

*FCC PART 15, SUBPART B and C
TEST REPORT*

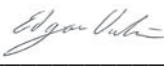
for

NEEDLE & SYRINGE

MODEL: 100-2040

Prepared for

**SONOSIM ,INC.
1738 BERKELEY STREET
SANTA MONIA, CALIFORNIA 90404**

Prepared by: 

EDGAR VALENCIA

Approved by: 

KYLE FUJIMOTO

**COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500**

DATE: SEPTEMBER 13, 2017

| | REPORT | APPENDICES | | | | | TOTAL |
|-------|--------|------------|---|---|----|----|-----------|
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GENERAL REPORT SUMMARY

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

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

This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested: Needle & Syringe
Model: 100-2040
S/N: N/A

Product Description: The EUT is a Needle & syringe which communicates with an ultrasound training program.

Modifications: The EUT was not modified during the testing.

Customer: SonoSim ,Inc.
1738 Berkeley Street
Santa Monica, California 90404

Test Dates: August 22, 23, 24, and 29, 2017; November 6, 2017

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247

Test Procedure: ANSI C63.10 and ANSI C63.4

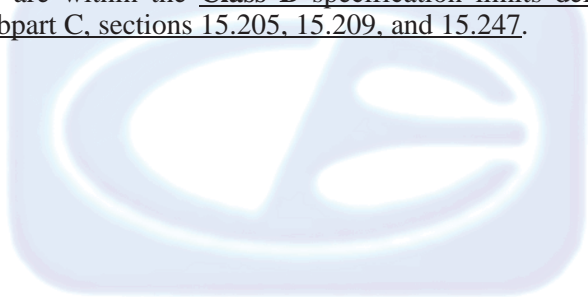
Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

| TEST | DESCRIPTION | RESULTS |
|------|--|---|
| 1 | Conducted RF Emissions, 150 kHz – 30 MHz | This test was not performed because the EUT is battery powered and cannot be connected to the AC public mains. |
| 2 | 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) |
| 3 | 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, and section 15.247 (d) |
| 4 | DTS Bandwidth | Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (a)(2) |
| 5 | Peak Power Output | Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(3) |
| 6 | RF Conducted Antenna Test | Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (d) |
| 7 | Peak 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) |

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Needle & Syringe, Model: 100-2040. The emissions measurements were performed according to the measurement procedure described in ANSI C63.10 and ANSI C63.4. 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, 15.209, and 15.247.



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

SonoSim, Inc.

Nicole Durden Senior Vice President

Compatible Electronics Inc.

Kyle Fujimoto Test Engineer
Edgar Valencia Test Technician

2.4 Date Test Sample was Received

The test sample was received on August, 24 2017.

2.5 Disposition of the Test Sample

The test sample has not been returned to SonoSim, Inc. as of the date of this test report.

2.6 Abbreviations and Acronyms

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

| | |
|------|--------------------------------------|
| RF | Radio Frequency |
| EMI | Electromagnetic Interference |
| EUT | Equipment Under Test |
| P/N | Part Number |
| S/N | Serial Number |
| HP | Hewlett Packard |
| ITE | Information Technology Equipment |
| CML | Corrected Meter Limit |
| LISN | Line Impedance Stabilization Network |
| N/A | Not Applicable |

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 |
| ANSI C63.4 2014 | 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 |
| FCC Title 47, Part 15 Subpart B | FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators |
| 558074 D01 DTS Meas Guidance v04 | Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating under 15.247 |

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The Needle & Syringe Model: 100-2040 (EUT) was tested as a stand alone unit and continuously transmitting.

The EUT was tested 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.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final emissions data was taken in this mode of operation and any cables were maximized. All initial investigations were performed with the measurement receiver in manual mode scanning the frequency range continuously. Photographs of the test setup are in Appendix D of this report.

4.1.1 Cable Construction and Termination

The EUT had not external cables.

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

| EQUIPMENT | MANUFACTURER | MODEL NUMBER | SERIAL NUMBER | FCC ID |
|------------------------|---------------------|---------------------|----------------------|---------------|
| NEEDLE & SYRINGE (EUT) | SONOSIM,INC. | 100-2040 | N/A | 2AEME-1002040 |

5.2 Emissions Test Equipment

| EQUIPMENT TYPE | MANUFACTURER | MODEL NUMBER | SERIAL NUMBER | CALIBRATION DATE | CAL. CYCLE |
|---|----------------------------|--------------|---------------|--------------------|------------|
| GENERAL TEST EQUIPMENT USED IN LAB D | | | | | |
| TDK TestLab | TDK RF Solutions, Inc. | 9.22 | 700145 | N/A | N/A |
| Computer | Hewlett Packard | p6716f | MXX1030PX0 | N/A | N/A |
| LCD Monitor | Hewlett Packard | 52031a | 3CQ046N3MG | N/A | N/A |
| EMI Receiver, 20 Hz – 40 GHz | Rohde & Schwarz | ESIB40 | 100194 | June 14, 2016 | 2 Year |
| EMI Receiver, 20 Hz – 40 GHz | Rohde & Schwarz | ESIB40 | 100194 | September 26, 2017 | 2 Year |
| EMI Receiver, 20 Hz – 26.5 GHz | Keysight | N9038A | MY51210150 | December 29, 2015 | 2 Year |
| RF RADIATED EMISSIONS TEST EQUIPMENT | | | | | |
| CombiLog Antenna | Com-Power | AC-220 | 61060 | July 27, 2017 | 2 Year |
| Preamplifier | Com-Power | PAM-118A | 551024 | May 12, 2016 | 2 Year |
| Preamplifier | Com-Power | PA-840 | 711013 | May 13, 2016 | 2 Year |
| Loop Antenna | Com-Power | AL-130R | 121090 | February 9, 2017 | 2 Year |
| Horn Antenna | Com-Power | AH-826 | 71957 | N/A | N/A |
| Horn Antenna | Com-Power | AH-118 | 071175 | February 26, 2016 | 2 Year |
| Antenna Mast | Com Power | AM-100 | N/A | N/A | N/A |
| System Controller | Sunol Sciences Corporation | SC110V | 112213-1 | N/A | N/A |
| Turntable | Sunol Sciences Corporation | 2011VS | N/A | N/A | N/A |
| Antenna-Mast | Sunol Sciences Corporation | TWR95-4 | 112213-3 | N/A | N/A |

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

For frequencies 1 GHz and below: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

For frequencies above 1 GHz: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was not grounded.

7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Channel Description and Frequencies

The lowest frequency the EUT will use is 2402 MHz and the highest frequency the EUT will use is 2480 MHz. Each channel used by the EUT is 2 MHz apart.

7.2 Antenna Gain

The EUT utilizes an antenna with a 1.1 dBi gain.

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 spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. 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 C63.4. 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 the Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

This test was not performed because the EUT is battery powered only and cannot be connected to the AC public mains.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was used as the measuring meter. Below 1 GHz, a built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets.

The frequencies above 1 GHz were averaged by using the RMS detector function on the EMI Receiver.

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 |

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

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.247 (d) for radiated emissions. Please see Appendix E for the data sheets.

8.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
 Needle & Syringe, Model: 100-2040

| Frequency MHz | Corrected Reading* dBuV/m | Specification Limit dBuV/m | Delta (Cor. Reading – Spec. Limit) dB |
|-------------------|---------------------------|----------------------------|---------------------------------------|
| 88.50 (V) | 35.80 (QP) | 40.00 | -4.20 |
| 4960 (X-Axis) (H) | 48.71 (Avg) | 53.97 | -5.26 |
| 7440 (Y-Axis) (V) | 47.99 (Avg) | 53.97 | -5.98 |
| 7440 (Z-Axis) (H) | 47.29 (Avg) | 53.97 | -6.68 |
| 7440 (X-Axis) (H) | 46.75 (Avg) | 53.97 | -7.22 |
| 85.90 (V) | 32.65 (QP) | 40.00 | -7.35 |

Notes:

- * The complete emissions data is given in Appendix E of this report.
- Pk Peak Reading Avg Average Reading
- H Horizontal Polarization V Vertical Polarization

8.2 DTS Bandwidth

The EMI Receiver was tuned to the highest point of the maximized fundamental emission based on the procedure used in section 8.1.2. The DTS bandwidth was then obtained by then setting the EMI Receiver to the settings shown below:

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).

8.3 Peak Output Power

Since antenna conducted tests could not be performed on the EUT due to a lack of an antenna connector on the EUT, the peak power output power was calculated by the following equation:

$$P = [(E \cdot D)^2] / (30 G)$$

P = Power in Watts for which you are solving

E = the measured maximum field strength in V/m utilizing the widest available RBW

G = the numeric gain of the transmitting antenna over an isotropic radiator

.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (b)(3).

8.4 Emissions in Non-Restricted Bands

The emissions in the non-restricted frequency bands measurements were performed via radiated per section 8.1.2. of this test report to maximize the emission. The reference level was established by setting the instrument center frequency to DTS channel center frequency. 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. 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.

The EUT was investigated in both single channel and frequency hopping modes. The worst case was determined to be when the EUT was in single channel mode.

Test Results:

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

8.5 RF Band Edges

The RF band edges were taken at 2390 MHz and 2400 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 EUT was investigated in both single channel and frequency hopping modes. The worst case was determined to be when the EUT was in single channel mode.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power at the restricted bands closest to the band edges at 2390 MHz and 2483.5 MHz also meet the limits of section 15.209. Please see the data sheets located in Appendix E.

8.6 Spectral Density Test

Since antenna conducted tests could not be performed on the EUT due to a lack of an antenna connector on the EUT, the spectral density was measured as follows:

- A. The EMI Receiver was tuned to the highest point of the maximized fundamental emission based on the procedure used in section 8.1.2. The EMI Receiver was then set to an RBW of 3 kHz, VBW of 10 kHz, frequency span of 1.5*DTS Bandwidth, and a sweep time set to auto. Using these settings, the peak level was obtained.
- B. Using the peak level obtained in step 1, the field strength E, was derived by applying the appropriate antenna factor, cable loss, and pre-amp gain for that frequency
- C. The following equations was then used to calculate the power level for comparison to the +8 dBm limit.

$$P = [(E \cdot D)^2] / (30 G)$$

P = Power in Watts for which you are solving

E = the measured maximum field strength in V/m utilizing the widest available RBW

G = the numeric gain of the transmitting antenna over an isotropic radiator

Test Results:

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

9. CONCLUSIONS

The Needle & Syringe, Model: 100-2040, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B, and Subpart C, sections 15.205, 15.209, and 15.247.





APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

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

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

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

LABORATORY ACCREDITATIONS AND RECOGNITIONS



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

Quote from ISO-ILAC-IAF Communiqué on 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."





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 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.

The EUT was not modified during the testing.



APPENDIX C

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

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Needle & Syringe
Model: 100-2040
S/N: N/A

There were no additional models covered under this report.



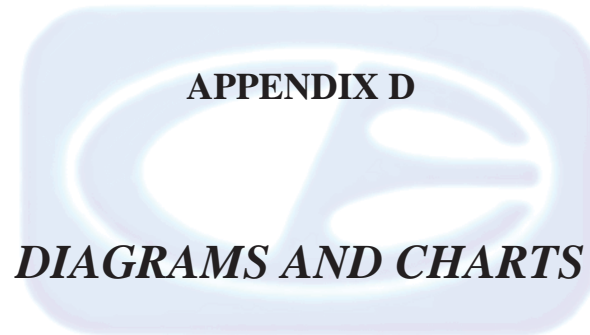


FIGURE 1: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER

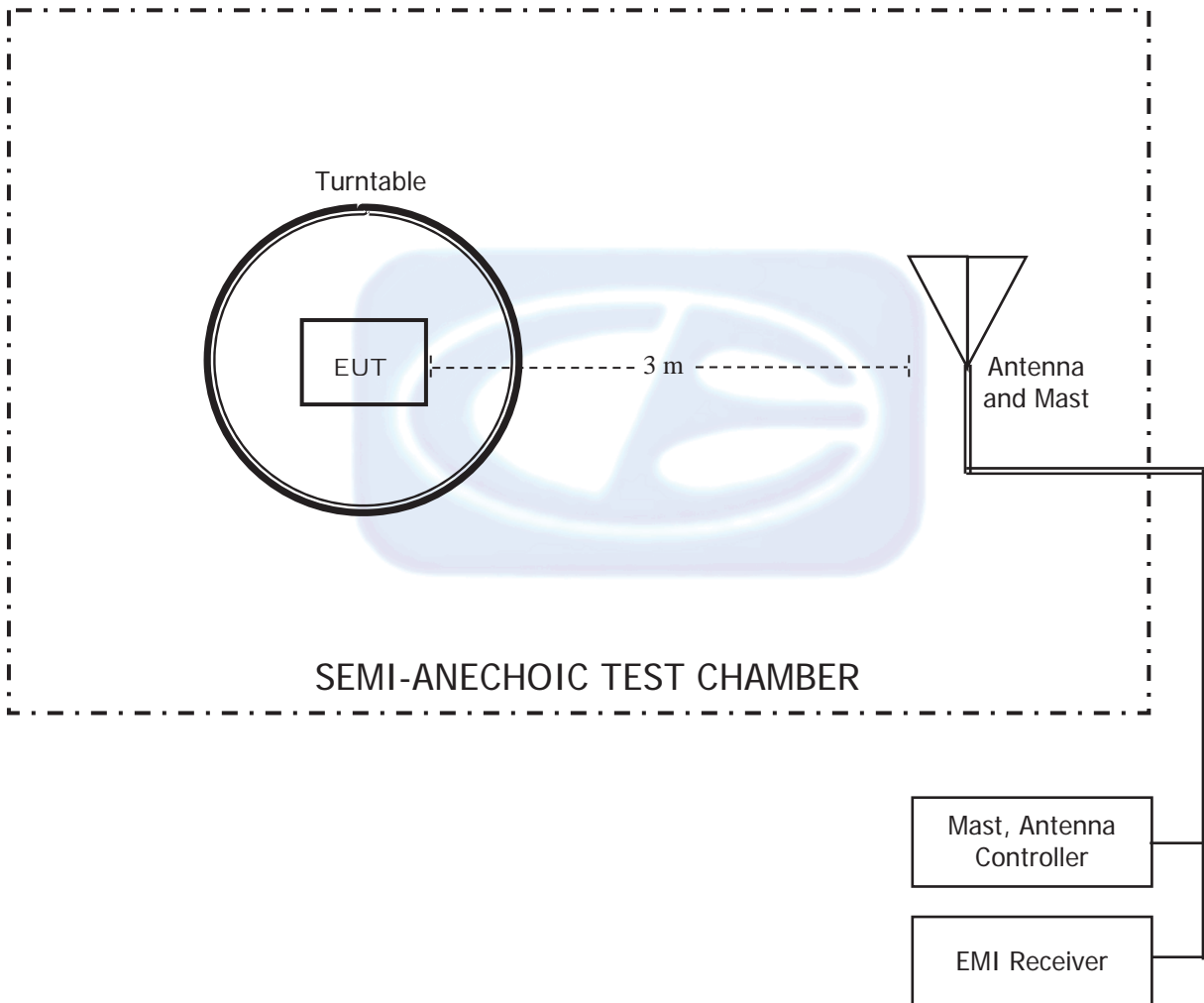
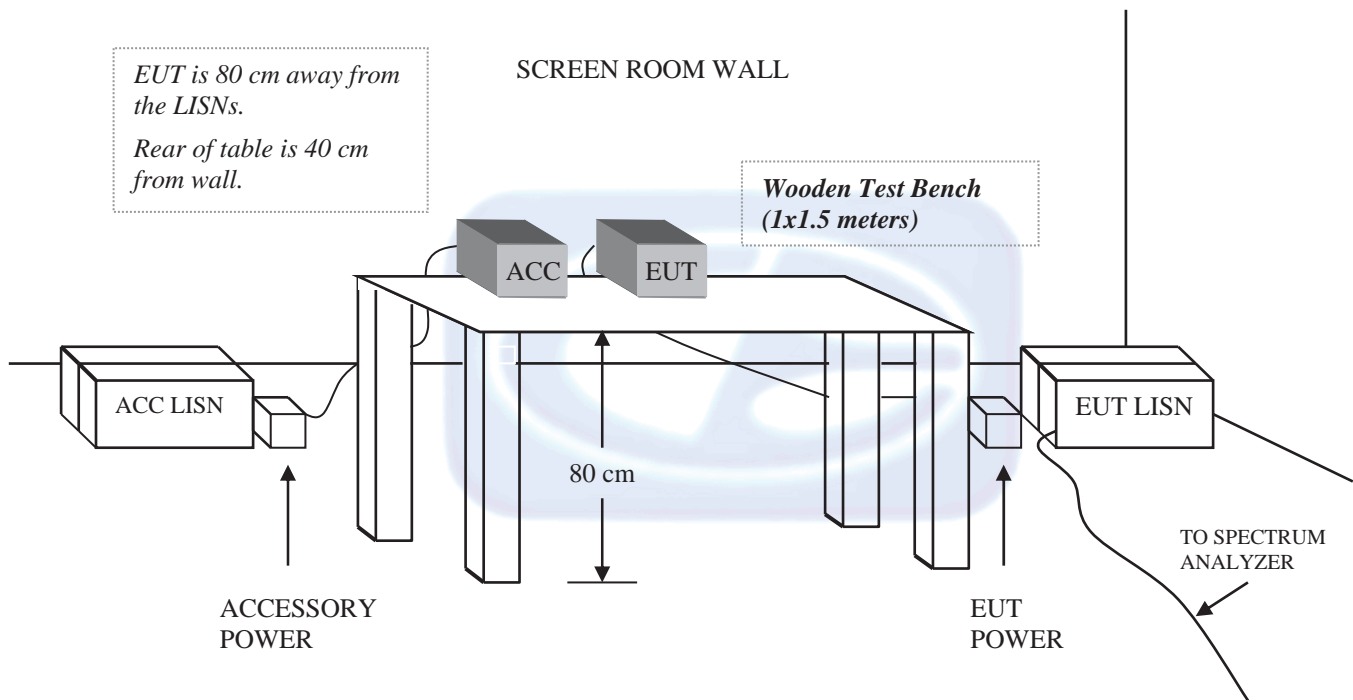


FIGURE 2: CONDUCTED EMISSIONS TEST SETUP



COM-POWER AL-130R**LOOP ANTENNA**

S/N: 121090

CALIBRATION DATE: FEBRUARY 9, 2017

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

COM-POWER AC-220**COMBILOG ANTENNA****S/N: 61060****CALIBRATION DATE: JULY 27, 2017**

| FREQUENCY (MHz) | FACTOR (dB) | FREQUENCY (MHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 30 | 23.80 | 200 | 14.10 |
| 35 | 24.00 | 250 | 15.30 |
| 40 | 24.70 | 300 | 17.70 |
| 45 | 22.90 | 350 | 17.70 |
| 50 | 22.10 | 400 | 19.00 |
| 60 | 17.60 | 450 | 21.30 |
| 70 | 12.70 | 500 | 21.00 |
| 80 | 11.20 | 550 | 22.30 |
| 90 | 13.10 | 600 | 23.40 |
| 100 | 14.40 | 650 | 22.90 |
| 120 | 15.30 | 700 | 24.60 |
| 125 | 15.00 | 750 | 24.50 |
| 140 | 12.80 | 800 | 25.40 |
| 150 | 16.50 | 850 | 26.40 |
| 160 | 12.90 | 900 | 27.20 |
| 175 | 14.30 | 950 | 27.80 |
| 180 | 14.50 | 1000 | 26.80 |

COM POWER AH-118**HORN ANTENNA****S/N: 071175****CALIBRATION DATE: FEBRUARY 26, 2016**

| FREQUENCY (GHz) | FACTOR (dB) | FREQUENCY (GHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 1.0 | 23.93 | 10.0 | 39.33 |
| 1.5 | 25.54 | 10.5 | 39.64 |
| 2.0 | 28.09 | 11.0 | 41.04 |
| 2.5 | 30.21 | 11.5 | 44.29 |
| 3.0 | 30.15 | 12.0 | 41.22 |
| 3.5 | 30.17 | 12.5 | 41.50 |
| 4.0 | 31.90 | 13.0 | 41.62 |
| 4.5 | 33.51 | 13.5 | 40.63 |
| 5.0 | 33.87 | 14.0 | 39.94 |
| 5.5 | 35.08 | 14.5 | 41.84 |
| 6.0 | 34.81 | 15.0 | 42.69 |
| 6.5 | 34.26 | 15.5 | 39.03 |
| 7.0 | 36.33 | 16.0 | 39.07 |
| 7.5 | 37.03 | 16.5 | 41.40 |
| 8.0 | 37.56 | 17.0 | 43.18 |
| 8.5 | 40.07 | 17.5 | 47.01 |
| 9.0 | 38.92 | 18.0 | 46.48 |
| 9.5 | 38.21 | | |

COM-POWER PAM-118A**PREAMPLIFIER****S/N: 551024****CALIBRATION DATE: MAY 12, 2016**

| FREQUENCY (GHz) | FACTOR (dB) | FREQUENCY (GHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 1.0 | 39.84 | 6.0 | 39.05 |
| 1.1 | 39.40 | 6.5 | 38.94 |
| 1.2 | 39.58 | 7.0 | 39.25 |
| 1.3 | 39.68 | 7.5 | 39.09 |
| 1.4 | 39.91 | 8.0 | 39.01 |
| 1.5 | 39.78 | 8.5 | 38.60 |
| 1.6 | 39.50 | 9.0 | 38.64 |
| 1.7 | 39.81 | 9.5 | 39.67 |
| 1.8 | 39.89 | 10.0 | 39.30 |
| 1.9 | 39.94 | 11.0 | 39.15 |
| 2.0 | 39.57 | 12.0 | 39.24 |
| 2.5 | 40.39 | 13.0 | 39.49 |
| 3.0 | 40.63 | 14.0 | 39.44 |
| 3.5 | 40.80 | 15.0 | 39.94 |
| 4.0 | 40.86 | 16.0 | 40.09 |
| 4.5 | 39.94 | 17.0 | 40.06 |
| 5.0 | 34.47 | 18.0 | 39.76 |
| 5.5 | 39.32 | | |

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

S/N: 71957

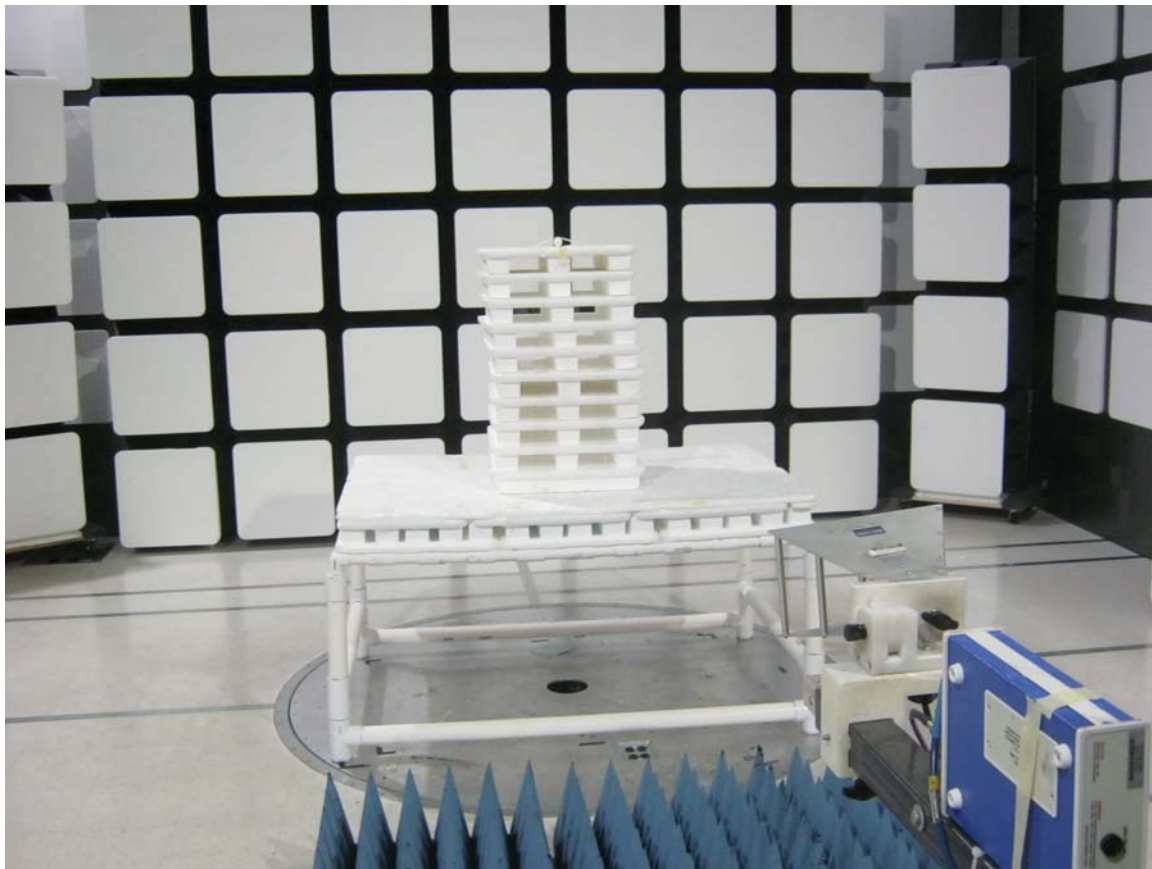
| FREQUENCY (GHz) | FACTOR (dB) | FREQUENCY (GHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 18.0 | 33.5 | 22.5 | 35.5 |
| 18.5 | 33.5 | 23.0 | 35.9 |
| 19.0 | 34.0 | 23.5 | 35.7 |
| 19.5 | 34.0 | 24.0 | 35.6 |
| 20.0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

COM-POWER PA-840**MICROWAVE PREAMPLIFIER**

S/N: 711013

CALIBRATION DATE: MAY 13, 2016

| FREQUENCY (GHz) | FACTOR (dB) | FREQUENCY (GHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 18.0 | 25.19 | 31.0 | 25.69 |
| 19.0 | 24.48 | 31.5 | 25.74 |
| 20.0 | 24.39 | 32.0 | 26.35 |
| 21.0 | 24.73 | 32.5 | 26.64 |
| 22.0 | 23.49 | 33.0 | 25.98 |
| 23.0 | 24.23 | 33.5 | 24.68 |
| 24.0 | 24.59 | 34.0 | 24.61 |
| 25.0 | 25.32 | 34.5 | 23.78 |
| 26.0 | 25.66 | 35.0 | 24.74 |
| 26.5 | 25.99 | 35.5 | 24.39 |
| 27.0 | 26.26 | 36.0 | 23.46 |
| 27.5 | 25.33 | 36.5 | 23.71 |
| 28.0 | 24.49 | 37.0 | 26.35 |
| 28.5 | 24.74 | 37.5 | 23.49 |
| 29.0 | 25.93 | 38.0 | 25.42 |
| 29.5 | 26.28 | 38.5 | 24.87 |
| 30.0 | 26.17 | 39.0 | 22.60 |
| 30.5 | 26.11 | 39.5 | 20.57 |
| | | 40.0 | 19.15 |



FRONT VIEW

SONOSIM,INC.
NEEDLE & SYRINGE
MODEL: 100-2040

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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

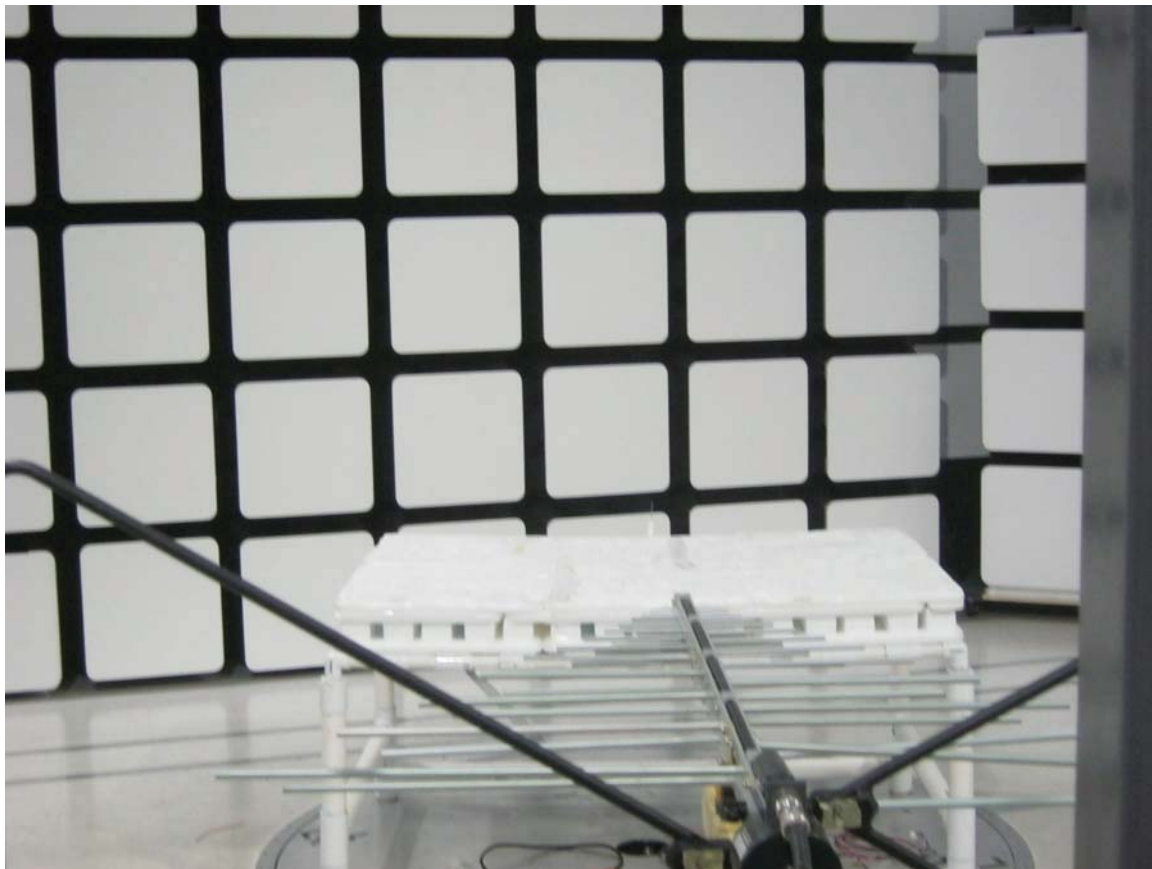


REAR VIEW

SONOSIM,INC.
NEEDLE & SYRINGE
MODEL: 100-2040

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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

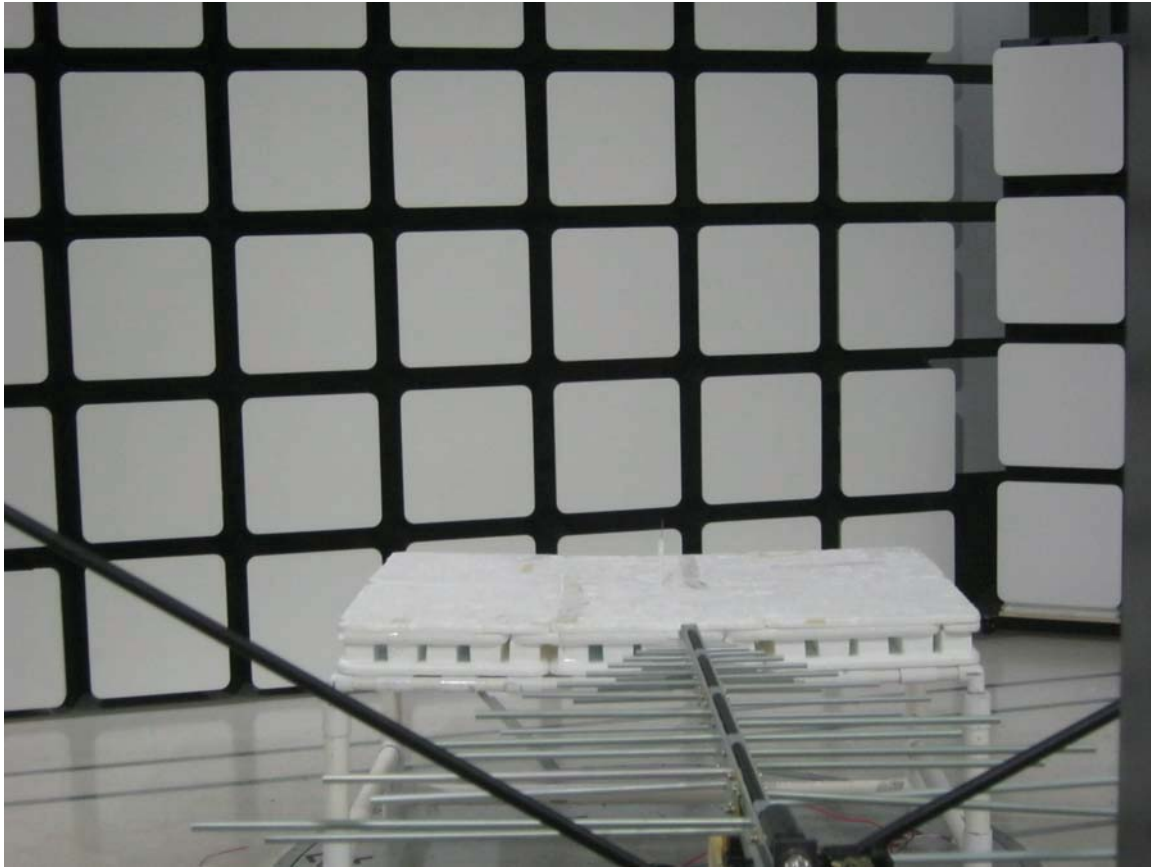


FRONT VIEW

SONOSIM,INC.
NEEDLE & SYRINGE
MODEL: 100-2040

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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

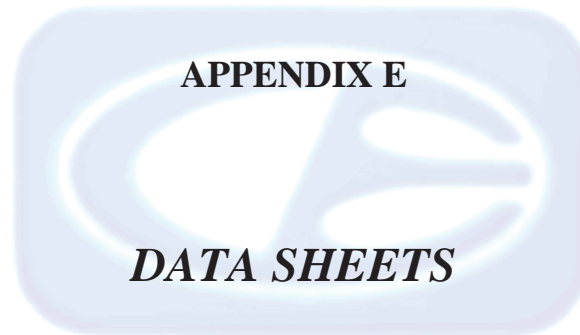


REAR VIEW

SONOSIM,INC.
NEEDLE & SYRINGE
MODEL: 100-2040

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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





***RADIATED EMISSIONS
DATA SHEETS***

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - X-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4804.00 | 44.60 | V | 73.97 | -29.37 | Peak | 280.25 | 187.01 | |
| 4804.00 | 34.77 | V | 53.97 | -19.20 | Avg | 280.25 | 187.01 | |
| 7206.00 | 45.03 | V | 73.97 | -28.94 | Peak | 34.25 | 190.00 | |
| 7206.00 | 35.73 | V | 53.97 | -18.24 | Avg | 34.25 | 190.00 | |
| 9608.00 | | | | | | | | No Emission |
| 9608.00 | | | | | | | | Detected |
| 12010.00 | | | | | | | | No Emission |
| 12010.00 | | | | | | | | Detected |
| 14412.00 | | | | | | | | No Emission |
| 14412.00 | | | | | | | | Detected |
| 16814.00 | | | | | | | | No Emission |
| 16814.00 | | | | | | | | Detected |
| 19216.00 | | | | | | | | No Emission |
| 19216.00 | | | | | | | | Detected |
| 21618.00 | | | | | | | | No Emission |
| 21618.00 | | | | | | | | Detected |
| 24020.00 | | | | | | | | No Emission |
| 24020.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - Y-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4804.00 | 52.70 | V | 73.97 | -21.27 | Peak | 51.00 | 171.79 | |
| 4804.00 | 45.80 | V | 53.97 | -8.17 | Avg | 51.00 | 171.79 | |
| 7206.00 | 51.34 | V | 73.97 | -22.64 | Peak | 0.00 | 242.59 | |
| 7206.00 | 42.37 | V | 53.97 | -11.61 | Avg | 0.00 | 242.59 | |
| 9608.00 | | | | | | | | No Emission |
| 9608.00 | | | | | | | | Detected |
| 12010.00 | | | | | | | | No Emission |
| 12010.00 | | | | | | | | Detected |
| 14412.00 | | | | | | | | No Emission |
| 14412.00 | | | | | | | | Detected |
| 16814.00 | | | | | | | | No Emission |
| 16814.00 | | | | | | | | Detected |
| 19216.00 | | | | | | | | No Emission |
| 19216.00 | | | | | | | | Detected |
| 21618.00 | | | | | | | | No Emission |
| 21618.00 | | | | | | | | Detected |
| 24020.00 | | | | | | | | No Emission |
| 24020.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4804.00 | 49.31 | V | 73.97 | -24.66 | Peak | 188.50 | 147.31 | |
| 4804.00 | 41.02 | V | 53.97 | -12.95 | Avg | 188.50 | 147.31 | |
| 7206.00 | 50.68 | V | 73.97 | -23.29 | Peak | 89.75 | 114.77 | |
| 7206.00 | 41.86 | V | 53.97 | -12.11 | Avg | 89.75 | 114.77 | |
| 9608.00 | | | | | | | | No Emission |
| 9608.00 | | | | | | | | Detected |
| 12010.00 | | | | | | | | No Emission |
| 12010.00 | | | | | | | | Detected |
| 14412.00 | | | | | | | | No Emission |
| 14412.00 | | | | | | | | Detected |
| 16814.00 | | | | | | | | No Emission |
| 16814.00 | | | | | | | | Detected |
| 19216.00 | | | | | | | | No Emission |
| 19216.00 | | | | | | | | Detected |
| 21618.00 | | | | | | | | No Emission |
| 21618.00 | | | | | | | | Detected |
| 24020.00 | | | | | | | | No Emission |
| 24020.00 | | | | | | | | Detected |
| | | | | | | | | |
| | | | | | | | | |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - X-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4804.00 | 51.73 | H | 73.97 | -22.24 | Peak | 240.75 | 172.86 | |
| 4804.00 | 43.39 | H | 53.97 | -10.58 | Avg | 240.75 | 172.86 | |
| 7206.00 | 47.54 | H | 73.97 | -26.43 | Peak | 180.75 | 173.28 | |
| 7206.00 | 34.46 | H | 53.97 | -19.51 | Avg | 180.75 | 173.28 | |
| 9608.00 | | | | | | | | No Emission |
| 9608.00 | | | | | | | | Detected |
| 12010.00 | | | | | | | | No Emission |
| 12010.00 | | | | | | | | Detected |
| 14412.00 | | | | | | | | No Emission |
| 14412.00 | | | | | | | | Detected |
| 16814.00 | | | | | | | | No Emission |
| 16814.00 | | | | | | | | Detected |
| 19216.00 | | | | | | | | No Emission |
| 19216.00 | | | | | | | | Detected |
| 21618.00 | | | | | | | | No Emission |
| 21618.00 | | | | | | | | Detected |
| 24020.00 | | | | | | | | No Emission |
| 24020.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - Y-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4804.00 | 45.55 | H | 73.97 | -28.42 | Peak | 24.50 | 141.16 | |
| 4804.00 | 34.67 | H | 53.97 | -19.30 | Avg | 24.50 | 141.16 | |
| 7206.00 | 50.06 | H | 73.97 | -23.91 | Peak | 336.25 | 167.49 | |
| 7206.00 | 39.37 | H | 53.97 | -14.60 | Avg | 336.25 | 167.49 | |
| 9608.00 | | | | | | | | No Emission |
| 9608.00 | | | | | | | | Detected |
| 12010.00 | | | | | | | | No Emission |
| 12010.00 | | | | | | | | Detected |
| 14412.00 | | | | | | | | No Emission |
| 14412.00 | | | | | | | | Detected |
| 16814.00 | | | | | | | | No Emission |
| 16814.00 | | | | | | | | Detected |
| 19216.00 | | | | | | | | No Emission |
| 19216.00 | | | | | | | | Detected |
| 21618.00 | | | | | | | | No Emission |
| 21618.00 | | | | | | | | Detected |
| 24020.00 | | | | | | | | No Emission |
| 24020.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4804.00 | 51.71 | H | 73.97 | -22.26 | Peak | 94.50 | 153.16 | |
| 4804.00 | 44.12 | H | 53.97 | -9.85 | Avg | 94.50 | 153.16 | |
| 7206.00 | 52.70 | H | 73.97 | -21.27 | Peak | 246.00 | 147.13 | |
| 7206.00 | 43.03 | H | 53.97 | -10.94 | Avg | 246.00 | 147.13 | |
| 9608.00 | | | | | | | | No Emission |
| 9608.00 | | | | | | | | Detected |
| 12010.00 | | | | | | | | No Emission |
| 12010.00 | | | | | | | | Detected |
| 14412.00 | | | | | | | | No Emission |
| 14412.00 | | | | | | | | Detected |
| 16814.00 | | | | | | | | No Emission |
| 16814.00 | | | | | | | | Detected |
| 19216.00 | | | | | | | | No Emission |
| 19216.00 | | | | | | | | Detected |
| 21618.00 | | | | | | | | No Emission |
| 21618.00 | | | | | | | | Detected |
| 24020.00 | | | | | | | | No Emission |
| 24020.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
Transmit Mode - X-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4884.00 | 43.38 | V | 73.97 | -30.59 | Peak | 310.00 | 158.05 | |
| 4884.00 | 31.11 | V | 53.97 | -22.86 | Avg | 310.00 | 158.05 | |
| 7326.00 | 48.37 | V | 73.97 | -25.60 | Peak | 145.75 | 178.29 | |
| 7326.00 | 37.58 | V | 53.97 | -16.39 | Avg | 145.75 | 178.29 | |
| 9768.00 | | | | | | | | No Emission |
| 9768.00 | | | | | | | | Detected |
| 12210.00 | | | | | | | | No Emission |
| 12210.00 | | | | | | | | Detected |
| 14652.00 | | | | | | | | No Emission |
| 14652.00 | | | | | | | | Detected |
| 17094.00 | | | | | | | | No Emission |
| 17094.00 | | | | | | | | Detected |
| 19536.00 | | | | | | | | No Emission |
| 19536.00 | | | | | | | | Detected |
| 21978.00 | | | | | | | | No Emission |
| 21978.00 | | | | | | | | Detected |
| 24420.00 | | | | | | | | No Emission |
| 24420.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
Transmit Mode - Y-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4884.00 | 53.22 | V | 73.97 | -20.75 | Peak | 283.75 | 170.65 | |
| 4884.00 | 46.05 | V | 53.97 | -7.92 | Avg | 283.75 | 170.65 | |
| 7326.00 | 51.99 | V | 73.97 | -21.98 | Peak | 186.25 | 236.38 | |
| 7326.00 | 42.41 | V | 53.97 | -11.56 | Avg | 186.25 | 236.38 | |
| 9768.00 | | | | | | | | No Emission |
| 9768.00 | | | | | | | | Detected |
| 12210.00 | | | | | | | | No Emission |
| 12210.00 | | | | | | | | Detected |
| 14652.00 | | | | | | | | No Emission |
| 14652.00 | | | | | | | | Detected |
| 17094.00 | | | | | | | | No Emission |
| 17094.00 | | | | | | | | Detected |
| 19536.00 | | | | | | | | No Emission |
| 19536.00 | | | | | | | | Detected |
| 21978.00 | | | | | | | | No Emission |
| 21978.00 | | | | | | | | Detected |
| 24420.00 | | | | | | | | No Emission |
| 24420.00 | | | | | | | | Detected |

FCC 15.247

SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
 Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4884.00 | 48.95 | V | 73.97 | -25.02 | Peak | 218.00 | 147.67 | |
| 4884.00 | 41.63 | V | 53.97 | -12.34 | Avg | 218.00 | 147.67 | |
| 7326.00 | 49.90 | V | 73.97 | -24.07 | Peak | 89.25 | 150.41 | |
| 7326.00 | 41.17 | V | 53.97 | -12.80 | Avg | 89.25 | 150.41 | |
| 9768.00 | | | | | | | | No Emission |
| 9768.00 | | | | | | | | Detected |
| 12210.00 | | | | | | | | No Emission |
| 12210.00 | | | | | | | | Detected |
| 14652.00 | | | | | | | | No Emission |
| 14652.00 | | | | | | | | Detected |
| 17094.00 | | | | | | | | No Emission |
| 17094.00 | | | | | | | | Detected |
| 19536.00 | | | | | | | | No Emission |
| 19536.00 | | | | | | | | Detected |
| 21978.00 | | | | | | | | No Emission |
| 21978.00 | | | | | | | | Detected |
| 24420.00 | | | | | | | | No Emission |
| 24420.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
 Transmit Mode - X-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4884.00 | 51.89 | H | 73.97 | -22.08 | Peak | 131.00 | 128.74 | |
| 4884.00 | 44.81 | H | 53.97 | -9.16 | Avg | 131.00 | 128.74 | |
| 7326.00 | 52.19 | H | 73.97 | -21.78 | Peak | 113.75 | 138.11 | |
| 7326.00 | 43.99 | H | 53.97 | -9.98 | Avg | 113.75 | 138.11 | |
| 9768.00 | | | | | | | | No Emission |
| 9768.00 | | | | | | | | Detected |
| 12210.00 | | | | | | | | No Emission |
| 12210.00 | | | | | | | | Detected |
| 14652.00 | | | | | | | | No Emission |
| 14652.00 | | | | | | | | Detected |
| 17094.00 | | | | | | | | No Emission |
| 17094.00 | | | | | | | | Detected |
| 19536.00 | | | | | | | | No Emission |
| 19536.00 | | | | | | | | Detected |
| 21978.00 | | | | | | | | No Emission |
| 21978.00 | | | | | | | | Detected |
| 24420.00 | | | | | | | | No Emission |
| 24420.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
Transmit Mode - Y-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4884.00 | 46.44 | H | 73.97 | -27.53 | Peak | 191.25 | 127.49 | |
| 4884.00 | 36.88 | H | 53.97 | -17.09 | Avg | 191.25 | 127.49 | |
| 7326.00 | 50.24 | H | 73.97 | -23.73 | Peak | 217.50 | 211.55 | |
| 7326.00 | 39.40 | H | 53.97 | -14.57 | Avg | 217.50 | 211.55 | |
| 9768.00 | | | | | | | | No Emission |
| 9768.00 | | | | | | | | Detected |
| 12210.00 | | | | | | | | No Emission |
| 12210.00 | | | | | | | | Detected |
| 14652.00 | | | | | | | | No Emission |
| 14652.00 | | | | | | | | Detected |
| 17094.00 | | | | | | | | No Emission |
| 17094.00 | | | | | | | | Detected |
| 19536.00 | | | | | | | | No Emission |
| 19536.00 | | | | | | | | Detected |
| 21978.00 | | | | | | | | No Emission |
| 21978.00 | | | | | | | | Detected |
| 24420.00 | | | | | | | | No Emission |
| 24420.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4884.00 | 52.60 | H | 73.97 | -21.38 | Peak | 93.25 | 115.85 | |
| 4884.00 | 45.71 | H | 53.97 | -8.27 | Avg | 93.25 | 115.85 | |
| 7326.00 | 52.94 | H | 73.97 | -21.03 | Peak | 239.25 | 130.35 | |
| 7326.00 | 44.70 | H | 53.97 | -9.27 | Avg | 239.25 | 130.35 | |
| 9768.00 | | | | | | | | No Emission |
| 9768.00 | | | | | | | | Detected |
| 12210.00 | | | | | | | | No Emission |
| 12210.00 | | | | | | | | Detected |
| 14652.00 | | | | | | | | No Emission |
| 14652.00 | | | | | | | | Detected |
| 17094.00 | | | | | | | | No Emission |
| 17094.00 | | | | | | | | Detected |
| 19536.00 | | | | | | | | No Emission |
| 19536.00 | | | | | | | | Detected |
| 21978.00 | | | | | | | | No Emission |
| 21978.00 | | | | | | | | Detected |
| 24420.00 | | | | | | | | No Emission |
| 24420.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - High Channel
Transmit Mode - X-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4960.00 | 47.13 | V | 73.97 | -26.84 | Peak | 211.25 | 180.26 | |
| 4960.00 | 32.94 | V | 53.97 | -21.03 | Avg | 211.25 | 180.26 | |
| 7440.00 | 49.23 | V | 73.97 | -24.74 | Peak | 149.00 | 118.00 | |
| 7440.00 | 38.31 | V | 53.97 | -15.66 | Avg | 149.00 | 118.00 | |
| 9920.00 | | | | | | | | No Emission |
| 9920.00 | | | | | | | | Detected |
| 12400.00 | | | | | | | | No Emission |
| 12400.00 | | | | | | | | Detected |
| 14880.00 | | | | | | | | No Emission |
| 14880.00 | | | | | | | | Detected |
| 17360.00 | | | | | | | | No Emission |
| 17360.00 | | | | | | | | Detected |
| 19840.00 | | | | | | | | No Emission |
| 19840.00 | | | | | | | | Detected |
| 22320.00 | | | | | | | | No Emission |
| 22320.00 | | | | | | | | Detected |
| 24800.00 | | | | | | | | No Emission |
| 24800.00 | | | | | | | | Detected |

FCC 15.247

SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - High Channel
 Transmit Mode - Y-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4960.00 | 50.39 | V | 73.97 | -23.58 | Peak | 353.00 | 139.07 | |
| 4960.00 | 42.57 | V | 53.97 | -11.40 | Avg | 353.00 | 139.07 | |
| 7440.00 | 54.45 | V | 73.97 | -19.52 | Peak | 49.00 | 199.25 | |
| 7440.00 | 47.99 | V | 53.97 | -5.98 | Avg | 49.00 | 199.25 | |
| 9920.00 | | | | | | | | No Emission |
| 9920.00 | | | | | | | | Detected |
| 12400.00 | | | | | | | | No Emission |
| 12400.00 | | | | | | | | Detected |
| 14880.00 | | | | | | | | No Emission |
| 14880.00 | | | | | | | | Detected |
| 17360.00 | | | | | | | | No Emission |
| 17360.00 | | | | | | | | Detected |
| 19840.00 | | | | | | | | No Emission |
| 19840.00 | | | | | | | | Detected |
| 22320.00 | | | | | | | | No Emission |
| 22320.00 | | | | | | | | Detected |
| 24800.00 | | | | | | | | No Emission |
| 24800.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - High Channel
Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4960.00 | 50.11 | V | 73.97 | -23.87 | Peak | 214.50 | 155.73 | |
| 4960.00 | 42.03 | V | 53.97 | -11.94 | Avg | 214.50 | 155.73 | |
| 7440.00 | 53.42 | V | 73.97 | -20.56 | Peak | 107.50 | 110.65 | |
| 7440.00 | 45.55 | V | 53.97 | -8.42 | Avg | 107.50 | 110.65 | |
| 9920.00 | | | | | | | | No Emission |
| 9920.00 | | | | | | | | Detected |
| 12400.00 | | | | | | | | No Emission |
| 12400.00 | | | | | | | | Detected |
| 14880.00 | | | | | | | | No Emission |
| 14880.00 | | | | | | | | Detected |
| 17360.00 | | | | | | | | No Emission |
| 17360.00 | | | | | | | | Detected |
| 19840.00 | | | | | | | | No Emission |
| 19840.00 | | | | | | | | Detected |
| 22320.00 | | | | | | | | No Emission |
| 22320.00 | | | | | | | | Detected |
| 24800.00 | | | | | | | | No Emission |
| 24800.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - High Channel
Transmit Mode - X-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4960.00 | 55.50 | H | 73.97 | -18.48 | Peak | 250.25 | 160.08 | |
| 4960.00 | 48.71 | H | 53.97 | -5.26 | Avg | 250.25 | 160.08 | |
| 7440.00 | 56.58 | H | 73.97 | -17.39 | Peak | 238.00 | 152.86 | |
| 7440.00 | 46.75 | H | 53.97 | -7.22 | Avg | 238.00 | 152.86 | |
| 9920.00 | | | | | | | | No Emission |
| 9920.00 | | | | | | | | Detected |
| 12400.00 | | | | | | | | No Emission |
| 12400.00 | | | | | | | | Detected |
| 14880.00 | | | | | | | | No Emission |
| 14880.00 | | | | | | | | Detected |
| 17360.00 | | | | | | | | No Emission |
| 17360.00 | | | | | | | | Detected |
| 19840.00 | | | | | | | | No Emission |
| 19840.00 | | | | | | | | Detected |
| 22320.00 | | | | | | | | No Emission |
| 22320.00 | | | | | | | | Detected |
| 24800.00 | | | | | | | | No Emission |
| 24800.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - High Channel
Transmit Mode - Y-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4960.00 | 47.54 | H | 73.97 | -26.43 | Peak | 17.25 | 105.52 | |
| 4960.00 | 37.74 | H | 53.97 | -16.23 | Avg | 17.25 | 105.52 | |
| 7440.00 | 51.89 | H | 73.97 | -22.09 | Peak | 0.00 | 175.37 | |
| 7440.00 | 42.97 | H | 53.97 | -11.00 | Avg | 0.00 | 175.37 | |
| 9920.00 | | | | | | | | No Emission |
| 9920.00 | | | | | | | | Detected |
| 12400.00 | | | | | | | | No Emission |
| 12400.00 | | | | | | | | Detected |
| 14880.00 | | | | | | | | No Emission |
| 14880.00 | | | | | | | | Detected |
| 17360.00 | | | | | | | | No Emission |
| 17360.00 | | | | | | | | Detected |
| 19840.00 | | | | | | | | No Emission |
| 19840.00 | | | | | | | | Detected |
| 22320.00 | | | | | | | | No Emission |
| 22320.00 | | | | | | | | Detected |
| 24800.00 | | | | | | | | No Emission |
| 24800.00 | | | | | | | | Detected |

FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Harmonics - High Channel
Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 4960.00 | 52.51 | H | 73.97 | -21.46 | Peak | 252.75 | 120.26 | |
| 4960.00 | 43.59 | H | 53.97 | -10.38 | Avg | 252.75 | 120.26 | |
| 7440.00 | 56.19 | H | 73.97 | -17.79 | Peak | 109.50 | 183.19 | |
| 7440.00 | 47.29 | H | 53.97 | -6.68 | Avg | 109.50 | 183.19 | |
| 9920.00 | | | | | | | | No Emission |
| 9920.00 | | | | | | | | Detected |
| 12400.00 | | | | | | | | No Emission |
| 12400.00 | | | | | | | | Detected |
| 14880.00 | | | | | | | | No Emission |
| 14880.00 | | | | | | | | Detected |
| 17360.00 | | | | | | | | No Emission |
| 17360.00 | | | | | | | | Detected |
| 19840.00 | | | | | | | | No Emission |
| 19840.00 | | | | | | | | Detected |
| 22320.00 | | | | | | | | No Emission |
| 22320.00 | | | | | | | | Detected |
| 24800.00 | | | | | | | | No Emission |
| 24800.00 | | | | | | | | Detected |

FCC Class B and FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

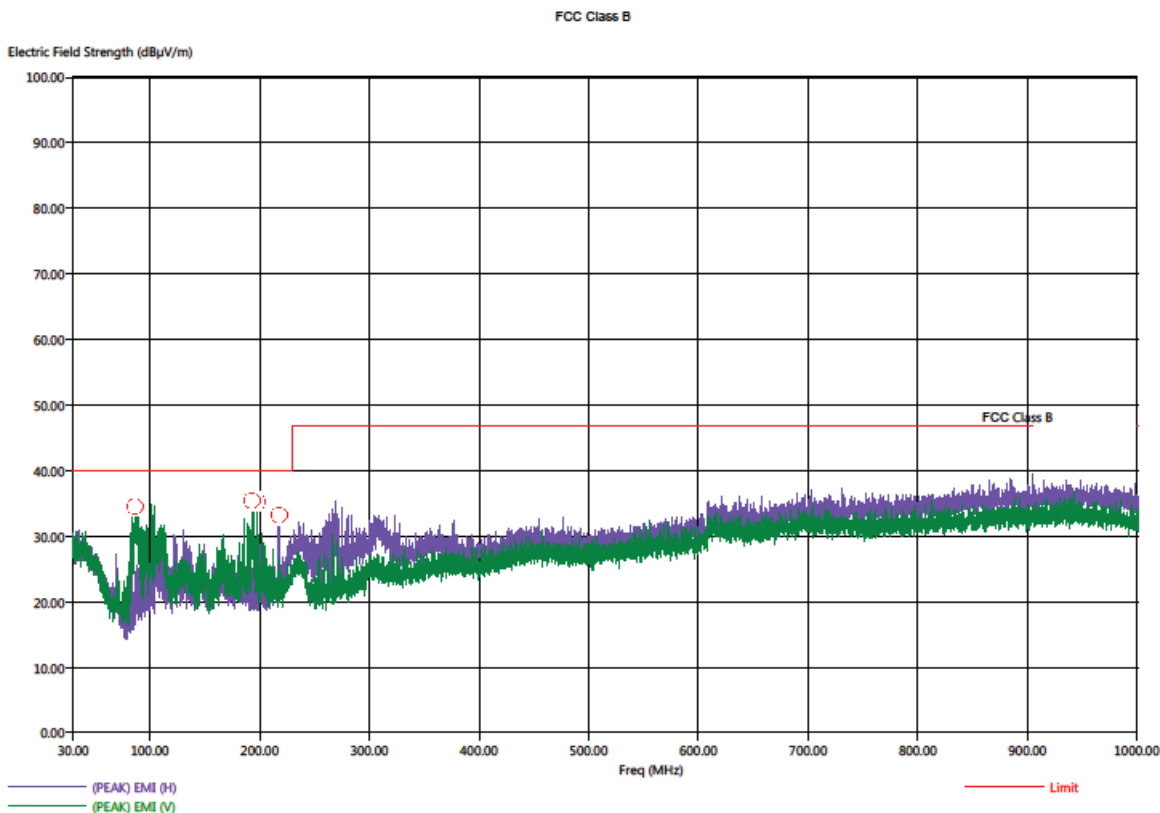
 Date: 08/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

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

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|--|
| | | | | | | | | No Emissions Detected from 9 kHz to 30 MHz for the digital portion of the EUT |
| | | | | | | | | No Emissions Detected from 9 kHz to 30 MHz for the Non-Harmonic Emissions of the Transmitter for the EUT |
| | | | | | | | | No Emissions Detected from 1 GHz to 25 GHz for the digital portion of 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: 5 - Aqilent - Pre-Scan - EN 55022 Class B - 30 MHz to 1000 MHz - 08-24-2017.set
Operator: Kyle Haag
EUT Type: Needle & Syringe
EUT Condition: The EUT was communicating with its proprietary program.
Comments: Company: SonoSim Inc.
Model: 100-2040
S/N: Sequential

8/24/2017 3:50:57 PM
Sequence: Preliminary Scan



Title: Radiated Final -FCC Class B
 File: 5 - Agilent - Final Scan - EN 55022 Class B - 30 MHz to 1000 MHz - 08-24-2017.set
 Operator: Kyle Haag
 EUT Type: Needle & Syringe
 EUT Condition: The EUT was communicating with its proprietary program.
 Comments: Company: SonoSim Inc.
 Model: 100-2040
 S/N: Sequential

8/24/2017 4:01:38 PM
 Sequence: Final Measurements

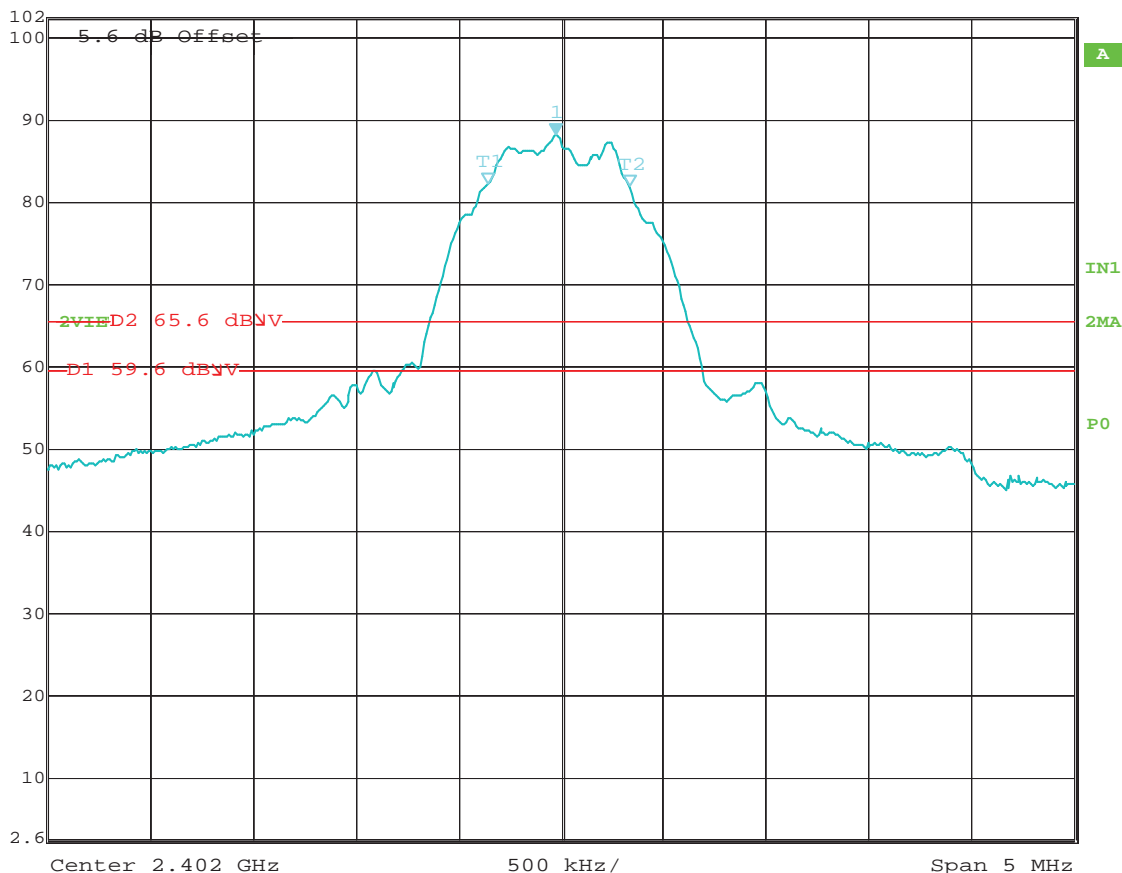
FCC Class B

| Freq (MHz) | Pol | (PEAK) EMI (dBµV/m) | (QP) BMI (dBµV/m) | (PEAK) Margin (dB) | (QP) Margin (dB) | Limit (dBµV/m) | Transducer (dB) | Cable (dB) | Ttbl Aql (dea) | Twr Ht (cm) |
|------------|-----|---------------------|-------------------|--------------------|------------------|----------------|-----------------|------------|----------------|-------------|
| 85.90 | V | 38.70 | 32.65 | -1.30 | -7.35 | 40.00 | 12.38 | 0.70 | 140.25 | 111.37 |
| 88.00 | V | 37.88 | 32.42 | -2.12 | -7.58 | 40.00 | 12.70 | 0.70 | 133.00 | 286.59 |
| 88.50 | V | 41.45 | 35.80 | 1.45 | -4.20 | 40.00 | 12.82 | 0.70 | 121.00 | 159.13 |
| 89.30 | V | 33.33 | 28.24 | -6.67 | -11.76 | 40.00 | 12.97 | 0.70 | 126.25 | 175.25 |
| 192.60 | V | 34.30 | 26.27 | -5.70 | -13.73 | 40.00 | 14.24 | 0.63 | 348.75 | 159.25 |
| 197.50 | V | 29.94 | 22.66 | -10.06 | -17.34 | 40.00 | 14.14 | 0.61 | 199.00 | 254.89 |
| 217.40 | H | 32.33 | 26.41 | -7.67 | -13.59 | 40.00 | 14.55 | 0.86 | 228.75 | 190.95 |





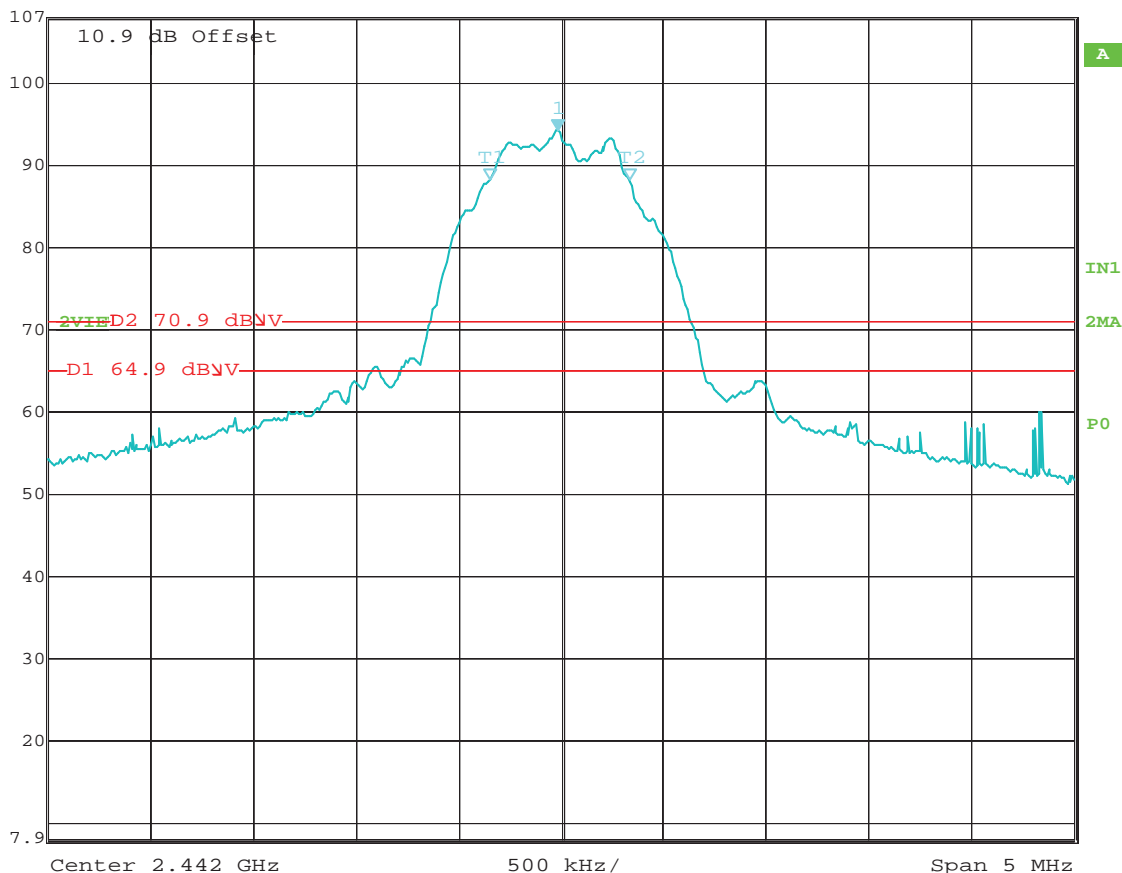
| | | | | | |
|--|-------------------|-----|------------------|--------|---------|
| | Marker 1 [T2 ndB] | RBW | 100 kHz | RF Att | 10 dB |
| | Ref Lvl | ndB | 6.00 dB | VBW | 300 kHz |
| | 102.6 dBV | BW | 691.38276553 kHz | SWT | 5 ms |
| | | | | Unit | dBV |



Date: 29.AUG.2017 15:02:06

-6 dB Bandwidth – Low Channel

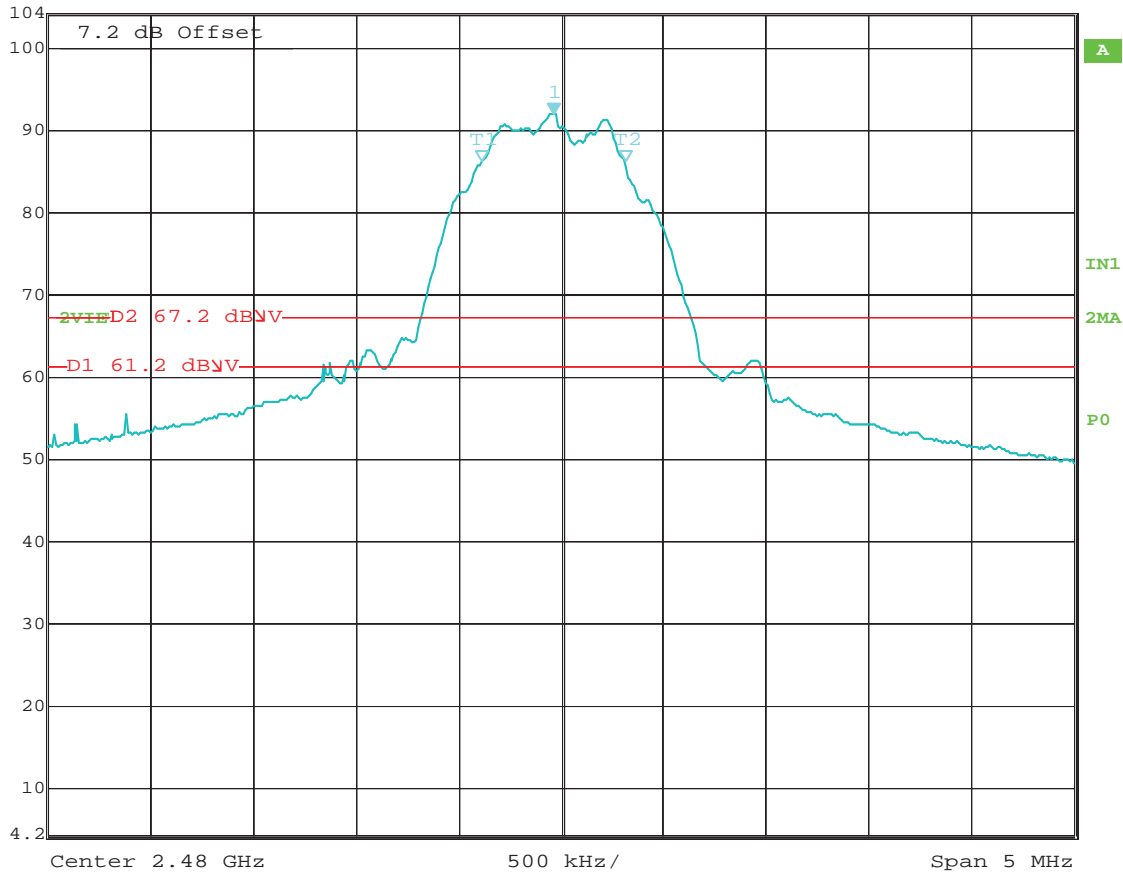
RS
 Marker 1 [T2 ndB] RBW 100 kHz RF Att 10 dB
 Ref Lvl ndB 6.00 dB VBW 300 kHz
 107.9 dBV BW 681.36272545 kHz SWT 5 ms Unit dBV



Date: 29.AUG.2017 15:04:41

-6 dB Bandwidth – Middle Channel

| | | | | | |
|--|-------------------|-----|------------------|--------|---------|
| | Marker 1 [T2 ndB] | RBW | 100 kHz | RF Att | 10 dB |
| | Ref Lvl | ndB | 6.00 dB | VBW | 300 kHz |
| | 104.2 dBV | BW | 701.40280561 kHz | SWT | 5 ms |
| | | | | Unit | dBV |



Date: 29.AUG.2017 15:07:36

-6 dB Bandwidth – High Channel

SPECTRAL DENSITY OUTPUT

DATA SHEETS

FCC 15.247

SonoSim, Inc.
 LS Needle/Syringe
 Model: 100-2040

Date: 08/22/2017
 Lab: D
 Tested By: Kyle Fujimoto

Setting = 0 dBm
Spectral Density Output

| Freq. (MHz) | Level (dBUV/m) | Level (V/m) | Antenna Gain (dBi) | Numeric Gain | Spectral Density (Watts) | Spectral Density (mW) | Spectral Density (dBm) | Comments |
|-------------|----------------|-------------|--------------------|--------------|--------------------------|-----------------------|------------------------|---------------|
| 2402 | 67.51 | 0.0023741 | 1.1 | 1.28825 | 1.313E-06 | 0.001313 | -28.8188 | Vert X-Axis |
| 2442 | 64.61 | 0.0017002 | 1.1 | 1.28825 | 6.732E-07 | 0.000673 | -31.7188 | Vert X-Axis |
| 2480 | 67.84 | 0.002466 | 1.1 | 1.28825 | 1.416E-06 | 0.001416 | -28.4888 | Vert X-Axis |
| | | | | | | | | |
| 2402 | 72.79 | 0.0043601 | 1.1 | 1.28825 | 4.427E-06 | 0.004427 | -23.5388 | Vert Y-Axis |
| 2442 | 72.78 | 0.0043551 | 1.1 | 1.28825 | 4.417E-06 | 0.004417 | -23.5488 | Vert Y-Axis |
| 2480 | 72.77 | 0.0043501 | 1.1 | 1.28825 | 4.407E-06 | 0.004407 | -23.5588 | Vert Y-Axis |
| | | | | | | | | |
| 2402 | 70.71 | 0.0034316 | 1.1 | 1.28825 | 2.742E-06 | 0.002742 | -25.62 | Vert. Z-Axis |
| 2442 | 59.16 | 0.0009078 | 1.1 | 1.28825 | 1.919E-07 | 0.000192 | -37.17 | Vert. Z-Axis |
| 2480 | 68.59 | 0.0026884 | 1.1 | 1.28825 | 1.683E-06 | 0.001683 | -27.74 | Vert. Z-Axis |
| | | | | | | | | |
| 2402 | 74.09 | 0.0050641 | 1.1 | 1.28825 | 5.972E-06 | 0.005972 | -22.24 | Horiz. X-Axis |
| 2442 | 77.29 | 0.0073198 | 1.1 | 1.28825 | 1.248E-05 | 0.012477 | -19.04 | Horiz. X-Axis |
| 2480 | 74.87 | 0.0055399 | 1.1 | 1.28825 | 7.147E-06 | 0.007147 | -21.46 | Horiz. X-Axis |
| | | | | | | | | |
| 2402 | 67.89 | 0.0024803 | 1.1 | 1.28825 | 1.433E-06 | 0.001433 | -28.44 | Horiz. Y-Axis |
| 2442 | 67.00 | 0.0022387 | 1.1 | 1.28825 | 1.167E-06 | 0.001167 | -29.33 | Horiz. Y-Axis |
| 2480 | 69.50 | 0.0029854 | 1.1 | 1.28825 | 2.075E-06 | 0.002075 | -26.83 | Horiz. Y-Axis |
| | | | | | | | | |
| 2402 | 70.91 | 0.0035116 | 1.1 | 1.28825 | 2.872E-06 | 0.002872 | -25.42 | Horiz. Z-Axis |
| 2442 | 74.20 | 0.0051286 | 1.1 | 1.28825 | 6.125E-06 | 0.006125 | -22.13 | Horiz. Z-Axis |
| 2480 | 73.05 | 0.0044926 | 1.1 | 1.28825 | 4.7E-06 | 0.0047 | -23.28 | Horiz. Z-Axis |
| | | | | | | | | |

Level in dBuV obtained by maximizing fundamental emission then setting the EMI Receiver to RBW = 3 kHz, VBW = 10 kHz, Span = 1.5 * DTS BW, Sweep Time = Auto

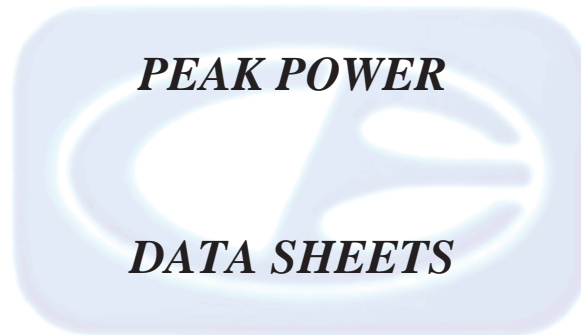
The Power in Watts is obtained by the following Formula Below:

$$P = \frac{(E \cdot D)^2}{30 \cdot G}$$

P = Power in Watts

E = The Measured Maximum Field Strength in V/m

G = The Numeric Gain of the Transmitting Antenna over an Isotropic Radiator



FCC 15.247

SonoSim, Inc.
 LS Needle/Syringe
 Model: 100-2040

Date: 08/22/2017
 Lab: D
 Tested By: Kyle Fujimoto

Setting = 0 dBm
 Peak Output Power

| Freq. (MHz) | Level (dBuV/m) | Level (V/m) | Antenna Gain (dBi) | Numeric Gain | Power Output (Watts) | Power Output (mW) | Power Output (dBm) | Comments |
|-------------|----------------|-------------|--------------------|--------------|----------------------|-------------------|--------------------|---------------|
| 2402.00 | 84.95 | 0.017680722 | 1.1 | 1.28825 | 0.00007280 | 0.07280 | -11.38 | Vert. X-Axis |
| 2442.00 | 84.93 | 0.017640058 | 1.1 | 1.28825 | 0.00007246 | 0.07246 | -11.40 | Vert. X-Axis |
| 2480.00 | 88.78 | 0.027478942 | 1.1 | 1.28825 | 0.00017584 | 0.17584 | -7.55 | Vert. X-Axis |
| | | | | | | | | |
| 2402.00 | 89.99 | 0.03158639 | 1.1 | 1.28825 | 0.00023234 | 0.23234 | -6.34 | Vert. Y-Axis |
| 2442.00 | 89.56 | 0.030060763 | 1.1 | 1.28825 | 0.00021044 | 0.21044 | -6.77 | Vert. Y-Axis |
| 2480.00 | 91.61 | 0.038062736 | 1.1 | 1.28825 | 0.00033738 | 0.33738 | -4.72 | Vert. Y-Axis |
| | | | | | | | | |
| 2402.00 | 88.03 | 0.025205772 | 1.1 | 1.28825 | 0.00014795 | 0.14795 | -8.30 | Vert. Z-Axis |
| 2442.00 | 75.89 | 0.006230171 | 1.1 | 1.28825 | 0.00000904 | 0.00904 | -20.44 | Vert. Z-Axis |
| 2480.00 | 84.83 | 0.017438134 | 1.1 | 1.28825 | 0.00007081 | 0.07081 | -11.50 | Vert. Z-Axis |
| | | | | | | | | |
| 2402.00 | 91.55 | 0.037800714 | 1.1 | 1.28825 | 0.00033275 | 0.33275 | -4.78 | Horiz. X-Axis |
| 2442.00 | 94.07 | 0.050524264 | 1.1 | 1.28825 | 0.00059446 | 0.59446 | -2.26 | Horiz. X-Axis |
| 2480.00 | 91.16 | 0.036140986 | 1.1 | 1.28825 | 0.00030417 | 0.30417 | -5.17 | Horiz. X-Axis |
| | | | | | | | | |
| 2402.00 | 85.23 | 0.018259967 | 1.1 | 1.28825 | 0.00007765 | 0.07765 | -11.10 | Horiz. Y-Axis |
| 2442.00 | 83.62 | 0.015170504 | 1.1 | 1.28825 | 0.00005359 | 0.05359 | -12.71 | Horiz. Y-Axis |
| 2480.00 | 86.86 | 0.022029265 | 1.1 | 1.28825 | 0.00011301 | 0.11301 | -9.47 | Horiz. Y-Axis |
| | | | | | | | | |
| 2402.00 | 88.95 | 0.028022056 | 1.1 | 1.28825 | 0.00018286 | 0.18286 | -7.38 | Horiz. Z-Axis |
| 2442.00 | 90.97 | 0.035359002 | 1.1 | 1.28825 | 0.00029115 | 0.29115 | -5.36 | Horiz. Z-Axis |
| 2480.00 | 92.67 | 0.043003123 | 1.1 | 1.28825 | 0.00043065 | 0.43065 | -3.66 | Horiz. Z-Axis |
| | | | | | | | | |

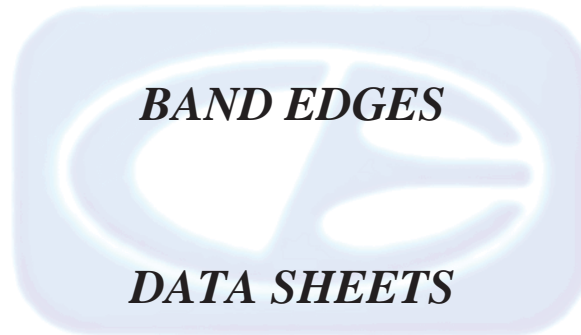
The Power in Watts is obtained by the following Formula Below:

$$P = [(E \cdot D)^2] / (30 \cdot G)$$

P = Power in Watts

E = The Measured Maximum Field Strength in V/m

G = The Numeric Gain of the Transmitting Antenna over an Isotropic Radiator



FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

 Date: 08/22/2017
 Lab: D
 Tested By: Kyle Fujimoto

Band Edges

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|------------------------------|
| 2402.00 | 90.82 | H | -- | -- | Peak | 292.25 | 161.22 | Fundamental - Low Ch. |
| 2402.00 | 86.79 | H | -- | -- | Avg | 292.25 | 161.22 | X-Axis - Worst Case |
| 2390.00 | 53.06 | H | 73.97 | -20.91 | Peak | 292.25 | 161.22 | Band Edge |
| 2390.00 | 28.54 | H | 53.97 | -25.43 | Avg | 292.25 | 161.22 | X-Axis - Worst Case |
| 2402.00 | 89.52 | V | -- | -- | Peak | 269.50 | 193.70 | Fundamental - Low Ch. |
| 2402.00 | 86.26 | V | -- | -- | Avg | 269.50 | 193.70 | X-Axis - Worst Case |
| 2390.00 | 51.41 | V | 73.97 | -22.56 | Peak | 269.50 | 193.70 | Band Edge |
| 2390.00 | 27.77 | V | 53.97 | -26.20 | Avg | 269.50 | 193.70 | X-Axis - Worst Case |
| | | | | | | | | |
| | | | | | | | | |

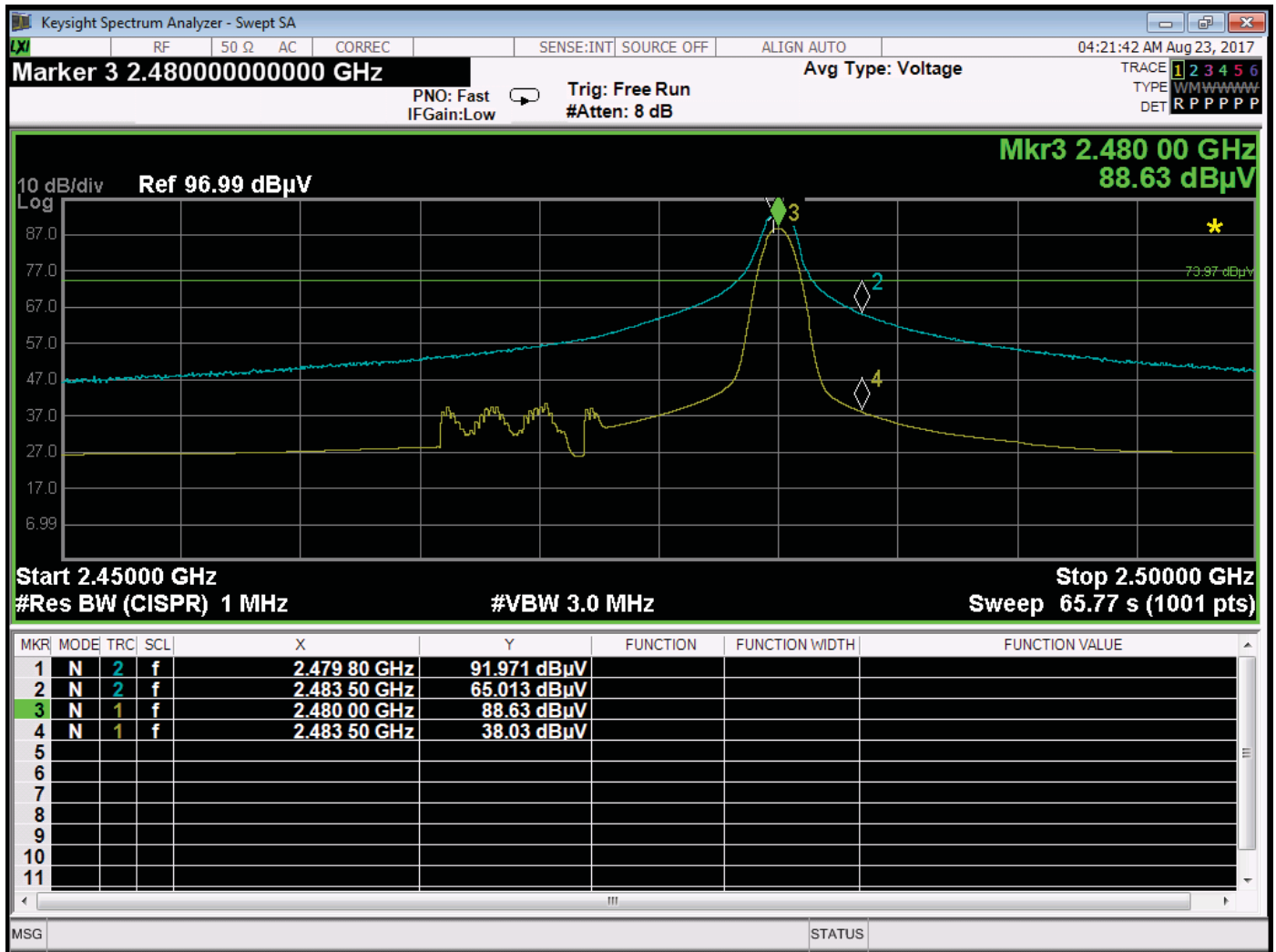
FCC 15.247

 SonoSim, Inc.
 Needle & Syringe
 Model: 100-2040

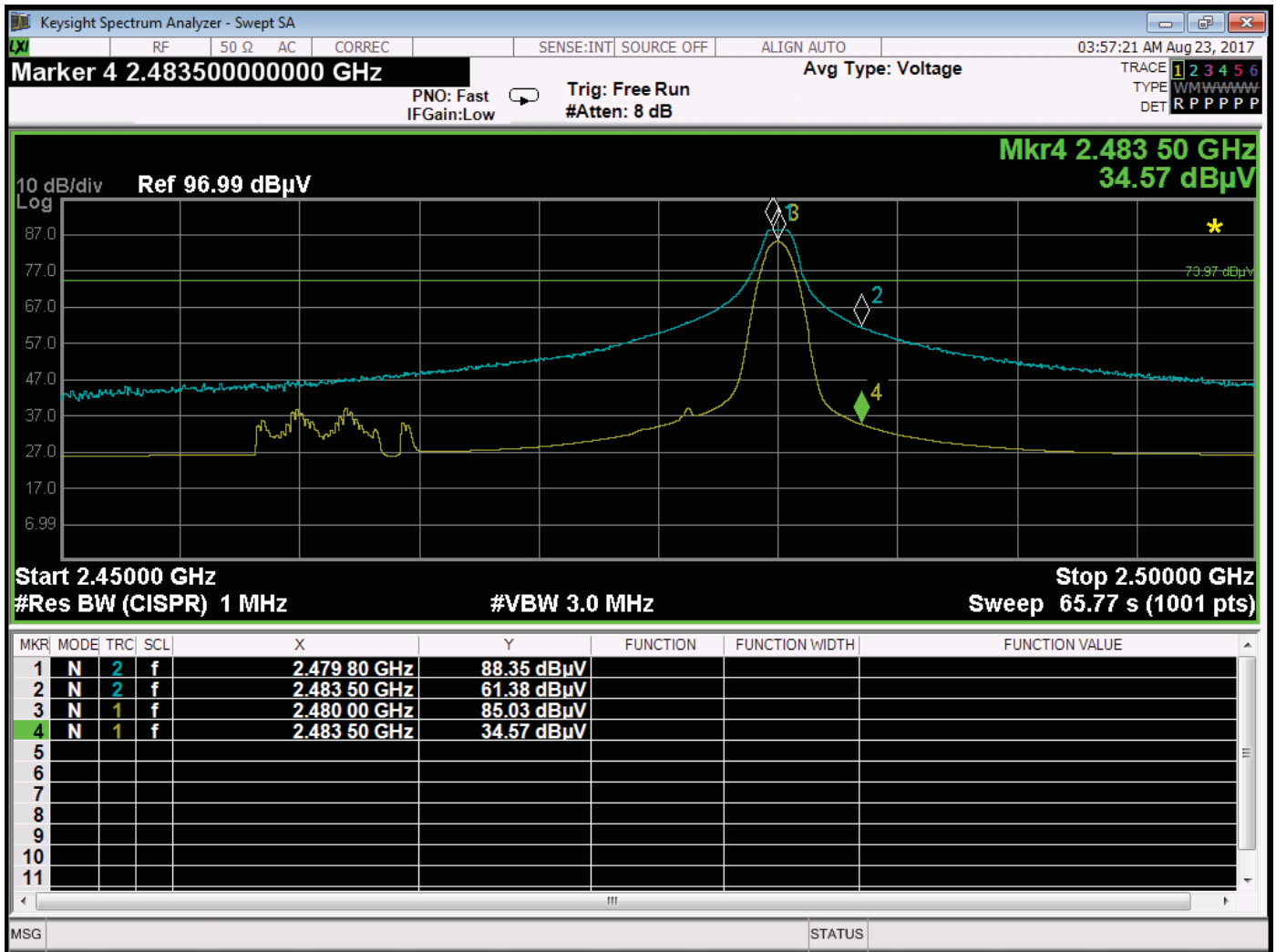
 Date: 08/22/2017
 Lab: D
 Tested By: Kyle Fujimoto

Band Edges

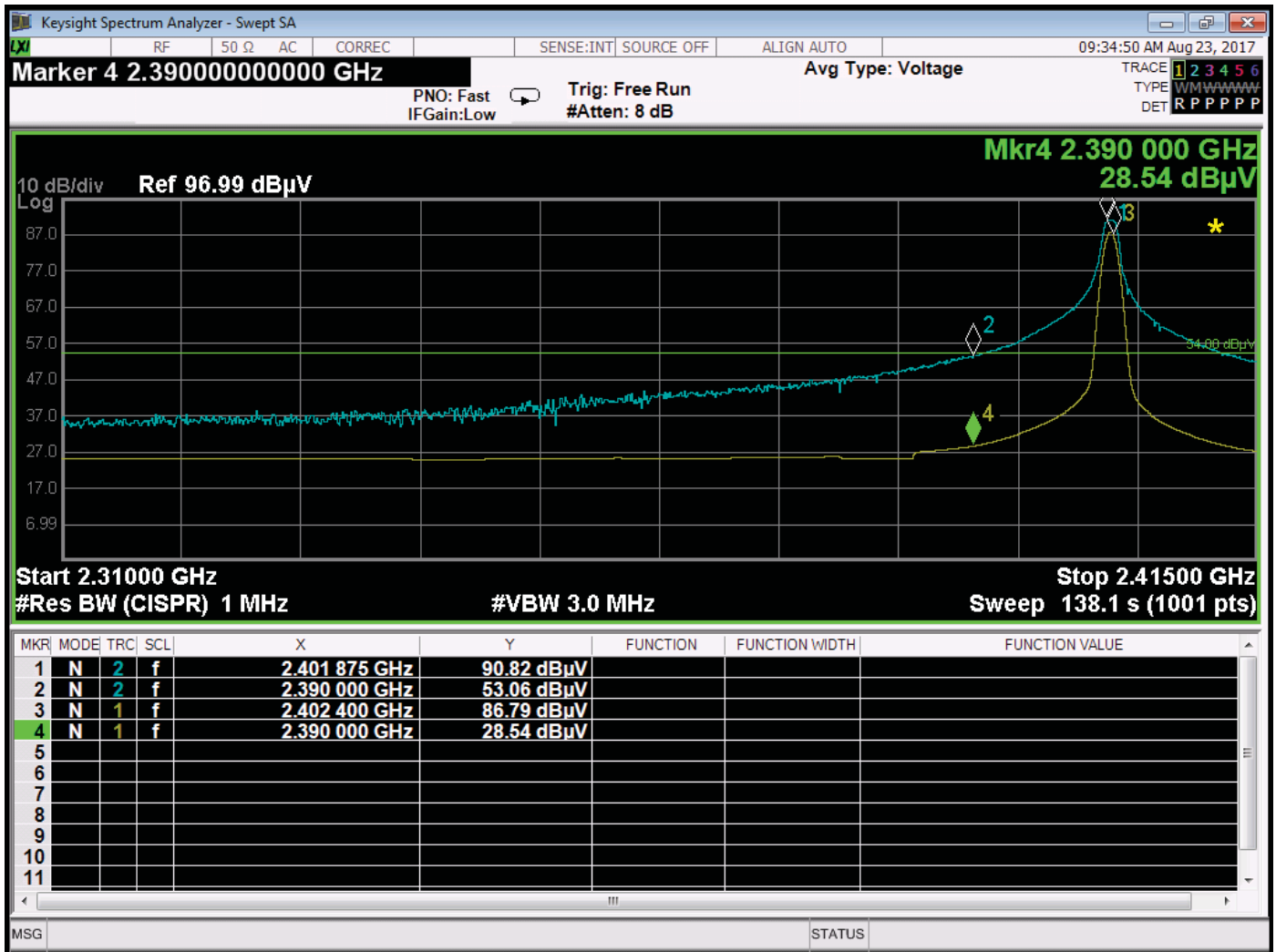
| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------------------------|
| 2480.00 | 91.97 | H | -- | -- | Peak | 221.50 | 132.98 | Fundamental - High Ch. |
| 2480.00 | 88.63 | H | -- | -- | Avg | 221.50 | 132.98 | Y-Axis - Worst Case |
| 2483.50 | 65.01 | H | 73.97 | -8.96 | Peak | 221.50 | 132.98 | Band Edge |
| 2483.50 | 38.03 | H | 53.97 | -15.94 | Avg | 221.50 | 132.98 | Y-Axis - Worst Case |
| 2480.00 | 88.35 | V | -- | -- | Peak | 154.25 | 120.92 | Fundamental - High Ch. |
| 2480.00 | 85.03 | V | -- | -- | Avg | 154.25 | 120.92 | Y-Axis - Worst Case |
| 2483.50 | 61.38 | V | 73.97 | -12.59 | Peak | 154.25 | 120.92 | Band Edge |
| 2483.50 | 34.57 | V | 53.97 | -19.40 | Avg | 154.25 | 120.92 | Y-Axis - Worst Case |
| | | | | | | | | |
| | | | | | | | | |



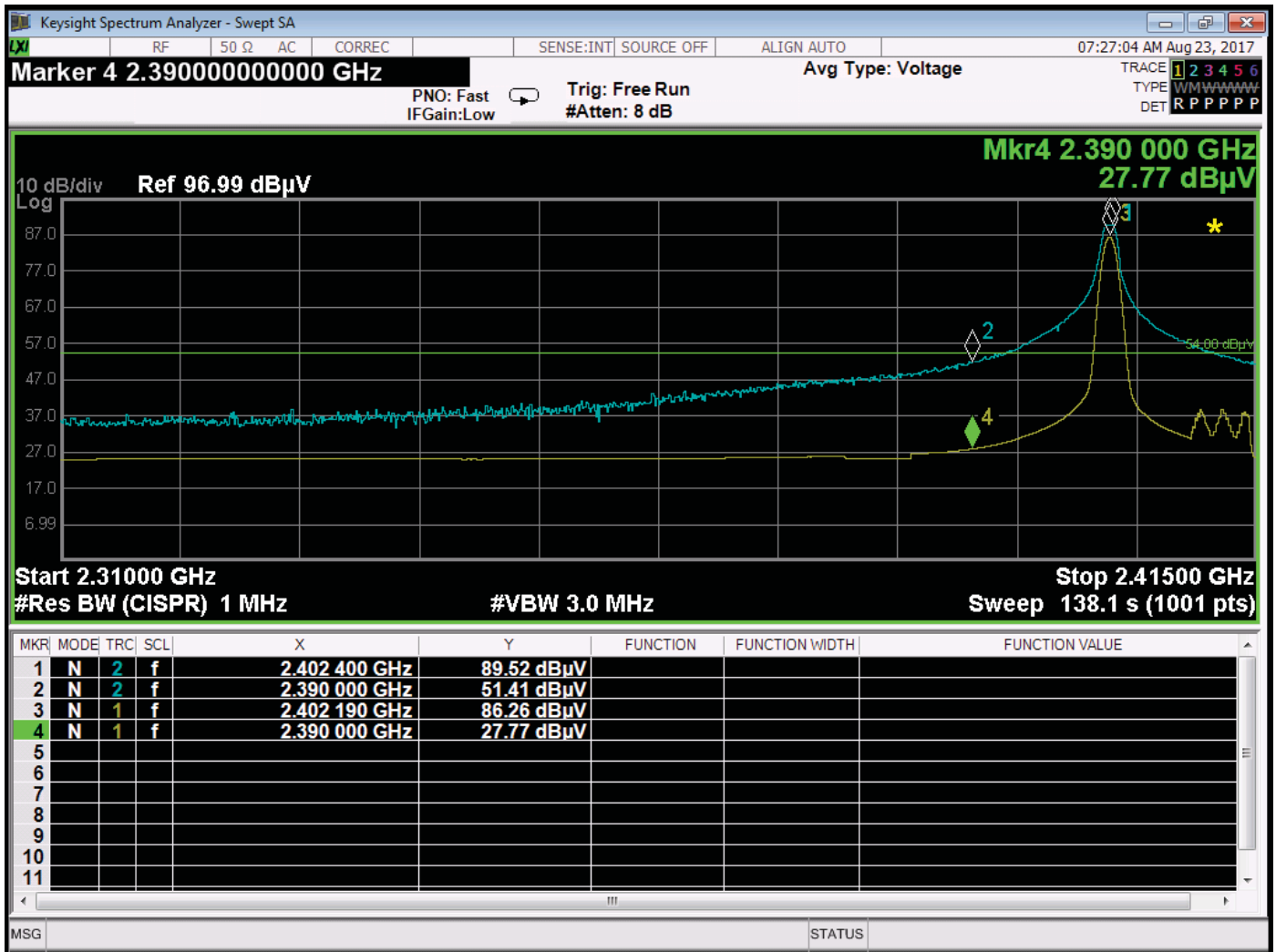
Band Edge – High Channel – Horizontal Polarization – Y-Axis – Worst Case



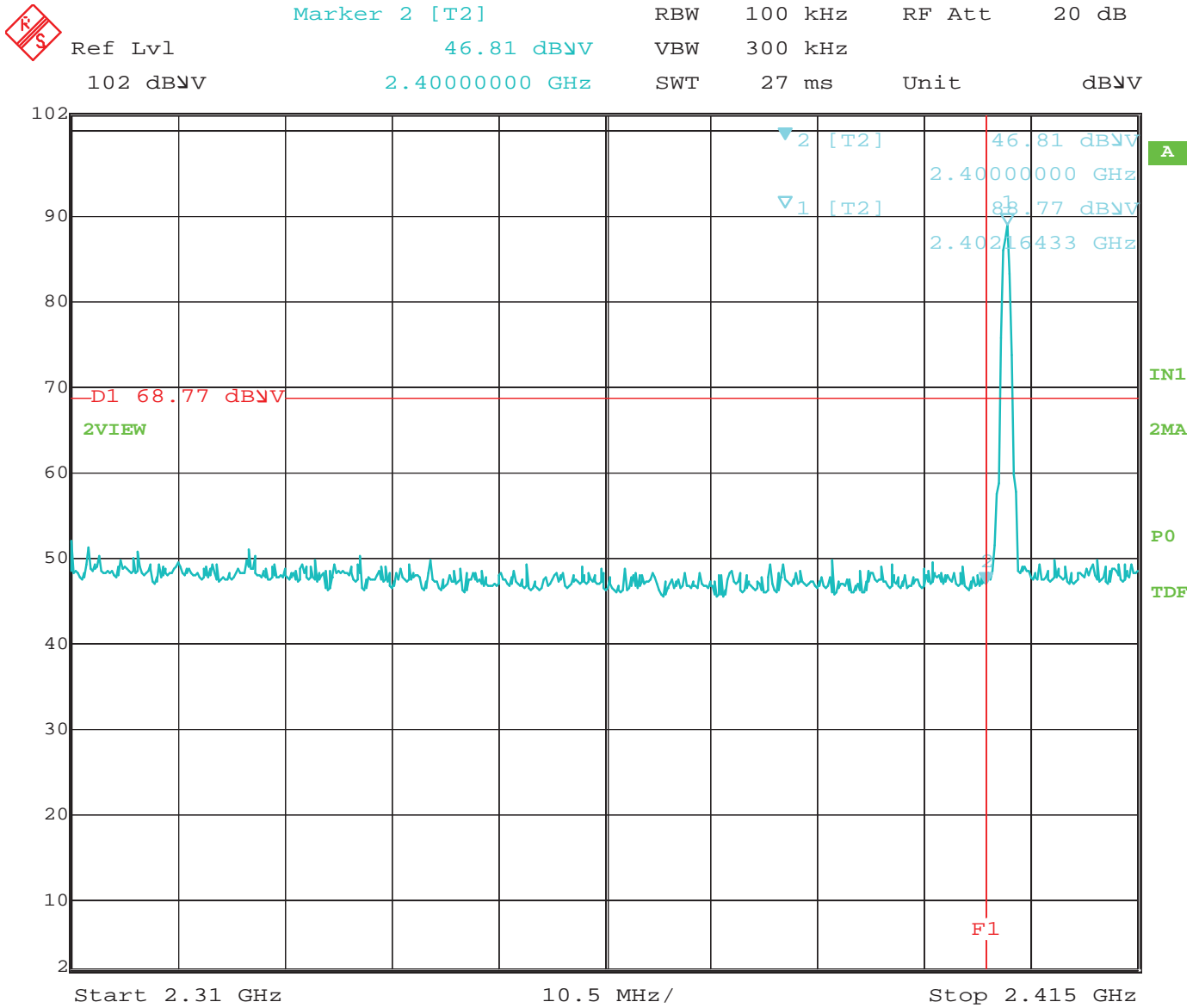
Band Edge – High Channel – Vertical Polarization – Y-Axis – Worst Case



Band Edge – Low Channel – Horizontal Polarization – X-Axis – Worst Case.



Band Edge – Low Channel– Vertical Polarization – X-Axis – Worst Case.

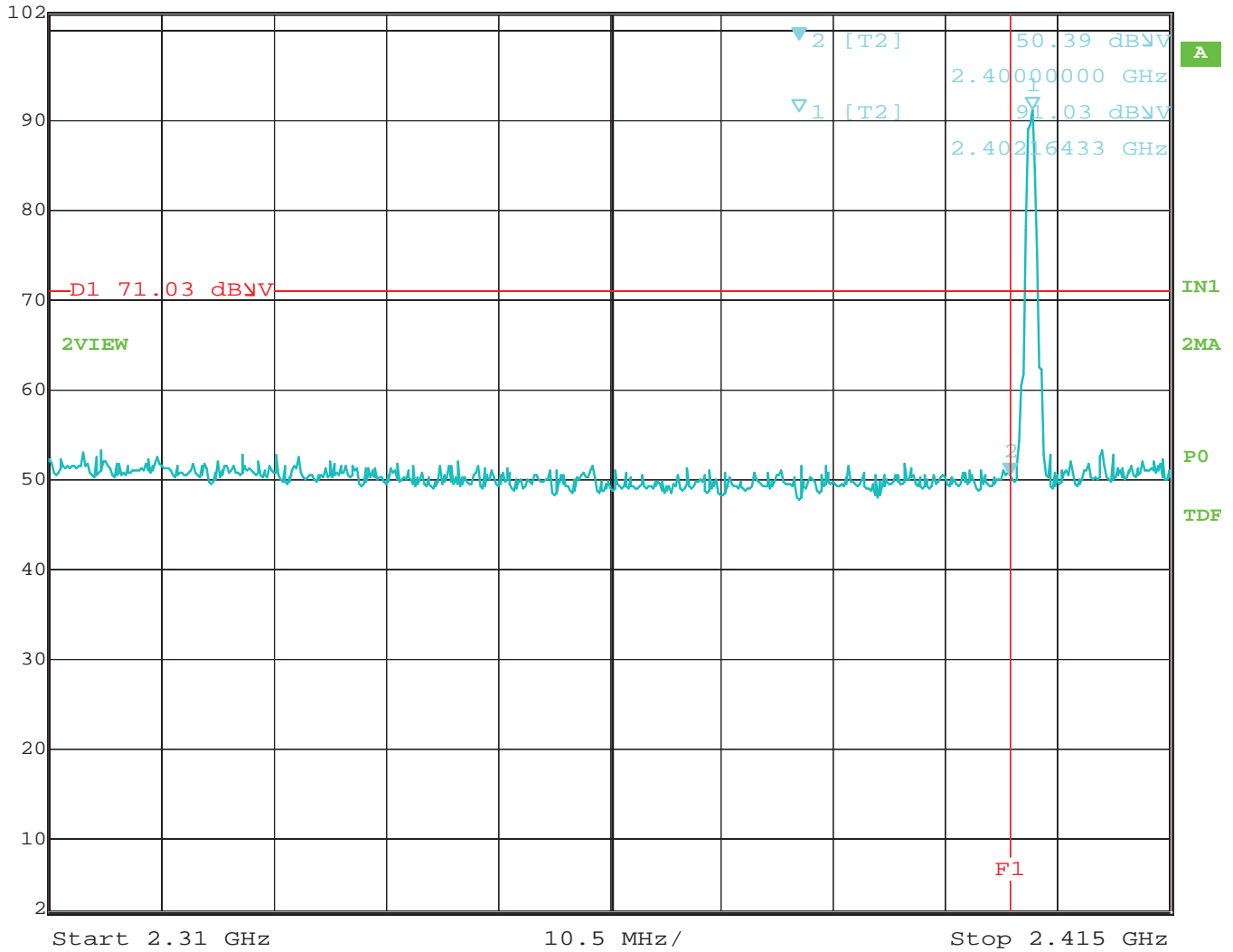


Date: 6.NOV.2017 14:14:44

Band Edge – 2400 MHz – Low Channel – Vertical Polarization – Y-Axis Worst Case



Marker 2 [T2] RBW 100 kHz RF Att 20 dB
 Ref Lvl 50.39 dBV VBW 300 kHz
 102 dBV 2.4000000 GHz SWT 27 ms Unit dBV



Date: 6.NOV.2017 14:13:21

Band Edge – 2400 MHz – Low Channel – Horizontal Polarization – X-Axis Worst Case