

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

**802.11b Back Side High (Battery SN: UWDC320XBGN1407, 10mm)**

Date/Time: 10/8/2012 8:42:59 PM

Communication System: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 51.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Back Side High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.167 mW/g

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

Reference Value = 4.08 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.334 W/kg

**SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.081 mW/g**

Maximum value of SAR (measured) = 0.171 mW/g



Figure 242 Body, Back Side, 802.11b Channel 11

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**802.11b Front Side High (Battery SN: UWDC320XBGN1407, 10mm)**

Date/Time: 10/8/2012 9:09:27 PM

Communication System: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 51.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Front Side High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.057 mW/g

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

Reference Value = 3.05 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 0.100 W/kg

**SAR(1 g) = 0.053 mW/g; SAR(10 g) = 0.029 mW/g**

Maximum value of SAR (measured) = 0.058 mW/g

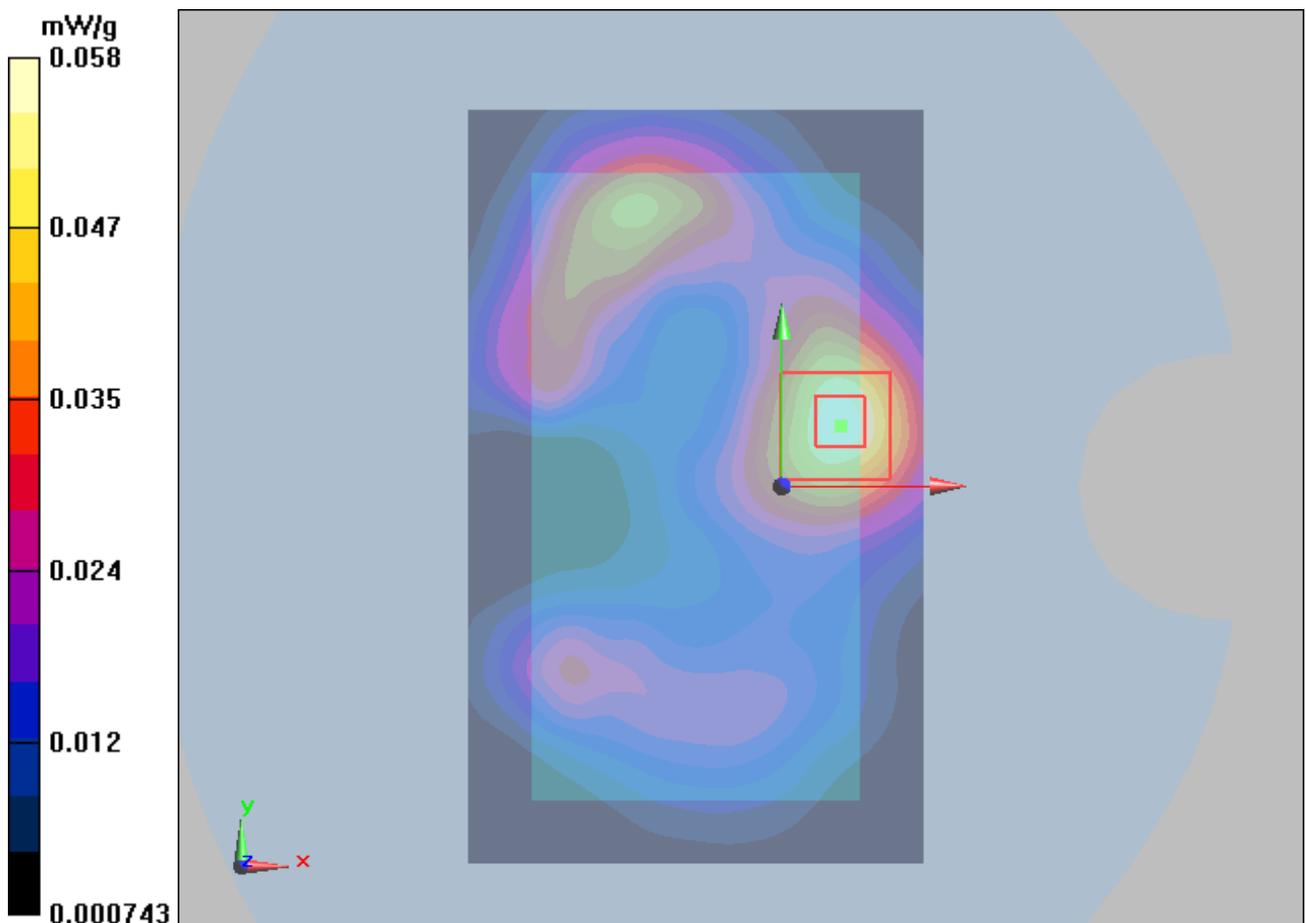


Figure 243 Body, Front Side, 802.11b Channel 11

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**802.11b Right Edge High (Battery SN: UWDC320XBGN1407, 10mm)**

Date/Time: 10/8/2012 10:02:35 PM

Communication System: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 51.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Right Edge High/Area Scan (31x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.097 mW/g

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

Reference Value = 5.01 V/m; Power Drift = 0.079 dB

Peak SAR (extrapolated) = 0.166 W/kg

**SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.051 mW/g**

Maximum value of SAR (measured) = 0.100 mW/g

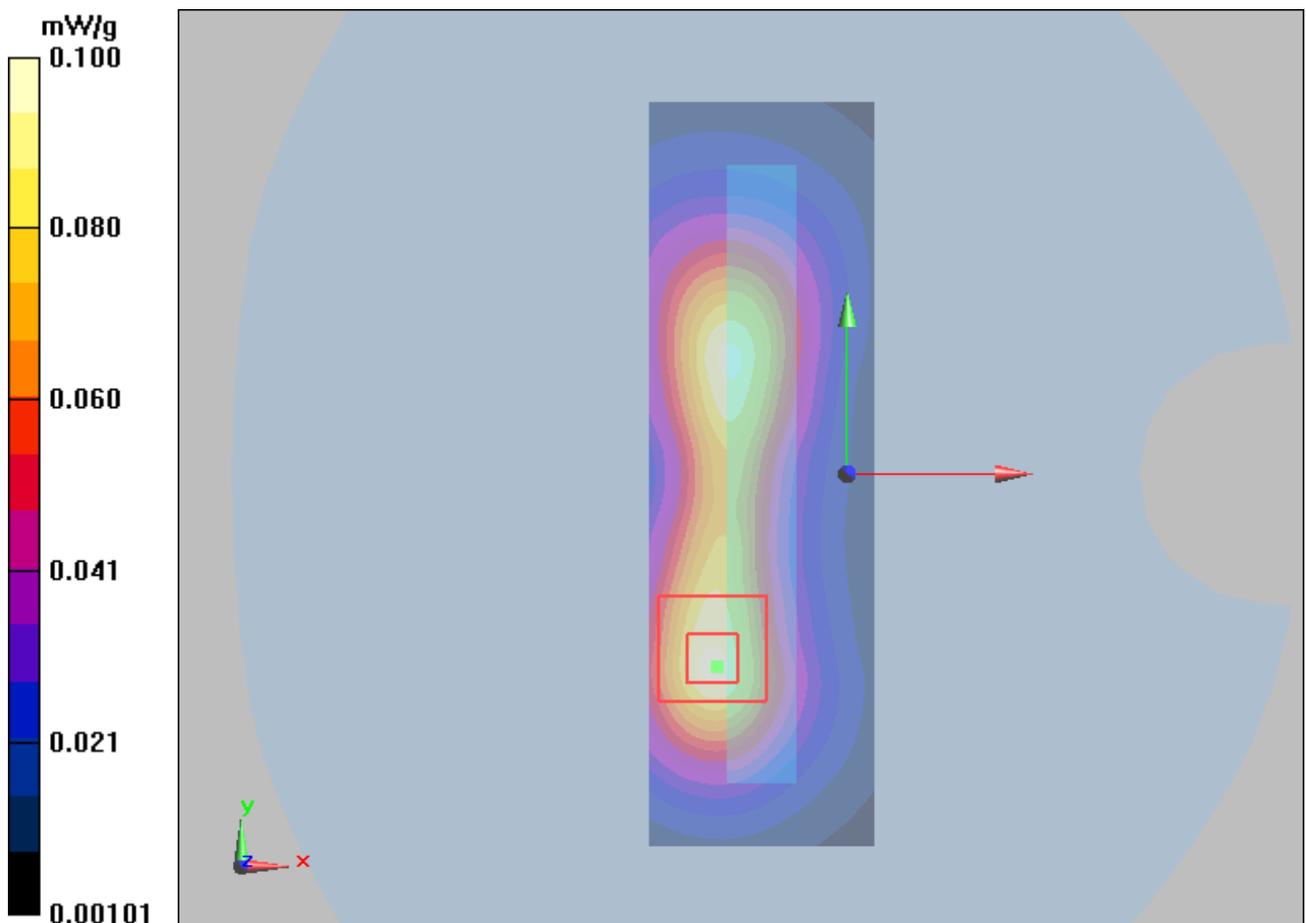


Figure 244 Body, Right Edge, 802.11b Channel 11

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**802.11b with Earphone Back Side High (Battery SN: UWDC320XBGN1407, 10mm)**

Date/Time: 10/8/2012 9:36:55 PM

Communication System: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 51.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Back Side High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.135 mW/g

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

Reference Value = 3.45 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 0.285 W/kg

**SAR(1 g) = 0.135 mW/g; SAR(10 g) = 0.068 mW/g**

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

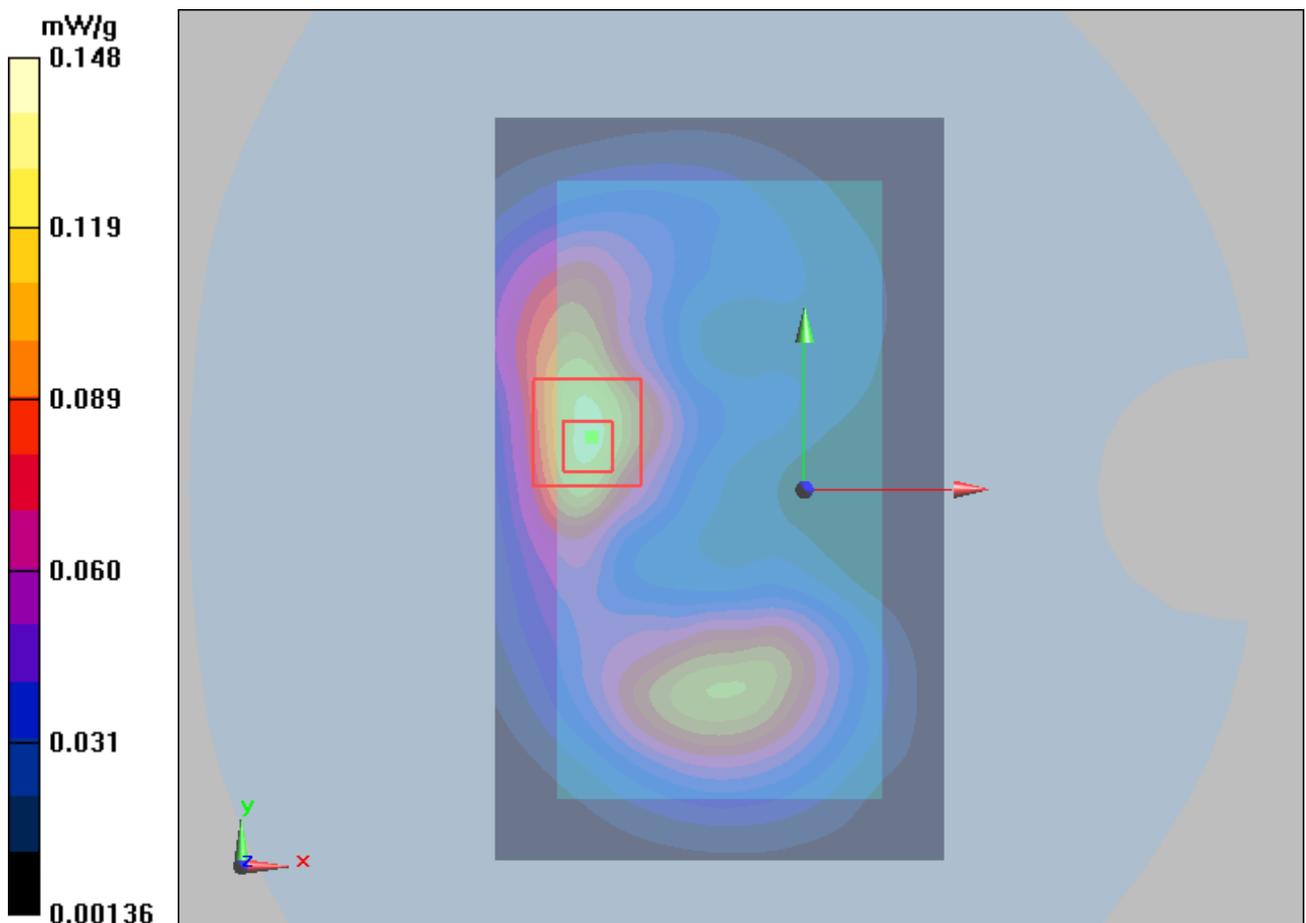


Figure 245 Body, Back Side, 802.11b Channel 11

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**802.11b Back Side High (Battery SN: UWDC320XBGN1407, 10mm)**

Date/Time: 10/15/2012 1:36:07 PM

Communication System: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 51.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Back Side High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.166 mW/g

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

Reference Value = 1.81 V/m; Power Drift = 0.033 dB

Peak SAR (extrapolated) = 0.317 W/kg

**SAR(1 g) = 0.147 mW/g; SAR(10 g) = 0.073 mW/g**

Maximum value of SAR (measured) = 0.163 mW/g

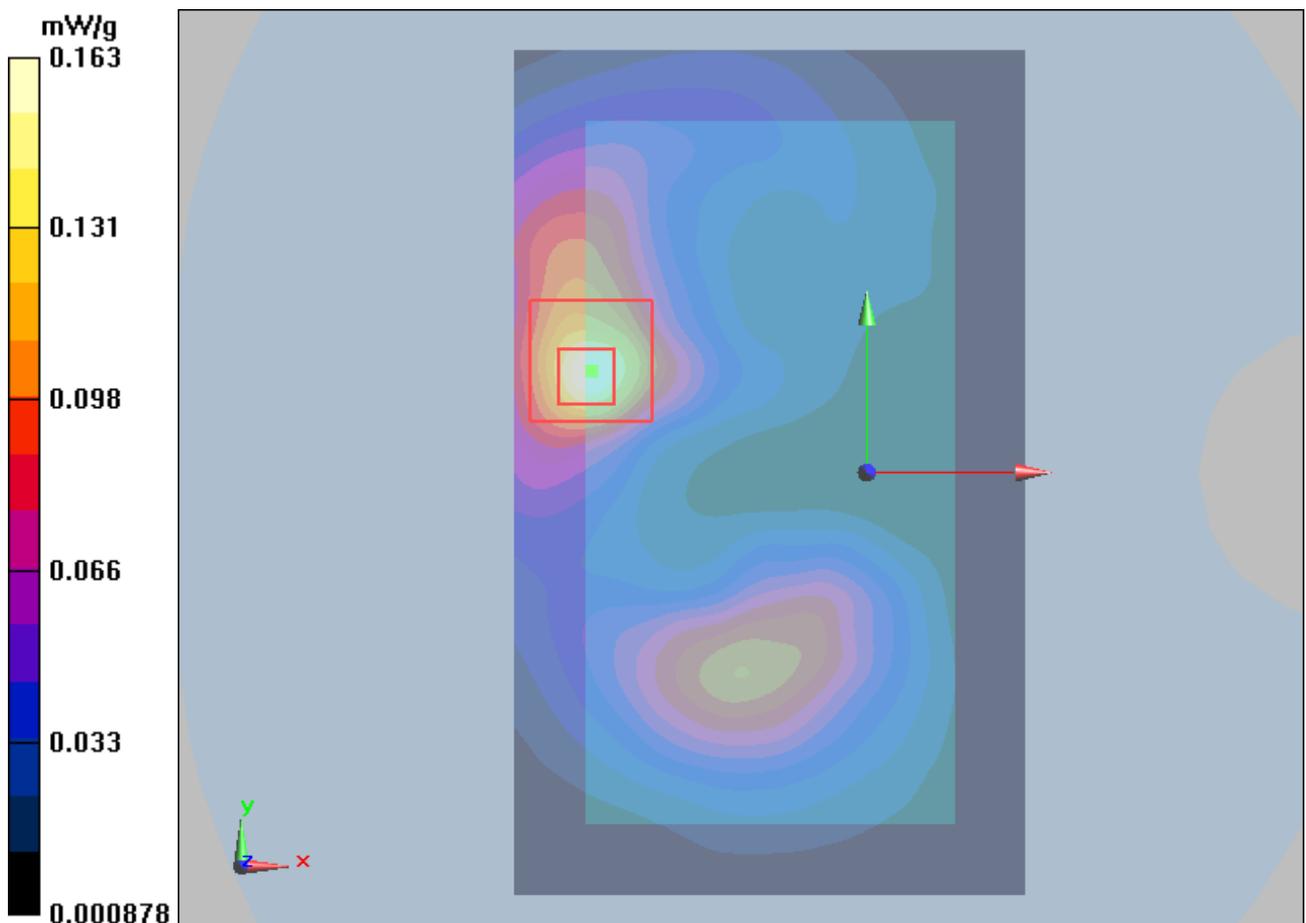


Figure 246 Body, Back Side, 802.11b Channel 11

## ANNEX D: Volume Scan System Check Results(Original M931)

### System Performance Check at 1750 MHz Body TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033

Date/Time: 10/24/2012 9:52:45 AM

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

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.49$  mho/m;  $\epsilon_r = 52.64$   $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.65, 4.65, 4.65); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 10 mW/g

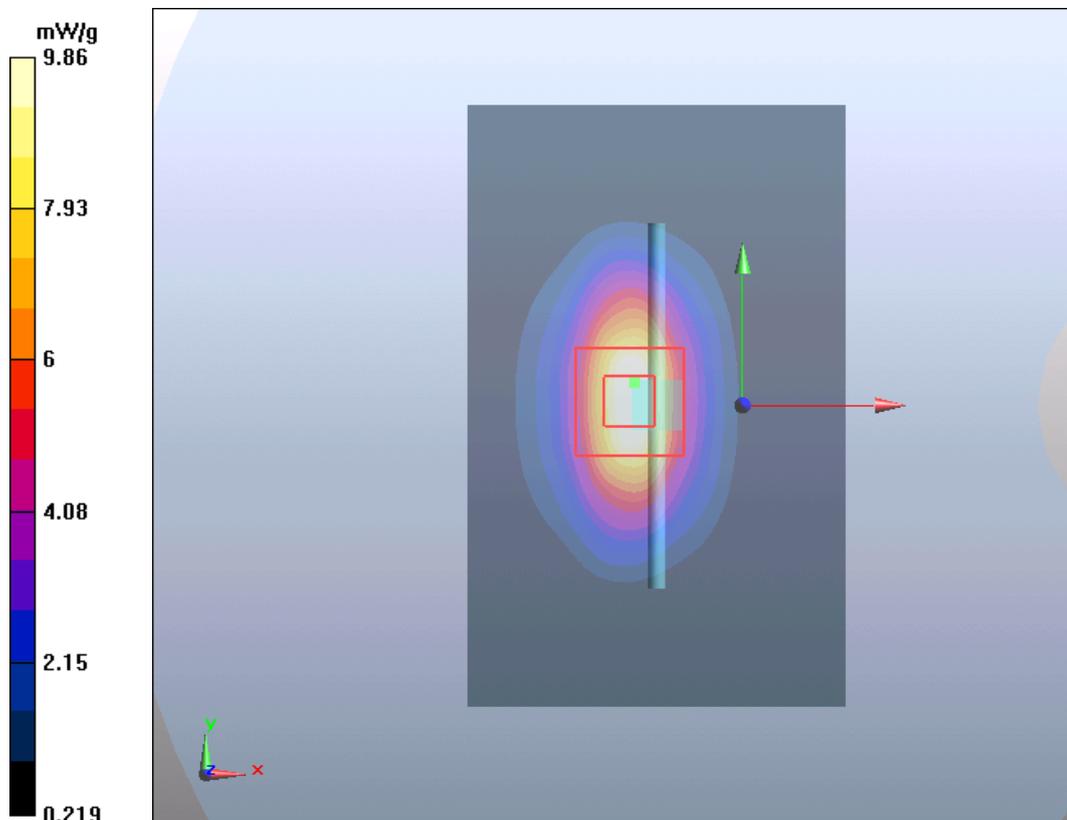
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 74.8 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 15.3 W/kg

**SAR(1 g) = 8.71 mW/g; SAR(10 g) = 4.64 mW/g**

Maximum value of SAR (measured) = 9.86 mW/g



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### System Performance Check at 1900 MHz Body TSL

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060**

Date/Time: 10/24/2012 11:05:25 AM

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

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 53.10$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (41x71x1):** Measurement grid: dx=15mm, dy=15mm

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

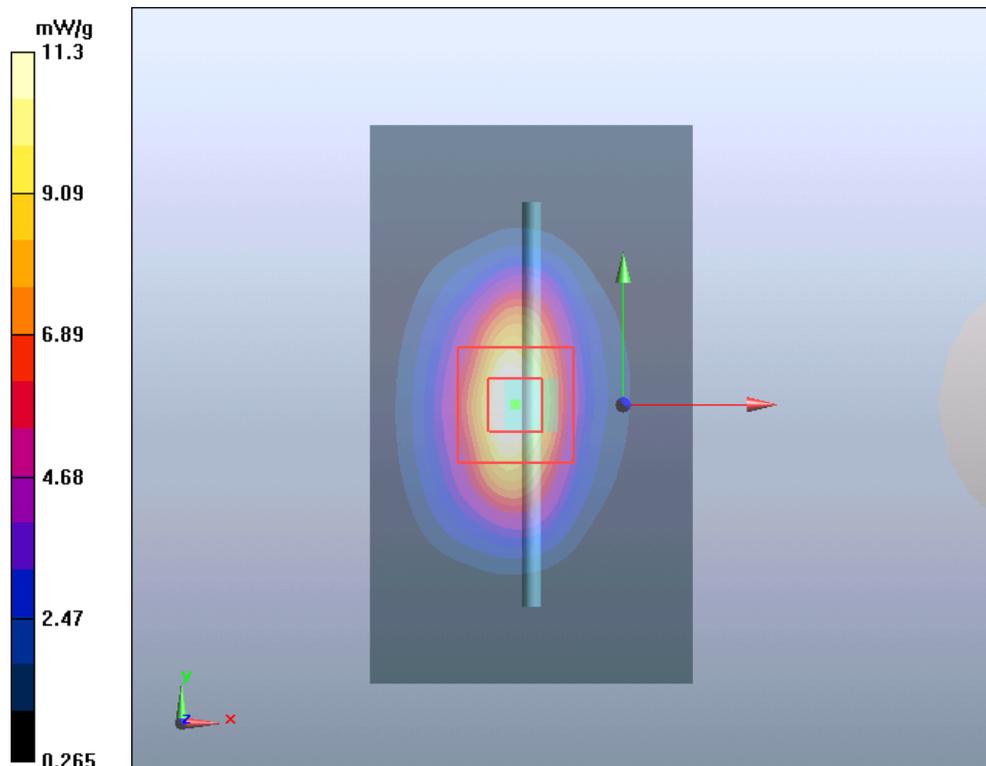
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 82.3 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 17.8 W/kg

**SAR(1 g) = 9.95 mW/g; SAR(10 g) = 5.22 mW/g**

Maximum value of SAR (measured) = 11.3 mW/g



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## System Performance Check at 2450 MHz Body TSL

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786**

Date/Time: 10/24/2012 1:33:59 PM

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

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 50.70$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (41x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 16 mW/g

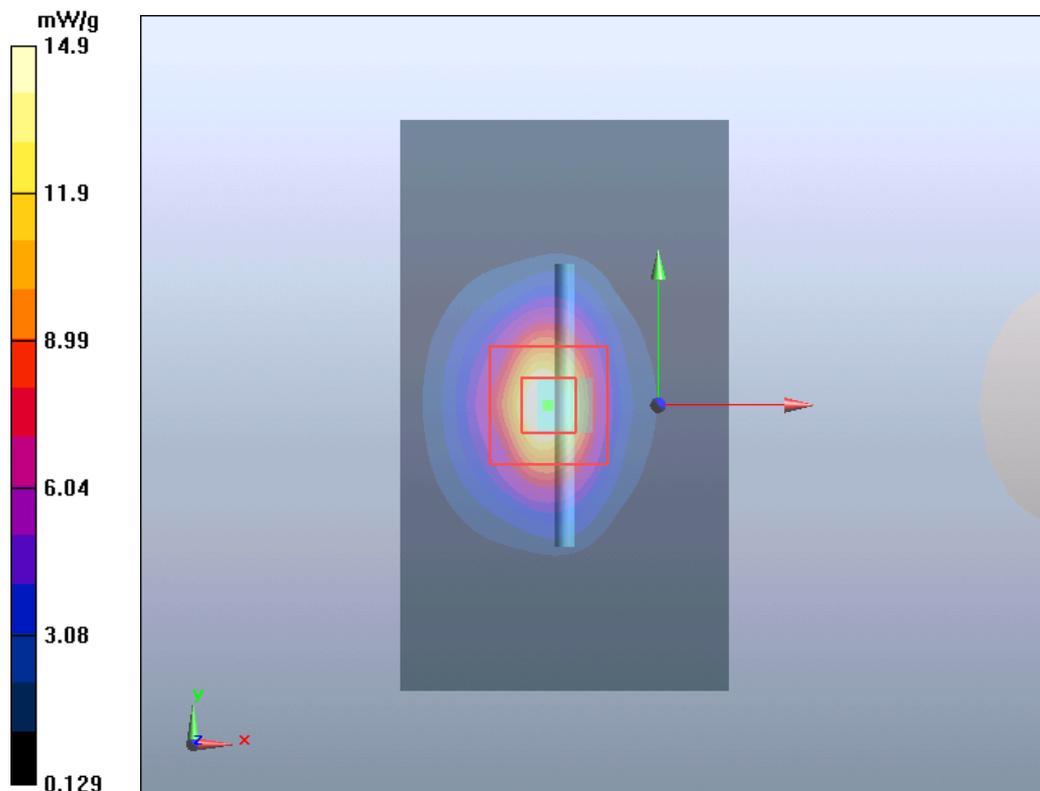
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 81.2 V/m; Power Drift = 0.076 dB

Peak SAR (extrapolated) = 25.4 W/kg

**SAR(1 g) = 12.7 mW/g; SAR(10 g) = 6.13 mW/g**

Maximum value of SAR (measured) = 14.9 mW/g



## ANNEX E: Volume Scan Graph Results(Original M931)

### C8869L 802.11b Back Side 10mm Volume Scan

Date/Time: 10/24/2012 10:54:26 PM

Communication System: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 51.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Towards Ground High/Area Scan (51x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.185 mW/g

**Towards Ground High/Volume Scan (10x14x7):** Measurement grid: dx=8mm, dy=8mm, dz=5mm

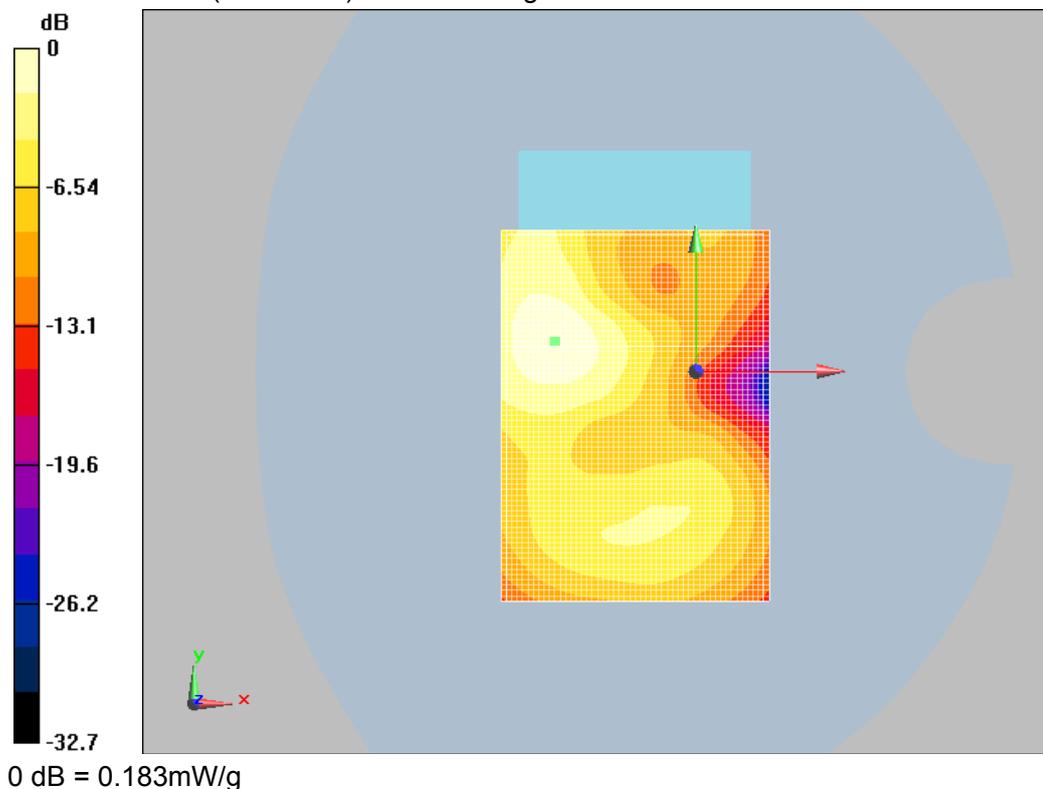
Reference Value = 5.82 V/m; Power Drift = -0.192 dB

Peak SAR (extrapolated) = 0.346 W/kg

**SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.087 mW/g**

Total Absorbed Power = 0.00544282 W

Maximum value of SAR (measured) = 0.183 mW/g



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## C8869L CDMA AWS Back Side 10mm Volume Scan

Date/Time: 10/24/2012 7:36:02 PM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature:22.3 °C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.65, 4.65, 4.65); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Towards Phantom Middle/Area Scan (51x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.01 mW/g

**Towards Phantom Middle/Volume Scan (10x14x7):** Measurement grid: dx=8mm, dy=8mm, dz=5mm

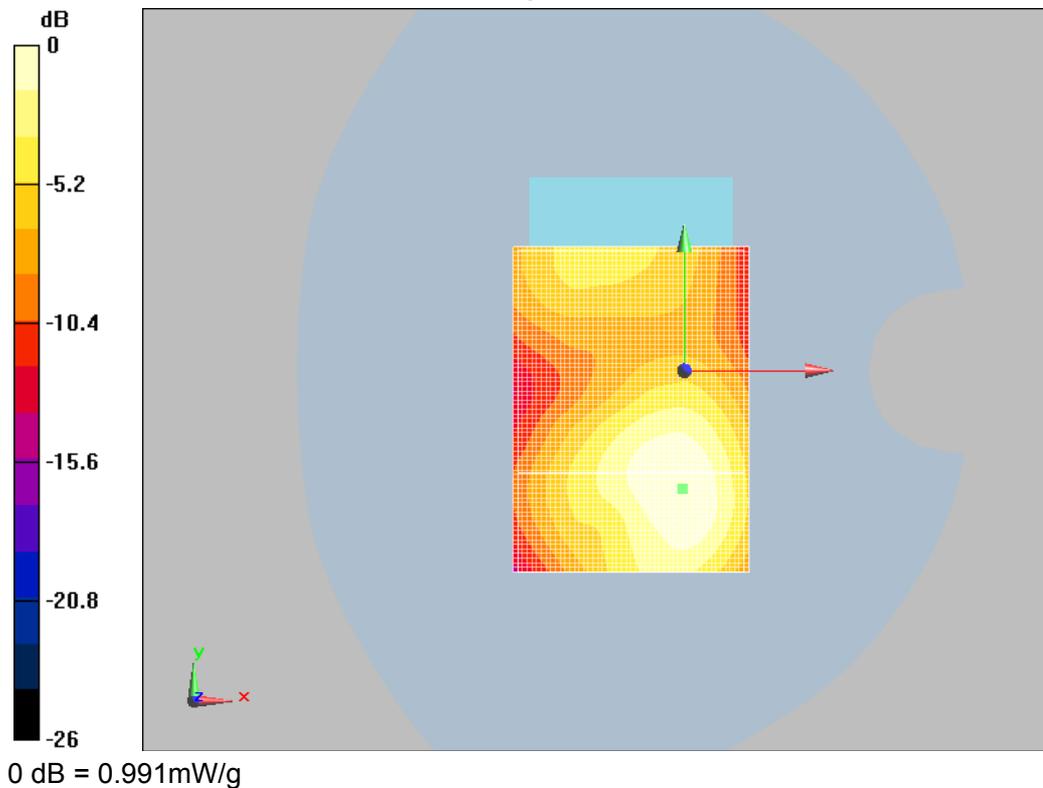
Reference Value = 11.5 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 1.46 W/kg

**SAR(1 g) = 0.951 mW/g; SAR(10 g) = 0.590 mW/g**

Total Absorbed Power = 0.0419537 W

Maximum value of SAR (measured) = 0.991 mW/g



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## C8869L LTE B2 1RB Back Side 10mm Volume Scan

Date/Time: 10/24/2012 5:10:36 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 53.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Towards Phantom Middle(High)/Area Scan (51x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.683 mW/g

**Towards Phantom Middle(High)/Volume Scan (10x14x7):** Measurement grid: dx=8mm, dy=8mm, dz=5mm

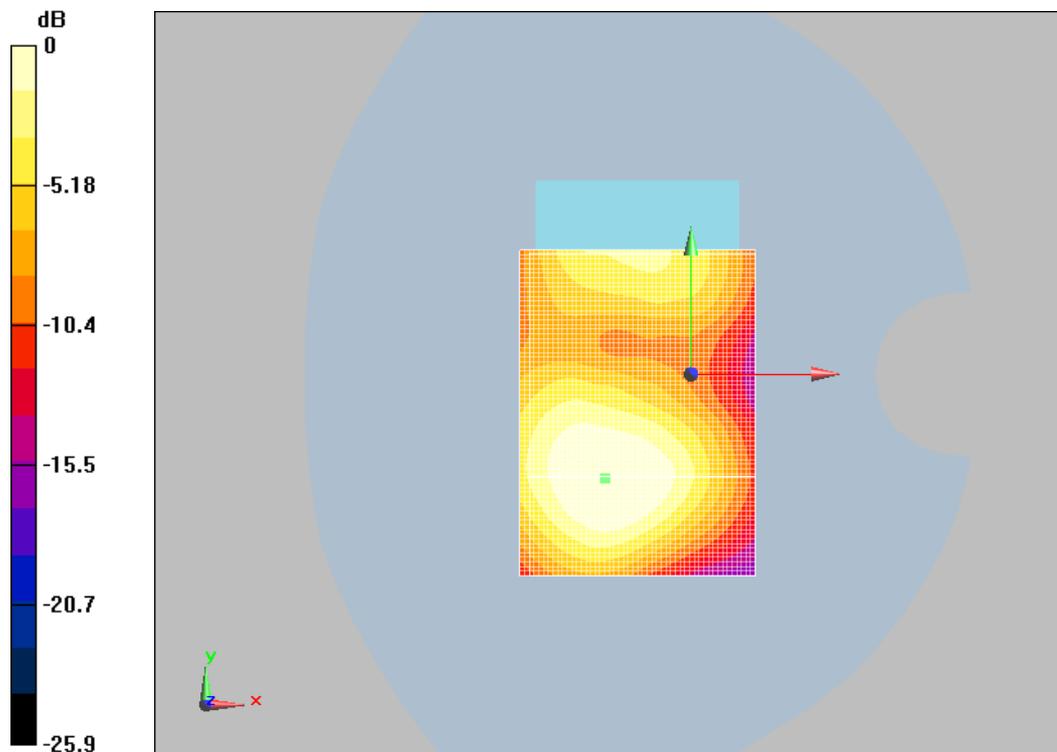
Reference Value = 9.02 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.928 W/kg

**SAR(1 g) = 0.609 mW/g; SAR(10 g) = 0.388 mW/g**

Total Absorbed Power = 0.0262953 W

Maximum value of SAR (measured) = 0.645 mW/g



0 dB = 0.645mW/g

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**C8869L LTE B4 16QAM 1RB Back Side 10mm Volume Scan**

Date/Time: 10/24/2012 9:26:21 PM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.65, 4.65, 4.65); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Towards Phantom Middle(High) /Area Scan (51x71x1):** Measurement grid: dx=15mm, dy=15mm

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

**Towards Phantom Middle(High) /Volume Scan (10x14x7):** Measurement grid: dx=8mm, dy=8mm, dz=5mm

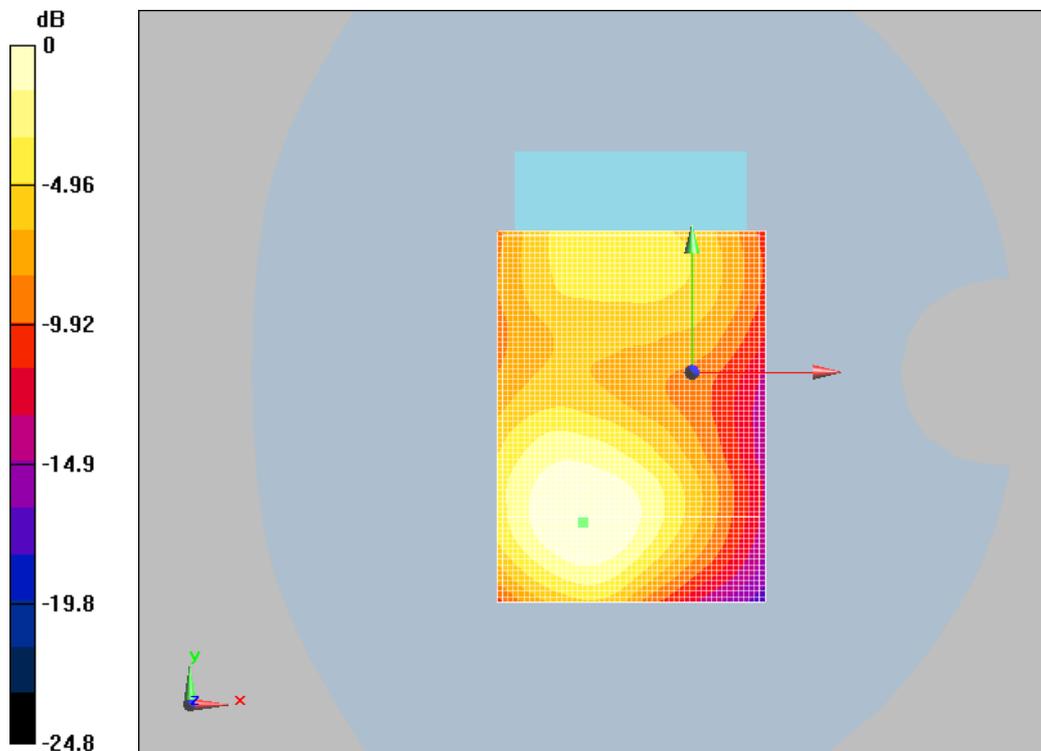
Reference Value = 9.12 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 0.936 W/kg

**SAR(1 g) = 0.612 mW/g; SAR(10 g) = 0.384 mW/g**

Total Absorbed Power = 0.0266234 W

Maximum value of SAR (measured) = 0.667 mW/g



0 dB = 0.667mW/g

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**C8869L CDMA AWS Back Side 10mm Volume Scan+LTE B2**

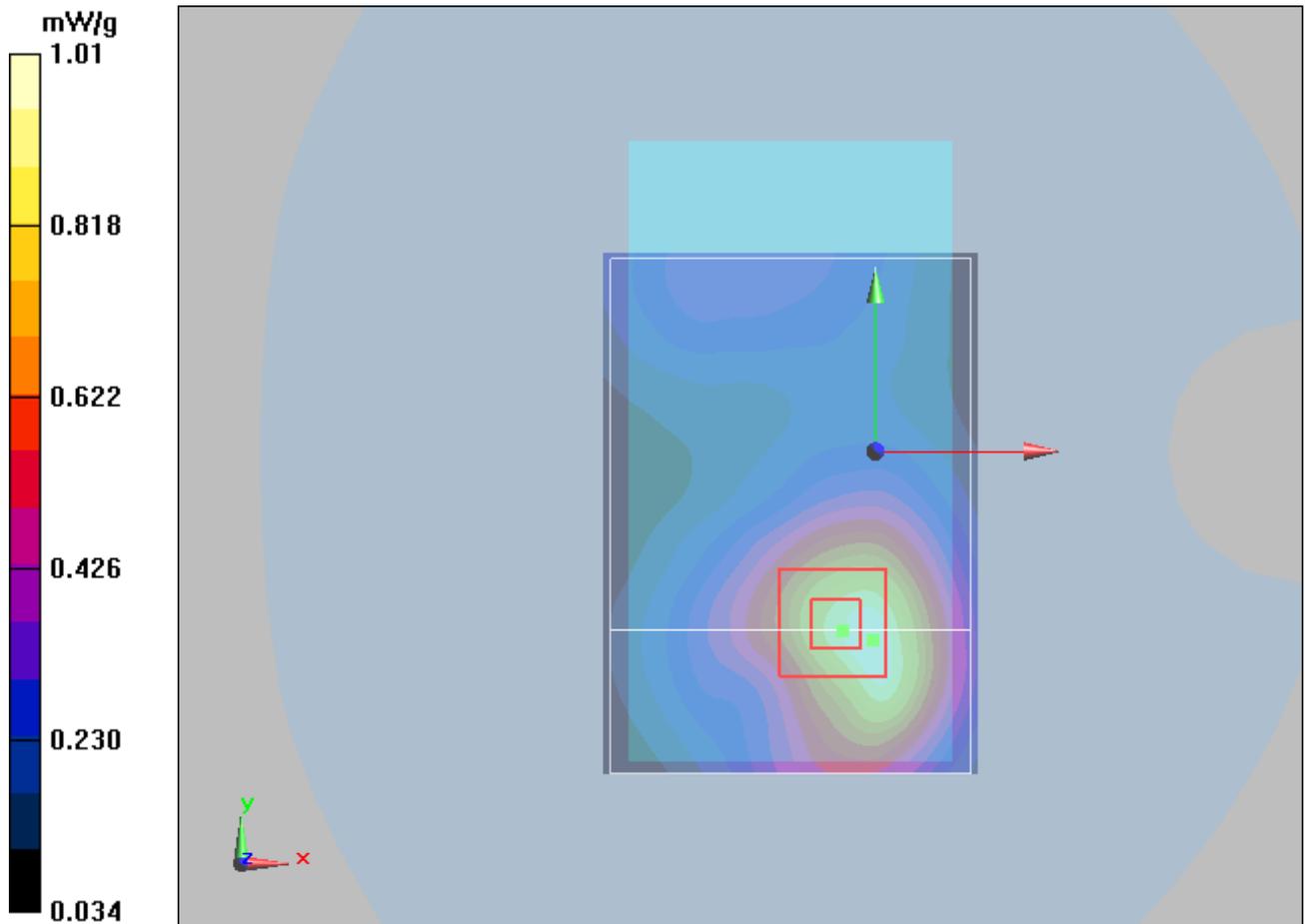
Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

DASY5 Configuration:

**Multi Band Result:**

**SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.824 mW/g**

Maximum value of SAR (measured) = 1.96 mW/g



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## C8869L CDMA AWS Back Side 10mm Volume Scan+LTE B4

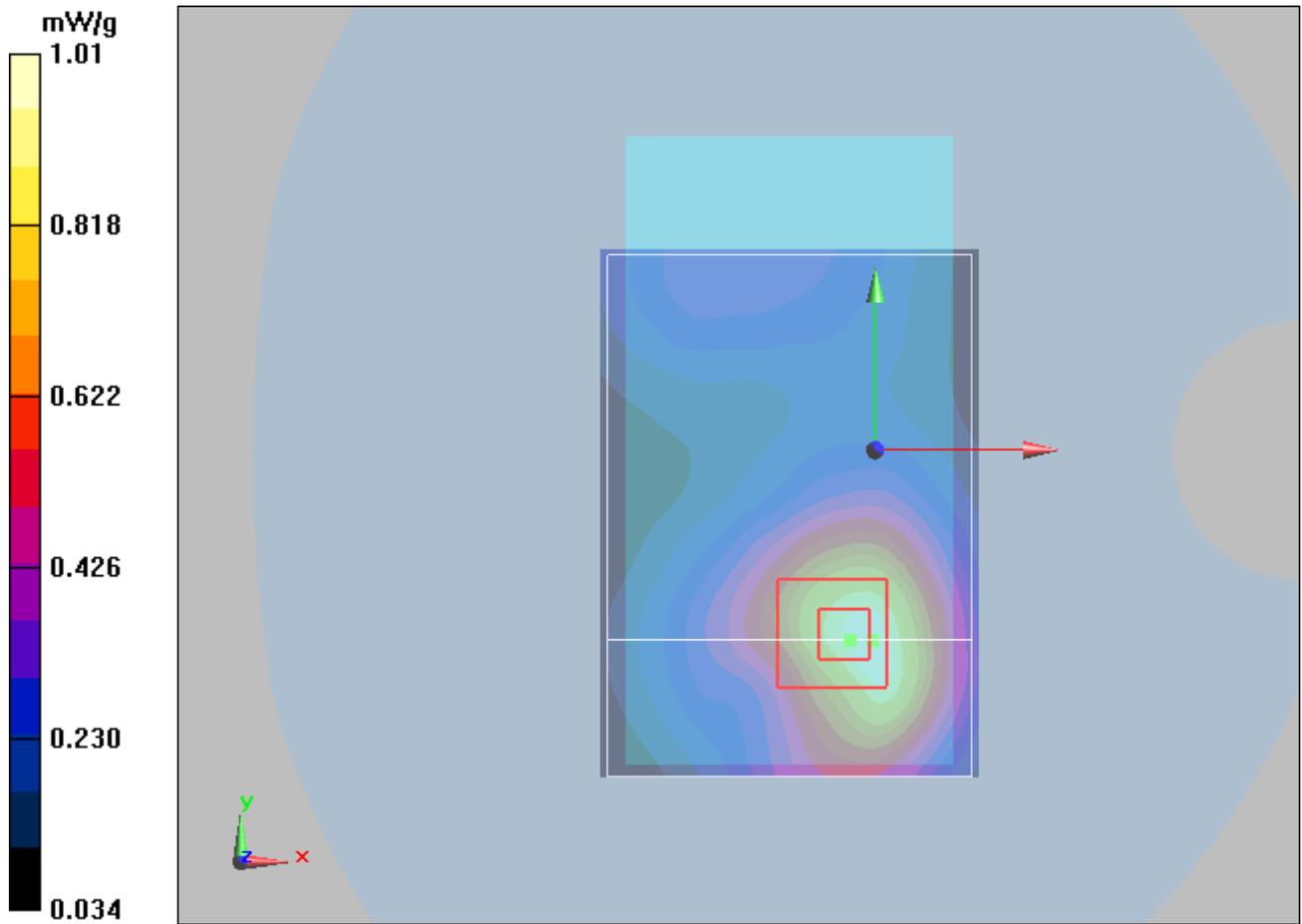
Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

DASY5 Configuration:

### Multi Band Result:

**SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.760 mW/g**

Maximum value of SAR (measured) = 1.8 mW/g



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## C8869L CDMA AWS Back Side 10mm Volume Scan+LTE B2+802.11b

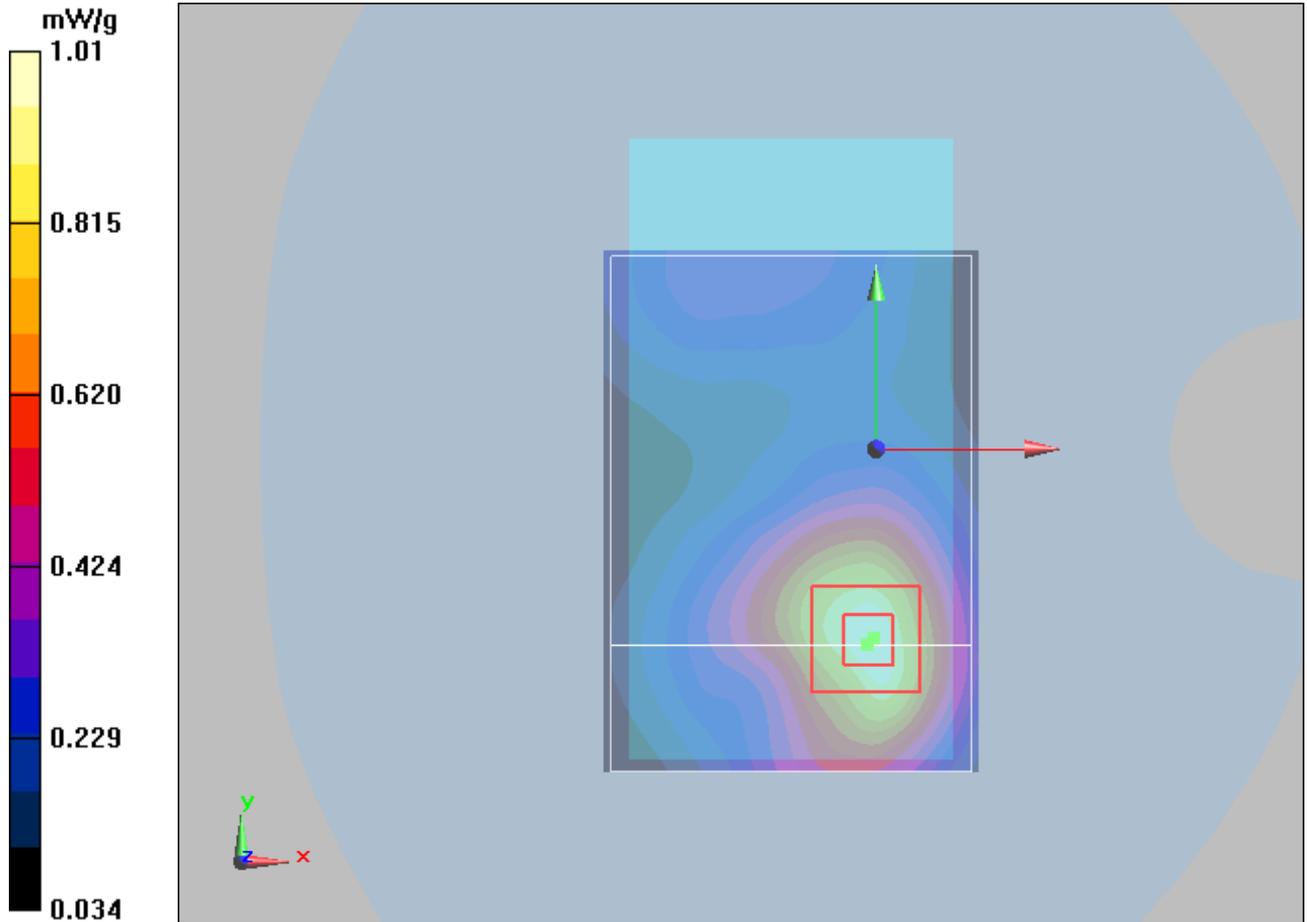
Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

DASY5 Configuration:

### Multi Band Result:

**SAR(1 g) = 1.35 mW/g; SAR(10 g) = 0.863 mW/g**

Maximum value of SAR (measured) = 2.06 mW/g



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## C8869L CDMA AWS Back Side 10mm Volume Scan+LTE B4+802.11b

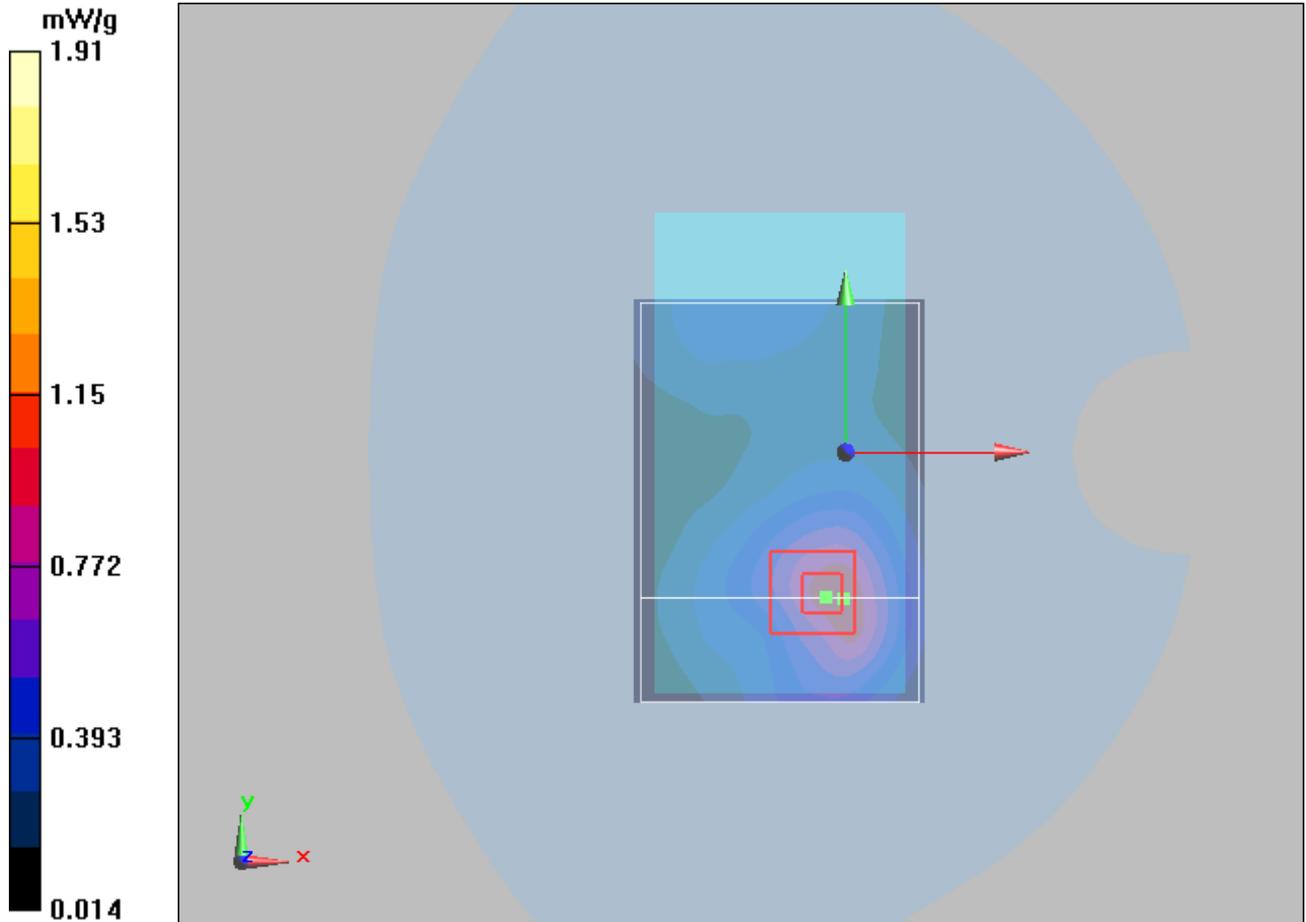
Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

DASY5 Configuration:

### Multi Band Result:

**SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.800 mW/g**

Maximum value of SAR (measured) = 1.91 mW/g



## ANNEX F: System Check Results (New M931)

### System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date/Time: 6/29/2013 9:20:38 PM

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

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.916$  mho/m;  $\epsilon_r = 41.25$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=15mm, Pin=250mW/Area Scan (41x121x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.64 mW/g

**d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.4 V/m; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 3.67 W/kg

**SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.63 mW/g**

Maximum value of SAR (measured) = 2.62 mW/g

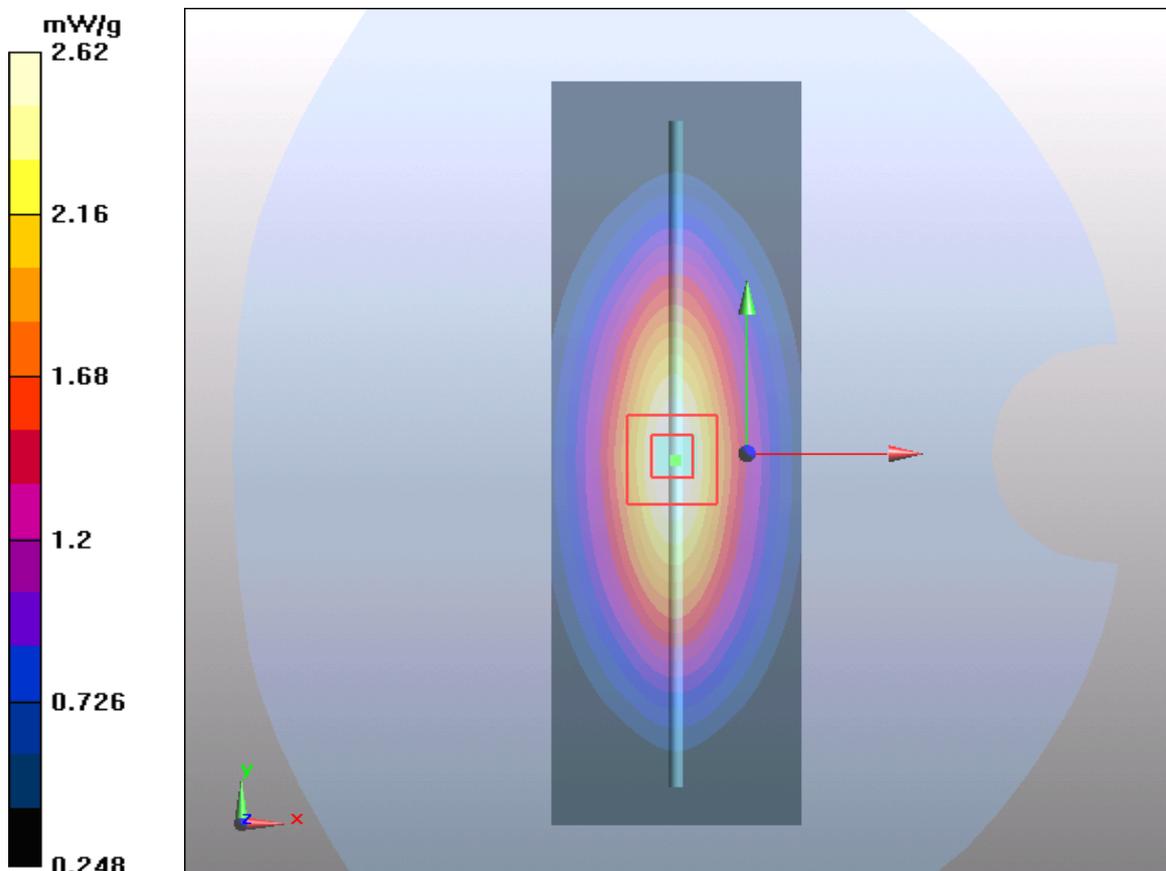


Figure 247 System Performance Check 835MHz 250mW

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## System Performance Check at 835 MHz Body TSL

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020**

Date/Time: 6/29/2013 5:48:07 PM

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

Medium parameters used:  $f = 835$  MHz;  $\sigma = 1.012$  mho/m;  $\epsilon_r = 54.35$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=15mm, Pin=250mW/Area Scan (41x121x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 2.57 mW/g

**d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.9 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 3.5 W/kg

**SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.6 mW/g**

Maximum value of SAR (measured) = 2.6 mW/g

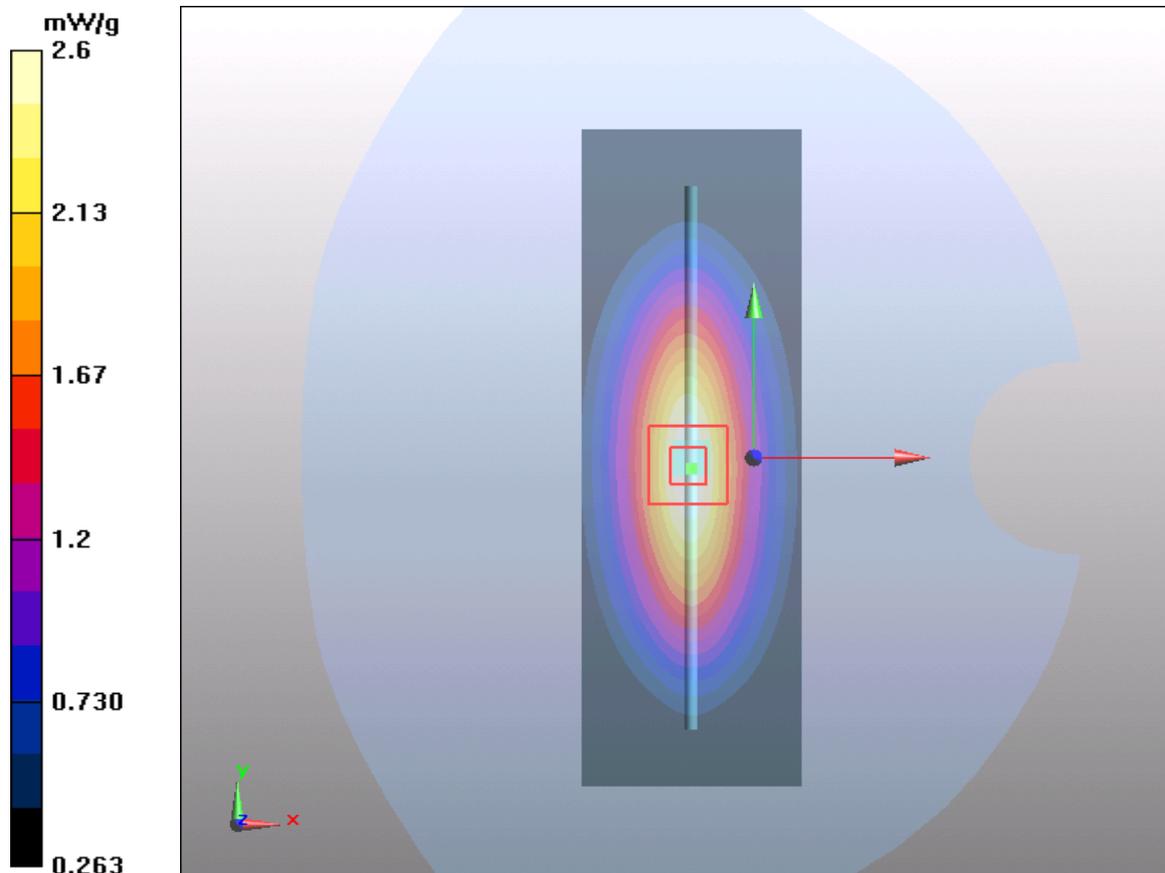


Figure 248 System Performance Check 835MHz 250Mw

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## System Performance Check at 1750 MHz Head TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1023

Date/Time: 6/30/2013 12:46:33 AM

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

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.398$  mho/m;  $\epsilon_r = 39.17$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.88 mW/g

**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 81.1 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 15.5 W/kg

**SAR(1 g) = 8.68 mW/g; SAR(10 g) = 4.55 mW/g**

Maximum value of SAR (measured) = 9.66 mW/g

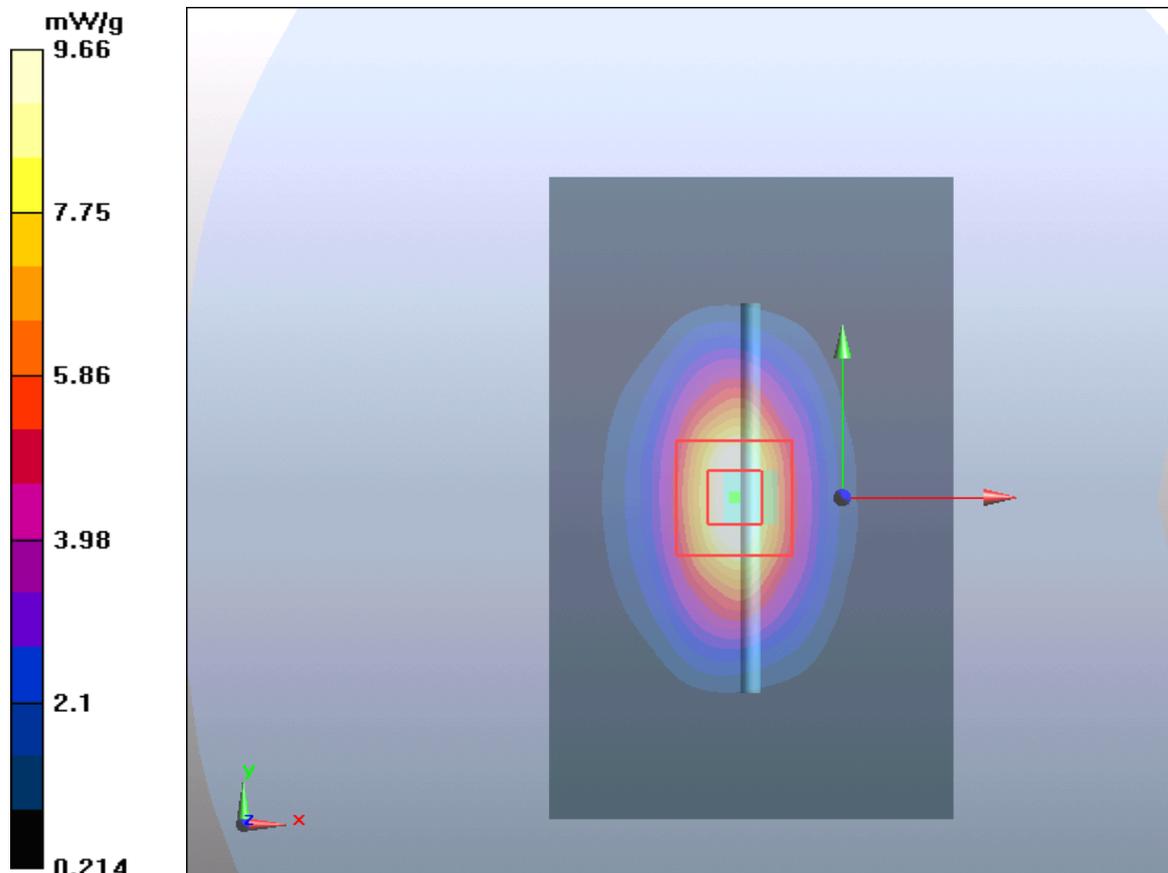


Figure 249 System Performance Check 1750MHz 250mW

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## System Performance Check at 1750 MHz Body TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1023

Date/Time: 6/30/2013 2:42:45 AM

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

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.468$  mho/m;  $\epsilon_r = 52.12$   $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 10 mW/g

**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 74.8 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 15.3 W/kg

**SAR(1 g) = 8.72 mW/g; SAR(10 g) = 4.67 mW/g**

Maximum value of SAR (measured) = 9.89 mW/g

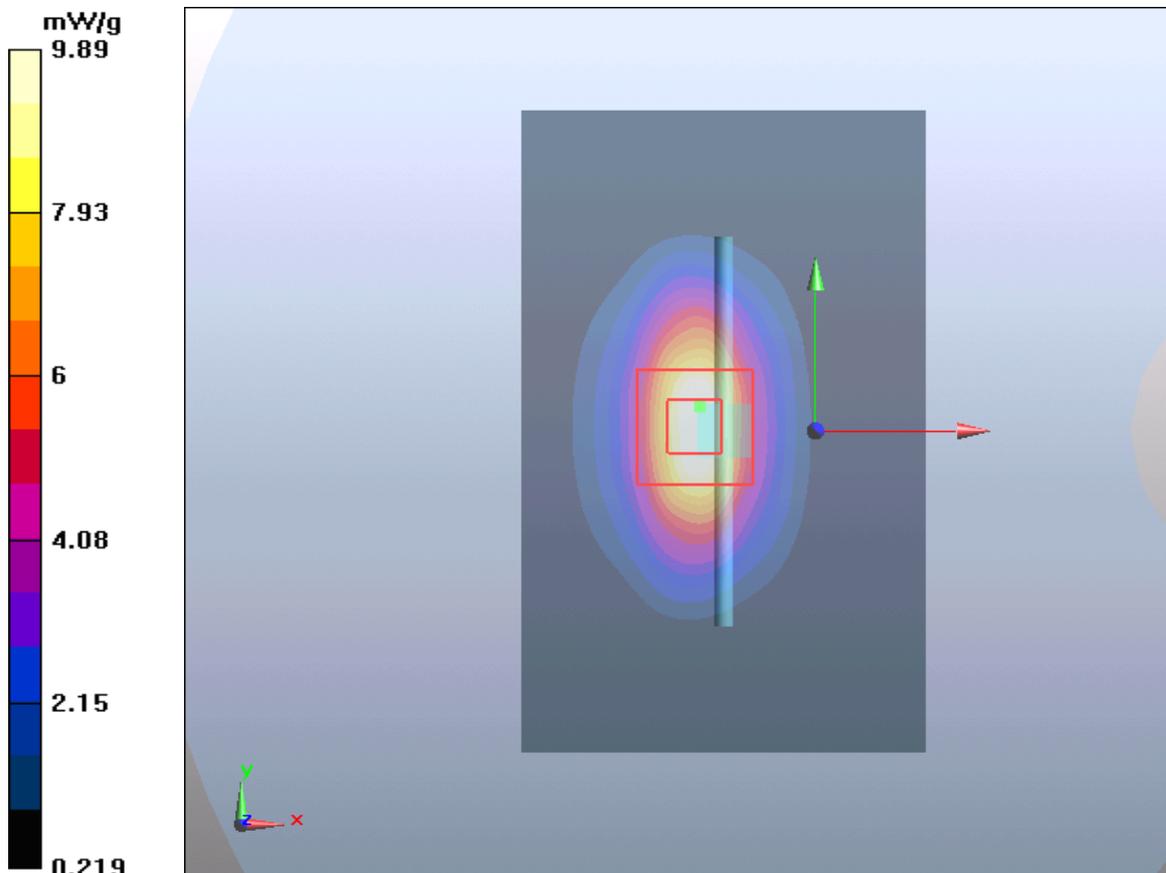


Figure 250 System Performance Check 1750MHz 250mW

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## System Performance Check at 1900 MHz Head TSL

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060**

Date/Time: 6/29/2013 11:10:55 AM

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

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.451$  mho/m;  $\epsilon_r = 38.33$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (41x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 11.3 mW/g

**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 85.5 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 17.8 W/kg

**SAR(1 g) = 9.46 mW/g; SAR(10 g) = 4.96 mW/g**

Maximum value of SAR (measured) = 10.72 mW/g

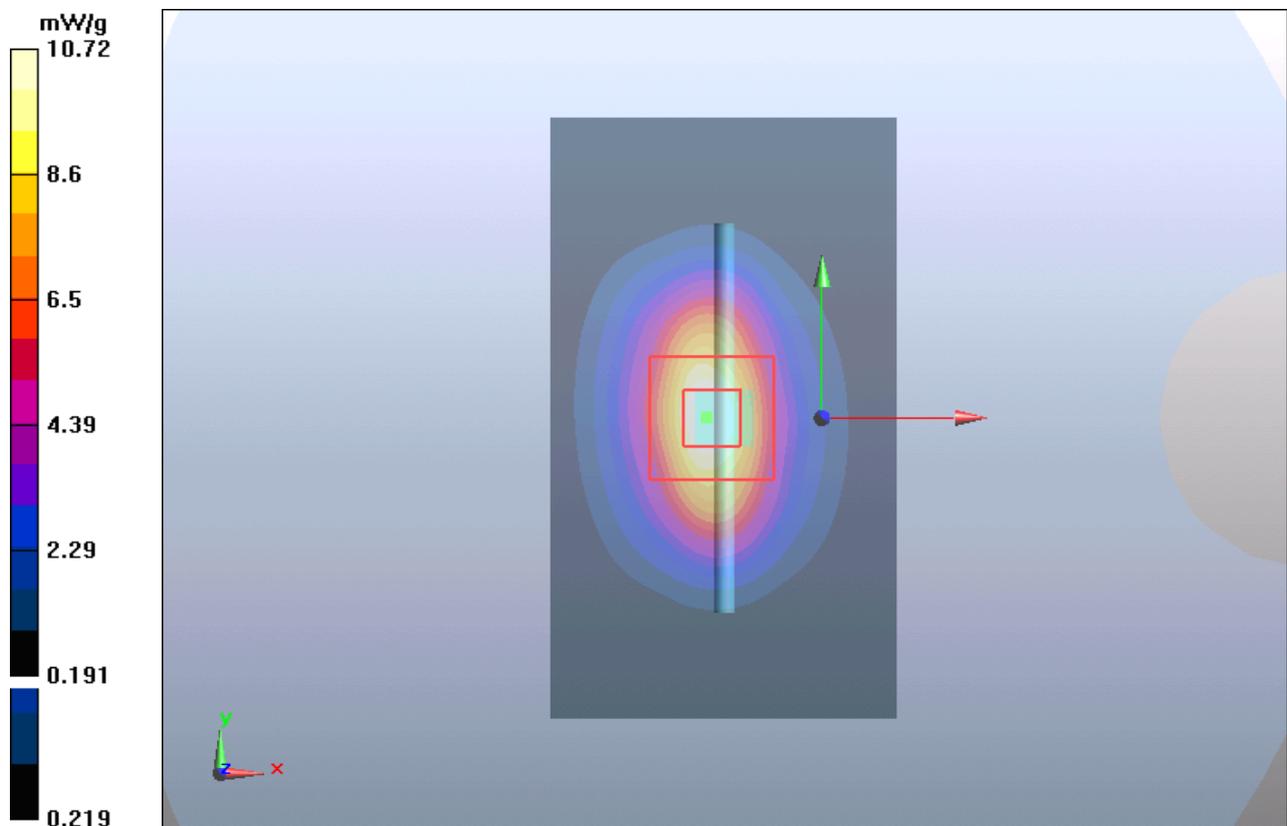


Figure 251 System Performance Check 1900MHz 250mW

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## System Performance Check at 1900 MHz Body TSL

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060**

Date/Time: 6/29/2013 6:45:25 AM

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

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.524$  mho/m;  $\epsilon_r = 52.56$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (41x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.0 mW/g

**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 82.3 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 17.8 W/kg

**SAR(1 g) = 9.92 mW/g; SAR(10 g) = 5.24 mW/g**

Maximum value of SAR (measured) = 11.32 mW/g

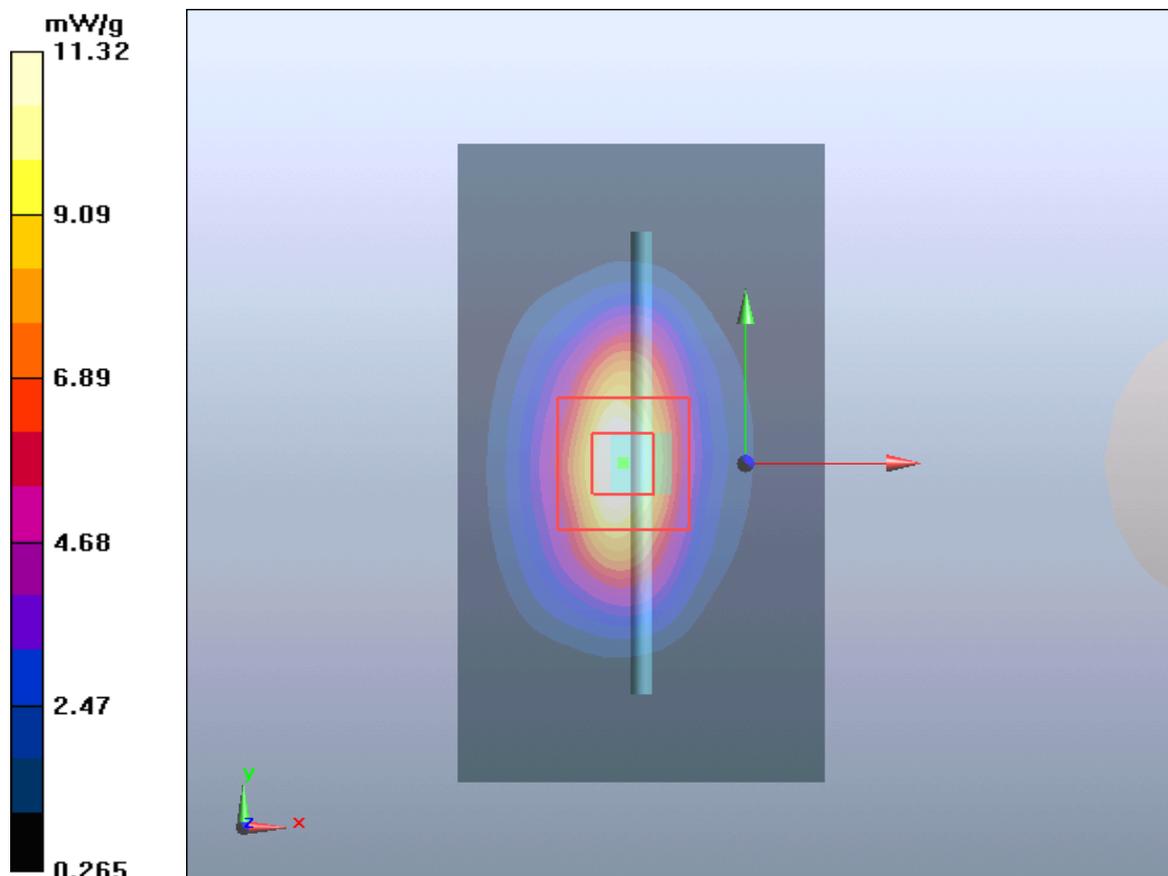


Figure 252 System Performance Check 1900MHz 250mW

**System Performance Check at 2450 MHz Head TSL**

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786**

Date/Time: 7/3/2013 4:00:12 PM

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

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.86$  mho/m;  $\epsilon_r = 38.53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (41x71x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 18.1 mW/g

**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 81.5 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 30 W/kg

**SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.20 mW/g**

Maximum value of SAR (measured) = 15.9 mW/g

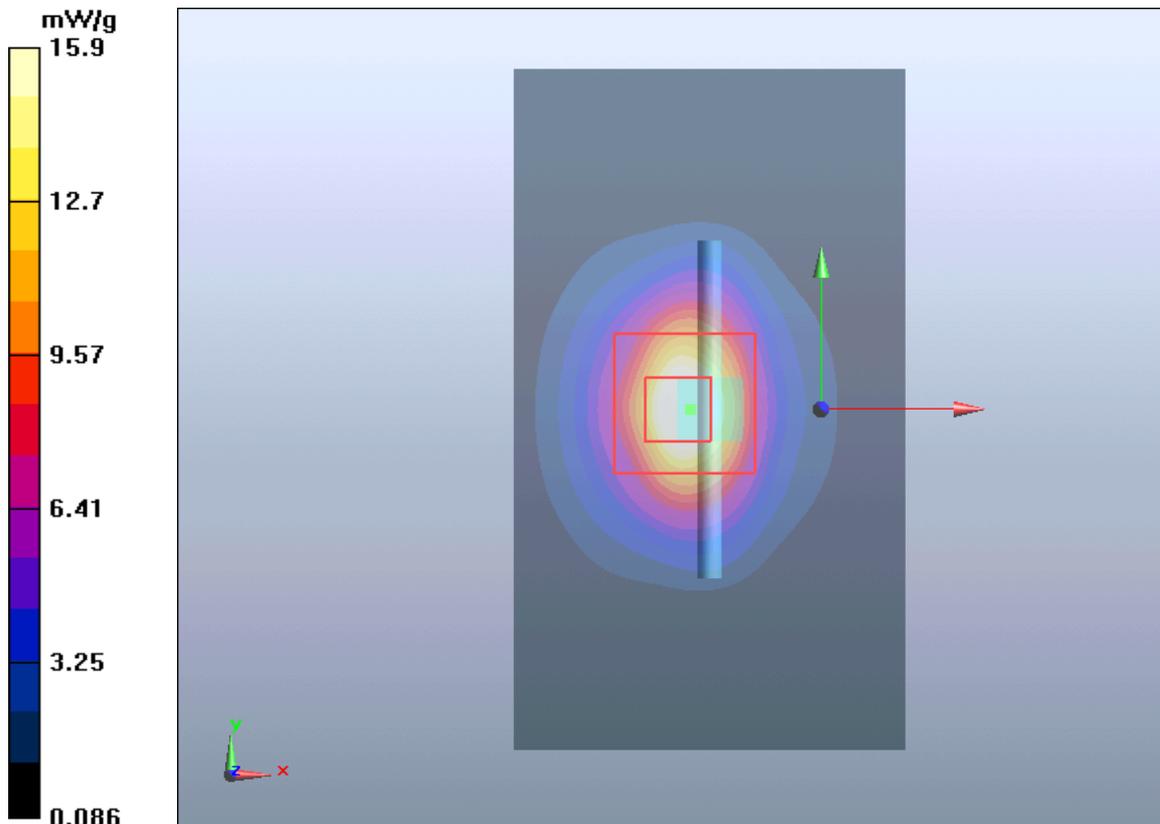


Figure 253 System Performance Check 2450MHz 250mW

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## System Performance Check at 2450 MHz Body TSL

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786**

Date/Time: 7/3/2013 2:33:59 PM

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

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.903$  mho/m;  $\epsilon_r = 51.69$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.9, 6.9, 6.9); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**d=10mm, Pin=250mW/Area Scan (41x71x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 16 mW/g

**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 81.2 V/m; Power Drift = 0.076 dB

Peak SAR (extrapolated) = 25.4 W/kg

**SAR(1 g) = 12.9 mW/g; SAR(10 g) = 6.13 mW/g**

Maximum value of SAR (measured) = 14.9 mW/g

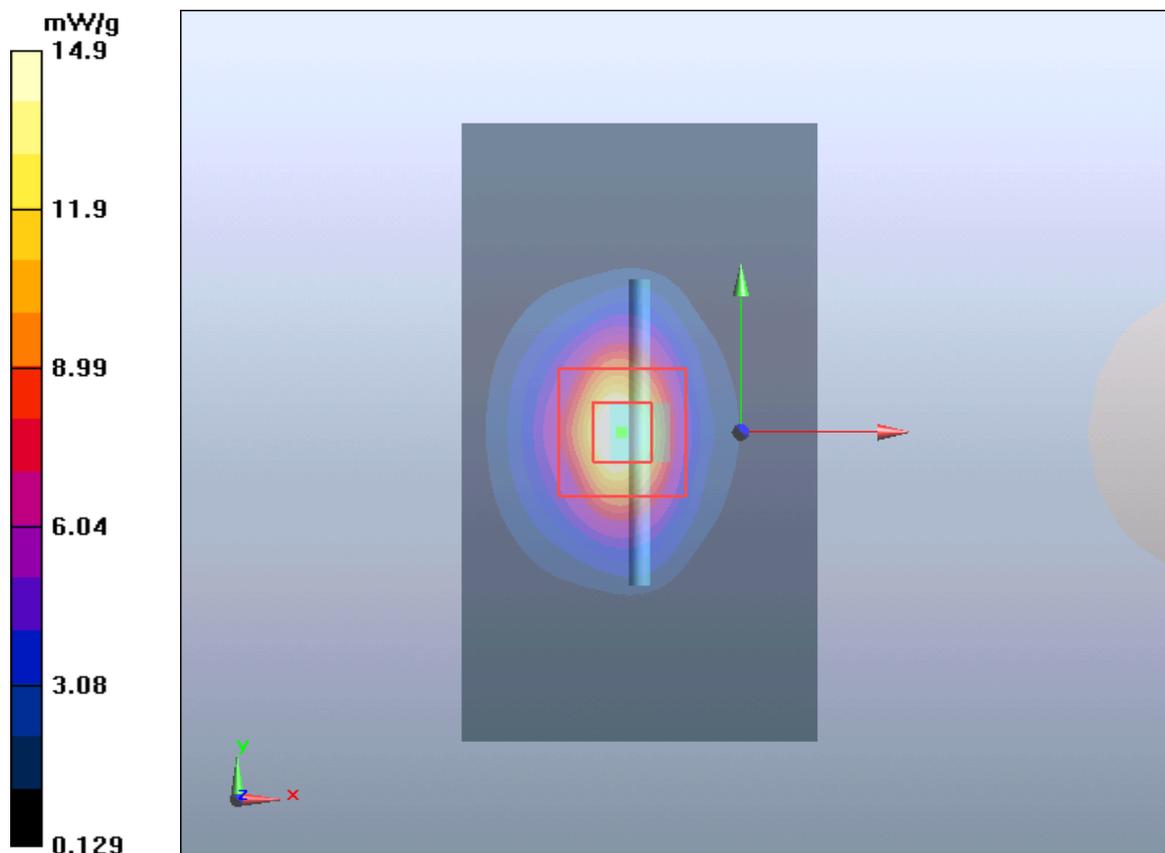


Figure 254 System Performance Check 2450MHz 250mW

## ANNEX G: Graph Results (New M931)

### CDMA Cellular Left Cheek Middle (SN: UWDC320XBGN01407)

Date/Time: 6/29/2013 10:37:41 PM

Communication System: CDMA ; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.918$  mho/m;  $\epsilon_r = 41.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Left Cheek Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.473 mW/g

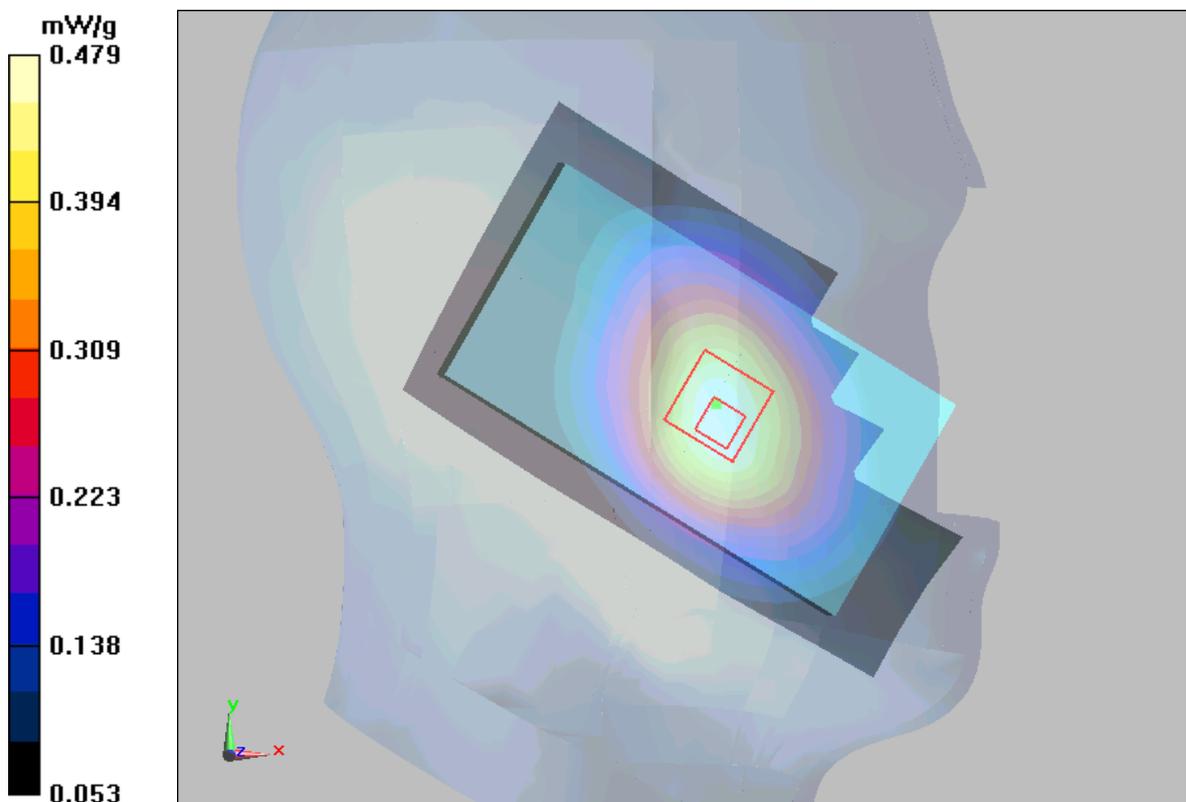
**Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.9 V/m; Power Drift = -0.085 dB

Peak SAR (extrapolated) = 0.604 W/kg

**SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.341 mW/g**

Maximum value of SAR (measured) = 0.479 mW/g



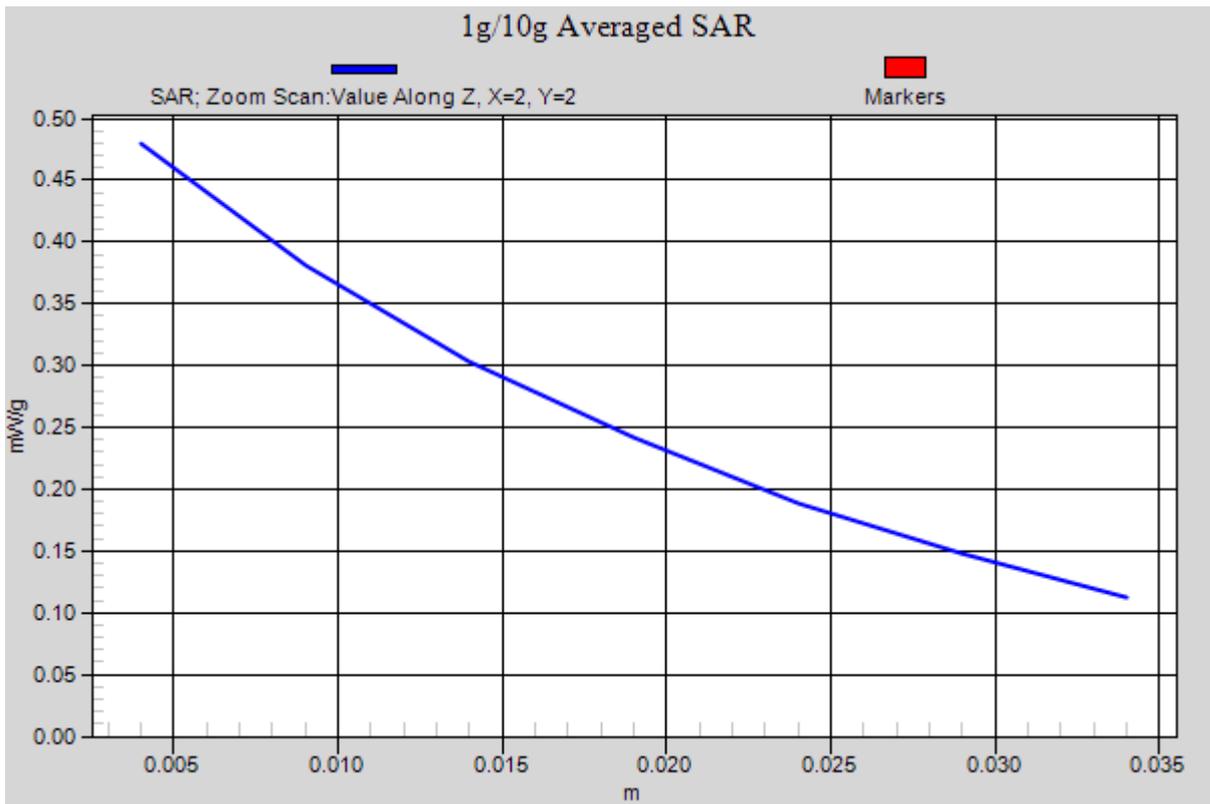


Figure 255 CDMA Cellular Left Hand Touch Cheek Channel 384

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**CDMA Cellular Back Side High (SN: MAIC702X03600810, Distance 10mm)**

Date/Time: 6/29/2013 6:26:28 PM

Communication System: CDMA ; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 848.31$  MHz;  $\sigma = 1.02$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.646 mW/g

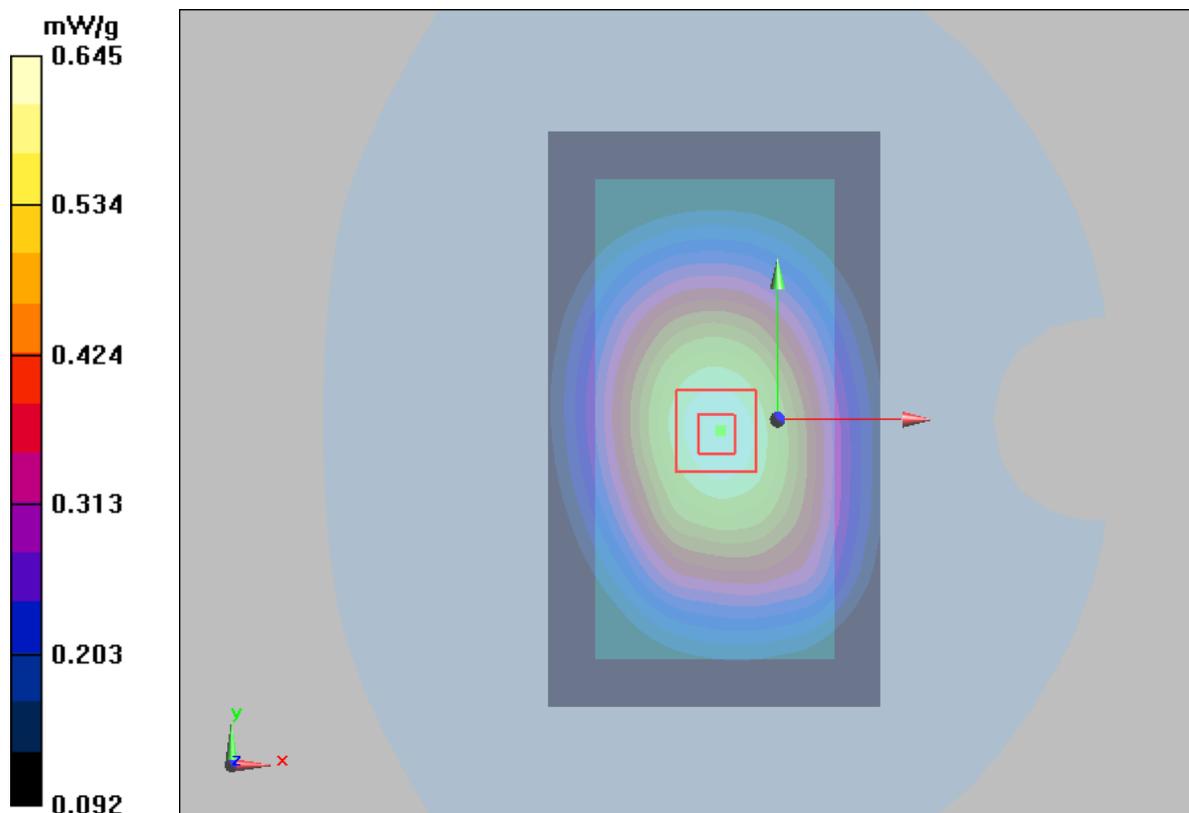
**Back Side High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.4 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 0.767 W/kg

**SAR(1 g) = 0.614 mW/g; SAR(10 g) = 0.460 mW/g**

Maximum value of SAR (measured) = 0.645 mW/g



**Figure 256 Body, CDMA Cellular Back Side Channel 1013**

**CDMA Cellular Back Side Middle (SN: MAIC702X03600810, Distance 10mm)**

Date/Time: 6/29/2013 6:03:02 PM

Communication System: CDMA ; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 837$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.774 mW/g

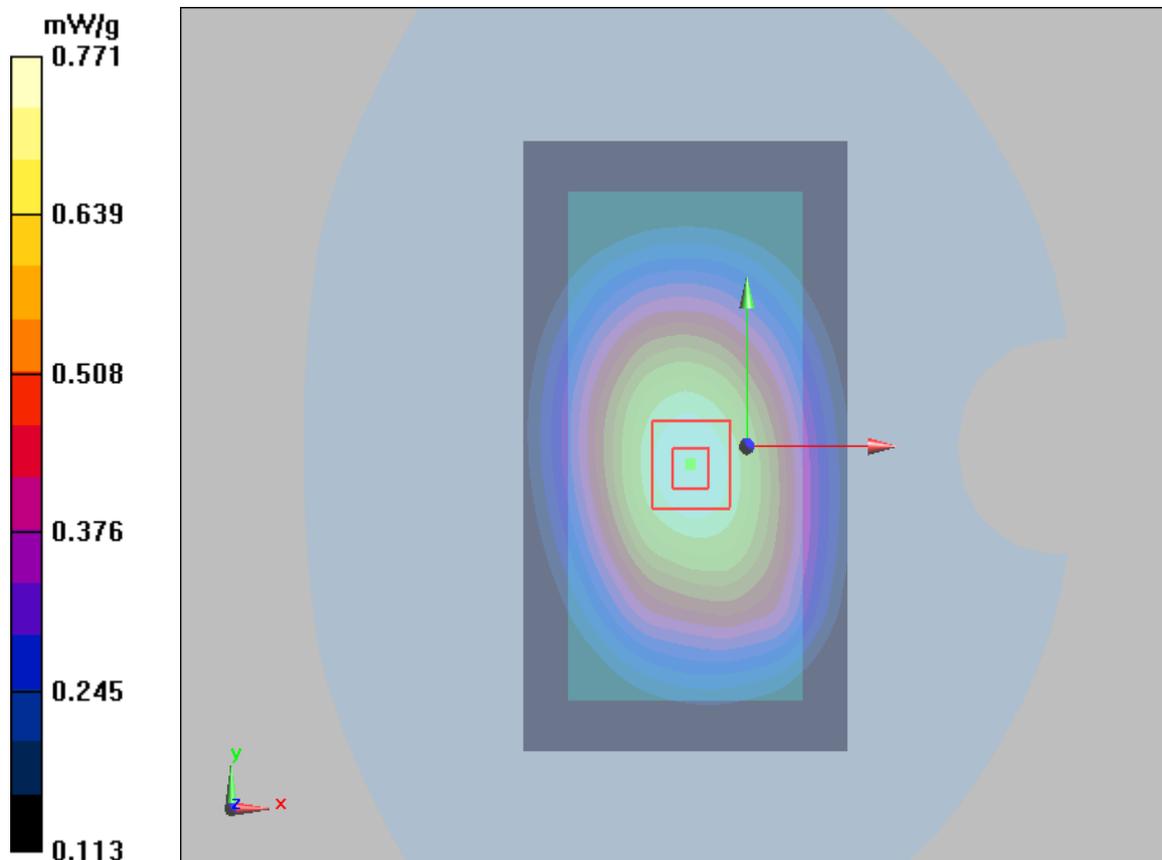
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.5 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.915 W/kg

**SAR(1 g) = 0.728 mW/g; SAR(10 g) = 0.543 mW/g**

Maximum value of SAR (measured) = 0.771 mW/g



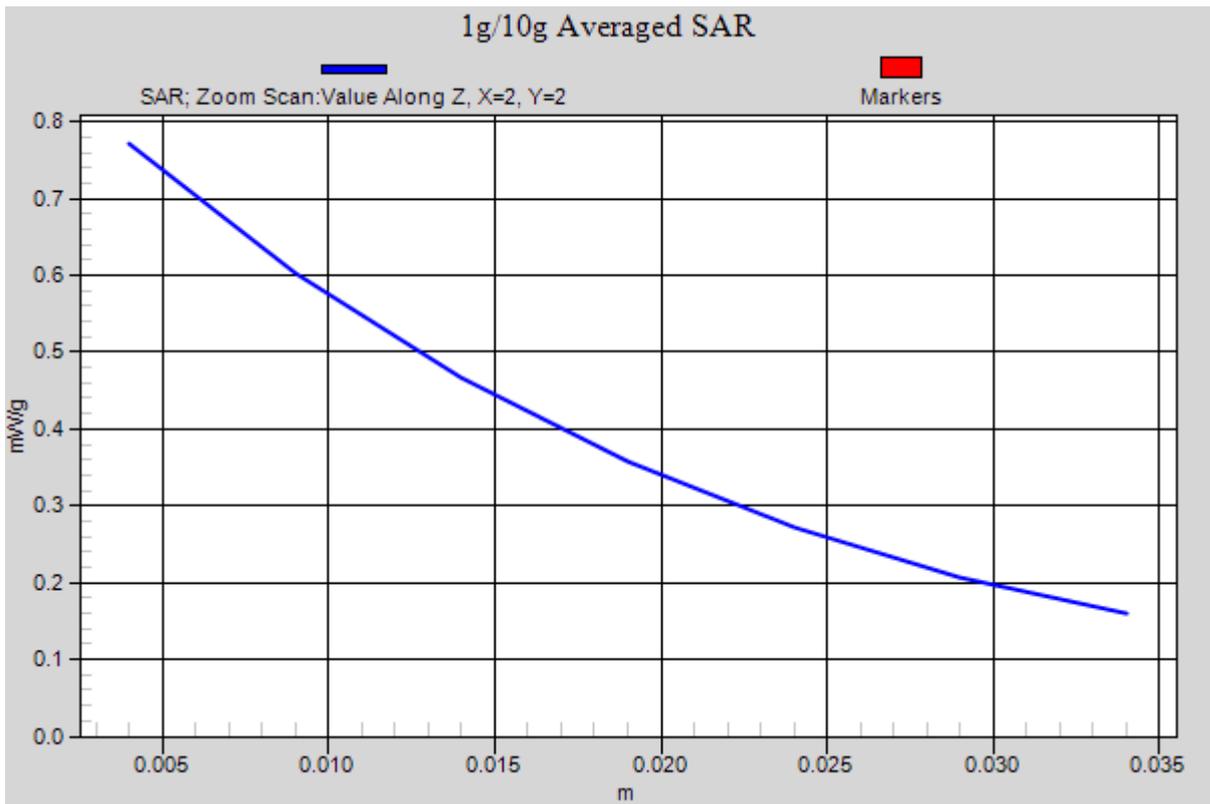


Figure 257 Body, CDMA Cellular Back Side Channel 384

**TA Technology (Shanghai) Co., Ltd.**  
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**CDMA Cellular Back Side Low (SN: MAIC702X03600810, Distance 10mm)**

Date/Time: 6/29/2013 6:46:14 PM

Communication System: CDMA ; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 825$  MHz;  $\sigma = 1$  mho/m;  $\epsilon_r = 54.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.488 mW/g

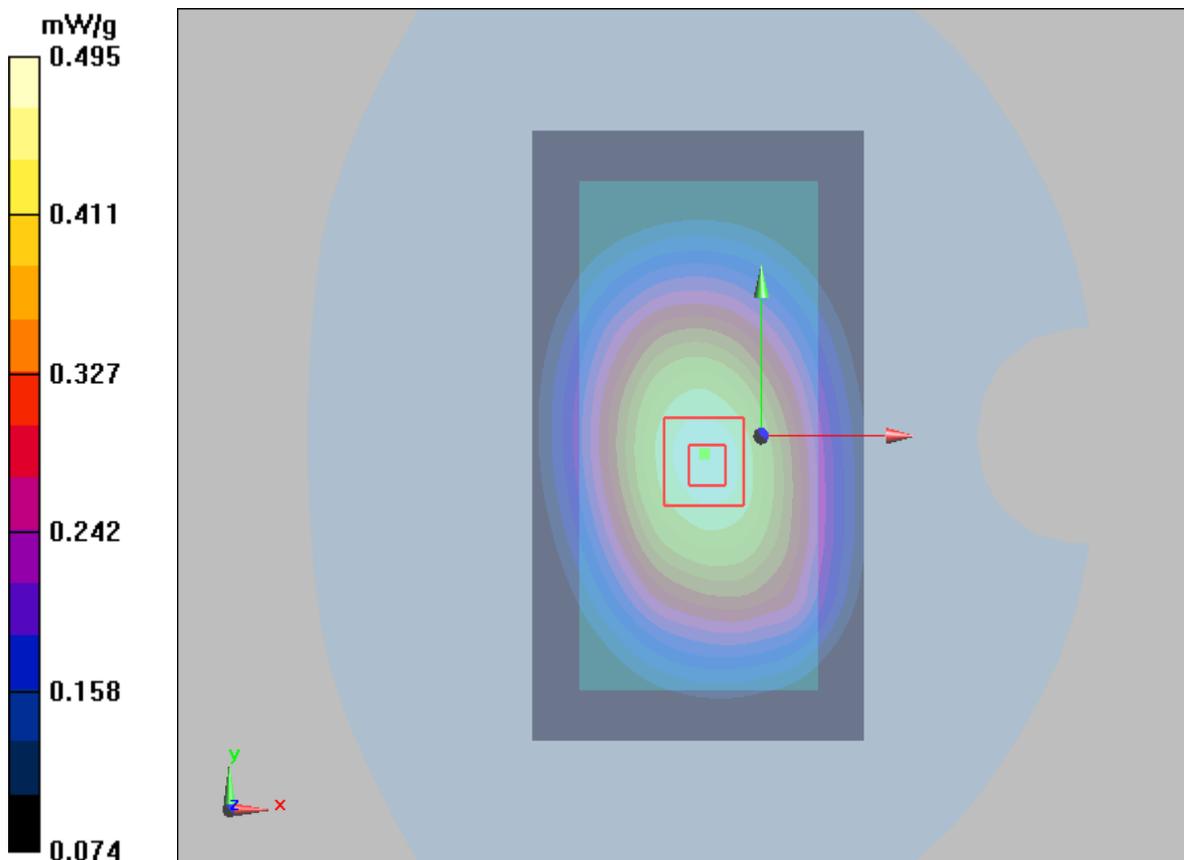
**Back Side Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.2 V/m; Power Drift = 0.057 dB

Peak SAR (extrapolated) = 0.597 W/kg

**SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.354 mW/g**

Maximum value of SAR (measured) = 0.495 mW/g



**Figure 258 Body, CDMA Cellular Back Side Channel 777**

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## CDMA PCS Left Cheek Middle (SN: UWDC320XBGN01407)

Date/Time: 6/29/2013 11:43:39 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.43$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Left Cheek Middle /Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.469 mW/g

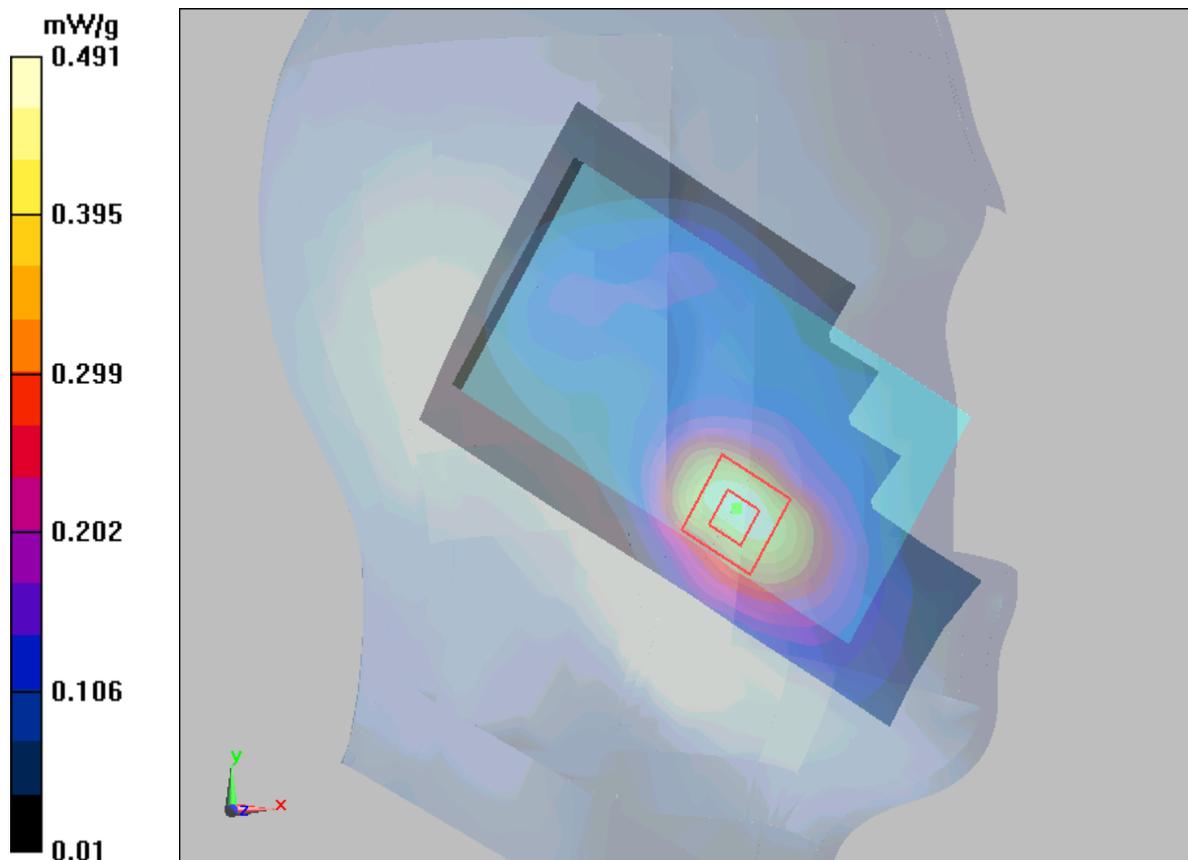
**Left Cheek Middle /Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.93 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.695 W/kg

**SAR(1 g) = 0.452 mW/g; SAR(10 g) = 0.277 mW/g**

Maximum value of SAR (measured) = 0.491 mW/g



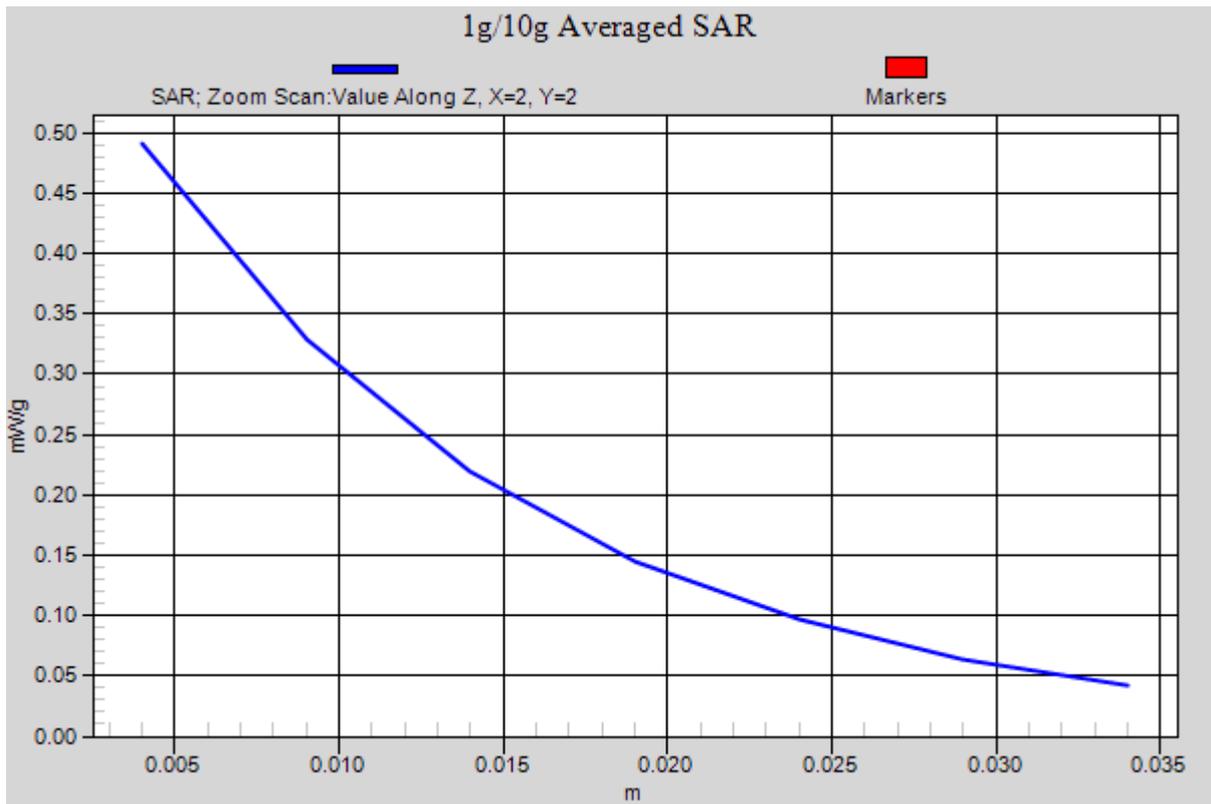


Figure 259 CDMA PCS Left Hand Touch Cheek Channel 600

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## CDMA PCS Bottom Edge High (SN: UWDC320XBG01407, Distance 10mm)

Date/Time: 6/29/2013 7:15:55 PM

Communication System: CDMA ; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1909$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 52.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Bottom Side Middle/Area Scan (31x61x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.08 mW/g

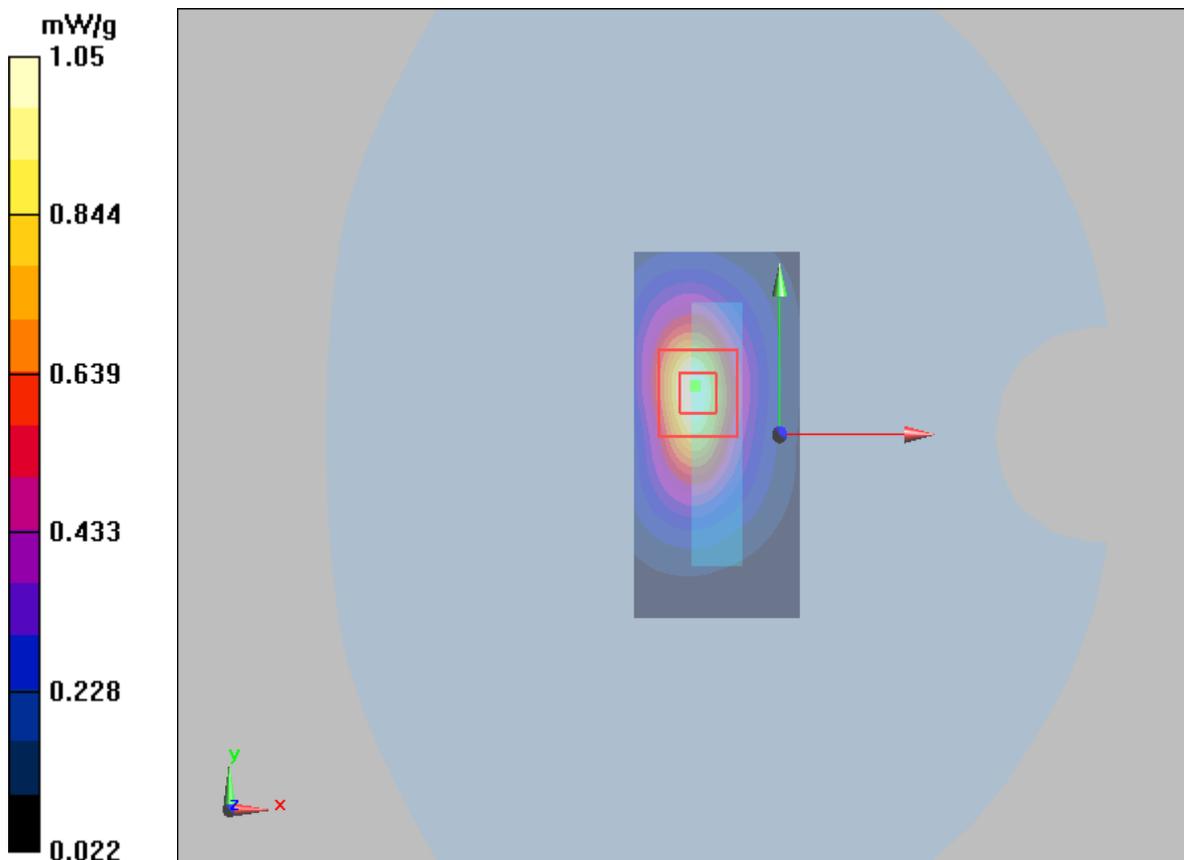
**Bottom Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.8 V/m; Power Drift = 0.055 dB

Peak SAR (extrapolated) = 1.65 W/kg

**SAR(1 g) = 0.960 mW/g; SAR(10 g) = 0.515 mW/g**

Maximum value of SAR (measured) = 1.05 mW/g



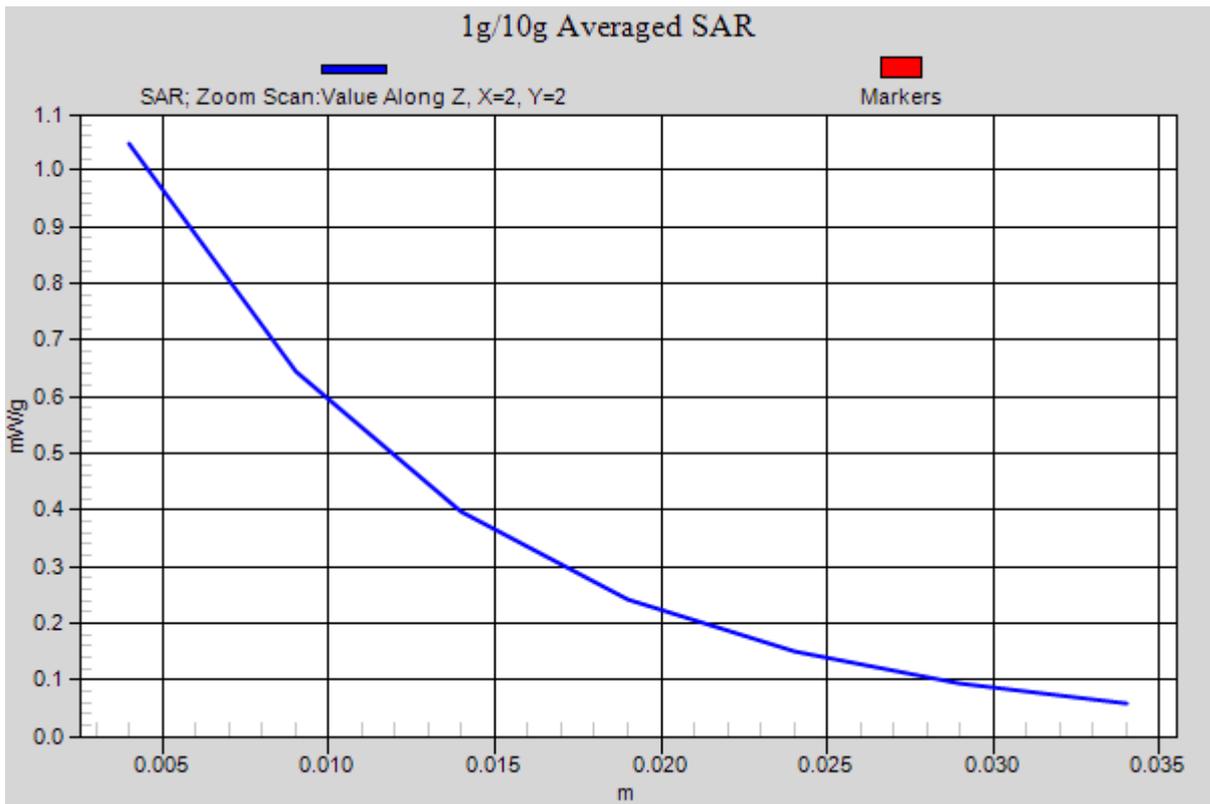


Figure 260 Body, CDMA PCS Bottom Edge Channel 1175

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**CDMA PCS Bottom Edge with 1xadvance High (SN: UWDC320XBGN01407, Distance 10mm)**

Date/Time: 6/29/2013 7:56:18 PM

Communication System: CDMA ; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1909$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 52.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Bottom Side with 1xadvance High/Area Scan (31x61x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1 mW/g

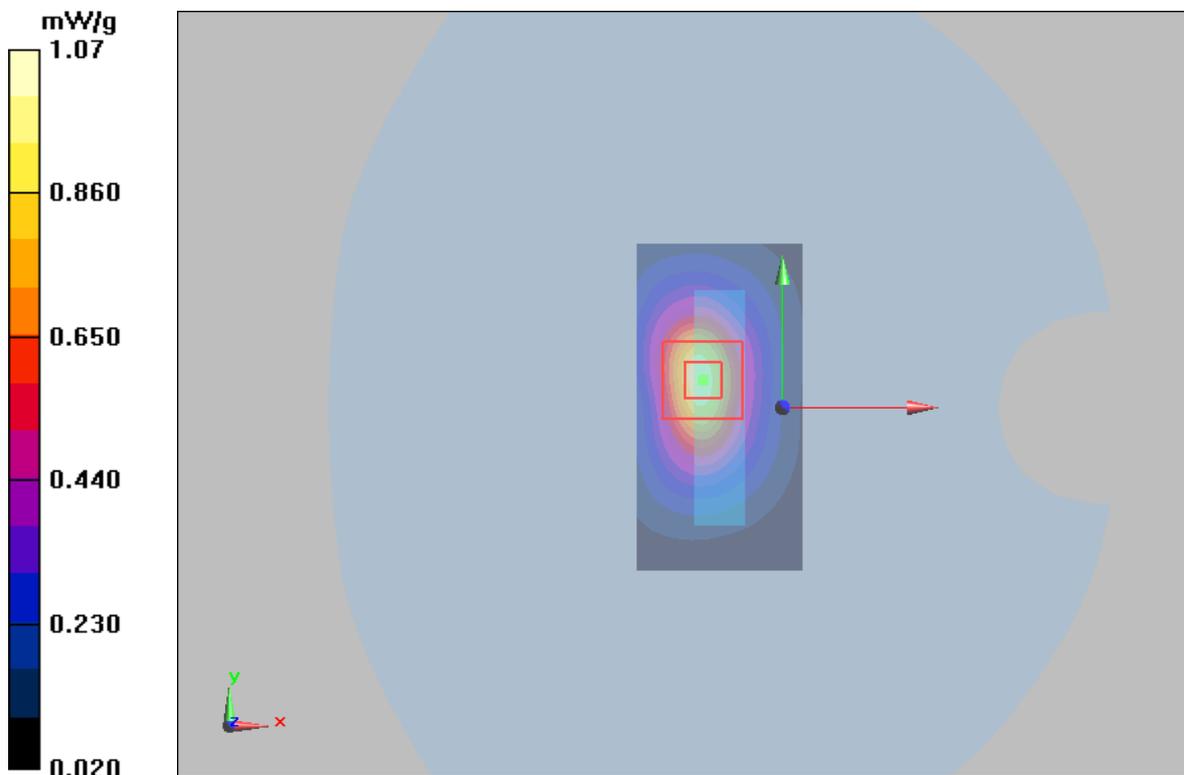
**Bottom Side with 1xadvance High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.1 V/m; Power Drift = 0.147 dB

Peak SAR (extrapolated) = 1.64 W/kg

**SAR(1 g) = 0.951 mW/g; SAR(10 g) = 0.507 mW/g**

Maximum value of SAR (measured) = 1.07 mW/g



**Figure 261 Body, CDMA PCS Bottom Edge Channel 1175**

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**CDMA PCS Bottom Edge High (SN: UWDC320XBGN01407, Distance 10mm)**

Date/Time: 6/29/2013 7:30:57 PM

Communication System: CDMA ; Frequency: 1908.75 MHz;Duty Cycle: 1:1

Medium parameters used:  $f = 1909$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 52.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature:22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Bottom Side High/Area Scan (31x61x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.03 mW/g

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

Reference Value = 22.3 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 1.57 W/kg

**SAR(1 g) = 0.910 mW/g; SAR(10 g) = 0.490 mW/g**

Maximum value of SAR (measured) = 0.971 mW/g

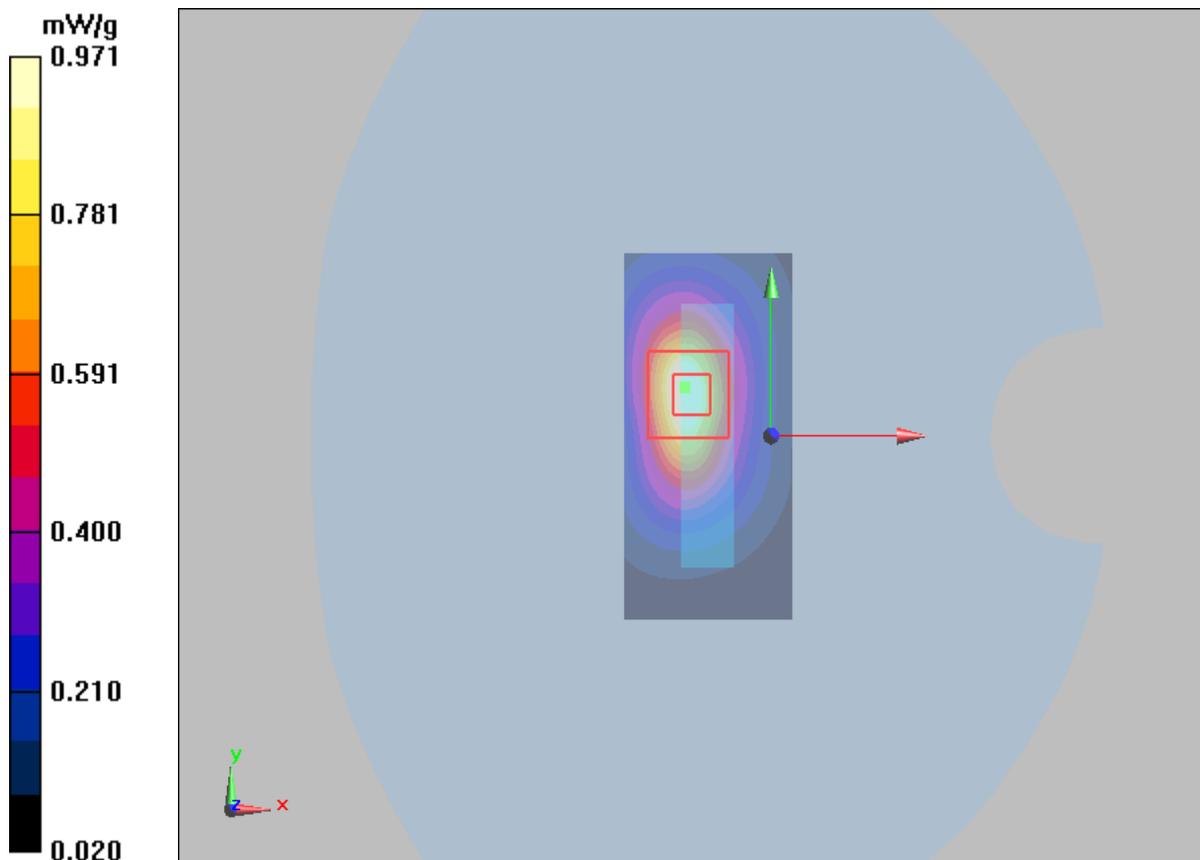


Figure 262 Body, CDMA PCS Bottom Edge Channel 1175

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## CDMA AWS Left Cheek Middle (SN: UWDC320XBGN01407)

Date/Time: 6/30/2013 1:20:33 AM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.38$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Left Cheek Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.613 mW/g

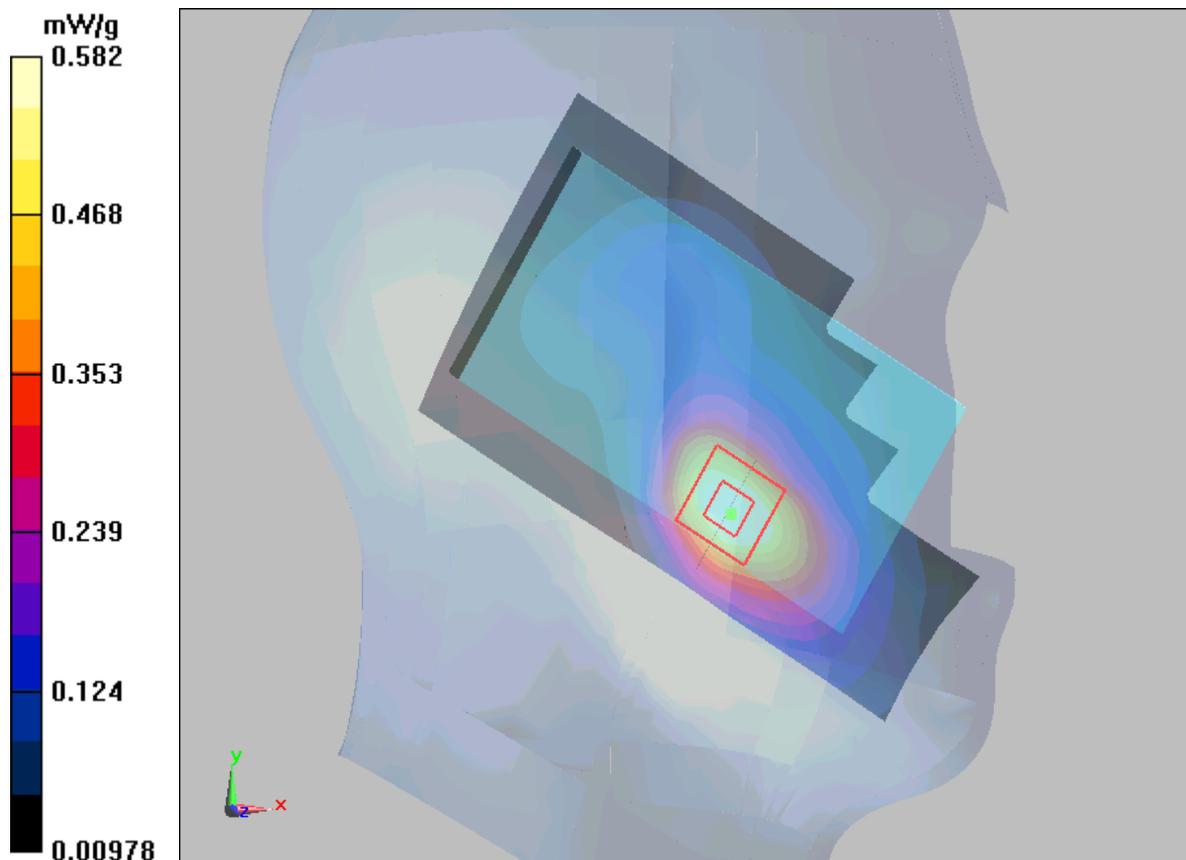
**Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.06 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 0.825 W/kg

**SAR(1 g) = 0.535 mW/g; SAR(10 g) = 0.330 mW/g**

Maximum value of SAR (measured) = 0.582 mW/g



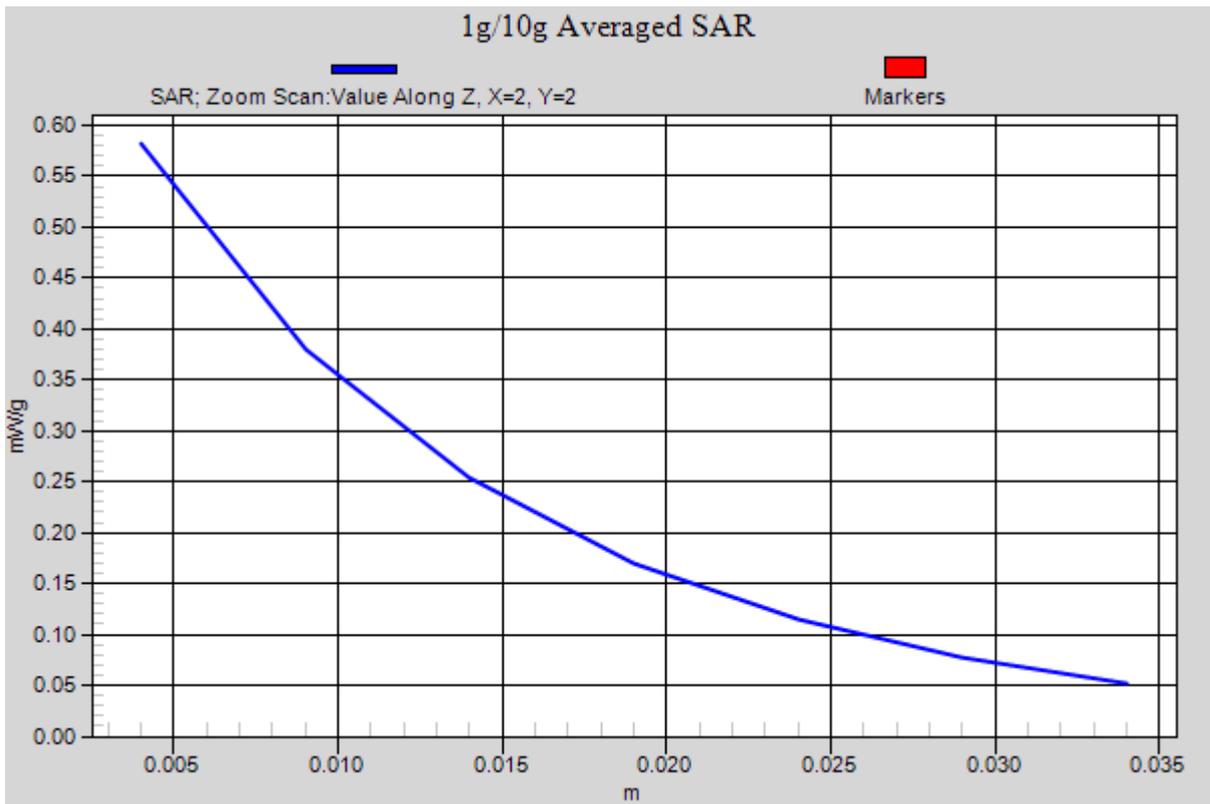


Figure 263 CDMA AWS Left Hand Touch Cheek Channel 450

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## CDMA AWS Back Side Middle (SN: UWDC320XBGN01407, Distance 10mm)

Date/Time: 6/30/2013 3:11:00 AM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 52.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature:22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle /Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.816 mW/g

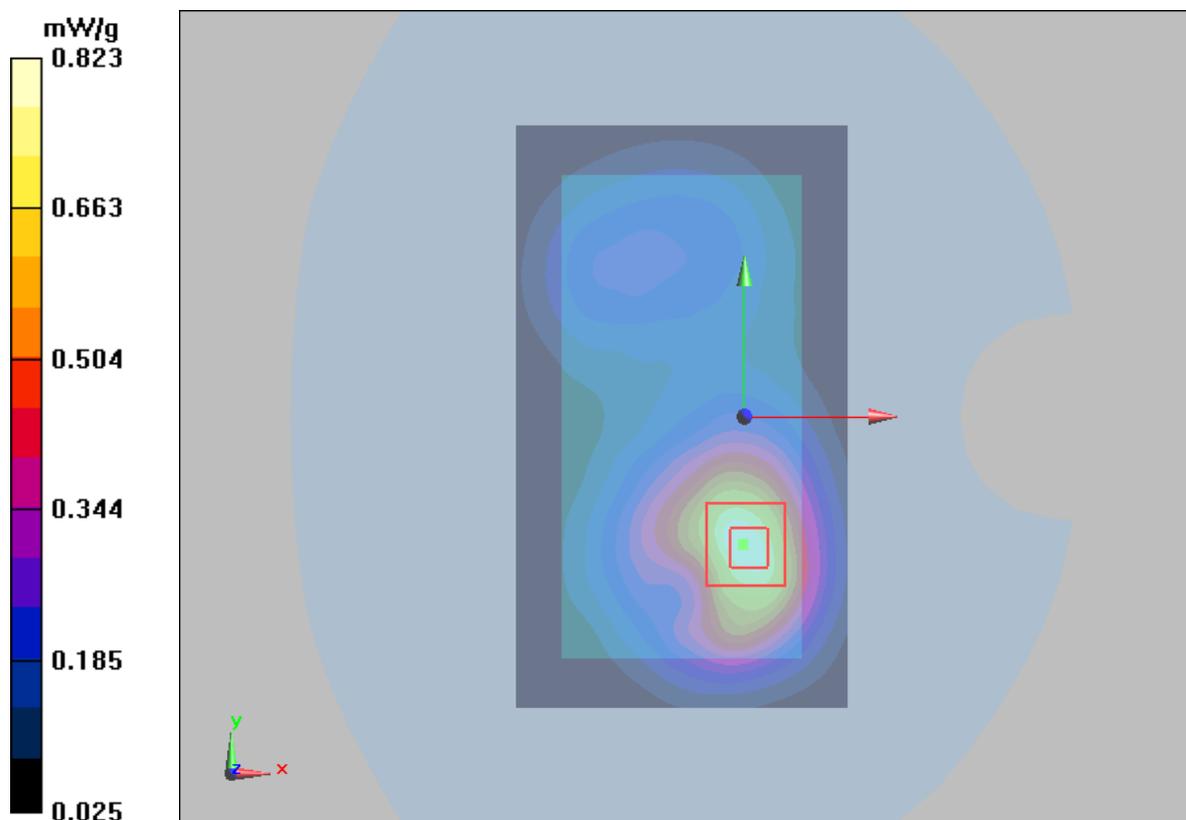
**Back Side Middle /Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.4 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.762 mW/g; SAR(10 g) = 0.457 mW/g**

Maximum value of SAR (measured) = 0.823 mW/g



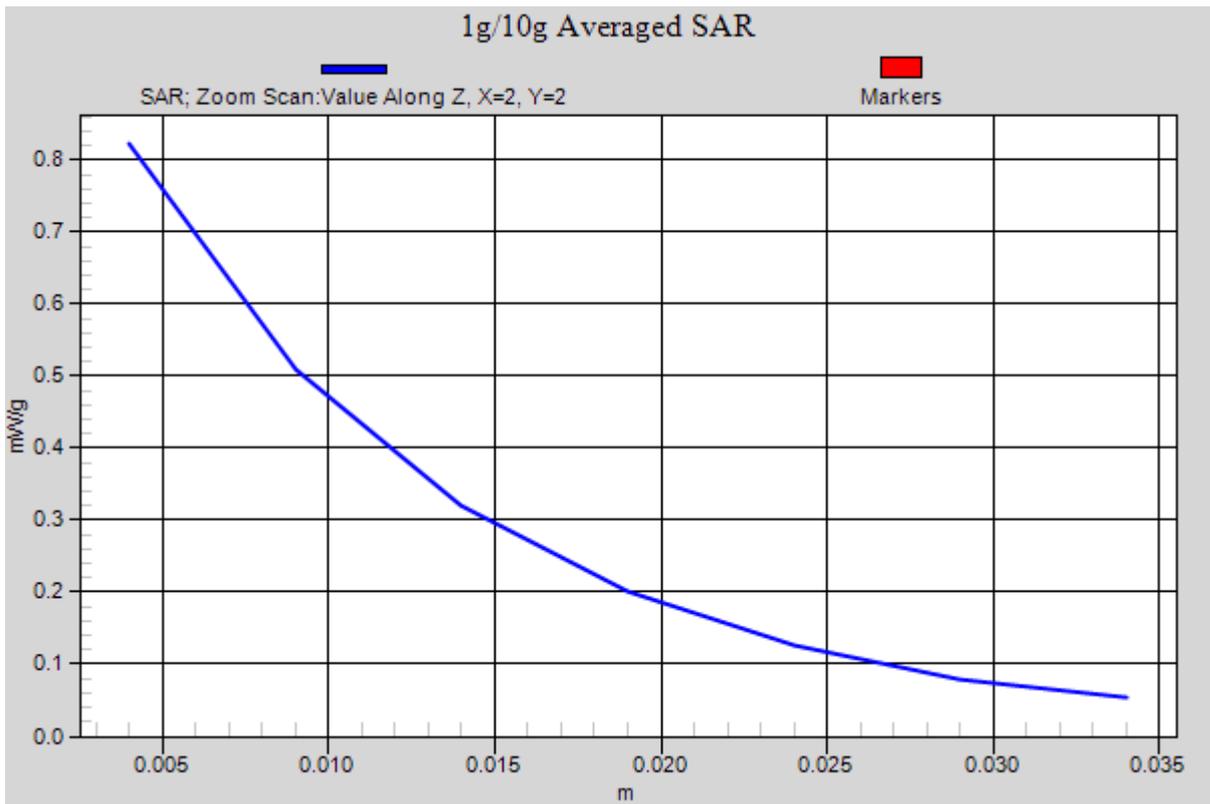


Figure 264 Body, CDMA AWS Back Side Channel 450

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## LTE Band 2 with 1 RB Right Cheek Low (SN: UWDC320XBGN01407,10MHz, QPSK)

Date/Time: 6/30/2013 5:58:12 PM

Communication System: LTE; Frequency: 1855 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1855$  MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r = 38.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Right Cheek Low /Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.988 mW/g

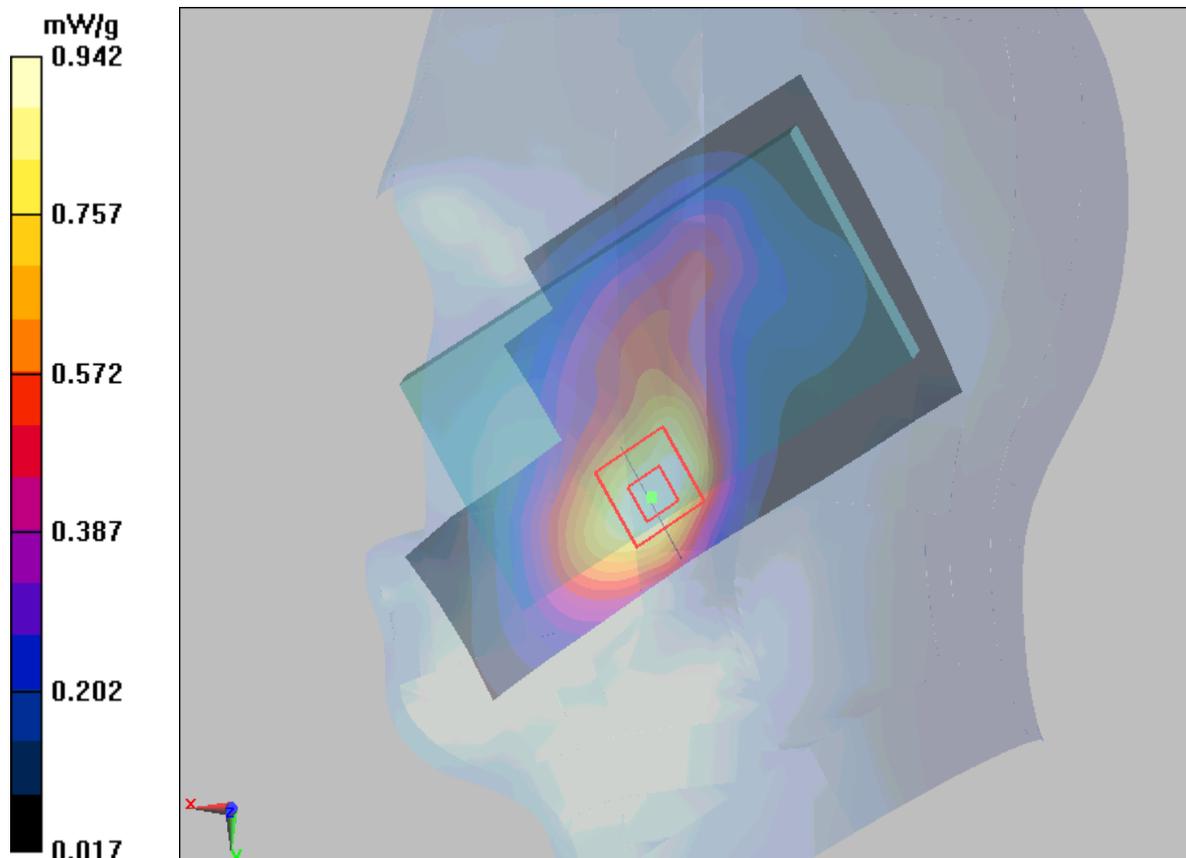
**Right Cheek Low /Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.5 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 1.31 W/kg

**SAR(1 g) = 0.873 mW/g; SAR(10 g) = 0.564 mW/g**

Maximum value of SAR (measured) = 0.942 mW/g



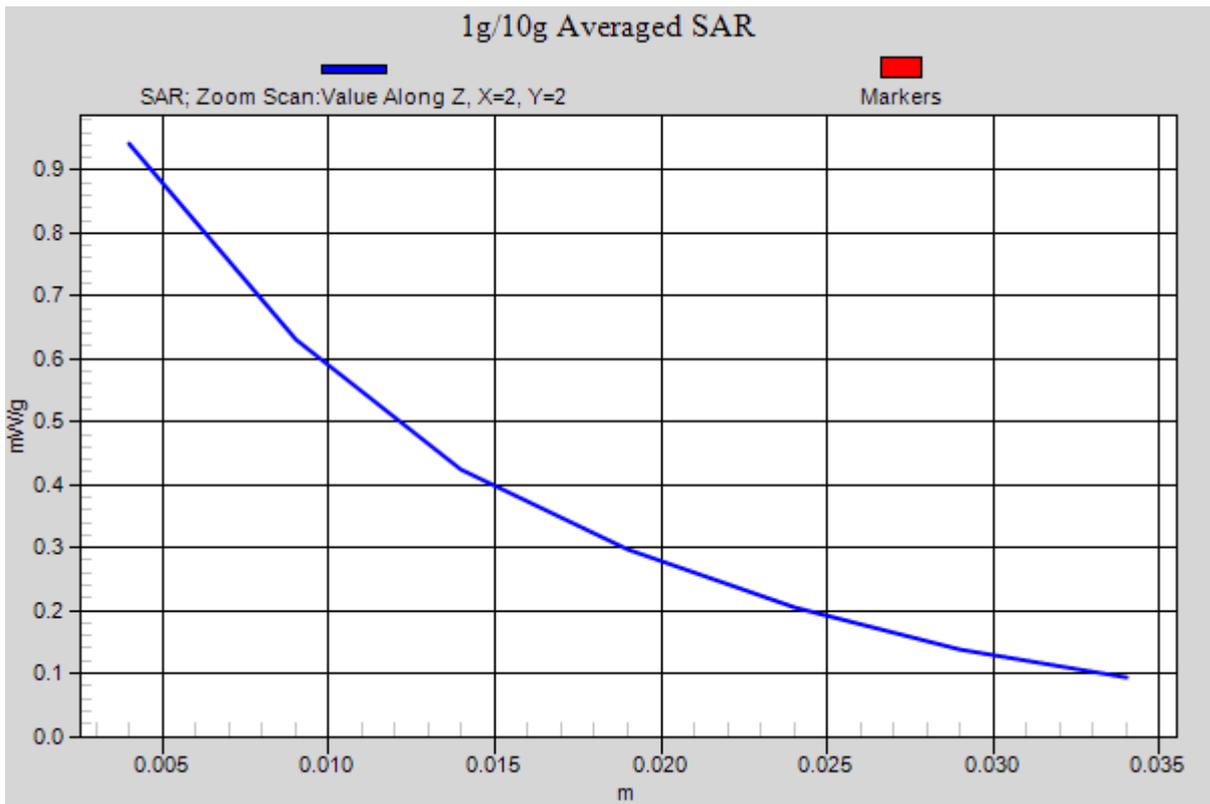


Figure 265 LTE Band 2 with 1 RB Right Hand Touch Cheek Channel 18650

TA Technology (Shanghai) Co., Ltd.  
Test Report

**LTE Band 2 with 1 RB Back Side Middle (SN: UWDC320XBGN01407,10MHz, SN: UWDC320XBGN01407, Distance 15mm, QPSK, Low end)**

Date/Time: 6/29/2013 9:07:09 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle(0 offset) /Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.56 mW/g

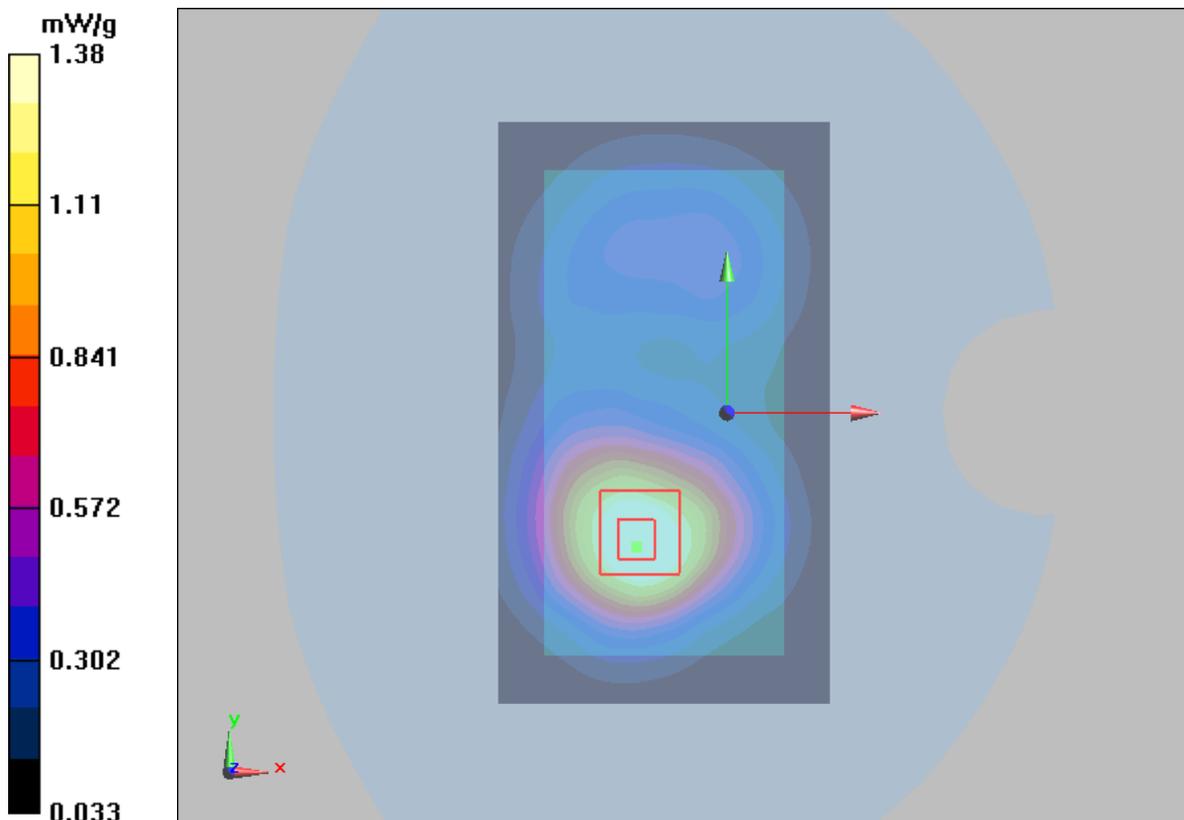
**Back Side Middle(0 offset) /Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.3 V/m; Power Drift = -0.033 dB

Peak SAR (extrapolated) = 1.96 W/kg

**SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.792 mW/g**

Maximum value of SAR (measured) = 1.38 mW/g



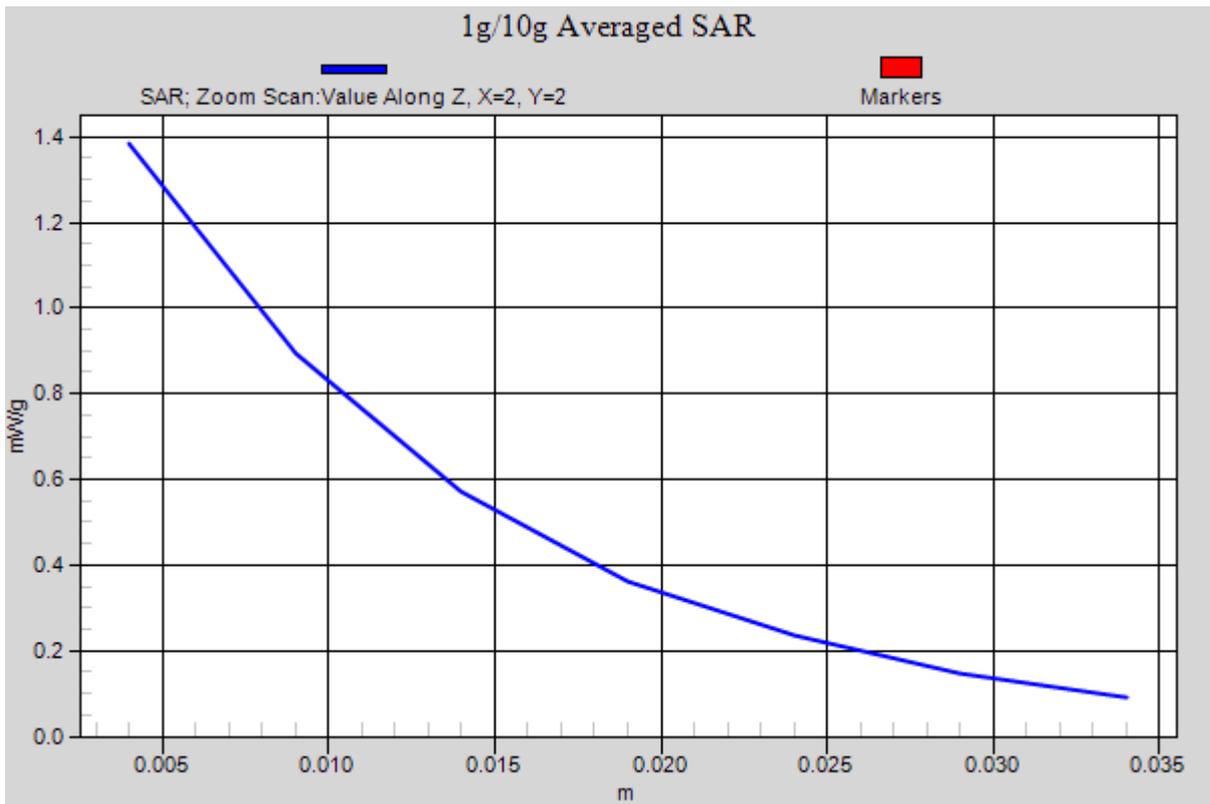


Figure 266 Body, LTE Band 2 with 1 RB Back Side Channel 18900

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**LTE Band 2 with 1 RB Back Side Middle (SN: UWDC320XBG01407,10MHz, SN: UWDC320XBG01407, Distance 15mm, QPSK, High end)**

Date/Time: 6/29/2013 8:41:22 PM

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

Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.43$  mho/m;  $\epsilon_r = 52.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle(99 offset)/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.28 mW/g

**Back Side Middle(99 offset)/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.3 V/m; Power Drift = 0.063 dB

Peak SAR (extrapolated) = 1.75 W/kg

**SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.705 mW/g**

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

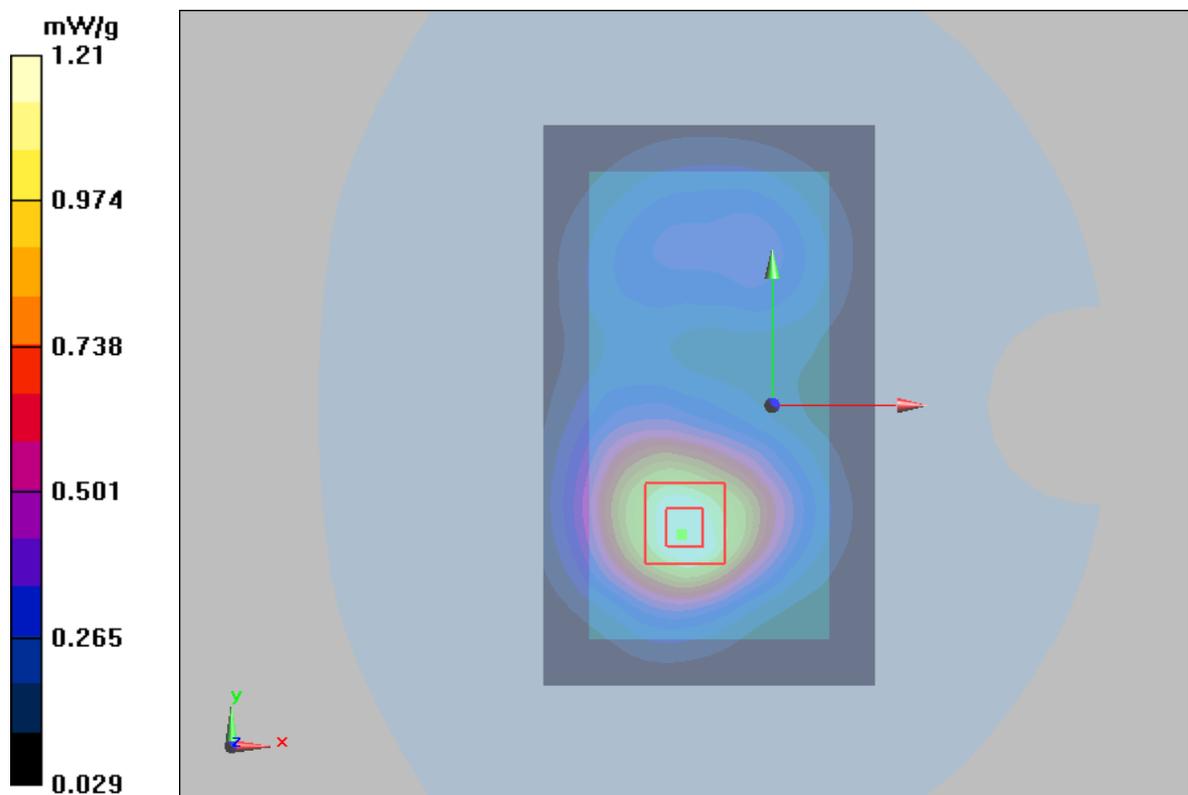


Figure 267 Body, LTE Band 2 with 1 RB Back Side Channel 18900

**TA Technology (Shanghai) Co., Ltd.**  
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**LTE Band 2 with 1 RB Back Side Middle (SN: UWDC320XBGN01407,10MHz, SN: MAIC702X03600810, Distance 15mm, QPSK)**

Date/Time: 6/29/2013 9:23:42 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle(0 offset)/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.44 mW/g

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

Reference Value = 14.8 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 3.43 W/kg

**SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.770 mW/g**

Maximum value of SAR (measured) = 1.83 mW/g

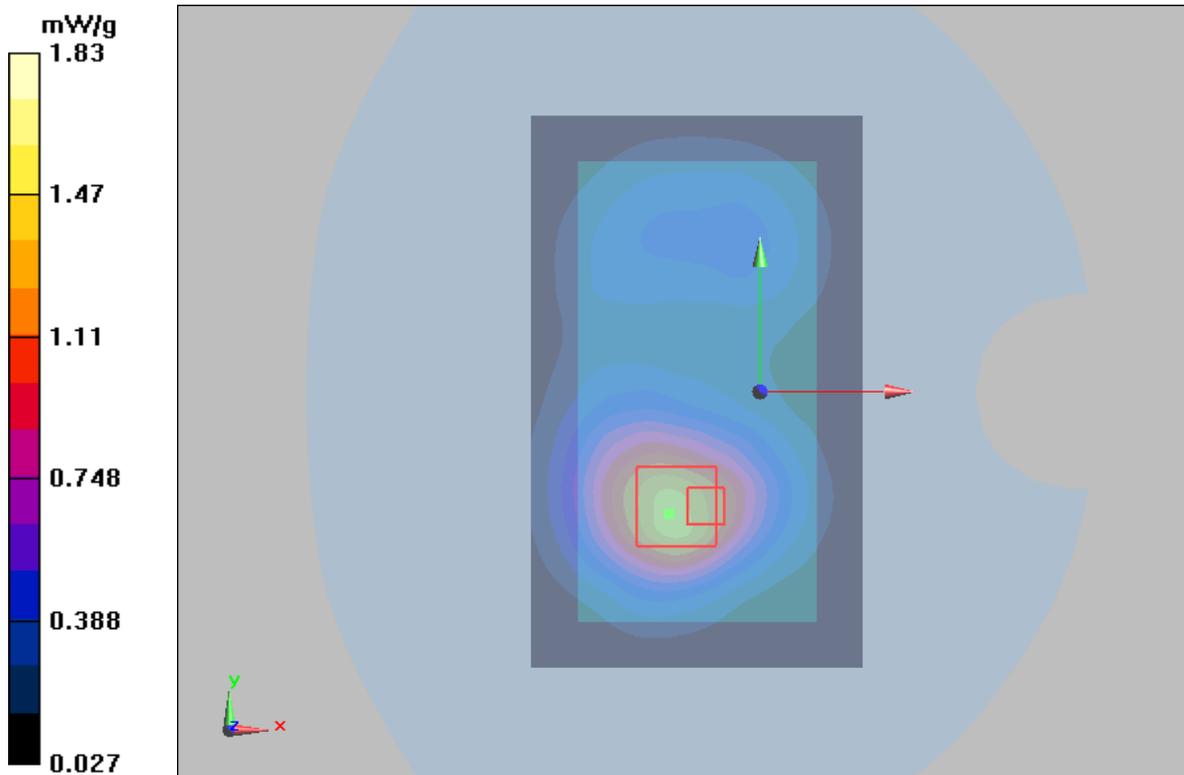


Figure 268 Body, LTE Band 2 with 1 RB Back Side Channel 18900

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## LTE Band 4 with 1 RB Right Cheek High (SN: UWDC320XBGN01407,10MHz, QPSK)

Date/Time: 6/30/2013 1:56:56 AM

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

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Right Cheek High/Area Scan (51x121x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.895 mW/g

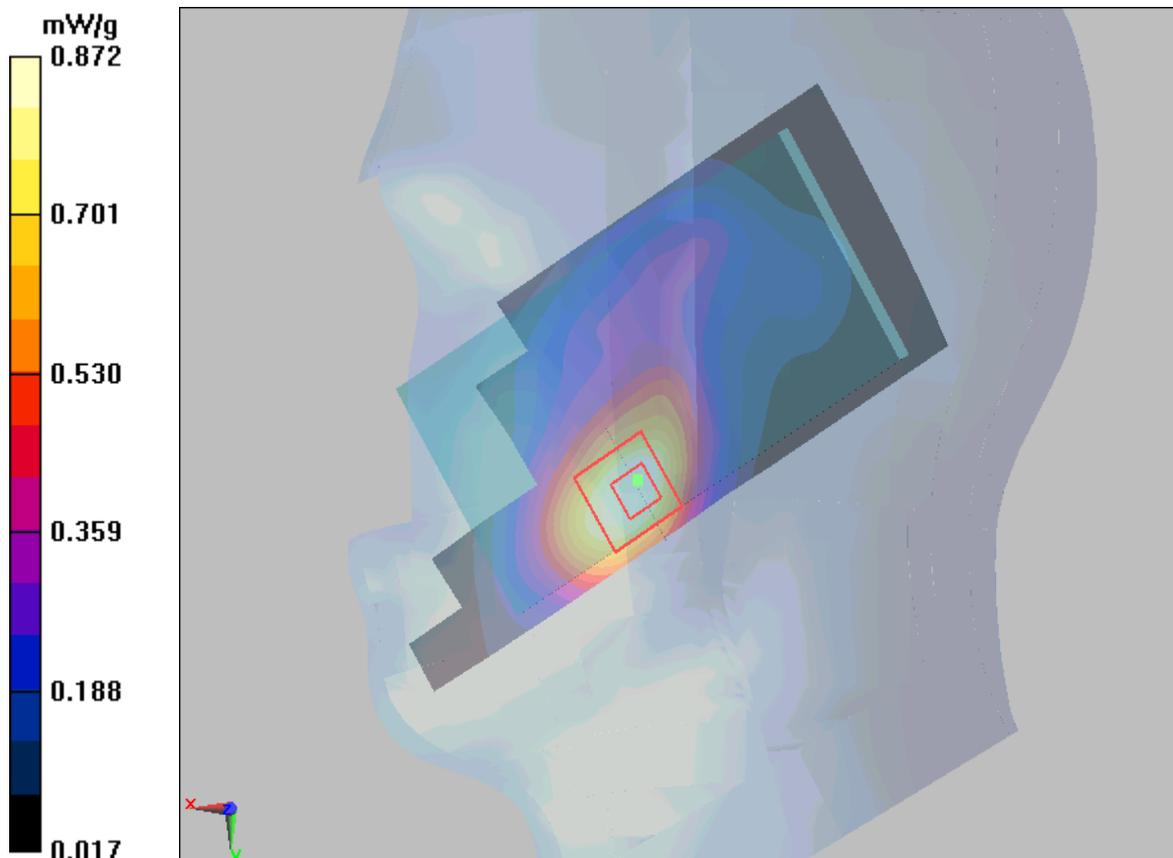
**Right Cheek High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11 V/m; Power Drift = -0.009 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.808 mW/g; SAR(10 g) = 0.512 mW/g**

Maximum value of SAR (measured) = 0.872 mW/g



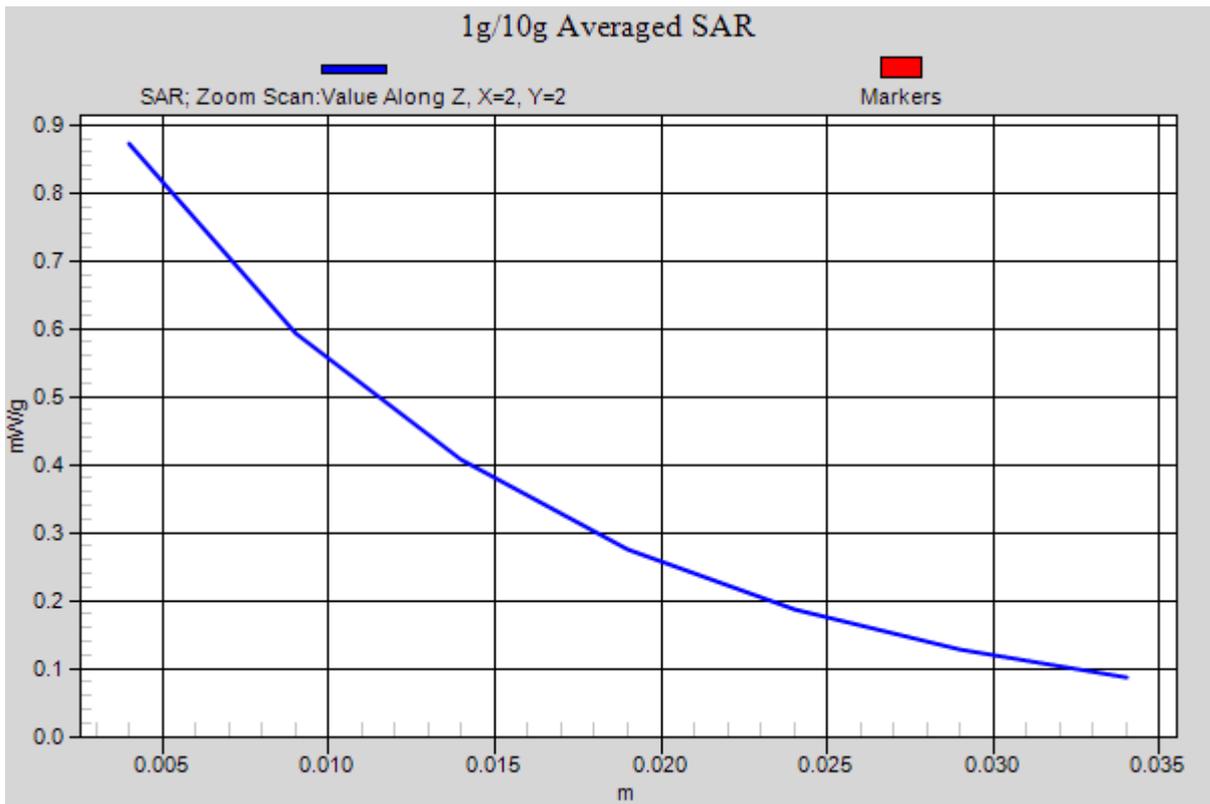


Figure 269 LTE Band 4 with 1 RB Right Hand Touch Cheek Channel 20350

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**LTE Band 4 with 1 RB Back Side Middle (10MHz, SN: UWDC320XBGN01407, Distance 10mm, QPSK, Low end)**

Date/Time: 6/30/2013 10:51:14 AM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 52.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle(Low)/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.38 mW/g

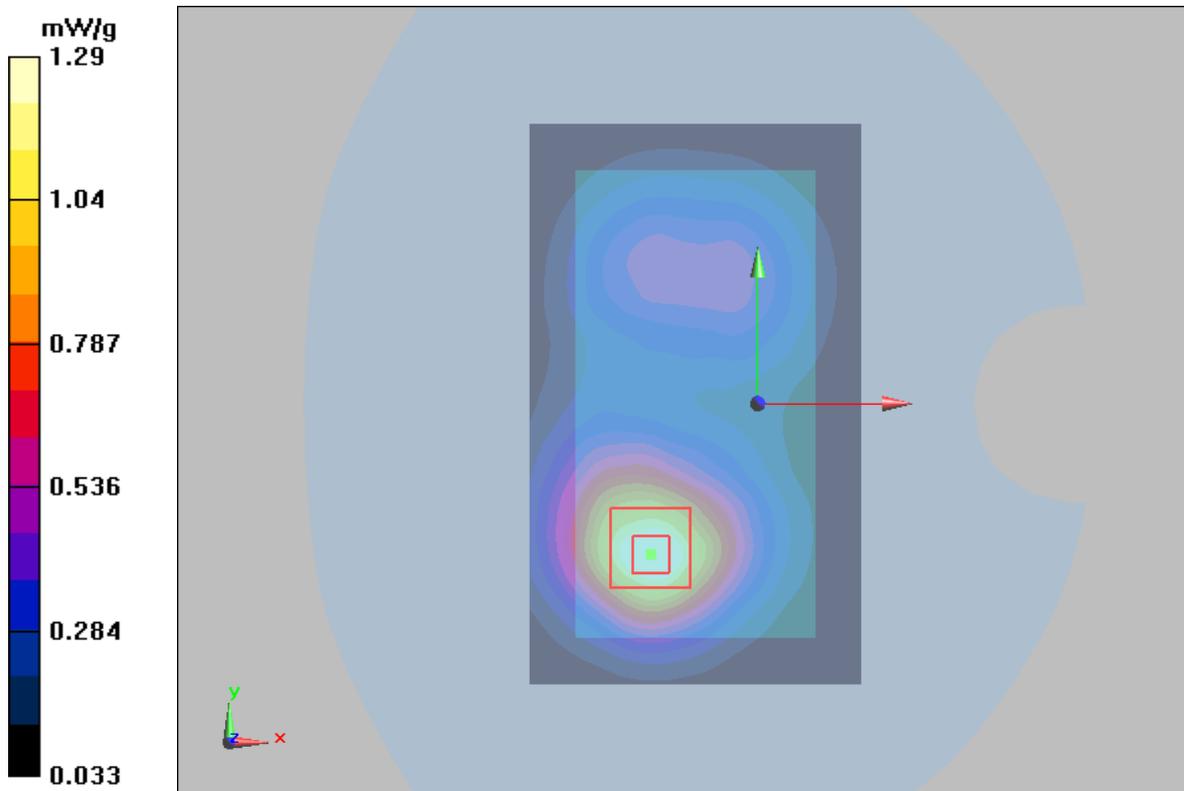
**Back Side Middle(Low)/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.1 V/m; Power Drift = 0.082 dB

Peak SAR (extrapolated) = 1.89 W/kg

**SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.735 mW/g**

Maximum value of SAR (measured) = 1.29 mW/g



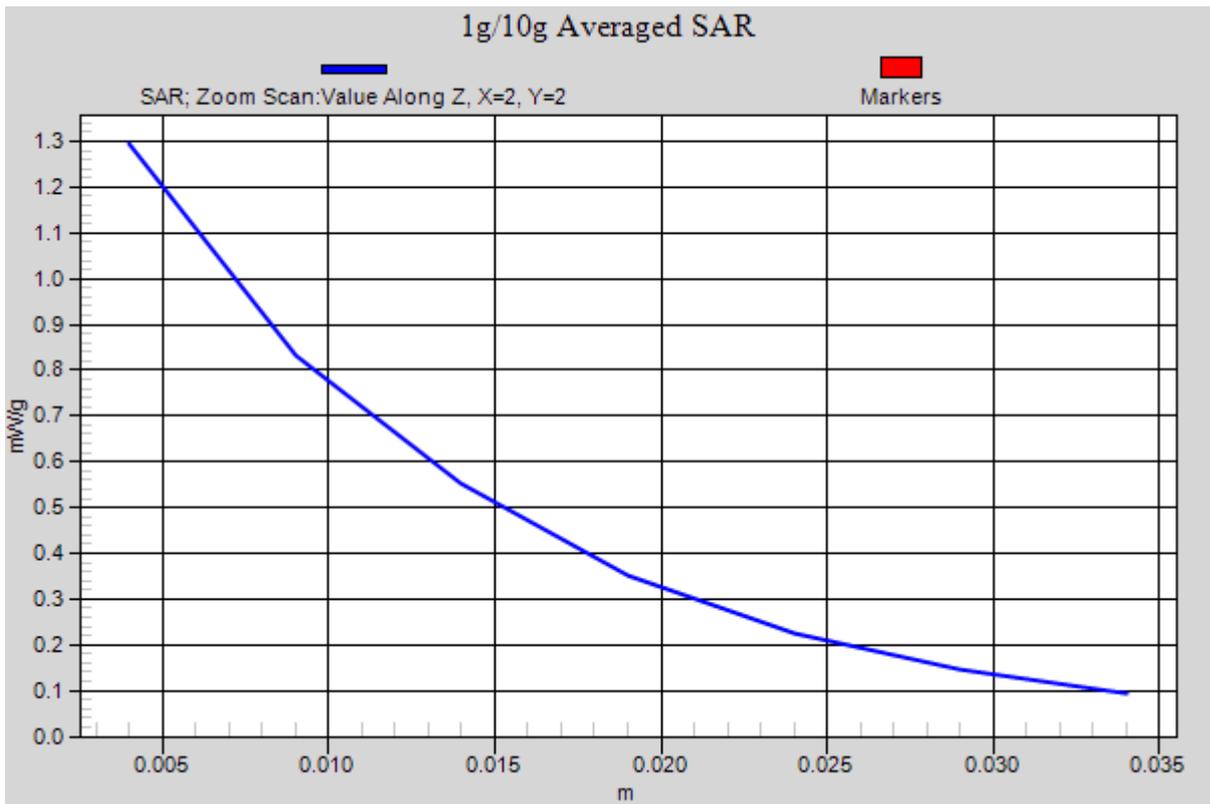


Figure 270 Body, LTE Band 4 with 1 RB Back Side Channel 20175

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## LTE Band 4 with 1 RB Back Side Middle (10MHz, SN: UWDC320XBGN01407, Distance 10mm, QPSK, High end)

Date/Time: 6/30/2013 11:07:54 AM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 52.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle(High) /Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.35 mW/g

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

Reference Value = 12.1 V/m; Power Drift = 0.106 dB

Peak SAR (extrapolated) = 1.83 W/kg

**SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.729 mW/g**

Maximum value of SAR (measured) = 1.28 mW/g

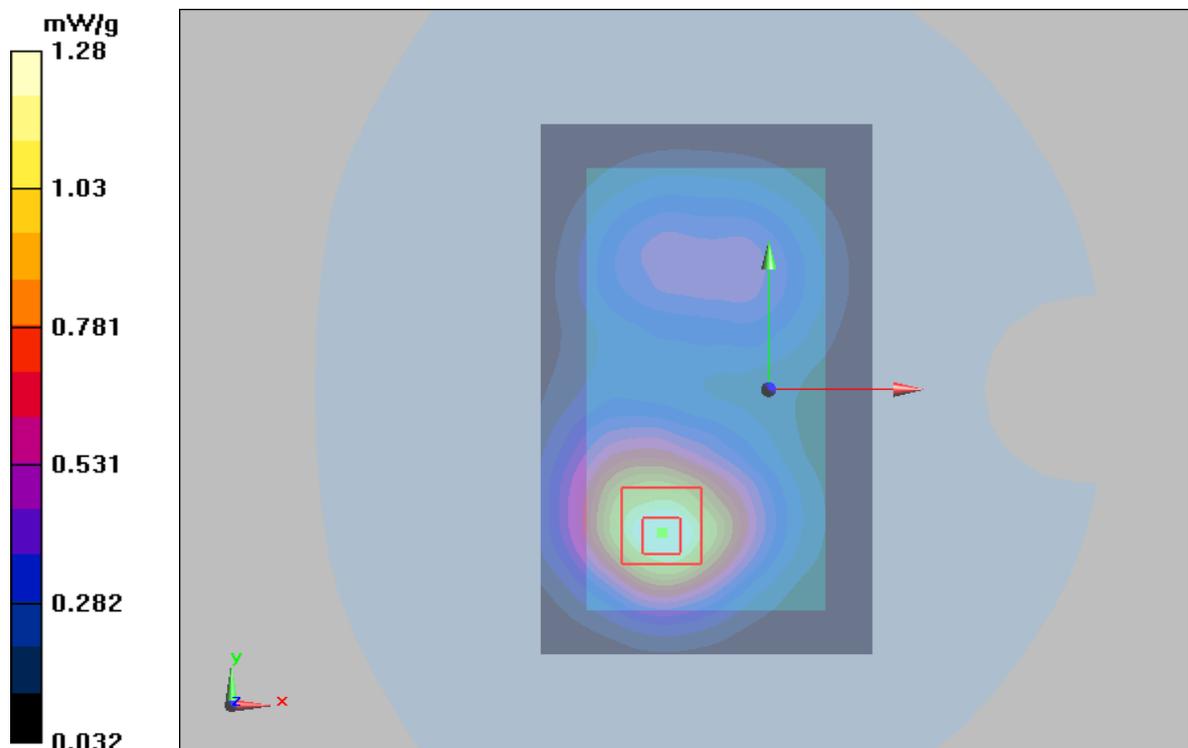


Figure 271 Body, LTE Band 4 with 1 RB Back Side Channel 20175

**LTE Band 4 with 1 RB Back Side Middle (10MHz, SN: UWDC320XBGN01407, Distance 10mm, QPSK)**

Date/Time: 6/30/2013 11:24:24 AM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 52.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle(Low)/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.34 mW/g

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

Reference Value = 12.1 V/m; Power Drift = 0.133 dB

Peak SAR (extrapolated) = 1.87 W/kg

**SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.731 mW/g**

Maximum value of SAR (measured) = 1.26 mW/g

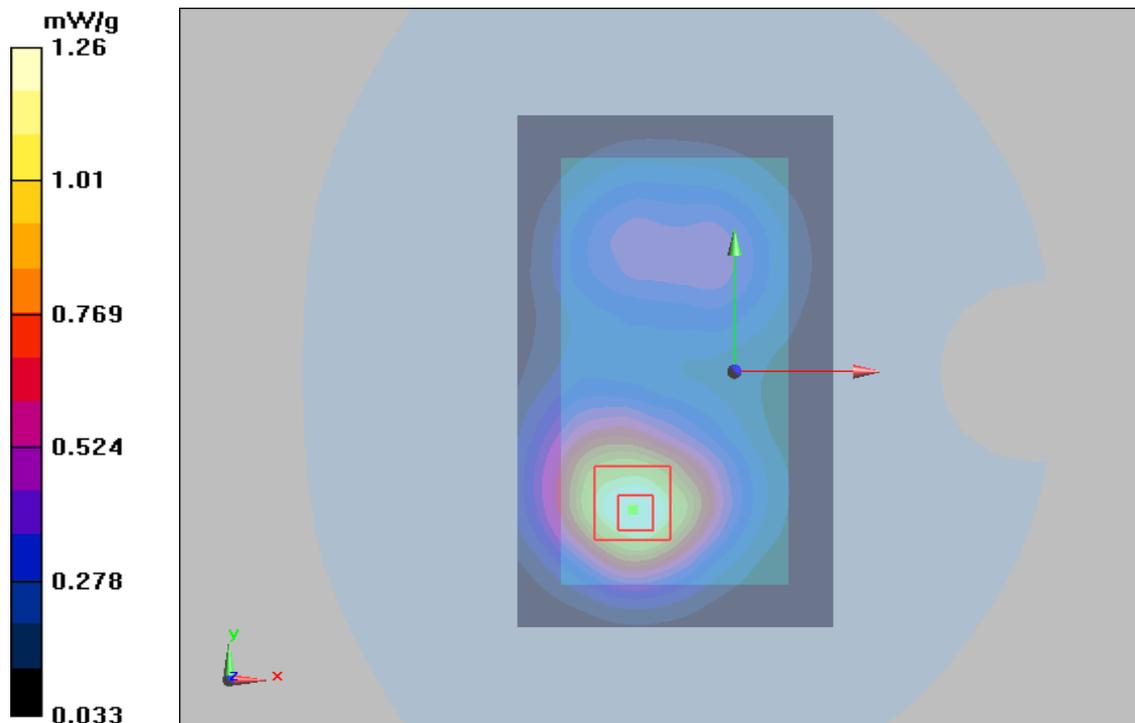


Figure 272 Body, LTE Band 4 with 1 RB Back Side Channel 20175

**BT Left Cheek High (Battery SN: UWDC320XBGN1407)**

Date/Time: 7/3/2013 6:17:40 PM

Communication System: BT; Frequency: 2480 MHz;Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature:22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Left/Cheek High/Area Scan (71x131x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.00249 mW/g

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

Reference Value = 0.879 V/m; Power Drift = 0.151 dB

Peak SAR (extrapolated) = 0.00508 W/kg

**SAR(1 g) = 0.000929 mW/g; SAR(10 g) = 0.000369 mW/g**

Maximum value of SAR (measured) = 0.00264 mW/g

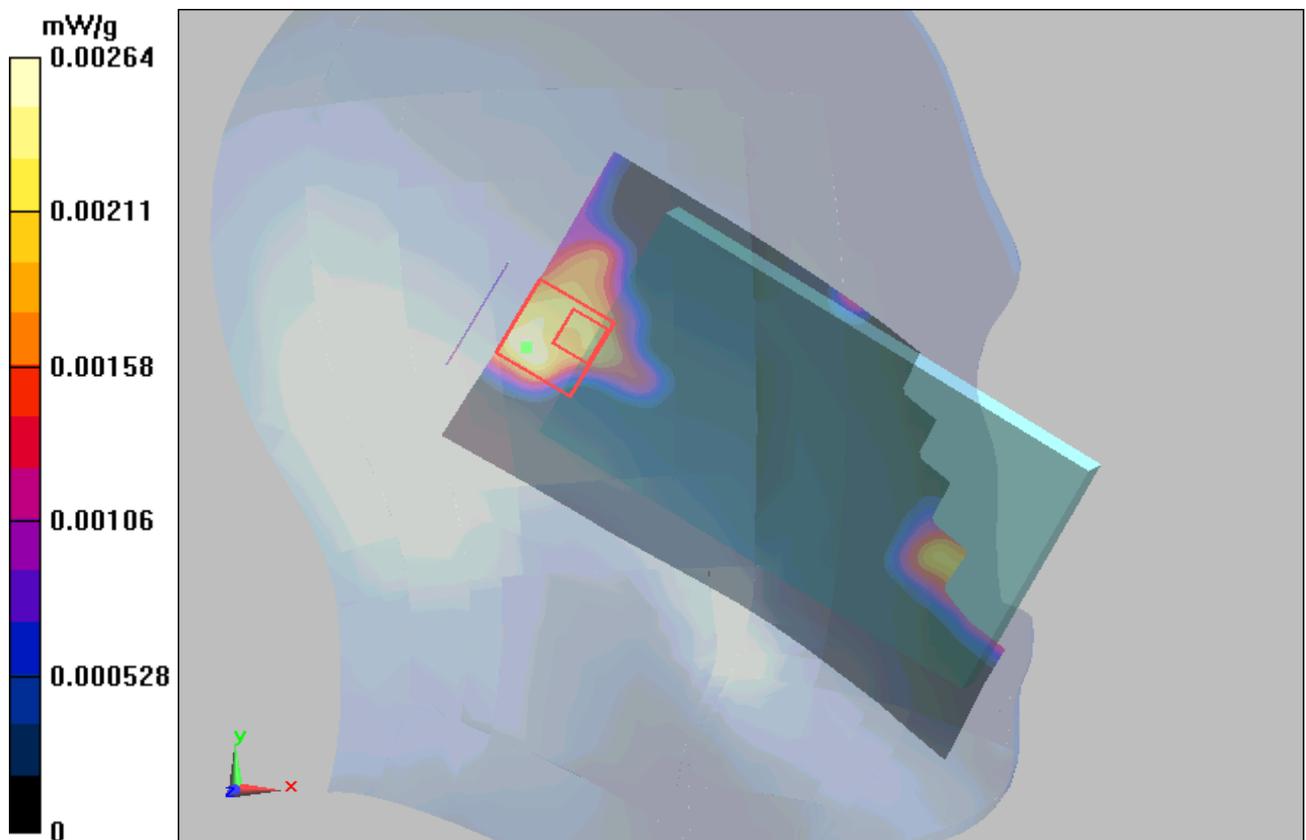


Figure 273 Left Hand Touch Cheek BT Channel 78

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

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**BT Left Tilt High (Battery SN: UWDC320XBGN1407)**

Date/Time: 7/4/2013 1:44:03 AM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Left/Tilt High/Area Scan (71x131x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.00269 mW/g

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

Reference Value = 0.648 V/m; Power Drift = 0.060 dB

Peak SAR (extrapolated) = 0.00455 W/kg

**SAR(1 g) = 0.000235 mW/g; SAR(10 g) = 3.22e-005 mW/g**

Maximum value of SAR (measured) = 0.00146 mW/g

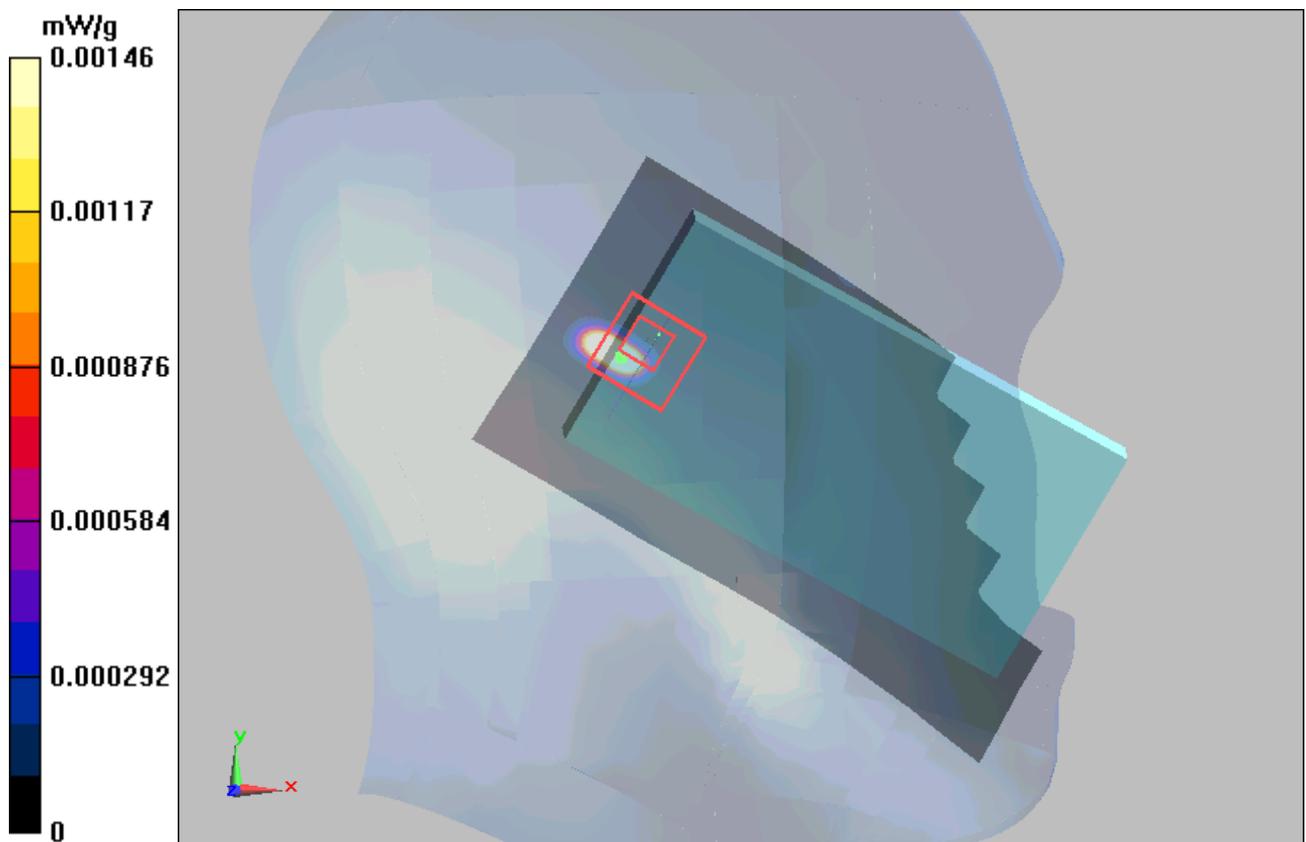


Figure 274 Left Hand Tilt 15° BT Channel 78

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

**BT Right Cheek High (Battery SN: UWDC320XBGN1407)**

Date/Time: 7/4/2013 1:13:14 AM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Right/Cheek High/Area Scan (71x131x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.00355 mW/g

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

Reference Value = 1.15 V/m; Power Drift = 0.056 dB

Peak SAR (extrapolated) = 0.00435 W/kg

**SAR(1 g) = 0.00205 mW/g; SAR(10 g) = 0.000969 mW/g**

Maximum value of SAR (measured) = 0.0028 mW/g

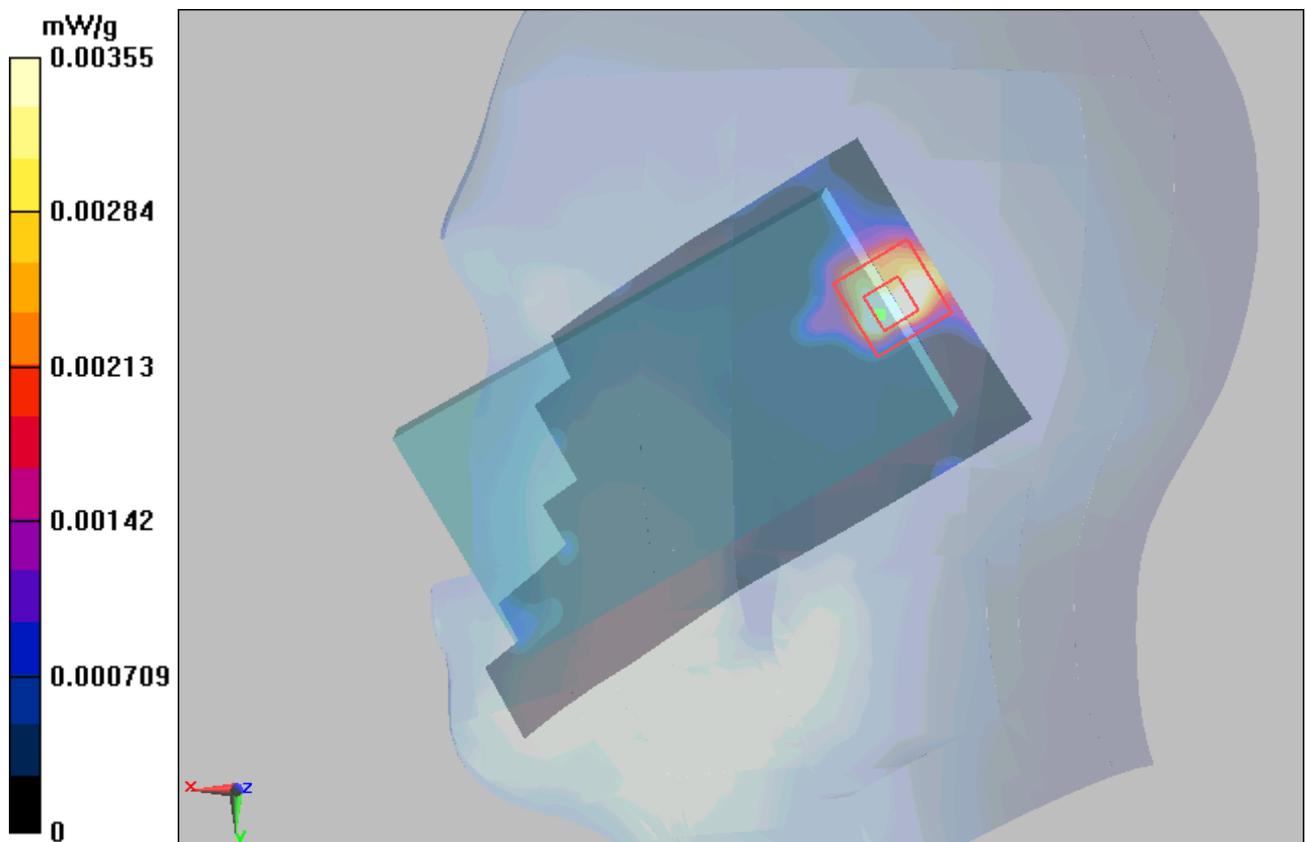


Figure 275 Right Hand Touch Cheek BT Channel 78

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## BT Right Tilt High (Battery SN: UWDC320XBGN1407)

Date/Time: 7/3/2013 12:44:46 AM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Right/Tilt High/Area Scan (71x131x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.00406 mW/g

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

Reference Value = 0.961 V/m; Power Drift = 0.117 dB

Peak SAR (extrapolated) = 0.0063 W/kg

**SAR(1 g) = 0.00241 mW/g; SAR(10 g) = 0.00106 mW/g**

Maximum value of SAR (measured) = 0.00329 mW/g

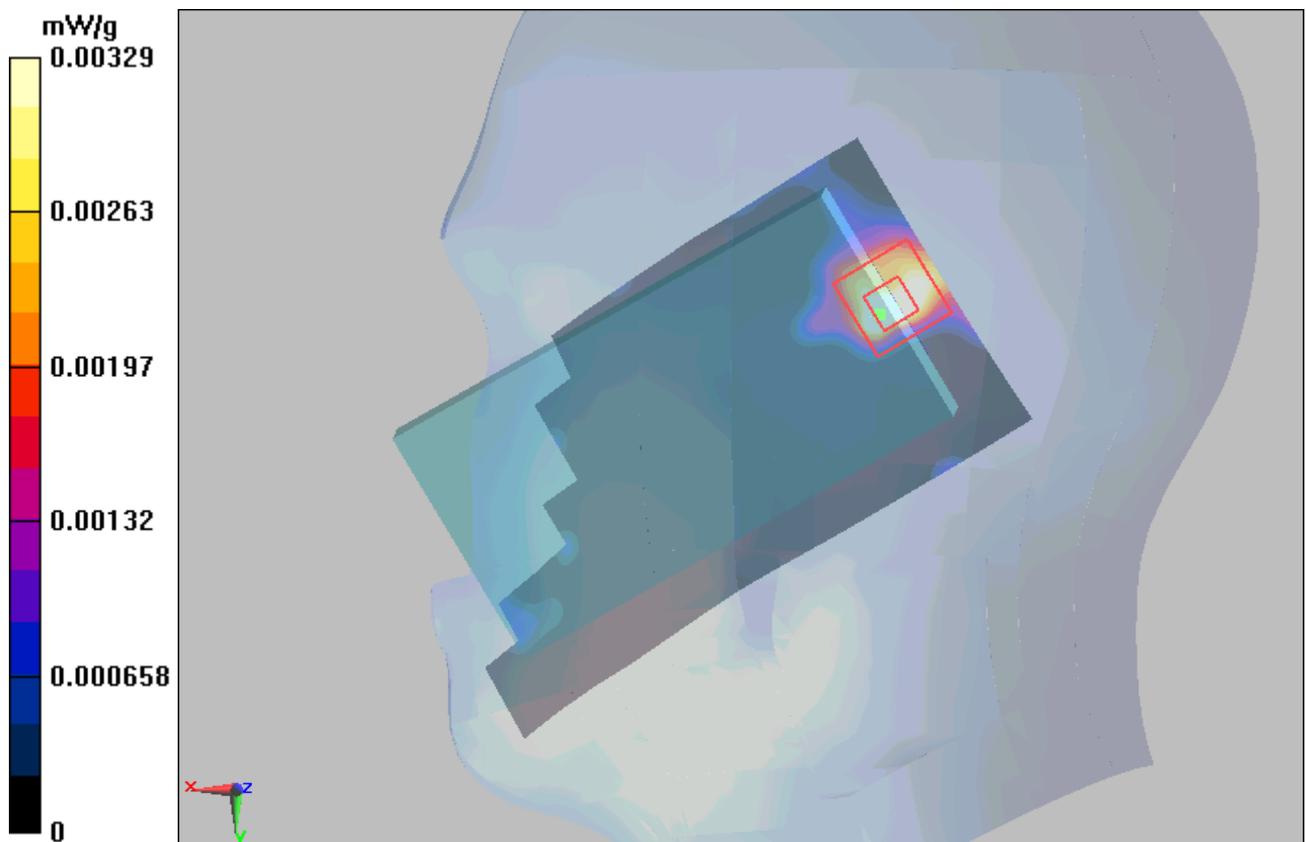


Figure 276 Right Hand Tilt 15° BT Channel 78

**TA Technology (Shanghai) Co., Ltd.**  
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**BT Right Cheek High (Battery SN: MAIC702X03600810)**

Date/Time: 7/4/2013 2:16:45 AM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.9$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Right /Tilt High/Area Scan (71x131x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.00306 mW/g

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

Reference Value = 0.880 V/m; Power Drift = 0.153 dB

Peak SAR (extrapolated) = 0.00771 W/kg

**SAR(1 g) = 0.00129 mW/g; SAR(10 g) = 0.000179 mW/g**

Maximum value of SAR (measured) = 0.00222 mW/g

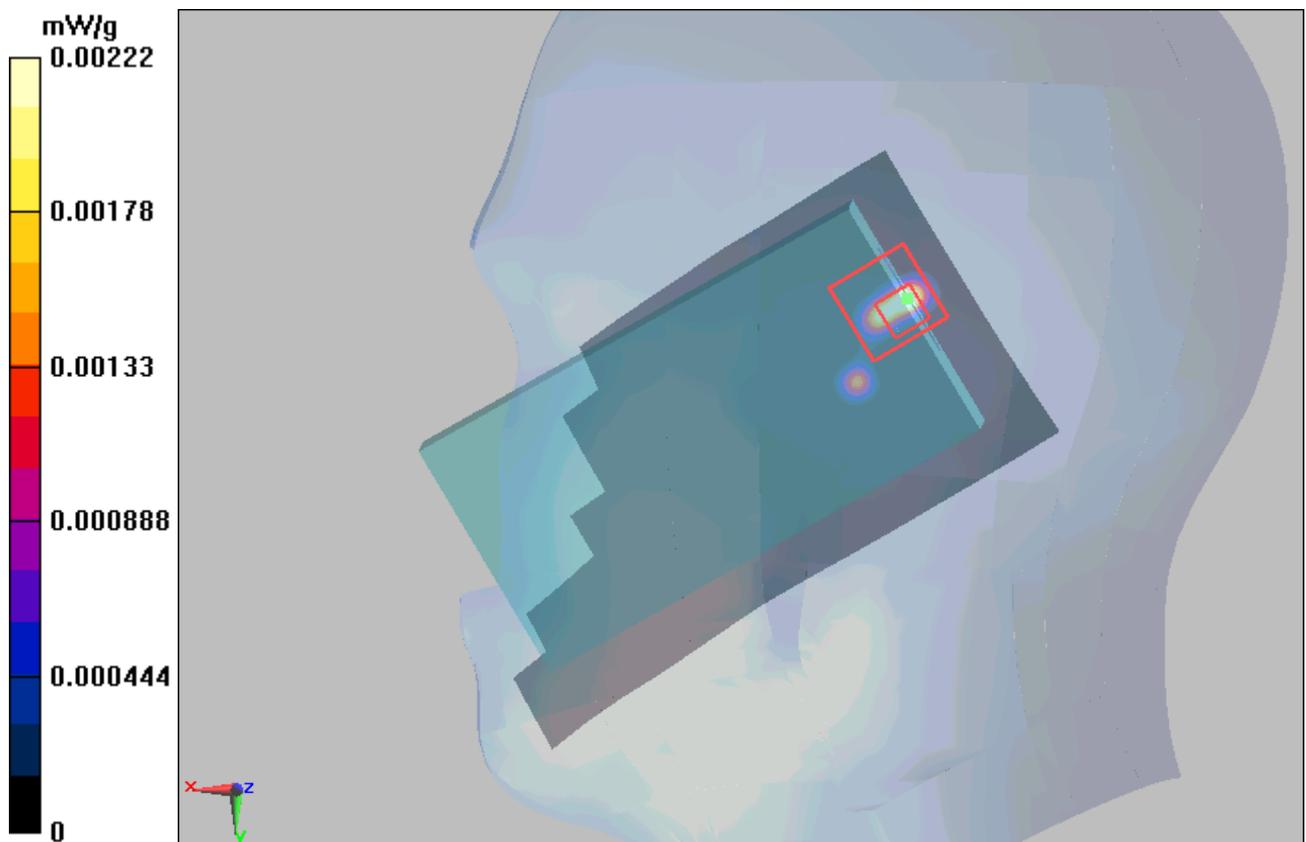


Figure 277 Right Hand Touch Cheek BT Channel 78

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## BT Back Side High (Battery SN: UWDC320XBG1407, 10mm)

Date/Time: 7/4/2013 4:16:15 AM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.93$  mho/m;  $\epsilon_r = 51.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.9, 6.9, 6.9); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Back Side 10mm/Towards Ground High/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.029 mW/g

**Back Side 10mm/Towards Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.93 V/m; Power Drift = 0.039 dB

Peak SAR (extrapolated) = 0.034 W/kg

**SAR(1 g) = 0.028 mW/g; SAR(10 g) = 0.026 mW/g**

Maximum value of SAR (measured) = 0.032 mW/g

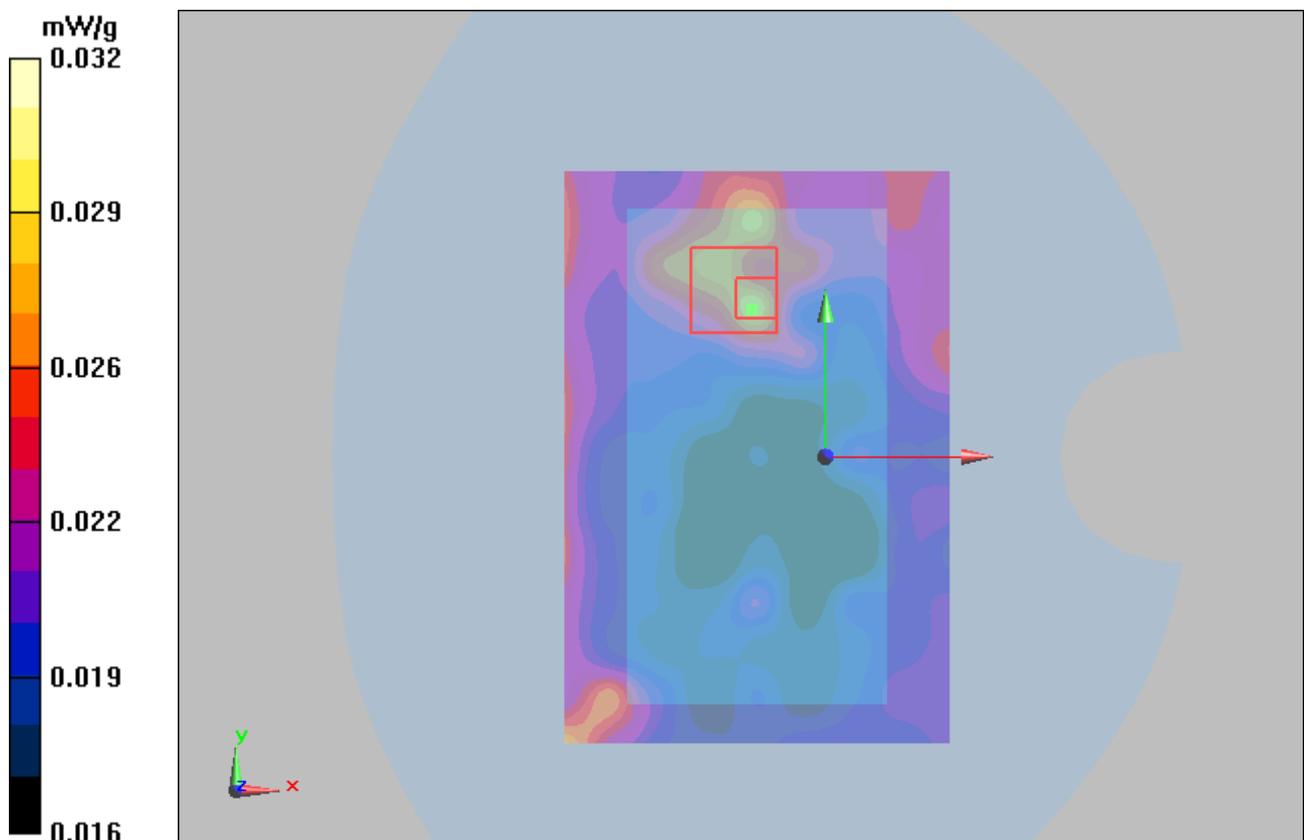


Figure 278 Body, Back Side, BT Channel 78

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

**BT Front Side High (Battery SN: UWDC320XBGN1407, 10mm)**

Date/Time: 7/3/2013 9:47:49 PM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.93$  mho/m;  $\epsilon_r = 51.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.9, 6.9, 6.9); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Front Side 10mm/Towards Phantom High/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm

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

**Front Side 10mm/Towards Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.4 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 0.050 W/kg

**SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.0078 mW/g**

Maximum value of SAR (measured) = 0.012 mW/g

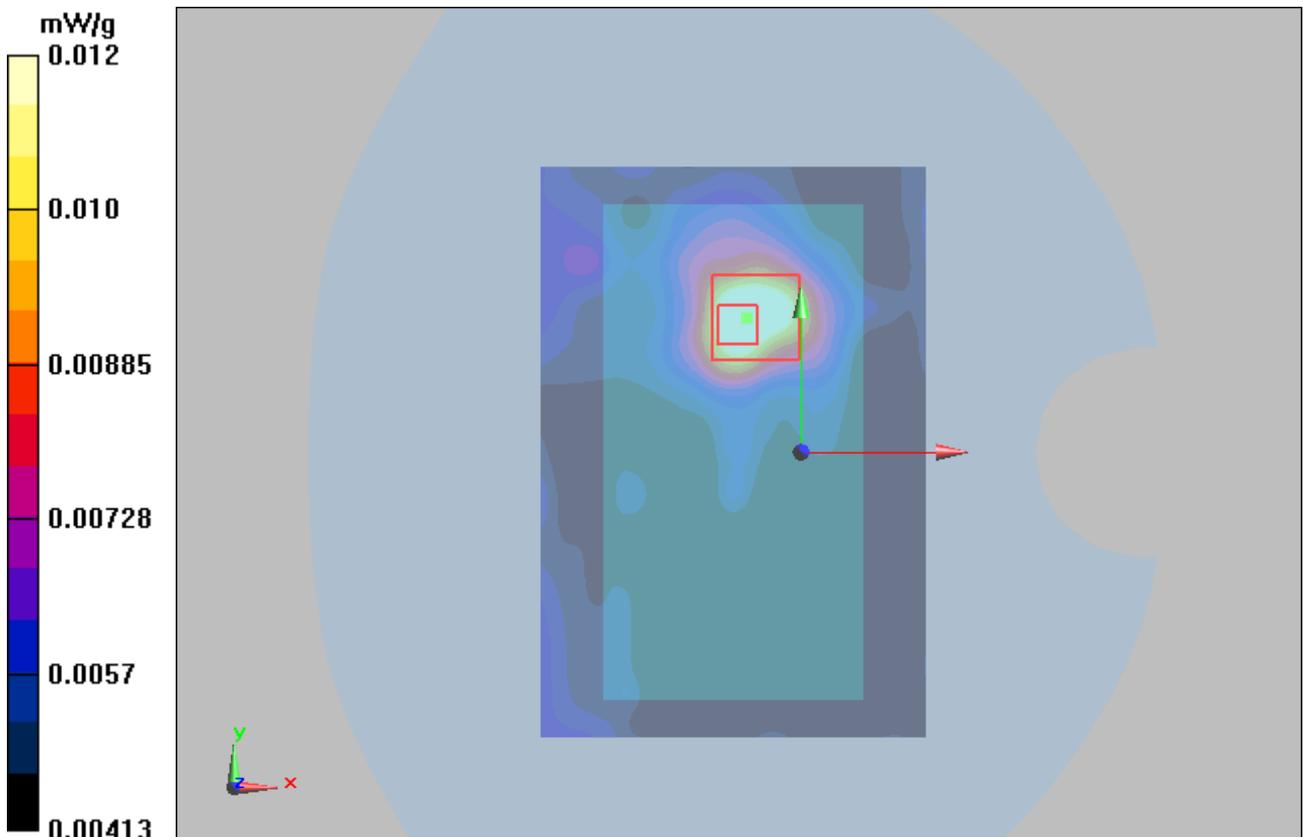


Figure 279 Body, Front Side, BT Channel 78

TA Technology (Shanghai) Co., Ltd.  
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**BT Right Edge High (Battery SN: UWDC320XBGN1407, 10mm)**

Date/Time: 7/3/2013 10:20:32 PM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.93$  mho/m;  $\epsilon_r = 51.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.9, 6.9, 6.9); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Right Side 10mm/Towards Phantom High/Area Scan (51x161x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.029 mW/g

**Right Side 10mm/Towards Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.05 V/m; Power Drift = -0.048 dB

Peak SAR (extrapolated) = 0.031 W/kg

**SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00474 mW/g**

Maximum value of SAR (measured) = 0.013 mW/g

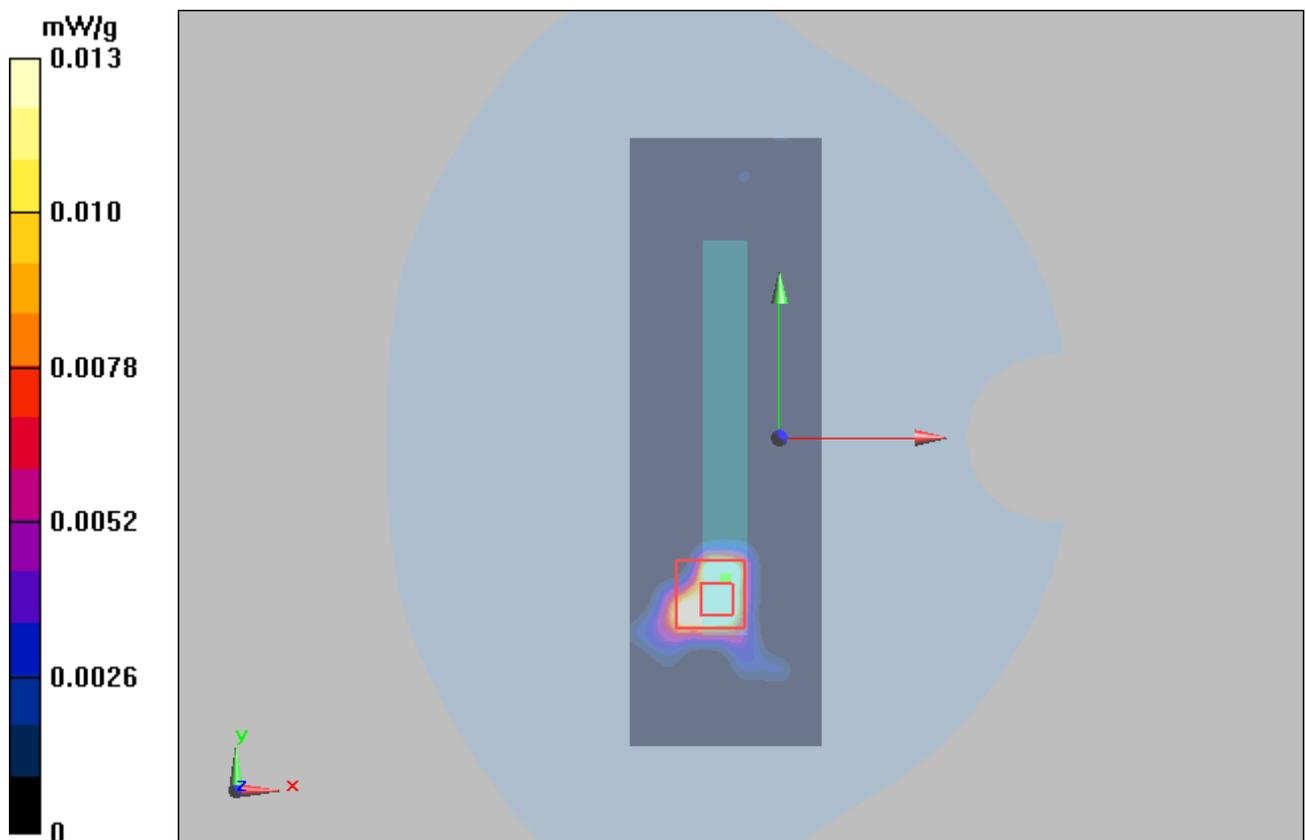


Figure 280 Body, Right Edge, BT Channel 78

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## BT Back Side High (Battery SN: UWDC320XBG1407, 10mm)

Date/Time: 7/3/2013 11:16:15 PM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.93$  mho/m;  $\epsilon_r = 51.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.9, 6.9, 6.9); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

## Flat Back Side 10mm With Battery MAIC/Towards Ground High/Area Scan (81x121x1):

Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.029 mW/g

## Flat Back Side 10mm With Battery MAIC/Towards Ground High/Zoom Scan (7x7x7)/Cube 0:

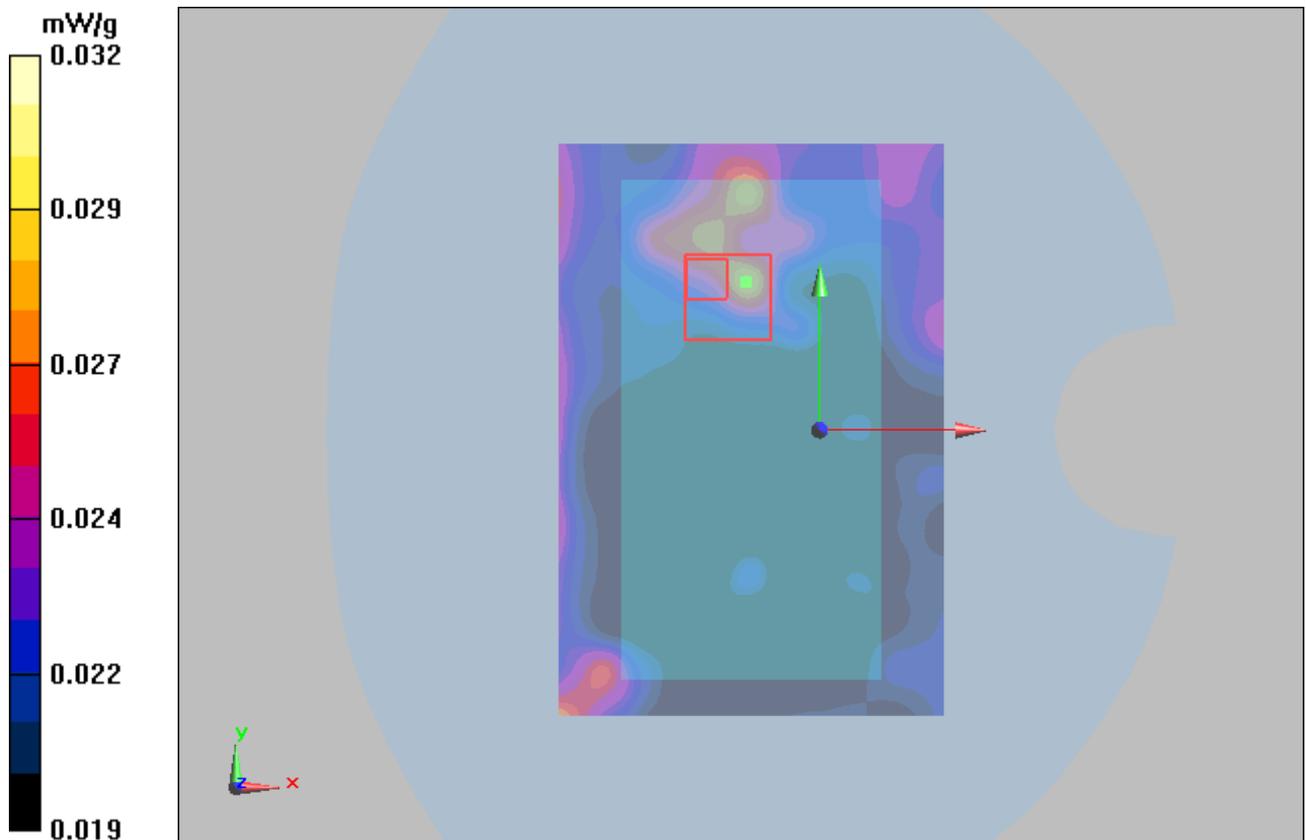
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.93 V/m; Power Drift = 0.106 dB

Peak SAR (extrapolated) = 0.032 W/kg

**SAR(1 g) = 0.028 mW/g; SAR(10 g) = 0.027 mW/g**

Maximum value of SAR (measured) = 0.032 mW/g



TA Technology (Shanghai) Co., Ltd.  
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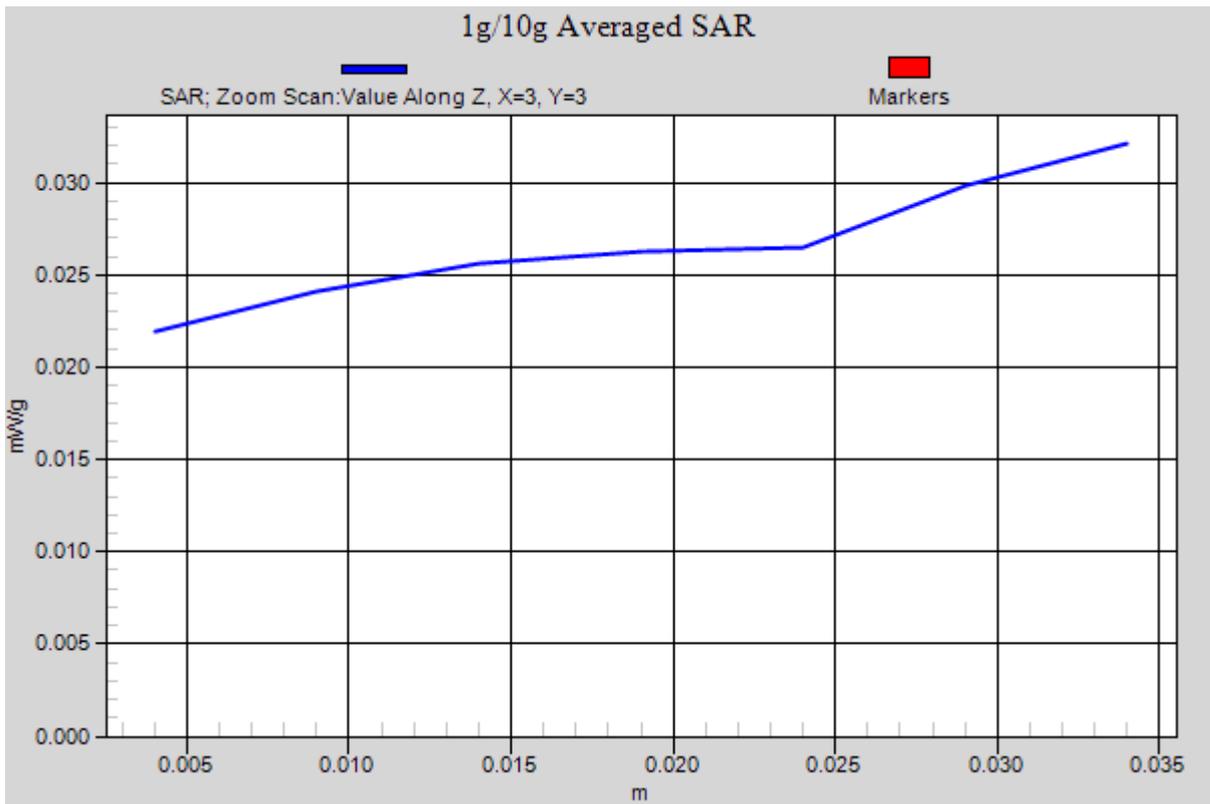


Figure 281 Body, Back Side, BT Channel 78

## ANNEX H: Volume Scan Graph Results(New M931)

### C8869L CDMA Cellular Back Side 15mm Volume Scan

Date/Time: 6/29/2013 5:59:16 PM

Communication System: CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 837$  MHz;  $\sigma = 1.014$  mho/m;  $\epsilon_r = 54.339$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Back Side Middle/Area Scan (7x11x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.543 W/kg

**Back Side Middle/Volume Scan (10x14x7):** Measurement grid: dx=8mm, dy=8mm, dz=5mm

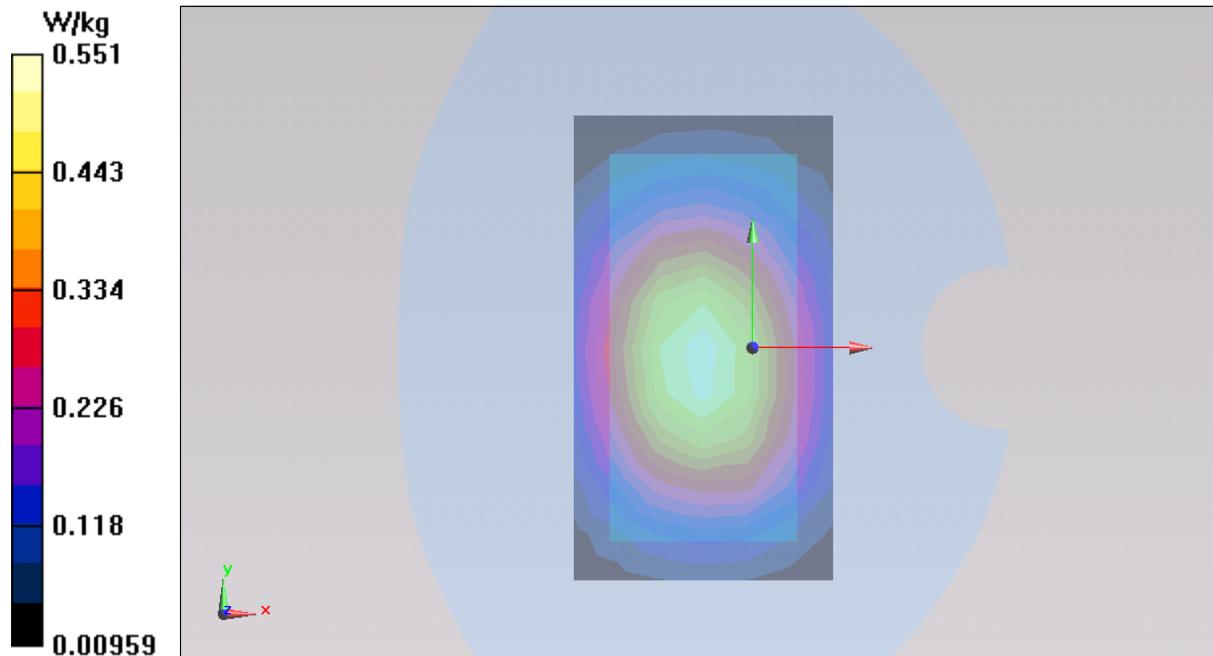
Reference Value = 23.647 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.676 mW/g

**SAR(1 g) = 0.529 mW/g; SAR(10 g) = 0.396 mW/g**

Total Absorbed Power = 0.0453 W

Maximum value of SAR (measured) = 0.551 W/kg



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## C8869L CDMA AWS Back Side 10mm Volume Scan

Date/Time: 6/30/2013 3:08:39 AM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.45$  mho/m;  $\epsilon_r = 52.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, V52.8 Build 2; SEMCAD X Version 14.0 Build 59

**Back Side Middle /Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.766 mW/g

**Back Side Middle /Volume Scan (10x14x7):** Measurement grid: dx=8mm, dy=8mm, dz=5mm

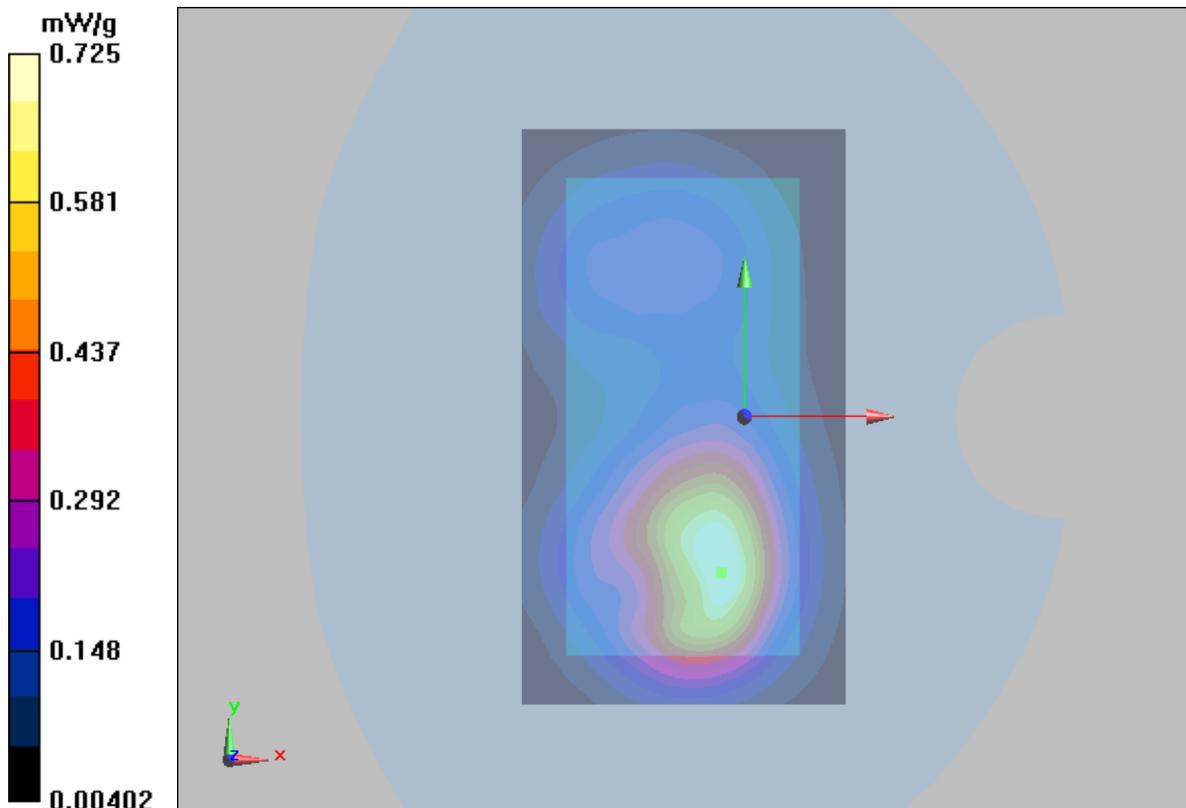
Reference Value = 12.4 V/m; Power Drift = -0.130 dB

Peak SAR (extrapolated) = 1.08 W/kg

**SAR(1 g) = 0.679 mW/g; SAR(10 g) = 0.415 mW/g**

Total Absorbed Power = 0.0302412 W

Maximum value of SAR (measured) = 0.725 mW/g



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## C8869L LTE B4 1RB Back Side 15mm Volume Scan

Date/Time: 6/30/2013 3:30:36 PM

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

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.454$  mho/m;  $\epsilon_r = 52.169$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**Back Side Middle(Low)/Area Scan (7x11x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.710 W/kg

**Back Side Middle(Low)/Volume Scan (10x14x7):** Measurement grid: dx=8mm, dy=8mm, dz=5mm

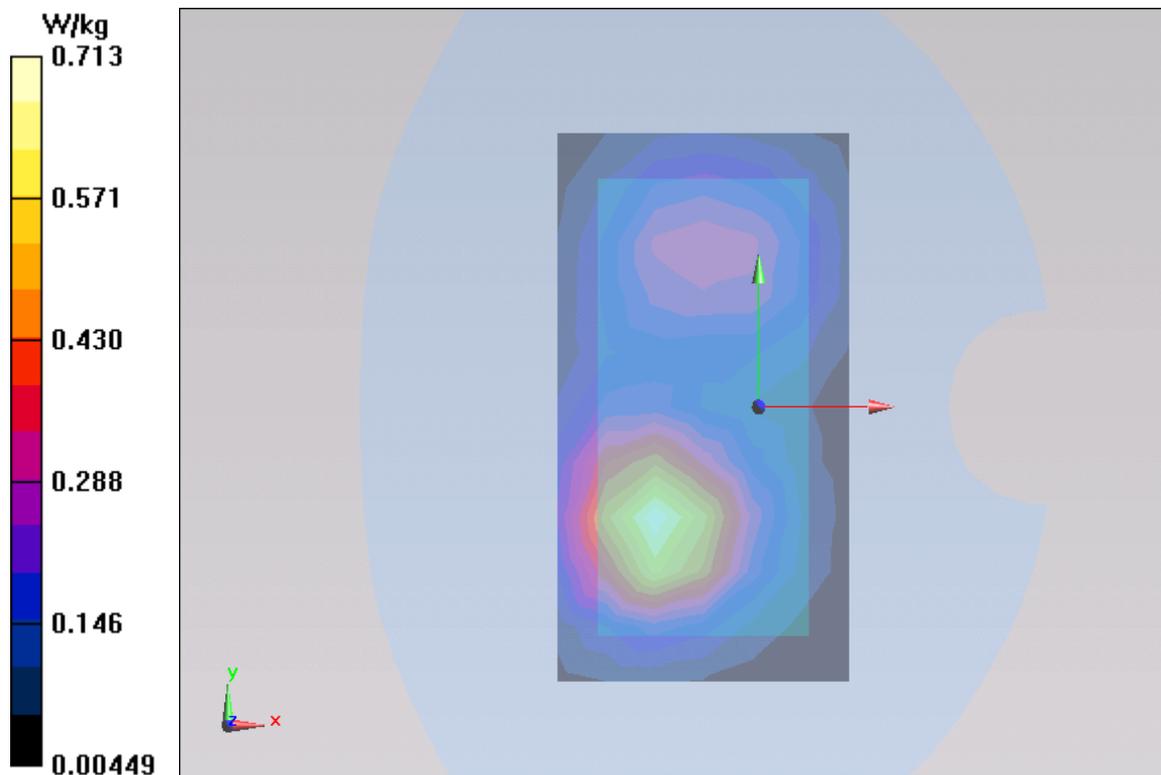
Reference Value = 10.091 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.037 mW/g

**SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.417 mW/g**

Total Absorbed Power = 0.0303 W

Maximum value of SAR (measured) = 0.713 W/kg



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## C8869L BT Back Side 10mm Volume Scan

Date/Time: 7/4/2013 8:54:26 AM

Communication System: BT; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.93$  mho/m;  $\epsilon_r = 51.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

**Back Side 10mm/High/Area Scan (81x121x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.069 mW/g

**Back Side 10mm/High/Volume Scan (16x22x7):** Measurement grid: dx=5mm, dy=5mm, dz=5mm

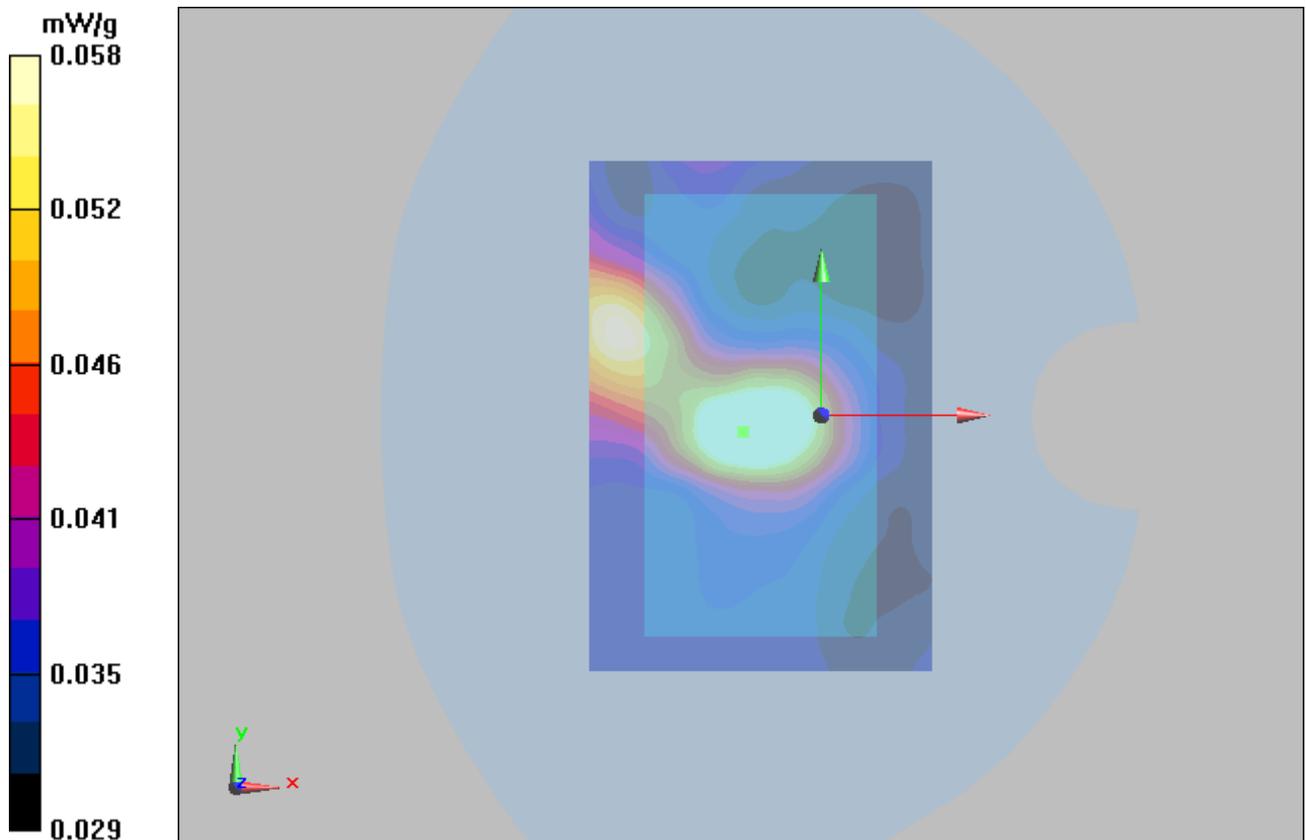
Reference Value = 5.94 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 0.102 W/kg

**SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.045 mW/g**

Total Absorbed Power = 0.00877948 W

Maximum value of SAR (measured) = 0.058 mW/g



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**C8869L CDMA Cellular Back Side 15mm Volume Scan+LTE B4+802.11b+BT**

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

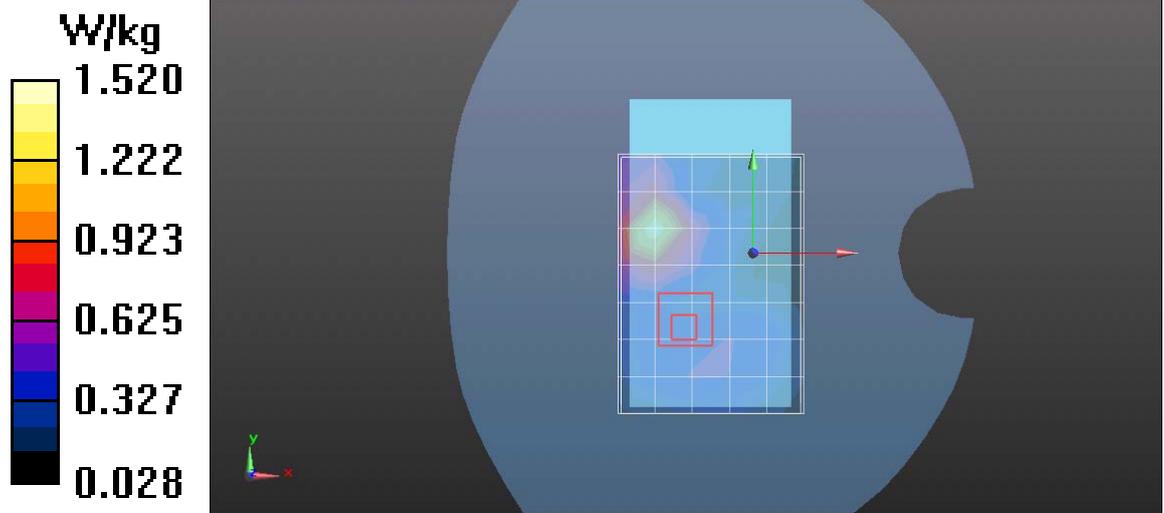
DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

**Multi Band Result:**

**SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.735 mW/g**

Maximum value of SAR (interpolated) = 1.52 W/kg



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**C8869L CDMA AWS Back Side 10mm Volume Scan+LTE B2+802.11b+BT**

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

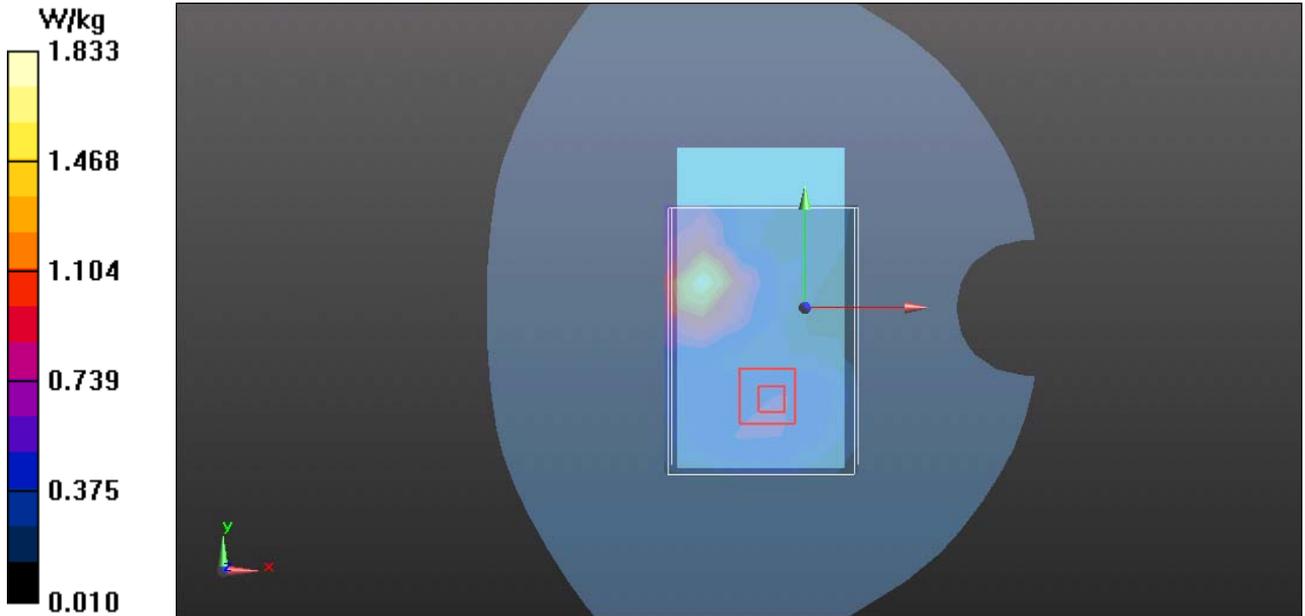
DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

**Multi Band Result:**

**SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.765 mW/g**

Maximum value of SAR (interpolated) = 1.83 W/kg



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## C8869L CDMA AWS Back Side 10mm Volume Scan+LTE B2

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

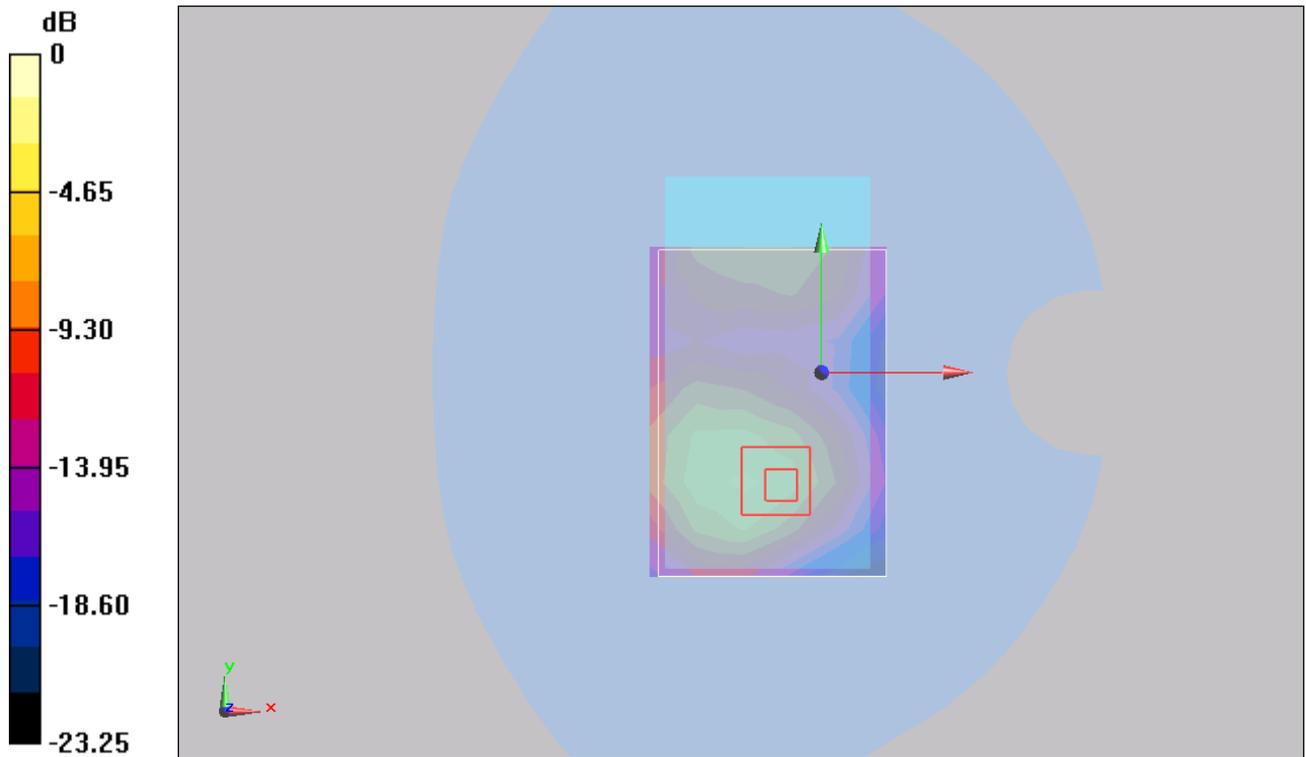
DASY4 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

### Multi Band Result:

**SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.731 mW/g**

Maximum value of SAR (interpolated) = 1.80 W/kg



0 dB = 1.80 W/kg = 5.11 dB W/kg

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## ANNEX I: Probe Calibration Certificate(SN:3189)

**Calibration Laboratory of  
Schmid & Partner  
Engineering AG**  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
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**S** Swiss Calibration Service

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The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TA-Shanghai (Auden)**

Certificate No: **ES3-3189\_Jun12**

### CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3189**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-12.v7, QA CAL-23.v4, QA CAL-25.v4  
Calibration procedure for dosimetric E-field probes**

Calibration date: **June 22, 2012**

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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	10-Jan-12 (No. DAE4-660_Jan12)	Jan-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 22, 2012

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Accreditation No.: SCS 108

**Glossary:**

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	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

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

**Methods Applied and Interpretation of Parameters:**

- NORM<sub>x,y,z</sub>:** Assessed for E-field polarization  $\theta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* 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.
- DCP<sub>x,y,z</sub>:** 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
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>:** A, B, C 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 NORM<sub>x,y,z</sub> \* 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.

ES3DV3 - SN:3189

June 22, 2012

# Probe ES3DV3

## SN:3189

Manufactured: March 25, 2008  
Calibrated: June 22, 2012

Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

ES3DV3- SN:3189

June 22, 2012

**DASY/EASY - Parameters of Probe: ES3DV3 - SN:3189**

**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	1.35	1.05	$\pm 10.1 \%$
DCP (mV) <sup>B</sup>	99.5	100.6	100.2	

**Modulation Calibration Parameters**

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc (k=2)
0	CW	0.00	X	0.00	0.00	1.00	160.3	$\pm 3.8 \%$
			Y	0.00	0.00	1.00	164.9	
			Z	0.00	0.00	1.00	182.0	

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 NormX,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>C</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

ES3DV3- SN:3189

June 22, 2012

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3189

### 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	Depth (mm)	Unct. (k=2)
300	45.3	0.87	6.83	6.83	6.83	0.25	1.06	± 13.4 %
450	43.5	0.87	6.37	6.37	6.37	0.14	1.67	± 13.4 %
835	41.5	0.90	5.81	5.81	5.81	0.63	1.24	± 12.0 %
1750	40.1	1.37	4.90	4.90	4.90	0.80	1.14	± 12.0 %
1900	40.0	1.40	4.69	4.69	4.69	0.62	1.31	± 12.0 %
2450	39.2	1.80	4.14	4.14	4.14	0.65	1.36	± 12.0 %

<sup>C</sup> Frequency validity 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.

<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.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

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ES3DV3-SN:3189

June 22, 2012

### DASY/EASY - Parameters of Probe: ES3DV3 - SN:3189

#### 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	Depth (mm)	Unct. (k=2)
300	58.2	0.92	6.53	6.53	6.53	0.23	1.90	± 13.4 %
450	56.7	0.94	6.73	6.73	6.73	0.10	1.00	± 13.4 %
835	55.2	0.97	5.81	5.81	5.81	0.54	1.33	± 12.0 %
1750	53.4	1.49	4.65	4.65	4.65	0.67	1.38	± 12.0 %
1900	53.3	1.52	4.36	4.36	4.36	0.62	1.40	± 12.0 %
2450	52.7	1.95	3.96	3.96	3.96	0.64	0.99	± 12.0 %

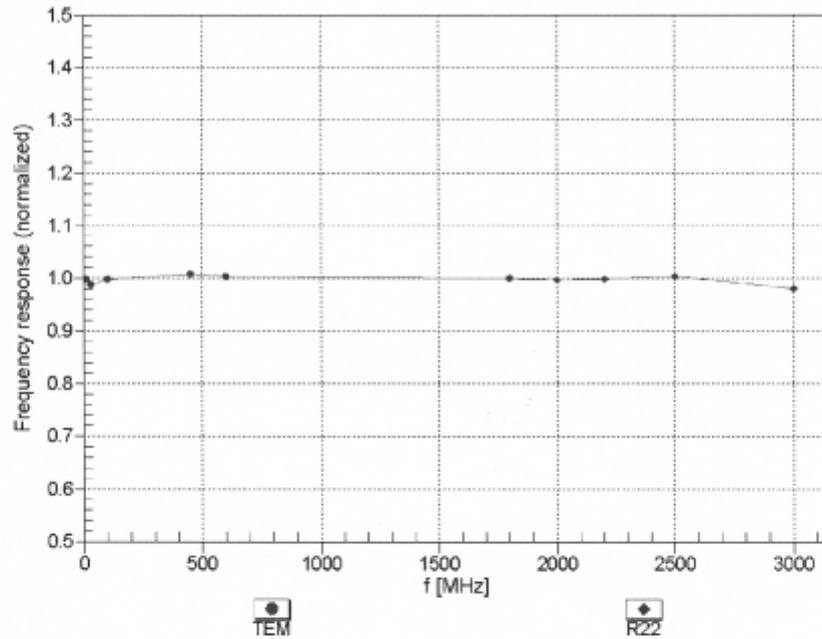
<sup>C</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<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.

ES3DV3- SN:3189

June 22, 2012

**Frequency Response of E-Field**  
(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  (k=2)

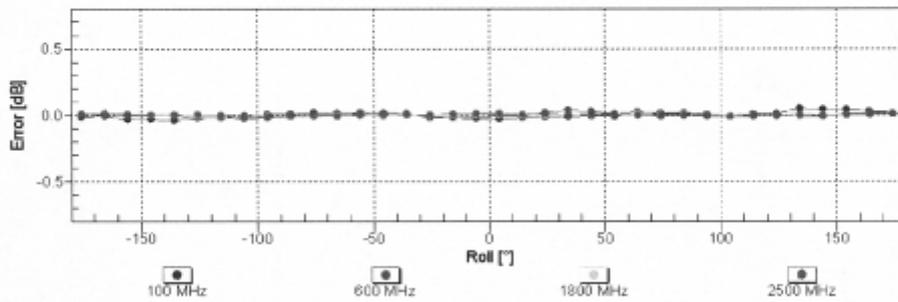
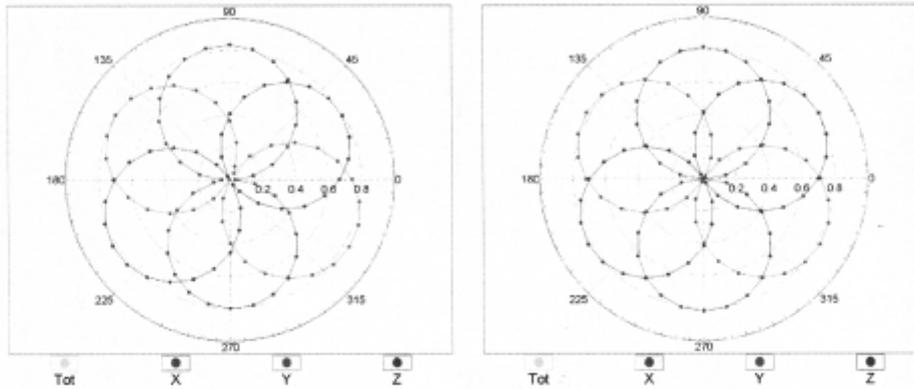
ES3DV3- SN:3189

June 22, 2012

Receiving Pattern ( $\phi$ ),  $\vartheta = 0^\circ$

f=600 MHz,TEM

f=1800 MHz,R22

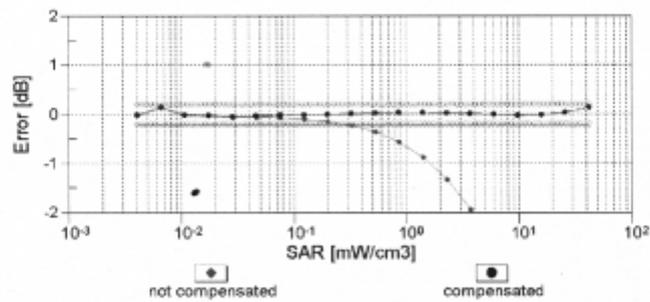
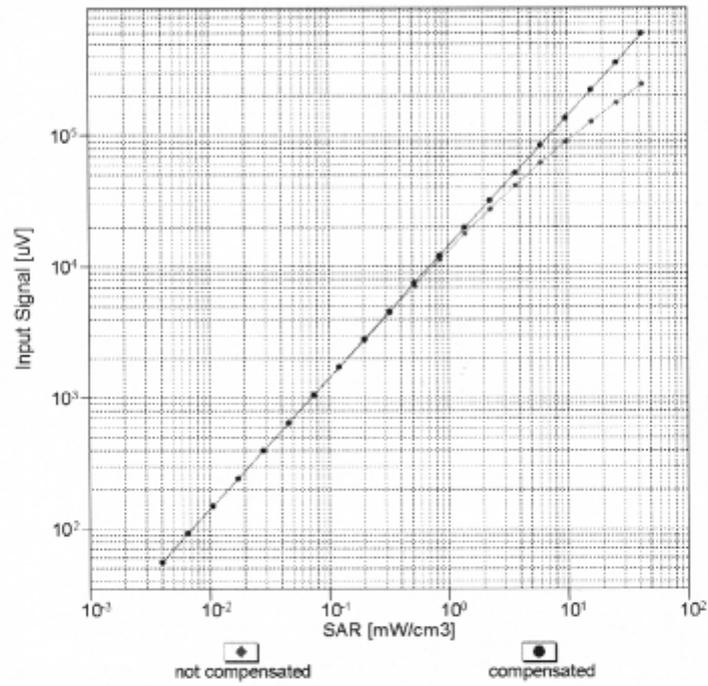


Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

ES3DV3-SN:3189

June 22, 2012

**Dynamic Range  $f(SAR_{head})$**   
(TEM cell,  $f = 900$  MHz)

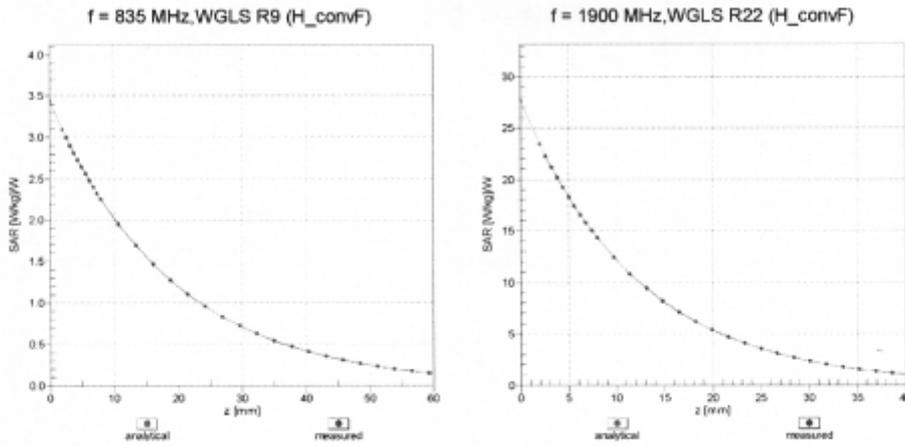


Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

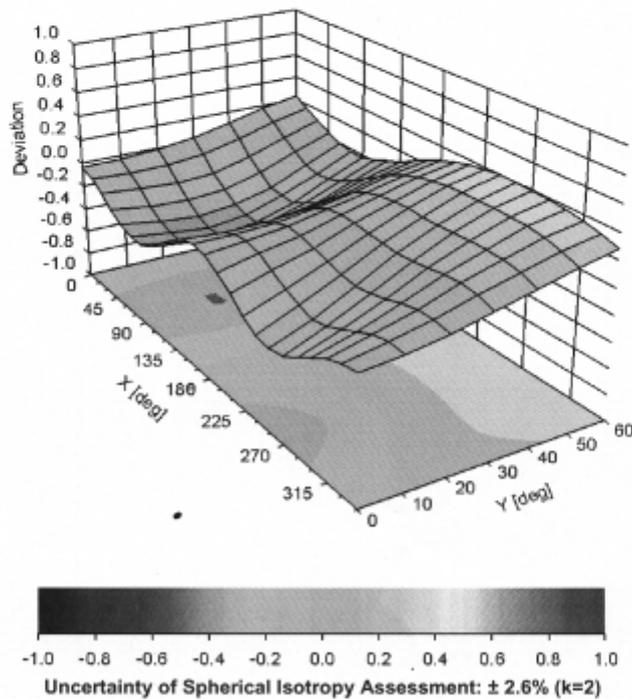
ES3DV3- SN:3189

June 22, 2012

### Conversion Factor Assessment



### Deviation from Isotropy in Liquid Error ( $\phi$ , $\theta$ ), f = 900 MHz



**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

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ES3DV3- SN:3189

June 22, 2012

**DASY/EASY - Parameters of Probe: ES3DV3 - SN:3189**

**Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	54.1
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

# TA Technology (Shanghai) Co., Ltd. Test Report

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## ANNEX J: Probe Calibration Certificate(SN:3753)

**Calibration Laboratory of  
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**C** Service suisse d'étalonnage  
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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Auden**

Certificate No: **EX3-3753\_Jan13**

### CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3753**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4  
Calibration procedure for dosimetric E-field probes**

Calibration date: **January 17, 2013**

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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013 Dec12)	Dec-13
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
			Issued: January 17, 2013
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# TA Technology (Shanghai) Co., Ltd.

## Test Report

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Accreditation No.: **SCS 108**

### Glossary:

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization $\varphi$	$\varphi$ rotation around probe axis
Polarization $\vartheta$	$\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* 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.
- DCP<sub>x,y,z</sub>**: 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
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: 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 NORM<sub>x,y,z</sub> \* 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.

EX3DV4 – SN:3753

January 17, 2013

# Probe EX3DV4

## SN:3753

Manufactured: March 16, 2010  
Calibrated: January 17, 2013

Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

# TA Technology (Shanghai) Co., Ltd.

## Test Report

EX3DV4- SN:3753

January 17, 2013

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753

#### Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup>	0.47	0.31	0.45	± 10.1 %
DCP (mV) <sup>B</sup>	101.8	102.3	102.3	

#### Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc <sup>E</sup> (k=2)
0	CW	X	0.0	0.0	1.0	0.00	163.7	±3.5 %
		Y	0.0	0.0	1.0		168.5	
		Z	0.0	0.0	1.0		159.9	

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 NormX,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.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

EX3DV4- SN:3753

January 17, 2013

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753

#### 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	Depth (mm)	Unct. (k=2)
750	41.9	0.89	9.46	9.46	9.46	0.45	0.83	± 12.0 %
835	41.5	0.90	8.95	8.95	8.95	0.26	1.19	± 12.0 %
1750	40.1	1.37	7.86	7.86	7.86	0.52	0.79	± 12.0 %
1900	40.0	1.40	7.63	7.63	7.63	0.54	0.73	± 12.0 %
2000	40.0	1.40	7.50	7.50	7.50	0.53	0.77	± 12.0 %
2450	39.2	1.80	6.86	6.86	6.86	0.44	0.80	± 12.0 %
5200	36.0	4.66	4.65	4.65	4.65	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.48	4.48	4.48	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.46	4.46	4.46	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.51	4.51	4.51	0.35	1.80	± 13.1 %
5800	35.3	5.27	4.36	4.36	4.36	0.45	1.80	± 13.1 %

<sup>C</sup> Frequency validity 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.

<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.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

EX3DV4- SN:3753

January 17, 2013

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753

#### 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	Depth (mm)	Unct. (k=2)
750	55.5	0.96	9.25	9.25	9.25	0.54	0.75	± 12.0 %
835	55.2	0.97	9.05	9.05	9.05	0.68	0.68	± 12.0 %
1750	53.4	1.49	7.82	7.82	7.82	0.50	0.84	± 12.0 %
1900	53.3	1.52	7.33	7.33	7.33	0.31	1.01	± 12.0 %
2000	53.3	1.52	7.43	7.43	7.43	0.57	0.73	± 12.0 %
2300	52.9	1.81	7.07	7.07	7.07	0.74	0.64	± 12.0 %
2450	52.7	1.95	6.90	6.90	6.90	0.80	0.50	± 12.0 %
2600	52.5	2.16	6.66	6.66	6.66	0.80	0.50	± 12.0 %
3500	51.3	3.31	6.30	6.30	6.30	0.38	1.11	± 13.1 %
5200	49.0	5.30	4.38	4.38	4.38	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.13	4.13	4.13	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.09	4.09	4.09	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.10	4.10	4.10	0.45	1.90	± 13.1 %
5800	48.2	6.00	4.02	4.02	4.02	0.55	1.90	± 13.1 %

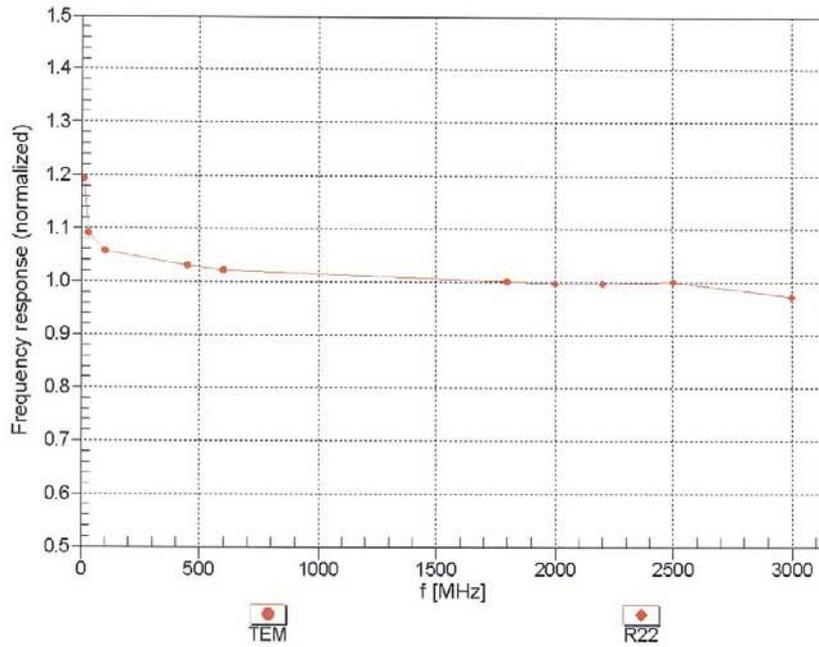
<sup>C</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<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.

EX3DV4- SN:3753

January 17, 2013

**Frequency Response of E-Field**  
(TEM-Cell:ifi110 EXX, Waveguide: R22)

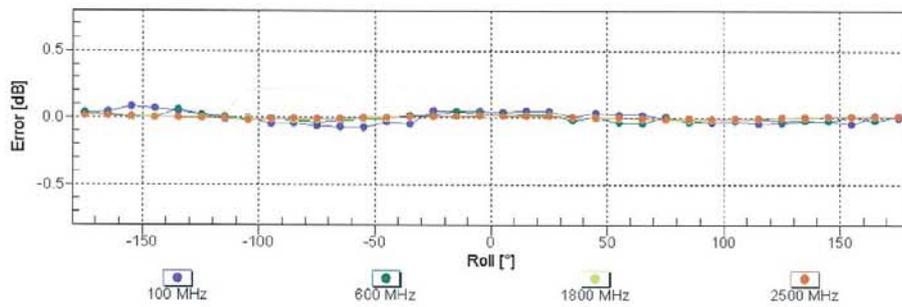
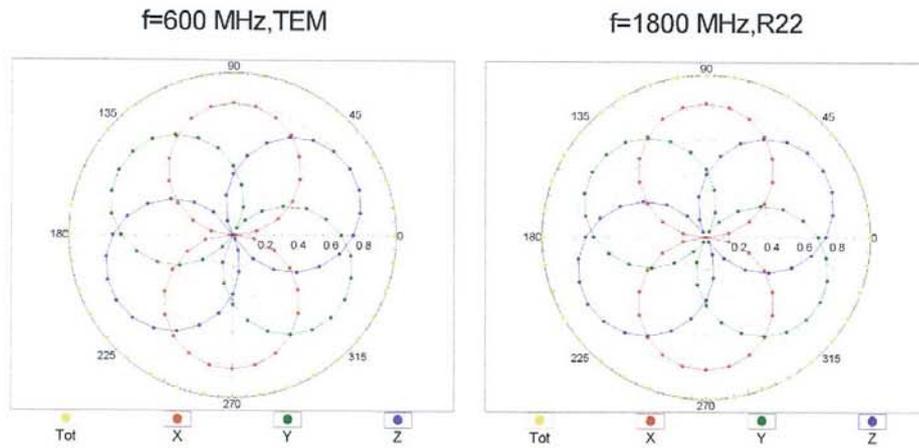


Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  (k=2)

EX3DV4-SN:3753

January 17, 2013

Receiving Pattern ( $\phi$ ),  $\vartheta = 0^\circ$

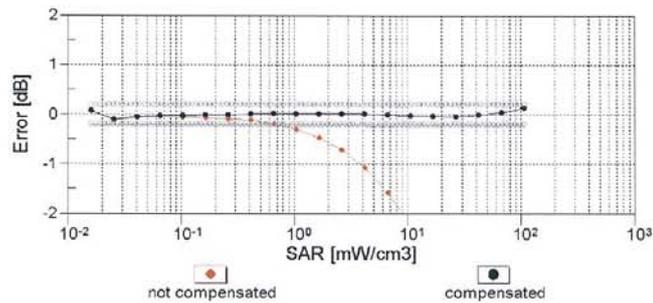
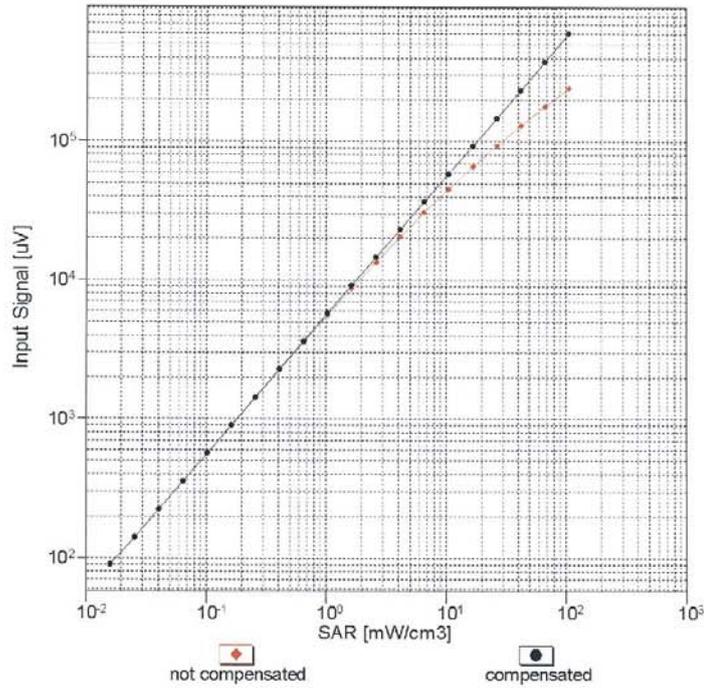


Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

EX3DV4- SN:3753

January 17, 2013

**Dynamic Range  $f(SAR_{head})$**   
(TEM cell ,  $f = 900$  MHz)

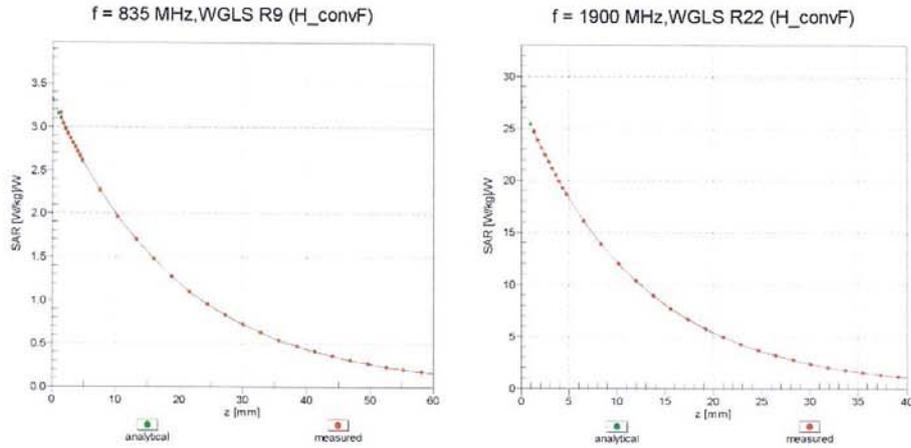


Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

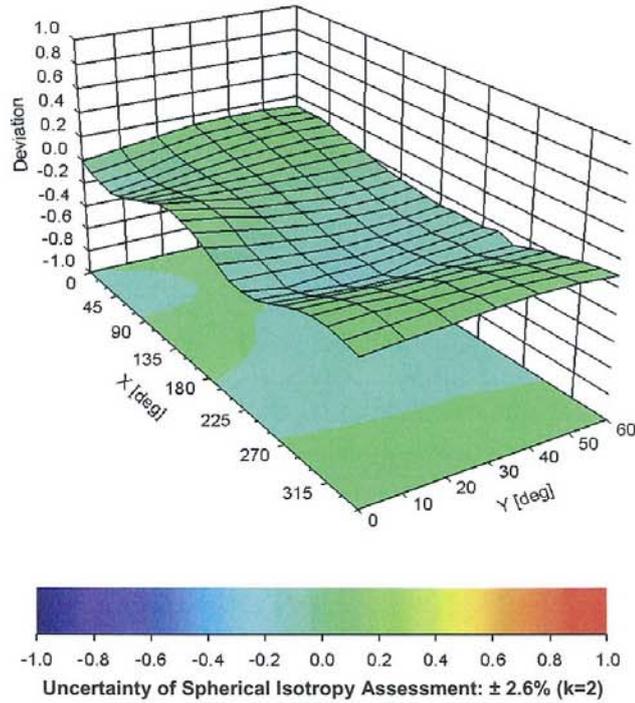
EX3DV4-SN:3753

January 17, 2013

### Conversion Factor Assessment



### Deviation from Isotropy in Liquid Error ( $\phi, \vartheta$ ), f = 900 MHz



**TA Technology (Shanghai) Co., Ltd.**  
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EX3DV4- SN:3753

January 17, 2013

**DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753**

**Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	55.2
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm

# TA Technology (Shanghai) Co., Ltd. Test Report

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## ANNEX K: D835V2 Dipole Calibration Certificate

**Calibration Laboratory of  
Schmid & Partner  
Engineering AG**  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TA-Shanghai (Auden)**

Certificate No: **D835V2-4d020\_Aug11**

### CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d020**

Calibration procedure(s) **QA CAL-05.v8  
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **August 26, 2011**

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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

Calibrated by: **Jeton Kastrati**      Name: **Jeton Kastrati**      Function: **Laboratory Technician**

Approved by: **Katja Pokovic**      Name: **Katja Pokovic**      Technical Manager

Signature:   
  
Issued: August 26, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

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**Calibration Laboratory of  
Schmid & Partner  
Engineering AG**  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

### 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:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

### Additional Documentation:

- 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.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.1 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.32 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	<b>9.34 mW / g ± 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.52 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	<b>6.11 mW / g ± 16.5 % (k=2)</b>

### Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.4 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.42 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	<b>9.46 mW / g ± 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.59 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	<b>6.26 mW / g ± 16.5 % (k=2)</b>

# TA Technology (Shanghai) Co., Ltd.

## Test Report

### Appendix

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.9 $\Omega$ - 3.1 $j\Omega$
Return Loss	- 27.7 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7 $\Omega$ - 5.4 $j\Omega$
Return Loss	- 25.1 dB

#### General Antenna Parameters and Design

Electrical Delay (one direction)	1.391 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.

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	April 22, 2004

**DASY5 Validation Report for Head TSL**

Date: 25.08.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020**

Communication System: CW; Frequency: 835 MHz

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.89$  mho/m;  $\epsilon_r = 41.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

**Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:**

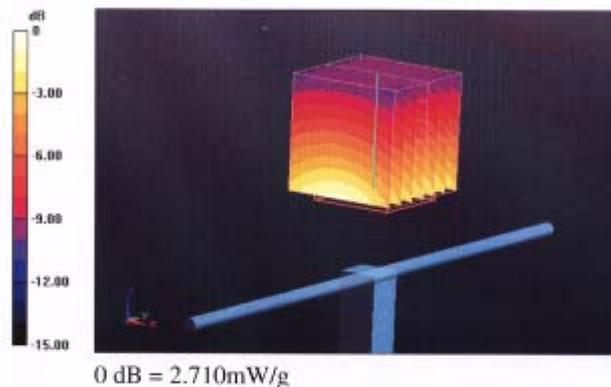
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.930 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.421 W/kg

**SAR(1 g) = 2.32 mW/g; SAR(10 g) = 1.52 mW/g**

Maximum value of SAR (measured) = 2.708 mW/g

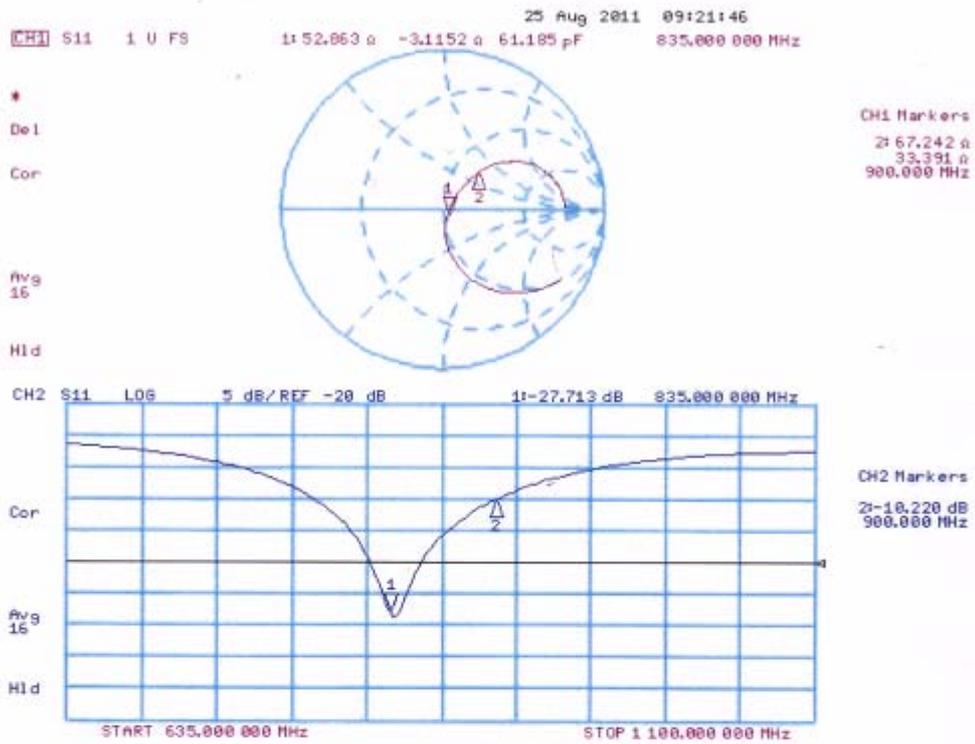


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## Impedance Measurement Plot for Head TSL



**DASY5 Validation Report for Body TSL**

Date: 26.08.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020**

Communication System: CW; Frequency: 835 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.99 \text{ mho/m}$ ;  $\epsilon_r = 53.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

**Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:**

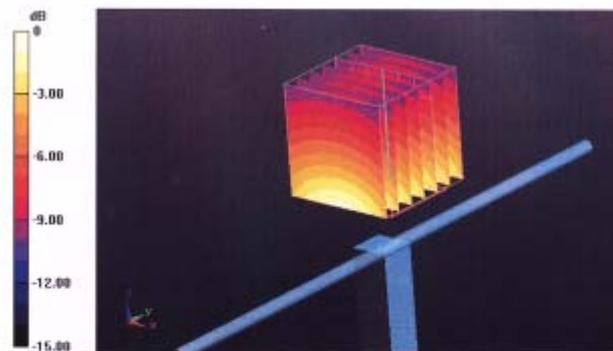
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 55.406 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.509 W/kg

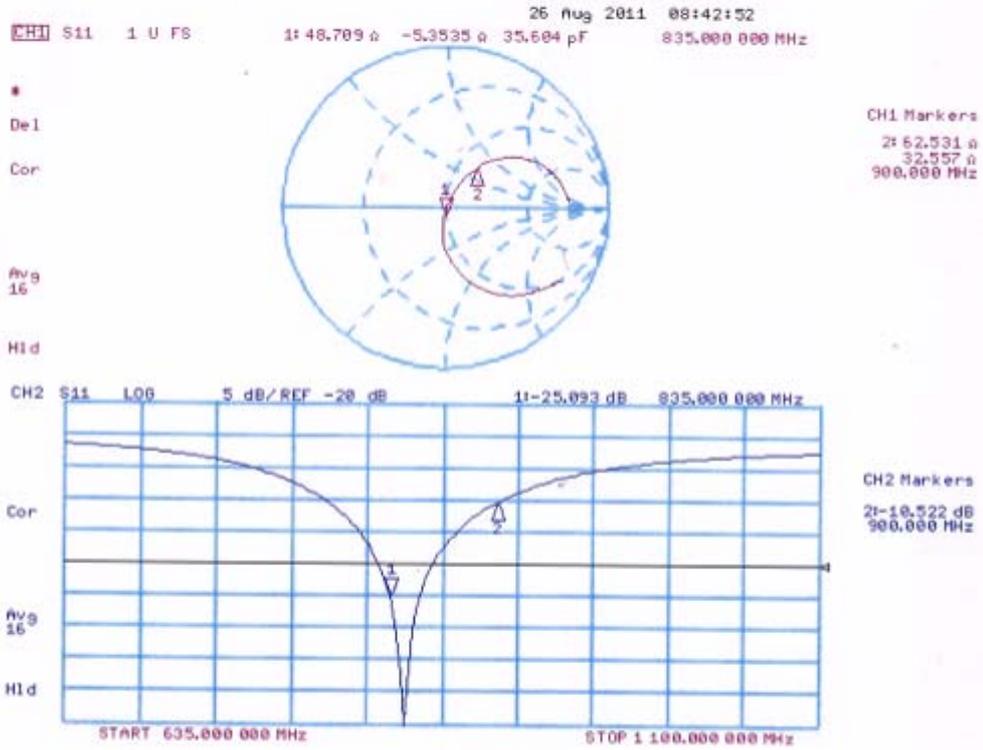
**SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.59 mW/g**

Maximum value of SAR (measured) = 2.827 mW/g



0 dB = 2.830mW/g

Impedance Measurement Plot for Body TSL



# TA Technology (Shanghai) Co., Ltd. Test Report

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## ANNEX L: D1750V2 Dipole Calibration Certificate(SN:1033)

**Calibration Laboratory of  
Schmid & Partner  
Engineering AG**  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TA Shanghai (Auden)**

Certificate No: **D1750V2-1033\_May10**

### CALIBRATION CERTIFICATE

Object: **D1750V2 - SN: 1033**

Calibration procedure(s): **QA CAL-05.v6  
Calibration procedure for dipole validation kits**

Calibration date: **May 17, 2010**

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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by:	Name <b>Dimce Iliev</b>	Function <b>Laboratory Technician</b>	Signature 
Approved by:	Name <b>Katja Pokovic</b>	Function <b>Technical Manager</b>	Signature 

Issued: May 19, 2010

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