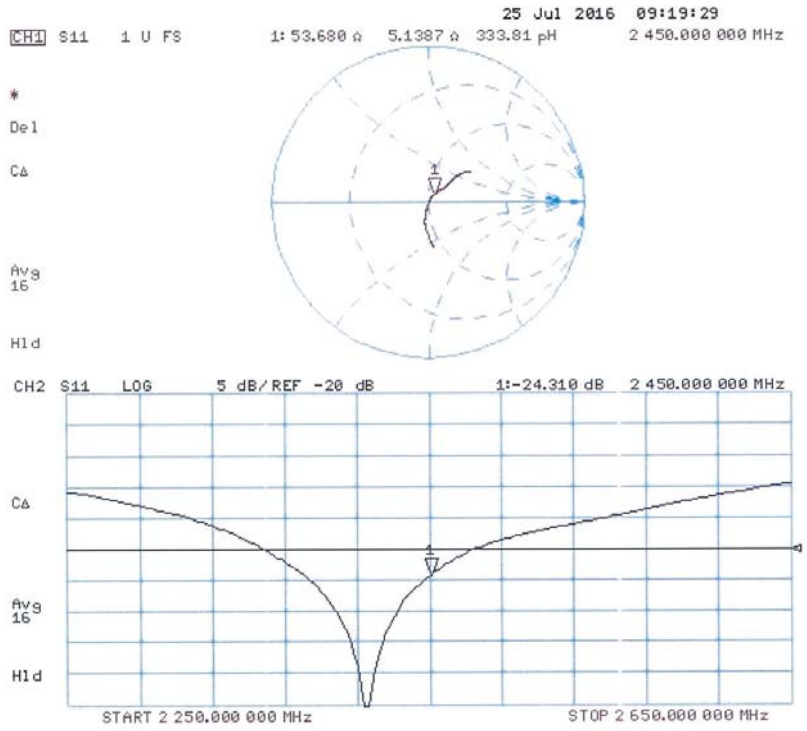
**Impedance Measurement Plot for Head TSL**



## DASY5 Validation Report for Body TSL

Date: 25.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:853**

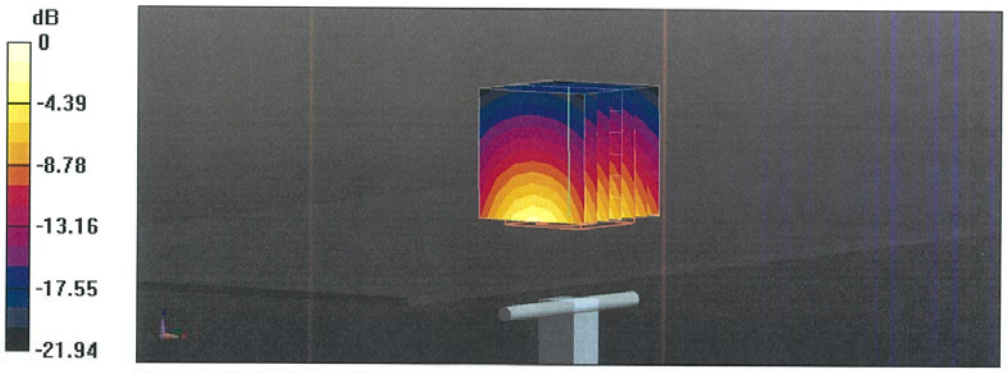
Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; $\sigma$ = 2.03 S/m; $\varepsilon_r$ = 51.8; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.79, 7.79, 7.79); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

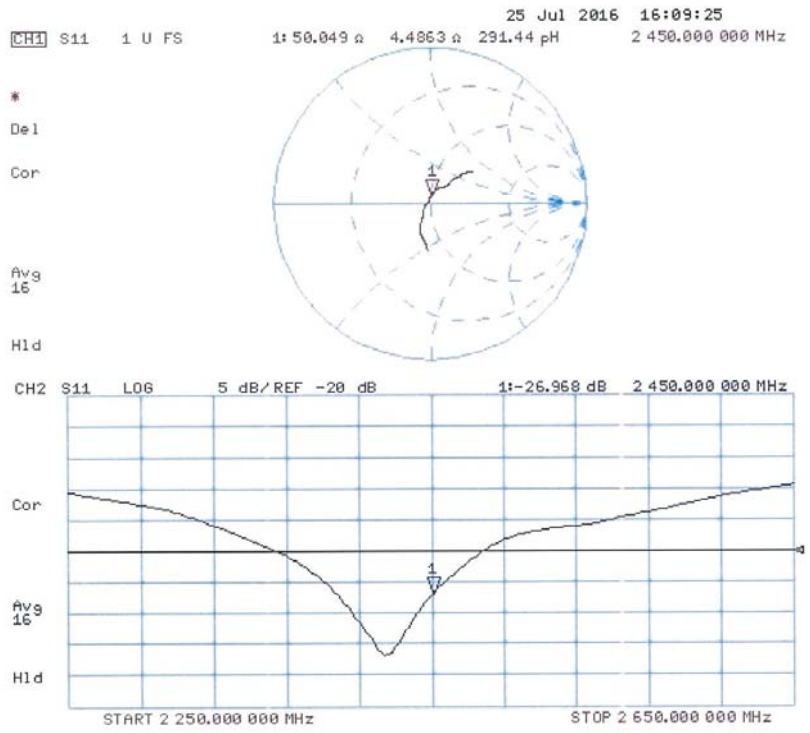
### Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 107.4 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 26.3 W/kg
**SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.1 W/kg**
Maximum value of SAR (measured) = 21.6 W/kg




0 dB = 21.6 W/kg = 13.34 dBW/kg

**Impedance Measurement Plot for Body TSL**



**2600 MHz 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
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 0108**

**Client** CTTL-BJ (Auden) **Certificate No: D2600V2-1012_Jul16**

# CALIBRATION CERTIFICATE

| | |
|---|---|
| Object | D2600V2 - SN:1012 |
| Calibration procedure(s) | QA CAL-05.v9<br>Calibration procedure for dipole validation kits above 700 MHz |
| Calibration date: | July 25, 2016 |

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 NRP | SN: 104778 | 06-Apr-16 (No. 217-02288/02289) | Apr-17 |
| Power sensor NRP-Z91 | SN: 103244 | 06-Apr-16 (No. 217-02288) | Apr-17 |
| Power sensor NRP-Z91 | SN: 103245 | 06-Apr-16 (No. 217-02289) | Apr-17 |
| Reference 20 dB Attenuator | SN: 5058 (20k) | 05-Apr-16 (No. 217-02292) | Apr-17 |
| Type-N mismatch combination | SN: 5047.2 / 06327 | 05-Apr-16 (No. 217-02295) | Apr-17 |
| Reference Probe EX3DV4 | SN: 7349 | 15-Jun-16 (No. EX3-7349_Jun16) | Jun-17 |
| DAE4 | SN: 601 | 30-Dec-15 (No. DAE4-601_Dec15) | Dec-16 |

| Secondary Standards | ID # | Check Date (in house) | Scheduled Check |
|---|---|---|---|
| Power meter EPM-442A | SN: GB37480704 | 07-Oct-15 (No. 217-02222) | In house check: Oct-16 |
| Power sensor HP 8481A | SN: US37292783 | 07-Oct-15 (No. 217-02222) | In house check: Oct-16 |
| Power sensor HP 8481A | SN: MY41092317 | 07-Oct-15 (No. 217-02223) | In house check: Oct-16 |
| RF generator R&S SMT-06 | SN: 100972 | 15-Jun-15 (in house check Jun-15) | In house check: Oct-16 |
| Network Analyzer HP 8753E | SN: US37390585 | 18-Oct-01 (in house check Oct-15) | In house check: Oct-16 |

| | Name | Function | Signature |
|---|---|---|---|
| Calibrated by: | Michael Weber | Laboratory Technician | |
| Approved by: | Katja Pokovic | Technical Manager | |

Issued: July 26, 2016

**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 0108**

**Glossary:**

| | |
|---|---|
| TSL | tissue simulating liquid |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A | not applicable or not measured |

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

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "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
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation:**

e) DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

| | | |
|---|---|---|
| **DASY Version** | DASY5 | V52.8.8 |
| **Extrapolation** | Advanced Extrapolation | |
| **Phantom** | Modular Flat Phantom | |
| **Distance Dipole Center - TSL** | 10 mm | with Spacer |
| **Zoom Scan Resolution** | dx, dy, dz = 5 mm | |
| **Frequency** | 2600 MHz ± 1 MHz | |

## Head TSL parameters

The following parameters and calculations were applied.

| | **Temperature** | **Permittivity** | **Conductivity** |
|---|---|---|---|
| **Nominal Head TSL parameters** | 22.0 °C | 39.0 | 1.96 mho/m |
| **Measured Head TSL parameters** | (22.0 ± 0.2) °C | 37.5 ± 6 % | 2.02 mho/m ± 6 % |
| **Head TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Head TSL

| **SAR averaged over 1 cm$^3$ (1 g) of Head TSL** | Condition | |
|---|---|---|
| SAR measured | 250 mW input power | 14.5 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **56.7 W/kg ± 17.0 % (k=2)** |

| **SAR averaged over 10 cm$^3$ (10 g) of Head TSL** | condition | |
|---|---|---|
| SAR measured | 250 mW input power | 6.39 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **25.2 W/kg ± 16.5 % (k=2)** |

## Body TSL parameters

The following parameters and calculations were applied.

| | **Temperature** | **Permittivity** | **Conductivity** |
|---|---|---|---|
| **Nominal Body TSL parameters** | 22.0 °C | 52.5 | 2.16 mho/m |
| **Measured Body TSL parameters** | (22.0 ± 0.2) °C | 51.4 ± 6 % | 2.20 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL

| **SAR averaged over 1 cm$^3$ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 250 mW input power | 14.0 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **55.3 W/kg ± 17.0 % (k=2)** |

| **SAR averaged over 10 cm$^3$ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 250 mW input power | 6.25 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **24.8 W/kg ± 16.5 % (k=2)** |

## Appendix (Additional assessments outside the scope of SCS 0108)

### Antenna Parameters with Head TSL

| | |
|---|---|
| Impedance, transformed to feed point | 46.8 Ω - 6.6 jΩ |
| Return Loss | - 22.4 dB |

### Antenna Parameters with Body TSL

| | |
|---|---|
| Impedance, transformed to feed point | 44.1 Ω - 4.9 jΩ |
| Return Loss | - 21.8 dB |

### General Antenna Parameters and Design

| | |
|---|---|
| Electrical Delay (one direction) | 1.152 ns |

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### Additional EUT Data

| | |
|---|---|
| Manufactured by | SPEAG |
| Manufactured on | October 30, 2007 |

**DASY5 Validation Report for Head TSL**

Date: 22.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

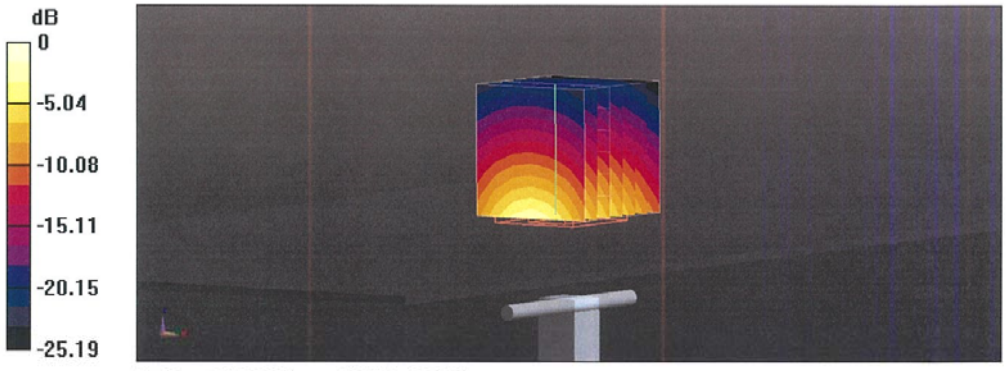
**DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1012**

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; $\sigma$ = 2.02 S/m; $\varepsilon_r$ = 37.5; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

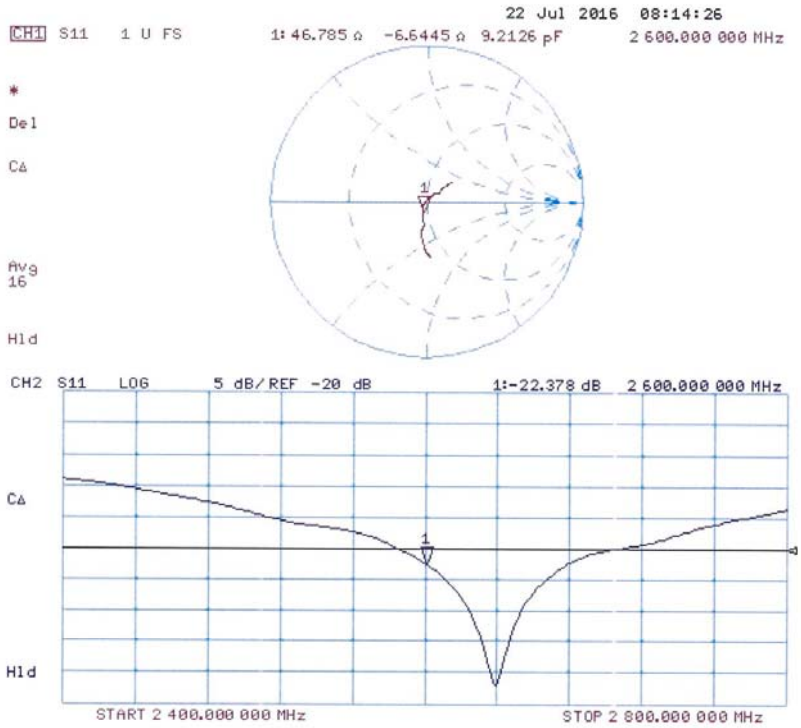
- Probe: EX3DV4 - SN7349; ConvF(7.56, 7.56, 7.56); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

**Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 115.3 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 30.9 W/kg
**SAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.39 W/kg**
Maximum value of SAR (measured) = 24.7 W/kg




0 dB = 24.7 W/kg = 13.93 dBW/kg

**Impedance Measurement Plot for Head TSL**



## DASY5 Validation Report for Body TSL

Date: 22.07.2016

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1012**

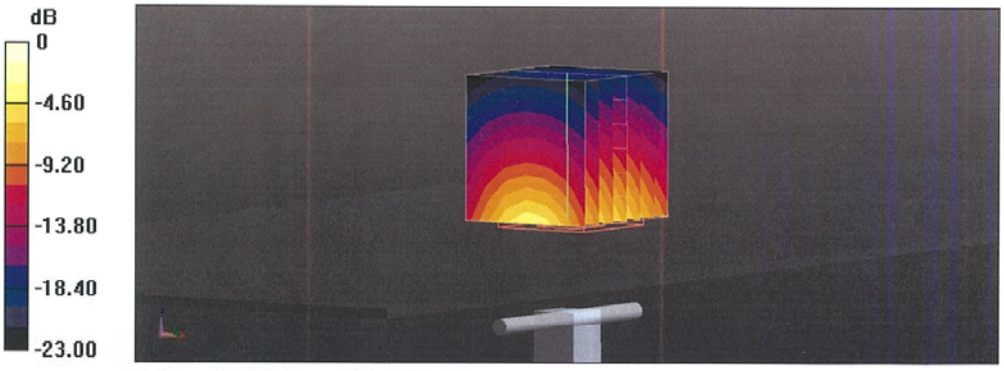
Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; $\sigma$ = 2.2 S/m; $\varepsilon_r$ = 51.4; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.48, 7.48, 7.48); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

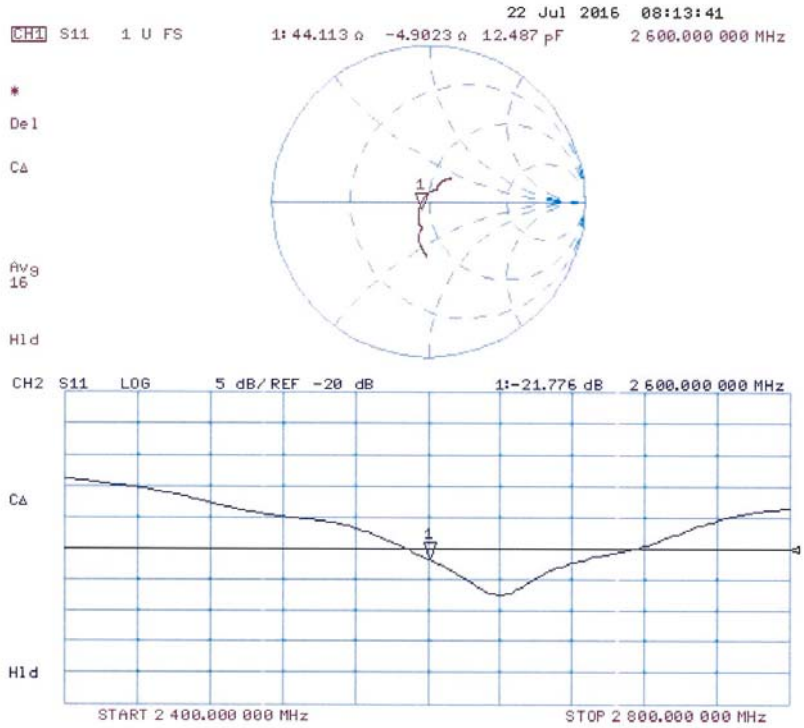
### Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.8 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 28.9 W/kg
**SAR(1 g) = 14 W/kg; SAR(10 g) = 6.25 W/kg**
Maximum value of SAR (measured) = 23.5 W/kg




0 dB = 23.5 W/kg = 13.71 dBW/kg

**Impedance Measurement Plot for Body TSL**



# ANNEX I SPOT CHECK TEST

**As the test lab for 5085B from TCL Communication Ltd, we, CTTL (Shouxiang), declare on our sole responsibility that, according to "Declaration of changes" provided by applicant, only the Spot check test should be performed. The test results are as below.**

## I.1 Conducted power of selected case

**Table I.1-1: The conducted Power for GSM/GPRS**

| GSM850 | | | | |
|---|---|---|---|---|
| | | Measured Power (dBm) | | |
| Config | Tune-up | CH251 848.8 MHz | CH128 836.6 MHz | CH191 824.4 MHz |
| GSM Speech | 33.30 | 32.96 | 33.01 | 32.95 |
| GPRS 1 Txslot | 33.10 | 32.95 | 32.99 | 32.93 |

| GSM1900 | | | | |
|---|---|---|---|---|
| | | Measured Power (dBm) | | |
| Config | Tune-up | CH251 848.8 MHz | CH128 836.6 MHz | CH191 824.4 MHz |
| GSM Speech | 30.30 | 29.71 | 29.59 | 29.56 |
| GPRS 2 Txslots | 28.00 | 26.99 | 26.98 | 26.96 |

**Table I.1-2: The conducted Power for WCDMA**

| WCDMA 850 | | | | | |
|---|---|---|---|---|---|
| | | | Measured Power (dBm) | | |
| Item | | Tune-up | CH4233 846.6MHz | CH4182 836.4MHz | CH4132 826.4MHz |
| WCDMA | RMC | 24 | 23.45 | 23.29 | 23.27 |

| WCDMA 1900 | | | | | |
|---|---|---|---|---|---|
| | | | Measured Power (dBm) | | |
| Item | | Tune-up | CH9538 1907.6 MHz | CH9400 1880 MHz | CH9262 1852.4 MHz |
| WCDMA | RMC | 24 | 23.75 | 24.25 | 24.18 |

**Table I.1-3: The conducted Power for LTE**

| LTE band 4 | | | | |
|---|---|---|---|---|
| BandWidth | RB Number | Channel | Tune-up | Measured Power |
| 20 MHz | 1H | 1745 (20300) | 24 | 23.96 |
| | | 1732.5 (20175) | 24 | / |
| | | 1720 (20050) | 24 | / |
| 20 MHz | 1L | 1745 (20300) | 24 | / |
| | | 1732.5 (20175) | 24 | 23.96 |
| | | 1720 (20050) | 24 | 23.97 |

| LTE band 7 | | | | |
|---|---|---|---|---|
| BandWidth | RB Number | Channel | Tune-up | Measured Power |
| 20 MHz | 1H | 2560 (21350) | 24.4 | / |
| | | 2535 (21100) | 24.4 | 23.85 |
| | | 2510 (20850) | 24.4 | 23.89 |
| 20 MHz | 1L | 2560 (21350) | 24.4 | 23.79 |
| | | 2535 (21100) | 24.4 | / |
| | | 2510 (20850) | 24.4 | / |

| LTE band 12 | | | | |
|---|---|---|---|---|
| BandWidth | RB Number | Channel | Tune-up | Measured Power |
| 10 MHz | 1M | 711(23130) | 24.5 | / |
| | | 707.5(23095) | 24.5 | 23.90 |
| | | 704(23060) | 24.5 | 23.93 |
| 10 MHz | 1L | 711(23130) | 24.5 | 23.97 |
| | | 707.5(23095) | 24.5 | / |
| | | 704(23060) | 24.5 | / |

| LTE band 13 | | | | |
|---|---|---|---|---|
| BandWidth | RB Number | Channel | Tune-up | Measured Power |
| 10 MHz | 1H | 782 (23230) | 24.5 | 23.66 |
| | 1M | | 24.5 | 23.65 |
| | 1L | | 24.5 | 23.78 |

| LTE band 17 | | | | |
|---|---|---|---|---|
| BandWidth | RB Number | Channel | Tune-up | Measured Power |
| 10 MHz | 1L | 711 (23800) | 24.5 | 23.96 |
| | | 710 (23790) | 24.5 | 23.96 |
| | | 709 (23780) | 24.5 | 23.94 |

## I.2 Measurement results

| Test Band | Channel | Frequency | Tune-Up | Measured Power | Test Poisition | Measrued 10g SAR | Measued 1g SAR | Report 10g SAR | Report 1g SAR | Power Drift | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GSM850 | 251 | 848.8 | 33.3 | 32.96 | Left Cheek | 0.265 | 0.349 | 0.29 | 0.38 | -0.16 | Fig I.1 |
| GSM850 | 251 | 848.8 | 33.1 | 32.95 | Rear | 0.22 | 0.371 | 0.23 | 0.38 | 0.07 | Fig I.2 |
| PCS1900 | 512 | 1850.2 | 30.3 | 29.56 | Left Cheek | 0.087 | 0.139 | 0.10 | 0.16 | 0.07 | Fig I.3 |
| PCS1900 | 512 | 1850.2 | 28 | 26.96 | Bottom | 0.221 | 0.416 | 0.28 | 0.53 | 0.11 | Fig I.4 |
| WCDMA850 | 4233 | 846.6 | 24 | 23.45 | Left Cheek | 0.280 | 0.368 | 0.32 | 0.42 | -0.05 | Fig I.5 |
| WCDMA850 | 4233 | 846.6 | 24 | 23.45 | Rear | 0.186 | 0.317 | 0.21 | 0.36 | 0 | Fig I.6 |
| LTE Band4 | 20300 | 1745 MHz | 24 | 23.96 | Left Cheek | 0.217 | 0.342 | 0.22 | 0.35 | -0.02 | Fig I.7 |
| LTE Band4 | 20300 | 1745 MHz | 24 | 23.96 | Bottom | 0.361 | 0.671 | 0.36 | 0.68 | 0.12 | Fig I.8 |
| LTE Band7 | 20850 | 2510 MHz | 24.4 | 23.89 | Right Cheek | 0.169 | 0.319 | 0.19 | 0.36 | 0.12 | Fig I.9 |
| LTE Band7 | 20850 | 2510 MHz | 24.4 | 23.89 | Bottom | 0.291 | 0.591 | 0.33 | 0.66 | 0.16 | Fig I.10 |
| LTE Band12 | 23130 | 711 MHz | 24.5 | 23.97 | Left Cheek | 0.192 | 0.24 | 0.22 | 0.27 | -0.04 | Fig I.11 |
| LTE Band12 | 23130 | 711 MHz | 24.5 | 23.97 | Rear | 0.235 | 0.296 | 0.27 | 0.33 | 0.01 | Fig I.12 |
| LTE Band13 | 23230 | 782 MHz | 24.5 | 23.78 | Left Cheek | 0.106 | 0.137 | 0.13 | 0.16 | 0.02 | Fig I.13 |
| LTE Band13 | 23230 | 782 MHz | 24.5 | 23.78 | Rear | 0.167 | 0.213 | 0.20 | 0.25 | 0.02 | Fig I.14 |

## I.3 Reported SAR Comparison

| Exposure Configuration | Technology Band | Reported SAR 1g (W/Kg): spot check | Reported SAR 1g (W/Kg): original |
|---|---|---|---|
| Head | GSM850 | 0.38 | 0.34 |
| | GSM1900 | 0.16 | 0.21 |
| | WCDMA 850 | 0.42 | 0.42 |
| | WCDMA1900 | 0.25 | 0.39 |
| | LTE Band4 | 0.35 | 0.45 |
| | LTE Band7 | 0.36 | 0.31 |
| | LTE Band12 | 0.27 | 0.24 |
| | LTE Band13 | 0.16 | 0.16 |
| Body | GSM850 | 0.38 | 0.42 |
| | GSM1900 | 0.53 | 0.55 |
| | WCDMA 850 | 0.36 | 0.48 |
| | WCDMA1900 | 0.56 | 0.73 |
| | LTE Band4 | 0.68 | 1.03 |
| | LTE Band7 | 0.66 | 0.87 |
| | LTE Band12 | 0.33 | 0.33 |
| | LTE Band13 | 0.25 | 0.25 |

**Note: The spot check results of Head for GSM850,, LTE band7 and LTE band12 are larger than the original result. So they replace the original results and others are shared.**

**GSM850_CH251 Left Cheek**
Date: 1/5/2017
Electronics: DAE4 Sn1331
Medium: Head 835 MHz
Medium parameters used: f = 848.8 MHz; $\sigma$ = 0.875 mho/m; $\varepsilon r$ = 41.67; $\rho$ = 1000 kg/$m^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: GSM850 848.8 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.01,10.01,10.01)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.404 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.051 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.454 W/kg
**SAR(1 g) = 0.349 W/kg; SAR(10 g) = 0.265 W/kg**
Maximum value of SAR (measured) = 0.38 W/kg

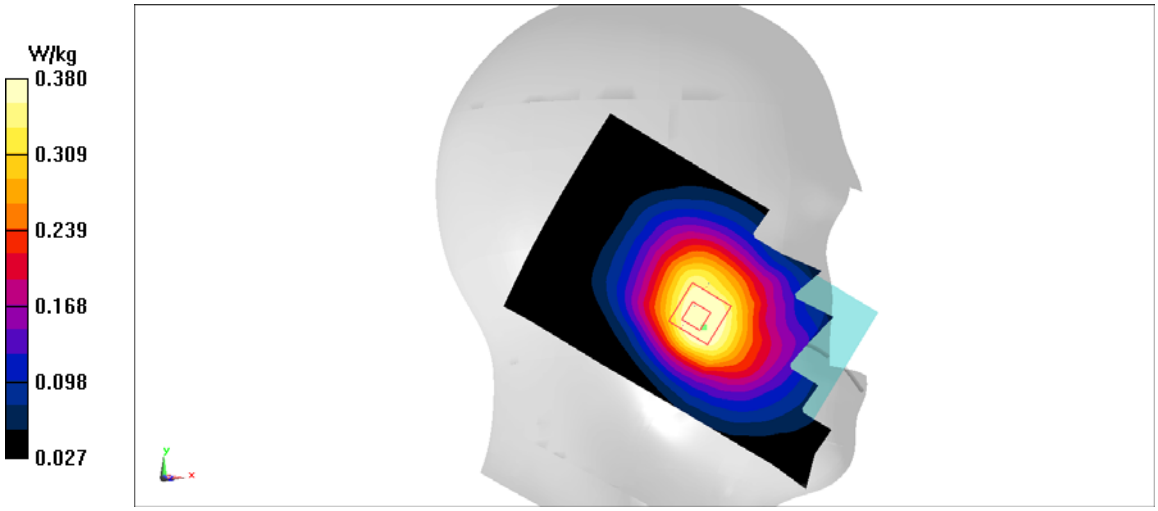



**Figure I.1**

**GSM850_CH251 Rear**
Date: 1/5/2017
Electronics: DAE4 Sn1331
Medium: Head 835 MHz
Medium parameters used: f = 848.8 MHz; $\sigma$ = 0.965 mho/m; $\varepsilon r$ = 55.46; $\rho$ = 1000 kg/$m^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: GSM850 848.8 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(9.83,9.83,9.83)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.405 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.93 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.624 W/kg
**SAR(1 g) = 0.371 W/kg; SAR(10 g) = 0.22 W/kg**
Maximum value of SAR (measured) = 0.447 W/kg

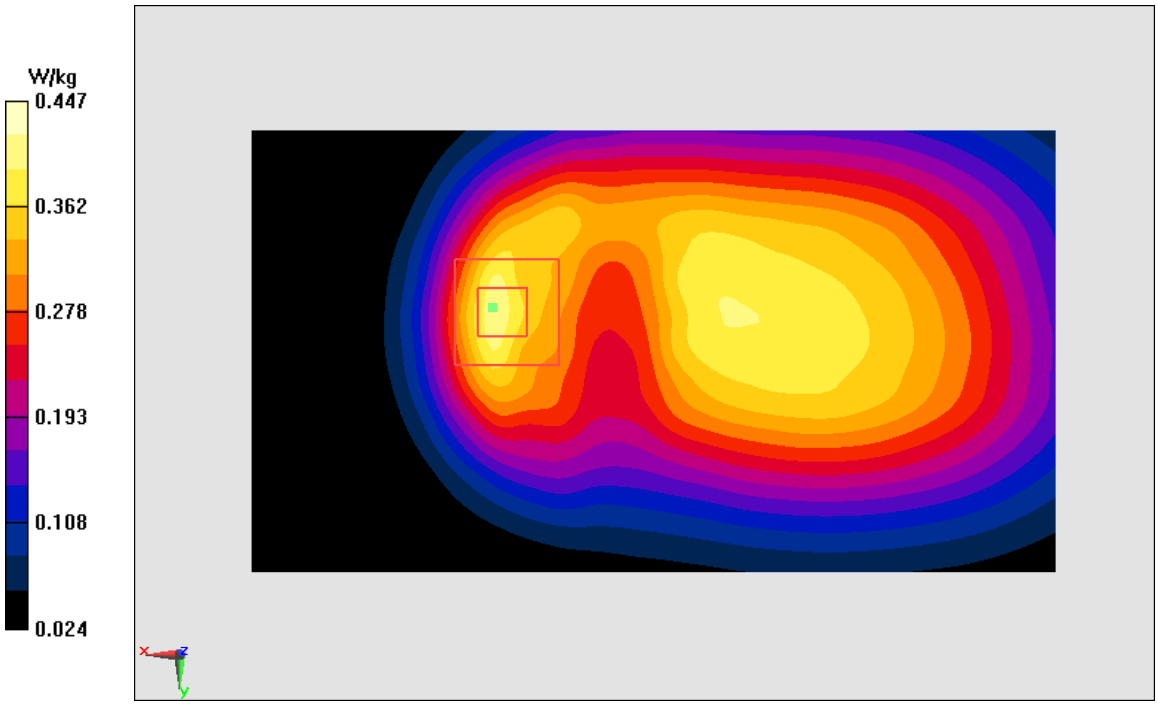



**Figure I.2**

**PCS1900 _CH512 Left Cheek**
Date: 1/7/2017
Electronics: DAE4 Sn1331
Medium: Head 1900 MHz
Medium parameters used: f = 1850.2 MHz; $\sigma$ = 1.425 mho/m; $\varepsilon r$ = 39.852; $\rho$ = 1000 kg/m$^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.1,8.1,8.1)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.153 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.886 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.205 W/kg
**SAR(1 g) = 0.139 W/kg; SAR(10 g) = 0.0872 W/kg**
Maximum value of SAR (measured) = 0.164 W/kg

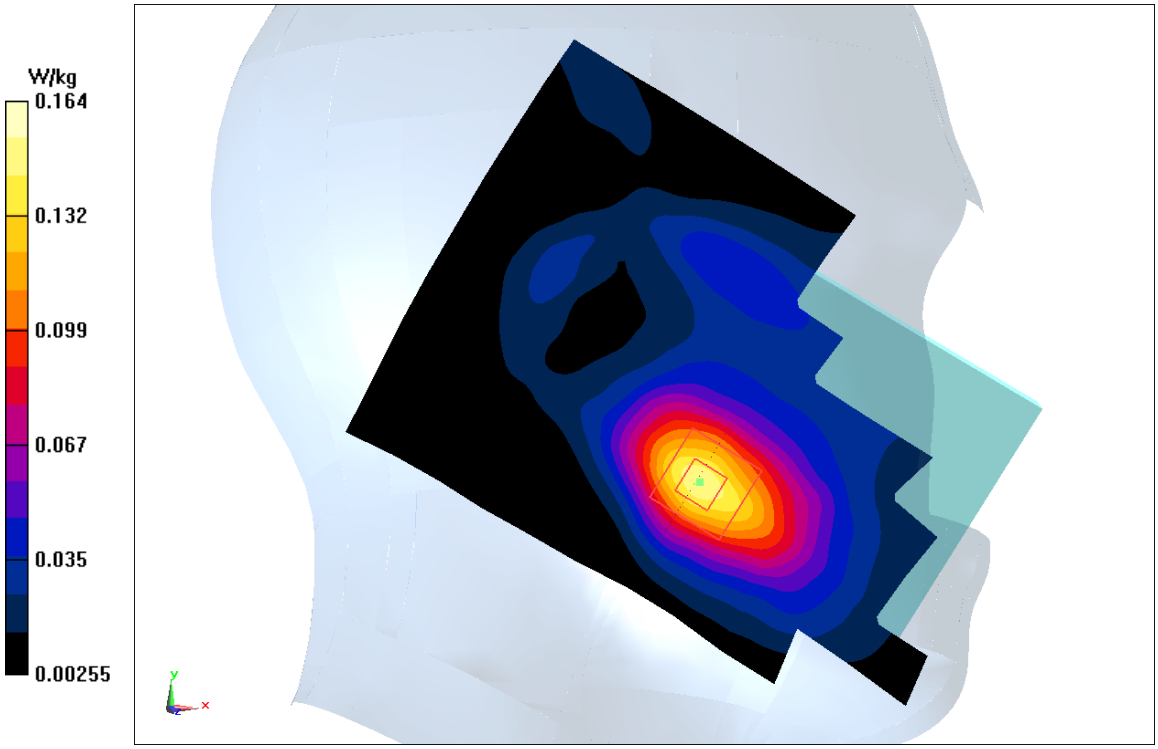



**Figure I.3**

**PCS1900 _CH512 Bottom**
Date: 1/7/2017
Electronics: DAE4 Sn1331
Medium: Head 1900 MHz
Medium parameters used: f = 1850.2 MHz; $\sigma$ = 1.562 mho/m; $\varepsilon r$ = 54.01; $\rho$ = 1000 kg/$m^3$
Ambient Temperature: 22.5°C,  Liquid Temperature: 22.3°C
Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:4
Probe: EX3DV4 – SN7307 ConvF(7.67,7.67,7.67)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.499 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.56 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.712 W/kg
**SAR(1 g) = 0.416 W/kg; SAR(10 g) = 0.221 W/kg**
Maximum value of SAR (measured) = 0.512 W/kg

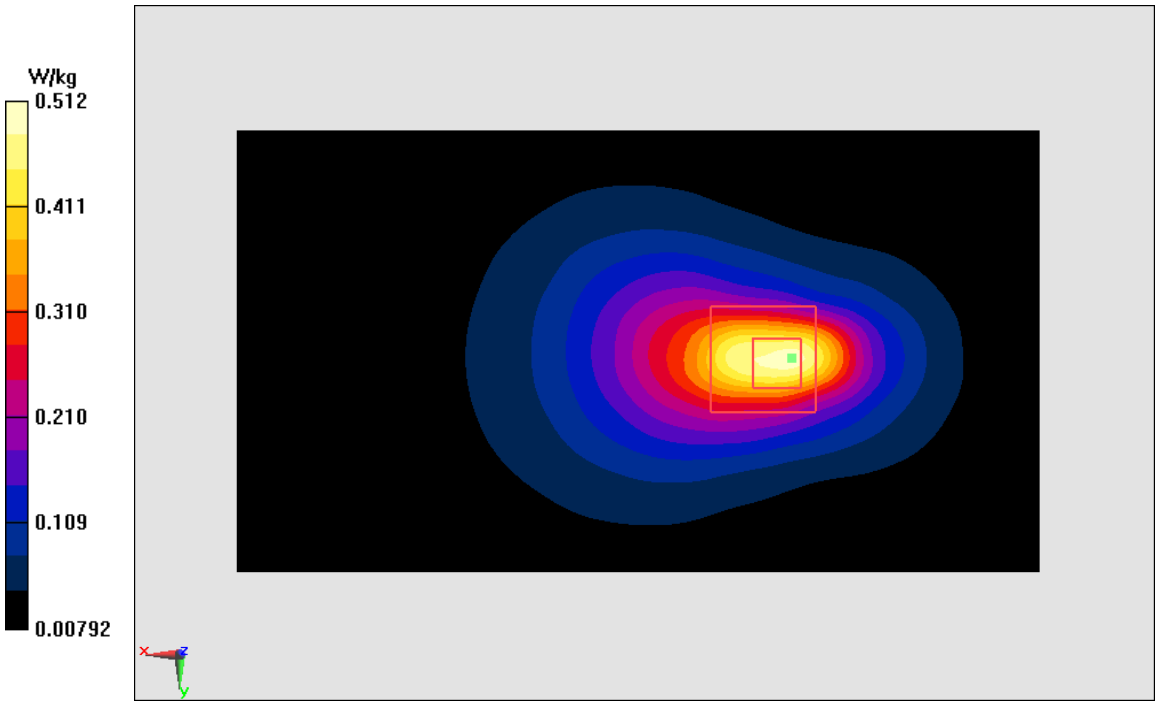



**Figure I.4**

**WCDMA850-BV_CH4233 Left Cheek**
Date: 1/5/2017
Electronics: DAE4 Sn1331
Medium: Head 835 MHz
Medium parameters used: f = 846.6 MHz; $\sigma$ = 0.879 mho/m; $\varepsilon r$ = 41.71; $\rho$ = 1000 kg/$m^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 846.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.01,10.01,10.01)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.482 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.222 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.531 W/kg
**SAR(1 g) = 0.368 W/kg; SAR(10 g) = 0.280 W/kg**
Maximum value of SAR (measured) = 0.441 W/kg

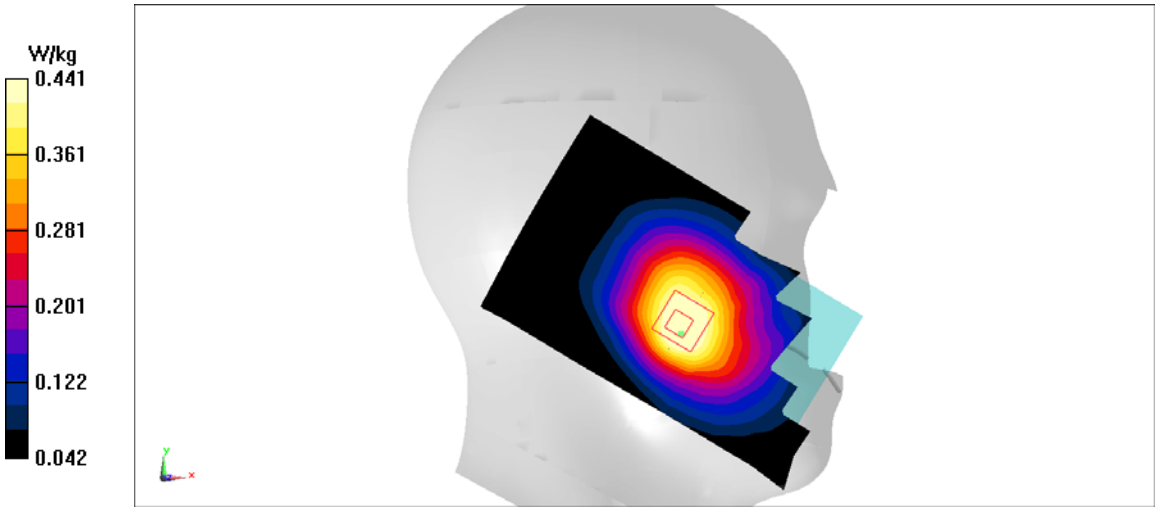



**Figure I.5**

**WCDMA850-BV_CH4233 Rear**
Date: 1/5/2017
Electronics: DAE4 Sn1331
Medium: Head 835 MHz
Medium parameters used: f = 846.6 MHz; $\sigma$ = 0.969 mho/m; $\varepsilon r$ = 55.43; $\rho$ = 1000 kg/$m^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 846.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(9.83,9.83,9.83)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.379 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.9 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 0.54 W/kg
**SAR(1 g) = 0.317 W/kg; SAR(10 g) = 0.186 W/kg**
Maximum value of SAR (measured) = 0.392 W/kg

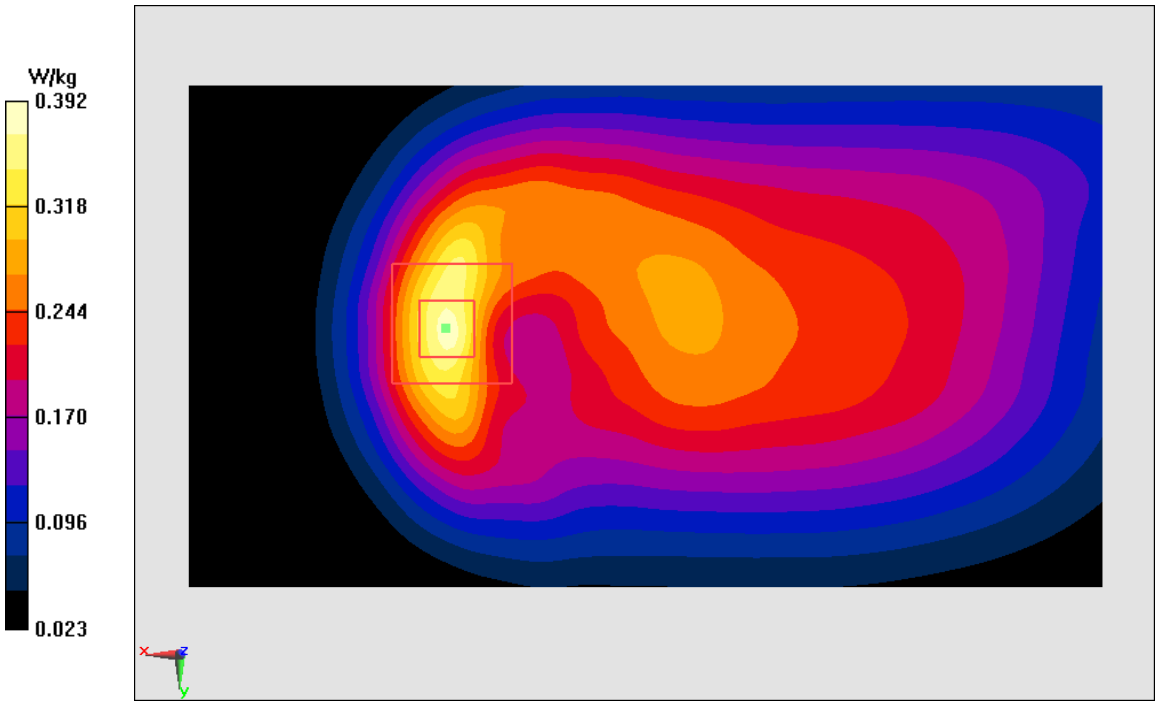



**Figure I.6**

**LTE1700-FDD4_CH20300 Left Cheek**
Date: 1/6/2017
Electronics: DAE4 Sn1331
Medium: Head 1750 MHz
Medium parameters used: f = 1745 MHz; $\sigma$ = 1.398 mho/m; $\varepsilon r$ = 39.716; $\rho$ = 1000 kg/$m^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD4 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.37,8.37,8.37)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.41 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.07 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.509 W/kg
**SAR(1 g) = 0.342 W/kg; SAR(10 g) = 0.217 W/kg**
Maximum value of SAR (measured) = 0.396 W/kg

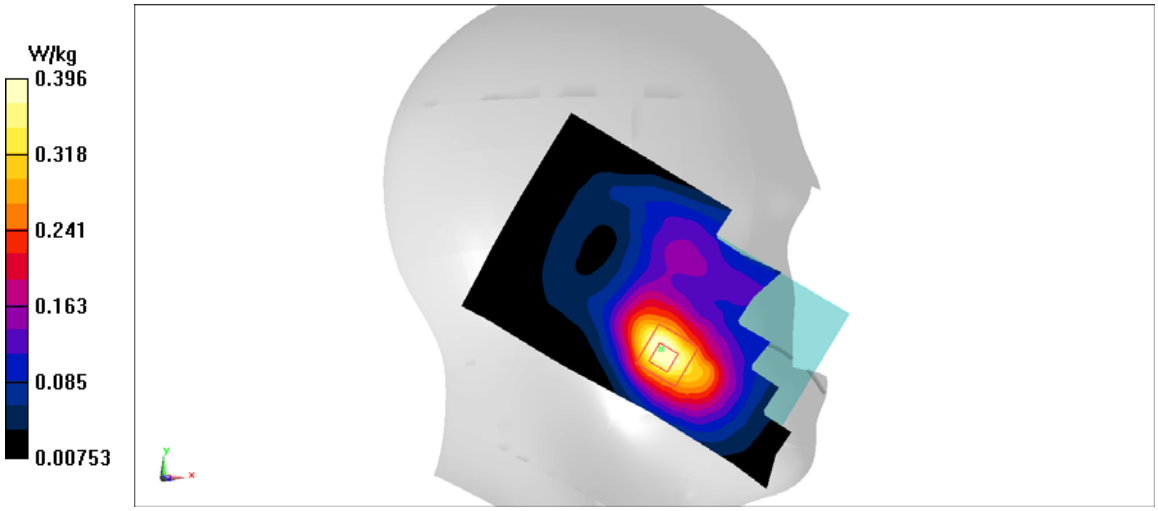



**Figure I.9**

**LTE1700-FDD4_CH20300 Bottom**
Date: 1/6/2017
Electronics: DAE4 Sn1331
Medium: Head 1750 MHz
Medium parameters used: f = 1745 MHz; $\sigma$ = 1.492 mho/m; $\varepsilon r$ = 53.124; $\rho$ = 1000 kg/$m^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD4 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.18,8.18,8.18)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.83 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.52 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.13 W/kg
**SAR(1 g) = 0.671 W/kg; SAR(10 g) = 0.361 W/kg**
Maximum value of SAR (measured) = 0.813 W/kg

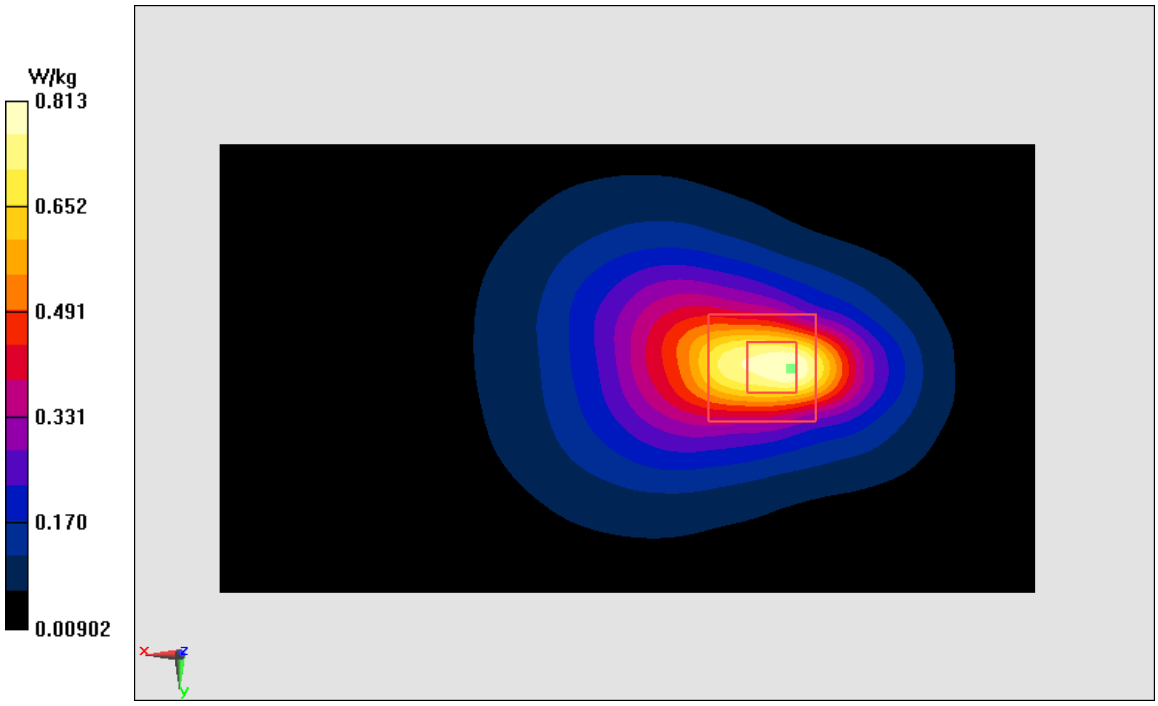



**Figure I.10**

**LTE2500-FDD7_CH20850 Right Cheek**
Date: 1/8/2017
Electronics: DAE4 Sn1331
Medium: Head 2600 MHz
Medium parameters used: f = 2510 MHz; $\sigma$ = 1.985 mho/m; $\varepsilon r$ = 39.51; $\rho$ = 1000 kg/m$^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2510 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(7.21,7.21,7.21)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.437 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.728 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.609 W/kg
**SAR(1 g) = 0.319 W/kg; SAR(10 g) = 0.169 W/kg**
Maximum value of SAR (measured) = 0.397 W/kg

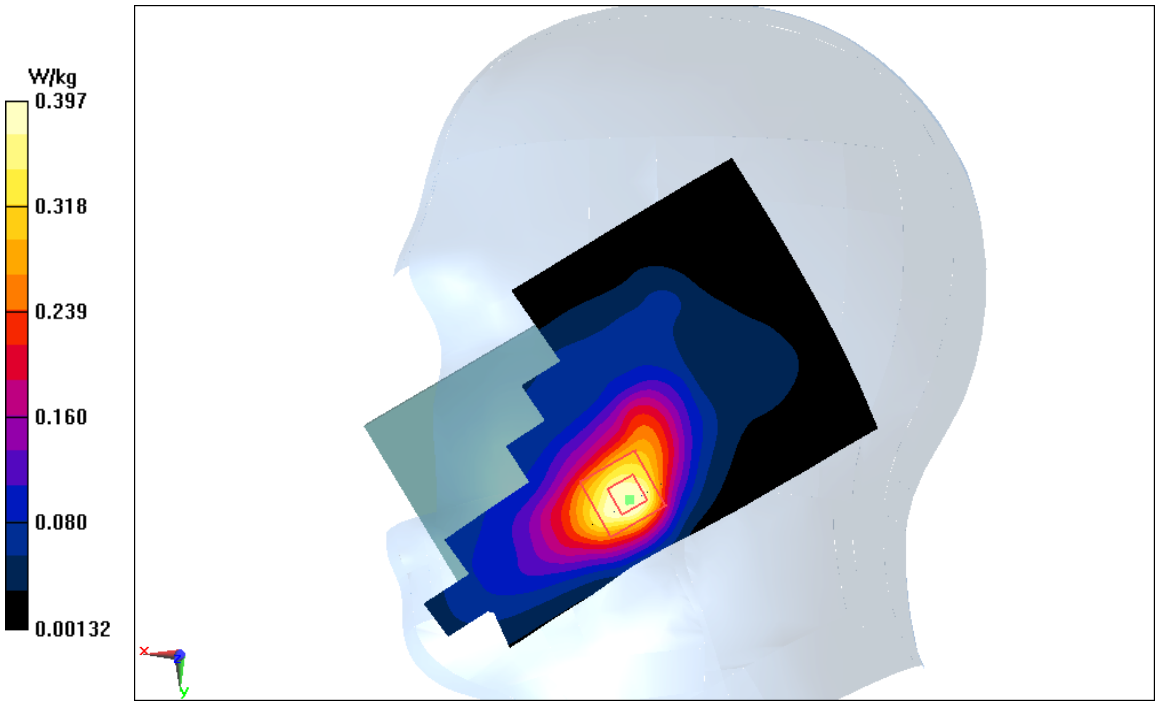



**Figure I.11**

**LTE2500-FDD7_CH20850 Bottom**
Date: 1/8/2017
Electronics: DAE4 Sn1331
Medium: Head 2600 MHz
Medium parameters used: f = 2510 MHz; $\sigma$ = 2.206 mho/m; $\varepsilon r$ = 52.21; $\rho$ = 1000 kg/m$^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2510 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(7.03,7.03,7.03)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.762 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.67 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.16 W/kg
**SAR(1 g) = 0.591 W/kg; SAR(10 g) = 0.291 W/kg**
Maximum value of SAR (measured) = 0.751 W/kg

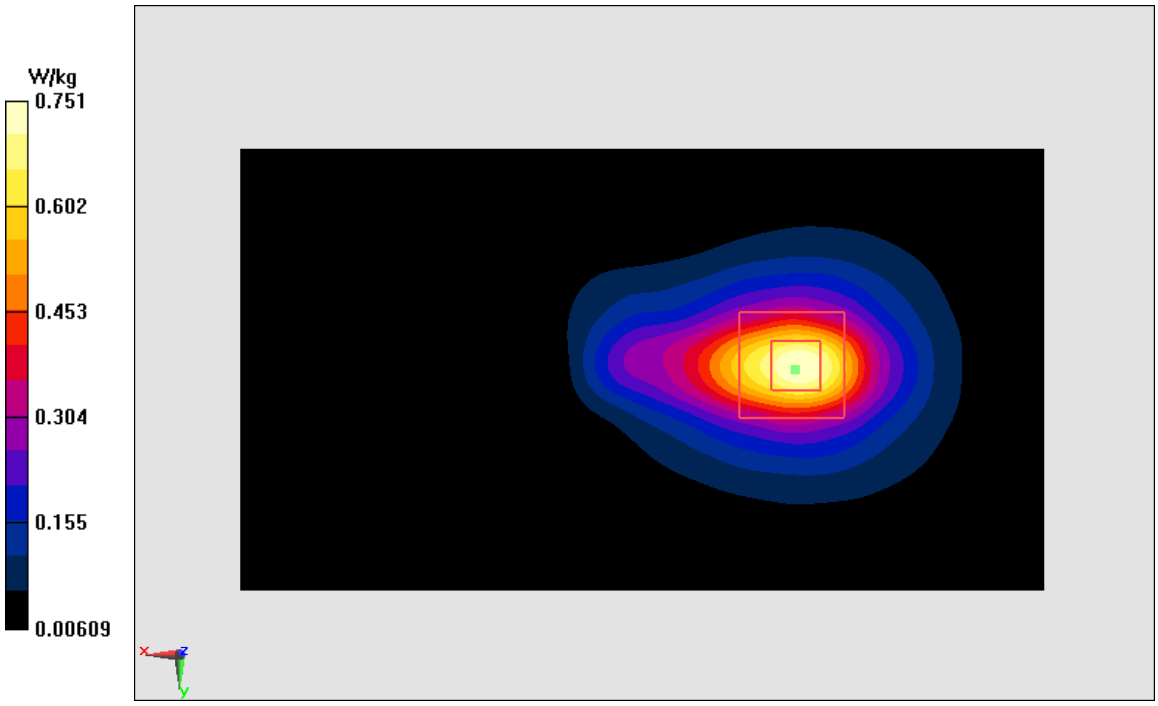



**Figure I.12**

**LTE700-FDD12_CH23130 Left Cheek**
Date: 1/4/2017
Electronics: DAE4 Sn1331
Medium: Head 750 MHz
Medium parameters used: f = 711 MHz; $\sigma$ = 0.895 mho/m; $\varepsilon r$ = 41.623; $\rho$ = 1000 kg/m$^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 711 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.47,10.47,10.47)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.259 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.792 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.286 W/kg
**SAR(1 g) = 0.24 W/kg; SAR(10 g) = 0.192 W/kg**
Maximum value of SAR (measured) = 0.26 W/kg

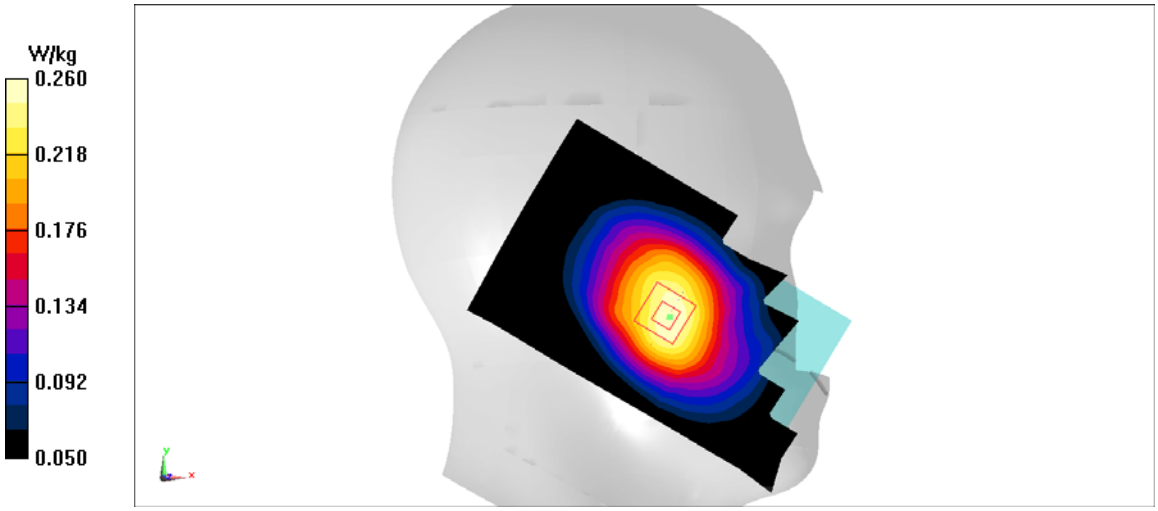



**Figure I.13**

**LTE700-FDD12_CH23130 Rear**
Date: 1/4/2017
Electronics: DAE4 Sn1331
Medium: Head 750 MHz
Medium parameters used: f = 711 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon r$ = 56.214; $\rho$ = 1000 kg/m$^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 711 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(9.93,9.93,9.93)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.323 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.21 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.359 W/kg
**SAR(1 g) = 0.296 W/kg; SAR(10 g) = 0.235 W/kg**
Maximum value of SAR (measured) = 0.319 W/kg

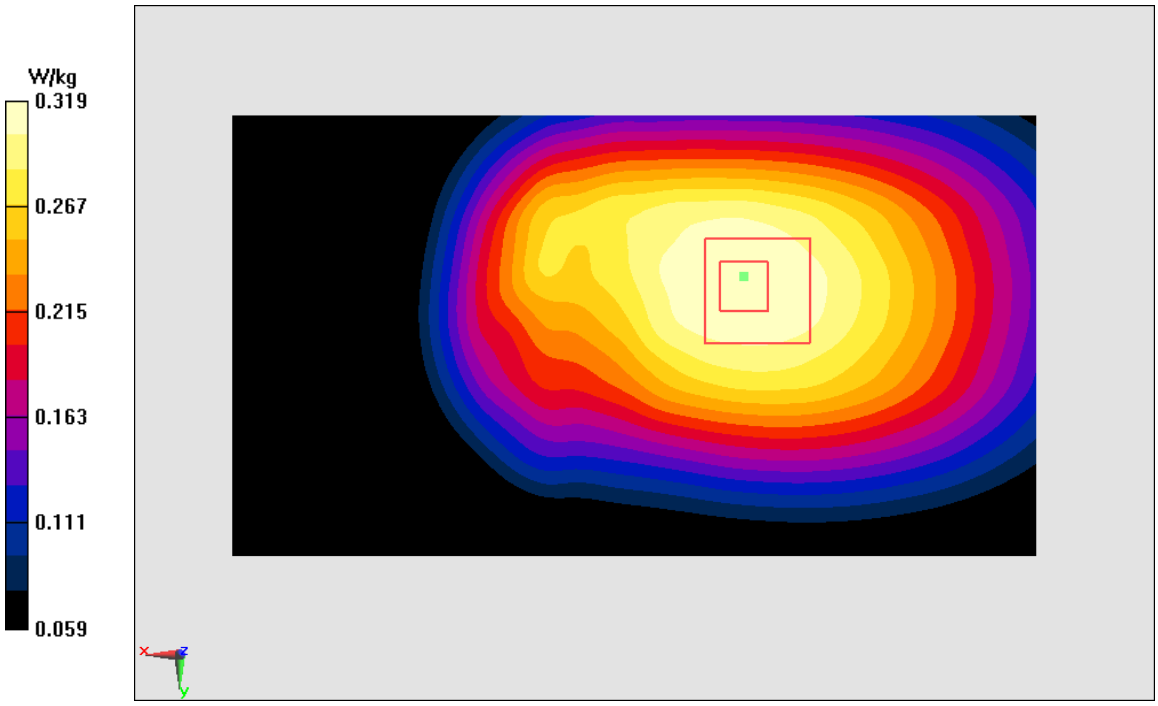



**Figure I.14**

**LTE750-FDD13_CH23230 Left Cheek**
Date: 1/4/2017
Electronics: DAE4 Sn1331
Medium: Head 750 MHz
Medium parameters used: f = 782 MHz; $\sigma$ = 0.875 mho/m; $\varepsilon r$ = 41.725; $\rho$ = 1000 kg/m$^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.47,10.47,10.47)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.148 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.4 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.171 W/kg
**SAR(1 g) = 0.137 W/kg; SAR(10 g) = 0.106 W/kg**
Maximum value of SAR (measured) = 0.148 W/kg

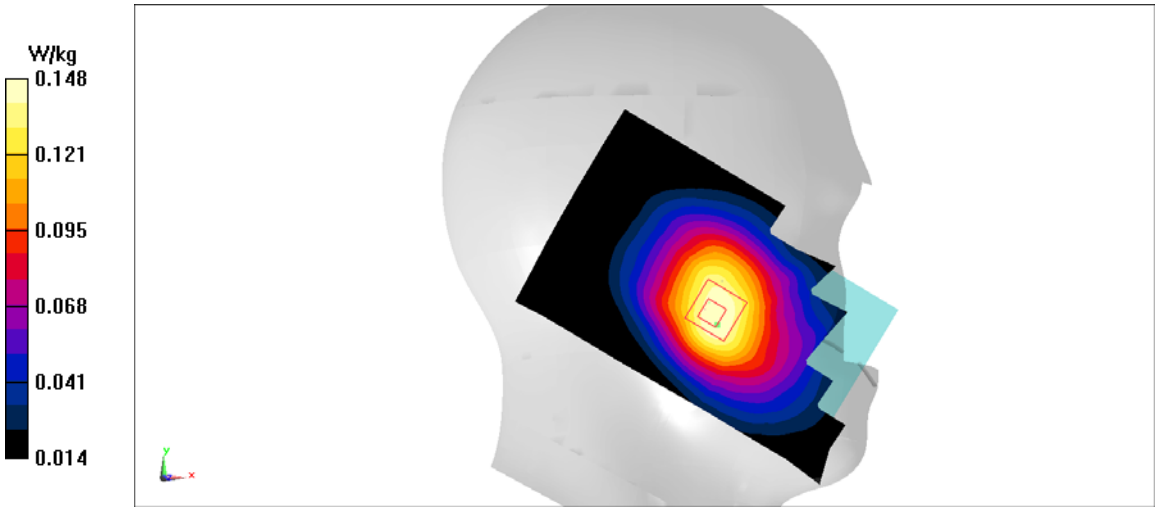



**Figure I.15**

**LTE750-FDD13_CH23230 Rear**
Date: 1/4/2017
Electronics: DAE4 Sn1331
Medium: Head 750 MHz
Medium parameters used: f = 782 MHz; $\sigma$ = 0.952 mho/m; $\varepsilon r$ = 56.347; $\rho$ = 1000 kg/m$^3$
Ambient Temperature: 22.5ºC,  Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(9.93,9.93,9.93)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.232 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.87 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.262 W/kg
**SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.167 W/kg**
Maximum value of SAR (measured) = 0.231 W/kg

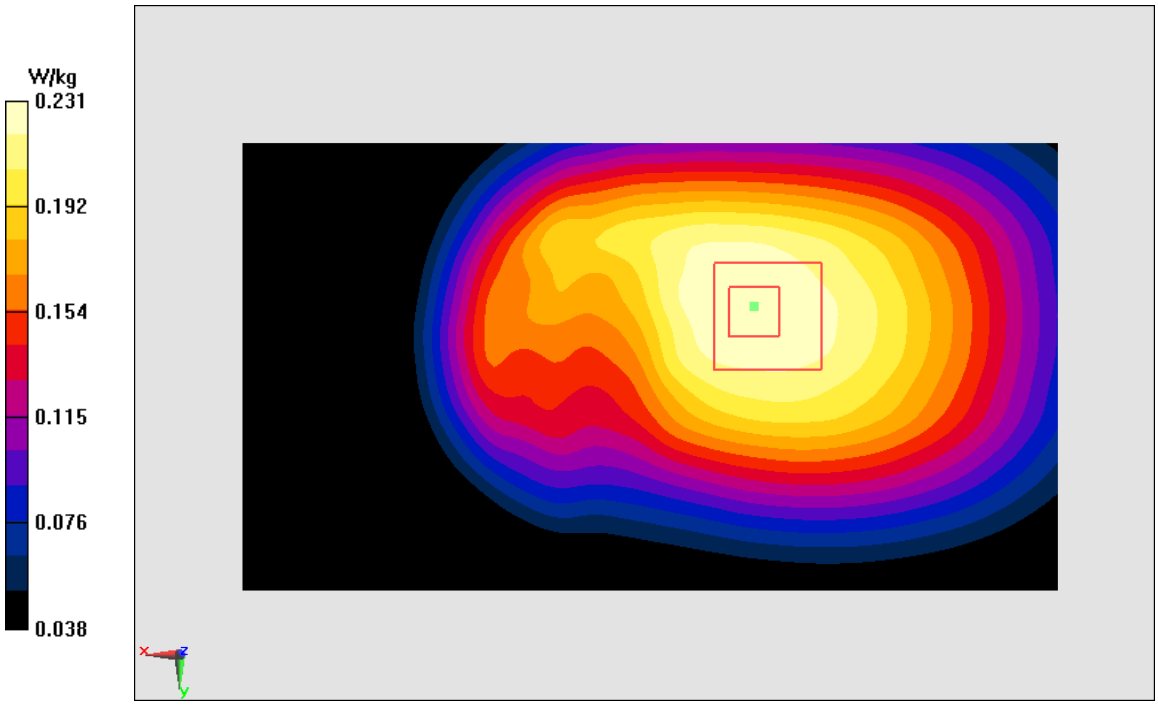
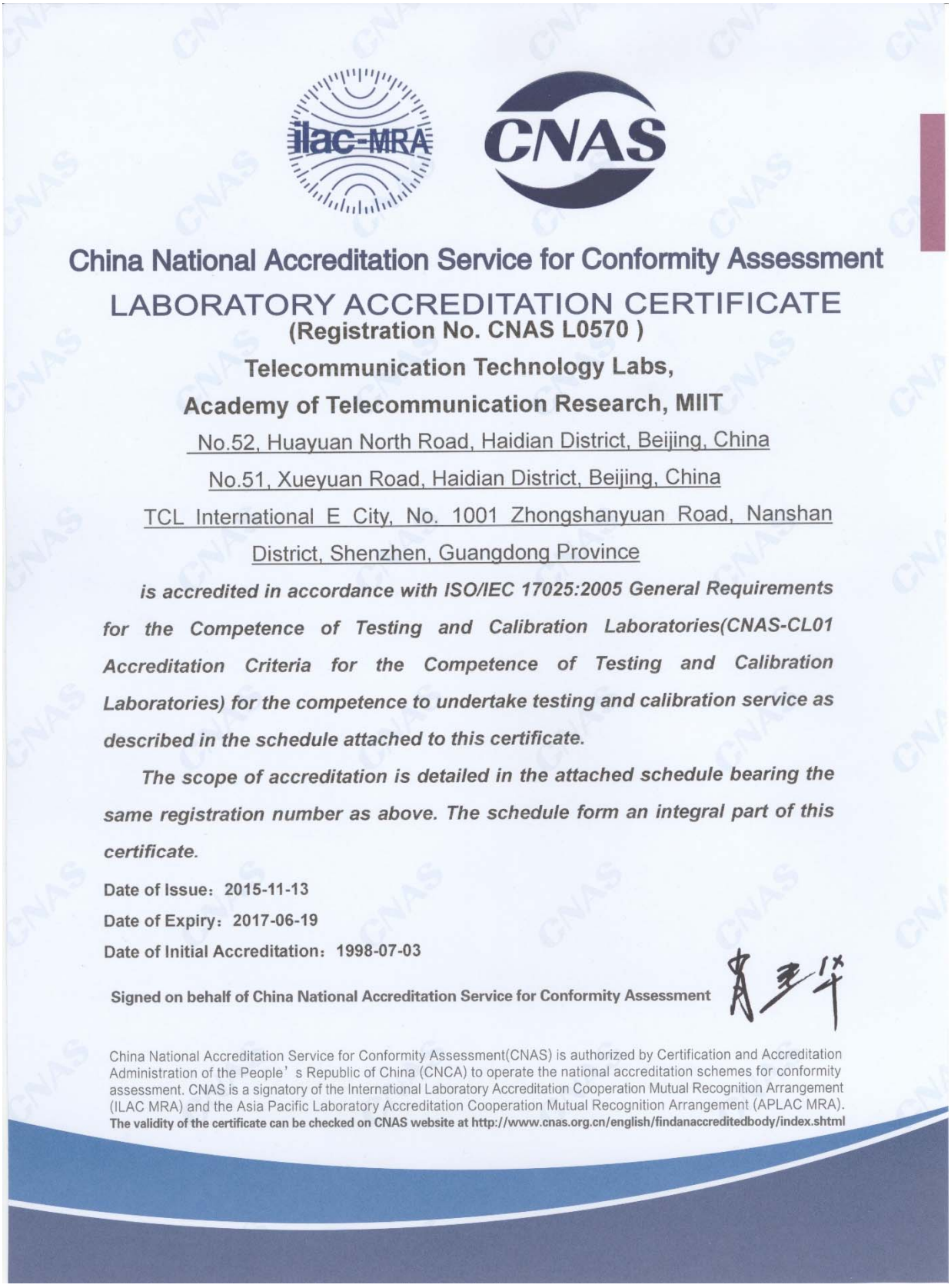



**Figure I.16**

## ANNEX J Accreditation Certificate



China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(Registration No. CNAS L0570 )

Telecommunication Technology Labs,

Academy of Telecommunication Research, MIIT

No.52, Huayuan North Road, Haidian District, Beijing, China

No.51, Xueyuan Road, Haidian District, Beijing, China

TCL International E City, No. 1001 Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong Province

*is accredited in accordance with ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake testing and calibration service as described in the schedule attached to this certificate.*

*The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule form an integral part of this certificate.*

Date of Issue: 2015-11-13

Date of Expiry: 2017-06-19

Date of Initial Accreditation: 1998-07-03

Signed on behalf of China National Accreditation Service for Conformity Assessment

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