FCC PART 15, SUBPART B and C
TEST REPORT

for

ECOLINK WIRELESS DOOR/WINDOW CONTACT 2016

MODEL: 4655BC0-R

Prepared for

ECOLINK INTELLIGENT TECHNOLOGY, INC.
2055 CORTE DEL NOGAL
CARLSBAD, CA 92011

Prepared by:_____

EDGAR VALENCIA

Approved by:_____

KYLE FUJIMOTO

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: OCTOBER 13, 2016

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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NVLAP® TESTING
NVLAP LAB CODE 200528-0

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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:	Ecolink Wireless Door/Window Contact 2016 Model: 4655BC0-R S/N: N/A
Product Description:	The EUT is a wireless door/window sensor.
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	EcoLink Intelligent Technology, Inc. 2055 Corte Del Nogal Carlsbad, CA 92011
Test Dates:	November 11, 12, and 17, 2016

Test Specification covered by accreditation:

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Test Specifications:	Emissions requirements CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249
Test Procedure:	ANSI C63.4 2014, 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, 10 kHz – 25 GHz (Transmitter and Digital portion)	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, section 15.205, 15.209 and 15.249 Highest reading in relation to spec limit: 52.87 dBuV/m @ 2483.50 MHz (*U = 3.70 dB)

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Ecolink Wireless Door/Window Contact 2016, Model: 4655BC0-R. 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 **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.249.

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

EcoLink Intelligent Technology, Inc.

Jesse Mendez	Staff Engineer Electrical
Anna Poltoratska	Project Manager

Compatible Electronics Inc.

Edgar Valencia	Test Technician
Kyle Fujimoto	Test Engineer
James Ross	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on September 20, 2016.

2.5 Disposition of the Test Sample

The test sample has not been returned to EcoLink Intelligent Technology, Inc. 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
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
Tx	Transmit
Rx	Receiver
FCC	Federal Communications Commission

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
EN 50147-2: 1997	Anechoic chambers. Alternative test site suitability with respect to site attenuation
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 C63.4 2014	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

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The Ecolink Wireless Door/Window Contact 2016, Model: 4655BC0-R (EUT) was tested as a stand alone device. A fresh set of batteries were inserted in the EUT prior to the testing.

The EUT was tested for emissions at the low, middle, and high channels while in the X, Y and Z axis. During the testing, the EUT was continuously transmitting.

Two "AAA" batteries with 10-centimeter cables were used to test the EUT to allow the EUT to continuously transmit for an extended time.

The EUT normally operates with a 3 volt coin cell battery and this was used to verify the worst case emissions. The coin cell battery was not used beyond this due to the fact the EUT will not continuously transmit for an extended time when the coin cell battery is used.

The EUT was placed in a special modulated test mode to allow for continuously transmit via the GreenPeak ZigBee 3.0 SDK software. The laptop for the test software was only used to program the EUT and then was removed during the testing.

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

4.1.1 Cable Construction and Termination

Cables 1-2 These are 10-centimeter cables connecting the "AAA" battery holder to the EUT. The cables have an alligator clip at the EUT end and are hard wired into the "AAA" battery holder.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
ECOLINK WIRELESS DOOR/WINDOW CONTACT 2016	ECOLINK INTELLIGENT TECHNOLOGY, INC.	4655BC0-R	N/A	XQC-4655BC0R
TEST SOFTWARE FOR EUT	GREENPEAK TECHNOLOGIES	ZIGBEE 3.0 SDK	N/A	N/A
LAPTOP FOR TEST SOFTWARE	DELL	X436M A01	N/A	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB D					
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, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51210150	December 29, 2015	1 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	September 3, 2015	2 Year
Preamplifier	Com-Power	PAM-118A	551024	May 12, 2016	1 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2016	2 Year
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
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
Preamplifier	Com-Power	PA-840	711013	May 13, 2016	1 Year

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 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. A transient limiter was used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI Receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding, and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI 63:4. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by computer software. The final qualification data is located in Appendix E.

Test Results:

This test was not performed for the EUT is battery powered and does not connect to the AC power mains.

7.1.2 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 effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 10 kHz to 150 kHz, 9 kHz for 150 kHz to 30 MHz, 120 kHz for 30 MHz to 1 GHz and 1 MHz for 1 GHz to 25 GHz).

For emissions above 1 GHz, the readings were averaged by "duty cycle correction factor", derived from 20 log (dwell time /100ms). This duty cycle correction factor was then subtracted from the peak reading.

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, EN 50147-2 and CISPR 22. 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.

The EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 2.0.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 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 25 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the **Class B** limits of **CFR** Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209 and 15.249 for radiated emissions.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Frequency MHz	EMI Reading (dBuV/m)	Specification Limit (dBuV)	Delta (Cor. Reading – Spec. Limit) dB)
2483.5 (H) (Z-Axis)	52.87 (AVG)	53.97	-1.10
7320.0 (H) (Z-Axis)	52.87 (AVG)	53.97	-1.10
7320.0 (H) (Y-Axis)	52.61 (AVG)	53.97	-1.36
4960.0 (H) (X-Axis)	52.42 (AVG)	53.97	-1.55
7320.0 (H) (X-Axis)	52.37 (AVG)	53.97	-1.61
7440.0 (H) (Y-Axis)	51.81 (AVG)	53.97	-2.16

Notes:

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

(V) Vertical
(H) Horizontal
(QP) Quasi-Peak
(Avg) Average

7.2 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 duty cycle. The data sheets are located in Appendix E.

Where $\delta(\mathrm{dB}) = 20\log\left[\sum(nt_1 + mt_2 + \ldots + \xi t_x)/T\right]$

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

Duty Cycle Correction Factor = -13.72 dB

The worst case EUT was when the EUT was attempting to pair to a security controller. Please see Appendix E for the data sheets and more detailed explanation of how the duty cycle was derived.

8. CONCLUSIONS

The Ecolink Wireless Door/Window Contact 2016, Models: 4655BC0-R (EUT), as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.249.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP® TESTING NVLAP LAB CODE 200528-0

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 — Requirements."

ANSI listing CETCB

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).
US/EU MRA list NIST MRA site

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).
APEC MRA list NIST MRA site

We are also listed for IT products by the following country/agency:

VCCI Support member: Please visit http://www.vcci.jp/vcci_e/

FCC Listing, from FCC OET site
FCC test lab search https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm

Industry Canada Industrie Canada Compatible Electronics IC listing can be found at:
http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home

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 15.249 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

Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R
S/N: N/A

There are no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

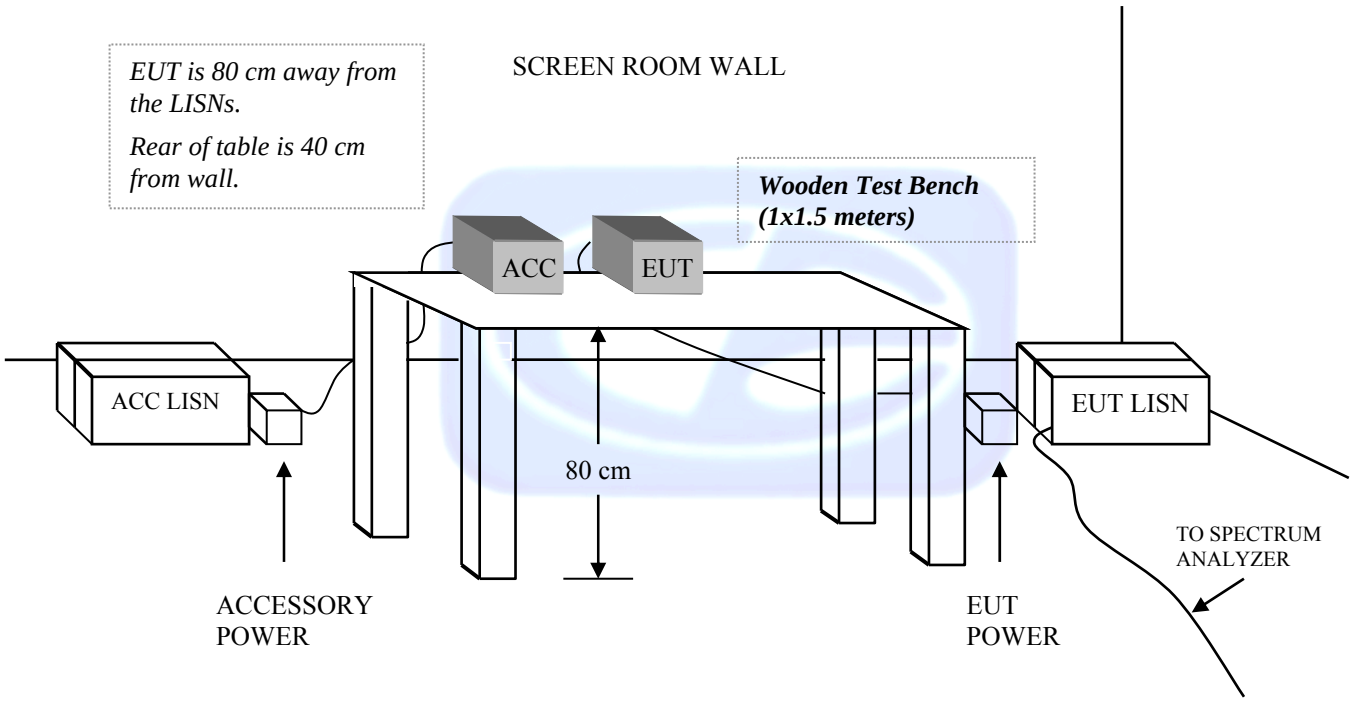
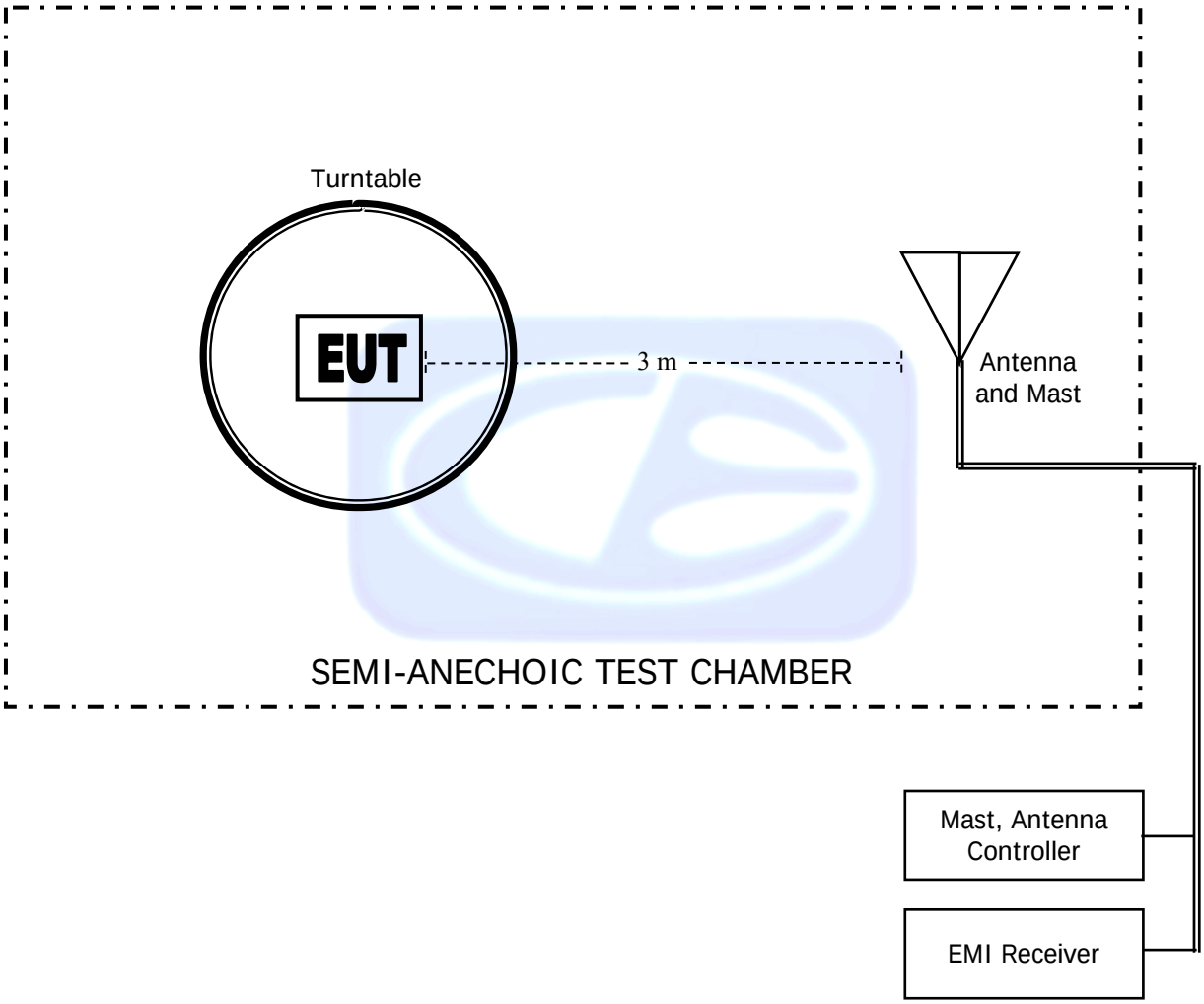


FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

CALIBRATION DATE: FEBRUARY 6, 2015

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-33.18	18.32
0.01	-34.10	17.40
0.02	-38.65	12.85
0.03	-39.28	12.22
0.04	-40.09	11.41
0.05	-40.85	10.65
0.06	-40.88	10.62
0.07	-41.07	10.43
0.08	-41.04	10.46
0.09	-41.19	10.31
0.1	-41.20	10.30
0.2	-41.52	9.98
0.3	-41.53	9.97
0.4	-41.42	10.08
0.5	-41.53	9.97
0.6	-41.53	9.97
0.7	-41.43	10.07
0.8	-41.23	10.27
0.9	-41.13	10.37
1	-41.14	10.36
2	-40.80	10.70
3	-40.66	10.84
4	-40.61	10.89
5	-40.33	11.17
6	-40.53	10.97
7	-40.47	11.03
8	-40.48	11.02
9	-39.93	11.57
10	-39.81	11.69
15	-43.35	8.15
20	-39.16	12.34
25	-40.24	11.26
30	-43.18	8.32

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61060

CALIBRATION DATE: SEPTEMBER 3, 2015

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	24.00	200	13.00
35	24.30	250	15.30
40	25.40	300	18.20
45	21.50	350	17.90
50	22.50	400	18.60
60	15.40	450	19.80
70	12.70	500	21.60
80	11.10	550	22.40
90	13.40	600	23.70
100	13.80	650	24.30
120	15.40	700	24.00
125	15.40	750	24.50
140	13.10	800	24.30
150	17.20	850	26.30
160	13.20	900	26.90
175	14.20	950	26.00
180	14.30	1000	25.60

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: FEBRUARY 26, 2016

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.93	10.0	39.33
1.5	25.54	10.5	39.64
2.0	28.09	11.0	41.04
2.5	30.21	11.5	44.29
3.0	30.15	12.0	41.22
3.5	30.17	12.5	41.50
4.0	31.90	13.0	41.62
4.5	33.51	13.5	40.63
5.0	33.87	14.0	39.94
5.5	35.08	14.5	41.84
6.0	34.81	15.0	42.69
6.5	34.26	15.5	39.03
7.0	36.33	16.0	39.07
7.5	37.03	16.5	41.40
8.0	37.56	17.0	43.18
8.5	40.07	17.5	47.01
9.0	38.92	18.0	46.48
9.5	38.21		

COM-POWER PA-118

PREAMPLIFIER

S/N: 551024

CALIBRATION DATE: MAY 12, 2016

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.84	6.0	39.05
1.1	39.40	6.5	38.94
1.2	39.58	7.0	39.25
1.3	39.68	7.5	39.09
1.4	39.91	8.0	39.01
1.5	39.78	8.5	38.60
1.6	39.50	9.0	38.64
1.7	39.81	9.5	39.67
1.8	39.89	10.0	39.30
1.9	39.94	11.0	39.15
2.0	39.57	12.0	39.24
2.5	40.39	13.0	39.49
3.0	40.63	14.0	39.44
3.5	40.80	15.0	39.94
4.0	40.86	16.0	40.09
4.5	39.94	17.0	40.06
5.0	34.47	18.0	39.76
5.5	39.32		

COM-POWER AH-826

HORN ANTENNA

S/N: 71957

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.5	22.5	35.5
18.5	33.5	23.0	35.9
19.0	34.0	23.5	35.7
19.5	34.0	24.0	35.6
20.0	34.3	24.5	36.0
20.5	34.9	25.0	36.2
21.0	34.7	25.5	36.1
21.5	35.0	26.0	36.2
22.0	35.0	26.5	35.7

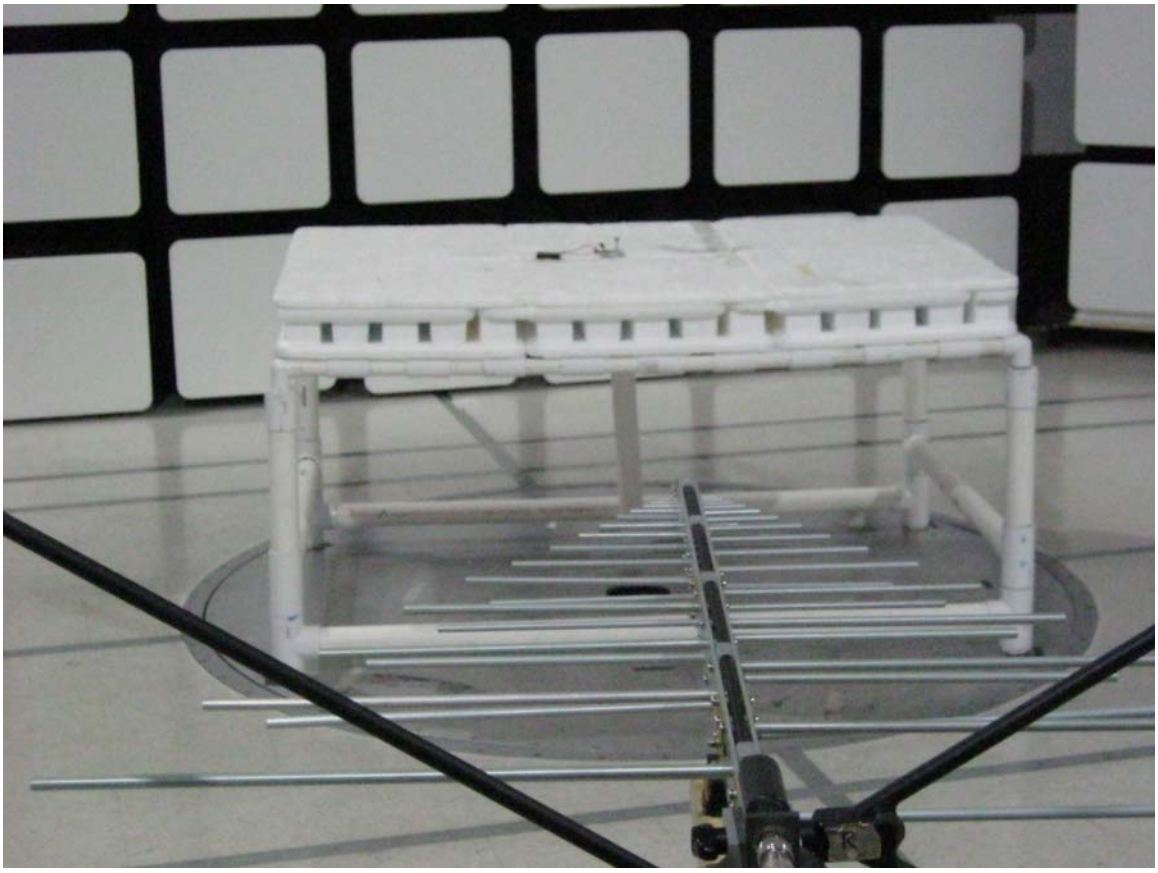
COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: MAY 13, 2016

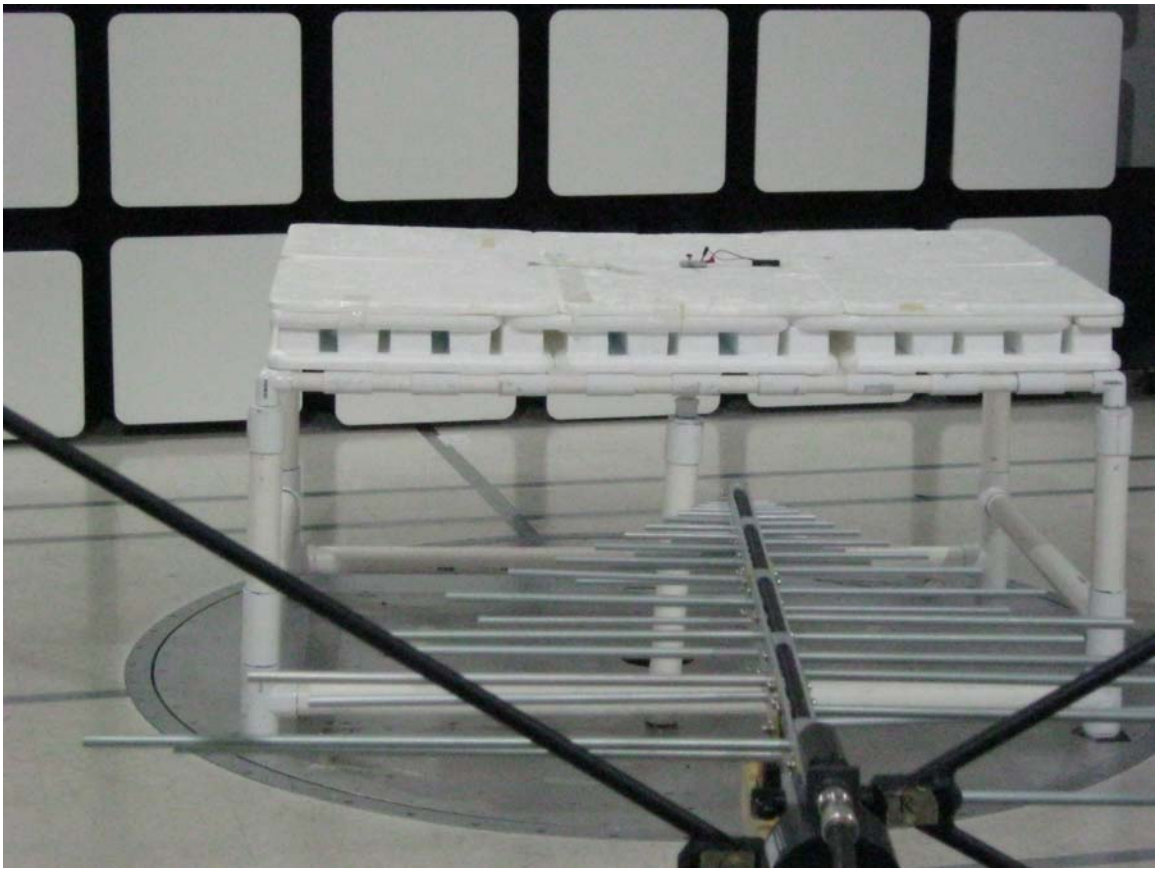
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	25.19	31.0	25.69
19.0	24.48	31.5	25.74
20.0	24.39	32.0	26.35
21.0	24.73	32.5	26.64
22.0	23.49	33.0	25.98
23.0	24.23	33.5	24.68
24.0	24.59	34.0	24.61
25.0	25.32	34.5	23.78
26.0	25.66	35.0	24.74
26.5	25.99	35.5	24.39
27.0	26.26	36.0	23.46
27.5	25.33	36.5	23.71
28.0	24.49	37.0	26.35
28.5	24.74	37.5	23.49
29.0	25.93	38.0	25.42
29.5	26.28	38.5	24.87
30.0	26.17	39.0	22.60
30.5	26.11	39.5	20.57
		40.0	19.15



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
ECOLINK WIRELESS DOOR/WINDOW CONTACT 2016
MODEL: 4655BC0-R
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

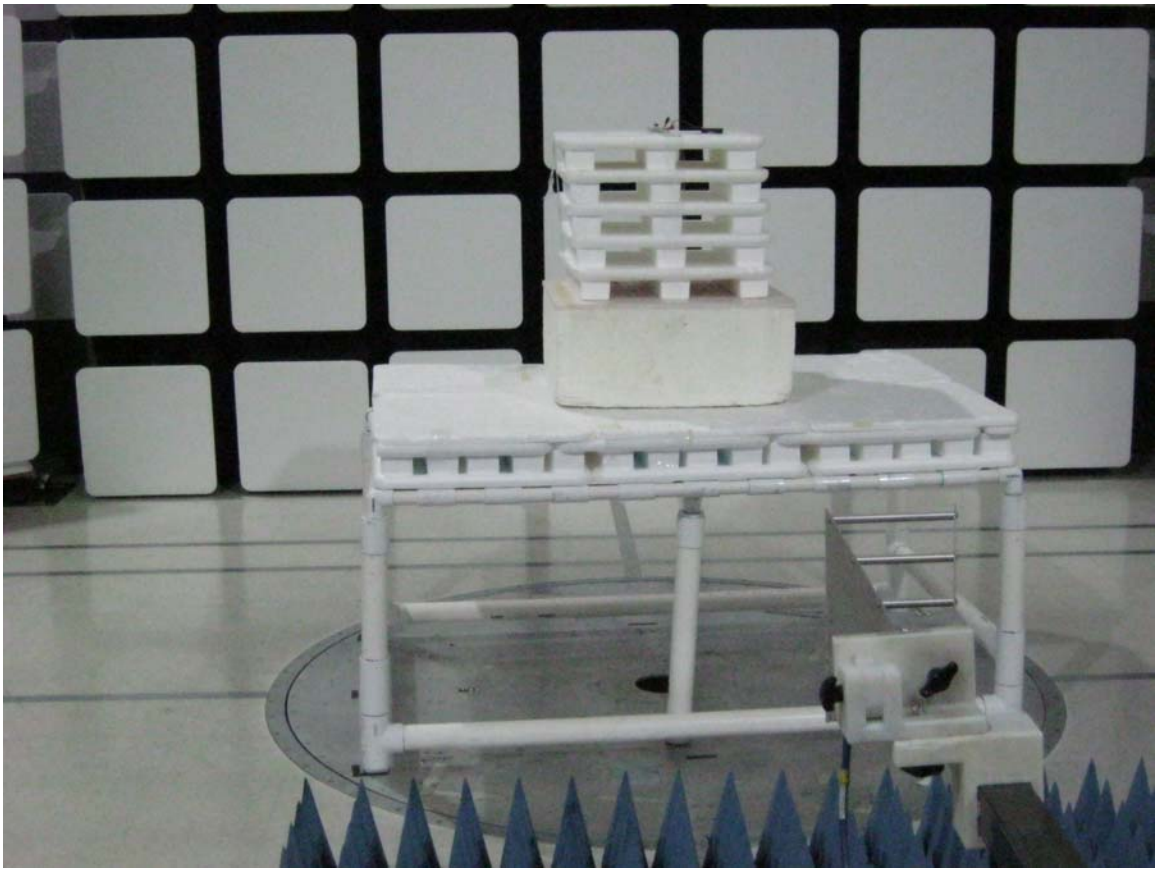
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
ECOLINK WIRELESS DOOR/WINDOW CONTACT 2016
MODEL: 4655BC0-R
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

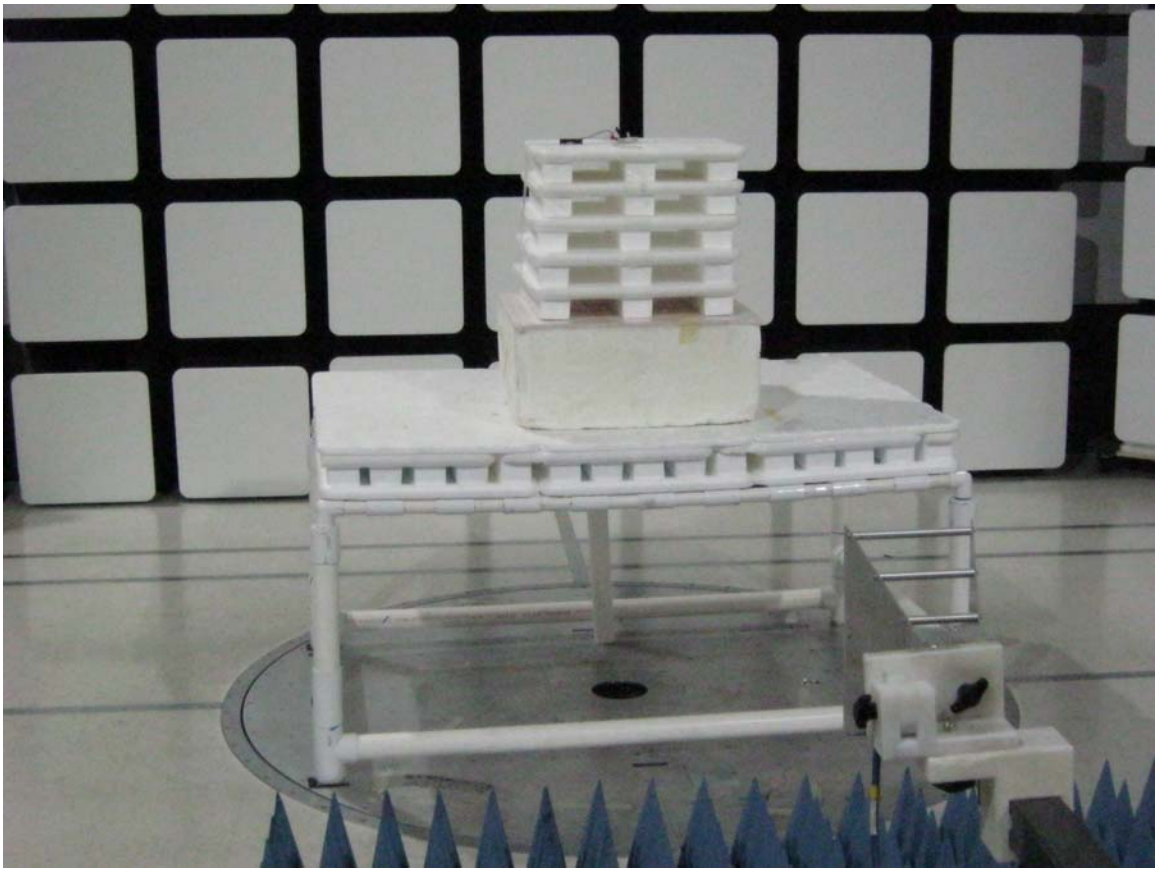
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
ECOLINK WIRELESS DOOR/WINDOW CONTACT 2016
MODEL: 4655BC0-R
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
ECOLINK WIRELESS DOOR/WINDOW CONTACT 2016
MODEL: 4655BC0-R
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

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/12/2016
Lab: D
Tested By: Kyle Fujimoto

Fundamental of the EUT

2405 MHz

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2405	93.21	V	113.97	-20.76	Peak	245.50	197.76	**X-Axis**
2405	79.49	V	93.97	-14.48	Avg	245.50	197.76	**X-Axis**
2405	97.68	H	113.97	-16.29	Peak	240.25	160.32	**X-Axis**
2405	83.96	H	93.97	-10.01	Avg	240.25	160.32	**X-Axis**
2405	93.33	V	113.97	-20.64	Peak	6.25	159.55	**Y-Axis**
2405	79.61	V	93.97	-14.36	Avg	6.25	159.55	**Y-Axis**
2405	91.08	H	113.97	-22.89	Peak	284.00	102.35	**Y-Axis**
2405	77.36	H	93.97	-16.61	Avg	284.00	102.35	**Y-Axis**
2405	93.98	V	113.97	-19.99	Peak	188.25	100.55	**Z-Axis**
2405	80.26	V	93.97	-13.71	Avg	188.25	100.55	**Z-Axis**
2405	96.45	H	113.97	-17.52	Peak	185.25	125.25	**Z-Axis**
2405	82.73	H	93.97	-11.24	Avg	185.25	125.25	**Z-Axis**

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Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/12/2016
Lab: D
Tested By: Kyle Fujimoto

Fundamental of the EUT

2440 MHz

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2440	96.53	V	113.97	-17.44	Peak	68.25	172.08	**X-Axis**
2440	82.81	V	93.97	-11.16	Avg	68.25	172.08	**X-Axis**
2440	101.72	H	113.97	-12.25	Peak	108.25	221.58	**X-Axis**
2440	88.00	H	93.97	-5.97	Avg	108.25	221.58	**X-Axis**
2440	100.53	V	113.97	-13.44	Peak	120.00	111.49	**Y-Axis**
2440	86.81	V	93.97	-7.16	Avg	120.00	111.49	**Y-Axis**
2440	99.52	H	113.97	-14.45	Peak	236.00	191.31	**Y-Axis**
2440	85.80	H	93.97	-8.17	Avg	236.00	191.31	**Y-Axis**
2440	98.83	V	113.97	-15.14	Peak	226.75	104.26	**Z-Axis**
2440	85.11	V	93.97	-8.86	Avg	226.75	104.26	**Z-Axis**
2440	98.85	H	113.97	-15.12	Peak	76.00	157.40	**Z-Axis**
2440	85.13	H	93.97	-8.84	Avg	76.00	157.40	**Z-Axis**

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Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/12/2016
Lab: D
Tested By: Kyle Fujimoto

Fundamental of the EUT

2480 MHz

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480	95.66	V	113.97	-18.31	Peak	77.00	128.80	**X-Axis**
2480	81.94	V	93.97	-12.03	Avg	77.00	128.80	**X-Axis**
2480	98.56	H	113.97	-15.42	Peak	224.50	150.65	**X-Axis**
2480	84.84	H	93.97	-9.13	Avg	224.50	150.65	**X-Axis**
2480	97.50	V	113.97	-16.47	Peak	308.50	128.80	**Y-Axis**
2480	83.78	V	93.97	-10.19	Avg	308.50	128.80	**Y-Axis**
2480	95.24	H	113.97	-18.73	Peak	313.50	135.50	**Y-Axis**
2480	81.52	H	93.97	-12.45	Avg	313.50	135.50	**Y-Axis**
2480	96.20	V	113.97	-17.77	Peak	311.50	125.50	**Z-Axis**
2480	82.48	V	93.97	-11.49	Avg	311.50	125.50	**Z-Axis**
2480	97.74	H	113.97	-16.23	Peak	182.25	124.50	**Z-Axis**
2480	84.02	H	93.97	-9.95	Avg	182.25	124.50	**Z-Axis**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel

X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	59.66	V	73.97	-14.31	Peak	234.75	183.19	
4810	45.94	V	53.97	-8.03	Avg	234.75	183.19	
7215	58.03	V	73.97	-15.94	Peak	0.00	142.23	
7215	44.31	V	53.97	-9.66	Avg	0.00	142.23	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

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Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel

X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	62.08	H	73.97	-11.90	Peak	197.25	142.71	
4810	48.36	H	53.97	-5.61	Avg	197.25	142.71	
7215	58.91	H	73.97	-15.06	Peak	109.25	199.19	
7215	45.19	H	53.97	-8.78	Avg	109.25	199.19	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

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Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel

Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	55.42	V	73.97	-18.55	Peak	285.75	216.02	
4810	41.70	V	53.97	-12.27	Avg	285.75	216.02	
7215	56.31	V	73.97	-17.66	Peak	0.00	216.02	
7215	42.59	V	53.97	-11.38	Avg	0.00	216.02	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

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Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel

Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	58.93	H	73.97	-15.04	Peak	258.00	186.41	
4810	45.21	H	53.97	-8.76	Avg	258.00	186.41	
7215	54.98	H	73.97	-18.99	Peak	156.00	160.92	
7215	41.26	H	53.97	-12.71	Avg	156.00	160.92	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

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Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel

Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	63.96	V	73.97	-10.01	Peak	81.75	218.05	
4810	50.24	V	53.97	-3.73	Avg	81.75	218.05	
7215	58.55	V	73.97	-15.42	Peak	275.50	198.77	
7215	44.83	V	53.97	-9.14	Avg	275.50	198.77	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel

Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	63.10	H	73.97	-10.87	Peak	157.00	189.10	
4810	49.38	H	53.97	-4.59	Avg	157.00	189.10	
7215	59.44	H	73.97	-14.53	Peak	43.50	158.23	
7215	45.72	H	53.97	-8.25	Avg	43.50	158.23	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel

X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	60.19	V	73.97	-13.78	Peak	142.25	163.61	
4880	46.47	V	53.97	-7.50	Avg	142.25	163.61	
7320	64.48	V	73.97	-9.49	Peak	182.50	138.83	
7320	50.76	V	53.97	-3.21	Avg	182.50	138.83	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel

X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	64.08	H	73.97	-9.89	Peak	97.00	178.17	
4880	50.36	H	53.97	-3.61	Avg	97.00	178.17	
7320	66.09	H	73.97	-7.89	Peak	328.50	159.31	
7320	52.37	H	53.97	-1.61	Avg	328.50	159.31	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel

Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	62.82	V	73.97	-11.15	Peak	13.50	124.68	
4880	49.10	V	53.97	-4.87	Avg	13.50	124.68	
7320	64.80	V	73.97	-9.18	Peak	313.25	124.68	
7320	51.08	V	53.97	-2.90	Avg	313.25	124.68	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel

Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	64.92	H	73.97	-9.05	Peak	125.25	177.28	
4880	51.20	H	53.97	-2.77	Avg	125.25	177.28	
7320	66.33	H	73.97	-7.64	Peak	240.25	150.77	
7320	52.61	H	53.97	-1.36	Avg	240.25	150.77	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel

Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	59.26	V	73.97	-14.71	Peak	128.25	240.02	
4880	45.54	V	53.97	-8.43	Avg	128.25	240.02	
7320	63.74	V	73.97	-10.23	Peak	42.75	131.91	
7320	50.02	V	53.97	-3.95	Avg	42.75	131.91	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel

Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	64.98	H	73.97	-8.99	Peak	307.75	120.74	
4880	51.26	H	53.97	-2.71	Avg	307.75	120.74	
7320	66.59	H	73.97	-7.38	Peak	61.50	133.28	
7320	52.87	H	53.97	-1.10	Avg	61.50	133.28	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel

X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	57.82	V	73.97	-16.15	Peak	350.00	225.25	
4960	44.10	V	53.97	-9.87	Avg	350.00	225.25	
7440	63.52	V	73.97	-10.45	Peak	144.00	226.71	
7440	49.80	V	53.97	-4.17	Avg	144.00	226.71	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel

X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	66.14	H	73.97	-7.83	Peak	154.75	168.38	
4960	52.42	H	53.97	-1.55	Avg	154.75	168.38	
7440	64.48	H	73.97	-9.50	Peak	350.00	158.58	
7440	50.76	H	53.97	-3.22	Avg	350.00	158.58	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel

Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	59.32	V	73.97	-14.65	Peak	65.00	148.14	
4960	45.60	V	53.97	-8.37	Avg	65.00	148.14	
7440	61.09	V	73.97	-12.88	Peak	351.25	138.05	
7440	47.37	V	53.97	-6.60	Avg	351.25	138.05	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel

Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	62.31	H	73.97	-11.66	Peak	350.00	168.38	
4960	48.59	H	53.97	-5.38	Avg	350.00	168.38	
7440	65.53	H	73.97	-8.44	Peak	139.75	168.38	
7440	51.81	H	53.97	-2.16	Avg	139.75	168.38	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 20166
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel

Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	56.84	V	73.97	-17.13	Peak	10.00	135.79	
4960	43.12	V	53.97	-10.85	Avg	10.00	135.79	
7440	64.78	V	73.97	-9.19	Peak	14.25	135.79	
7440	51.06	V	53.97	-2.91	Avg	14.25	135.79	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/11/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel

Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	63.85	H	73.97	-10.12	Peak	190.75	156.50	
4960	50.13	H	53.97	-3.84	Avg	190.75	156.50	
7440	63.12	H	73.97	-10.85	Peak	208.00	147.61	
7440	49.40	H	53.97	-4.57	Avg	208.00	147.61	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

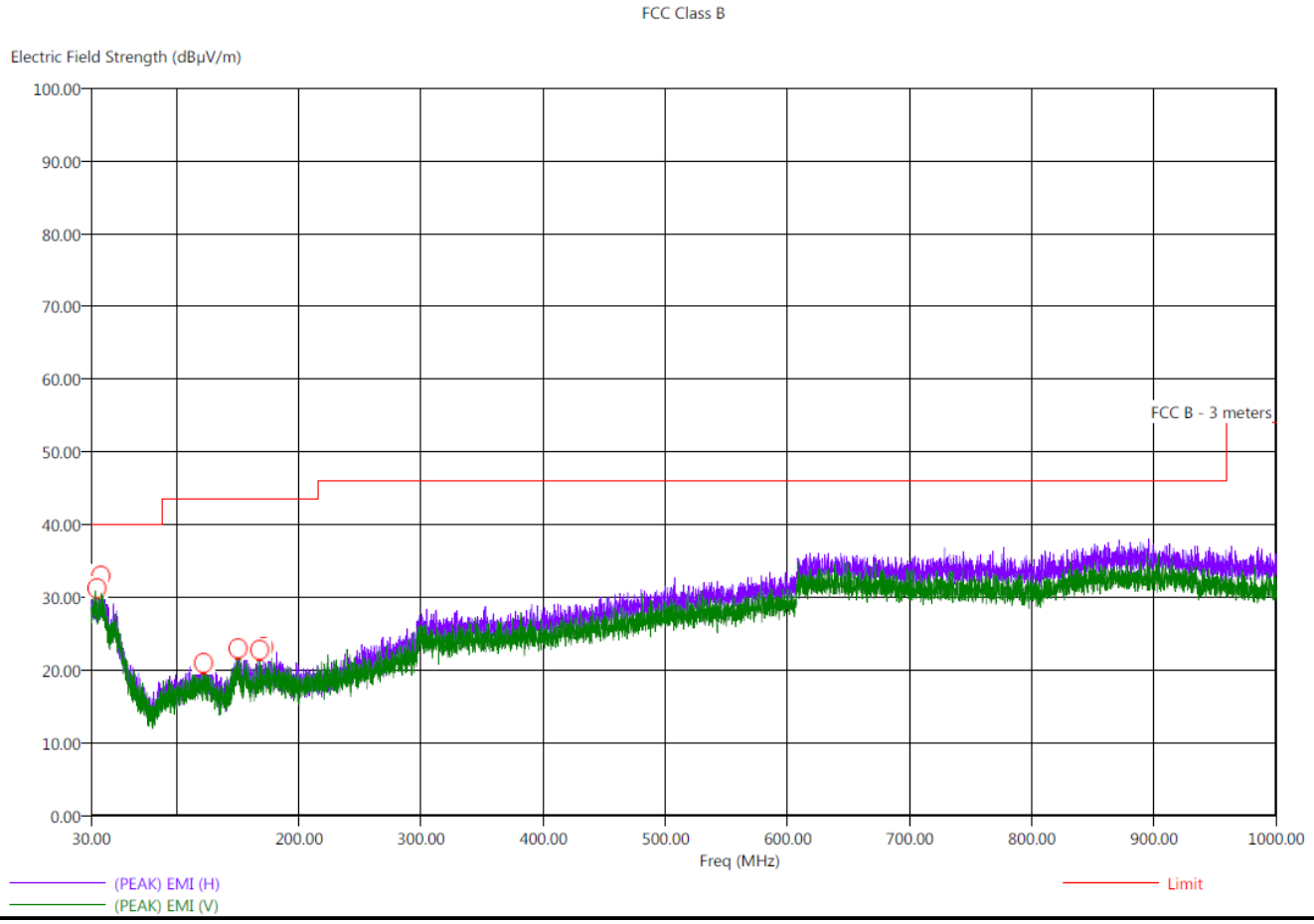
Date: 11/12/2016
Lab: D
Tested By: Kyle Fujimoto

Digital Spurious Emissions

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions from the
								Digital Portion of the EUT
								from 10 kHz to 30 MHz
								No Emissions from the
								Non-Harmonic emissions
								of the TX from 10 kHz
								to 30 MHz
								Tested in the X-Axis,
								Y-Axis, and Z-Axis
								No Emissions from the
								Digital Portion of the EUT
								from 1 GHz to 25 GHz
								No Emissions from the
								Non-Harmonic emissions
								of the TX from 1 GHz
								to 25 GHz
								Tested in the X-Axis,
								Y-Axis, and Z-Axis

Title: Pre-Scan - FCC Class B
File: Agilent - Pre-Scan - FCC Class B - 30 MHz to 1000 MHz - X-Axis - 11-17-2016.set
Operator: Kyle Fujimoto
EUT Type: Echolink Wireless Door/Window Contact 2016
EUT Condition: The EUT is continuously transmitting at the low channel - X-axis
Comments: Company: Echolink Intelligent Technology, Inc.
Model: 4655BC0-R

11/17/2016 8:19:38 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: Agilent - Final Scan - FCC Class B - 30 MHz to 1000 MHz - X-Axis Worst Case - 11-17-2016.set
Operator: Kyle Fujimoto
EUT Type: Ecolink Wireless Door/Window Contact 2016
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
Comments: Company: Ecolink Intelligent Technology, Inc.
Model: 4655BC0-R
X-Axis is Worst Case

11/17/2016 9:02:44 AM
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 Agl (deg)
34.90	H	31.42	26.62	-8.58	-13.38	40.00	24.33	0.35	329.25
38.10	H	32.98	27.28	-7.02	-12.72	40.00	24.99	0.38	292.25
122.20	V	21.74	16.60	-21.76	-26.90	43.50	15.40	0.70	201.50
150.30	H	23.53	18.18	-19.97	-25.32	43.50	16.98	0.80	260.00
168.10	V	21.61	16.92	-21.89	-26.58	43.50	13.76	0.73	83.25
171.30	H	22.02	17.06	-21.48	-26.44	43.50	13.97	0.71	69.75

BAND EDGES DATA SHEETS

FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

Date: 11/12/2016
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Low Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2405	93.98	V	113.97	-19.99	Peak	188.25	100.55	**Fundamental**
2405	80.26	V	93.97	-13.71	Avg	188.25	100.55	**Z-Axis Worst Case**
2400	54.43	V	73.97	-19.54	Peak	188.25	100.55	**Band Edge**
2400	40.71	V	53.97	-13.26	Avg	188.25	100.55	**Z-Axis Worst Case**
2405	97.68	H	113.97	-16.29	Peak	240.25	160.32	**Fundamental**
2405	83.96	H	93.97	-10.01	Avg	240.25	160.32	**X-Axis Worst Case**
2400	57.44	H	73.97	-16.53	Peak	240.25	160.32	**Band Edge**
2400	43.72	H	53.97	-10.25	Avg	240.25	160.32	**X-Axis Worst Case**

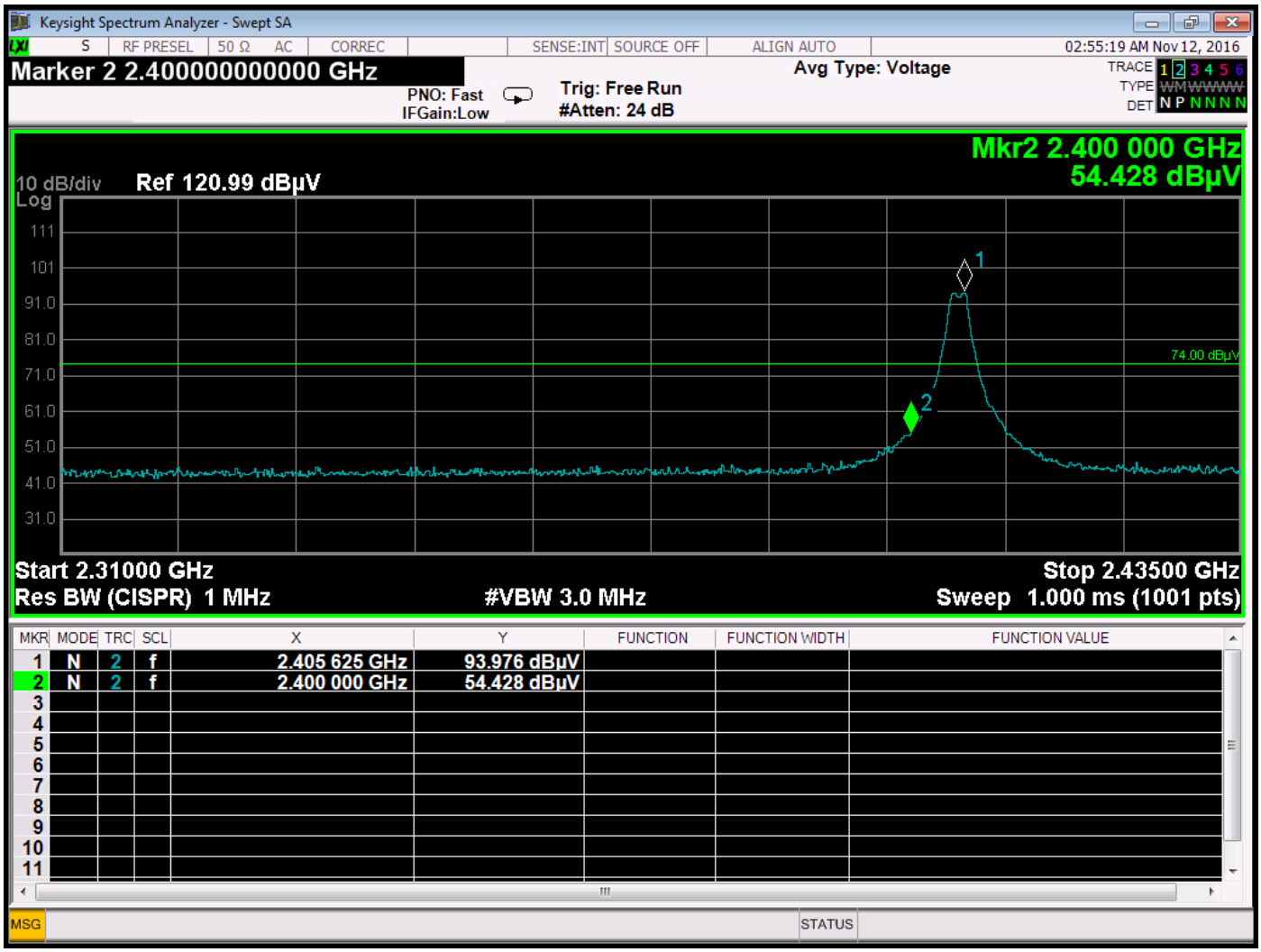
FCC 15.249

Ecolink Intelligent Technology, Inc.
Ecolink Wireless Door/Window Contact 2016
Model: 4655BC0-R

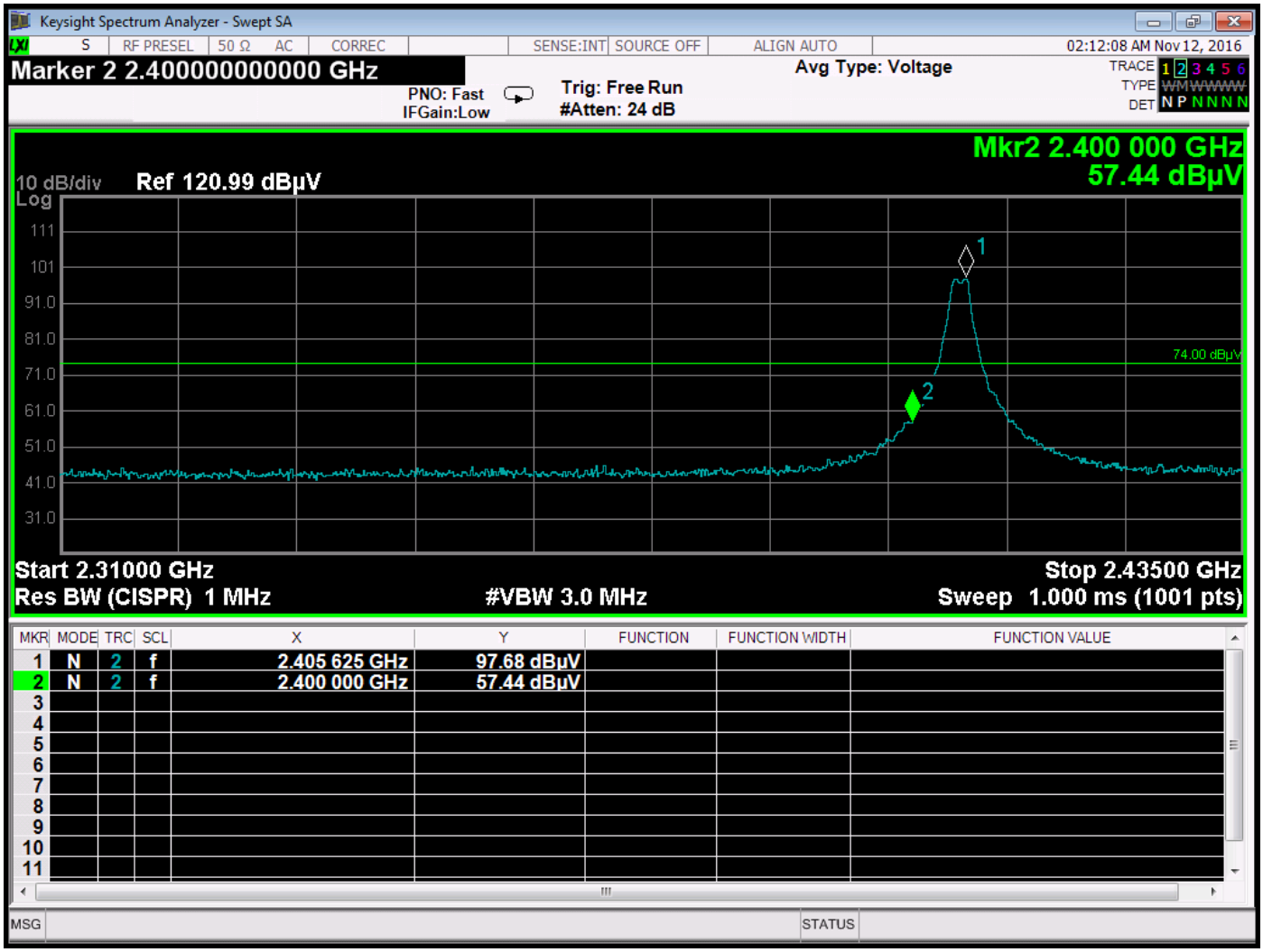
Date: 11/12/2016
Lab: D
Tested By: Kyle Fujimoto

Band Edges - High Channel

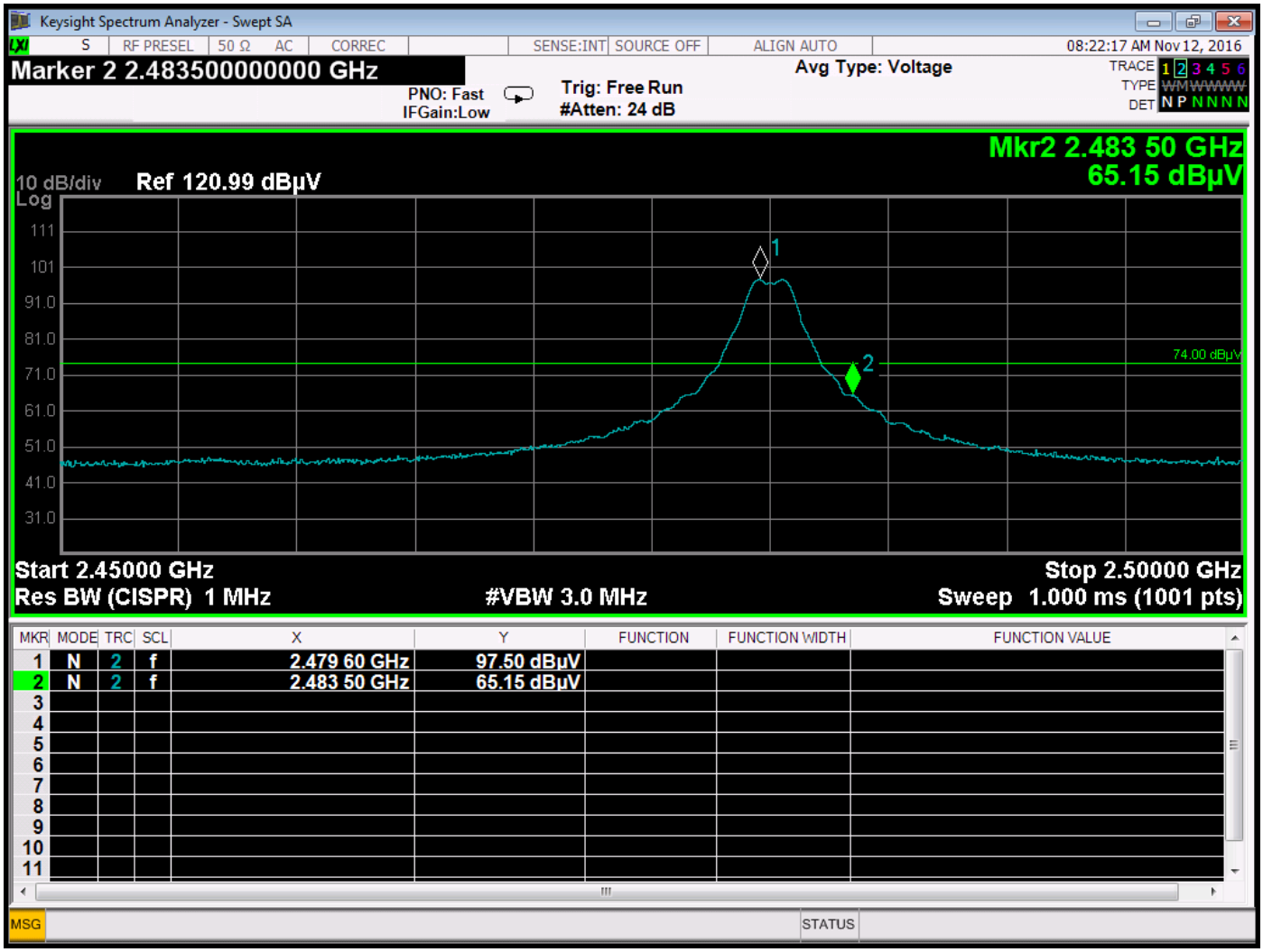
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480	97.50	V	113.97	-16.47	Peak	308.50	128.80	**Fund. of High Channel**
2480	83.78	V	93.97	-10.19	Avg	308.50	128.80	**Y-Axis Worst Case**
2483.5	65.15	V	73.97	-8.82	Peak	308.50	128.80	**Band Edge of High Ch.**
2483.5	51.43	V	53.97	-2.54	Avg	308.50	128.80	**Y-Axis Worst Case**
2480	98.56	H	113.97	-15.42	Peak	224.50	150.65	**Fund. of High Channel**
2480	84.84	H	93.97	-9.13	Avg	224.50	150.65	**X-Axis Worst Case**
2483.5	66.59	H	73.97	-7.38	Peak	224.50	150.65	**Fund. of High Channel**
2483.5	52.87	H	53.97	-1.10	Avg	224.50	150.65	**X-Axis Worst Case**



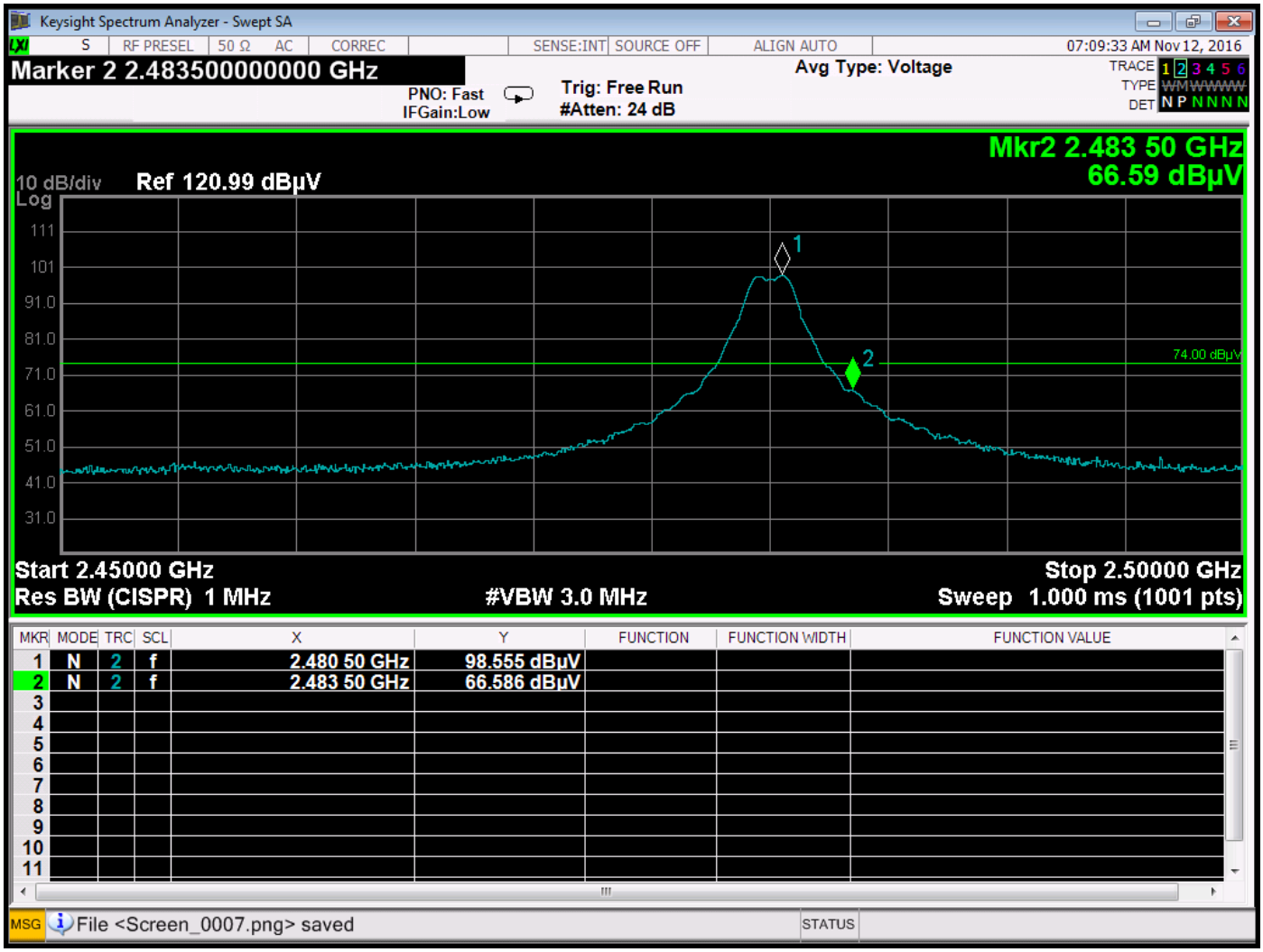
Band Edge – Vertical Polarization – Low Channel – Model: 4655BC0-R – Z-Axis Worst Case



Band Edge – Horizontal Polarization – Low Channel – Model: 4655BC0-R – X-Axis Worst Case

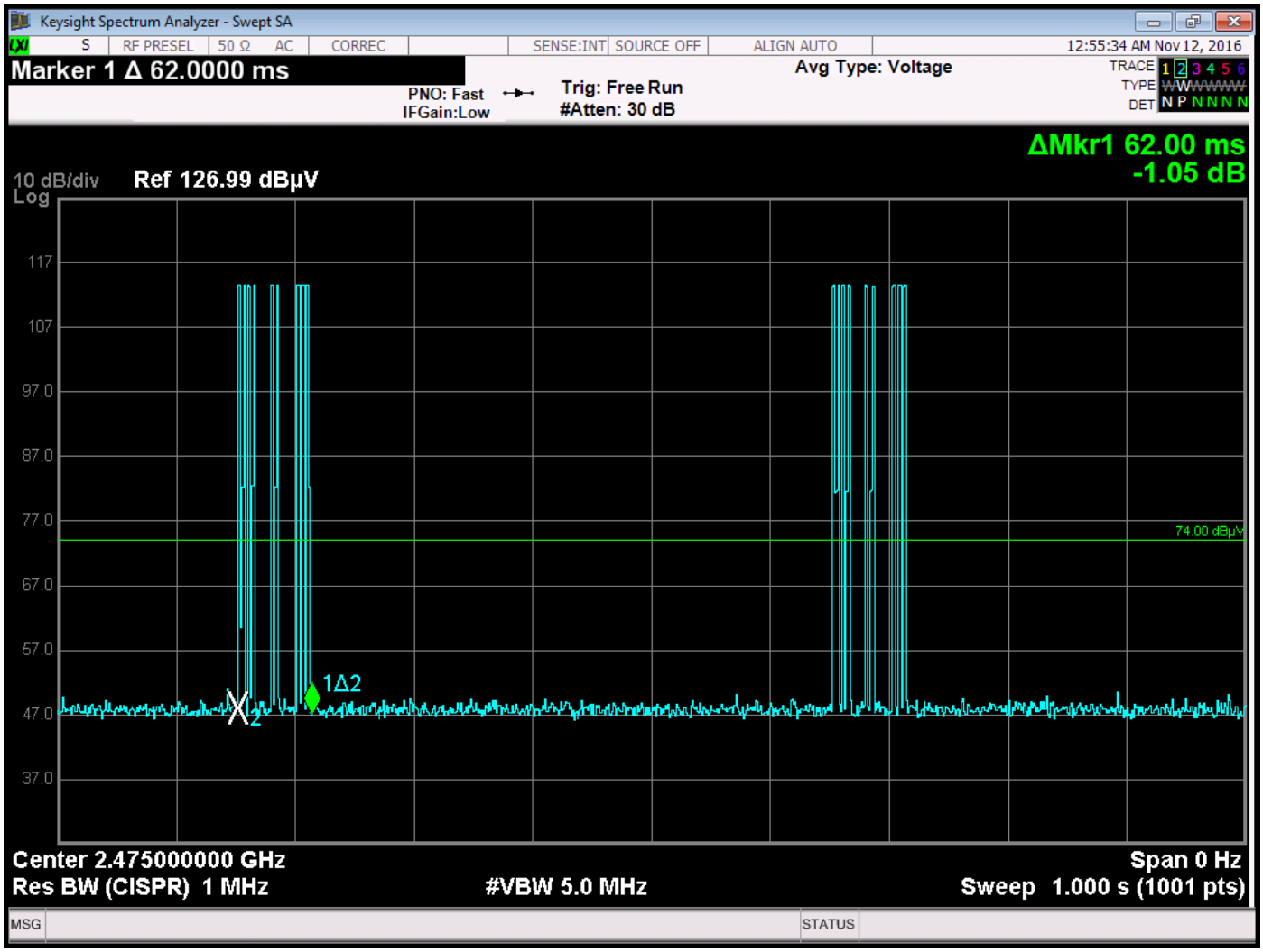


Band Edge – Vertical Polarization – High Channel – Model: 4655BC0-R – Y-Axis Worst Case

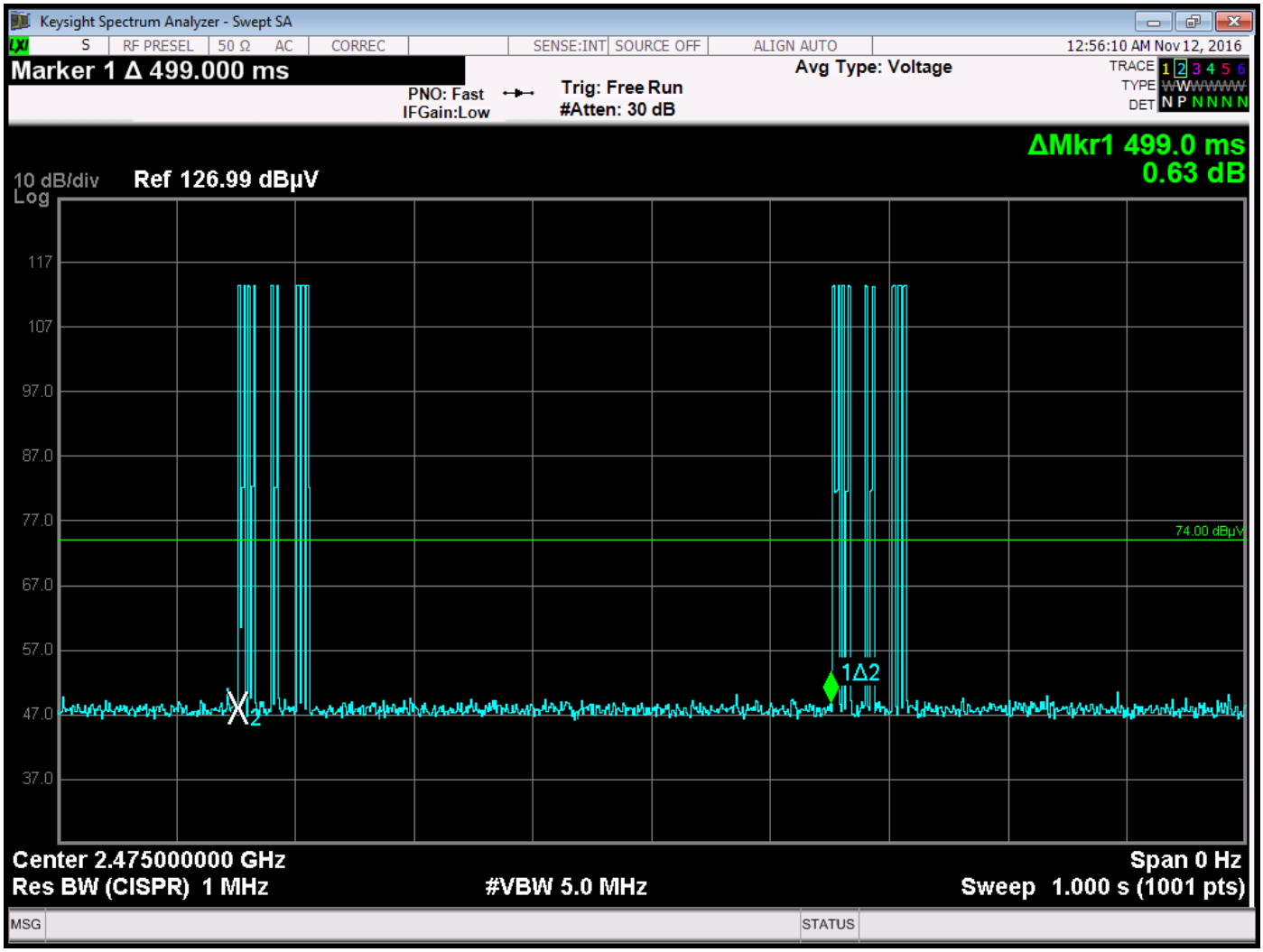


Band Edge – Horizontal Polarization – High Channel – Model: 4655BC0-R – X-Axis Worst Case

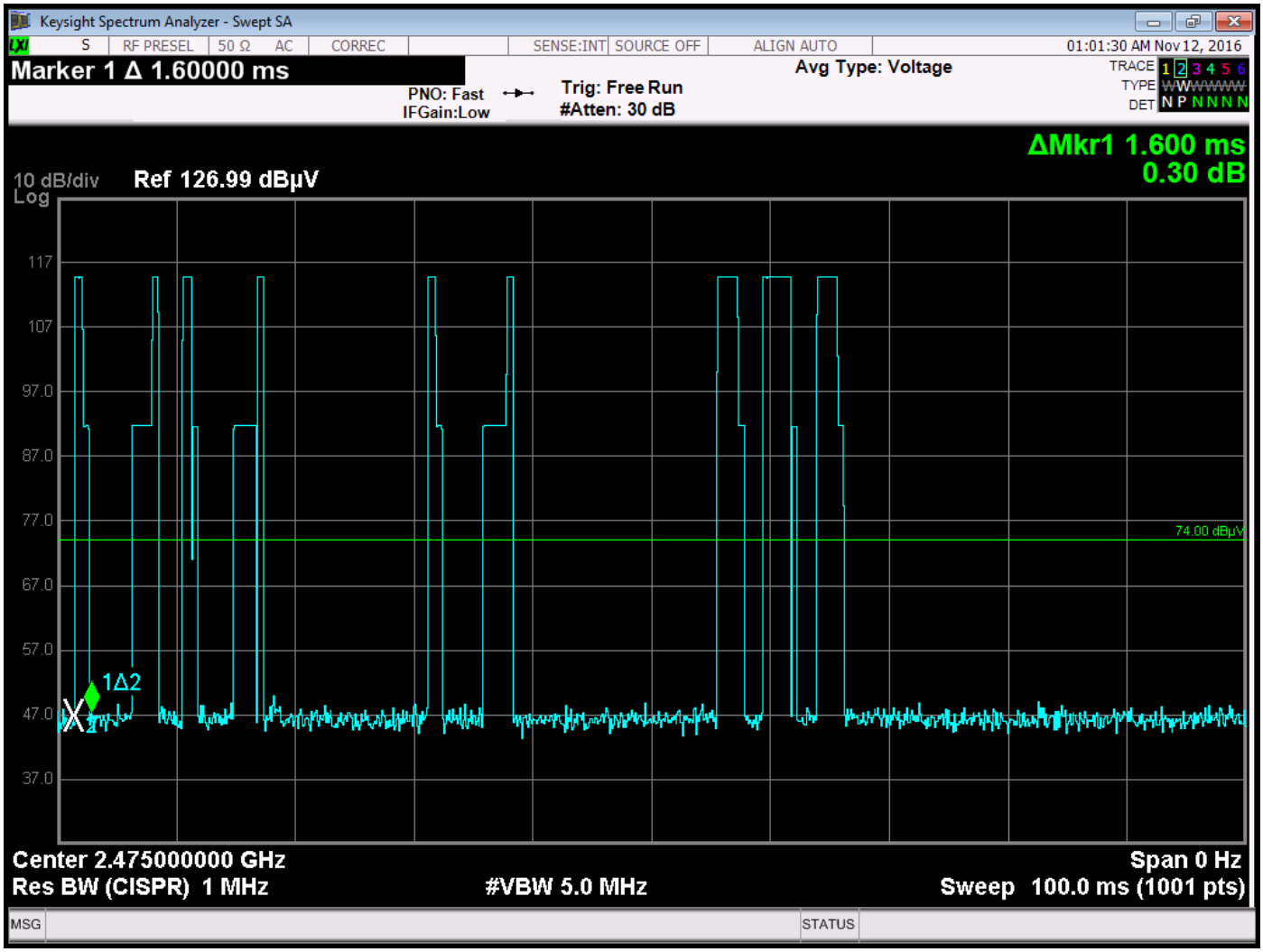
DUTY CYCLE DATA SHEETS



Pulse Train when in Attempting to Pair Mode.

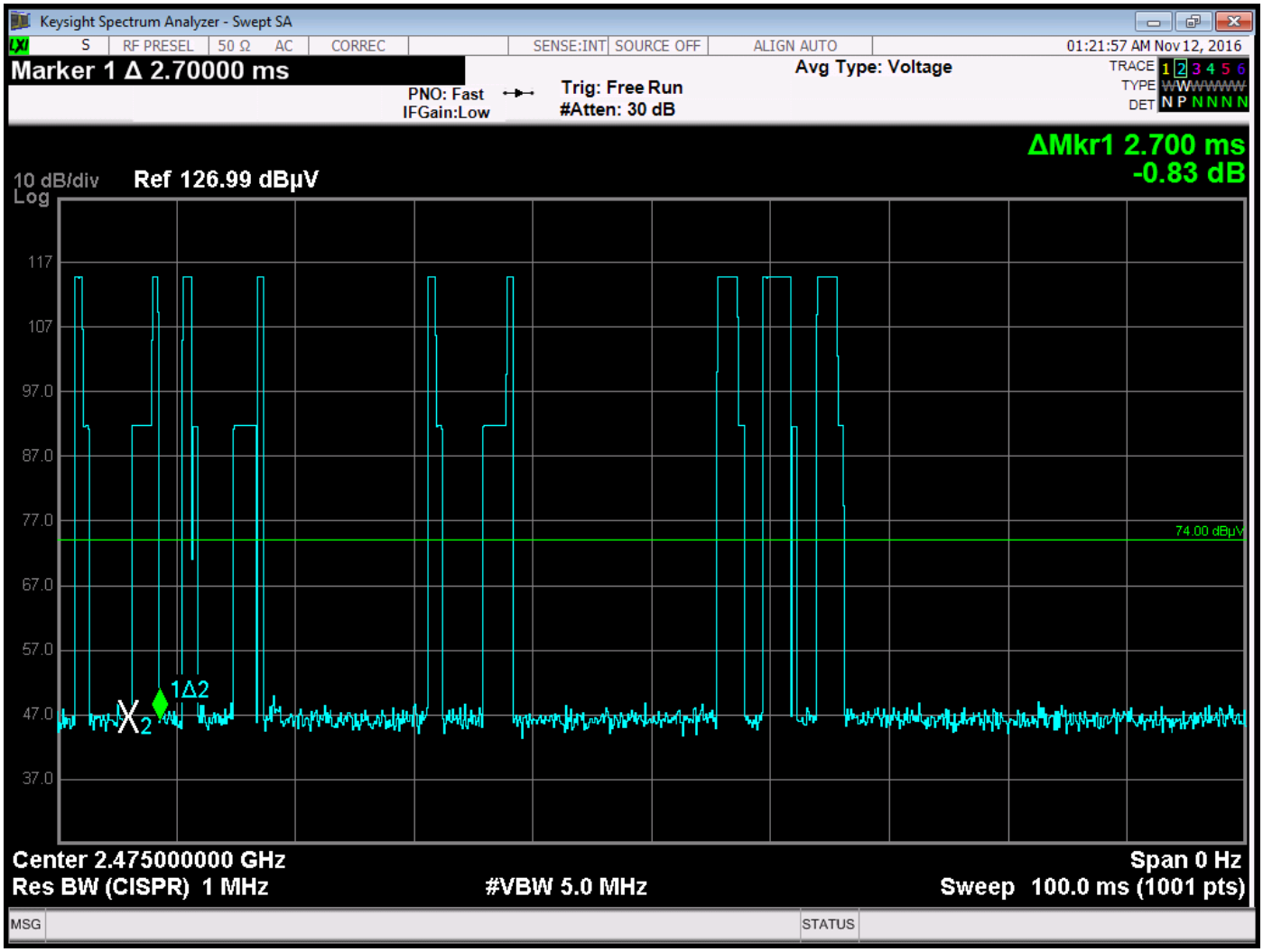


The Pulse Train only appears once in a 100 ms period – Attempting to Pair Mode

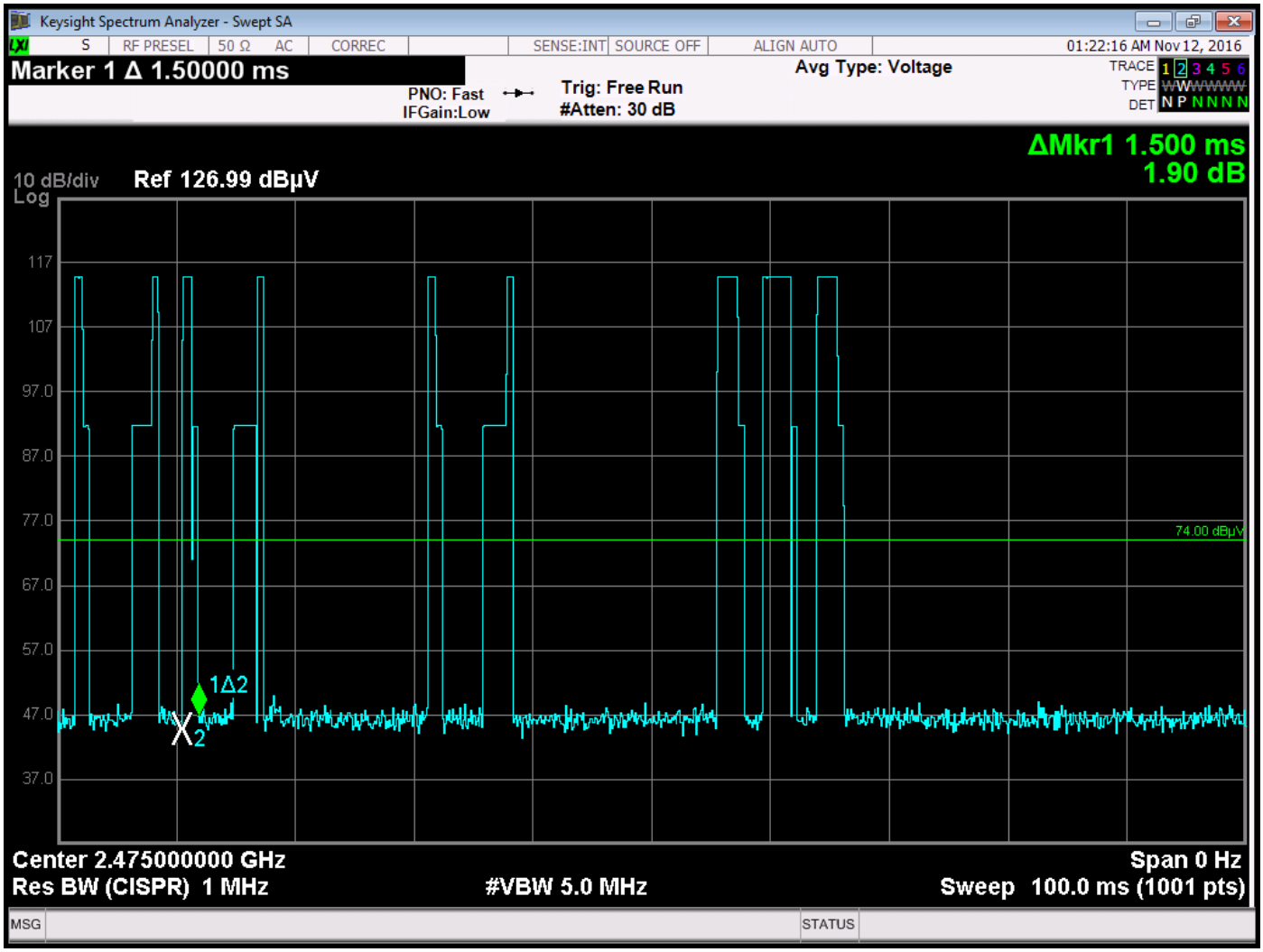


Pulse Train on 100 ms Scale – Attempting to Pair Mode

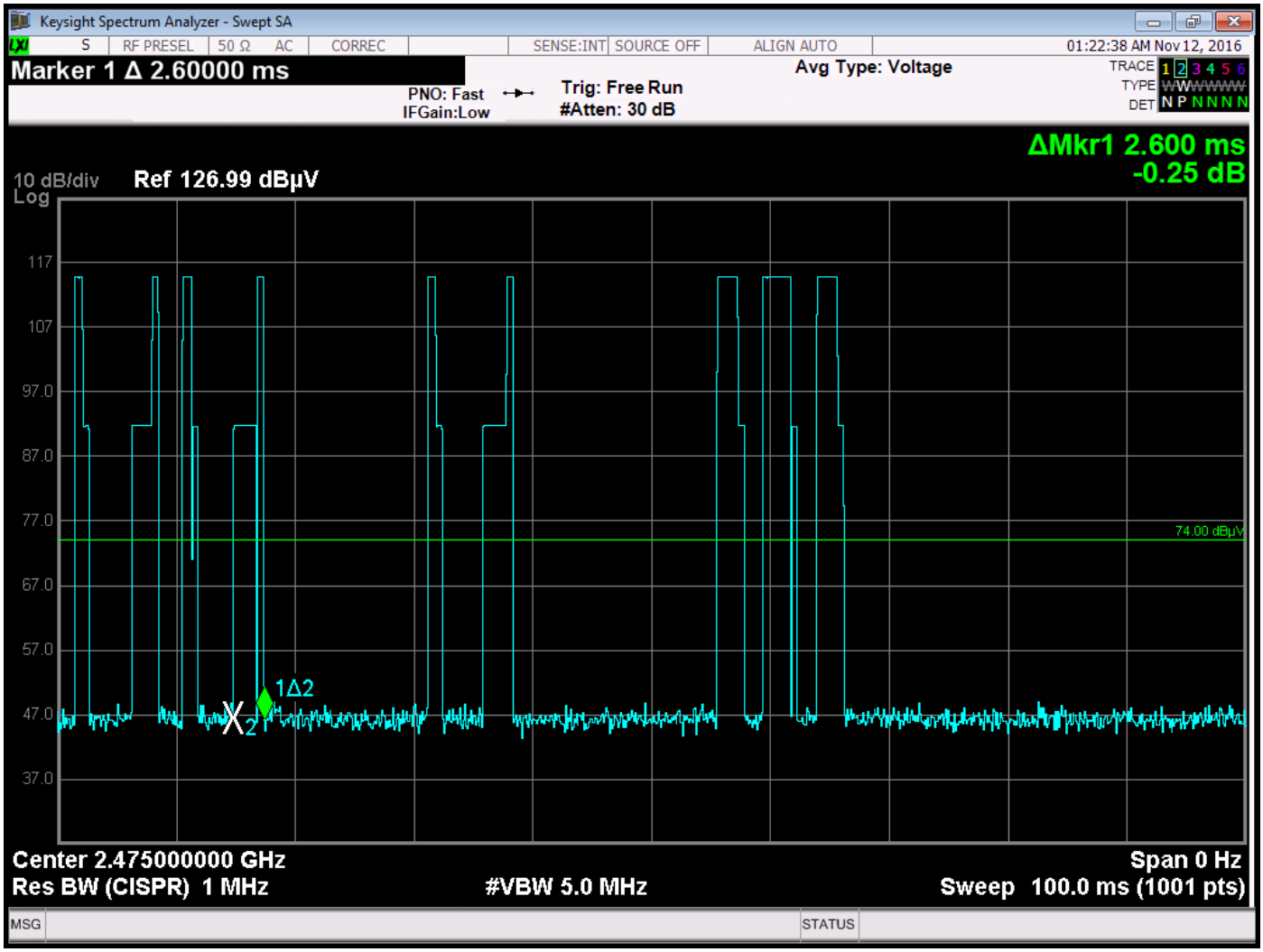
Pulse #1 = 1.600 ms – Attempting to Pair Mode



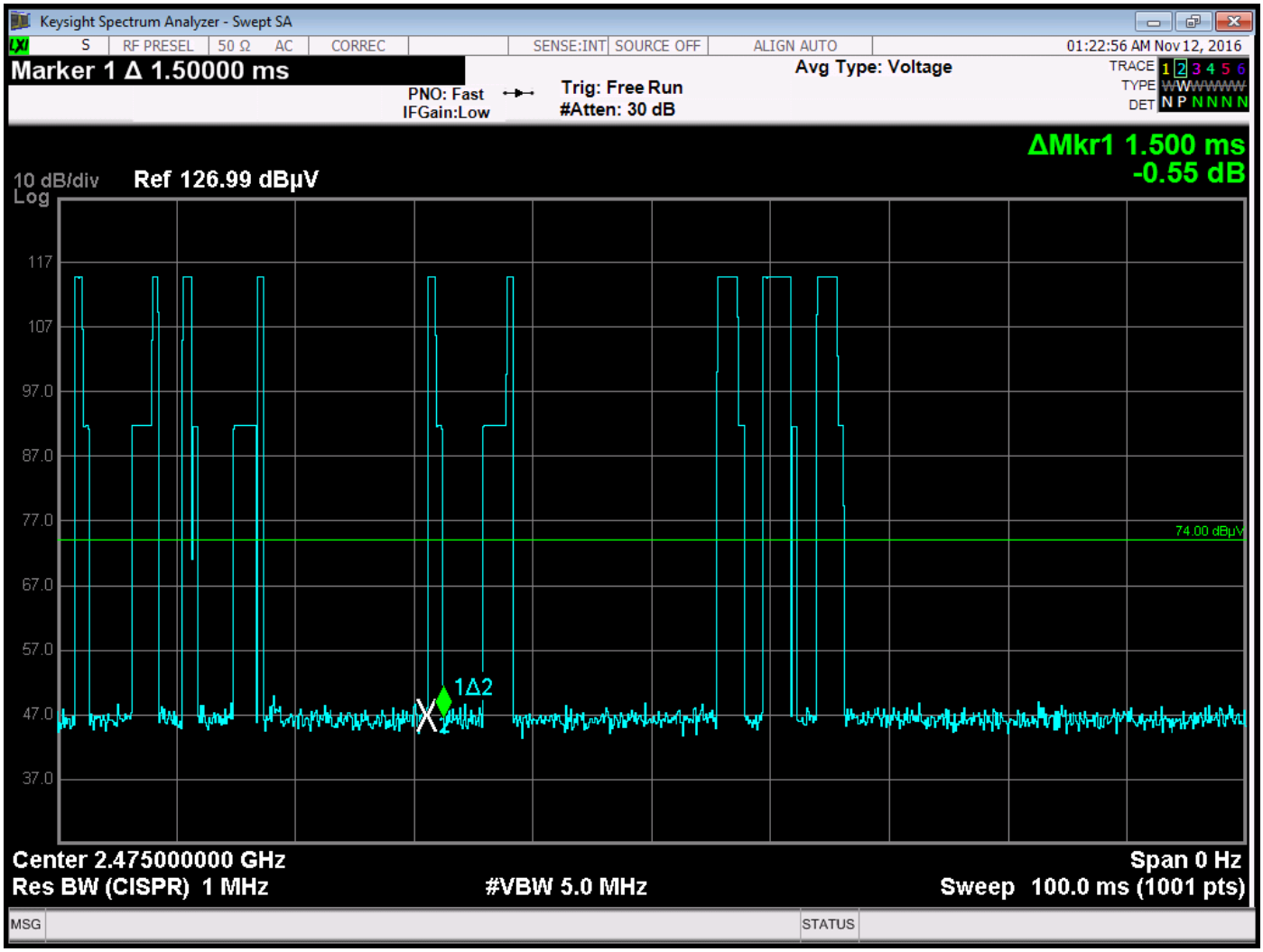
Pulse #2 = 2.700 ms – Attempting to Pair Mode



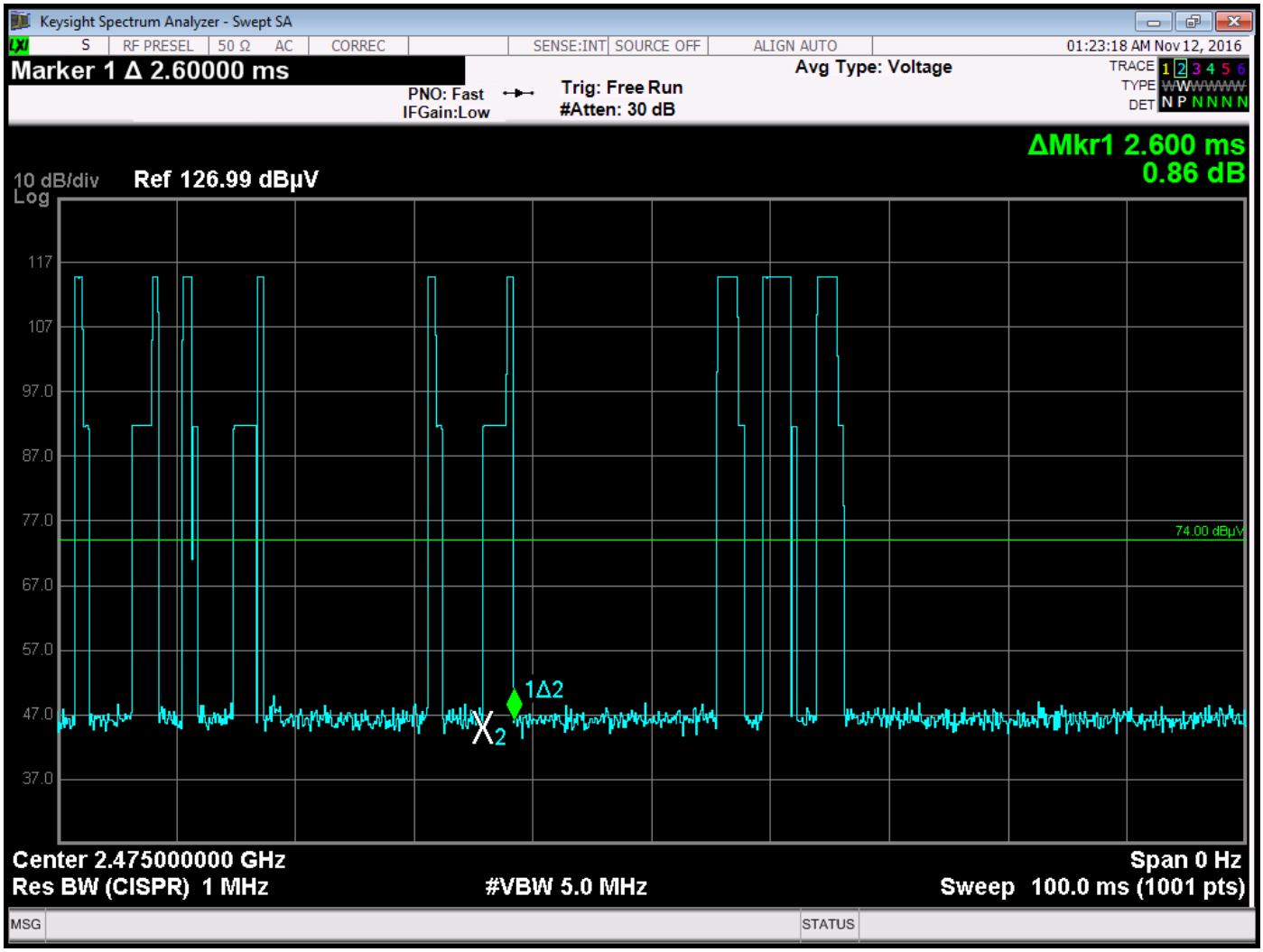
Pulse #3 = 1.500 ms – Attempting to Pair Mode



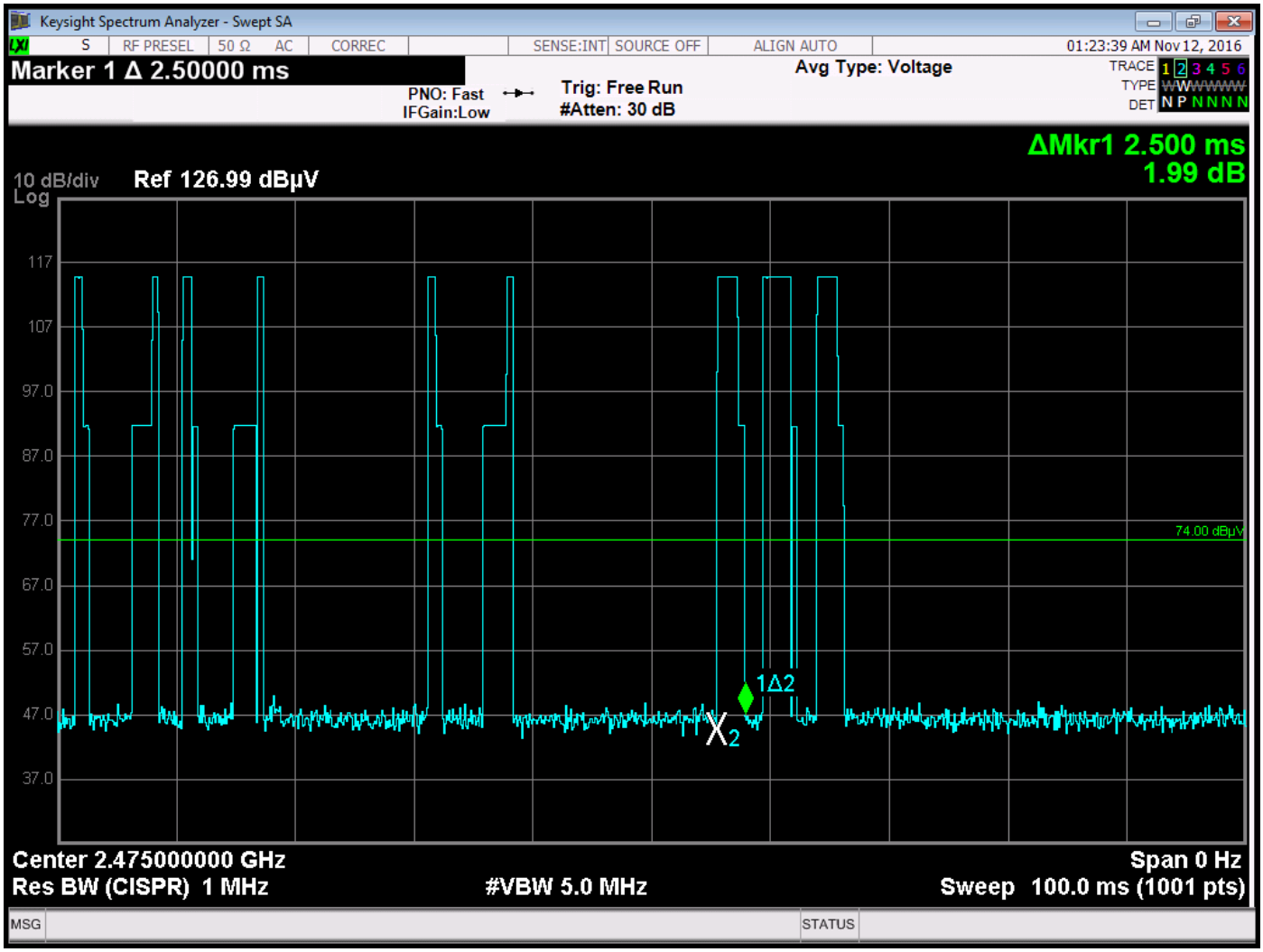
Pulse #4 = 2.600 ms – Attempting to Pair Mode



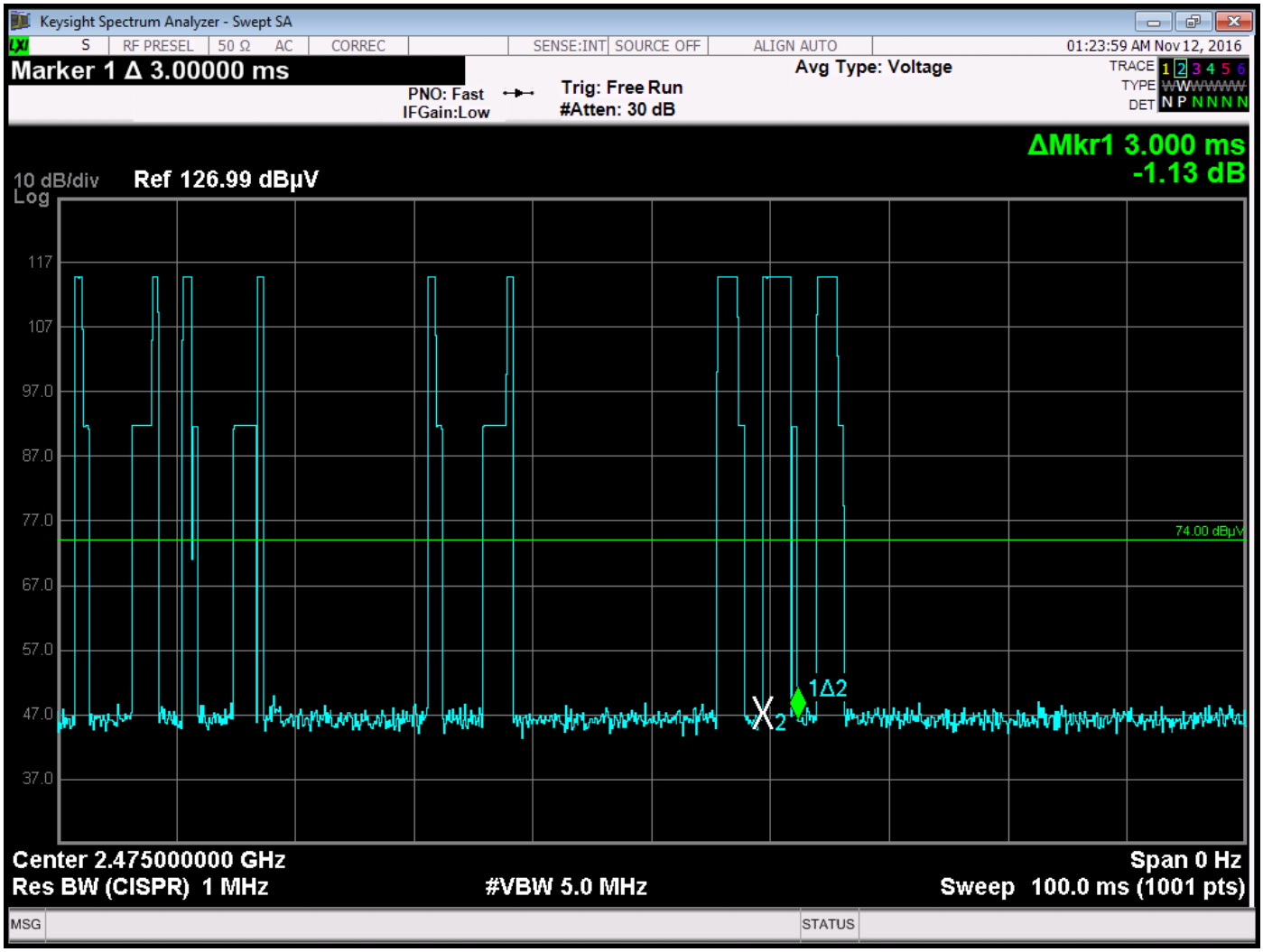
Pulse #5 = 1.500 ms – Attempting to Pair Mode



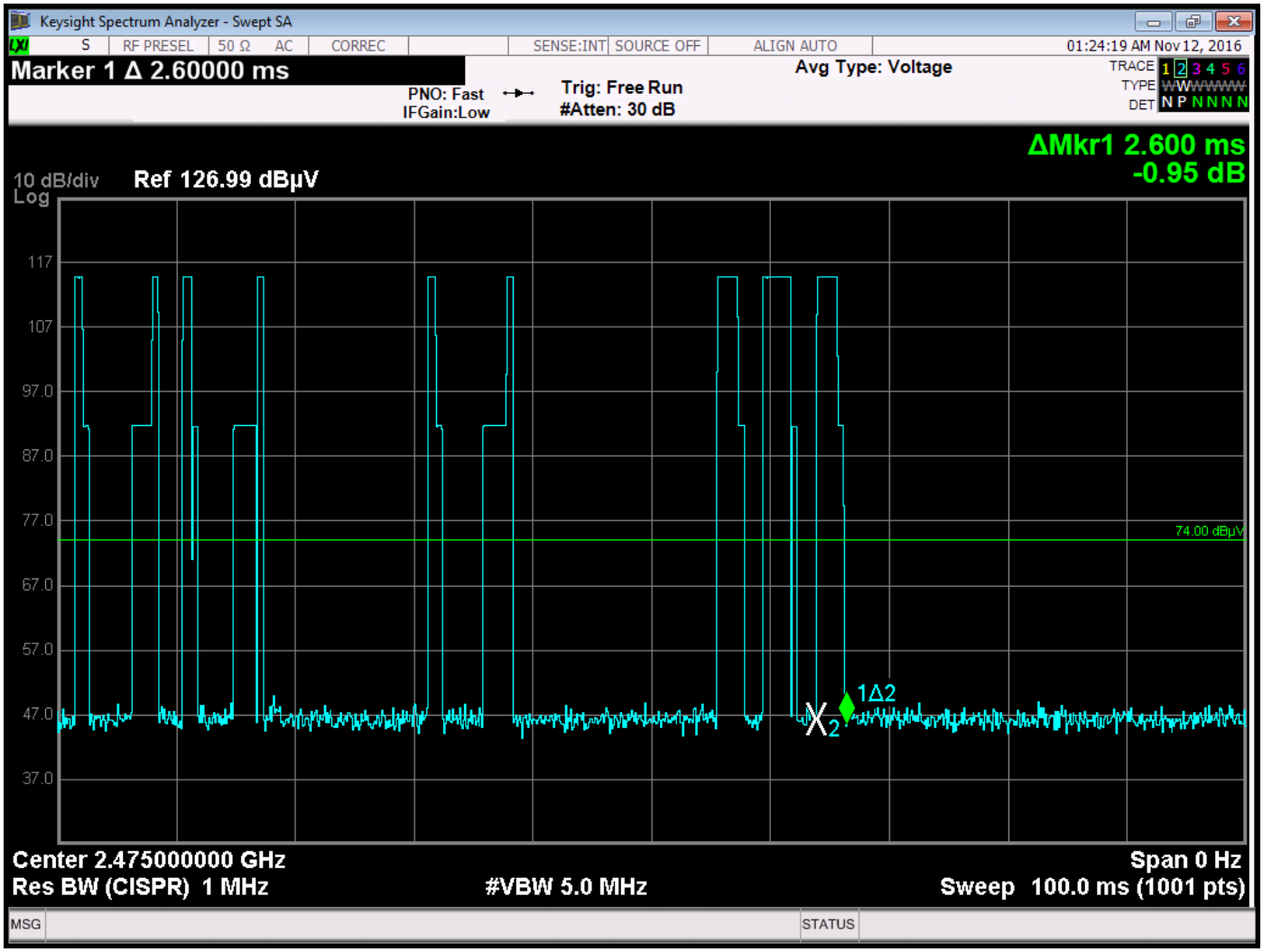
Pulse #6 = 2.600 ms – Attempting to Pair Mode



Pulse #7 = 2.500 ms – Attempting to Pair Mode



Pulse #8 = 3.000 ms – Attempting to Pair Mode



Pulse #9 = 2.600 ms – Attempting to Pair Mode

Total One Time = 20.6 ms
Total Duty Cycle = 20.6 ms / 100 ms = 20.6%
A Peak to Average Ratio of -13.72 dB can be utilized