

# SAR Test Datasheet

## BlackBerry Closed Loop Antenna Tuning Experiments

As per FCC OET, SAR measurements were performed in 9 tunings states on the first mode which resulted in the worst case SAR value to investigate the effect and cover the corners, midpoints of the edges, and the mid-point of the tuning range, in addition to the Closed Loop condition.

Second worst case mode was tested in the 4 corners and mid-point of tuning range to minimize the number of tests, in addition to the Closed Loop condition.

For other band/mode combinations, the single data scan was chosen, based on simulation, to yield the lowest predicted SAR, in addition to the Closed Loop condition.

Please refer to the Confidential Exhibit: Operational Description for detailed information about the Closed Loop Antenna Tuning and the Tuner Test Matrices explaining the capacitor values for the tuning states.

### Device Information

|                           |                 |                   |                 |              |                        |                        |
|---------------------------|-----------------|-------------------|-----------------|--------------|------------------------|------------------------|
| <b>BlackBerry Model #</b> |                 | RFW121LW          |                 |              |                        |                        |
| <b>FCC ID #</b>           |                 | L6ARFW120LW       |                 |              |                        |                        |
| <b>DeviceType</b>         | <b>Sample #</b> | <b>Device PIN</b> | <b>HW REV #</b> | <b>CPR #</b> | <b>Software Bundle</b> | <b>Date (mm/dd/yy)</b> |
| Radiated                  | 22              | 2FFFE461          | 2               | 26843        | 10.2.0.519             | 09/12-14/2013          |

### System accuracy verification

| f (MHz) | Limits / Measured                 | Scan Type | SAR 1g/10g (W/kg) | Dielectric Parameters |                | Liquid Temp. (°C) |
|---------|-----------------------------------|-----------|-------------------|-----------------------|----------------|-------------------|
|         |                                   |           |                   | $\epsilon_r$          | $\sigma$ [S/m] |                   |
| 835     | Measured                          | Zoom Scan | 8.83/5.79         | 40.0                  | 0.88           | 22.9              |
|         | Recommended Limits (Dipole: 446)  |           | 9.39 / 6.13       | 41.5                  | 0.90           | N/A               |
| 1900    | Measured                          | Zoom Scan | 38.6/20.3         | 38.1                  | 1.41           | 22.6              |
|         | Recommended Limits (Dipole: 545 ) |           | 40.2/21.1         | 40.0                  | 1.40           | N/A               |

### Electrical parameters of tissue simulating liquid

| Band (MHz) | Tissue Type | Limits / Measured  | f (MHz) | Dielectric Parameters |                | Liquid Temp (°C) |
|------------|-------------|--------------------|---------|-----------------------|----------------|------------------|
|            |             |                    |         | $\epsilon_r$          | $\sigma$ [S/m] |                  |
| 835        | Head        | Measured           | 815     | 40.2                  | 0.86           | 22.9             |
|            |             |                    | 825     | 40.2                  | 0.87           |                  |
|            |             |                    | 835     | 40.0                  | 0.88           |                  |
|            |             | Recommended Limits | 850     | 39.8                  | 0.89           | N/A              |
| 1900       | Head        | Measured           | 1850    | 38.2                  | 1.36           | 22.6             |
|            |             |                    | 1900    | 38.1                  | 1.41           |                  |
|            |             |                    | 1910    | 38.0                  | 1.43           |                  |
|            |             | Recommended Limits | 1900    | 40.0                  | 1.40           | N/A              |

**SAR Test Data:**

| Measured SAR Values - Head - WCDMA FDD II 1900 MHz |             |            |                |                          |        |                            |                                  |
|----------------------------------------------------|-------------|------------|----------------|--------------------------|--------|----------------------------|----------------------------------|
| Channel                                            | Freq. (MHz) | Position   | 1 g SAR (W/kg) | % delta from Closed Loop | Scan # | Comments                   | Hotspot Coordinates (x, y, z) mm |
| 9400                                               | 1880.0      | Left Cheek | 0.67           | 0.00                     | 1      | Closed Loop                | 64.31, 253.9, -170.5             |
| 9400                                               | 1880.0      | Left Cheek | 0.60           | -10.45                   | 2      | Cap 1= Max C, Cap 2= Max C | 64.31, 253.9, -170.5             |
| 9400                                               | 1880.0      | Left Cheek | 0.67           | 0.00                     | 3      | Cap 1= Max C, Cap 2= Mid C | 64.31, 253.9, -170.6             |
| 9400                                               | 1880.0      | Left Cheek | 0.65           | -2.99                    | 4      | Cap 1= Max C, Cap 2= Min C | 64.99, 255.2, -170.4             |
| 9400                                               | 1880.0      | Left Cheek | 0.66           | -1.49                    | 5      | Cap 1= Mid C, Cap 2= Max C | 64.98, 255.2, -170.4             |
| 9400                                               | 1880.0      | Left Cheek | 0.65           | -2.99                    | 6      | Cap 1= Mid C, Cap 2= Mid C | 64.99, 255.2, -170.5             |
| 9400                                               | 1880.0      | Left Cheek | 0.63           | -5.97                    | 7      | Cap 1= Mid C, Cap 2= Min C | 65.02, 255.2, -170.6             |
| 9400                                               | 1880.0      | Left Cheek | 0.49           | -26.87                   | 8      | Cap 1= Min C, Cap 2= Max C | 64.32, 253.9, -170.5             |
| 9400                                               | 1880.0      | Left Cheek | 0.57           | -14.93                   | 9      | Cap 1= Min C, Cap 2= Mid C | 64.32, 253.9, -170.5             |
| 9400                                               | 1880.0      | Left Cheek | 0.63           | -5.97                    | 10     | Cap 1= Min C, Cap 2= Min C | 63.79, 255.9, -170.9             |

| Measured SAR Values - Head - WCDMA FDD II 1900 MHz |             |            |                                |                                |                         |                             |
|----------------------------------------------------|-------------|------------|--------------------------------|--------------------------------|-------------------------|-----------------------------|
| Channel                                            | Freq. (MHz) | Position   | Declared Conducted power (dBm) | Measured Conducted power (dBm) | Measured 1 g SAR (W/kg) | Extrapolated 1 g SAR (W/kg) |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.67                    | 0.73                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.60                    | 0.66                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.67                    | 0.73                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.65                    | 0.71                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.66                    | 0.72                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.65                    | 0.71                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.63                    | 0.69                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.49                    | 0.54                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.57                    | 0.62                        |
| 9400                                               | 1880.0      | Left Cheek | 23.00                          | 22.60                          | 0.63                    | 0.69                        |

|                   |            |
|-------------------|------------|
| Device Model      | RFW121LW   |
| Hardware Rev. #   | 2          |
| Software Bundle # | 10.2.0.519 |
| Date              | 09/12/2013 |

**Measured SAR Values - Head - WCDMA FDD V 850 MHz**

| Channel | Freq. (MHz) | Position   | 1 g SAR (W/kg) | % delta from Closed Loop | Scan # | Comments                   | Hotspot Coordinates  |
|---------|-------------|------------|----------------|--------------------------|--------|----------------------------|----------------------|
|         |             |            |                |                          |        |                            | (x, y, z) mm         |
| 4182    | 836.4       | Left Cheek | 0.42           | 0.00                     | 1      | Closed Loop                | 66.25, 275.1, -173.9 |
| 4182    | 836.4       | Left Cheek | 0.40           | -4.76                    | 2      | Cap 1= Max C, Cap 2= Max C | 65.81, 273.7, -172.6 |
| 4182    | 836.4       | Left Cheek | 0.41           | -2.38                    | 3      | Cap 1= Max C, Cap 2= Min C | 65.47, 275.7, -174.5 |
| 4182    | 836.4       | Left Cheek | 0.42           | 0.00                     | 4      | Cap 1= Mid C, Cap 2= Mid C | 66.75, 274.9, -174.2 |
| 4182    | 836.4       | Left Cheek | 0.39           | -7.14                    | 5      | Cap 1= Min C, Cap 2= Max C | 66.77, 274.9, -174.2 |
| 4182    | 836.1       | Left Cheek | 0.24           | -42.86                   | 6      | Cap 1= Min C, Cap 2= Min C | 66.75, 274.9, -174.1 |

**Measured SAR Values - Head - WCDMA FDD V 850 MHz**

| Channel | Freq. (MHz) | Position   | Declared Conducted power (dBm) | Measured Conducted power (dBm) | Measured 1 g SAR (W/kg) | Extrapolated 1 g SAR (W/kg) |
|---------|-------------|------------|--------------------------------|--------------------------------|-------------------------|-----------------------------|
| 4182    | 836.4       | Left Cheek | 23.50                          | 23.20                          | 0.42                    | 0.45                        |
| 4182    | 836.4       | Left Cheek | 23.50                          | 23.20                          | 0.40                    | 0.43                        |
| 4182    | 836.4       | Left Cheek | 23.50                          | 23.20                          | 0.41                    | 0.44                        |
| 4182    | 836.4       | Left Cheek | 23.50                          | 23.20                          | 0.42                    | 0.45                        |
| 4182    | 836.4       | Left Cheek | 23.50                          | 23.20                          | 0.39                    | 0.42                        |
| 4182    | 836.1       | Left Cheek | 23.50                          | 23.20                          | 0.24                    | 0.26                        |

|                   |            |
|-------------------|------------|
| Device Model      | RFW121LW   |
| Hardware Rev. #   | 2          |
| Software Bundle # | 10.2.0.519 |
| Date              | 09/14/2013 |

**SAR Plots:**

Date/Time: 9/11/2013 12:57:02 AM

Test Laboratory: RIM Testing Services

DipoleValidation\_835MHz\_09\_11\_13\_Amb\_Tem\_24.0C\_Liq\_Tem\_22.9C

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:446**

Communication System: UID 0 - n/a, CW; Frequency: 835 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.876 \text{ S/m}$ ;  $\epsilon_r = 40.009$ ;  $\rho = 1000 \text{ kg/m}^3$ 

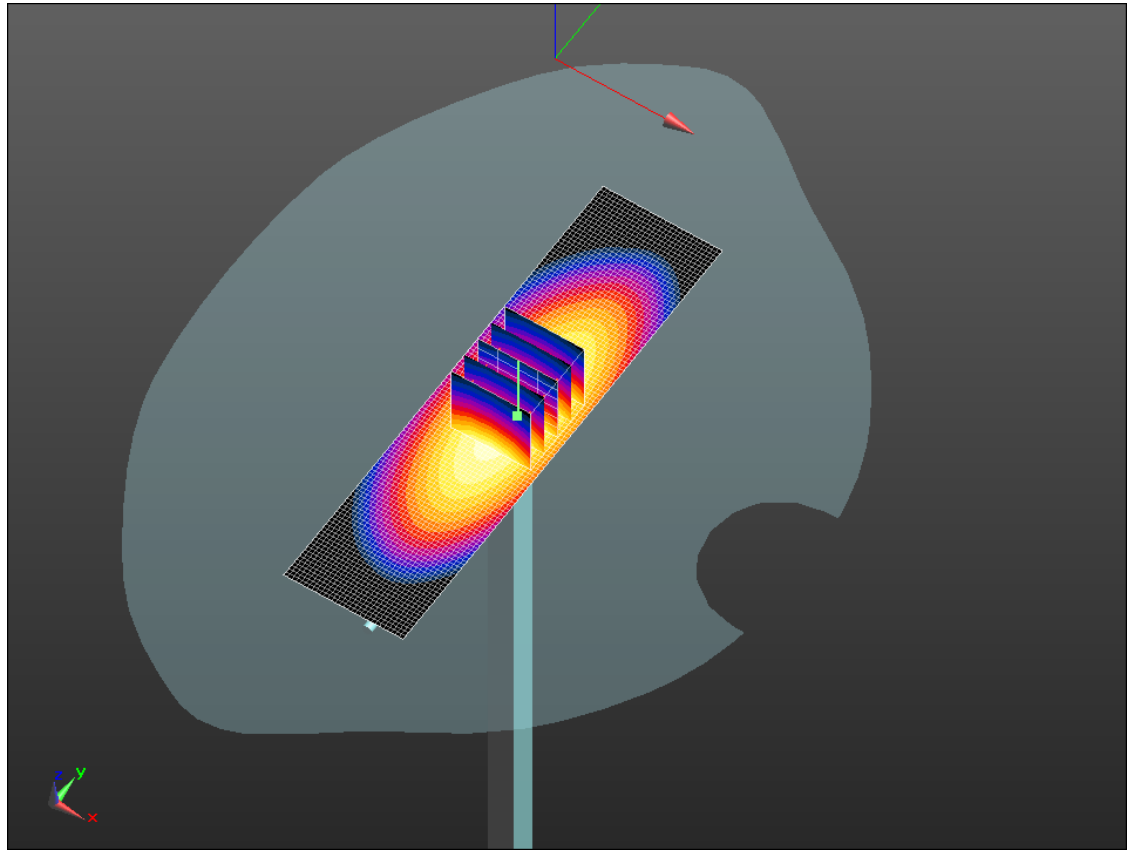
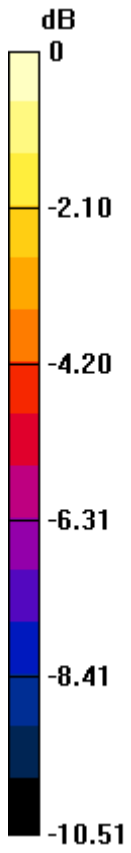
Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(6.19, 6.19, 6.19); Calibrated: 1/10/2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection),  $z = 2.0, 32.0$
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

**Configuration/d=15mm, Pin=1000mW/Area Scan (31x121x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ Maximum value of SAR (interpolated) =  $10.1 \text{ W/kg}$ **Configuration/d=15mm, Pin=1000mW/Zoom Scan (5x5x7) (5x5x7)/Cube****0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$ Reference Value =  $110.8 \text{ V/m}$ ; Power Drift =  $0.07 \text{ dB}$ Peak SAR (extrapolated) =  $13.1 \text{ W/kg}$ **SAR(1 g) =  $8.83 \text{ W/kg}$ ; SAR(10 g) =  $5.79 \text{ W/kg}$** Maximum value of SAR (measured) =  $10.3 \text{ W/kg}$



0 dB = 10.3 W/kg = 10.13 dBW/kg

Date/Time: 9/10/2013 7:40:24 PM

Test Laboratory: RIM Testing Services

DipoleValidation\_1900MHz\_09\_10\_13\_Amb\_Tem\_22.9C\_Liq\_Tem\_22.6C

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:545**

Communication System: UID 0 - n/a, CW; Frequency: 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.412 \text{ S/m}$ ;  $\epsilon_r = 38.067$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3225; ConvF(5.35, 5.35, 5.35); Calibrated: 1/10/2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection),  $z = 2.0, 32.0$
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- DASYS2 52.8.6(1115); SEMCAD X 14.6.9(7117)

**Configuration/d=10mm, Pin=1000mW/Area Scan (31x61x1):** Interpolatedgrid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ 

Maximum value of SAR (interpolated) = 49.5 W/kg

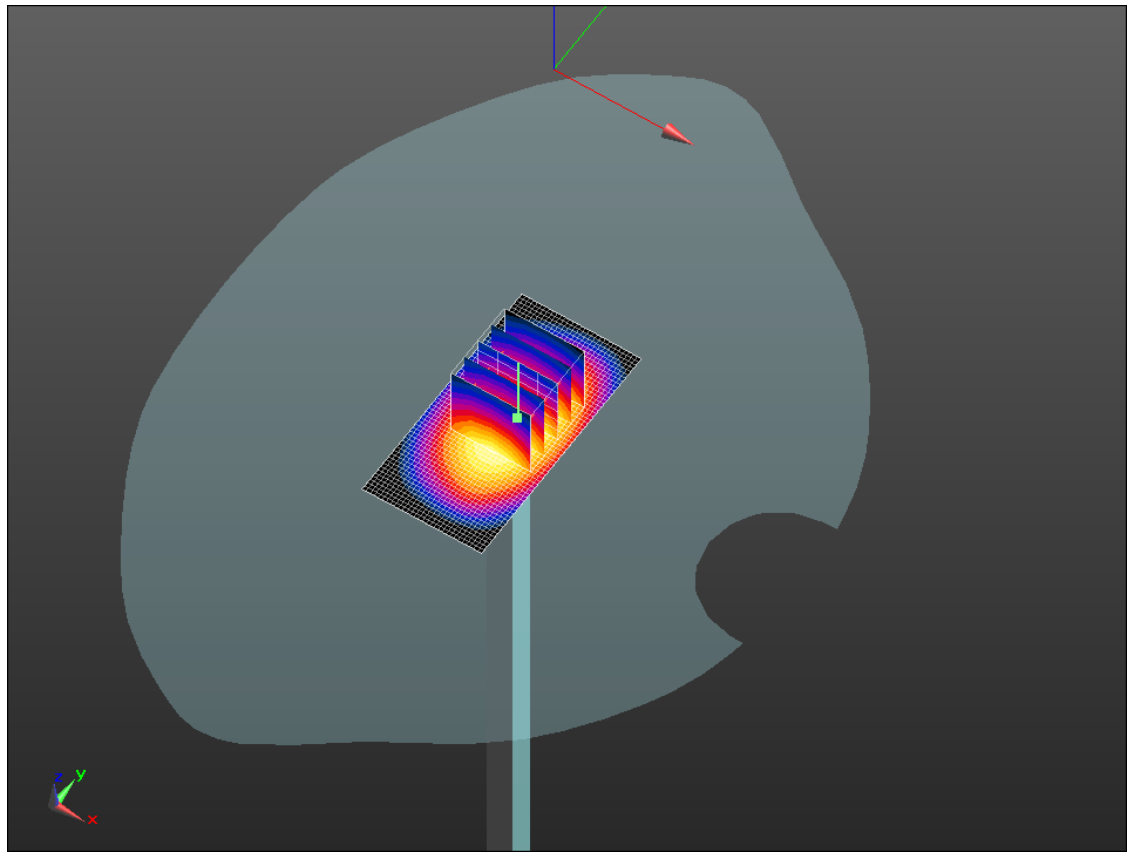
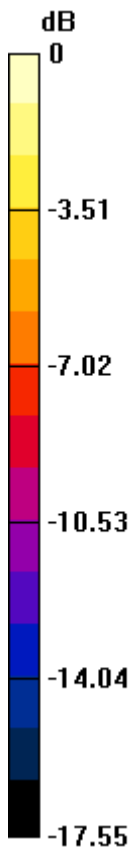
**Configuration/d=10mm, Pin=1000mW/Zoom Scan (5x5x7) (5x5x7)/Cube****0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 193.3 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 68.8 W/kg

**SAR(1 g) = 38.6 W/kg; SAR(10 g) = 20.3 W/kg**

Maximum value of SAR (measured) = 48.6 W/kg



0 dB = 48.6 W/kg = 16.87 dBW/kg

Date: 9/12/2013

Test Lab: RIM Testing Services

**DUT Name: BlackBerry Smartphone, Type: Sample, Serial: 2FFFE461****Configuration: Left-Hand-Side HSL - UMTS II**

Communication System: WCDMA FDD II; Communication System Band: UMTS FDD II; Frequency: 1880 MHz

Medium Parameters used:  $f=1880$  MHz;  $\sigma = 1.391$  S/m;  $\epsilon_r = 38.121$ ;  $\rho = 1.000$  g/cm<sup>3</sup>

Phantom section: Left Section

**DASY Configuration:**

- Probe: ES3DV3 - SN3225; ConvF: (5.35,5.35,5.35); Calibrated: 1/10/2013;
- Sensor-Surface: 3 mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- DASY52 52.8.6(1115); SEMCAD X Version 14.6.9 (7117)

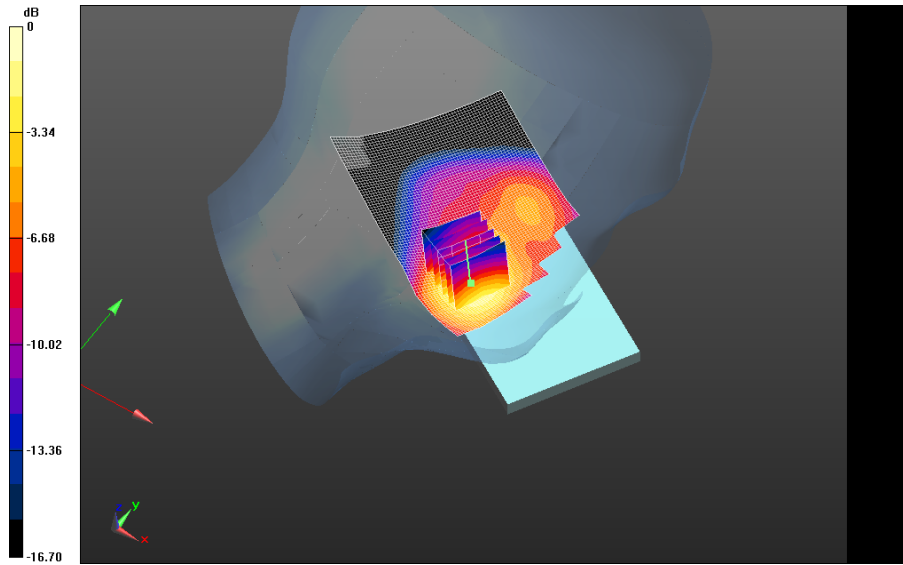
**Left-Hand-Side HSL - UMTS II/Touch Position -****UMTS\_II\_chan9400\_Scan#1\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.798 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -****UMTS\_II\_chan9400\_Scan#1\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube****0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mmReference Value = 6.380 V/m; **Power Drift = -0.055 dB****Averaged SAR: SAR(1g) = 0.672 W/kg; SAR(10g) = 0.406 W/kg**

Maximum value of SAR (interpolated) = 1.03 W/kg



0 dB = 0.804 W/kg = -0.95 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**
**UMTS\_II\_chan9400\_Scan#2\_\_amb\_temp\_23.2C\_liq\_temp\_21.9C/Area Scan (61x91x1):**

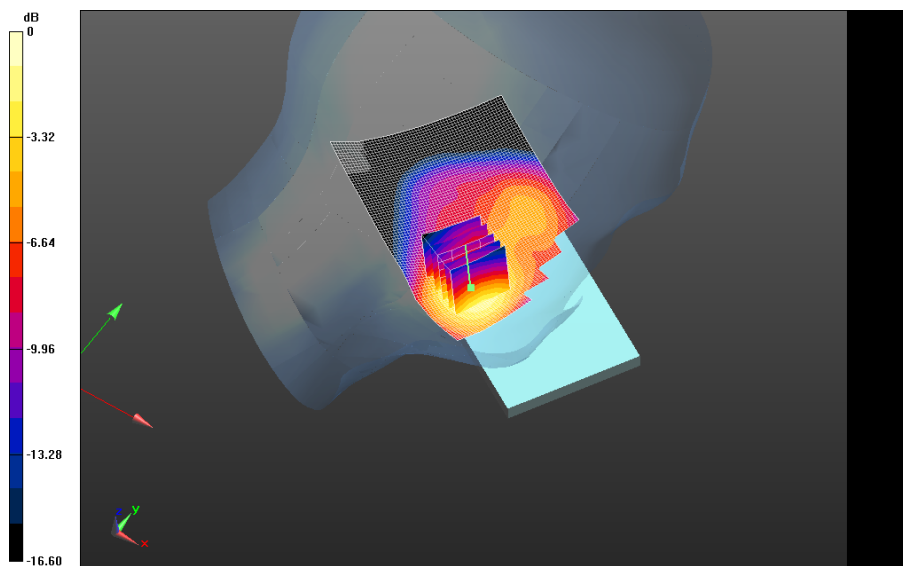
Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.719 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**
**UMTS\_II\_chan9400\_Scan#2\_\_amb\_temp\_23.2C\_liq\_temp\_21.9C/Zoom Scan (21x21x36)/Cube**
**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.476 V/m; **Power Drift = -0.032 dB**
**Averaged SAR: SAR(1g) = 0.601 W/kg; SAR(10g) = 0.366 W/kg**

Maximum value of SAR (interpolated) = 0.911 W/kg



0 dB = 0.804 W/kg = -0.95 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

**UMTS\_II\_chan9400\_Scan#3\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.820 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

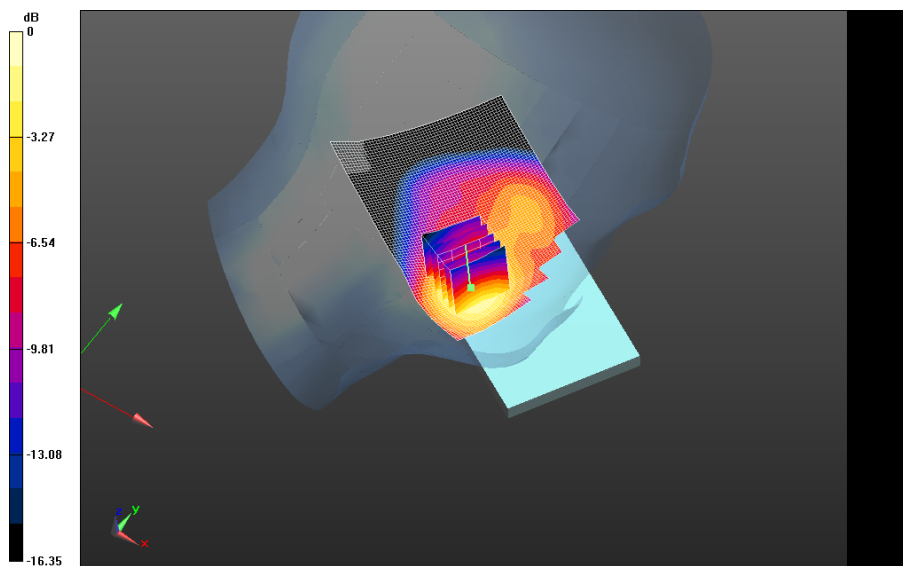
**UMTS\_II\_chan9400\_Scan#3\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.895 V/m; **Power Drift = 0.053 dB**

**Averaged SAR: SAR(1g) = 0.670 W/kg; SAR(10g) = 0.411 W/kg**

Maximum value of SAR (interpolated) = 1.01 W/kg



0 dB = 0.721 W/kg = -1.42 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**
**UMTS\_II\_chan9400\_Scan#4\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

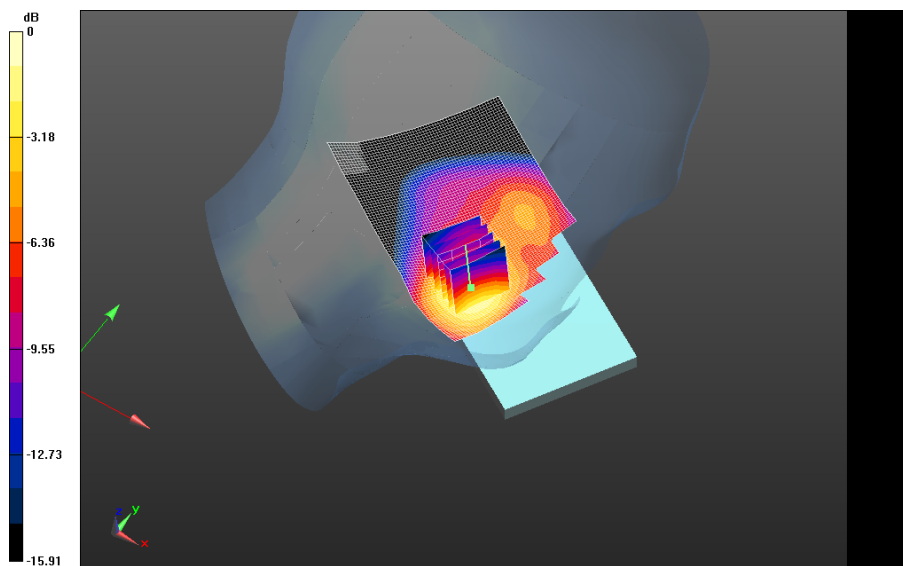
Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.780 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**
**UMTS\_II\_chan9400\_Scan#4\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**
**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.377 V/m; **Power Drift = 0.112 dB**
**Averaged SAR: SAR(1g) = 0.648 W/kg; SAR(10g) = 0.395 W/kg**

Maximum value of SAR (interpolated) = 0.988 W/kg



0 dB = 0.796 W/kg = -0.99 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

**UMTS\_II\_chan9400\_Scan#5\_amb\_temp\_23.4C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.816 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

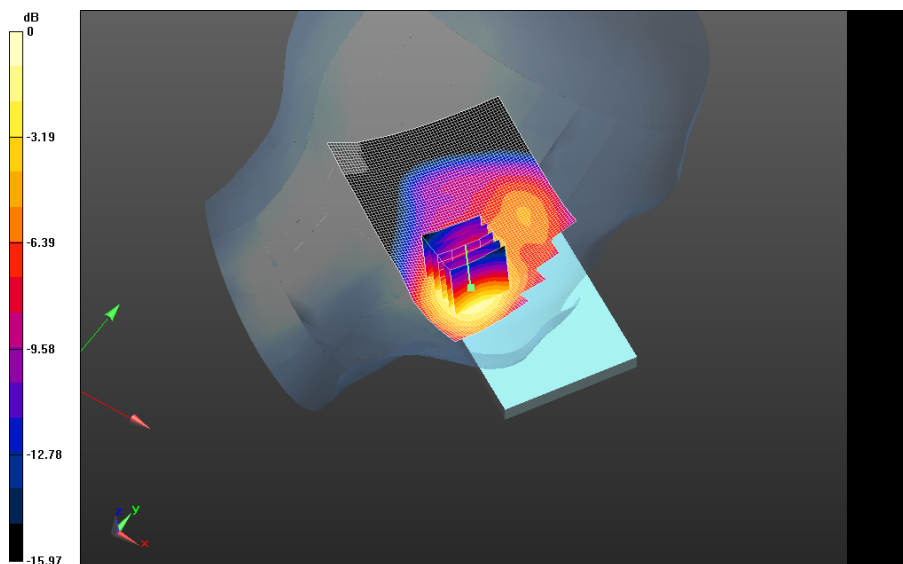
**UMTS\_II\_chan9400\_Scan#5\_amb\_temp\_23.4C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.817 V/m; **Power Drift = 0.021 dB**

**Averaged SAR: SAR(1g) = 0.662 W/kg; SAR(10g) = 0.404 W/kg**

Maximum value of SAR (interpolated) = 0.998 W/kg



0 dB = 0.765 W/kg = -1.16 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

**UMTS\_II\_chan9400\_Scan#6\_amb\_temp\_22.8C\_liq\_temp\_21.9C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.797 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

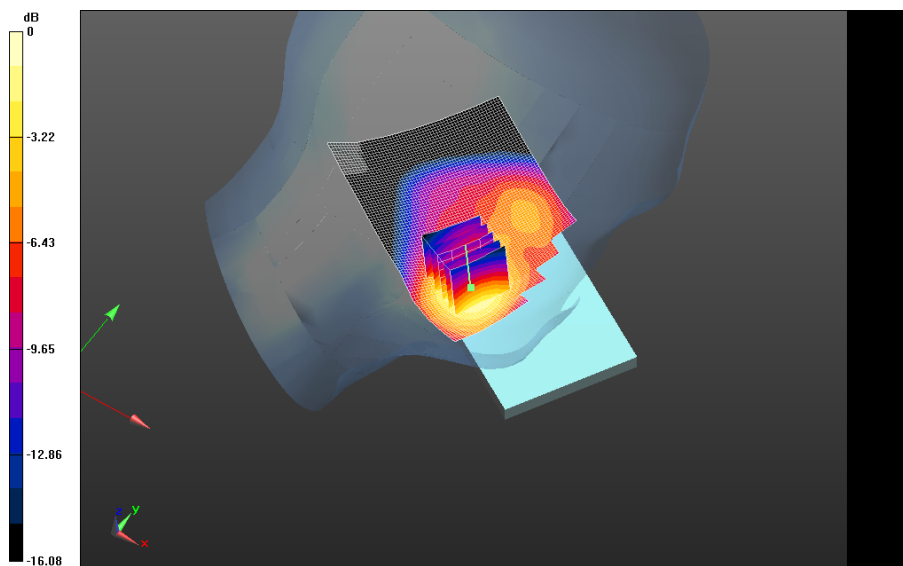
**UMTS\_II\_chan9400\_Scan#6\_amb\_temp\_22.8C\_liq\_temp\_21.9C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.569 V/m; **Power Drift = -0.085 dB**

**Averaged SAR: SAR(1g) = 0.654 W/kg; SAR(10g) = 0.398 W/kg**

Maximum value of SAR (interpolated) = 0.996 W/kg



0 dB = 0.777 W/kg = -1.10 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

**UMTS\_II\_chan9400\_Scan#7\_amb\_temp\_23.4C\_liq\_temp\_22.0C 2/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.775 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

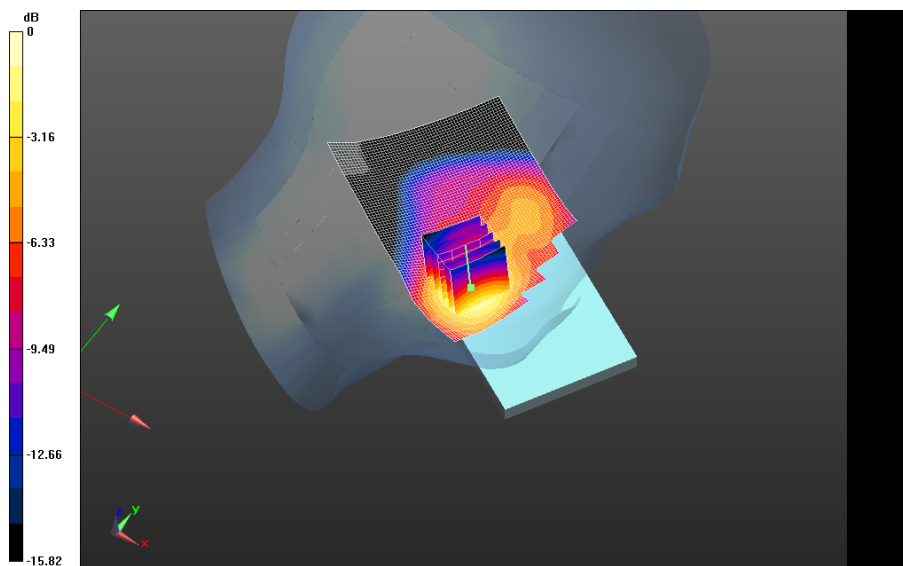
**UMTS\_II\_chan9400\_Scan#7\_amb\_temp\_23.4C\_liq\_temp\_22.0C 2/Zoom Scan**

**(21x21x36)/Cube 0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.766 V/m; **Power Drift = 0.061 dB**

**Averaged SAR: SAR(1g) = 0.630 W/kg; SAR(10g) = 0.386 W/kg**

Maximum value of SAR (interpolated) = 0.960 W/kg



0 dB = 0.776 W/kg = -1.10 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

**UMTS\_II\_chan9400\_Scan#8\_amb\_temp\_22.9C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.600 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

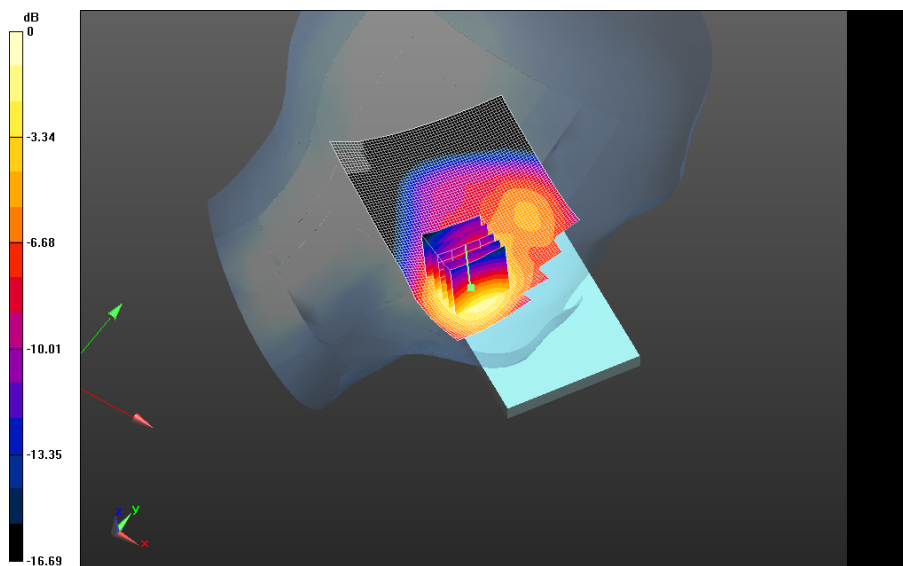
**UMTS\_II\_chan9400\_Scan#8\_amb\_temp\_22.9C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 5.755 V/m; **Power Drift = -0.047 dB**

**Averaged SAR: SAR(1g) = 0.493 W/kg; SAR(10g) = 0.301 W/kg**

Maximum value of SAR (interpolated) = 0.760 W/kg



0 dB = 0.750 W/kg = -1.25 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

**UMTS\_II\_chan9400\_Scan#9\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.689 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

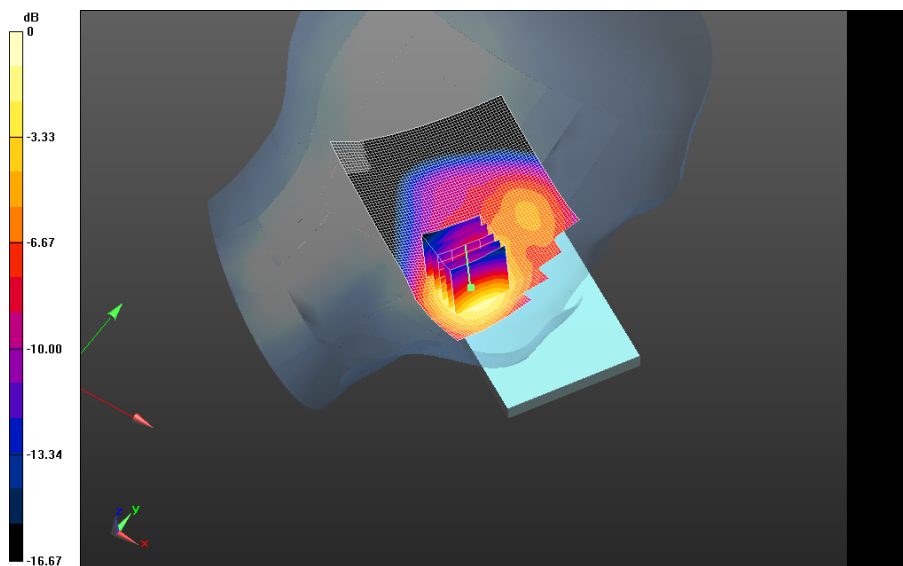
**UMTS\_II\_chan9400\_Scan#9\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.137 V/m; **Power Drift = -0.019 dB**

**Averaged SAR: SAR(1g) = 0.574 W/kg; SAR(10g) = 0.346 W/kg**

Maximum value of SAR (interpolated) = 0.887 W/kg



0 dB = 0.591 W/kg = -2.28 dBW/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

**UMTS\_II\_chan9400\_Scan#10\_amb\_temp\_22.9C\_liq\_temp\_22.1C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.767 W/kg

**Left-Hand-Side HSL - UMTS II/Touch Position -**

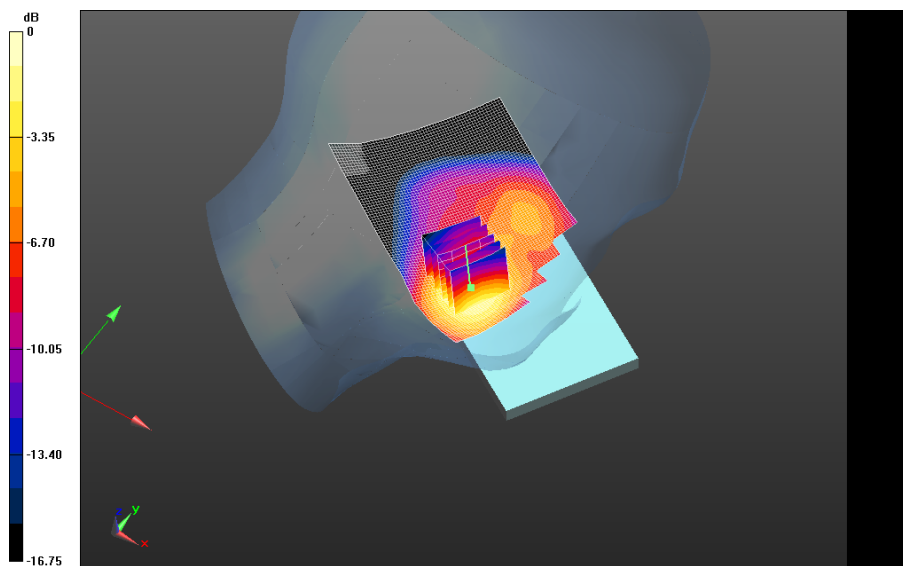
**UMTS\_II\_chan9400\_Scan#10\_amb\_temp\_22.9C\_liq\_temp\_22.1C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.355 V/m; **Power Drift = 0.052 dB**

**Averaged SAR: SAR(1g) = 0.632 W/kg; SAR(10g) = 0.383 W/kg**

Maximum value of SAR (interpolated) = 0.973 W/kg



0 dB = 0.695 W/kg = -1.58 dBW/kg

Date: 9/14/2013

Test Lab: RIM Testing Services

**DUT Name: BlackBerry Smartphone, Type: Sample, Serial: 2FFFE461****Configuration: Left-Hand-Side HSL - UMTS V**

Communication System: WCDMA FDD V; Communication System Band: UMTS band V;  
Frequency: 836.4 MHz, Communication System PAR: 0 dB; PMF: 1.07029; Duty Cycle: 1:1  
Medium Parameters used:  $f=836.4$  MHz;  $\sigma = 0.877$  S/m;  $\epsilon_r = 39.993$ ;  $\rho = 1.000$  g/cm<sup>3</sup>  
Phantom section: Left Section

**DASY Configuration:**

- Probe: ES3DV3 - SN3225; ConvF: (6.19,6.19,6.19); Calibrated: 1/10/2013;
- Sensor-Surface: 3 mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn881; Calibrated: 1/14/2013
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- DASY52 52.8.6(1115); SEMCAD X Version 14.6.9 (7117)

**Left-Hand-Side HSL - UMTS V/Touch Position -****UMTS\_V\_chan4182\_Scan#1\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Area Scan (61x101x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

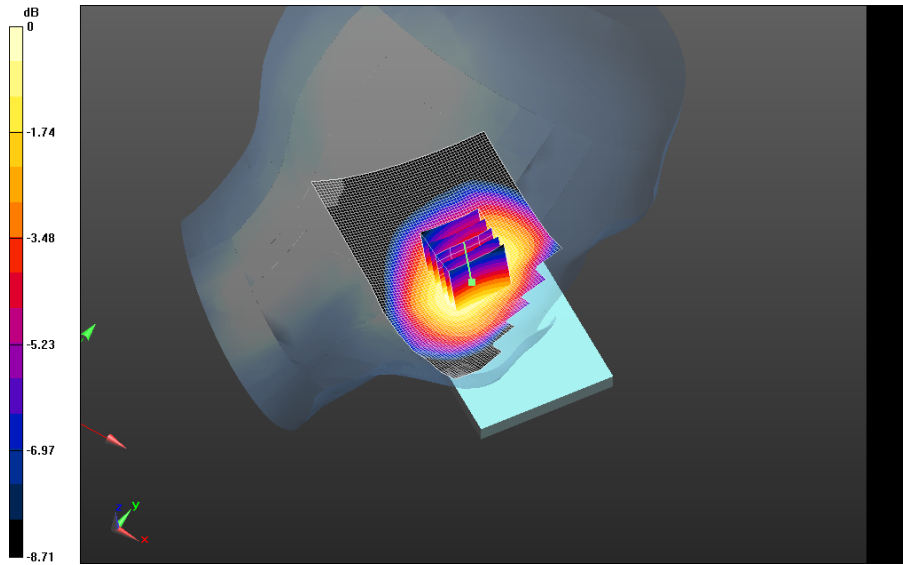
Maximum value of SAR (interpolated) = 0.453 W/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -****UMTS\_V\_chan4182\_Scan#1\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube****0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.863 V/m; Power Drift = -0.221 dB

Averaged SAR: SAR(1g) = 0.415 W/kg; SAR(10g) = 0.316 W/kg

Maximum value of SAR (interpolated) = 0.515 W/kg



0 dB = 0.452 W/kg = -3.45 dBW/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

**UMTS\_V\_chan4182\_Scan#2\_amb\_temp\_23.2C\_liq\_temp\_21.9C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.434 W/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

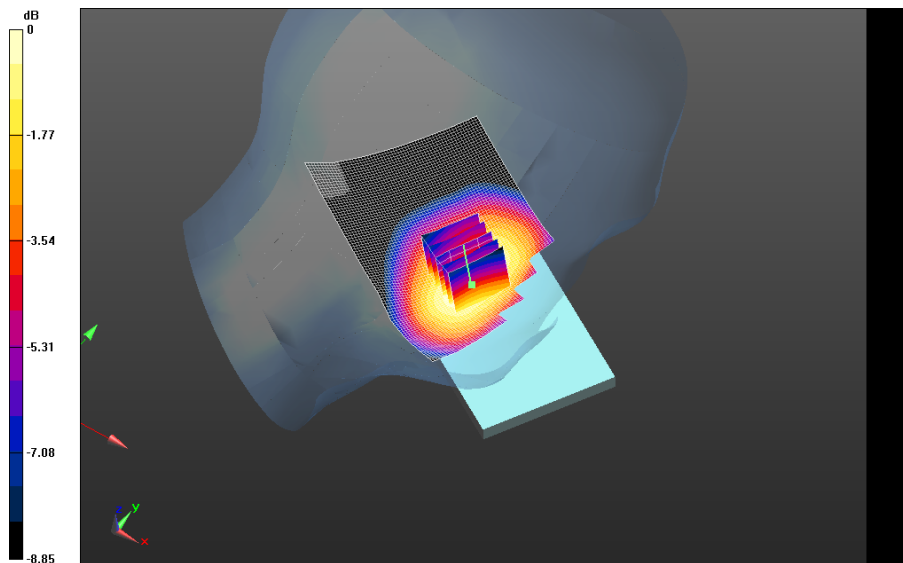
**UMTS\_V\_chan4182\_Scan#2\_amb\_temp\_23.2C\_liq\_temp\_21.9C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.846 V/m; Power Drift = 0.056 dB

Averaged SAR: SAR(1g) = 0.404 W/kg; SAR(10g) = 0.309 W/kg

Maximum value of SAR (interpolated) = 0.512 W/kg



0 dB = 0.452 W/kg = -3.45 dBW/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

**UMTS\_V\_chan4182\_Scan#3\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.445 W/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

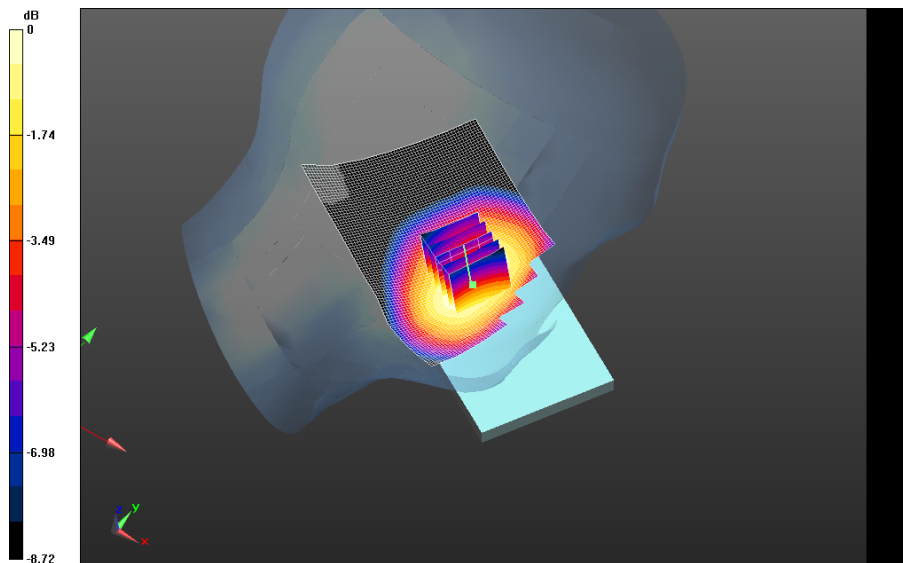
**UMTS\_V\_chan4182\_Scan#3\_amb\_temp\_23.0C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.634 V/m; Power Drift = 0.316 dB

Averaged SAR: SAR(1g) = 0.409 W/kg; SAR(10g) = 0.312 W/kg

Maximum value of SAR (interpolated) = 0.512 W/kg



0 dB = 0.444 W/kg = -3.53 dBW/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

**UMTS\_V\_chan4182\_Scan#4\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.447 W/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

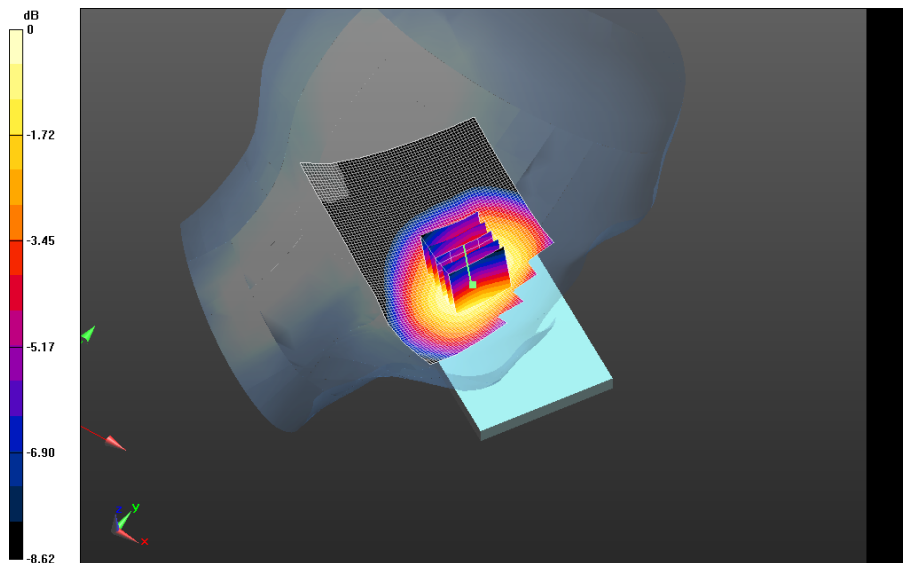
**UMTS\_V\_chan4182\_Scan#4\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.155 V/m; Power Drift = -0.092 dB

Averaged SAR: SAR(1g) = 0.416 W/kg; SAR(10g) = 0.317 W/kg

Maximum value of SAR (interpolated) = 0.518 W/kg



0 dB = 0.452 W/kg = -3.45 dBW/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

**UMTS\_V\_chan4182\_Scan#5\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.421 W/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

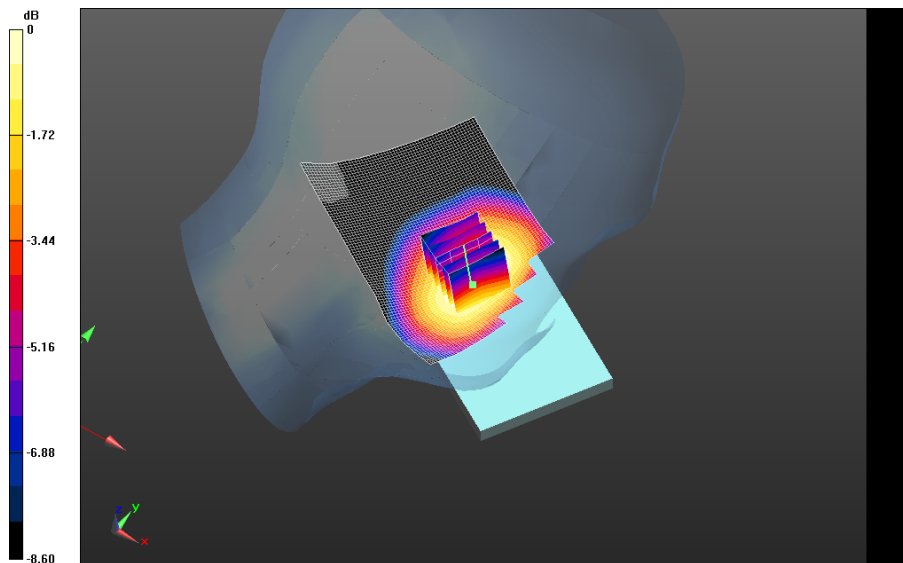
**UMTS\_V\_chan4182\_Scan#5\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 6.236 V/m; Power Drift = -0.00493 dB

Averaged SAR: SAR(1g) = 0.389 W/kg; SAR(10g) = 0.297 W/kg

Maximum value of SAR (interpolated) = 0.483 W/kg



0 dB = 0.456 W/kg = -3.41 dBW/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

**UMTS\_V\_chan4182\_Scan#6\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Area Scan (61x91x1):**

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.263 W/kg

**Left-Hand-Side HSL - UMTS V/Touch Position -**

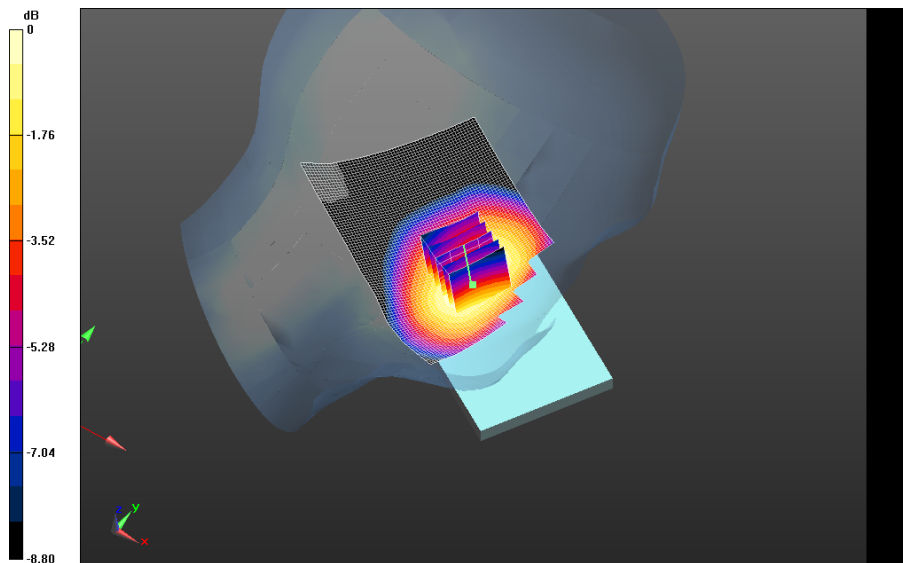
**UMTS\_V\_chan4182\_Scan#6\_amb\_temp\_22.8C\_liq\_temp\_22.0C/Zoom Scan (21x21x36)/Cube**

**0:** Interpolated grid: dx=1.500 mm, dy=1.500 mm, dz=1.000 mm

Reference Value = 5.195 V/m; Power Drift = 0.170 dB

Averaged SAR: SAR(1g) = 0.244 W/kg; SAR(10g) = 0.185 W/kg

Maximum value of SAR (interpolated) = 0.305 W/kg



0 dB = 0.426 W/kg = -3.71 dBW/kg