

**FCC PART 15, SUBPART B and C; FCC SECTION 15.249
TEST REPORT**

for
HINGE SENSOR
Model: H4

Prepared for

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APRIL 29, 2022

	REPORT BODY	APPENDICES					TOTAL
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GENERAL REPORT SUMMARY

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

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

The client must not use this report to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the U.S. government.

Device Tested: Hinge Sensor
Model: H4
S/N: N/A

Product Description: The EUT is a wearable sensor that utilizes a BLE Radio.

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

Customer: Hinge Health, Inc.
455 Market Street, Suite 700
San Francisco, California 94105

Test Dates: April 8, 9 and 20, 2022

Test Specifications covered by accreditation:

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B;
CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.249



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	Conducted RF Emissions, 150 kHz – 30 MHz	The EUT complies with the limits of CFR Title 47, Part 15 Subpart B, Section 15.107, Class B; CFR Title 47, Part 15, Subpart C, Sections 15.207 See section 6.3 for Measurement Uncertainty
2	Spurious Radiated RF Emissions, 9 kHz –25000 MHz (Transmitter and Digital Portion)	The EUT complies with the limits of CFR Title 47, Part 15, Subpart B, Section 15.109, Class B; CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.249 See section 6.3 for Measurement Uncertainty



1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Hinge Sensor, Model: H4. 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 specification limits defined by CFR Title 47, Part 15 Subpart B, Sections 15.107 Class B and 15.109 Class B; CFR Title 47, Part 15, Subpart C, Sections 15.207, 15.209 and 15.249.



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

Hinge Health, Inc.

Vineet Mehrotra
David Rowe

Supply Chain | Hardware Product Management
Senior Quality and Compliance Manager

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 initial date of testing. Received as described in product description.

2.5 Disposition of the Test Sample

The test sample has not been returned to Hinge Health, 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	Model
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
CFR	Code of Federal Regulations
FCC	Federal Communications Commission
MHz	Megahertz

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
CFR Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4: 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10: 2013	American National Standard of procedure for compliance testing of unlicensed wireless devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

Battery Mode: The Hinge Sensor, Model: H4 (EUT) was setup in a stand-alone configuration. The EUT was investigated in all three orthogonal axes. During the testing, the EUT was continuously transmitting at 2402 MHz, 2440 MHz, or 2480 MHz. The EUT was tested from 9 kHz to 25 GHz.

The firmware inside the EUT allowed the EUT to continuously transmit at the low, middle, or high channel by pressing the button on the EUT.

AC Power Mode: The Hinge Sensor, Model: H4 (EUT) was connected to an AC to USB adapter. The EUT was investigated in all three orthogonal axes. During the testing, the EUT was continuously transmitting at 2402 MHz, 2440 MHz, or 2480 MHz. The EUT was also continuously charging the internal battery inside the EUT. The EUT was tested from 9 kHz to 25 GHz.

The firmware inside the EUT allowed the EUT to continuously transmit at the low, middle, or high channel by pressing the button on the EUT.

The firmware is stored in one of the network drives in the company's server.

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

4.1.1 Cable Construction and Termination

Cable 1 (AC Power Mode Only)

This is a 2-meter braid shielded cable connecting the EUT to the AC-to-USB adapter. The cable has a mini USB connector at the EUT end and a USB type 'A' connector at the AC to USB adapter end. The shield of the cable was grounded to the chassis via the connectors.

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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
HINGE SENSOR (EUT)	HINGE HEALTH, INC.	H4	N/A	2AQLGHINGE4
FIRMWARE	HINGE HEALTH, INC.	V1.0	N/A	N/A
AC-TO-USB ADAPTER (AC MODE ONLY)	AMAZON	FANA7R	N/A	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
RF RADIATED AND CONDUCTED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
MXE EMI Receiver, 20 Hz – 26.5 GHz	Keysight Technologies, Inc.	N9038A	MY51210150	September 17, 2021	2 Year
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
Loop Antenna	Com-Power	AL-130R	121090	February 10 2022	3 Year
CombiLog Antenna	Com-Power	AC-220	61093	December 14, 2021	2 Year
Horn Antenna	Com-Power	AH-118	10050113	December 16, 2021	2 Year
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A
Preamplifier	Com-Power	PAM-118	181653	March 7, 2022	1 Year
Preamplifier	Com-Power	PA-840	711013	April 9, 2020	2 Year
LISN (EUT)	Com-Power	LI-215A	191951	August 4, 2021	1 Year
Attenuator 10 dB	SureCall	SC-ATT-10	17100025	December 7, 2021	1 Year
Variable Autotransformer	Staco Energy Products	3PN1010	N/A	N/A	N/A
True RMS Multimeter	Fluke	115	36601149WS	November 21, 2021	1 Year
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}	$U_{lab} = 2 u_c(y)$
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	4.51 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:

The EUT complies with the specification limits of CFR Title 47, Part 15, Subpart B, Section 15.107 Class B; and CFR Title 47, Part 15, Subpart C, Section 15.207 for conducted emissions.

7.1.2 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. The EMI Receiver's internal preamplifier was used up to 1000 MHz and an external preamplifier was used above 1 GHz to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured.

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 duty cycle correction factor described in section 7.4 of this test report.

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 and ANSI C63.10. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength).

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

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 25 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the specification limits of CFR Title 47, Part 15, Subpart B, Section 15.109 Class B; CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.249 for radiated emissions.



7.1.3 RF Emissions Test Results

Table 1 CONDUCTED EMISSION RESULTS
Hinge Sensor, Model: H4

Frequency MHz	Average Emission Level* dBuV	Average Specification Limit dBuV	Delta (Emission – Spec limit) dB
0.282 (WL)	23.93	50.82	-26.89
0.338 (BL)	22.21	49.17	-26.97
0.274 (WL)	23.55	50.54	-26.98
0.294 (BL)	23.35	50.41	-27.06
0.238 (BL)	21.72	51.89	-30.17
0.194 (BL)	23.00	53.72	-30.71

Table 2 RADIATED EMISSION RESULTS
Hinge Sensor, Model: H4

Frequency (MHz)	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) (dB)
821.90 (H) (AC Mode)	33.90 (QP)	46.00	-12.10
910.50 (H) (Battery Mode)	33.72 (QP)	46.00	-12.28
751.50 (H) (AC Mode)	32.80 (QP)	46.00	-13.20
641.20 (H) (Battery Mode)	32.03 (QP)	46.00	-13.97
609.70 (H) (Battery Mode)	31.97 (QP)	46.00	-14.03
621.30 (H) (Battery Mode)	31.79 (QP)	46.00	-14.21

Notes:

- * The complete emissions data is given in Appendix E of this report.
- (BL) Black Lead
(WL) White Lead
(V) Vertical
(H) Horizontal
(BATT) Battery Mode
(AC) AC Mode

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 $\text{dB}\mu\text{V}/\text{m}$

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.

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

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

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:

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

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:

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

or, if the magnetic antenna factor is used:

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

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

7.2 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 CFR Title 47, Part 15, Subpart A, Section 15.31 (e) for variation of the input power.

7.3 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

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

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 advertising mode

Duty Cycle Correction Factor = -20 dB

Time of One Pulse = 370 us

Total On Time = 370 us

The time between pulses is 42 ms

Duty Cycle = 370 us / 42 ms = 0.00881 = 0.88 %

The maximum Peak to Average ratio of -20 dB can be utilized

8. CONCLUSIONS

The Hinge Sensor, Model: H4 (EUT), as tested, meets all of the specification limits defined in CFR Title 47, Part 15, Subpart B, Sections 15.107 **Class B** and 15.109 **Class B**; CFR Title 47, Part 15, Subpart C, Sections 15.205, 15.207, 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
(949) 587-0400

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 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"

ISED Test Site Registration Number: 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, FCC 15.249 specifications.

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

No modifications were made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Hinge Sensor
Model: H4
S/N: N/A

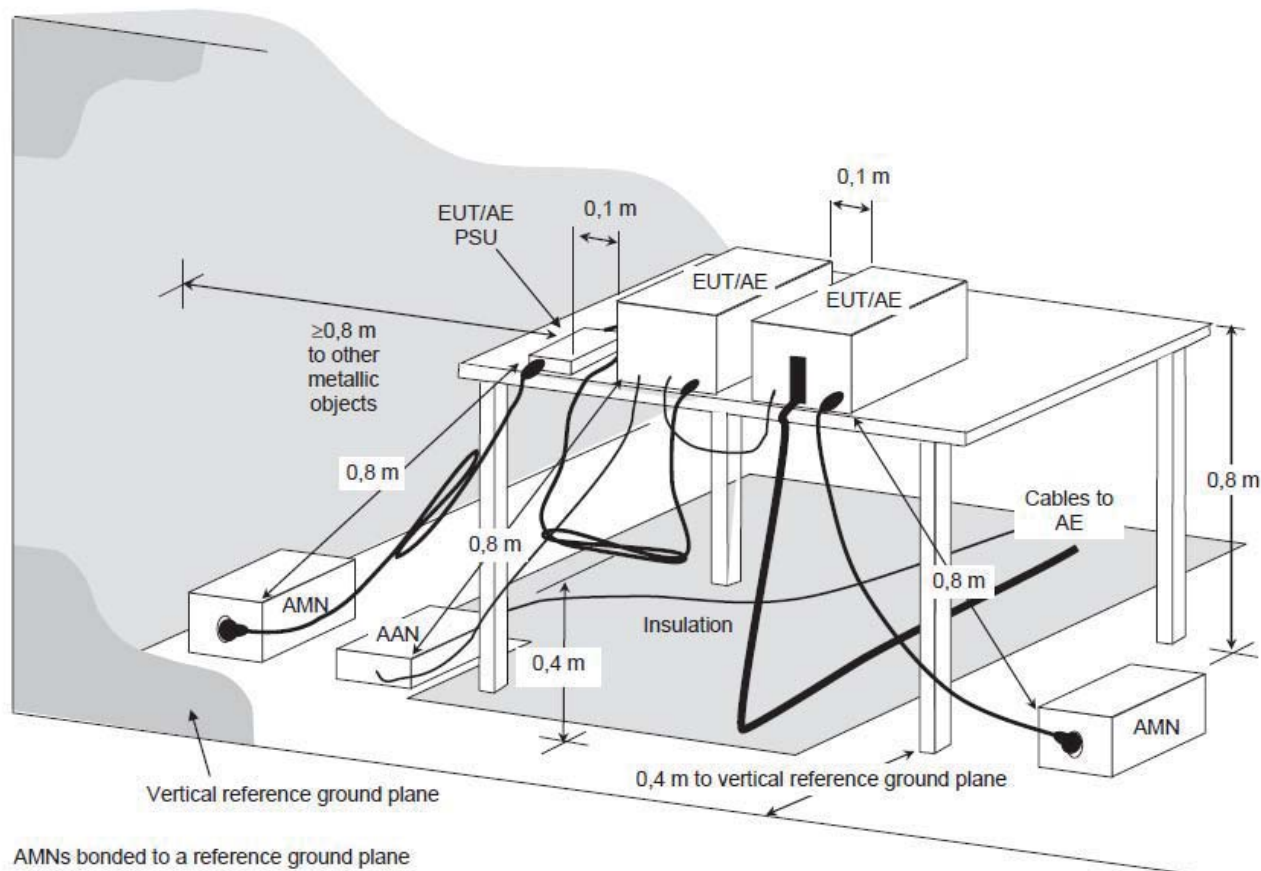
There are no additional models covered under this report.



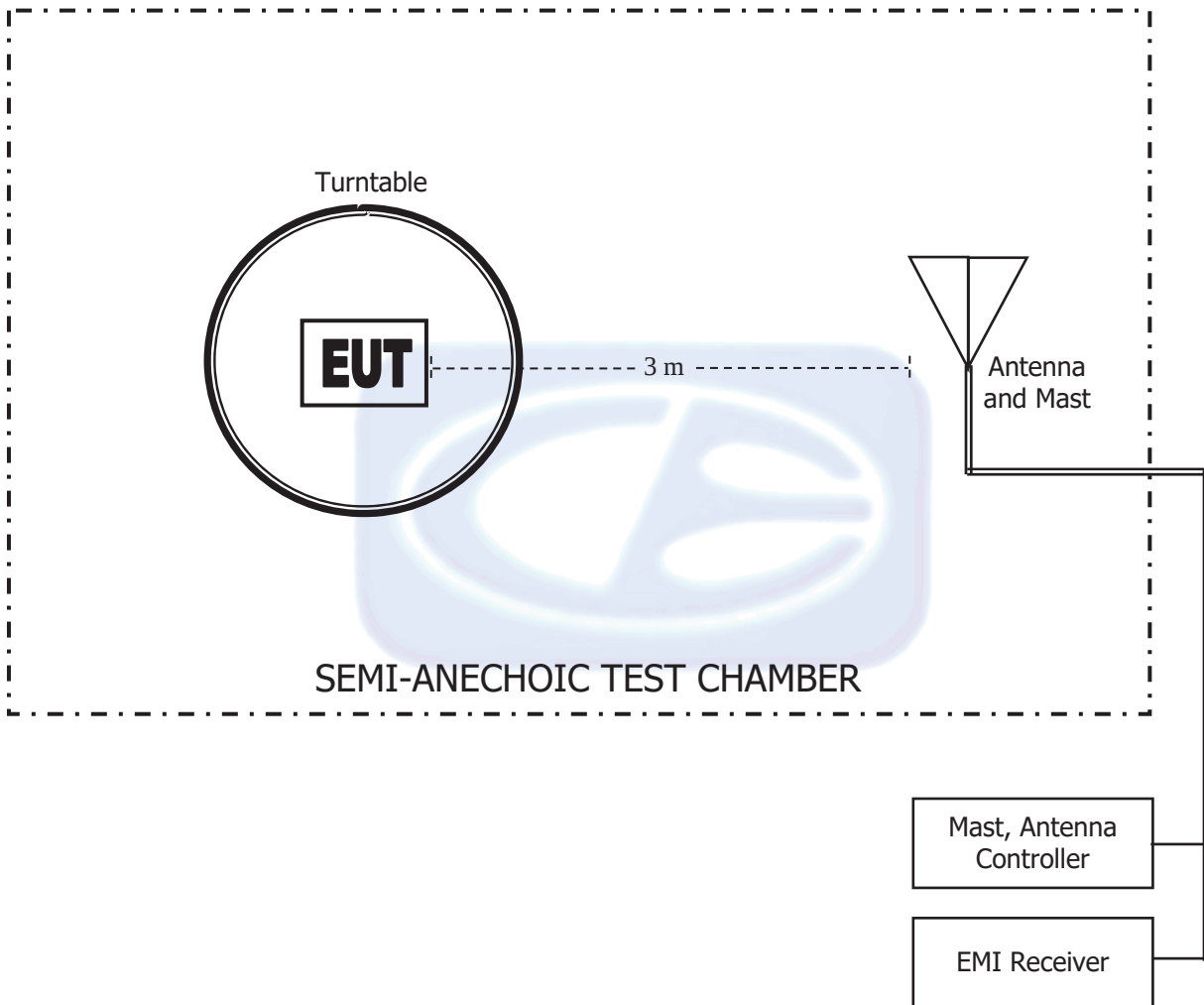
APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP



**FIGURE 2: LAYOUT OF THE
SEMI-ANECHOIC TEST CHAMBER**



COM-POWER AL-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 AH-826**HORN ANTENNA**

S/N: 71957

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

COM-POWER 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		

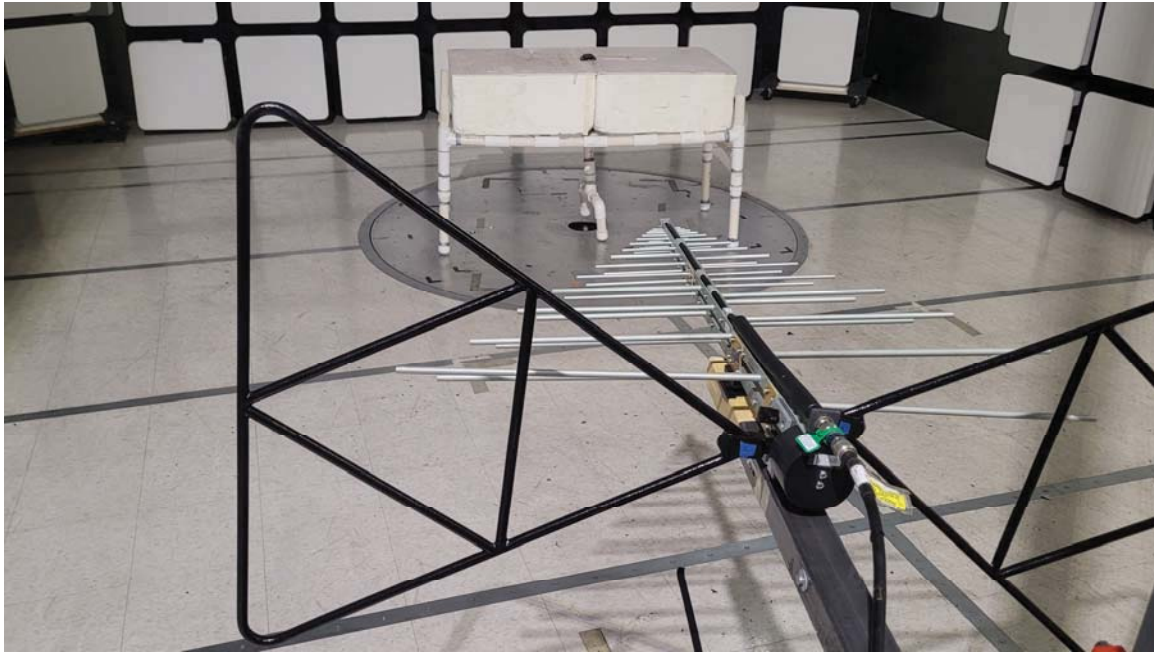
COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: APRIL 9, 2020

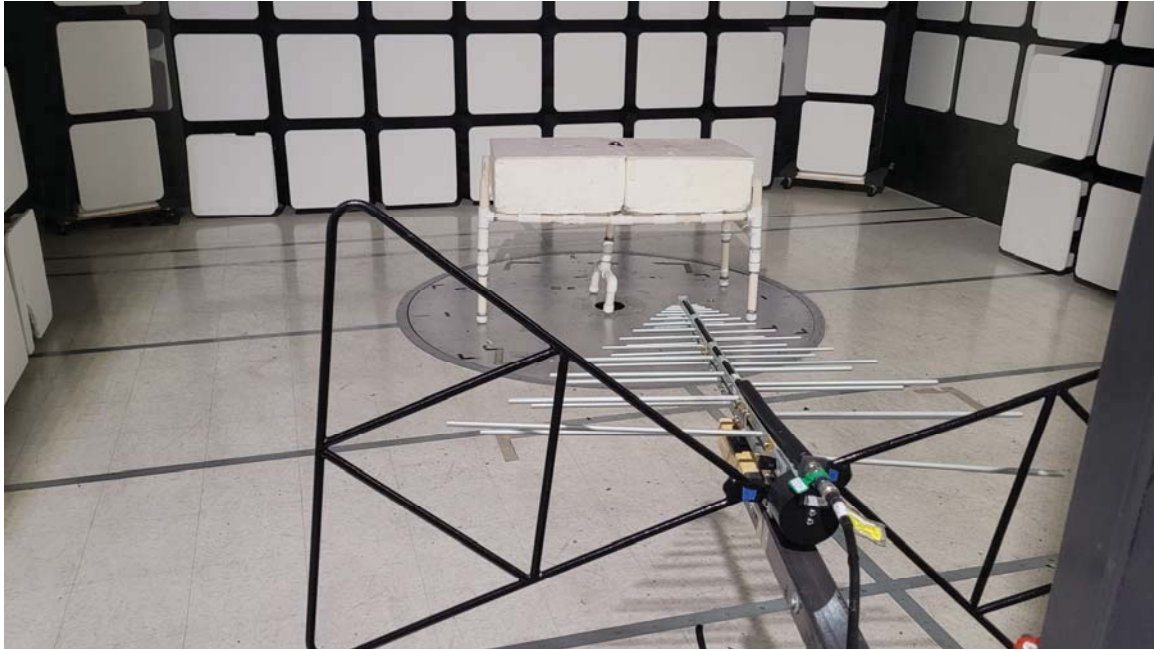
FREQUENCY (GHz)	FACTOR (dB)
18.0	26.88
19.0	25.52
20.0	26.26
21.0	24.96
22.0	24.74
23.0	25.45
24.0	26.65
25.0	26.02
26.0	27.16
26.5	28.08



FRONT VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – BATTERY MODE – BELOW 1 GHz

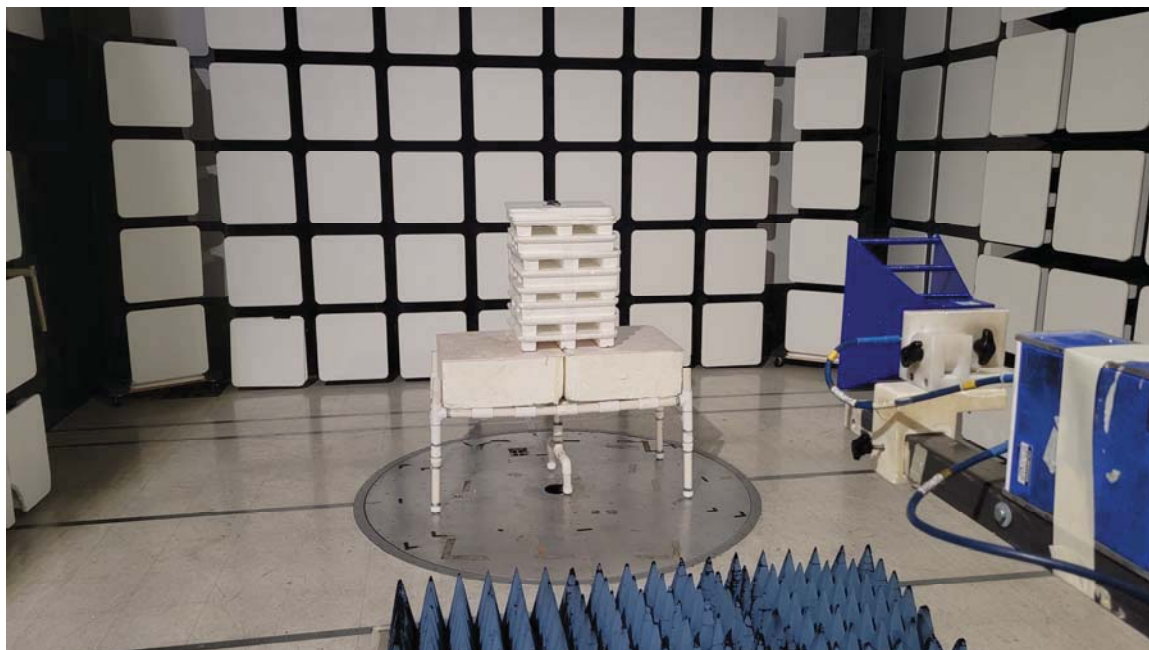
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – BATTERY MODE – BELOW 1 GHz

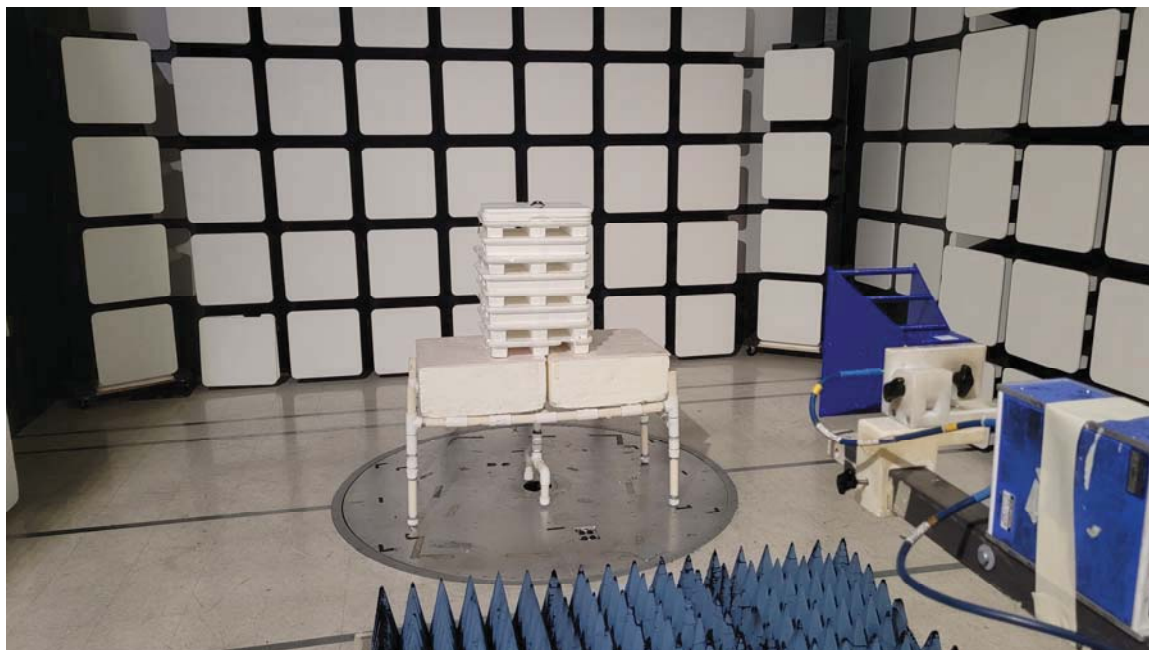
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – BATTERY MODE – ABOVE 1 GHz

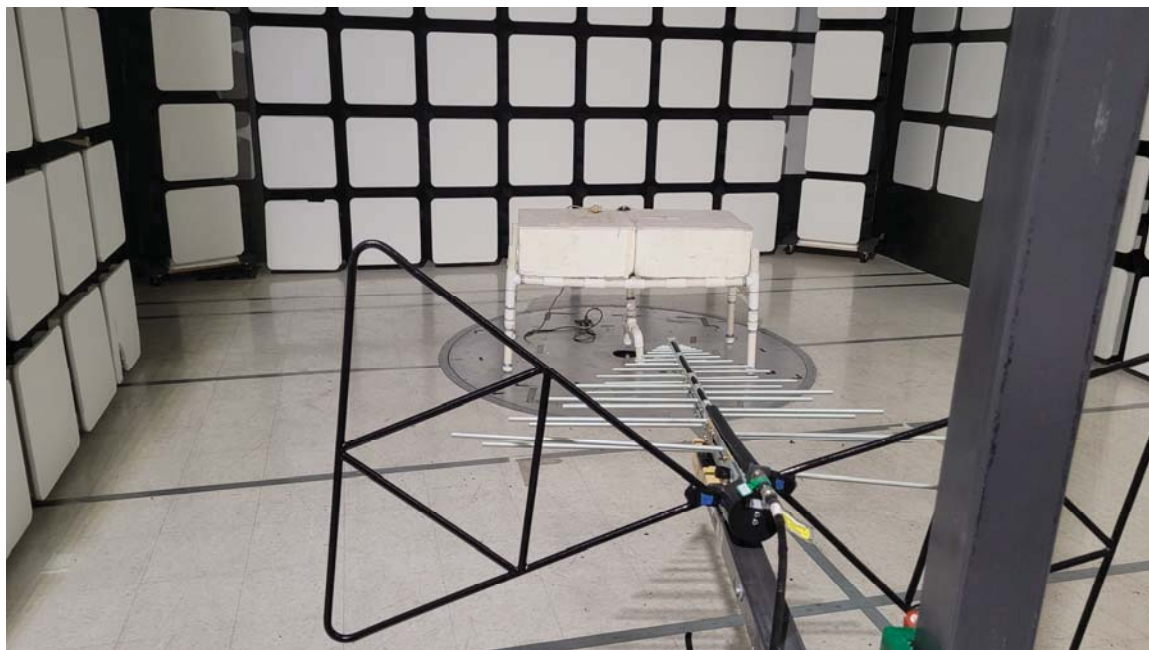
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – BATTERY MODE – ABOVE 1 GHz

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



FRONT VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – AC MODE – BELOW 1 GHz

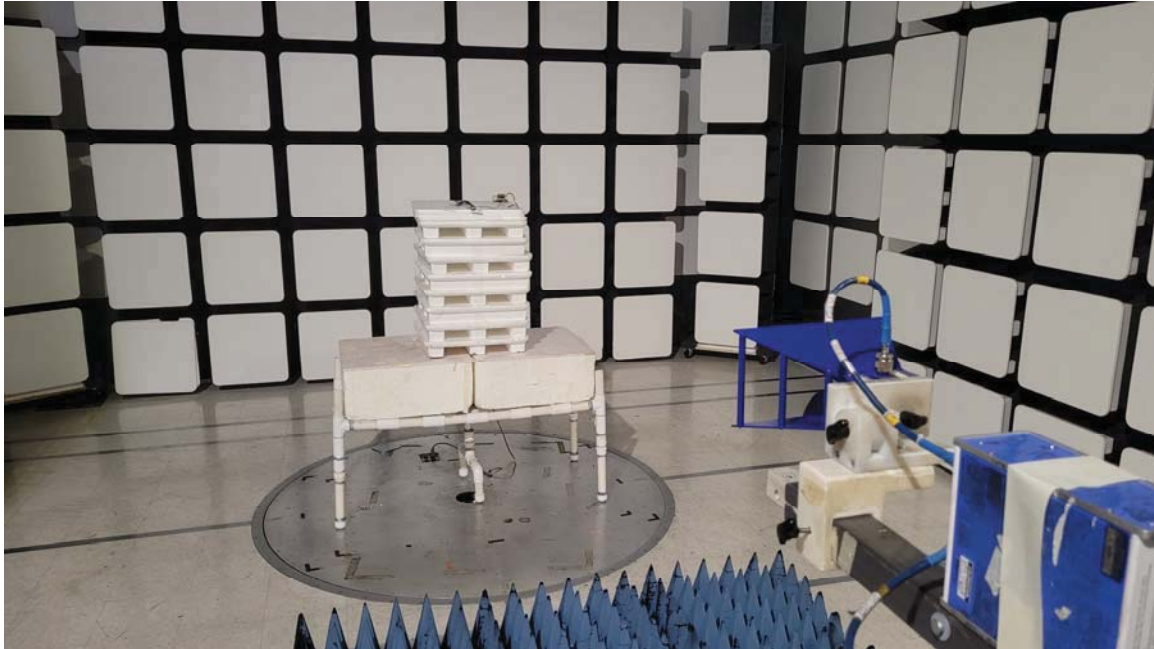
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – AC MODE – BELOW 1 GHz

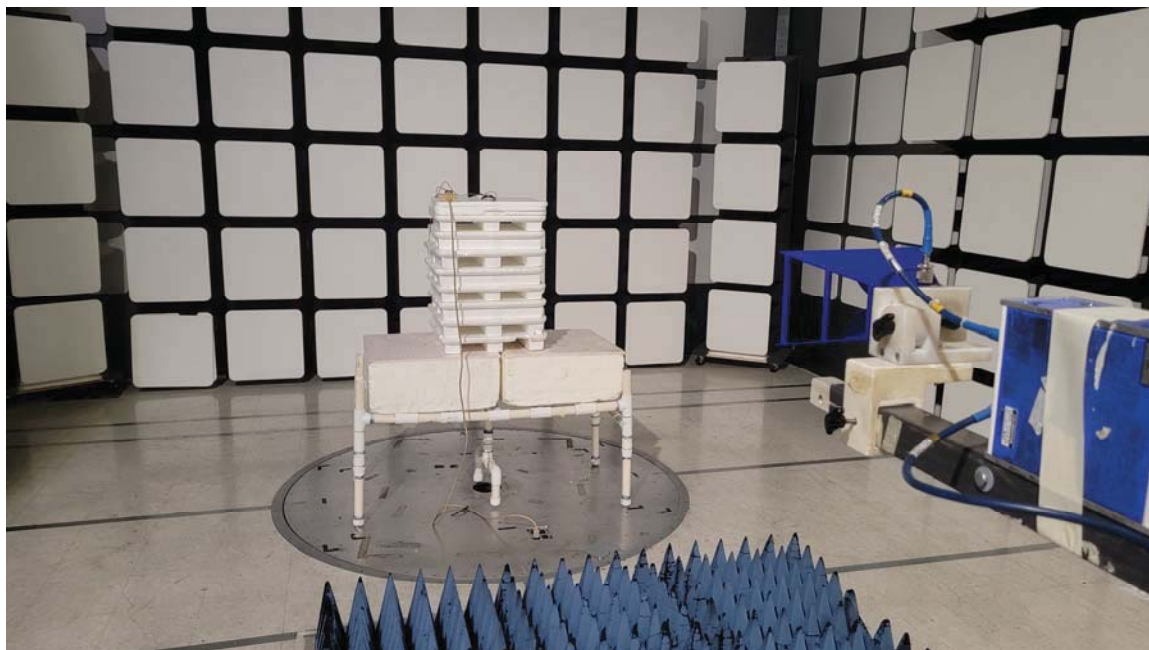
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – AC MODE – ABOVE 1 GHz

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



REAR VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
RADIATED EMISSIONS – AC MODE – ABOVE 1 GHz

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



FRONT VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
CONDUCTED EMISSIONS – AC MODE

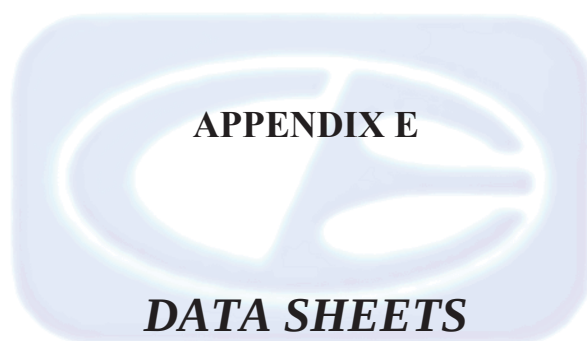
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

HINGE HEALTH, INC.
HINGE SENSOR
MODEL: H4
FCC SUBPART B AND C
CONDUCTED EMISSIONS – AC MODE

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

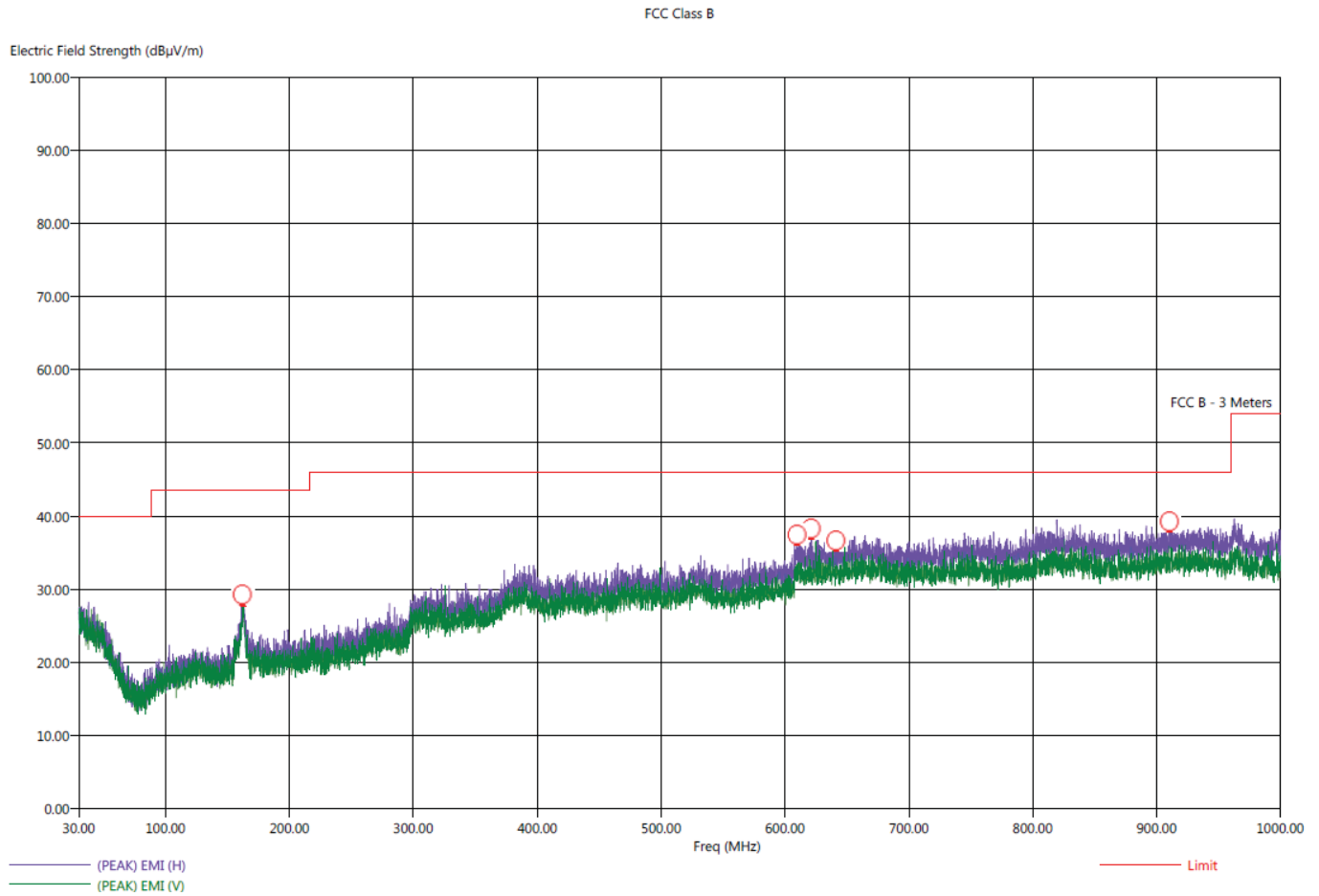


RADIATED EMISSIONS

DATA SHEETS

Title: Pre-Scan - FCC Class B
File: 1 - RS - Pre-Scan - Tx Mode - FCC Class B - Battery Mode.set
Operator: Kye Fujimoto
EUT Type: Hinge Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Company: Hinge Health, Inc.
Model: H4
S/N: N/A
Battery Mode

4/8/2022 1:47:58 PM
Sequence: Preliminary Scan





FCC Part 15 Subpart B and C; and FCC Section 15.249 Test Report
Hinge Sensor
Model: H4

Title: Radiated Final - FCC Class B
 File: 1 - RS - Final Scan - Tx Mode - FCC Class B - Battery Mode.set
 Operator: Kyle Fujimoto
 EUT Type: Hinge Health
 EUT Condition: The EUT is continuously transmitting at the low channel
 Company: Hinge Health, Inc.
 Model: H4
 S/N: N/A
 Battery Mode

4/8/2022 1:57:35 PM
 Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(OP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
161.90	V	31.10	25.83	-12.40	-17.67	43.50	22.41	1.07	88.25	111.34
162.80	V	30.47	25.72	-13.03	-17.78	43.50	22.37	1.07	26.50	334.86
609.70	H	37.34	31.97	-8.66	-14.03	46.00	24.80	2.07	32.25	302.32
621.30	H	36.71	31.79	-9.29	-14.21	46.00	24.72	2.09	235.25	382.02
641.20	H	37.63	32.03	-8.37	-13.97	46.00	25.10	2.12	219.75	382.26
910.50	H	39.75	33.72	-6.25	-12.28	46.00	28.10	2.64	17.75	254.80



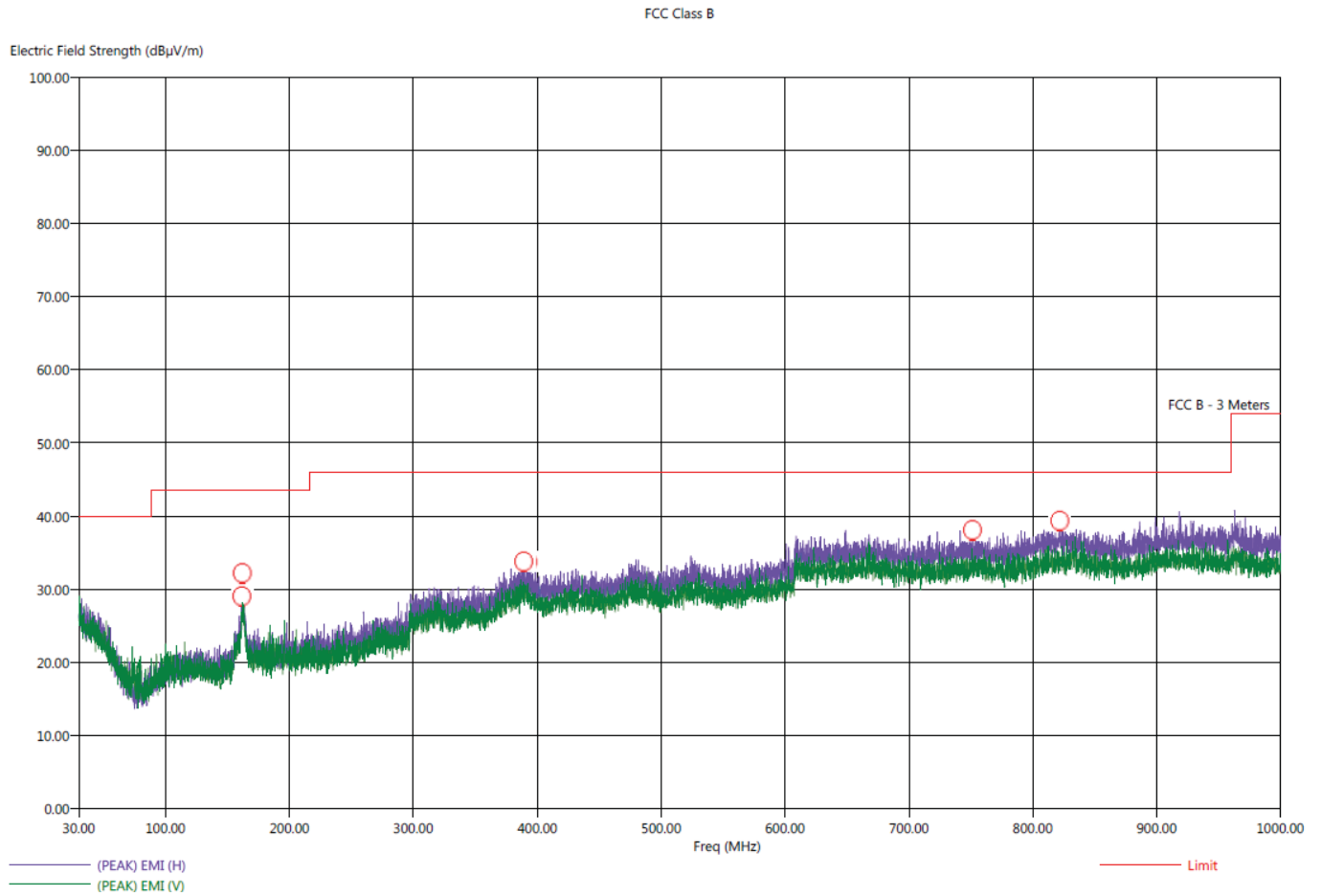
Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

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

Title: Pre-Scan - FCC Class B
File: 2 - RS - Pre-Scan - Tx Mode - FCC Class B - AC Power Mode.set
Operator: Kye Fujimoto
EUT Type: Hinge Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Company: Hinge Health, Inc.
Model: H4
S/N: N/A
AC Power Mode

4/8/2022 2:28:02 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 2 - RS - Final Scan - Tx Mode - FCC Class B - AC Power Mode.set
Operator: Kyle Fujimoto
EUT Type: Hinge Health
EUT Condition: The EUT is continuously transmitting at the low channel
Company: Hinge Health, Inc.
Model: H4
S/N: N/A
AC Power Mode

4/8/2022 2:37:11 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(OP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
161.50	H	30.57	25.24	-12.93	-18.26	43.50	21.70	1.07	241.25	191.04
162.00	H	32.72	26.44	-10.78	-17.06	43.50	22.89	1.07	31.25	238.50
389.20	H	34.66	28.81	-11.34	-17.19	46.00	23.60	1.69	298.75	318.26
392.50	H	33.39	28.44	-12.61	-17.56	46.00	23.22	1.70	274.75	110.50
751.50	H	37.68	32.80	-8.32	-13.20	46.00	26.40	2.35	320.00	292.23
821.90	H	39.47	33.90	-6.53	-12.10	46.00	27.60	2.55	155.50	159.22



**FUNDAMENTAL AND HARMONICS
BATTERY MODE
*DATA SHEETS***



FCC 15.249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Fundamental Low Channel - Battery Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

[illegible]



FCC 15.249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Fundamental Middle Channel - Battery Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

[illegible]



FCC 15.249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Fundamental High Channel - Battery Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

[illegible]

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - X-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	38.84	V	73.97	-35.13	Peak	235.50	111.34	
4804.00	18.84	V	53.97	-35.13	Avg	235.50	111.34	
7206.00	43.96	V	73.97	-30.01	Peak	301.75	110.98	
7206.00	23.96	V	53.97	-30.01	Avg	301.75	110.98	
9608.00	45.33	V	73.97	-28.64	Peak	101.75	189.01	
9608.00	25.33	V	53.97	-28.64	Avg	101.75	189.01	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Y-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.31	V	73.97	-32.66	Peak	95.50	111.16	
4804.00	21.31	V	53.97	-32.66	Avg	95.50	111.16	
7206.00	44.70	V	73.97	-29.27	Peak	287.25	224.17	
7206.00	24.70	V	53.97	-29.27	Avg	287.25	224.17	
9608.00	45.91	V	73.97	-28.06	Peak	284.00	143.22	
9608.00	25.91	V	53.97	-28.06	Avg	284.00	143.22	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Z-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	40.39	V	73.97	-33.58	Peak	306.75	143.16	
4804.00	20.39	V	53.97	-33.58	Avg	306.75	143.16	
7206.00	44.90	V	73.97	-29.07	Peak	313.50	207.28	
7206.00	24.90	V	53.97	-29.07	Avg	313.50	207.28	
9608.00	46.26	V	73.97	-27.71	Peak	292.50	249.91	
9608.00	26.26	V	53.97	-27.71	Avg	292.50	249.91	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - X-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.39	H	73.97	-32.58	Peak	188.75	127.34	
4804.00	21.39	H	53.97	-32.58	Avg	188.75	127.34	
7206.00	42.94	H	73.97	-31.03	Peak	146.50	249.92	
7206.00	22.94	H	53.97	-31.03	Avg	146.50	249.92	
9608.00	44.74	H	73.97	-29.23	Peak	94.75	143.88	
9608.00	24.74	H	53.97	-29.23	Avg	94.75	143.88	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Y-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	38.71	H	73.97	-35.26	Peak	308.00	111.46	
4804.00	18.71	H	53.97	-35.26	Avg	308.00	111.46	
7206.00	44.58	H	73.97	-29.39	Peak	289.00	249.91	
7206.00	24.58	H	53.97	-29.39	Avg	289.00	249.91	
9608.00	42.25	H	73.97	-31.72	Peak	325.00	248.25	
9608.00	22.25	H	53.97	-31.72	Avg	325.00	248.25	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Z-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	40.48	H	73.97	-33.49	Peak	212.00	128.35	
4804.00	20.48	H	53.97	-33.49	Avg	212.00	128.35	
7206.00	44.30	H	73.97	-29.67	Peak	45.00	191.10	
7206.00	24.30	H	53.97	-29.67	Avg	45.00	191.10	
9608.00	45.12	H	73.97	-28.85	Peak	64.50	191.16	
9608.00	25.12	H	53.97	-28.85	Avg	64.50	191.16	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249

Hinge Health, Inc.
Hinge Sensor
Model: H4
Middle Channel - Transmit Mode - X-Axis
Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	39.54	V	73.97	-34.43	Peak	225.75	159.94	
4880.00	19.54	V	53.97	-34.43	Avg	225.75	159.94	
7320.00	45.20	V	73.97	-28.77	Peak	289.00	143.28	
7320.00	25.20	V	53.97	-28.77	Avg	289.00	143.28	
9760.00	46.69	V	73.97	-27.28	Peak	19.75	111.40	
9760.00	26.69	V	53.97	-27.28	Avg	19.75	111.40	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - Y-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	38.99	V	73.97	-34.98	Peak	287.50	239.88	
4880.00	18.99	V	53.97	-34.98	Avg	287.50	239.88	
7320.00	43.47	V	73.97	-30.50	Peak	225.75	238.86	
7320.00	23.47	V	53.97	-30.50	Avg	225.75	238.86	
9760.00	47.83	V	73.97	-26.14	Peak	279.00	192.83	
9760.00	27.83	V	53.97	-26.14	Avg	279.00	192.83	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - Z-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	40.96	V	73.97	-33.01	Peak	23.50	159.10	
4880.00	20.96	V	53.97	-33.01	Avg	23.50	159.10	
7320.00	45.47	V	73.97	-28.50	Peak	323.00	238.86	
7320.00	25.47	V	53.97	-28.50	Avg	323.00	238.86	
9760.00	46.78	V	73.97	-27.19	Peak	282.00	223.34	
9760.00	26.78	V	53.97	-27.19	Avg	282.00	223.34	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - X-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	41.25	H	73.97	-32.72	Peak	34.00	191.22	
4880.00	21.25	H	53.97	-32.72	Avg	34.00	191.22	
7320.00	45.02	H	73.97	-28.95	Peak	247.00	111.94	
7320.00	25.02	H	53.97	-28.95	Avg	247.00	111.94	
9760.00	47.46	H	73.97	-26.51	Peak	33.25	127.46	
9760.00	27.46	H	53.97	-26.51	Avg	33.25	127.46	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - Y-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	40.71	H	73.97	-33.26	Peak	331.75	207.64	
4880.00	20.71	H	53.97	-33.26	Avg	331.75	207.64	
7320.00	43.91	H	73.97	-30.06	Peak	280.75	249.98	
7320.00	23.91	H	53.97	-30.06	Avg	280.75	249.98	
9760.00	47.46	H	73.97	-26.51	Peak	12.50	238.86	
9760.00	27.46	H	53.97	-26.51	Avg	12.50	238.86	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - Z-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	40.82	H	73.97	-33.15	Peak	232.50	191.52	
4880.00	20.82	H	53.97	-33.15	Avg	232.50	191.52	
7320.00	43.92	H	73.97	-30.05	Peak	38.25	127.16	
7320.00	23.92	H	53.97	-30.05	Avg	38.25	127.16	
9760.00	46.49	H	73.97	-27.48	Peak	275.75	143.16	
9760.00	26.49	H	53.97	-27.48	Avg	275.75	143.16	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - X-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	40.03	V	73.97	-33.94	Peak	17.50	223.04	
4960.00	20.03	V	53.97	-33.94	Avg	17.50	223.04	
7440.00	44.68	V	73.97	-29.29	Peak	123.25	191.58	
7440.00	24.68	V	53.97	-29.29	Avg	123.25	191.58	
9920.00	46.77	V	73.97	-27.20	Peak	43.00	249.98	
9920.00	26.77	V	53.97	-27.20	Avg	43.00	249.98	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.249

Hinge Health, Inc.
Hinge Sensor
Model: H4
High Channel - Transmit Mode - Y-Axis
Battery Mode

Date: 04/07/2022
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	38.74	V	73.97	-35.23	Peak	319.25	207.52	
4960.00	18.74	V	53.97	-35.23	Avg	319.25	207.52	
7440.00	44.07	V	73.97	-29.90	Peak	33.50	249.92	
7440.00	24.07	V	53.97	-29.90	Avg	33.50	249.92	
9920.00	45.58	V	73.97	-28.39	Peak	83.50	175.28	
9920.00	25.58	V	53.97	-28.39	Avg	83.50	175.28	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - Z-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	39.68	V	73.97	-34.29	Peak	358.00	160.47	
4960.00	19.68	V	53.97	-34.29	Avg	358.00	160.47	
7440.00	45.62	V	73.97	-28.35	Peak	1.50	175.28	
7440.00	25.62	V	53.97	-28.35	Avg	1.50	175.28	
9920.00	46.73	V	73.97	-27.24	Peak	264.50	160.11	
9920.00	26.73	V	53.97	-27.24	Avg	264.50	160.11	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - X-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	37.86	H	73.97	-36.11	Peak	254.25	188.59	
4960.00	17.86	H	53.97	-36.11	Avg	254.25	188.59	
7440.00	44.10	H	73.97	-29.87	Peak	246.00	174.80	
7440.00	24.10	H	53.97	-29.87	Avg	246.00	174.80	
9920.00	47.07	H	73.97	-26.90	Peak	181.25	241.97	
9920.00	27.07	H	53.97	-26.90	Avg	181.25	241.97	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - Y-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	40.21	H	73.97	-33.76	Peak	325.50	142.86	
4960.00	20.21	H	53.97	-33.76	Avg	325.50	142.86	
7440.00	44.78	H	73.97	-29.19	Peak	331.00	190.80	
7440.00	24.78	H	53.97	-29.19	Avg	331.00	190.80	
9920.00	47.16	H	73.97	-26.81	Peak	279.50	237.43	
9920.00	27.16	H	53.97	-26.81	Avg	279.50	237.43	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - Z-Axis

Battery Mode

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	38.38	H	73.97	-35.59	Peak	88.75	159.22	
4960.00	18.38	H	53.97	-35.59	Avg	88.75	159.22	
7440.00	44.51	H	73.97	-29.46	Peak	33.25	160.65	
7440.00	24.51	H	53.97	-29.46	Avg	33.25	160.65	
9920.00	47.49	H	73.97	-26.48	Peak	164.75	159.94	
9920.00	27.49	H	53.97	-26.48	Avg	164.75	159.94	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected



FCC 15,249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Date: 04/07/2022

Lab: D

Tested By: Kyle Fujimoto

Digital Portion of the Tx from 9 kHz to 30 MHz and 1 GHz to 25 GHz

Non-Harmonic Emissions of the Tx from 9 kHz to 30 MHz and 1 GHz to 25 GHz

[illegible]

**FUNDAMENTAL AND HARMONICS
AC MODE
*DATA SHEETS***



FCC 15.249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Fundamental Low Channel - AC mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

[illegible]



FCC 15.249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Fundamental Middle Channel - AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

[illegible]



FCC 15.249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Fundamental High Channel - AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

[illegible]

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - X-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	38.94	V	73.97	-35.03	Peak	347.50	186.50	
4804.00	18.94	V	53.97	-35.03	Avg	347.50	186.50	
7206.00	44.75	V	73.97	-29.22	Peak	72.75	127.46	
7206.00	24.75	V	53.97	-29.22	Avg	72.75	127.46	
9608.00	46.66	V	73.97	-27.31	Peak	0.00	239.04	
9608.00	26.66	V	53.97	-27.31	Avg	0.00	239.04	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Y-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.90	V	73.97	-32.07	Peak	38.50	111.34	
4804.00	21.90	V	53.97	-32.07	Avg	38.50	111.34	
7206.00	42.70	V	73.97	-31.27	Peak	82.00	143.16	
7206.00	22.70	V	53.97	-31.27	Avg	82.00	143.16	
9608.00	46.62	V	73.97	-27.35	Peak	265.00	127.16	
9608.00	26.62	V	53.97	-27.35	Avg	265.00	127.16	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Z-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	40.19	V	73.97	-33.78	Peak	317.00	159.46	
4804.00	20.19	V	53.97	-33.78	Avg	317.00	159.46	
7206.00	45.15	V	73.97	-28.82	Peak	305.25	143.04	
7206.00	25.15	V	53.97	-28.82	Avg	305.25	143.04	
9608.00	45.39	V	73.97	-28.58	Peak	179.50	190.92	
9608.00	25.39	V	53.97	-28.58	Avg	179.50	190.92	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - X-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.85	H	73.97	-32.12	Peak	60.50	144.53	
4804.00	21.85	H	53.97	-32.12	Avg	60.50	144.53	
7206.00	43.86	H	73.97	-30.11	Peak	251.50	143.16	
7206.00	23.86	H	53.97	-30.11	Avg	251.50	143.16	
9608.00	45.25	H	73.97	-28.72	Peak	81.00	152.47	
9608.00	25.25	H	53.97	-28.72	Avg	81.00	152.47	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Y-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	39.75	H	73.97	-34.22	Peak	323.50	159.10	
4804.00	19.75	H	53.97	-34.22	Avg	323.50	159.10	
7206.00	45.59	H	73.97	-28.38	Peak	344.50	127.40	
7206.00	25.59	H	53.97	-28.38	Avg	344.50	127.40	
9608.00	47.03	H	73.97	-26.94	Peak	249.50	111.40	
9608.00	27.03	H	53.97	-26.94	Avg	249.50	111.40	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Low Channel - Transmit Mode - Z-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	40.05	H	73.97	-33.92	Peak	182.50	191.34	
4804.00	20.05	H	53.97	-33.92	Avg	182.50	191.34	
7206.00	43.58	H	73.97	-30.39	Peak	33.00	223.22	
7206.00	23.58	H	53.97	-30.39	Avg	33.00	223.22	
9608.00	46.14	H	73.97	-27.83	Peak	120.00	249.97	
9608.00	26.14	H	53.97	-27.83	Avg	120.00	249.97	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - X-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	40.56	V	73.97	-33.41	Peak	22.75	207.10	
4880.00	20.56	V	53.97	-33.41	Avg	22.75	207.10	
7320.00	44.54	V	73.97	-29.43	Peak	292.50	159.58	
7320.00	24.54	V	53.97	-29.43	Avg	292.50	159.58	
9760.00	47.13	V	73.97	-26.84	Peak	89.00	222.92	
9760.00	27.13	V	53.97	-26.84	Avg	89.00	222.92	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - Y-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	38.54	V	73.97	-35.43	Peak	54.75	239.28	
4880.00	18.54	V	53.97	-35.43	Avg	54.75	239.28	
7320.00	43.70	V	73.97	-30.27	Peak	193.25	249.92	
7320.00	23.70	V	53.97	-30.27	Avg	193.25	249.92	
9760.00	46.92	V	73.97	-27.05	Peak	97.50	111.22	
9760.00	26.92	V	53.97	-27.05	Avg	97.50	111.22	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.249

Hinge Health, Inc.
Hinge Sensor
Model: H4
Middle Channel - Transmit Mode - Z-Axis
AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	41.75	V	73.97	-32.22	Peak	312.00	222.92	
4880.00	21.75	V	53.97	-32.22	Avg	312.00	222.92	
7320.00	44.77	V	73.97	-29.20	Peak	10.00	223.16	
7320.00	24.77	V	53.97	-29.20	Avg	10.00	223.16	
9760.00	47.67	V	73.97	-26.30	Peak	133.75	190.92	
9760.00	27.67	V	53.97	-26.30	Avg	133.75	190.92	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - X-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	41.13	H	73.97	-32.84	Peak	59.50	127.22	
4880.00	21.13	H	53.97	-32.84	Avg	59.50	127.22	
7320.00	42.65	H	73.97	-31.32	Peak	253.00	159.34	
7320.00	22.65	H	53.97	-31.32	Avg	253.00	159.34	
9760.00	46.43	H	73.97	-27.54	Peak	37.25	127.34	
9760.00	26.43	H	53.97	-27.54	Avg	37.25	127.34	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.249

Hinge Health, Inc.
Hinge Sensor
Model: H4
Middle Channel - Transmit Mode - Y-Axis
AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	41.68	H	73.97	-32.29	Peak	163.00	191.16	
4880.00	21.68	H	53.97	-32.29	Avg	163.00	191.16	
7320.00	44.00	H	73.97	-29.97	Peak	117.75	111.10	
7320.00	24.00	H	53.97	-29.97	Avg	117.75	111.10	
9760.00	46.97	H	73.97	-27.00	Peak	229.50	143.16	
9760.00	26.97	H	53.97	-27.00	Avg	229.50	143.16	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

Middle Channel - Transmit Mode - Z-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	40.81	H	73.97	-33.16	Peak	50.00	111.10	
4880.00	20.81	H	53.97	-33.16	Avg	50.00	111.10	
7320.00	45.30	H	73.97	-28.67	Peak	103.75	237.13	
7320.00	25.30	H	53.97	-28.67	Avg	103.75	237.13	
9760.00	47.36	H	73.97	-26.61	Peak	160.25	241.97	
9760.00	27.36	H	53.97	-26.61	Avg	160.25	241.97	
12200.00								No Emission
12200.00								Detected
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - X-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	38.41	V	73.97	-35.56	Peak	150.00	127.76	
4960.00	18.41	V	53.97	-35.56	Avg	150.00	127.76	
7440.00	45.17	V	73.97	-28.80	Peak	114.75	143.16	
7440.00	25.17	V	53.97	-28.80	Avg	114.75	143.16	
9920.00	46.64	V	73.97	-27.33	Peak	104.50	127.40	
9920.00	26.64	V	53.97	-27.33	Avg	104.50	127.40	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - Y-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	38.68	V	73.97	-35.29	Peak	313.00	142.98	
4960.00	18.68	V	53.97	-35.29	Avg	313.00	142.98	
7440.00	44.39	V	73.97	-29.58	Peak	83.00	160.41	
7440.00	24.39	V	53.97	-29.58	Avg	83.00	160.41	
9920.00	47.23	V	73.97	-26.74	Peak	168.00	175.58	
9920.00	27.23	V	53.97	-26.74	Avg	168.00	175.58	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - Z-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	40.33	V	73.97	-33.64	Peak	183.75	127.16	
4960.00	20.33	V	53.97	-33.64	Avg	183.75	127.16	
7440.00	45.79	V	73.97	-28.18	Peak	159.25	143.64	
7440.00	25.79	V	53.97	-28.18	Avg	159.25	143.64	
9920.00	47.53	V	73.97	-26.44	Peak	254.00	127.88	
9920.00	27.53	V	53.97	-26.44	Avg	254.00	127.88	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - X-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	38.02	H	73.97	-35.95	Peak	145.75	227.82	
4960.00	18.02	H	53.97	-35.95	Avg	145.75	227.82	
7440.00	43.80	H	73.97	-30.17	Peak	215.75	127.40	
7440.00	23.80	H	53.97	-30.17	Avg	215.75	127.40	
9920.00	47.10	H	73.97	-26.87	Peak	81.75	143.52	
9920.00	27.10	H	53.97	-26.87	Avg	81.75	143.52	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - Y-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	40.55	H	73.97	-33.42	Peak	136.00	159.28	
4960.00	20.55	H	53.97	-33.42	Avg	136.00	159.28	
7440.00	45.36	H	73.97	-28.61	Peak	108.75	190.86	
7440.00	25.36	H	53.97	-28.61	Avg	108.75	190.86	
9920.00	46.05	H	73.97	-27.92	Peak	359.75	206.92	
9920.00	26.05	H	53.97	-27.92	Avg	359.75	206.92	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

High Channel - Transmit Mode - Z-Axis

AC Mode

Date: 04/08/2022

Lab: D

Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	38.96	H	73.97	-35.01	Peak	118.00	158.92	
4960.00	18.96	H	53.97	-35.01	Avg	118.00	158.92	
7440.00	43.81	H	73.97	-30.16	Peak	317.50	238.92	
7440.00	23.81	H	53.97	-30.16	Avg	317.50	238.92	
9920.00	47.18	H	73.97	-26.79	Peak	114.75	143.16	
9920.00	27.18	H	53.97	-26.79	Avg	114.75	143.16	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected



FCC 15.249

Hinge Health

Hinge Sensor

Model: H4

Date: 04/08/2022

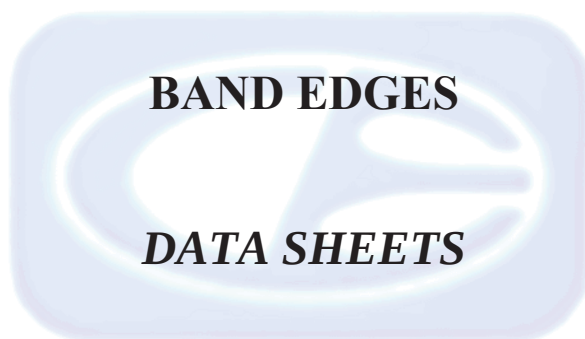
Lab: D

Tested By: Kyle Fujimoto

Digital Portion of the Tx from 9 kHz to 30 MHz and 1 GHz to 25 GHz

Non-Harmonic Emissions of the Tx from 9 kHz to 30 MHz and 1 GHz to 25 GHz

[illegible]



**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

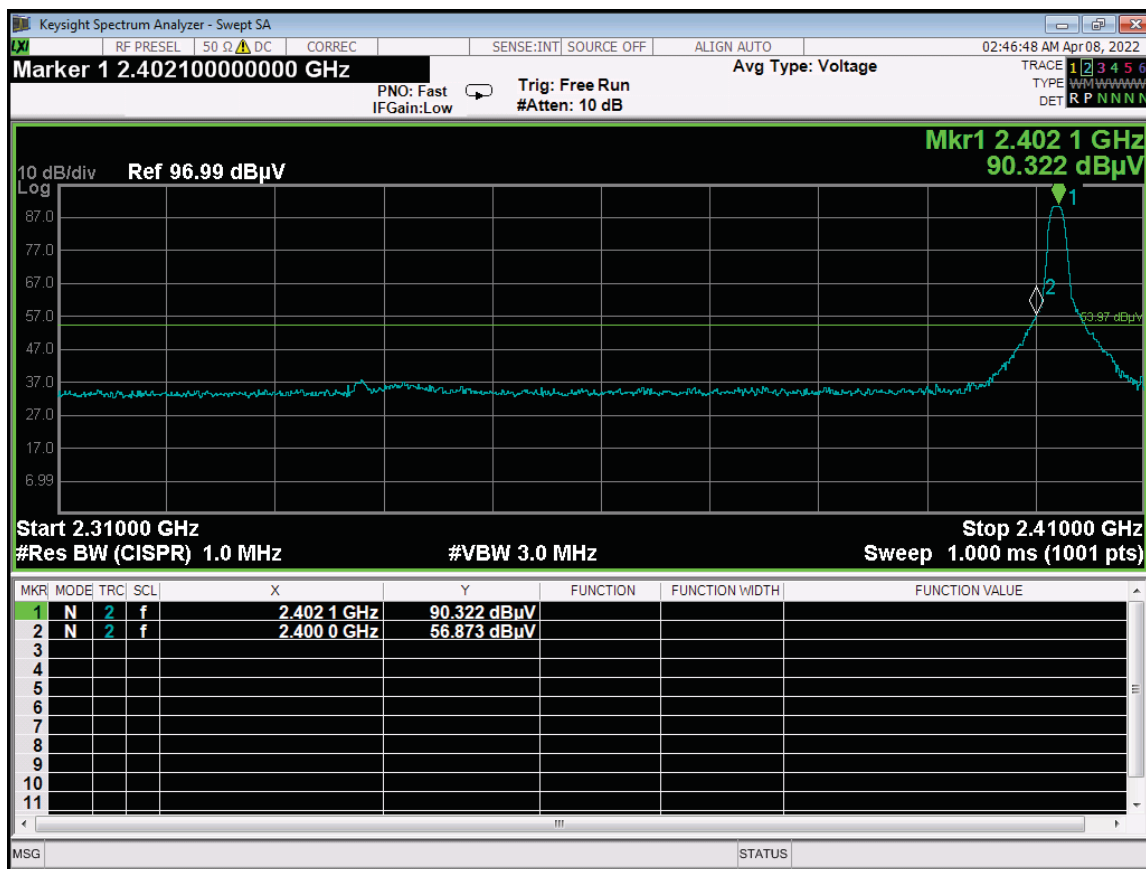
Band Edges - Battery Mode

Date: 04/08/2022

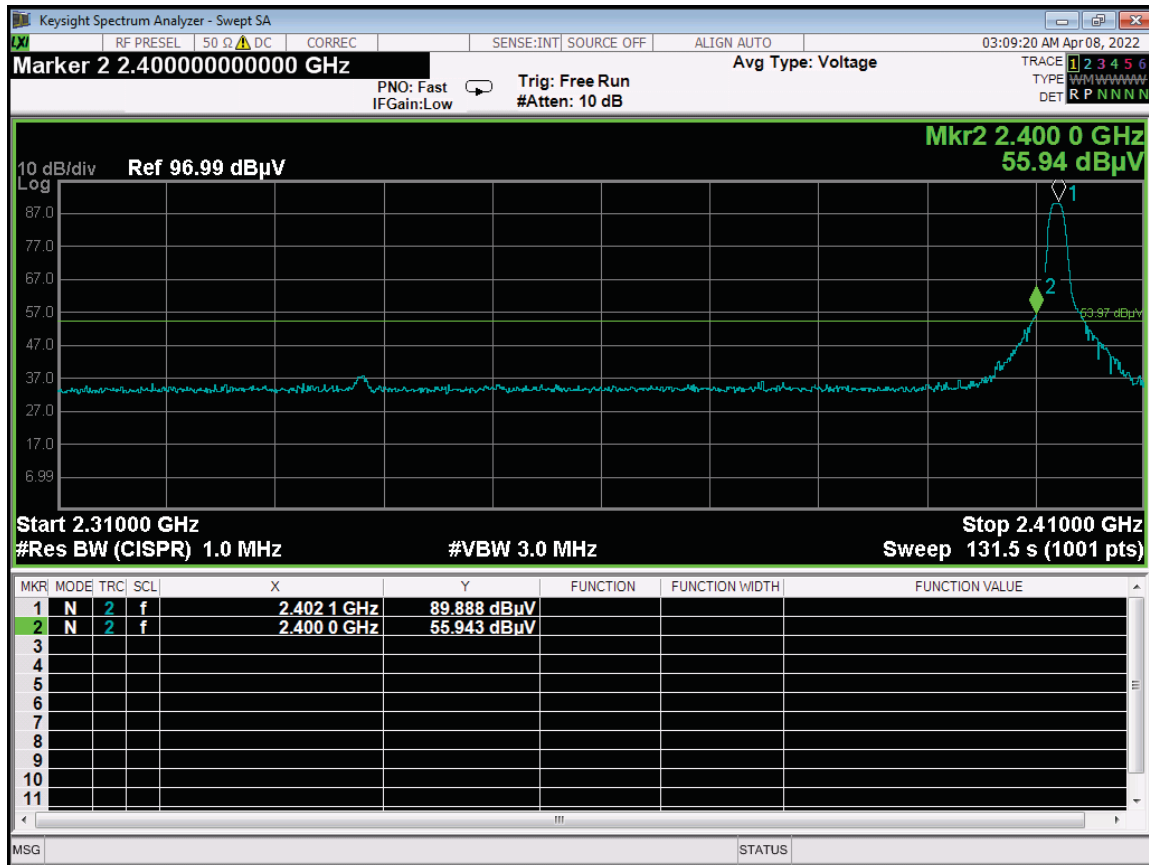
Lab: D

Tested By: Kyle Fujimoto

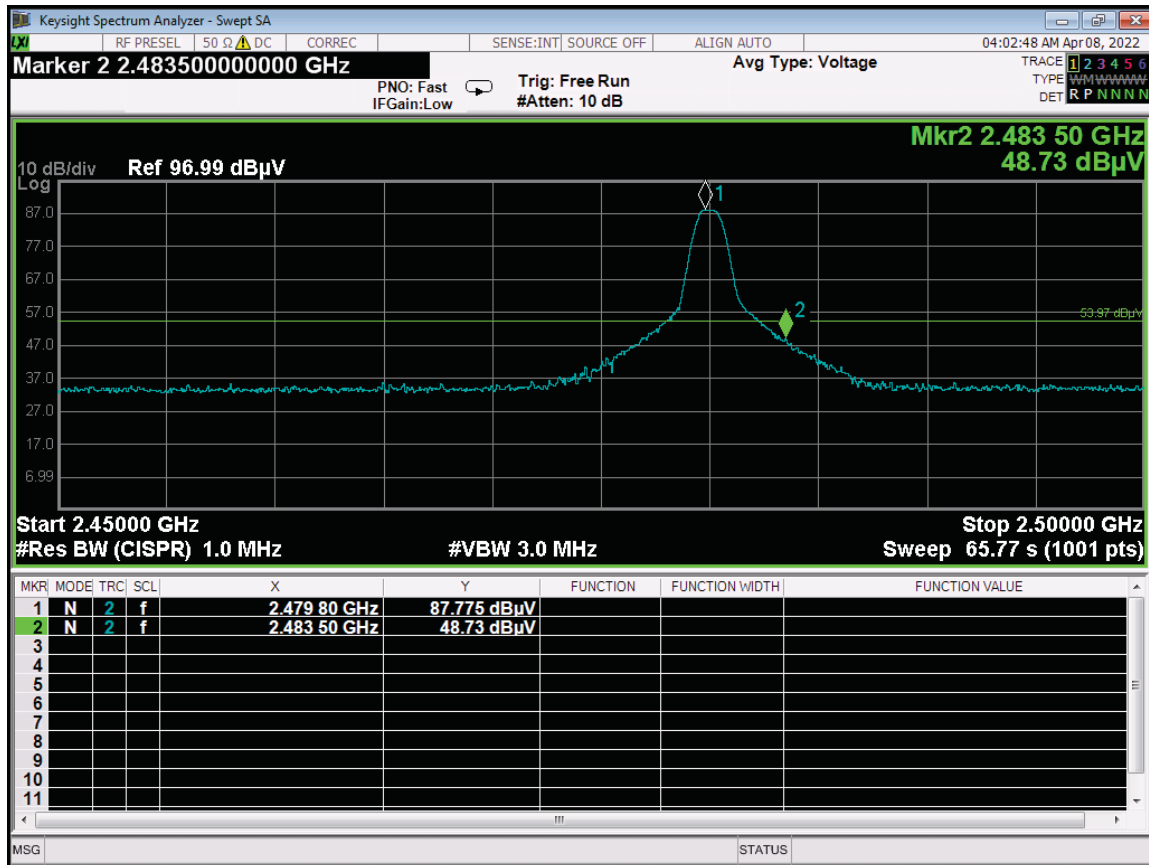
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	90.32	H	113.97	-23.65	Peak	196.25	163.46	Fundamental - Low Ch.
2402.00	70.32	H	93.97	-23.65	Avg	196.25	163.46	X-Axis - Worst Case
2400.00	56.87	H	73.97	-17.10	Peak	196.25	163.46	Band Edge
2400.00	36.87	H	53.97	-17.10	Avg	196.25	163.46	X-Axis - Worst Case
2402.00	89.89	V	113.97	-24.08	Peak	54.00	164.35	Fundamental - Low Ch.
2402.00	69.89	V	93.97	-24.08	Avg	54.00	164.35	Z-Axis - Worst Case
2400.00	55.94	V	73.97	-18.03	Peak	54.00	164.35	Band Edge
2400.00	35.94	V	53.97	-18.03	Avg	54.00	164.35	Z-Axis - Worst Case
2480.00	87.78	H	113.97	-26.20	Peak	16.75	192.35	Fundamental - High Ch.
2480.00	67.78	H	93.97	-26.20	Avg	16.75	192.35	X-Axis - Worst Case
2483.50	48.73	H	73.97	-25.24	Peak	16.75	192.35	Band Edge
2483.50	28.73	H	53.97	-25.24	Avg	16.75	192.35	X-Axis - Worst Case
2480.00	87.25	V	113.97	-26.72	Peak	234.50	143.70	Fundamental - High Ch.
2480.00	67.25	V	93.97	-26.72	Avg	234.50	143.70	Z-Axis - Worst Case
2483.50	48.07	V	73.97	-25.90	Peak	234.50	143.70	Band Edge
2483.50	28.07	V	53.97	-25.90	Avg	234.50	143.70	Z-Axis - Worst Case



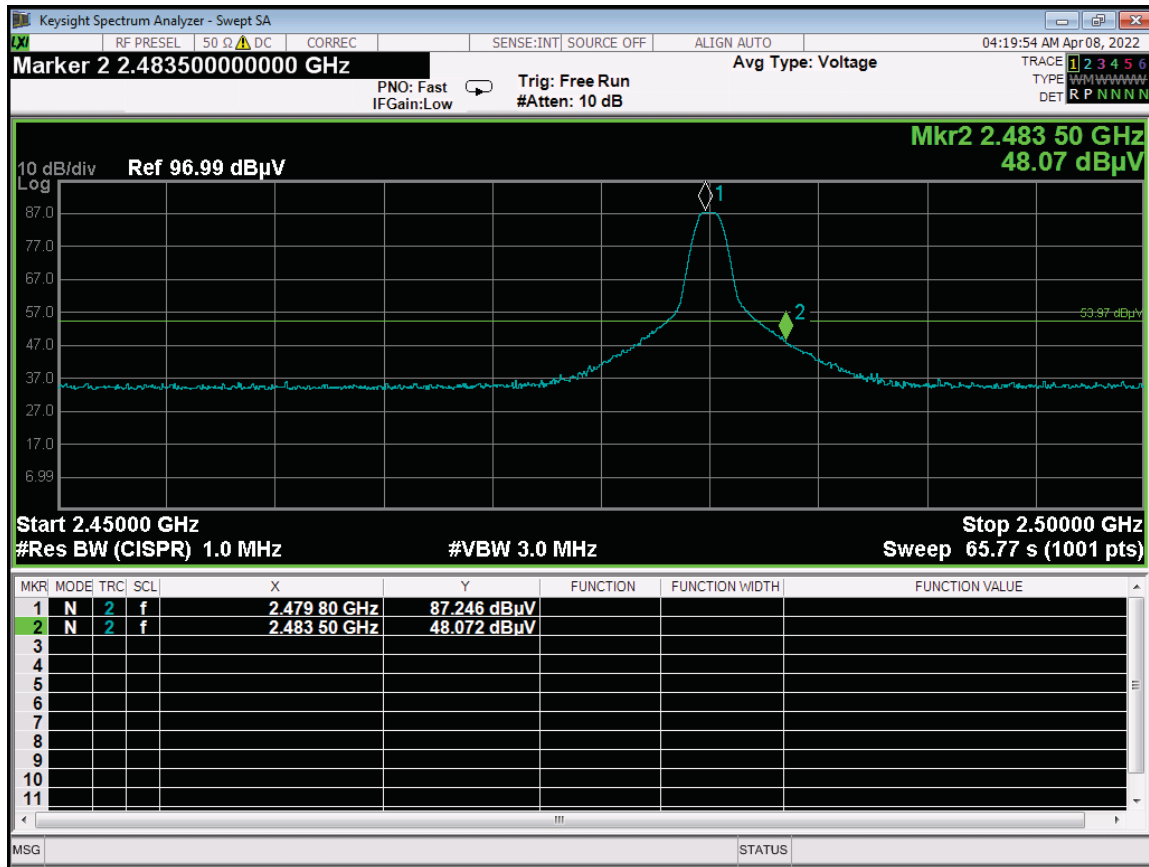
Band Edge – Low Channel – Horizontal Polarization – Battery Mode – X-Axis



Band Edge – Low Channel – Vertical Polarization – Battery Mode – Z-Axis



Band Edge – High Channel – Horizontal Polarization – Battery Mode – X-Axis



Band Edge – High Channel – Vertical Polarization – Battery Mode – Z-Axis

**FCC 15.249**

Hinge Health, Inc.

Hinge Sensor

Model: H4

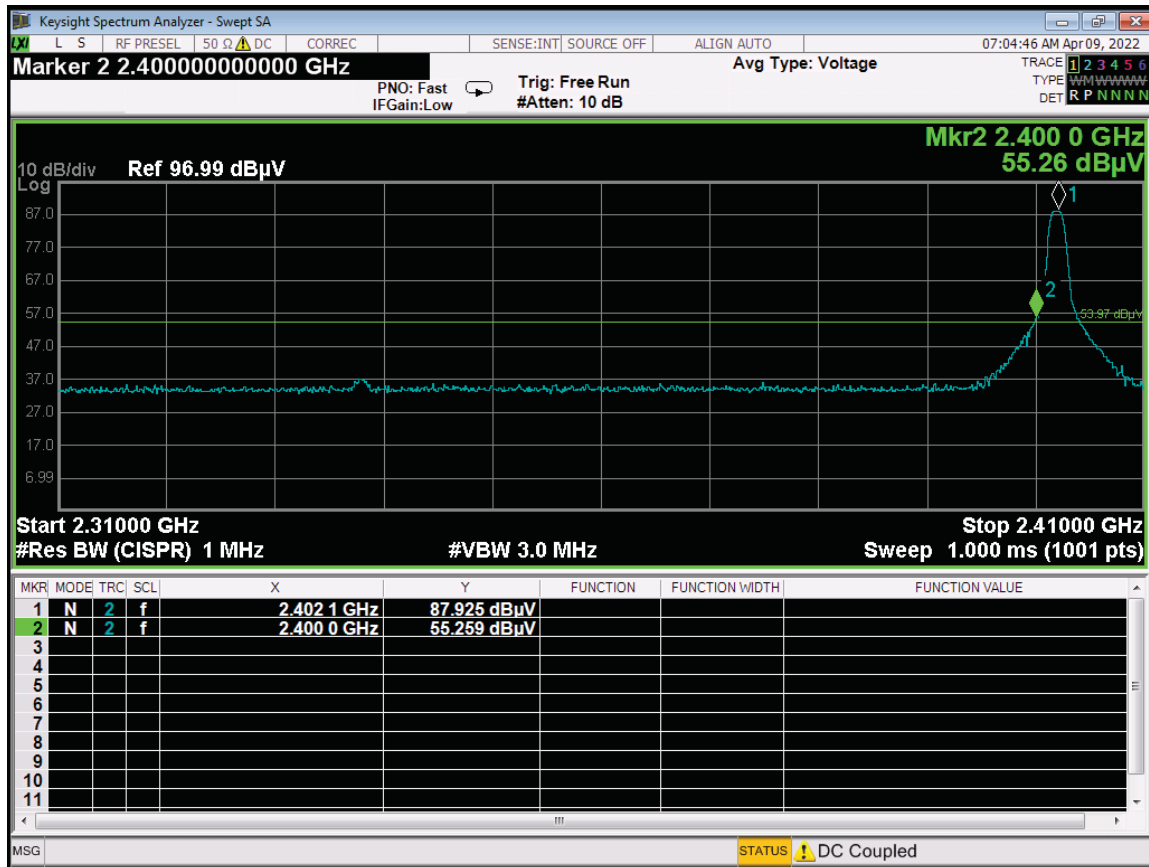
Band Edges - AC mode

Date: 04/08/2022

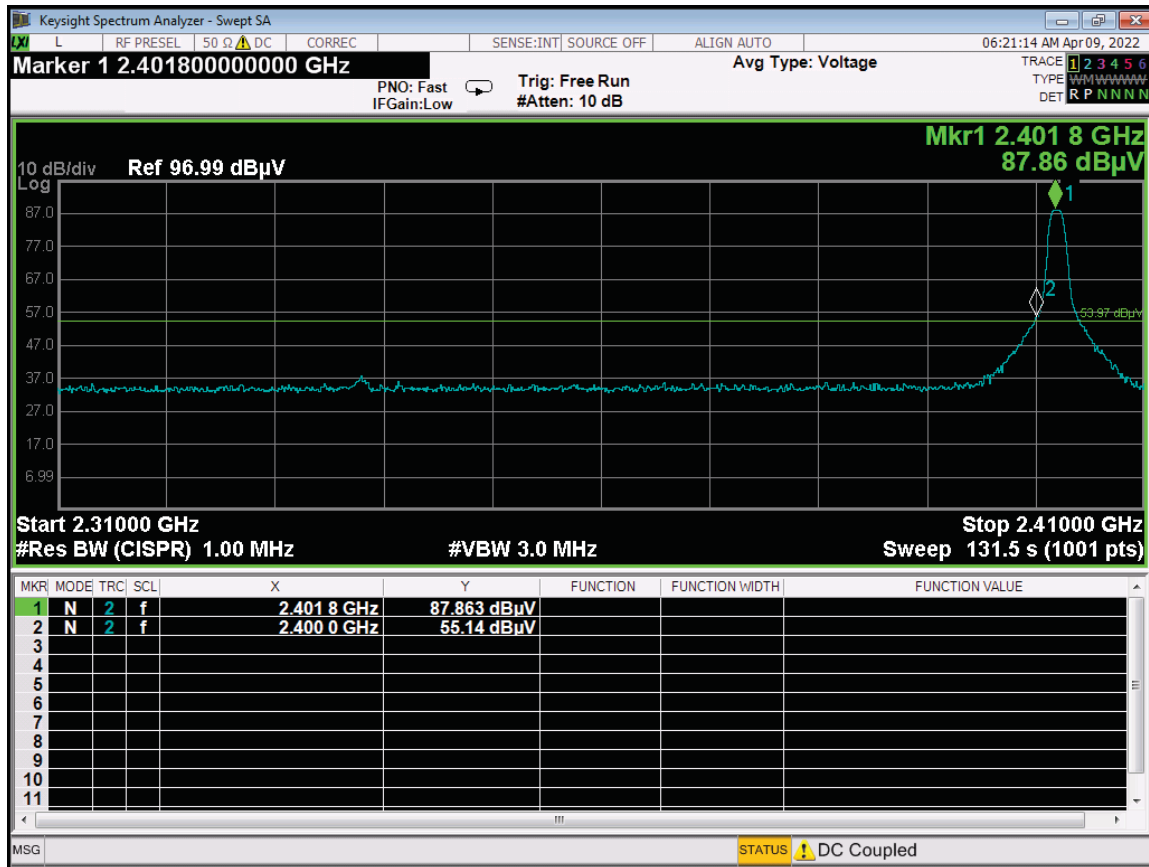
Lab: D

Tested By: Kyle Fujimoto

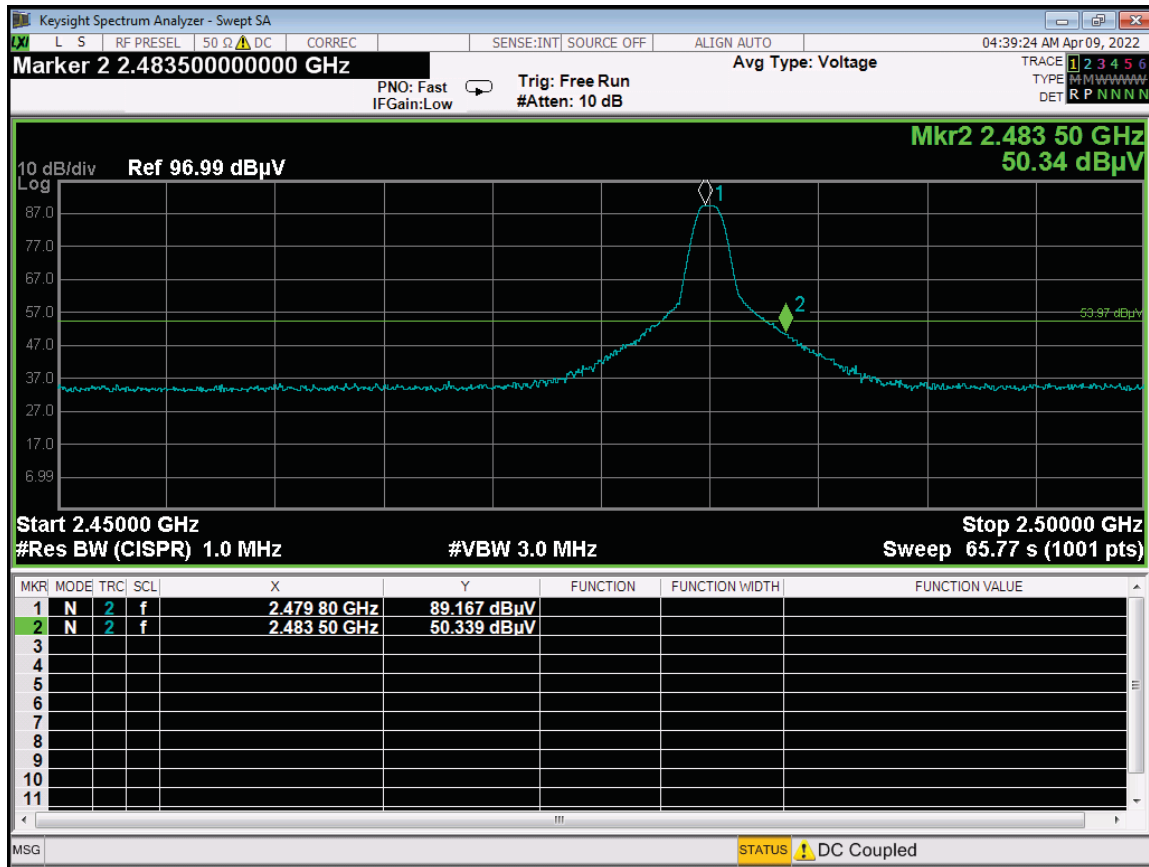
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	87.92	H	113.97	-26.05	Peak	190.75	146.08	Fundamental - Low Ch.
2402.00	67.92	H	93.97	-6.97	Avg	190.75	146.08	X-Axis - Worst Case
2400.00	55.26	H	73.97	-18.71	Peak	190.75	146.08	Band Edge
2400.00	35.26	H	53.97	-18.71	Avg	190.75	146.08	X-Axis - Worst Case
2402.00	87.86	V	113.97	-26.11	Peak	331.25	203.76	Fundamental - Low Ch.
2402.00	67.86	V	93.97	-26.11	Avg	331.25	203.76	Z-Axis - Worst Case
2400.00	55.14	V	73.97	-18.83	Peak	331.25	203.76	Band Edge
2400.00	35.14	V	53.97	-18.83	Avg	331.25	203.76	Z-Axis - Worst Case
2480.00	89.17	H	113.97	-24.80	Peak	361.00	172.71	Fundamental - High Ch.
2480.00	69.17	H	93.97	-24.80	Avg	361.00	172.71	X-Axis - Worst Case
2483.50	50.34	H	73.97	-23.63	Peak	361.00	172.71	Band Edge
2483.50	30.34	H	53.97	-23.63	Avg	361.00	172.71	X-Axis - Worst Case
2480.00	87.99	V	113.97	-25.98	Peak	229.00	140.71	Fundamental - High Ch.
2480.00	67.99	V	93.97	-25.98	Avg	229.00	140.71	Z-Axis - Worst Case
2483.50	49.47	V	73.97	-24.51	Peak	229.00	140.71	Band Edge
2483.50	29.47	V	53.97	-24.51	Avg	229.00	140.71	Z-Axis - Worst Case



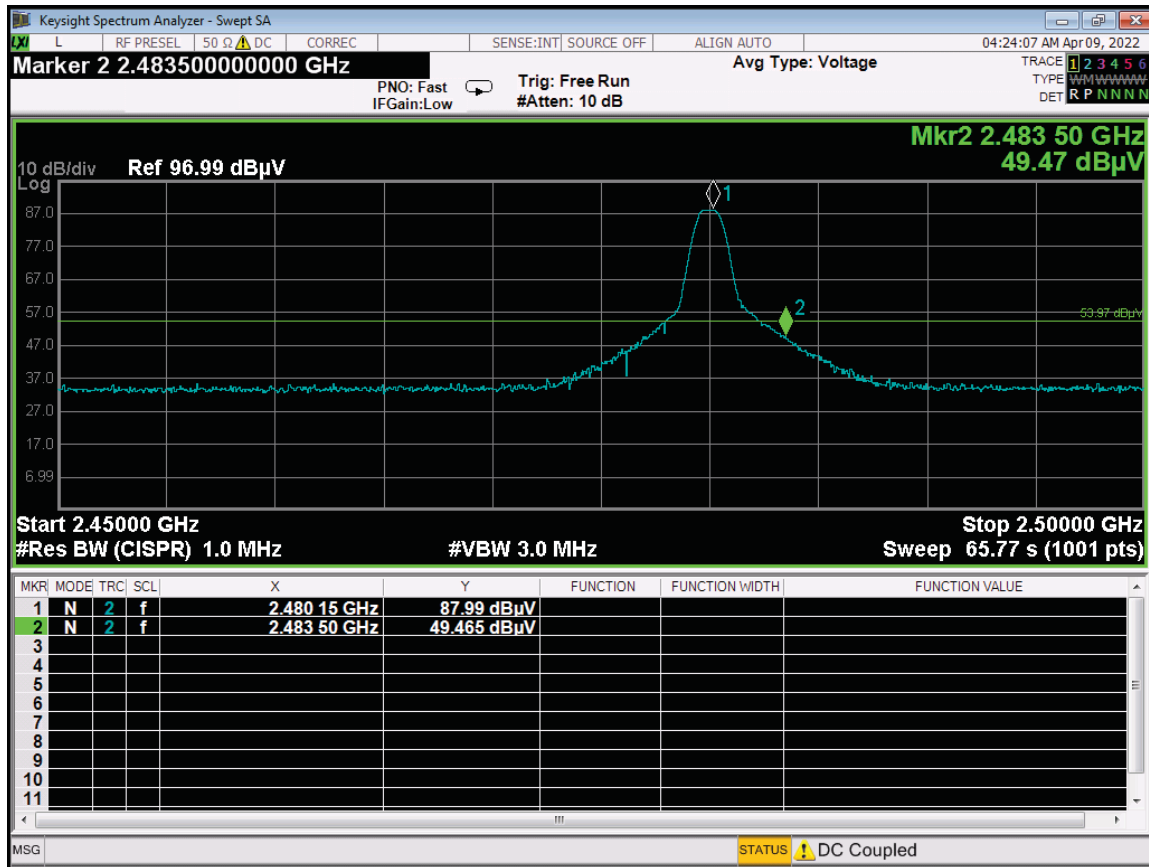
Band Edge – Low Channel – Horizontal Polarization – AC Mode – X-Axis



Band Edge – Low Channel – Vertical Polarization – AC Mode – Z-Axis



Band Edge – High Channel – Horizontal Polarization – AC Mode – X-Axis



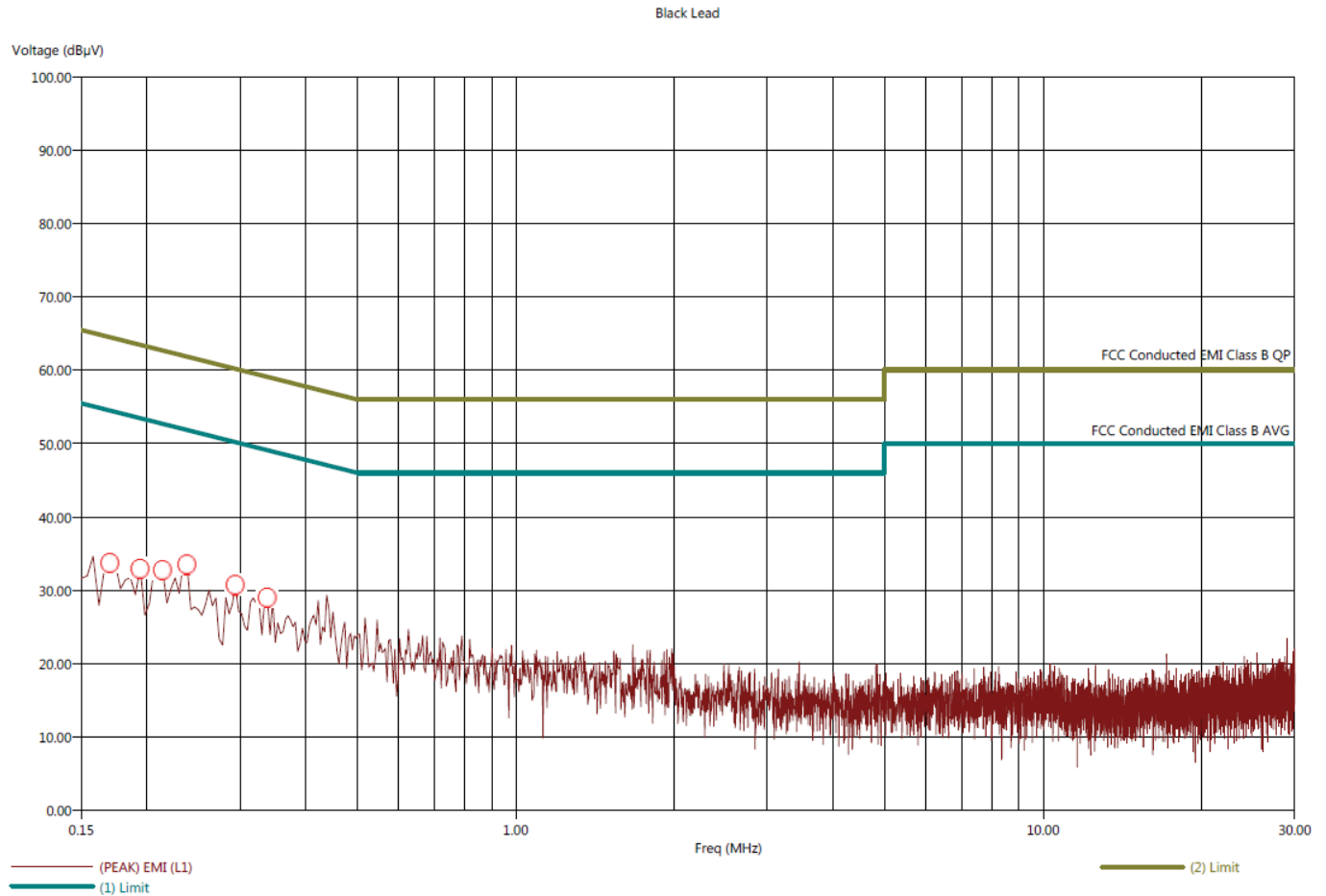
Band Edge – High Channel – Vertical Polarization – AC Mode – Z-Axis

CONDUCTED EMISSIONS

DATA SHEETS

Title: FCC Class B - Black Lead
File: 1 - BL - Pre-Scan - Tx Mode - FCC-B - 04-08-2022.set
Operator: Kyle Fujimoto
EUT Type: Hinge Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Company: Hinge Health, Inc.
Model: H4
S/N: N/A
AC Power Mode

4/8/2022 4:12:42 PM
Sequence: Preliminary Scan



Title: FCC Class B - Black Lead
File: 1 - BL - Final Scan - Tx Mode - FCC-B - 04-08-2022.set
Operator: Kyle Fujimoto
EUT Type: Hinge Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Company: Hinge Health, Inc.
Model: H4
S/N: N/A
AC Power Mode

4/8/2022 4:16:46 PM
Sequence: Final Measurements

Black Lead - Average

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)
0.170	34.20	23.66	-20.57	-31.11	54.77	0.13	0.14	10.00
0.194	33.07	23.00	-20.64	-30.71	53.72	0.12	0.12	10.00
0.214	31.81	22.13	-21.13	-30.81	52.94	0.12	0.11	10.00
0.238	32.96	21.72	-18.93	-30.17	51.89	0.12	0.11	10.00
0.294	33.64	23.35	-16.77	-27.06	50.41	0.13	0.10	10.00
0.338	32.22	22.21	-16.96	-26.97	49.17	0.13	0.10	10.00

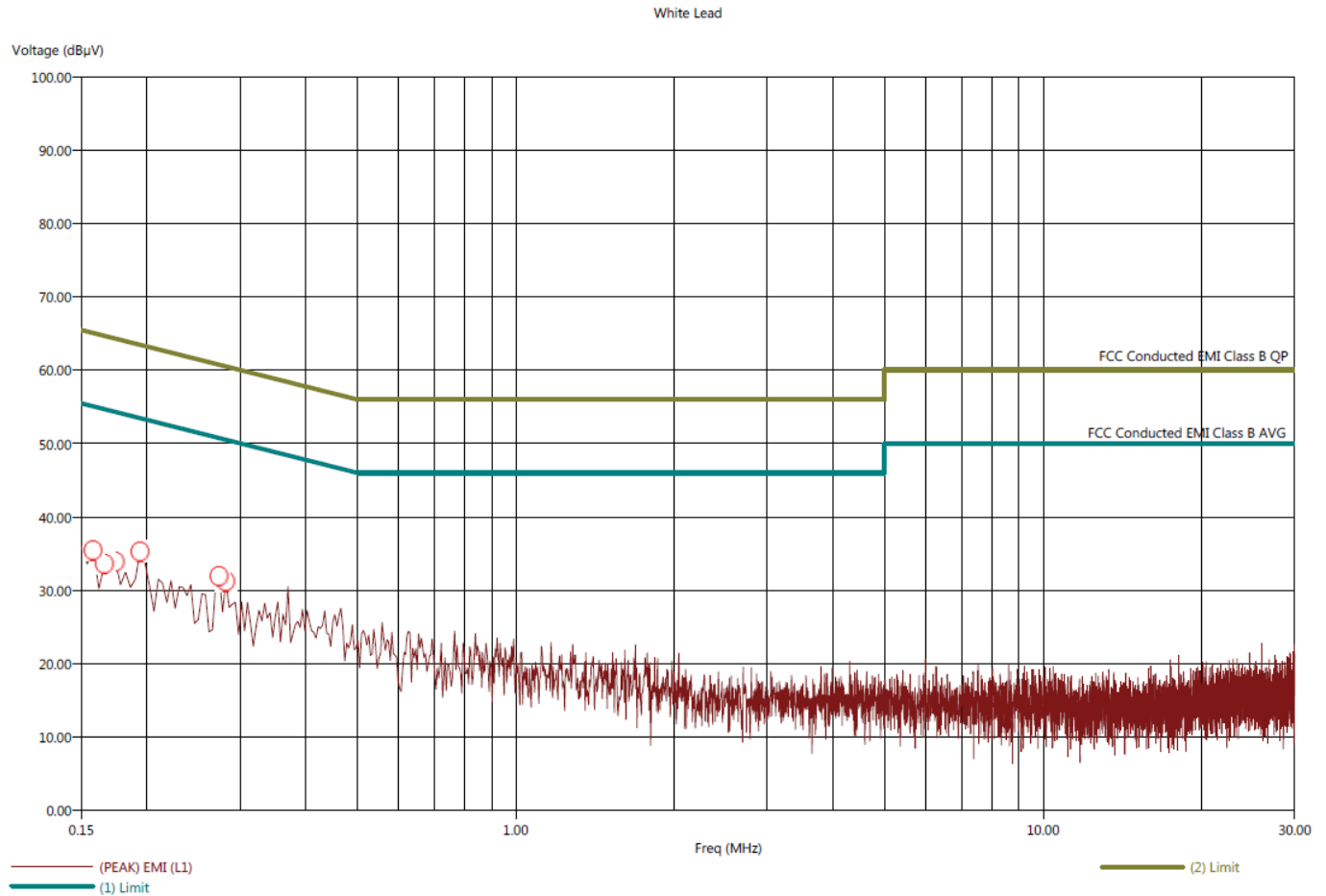




FCC Part 15 Subpart B and C; and FCC Section 15.249 Test Report
Hinge Sensor
Model: H4

Title: FCC Class B - White Lead
File: 2 - WL - Pre-Scan - Tx Mode - FCC-B - 04-08-2022.set
Operator: Kyle Fujimoto
EUT Type: Hinge Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Company: Hinge Health, Inc.
Model: H4
S/N: N/A
AC Power Mode

4/8/2022 4:18:14 PM
Sequence: Preliminary Scan



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

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

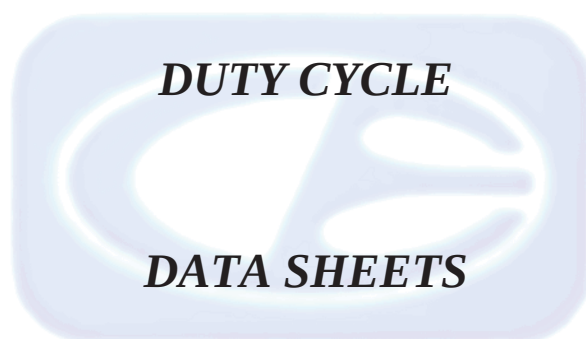
Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

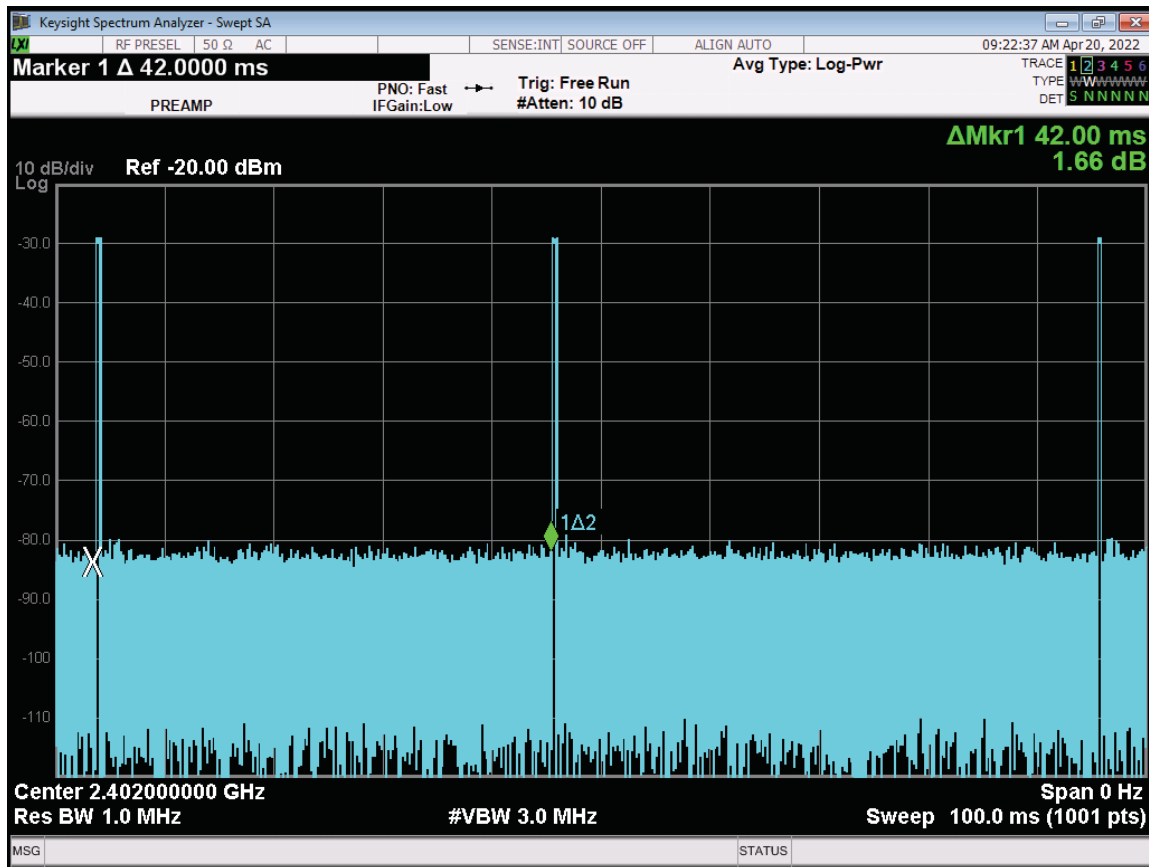
Title: FCC Class B - White Lead
File: 2 - WL - Final Scan - Tx Mode - FCC-B - 04-08-2022.set
Operator: Kyle Fujimoto
EUT Type: Hinge Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Company: Hinge Health, Inc.
Model: H4
S/N: N/A
AC Power Mode

4/8/2022 4:19:12 PM
Sequence: Final Measurements

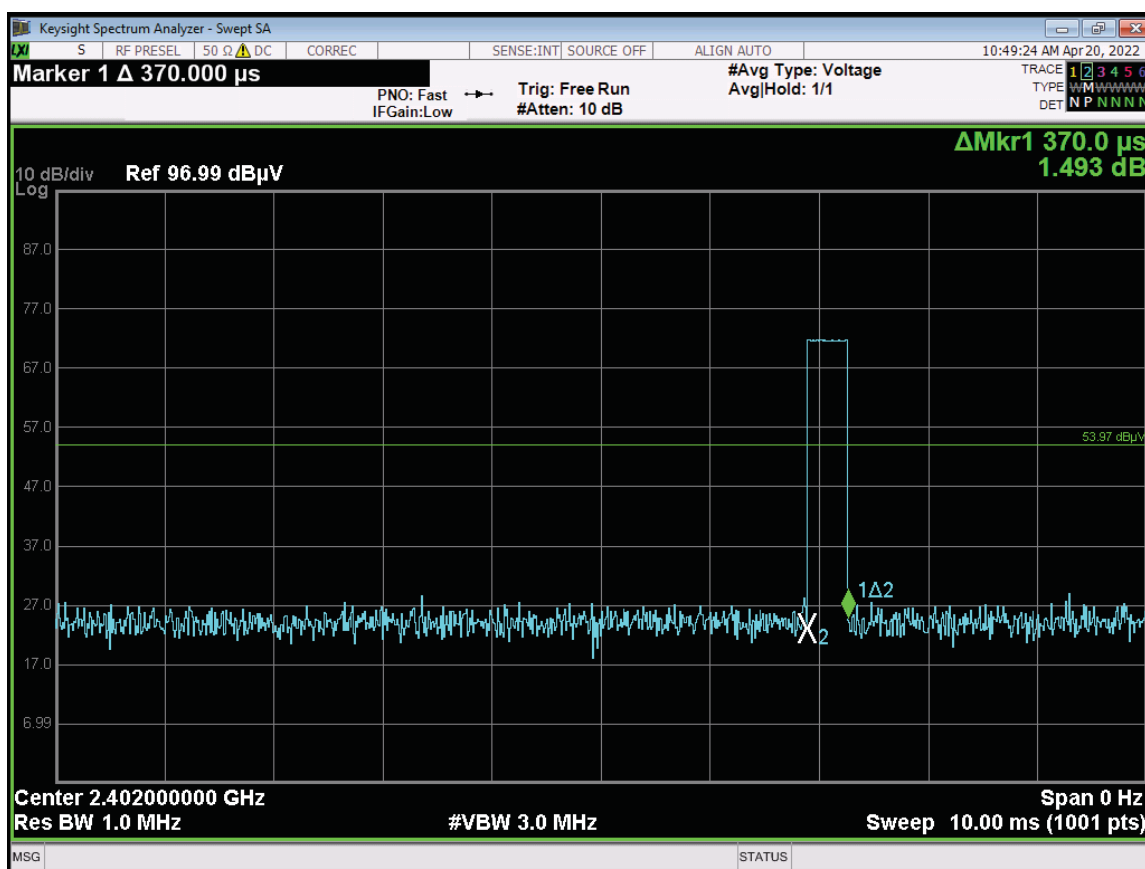
White Lead - Average								
Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.158	34.09	24.02	-20.84	-30.91	54.92	0.13	0.14	10.00
0.166	33.90	23.92	-21.19	-31.17	55.09	0.13	0.14	10.00
0.174	33.55	23.36	-20.86	-31.05	54.41	0.13	0.13	10.00
0.194	33.79	22.90	-19.98	-30.87	53.77	0.12	0.12	10.00
0.274	33.93	23.55	-16.60	-26.98	50.54	0.13	0.09	10.00
0.282	34.75	23.93	-16.07	-26.89	50.82	0.13	0.10	10.00







One Pulse every 42 ms - Advertising Mode
(Worst Case)



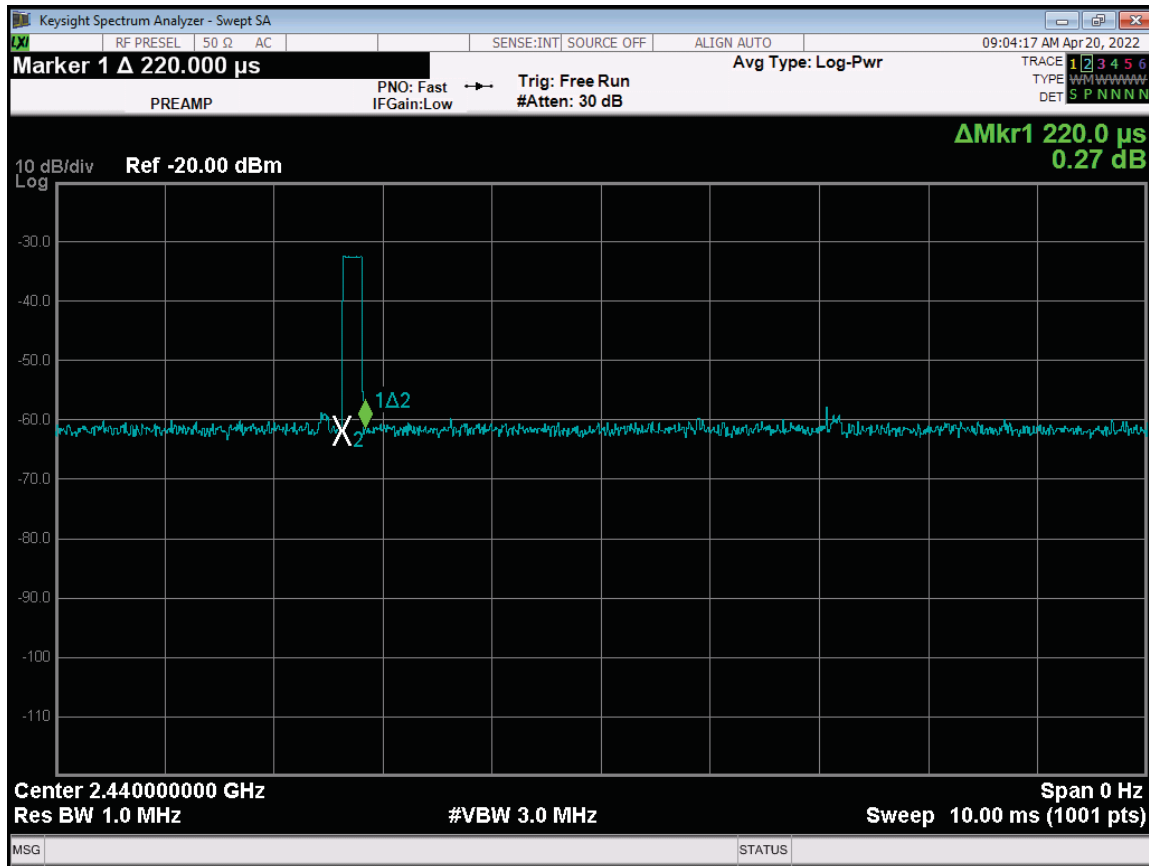
Time of One Pulse 370 us - Advertising Mode

$$\text{Duty Cycle} = 370 \mu\text{s} / 42 \text{ ms} = 0.88 \%$$

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Lake Forest, CA 92630
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Time of One Pulse 220 μs - Data Mode