

## SAR Test Report - New Filing

Applicant:



**President Electronics USA**  
1007 Collier Center Way  
Naples, FL 341100  
USA

| Maximum <u>reported</u> 1g SAR |      |      |
|--------------------------------|------|------|
| FACE:                          | 0.26 | W/kg |
| BODY:                          | 0.32 |      |
| General Pop. Limit:            | 1.60 |      |

FCC ID:

**2AEOCPC219**

Product Model Number / HVIN

**JERRY FCC**

Product Name / PMN

**JERRY FCC**

In Accordance With:

**FCC 47 CFR §2.1093**

Radiofrequency Radiation Exposure Evaluation: Portable Devices

Approved By:



**Ben Hewson, President**

Celltech Labs Inc.  
21-364 Lougheed Rd.  
Kelowna, BC, V1X 7R8  
Canada



Test Lab Certificate: 2470.01



**Industry  
Canada**

IC Registration 3874A



FCC Registration: CA3874

This report shall not be reproduced in any form without the expressed written consent of Celltech Labs Inc.

## Table of Contents

|   |    |
|---|----|
| 1.0 REVISION HISTORY .....  | 4  |
| 2.0 CLIENT AND DEVICE INFORMATION .....                               | 5  |
| 3.0 SCOPE OF EVALUATION .....   | 6  |
| 4.0 NORMATIVE REFERENCES .....  | 7  |
| 5.0 STATEMENT OF COMPLIANCE .....                                     | 8  |
| 6.0 SAR MEASUREMENT SYSTEM .....                                      | 9  |
| 7.0 RF CONDUCTED POWER MEASUREMENT .....                              | 10 |
| TABLE 7.1 CONDUCTED POWER MEASUREMENTS P1 (LITHIUM-ION BATTERY) ..... | 10 |
| 8.0 NUMBER OF TEST CHANNELS ( $N_C$ ) .....                           | 11 |
| 9.0 ACCESSORIES EVALUATED .....                                       | 12 |
| TABLE 9.1 MANUFACTURER'S ACCESSORY LIST .....                         | 12 |
| 10.0 SAR MEASUREMENT SUMMARY .....                                    | 13 |
| TABLE 10.1: MEASURED RESULTS – BODY .....                             | 13 |
| TABLE 10.2: MEASURED RESULTS – FACE .....                             | 13 |
| 11.0 SCALING OF MAXIMUM MEASURE SAR .....                             | 14 |
| TABLE 11.1 SAR SCALING .....  | 14 |
| TABLE 11.1 SAR SCALING (CONT.) .....                                  | 15 |
| 12.0 SAR EXPOSURE LIMITS .....  | 17 |
| TABLE 12.1 EXPOSURE LIMITS .....                                      | 17 |
| 13.0 DETAILS OF SAR EVALUATION .....                                  | 18 |
| TABLE 13.1 DAY LOG .....  | 18 |
| 13.2 DUT SETUP AND CONFIGURATION .....                                | 19 |
| 13.3 DUT POSITIONING .....  | 19 |
| 13.4 GENERAL PROCEDURES AND REPORT .....                              | 20 |
| 13.5 FLUID DIELECTRIC AND SYSTEMS PERFORMANCE CHECK .....             | 21 |
| 13.6 SCAN RESOLUTION 100MHZ TO 2GHZ .....                             | 21 |
| 13.7 SCAN RESOLUTION 2GHZ TO 3GHZ .....                               | 23 |
| 13.8 SCAN RESOLUTION 5GHZ TO 6GHZ .....                               | 23 |
| 14.0 MEASUREMENT UNCERTAINTIES .....                                  | 24 |
| TABLE 14.1 MEASUREMENT UNCERTAINTY .....                              | 24 |
| 15.0 FLUID DIELECTRIC PARAMETERS .....                                | 25 |
| TABLE 15.1 FLUID DIELECTRIC PARAMETERS 30MHZ HEAD TSL .....           | 25 |
| 16.0 SYSTEM VERIFICATION TEST RESULTS .....                           | 26 |
| TABLE 16.1 SYSTEM VERIFICATION RESULTS 30MHZ HEAD TSL .....           | 26 |
| 17.0 SYSTEM VALIDATION SUMMARY .....                                  | 27 |
| TABLE 17.1 SYSTEM VALIDATION SUMMARY .....                            | 27 |

|   |    |
|---|----|
| <i>18.0 MEASUREMENT SYSTEM SPECIFICATIONS</i> .....                 | 28 |
| TABLE 18.1 MEASUREMENT SYSTEM SPECIFICATIONS .....                  | 28 |
| <i>19.0 TEST EQUIPMENT LIST</i> .....                               | 30 |
| TABLE 19.1 EQUIPMENT LIST AND CALIBRATION .....                     | 30 |
| <i>20.0 FLUID COMPOSITION</i> .....                                 | 32 |
| TABLE 20.1 FLUID COMPOSITION 150MHz HEAD TSL .....                  | 32 |
| <i>APPENDIX A – SYSTEM VERIFICATION PLOTS</i> .....                 | 33 |
| <i>APPENDIX B – MEASUREMENT PLOTS OF MAXIMUM MEASURED SAR</i> ..... | 35 |
| <i>APPENDIX E – PROBE CALIBRATION</i> .....                         | 39 |
| <i>APPENDIX F – DIPOLE CALIBRATION</i> .....                        | 40 |
| <i>APPENDIX G - PHANTOM</i> .....                                   | 41 |
| <i>END OF REPORT</i> .....  | 42 |

## 1.0 REVISION HISTORY

| Revision History           |   |                  |                               |                  |                        |
|----------------------------|---|------------------|-------------------------------|------------------|------------------------|
| <b>Samples Tested By:</b>  |   | Ben Hewson       | <b>Date(s) of Evaluation:</b> |                  | 13 & 15 February, 2024 |
| <b>Report Prepared By:</b> |   | Art Voss, P.Eng. | <b>Report Reviewed By:</b>    |                  | Ben Hewson             |
| Report Revision            | Description of Revision                 | Revised Section  | Revised By                    | Revision Date    |                        |
| 0.1                        | Draft                                   | n/a              | Art Voss                      | 25 February 2024 |                        |
| 1.0                        | Initial Release                         | n/a              | Art Voss                      | 8 March 2024     |                        |
| 2.0                        | Corrected Test Site Registration Number | Cover            | Art Voss                      | 20 March 2024    |                        |

## 2.0 CLIENT AND DEVICE INFORMATION

| Client Information                    |  |
|---------------------------------------|--|
| Applicant Name (FCC)                  | President Electronics USA                        |
| Applicant Address (FCC)               | 1007 Collier Center Way                          |
|                                       | Naples, FL, 34110                                |
|                                       | USA  |
| DUT Information                       |  |
| Device Identifier(s):                 | <b>FCC ID:</b> 2AEOCPC219                        |
| Device Type:                          | Portable/Mobile 1W / 4W AM / FM CBRS Transceiver |
| Device Model(s) / HVIN:               | Jerry FCC  |
| Device Marketing Name / PMN:          | Jerry FCC  |
| Firmware Version ID Number / FVIN:    | -  |
| Host Marketing Name / HMN:            | -  |
| Test Sample Serial No.:               | TA Sample No. 1                                  |
| Equipment Class (FCC):                | Licensed Non-Broadcast Station Transmitter (TNB) |
| Transmit Frequency Range:             | 26.965MHz - 27.405MHz                            |
| Test Channels:                        | 40 Channels                                      |
| Manuf. Max. Rated Output Power:       | 1W (30dBm), 4W (36dBm) DSB                       |
| Manuf. Max. Rated BW/Data Rate:       | 8kHz DSB   |
| Antenna Make and Model:               | n/a  |
| Antenna Type and Gain:                | 0dBi (Typical), 3dBi (Max)                       |
| Modulation:                           | AM / FM  |
| Mode:                                 | Simplex  |
| DUT Power Source:                     | 7.4VDC Li-Ion                                    |
| DUT Dimensions [WxLxH]                | 65mm x 135mm x45mm w/o Antenna                   |
| Deviation(s) from standard/procedure: | None   |
| Modification of DUT:                  | None   |

### 3.0 SCOPE OF EVALUATION

#### Preface:

This Certification Report was prepared on behalf of:

#### President Electronics USA

, (the 'Applicant'), in accordance with the applicable Federal Communications Commission (FCC) CFR 47 and Innovation, Scientific and Economic Development (ISED) Canada rules parts and regulations (the 'Rules'). The scope of this investigation was limited to only the equipment, devices and accessories (the 'Equipment') supplied by the Applicant. The tests and measurements performed on this Equipment were only those set forth in the applicable Rules and/or the Test and Measurement Standards they reference. The Rules applied and the Test and Measurement Standards used during this evaluation appear in the Normative References section of this report. The limits set forth in the technical requirements of the applicable Rules were applied to the measurement results obtained during this evaluation and, unless otherwise noted, these limits were used as the Pass/Fail criteria. The Pass/Fail statements made in this report apply to only the tests and measurements performed on only the Equipment tested during this evaluation. Where applicable and permissible, information including test and measurement data and/or results from previous evaluations of same or similar equipment, devices and/or accessories may be cited in this report.

#### Device Description:

The Jerry FCC is Portable / Mobile 1W / 4W AM / FM CBRS Transceiver.

#### Application:

This is an application for a New Certification, Single.

#### Regulatory Requirement:

As per FCC 47 CFR 2 Subpart I, Equipment Authorization is required for this Equipment by means of Certification in accordance with FCC 47 CFR §95 Subpart D, (CBRS), and ANSI C63.26.

#### Scope of Work:

The scope of this investigation is limited only to the evaluation of the Jerry FCC to determine compliance to the Rules identified herein.

#### RF Exposure:

The Jerry FCC can be used as a portable or mobile transceiver. As per FCC 47 CFR §2.1091 and §2.1093, an RF Exposure (SAR and MPE) evaluation is required for this Equipment and the results of the RF Exposure (SAR and MPE) evaluation appear in a separate report.

## 4.0 NORMATIVE REFERENCES


| <b>Normative References*</b>  |   |
|---|---|
| ANSI / ISO 17025  | General Requirements for competence of testing and calibration laboratories   |
| FCC CFR Title 47 Part 2<br>Title 47:<br>Part 2.1093:  | Code of Federal Regulations<br>Telecommunication<br>Radiofrequency Radiation Exposure Evaluation: Portable Devices  |
| IEC International Standard /IEEE International Committee on Electromagnetic Safety<br>IEC/IEEE 62209-1528 | Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528; Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz) |
| FCC KDB<br>KDB 865664 D01v01r04   | SAR Measurement Requirements for 100MHz to 6GHz   |
| FCC KDB<br>KDB 447498 D01v06  | Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies   |
| * When the issue number or issue date is omitted, the latest version is assumed.                          |   |

## 5.0 STATEMENT OF COMPLIANCE

This measurement report demonstrates that samples of the product model(s) were evaluated for Specific Absorption Rate (SAR) on the date(s) shown, in accordance with the Measurement Procedures cited and were found to comply with the Standard(s) Applied based on the Exposure Limits of the Use Group indicated for which the product is intended to be used.

|  |  |  |
|--|--|--|
| <b>Applicant:</b><br>President Electronics USA   | <b>Model / HVIN:</b><br>JERRY FCC  |  |
| <b>Standard(s) Applied:</b><br>FCC 47 CFR §2.1093  | <b>Measurement Procedure(s):</b><br>FCC KDB 865664, FCC KDB 447498, FCC KDB 248227<br>IEC/IEEE Standard 62209-1528                               |  |
| <b>Reason For Issue:</b><br><input checked="" type="checkbox"/> New Certification<br><input type="checkbox"/> Class I Permissive Change<br><input type="checkbox"/> Class II Permissive Change | <b>Use Group:</b><br><input checked="" type="checkbox"/> General Population / Uncontrolled<br><input type="checkbox"/> Occupational / Controlled | <b>Limits Applied:</b><br><input checked="" type="checkbox"/> 1.6W/kg - 1g Volume<br><input type="checkbox"/> 8.0W/kg - 1g Volume<br><input type="checkbox"/> 4.0W/kg - 10g Volume |
| <b>Reason for Change:</b><br>New Application   |  | <b>Date(s) Evaluated:</b><br>13 & 15 February 2024   |

The results of this investigation are based solely on the test sample(s) provided by the applicant which was not adjusted, modified or altered in any manner whatsoever except as required to carry out specific tests or measurements. A description of the device, operating configuration, detailed summary of the test results, methodologies and procedures used during this evaluation, the equipment used and the various provisions of the rules are included in this test report.

|   |   |
|---|---|
| <p>I attest that the data reported herein is true and accurate within the tolerance of the Measurement Instrument Uncertainty; that all tests and measurements were performed in accordance with accepted practices or procedures; and that all tests and measurements were performed by me or by trained personnel under my direct supervision. The results of this investigation are based solely on the test sample(s) provided by the client which were not adjusted, modified or altered in any manner whatsoever, except as required to carry out specific tests or measurements. This test report has been completed in accordance with ISO/IEC 17025.</p> | <br>Trevor Whillock<br>Test Lab Engineer<br>Celltech Labs Inc.<br>25 February 2024<br>Date |
|---|---|



## 6.0 SAR MEASUREMENT SYSTEM

### SAR Measurement System

Celltech Labs Inc. SAR measurement facility employs a Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY6 measurement system is comprised of the measurement server, a robot controller, a computer, a near-field probe, a probe alignment sensor, an Elliptical Planar Phantom (ELI) phantom and a specific anthropomorphic mannequin (SAM) phantom for Head and/or Body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller and a teach pendant (Joystick) to control the robot's servo motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical form the DAE to digital electronic signal and transfers data to the DASY6 measurement server. The DAE4 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter, a command decoder and a control logic unit. Transmission to the DASY6 measurement server is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. The sensor systems are also used for mechanical surface detection and probe collision detection. The robot utilizes a controller with built in VME-bus computer.



**DASY 6 SAR System with SAM Phantom**



**DASY 6 Measurement Controller**

## 7.0 RF CONDUCTED POWER MEASUREMENT

**Table 7.1 Conducted Power Measurements P1 (Lithium-ion Battery)**

| Conducted Power Measurement Results: |                         |      |            |   |                                       |                  |
|--------------------------------------|-------------------------|------|------------|---|---------------------------------------|------------------|
| Channel Number                       | Channel Frequency (MHz) | Mode | Modulation | Measured Power [P <sub>Meas</sub> ] (dBm) | Rated Power [P <sub>Max</sub> ] (dBm) | Delta Power (dB) |
| 1                                    | 26.97                   | AM   | AM         | 35.30                                     | 36                                    | 0.70             |
| 20                                   | 27.21                   |      |            | 35.55                                     |                                       | 0.45             |
| 40                                   | 27.41                   |      |            | 35.72                                     |                                       | 0.28             |
| 1                                    | 26.97                   | FM   | FM         | 35.27                                     |                                       | 0.73             |
| 20                                   | 27.21                   |      |            | 35.54                                     |                                       | 0.46             |
| 40                                   | 24.41                   |      |            | 35.70                                     |                                       | 0.30             |
|                                      |                         |      |            |   | <b>Result:</b>                        | <b>Complies</b>  |

$$\text{Delta Power} = P_{\text{Max}} - P_{\text{Meas}}$$

\*The rated power and tolerance are stated for typical transmission modes. Some modes may produce lower than rated conducted power levels. Power measurements taken across the various channels did not produce levels in excess of the Rated Power plus Tolerance. SAR was evaluated using AM and FM mode at the Maximum output power level setting and produced the most conservative SAR. The reported SAR was not scaled down.

NOTE: The above test data reflects conducted power measurement from the Conducted sample. The SAR test sample had slightly different conducted power values and are identified in the SAR Report Data.

## 8.0 NUMBER OF TEST CHANNELS ( $N_C$ )

| Number of Required Test Channels  |                     |                |                         |                        |                     |                    |
|---|---------------------|----------------|-------------------------|------------------------|---------------------|--------------------|
| Frequency   |                     |                | Number of Channels      |                        | Spacing             |                    |
| $f_{LOW}$<br>(MHz)  | $f_{HIGH}$<br>(MHz) | $f_C$<br>(MHz) | KDB 447498<br>( $N_C$ ) | IEC 62209<br>( $N_C$ ) | KDB 447498<br>(MHz) | IEC 62209<br>(MHz) |
| 26.965  | 27.405              | 27.185         | 1                       | 3                      |                     | 0.2                |
| <p><b>KDB 447498: <math>N_C = \text{RoundUp} \{ [ 100 ( F_{HIGH} - F_{LOW} ) / F_C ]^{0.5} \times ( F_C / 100 )^{0.2} \}</math></b></p> <p><b>IEC 62209-1: <math>N_C = 2 \times \{ \text{RoundUp} [ 10 ( F_{HIGH} - F_{LOW} ) / F_C ] \} + 1</math></b></p> |                     |                |                         |                        |                     |                    |

The number of channels tested was based on Low, Mid and High CB Channels.

## 9.0 ACCESSORIES EVALUATED

Table 9.1 Manufacturer's Accessory List

| Manufacturer's Accessory List |                            |   |               |            |
|-------------------------------|----------------------------|---|---------------|------------|
| Test Report ID Number         | Manufacturer's Part Number | Description   | SAR Evaluated | SAR Tested |
| <b>Antenna Accessory</b>      |                            |   |               |            |
| T1                            | –                          | Flexible Antenna                                      | Y             | Y          |
| <b>Battery Accessory</b>      |                            |   |               |            |
| P1                            | –                          | Lithium-ion Rechargeable Battery                      | Y             | Y          |
| P2                            | –                          | DC Power Supply with Lithium-ion Rechargeable Battery | Y             | Y          |
| <b>Body-Worn Accessory</b>    |                            |   |               |            |
| B1                            | –                          | Plastic Belt-Clip                                     | Y             | Y          |
| <b>Audio Accessory</b>        |                            |   |               |            |
| A1                            | –                          | Speaker-Microphone ( Representative Sample)           | Y             | Y          |

## 10.0 SAR MEASUREMENT SUMMARY

**Table 10.1: Measured Results – BODY**

| Measured 1g SAR Results - BODY Configuration |         |                      |                             |      |     |                                 |          |              |                     |                |                  |                  |                       |                 |                            |
|--|---------|----------------------|-----------------------------|------|-----|---------------------------------|----------|--------------|---------------------|----------------|------------------|------------------|-----------------------|-----------------|----------------------------|
| Date   | Plot ID | Test Frequency (MHz) | DUT Configuration           |      |     | Accessories                     | Spacing  |              | Measured SAR (W/kg) | SAR Drift (dB) | Delta Power (dB) | Crest Factor (n) | Fluid Sensitivity (n) | Duty Factor (%) | <u>reported</u> SAR (W/kg) |
|  |         |                      | Pos                         | Mode | Mod |                                 | DUT (mm) | Antenna (mm) |                     |                |                  |                  |                       |                 |                            |
| 2/15/2024                                    | B1      | 26.965               | Touch                       | AM   | AM  | P1 T1 B1 A1                     | 0        | 50           | 0.141               | 0.900          | -0.600           | 1.000            | 1.046                 | 75.000          | 0.127                      |
| 2/15/2024                                    | B2      | 27.205               | Touch                       | AM   | AM  | P1 T1 B1 A1                     | 0        | 50           | 0.303               | -0.160         | -1.110           | 1.000            | 1.047                 | 75.000          | 0.319                      |
| 2/15/2024                                    | B3      | 27.405               | Touch                       | AM   | AM  | P1 T1 B1 A1                     | 0        | 50           | 0.270               | 0.160          | -0.030           | 1.000            | 1.047                 | 75.000          | 0.213                      |
| Applicable SAR Limit                         |         |                      |                             |      |     | Use Group                       |          |              |                     |                | Limit            |                  |                       |                 |                            |
| FCC CFR 2.1093                               |         |                      | Health Canada Safety Code 6 |      |     | General Population/User Unaware |          |              |                     |                | 1.6 W/kg         |                  |                       |                 |                            |

**Table 10.2: Measured Results – FACE**

| Measured 1g SAR Results - FACE Configuration |         |                      |                             |      |     |                                 |          |              |                     |                |                  |                  |                       |                 |                            |
|--|---------|----------------------|-----------------------------|------|-----|---------------------------------|----------|--------------|---------------------|----------------|------------------|------------------|-----------------------|-----------------|----------------------------|
| Date   | Plot ID | Test Frequency (MHz) | DUT Configuration           |      |     | Accessories                     | Spacing  |              | Measured SAR (W/kg) | SAR Drift (dB) | Delta Power (dB) | Crest Factor (n) | Fluid Sensitivity (n) | Duty Factor (%) | <u>reported</u> SAR (W/kg) |
|  |         |                      | Pos                         | Mode | Mod |                                 | DUT (mm) | Antenna (mm) |                     |                |                  |                  |                       |                 |                            |
| 2/15/2024                                    | F1      | 26.965               | 25mm                        | AM   | AM  | P1 T1                           | 25       | 45           | 0.294               | 0.050          | -0.600           | 1.000            | 1.046                 | 75.000          | 0.265                      |
| 2/15/2024                                    | F2      | 27.205               | 25mm                        | AM   | AM  | P1 T1                           | 25       | 45           | 0.138               | -0.410         | -1.110           | 1.000            | 1.047                 | 75.000          | 0.154                      |
| 2/15/2024                                    | F3      | 27.405               | 25mm                        | AM   | AM  | P1 T1                           | 25       | 45           | 0.147               | 5.780          | -0.030           | 1.000            | 1.047                 | 75.000          | 0.116                      |
| Applicable SAR Limit                         |         |                      |                             |      |     | Use Group                       |          |              |                     |                | Limit            |                  |                       |                 |                            |
| FCC CFR 2.1093                               |         |                      | Health Canada Safety Code 6 |      |     | General Population/User Unaware |          |              |                     |                | 1.6 W/kg         |                  |                       |                 |                            |

## 11.0 SCALING OF MAXIMUM MEASURE SAR

Table 11.1 SAR Scaling

| Scaling of Maximum Measured SAR (1g)                               |                        |                           |           |        |
|--|------------------------|---------------------------|-----------|--------|
| Measured Parameters  |                        | Configuration             |           |        |
|  |                        | Body                      | Face      |        |
| Plot ID  |                        | B2                        | F1        |        |
| Maximum Measured SAR <sub>M</sub>                                  |                        | 0.303                     | 0.294     | (W/kg) |
| Frequency  |                        | 27.205                    | 26.965    | (MHz)  |
| <b>Drift</b>   | Power Drift            | -0.160                    | 0.050 (2) | (dB)   |
| Conducted Power  |                        | 28.890                    | 29.400    | (dBm)  |
| <b>DC</b>  | Transmitter Duty Cycle | 100.0 (1)                 | 100.0 (3) | (%)    |
| <b>DF</b>  | Use Duty Factor        | 75.0                      | 75.0      | (%)    |
| Fluid Deviation from Target  |                        |                           |           |        |
| $\Delta\epsilon$   | Permittivity           | 2.86%                     | 2.94%     |        |
| $\Delta\sigma$   | Conductivity           | -5.18%                    | -5.05%    |        |
| Fluid Sensitivity Calculation (1g)                                 |                        | IEC/IEEE 62209-1528 7.8.2 |           |        |
| Delta SAR = $C_e * \Delta\epsilon + C_\sigma * \Delta\sigma$       |                        |                           |           | (8)    |
| $C_e = (-0.0007854*f^3) + (0.009402*f^2) - (0.02742*f) - 0.2026$   |                        |                           |           | (9)    |
| $C_\sigma = (0.009804*f^3) - (0.08661*f^2) + (0.02981*f) + 0.7829$ |                        |                           |           | (10)   |
| <b>f</b>   | Frequency (GHz)        | 0.027205                  | 0.026965  |        |
| <b>C<sub>e</sub></b>   |                        | -0.203                    | -0.203    |        |
| <b>C<sub>σ</sub></b>   |                        | 0.784                     | 0.784     |        |
| <b>C<sub>e</sub> * Δε</b>  |                        | -0.006                    | -0.006    |        |
| <b>C<sub>σ</sub> * Δσ</b>  |                        | -0.041                    | -0.040    |        |
| <b>ΔSAR</b>  |                        | -0.046                    | -0.046    | (%)    |
| Manufacturer's Tuneup Tolerance                                    |                        |                           |           |        |
| Measured Conducted Power   |                        | 28.890                    | 29.400    | (dBm)  |
| Rated Conducted Power  |                        | 30.000                    | 30.000    | (dBm)  |
| <b>ΔP</b>  |                        | -1.110                    | -0.600    | (dB)   |
| Transmitter Duty Cycle [Crest Factor]                              |                        |                           |           |        |
| Transmitter Duty Cycle (DC)  |                        | 100.0                     | 100.0     | (%)    |
| <b>CF (1/DC)</b>   |                        | 1.00 (1)                  | 1.00 (3)  |        |

\*Fluid dielectric targets above and below 30MHz are not publish. Fluid deviation is based on the 30MHz target.

Table 11.1 SAR Scaling (Cont.)

| Scaling of Maximum Measured SAR (1g)                     |               |           |        |
|--|---------------|-----------|--------|
| Measured Parameters                                      | Configuration |           |        |
|  | Body          | Face      |        |
| Plot ID  | B2            | F1        |        |
| Maximum Measured SAR <sub>M</sub>                        | 0.303         | 0.294     | (W/kg) |
| Frequency  | 27.205        | 26.965    | (MHz)  |
| Drift Power Drift  | -0.160        | 0.050 (2) | (dB)   |
| Conducted Power  | 28.890        | 29.400    | (dBm)  |
| DC Transmitter Duty Cycle                                | 100.0 (1)     | 100.0 (3) | (%)    |
| DF Use Duty Factor                                       | 75.0          | 75.0      | (%)    |
| SAR Adjustment for Fluid Sensitivity                     |               |           |        |
| SAR <sub>1</sub> = SAR <sub>M</sub> X [ΔSAR]             | 0.317         | 0.307     | (W/kg) |
| SAR Adjustment for Tuneup Tolerance                      |               |           |        |
| SAR <sub>2</sub> = SAR <sub>1</sub> + [ΔP]               | 0.409         | 0.353     | (W/kg) |
| SAR Adjustment for Drift                                 |               |           |        |
| SAR <sub>3</sub> = SAR <sub>2</sub> + [Drift]            | 0.425         | 0.353 (2) | (W/kg) |
| SAR Adjustment for Transmitter Duty Cycle [Crest Factor] |               |           |        |
| SAR <sub>4</sub> = SAR <sub>3</sub> x [CF]               | 0.425 (1)     | 0.353 (3) | (W/kg) |
| SAR Adjustment for Use Duty Factor                       |               |           |        |
| SAR <sub>5</sub> = SAR <sub>4</sub> x [DF]               | 0.319         | 0.265     | (W/kg) |
| <u>reported</u> 1g SAR                                   |               |           |        |
| <u>reported</u> SAR                                      | 0.32          | 0.26      | (W/kg) |

| <b>NOTES to Table</b>   |  |
|---|--|
| <p>Scaling of the Maximum Measured SAR is based on the highest Face, Body, Extremity and/or Head SAR measured of ALL test channels, configurations and accessories used during THIS evaluation. The Measured Fluid Deviation parameters, Drift, Conducted Power, Duty Cycle [Crest] and Use Duty Factor apply only to those test frequencies and configurations producing the highest SAR. The <u>reported</u> SAR is the accumulation of all SAR Adjustments from the applicable steps above. The Plot ID is for identification of the SAR Measurement Plot(s) in the Annexes of this report.</p> <p>NOTE: The above adjustments have been applied to <u>ALL</u> Measured SAR values. In some cases, the highest Measure SAR may not have produced the highest <u>reported</u> SAR after all adjustments have been made.</p> <p>NOTE: Some of the above adjustments may not be applicable to each configuration. They are identified by grayed fields.</p> |  |
| <b>SAR<sub>1</sub></b>  | <p>Per IEC/IEEE 62209-1528, FCC KDB 865664, ISED RSS-102 and ISED Notice 2012-DRS0529, SAR adjustment is applied when the calculated <math>\Delta</math>SAR, resulting from the equations indicated, is negative (-).</p> <p><math>\Delta</math>SAR is given as a percentage (%). The SAR is MULTIPLIED by this scaling factor only when the scaling factor is negative (-).</p>   |
| <b>SAR<sub>2</sub></b>  | <p>Per IEC/IEEE 62209-1528, FCC KDB 865664 and ISED RSS-102, adjustment is required only when the difference (<math>\Delta</math>P) between the Measured Conducted Power and the Manufacturer's Rated Conducted Power is (-) Negative.</p> <p><math>\Delta</math>P is given in dB. The absolute value of <math>\Delta</math>P is ADDED (logarithmically) to the SAR when <math>\Delta</math>P is negative (-).</p>   |
| <b>SAR<sub>3</sub></b>  | <p>Per IEC/IEEE 62209-1528, FCC KDB 865664 and ISED RSS-102, adjustment is required only when Measured Drift is negative (-). The absolute value of Measured Drift is ADDED (logarithmically) to the SAR.</p> <p>Drift is given in dB. The absolute value of Drift is ADDED (logarithmically) to the SAR when Drift is negative (-).</p>   |
| <b>SAR<sub>4</sub></b>  | <p>Per IEC/IEEE 62209-1528, FCC KDB 865664 and ISED RSS-102, when the transmit Duty Cycle (DC) is less than 100%, the <u>reported</u> SAR must be scaled to 100% by the Crest Factor (CF). <math>CF = 1/DC</math> where DC is in decimal.</p> <p>CF is given as a decimal. The SAR is MULTIPLIED by this scaling factor only when the scaling factor is greater than 1.</p>  |
| <b>SAR<sub>5</sub></b>  | <p>Use Duty Factor applies to Push-To-Talk (PTT) transceivers or other devices whereby the user has some control of the transmitter on-off period. Per IEC/IEEE 62209-1528, FCC KDB 447498, FCC KDB 643646 and ISED RSS-102, a Duty Factor (DF) of 50% may be applied. In cases where Voice Activated transmit is employed, a DF of 75% may be applied.</p> <p>DF is given as a percentage (%). The SAR is MULTIPLIED by this scaling factor only when the scaling factor is less than 100%.</p> |
| <b><u>reported</u> SAR</b>  | <p>The <u>reported</u> SAR is the Maximum SAR after all applicable adjustments have been made and is indicated on the cover page of this report.</p>   |

- Note (1): Crest Factor = 1 (100% Duty Cycle), Crest Factor Adjustment not Required.
- Note (2): Power Drift is Positive, Drift Adjustment not Required.
- Note (3): Crest Factor = 1 (100% Duty Cycle), Crest Factor Adjustment not Required.



## 12.0 SAR EXPOSURE LIMITS

Table 12.1 Exposure Limits

| SAR RF EXPOSURE LIMITS   |                             |  |  |
|--|-----------------------------|--|--|
| FCC 47 CFR§2.1093  | Health Canada Safety Code 6 | General Population /<br>Uncontrolled Exposure <sup>(4)</sup> | Occupational /<br>Controlled Exposure <sup>(5)</sup> |
| Spatial Average <sup>(1)</sup><br>(averaged over the whole body)   |                             | 0.08 W/kg  | 0.4 W/kg   |
| Spatial Peak <sup>(2)</sup><br>(Head and Trunk averaged over any 1 g of tissue)  |                             | <b>1.6 W/kg</b>  | 8.0 W/kg   |
| Spatial Peak <sup>(3)</sup><br>(Hands/Wrists/Feet/Ankles averaged over 10 g)   |                             | 4.0 W/kg   | 20.0 W/kg  |
| (1) The Spatial Average value of the SAR averaged over the whole body.   |                             |  |  |
| (2) The Spatial Peak value of the SAR averaged over any 1 gram of tissue, defined as a tissue volume in the shape of a cube and over the appropriate averaging time.                               |                             |  |  |
| (3) The Spatial Peak value of the SAR averaged over any 10 grams of tissue, defined as a tissue volume in the shape of a cube and over the appropriate averaging time.                             |                             |  |  |
| (4) Uncontrolled environments are defined as locations where there is potential exposure to individuals who have no knowledge or control of their potential exposure.                              |                             |  |  |
| (5) Controlled environments are defined as locations where there is potential exposure to individuals who have knowledge of their potential exposure and can exercise control over their exposure. |                             |  |  |

### 13.0 DETAILS OF SAR EVALUATION

Table 13.1 Day Log

| DAY LOG     |                   |                 |                       |                           | Fluid Dielectric | SPC | Test | Task                       |
|-------------|-------------------|-----------------|-----------------------|---------------------------|------------------|-----|------|----------------------------|
| Date        | Ambient Temp (°C) | Fluid Temp (°C) | Relative Humidity (%) | Barometric Pressure (kPa) |                  |     |      |                            |
| 13 Feb 2024 | 25.2              | 23.9            | 22%                   | 102.3                     | X                | X   | X    | 30H Fluids, SPC & SAR Test |
| 15 Feb 2024 | 23.3              | 22.7            | 19%                   | 102.4                     |                  |     | X    | 30H SAR Test               |

Per IEEE1528 Test series was started within 24 hours and completed within 48 hours of Fluid Parameter Measurement

### 13.2 DUT Setup and Configuration

| DUT Setup and Configuration |   |
|-----------------------------|---|
| <b>Overview</b>             | <p>The JERRY FCC was evaluated for SAR in the <i>Body</i> and <i>Face</i> configuration at the maximum conducted output power level, preset by the manufacturer, with a fully charged battery in unmodulated continuous transmit operation (AM/FM mode at 100% duty cycle) with the transmit key continuously depressed. For a Push-To-Talk (PTT) device with VOX enabled operation, a 75% duty cycle compensation for the <u>reported SAR</u> was used, as per FCC KDB 447498.</p> <p>The test procedures outlined in FCC KDB 447498, FCC KDB 865664, ISED RSS-102 and IEC/IEEE 62209-1528 were used throughout the evaluation of this device.</p> |

### 13.3 DUT Positioning

| DUT Positioning           |  |
|---------------------------|--|
| <b>Positioning</b>        | The DUT Positioner was securely fastened to the Phantom Platform. Registration marks were placed on the DUT and the Positioner to ensure consistent positioning of the DUT for each test evaluation.   |
| <b>FACE Configuration</b> | The DUT was securely clamped into the device holder with the surface of the DUT normally held to the user's face facing the phantom. The device holder was adjusted to ensure that the horizontal axis of the DUT was parallel to the bottom of the phantom. A 25mm spacer block was used to set the separation distance between the DUT and the phantom to 25mm. When applicable and unless by design, the antenna of the DUT was prevented from sagging away from the phantom. The spacer block was removed before testing.  |
| <b>BODY Configuration</b> | Body-Worn and Audio Accessories were affixed to the DUT in the manner in which they are intended to be used. The DUT, with its accessories, were securely clamped into the device holder with the surface of the DUT normally in contact with the body in direct contact with the bottom of the phantom, or 0mm separation from the DUT's accessory to the phantom. Body-Worn Accessory straps, linkages, etc. were positioned in a fashion resembling that for which they were intended to be used. Audio Accessory cables, etc., were positioned in a fashion resembling that for which they were intended to be used. |
| <b>HEAD Configuration</b> | This device is not intended to be held to the ear and was not tested in the HEAD configuration.  |

### 13.4 General Procedures and Report

| <b>General Procedures and Reporting</b> |   |
|---|---|
| <b>General Procedures</b>               | <p>The fluid dielectric parameters of the Active Tissue Simulating Liquid (TSL) were measured as described in this Section, recorded and entered into the DASY Measurement Server. Active meaning the TSL used during the SAR evaluation of the DUT. The temperature of the Active TSL was measured and recorded prior to performing a System Performance Check (SPC). An SPC was performed with the Active TSL prior to the start of the test series. The temperature of the Active TSL was measured throughout the day and the Active TSL temperature was maintained to <math>\pm 0.5^{\circ}\text{C}</math>. The Active TSL temperature was maintained to within <math>\pm 1.0^{\circ}\text{C}</math> throughout the test series. TSL analysis and SPC were repeated when the Active TSL use exceeded 84 hours.</p> <p>An Area Scan exceeding the length and width of the DUT projection was performed and the locations of all maximas within 2dB of the Peak SAR recorded. A Zoom Scan centered over the Peak SAR location(s) was performed and the 1g and 10g SAR values recorded. The resolutions of the Area Scan and Zoom Scan are described in the Scan Resolution table(s) in this Section. A Power Reference Measurement was taken at the phantom reference point immediately prior to the Area Scan. A Power Drift measurement was taken at the phantom reference point immediately following the Zoom Scan to determine the power drift. A Z-Scan from the <u>Maximum Distance to Phantom Surface</u> to the fluid surface was performed following the power drift measurement.</p> |
| <b>Reporting</b>                        | <p>The 1g SAR, 10g SAR and power drift measurements are recorded in the SAR Measurement Summary tables in the SAR Measurement Summary Section of this report. The SAR values shown in the 100% DC (Duty Cycle) column are the SAR values reported by the SAR Measurement Server with the DUT operating at 100% transmit duty cycle. These tables also include other information such as transmit channel and frequency, modulation, accessories tested and DUT-phantom separation distance.</p> <p>In the Scaling of Maximum Measured SAR Section of this report, the highest measured SAR in the BODY configuration, within the entire scope of this assessment, are, when applicable, scaled for Fluid Sensitivity, Manufacturer's Tune-Up Tolerance, Simultaneous Transmission and Drift. With the exception of Duty Cycle correction/compensation, SAR values are <u>ONLY</u> scaled up, not down. The final results of this scaling is the <u>reported SAR</u> which appears on the Cover Page of this report.</p>   |

### 13.5 Fluid Dielectric and Systems Performance Check

| Fluid Dielectric and Systems Performance Check |   |
|--|---|
| <b>Fluid Dielectric Measurement Procedure</b>  | <p>The fluid dielectric parameters of the Tissue Simulating Liquid (TSL) are measured using the Open-Ended Coax Method connected to an Agilent 8753ET Network Analyzer connected to a measurement server running Aprel Dielectric Property Measurement System. A frequency range of <math>\pm 100\text{MHz}</math> for frequencies <math>&gt; 300\text{MHz}</math>, <math>\pm 50\text{MHz}</math> for frequencies <math>\leq 300\text{MHz}</math> and <math>\pm 20\text{MHz}</math> for frequencies <math>\leq 30\text{MHz}</math> with frequency step size of <math>10\text{MHz}</math> (<math>5\text{MHz}</math> below <math>100\text{MHz}</math>) is used. The center frequency is centered around the SAR measurement probe's calibration point for that TSL frequency range. A calibration of the setup is performed using a short-open-deionized water (at <math>23^\circ\text{C}</math> in a <math>300\text{ml}</math> beaker) method. A sample of the TSL is placed in a <math>300\text{ml}</math> beaker and the open-ended coax is submerged approximately <math>8\text{mm}</math> below the fluid surface in the approximate center of the beaker. A check of the setup is made to ensure no air is trapped under the open-ended coax. The sample of TSL is measured and compared to the FCC OET Bulletin 65 Supplement C targets for HEAD or BODY for the entire fluid measurement range. Fluid adjustment are made if the dielectric parameters are <math>&gt; 5\%</math> in range that the DUT is to be tested. If the adjustments fail to bring the parameters to <math>\leq 5\%</math> but are <math>&lt; 10\%</math>, the SAR Fluid Sensitivity as per IEC 62201-1 and FCC KDB 865664 are applied to the highest measured SAR. A TSL with dielectric parameters <math>&gt; 10\%</math> in the DUT test frequency range are not used.</p>   |
| <b>Systems Performance Check</b>               | <p>The fluid dielectric parameters of the Active TSL are entered into the DASY Measurement Server at each of the <math>10\text{MHz}</math> step size intervals. Active meaning the TSL used during the SAR evaluation of the DUT. The DASY Measurement System will automatically interpolate the dielectric parameters for DUT test frequencies that fall between the <math>10\text{MHz}</math> step intervals.</p> <p>A Systems Performance Check (SPC) is performed in accordance with IEEE 1528 "System Check" and FCC KDB 865664 "System Verification". A validation source, dipole or Confined Loop Antenna (CLA), is placed under the geometric center of the phantom and separated from the phantom in accordance to the validation source's Calibration Certificate data. A CW signal set to the frequency of the validate source's and SAR measurement probe's calibration frequency with a forward power set to the validation source's Calibration Certificate data power setting is applied to the validation source. An Area Scan is centered over the projection of the validation source's feed point and an Area Scan is taken. A Zoom Scan centered over the Peak SAR measurement of the Area Scan and the <math>1\text{g}</math> and <math>10\text{g}</math> SAR is measured. The measured <math>1\text{g}</math> and <math>10\text{g}</math> SAR is compared to the <math>1\text{g}</math> and <math>10\text{g}</math> SAR measurements from the validation source's Calibration Certificate. When required, the measured SAR is normalized to <math>1.0\text{W}</math> and compared to the normalized SAR indicated on the validation source's Calibration Certificate. The SPC is considered valid when the measured and normalized SAR is <math>\leq 10\%</math> of the measured and normalize SAR of the validation source's Calibration Certificate.</p> <p>The fluid dielectric parameters of the Active TSL and SPC are repeated when the Active TSL has been in use for greater than <math>84</math> hours or if the Active TSL temperature has exceed <math>\pm 1^\circ\text{C}</math> of the initial fluid analysis.</p> |

### 13.6 Scan Resolution 100MHz to 2GHz

| Scan Resolution 100MHz to 2GHz   |  |
|--|--|
| Maximum distance from the closest measurement point to phantom surface:<br>(Geometric Center of Probe Center)  | <b><math>4 \pm 1 \text{ mm}</math></b>   |
| Maximum probe angle normal to phantom surface.<br>(Flat Section ELI Phantom)   | <b><math>5^\circ \pm 1^\circ</math></b>  |
| Area Scan Spatial Resolution $\Delta X, \Delta Y$  | <b><math>15 \text{ mm}</math></b>        |
| Zoom Scan Spatial Resolution $\Delta X, \Delta Y$  | <b><math>7.5 \text{ mm}</math></b>       |
| Zoom Scan Spatial Resolution $\Delta Z$<br>(Uniform Grid)  | <b><math>5 \text{ mm}</math></b>         |
| Zoom Scan Volume X, Y, Z   | <b><math>30 \text{ mm}</math></b>        |
| Phantom  | <b>ELI</b>                               |
| Fluid Depth  | <b><math>150 \pm 5 \text{ mm}</math></b> |
| An Area Scan with an area extending beyond the device was used to locate the candidate maximas within $2\text{dB}$ of the global maxima.                               |  |
| A Zoom Scan centered over the peak SAR location(s) determined by the Area Scan was used to determine the $1\text{-gram}$ and $10\text{-gram}$ peak spatial-average SAR |  |



### 13.7 Scan Resolution 2GHz to 3GHz

| Scan Resolution 2GHz to 3GHz   |            |
|--|------------|
| Maximum distance from the closest measurement point to phantom surface:<br>(Geometric Center of Probe Center)  | 4 ± 1 mm   |
| Maximum probe angle normal to phantom surface.<br>(Flat Section ELI Phantom)   | 5° ± 1°    |
| Area Scan Spatial Resolution $\Delta X, \Delta Y$  | 12 mm      |
| Zoom Scan Spatial Resolution $\Delta X, \Delta Y$  | 5 mm       |
| Zoom Scan Spatial Resolution $\Delta Z$<br>(Uniform Grid)  | 5 mm       |
| Zoom Scan Volume X, Y, Z   | 30 mm      |
| Phantom  | ELI        |
| Fluid Depth  | 150 ± 5 mm |
| An Area Scan with an area extending beyond the device was used to locate the candidate maximas within 2dB of the global maxima.                      |            |
| A Zoom Scan centered over the peak SAR location(s) determined by the Area Scan was used to determine the 1-gram and 10-gram peak spatial-average SAR |            |

### 13.8 Scan Resolution 5GHz to 6GHz

| Scan Resolution 5GHz to 6GHz   |            |
|--|------------|
| Maximum distance from the closest measurement point to phantom surface:<br>(Geometric Center of Probe Center)  | 4 ± 1 mm   |
| Maximum probe angle normal to phantom surface.<br>(Flat Section ELI Phantom)   | 5° ± 1°    |
| Area Scan Spatial Resolution $\Delta X, \Delta Y$  | 10 mm      |
| Zoom Scan Spatial Resolution $\Delta X, \Delta Y$  | 4 mm       |
| Zoom Scan Spatial Resolution $\Delta Z$<br>(Uniform Grid)  | 2 mm       |
| Zoom Scan Volume X, Y, Z   | 22 mm      |
| Phantom  | ELI        |
| Fluid Depth  | 100 ± 5 mm |
| An Area Scan with an area extending beyond the device was used to locate the candidate maximas within 2dB of the global maxima.                      |            |
| A Zoom Scan centered over the peak SAR location(s) determined by the Area Scan was used to determine the 1-gram and 10-gram peak spatial-average SAR |            |

## 14.0 MEASUREMENT UNCERTAINTIES

### Table 14.1 Measurement Uncertainty

Not required per FCC KDB 865664



## 15.0 FLUID DIELECTRIC PARAMETERS

**Table 15.1 Fluid Dielectric Parameters 30MHz HEAD TSL**

\*\*\*\*\*  
 Aprel Laboratory  
 Test Result for UIM Dielectric Parameter  
 Tue 13/Feb/2024 18:08:16  
 Freq Frequency(GHz)  
 FCC\_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon  
 FCC\_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma  
 Test\_e Epsilon of UIM  
 Test\_s Sigma of UIM  
 \*\*\*\*\*

| Freq  | FCC_eH | FCC_sH | Test_e | Test_s |
|-------|--------|--------|--------|--------|
| 0.025 | 55.00  | 0.75   | 57.00  | 0.72   |
| 0.030 | 55.00  | 0.75   | 56.03  | 0.70   |
| 0.035 | 55.00  | 0.75   | 55.39  | 0.73   |

| FLUID DIELECTRIC PARAMETERS |             |                 |          |                   |                           |                           |        | Fluid Sensitivity Calculation<br>IEC/IEEE 62209-1528 7.8.2 |        |                              |       |
|-----------------------------|-------------|-----------------|----------|-------------------|---------------------------|---------------------------|--------|--|--------|------------------------------|-------|
| Date:                       | 13-Feb-2024 | Fluid Temp:     | 23.9     | Frequency:        | 30MHz                     | Tissue:                   | Head   | ΔSAR   |        | SAR Correction<br>Factor (1) |       |
| Freq<br>(MHz)               | Test ε      | Test σ<br>(S/m) | Target ε | Target σ<br>(S/m) | Deviation<br>Permittivity | Deviation<br>Conductivity | 1g     |  |        |                              |       |
| 25.0000                     |             | 57.0000         | 0.7200   | 55.0000           | 0.75                      | 3.64%                     | -4.00% | -0.039   | -0.036 | 1.039                        | 1.036 |
| 26.9650                     | *           | 56.6188         | 0.7121   | 55.0000           | 0.75                      | 2.94%                     | -5.05% | -0.046   | -0.043 | 1.046                        | 1.043 |
| 27.2050                     | *           | 56.5722         | 0.7112   | 55.0000           | 0.75                      | 2.86%                     | -5.18% | -0.047   | -0.043 | 1.047                        | 1.043 |
| 27.4050                     | *           | 56.5334         | 0.7104   | 55.0000           | 0.75                      | 2.79%                     | -5.28% | -0.047   | -0.044 | 1.047                        | 1.044 |
| 30.0000                     |             | 56.0300         | 0.7000   | 55.0000           | 0.75                      | 1.87%                     | -6.67% | -0.056   | -0.053 | 1.056                        | 1.053 |
| 35.0000                     |             | 55.3900         | 0.7300   | 55.0000           | 0.75                      | 0.71%                     | -2.67% | -0.022   | -0.021 | 1.022                        | 1.021 |

\*Channel Frequency Tested

Fluid dielectric targets above and below 30MHz are not published. Deviation based on 30MHz target using 150 MHz Head TSL.

## 16.0 SYSTEM VERIFICATION TEST RESULTS

**Table 16.1 System Verification Results 30MHz HEAD TSL**

| System Verification Test Results   |                  |                    |                         |                       |                        |
|--|------------------|--------------------|-------------------------|-----------------------|------------------------|
| Date   |                  | Frequency<br>(MHz) | Validation Source       |                       |                        |
|  |                  |                    | P/N                     |                       | S/N                    |
| 21 Dec 2020  |                  | 30                 | CLA-30                  |                       | 1005                   |
| Fluid Type   | Fluid Temp<br>°C | Ambient Temp<br>°C | Ambient Humidity<br>(%) | Forward Power<br>(mW) | Source Spacing<br>(mm) |
| Head   | 24.5             | 24                 | 24%                     | 1000                  | 0                      |
| Fluid Parameters   |                  |                    |                         |                       |                        |
| Permittivity   |                  |                    | Conductivity            |                       |                        |
| Measured   | Target           | Deviation          | Measured                | Target                | Deviation              |
| 54.39  | 55.00            | -1.11%             | 0.69                    | 0.75                  | -8.00%                 |
| Measured SAR   |                  |                    |                         |                       |                        |
| 1 gram   |                  |                    | 10 gram                 |                       |                        |
| Measured   | Target           | Deviation          | Measured                | Target                | Deviation              |
| 1.20   | 1.25             | 4.00%              | 0.76                    | 0.775                 | 1.94%                  |
| Measured SAR Normalized to 1.0W  |                  |                    |                         |                       |                        |
| 1 gram   |                  |                    | 10 gram                 |                       |                        |
| Normalized   | Target           | Deviation          | Normalized              | Target                | Deviation              |
| 1.20   | 1.25             | 4.00%              | 0.76                    | 0.775                 | 1.94%                  |
| <p>Prior to the SAR evaluations, system checks were performed on the planar section of the phantom and a SPEAG validation dipole in accordance with the procedures described in IEEE 1528-2013, FCC KDB 846224 and IEC 62209-1.</p> <p>The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer.</p> <p>The forward power was applied to the dipole and the system was verified to a tolerance of +10% from the system manufacturer's dipole calibration target SAR value.</p> <p>The forward power applied was same forward power applied by the calibration lab during the calibration of this validation source.</p> |                  |                    |                         |                       |                        |

## 17.0 SYSTEM VALIDATION SUMMARY

Table 17.1 System Validation Summary

| SAR Validation Summary Chart |             |            |                   |                 |                    |                |               |
|------------------------------|-------------|------------|-------------------|-----------------|--------------------|----------------|---------------|
| Validation Date              | Probe Model | Probe S/N  | Validation Source | Frequency (MHz) | Validation Results |                |               |
|                              |             |            |                   |                 | Linearity          | Isotropy       | Extrapolation |
| ✓                            |             | = Complete |                   |                 | ✓                  | = Not Required |               |
| 10-Aug-23                    | EX3DV4      | 3600       | CLA-30            | 30              | Pass               | Pass           | ✓             |

## 18.0 MEASUREMENT SYSTEM SPECIFICATIONS


Table 18.1 Measurement System Specifications

| Measurement System Specification                |  |
|---|--|
| <b>Specifications</b>                           |  |
| Positioner                                      | Stäubli Unimation Corp. Robot Model: TX90XL  |
| Repeatability                                   | +/- 0.035 mm   |
| No. of axis                                     | 6.0  |
| <b>Data Acquisition Electronic (DAE) System</b> |  |
| <b>Cell Controller</b>                          |  |
| Processor                                       | Intel(R) Core(TM) i7-7700  |
| Clock Speed                                     | 3.60 GHz   |
| Operating System                                | Windows 10 Professional  |
| <b>Data Converter</b>                           |  |
| Features  | Signal Amplifier, multiplexer, A/D converter, and control logic  |
| Software  | Measurement Software: DASY6, V 6.4.0.12171 / DASY52 V10.2(1504)<br>Postprocessing Software: SEMCAD X, V14.6.12(7470) |
| Connecting Lines                                | Optical downlink for data and status info., Optical uplink for commands and clock                                    |
| <b>DASY Measurement Server</b>                  |  |
| Function  | Real-time data evaluation for field measurements and surface detection   |
| Hardware  | Intel ULV Celeron CPU 400 MHz; 128 MB chip disk; 128 MB RAM  |
| Connections                                     | COM1, COM2, DAE, Robot, Ethernet, Service Interface  |
| <b>E-Field Probe</b>                            |  |
| Model   | EX3DV4   |
| Serial No.                                      | 7826   |
| Construction                                    | Triangular core fiber optic detection system   |
| Frequency                                       | 10 MHz to 6 GHz  |
| Linearity                                       | ±0.2 dB (30 MHz to 3 GHz)  |
| <b>Phantom</b>                                  |  |
| Type  | ELI Elliptical Planar Phantom  |
| Shell Material                                  | Fiberglass   |
| Thickness                                       | 2mm +/- .2mm   |
| Volume  | > 30 Liter   |


**Table 18.1**

**Measurement System Specification (Continued)**


Probe Specification

|                 |  |   |
|-----------------|--|---|
| Construction:   | Symmetrical design with triangular core;<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, glycol) |  |
| Calibration:    | In air from 10 MHz to 2.5 GHz<br>In head simulating tissue at frequencies of 900 MHz<br>and 1.8 GHz (accuracy $\pm 8\%$ )                                |   |
| Frequency:      | 10 MHz to > 6 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 3 GHz)   |   |
| Directivity:    | $\pm 0.2$ dB in head tissue (rotation around probe axis)<br>$\pm 0.4$ dB in head tissue (rotation normal to probe axis)                                  |   |
| Dynamic Range:  | 5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB   |   |
| Surface Detect: | $\pm 0.2$ mm repeatability in air and clear liquids over diffuse reflecting surfaces   |   |
| Dimensions:     | Overall length: 330 mm; Tip length: 16 mm;<br>Body diameter: 12 mm; Tip diameter: 6.8 mm<br>Distance from probe tip to dipole centers: 2.7 mm            |   |
| Application:    | General dosimetry up to 3 GHz; Compliance tests of mobile phone  | <b>EX3DV4 E-Field Probe</b>   |

Phantom Specification

|  |   |
|--|---|
| <p>The ELI V5.0 phantom is an elliptical planar fiberglass shell phantom with a shell thickness of 2.0mm +/- .2mm at the planar area. This phantom conforms to OET Bulletin 65, Supplement C, IEEE 1528-2013, IEC 62209-1 and IEC 62209-2.</p> |  |
|  | <b>ELI Phantom</b>  |

Device Positioner Specification

|   |   |
|---|---|
| <p>The DASY device positioner has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.</p> |  |
|   | <b>Device Positioner</b>  |

## 19.0 TEST EQUIPMENT LIST

**Table 19.1 Equipment List and Calibration**

| Test Equipment List                         |           |             |                 |                 |
|---|-----------|-------------|-----------------|-----------------|
| DESCRIPTION                                 | ASSET NO. | SERIAL NO.  | DATE CALIBRATED | CALIBRATION DUE |
| Schmid & Partner DASY 6 System              | -         | -           | -               | -               |
| -DASY Measurement Server                    | 00158     | 1078        | CNR             | CNR             |
| -Robot                                      | 00046     | 599396-01   | CNR             | CNR             |
| -DAE4                                       | 00019     | 353         | 16-Apr-23       | 16-Apr-24       |
| -EX3DV4 E-Field Probe                       | 00213     | 3600        | 20-Apr-21       | 20-Apr-22       |
| -CLA 30 Validation Dipole                   | 00300     | 1005        | 13-Apr-23       | 13-Apr-26       |
| ELI Phantom                                 | 00247     | 1234        | CNR             | CNR             |
| SAM Phantom                                 | 00154     | 1033        | CNR             | CNR             |
| MFP Phantom                                 | 00355     | 1177/2      | CNR             | CNR             |
| HP 85070C Dielectric Probe Kit              | 00033     | none        | CNR             | CNR             |
| Gigatronics 8652A Power Meter               | 00007     | 1835801     | 10-May-22       | 10-May-25       |
| Gigatronics 80701A Power Sensor             | 00186     | 1837002     | COU             | COU             |
| Gigatronics 80334A Power Sensor             | 00237     | 1837001     | 10-May-22       | 10-May-25       |
| HP 8753ET Network Analyzer                  | 00134     | US39170292  | 06-Jan-24       | 06-Jan-27       |
| Rohde & Schwarz SMR20 Signal Generator      | 00006     | 100104      | COU             | COU             |
| Amplifier Research 10W1000C Power Amplifier | 00041     | 27887       | CNR             | CNR             |
| Amplifier Research 5S1G4 Power Amplifier    | 00106     | 26235       | CNR             | CNR             |
| Narda Directional Coupler 3020A             | 00064     | -           | CNR             | CNR             |
| Digital Multi Meter DMR-1800                | 00250     | TE182       | 23-Jun-20       | 23-Jun-23       |
| Bipolar Power Supply 6299A                  | 00086     | 1144A02155  | CNR             | CNR             |
| DC-18G 10W 30db Attenuator                  | 00102     | -           | COU             | COU             |
| R&S FSP40 Spectrum Analyzer                 | 00241     | 100500      | 09-Aug-21       | 09-Aug-24       |
| HP 8566B Spectrum Analyzer                  | 00051     | 2747A055100 | 29-Jun-20       | 29-Jun-23       |
| RF Cable-SMA                                | 00311     | -           | CNR             | CNR             |
| HP Calibration Kit                          | 00145     | -           | CNR             | CNR             |

CNR = Calibration Not Required

SB=Stand By

COU = Calibrate on Use

\*Verified and Extended

\* \*Per KDB 865664 3.2.2; Supporting documentation is included in the report for validation dipoles exceeding the recommended annual calibration cycle.

**Note: Per KDB 865664, Dipoles are evaluated annually for return loss and impedance. The dipole's SAR target can only be assessed by the SAR equipment manufacturer and remains the target until the dipole is recalibrated by the manufacturer. The dipole's SAR is evaluated and compared to this target during each and every System Verification which is performed prior to and/or during each DUT SAR evaluation. The results of these verifications are shown in Section 16.0**

## 20.0 FLUID COMPOSITION

Table 20.1 Fluid Composition 150MHz HEAD TSL

| 150MHz Head                                |       |                     |                    |                             |
|--|-------|---------------------|--------------------|-----------------------------|
| Tissue Simulating Liquid (TSL) Composition |       |                     |                    |                             |
| Component by Percent Weight                |       |                     |                    |                             |
| Water                                      | Sugar | Salt <sup>(1)</sup> | HEC <sup>(2)</sup> | Bacteriacide <sup>(3)</sup> |
| 38.35                                      | 55.5  | 5.15                | 0.9                | 0.1                         |

(1) Non-Iodinized

(2) HydroxyEthyl-Cellulose: Sigma-Aldrich P/N 54290-500g

(3) Dow Chemical Dowicil 75 Antimicrobial Perservative

Note: 150MHz HEAD TSL formulation was used during this evaluation.



## APPENDIX A – SYSTEM VERIFICATION PLOTS

**DUT: CLA-30 - SN1005; Type: CLA-30; Serial: SN1005**

**Procedure Name: SPC 30H Input=1.0W, 1g Target[1.098][1.22][1.342]W/kg\_ 10g Target [0.699][0.777][0.855] 2 2**

Communication System: UID 0, CW (0); Frequency: 30 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 30$  MHz;  $\sigma = 0.7$  S/m;  $\epsilon_r = 56.03$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Date/Time: 2/13/2024 6:53:47 PM

DASY5 Configuration:

- Probe: EX3DV4 - SN7826; ConvF(15.21, 15.21, 15.21) @ 30 MHz; Calibrated: 5/16/2023
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 4/18/2023
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

**SPC/SPC 30H Input=1.0W, 1g Target[1.098][1.22][1.342]W/kg\_ 10g Target [0.699][0.777][0.855] 2 2/Area Scan (9x9x1):**

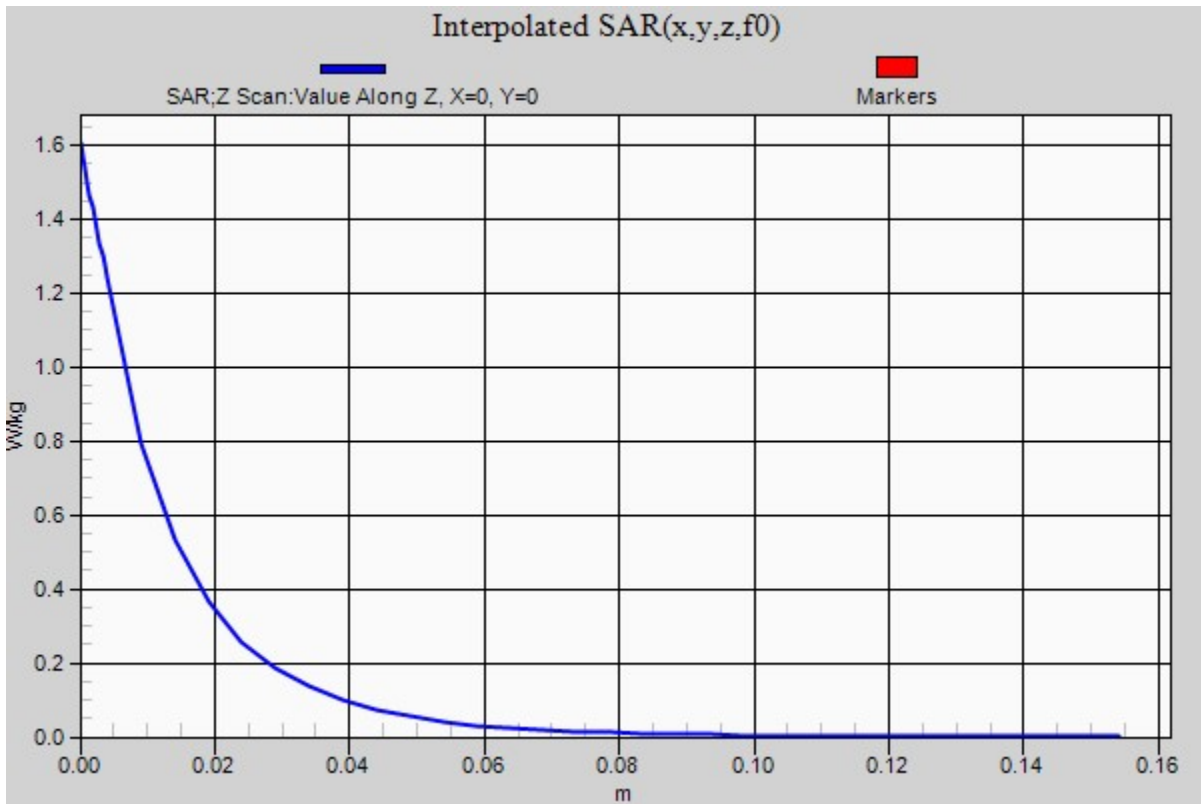
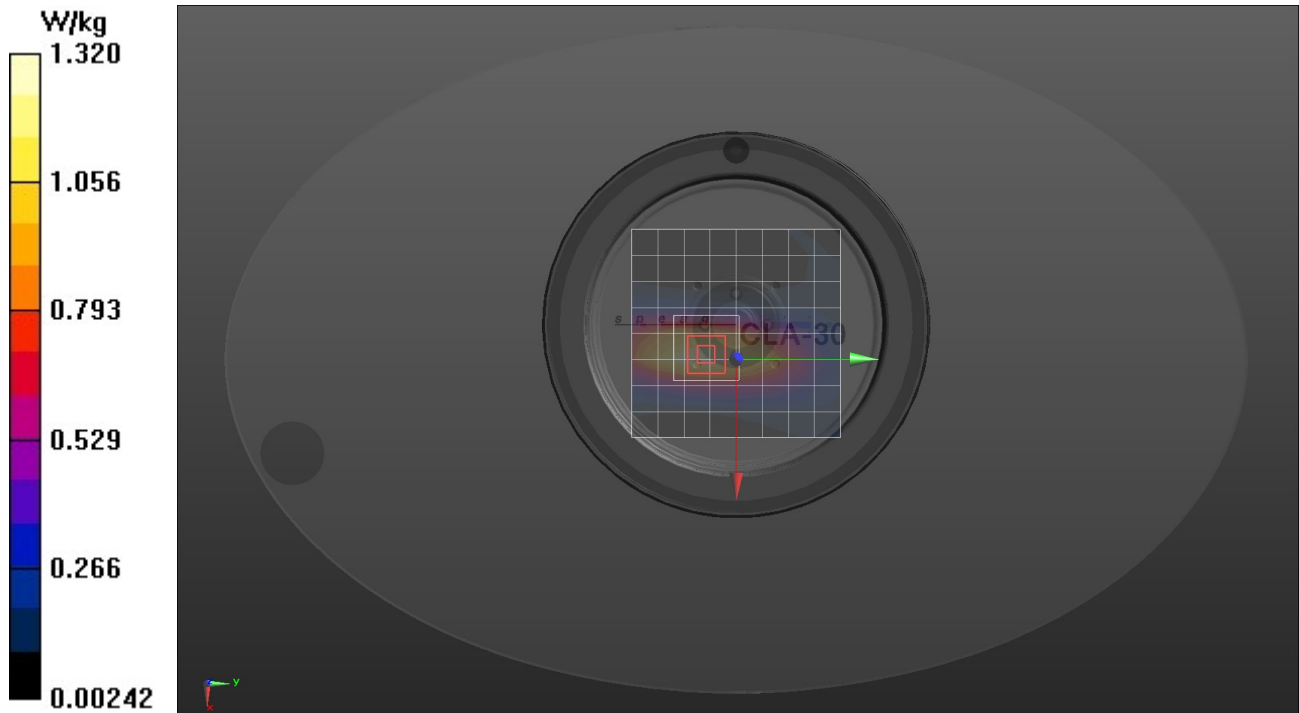
Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (measured) = 1.32 W/kg

**SPC/SPC 30H Input=1.0W, 1g Target[1.098][1.22][1.342]W/kg\_ 10g Target [0.699][0.777][0.855] 2 2/Zoom Scan (6x6x7)/Cube 0:**

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm  
Reference Value = 42.49 V/m; Power Drift = 0.01 dB  
Peak SAR (extrapolated) = 2.04 W/kg  
**SAR(1 g) = 1.26 W/kg; SAR(10 g) = 0.794 W/kg**  
Smallest distance from peaks to all points 3 dB below = 16.5 mm  
Ratio of SAR at M2 to SAR at M1 = 63.5%  
Maximum value of SAR (measured) = 1.35 W/kg

**SPC/SPC 30H Input=1.0W, 1g Target[1.098][1.22][1.342]W/kg\_ 10g Target [0.699][0.777][0.855] 2 2/Z Scan (1x1x42):**

Measurement grid: dx=20mm, dy=20mm, dz=5mm  
Penetration depth = 12.49 (11.19, 13.51) [mm]  
Maximum value of SAR (interpolated) = 1.60 W/kg



## APPENDIX B – MEASUREMENT PLOTS OF MAXIMUM MEASURED SAR

B2

**DUT: President-JERRY FCC; Type: PTT;**

**Procedure Name: B2-President JERRY FCC, 27.205 MHz Body Config, Flexible Antenna, B1, A1, bat P1 2 2**

Communication System: UID 0, FM (0); Frequency: 27.205 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 27.205$  MHz;  $\sigma = 0.711$  S/m;  $\epsilon_r = 56.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Date/Time: 2/15/2024 3:41:07 PM

DASY5 Configuration:

- Probe: EX3DV4 - SN7826; ConvF(15.21, 15.21, 15.21) @ 27.205 MHz; Calibrated: 5/16/2023
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 4/18/2023
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

**30H/B2-President JERRY FCC, 27.205 MHz Body Config, Flexible Antenna, B1, A1, bat P1 2 2/Area Scan (8x26x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.345 W/kg

**30H/B2-President JERRY FCC, 27.205 MHz Body Config, Flexible Antenna, B1, A1, bat P1 2 2/Zoom Scan (5x5x7)/Cube 0:**

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm  
Reference Value = 21.82 V/m; Power Drift = -0.16 dB  
Peak SAR (extrapolated) = 0.518 W/kg  
**SAR(1 g) = 0.303 W/kg; SAR(10 g) = 0.205 W/kg**  
Smallest distance from peaks to all points 3 dB below = 18.3 mm  
Ratio of SAR at M2 to SAR at M1 = 63.7%

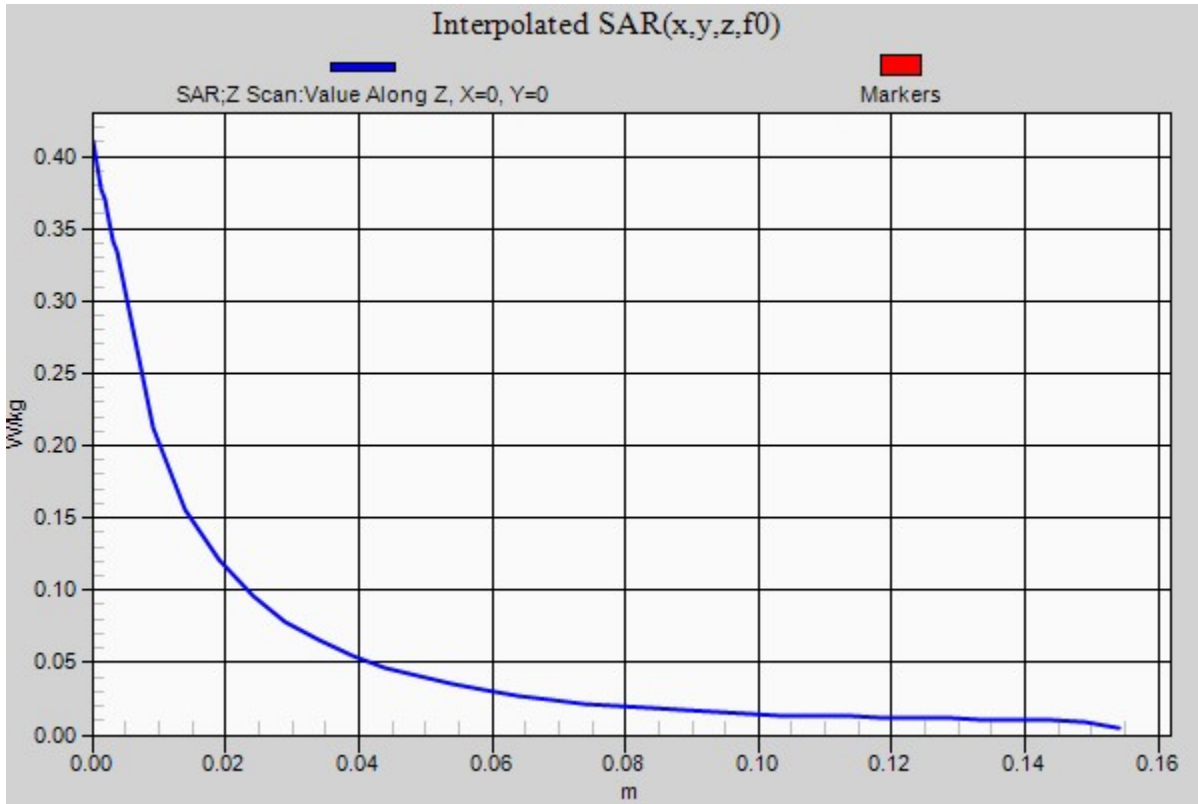
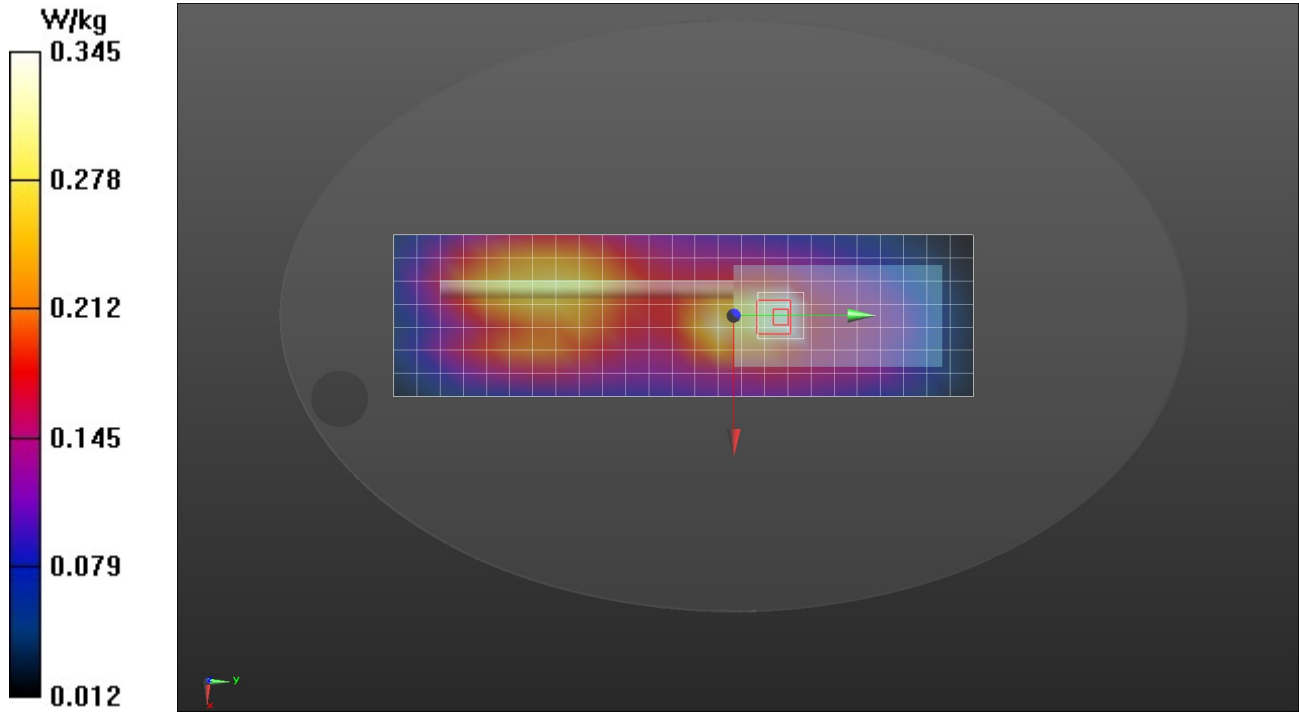
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.314 W/kg

**30H/B2-President JERRY FCC, 27.205 MHz Body Config, Flexible Antenna, B1, A1, bat P1 2 2/Z Scan (1x1x42):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Penetration depth = 16.09 (11.68, 19.38) [mm]  
Maximum value of SAR (interpolated) = 0.410 W/kg



F1

**DUT: President-JERRY FCC; Type: PTT; Procedure Name: F1-President JERRY FCC,D- 26.965 MHz Face Config[25mm], Flexible Antenna, bat P1,**

Communication System: UID 0, FM(0); Frequency: 26.965 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 26.965$  MHz;  $\sigma = 0.712$  S/m;  $\epsilon_r = 56.619$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

Date/Time: 2/17/2024 2:49:58 PM

DASY5 Configuration:

- Probe: EX3DV4 - SN7826; ConvF(15.21, 15.21, 15.21) @ 26.965 MHz; Calibrated: 5/16/2023
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 4/18/2023
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

**30H/F1-President JERRY FCC,D- 26.965 MHz Face Config[25mm], Flexible Antenna, bat P1,/Area Scan (8x26x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.338 W/kg

**30H/F1-President JERRY FCC,D- 26.965 MHz Face Config[25mm], Flexible Antenna, bat P1,/Zoom Scan (5x5x7)/Cube 0:**

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm  
Reference Value = 17.21 V/m; Power Drift = 0.05 dB  
Peak SAR (extrapolated) = 0.418 W/kg  
**SAR(1 g) = 0.294 W/kg; SAR(10 g) = 0.208 W/kg**  
Smallest distance from peaks to all points 3 dB below = 4.5 mm  
Ratio of SAR at M2 to SAR at M1 = 75.2%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.321 W/kg

**30H/F1-President JERRY FCC,D- 26.965 MHz Face Config[25mm], Flexible Antenna, bat P1,/Z Scan (1x1x42):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Penetration depth = 29.66 (25.61, 31.07) [mm]  
Maximum value of SAR (interpolated) = 0.151 W/kg

