FCC PART 15, SUBPART B and C; FCC 15.249; and RSS-210 & RSS-GEN TEST REPORT

for

Z-WAVE GARAGE DOOR CONTROLLER

Model: GDZW7-ECO

Prepared for

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

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DATE: FEBRUARY 1, 2023

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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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 by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the United States Government.

Device Tested:	Z-Wave Garage Door Controller Model: GDZW7-ECO S/N: ELGLCR2217TW00005
Product Description:	The equipment under test is a battery powered Z-Wave Garage Door Controller that uses Z-Wave technology. The transmit frequency is 908.42 MHz and 916 MHz. The clock oscillator is 39 MHz. Dimensions: 2.3 cm (L) x 9.2 cm (W) x 13.7 cm (H).
Modifications:	The EUT was not modified to meet the specifications.
Customer:	Ecolink Intelligent Technology, Inc. 2055 Corte Del Nogal Carlsbad, California 92011
Test Dates:	January 13, 16, 17 and 18, 2023

Test Specifications covered by accreditation:

Test Specifications:	Emissions requirements CFR Title 47, Part 15, Subpart B; CFR Title 47, Part 15, Subpart C, sections 15.205, 15.207, 15.209, and 15.249; RSS-210 and RSS-Gen

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Test Procedures:	ANSI C63.4 and ANSI C63.10
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Conducted RF Emissions, 150 kHz – 30 MHz	Complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; the limits of CFR Title 47, Part 15, Subpart C section 15.207; and the limits of RSS-Gen for conducted emissions. Highest reading in relation to spec limit 40.01 dBuV (Avg) @ 0.3306 MHz (*U = 2.72 dB).
2	Spurious Radiated RF Emissions, 9 kHz – 9.16 GHz	Complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; the limits of CFR Title 47, Part 15 Subpart C, sections 15.205, 15.209, and 15.249; and the limits of RSS-210 and RSS-Gen Highest reading in relation to spec limit 93.92 dBuV/m (QP) @ 908.42 MHz (*U = 3.32 dB)
3	Variation of the Input Power	The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart A section 15.31 (e); and RSS-Gen
4	99% Bandwidth	This test was performed to obtain the emission designator required by Innovation, Science and Economic Development Canada.

*U = Expanded Uncertainty with a coverage factor of k=2

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Z-Wave Garage Door Controller, Model: GDZW7-ECO. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed 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, section 15.109; the specification limits defined by CFR Title 47, Part 15 Subpart C sections 15.205, 15.209 and 15.249; and the specifications limits defined by RSS-210 and RSS-Gen.

This test report covers the FCC 15.249 portion of the EUT. The FCC 15.247 portion is covered under the Compatible Electronics, Inc. test report **B30117D2**, and the FCC 15.231 portion is covered under the Compatible Electronics, Inc. test report **B30117D3**.

1.1 Decision Rule & Risk

If a measured value exceeds a specification limit it implies non-compliance. If the value is below a specification limit it implies compliance. Measurement uncertainty of the laboratory is reported with all measurement results but generally not taken into consideration unless a standard, rule or law requires it to be considered.

Qualification test reports are only produced for products that are in compliance with the test requirements, therefore results are always in conformity. Otherwise, an engineering report or just the data is provided to the customer.

When performing a measurement and making a statement of conformity, in or out-of-specification to manufacturer's specifications or Pass/Fail against a requirement, there are two possible outcomes:

- The result is reported as conforming with the specification
- The result is reported as not conforming with the specification

The decision rule is defined below.

When the test result is found to be below the limit but within our measurement uncertainty of the limit, it is our policy that the final acceptance decision is left to the customer, after discussing the implications and potential risks of the decision.

When the test result is found to be exactly on the specification, it is our policy, in the case of unwanted emissions measurements to consider the result non-compliant, however, the final decision is left to the customer, after discussing the implications and potential risks of the decision.

When the test result is found to be over the specification limit under any condition, it is our policy to consider the result non-compliant.

In terms of uncertainty of measurement, the laboratory is a calibrated and tightly controlled environment and generally exceptionally stable, the measurement uncertainties are evaluated without the considering of the test sample. When it comes to the test sample however, as most testing is performed on a single sample rather than a sample population, and that sample is often a pre-production representation of the final product, that test sample represents a significantly higher source of measurement uncertainty. We advise our customers of this and that when in doubt (small test to limit margins), they may wish to perform statistical sampling on a population to gain a higher confidence in the results. All lab reported results are that of a single sample in any event.

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.

Dave Shepard	Product Compliance/QA Specialist
Jay Stone	Director of Engineering

Compatible Electronics Inc.

Kyle Fujimoto	Sr. Test Engineer
James Ross	Sr. Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to the date of this report.

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 report.

2.6 Abbreviations and Acronyms

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

EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
FCC	Federal Communications Commission
DoC	Declaration of Conformity
N/A	Not Applicable
Tx	Transmit
Rx	Receive
Inc.	Incorporated
RSS	Radio Standards Specification
RF	Radio Frequency
BLE	Bluetooth Low Energy
CFR	Code of Federal Regulations
Sr.	Senior
DC	Direct Current
LED	Light Emitting Diode

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this emission 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
RSS-210 Issue 10: 2019 + Amendment (April 2020)	License-exempt Radio Apparatus: Category I Equipment
RSS-Gen Issue 5: 2018 + Amendment 1: 2019 + Amendment 2: 2021	General Requirements for Compliance of Radio Apparatus
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 of procedure for compliance testing of unlicensed wireless devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The Z-Wave Garage Door Controller, Model: GDZW7-ECO (EUT) was connected to unterminated cables on its J3 and J4 ports. A switching adapter was also connected to its DC IN port. The EUT was transmtting or receiving at 908.42 MHz or 916 MHz on a continuous basis.

The EUT was tested for emissions while in the X, Y and Z axis. 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 firmware inside the EUT allowed the EUT to continuously transmit or receive at 908.42 MHz or 916 MHz.

The firmware is stored on the company's servers.

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

4.1.1 Cable Construction and Termination

Cable 1 This is a 1.5-meter unshielded, unterminated cable connecting the EUT's J3 port. The cable was bundled to 40 centimeters above the ground plane.

Cable 2 This is a 1.5-meter unshielded, unterminated cable connecting the EUT's J4 port. The cable was bundled to 40 centimeters above the ground plane.

Cable 3 This is a 1.5-meter unshielded cable connecting the EUT to the switching adapter. The cable has a 1/8 inch power adapter at the EUT end and is hard wired into the switching adapter. The cable was bundled to a length of 1-meter.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	IDENTIFICATIONS
Z-WAVE GARAGE DOOR CONTROLLER (EUT)	ECOLINK INTELLIGENT TECHNOLOGY, INC.	GDZW7-ECO	ELGLCR2217 TW00005	FCC: XQC-GDZW7LR IC: 9863B-GDZW7LR
FIRMWARE	ECOLINK INTELLIGENT TECHNOLOGY, INC.	1.0	N/A	N/A
SWITCHING ADAPTER	AMIGO	AMS135-1201000FU	N/A	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
RF RADIATED AND AC CONDUCTED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Keysight Technologies, Inc.	N9038A	MY51210150	September 17, 2021	September 17, 2023
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
Loop Antenna	Com-Power	AL-130R	121090	February 10, 2022	February 10, 2025
CombiLog Antenna	Com-Power	AC-220	61093	December 14, 2021	December 14, 2023
Horn Antenna	Com-Power	AH-118	10050113	December 16, 2021	December 16, 2023
Preamplifier	Com-Power	PA-118	181653	March 7, 2022	March 7, 2023
Below 1 GHz Conducted Cable	N/A	N/A	Asset #: 0009	October 3, 2022	October 3, 2023
Below 1 GHz Radiated Cable	N/A	N/A	Asset #: 0006	October 3, 2022	October 3, 2023
Above 1 GHz Cable	Suhner	Sucoflex 102EA	2291	August 2, 2021	August 2, 2023
Above 1 GHz Cable	Suhner	Sucoflex 102EA	501393	August 2, 2021	August 2, 2023
Above 1 GHz Cable	Suhner	Sucoflex 102EA	501394	August 2, 2021	August 2, 2023
LISN	Com-Power	LI-215A	191951	August 16, 2022	August 16, 2023
Attenuator 10 dB	Surecall	SC-ATT-10	17100025	December 2, 2022	December 2, 2023
Multimeter	Fluke	115	36601149WS	November 21, 2021	November 21, 2023
Variable Autotransformer	Staco Energy Products	3PN2210	003	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 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 0.6 by 1.2 meter non-conductive table 0.8 meters above the ground plane.

For frequencies above 1 GHz: The EUT was mounted on a 0.6 by 1.2 meter non-conductive table 1.5 meters above the ground plane.

The EUT was not grounded.

6.3 Measurement Uncertainty

Compatible Electronics' U_{lab} value is less than U_{cispr}, thus based on this − compliance is deemed to occur if no measured disturbance exceeds the disturbance limit

$$u_c(y) = \sqrt{\sum_i c_i^2 \; u^2(x_i)}$$

Measurement		**U_{cispr}**	$U_{lab} = 2\,uc\,(y)$
Conducted disturbance (mains port)	(150 kHz – 30 MHz)	3.4 dB	2.72 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(30 MHz – 1 000 MHz)	6.3 dB	3.32 dB (Vertical) 3.30 dB (Horizontal)
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(1 GHz - 6 GHz)	5.2 dB	4.06 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(6 GHz – 18 GHz)	5.5 dB	4.06 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(18 GHz – 26.5 GHz)	N/A	4.43 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(26.5 GHz – 40 GHz)	N/A	4.57 dB

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 10 dB attenuator 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.

The six highest emissions are listed in Table 1.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; the limits of CFR Title 47, Part 15, Subpart C section 15.207; and the limits of RSS-Gen for conducted emissions.

7.1.2 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. An internal preamplifier was used to increase the sensitivity of the instrument during emissions tests up to 1000 MHz, and an external preamplifier was used to increase the sensitivity of the instrument during emissions tests above 1 GHz. 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 considers 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.

The frequencies below 1 GHz were quasi-peaked using the quasi-peak detector of the EMI Receiver.

The frequencies above 1 GHz were averaged using the average detector of the EMI Receiver.

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 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 to ensure accurate results.

The EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 2.

Radiated Emissions Test (Continued)

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 9.16 GHz	1 MHz	Horn Antenna

Test Results:

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

7.1.3 RF Emissions Test Results

Table 1 CONDUCTED EMISSION RESULTS
Z-Wave Garage Door Controller, Model: GDZW7-ECO

Frequency (MHz)	Average Corrected Reading* (dBµV/m)	Average Specification Limit (dBµV/m)	Delta (Cor. Reading – Spec. Limit) (dB)
0.306 (WL) (Rx)[1]	40.01	49.74	-9.73
0.318 (WL) (Rx)[1]	39.66	49.74	-10.08
0.310 (WL) (Rx)[2]	37.22	49.67	-12.45
0.330 (WL) (Rx)[2]	34.01	49.16	-15.15
0.294 (WL) (Rx)[1]	34.96	50.25	-15.29
0.334 (BL) (Tx)[1]	33.82	49.16	-15.34

[1] 908.42 MHz Tx/Rx Frequency
[2] 916.00 MHz Tx/Rx Frequency

Table 2 RADIATED EMISSION RESULTS
Z-Wave Garage Door Controller, Model: GDZW7-ECO

Frequency MHz	Quasi-Peak Corrected Reading* (dBµV/m)	Specification Limit (dBµV/m)	Delta (Cor. Reading – Spec. Limit) (dB)
908.42 (V) (Y-Axis)	93.92	93.97	-0.05
908.42 (H) (X-Axis)	93.92	93.97	-0.05
916.00 (V) (Y-Axis)	93.31	93.97	-0.66
916.00 (V) (Z-Axis)	93.23	93.97	-0.74
908.42 (V) (Z-Axis)	92.91	93.97	-1.06
916.00 (H) (X-Axis)	92.39	93.97	-1.58

Notes:

* The complete emissions data is given in Appendix E of this report.
(V) Vertical
(H) Horizontal
(BL) Black Lead
(WL) White Lead
(Rx) Receiving
(Tx) Transmitting

7.1.4 Sample Calculations

A correction factor for the antenna, cable, and a distance factor (if any) must be applied to the meter reading before a true field strength reading can be obtained. This Corrected Meter Reading is then compared to the specification limit in order to determine compliance with the limits.

Conversion to logarithmic terms: Specification limit (µV/m) log x 20 = Specification Limit in dBuV/m

To correct for distance when measuring at a distance other than the specification

For measurements below 30 MHz: (Specification distance / test distance) log x 40 = distance factor

For measurements above 30 MHz: (Specification distance / test distance) log x 20 = distance factor

Note: When using an Active Antenna, the Antenna factor shall be subtracted due to the combination of the internal amplification and antenna loss.

Corrected Meter Reading = meter reading + F – A + C

where: F = antenna factor
A= amplifier gain
C = cable loss

The correction factors for the antenna and the amplifier gain are attached in Appendix D of this report. The data sheets are attached in Appendix E.

The distance factor D is 0 when the test is performed at the required specification distance.

When the limit is in terms of magnetic field, the following equation applies:

$$H[dB(\mu A/m)] = V[dB(\mu V)] + L_C\,[dB] - G_{PA}\,[dB] + AF^H\,[dB(S/m)]$$

where: H is the magnetic field strength (to be compared with the limit),
V is the voltage level measured by the receiver or spectrum analyzer,
L_C is the cable loss,
G_{PA} is the gain of the preamplifier (if used), and
AF^H is the magnetic antenna factor.

The G_{PA} term is only included in the equation when an external preamplifier is used in the measurement chain, in front of the receiver or spectrum analyzer. An external preamplifier is not usually necessary (or even advisable, due to risk of saturating the input mixer of the receiver) when an active loop antenna is used. In that case, the antenna factor of the loop already includes the gain of its built-in preamplifier.

Sample Calculations (Continued)

If the "electrical" antenna factor is used instead, the above equation becomes:

$$H[dB(\mu A/m)] = V[dB(\mu V)] + L_C\,[dB] - G_{PA}[dB] + AF^E\,[dB(m^{-1})] - 51.5\,[dB\Omega]$$

where: AF^E is the "electric" antenna factor, as provided by the antenna calibration laboratory.

When the limit is in terms of electric field, the following equation applies:

$$E[dB(\mu V/m)] = V[dB(\mu V)] + L_C[dB] - G_{PA}[dB] + AF^E\,[dB(m^{-1})]$$

or, if the magnetic antenna factor is used:

$$E[dB(\mu V/m)] = V[dB(\mu V)] + L_C[dB] - G_{PA}[dB] + AF^H\,[dB(S/m)] + 51.5[dB\Omega]$$

The display of the receiver (or spectrum analyzer) **shall not** be configured in units of current, e.g. µA or dB(µA). That conversion is calculated inside the receiver (or spectrum analyzer) using its input impedance, which is 50 Ω, while the magnetic field calculation is based on the free-space impedance of 377 Ω.

7.1.5 99 % Bandwidth

The 99 % bandwidth was measured using an EMI Receiver.

The following steps were performed for measuring the 99 % bandwidth per RSS-GEN, Issue 5, clause 6.7:

1. Set RBW to 1 % to 5 % of the actual occupied bandwidth.
2. Set VBW to greater than 3 times the RBW.
3. Set the EMI Receiver to the occupied bandwidth Function set at 99 %
4. Set the peak detector to max hold.
5. Set the sweep time to auto
6. Allow the trace to stabilize.

Please note that this was only used to determine the emission bandwidth and that there are no limits or pass/fail criteria for this test. Please see the data sheets located in Appendix E.

7.1.6 Variation of the Input Power

The variation of the input power test was performed using the EMI Receiver. The EUT input power was varied between 85% and 115% of the nominal rated supply voltage. The carrier frequency was monitored for any change in amplitude.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart A section 15.31 (e); and RSS-Gen.

8. CONCLUSIONS

The Z-Wave Garage Door Controller, Model: GDZW7-ECO (EUT), as tested, meets all of the specification limits defined in RSS-210, RSS-Gen, the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B; and the specification limits defined in CFR Title 47, Part, 15, Subpart C, sections 15.205, 15.207, 15.209 and 15.249.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP® TESTING
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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 the Management Systems Requirements of ISO/IEC 17025, General Requirements for the competence of testing and calibration laboratories:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025 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 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001"

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APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B, FCC 15.249, RSS-210, and RSS-Gen 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

MODELS COVERED UNDER THIS REPORT

MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	Z-Wave Garage Door Controller Model: GDZW7-ECO S/N: ELGLCR2217TW00005

There are no additional models or part numbers covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

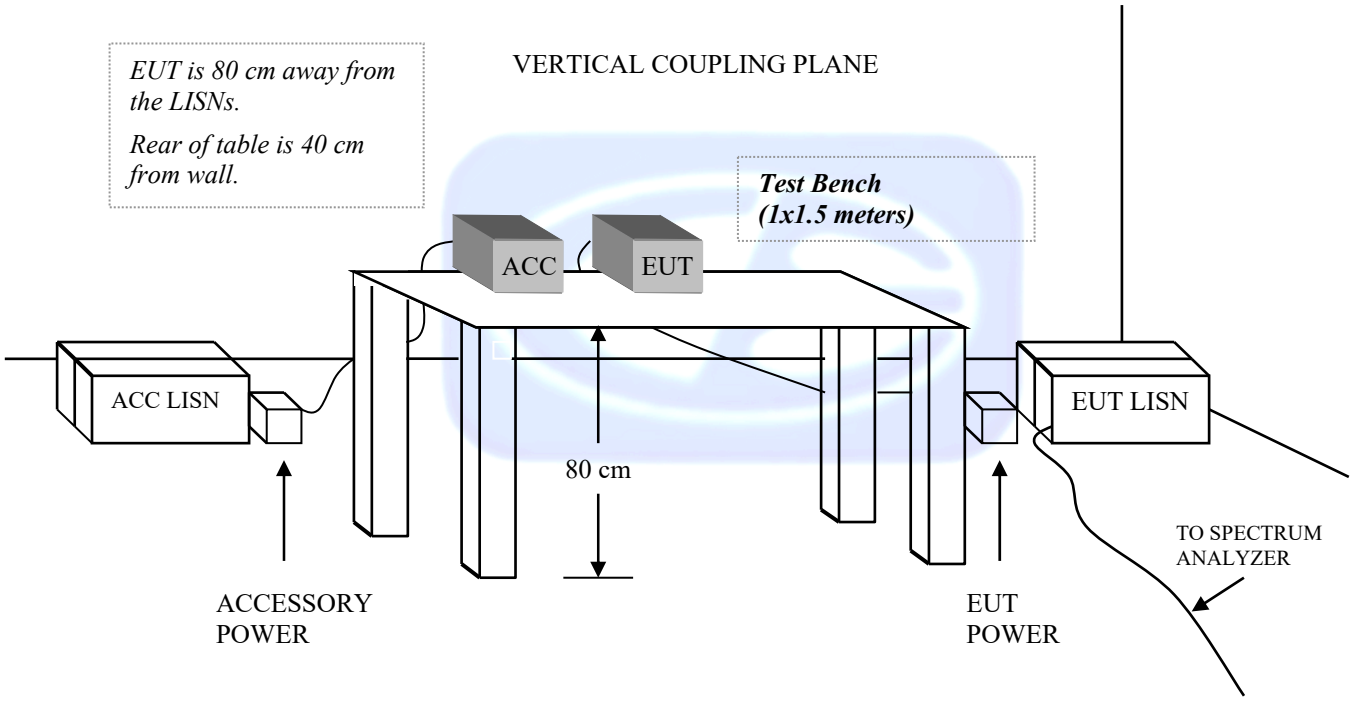
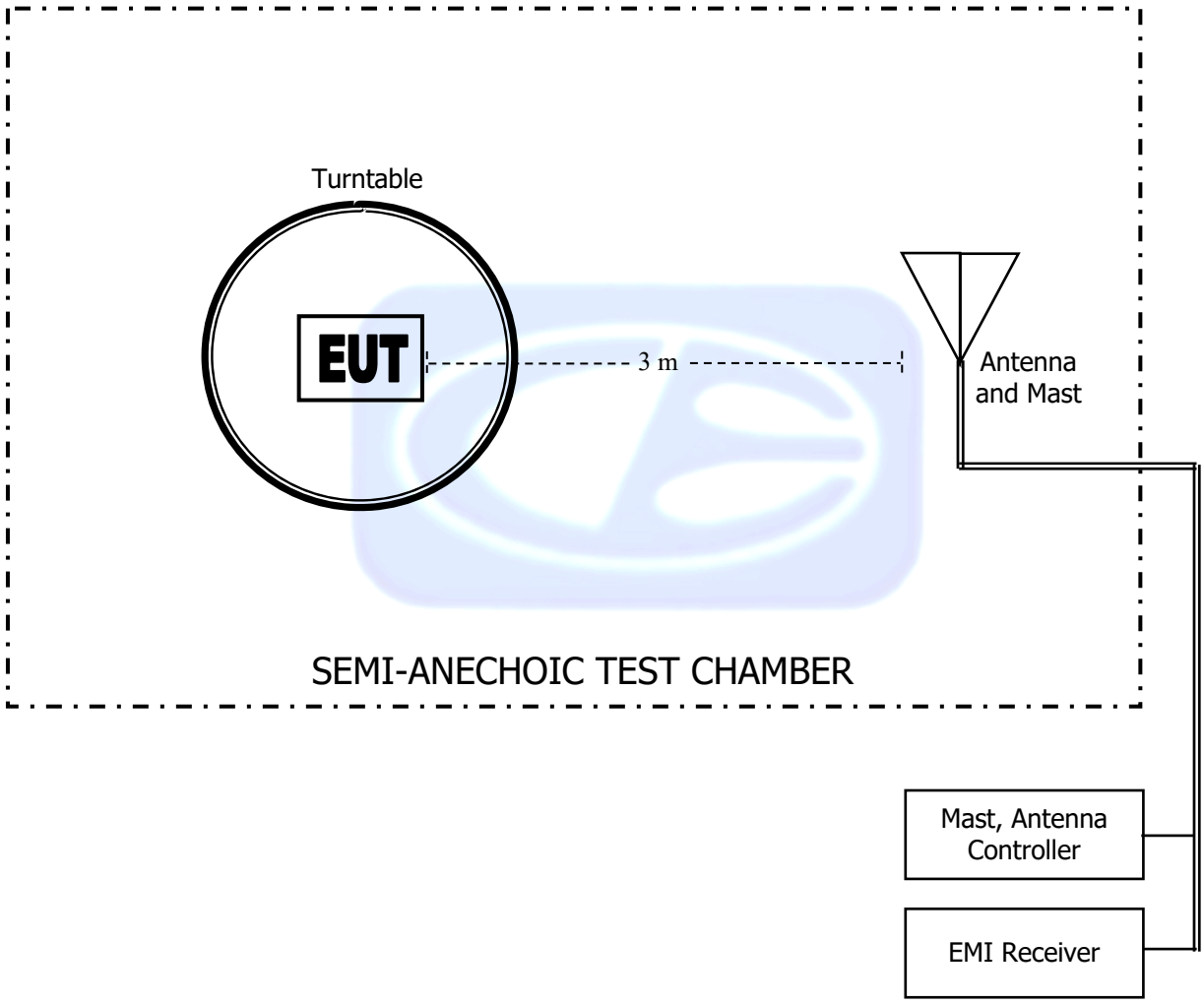


FIGURE 2: LAYOUT OF THE SEMI -ANECHOIC TEST CHAMBER



COM-POWER AL-130R

LOOP ANTENNA

S/N: 121090

CALIBRATION DATE: FEBRUARY 10, 2022

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	15.6	-35.8
0.01	15.8	-35.6
0.02	14.8	-36.6
0.03	15.6	-35.9
0.04	15.0	-36.5
0.05	14.4	-37.1
0.06	14.6	-36.9
0.07	14.3	-37.2
0.08	14.3	-37.2
0.09	14.4	-37.0
0.10	14.1	-37.4
0.20	14.1	-37.4
0.30	14.0	-37.5
0.40	13.9	-37.6
0.50	14.1	-37.3
0.60	14.1	-37.3
0.70	14.2	-37.3
0.80	14.2	-37.3
0.90	14.2	-37.2
1.00	14.4	-37.0
2.00	14.6	-36.9
3.00	14.6	-36.8
4.00	14.9	-36.6
5.00	14.9	-36.7
6.00	14.8	-36.7
7.00	14.6	-36.8
8.00	14.5	-37.0
9.00	14.3	-37.2
10.00	14.5	-37.0
11.00	14.6	-36.9
12.00	14.7	-36.7
13.00	14.9	-36.6
14.00	15.0	-36.5
15.00	14.9	-36.6
16.00	14.9	-36.6
17.00	14.6	-36.8
18.00	14.4	-37.1
19.00	14.5	-37.0
20.00	14.5	-37.0
21.00	14.2	-37.3
22.00	13.9	-37.5
23.00	13.9	-37.5
24.00	13.8	-37.7
25.00	13.4	-38.0
26.00	13.2	-38.2
27.00	13.2	-38.3
28.00	12.7	-38.7
29.00	12.7	-38.8
30.00	12.4	-39.0

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61093

CALIBRATION DATE: DECEMBER 14, 2021

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	22.50	200	16.00
35	21.40	250	17.40
40	21.00	300	19.70
45	20.60	350	20.00
50	19.70	400	22.20
60	16.10	450	22.40
70	12.80	500	23.10
80	12.50	550	23.40
90	14.20	600	24.90
100	15.40	650	25.30
120	16.50	700	25.40
125	16.80	750	26.40
140	15.90	800	26.70
150	16.60	850	27.10
160	18.50	900	27.90
175	15.90	950	28.00
180	15.50	1000	28.00

COM POWER AH-118

HORN ANTENNA

S/N: 10050113

CALIBRATION DATE: DECEMBER 16, 2021

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.86	10.0	38.91
1.5	25.67	10.5	39.94
2.0	28.25	11.0	39.10
2.5	29.17	11.5	39.70
3.0	29.78	12.0	40.29
3.5	30.88	12.5	41.93
4.0	31.21	13.0	41.34
4.5	32.96	13.5	40.57
5.0	33.30	14.0	40.23
5.5	34.24	14.5	42.25
6.0	34.57	15.0	43.63
6.5	35.61	15.5	39.96
7.0	36.60	16.0	40.38
7.5	37.49	16.5	40.56
8.0	37.44	17.0	40.93
8.5	37.98	17.5	42.27
9.0	38.01	18.0	43.77
9.5	38.53		

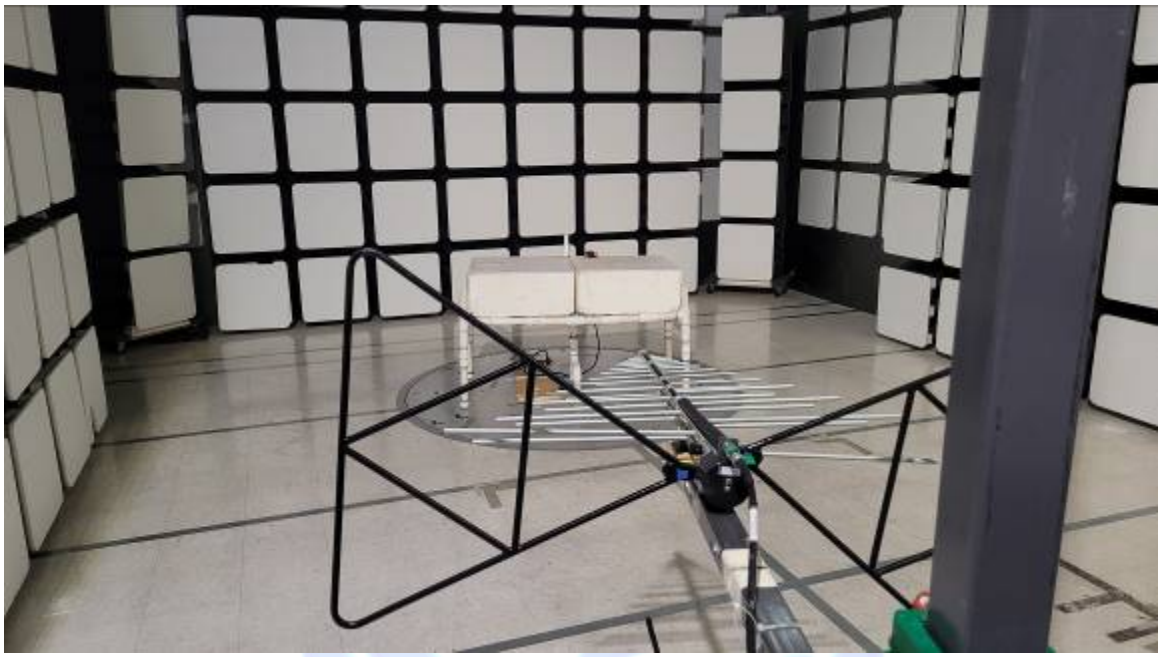
COM-POWER PAM-118

PREAMPLIFIER

S/N: 181653

CALIBRATION DATE: MARCH 7, 2022

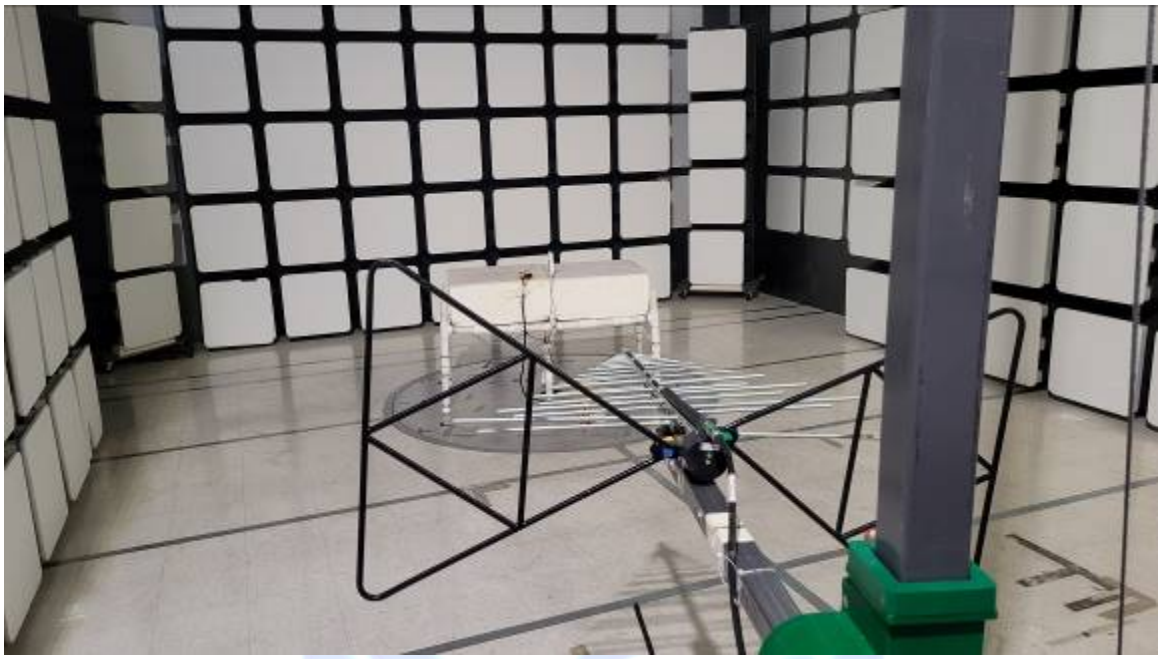
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.02	6.0	38.84
1.1	39.72	6.5	39.20
1.2	39.93	7.0	39.46
1.3	39.98	7.5	39.67
1.4	39.99	8.0	39.28
1.5	40.20	8.5	38.63
1.6	40.05	9.0	38.96
1.7	40.15	9.5	39.33
1.8	40.20	10.0	39.58
1.9	40.33	11.0	38.25
2.0	40.33	12.0	40.03
2.5	40.60	13.0	40.55
3.0	40.76	14.0	40.36
3.5	40.87	15.0	39.34
4.0	40.39	16.0	37.34
4.5	39.55	17.0	42.14
5.0	40.34	18.0	42.54
5.5	39.45		



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; RSS-210 AND RSS-GEN – RADIATED EMISSIONS – BELOW 1 GHz

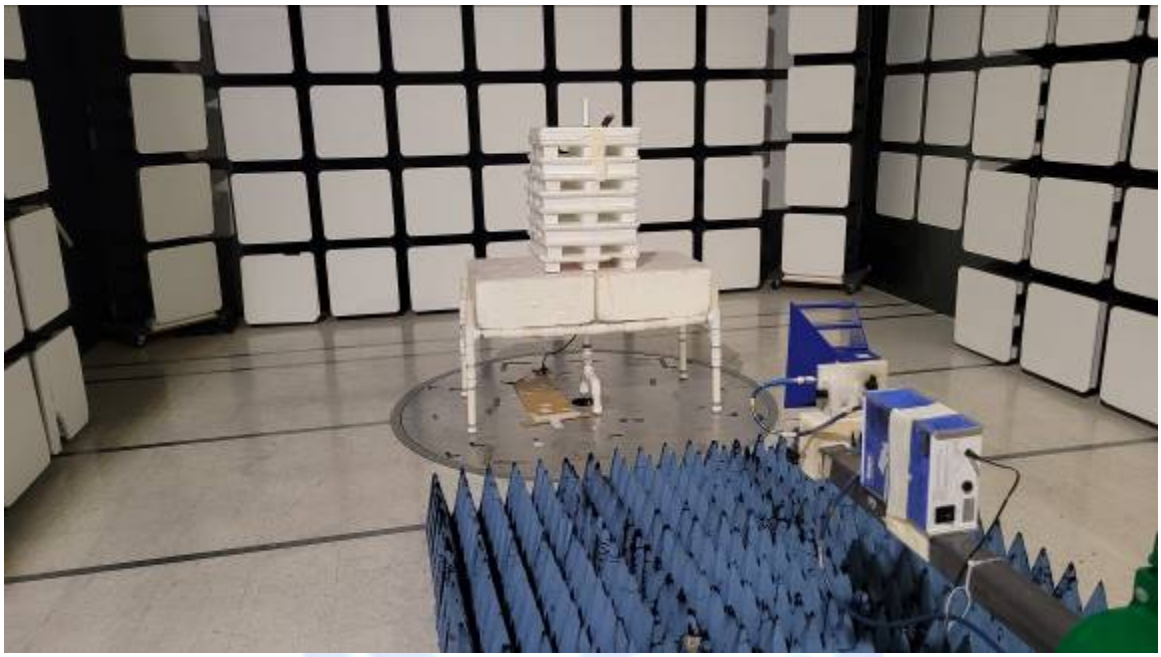
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; RSS-210 AND RSS-GEN – RADIATED EMISSIONS – BELOW 1 GHz

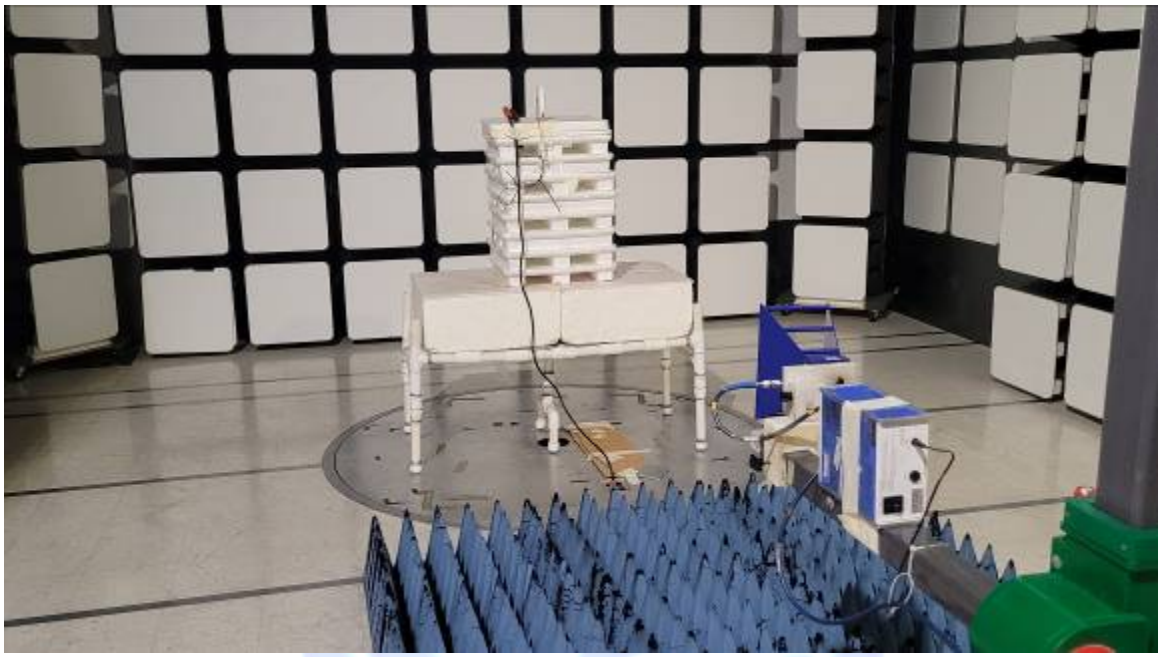
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; RSS-210 AND RSS-GEN – RADIATED EMISSIONS – ABOVE 1 GHz
TRANSMIT MODE

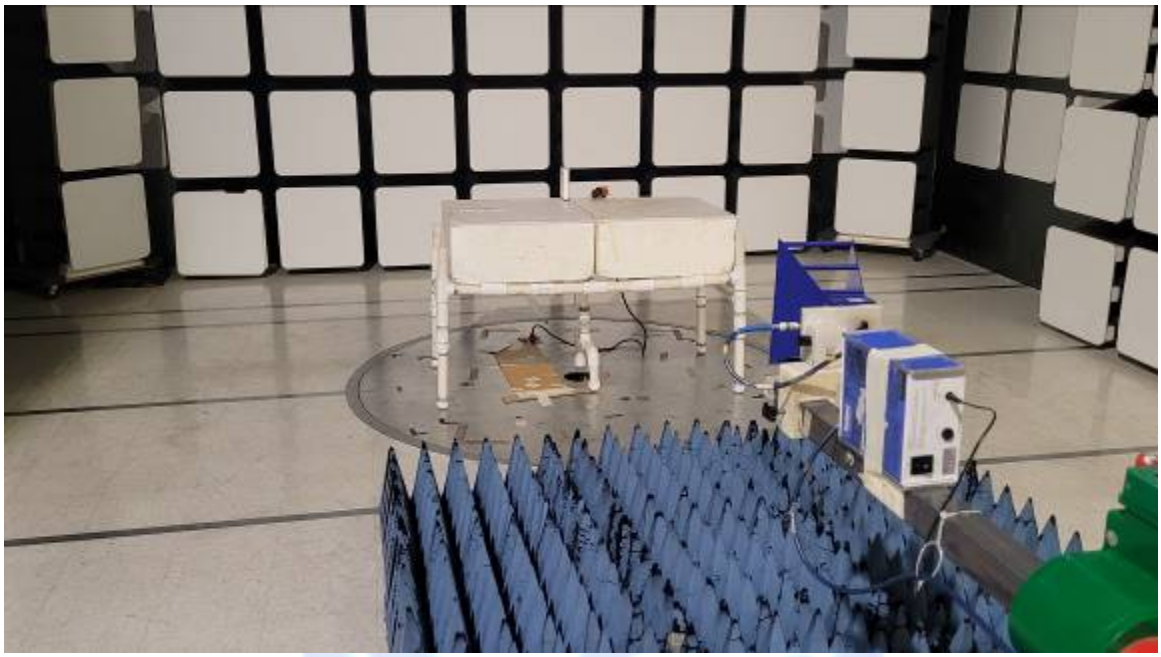
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; RSS-210 AND RSS-GEN – RADIATED EMISSIONS – ABOVE 1 GHz
TRANSMIT MODE

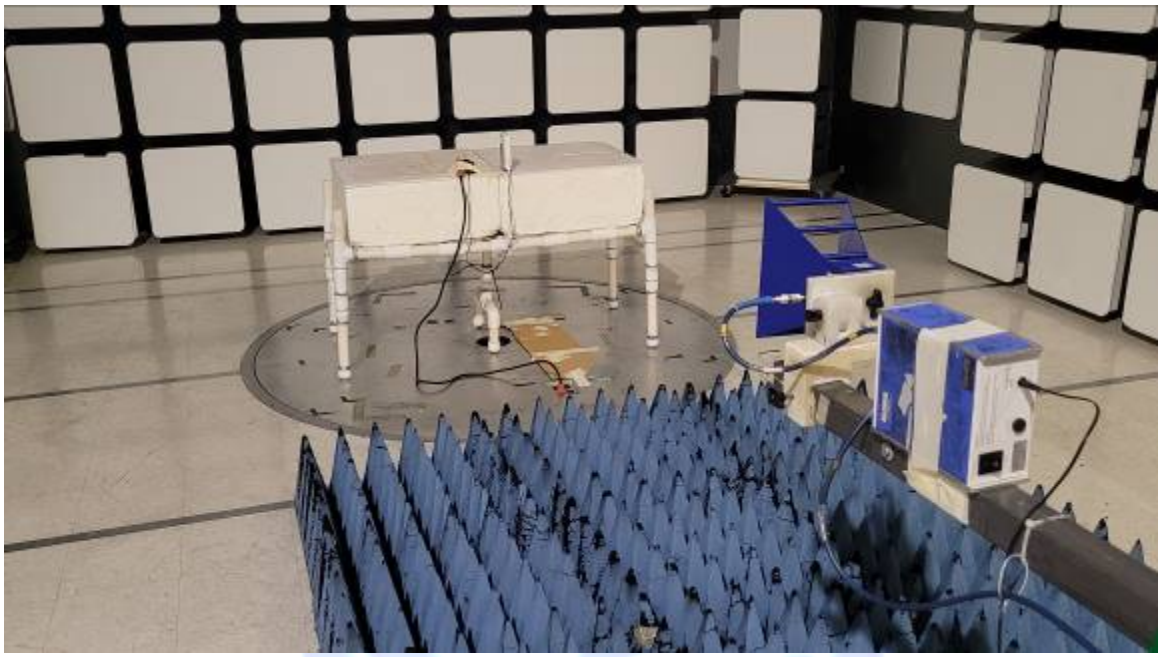
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; RSS-210 AND RSS-GEN – RADIATED EMISSIONS – ABOVE 1 GHz
RECEIVE MODE

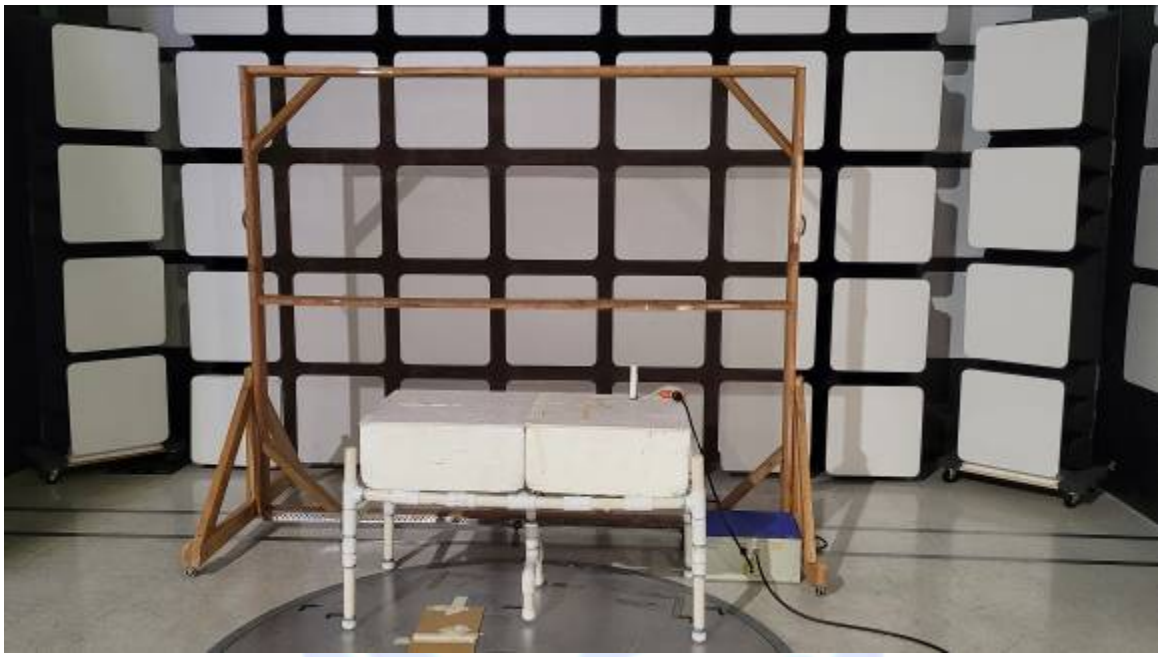
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; RSS-210 AND RSS-GEN – RADIATED EMISSIONS – ABOVE 1 GHz
RECEIVE MODE

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; AND RSS-GEN – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
Z-WAVE GARAGE DOOR CONTROLLER
MODEL: GDZW7-ECO
FCC SUBPART B AND C; AND RSS-GEN – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

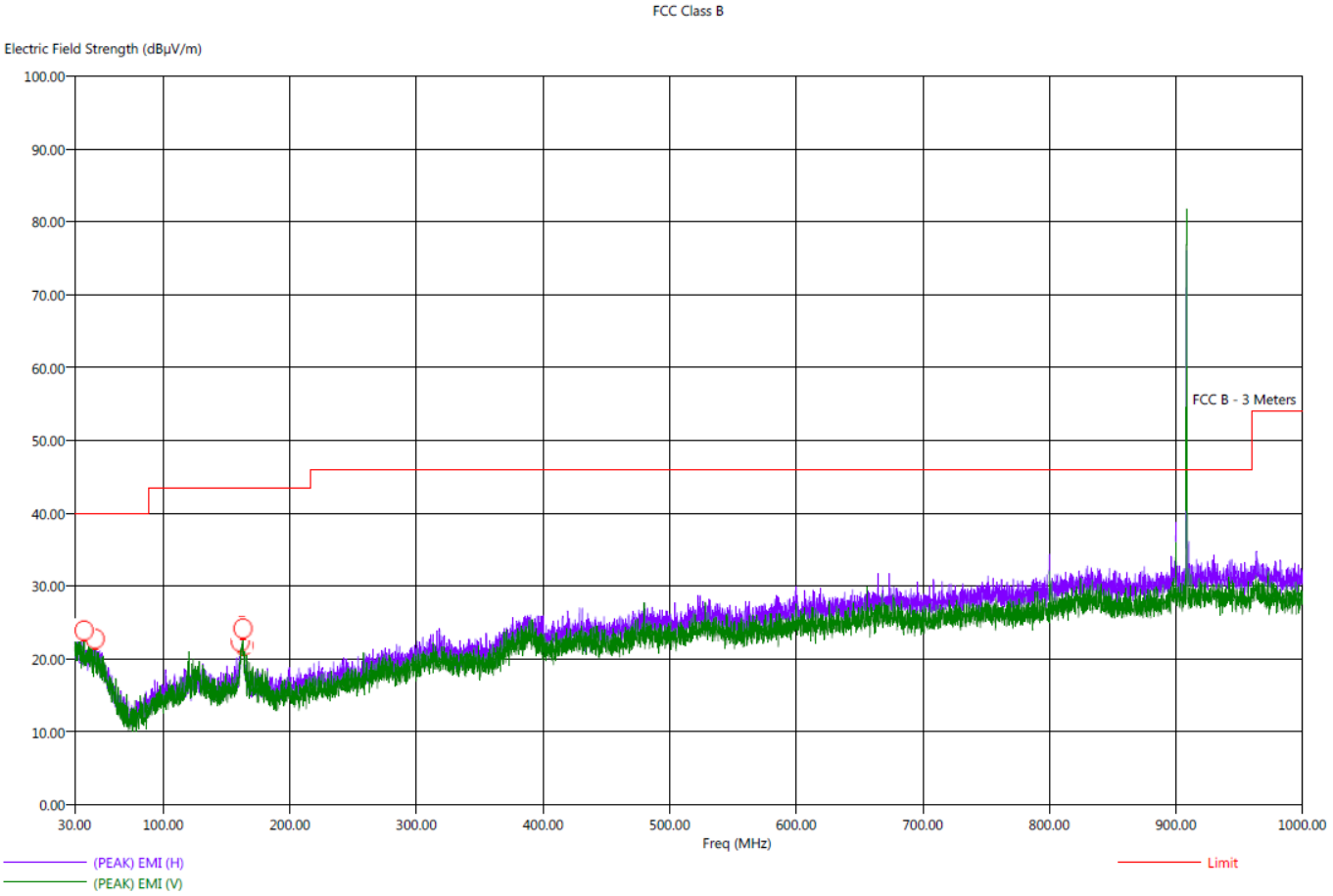
DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

Title: Pre-Scan - FCC Class B
File: 5 - Keysight - Pre-Scan - RX MODE - Y-Axis - 908.42 MHz - FCC Class B - 01-16-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)
Note: The Frequency at 908.42 MHz is from the accessory unit that is transmitting to the EUT and is placed away from the turntable.

1/16/2023 9:45:42 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 5 - Keysight - Final Scan - RX MODE - Y-Axis - 908.42 MHz - FCC Class B - 01-16-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)

1/16/2023 9:56:06 AM
Sequence: Final Measurements

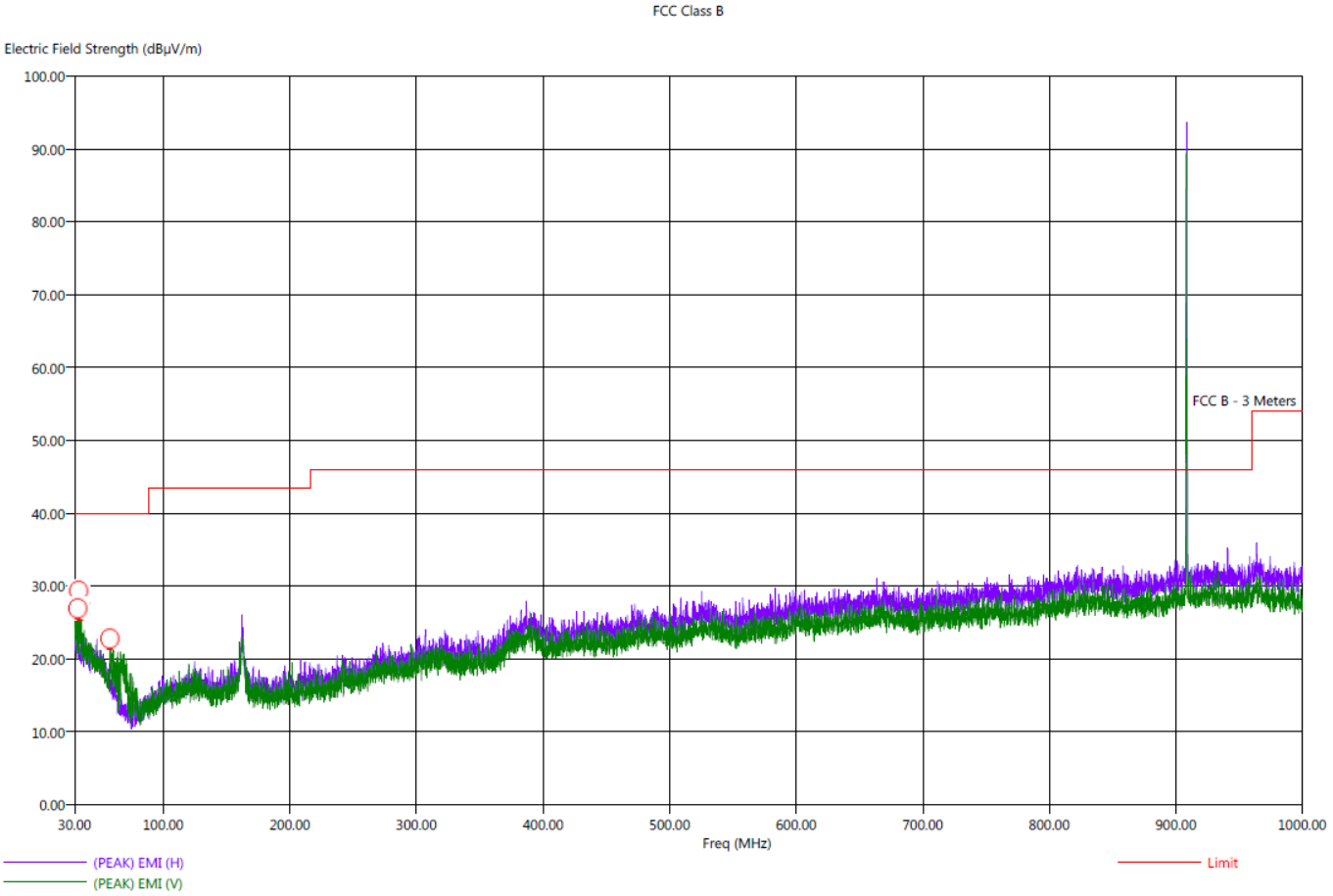
FCC Class B

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)	Twr Ht (cm)
37.50	V	23.37	18.36	-16.63	-21.64	40.00	21.17	0.41	312.00	334.67
46.10	H	22.65	17.64	-17.35	-22.36	40.00	20.38	0.45	18.50	143.56
160.90	H	23.01	17.84	-20.49	-25.66	43.50	20.10	0.93	359.75	366.67
162.10	H	27.02	20.75	-16.48	-22.75	43.50	22.93	0.94	54.75	207.08
162.90	V	26.04	20.50	-17.46	-23.00	43.50	22.38	0.94	120.25	111.50
163.70	H	22.82	17.52	-20.68	-25.98	43.50	19.73	0.94	357.75	190.91

COMPATIBLE ELECTRONICS

Title: Pre-Scan - FCC Class B
File: 1 - Keysight - Pre-Scan - Y-Axis - 908.42 MHz - FCC Class B - 01-12-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)
Note: The Frequency at 908.42 MHz is subject to the limits of FCC 15.249 instead.

1/12/2023 2:13:04 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 1 - Keysight - Final Scan - Y-Axis - 908.42 MHz - FCC Class B - 01-12-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)

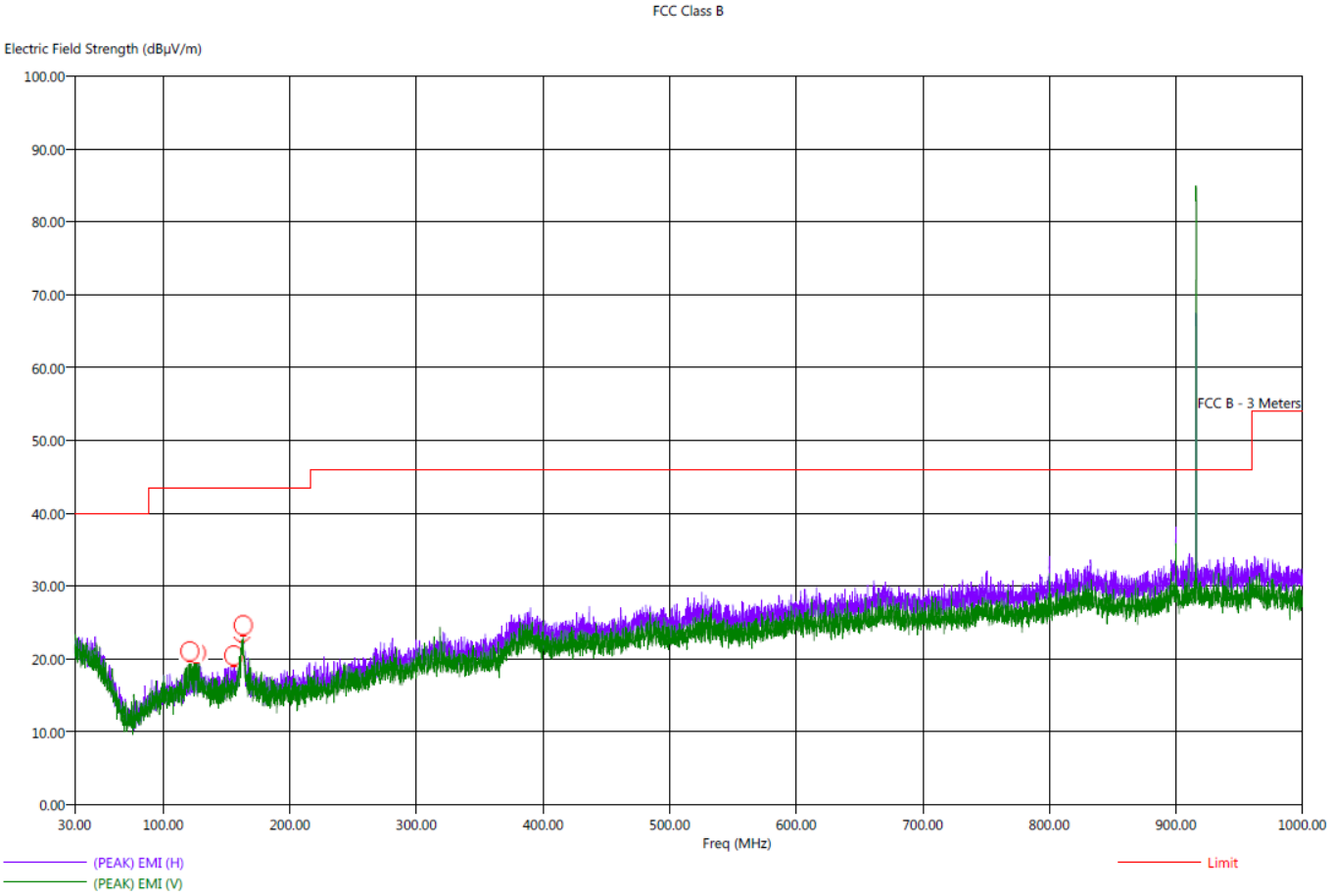
1/12/2023 2:28:58 PM
Sequence: Final Measurements

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 (deq)	Twr Ht (cm)
32.40	V	29.44	21.64	-10.56	-18.36	40.00	21.89	0.38	281.75	175.14
33.10	V	33.28	24.67	-6.72	-15.33	40.00	21.71	0.38	310.75	143.32
34.10	V	33.40	26.60	-6.60	-13.40	40.00	21.49	0.39	309.75	111.62
34.40	V	32.01	25.83	-7.99	-14.17	40.00	21.46	0.39	211.50	127.14
35.20	V	29.16	22.62	-10.84	-17.38	40.00	21.33	0.39	217.75	159.38
57.70	V	22.82	16.37	-17.18	-23.63	40.00	16.96	0.52	0.25	158.97

Title: Pre-Scan - FCC Class B
File: 6 - Keysight - Pre-Scan - RX MODE - Y-Axis - 916.00 MHz - FCC Class B - 01-16-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)
Note: The Frequency at 916.00 MHz is from the accessory unit that is transmitting to the EUT and is placed away from the turntable.

1/16/2023 10:52:23 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 6 - Keysight - Final Scan - RX MODE - Y-Axis - 916 MHz - FCC Class B - 01-16-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)

1/16/2023 11:01:15 AM
Sequence: Final Measurements

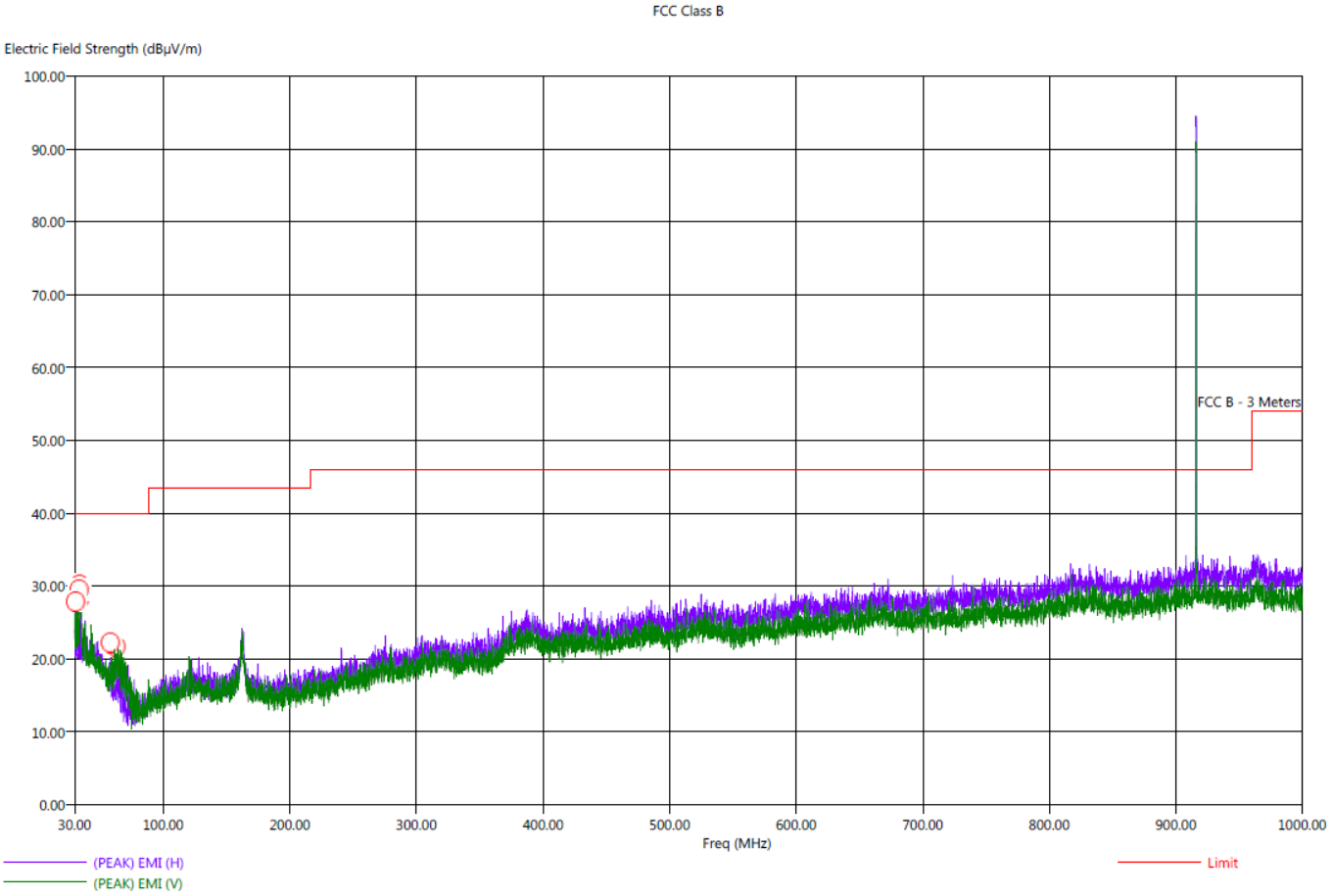
FCC Class B

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)	Twr Ht (cm)
120.90	V	24.02	17.97	-19.48	-25.53	43.50	16.61	0.80	69.50	111.32
121.40	V	22.99	16.87	-20.51	-26.63	43.50	16.62	0.80	26.75	175.08
126.20	V	23.75	17.58	-19.75	-25.92	43.50	16.80	0.82	50.25	111.32
155.70	H	19.51	14.63	-23.99	-28.87	43.50	16.90	0.91	145.00	158.97
162.10	H	26.36	20.78	-17.14	-22.72	43.50	22.99	0.93	359.25	111.44
163.10	V	25.54	20.21	-17.96	-23.29	43.50	22.43	0.94	88.75	238.73

COMPATIBLE ELECTRONICS

Title: Pre-Scan - FCC Class B
File: 3 - Keysight - Pre-Scan - Y-Axis - 916.00 MHz - FCC Class B - 01-12-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)
Note: The Frequency at 916.00 MHz is subject to the limits of FCC 15.249 instead.

1/12/2023 3:24:52 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 2 - Keysight - Final Scan - Y-Axis - 916.00 MHz - FCC Class B - 01-12-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005
Y-Axis (Worst Case)

1/12/2023 3:52:34 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 Agl (deg)	Twr Ht (cm)
30.70	V	28.87	21.83	-11.13	-18.17	40.00	22.24	0.36	283.25	158.67
33.40	V	33.83	26.14	-6.17	-13.86	40.00	21.64	0.38	282.25	111.38
33.90	V	33.30	25.97	-6.70	-14.03	40.00	21.57	0.38	279.00	127.08
34.40	V	32.87	26.44	-7.13	-13.56	40.00	21.46	0.39	332.00	111.56
58.20	H	19.08	14.20	-20.92	-25.80	40.00	16.89	0.52	141.50	127.14
62.60	H	17.74	12.43	-22.26	-27.57	40.00	15.14	0.55	98.00	111.02

FUNDAMENTAL AND HARMONICS

DATA SHEETS

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Fundamental
Low Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
908.42	88.56	V	93.97	-5.41	Peak	340.50	131.68	**X-Axis**
908.42	88.10	V	93.97	-5.87	QP	340.50	131.68	**Vertical Polarization**
908.42	93.92	V	93.97	-0.05	Peak	356.50	113.83	**Y-Axis**
908.42	93.92	V	93.97	-0.05	QP	356.50	113.83	**Vertical Polarization**
908.42	92.97	V	93.97	-1.00	Peak	173.50	132.10	**Z-Axis**
908.42	92.91	V	93.97	-1.06	QP	173.50	132.10	**Vertical Polarization**
908.42	93.92	H	93.97	-0.05	Peak	79.75	180.76	**X-Axis**
908.42	93.92	H	93.97	-0.05	QP	79.75	180.76	**Horizontal Polarization**
908.42	90.69	H	93.97	-3.28	Peak	44.75	168.64	**Y-Axis**
908.42	90.15	H	93.97	-3.82	QP	44.75	168.64	**Horizontal Polarization**
908.42	89.02	H	93.97	-4.95	Peak	6.00	102.25	**Z-Axis**
908.42	86.39	H	93.97	-7.58	QP	6.00	102.25	**Horizontal Polarization**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Fundamental
High Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
916.00	88.92	V	93.97	-5.05	Peak	222.50	105.56	**X-Axis**
916.00	88.76	V	93.97	-5.22	QP	222.50	105.56	**Vertical Polarization**
916.00	93.78	V	93.97	-0.19	Peak	218.50	113.11	**Y-Axis**
916.00	93.31	V	93.97	-0.66	QP	218.50	113.11	**Vertical Polarization**
916.00	93.71	V	93.97	-0.26	Peak	351.25	114.43	**Z-Axis**
916.00	93.23	V	93.97	-0.74	QP	351.25	114.43	**Vertical Polarization**
916.00	92.80	H	93.97	-1.17	Peak	90.00	100.37	**X-Axis**
916.00	92.39	H	93.97	-1.58	QP	90.00	100.37	**Horizontal Polarization**
916.00	90.53	H	93.97	-3.44	Peak	233.75	100.26	**Y-Axis**
916.00	90.42	H	93.97	-3.55	QP	233.75	100.26	**Horizontal Polarization**
916.00	87.08	H	93.97	-6.89	Peak	36.75	102.10	**Z-Axis**
916.00	86.56	H	93.97	-7.41	QP	36.75	102.10	**Horizontal Polarization**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
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	32.08	V	73.97	-41.89	Peak	292.00	191.32	
1816.84	20.33	V	53.97	-33.64	Avg	292.00	191.32	
2725.26	36.30	V	73.97	-37.67	Peak	302.50	159.08	
2725.26	24.67	V	53.97	-29.30	Avg	302.50	159.08	
3633.68	36.27	V	73.97	-37.70	Peak	70.25	127.38	
3633.68	24.79	V	53.97	-29.18	Avg	70.25	127.38	
4542.10	37.55	V	73.97	-36.42	Peak	47.00	177.95	
4542.10	25.77	V	53.97	-28.20	Avg	47.00	177.95	
5450.52	39.47	V	73.97	-34.50	Peak	121.75	143.02	
5450.52	27.82	V	53.97	-26.15	Avg	121.75	143.02	
6358.94								**No Emission**
6358.94								**Detected**
7267.36								**No Emission**
7267.36								**Detected**
8175.78								**No Emission**
8175.78								**Detected**
9084.20								**No Emission**
9084.20								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
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	32.18	V	73.97	-41.79	Peak	190.25	238.91	
1816.84	20.41	V	53.97	-33.56	Avg	190.25	238.91	
2725.26	37.78	V	73.97	-36.19	Peak	0.75	249.01	
2725.26	24.68	V	53.97	-29.29	Avg	0.75	249.01	
3633.68	36.44	V	73.97	-37.53	Peak	259.75	223.20	
3633.68	24.69	V	53.97	-29.28	Avg	259.75	223.20	
4542.10	38.15	V	73.97	-35.82	Peak	198.75	143.38	
4542.10	25.82	V	53.97	-28.15	Avg	198.75	143.38	
5450.52	39.94	V	73.97	-34.03	Peak	301.75	143.38	
5450.52	27.84	V	53.97	-26.13	Avg	301.75	143.38	
6358.94								**No Emission**
6358.94								**Detected**
7267.36								**No Emission**
7267.36								**Detected**
8175.78								**No Emission**
8175.78								**Detected**
9084.20								**No Emission**
9084.20								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
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	32.24	V	73.97	-41.73	Peak	175.00	111.26	
1816.84	20.27	V	53.97	-33.70	Avg	175.00	111.26	
2725.26	36.36	V	73.97	-37.61	Peak	346.00	127.38	
2725.26	24.72	V	53.97	-29.25	Avg	346.00	127.38	
3633.68	36.11	V	73.97	-37.86	Peak	116.00	159.38	
3633.68	24.40	V	53.97	-29.57	Avg	116.00	159.38	
4542.10	38.39	V	73.97	-35.58	Peak	136.25	111.38	
4542.10	25.87	V	53.97	-28.10	Avg	136.25	111.38	
5450.52	39.78	V	73.97	-34.19	Peak	310.50	191.26	
5450.52	27.86	V	53.97	-26.11	Avg	310.50	191.26	
6358.94								**No Emission**
6358.94								**Detected**
7267.36								**No Emission**
7267.36								**Detected**
8175.78								**No Emission**
8175.78								**Detected**
9084.20								**No Emission**
9084.20								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
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	32.62	H	73.97	-41.35	Peak	247.75	127.20	
1816.84	20.28	H	53.97	-33.69	Avg	247.75	127.20	
2725.26	36.48	H	73.97	-37.49	Peak	144.00	111.38	
2725.26	24.62	H	53.97	-29.35	Avg	144.00	111.38	
3633.68	36.32	H	73.97	-37.65	Peak	353.75	127.26	
3633.68	25.29	H	53.97	-28.68	Avg	353.75	127.26	
4542.10	38.12	H	73.97	-35.85	Peak	161.25	111.26	
4542.10	25.78	H	53.97	-28.19	Avg	161.25	111.26	
5450.52	40.42	H	73.97	-33.55	Peak	342.00	127.32	
5450.52	27.85	H	53.97	-26.12	Avg	342.00	127.32	
6358.94								**No Emission**
6358.94								**Detected**
7267.36								**No Emission**
7267.36								**Detected**
8175.78								**No Emission**
8175.78								**Detected**
9084.20								**No Emission**
9084.20								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
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	33.12	H	73.97	-40.85	Peak	93.25	251.20	
1816.84	20.65	H	53.97	-33.32	Avg	93.25	251.20	
2725.26	36.48	H	73.97	-37.49	Peak	349.75	144.76	
2725.26	24.89	H	53.97	-29.08	Avg	349.75	144.76	
3633.68	36.50	H	73.97	-37.47	Peak	236.25	239.44	
3633.68	24.44	H	53.97	-29.53	Avg	236.25	239.44	
4542.10	37.38	H	73.97	-36.59	Peak	72.00	249.07	
4542.10	25.88	H	53.97	-28.09	Avg	72.00	249.07	
5450.52	42.40	H	73.97	-31.57	Peak	112.20	111.50	
5450.52	32.69	H	53.97	-21.28	Avg	112.25	111.50	
6358.94								**No Emission**
6358.94								**Detected**
7267.36								**No Emission**
7267.36								**Detected**
8175.78								**No Emission**
8175.78								**Detected**
9084.20								**No Emission**
9084.20								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
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	32.79	H	73.97	-41.18	Peak	272.75	159.20	
1816.84	20.42	H	53.97	-33.55	Avg	272.75	159.20	
2725.26	30.29	H	73.97	-43.68	Peak	315.25	191.08	
2725.26	24.64	H	53.97	-29.33	Avg	315.25	191.08	
3633.68	38.77	H	73.97	-35.20	Peak	308.50	127.44	
3633.68	28.79	H	53.97	-25.18	Avg	308.50	127.44	
4542.10	37.92	H	73.97	-36.05	Peak	105.75	127.08	
4542.10	25.86	H	53.97	-28.11	Avg	105.75	127.08	
5450.52	39.48	H	73.97	-34.49	Peak	55.00	143.56	
5450.52	28.15	H	53.97	-25.82	Avg	55.00	143.56	
6358.94								**No Emission**
6358.94								**Detected**
7267.36								**No Emission**
7267.36								**Detected**
8175.78								**No Emission**
8175.78								**Detected**
9084.20								**No Emission**
9084.20								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
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	32.53	V	73.97	-41.44	Peak	284.25	222.85	
1832.00	20.44	V	53.97	-33.53	Avg	284.25	222.85	
2748.00	36.35	V	73.97	-37.62	Peak	3.75	175.98	
2748.00	24.44	V	53.97	-29.53	Avg	3.75	175.98	
3664.00	36.42	V	73.97	-37.55	Peak	231.50	127.32	
3664.00	24.42	V	53.97	-29.55	Avg	231.50	127.32	
4580.00	38.06	V	73.97	-35.91	Peak	161.50	143.32	
4580.00	25.69	V	53.97	-28.28	Avg	161.50	143.32	
5496.00	39.50	V	73.97	-34.47	Peak	139.75	249.01	
5496.00	28.29	V	53.97	-25.68	Avg	139.75	249.01	
6412.00								**No Emission**
6412.00								**Detected**
7328.00								**No Emission**
7328.00								**Detected**
8244.00								**No Emission**
8244.00								**Detected**
9160.00								**No Emission**
9160.00								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
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	32.27	V	73.97	-41.70	Peak	311.25	175.32	
1832.00	20.42	V	53.97	-33.55	Avg	311.25	175.32	
2748.00	36.23	V	73.97	-37.74	Peak	26.50	159.32	
2748.00	24.37	V	53.97	-29.60	Avg	26.50	159.32	
3664.00	36.10	V	73.97	-37.87	Peak	223.25	249.01	
3664.00	24.43	V	53.97	-29.54	Avg	223.25	249.01	
4580.00	37.20	V	73.97	-36.77	Peak	237.75	238.91	
4580.00	25.64	V	53.97	-28.33	Avg	237.75	238.91	
5496.00	40.20	V	73.97	-33.77	Peak	71.00	249.95	
5496.00	27.99	V	53.97	-25.98	Avg	71.00	249.95	
6412.00								**No Emission**
6412.00								**Detected**
7328.00								**No Emission**
7328.00								**Detected**
8244.00								**No Emission**
8244.00								**Detected**
9160.00								**No Emission**
9160.00								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
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	32.57	V	73.97	-41.40	Peak	174.25	175.32	
1832.00	20.70	V	53.97	-33.27	Avg	174.25	175.32	
2748.00	36.09	V	73.97	-37.88	Peak	203.00	209.17	
2748.00	24.52	V	53.97	-29.45	Avg	203.00	209.17	
3664.00	36.27	V	73.97	-37.70	Peak	47.75	223.20	
3664.00	24.55	V	53.97	-29.42	Avg	47.75	223.20	
4580.00	38.13	V	73.97	-35.84	Peak	0.00	127.62	
4580.00	25.74	V	53.97	-28.23	Avg	0.00	127.62	
5496.00	40.17	V	73.97	-33.80	Peak	2.00	223.26	
5496.00	28.03	V	53.97	-25.94	Avg	2.00	223.26	
6412.00								**No Emission**
6412.00								**Detected**
7328.00								**No Emission**
7328.00								**Detected**
8244.00								**No Emission**
8244.00								**Detected**
9160.00								**No Emission**
9160.00								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
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	32.48	H	73.97	-41.49	Peak	17.50	175.20	
1832.00	20.72	H	53.97	-33.25	Avg	17.50	175.20	
2748.00	36.11	H	73.97	-37.86	Peak	157.75	143.26	
2748.00	24.39	H	53.97	-29.58	Avg	157.75	143.26	
3664.00	36.12	H	73.97	-37.85	Peak	273.25	127.50	
3664.00	24.37	H	53.97	-29.60	Avg	273.25	127.50	
4580.00	37.52	H	73.97	-36.45	Peak	270.25	143.32	
4580.00	25.62	H	53.97	-28.35	Avg	270.25	143.32	
5496.00	40.03	H	73.97	-33.94	Peak	121.50	249.95	
5496.00	27.85	H	53.97	-26.12	Avg	121.50	249.95	
6412.00								**No Emission**
6412.00								**Detected**
7328.00								**No Emission**
7328.00								**Detected**
8244.00								**No Emission**
8244.00								**Detected**
9160.00								**No Emission**
9160.00								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
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	32.40	H	73.97	-41.57	Peak	78.00	207.02	
1832.00	20.49	H	53.97	-33.48	Avg	78.00	207.02	
2748.00	36.58	H	73.97	-37.39	Peak	255.00	249.01	
2748.00	24.37	H	53.97	-29.60	Avg	255.00	249.01	
3664.00	36.30	H	73.97	-37.67	Peak	312.00	127.32	
3664.00	24.66	H	53.97	-29.31	Avg	312.00	127.32	
4580.00	37.50	H	73.97	-36.47	Peak	115.75	224.04	
4580.00	25.60	H	53.97	-28.37	Avg	115.75	224.04	
5496.00	41.58	H	73.97	-32.39	Peak	101.50	127.08	
5496.00	27.91	H	53.97	-26.06	Avg	101.50	127.08	
6412.00								**No Emission**
6412.00								**Detected**
7328.00								**No Emission**
7328.00								**Detected**
8244.00								**No Emission**
8244.00								**Detected**
9160.00								**No Emission**
9160.00								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
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	32.86	H	73.97	-41.11	Peak	121.50	175.68	
1832.00	20.63	H	53.97	-33.34	Avg	121.50	175.68	
2748.00	36.32	H	73.97	-37.65	Peak	322.75	222.97	
2748.00	24.48	H	53.97	-29.49	Avg	322.75	222.97	
3664.00	37.56	H	73.97	-36.41	Peak	303.25	127.26	
3664.00	27.63	H	53.97	-26.34	Avg	303.25	127.26	
4580.00	38.28	H	73.97	-35.69	Peak	22.25	127.32	
4580.00	25.72	H	53.97	-28.25	Avg	22.25	127.32	
5496.00	42.03	H	73.97	-31.94	Peak	185.25	191.80	
5496.00	27.97	H	53.97	-26.00	Avg	185.25	191.80	
6412.00								**No Emission**
6412.00								**Detected**
7328.00								**No Emission**
7328.00								**Detected**
8244.00								**No Emission**
8244.00								**Detected**
9160.00								**No Emission**
9160.00								**Detected**

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
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 9.16 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 1 GHz to 9.16 GHz
								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 9.16 GHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis
								Investigated at both Low
								channel and High channel

FCC Class B and RSS-GEN

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

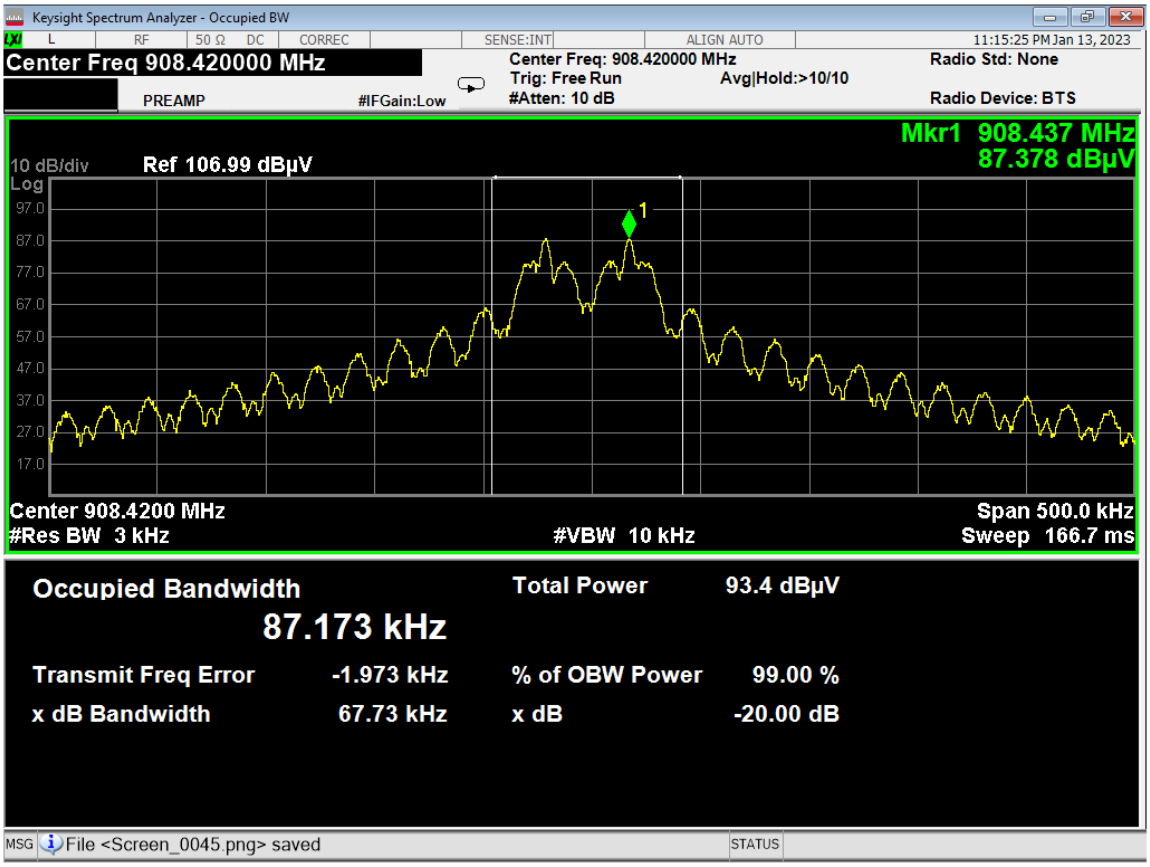
Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Receive Mode - 1 GHz to 9.16 GHz

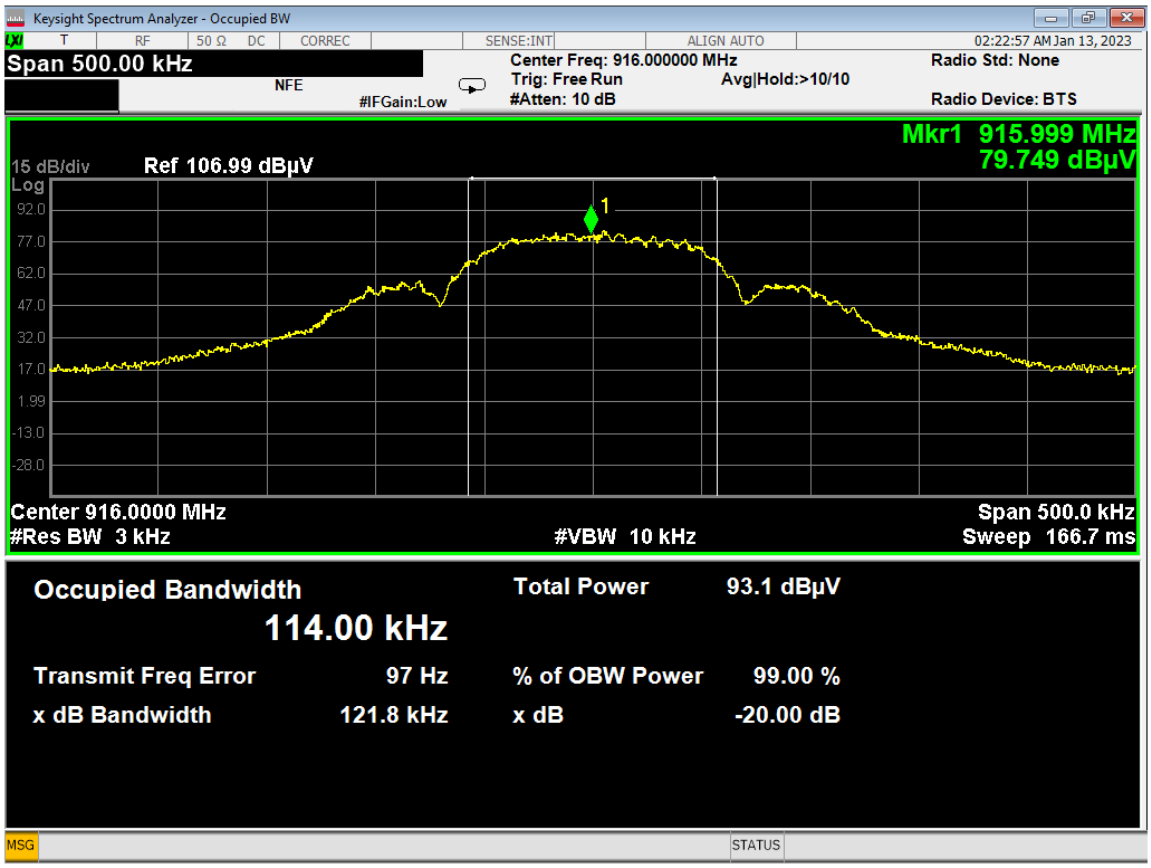
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 1 GHz to 9.16 GHz
								for the Receive Mode
								of the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis
								Investigated at both Low
								channel and High channel

99 % BANDWIDTH

DATA SHEETS



99 Percent Bandwidth Plot – 908.42 MHz



99 Percent Bandwidth Plot – 916.00 MHz

BAND EDGES DATA SHEETS

FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

Date: 01/13/2023
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
908.42	93.92	V	93.97	-0.05	Peak	356.50	113.83	**Fundamental - Low Ch.**
908.42	93.92	V	93.97	-0.05	QP	356.50	113.83	**Y-Axis - Worst Case**
902.00	26.77	V	46.00	-19.23	Peak	356.50	113.83	**Band Edge**
902.00	22.42	V	46.00	-23.58	QP	356.50	113.83	**Y-Axis - Worst Case**
908.42	93.92	H	93.97	-0.05	Peak	79.75	180.76	**Fundamental - Low Ch.**
908.42	93.92	H	93.97	-0.05	QP	79.75	180.76	**X-Axis - Worst Case**
902.00	28.06	H	46.00	-17.95	Peak	79.75	180.76	**Band Edge**
902.00	24.87	H	46.00	-21.13	QP	79.75	180.76	**X-Axis - Worst Case**

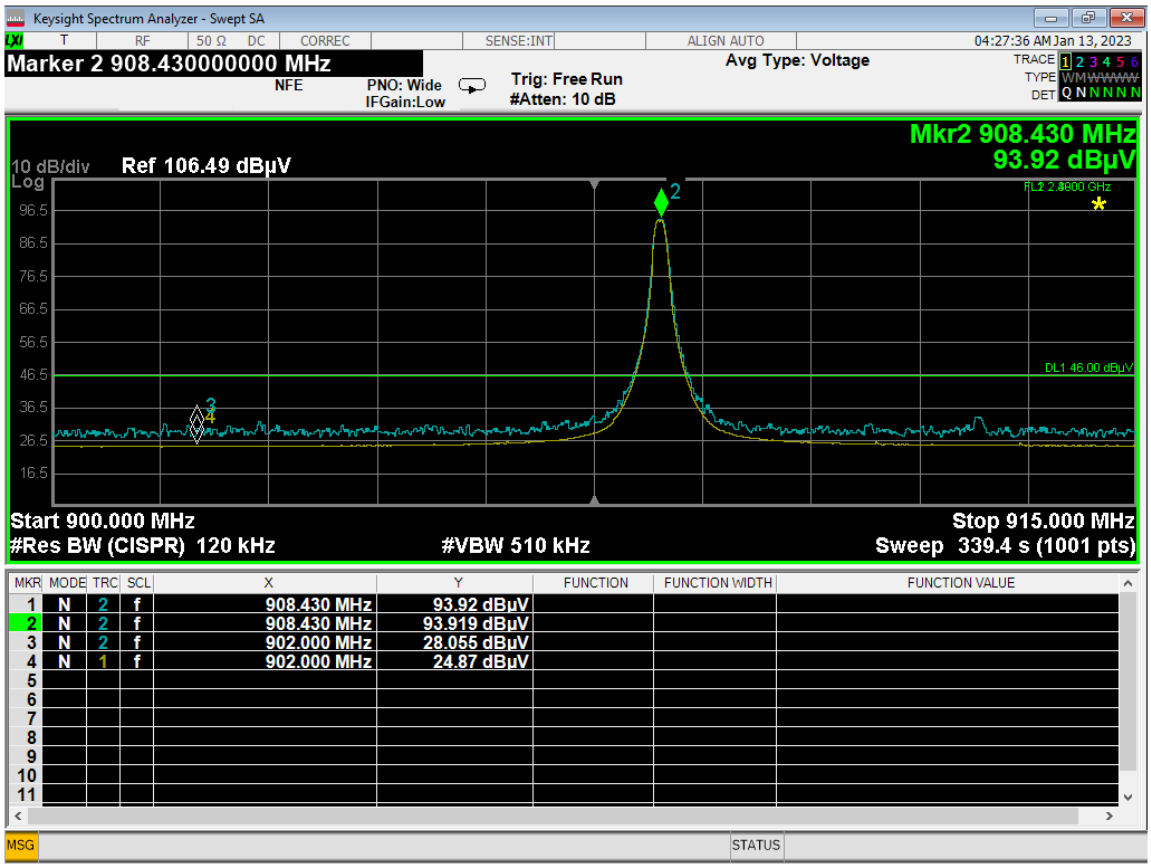
FCC 15.249 and RSS-210

Ecolink Intelligent Technology, Inc.
Z-Wave Garage Door Controller
Model: GDZW7-ECO

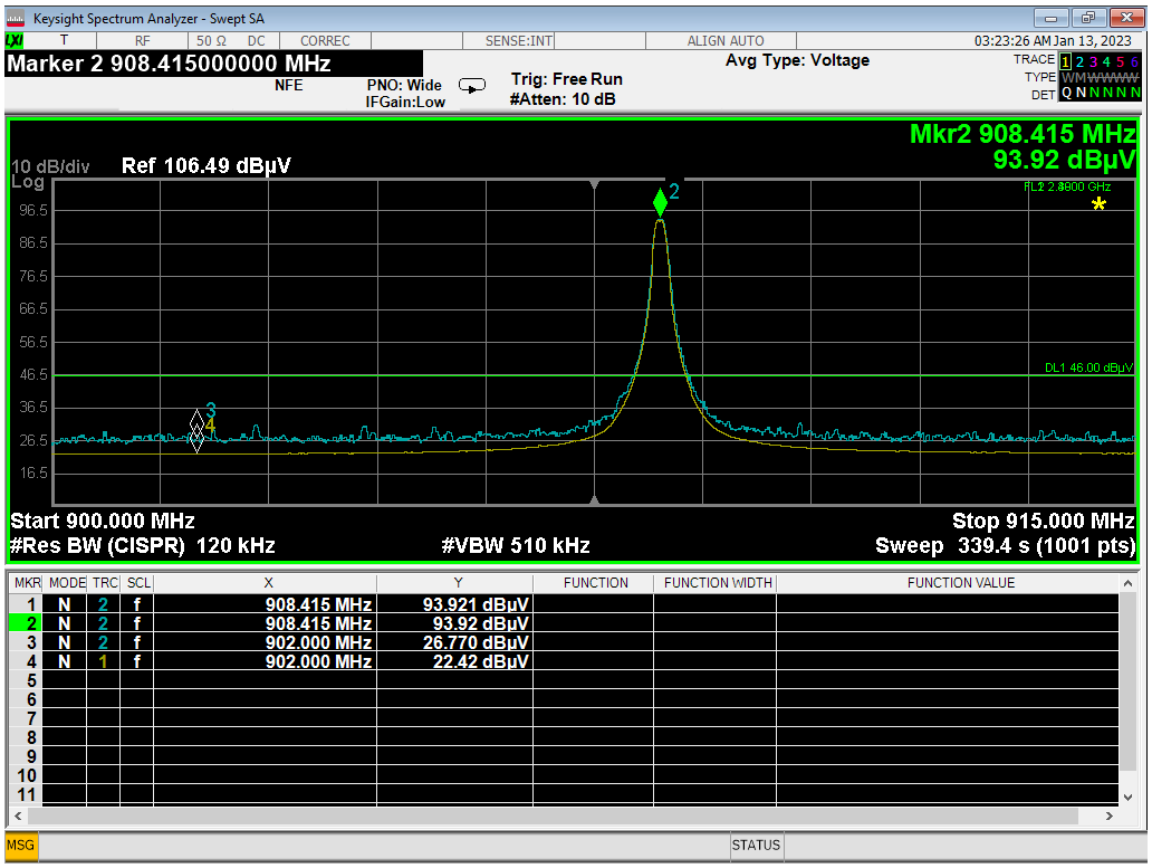
Date: 01/13/2023
Lab: D
Tested By: Kyle Fujimoto

Band Edges - High Channel

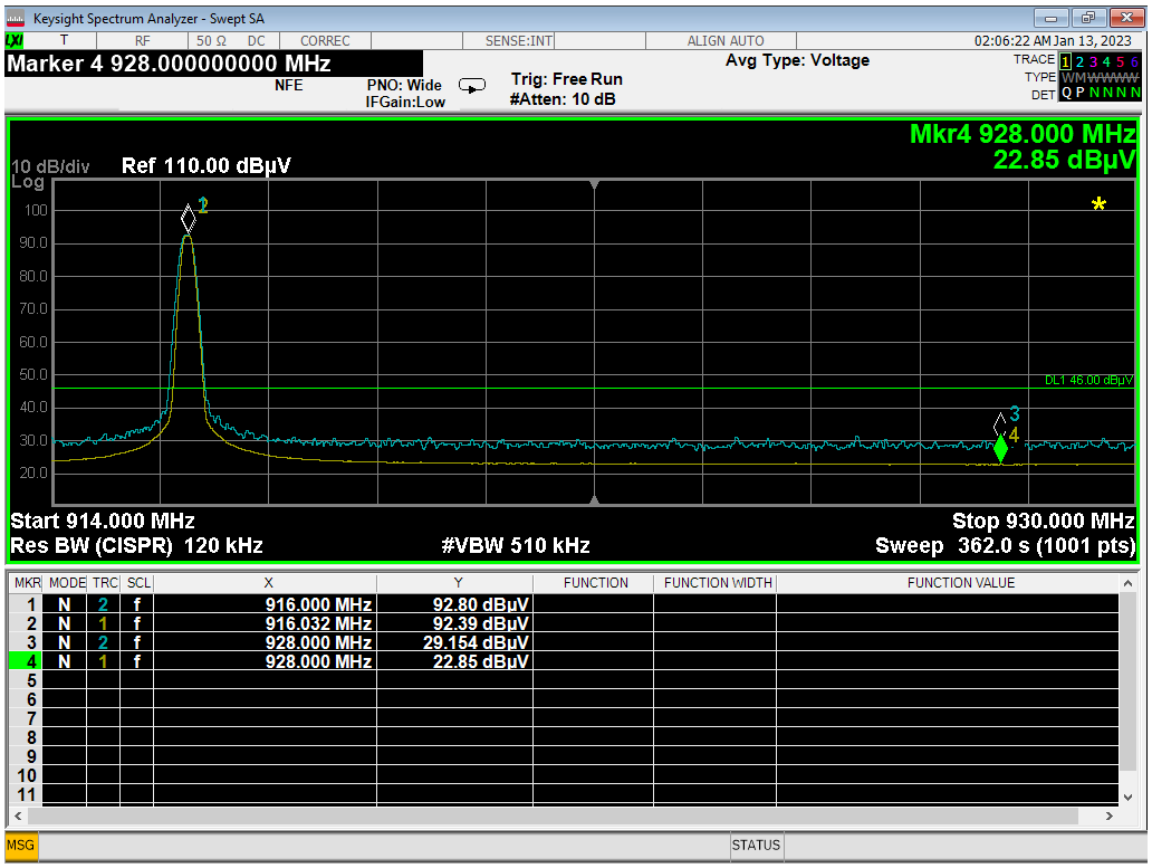
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
916.00	93.78	V	93.97	-0.19	Peak	218.50	113.11	**Fundamental - High Ch.**
916.00	93.31	V	93.97	-0.66	QP	218.50	113.11	**Y-Axis - Worst Case**
928.00	29.68	V	46.00	-16.32	Peak	218.50	113.11	**Band Edge**
928.00	24.76	V	46.00	-21.24	QP	218.50	113.11	**Y-Axis - Worst Case**
916.00	92.80	H	93.97	-1.17	Peak	90.00	100.37	**Fundamental - High Ch.**
916.00	92.39	H	93.97	-1.58	QP	90.00	100.37	**X-Axis - Worst Case**
928.00	29.15	H	46.00	-16.85	Peak	90.00	100.37	**Band Edge**
928.00	22.85	H	46.00	-23.15	QP	90.00	100.37	**X-Axis - Worst Case**



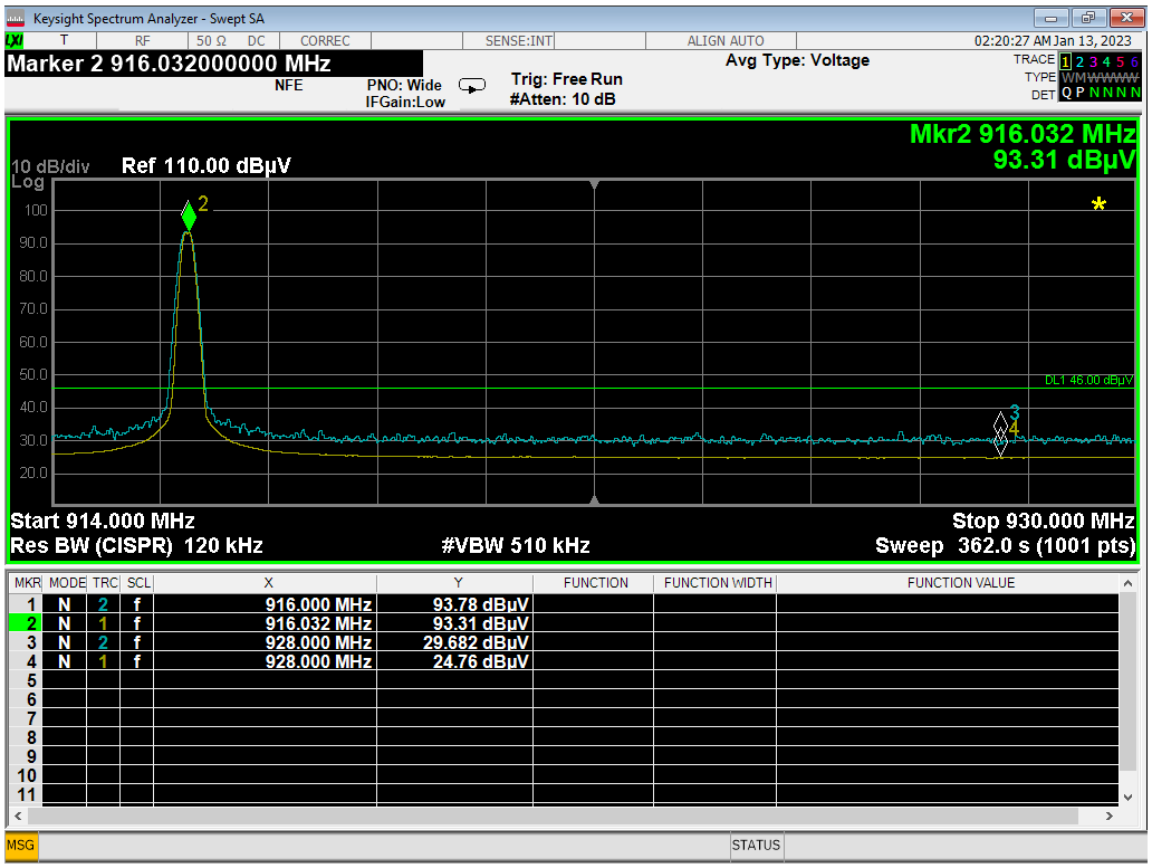
Band Edge – 908.42 MHz – Horizontal Polarization – X-Axis



Band Edge – 908.42 MHz – Vertical Polarization – Y-Axis



Band Edge – 916 MHz – Horizontal Polarization – X-Axis

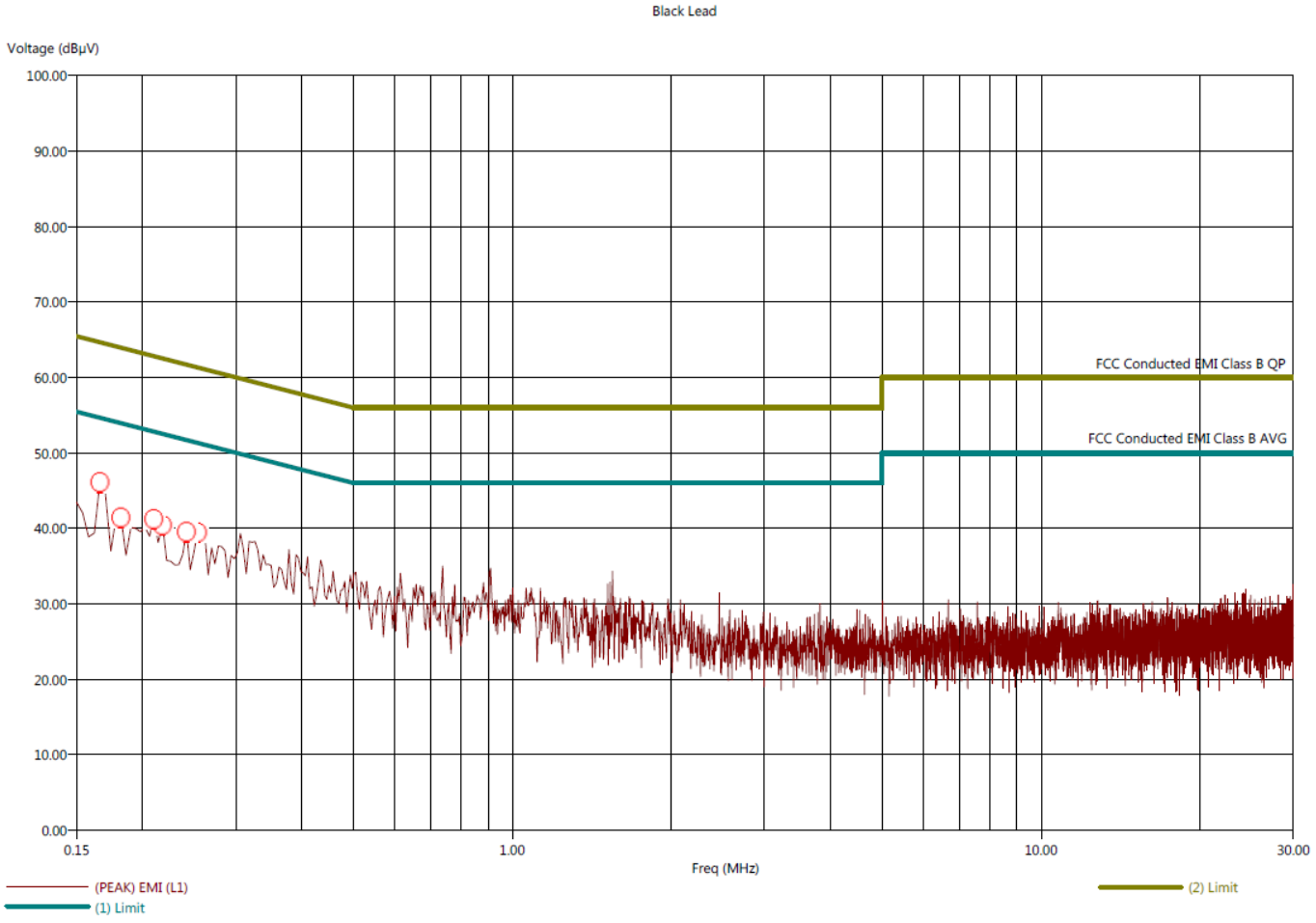


Band Edge – 916 MHz – Vertical Polarization – Y-Axis

CONDUCTED EMISSIONS DATA SHEETS

Title: FCC Class B - Black Lead
File: 9 - Pre-Scan - Black Lead - Rx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 11:08:04 AM
Sequence: Preliminary Scan



Title: FCC Class B - Black Lead
File: 9 - Final Scan - Black Lead - Rx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

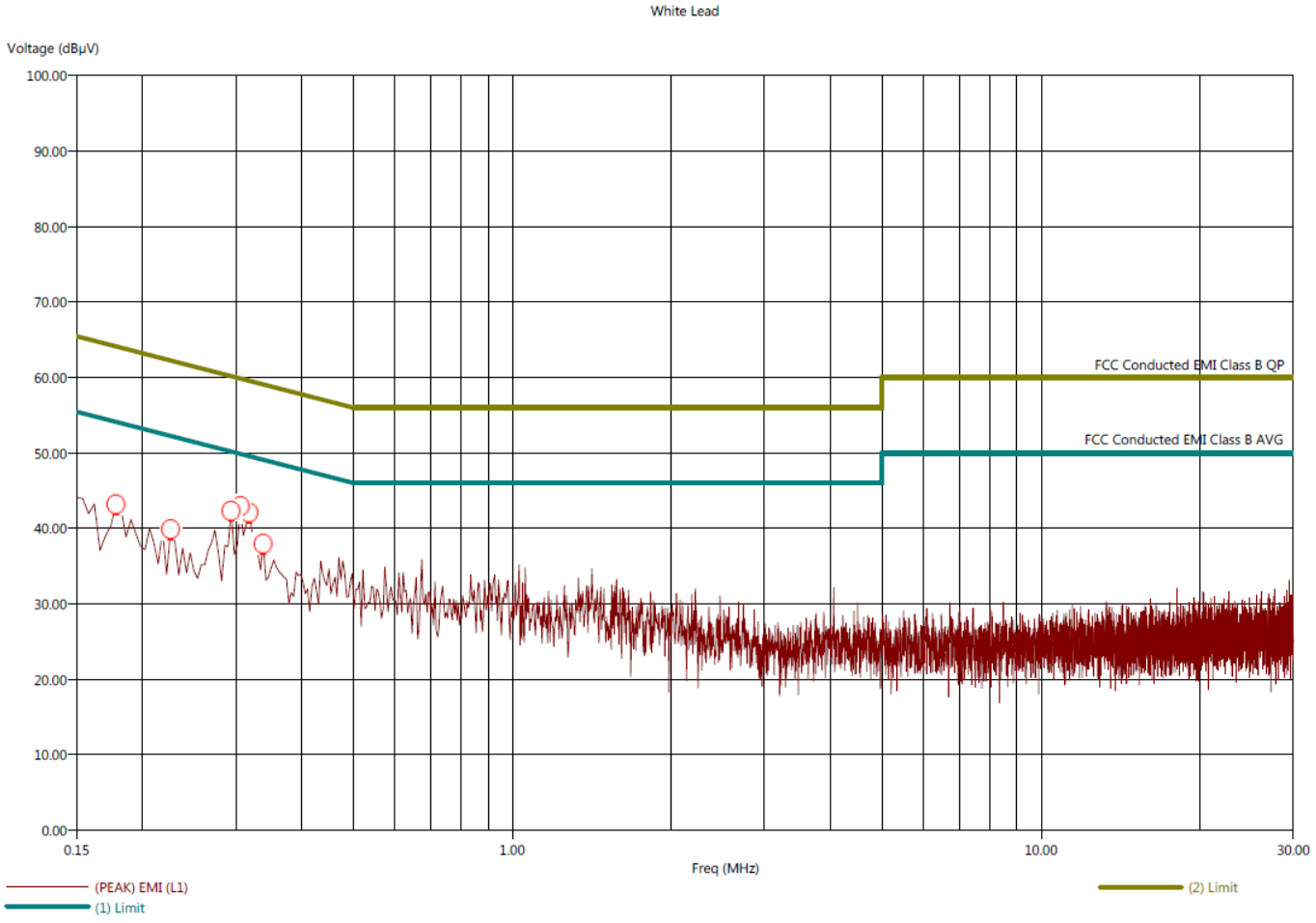
1/17/2023 11:09:17 AM
Sequence: Final Measurements

Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.166	42.16	31.27	-12.34	-23.23	54.50	0.01	0.18	10.10
0.182	41.13	30.96	-13.00	-23.17	54.14	0.01	0.17	10.10
0.210	40.80	30.28	-12.29	-22.81	53.09	0.01	0.16	10.10
0.218	39.81	29.77	-12.74	-22.78	52.54	0.01	0.16	10.10
0.242	38.94	29.15	-13.21	-23.00	52.15	0.01	0.15	10.10
0.254	42.57	33.10	-8.86	-18.33	51.43	0.01	0.15	10.10

Title: FCC Class B - White Lead
File: 10 - Pre-Scan - White Lead - Rx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 11:12:40 AM
Sequence: Preliminary Scan



Title: FCC Class B - White Lead
File: 10 - Final Scan - White Lead - Rx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

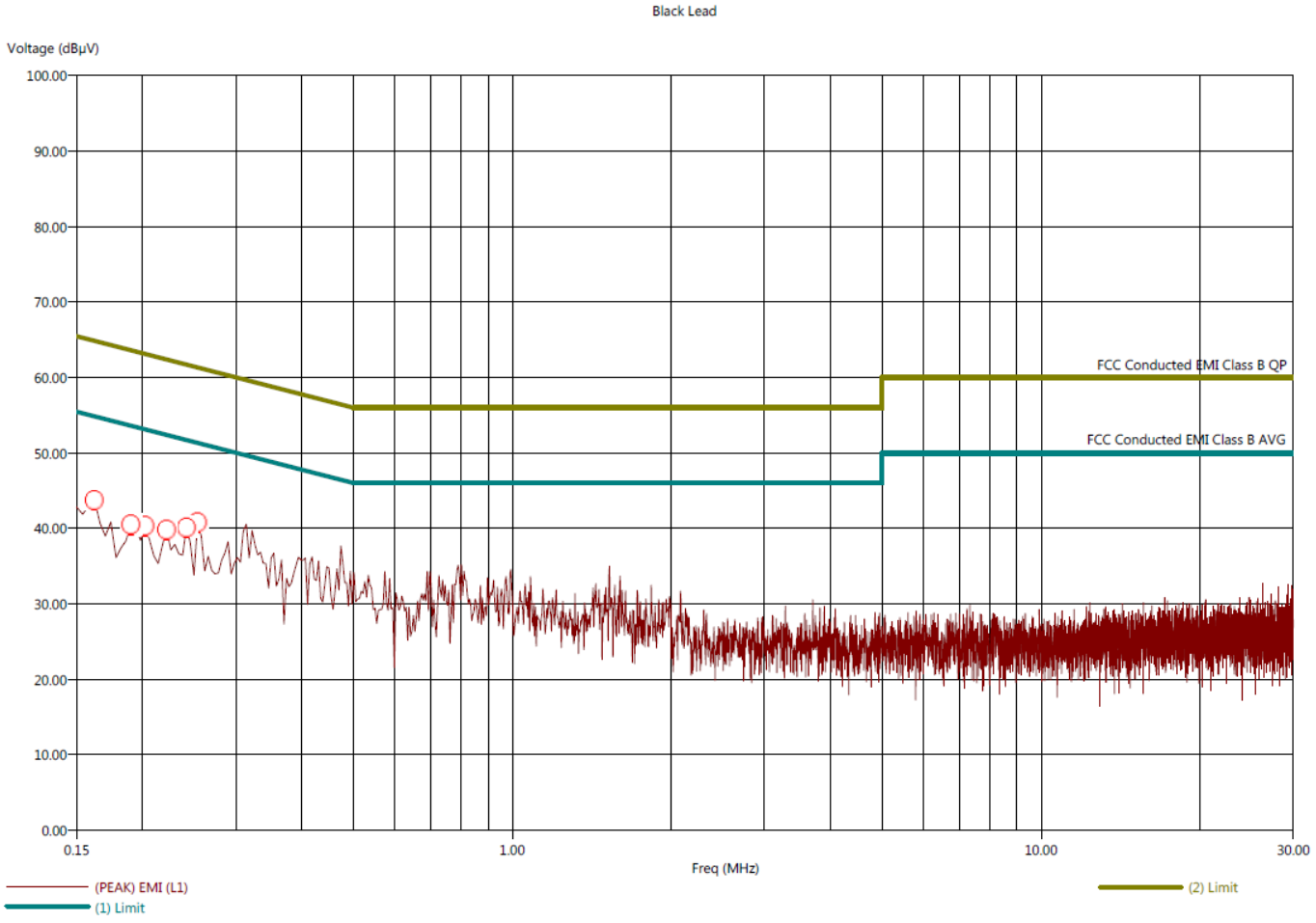
1/17/2023 11:13:41 AM
Sequence: Final Measurements

White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.178	47.31	35.20	-6.95	-19.06	54.26	0.01	0.17	10.10
0.226	46.17	33.64	-6.62	-19.15	52.78	0.01	0.15	10.10
0.294	44.90	34.96	-5.35	-15.29	50.25	0.01	0.13	10.10
0.306	47.75	40.01	-1.99	-9.73	49.74	0.01	0.13	10.10
0.318	47.52	39.66	-2.22	-10.08	49.74	0.01	0.13	10.10
0.338	43.72	33.66	-5.56	-15.62	49.28	0.01	0.13	10.10

Title: FCC Class B - Black Lead
File: 11 - Pre-Scan - Black Lead - Rx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 11:15:50 AM
Sequence: Preliminary Scan



Title: FCC Class B - Black Lead
File: 11 - Final Scan - Black Lead - Rx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

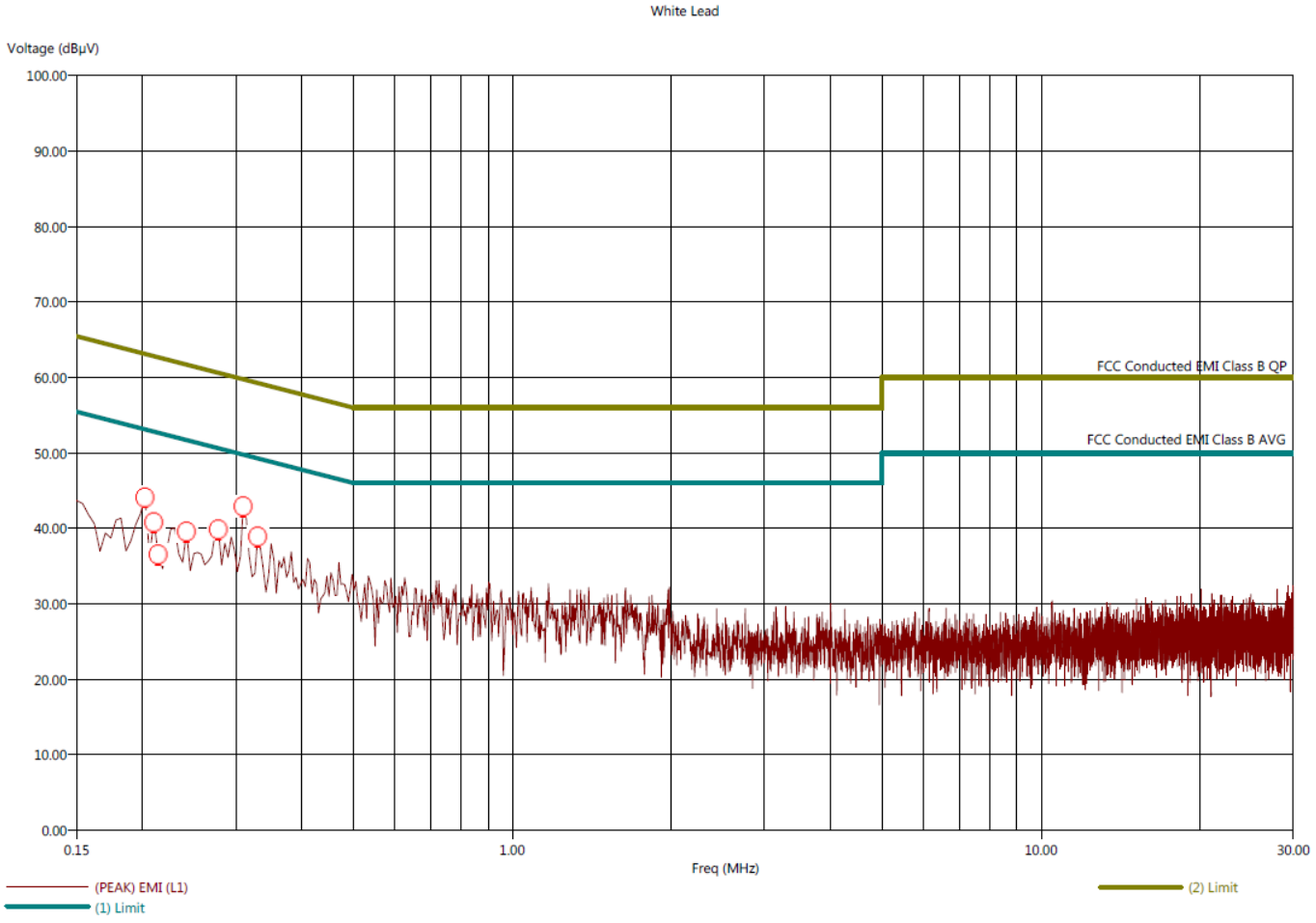
1/17/2023 11:17:05 AM
Sequence: Final Measurements

Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.162	48.20	35.94	-7.03	-19.29	55.23	0.01	0.19	10.10
0.190	47.69	34.92	-6.20	-18.97	53.89	0.01	0.17	10.10
0.202	47.56	33.70	-5.31	-19.17	52.87	0.01	0.16	10.10
0.222	45.84	33.06	-6.24	-19.02	52.08	0.01	0.15	10.10
0.242	45.73	33.00	-6.13	-18.86	51.86	0.01	0.15	10.10
0.254	43.03	32.65	-8.04	-18.42	51.07	0.01	0.15	10.10

Title: FCC Class B - White Lead
File: 12 - Pre-Scan - White Lead - Rx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 11:19:30 AM
Sequence: Preliminary Scan



Title: FCC Class B - White Lead
File: 12 - Final Scan - White Lead - Rx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously receiving at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 11:20:42 AM
Sequence: Final Measurements

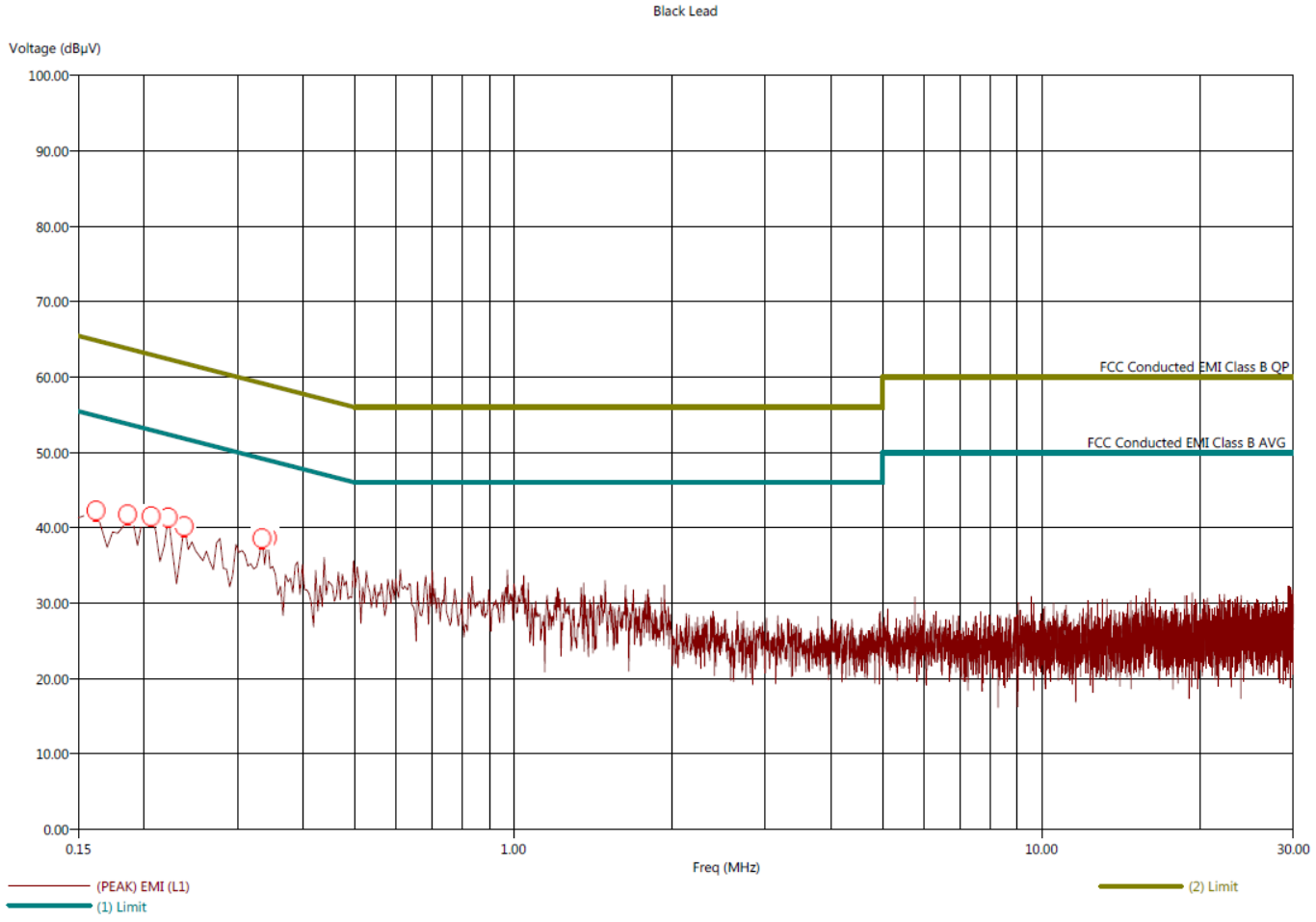
White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.202	39.92	29.48	-12.94	-23.38	52.86	0.01	0.15	10.10
0.210	40.20	29.61	-12.27	-22.86	52.46	0.01	0.15	10.10
0.214	39.33	29.83	-13.18	-22.68	52.51	0.01	0.15	10.10
0.242	39.71	29.06	-12.20	-22.85	51.91	0.01	0.14	10.10
0.278	42.69	32.52	-7.99	-18.16	50.69	0.01	0.13	10.10
0.310	46.67	37.22	-3.00	-12.45	49.67	0.01	0.13	10.10
0.330	43.14	34.01	-6.02	-15.15	49.16	0.01	0.13	10.10

COMPATIBLE ELECTRONICS

Title: FCC Class B - Black Lead
File: 1 - Pre-Scan - Black Lead - Tx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 10:10:19 AM
Sequence: Preliminary Scan



Title: FCC Class B - Black Lead
File: 1 - Final Scan - Black Lead - Tx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

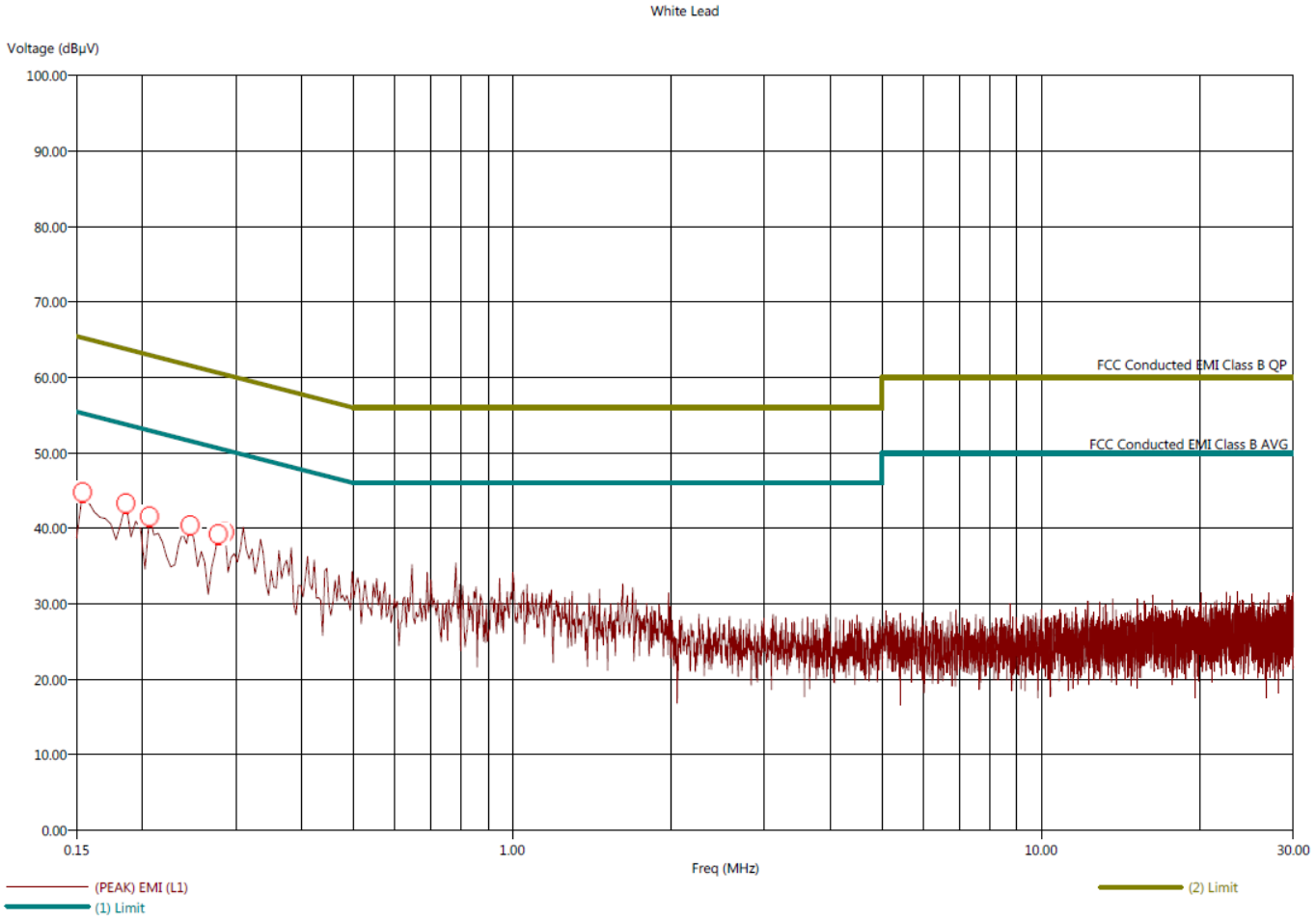
1/17/2023 10:12:29 AM
Sequence: Final Measurements

Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.162	48.13	35.94	-6.98	-19.17	55.11	0.01	0.19	10.10
0.186	48.05	34.90	-6.04	-19.19	54.09	0.01	0.17	10.10
0.206	47.53	33.55	-5.29	-19.27	52.81	0.01	0.16	10.10
0.222	45.41	33.25	-6.75	-18.91	52.17	0.01	0.15	10.10
0.238	45.14	33.16	-6.76	-18.74	51.90	0.01	0.15	10.10
0.334	42.81	33.82	-6.35	-15.34	49.16	0.01	0.14	10.10
0.342	41.89	31.62	-7.18	-17.45	49.07	0.01	0.14	10.10

Title: FCC Class B - White Lead
File: 2 - Pre-Scan - White Lead - Tx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 10:35:28 AM
Sequence: Preliminary Scan



Title: FCC Class B - White Lead
File: 2 - Final Scan - White Lead - Tx Mode - 908.42 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

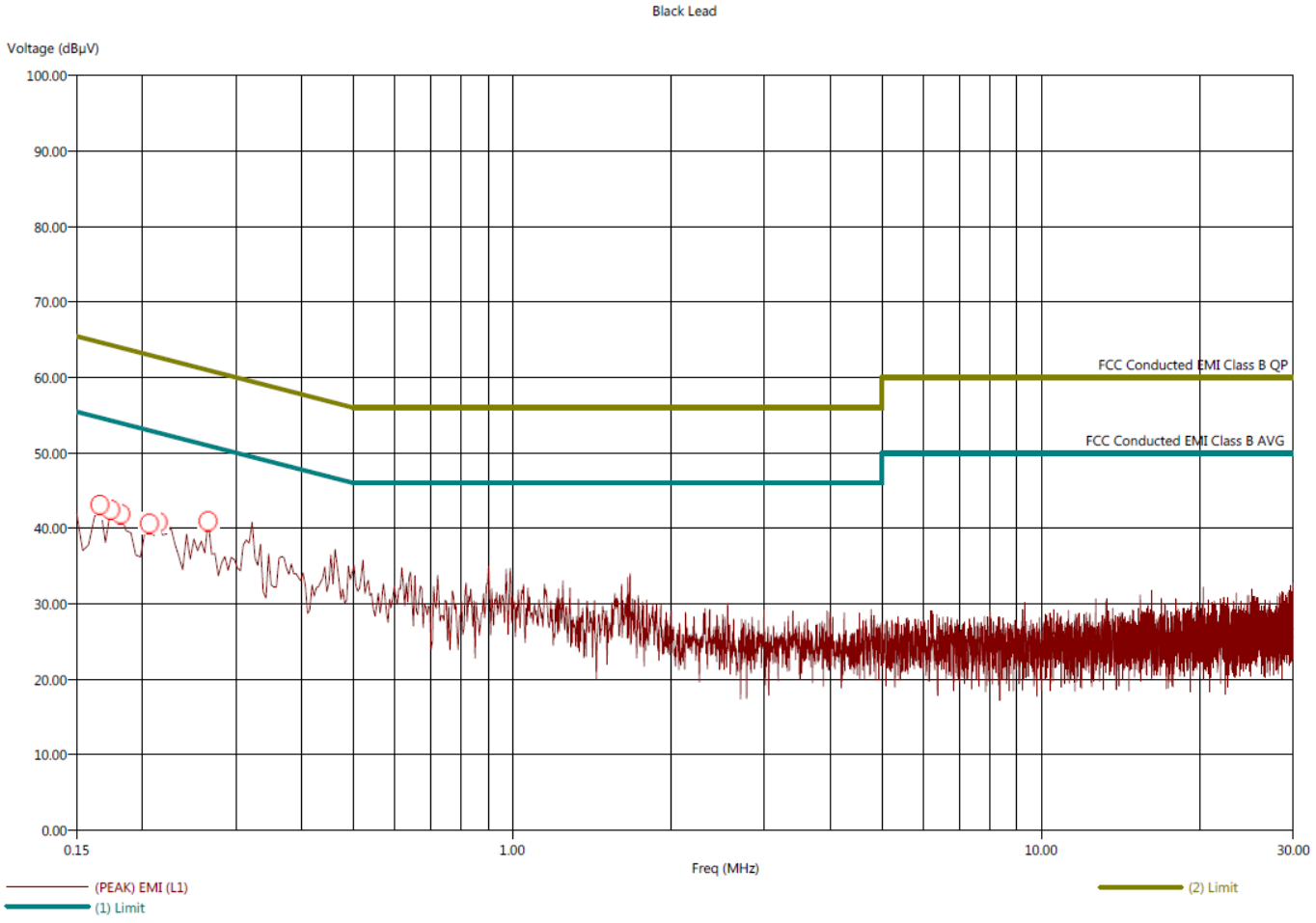
1/17/2023 10:36:12 AM
Sequence: Final Measurements

White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.154	41.75	31.52	-13.28	-23.51	55.03	0.01	0.18	10.10
0.186	40.56	30.77	-13.50	-23.29	54.07	0.01	0.16	10.10
0.206	40.19	29.79	-12.91	-23.31	53.10	0.01	0.15	10.10
0.246	38.74	28.93	-12.93	-22.74	51.67	0.01	0.14	10.10
0.278	41.45	32.40	-9.19	-18.24	50.64	0.01	0.13	10.10
0.286	43.08	32.09	-7.48	-18.47	50.57	0.01	0.13	10.10

Title: FCC Class B - Black Lead
File: 3 - Pre-Scan - Black Lead - Tx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 10:39:07 AM
Sequence: Preliminary Scan



Title: FCC Class B - Black Lead
File: 3 - Final Scan - Black Lead - Tx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

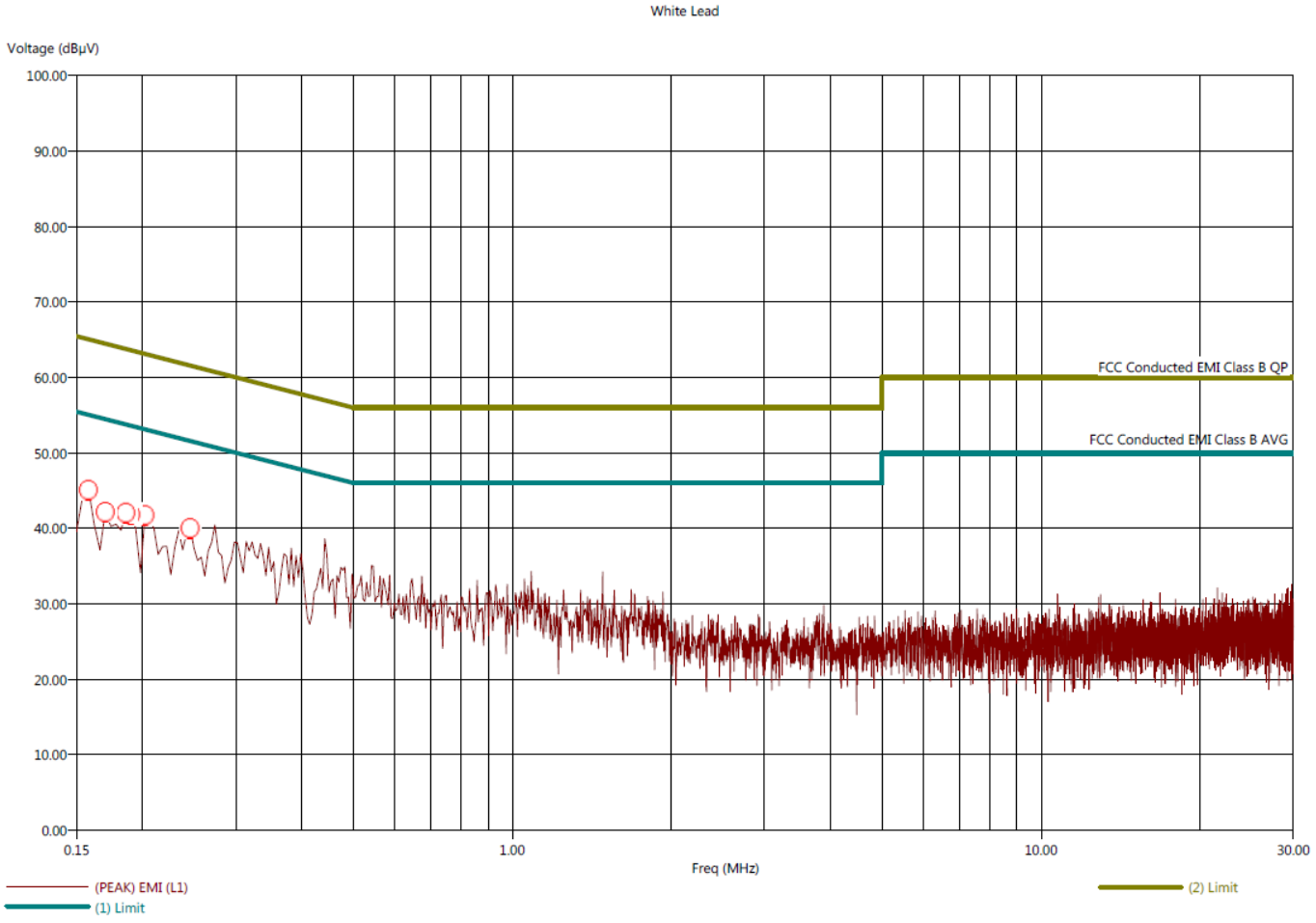
1/17/2023 10:40:14 AM
Sequence: Final Measurements

Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.166	48.50	35.78	-6.45	-19.17	54.94	0.01	0.19	10.10
0.174	49.15	35.11	-5.13	-19.17	54.28	0.01	0.18	10.10
0.182	48.53	34.45	-5.13	-19.21	53.66	0.01	0.17	10.10
0.206	46.52	33.42	-6.11	-19.21	52.63	0.01	0.16	10.10
0.214	46.36	33.72	-6.57	-19.21	52.93	0.01	0.16	10.10
0.266	43.36	32.46	-7.67	-18.57	51.02	0.01	0.15	10.10

Title: FCC Class B - White Lead
File: 4 - Pre-Scan - White Lead - Tx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujimoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 10:42:47 AM
Sequence: Preliminary Scan



Title: FCC Class B - White Lead
File: 4 - Final Scan - White Lead - Tx Mode - 916.00 MHz - FCC Class B - 01-17-2023.set
Operator: Kyle Fujmoto
EUT Type: Z-Wave Garage Door Controller
EUT Condition: The EUT is continuously transmitting at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
Model: GDZW7-ECO
S/N: ELGLCR2217TW00005

1/17/2023 10:43:46 AM
Sequence: Final Measurements

White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.158	43.13	31.59	-11.99	-23.53	55.12	0.01	0.18	10.10
0.170	40.47	30.81	-13.74	-23.40	54.22	0.01	0.16	10.10
0.186	40.21	30.32	-13.35	-23.24	53.55	0.01	0.16	10.10
0.190	40.67	30.39	-13.15	-23.43	53.82	0.01	0.16	10.10
0.202	40.70	30.20	-12.77	-23.27	53.48	0.01	0.15	10.10
0.246	43.83	33.01	-7.57	-18.39	51.40	0.01	0.14	10.10