

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

for

RING PANIC BUTTON

Part Number: 4AP1S90EN0

Prepared for

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

Prepared by: _____

THOMAS SZYNAL

Approved by: _____

KYLE FUJIMOTO

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114 OLINDA DRIVE
BREA, CALIFORNIA 92823
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DATE: JANUARY 08, 2019

	REPORT	APPENDICES						TOTAL
	BODY	A	B	C	D	E	F	
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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: Ring Panic Button
P/N: 4AP1S90EN0
S/N: N/A

Product Description: The EUT is a battery powered device for home automation applications. The Panic Button will be installed on the wall for emergencies and sending alarms.

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

Customer: Ecolink Intelligent Technology, Inc.
2055 Corte Del Nogal
Carlsbad, California 92011

Test Dates: January 7 and 8, 2019

Test Specification covered by accreditation:

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, 15.249,
RSS-210 Issue 9 (2017), and RSS-Gen Issue 5 (2018)



Test Procedure: 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 – 9300 MHz (Transmitter, Receiver, and Digital portion)	Complies with the limits of RSS-210, RSS-Gen, CFR Title 47 Part 15 Subpart B Section 15.109 & Subpart C Sections 15.205, 15.209, & 15.249 Highest reading in relation to spec limit: 93.23 dBuV/m (QP) @ 908.42 MHz (*U = 3.26 dB)





1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Ring Panic Button, P/N: 4AP1S90EN0. 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 Code of Federal Regulations Title 47, Part 15 Subpart B sections 15.107, 15.109, & Part 15 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.

Anna Poltoratska Project Manager

Compatible Electronics Inc.

Thomas Szynal Test Technician
Kyle Fujimoto Test Engineer

2.4 Date Test Sample was Received

The test sample was received on January 07, 2019.

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
FSK/GFSK	Frequency Shift Keying/ Gaussian Frequency Shift Keying
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
N/A	Not Applicable
Tx	Transmit
Rx	Receive
SDK	Software Development Kit

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
RSS-210 Issue 9: 2017	License-exempt Radio Apparatus: Category I Equipment
RSS Gen Issue 5: 2018	General Requirements for Compliance of Radio Apparatus
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 C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The Ring Panic Button, P/N: 4AP1S90EN0 (EUT) was tested as a stand alone device. A fresh battery was inserted in the EUT prior to the testing.

The EUT was tested for emissions at the low and high channels while in the X, Y and Z axis. During the testing, the EUT was continuously transmitting or receiving, depending on test mode.

The EUT was placed in the standard test mode once the battery was installed. The EUT utilizes FSK/GFSK modulation and was tested at 908.42 MHz and 916 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 above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

The EUT has no external cables.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	S/N	FCC ID and IC ID
RING PANIC BUTTON (EUT)	ECOLINK INTELLIGENT TECHNOLOGY, INC.	4AP1S90EN0	N/A	FCC ID: XQCBHAPB001 IC: 9863B-BHAPB001



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	Keysight Technologies	N9038A	MY51210150	July 26, 2018	1 Year
RF RADIATED EMISSIONS AND 99 % BANDWIDTH TEST EQUIPMENT					
EMI Receiver, 20 Hz – 26.5 GHz	Keysight Technologies	N9038A	MY51210150	July 26, 2018	1 Year
Loop Antenna	Com-Power	AL-130R	121090	February 9, 2017	2 Year
CombiLog Antenna	Com-Power	AC-220	61060	July 27, 2017	2 Year
Preamplifier	Com-Power	PAM-118A	551024	May 10, 2018	1 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. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 9 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 9.3 GHz).

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 EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 1.0.

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 9.3 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the **Class B** limits of RSS-210, RSS-Gen, CFR Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209 and 15.249 for radiated emissions.



7.1.2 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Ring Panic Button
P/N: 4AP1S90EN0

Frequency MHz	Quasi-Peak EMI Reading (dBuV/m)	Specification Limit (dBuV)	Delta (Cor. Reading – Spec. Limit) dB
908.42 (V) (Y-Axis)	93.23	93.97	-0.74
916.00 (V) (Z-Axis)	92.77	93.97	-1.20
916.00 (H) (X-Axis)	92.56	93.97	-1.41
908.42 (H) (X-Axis)	92.50	93.97	-1.47
908.42 (V) (Z-Axis)	92.43	93.97	-1.54
916.00 (V) (Y-Axis)	92.35	93.97	-1.62

Notes:

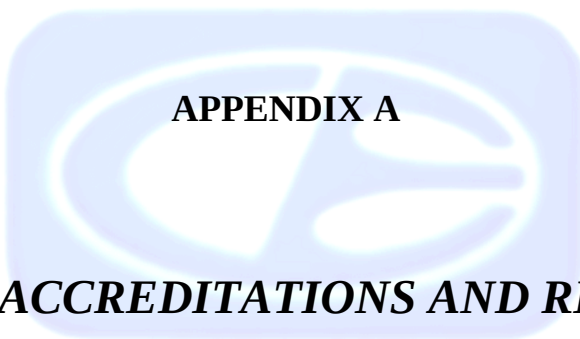
- * The complete emissions data is given in Appendix E of this report.
- (V) Vertical
- (H) Horizontal



8. CONCLUSIONS

The Ring Panic Button, P/N: 4AP1S90EN0, as tested, meets all of the specification limits defined in RSS-210, RSS-Gen, and the **Class B** limits of FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209 and 15.249.





APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS



NVLAP LAB CODE 200528-0

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."

Innovation, Science and Economic Development Canada
Lab Code 2154A



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/>**

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass RSS-210, RSS-Gen, 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

Ring Panic Button
P/N: 4AP1S90EN0
S/N: N/A

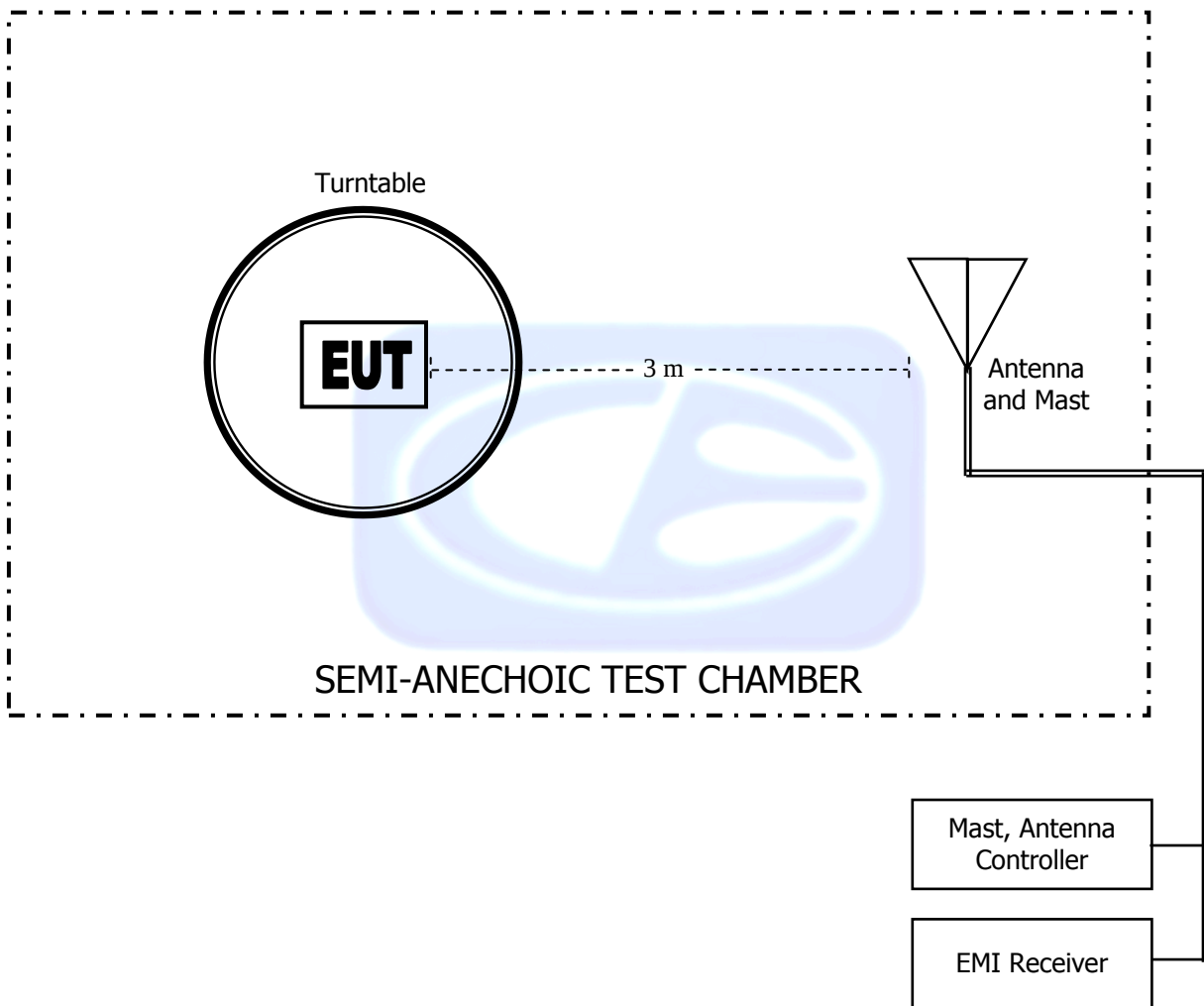
There are no additional models covered under this report.



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 9, 2017**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-36.17	15.33
0.01	-35.86	15.64
0.02	-37.30	14.20
0.03	-36.58	14.92
0.04	-36.99	14.51
0.05	-37.66	13.84
0.06	-37.53	13.97
0.07	-37.64	13.86
0.08	-37.52	13.98
0.09	-37.62	13.88
0.1	-37.59	13.91
0.2	-37.79	13.71
0.3	-37.80	13.70
0.4	-37.70	13.80
0.5	-37.79	13.71
0.6	-37.79	13.71
0.7	-37.69	13.81
0.8	-37.49	14.01
0.9	-37.39	14.11
1	-37.39	14.11
2	-37.09	14.41
3	-37.09	14.41
4	-37.19	14.31
5	-36.98	14.52
6	-37.17	14.33
7	-37.05	14.45
8	-36.85	14.65
9	-36.84	14.66
10	-36.75	14.75
15	-37.16	14.34
20	-36.44	15.06
25	-37.88	13.62
30	-39.14	12.36

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**

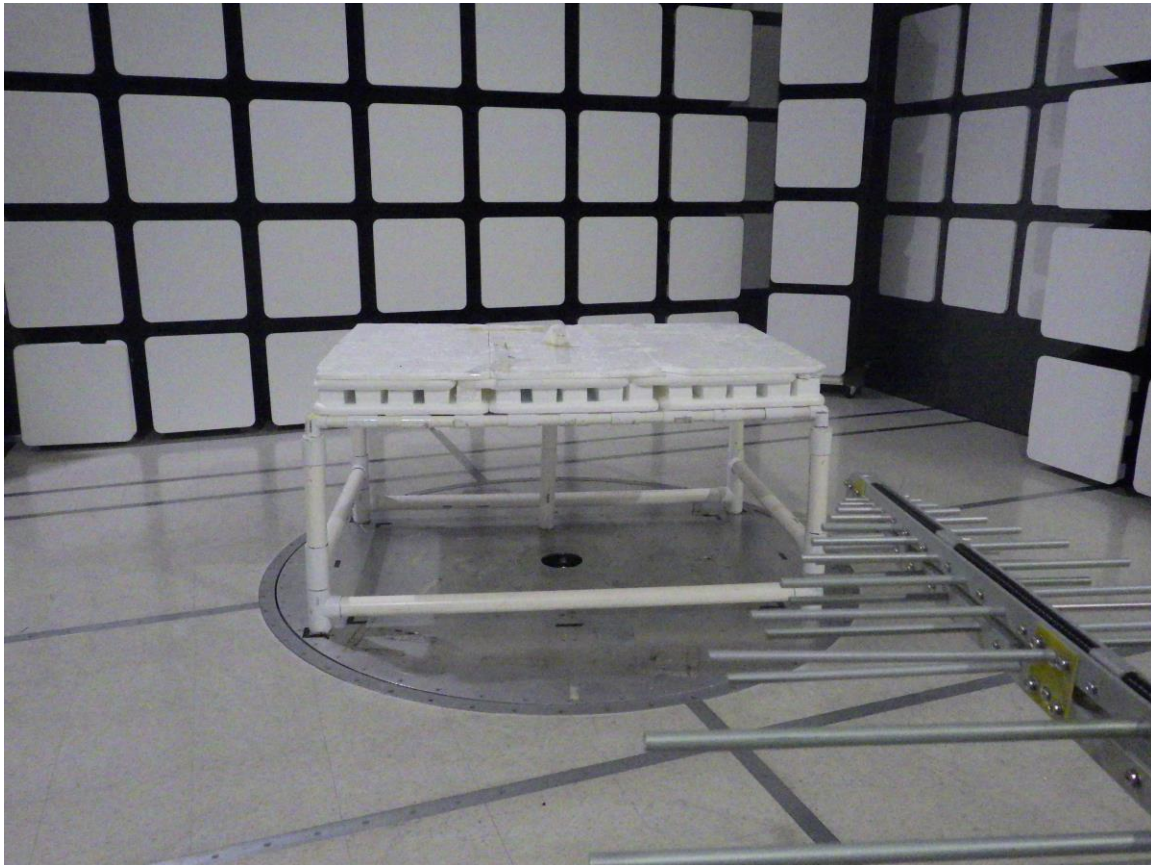
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.71	10.0	40.08
1.5	25.46	10.5	40.75
2.0	29.26	11.0	41.78
2.5	27.95	11.5	41.02
3.0	29.03	12.0	40.32
3.5	29.70	12.5	40.96
4.0	30.71	13.0	40.29
4.5	31.62	13.5	39.48
5.0	33.23	14.0	39.89
5.5	35.07	14.5	42.75
6.0	34.43	15.0	40.98
6.5	34.98	15.5	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 PAM-118A**PREAMPLIFIER**

S/N: 551024

CALIBRATION DATE: MAY 10, 2018

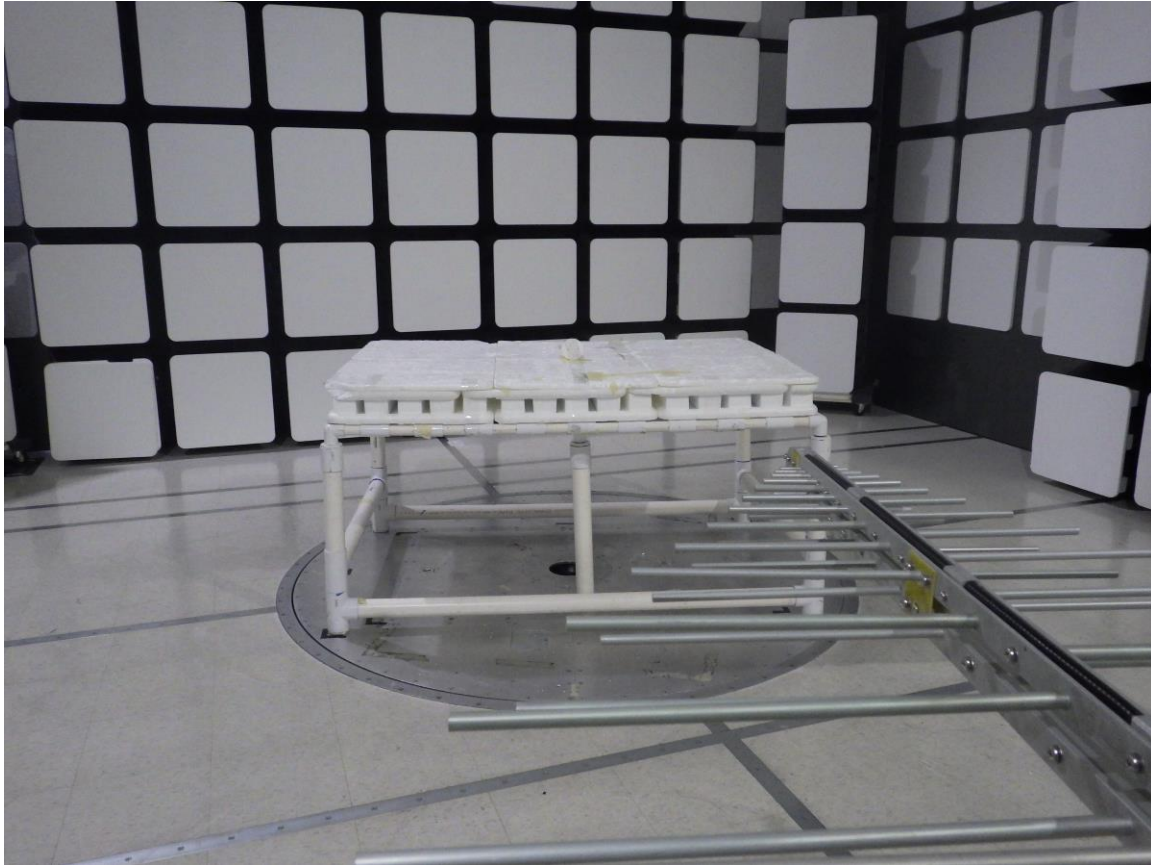
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.99	6.0	39.01
1.1	39.77	6.5	39.00
1.2	39.02	7.0	39.69
1.3	39.44	7.5	38.96
1.4	39.64	8.0	38.57
1.5	40.23	8.5	39.17
1.6	40.17	9.0	38.82
1.7	40.23	9.5	39.30
1.8	39.48	10.0	38.90
1.9	39.85	11.0	38.86
2.0	39.99	12.0	39.87
2.5	40.38	13.0	39.55
3.0	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

ECOLINK INTELLIGENT TECHNOLOGY, INC.
RING PANIC BUTTON
PART NUMBER: 4AP1S90EN0
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

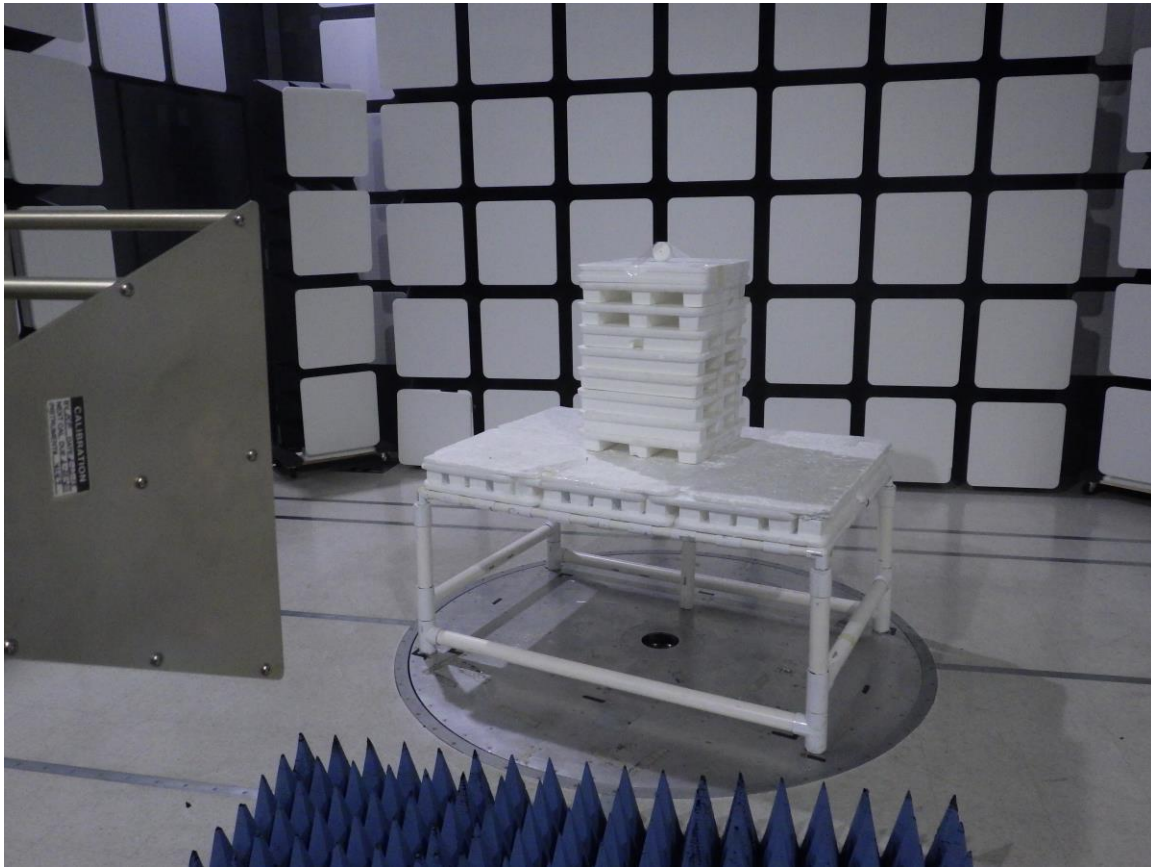
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
RING PANIC BUTTON
PART NUMBER: 4AP1S90EN0
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

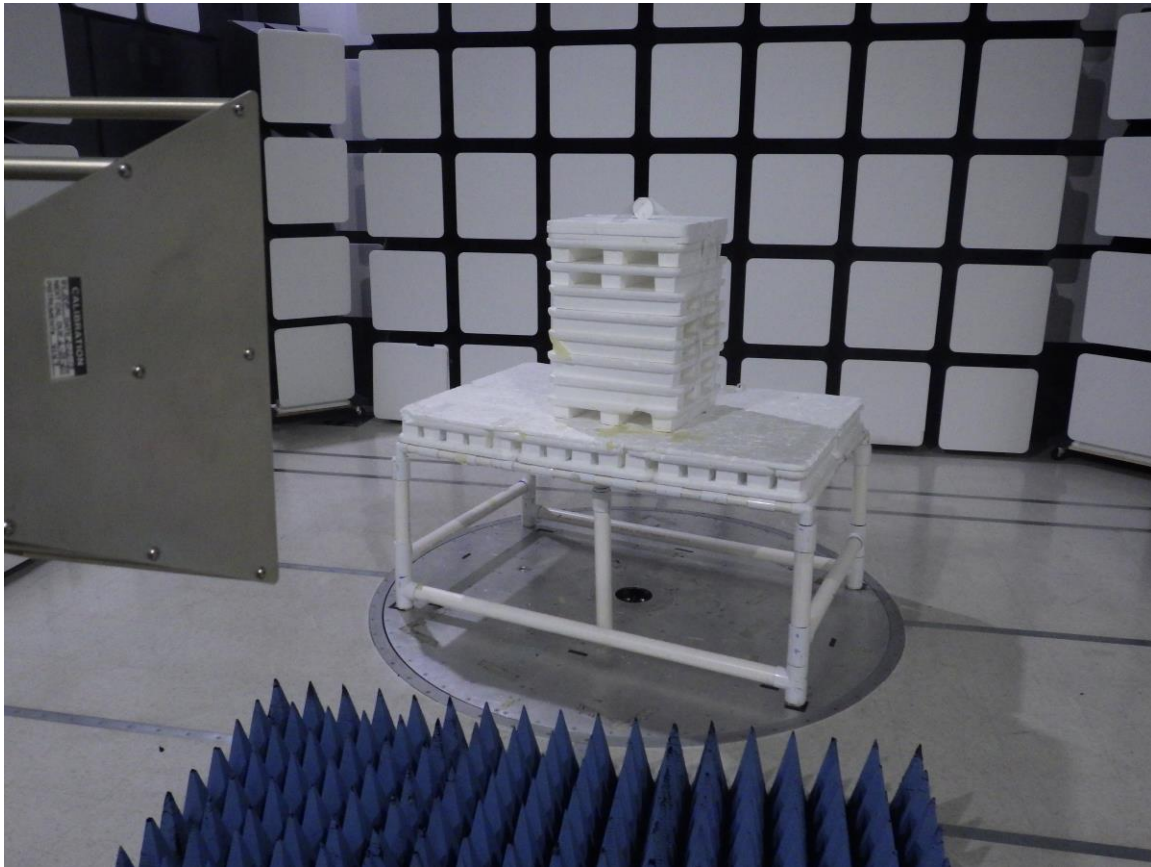
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
RING PANIC BUTTON
PART NUMBER: 4AP1S90EN0
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
RING PANIC BUTTON
PART NUMBER: 4AP1S90EN0
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

APPENDIX E

RADIATED DATA SHEETS

***RADIATED EMISSIONS
DATA SHEETS***

FCC 15.249

Ecolink Intelligent Technology, Inc.

Ring Panic Button

Part Number: 4AP1S90EN0

Date: 01/09/2019

Lab: D

Tested By: Kyle Fujimoto

Fundamental - Unit R2

Low Channel

[illegible]



FCC 15.249

Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0

Date: 01/09/2019

Lab: D

Tested By: Kyle Fujimoto

Fundamental - Unit R3

High Channel

[illegible]

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - Low Channel - Unit R2**
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1816.84	37.32	V	53.97	-16.65	Peak	80.25	182.31	
2725.26								No Emission Detected
3633.68								No Emission Detected
4542.10	44.20	V	53.97	-9.77	Peak	289.75	229.89	
5450.52								No Emission Detected
6358.94	48.86	V	53.97	-5.11	Peak	34.75	100.00	
7267.36								No Emission Detected
8175.78								No Emission Detected
9084.20								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - Low Channel - Unit R2**
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1816.84	46.62	V	53.97	-7.35	Peak	75.25	149.95	
2725.26	42.16	V	53.97	-11.81	Peak	280.25	149.89	
3633.68								No Emission Detected
4542.10	46.02	V	53.97	-7.95	Peak	47.50	100.00	
5450.52								No Emission Detected
6358.94	48.11	V	53.97	-5.86	Peak	300.25	138.37	
7267.36								No Emission Detected
8175.78								No Emission Detected
9084.20								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - Low Channel - Unit R2**
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1816.84	45.06	V	53.97	-8.91	Peak	90.25	136.58	
2725.26	41.89	V	53.97	-12.08	Peak	283.00	139.56	
3633.68								No Emission Detected
4542.10	46.94	V	53.97	-7.03	Peak	307.75	149.89	
5450.52								No Emission Detected
6358.94								No Emission Detected
7267.36								No Emission Detected
8175.78								No Emission Detected
9084.20								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - Low Channel - Unit R2**
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1816.84	47.50	H	53.97	-6.47	Peak	123.25	175.02	
2725.26	41.59	H	53.97	-12.38	Peak	235.00	159.98	
3633.68								No Emission Detected
4542.10	46.12	H	53.97	-7.86	Peak	229.50	179.74	
5450.52								No Emission Detected
6358.94								No Emission Detected
7267.36								No Emission Detected
8175.78								No Emission Detected
9084.20								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - Low Channel - Unit R2**
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1816.84	40.79	H	53.97	-13.18	Peak	134.75	216.46	
2725.26	39.06	H	53.97	-14.91	Peak	45.50	142.97	
3633.68								No Emission Detected
4542.10	45.49	H	53.97	-8.48	Peak	37.00	189.89	
5450.52								No Emission Detected
6358.94								No Emission Detected
7267.36								No Emission Detected
8175.78								No Emission Detected
9084.20								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - Low Channel - Unit R2**
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1816.84	45.47	H	53.97	-8.50	Peak	166.50	119.86	
2725.26	40.51	H	53.97	-13.46	Peak	0.00	220.10	
3633.68								No Emission Detected
4542.10	45.88	H	53.97	-8.09	Peak	345.00	100.00	
5450.52								No Emission Detected
6358.94	48.27	H	53.97	-5.70	Avg	0.00	100.00	
7267.36								No Emission Detected
8175.78								No Emission Detected
9084.20								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - High Channel - Unit R3**
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1832.00	39.45	V	53.97	-14.52	Peak	300.00	149.89	
2748.00	40.29	V	53.97	-13.68	Peak	0.00	149.89	
3664.00								No Emission Detected
4580.00	44.88	V	53.97	-9.09	Peak	89.75	169.89	
5496.00								No Emission Detected
6412.00	47.12	V	53.97	-6.85	Peak	189.75	142.07	
7328.00								No Emission Detected
8244.00								No Emission Detected
9160.00								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - High Channel - Unit R3**
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1832.00	46.43	V	53.97	-7.54	Peak	75.25	145.05	
2748.00	40.90	V	53.97	-13.08	Peak	85.50	145.00	
3664.00								No Emission Detected
4580.00	45.83	V	53.97	-8.14	Peak	0.00	149.95	
5496.00								No Emission Detected
6412.00	47.70	V	53.97	-6.28	Peak	310.25	100.00	
7328.00								No Emission Detected
8244.00								No Emission Detected
9160.00								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - High Channel - Unit R3**
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1832.00	48.47	V	53.97	-5.50	Peak	270.00	250.00	
2748.00	40.80	V	53.97	-13.17	Peak	80.25	250.00	
3664.00								No Emission Detected
4580.00	44.42	V	53.97	-9.55	Peak	270.25	100.00	
5496.00								No Emission Detected
6412.00								No Emission Detected
7328.00								No Emission Detected
8244.00								No Emission Detected
9160.00								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - High Channel - Unit R3**
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1832.00	49.31	H	53.97	-4.66	Peak	150.00	118.85	
2748.00	42.45	H	53.97	-11.53	Peak	199.75	100.00	
3664.00								No Emission Detected
4580.00	44.79	H	53.97	-9.18	Peak	67.00	176.22	
5496.00								No Emission Detected
6412.00								No Emission Detected
7328.00								No Emission Detected
8244.00								No Emission Detected
9160.00								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - High Channel - Unit R3**
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1832.00	41.22	H	53.97	-12.75	Peak	288.25	168.58	
2748.00	39.75	H	53.97	-14.23	Peak	300.25	139.86	
3664.00								No Emission Detected
4580.00	45.45	H	53.97	-8.52	Peak	34.25	154.13	
5496.00								No Emission Detected
6412.00								No Emission Detected
7328.00								No Emission Detected
8244.00								No Emission Detected
9160.00								No Emission Detected

FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/07/2019
Lab: D
Tested By: Tom Szynal**Harmonics - High Channel - Unit R3**
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1832.00	46.63	H	53.97	-7.34	Peak	180.25	116.46	
2748.00	40.38	H	53.97	-13.59	Peak	22.25	199.86	
3664.00								No Emission Detected
4580.00	46.18	H	53.97	-7.79	Peak	0.00	100.00	
5496.00								No Emission Detected
6412.00	48.33	H	53.97	-5.64	Peak	0.00	100.00	
7328.00								No Emission Detected
8244.00								No Emission Detected
9160.00								No Emission Detected

FCC 15.249 and FCC Class BEcolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0

Date: 01/07/2019

Lab: D

Tested By: Tom Szynal

**Non-Harmonic Emissions from the Tx and Digital Portion
9 kHz to 30 MHz and 1 GHz to 9.3 GHz - Unit R2 and Unit
R3**

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 9.3 GHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 1 GHz to 9.3 GHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis



FCC Class B

Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0

Date: 01/08/2019

Lab: D

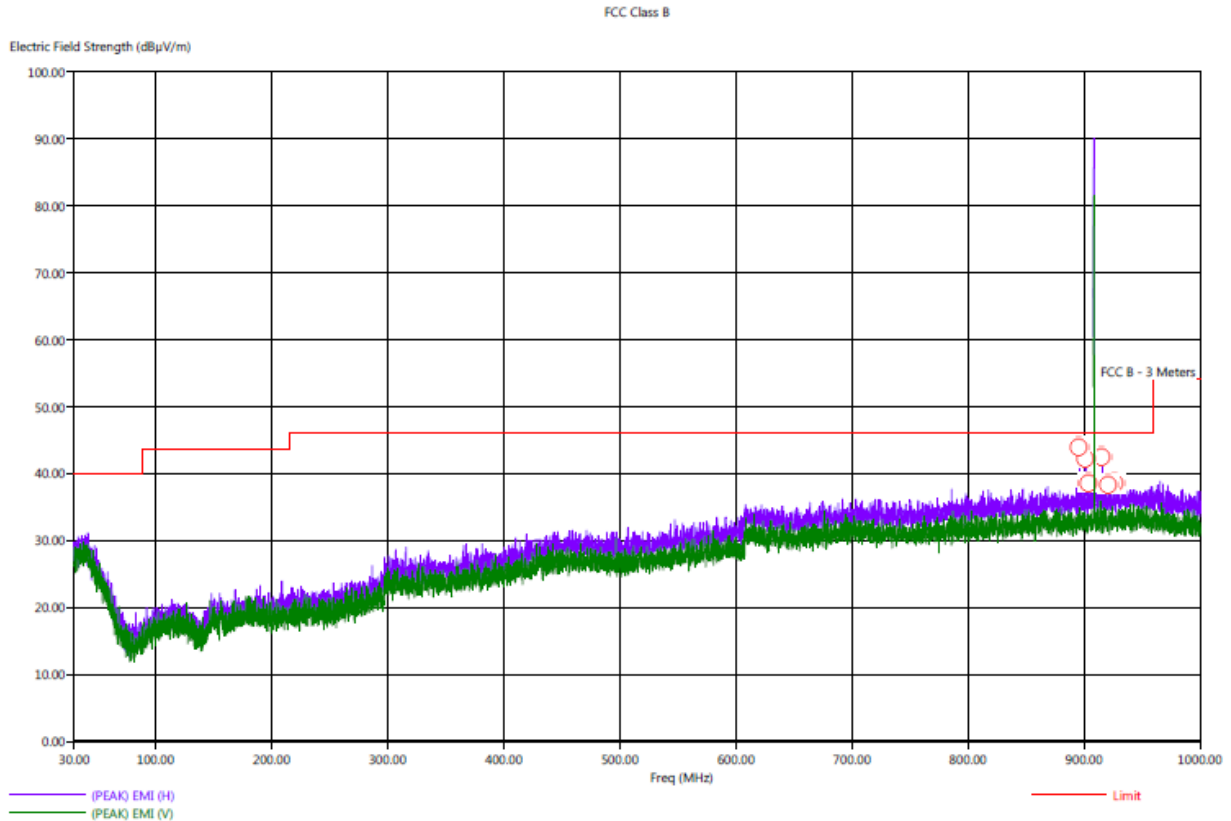
Tested By: Kyle Fujimoto

Receive Mode - 1 GHz to 5 GHz - Unit R8

[illegible]

Title: Radiated Emissions - FCC Class B
File: Agilent - Pre-Scan - FCC Class B 908 MHz x-axis worst case 01-08-19.set
Operator: Tom Szyml
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously transmitting at 908.42 MHz - X-axis is worst case
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: 4AP1S90EN0
S/N: N/A
Note: The Frequency at 908.42 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead

1/8/2019 8:19:09 AM
Sequence: Preliminary Scan



Title: Radiated Emissions - FCC Class B
File: Agilent - Final Scan - FCC Class B 908 MHz x-axis worst case 01-08-19.set
Operator: Tom Szydal
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously transmitting at 908.42 MHz - X-Axis worst Case
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: 4AP1S90EN0
S/N: N/A

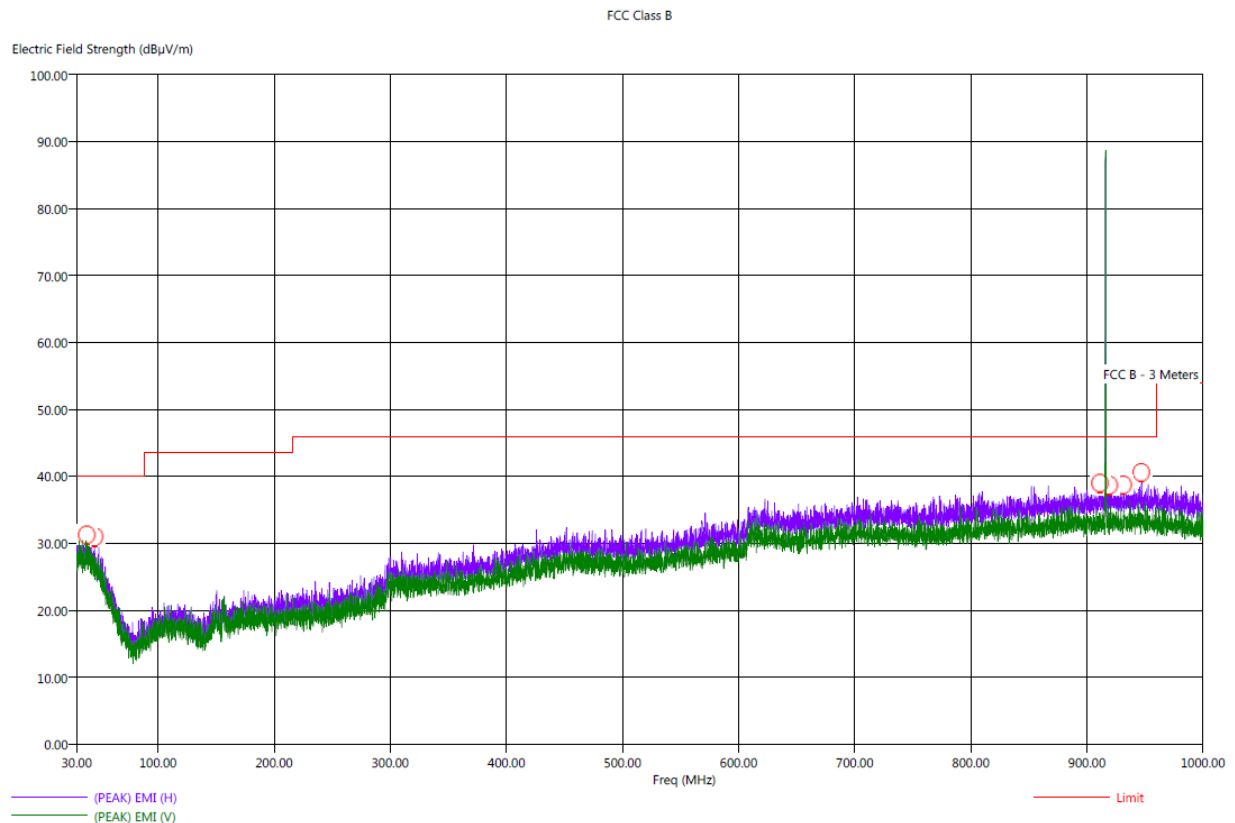
1/8/2019 9:20:51 AM
Sequence: Final Measurements

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)	Ttbt Aql (deg)	Twr Ht (cm)
896.00	H	40.18	34.67	-5.82	-11.33	46.00	27.14	2.98	123.25	143.32
901.30	H	39.04	34.43	-6.96	-11.57	46.00	27.22	3.00	293.25	143.32
903.20	H	38.77	33.63	-7.23	-12.37	46.00	27.24	3.01	291.75	175.14
915.60	H	38.75	34.04	-7.25	-11.96	46.00	27.39	3.03	241.50	302.85
920.90	H	39.18	33.60	-6.82	-12.40	46.00	27.45	3.04	57.25	127.20
926.50	H	39.36	33.51	-6.64	-12.49	46.00	27.52	3.05	331.50	207.02



Title: Radiated Emissions - FCC Class B
File: Agilent - Pre-Scan - FCC Class B 916 MHz z-axis 01-07-19.set
Operator: Tom Szyal
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously transmitting at 916 MHz - Z-axis is worst case
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: 4AP1S90EN0
S/N: N/A
Note: The Frequency at 916 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead

1/7/2019 4:53:47 PM
Sequence: Preliminary Scan



Title: Radiated Emissions - FCC Class B
File: Agilent - Final Scan - FCC Class B 916 MHz z-axis worst case 01-07-19.set
Operator: Tom Szydal
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously transmitting at 916 MHz - Z-Axis worst Case
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: 4AP1S90EN0
S/N: N/A

1/7/2019 5:10:53 PM
Sequence: Final Measurements

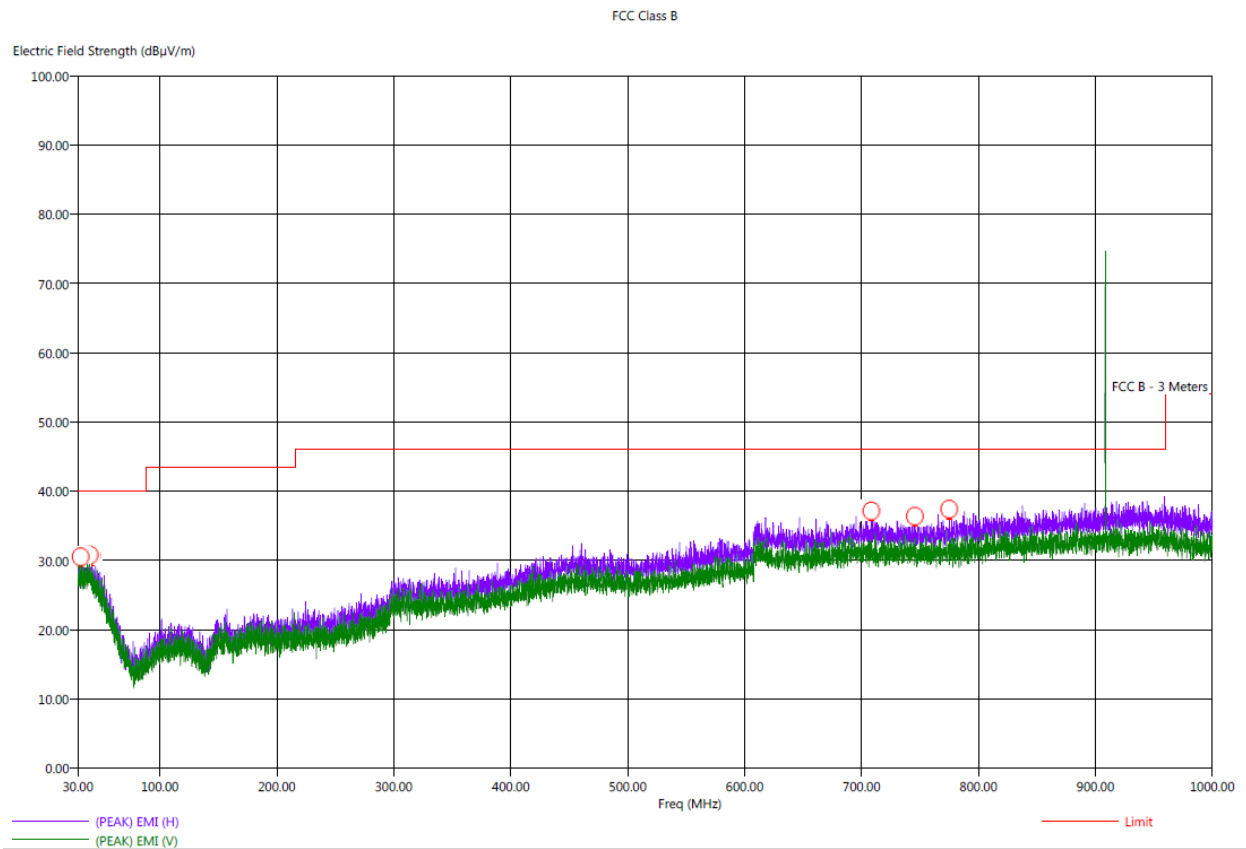
FCC Class B

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)
38.70	H	33.88	27.12	-6.12	-12.88	40.00	24.54	0.89	59.25	222.91
45.40	H	30.21	25.31	-9.79	-14.69	40.00	22.82	0.90	337.00	318.79
911.30	H	38.93	33.67	-7.07	-12.33	46.00	27.34	3.02	113.50	143.26
919.20	H	39.52	33.75	-6.48	-12.25	46.00	27.44	3.04	78.00	398.61
931.20	H	38.72	33.93	-7.28	-12.07	46.00	27.58	3.06	359.00	143.26
946.90	H	39.25	34.02	-6.75	-11.98	46.00	27.77	3.09	4.00	111.32



Title: Radiated Emissions - FCC Class B
File: Agilent - Pre-Scan - FCC Class B - 908.42 MHz - Rx Mode - X-axis - 01-08-19.set
Operator: Kyle Fujimoto
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously receiving at 908.42 MHz - X-axis is worst case
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: 4AP1S90EN0
S/N: N/A
Note: The Frequency at 908.42 MHz is the transmit signal from the accessory unit inside the test chamber and not the EUT.

1/8/2019 10:00:14 AM
Sequence: Preliminary Scan



Title: Radiated Emissions - FCC Class B
File: Agilent - Final Scan - FCC Class B - 908.42 MHz - Rx Mode - X-axis - 01-08-19.set
Operator: Kyle Fujimoto
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously receiving at 908.42 MHz - X-Axis is worst case
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: 4AP1S90EN0
S/N: N/A

1/8/2019 10:09:34 AM
Sequence: Final Measurements

FCC Class B

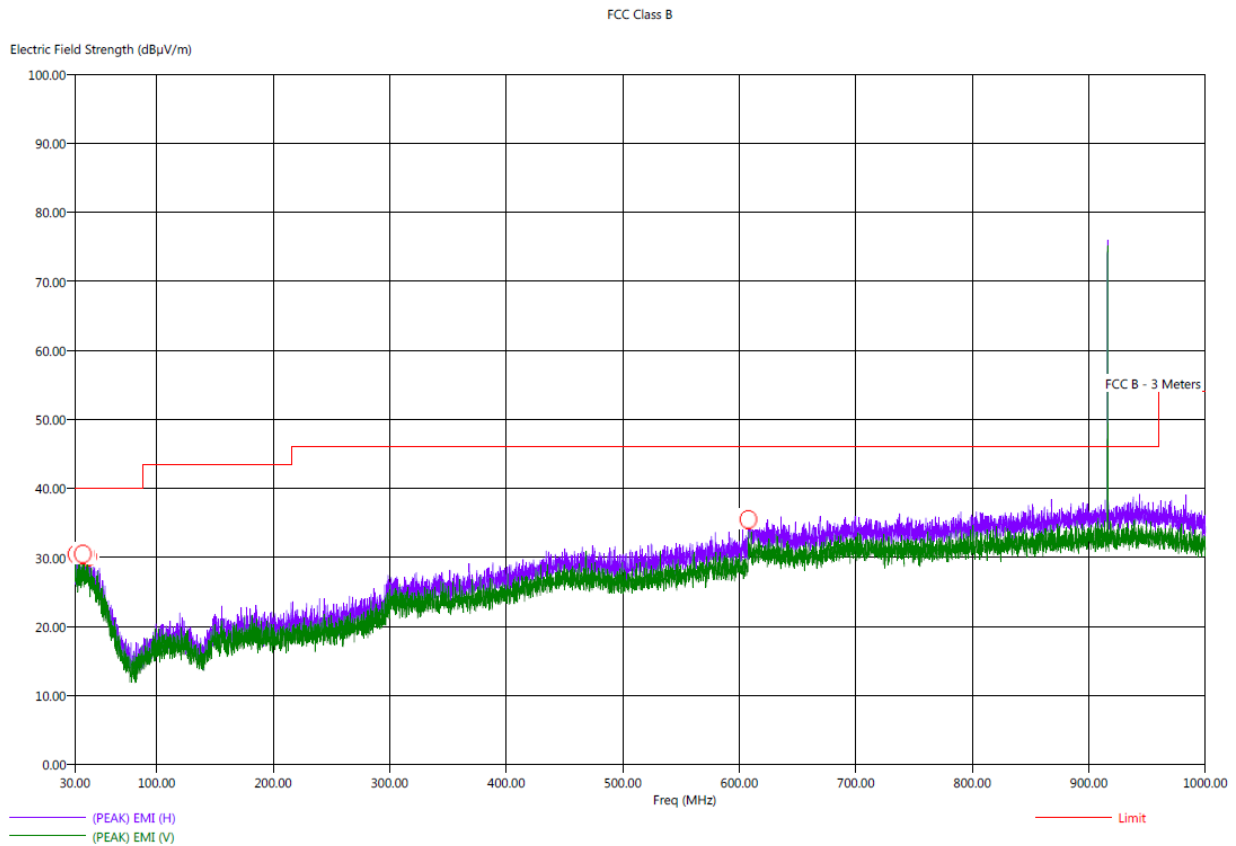
Freq (MHz)	Pol	(PEAK) EMI (dB μ V/m)	(QP) EMI (dB μ V/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dB μ V/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
32.20	H	31.73	26.41	-8.27	-13.59	40.00	23.90	0.83	284.00	223.38
40.00	H	31.89	27.04	-8.11	-12.96	40.00	24.70	0.90	180.25	318.85
41.80	H	31.79	26.30	-8.21	-13.70	40.00	24.05	0.90	0.00	127.26
708.30	H	36.88	31.30	-9.12	-14.70	46.00	24.58	2.53	320.75	366.37
745.70	H	36.66	31.22	-9.34	-14.78	46.00	24.51	2.68	87.50	286.85
775.00	H	36.28	31.44	-9.72	-14.56	46.00	24.96	2.75	214.25	207.08



Title: Radiated Emissions - FCC Class B
File: Agilent - Pre-Scan - FCC Class B - 916 MHz - Rx Mode - Z-axis - 01-08-19.set
Operator: Kyle Fujimoto
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously receiving at 916 MHz - Z-axis is worst case
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: TBD
S/N: 4AP1S90EN0

1/8/2019 10:26:43 AM
Sequence: Preliminary Scan

Note: The Frequency at 916 MHz is the transmit signal from the accessory unit inside the test chamber and not the EUT.



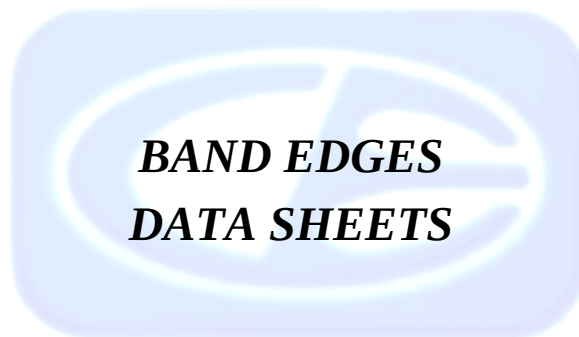
Title: Radiated Emissions - FCC Class B
File: Agilent - Final Scan - FCC Class B - 916 MHz - Rx Mode - Z-axis - 01-08-19.set
Operator: Kyle Fujimoto
EUT Type: Ring Panic Button
EUT Condition: The EUT is continuously receiving at 916 MHz - Z-Axis is worst axis
Comments: Company: Ecolink Intelligent Technology, Inc.
P/N: 4AP1S90EN0
S/N: N/A

1/8/2019 10:36:10 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 Aql (deq)	Twr Ht (cm)
31.30	H	32.15	26.51	-7.85	-13.49	40.00	23.85	0.81	124.25	382.67
36.80	V	31.59	26.51	-8.41	-13.49	40.00	24.24	0.87	296.25	175.02
38.80	H	32.91	26.91	-7.09	-13.09	40.00	24.52	0.89	144.25	302.55
39.10	H	32.14	26.82	-7.86	-13.18	40.00	24.57	0.89	293.50	111.50
41.20	H	32.42	26.51	-7.58	-13.49	40.00	24.30	0.90	271.00	366.55
607.80	H	35.84	30.78	-10.16	-15.22	46.00	23.32	2.50	209.25	318.55







FCC 15.249

Ecolink Intelligent Technology, Inc.

Ring Panic Button

Part Number: 4AP1S90EN0

Date: 01/09/2019

Lab: D

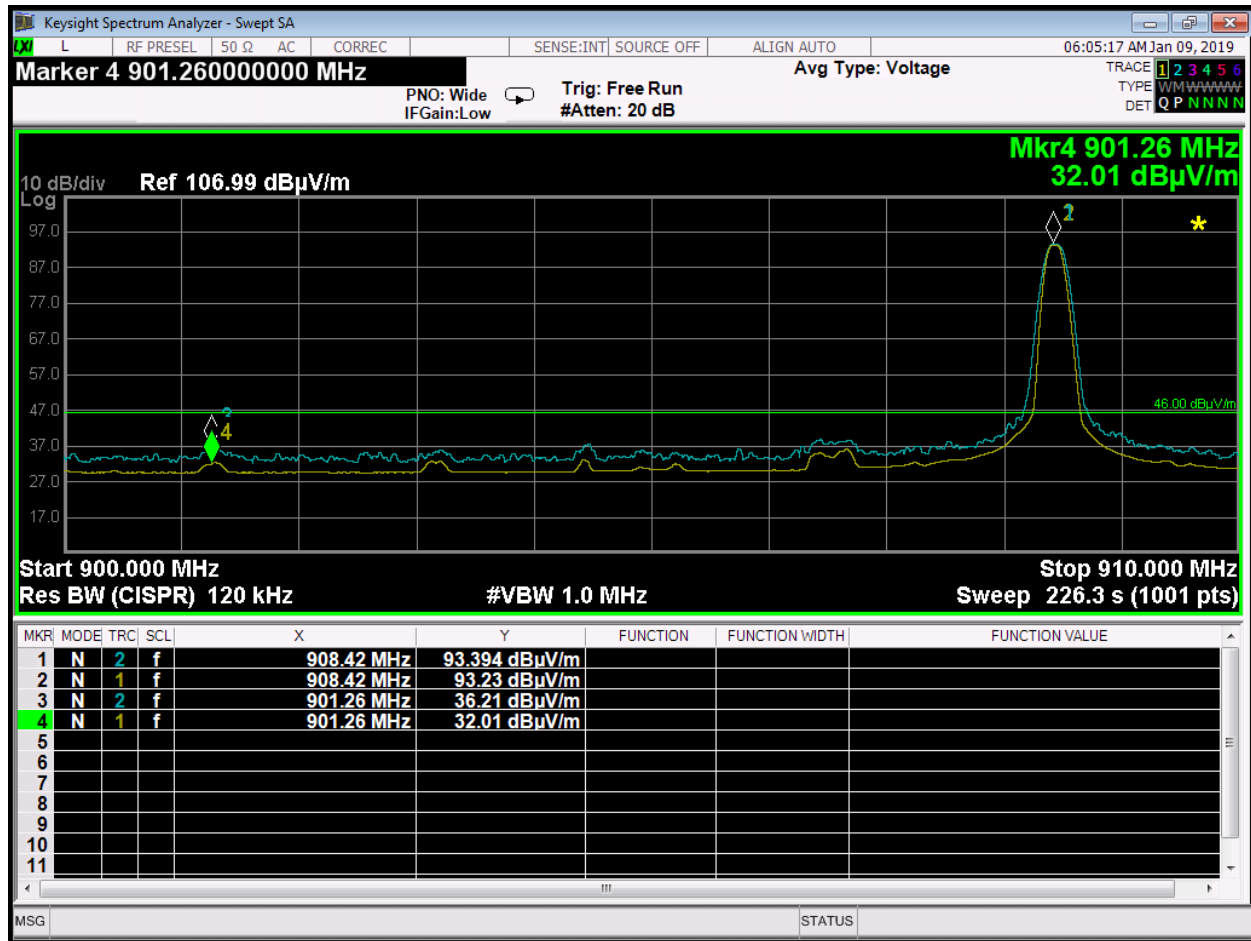
Tested By: Kyle Fujimoto

Band Edges - Unit R2

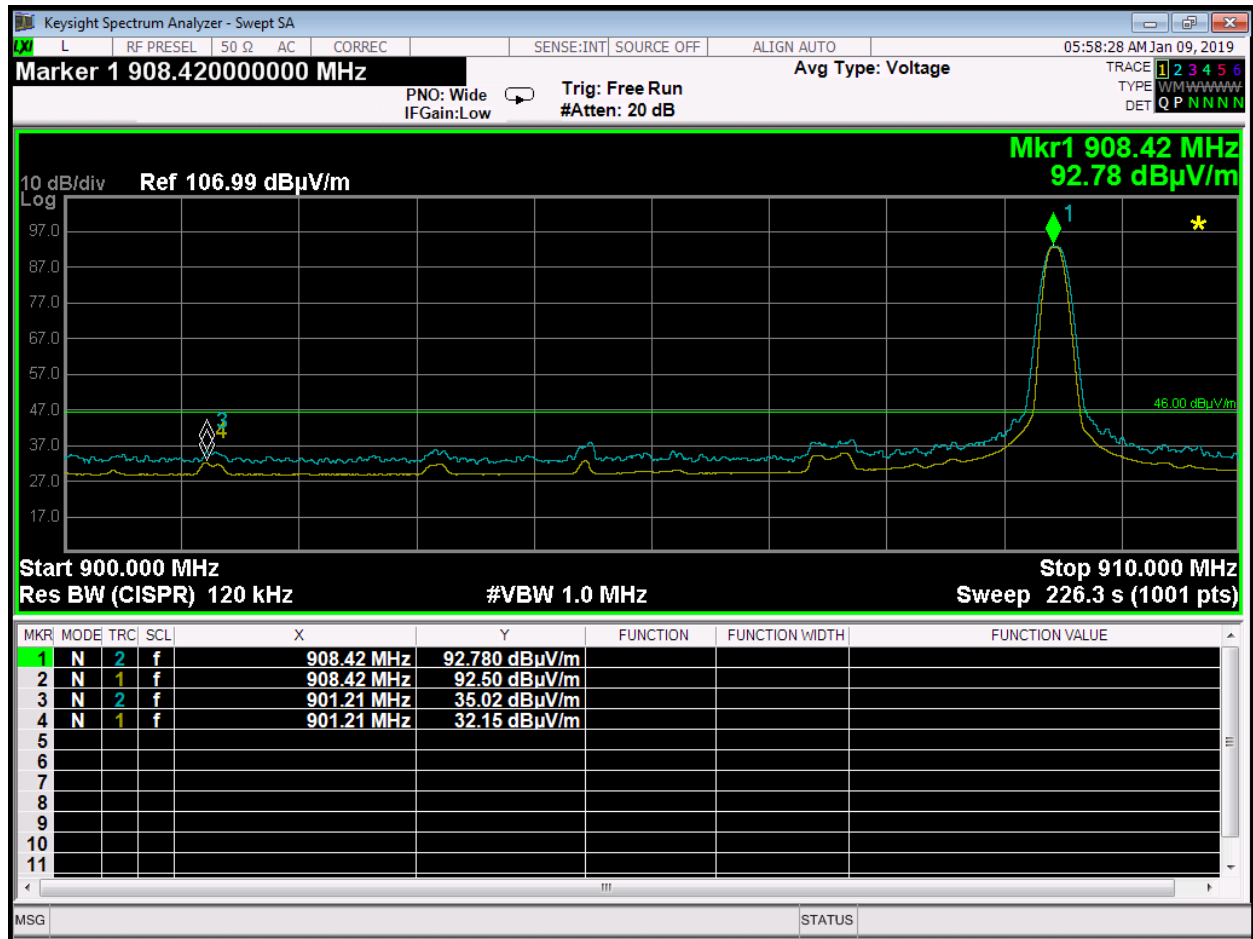
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FCC 15.249Ecolink Intelligent Technology, Inc.
Ring Panic Button
Part Number: 4AP1S90EN0Date: 01/09/2019
Lab: D
Tested By: Kyle Fujimoto**Band Edges - Unit R3**

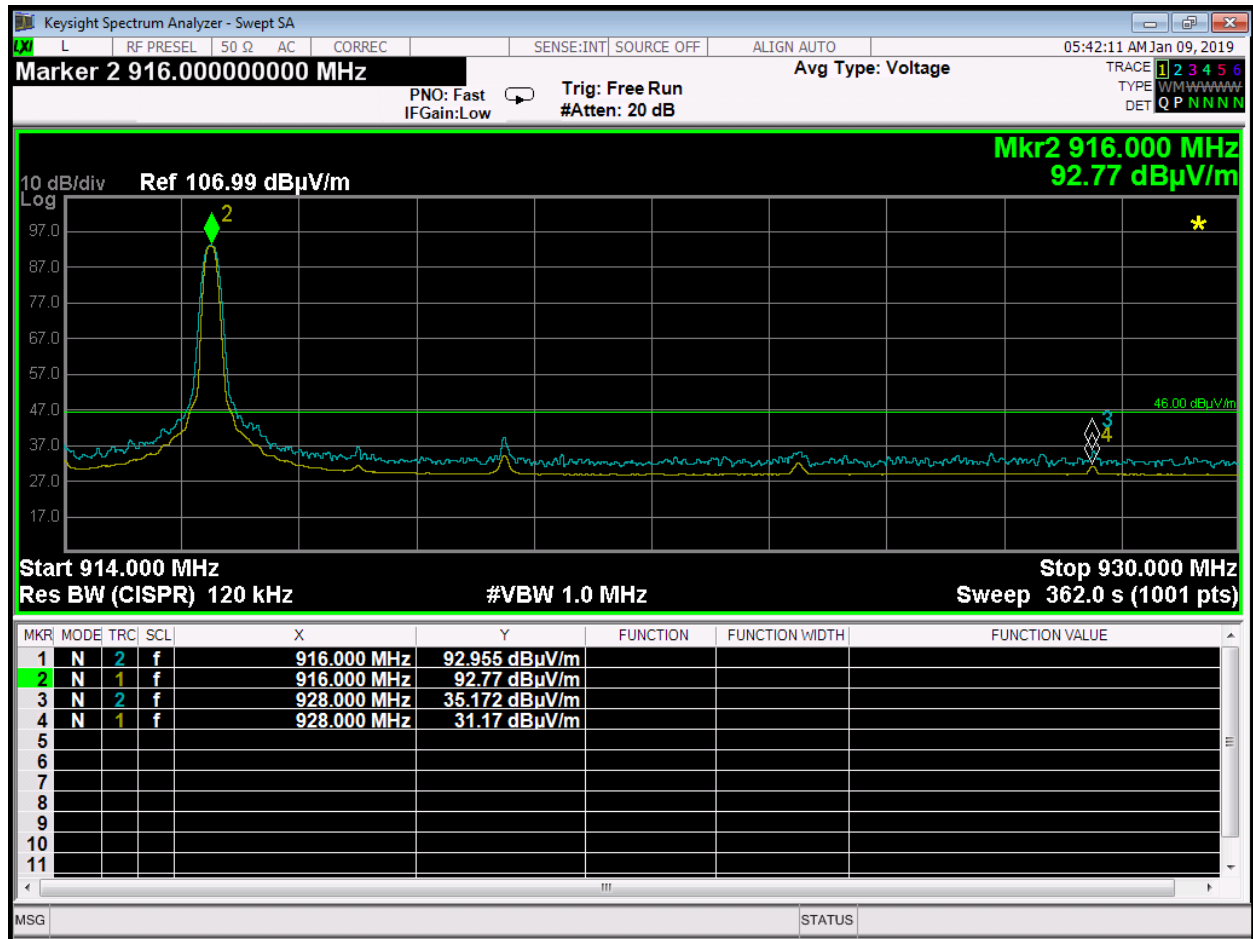
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
916.00	92.96	V	93.97	-1.01	Peak	193.25	155.74	Fundamental - High Ch.
916.00	92.77	V	93.97	-1.20	QP	193.25	155.74	Z-Axis - Worst Case
928.00	35.17	V	46.00	-30.83	Peak	193.25	155.74	Band Edge
928.00	31.17	V	46.00	-14.83	QP	193.25	155.74	Z-Axis - Worst Case
916.00	92.75	H	93.97	-1.22	Peak	126.00	154.91	Fundamental - High Ch.
916.00	92.56	H	93.97	-1.41	QP	126.00	154.91	X-Axis - Worst Case
928.00	37.49	H	46.00	-28.51	Peak	126.00	154.91	Band Edge
928.00	31.01	H	46.00	-14.99	QP	126.00	154.91	X-Axis - Worst Case



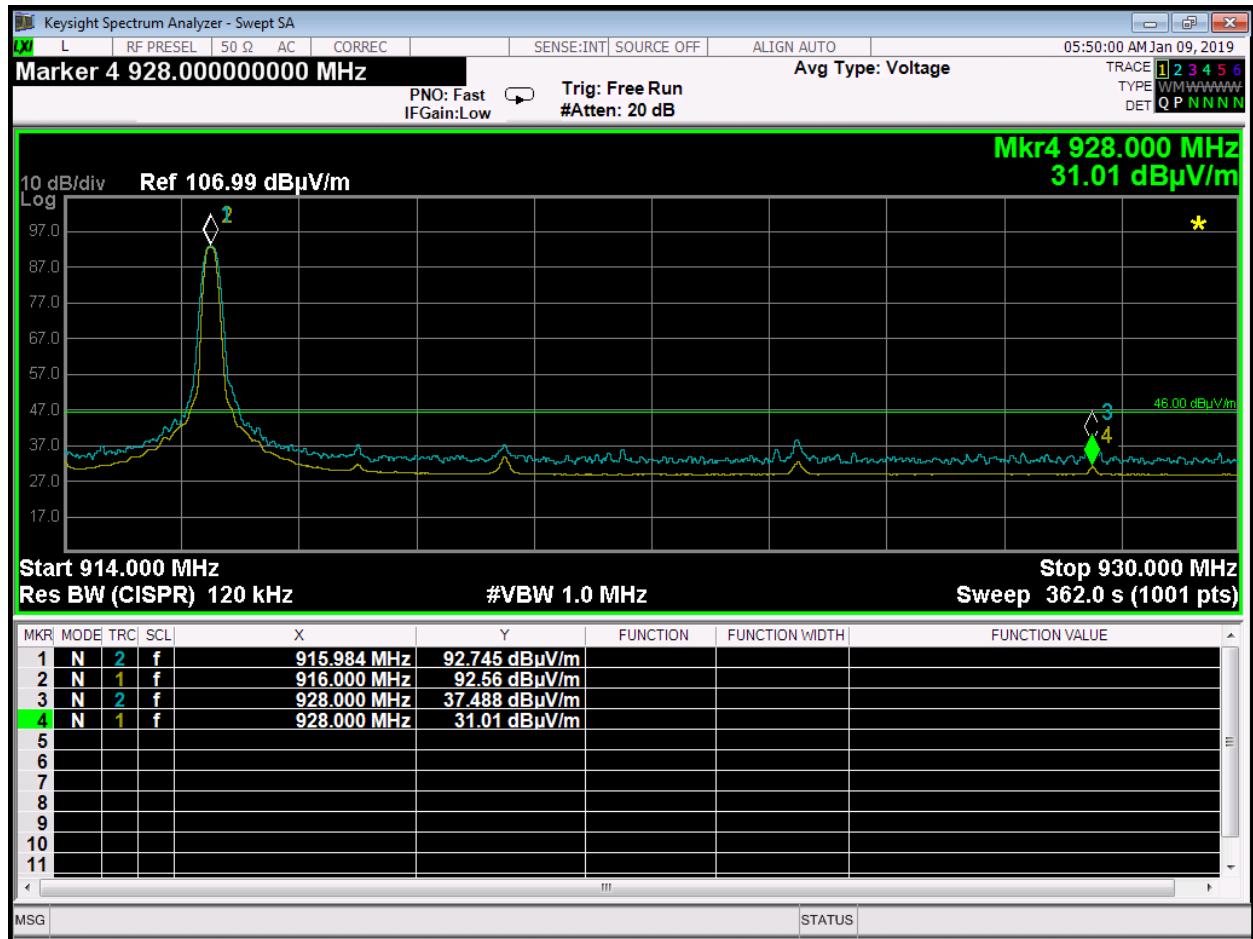
Band Edge – Vertical Polarization – Low Channel – Part Number: 4AP1S90EN0– Y-Axis Worst Case



Band Edge – Horizontal Polarization – Low Channel – Part Number: 4AP1S90EN0– X-Axis Worst Case

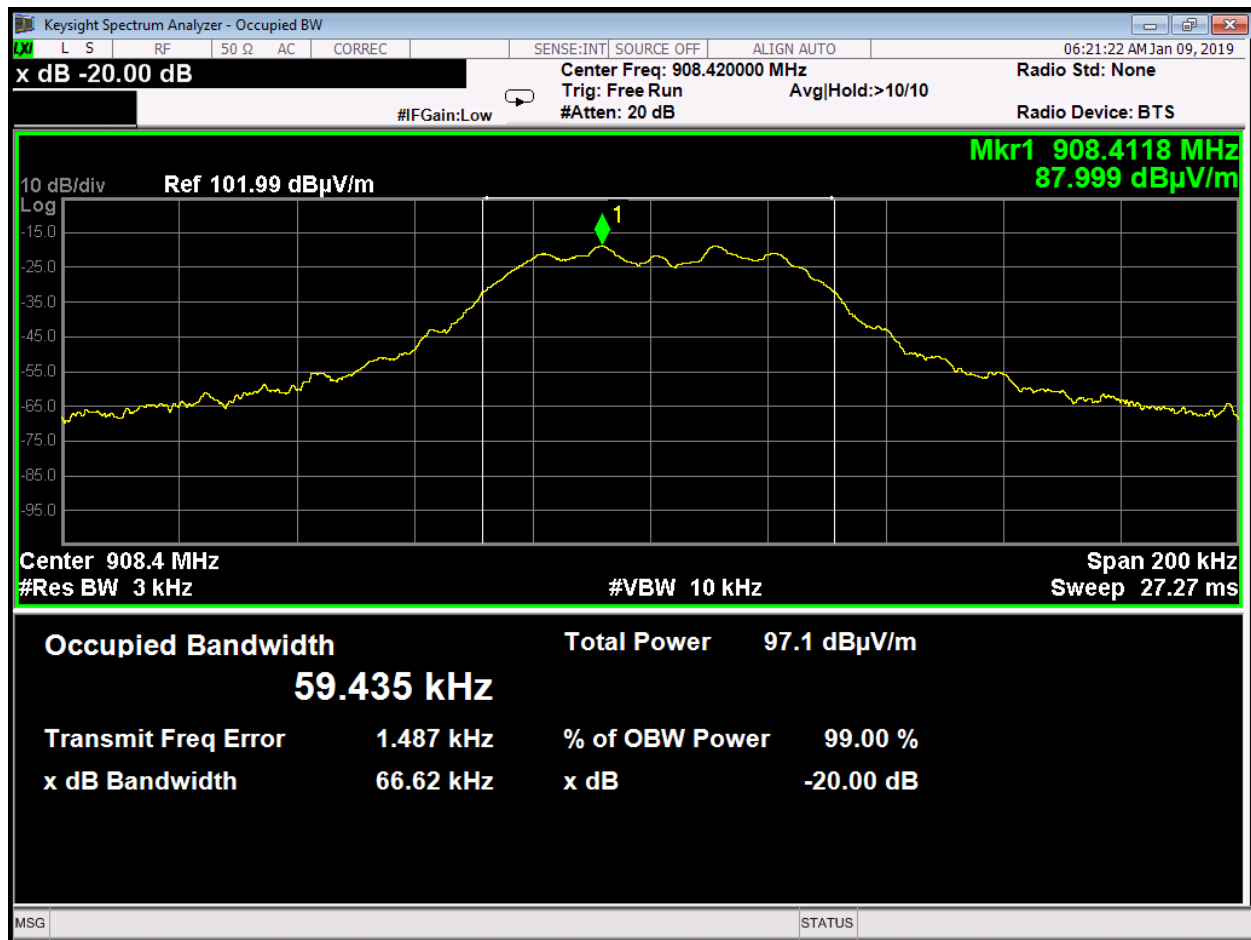


Band Edge – Vertical Polarization – High Channel – Part Number: 4AP1S90EN0– Z-Axis Worst Case

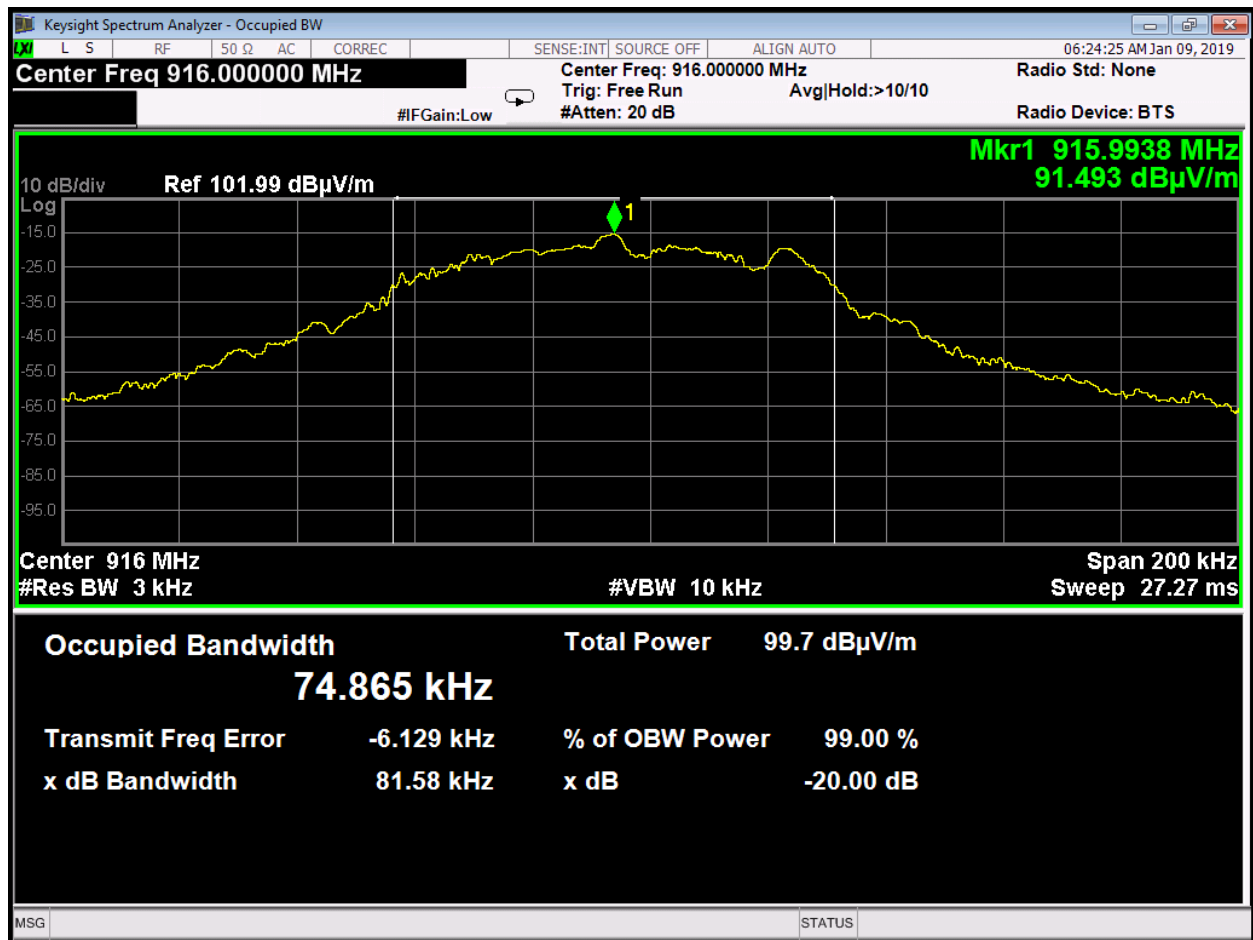


Band Edge – Horizontal Polarization – High Channel – Part Number: 4AP1S90EN0 – X-Axis Worst Case

**99 % BANDWIDTH
DATA SHEETS**



99 Percent BW – 908.42 MHz



99 Percent BW - 916 MHz