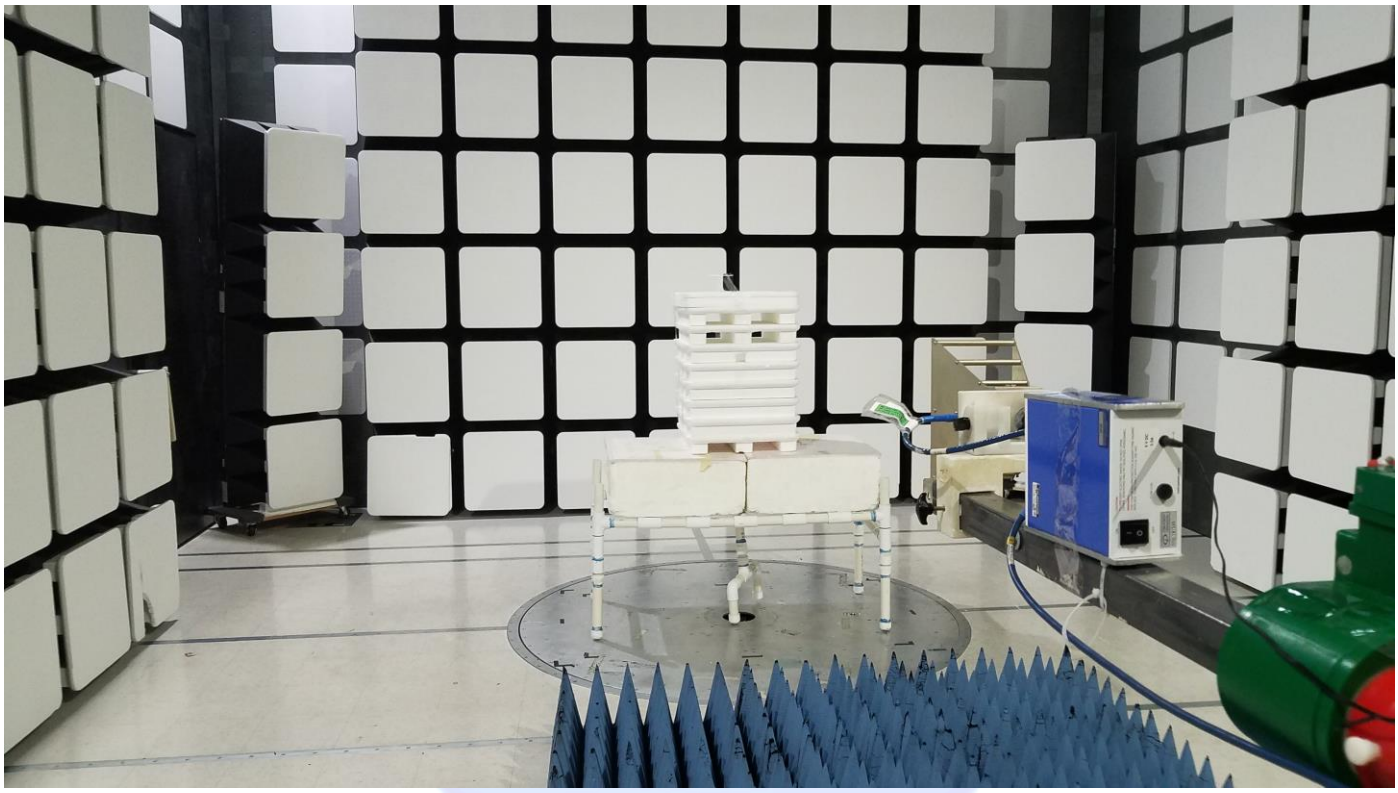
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

LINX TECHNOLOGIES
COMPACT HANDHELD TRANSMITTER
MODEL: OTX-418-IND-MS-SEA01
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

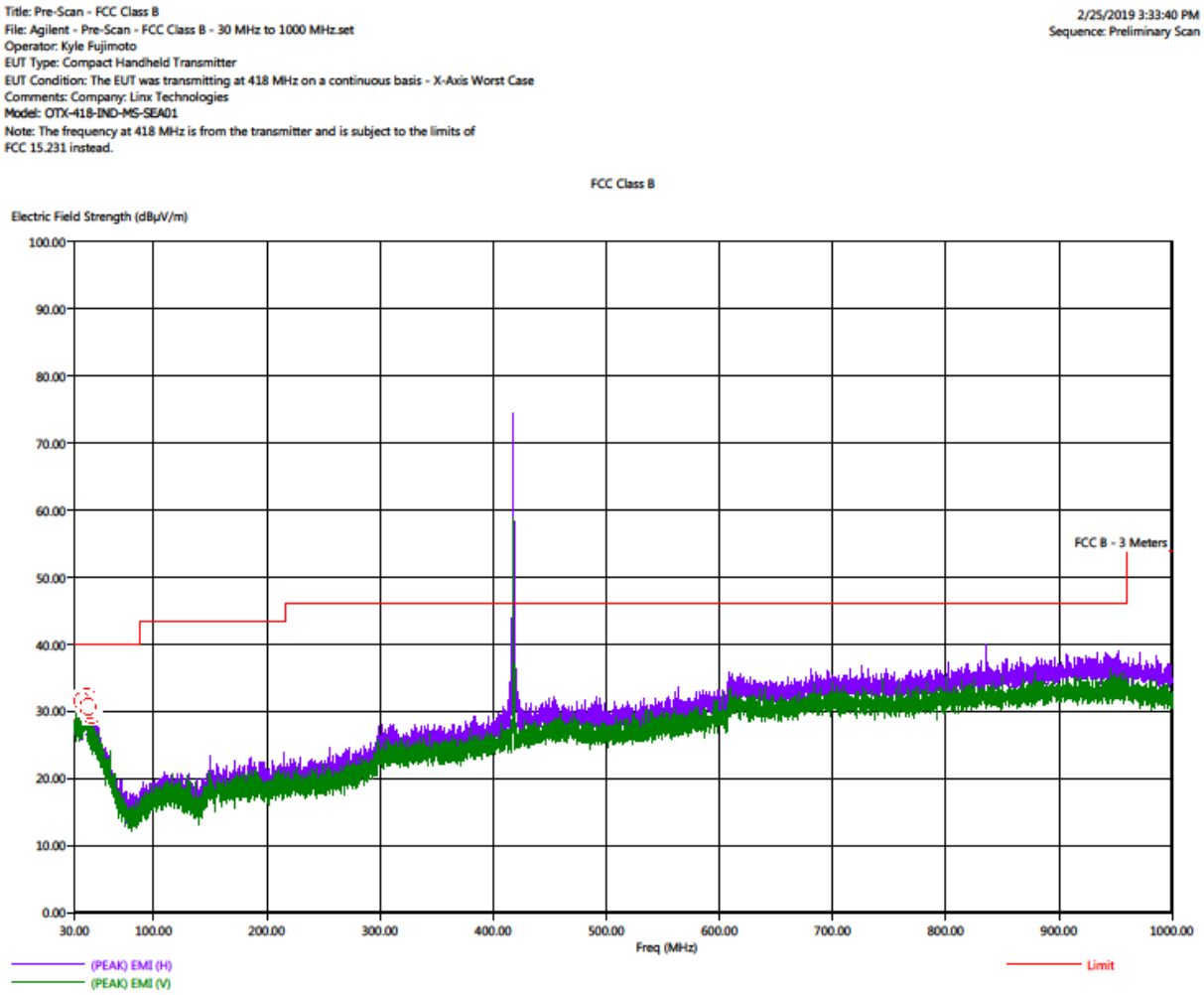
LINX TECHNOLOGIES
COMPACT HANDHELD TRANSMITTER
MODEL: OTX-418-IND-MS-SEA01
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS DATA SHEETS



No additional spurious emissions were found between 9 kHz – 30 MHz and 1 GHz – 4.18 GHz

Title: Radiated Final - FCC Class B
File: Agilent - Final Scan - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Compact Handheld Transmitter
EUT Condition: The EUT was transmitting at 418 MHz on a continuous basis - X-Axis Worst Case
Comments: Company: Linx Technologies
Model: OTX-418-IND-MS-SEA01

2/25/2019 4:11:35 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
36.70	H	32.00	26.62	-8.00	-13.38	40.00	24.24	0.87	127.00	318.79
37.10	H	32.13	26.67	-7.87	-13.33	40.00	24.32	0.88	90.00	287.14
39.30	H	33.67	27.04	-6.33	-12.96	40.00	24.59	0.89	227.50	239.44
40.80	H	32.77	26.64	-7.23	-13.36	40.00	24.31	0.90	246.75	350.79
41.30	H	31.86	26.60	-8.14	-13.40	40.00	24.26	0.90	0.25	207.26
41.90	V	31.68	26.44	-8.32	-13.56	40.00	24.06	0.90	79.00	318.79
43.70	V	31.38	25.46	-8.62	-14.54	40.00	23.38	0.90	237.00	127.08
45.30	V	30.65	25.20	-9.35	-14.80	40.00	22.87	0.90	19.50	366.85

1

No additional spurious emissions were found between 9 kHz – 30 MHz and 1 GHz – 4.18 GHz

FCC 15.231

Linx Technologies
Compact Handheld Transmitter
Model: OTX-418-IND-MS-SEA01

Date: 02/25/2019
Lab: D
Tested By: Kyle Fujimoto

Fundamental - 418 MHz
Duty Cycle: 48.3%

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
418.00	63.10	V	100.28	-37.18	Peak	1.25	128.34	**X-Axis**
418.00	56.78	V	80.28	-23.50	Avg	1.25	128.34	**Vertical Polarization**
418.00	76.70	V	100.28	-23.58	Peak	297.50	111.44	**Y-Axis**
418.00	70.38	V	80.28	-9.90	Avg	297.50	111.44	**Vertical Polarization**
418.00	76.73	V	100.28	-23.55	Peak	10.25	138.31	**Z-Axis**
418.00	70.41	V	80.28	-9.87	Avg	10.25	138.31	**Vertical Polarization**
418.00	78.61	H	100.28	-21.67	Peak	17.00	100.22	**X-Axis**
418.00	72.29	H	80.28	-7.99	Avg	17.00	100.22	**Horizontal Polarization**
418.00	71.27	H	100.28	-29.01	Peak	2.75	100.01	**Y-Axis**
418.00	64.95	H	80.28	-15.33	Avg	2.75	100.01	**Horizontal Polarization**
418.00	73.85	H	100.28	-26.43	Peak	299.75	237.29	**Z-Axis**
418.00	67.53	H	80.28	-12.75	Avg	299.75	237.29	**Horizontal Polarization**

FCC 15.231

Linx Technologies
Compact Handheld Transmitter
Model: OTX-418-IND-MS-SEA01

Date: 02/25/2019
Lab: D
Tested By: Kyle Fujimoto

Harmonics - X-Axis
Duty Cycle: 48.3%

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
836.00	38.07	V	80.28	-42.21	Peak	37.75	105.59	
836.00	31.75	V	60.28	-28.53	Avg	37.75	105.59	
1254.00	35.48	V	73.97	-38.49	Peak	173.75	127.02	
1254.00	29.16	V	53.97	-24.81	Avg	173.75	127.02	
1672.00	41.63	V	73.97	-32.34	Peak	202.00	143.26	
1672.00	35.31	V	53.97	-18.66	Avg	202.00	143.26	
2090.00	42.95	V	80.28	-37.33	Peak	212.25	249.97	
2090.00	36.63	V	60.28	-23.65	Avg	212.25	249.97	
2508.00	47.03	V	80.28	-33.25	Peak	14.00	127.32	
2508.00	40.71	V	60.28	-19.57	Avg	14.00	127.32	
2926.00	44.62	V	80.28	-35.66	Peak	156.75	143.44	
2926.00	38.30	V	60.28	-21.98	Avg	156.75	143.44	
3344.00	46.80	V	80.28	-33.48	Peak	301.75	111.44	
3344.00	40.48	V	60.28	-19.80	Avg	301.75	111.44	
3762.00	45.69	V	73.97	-28.28	Peak	279.00	143.38	
3762.00	39.37	V	53.97	-14.60	Avg	279.00	143.38	
4180.00	42.60	V	73.97	-31.37	Peak	126.00	127.14	
4180.00	36.28	V	53.97	-17.69	Avg	126.00	127.14	

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Date: 02/25/2019
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Harmonics - Y-Axis
Duty Cycle: 48.3%

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
836.00	42.42	V	80.28	-37.86	Peak	10.00	105.59	
836.00	36.10	V	60.28	-24.18	Avg	10.00	105.59	
1254.00	36.25	V	73.97	-37.72	Peak	296.00	127.20	
1254.00	29.93	V	53.97	-24.04	Avg	296.00	127.20	
1672.00	45.41	V	73.97	-28.56	Peak	2.50	143.26	
1672.00	39.09	V	53.97	-14.88	Avg	2.50	143.26	
2090.00	48.18	V	80.28	-32.10	Peak	78.00	207.20	
2090.00	41.86	V	60.28	-18.42	Avg	78.00	207.20	
2508.00	44.35	V	80.28	-35.93	Peak	301.50	111.44	
2508.00	38.03	V	60.28	-22.25	Avg	301.50	111.44	
2926.00	42.50	V	80.28	-37.78	Peak	123.00	111.20	
2926.00	36.18	V	60.28	-24.10	Avg	123.00	111.20	
3344.00	49.08	V	80.28	-31.20	Peak	58.50	111.32	
3344.00	42.76	V	60.28	-17.52	Avg	58.50	111.32	
3762.00	43.85	V	73.97	-30.12	Peak	301.25	127.32	
3762.00	37.53	V	53.97	-16.44	Avg	301.25	127.32	
4180.00	44.24	V	73.97	-29.73	Peak	0.25	127.08	
4180.00	37.92	V	53.97	-16.05	Avg	0.25	127.08	

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Date: 02/25/2019
Lab: D
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Harmonics - Z-Axis
Duty Cycle: 48.3%

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
836.00	40.17	V	80.28	-40.12	Peak	156.50	105.59	
836.00	33.85	V	60.28	-26.44	Avg	156.50	105.59	
1254.00	36.34	V	73.97	-37.63	Peak	167.25	127.02	
1254.00	30.02	V	53.97	-23.95	Avg	167.25	127.02	
1672.00	44.26	V	73.97	-29.71	Peak	358.75	159.20	
1672.00	37.94	V	53.97	-16.03	Avg	358.75	159.20	
2090.00	48.24	V	80.28	-32.04	Peak	203.50	159.14	
2090.00	41.92	V	60.28	-18.36	Avg	203.50	159.14	
2508.00	53.04	V	80.28	-27.24	Peak	24.25	159.26	
2508.00	46.72	V	60.28	-13.56	Avg	24.25	159.26	
2926.00	51.21	V	80.28	-29.07	Peak	0.25	111.32	
2926.00	44.89	V	60.28	-15.39	Avg	0.25	111.32	
3344.00	55.70	V	80.28	-24.58	Peak	1.50	143.26	
3344.00	49.38	V	60.28	-10.90	Avg	1.50	143.26	
3762.00	44.96	V	73.97	-29.01	Peak	203.75	174.91	
3762.00	38.64	V	53.97	-15.33	Avg	203.75	174.91	
4180.00	44.34	V	73.97	-29.63	Peak	28.75	111.20	
4180.00	38.02	V	53.97	-15.95	Avg	28.75	111.20	

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Date: 02/25/2019
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Harmonics - X-Axis
Duty Cycle: 48.3%

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
836.00	44.89	H	80.28	-35.39	Peak	230.75	100.41	
836.00	38.57	H	60.28	-21.71	Avg	230.75	100.41	
1254.00	37.65	H	73.97	-36.32	Peak	158.00	143.38	
1254.00	31.33	H	53.97	-22.64	Avg	158.00	143.38	
1672.00	45.83	H	73.97	-28.14	Peak	317.50	190.97	
1672.00	39.51	H	53.97	-14.46	Avg	317.50	190.97	
2090.00	47.14	H	80.28	-33.14	Peak	217.25	143.74	
2090.00	40.82	H	60.28	-19.46	Avg	217.25	143.74	
2508.00	49.84	H	80.28	-30.44	Peak	253.50	127.26	
2508.00	43.52	H	60.28	-16.76	Avg	253.50	127.26	
2926.00	49.21	H	80.28	-31.07	Peak	258.25	111.50	
2926.00	42.89	H	60.28	-17.39	Avg	258.25	111.50	
3344.00	54.16	H	80.28	-26.12	Peak	289.25	111.50	
3344.00	47.84	H	60.28	-12.44	Avg	289.25	111.50	
3762.00	46.61	H	73.97	-27.36	Peak	126.25	127.38	
3762.00	40.29	H	53.97	-13.68	Avg	126.25	127.38	
4180.00	38.50	H	73.97	-35.47	Peak	255.25	143.32	
4180.00	32.18	H	53.97	-21.79	Avg	255.25	143.32	

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Harmonics - Y-Axis
Duty Cycle: 48.3%

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
836.00	42.12	H	80.28	-38.16	Peak	9.25	100.28	
836.00	35.80	H	60.28	-24.48	Avg	9.25	100.28	
1254.00	37.17	H	73.97	-36.80	Peak	98.75	249.97	
1254.00	30.85	H	53.97	-23.12	Avg	98.75	249.97	
1672.00	44.85	H	73.97	-29.12	Peak	344.50	143.38	
1672.00	38.53	H	53.97	-15.44	Avg	344.50	143.38	
2090.00	43.89	H	80.28	-36.39	Peak	173.75	143.20	
2090.00	37.57	H	60.28	-22.71	Avg	173.75	143.20	
2508.00	52.26	H	80.28	-28.02	Peak	317.25	207.08	
2508.00	45.94	H	60.28	-14.34	Avg	317.25	207.08	
2926.00	51.48	H	80.28	-28.80	Peak	0.00	207.02	
2926.00	45.16	H	60.28	-15.12	Avg	0.00	207.02	
3344.00	56.49	H	80.28	-23.79	Peak	350.50	207.08	
3344.00	50.17	H	60.28	-10.11	Avg	350.50	207.08	
3762.00	46.12	H	73.97	-27.85	Peak	289.25	175.20	
3762.00	39.80	H	53.97	-14.17	Avg	289.25	175.20	
4180.00	44.61	H	73.97	-29.36	Peak	171.00	127.14	
4180.00	38.29	H	53.97	-15.68	Avg	171.00	127.14	

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Date: 02/25/2019
Lab: D
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Harmonics - Z-Axis
Duty Cycle: 48.3%

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
836.00	44.41	H	80.28	-35.87	Peak	105.75	100.28	
836.00	38.09	H	60.28	-22.19	Avg	105.75	100.28	
1254.00	36.96	H	73.97	-37.01	Peak	181.25	128.64	
1254.00	30.64	H	53.97	-23.33	Avg	181.25	128.64	
1672.00	44.74	H	73.97	-29.23	Peak	130.25	111.26	
1672.00	38.42	H	53.97	-15.55	Avg	130.25	111.26	
2090.00	44.51	H	80.28	-35.77	Peak	169.00	143.26	
2090.00	38.19	H	60.28	-22.09	Avg	169.00	143.26	
2508.00	44.46	H	80.28	-35.82	Peak	195.25	207.08	
2508.00	38.14	H	60.28	-22.14	Avg	195.25	207.08	
2926.00	46.69	H	80.28	-33.59	Peak	190.50	191.14	
2926.00	40.37	H	60.28	-19.91	Avg	190.50	191.14	
3344.00	43.53	H	80.28	-36.75	Peak	135.00	191.26	
3344.00	37.21	H	60.28	-23.07	Avg	135.00	191.26	
3762.00	47.55	H	73.97	-26.42	Peak	117.00	175.98	
3762.00	41.23	H	53.97	-12.74	Avg	117.00	175.98	
4180.00	43.63	H	73.97	-30.34	Peak	158.75	111.56	
4180.00	37.31	H	53.97	-16.66	Avg	158.75	111.56	

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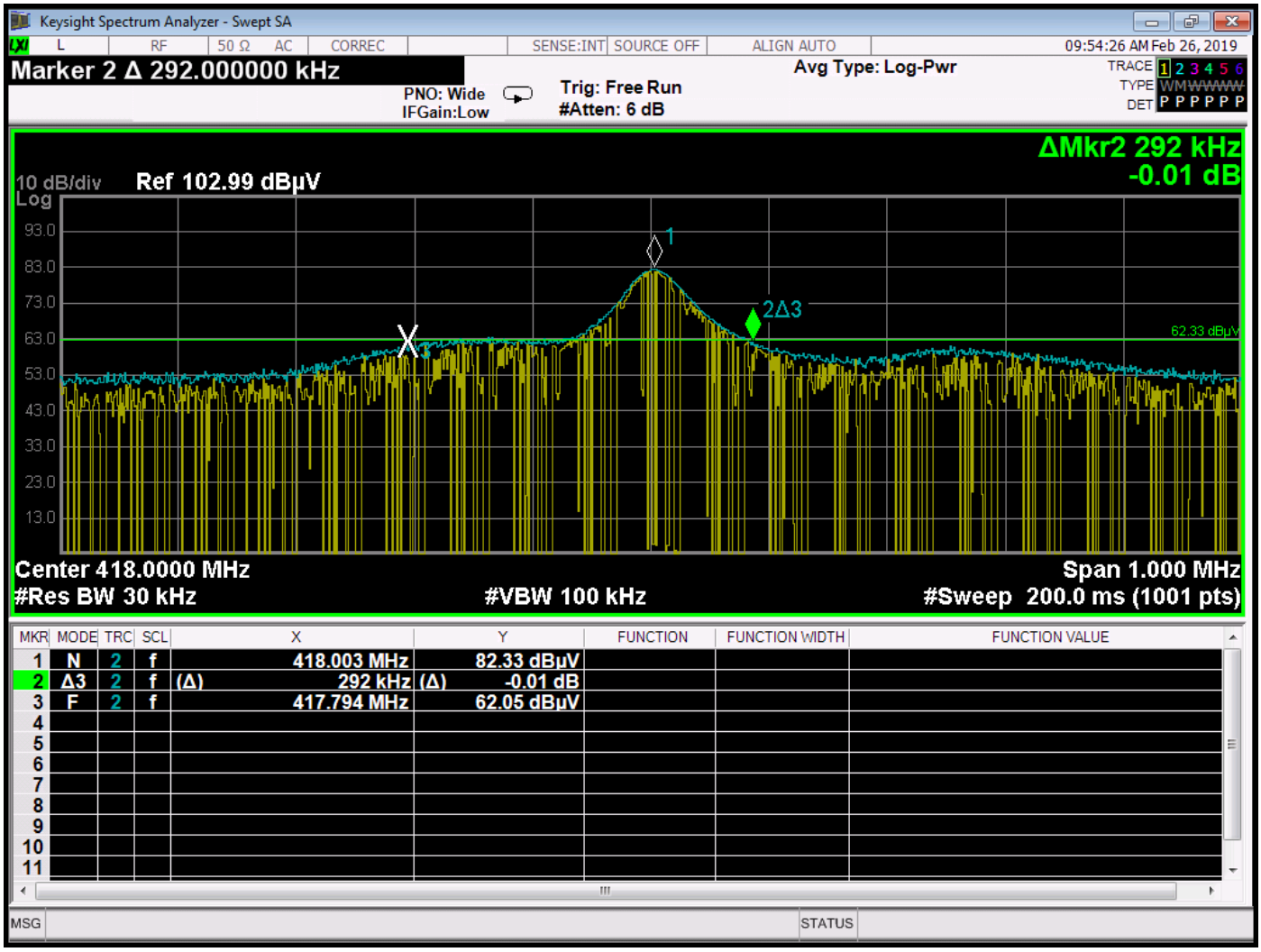
Linx Technologies
Compact Handheld Transmitter
Model: OTX-418-IND-MS-SEA01

Date: 02/25/2019
Lab: D
Tested By: Kyle Fujimoto

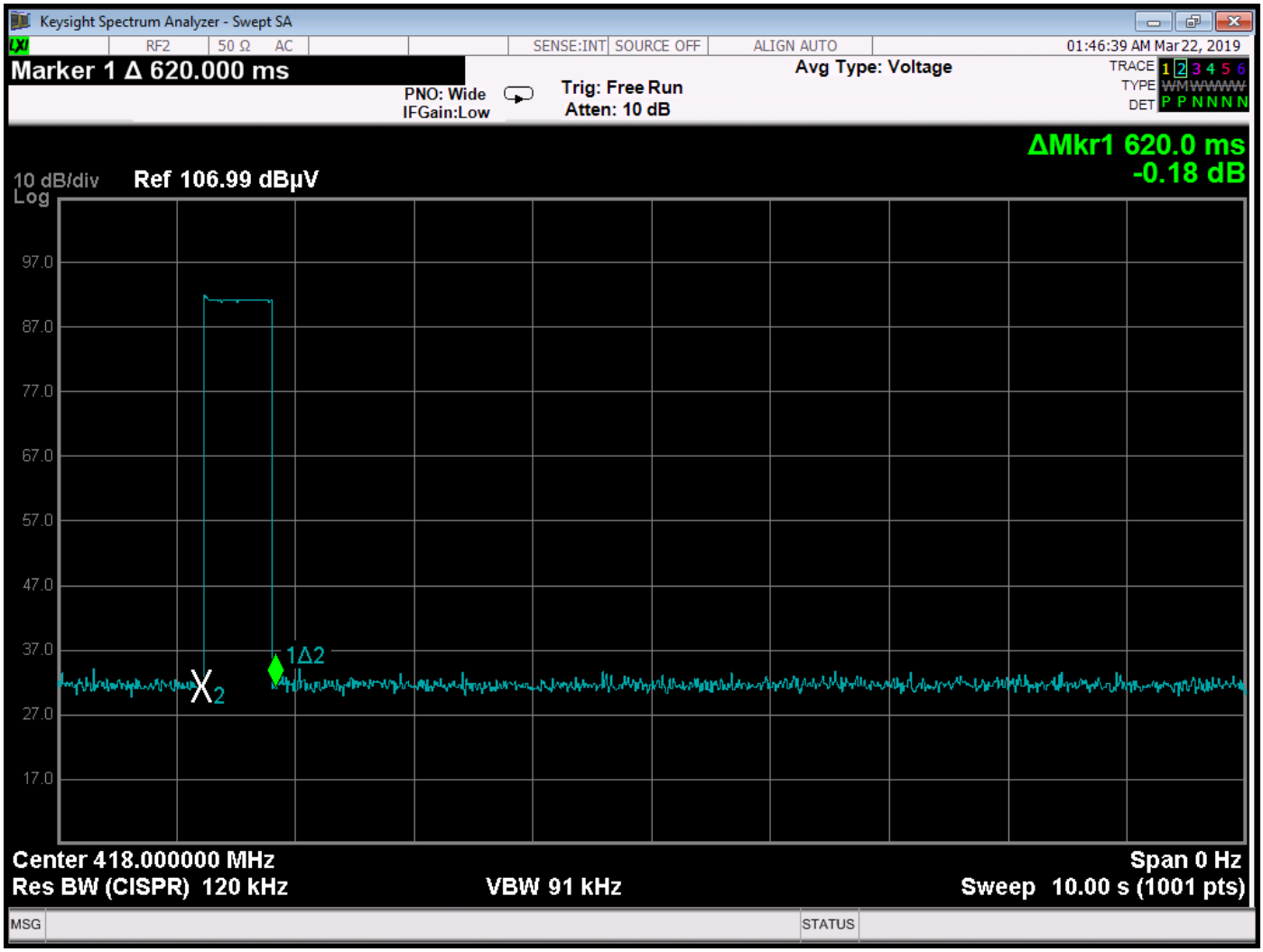
Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz
Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 4.18 GHz

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								No Emissions Detected
								from 1 GHz to 4.18 GHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 1 GHz to 4.18 GHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis

No additional spurious emissions were found between 9 kHz – 30 MHz and 1 GHz – 4.18 GHz



-20 dB Bandwidth Plot



The EUT turns off as soon as the button is released. The button was held down for 620 ms.