DAT-PL-162/04-01

TESTING
No. L0570

TEST REPORT

REPORT NUMBER: B15X50225-FCC-SAR_Rev1

ON

Type of Equipment: Mobile Phone
Type of Designation: U100
Manufacturer: Shenzhen fortuneship technology.,LTD

ACCORDING TO

FCC Part 2.1093: Radiofrequency radiation exposure evaluation: portable devices, Oct-1-2013
IEEE Std 1528™-2013: IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

China Telecommunication Technology Labs.

Month date, year
Jul 21, 2015

Signature

He Guili
Director

FCC ID:	ZC4U100
Report Date:	2015-07-21

Test Firm Name:	China Telecommunication Technology Labs
Registration Number:	840587

Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 2.1093. The sample tested was found to comply with the requirements defined in the applied rules.

CTL Test Report

Table of Contents

CTL Test Report

CTTL Test Report

1. General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate compliance with the requirements of FCC CFR 47 Part 2.1093.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviations from, additions to, or exclusions from the test specifications have been made. See Annex C.

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CTTL Test Report

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Name: Li Guoqing

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Date: 2015-07-21

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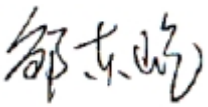
Signature: 

CTTL Test Report

1.3 Testing Laboratory information

1.3.1 Location

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1.3.2 Details of accreditation status

Accredited by:	China National Accreditation Service for Conformity Assessment (CNAS)
Lab number:	DA7130
DAR Registration number:	DAT-PL-162/04-01
Accredited by:	CNAS (China National Accreditation Service for Conformity Assessment)
Registration number:	CNAS L0570
Standard:	ISO/IEC 17025:2005

1.3.3 Test location, where different from section 1.3.1

Name:	------
Address:	------

CTTL Test Report

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name:	Corporativo Lanix S.A. de C.V.
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Name:	Shenzhen fortuneship technology,LTD
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Name:	Shenzhen fortuneship technology.,LTD
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CTL Test Report

2 Test Item

2.1 General Information

Manufacturer:	Shenzhen fortuneship technology,LTD
Name:	Mobile Phone
Model Number:	U100
Serial Number:	--
Production Status:	Product
Receipt date of test item:	2015-05-29

2.2 Outline of EUT

EUT is a Digital Mobile Phone, supporting GSM/GPRS 850/1900 bands. For GPRS, the multi class is 12 (maximum 4 up timeslots).

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	handset	Shenzhen fortuneship technology.,LTD	U100	--	None
B	battery	--	--	--	None

Cables:

Item	Cable Type	Manufacturer	Length	Shield	Quantity	Remarks
1	DC cable on Adapter	--	--	--	--	None

2.5 Other Information

Version of hardware and software:

HW Version: T616-MB-V1.0

SW Version: --

2.6 References

ANSI C95.1–2006:IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

IEEE Std 1528-2013:IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

IEEE1528a-2005 Recommended Practice for Determining the Peak Spatial-Average

Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques.

KDB447498 D01General RF Exposure Guidance v05r02 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

KDB447498 D03 Supplement C Cross-Reference v01OET Bulletin 65, Supplement C Cross-Reference

KDB865664 D01 SAR Measurement Requirements for 100 MHz to 6 GHzv01r03SAR Measurement Requirements for 100 MHz to 6 GHz.

KDB865664 D02 RF Exposure Reporting v01r01RF Exposure Compliance Reporting and Documentation Considerations.

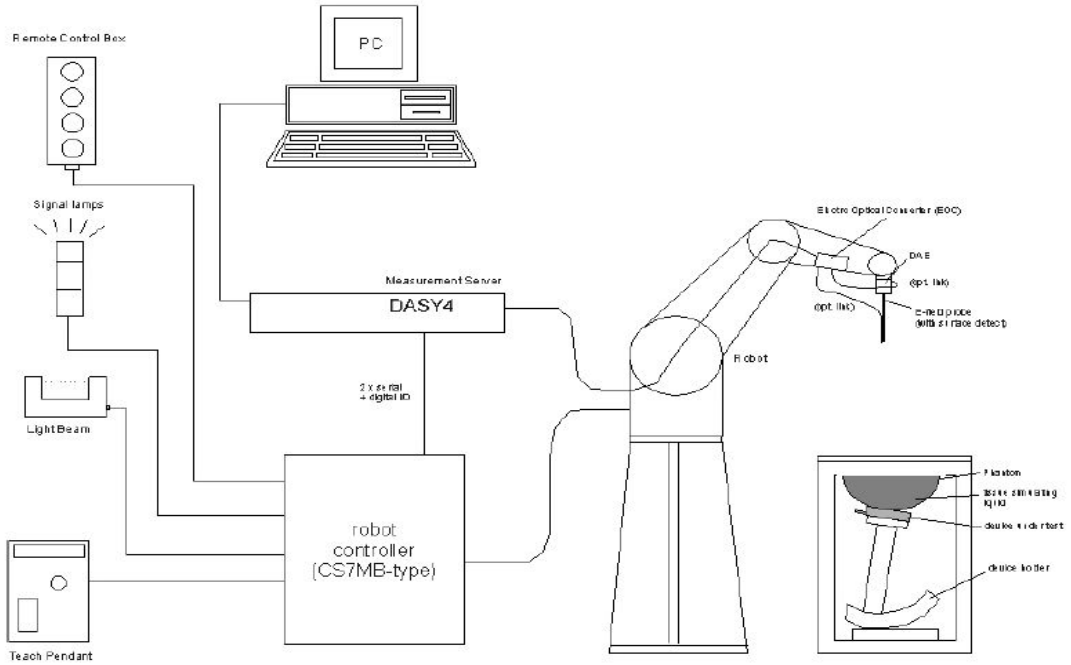
CTL Test Report

3 Measurement Systems

3.1 SAR Measurement Systems Setup

All measurements were performed using the automated near-field scanning system, DASY5, from Schmid& Partner Engineering AG (SPEAG). The system is based on a high precision industrial robot which positions the probes with a positional repeatability of better than 0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

A cell controller system containing the power supply, robot controller, teach pendant (Joystick) and remote control, is used to drive the robot motors. The PC consists of the Micron Pentium III 800 MHz computer with Windows 2000 system and SAR Measurement Software DASY5, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc., which is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical signal to digital electric signal of the DAE and transfers data to the PC plug-in card.



Demonstration of measurement system setup

The DAE4 consists of a highly sensitive electrometer-grade preamplifier with

auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logicunit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built-in VME-bus computer.

3.2 E-field Probe

3.2.1 E-field Probe Description

The SAR measurements were conducted with the dosimetric probe ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the standard procedure with an accuracy of better than ±10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB.

Items	Specification
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection System Built-in shielding against static charges PEEK enclosure material(resistant to organic solvents, e.g., glycol)
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at frequencies of 450MHz, 900MHz and 1.8GHz (accuracy±8%) Calibration for other liquids and frequencies upon request
Frequency	l 0 MHz to > 6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)
Directivity	±0.2 dB in brain tissue (rotation around probe axis) ±0.4 dB in brain tissue (rotation normal probe axis)
DynamicRange	5u W/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surface
Dimensions	Overall length: 330mm Tip length: 16mm Body diameter: 12mm Tip diameter: 6.8mm Distance from probe tip to dipole centers: 2.7mm
Application	General dosimetry up to 3GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

3.2.2 E-field Probe Calibration

The Annex C is the copy of the calibration certificate of the used probes.
Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (Norm X, Norm Y, Norm Z), the diode compression parameter (DCP) and the conversion factor (Conv F) of the probe are tested.
The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.
E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The free-space E-field measured in the medium correlates to temperature increase in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),
C = Heat capacity of tissue (brain or muscle),
ΔT = Temperature increase due to RF exposure.
Or

$$SAR = \frac{|E|^3 \sigma}{\rho}$$

Where:
σ = Simulated tissue conductivity,
ρ = Tissue density (kg/m^3).

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables thedosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.
Specifications:
Shell Thickness: 2±0.1mm
Filling Volume: Approx. 20 liters
Dimensions: 810 x l000 x 500 mm (H x L x W)
Liquid depth when testing: at least 150 mm

3.4 Device Holder

In combination with the Generic Twin Phantom V3.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeat ably positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom etc).

CTL Test Report

4 Test Results

4.1 Operational Condition

Specifications IEEE Std 1528™-2013
Date of Tests 2015-05-29~2015-06-02
Operation Mode TX at the highest output peak power level
Method of measurement: IEEE Std 1528™-2013

4.2 Test Equipment Used

ITEM	TYPE	S/N	CALIBRATION DATE	DUE DATE
probe	EX3DV4	3844	2015-04-29	2016-04-28
DAE	DAE4	1329	2015-04-21	2016-04-20
D835V2	dipole	4d135	2015-04-22	2016-04-21
D1900V2	dipole	5d135	2015-04-27	2016-04-26
Power Meter	N1914A	MY50001660	2015-03-06	2016-03-05
Radio Communication Analyzer	CMU200	112012	2015-03-06	2016-03-05
Signal Generator	N5181A	MY50143363	2015-03-06	2016-03-05
Power Sensor	E8481H	MY51020011	2015-03-06	2016-03-05
Power Amplifier	ZHL	QA1202003	NA	NA
Attenuator	8491A	MY39267989	NA	NA
Probe kit	85070E	3G-S-00139	NA	NA
Network Analyzer	E5071C	US39175666	2015-03-06	2016-03-05

4.3 Applicable Limit Regulations

Item	Limit Level
Local Specific Absorption Rate (SAR) (1g)	1.6W/kg

4.4 Test Results

The EUT complies.
Note:
All measurements are traceable to national standards.

4.5 Test Setup and Procedures

4.5.1 Test distance

The distance between EUT and flat phantom is 10 mm for body modes.

4.5.2Duty Factor and Crest Factor

For GPRS the multi time slot is class 12 with maximum 4 up time slots. For 1 up time slots, the crest factor used is 8.3, for 2 up time slots, it is 4.15, and for 4 up time slots, it is 2.

4.5.3General body mode measurement procedures

Generally, for body mode, the evaluation was performed according to the following procedure:

Step 1: The SAR value at a fixed location above the center point flat phantom was measured and was used as a reference value for assessing the power drift.

Step 2: The SAR distribution at the exposed side of the body was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the EUT and the horizontal grid spacing was 10 mm x 10 mm. Based on these data, the area of the maximum absorption was determined by interpolation.

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7 x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

a. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. The extrapolation was based on the least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

b. The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot"-condition (in x ~ y and z-directions). The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

c. All neighboring volumes were evaluated until no neighboring volume with a higher average e-value was found.

Step 4: Re-measurement the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation should be repeated.

4.6Test Environment and Liquid Information

4.6.1 Test Environment

Date:	Liquid Temperature (℃)	Ambient Temperature (℃)	Ambient Humidity (%)
	18~~25	18~~25	30~~70
2015-05-29	22.7	22.5	60.3
2015-06-02	22.4	22.5	59.4

4.6.2 Liquid Recipes

INGREDIENTS	TISSUE TYPE			
	HSL850	MSL850	HSL1900	MSL1900
Water	40.29	50.75	55.242	69.91
DGBE	0	0	44.452	29.96
Sugar	57.90	48.21	0	0
Salt	1.38	0.94	0.306	0.13
Cellulose	0.24	0.00	0	0
Preventol	0.18	0.10	0	0

4.6.3 Liquid Parameters

Table4.6.3.1: Targets for tissue simulating liquid

Frequency (MHz)	Liquid Type	Conductivity (σ)	± 5% Range	Permittivity (ε)	± 5% Range
835	Head	0.90	0.86 - 0.95	41.5	39.4 - 43.6
835	Body	0.97	0.92 - 1.02	55.2	52.4 - 58.0
1900	Head	1.40	1.33 - 1.47	40.0	38.0 - 42.0
1900	Body	1.52	1.44 - 1.60	53.3	50.6 - 56.0

Table 4.6.3.2:Dielectric Performance of Tissue Simulating Liquid

Measurement Value						
Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ	Drift (%)	Test Date
Head	835 MHz	41.08	-1.01%	0.899	-0.11%	2015-05-29
Body	835 MHz	55.22	+0.04%	0.994	+2.47%	2015-05-29
Head	1900 MHz	40.33	+0.82%	1.391	-0.64%	2015-06-02
Body	1900 MHz	52.68	-1.16%	1.551	+2.04%	2015-06-02

4.7 System Validation Check

Validation Method:

The setup of system validation check or performance check is demonstrated as figure 5. The amplifier, low pass filter and attenuators are optional. The dipole shall be positioned and centered below the phantom, paralleling to the longest side of the phantom. A low loss and low dielectric constant spacer on the dipole may be used to guarantee the correct distance between the dipole top surface and the phantom bottom surface.

The separation d, which is defined as the distance from the liquid bottom surface to the dipole's central axis at location of the feed-point, should be as following: for 835 MHz dipole, d = 15 mm, and for 1900 MHz dipole, d = 10 mm, and this can be obtained using two different size spacer. The dipole arms shall be parallel to the flat phantom surface.

First the power meter PM1 is connected to the cable and it measures the forward power at the location of the dipole connector (X). The signal generator is adjusted for the desired forward power at the dipole connector (taking into account the (Att1) value) and the power meter PM2 is read at that level. Then after connecting the cable to the dipole, the signal generator is readjusted for the same reading at the power meter PM2.

The system validation check procedures are the same as all measurement procedures used for compliance tests. A complete 1 g averaged SAR measurement is performed using the flat part of the phantom. The reference dipole input power is adjusted to produce a 1 g averaged SAR value falling in the range of 0.4 – 10 mW/g. The 1 g averaged SAR is measured at 835 MHz and 1900 MHz using corresponding dipole respectively. Then the results are normalized to 1 W forward input power and compared with the reference SAR values.

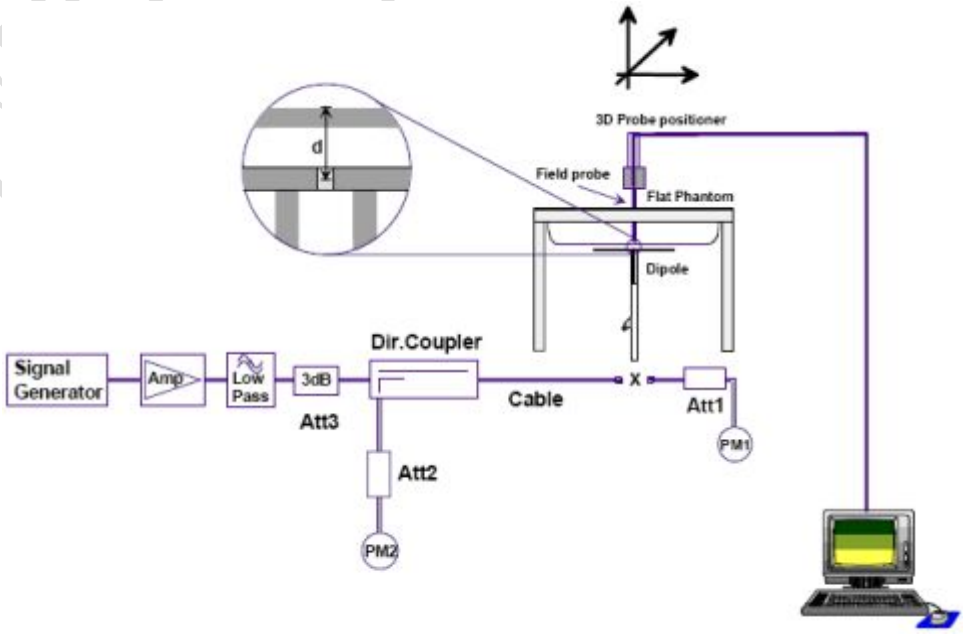


Figure 5Illustration of system validation test setup

Table 4.7.1：System Verification of Head

Verification Results							
Input power level: 250mW							
Frequency	**Target value (W/kg)**		**Measured value (W/kg)**		**Deviation**		**Test date**
	10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1 g Average**	
835 MHz	1.55	2.36	1.46	2.24	-5.81%	-5.08%	2015-05-29
1900 MHz	5.10	9.83	5.07	9.77	-0.59%	-0.61%	2015-06-02

Table 4.7.2：System Verification of Body

Verification Results							
Input power level: 250mW							
Frequency	**Target value (W/kg)**		**Measured value (W/kg)**		**Deviation**		**Test date**
	10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1 g Average**	
835 MHz	1.57	2.37	1.51	2.28	-3.82%	-3.80%	2015-05-29
1900 MHz	5.27	10.0	5.08	9.61	-3.60%	-3.90%	2015-06-02

CTL Test Report

4.8 Maximum Output Power Measurement

According to FCC OET 65c, maximum output power shall be measured before andafter each SAR test. The test setup and method are described as following.

Test setup

The output power measurement test setup is demonstrated as figure 6.

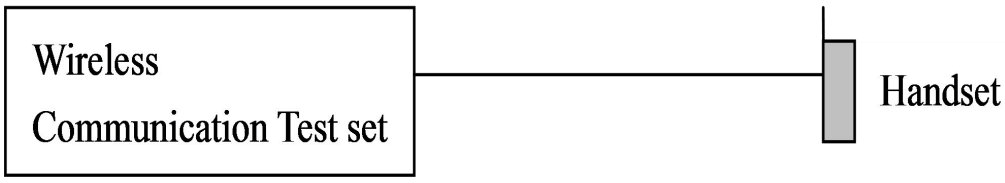


Figure 6 Demonstration of power measurement

Note: For GSM850/EGSM900, the PCL=5, and for DCS1800/PCS1900, PCL=0. For GPRS, the coding scheme used is CS4.

GSM modes:

Note: For GSM, GPRS, only the modes with the maximum time average power values, complete set of tests are performed. For GSM+BT (Earphone, Hand free) need to be tested respectively, the test mode is the worst case of GSM modes.

If there is no GSM (voice mode), then for GPRS, only the modes with the maximum time average power values are needed to be tested, which for GPRS, the complete tests are performed using the maximum power configurations.

4.8.1 Manufacturing tolerance

Table 4.8.1.1: GSM Speech

GSM 850			
Channel	Channel 251	Channel 190	Channel 128
Maximum Target Value (dBm)（RMS）	32.0±1	32.0±1	32.0±1
PCS 1900			
Channel	Channel 810	Channel 661	Channel 512
Maximum Target Value (dBm)（RMS）	29.0±1	29.0±1	29.0±1

Table 4.8.1.2: GPRS

GSM 850 GPRS				
Channel		251	190	128
1 Tx slots	Maximum Target Value (dBm) (RMS)	32.0±1	32.0±1	32.0±1
2 Tx slots	Maximum Target Value (dBm) (RMS)	30.0±1	30.0±1	30.0±1
3 Tx slots	Maximum Target Value (dBm) (RMS)	28.0±1	28.0±1	28.0±1
4 Tx slots	Maximum Target Value (dBm) (RMS)	26.0±1	26.0±1	26.0±1
GSM 1900 GPRS				
Channel		810	661	512
1 Tx slots	Maximum Target Value (dBm) (RMS)	29.0±1	29.0±1	29.0±1
2 Tx slots	Maximum Target Value (dBm) (RMS)	27.0±1	27.0±1	27.0±1
3 Tx slots	Maximum Target Value (dBm) (RMS)	25.0±1	25.0±1	25.0±1
4 Tx slots	Maximum Target Value (dBm) (RMS)	23.0±1	23.0±1	23.0±1

Table 4.8.1.3: Bluetooth

Bluetooth				
Channel		Channel 0	Channel 39	Channel 78
GFSK	Maximum Target Value (dBm) (RMS)	2.5±1	2.5±1	2.5±1
π/4 DQPSK	Maximum Target Value (dBm) (RMS)	2.5±1	2.5±1	2.5±1
8DPSK	Maximum Target Value (dBm) (RMS)	2.5±1	2.5±1	2.5±1

4.8.2Power Measurement result

Table 4.8.2.1: The conducted power measurement results for GSM850/1900

Frequency	Conducted Power (dBm) (RMS)		
GSM850	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)
	32.9	33.0	33.0
GSM1900	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)
	29.7	29.7	29.7

Table 4.8.2.2: The conducted power measurement results for GPRS

GSM 850 MHz（RMS）							
GPRS (GMSK)	**251**	**190**	**128**	**Calculation**	**251**	**190**	**128**
1Txslot	32.9	32.9	32.9	-9.03dB	23.87	23.87	23.87
2Txslots	**30.8**	**30.8**	**30.8**	-6.02dB	**24.78**	**24.78**	**24.78**
3Txslots	28.5	28.5	28.6	-4.26dB	24.24	24.24	24.34
4Txslots	26.4	26.5	26.7	-3.01dB	23.39	23.49	23.69
GSM 1900 MHz（RMS）							
GPRS (GMSK)	**810**	**661**	**512**	**Calculation**	**810**	**661**	**512**
1Txslot	29.3	29.3	29.3	-9.03dB	20.27	20.27	20.27
2Txslots	**27.5**	**27.5**	**27.5**	-6.02dB	**21.48**	**21.48**	**21.48**
3Txslots	25.5	25.5	25.5	-4.26dB	21.24	21.24	21.24
4Txslots	23.4	23.4	23.3	-3.01dB	20.39	20.39	20.29

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

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

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

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

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

According to the conducted power as above, the body measurements are performed with GPRS 2Timeslots for GSM850 and GSM1900.

CTL Test Report

Table 4.8.2.3: The conducted power for Bluetooth

GFSK			
Channel	Ch0 (2402 MHz)	Ch39 (2441MHz)	CH78 (2480MHz)
Conducted Output Power (dBm)	3.20	2.32	1.81
π/4 DQPSK			
Channel	Ch0 (2402 MHz)	Ch39 (2441MHz)	CH78 (2480MHz)
Conducted Output Power (dBm)	3.36	2.58	1.53
8DPSK			
Channel	Ch0 (2402 MHz)	Ch39 (2441MHz)	CH78 (2480MHz)
Conducted Output Power (dBm)	3.37	2.51	1.53

Note:BT standalone SAR are not required, because maximum average output power is less than 10mW.

When the standalone SAR test exclusion is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion:

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

SAR head value of BT is 0.092W/Kg. SAR body value of BT is 0.046W/Kg.

4.9Test Data

4.9.1Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for CF265B are as follows (with expanded uncertainty 21.7%)

Table 4.9.1.1: Max. Reported SAR (1g)

Band	Position/Distance	Reported SAR 1g(W/Kg)
GSM 850	Head/0mm	0.692
	Body/10mm	0.478
GSM 1900	Head/0mm	0.988
	Body/10mm	0.513

The SAR values found for the Mobile Phone are below the maximum recommended levels of 1.6 W/Kg as averaged over any 1g tissue according to the ANSI C95.1-2006.

The maximum reported SAR value is obtained at the case of **(Table 4.9.1.1)**, and the values are: **0.988 W/kg (1g)**.

Table 4.9.1.2: SAR Measurement Variability for Head Value (1g)

Frequency		side	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	Reported SAR(1g)(W/kg)	The Ratio
MHz	Ch.						
1850.2	512	Right	Touch	0.812	0.841	0.988	1.036

NOTE:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

The sample has two antennas. One is main antenna for GSM, and the other is for BT. So simultaneous transmission is GSM and BT.

Table 4.9.1.3: Simultaneous SAR (1g)

Simultaneous Transmission SAR(W/Kg)						
Test Position			GSM 850	GSM 1900	BT note	SUM
Head	Left	Cheek	0.523	**0.588**	**0.092**	0.680
		Tilt 15°	0.310	**0.549**	**0.092**	0.641
	Right	Cheek	0.692	**0.988**	**0.092**	**1.080**
		Tilt 15°	0.314	**0.571**	**0.092**	0.663
Body	Ground Side		**0.478**	0.347	**0.046**	0.524
	Phantom Side		0.181	**0.513**	**0.046**	0.559

According to the above table, the maximum sum of reported SAR values for GSM 1900 and BT is **1.080 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 4.9.2.

CTL Test Report

4.9.2 Measured Results

Table 4.9.2.1: SAR Values(GSM 835 MHz Band - Head)

Frequency		Side	Test Position	Maximum allowed Power (dBm)	Measured average power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.								
Original									
836.6	190	Left	Touch	33.0	33.0	1	0.523	0.523	-0.13
836.6	190	Left	Tilt	33.0	33.0	1	0.310	0.310	0.01
836.6	190	Righ	Touch	33.0	33.0	1	0.592	0.592	0.05
836.6	190	Righ	Tilt	33.0	33.0	1	0.314	0.314	0.07
848.8	251	Righ	Touch	33.0	32.9	1.026	0.674	0.692	0.04
824.2	128	Righ	Touch	33.0	33.0	1	0.525	0.525	-0.13

Table 4.9.2.2: SAR Values(GSM 835 MHz Band - Body)

Frequency		Mode (number of timeslots)	Test Position	Maximum allowed Power (dBm)	Measured average power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.								
Original									
836.6	190	GPRS (2)	Ground	31.0	30.8	1.047	0.419	0.439	0.13
836.6	190	GPRS (2)	Phantom	31.0	30.8	1.047	0.173	0.181	0.12
848.8	251	GPRS (2)	Ground	31.0	30.8	1.047	0.457	0.478	0.18
824.2	128	GPRS (2)	Ground	31.0	30.8	1.047	0.377	0.395	-0.11

Note: The distance between the EUT and the phantom bottom is 10mm.

Table 4.9.2.3: SAR Values(GSM 1900 MHz Band - Head)

Frequency		Side	Test Position	Maximum allowed Power (dBm)	Measured average power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.								
Original									
1880	661	Left	Touch	30.0	29.3	1.175	0.500	0.588	-0.06
1880	661	Left	Tilt	30.0	29.3	1.175	0.467	0.549	0.03
1880	661	Right	Touch	30.0	29.3	1.175	0.700	0.822	0.03
1880	661	Right	Tilt	30.0	29.3	1.175	0.486	0.571	0.03
1909.8	810	Right	Touch	30.0	29.3	1.175	0.600	0.705	0.06
1850.2	512	Right	Touch	30.0	29.3	1.175	0.812	0.951	0.10
First Repeated SAR test									
1850.2	512	Right	Touch	30.0	29.3	1.175	0.841	0.988	-0.04

Table 4.9.2.4: SAR Values(GSM 1900 MHz Band - Body)

Frequency		Mode (number of timeslots)	Test Position	Maximum allowed Power (dBm)	Measured average power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.								
Original									
1880	661	GPRS (2)	Ground	28.0	27.5	1.122	0.309	0.347	0.09
1880	661	GPRS (2)	Phantom	28.0	27.5	1.122	0.404	0.453	-0.12
1909.8	810	GPRS (2)	Phantom	28.0	27.5	1.122	0.351	0.394	0.09
1850.2	512	GPRS (2)	Phantom	28.0	27.5	1.122	0.457	0.513	-0.14

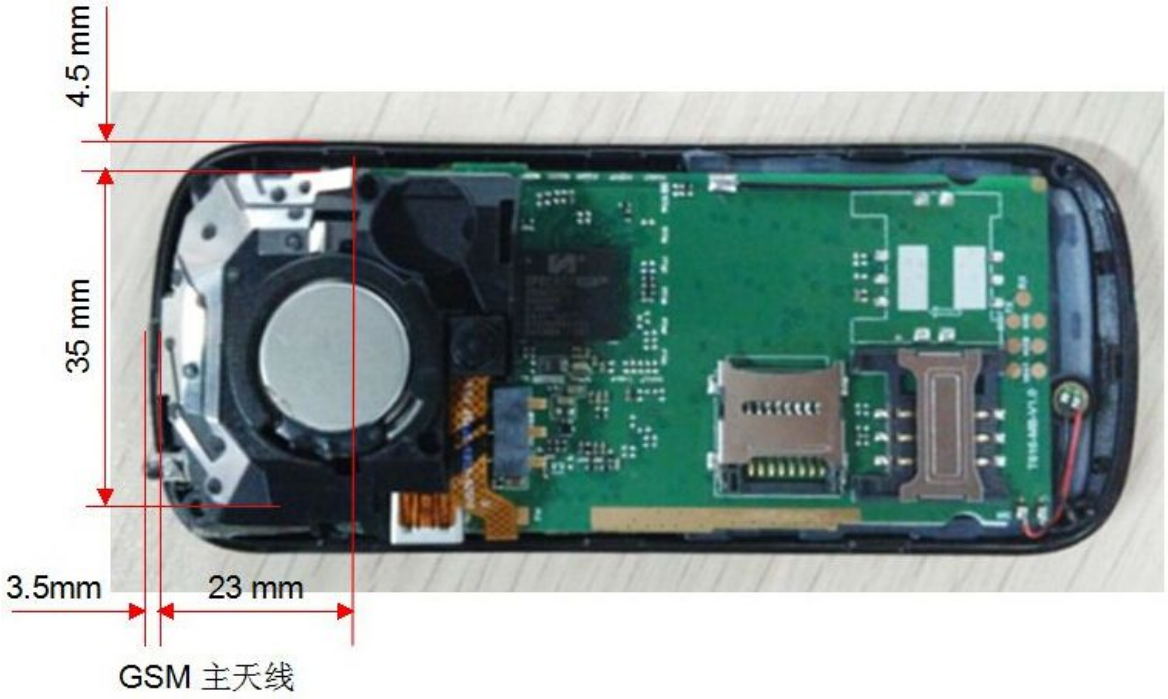
Note: The distance between the EUT and the phantom bottom is 10mm.

4.9.3 Simultaneous Transmission Consideration

4.9.3.1 Introduction

The following procedures adopted from "FCC SAR Considerations for Cell Phones with Multiple Transmitters" are applicable to handsets with built-in unlicensed transmitters such as 802.11 a/b/g and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

4.9.3.2 Transmit Antenna Separation Distances



Picture 4.9.3.2.1 Antenna Locations

4.9.3.3 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

According to the KDB447498 appendix A, the SAR test exclusion threshold for

2450MHz at 5mm test separation distances is 10mW.

$$\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} * \sqrt{\text{Frequency (GHz)}} \leqslant 3.0$$

Based on the above equation, Bluetooth SAR was not required:
Evaluation=0.689＜3.0

CTL Test Report

4.10 Measurement uncertainty

ERROR SOURCE	Uncertainty value (%)	Probability distribution	Divisor	c_i (1g)	Standard Uncertainty (%)
Measurement equipment					
Probe calibration	5.9	Normal	1	1	5.9
Probe axial isotropy	4.7	Rectangular	$\sqrt{3}$	0.7	1.9
Probe hemispherical isotropy	9.6	Rectangular	$\sqrt{3}$	0.7	3.9
Probe linearity	4.7	Rectangular	$\sqrt{3}$	1	2.7
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	0.6
Boundary effect	0.8	Rectangular	$\sqrt{3}$	1	0.6
Measurement device	0.3	Normal	1	1	0.3
Response time	0.0	Normal	1	1	0
Noise	0.0	Normal	1	1	0
Integration time	1.7	Normal	1	1	2.6
Mechanical constraints					
Scanning system	1.5	Rectangular	$\sqrt{3}$	1	0.2
Positioning of the probe	2.9	Normal	1	1	2.9
Phantom shell	4.0	Rectangular	$\sqrt{3}$	1	2.3
Positioning of the dipole	2.0	Normal	1	1	2.0
Positioning of the phone	2.9	Normal	1	1	2.9
Device holder disturbance	3.6	Normal	1	1	3.6
Physical parameters					
Liquid conductivity (deviation from target)	5.0	Rectangular	$\sqrt{3}$	0.5	1.4
Liquid conductivity (measurement error)	4.3	Rectangular	$\sqrt{3}$	0.5	1.2
Liquid permittivity (deviation from target)	5.0	Rectangular	$\sqrt{3}$	0.5	1.4
Liquid permittivity (measurement error)	4.3	Rectangular	$\sqrt{3}$	0.5	1.2
Drifts in output power of the phone, probe, temperature and humidity	5.0	Rectangular	$\sqrt{3}$	1	2.9
Environment disturbance	3.0	Rectangular	$\sqrt{3}$	1	1.7
Post-processing					
SAR interpolation and extrapolation	0.6	Rectangular	$\sqrt{3}$	1	0.6
Maximum SAR evaluation	1.0	Rectangular	$\sqrt{3}$		0.6
Combined standard uncertainty	$u_c = \sqrt{\sum_{i=1}^{m} c_i^2 \cdot u_i^2}$ =11.08%				

Expanded uncertainty （confidence interval of 95%）	Normal $u_e = 1.96u_c$ =21.7%

Annex A Graphical Measurement Results

GSM850 Left Cheek Middle

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Head 850MHz

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m;εr = 41.058; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 850MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(10.08, 10.08, 10.08)

Middle Cheek Left GSM 850MHz/Area Scan (10x6x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.542 mW/g

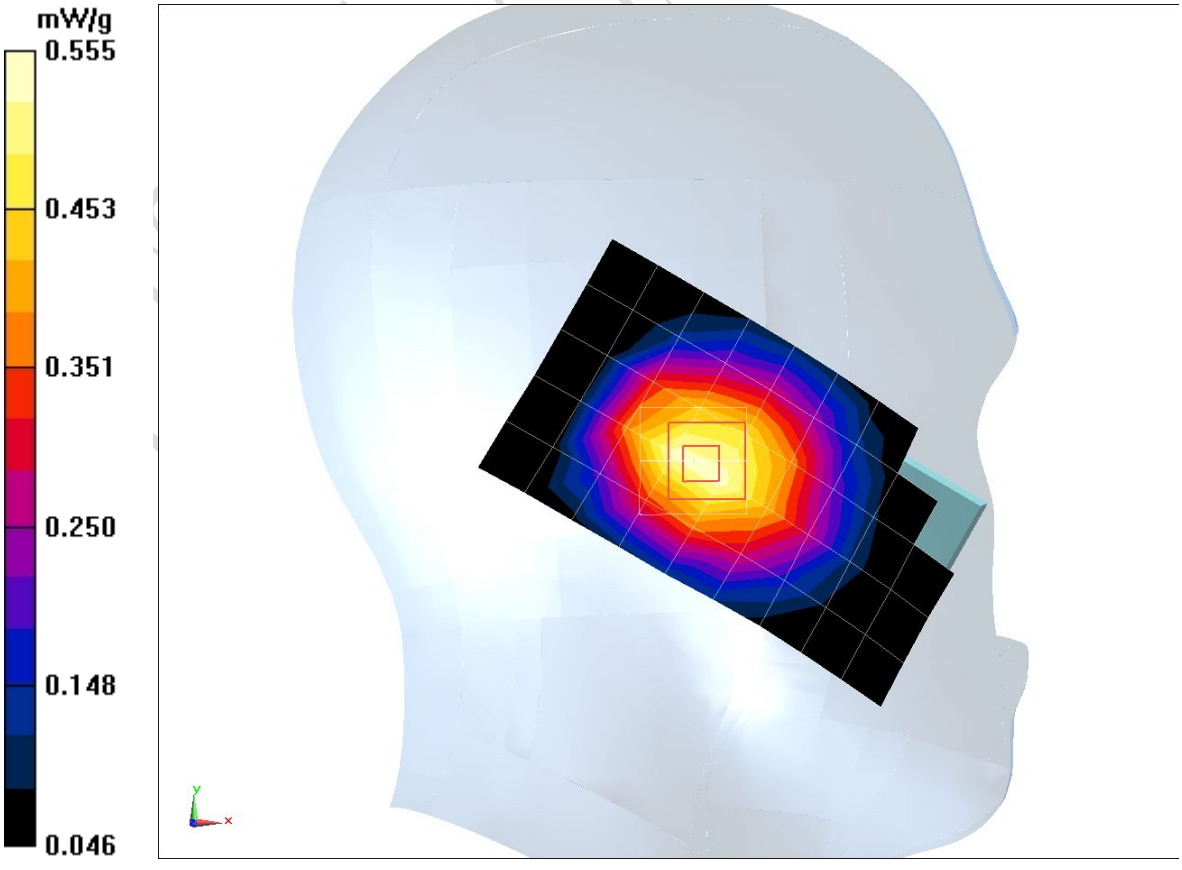
Middle Cheek Left GSM 850MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.660 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.7080 mW/g

SAR(1 g) = 0.523 mW/g; SAR(10 g) = 0.372 mW/g

Maximum value of SAR (measured) = 0.555 mW/g



CTL Test Report

GSM850 Left Tilt Middle

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Head 850MHz

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m;εr = 41.058; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 850MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(10.08, 10.08, 10.08)

Middle Tilt Left GSM 850MHz/Area Scan (10x6x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.331 mW/g

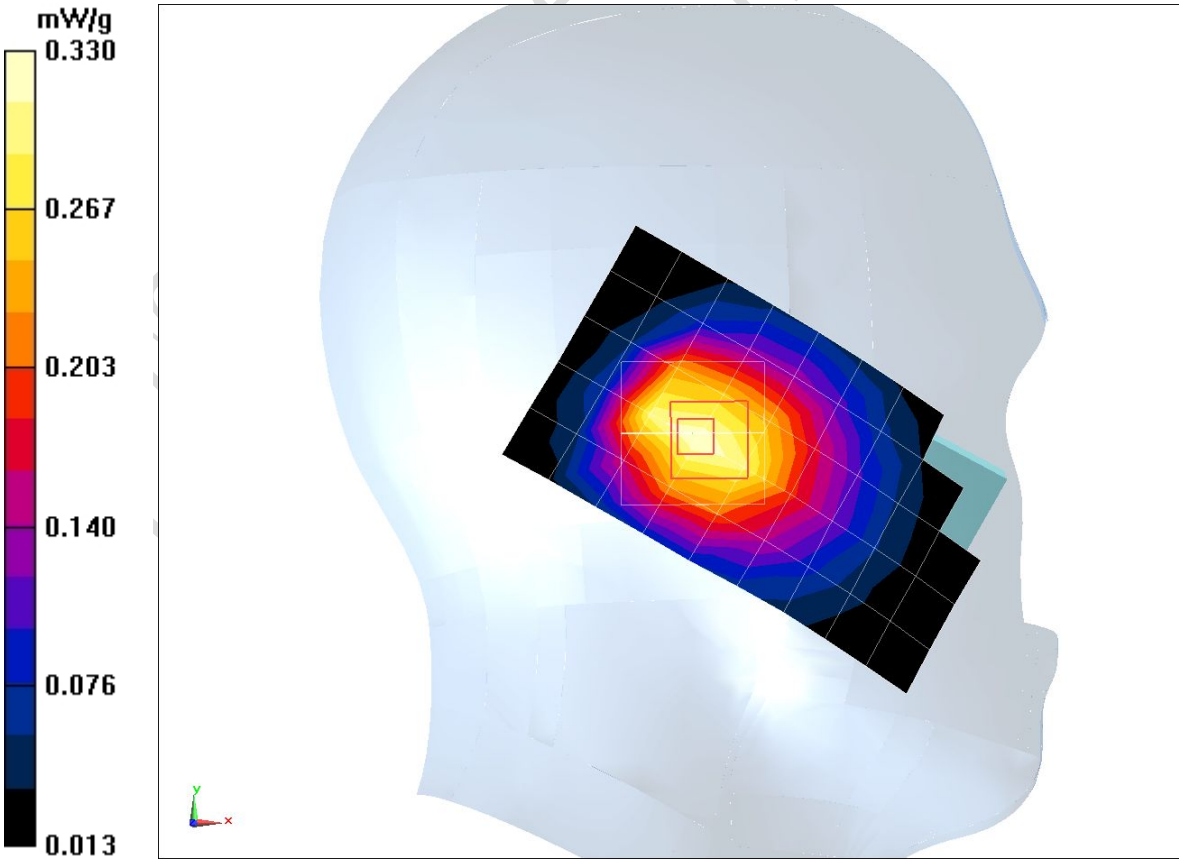
Middle Tilt Left GSM 850MHz/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.473 V/m; Power Drift = 0.0052 dB

Peak SAR (extrapolated) = 0.5020 mW/g

SAR(1 g) = 0.310 mW/g; SAR(10 g) = 0.218 mW/g

Maximum value of SAR (measured) = 0.330 mW/g



GSM850 Right Cheek Middle

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Head 850MHz

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m;εr = 41.058; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 850MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(10.08, 10.08, 10.08)

Middle Cheek Right GSM 850MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.669 mW/g

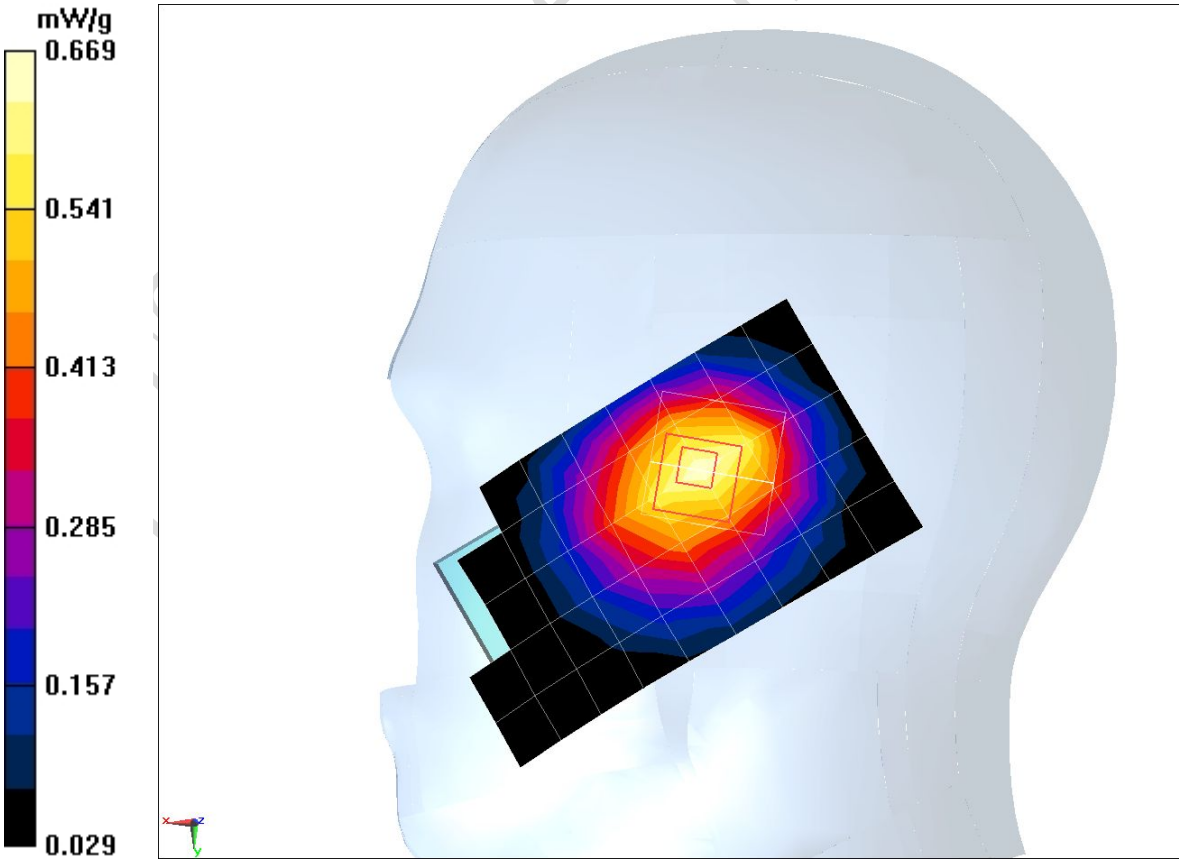
Middle Cheek Right GSM 850MHz/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.072 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.8370 mW/g

SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.408 mW/g

Maximum value of SAR (measured) = 0.669mW/g



GSM850 Right Tilt Middle

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Head 850MHz

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m;εr = 41.058; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 850MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(10.08, 10.08, 10.08)

Middle Tilt Right GSM 850MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

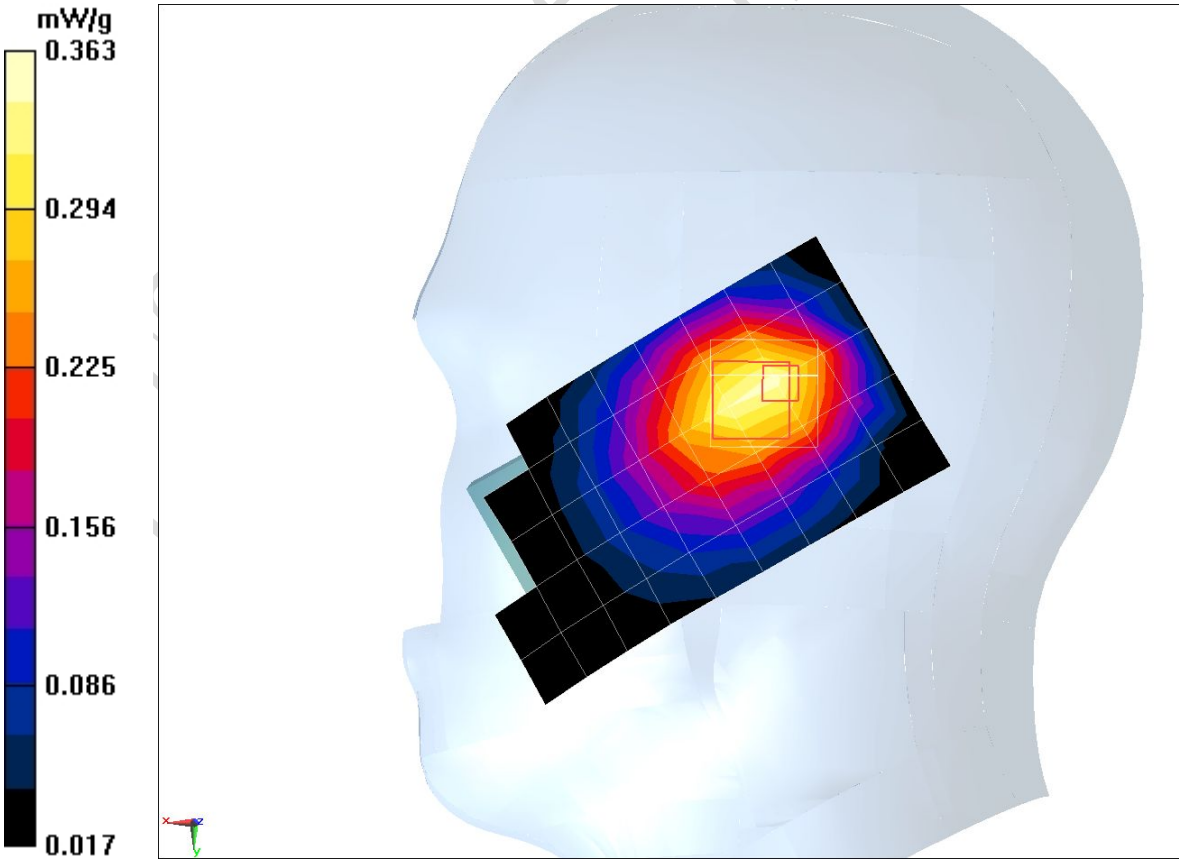
Middle Tilt Right GSM 850MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.909 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.5060 mW/g

SAR(1 g) = 0.314 mW/g; SAR(10 g) = 0.218 mW/g

Maximum value of SAR (measured) = 0.363 mW/g



GSM850 Right Cheek High

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Head 850MHz

Medium parameters used: f = 849 MHz; σ = 0.912 mho/m;εr = 40.921; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 850MHz; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(10.08, 10.08, 10.08)

High Cheek Right GSM 850MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.768 mW/g

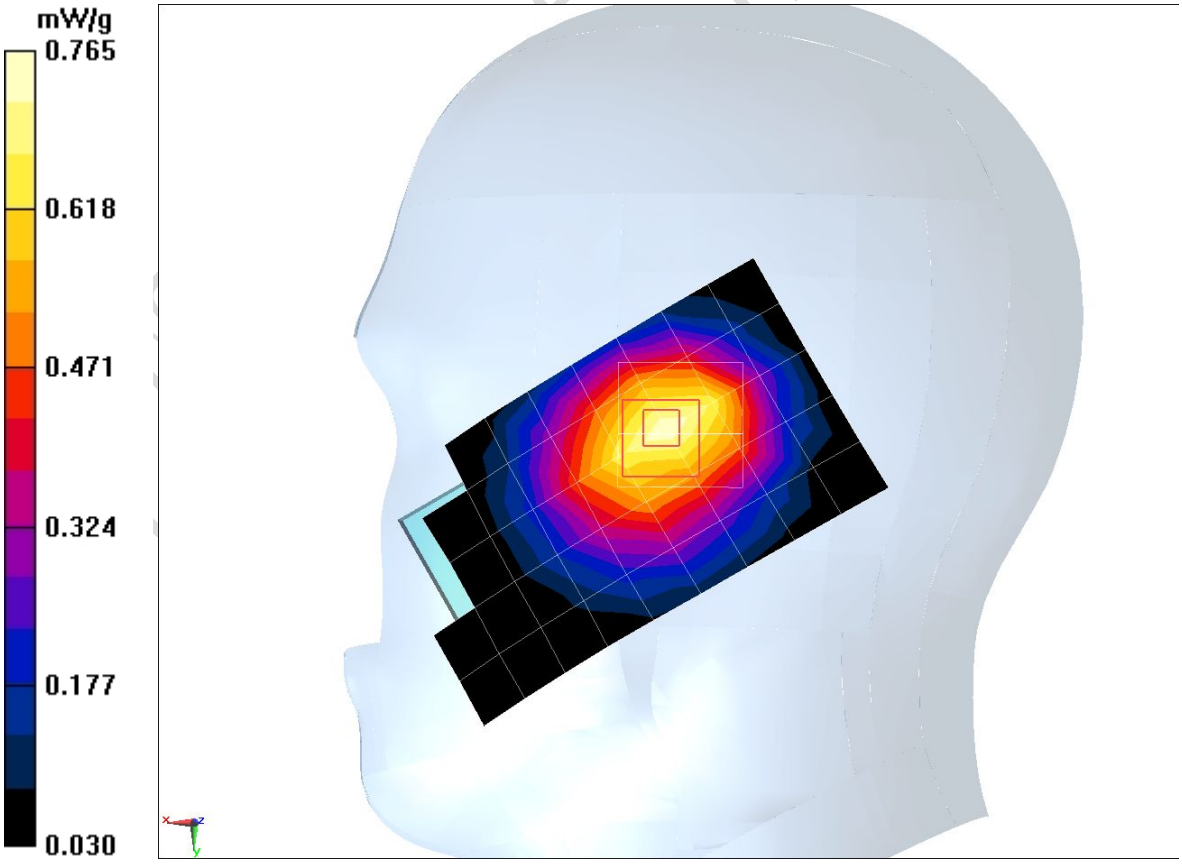
High Cheek Right GSM 850MHz/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

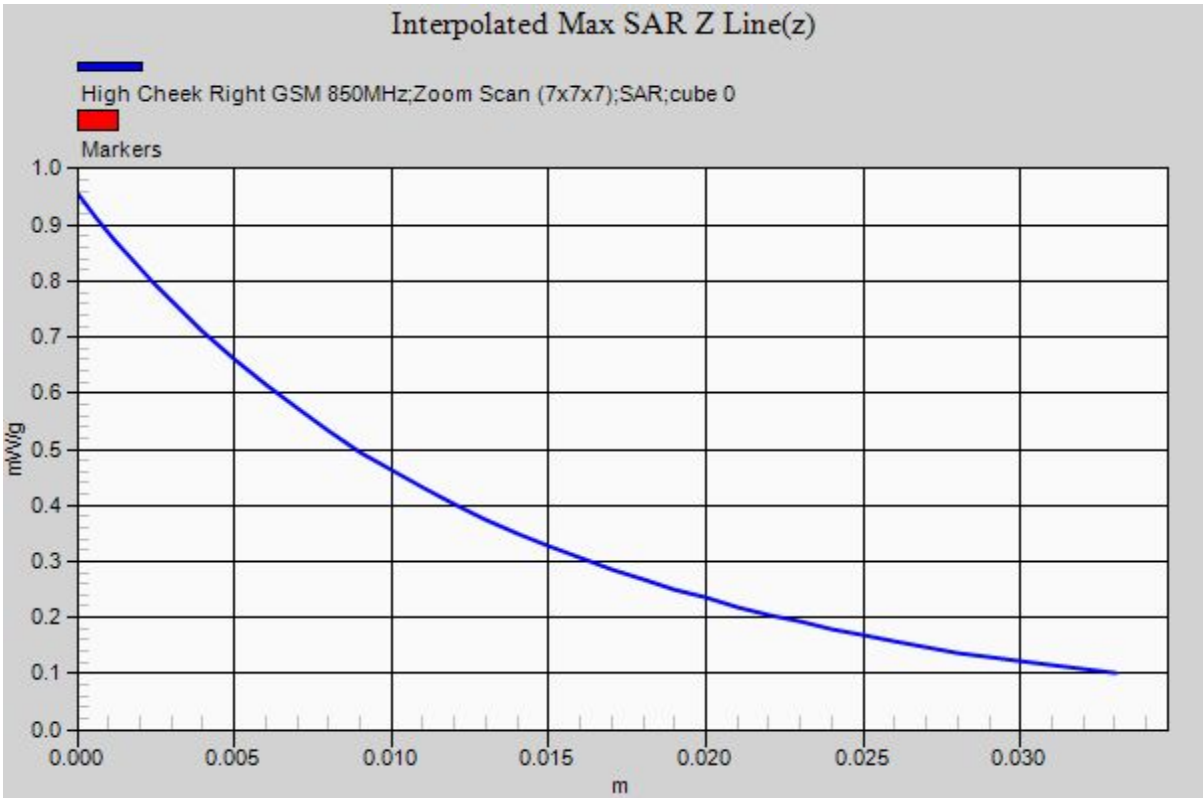
Reference Value = 25.508 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.9560 mW/g

SAR(1 g) = 0.674 mW/g; SAR(10 g) = 0.465 mW/g

Maximum value of SAR (measured) = 0.765 mW/g




Interpolated Max SAR Z Line(z)
High Cheek Right GSM 850MHz;Zoom Scan (7x7x7);SAR;cube 0
Markers
mW/g
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

CTL Test

GSM850 Right Cheek Low

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Head 850MHz

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.889 mho/m;εr = 41.226; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 850MHz; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(10.08, 10.08, 10.08)

Low Cheek Right GSM 850MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.599 mW/g

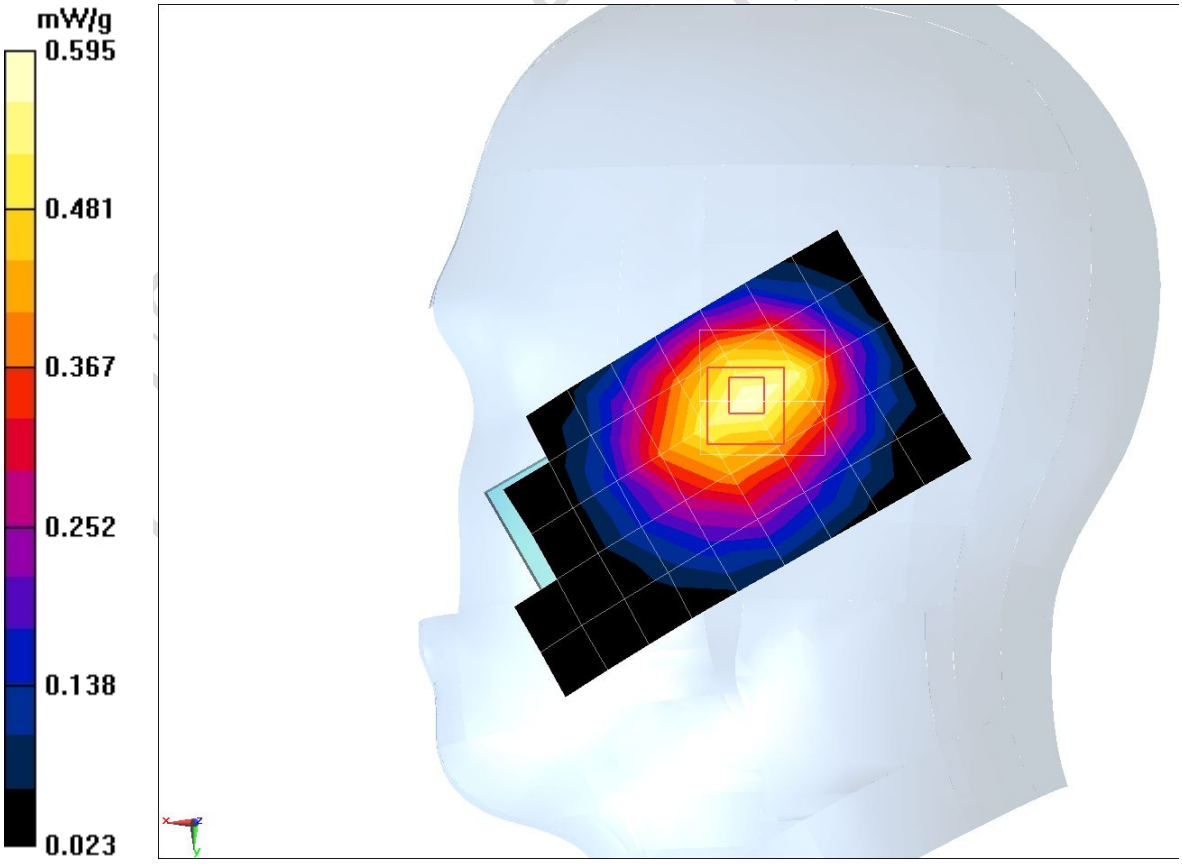
Low Cheek Right GSM 850MHz/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.183 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.7410 mW/g

SAR(1 g) = 0.525 mW/g; SAR(10 g) = 0.364 mW/g

Maximum value of SAR (measured) = 0.595 mW/g



GSM850 Body Toward Ground GPRS 2TS Middle

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Body 850MHz

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m;εr = 55.205; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GPRS 850MHz 2TS; Frequency: 836.6 MHz; Duty Cycle: 1:4.15

Probe: EX3DV4 - SN3844ConvF(10.1, 10.1, 10.1)

Middle Toward Ground GPRS 2TS 850MHz/Area Scan (8x14x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.460 mW/g

Middle Toward Ground GPRS 2TS 850MHz/Zoom Scan (7x7x7)/Cube 0:

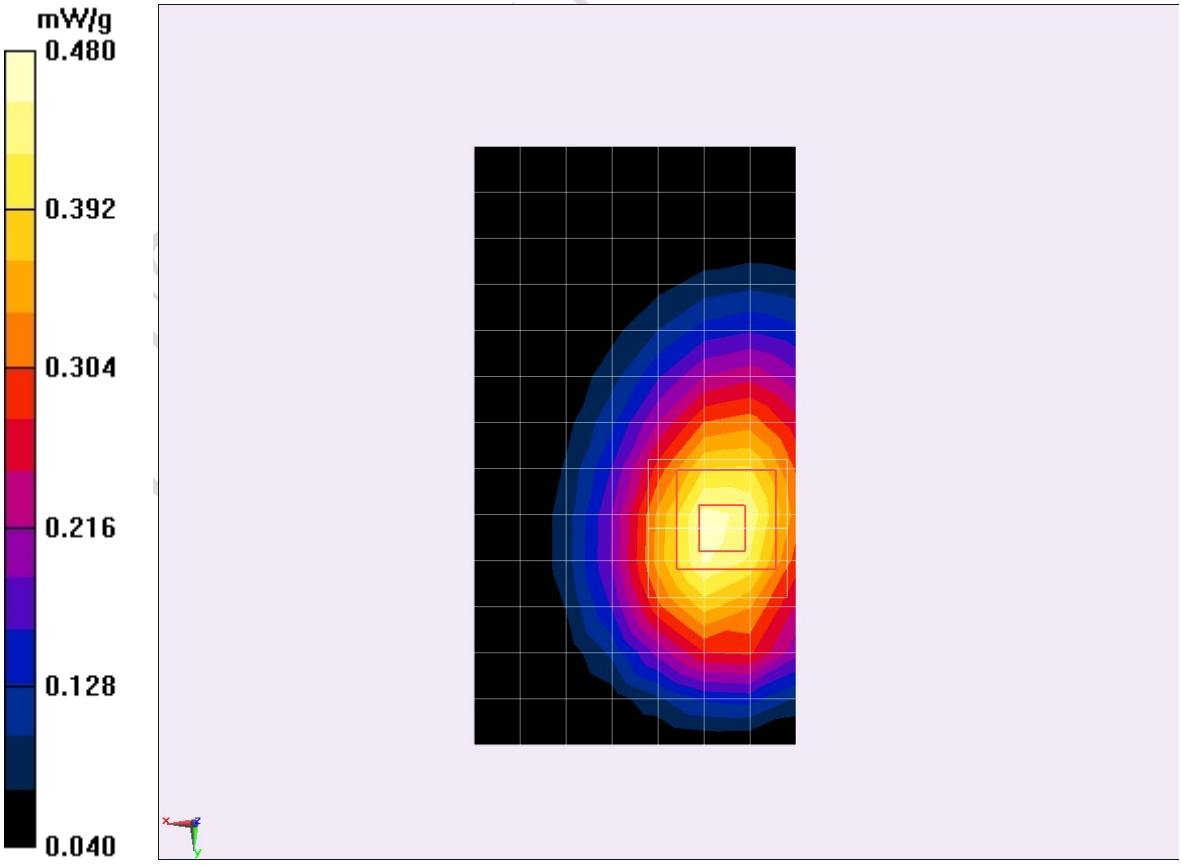
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.055 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.5910 mW/g

SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.287 mW/g

Maximum value of SAR (measured) = 0.480 mW/g



GSM850 Body Toward Phantom GPRS 2TS Middle

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Body 850MHz

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m;εr = 55.205; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GPRS 850MHz 2TS; Frequency: 836.6 MHz; Duty Cycle: 1:4.15

Probe: EX3DV4 - SN3844ConvF(10.1, 10.1, 10.1)

Middle Toward Phantom GPRS 2TS 850MHz/Area Scan (8x14x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.181 mW/g

Middle Toward Phantom GPRS 2TS 850MHz/Zoom Scan (7x7x7)/Cube 0:

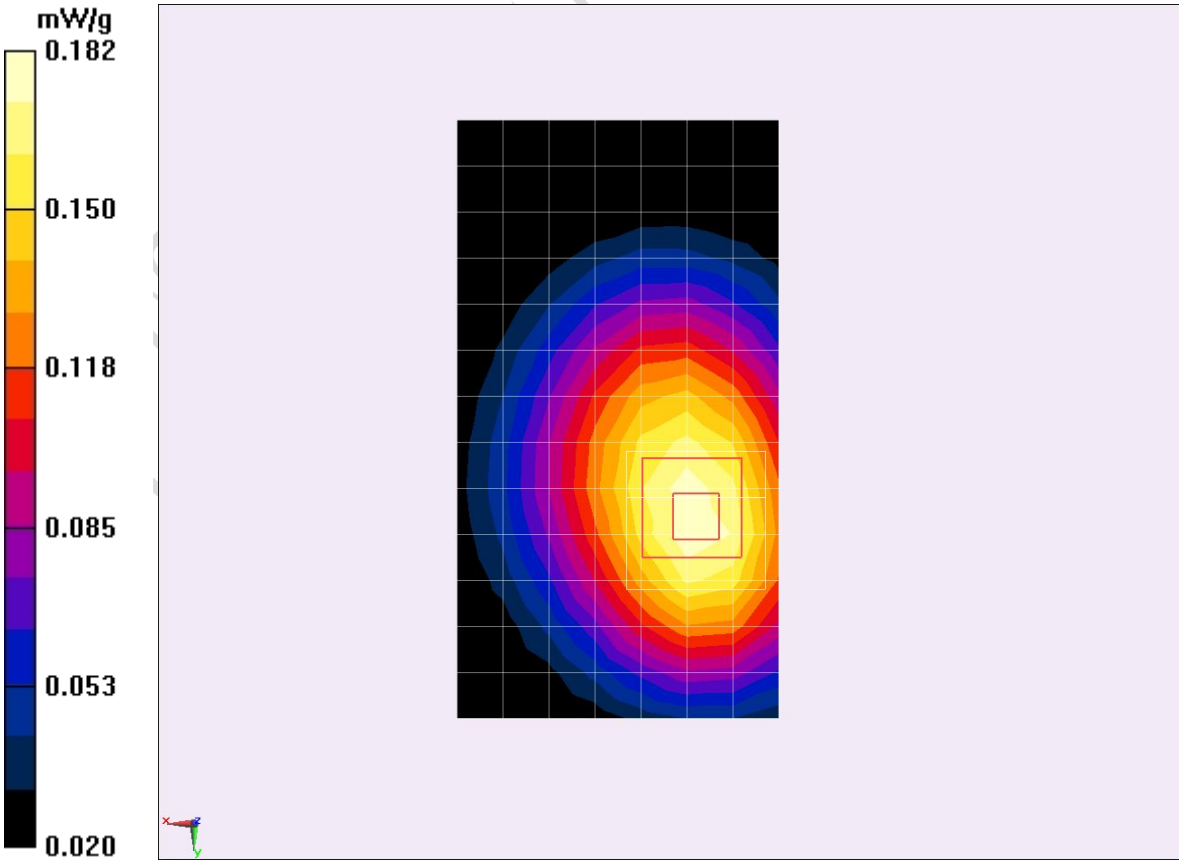
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.551 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.2300 mW/g

SAR(1 g) = 0.173 mW/g; SAR(10 g) = 0.125 mW/g

Maximum value of SAR (measured) = 0.182 mW/g



GSM850 Body Toward Ground GPRS 2TS High

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Body 850MHz

Medium parameters used: f = 849 MHz; σ = 1.007 mho/m;εr = 55.111; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GPRS 850MHz 2TS; Frequency: 848.8 MHz; Duty Cycle: 1:4.15

Probe: EX3DV4 - SN3844ConvF(10.1, 10.1, 10.1)

High Toward Ground GPRS 2TS 850MHz/Area Scan (8x14x1): Measurement grid: dx=10mm, dy=10mm

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

High Toward Ground GPRS 2TS 850MHz/Zoom Scan (7x7x7)/Cube 0:

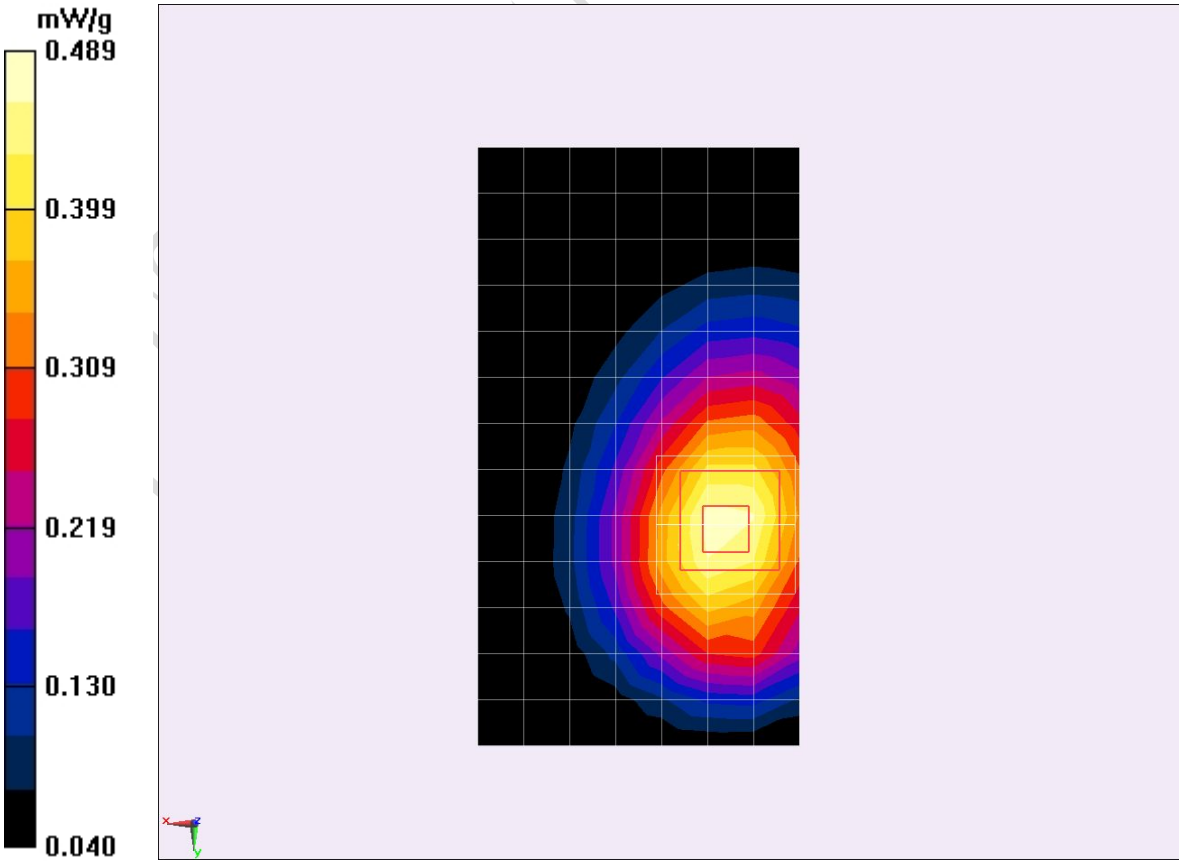
Measurement grid: dx=5mm, dy=5mm, dz=5mm

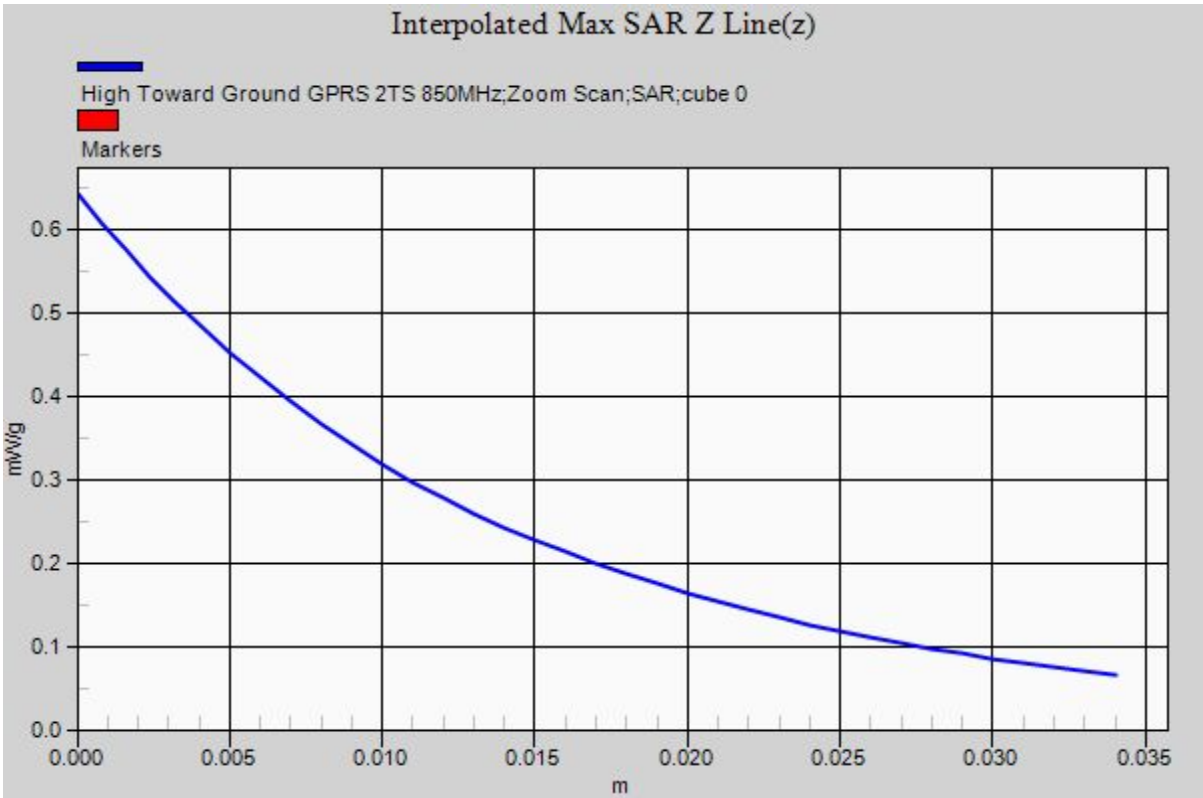
Reference Value = 14.185 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.6440 mW/g

SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.312 mW/g

Maximum value of SAR (measured) = 0.489 mW/g

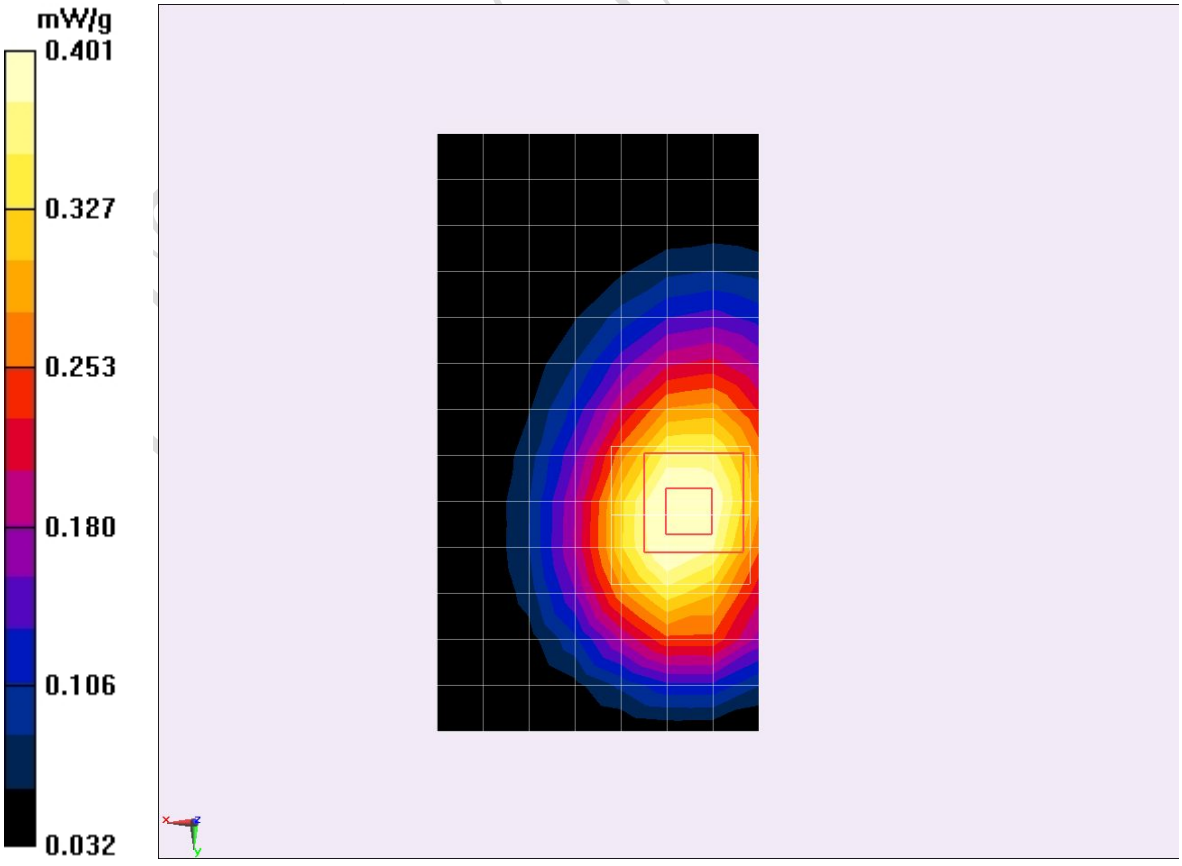



Interpolated Max SAR Z Line(z)
High Toward Ground GPRS 2TS 850MHz;Zoom Scan;SAR;cube 0
Markers
mW/g
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

CTL Test

GSM850 Body Toward Ground GPRS 2TS Low

Date/Time: 05/29/2015
Electronics: DAE4 Sn1329
Medium: Body 850MHz
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.983 mho/m;εr = 55.327; ρ = 1000 kg/m3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: GPRS 850MHz 2TS; Frequency: 824.2 MHz; Duty Cycle: 1:4.15
Probe: EX3DV4 - SN3844ConvF(10.1, 10.1, 10.1)
Low Toward Ground GPRS 2TS 850MHz/Area Scan (8x14x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.421 mW/g
Low Toward Ground GPRS 2TS 850MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.660 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.5310 mW/g
SAR(1 g) = 0.377 mW/g; SAR(10 g) = 0.258 mW/g
Maximum value of SAR (measured) = 0.401 mW/g



CTL Test Report

GSM1900 Left Cheek Middle

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.363 mho/m;εr = 40.404; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 1900MHz; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

Middle Cheek Left GSM 1900MHz/Area Scan (10x6x1): Measurement grid: dx=15mm, dy=15mm

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

Middle Cheek Left GSM 1900MHz/Zoom Scan (10x10x7)/Cube 0:

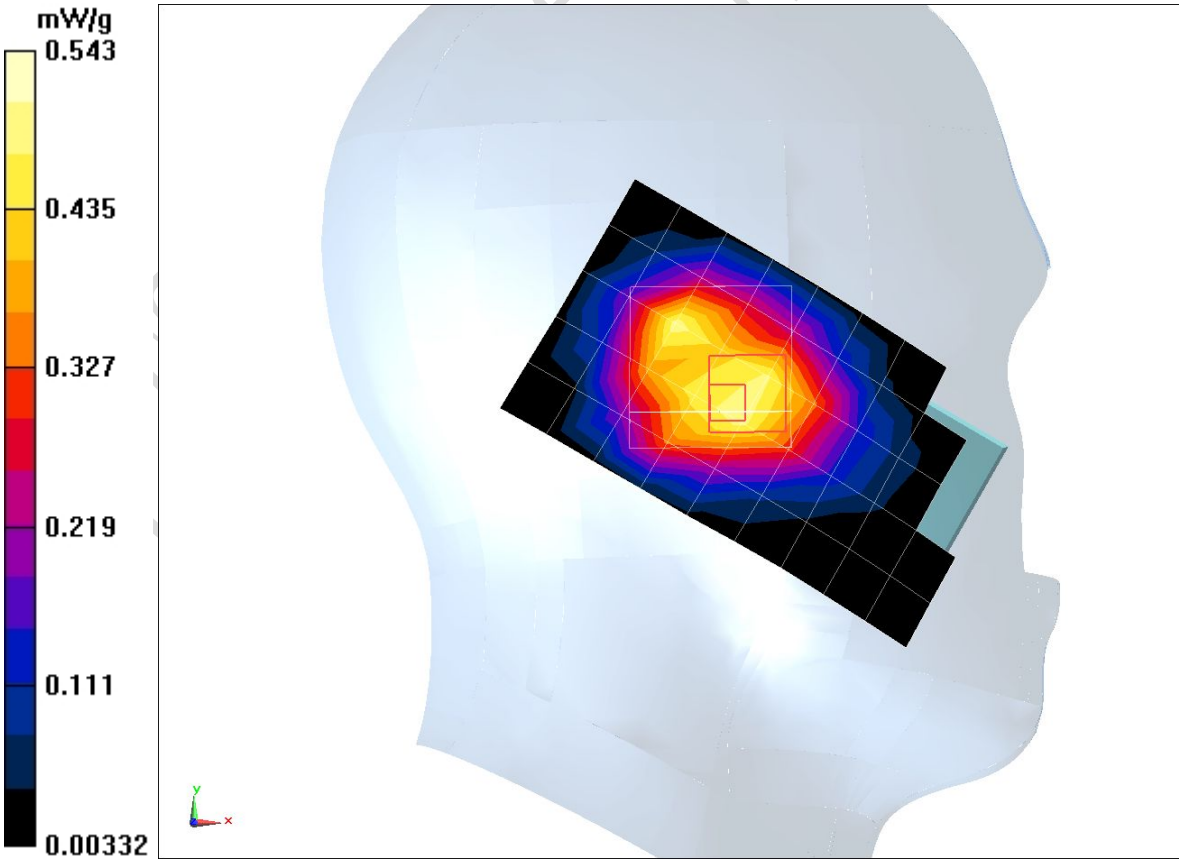
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.890 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.8680 mW/g

SAR(1 g) = 0.500 mW/g; SAR(10 g) = 0.309 mW/g

Maximum value of SAR (measured) = 0.543 mW/g



GSM1900 Left Tilt Middle

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.363 mho/m;εr = 40.404; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 1900MHz; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

Middle Tilt Left GSM 1900MHz/Area Scan (10x6x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.480 mW/g

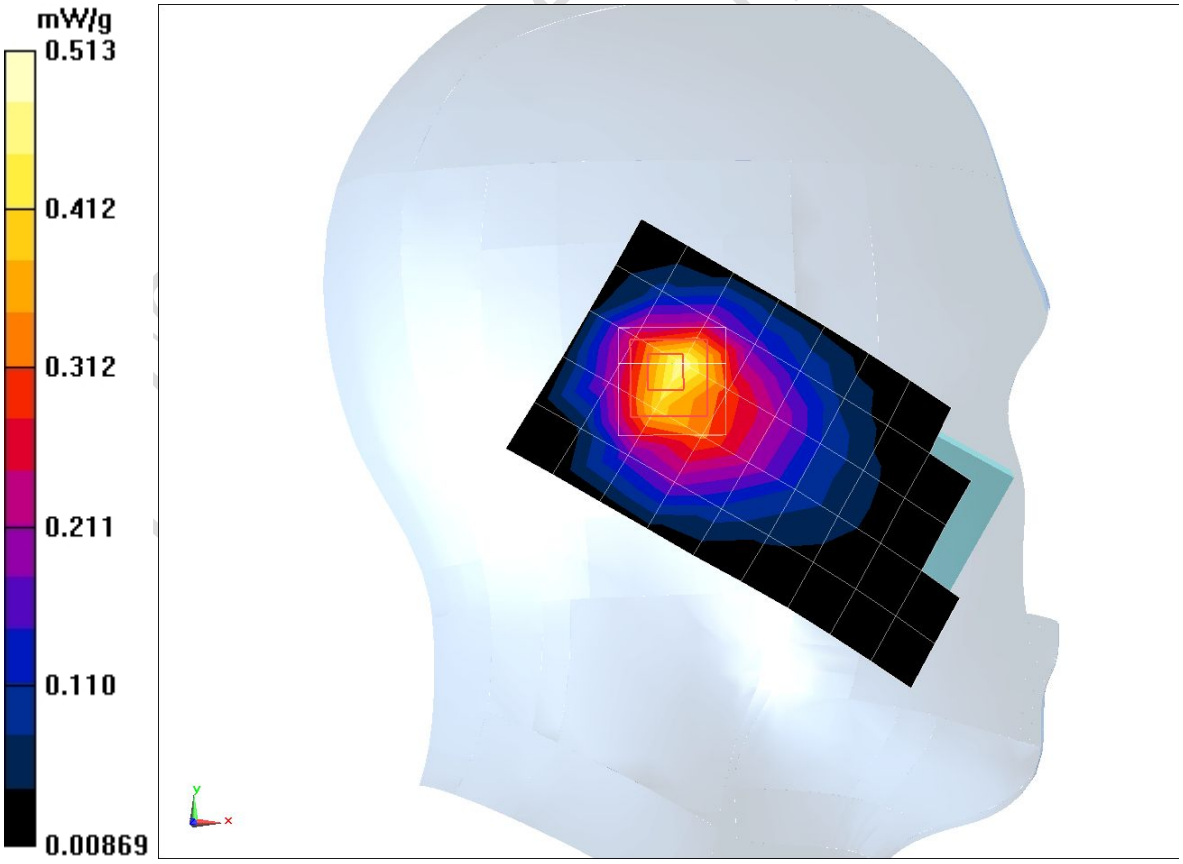
Middle Tilt Left GSM 1900MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.966 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.7930 mW/g

SAR(1 g) = 0.467 mW/g; SAR(10 g) = 0.259 mW/g

Maximum value of SAR (measured) = 0.513 mW/g



GSM1900 Right Cheek Middle

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.363 mho/m;εr = 40.404; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 1900MHz; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

Middle Cheek Right GSM 1900MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.792 mW/g

Middle Cheek Right GSM 1900MHz/Zoom Scan (8x8x7)/Cube 0:

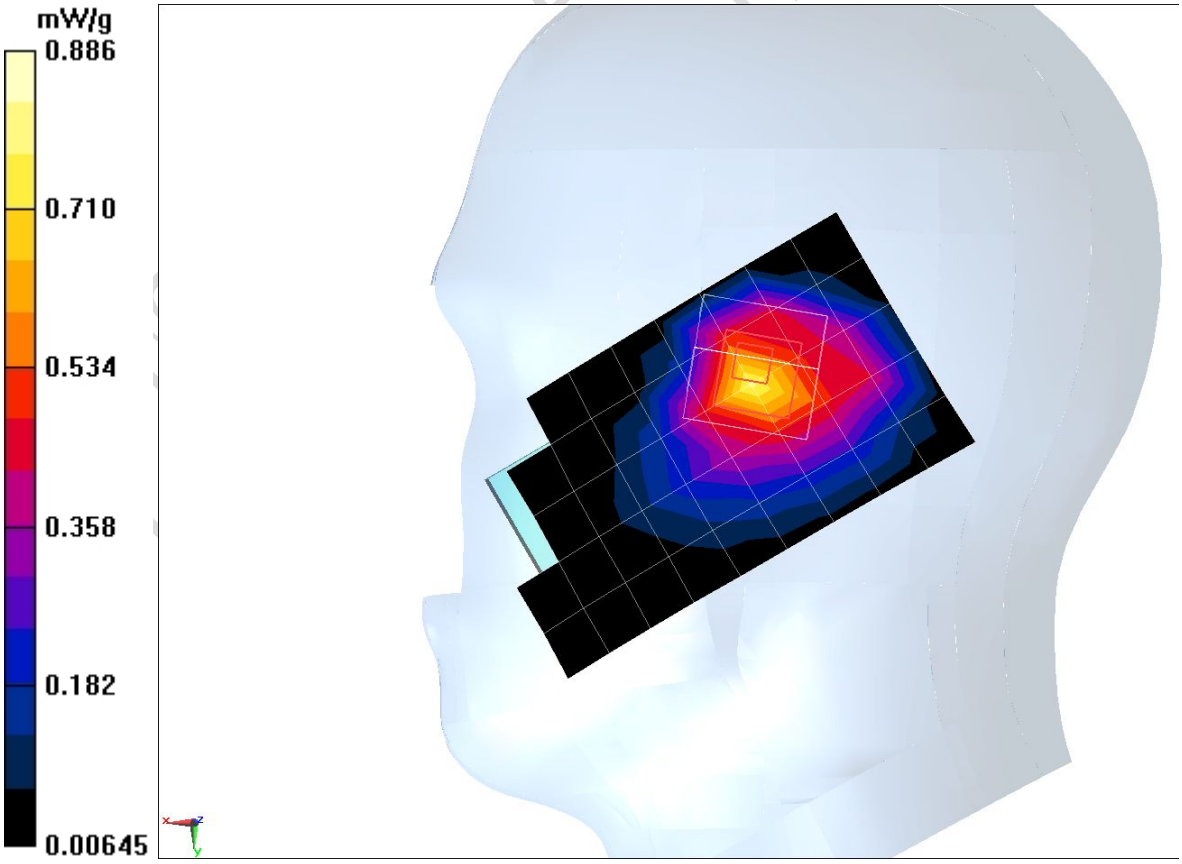
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.147 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.3660 mW/g

SAR(1 g) = 0.700 mW/g; SAR(10 g) = 0.374 mW/g

Maximum value of SAR (measured) = 0.886 mW/g



GSM1900 Right Tilt Middle

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.363 mho/m;εr = 40.404; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 1900MHz; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

Middle Tilt Right GSM 1900MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.487 mW/g

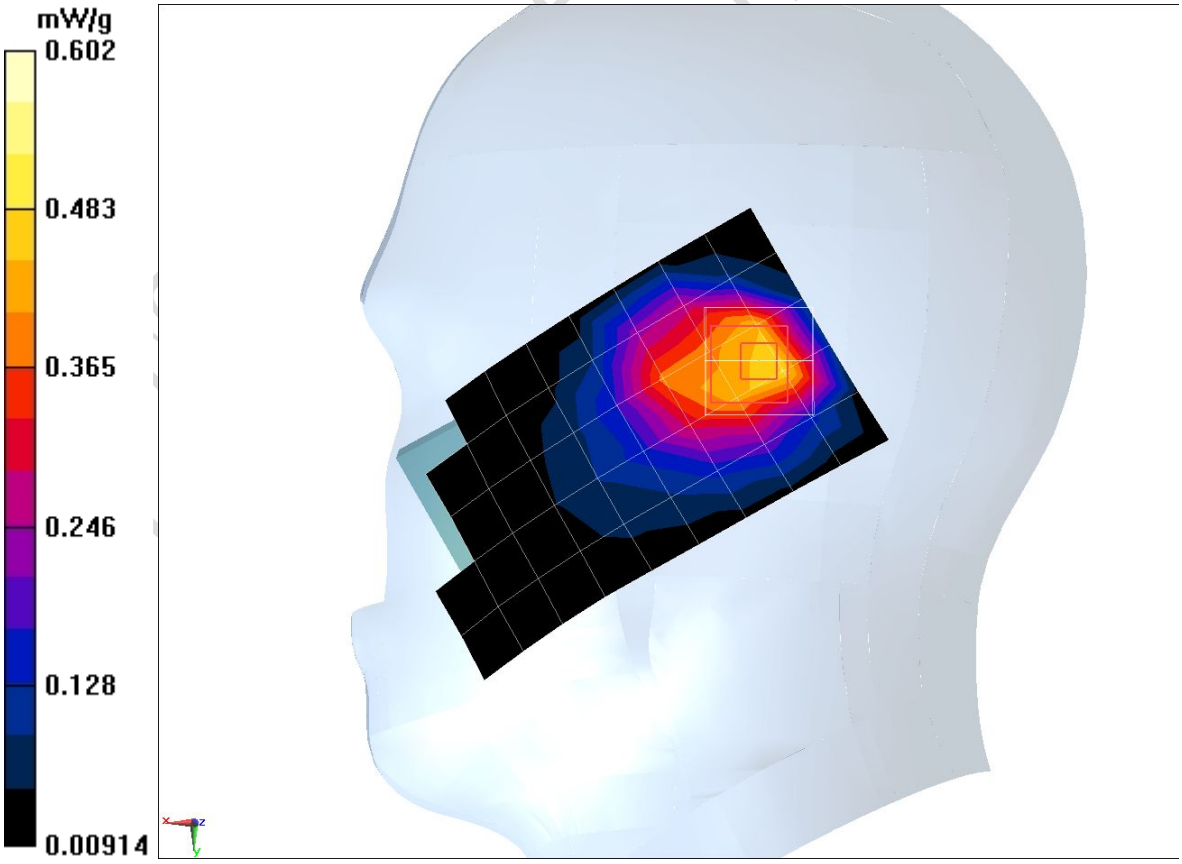
Middle Tilt Right GSM 1900MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.875 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.8080 mW/g

SAR(1 g) = 0.486 mW/g; SAR(10 g) = 0.275 mW/g

Maximum value of SAR (measured) = 0.602 mW/g



GSM1900 Right Cheek High

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used: f = 1910 MHz; σ = 1.404 mho/m;εr = 40.308; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 1900MHz; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

High Cheek Right GSM 1900MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.651 mW/g

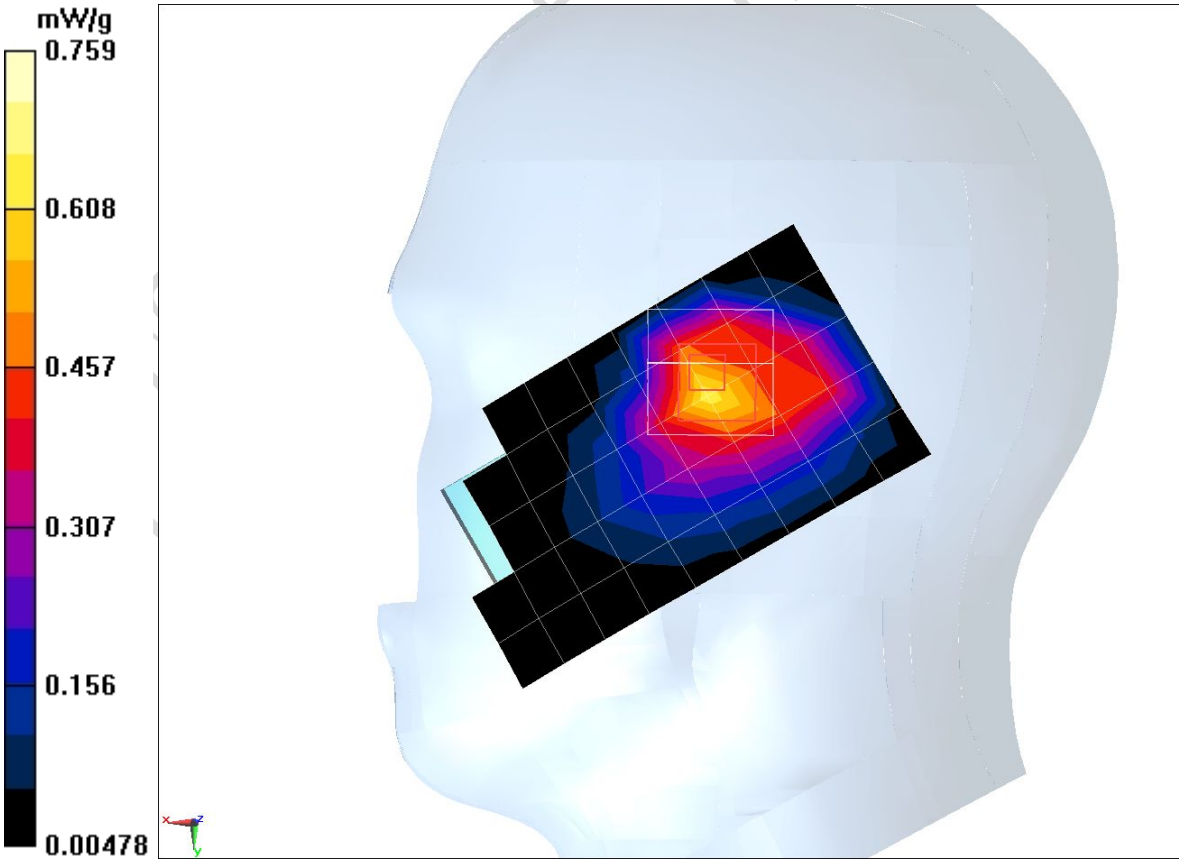
High Cheek Right GSM 1900MHz/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.859 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.2240 mW/g

SAR(1 g) = 0.600 mW/g; SAR(10 g) = 0.318 mW/g

Maximum value of SAR (measured) = 0.759 mW/g



GSM1900 Right Cheek Low

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.337 mho/m;εr = 40.575; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 1900MHz; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

Low Cheek Right GSM 1900MHz/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.922 mW/g

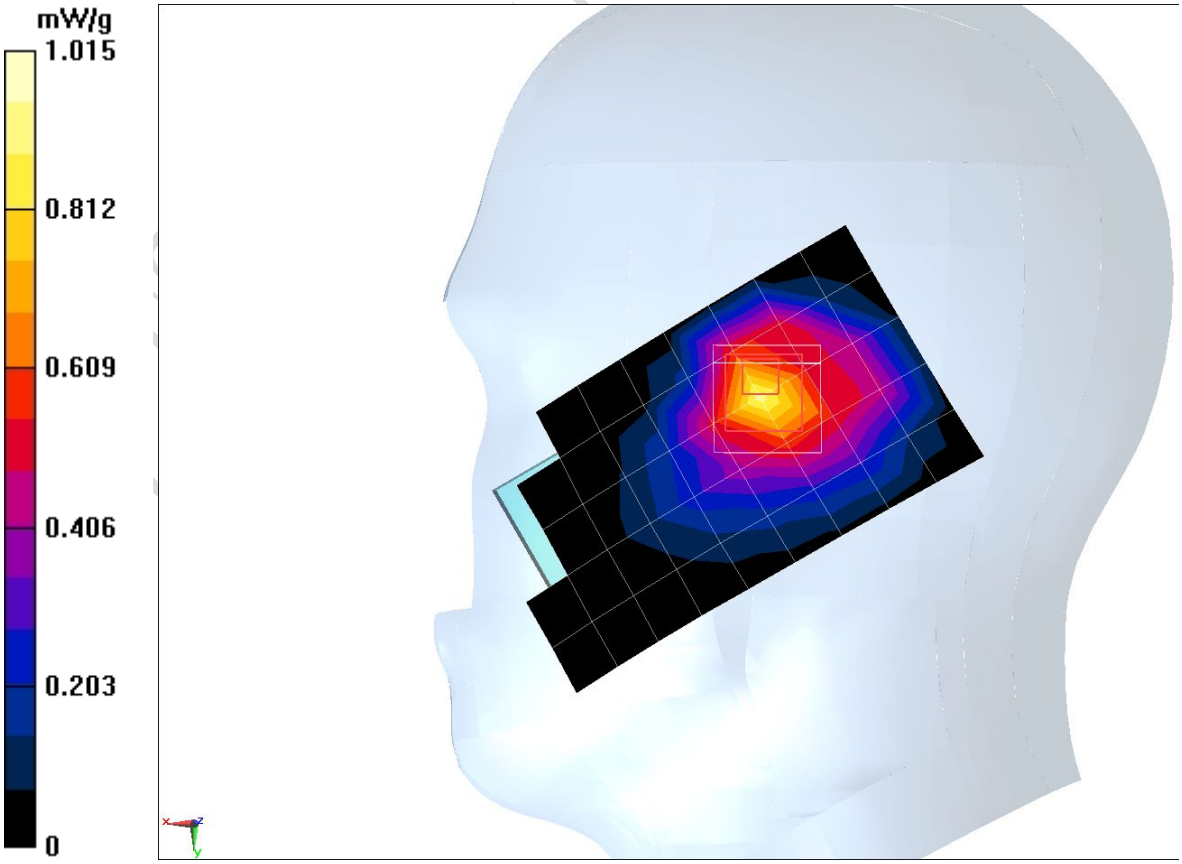
Low Cheek Right GSM 1900MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.637 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.5420 mW/g

SAR(1 g) = 0.812 mW/g; SAR(10 g) = 0.449 mW/g

Maximum value of SAR (measured) = 1.015 mW/g



First Repeated SAR test
GSM1900 Right Cheek Low 2

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.337 mho/m;εr = 40.575; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GSM 1900MHz; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

Low Cheek Right GSM 1900MHz 2/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.938 mW/g

Low Cheek Right GSM 1900MHz 2/Zoom Scan (8x8x7)/Cube 0:

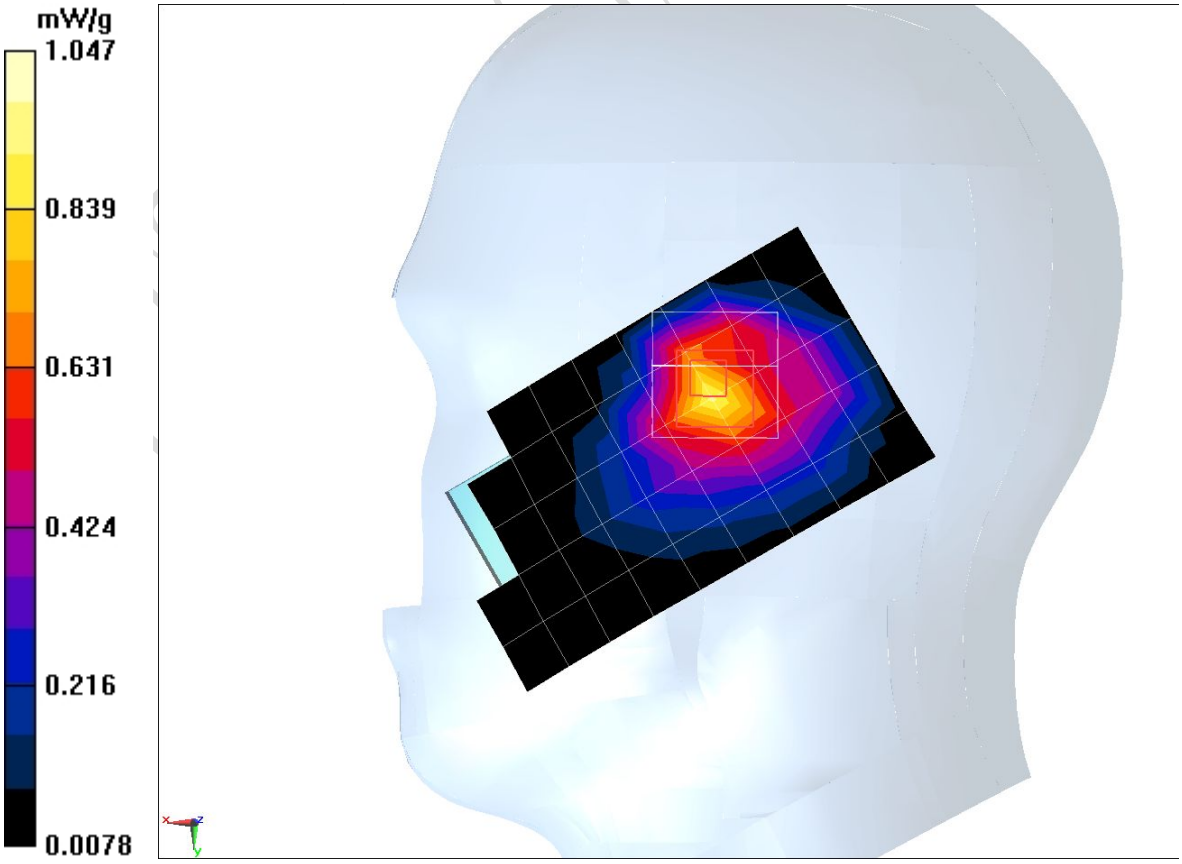
Measurement grid: dx=5mm, dy=5mm, dz=5mm

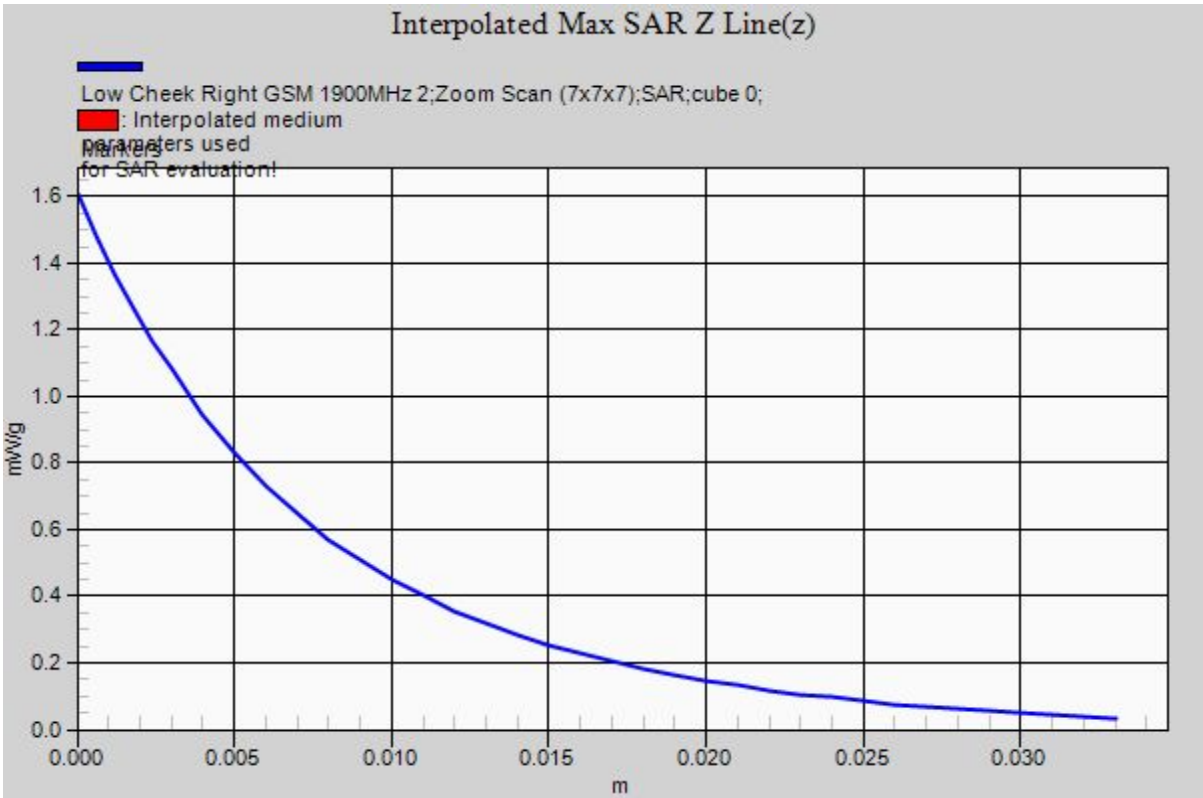
Reference Value = 20.924 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.6090 mW/g

SAR(1 g) = 0.841 mW/g; SAR(10 g) = 0.456 mW/g

Maximum value of SAR (measured) = 1.047 mW/g




Interpolated Max SAR Z Line(z)
Low Cheek Right GSM 1900MHz 2;Zoom Scan (7x7x7);SAR;cube 0;
: Interpolated medium
parameters used
for SAR evaluation!
Markers
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
mW/g
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

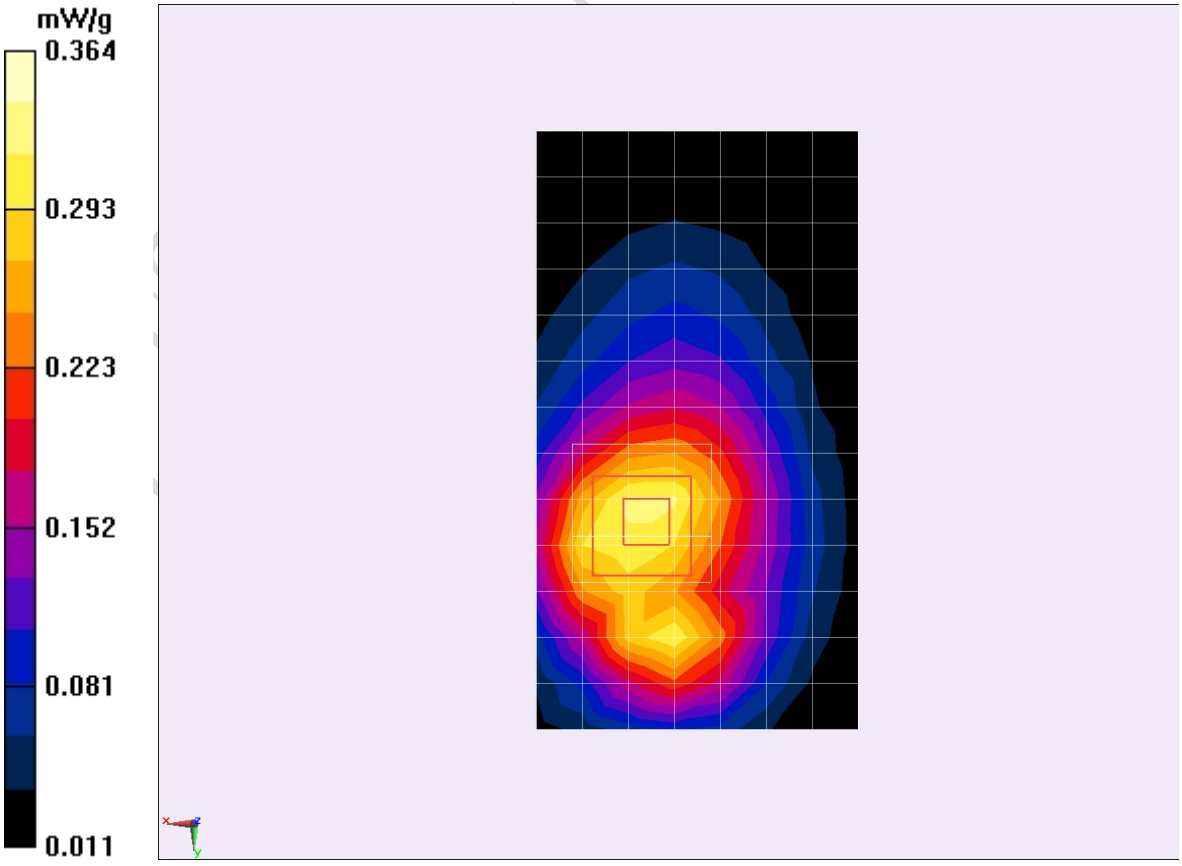
CTL Test

GSM1900 Body Toward Ground GPRS 2TS Middle

Date/Time: 06/02/2015
Electronics: DAE4 Sn1329
Medium: Body 1900MHz
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m;εr = 52.746; ρ = 1000 kg/m3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: GPRS 1900MHz 2TS; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Probe: EX3DV4 - SN3844ConvF(7.84, 7.84, 7.84)

Middle Toward Ground GPRS 2TS 1900MHz/Area Scan (8x14x1):
Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.322 mW/g

Middle Toward Ground GPRS 2TS 1900MHz/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.645 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.4880 mW/g
SAR(1 g) = 0.309 mW/g; SAR(10 g) = 0.189 mW/g
Maximum value of SAR (measured) = 0.364 mW/g



GSM1900 Body Toward Phantom GPRS 2TS Middle

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Body 1900MHz

Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m;εr = 52.746; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GPRS 1900MHz 2TS; Frequency: 1880 MHz; Duty Cycle: 1:4.15

Probe: EX3DV4 - SN3844ConvF(7.84, 7.84, 7.84)

Middle Toward Phantom GPRS 2TS 1900MHz/Area Scan (8x14x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.445 mW/g

Middle Toward Phantom GPRS 2TS 1900MHz/Zoom Scan (7x7x7)/Cube 0:

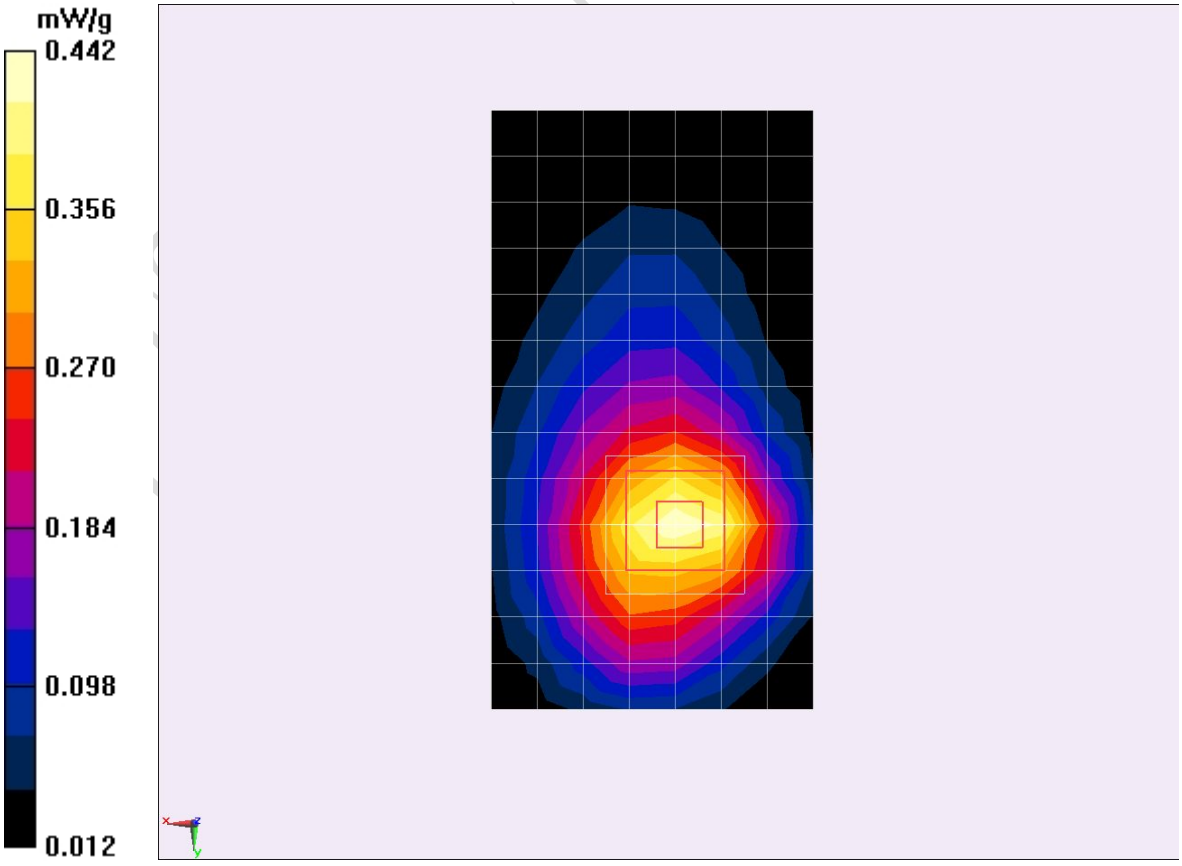
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.664 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.6410 mW/g

SAR(1 g) = 0.404 mW/g; SAR(10 g) = 0.244 mW/g

Maximum value of SAR (measured) = 0.442 mW/g



GSM1900 Body Toward Phantom GPRS 2TS High

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Body 1900MHz

Medium parameters used: f = 1910 MHz; σ = 1.562 mho/m;εr = 52.664; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GPRS 1900MHz 2TS; Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Probe: EX3DV4 - SN3844ConvF(7.84, 7.84, 7.84)

High Toward Phantom GPRS 2TS 1900MHz/Area Scan (8x14x1):

Measurement grid: dx=10mm, dy=10mm

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

High Toward Phantom GPRS 2TS 1900MHz/Zoom Scan (7x7x7)/Cube 0:

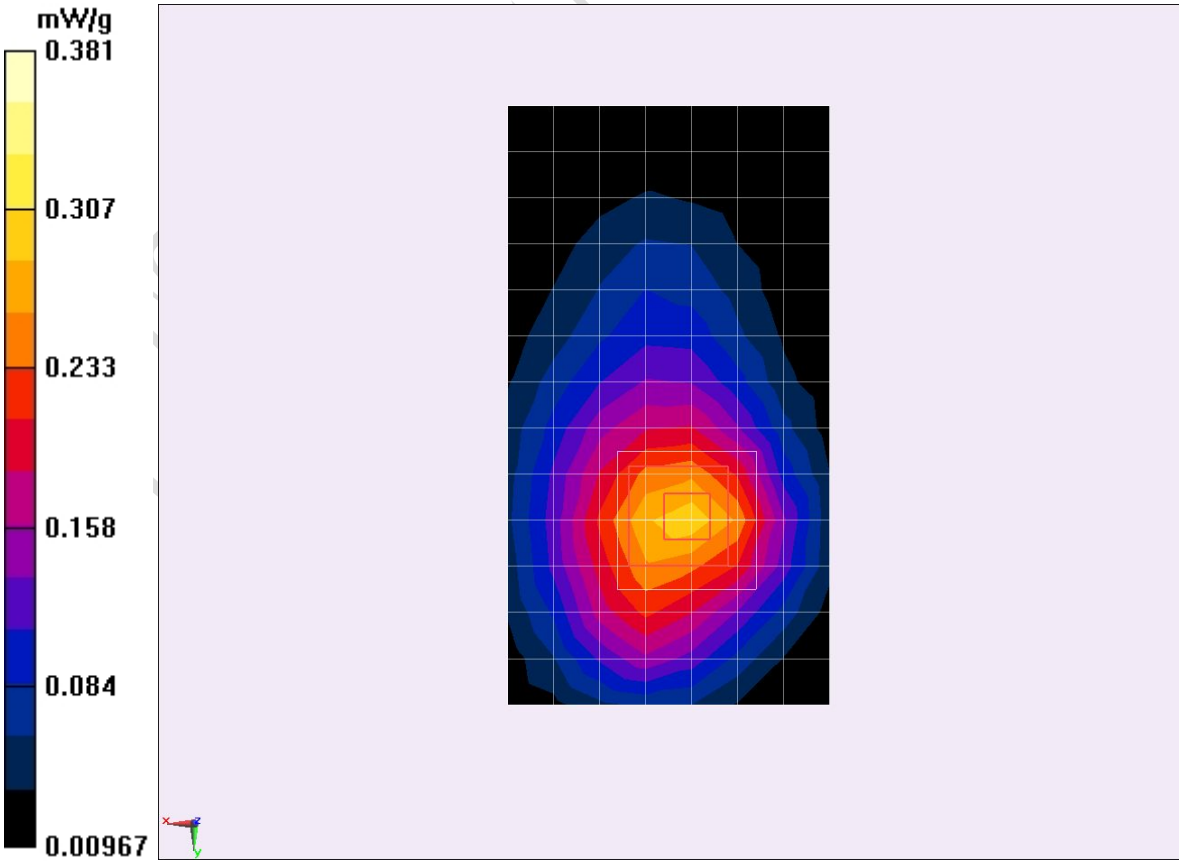
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.325 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.5730 mW/g

SAR(1 g) = 0.351 mW/g; SAR(10 g) = 0.211 mW/g

Maximum value of SAR (measured) = 0.381 mW/g



GSM1900 Body Toward Phantom GPRS 2TS Low

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Body 1900MHz

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.503 mho/m;εr = 52.869; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

Communication System: GPRS 1900MHz 2TS; Frequency: 1850.2 MHz; Duty Cycle: 1:4.15

Probe: EX3DV4 - SN3844ConvF(7.84, 7.84, 7.84)

Low Toward Phantom GPRS 2TS 1900MHz/Area Scan (8x14x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.601 mW/g

Low Toward Phantom GPRS 2TS 1900MHz/Zoom Scan (7x7x7)/Cube 0:

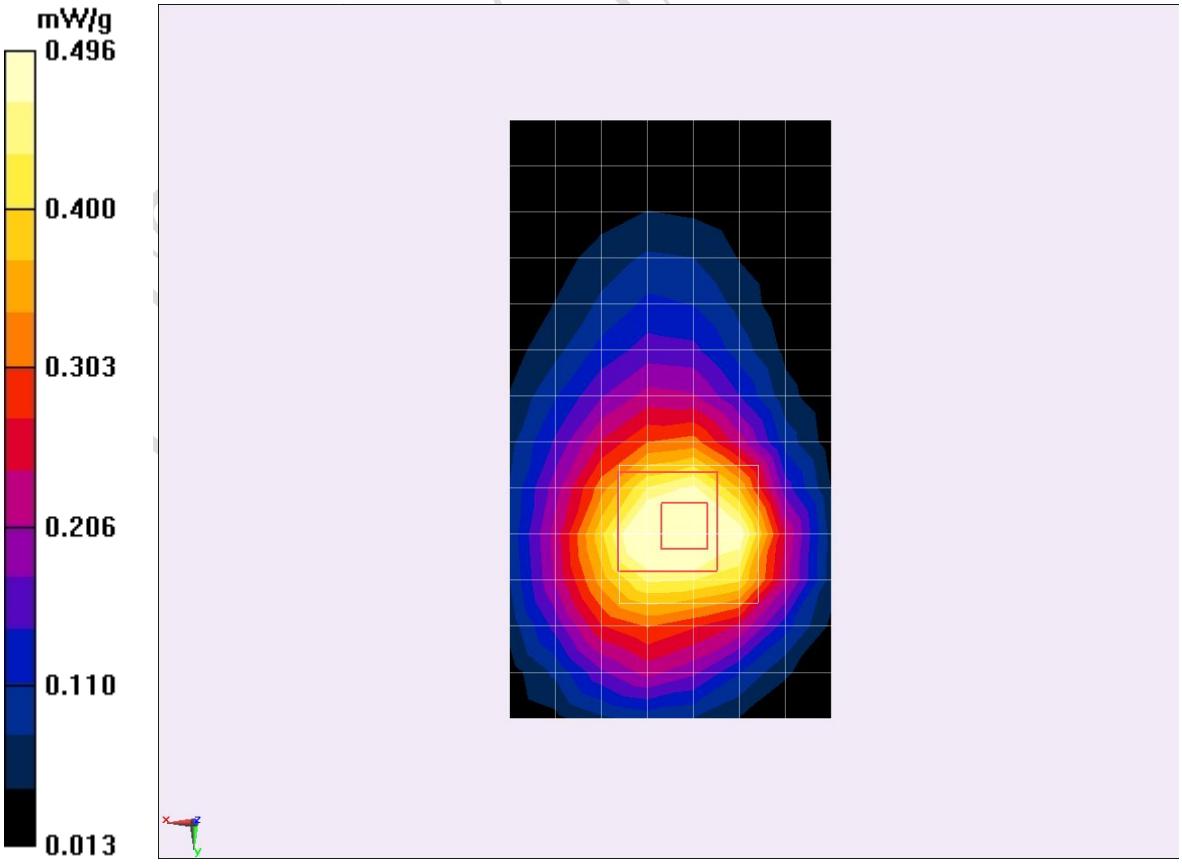
Measurement grid: dx=5mm, dy=5mm, dz=5mm

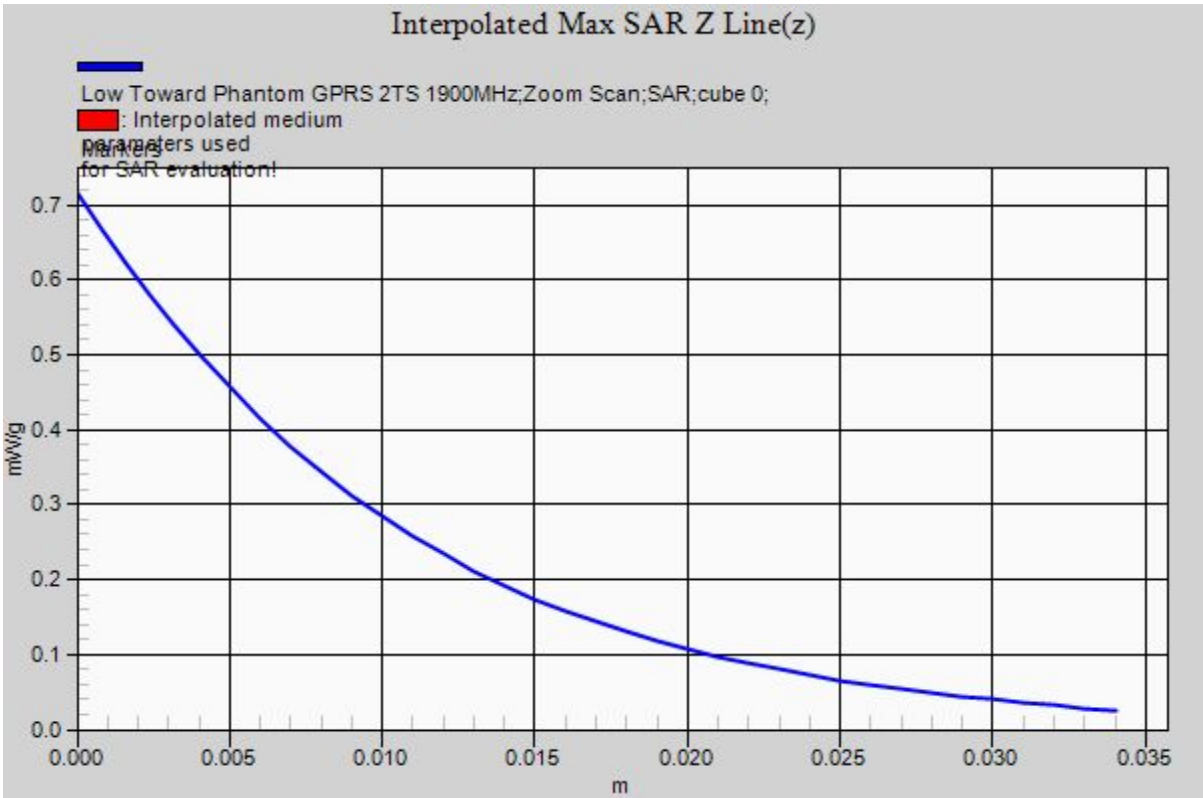
Reference Value = 13.391 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.7150 mW/g

SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.278 mW/g

Maximum value of SAR (measured) = 0.496 mW/g




Interpolated Max SAR Z Line(z)
Low Toward Phantom GPRS 2TS 1900MHz;Zoom Scan;SAR;cube 0;
: Interpolated medium
parameters used
for SAR evaluation!
Markers
mW/g
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

CTL Test

AnnexB System Performance Check Graphical Results

Head 835MHz

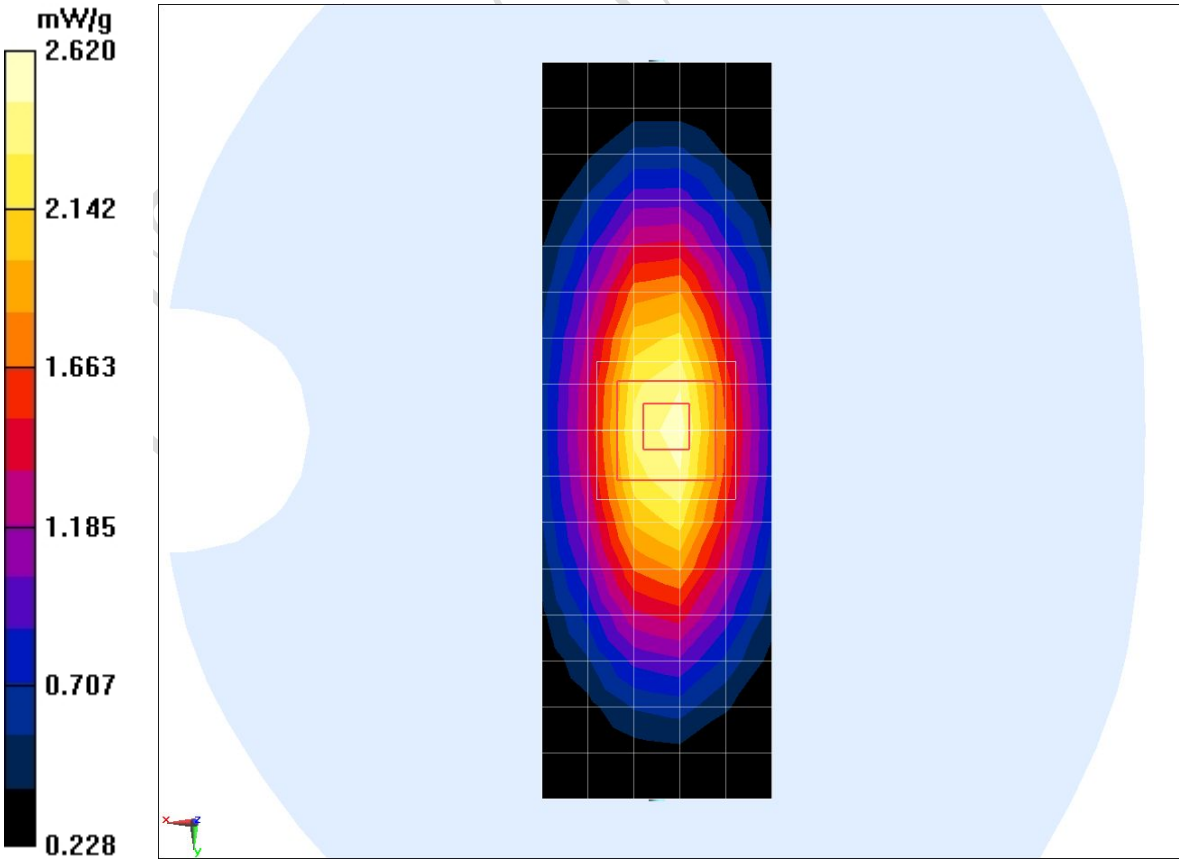
Date/Time: 05/29/2015
Electronics: DAE4 Sn1329
Medium: Head 850MHz
Medium parameters used: f = 835 MHz; σ = 0.899 mho/m;εr = 41.084; ρ = 1000 kg/m3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Probe: EX3DV4 - SN3844ConvF(10.08, 10.08, 10.08)

System Performance Check 835MHz Head/Area Scan (6x17x1):

Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 2.553 mW/g

System Performance Check 835MHz Head/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.646 V/m; Power Drift = -0.0081 dB
Peak SAR (extrapolated) = 3.3250 mW/g
SAR(1 g) = 2.24 mW/g; SAR(10 g) = 1.46 mW/g
Maximum value of SAR (measured) = 2.620 mW/g



Body 835MHz

Date/Time: 05/29/2015

Electronics: DAE4 Sn1329

Medium: Body 850MHz

Medium parameters used: f = 835 MHz; σ = 0.994 mho/m;εr = 55.225; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

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

Probe: EX3DV4 - SN3844ConvF(10.1, 10.1, 10.1)

System Performance Check 835MHz Body/Area Scan (6x17x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.467 mW/g

System Performance Check 835MHz Body/Zoom Scan (7x7x7)/Cube 0:

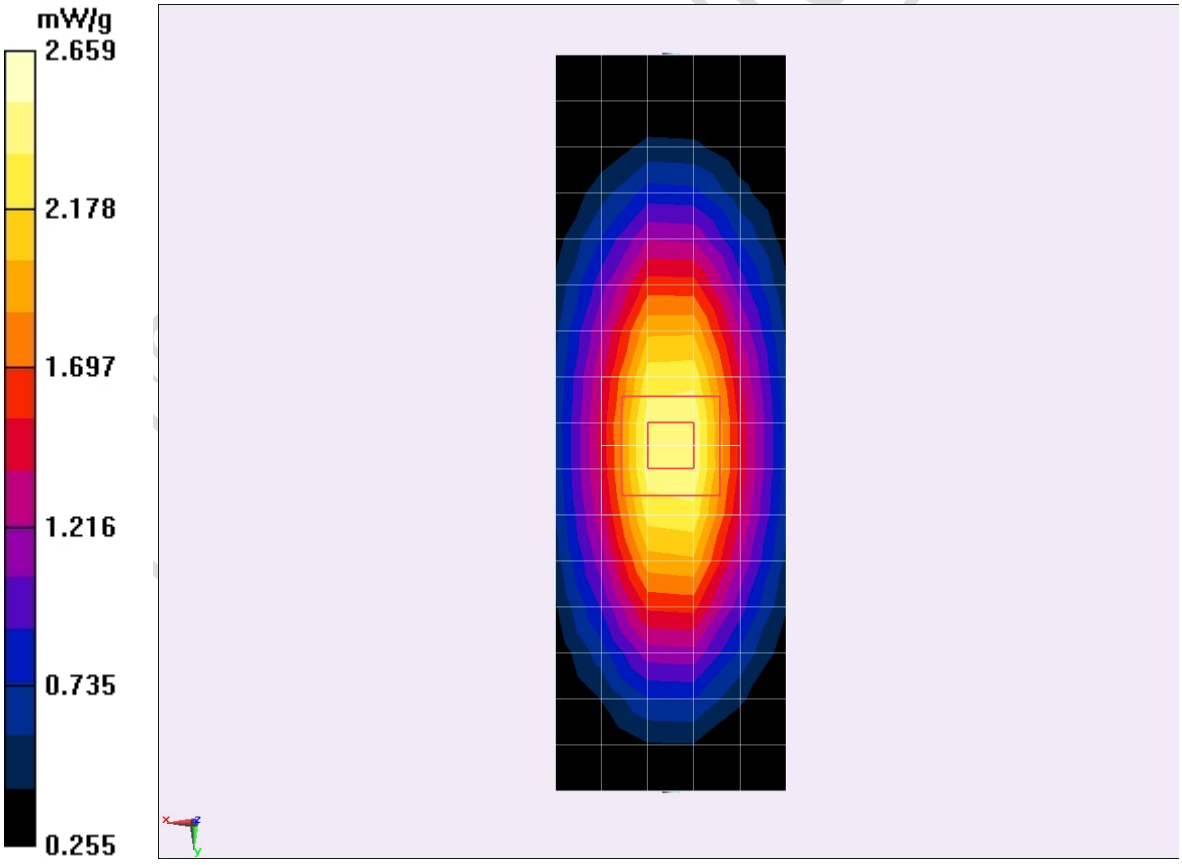
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.927 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.3470 mW/g

SAR(1 g) = 2.28 mW/g; SAR(10 g) = 1.51 mW/g

Maximum value of SAR (measured) = 2.659 mW/g



Head 1900MHz

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Head 1900MHz

Medium parameters used: f = 1900 MHz; σ = 1.391 mho/m;εr = 40.327; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

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

Probe: EX3DV4 - SN3844ConvF(8.17, 8.17, 8.17)

System Performance Check 1900MHz Head/Area Scan (6x11x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 12.047 mW/g

System Performance Check 1900MHz Head/Zoom Scan (7x7x7)/Cube 0:

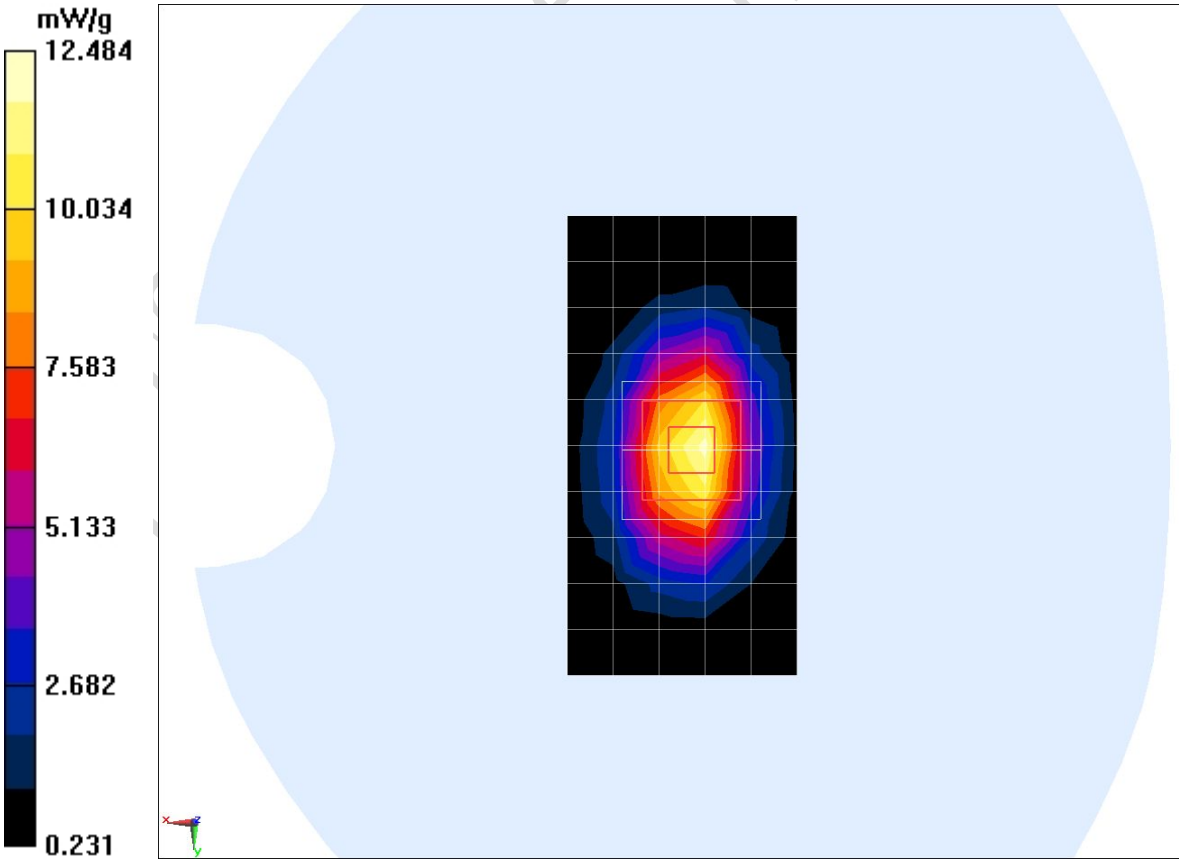
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.259 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 18.1540 mW/g

SAR(1 g) = 9.77 mW/g; SAR(10 g) = 5.07 mW/g

Maximum value of SAR (measured) = 12.484 mW/g



Body 1900MHz

Date/Time: 06/02/2015

Electronics: DAE4 Sn1329

Medium: Body 1900MHz

Medium parameters used: f = 1900 MHz; σ = 1.551 mho/m;εr = 52.683; ρ = 1000 kg/m3

Ambient Temperature:22.5°C Liquid Temperature:22.5°C

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

Probe: EX3DV4 - SN3844ConvF(7.84, 7.84, 7.84)

System Performance Check 1900MHz Body/Area Scan (6x11x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 10.828 mW/g

System Performance Check 1900MHz Body/Zoom Scan (7x7x7)/Cube 0:

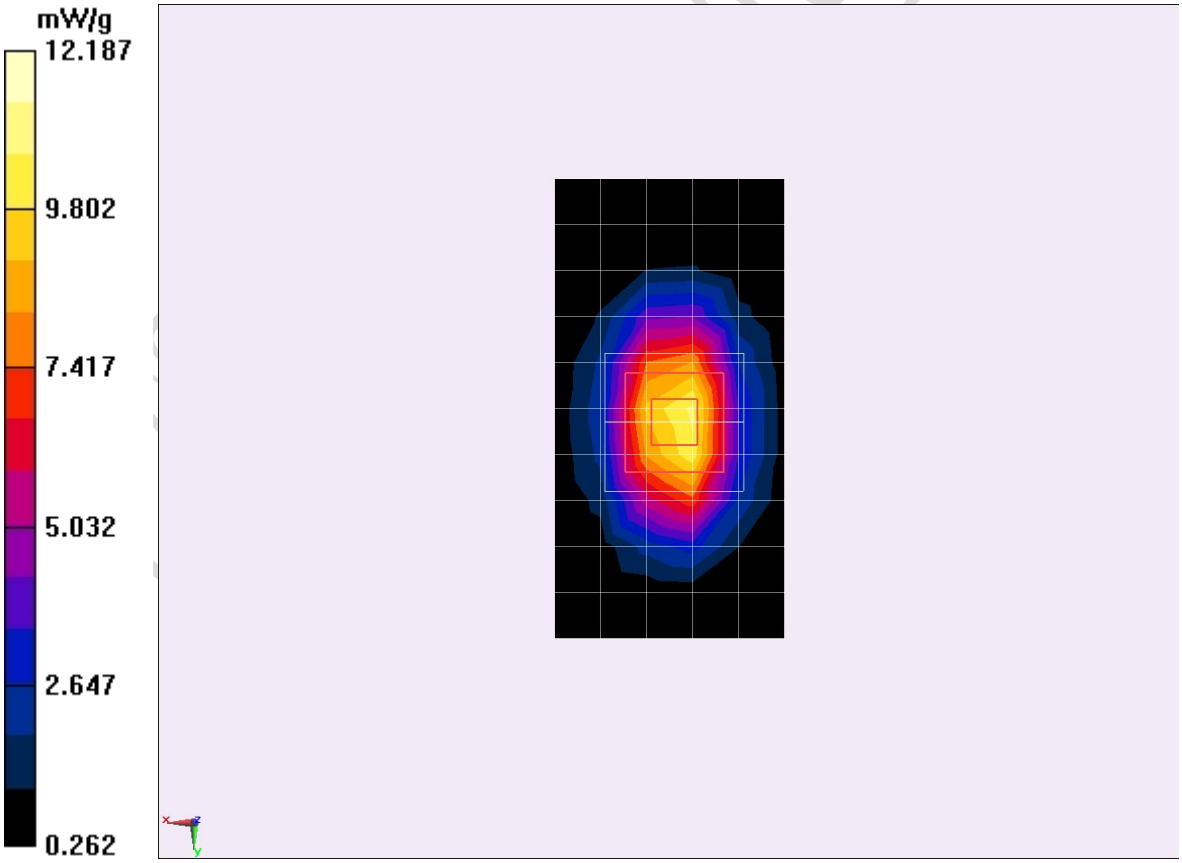
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.908 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 16.7850 mW/g

SAR(1 g) = 9.61 mW/g; SAR(10 g) = 5.08 mW/g

Maximum value of SAR (measured) = 12.187 mW/g



AnnexC Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

Annex DEUT Test Setup Photos

See the Pic1~Pic6 in the document ”ZC4U100_SAR test setup photos”.

Annex E External Photos

See the document ”ZC4U100_External Photos”.

Annex F Internal Photos

See the document ”ZC4U100_Internal Photos”.

Annex H Calibration Certificates

See the documents ”ZC4U100_DAE Calibration Certificate”, “ZC4U100_Dipole Calibration Certificate” and “ZC4U100_Probe Calibration Certificate”.

The End of this Report

CTTL Test Report