

## SAR Compliance Test Report

**APPLICANT NAME & ADDRESS :**

Iris ID, Inc.  
512, Daerung Post Tower 1st Suite, 288, Digital -ro, Guro -gu,  
Seoul, 08390, Republic of Korea

**DATA & LOCATION OF TESTING**

Dates of testing : 2018-08-06 ~ 2018-08-20  
Test Site :  
140-16 Eongmalli -ro, Majang -myeon,  
Icheon -si, Gyeonggi -do, Korea

**Test Device :**

FCC ID : ZKE -ICAMM300

MODEL : iCAM M300

APPLICANT : Iris ID, Inc.

**Test Report No. :**

ESTSFC1810-001

**FCC Rule Part(s) :**

FCC 47 CFR §2.1093, IEEE STD 1528 - 2013

**Applicant Type :**

Certification

**Rule Part(s) :**

Published RF exposure KDB procedures (IEEE Std 1528 -2013)

- o 248227 D01 802.11 Wi-Fi SAR v02r02
- o 447498 D01 General RF Exposure Guidance v06
- o 447498 D03 Supplement C Cross -Reference v01
- o 616217 D04 SAR for laptop and tablets v01r02
- o 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- o 865664 D02 RF Exposure Reporting v01r02
- o 941225 D01 3G SAR Procedures v03r01
- o 941225 D05 SAR for LTE Devices v02r05
- o 941225 D06 Hotspot Mode v02r01

**Number of page :**

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**Test results :**

The Tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.

**Date and Signatures :** 2018-10-16**Report Prepared By :** Engineer / Sun-Duk Hong

(Signature)

Engineering Manager / In-Ki Hong

(Signature)

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## 1. SUMMARY FOR TEST REPORT

|                          |   |
|--------------------------|---|
| FCC ID                   | ZKE -ICAMM300   |
| Date of test             | 2018 -08 -06 ~ 2018 -08 -20   |
| Measurement performed by | Sun -Duk Hong   |
| Technical Reviewer       | In -Ki Hong   |
| EUT Type                 | Portable Data Collection Terminal   |
| Frequency                | Bluetooth : 2402 ~ 2480 MHz<br>802.11b/g/n20 : 2412 ~ 2462 MHz<br>802.11a/n20/n40/ac80 : 5150 ~ 5250 MHz,<br>5745~5825 MHz<br>LTE FDD2 : 1850~1910 MHz<br>LTE FDD4 : 1710~1755 MHz<br>LTE FDD5 : 824~849 MHz<br>LTE FDD17 : 704~716 MHz<br>GSM 850 : 824~850 MHz<br>GSM 1900 : 1850~1910 MHz<br>WCDMA BAND2 : 1852.4~1907.6 MHz<br>WCDMA BAND4 : 1712.4~1752.6 MHz<br>WCDMA BAND5 : 826.4~846.6 MHz |
| Duty Cycle               | >98%  |
| Battery Type             | 5.8 V (BATTERY)   |

## 1.1 Head and Body Worn Configuration

Max. SAR Measurement

| BAND               | Tx. FREQUENCY<br>(MHz) | SAR(W/kg)           |                            |
|--------------------|------------------------|---------------------|----------------------------|
|                    |                        | 1g - Head<br>(W/kg) | 10g - Body -Worm<br>(W/kg) |
| GSM/GPRS/EDGE 850  | 824 ~ 850              | 0.450               | 0.384                      |
| GSM/GPRS/EDGE 1900 | 1 850 ~ 1 910          | 0.262               | 0.519                      |
| WCDMA 2            | 1 852.4 ~ 1 907.6      | 0.652               | 1.140                      |
| WCDMA 4            | 1 712.4 ~ 1 752.6      | 0.645               | 1.192                      |
| WCDMA 5            | 826.4 ~ 846.6          | 0.772               | 0.516                      |
| LTE FDD2           | 1 850 ~ 1 910          | 0.321               | 0.841                      |
| LTE FDD4           | 1 710 ~ 1 755          | 0.330               | 0.881                      |
| LTE FDD5           | 824 ~ 849              | 0.320               | 0.320                      |
| LTE FDD17          | 704 ~ 716              | 0.260               | 0.498                      |
| 802.11n HT20       | 2 412 ~ 2 462          | 0.417               | 0.018                      |

Highest Simultaneous SAR Summary

| BAND             | HEAD  |       | Highest Scaled 1g(W/kg) | BODY  |       | Dist | Highest Scaled 10g(W/kg) |
|------------------|-------|-------|-------------------------|-------|-------|------|--------------------------|
| GSM850 + WIFI    | 0.450 | 0.371 | 0.821                   | 0.384 | 0.016 | 0    | 0.400                    |
| GSM1900 + WIFI   | 0.262 | 0.371 | 0.633                   | 0.519 | 0.016 | 0    | 0.535                    |
| WCDMA 2 + WIFI   | 0.652 | 0.371 | 1.023                   | 0.114 | 0.016 | 0    | 0.130                    |
| WCDMA 4 + WIFI   | 0.645 | 0.371 | 1.016                   | 0.192 | 0.016 | 0    | 0.208                    |
| WCDMA 5 + WIFI   | 0.772 | 0.371 | 1.143                   | 0.516 | 0.016 | 0    | 0.532                    |
| LTE FDD2 + WIFI  | 0.321 | 0.371 | 0.692                   | 0.841 | 0.016 | 0    | 0.857                    |
| LTE FDD4 + WIFI  | 0.330 | 0.371 | 0.701                   | 0.881 | 0.016 | 0    | 0.897                    |
| LTE FDD5 + WIFI  | 0.320 | 0.371 | 0.691                   | 0.320 | 0.016 | 0    | 0.336                    |
| LTE FDD17 + WIFI | 0.260 | 0.371 | 0.631                   | 0.498 | 0.016 | 0    | 0.514                    |

## 1.2 Measurement Uncertainty

|                               |   |
|-------------------------------|---|
| Combine Standard Uncertainty  | ± 11.00 ( $k=1$ )                       |
| Extended Standard Uncertainty | ± 22.00 ( $k=2$ , 95% CONFIDENCE LEVEL) |

### 1.3 Conducted RF Output Power Table

#### 1.3.1 GSM Conducted Power

| GSM 850      |           | Measured Power (dBm) |       |       | Average Power (dBm) |       |       |
|--------------|-----------|----------------------|-------|-------|---------------------|-------|-------|
|              |           | 128                  | 190   | 251   | 128                 | 190   | 251   |
| GPRS         | 1 Txslots | 33.22                | 33.35 | 33.43 | 24.19               | 24.32 | 24.40 |
|              | 2 Txslots | 32.54                | 32.66 | 32.75 | 26.52               | 26.64 | 26.73 |
|              | 3 Txslots | 30.75                | 30.89 | 30.98 | 26.49               | 26.63 | 26.72 |
|              | 4 Txslots | 29.54                | 29.71 | 29.79 | 26.53               | 26.70 | 26.78 |
| EGPRS (GMSK) | 1 Txslots | 33.20                | 33.33 | 33.40 | 24.17               | 24.30 | 24.37 |
|              | 2 Txslots | 32.53                | 32.64 | 32.73 | 26.51               | 26.62 | 26.71 |
|              | 3 Txslots | 30.73                | 30.88 | 30.98 | 26.47               | 26.62 | 26.72 |
|              | 4 Txslots | 29.52                | 29.70 | 29.78 | 26.51               | 26.69 | 26.77 |
| EGPRS (8PSK) | 1 Txslots | 26.36                | 26.30 | 26.24 | 17.33               | 17.27 | 17.21 |
|              | 2 Txslots | 25.35                | 25.44 | 25.35 | 19.33               | 19.42 | 19.33 |
|              | 3 Txslots | 23.71                | 23.52 | 23.63 | 19.45               | 19.26 | 19.37 |
|              | 4 Txslots | 22.51                | 22.45 | 22.75 | 19.50               | 19.44 | 19.74 |
| GSM 1900     |           | Measured Power (dBm) |       |       | Average Power (dBm) |       |       |
|              |           | 512                  | 661   | 810   | 512                 | 661   | 810   |
| GPRS         | 1 Txslots | 30.58                | 30.79 | 30.72 | 21.55               | 21.76 | 21.69 |
|              | 2 Txslots | 29.63                | 29.96 | 29.96 | 23.61               | 23.94 | 23.94 |
|              | 3 Txslots | 27.38                | 27.90 | 28.08 | 23.12               | 23.64 | 23.82 |
|              | 4 Txslots | 26.08                | 26.61 | 26.87 | 23.07               | 23.60 | 23.86 |
| EGPRS (GMSK) | 1 Txslots | 30.57                | 30.78 | 30.70 | 21.54               | 21.75 | 21.67 |
|              | 2 Txslots | 29.62                | 29.95 | 29.95 | 23.60               | 23.93 | 23.93 |
|              | 3 Txslots | 27.38                | 27.89 | 28.08 | 23.12               | 23.63 | 23.82 |
|              | 4 Txslots | 26.07                | 26.59 | 26.85 | 23.06               | 23.58 | 23.84 |
| EGPRS (8PSK) | 1 Txslots | 25.08                | 25.08 | 25.17 | 16.05               | 16.05 | 16.14 |
|              | 2 Txslots | 24.48                | 24.88 | 24.75 | 18.46               | 18.86 | 18.73 |
|              | 3 Txslots | 22.61                | 23.04 | 22.57 | 18.35               | 18.78 | 18.31 |
|              | 4 Txslots | 21.43                | 21.86 | 21.39 | 18.42               | 18.85 | 18.38 |

#### NOTES:

1) Division Factors To average the power, the division factor is as follows:

1TX -slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX -slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX -slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX -slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

According to the conducted power as above, the body measurements are performed with 4Txslots for GSM 850 and 2Txslots for GSM 1900.

### 1.3.2 WCDMA Conducted Power

| ITEM  | BAND  | WCDMA BAND2          |                      |                      |
|-------|-------|----------------------|----------------------|----------------------|
|       | ARFCN | 9262<br>(1852.4 MHz) | 9400<br>(1880.0 MHz) | 9538<br>(1907.6 MHz) |
| WCDMA | non   | <b>23.56</b>         | <b>23.42</b>         | <b>23.58</b>         |
| HSDPA | 1     | 22.81                | 22.82                | 22.48                |
|       | 2     | 22.78                | 22.25                | 22.51                |
|       | 3     | 22.79                | 22.25                | 22.49                |
|       | 4     | 22.23                | 22.26                | 22.50                |
| HSUPA | 1     | 20.28                | 20.29                | 20.55                |
|       | 2     | 20.24                | 20.26                | 20.51                |
|       | 3     | 21.25                | 21.26                | 21.51                |
|       | 4     | 20.79                | 20.86                | 20.99                |
|       | 5     | 22.80                | 22.80                | 23.05                |

| ITEM  | BAND  | WCDMA BAND4          |                      |                      |
|-------|-------|----------------------|----------------------|----------------------|
|       | ARFCN | 1312<br>(1712.4 MHz) | 1413<br>(1732.6 MHz) | 1513<br>(1752.6 MHz) |
| WCDMA | non   | <b>23.61</b>         | <b>23.61</b>         | <b>23.51</b>         |
| HSDPA | 1     | 22.61                | 22.51                | 22.51                |
|       | 2     | 22.61                | 22.61                | 21.71                |
|       | 3     | 22.21                | 22.11                | 22.01                |
|       | 4     | 22.11                | 22.09                | 22.01                |
| HSUPA | 1     | 20.71                | 20.71                | 20.51                |
|       | 2     | 20.68                | 20.14                | 20.51                |
|       | 3     | 20.69                | 20.71                | 20.51                |
|       | 4     | 20.08                | 20.05                | 20.01                |
|       | 5     | 22.71                | 22.51                | 22.61                |

| ITEM  | BAND  | WCDMA BAND5         |                     |                     |
|-------|-------|---------------------|---------------------|---------------------|
|       | ARFCN | 4132<br>(826.4 MHz) | 4183<br>(836.6 MHz) | 4233<br>(846.6 MHz) |
| WCDMA | non   | <b>23.13</b>        | <b>22.88</b>        | <b>22.93</b>        |
| HSDPA | 1     | 21.73               | 21.85               | 21.62               |
|       | 2     | 21.78               | 21.55               | 21.61               |
|       | 3     | 21.79               | 21.61               | 21.66               |
|       | 4     | 21.78               | 21.63               | 21.65               |
| HSUPA | 1     | 19.68               | 19.78               | 19.70               |
|       | 2     | 19.64               | 19.52               | 19.58               |
|       | 3     | 20.72               | 20.53               | 20.59               |
|       | 4     | 20.16               | 20.02               | 20.11               |
|       | 5     | 22.04               | 21.85               | 21.94               |

\* Note : This device does not support DC-HSDPA

### 1.3.3 LTE Conducted Power

| LTE FDD2        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 1860              | 1880              | 1900               |  |
| Channel         |            |         |           | 18700             | 18900             | 19100              |  |
| 20              | QPSK       | 1       | Low       | 23.94             | 23.73             | 23.14              |  |
|                 |            | 1       | Mid       | 23.80             | 23.55             | 22.96              |  |
|                 |            | 1       | High      | 23.70             | 23.42             | 23.01              |  |
|                 |            | 50      | Low       | 22.97             | 22.72             | 22.09              |  |
|                 |            | 50      | Mid       | 23.01             | 22.63             | 21.93              |  |
|                 |            | 50      | High      | 22.76             | 22.60             | 22.01              |  |
|                 |            | 100     | -         | 22.91             | 22.61             | 22.02              |  |
|                 | 16QAM      | 1       | Low       | 23.12             | 23.01             | 22.43              |  |
|                 |            | 1       | Mid       | 23.21             | 22.76             | 22.19              |  |
|                 |            | 1       | High      | 23.20             | 22.93             | 22.24              |  |
|                 |            | 50      | Low       | 22.05             | 21.74             | 21.18              |  |
|                 |            | 50      | Mid       | 21.98             | 21.63             | 21.15              |  |
|                 |            | 50      | High      | 21.48             | 21.61             | 21.09              |  |
|                 |            | 100     | -         | 21.96             | 21.69             | 21.17              |  |
| Frequency (MHz) |            |         |           | 1857.5            | 1880              | 1902.5             |  |
| Channel         |            |         |           | 18675             | 18900             | 19125              |  |
| 15              | QPSK       | 1       | Low       | 24.01             | 24.03             | 23.50              |  |
|                 |            | 1       | Mid       | 23.86             | 24.12             | 23.28              |  |
|                 |            | 1       | High      | 24.12             | 24.15             | 23.24              |  |
|                 |            | 36      | Low       | 22.76             | 22.87             | 22.27              |  |
|                 |            | 36      | Mid       | 22.93             | 22.88             | 22.20              |  |
|                 |            | 36      | High      | 22.89             | 22.82             | 22.15              |  |
|                 |            | 75      | -         | 22.90             | 22.86             | 22.09              |  |
|                 | 16QAM      | 1       | Low       | 23.20             | 22.48             | 22.93              |  |
|                 |            | 1       | Mid       | 23.07             | 23.47             | 22.74              |  |
|                 |            | 1       | High      | 23.30             | 23.50             | 22.81              |  |
|                 |            | 36      | Low       | 21.85             | 22.01             | 21.43              |  |
|                 |            | 36      | Mid       | 21.92             | 22.02             | 21.32              |  |
|                 |            | 36      | High      | 21.95             | 22.01             | 21.43              |  |
|                 |            | 75      | -         | 22.01             | 21.93             | 21.22              |  |

| LTE FDD2        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 1855.0            | 1880.0            | 1905.0             |  |
| Channel         |            |         |           | 18650             | 18900             | 19150              |  |
| 10              | QPSK       | 1       | Low       | 24.01             | 23.70             | 23.31              |  |
|                 |            | 1       | Mid       | 23.86             | 23.60             | 23.27              |  |
|                 |            | 1       | High      | 23.92             | 23.66             | 23.25              |  |
|                 |            | 25      | Low       | 22.90             | 22.64             | 22.04              |  |
|                 |            | 25      | Mid       | 22.94             | 22.60             | 22.01              |  |
|                 |            | 25      | High      | 22.99             | 22.55             | 22.02              |  |
|                 |            | 50      | -         | 23.01             | 22.63             | 22.85              |  |
|                 | 16QAM      | 1       | Low       | 23.12             | 22.85             | 22.72              |  |
|                 |            | 1       | Mid       | 23.19             | 22.90             | 22.65              |  |
|                 |            | 1       | High      | 23.17             | 23.00             | 22.65              |  |
|                 |            | 25      | Low       | 22.09             | 21.92             | 21.14              |  |
|                 |            | 25      | Mid       | 21.95             | 21.63             | 21.15              |  |
|                 |            | 25      | High      | 21.93             | 21.55             | 21.11              |  |
|                 |            | 50      | -         | 21.67             | 21.63             | 21.12              |  |
| Frequency (MHz) |            |         |           | 1852.5            | 1880.0            | 1907.5             |  |
| Channel         |            |         |           | 18625             | 18900             | 19175              |  |
| 5               | QPSK       | 1       | Low       | <b>24.05</b>      | <b>24.28</b>      | <b>23.74</b>       |  |
|                 |            | 1       | Mid       | 24.16             | 24.15             | 23.32              |  |
|                 |            | 1       | High      | 23.79             | 23.78             | 23.03              |  |
|                 |            | 12      | Low       | 23.11             | 23.15             | 22.61              |  |
|                 |            | 12      | Mid       | 23.15             | 23.18             | 22.48              |  |
|                 |            | 12      | High      | 23.06             | 23.02             | 22.35              |  |
|                 |            | 25      | -         | 22.97             | 23.16             | 22.51              |  |
|                 | 16QAM      | 1       | Low       | 23.39             | 23.67             | 23.03              |  |
|                 |            | 1       | Mid       | 23.36             | 23.45             | 22.79              |  |
|                 |            | 1       | High      | 23.10             | 23.12             | 22.35              |  |
|                 |            | 12      | Low       | 22.15             | 22.22             | 21.55              |  |
|                 |            | 12      | Mid       | 22.17             | 22.16             | 21.58              |  |
|                 |            | 12      | High      | 22.07             | 22.08             | 21.39              |  |
|                 |            | 25      | -         | 22.06             | 22.15             | 21.55              |  |

| LTE FDD2        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 1908.5            | 1880.0            | 1851.5             |  |
| Channel         |            |         |           | 18615             | 18900             | 19185              |  |
| 3               | QPSK       | 1       | Low       | 23.83             | 23.44             | 23.19              |  |
|                 |            | 1       | Mid       | 23.90             | 23.45             | 23.02              |  |
|                 |            | 1       | High      | 23.83             | 23.52             | 22.02              |  |
|                 |            | 8       | Low       | 22.91             | 22.51             | 22.01              |  |
|                 |            | 8       | Mid       | 22.88             | 22.54             | 21.96              |  |
|                 |            | 8       | High      | 22.82             | 22.49             | 22.07              |  |
|                 |            | 15      | -         | 22.80             | 22.54             | 22.72              |  |
|                 | 16QAM      | 1       | Low       | 23.22             | 22.75             | 22.53              |  |
|                 |            | 1       | Mid       | 23.05             | 22.71             | 22.38              |  |
|                 |            | 1       | High      | 22.95             | 22.73             | 21.16              |  |
|                 |            | 8       | Low       | 21.94             | 21.64             | 21.15              |  |
|                 |            | 8       | Mid       | 21.92             | 21.62             | 21.18              |  |
|                 |            | 8       | High      | 21.89             | 21.60             | 21.13              |  |
|                 |            | 15      | -         | 21.95             | 21.64             | 22.08              |  |
| Frequency (MHz) |            |         |           | 1909.3            | 1880.0            | 1850.7             |  |
| Channel         |            |         |           | 18607             | 18900             | 19193              |  |
| 1.4             | QPSK       | 1       | Low       | 23.74             | 23.60             | 23.15              |  |
|                 |            | 1       | Mid       | 23.84             | 23.57             | 23.17              |  |
|                 |            | 1       | High      | 23.76             | 23.62             | 23.12              |  |
|                 |            | 3       | Low       | 23.77             | 23.71             | 22.99              |  |
|                 |            | 3       | Mid       | 23.82             | 23.68             | 22.98              |  |
|                 |            | 3       | High      | 23.80             | 23.63             | 23.07              |  |
|                 |            | 6       | -         | 23.15             | 22.51             | 22.11              |  |
|                 | 16QAM      | 1       | Low       | 23.02             | 22.63             | 22.06              |  |
|                 |            | 1       | Mid       | 23.06             | 22.63             | 22.05              |  |
|                 |            | 1       | High      | 23.02             | 22.65             | 21.96              |  |
|                 |            | 3       | Low       | 22.87             | 22.43             | 22.07              |  |
|                 |            | 3       | Mid       | 22.93             | 22.52             | 22.14              |  |
|                 |            | 3       | High      | 22.92             | 22.41             | 22.04              |  |
|                 |            | 6       | -         | 22.28             | 22.63             | 21.19              |  |

| LTE FDD4        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 1720.0            | 1732.0            | 1745.0             |  |
| Channel         |            |         |           | 20050             | 20175             | 20300              |  |
| 20              | QPSK       | 1       | Low       | 23.52             | 23.55             | 23.57              |  |
|                 |            | 1       | Mid       | 23.42             | 23.48             | 23.45              |  |
|                 |            | 1       | High      | 23.48             | 23.43             | 23.45              |  |
|                 |            | 50      | Low       | 22.82             | 22.77             | 22.79              |  |
|                 |            | 50      | Mid       | 22.78             | 22.80             | 22.71              |  |
|                 |            | 50      | High      | 22.77             | 22.73             | 22.77              |  |
|                 |            | 100     | -         | 22.68             | 22.72             | 22.65              |  |
|                 | 16QAM      | 1       | Low       | 22.40             | 22.39             | 22.47              |  |
|                 |            | 1       | Mid       | 22.29             | 22.27             | 22.31              |  |
|                 |            | 1       | High      | 22.25             | 22.31             | 22.29              |  |
|                 |            | 50      | Low       | 21.86             | 21.78             | 21.81              |  |
|                 |            | 50      | Mid       | 21.69             | 21.72             | 21.76              |  |
|                 |            | 50      | High      | 21.72             | 21.75             | 21.64              |  |
|                 |            | 100     | -         | 21.60             | 21.59             | 21.63              |  |
| Frequency (MHz) |            |         |           | 1717.5            | 1732.5            | 1747.5             |  |
| Channel         |            |         |           | 20025             | 20175             | 20325              |  |
| 15              | QPSK       | 1       | Low       | 23.67             | 23.58             | 23.62              |  |
|                 |            | 1       | Mid       | 23.49             | 23.52             | 23.48              |  |
|                 |            | 1       | High      | 23.35             | 23.39             | 23.40              |  |
|                 |            | 36      | Low       | 22.74             | 22.71             | 22.80              |  |
|                 |            | 36      | Mid       | 22.82             | 22.69             | 22.75              |  |
|                 |            | 36      | High      | 22.71             | 22.83             | 22.77              |  |
|                 |            | 75      | -         | 22.76             | 22.82             | 22.71              |  |
|                 | 16QAM      | 1       | Low       | 22.47             | 22.45             | 22.41              |  |
|                 |            | 1       | Mid       | 22.41             | 22.38             | 22.35              |  |
|                 |            | 1       | High      | 22.38             | 22.41             | 22.29              |  |
|                 |            | 36      | Low       | 21.89             | 21.93             | 21.92              |  |
|                 |            | 36      | Mid       | 21.81             | 21.85             | 21.76              |  |
|                 |            | 36      | High      | 21.72             | 21.81             | 21.74              |  |
|                 |            | 75      | -         | 21.78             | 21.74             | 21.75              |  |

| LTE FDD4        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 1715.0            | 1732.5            | 1750.0             |  |
| Channel         |            |         |           | 20000             | 20175             | 20350              |  |
| 10              | QPSK       | 1       | Low       | 23.66             | 23.64             | 23.59              |  |
|                 |            | 1       | Mid       | 23.48             | 23.51             | 23.54              |  |
|                 |            | 1       | High      | 23.41             | 23.45             | 23.51              |  |
|                 |            | 25      | Low       | 22.82             | 22.91             | 22.92              |  |
|                 |            | 25      | Mid       | 22.81             | 22.84             | 22.75              |  |
|                 |            | 25      | High      | 22.82             | 22.88             | 22.83              |  |
|                 |            | 50      | -         | 22.71             | 22.75             | 22.67              |  |
|                 | 16QAM      | 1       | Low       | 22.46             | 22.39             | 22.38              |  |
|                 |            | 1       | Mid       | 22.18             | 22.21             | 22.27              |  |
|                 |            | 1       | High      | 22.14             | 22.20             | 22.18              |  |
|                 |            | 25      | Low       | 21.70             | 21.73             | 21.64              |  |
|                 |            | 25      | Mid       | 21.69             | 21.72             | 21.67              |  |
|                 |            | 25      | High      | 21.72             | 21.76             | 21.83              |  |
|                 |            | 50      | -         | 21.68             | 21.71             | 21.77              |  |
| Frequency (MHz) |            |         |           | 1712.5            | 1732.5            | 1752.5             |  |
| Channel         |            |         |           | 19975             | 20175             | 20375              |  |
| 5               | QPSK       | 1       | Low       | <b>23.71</b>      | <b>23.68</b>      | <b>23.65</b>       |  |
|                 |            | 1       | Mid       | 23.64             | 23.59             | 23.57              |  |
|                 |            | 1       | High      | 23.51             | 23.57             | 23.59              |  |
|                 |            | 12      | Low       | 22.86             | 22.77             | 22.83              |  |
|                 |            | 12      | Mid       | 22.74             | 22.71             | 22.79              |  |
|                 |            | 12      | High      | 22.78             | 22.75             | 22.80              |  |
|                 |            | 25      | -         | 22.61             | 22.55             | 22.64              |  |
|                 | 16QAM      | 1       | Low       | 22.28             | 22.33             | 22.31              |  |
|                 |            | 1       | Mid       | 22.37             | 22.30             | 22.35              |  |
|                 |            | 1       | High      | 22.29             | 22.34             | 22.27              |  |
|                 |            | 12      | Low       | 21.87             | 21.79             | 21.75              |  |
|                 |            | 12      | Mid       | 21.69             | 21.61             | 21.72              |  |
|                 |            | 12      | High      | 21.71             | 21.77             | 21.69              |  |
|                 |            | 25      | -         | 21.57             | 21.64             | 21.61              |  |

| LTE FDD4        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 1711.5            | 1732.5            | 1753.5             |  |
| Channel         |            |         |           | 19965             | 20175             | 20385              |  |
| 3               | QPSK       | 1       | Low       | 23.55             | 23.54             | 23.49              |  |
|                 |            | 1       | Mid       | 23.59             | 23.52             | 23.51              |  |
|                 |            | 1       | High      | 23.43             | 23.47             | 23.43              |  |
|                 |            | 8       | Low       | 22.78             | 22.64             | 22.70              |  |
|                 |            | 8       | Mid       | 22.67             | 22.77             | 22.72              |  |
|                 |            | 8       | High      | 22.56             | 22.66             | 22.71              |  |
|                 |            | 15      | -         | 22.55             | 22.46             | 22.53              |  |
|                 | 16QAM      | 1       | Low       | 22.71             | 22.73             | 22.61              |  |
|                 |            | 1       | Mid       | 22.63             | 22.43             | 22.71              |  |
|                 |            | 1       | High      | 22.85             | 22.91             | 22.94              |  |
|                 |            | 8       | Low       | 22.79             | 22.74             | 22.83              |  |
|                 |            | 8       | Mid       | 22.32             | 22.35             | 22.40              |  |
|                 |            | 8       | High      | 22.50             | 22.43             | 22.41              |  |
|                 |            | 15      | -         | 22.46             | 22.55             | 22.56              |  |
| Frequency (MHz) |            |         |           | 1710.7            | 1732.5            | 1754.3             |  |
| Channel         |            |         |           | 19957             | 20175             | 20393              |  |
| 1.4             | QPSK       | 1       | Low       | 23.56             | 23.52             | 23.55              |  |
|                 |            | 1       | Mid       | 23.53             | 23.60             | 23.54              |  |
|                 |            | 1       | High      | 23.52             | 23.56             | 23.58              |  |
|                 |            | 3       | Low       | 22.70             | 22.65             | 22.72              |  |
|                 |            | 3       | Mid       | 22.65             | 22.72             | 22.68              |  |
|                 |            | 3       | High      | 22.69             | 22.74             | 22.75              |  |
|                 |            | 6       | -         | 22.67             | 22.70             | 22.68              |  |
|                 | 16QAM      | 1       | Low       | 22.38             | 22.45             | 22.44              |  |
|                 |            | 1       | Mid       | 22.41             | 22.48             | 22.43              |  |
|                 |            | 1       | High      | 22.38             | 22.30             | 22.36              |  |
|                 |            | 3       | Low       | 21.68             | 21.70             | 21.75              |  |
|                 |            | 3       | Mid       | 21.64             | 21.61             | 21.65              |  |
|                 |            | 3       | High      | 21.69             | 21.72             | 21.62              |  |
|                 |            | 6       | -         | 21.52             | 21.56             | 21.51              |  |

| LTE FDD5        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 836.5             |                   |                    |  |
| Channel         |            |         |           | 20525             |                   |                    |  |
| 10              | QPSK       | 1       | Low       | 24.16             |                   |                    |  |
|                 |            | 1       | Mid       | 24.12             |                   |                    |  |
|                 |            | 1       | High      | 24.08             |                   |                    |  |
|                 |            | 25      | Low       | 22.93             |                   |                    |  |
|                 |            | 25      | Mid       | 22.96             |                   |                    |  |
|                 |            | 25      | High      | 22.95             |                   |                    |  |
|                 |            | 50      | -         | 22.92             |                   |                    |  |
|                 | 16QAM      | 1       | Low       | 22.23             |                   |                    |  |
|                 |            | 1       | Mid       | 22.04             |                   |                    |  |
|                 |            | 1       | High      | 21.95             |                   |                    |  |
|                 |            | 25      | Low       | 21.04             |                   |                    |  |
|                 |            | 25      | Mid       | 21.00             |                   |                    |  |
|                 |            | 25      | High      | 20.95             |                   |                    |  |
|                 |            | 50      | -         | 21.01             |                   |                    |  |
| Frequency (MHz) |            |         |           | 826.5             | 836.5             | 846.5              |  |
| Channel         |            |         |           | 20425             | 20525             | 20625              |  |
| 5               | QPSK       | 1       | Low       | <b>24.17</b>      | <b>24.20</b>      | <b>24.19</b>       |  |
|                 |            | 1       | Mid       | 24.15             | 24.13             | 24.16              |  |
|                 |            | 1       | High      | 24.14             | 24.17             | 24.13              |  |
|                 |            | 12      | Low       | 23.06             | 22.95             | 23.02              |  |
|                 |            | 12      | Mid       | 23.02             | 22.93             | 22.98              |  |
|                 |            | 12      | High      | 23.06             | 22.97             | 23.02              |  |
|                 |            | 25      | -         | 23.04             | 23.02             | 22.96              |  |
|                 | 16QAM      | 1       | Low       | 22.34             | 22.34             | 22.17              |  |
|                 |            | 1       | Mid       | 22.28             | 21.95             | 21.99              |  |
|                 |            | 1       | High      | 22.23             | 21.93             | 21.95              |  |
|                 |            | 12      | Low       | 22.02             | 21.99             | 21.94              |  |
|                 |            | 12      | Mid       | 22.05             | 21.98             | 21.93              |  |
|                 |            | 12      | High      | 22.09             | 21.95             | 22.02              |  |
|                 |            | 25      | -         | 22.06             | 22.00             | 22.00              |  |

| LTE FDD5        |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 825.5             | 836.5             | 847.5              |  |
| Channel         |            |         |           | 20415             | 20625             | 20635              |  |
| 3               | QPSK       | 1       | Low       | 24.18             | 24.00             | 24.18              |  |
|                 |            | 1       | Mid       | 24.23             | 13.24.22          | 24.25              |  |
|                 |            | 1       | High      | 24.13             | 24.20             | 24.18              |  |
|                 |            | 8       | Low       | 23.08             | 22.95             | 22.95              |  |
|                 |            | 8       | Mid       | 22.98             | 22.91             | 23.02              |  |
|                 |            | 8       | High      | 22.97             | 22.94             | 22.96              |  |
|                 |            | 15      | -         | 23.07             | 22.92             | 23.05              |  |
|                 | 16QAM      | 1       | Low       | 22.38             | 22.16             | 22.25              |  |
|                 |            | 1       | Mid       | 22.39             | 22.13             | 22.17              |  |
|                 |            | 1       | High      | 22.41             | 22.20             | 22.20              |  |
|                 |            | 8       | Low       | 22.10             | 22.03             | 22.04              |  |
|                 |            | 8       | Mid       | 22.03             | 22.06             | 21.98              |  |
|                 |            | 8       | High      | 22.04             | 22.00             | 22.06              |  |
|                 |            | 15      | -         | 21.99             | 21.93             | 21.96              |  |
| Frequency (MHz) |            |         |           | 824.7             | 836.5             | 848.3              |  |
| Channel         |            |         |           | 20407             | 20625             | 20643              |  |
| 1.4             | QPSK       | 1       | Low       | 23.94             | 24.12             | 24.06              |  |
|                 |            | 1       | Mid       | 24.01             | 24.13             | 24.11              |  |
|                 |            | 1       | High      | 23.97             | 24.14             | 23.94              |  |
|                 |            | 3       | Low       | 23.97             | 23.97             | 23.96              |  |
|                 |            | 3       | Mid       | 23.91             | 23.96             | 23.96              |  |
|                 |            | 3       | High      | 23.85             | 23.91             | 23.94              |  |
|                 |            | 6       | -         | 22.95             | 22.96             | 23.01              |  |
|                 | 16QAM      | 1       | Low       | 22.17             | 22.34             | 22.23              |  |
|                 |            | 1       | Mid       | 22.20             | 22.26             | 22.24              |  |
|                 |            | 1       | High      | 22.10             | 22.19             | 22.21              |  |
|                 |            | 3       | Low       | 22.41             | 22.37             | 22.46              |  |
|                 |            | 3       | Mid       | 22.33             | 22.36             | 22.41              |  |
|                 |            | 3       | High      | 22.33             | 22.45             | 22.42              |  |
|                 |            | 6       | -         | 22.02             | 22.09             | 22.05              |  |

| LTE FDD17       |            |         |           |                   |                   |                    |  |
|-----------------|------------|---------|-----------|-------------------|-------------------|--------------------|--|
| BW(MHz)         | Modulation | RB size | RB Offset | Power(dBm)<br>Low | Power(dBm)<br>Mid | Power(dBm)<br>High |  |
| Frequency (MHz) |            |         |           | 710.0             |                   |                    |  |
| Channel         |            |         |           |                   |                   |                    |  |
| 10              | QPSK       | 1       | Low       | 23.48             |                   |                    |  |
|                 |            | 1       | Mid       | 23.43             |                   |                    |  |
|                 |            | 1       | High      | 23.42             |                   |                    |  |
|                 |            | 25      | Low       | 22.51             |                   |                    |  |
|                 |            | 25      | Mid       | 22.50             |                   |                    |  |
|                 |            | 25      | High      | 22.51             |                   |                    |  |
|                 |            | 50      | -         | 22.59             |                   |                    |  |
|                 | 16QAM      | 1       | Low       | 21.56             |                   |                    |  |
|                 |            | 1       | Mid       | 21.54             |                   |                    |  |
|                 |            | 1       | High      | 21.52             |                   |                    |  |
|                 |            | 25      | Low       | 21.56             |                   |                    |  |
|                 |            | 25      | Mid       | 21.51             |                   |                    |  |
|                 |            | 25      | High      | 21.58             |                   |                    |  |
|                 |            | 50      | -         | 21.63             |                   |                    |  |
| Frequency (MHz) |            |         |           | 706.5             | 710.0             | 713.5              |  |
| Channel         |            |         |           |                   |                   |                    |  |
| 5               | QPSK       | 1       | Low       | <b>23.48</b>      | <b>23.45</b>      | <b>23.45</b>       |  |
|                 |            | 1       | Mid       | 23.43             | 23.41             | 23.41              |  |
|                 |            | 1       | High      | 23.43             | 23.37             | 23.38              |  |
|                 |            | 12      | Low       | 22.52             | 22.50             | 22.49              |  |
|                 |            | 12      | Mid       | 22.50             | 22.51             | 22.47              |  |
|                 |            | 12      | High      | 22.49             | 22.48             | 22.45              |  |
|                 |            | 25      | -         | 22.57             | 22.56             | 22.54              |  |
|                 | 16QAM      | 1       | Low       | 21.54             | 21.51             | 21.53              |  |
|                 |            | 1       | Mid       | 21.56             | 21.52             | 21.52              |  |
|                 |            | 1       | High      | 21.49             | 21.47             | 21.43              |  |
|                 |            | 12      | Low       | 21.57             | 21.54             | 21.51              |  |
|                 |            | 12      | Mid       | 21.58             | 21.55             | 21.50              |  |
|                 |            | 12      | High      | 21.60             | 21.59             | 21.56              |  |
|                 |            | 25      | -         | 21.54             | 21.53             | 21.59              |  |

### 1.3.4 WIFI Conducted Power

802.11b (dBm)

| BAND       | Channel / Rate | 1    | 2    | 5.5  | 11   |
|------------|----------------|------|------|------|------|
| 2.4<br>GHz | 1 (2 412 MHz)  | 7.55 | 7.62 | 7.65 | 7.54 |
|            | 6 (2 437 MHz)  | 8.51 | 8.54 | 8.65 | 8.61 |
|            | 11 (2 462 MHz) | 9.42 | 9.34 | 9.49 | 9.28 |

802.11g (dBm)

| BAND       | Channel / Rate | 6     | 9     | 12    | 18    | 24    | 36    | 48    | 54    |
|------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2.4<br>GHz | 1 (2 412 MHz)  | 14.14 | 14.05 | 14.03 | 14.02 | 13.96 | 13.91 | 13.88 | 13.81 |
|            | 6 (2 437 MHz)  | 14.94 | 14.91 | 14.85 | 14.81 | 14.75 | 14.63 | 14.54 | 14.43 |
|            | 11 (2 462 MHz) | 15.55 | 15.43 | 15.46 | 15.38 | 15.32 | 15.24 | 15.18 | 15.18 |

802.11n20 (dBm)

| BAND       | Channel / Rate | MCS0         | MCS1  | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
|------------|----------------|--------------|-------|-------|-------|-------|-------|-------|-------|
| 2.4<br>GHz | 1 (2 412 MHz)  | <b>15.03</b> | 14.96 | 14.88 | 14.87 | 14.76 | 14.68 | 14.62 | 14.56 |
|            | 6 (2 437 MHz)  | <b>15.33</b> | 15.28 | 15.31 | 15.25 | 15.21 | 15.12 | 15.02 | 14.93 |
|            | 11 (2 462 MHz) | <b>16.38</b> | 16.31 | 16.24 | 16.18 | 16.15 | 16.08 | 16.02 | 15.9  |

### 802.11a (dBm)

| BAND           | Channel / Rate | 6     | 9     | 12    | 18    | 24    | 36    | 48    | 54    |
|----------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 GHz<br>BAND1 | 38 (5180 MHz)  | -5.49 | -5.65 | -5.72 | -5.78 | -5.87 | -5.98 | -6.12 | -6.81 |
|                | 44 (5220 MHz)  | -5.08 | -5.14 | -5.24 | -5.29 | -5.35 | -5.4  | -5.45 | -5.56 |
|                | 48 (5240 MHz)  | -4.58 | -4.64 | -4.72 | -4.76 | -4.82 | -4.89 | -4.94 | -4.99 |
| 5 GHz<br>BAND4 | 149 (5745 MHz) | -1.09 | -1.25 | -1.31 | -1.36 | -1.44 | -1.49 | -1.56 | -1.6  |
|                | 157 (5785 MHz) | -0.88 | -1.05 | -1.17 | -1.26 | -1.32 | -1.44 | -1.53 | -1.69 |
|                | 165 (5825 MHz) | -0.93 | -1.18 | -1.29 | -1.37 | -1.42 | -1.48 | -1.56 | -1.65 |

### 802.11n20 (dBm)

| BAND           | Channel / Rate | MCS0  | MCS1  | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
|----------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 GHz<br>BAND1 | 38 (5180 MHz)  | -4.27 | -4.57 | -4.64 | -4.72 | -4.81 | -4.94 | -4.99 | -5.07 |
|                | 44 (5220 MHz)  | -3.91 | -4.19 | -4.28 | -4.34 | -4.41 | -4.49 | -4.54 | -4.62 |
|                | 48 (5240 MHz)  | -3.60 | -3.81 | -3.89 | -3.92 | -4.00 | -4.05 | -4.12 | -4.19 |
| 5 GHz<br>BAND4 | 149 (5745 MHz) | 0.19  | 0.16  | 0.12  | 0.03  | -0.07 | -0.13 | -0.21 | -0.29 |
|                | 157 (5785 MHz) | 0.52  | 0.51  | 0.44  | 0.31  | 0.24  | 0.19  | 0.12  | 0.01  |
|                | 165 (5825 MHz) | 0.44  | 0.32  | 0.23  | 0.18  | 0.12  | 0.04  | -0.01 | -0.09 |

### 802.11n40 (dBm)

| BAND           | Channel / Rate | MCS0  | MCS1  | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
|----------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 GHz<br>BAND1 | 38 (5190 MHz)  | -4.62 | -4.92 | -4.98 | -5.05 | -5.12 | -5.19 | -5.26 | -5.37 |
|                | 48 (5230 MHz)  | -4.04 | -4.54 | -5.59 | -5.65 | -5.76 | -5.82 | -5.89 | -5.98 |
| 5 GHz<br>BAND4 | 151 (5755 MHz) | 0.24  | 0.15  | 0.02  | -0.08 | -0.17 | -0.25 | -0.37 | -0.49 |
|                | 159 (5795 MHz) | 0.39  | -0.11 | -0.19 | -0.27 | -0.38 | -0.49 | -0.61 | -0.72 |

### 802.11ac80 (dBm)

| BAND           | Channel / Rate | MCS0  | MCS1  | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  | MCS8  |
|----------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 GHz<br>BAND1 | 42 (5210 MHz)  | -6.01 | -6.38 | -0.54 | -0.81 | -0.98 | -1.11 | -1.2  | -1.31 | -1.42 |
|                |                |       |       |       |       |       |       |       |       |       |
| 5 GHz<br>BAND4 | 155 (5775 MHz) | -1.42 | -1.59 | -1.63 | -1.78 | -1.91 | -2.01 | -2.12 | -2.26 | -2.36 |
|                |                |       |       |       |       |       |       |       |       |       |

### 1.3.5 BLUETOOTH Conducted Power

#### Bluetooth

| MODE | Channel / Freq | Output Power (dBm) | Output Power (mW) |
|------|----------------|--------------------|-------------------|
| BDR  | 1 (2402 MHz)   | 4.00               | 2.51              |
|      | 39 (2441 MHz)  | 4.00               | 2.51              |
|      | 78 (2480 MHz)  | 4.00               | 2.51              |
| EDR  | 1 (2402 MHz)   | 2.00               | 1.58              |
|      | 39 (2441 MHz)  | 2.00               | 1.58              |
|      | 78 (2480 MHz)  | 2.00               | 1.58              |
| LE   | 1 (2402 MHz)   | 2.00               | 1.58              |
|      | 20 (2442 MHz)  | 2.00               | 1.58              |
|      | 39 (2480 MHz)  | 2.00               | 1.58              |

#### Note :

Per FCC KDB 447498 D01v06, The SAR exclusion threshold for distance < 50mm is defined by the following equation:

$$\frac{\text{MaxPowerofChannel}(mW)}{\text{TestSeparationDistance}(mm)} * \sqrt{\text{Frequency}(GHz)} \leq 3.0(\text{1g SAR}), 7.5(\text{10g SAR})$$

| MODE | Frequency<br>(MHz) | Maximum Allowed<br>Power (mW) | Separation Distance<br>(mm) | $\leq 3.0$ | $\leq 7.5$ |
|------|--------------------|-------------------------------|-----------------------------|------------|------------|
|      |                    |                               |                             | 1g SAR     | 10g SAR    |
| BDR  | 2480               | 4.00                          | 5                           | 0.78       |            |
|      |                    | 4.00                          | 10                          | 0.39       |            |
|      |                    | 4.00                          | 15                          | 0.26       |            |
|      |                    | 4.00                          | 5                           |            | 0.78       |

Based on the maximum conducted power of Bluetooth LE and antenna to use separation distance Bluetooth SAR was not required  $[(4/5)^* 2.480] = 0.78 \cdot 3.0, [(4/15)^* 2.480] = 0.26 \cdot 3.0$  for 1-g SAR,  
 $[(4/10)^* 2.480] = 0.39 \cdot 3.0$  for 1-g SAR,  $[(4/5)^* 2.480] = 0.78 \cdot 7.5$  for 10-g SAR.

### 1.3.6 5 GHz WLAN Conducted Power

#### 5 GHz WLAN

| MODE           | Channel / Freq | Output Power (dBm) | Output Power (mW) |
|----------------|----------------|--------------------|-------------------|
| 5 GHz<br>BAND1 | 38 (5180 MHz)  | -4.27              | 0.37              |
|                | 44 (5220 MHz)  | -3.91              | 0.41              |
|                | 48 (5240 MHz)  | -3.60              | 0.44              |
| 5 GHz<br>BAND4 | 149 (5745 MHz) | 0.19               | 1.04              |
|                | 157 (5785 MHz) | 0.52               | 1.13              |
|                | 165 (5825 MHz) | 0.44               | 1.11              |

#### Note :

Per FCC KDB 447498 D01v06, The SAR exclusion threshold for distance < 50mm is defined by the following equation:

$$\frac{\text{MaxPowerofChannel}(mW)}{\text{TestSeparationDistance}(mm)} * \sqrt{\text{Frequency}(GHz)} \leq 3.0(\text{1g SAR}), 7.5(\text{10g SAR})$$

| MODE           | Frequency<br>(MHz) | Maximum Allowed<br>Power (mW) | Separation Distance<br>(mm) | $\leq 3.0$ | $\leq 7.5$ |
|----------------|--------------------|-------------------------------|-----------------------------|------------|------------|
|                |                    |                               |                             | 1g SAR     | 10g SAR    |
| 5 GHz<br>BAND4 | 5785               | 0.52                          | 5                           | 0.54       |            |
|                |                    | 0.52                          | 10                          | 0.27       |            |
|                |                    | 0.52                          | 15                          | 0.18       |            |
|                |                    | 0.52                          | 5                           |            | 0.54       |

Based on the maximum conducted power of 5 GHz WLAN and antenna to use separation distance 5 GHz WALN SAR was not required  $[(0.52/5) * 5.785] = 0.54 < 3.0$ ,  $[(0.52/10) * 5.785] = 0.27 < 3.0$  for 1-g SAR,  $[(0.52/15) * 5.785] = 0.18 < 3.0$  for 10-g SAR.

## 2. DESCRIPTION OF THE DEVICE UNDER TEST

The FCC rules for evaluating portable devices for RF exposure compliance are contained in 47 CFR §2.1093. For purposes of RF exposure evaluation, a portable device is defined as a transmitting device designed to be used with any part of its radiating structure in direct contact with the user's body or within 20 cm of the body of a user or bystanders under normal operating conditions. This category of devices would include hand-held that incorporate the radiating antenna into the hand-piece and wireless transmitters that are carried next to the body. Portable services are evaluated with respect to SAR limits for RF exposure. The applicable SAR limit for portable transmitters used by consumers is 1.6 W/kg, which is averaged over any one gram of tissue defined as a tissue volume in the shape of a cube.

### 2.1 Antenna Description

|          |                                   |
|----------|-----------------------------------|
| Type     | PiFA Antenna ,PCB Antenna         |
| Location | the type of the device (Fig. 4.5) |

### 2.2 Device Description

|                      |                        |                    |
|----------------------|------------------------|--------------------|
| Serial numbers       | NONE                   |                    |
| Exposure environment | Uncontrolled exposure  |                    |
| Device category      | Portable device        |                    |
| Mode(s) of Operation | 802.11b/g/n            |                    |
| Modulation Mode(s)   | DSSS,OFDM,QPSK, 16QAM  |                    |
| Duty Cycle           | >98%                   |                    |
| test signal method   | Base station simulator | Internal test code |

### 3.3 Battery Options

- Standard     Extended

### 3. TEST CONDITIONS

#### 3.1 Ambient Conditions

|  |           |
|--|-----------|
| Ambient Temperature ( C )                  | (21 ~ 22) |
| Tissue simulating liquid temperature ( C ) | (21 ~ 22) |
| Humidity (% R.H.)                          | (49 ~ 51) |

#### 3.2 RF Characteristics of The Test Site

This measurement were performed in a fully enclosed RF Shielded environment

#### 3.3 Test Signal, Frequencies, And Output Power

The Mobile Computer was placed into simulated call mode

In all operation bands the measurements were performed on lowest, middle and highest channels.

The Mobile Computer was placed into simulated call mode was set to maximum power level during the all tests and at the beginning of the each test the battery was fully charged

DASY4 system measures power drift during SAR testing by comparing e -field in the same location at the beginning and at the end of measurement. These records were used to monitor stability of power output.

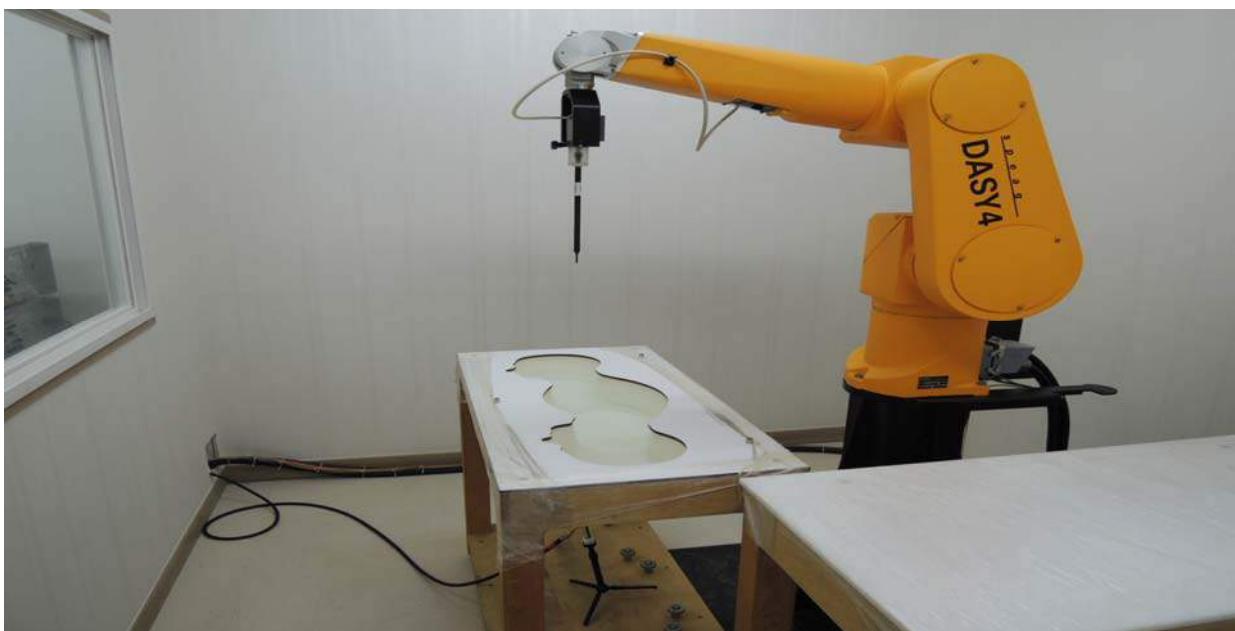


Fig. 4.1 SAR Measurement System

## 4. DESCRIPTION OF THE TEST EQUIPMENT

An SAR measurement system usually consists of a small diameter isotropic electric field probe, a multiple axis probe positioning system, a test device holder, one or more phantom models, the field probe instrumentation, a computer and other electronic equipment for controlling the probe and making the measurements. Other supporting equipment, such as a network analyzer, power meters and RF signal generators, are also required to measure the dielectric parameters of the simulated tissue media and to verify the measurement accuracy of the SAR system.

### 4.1 Test System Specifications

| Test Equipment | Model                                    | Serial Number          | Cal. Date    |
|----------------|--|------------------------|--------------|
| DAE            | DAE4                                     | 551                    | 2019 -01 -28 |
| E -Field Probe | ES3DV3                                   | 3123                   | 2019 -01 -22 |
|                | SSE2                                     | 08/16_EPG291           | 2018 -12 -19 |
| Dipole Antenna | D750V3                                   | 1162                   | 2020 -07 -24 |
|                | D835V2                                   | 475                    | 2018 -11 -16 |
|                | D900V2                                   | 1d023                  | 2018 -11 -16 |
|                | D1750V2                                  | 1151                   | 2020 -07 -20 |
|                | D1800V2                                  | 2d059                  | 2018 -11 -16 |
|                | D1900V2                                  | 5d058                  | 2018 -11 -21 |
|                | D1950V2                                  | 1022                   | 2020 -01 -28 |
|                | D2450V2                                  | 741                    | 2020 -01 -27 |
|                | D2600V2                                  | 1127                   | 2020 -07 -26 |
|                | D5GHzV2                                  | 1137                   | 2018 -11 -18 |
|                | Comosar 300MHz Reference Dipole          | 03/14 DIP<br>0G300-284 | 2020 -03 -13 |
|                | Comosar 450MHz Reference Dipole          | 03/14 DIP<br>0G450-285 | 2020 -03 -13 |
|                | Comosar 835MHz Reference Dipole          | 03/14 DIP<br>0G835-286 | 2020 -03 -13 |
|                | Comosar 900MHz Reference Dipole          | 03/14 DIP<br>0G900-287 | 2020 -03 -13 |
|                | Comosar 1800MHz Reference Dipole         | 03/14 DIP<br>1G800-288 | 2020 -03 -13 |
|                | Comosar 1900MHz Reference Dipole         | 03/14 DIP<br>1G900-289 | 2020 -03 -13 |
|                | Comosar 2000MHz Reference Dipole         | 03/14 DIP<br>2G000-290 | 2020 -03 -13 |
|                | Comosar 2450MHz Reference Dipole         | 03/14 DIP<br>2G450-291 | 2020 -03 -13 |
|                | Comosar 5000-6000MHz Reference Waveguide | 48/13 WGA30            | 2020 -03 -13 |

## 4. DESCRIPTION OF THE TEST EQUIPMENT

| Test Equipment               | Model        | Serial Number | Cal. Date    |
|------------------------------|--------------|---------------|--------------|
| Network analyzer             | 8753ES       | MY40000609    | 2018 -09 -29 |
| Signal generator             | SMBV100A     | 256663        | 2018 -12 -26 |
| RF Power meter               | EPM -442A    | GB37170412    | 2018 -12 -26 |
| Power Sensor                 | 8481A        | 3318A96476    | 2018 -12 -26 |
| Power Sensor                 | 8481A        | 2702A59566    | 2018 -12 -26 |
| Dielectric Probe             | 85070D       | US01440154    | -            |
| Power Amplifier              | BBS3Q7ECK    | 1026          | 2018 -12 -27 |
| Power Amplifier              | BBS3K8CEM    | 1002          | 2018 -12 -27 |
| LP Filter 1.5GHz             | LA -15N      | 0302          | 2018 -12 -26 |
| LP Filter 3.0GHz             | LA -30N      | 0301          | 2018 -12 -26 |
| LP Filter 6.0GHz             | LA -60N      | 40059         | 2018 -12 -26 |
| Attenuator                   | 50FH -010 -5 | 74868         | 2018 -12 -26 |
| Attenuator                   | 8491B        | 21828         | 2018 -12 -26 |
| Dual Directional Coupler     | 772D         | 3736A22424    | 2018 -12 -27 |
| Dual Directional Coupler     | 778D         | 17575         | 2018 -12 -27 |
| Wireless Communications Test | E5515C       | GB42230119    | 2018 -12 -27 |
| Wideband radio Communication | CMW500       | 137216        | 2018 -12 -26 |

### 4.2 SAR Measurement Setup

Measurement are performed using the DASY4 dosimetric assessment system. The DASY4 is made by Schmid & Partner Engineering AG(SPEAG) in Zurich, Switzerland and consists of high precision robotics system (Staubli), robot controller, Pentium IV computer, near-field probe, probe alignment sensor, and the SAM twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field(EMF) (see Fig. 5.1) A cell controller system contains the power supply, robot controller, teach pendant(Joystick), and a remote control used to drive the robot motors. The pc consists of the Intel Pentium IV 2.4 GHz computer with WindowsXP system and SAR measurement Software DASY4, A/D interface card, monitor, mouse, and keyboard. The Staubli Robot data acquisition electronic (DAE) circuit that performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc.

## 4. DESCRIPTION OF THE TEST EQUIPMENT(continued)

Is connected to the Electro -optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

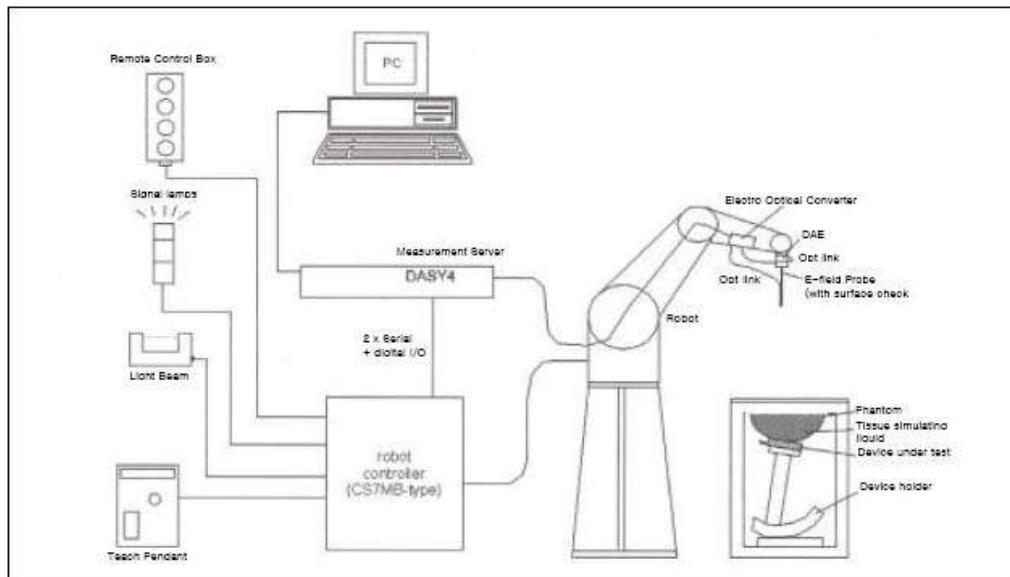


Fig. 4.1 SAR Measurement System Setup

The DAE4 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gainswitching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the Ethernet Card 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. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in.

### 4.3 DASY4 E-Field Probe System

The SAR measurements were conducted with the dosimetric probe ET3DV6, designed in the classical triangular configuration (see Fig.5.2) and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box in the robot arm and provides an automatic detection transmitter, the other half to a synchronized receiver.

## 4. DESCRIPTION OF THE TEST EQUIPMENT(continued)

As the probe approach the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches a maximum and then decreases until the coupling is zero. The distance of the coupling maximum to the surface is probe angle. The DASY4 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting (see Fig. 5.2). The approach is stopped at reaching the maximum.

|  |  |   |
|--|--|---|
| <br><b>Isotropic E-Field Probe</b> | <b>Isotropic E-Field Probe for Dosimetric Measurements</b> |   |
|  | <b>Construction</b>  | Symmetrical design with triangular core<br>Interleafed sensors<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., glycol)                    |
|  | <b>Calibration</b>   | In air from 10 MHz to 3 GHz<br>In brain and muscle simulating tissue at frequencies of 450 MHz, 900 MHz and 1.8 GHz (accuracy $\pm 8\%$ )<br>Calibration for other liquids and frequencies upon request |
|  | <b>Frequency</b>   | 10 MHz to $> 6$ GHz; Linearity: $\pm 0.2$ dB (30 MHz to 3 GHz)  |
|  | <b>Directivity</b>   | $\pm 0.2$ dB in brain tissue (rotation around probe axis)<br>$\pm 0.3$ dB in brain tissue (rotation normal to probe axis)   |
|  | <b>Dynamic Range</b>                                       | 5 $\mu$ W/g to $> 100$ mW/g; Linearity: $\pm 0.2$ dB  |
|  | <b>Dimensions</b>  | Overall length: 330 mm<br>Tip length: 20 mm<br>Body diameter: 12 mm<br>Tip diameter: 3.9 mm<br>Distance from probe tip to dipole centers: 2.7 mm  |

**Fig. 4.2 Probe Specifications**

## 4. DESCRIPTION OF THE TEST EQUIPMENT(continued)

### 4.4 Phantom & Equivalent Tissues

#### SAM Phantom

The SAM Twin Phantom V4.0 is constructed of the fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

#### Head & Muscle simulation Mixture Characterization

The brain and muscle mixtures consist of a viscous gel using hydroxethylcellulose(HEC) gelling agent and saline solution (see Fig 5.3). Preservation with a bactericide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The head tissue dielectric parameters recommended by the IEEE SCC -34/SC -2 have been specified in IEEE1528(2013) are derived from the issue dielectric parameters computed from the 4 -Cole -Cole equations. The mixture characterizations used for the brain and muscle tissue simulation liquids are according to the data by C. Gabriel and G. Hartagrove. (see Fig. 5.3)

| Frequency<br>(MHz) | Head |       | Body |       |
|--------------------|------|-------|------|-------|
|                    | r    | (S/m) | r    | (S/m) |
| 150                | 52.3 | 0.76  | 61.9 | 0.8   |
| 300                | 45.3 | 0.87  | 58.2 | 0.92  |
| 450                | 43.5 | 0.87  | 56.7 | 0.94  |
| 835                | 41.5 | 0.9   | 55.2 | 0.97  |
| 900                | 41.5 | 0.97  | 55   | 1.05  |
| 915                | 41.5 | 0.98  | 55   | 1.06  |
| 1450               | 40.5 | 1.2   | 54   | 1.3   |
| 1610               | 40.3 | 1.29  | 53.8 | 1.4   |
| 1800 -2000         | 40   | 1.4   | 53.3 | 1.52  |
| 2450               | 39.2 | 1.8   | 52.7 | 1.95  |
| 3000               | 38.5 | 2.4   | 52   | 2.73  |
| 5800               | 35.3 | 5.27  | 48.2 | 6     |

Fig.4.3 Head and body tissue parameters by the IEEE SCC -34/SC -2 in P1528

## 4. DESCRIPTION OF THE TEST EQUIPMENT(continued)

| Ingredients<br>(% by weight) | Frequency(MHz) |       |      |      |       |      |       |       |       |      |       |      |
|------------------------------|----------------|-------|------|------|-------|------|-------|-------|-------|------|-------|------|
|                              | 450            |       | 750  |      | 835   |      | 915   |       | 1 900 |      | 2 450 |      |
| Tissue Type                  | Head           | Body  | Head | Body | Head  | Body | Head  | Body  | Head  | Body | Head  | Body |
| Water                        | 38.56          | 51.16 | 41.2 | 51.7 | 41.45 | 52.4 | 41.05 | 56.0  | 54.9  | 40.4 | 62.7  | 73.2 |
| Salt(NaCl)                   | 3.95           | 1.49  | 1.4  | 1.0  | 1.45  | 1.4  | 1.35  | 0.76  | 0.18  | 0.5  | 0.5   | 0.04 |
| Sugar                        | 56.32          | 46.78 | 57   | 47.2 | 56.0  | 45.0 | 56.5  | 41.76 | 0.0   | 58.0 | 0.0   | 0.0  |
| HEC                          | 0.98           | 0.52  | 0.2  | 0.0  | 1.0   | 1.0  | 1.0   | 1.21  | 0.0   | 1.0  | 0.0   | 0.0  |
| Bactericide                  | 0.19           | 0.05  | 0.2  | 0.1  | 0.1   | 0.1  | 0.1   | 0.27  | 0.0   | 0.1  | 0.0   | 0.0  |
| Triton X -100                | 0.0            | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 36.8  | 0.0  |
| DGBE                         | 0.0            | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 44.92 | 0.0  | 0.0   | 26.7 |

Salt: 99 % Pure Sodium Chloride      Sugar: 98 % Pure Sucrose  
 Water: De -ionized, 16 M resistivity      HEC: Hydroxyethyl Cellulose  
 DGBE: 99 % Di(ethylene glycol) butyl ether, [ 2 -(2 -butoxyethoxy) ethanol ]  
 Triton X -100(ultra pure): Polyethylene glycol mono [ 4 -(1,1,3,3 -tetramethylbutyl)pheny ] ether

**Fig. 4.4 Composition of the Tissue Equivalent Matter**

### Device Holder for Transmitters

In combination with the SAM Twin Phantom V4.0, the Mounting Device enables the rotation of the accurately, and repeatably be positioned according to the FCC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

Note : A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produce infinite number of configurations [12]. To produce the worst -case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

## 4. DESCRIPTION OF THE TEST EQUIPMENT(continued)

### 4.5 Transmitting antenna information

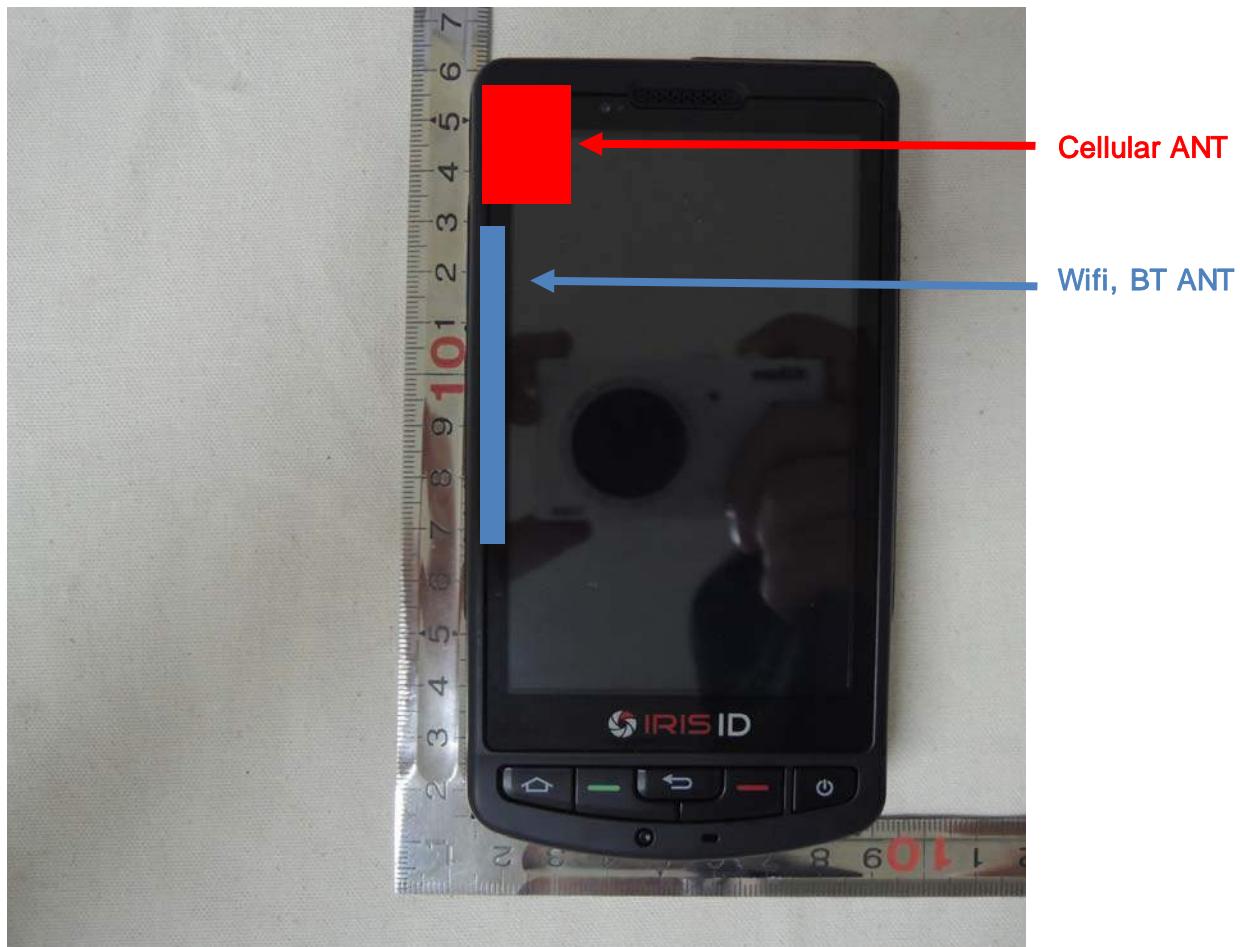


Fig. 4.5 Antenna information

The Body SAR measurement positions of each band are as below:

| ANTENNA   | Front | Rear | Left Edge | Right Edge | Top Edge | Bottom Edge |
|-----------|-------|------|-----------|------------|----------|-------------|
| 2G 3G LTE | YES   | YES  | YES       | NO         | YES      | NO          |

Note: According to KDB941225 antenna -to -edge>2.5cm, SAR is not required.

## 5. DESCRIPTION OF THE TEST PROCEDURE

### 5.1 Definition of Reference Point

#### EAR Reference point

The point 'M' is the reference point for the center of the mouth, 'ERP' is the ear reference point. The ERP are 15mm posterior to the entrance to the ear canal(EEC) along the B-M line (Back -Mouth), as shown in figure 6.1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck -Front) is perpendicular to the reference plane and passing through the ERP is called the Reference Pivoting Line (see Figure 6.1) B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].

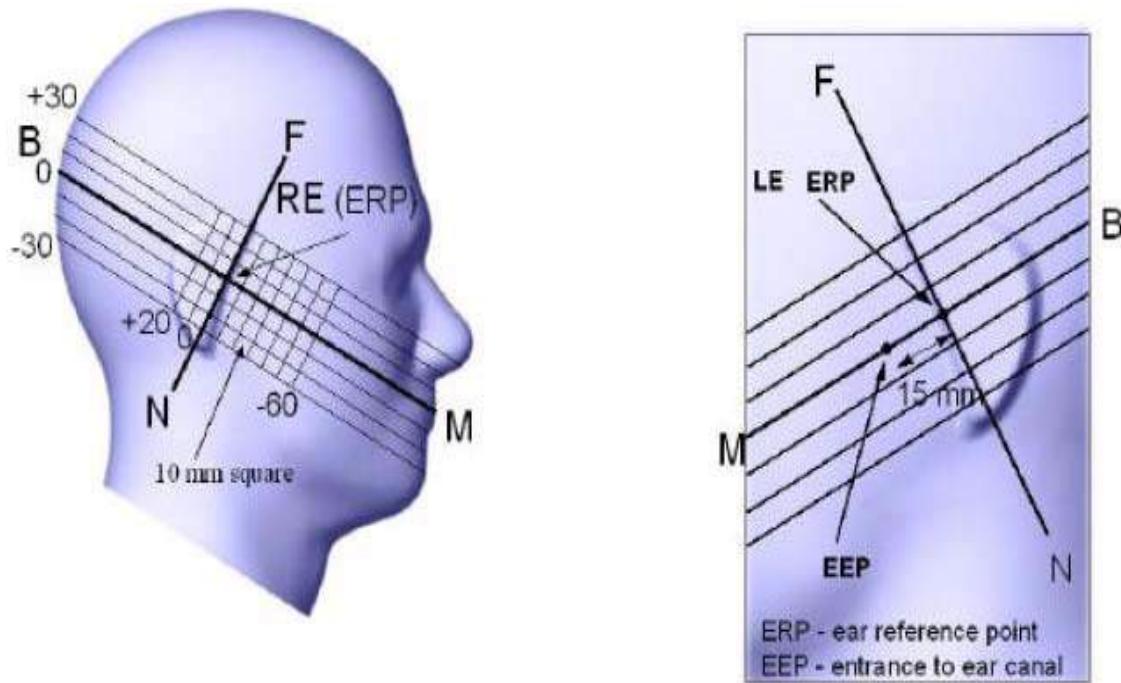
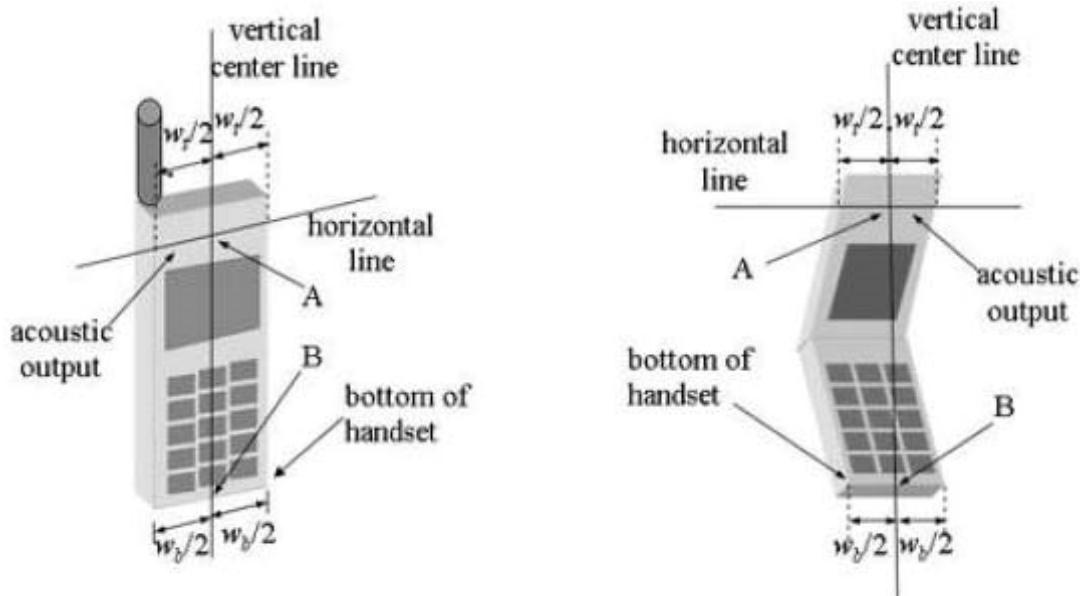


Figure 5.1 Close -up side view of ERP

#### Handset Reference Points

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the 'test device reference point "located along the "vertical centerline "on the front of the device aligned to the "ear reference point "(see Fig. 6.2). The 'test device reference point " was than located at the same level as the center of the ear reference point. The test device was positioned so that the "vertical centerline "was bisecting the front surface of the handset at its top and bottom edges, positioning the "ear reference point "on the outer surface of the both the left and right head phantoms on the ear reference point " on the outer surface of the both the left and right head phantoms on the ear reference point.

## 5. DESCRIPTION OF THE TEST PROCEDURE(continued)



**Figure 5.2 Handset Vertical Center & Horizontal Line Reference Points**

### 5.2 Test Configuration Positions

Positioning for Cheek/Touch

- 1) Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece, open the cover . (If the phone can also be used with the cover closed ,both configurations must be tested.)
- 2) Define two imaginary lines on the handset: the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset: the midpoint of the width  $w_t$  of the handset at the level of the acoustic output (point A on Figures 6.2), and the midpoint of the width  $w_b$  of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 6.2). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 6.2), especially for clamshell handsets, handsets with lip pieces, and other irregularly - shaped handsets.
- 3) Position the handset close to the surface of the phantom touch that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6.3), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.

## 5. DESCRIPTION OF THE TEST PROCEDURE(continued)

- 4) Translate the handset towards the phantom along the line passing through RE and LE until the handset touches the ear.
- 5) While maintaining the handset in this plane, rotate it around the LE -RE line until the vertical centerline is in the plane normal to MB -NF including the line MB (called the reference plane).
- 6) Rotate the phone around the vertical centerline until the phone (horizontal line) is symmetrical with respect to the line NF.
- 7) While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, rotate the handset about the line NF until any point on the handset is in contact with a phantom point

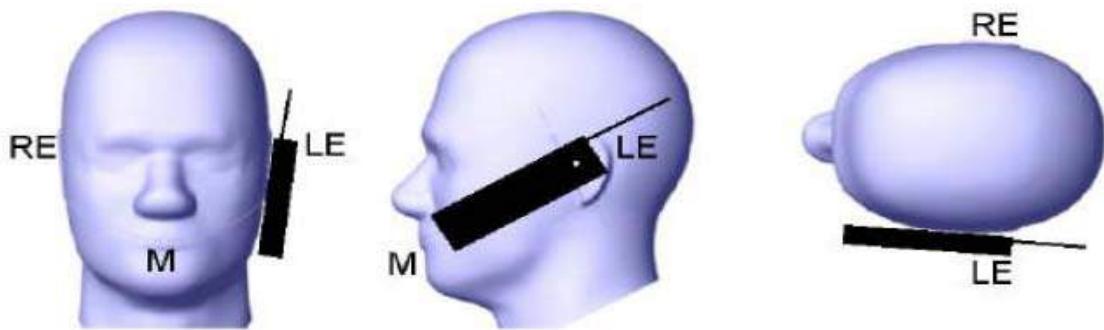


Figure 5.3 'Cheek " or "Touch " Position.

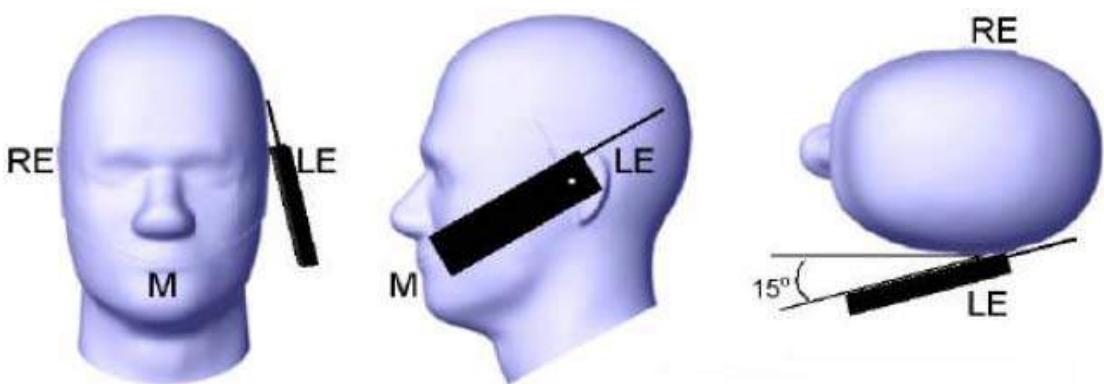


Figure 5.3 "Tilted " Position.

## 5. DESCRIPTION OF THE TEST PROCEDURE(continued)

### Positioning for Ear / 15 °Tilted

- 1) Repeat steps 1 to 7 of 6.2(Positioning for Cheek/Touch) to place the device in the "cheek position."
- 2) While maintaining the orientation of the phone retract the phone parallel to the reference plane far enough to enable a rotation of the phone by 15 degree.
- 3) Rotate the phone around the horizontal line by 15 degree.
- 4) While maintaining the orientation of the phone, move the phone parallel to the reference plane until any part of the phone touches the head. (In this position, point A will be located on the line RE -LE). The tilted position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, the angle of the phone shall be reduced. The tilted position is obtained if any part of the phone is in contact of the ear as well as a second part of the phone is contact with the head.

### Body Holder / Belt Clip Configurations

Body -worn operation configurations are tested with the belt -clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. A device with a headset output is tested with a headset connected to the device. Body dielectric parameters are used.

Accessories for Body -worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are supplied with the device, the device is tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (i.e. the same metallic belt -clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body -worn accessories may not always be supplied or available as options for some devices intended to be authorized for body -worn use. In this case, a test configuration where a separation distance between the back of the device and the flat phantom is used. All test position spacings are documented. Transmitters that are designed to operate in front of a person's face, as in push -to -talk configurations, are tested for SAR compliance is tested with the accessory(ies), including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration. In all case SAR measurements are performed to investigate the worst case positioning. Worst -case positioning is then documented and used to perform Body SAR testing.

In order for users to be aware of the body -worn operation requirements for meeting RF exposure compliance, operation instructing instructions and cautions statements are included in the user's manual.

## 5. DESCRIPTION OF THE TEST PROCEDURE(continued)

### 5.3 Scan Procedures

First coarse scans are used for quick determination of the field distribution. Nest cube scan, 5x5x7 points; spacing between each point 5x5x5 mm, is performed around the highest E -field value to determine the averaged SAR -distribution over 1g.

### 5.4 SAR Averaging Methods

The maximum SAR value is averaged over its volume using interpolation and extrapolation.

The interpolation of the points is done with a 3d -Spline. The 3d -Spline is composed of three one -dimensional splines with the 'Not a Knot "?condition [W.Gander, Computermathematik, p. 141 -150] (x, y and z directions) [Numerical Recipes in C, Second Edition, p 123].

The extrapolation is based on least square algorithm [W.Gander, Computermathematik, p. 168 -180]. Through the points in the first 30 mm in all z -axis, polynomials of order four are calculated. This polynomial is then used to evaluate the points between the surface and the probe tip. The points calculated from the surface, have a distance of 1mm from one another.

## 6. MEASUREMENT UNCERTAINTY

According to CENELEC [17], typical worst -case uncertainty of field measurements is 5 dB.  
 For well -defined modulation characteristics the uncertainty can be reduced to 3 dB.

| ERROR Description   | Uncertainty | Probability  | Divisor | ci 1           | Standard unc. | vi or |
|---|-------------|--------------|---------|----------------|---------------|-------|
|   | value ± %   | Distribution |         | 1g             | (1g)          | Veff  |
| <b>MEASUREMENT SYSTEM</b>   |             |              |         |                |               |       |
| Probe Calibration   | ± 11.7 %    | normal       | 1       | 1              | ± 6.0 %       |       |
| Axial Isotropy  | ± 4.7       | rectangular  | 3       | $(1-cp)^{1/2}$ | ± 2.71%       |       |
| Hemispherical Isotropy  | ± 9.6       | rectangular  | 3       | $(cp)^{1/2}$   | ± 3.9%        |       |
| Boundary Effects  | ± 1.0       | rectangular  | 3       | 1              | ± 0.58%       |       |
| Linearity   | ± 4.7       | rectangular  | 3       | 1              | ± 2.7%        |       |
| Modulation Response   | ± 3.5       | rectangular  | 3       | 1              | ± 2.0%        |       |
| System Detection Limits   | ± 1.0       | rectangular  | 3       | 1              | ± 0.58%       |       |
| Readout Electronics   | ± 1.0       | normal       | 1       | 1              | ± 0.3%        |       |
| Response time   | ± 0.8       | rectangular  | 3       | 1              | ± 0.46%       |       |
| Integration time  | ± 2.6       | rectangular  | 3       | 1              | ± 1.5%        |       |
| RF Amnient Conditions   | ± 3.0       | rectangular  | 3       | 1              | ± 1.73%       |       |
| Probe Positioner Mechanical Tolerance   | ± 0.4       | rectangular  | 3       | 1              | ± 0.23%       |       |
| Probe Positioning with respect to Phantom Shell                                 | ± 2.9       | rectangular  | 3       | 1              | ± 1.67%       |       |
| Extrapolation, Interpolation and Integration Algorithms for Max. SAR Evaluation | ± 1.0       | rectangular  | 3       | 1              | ± 0.58%       |       |
| <b>Test Sample Related</b>  |             |              |         |                |               |       |
| Test Sample Positioning   | ± 2.9       | normal       | 1       | 1              | ± 2.84%       | 145   |
| Device Holder Uncertainty   | ± 3.6       | normal       | 0.84    | 1              | ± 3.60%       | 5     |
| Output Power Validation - SAR drift measurement                                 | ± 5.0       | rectangular  | 3       | 1              | ± 2.89%       |       |
| <b>Phantom and Tissue Parameters</b>  |             |              |         |                |               |       |
| Phantom Uncertainty (shape and thickness tolerances)                            | ± 4.0       | rectangular  | 3       | 1              | ± 2.31%       |       |
| SAR Correction  | ± 5.0       | normal       | 1       | 1              | ± 5.0%        |       |
| Liquid Conductivity - measurement uncertainty                                   | ± 5.0       | normal       | 1       | 0.64           | ± 1.6%        |       |
| Liquid Conductivity - temperature uncertainty                                   | ± 1.7       | rectangular  | 3       | 0.64           | ± 1.85%       |       |
| Liquid Permittivity - measurement uncertainty                                   | ± 5.0       | normal       | 1       | 0.6            | ± 1.50%       |       |
| Liquid Permittivity - temperature uncertainty                                   | ± 0.3       | rectangular  | 3       | 0.6            | ± 1.73%       |       |
| Combined Standard Uncertainty   |             |              |         |                | ± 11.80 %     | 330   |
| Coverage Factor for 95%   |             |              |         |                | $K = 2$       |       |
| Expanded Standard Uncertainty   |             |              |         |                | ± 23.60 %     |       |

## 6. MEASUREMENT UNCERTAINTY

According to CENELEC [17], typical worst -case uncertainty of field measurements is 5 dB.  
 For well -defined modulation characteristics the uncertainty can be reduced to 3 dB.

| ERROR Description   | Uncertainty | Probability  | Divisor | ci 1            | Standard unc. | vi or |
|---|-------------|--------------|---------|-----------------|---------------|-------|
|   | value ± %   | Distribution |         | 1g              | (1g)          | Veff  |
| <b>MEASUREMENT SYSTEM</b>   |             |              |         |                 |               |       |
| Probe Calibration   | ± 11.7 %    | normal       | 1       | 1               | ± 6.0%        |       |
| Axial Isotropy  | ± 4.7       | rectangular  | 3       | $(1-cp )^{1/2}$ | ± 2.71%       |       |
| Hemispherical Isotropy  | ± 9.6       | rectangular  | 3       | $(cp )^{1/2}$   | ± 5.54%       |       |
| Boundary Effects  | ± 1.0       | rectangular  | 3       | 1               | ± 0.58%       |       |
| Linearity   | ± 4.7       | rectangular  | 3       | 1               | ± 2.71%       |       |
| Modulation Response   | ± 3.5       | rectangular  | 3       | 1               | ± 2.0%        |       |
| System Detection Limits   | ± 1.0       | rectangular  | 3       | 1               | ± 0.58%       |       |
| Readout Electronics   | ± 1.0       | normal       | 1       | 1               | ± 0.30%       |       |
| Response time   | ± 0.8       | rectangular  | 3       | 1               | ± 0.46%       |       |
| Integration time  | ± 2.6       | rectangular  | 3       | 1               | ± 1.50%       |       |
| RF Amnient Conditions   | ± 3.0       | rectangular  | 3       | 1               | ± 1.73%       |       |
| Probe Positioner Mechanical Tolerance   | ± 0.4       | rectangular  | 3       | 1               | ± 0.23%       |       |
| Probe Positioning with respect to Phantom Shell                                 | ± 2.9       | rectangular  | 3       | 1               | ± 1.69%       |       |
| Extrapolation, Interpolation and Integration Algorithms for Max. SAR Evaluation | ± 1.0       | rectangular  | 3       | 1               | ± 0.58%       |       |
| <b>Test Sample Related</b>  |             |              |         |                 |               |       |
| Test Sample Positioning   | ± 2.9       | normal       | 1       | 1               | ± 2.38%       | 145   |
| Device Holder Uncertainty   | ± 3.6       | normal       | 0.84    | 1               | ± 3.60%       | 5     |
| Output Power Validation - SAR drift measurement                                 | ± 5.0       | rectangular  | 3       | 1               | ± 2.89%       |       |
| <b>Phantom and Tissue Parameters</b>  |             |              |         |                 |               |       |
| Phantom Uncertainty (shape and thickness tolerances)                            | ± 4.0       | rectangular  | 3       | 1               | ± 2.31%       |       |
| SAR Correction  | ± 5.0       | normal       | 1       | 1               | ± 5.0%        |       |
| Liquid Conductivity - measurement uncertainty                                   | ± 5.0       | normal       | 1       | 0.78            | ± 2.89%       |       |
| Liquid Conductivity - temperature uncertainty                                   | ± 1.7       | rectangular  | 3       | 0.78            | ± 2.5%        |       |
| Liquid Permittivity - measurement uncertainty                                   | ± 5.0       | normal       | 1       | 0.23            | ± 2.89%       |       |
| Liquid Permittivity - temperature uncertainty                                   | ± 0.3       | rectangular  | 3       | 0.23            | ± 2.50%       |       |
| Combined Standard Uncertainty   |             |              |         |                 | ± 11.70 %     | 330   |
| Coverage Factor for 95%   |             |              |         |                 | K = 2         |       |
| Expanded Standard Uncertainty   |             |              |         |                 | ± 23.40 %     |       |

## 7. SYSTEM VERIFICATION

### Tissue Verification

**Table 7.1 Simulated Tissue Verification**

| DATE      | Tissue Type | Freq (MHz) | Measured            |                      | TARGET              |                      | % Dev | % Dev |
|-----------|-------------|------------|---------------------|----------------------|---------------------|----------------------|-------|-------|
|           |             |            | Conductivity, (S/m) | Dielectric Constant, | Conductivity, (S/m) | Dielectric Constant, |       |       |
| 2018/8/6  |             | 8242.2     | 0.877               | 40.40                | 0.90                | 41.50                | -2.56 | -2.65 |
|           |             | 836.6      | 0.896               | 40.30                | 0.90                | 41.50                | -0.44 | -2.89 |
|           |             | 824.2      | 0.912               | 40.20                | 0.90                | 41.50                | 1.33  | -3.13 |
| 2018/8/6  |             | 826.4      | 0.882               | 40.40                | 0.90                | 41.50                | -2.00 | -2.65 |
|           |             | 836.6      | 0.896               | 40.30                | 0.90                | 41.50                | -0.44 | -2.89 |
|           |             | 846.6      | 0.908               | 40.20                | 0.90                | 41.50                | 0.89  | -3.13 |
| 2018/8/6  |             | 826.5      | 0.882               | 40.40                | 0.90                | 41.50                | -2.00 | -2.65 |
|           |             | 836.5      | 0.896               | 40.30                | 0.90                | 41.50                | -0.44 | -2.89 |
|           |             | 846.5      | 0.908               | 40.20                | 0.90                | 41.50                | 0.89  | -3.13 |
| 2018/8/8  |             | 706.5      | 0.855               | 41.80                | 0.89                | 41.95                | -4.26 | -0.36 |
|           |             | 710.0      | 0.858               | 41.70                | 0.89                | 41.95                | -3.92 | -0.60 |
|           |             | 713.5      | 0.862               | 41.60                | 0.89                | 41.95                | -3.47 | -0.83 |
| 2018/8/10 |             | 1712.4     | 1.360               | 40.40                | 1.36                | 40.08                | 0.00  | 0.81  |
|           |             | 1732.6     | 1.380               | 40.60                | 1.36                | 40.08                | 1.47  | 1.31  |
|           |             | 1752.6     | 1.390               | 40.50                | 1.36                | 40.08                | 2.21  | 1.06  |
| 2018/8/10 |             | 1712.5     | 1.360               | 40.40                | 1.36                | 40.08                | 0.00  | 0.81  |
|           |             | 1732.5     | 1.380               | 40.60                | 1.36                | 40.08                | 1.47  | 1.31  |
|           |             | 1752.5     | 1.390               | 40.60                | 1.36                | 40.08                | 2.21  | 1.31  |
| 2018/8/14 |             | 1852.5     | 1.350               | 39.70                | 1.40                | 40.00                | -3.57 | -0.75 |
|           |             | 1880.0     | 1.390               | 39.60                | 1.40                | 40.00                | -0.71 | -1.00 |
|           |             | 1907.5     | 1.400               | 39.50                | 1.40                | 40.00                | 0.00  | -1.25 |
| 2018/8/14 |             | 1852.4     | 1.350               | 39.70                | 1.40                | 40.00                | -3.57 | -0.75 |
|           |             | 1880.0     | 1.370               | 39.60                | 1.40                | 40.00                | -2.14 | -1.00 |
|           |             | 1907.6     | 1.400               | 39.50                | 1.40                | 40.00                | 0.00  | -1.25 |
| 2018/8/14 |             | 1852.5     | 1.350               | 39.70                | 1.40                | 40.00                | -3.57 | -0.75 |
|           |             | 1880.0     | 1.370               | 39.60                | 1.40                | 40.00                | -2.14 | -1.00 |
|           |             | 1907.5     | 1.400               | 39.50                | 1.40                | 40.00                | 0.00  | -1.25 |
| 2018/8/14 |             | 2412.0     | 1.760               | 39.27                | 1.79                | 39.70                | -1.68 | -1.08 |
|           |             | 2437.0     | 1.800               | 39.20                | 1.83                | 39.70                | -1.64 | -1.26 |
|           |             | 2462.0     | 1.830               | 39.16                | 1.86                | 39.60                | -1.61 | -1.11 |

## 7. SYSTEM VERIFICATION

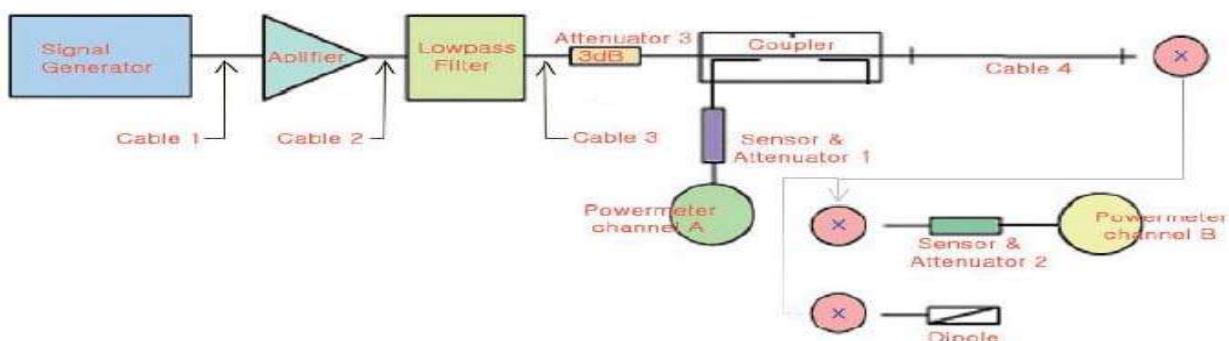
| MEASURED TISSUE PARAMETERS |             |            |                     |                      |                     |                      |        |       |  |
|----------------------------|-------------|------------|---------------------|----------------------|---------------------|----------------------|--------|-------|--|
| DATE                       | Tissue Type | Freq (MHz) | Measured            |                      | TARGET              |                      | % Dev  | % Dev |  |
|                            |             |            | Conductivity, (S/m) | Dielectric Constant, | Conductivity, (S/m) | Dielectric Constant, |        |       |  |
| 2018/8/7                   | BODY        | 824.2      | 0.949               | 55.40                | 0.97                | 55.24                | -2.16  | 0.29  |  |
|                            |             | 836.6      | 0.963               | 55.30                | 0.97                | 55.24                | -0.72  | 0.11  |  |
|                            |             | 848.8      | 0.976               | 55.20                | 0.97                | 55.24                | 0.62   | -0.07 |  |
| 2018/8/7                   |             | 826.4      | 0.952               | 55.40                | 0.97                | 55.24                | -1.86  | 0.29  |  |
|                            |             | 836.6      | 0.963               | 55.30                | 0.97                | 55.24                | -0.72  | 0.11  |  |
|                            |             | 846.6      | 0.973               | 55.20                | 0.97                | 55.24                | 0.31   | -0.07 |  |
| 2018/8/7                   |             | 826.5      | 0.952               | 55.40                | 0.97                | 55.20                | -1.86  | 0.36  |  |
|                            |             | 836.5      | 0.963               | 55.30                | 0.97                | 55.24                | -0.72  | 0.11  |  |
|                            |             | 846.5      | 0.793               | 55.20                | 0.97                | 55.24                | -18.25 | -0.07 |  |
| 2018/8/9                   |             | 706.5      | 0.950               | 57.60                | 0.96                | 55.54                | -1.04  | 3.71  |  |
|                            |             | 710.0      | 0.953               | 57.60                | 0.96                | 55.54                | -0.73  | 3.71  |  |
|                            |             | 713.5      | 0.958               | 57.50                | 0.96                | 55.54                | -0.21  | 3.53  |  |
| 2018/8/13                  |             | 1712.5     | 1.420               | 52.40                | 1.48                | 53.43                | -4.05  | -1.93 |  |
|                            |             | 1732.6     | 1.430               | 52.30                | 1.48                | 53.43                | -3.38  | -2.11 |  |
|                            |             | 1752.6     | 1.450               | 52.30                | 1.48                | 53.43                | -2.03  | -2.11 |  |
| 2018/8/13                  |             | 1712.5     | 1.420               | 52.40                | 1.48                | 53.43                | -4.05  | -1.93 |  |
|                            |             | 1732.5     | 1.430               | 52.30                | 1.48                | 53.43                | -3.38  | -2.11 |  |
|                            |             | 1752.5     | 1.450               | 52.30                | 1.48                | 53.43                | -2.03  | -2.11 |  |
| 2018/8/16                  |             | 1850.2     | 1.490               | 51.30                | 1.52                | 53.30                | -1.97  | -3.75 |  |
|                            |             | 1880.0     | 1.520               | 51.30                | 1.52                | 53.30                | 0.00   | -3.75 |  |
|                            |             | 1909.8     | 1.550               | 51.20                | 1.52                | 53.30                | 1.97   | -3.94 |  |
| 2018/8/16                  |             | 1852.4     | 1.490               | 51.30                | 1.52                | 53.30                | -1.97  | -3.75 |  |
|                            |             | 1880.0     | 1.520               | 51.30                | 1.52                | 53.30                | 0.00   | -3.75 |  |
|                            |             | 1907.6     | 1.550               | 51.20                | 1.52                | 53.30                | 1.97   | -3.94 |  |
| 2018/8/16                  |             | 1852.5     | 1.490               | 51.30                | 1.52                | 53.30                | -1.97  | -3.75 |  |
|                            |             | 1880.0     | 1.520               | 51.30                | 1.52                | 53.30                | 0.00   | -3.75 |  |
|                            |             | 1907.5     | 1.550               | 51.20                | 1.52                | 53.30                | 1.97   | -3.94 |  |
| 2018/8/16                  |             | 2412.0     | 1.910               | 52.75                | 1.93                | 50.70                | -1.04  | 4.04  |  |
|                            |             | 2437.0     | 1.950               | 52.70                | 1.97                | 50.70                | -1.02  | 3.94  |  |
| 2018/8/16                  |             | 2462.0     | 1.980               | 52.67                | 2.00                | 50.60                | -1.00  | 4.09  |  |

## 7. SYSTEM VERIFICATION

**Table 7.2 System Validation**

| SYSTEM DIPOLE VALIDATION TARGET & MEASURED - BODY |                        |                   |                         |                         |               |            |
|---|------------------------|-------------------|-------------------------|-------------------------|---------------|------------|
| Tissue  | System Validation Kit: | Forward Power (W) | Targeted SAR 10g (mW/g) | Measured SAR 10g (mW/g) | Deviation (%) | Test Date  |
| 750 MHz BODY                                      | D750V3(S/N:1162)       | 1.0               | 5.64                    | 5.44                    | -3.55         | 2018-08-09 |
| 835 MHz BODY                                      | D835V2(S/N:475)        | 1.0               | 6.29                    | 6.28                    | -0.16         | 2018-08-07 |
| 1 750 MHz BODY                                    | D1750V2(S/N:1151)      | 1.0               | 19.30                   | 18.56                   | -3.83         | 2018-08-13 |
| 1 900 MHz BODY                                    | D1900V2(S/N:5d058)     | 1.0               | 20.60                   | 21.36                   | 3.69          | 2018-08-16 |
| 2 450 MHz BODY                                    | D2450V2(S/N:741)       | 1.0               | 23.40                   | 24.96                   | 6.67          | 2018-08-17 |

| SYSTEM DIPOLE VALIDATION TARGET & MEASURED - HEAD |                        |                   |                        |                        |               |            |
|---|------------------------|-------------------|------------------------|------------------------|---------------|------------|
| Tissue  | System Validation Kit: | Forward Power (W) | Targeted SAR 1g (mW/g) | Measured SAR 1g (mW/g) | Deviation (%) | Test Date  |
| 750 MHz HEAD                                      | D750V3(S/N:1162)       | 1.0               | 8.12                   | 7.96                   | -1.97         | 2018-08-08 |
| 835 MHz HEAD                                      | D835V2(S/N:475)        | 1.0               | 9.46                   | 9.80                   | 3.59          | 2018-08-06 |
| 1 750 MHz HEAD                                    | D1750V2(S/N:1151)      | 1.0               | 36.20                  | 33.84                  | -6.52         | 2018-08-10 |
| 1 900 MHz HEAD                                    | D1900V2(S/N:5d058)     | 1.0               | 40.00                  | 38.08                  | -4.80         | 2018-08-14 |
| 2 450 MHz HEAD                                    | D2450V2(S/N:741)       | 1.0               | 52.80                  | 55.56                  | 5.23          | 2018-08-20 |



## 8. RESULTS

Ambient TEMPERATURE (C) : 21 ~ 23  
 Relative HUMIDITY (%) : 49 ~ 51  
 Mixture Type : Portable Data Collection Terminal  
 Model Name : iCAM M300

### Measurement Results

| IEEE STD 1528 - 2013 - SAFETY LIMIT<br>Spatial Peak<br>Uncontrolled Exposure/General Population |                   |        |            |      |             |                  | 1.6 W/kg (W/kg)<br>averaged over 1 gram |                |                   |
|---|-------------------|--------|------------|------|-------------|------------------|---|----------------|-------------------|
| Mode  | HEAD/EUT Position |        | Freq (MHz) | Ch   | Power (dBm) | Power Drift (dB) | 1g SAR (W/Kg)                           | scaling Factor | Scaled SAR (mW/g) |
| GSM850  | RIGHT             | TOUTCH | 836.6      | 190  | 33.35       | -0.013           | 0.341                                   | 0.923          | 0.315             |
|   |                   | TILT   |            |      |             | 0.002            | 0.488                                   | 0.923          | 0.450             |
|   | LEFT              | TOUCH  |            |      |             | -0.007           | 0.233                                   | 0.923          | 0.215             |
|   |                   | TILT   |            |      |             | -0.030           | 0.244                                   | 0.923          | 0.225             |
|   | RIGHT             | TILT   | 824.2      | 128  | 33.22       | -0.025           | 0.385                                   | 0.951          | 0.366             |
|   |                   | TILT   | 848.8      | 251  | 33.43       | -0.027           | 0.480                                   | 0.906          | 0.435             |
| GSM1900   | RIGHT             | TOUTCH | 1880.0     | 661  | 30.79       | 0.092            | 0.314                                   | 0.834          | 0.262             |
|   |                   | TILT   |            |      |             | 0.029            | 0.273                                   | 0.834          | 0.228             |
|   | LEFT              | TOUCH  |            |      |             | -0.119           | 0.217                                   | 0.834          | 0.181             |
|   |                   | TILT   |            |      |             | 0.013            | 0.204                                   | 0.834          | 0.170             |
|   | RIGHT             | TOUCH  | 1852.5     | 512  | 30.58       | 0.012            | 0.282                                   | 0.875          | 0.247             |
|   |                   | TOUCH  | 1907.5     | 810  | 30.72       | 0.060            | 0.306                                   | 0.847          | 0.259             |
| WCDMA BAND2   | RIGHT             | TOUTCH | 1880.0     | 9400 | 23.42       | -0.035           | 0.519                                   | 1.143          | 0.593             |
|   |                   | TILT   |            |      |             | -0.028           | 0.421                                   | 1.143          | 0.481             |
|   | LEFT              | TOUCH  |            |      |             | -0.145           | 0.351                                   | 1.143          | 0.401             |
|   |                   | TILT   |            |      |             | 0.016            | 0.311                                   | 1.143          | 0.355             |
|   | RIGHT             | TOUCH  | 1852.4     | 9262 | 23.56       | -0.050           | 0.589                                   | 1.107          | <b>0.652</b>      |
|   |                   | TOUCH  | 1907.6     | 9538 | 23.58       | 0.002            | 0.409                                   | 1.102          | 0.451             |
| WCDMA BAND4   | RIGHT             | TOUTCH | 1732.6     | 1413 | 23.61       | 0.093            | 0.590                                   | 1.094          | 0.645             |
|   |                   | TILT   |            |      |             | 0.059            | 0.507                                   | 1.094          | 0.555             |
|   | LEFT              | TOUCH  |            |      |             | -0.161           | 0.430                                   | 1.094          | 0.470             |
|   |                   | TILT   |            |      |             | 0.056            | 0.398                                   | 1.094          | 0.435             |
|   | RIGHT             | TOUCH  | 1712.4     | 1312 | 23.61       | 0.184            | 0.446                                   | 1.094          | 0.488             |
|   |                   | TOUCH  | 1752.6     | 1513 | 23.51       | 0.191            | 0.492                                   | 1.119          | 0.551             |

## 8. RESULTS

### Measurement Results

| Mode                  | HEAD/EUT Position |        | Freq (MHz) | Ch    | Power (dBm) | Power Drift (dB) | 1g SAR (W/Kg) | scaling Factor | Scaled SAR (mW/g) |
|-----------------------|-------------------|--------|------------|-------|-------------|------------------|---------------|----------------|-------------------|
| WCDMA<br>BAND5        | RIGHT             | TOUTCH | 836.6      | 4183  | 22.88       | -0.136           | 0.407         | 1.294          | 0.527             |
|                       |                   | TILT   |            |       |             | -0.014           | 0.596         | 1.294          | 0.771             |
|                       | LEFT              | TOUCH  |            |       |             | 0.008            | 0.252         | 1.294          | 0.326             |
|                       |                   | TILT   |            |       |             | -0.050           | 0.264         | 1.294          | 0.342             |
|                       | RIGHT             | TILT   | 826.4      | 4132  | 23.13       | 0.073            | 0.632         | 1.222          | <b>0.772</b>      |
|                       |                   | TILT   | 846.6      | 4233  | 22.93       | -0.205           | 0.560         | 1.279          | 0.716             |
|                       | RIGHT             | TOUTCH | 1880.0     | 18900 | 24.28       | -0.071           | 0.403         | 0.745          | 0.300             |
|                       |                   | TILT   |            |       |             | 0.036            | 0.331         | 0.745          | 0.247             |
| LTE<br>FDD2           | LEFT              | TOUCH  |            |       |             | -0.001           | 0.273         | 0.745          | 0.203             |
|                       |                   | TILT   |            |       |             | 0.065            | 0.242         | 0.745          | 0.180             |
|                       | RIGHT             | TOUTCH | 1852.5     | 18625 | 24.05       | -0.020           | 0.409         | 0.785          | 0.321             |
|                       |                   | TOUTCH | 1907.5     | 19175 | 23.74       | -0.032           | 0.358         | 0.843          | 0.302             |
|                       | RIGHT             | TOUTCH | 1732.5     | 20175 | 23.71       | 0.031            | 0.385         | 0.849          | 0.327             |
|                       |                   | TILT   |            |       |             | 0.052            | 0.337         | 0.849          | 0.286             |
|                       | LEFT              | TOUCH  |            |       |             | -0.054           | 0.291         | 0.849          | 0.247             |
|                       |                   | TILT   |            |       |             | -0.039           | 0.279         | 0.849          | 0.237             |
| LTE<br>FDD4           | RIGHT             | TOUCH  | 1712.5     | 19975 | 23.68       | -0.024           | 0.354         | 0.855          | 0.303             |
|                       |                   | TOUCH  | 1752.5     | 20375 | 23.65       | 0.022            | 0.383         | 0.861          | 0.330             |
|                       | RIGHT             | TOUTCH | 836.5      | 20525 | 24.2        | -0.170           | 0.316         | 0.759          | 0.240             |
|                       |                   | TILT   |            |       |             | -0.055           | 0.422         | 0.759          | 0.320             |
|                       | LEFT              | TOUCH  |            |       |             | 0.008            | 0.210         | 0.759          | 0.159             |
|                       |                   | TILT   |            |       |             | 0.006            | 0.222         | 0.759          | 0.168             |
|                       | RIGHT             | TILT   | 826.5      | 20425 | 24.17       | 0.007            | 0.395         | 0.764          | 0.302             |
|                       |                   | TILT   | 846.5      | 20625 | 24.19       | -0.012           | 0.351         | 0.760          | 0.267             |
| LTE<br>FDD17          | RIGHT             | TOUTCH | 710.0      | 23790 | 23.45       | -0.108           | 0.177         | 0.902          | 0.160             |
|                       |                   | TILT   |            |       |             | 0.075            | 0.250         | 0.902          | 0.225             |
|                       | LEFT              | TOUCH  |            |       |             | -0.110           | 0.143         | 0.902          | 0.129             |
|                       |                   | TILT   |            |       |             | -0.007           | 0.139         | 0.902          | 0.125             |
|                       | RIGHT             | TILT   | 706.5      | 23755 | 23.48       | 0.076            | 0.283         | 0.895          | 0.253             |
|                       |                   | TILT   | 713.5      | 23825 | 23.45       | 0.057            | 0.288         | 0.902          | 0.260             |
| 2.4G<br>802.11n<br>20 | RIGHT             | TOUTCH | 2 437      | 6     | 15.33       | 0.038            | 0.017         | 1.040          | 0.018             |
|                       |                   | TILT   |            |       |             | 0.071            | 0.00904       | 1.040          | 0.009             |
|                       | LEFT              | TOUCH  |            |       |             | 0.048            | 0.00691       | 1.040          | 0.007             |
|                       |                   | TILT   |            |       |             | 0.038            | 0.011         | 1.040          | 0.011             |
|                       | RIGHT             | TOUCH  | 2 412      | 1     | 15.03       | 0.094            | 0.016         | 1.114          | 0.018             |
|                       |                   | TOUCH  | 2 462      | 11    | 16.38       | 0.068            | 0.021         | 0.817          | 0.017             |

## 8. RESULTS

| IEEE STD 1528 - 2013 - SAFETY LIMIT<br>Spatial Peak<br>Uncontrolled Exposure/General Population |                   |            |       |             |                  |                |           | 4.0 W/kg (W/kg)<br>averaged over 10 gram |                   |
|---|-------------------|------------|-------|-------------|------------------|----------------|-----------|--|-------------------|
| Mode  | Body/EUT Position | Freq (MHz) | Ch    | Power (dBm) | Power Drift (dB) | 10g SAR (W/Kg) | Dist (mm) | scaling Factor                           | Scaled SAR (mW/g) |
| GSM850  | FRONT             | 836.6      | 190   | 33.35       | 0.042            | 0.287          | 0         | 0.923                                    | 0.265             |
|   | REAR              |            |       |             | -0.030           | 0.160          | 0         | 0.923                                    | 0.148             |
|   | LEFT              |            |       |             | 0.061            | 0.265          | 0         | 0.923                                    | 0.244             |
|   | TOP               |            |       |             | 0.412            | 0.416          | 0         | 0.923                                    | 0.384             |
|   | TOP               | 824.2      | 128   | 33.22       | 0.110            | 0.343          | 0         | 0.951                                    | 0.326             |
|   | TOP               | 848.8      | 251   | 33.43       | 0.143            | 0.370          | 0         | 0.906                                    | 0.335             |
| GSM1900   | FRONT             | 1880.0     | 661   | 30.79       | 0.078            | 0.200          | 0         | 0.834                                    | 0.167             |
|   | REAR              |            |       |             | 0.127            | 0.198          | 0         | 0.834                                    | 0.165             |
|   | LEFT              |            |       |             | 0.129            | 0.582          | 0         | 0.834                                    | 0.485             |
|   | TOP               |            |       |             | 0.103            | 0.225          | 0         | 0.834                                    | 0.188             |
|   | LEFT              | 1850.2     | 512   | 30.58       | 0.337            | 0.586          | 0         | 0.875                                    | 0.513             |
|   | LEFT              | 1909.8     | 810   | 30.72       | 0.490            | 0.613          | 0         | 0.847                                    | 0.519             |
| WCDMA BAND2   | FRONT             | 1880.0     | 9400  | 23.42       | -0.081           | 0.302          | 0         | 1.143                                    | 0.345             |
|   | REAR              |            |       |             | 0.167            | 0.294          | 0         | 1.143                                    | 0.336             |
|   | LEFT              |            |       |             | -0.149           | 0.947          | 0         | 1.143                                    | 1.082             |
|   | TOP               |            |       |             | 0.033            | 0.275          | 0         | 1.143                                    | 0.314             |
|   | LEFT              | 1852.4     | 9262  | 23.56       | -0.170           | 1.030          | 0         | 1.107                                    | 1.140             |
|   | LEFT              | 1907.6     | 9538  | 23.58       | -0.066           | 0.791          | 0         | 1.102                                    | 0.871             |
| WCDMA BAND4   | FRONT             | 1732.6     | 1413  | 23.61       | 0.079            | 0.319          | 0         | 1.094                                    | 0.349             |
|   | REAR              |            |       |             | 0.116            | 0.332          | 0         | 1.094                                    | 0.363             |
|   | LEFT              |            |       |             | 0.010            | 1.010          | 0         | 1.094                                    | 1.105             |
|   | TOP               |            |       |             | 0.007            | 0.426          | 0         | 1.094                                    | 0.466             |
|   | LEFT              | 1712.4     | 1312  | 23.61       | -0.016           | 1.090          | 0         | 1.094                                    | <b>1.192</b>      |
|   | LEFT              | 1752.6     | 1513  | 23.51       | 0.024            | 1.020          | 0         | 1.119                                    | 1.142             |
| WCDMA BAND5   | FRONT             | 836.6      | 4183  | 22.88       | 0.003            | 0.332          | 0         | 1.294                                    | 0.430             |
|   | REAR              |            |       |             | 0.057            | 0.171          | 0         | 1.294                                    | 0.221             |
|   | LEFT              |            |       |             | 0.106            | 0.311          | 0         | 1.294                                    | 0.402             |
|   | TOP               |            |       |             | 0.131            | 0.399          | 0         | 1.294                                    | 0.516             |
|   | TOP               | 826.4      | 4132  | 23.13       | 0.168            | 0.407          | 0         | 1.222                                    | 0.497             |
|   | TOP               | 846.6      | 4233  | 22.93       | 0.150            | 0.378          | 0         | 1.279                                    | 0.484             |
| LTE FDD2  | FRONT             | 1800.0     | 18900 | 24.28       | 0.069            | 0.236          | 0         | 0.938                                    | 0.221             |
|   | REAR              |            |       |             | 0.160            | 0.274          | 0         | 0.938                                    | 0.257             |
|   | LEFT              |            |       |             | -0.016           | 0.831          | 0         | 0.938                                    | 0.779             |
|   | TOP               |            |       |             | -0.070           | 0.302          | 0         | 0.938                                    | 0.283             |
|   | LEFT              | 1852.5     | 18625 | 24.05       | -0.076           | 0.834          | 0         | 0.989                                    | 0.824             |
|   | LEFT              | 1907.5     | 19175 | 23.74       | -0.054           | 0.792          | 0         | 1.062                                    | 0.841             |

## 8. RESULTS

| IEEE STD 1528 - 2013 - SAFETY LIMIT<br>Spatial Peak<br>Uncontrolled Exposure/General Population |                   |            |       |             |                  |                |           | 4.0 W/kg (W/kg)<br>averaged over 10 gram |                   |
|---|-------------------|------------|-------|-------------|------------------|----------------|-----------|--|-------------------|
| Mode  | Body/EUT Position | Freq (MHz) | Ch    | Power (dBm) | Power Drift (dB) | 10g SAR (W/Kg) | Dist (mm) | scaling Factor                           | Scaled SAR (mW/g) |
| LTE FDD4  | FRONT             | 1732.5     | 20175 | 23.71       | -0.210           | 0.246          | 0         | 1.069                                    | 0.263             |
|   | REAR              |            |       |             | 0.074            | 0.242          | 0         | 1.069                                    | 0.259             |
|   | LEFT              |            |       |             | -0.008           | 0.824          | 0         | 1.069                                    | <b>0.881</b>      |
|   | TOP               |            |       |             | -0.079           | 0.210          | 0         | 1.069                                    | 0.225             |
|   | LEFT              | 1712.5     | 19975 | 23.68       | -0.027           | 0.736          | 0         | 1.076                                    | 0.792             |
|   | LEFT              | 1752.5     | 20375 | 23.65       | 0.064            | 0.748          | 0         | 1.084                                    | 0.811             |
| LTE FDD5  | FRONT             | 836.5      | 20525 | 24.2        | -0.256           | 0.250          | 0         | 0.955                                    | 0.239             |
|   | REAR              |            |       |             | -0.023           | 0.144          | 0         | 0.955                                    | 0.138             |
|   | LEFT              |            |       |             | 0.390            | 0.266          | 0         | 0.955                                    | 0.254             |
|   | TOP               |            |       |             | -0.028           | 0.335          | 0         | 0.955                                    | 0.320             |
|   | TOP               | 826.5      | 20425 | 24.17       | 0.129            | 0.316          | 0         | 0.962                                    | 0.304             |
|   | TOP               | 846.5      | 20625 | 24.19       | 0.218            | 0.315          | 0         | 0.957                                    | 0.302             |
| LTE FDD17   | FRONT             | 710.0      | 23790 | 23.45       | -0.031           | 0.161          | 0         | 1.135                                    | 0.183             |
|   | REAR              |            |       |             | 0.016            | 0.178          | 0         | 1.135                                    | 0.202             |
|   | LEFT              |            |       |             | -0.097           | 0.388          | 0         | 1.135                                    | 0.440             |
|   | TOP               |            |       |             | 0.209            | 0.268          | 0         | 1.135                                    | 0.304             |
|   | LEFT              | 706.5      | 23755 | 23.48       | -0.064           | 0.442          | 0         | 1.127                                    | 0.498             |
|   | LEFT              | 713.5      | 23825 | 23.45       | -0.157           | 0.420          | 0         | 1.135                                    | 0.477             |
| 2.4G 802.11n 20   | FRONT             | 2 437      | 6     | 15.33       | 0.260            | 0.021          | 0         | 1.040                                    | 0.022             |
|   | REAR              |            |       |             | 0.154            | 0.189          | 0         | 1.040                                    | 0.197             |
|   | LEFT              |            |       |             | -0.016           | 0.401          | 0         | 1.040                                    | 0.417             |
|   | TOP               |            |       |             | -0.055           | 0.138          | 0         | 1.040                                    | 0.144             |
|   | LEFT              | 2 412      | 1     | 15.03       | 0.226            | 0.308          | 0         | 1.114                                    | 0.343             |
|   | LEFT              | 2 462      | 11    | 16.38       | -0.034           | 0.386          | 0         | 0.817                                    | 0.315             |

Test Laboratory: ESTECH

## VALIDATION 750 BODY

**DUT: Dipole 750 MHz; Type: D750V2; Serial: D750V2 - SN:xxx**

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.993 \text{ mho/m}$ ;  $\epsilon_r = 57.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.36, 6.36, 6.36); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.12 mW/g

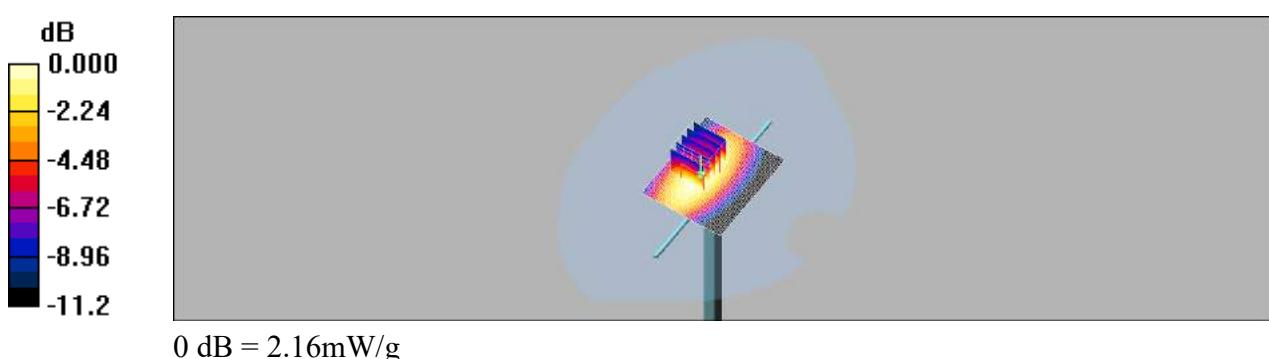
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 42.5 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 3.00 W/kg

**SAR(1 g) = 2.05 mW/g; SAR(10 g) = 1.36 mW/g**

Maximum value of SAR (measured) = 2.16 mW/g



Test Laboratory: ESTECH

## VALIDATION 835 BODY

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:xxx**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 835 \text{ MHz}$ ;  $\sigma = 0.961 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.54 mW/g

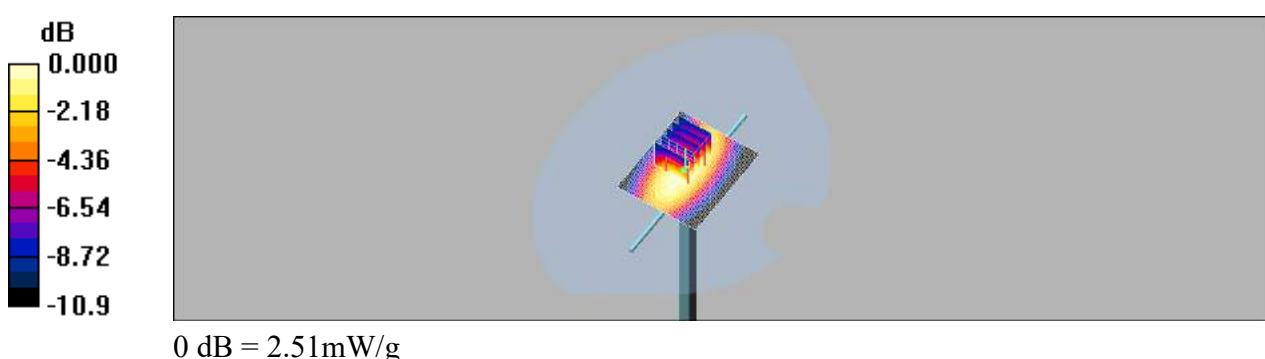
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.9 V/m; Power Drift = 0.002 dB

Peak SAR (extrapolated) = 3.41 W/kg

**SAR(1 g) = 2.36 mW/g; SAR(10 g) = 1.57 mW/g**

Maximum value of SAR (measured) = 2.51 mW/g



Test Laboratory: ESTECH

## VALIDATION 1750 BODY

**DUT: Dipole 1750 MHz; Type: D1750V2; Serial: Not Specified**

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1750 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 13.2 mW/g

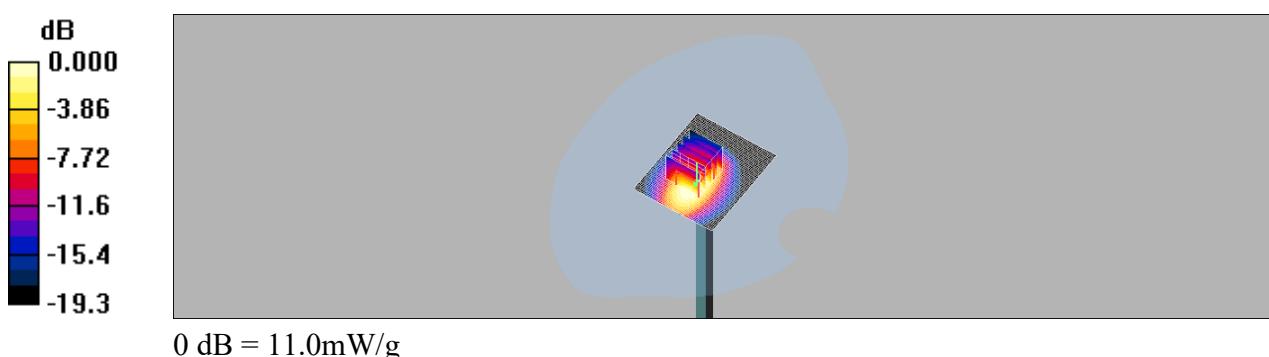
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 78.9 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 18.4 W/kg

**SAR(1 g) = 9.6 mW/g; SAR(10 g) = 4.64 mW/g**

Maximum value of SAR (measured) = 11.0 mW/g



Test Laboratory: ESTECH

## VALIDATION 1900 BODY

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:xxx**

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.54 \text{ mho/m}$ ;  $\epsilon_r = 51.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 12.9 mW/g

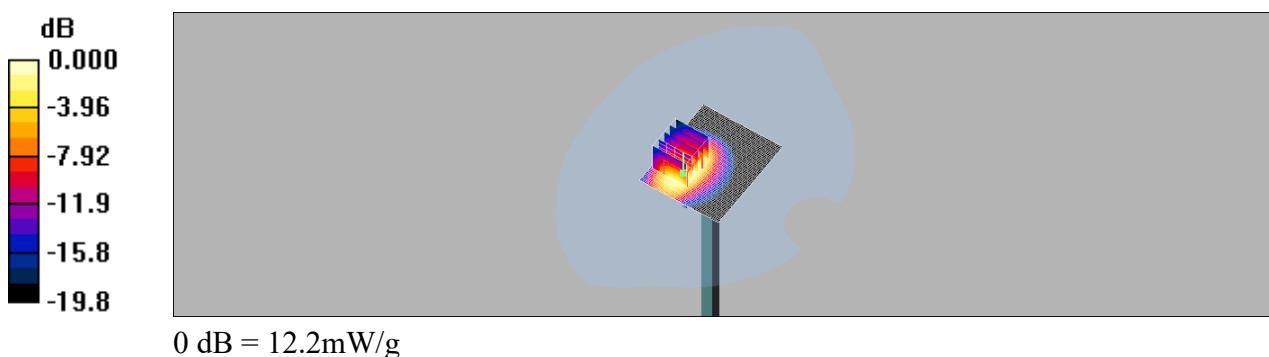
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 48.7 V/m; Power Drift = 0.085 dB

Peak SAR (extrapolated) = 17.1 W/kg

**SAR(1 g) = 10 mW/g; SAR(10 g) = 5.34 mW/g**

Maximum value of SAR (measured) = 12.2 mW/g



Test Laboratory: ESTECH

## VALIDATION 2450-BODY

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:xxx**

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2450$  MHz;  $\sigma = 1.98$  mho/m;  $\epsilon_r = 50.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.47, 4.47, 4.47); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 17.3 mW/g

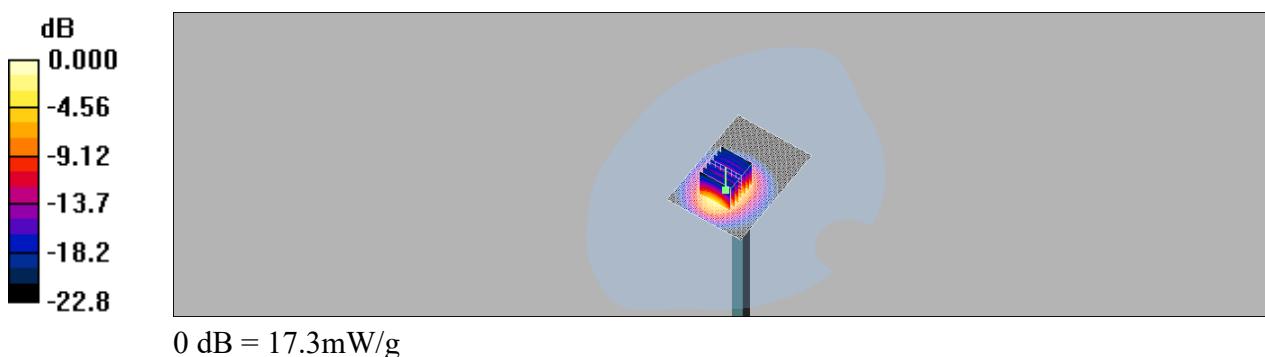
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 69.9 V/m; Power Drift = 0.132 dB

Peak SAR (extrapolated) = 32.6 W/kg

**SAR(1 g) = 14.2 mW/g; SAR(10 g) = 6.24 mW/g**

Maximum value of SAR (measured) = 17.3 mW/g



Test Laboratory: ESTECH

## VALIDATION 750 HEAD

**DUT: Dipole 750 MHz; Type: D750V2; Serial: D750V2 - SN:xxx**

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used (extrapolated):  $f = 750 \text{ MHz}$ ;  $\sigma = 0.894 \text{ mho/m}$ ;  $\epsilon_r = 40.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.53, 6.53, 6.53); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.15 mW/g

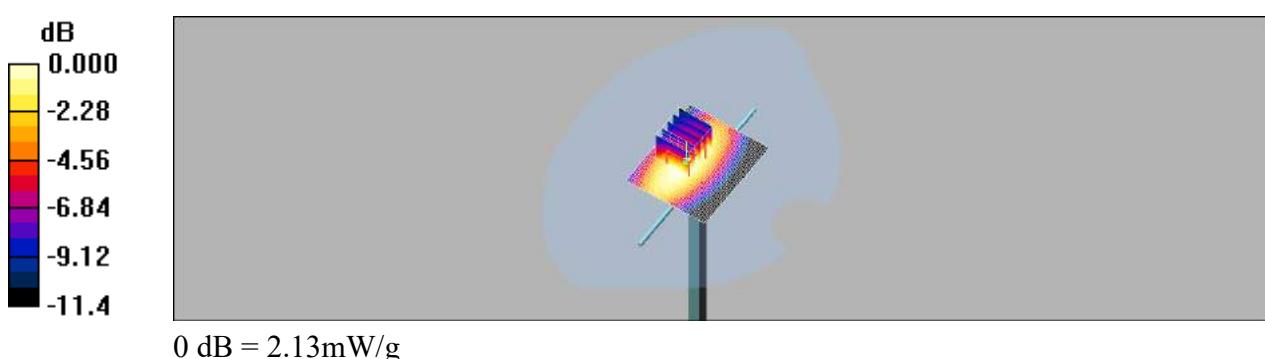
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 45.6 V/m; Power Drift = 0.110 dB

Peak SAR (extrapolated) = 2.85 W/kg

**SAR(1 g) = 1.99 mW/g; SAR(10 g) = 1.32 mW/g**

Maximum value of SAR (measured) = 2.13 mW/g



Test Laboratory: ESTECH

## VALIDATION 835 HEAD

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:xxx**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 835 \text{ MHz}$ ;  $\sigma = 0.894 \text{ mho/m}$ ;  $\epsilon_r = 40.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.63 mW/g

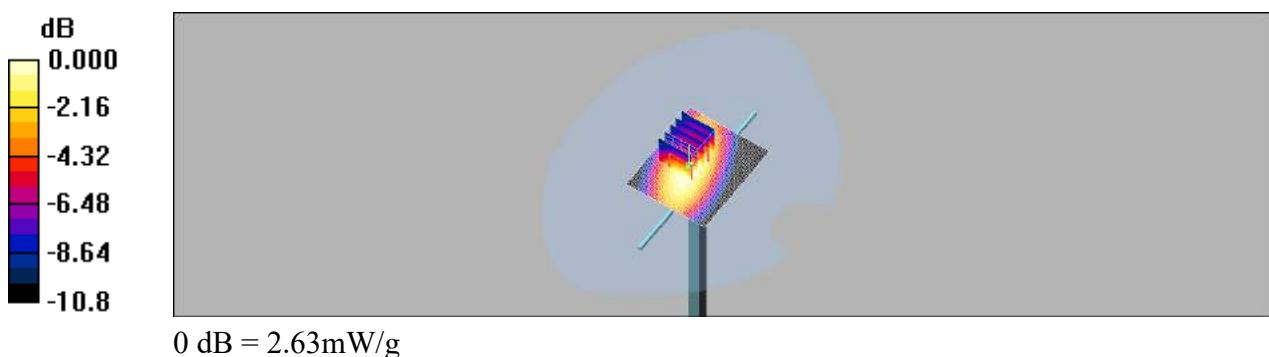
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 52.0 V/m; Power Drift = 0.037 dB

Peak SAR (extrapolated) = 3.51 W/kg

**SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.63 mW/g**

Maximum value of SAR (measured) = 2.63 mW/g



Test Laboratory: ESTECH

## VALIDATION 1750 HEAD

**DUT: Dipole 1750 MHz; Type: D1750V2; Serial: Not Specified**

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1750 \text{ MHz}$ ;  $\sigma = 1.39 \text{ mho/m}$ ;  $\epsilon_r = 40.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 10.6 mW/g

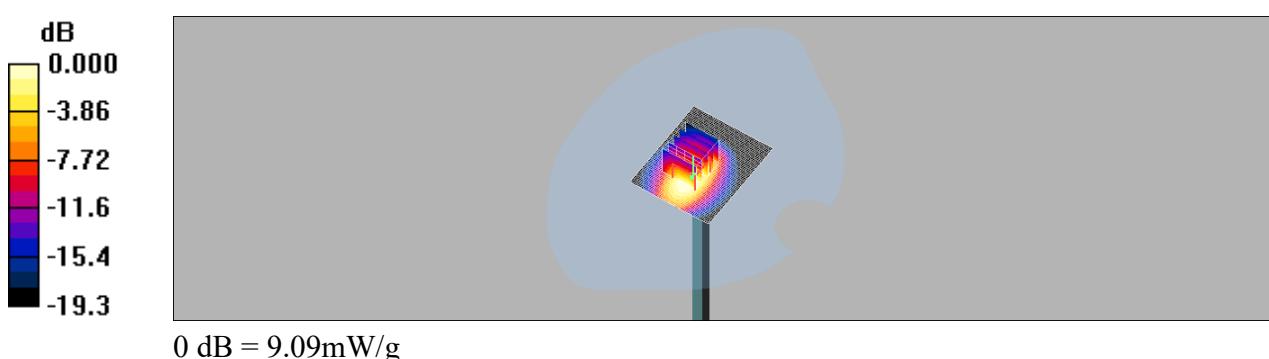
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 72.3 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 14.9 W/kg

**SAR(1 g) = 8.46 mW/g; SAR(10 g) = 4.51 mW/g**

Maximum value of SAR (measured) = 9.09 mW/g



Test Laboratory: ESTECH

## VALIDATION 1900 HEAD

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:xxx**

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.39 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 12.9 mW/g

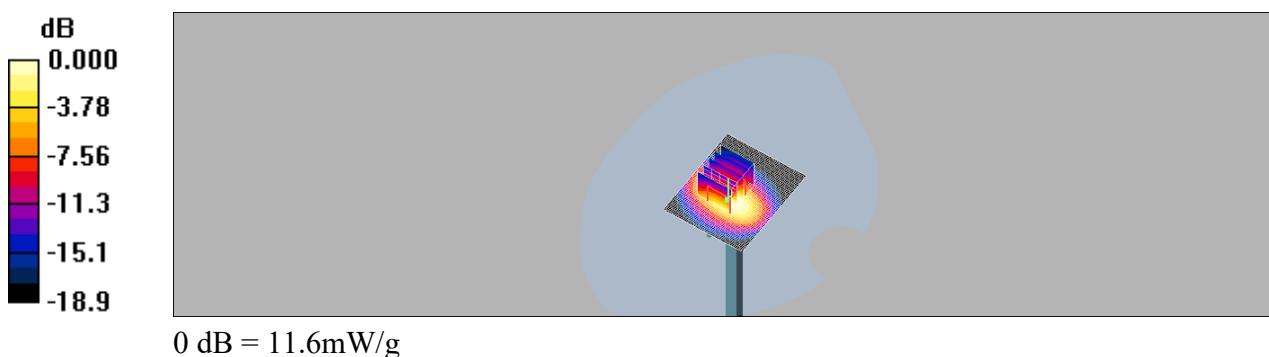
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 82.5 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 16.6 W/kg

**SAR(1 g) = 9.52 mW/g; SAR(10 g) = 5.14 mW/g**

Maximum value of SAR (measured) = 11.6 mW/g



Test Laboratory: ESTECH

## VALIDATION 2450-HEAD

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:xxx**

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2450$  MHz;  $\sigma = 1.84$  mho/m;  $\epsilon_r = 39.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.76, 4.76, 4.76); Calibrated: 2018-01-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x101x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 11.4 mW/g

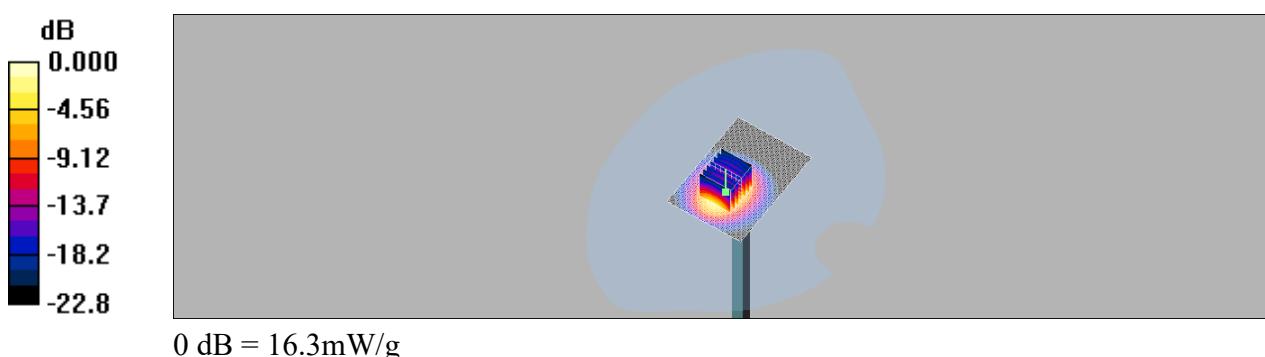
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.3 V/m; Power Drift = 0.129 dB

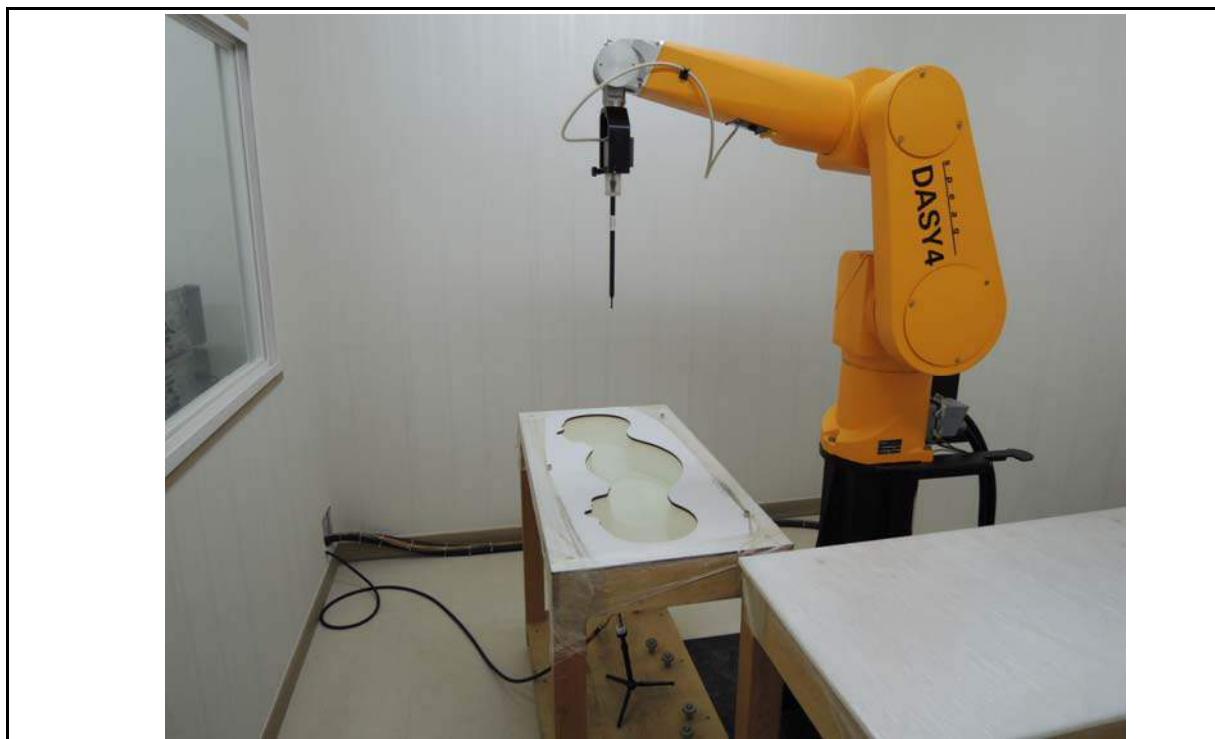
Peak SAR (extrapolated) = 21.1 W/kg

**SAR(1 g) = 13.89 mW/g; SAR(10 g) = 8.53 mW/g**

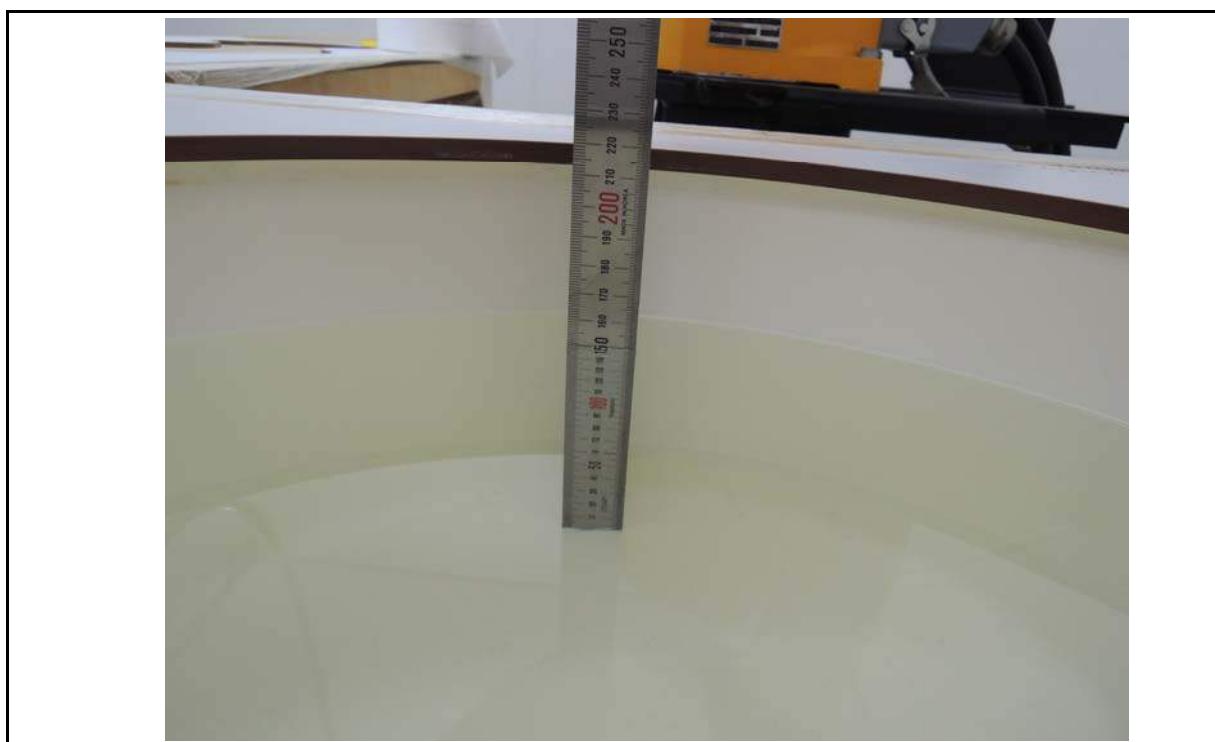
Maximum value of SAR (measured) = 16.3 mW/g



Dipole Validation



Liquid depth





## APPENDIX B : SAR Test Data

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Test Report No. : ESTSFC1810-001  
EST -P25 -IO2 -F12(2017.08.28.)

Web : [www.estech.co.kr](http://www.estech.co.kr)

Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH GSM850

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.420 mW/g

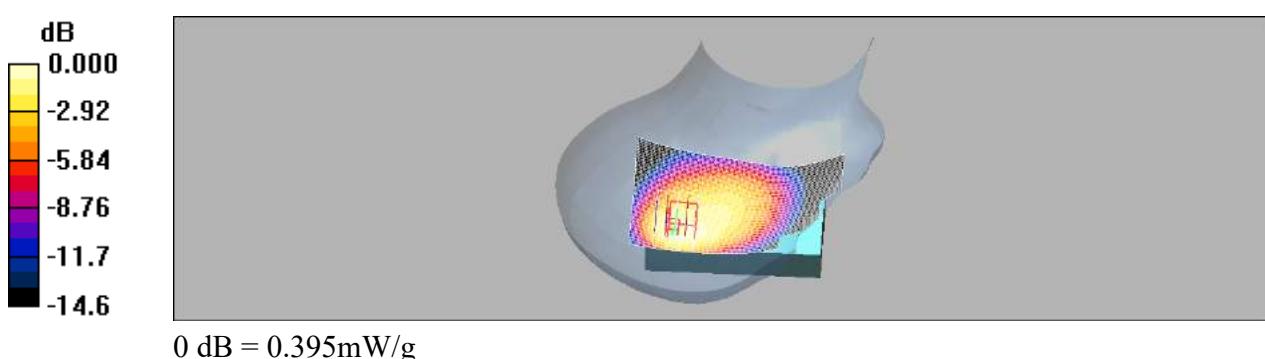
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.1 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.566 W/kg

**SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.226 mW/g**

Maximum value of SAR (measured) = 0.395 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT GSM850

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.568 mW/g

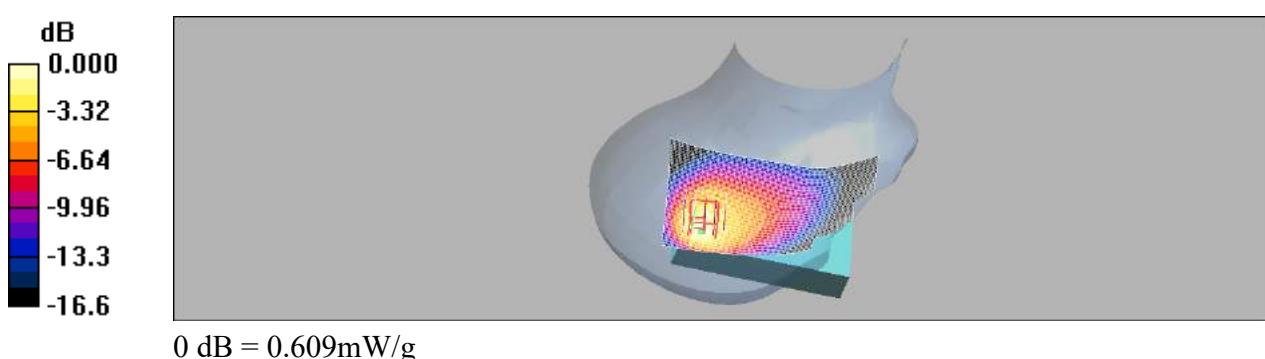
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.4 V/m; Power Drift = 0.002 dB

Peak SAR (extrapolated) = 1.09 W/kg

**SAR(1 g) = 0.488 mW/g; SAR(10 g) = 0.270 mW/g**

Maximum value of SAR (measured) = 0.609 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH GSM850

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.266 mW/g

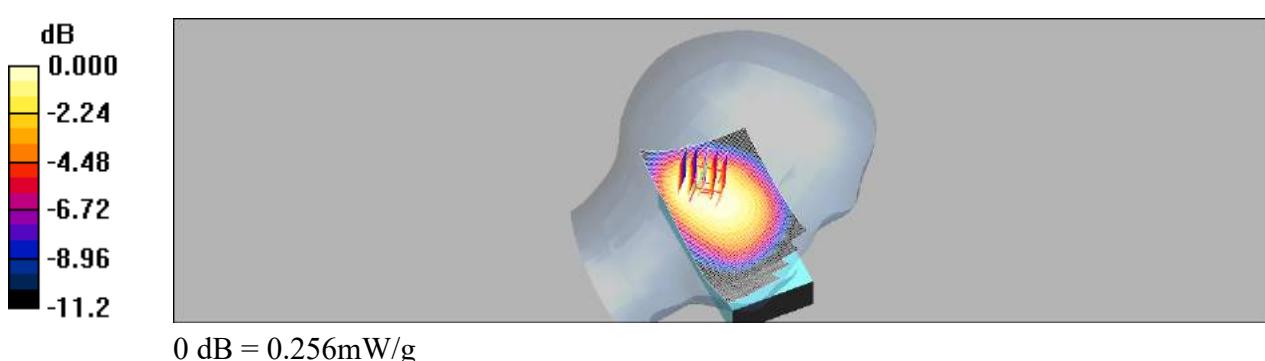
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 16.9 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.302 W/kg

**SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.173 mW/g**

Maximum value of SAR (measured) = 0.256 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT GSM850

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.282 mW/g

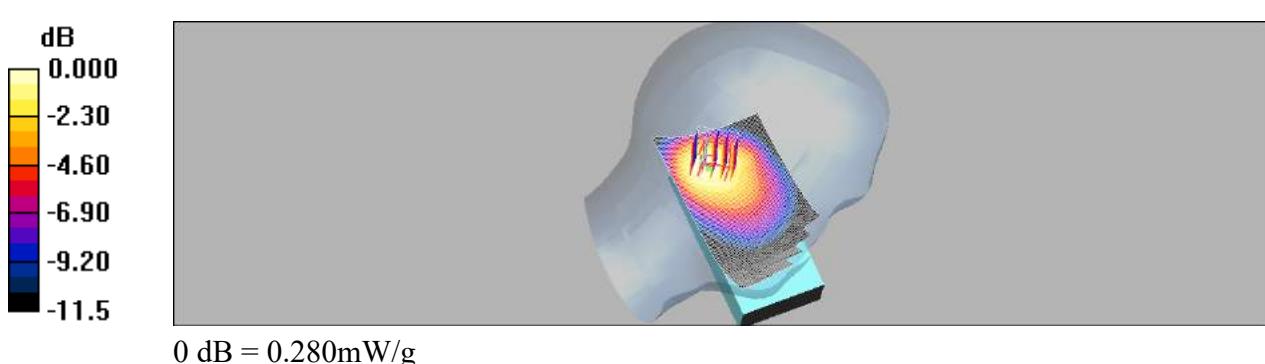
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.4 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.359 W/kg

**SAR(1 g) = 0.244 mW/g; SAR(10 g) = 0.167 mW/g**

Maximum value of SAR (measured) = 0.280 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT GSM850 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 824.2 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 824.2 \text{ MHz}$ ;  $\sigma = 0.877 \text{ mho/m}$ ;  $\epsilon_r = 40.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.453 mW/g

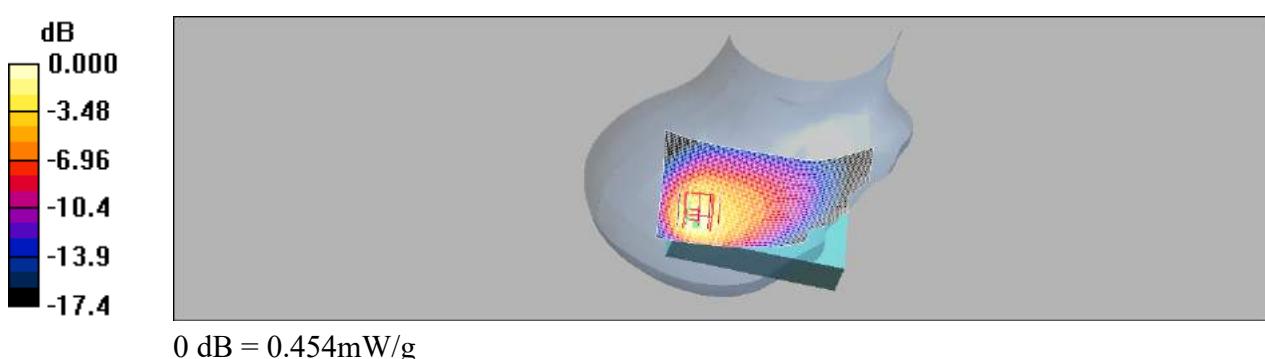
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.3 V/m; Power Drift = -0.025 dB

Peak SAR (extrapolated) = 0.858 W/kg

**SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.211 mW/g**

Maximum value of SAR (measured) = 0.454 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT GSM850 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 848.8 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 848.8 \text{ MHz}$ ;  $\sigma = 0.912 \text{ mho/m}$ ;  $\epsilon_r = 40.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.560 mW/g

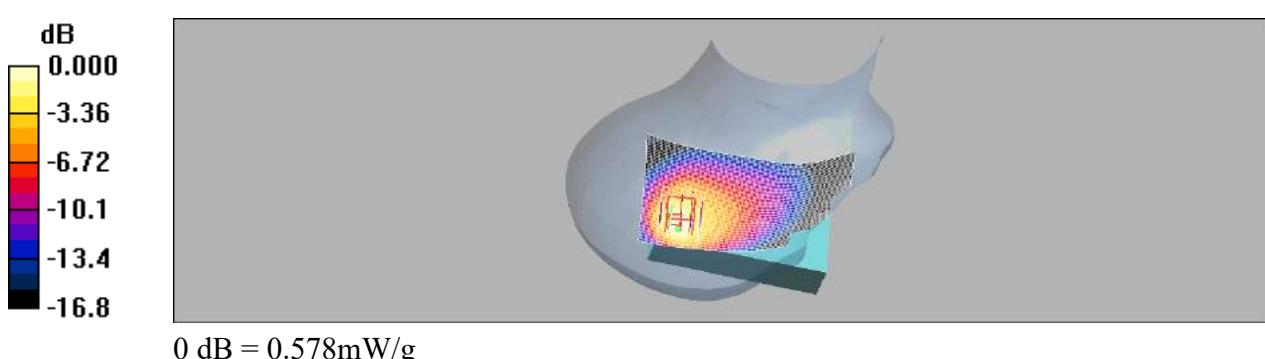
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 16.8 V/m; Power Drift = -0.027 dB

Peak SAR (extrapolated) = 1.05 W/kg

**SAR(1 g) = 0.480 mW/g; SAR(10 g) = 0.263 mW/g**

Maximum value of SAR (measured) = 0.578 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH GSM 1900

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.348 mW/g

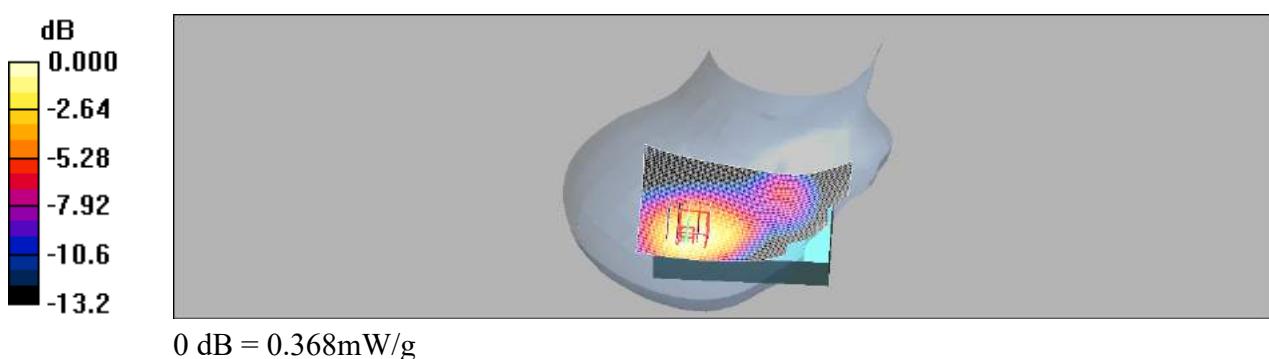
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.7 V/m; Power Drift = 0.092 dB

Peak SAR (extrapolated) = 0.451 W/kg

**SAR(1 g) = 0.314 mW/g; SAR(10 g) = 0.207 mW/g**

Maximum value of SAR (measured) = 0.368 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT GSM 1900

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.318 mW/g

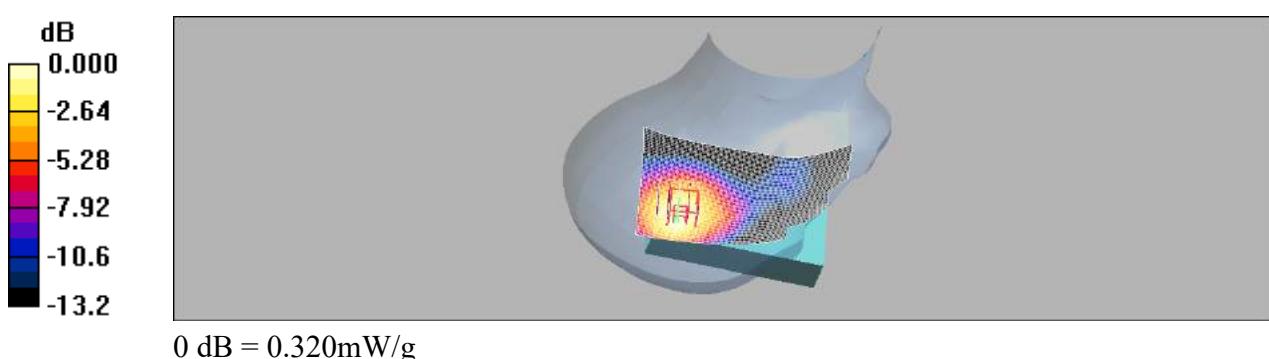
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.6 V/m; Power Drift = 0.029 dB

Peak SAR (extrapolated) = 0.405 W/kg

**SAR(1 g) = 0.273 mW/g; SAR(10 g) = 0.176 mW/g**

Maximum value of SAR (measured) = 0.320 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH GSM 1900

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.251 mW/g

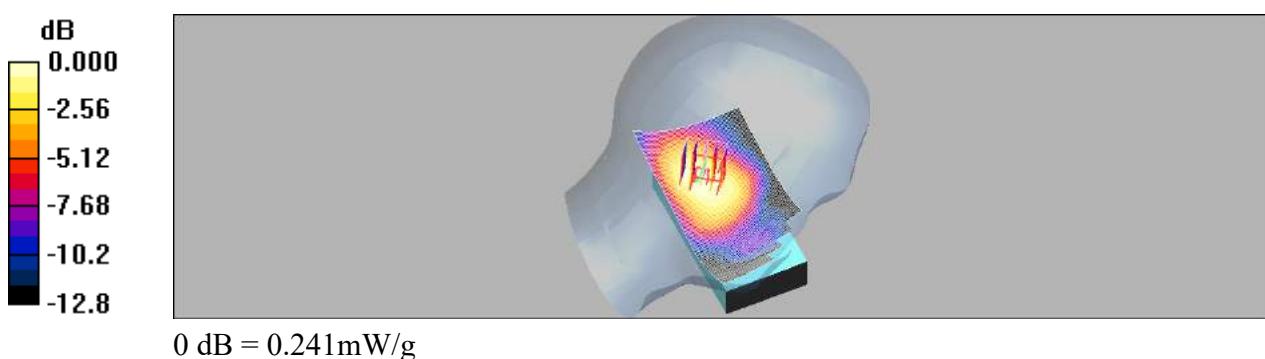
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 12.7 V/m; Power Drift = -0.119 dB

Peak SAR (extrapolated) = 0.282 W/kg

**SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.152 mW/g**

Maximum value of SAR (measured) = 0.241 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT GSM 1900

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.234 mW/g

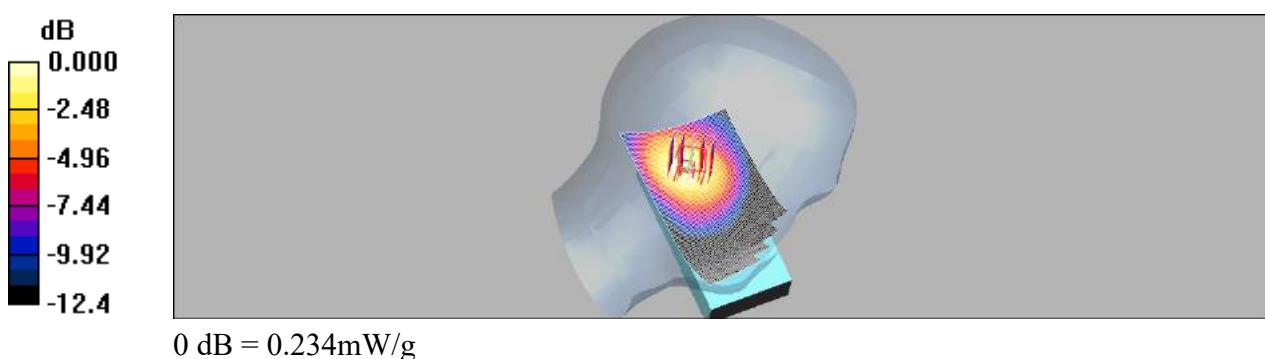
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 12.8 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 0.277 W/kg

**SAR(1 g) = 0.204 mW/g; SAR(10 g) = 0.138 mW/g**

Maximum value of SAR (measured) = 0.234 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH GSM 1900 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1852.5 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 1852.5 \text{ MHz}$ ;  $\sigma = 1.35 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.315 mW/g

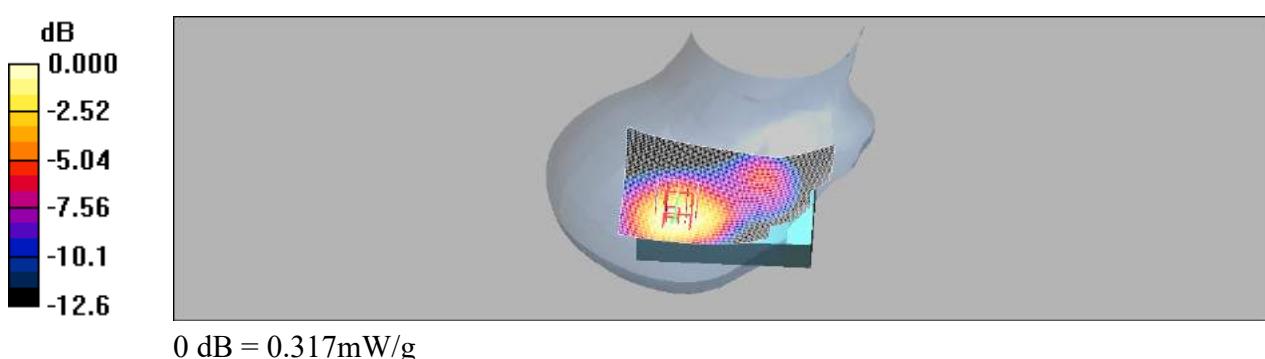
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.4 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.386 W/kg

**SAR(1 g) = 0.282 mW/g; SAR(10 g) = 0.190 mW/g**

Maximum value of SAR (measured) = 0.317 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH GSM 1900 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1907.5 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.341 mW/g

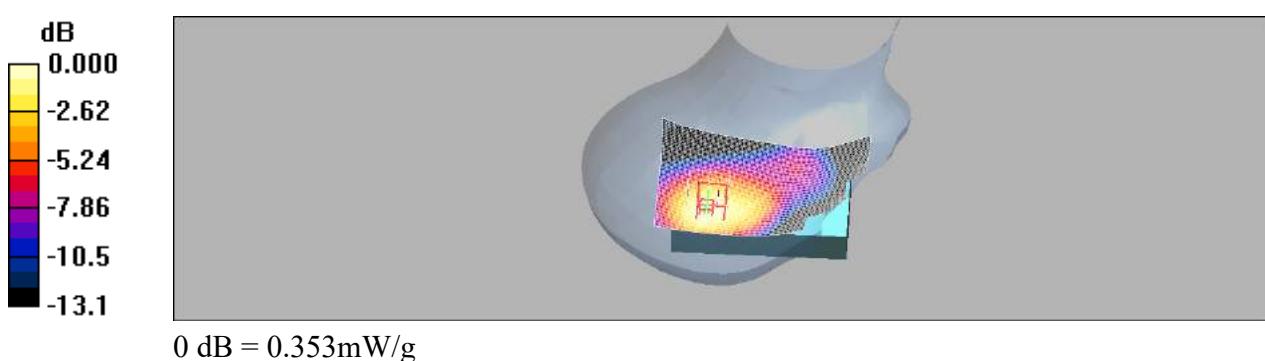
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.7 V/m; Power Drift = 0.060 dB

Peak SAR (extrapolated) = 0.435 W/kg

**SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.202 mW/g**

Maximum value of SAR (measured) = 0.353 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH WCDMA2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.577 mW/g

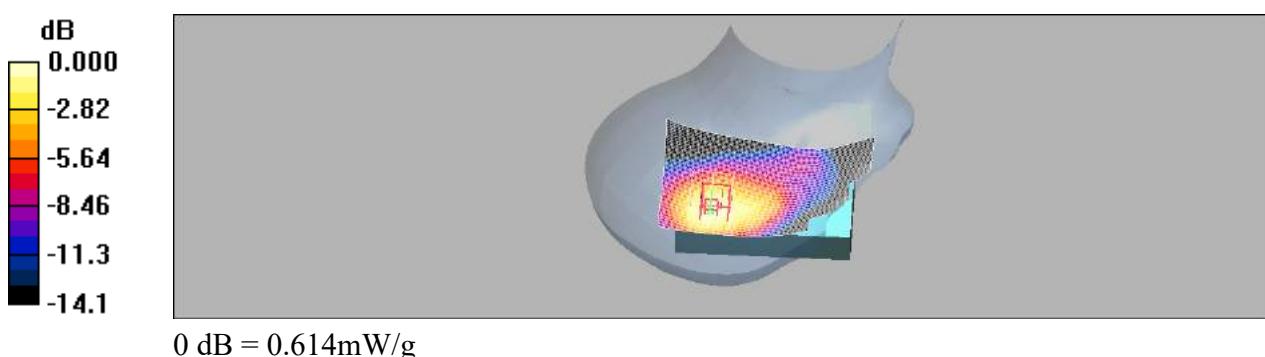
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.7 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.781 W/kg

**SAR(1 g) = 0.519 mW/g; SAR(10 g) = 0.329 mW/g**

Maximum value of SAR (measured) = 0.614 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT WCDMA2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.500 mW/g

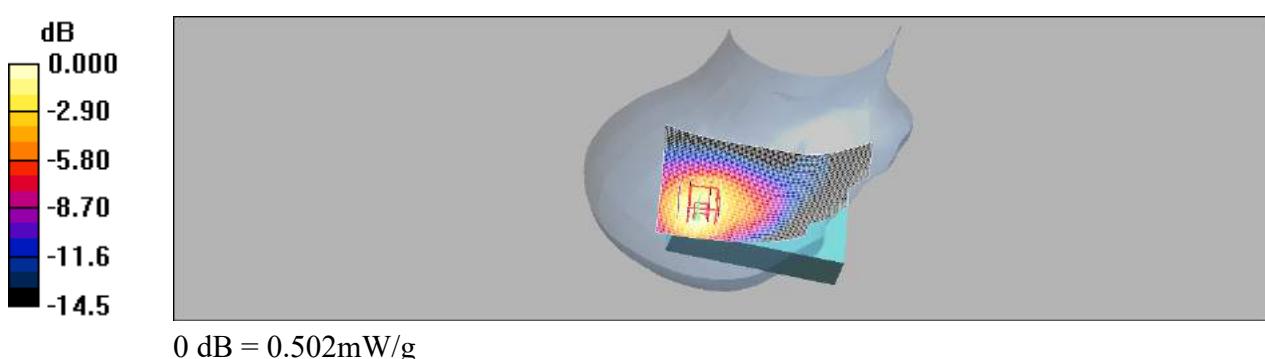
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.4 V/m; Power Drift = -0.028 dB

Peak SAR (extrapolated) = 0.670 W/kg

**SAR(1 g) = 0.421 mW/g; SAR(10 g) = 0.262 mW/g**

Maximum value of SAR (measured) = 0.502 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH WCDMA2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.407 mW/g

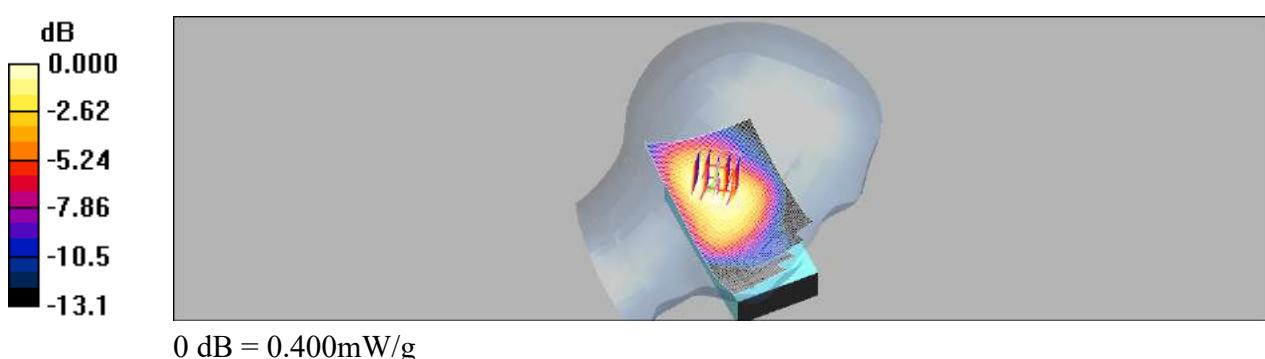
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 16.6 V/m; Power Drift = -0.145 dB

Peak SAR (extrapolated) = 0.486 W/kg

**SAR(1 g) = 0.351 mW/g; SAR(10 g) = 0.239 mW/g**

Maximum value of SAR (measured) = 0.400 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT WCDMA2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.368 mW/g

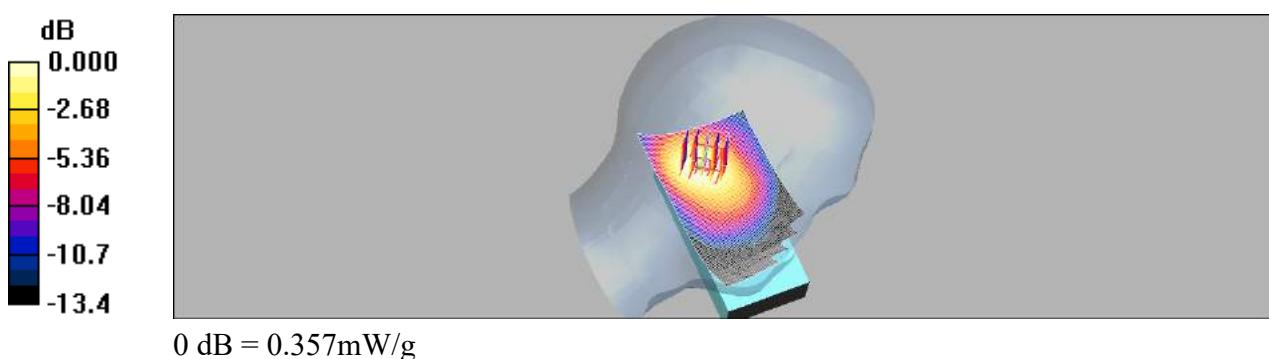
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.7 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 0.452 W/kg

**SAR(1 g) = 0.311 mW/g; SAR(10 g) = 0.206 mW/g**

Maximum value of SAR (measured) = 0.357 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH WCDMA2 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1852.4 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.35$  mho/m;  $\epsilon_r = 39.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.661 mW/g

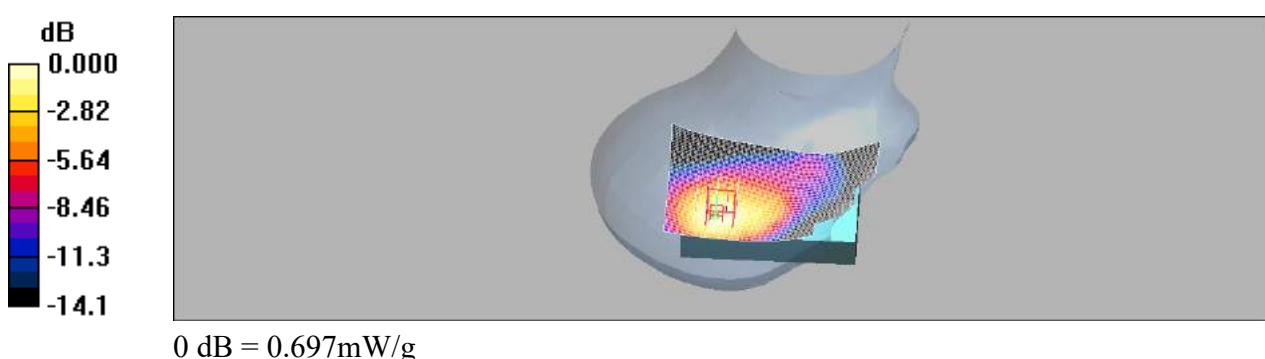
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.5 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.881 W/kg

**SAR(1 g) = 0.589 mW/g; SAR(10 g) = 0.373 mW/g**

Maximum value of SAR (measured) = 0.697 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH WCDMA2 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.457 mW/g

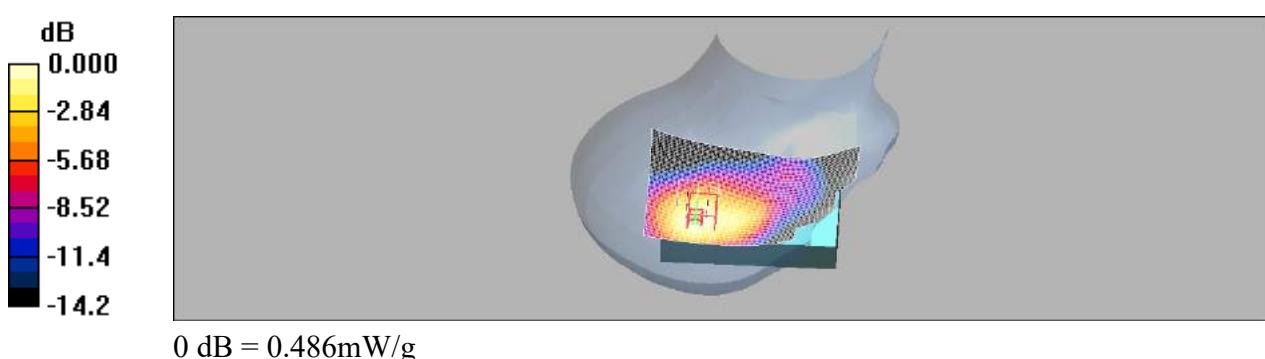
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.7 V/m; Power Drift = 0.002 dB

Peak SAR (extrapolated) = 0.623 W/kg

**SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.258 mW/g**

Maximum value of SAR (measured) = 0.486 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH WCDMA4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.665 mW/g

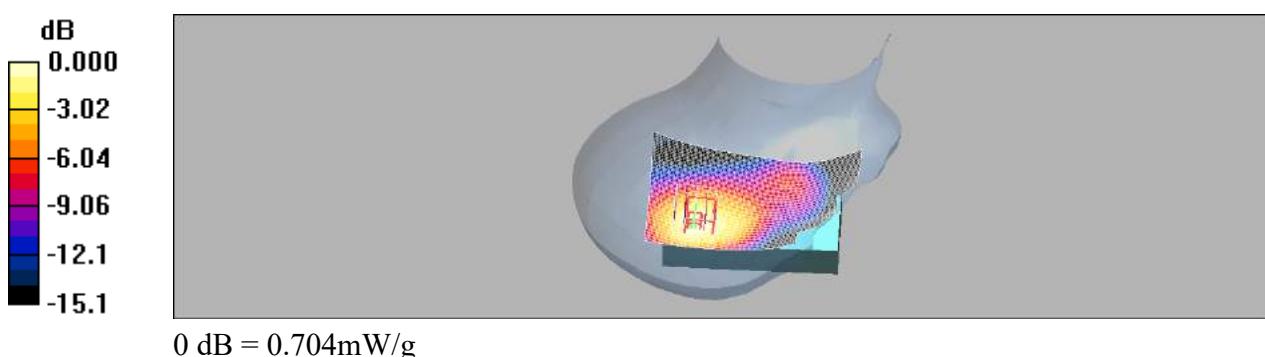
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 16.4 V/m; Power Drift = 0.093 dB

Peak SAR (extrapolated) = 0.902 W/kg

**SAR(1 g) = 0.590 mW/g; SAR(10 g) = 0.366 mW/g**

Maximum value of SAR (measured) = 0.704 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT WCDMA4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.38$  mho/m;  $\epsilon_r = 40.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.585 mW/g

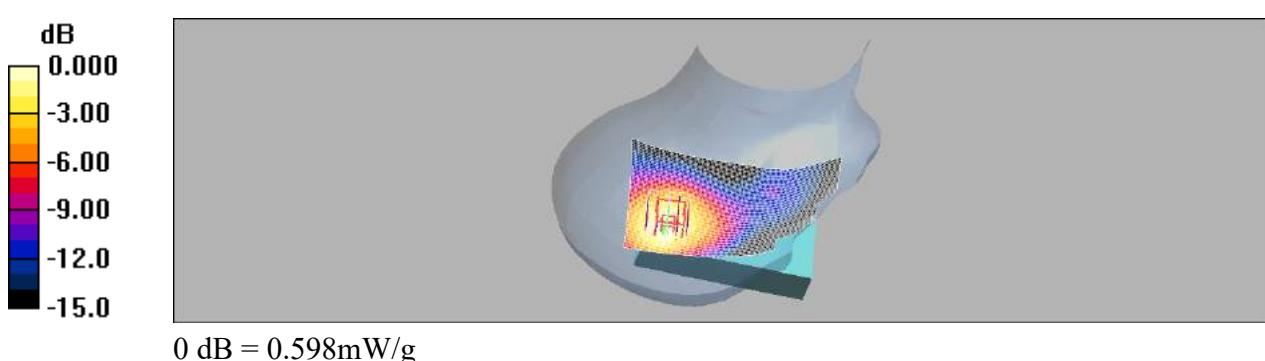
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.2 V/m; Power Drift = 0.059 dB

Peak SAR (extrapolated) = 0.792 W/kg

**SAR(1 g) = 0.507 mW/g; SAR(10 g) = 0.313 mW/g**

Maximum value of SAR (measured) = 0.598 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH WCDMA4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.38$  mho/m;  $\epsilon_r = 40.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.497 mW/g

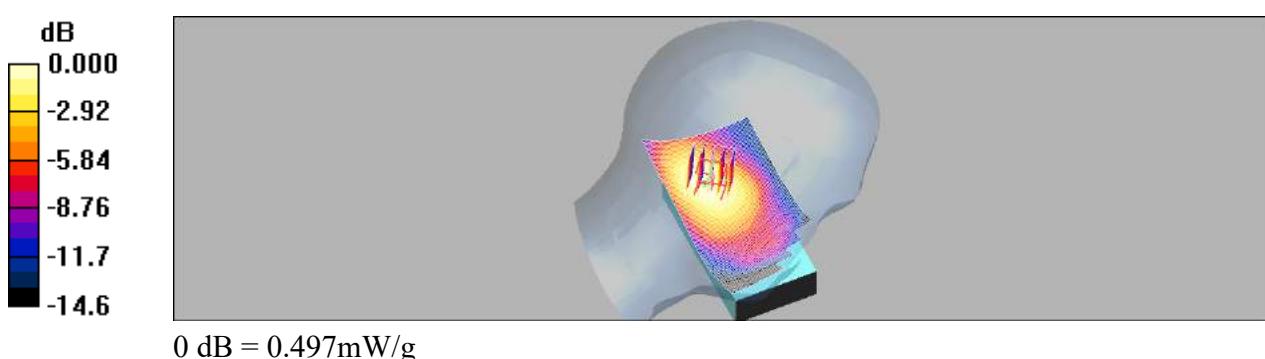
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.1 V/m; Power Drift = -0.161 dB

Peak SAR (extrapolated) = 0.608 W/kg

**SAR(1 g) = 0.430 mW/g; SAR(10 g) = 0.282 mW/g**

Maximum value of SAR (measured) = 0.497 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT WCDMA4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.470 mW/g

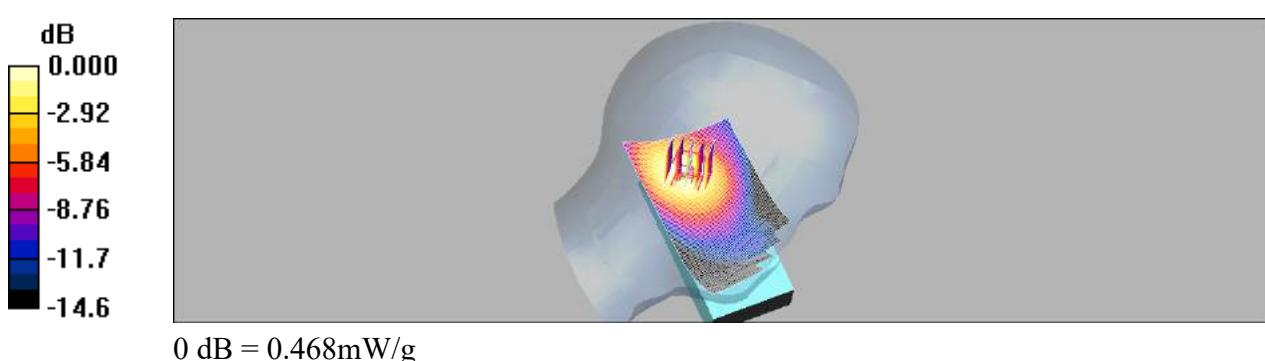
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 16.6 V/m; Power Drift = 0.056 dB

Peak SAR (extrapolated) = 0.586 W/kg

**SAR(1 g) = 0.398 mW/g; SAR(10 g) = 0.253 mW/g**

Maximum value of SAR (measured) = 0.468 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH WCDMA4 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1712.4$  MHz;  $\sigma = 1.36$  mho/m;  $\epsilon_r = 40.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.534 mW/g

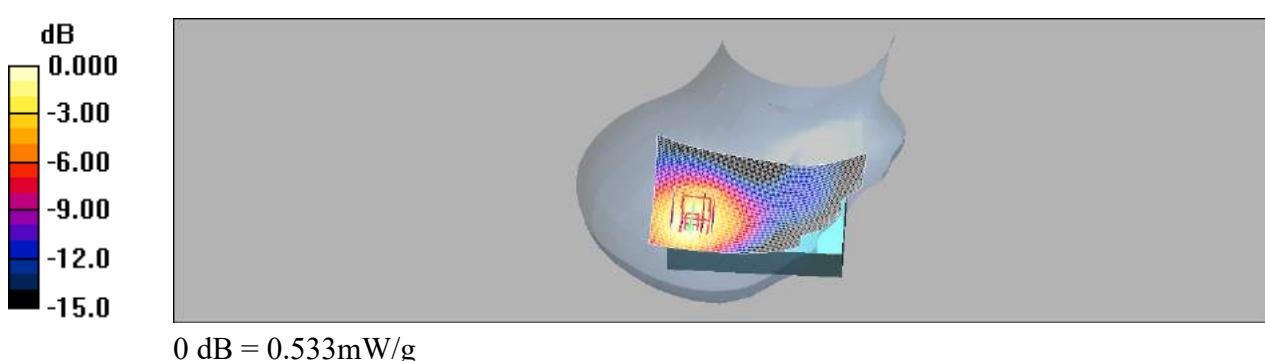
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.9 V/m; Power Drift = 0.184 dB

Peak SAR (extrapolated) = 0.705 W/kg

**SAR(1 g) = 0.446 mW/g; SAR(10 g) = 0.275 mW/g**

Maximum value of SAR (measured) = 0.533 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH WCDMA4 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1752.6 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.577 mW/g

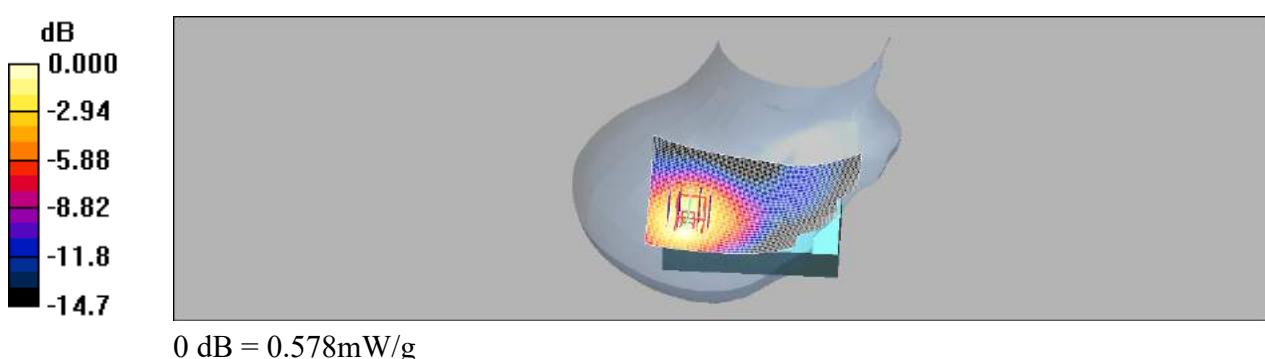
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.9 V/m; Power Drift = 0.191 dB

Peak SAR (extrapolated) = 0.762 W/kg

**SAR(1 g) = 0.492 mW/g; SAR(10 g) = 0.303 mW/g**

Maximum value of SAR (measured) = 0.578 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH WCDMA5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.515 mW/g

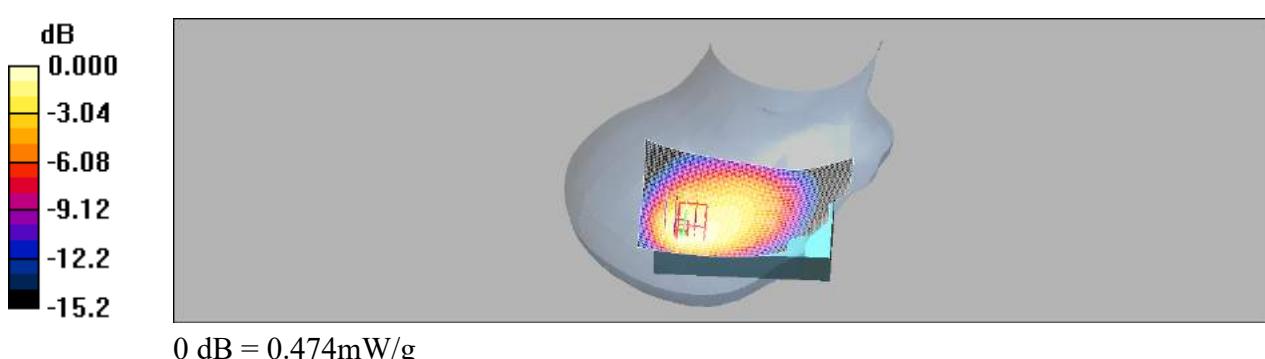
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 19.2 V/m; Power Drift = -0.136 dB

Peak SAR (extrapolated) = 0.721 W/kg

**SAR(1 g) = 0.407 mW/g; SAR(10 g) = 0.266 mW/g**

Maximum value of SAR (measured) = 0.474 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT WCDMA5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.896$  mho/m;  $\epsilon_r = 40.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.679 mW/g

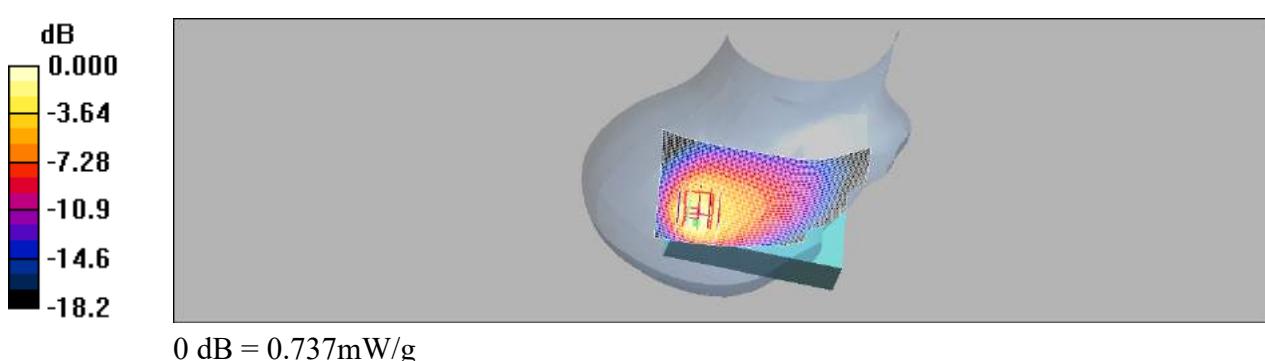
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.9 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 1.51 W/kg

**SAR(1 g) = 0.596 mW/g; SAR(10 g) = 0.308 mW/g**

Maximum value of SAR (measured) = 0.737 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH WCDMA5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.896$  mho/m;  $\epsilon_r = 40.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.282 mW/g

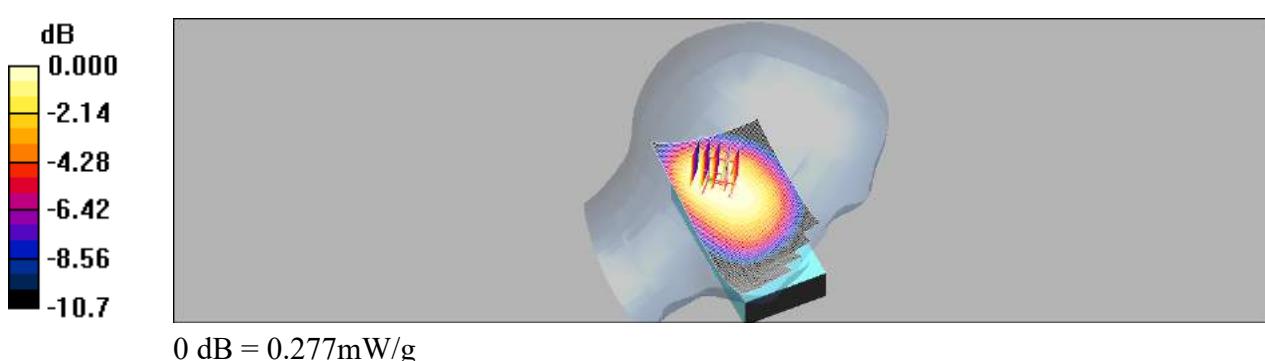
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.7 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.322 W/kg

**SAR(1 g) = 0.252 mW/g; SAR(10 g) = 0.189 mW/g**

Maximum value of SAR (measured) = 0.277 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT WCDMA5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.896$  mho/m;  $\epsilon_r = 40.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.303 mW/g

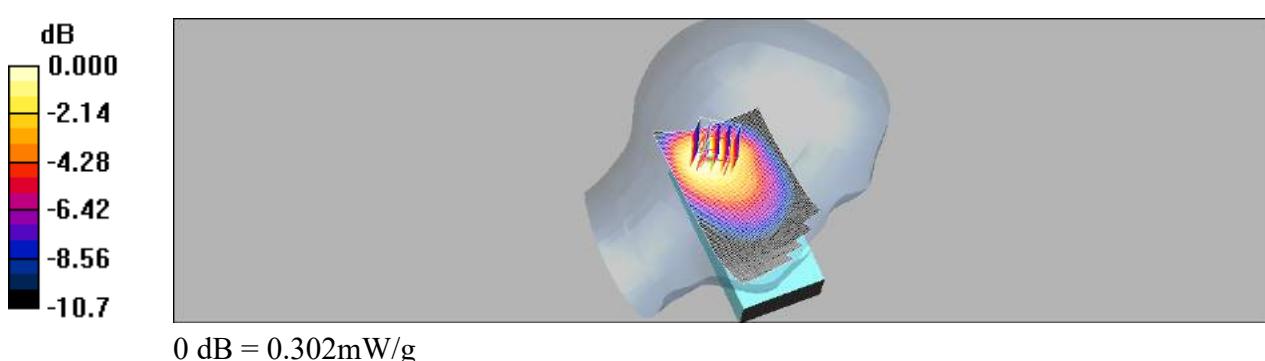
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.0 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.375 W/kg

**SAR(1 g) = 0.264 mW/g; SAR(10 g) = 0.184 mW/g**

Maximum value of SAR (measured) = 0.302 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT WCDMA5 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 826.4$  MHz;  $\sigma = 0.882$  mho/m;  $\epsilon_r = 40.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.720 mW/g

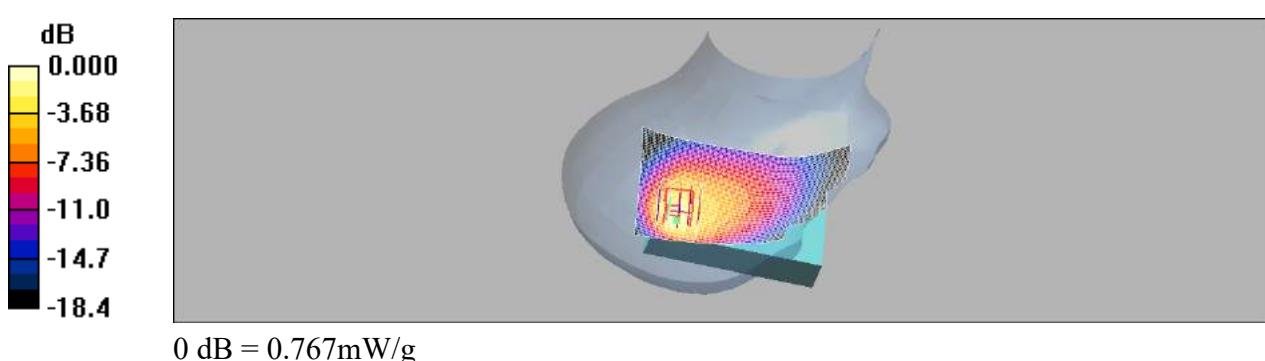
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.2 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 1.61 W/kg

**SAR(1 g) = 0.632 mW/g; SAR(10 g) = 0.325 mW/g**

Maximum value of SAR (measured) = 0.767 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT WCDMA5 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 846.6 \text{ MHz}$ ;  $\sigma = 0.908 \text{ mho/m}$ ;  $\epsilon_r = 40.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.681 mW/g

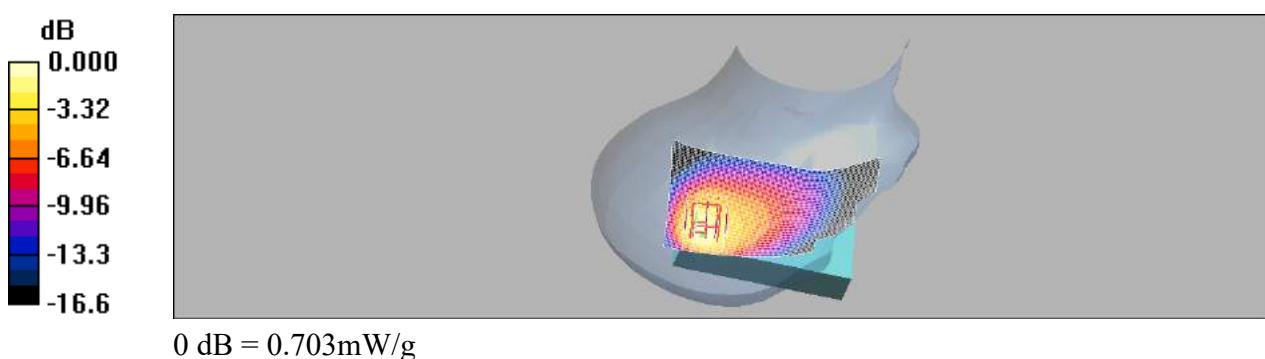
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 18.6 V/m; Power Drift = -0.205 dB

Peak SAR (extrapolated) = 1.24 W/kg

**SAR(1 g) = 0.560 mW/g; SAR(10 g) = 0.315 mW/g**

Maximum value of SAR (measured) = 0.703 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.458 mW/g

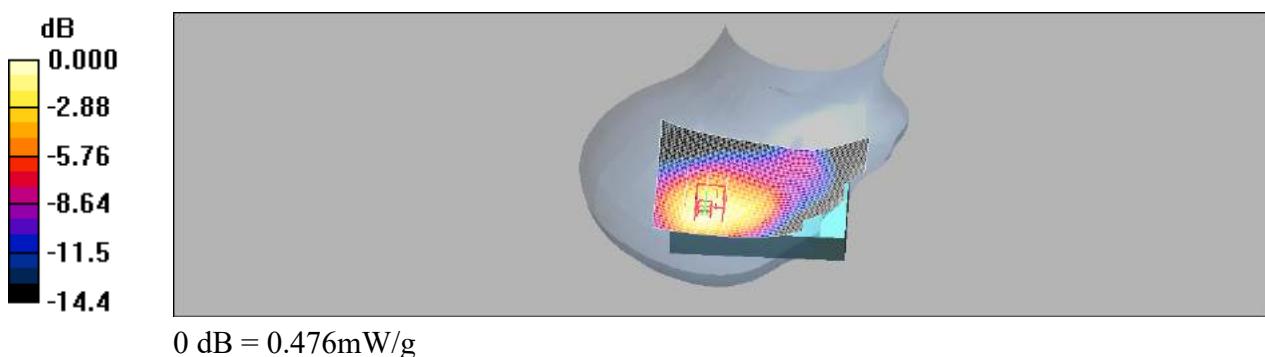
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.9 V/m; Power Drift = -0.071 dB

Peak SAR (extrapolated) = 0.609 W/kg

**SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.256 mW/g**

Maximum value of SAR (measured) = 0.476 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.391 mW/g

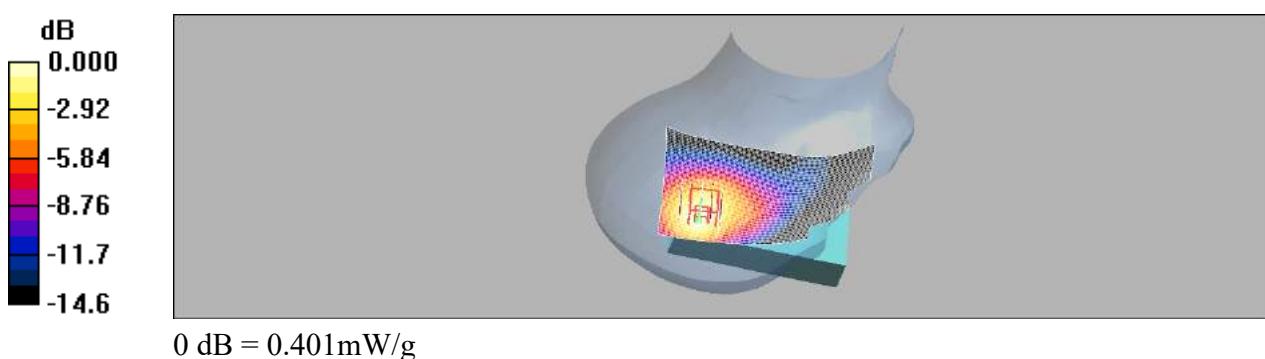
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.1 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 0.533 W/kg

**SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.204 mW/g**

Maximum value of SAR (measured) = 0.401 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH LTE2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.315 mW/g

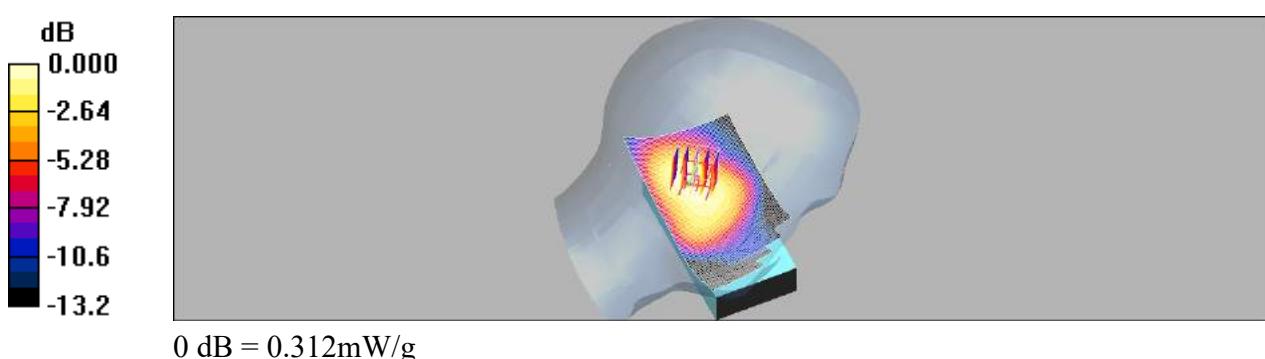
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 14.4 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 0.377 W/kg

**SAR(1 g) = 0.273 mW/g; SAR(10 g) = 0.187 mW/g**

Maximum value of SAR (measured) = 0.312 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT LTE2

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.37 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.292 mW/g

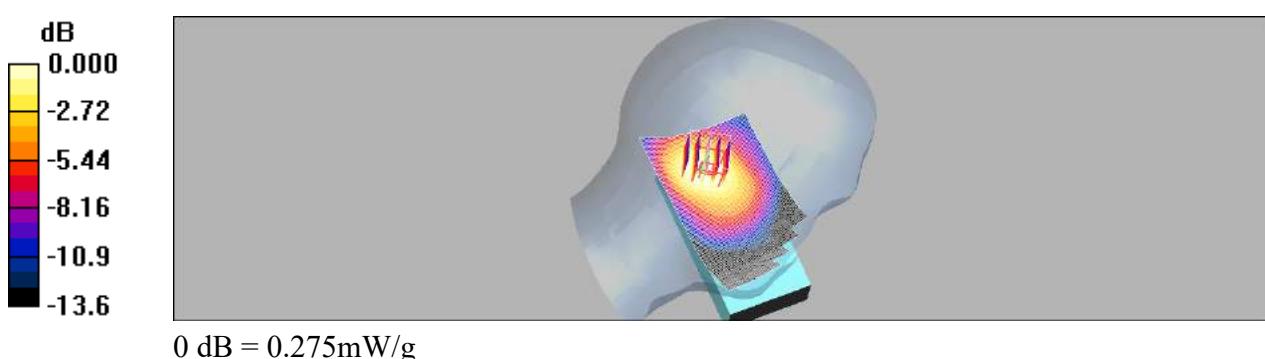
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.9 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 0.347 W/kg

**SAR(1 g) = 0.242 mW/g; SAR(10 g) = 0.161 mW/g**

Maximum value of SAR (measured) = 0.275 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE2 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1852.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1852.5 \text{ MHz}$ ;  $\sigma = 1.35 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.459 mW/g

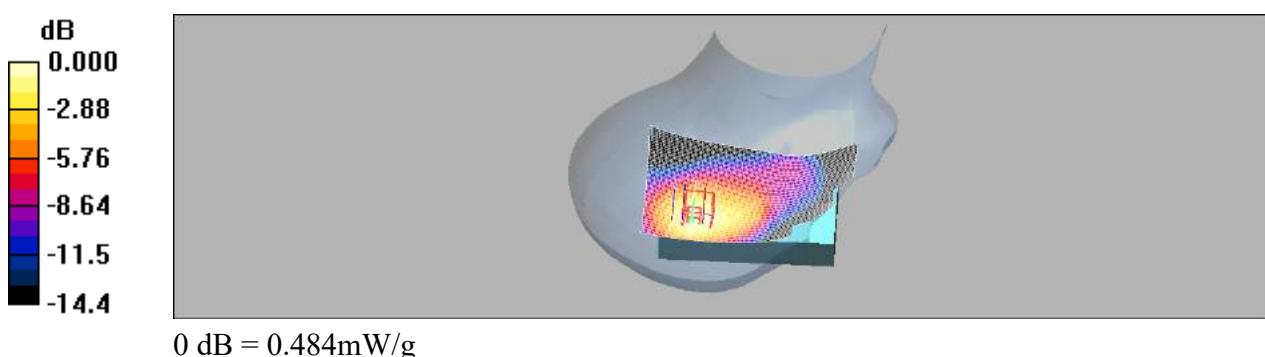
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.7 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 0.609 W/kg

**SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.259 mW/g**

Maximum value of SAR (measured) = 0.484 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE2 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1907.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.26, 5.26, 5.26); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.398 mW/g

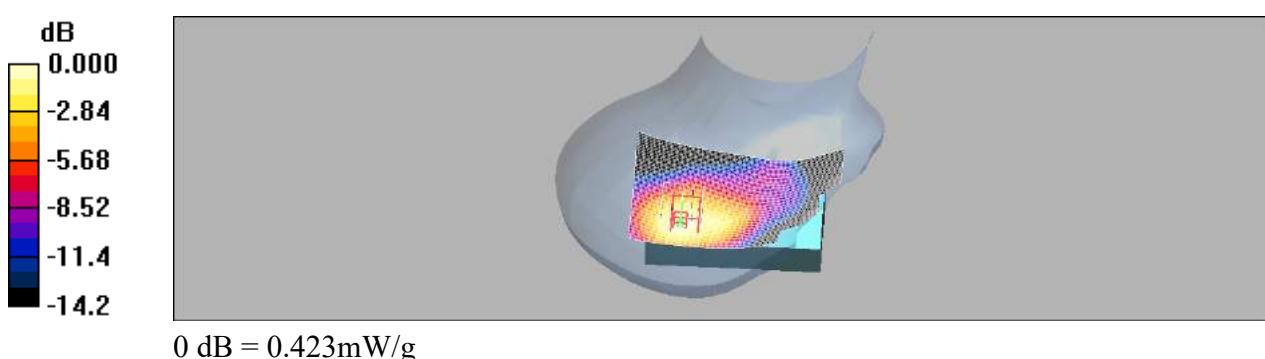
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 12.7 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.542 W/kg

**SAR(1 g) = 0.358 mW/g; SAR(10 g) = 0.225 mW/g**

Maximum value of SAR (measured) = 0.423 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.450 mW/g

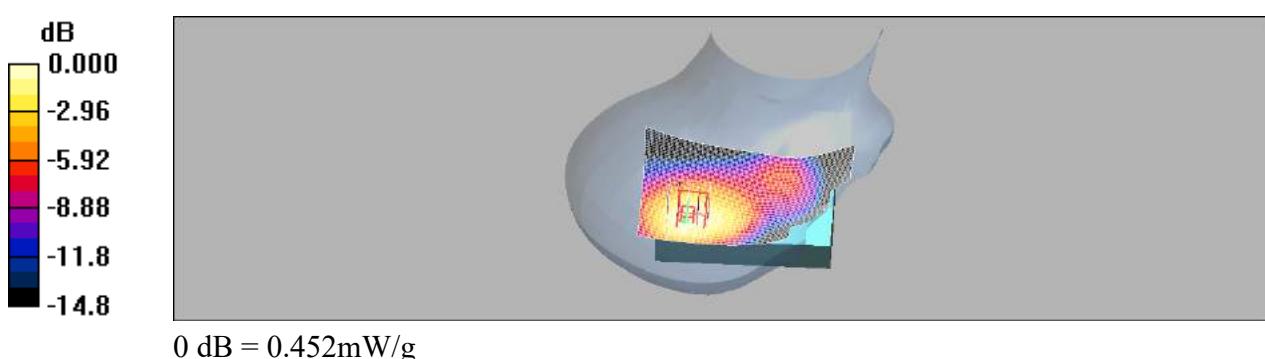
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.6 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 0.579 W/kg

**SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.242 mW/g**

Maximum value of SAR (measured) = 0.452 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.393 mW/g

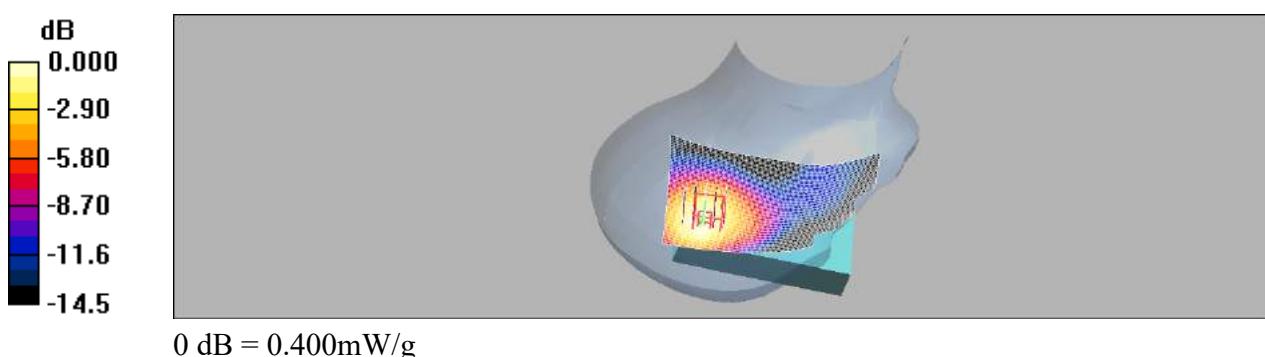
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.1 V/m; Power Drift = 0.052 dB

Peak SAR (extrapolated) = 0.522 W/kg

**SAR(1 g) = 0.337 mW/g; SAR(10 g) = 0.208 mW/g**

Maximum value of SAR (measured) = 0.400 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH LTE4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.338 mW/g

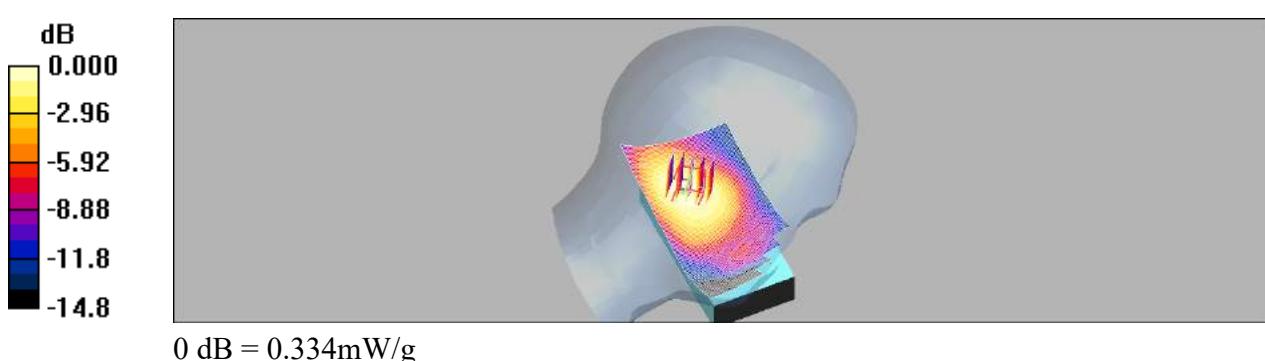
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 14.8 V/m; Power Drift = -0.054 dB

Peak SAR (extrapolated) = 0.412 W/kg

**SAR(1 g) = 0.291 mW/g; SAR(10 g) = 0.190 mW/g**

Maximum value of SAR (measured) = 0.334 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT LTE4

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.327 mW/g

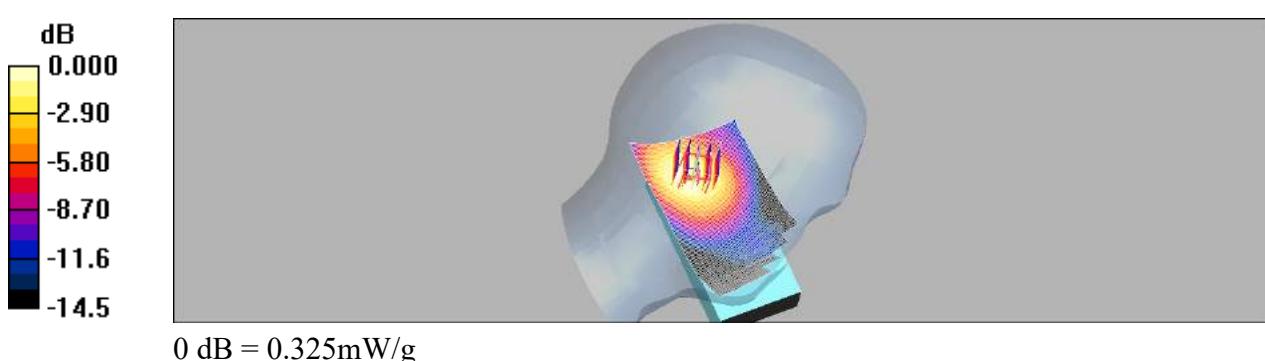
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 14.0 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.409 W/kg

**SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.178 mW/g**

Maximum value of SAR (measured) = 0.325 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE4 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1712.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1712.5 \text{ MHz}$ ;  $\sigma = 1.36 \text{ mho/m}$ ;  $\epsilon_r = 40.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.410 mW/g

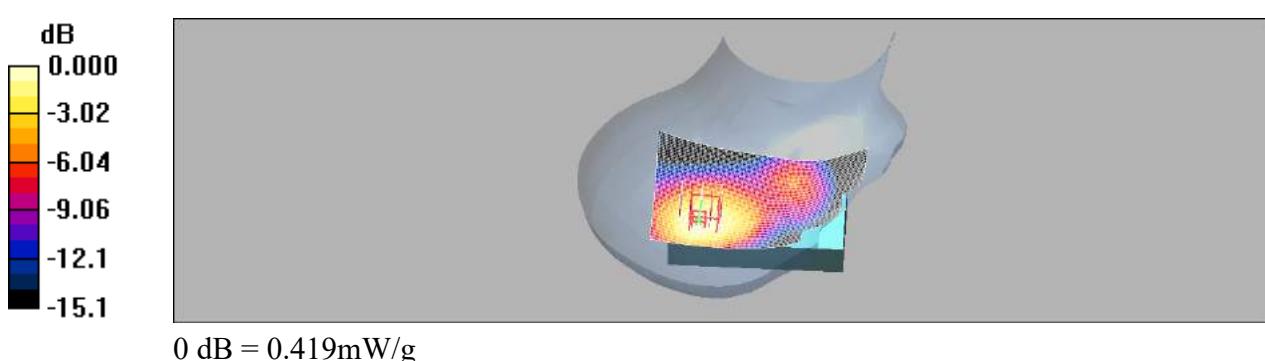
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.2 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 0.538 W/kg

**SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.222 mW/g**

Maximum value of SAR (measured) = 0.419 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE4 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 1752.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1752.5$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.443 mW/g

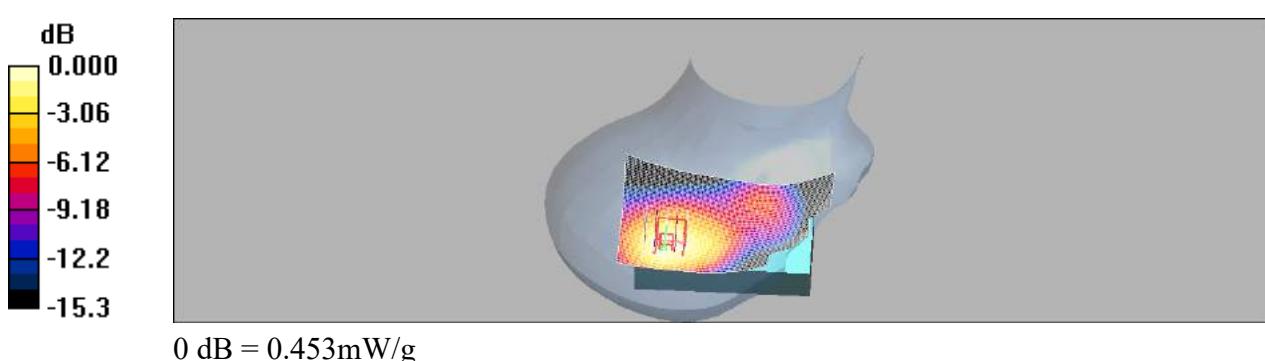
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 0.581 W/kg

**SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.239 mW/g**

Maximum value of SAR (measured) = 0.453 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.395 mW/g

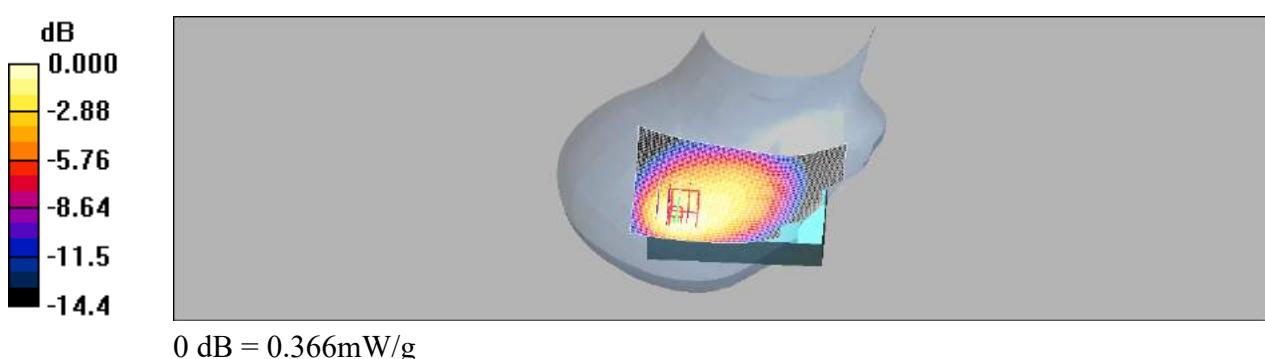
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.0 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 0.511 W/kg

**SAR(1 g) = 0.316 mW/g; SAR(10 g) = 0.210 mW/g**

Maximum value of SAR (measured) = 0.366 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.448 mW/g

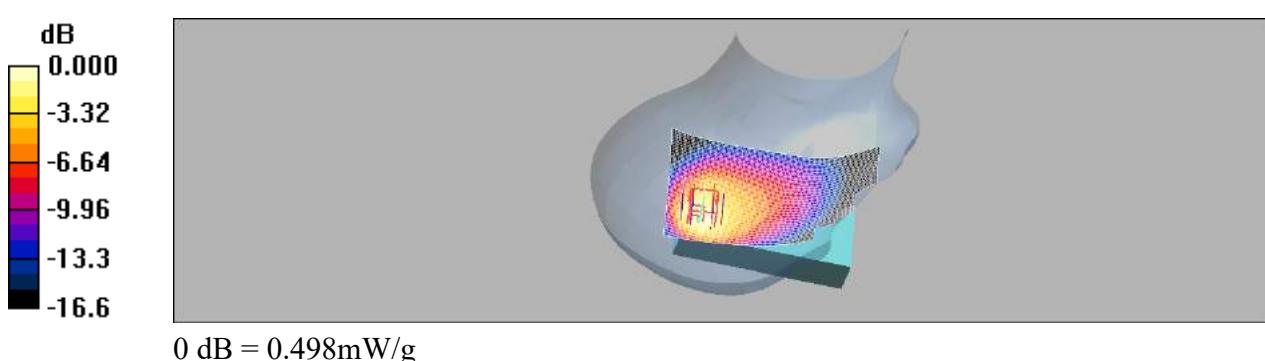
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 16.3 V/m; Power Drift = -0.055 dB

Peak SAR (extrapolated) = 0.933 W/kg

**SAR(1 g) = 0.422 mW/g; SAR(10 g) = 0.235 mW/g**

Maximum value of SAR (measured) = 0.498 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH LTE5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.241 mW/g

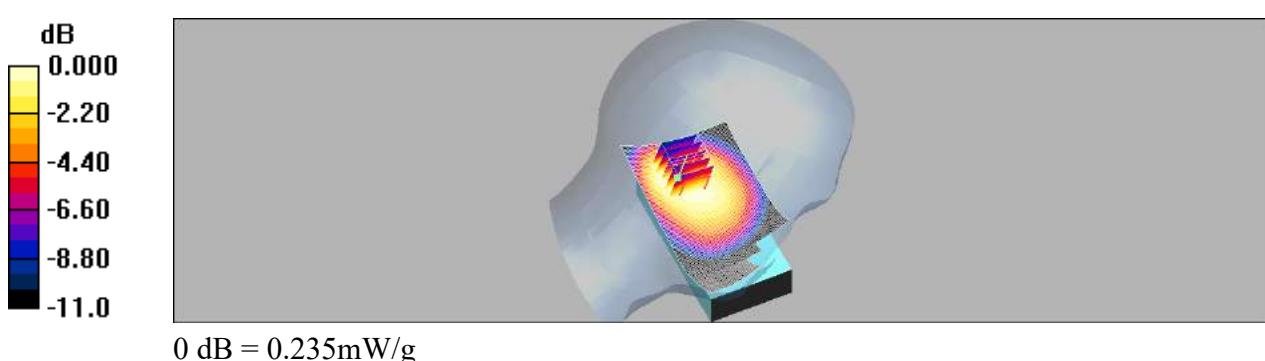
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 16.0 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.279 W/kg

**SAR(1 g) = 0.210 mW/g; SAR(10 g) = 0.156 mW/g**

Maximum value of SAR (measured) = 0.235 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT LTE5

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 40.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.270 mW/g

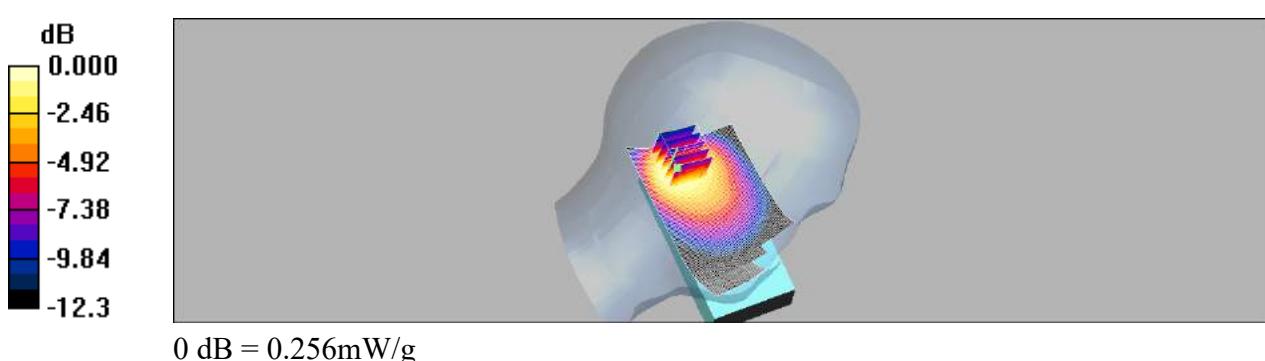
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 14.4 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 0.336 W/kg

**SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.151 mW/g**

Maximum value of SAR (measured) = 0.256 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE5 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 826.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 826.5 \text{ MHz}$ ;  $\sigma = 0.882 \text{ mho/m}$ ;  $\epsilon_r = 40.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.422 mW/g

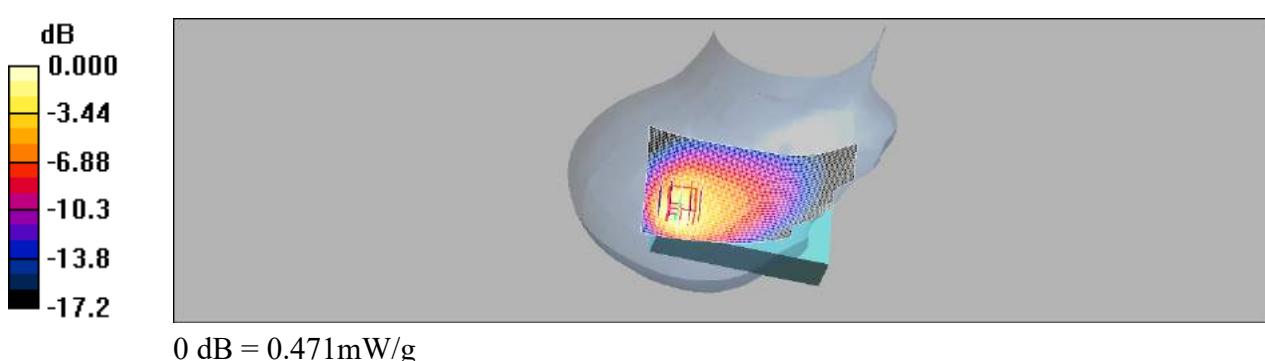
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.5 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 0.885 W/kg

**SAR(1 g) = 0.395 mW/g; SAR(10 g) = 0.219 mW/g**

Maximum value of SAR (measured) = 0.471 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE5 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 846.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 846.5 \text{ MHz}$ ;  $\sigma = 0.908 \text{ mho/m}$ ;  $\epsilon_r = 40.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.27, 6.27, 6.27); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.373 mW/g

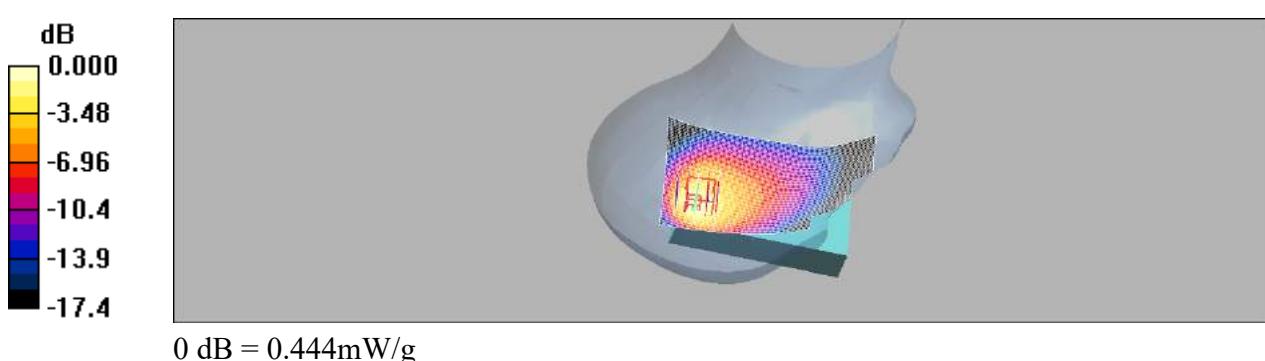
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 14.6 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 0.760 W/kg

**SAR(1 g) = 0.351 mW/g; SAR(10 g) = 0.193 mW/g**

Maximum value of SAR (measured) = 0.444 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH LTE17

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.858 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.53, 6.53, 6.53); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.197 mW/g

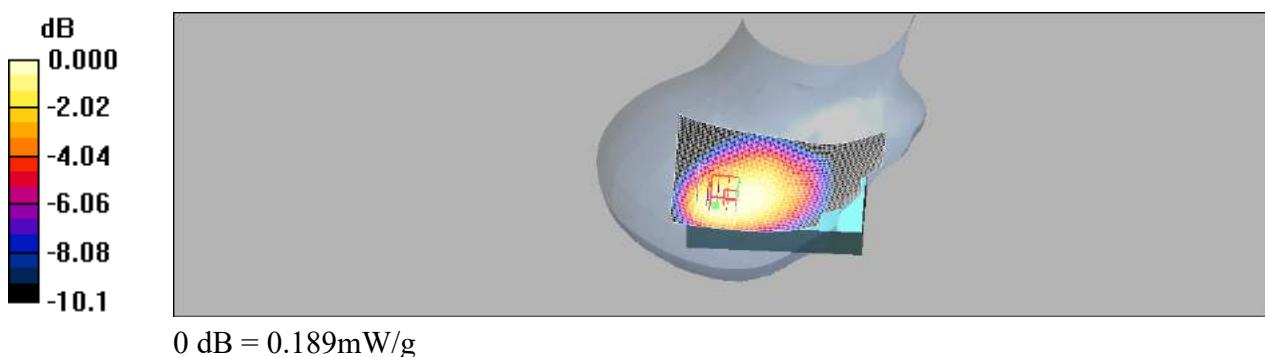
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.7 V/m; Power Drift = -0.108 dB

Peak SAR (extrapolated) = 0.221 W/kg

**SAR(1 g) = 0.177 mW/g; SAR(10 g) = 0.146 mW/g**

Maximum value of SAR (measured) = 0.189 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE17

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.858 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.53, 6.53, 6.53); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.267 mW/g

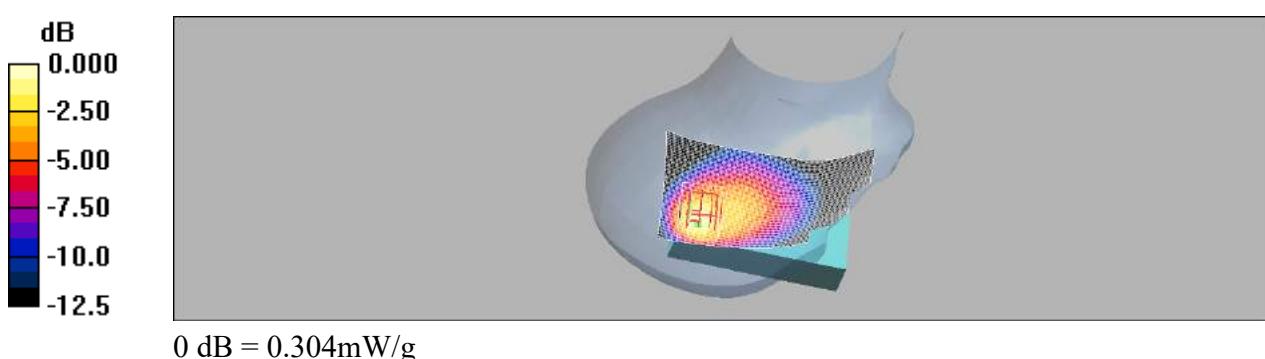
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.4 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 0.478 W/kg

**SAR(1 g) = 0.250 mW/g; SAR(10 g) = 0.166 mW/g**

Maximum value of SAR (measured) = 0.304 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH LTE17

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wirless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.858 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.53, 6.53, 6.53); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.146 mW/g

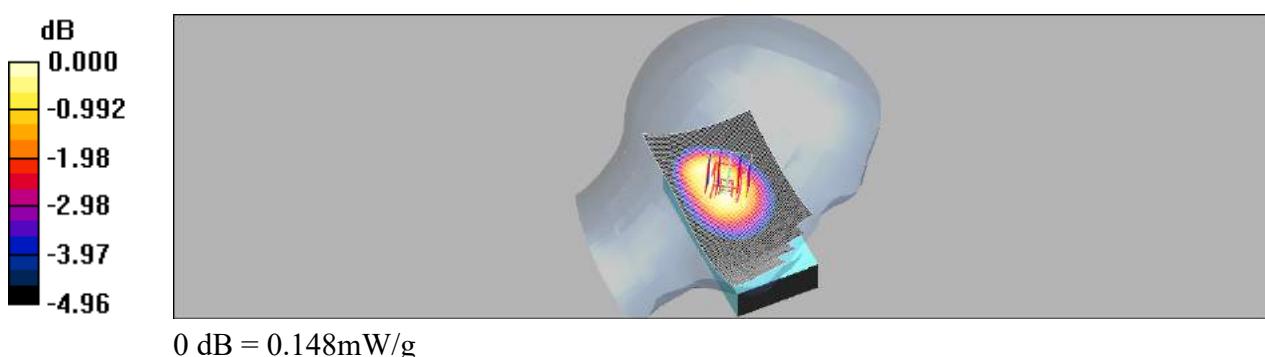
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.1 V/m; Power Drift = -0.110 dB

Peak SAR (extrapolated) = 0.148 W/kg

**SAR(1 g) = 0.143 mW/g; SAR(10 g) = 0.124 mW/g**

Maximum value of SAR (measured) = 0.148 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT LTE17

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wirless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.858 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.53, 6.53, 6.53); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.162 mW/g

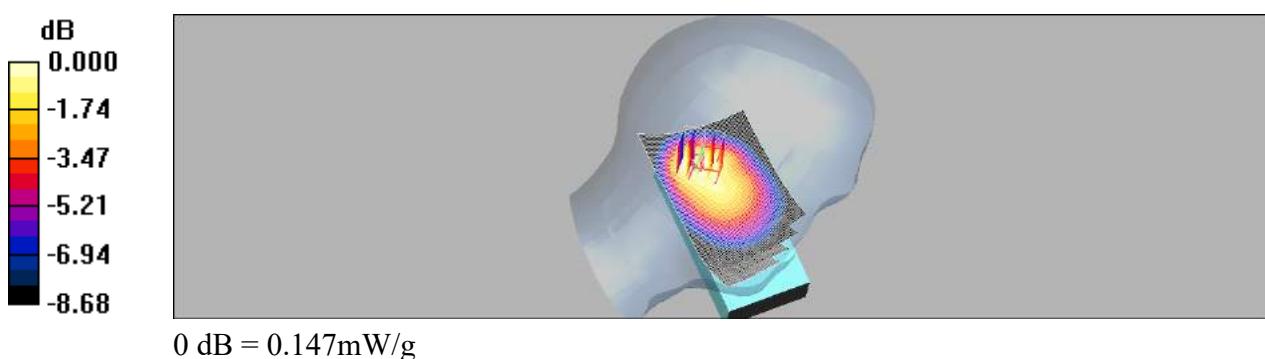
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 12.3 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.186 W/kg

**SAR(1 g) = 0.139 mW/g; SAR(10 g) = 0.112 mW/g**

Maximum value of SAR (measured) = 0.147 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE17 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 706.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 706.5 \text{ MHz}$ ;  $\sigma = 0.855 \text{ mho/m}$ ;  $\epsilon_r = 41.8$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.53, 6.53, 6.53); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.297 mW/g

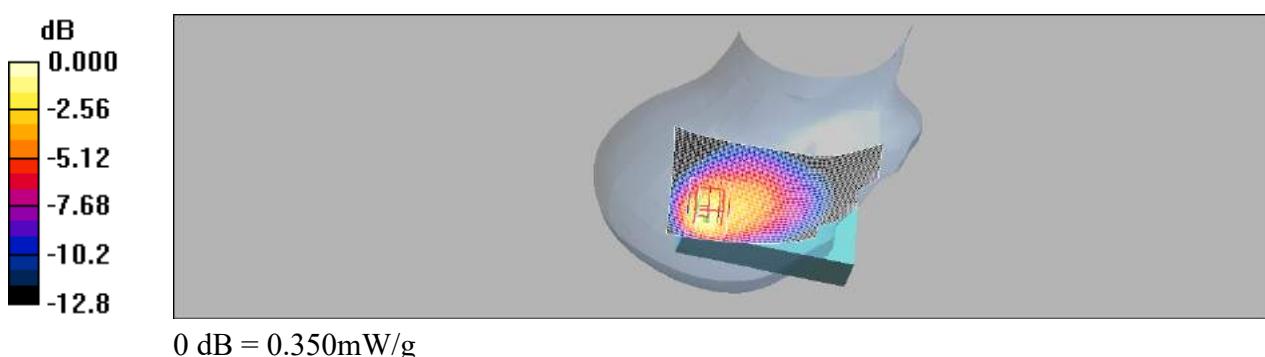
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 14.0 V/m; Power Drift = 0.076 dB

Peak SAR (extrapolated) = 0.557 W/kg

**SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.184 mW/g**

Maximum value of SAR (measured) = 0.350 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT LTE17 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wirless; Frequency: 713.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 714 \text{ MHz}$ ;  $\sigma = 0.862 \text{ mho/m}$ ;  $\epsilon_r = 41.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.53, 6.53, 6.53); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.304 mW/g

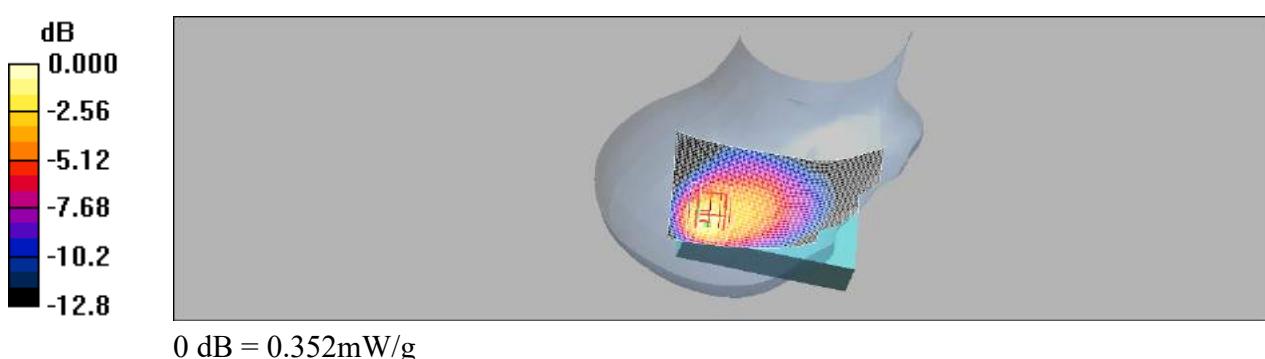
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 14.3 V/m; Power Drift = 0.057 dB

Peak SAR (extrapolated) = 0.561 W/kg

**SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.189 mW/g**

Maximum value of SAR (measured) = 0.352 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH 802.11n20

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 2467 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2442 \text{ MHz}$ ;  $\sigma = 1.83 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.76, 4.76, 4.76); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (91x161x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.022 mW/g

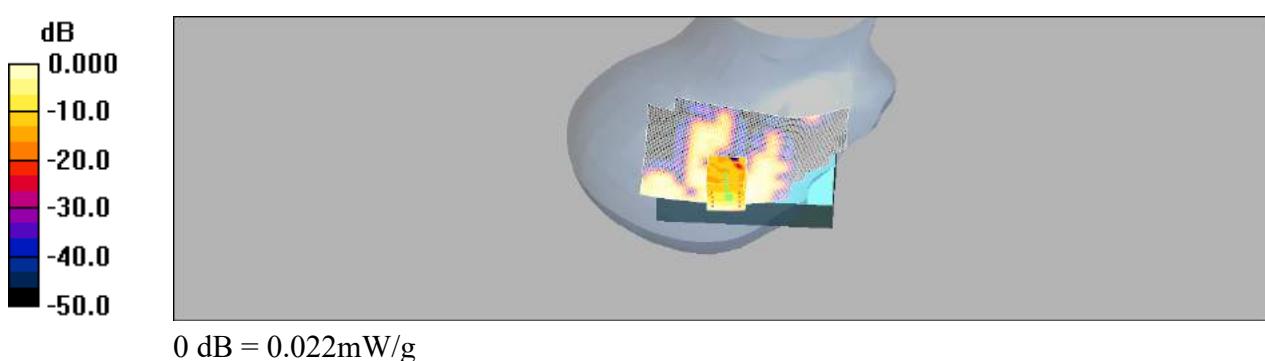
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 0.587 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 0.035 W/kg

**SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.00886 mW/g**

Maximum value of SAR (measured) = 0.022 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TILT 802.11n20

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 2467 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2442 \text{ MHz}$ ;  $\sigma = 1.83 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.76, 4.76, 4.76); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (91x161x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.014 mW/g

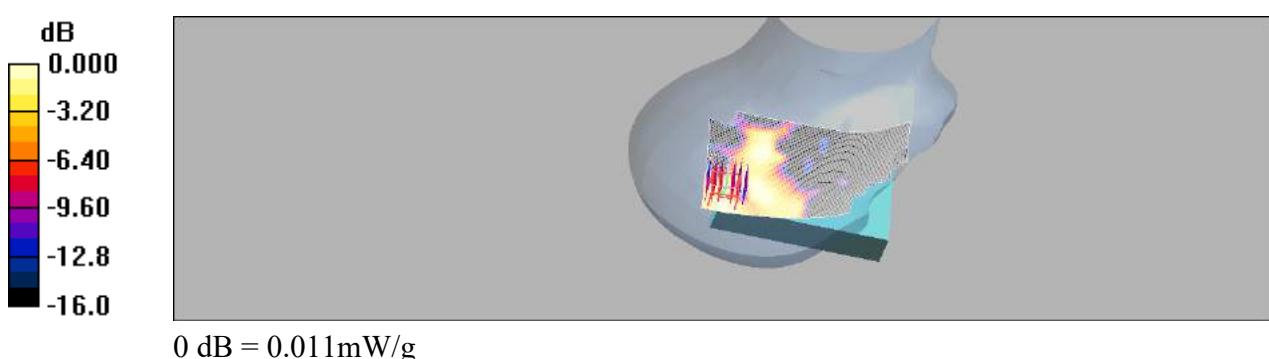
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 1.81 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.017 W/kg

**SAR(1 g) = 0.00904 mW/g; SAR(10 g) = 0.00461 mW/g**

Maximum value of SAR (measured) = 0.011 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TOUCH 802.11n20

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 2467 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2442 \text{ MHz}$ ;  $\sigma = 1.83 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.76, 4.76, 4.76); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (91x171x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.014 mW/g

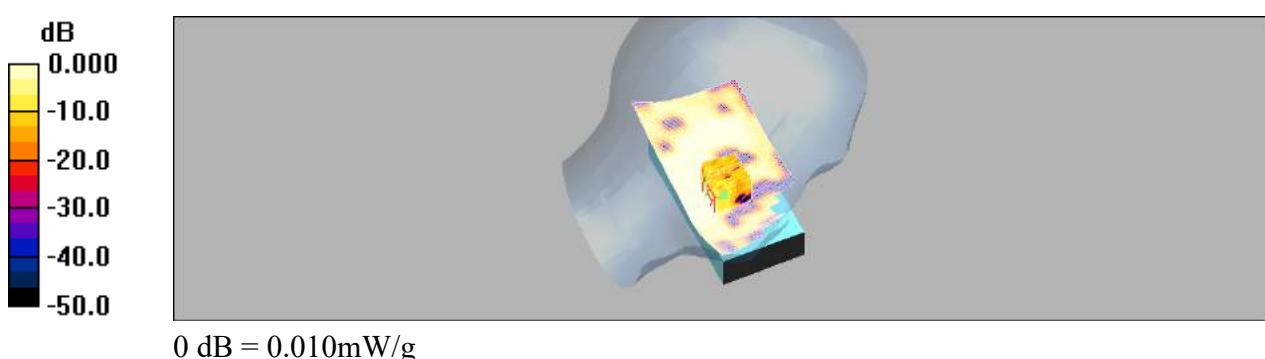
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 1.46 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 0.021 W/kg

**SAR(1 g) = 0.00691 mW/g; SAR(10 g) = 0.00253 mW/g**

Maximum value of SAR (measured) = 0.010 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD LEFT TILT 802.11n20

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wireless; Frequency: 2467 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2442 \text{ MHz}$ ;  $\sigma = 1.83 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.76, 4.76, 4.76); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (91x171x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.017 mW/g

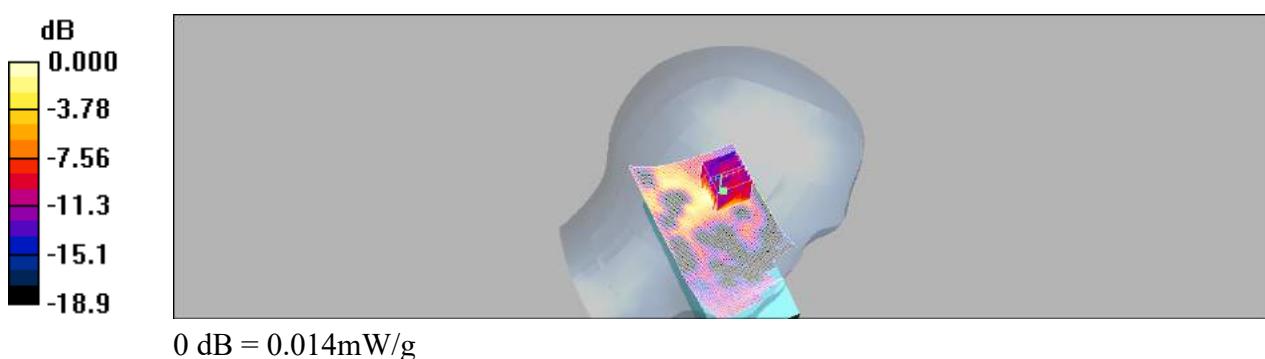
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 1.88 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 0.021 W/kg

**SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00497 mW/g**

Maximum value of SAR (measured) = 0.014 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH 802.11n20 LOW

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wirless; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.79 \text{ mho/m}$ ;  $\epsilon_r = 39.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.76, 4.76, 4.76); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (91x161x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.021 mW/g

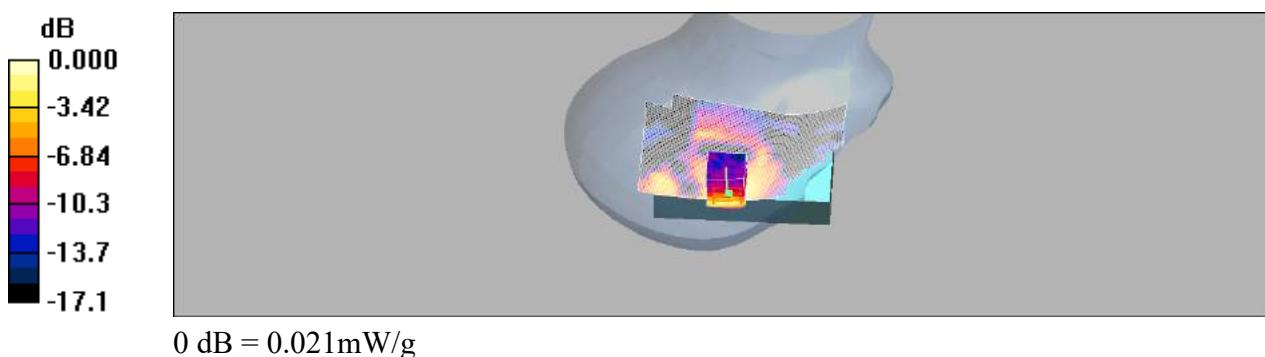
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 1.35 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.034 W/kg

**SAR(1 g) = 0.016 mW/g; SAR(10 g) = 0.00849 mW/g**

Maximum value of SAR (measured) = 0.021 mW/g



Test Laboratory: ESTECH

## iCAM M300 HEAD RIGHT TOUCH 802.11n20 HIGH

**DUT: iCAM M300; Type: HEAD TYPE; Serial: NONE**

Communication System: Wirless; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2472 \text{ MHz}$ ;  $\sigma = 1.86 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.76, 4.76, 4.76); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (91x161x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.026 mW/g

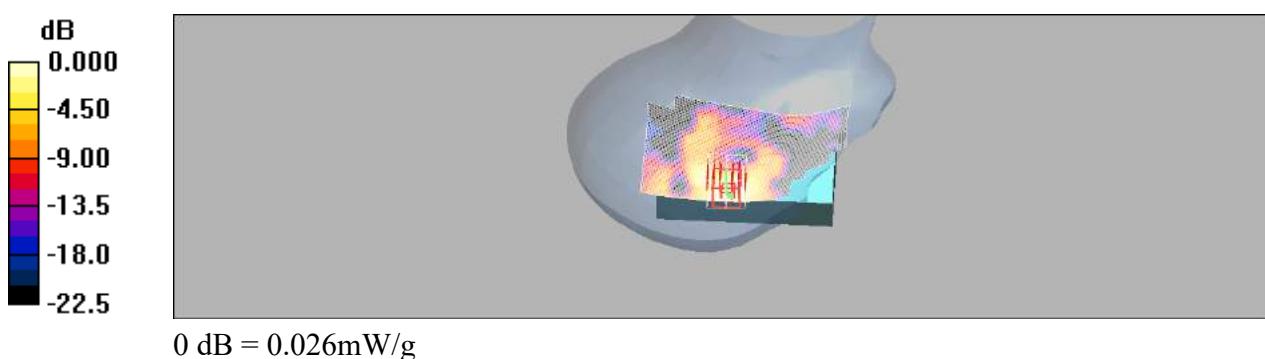
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 1.79 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 0.042 W/kg

**SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.011 mW/g**

Maximum value of SAR (measured) = 0.026 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM850 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.963 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.550 mW/g

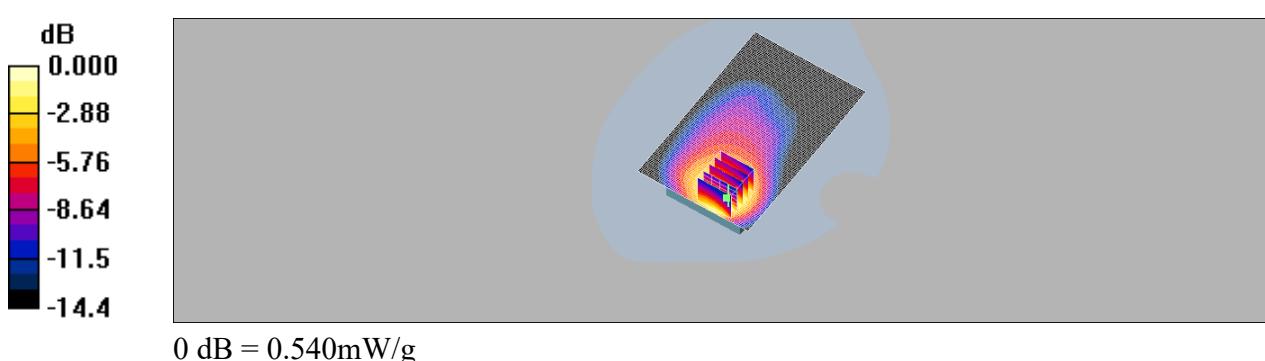
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 10.2 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.884 W/kg

**SAR(1 g) = 0.461 mW/g; SAR(10 g) = 0.287 mW/g**

Maximum value of SAR (measured) = 0.540 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM850 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.963 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.269 mW/g

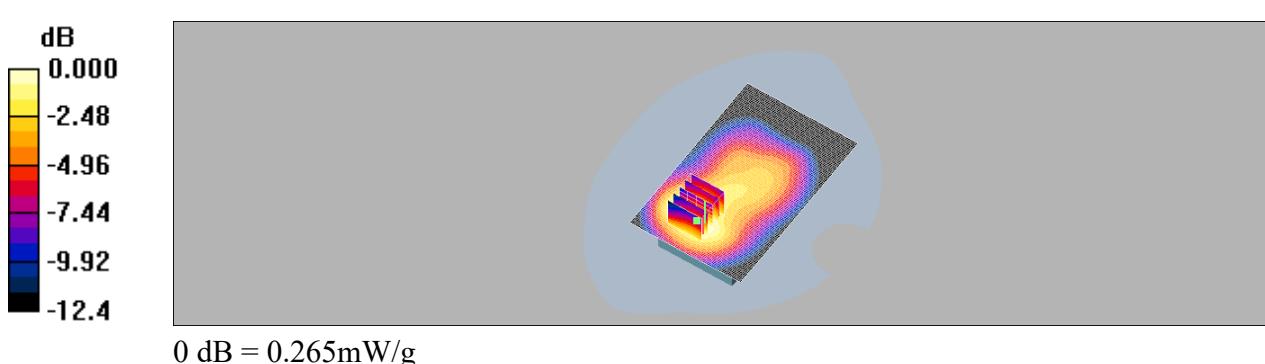
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.2 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.326 W/kg

**SAR(1 g) = 0.230 mW/g; SAR(10 g) = 0.160 mW/g**

Maximum value of SAR (measured) = 0.265 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM850 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.963 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.729 mW/g

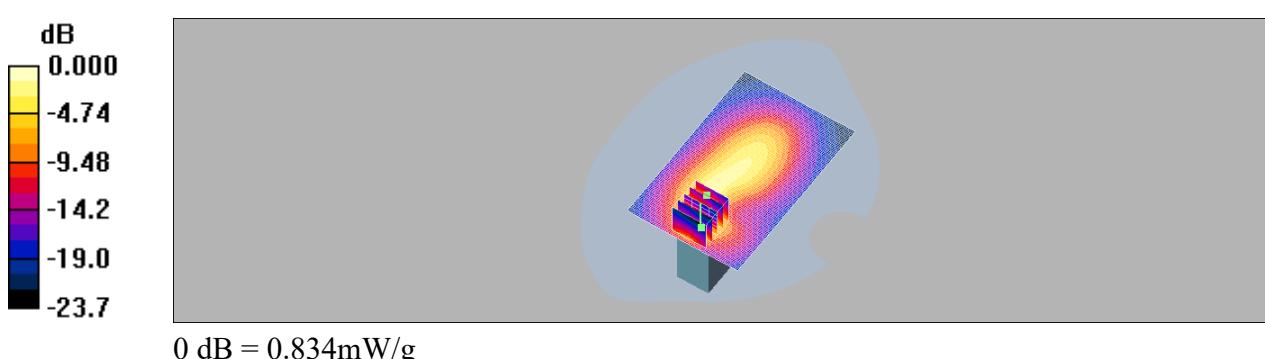
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 22.1 V/m; Power Drift = 0.061 dB

Peak SAR (extrapolated) = 1.71 W/kg

**SAR(1 g) = 0.557 mW/g; SAR(10 g) = 0.265 mW/g**

Maximum value of SAR (measured) = 0.834 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM850 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.963$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.40 mW/g

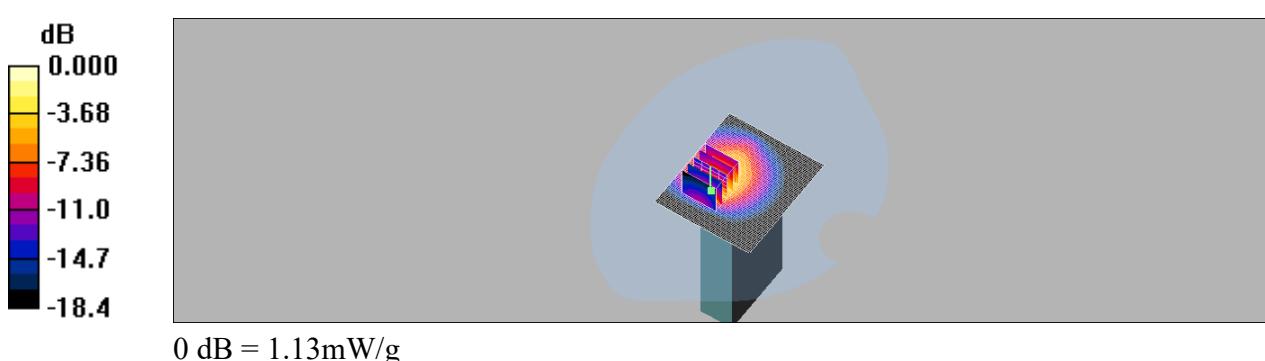
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.2 V/m; Power Drift = 0.412 dB

Peak SAR (extrapolated) = 2.17 W/kg

**SAR(1 g) = 0.837 mW/g; SAR(10 g) = 0.416 mW/g**

Maximum value of SAR (measured) = 1.13 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM850 TOP LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 824.2 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 824.2 \text{ MHz}$ ;  $\sigma = 0.949 \text{ mho/m}$ ;  $\epsilon_r = 55.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.29 mW/g

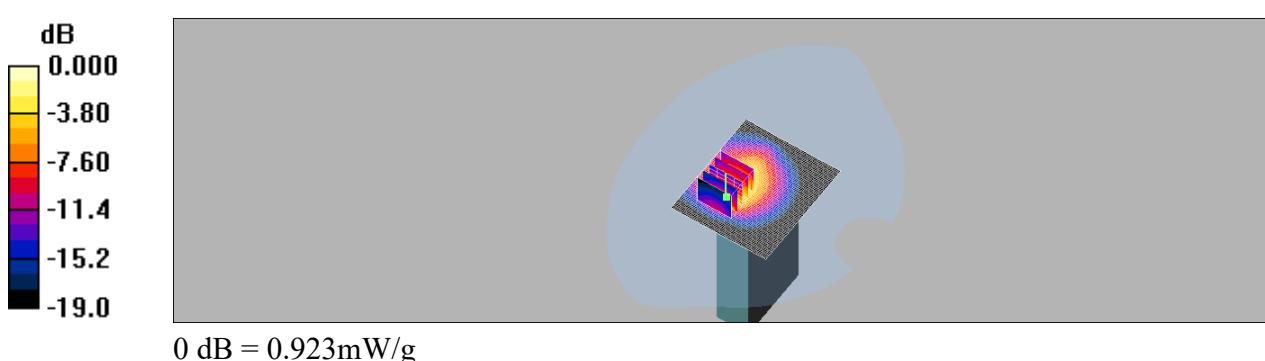
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.1 V/m; Power Drift = 0.110 dB

Peak SAR (extrapolated) = 1.96 W/kg

**SAR(1 g) = 0.715 mW/g; SAR(10 g) = 0.343 mW/g**

Maximum value of SAR (measured) = 0.923 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM850 TOP HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 848.8 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 848.8 \text{ MHz}$ ;  $\sigma = 0.976 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.31 mW/g

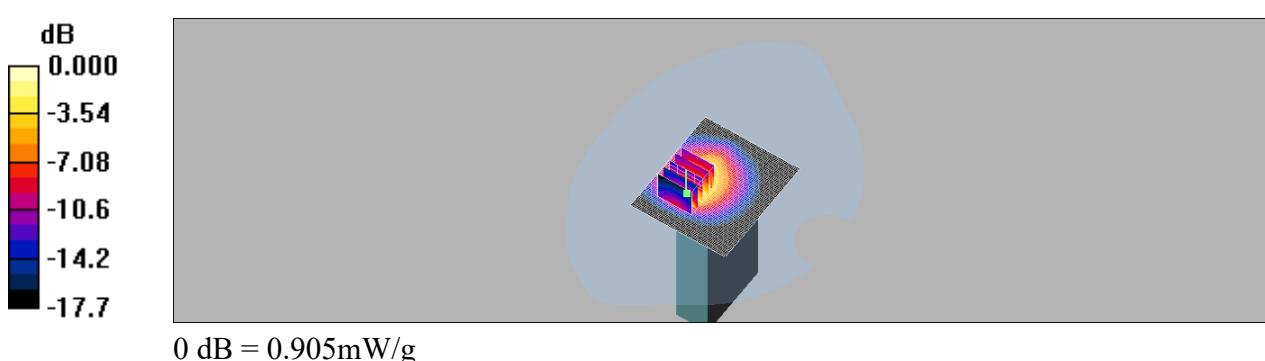
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.6 V/m; Power Drift = 0.143 dB

Peak SAR (extrapolated) = 2.03 W/kg

**SAR(1 g) = 0.745 mW/g; SAR(10 g) = 0.370 mW/g**

Maximum value of SAR (measured) = 0.905 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM1900 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.413 mW/g

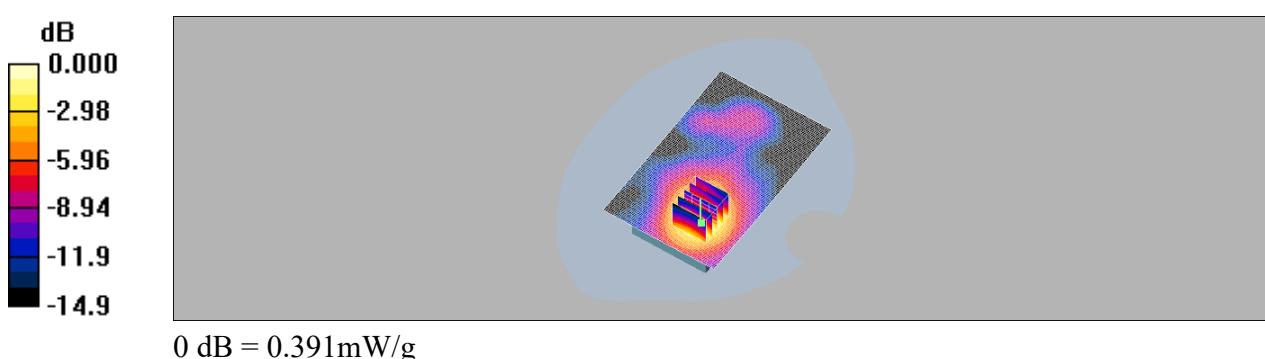
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 7.89 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 0.512 W/kg

**SAR(1 g) = 0.329 mW/g; SAR(10 g) = 0.200 mW/g**

Maximum value of SAR (measured) = 0.391 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM1900 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.415 mW/g

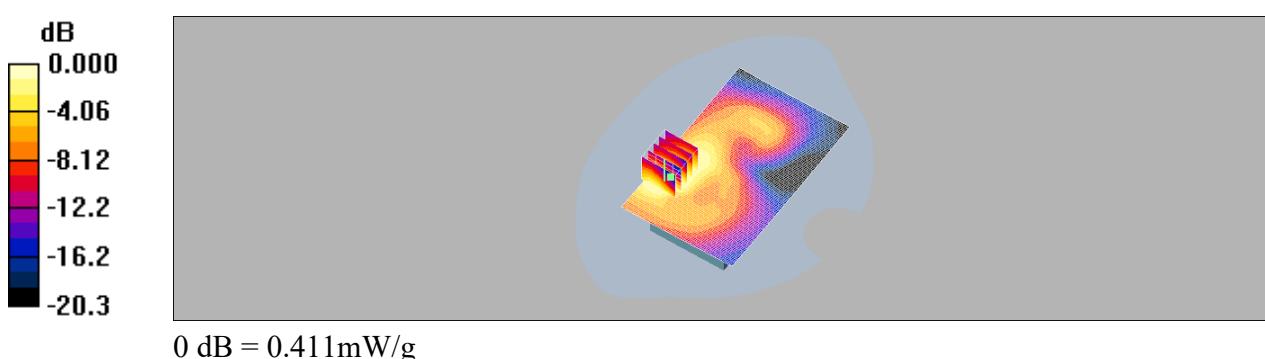
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 7.99 V/m; Power Drift = 0.127 dB

Peak SAR (extrapolated) = 0.571 W/kg

**SAR(1 g) = 0.339 mW/g; SAR(10 g) = 0.198 mW/g**

Maximum value of SAR (measured) = 0.411 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM1900 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.45 mW/g

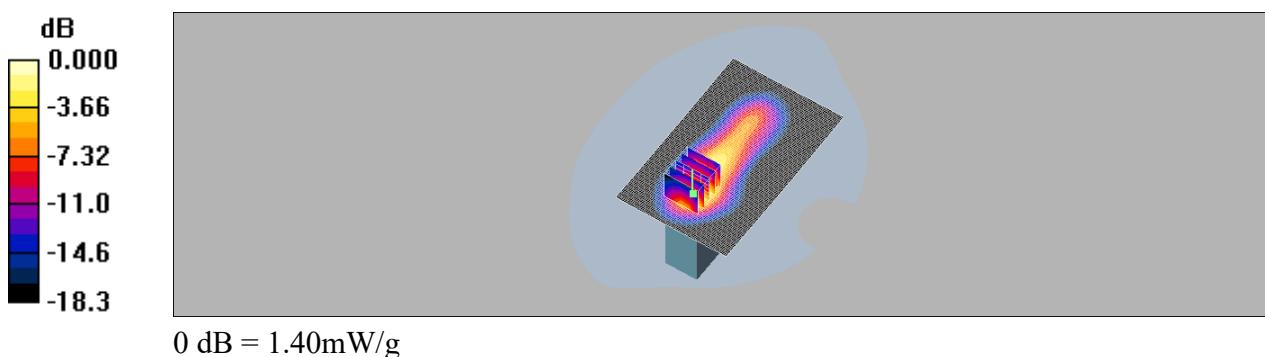
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 22.1 V/m; Power Drift = 0.129 dB

Peak SAR (extrapolated) = 2.02 W/kg

**SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.582 mW/g**

Maximum value of SAR (measured) = 1.40 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM1900 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.593 mW/g

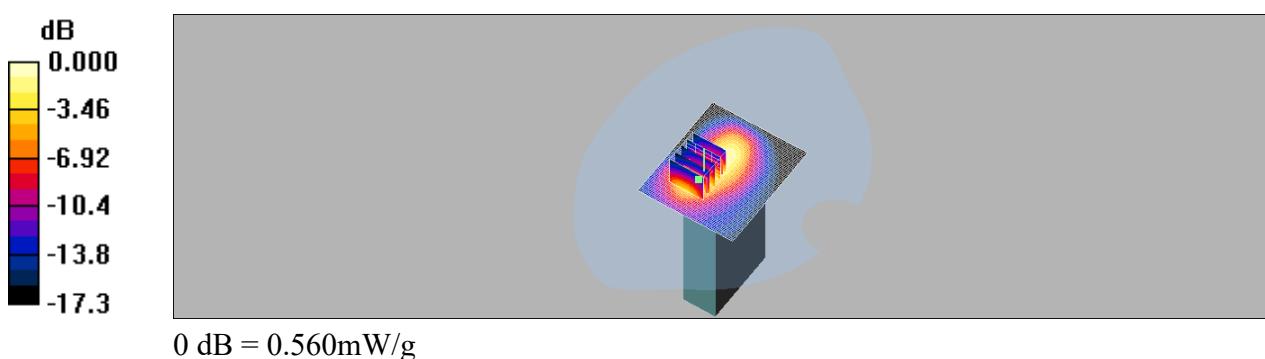
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.7 V/m; Power Drift = 0.103 dB

Peak SAR (extrapolated) = 0.826 W/kg

**SAR(1 g) = 0.424 mW/g; SAR(10 g) = 0.225 mW/g**

Maximum value of SAR (measured) = 0.560 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM1900 LEFT LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1850.2 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.49$  mho/m;  $\epsilon_r = 51.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

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

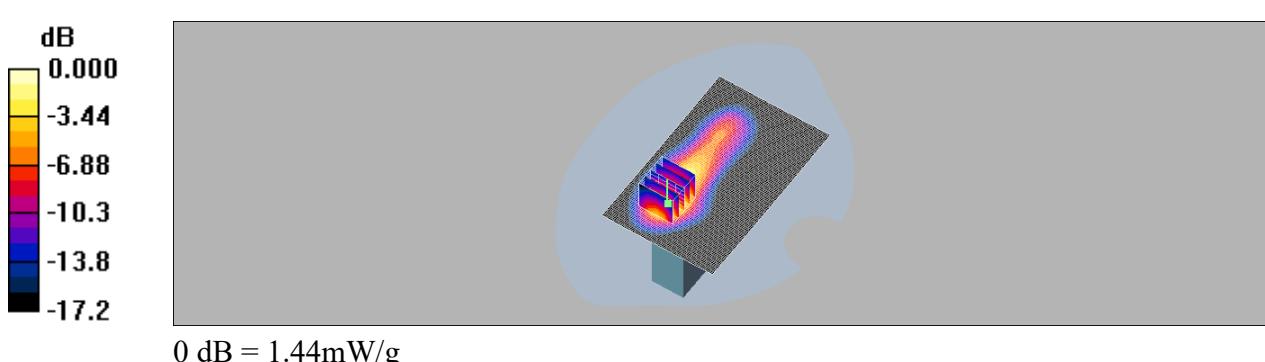
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.58 V/m; Power Drift = 0.337 dB

Peak SAR (extrapolated) = 1.99 W/kg

**SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.586 mW/g**

Maximum value of SAR (measured) = 1.44 mW/g



Test Laboratory: ESTECH

## iCAM M300 GSM1900 LEFT HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1909.8 MHz; Duty Cycle: 1:8

Medium parameters used:  $f = 1910 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 51.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.59 mW/g

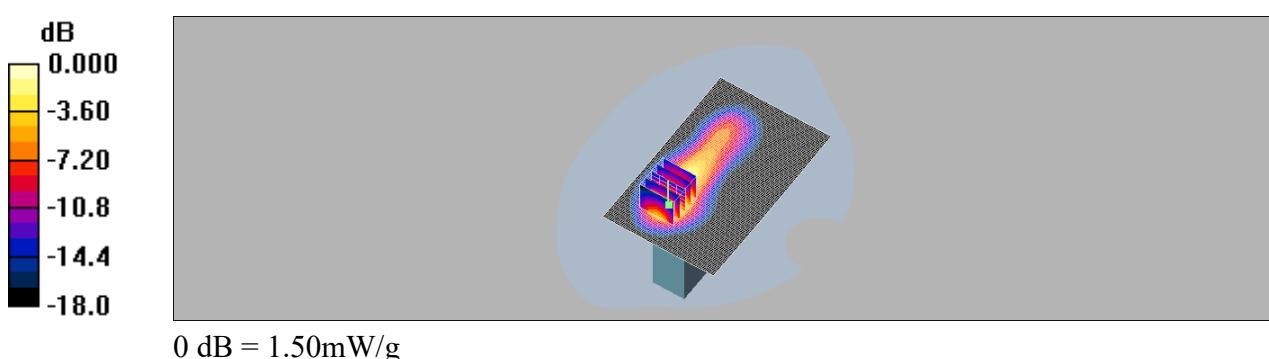
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.79 V/m; Power Drift = 0.490 dB

Peak SAR (extrapolated) = 2.09 W/kg

**SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.613 mW/g**

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



Test Laboratory: ESTECH

## iCAM M300 WCDMA2 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.643 mW/g

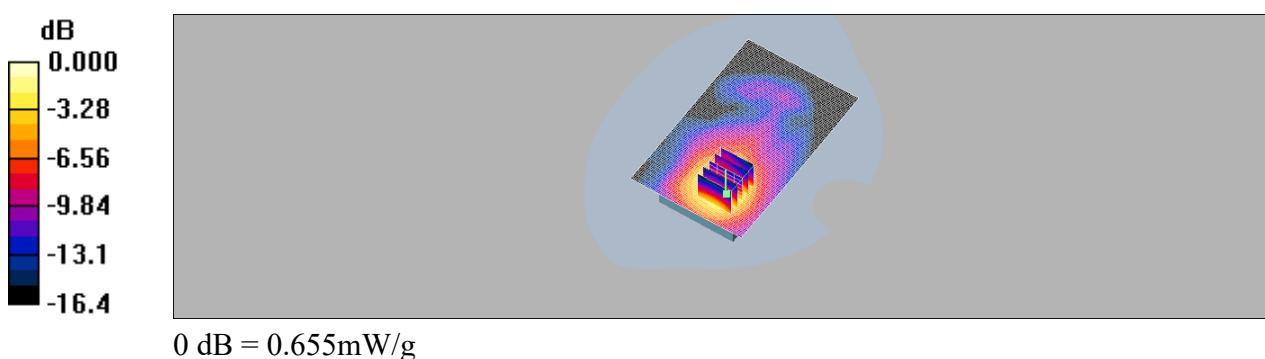
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.19 V/m; Power Drift = -0.081 dB

Peak SAR (extrapolated) = 0.897 W/kg

**SAR(1 g) = 0.531 mW/g; SAR(10 g) = 0.302 mW/g**

Maximum value of SAR (measured) = 0.655 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA2 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.651 mW/g

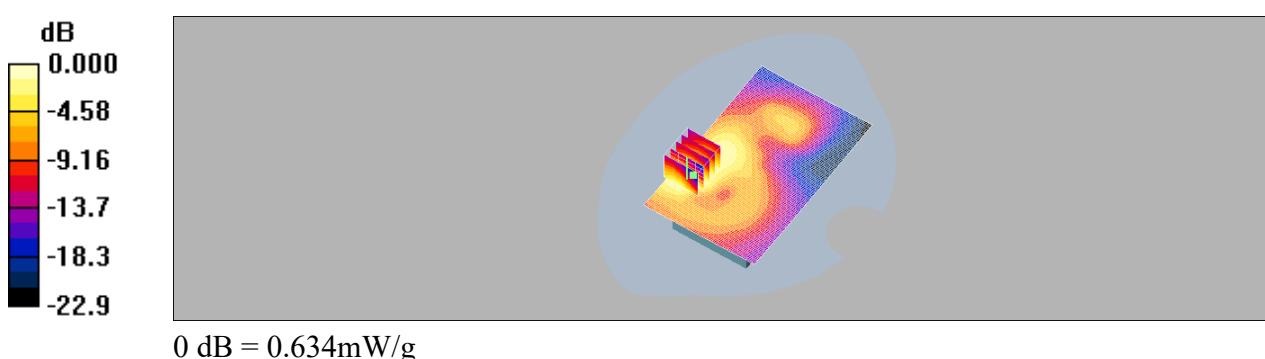
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 10.7 V/m; Power Drift = 0.167 dB

Peak SAR (extrapolated) = 0.923 W/kg

**SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.294 mW/g**

Maximum value of SAR (measured) = 0.634 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA2 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.37 mW/g

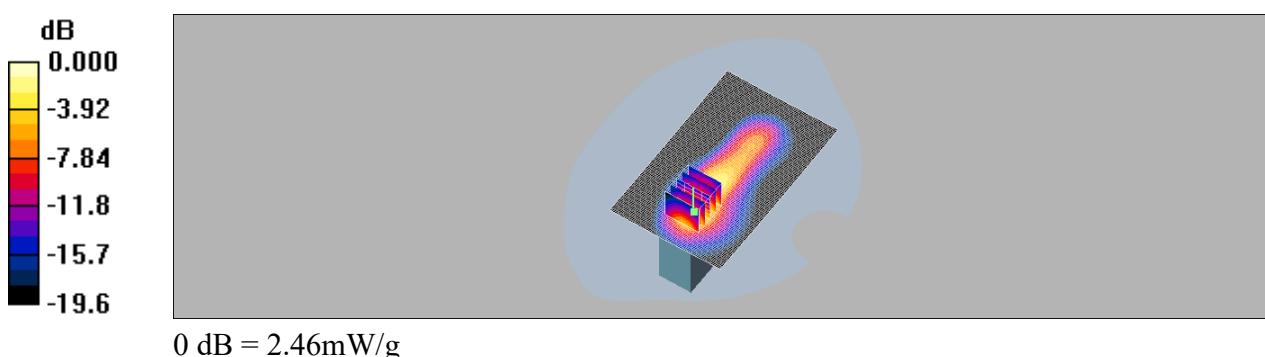
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 29.8 V/m; Power Drift = -0.149 dB

Peak SAR (extrapolated) = 3.53 W/kg

**SAR(1 g) = 1.89 mW/g; SAR(10 g) = 0.947 mW/g**

Maximum value of SAR (measured) = 2.46 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA2 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.683 mW/g

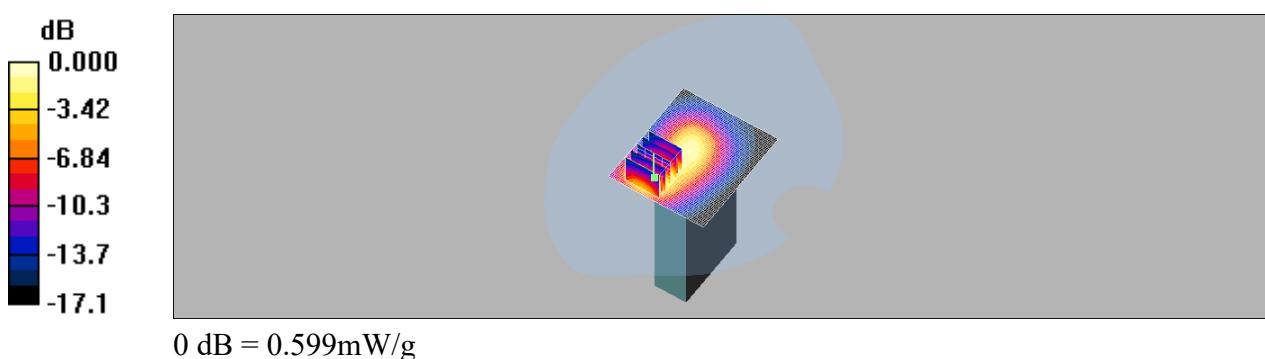
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.9 V/m; Power Drift = 0.033 dB

Peak SAR (extrapolated) = 0.922 W/kg

**SAR(1 g) = 0.501 mW/g; SAR(10 g) = 0.275 mW/g**

Maximum value of SAR (measured) = 0.599 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA2 LEFT LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.49$  mho/m;  $\epsilon_r = 51.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.55 mW/g

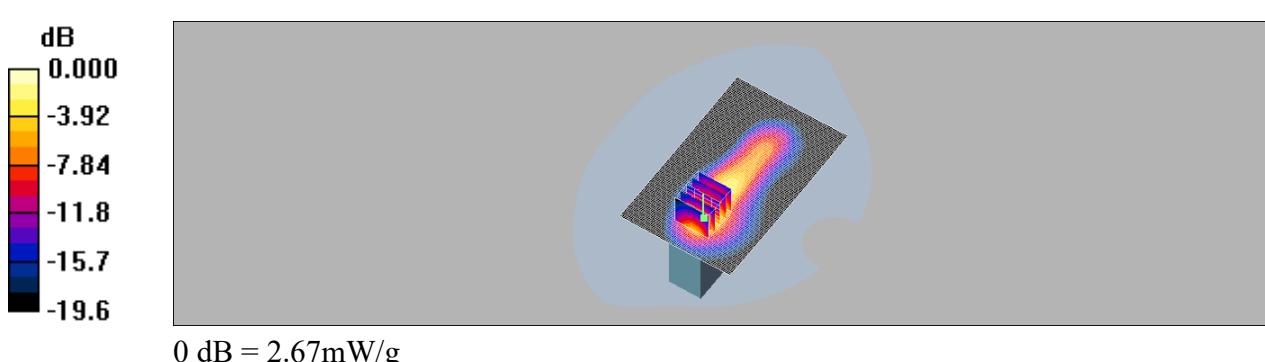
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.7 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 3.80 W/kg

**SAR(1 g) = 2.04 mW/g; SAR(10 g) = 1.03 mW/g**

Maximum value of SAR (measured) = 2.67 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA2 LEFT HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 51.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.99 mW/g

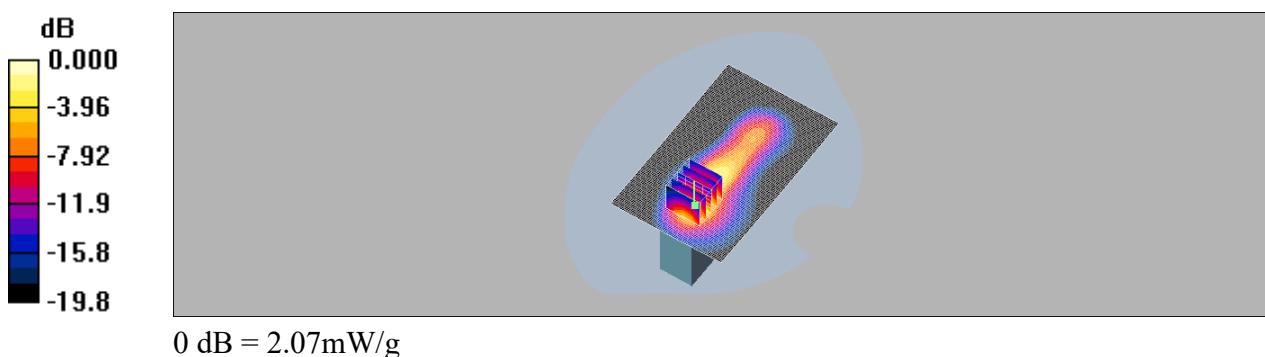
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 27.4 V/m; Power Drift = -0.066 dB

Peak SAR (extrapolated) = 3.00 W/kg

**SAR(1 g) = 1.59 mW/g; SAR(10 g) = 0.791 mW/g**

Maximum value of SAR (measured) = 2.07 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA4 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.38$  mho/m;  $\epsilon_r = 40.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.610 mW/g

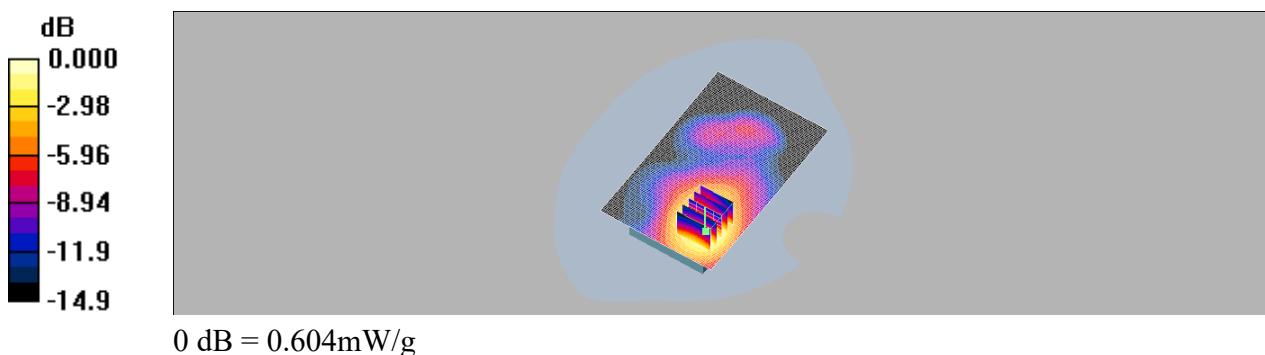
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.37 V/m; Power Drift = 0.079 dB

Peak SAR (extrapolated) = 0.838 W/kg

**SAR(1 g) = 0.521 mW/g; SAR(10 g) = 0.319 mW/g**

Maximum value of SAR (measured) = 0.604 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA4 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.38$  mho/m;  $\epsilon_r = 40.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.670 mW/g

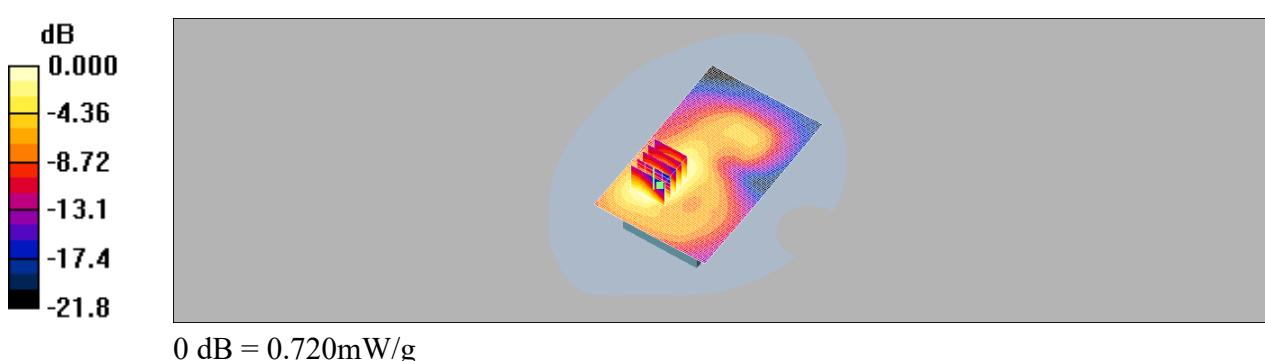
**/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = 0.116 dB

Peak SAR (extrapolated) = 1.05 W/kg

**SAR(1 g) = 0.579 mW/g; SAR(10 g) = 0.332 mW/g**

Maximum value of SAR (measured) = 0.720 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA4 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.43$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 3.08 mW/g

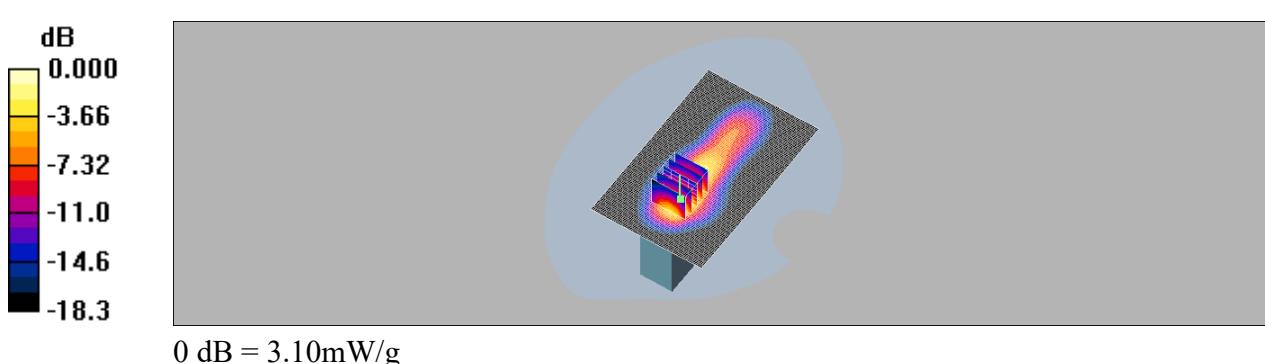
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 38.0 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 4.11 W/kg

**SAR(1 g) = 2.02 mW/g; SAR(10 g) = 1.01 mW/g**

Maximum value of SAR (measured) = 2.80 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA4 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.43$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.979 mW/g

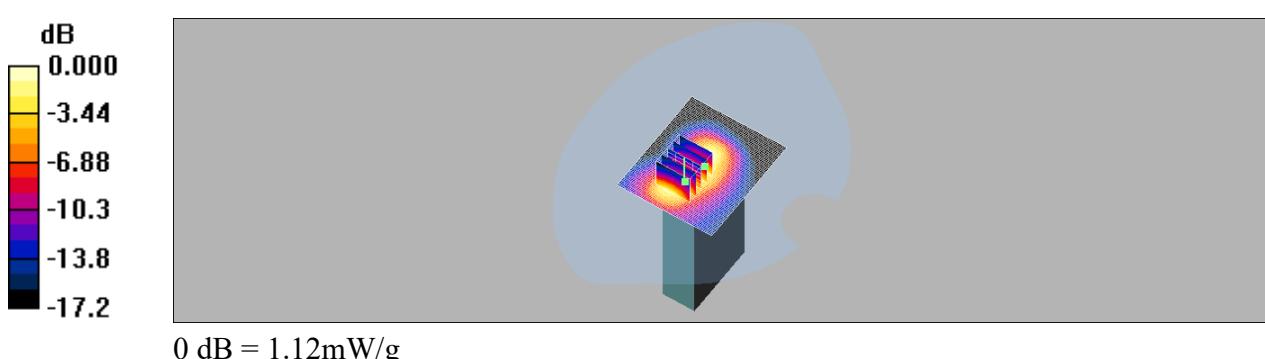
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.6 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.66 W/kg

**SAR(1 g) = 0.825 mW/g; SAR(10 g) = 0.426 mW/g**

Maximum value of SAR (measured) = 1.12 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA4 LEFT LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1712.5 \text{ MHz}$ ;  $\sigma = 1.42 \text{ mho/m}$ ;  $\epsilon_r = 52.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.80 mW/g

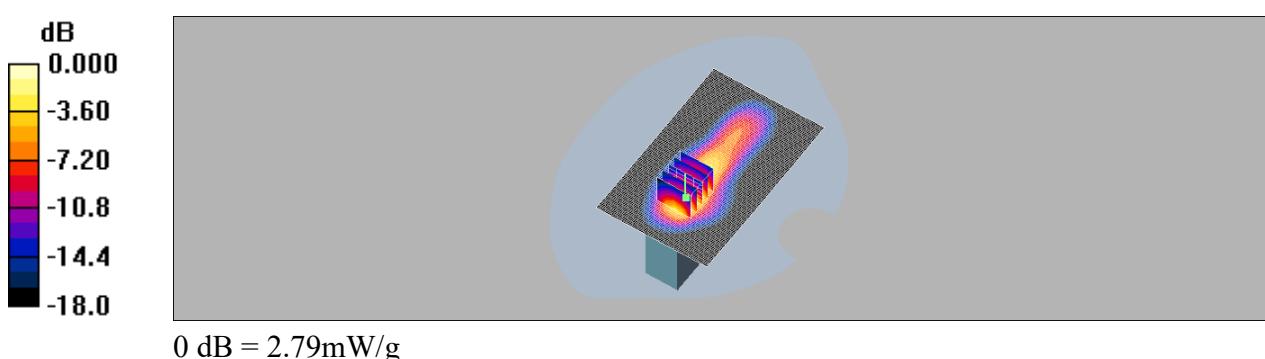
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 36.0 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 4.16 W/kg

**SAR(1 g) = 2.18 mW/g; SAR(10 g) = 1.09 mW/g**

Maximum value of SAR (measured) = 2.79 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA4 LEFT HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1752.6 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
maximum value of SAR (interpolated) = 3.07 mW/g

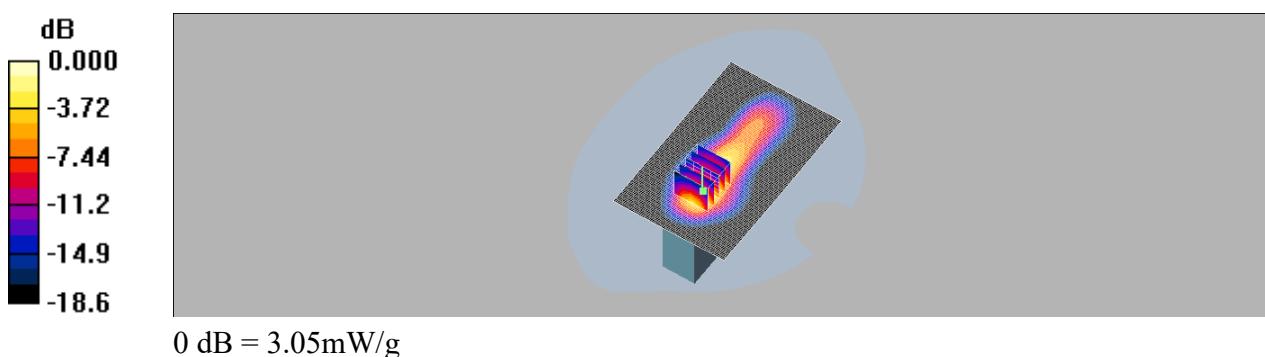
**Unnamed procedure/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 37.6 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 4.54 W/kg

**SAR(1 g) = 2.09 mW/g; SAR(10 g) = 1.02 mW/g**

maximum value of SAR (measured) = 2.85 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA5 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.963$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.684 mW/g

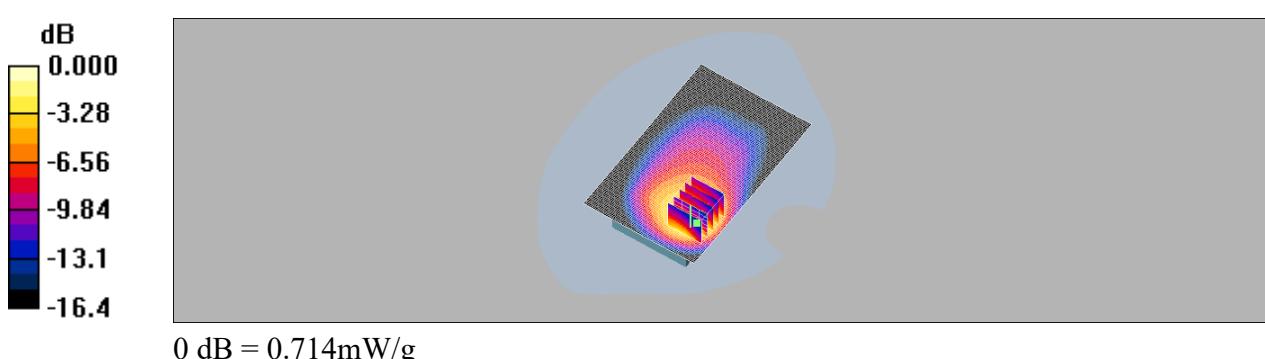
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.8 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 1.11 W/kg

**SAR(1 g) = 0.552 mW/g; SAR(10 g) = 0.332 mW/g**

Maximum value of SAR (measured) = 0.714 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA5 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.963$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.310 mW/g

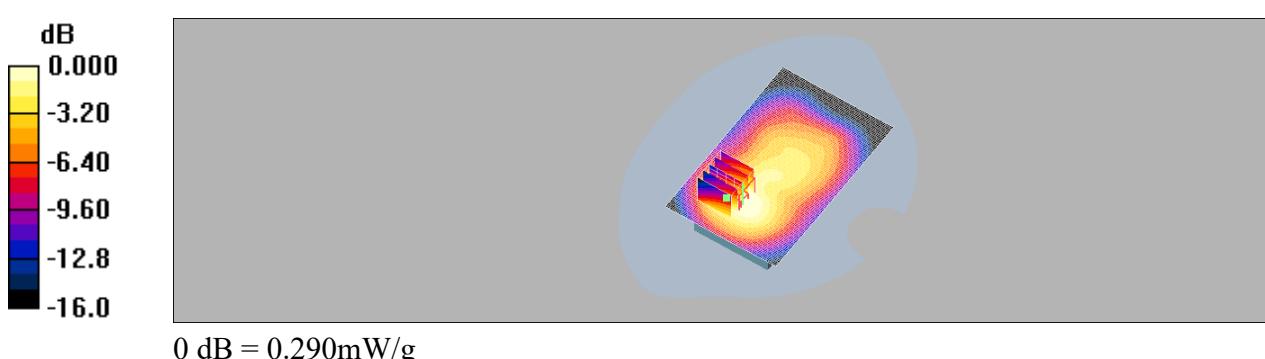
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.6 V/m; Power Drift = 0.057 dB

Peak SAR (extrapolated) = 0.400 W/kg

**SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.171 mW/g**

Maximum value of SAR (measured) = 0.290 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA5 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.963$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.07 mW/g

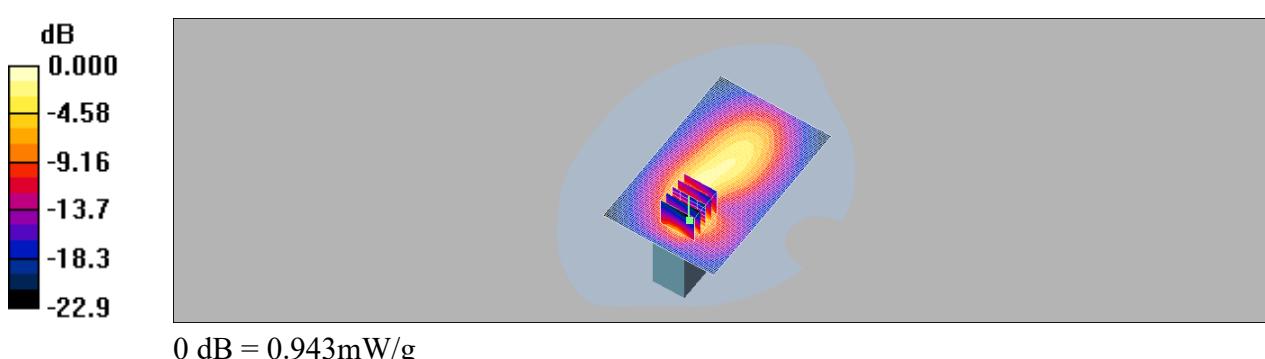
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.2 V/m; Power Drift = 0.106 dB

Peak SAR (extrapolated) = 2.04 W/kg

**SAR(1 g) = 0.649 mW/g; SAR(10 g) = 0.311 mW/g**

Maximum value of SAR (measured) = 0.943 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA5 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.963$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.896 mW/g

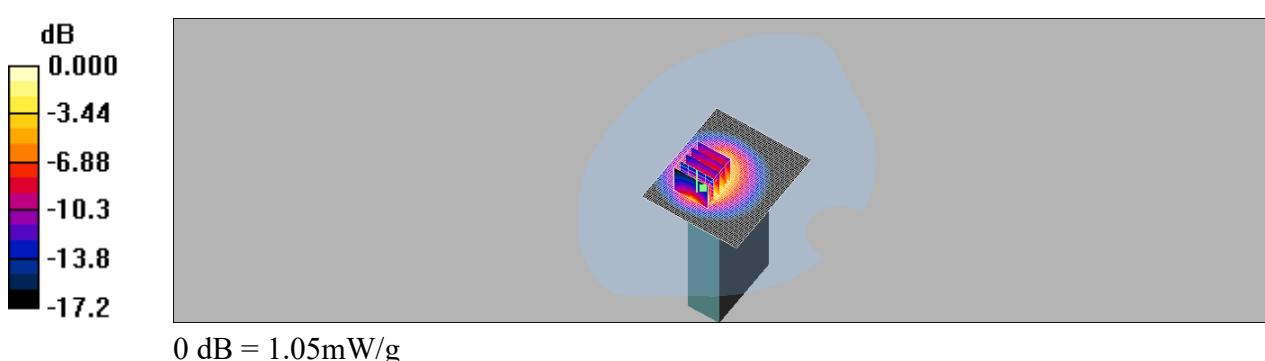
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.7 V/m; Power Drift = 0.131 dB

Peak SAR (extrapolated) = 2.08 W/kg

**SAR(1 g) = 0.802 mW/g; SAR(10 g) = 0.399 mW/g**

Maximum value of SAR (measured) = 1.05 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA5 TOP LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 826.4 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.28 mW/g

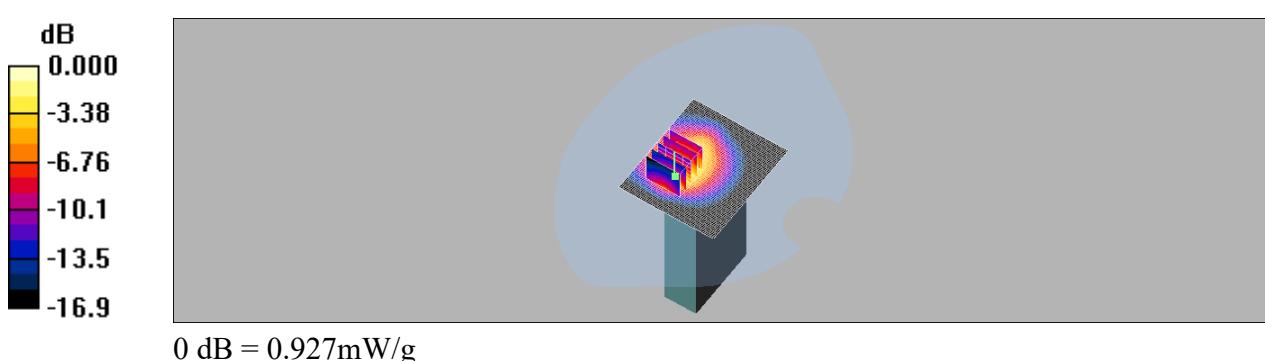
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 18.5 V/m; Power Drift = 0.168 dB

Peak SAR (extrapolated) = 1.93 W/kg

**SAR(1 g) = 0.765 mW/g; SAR(10 g) = 0.407 mW/g**

Maximum value of SAR (measured) = 0.927 mW/g



Test Laboratory: ESTECH

## iCAM M300 WCDMA5 TOP HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 846.6 \text{ MHz}$ ;  $\sigma = 0.973 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.23 mW/g

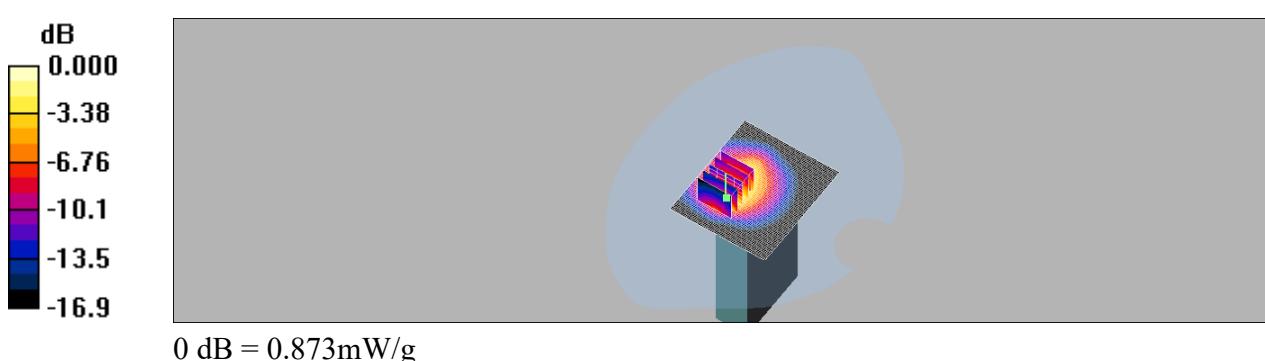
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.5 V/m; Power Drift = 0.150 dB

Peak SAR (extrapolated) = 1.84 W/kg

**SAR(1 g) = 0.721 mW/g; SAR(10 g) = 0.378 mW/g**

Maximum value of SAR (measured) = 0.873 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE2 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.473 mW/g

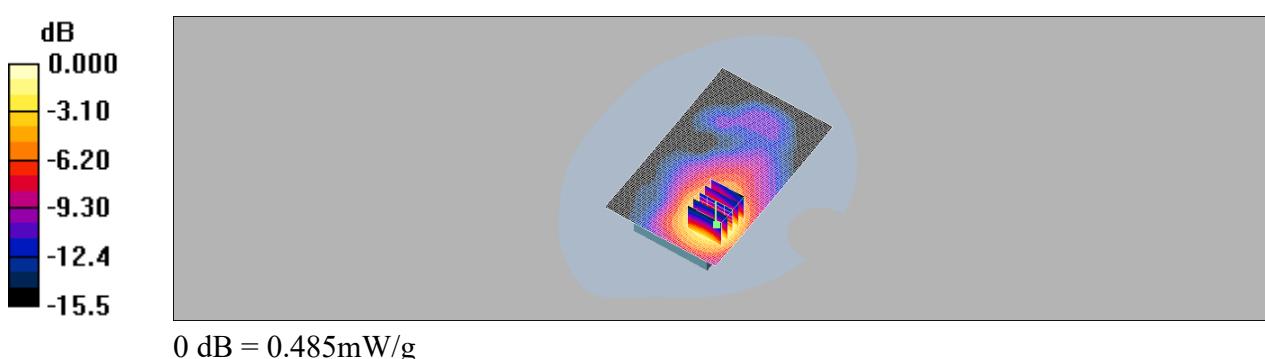
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 7.86 V/m; Power Drift = 0.069 dB

Peak SAR (extrapolated) = 0.659 W/kg

**SAR(1 g) = 0.404 mW/g; SAR(10 g) = 0.236 mW/g**

Maximum value of SAR (measured) = 0.485 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE2 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.519 mW/g

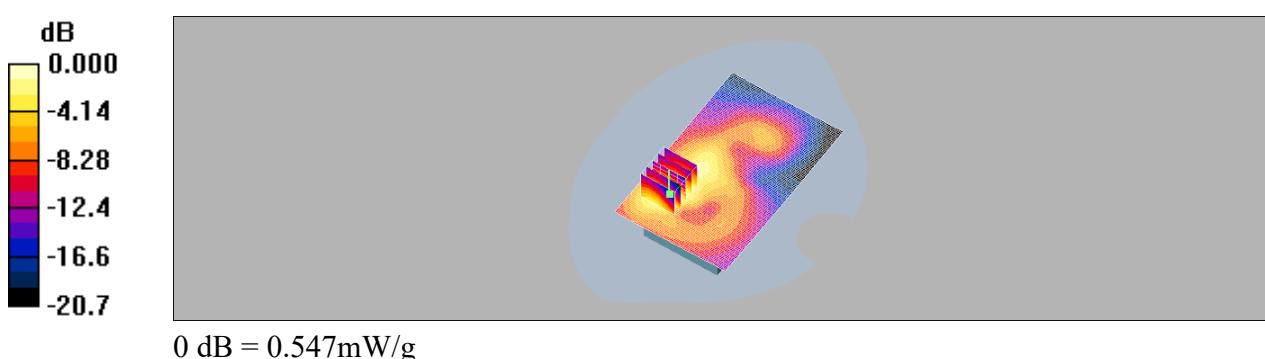
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.1 V/m; Power Drift = 0.160 dB

Peak SAR (extrapolated) = 0.788 W/kg

**SAR(1 g) = 0.448 mW/g; SAR(10 g) = 0.247 mW/g**

Maximum value of SAR (measured) = 0.547 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE2 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.10 mW/g

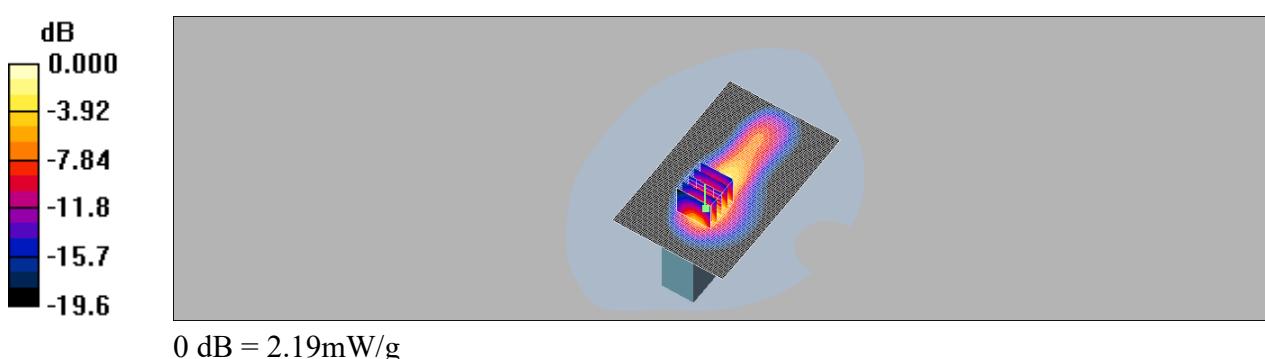
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 30.2 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 3.14 W/kg

**SAR(1 g) = 1.67 mW/g; SAR(10 g) = 0.831 mW/g**

Maximum value of SAR (measured) = 2.19 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE2 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.806 mW/g

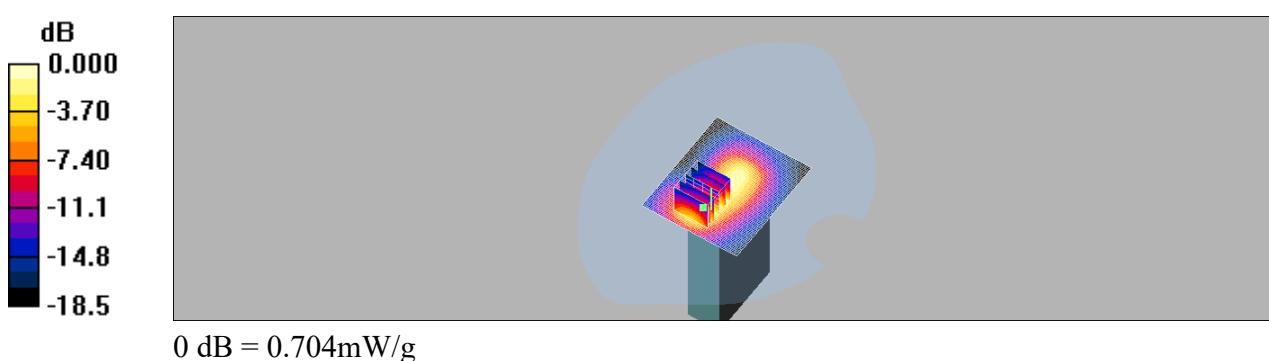
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 18.1 V/m; Power Drift = -0.070 dB

Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.585 mW/g; SAR(10 g) = 0.302 mW/g**

Maximum value of SAR (measured) = 0.704 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE2 LEFT LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1852.5 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 1852.5$  MHz;  $\sigma = 1.49$  mho/m;  $\epsilon_r = 51.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

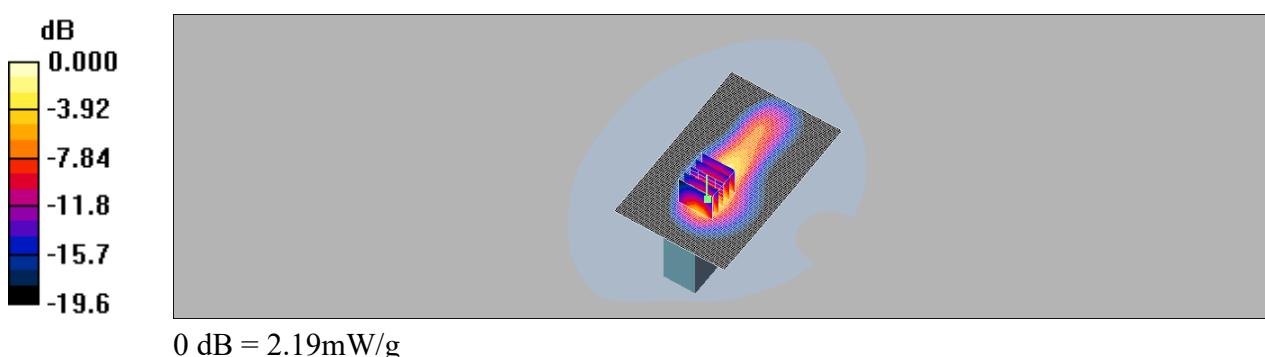
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 2.08 mW/g

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 30.6 V/m; Power Drift = -0.076 dB  
Peak SAR (extrapolated) = 3.10 W/kg  
**SAR(1 g) = 1.67 mW/g; SAR(10 g) = 0.834 mW/g**  
Maximum value of SAR (measured) = 2.19 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE2 LEFT HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1907.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 51.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.79, 4.79, 4.79); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.99 mW/g

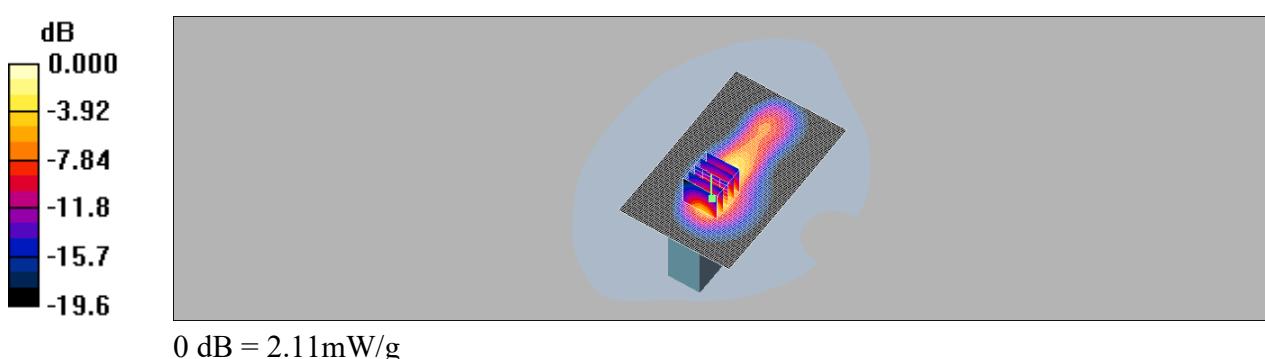
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 29.4 V/m; Power Drift = -0.054 dB

Peak SAR (extrapolated) = 3.05 W/kg

**SAR(1 g) = 1.61 mW/g; SAR(10 g) = 0.792 mW/g**

Maximum value of SAR (measured) = 2.11 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE4 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.489 mW/g

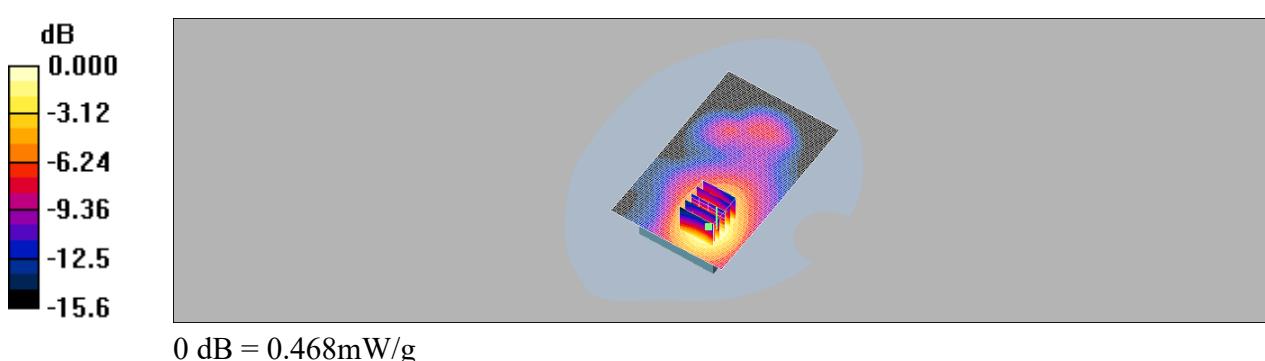
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 8.11 V/m; Power Drift = -0.210 dB

Peak SAR (extrapolated) = 0.662 W/kg

**SAR(1 g) = 0.408 mW/g; SAR(10 g) = 0.246 mW/g**

Maximum value of SAR (measured) = 0.468 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE4 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.38 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.59, 5.59, 5.59); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.485 mW/g

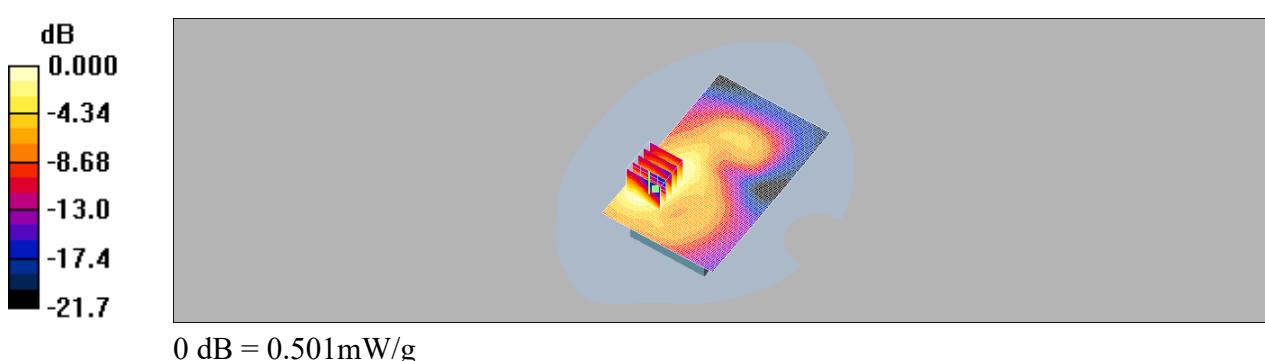
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.43 V/m; Power Drift = 0.074 dB

Peak SAR (extrapolated) = 0.740 W/kg

**SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.242 mW/g**

Maximum value of SAR (measured) = 0.501 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE4 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.43 \text{ mho/m}$ ;  $\epsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.06 mW/g

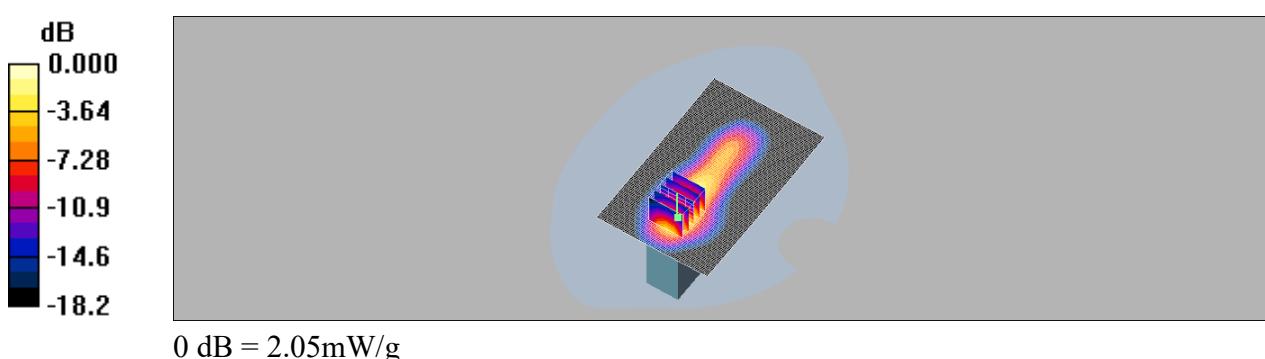
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 27.3 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 3.00 W/kg

**SAR(1 g) = 1.61 mW/g; SAR(10 g) = 0.824 mW/g**

Maximum value of SAR (measured) = 2.05 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE4 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1732.5 \text{ MHz}$ ;  $\sigma = 1.43 \text{ mho/m}$ ;  $\epsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.438 mW/g

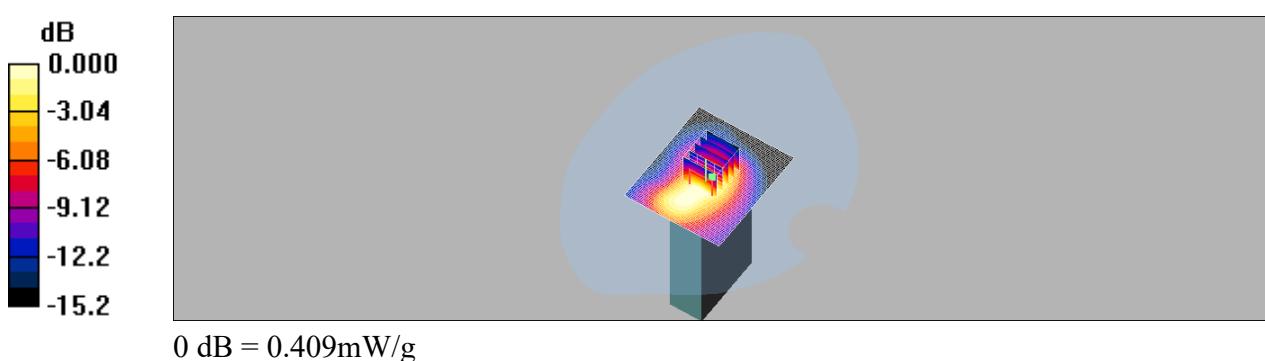
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.0 V/m; Power Drift = -0.079 dB

Peak SAR (extrapolated) = 0.545 W/kg

**SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.210 mW/g**

Maximum value of SAR (measured) = 0.409 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE4 LEFT LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1712.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1712.5 \text{ MHz}$ ;  $\sigma = 1.42 \text{ mho/m}$ ;  $\epsilon_r = 52.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.83 mW/g

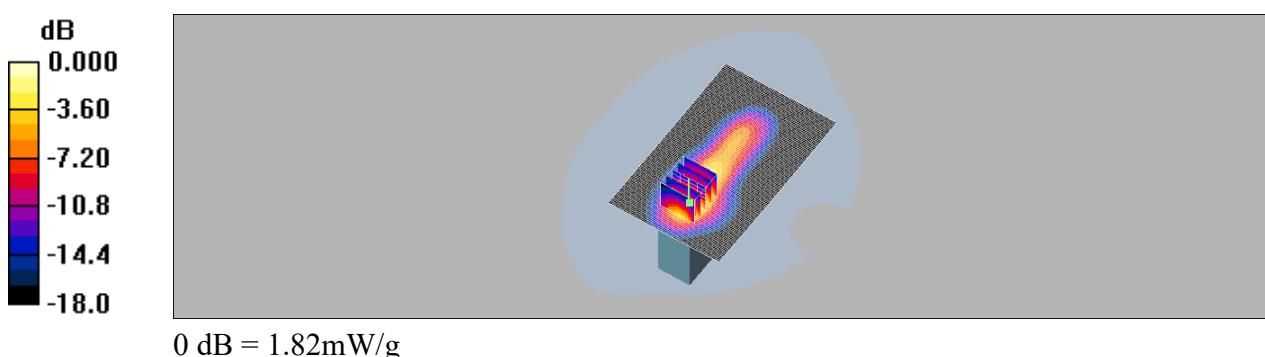
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 25.4 V/m; Power Drift = -0.027 dB

Peak SAR (extrapolated) = 2.67 W/kg

**SAR(1 g) = 1.43 mW/g; SAR(10 g) = 0.736 mW/g**

Maximum value of SAR (measured) = 1.82 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE4 LEFT HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 1752.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1752.5 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(5.03, 5.03, 5.03); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800\_12\_03\_23; Type: TP-1263; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.90 mW/g

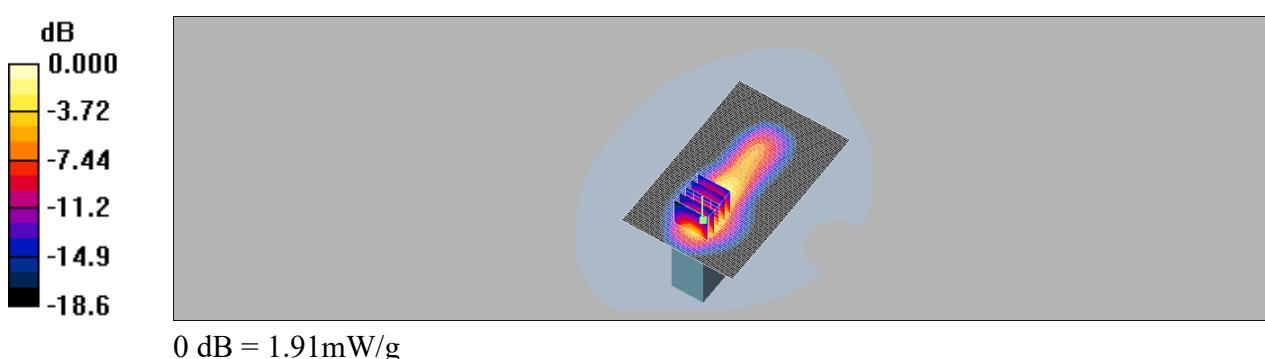
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 26.4 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 2.77 W/kg

**SAR(1 g) = 1.48 mW/g; SAR(10 g) = 0.748 mW/g**

Maximum value of SAR (measured) = 1.91 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE5 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1  
Medium parameters used (interpolated):  $f = 836.5 \text{ MHz}$ ;  $\sigma = 0.963 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.604 mW/g

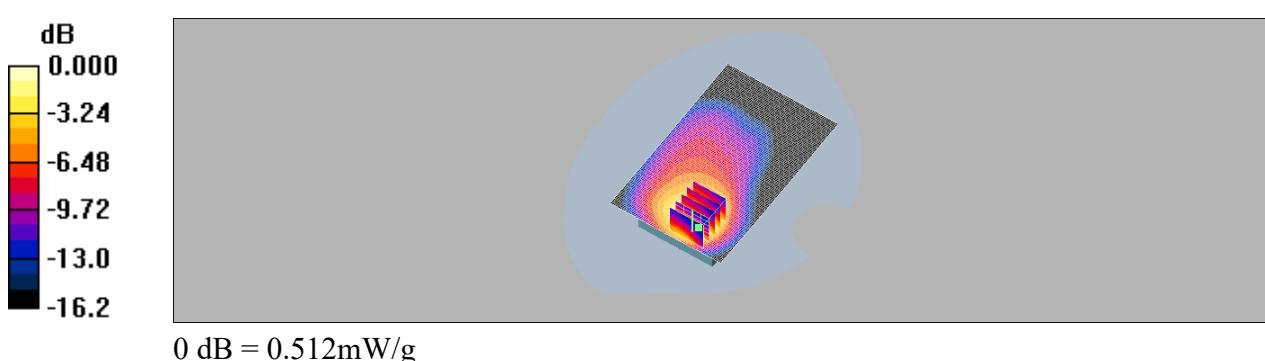
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 10.5 V/m; Power Drift = -0.256 dB

Peak SAR (extrapolated) = 0.835 W/kg

**SAR(1 g) = 0.406 mW/g; SAR(10 g) = 0.250 mW/g**

Maximum value of SAR (measured) = 0.512 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE5 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5 \text{ MHz}$ ;  $\sigma = 0.963 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.256 mW/g

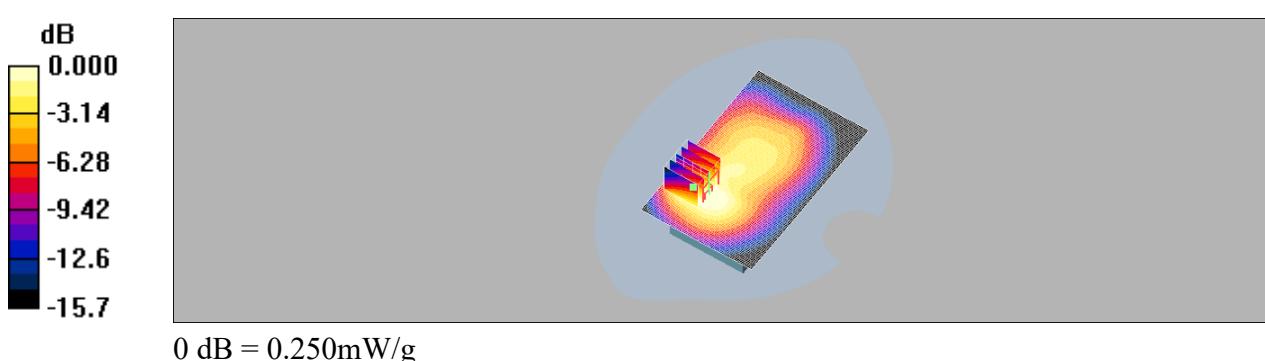
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 12.3 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 0.321 W/kg

**SAR(1 g) = 0.212 mW/g; SAR(10 g) = 0.144 mW/g**

Maximum value of SAR (measured) = 0.250 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE5 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.963$  mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.764 mW/g

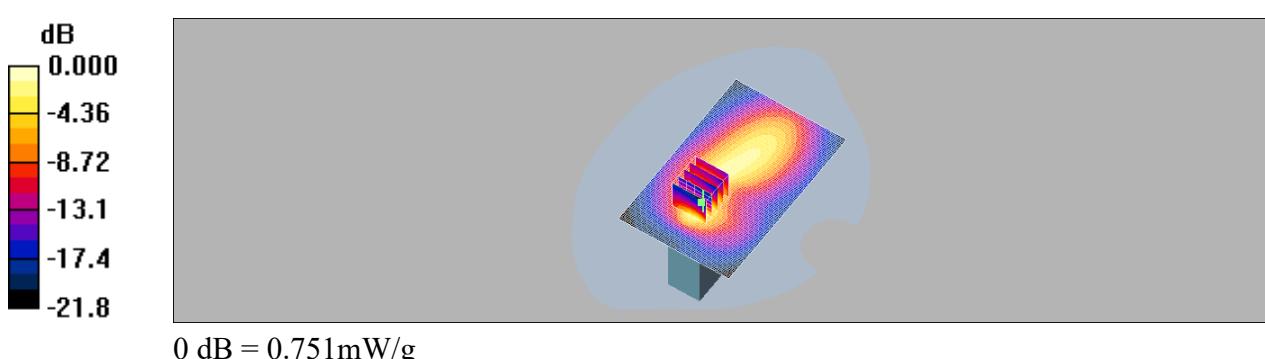
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.1 V/m; Power Drift = 0.390 dB

Peak SAR (extrapolated) = 1.78 W/kg

**SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.266 mW/g**

Maximum value of SAR (measured) = 0.751 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE5 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5 \text{ MHz}$ ;  $\sigma = 0.963 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.07 mW/g

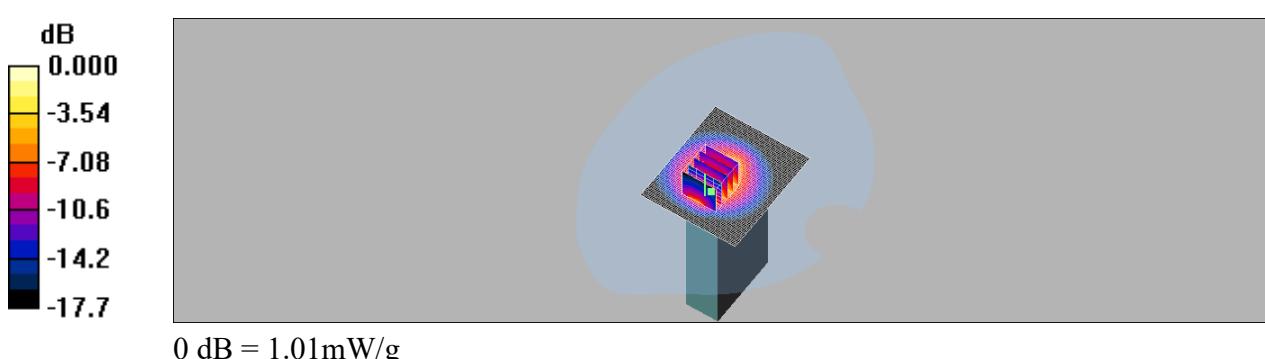
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 20.9 V/m; Power Drift = -0.028 dB

Peak SAR (extrapolated) = 1.96 W/kg

**SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.335 mW/g**

Maximum value of SAR (measured) = 1.01 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE5 TOP LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 826.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 826.5 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.768 mW/g

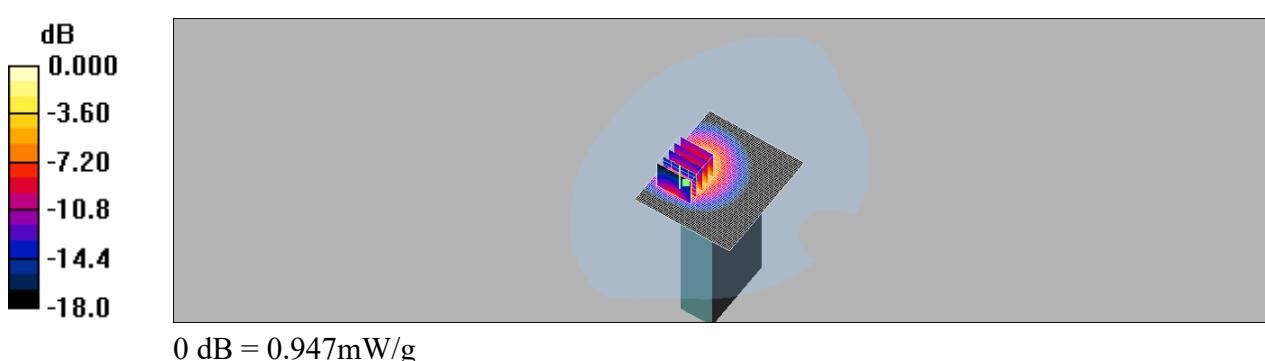
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.5 V/m; Power Drift = 0.129 dB

Peak SAR (extrapolated) = 1.97 W/kg

**SAR(1 g) = 0.675 mW/g; SAR(10 g) = 0.316 mW/g**

Maximum value of SAR (measured) = 0.947 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE5 TOP HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 846.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 846.5 \text{ MHz}$ ;  $\sigma = 0.973 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.17, 6.17, 6.17); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.759 mW/g

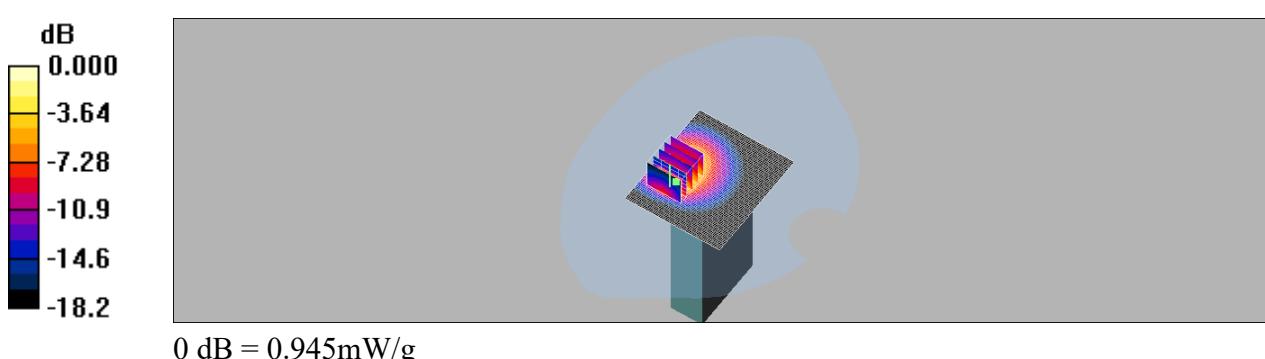
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.4 V/m; Power Drift = 0.218 dB

Peak SAR (extrapolated) = 1.99 W/kg

**SAR(1 g) = 0.674 mW/g; SAR(10 g) = 0.315 mW/g**

Maximum value of SAR (measured) = 0.945 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE17 FRONT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.953 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.36, 6.36, 6.36); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.432 mW/g

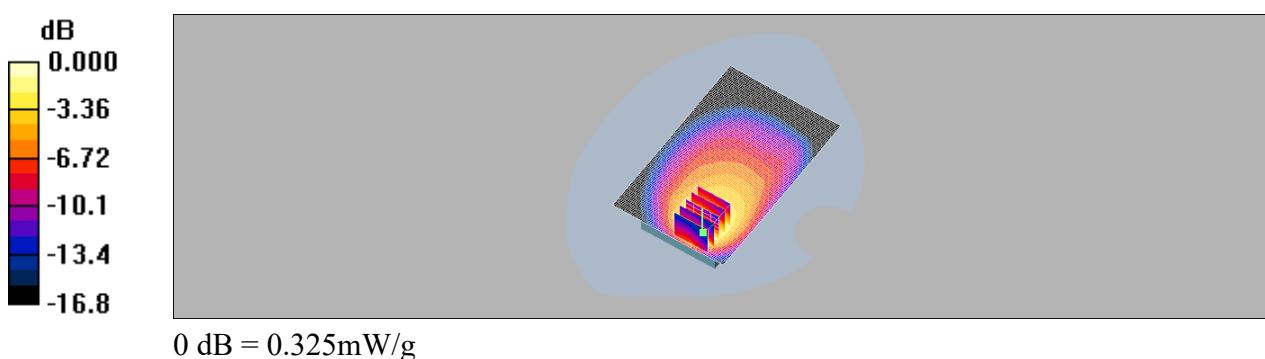
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.86 V/m; Power Drift = -0.031 dB

Peak SAR (extrapolated) = 0.601 W/kg

**SAR(1 g) = 0.272 mW/g; SAR(10 g) = 0.161 mW/g**

Maximum value of SAR (measured) = 0.325 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE17 REAR

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.953 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.36, 6.36, 6.36); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.389 mW/g

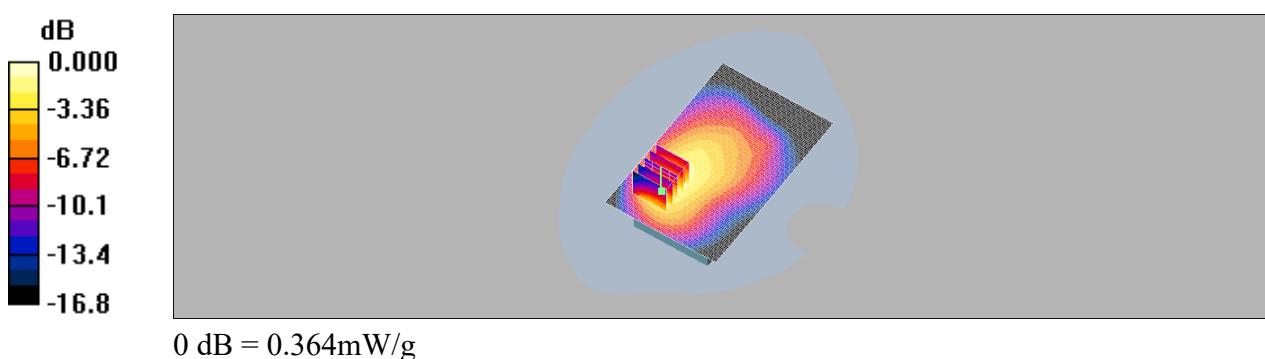
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.5 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 0.625 W/kg

**SAR(1 g) = 0.305 mW/g; SAR(10 g) = 0.178 mW/g**

Maximum value of SAR (measured) = 0.364 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE17 LEFT

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.953 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.36, 6.36, 6.36); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.12 mW/g

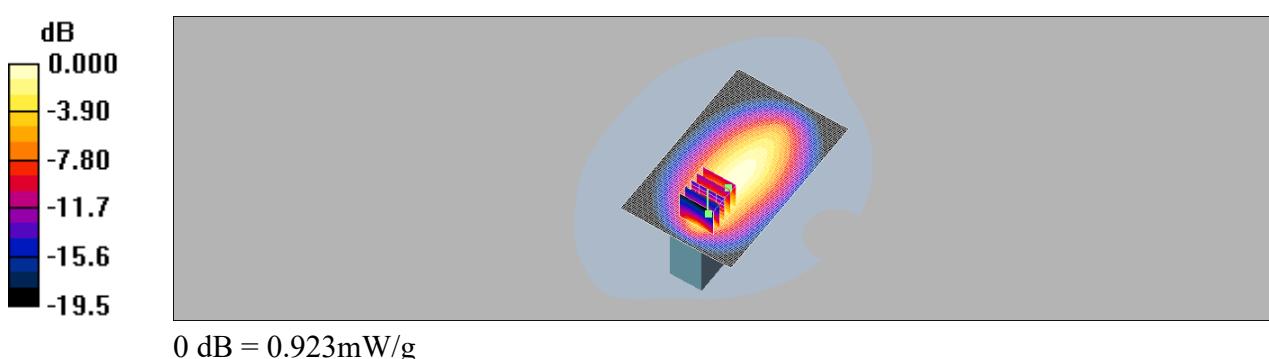
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 28.5 V/m; Power Drift = -0.097 dB

Peak SAR (extrapolated) = 1.87 W/kg

**SAR(1 g) = 0.707 mW/g; SAR(10 g) = 0.388 mW/g**

Maximum value of SAR (measured) = 0.923 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE17 TOP

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710 \text{ MHz}$ ;  $\sigma = 0.953 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.36, 6.36, 6.36); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (61x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.798 mW/g

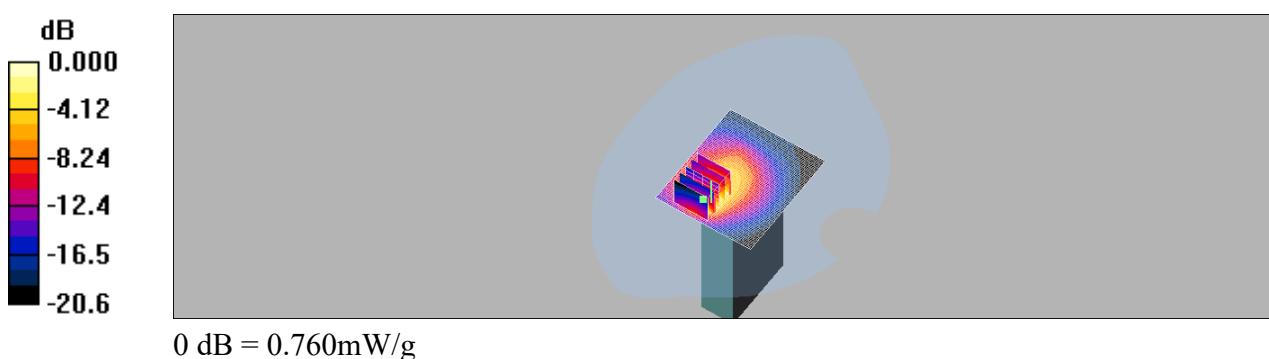
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 13.3 V/m; Power Drift = 0.209 dB

Peak SAR (extrapolated) = 1.92 W/kg

**SAR(1 g) = 0.611 mW/g; SAR(10 g) = 0.268 mW/g**

Maximum value of SAR (measured) = 0.760 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE17 LEFT LOW

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 706.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 706.5 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.36, 6.36, 6.36); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.08 mW/g

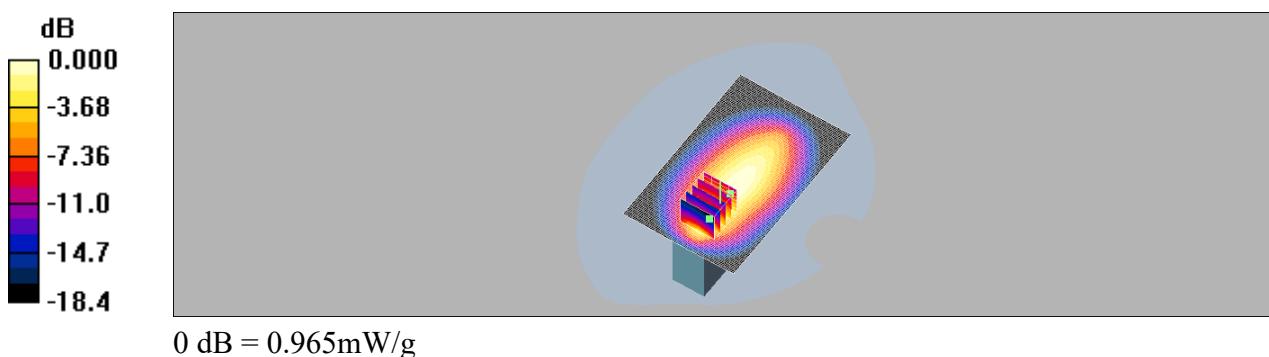
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 30.5 V/m; Power Drift = -0.064 dB

Peak SAR (extrapolated) = 1.74 W/kg

**SAR(1 g) = 0.785 mW/g; SAR(10 g) = 0.442 mW/g**

Maximum value of SAR (measured) = 0.965 mW/g



Test Laboratory: ESTECH

## iCAM M300 LTE17 LEFT HIGH

**DUT: iCAM M300; Type: BAR; Serial: xxxx**

Communication System: Wireless; Frequency: 713.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 714 \text{ MHz}$ ;  $\sigma = 0.958 \text{ mho/m}$ ;  $\epsilon_r = 57.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(6.36, 6.36, 6.36); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262; Serial: **Not Specified**
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.02 mW/g

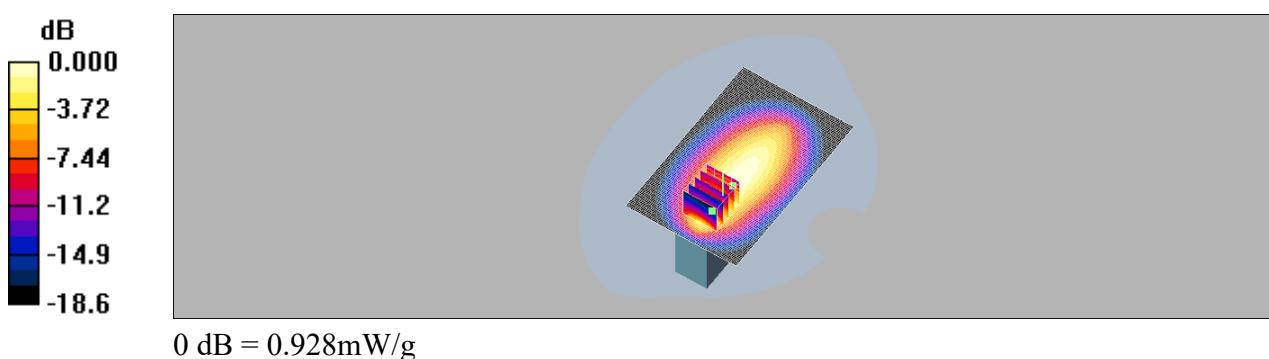
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 29.9 V/m; Power Drift = -0.157 dB

Peak SAR (extrapolated) = 1.64 W/kg

**SAR(1 g) = 0.744 mW/g; SAR(10 g) = 0.420 mW/g**

Maximum value of SAR (measured) = 0.928 mW/g



Test Laboratory: ESTECH

## iCAM M300 802.11n20 FRONT

**DUT: iCAM M300; Type: Not Specified; Serial: Not Specified**

Communication System: Wireless 2.4GHz; Frequency: 2442 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2467 \text{ MHz}$ ;  $\sigma = 1.97 \text{ mho/m}$ ;  $\epsilon_r = 50.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.47, 4.47, 4.47); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (111x181x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.028 mW/g

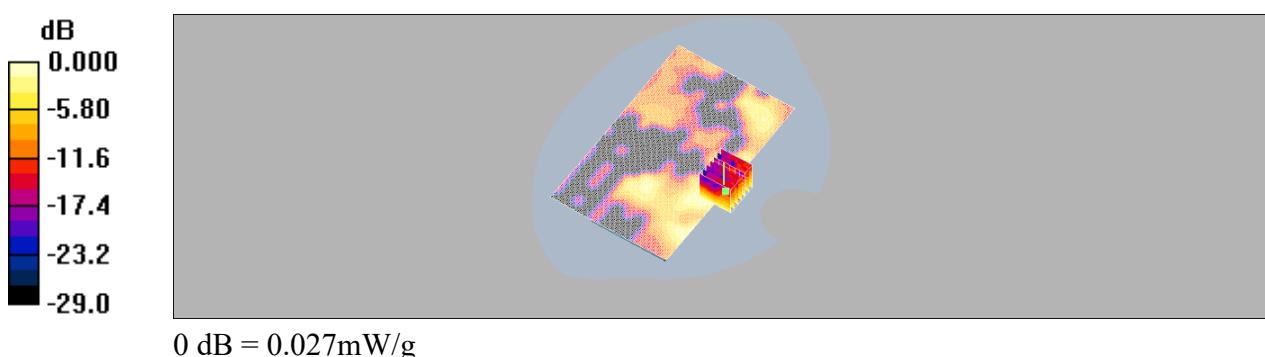
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 0.743 V/m; Power Drift = 0.26 dB

Peak SAR (extrapolated) = 0.052 W/kg

**SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.010 mW/g**

Maximum value of SAR (measured) = 0.027 mW/g



Test Laboratory: ESTECH

## iCAM M300 802.11n20 REAR

**DUT: iCAM M300; Type: Not Specified; Serial: Not Specified**

Communication System: Wireless 2.4GHz; Frequency: 2442 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2467 \text{ MHz}$ ;  $\sigma = 1.97 \text{ mho/m}$ ;  $\epsilon_r = 50.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.47, 4.47, 4.47); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (111x181x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.244 mW/g

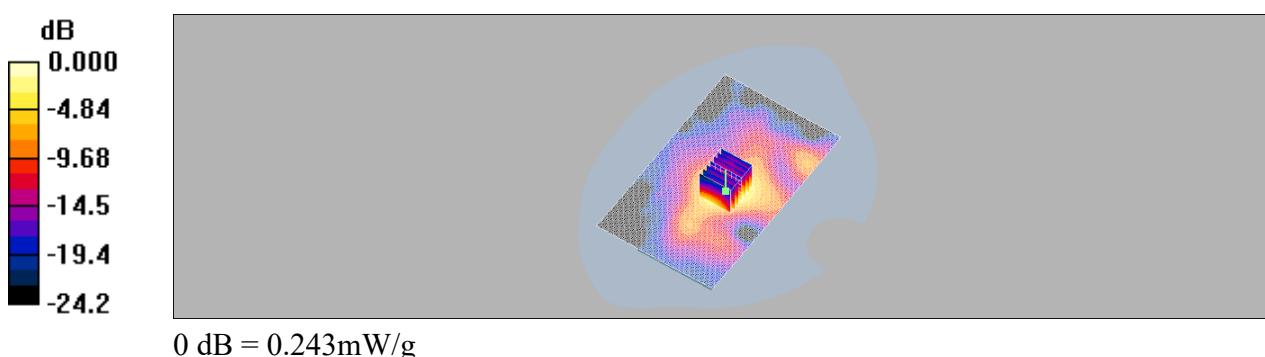
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 10.1 V/m; Power Drift = 0.154 dB

Peak SAR (extrapolated) = 0.382 W/kg

**SAR(1 g) = 0.189 mW/g; SAR(10 g) = 0.090 mW/g**

Maximum value of SAR (measured) = 0.243 mW/g



Test Laboratory: ESTECH

## iCAM M300 802.11n20 LEFT

**DUT: iCAM M300; Type: Not Specified; Serial: Not Specified**

Communication System: Wireless 2.4GHz; Frequency: 2442 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2467 \text{ MHz}$ ;  $\sigma = 1.97 \text{ mho/m}$ ;  $\epsilon_r = 50.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.47, 4.47, 4.47); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (81x181x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.577 mW/g

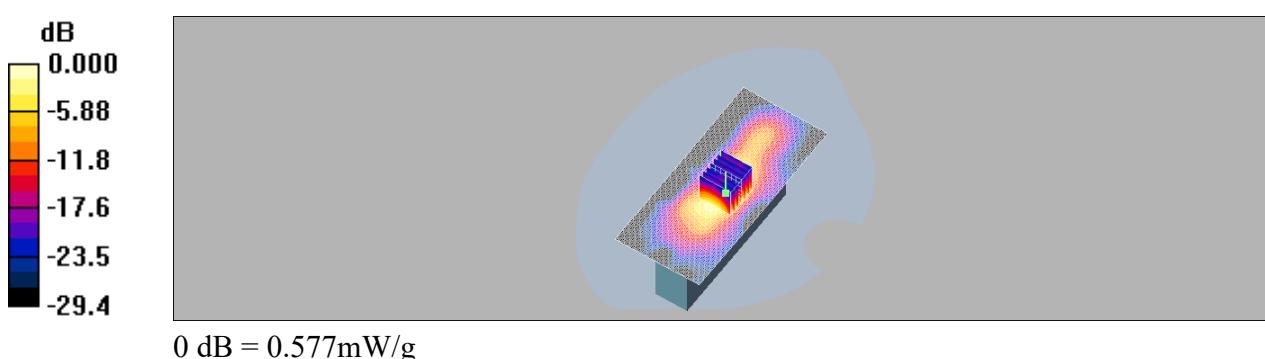
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 15.5 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 1.18 W/kg

**SAR(1 g) = 0.401 mW/g; SAR(10 g) = 0.158 mW/g**

Maximum value of SAR (measured) = 0.577 mW/g



Test Laboratory: ESTECH

## iCAM M300 802.11n20 TOP

**DUT: iCAM M300; Type: Not Specified; Serial: Not Specified**

Communication System: Wireless 2.4GHz; Frequency: 2442 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2467 \text{ MHz}$ ;  $\sigma = 1.97 \text{ mho/m}$ ;  $\epsilon_r = 50.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.47, 4.47, 4.47); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (81x151x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.191 mW/g

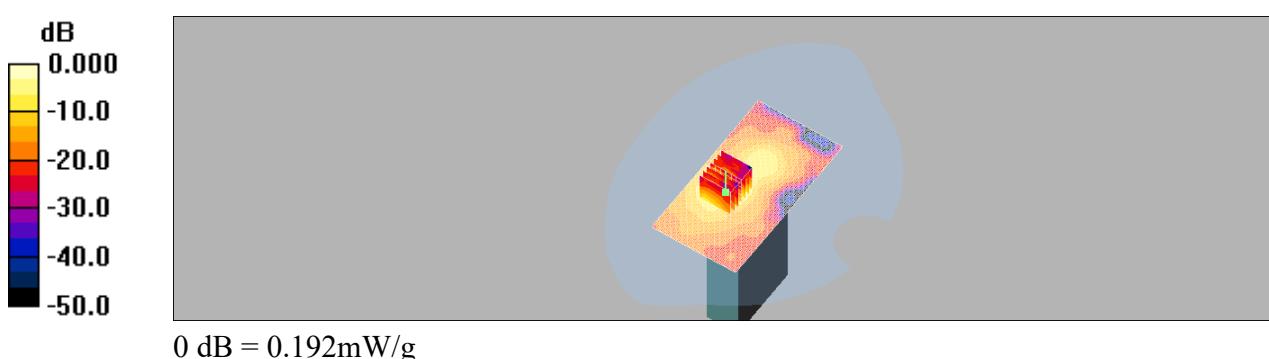
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 3.06 V/m; Power Drift = -0.055 dB

Peak SAR (extrapolated) = 0.406 W/kg

**SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.047 mW/g**

Maximum value of SAR (measured) = 0.192 mW/g



Test Laboratory: ESTECH

## iCAM M300 802.11n20 LEFT LOW

**DUT: iCAM M300; Type: Not Specified; Serial: Not Specified**

Communication System: Wireless 2.4GHz; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.93 \text{ mho/m}$ ;  $\epsilon_r = 50.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.47, 4.47, 4.47); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (81x181x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.419 mW/g

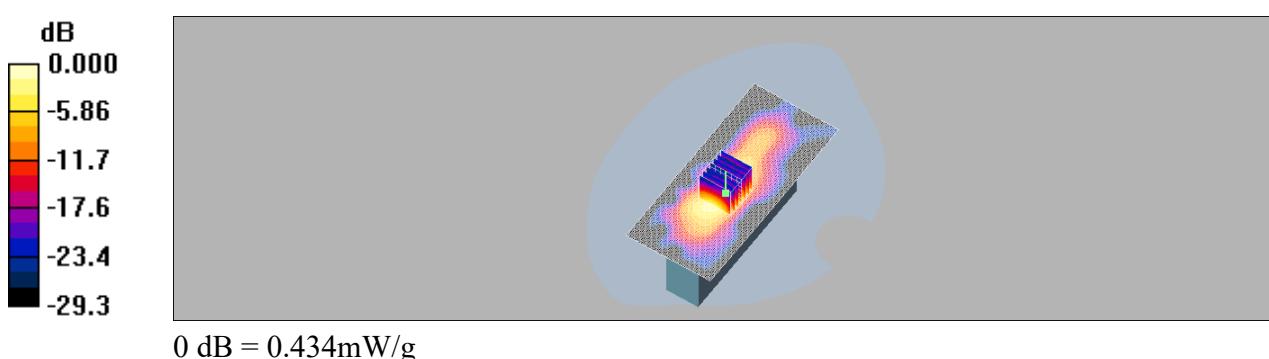
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.72 V/m; Power Drift = 0.226 dB

Peak SAR (extrapolated) = 0.866 W/kg

**SAR(1 g) = 0.308 mW/g; SAR(10 g) = 0.123 mW/g**

Maximum value of SAR (measured) = 0.434 mW/g



Test Laboratory: ESTECH

## iCAM M300 802.11n20 LEFT HIGH

**DUT: iCAM M300; Type: Not Specified; Serial: Not Specified**

Communication System: Wireless 2.4GHz; Frequency: 2472 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2462 \text{ MHz}$ ;  $\sigma = 2 \text{ mho/m}$ ;  $\epsilon_r = 50.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3123; ConvF(4.47, 4.47, 4.47); Calibrated: 2018-01-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn551; Calibrated: 2018-01-17
- Phantom: HSL1800; Type: TP-1262;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Area Scan (81x181x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.527 mW/g

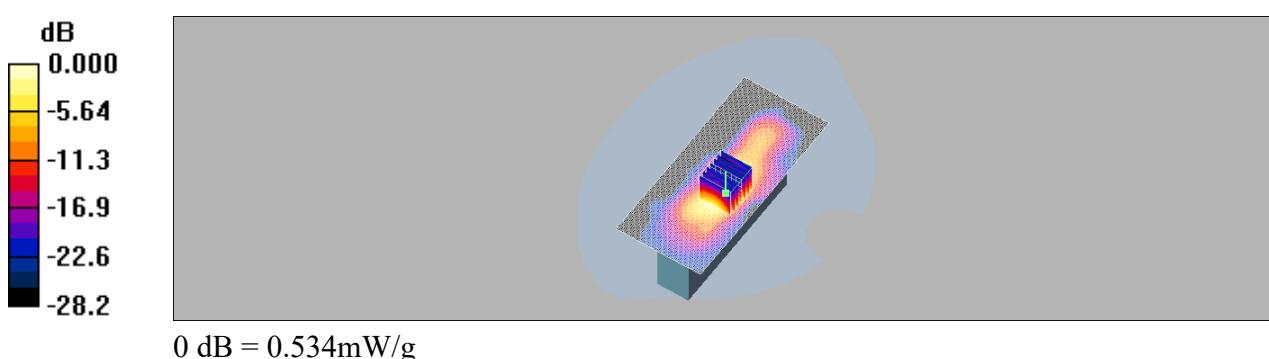
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.4 V/m; Power Drift = -0.034 dB

Peak SAR (extrapolated) = 1.10 W/kg

**SAR(1 g) = 0.386 mW/g; SAR(10 g) = 0.154 mW/g**

Maximum value of SAR (measured) = 0.534 mW/g



## APPENDIX C : SAR Tissue Data

| frequency      | e'      | e''     |
|----------------|---------|---------|
| 700000000.0000 | 41.9047 | 21.8063 |
| 702000000.0000 | 41.9565 | 21.7875 |
| 704000000.0000 | 41.8294 | 21.7216 |
| 706000000.0000 | 41.8287 | 21.7468 |
| 708000000.0000 | 41.8084 | 21.7435 |
| 710000000.0000 | 41.6828 | 21.7344 |
| 712000000.0000 | 41.6988 | 21.7181 |
| 714000000.0000 | 41.6354 | 21.7046 |
| 716000000.0000 | 41.4953 | 21.6821 |
| 718000000.0000 | 41.4941 | 21.6793 |
| 720000000.0000 | 41.4818 | 21.6789 |
| 722000000.0000 | 41.4409 | 21.6524 |
| 724000000.0000 | 41.3161 | 21.6408 |
| 726000000.0000 | 41.2013 | 21.6346 |
| 728000000.0000 | 40.8709 | 21.6116 |
| 730000000.0000 | 40.9565 | 21.5535 |
| 732000000.0000 | 40.8168 | 21.5452 |
| 734000000.0000 | 40.9037 | 21.5660 |
| 736000000.0000 | 40.8782 | 21.5279 |
| 738000000.0000 | 40.8505 | 21.5184 |
| 740000000.0000 | 40.8372 | 21.5302 |

| frequency      | e'      | e''     |
|----------------|---------|---------|
| 800000000.0000 | 40.4251 | 19.1966 |
| 802000000.0000 | 40.4457 | 19.1861 |
| 804000000.0000 | 40.4301 | 19.1710 |
| 806000000.0000 | 40.4728 | 19.1742 |
| 808000000.0000 | 40.4775 | 19.1234 |
| 810000000.0000 | 40.4595 | 19.1539 |
| 812000000.0000 | 40.4558 | 19.1354 |
| 814000000.0000 | 40.4620 | 19.1338 |
| 816000000.0000 | 40.4707 | 19.1266 |
| 818000000.0000 | 40.1450 | 19.1542 |
| 820000000.0000 | 40.4583 | 19.1458 |
| 822000000.0000 | 40.4301 | 19.1642 |
| 824000000.0000 | 40.4195 | 19.1222 |
| 826000000.0000 | 40.4166 | 19.1786 |
| 828000000.0000 | 40.3944 | 19.2002 |
| 830000000.0000 | 40.3904 | 19.2164 |
| 832000000.0000 | 40.3721 | 19.2171 |
| 834000000.0000 | 40.3798 | 19.2396 |
| 836000000.0000 | 40.3403 | 19.2515 |
| 838000000.0000 | 40.3216 | 19.2670 |
| 840000000.0000 | 40.3099 | 19.2560 |
| 842000000.0000 | 40.2997 | 19.2837 |
| 844000000.0000 | 40.2611 | 19.2807 |
| 846000000.0000 | 40.2600 | 19.2557 |
| 848000000.0000 | 40.2178 | 19.3232 |
| 850000000.0000 | 40.1062 | 19.3122 |
| 852000000.0000 | 40.1821 | 19.3244 |
| 854000000.0000 | 40.1733 | 19.3224 |
| 856000000.0000 | 40.1161 | 19.3541 |
| 858000000.0000 | 40.1163 | 19.3494 |
| 860000000.0000 | 40.0819 | 19.3258 |
| 862000000.0000 | 40.0732 | 19.3238 |
| 864000000.0000 | 40.0725 | 19.3485 |
| 866000000.0000 | 40.0178 | 19.2614 |
| 868000000.0000 | 40.0324 | 19.2319 |
| 870000000.0000 | 39.9768 | 19.2041 |
| 872000000.0000 | 40.0039 | 19.2115 |
| 874000000.0000 | 39.9485 | 19.2238 |
| 876000000.0000 | 39.9782 | 19.2201 |
| 878000000.0000 | 39.9115 | 19.2161 |
| 880000000.0000 | 39.9385 | 19.2036 |
| 882000000.0000 | 39.9887 | 19.2236 |
| 884000000.0000 | 39.9282 | 19.1881 |
| 886000000.0000 | 39.8758 | 19.1992 |
| 888000000.0000 | 39.8836 | 19.2541 |

|                |         |         |
|----------------|---------|---------|
| 890000000.0000 | 39.8393 | 19.1917 |
| 892000000.0000 | 39.8655 | 19.1603 |
| 894000000.0000 | 39.8166 | 19.1657 |
| 896000000.0000 | 39.8335 | 19.1515 |
| 898000000.0000 | 39.8106 | 19.1635 |
| 900000000.0000 | 39.8174 | 19.1475 |

| frequency       | e'      | e''     |
|-----------------|---------|---------|
| 1700000000.0000 | 40.4253 | 14.2458 |
| 1704000000.0000 | 40.5554 | 14.2428 |
| 1708000000.0000 | 40.6846 | 14.2585 |
| 1712000000.0000 | 40.4562 | 14.2672 |
| 1716000000.0000 | 40.3048 | 14.2209 |
| 1720000000.0000 | 40.5550 | 14.2534 |
| 1724000000.0000 | 40.6156 | 14.2922 |
| 1728000000.0000 | 40.6610 | 14.2708 |
| 1732000000.0000 | 40.6264 | 14.2861 |
| 1736000000.0000 | 40.4158 | 14.2795 |
| 1740000000.0000 | 40.3075 | 14.2652 |
| 1744000000.0000 | 40.4655 | 14.2635 |
| 1748000000.0000 | 40.3663 | 14.2503 |
| 1752000000.0000 | 40.5808 | 14.2488 |
| 1756000000.0000 | 40.3555 | 14.2479 |
| 1760000000.0000 | 40.2178 | 14.2484 |
| 1764000000.0000 | 40.3563 | 14.2511 |
| 1768000000.0000 | 40.5244 | 14.2506 |
| 1772000000.0000 | 40.4558 | 14.2381 |
| 1776000000.0000 | 40.2248 | 14.2169 |
| 1780000000.0000 | 40.2117 | 14.2352 |
| 1784000000.0000 | 40.1016 | 14.2063 |
| 1788000000.0000 | 40.1595 | 14.2184 |
| 1792000000.0000 | 40.0645 | 14.2255 |
| 1796000000.0000 | 40.0478 | 14.2331 |
| 1800000000.0000 | 40.2219 | 14.2181 |
| 1800400000.0000 | 40.1355 | 14.2081 |

| frequency       | e'      | e''     |
|-----------------|---------|---------|
| 1840000000.0000 | 39.7485 | 13.1038 |
| 1842000000.0000 | 39.7575 | 13.1163 |
| 1844000000.0000 | 39.7453 | 13.0903 |
| 1846000000.0000 | 39.7263 | 13.0928 |
| 1848000000.0000 | 39.7280 | 13.1097 |
| 1850000000.0000 | 39.7148 | 13.1125 |
| 1852000000.0000 | 39.7180 | 13.1224 |
| 1854000000.0000 | 39.7092 | 13.1047 |
| 1856000000.0000 | 39.6892 | 13.1060 |
| 1858000000.0000 | 39.6780 | 13.1164 |
| 1860000000.0000 | 39.6926 | 13.1071 |
| 1862000000.0000 | 39.6912 | 13.1141 |
| 1864000000.0000 | 39.6877 | 13.1225 |
| 1866000000.0000 | 39.6891 | 13.1246 |
| 1868000000.0000 | 39.6838 | 13.1165 |
| 1870000000.0000 | 39.6716 | 13.1158 |
| 1872000000.0000 | 39.6634 | 13.1301 |
| 1874000000.0000 | 39.6567 | 13.1377 |
| 1876000000.0000 | 39.6664 | 13.1432 |
| 1878000000.0000 | 39.6462 | 13.1479 |
| 1880000000.0000 | 39.6369 | 13.1423 |
| 1882000000.0000 | 39.6303 | 13.1586 |
| 1884000000.0000 | 39.6203 | 13.1742 |
| 1886000000.0000 | 39.6233 | 13.1782 |
| 1888000000.0000 | 39.6190 | 13.1665 |
| 1890000000.0000 | 39.6105 | 13.1664 |
| 1892000000.0000 | 39.5912 | 13.1852 |
| 1894000000.0000 | 39.5760 | 13.1749 |
| 1896000000.0000 | 39.5704 | 13.1700 |
| 1898000000.0000 | 39.5607 | 13.1854 |
| 1900000000.0000 | 39.5484 | 13.1879 |
| 1902000000.0000 | 39.5266 | 13.1849 |
| 1904000000.0000 | 39.5157 | 13.1982 |
| 1906000000.0000 | 39.5082 | 13.1946 |
| 1908000000.0000 | 39.4927 | 13.1964 |
| 1910000000.0000 | 39.4927 | 13.1908 |
| 1912000000.0000 | 39.4711 | 13.2054 |
| 1914000000.0000 | 39.4644 | 13.1983 |
| 1916000000.0000 | 39.4497 | 13.2055 |
| 1918000000.0000 | 39.4344 | 13.2247 |
| 1920000000.0000 | 39.4272 | 13.2385 |

| frequency     | e'      | e''     |
|---------------|---------|---------|
| 2400000000.00 | 50.7842 | 14.3162 |
| 2404000000.00 | 50.7607 | 14.3401 |
| 2408000000.00 | 50.7565 | 14.3631 |
| 2412000000.00 | 50.7292 | 14.3736 |
| 2416000000.00 | 50.7276 | 14.3866 |
| 2420000000.00 | 50.7283 | 14.4093 |
| 2424000000.00 | 50.7179 | 14.4156 |
| 2428000000.00 | 50.7100 | 14.4432 |
| 2432000000.00 | 50.6979 | 14.4597 |
| 2436000000.00 | 50.6859 | 14.4740 |
| 2440000000.00 | 50.6641 | 14.4849 |
| 2444000000.00 | 50.6690 | 14.5025 |
| 2448000000.00 | 50.6491 | 14.4944 |
| 2452000000.00 | 50.6208 | 14.5114 |
| 2456000000.00 | 50.6121 | 14.5104 |
| 2460000000.00 | 50.6013 | 14.5095 |
| 2464000000.00 | 50.5749 | 14.5194 |
| 2468000000.00 | 50.5687 | 14.5374 |
| 2472000000.00 | 50.5501 | 14.5309 |
| 2476000000.00 | 50.5237 | 14.5453 |
| 2480000000.00 | 50.5141 | 14.5673 |
| 2484000000.00 | 50.4937 | 14.5755 |
| 2488000000.00 | 50.4684 | 14.5866 |
| 2492000000.00 | 50.4429 | 14.5942 |
| 2496000000.00 | 50.4275 | 14.6157 |
| 2500000000.00 | 50.4205 | 14.6328 |

| frequency      | e'      | e''     |
|----------------|---------|---------|
| 690000000.0000 | 57.7445 | 24.3010 |
| 692000000.0000 | 57.7459 | 24.3434 |
| 694000000.0000 | 57.7555 | 24.2658 |
| 696000000.0000 | 57.7215 | 24.2577 |
| 698000000.0000 | 57.7255 | 24.2409 |
| 700000000.0000 | 57.6673 | 24.2662 |
| 702000000.0000 | 57.6676 | 24.2513 |
| 704000000.0000 | 57.6780 | 24.1947 |
| 706000000.0000 | 57.6208 | 24.1886 |
| 708000000.0000 | 57.6170 | 24.1344 |
| 710000000.0000 | 57.6100 | 24.1338 |
| 712000000.0000 | 57.5824 | 24.1129 |
| 714000000.0000 | 57.5472 | 24.1167 |
| 716000000.0000 | 57.5527 | 24.0788 |
| 718000000.0000 | 57.5548 | 24.0736 |
| 720000000.0000 | 57.5283 | 24.0627 |
| 722000000.0000 | 57.5196 | 24.0067 |
| 724000000.0000 | 57.5158 | 23.9790 |
| 726000000.0000 | 57.4736 | 23.9563 |
| 728000000.0000 | 57.4424 | 23.9535 |
| 730000000.0000 | 57.4605 | 23.9757 |
| 732000000.0000 | 57.4230 | 23.9407 |
| 734000000.0000 | 57.4220 | 23.9067 |
| 736000000.0000 | 57.3937 | 23.8976 |
| 738000000.0000 | 57.3573 | 23.8726 |
| 740000000.0000 | 57.3296 | 23.8634 |
| 742000000.0000 | 57.3293 | 23.8294 |
| 744000000.0000 | 57.3133 | 23.7939 |
| 746000000.0000 | 57.3015 | 23.8218 |
| 748000000.0000 | 57.2667 | 23.8067 |
| 750000000.0000 | 57.2823 | 23.8096 |

| frequency      | e'      | e''     |
|----------------|---------|---------|
| 820000000.0000 | 55.3790 | 20.6524 |
| 824000000.0000 | 55.3621 | 20.6976 |
| 828000000.0000 | 55.3544 | 20.7009 |
| 832000000.0000 | 55.3084 | 20.6979 |
| 836000000.0000 | 55.2877 | 20.6903 |
| 840000000.0000 | 55.2486 | 20.6884 |
| 844000000.0000 | 55.2404 | 20.6519 |
| 848000000.0000 | 55.2069 | 20.6650 |
| 852000000.0000 | 55.1810 | 20.6341 |
| 856000000.0000 | 55.1793 | 20.6297 |
| 860000000.0000 | 55.1192 | 20.6138 |
| 864000000.0000 | 55.0898 | 20.6118 |
| 868000000.0000 | 55.0621 | 20.5958 |
| 872000000.0000 | 55.0589 | 20.6142 |
| 876000000.0000 | 55.0018 | 20.6281 |
| 880000000.0000 | 54.9972 | 20.6254 |
| 884000000.0000 | 54.9595 | 20.6242 |
| 888000000.0000 | 54.9402 | 20.6083 |
| 892000000.0000 | 54.9226 | 20.6089 |
| 896000000.0000 | 54.9188 | 20.5800 |
| 900000000.0000 | 54.8972 | 20.5787 |
| 904000000.0000 | 54.8724 | 20.5706 |
| 908000000.0000 | 54.8513 | 20.5820 |
| 912000000.0000 | 54.8077 | 20.5682 |
| 916000000.0000 | 54.7794 | 20.5499 |
| 920000000.0000 | 54.7691 | 20.5467 |

| frequency       | e'      | e''     |
|-----------------|---------|---------|
| 1700000000.0000 | 52.4522 | 14.8740 |
| 1702500000.0000 | 52.4524 | 14.8668 |
| 1705000000.0000 | 52.4335 | 14.8491 |
| 1707500000.0000 | 52.4383 | 14.8567 |
| 1710000000.0000 | 52.4180 | 14.8511 |
| 1712500000.0000 | 52.4019 | 14.8643 |
| 1715000000.0000 | 52.4136 | 14.8480 |
| 1717500000.0000 | 52.3963 | 14.8548 |
| 1720000000.0000 | 52.3907 | 14.8486 |
| 1722500000.0000 | 52.3834 | 14.8585 |
| 1725000000.0000 | 52.3725 | 14.8639 |
| 1727500000.0000 | 52.3787 | 14.8629 |
| 1730000000.0000 | 52.3440 | 14.8655 |
| 1732500000.0000 | 52.3352 | 14.8547 |
| 1735000000.0000 | 52.2911 | 14.8724 |
| 1737500000.0000 | 52.3206 | 14.8818 |
| 1740000000.0000 | 52.3155 | 14.8754 |
| 1742500000.0000 | 52.3030 | 14.8641 |
| 1745000000.0000 | 52.2968 | 14.8695 |
| 1747500000.0000 | 52.2933 | 14.8691 |
| 1750000000.0000 | 52.2828 | 14.8779 |
| 1752500000.0000 | 52.2741 | 14.8708 |
| 1755000000.0000 | 52.2603 | 14.8752 |
| 1757500000.0000 | 52.2614 | 14.8711 |
| 1760000000.0000 | 52.2503 | 14.8696 |
| 1762500000.0000 | 52.2468 | 14.8729 |
| 1765000000.0000 | 52.2351 | 14.8793 |
| 1767500000.0000 | 52.2281 | 14.8781 |
| 1770000000.0000 | 52.2307 | 14.8619 |
| 1772500000.0000 | 52.2289 | 14.8711 |
| 1775000000.0000 | 52.2247 | 14.8641 |
| 1777500000.0000 | 52.2198 | 14.8649 |
| 1780000000.0000 | 52.2103 | 14.8514 |
| 1782500000.0000 | 52.1945 | 14.8649 |
| 1785000000.0000 | 52.1990 | 14.8506 |
| 1787500000.0000 | 52.1933 | 14.8631 |
| 1790000000.0000 | 52.1920 | 14.8501 |
| 1792500000.0000 | 52.1896 | 14.8489 |
| 1795000000.0000 | 52.1734 | 14.8483 |
| 1797500000.0000 | 52.1675 | 14.8428 |
| 1800000000.0000 | 52.1718 | 14.8577 |

| frequency       | e'      | e''     |
|-----------------|---------|---------|
| 1840000000.0000 | 51.3295 | 14.9584 |
| 1842000000.0000 | 51.3283 | 14.4503 |
| 1844000000.0000 | 51.3204 | 14.4592 |
| 1846000000.0000 | 51.3301 | 14.4589 |
| 1848000000.0000 | 51.3160 | 14.4687 |
| 1850000000.0000 | 51.3170 | 14.4729 |
| 1852000000.0000 | 51.3082 | 14.4754 |
| 1854000000.0000 | 51.2995 | 14.4779 |
| 1856000000.0000 | 51.3084 | 14.4711 |
| 1858000000.0000 | 51.2998 | 14.4736 |
| 1860000000.0000 | 51.3063 | 14.4703 |
| 1862000000.0000 | 51.2952 | 14.4764 |
| 1864000000.0000 | 51.2896 | 14.4862 |
| 1866000000.0000 | 51.2917 | 14.4851 |
| 1868000000.0000 | 51.2752 | 14.4952 |
| 1870000000.0000 | 51.2811 | 14.4966 |
| 1872000000.0000 | 51.2625 | 14.4943 |
| 1874000000.0000 | 51.2598 | 14.5003 |
| 1876000000.0000 | 51.2684 | 14.4980 |
| 1878000000.0000 | 51.2637 | 14.5107 |
| 1880000000.0000 | 51.2611 | 14.5167 |
| 1882000000.0000 | 51.2552 | 14.5121 |
| 1884000000.0000 | 51.2631 | 14.5225 |
| 1886000000.0000 | 51.2516 | 14.5220 |
| 1888000000.0000 | 51.2681 | 14.5356 |
| 1890000000.0000 | 51.2545 | 14.5227 |
| 1892000000.0000 | 51.2388 | 14.5324 |
| 1894000000.0000 | 51.2423 | 14.5259 |
| 1896000000.0000 | 51.2174 | 14.5372 |
| 1898000000.0000 | 51.2208 | 14.5466 |
| 1900000000.0000 | 51.2141 | 14.5705 |
| 1902000000.0000 | 51.2189 | 14.5700 |
| 1904000000.0000 | 51.2289 | 14.5623 |
| 1906000000.0000 | 51.2091 | 14.5821 |
| 1908000000.0000 | 51.1973 | 14.5593 |
| 1910000000.0000 | 51.1936 | 14.5793 |
| 1912000000.0000 | 51.1889 | 14.5773 |
| 1914000000.0000 | 51.1914 | 14.5961 |
| 1916000000.0000 | 51.1918 | 14.5868 |
| 1918000000.0000 | 51.1751 | 14.5870 |
| 1920000000.0000 | 51.1657 | 14.5921 |

| frequency     | e'      | e''     |
|---------------|---------|---------|
| 2400000000.00 | 39.7782 | 13.3194 |
| 2404000000.00 | 39.7579 | 13.3411 |
| 2408000000.00 | 39.7542 | 13.3656 |
| 2412000000.00 | 39.7342 | 13.3673 |
| 2416000000.00 | 39.7263 | 13.3898 |
| 2420000000.00 | 39.7251 | 13.4066 |
| 2424000000.00 | 39.7168 | 13.4182 |
| 2428000000.00 | 39.7076 | 13.4419 |
| 2432000000.00 | 39.6942 | 13.4636 |
| 2436000000.00 | 39.6860 | 13.4780 |
| 2440000000.00 | 39.6709 | 13.4843 |
| 2444000000.00 | 39.6691 | 13.4960 |
| 2448000000.00 | 39.6470 | 13.4972 |
| 2452000000.00 | 39.6210 | 13.5131 |
| 2456000000.00 | 39.6114 | 13.5120 |
| 2460000000.00 | 39.5958 | 13.5105 |
| 2464000000.00 | 39.5796 | 13.5209 |
| 2468000000.00 | 39.5662 | 13.5345 |
| 2472000000.00 | 39.5512 | 13.5299 |
| 2476000000.00 | 39.5230 | 13.5424 |
| 2480000000.00 | 39.5122 | 13.5680 |
| 2484000000.00 | 39.4907 | 13.5748 |
| 2488000000.00 | 39.4673 | 13.5890 |
| 2492000000.00 | 39.4492 | 13.5929 |
| 2496000000.00 | 39.4317 | 13.6134 |
| 2500000000.00 | 39.4163 | 13.6264 |



## APPENDIX D : Calibration Certificates

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Test Report No. : ESTSFC1810-001  
EST -P25 -IO2 -F12(2017.08.28.)

Web : [www.estech.co.kr](http://www.estech.co.kr)

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## IMPORTANT NOTICE

### USAGE OF THE DAE 4

The DAE unit is a delicate, high precision instrument and requires careful treatment by the user. There are no serviceable parts inside the DAE. Special attention shall be given to the following points:

**Battery Exchange:** The battery cover of the DAE4 unit is closed using a screw, over tightening the screw may cause the threads inside the DAE to wear out.

**Shipping of the DAE:** Before shipping the DAE to SPEAG for calibration, remove the batteries and pack the DAE in an antistatic bag. This antistatic bag shall then be packed into a larger box or container which protects the DAE from impacts during transportation. The package shall be marked to indicate that a fragile instrument is inside.

**E-Stop Failures:** Touch detection may be malfunctioning due to broken magnets in the E-stop. Rough handling of the E-stop may lead to damage of these magnets. Touch and collision errors are often caused by dust and dirt accumulated in the E-stop. To prevent E-stop failure, the customer shall always mount the probe to the DAE carefully and keep the DAE unit in a non-dusty environment if not used for measurements.

**Repair:** Minor repairs are performed at no extra cost during the annual calibration. However, SPEAG reserves the right to charge for any repair especially if rough unprofessional handling caused the defect.

**DASY Configuration Files:** Since the exact values of the DAE input resistances, as measured during the calibration procedure of a DAE unit, are not used by the DASY software, a nominal value of 200 M $\Omega$  is given in the corresponding configuration file.

**Important Note:**

**Warranty and calibration is void if the DAE unit is disassembled partly or fully by the Customer.**

**Important Note:**

**Never attempt to grease or oil the E-stop assembly. Cleaning and readjusting of the E-stop assembly is allowed by certified SPEAG personnel only and is part of the annual calibration procedure.**

**Important Note:**

**To prevent damage of the DAE probe connector pins, use great care when installing the probe to the DAE. Carefully connect the probe with the connector notch oriented in the mating position. Avoid any rotational movement of the probe body versus the DAE while turning the locking nut of the connector. The same care shall be used when disconnecting the probe from the DAE.**

**Calibration Laboratory of**  
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Accreditation No.: SCS 0108

Client Estech (Dymstec)

Certificate No: DAE4-551\_Jan18

## CALIBRATION CERTIFICATE

Object DAE4 - SD 000 D04 BJ - SN: 551

Calibration procedure(s) QA CAL-06.v29  
Calibration procedure for the data acquisition electronics (DAE)

Calibration date: January 17, 2018

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards             | ID #               | Cal Date (Certificate No.) | Scheduled Calibration  |
|-------------------------------|--------------------|----------------------------|------------------------|
| Keithley Multimeter Type 2001 | SN: 0810278        | 31-Aug-17 (No:21092)       | Aug-18                 |
| Secondary Standards           | ID #               | Check Date (in house)      | Scheduled Check        |
| Auto DAE Calibration Unit     | SE UWS 053 AA 1001 | 04-Jan-18 (in house check) | In house check: Jan-19 |
| Calibrator Box V2.1           | SE UMS 006 AA 1002 | 04-Jan-18 (in house check) | In house check: Jan-19 |

Calibrated by: Name Adrian Gehring Function Laboratory Technician Signature

Approved by: Name Sven Kühn Function Deputy Manager Signature

Issued: January 17, 2018

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Accreditation No.: **SCS 0108**

## Glossary

|                 |   |
|-----------------|---|
| DAE             | data acquisition electronics  |
| Connector angle | information used in DASY system to align probe sensor X to the robot coordinate system. |

## Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement:* Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

## DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB =  $6.1\mu V$ , full range =  $-100...+300 mV$

Low Range: 1LSB =  $61nV$ , full range =  $-1.....+3mV$

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| Calibration Factors | X                          | Y                          | Z                          |
|---------------------|----------------------------|----------------------------|----------------------------|
| High Range          | $405.853 \pm 0.02\% (k=2)$ | $405.714 \pm 0.02\% (k=2)$ | $405.414 \pm 0.02\% (k=2)$ |
| Low Range           | $4.00230 \pm 1.50\% (k=2)$ | $3.96503 \pm 1.50\% (k=2)$ | $4.00884 \pm 1.50\% (k=2)$ |

## Connector Angle

|   |                           |
|---|---------------------------|
| Connector Angle to be used in DASY system | $142.0^\circ \pm 1^\circ$ |
|---|---------------------------|

## Appendix (Additional assessments outside the scope of SCS0108)

### 1. DC Voltage Linearity

| High Range |         | Reading ( $\mu\text{V}$ ) | Difference ( $\mu\text{V}$ ) | Error (%) |
|------------|---------|---------------------------|------------------------------|-----------|
| Channel X  | + Input | 200037.09                 | -1.98                        | -0.00     |
| Channel X  | + Input | 20010.24                  | 4.35                         | 0.02      |
| Channel X  | - Input | -20001.99                 | 3.24                         | -0.02     |
| Channel Y  | + Input | 200037.58                 | 0.93                         | 0.00      |
| Channel Y  | + Input | 20004.83                  | -0.91                        | -0.00     |
| Channel Y  | - Input | -20008.72                 | -3.33                        | 0.02      |
| Channel Z  | + Input | 200037.10                 | 0.24                         | 0.00      |
| Channel Z  | + Input | 20006.34                  | 0.63                         | 0.00      |
| Channel Z  | - Input | -20006.19                 | -0.76                        | 0.00      |

| Low Range |         | Reading ( $\mu\text{V}$ ) | Difference ( $\mu\text{V}$ ) | Error (%) |
|-----------|---------|---------------------------|------------------------------|-----------|
| Channel X | + Input | 2001.46                   | -0.35                        | -0.02     |
| Channel X | + Input | 201.66                    | -0.04                        | -0.02     |
| Channel X | - Input | -197.77                   | 0.41                         | -0.21     |
| Channel Y | + Input | 2001.69                   | 0.05                         | 0.00      |
| Channel Y | + Input | 201.41                    | -0.20                        | -0.10     |
| Channel Y | - Input | -199.61                   | -1.23                        | 0.62      |
| Channel Z | + Input | 2001.43                   | 0.02                         | 0.00      |
| Channel Z | + Input | 200.53                    | -0.91                        | -0.45     |
| Channel Z | - Input | -199.38                   | -0.88                        | 0.45      |

### 2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | Common mode<br>Input Voltage (mV) | High Range<br>Average Reading ( $\mu\text{V}$ ) | Low Range<br>Average Reading ( $\mu\text{V}$ ) |
|-----------|-----------------------------------|---|--|
| Channel X | 200                               | -4.29   | -6.06  |
|           | -200                              | 8.35  | 6.15   |
| Channel Y | 200                               | -19.51  | -19.95   |
|           | -200                              | 19.09   | 19.05  |
| Channel Z | 200                               | 20.25   | 19.89  |
|           | -200                              | -22.46  | -22.47   |

### 3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | Input Voltage (mV) | Channel X ( $\mu\text{V}$ ) | Channel Y ( $\mu\text{V}$ ) | Channel Z ( $\mu\text{V}$ ) |
|-----------|--------------------|-----------------------------|-----------------------------|-----------------------------|
| Channel X | 200                | -                           | -0.86                       | -2.85                       |
| Channel Y | 200                | 6.79                        | -                           | 0.36                        |
| Channel Z | 200                | 10.05                       | 4.33                        | -                           |

#### 4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

|           | High Range (LSB) | Low Range (LSB) |
|-----------|------------------|-----------------|
| Channel X | 16114            | 15882           |
| Channel Y | 16188            | 16216           |
| Channel Z | 15552            | 16005           |

#### 5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec  
Input  $10M\Omega$

|           | Average ( $\mu V$ ) | min. Offset ( $\mu V$ ) | max. Offset ( $\mu V$ ) | Std. Deviation ( $\mu V$ ) |
|-----------|---------------------|-------------------------|-------------------------|----------------------------|
| Channel X | 1.09                | -0.43                   | 2.23                    | 0.52                       |
| Channel Y | 0.48                | -1.28                   | 2.24                    | 0.57                       |
| Channel Z | -0.00               | -1.27                   | 1.44                    | 0.44                       |

#### 6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

#### 7. Input Resistance (Typical values for information)

|           | Zeroing (kOhm) | Measuring (MOhm) |
|-----------|----------------|------------------|
| Channel X | 200            | 200              |
| Channel Y | 200            | 200              |
| Channel Z | 200            | 200              |

#### 8. Low Battery Alarm Voltage (Typical values for information)

| Typical values | Alarm Level (VDC) |
|----------------|-------------------|
| Supply (+ Vcc) | +7.9              |
| Supply (- Vcc) | -7.6              |

#### 9. Power Consumption (Typical values for information)

| Typical values | Switched off (mA) | Stand by (mA) | Transmitting (mA) |
|----------------|-------------------|---------------|-------------------|
| Supply (+ Vcc) | +0.01             | +6            | +14               |
| Supply (- Vcc) | -0.01             | -8            | -9                |

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Accreditation No.: SCS 0108

Client **Estech (Dymstec)**

Certificate No: **ES3-3123\_Jan18**

## CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3123**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-23.v5, QA CAL-25.v6**  
Calibration procedure for dosimetric E-field probes

Calibration date: **January 22, 2018**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP            | SN: 104778       | 04-Apr-17 (No. 217-02521/02522)   | Apr-18                 |
| Power sensor NRP-Z91       | SN: 103244       | 04-Apr-17 (No. 217-02521)         | Apr-18                 |
| Power sensor NRP-Z91       | SN: 103245       | 04-Apr-17 (No. 217-02525)         | Apr-18                 |
| Reference 20 dB Attenuator | SN: S5277 (20x)  | 07-Apr-17 (No. 217-02528)         | Apr-18                 |
| Reference Probe ES3DV2     | SN: 3013         | 30-Dec-17 (No. ES3-3013_Dec17)    | Dec-18                 |
| DAE4                       | SN: 660          | 21-Dec-17 (No. DAE4-660_Dec17)    | Dec-18                 |
|                            |                  |                                   |                        |
| Secondary Standards        | ID               | Check Date (in house)             | Scheduled Check        |
| Power meter E4419B         | SN: GB41293874   | 06-Apr-16 (in house check Jun-16) | In house check: Jun-18 |
| Power sensor E4412A        | SN: MY41498087   | 06-Apr-16 (in house check Jun-16) | In house check: Jun-18 |
| Power sensor E4412A        | SN: 000110210    | 06-Apr-16 (in house check Jun-16) | In house check: Jun-18 |
| RF generator HP 8648C      | SN: US3642U01700 | 04-Aug-99 (in house check Jun-16) | In house check: Jun-18 |
| Network Analyzer HP 8753E  | SN: US37390585   | 18-Oct-01 (in house check Oct-17) | In house check: Oct-18 |

| Calibrated by: | Name          | Function              | Signature |
|----------------|---------------|-----------------------|-----------|
|                | Michael Weber | Laboratory Technician |           |
| Approved by:   | Katja Pokovic | Technical Manager     |           |

Issued: January 24, 2018

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### Glossary:

|                       |  |
|-----------------------|--|
| TSL                   | tissue simulating liquid   |
| NORM $x,y,z$          | sensitivity in free space  |
| ConvF                 | sensitivity in TSL / NORM $x,y,z$  |
| DCP                   | diode compression point  |
| CF                    | crest factor (1/duty_cycle) of the RF signal   |
| A, B, C, D            | modulation dependent linearization parameters  |
| Polarization $\phi$   | $\phi$ rotation around probe axis  |
| Polarization $\theta$ | $\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\theta = 0$ is normal to probe axis |
| Connector Angle       | information used in DASY system to align probe sensor X to the robot coordinate system   |

### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- $NORMx,y,z$ : Assessed for E-field polarization  $\theta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide).  $NORMx,y,z$  are only intermediate values, i.e., the uncertainties of  $NORMx,y,z$  does not affect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- $NORM(f)x,y,z = NORMx,y,z * frequency\_response$  (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- $DCPx,y,z$ : DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- $PAR$ : PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- $Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z$ :  $A, B, C, D$  are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters*: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to  $NORMx,y,z * ConvF$  whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the  $NORMx$  (no uncertainty required).

# Probe ES3DV3

**SN:3123**

Manufactured: July 11, 2006  
Calibrated: January 22, 2018

**Calibrated for DASY/EASY Systems**  
(Note: non-compatible with DASY2 system!)

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3123

### Basic Calibration Parameters

|   | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|---|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 1.32     | 1.27     | 1.08     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                                     | 103.7    | 104.0    | 104.3    |               |

### Modulation Calibration Parameters

| UID | Communication System Name |   | A<br>dB | B<br>dB/ $\mu\text{V}$ | C   | D<br>dB | VR<br>mV | Unc <sup>E</sup><br>(k=2) |
|-----|---------------------------|---|---------|------------------------|-----|---------|----------|---------------------------|
| 0   | CW                        | X | 0.0     | 0.0                    | 1.0 | 0.00    | 232.7    | $\pm 3.5 \%$              |
|     |                           | Y | 0.0     | 0.0                    | 1.0 |         | 242.1    |                           |
|     |                           | Z | 0.0     | 0.0                    | 1.0 |         | 242.6    |                           |

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3123

### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 41.9                               | 0.89                            | 6.53    | 6.53    | 6.53    | 0.60               | 1.45                    | ± 12.0 %  |
| 835                  | 41.5                               | 0.90                            | 6.27    | 6.27    | 6.27    | 0.44               | 1.59                    | ± 12.0 %  |
| 900                  | 41.5                               | 0.97                            | 6.21    | 6.21    | 6.21    | 0.57               | 1.39                    | ± 12.0 %  |
| 1750                 | 40.1                               | 1.37                            | 5.59    | 5.59    | 5.59    | 0.47               | 1.55                    | ± 12.0 %  |
| 1810                 | 40.0                               | 1.40                            | 5.35    | 5.35    | 5.35    | 0.56               | 1.37                    | ± 12.0 %  |
| 1900                 | 40.0                               | 1.40                            | 5.26    | 5.26    | 5.26    | 0.47               | 1.55                    | ± 12.0 %  |
| 2450                 | 39.2                               | 1.80                            | 4.76    | 4.76    | 4.76    | 0.53               | 1.52                    | ± 12.0 %  |
| 2600                 | 39.0                               | 1.96                            | 4.58    | 4.58    | 4.58    | 0.80               | 1.29                    | ± 12.0 %  |

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3123

### Calibration Parameter Determined in Body Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 55.5                               | 0.96                            | 6.36    | 6.36    | 6.36    | 0.58               | 1.32                    | ± 12.0 %  |
| 835                  | 55.2                               | 0.97                            | 6.17    | 6.17    | 6.17    | 0.59               | 1.36                    | ± 12.0 %  |
| 900                  | 55.0                               | 1.05                            | 6.19    | 6.19    | 6.19    | 0.80               | 1.20                    | ± 12.0 %  |
| 1750                 | 53.4                               | 1.49                            | 5.03    | 5.03    | 5.03    | 0.44               | 1.69                    | ± 12.0 %  |
| 1810                 | 53.3                               | 1.52                            | 4.91    | 4.91    | 4.91    | 0.44               | 1.75                    | ± 12.0 %  |
| 1900                 | 53.3                               | 1.52                            | 4.79    | 4.79    | 4.79    | 0.37               | 1.97                    | ± 12.0 %  |
| 2450                 | 52.7                               | 1.95                            | 4.47    | 4.47    | 4.47    | 0.75               | 1.26                    | ± 12.0 %  |
| 2600                 | 52.5                               | 2.16                            | 4.11    | 4.11    | 4.11    | 0.80               | 1.20                    | ± 12.0 %  |

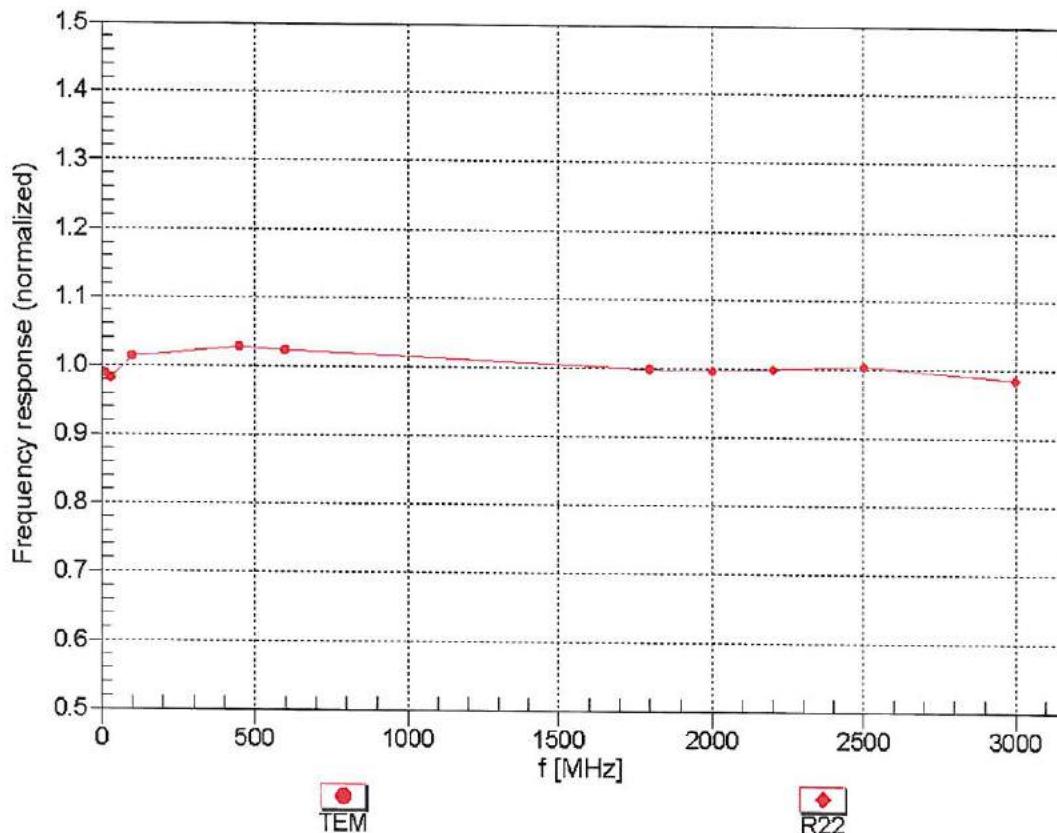
<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## Frequency Response of E-Field

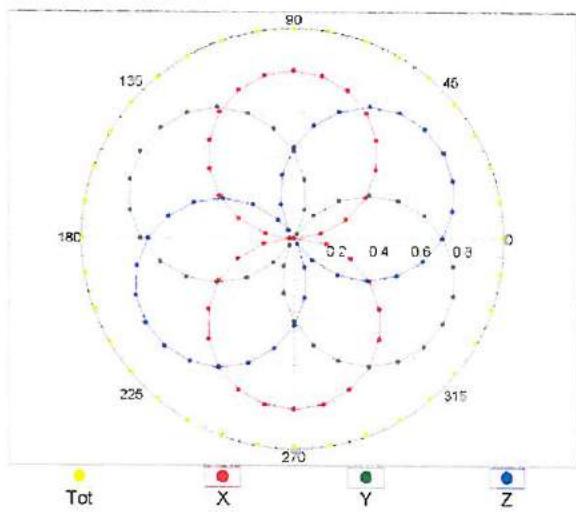
(TEM-Cell:ifi110 EXX, Waveguide: R22)



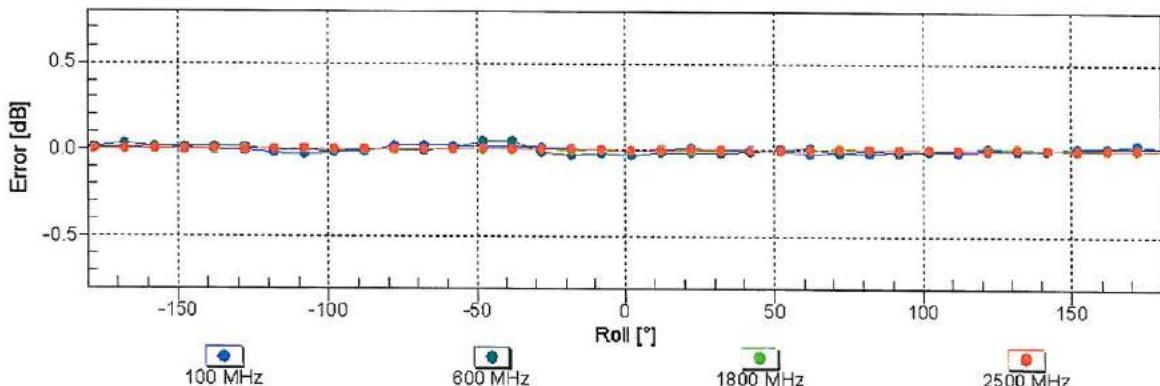
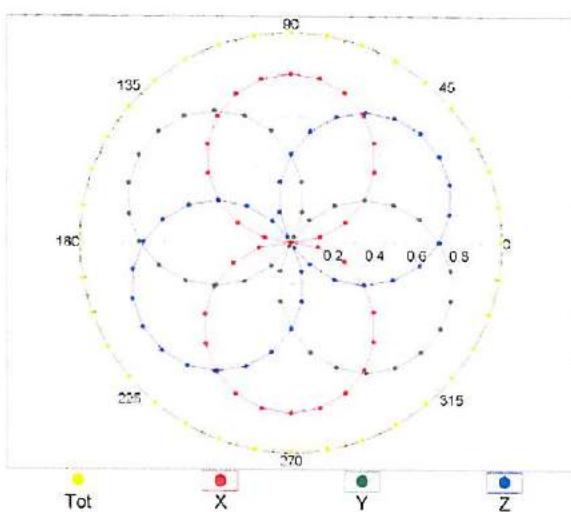
Uncertainty of Frequency Response of E-field:  $\pm 6.3\% (k=2)$

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$

f=600 MHz,TEM

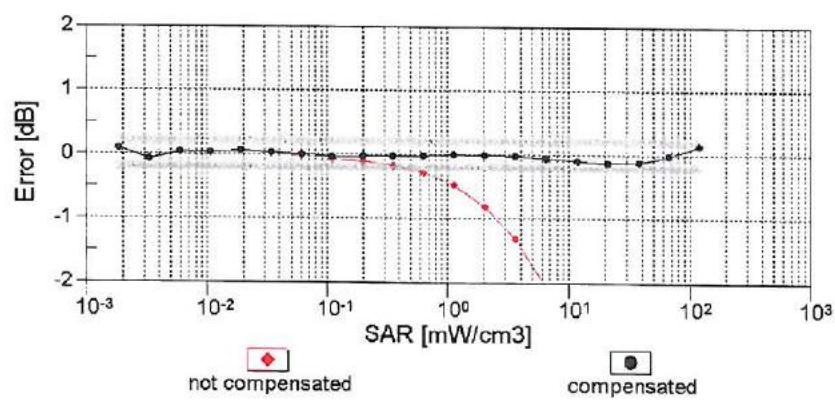
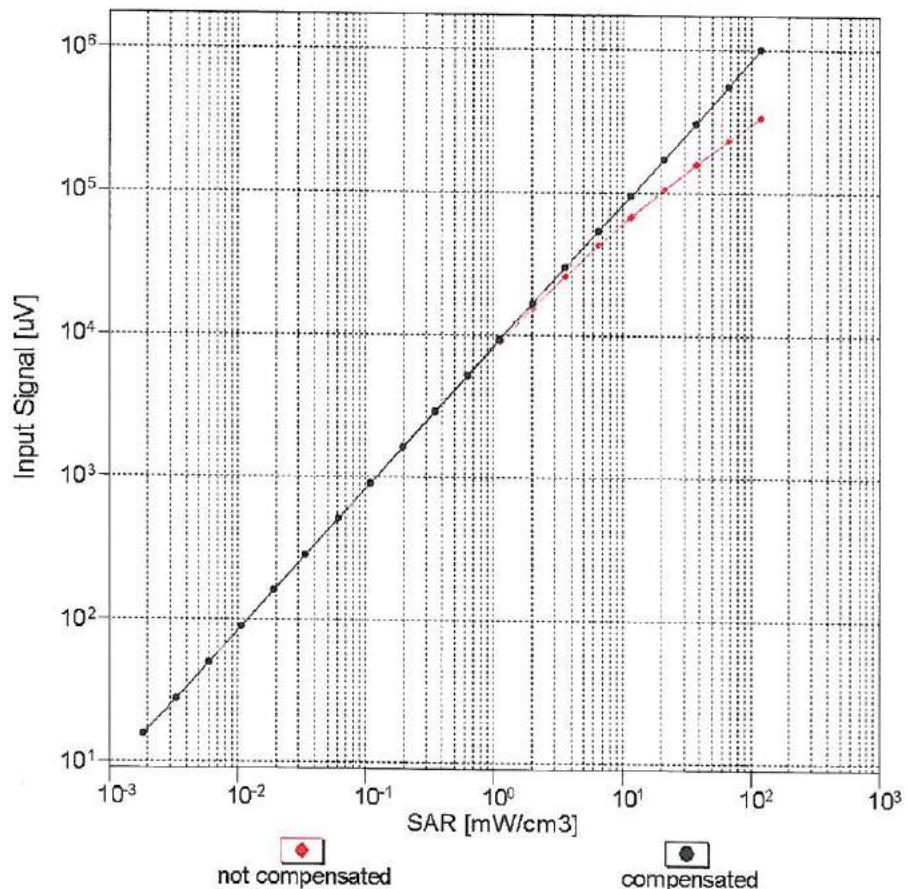


f=1800 MHz,R22



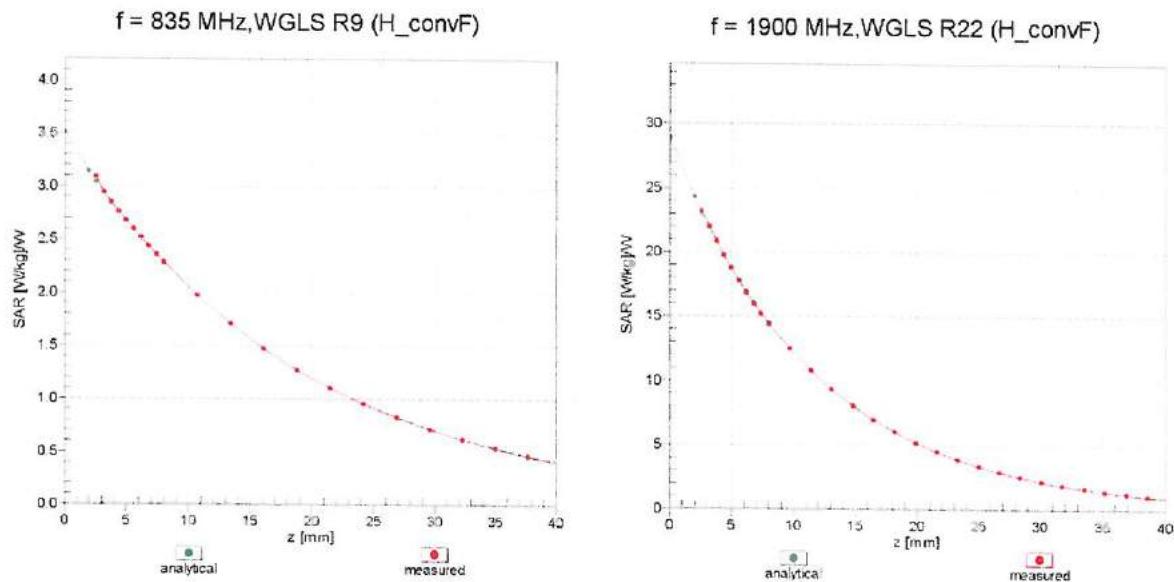
Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  (k=2)

### Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)

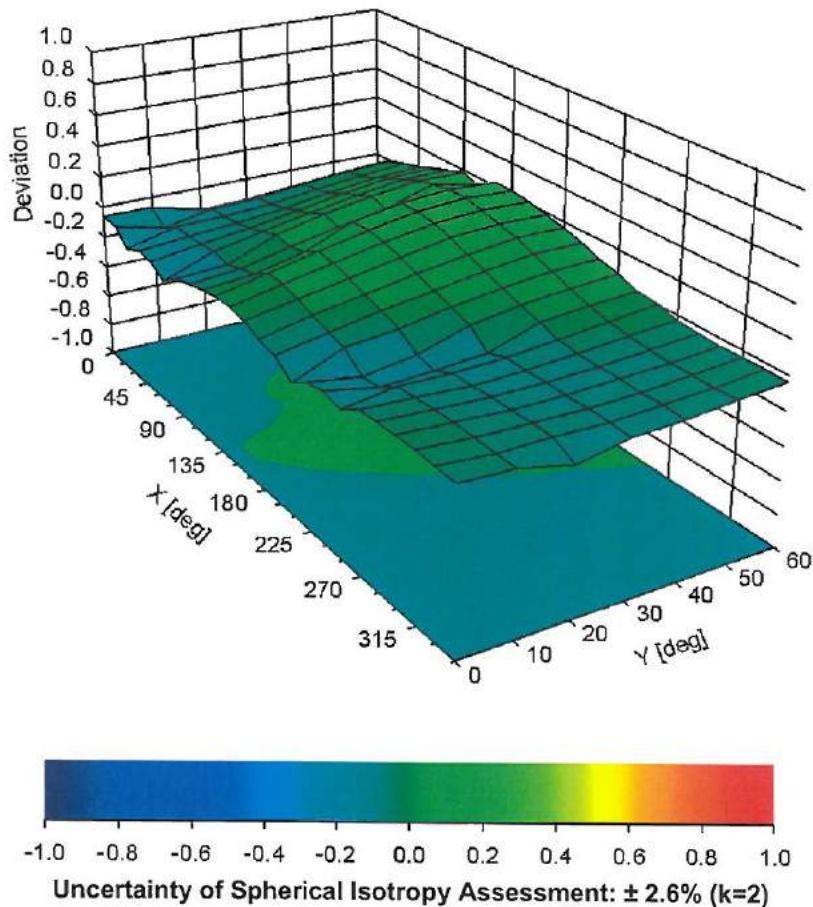


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

## Conversion Factor Assessment



## Deviation from Isotropy in Liquid Error ( $\phi, \theta$ ), $f = 900 \text{ MHz}$



## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3123

### Other Probe Parameters

|   |            |
|---|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle (°)                           | 72.1       |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 10 mm      |
| Tip Diameter                                  | 4 mm       |
| Probe Tip to Sensor X Calibration Point       | 2 mm       |
| Probe Tip to Sensor Y Calibration Point       | 2 mm       |
| Probe Tip to Sensor Z Calibration Point       | 2 mm       |
| Recommended Measurement Distance from Surface | 3 mm       |



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**C** Servizio svizzero di taratura  
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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client

**Estech (Dymstec)**

**Certificate No: D750V3-1162\_Jul18**

## **CALIBRATION CERTIFICATE**

Object **D750V3 - SN:1162**

Calibration procedure(s) **QA CAL-05.v10**  
 Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **July 24, 2018**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID #               | Cal Date (Certificate No.)      | Scheduled Calibration |
|-----------------------------|--------------------|---------------------------------|-----------------------|
| Power meter NRP             | SN: 104778         | 04-Apr-18 (No. 217-02672/02673) | Apr-19                |
| Power sensor NRP-Z91        | SN: 103244         | 04-Apr-18 (No. 217-02672)       | Apr-19                |
| Power sensor NRP-Z91        | SN: 103245         | 04-Apr-18 (No. 217-02673)       | Apr-19                |
| Reference 20 dB Attenuator  | SN: 5058 (20k)     | 04-Apr-18 (No. 217-02682)       | Apr-19                |
| Type-N mismatch combination | SN: 5047.2 / 06327 | 04-Apr-18 (No. 217-02683)       | Apr-19                |
| Reference Probe EX3DV4      | SN: 7349           | 30-Dec-17 (No. EX3-7349_Dec17)  | Dec-18                |
| DAE4                        | SN: 601            | 26-Oct-17 (No. DAE4-601_Oct17)  | Oct-18                |

| Secondary Standards             | ID #           | Check Date (in house)             | Scheduled Check        |
|---------------------------------|----------------|-----------------------------------|------------------------|
| Power meter EPM-442A            | SN: GB37480704 | 07-Oct-15 (in house check Oct-16) | In house check: Oct-18 |
| Power sensor HP 8481A           | SN: US37292783 | 07-Oct-15 (in house check Oct-16) | In house check: Oct-18 |
| Power sensor HP 8481A           | SN: MY41092317 | 07-Oct-15 (in house check Oct-16) | In house check: Oct-18 |
| RF generator R&S SMT-06         | SN: 100972     | 15-Jun-15 (in house check Oct-16) | In house check: Oct-18 |
| Network Analyzer Agilent E8358A | SN: US41080477 | 31-Mar-14 (in house check Oct-17) | In house check: Oct-18 |

| Calibrated by: | Name          | Function              | Signature |
|----------------|---------------|-----------------------|-----------|
|                | Manu Seitz    | Laboratory Technician |           |
| Approved by:   | Katja Pokovic | Technical Manager     |           |

Issued: July 24, 2018

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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Accreditation No.: SCS 0108

### Glossary:

|       |                                 |
|-------|---------------------------------|
| TSL   | tissue simulating liquid        |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A   | not applicable or not measured  |

### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Additional Documentation:

- e) DASY4/5 System Handbook

### Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                                     |                        |             |
|-------------------------------------|------------------------|-------------|
| <b>DASY Version</b>                 | DASY5                  | V52.10.1    |
| <b>Extrapolation</b>                | Advanced Extrapolation |             |
| <b>Phantom</b>                      | Modular Flat Phantom   |             |
| <b>Distance Dipole Center - TSL</b> | 15 mm                  | with Spacer |
| <b>Zoom Scan Resolution</b>         | dx, dy, dz = 5 mm      |             |
| <b>Frequency</b>                    | 750 MHz ± 1 MHz        |             |

## Head TSL parameters

The following parameters and calculations were applied.

|  | Temperature     | Permittivity | Conductivity     |
|--|-----------------|--------------|------------------|
| <b>Nominal Head TSL parameters</b>             | 22.0 °C         | 41.9         | 0.89 mho/m       |
| <b>Measured Head TSL parameters</b>            | (22.0 ± 0.2) °C | 40.9 ± 6 %   | 0.89 mho/m ± 6 % |
| <b>Head TSL temperature change during test</b> | < 0.5 °C        | ----         | ----             |

## SAR result with Head TSL

|   |                    |                          |
|---|--------------------|--------------------------|
| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b> | Condition          |                          |
| SAR measured  | 250 mW input power | 2.04 W/kg                |
| SAR for nominal Head TSL parameters                         | normalized to 1W   | 8.12 W/kg ± 17.0 % (k=2) |

|   |                    |                          |
|---|--------------------|--------------------------|
| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b> | condition          |                          |
| SAR measured  | 250 mW input power | 1.33 W/kg                |
| SAR for nominal Head TSL parameters                           | normalized to 1W   | 5.30 W/kg ± 16.5 % (k=2) |

## Body TSL parameters

The following parameters and calculations were applied.

|  | Temperature     | Permittivity | Conductivity     |
|--|-----------------|--------------|------------------|
| <b>Nominal Body TSL parameters</b>             | 22.0 °C         | 55.5         | 0.96 mho/m       |
| <b>Measured Body TSL parameters</b>            | (22.0 ± 0.2) °C | 55.3 ± 6 %   | 0.96 mho/m ± 6 % |
| <b>Body TSL temperature change during test</b> | < 0.5 °C        | ----         | ----             |

## SAR result with Body TSL

|   |                    |                          |
|---|--------------------|--------------------------|
| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Body TSL</b> | Condition          |                          |
| SAR measured  | 250 mW input power | 2.14 W/kg                |
| SAR for nominal Body TSL parameters                         | normalized to 1W   | 8.55 W/kg ± 17.0 % (k=2) |

|   |                    |                          |
|---|--------------------|--------------------------|
| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Body TSL</b> | condition          |                          |
| SAR measured  | 250 mW input power | 1.41 W/kg                |
| SAR for nominal Body TSL parameters                           | normalized to 1W   | 5.64 W/kg ± 16.5 % (k=2) |

## **Appendix (Additional assessments outside the scope of SCS 0108)**

### **Antenna Parameters with Head TSL**

|                                      |                               |
|--------------------------------------|-------------------------------|
| Impedance, transformed to feed point | 55.5 $\Omega$ - 0.8 $j\Omega$ |
| Return Loss                          | - 25.5 dB                     |

### **Antenna Parameters with Body TSL**

|                                      |                               |
|--------------------------------------|-------------------------------|
| Impedance, transformed to feed point | 51.2 $\Omega$ - 2.2 $j\Omega$ |
| Return Loss                          | - 32.0 dB                     |

### **General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.034 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### **Additional EUT Data**

|                 |               |
|-----------------|---------------|
| Manufactured by | SPEAG         |
| Manufactured on | June 23, 2016 |

# DASY5 Validation Report for Head TSL

Date: 24.07.2018

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1162**

Communication System: UID 0 - CW; Frequency: 750 MHz

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.89 \text{ S/m}$ ;  $\epsilon_r = 40.9$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.22, 10.22, 10.22) @ 750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

## Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

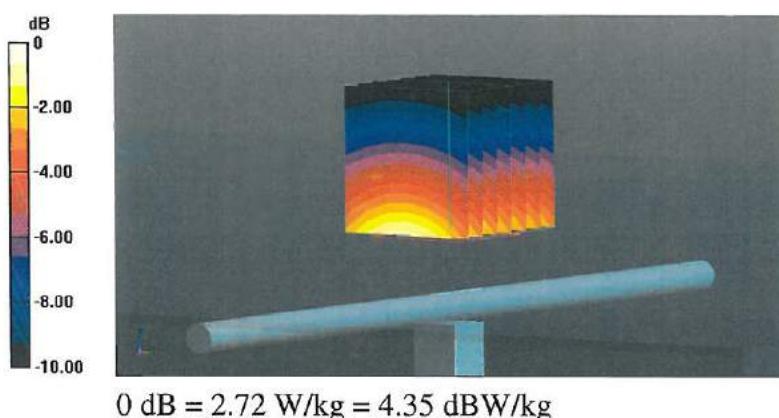
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 58.98 V/m; Power Drift = -0.03 dB

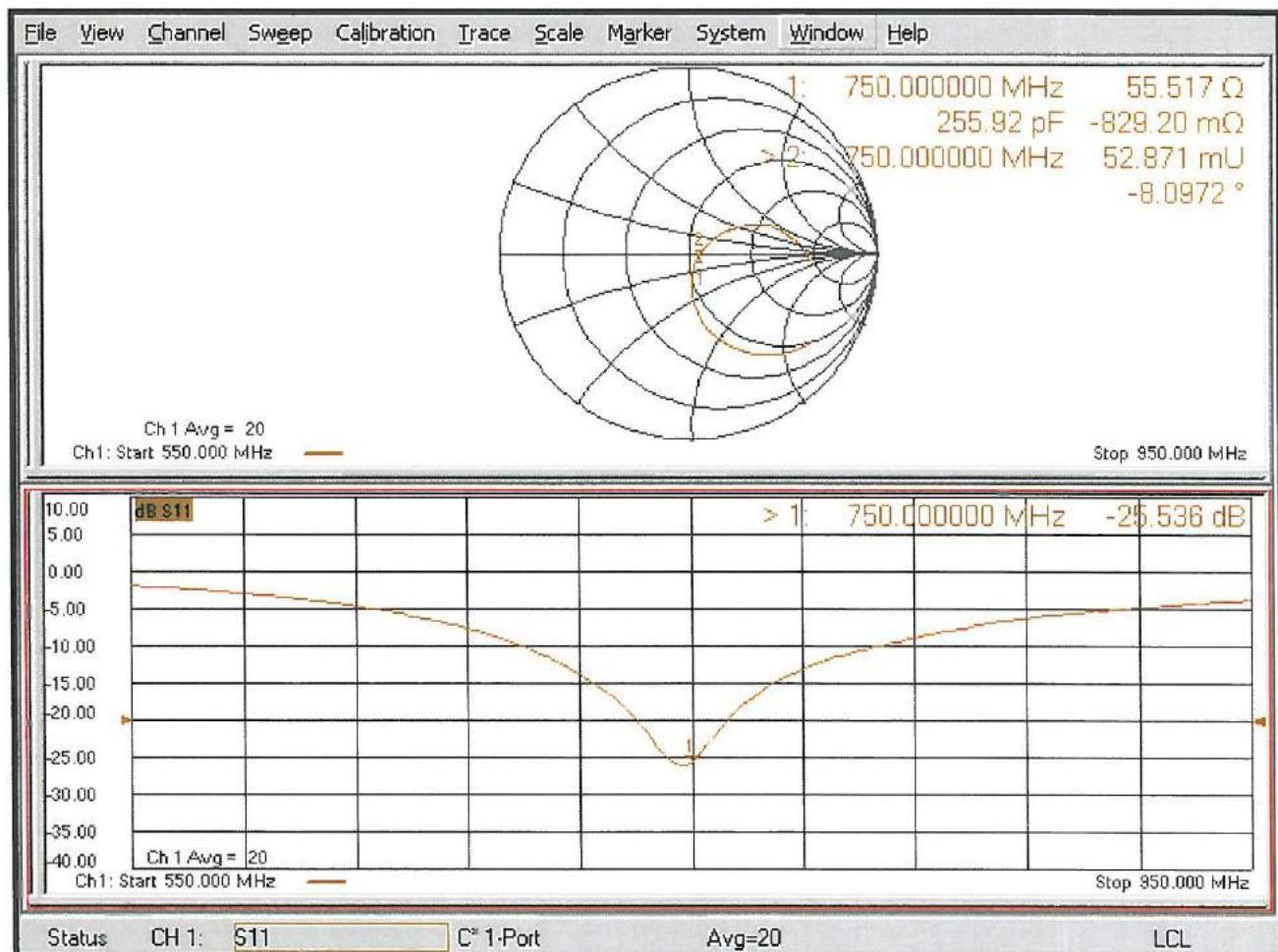
Peak SAR (extrapolated) = 3.07 W/kg

**SAR(1 g) = 2.04 W/kg; SAR(10 g) = 1.33 W/kg**

Maximum value of SAR (measured) = 2.72 W/kg



## Impedance Measurement Plot for Head TSL



# DASY5 Validation Report for Body TSL

Date: 23.07.2018

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1162**

Communication System: UID 0 - CW; Frequency: 750 MHz

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.96 \text{ S/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.19, 10.19, 10.19) @ 750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

## Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

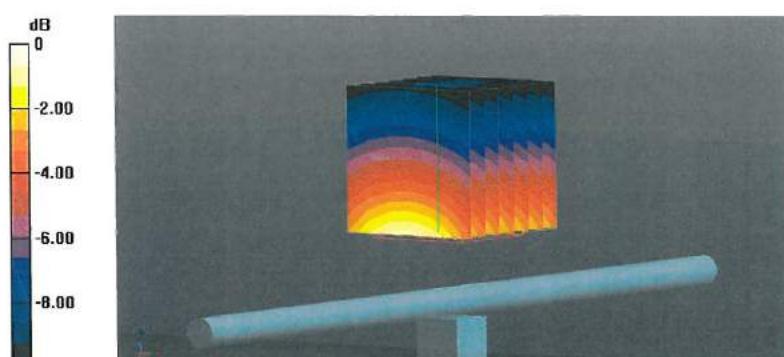
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 57.54 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.17 W/kg

**SAR(1 g) = 2.14 W/kg; SAR(10 g) = 1.41 W/kg**

Maximum value of SAR (measured) = 2.82 W/kg



## Impedance Measurement Plot for Body TSL

