COMPATIBLE ELECTRONICS

FCC PART 15, SUBPART B and C; and FCC SECTION 15.247; RSS-247 and RSS-GEN
TEST REPORT

for

BLUETOOTH SENSOR

MODEL: SENSOR-007

Prepared for

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	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 U.S. Government.

Device Tested:	Bluetooth Sensor Model: Sensor-007 S/N: N/A
Product Description:	The Bluetooth Sensor measures the amount of liquid a user drinks out of a water bottle. Dimensions: 6.0 cm (L) x 6.0 cm (D) x 3.7 cm (H)
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	HidrateSmart LLC PO Box 777250 Henderson, Nevada 89077
Test Dates:	January 24, 25, and 26, 2025

Test Specifications covered by accreditation:

Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247;
RSS-247 and RSS-GEN
Test Procedure: ANSI C63.4 and ANSI C63.10

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SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz – 30 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; the limits of CFR Title 47, Part 15, Subpart C, section 15.207; RSS-247 and RSS-GEN See section 6.3 for Measurement Uncertainty
2	Spurious Radiated RF Emissions, 30 MHz – 1000 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; the limits of CFR Title 47, Part 15, Subpart C, section 15.209; RSS-247 and RSS-GEN See section 6.3 for Measurement Uncertainty
3	Spurious Radiated RF Emissions, 9 kHz – 30 MHz and 1000 MHz – 25000 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; CFR Title 47, Part 15, Subpart C, section 15.247(d); RSS-247 and RSS-GEN See section 6.3 for Measurement Uncertainty
4	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 9 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d); RSS-247 and RSS-GEN
5	Emissions produced by the intentional radiator in restricted bands, 9 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209, section 15.247 (d); RSS-247 and RSS-GEN
6	DTS Bandwidth	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (a)(2); RSS-247
7	Maximum Conducted Output Power	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(3); RSS-247
8	RF Conducted Antenna Test	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (d); RSS-247
9	Power Spectral Density from the Intentional Radiator to the Antenna	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (e); RSS-247

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Bluetooth Sensor, Model: Sensor-007. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247; RSS-247 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

HidrateSmart LLC

Alexander Hambrock CEO

Compatible Electronics Inc.

Kyle Fujimoto	Senior Test Engineer
James Ross	Senior Test Engineer
James K. Baer	General Manager

2.4 Date Test Sample was Received

The test sample was received on prior to the initial test date.

2.5 Disposition of the Test Sample

The test sample has not been returned to HidrateSmart LLC as of the date of this test report.

2.6 Abbreviations and Acronyms

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

dB	Decibel
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
AC	Alternating Current
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
Tx	Transmit
Rx	Receive
BLE	Bluetooth Low Energy
DC	Direct Current
FCC	Federal Communications Commission
RSS	Radio Standards Specifications

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators
558074 D01 DTS Meas Guidance v05 r02	Guidance for Performing Compliance Measurements on Digital Transmissions Systems (DTS) Operating Under Section 15.247
EN 50147-2: 1997	Anechoic chambers. Alternative test site suitability with respect to site attenuation
ANSI C63.4 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices
RSS-Gen Issue 5: 2018 + Amendment 1: 2019 + Amendment 2: 2021	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 3 August 2023	Digital Transmissions Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

4. DESCRIPTION OF TEST CONFIGURATION

Normal Operation: The Bluetooth Sensor, Model: Sensor-007 (EUT) was directly connected to a water bottle and transmtting BLE on a continuous basis.

Charging Mode: The Bluetooth Sensor, Model: Sensor-007 (EUT) was connected to an ITE power supply via a special USB charging cable that connected to the EUT. The EUT was continuously charging the battery.

The EUT was tested for emissions while in the X, Y and Z axis. The X orientation is when the EUT is parallel to the ground. The Y orientation is when the EUT is perpendicular to the ground mounted vertically. The Z orientation is when the EUT is perpendicular to the ground mounted horizontally.

The firmware on the laptop allowed the EUT to continuously transmit at 2402 MHz, 2440 MHz, or 2480 MHz.

The firmware is stored on the company's servers.

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

4.1.1 Cable Construction and Termination

Cable 1 **(Charging Mode Only)**
This is a 2-meter braid shielded cable connecting the ITE Power Supply to the EUT. The cable has a USB type 'A' connector at the ITE Power Supply end and a USB type 'C' connector at the EUT end. The shield of the cable was grounded to the chassis via the connectors.

Cable 2** This is a 8-centimeter unshielded cable connecting the EUT to cable #4. The cable has a 4-pin connector at each end.

Cable 3** This is a 23-centimeter unshielded cable connecting the USB to TTL to cable #3. The cable has a 4-pin connector at the cable #3 end and an 3-pin connector at the USB to TTL end.

Cable 4** This is a 1-meter braid shielded cable connecting the USB to TTL to the laptop. The cable has a USB type 'A' connector at the laptop end and a USB 'Mini' connector at the TTL end. The shield of the cable was grounded to the chassis via the connectors.

**These cables were used to program the EUT only and were removed during the testing.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	ID
BLUETOOTH SENSOR (EUT)	HIDRATESMART LLC	SENSOR-007	N/A	FCC ID: 2BH5C-007 IC: 25893-007
LAPTOP**	DELL	INSPIRION 5593	3L68803	N/A
PRODUCT TEST FIRMWARE**	NORTIC	25893-005	N/A	N/A
ITE POWER SUPPLY*	APPLE	A1385	N/A	N/A
USB TO TTL**	TELINK	N/A	N/A	N/A

*Used for Charging Mode Only
**Used to program the EUT only

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	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, 3 Hz – 44 GHz	Keysight Technologies, Inc.	N9038A	MY59050117	July 14, 2023	July 14, 2025
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
Loop Antenna	Com-Power	AL-130R	121090	February 10, 2022	February 10, 2025
CombiLog Antenna	Com-Power	AC-220	10030004	November 22, 2023	November 22, 2025
Horn Antenna	Com-Power	AH-118	10050192	November 30, 2023	November 30, 2025
Preamplifier	Com-Power	PA-118	181653	March 7, 2022	March 7, 2025
Horn Antenna	Com-Power	AH826	0071957	NCR	NCR
High Pass Filter	Microwave Circuits	H3G020G4	495523	December 6, 2023	December 6, 2025
Preamplifier	Com-Power	PA-840	711013	April 8, 2022	April 8, 2025
Below 1 GHz Radiated Cable	N/A	N/A	Asset #: 0006	October 27, 2023	October 27, 2025
Power Sensor	ETS-Lindgren	7002-006	00151018	June 2, 2022	June 2, 2025
Above 1 GHz Cable	Suhner	Sucoflex 102EA	2291	August 22, 2023	August 22, 2025
Above 1 GHz Cable	Suhner	Sucoflex 102EA	501393	August 22, 2023	August 22, 2025
Above 1 GHz Cable	Suhner	Sucoflex 102EA	501394	August 22, 2023	August 22, 2025
Variable Auto Transformer	Staco Energy Products	3PN1010	N/A	N/A	N/A
True RMS Multimeter	Fluke	85	62700530	August 3, 2023	August 3, 2025
Computer	Hewlett Packard	p6716f	MXX1030PX0	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	4.57 dB

7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Channel Description and Frequencies

The EUT operates on forty channels using BLE. The channel and frequencies are shown below. The channels are spaced 2 MHz apart. Below is the channel and frequencies of the low, middle, and high channels.

Channel 0 – 2402 MHz

Channel 19 – 2440 MHz

Channel 39 – 2480 MHz

7.2 Antenna Gain

The gain of the chip antenna is -1.0 dBi.

8. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. A 10 dB attenuator was used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI Receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

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

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

The six highest emissions are listed in Table 2.0.

Test Results:

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

8.1.2 Radiated Emissions Test

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

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

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

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna to ensure accurate results.

The EUT was tested at a 3-meter test distance. The six highest emissions are listed in Tables 1.0 and 3.0.

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 25 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; the limits of CFR Title 47, Part 15, Subpart C sections 15.205, 15.209 and 15.247; and the limits of RSS-247 and RSS-Gen for radiated emissions.

8.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Bluetooth Sensor – Normal Operation
Model: Sensor-007

Frequency MHz	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) dB)
7440.00 (V) (Z-Axis)	43.04 (Avg)	53.97	-10.93
85.50 (V)	27.43 (QP)	40.00	-12.57
4804.00 (H) (Y-Axis)	40.89 (Avg)	53.97	-13.08
4804.00 (H) (Y-Axis)	40.84 (Avg)	53.97	-13.13
4960.00 (H) (Y-Axis)	40.45 (Avg)	53.97	-13.52
4880.00 (H) (Y-Axis)	39.98 (Avg)	53.97	-13.99

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

Table 2.0 RADIATED EMISSION RESULTS
Bluetooth Sensor – Charging Mode
Model: Sensor-007

Frequency MHz	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) dB)
85.50 (V)	29.68 (QP)	40.00	-10.32
4880.00 (H) (Y-Axis)	42.40 (Avg)	53.97	-11.57
4804.00 (V) (X-Axis)	41.66 (Avg)	53.97	-12.31
4960.00 (V) (Z-Axis)	40.55 (Avg)	53.97	-13.42
4804.00 (V) (Y-Axis)	40.04 (Avg)	53.97	-13.93
85.50 (H)	25.93 (QP)	40.00	-14.07

Notes:
(BL) Black Lead
(WL) White Lead
(Avg) Average
(QP) Quasi-Peak

RF Emissions Test Results

Table 3.0 CONDUCTED EMISSION RESULTS
Bluetooth Sensor – Charging Mode
Model: Sensor-007

Frequency MHz	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) dB)
0.374 (BL)	35.83 (Avg)	48.28	-12.45
0.302 (BL)	33.25 (Avg)	49.82	-16.57
0.654 (BL)	28.85 (Avg)	46.00	-17.15
0.638 (BL)	28.65 (Avg)	46.00	-17.35
0.366 (WL)	29.38 (Avg)	48.35	-18.97
0.370 (WL)	29.16 (Avg)	48.25	-19.09

Notes:

(BL) Black Lead
(WL) White Lead
(Avg) Average
(QP) Quasi-Peak

8.1.4 Sample Calculations

A correction factor for the antenna, cable, and a distance factor (if any) must be applied to the meter reading before a true field strength reading can be obtained. This Corrected Meter Reading is then compared to the specification limit in order to determine compliance with the limits.
Conversion to logarithmic terms: Specification limit (μV/m) log x 20 = Specification Limit in dBuV/m
To correct for distance when measuring at a distance other than the specification
For measurements below 30 MHz: (Specification distance / test distance) log x 40 = distance factor
For measurements above 30 MHz: (Specification distance / test distance) log x 20 = distance factor
Note: When using an Active Antenna, the Antenna factor shall be subtracted due to the combination of the internal amplification and antenna loss.
Corrected Meter Reading = meter reading + F – A + C

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

The correction factors for the antenna and the amplifier gain are attached in Appendix D of this report. The data sheets are attached in Appendix E.
The distance factor D is 0 when the test is performed at the required specification distance.
When the limit is in terms of magnetic field, the following equation applies:

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

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

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

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

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

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

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

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

or, if the magnetic antenna factor is used:

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

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

8.2 DTS Bandwidth

The DTS Bandwidth was measured using the EMI Receiver. The bandwidth was measured using a direct connection from the EUT. The following steps were performed for measuring the DTS Bandwidth.

1. Set RBW = 100 kHz
2. Set the video bandwidth (VBW) to equal or greater than 3 times the RBW
3. Detector = Peak
4. Trace Mode = Max Hold
5. Sweep = Auto Couple
6. Allow the trace to stabilize
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(2); and RSS-247.

8.3 Maximum Peak Conducted Output Power

The maximum peak conducted output power was measured using the EMI Receiver. The following steps were performed for measuring the maximum peak conducted output power.

1. Set the RBW ≥ DTS Bandwidth
2. Set the VBW ≥ [3 X RBW]
3. Set span ≥ [3 X RBW]
4. Sweep time = auto couple
5. Detector = peak
6. Trace mode = max hold
7. Allow trace to fully stabilize
8. Use the peak marker function to determine the peak amplitude level

Test Results:

The EUT complies with the relevant requirements of CFR Title 47, Part 15, Subpart C Section 15.247 (b)(3); and RSS-247.

8.4 Emissions in Non-Restricted Bands

The emissions in the non-restricted frequency bands measurements were performed using the EMI receiver directly connected to the EUT. The reference level was established by setting the instrument center frequency to DTS channel center frequency. The span was set to $\geq$ 1.5 times the DTS bandwidth. The RBW was set to 100 kHz and the VBW was set to 300 kHz. A peak detector was used with sweep set to auto. A max hold trace was used and allowed to fully stabilize. The peak marker function was used to determine the level and 20 dB below that was the reference level. For emission level measurement, the center frequency and span were set to encompass the frequency range to be measured. The RBW was set to 100 kHz and the VBW was set to 300 kHz. A peak detector was used with a sweep time set to auto. The number of measurement points were greater than the span/RBW. A max hold trace was used and allowed to fully stabilize. The peak marker function was used to determine the maximum amplitude level. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d); and RSS-247.

8.5 RF Band Edges

The RF band edges were taken at 2390 MHz when the EUT was on the low channel and 2483.5 MHz when the EUT was on the high channel using the EMI Receiver. A preamplifier was used to boost the signal level, with the plots being taken at a 3 meter test distance. The radiated emissions test procedure as describe in section 8.1.2 of this test report was used to maximize the emission.

The RF band edge was also taken at 2400 MHz when the EUT was on the low channel. The following steps were performed for measuring the band edge at 2400 MHz:

1. Set analyzer center frequency to DTS channel center frequency
2. Set the span wide enough to cover the band edges.
3. Set the RBW to 100 kHz
4. Set the VBW ≥ 3 X RBW
5. Detector = Peak
6. Sweep time = auto couple
7. Allow the trace to stabilize
8. Use the peak marker function to determine the maximum amplitude level

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d) for band edges; and RSS-247. Please see the data sheets located in Appendix E.

8.6 Spectral Density Test

The spectrum density output was measured using the EMI Receiver. The spectral density output was measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The following steps were performed for measuring the spectral density.

1. Set analyzer center frequency to DTS channel center frequency
2. Set the span to at least 1.5 times the OBW.
3. Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz
4. Set the VBW ≥ [3 X RBW]
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize
9. Use the peak marker function to determine the maximum amplitude level within the RBW
10. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (e); and RSS-247.

8.7 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:

This carrier frequency of the EUT does not change when the EUT's input power is varied between 85% and 115% of the nominal rated supply voltage.

8.8 99 % Bandwidth

The 99 % bandwidth was measured using an EMI Receiver.

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

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

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

9. CONCLUSIONS

The Bluetooth Sensor, Model: Sensor-007, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247; RSS-Gen and RSS-247.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP TESTING
NVLAP LAB CODE 200528-0

ilac-MRA

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."

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 and FCC 15.247; RSS-GEN and RSS-247 specifications.

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

No modifications were made to the EUT during the testing.

APPENDIX C

MODELS COVERED UNDER THIS REPORT

MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	Bluetooth Sensor Model: Sensor-007 S/N: N/A

There are no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

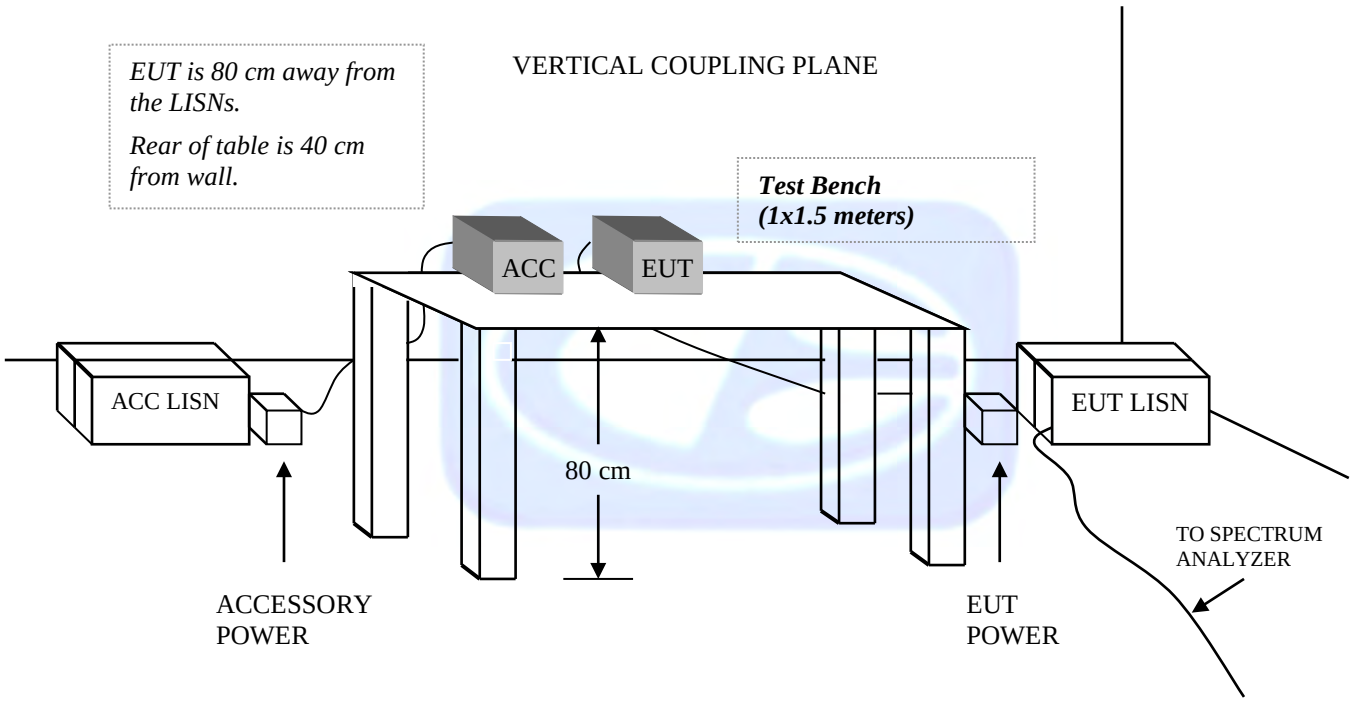
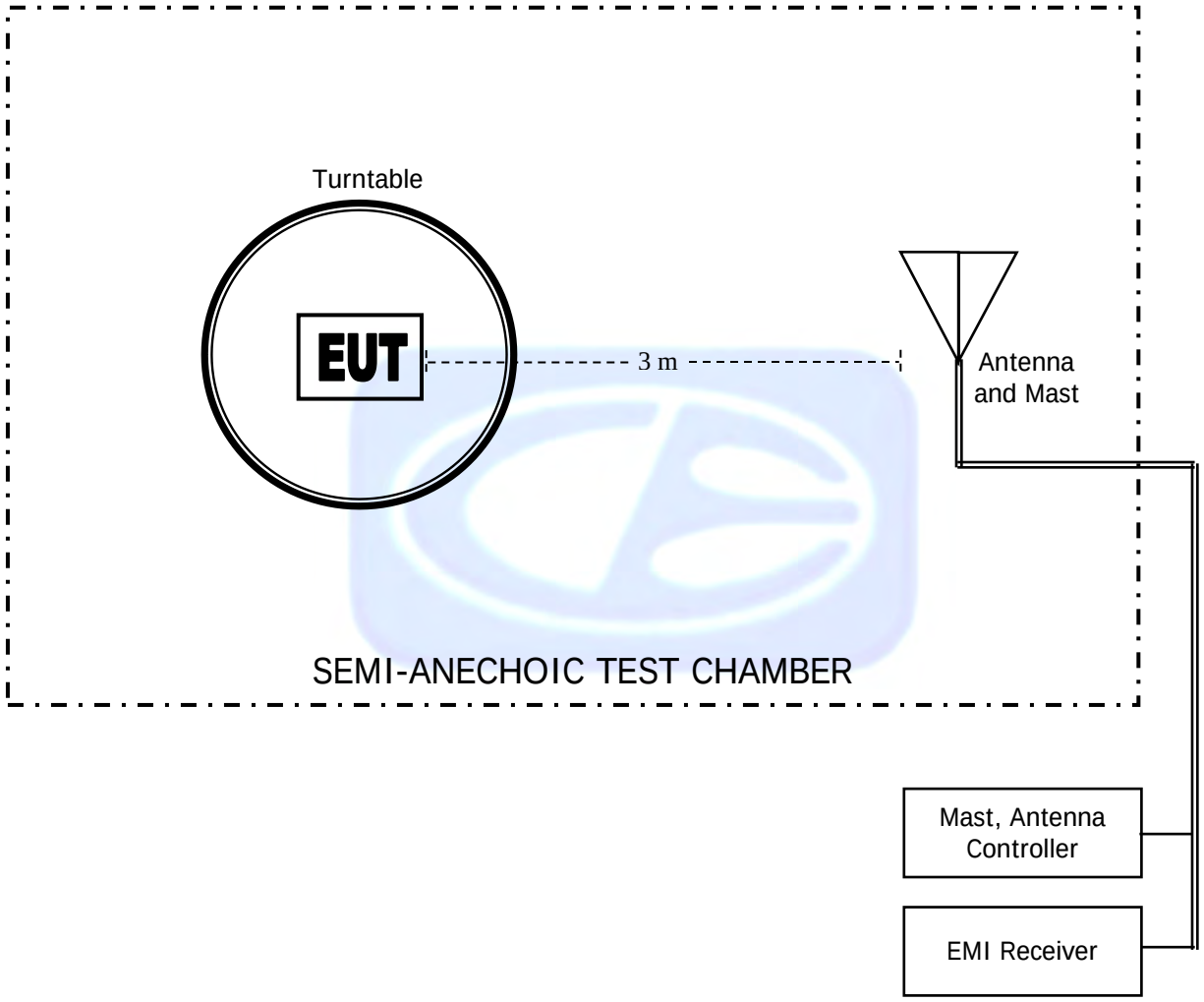


FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COMPATIBLE ELECTRONICS

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: 10030004

CALIBRATION DATE: NOVEMBER 22, 2023

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	23.10	200	16.10
35	22.00	250	17.90
40	41.30	300	19.10
45	20.50	350	20.30
50	19.30	400	21.60
60	15.40	450	22.20
70	12.40	500	23.20
80	12.40	550	23.70
90	14.10	600	25.10
100	15.50	650	25.30
120	15.90	700	25.10
125	15.90	750	26.70
140	14.80	800	26.60
150	14.60	850	27.20
160	14.80	900	28.00
175	15.90	950	29.10
180	15.50	1000	28.90

COMPATIBLE ELECTRONICS

COM POWER AH-118

HORN ANTENNA

S/N: 10050192

CALIBRATION DATE: NOVEMBER 30, 2023

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.01	10.0	38.78
1.5	25.25	10.5	39.29
2.0	27.21	11.0	39.30
2.5	27.42	11.5	39.87
3.0	28.89	12.0	39.77
3.5	30.58	12.5	40.21
4.0	31.78	13.0	40.01
4.5	32.48	13.5	40.06
5.0	33.13	14.0	40.63
5.5	34.27	14.5	41.41
6.0	34.92	15.0	41.53
6.5	35.58	15.5	40.59
7.0	36.83	16.0	41.63
7.5	37.02	16.5	40.93
8.0	36.93	17.0	41.27
8.5	37.67	17.5	41.69
9.0	37.53	18.0	44.00
9.5	38.76		

COMPATIBLE ELECTRONICS

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		

COMPATIBLE ELECTRONICS

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

COMPATIBLE ELECTRONICS

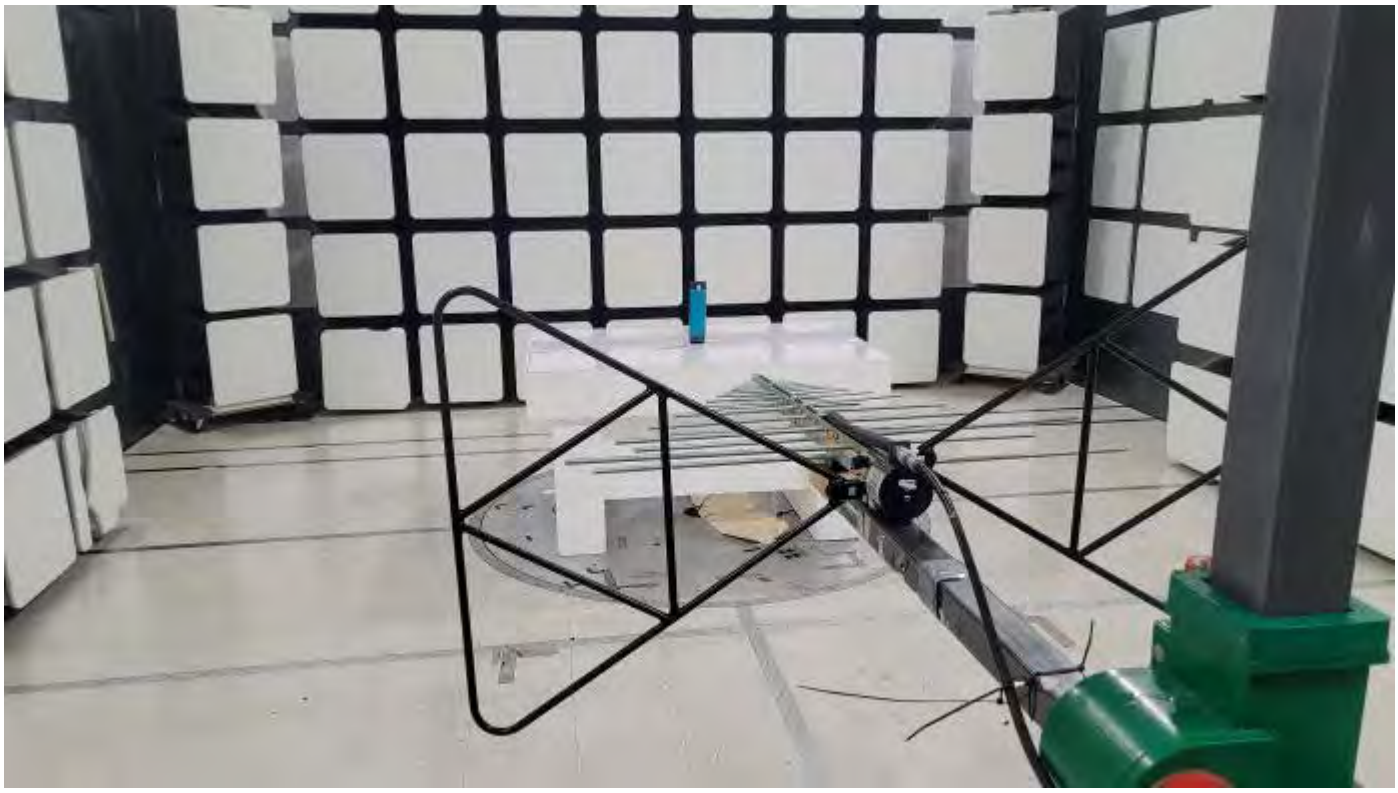
COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: APRIL 8, 2022

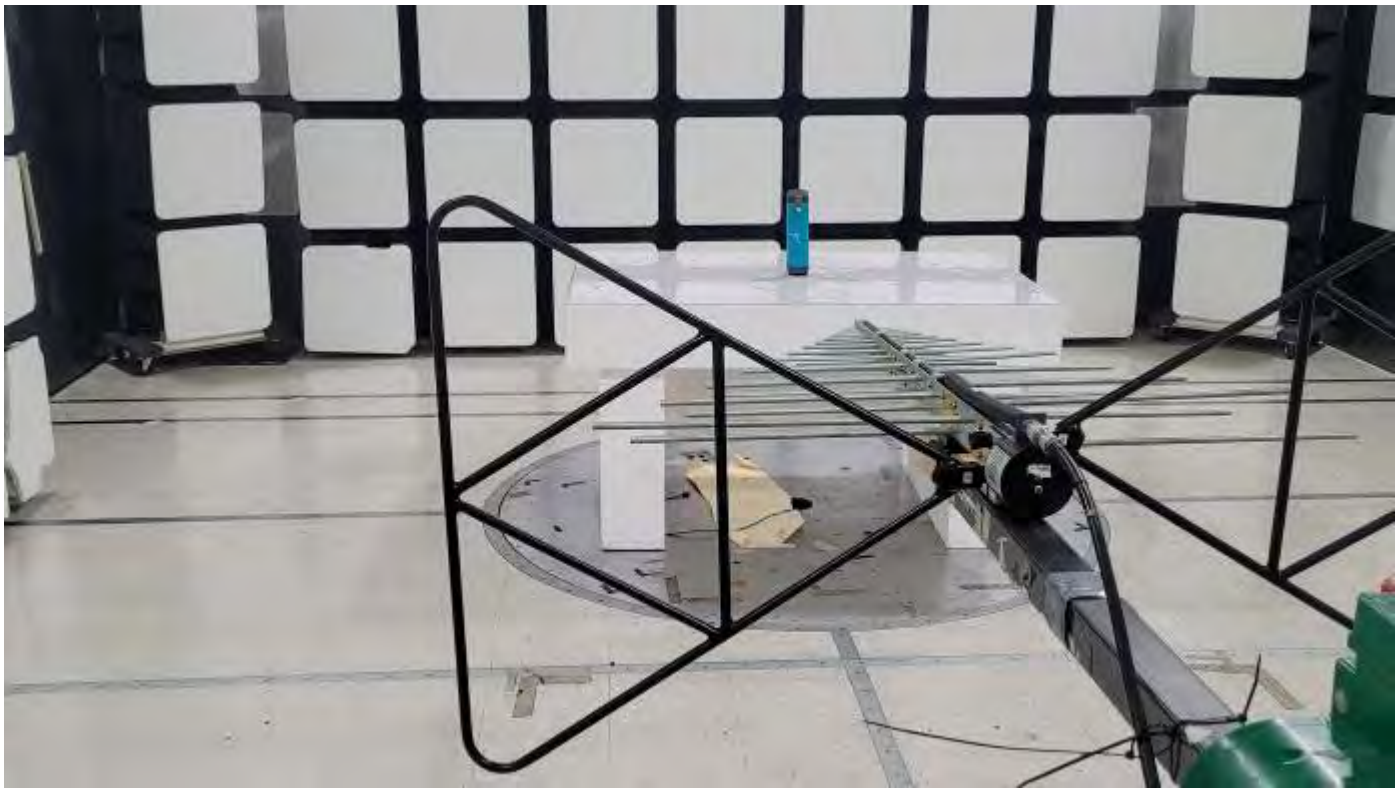
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	24.85	31.0	25.37
19.0	24.25	31.5	25.44
20.0	22.69	32.0	24.96
21.0	22.17	32.5	26.17
22.0	22.78	33.0	25.83
23.0	23.23	33.5	25.19
24.0	23.72	34.0	26.31
25.0	24.13	34.5	24.70
26.0	24.28	35.0	25.31
26.5	25.06	35.5	24.39
27.0	26.22	36.0	25.09
27.5	24.85	36.5	25.24
28.0	25.30	37.0	27.10
28.5	25.01	37.5	27.45
29.0	25.54	38.0	23.72
29.5	26.23	38.5	23.01
30.0	26.00	39.0	21.29
30.5	25.39	39.5	21.11
		40.0	19.17



FRONT VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 – RADIATED EMISSIONS – 30 MHz to 1000 MHz
NORMAL OPERATION

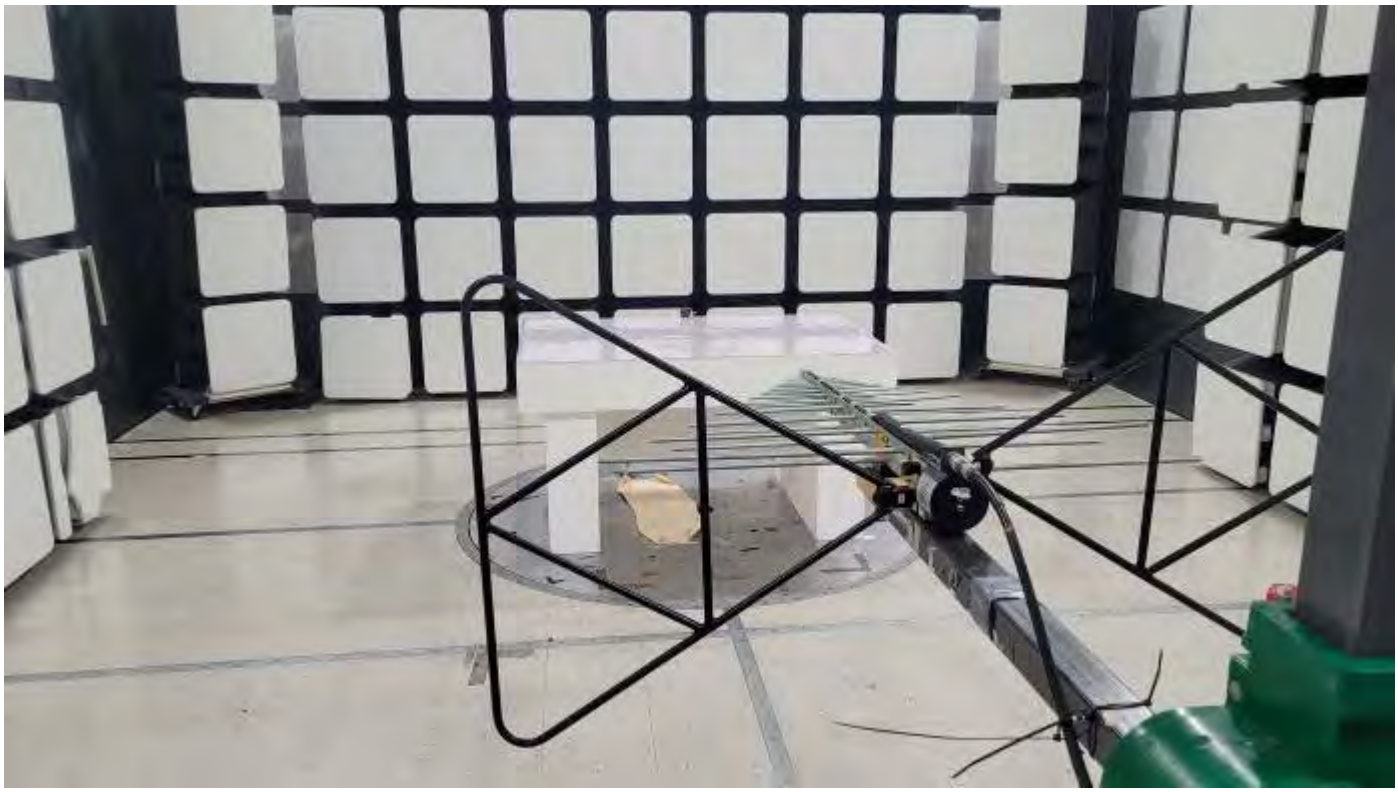
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 –
RADIATED EMISSIONS – 30 MHz to 1000 MHz
NORMAL OPERATION

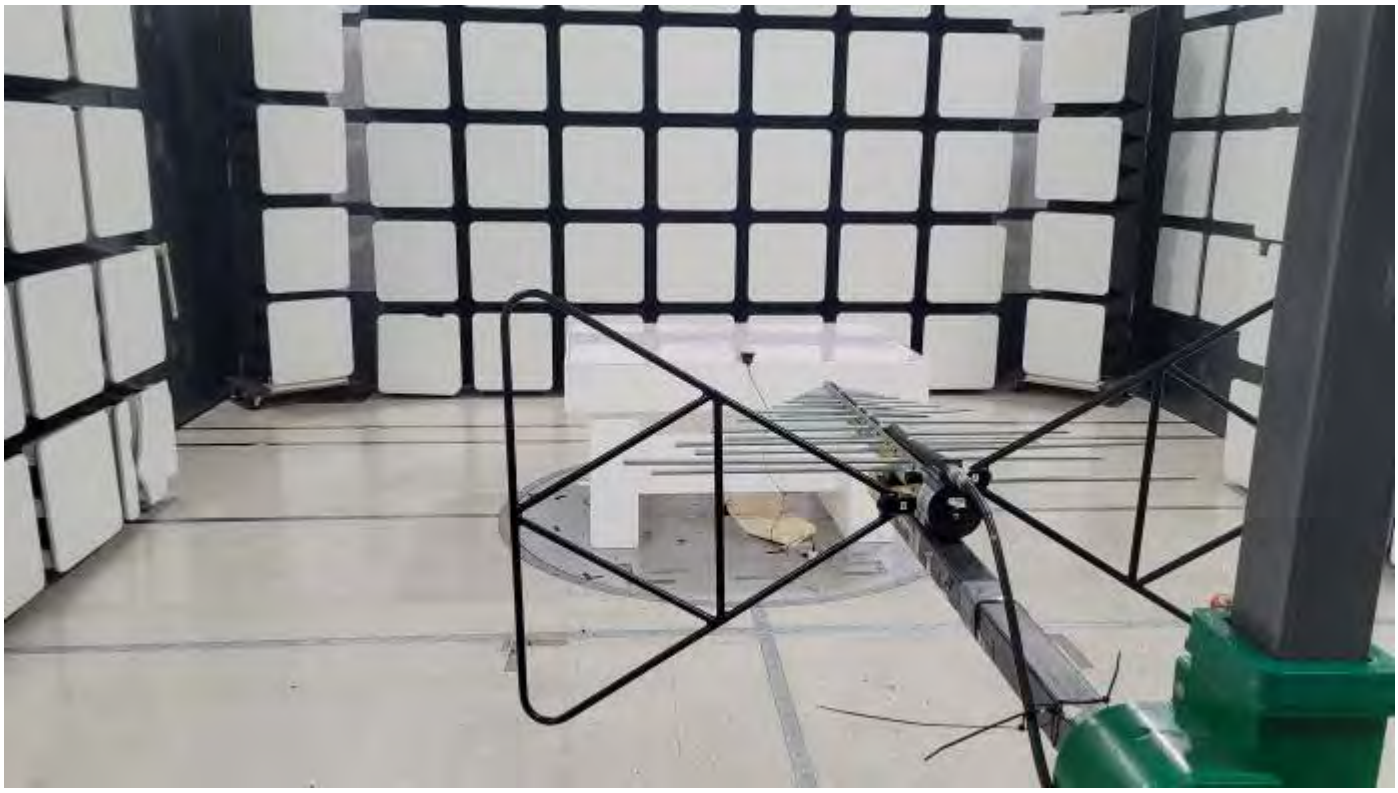
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 –
RADIATED EMISSIONS – 30 MHz to 1000 MHz
CHARGING MODE

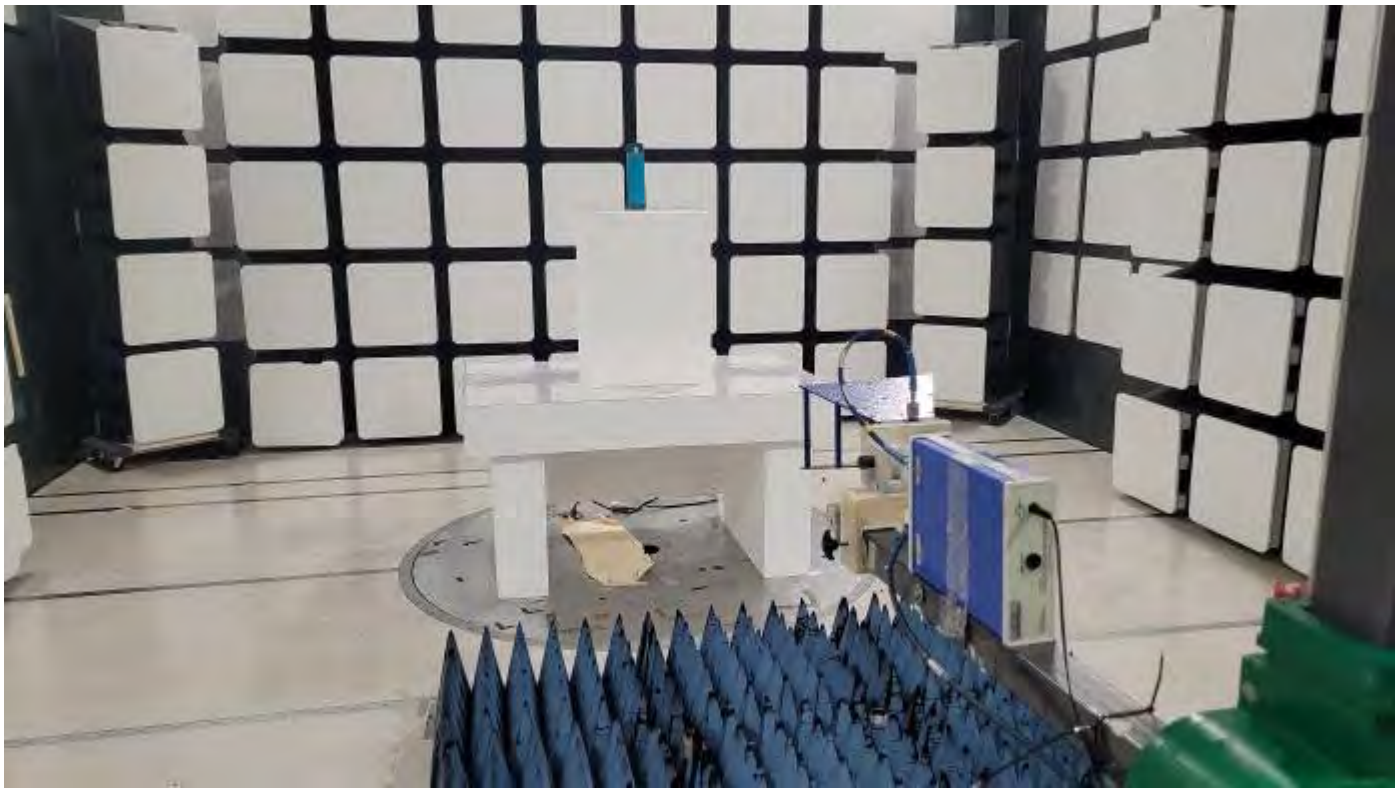
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 –
RADIATED EMISSIONS – 30 MHz to 1000 MHz
CHARGING MODE

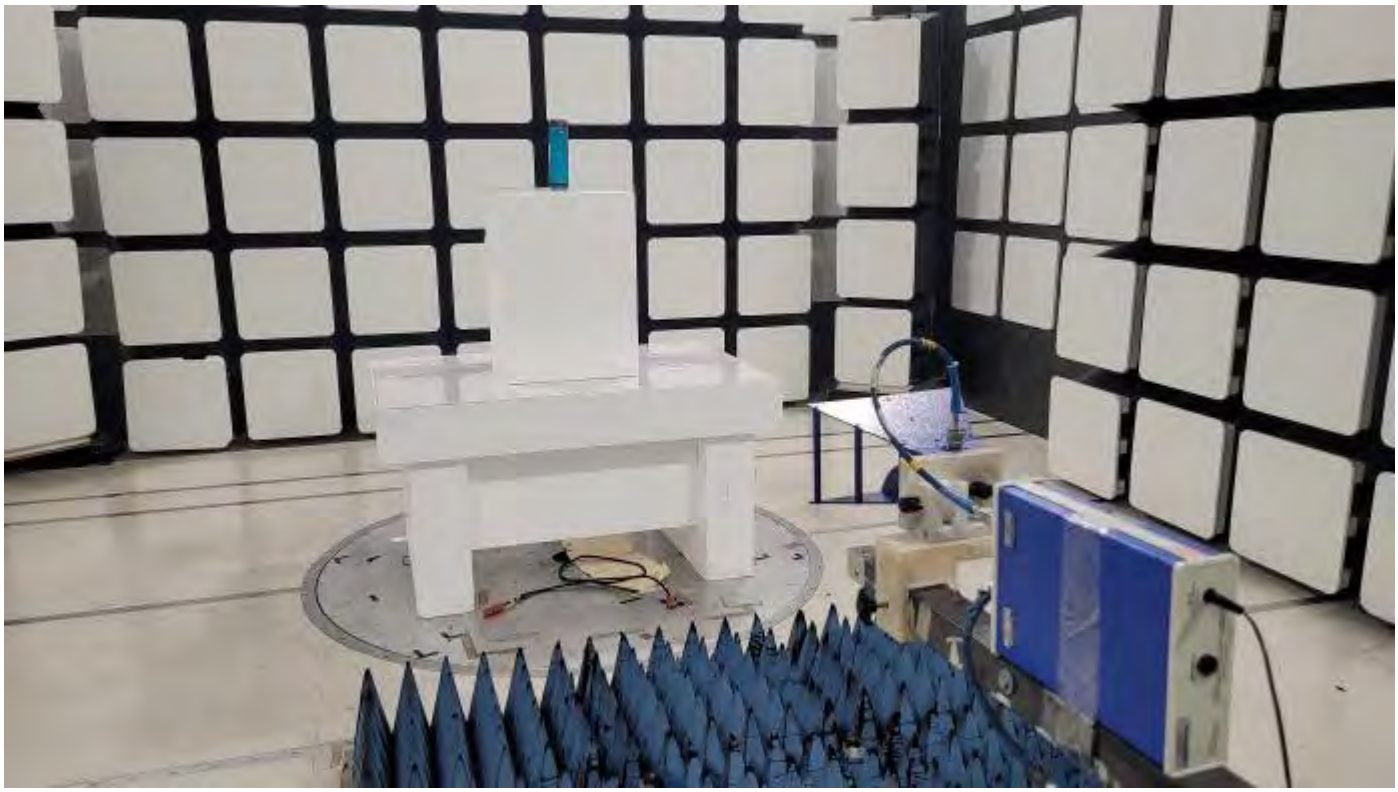
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 –
RADIATED EMISSIONS – ABOVE 1 GHz
NORMAL OPERATION

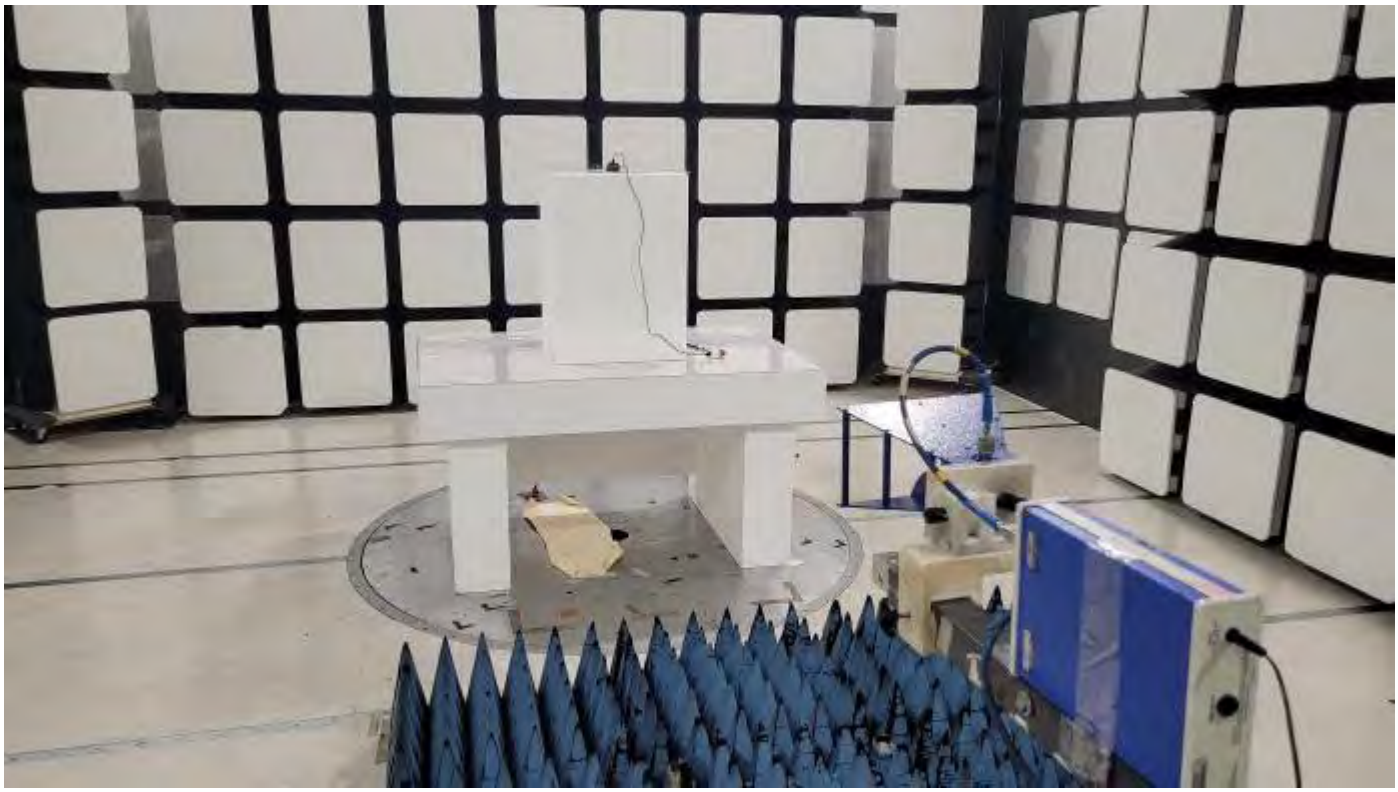
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 –
RADIATED EMISSIONS – ABOVE 1 GHz
NORMAL OPERATION

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

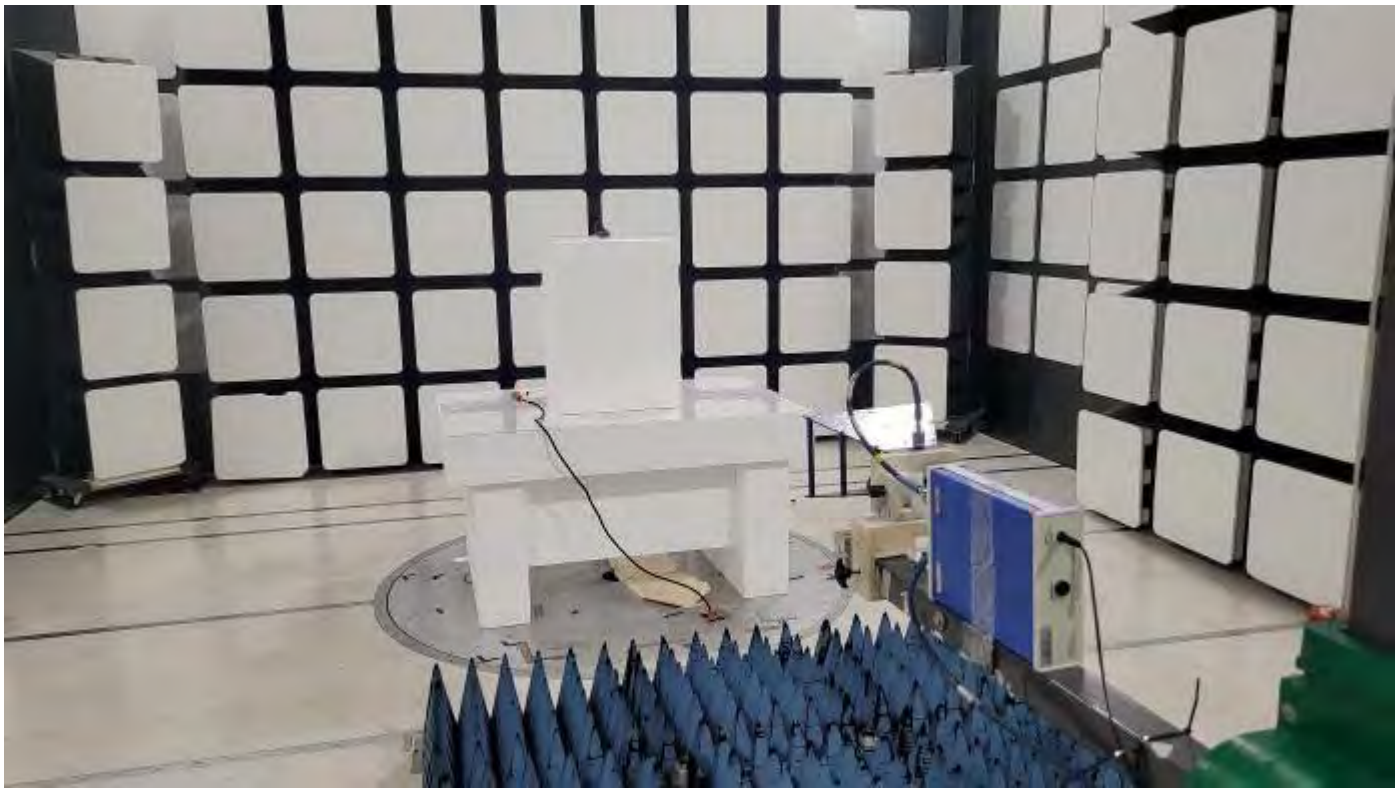


FRONT VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 –
RADIATED EMISSIONS – ABOVE 1 GHz
CHARGING MODE

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

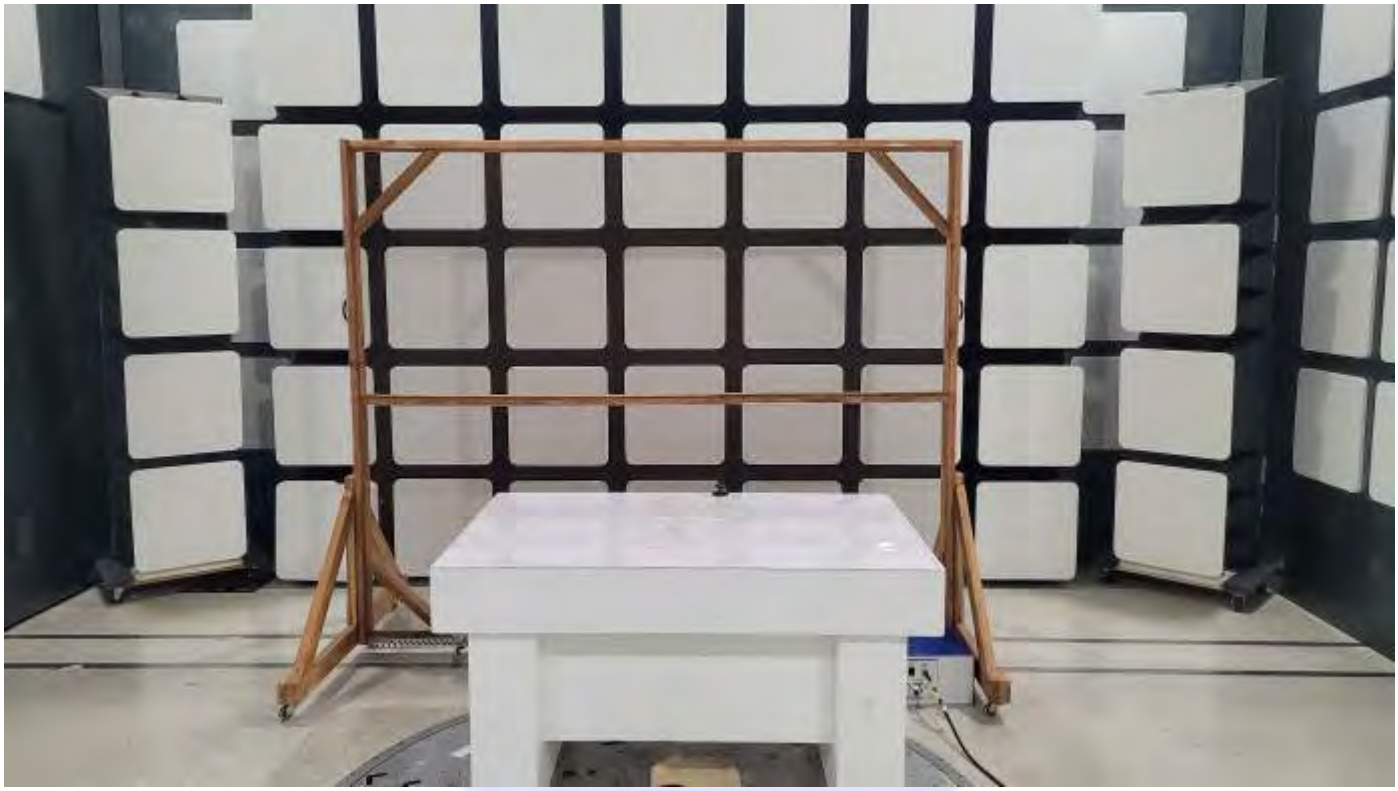
COMPATIBLE ELECTRONICS



REAR VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; RSS-GEN and RSS-247 –
RADIATED EMISSIONS – ABOVE 1 GHz
CHARGING MODE

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; and RSS-GEN – CONDUCTED EMISSIONS
CHARGING MODE

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

HIDRATESMART LLC
BLUETOOTH SENSOR
MODEL: SENSOR-007
FCC SUBPART B AND C; and RSS-GEN – CONDUCTED EMISSIONS
CHARGING MODE

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS DATA SHEETS

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	55.88	V	73.97	-18.09	Peak	242.75	111.04	
4804.00	39.63	V	53.97	-14.34	Avg	242.75	111.04	
7206.00		V	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		V	--	--	Avg			**Done via Conducted**
9608.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		V	--	--	Avg			**Done via Conducted**
12010.00	50.42	V	73.97	-23.55	Peak	170.00	175.46	
12010.00	34.17	V	53.97	-19.80	Avg	170.00	175.46	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	52.75	H	73.97	-21.22	Peak	135.50	111.34	
4804.00	36.50	H	53.97	-17.47	Avg	135.50	111.34	
7206.00		H	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		H	--	--	Avg			**Done via Conducted**
9608.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		H	--	--	Avg			**Done via Conducted**
12010.00	50.73	H	73.97	-23.24	Peak	117.75	142.98	
12010.00	34.48	H	53.97	-19.49	Avg	117.75	142.98	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	54.91	V	73.97	-19.06	Peak	195.75	111.34	
4804.00	38.66	V	53.97	-15.31	Avg	195.75	111.34	
7206.00		V	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		V	--	--	Avg			**Done via Conducted**
9608.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		V	--	--	Avg			**Done via Conducted**
12010.00	53.51	V	73.97	-20.46	Peak	350.00	110.80	
12010.00	37.26	V	53.97	-16.71	Avg	350.00	110.80	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	57.14	H	73.97	-16.83	Peak	234.00	111.28	
4804.00	40.89	H	53.97	-13.08	Avg	234.00	111.28	
7206.00		H	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		H	--	--	Avg			**Done via Conducted**
9608.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		H	--	--	Avg			**Done via Conducted**
12010.00	51.57	H	73.97	-22.40	Peak	102.00	143.58	
12010.00	35.32	H	53.97	-18.65	Avg	102.00	143.58	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	54.16	V	73.97	-19.81	Peak	121.75	111.46	
4804.00	37.91	V	53.97	-16.06	Avg	121.75	111.46	
7206.00		V	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		V	--	--	Avg			**Done via Conducted**
9608.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		V	--	--	Avg			**Done via Conducted**
12010.00	50.52	V	73.97	-23.45	Peak	124.75	143.34	
12010.00	34.27	V	53.97	-19.70	Avg	124.75	143.34	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	53.26	H	73.97	-20.71	Peak	23.25	111.46	
4804.00	37.01	H	53.97	-16.96	Avg	23.25	111.46	
7206.00		H	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		H	--	--	Avg			**Done via Conducted**
9608.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		H	--	--	Avg			**Done via Conducted**
12010.00	54.24	H	73.97	-19.73	Peak	359.75	206.98	
12010.00	37.99	H	53.97	-15.98	Avg	359.75	206.98	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

COMPATIBLE ELECTRONICS

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	57.09	V	73.97	-16.88	Peak	80.25	142.80	
4880.00	40.84	V	53.97	-13.13	Avg	80.25	142.80	
7320.00	51.03	V	73.97	-22.94	Peak	41.75	249.02	
7320.00	34.78	V	53.97	-19.19	Avg	41.75	249.02	
9760.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		V	--	--	Avg			**Done via Conducted**
12200.00	51.96	V	73.97	-22.01	Peak	288.50	127.22	
12200.00	35.71	V	53.97	-18.26	Avg	288.50	127.22	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

COMPATIBLE ELECTRONICS

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HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.43	H	73.97	-19.54	Peak	201.75	110.92	
4880.00	38.18	H	53.97	-15.79	Avg	201.75	110.92	
7320.00	55.10	H	73.97	-18.87	Peak	81.50	127.28	
7320.00	38.85	H	53.97	-15.12	Avg	81.50	127.28	
9760.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		H	--	--	Avg			**Done via Conducted**
12200.00	51.62	H	73.97	-22.35	Peak	23.75	191.46	
12200.00	35.37	H	53.97	-18.60	Avg	23.75	191.46	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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HidrateSmart LLC
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Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.97	V	73.97	-19.00	Peak	104.25	142.86	
4880.00	38.72	V	53.97	-15.25	Avg	104.25	142.86	
7320.00	53.38	V	73.97	-20.59	Peak	148.50	143.16	
7320.00	37.13	V	53.97	-16.84	Avg	148.50	143.16	
9760.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		V	--	--	Avg			**Done via Conducted**
12200.00	52.53	V	73.97	-21.44	Peak	339.50	191.28	
12200.00	36.28	V	53.97	-17.69	Avg	339.50	191.28	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Tested By: Kyle Fujimoto

Harmonics - Normal Operation
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	56.23	H	73.97	-17.74	Peak	130.75	111.10	
4880.00	39.98	H	53.97	-13.99	Avg	130.75	111.10	
7320.00	54.36	H	73.97	-19.61	Peak	215.50	191.34	
7320.00	38.11	H	53.97	-15.86	Avg	215.50	191.34	
9760.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		H	--	--	Avg			**Done via Conducted**
12200.00	50.55	H	73.97	-23.42	Peak	94.50	238.62	
12200.00	34.30	H	53.97	-19.67	Avg	94.50	238.62	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Date: 01/26/2025
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Harmonics - Normal Operation
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.58	V	73.97	-19.39	Peak	119.00	110.92	
4880.00	38.33	V	53.97	-15.64	Avg	119.00	110.92	
7320.00	53.92	V	73.97	-20.05	Peak	237.00	127.10	
7320.00	37.67	V	53.97	-16.30	Avg	237.00	127.10	
9760.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		V	--	--	Avg			**Done via Conducted**
12200.00	51.15	V	73.97	-22.82	Peak	130.50	159.28	
12200.00	34.90	V	53.97	-19.07	Avg	130.50	159.28	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Date: 01/26/2025
Lab: D
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Harmonics - Normal Operation
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	53.34	H	73.97	-20.63	Peak	26.25	127.04	
4880.00	37.09	H	53.97	-16.88	Avg	26.25	127.04	
7320.00	53.21	H	73.97	-20.76	Peak			
7320.00	36.96	H	53.97	-17.01	Avg			
9760.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		H	--	--	Avg			**Done via Conducted**
12200.00	50.73	H	73.97	-23.24	Peak	0.00	158.98	
12200.00	34.48	H	53.97	-19.49	Avg	0.00	158.98	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	52.56	H	73.97	-21.41	Peak	19.75	111.28	
4960.00	36.31	H	53.97	-17.66	Avg	19.75	111.28	
7440.00	55.96	H	73.97	-18.01	Peak	69.25	111.34	
7440.00	39.71	H	53.97	-14.26	Avg	69.25	111.34	
9920.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		H	--	--	Avg			**Done via Conducted**
12400.00	49.88	H	73.97	-24.09	Peak	265.75	143.46	
12400.00	33.63	H	53.97	-20.34	Avg	265.75	143.46	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Harmonics - Normal Operation
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	54.39	V	73.97	-19.58	Peak	163.00	174.44	
4960.00	38.14	V	53.97	-15.83	Avg	163.00	174.44	
7440.00	54.20	V	73.97	-19.77	Peak	13.75	159.46	
7440.00	37.95	V	53.97	-16.02	Avg	13.75	159.46	
9920.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		V	--	--	Avg			**Done via Conducted**
12400.00	48.82	V	73.97	-25.15	Peak	91.00	238.92	
12400.00	32.57	V	53.97	-21.40	Avg	91.00	238.92	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Harmonics - Normal Operation
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	54.39	V	73.97	-19.58	Peak	163.00	174.44	
4960.00	38.14	V	53.97	-15.83	Avg	163.00	174.44	
7440.00	54.20	V	73.97	-19.77	Peak	13.75	159.46	
7440.00	37.95	V	53.97	-16.02	Avg	13.75	159.46	
9920.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		V	--	--	Avg			**Done via Conducted**
12400.00	48.82	V	73.97	-25.15	Peak	91.00	238.92	
12400.00	32.57	V	53.97	-21.40	Avg	91.00	238.92	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Tested By: Kyle Fujimoto

Harmonics - Normal Operation
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	56.70	H	73.97	-17.27	Peak	139.50	111.52	
4960.00	40.45	H	53.97	-13.52	Avg	139.50	111.52	
7440.00	56.61	H	73.97	-17.36	Peak	155.00	110.62	
7440.00	40.36	H	53.97	-13.61	Avg	155.00	110.62	
9920.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		H	--	--	Avg			**Done via Conducted**
12400.00	50.14	H	73.97	-23.83	Peak	22.00	142.68	
12400.00	33.89	H	53.97	-20.08	Avg	22.00	142.68	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	53.77	V	73.97	-20.20	Peak	236.00	111.22	
4960.00	37.52	V	53.97	-16.45	Avg	236.00	111.22	
7440.00	59.29	V	73.97	-14.68	Peak	213.00	110.98	
7440.00	43.04	V	53.97	-10.93	Avg	213.00	110.98	
9920.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		V	--	--	Avg			**Done via Conducted**
12400.00	49.80	V	73.97	-24.17	Peak	155.75	111.22	
12400.00	33.55	V	53.97	-20.42	Avg	155.75	111.22	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Model: Sensor-007

Date: 01/26/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Normal Operation
High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	51.60	H	73.97	-22.37	Peak	131.75	143.16	
4960.00	35.35	H	53.97	-18.62	Avg	131.75	143.16	
7440.00	55.15	H	73.97	-18.82	Peak	235.75	111.16	
7440.00	38.90	H	53.97	-15.07	Avg	235.75	111.16	
9920.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		H	--	--	Avg			**Done via Conducted**
12400.00	49.86	H	73.97	-24.11	Peak	316.50	143.40	
12400.00	33.61	H	53.97	-20.36	Avg	316.50	143.40	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.247 and FCC Class B

HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/26/2025
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 25 GHz
Normal Operation

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis

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Model: Sensor-007

Date: 01/25/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Charging Mode
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	57.91	V	73.97	-16.06	Peak	201.50	111.46	
4804.00	41.66	V	53.97	-12.31	Avg	201.50	111.46	
7206.00		V	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		V	--	--	Avg			**Done via Conducted**
9608.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		V	--	--	Avg			**Done via Conducted**
12010.00	52.83	V	73.97	-21.14	Peak	52.75	223.64	
12010.00	36.58	V	53.97	-17.39	Avg	52.75	223.64	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

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HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/25/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Charging Mode
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	55.74	H	73.97	-18.23	Peak	288.00	111.28	
4804.00	39.49	H	53.97	-14.48	Avg	288.00	111.28	
7206.00		H	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		H	--	--	Avg			**Done via Conducted**
9608.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		H	--	--	Avg			**Done via Conducted**
12010.00	53.04	H	73.97	-20.93	Peak	133.50	111.40	
12010.00	36.79	H	53.97	-17.18	Avg	133.50	111.40	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

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Harmonics - Charging Mode
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	56.29	V	73.97	-17.68	Peak	231.25	111.04	
4804.00	40.04	V	53.97	-13.93	Avg	231.25	111.04	
7206.00		V	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		V	--	--	Avg			**Done via Conducted**
9608.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		V	--	--	Avg			**Done via Conducted**
12010.00	52.57	V	73.97	-21.40	Peak	14.75	223.64	**No Emissions**
12010.00	36.32	V	53.97	-17.65	Avg	14.75	223.64	**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

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Harmonics - Charging Mode
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	55.78	H	73.97	-18.19	Peak	230.00	110.92	
4804.00	39.53	H	53.97	-14.44	Avg	230.00	110.92	
7206.00		H	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		H	--	--	Avg			**Done via Conducted**
9608.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		H	--	--	Avg			**Done via Conducted**
12010.00	50.75	H	73.97	-23.22	Peak	241.25	207.52	
12010.00	34.50	H	53.97	-19.47	Avg	241.25	207.52	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

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Harmonics - Charging Mode
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	53.87	V	73.97	-20.10	Peak	309.25	127.22	
4804.00	37.62	V	53.97	-16.35	Avg	309.25	127.22	
7206.00		V	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		V	--	--	Avg			**Done via Conducted**
9608.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		V	--	--	Avg			**Done via Conducted**
12010.00	51.87	V	73.97	-22.10	Peak	132.00	111.10	
12010.00	35.62	V	53.97	-18.35	Avg	132.00	111.10	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

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Harmonics - Charging Mode
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	54.53	H	73.97	-19.44	Peak	198.75	112.35	
4804.00	38.28	H	53.97	-15.69	Avg	198.75	112.35	
7206.00		H	--	--	Peak			**N/A - Not in Restricted Band**
7206.00		H	--	--	Avg			**Done via Conducted**
9608.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9608.00		H	--	--	Avg			**Done via Conducted**
12010.00	51.36	H	73.97	-22.61	Peak	25.50	249.85	
12010.00	35.11	H	53.97	-18.86	Avg	25.50	249.85	
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

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Harmonics - Charging Mode
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.93	V	73.97	-19.04	Peak	135.00	111.40	
4880.00	38.68	V	53.97	-15.29	Avg	135.00	111.40	
7320.00	51.92	V	73.97	-22.05	Peak	321.25	223.04	
7320.00	35.67	V	53.97	-18.30	Avg	321.25	223.04	
9760.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		V	--	--	Avg			**Done via Conducted**
12200.00	50.22	V	73.97	-23.75	Peak	315.75	205.91	
12200.00	33.97	V	53.97	-20.00	Avg	315.75	205.91	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Harmonics - Charging Mode
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.54	H	73.97	-19.43	Peak	265.50	126.98	
4880.00	38.29	H	53.97	-15.68	Avg	265.50	126.98	
7320.00	53.06	H	73.97	-20.91	Peak	228.00	207.34	
7320.00	36.81	H	53.97	-17.16	Avg	228.00	207.34	
9760.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		H	--	--	Avg			**Done via Conducted**
12200.00	52.11	H	73.97	-21.86	Peak	228.50	191.46	
12200.00	35.86	H	53.97	-18.11	Avg	228.50	191.46	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Harmonics - Charging Mode
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.23	V	73.97	-19.74	Peak	240.75	110.92	
4880.00	37.98	V	53.97	-15.99	Avg	240.75	110.92	
7320.00	55.26	V	73.97	-18.71	Peak	232.75	127.70	
7320.00	39.01	V	53.97	-14.96	Avg	232.75	127.70	
9760.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		V	--	--	Avg			**Done via Conducted**
12200.00	51.97	V	73.97	-22.00	Peak	348.75	111.04	
12200.00	35.72	V	53.97	-18.25	Avg	348.75	111.04	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Harmonics - Charging Mode
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	58.65	H	73.97	-15.32	Peak	219.25	111.28	
4880.00	42.40	H	53.97	-11.57	Avg	219.25	111.28	
7320.00	55.33	H	73.97	-18.64	Peak	137.00	111.34	
7320.00	39.08	H	53.97	-14.89	Avg	137.00	111.34	
9760.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		H	--	--	Avg			**Done via Conducted**
12200.00	38.87	H	73.97	-35.10	Peak	353.00	159.38	
12200.00	22.62	H	53.97	-31.35	Avg	353.00	159.38	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Harmonics - Charging Mode
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.50	V	73.97	-19.47	Peak	296.00	111.46	
4880.00	38.25	V	53.97	-15.72	Avg	296.00	111.46	
7320.00	56.18	V	73.97	-17.79	Peak	159.50	111.28	
7320.00	39.93	V	53.97	-14.04	Avg	159.50	111.28	
9760.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		V	--	--	Avg			**Done via Conducted**
12200.00	52.63	V	73.97	-21.34	Peak	131.25	111.10	
12200.00	36.38	V	53.97	-17.59	Avg	131.25	111.10	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Harmonics - Charging Mode
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	53.78	H	73.97	-20.19	Peak	203.50	127.40	
4880.00	37.53	H	53.97	-16.44	Avg	203.50	127.40	
7320.00	53.40	H	73.97	-20.57	Peak	241.00	111.34	
7320.00	37.15	H	53.97	-16.82	Avg	241.00	111.34	
9760.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9760.00		H	--	--	Avg			**Done via Conducted**
12200.00	49.94	H	73.97	-24.03	Peak	329.75	110.80	
12200.00	33.69	H	53.97	-20.28	Avg	329.75	110.80	
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

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Harmonics - Charging Mode
High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	55.56	V	73.97	-18.41	Peak	331.25	127.28	
4960.00	39.31	V	53.97	-14.66	Avg	331.25	127.28	
7440.00	52.60	V	73.97	-21.37	Peak	290.25	143.10	
7440.00	36.35	V	53.97	-17.62	Avg	290.25	143.10	
9920.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		V	--	--	Avg			**Done via Conducted**
12400.00	49.83	V	73.97	-24.14	Peak	10.00	249.02	
12400.00	33.58	V	53.97	-20.39	Avg	10.00	249.02	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Harmonics - Charging Mode
High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	51.68	H	73.97	-22.29	Peak	274.25	110.98	
4960.00	35.43	H	53.97	-18.54	Avg	274.25	110.98	
7440.00	56.09	H	73.97	-17.88	Peak	225.50	207.16	
7440.00	39.84	H	53.97	-14.13	Avg	225.50	207.16	
9920.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		H	--	--	Avg			**Done via Conducted**
12400.00	50.66	H	73.97	-23.31	Peak	202.50	159.04	
12400.00	34.41	H	53.97	-19.56	Avg	202.50	159.04	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Harmonics - Charging Mode
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	49.74	V	73.97	-24.23	Peak	300.50	127.34	
4960.00	33.49	V	53.97	-20.48	Avg	300.50	127.34	
7440.00	56.27	V	73.97	-17.70	Peak	223.25	111.76	
7440.00	40.02	V	53.97	-13.95	Avg	223.25	111.76	
9920.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		V	--	--	Avg			**Done via Conducted**
12400.00	49.95	V	73.97	-24.02	Peak	347.25	191.28	
12400.00	33.70	V	53.97	-20.27	Avg	347.25	191.28	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

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Harmonics - Charging Mode
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	54.55	H	73.97	-19.42	Peak	309.25	111.28	
4960.00	38.30	H	53.97	-15.67	Avg	309.25	111.28	
7440.00	49.11	H	73.97	-24.86	Peak	205.00	143.58	
7440.00	32.86	H	53.97	-21.11	Avg	205.00	143.58	
9920.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		H	--	--	Avg			**Done via Conducted**
12400.00	51.86	H	73.97	-22.11	Peak	11.25	159.34	
12400.00	35.61	H	53.97	-18.36	Avg	11.25	159.34	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/25/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Charging Mode
High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	56.80	V	73.97	-17.17	Peak	14.00	111.16	
4960.00	40.55	V	53.97	-13.42	Avg	14.00	111.16	
7440.00	58.44	V	73.97	-15.53	Peak	342.25	127.16	
7440.00	42.19	V	53.97	-11.78	Avg	342.25	127.16	
9920.00		V	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		V	--	--	Avg			**Done via Conducted**
12400.00	49.59	V	73.97	-24.38	Peak	17.75	175.16	
12400.00	33.34	V	53.97	-20.63	Avg	17.75	175.16	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/25/2025
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Charging Mode
High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	53.77	H	73.97	-20.20	Peak	55.00	111.34	
4960.00	37.52	H	53.97	-16.45	Avg	55.00	111.34	
7440.00	54.57	H	73.97	-19.40	Peak	40.25	207.28	
7440.00	38.32	H	53.97	-15.65	Avg	40.25	207.28	
9920.00		H	--	--	Peak			**N/A - Not in Restricted Band**
9920.00		H	--	--	Avg			**Done via Conducted**
12400.00	49.91	H	73.97	-24.06	Peak	356.25	175.10	
12400.00	33.66	H	53.97	-20.31	Avg	356.25	175.10	
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.247 and FCC Class B

HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

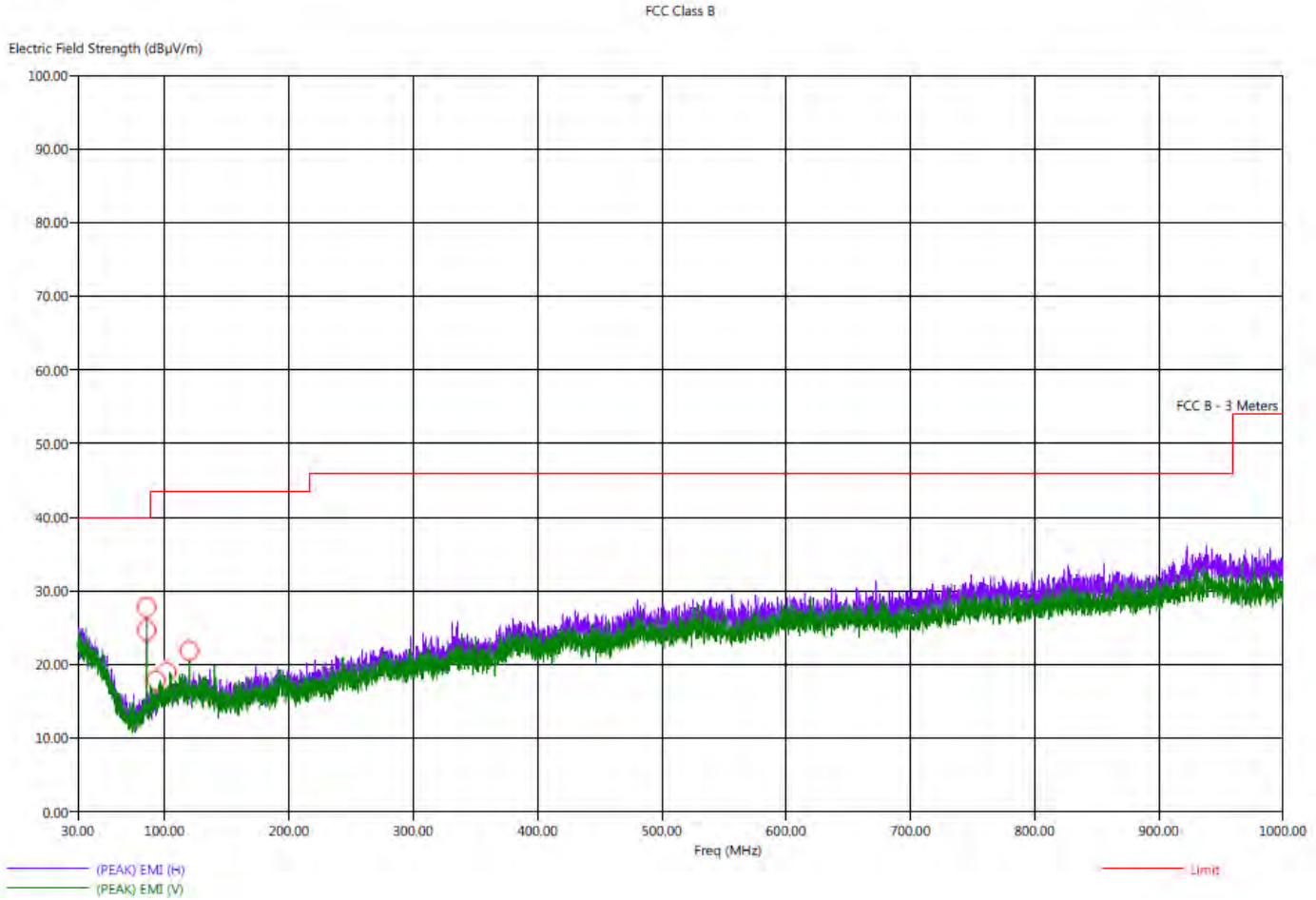
Date: 01/25/2025
Lab: D
Tested By: Kyle Fujimoto

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 25 GHz
Charging Mode

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis

Title: Pre-Scan - FCC Class B
File: 1 - Keysight - Pre-Scan - Y-Axis - Normal Mode - FCC Class B - 30 MHz to 1000 MHz - 01-25-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: EUT is transmitting continuously at 2480 MHz
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A
Normal Operation - Y-Axis - Worst Case

1/24/2025 2:37:58 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 1 - Keysight - Final Scan - Y-Axis - Normal Mode - FCC Class B - 30 MHz to 1000 MHz - 01-25-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: The EUT is transmitting continuously at 2480 MHz
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A
Normal Operation - Y-Axis

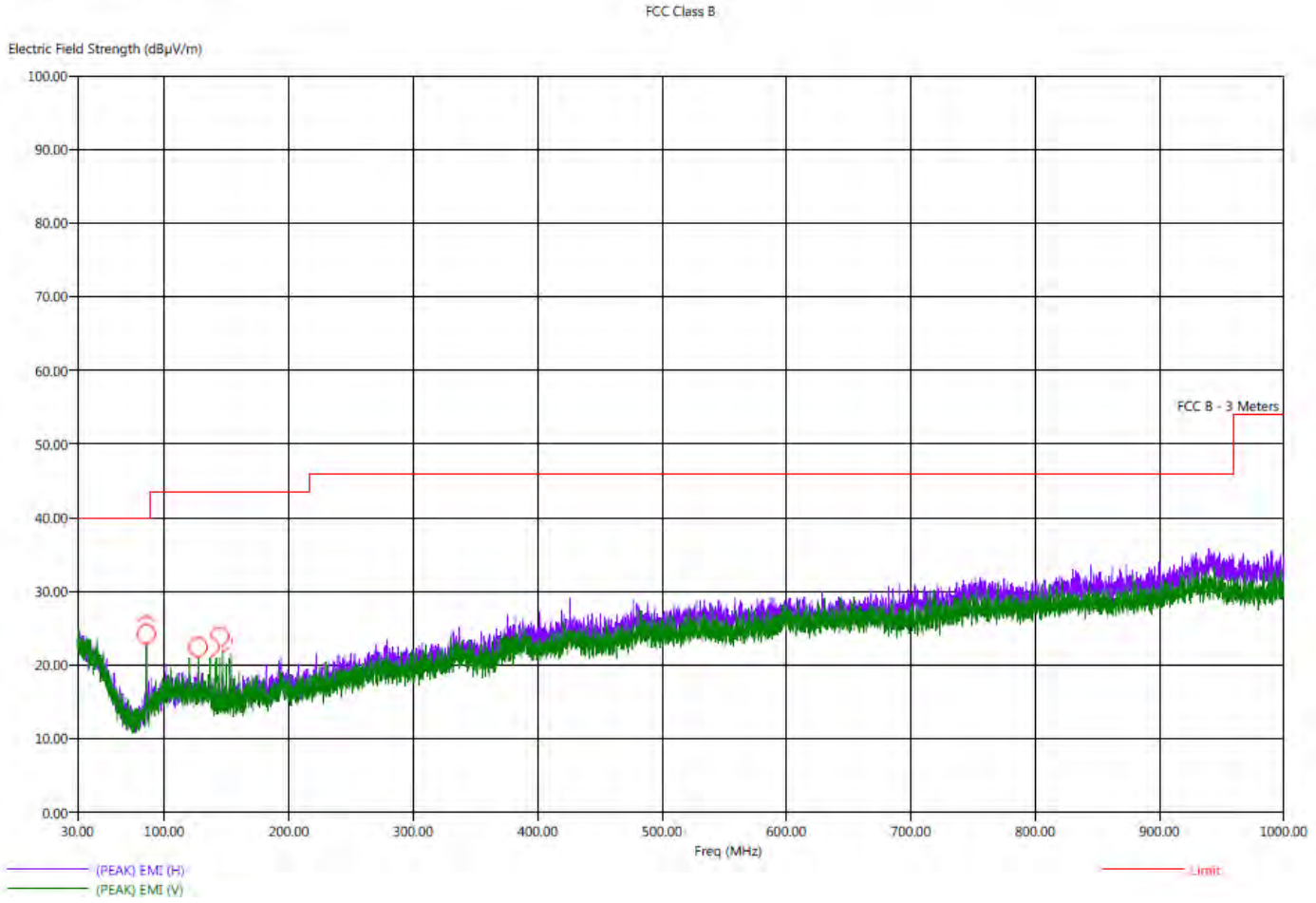
1/24/2025 2:57:56 PM
Sequence: Final Measurements

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)
85.50	H	28.41	23.93	-11.59	-16.07	40.00	13.41	0.53	55.50	110.80
85.50	V	30.78	27.43	-9.22	-12.57	40.00	13.41	0.53	141.25	111.04
93.20	H	17.22	12.02	-26.28	-31.48	43.50	14.66	0.57	273.75	318.92
94.80	H	17.21	12.24	-26.29	-31.26	43.50	14.86	0.58	256.75	159.10
101.90	H	18.85	13.06	-24.65	-30.44	43.50	15.70	0.61	112.50	222.92
120.00	V	25.47	22.50	-18.03	-21.00	43.50	15.90	0.70	294.00	319.10

Title: Pre-Scan - FCC Class B
File: 2 - Keysight - Pre-Scan - X-Axis - Charging Mode - FCC Class B - 30 MHz to 1000 MHz - New PS - 01-25-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: EUT is transmitting continuously at 2480 MHz and charging the EUT via a USB Charger
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A
Charging Mode - X-Axis - Worst Case

1/24/2025 1:08:22 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 2 - Keysight - Final Scan - X-Axis - Charging Mode - FCC Class B - 30 MHz to 1000 MHz - New PS - 01-25-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: The EUT is transmitting continuously at 2480 MHz and charging the EUT via a USB charger
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A
Charging Mode - X-Axis

1/24/2025 1:52:46 PM
Sequence: Final Measurements

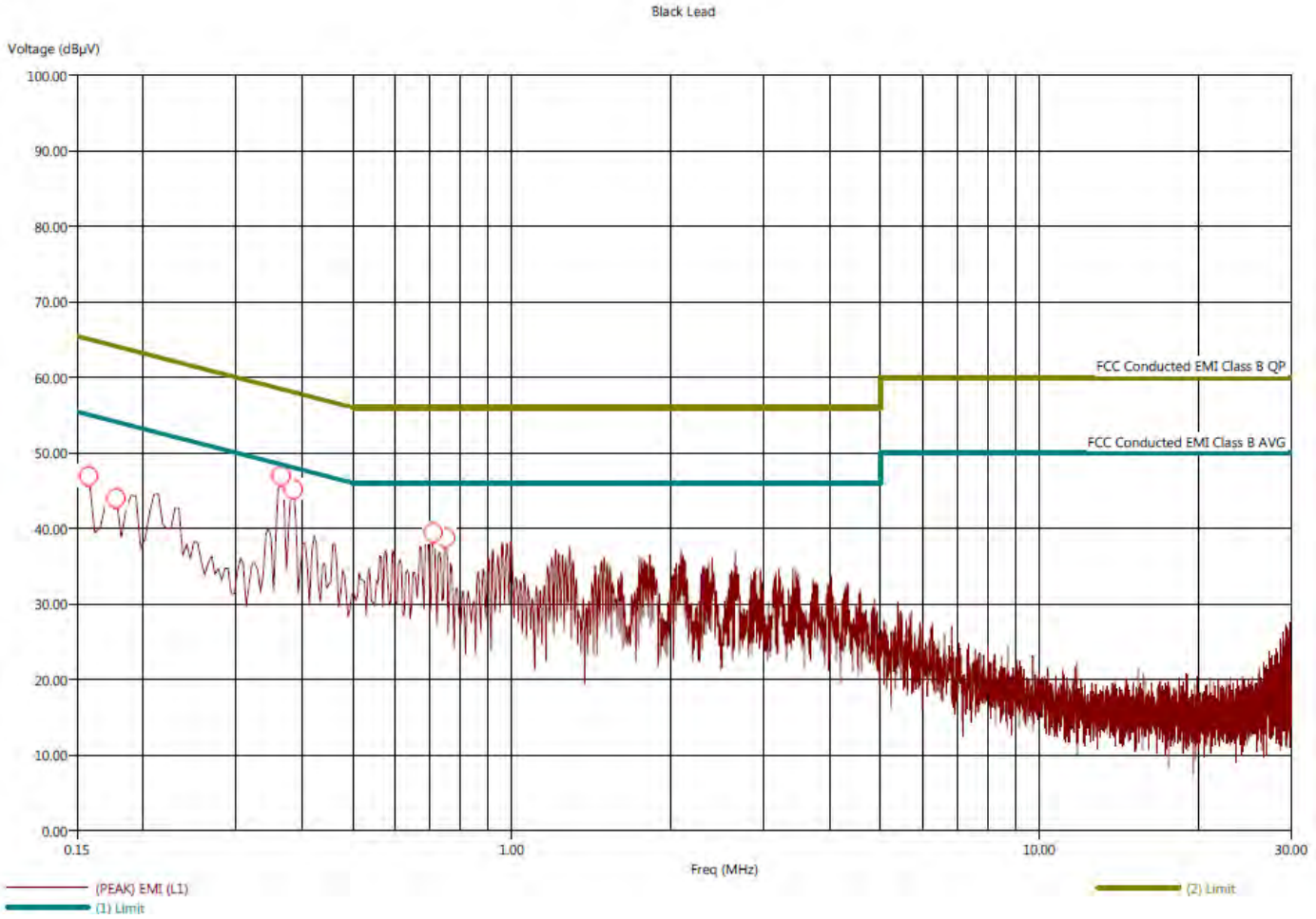
FCC Class B

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)
85.50	H	29.50	25.93	-10.50	-14.07	40.00	13.40	0.53	0.00	111.34
85.50	V	32.98	29.68	-7.02	-10.32	40.00	13.41	0.53	216.00	255.52
127.20	V	24.37	14.28	-19.13	-29.22	43.50	15.80	0.72	1.75	111.22
136.80	V	20.82	12.81	-22.68	-30.69	43.50	15.23	0.71	49.50	191.10
144.50	V	17.89	12.20	-25.61	-31.30	43.50	14.60	0.70	190.75	271.28
146.80	V	22.54	13.23	-20.96	-30.27	43.50	14.60	0.70	184.75	143.46

CONDUCTED EMISSIONS DATA SHEETS

Title: FCC Class B - Black Lead
File: Keysight - Pre-Scan - AC Charging Mode - Black Lead - FCC Class B - 01-26-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: The EUT is continuously transmitting at 2402 MHz and also charging the EUT
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A

1/26/2025 11:30:43 AM
Sequence: Preliminary Scan



Title: FCC Class B - Black Lead
File: Keysight - Final Scan - AC Charging Mode - Black Lead - FCC Class B - 01-26-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: The EUT is continuously transmitting at 2402 MHz and also charging the EUT
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A

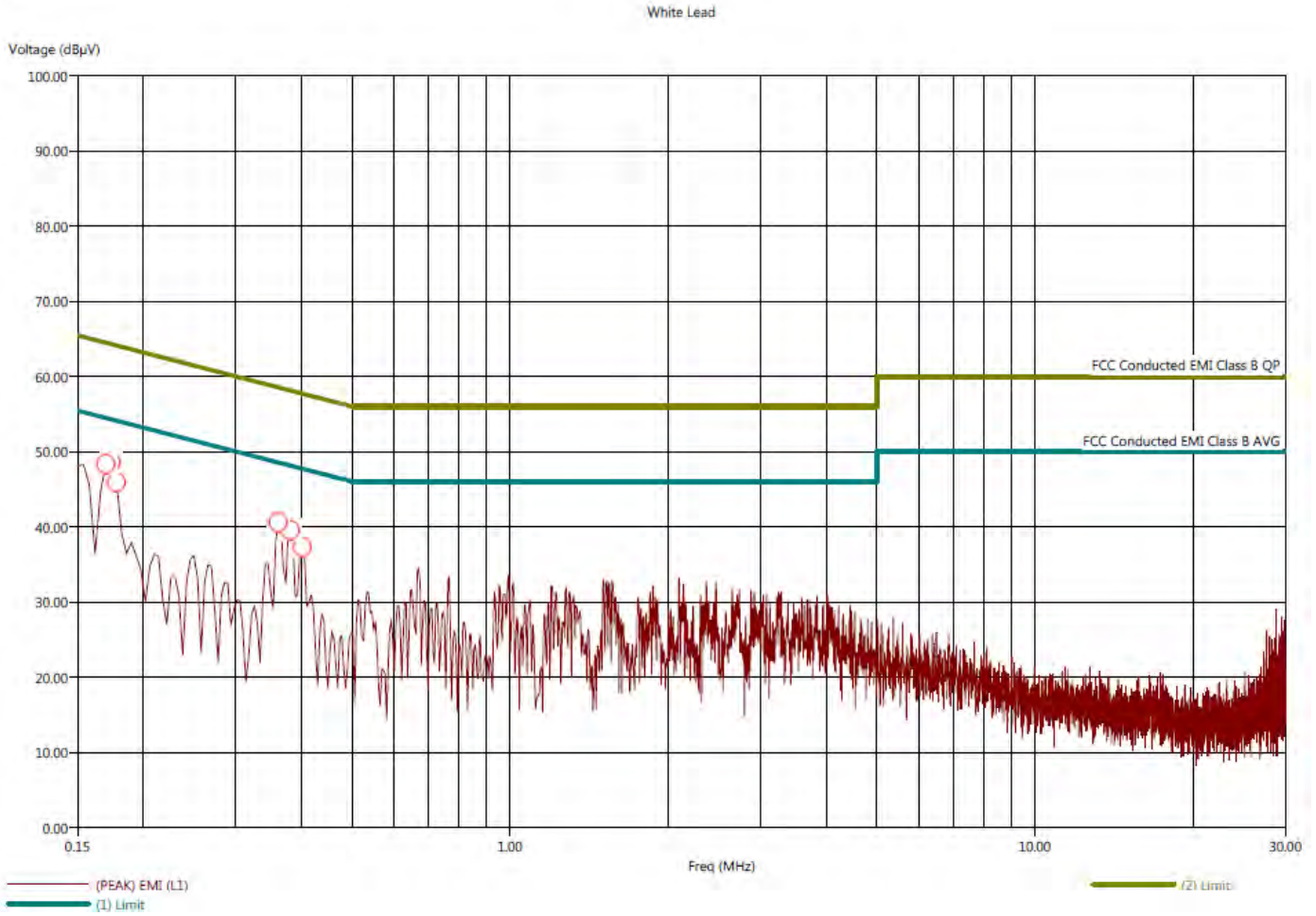
1/26/2025 11:34:43 AM
Sequence: Final Measurements

Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.158	48.93	41.12	-6.45	-14.26	55.38	0.28	0.14	9.94
0.178	50.35	41.52	-3.95	-12.78	54.29	0.28	0.12	9.92
0.366	49.20	43.59	0.68	-4.93	48.51	0.36	0.09	9.97
0.386	46.74	40.71	-1.34	-7.37	48.08	0.37	0.09	9.97
0.710	41.60	35.35	-4.40	-10.65	46.00	0.37	0.09	10.00
0.750	40.92	32.62	-5.08	-13.38	46.00	0.36	0.09	10.00

Title: FCC Class B - White Lead
File: Keysight - Pre-Scan - AC Charging Mode - White Lead - FCC Class B - 01-26-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: The EUT is continuously transmitting at 2402 MHz and also charging the EUT
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A

1/26/2025 11:43:24 AM
Sequence: Preliminary Scan



Title: FCC Class B - White Lead
File: Keysight - Final Scan - AC Charging Mode - White Lead - FCC Class B - 01-26-2025.set
Operator: Kyle Fujimoto
EUT Type: Bluetooth Sensor
EUT Condition: The EUT is continuously transmitting at 2480 MHz and also charging the EUT
Company: HidrateSmart LLC
Model: Sensor-007
S/N: N/A
Normal Operation - X-Axis

1/26/2025 11:45:23 AM
Sequence: Final Measurements

White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (AVG) (dB)	(AVG) Margin (AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.170	49.05	38.65	-5.32	-15.72	54.36	0.28	0.10	9.92
0.174	49.27	38.79	-5.13	-15.61	54.40	0.28	0.10	9.92
0.178	49.13	38.74	-5.26	-15.65	54.39	0.28	0.10	9.92
0.362	44.35	39.43	-4.17	-9.09	48.52	0.36	0.06	9.97
0.382	41.19	35.27	-6.95	-12.87	48.14	0.37	0.06	9.97
0.402	37.75	28.38	-9.95	-19.32	47.69	0.38	0.06	9.98

BAND EDGES DATA SHEETS

FCC 15.247

HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/25/2024
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Normal Operation
Low Channel

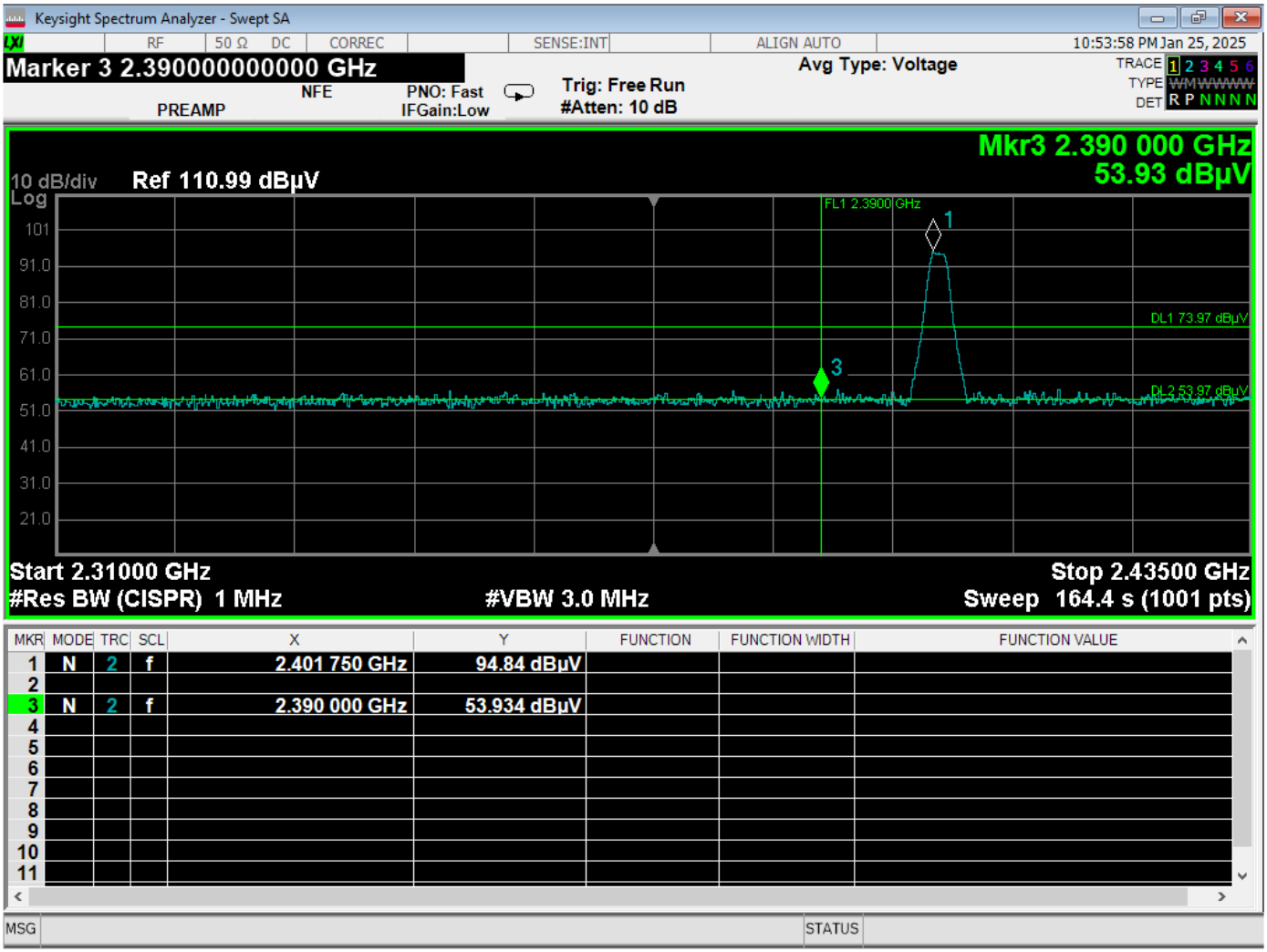
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	95.65	H	--	--	Peak	219.25	158.32	**Fundamental**
2402.00	79.40	H	--	--	Avg	219.25	158.32	**Z-Axis - 2 Mbit**
2390.00	53.12	H	73.97	-20.85	Peak	219.25	158.32	**Band Edge**
2390.00	36.87	H	53.97	-17.10	Avg	219.25	158.32	**Z-Axis - 2 Mbit**
2402.00	94.84	V	--	--	Peak	135.75	143.70	**Fundamental**
2402.00	78.59	V	--	--	Avg	135.75	143.70	**Z-Axis - 2 Mbit**
2390.00	53.93	V	73.97	-20.04	Peak	135.75	143.70	**Band Edge**
2390.00	37.68	V	53.97	-16.29	Avg	135.75	143.70	**Z-Axis - 2 Mbit**

FCC 15.247
HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

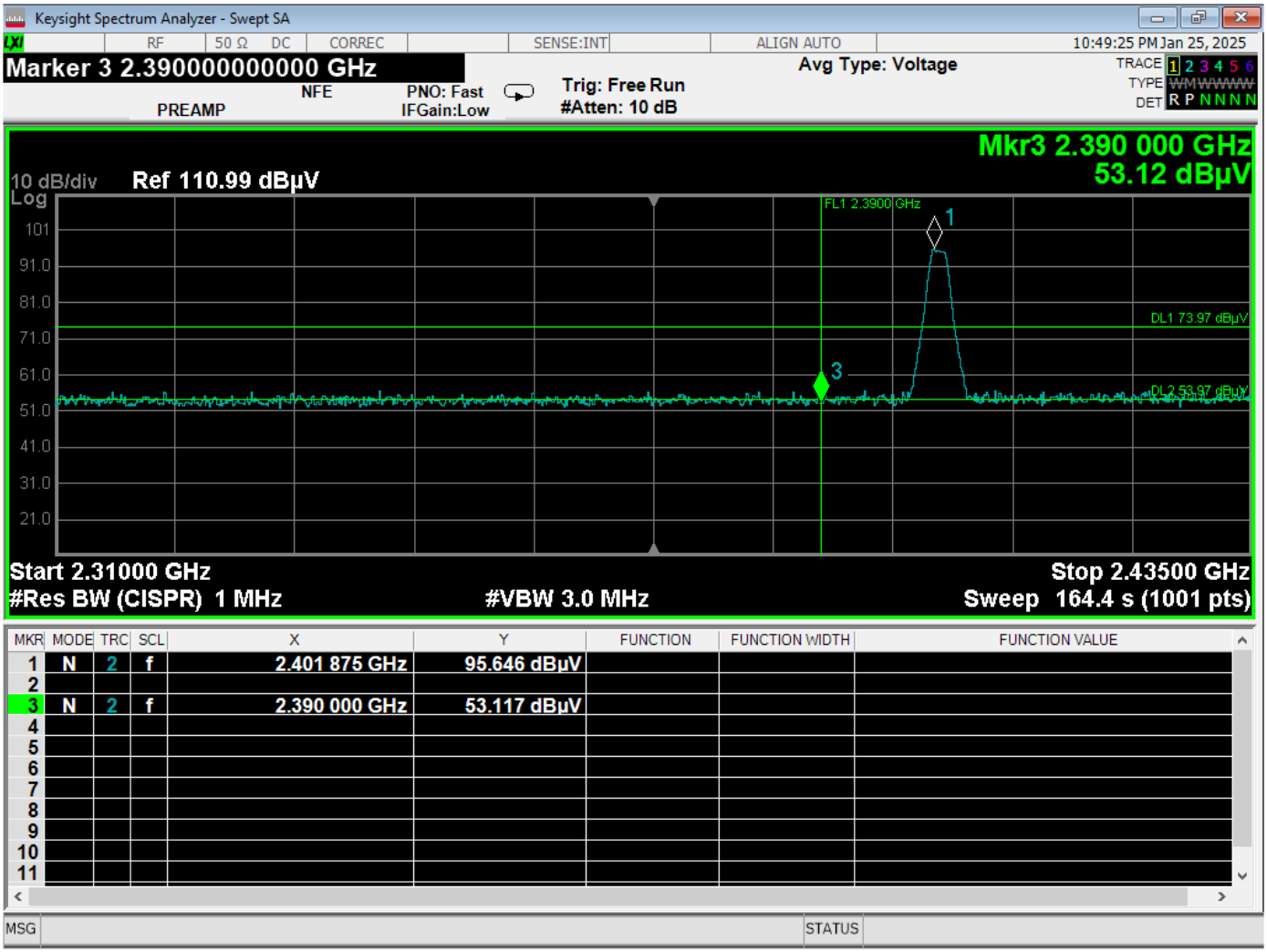
Date: 01/25/2024
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Normal Operation
High Channel

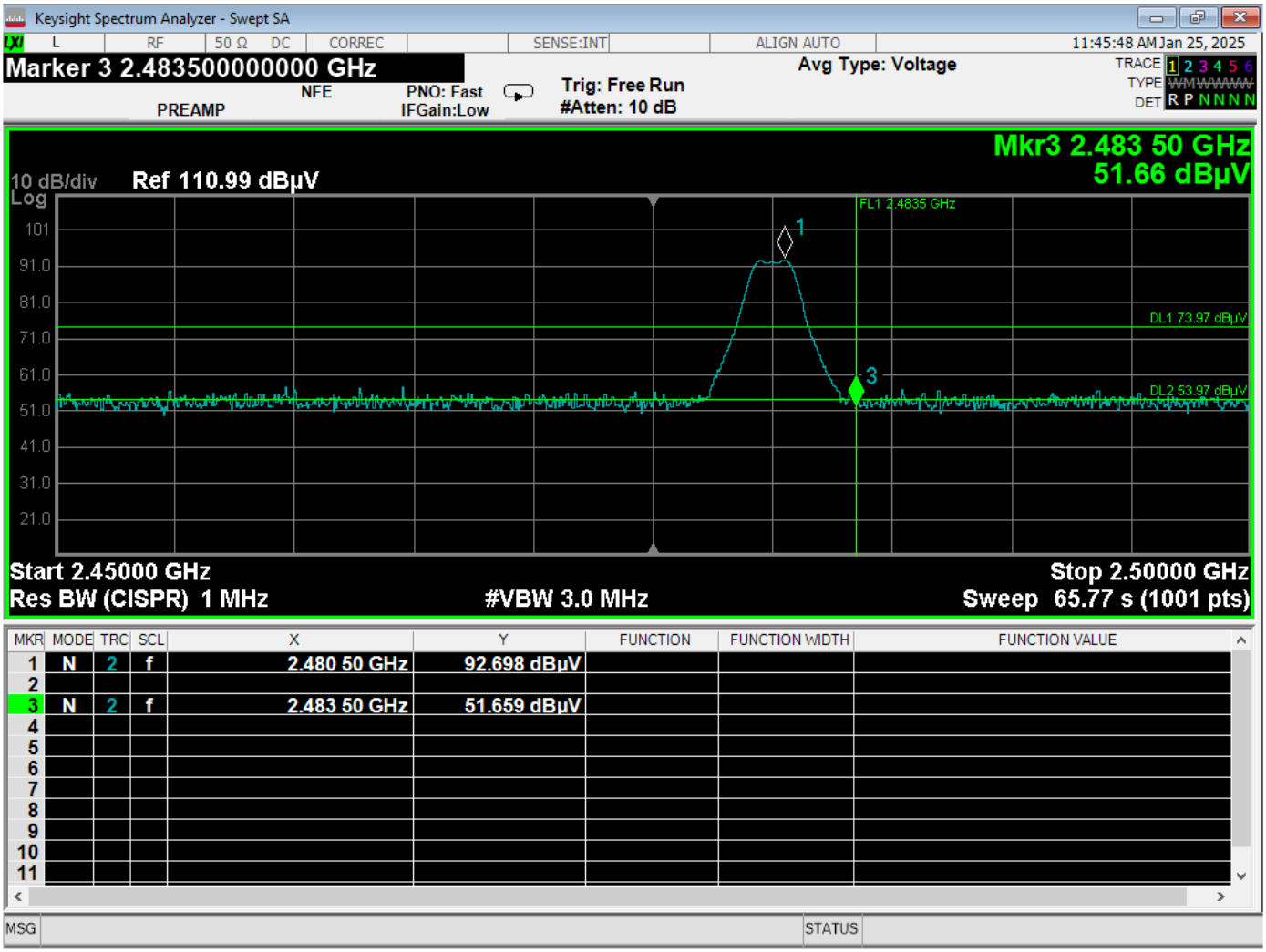
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	95.48	H	--	--	Peak	184.50	207.46	**Fundamental**
2480.00	79.23	H	--	--	Avg	184.50	207.46	**Z-Axis - 2 Mbit**
2483.50	55.29	H	73.97	-18.68	Peak	184.50	207.46	**Band Edge**
2483.50	39.04	H	53.97	-14.93	Avg	184.50	207.46	**Z-Axis - 2 Mbit**
2480.00	92.70	V	--	--	Peak	87.50	146.80	**Fundamental**
2480.00	76.45	V	--	--	Avg	87.50	146.80	**Z-Axis - 2 Mbit**
2483.50	51.66	V	73.97	-22.31	Peak	87.50	146.80	**Band Edge**
2483.50	35.41	V	53.97	-18.56	Avg	87.50	146.80	**Z-Axis - 2 Mbit**



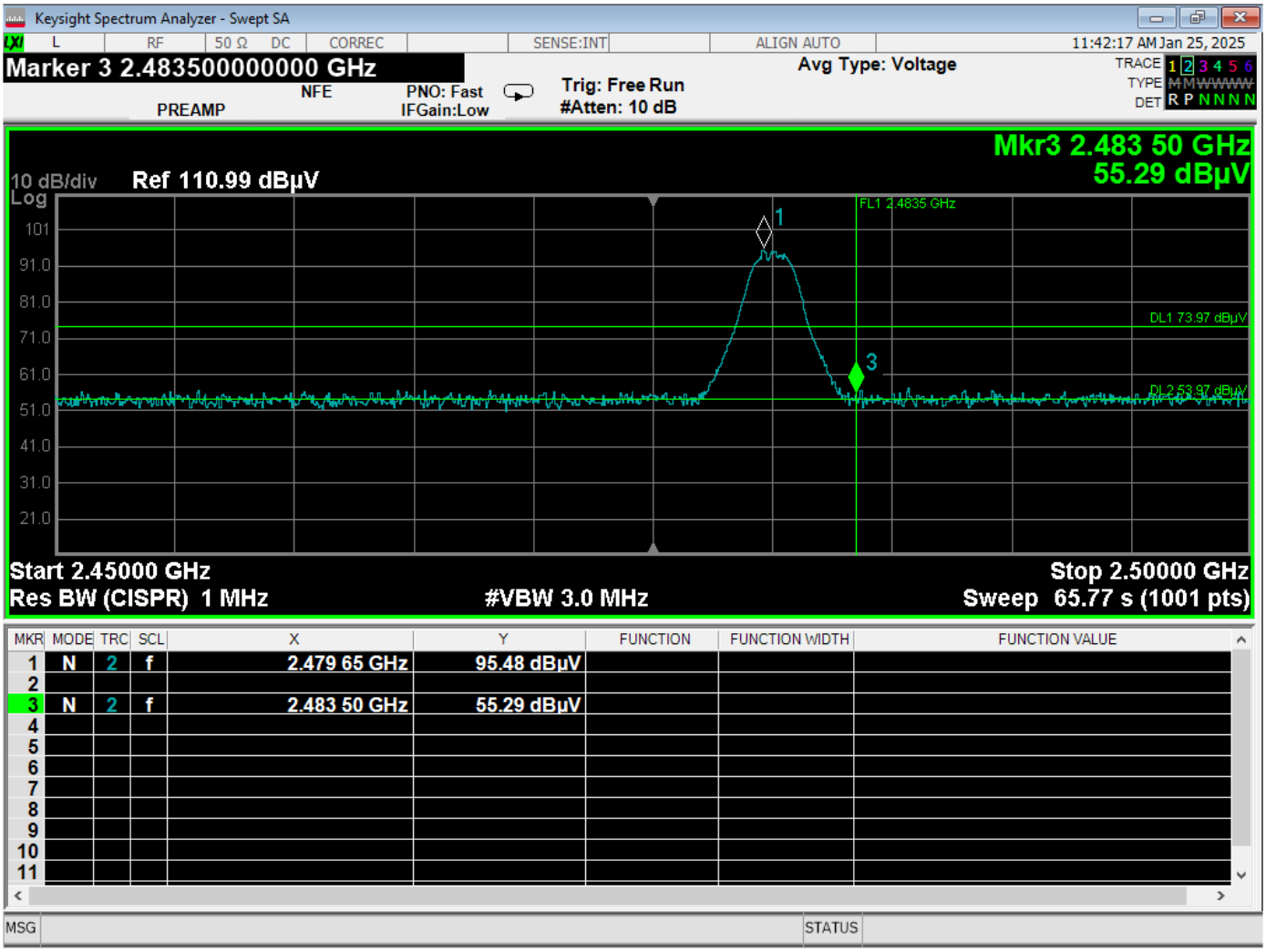
Band Edge – Normal Operation – Low Channel – Vertical Polarization – Z-Axis



Band Edge – Normal Operation – Low Channel – Horizontal Polarization – Z-Axis



Band Edge – Normal Operation – High Channel – Vertical Polarization – Z-Axis



Band Edge – Normal Operation – High Channel – Horizontal Polarization – Z-Axis

FCC 15.247

HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

Date: 01/25/2025
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Charging Mode
Low Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	99.96	H	--	--	Peak	294.00	123.29	**Fundamental**
2402.00	83.71	H	--	--	Avg	294.00	123.29	**Z-Axis - 2 Mbit**
2390.00	53.73	H	73.97	-20.24	Peak	294.00	123.29	**Band Edge**
2390.00	37.48	H	53.97	-16.49	Avg	294.00	123.29	**Z-Axis - 2 Mbit**
2402.00	97.62	V	--	--	Peak	328.00	126.08	**Fundamental**
2402.00	81.37	V	--	--	Avg	328.00	126.08	**Z-Axis - 2 Mbit**
2390.00	53.93	V	73.97	-20.04	Peak	328.00	126.08	**Band Edge**
2390.00	37.68	V	53.97	-16.29	Avg	328.00	126.08	**Z-Axis - 2 Mbit**

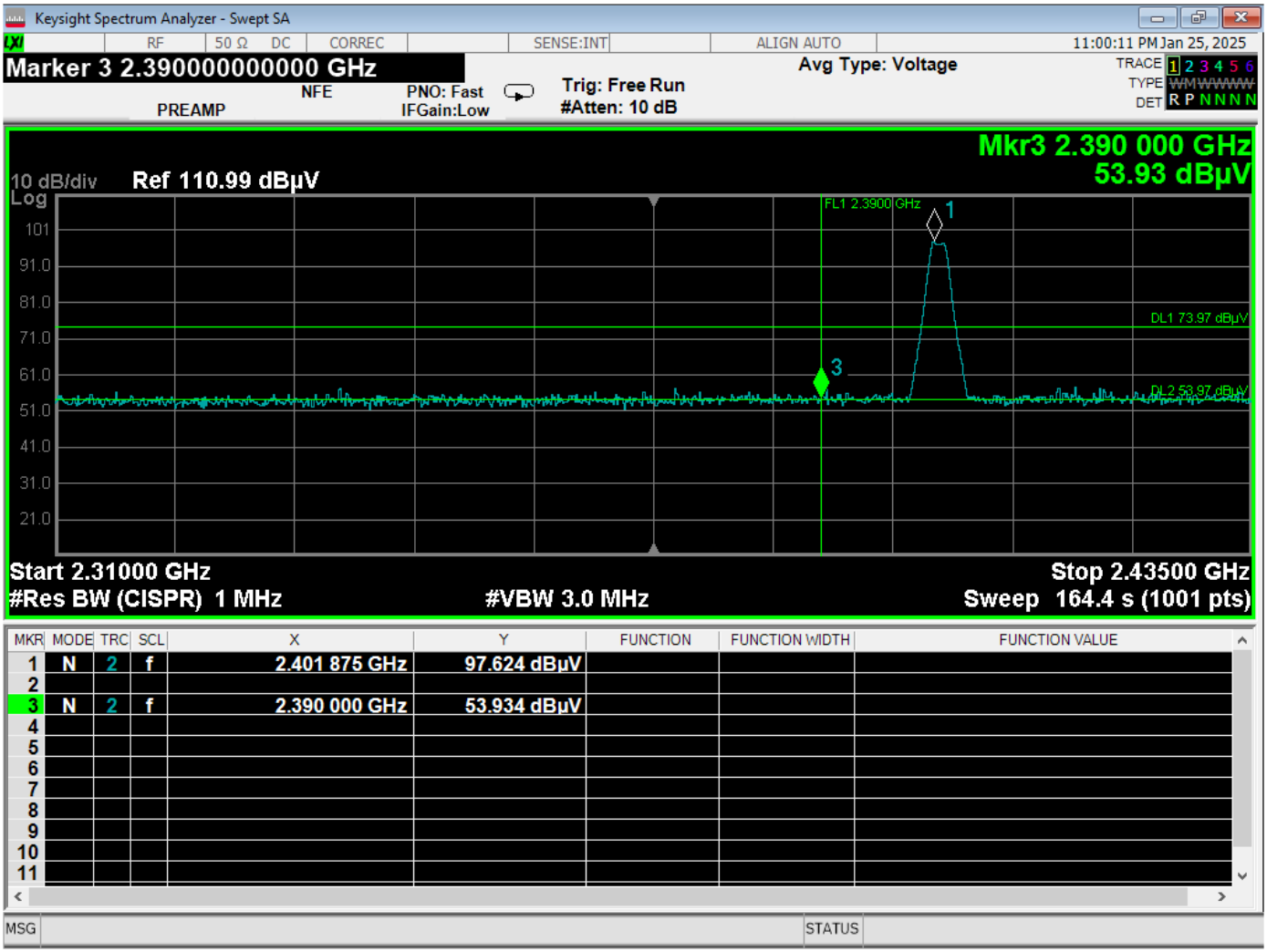
FCC 15.247

HidrateSmart LLC
Bluetooth Sensor
Model: Sensor-007

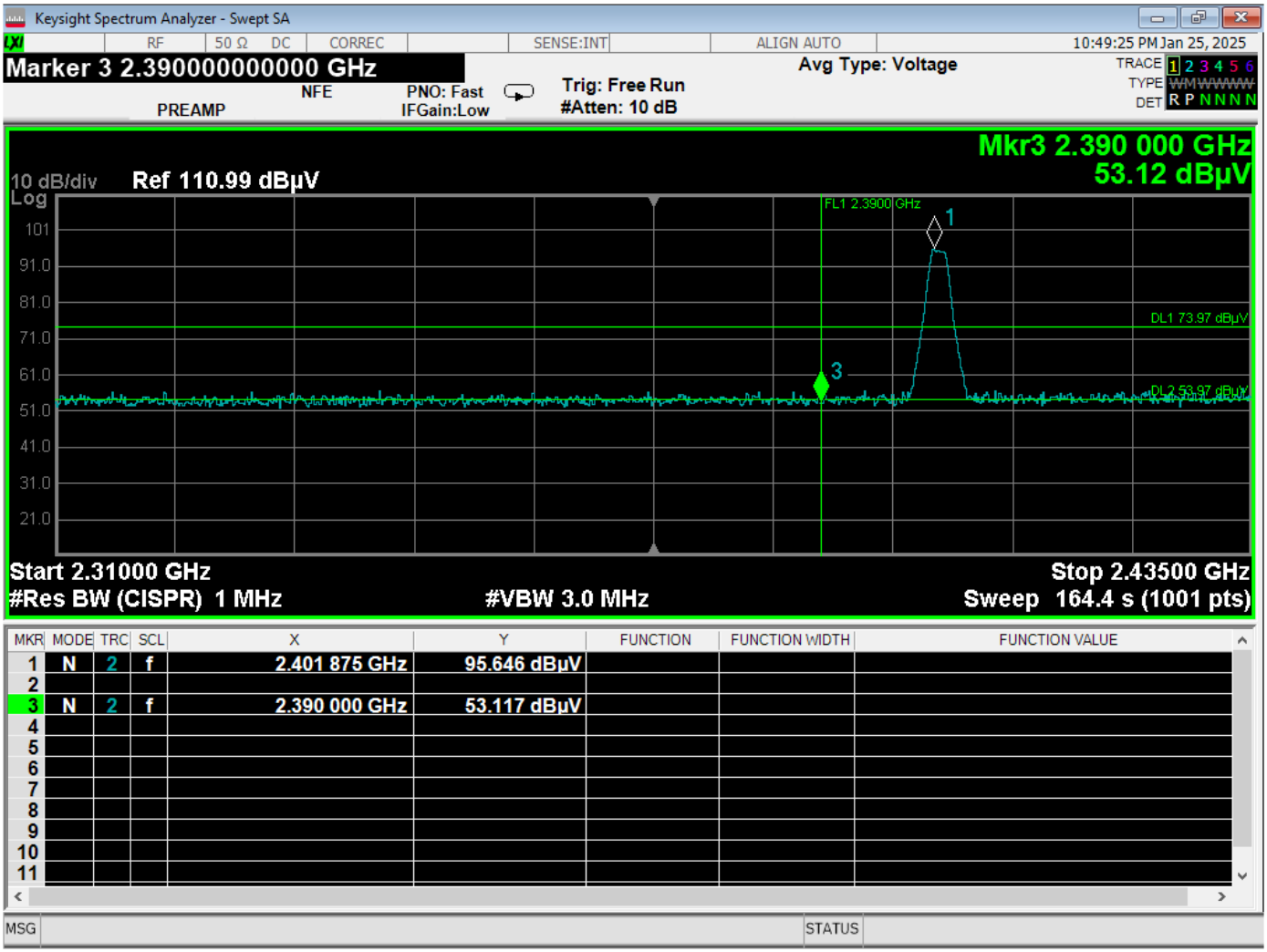
Date: 01/25/2025
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Charging Mode
High Channel

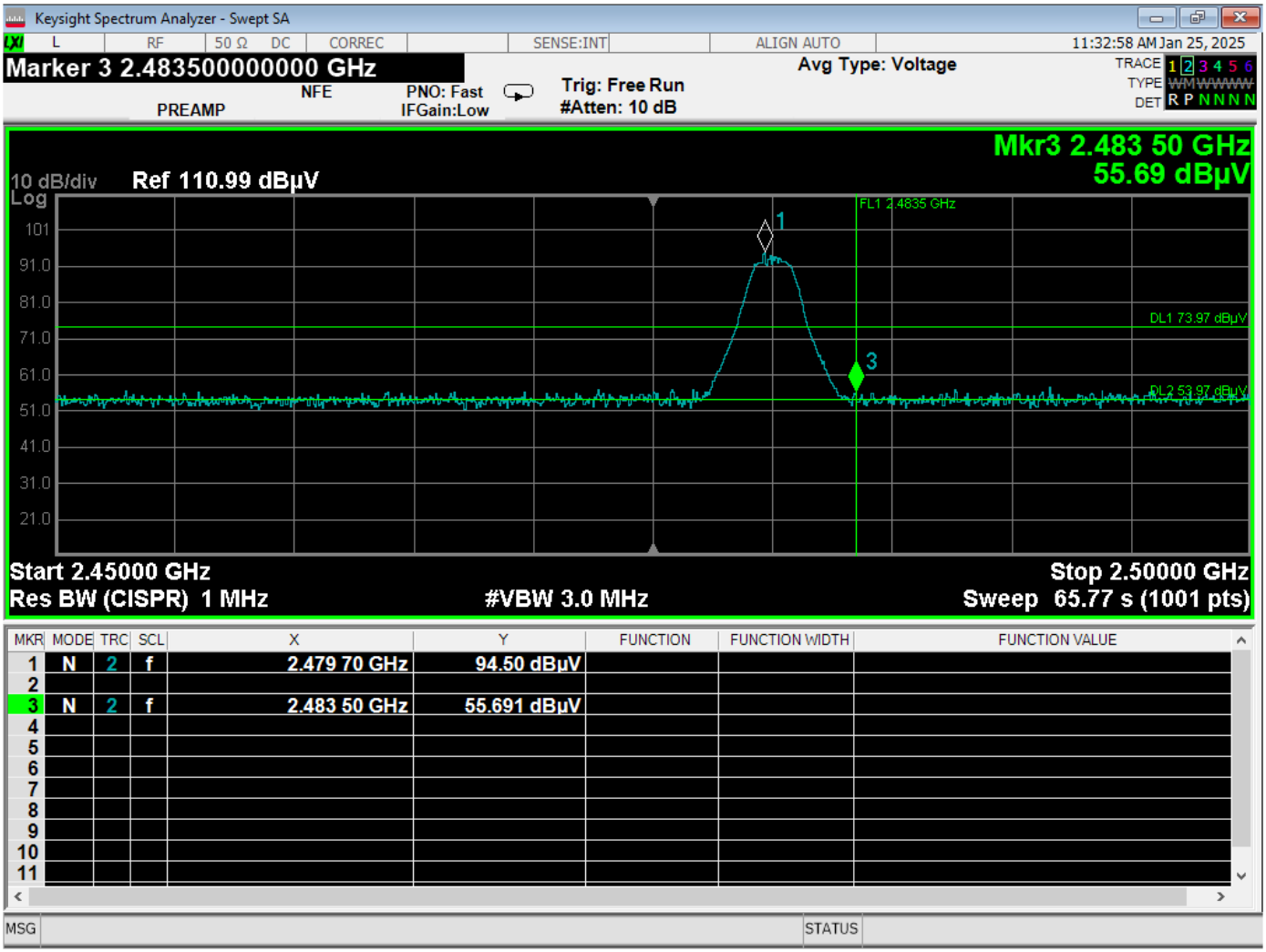
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit (dBuV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	97.60	H	--	--	Peak	334.00	119.76	**Fundamental**
2480.00	81.35	H	--	--	Avg	334.00	119.76	**Z-Axis - 2 Mbit**
2483.50	55.20	H	73.97	-18.77	Peak	334.00	119.76	**Band Edge**
2483.50	38.95	H	53.97	-15.02	Avg	334.00	119.76	**Z-Axis - 2 Mbit**
2480.00	94.50	V	--	--	Peak	246.25	100.02	**Fundamental**
2480.00	78.25	V	--	--	Avg	246.25	100.02	**Z-Axis - 2 Mbit**
2483.50	55.69	V	73.97	-18.28	Peak	246.25	100.02	**Band Edge**
2483.50	39.44	V	53.97	-14.53	Avg	246.25	100.02	**Z-Axis - 2 Mbit**



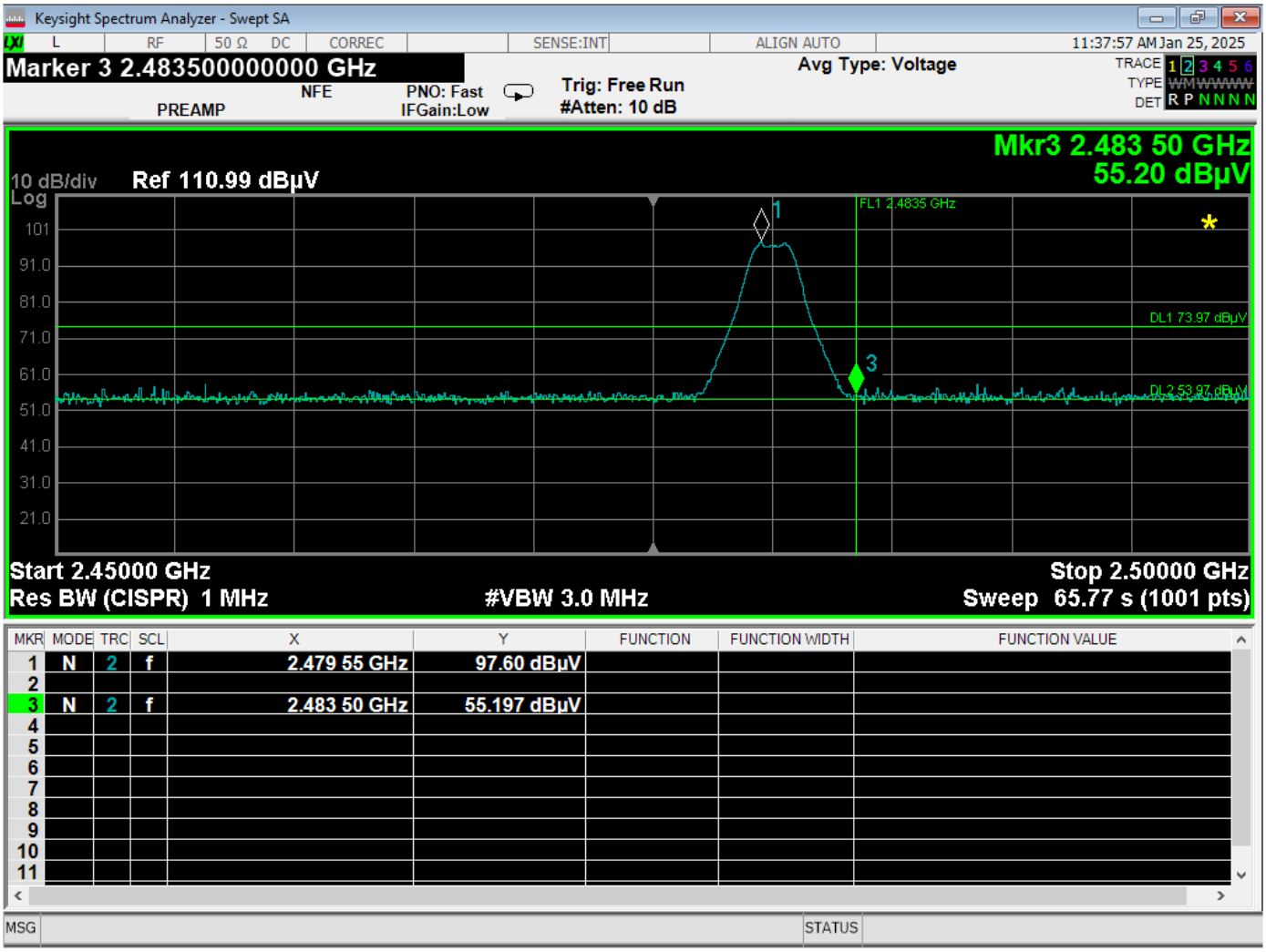
Band Edge – Charging Mode – Low Channel – Vertical Polarization – Z-Axis



Band Edge – Charging Mode – Low Channel – Horizontal Polarization – Z-Axis

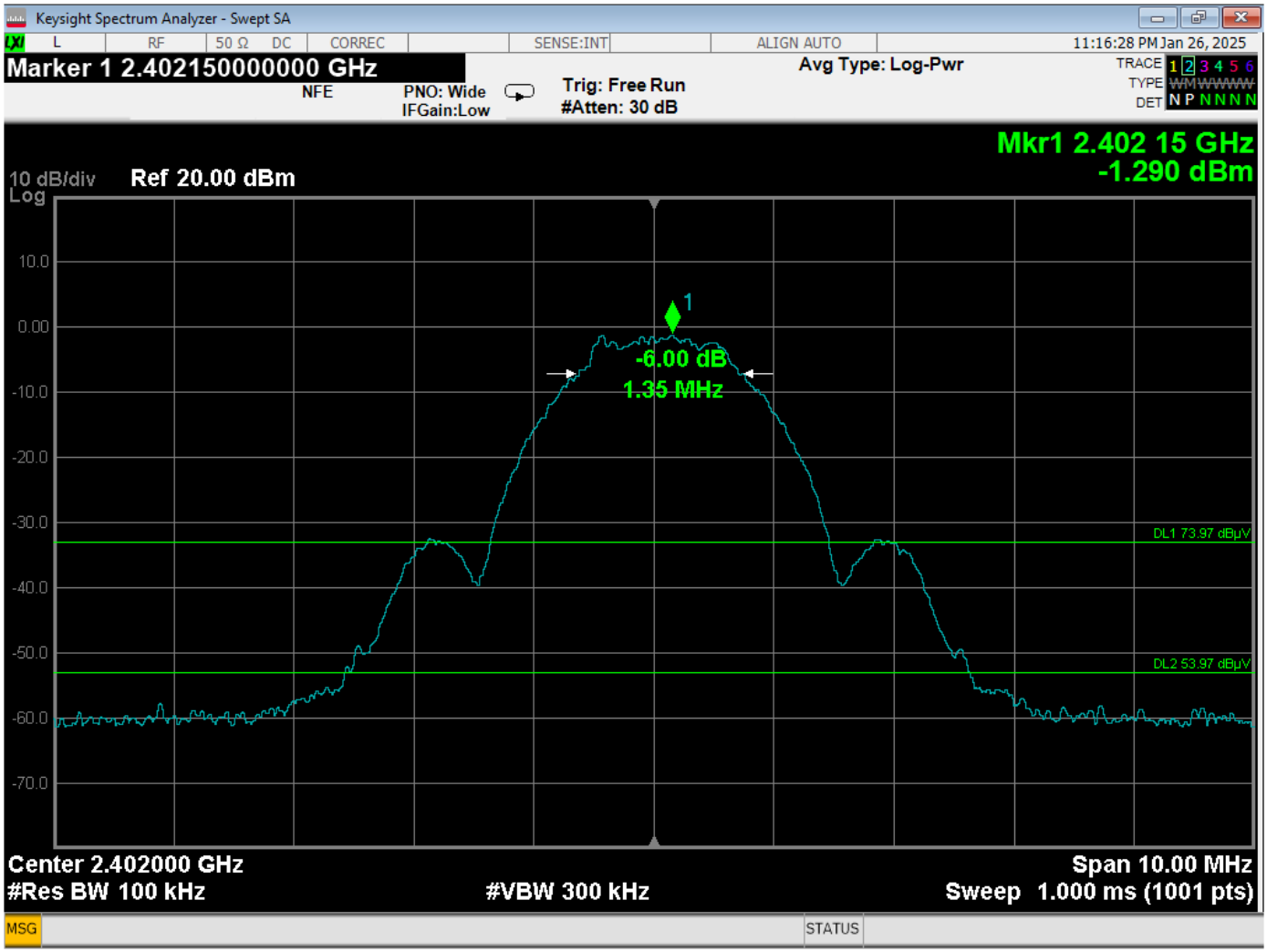


Band Edge – Charging Mode – High Channel – Vertical Polarization – Z-Axis

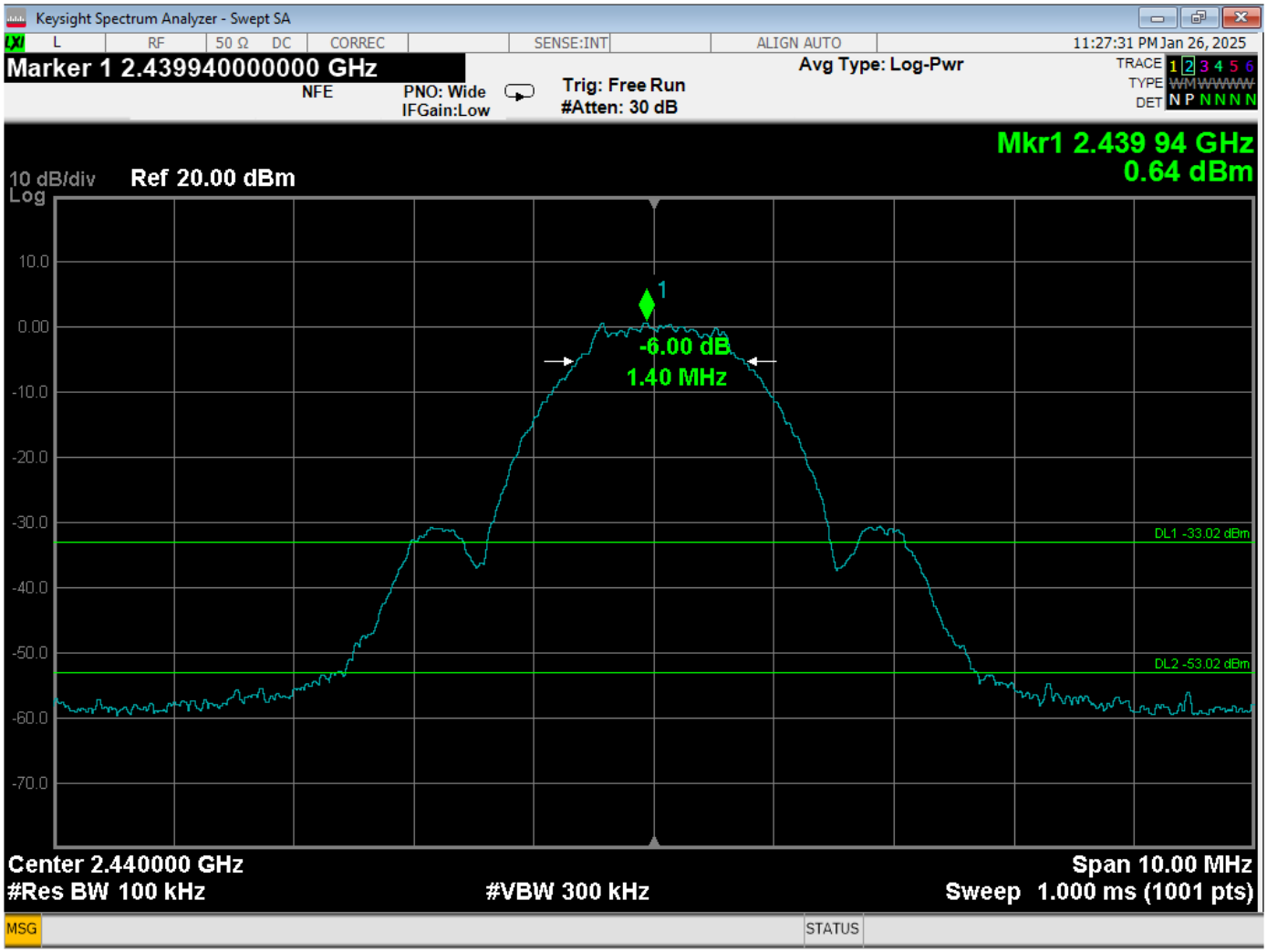


Band Edge – Aluminum Enclosure – High Channel – Horizontal Polarization – Z-Axis

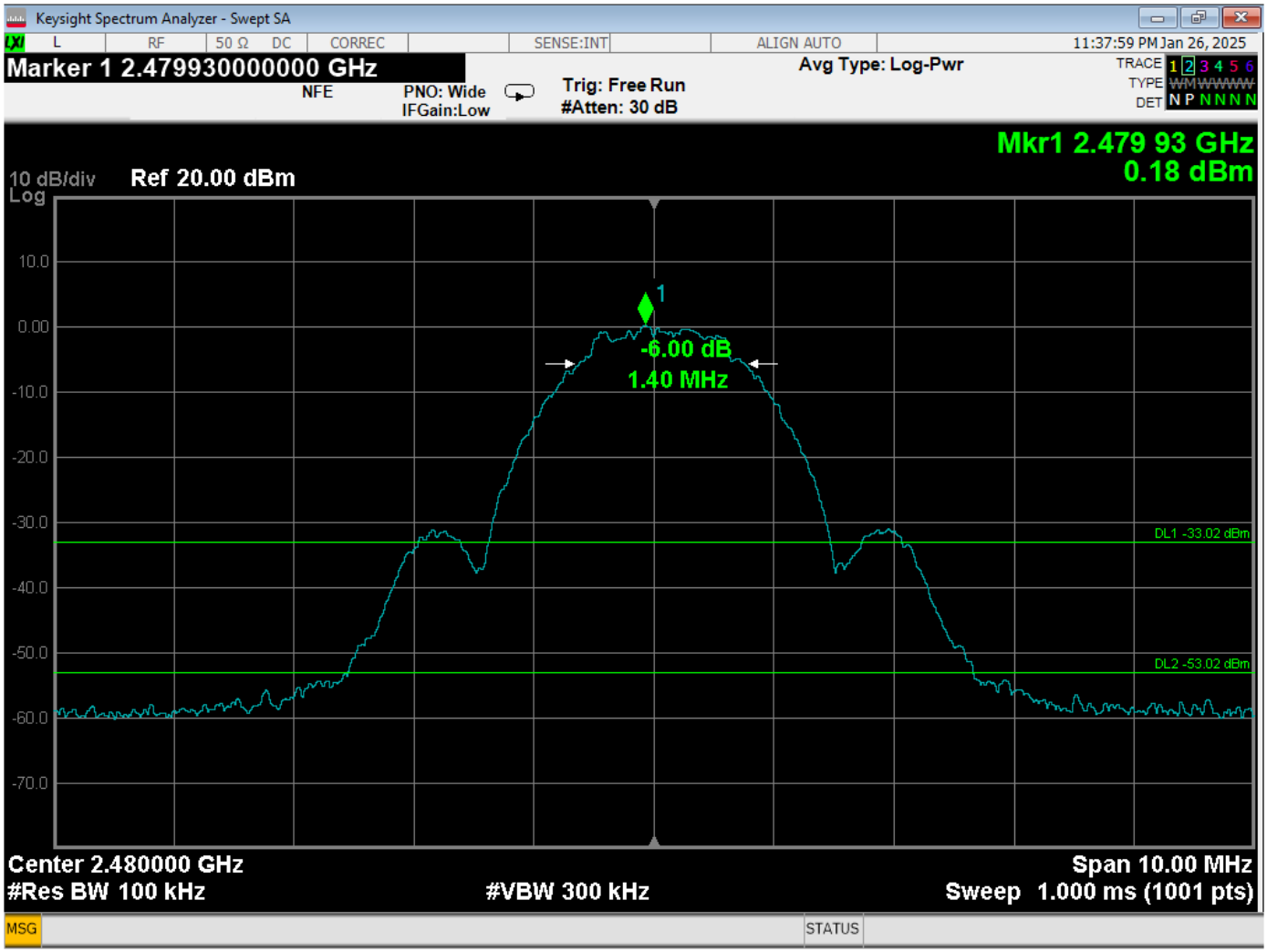
-6 dB BANDWIDTH DATA SHEETS



-6 dB Bandwidth – Low Channel

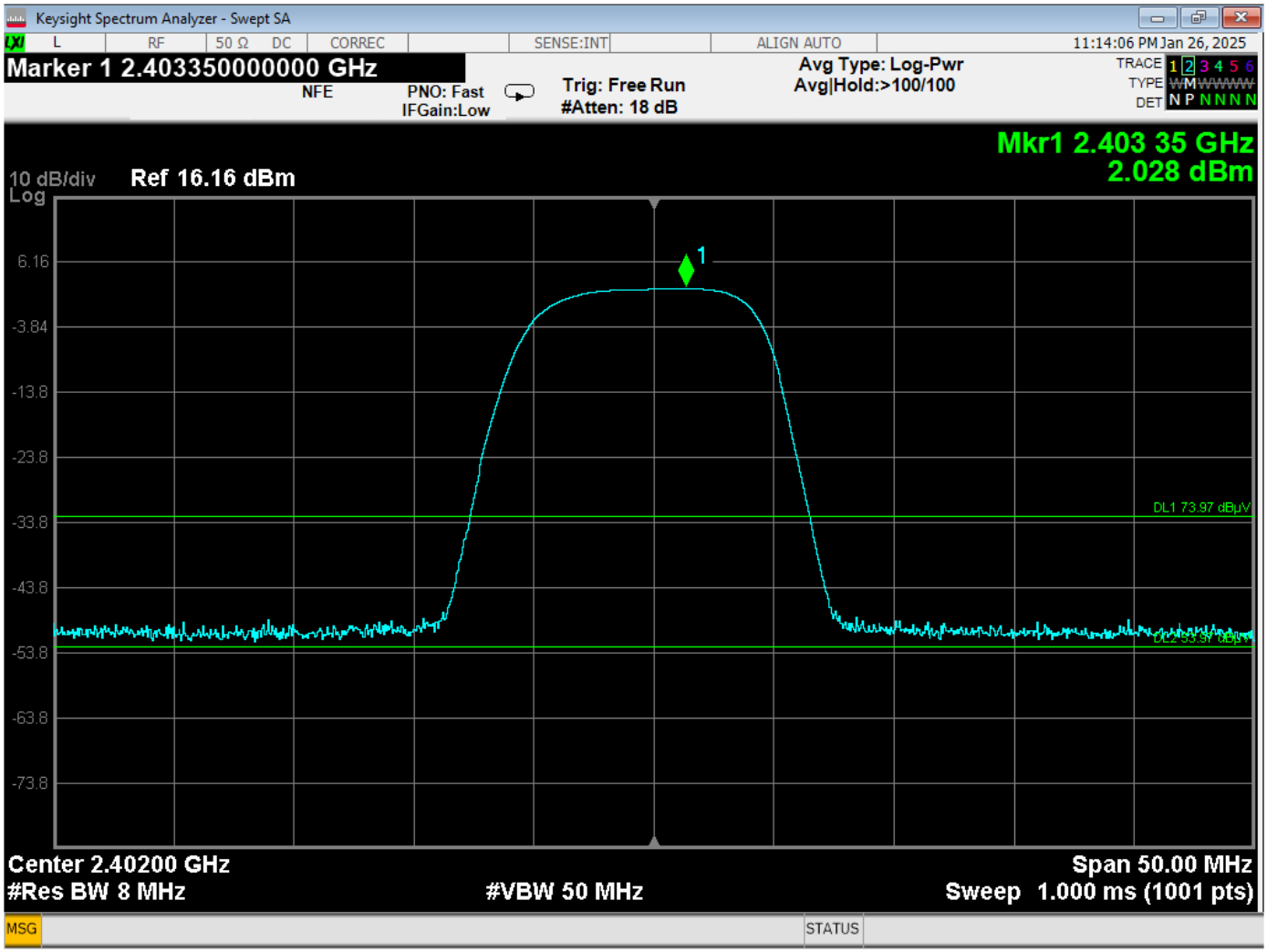


-6 dB Bandwidth – Middle Channel

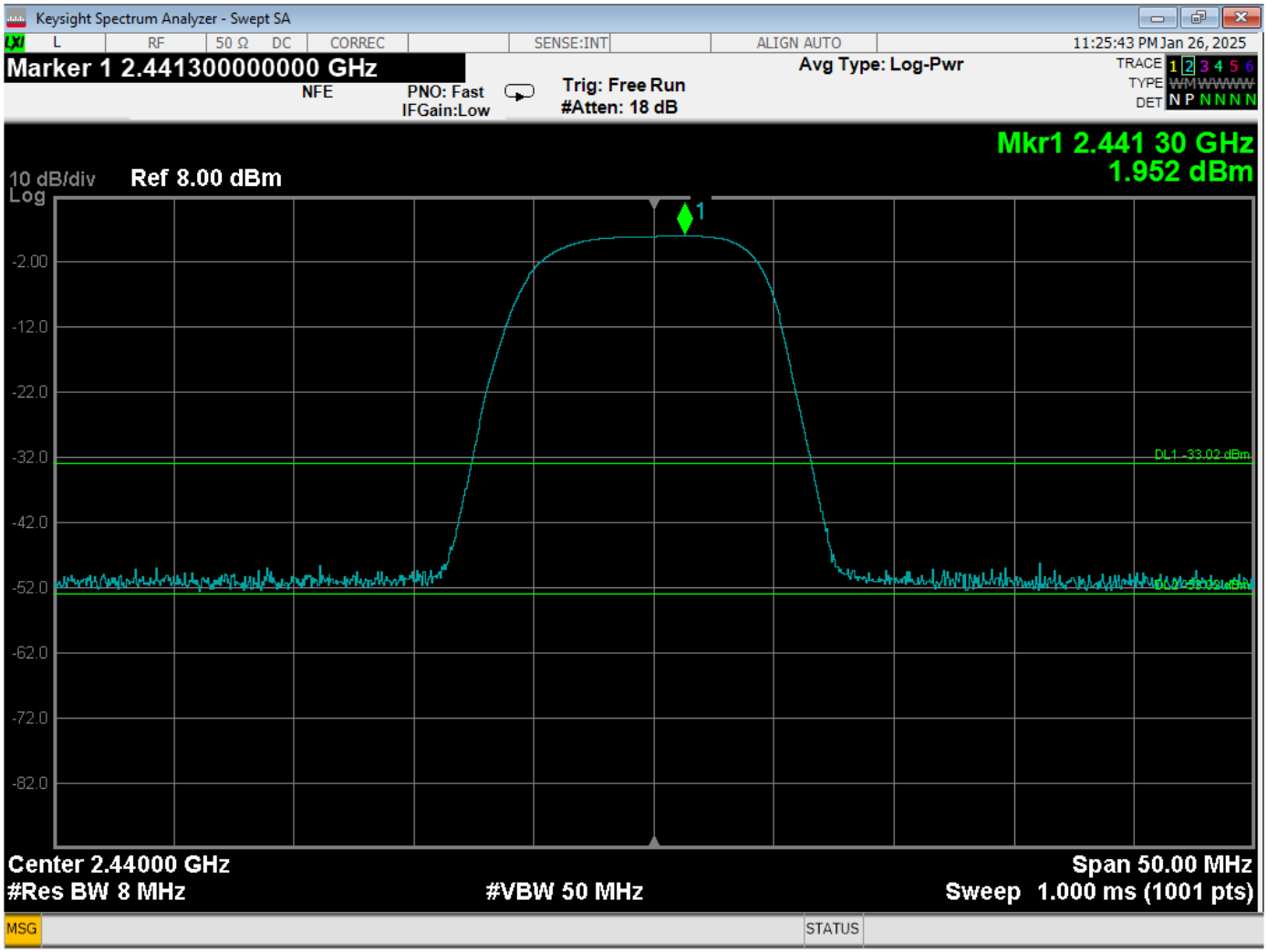


-6 dB Bandwidth – High Channel

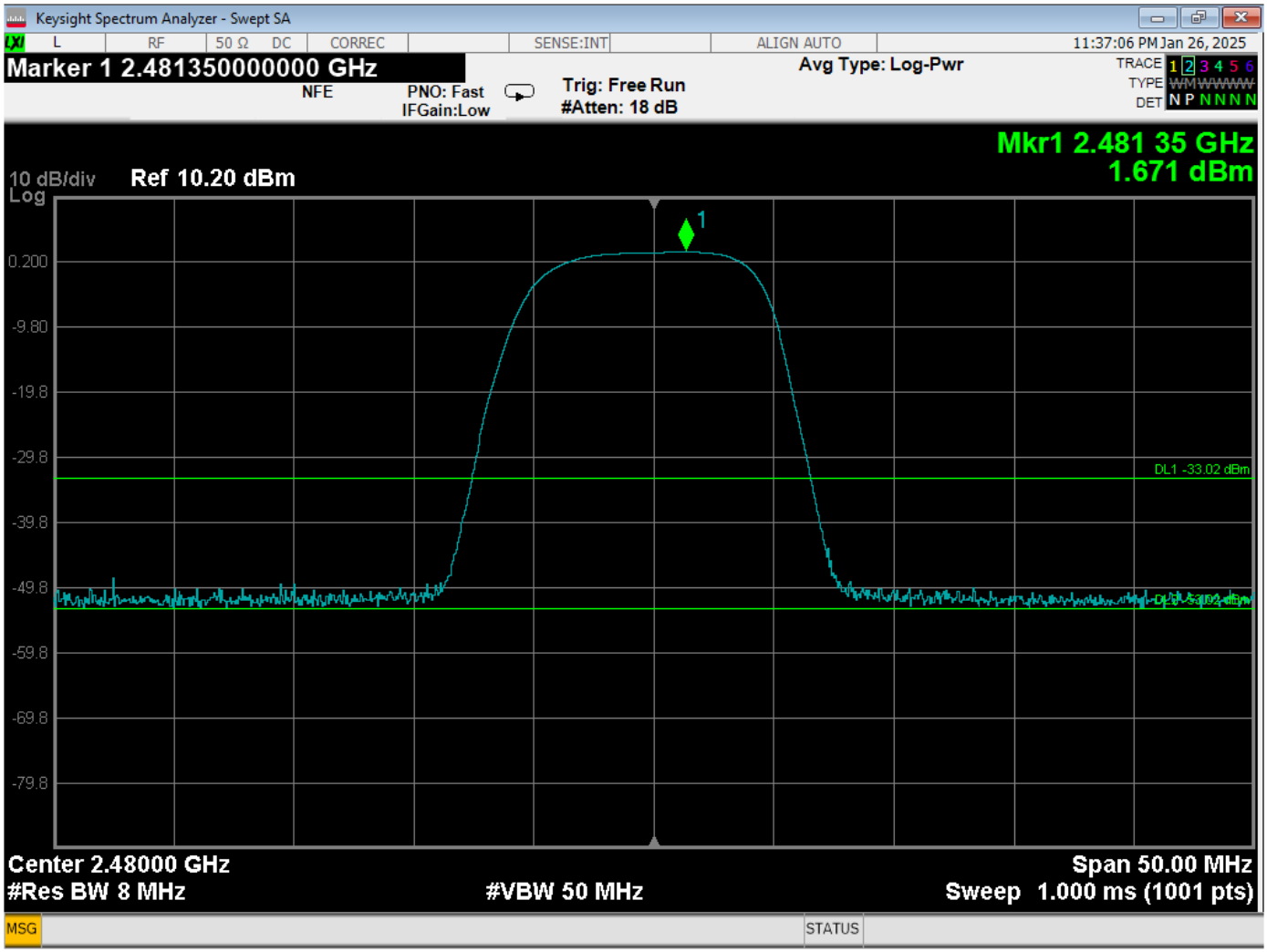
PEAK POWER OUTPUT DATA SHEETS



Peak Power Output – Low Channel



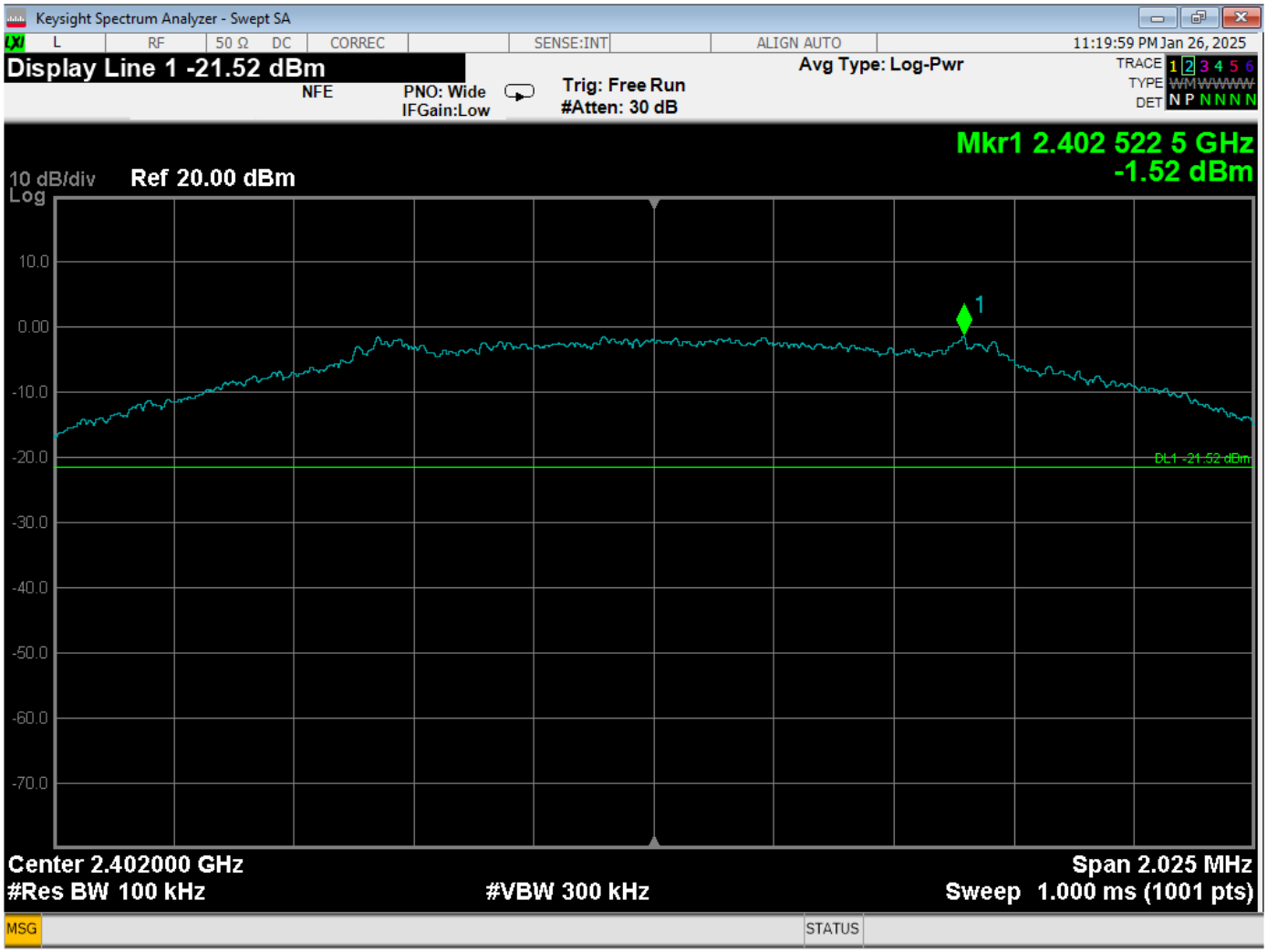
Peak Power Output – Middle Channel



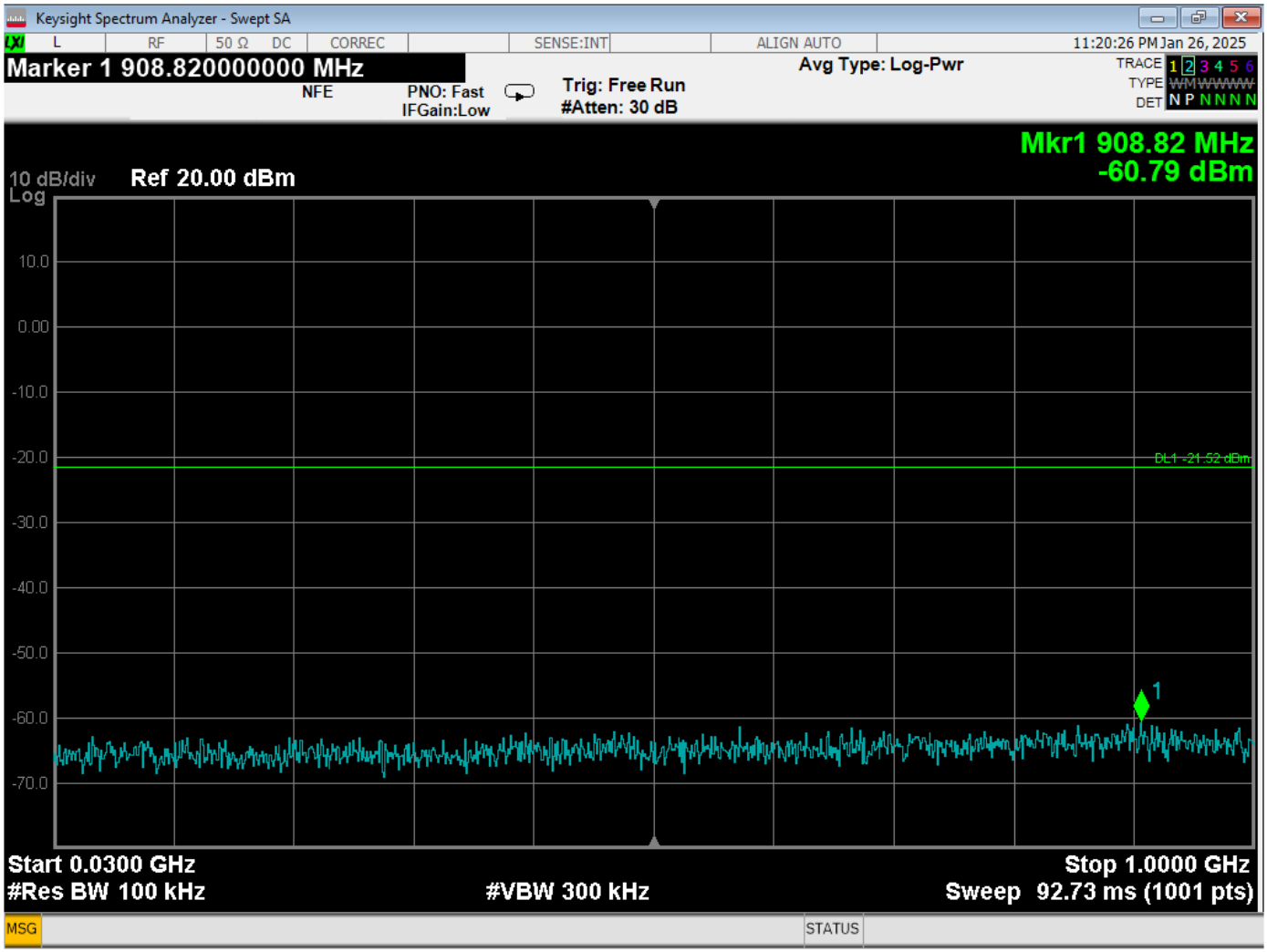
Peak Power Output – High Channel

RF ANTENNA CONDUCTED

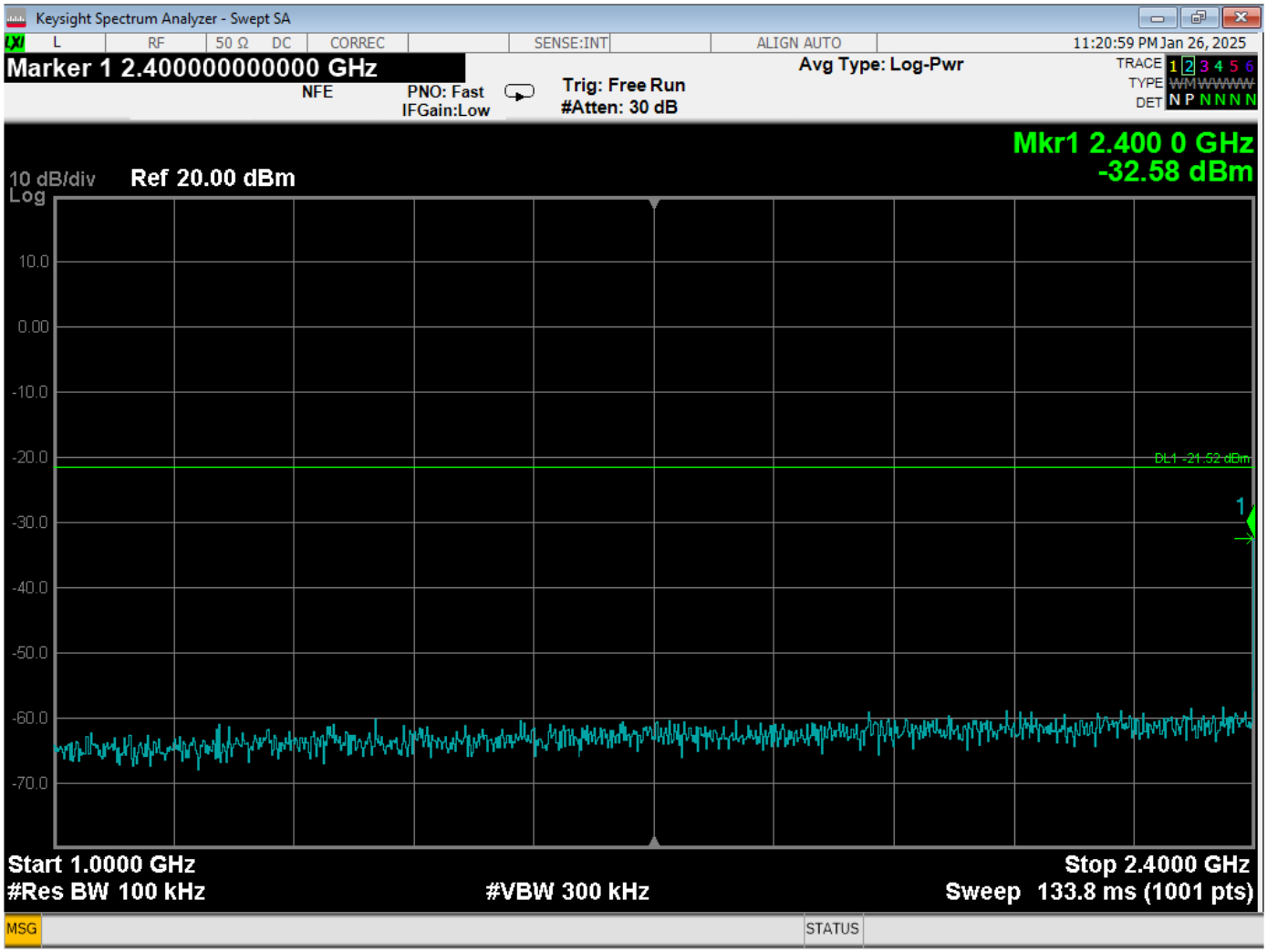
DATA SHEETS



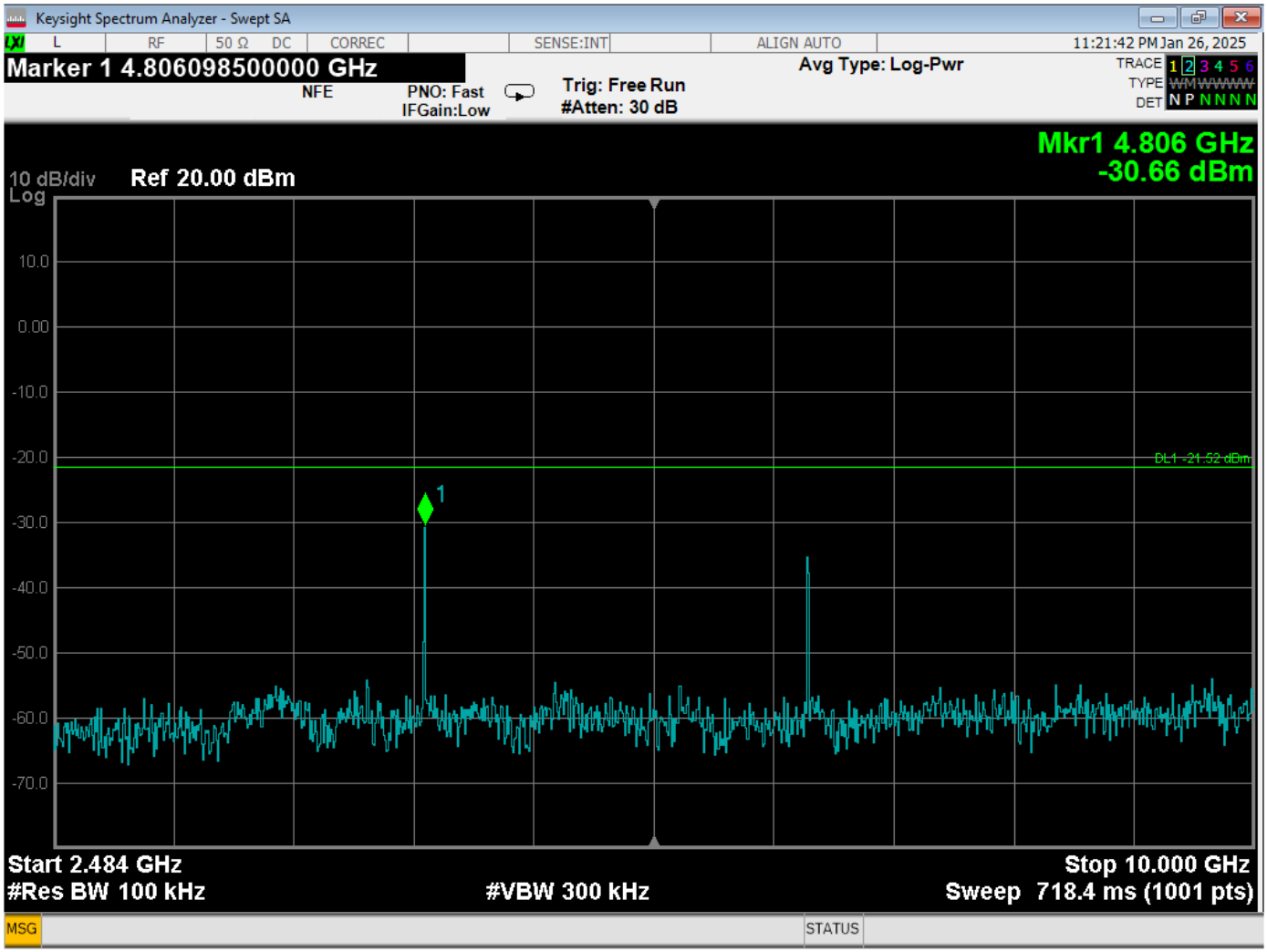
RF Antenna Conducted – Low Channel – Reference Level



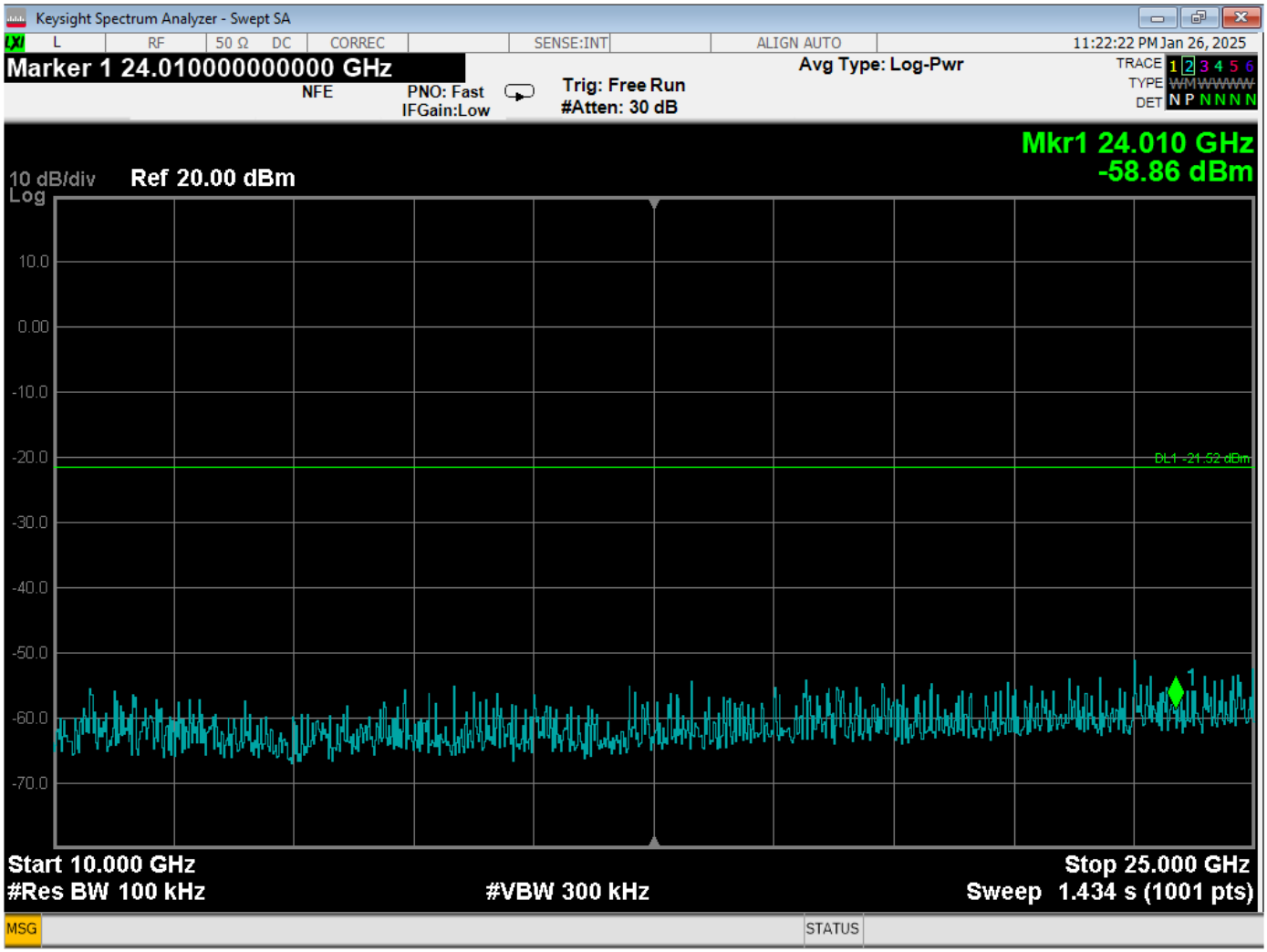
RF Antenna Conducted – Low Channel – 30 MHz to 1.000 GHz



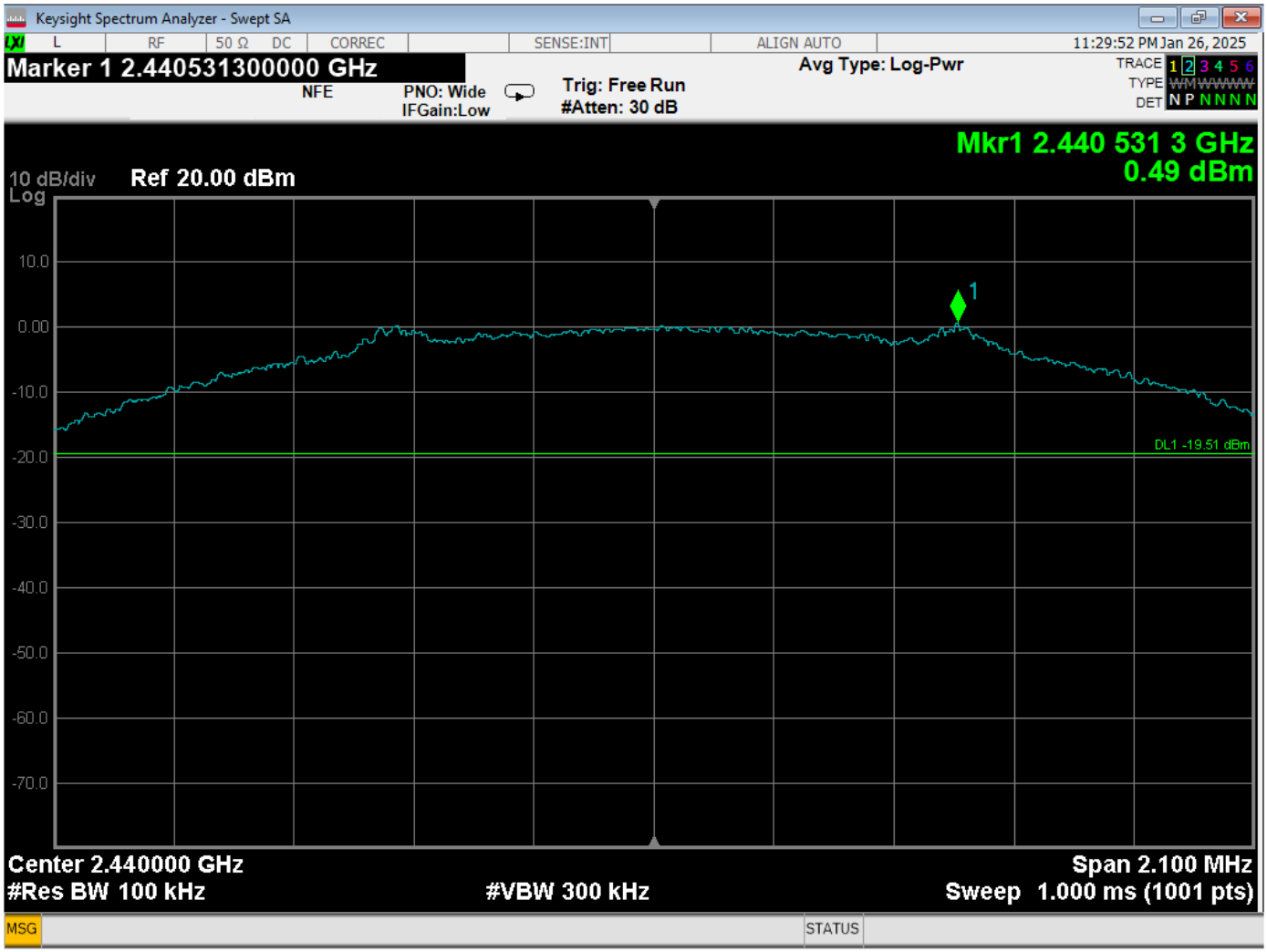
RF Antenna Conducted – Low Channel – 1 GHz to 2.4 GHz



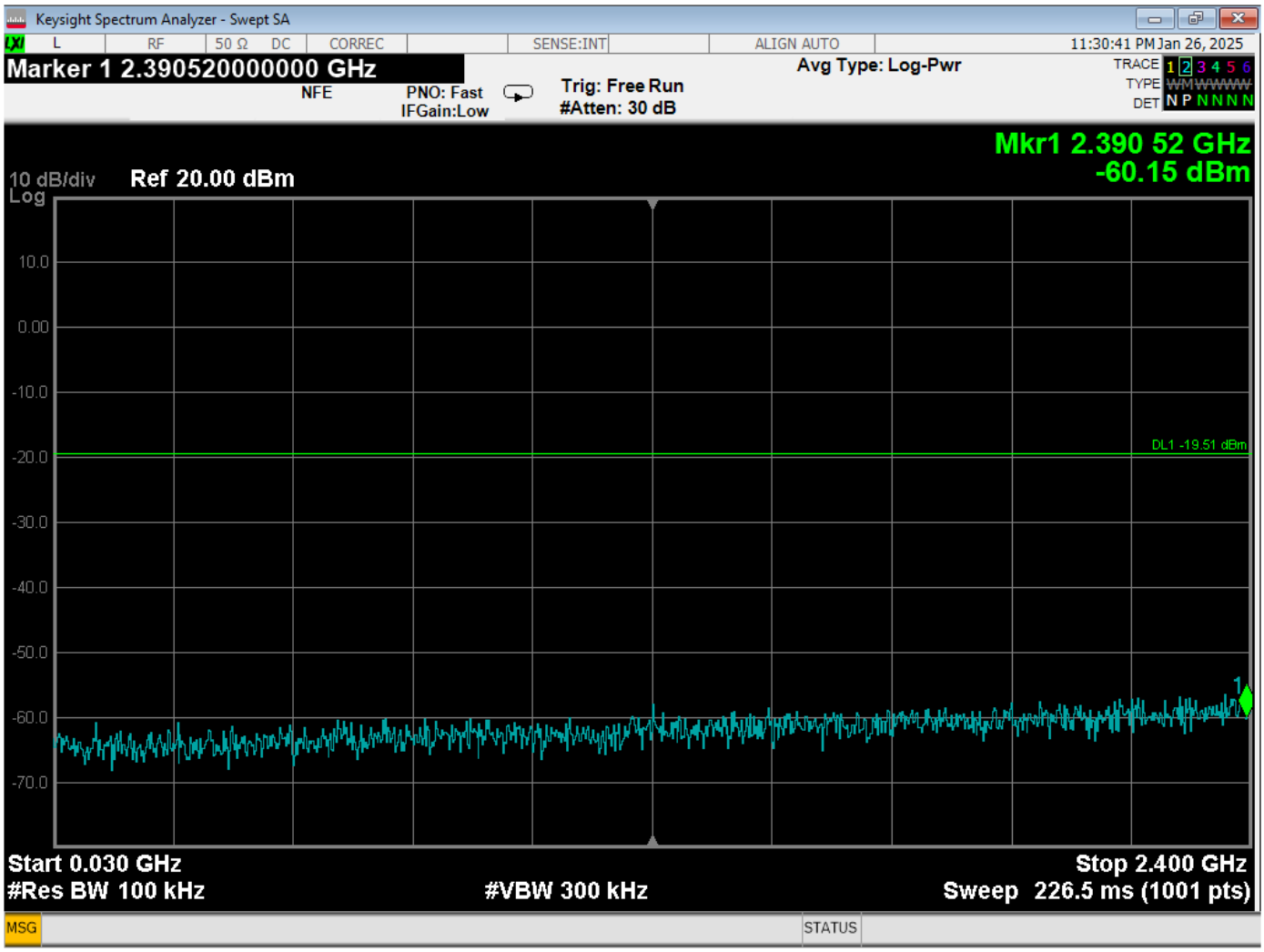
RF Antenna Conducted – Low Channel – 2483.5 MHz to 10 GHz



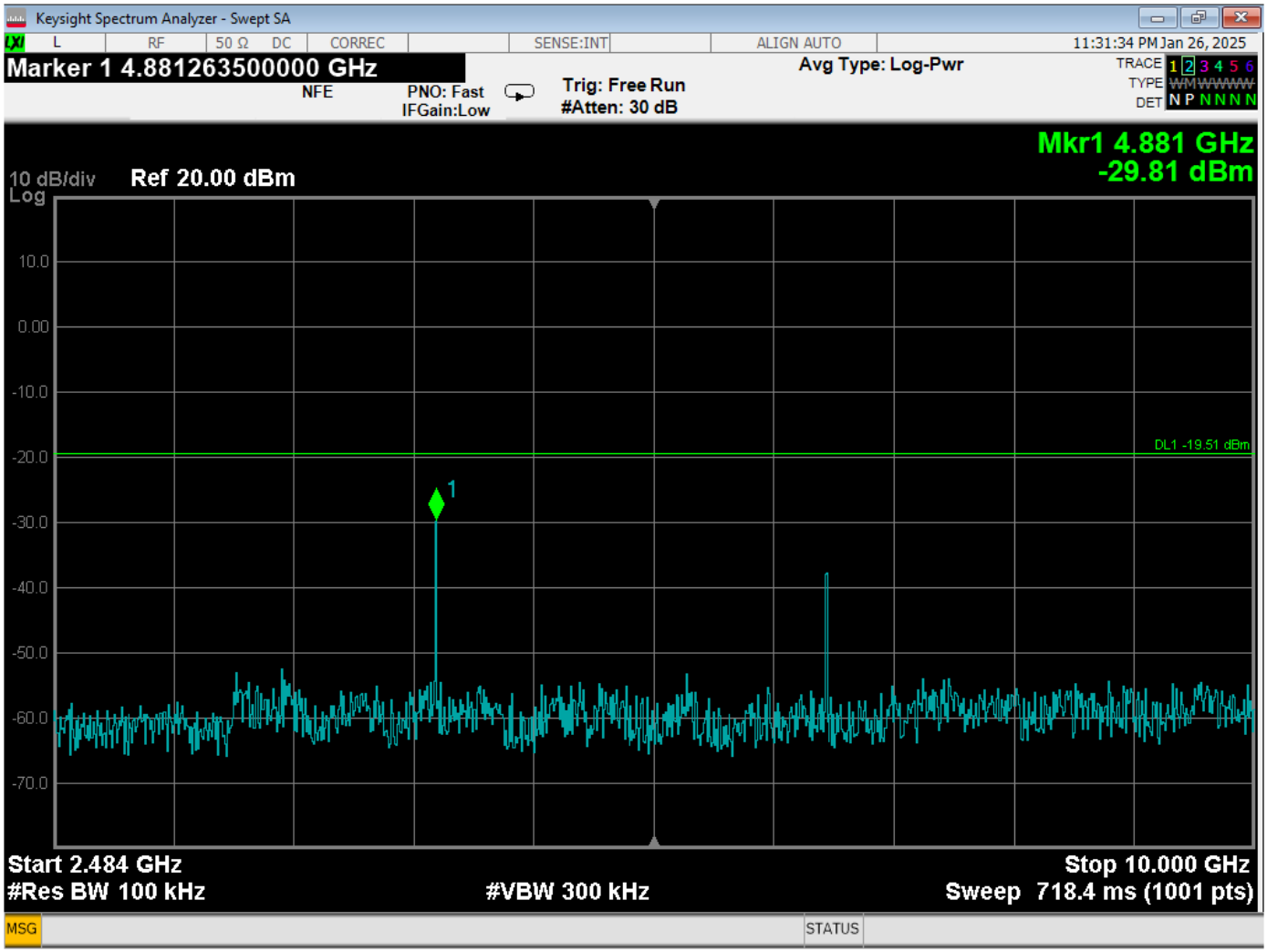
RF Antenna Conducted – Low Channel – 10 GHz to 25 GHz



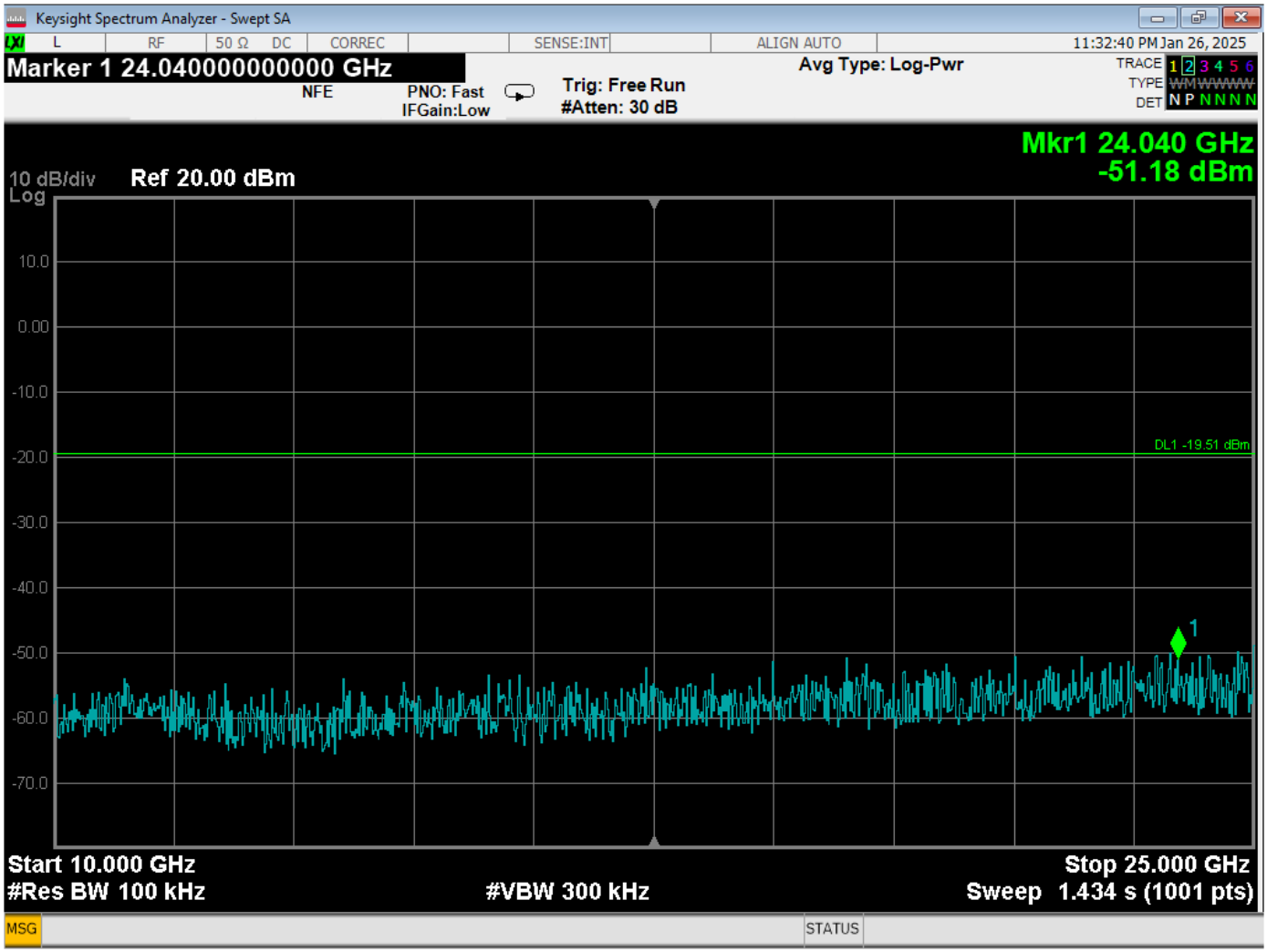
RF Antenna Conducted – Middle Channel – Reference Level



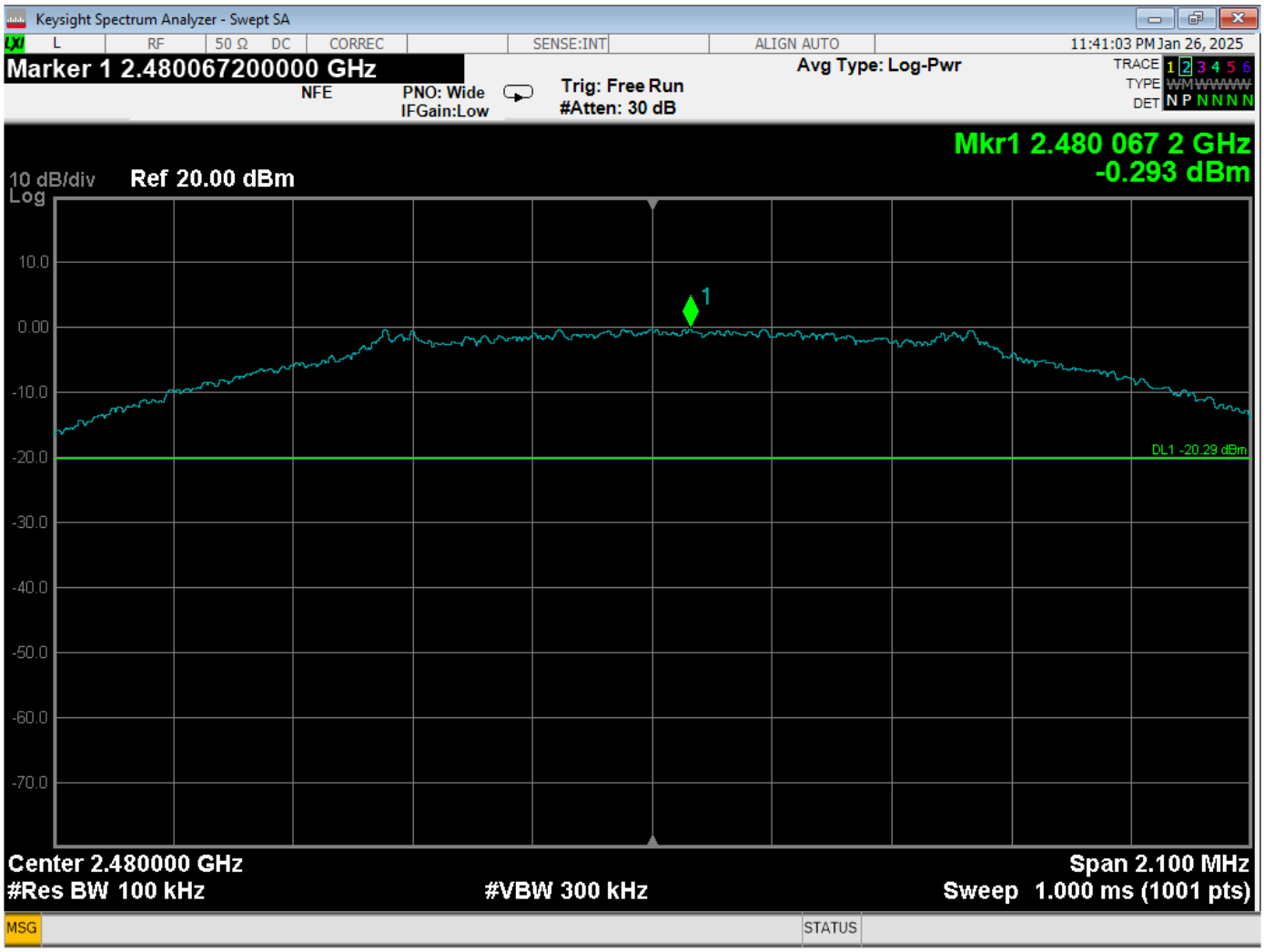
RF Antenna Conducted – Middle Channel – 30 MHz to 2.4 GHz



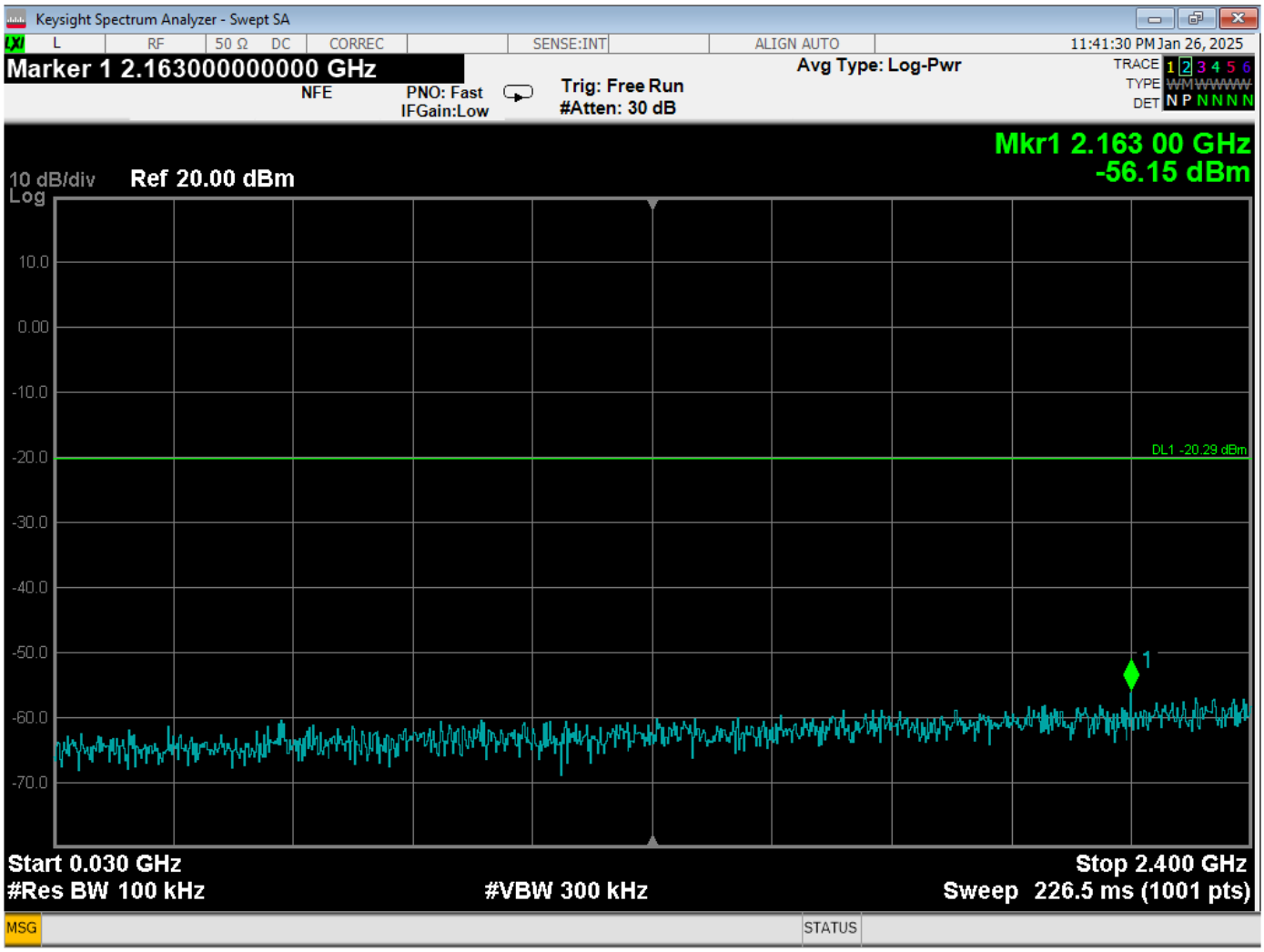
RF Antenna Conducted – Middle Channel – 2483.5 MHz to 10 GHz



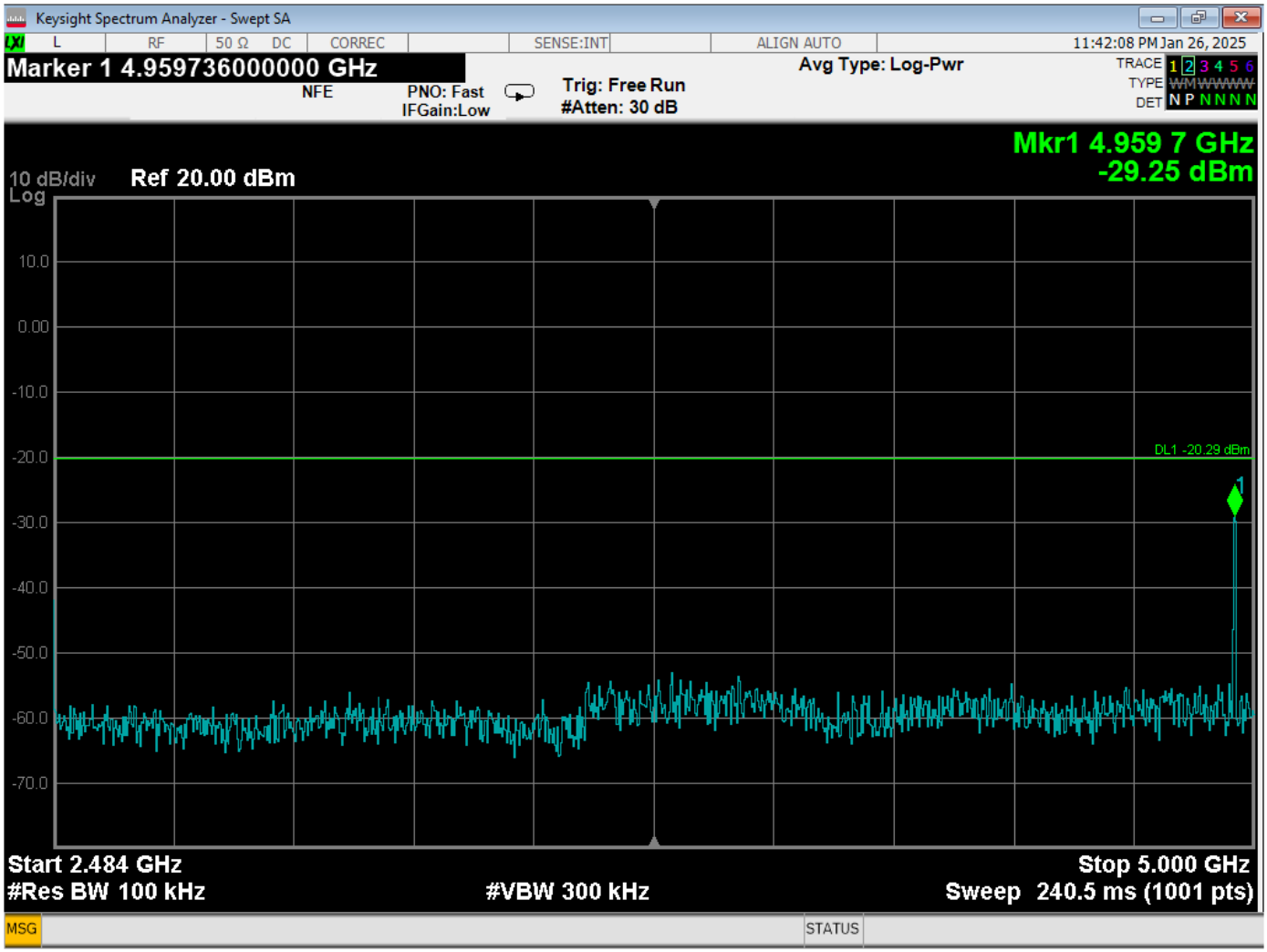
RF Antenna Conducted – Middle Channel – 10 GHz to 25 GHz



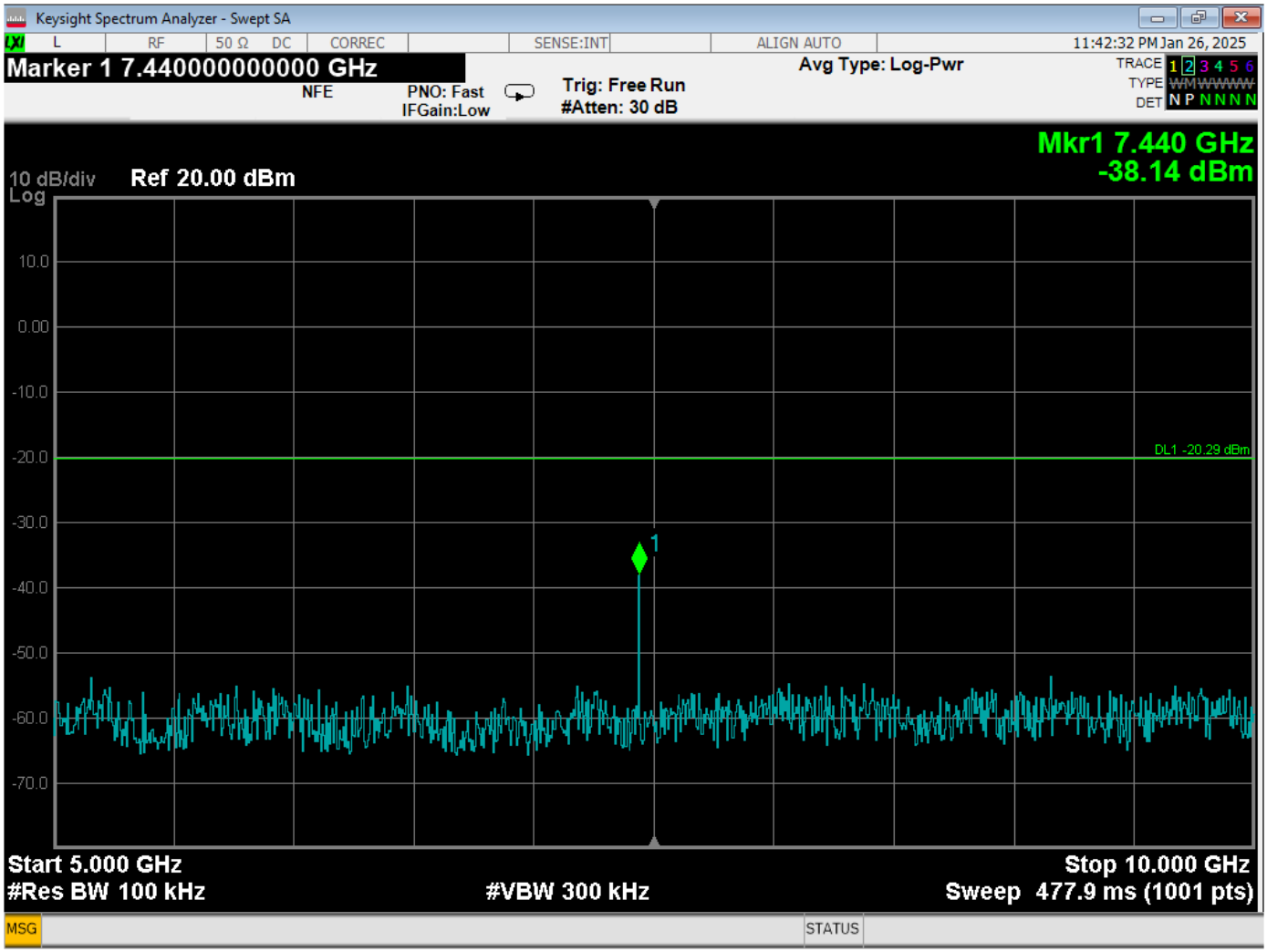
RF Antenna Conducted – High Channel – Reference Level



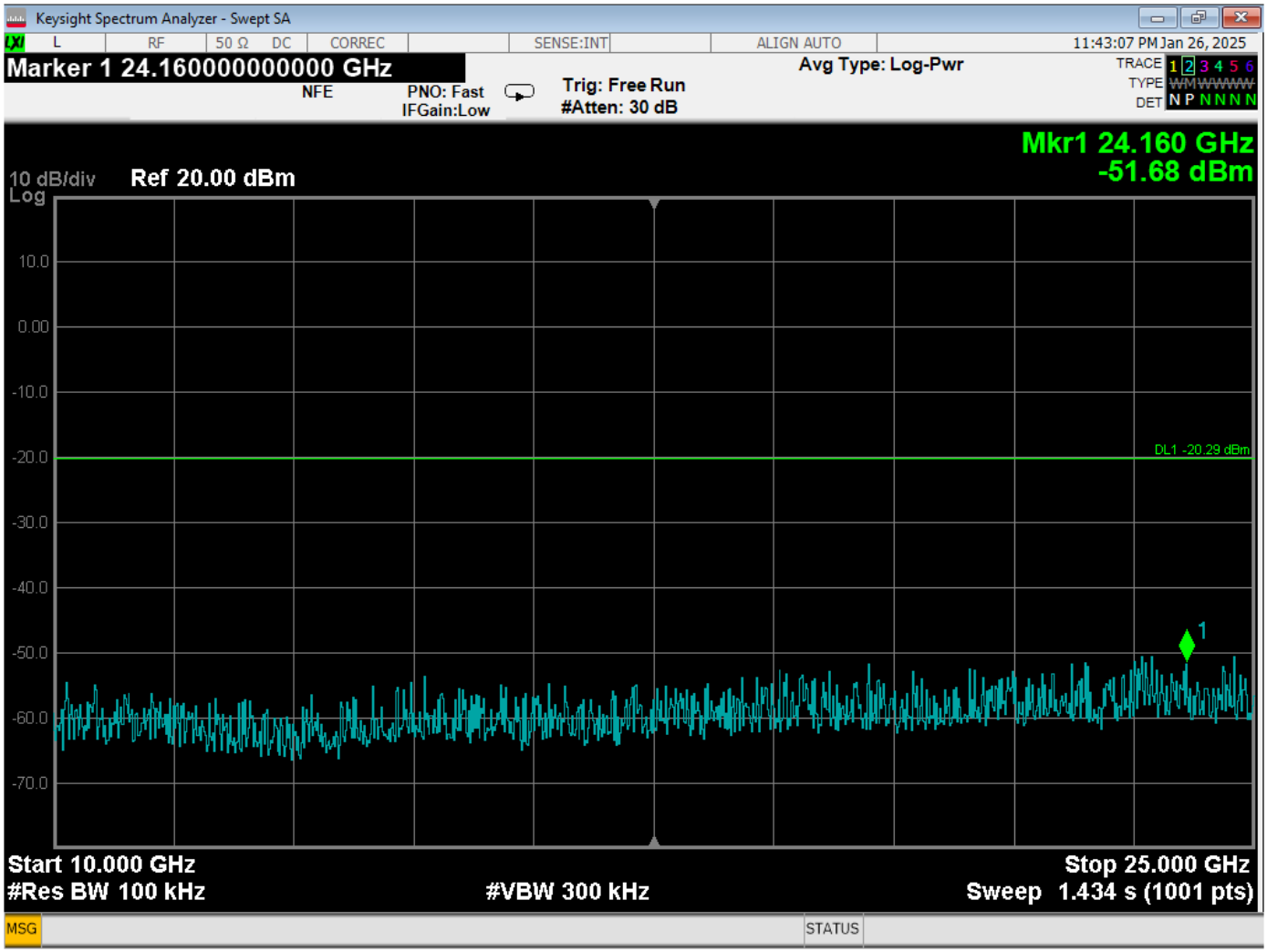
RF Antenna Conducted – High Channel – 30 MHz to 2.400 GHz



RF Antenna Conducted – High Channel – 2483.5 MHz to 5 GHz



RF Antenna Conducted – High Channel – 5 GHz to 10 GHz



RF Antenna Conducted – High Channel – 10 GHz to 25 GHz

HIDRATESMART LLC

BLUETOOTH SENSOR

MODEL: SENSOR-007

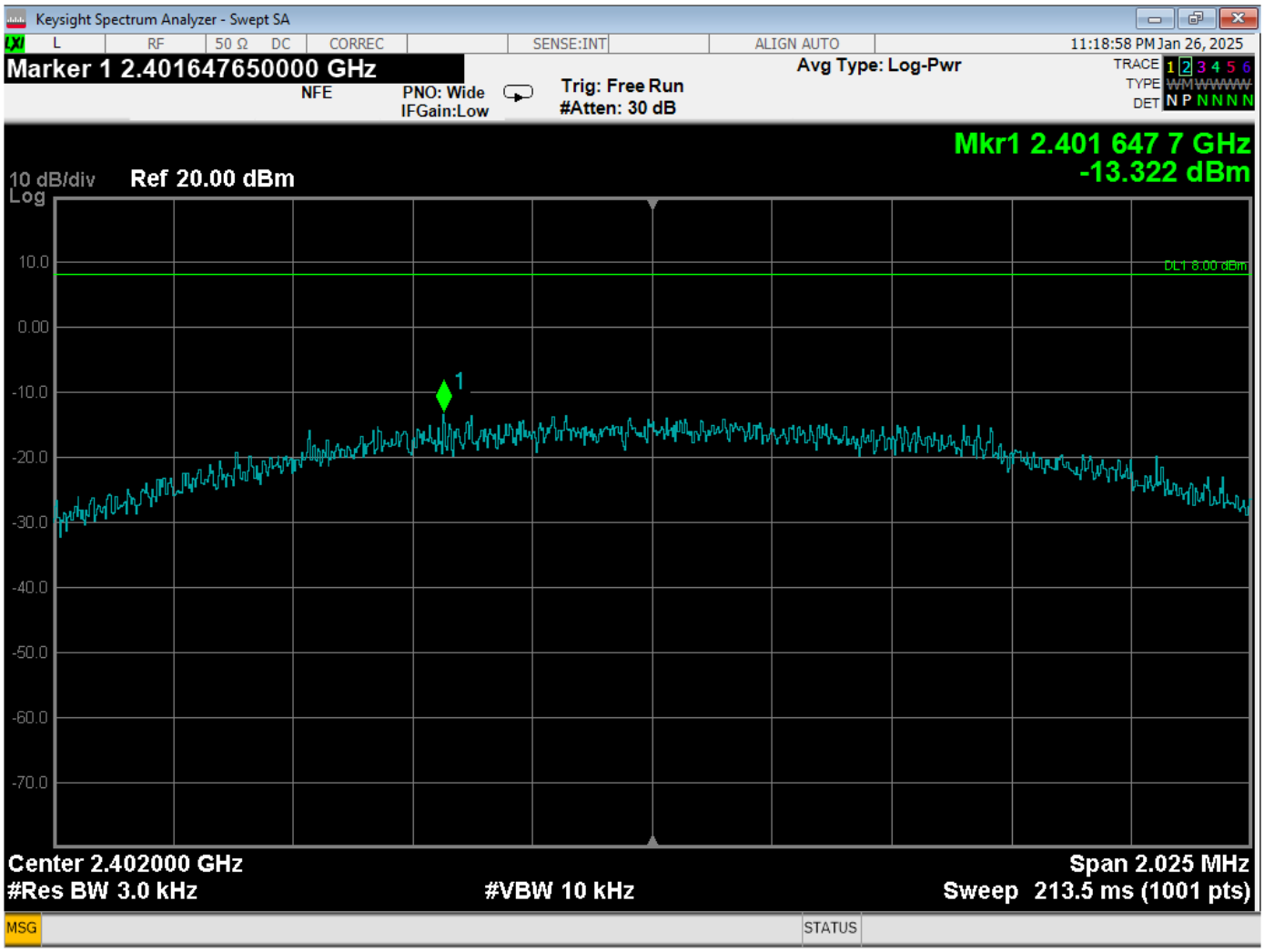
EMISSIONS IN NON-RESTRICTED BANDS

FREQUENCY (MHz)	LEVEL (dBm)	Limit* (dBm)	Margin (dB)
2400.00	-32.58	-19.51	-13.07
24040.00	-51.18	-19.51	-31.67
24160.00	-51.68	-19.51	-32.17

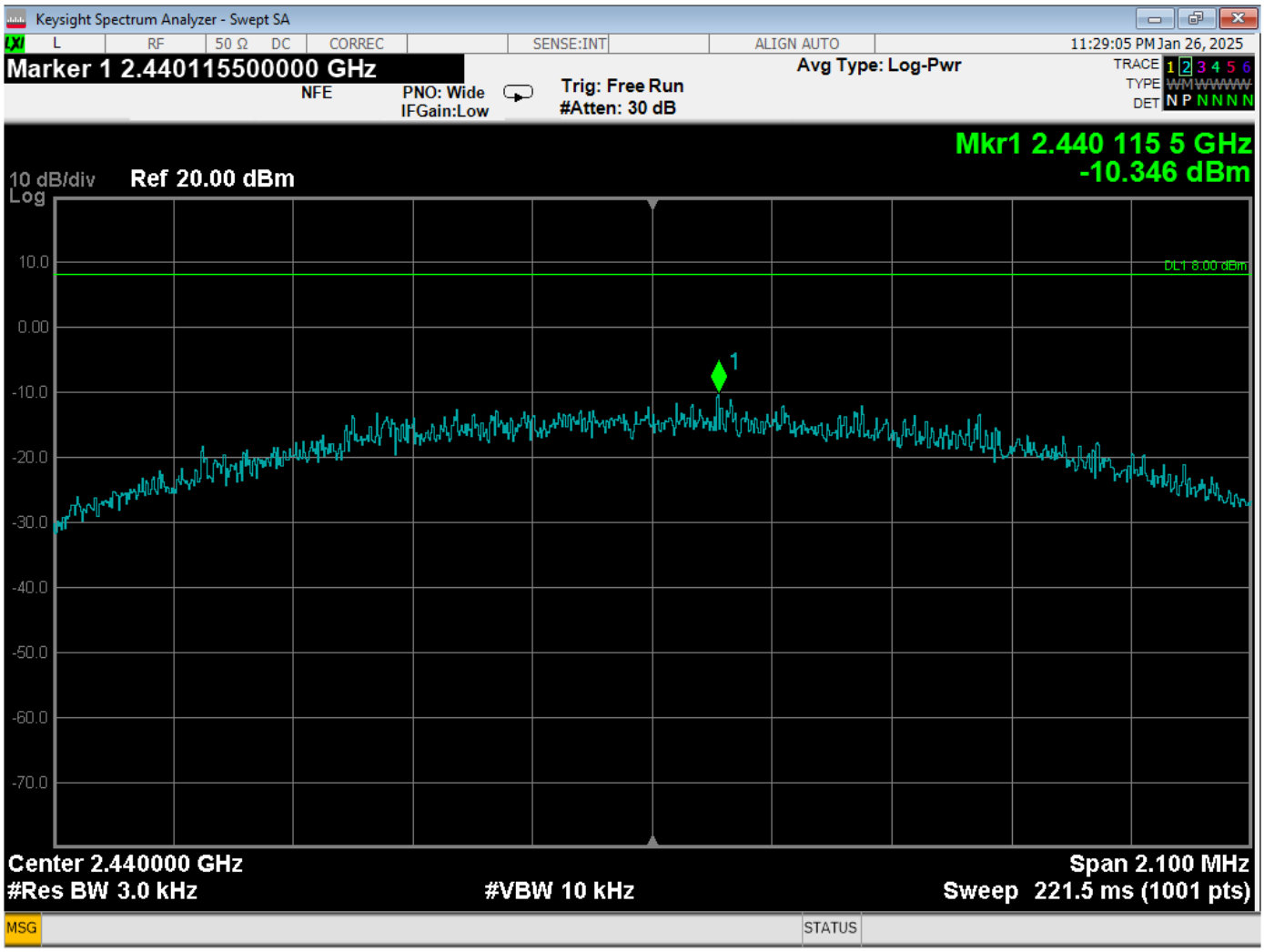
*The Limit is based on 20 dB below the highest reference level obtained on the previous pages per section 11.11.2 of ANSI C63.10.

PEAK POWER SPECTRAL DENSITY

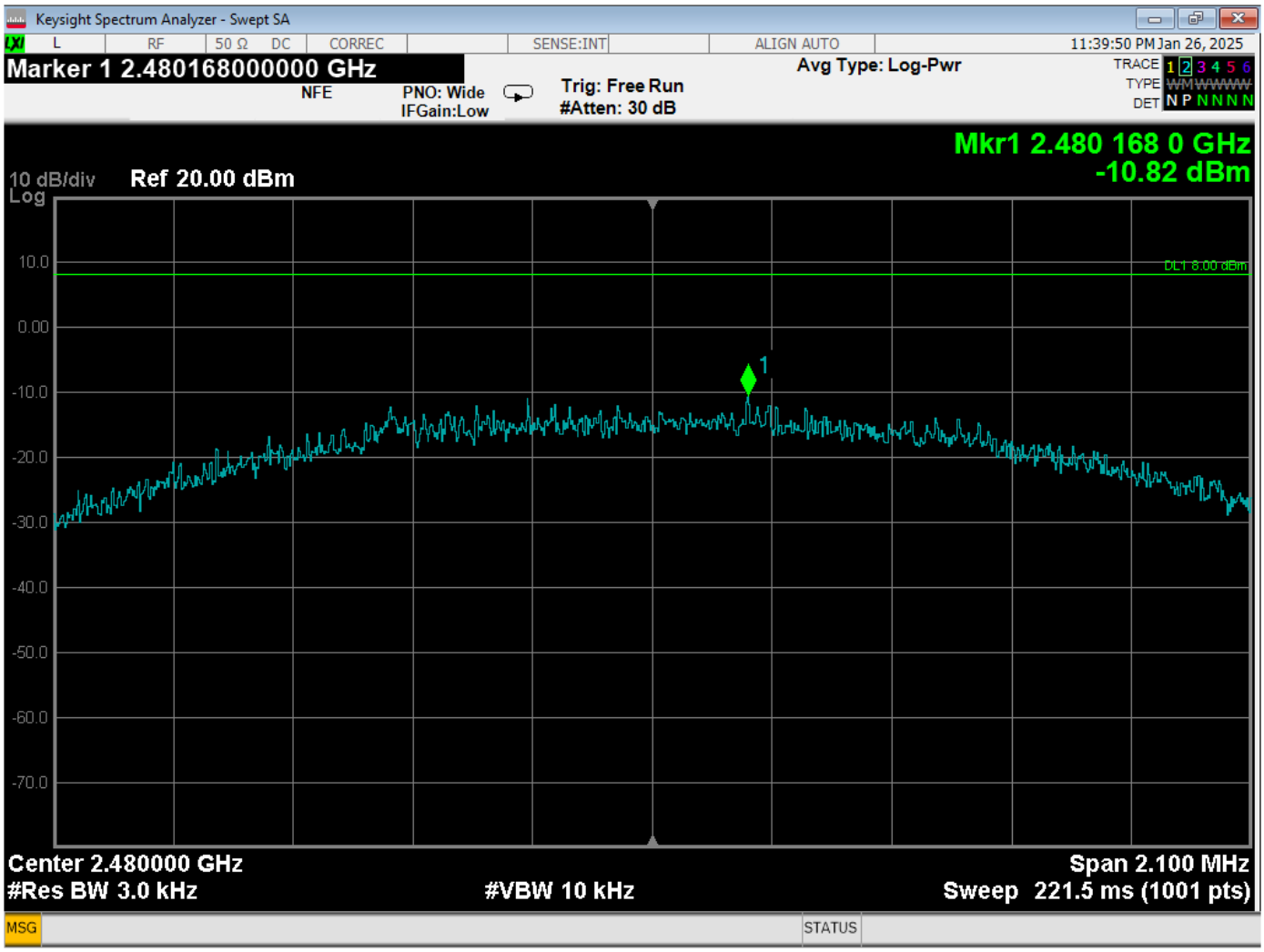
DATA SHEETS



Peak Power Spectral Density – Low Channel



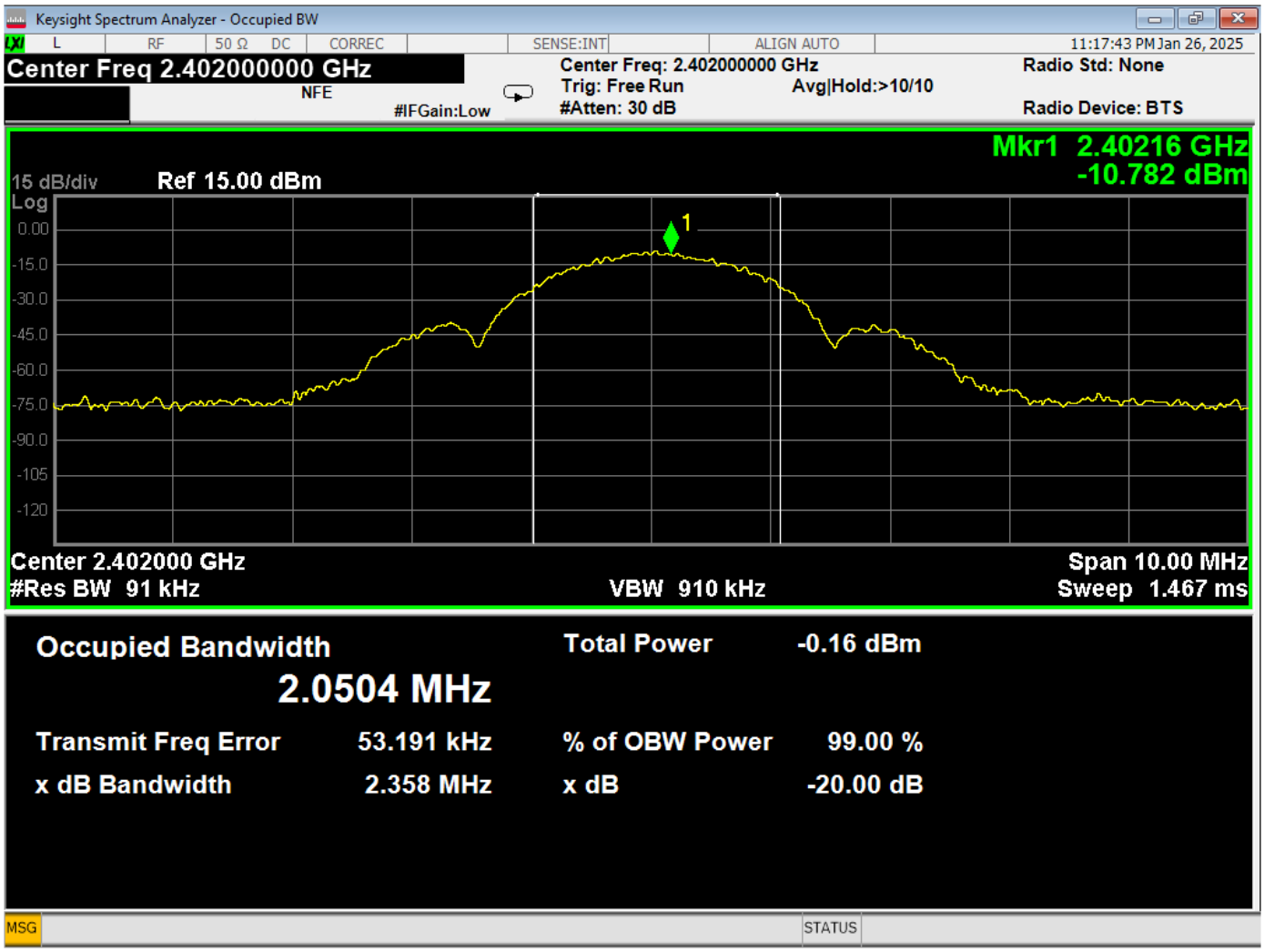
Peak Power Spectral Density – Middle Channel



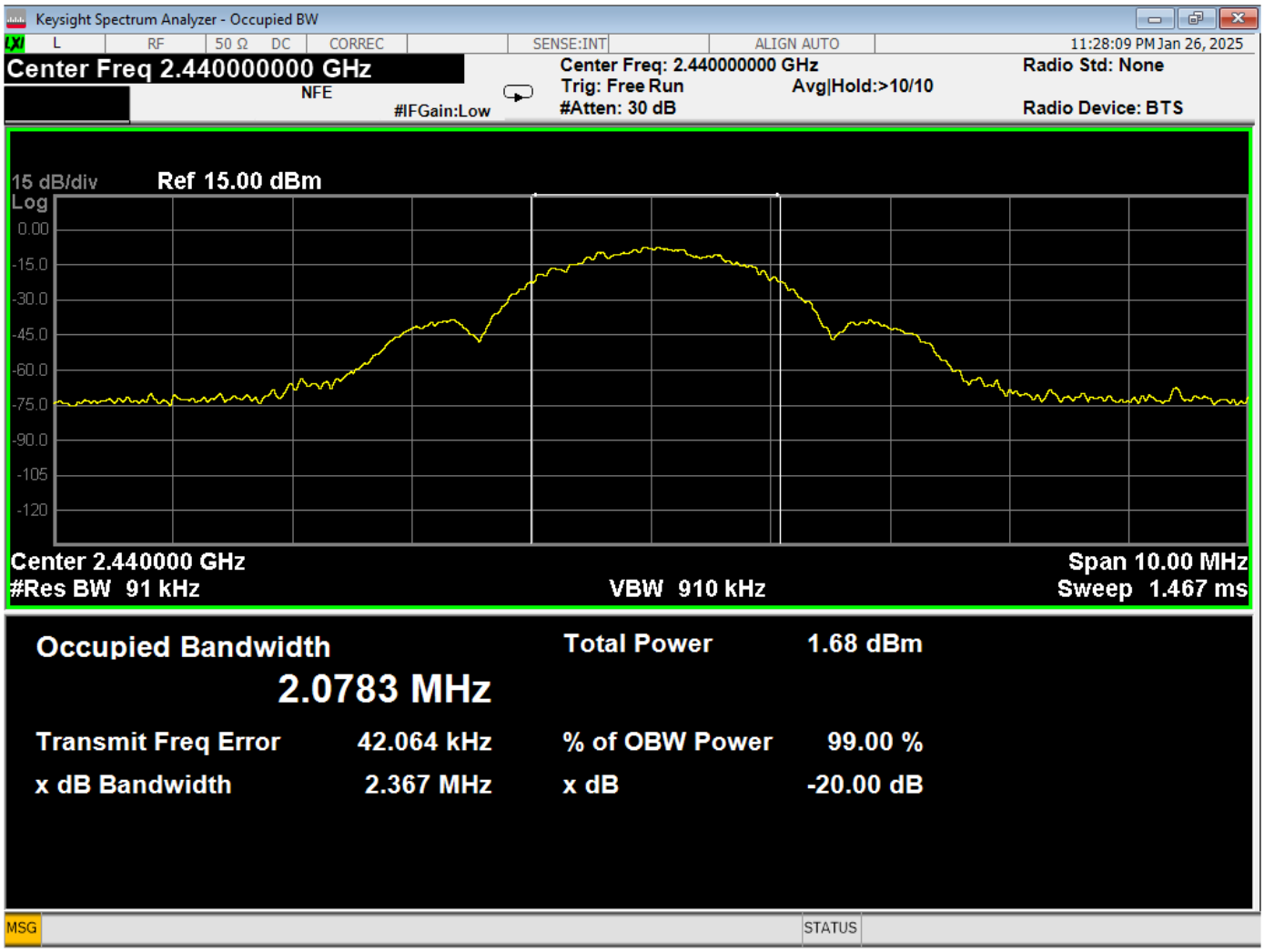
Peak Power Spectral Density – High Channel

99% BANDWIDTH

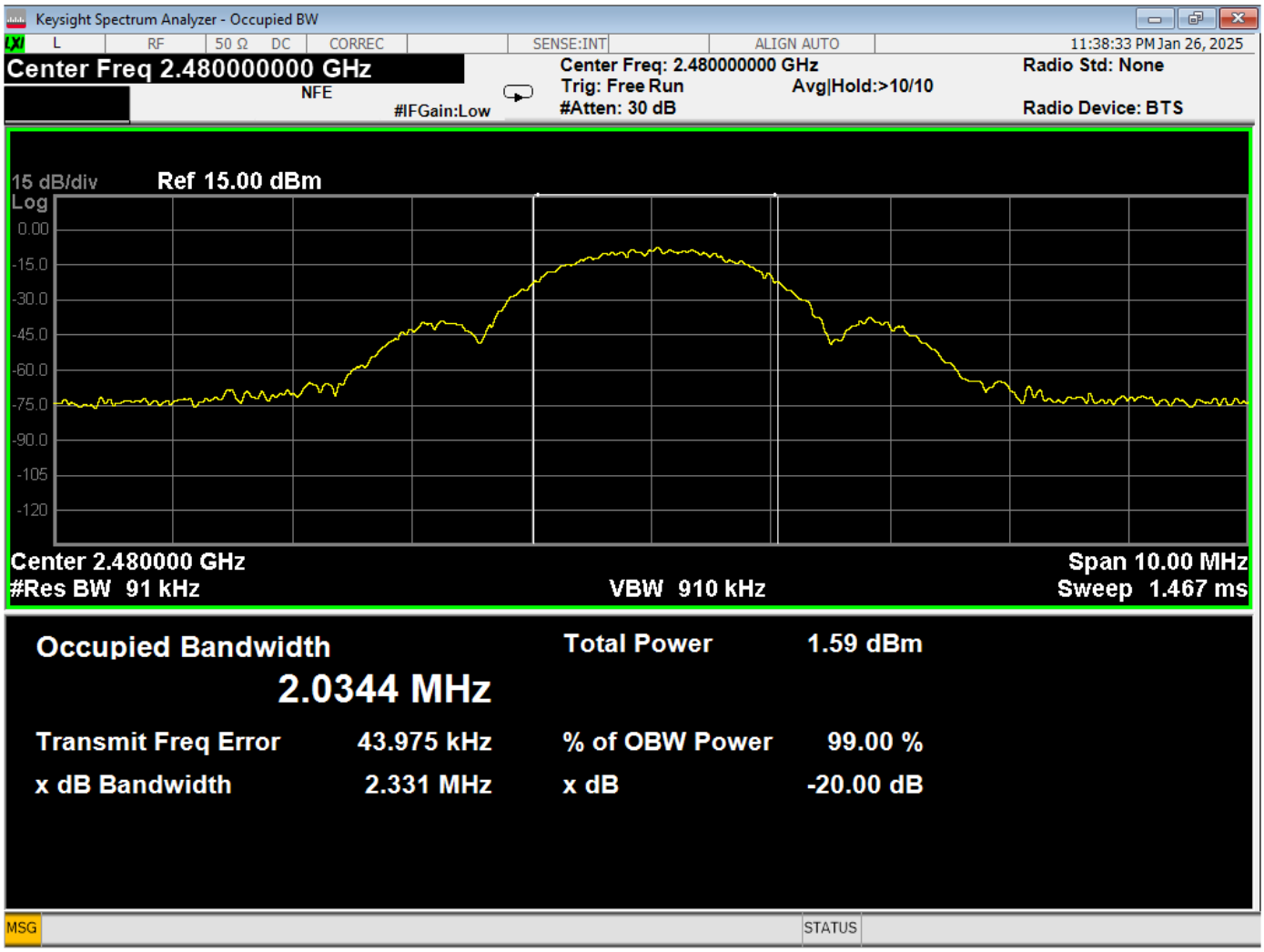
DATA SHEETS



99% Bandwidth – Low Channel



99% Bandwidth – Middle Channel



99% Bandwidth – High Channel