



|                            |                  |
|----------------------------|------------------|
| Test Report Serial Number: | 16122-R1.1       |
| Test Report Date:          | 26 February 2016 |
| Project Number:            | 1342             |

## SAR Test Report

Applicant:

**sepura**

*Going further in critical communications*

Sepura PLC  
9000 Cambridge Research Park Beach Drive,  
WaterBeach  
Cambridge, UK, CB25 9TL

FCC ID:

**XX6SC2024**

Product Model Number / HVIN

**SC2024**

### Maximum Reported 1g SAR

|                     |       |      |      |
|---------------------|-------|------|------|
| FCC                 | FACE: | 0.72 | W/kg |
|                     | BODY: | 0.79 |      |
|                     | HEAD: | 1.92 |      |
| IC                  | FACE: | 0.72 |      |
|                     | BODY: | 0.81 |      |
|                     | HEAD: | 1.95 |      |
| Occupational Limit: |       | 8.00 |      |

IC Registration Number

**8739A-SC2024**

Product Name / PMN

**SC2024**

In Accordance With:

### FCC 47 CFR §2.1093

Radiofrequency Radiation Exposure Evaluation: Portable Devices

### Health Canada Safety Code 6

Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range  
from 3kHz to 300GHz

Approved By:

**Ben Hewson, President**

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Canada



Test Lab Certificate: 2470.01



Industry  
Canada

IC Registration 3874A-1



FCC Registration: 714830

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## 1.0 DOCUMENT CONTROL

| <b>Tested By:</b>   | Jasmeet Gill    |          |                  |
|---------------------|-----------------|----------|------------------|
| <b>Prepared By:</b> | Art Voss        |          |                  |
| <b>Reviewed By:</b> | Art Voss        |          |                  |
| Issue Number        | Description     | By       | Issue Date       |
| 1.0                 | Initial Release | Art Voss | 29 February 2016 |

## 2.0 NORMATIVE REFERENCES

| Normative References*                                                            |                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANSI / ISO 17025:2005                                                            | General Requirements for competence of testing and calibration laboratories                                                                                                      |
| FCC CFR Title 47 Part 2                                                          | Code of Federal Regulations                                                                                                                                                      |
| Title 47:                                                                        | Telecommunication                                                                                                                                                                |
| Part 2.1093:                                                                     | Radiofrequency Radiation Exposure Evaluation: Portable Devices                                                                                                                   |
| Health Canada                                                                    |                                                                                                                                                                                  |
| Safety Code 6 (2015)                                                             | Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3kHz to 300GHz                                                                     |
| Industry Canada Spectrum Management & Telecommunications Policy                  |                                                                                                                                                                                  |
| RSS-102 Issue 5:                                                                 | Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)                                                                                        |
| IEEE International Committee on Electromagnetic Safety                           |                                                                                                                                                                                  |
| IEEE 1528-2013:                                                                  | IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques |
| IEC International Standard                                                       |                                                                                                                                                                                  |
| IEC 62209-2                                                                      | Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 2                                                                 |
| FCC KDB                                                                          |                                                                                                                                                                                  |
| KDB 865664                                                                       | SAR Measurement Requirements for 100MHz to 6GHz                                                                                                                                  |
| FCC KDB                                                                          |                                                                                                                                                                                  |
| KDB 447498                                                                       | Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies                                                                                          |
| FCC KDB                                                                          |                                                                                                                                                                                  |
| KDB 643646                                                                       | SAR Test Reduction Considerations for Occupational PTT Radios                                                                                                                    |
| * When the issue number or issue date is omitted, the latest version is assumed. |                                                                                                                                                                                  |

### 3.0 CLIENT AND DEVICE INFORMATION

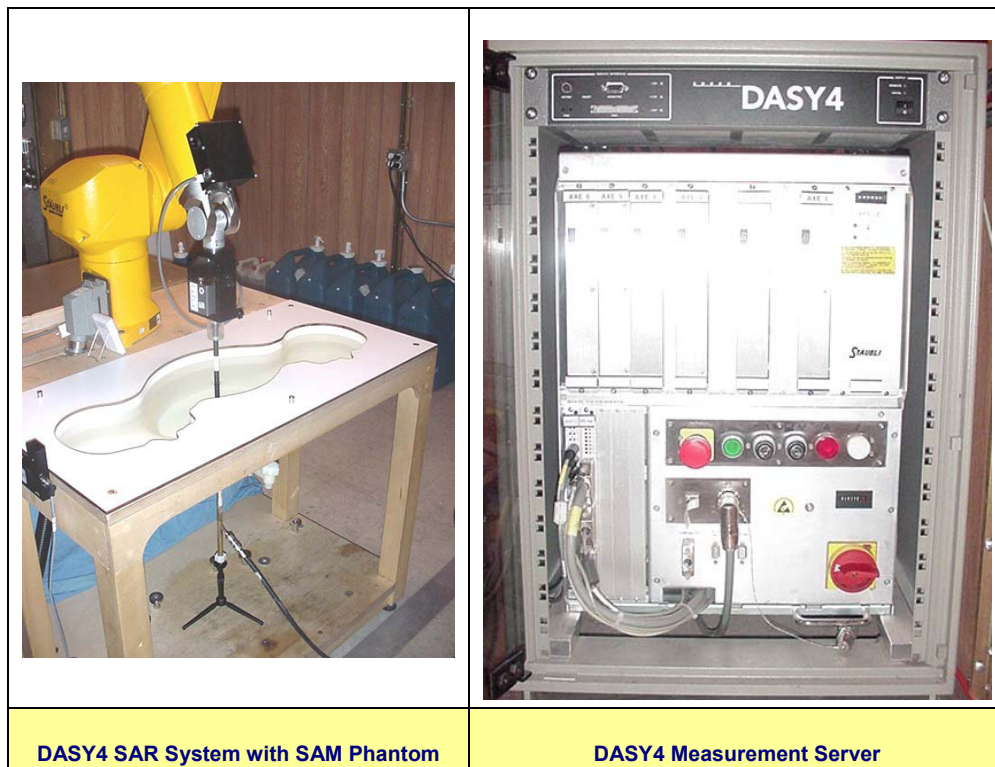
| Client Information                    |                                                                                                                          |         |           |     |              |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------|-----------|-----|--------------|
| Applicant Name                        | Sepura PLC                                                                                                               |         |           |     |              |
| Applicant Address                     | 9000 Cambridge Research Park Beach Drive, Waterbeach                                                                     |         |           |     |              |
|                                       | Cambridge, UK, CB25 9TL                                                                                                  |         |           |     |              |
|                                       | UK                                                                                                                       |         |           |     |              |
| DUT Information                       |                                                                                                                          |         |           |     |              |
| Device Identifier(s):                 | <table border="1"> <tr> <td>FCC ID:</td> <td>XX6SC2024</td> </tr> <tr> <td>IC:</td> <td>8739A-SC2014</td> </tr> </table> | FCC ID: | XX6SC2024 | IC: | 8739A-SC2014 |
| FCC ID:                               | XX6SC2024                                                                                                                |         |           |     |              |
| IC:                                   | 8739A-SC2014                                                                                                             |         |           |     |              |
| Device Type:                          | Licensed Non-Broadcast Transmitter Held to Face (TNF) FCC Part 90                                                        |         |           |     |              |
|                                       | Land Mobile Radio Transmitter/Receiver (27.41-960MHz) RSS-119                                                            |         |           |     |              |
| Type of Equipment:                    | Portable Digital Push-To-Talk (PTT) Radio Transceiver                                                                    |         |           |     |              |
| Device Model(s) / HVIN:               | SC2024                                                                                                                   |         |           |     |              |
| Device Marketing Name / PMN:          | SC2024                                                                                                                   |         |           |     |              |
| Firmware Version ID Number / FVIN:    | n/a                                                                                                                      |         |           |     |              |
| Host Marketing Name / HMN:            | n/a                                                                                                                      |         |           |     |              |
| Test Sample Serial No.:               | T/A Sample - Identical Prototype                                                                                         |         |           |     |              |
| Transmit Frequency Range:             | UHF: 404-470MHz                                                                                                          |         |           |     |              |
|                                       | WiFi: 2412-2462MHz                                                                                                       |         |           |     |              |
|                                       | BLE: 2402-2480MHz                                                                                                        |         |           |     |              |
| Number of Channels:                   | n/a                                                                                                                      |         |           |     |              |
| Manuf. Max. Rated Output Power:       | UHF: 34.77dBm (3.0W)                                                                                                     |         |           |     |              |
| Manuf. Max. Rated BW/Data Rate:       | n/a                                                                                                                      |         |           |     |              |
| Antenna Gain:                         | n/a                                                                                                                      |         |           |     |              |
| Modulation:                           | TDMA                                                                                                                     |         |           |     |              |
| Mode:                                 | TETRA                                                                                                                    |         |           |     |              |
| Duty Cycle:                           | 25% Transmit Duty Cycle                                                                                                  |         |           |     |              |
| DUT Power Source:                     | 7.4VDC Li-Ion Battery                                                                                                    |         |           |     |              |
| Deviation(s) from standard/procedure: | None                                                                                                                     |         |           |     |              |
| Modification of DUT:                  | None                                                                                                                     |         |           |     |              |

## 4.0 INTRODUCTION

This measurement report demonstrates that the Sepura plc Models: SC2024 Portable TETRA Radio L Portable PTT Radio Transceiver with Bluetooth complies with the SAR (Specific Absorption Rate) RF exposure requirements specified FCC 47 CFR §2.1093 and Health Canada's Safety Code 6 for the Occupational / Controlled Exposure environment. The measurement procedures were in accordance of KDB 447498; KDB 865664; IC RSS-102 Issue 4 and IEEE Standard 1528-2013. A description of the device, operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used and the various provisions of the rules are included within this test report.

## 5.0 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 DASY4 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 DASY4 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 DASY4 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.



## 6.0 RF CONDUCTED POWER MEASUREMENT

Table 6.0

| MEASURED CONDUCTED OUTPUT POWER                                     |         |        |       |
|---------------------------------------------------------------------|---------|--------|-------|
| Freq (MHz)                                                          | Mode    | SC2024 | Rated |
|                                                                     |         | dBm    | dBm   |
| 406.1                                                               | 100% DC | 34.82  | 34.77 |
| 418                                                                 | 100% DC | 34.82  | 34.77 |
| 430                                                                 | 100% DC | 34.82  | 34.77 |
| 440                                                                 | 100% DC | 34.82  | 34.77 |
| 450                                                                 | 100% DC | 34.82  | 34.77 |
| 460                                                                 | 100% DC | 34.82  | 34.77 |
| 470                                                                 | 100% DC | 34.82  | 34.77 |
| Note: All channels were test at 100% TETRA Duty Cycle               |         |        |       |
| Note: Max normal operating TETRA duty cycle: 1 time slot in 4 = 25% |         |        |       |

## 7.0 NUMBER OF TEST CHANNELS ( $N_c$ )

Table 7.0

| Antenna Part No.                                                                                                      |           | Antenna Type | Antenna Freq. Range | $N_c$ | Test Frequencies (MHz)      |
|-----------------------------------------------------------------------------------------------------------------------|-----------|--------------|---------------------|-------|-----------------------------|
| 1                                                                                                                     | 300-00499 | Extended     | 403 - 470 MHz       | 3     | 406.1, 418, 430,450,460,470 |
| 2                                                                                                                     | 300-00662 | Extended     | 410 - 430 MHz       | 3     | 406.1, 418, 430             |
| 3                                                                                                                     | 300-00663 | Extended     | 450 - 470 MHz       | 3     | 450, 460, 470               |
| 4                                                                                                                     | 300-01031 | Whip         | 410 - 430 MHz       | 3     | 410, 420, 430               |
| 5                                                                                                                     | 300-01032 | Whip         | 450 - 470 MHz       | 3     | 450, 460, 470               |
| Note: The number of test channels ( $N_c$ ) were determined by selecting Low, Mid, and High channels for each antenna |           |              |                     |       |                             |

## 8.0 MANUFACTURER'S ACCESSORY LIST

| Table 8.0                      |                               |                                |                |                |
|--------------------------------|-------------------------------|--------------------------------|----------------|----------------|
| Accessory ID # for Test Report | ACCESSORY CATEGORY: ANTENNA   |                                |                |                |
|                                | Part Number                   | Description                    |                | SAR Evaluation |
| 499                            | 300-00499                     | Extended                       | 403 - 470 MHz  | Yes            |
| 662                            | 300-00662                     | Extended                       | 410 - 430 MHz  | Yes            |
| 663                            | 300-00663                     | Extended                       | 450 - 470 MHz  | Yes            |
| 1031                           | 300-01031                     | Whip                           | 410 - 430 MHz  | Yes            |
| 1032                           | 300-01032                     | Whip                           | 450 - 470 MHz  | Yes            |
| Accessory ID # for Test Report | ACCESSORY CATEGORY: BATTERY   |                                |                |                |
|                                | Part Number                   | Description                    |                | SAR Evaluation |
| Default                        | 300-01174                     | Li-Poly battery, 7.4V, 1160mAh |                | Yes            |
| B2                             | 300-01175                     | Li-Ion battery, 7.4V, 1880mAh  |                | Yes            |
| Accessory ID # for Test Report | ACCESSORY CATEGORY: BODY-WORN |                                |                |                |
|                                | Part Number                   | Description                    | SAR Evaluation |                |
| 442                            | 300-00442                     | Belt-Clip                      | Yes            |                |
| 1385                           | 300-01385                     | Lightweight Leather Case       | Yes            |                |
| 1386                           | 300-01386                     | Heavy Duty Leather Case        | Yes            |                |
| 1387                           | 300-01387                     | Nylon Holster                  | Yes            |                |

## 9.0 SAR MEASUREMENT SUMMARY

Table 9.0

| Measured SAR Results (1g)- FACE Configuration (FCC/IC) |         |        |      |                      |            |                             |            |         |          |              |              |                             |               |                |
|--------------------------------------------------------|---------|--------|------|----------------------|------------|-----------------------------|------------|---------|----------|--------------|--------------|-----------------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz) | Modulation | Accessories                 |            |         |          | DUT Spacing  |              | Measured SAR (1g)           |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                      |            | Antenna ID                  | Battery ID | Body ID | Audio ID | DUT (mm)     | Antenna (mm) | 100% DC (W/kg)              | 50% DC (W/kg) |                |
| Jan.30/16                                              | F1      | SC2024 |      | 406.1                | Tetra      | 662                         | 1174       | n/a     | n/a      |              |              | 0.990                       | 0.495         | 0.434          |
| Jan.30/16                                              | F2      | SC2024 |      | 418                  | Tetra      | 662                         | 1174       | n/a     | n/a      |              |              | 1.090                       | 0.545         | 0.403          |
| Jan.30/16                                              | F3      | SC2024 |      | 430                  | Tetra      | 662                         | 1174       | n/a     | n/a      |              |              | 1.420                       | 0.710         | 0.367          |
| Feb.01/16                                              | F19     | SC2024 |      | 430                  | Tetra      | 662                         | 1175       | n/a     | n/a      |              |              | 1.230                       | 0.615         | -0.447         |
| June.23/15                                             | LC3     | SC2024 |      | M 420                | Tetra      | 662                         | 1174       |         |          |              |              | 2.980                       | 1.490         | -0.051         |
| June.23/15                                             | LT2     | SC2024 |      | M 420                | Tetra      | 662                         | 1174       |         |          |              |              | 3.120                       | 1.560         | -0.082         |
| June.24/15                                             | RC2     | SC2024 |      | M 420                | Tetra      | 662                         | 1174       |         |          |              |              | 2.400                       | 1.200         | -0.001         |
| June.24/15                                             | RT2     | SC2024 |      | M 420                | Tetra      | 662                         | 1174       |         |          |              |              | 2.620                       | 1.310         | -0.037         |
| June.27/15                                             | LC9     | SC2024 |      | L 410                | Tetra      | 662                         | 1174       |         |          |              |              | 3.210                       | 1.605         | -0.067         |
| June.27/15                                             | LC10    | SC2024 |      | H 430                | Tetra      | 662                         | 1174       |         |          |              |              | 3.310                       | 1.655         | -0.038         |
| SAR Limit                                              |         |        |      |                      |            | Head/Body                   |            |         |          | Spatial Peak |              | RF Exposure Category        |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      |                      |            | Health Canada Safety Code 6 |            |         |          | 8.0 W/kg     |              | 1 Gram Average Occupational |               |                |

Table 9.1

| Measured SAR Results (1g)- BODY Configuration (FCC/IC) |         |        |      |                      |            |                             |            |         |          |              |              |                             |               |                |
|--------------------------------------------------------|---------|--------|------|----------------------|------------|-----------------------------|------------|---------|----------|--------------|--------------|-----------------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz) | Modulation | Accessories                 |            |         |          | DUT Spacing  |              | Measured SAR (1g)           |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                      |            | Antenna ID                  | Battery ID | Body ID | Audio ID | DUT (mm)     | Antenna (mm) | 100% DC (W/kg)              | 50% DC (W/kg) |                |
| Jan.28/16                                              | B1      | SC2024 |      | 406.1                | CW         | 662                         | 1174       | 1589    | 388      |              |              | 0.925                       | 0.463         | -0.037         |
| Jan.28/16                                              | B2      | SC2024 |      | 418                  | CW         | 662                         | 1174       | 1589    | 388      |              |              | 1.030                       | 0.515         | 0.689          |
| Jan.28/16                                              | B3      | SC2024 |      | 430                  | CW         | 662                         | 1174       | 1589    | 388      |              |              | 1.310                       | 0.655         | -0.058         |
| SAR Limit                                              |         |        |      |                      |            | Head/Body                   |            |         |          | Spatial Peak |              | RF Exposure Category        |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      |                      |            | Health Canada Safety Code 6 |            |         |          | 8.0 W/kg     |              | 1 Gram Average Occupational |               |                |



**Table 9.2**

| Measured SAR Results (1g)- FACE Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.30/16                                              | F4      | SC2024 |      | 406.1                       | CW         | 1031        | 1174       | n/a     | n/a      |                |              | 0.078                | 0.039         | 0.272          |
| Jan.30/16                                              | F5      | SC2024 |      | 418                         | CW         | 1031        | 1174       | n/a     | n/a      |                |              | 0.855                | 0.428         | -0.104         |
| Jan.30/16                                              | F6      | SC2024 |      | 430                         | CW         | 1031        | 1174       | n/a     | n/a      |                |              | 0.953                | 0.477         | -0.166         |
| June.23/15                                             | LC5     | 2024   |      | M 420                       | Tetra      | 1031        |            |         |          |                |              | 1.920                | 0.960         | -0.052         |
| June.23/15                                             | LT4     | 2024   |      | M 420                       | Tetra      | 1031        |            |         |          |                |              | 2.250                | 1.125         | -0.056         |
| June.24/15                                             | RC4     | 2024   |      | M 420                       | Tetra      | 1031        |            |         |          |                |              | 1.510                | 0.755         | -0.011         |
| June.24/15                                             | RT4     | 2024   |      | M 420                       | Tetra      | 1031        |            |         |          |                |              | 1.660                | 0.830         | 0.101          |
| June.27/15                                             | LT6     | 2024   |      | L 410                       | Tetra      | 1031        |            |         |          |                |              | 2.130                | 1.065         | -0.044         |
| June.27/15                                             | LT7     | 2024   |      | H 430                       | Tetra      | 1031        |            |         |          |                |              | 2.690                | 1.345         | -0.030         |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.3**

| Measured SAR Results (1g)- BODY Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.28/16                                              | B4      | SC2024 |      | 406.1                       | CW         | 1031        | 1174       | 1589    | 388      |                |              | 0.780                | 0.390         | -0.124         |
| Jan.28/16                                              | B5      | SC2024 |      | 418                         | CW         | 1031        | 1174       | 1589    | 388      |                |              | 0.880                | 0.440         | -0.056         |
| Jan.28/16                                              | B6      | SC2024 |      | 430                         | CW         | 1031        | 1174       | 1589    | 388      |                |              | 0.969                | 0.485         | -0.080         |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.4**

| Measured SAR Results (1g)- FACE Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.31/16                                              | F7      | SC2024 |      | 406.1                       | CW         | 499         | 1174       | n/a     | n/a      |                |              | 0.838                | 0.419         | -0.181         |
| Jan.31/16                                              | F8      | SC2024 |      | 418                         | CW         | 499         | 1174       | n/a     | n/a      |                |              | 1.030                | 0.515         | -0.131         |
| Jan.31/16                                              | F9      | SC2024 |      | 430                         | CW         | 499         | 1174       | n/a     | n/a      |                |              | 1.330                | 0.665         | 0.024          |
| Jan.31/16                                              | F10     | SC2024 |      | 450                         | CW         | 499         | 1174       | n/a     | n/a      |                |              | 1.260                | 0.630         | 0.240          |
| Jan.31/16                                              | F11     | SC2024 |      | 460                         | CW         | 499         | 1174       | n/a     | n/a      |                |              | 1.050                | 0.525         | -0.067         |
| Jan.31/16                                              | F12     | SC2024 |      | 470                         | CW         | 499         | 1174       | n/a     | n/a      |                |              | 0.789                | 0.395         | -0.046         |
| June.23/15                                             | LC2     | 2024   |      | M 440                       | Tetra      | 499         |            |         |          |                |              | 3.530                | 1.765         | -0.042         |
| June.23/15                                             | LT1     | 2024   |      | M 440                       | Tetra      | 499         |            |         |          |                |              | 2.650                | 1.325         | -0.017         |
| June.24/15                                             | RC1     | 2024   |      | M 440                       | Tetra      | 499         |            |         |          |                |              | 2.630                | 1.315         | -0.013         |
| June.24/15                                             | RT1     | 2024   |      | M 440                       | Tetra      | 499         |            |         |          |                |              | 2.540                | 1.270         | -0.016         |
| June.25/15                                             | LC7     | 2024   |      | L 403                       | Tetra      | 499         |            |         |          |                |              | 2.430                | 1.215         | -0.090         |
| June.25/15                                             | LC8     | 2024   |      | H 470                       | Tetra      | 499         |            |         |          |                |              | 1.990                | 0.995         | -0.018         |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.5**

| Measured SAR Results (1g)- BODY Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.28/16                                              | B7      | SC2024 |      | 406.1                       | CW         | 499         | 1174       | 1589    | 388      |                |              | 0.825                | 0.413         | -0.142         |
| Jan.28/16                                              | B8      | SC2024 |      | 418                         | CW         | 499         | 1174       | 1589    | 388      |                |              | 1.040                | 0.520         | -0.192         |
| Jan.28/16                                              | B9      | SC2024 |      | 430                         | CW         | 499         | 1174       | 1589    | 388      |                |              | 1.310                | 0.655         | 0.388          |
| Jan.28/16                                              | B10     | SC2024 |      | 450                         | CW         | 499         | 1174       | 1589    | 388      |                |              | 1.110                | 0.555         | 0.032          |
| Jan.28/16                                              | B11     | SC2024 |      | 460                         | CW         | 499         | 1174       | 1589    | 388      |                |              | 0.891                | 0.446         | 0.248          |
| Jan.28/16                                              | B12     | SC2024 |      | 470                         | CW         | 499         | 1174       | 1589    | 388      |                |              | 0.702                | 0.351         | 0.184          |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.6**

| Measured SAR Results (1g)- FACE Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.31/16                                              | F13     | SC2024 |      | 450                         | CW         | 663         | 1174       | n/a     | n/a      |                |              | 1.360                | 0.680         | -0.403         |
| Jan.31/16                                              | F14     | SC2024 |      | 460                         | CW         | 663         | 1174       | n/a     | n/a      |                |              | 1.390                | 0.695         | 0.418          |
| Feb.01/16                                              | F15     | SC2024 |      | 470                         | CW         | 663         | 1174       | n/a     | n/a      |                |              | 1.310                | 0.655         | -0.130         |
| Feb.01/16                                              | LC1     | SC2024 |      | 450                         | CW         | 663         | 1175       | n/a     | n/a      |                |              | 3.590                | 1.795         | 0.396          |
| June.23/15                                             | LC4     | 2024   |      | M 460                       | Tetra      | 663         |            |         |          |                |              | 3.510                | 1.755         | -0.004         |
| June.23/15                                             | LT3     | 2024   |      | M 460                       | Tetra      | 663         |            |         |          |                |              | 2.810                | 1.405         | -0.020         |
| June.24/15                                             | RC3     | 2024   |      | M 460                       | Tetra      | 663         |            |         |          |                |              | 2.860                | 1.430         | -0.029         |
| June.24/15                                             | RT3     | 2024   |      | M 460                       | Tetra      | 663         |            |         |          |                |              | 2.740                | 1.370         | 0.006          |
| June.27/15                                             | LC11    | 2024   |      | L 450                       | Tetra      | 663         |            |         |          |                |              | 3.610                | 1.805         | -0.058         |
| June.27/15                                             | LC12    | 2024   |      | H 470                       | Tetra      | 663         |            |         |          |                |              | 3.180                | 1.590         | -0.055         |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.7**

| Measured SAR Results (1g)- BODY Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.28/16                                              | B13     | SC2024 |      | 450                         | CW         | 663         | 1174       | 1589    | 388      |                |              | 1.330                | 0.665         | 0.483          |
| Jan.28/16                                              | B14     | SC2024 |      | 460                         | CW         | 663         | 1174       | 1589    | 388      |                |              | 1.480                | 0.740         | -0.438         |
| Jan.28/16                                              | B15     | SC2024 |      | 470                         | CW         | 663         | 1174       | 1589    | 388      |                |              | 1.310                | 0.655         | -0.229         |
| Jan.29/16                                              | B19     | SC2024 |      | 460                         | CW         | 663         | 1175       | 1589    | 388      |                |              | 1.520                | 0.760         | -0.112         |
| Jan.29/16                                              | B20     | SC2024 |      | 460                         | CW         | 663         | 1175       | 1385    | 388      |                |              | 1.440                | 0.720         | 0.027          |
| Jan.29/16                                              | B21     | SC2024 |      | 460                         | CW         | 663         | 1175       | 1386    | 388      |                |              | 0.906                | 0.453         | -0.045         |
| Jan.29/16                                              | B22     | SC2024 |      | 460                         | CW         | 663         | 1175       | 1387    | 388      |                |              | 1.440                | 0.720         | -0.045         |
| Jan.29/16                                              | B23     | SC2024 |      | 460                         | CW         | 663         | 1175       | n/a     | 388      |                |              | 0.689                | 0.345         | 0.373          |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.8**

| Measured SAR Results (1g)- FACE Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.31/16                                              | F16     | SC2024 |      | 450                         | CW         | 1032        | 1174       | n/a     | n/a      |                |              | 0.745                | 0.373         | 0.305          |
| Jan.31/16                                              | F17     | SC2024 |      | 460                         | CW         | 1032        | 1174       | n/a     | n/a      |                |              | 0.822                | 0.411         | 0.332          |
| Jan.31/16                                              | F18     | SC2024 |      | 470                         | CW         | 1032        | 1174       | n/a     | n/a      |                |              | 0.996                | 0.498         | -0.009         |
| Feb.01/16                                              | LC1     | SC2024 |      | 450                         | CW         | 663         | 1175       | n/a     | n/a      |                |              | 3.590                | 1.795         | 0.396          |
| June.24/15                                             | LC6     | 2024   |      | M 460                       | Tetra      | 1032        |            |         |          |                |              | 2.080                | 1.040         | -0.072         |
| June.24/15                                             | LT5     | 2024   |      | M 460                       | Tetra      | 1032        |            |         |          |                |              | 2.580                | 1.290         | -0.090         |
| June.25/15                                             | RC5     | 2024   |      | M 460                       | Tetra      | 1032        |            |         |          |                |              | 1.740                | 0.870         | -0.086         |
| June.25/15                                             | RT5     | 2024   |      | M 460                       | Tetra      | 1032        |            |         |          |                |              | 1.940                | 0.970         | -0.035         |
| June.27/15                                             | LT8     | 2024   |      | L 450                       | Tetra      | 1032        |            |         |          |                |              | 2.130                | 1.065         | -0.058         |
| June.27/15                                             | LT9     | 2024   |      | L 470                       | Tetra      | 1032        |            |         |          |                |              | 2.640                | 1.320         | -0.073         |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.9**

| Measured SAR Results (1g)- BODY Configuration (FCC/IC) |         |        |      |                             |            |             |            |         |          |                |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|-----------------------------|------------|-------------|------------|---------|----------|----------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz)        | Modulation | Accessories |            |         |          | DUT Spacing    |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                             |            | Antenna ID  | Battery ID | Body ID | Audio ID | DUT (mm)       | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Jan.28/16                                              | B16     | SC2024 |      | 450                         | CW         | 1032        | 1174       | 1589    | 388      |                |              | 0.664                | 0.332         | 0.394          |
| Jan.28/16                                              | B17     | SC2024 |      | 460                         | CW         | 1032        | 1174       | 1589    | 388      |                |              | 0.822                | 0.411         | 0.465          |
| Jan.28/16                                              | B18     | SC2024 |      | 470                         | CW         | 1032        | 1174       | 1589    | 388      |                |              | 1.130                | 0.565         | -0.412         |
| SAR Limit                                              |         |        |      |                             |            |             | Head/Body  |         |          | Spatial Peak   |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      | Health Canada Safety Code 6 |            |             | 8.0 W/kg   |         |          | 1 Gram Average |              | Occupational         |               |                |

**Table 9.10**

| Measured SAR Results (1g)- FACE Configuration (FCC/IC) |         |        |      |                      |            |                             |            |         |          |              |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|----------------------|------------|-----------------------------|------------|---------|----------|--------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz) | Modulation | Accessories                 |            |         |          | DUT Spacing  |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                      |            | Antenna ID                  | Battery ID | Body ID | Audio ID | DUT (mm)     | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Feb.02/16                                              | F20     | SC2024 |      | 2412                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.006                | 0.003         | -2.920         |
| Feb.02/16                                              | F21     | SC2024 |      | 2437                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.005                | 0.003         | 2.310          |
| Feb.02/16                                              | F22     | SC2024 |      | 2462                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.006                | 0.003         | 2.110          |
| Feb.02/16                                              | F23     | SC2024 |      | 2402                 | BT         | 662                         | 1174       | n/a     | n/a      |              |              | 0.006                | 0.003         | -1.590         |
| Feb.02/16                                              | LC2     | SC2024 |      | 2412                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.014                | 0.007         | -0.036         |
| Feb.02/16                                              | LC3     | SC2024 |      | 2437                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.018                | 0.009         | -0.056         |
| Feb.02/16                                              | LC4     | SC2024 |      | 2462                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.018                | 0.009         | -0.437         |
| Feb.02/16                                              | LT1     | SC2024 |      | 2437                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.012                | 0.006         | 0.690          |
| Feb.03/16                                              | LC5     | SC2024 |      | 2402                 | BT         | 662                         | 1174       | n/a     | n/a      |              |              | 0.024                | 0.012         | 1.170          |
| Feb.02/16                                              | RC1     | SC2024 |      | 2412                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.011                | 0.005         | 1.650          |
| Feb.03/16                                              | RC2     | SC2024 |      | 2437                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.010                | 0.005         | -4.350         |
| Feb.03/16                                              | RC3     | SC2024 |      | 2462                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.016                | 0.008         | 0.229          |
| Feb.03/16                                              | RT1     | SC2024 |      | 2462                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.013                | 0.007         | -0.601         |
| Feb.03/16                                              | RC4     | SC2024 |      | 2402                 | BT         | 662                         | 1174       | n/a     | n/a      |              |              | 0.021                | 0.011         | 0.378          |
| SAR Limit                                              |         |        |      |                      |            | Head/Body                   |            |         |          | Spatial Peak |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      |                      |            | Health Canada Safety Code 6 |            |         |          | 8.0 W/kg     |              | 1 Gram Average       |               | Occupational   |

**Table 9.11**

| Measured SAR Results (1g)- BODY Configuration (FCC/IC) |         |        |      |                      |            |                             |            |         |          |              |              |                      |               |                |
|--------------------------------------------------------|---------|--------|------|----------------------|------------|-----------------------------|------------|---------|----------|--------------|--------------|----------------------|---------------|----------------|
| Date                                                   | Plot ID | DUT    |      | Test Frequency (MHz) | Modulation | Accessories                 |            |         |          | DUT Spacing  |              | Measured SAR (1g)    |               | SAR Drift (dB) |
|                                                        |         | M/N    | Type |                      |            | Antenna ID                  | Battery ID | Body ID | Audio ID | DUT (mm)     | Antenna (mm) | 100% DC (W/kg)       | 50% DC (W/kg) |                |
| Feb.04/16                                              | B24     | SC2024 |      | 2412                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.013                | 0.007         | 2.830          |
| Feb.04/16                                              | B25     | SC2024 |      | 2437                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.012                | 0.006         | 0.755          |
| Feb.04/16                                              | B26     | SC2024 |      | 2462                 | wifi       | 662                         | 1174       | n/a     | n/a      |              |              | 0.013                | 0.006         | 0.259          |
| Feb.04/16                                              | B27     | SC2024 |      | 2402                 | BT         | 662                         | 1174       | n/a     | n/a      |              |              | 0.016                | 0.008         | -0.579         |
| SAR Limit                                              |         |        |      |                      |            | Head/Body                   |            |         |          | Spatial Peak |              | RF Exposure Category |               |                |
| FCC 47 CFR 2.1093                                      |         |        |      |                      |            | Health Canada Safety Code 6 |            |         |          | 8.0 W/kg     |              | 1 Gram Average       |               | Occupational   |

## 10.0 SCALING OF MAXIMUM MEASURE SAR

**Table 10.0**

**Scaling of Maximum Measured SAR**

| Plot ID | Configuration    | Freq  | Measured Fluid Deviation |              | Measured Conducted Power | Measured Drift | Measured SAR (1g) |
|---------|------------------|-------|--------------------------|--------------|--------------------------|----------------|-------------------|
|         |                  | (MHz) | Permittivity             | Conductivity | (dBm)                    | (dB)           | (W/kg)            |
| F3      | Face 00662       | H 430 | 1.81%                    | -4.60%       | 34.82                    | 0.367          | 0.710             |
| B19     | Body 00663       | M 460 | -3.72%                   | 1.06%        | 34.82                    | -0.112         | 0.760             |
| LC11    | Left Cheek 00663 | L 450 | 3.93%                    | 6.90%        | 34.82                    | -0.058         | 1.805             |

**Step 1**

Fluid Sensitivity Adjustment (1)

| Plot ID | Scale Factor | X | Measured SAR | = | Adjusted SAR (1g) |
|---------|--------------|---|--------------|---|-------------------|
|         | (%)          |   | (W/kg)       |   | (W/kg)            |
| F3      | n/a          | X | 0.710        | = | 0.710             |
| B19     | n/a          | X | 0.760        | = | 0.760             |
| LC11    | 4.071%       | X | 1.805        | = | 1.878             |

**Step 2**

Manufacturer's Tune-Up Tolerance (2)

| Plot ID | Measured Conducted Power | Rated Power | Delta | + | Adjusted SAR | = | Reported SAR (1g) |
|---------|--------------------------|-------------|-------|---|--------------|---|-------------------|
|         | (dBm)                    | (dBm)       | (dB)  |   | (W/kg)       |   | (W/kg)            |
| F3      | 34.82                    | 34.77       | 0.05  | + | 0.710        | = | 0.710             |
| B19     | 34.82                    | 34.77       | 0.05  | + | 0.760        | = | 0.760             |
| LC11    | 34.82                    | 34.77       | 0.05  | + | 1.878        | = | 1.878             |

**Step 3**

Simultaneous Transmission (3) - Bluetooth

| Plot ID | Rated Output Power (Pmax) | Freq  | Separation Distance | Estimated SAR | + | Reported SAR | = | Simultaneous Reported SAR |
|---------|---------------------------|-------|---------------------|---------------|---|--------------|---|---------------------------|
|         | (mW)                      | (MHz) | (mm)                | (W/kg)        |   | (W/kg)       |   | (W/kg)                    |
| F3      | n/a                       | n/a   | n/a                 | n/a           | + | 0.710        | = | 0.710                     |
| B19     | n/a                       | n/a   | n/a                 | n/a           | + | 0.760        | = | 0.760                     |
| LC11    | n/a                       | n/a   | n/a                 | n/a           | + | 1.878        | = | 1.878                     |

**Step 4 (IC/EU/AU)**

Drift Adjustment (4)

| Plot ID | Measured Drift | + | Reported or Simultaneous Reported SAR | = | Scaled SAR (1g) |
|---------|----------------|---|---------------------------------------|---|-----------------|
|         | (dB)           |   | (W/kg)                                |   | (W/kg)          |
| F3      | 0.367          | + | 0.710                                 | = | 0.710           |
| B19     | -0.112         | + | 0.760                                 | = | 0.780           |
| LC11    | -0.058         | + | 1.878                                 | = | 1.903           |

**Notes**

See Notes Below

#### Notes

- (1) Per IEC-62209-1. Scaling required only when Measured Fluid Deviation is greater than 5% and only when the Scale Factor is (+) Positive. See Table 8.1
- (2) Per KDB 447498. Scaling required only when Delta is (-) Negative. The absolute value of Delta is added to Adjusted SAR.
- (3) Per KDB 447498 4.3.2.
- (4) Per IEC 62209-1. Scaling required only when Measured Drift is (-) Negative. The absolute value of Measured Drift is added to Reported or Simultaneous Reported SAR.

**Table 10.1**

| Fluid Sensitivity Calculation (1g)                                 |               |
|--------------------------------------------------------------------|---------------|
| Delta SAR = $C_e \cdot \Delta E_r + C(\sigma) \cdot \Delta \sigma$ |               |
| Frequency (GHz)                                                    | Plot ID       |
| 0.450                                                              | LC10          |
| $C_e$                                                              | -0.1583       |
| $C\sigma$                                                          | 0.6802        |
| $\Delta E$                                                         | 3.93%         |
| $\Delta \sigma$                                                    | 6.9%          |
| <b><math>\Delta SAR</math></b>                                     | <b>4.071%</b> |
| Scale Factor Is Negative. Scaling NOT Required                     |               |

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.

  
 Art Voss, P.Eng.  
 Technical Manager  
 Celltech Labs Inc.  
 26 February 2016  
 Date





## 11.0 SAR EXPOSURE LIMITS

**Table 11.0**

| <b>SAR RF EXPOSURE LIMITS</b>                                                                                                                                                                  |                                        |                                                         |                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------|-------------------------------------------------|
| <b>FCC 47 CFR 2.1093</b>                                                                                                                                                                       | <b>Health Canada<br/>Safety Code 6</b> | <b>(General Population /<br/>Uncontrolled Exposure)</b> | <b>(Occupational /<br/>Controlled Exposure)</b> |
| <b>Spatial Average<br/>(averaged over the whole body)</b>                                                                                                                                      |                                        | 0.08 W/kg                                               | 0.4 W/kg                                        |
| <b>Spatial Peak<br/>(averaged over any 1 g of tissue)</b>                                                                                                                                      |                                        | 1.6 W/kg                                                | <b>8.0 W/kg</b>                                 |
| <b>Spatial Peak<br/>(hands/wrists/feet/ankles averaged over 10 g)</b>                                                                                                                          |                                        | 4.0 W/kg                                                | 20.0 W/kg                                       |
| The Spatial Average value of the SAR averaged over the whole body.                                                                                                                             |                                        |                                                         |                                                 |
| 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.                              |                                        |                                                         |                                                 |
| 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.                            |                                        |                                                         |                                                 |
| Uncontrolled environments are defined as locations where there is potential exposure to individuals who have no knowledge or control of their potential exposure.                              |                                        |                                                         |                                                 |
| 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. |                                        |                                                         |                                                 |

## 12.0 DETAILS OF SAR EVALUATION

### EVALUATION DETAILS

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | The test channels selected for the SAR evaluations were based test procedures IEC 62209-1 and IEC 62209-2. The procedure yielding the highest channel count was applied.                                                                                                                                                                                                                                                                                                |
| 2 | The DUT was evaluated for SAR in accordance with the procedures described in IEC 62209-1 and IEC 62209-2.                                                                                                                                                                                                                                                                                                                                                               |
| 3 | The DUT was evaluated for SAR at the maximum conducted output power level, preset by the manufacturer, in unmodulated continuous transmit operation (Continuous Wave mode at 100% duty cycle) with the transmit key continuously depressed. For a Push-To-Talk (PTT) device, the 50% duty cycle compensation reported assumes a transmit/receive cycle of equal time base. As this is a TETRA transceiver with a 25% transmit duty cycle, a Crest factor of 4 was used. |
| 4 | A single point SAR measurement was taken prior to the Area Scan and after the Zoom Scan and the SAR drift of the DUT was evaluated. The measured SAR drift was added to the measured SAR levels of the Maximum <u>reported</u> SAR (IC/EU only).                                                                                                                                                                                                                        |
| 5 | Each SAR evaluations were performed with a fully charged battery.                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6 | The fluid temperature remained within +/-2°C from the time of the fluid dielectric parameter measurement to the completion of the SAR evaluation.                                                                                                                                                                                                                                                                                                                       |
| 7 | The fluid temperature remained within +/-0.5°C throughout the test day.                                                                                                                                                                                                                                                                                                                                                                                                 |

### SCAN PROCEDURE

|                                                                                                                                                      |                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Maximum distance from the closest measurement point to phantom surface.                                                                              | 4 ± 1mm            |
| Maximum probe angle normal to phantom surface.                                                                                                       | 5° ± 1°            |
| Area Scan Spatial Resolution ΔX, ΔY                                                                                                                  | 15mm               |
| Zoom Scan Spatial Resolution ΔX, ΔY                                                                                                                  | 7.5mm              |
| Zoom Scan Spatial Resolution ΔZ                                                                                                                      | 5mm                |
| Zoom Scan Volume X, Y, Z                                                                                                                             | 30mm x 30mm x 30mm |
| Phantom                                                                                                                                              | SAM                |
| Fluid Depth                                                                                                                                          | 150mm              |
| 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 |                    |

### 13.0 MEASUREMENT UNCERTAINTIES

**Table 13.0**

#### UNCERTAINTY BUDGET FOR DEVICE EVALUATION (IEEE 1528-2013 Table 9)

| Uncertainty Component                                                          | IEEE 1528 Section | Uncertainty Value $\pm\%$ | Probability Distribution | Divisor     | ci 1g | ci 10g | Uncertainty Value $\pm\%$ (1g) | Uncertainty Value $\pm\%$ (10g) | $V_i$ or $V_{eff}$ |
|--------------------------------------------------------------------------------|-------------------|---------------------------|--------------------------|-------------|-------|--------|--------------------------------|---------------------------------|--------------------|
| <b>Measurement System</b>                                                      |                   |                           |                          |             |       |        |                                |                                 |                    |
| Probe Calibration*                                                             | E.2.1             | 6.6                       | Normal                   | 1           | 1     | 1      | 6.60                           | 6.60                            | $\infty$           |
| Axial Isotropy*                                                                | E.2.2             | 4.7                       | Rectangular              | 1.732050808 | 0.7   | 0.7    | 1.9                            | 1.9                             | $\infty$           |
| Hemispherical Isotropy*                                                        | E.2.2             | 9.6                       | Rectangular              | 1.732050808 | 0.7   | 0.7    | 3.9                            | 3.9                             | $\infty$           |
| Boundary Effect*                                                               | E.2.3             | 8.3                       | Rectangular              | 1.732050808 | 1     | 1      | 4.8                            | 4.8                             | $\infty$           |
| Linearity*                                                                     | E.2.4             | 4.7                       | Rectangular              | 1.732050808 | 1     | 1      | 2.7                            | 2.7                             | $\infty$           |
| System Detection Limits*                                                       | E.2.4             | 1.0                       | Rectangular              | 1.732050808 | 1     | 1      | 0.6                            | 0.6                             | $\infty$           |
| Modulation Response                                                            | E.2.5             | 4.0                       | Rectangular              | 1.732050808 | 1     | 1      | 2.3                            | 2.3                             | $\infty$           |
| Readout Electronics*                                                           | E.2.6             | 1.0                       | Normal                   | 1           | 1     | 1      | 1.0                            | 1.0                             | $\infty$           |
| Response Time*                                                                 | E.2.7             | 0.8                       | Rectangular              | 1.732050808 | 1     | 1      | 0.5                            | 0.5                             | $\infty$           |
| Integration Time*                                                              | E.2.8             | 1.4                       | Rectangular              | 1.732050808 | 1     | 1      | 0.8                            | 0.8                             | $\infty$           |
| RF Ambient Conditions - Noise                                                  | E.6.1             | 0.0                       | Rectangular              | 1.732050808 | 1     | 1      | 0.0                            | 0.0                             | $\infty$           |
| RF Ambient Conditions - Reflection                                             | E.6.1             | 0.0                       | Rectangular              | 1.732050808 | 1     | 1      | 0.0                            | 0.0                             | $\infty$           |
| Probe Positioner Mechanical Tolerance*                                         | E.6.2             | 0.4                       | Rectangular              | 1.732050808 | 1     | 1      | 0.2                            | 0.2                             | $\infty$           |
| Probe Positioning wrt Phantom Shell*                                           | E.6.3             | 2.9                       | Rectangular              | 1.732050808 | 1     | 1      | 1.7                            | 1.7                             | $\infty$           |
| Extrapolation, interpolation & integration algorithms for max. SAR evaluation* | E.5               | 3.9                       | Rectangular              | 1.732050808 | 1     | 1      | 2.3                            | 2.3                             | $\infty$           |
| <b>Test Sample Related</b>                                                     |                   |                           |                          |             |       |        |                                |                                 |                    |
| Test Sample Positioning                                                        | E.4.2             | 0.3                       | Normal                   | 1           | 1     | 1      | 0.3                            | 0.3                             | 5                  |
| Device Holder Uncertainty*                                                     | E.4.1             | 3.6                       | Normal                   | 1           | 1     | 1      | 3.6                            | 3.6                             | $\infty$           |
| SAR Drift Measurement**                                                        | E.2.9             | 0.0                       | Rectangular              | 1.732050808 | 1     | 1      | 0.0                            | 0.0                             | $\infty$           |
| SAR Scaling***                                                                 | E.6.5             | 2.0                       | Rectangular              | 1.732050808 | 1     | 1      | 1.2                            | 1.2                             | $\infty$           |
| <b>Phantom and Tissue Parameters</b>                                           |                   |                           |                          |             |       |        |                                |                                 |                    |
| Phantom Uncertainty*                                                           | E.3.1             | 4.0                       | Rectangular              | 1.732050808 | 1     | 1      | 2.3                            | 2.3                             | $\infty$           |
| SAR Correction Uncertainty                                                     | E.3.2             | 1.2                       | Normal                   | 1           | 1     | 0.84   | 1.2                            | 1.0                             | $\infty$           |
| Liquid Conductivity (measurement)                                              | E.3.3             | 6.8                       | Normal                   | 1           | 0.78  | 0.71   | 5.3                            | 4.8                             | 10                 |
| Liquid Permittivity (measurement)                                              | E.3.3             | 5.3                       | Normal                   | 1           | 0.23  | 0.26   | 1.2                            | 1.4                             | 10                 |
| Liquid Conductivity (Temperature)                                              | E.3.2             | 0.1                       | Rectangular              | 1.732050808 | 0.78  | 0.71   | 0.1                            | 0.0                             | $\infty$           |
| Liquid Permittivity Temperature)                                               | E.3.2             | 0.0                       | Rectangular              | 1.732050808 | 0.23  | 0.26   | 0.0                            | 0.0                             | $\infty$           |
| <b>Effective Degrees of Freedom<sup>(1)</sup></b>                              |                   |                           |                          |             |       |        |                                | <b><math>V_{eff} =</math></b>   | <b>873.2</b>       |
| <b>Combined Standard Uncertainty</b>                                           |                   |                           | <b>RSS</b>               |             |       |        | <b>12.59</b>                   | <b>12.40</b>                    |                    |
| <b>Expanded Uncertainty (95% Confidence Interval)</b>                          |                   |                           | <b>k=2</b>               |             |       |        | <b>25.18</b>                   | <b>24.80</b>                    |                    |

Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003

(1) The Effective Degrees of Freedom is > 30 therefore a coverage factor of k=2 represents an approximate confidence level of 95%.

\* Provided by SPEAG

Table 13.1

Calculation of the Degrees and Effective Degrees of Freedom

$$v_i = n - 1$$

$$v_{\text{eff}} = \frac{u_c^4}{m \sum_{i=1}^m \frac{c_i^4 u_i^4}{v_i}}$$

## 14.0 TISSUE SIMULATING LIQUID (TSL) RECIPE

Table 14.0

| Simulated Tissue Mixture |             |
|--------------------------|-------------|
| Frequency:               | Fluid Type  |
| 450 MHz                  | HEAD        |
| Ingredient               | % by Weight |
| Water                    | 38.56       |
| Sugar                    | 56.32       |
| Salt                     | 3.95        |
| HEC                      | 0.98        |
| Bactericide              | 0.19        |

## 15.0 FLUID DIELECTRIC PARAMETERS

Table 15.0

| FLUID DIELECTRIC PARAMETERS |           |             |          |            |                        |                        |
|-----------------------------|-----------|-------------|----------|------------|------------------------|------------------------|
| Date:                       | 26-Jan-16 | Fluid Temp: | 22.8     | Frequency: | 450MHz                 | Tissue: Body           |
| Freq (MHz)                  | Test_e    | Test_s      | Target_e | Target_s   | Deviation Permittivity | Deviation Conductivity |
| 350.0000                    | 55.5200   | 0.8600      | 57.7000  | 0.93       | -3.78%                 | -7.53%                 |
| 360.0000                    | 55.9600   | 0.8700      | 57.6000  | 0.93       | -2.85%                 | -6.45%                 |
| 370.0000                    | 55.5200   | 0.8700      | 57.5000  | 0.93       | -3.44%                 | -6.45%                 |
| 380.0000                    | 54.7300   | 0.8800      | 57.4000  | 0.93       | -4.65%                 | -5.38%                 |
| 390.0000                    | 55.0800   | 0.8800      | 57.3000  | 0.93       | -3.87%                 | -5.38%                 |
| 400.0000                    | 55.2100   | 0.8800      | 57.2000  | 0.93       | -3.48%                 | -5.38%                 |
| 410.0000                    | 54.0200   | 0.8900      | 57.1000  | 0.93       | -5.39%                 | -4.30%                 |
| 420.0000                    | 55.3200   | 0.9000      | 57.0000  | 0.94       | -2.95%                 | -4.26%                 |
| 430.0000                    | 54.8700   | 0.9100      | 56.9000  | 0.94       | -3.57%                 | -3.19%                 |
| 440.0000                    | 53.8400   | 0.9200      | 56.8000  | 0.94       | -5.21%                 | -2.13%                 |
| 450.0000                    | 54.5700   | 0.9500      | 56.7000  | 0.94       | -3.76%                 | 1.06%                  |
| 460.0000                    | 54.5500   | 0.9500      | 56.6600  | 0.94       | -3.72%                 | 1.06%                  |
| 470.0000                    | 54.3300   | 0.9500      | 56.6200  | 0.94       | -4.04%                 | 1.06%                  |
| 480.0000                    | 53.3400   | 0.9500      | 56.5800  | 0.94       | -5.73%                 | 1.06%                  |
| 490.0000                    | 53.7100   | 0.9500      | 56.5400  | 0.94       | -5.01%                 | 1.06%                  |
| 500.0000                    | 53.7300   | 0.9700      | 56.5100  | 0.94       | -4.92%                 | 3.19%                  |
| 510.0000                    | 52.9900   | 0.9800      | 56.4700  | 0.94       | -6.16%                 | 4.26%                  |
| 520.0000                    | 52.8000   | 0.9800      | 56.4300  | 0.95       | -6.43%                 | 3.16%                  |
| 530.0000                    | 53.1300   | 1.0100      | 56.3900  | 0.95       | -5.78%                 | 6.32%                  |
| 540.0000                    | 53.0800   | 1.0000      | 56.3500  | 0.95       | -5.80%                 | 5.26%                  |
| 550.0000                    | 53.0700   | 1.0300      | 56.3100  | 0.95       | -5.75%                 | 8.42%                  |

**Table 15.1**

| FLUID DIELECTRIC PARAMETERS |           |             |          |            |                        |                        |
|-----------------------------|-----------|-------------|----------|------------|------------------------|------------------------|
| Date:                       | 29-Jan-16 | Fluid Temp: | 22.4     | Frequency: | 450MHz                 | Tissue: Head           |
| Freq (MHz)                  | Test_e    | Test_s      | Target_e | Target_s   | Deviation Permittivity | Deviation Conductivity |
| 350.0000                    | 45.5600   | 0.7800      | 44.7000  | 0.87       | 1.92%                  | -10.34%                |
| 360.0000                    | 45.0300   | 0.7700      | 44.5800  | 0.87       | 1.01%                  | -11.49%                |
| 370.0000                    | 45.3000   | 0.7800      | 44.4600  | 0.87       | 1.89%                  | -10.34%                |
| 380.0000                    | 44.8100   | 0.7900      | 44.3400  | 0.87       | 1.06%                  | -9.20%                 |
| 390.0000                    | 45.3200   | 0.7900      | 44.2200  | 0.87       | 2.49%                  | -9.20%                 |
| 400.0000                    | 44.8100   | 0.8100      | 44.1000  | 0.87       | 1.61%                  | -6.90%                 |
| 410.0000                    | 44.9100   | 0.8200      | 43.9800  | 0.87       | 2.11%                  | -5.75%                 |
| 420.0000                    | 43.7800   | 0.8300      | 43.8600  | 0.87       | -0.18%                 | -4.60%                 |
| 430.0000                    | 44.5300   | 0.8300      | 43.7400  | 0.87       | 1.81%                  | -4.60%                 |
| 440.0000                    | 43.9200   | 0.8400      | 43.6200  | 0.87       | 0.69%                  | -3.45%                 |
| 450.0000                    | 43.6700   | 0.8600      | 43.5000  | 0.87       | 0.39%                  | -1.15%                 |
| 460.0000                    | 44.0100   | 0.8500      | 43.4500  | 0.87       | 1.29%                  | -2.30%                 |
| 470.0000                    | 43.9300   | 0.8600      | 43.4000  | 0.87       | 1.22%                  | -1.15%                 |
| 480.0000                    | 43.3500   | 0.8700      | 43.3400  | 0.87       | 0.02%                  | 0.00%                  |
| 490.0000                    | 42.9700   | 0.8800      | 43.2900  | 0.87       | -0.74%                 | 1.15%                  |
| 500.0000                    | 42.8200   | 0.9000      | 43.2400  | 0.87       | -0.97%                 | 3.45%                  |
| 510.0000                    | 42.1200   | 0.8900      | 43.1900  | 0.87       | -2.48%                 | 2.30%                  |
| 520.0000                    | 41.8100   | 0.9100      | 43.1400  | 0.88       | -3.08%                 | 3.41%                  |
| 530.0000                    | 42.3900   | 0.9200      | 43.0800  | 0.88       | -1.60%                 | 4.55%                  |
| 540.0000                    | 42.2200   | 0.9200      | 43.0300  | 0.88       | -1.88%                 | 4.55%                  |
| 550.0000                    | 42.2900   | 0.9400      | 42.9800  | 0.88       | -1.61%                 | 6.82%                  |

**Table 15.2**

| FLUID DIELECTRIC PARAMETERS |           |             |          |            |                        |                        |      |
|-----------------------------|-----------|-------------|----------|------------|------------------------|------------------------|------|
| Date:                       | 01-Feb-16 | Fluid Temp: | 22.9     | Frequency: | 2450MHz                | Tissue:                | Head |
| Freq (MHz)                  | Test_e    | Test_s      | Target_e | Target_s   | Deviation Permittivity | Deviation Conductivity |      |
| 2350.0000                   | 36.4100   | 1.7600      | 39.3800  | 1.71       | -7.54%                 | 2.92%                  |      |
| 2360.0000                   | 36.4500   | 1.7900      | 39.3600  | 1.72       | -7.39%                 | 4.07%                  |      |
| 2370.0000                   | 36.2800   | 1.7800      | 39.3400  | 1.73       | -7.78%                 | 2.89%                  |      |
| 2380.0000                   | 36.3200   | 1.7900      | 39.3200  | 1.74       | -7.63%                 | 2.87%                  |      |
| 2390.0000                   | 36.1900   | 1.8100      | 39.3100  | 1.75       | -7.94%                 | 3.43%                  |      |
| 2400.0000                   | 36.0600   | 1.8100      | 39.2900  | 1.76       | -8.22%                 | 2.84%                  |      |
| 2410.0000                   | 36.1000   | 1.8300      | 39.2700  | 1.76       | -8.07%                 | 3.98%                  |      |
| 2420.0000                   | 36.0800   | 1.8300      | 39.2500  | 1.77       | -8.08%                 | 3.39%                  |      |
| 2430.0000                   | 36.2200   | 1.8700      | 39.2400  | 1.78       | -7.70%                 | 5.06%                  |      |
| 2440.0000                   | 36.0800   | 1.8700      | 39.2200  | 1.79       | -8.01%                 | 4.47%                  |      |
| 2450.0000                   | 35.9800   | 1.8900      | 39.2000  | 1.80       | -8.21%                 | 5.00%                  |      |
| 2460.0000                   | 35.9800   | 1.8800      | 39.1900  | 1.81       | -8.19%                 | 3.87%                  |      |
| 2470.0000                   | 36.1200   | 1.9200      | 39.1700  | 1.82       | -7.79%                 | 5.49%                  |      |
| 2480.0000                   | 35.9600   | 1.9000      | 39.1600  | 1.83       | -8.17%                 | 3.83%                  |      |
| 2490.0000                   | 35.7800   | 1.9100      | 39.1500  | 1.84       | -8.61%                 | 3.80%                  |      |
| 2500.0000                   | 35.8900   | 1.9400      | 39.1400  | 1.85       | -8.30%                 | 4.86%                  |      |
| 2510.0000                   | 35.8500   | 1.9500      | 39.1200  | 1.87       | -8.36%                 | 4.28%                  |      |
| 2520.0000                   | 35.7900   | 1.9500      | 39.1100  | 1.88       | -8.49%                 | 3.72%                  |      |
| 2530.0000                   | 35.7100   | 1.9700      | 39.1000  | 1.89       | -8.67%                 | 4.23%                  |      |
| 2540.0000                   | 35.7000   | 2.0100      | 39.0900  | 1.90       | -8.67%                 | 5.79%                  |      |
| 2550.0000                   | 35.7900   | 1.9800      | 39.0700  | 1.91       | -8.40%                 | 3.66%                  |      |



**Table 15.3**

| FLUID DIELECTRIC PARAMETERS |           |             |          |            |                        |                        |
|-----------------------------|-----------|-------------|----------|------------|------------------------|------------------------|
| Date:                       | 03-Feb-16 | Fluid Temp: | 23.3     | Frequency: | 2450MHz                | Tissue: Body           |
| Freq (MHz)                  | Test_e    | Test_s      | Target_e | Target_s   | Deviation Permittivity | Deviation Conductivity |
| 2350.0000                   | 50.4800   | 1.8100      | 52.8300  | 1.85       | -4.45%                 | -2.16%                 |
| 2360.0000                   | 50.5000   | 1.8100      | 52.8200  | 1.86       | -4.39%                 | -2.69%                 |
| 2370.0000                   | 50.6600   | 1.8200      | 52.8100  | 1.87       | -4.07%                 | -2.67%                 |
| 2380.0000                   | 50.3900   | 1.8300      | 52.7900  | 1.88       | -4.55%                 | -2.66%                 |
| 2390.0000                   | 50.1800   | 1.8200      | 52.7800  | 1.89       | -4.93%                 | -3.70%                 |
| 2400.0000                   | 50.2100   | 1.8500      | 52.7700  | 1.90       | -4.85%                 | -2.63%                 |
| 2410.0000                   | 50.1800   | 1.8600      | 52.7500  | 1.91       | -4.87%                 | -2.62%                 |
| 2420.0000                   | 50.1200   | 1.8600      | 52.7400  | 1.92       | -4.97%                 | -3.12%                 |
| 2430.0000                   | 50.0200   | 1.8800      | 52.7300  | 1.93       | -5.14%                 | -2.59%                 |
| 2440.0000                   | 50.0600   | 1.9100      | 52.7100  | 1.94       | -5.03%                 | -1.55%                 |
| 2450.0000                   | 50.0900   | 1.9300      | 52.7000  | 1.95       | -4.95%                 | -1.03%                 |
| 2460.0000                   | 50.1400   | 1.9500      | 52.6900  | 1.96       | -4.84%                 | -0.51%                 |
| 2470.0000                   | 50.2700   | 1.9400      | 52.6700  | 1.98       | -4.56%                 | -2.02%                 |
| 2480.0000                   | 50.0900   | 1.9700      | 52.6600  | 1.99       | -4.88%                 | -1.01%                 |
| 2490.0000                   | 50.0600   | 1.9600      | 52.6500  | 2.01       | -4.92%                 | -2.49%                 |
| 2500.0000                   | 49.9700   | 1.9700      | 52.6400  | 2.02       | -5.07%                 | -2.48%                 |
| 2510.0000                   | 50.0900   | 2.0000      | 52.6200  | 2.04       | -4.81%                 | -1.96%                 |
| 2520.0000                   | 49.9400   | 2.0000      | 52.6100  | 2.05       | -5.08%                 | -2.44%                 |
| 2530.0000                   | 49.8700   | 2.0100      | 52.6000  | 2.06       | -5.19%                 | -2.43%                 |
| 2540.0000                   | 49.7200   | 2.0500      | 52.5900  | 2.08       | -5.46%                 | -1.44%                 |
| 2550.0000                   | 49.9400   | 2.0700      | 52.5700  | 2.09       | -5.00%                 | -0.96%                 |

## 16.0 SYSTEM VERIFICATION TEST RESULTS

Table 16.0

| System Verification Test Results |                        |               |                     |                       |                            |                          |                           |                      |              |        |           |
|----------------------------------|------------------------|---------------|---------------------|-----------------------|----------------------------|--------------------------|---------------------------|----------------------|--------------|--------|-----------|
| Date                             | Frequency<br><br>(MHz) | Fluid<br>Type | Fluid<br>Temp<br>°C | Ambient<br>Temp<br>°C | Ambient<br>Humidity<br>(%) | Forward<br>Power<br>(mW) | Dipole<br>Spacing<br>(mm) | Validation<br>Source |              |        |           |
|                                  |                        |               |                     |                       |                            |                          |                           | P/N                  |              | S/N    |           |
| 26 Jan 2016                      | 450                    | Body          | 22.8                | 25                    | 13%                        | 250                      | 15                        | D450V3               |              | 1068   |           |
| SAR                              |                        |               |                     |                       |                            | Fluid Parameters         |                           |                      |              |        |           |
| 1 gram                           |                        |               | 10 gram             |                       |                            | Permittivity             |                           |                      | Conductivity |        |           |
| Measured                         | Target                 | Deviation     | Measured            | Target                | Deviation                  | Measured                 | Target                    | Deviation            | Measured     | Target | Deviation |
| 1.13                             | 1.12                   | 0.89%         | 0.76                | 0.74                  | 3.52%                      | 54.57                    | 56.70                     | -3.76%               | 0.95         | 0.94   | 1.06%     |

Table 16.1

| System Verification Test Results |                        |               |                     |                       |                            |                          |                           |                      |              |        |           |
|----------------------------------|------------------------|---------------|---------------------|-----------------------|----------------------------|--------------------------|---------------------------|----------------------|--------------|--------|-----------|
| Date                             | Frequency<br><br>(MHz) | Fluid<br>Type | Fluid<br>Temp<br>°C | Ambient<br>Temp<br>°C | Ambient<br>Humidity<br>(%) | Forward<br>Power<br>(mW) | Dipole<br>Spacing<br>(mm) | Validation<br>Source |              |        |           |
|                                  |                        |               |                     |                       |                            |                          |                           | P/N                  |              | S/N    |           |
| 30 Jan 2016                      | 450                    | Head          | 22.9                | 24                    | 13%                        | 250                      | 15                        | D450V3               |              | 1068   |           |
| SAR                              |                        |               |                     |                       | Fluid Parameters           |                          |                           |                      |              |        |           |
| 1 gram                           |                        |               | 10 gram             |                       |                            | Permittivity             |                           |                      | Conductivity |        |           |
| Measured                         | Target                 | Deviation     | Measured            | Target                | Deviation                  | Measured                 | Target                    | Deviation            | Measured     | Target | Deviation |
| 1.15                             | 1.16                   | -0.86%        | 0.78                | 0.78                  | 0.13%                      | 43.67                    | 43.50                     | 0.39%                | 0.86         | 0.87   | -1.15%    |

Table 16.2

| System Verification Test Results |                        |               |                     |                       |                            |                          |                           |                      |              |        |           |
|----------------------------------|------------------------|---------------|---------------------|-----------------------|----------------------------|--------------------------|---------------------------|----------------------|--------------|--------|-----------|
| Date                             | Frequency<br><br>(MHz) | Fluid<br>Type | Fluid<br>Temp<br>°C | Ambient<br>Temp<br>°C | Ambient<br>Humidity<br>(%) | Forward<br>Power<br>(mW) | Dipole<br>Spacing<br>(mm) | Validation<br>Source |              |        |           |
|                                  |                        |               |                     |                       |                            |                          |                           | P/N                  |              | S/N    |           |
| 01 Feb 2016                      | 2450                   | Head          | 22.9                | 26                    | 12%                        | 250                      | 10                        | D2450V2              |              | 825    |           |
| SAR                              |                        |               |                     |                       |                            | Fluid Parameters         |                           |                      |              |        |           |
| 1 gram                           |                        |               | 10 gram             |                       |                            | Permittivity             |                           |                      | Conductivity |        |           |
| Measured                         | Target                 | Deviation     | Measured            | Target                | Deviation                  | Measured                 | Target                    | Deviation            | Measured     | Target | Deviation |
| 12.20                            | 13.10                  | -6.87%        | 5.58                | 6.06                  | -7.92%                     | 35.98                    | 39.20                     | -8.21%               | 1.89         | 1.80   | 5.00%     |

Table 16.3

| System Verification Test Results |        |           |            |            |              |                  |               |                |                   |        |           |
|----------------------------------|--------|-----------|------------|------------|--------------|------------------|---------------|----------------|-------------------|--------|-----------|
| Date                             |        | Frequency | Fluid Type | Fluid Temp | Ambient Temp | Ambient Humidity | Forward Power | Dipole Spacing | Validation Source |        |           |
|                                  |        |           |            |            |              |                  |               |                | P/N               |        | S/N       |
| 03 Feb 2016                      |        | 2450      | Body       | 23.3       | 26           | 12%              | 250           | 10             | D2450V2           |        | 825       |
| SAR                              |        |           |            |            |              | Fluid Parameters |               |                |                   |        |           |
| 1 gram                           |        |           | 10 gram    |            |              | Permittivity     |               |                | Conductivity      |        |           |
| Measured                         | Target | Deviation | Measured   | Target     | Deviation    | Measured         | Target        | Deviation      | Measured          | Target | Deviation |
| 13.30                            | 13.00  | 2.31%     | 6.20       | 6.05       | 2.48%        | 50.09            | 52.70         | -4.95%         | 1.93              | 1.95   | -1.03%    |

## 17.0 MEASUREMENT SYSTEM SPECIFICATIONS

Table 17.0

| Measurement System Specification                       |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b><u>Specifications</u></b>                           |                                                                                   |
| Positioner                                             | Stäubli Unimation Corp. Robot Model: RX60L                                        |
| Repeatability                                          | 0.02 mm                                                                           |
| No. of axis                                            | 6                                                                                 |
| <b><u>Data Acquisition Electronic (DAE) System</u></b> |                                                                                   |
| <b><u>Cell Controller</u></b>                          |                                                                                   |
| Processor                                              | AMD Athlon XP 2400+                                                               |
| Clock Speed                                            | 2.0 GHz                                                                           |
| Operating System                                       | Windows XP Professional                                                           |
| <b><u>Data Converter</u></b>                           |                                                                                   |
| Features                                               | Signal Amplifier, multiplexer, A/D converter, and control logic                   |
| Software                                               | Measurement Software: DASY4, V4.7 Build 80                                        |
|                                                        | Postprocessing Software: SEMCAD, V1.8 Build 186                                   |
| Connecting Lines                                       | Optical downlink for data and status info., Optical uplink for commands and clock |
| <b><u>DASY4 Measurement Server</u></b>                 |                                                                                   |
| Function                                               | Real-time data evaluation for field measurements and surface detection            |
| Hardware                                               | PC/104 166MHz Pentium CPU; 32 MB chipdisk; 64 MB RAM                              |
| Connections                                            | COM1, COM2, DAE, Robot, Ethernet, Service Interface                               |
| <b><u>E-Field Probe</u></b>                            |                                                                                   |
| Model                                                  | EX3DV4                                                                            |
| Serial No.                                             | 3600                                                                              |
| Construction                                           | Triangular core fiber optic detection system                                      |
| Frequency                                              | 10 MHz to 6 GHz                                                                   |
| Linearity                                              | ±0.2 dB (30 MHz to 3 GHz)                                                         |
| <b><u>Phantom</u></b>                                  |                                                                                   |
| Type                                                   | SAM                                                                               |
| Shell Material                                         | Fiberglass                                                                        |
| Thickness                                              | 2mm +/- .2mm                                                                      |
| Volume                                                 | > 30 Liter                                                                        |

**Table 17.1**

## 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 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><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

The SAM phantom is a **Specific Anthropomorphic Mannequin** planar fiberglass shell phantom with a shell thickness of 2.0mm +/- .2mm at the planar area. This phantom conforms to IEEE 1528-2013, IEC 62209-1 and IEC 62209-2.



**SAM Phantom**

### Device Positioner Specification

The DASY4 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  $65^\circ$ . 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.



**Device Positioner**

## 18.0 TEST EQUIPMENT LIST

Table 18.0

### Test Equipment List

| DESCRIPTION                              | ASSET NO. | SERIAL NO. | DATE CALIBRATED | CALIBRATION INTERVAL |
|------------------------------------------|-----------|------------|-----------------|----------------------|
| Schmid & Partner DASY4 System            | -         | -          | -               | -                    |
| -DASY4 Measurement Server                | 00158     | 1078       | CNR             | CNR                  |
| -Robot                                   | 00046     | 599396-01  | CNR             | CNR                  |
| -DAE4                                    | 00019     | 353        | 9 April 2014    | Biennial             |
| -DAE3                                    | 00018     | 370        | 23 April 2015   | Biennial             |
| -EX3DV6 E-Field Probe                    | 00017     | 3600       | 23 April 2015   | Annual               |
| -D450V3 Validation Dipole                | 00221     | 1068       | 21 April 2015   | Triennial            |
| SAM Phantom                              | 00247     | -          | CNR             | CNR                  |
| HP 85070C Dielectric Probe Kit           | 00033     | none       | CNR             | CNR                  |
| Gigatronics 8652A Power Meter            | 00110     | 1835801    | 17 March 2014   | Biennial             |
| Gigatronics 80701A Power Sensor          | 00249     | 1834473    | 17 March 2014   | Biennial             |
| Gigatronics 80701A Power Sensor          | 00248     | 1833687    | 17 March 2014   | Biennial             |
| HP 8753ET Network Analyzer               | 00134     | US39170292 | 22 Oct 2014     | Biennial             |
| Rohde & Schwarz SMR20 Signal Generator   | 00006     | 100104     | 8 May 2014      | Biennial             |
| Amplifier Research 5S1G4 Power Amplifier | 00106     | 26235      | CNR             | CNR                  |

CNR = Calibration Not Required

## APPENDIX A - SAR MEASUREMENT PLOTS

## Plot B19

Date/Time: 29/01/2016 11:48:59 AM

**2024 Jan 29 2016 450B Body 00663 WC**

**DUT: Sepura SC2020 Series ; Type: PTT-Tetra; Serial: Not Specified**

Program Notes: Jan 29 2016 Ambient Temp: 22C Fluid Temp: 21.2C Humidity: 14%

Procedure Notes:

Communication System: UHF 380-470

Frequency: 460 MHz; Duty Cycle: 1:4

Medium: TSL\_450B[26JA16] Medium parameters used:  $f = 460 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(8.8, 8.8, 8.8); Calibrated: 23/04/2015
- Sensor-Surface: 5mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 23/04/2015
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**B19 Body SC2024 3W Antenna 00663 Frequency 460MHz Battery 2/Area Scan (61x161x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.54 mW/g

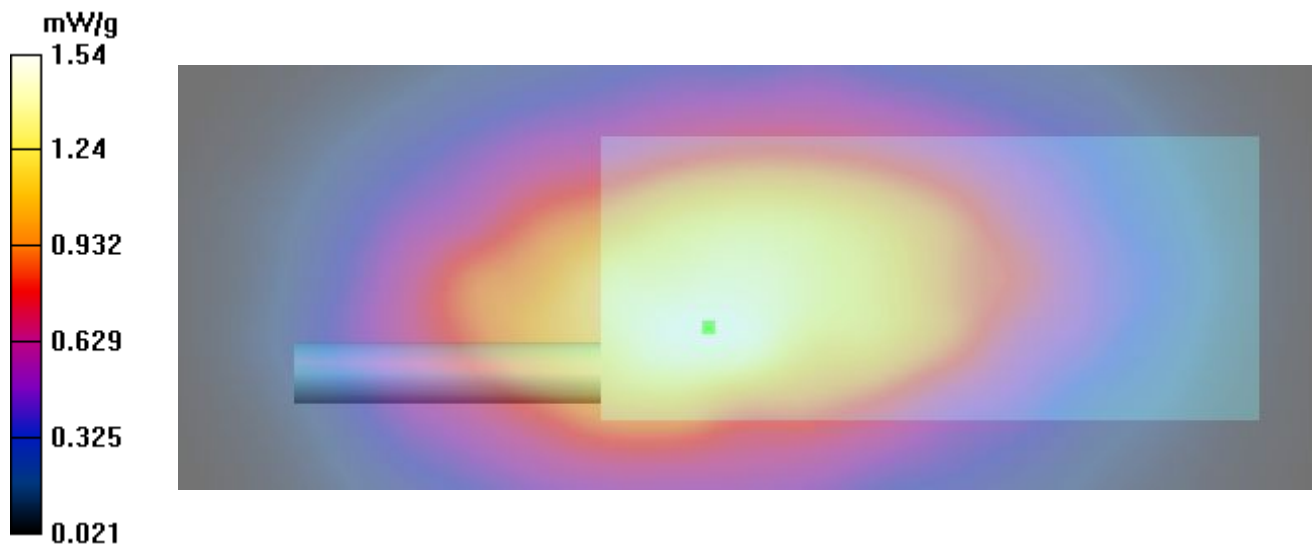
**B19 Body SC2024 3W Antenna 00663 Frequency 460MHz Battery 2/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 35.7 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 2.43 W/kg

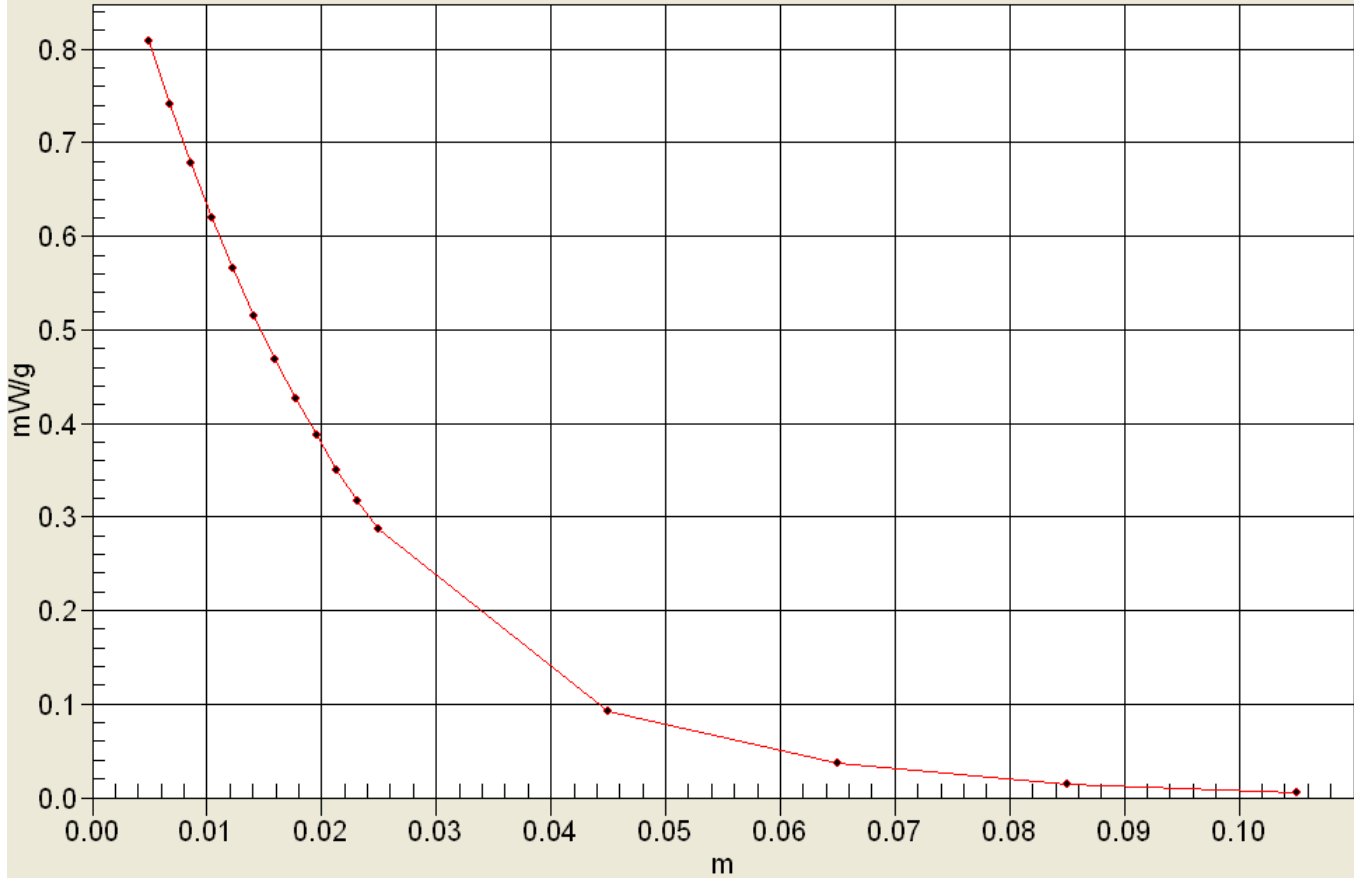
**SAR(1 g) = 1.52 mW/g; SAR(10 g) = 1.08 mW/g**

Maximum value of SAR (measured) = 1.50 mW/g





**Interpolated SAR(x,y,z,f0)**  
 SAR; Z Scan: Value Along Z, X=0, Y=0



Date/Time: 30/01/2016 11:55:06 AM

**2024 Jan 30 2016 450H Face 00662**

**DUT: Sepura SC2020 Series ; Type: PTT-Tetra; Serial: Not Specified**

Program Notes: Jan 30 2016 Ambient Temp: 24C Fluid Temp: 22.9C Humidity: 13%

Procedure Notes:

Communication System: UHF 380-470

Frequency: 430 MHz; Duty Cycle: 1:4

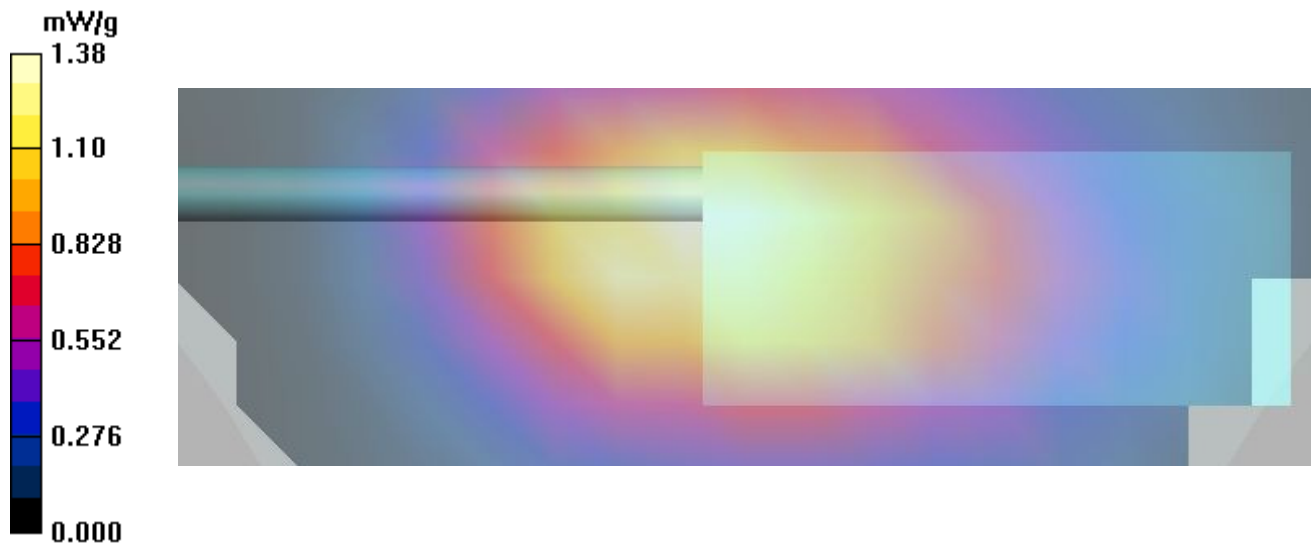
Medium: TSL\_450H[29JA16] Medium parameters used:  $f = 430 \text{ MHz}$ ;  $\sigma = 0.83 \text{ mho/m}$ ;  $\epsilon_r = 44.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(9.03, 9.03, 9.03); Calibrated: 23/04/2015
- Sensor-Surface: 5mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 23/04/2015
- Phantom: SAM with CRP; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

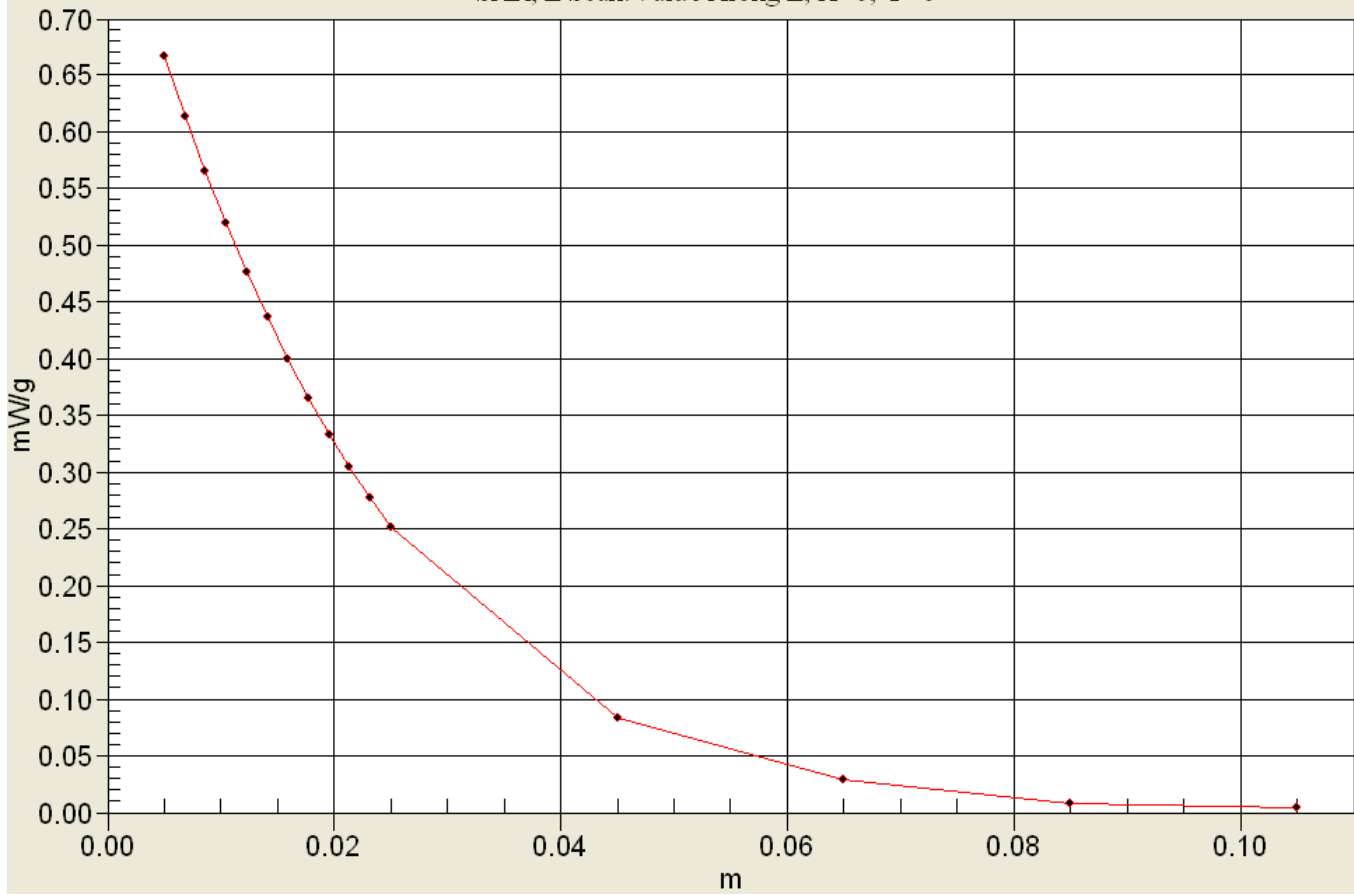
**F3 Face SC2024 3W Antenna 00662 Frequency 430.0MHz High/Area Scan (7x21x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (measured) = 1.38 mW/g

**F3 Face SC2024 3W Antenna 00662 Frequency 430.0MHz High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$   
Reference Value = 39.0 V/m; Power Drift = 0.367 dB  
Peak SAR (extrapolated) = 2.02 W/kg  
**SAR(1 g) = 1.42 mW/g; SAR(10 g) = 1.02 mW/g**

Maximum value of SAR (measured) = 1.43 mW/g



**Interpolated SAR(x,y,z,f0)**  
 SAR; Z Scan: Value Along Z, X=0, Y=0



## Plot LC11

Date/Time: 27/06/2015 8:46:47 PM

2024 June 27 2015 450H 3W Head wc 00663

DUT: Sepura SC2020 Series ; Type: PTT-Tetra; Serial: **Not Specified**

Program Notes: June 27 2015 Ambient Temp: 27C Fluid Temp: 24.1C Humidity: 22%

Procedure Notes:

Communication System: UHF 380-470

Frequency: 450 MHz; Duty Cycle: 1:4

Medium: TSL\_450H Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 45.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(9.03, 9.03, 9.03); Calibrated: 23/04/2015
- Sensor-Surface: 5mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 23/04/2015
- Phantom: SAM with CRP; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LC SC2024 3W Antenna 00663 Frequency 450MHz Low/Area Scan (7x19x1): Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 3.52 mW/g

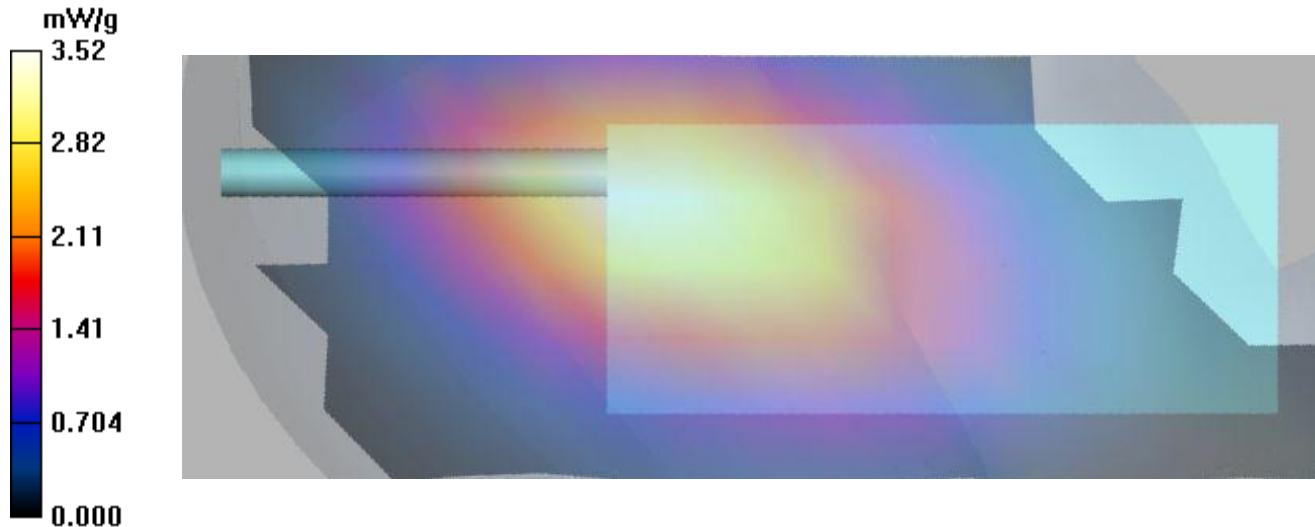
LC SC2024 3W Antenna 00663 Frequency 450MHz Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.8 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 5.30 W/kg

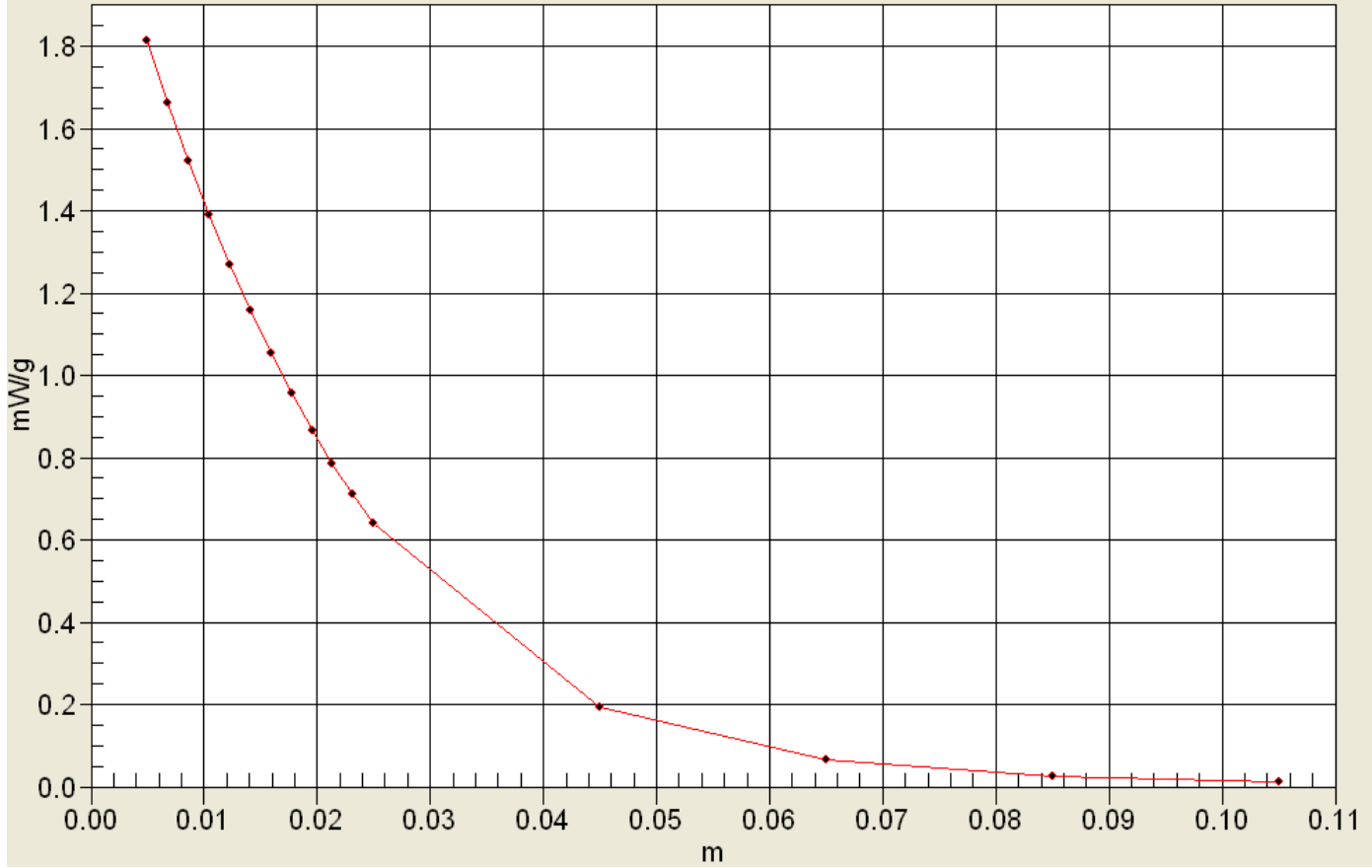
**SAR(1 g) = 3.61 mW/g; SAR(10 g) = 2.45 mW/g**

Maximum value of SAR (measured) = 3.59 mW/g



### Interpolated SAR(x,y,z,f0)

SAR; Z Scan: Value Along Z, X=0, Y=0



## APPENDIX B - SYSTEM VERIFICATION MEASUREMENT PLOTS

Date/Time: 26/01/2016 2:15:59 PM

**SPC 450B - 26 Jan 2016**

**DUT: Dipole 450 MHz; Type: D450V3; Serial: 1068; Calibrated: 04/27/2012**

Program Notes: 30 Dec 2015 Ambient Temp: 25C Fluid Temp: 23.8C; Humidity: 9%

Procedure Notes:

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: TSL\_450B[26JA16] Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600 2015; ConvF(8.8, 8.8, 8.8); Calibrated: 23/04/2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370 2015; Calibrated: 23/04/2015
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Body d=15mm Pin=250mW, TS=[1.008][1.12][1.232]/Area Scan (41x61x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.22 mW/g

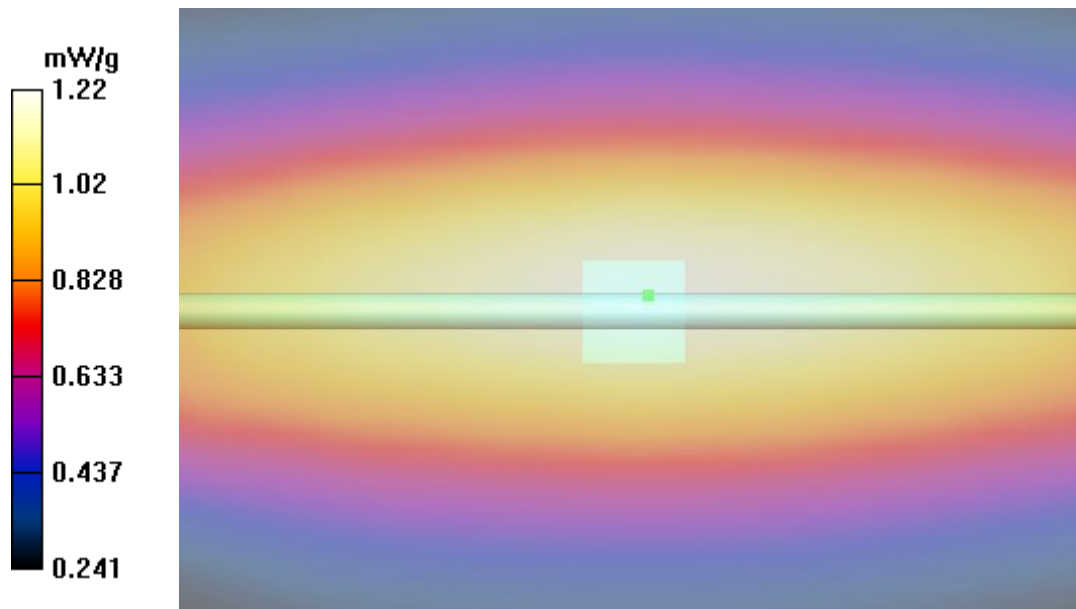
**Body d=15mm Pin=250mW, TS=[1.008][1.12][1.232]/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 35.6 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 1.65 W/kg

**SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.764 mW/g**

Maximum value of SAR (measured) = 1.21 mW/g



Date/Time: 30/01/2016 10:05:32 AM

# SPC 450H - 30 Jan 2016

**DUT: Dipole 450 MHz; Type: D450V3; Serial: 1068; Calibrated: 04/27/2012**

Program Notes: 30 Jan 2016 Ambient Temp: 24C Fluid Temp: 22.9C; Humidity: 13%

## Procedure Notes:

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: TSL\_450H[29JA16] Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.86 \text{ mho/m}$ ;  $\epsilon_r = 43.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600 2015; ConvF(9.03, 9.03, 9.03); Calibrated: 23/04/2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370 2015; Calibrated: 23/04/2015
- Phantom: SAM with CRP; Type: SAM; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Head d=15mm Pin=250mW, TS=[1.044][1.16][1.276]/Area Scan (5x5x1):** Measurement grid: dx=15mm, dy=15mm

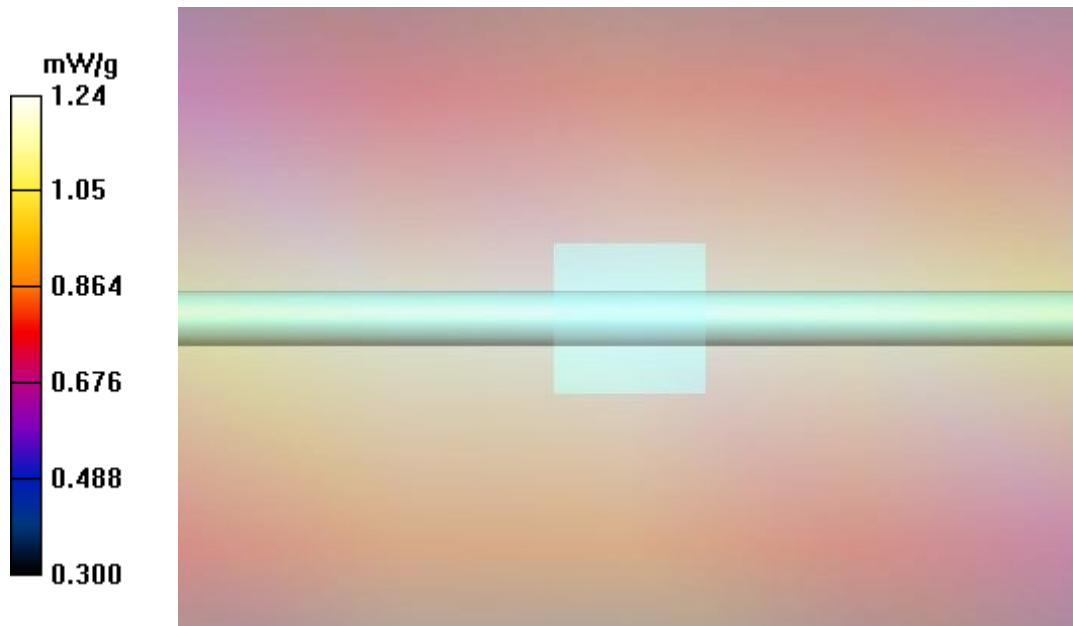
Maximum value of SAR (measured) = 1.24 mW/g

**Head d=15mm Pin=250mW, TS=[1.044][1.16][1.276]/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 38.4 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 1.68 W/kg

**SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.779 mW/g**



Date/Time: 01/02/2016 3:59:48 PM

## SPC 2450H 01 February 2016

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 825; Calibrated: 25/04/2012**

Program Notes: 01 February 2016 Ambient Temp: 26C; Fluid Temp: 22.9C; Humidity: 12%

### Procedure Notes:

Communication System: CW

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: TSL\_2450H[01FE16] Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.89 \text{ mho/m}$ ;  $\epsilon_r = 36$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600 2015; ConvF(6.06, 6.06, 6.06); Calibrated: 23/04/2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370 2015; Calibrated: 23/04/2015
- Phantom: SAM with CRP; Type: SAM; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**2450 MHz Head Dipole d=10mm P=250mW TS=[11.43][12.70][13.97]/Area Scan (5x5x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (measured) = 12.4 mW/g

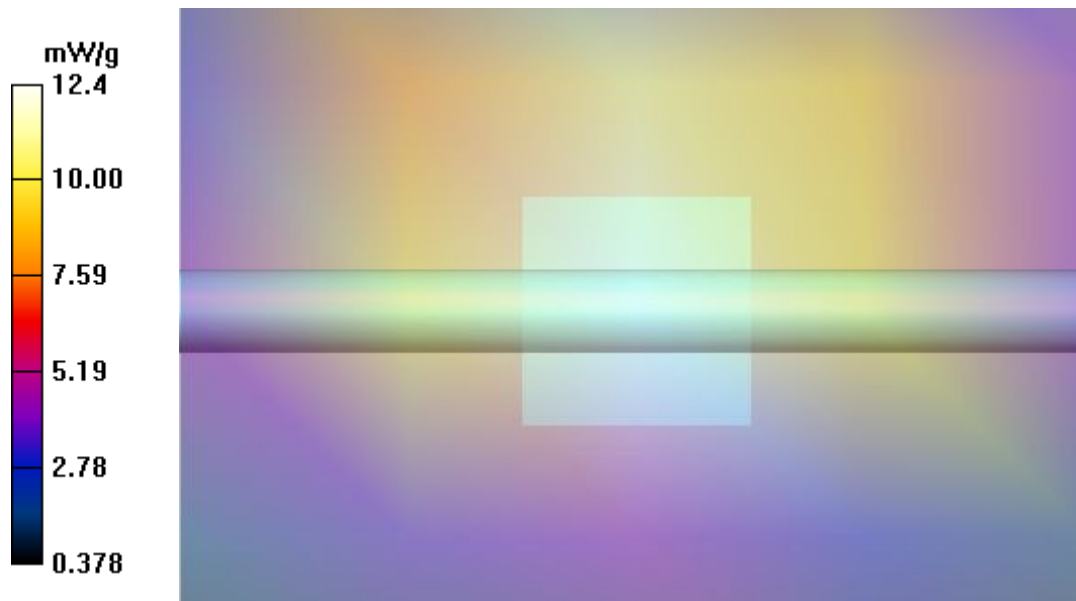
**2450 MHz Head Dipole d=10mm P=250mW TS=[11.43][12.70][13.97]/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 75.4 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 26.5 W/kg

**SAR(1 g) = 12.2 mW/g; SAR(10 g) = 5.58 mW/g**

Maximum value of SAR (measured) = 13.9 mW/g





Date/Time: 03/02/2016 5:33:04 PM

## SPC 2450B 03 February 2016

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 825; Calibrated: 25/04/2012**

Program Notes: 01 February 2016 Ambient Temp: 26C; Fluid Temp: 22.9C; Humidity: 12%

### Procedure Notes:

Communication System: CW

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: TSL\_2450H[01FE16] Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.89 \text{ mho/m}$ ;  $\epsilon_r = 36$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600 2015; ConvF(6.06, 6.06, 6.06); Calibrated: 23/04/2015
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370 2015; Calibrated: 23/04/2015
- Phantom: SAM with CRP; Type: SAM; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**2450 MHz Head Dipole d=10mm P=250mW TS=[11.70][13.00][14.30]/Area Scan (5x5x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (measured) = 12.6 mW/g

**2450 MHz Head Dipole d=10mm P=250mW TS=[11.70][13.00][14.30]/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 69.0 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 27.1 W/kg

**SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.2 mW/g**

Maximum value of SAR (measured) = 15.2 mW/g

