SAR TEST REPORT

No. 121202-R4

for

Five Technology Co., Ltd

Tablet Computer

Model Name: F208

FCC ID: RDX-FNFIFIVEMX

Issued Date: 2013-1-9

Test Laboratory:
GCCT, *Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center*
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GENERAL SUMMARY

Product Name	Tablet Computer
Model Name	F208
Applicant	Five Technology Co., Ltd
Manufacturer	Five Technology Co., Ltd
Test laboratory	GCCT, Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center
Reference Standards	**OET Bulletin 65 (Edition 97-01) and Supplement C(Edition 01-01):** Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits **IEEE Std C95.1, 1999:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz **IEEE 1528-2003:** Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques **FCC KDB 447498 D01 v05:** Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies **FCC KDB 865664 D01 v01:** SAR Measurement Requirements for 100 MHz to 6 GHz **FCC KDB 616217 D04 v01:** SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers **FCC KDB 248227 D01 v01r02:** SAR Measurement Procedures for 802.11 a/b/g Transmitters **IEC 62209-1: 2006:** Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures, Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz) **IEC 62209-2: 2010:** Human exposure to radio frequency fields from handheld and body-mounted wireless communication devices - Human models, instrumentation, and procedures, Part 2: Procedure to determine the specific absorption rate (SAR) for mobile wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)
Test Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards. General Judgment: **Pass** **Date of issue: 2013.1.9**
Comment:	The test results in this report apply only to the tested sample of the stated device/equipment.

Approved by:	*Reviewed by:*	*Tested by:*
Luo Jian Deputy Manager	Dong Xiaobo Deputy Manager	Li Linqiang Test Engineer

1. General Information

1.1 Testing Laboratory

Company	GCCT, Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center
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1.2 Application Information

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1.3 Manufacturer Information

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1.4 EUT Information

Product Name	Tablet Computer
Exposure Category	Uncontrolled Environment / General Population
Model Number	F208
Device Type	Portable Device
Hardware version	V2.0
Software version	F208_FW_PERU_411_V1.0
Supporting modes	GPRS/EGPRS 850/1900 (tested) WCDMA/HSDPA Band V (tested) WiFi (802.11b/g/n) (tested) Bluetooth (tested)
GPRS Level	GPRS: Class 12
EGPRS Level	EGPRS: Class 12
Max. SAR (1g):	GPRS 850: 1.48 W/Kg GPRS1900: 1.53 W/Kg WCDMA Band V: 1.34W/Kg WiFi (802.11b) : 0.70W/Kg Bluetooth: 0.03W/Kg
Antenna Specification	Internal Antenna
Accessories	Charger: input: 100-240v, 0.5A output: 5v, 2A Earphone
Comment	The diagonal dimension of the table is 20.3 cm. The above EUT's information is declared by manufacture.

2. EUT Operational Conditions During Test

2.1 General Description of Test Procedures

A communication link is set up with a System Simulator (SS) by air link, and a call is established The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128,190 and 251 in the case of GPRS850/EGPRS850, allocated to 512, 661 and 810 in the case of GPRS1900/EGPRS1900, allocated to 4132, 4183 and 4233 respectively in the case of WCDMA Band V. The EUT is commanded to operate at maximum transmitting power by MT8820C.

When we test, the EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. The antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the EUT. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the EUT by at least 30 dB.

2.2 GSM Test Configuration

For the SAR tests for GSM, a communication link is set up with a System Simulator (SS) by air link. Using MT8820C the power lever is set to “5” of GSM850, set to “0” of PCS1900. The EUT is commanded to operate at maximum transmitting power. The GPRS class is 12 for this EUT. It has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5. The EGPRS class is 12 for this EUT, when SAR tests for EGPRS mode, GMSK modulation is used to minimize SAR measurement error.

2.3 WCDMA Test Configuration

For the SAR body tests for WCDMA Band V, a communication link is set up with a System Simulator (SS) by air link. We established the radio link with 12.2kbps RMC and the power control “all bits up” in test loop mode 1.

HSDPA:

SAR for body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. In addition, body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least 0.25 dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2kbps RMC without HSDPA.

2.4 WiFi Test Configuration

For the 802.11b/g SAR tests, The EUT work on test mode. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 1, 6 and 11 respectively in the case of 2450 MHz. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate. 802.11b/g operating modes are tested independently according to the service requirements in each frequency band. 802.11b/g modes are tested on channels1,6,11, however, if output power reduction is necessary for channels 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels must be tested instead.

SAR is not required for 802.11g channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels.

2.5 Test Position of EUT

The diagonal display of tablet computer is 8 inches. According to the tablet procedures, the separation distance of 0 mm should be applied to test all sides and edges of the device with an antenna closer than 5.0 cm from the surface or edge. The EUT is tested at the following 6 test positions:

●Test Position 1: The back side of the EUT towards the bottom of the flat phantom distance 0mm.

●Test Position 2: The front side of the EUT towards the bottom of the flat phantom distance 0 mm.

●Test Position 3: The top side of the EUT towards the bottom of the flat phantom distance 0 mm.

●Test Position 4: The bottom side of the EUT towards the bottom of the flat phantom distance 0 mm.

●Test Position 5: The left side of the EUT towards the bottom of the flat phantom distance 0 mm.

●Test Position 6: The right side of the EUT towards the bottom of the flat phantom distance 0 mm.

3. SAR Measurements System Configuration

These measurements were performed with the automated near-field scanning system DASY5 from SPEAG. The system is based on a high precision robot, which positions the probes with a positional repeatability of better than ± 0.02 mm. Special E-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 to the data acquisition unit. The SAR measurements were conducted with the dosimetric probe manufactured by SPEAG, designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the procedure described in with accuracy of better than ±10%. The spherical isotropy was evaluated and found to be better than ±0.3 dB. The phantom used was the SAM Twin Phantom and ELI4 Phantom as described in IEC 62209-1, FCC OET 065 supplement C, IEEE1528 and CENELEC EN50361.

3.1 Measurement System Diagram

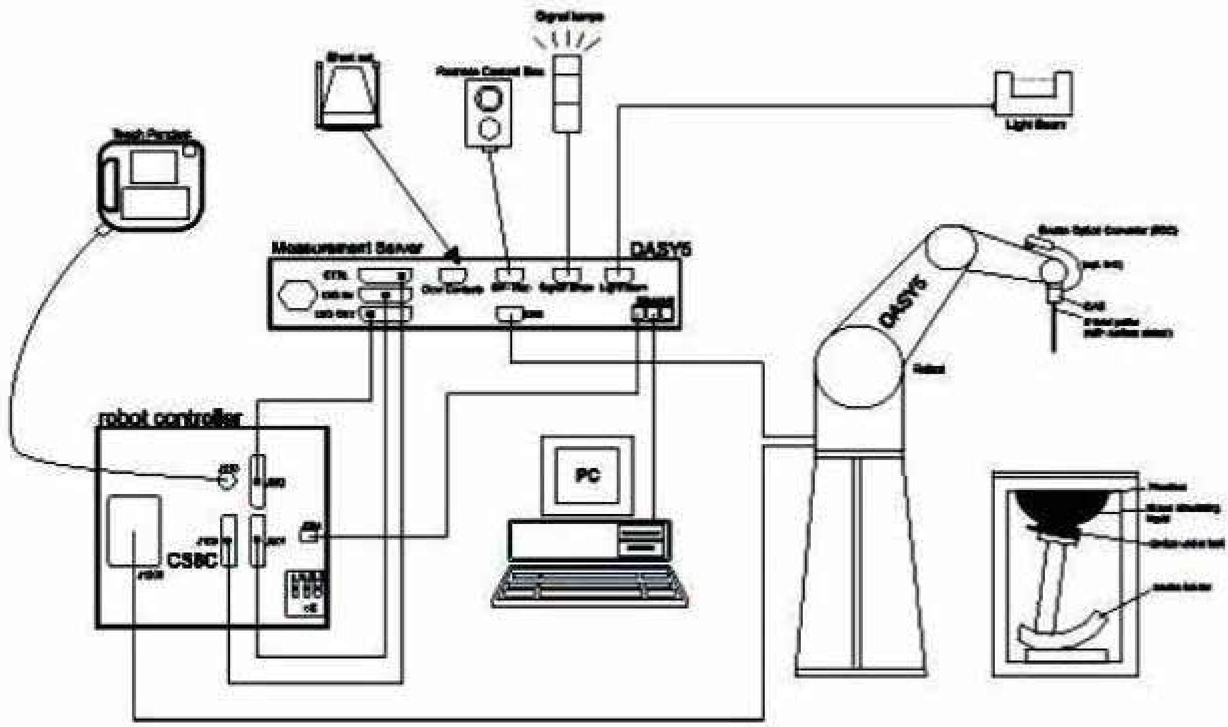


Figure1 system diagram

The DASY5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (TX90XL) with St¨aubli CS8c robot controllers.
2. DASY5 Measurement Server.
3. Data Acquisition Electronics.
4. A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in

tissue simulating liquid. The probe is equipped with an optical surface detector system.

5. Light Beam Unit.
6. The SAM phantom enabling testing left-hand right-hand and the ELI4 phantom for body usage.
7. The Position device for handheld EUT.
8. Tissue simulating liquid mixed according to the given recipes
9. System validation dipoles to validate the proper functioning of the system.
10. A computer operating Windows xp.

3.2 System Components

The mobile phone under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The DASY5 software computes the results to give a SAR value in a 1g or 10 g mass.

3.2.1 TX90XL

The TX90XL robot has six axes. The six axes are controlled by the St¨aubli CS8c robot controllers. It offers the features important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchrony motors; no stepper motors)
- Low ELF

3.2.2 DASY5 Measurement Server

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz Intel ULV Celeron, 128MB chip disk and 128MB RAM. The necessary circuits for communication with either the DAE4 electronics box as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.

Figure 2 TX90XL

Figure 3 Measurement Server

3.2.3 Probe

For the measurements the Specific Dosimetric E-Field Probe ES3DV3 and EX3DV4 with following specifications is used.

Frequency：10 MHz to 3 GHz; Linearity: ± 0.2 dB

Directivity： ± 0.3 dB in HSL (rotation around probe axis)

± 0.5 dB in tissue material (rotation normal to probe axis)

Dynamic Range：10 μW/g to > 100 mW/g; Linearity: ± 0.2 dB

Tip Diameter: 5 mm; Distance between probe tip and sensor center: 2.5 mm

Probe linearity: ±0.3 dB;

Calibration range: 835 to 2500 MHz for head & body simulating liquid

3.2.4 Device holder

The DASY device holder is designed to cope with the different positions given in the standard.

It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles. The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity =3 and loss tangent =0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

Figure 4 probe

Figure 5 device holder

3.2.5 Phantom

The SAM Twin Phantom and the ELI4 Phantom are constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is in compliance with the specification set in IEEE P1528 and CENELEC EN62209-1. The SAM Twin phantom enables the dosimetric evaluation of left and right hand phone usage and the ELI4 phantom enables the dosimetric evaluation of body mounted usage. 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.

Shell thickness: 2 mm +/-0.2 mm

Filling Volume: Approx. 25 liters

Dimensions (H x L x W): 850 x 1000 x 500 mm

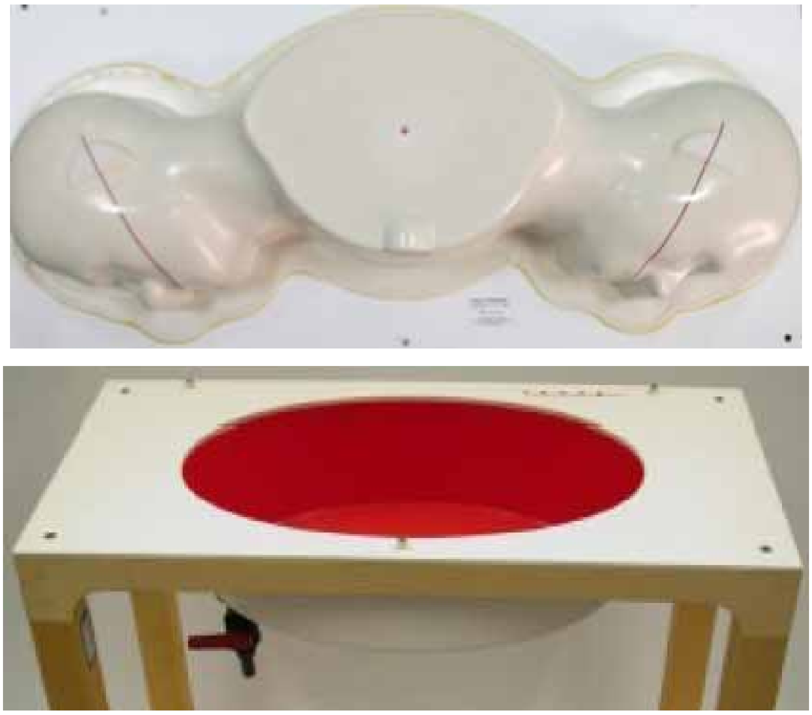


Figure 6 SAM Twin phantom and ELI phantom

3.2.6 Data Acquisition Electronics

DAE4 consist 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 with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock. The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

Input impedance: 200MOhm, symmetrical and floating.

Common mode rejection: > 80 dB.

3.2.7 Validation dipoles

Frequencies:

SPEAG has a full range of dipoles corresponding to the frequencies defines by the standards: 835, 900, 1800, 1900, 2000, 2450MHz

Maximum input Power: 100W

Connectors: SMA

Dimensions: (depends on the dipole frequency)

Figure 7 DAE4

Figure 8 Validation dipoles

3.3 Equivalent Tissues

The relative permittivity and conductivity of the tissue material should be within ±5% of the values given in the table below recommended by the FCC OET 65 supplement C.

Target Frequency	Head		Body	
(MHz)	εr	σ (S/m)	εr	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800—2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

4. Evaluation Procedures

4.1 Data Evaluation

The DASY5 software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters: - Sensitivity *Normi, ai0, ai1, ai2*

-Conversion factor *ConvFi*

- Diode compression point *dcpi* Device parameters: -

Frequency *f*

- Crest factor *cf*

Media parameters: - Conductivity σ

-Density ρ

These parameters must be set correctly in the software. They can be found in the component documents or be imported into the software from the configuration files issued for the DASY5 components. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 * \frac{cf}{dcp_i}$$

with *Vi* = Compensated signal of channel i (i = x, y, z)

Ui = Input signal of channel i (i = x, y, z)

cf = Crest factor of exciting field (DASY5 parameter)

dcpi = Diode compression point (DASY5 parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: $E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$

With *Vi* = Compensated signal of channel i (i = x, y, z)

Normi = Sensor sensitivity of channel i (i = x, y, z)

$\mu V/(V/m)^2$ for E0field Probes

ConvF= Sensitivity enhancement in solution

aij = Sensor sensitivity factors for H-field probes

f = Carrier frequency (GHz)

Ei = Electric field strength of channel i in V/m

Hi = Magnetic field strength of channel i in A/m The RSS value of the field components give the total field strength (Hermitian magnitude):

$$E_{tot}=\sqrt{E_x^2+E_y^2+E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

With *SAR* = local specific absorption rate in mW/g

Etot = total field strength in V/m

σ= conductivity in [mho/m] or [Siemens/m]

ρ= equivalent tissue density in g/cm^3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field as a free space field.

$$P_{pwe}=\frac{E_{tot}^2}{3770} \quad \text{Or} \quad P_{pwe}=H_{tot}^2 \cdot 37.7$$

With Ppwe = Equivalent power density of a plane wave in mW/cm^2

Etot = total electric field strength in V/m

Htot = total magnetic field strength in A/m

4.2 SAR Evaluation Procedures

The procedure for assessing the peak spatial-average SAR value consists of the following steps:

• **Power Reference Measurement**

The reference and drift jobs are useful jobs for monitoring the power drift of the device under test in the batch process. Both jobs measure the field at a specified reference position, at a selectable distance from the phantom surface. The reference position can be either the selected section’s grid reference point or a user point in this section. The reference job projects the selected point onto the phantom surface, orients the probe perpendicularly to the surface, and approaches the surface using the selected detection method.

• **Area Scan**

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a finer measurement around the hot spot. The sophisticated interpolation routines implemented in DASY5 software can find the maximum locations even in relatively coarse grids. The scan area is defined by an editable grid. This grid is anchored at the grid reference point of the selected section in the phantom. When the area scan's property sheet is brought-up, grid was at to 15 mm by 15 mm and can be edited by a user.

• **Zoom Scan**

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default zoom scan measures 7 x 7 x 7 points within a cube whose base faces are centered around the maximum found in a preceding area scan job within the same procedure. If the preceding Area Scan job indicates more then one maximum, the number of Zoom Scans has to be enlarged accordingly (The default number inserted is 1).

• **Power Drift measurement**

The drift job measures the field at the same location as the most recent reference job within the same procedure, and with the same settings. The drift measurement gives the field difference in dB from the reading conducted within the last reference measurement. Several drift measurements are possible for one reference measurement. This allows a user to monitor the power drift of the device under test within a batch process. In the properties of the Drift job, the user can specify a limit for the drift and have DASY5 software stop the measurements if this limit is exceeded.

4.3 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the IEC62209-1 standard. It can be conducted for 1 g and 10 g. The DASY5 system allows evaluations that combine measured data and robot positions, such as:

maximum search
extrapolation
boundary correction
Peak search for averaged SAR

During a maximum search, global and local maximum searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation.

Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Cube Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1 g and 10 g cubes.

Boundary effect

For measurements in the immediate vicinity of a phantom surface, the field coupling effects between the probe and the boundary influence the probe characteristics. Boundary effect errors of different dosimetric probe types have been analyzed by measurements and using a numerical probe model. As expected, both methods showed an enhanced sensitivity in the immediate vicinity of the boundary. The effect strongly depends on the probe dimensions and disappears with increasing distance from the boundary. The sensitivity can be approximately given as:

$$S \approx S_o + S_b exp(-\frac{z}{a}) cos(\pi \frac{z}{\lambda})$$

Since the decay of the boundary effect dominates for small probes (a<<λ), the cos-term can be omitted. Factors *Sb* (parameter Alpha in the DASY5 software) and *a* (parameter Delta in the DASY5 software) are assessed during probe calibration and used for numerical compensation of the boundary effect. Several simulations and measurements have confirmed that the compensation is valid for different field and boundary configurations.

This simple compensation procedure can largely reduce the probe uncertainty near boundaries. It works well as long as:

the boundary curvature is small

the probe axis is angled less than 30 ° to the boundary normal

the distance between probe and boundary is larger than 25% of the probe diameter

the probe is symmetric (all sensors have the same offset from the probe tip)

Since all of these requirements are fulfilled in a DASY5 system, the correction of the probe boundary effect in the vicinity of the phantom surface is performed in a fully automated manner via the measurement data extraction during post processing.

5. Test Laboratory Environment

Temperature	Min. = 20°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

6. Conducted Output Power Measurement

The following procedures had been used to prepare the EUT for the SAR test. To setup the desire channel frequency and the maximum output power. A Radio Communication Tester MT8820C was used to program the EUT.

GSM 850		**Power (dBm)**				**Average power (dBm)**		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GPRS	1TXslot	32.68	32.75	32.88	-9.03	23.65	23.72	23.85
	2TXslots	32.16	32.14	32.20	-6.02	26.14	26.12	26.18
	3TXslots	30.53	30.46	30.49	-4.26	26.27	26.2	26.23
	4TXslots	29.48	29.40	29.45	-3.01	**26.47**	**26.39**	**26.44**
EGPRS	1TXslot	27.25	27.24	27.11	-9.03	18.22	18.21	18.08
	2TXslots	26.09	26.16	26.10	-6.02	**20.07**	**20.14**	**20.08**
	3TXslots	24.06	24.11	23.90	-4.26	19.80	19.85	19.64
	4TXslots	22.65	22.73	22.56	-3.01	19.64	19.72	19.55
GSM 1900		**Power (dBm)**				**Average power (dBm)**		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GPRS	1TXslot	29.37	29.27	29.61	-9.03	20.34	20.24	20.58
	2TXslots	28.56	28.51	28.85	-6.02	22.54	22.49	22.83
	3TXslots	26.72	22.66	27.09	-4.26	22.46	18.40	22.83
	4TXslots	25.71	25.61	26.05	-3.01	**22.70**	**22.60**	**23.04**
EGPRS	1TXslot	25.05	25.02	25.08	-9.03	16.02	15.99	16.05
	2TXslots	23.98	23.81	23.94	-6.02	**17.96**	**17.79**	**17.92**

	3TXslots	21.48	21.68	21.50	-4.26	17.22	17.42	17.24
	4TXslots	20.23	20.34	20.47	-3.01	17.22	17.33	17.46

Note:

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) => -9.03 dB

2 TX-slots = 2 transmit time slots out of 8 time slots

=> Conducted power divided by (8/2) => -6.02 dB

3TX-slots = 3 transmit time slots out of 8 time slots

=> Conducted power divided by (8/3) => -4.26 dB

4 TX-slots = 4 transmit time slots out of 8 time slots

=> Conducted power divided by (8/4) => -3.01 dB

2) Average power numbers

The maximum power numbers are marks in bold. According to the conducted power as above, the body measurements are performed with 4Txslots for GPRS and 2Txslots for EGPRS.

WCDMA Band V		Conducted power（dBm）					
		Ch 4132		Ch 4183		Ch 4233	
		Peak	Average	Peak	Average	Peak	Average
RMC	12.2kbps RMC	26.03	23.01	26.03	22.85	26.04	22.99
	64kbps RMC	25.96	22.96	25.95	22.34	26.00	21.65
	144kbps RMC	25.96	22.95	25.62	22.35	25.63	22.86
	384kbps RMC	25.97	22.96	25.96	22.15	25.91	21.34
HSDPA	Sub - Test 1	25.89	22.19	25.79	22.09	25.62	22.05
	Sub - Test 2	25.12	22.01	25.15	21.96	25.42	21.65
	Sub - Test 3	25.52	22.03	25.45	22.08	25.42	21.97
	Sub - Test 4	25.21	21.68	25.25	21.65	25.34	21.23

7. SAR Measurement Results

7.1 Liquid Measurement Results

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectric parameters are within the tolerances of the specified target values.

Date: Dec 11, 2012 **Ambient condition:** Temperature: 21.5°C; Relative humidity: 58%

Body Simulation Liquid			Parameters	Target	Measured	Deviation [%]	Limited [%]
Frequency	Temp.[°C]	Depth [cm]					
835MHz	21.5	＞15cm	Permittivity:	55.2	53.74	-2.64	±5
			Conductivity:	0.97	0.94	-3.09	±5

Date: Dec 13, 2012 **Ambient condition:** Temperature: 21.5°C; Relative humidity: 58%

Body Simulation Liquid			Parameters	Target	Measured	Deviation [%]	Limited [%]
Frequency	Temp.[°C]	Depth [cm]					
1900MHz	21.5	＞15cm	Permittivity:	53.3	50.72	-4.84	±5
			Conductivity:	1.52	1.58	3.95	±5

Date: Dec 15, 2012 **Ambient condition:** Temperature: 21.5°C; Relative humidity: 58%

Body Simulation Liquid			Parameters	Target	Measured	Deviation [%]	Limited [%]
Frequency	Temp.[°C]	Depth [cm]					
2450MHz	21.3	＞15cm	Permittivity:	52.7	50.71	-3.78	±5
			Conductivity:	1.95	2.02	3.59	±5

7.2 System Performance Check

System Performance Check Measurement conditions

- The measurements were performed in the flat section of the SAM twin phantom filled with head and body simulating liquid of the following parameters.
- The DASY5 system with an E-field probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15 mm (below 1 GHz) and 10 mm (above 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 10mm was aligned with the dipole.
- Special 7x7x7 fine cube was chosen for cube integration (dx= 5 mm, dy= 5 mm, dz= 5 mm).
- Distance between probe sensors and phantom surface was set to 2.5 mm.

The depth of Liquid must above 15cm

System Performance Check Results:

Dipole: D900V2 SN: 1d073

Date: Dec 11, 2012 **Ambient condition:** Temperature: 21.5°C; Relative humidity: 58%

Body Simulation Liquid			Parameters	Target	Measured	Deviation [%]	Limited [%]
Frequency	Temp.[°C]	Depth [cm]					
900MHz	21.5	15cm	Permittivity:	55.0	53.12	-3.42	±5
			Conductivity:	1.05	1.002	-4.58	±5
			1g SAR (250mW)	2.81	2.68	-4.63	±10

Note: The signal power to dipole input port is 125mW.

Dipole: D1900V2 SN: 5d070

Date: Dec 13, 2012 **Ambient condition:** Temperature: 21.5°C; Relative humidity: 58%

Body Simulation Liquid			Parameters	Target	Measured	Deviation [%]	Limited [%]
Frequency	Temp.[°C]	Depth [cm]					
1900MHz	21.5	15cm	Permittivity:	53.3	50.72	-4.84	±5
			Conductivity:	1.52	1.58	3.95	±5
			1g SAR (250mW)	10.3	10.52	2.14	±10

Note: The signal power to dipole input port is 62.5mW.

Dipole: D2450V2 SN: 815

Date: Dec 15, 2012 **Ambient condition:** Temperature: 21.5°C; Relative humidity: 58%

Body Head Simulation Liquid			Parameters	Target	Measured	Deviation [%]	Limited [%]
Frequency	Temp.[°C]	Depth [cm]					
2450MHz	21.5	15cm	Permittivity:	52.7	50.71	-3.78	±5
			Conductivity:	1.95	2.02	3.59	±5
			1g SAR (250mW)	13.0	13.56	4.31	±10

Note: The signal power to dipole input port is 125mW.

7.3 Measurement Results

Test mode: GSM 850 (GPRS/EGPRS), Depth of liquid: ＞15.0 cm Date: Dec 11, 2012						
EUT Position	Timeslots	Channel	Frequency (MHz)	SAR (1g) (W/kg)	Power Drift (dB)	Limit (W/kg)
Test Case Position of GPRS (Distance 0mm)						
Position 1	4 timeslots	251	848.8	0.828	0.13	1.6
	4 timeslots	190	836.6	1	0.13	
	4 timeslots	128	824.2	0.976	-0.04	
Position 2	4 timeslots	251	848.8	0.933	0.08	
	4 timeslots	190	836.6	1.15	-0.12	
	4 timeslots	128	824.2	1.27	0.11	
Position 3	4 timeslots	190	836.6	0.542	0.02	
Position 4	4 timeslots	190	836.6	0.116	-0.18	
Position 5	4 timeslots	190	836.6	0.06	-0.06	
Position 6	4 timeslots	251	848.8	0.835	0.07	
	4 timeslots	190	836.6	1.17	0.17	
	4 timeslots	128	824.2	**1.31**	0.06	
Worst Case Position with Earphone (GPRS) (Distance 0mm)						
Position 6	4 timeslots	128	824.2	1.24	-0.12	
Worst case position of EGPRS (Distance 0mm)						
Position 6	2 timeslots	128	824.2	1.17	-0.06	

Test mode: GSM 1900 (GPRS/EGPRS), Depth of liquid: ＞15.0 cm Date: Dec 13, 2012						
EUT Position	Timeslots	Channel	Frequency (MHz)	SAR (1g) (W/kg)	Power Drift (dB)	Limit (W/kg)
Test Case Position of GPRS (Distance 0mm)						
Position 1	4 timeslots	661	1880	0.7	0.13	
Position 2	4 timeslots	810	1909.8	**1.23**	0.18	1.6
	4 timeslots	661	1880	1.01	-0.14	
	4 timeslots	512	1850.2	0.765	-0.04	
Position 3	4 timeslots	661	1880	0.066	0.16	
Position 4	4 timeslots	661	1880	0.085	-0.11	
Position 5	4 timeslots	661	1880	0.124	-0.02	
Position 6	4 timeslots	661	1880	0.298	0.17	
Worst Case Position with Earphone (GPRS) (Distance 0mm)						
Position 2	4 timeslots	810	1909.8	**1.23**	0.17	
Worst case position of EGPRS (Distance 0mm)						
Position 2	2 timeslots	810	1909.8	0.893	-0.12	

Note:
1. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB (< 0.8W/kg) lower than the SAR limit, testing at the high and low channels is optional.
2. Upper and lower frequencies were measured at the worst case.
3. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

Test mode: WCDMA Band V, Depth of liquid: ＞15.0 cm Date: Dec 14, 2012					
EUT Position	Channel	Frequency (MHz)	SAR (1g) (W/kg)	Power Drift (dB)	Limit (W/kg)
Test Case Position of RMC (Distance 0mm)					1.6
Position 1	4183	836.6	0.764	0.18	
Position 2	4233	846.6	0.988	-0.04	
	4183	836.6	**1.2**	0.13	
	4132	826.4	0.939	0.07	

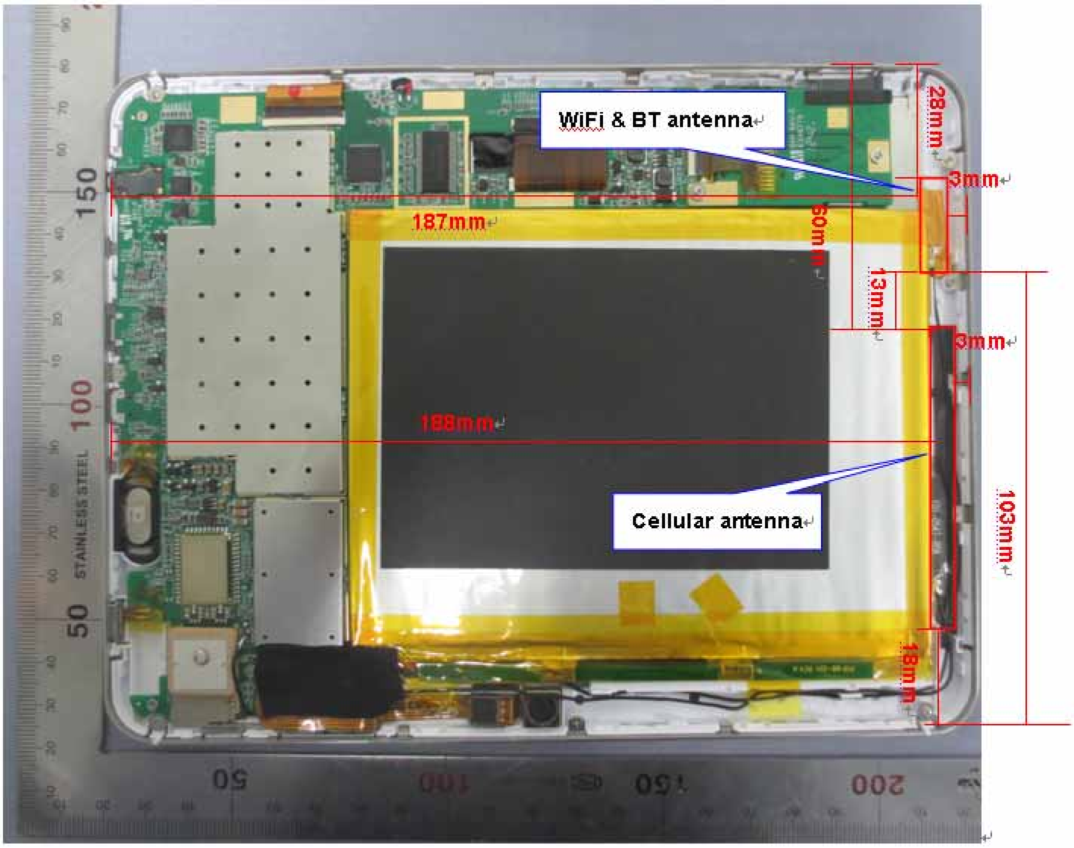
Position 3	4233	846.6	0.637	0.15	
	4183	836.6	0.854	-0.21	
	4132	826.4	0.887	0.12	
Position 4	4183	836.6	0.083	0.16	
Position 5	4183	836.6	0.044	-0.16	
Position 6	4233	846.6	0.822	0.07	
	4183	836.6	1.05	0.11	
	4132	826.4	0.995	-0.02	
Worst Case Position of RMC with Earphone (Distance 0 mm)					
Position 2	4183	836.6	1.18	-0.10	
Worst Case Position of HSDPA(subtest-1) (Distance 0 mm)					
Position 2	4183	836.6	0.692	0.17	

Note:

1. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB (< 0.8W/kg) lower than the SAR limit, testing at the high and low channels is optional.
2. Upper and lower frequencies were measured at the worst case.
3. SAR is measured for HSDPA when the maximum scaled SAR 12.2kbps RMC is above 75% of the SAR limit, SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1.

SAR consideration for unlicensed transmitters

The tablet supports WiFi and Bluetooth function, the layout of antennas and the measured and tune-up limit power are as follow.



WiFi 802.11 (b/g/n):

	Conducted power（dBm）							
	802.11b		802.11g		802.11n(H20)		802.11n(H40)	
	Measured	Tune-up limit	Measured	Tune-up limit	Measured	Tune-up limit	Measured	Tune-up limit
Lowest	10.38	11	10.75	11	10.59	11	10.19	11
Middle	10.33	11	10.23	11	10.24	11	10.14	11
Highest	10.75	11	10.28	11	10.07	11	10.31	11

Bluetooth:

	Conducted power（dBm）					
	GFSK		Pi/4DQPSK		8QPSK	
	Measured	Tune-up limit	Measured	Tune-up limit	Measured	Tune-up limit
Lowest	0.04	1	0.44	1	0.74	1
Middle	0.80	1	0.89	1	-0.88	1
Highest	0.60	1	0.62	1	-0.88	1

According to KDB 616217 D04, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in KDB 447498 can be applied to determine SAR test exclusion for adjacent edge configurations.

The first and second nearest distance of WiFi / Bluetooth to the edges are 3mm and 28mm, use these as the minimum separation distances to calculate tablet edges SAR exclusion thresholds.
The maximum tune-up power of WiFi is 11dBm=13mW, the threshold factor are 6.6 and 0.7 for the 2 edges, so only the nearest edge required to test SAR.
The maximum tune-up power of WiFi is 1dBm=2mW, the threshold factor are 0.7 and 0.1 that all less than 3.0 for the 2 edges , so no edge required to test SAR.

But for conservative consideration, we still test the 2 edges that are near to the antenna.

The standalone SAR of WiFi is:

Test mode: WiFi (802.11b) Depth of liquid: ＞15.0 cm Date: Dec 15, 2012						
EUT Position	Channel	Frequency (MHz)	Liquid Temp.°C	SAR (1g) (W/kg)	Power Drift (dB)	Limit (W/kg)
Test Distance: 0mm						
Position 1	11	2462	21.8	0.659	0.18	1.6
Position 4	11	2462	21.8	0.00493	-0.14	
Position 6	11	2462	21.8	0.043	-0.12	

Bluetooth SAR is measured with the modulation that leads to maximum conducted power.

Test mode: Bluetooth (Pi/4-DQPSK) Liquid Depth: ＞15.0 cm Date: Dec 15, 2012					
EUT Position	Frequency (MHz)	Liquid Temp.°C	SAR (1g) (W/kg)	Power Drift (dB)	Limit (W/kg)
Test Distance: 0mm					
Position 1	2441	21.8	0.021	-0.18	1.6
Position 4	2441	21.8	0.0056	0.19	
Position 6	2441	21.8	0.0088	0.17	

Scaled SAR values to the maximum tune-up output power:

Band	Test Configuration	Mode	channel	Power (dBm)		SAR(W/Kg)	
				Measured	Tune-up limit	Measured	Scaled
GPRS 850	Position 6	4 slots	128	29.48	30	1.31	1.48
EGPRS 850	Position 6	2 slots	128	26.09	27	1.17	1.44
GPRS 1900	Position 2	4 slots	810	26.05	27	1.23	1.53
EGPRS 1900	Position 2	2 slots	810	23.94	25	0.893	1.14
WCDMA V	Position 2	RMC 12.2kbps	4183	26.03	26.5	1.2	1.34
WCDMA V	Position 2	HSDPA	4183	25.79	26.5	0.692	0.82
WiFi	Position 1	802.11b	11	10.75	11	0.659	0.70
Bluetooth	Position 1	Pi/4-DQ PSK	39	0.89	1	0.021	0.03

Simultaneous SAR consideration:

The EUT supports Bluetooth and Wi-Fi functions, and the functions can not work together with cellular as listed below that declared by manufacturer, simultaneous SAR is not required.

No	Capable TX Configuration	Supported	NOT supported
1	WWAN +BT		√
2	WWAN +WLAN		√
3	BT+WLAN		√
4	WWAN +BT+WLAN		√

8. Measurement Uncertainty

Uncertainty Component	Sec.	Tol (±%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	6.55	N	1.0	1.0	1.0	6.55	6.55	∞
Axial Isotropy	E.2.2	0.5	R	$\sqrt{3}$	1.0	1.0	0.29	0.29	∞
Hemispherical Isotropy	E.2.2	2.6	R	$\sqrt{3}$	1.0	1.0	1.5	1.5	∞
Boundary effect	E.2.3	0.8	R	$\sqrt{3}$	1.0	1.0	0.46	0.46	∞
Linearity	E.2.4	0.6	R	$\sqrt{3}$	1.0	1.0	0.35	0.35	∞
System detection limits	E.2.5	0.25	R	$\sqrt{3}$	1.0	1.0	0.14	0.14	∞
Readout Electronics	E.2.6	0.35	N	1	1.0	1.0	0.35	0.35	∞
Reponse Time	E.2.7	0	R	$\sqrt{3}$	1.0	1.0	0	0	∞
Integration Time	E.2.8	2.6	R	$\sqrt{3}$	1.0	1.0	1.5	1.5	∞
RF ambient Conditions-Noise	E.6.1	0	R	$\sqrt{3}$	1.0	1.0	0	0	∞
RF ambient Conditions-Reflections	E.6.1	3.0	R	$\sqrt{3}$	1.0	1.0	1.7	1.7	∞
Probe positioner Mechanical Tolerance	E.6.2	1.5	R	$\sqrt{3}$	1.0	1.0	0.87	0.87	∞
Probe positioning with respect to Phantom Shell	E.6.3	2.9	R	$\sqrt{3}$	1.0	1.0	1.67	1.67	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR	E.5	1.0	R	$\sqrt{3}$	1.0	1.0	0.58	0.58	∞
Test sample Related									
Test Sample Positioning	E.4.2	4.6	N	1.0	1.0	1.0	4.6	4.6	N-1
Device Holder Uncertainty	E.4.1	5.2	N	1.0	1.0	1.0	5.2	5.2	N-1
Output Power Variation - SAR drift measurement	6.6.2	5	R	$\sqrt{3}$	1.0	1.0	2.89	2.89	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	4.0	R	$\sqrt{3}$	1.0	1.0	2.31	2.31	∞
Liquid conductivity - deviation from target value	E.3.2	5.0	R	$\sqrt{3}$	0.64	0.43	1.85	1.24	∞
Liquid conductivity - measurement uncertainty	E.3.3	2.5	N	1.0	0.64	0.43	1.60	1.08	M
Liquid permitivity - deviation from target value	E.3.2	5.0	R	$\sqrt{3}$	0.6	0.49	1.73	1.42	∞
Liquid permitivity - measurement uncertainty	E.3.3	2.5	N	1.0	0.6	0.49	1.5	1.23	M
Combined Standard Uncertainty			RSS				11.3	11.0	
Expanded Uncertainty (95% Confidence interval)			K				23	22	

9. EUT Photo

The front side of the EUT

The back side of the EUT

10. Equipment List & Calibration Status

Name of Equipment	Manufacturer	Type/Model	Serial Number	Last Cal. Date	Calibration Due
P C	HP	d7900eC	CZC9312JJ4	N/A	N/A
E-field PROBE	SPEAG	ES3DV3	SN 3221	2012-9-27	2013-9-26
DAE	SPEAG	DAE4-SD 000 D04 BJ	SN 893	2012-9-27	2013-9-26
DEVICE HOLDER	Stäubli	N/A	N/A	N/A	N/A
SAM PHANTOM	SPEAG	SAM Twin Phantom	TP-1545/TP-1548	N/A	N/A
6 AXIS ROBOT	Stäubli	Robot TX90XL	F09/5B9UA1/A/01	N/A	N/A
DIPOLE 900MHz	SPEAG	D900V2	1d073	2012-9-28	2013-9-27
DIPOLE 1900MHz	SPEAG	D1900V2	5d070	2012-10-01	2013-9-30
DIPOLE 2450MHz	SPEAG	D2450V2	815	2012-9-26	2013-9-25
Wireless Communication Test Set	Anritsu	MT8820C	6201060976	2012-8-27	2013-8-26
Signal Generator	Agilent	5183A	MY49060563	2012-8-27	2013-8-26
Power Meter	Agilent	E4419B	MY45104719	2012-8-27	2013-8-26
Power Sensor	Agilent	N8481H	MY48100148	2012-8-27	2013-8-26
Directional couplers	Agilent	778D	MY48220223	N/A	N/A
Power amplifier	mini-circuits	ZHL-42W	QA0940002	N/A	N/A
Power supply	Topward	3303d	796708	2012-8-27	2013-8-26
Network Analyzer	Agilent	E5071C	MY46108263	2012-8-27	2013-8-26
LIQUID CALIBRATION KIT	Agilent	85070E	N/A	N/A	N/A

11. Attachments

Exhibit	Content
1	System Performance Check Plots
2	SAR Test Plots
3	EUT Test Positions
4	Probe calibration report
5	Dipole calibration report
6	DAE calibration report

ANNEXE 1 System Performance Check Plots

System 900 MHz dipole

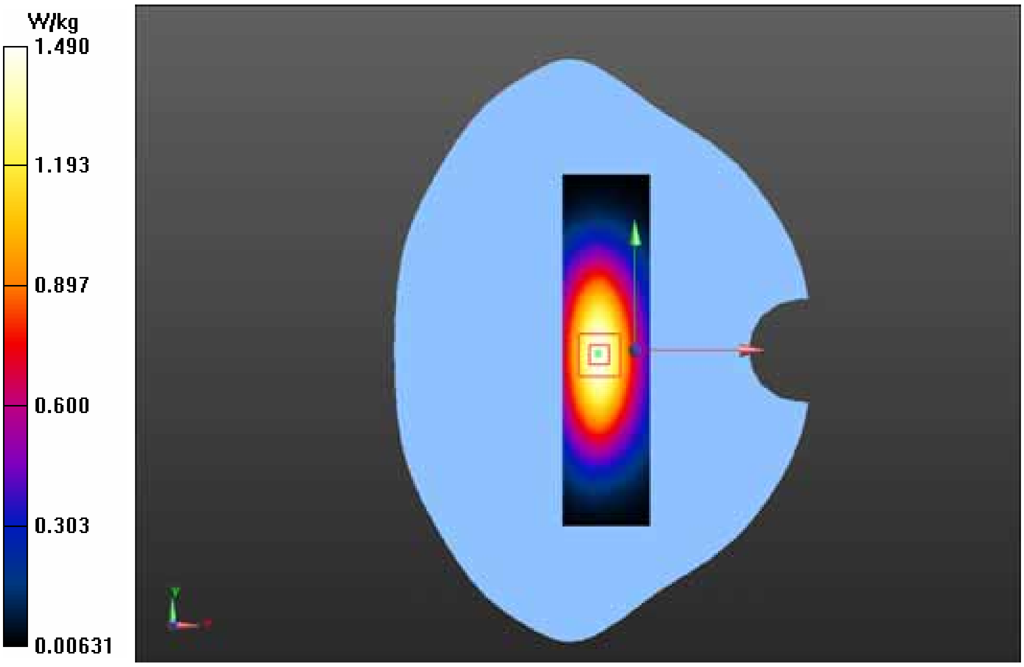
DUT: Dipole 900 MHz D900V2; Type: D900V2

Communication System: CW; Communication System Band: D900 (900.0 MHz);
Frequency: 900 MHz; Communication System PAR: 0 dB
Medium parameters used: f = 900 MHz; σ = 1.002 mho/m; ε_r = 53.123; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.17, 6.17, 6.17); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: SAM_1 with CRP v4.0; Type: QD000P40CC; Serial: TP:1586
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

System 900Body/system/Area Scan (31x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 40.545 V/m; Power Drift = -0.15 dB
Maximum value of SAR (interpolated) = 1.49 W/kg
System 900Body/system/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 40.545 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 1.987 mW/g
SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.871 mW/g
Maximum value of SAR (measured) = 1.45 W/kg



System 1900 MHz dipole

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

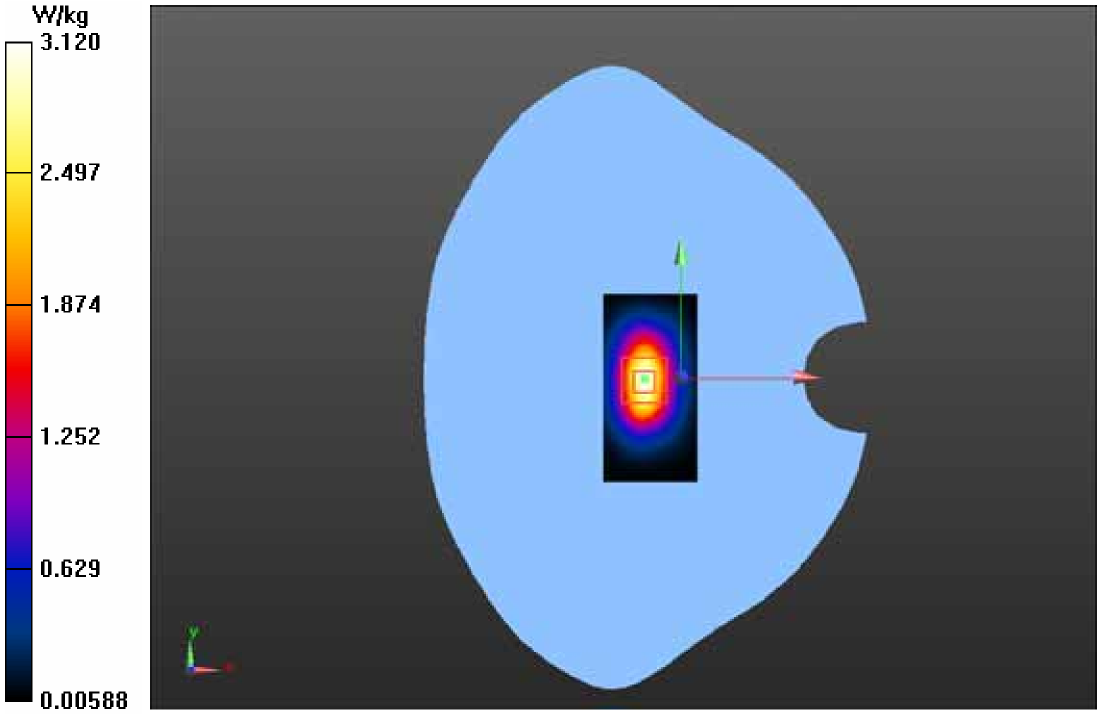
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz; Communication System PAR: 0 dB
Medium parameters used: f = 1900 MHz; σ = 1.578 mho/m; ε_r = 50.718; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: SAM_2with CRP v4.0; Type: QD000P40CC; Serial: TP:1548
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

System 1900 Body/system (62.5mv)/Area Scan (31x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 44.616 V/m; Power Drift = -0.04 dB
Maximum value of SAR (interpolated) = 3.12 W/kg

System 1900 Body/system (62.5mv)/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.616 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 4.728 mW/g
SAR(1 g) = 2.63 mW/g; SAR(10 g) = 1.37 mW/g
Maximum value of SAR (measured) = 2.97 W/kg



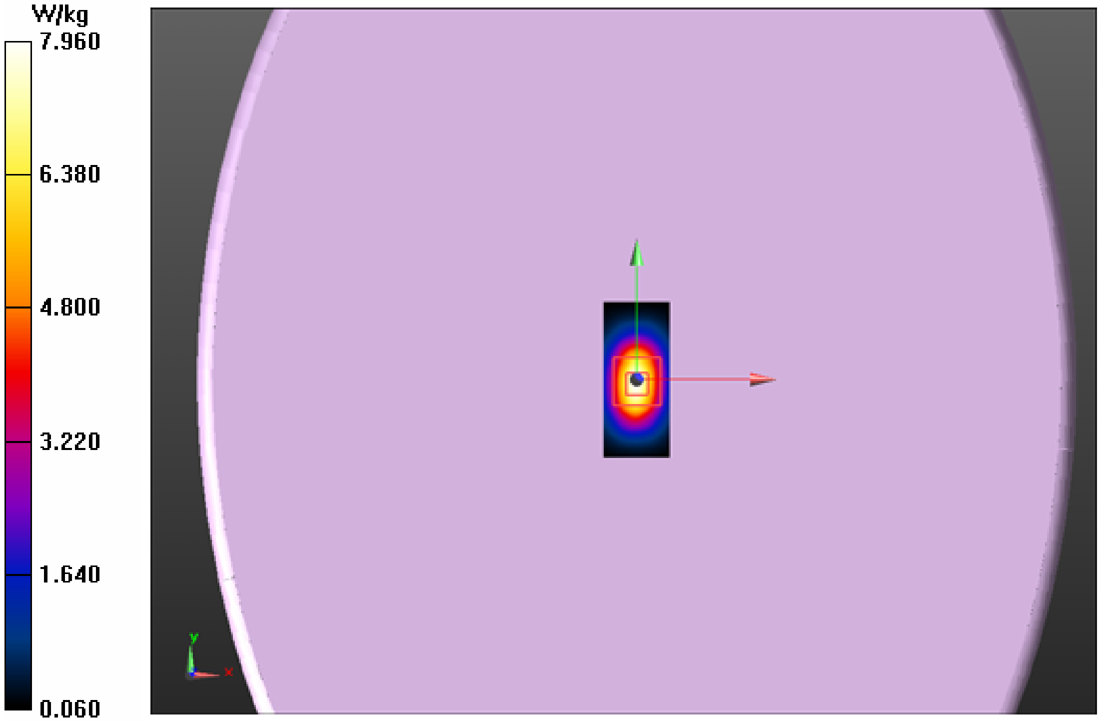
System 2450 MHz dipole

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz; Communication System PAR: 0 dB
Medium parameters used: f = 2450 MHz; σ = 2.02 mho/m; ε_r = 50.71; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.31, 4.31, 4.31); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

system/system check/Area Scan (31x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 63.134 V/m; Power Drift = -0.08 dB
Maximum value of SAR (interpolated) = 7.96 W/kg
system/system check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 63.134 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 13.870 mW/g
SAR(1 g) = 6.78 mW/g; SAR(10 g) = 3.21 mW/g
Maximum value of SAR (measured) = 7.75 W/kg



ANNEXE 2 SAR Test Plots

GPRS 850-back side -high (position1)

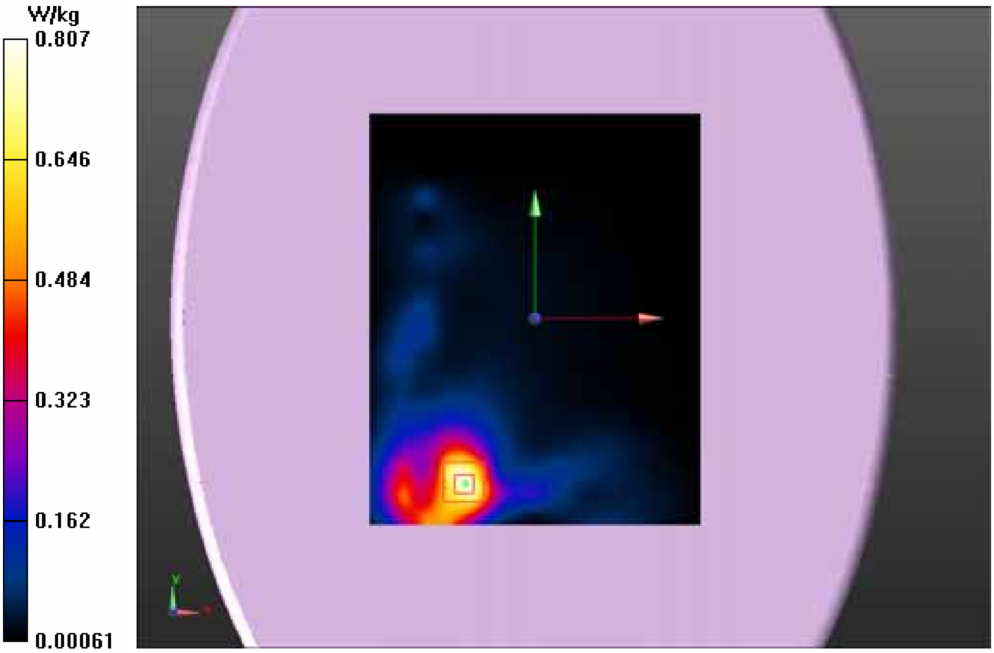
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 848.8 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.969 mho/m; ε_r = 55.75;
ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 back side-High/Area Scan (121x151x1): Interpolated grid:
dx=1.500 mm, dy=1.500 mm
Reference Value = 4.302 V/m; Power Drift = 0.13 dB
Maximum value of SAR (interpolated) = 0.807 W/kg
GPRS 850 back side-High/Zoom Scan (5x5x7)/Cube 0: Measurement grid:
dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.302 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.433 mW/g
SAR(1 g) = 0.828 mW/g; SAR(10 g) = 0.447 mW/g
Maximum value of SAR (measured) = 0.949 W/kg



GPRS 850-back side -mid (position1)

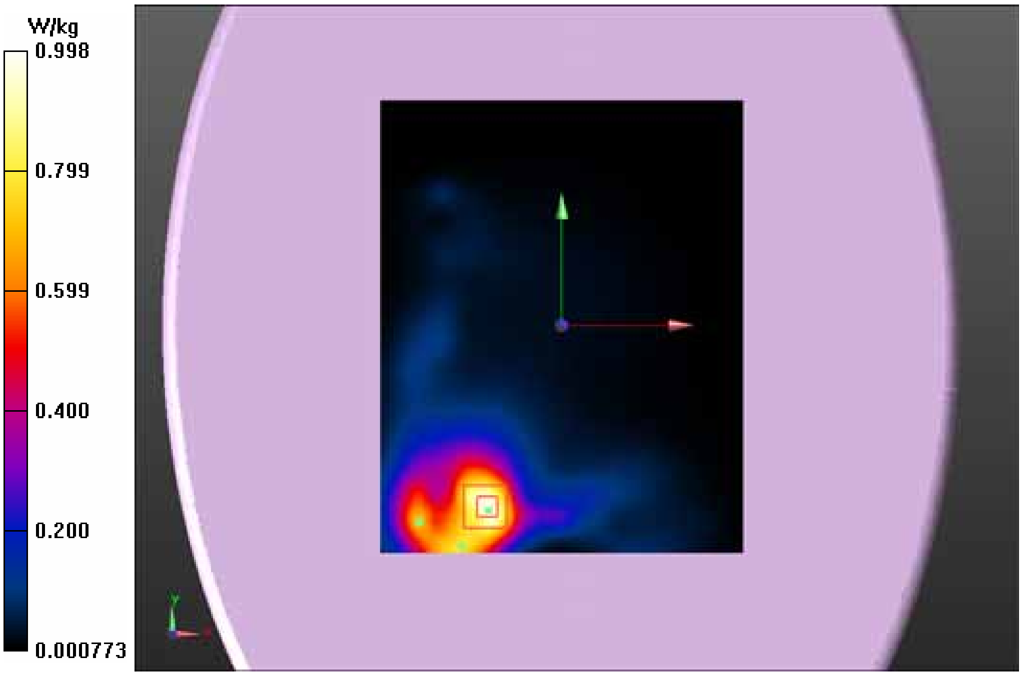
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 836.6 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 back side-Mid/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 5.049 V/m; Power Drift = 0.13 dB
Maximum value of SAR (interpolated) = 0.998 W/kg
GPRS 850 back side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.049 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.688 mW/g
SAR(1 g) = 1 mW/g; SAR(10 g) = 0.561 mW/g
Maximum value of SAR (measured) = 1.14 W/kg



GPRS 850-back side -low (position1)

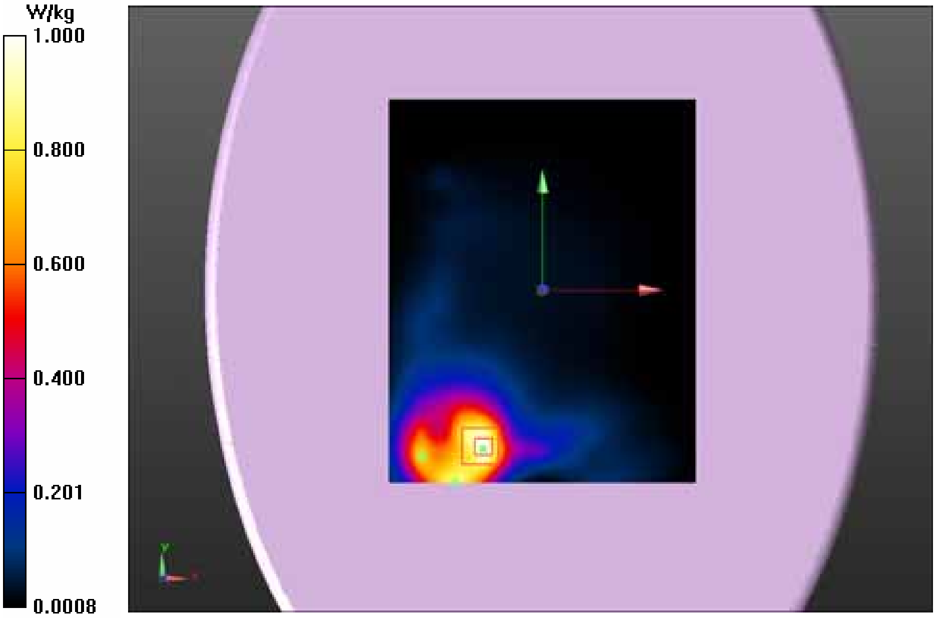
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 824.2 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 mho/m; ε_r = 55.959; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 back side-Low/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 5.554 V/m; Power Drift = -0.04 dB
Maximum value of SAR (interpolated) = 1.00 W/kg
GPRS 850 back side-Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.554 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.747 mW/g
SAR(1 g) = 0.976 mW/g; SAR(10 g) = 0.566 mW/g
Maximum value of SAR (measured) = 1.07 W/kg



GPRS 850- front side -high (position2)

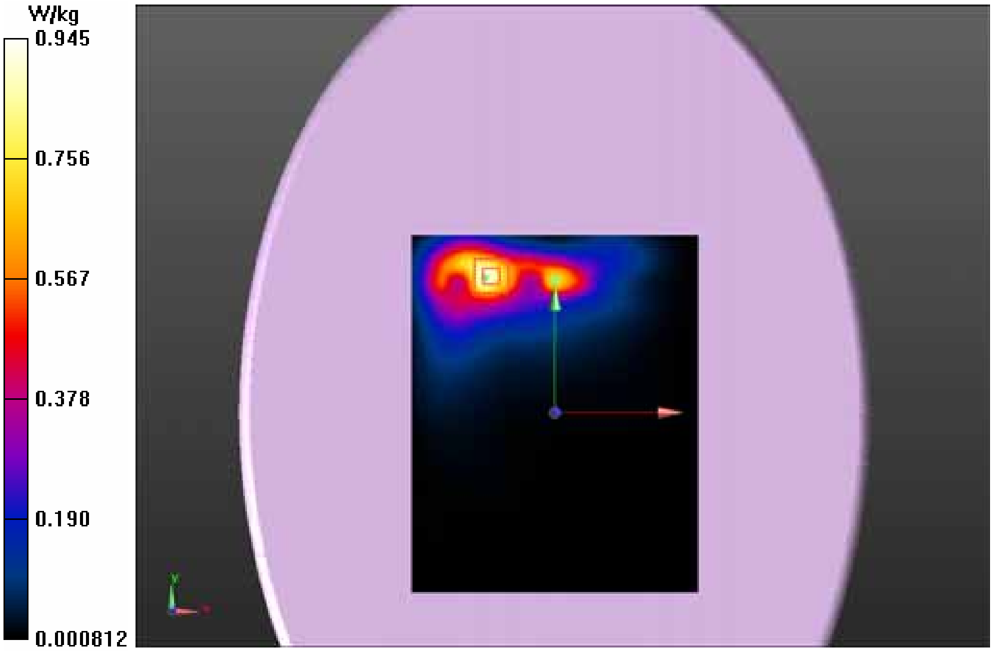
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 848.8 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.969 mho/m; ε_r = 55.75; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 front side-High/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 2.855 V/m; Power Drift = 0.08 dB
Maximum value of SAR (interpolated) = 0.945 W/kg
GPRS 850 front side-High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.855 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.889 mW/g
SAR(1 g) = 0.933 mW/g; SAR(10 g) = 0.474 mW/g
Maximum value of SAR (measured) = 1.04 W/kg



GPRS 850- front side -mid (position2)

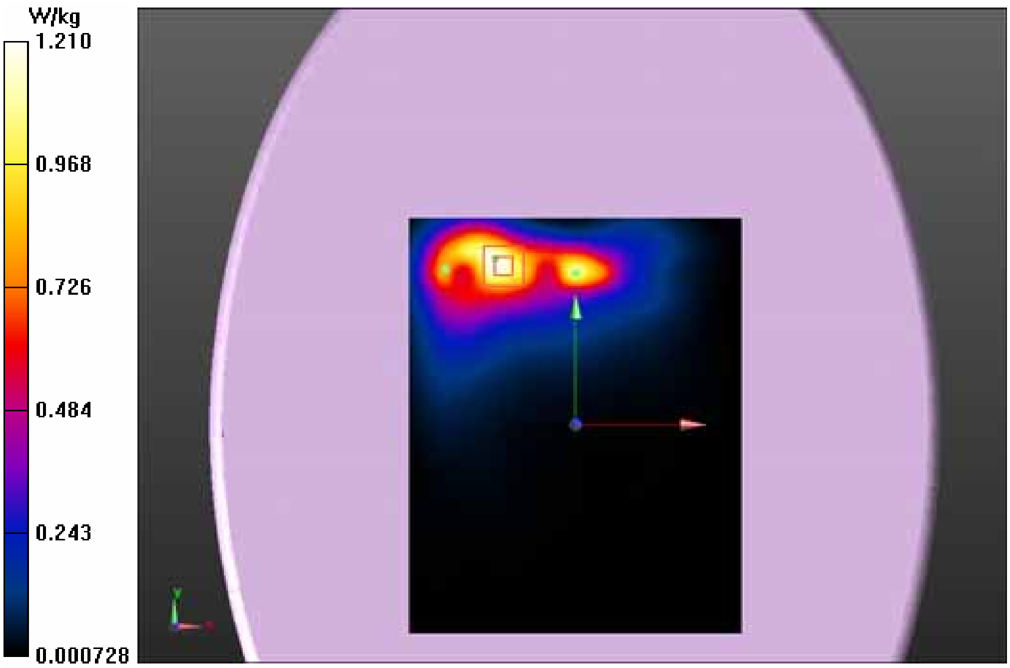
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 836.6 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858;
ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 front side-Mid/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 3.811 V/m; Power Drift = -0.12 dB
Maximum value of SAR (interpolated) = 1.21 W/kg
GPRS 850 front side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.811 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.241 mW/g
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.611 mW/g
Maximum value of SAR (measured) = 1.20 W/kg



GPRS 850- front side -low (position2)

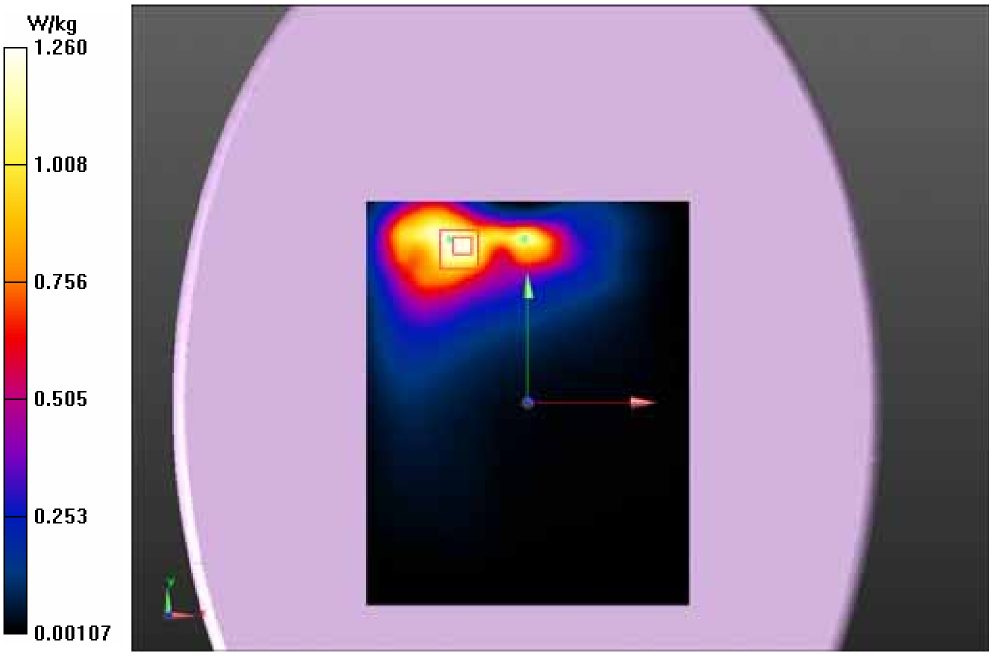
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 824.2 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 mho/m; ε_r = 55.959; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 front side-Low/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 4.662 V/m; Power Drift = 0.11 dB
Maximum value of SAR (interpolated) = 1.26 W/kg
GPRS 850 front side-Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.662 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 2.281 mW/g
SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.713 mW/g
Maximum value of SAR (measured) = 1.35 W/kg



GPRS 850- top side -mid (position3)

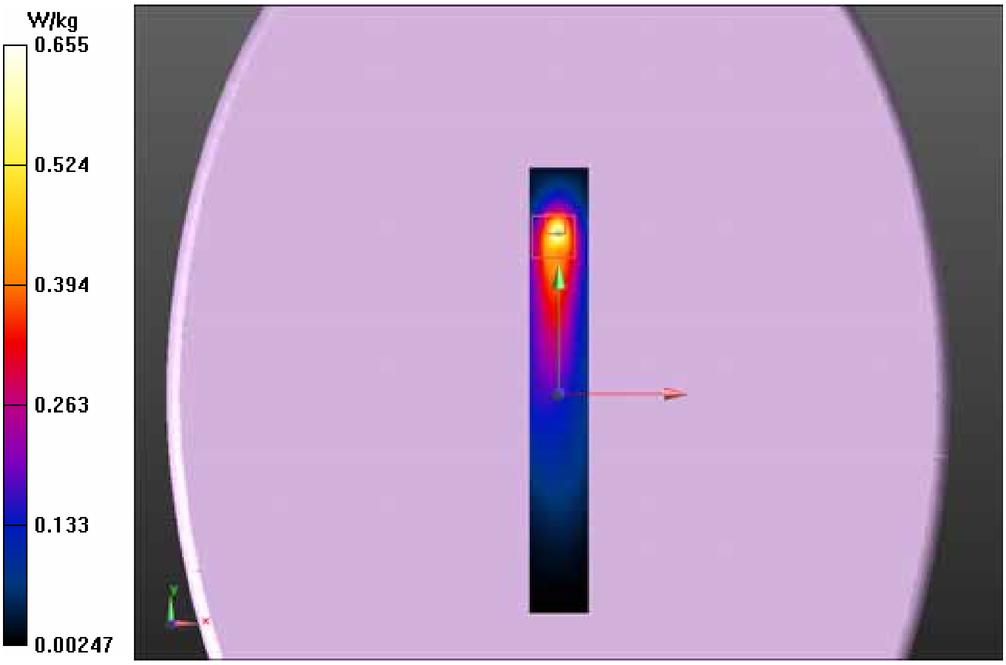
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 836.6 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 top side-Mid/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 13.139 V/m; Power Drift = 0.02 dB
Maximum value of SAR (interpolated) = 0.655 W/kg
GPRS 850 top side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.139 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.715 mW/g
SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.233 mW/g
Maximum value of SAR (measured) = 0.693 W/kg



GPRS 850- bottom side -mid (position4)

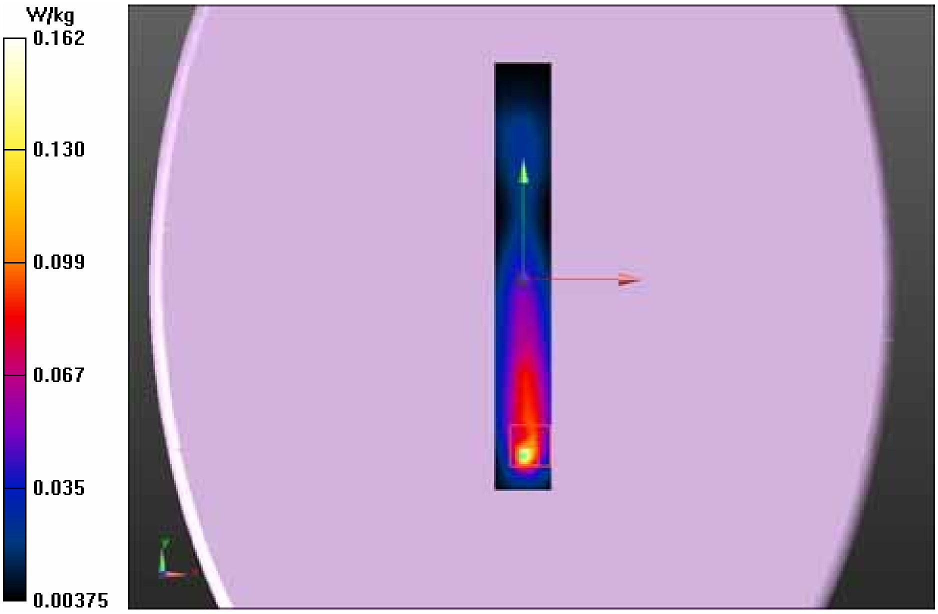
DUT: i-five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 836.6 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS850 bottom side-Mid/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 7.172 V/m; Power Drift = -0.18 dB
Maximum value of SAR (interpolated) = 0.162 W/kg
GPRS850 bottom side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.172 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.409 mW/g
SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.144 W/kg



GPRS 850- left side -mid (position5)

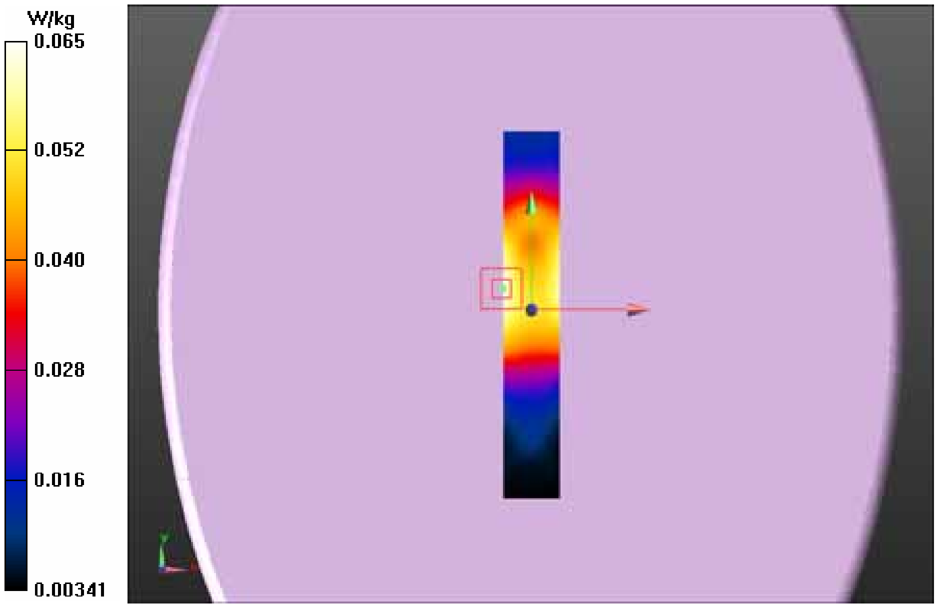
DUT: i-five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 836.6 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858;
ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850-left side-mid/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 7.439 V/m; Power Drift = -0.06 dB
Maximum value of SAR (interpolated) = 0.0647 W/kg
GPRS 850-left side-mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.439 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.076 mW/g
SAR(1 g) = 0.060 mW/g; SAR(10 g) = 0.046 mW/g
Maximum value of SAR (measured) = 0.0633 W/kg



GPRS 850- right side -high (position6)

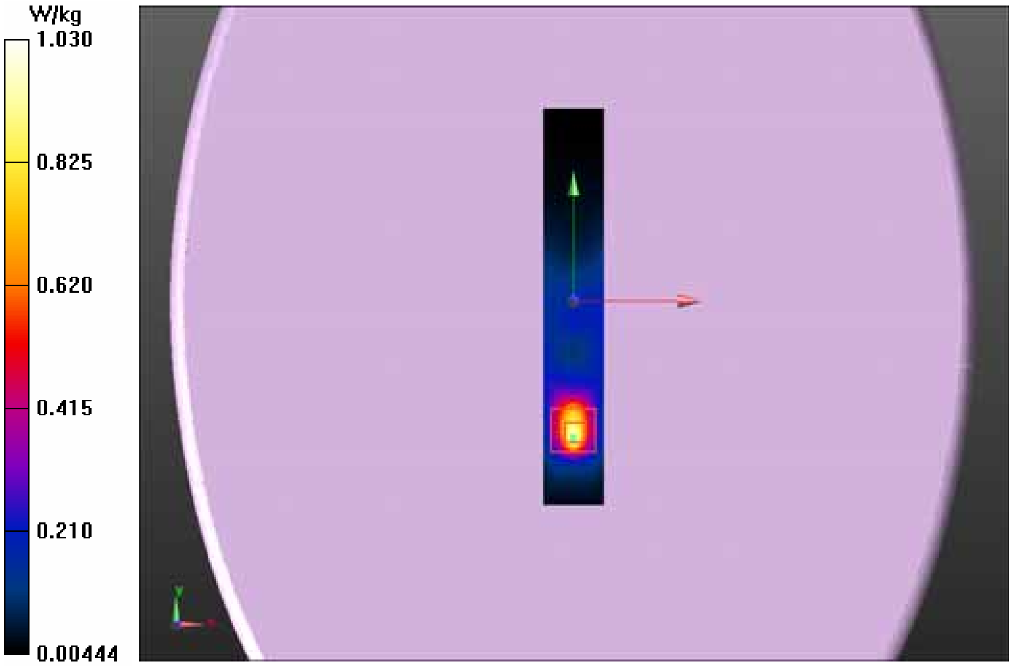
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 848.8 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.969 mho/m; ε_r = 55.75; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 right side-High/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 13.673 V/m; Power Drift = 0.07 dB
Maximum value of SAR (interpolated) = 1.03 W/kg
GPRS 850 right side-High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.673 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 3.125 mW/g
SAR(1 g) = 0.835 mW/g; SAR(10 g) = 0.279 mW/g
Maximum value of SAR (measured) = 1.12 W/kg



GPRS 850- right side -mid (position6)

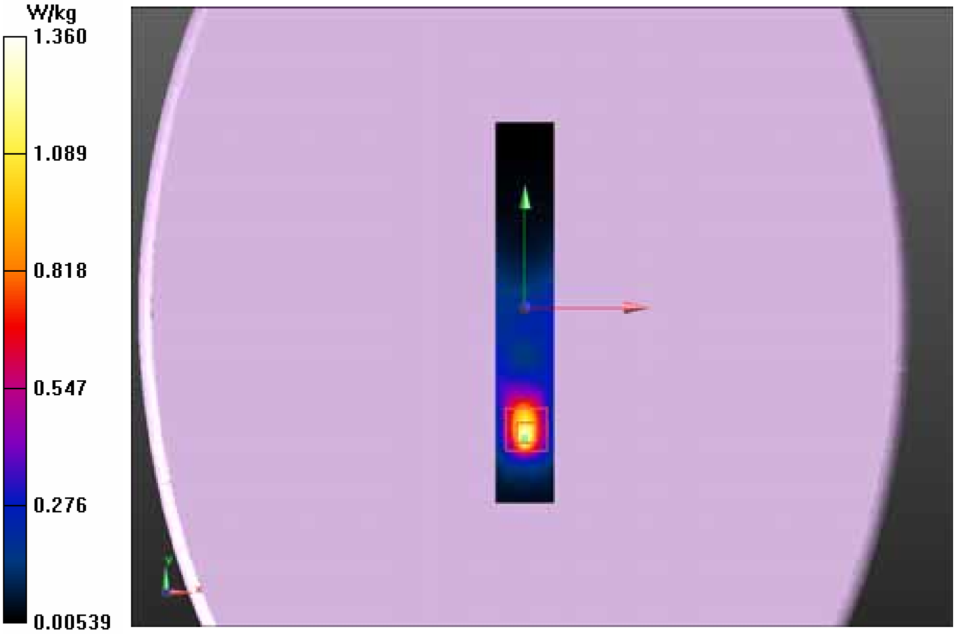
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850; Frequency: 836.6 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 right side-Mid/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 14.892 V/m; Power Drift = 0.17 dB
Maximum value of SAR (interpolated) = 1.36 W/kg
GPRS 850 right side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.892 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 4.369 mW/g
SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.391 mW/g
Maximum value of SAR (measured) = 1.53 W/kg



GPRS 850- right side -low (position6)

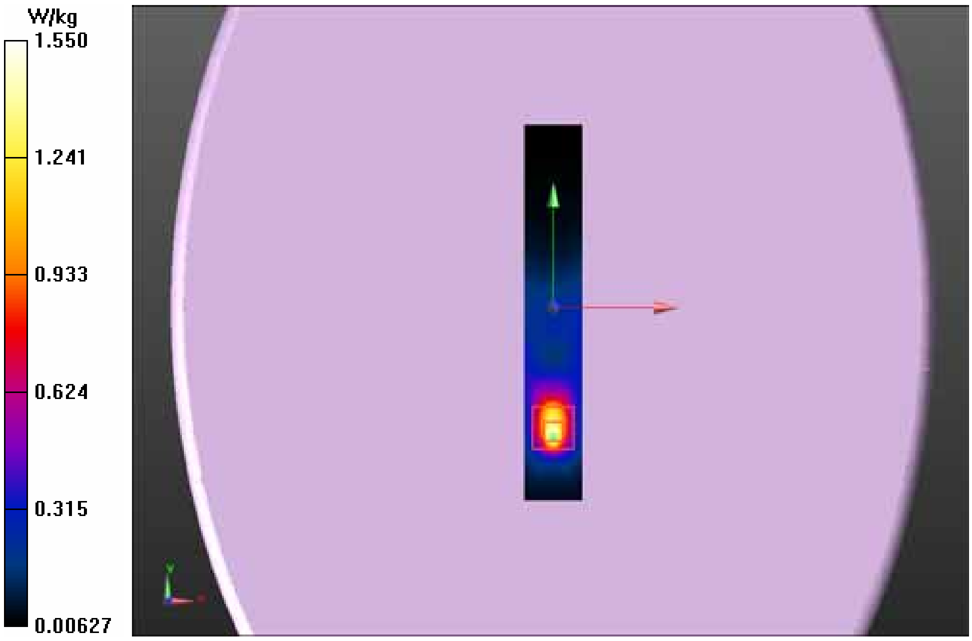
DUT: i-Five; Type: F208

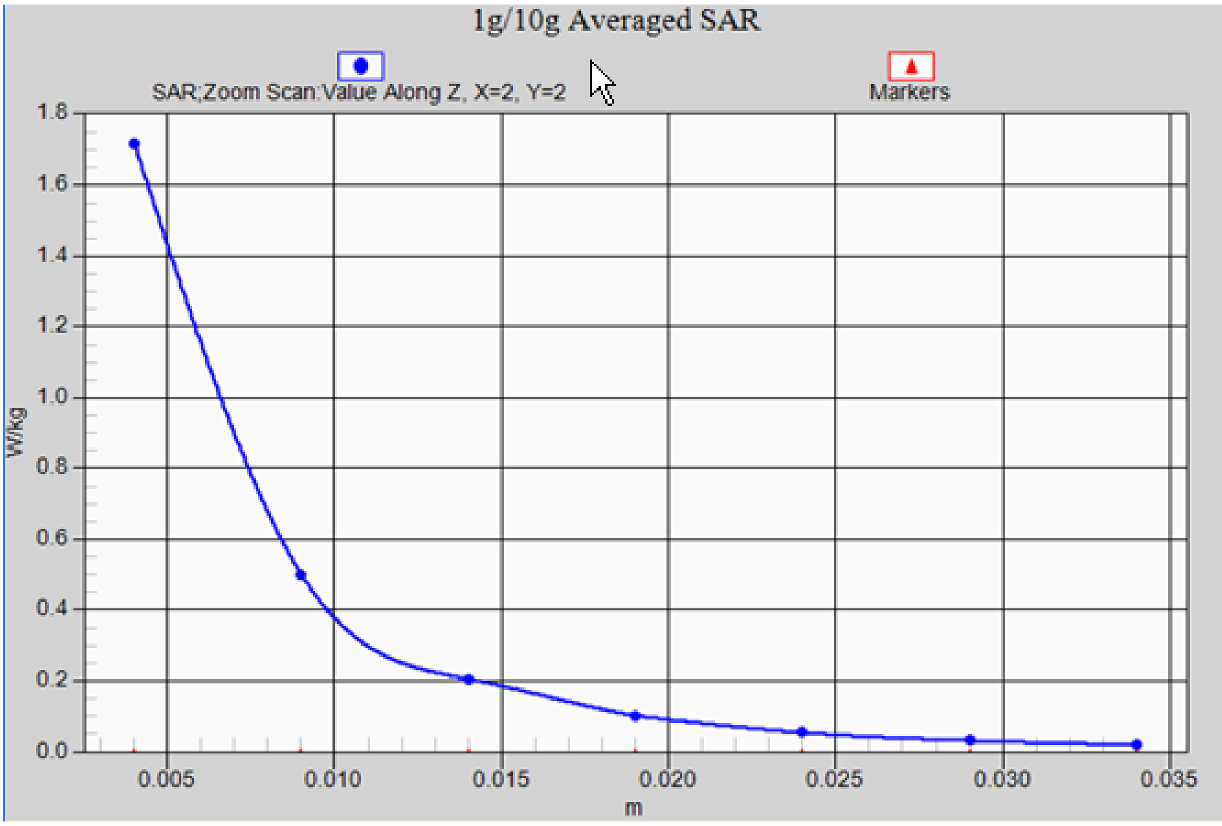
Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 824.2 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 mho/m; ε_r = 55.959;
ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 right side-Low/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 15.839 V/m; Power Drift = 0.06 dB
Maximum value of SAR (interpolated) = 1.55 W/kg
GPRS 850 right side-Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.839 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 5.019 mW/g
SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.440 mW/g
Maximum value of SAR (measured) = 1.72 W/kg





GPRS 850- right side -low (position6)-_z-axis scan

GPRS 850- right side -low with headset (position6)

DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: GSM850;
Frequency: 824.2 MHz; Communication System PAR: 3.181 dB
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 mho/m; ε_r = 55.959; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

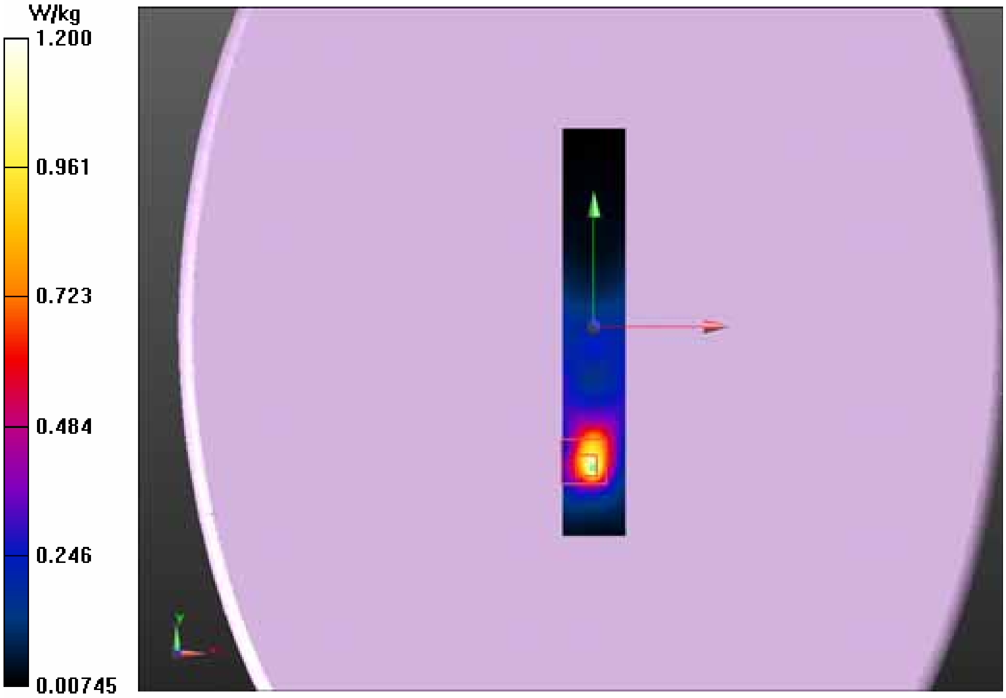
- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 850 right side-Low with headset/Area Scan (21x131x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 14.735 V/m; Power Drift = -0.12 dB
Maximum value of SAR (interpolated) = 1.20 W/kg

GPRS 850 right side-Low with headset/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.735 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 4.688 mW/g
SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.423 mW/g
Maximum value of SAR (measured) = 1.19 W/kg



EGPRS 850- right side -low (position6)

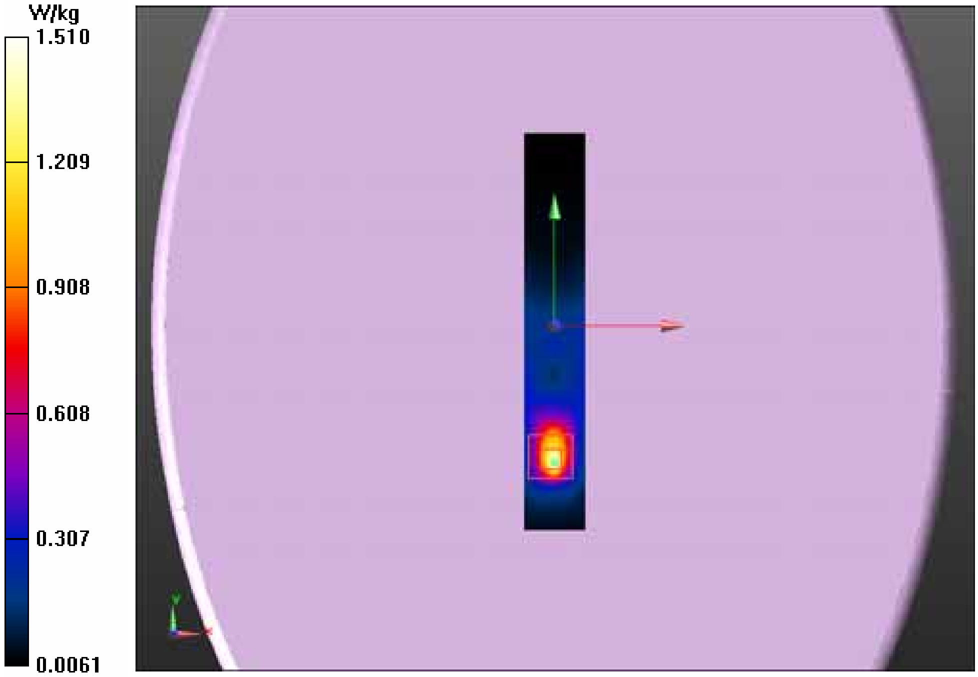
DUT: i-Five; Type: F208

Communication System: EGPRS(2slots); Communication System Band: GSM850;
Frequency: 824.2 MHz; Communication System PAR: 6.128 dB
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 mho/m; ε_r = 55.959;
ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

EGPRS 850 right side-Low /Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 14.828 V/m; Power Drift = -0.06 dB
Maximum value of SAR (interpolated) = 1.51 W/kg
EGPRS 850 right side-Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.828 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 4.308 mW/g
SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.401 mW/g
Maximum value of SAR (measured) = 1.54 W/kg



GPRS 1900- back side -mid (position1)

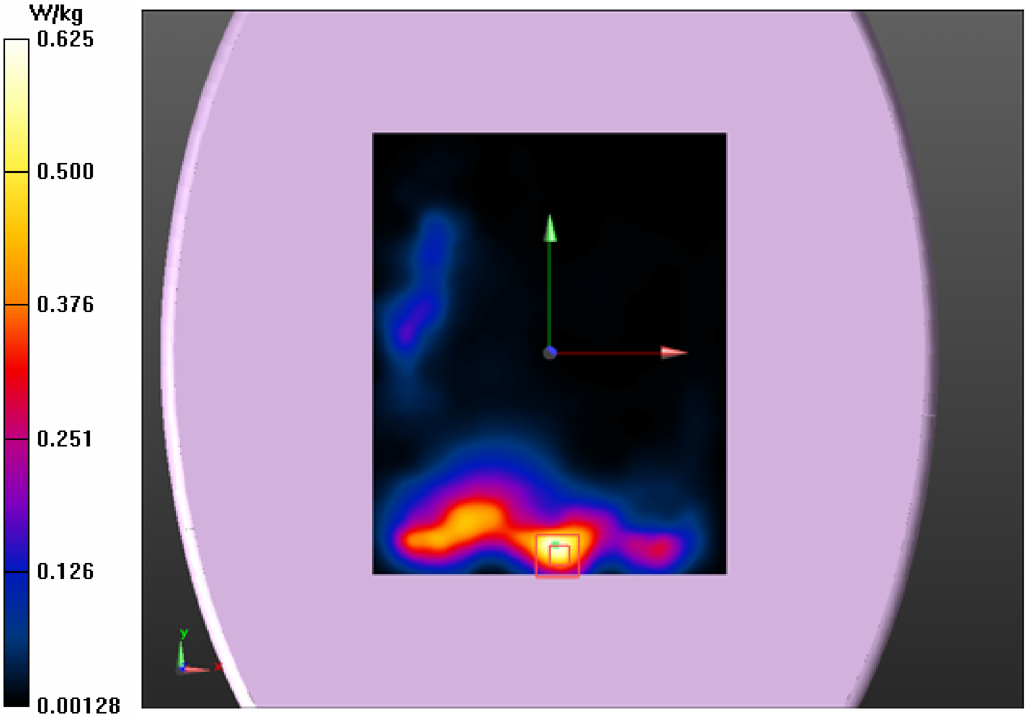
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1880 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1880 MHz; σ = 1.57 mho/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 1900 back side-Mid/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.479 V/m; Power Drift = 0.13 dB
Maximum value of SAR (interpolated) = 0.625 W/kg
GPRS 1900 back side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.479 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.548 mW/g
SAR(1 g) = 0.700 mW/g; SAR(10 g) = 0.290 mW/g
Maximum value of SAR (measured) = 0.693 W/kg



GPRS 1900- front side –high (position2)

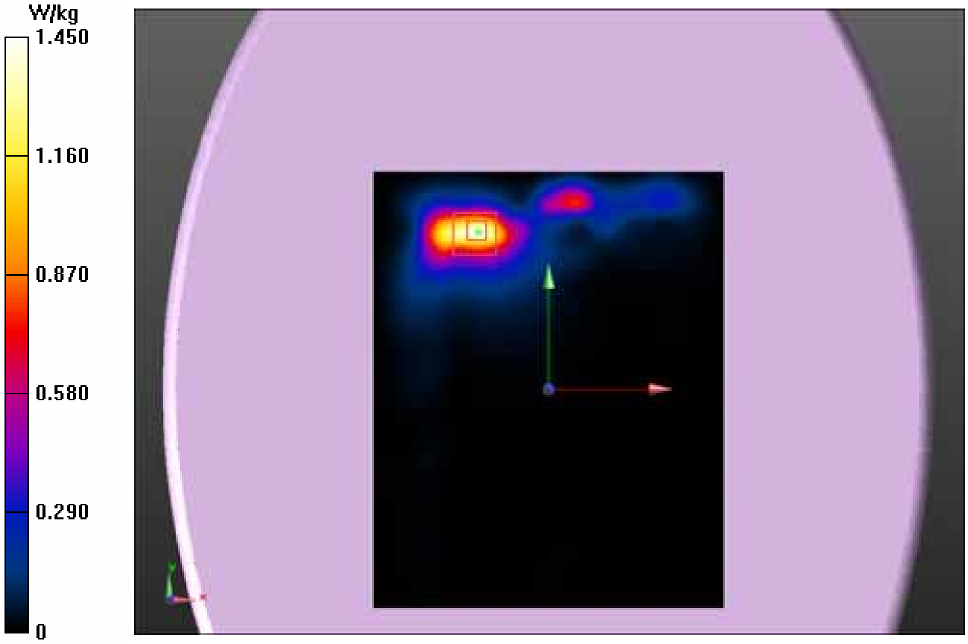
DUT: i-Five; Type: F208

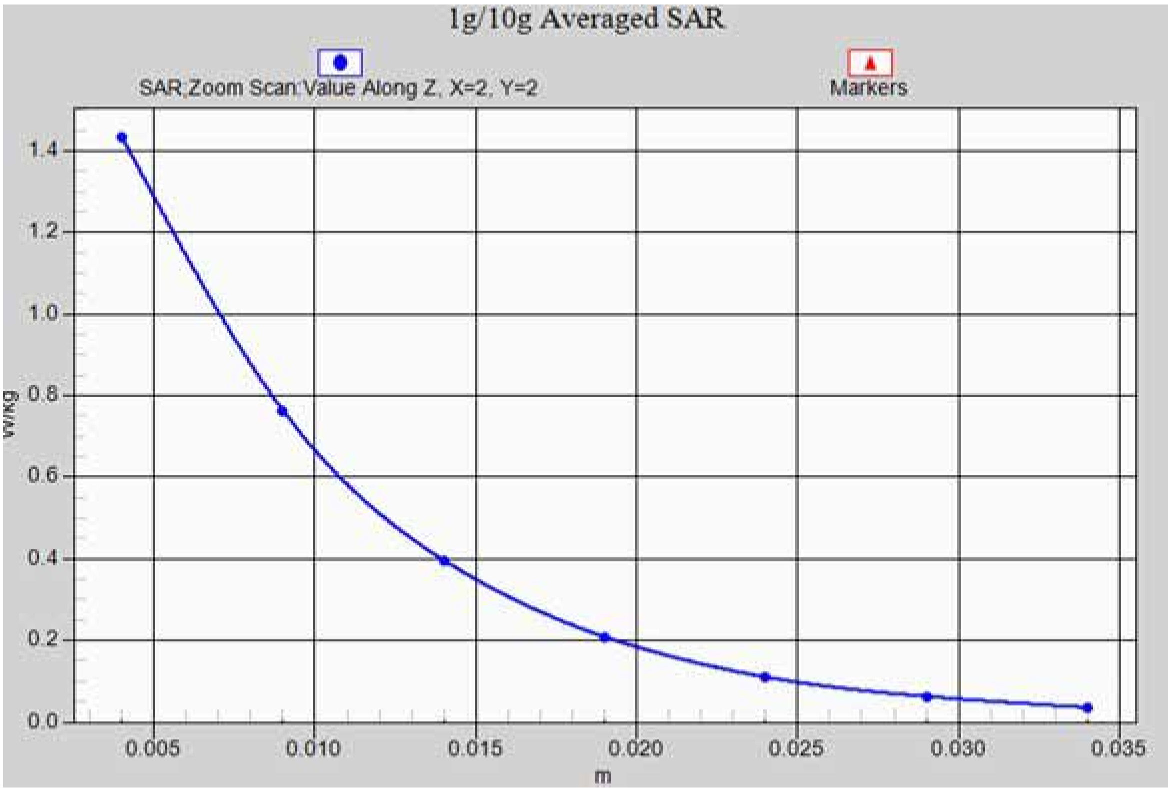
Communication System: GPRS(4slots); Communication System Band: PCS1900; Frequency: 1909.8 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1909.8 MHz; σ = 1.6 mho/m; ε_r = 51.04; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 1900 front side-High /Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.800 V/m; Power Drift = 0.18 dB
Maximum value of SAR (interpolated) = 1.45 W/kg
GPRS 1900 front side-High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.800 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 2.585 mW/g
SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.597 mW/g
Maximum value of SAR (measured) = 1.43 W/kg





GPRS 1900- front side –high (position2) _z-axis scan

GPRS 1900- front side –mid (position2)

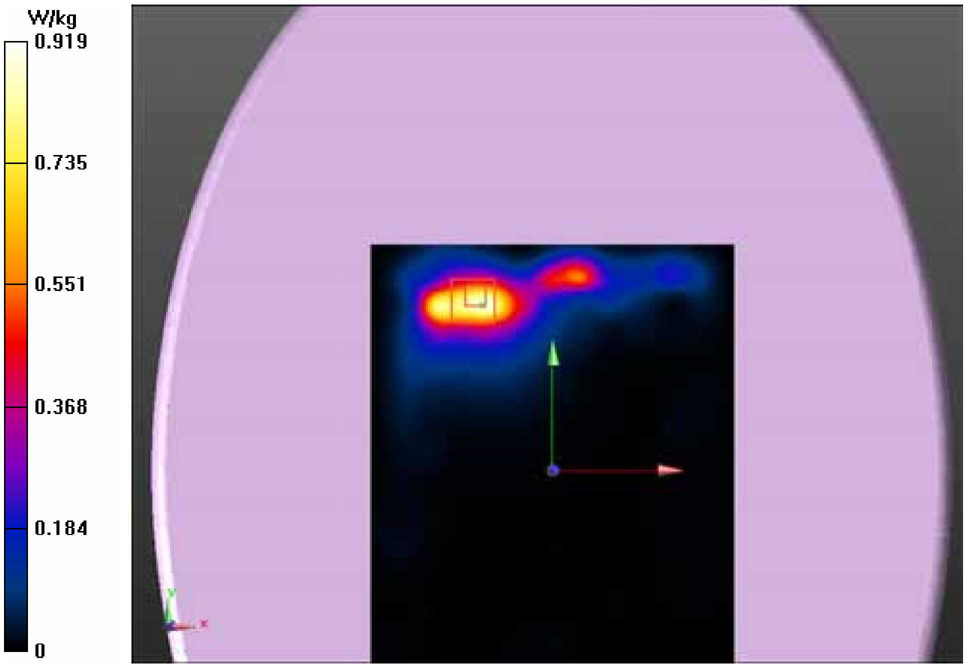
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1880 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1880 MHz; σ = 1.57 mho/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 1900 front side-Mid/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.835 V/m; Power Drift = -0.14 dB
Maximum value of SAR (interpolated) = 0.919 W/kg
GPRS 1900 front side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.835 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 2.417 mW/g
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.482 mW/g
Maximum value of SAR (measured) = 1.04 W/kg



GPRS 1900- front side –low (position2)

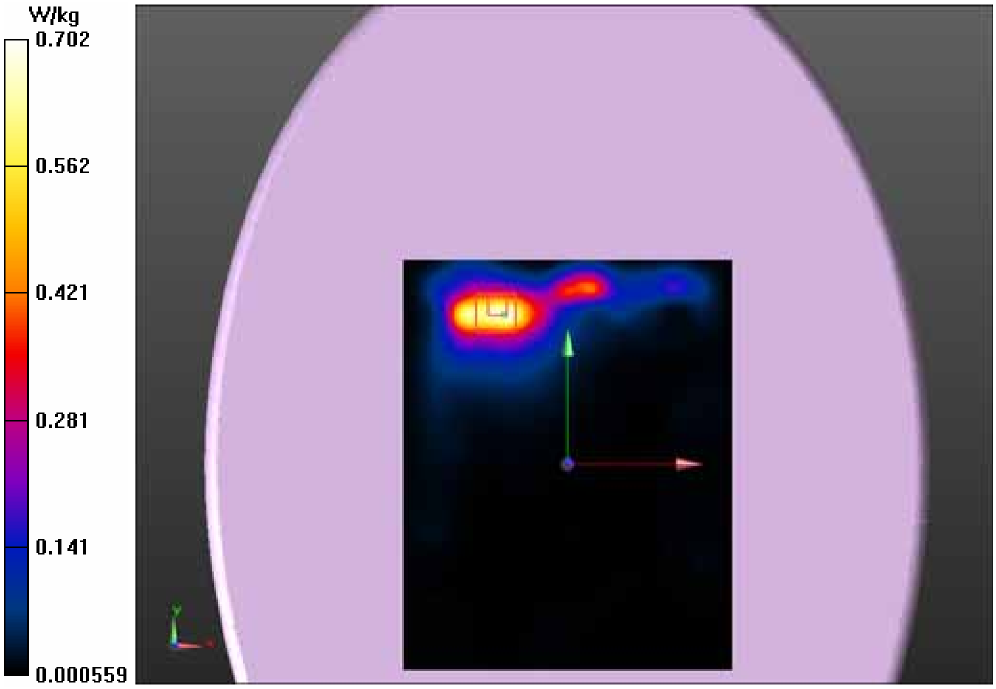
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1850.2 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1850.2 MHz; σ = 1.53 mho/m; ε_r = 51.24; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 1900 front side-Low/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.594 V/m; Power Drift = -0.04 dB
Maximum value of SAR (interpolated) = 0.702 W/kg
GPRS 1900 front side-Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.594 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.770 mW/g
SAR(1 g) = 0.765 mW/g; SAR(10 g) = 0.372 mW/g
Maximum value of SAR (measured) = 0.781 W/kg



GPRS 1900- top side –mid (position3)

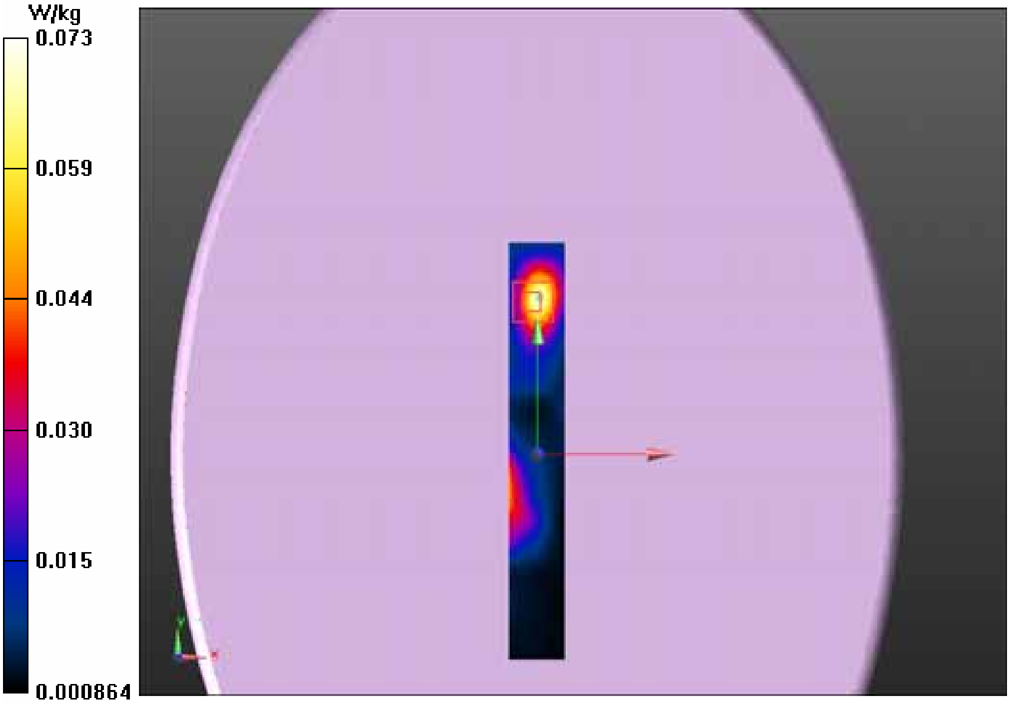
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1880 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1880 MHz; σ = 1.57 mho/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS1900 top side-Mid/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 2.270 V/m; Power Drift = 0.16 dB
Maximum value of SAR (interpolated) = 0.0732 W/kg
GPRS1900 top side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.270 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.172 mW/g
SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.029 mW/g
Maximum value of SAR (measured) = 0.0648 W/kg



GPRS 1900- bottom side –mid (position4)

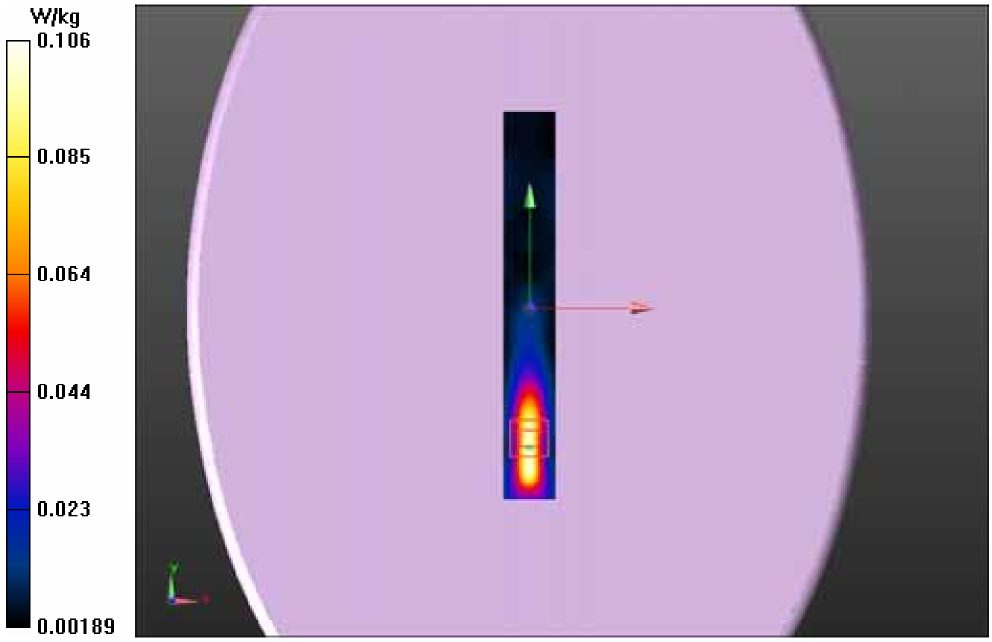
DUT: i-five; Type: F208

Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1880 MHz ;Communication System PAR: 3.181 dB
Medium parameters used: f = 1880 MHz; σ = 1.57 mho/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS1900 Bottom side/mid/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 2.607 V/m; Power Drift = -0.11 dB
Maximum value of SAR (interpolated) = 0.106 W/kg
GPRS1900 Bottom side/mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.607 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.172 mW/g
SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.039 mW/g
Maximum value of SAR (measured) = 0.105 W/kg



GPRS 1900- left side –mid (position5)

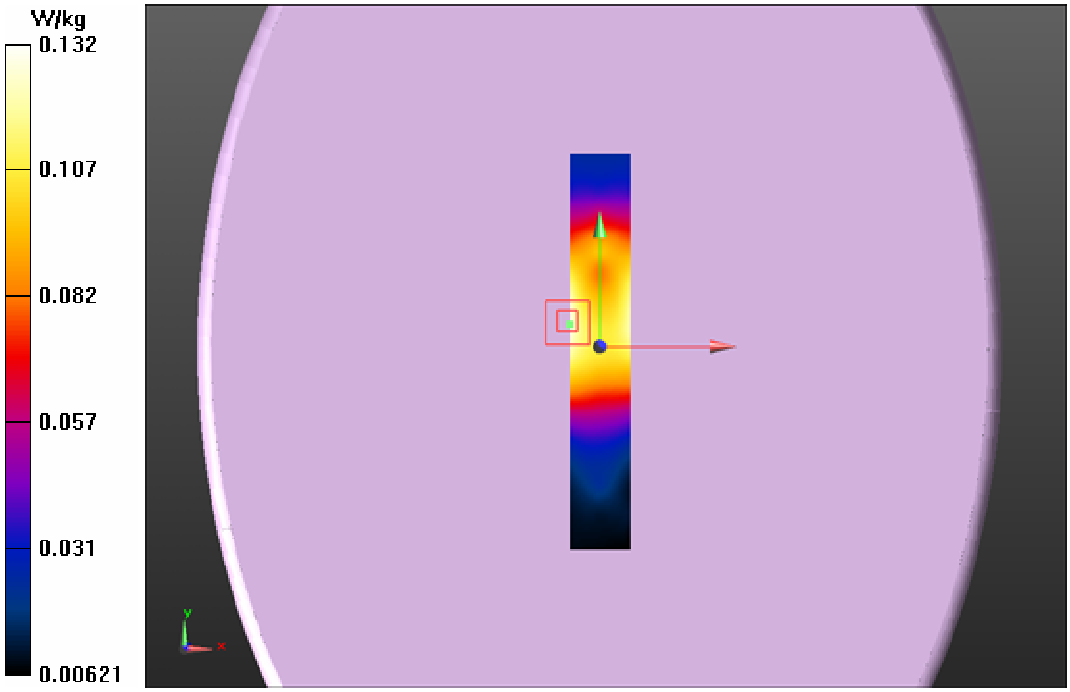
DUT: i-five; Type: F208

Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1880 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1880 MHz; σ = 1.57 mho/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS1900 left/side-mid/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 8.367 V/m; Power Drift = -0.02 dB
Maximum value of SAR (interpolated) = 0.132 W/kg
GPRS1900 left/side-mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.367 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.159 mW/g
SAR(1 g) = 0.124 mW/g; SAR(10 g) = 0.096 mW/g
Maximum value of SAR (measured) = 0.131 W/kg



GPRS 1900- right side –mid (position 6)

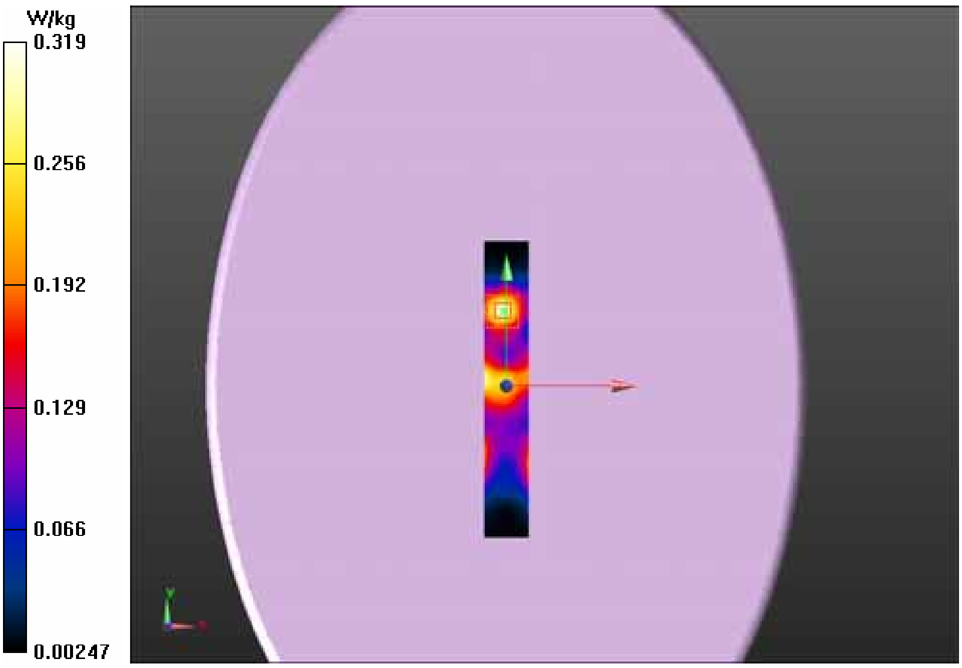
DUT: i-Five; Type: F208

Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1880 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1880 MHz; σ = 1.57 mho/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS1900 right side-Mid/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 12.888 V/m; Power Drift = 0.17 dB
Maximum value of SAR (interpolated) = 0.319 W/kg
GPRS1900 right side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.888 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.664 mW/g
SAR(1 g) = 0.298 mW/g; SAR(10 g) = 0.143 mW/g
Maximum value of SAR (measured) = 0.337 W/kg



GPRS 1900- front side –high with headset (position 2)

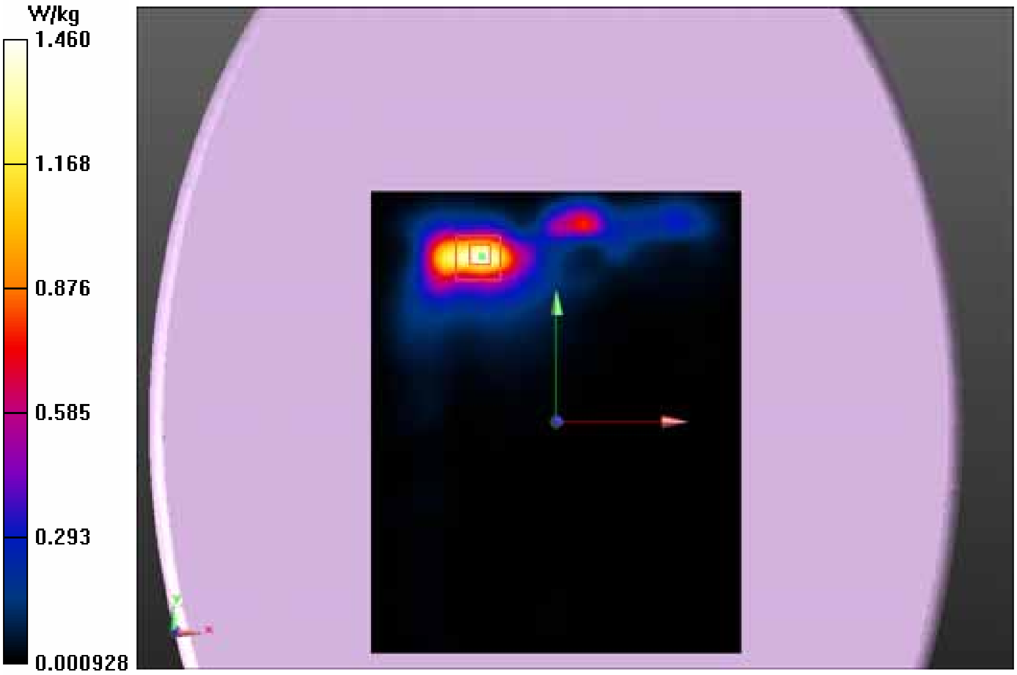
DUT: i-Five; Type: F208

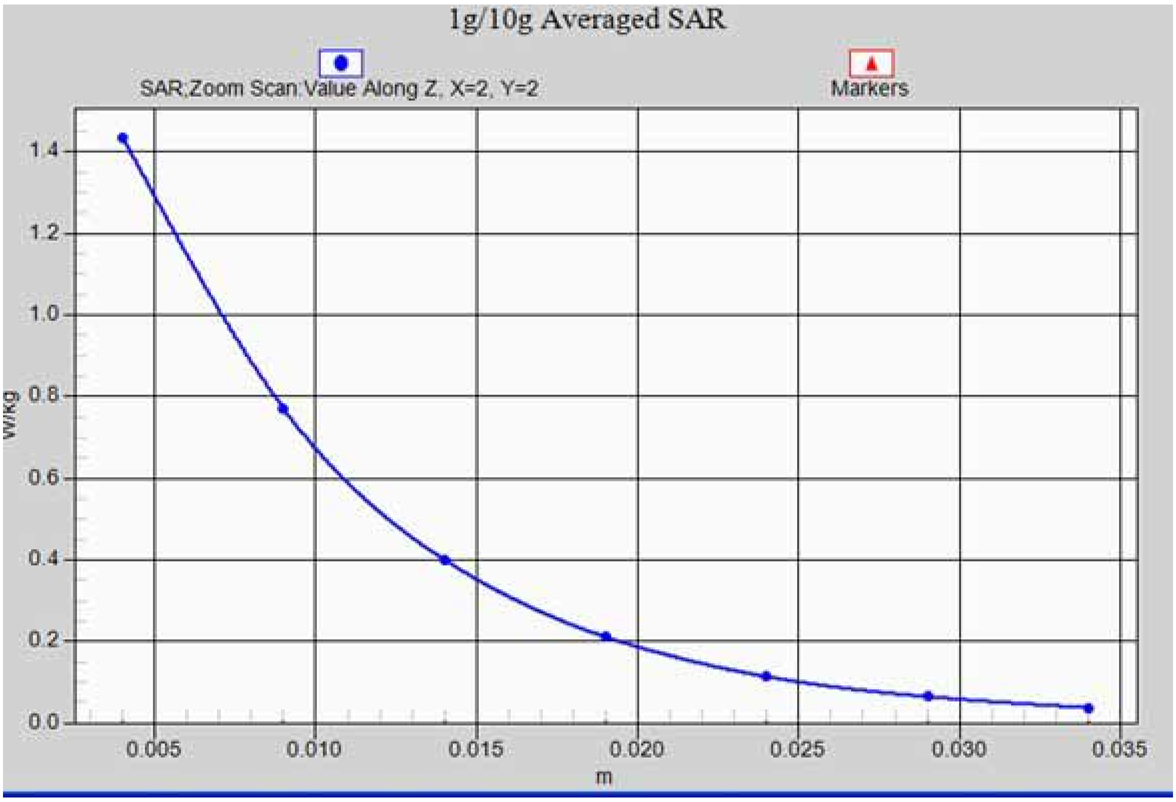
Communication System: GPRS(4slots); Communication System Band: PCS1900;
Frequency: 1909.8 MHz; Communication System PAR: 3.181 dB
Medium parameters used: f = 1909.8 MHz; σ = 1.6 mho/m; ε_r = 51.04; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GPRS 1900 front side-High with headset /Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.892 V/m; Power Drift = 0.17 dB
Maximum value of SAR (interpolated) = 1.46 W/kg
GPRS 1900 front side-High with headset /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.892 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 2.606 mW/g
SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.599 mW/g
Maximum value of SAR (measured) = 1.44 W/kg





GPRS 1900- front side –high with headset (position 2) _z-axis scan

EGPRS 1900- front side –high (position 2)

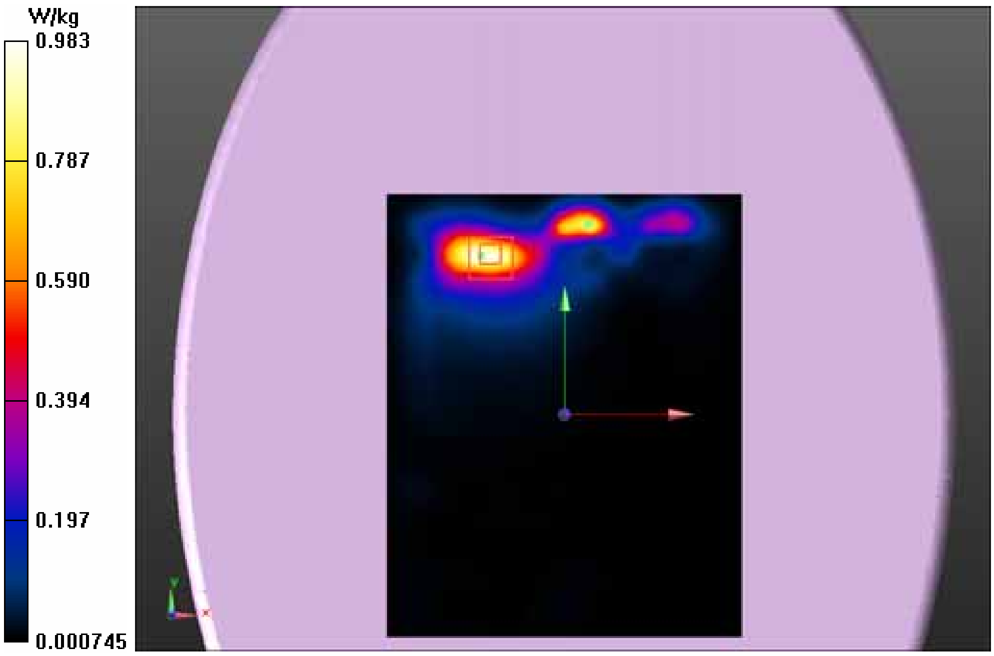
DUT: i-Five; Type: F208

Communication System: EGPRS(2slots); Communication System Band: PCS1900; Frequency: 1909.8 MHz; Communication System PAR: 6.128 dB
Medium parameters used: f = 1909.8 MHz; σ = 1.6 mho/m; ε_r = 51.04; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.87, 4.87, 4.87); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

EGPRS 1900 front side-High /Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 2.083 V/m; Power Drift = -0.12 dB
Maximum value of SAR (interpolated) = 0.983 W/kg
EGPRS 1900 front side-High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.083 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.881 mW/g
SAR(1 g) = 0.893 mW/g; SAR(10 g) = 0.432 mW/g
Maximum value of SAR (measured) = 0.990 W/kg



WCDMA Band V Test Position 1 mid

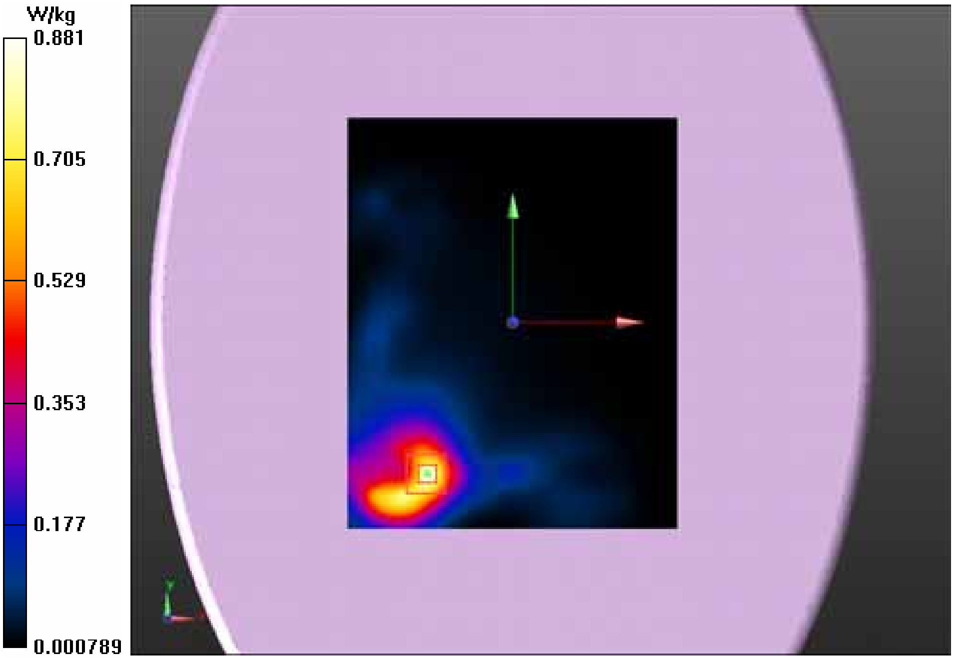
DUT: Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA band V/back side-Mid/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 3.776 V/m; Power Drift = 0.18 dB
Maximum value of SAR (interpolated) = 0.881 W/kg
WCDMA band V/back side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.776 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.314 mW/g
SAR(1 g) = 0.764 mW/g; SAR(10 g) = 0.421 mW/g
Maximum value of SAR (measured) = 0.878 W/kg



WCDMA Band V Test Position 2 High

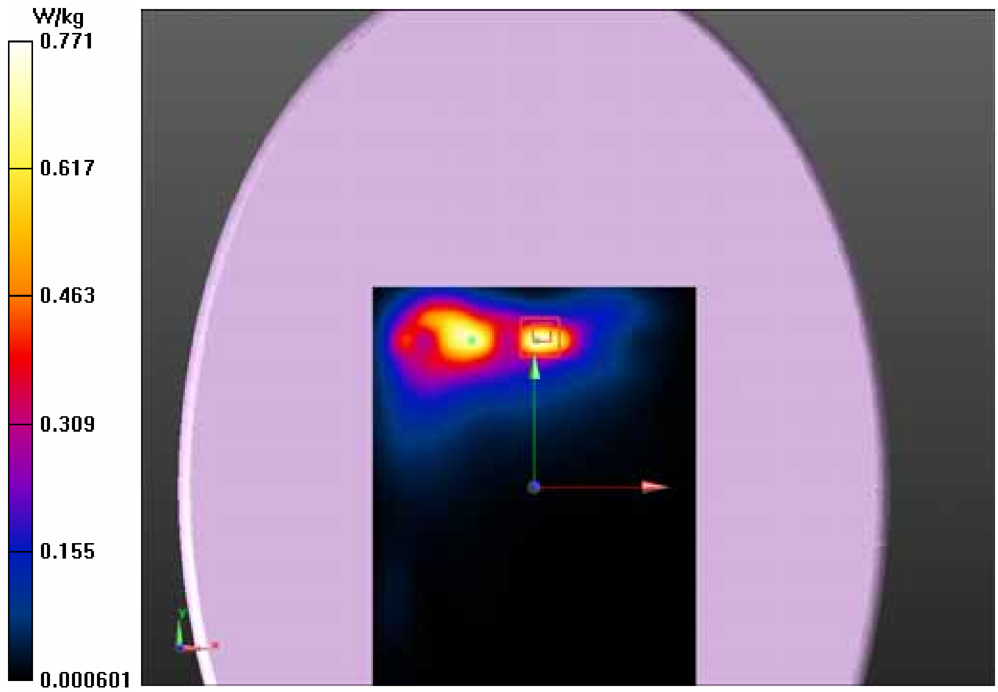
DUT: Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 846.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.968 mho/m; ε_r = 55.77; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA band V/front side-High /Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 2.977 V/m; Power Drift = -0.04 dB
Maximum value of SAR (interpolated) = 0.771 W/kg
WCDMA band V/front side-High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.977 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.325 mW/g
SAR(1 g) = 0.988 mW/g; SAR(10 g) = 0.397 mW/g
Maximum value of SAR (measured) = 1.00 W/kg



WCDMA Band V Test Position 2 Mid

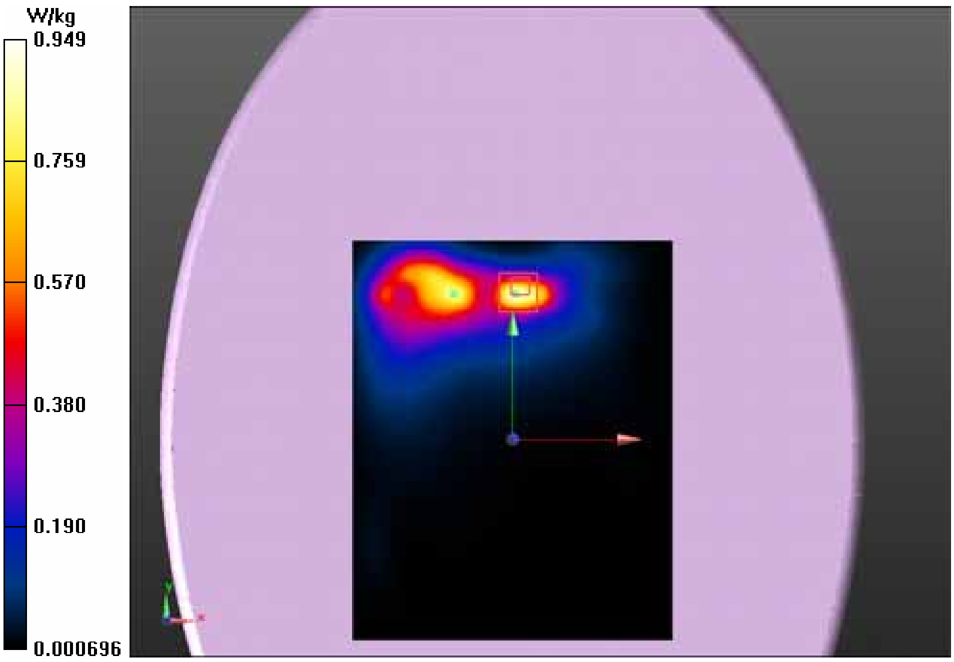
DUT: Five; Type: F208

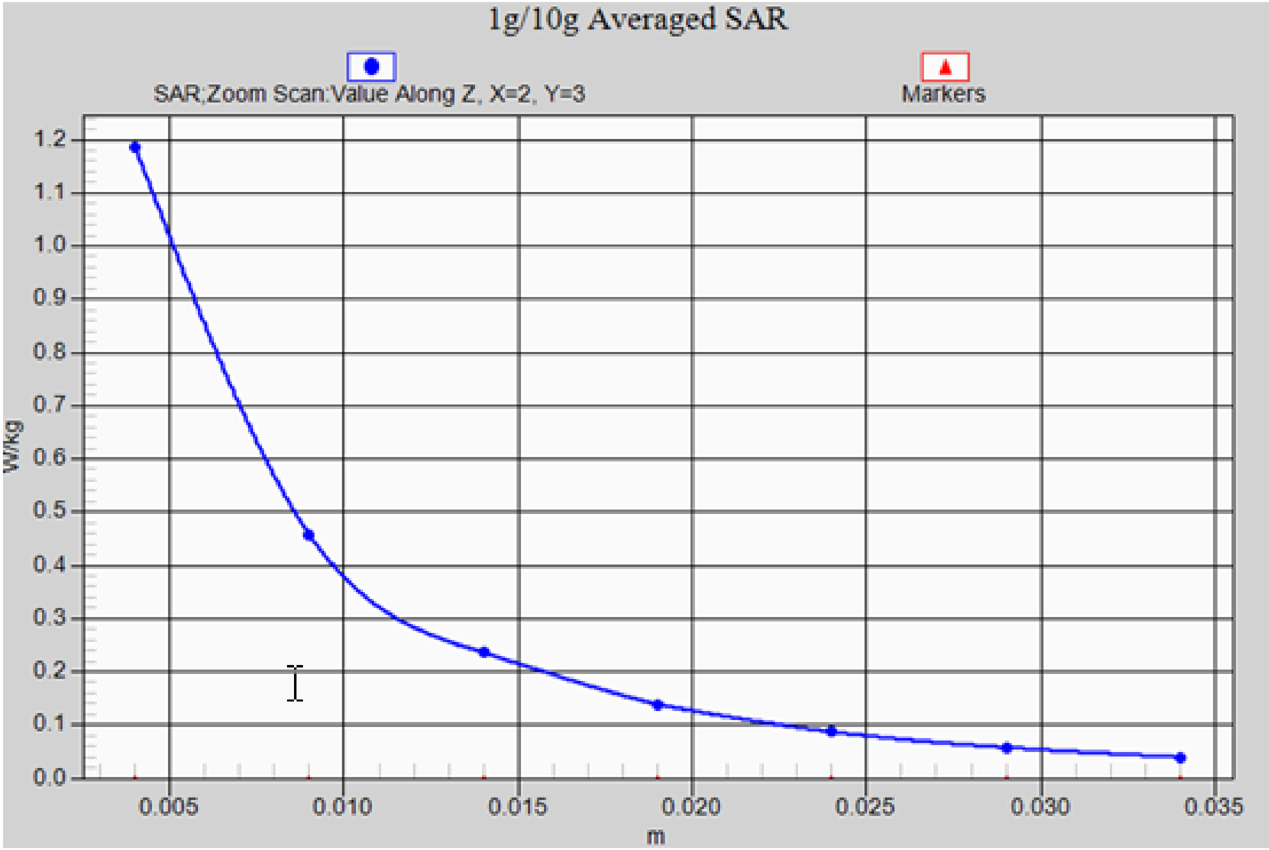
Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA band V/front side-Mid /Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 3.276 V/m; Power Drift = 0.13 dB
Maximum value of SAR (interpolated) = 0.949 W/kg
WCDMA band V/front side-Mid /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.276 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 4.017 mW/g
SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.485 mW/g
Maximum value of SAR (measured) = 1.19 W/kg





WCDMA Band V Test Position 2 Mid_ z-axis scan

WCDMA Band V Test Position 2 Low

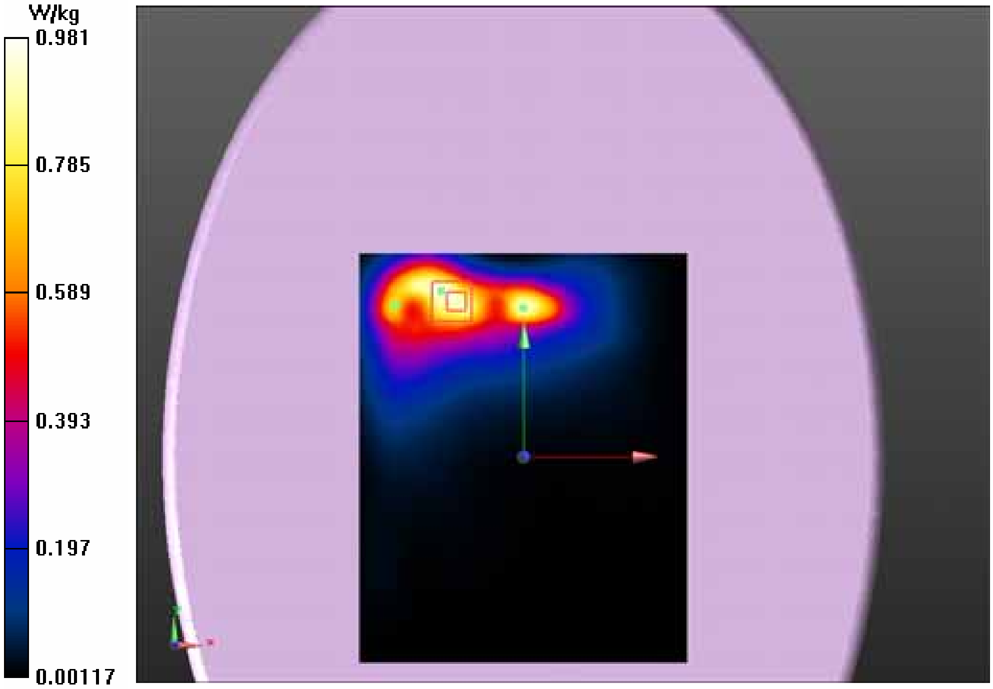
DUT: Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 826.4 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.952 mho/m; ε_r = 55.941; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA band V/front side-Low/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 3.374 V/m; Power Drift = 0.07 dB
Maximum value of SAR (interpolated) = 0.981 W/kg
WCDMA band V/front side-Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.374 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.772 mW/g
SAR(1 g) = 0.939 mW/g; SAR(10 g) = 0.508 mW/g
Maximum value of SAR (measured) = 1.03 W/kg



WCDMA Band V Test Position 3 High

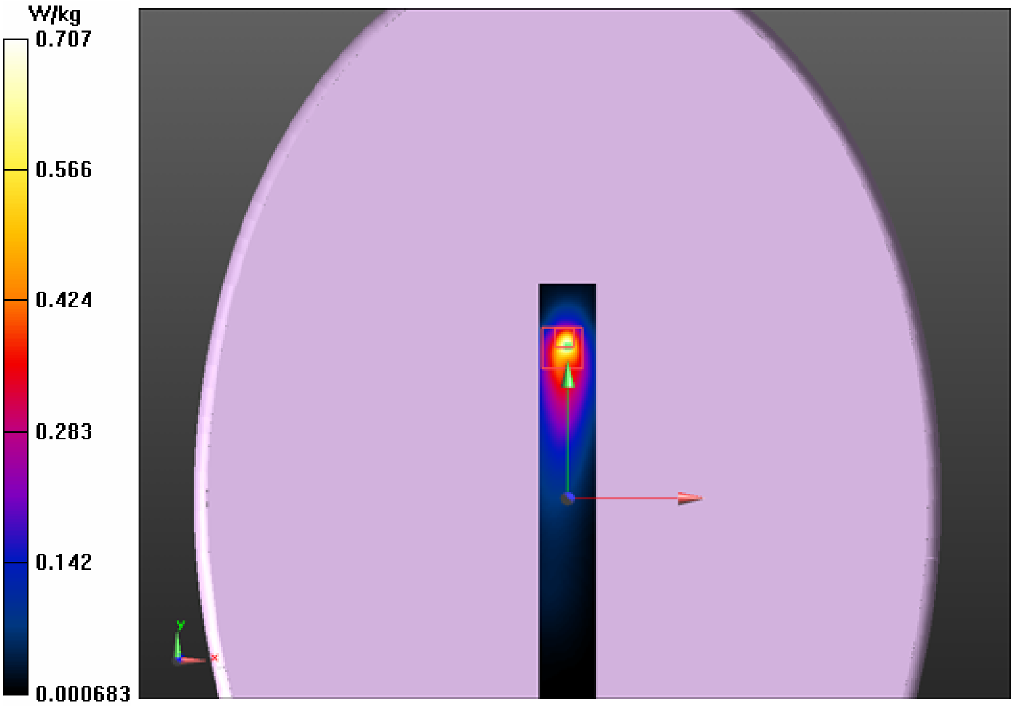
DUT: i-Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 846.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.968 mho/m; ε_r = 55.77; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V-top side-High/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 8.611 V/m; Power Drift = 0.15 dB
Maximum value of SAR (interpolated) = 0.707 W/kg
WCDMA Band V-top side-High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.611 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 2.598 mW/g
SAR(1 g) = 0.637 mW/g; SAR(10 g) = 0.240 mW/g
Maximum value of SAR (measured) = 0.847 W/kg



WCDMA Band V Test Position 3 Mid

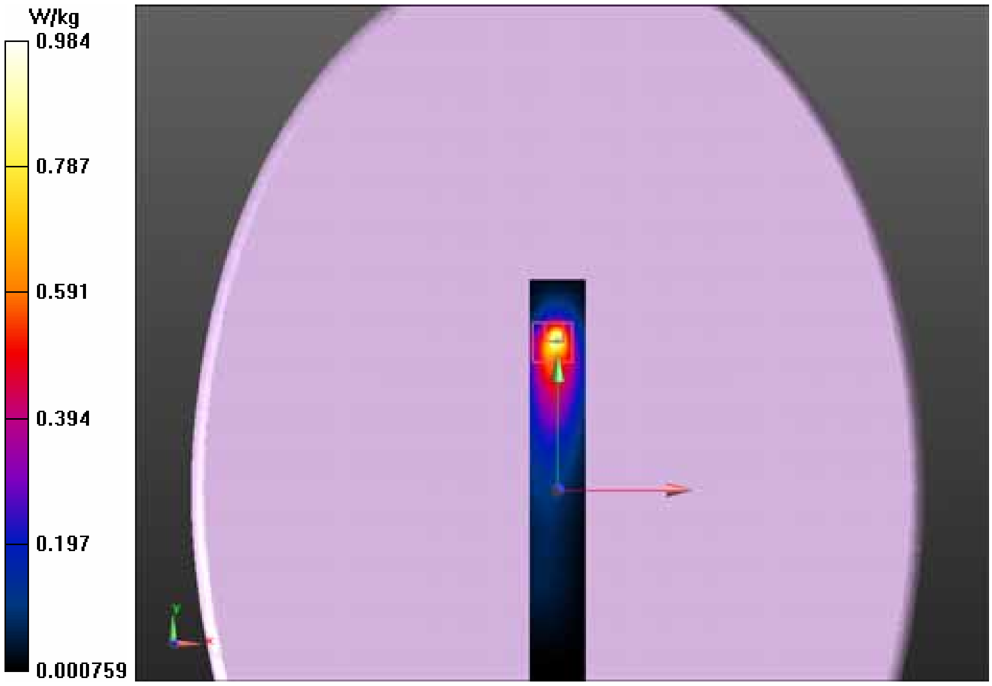
DUT: i-Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V-top side-Mid/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 10.513 V/m; Power Drift = -0.21 dB
Maximum value of SAR (interpolated) = 0.984 W/kg
WCDMA Band V-top side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.513 V/m; Power Drift = -0.21 dB
Peak SAR (extrapolated) = 3.450 mW/g
SAR(1 g) = 0.854 mW/g; SAR(10 g) = 0.322 mW/g
Maximum value of SAR (measured) = 1.14 W/kg



WCDMA Band V Test Position 3 Low

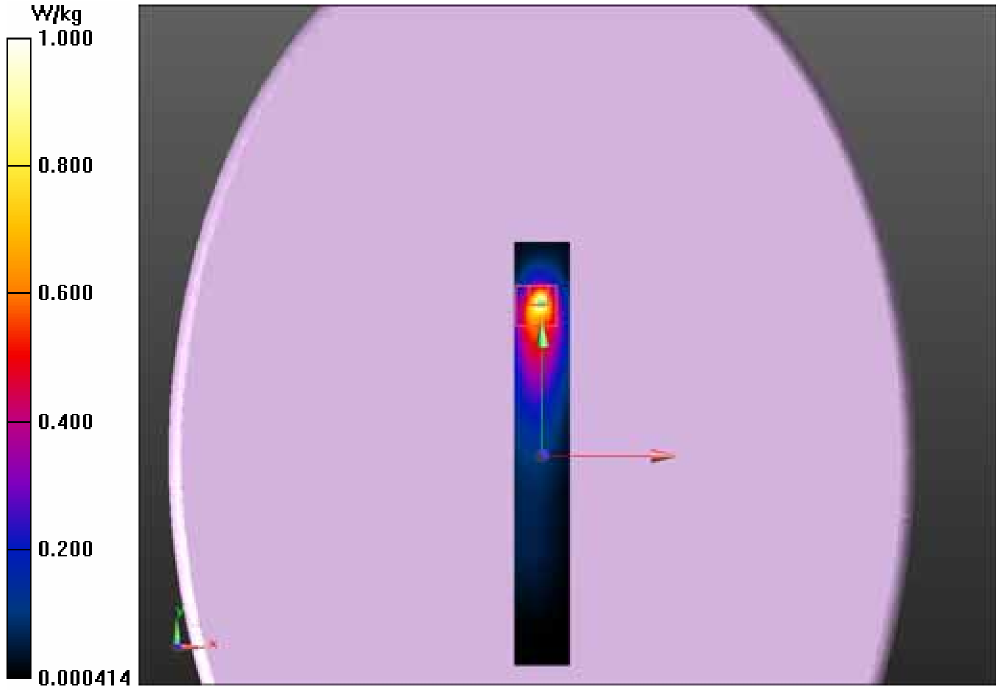
DUT: i-Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 826.4 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.952 mho/m; ε_r = 55.941; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V-top side-Low/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 10.350 V/m; Power Drift = 0.12 dB
Maximum value of SAR (interpolated) = 1.00 W/kg
WCDMA Band V-top side-Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.350 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 3.605 mW/g
SAR(1 g) = 0.887 mW/g; SAR(10 g) = 0.335 mW/g
Maximum value of SAR (measured) = 1.17 W/kg



WCDMA Band V Test Position 4 Mid

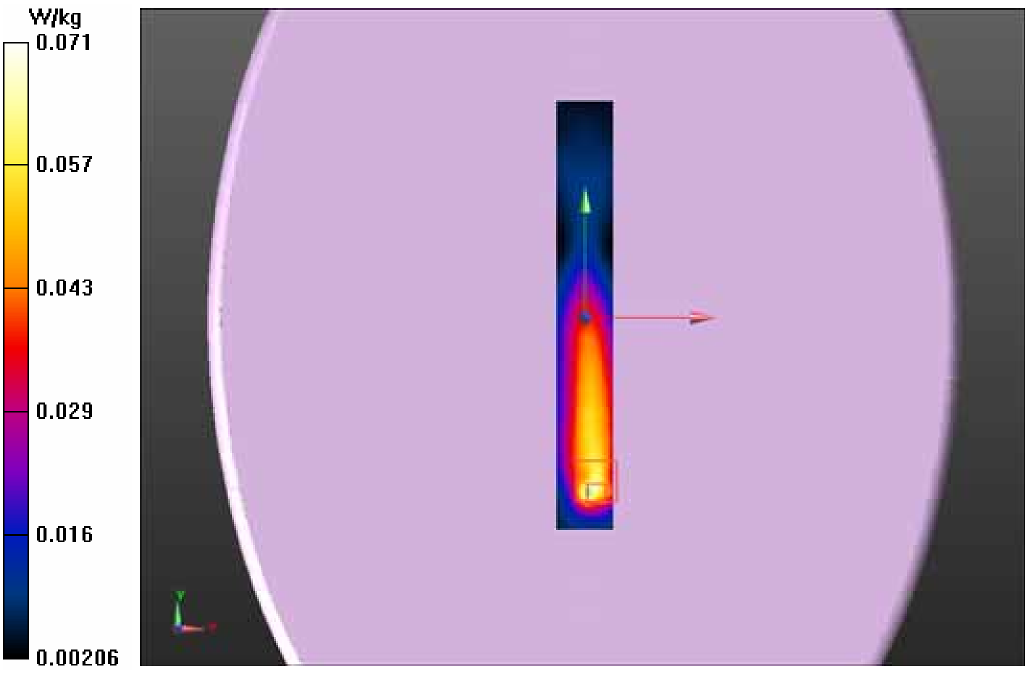
DUT: i-five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V-bottom side-Mid/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 5.999 V/m; Power Drift = 0.16 dB
Maximum value of SAR (interpolated) = 0.0706 W/kg
WCDMA Band V-bottom side-Mid /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.999 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.273 mW/g
SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.037 mW/g
Maximum value of SAR (measured) = 0.0879 W/kg



WCDMA Band V Test Position 5 Mid

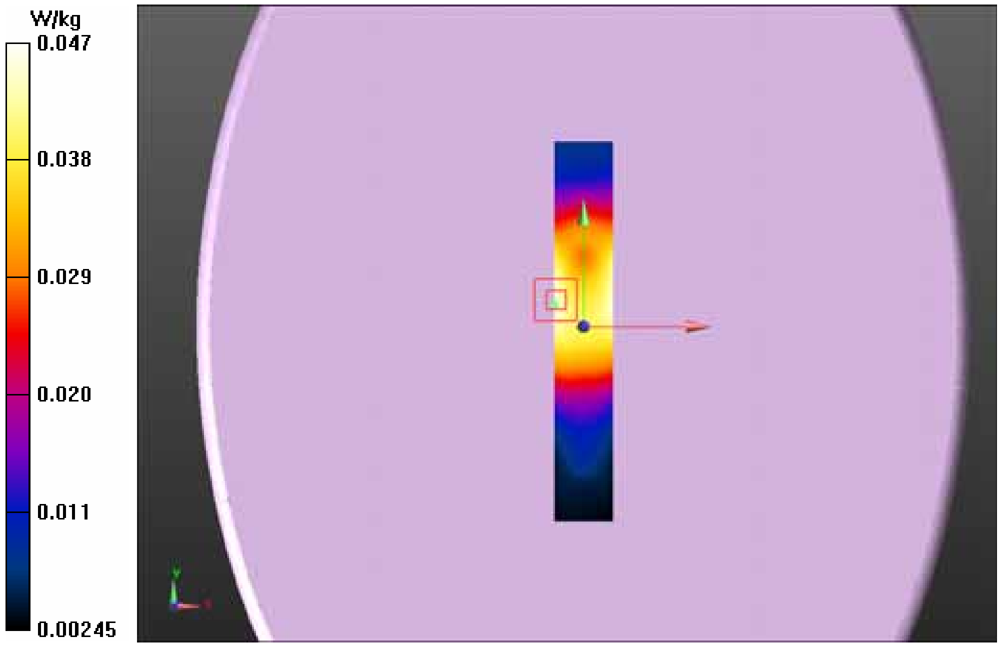
DUT: i-five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V left -mid/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 6.473 V/m; Power Drift = -0.16 dB
Maximum value of SAR (interpolated) = 0.0475 W/kg
WCDMA Band V left -mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.473 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.058 mW/g
SAR(1 g) = 0.044 mW/g; SAR(10 g) = 0.034 mW/g
Maximum value of SAR (measured) = 0.0463 W/kg



WCDMA Band V Test Position 6 High

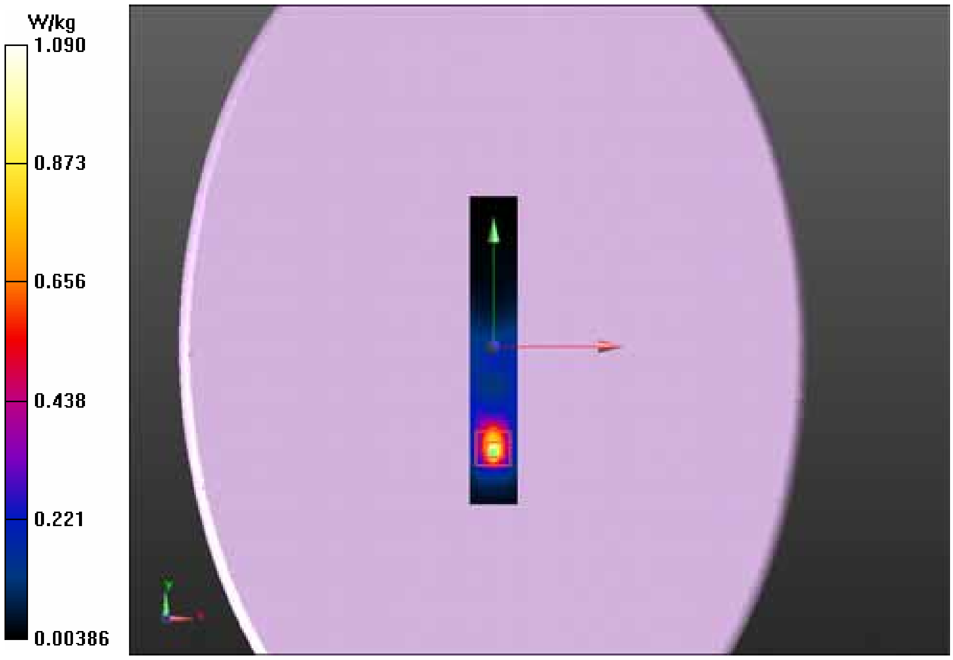
DUT: i-Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 846.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.968 mho/m; ε_r = 55.77; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V-right side-High /Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 12.979 V/m; Power Drift = 0.07 dB
Maximum value of SAR (interpolated) = 1.09 W/kg
WCDMA Band V-right side-High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.979 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 3.077 mW/g
SAR(1 g) = 0.822 mW/g; SAR(10 g) = 0.274 mW/g
Maximum value of SAR (measured) = 1.12 W/kg



WCDMA Band V Test Position 6 Mid

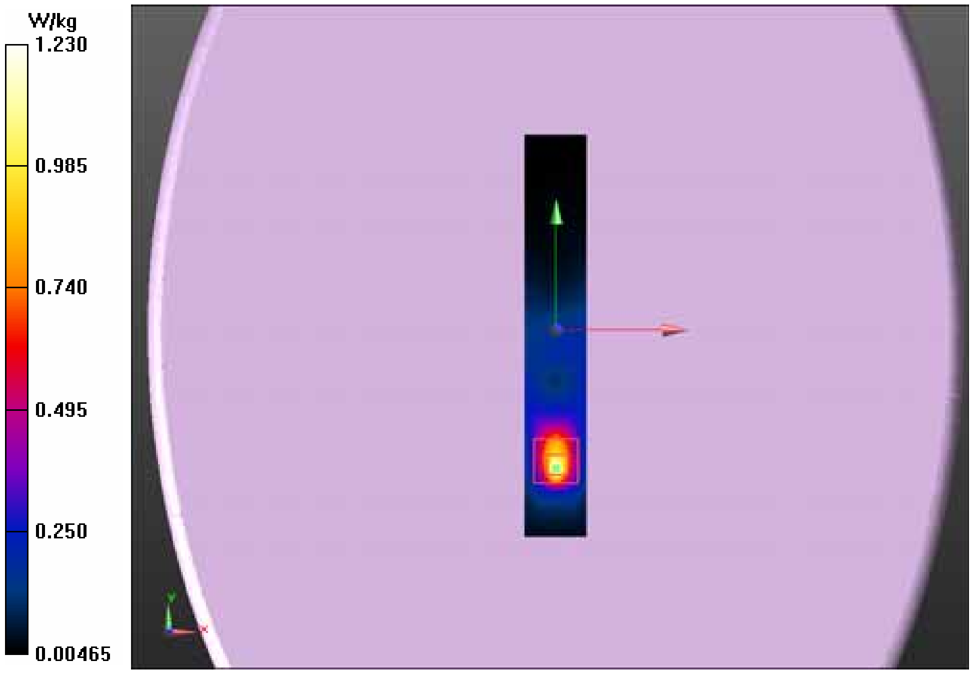
DUT: i-Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V-right side-Mid /Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 13.849 V/m; Power Drift = 0.11 dB
Maximum value of SAR (interpolated) = 1.23 W/kg
WCDMA Band V-right side-Mid /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.849 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 3.893 mW/g
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.349 mW/g
Maximum value of SAR (measured) = 1.42 W/kg



WCDMA Band V Test Position 6 Low

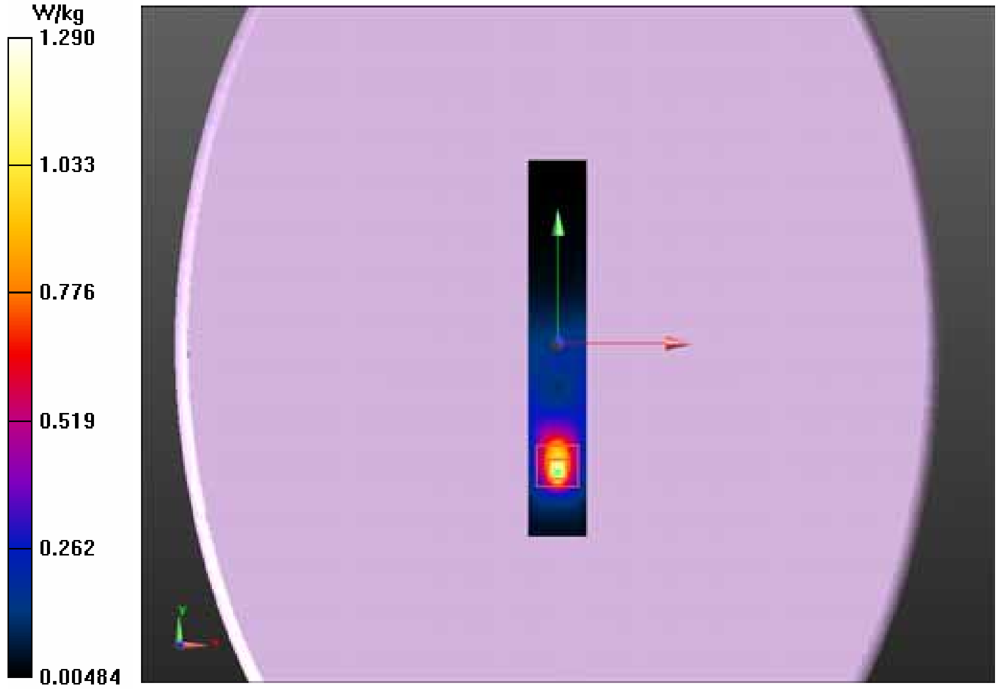
DUT: i-Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 826.4 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.952 mho/m; ε_r = 55.941; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA Band V-right side-Low/Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 13.407 V/m; Power Drift = -0.02 dB
Maximum value of SAR (interpolated) = 1.29 W/kg
WCDMA Band V-right side-Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.407 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.786 mW/g
SAR(1 g) = 0.995 mW/g; SAR(10 g) = 0.336 mW/g
Maximum value of SAR (measured) = 1.34 W/kg



WCDMA Band V Test Position 2 Mid with headset

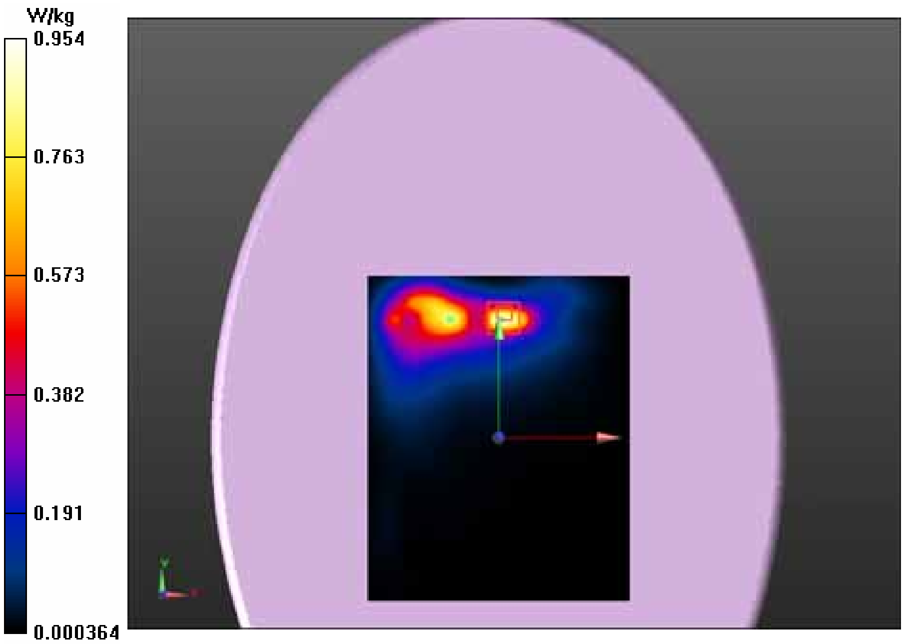
DUT: Five; Type: F208

Communication System: UMTS-FDD(WCDMA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WCDMA V/front side-Mid with headset 2/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 3.404 V/m; Power Drift = -0.10 dB
Maximum value of SAR (interpolated) = 0.954 W/kg
WCDMA V/front side-Mid with headset 2/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.404 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 3.947 mW/g
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.478 mW/g
Maximum value of SAR (measured) = 1.17 W/kg



HSDPA-Test Position 2 Mid

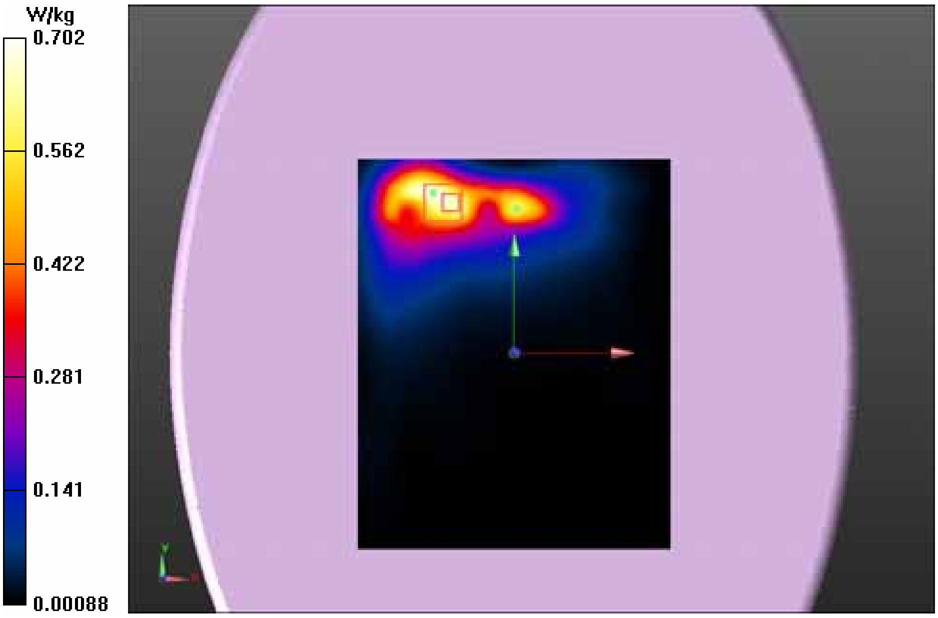
DUT: i-Five; Type: F208

Communication System: UMTS-FDD (HSDPA); Communication System Band: Band5; Frequency: 836.6 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.858; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(6.23, 6.23, 6.23); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

HSDPA/front side-Mid-HSDPA/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 2.702 V/m; Power Drift = 0.17 dB
Maximum value of SAR (interpolated) = 0.702 W/kg
HSDPA/front side-Mid-HSDPA/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.702 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.345 mW/g
SAR(1 g) = 0.692 mW/g; SAR(10 g) = 0.357 mW/g
Maximum value of SAR (measured) = 0.767 W/kg



Bluetooth-Test Position 1- Mid

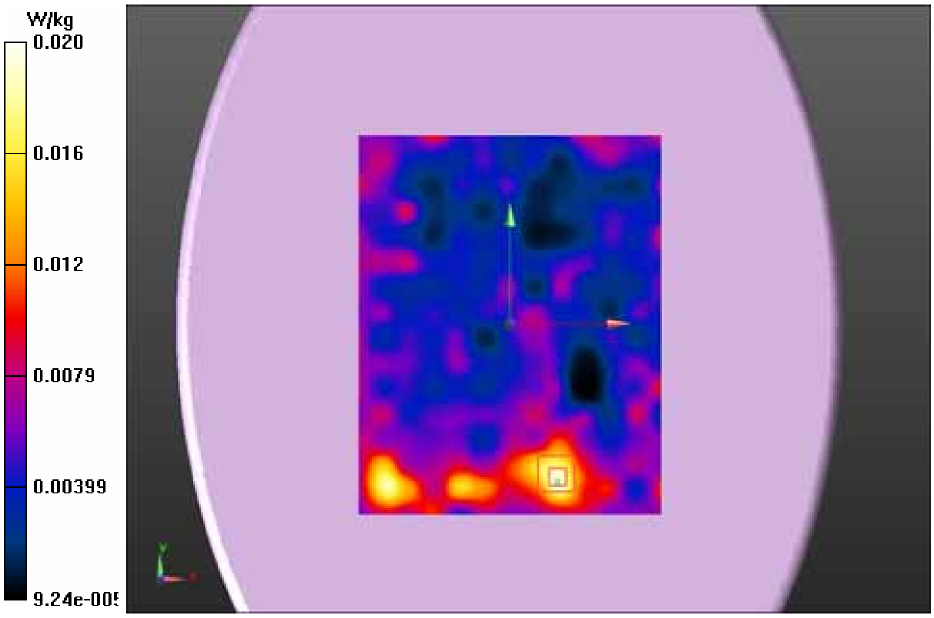
DUT: i-five; Type: F208

Communication System: BT; Communication System Band: BT; Frequency: 2441 MHz; Communication System PAR: 0 dB
Medium parameters used: f = 2441 MHz; σ = 2.02 mho/m; ε_r = 50.72; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.31, 4.31, 4.31); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bluetooth back side-mid/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.422 V/m; Power Drift = -0.18 dB
Maximum value of SAR (interpolated) = 0.0196 W/kg
Bluetooth back side-mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.422 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.057 mW/g
SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.012 mW/g
Maximum value of SAR (measured) = 0.0229 W/kg



Bluetooth-Test Position 4- Mid

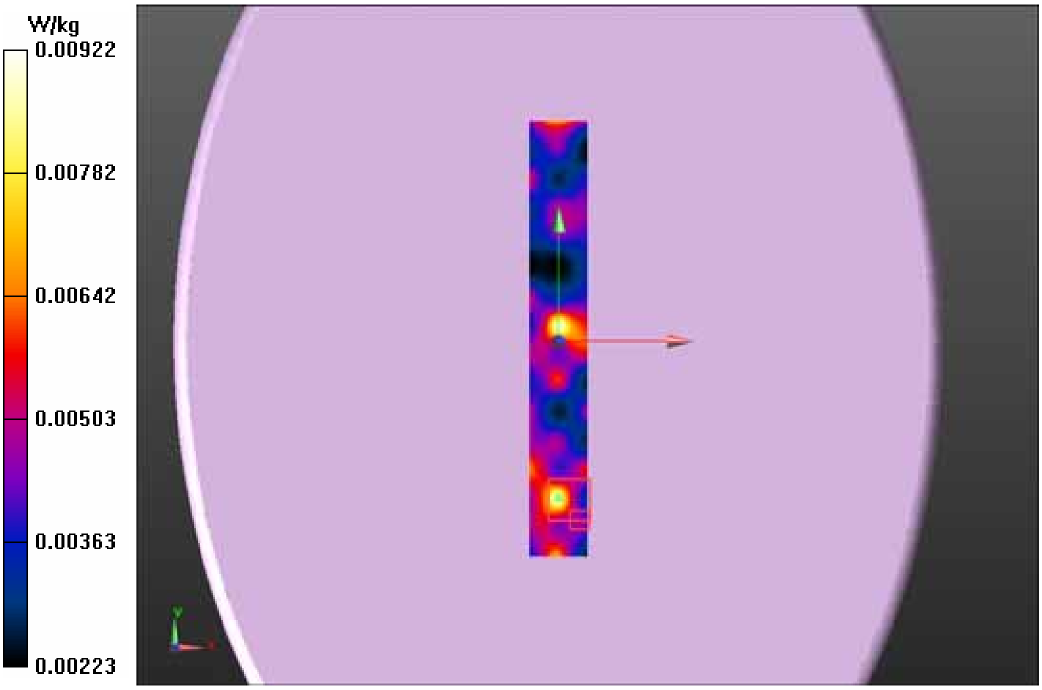
DUT: i-five; Type: F208

Communication System: BT; Communication System Band: BT; Frequency: 2441 MHz; Communication System PAR: 0 dB
Medium parameters used: f = 2441 MHz; σ = 2.02 mho/m; ε_r = 50.72; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.31, 4.31, 4.31); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bluetooth/bottom side-Mid/Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.014 V/m; Power Drift = 0.19 dB
Maximum value of SAR (interpolated) = 0.00922 W/kg
Bluetooth/bottom side-Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.014 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.00965 mW/g
SAR(1 g) = 0.00558 mW/g; SAR(10 g) = 0.00429 mW/g
Maximum value of SAR (measured) = 0.00767 W/kg



Bluetooth-Test Position 6- Mid

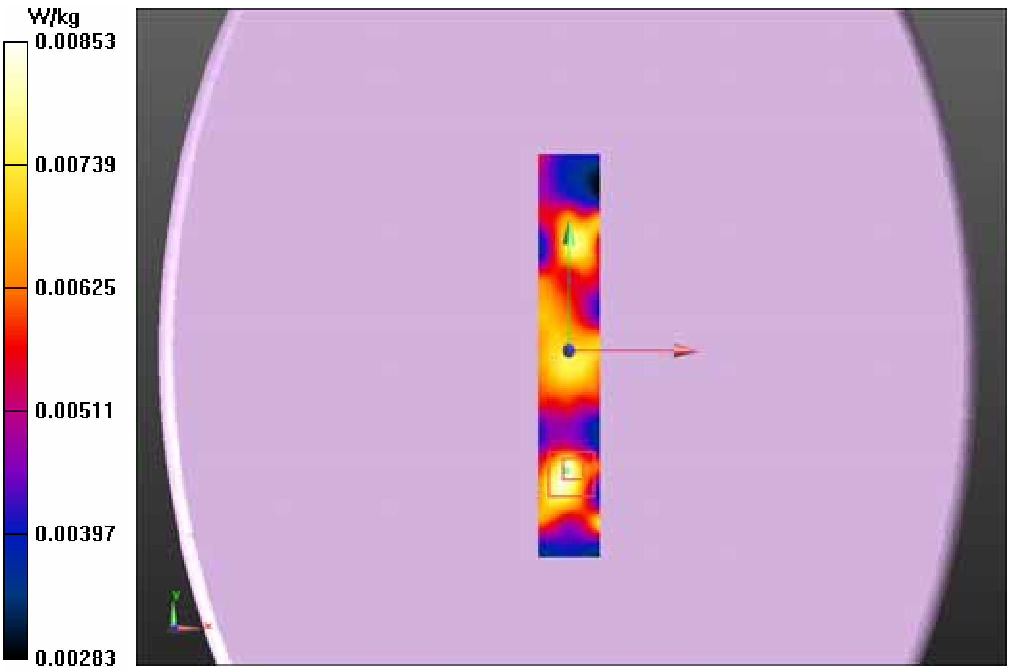
DUT: i-five; Type: F208

Communication System: BT; Communication System Band: BT; Frequency: 2441 MHz; Communication System PAR: 0 dB
Medium parameters used: f = 2441 MHz; σ = 2.02 mho/m; ε_r = 50.72; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.31, 4.31, 4.31); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bluetooth right side-mid Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.474 V/m; Power Drift = 0.17 dB
Maximum value of SAR (interpolated) = 0.00853 W/kg
Bluetooth right side-mid Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.474 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.031 mW/g
SAR(1 g) = 0.00875 mW/g; SAR(10 g) = 0.00567 mW/g
Maximum value of SAR (measured) = 0.00928 W/kg



WIFI(802.11b)-back side-high(position 1)

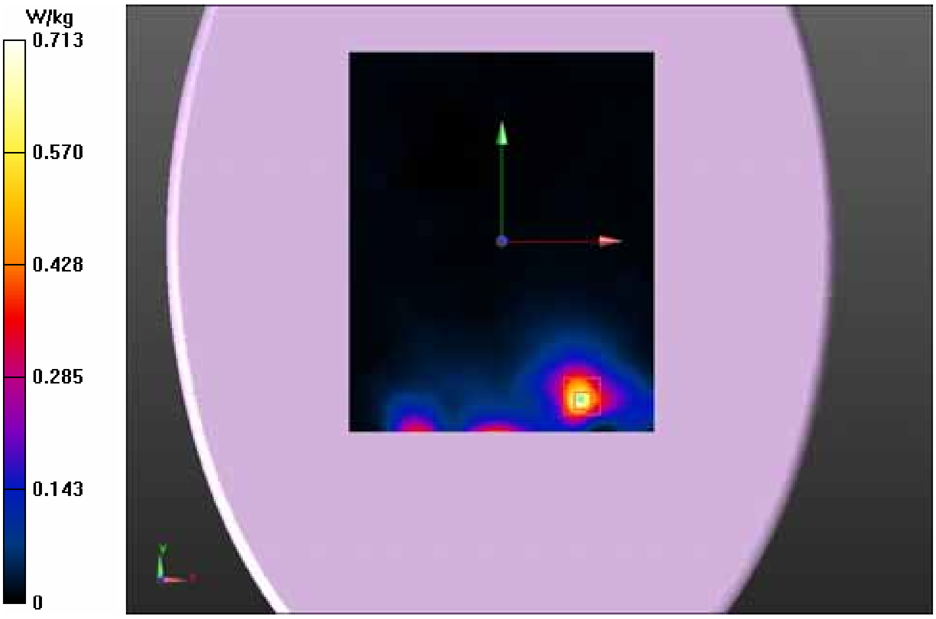
DUT: i-five; Type: F208

Communication System: 802.11b WiFi 2.4 GHz ; Communication System Band: 2450;
Frequency: 2462 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 2462 MHz; σ = 2.013 mho/m; ε_r = 50.739;
ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.31, 4.31, 4.31); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WIFI -back side-high/Area Scan (121x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.597 V/m; Power Drift = 0.18 dB
Maximum value of SAR (interpolated) = 0.713 W/kg
WIFI -back side-high/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.597 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.664 mW/g
SAR(1 g) = 0.659 mW/g; SAR(10 g) = 0.287 mW/g
Maximum value of SAR (measured) = 0.727 W/kg



WIFI(802.11b)-bottom side-high(position 4)

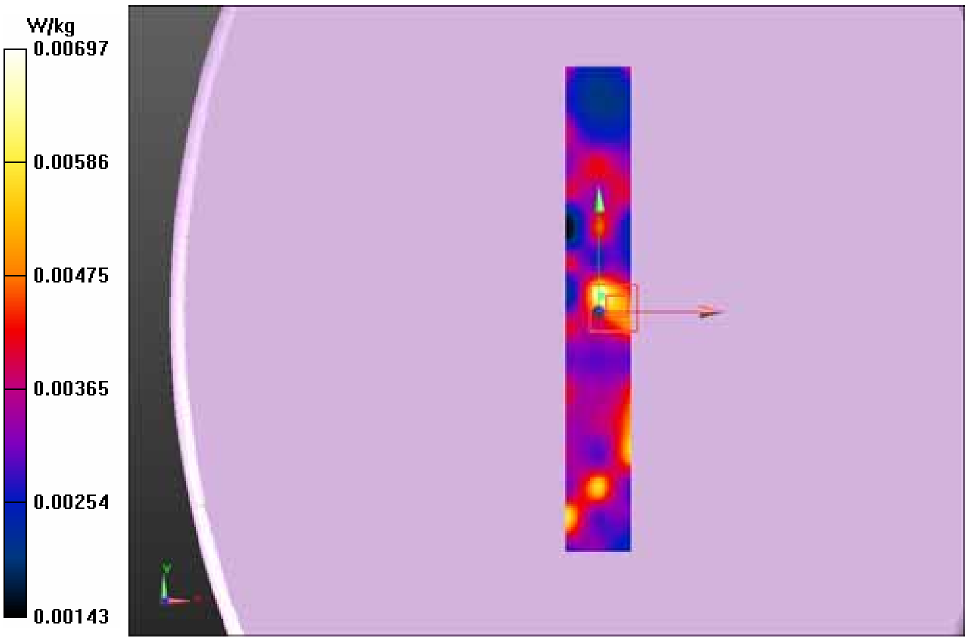
DUT: i-five; Type: F208

Communication System: 802.11b WiFi 2.4 GHz ; Communication System Band: 2450; Frequency: 2462 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 2462 MHz; σ = 2.013 mho/m; ε_r = 50.739; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.31, 4.31, 4.31); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WIFI-bottom side-High /Area Scan (21x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 1.429 V/m; Power Drift = -0.14 dB
Maximum value of SAR (interpolated) = 0.00697 W/kg
WIFI-/bottom side-High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.429 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.00964 mW/g
SAR(1 g) = 0.00493 mW/g; SAR(10 g) = 0.00307 mW/g
Maximum value of SAR (measured) = 0.00721 W/kg



WIFI(802.11b)-right side-high(position 6)

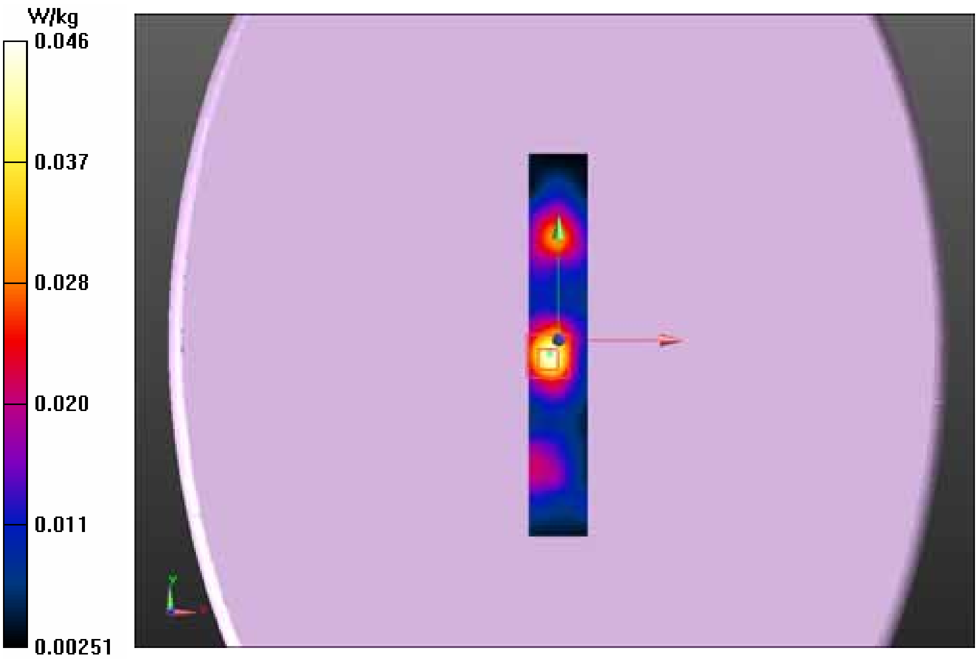
DUT: i-five; Type: F208

Communication System: 802.11b WiFi 2.4 GHz ; Communication System Band: 2450; Frequency: 2462 MHz; Communication System PAR: 0 dB
Medium parameters used (interpolated): f = 2462 MHz; σ = 2.013 mho/m; ε_r = 50.739; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3221; ConvF(4.31, 4.31, 4.31); Calibrated: 9/27/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn893; Calibrated: 9/27/2012
- Phantom: ELI v4.0; Type: QD OVA 001 BB; Serial: TP:1069
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

WIFI right side-high /Area Scan (21x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 4.151 V/m; Power Drift = -0.12 dB
Maximum value of SAR (interpolated) = 0.0456 W/kg
WIFI right side-high /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.151 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.108 mW/g
SAR(1 g) = 0.043 mW/g; SAR(10 g) = 0.021 mW/g
Maximum value of SAR (measured) = 0.0453 W/kg



ANNEXE 3 EUT Test Positions

Test position:

 Position 1	 Position 2
 Position 3	 Position 4
 Position 5	 Position 6

	
Position 2 with earphone	**Position 6 with earphone**

ANNEXE 4 Probe calibration report

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

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Swiss Calibration Service

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **GCCT (Auden)**

Certificate No: **ES3-3221_Sep12**

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3221

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

Calibration date: September 27, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

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

Issued: October 1, 2012

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

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

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV3

SN:3221

Manufactured: September 1, 2009
Repaired: September 11, 2012
Calibrated: September 27, 2012

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3221

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.11	1.38	1.06	± 10.1 %
DCP (mV)[B]	103.6	100.4	103.1	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc[E] (k=2)
0	CW	0.00	X	0.00	0.00	1.00	144.5	±3.5 %
			Y	0.00	0.00	1.00	122.0	
			Z	0.00	0.00	1.00	143.2	

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%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3221

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	6.20	6.20	6.20	0.25	2.17	± 12.0 %
900	41.5	0.97	6.17	6.17	6.17	0.27	1.99	± 12.0 %
1750	40.1	1.37	5.60	5.60	5.60	0.80	1.16	± 12.0 %
1900	40.0	1.40	5.39	5.39	5.39	0.62	1.40	± 12.0 %
2000	40.0	1.40	5.34	5.34	5.34	0.76	1.22	± 12.0 %
2450	39.2	1.80	4.68	4.68	4.68	0.80	1.24	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

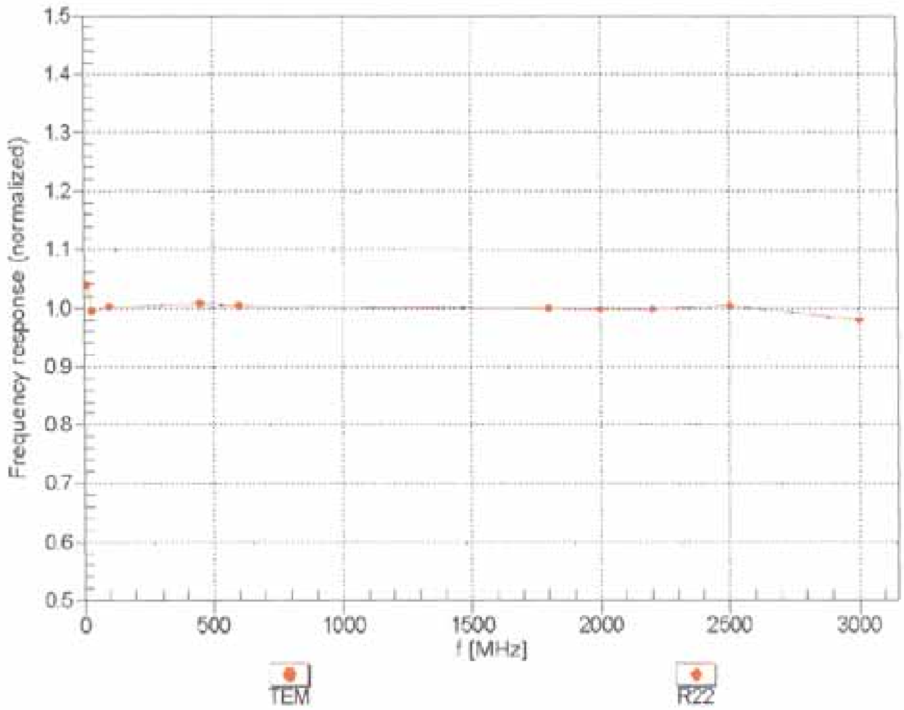
DASY/EASY - Parameters of Probe: ES3DV3 - SN:3221

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.23	6.23	6.23	0.37	1.80	± 12.0 %
900	55.0	1.05	6.17	6.17	6.17	0.80	1.16	± 12.0 %
1750	53.4	1.49	5.17	5.17	5.17	0.59	1.46	± 12.0 %
1900	53.3	1.52	4.87	4.87	4.87	0.46	1.73	± 12.0 %
2000	53.3	1.52	4.89	4.89	4.89	0.64	1.49	± 12.0 %
2450	52.7	1.95	4.31	4.31	4.31	0.68	1.16	± 12.0 %

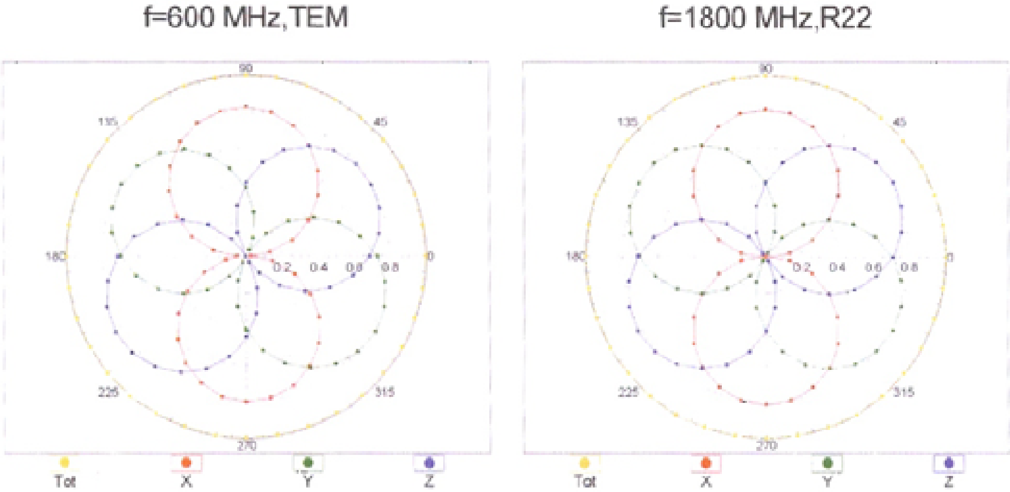
[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

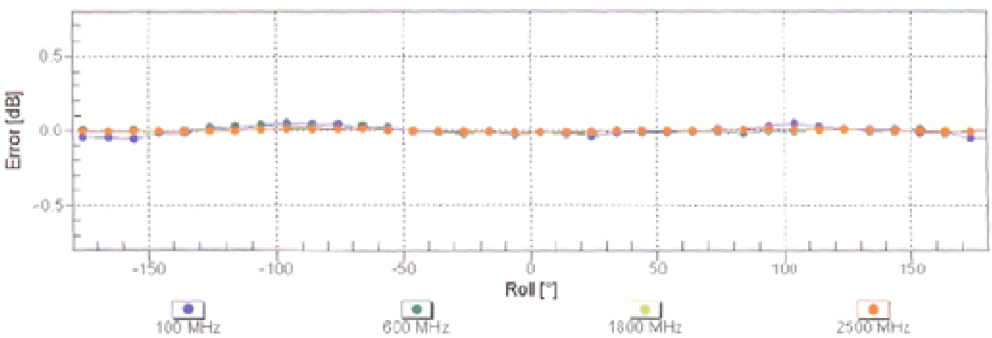
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

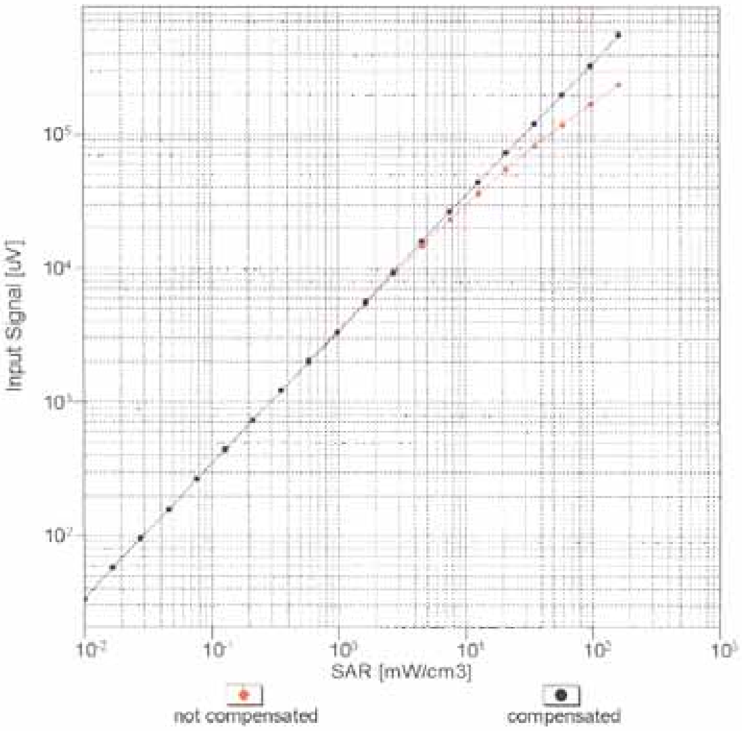
Receiving Pattern (ϕ), ϑ = 0°

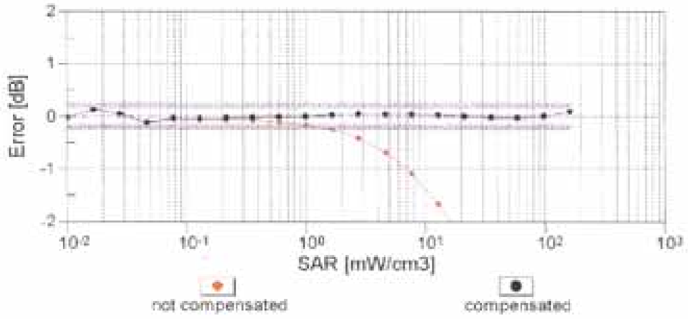




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})
(TEM cell , f = 900 MHz)

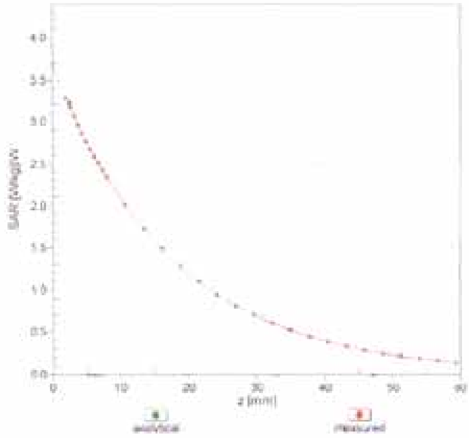




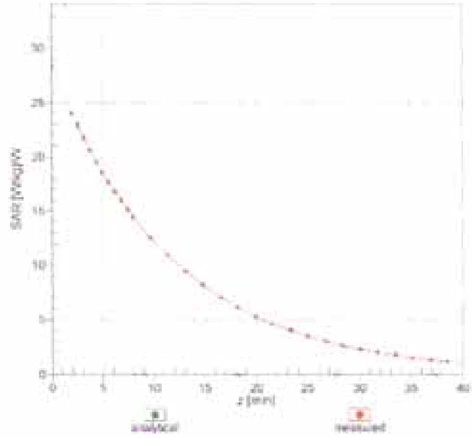
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

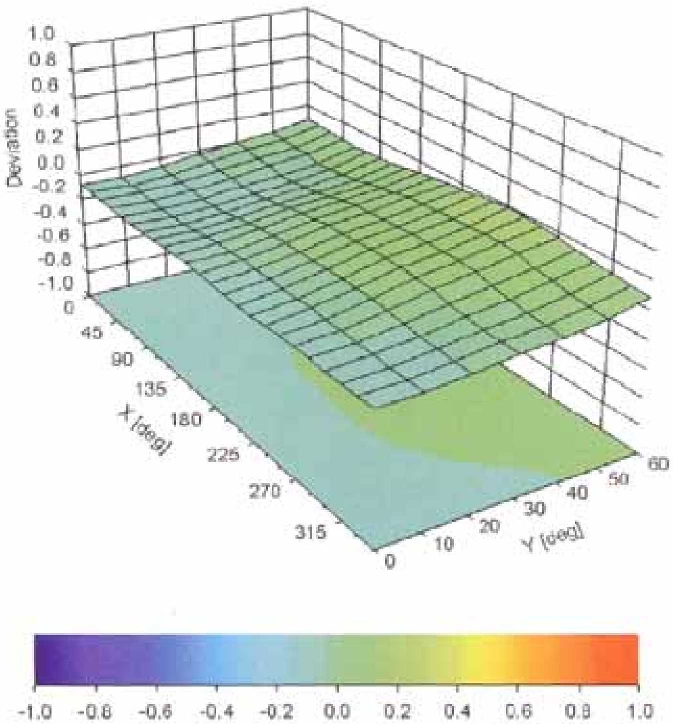


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3221

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	34
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

ANNEXE 5 Dipole calibration report

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

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client GCCT (Auden)

Certificate No: D900V2-1d073_Sep12

CALIBRATION CERTIFICATE

Object	D900V2 - SN: 1d073
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 28, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	Israe El-Naouq
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 28, 2012

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

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) 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	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.97 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.3 ± 6 %	0.96 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	2.68 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**10.7 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.72 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**6.89 mW /g ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.0	1.05 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.7 ± 6 %	1.06 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	2.81 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**11.1 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.80 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**7.12 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.5 Ω - 7.6 jΩ
Return Loss	- 22.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.6 Ω - 8.9 jΩ
Return Loss	- 20.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.407 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	January 29, 2008

DASY5 Validation Report for Head TSL

Date: 28.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

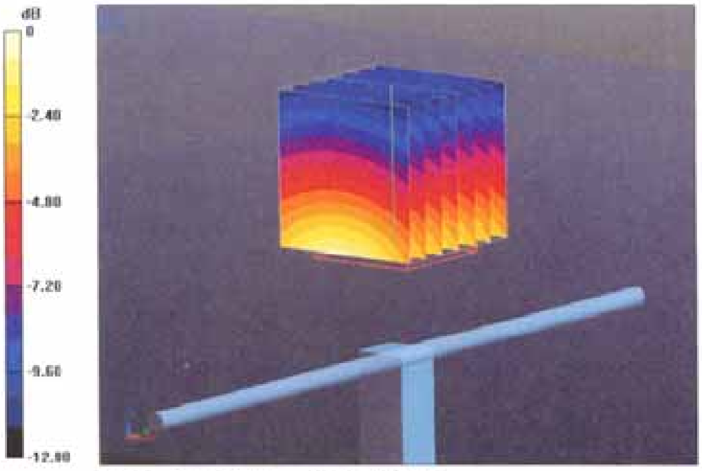
DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 1d073

Communication System: CW; Frequency: 900 MHz
Medium parameters used: f = 900 MHz; σ = 0.96 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

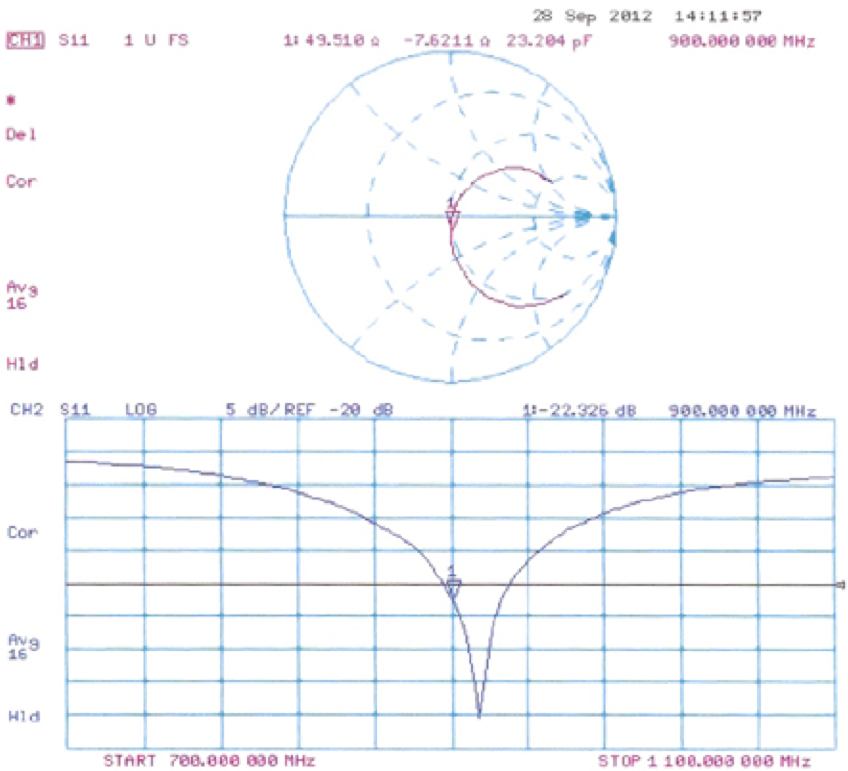
- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.155 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 4.031 mW/g
SAR(1 g) = 2.68 mW/g; SAR(10 g) = 1.72 mW/g
Maximum value of SAR (measured) = 3.11 W/kg



0 dB = 3.11 W/kg = 9.86 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 28.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

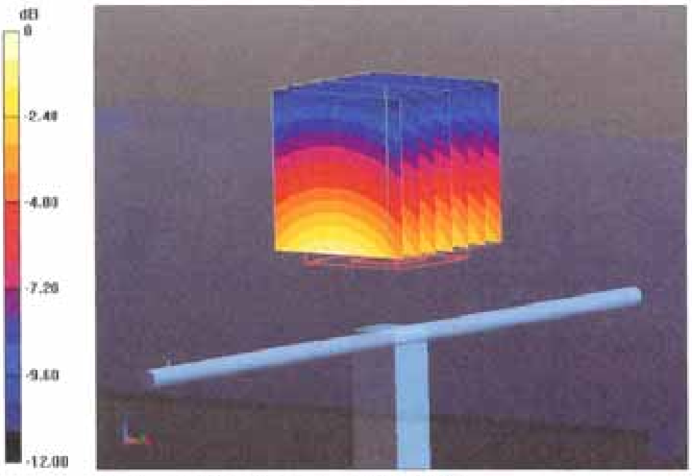
DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 1d073

Communication System: CW; Frequency: 900 MHz
Medium parameters used: f = 900 MHz; σ = 1.06 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

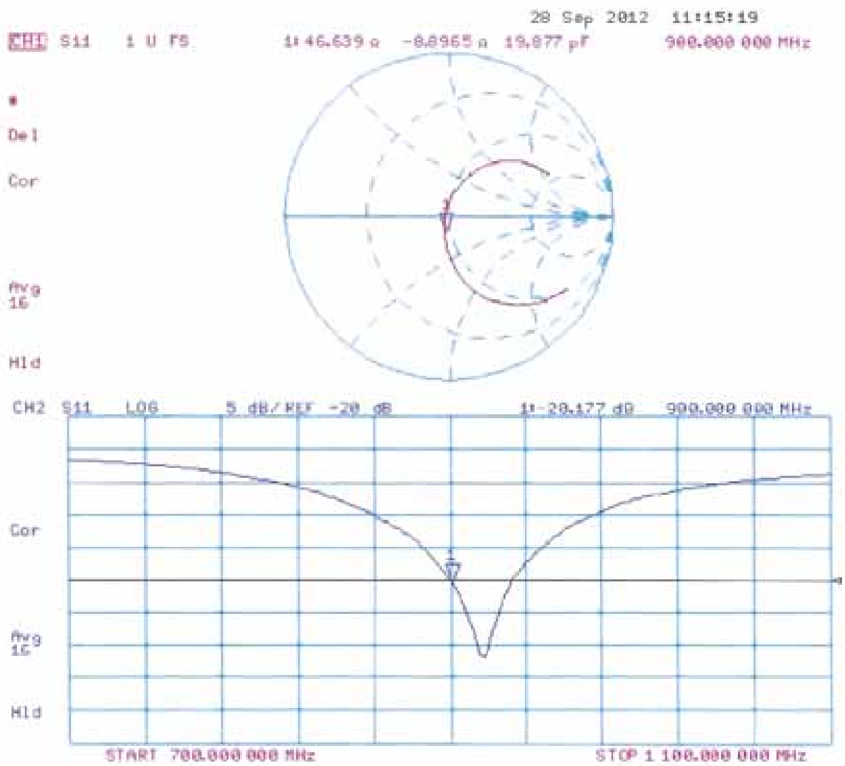
- Probe: ES3DV3 - SN3205; ConvF(5.94, 5.94, 5.94); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.155 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 4.294 mW/g
SAR(1 g) = 2.81 mW/g; SAR(10 g) = 1.8 mW/g
Maximum value of SAR (measured) = 3.29 W/kg



0 dB = 3.29 W/kg = 10.34 dB W/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 108**

Client **GCCT (Auden)**

Certificate No: **D1900V2-5d070_Oct12**

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d070
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	October 01, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	Israe El-Naouq
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 2, 2012

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Accreditation No.: **SCS 108**

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) 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	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.6 ± 6 %	1.37 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	9.89 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**40.2 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.22 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**21.1 mW /g ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.5 ± 6 %	1.54 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	10.3 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**40.7 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.47 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**21.7 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.7 Ω + 4.7 jΩ
Return Loss	- 25.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.5 Ω + 5.8 jΩ
Return Loss	- 24.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 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	January 24, 2006

DASY5 Validation Report for Head TSL

Date: 01.10.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d070

Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.37 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

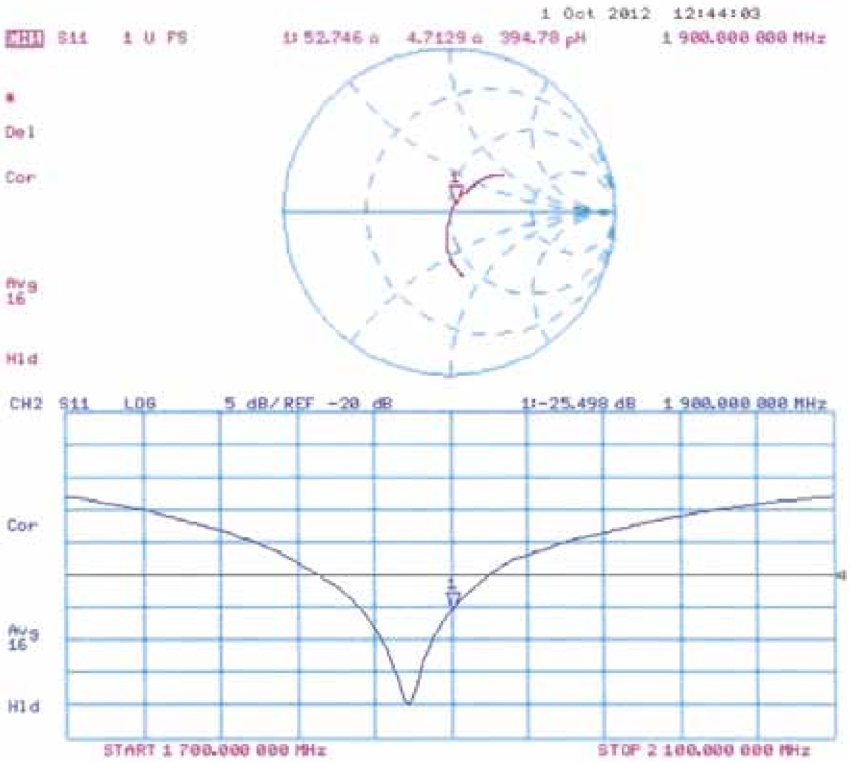
DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

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 = 95.678 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 17.559 mW/g
SAR(1 g) = 9.89 mW/g; SAR(10 g) = 5.22 mW/g
Maximum value of SAR (measured) = 12.2 W/kg

0 dB = 12.2 W/kg = 21.73 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 01.10.2012

Test Laboratory: SPEAG, Zurich, Switzerland

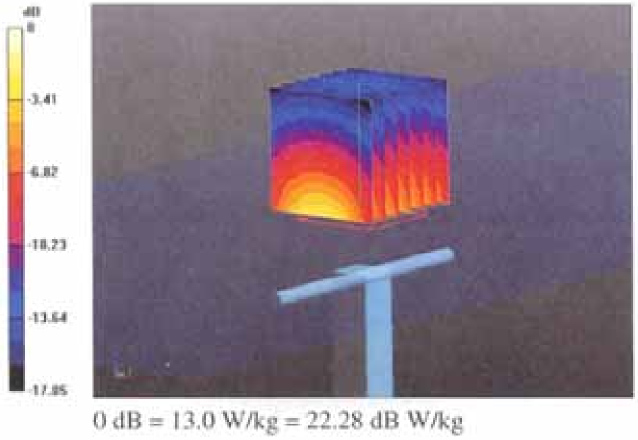
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d070

Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.54 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

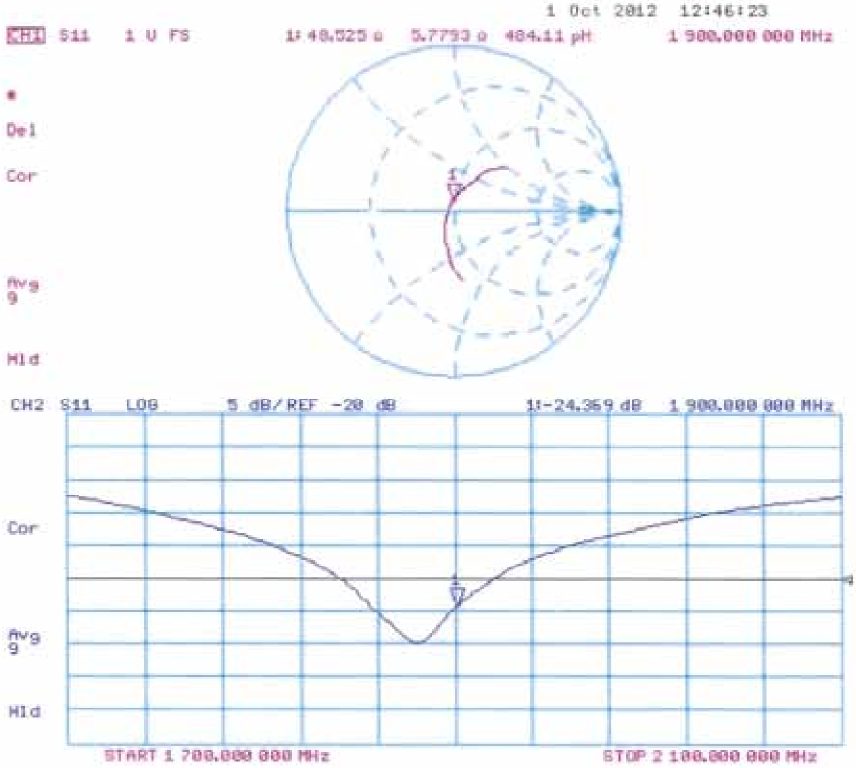
- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

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 = 95.678 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 18.097 mW/g
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.47 mW/g
Maximum value of SAR (measured) = 13.0 W/kg



0 dB = 13.0 W/kg = 22.28 dB W/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 108**

Client **GCCT (Auden)**

Certificate No: **D2450V2-815_Sep12**

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 815
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 26, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	Israe El-Naouq
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 26, 2012

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Accreditation No.: **SCS 108**

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) 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	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.9 ± 6 %	1.84 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	13.4 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**53.2 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.24 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**24.9 mW /g ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.0 ± 6 %	2.01 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	13.0 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**50.9 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.06 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**23.9 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.4 Ω + 3.0 jΩ
Return Loss	- 29.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7 Ω + 4.7 jΩ
Return Loss	- 26.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.158 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 23, 2007

DASY5 Validation Report for Head TSL

Date: 26.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

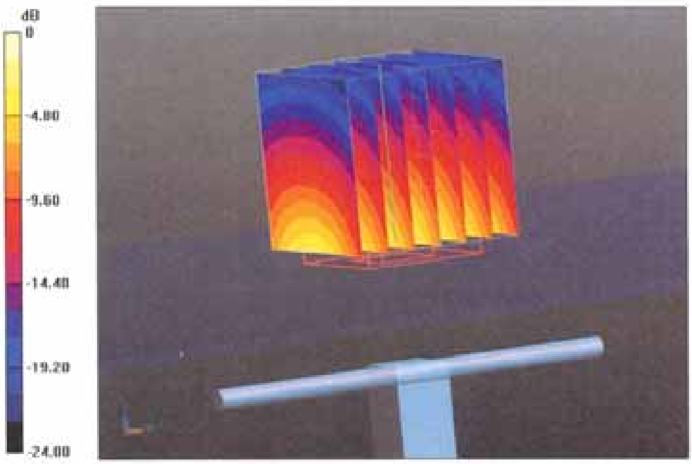
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 815

Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.84 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

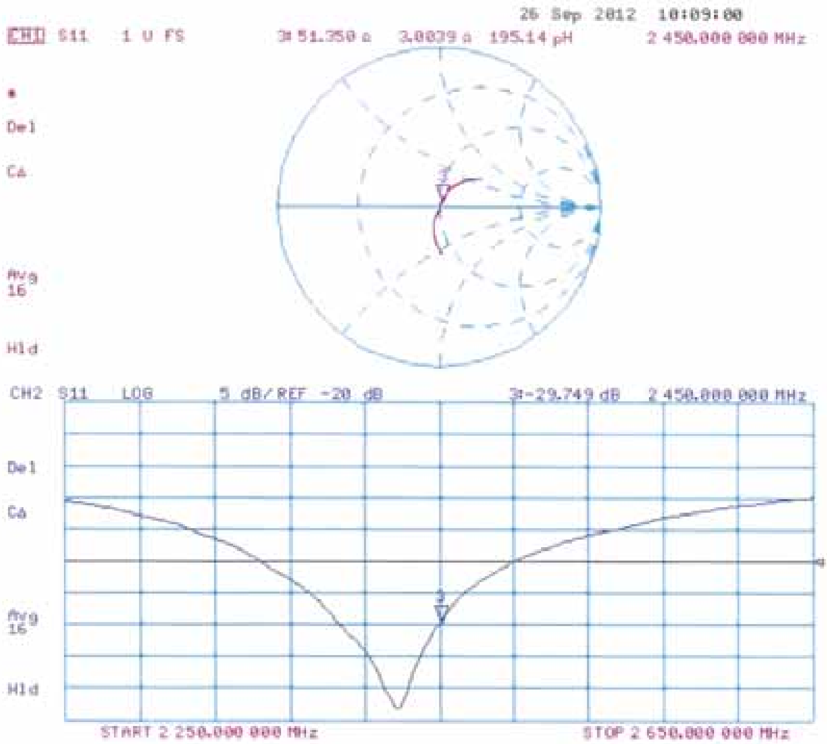
- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

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 = 99.653 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 27.468 mW/g
SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.24 mW/g
Maximum value of SAR (measured) = 16.9 W/kg



0 dB = 16.9 W/kg = 24.56 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 26.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

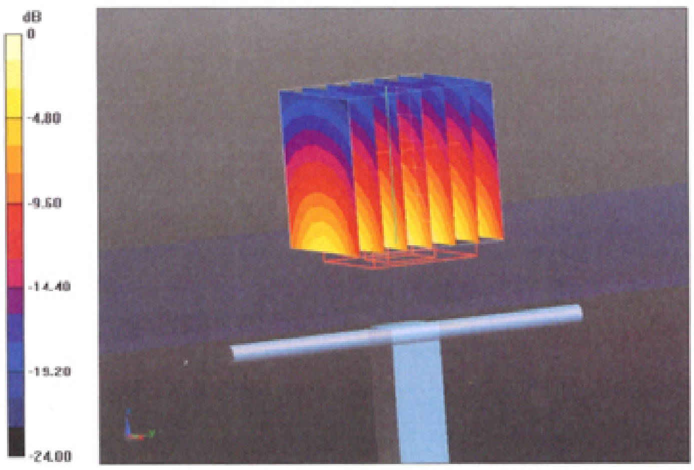
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 815

Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

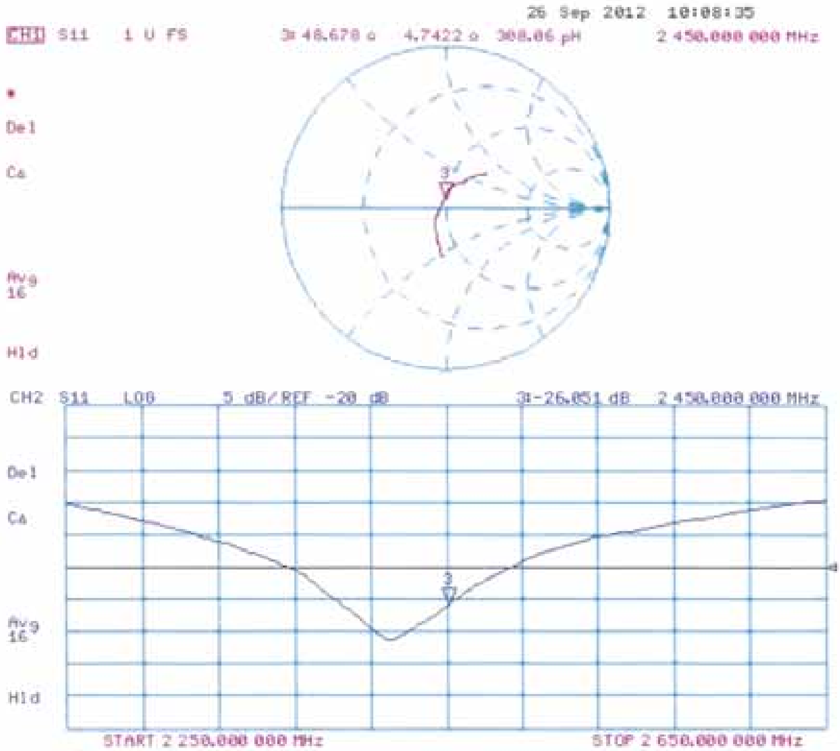
- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

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 = 95.205 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 27.024 mW/g
SAR(1 g) = 13 mW/g; SAR(10 g) = 6.06 mW/g
Maximum value of SAR (measured) = 17.0 W/kg



0 dB = 17.0 W/kg = 24.61 dB W/kg

Impedance Measurement Plot for Body TSL



ANNEXE 6 DAE calibration report

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **GCCT (Auden)**

Certificate No: **DAE4-893_Sep12**

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BJ - SN: 893
Calibration procedure(s)	QA CAL-06.v25 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	September 27, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	28-Sep-11 (No:11450)	Sep-12
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Calibrator Box V2.1	SE UWS 053 AA 1001	05-Jan-12 (in house check)	In house check: Jan-13

	Name	Function	Signature
Calibrated by:	Eric Hainfeld	Technician	
Approved by:	Fin Bomholt	R&D Director	i.V. [illegible]

Issued: September 27, 2012

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Accreditation No.: **SCS 108**

Glossary

DAE	data acquisition electronics
Connector angle	information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle*: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
    - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
    - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
    - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
    - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
    - *Input Offset Measurement*: Output voltage and statistical results over a large number of zero voltage measurements.
    - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
    - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
    - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
    - *Power consumption:* Typical value for information. Supply currents in various operating modes.

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV , full range = -100...+300 mV

Low Range: 1LSB = 61nV , full range = -1.......+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	406.225 ± 0.1% (k=2)	406.084 ± 0.1% (k=2)	405.117 ± 0.1% (k=2)
Low Range	4.01000 ± 0.7% (k=2)	4.02161 ± 0.7% (k=2)	3.98512 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	174.5 ° ± 1 °

Appendix

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199995.97	-2.11	-0.00
Channel X	+ Input	20003.49	2.31	0.01
Channel X	- Input	-19996.34	3.89	-0.02
Channel Y	+ Input	199996.46	-1.92	-0.00
Channel Y	+ Input	19999.56	-1.41	-0.01
Channel Y	- Input	-20000.29	0.07	-0.00
Channel Z	+ Input	199997.57	-0.73	-0.00
Channel Z	+ Input	19998.79	-2.14	-0.01
Channel Z	- Input	-20001.40	-1.01	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2003.38	2.07	0.10
Channel X	+ Input	202.34	0.57	0.28
Channel X	- Input	-197.99	0.01	-0.01
Channel Y	+ Input	2002.03	0.81	0.04
Channel Y	+ Input	200.97	-0.69	-0.34
Channel Y	- Input	-198.23	0.01	-0.01
Channel Z	+ Input	2002.07	0.82	0.04
Channel Z	+ Input	201.75	0.14	0.07
Channel Z	- Input	-200.05	-1.79	0.90

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	17.36	15.93
	- 200	-15.52	-16.86
Channel Y	200	7.39	6.92
	- 200	-8.23	-8.65
Channel Z	200	5.62	5.64
	- 200	-8.03	-8.06

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	3.18	-3.22
Channel Y	200	8.71	-	3.65
Channel Z	200	9.66	6.68	-

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16472	14639
Channel Y	16065	13652
Channel Z	15699	15904

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.78	-1.09	2.36	0.66
Channel Y	-0.06	-2.31	2.02	0.70
Channel Z	-0.52	-2.78	1.43	0.74

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9

*** END OF REPORT ***