

**FCC PART 15, SUBPART B and C; RSS-210, RSS GEN
TEST REPORT***for***LIGHT SENSOR****Part Number: DWLZWAVE2.5-ECO**

Prepared for

ECOLINK INTELLIGENT TECHNOLOGY, INC.
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DATE: OCTOBER 1, 2020

	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 to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested: Light Sensor
Part Number: DWLZWAVE2.5-ECO
S/N: N/A

Product Description: The equipment under test is a battery powered light sensor manufactured by Ecolink Intelligent Technology. The transmit/receive frequencies are 908.42 MHz or 916 MHz. Dimensions: 8.0 cm (L) x 2.5 cm (H) x 2.5 cm (W).

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

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

Test Dates: September 2, 3 and 4, 2020

Test Specifications covered by accreditation:

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; Subpart C, Sections 15.205, 15.209, and 15.249;
and RSS-210 Issue 10, and RSS-Gen Issue 5



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 Radiated RF Emissions, 9 kHz – 9.3 GHz (Transmitter, Receiver, and Digital portion)	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15 Subpart C, section 15.205, 15.209 and 15.249; RSS-210 and RSS-Gen Highest reading in relation to spec limit 44.39 dBuV/m (QP) @ 777.90 MHz (*U = 3.27 dB)

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Light Sensor, Part Number: DWLZWAVE2.5-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 Code of Federal Regulations Title 47, Part 15 Subpart B section, 15.109; Part 15 Subpart C sections 15.205, 15.209 and 15.249; and RSS-210 and RSS-Gen.**

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.

David Shepard	Engineer
Jay Stone	Director of Engineering

Compatible Electronics Inc.

James Ross	Test Engineer
Kyle Fujimoto	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 test 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
ITE	Information Technology Equipment
DoC	Declaration of Conformity
N/A	Not Applicable
Tx	Transmit
Rx	Receive
Inc.	Incorporated
RF	Radio Frequency
BLE	Bluetooth Low Energy
CEO	Chief Executive Officer
N/A	Not Applicable
DC	Direct Current

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC CFR Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
FCC CFR Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) –Unintentional Radiators
RSS-210 Issue 10: 2019	License-exempt Radio Apparatus: Category I Equipment
RSS-Gen Issue 5: 2019 + Amendment 1	General Requirements for Compliance of Radio Apparatus
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 Light Sensor, Part Number: DWLZWAVE2.5-ECO (EUT) was tested as a stand-alone unit, and is internal battery powered. The EUT was transmitting or receiving at 908.42 MHz or 916 MHz on a continuous basis.

The EUT was tested for emissions at the low and high channels 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 EUT was tested with a new battery.

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

The EUT contained no external cables.

**5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT****5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	PART NUMBER	FCC ID
LIGHT SENSOR (EUT)	ECOLINK INTELLIGENT TECHNOLOGY, INC.	DWLZWAVE2.5-ECO	XQC-DWLZ25 IC: 9863B-DWLZ25



5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
RADIATED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
EMI Receiver, 20 Hz – 40GHz	Rohde & Schwarz	N9038A	MY51210150	July 15, 2020	1 Year
Loop Antenna	Com-Power	AL-130R	121090	February 5, 2019	2 Year
CombiLog Antenna	Com-Power	AC-220	061093	June 5, 2019	2 Year
Horn Antenna	Com-Power	AH-118	10050113	February 4, 2020	2 Year
Preamplifier	Com-Power	PA-118	181653	February 5, 2020	1 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
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_{cisprr} , 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_{cisprr}	$U_{lab} = 2 u_c(y)$
Conducted disturbance (mains port)	(150 kHz – 30 MHz)	3.4 dB	2.73 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(30 MHz – 1 000 MHz)	6.3 dB	3.27 dB (Vertical) 3.19 dB (Horizontal)
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(1 GHz - 6 GHz)	5.2 dB	3.95 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(6 GHz – 18 GHz)	5.5 dB	3.95 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(18 GHz – 26.5 GHz)	N/A	4.69 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(26.5 GHz – 40 GHz)	N/A	4.55 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.

Test Results:

This test was not performed because the EUT operates on battery power only and cannot be connected to the AC public mains.

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 takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured.

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

The harmonic frequencies above 1 GHz were averaged using the duty cycle correction calculation.

All other 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 in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna to ensure accurate results.

The EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 1.

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 9.3 GHz	1 MHz	Horn Antenna

Test Results:

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



7.1.3 RF Emissions Test Results

Table 1 RADIATED EMISSION RESULTS
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Frequency (MHz)	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) (dB)
777.90 (V) (X-Axis) (Tx) (High Channel)	44.39 (QP)	46.00	-1.61
785.90 (H) (X-Axis) (Tx) (High Channel)	40.52 (QP)	46.00	-5.48
916.00 (V) (Y-Axis) (Tx) (High Channel)	87.86 (QP)	93.97	-6.11
908.42 (H) (X-Axis) (Tx) (Low Channel)	87.50 (QP)	93.97	-6.47
908.42 (V) (Y-Axis) (Tx) (Low Channel)	87.13 (QP)	93.97	-6.84
782.80 (H) (X-Axis) (Tx) (High Channel)	38.09 (QP)	46.00	-7.91

Notes:

- * The complete emissions data is given in Appendix E of this report.
- (V) Vertical Polarization
- (H) Horizontal Polarization
- (AV) Average Reading
- (QP) Quasi-Peak Reading
- (Tx) Transmitting
- (Rx) Receiving
- (BE) Band Edges



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 ($\mu\text{V}/\text{m}$) $\log \times 20$ = 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) $\log \times 40$ = distance factor

For measurements above 30 MHz: (Specification distance / test distance) $\log \times 20$ = 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.

7.1.5 Duty Cycle Calculation

The fundamental and harmonics were measured at a 3-meter test distance. The EMI Receiver was used to obtain the final test data. The final qualification data sheets are located in Appendix E.

Where

$$\delta(\text{dB}) = 20 \log \left[\frac{\sum (nt_1 + mt_2 + \dots + \xi t_x)}{T} \right]$$

n is the number of pulses of duration t_1

m is the number of pulses of duration t_2

ξ is the number of pulses of duration t_x

T is the period of the pulse train or 100 ms if the pulse train length is greater than 100 ms

The worst case was when the EUT was in node frame mode

Duty Cycle Correction Factor = -6.727 dB

Time of One Pulse = 46.092184 ms

Total On Time = 46.092184 ms

The time between pulses is greater than 100 ms

Duty Cycle = 46.092184 ms / 100 ms = 0.46092184 = 46.09 %

7.1.6 99 % Bandwidth

The 99 % Bandwidth was measured using an EMI Receiver and was taken after maximizing the worst case fundamental emission for both channels per section 7.1.

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.



8. CONCLUSIONS

The Light Sensor, Part Number: DWLZWAVE2.5-ECO (EUT), as tested, meets all of the specification limits defined in RSS-210, RSS-Gen, the **Class B** specification limits defined in FCC CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209 and 15.249.





APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
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LABORATORY ACCREDITATIONS AND RECOGNITIONS



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

Quote from ISO-ILAC-IAF Communiqué on 17025:

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

Innovation, Science and Economic Development Canada
Lab Code 2154A



APPENDIX B

MODIFICATIONS TO THE EUT

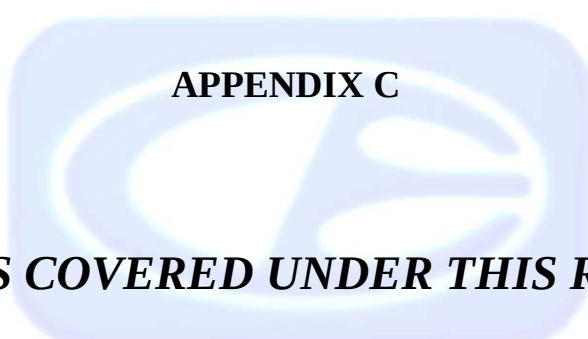
MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.249 specifications.

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

No modifications were made to the EUT during the testing.





APPENDIX C

MODELS COVERED UNDER THIS REPORT

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
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(805) 480-4044

Lake Forest Division
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Lake Forest, CA 92630
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MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Light Sensor
Part Number: DWLZWAVE2.5-ECO
S/N: N/A

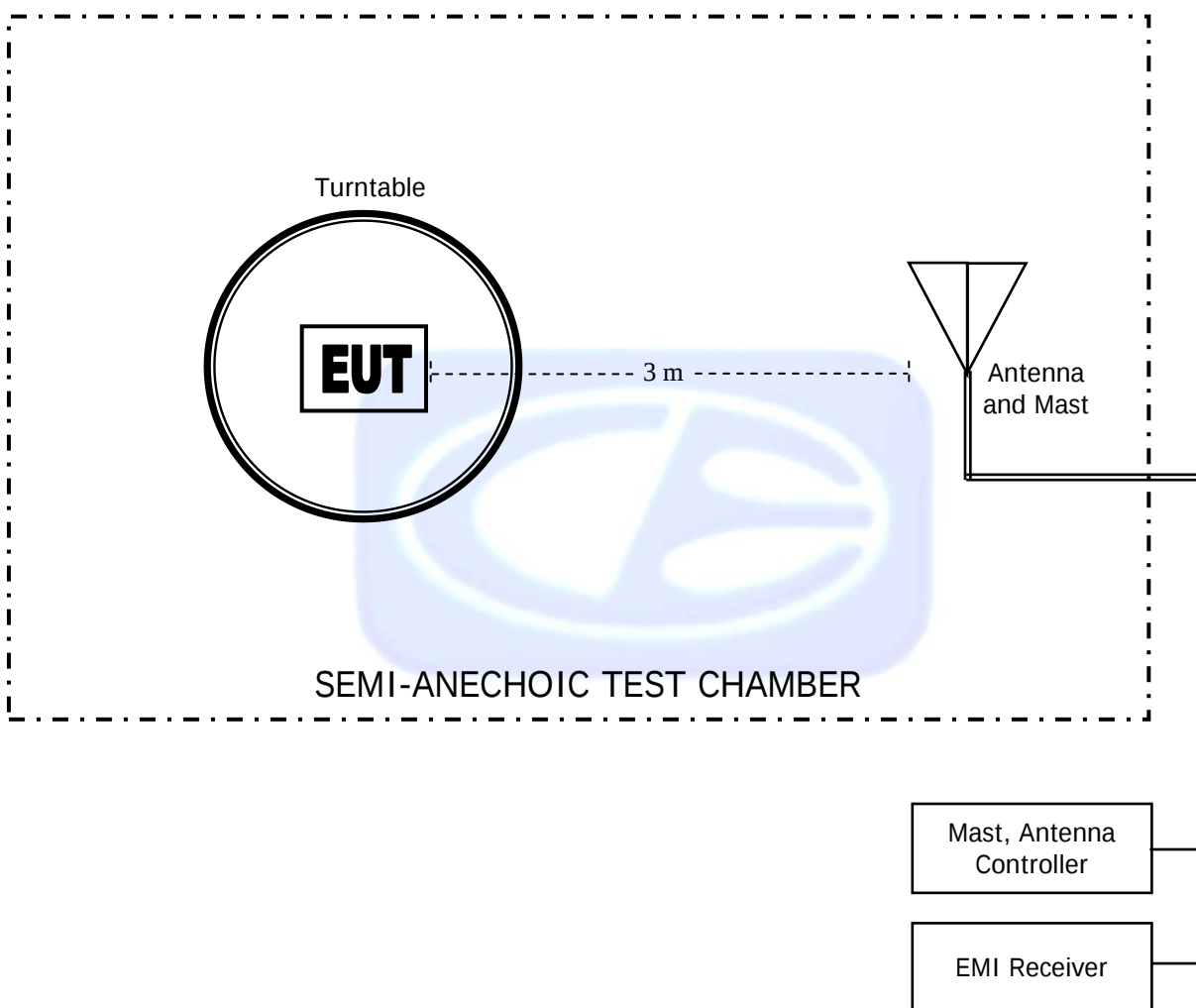
There are no additional models or part numbers covered under this report.



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 5, 2019

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	16.1	-35.4
0.01	15.6	-35.9
0.02	14.8	-36.7
0.03	15.6	-35.9
0.04	15.1	-36.4
0.05	14.4	-37.0
0.06	14.6	-36.9
0.07	14.4	-37.1
0.08	14.3	-37.1
0.09	14.5	-36.9
0.10	14.1	-37.3
0.20	14.1	-37.3
0.30	14.0	-37.4
0.40	14.0	-37.4
0.50	14.2	-37.2
0.60	14.2	-37.2
0.70	14.2	-37.2
0.80	14.2	-37.3
0.90	14.3	-37.2
1.00	14.5	-37.0
2.00	14.5	-36.9
3.00	14.5	-36.9
4.00	14.7	-36.8
5.00	14.6	-36.9
6.00	14.6	-36.9
7.00	14.6	-36.9
8.00	14.6	-36.9
9.00	14.6	-36.9
10.00	14.8	-36.6
11.00	14.9	-36.6
12.00	14.8	-36.6
13.00	14.8	-36.7
14.00	14.6	-36.8
15.00	14.5	-36.9
16.00	14.5	-37.0
17.00	14.6	-36.9
18.00	14.7	-36.7
19.00	14.8	-36.6
20.00	14.9	-36.6
21.00	14.6	-36.8
22.00	14.2	-37.2
23.00	13.7	-37.7
24.00	13.3	-38.2
25.00	13.0	-38.5
26.00	12.9	-38.6
27.00	13.0	-38.5
28.00	13.1	-38.4
29.00	13.1	-38.4
30.00	12.9	-38.5

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(949) 587-0400

COM-POWER AC-220**COMBILOG ANTENNA****S/N: 61093****CALIBRATION DATE: JUNE 5, 2019**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	22.10	200	15.30
35	20.90	250	16.80
40	20.10	300	19.00
45	19.40	350	19.60
50	18.40	400	21.70
60	15.10	450	21.60
70	12.00	500	22.20
80	11.60	550	22.70
90	13.50	600	24.20
100	14.70	650	24.40
120	15.90	700	24.50
125	15.90	750	25.40
140	14.80	800	26.30
150	15.50	850	26.70
160	19.80	900	27.50
175	15.20	950	27.80
180	14.90	1000	27.90



COM POWER AH-118

HORN ANTENNA

S/N: 10050113

CALIBRATION DATE: FEBRUARY 4, 2020

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.343	10.0	38.826
1.5	25.419	10.5	39.102
2.0	28.838	11.0	38.259
2.5	28.971	11.5	39.920
3.0	29.919	12.0	40.149
3.5	30.674	12.5	40.576
4.0	31.670	13.0	40.264
4.5	32.437	13.5	40.364
5.0	33.414	14.0	40.424
5.5	34.003	14.5	41.677
6.0	34.799	15.0	43.010
6.5	35.381	15.5	39.799
7.0	37.024	16.0	40.187
7.5	37.403	16.5	40.155
8.0	37.445	17.0	40.507
8.5	37.390	17.5	41.963
9.0	38.076	18.0	43.196
9.5	38.809		

COM-POWER PA-118**PREAMPLIFIER****S/N: 181653****CALIBRATION DATE: FEBRUARY 5, 2020**

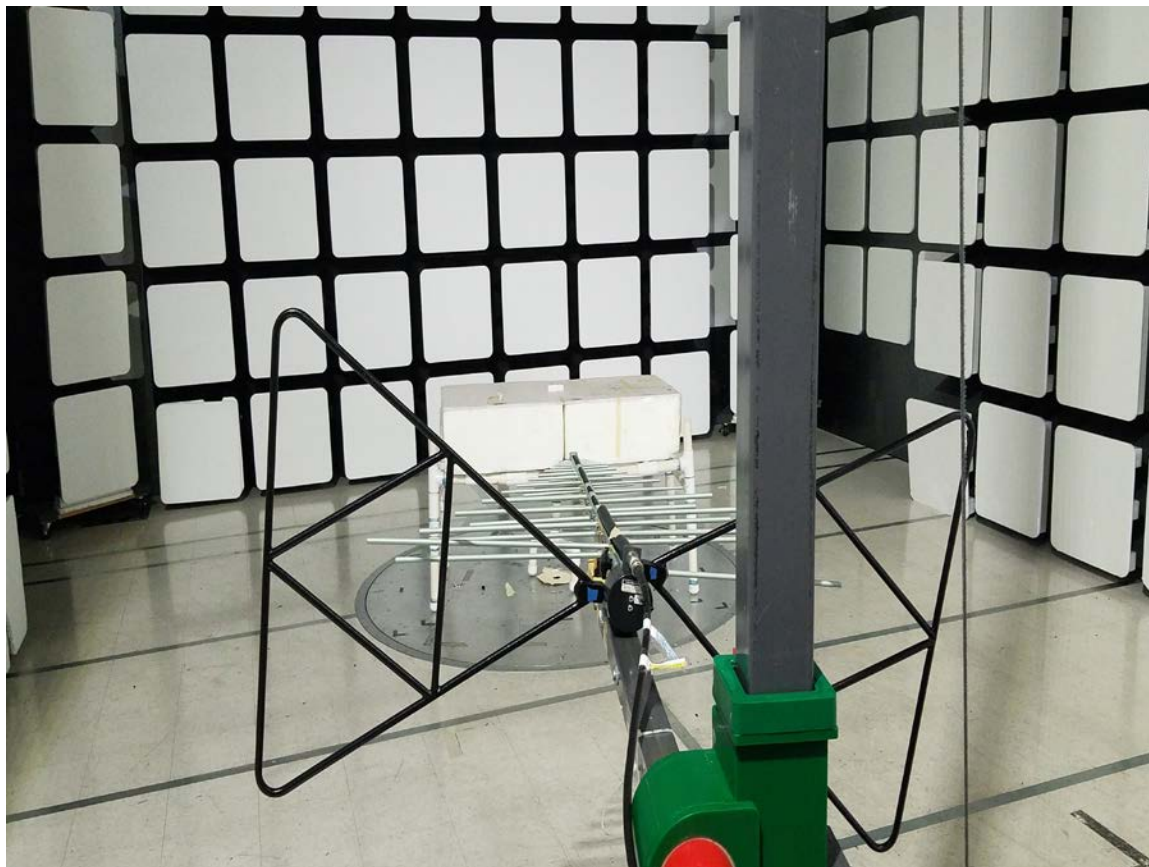
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.10	6.0	40.60
1.1	40.10	6.5	39.50
1.2	40.00	7.0	39.40
1.3	39.70	7.5	39.30
1.4	39.60	8.0	39.20
1.5	39.90	8.5	40.50
1.6	40.00	9.0	39.60
1.7	39.70	9.5	39.50
1.8	39.50	10.0	38.80
1.9	39.60	11.0	38.70
2.0	39.90	12.0	42.20
2.5	40.10	13.0	40.00
3.0	40.80	14.0	40.30
3.5	40.60	15.0	40.20
4.0	40.50	16.0	41.00
4.5	41.60	17.0	39.70
5.0	39.20	18.0	40.90
5.5	40.00		



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
LIGHT SENSOR
PART NUMBER: DWLZWAVE2.5-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

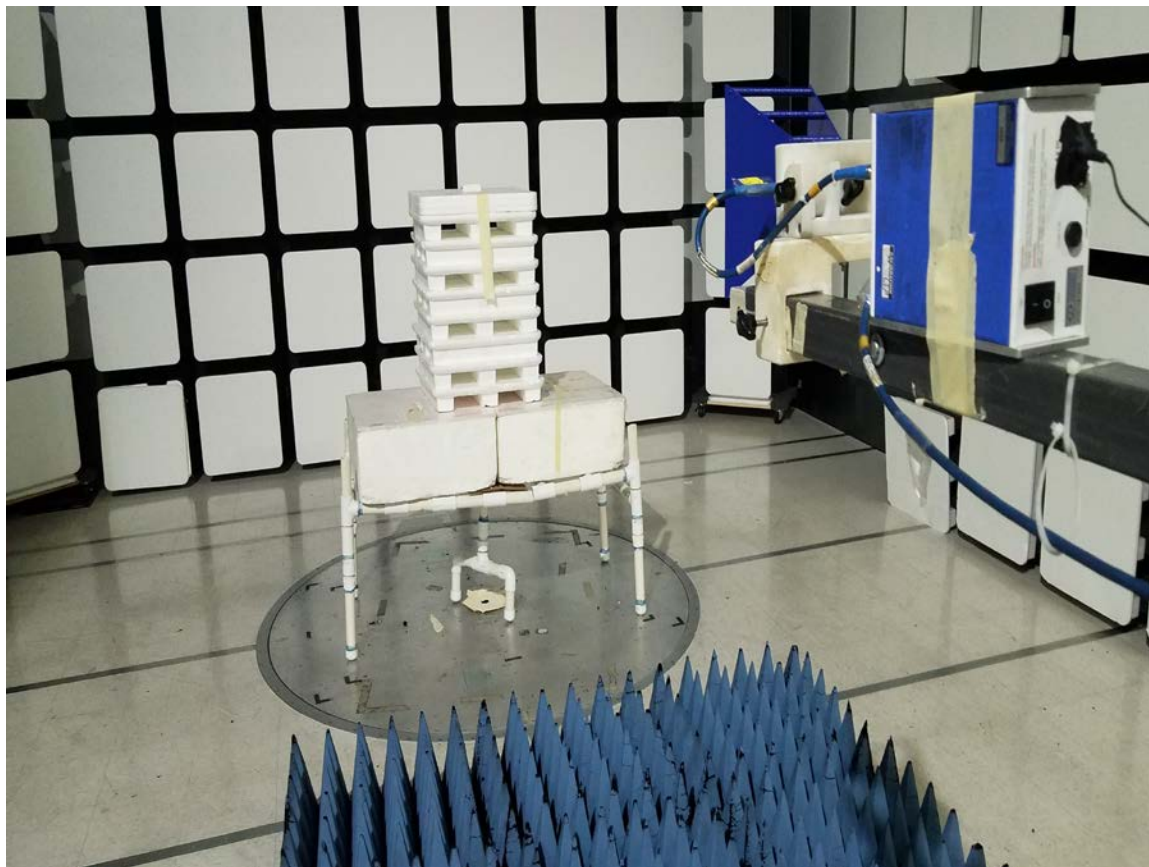
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
LIGHT SENSOR
PART NUMBER: DWLZWAVE2.5-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

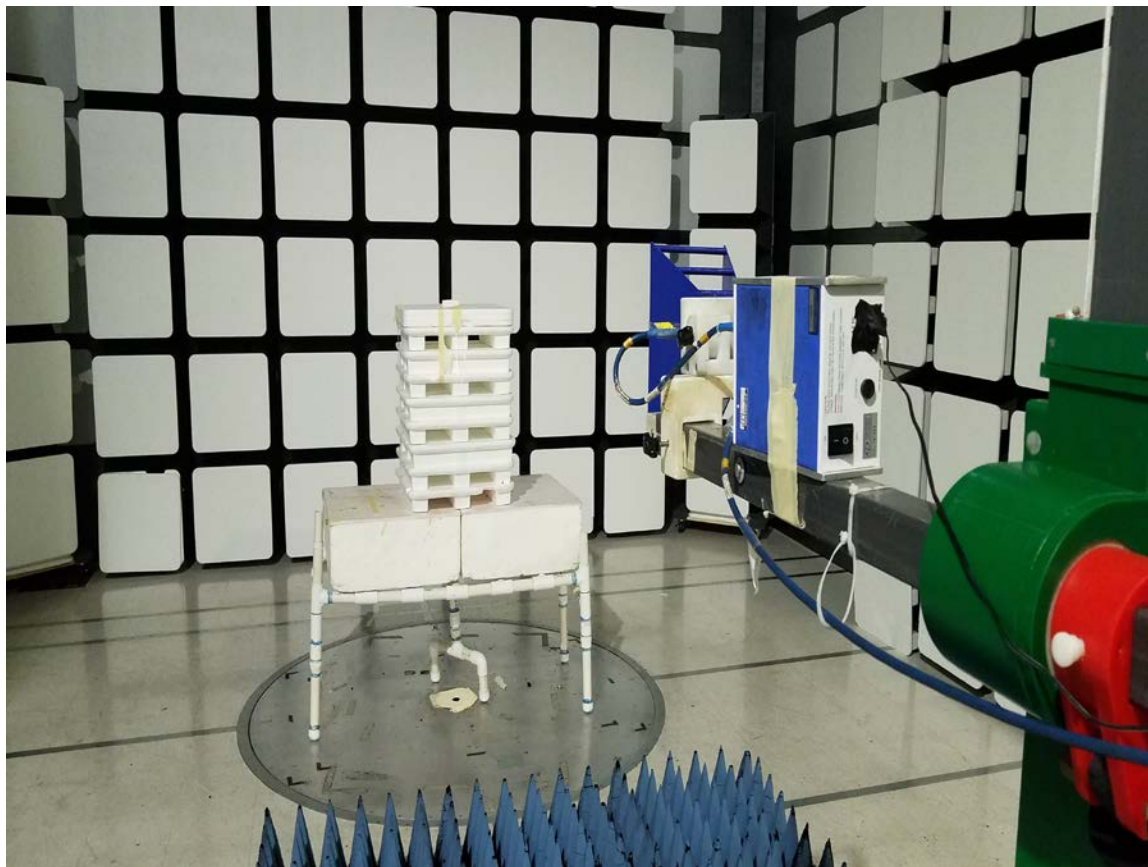
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
LIGHT SENSOR
PART NUMBER: DWLZWAVE2.5-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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



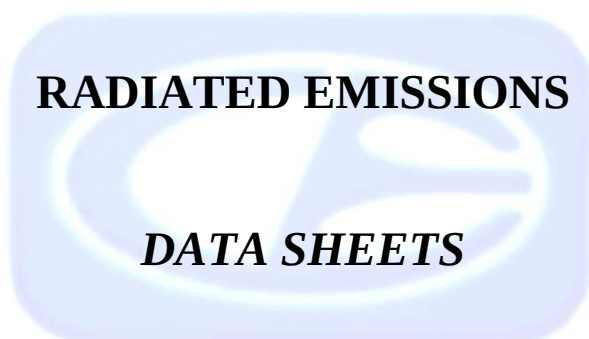
REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
LIGHT SENSOR
PART NUMBER: DWLZWAVE2.5-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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

APPENDIX E

DATA SHEETS

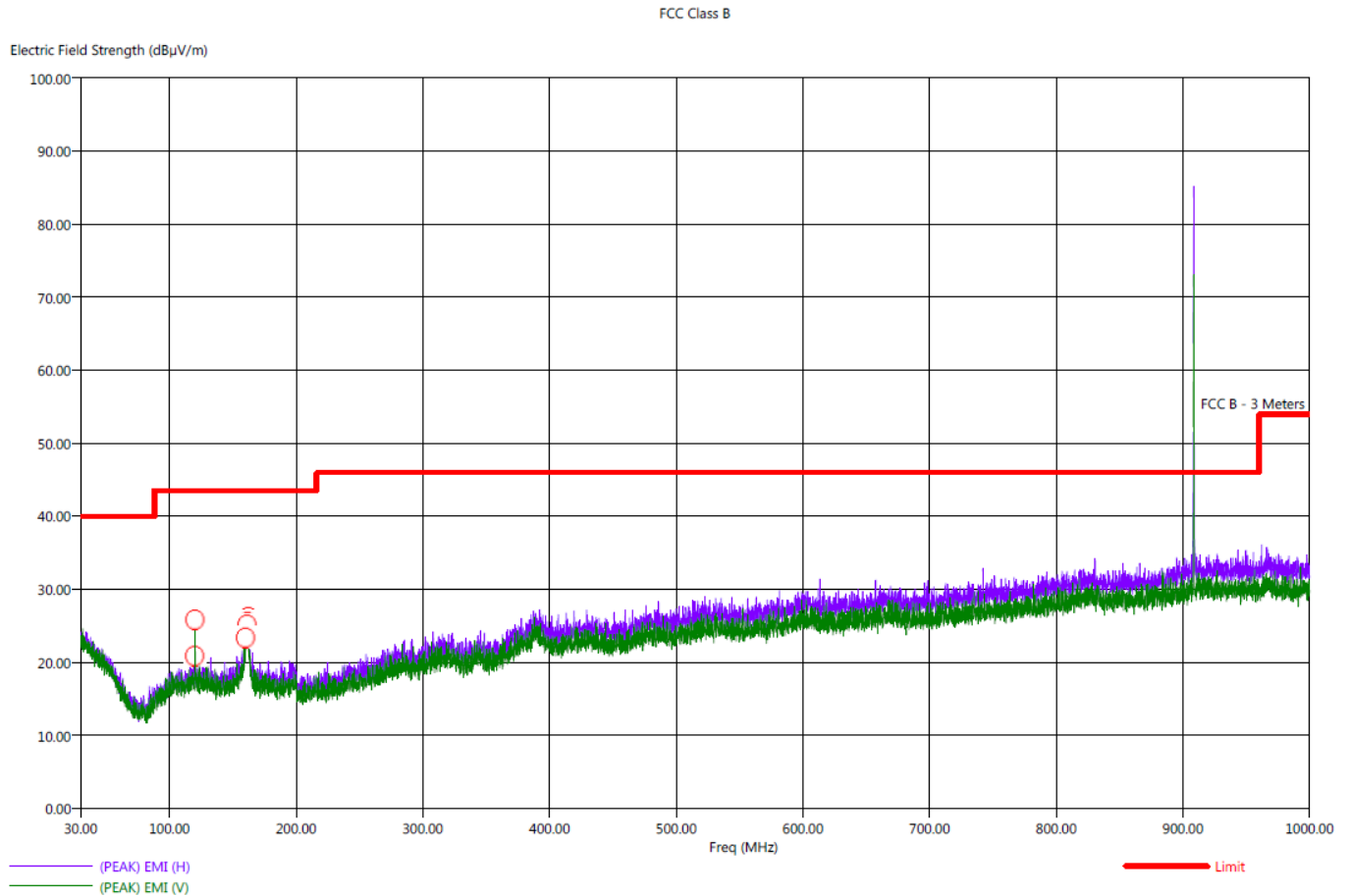


RADIATED EMISSIONS

DATA SHEETS

Title: Pre-Scan - FCC Class B
File: 1 - LF - Pre-Scan - Light Sensor - FCC Class B - 09-02-2020.set
Operator: Kyle Fujimoto
EUT Type: Light Sensor
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
P/N: DWLZWAVE2.5-ECO
S/N: N/A
X-Axis (Worst Case)
The Emissions at 908.42 MHz is the fundamental of the intentional radiator and is subject to the limits of FCC 15.249 instead.

9/2/2020 1:43:27 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 1 - LF - Final Scan - Light Sensor - FCC Class B - 09-02-2020.set
Operator: Kyle Fujimoto
EUT Type: Light Sensor
EUT Condition: The EUT is continuously transmitting at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
P/N: DWLZWAVE2.5-ECO
S/N: N/A
X-Axis (Worst Case)

9/2/2020 2:14:13 PM
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 Agl (deg)	Twr Ht (cm)
120.00	H	21.22	16.75	-22.28	-26.75	43.50	15.90	0.75	246.50	111.04
120.10	V	27.25	24.93	-16.25	-18.57	43.50	15.90	0.75	275.00	111.22
160.00	V	26.31	20.53	-17.19	-22.97	43.50	19.88	0.87	158.75	149.37
161.20	H	26.68	20.93	-16.82	-22.57	43.50	22.04	0.88	104.25	259.34
161.50	H	26.50	20.94	-17.00	-22.56	43.50	22.04	0.88	180.75	242.68
162.20	H	25.99	19.96	-17.51	-23.54	43.50	21.06	0.88	0.00	143.70

Note: The EUT was also tested from 9 kHz to 30 MHz and 1 GHz to 9.3 GHz with no spurious emissions being discovered



Title: Pre-Scan - FCC Class B

File: 1 - LF - Pre-Scan - Tx - 916.00 MHz - Light Sensor - FCC Class B - 09-02-2020.set

Operator: Kyle Fujimoto

EUT Type: Light Sensor

EUT Condition: The EUT is continuously transmitting at 916.00 MHz

Company: Ecolink Intelligent Technology, Inc.

P/N: DWLZWAVE2.5-ECO

S/N: N/A

X-Axis (Worst Case)

The Emissions at 916.00 MHz is the fundamental of the intentional radiator and is subject to the limits of FCC 15.249 instead.

9/3/2020 1:18:32 PM
Sequence: Preliminary Scan





Title: Radiated Final - FCC Class B

File: 1 - LF - Final Scan - Tx - 916.00 MHz - Light Sensor - FCC Class B - 09-02-2020.set

Operator: Kyle Fujimoto

EUT Type: Light Sensor

EUT Condition: The EUT is continuously transmitting at 916.00 MHz

Company: Ecolink Intelligent Technology, Inc.

P/N: DWLZWAVE2.5-ECO

S/N: N/A

X-Axis (Worst Case)

9/3/2020 1:41:06 PM

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)	Ttl Aql (dea)	Twr Ht (cm)
120.00	H	24.13	20.94	-19.37	-22.56	43.50	15.90	0.75	170.25	127.46
162.40	H	22.26	17.25	-21.24	-26.25	43.50	20.65	0.88	316.75	274.20
777.90	V	37.24	44.39	-8.76	-1.61	46.00	25.61	2.27	345.25	273.97
779.30	H	42.79	24.46	-3.21	-21.54	46.00	25.68	2.27	103.75	371.70
782.80	H	43.54	38.09	-2.46	-7.91	46.00	25.70	2.28	59.75	339.76
784.50	V	43.13	31.72	-2.87	-14.28	46.00	25.70	2.28	285.75	339.04
785.90	H	46.86	40.52	0.86	-5.48	46.00	25.80	2.28	48.00	371.76

Note: The EUT was also tested from 9 kHz to 30 MHz and 1 GHz to 9.3 GHz with no spurious emissions being discovered

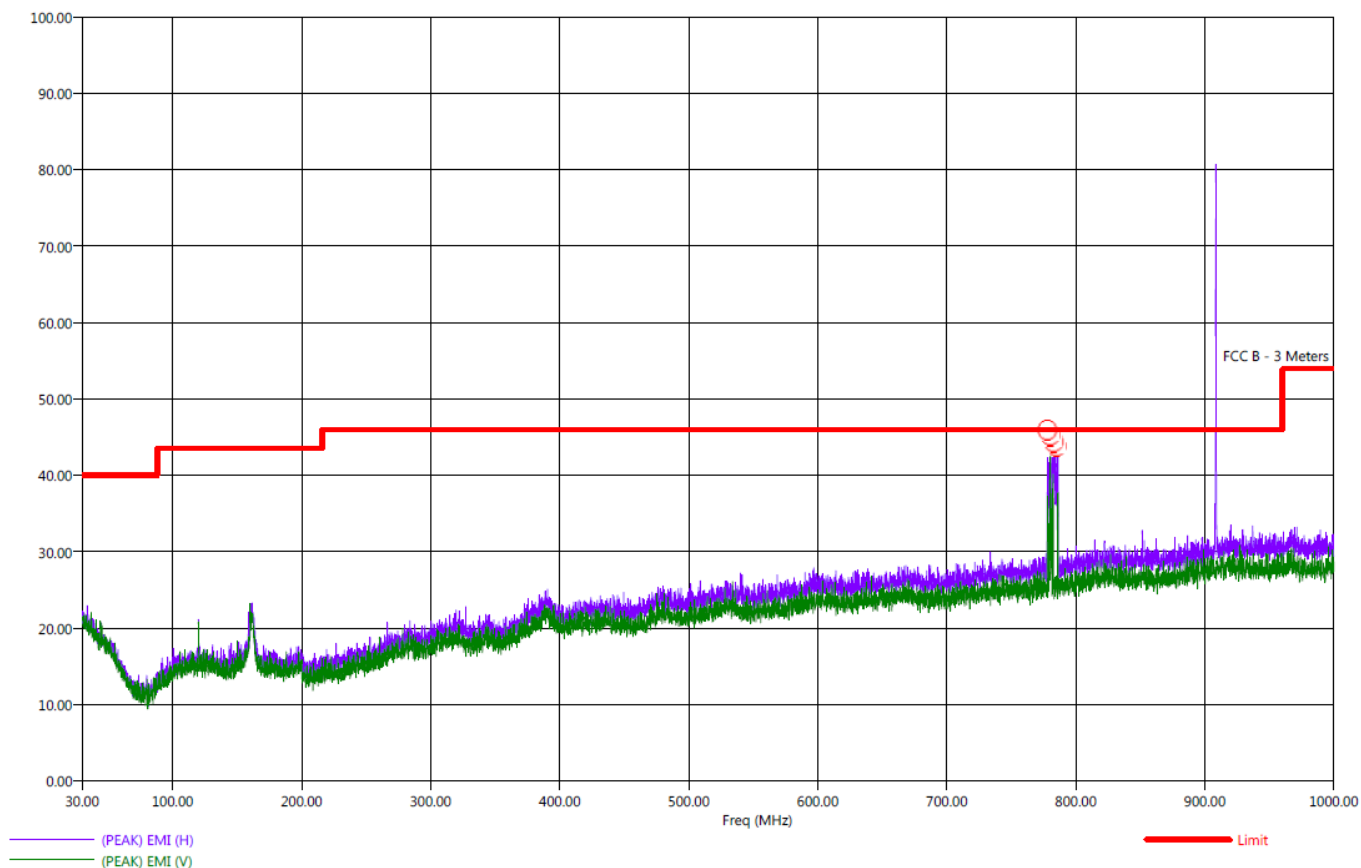


Title: Pre-Scan - FCC Class B
File: 1 - LF - Pre-Scan2 - Rx - 908.42 MHz - Light Sensor - FCC Class B - 09-02-2020.set
Operator: Kyle Fujimoto
EUT Type: Light Sensor
EUT Condition: The EUT is continuously receiving at 908.42 MHz
Company: Ecolink Intelligent Technology, Inc.
P/N: DWLZWAVE2.5-ECO
S/N: N/A
X-Axis (Worst Case)
Note: The Frequency at 908.42 MHz is a quick transient from the accessory transmitting unit placed away from the test site and was verified via a manual scan that this frequency is NOT from the EUT

9/3/2020 2:04:12 PM
Sequence: Preliminary Scan

FCC Class B

Electric Field Strength (dB μ V/m)





Title: Radiated Final - FCC Class B

File: 1 - LF - Final Scan - Rx - 908.42 MHz - Light Sensor - FCC Class B - 09-02-2020.set

Operator: Kyle Fujimoto

EUT Type: Light Sensor

EUT Condition: The EUT is continuously receiving at 908.42 MHz

Company: Ecolink Intelligent Technology, Inc.

P/N: DWLZWAVE2.5-ECO

S/N: N/A

9/3/2020 2:27:49 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)
777.90	H	43.42	37.84	-2.58	-8.16	46.00	25.61	2.27	56.75	290.02
780.20	H	43.62	36.08	-2.38	-9.92	46.00	25.62	2.27	294.75	339.28
780.40	H	29.33	24.36	-16.67	-21.64	46.00	25.64	2.27	15.00	290.38
782.80	H	29.98	24.42	-16.02	-21.58	46.00	25.70	2.28	223.25	371.34
785.10	H	41.17	28.79	-4.83	-17.21	46.00	25.71	2.28	122.00	241.49
786.20	H	31.13	24.53	-14.87	-21.47	46.00	25.80	2.28	62.75	159.76

Note: The EUT was also tested from 9 kHz to 30 MHz and 1 GHz to 9.3 GHz with no spurious emissions being discovered



Title: Pre-Scan - FCC Class B
File: 1 - LF - Pre-Scan - Rx - 916.00 MHz - Light Sensor - FCC Class B - 09-02-2020.set
Operator: Kyle Fujimoto
EUT Type: Light Sensor
EUT Condition: The EUT is continuously receiving at 916.00 MHz
Company: Ecolink Intelligent Technology, Inc.
P/N: DWLZWAVE2.5-ECO
S/N: N/A
X-Axis (Worst Case)

9/3/2020 2:47:08 PM
Sequence: Preliminary Scan





Title: Radiated Final - FCC Class B

File: 1 - LF - Final Scan - Rx - 916.00 MHz - Light Sensor - FCC Class B - 09-02-2020.set

Operator: Kyle Fujimoto

EUT Type: Light Sensor

EUT Condition: The EUT is continuously receiving at 916.00 MHz

Company: Ecolink Intelligent Technology, Inc.

P/N: DWLZWAVE2.5-ECO

S/N: N/A

9/3/2020 3:09:50 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)
161.70	H	23.94	18.61	-19.56	-24.89	43.50	22.08	0.88	360.00	339.70
779.40	H	30.13	24.30	-15.87	-21.70	46.00	25.65	2.27	138.75	339.16
781.00	H	30.89	24.55	-15.11	-21.45	46.00	25.70	2.27	217.00	127.46
784.50	H	29.69	24.35	-16.31	-21.65	46.00	25.70	2.28	276.75	371.40
785.00	H	38.87	30.98	-7.13	-15.02	46.00	25.70	2.28	170.50	290.92
785.50	H	29.91	24.37	-16.09	-21.63	46.00	25.71	2.28	235.25	357.37

Note: The EUT was also tested from 9 kHz to 30 MHz and 1 GHz to 9.3 GHz with no spurious emissions being discovered



Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

FUNDAMENTAL AND HARMONICS

DATA SHEETS



FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
Lab: D
Tested By: Kyle Fujimoto

Fundamental Low Channel

[illegible]



FCC 15.249

Ecolink Intelligent Technology, Inc.

Light Sensor

Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020

Lab: D

Tested By: Kyle Fujimoto

Fundamental

High Channel

[illegible]

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	344.50	100.00	
1816.84	25.36	V	53.97	-28.61	Avg	344.50	100.00	
2725.26	45.58	V	73.97	-28.39	Peak	150.75	101.13	
2725.26	38.86	V	53.97	-15.11	Avg	150.75	101.13	
3633.68	36.68	V	73.97	-37.29	Peak	357.25	199.10	
3633.68	29.96	V	53.97	-24.01	Avg	357.25	199.10	
4542.10	46.55	V	73.97	-27.42	Peak	61.00	100.25	
4542.10	39.83	V	53.97	-14.14	Avg	61.00	100.25	
5450.52	40.47	V	73.97	-33.50	Peak	49.00	200.11	
5450.52	33.75	V	53.97	-20.22	Avg	49.00	200.11	
6358.94	42.73	V	73.97	-31.24	Peak	304.50	100.88	
6358.94	36.01	V	53.97	-17.96	Avg	304.50	100.88	
7267.36	44.89	V	73.97	-29.08	Peak	0.50	100.88	
7267.36	38.17	V	53.97	-15.80	Avg	0.50	100.88	
8175.78	49.46	V	73.97	-24.51	Peak	226.25	100.11	
8175.78	42.74	V	53.97	-11.23	Avg	226.25	100.11	
9084.20	44.77	V	73.97	-29.20	Peak	289.00	100.14	
9084.20	38.05	V	53.97	-15.92	Avg	289.00	100.14	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	31.27	V	73.97	-42.70	Peak	292.00	100.00	
1816.84	24.55	V	53.97	-29.42	Avg	292.00	100.00	
2725.26	46.96	V	73.97	-27.01	Peak	168.00	100.00	
2725.26	40.24	V	53.97	-13.73	Avg	168.00	100.00	
3633.68	37.04	V	73.97	-36.93	Peak	146.50	200.00	
3633.68	30.32	V	53.97	-23.65	Avg	146.50	200.00	
4542.10	37.92	V	73.97	-36.05	Peak	324.50	100.88	
4542.10	31.20	V	53.97	-22.77	Avg	324.50	100.88	
5450.52	40.47	V	73.97	-33.50	Peak	25.50	200.11	
5450.52	33.75	V	53.97	-20.22	Avg	25.50	200.11	
6358.94	49.65	V	73.97	-24.32	Peak	358.25	200.11	
6358.94	42.93	V	53.97	-11.04	Avg	358.25	200.11	
7267.36	45.02	V	73.97	-28.95	Peak	199.00	200.11	
7267.36	38.30	V	53.97	-15.67	Avg	199.00	200.11	
8175.78	44.39	V	73.97	-29.58	Peak	34.75	100.21	
8175.78	37.67	V	53.97	-16.30	Avg	34.75	100.21	
9084.20	44.76	V	73.97	-29.21	Peak	213.75	249.92	
9084.20	38.04	V	53.97	-15.93	Avg	213.75	249.92	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	31.09	V	73.97	-42.88	Peak	345.00	100.00	
1816.84	24.37	V	53.97	-29.60	Avg	345.00	100.00	
2725.26	48.34	V	73.97	-25.63	Peak	274.75	100.00	
2725.26	41.62	V	53.97	-12.35	Avg	247.75	100.00	
3633.68	40.66	V	73.97	-33.31	Peak	257.25	200.00	
3633.68	33.94	V	53.97	-20.03	Avg	257.25	200.00	
4542.10	44.20	V	73.97	-29.77	Peak	312.00	200.00	
4542.10	37.48	V	53.97	-16.49	Avg	312.00	200.00	
5450.52	44.20	V	73.97	-29.77	Peak	64.00	199.94	
5450.52	37.48	V	53.97	-16.49	Avg	64.00	199.94	
6358.94	48.11	V	73.97	-25.86	Peak	111.25	249.94	
6358.94	41.39	V	53.97	-12.58	Avg	111.25	249.94	
7267.36	48.34	V	73.97	-25.63	Peak	164.75	100.00	
7267.36	41.62	V	53.97	-12.35	Avg	164.75	100.00	
8175.78	51.74	V	73.97	-22.23	Peak	242.00	200.11	
8175.78	45.02	V	53.97	-8.95	Avg	243.00	200.11	
9084.20	51.74	V	73.97	-22.23	Peak	311.75	249.90	
9084.20	45.02	V	53.97	-8.95	Avg	311.75	249.90	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	31.01	H	73.97	-42.96	Peak	66.50	249.07	
1816.84	24.29	H	53.97	-29.68	Avg	66.50	249.07	
2725.26	49.39	H	73.97	-24.58	Peak	135.75	199.04	
2725.26	42.67	H	53.97	-11.30	Avg	135.75	199.04	
3633.68	41.06	H	73.97	-32.91	Peak	15.00	100.00	
3633.68	34.34	H	53.97	-19.63	Avg	15.00	100.00	
4542.10	43.94	H	73.97	-30.03	Peak	228.25	100.04	
4542.10	37.22	H	53.97	-16.75	Avg	228.25	100.04	
5450.52	40.60	H	73.97	-33.37	Peak	311.75	249.07	
5450.52	33.88	H	53.97	-20.09	Avg	311.75	249.07	
6358.94	47.88	H	73.97	-26.09	Peak	173.50	100.04	
6358.94	41.16	H	53.97	-12.81	Avg	173.50	100.04	
7267.36	44.89	H	73.97	-29.08	Peak	90.75	100.25	
7267.36	38.17	H	53.97	-15.80	Avg	90.75	100.25	
8175.78	44.90	H	73.97	-29.07	Peak	48.75	199.10	
8175.78	38.18	H	53.97	-15.79	Avg	48.75	199.10	
9084.20	45.09	H	73.97	-28.88	Peak	301.50	100.00	
9084.20	38.37	H	53.97	-15.60	Avg	301.50	100.00	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	30.77	H	73.97	-43.20	Peak	146.00	200.00	
1816.84	24.05	H	53.97	-29.92	Avg	146.00	200.00	
2725.26	49.33	H	73.97	-24.64	Peak	132.25	100.88	
2725.26	42.61	H	53.97	-11.36	Avg	132.25	100.88	
3633.68	41.58	H	73.97	-32.39	Peak	140.50	100.55	
3633.68	34.86	H	53.97	-19.11	Avg	140.50	100.55	
4542.10	45.12	H	73.97	-28.85	Peak	171.75	100.00	
4542.10	38.40	H	53.97	-15.57	Avg	171.75	100.00	
5450.52	40.47	H	73.97	-33.50	Peak	49.50	100.25	
5450.52	33.75	H	53.97	-20.22	Avg	49.50	100.25	
6358.94	42.34	H	73.97	-31.63	Peak	309.75	100.00	
6358.94	35.62	H	53.97	-18.35	Avg	309.75	100.00	
7267.36	45.79	H	73.97	-28.18	Peak	166.25	100.25	
7267.36	39.07	H	53.97	-14.90	Avg	166.25	100.25	
8175.78	46.34	H	73.97	-27.63	Peak	50.75	200.25	
8175.78	39.62	H	53.97	-14.35	Avg	50.75	200.25	
9084.20	45.16	H	73.97	-28.81	Peak	160.00	100.25	
9084.20	38.44	H	53.97	-15.53	Avg	160.00	100.25	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	31.54	H	73.97	-42.43	Peak	92.50	249.98	
1816.84	24.82	H	53.97	-29.15	Avg	92.50	249.98	
2725.26	49.00	H	73.97	-24.97	Peak	220.50	100.00	
2725.26	42.28	H	53.97	-11.69	Avg	220.50	100.00	
3633.68	39.30	H	73.97	-34.67	Peak	214.00	100.00	
3633.68	32.58	H	53.97	-21.39	Avg	214.00	100.00	
4542.10	45.90	H	73.97	-28.07	Peak	157.50	100.00	
4542.10	39.18	H	53.97	-14.79	Avg	157.50	100.00	
5450.52	40.08	H	73.97	-33.89	Peak	186.50	249.95	
5450.52	33.36	H	53.97	-20.61	Avg	186.50	249.95	
6358.94	50.96	H	73.97	-23.01	Peak	311.75	100.04	
6358.94	44.24	H	53.97	-9.73	Avg	311.75	100.04	
7267.36	45.14	H	73.97	-28.83	Peak	311.50	200.00	
7267.36	38.42	H	53.97	-15.55	Avg	311.50	200.00	
8175.78	49.36	H	73.97	-24.61	Peak	346.75	100.00	
8175.78	42.64	H	53.97	-11.33	Avg	346.75	100.00	
9084.20	45.15	H	73.97	-28.82	Peak	0.00	100.00	
9084.20	38.43	H	53.97	-15.54	Avg	0.00	100.00	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	31.48	V	73.97	-42.49	Peak	187.00	200.05	
1832.00	24.76	V	53.97	-29.21	Avg	187.00	200.05	
2748.00	44.31	V	73.97	-29.66	Peak	59.00	100.94	
2748.00	37.59	V	53.97	-16.38	Avg	59.00	100.94	
3664.00	42.26	V	73.97	-31.71	Peak	255.75	100.25	
3664.00	35.54	V	53.97	-18.43	Avg	255.75	100.25	
4580.00	42.46	V	73.97	-31.51	Peak	347.00	200.05	
4580.00	35.74	V	53.97	-18.23	Avg	347.00	200.05	
5496.00	40.73	V	73.97	-33.24	Peak	38.25	200.00	
5496.00	34.01	V	53.97	-19.96	Avg	38.25	200.00	
6412.00	42.14	V	73.97	-31.83	Peak	203.25	100.00	
6412.00	35.42	V	53.97	-18.55	Avg	203.25	100.00	
7328.00	44.35	V	73.97	-29.62	Peak	288.25	100.00	
7328.00	37.63	V	53.97	-16.34	Avg	288.25	100.00	
8244.00	44.62	V	73.97	-29.35	Peak	347.00	100.00	
8244.00	37.90	V	53.97	-16.07	Avg	347.00	100.00	
9160.00	45.45	V	73.97	-28.52	Peak	12.00	100.25	
9160.00	38.73	V	53.97	-15.24	Avg	12.00	100.25	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	32.48	V	73.97	-41.49	Peak	191.00	201.19	
1832.00	25.76	V	53.97	-28.21	Avg	191.00	201.19	
2748.00	45.32	V	73.97	-28.65	Peak	347.00	100.00	
2748.00	38.60	V	53.97	-15.37	Avg	347.00	100.00	
3664.00	44.82	V	73.97	-29.15	Peak	80.00	100.04	
3664.00	38.10	V	53.97	-15.87	Avg	80.00	100.04	
4580.00	43.27	V	73.97	-30.70	Peak	153.00	199.04	
4580.00	36.55	V	53.97	-17.42	Avg	153.00	199.04	
5496.00	41.36	V	73.97	-32.61	Peak	224.25	199.04	
5496.00	34.64	V	53.97	-19.33	Avg	224.25	199.04	
6412.00	50.12	V	73.97	-23.85	Peak	144.00	199.04	
6412.00	43.40	V	53.97	-10.57	Avg	144.00	199.04	
7328.00	48.59	V	73.97	-25.38	Peak	153.25	100.04	
7328.00	41.87	V	53.97	-12.10	Avg	153.25	100.04	
8244.00	45.52	V	73.97	-28.45	Peak	250.00	100.00	
8244.00	38.80	V	53.97	-15.17	Avg	250.00	100.00	
9160.00	45.88	V	73.97	-28.09	Peak	185.25	249.01	
9160.00	39.16	V	53.97	-14.81	Avg	185.25	249.01	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	31.61	V	73.97	-42.36	Peak	33.75	100.00	
1832.00	24.89	V	53.97	-29.08	Avg	33.75	100.00	
2748.00	48.48	V	73.97	-25.49	Peak	304.50	200.23	
2748.00	41.76	V	53.97	-12.21	Avg	304.50	200.23	
3664.00	47.57	V	73.97	-26.40	Peak	0.00	100.00	
3664.00	40.85	V	53.97	-13.12	Avg	0.00	100.00	
4580.00	43.27	V	73.97	-30.70	Peak	123.75	100.00	
4580.00	36.55	V	53.97	-17.42	Avg	123.75	100.00	
5496.00	42.28	V	73.97	-31.69	Peak	0.00	249.96	
5496.00	35.56	V	53.97	-18.41	Avg	0.00	249.96	
6412.00	48.30	V	73.97	-25.67	Peak	167.00	100.58	
6412.00	41.58	V	53.97	-12.39	Avg	167.00	100.58	
7328.00	50.98	V	73.97	-22.99	Peak	0.25	200.25	
7328.00	44.26	V	53.97	-9.71	Avg	0.25	200.25	
8244.00	48.40	V	73.97	-25.57	Peak	17.75	100.00	
8244.00	41.68	V	53.97	-12.29	Avg	17.75	100.00	
9160.00	45.38	V	73.97	-28.59	Peak	273.25	248.02	
9160.00	38.66	V	53.97	-15.31	Avg	273.25	248.02	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	31.48	H	73.97	-42.49	Peak	233.75	105.25	
1832.00	24.76	H	53.97	-29.21	Avg	233.75	105.25	
2748.00	50.21	H	73.97	-23.76	Peak	201.00	100.25	
2748.00	43.49	H	53.97	-10.48	Avg	201.00	100.25	
3664.00	47.32	H	73.97	-26.65	Peak	189.25	100.25	
3664.00	40.60	H	53.97	-13.37	Avg	189.25	100.25	
4580.00	44.95	H	73.97	-29.02	Peak	308.25	100.00	
4580.00	38.23	H	53.97	-15.74	Avg	308.25	100.00	
5496.00	41.24	H	73.97	-32.73	Peak	292.75	100.00	
5496.00	34.52	H	53.97	-19.45	Avg	292.75	100.00	
6412.00	49.20	H	73.97	-24.77	Peak	272.50	100.64	
6412.00	42.48	H	53.97	-11.49	Avg	272.50	100.64	
7328.00	49.20	H	73.97	-24.77	Peak	161.50	100.25	
7328.00	42.48	H	53.97	-11.49	Avg	161.50	100.25	
8244.00	47.83	H	73.97	-26.14	Peak	234.75	106.24	
8244.00	41.11	H	53.97	-12.86	Avg	234.75	106.24	
9160.00	46.54	H	73.97	-27.43	Peak	156.00	200.00	
9160.00	39.82	H	53.97	-14.15	Avg	156.00	200.00	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	33.68	H	73.97	-40.29	Peak	155.00	200.55	
1832.00	26.96	H	53.97	-27.01	Avg	155.00	200.55	
2748.00	48.87	H	73.97	-25.10	Peak	323.25	249.99	
2748.00	42.15	H	53.97	-11.82	Avg	323.25	249.99	
3664.00	47.32	H	73.97	-26.65	Peak	311.25	200.00	
3664.00	40.60	H	53.97	-13.37	Avg	311.25	200.00	
4580.00	46.38	H	73.97	-27.59	Peak	263.75	100.00	
4580.00	39.66	H	53.97	-14.31	Avg	263.75	100.00	
5496.00	41.37	H	73.97	-32.60	Peak	295.00	200.00	
5496.00	34.65	H	53.97	-19.32	Avg	295.00	200.00	
6412.00	47.84	H	73.97	-26.13	Peak	3.25	100.25	
6412.00	41.12	H	53.97	-12.85	Avg	3.25	100.25	
7328.00	51.10	H	73.97	-22.87	Peak	0.00	200.11	
7328.00	44.38	H	53.97	-9.59	Avg	0.00	200.11	
8244.00	49.90	H	73.97	-24.07	Peak	311.75	200.29	
8244.00	43.18	H	53.97	-10.79	Avg	311.75	200.29	
9160.00	46.79	H	73.97	-27.18	Peak	304.50	100.82	
9160.00	40.07	H	53.97	-13.90	Avg	304.50	100.82	

FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020
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	35.11	H	73.97	-38.86	Peak	171.00	200.11	
1832.00	28.39	H	53.97	-25.58	Avg	171.00	200.11	
2748.00	48.35	H	73.97	-25.62	Peak	196.25	249.08	
2748.00	41.63	H	53.97	-12.34	Avg	196.25	249.08	
3664.00	45.60	H	73.97	-28.37	Peak	192.75	200.00	
3664.00	38.88	H	53.97	-15.09	Avg	192.75	200.00	
4580.00	45.48	H	73.97	-28.49	Peak	242.25	100.00	
4580.00	38.76	H	53.97	-15.21	Avg	242.25	100.00	
5496.00	42.41	H	73.97	-31.56	Peak	278.75	100.04	
5496.00	35.69	H	53.97	-18.28	Avg	278.75	100.04	
6412.00	51.16	H	73.97	-22.81	Peak	49.50	101.05	
6412.00	44.44	H	53.97	-9.53	Avg	49.50	101.05	
7328.00	49.20	H	73.97	-24.77	Peak	87.25	100.05	
7328.00	42.48	H	53.97	-11.49	Avg	87.25	100.05	
8244.00	47.36	H	73.97	-26.61	Peak	278.25	100.05	
8244.00	40.64	H	53.97	-13.33	Avg	278.25	100.05	
9160.00	44.74	H	73.97	-29.23	Peak	30.00	199.11	
9160.00	38.02	H	53.97	-15.95	Avg	30.00	199.11	



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Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020

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 9.3 GHz

[illegible]

FCC 15.249

Ecolink Intelligent Technology, Inc.

Light Sensor

Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020

Lab: D

Tested By: Kyle Fujimoto

Receive Mode - 1 GHz to 9.3 GHz

[illegible]



BAND EDGES

DATA SHEETS



FCC 15.249

Ecolink Intelligent Technology, Inc.

Light Sensor

Part Number: DWLZWAVE2.5-ECO

Date: 09/02/2020

Lab: D

Tested By: Kyle Fujimoto

Band Edges - Low Channel

[illegible]



FCC 15.249

Ecolink Intelligent Technology, Inc.
Light Sensor
Part Number: DWLZWAVE2.5-ECO

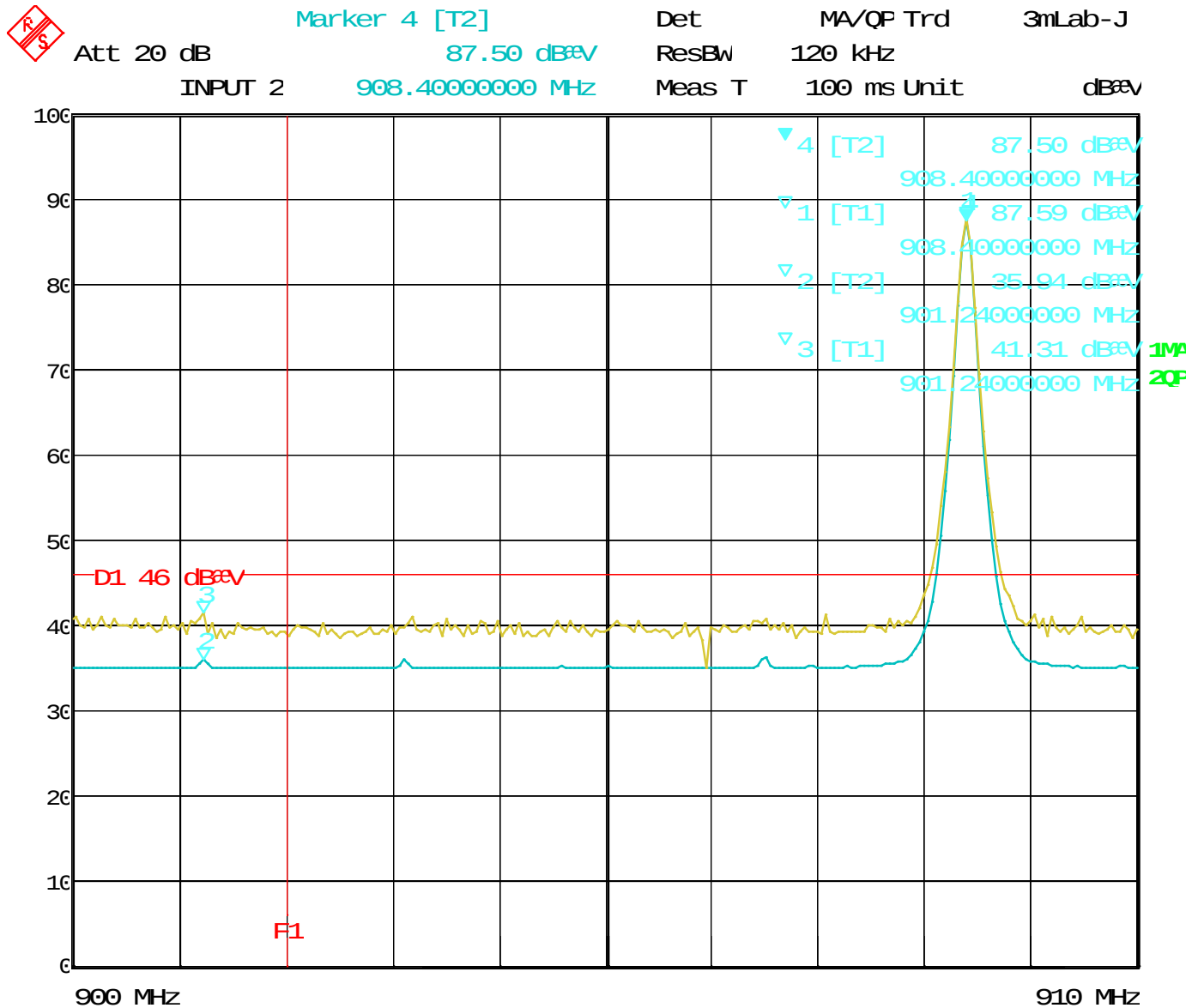
Date: 09/02/2020

Lab: D

Tested By: Kyle Fujimoto

Band Edges - High Channel

[illegible]



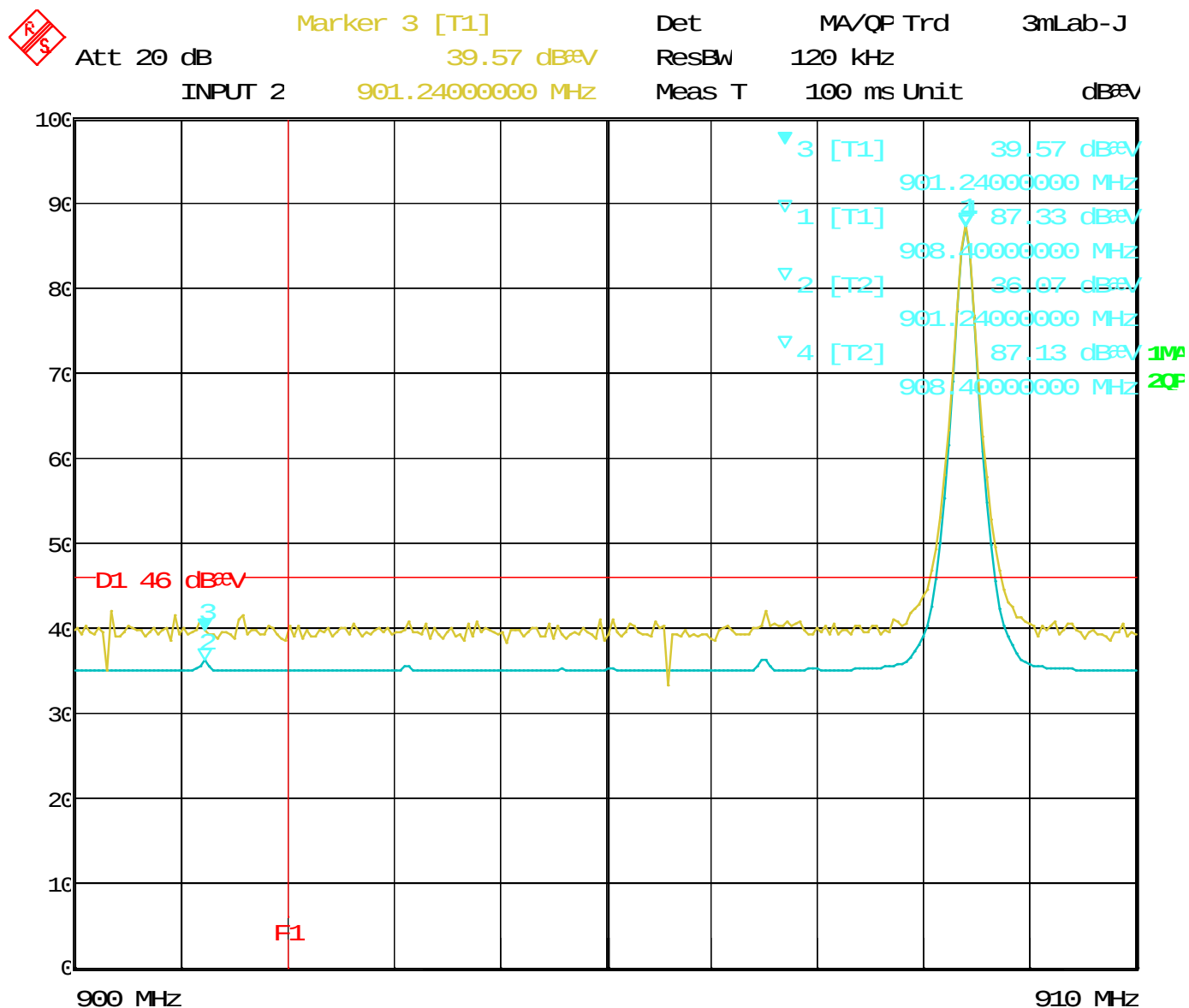
Date: 2.SEP.2020 10:58:10

BE - 908.42 MHz - Horizontal - X-Axis

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



Date: 2.SEP.2020 10:50:37

BE - 908.42 MHz - Vertical - Y-Axis

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



Att 20 dB

INPUT 2

Marker 4 [T2]

87.54 dB μ V

915.96000000 MHz

Det

ResBW

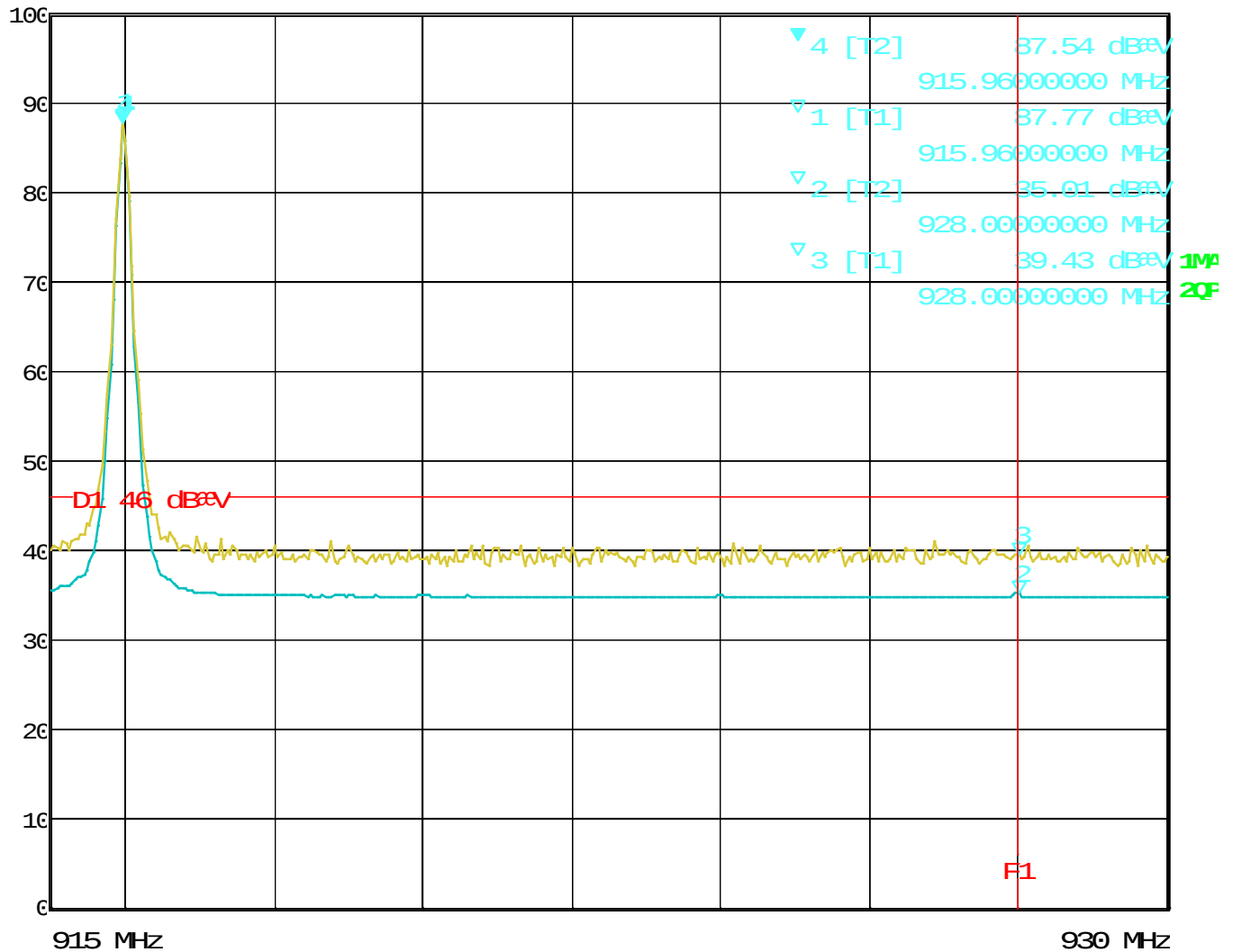
Meas T

MAV/QP Trd

120 kHz

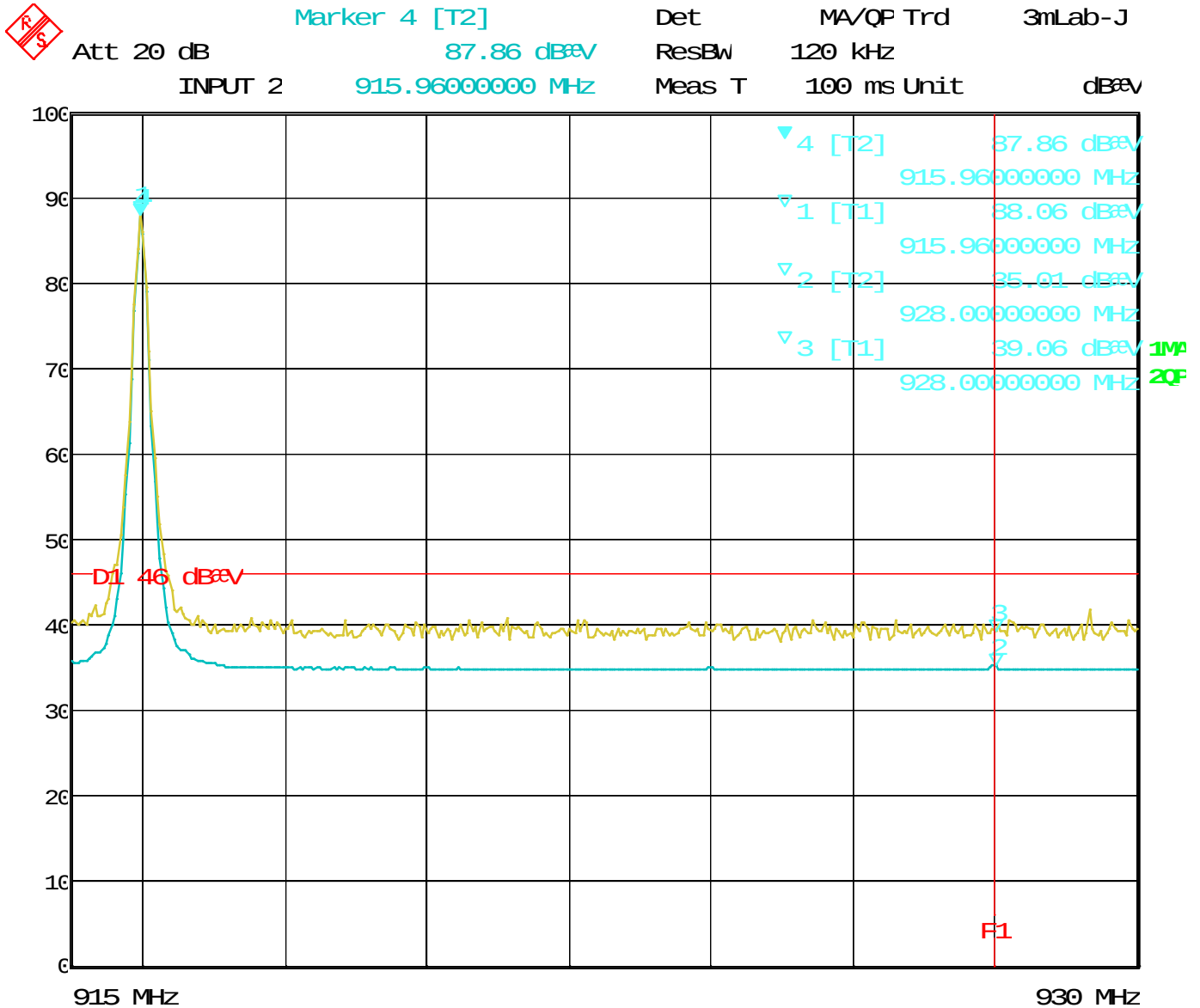
100 ms Unit

3mLab-J

dB μ V


Date: 2.SEP.2020 10:28:33

BE - 916 MHz - Horizontal - X-Axis

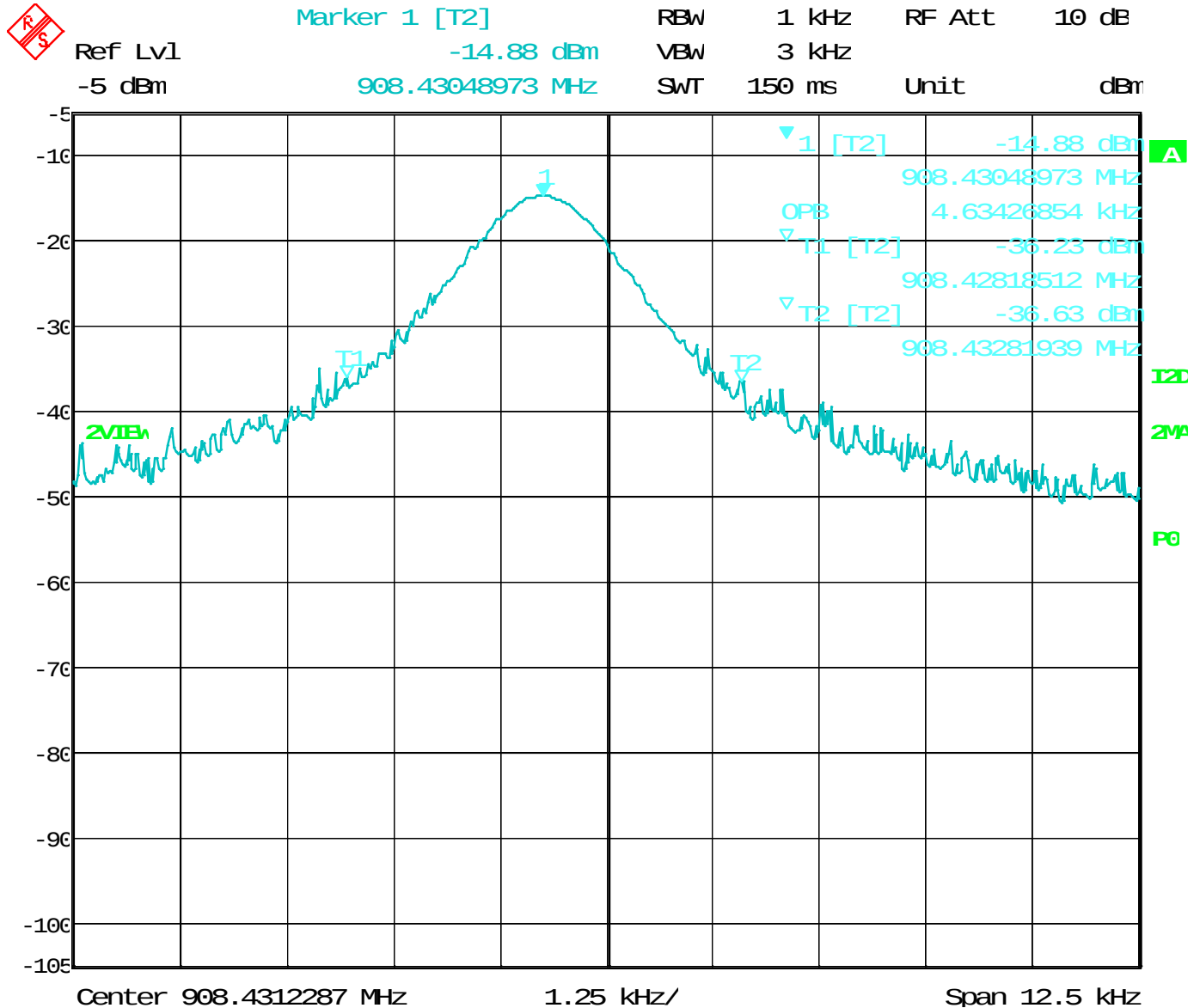


Date: 2.SEP.2020 10:37:24

BE - 916 MHz - Vertical - Y-Axis



**99 % BANDWIDTH
DATA SHEETS**



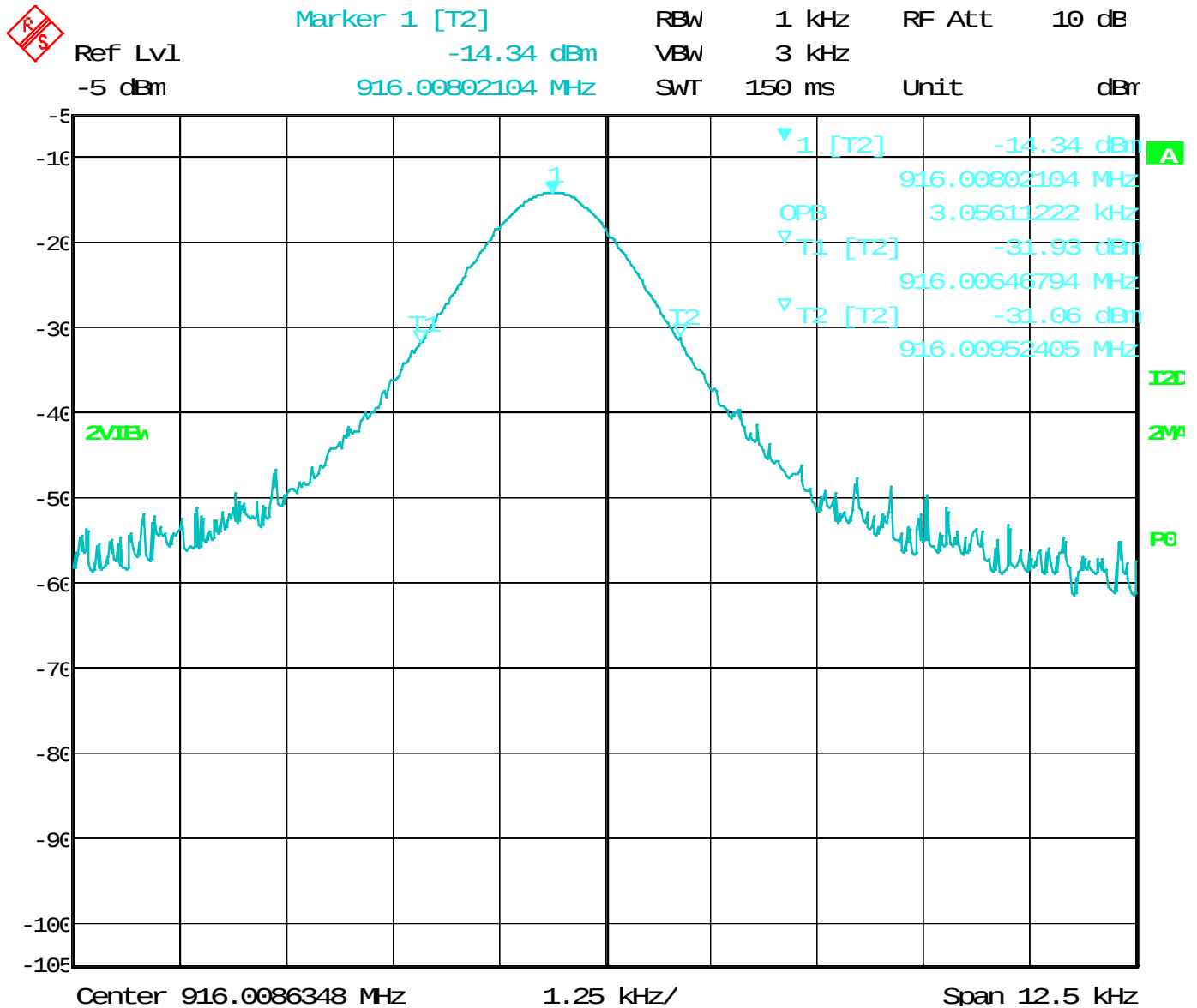
Date: 4.SEP.2020 16:07:49

BW 99 Percent - 908.42 MHz - Sensor - Low Channel

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



Date: 4.SEP.2020 16:11:40

BW 99 Percent - 916.00 MHz - Sensor – High Channel

Brea Division
 114 Olinda Drive
 Brea, CA 92823
 (714) 579-0500

Newbury Park Division
 1050 Lawrence Drive
 Newbury Park, CA 91320
 (805) 480-4044

Lake Forest Division
 20621 Pascal Way
 Lake Forest, CA 92630
 (949) 587-0400





Delta 1 [T2]

RBW 100 kHz RF Att 30 dB

Ref Lvl -0.60 dB

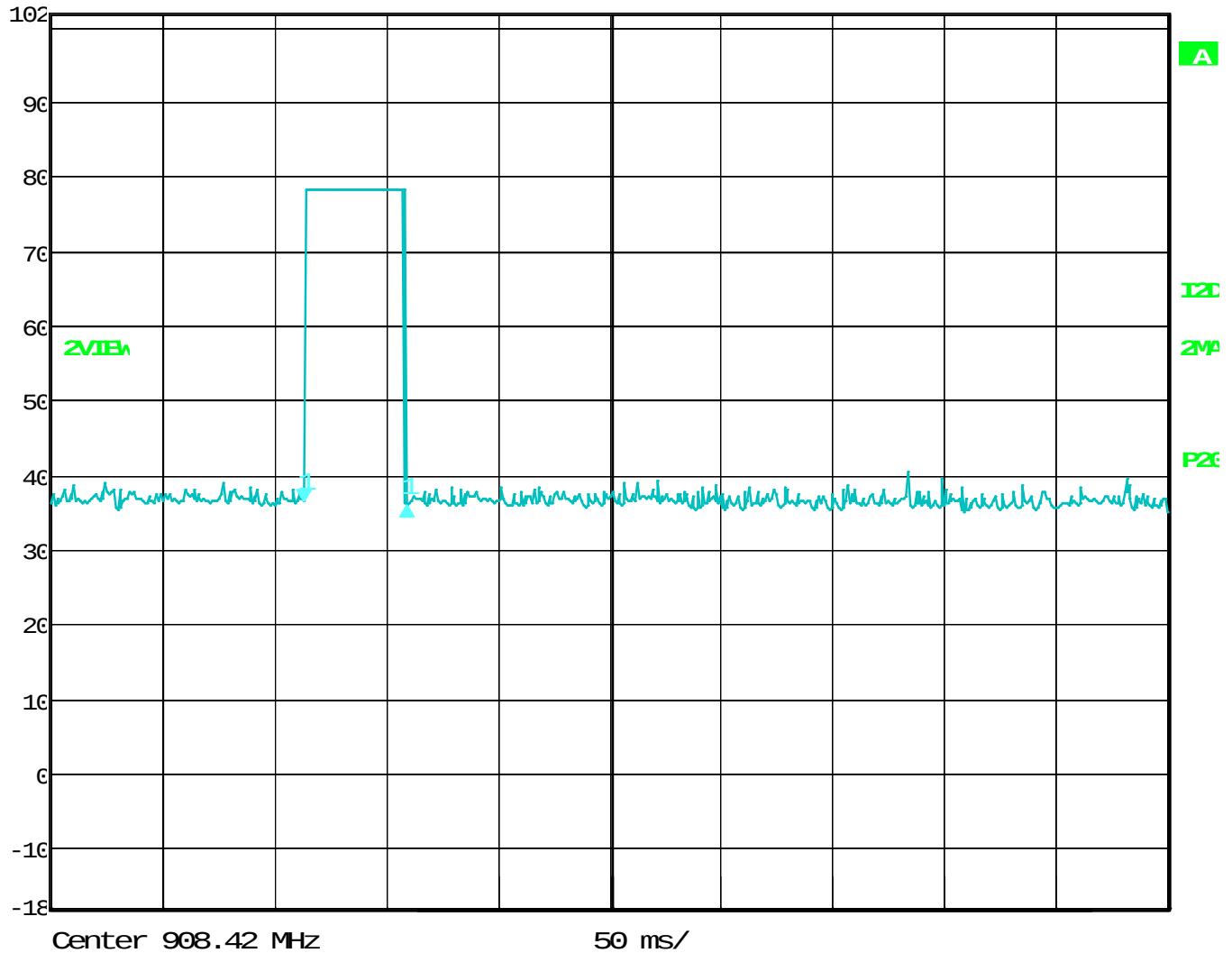
VBW 1 MHz

102 dB μ V

46.092184 ms

SWT 500 ms

Unit

dB μ V

Date: 2.SEP.2020 09:26:51

Pulse is 46.092184 ms

Duty Cycle = 46.092184 ms / 100 ms x 100 % = 46.09 %

Duty cycle correction = 20 log (0.46092184) = -6.727 dB correction factor

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



Delta 1 [T2]

RBW 100 kHz RF Att 30 dB

Ref Lvl

-0.10 dB

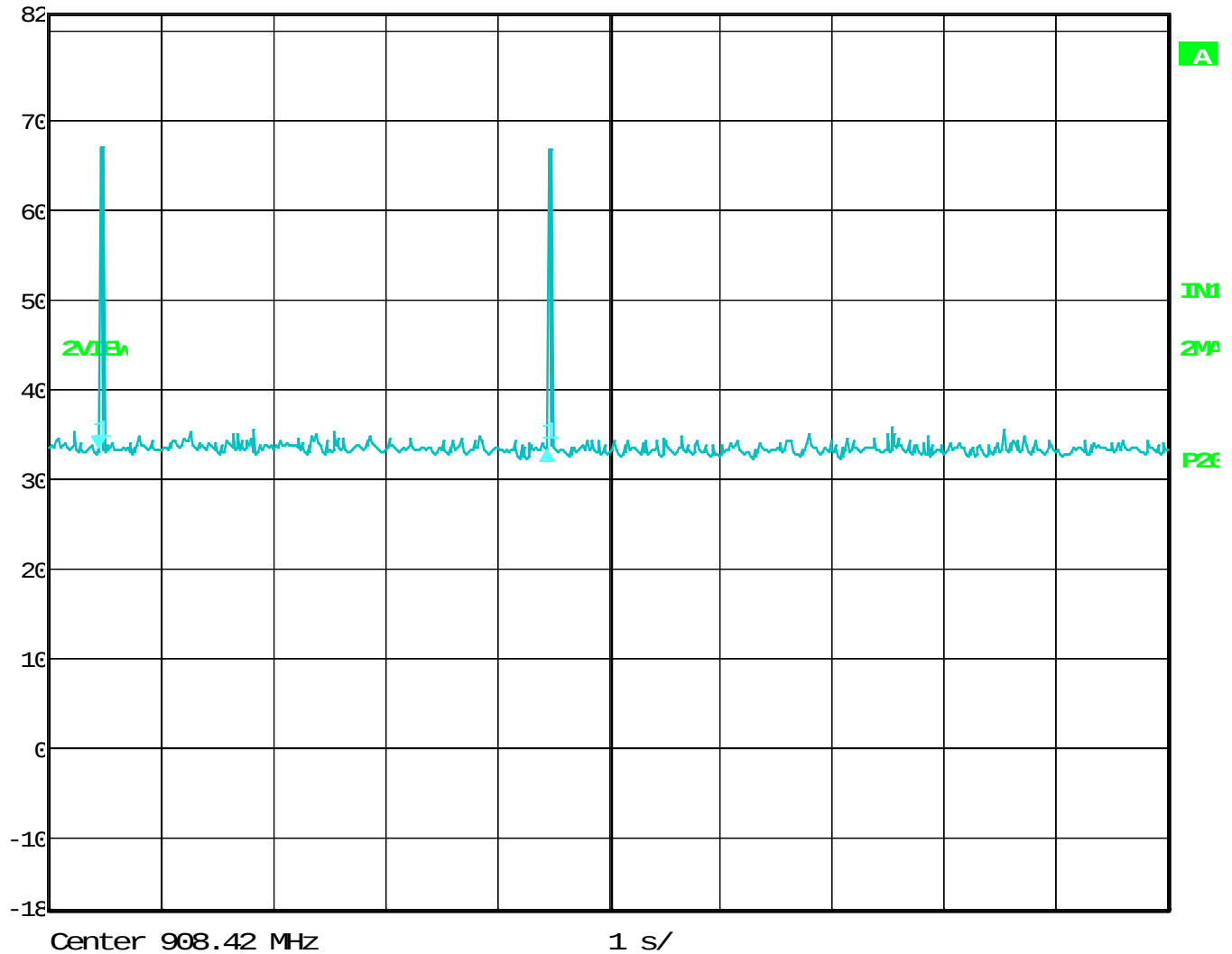
VBW 500 kHz

82 dB μ V

4.008016 s

SWT 10 s

Unit

dB μ V

Date: 2.SEP.2020 08:18:31

Time Between Pulses - 4 Seconds

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400