

# SAR TEST REPORT

Equipment Under Test	CDMA cellular phone
Product Name	CDMA TS001
Company Name	Toshiba Corporation, Mobile Communications Co., Quality Management Division
Company Address	1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555, Japan
Date of Receipt	2008.12.10
Date of Test(s)	2008.12.12-2008.12.15
Date of Issue	2008.12.26

Standards:

**FCC OET Bulletin 65 supplement C,  
ANSI/IEEE C95.1, C95.3, IEEE 1528**

In the configuration tested, the EUT complied with the standards specified above.

## Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS Taiwan Electronic & Communication Laboratory or testing done by SGS Taiwan Electronic & Communication Laboratory in connection with distribution or use of the product described in this report must be approved by SGS Taiwan Electronic & Communication Laboratory in writing.

Tested by : Ricky Huang Date : 2008.12.26  
Asst. Supervisor

Approved by : Robert Chang Date : 2008.12.26  
Tech Manager

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Contents

1. General Information .....	3
1.1 Testing Laboratory .....	3
1.2 Details of Applicant .....	3
1.3 Description of EUT .....	3
1.4 Test Environment .....	5
1.5 Operation description .....	5
1.6 Positioning Procedure .....	6
1.7 EVALUATION PROCEDURES .....	7
1.8 The SAR Measurement System .....	9
1.9 System Components .....	11
1.10 SAR System Verification .....	12
1.11 Tissue Simulant Fluid for the Frequency Band .....	13
1.12 Test Standards and Limits .....	14
2. Summary of Results .....	17
3. Instruments List .....	20
4. Measurements .....	21
5. System Verification .....	52
6. DAE & Probe Calibration certificate .....	54
7. Uncertainty Analysis .....	64
8. Phantom description .....	65
9. System Validation from Original equipment supplier .....	66

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

# 1. General Information

## 1.1 Testing Laboratory

SGS Taiwan Ltd. Electronics & Communication Laboratory	
134, Wu Kung Road, Wuku industrial zone	
Taipei county, Taiwan, R.O.C.	
Telephone	+886-2-2299-3279
Fax	+886-2-2298-0488
Internet	<a href="http://www.tw.sgs.com/">http://www.tw.sgs.com/</a>

## 1.2 Details of Applicant

Company Name	Toshiba Corporation, Mobile Communications Co., Quality Management Division
Company Address	1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555, Japan
Contact Person	Takao Kamei
TEL	+81-42-585-3180
Fax	+81-42-585-3285
E-mail	<a href="mailto:takao.kamei@toshiba.co.jp">takao.kamei@toshiba.co.jp</a>

## 1.3 Description of EUT

EUT Name	CDMA cellular phone
Product Name	CDMA TS001
FCC ID	WVS-CN8-J01
Marketing Name	T001
MEID	A000006E70724

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Mode of Operation	Cellular Band	
Definition	Production unit	
Duty Cycle	Cellular	
	1	
Maximum RF Conducted Power (Average)	Cellular	
	24.48dbm	
TX Frequency Range (MHz)	Cellular	
	824.7-848.31	
Channel Number (ARFCN)	Cellular	
	1013-777	
Battery Type	3.7 V Lithium-Ion	
Antenna Type	Internal Antenna	
Declaration	<b>Second &amp; Third solution(change housing colors)</b>	
	This model CDMA TS001 defined three colors for housing, white is the main solution, gray and pink are the second and third solutions, in order to find SAR value of second and third solutions whether the same with main solution, we used spot-check method to check it. Finally, the check result,Cullular Band was within 20% deviation.	
Max. SAR Measured (1 g)	<b>Original solution(white housing)</b>	
	Head	Body
	<b>0.381 mW/g</b> (At Cellular Band_Right Head (Cheek Position)_ 384 Channel_repeated with Memory card)	<b>0.840 mW/g</b> (At Cellular Band_Body 384 Channel)

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Max. SAR Measured (1 g)	Second solution(gray housing)	
	Head	Body
	<b>0.358 mW/g</b> (At Cellular Band_Right Head (Cheek Position)_ 384 Channel_repeated with Memory card)	<b>0.879 mW/g</b> (At Cellular Band_Body 384 Channel)
Max. SAR Measured (1 g)	Third solution(pink housing)	
	Head	Body
	<b>0.364 mW/g</b> (At Cellular Band_Right Head (Cheek Position)_384 Channel_repeated with Memory card)	<b>0.872 mW/g</b> (At Cellular Band_Body 384 Channel)

## 1.4 Test Environment

Ambient Temperature: 22±2° C

Tissue Simulating Liquid: 22±2° C

## 1.5 Operation description

### General:

1. The EUT is controlled by using a Radio Communication Tester (R&S CMU200), and the communication between the EUT and the tester is established by air link.  
Measurements are performed respectively on the lowest, middle and highest channels of the operating band(s). The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.
2. During the SAR testing, the DASY4 system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.
3. Testing Head SAR at lowest, middle and highest channel for all bands with LET/LEC/RET/REC conditions.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

4. Testing body-worn SAR by separating **1.5cm** between back side of EUT to flat phantom.

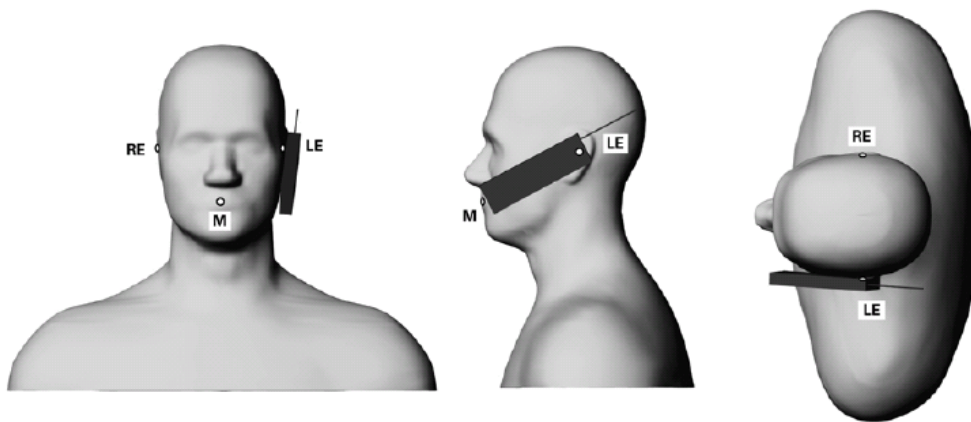
**Additional configuration (Head) :**

5. Testing SAR with dominant transmitter ON and co-located Bluetooth transmitter both ON for head-position worst case configuration.
6. For highest SAR configuration in this band repeated with external Memory card inside.

**Additional configuration (Body) :**

7. Testing body-worn SAR with Handset and Bluetooth transmitter OFF by separating **1.5cm** between front side of EUT to flat phantom.
8. Testing body-worn SAR with Handset and with Bluetooth transmitter ON at the body-worn worst case configuration.
9. For highest SAR configuration in this band repeated with external Memory card inside.
10. For highest SAR configuration in this band repeated with headset.

## 1.6 Positioning Procedure

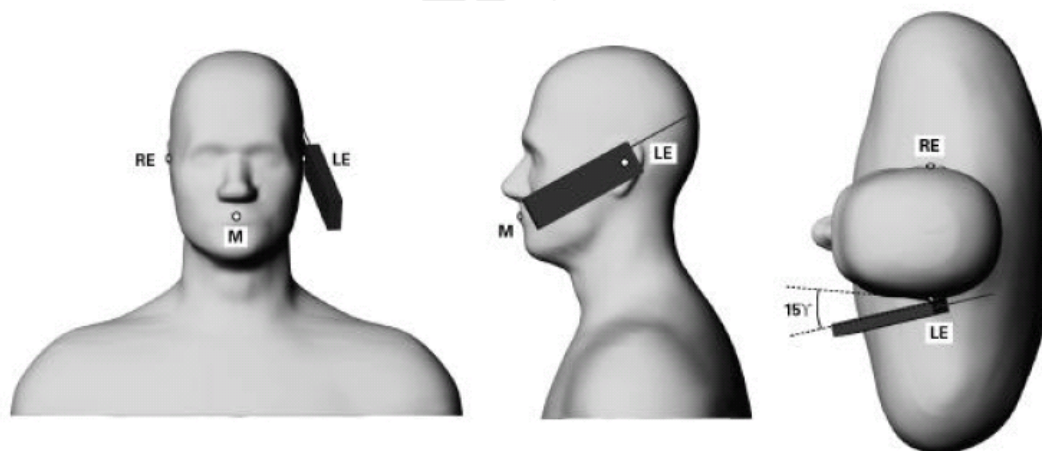


Phone position 1, "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.





Phone position 2, "tilted position." The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning

Cheek/Touch Position:

the handset was brought toward the mouth of the head phantom by pivoting against the ear reference point until any point of the mouthpiece or keypad touched the phantom.

Ear/Tilt Position:

With the phone aligned in the Cheek/Touch position, the handset was tilted away from the mouth with respect to the test device reference point by 15 degrees.

## 1.7 EVALUATION PROCEDURES

The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. The extraction of the measured data (grid and values) from the Zoom Scan.
2. The calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. The generation of a high-resolution mesh within the measured volume
4. The interpolation of all measured values from the measurement grid to the high-resolution grid

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

5. The extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. The calculation of the averaged SAR within masses of 1g and 10g.

The probe is calibrated at the center of the dipole sensors that is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated. The angle between the probe axis and the surface normal line is less than 30 degree.

In the Area Scan, the gradient of the interpolation function is evaluated to find all the extreme of the SAR distribution. The uncertainty on the locations of the extreme is less than 1/20 of the grid size. Only local maximum within -2 dB of the global maximum are searched and passed for the Cube Scan measurement. In the Cube Scan, the interpolation function is used to extrapolate the Peak SAR from the lowest measurement points to the inner phantom surface (the extrapolation distance). The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5mm.

The maximum search is automatically performed after each area scan measurement. It is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the area scanning measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations. The 1g and 10g peak evaluations are only available for the predefined cube 7x7x7 scans.

The routines are verified and optimized for the grid dimensions used in these cube measurements. The measured volume of 30x30x30mm contains about 30g of tissue. The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume. In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



This cube is moved around until the highest averaged SAR is found. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

## 1.8 The SAR Measurement System

A photograph of the SAR measurement System is given in Fig. a. This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY 4 professional system ). A Model EX3DV3 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation  $SAR = \sigma (|E_i|^2) / \rho$  where  $\sigma$  and  $\rho$  are the conductivity and mass density of the tissue-simulant.

A photograph of the SAR measurement System is given in Fig. a. This SAR Measurement

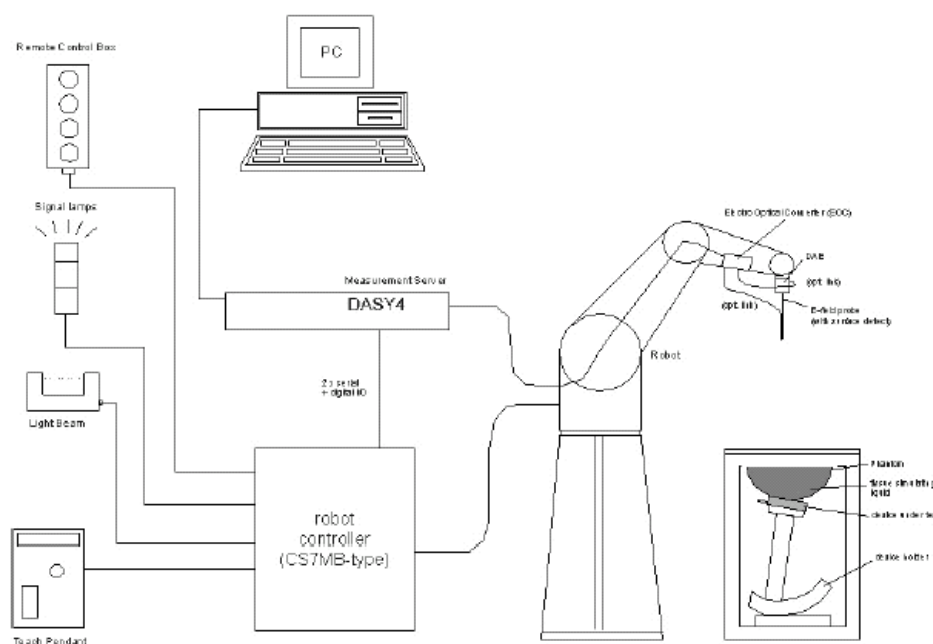


Fig.a The block diagram of SAR system

The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

An arm extension is for accommodating the data acquisition electronics (DAE).


- 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.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
  - A computer operating Windows 2000 or Windows XP.
  - DASY4 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
  - The SAM twin phantom enabling testing left-hand and right-hand usage.
  - The device holder for handheld mobile phones.
  - Tissue simulating liquid mixed according to the given recipes.
  - Validation dipole kits allowing to validate the proper functioning of the system.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## 1.9 System Components

### EX3DV3 E-Field Probe


Construction:	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration:	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL850 Additional CF for other liquids and frequencies upon request	
Frequency:	10 MHz to > 6 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)	
Directivity:	$\pm 0.3$ dB in HSL (rotation around probe axis) $\pm 0.5$ dB in tissue material (rotation normal to probe axis)	
Dynamic Range:	10 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)	
Dimensions:	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	
Application:	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

### SAM PHANTOM V4.0C


Construction:	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents 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 with the robot.
---------------	---

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Shell Thickness:	2 ± 0.2 mm	
Filling Volume:	Approx. 25 liters	
Dimensions:	Height: 251 mm; Length: 1000 mm; Width: 500 mm	

## DEVICE HOLDER

Construction	In combination with the Twin SAM Phantom V4.0/V4.0C or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).	 Device Holder
--------------	---	---

## 1.10 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 850 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1. During the tests, the ambient temperature of the laboratory was in the range 22.2°C, the relative humidity was in the range 62% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

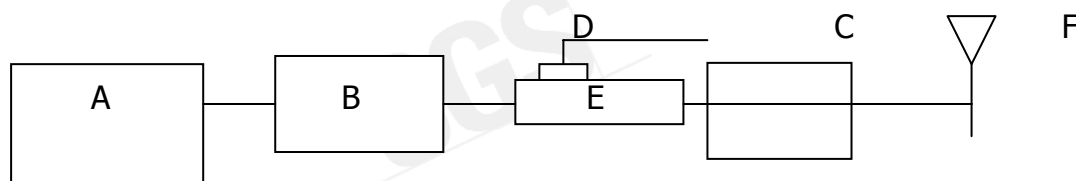
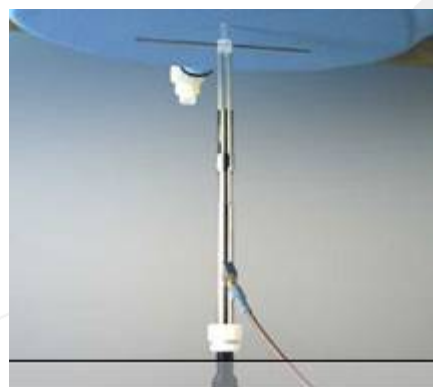


Fig.b The microwave circuit arrangement used for SAR system verification

- A. Agilent Model 8648D Signal Generator
- B. Mini circuits Model ZHL-42 Amplifier
- C. Agilent Model E4416A Power Meter
- D. Agilent Model 8481H Power Sensor
- E. Agilent Model 778D Dual directional coupling
- F. Reference dipole antenna



Photograph of the dipole Antenna

Validation Kit	Frequency (MHz)	Target SAR (1g) (Pin=250mW)	Measured SAR (1g)	Variation	Measured Date
D835V2 S/N: 4d063	835 MHz (Head)	2.29 mW/g	2.35 mW/g	2%	2008/12/12
D835V2 S/N: 4d063	835 MHz (Body)	2.44 mW/g	2.47 mW/g	1%	2008/12/15

Table 1. Result of System validation

## 1.11 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the HP Model 85070D Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with HP 8753D Network Analyzer (30 KHz-6000MHz) by using a procedure detailed in Section V.

All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The depth of the tissue simulant in the ear reference point of the phantom was 15cm±5mm during all tests. (Appendix Fig .2)

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Frequency (MHz)	Tissue type	Measurement date/ Limits	Dielectric Parameters		
			$\rho$	$\sigma$ (S/m)	Simulated Tissue Temperature(° C)
850	Head	Measured, 2008.12.12	43	0.897	21.7
		Recommended Limits	39.4-43.6	0.86-1.03	20-24
850	Body	Measured, 2008.12.15	56	0.954	21.7
		Recommended Limits	52.3-57.8	0.92-1.1	20-24

Table 2. Dielectric Parameters of Tissue Simulant Fluid

The composition of the brain tissue simulating liquid for 850 band:

Ingredient	850MHz (Head)	850MHz (Body)
DGMBE	X	X
Water	532.98 g	631.68 g
Salt	18.3 g	11.72 g
Preventol D-7	2.4 g	1.2 g
Cellulose	3.2 g	X
Sugar	766.0 g	600 g
Total amount	1 L (1.0kg)	1 L (1.0kg)

Table 3. Recipes for tissue simulating liquid

## 1.12 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate ("SAR") in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter. Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube). Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

(2) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.(Table .6)

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR (Brain)	1.60 m W/g	8.00 m W/g
Spatial Average SAR (Whole Body)	0.08 m W/g	0.40 m W/g
Spatial Peak SAR (Hands/Feet/Ankle/Wrist)	4.00 m W/g	20.00 m W/g

Table 4. RF exposure limits

## Notes:

1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## 2. Summary of Results

### Original solution measurement result (white housing) Cellular Band

Right Head (Cheek Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	1013	824.7	24.36dbm	0.218	22.1	21.7
	384	836.52	24.45dbm	0.329	22.1	21.7
	777	848.31	24.48dbm	0.3	22.1	21.7
Left Head (Cheek Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	1013	824.7	24.36dbm	0.186	22.1	21.7
	384	836.52	24.45dbm	0.289	22.1	21.7
	777	848.31	24.48dbm	0.291	22.1	21.7
Right Head (15° Tilt Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	1013	824.7	24.36dbm	0.119	22.1	21.7
	384	836.52	24.45dbm	0.229	22.1	21.7
	777	848.31	24.48dbm	0.201	22.1	21.7
Left Head (15° Tilt Position)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	1013	824.7	24.36dbm	0.116	22.1	21.7
	384	836.52	24.45dbm	0.237	22.1	21.7
	777	848.31	24.48dbm	0.2	22.1	21.7

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Right Head (Cheek Position)_repeated with Memory card						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.381	22.1	21.7
Right Head (Cheek Position)_repeated with Bluetooth active						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.346	22.1	21.7
Body worn						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	1013	824.7	24.36dbm	0.459	22.1	21.7
	384	836.52	24.45dbm	0.840	22.1	21.7
	777	848.31	24.48dbm	0.652	22.1	21.7
Body worn_ repeated for EUT front to phantom						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.345	22.1	21.7
Body worn_ repeated with Memory card						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.780	22.1	21.7
Body worn_ repeated with Bluetooth active						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.799	22.1	21.7
Body worn_ repeated with headset						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.557	22.1	21.7

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Second solution measurement result (gray housing)

### Cellular Band

Right Head (Cheek Position)_repeated with Memory card						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.358	22.1	21.7
Body worn						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.879	22.1	21.7

## Third solution measurement result (pink housing)

### Cellular Band

Right Head (Cheek Position)_repeated with Memory card						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.364	22.1	21.7
Body worn						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
850 MHz	384	836.52	24.45dbm	0.872	22.1	21.7

Note: SAR measurement results for the Mobile Phone at maximum output power.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

### 3. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration
Schmid & Partner Engineering AG	Dosimetric E-FieldProbe	EX3DV3	3526	Aug.26.2008
Schmid & Partner Engineering AG	850MHz System Validation Dipole	D835V2	4d063	Jun.06.2008
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	547	Jan.24.2008
Schmid & Partner Engineering AG	Software	DASY 4 V4.7 Build71	N/A	Calibration not required
Schmid & Partner Engineering AG	Phantom	SAM	N/A	Calibration not required
Agilent	Network Analyzer	8753D	3410A56662	Apr.16.2008
Agilent	Dielectric Probe Kit	85070D	US01440168	Calibration not required
Agilent	Dual-directional coupler	778D	50313	Aug.26.2008
Agilent	RF Signal Generator	E4438c	MY45093613	May.21.2008
Agilent	Power Sensor	8481H	MY41091361	May.20.2008
R&S	Radio Communication Test	CMU200	109326	Mar.11.2008

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## 4. Measurements

Date/Time: 2008/12/12 02:22:49

### Re Cheek\_CH1013

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 825 \text{ MHz}$ ;  $\sigma = 0.886 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.225 mW/g

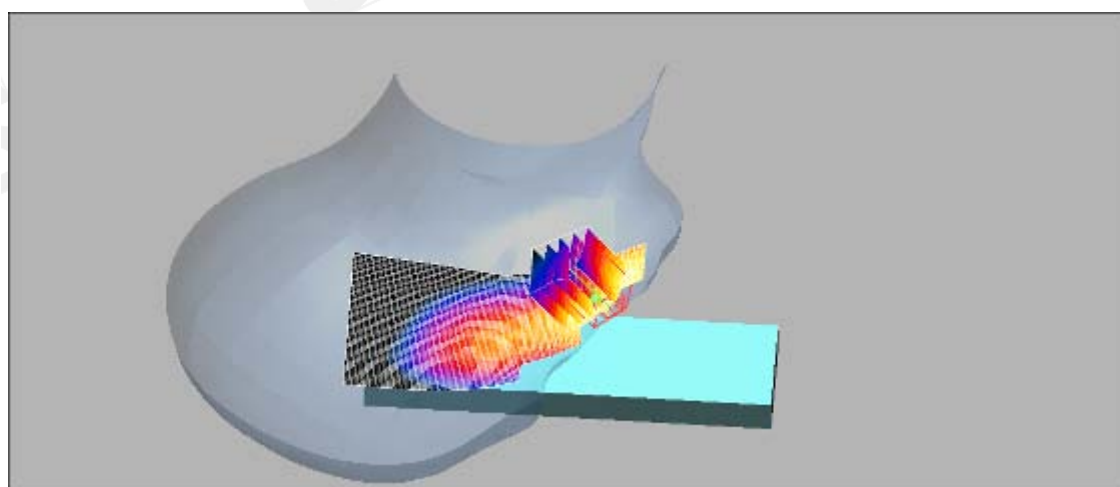
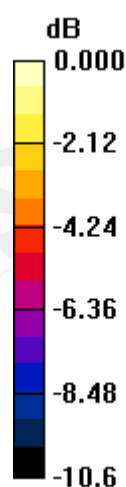
**RE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 3.84 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 0.315 W/kg

**SAR(1 g) = 0.218 mW/g; SAR(10 g) = 0.153 mW/g**

Maximum value of SAR (measured) = 0.241 mW/g



0 dB = 0.241mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Cheek\_CH384

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.346 mW/g

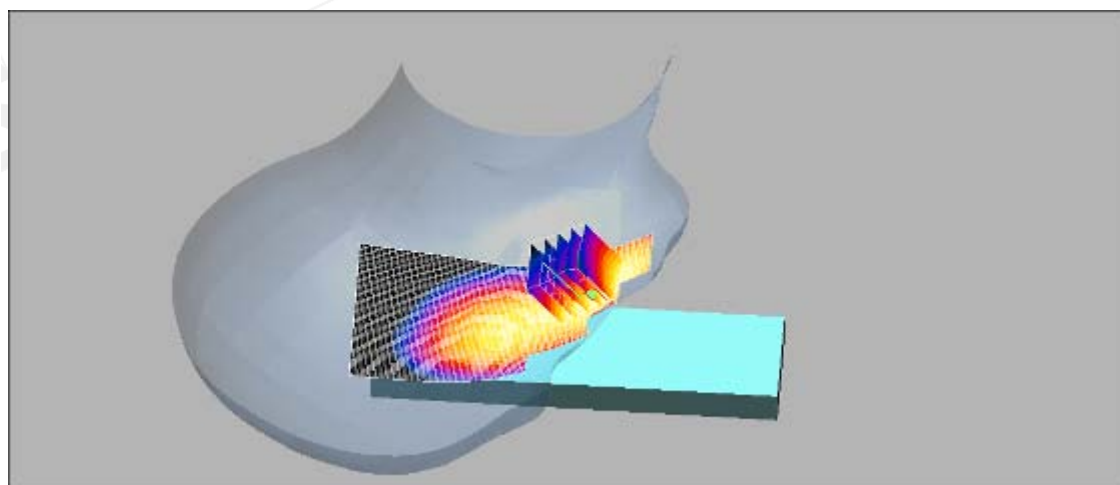
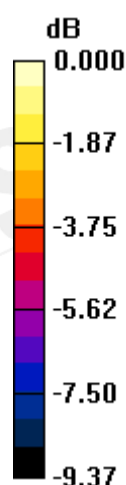
**RE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.40 V/m; Power Drift = -0.119 dB

Peak SAR (extrapolated) = 0.466 W/kg

**SAR(1 g) = 0.329 mW/g; SAR(10 g) = 0.229 mW/g**

Maximum value of SAR (measured) = 0.348 mW/g



0 dB = 0.348mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Cheek\_CH777

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated):  $f = 848.31 \text{ MHz}$ ;  $\sigma = 0.914 \text{ mho/m}$ ;  $\epsilon_r = 42.9$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.313 mW/g

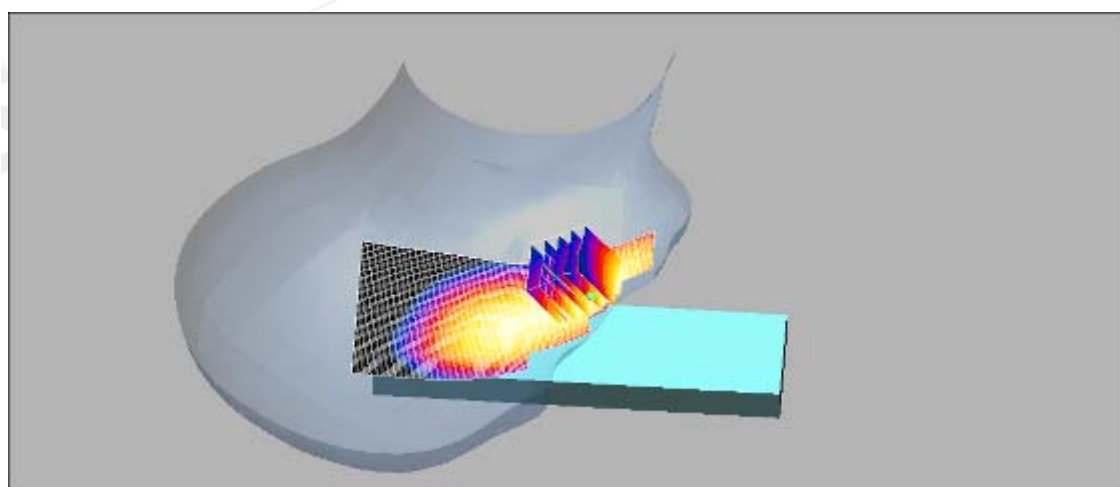
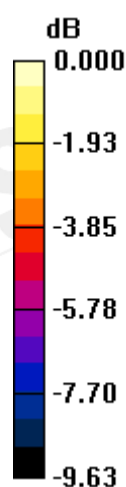
**RE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.21 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.427 W/kg

**SAR(1 g) = 0.300 mW/g; SAR(10 g) = 0.209 mW/g**

Maximum value of SAR (measured) = 0.319 mW/g



0 dB = 0.319mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Le Cheek\_CH1013

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 825 \text{ MHz}$ ;  $\sigma = 0.886 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**LE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.188 mW/g

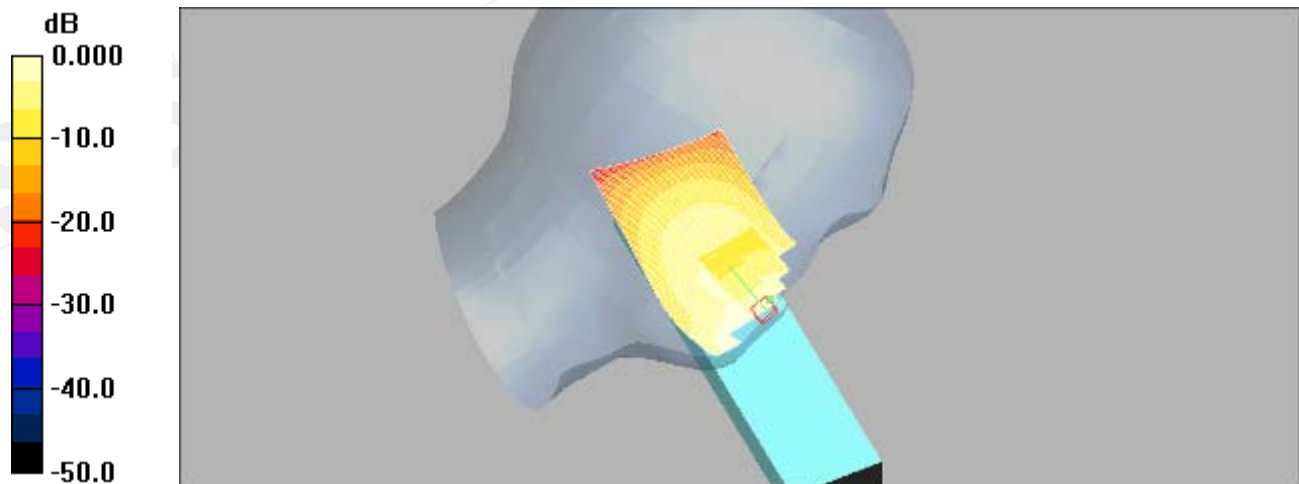
**LE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 3.71 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.261 W/kg

**SAR(1 g) = 0.186 mW/g; SAR(10 g)**

Maximum value of SAR (measured) = 0.209 mW/g



0 dB = 0.209mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Le Cheek\_CH384

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**LE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.292 mW/g

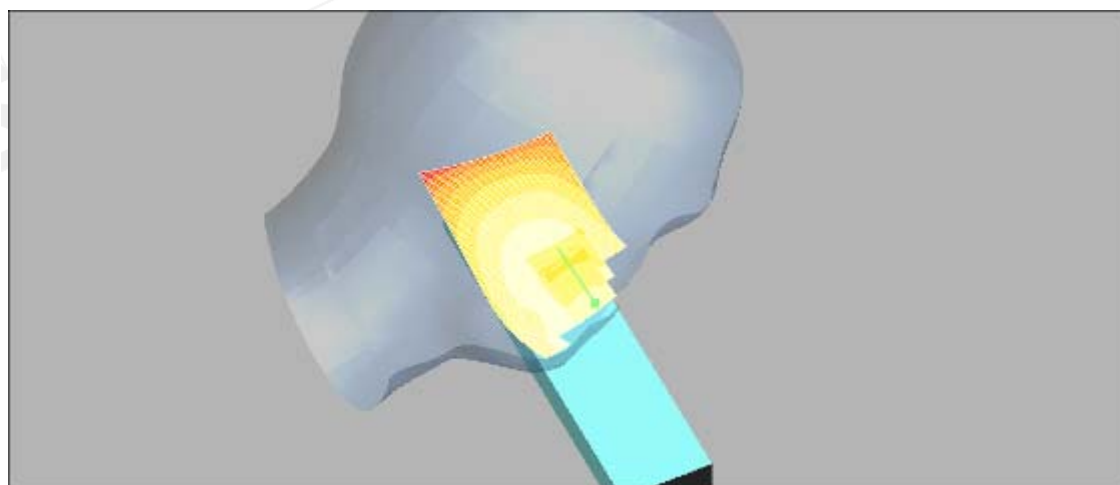
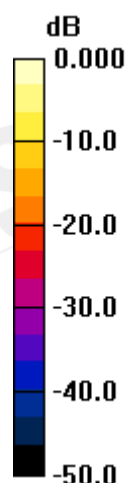
**LE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.38 V/m; Power Drift = 0.082 dB

Peak SAR (extrapolated) = 0.383 W/kg

**SAR(1 g) = 0.289 mW/g; SAR(10 g) = n.a.**

Maximum value of SAR (measured) = 0.308 mW/g



0 dB = 0.308mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## Le Cheek\_CH777

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated):  $f = 848.31 \text{ MHz}$ ;  $\sigma = 0.914 \text{ mho/m}$ ;  $\epsilon_r = 42.9$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**LE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.308 mW/g

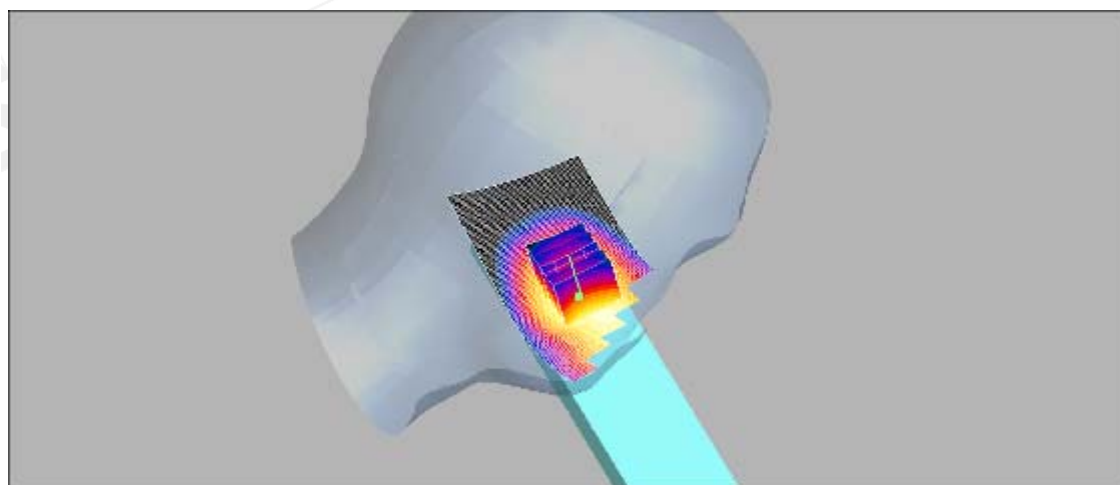
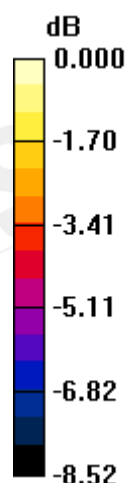
**LE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.36 V/m; Power Drift = 0.117 dB

Peak SAR (extrapolated) = 0.356 W/kg

**SAR(1 g) = 0.291 mW/g; SAR(10 g) = 0.220 mW/g**

Maximum value of SAR (measured) = 0.306 mW/g



0 dB = 0.306mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## Re Tilt\_CH1013

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 825 \text{ MHz}$ ;  $\sigma = 0.886 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Tilt/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
 Maximum value of SAR (interpolated) = 0.125 mW/g

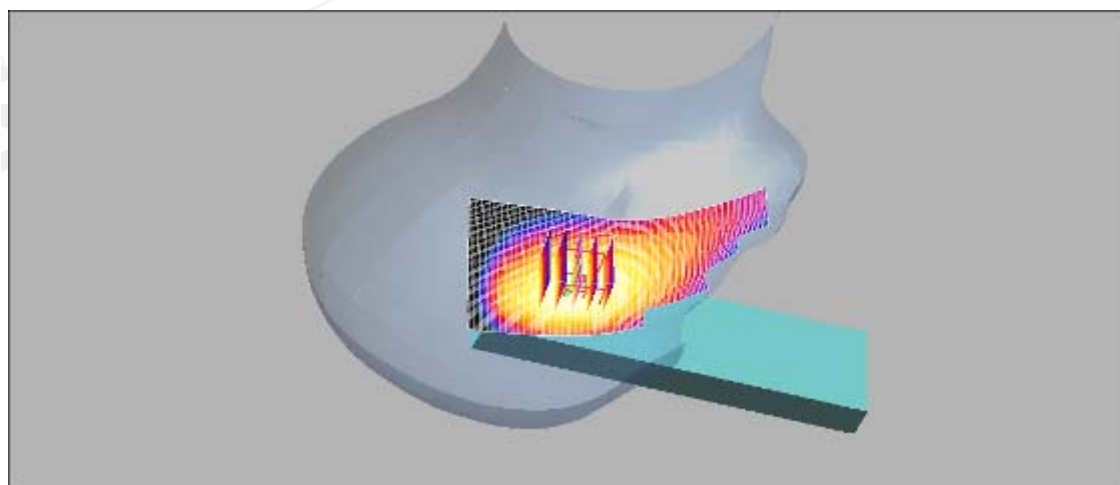
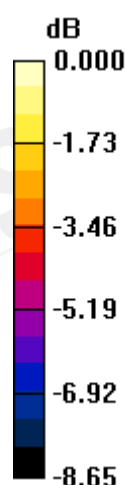
**RE\_Tilt/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.44 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 0.147 W/kg

**SAR(1 g) = 0.119 mW/g; SAR(10 g) = 0.091 mW/g**

Maximum value of SAR (measured) = 0.124 mW/g



0 dB = 0.124mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Tilt\_CH384

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Tilt/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.239 mW/g

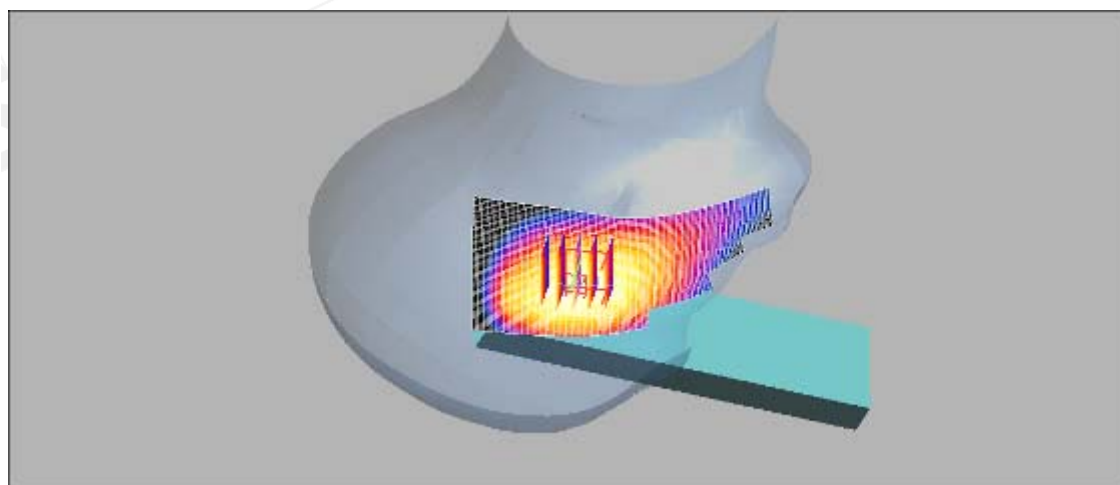
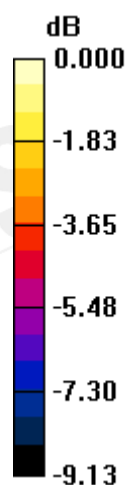
**RE\_Tilt/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.99 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.295 W/kg

**SAR(1 g) = 0.229 mW/g; SAR(10 g) = 0.174 mW/g**

Maximum value of SAR (measured) = 0.239 mW/g



0 dB = 0.239mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Tilt\_CH777

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated):  $f = 848.31 \text{ MHz}$ ;  $\sigma = 0.914 \text{ mho/m}$ ;  $\epsilon_r = 42.9$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Tilt/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.214 mW/g

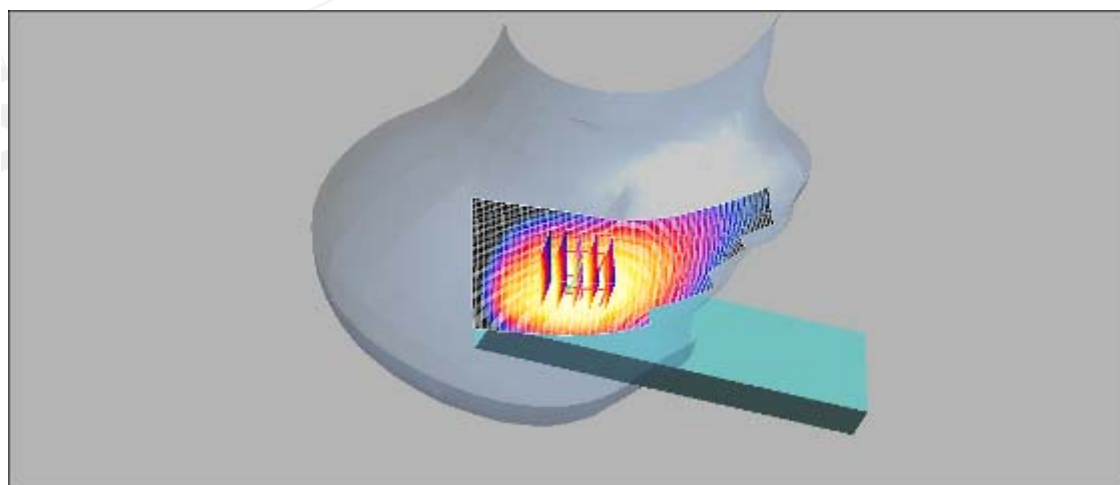
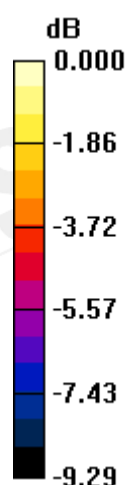
**RE\_Tilt/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 8.96 V/m; Power Drift = 0.033 dB

Peak SAR (extrapolated) = 0.262 W/kg

**SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.152 mW/g**

Maximum value of SAR (measured) = 0.211 mW/g



0 dB = 0.211mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Le Tilt\_CH1013

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 825 \text{ MHz}$ ;  $\sigma = 0.886 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**LE\_Tilt/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.121 mW/g

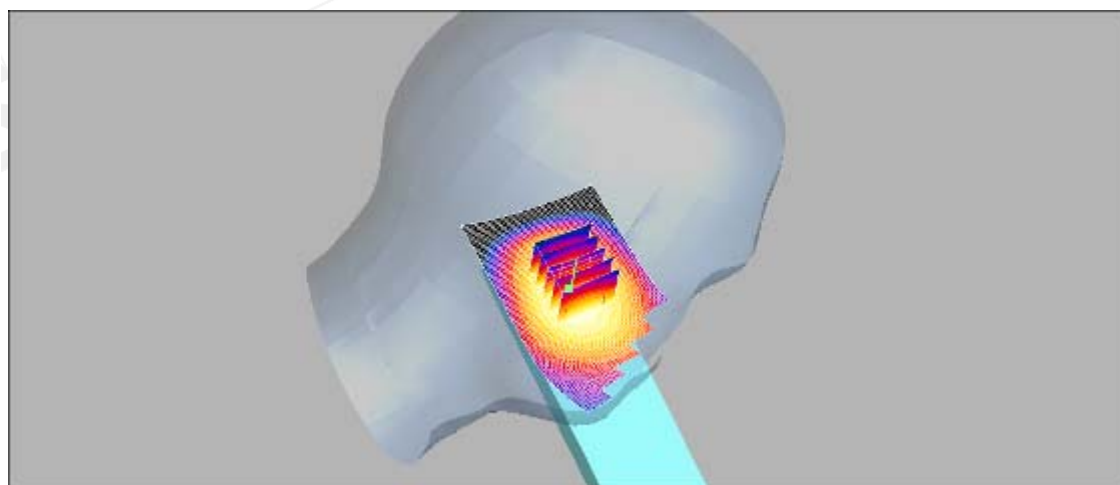
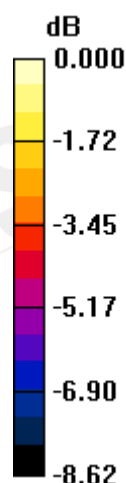
**LE\_Tilt/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.24 V/m; Power Drift = 0.158 dB

Peak SAR (extrapolated) = 0.150 W/kg

**SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.090 mW/g**

Maximum value of SAR (measured) = 0.120 mW/g



0 dB = 0.120mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Le Tilt\_CH384

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1  
Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

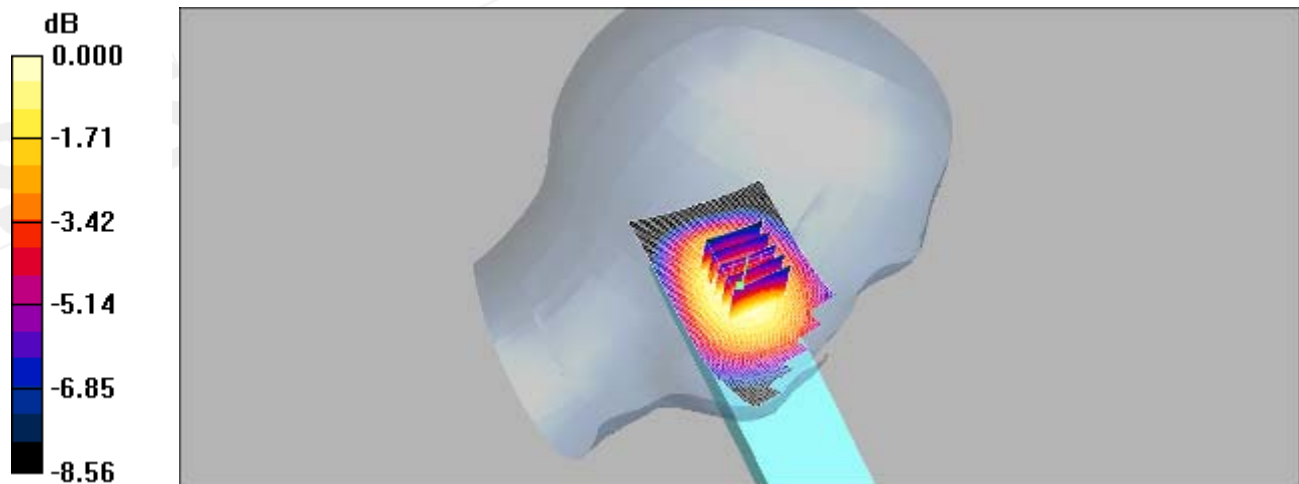
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**LE\_Tilt/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.254 mW/g

**LE\_Tilt/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$   
Reference Value = 10.1 V/m; Power Drift = 0.138 dB  
Peak SAR (extrapolated) = 0.300 W/kg

**SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.180 mW/g**  
Maximum value of SAR (measured) = 0.248 mW/g



0 dB = 0.248mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## Le Tilt\_CH777

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated):  $f = 848.31 \text{ MHz}$ ;  $\sigma = 0.914 \text{ mho/m}$ ;  $\epsilon_r = 42.9$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**LE\_Tilt/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.213 mW/g

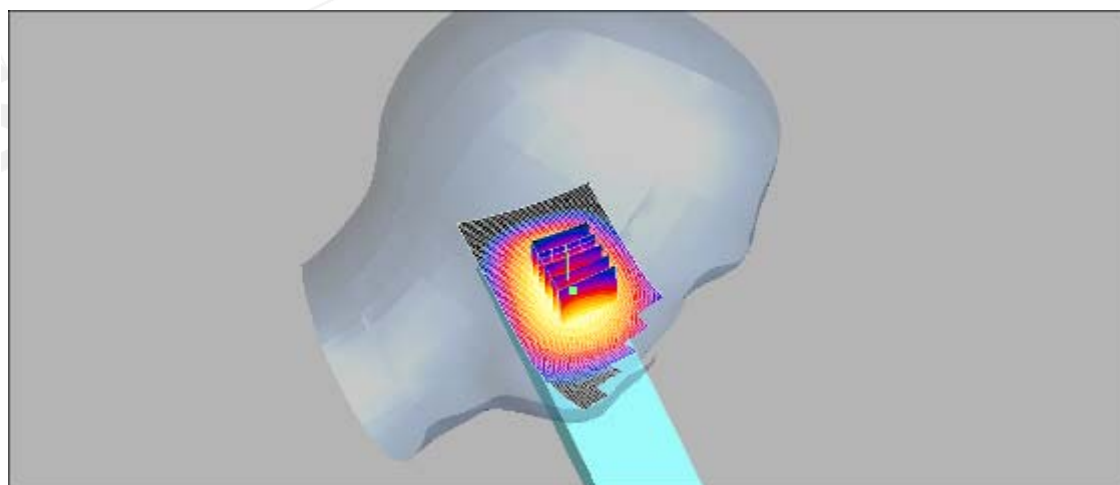
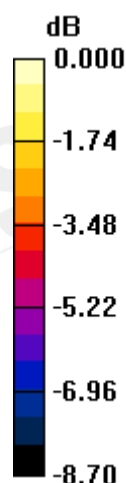
**LE\_Tilt/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.15 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 0.253 W/kg

**SAR(1 g) = 0.200 mW/g; SAR(10 g) = 0.152 mW/g**

Maximum value of SAR (measured) = 0.208 mW/g



0 dB = 0.208mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Cheek\_CH384\_repeated with Memory card

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.407 mW/g

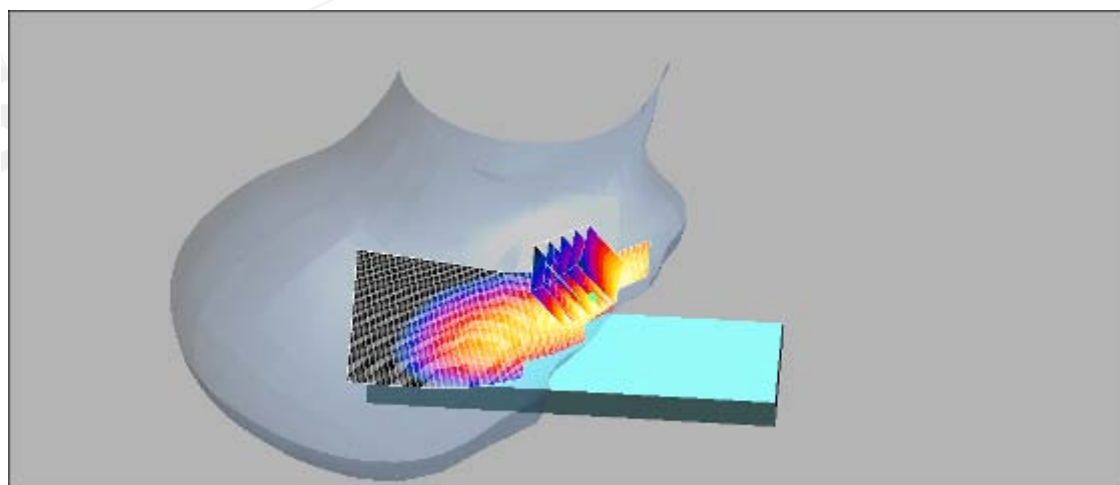
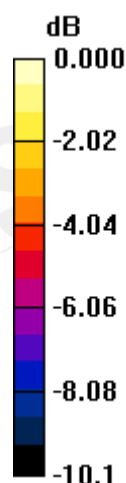
**RE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.18 V/m; Power Drift = -0.119 dB

Peak SAR (extrapolated) = 0.560 W/kg

**SAR(1 g) = 0.381 mW/g; SAR(10 g) = 0.264 mW/g**

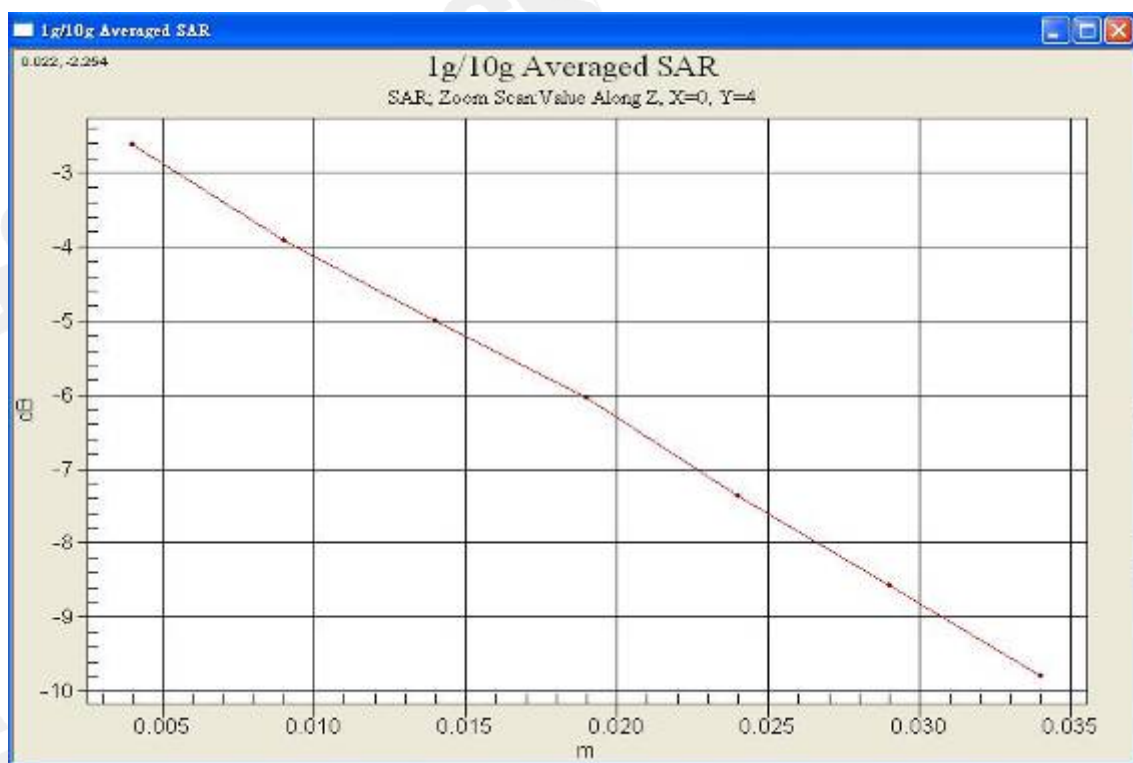
Maximum value of SAR (measured) = 0.411 mW/g



0 dB = 0.411mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Cheek\_CH384\_repeated with Bluetooth active

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.367 mW/g

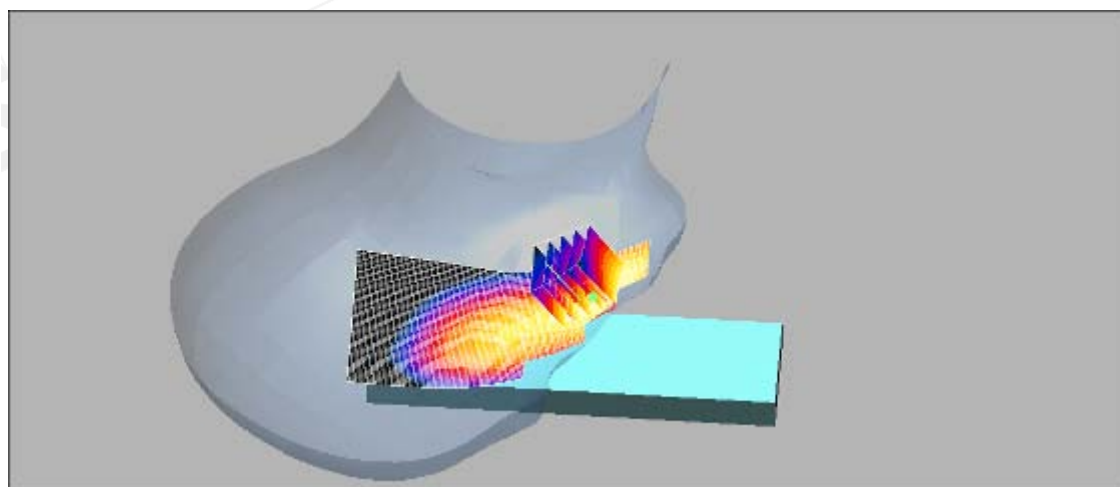
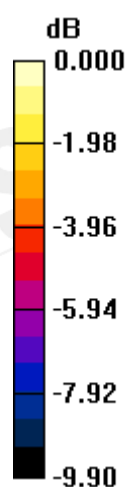
**RE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.18 V/m; Power Drift = -0.145 dB

Peak SAR (extrapolated) = 0.492 W/kg

**SAR(1 g) = 0.346 mW/g; SAR(10 g) = 0.242 mW/g**

Maximum value of SAR (measured) = 0.367 mW/g



0 dB = 0.367mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Body\_CH1013

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used:  $f = 825 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

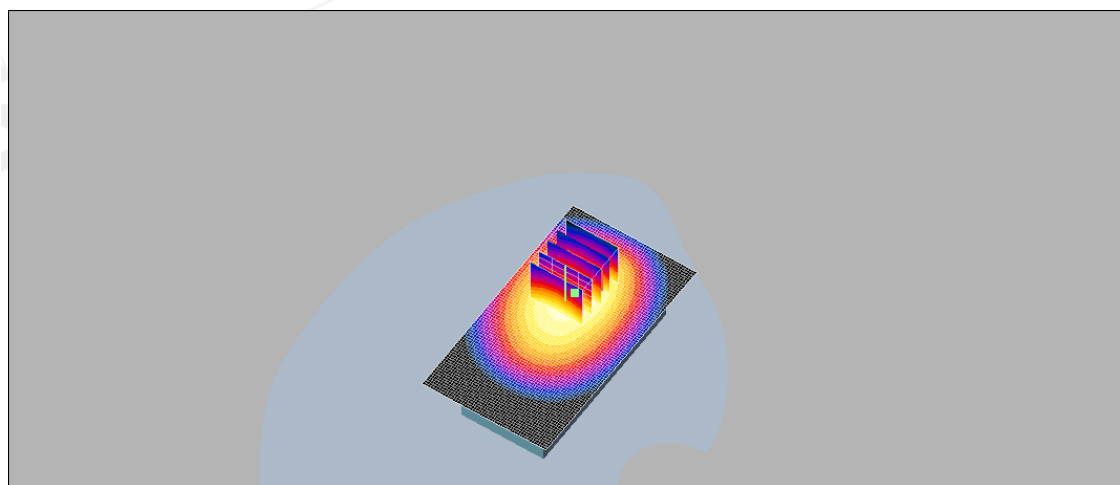
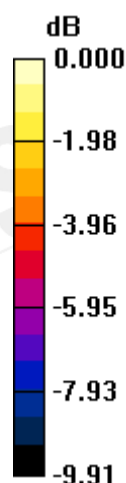
**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 7.68 V/m; Power Drift = -0.075 dB

Peak SAR (extrapolated) = 0.609 W/kg

**SAR(1 g) = 0.459 mW/g; SAR(10 g) = 0.335 mW/g**

Maximum value of SAR (measured) = 0.483 mW/g



0 dB = 0.483mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## Body\_CH384

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1  
Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 836.52 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

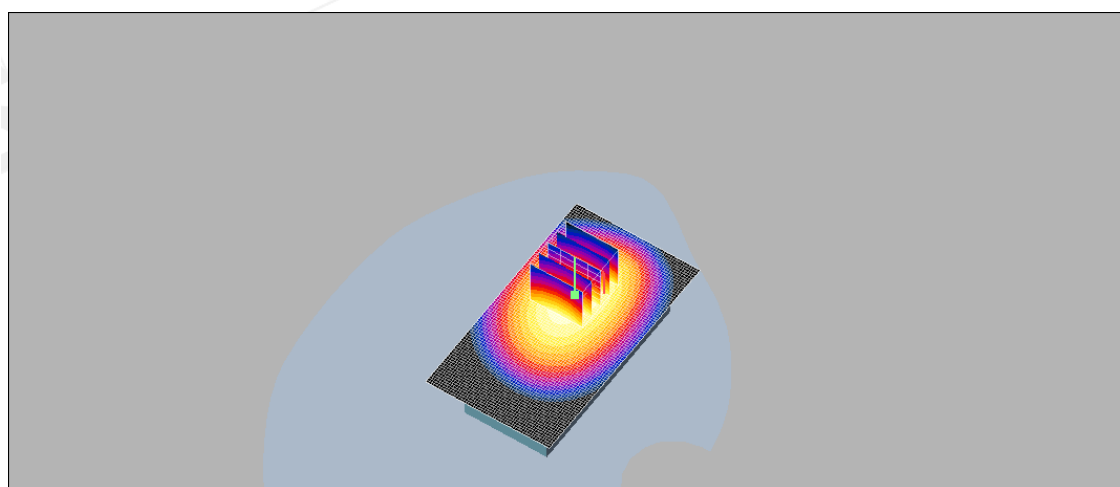
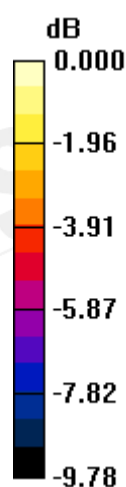
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.892 mW/g

**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$   
Reference Value = 10.7 V/m; Power Drift = -0.134 dB  
Peak SAR (extrapolated) = 1.14 W/kg

**SAR(1 g) = 0.840 mW/g; SAR(10 g) = 0.609 mW/g**  
Maximum value of SAR (measured) = 0.883 mW/g



0 dB = 0.883mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Body\_CH777

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 848.31 MHz; Duty Cycle: 1:1  
Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 848.31 \text{ MHz}$ ;  $\sigma = 0.954 \text{ mho/m}$ ;  $\epsilon_r = 54.1$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

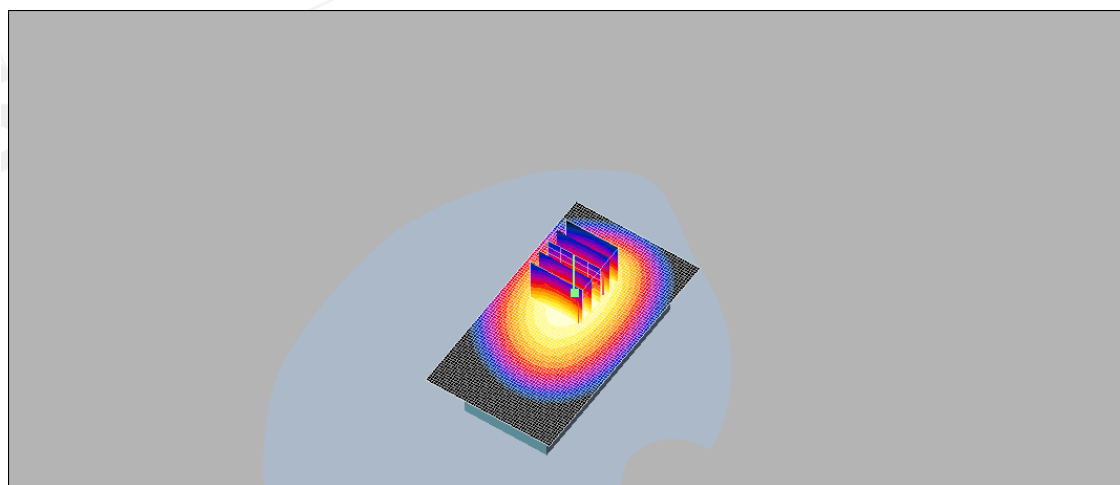
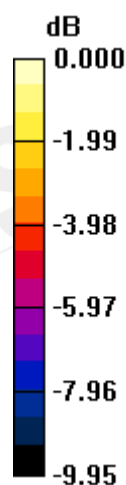
DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.694 \text{ mW/g}$

**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$   
Reference Value =  $9.71 \text{ V/m}$ ; Power Drift =  $0.113 \text{ dB}$   
Peak SAR (extrapolated) =  $0.856 \text{ W/kg}$

**SAR(1 g) =  $0.652 \text{ mW/g}$ ; SAR(10 g) =  $0.472 \text{ mW/g}$**   
Maximum value of SAR (measured) =  $0.681 \text{ mW/g}$



0 dB =  $0.681 \text{ mW/g}$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Body\_CH384\_ repeated for EUT front to phantom

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 836.52 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.379 \text{ mW/g}$

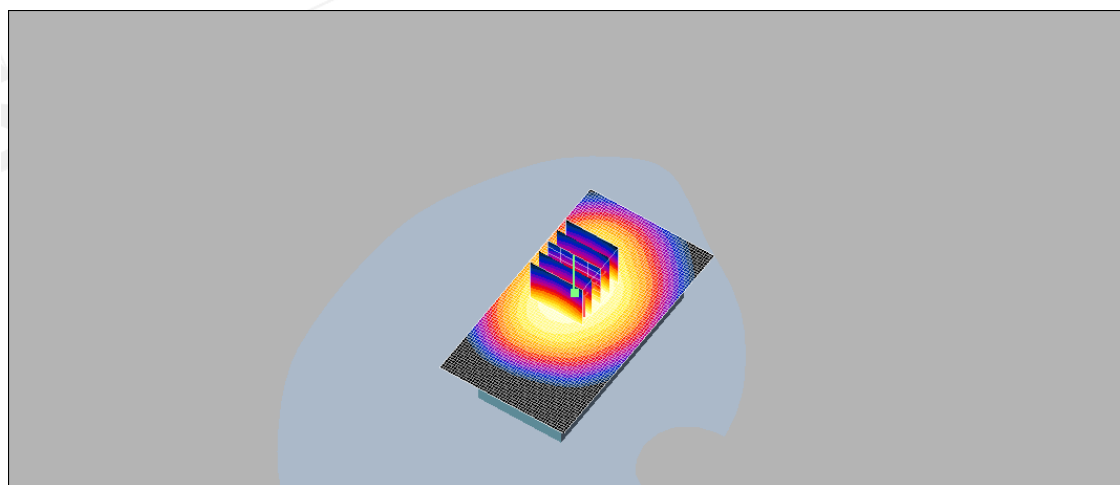
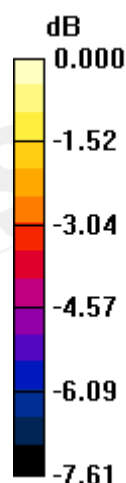
**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $9.58 \text{ V/m}$ ; Power Drift =  $-0.111 \text{ dB}$

Peak SAR (extrapolated) =  $0.440 \text{ W/kg}$

**SAR(1 g) =  $0.345 \text{ mW/g}$ ; SAR(10 g) =  $0.262 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.359 \text{ mW/g}$



0 dB =  $0.359 \text{ mW/g}$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Body\_CH384\_repeated with Memory card

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 836.52 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.853 \text{ mW/g}$

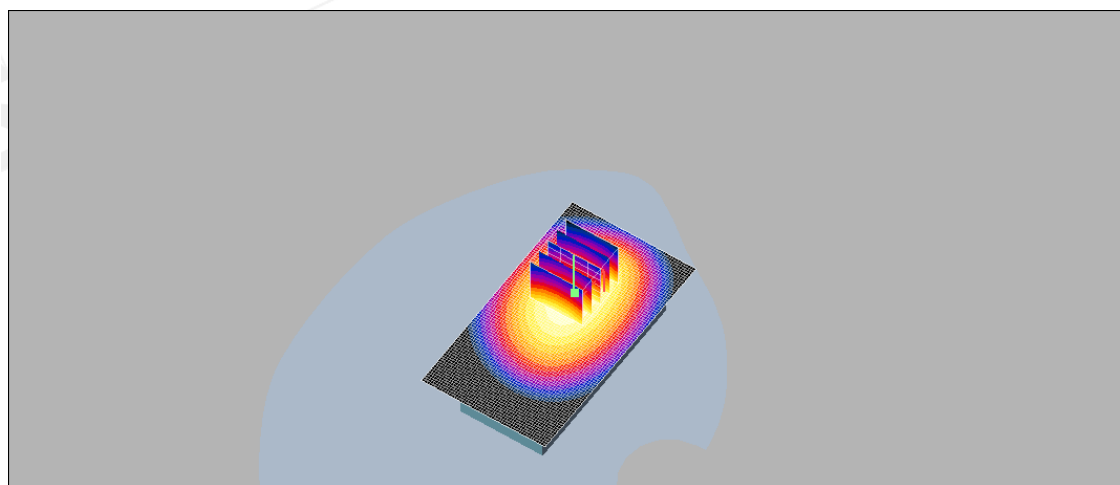
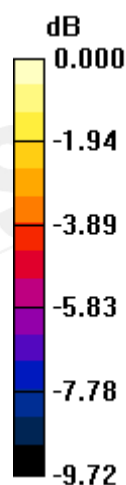
**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $10.3 \text{ V/m}$ ; Power Drift =  $-0.127 \text{ dB}$

Peak SAR (extrapolated) =  $1.04 \text{ W/kg}$

**SAR(1 g) =  $0.780 \text{ mW/g}$ ; SAR(10 g) =  $0.569 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.832 \text{ mW/g}$



0 dB =  $0.832 \text{ mW/g}$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## Body\_CH384\_repeated with Bluetooth active

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 836.52 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.861 mW/g

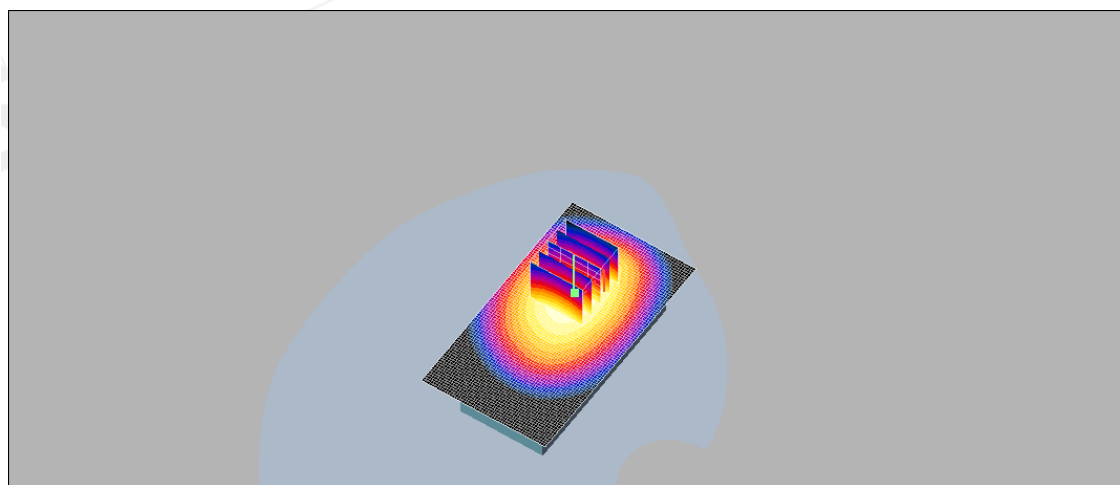
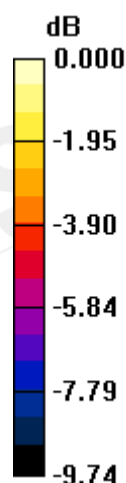
**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 9.91 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 1.05 W/kg

**SAR(1 g) = 0.799 mW/g; SAR(10 g) = 0.581 mW/g**

Maximum value of SAR (measured) = 0.842 mW/g



0 dB = 0.842mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Body\_CH384\_repeated with headset

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 836.52 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.603 mW/g

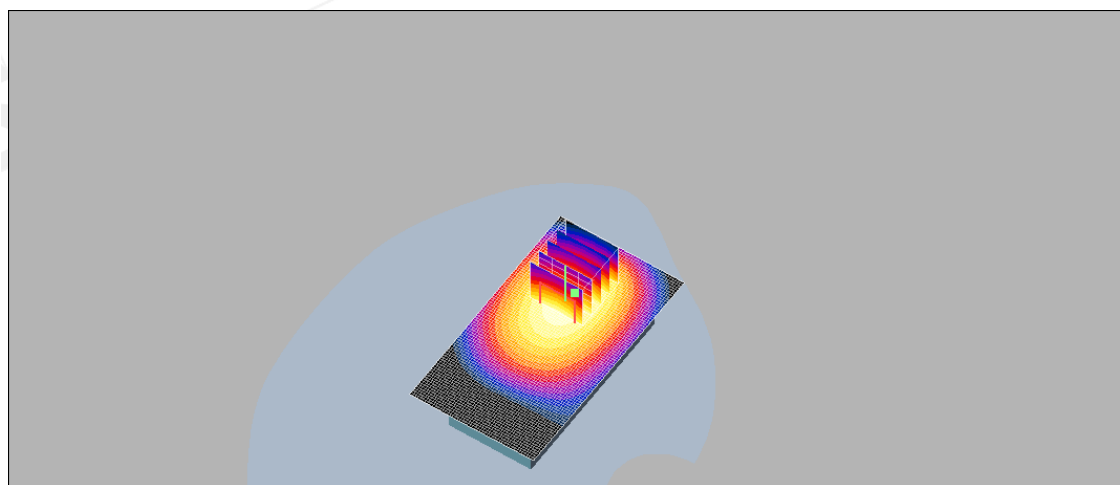
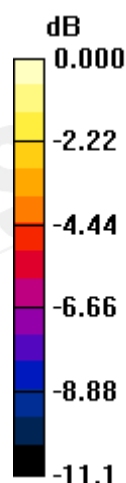
**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 6.24 V/m; Power Drift = 0.112 dB

Peak SAR (extrapolated) = 0.749 W/kg

**SAR(1 g) = 0.557 mW/g; SAR(10 g) = 0.399 mW/g**

Maximum value of SAR (measured) = 0.586 mW/g



0 dB = 0.586mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Cheek\_CH384\_repeated with Memory card

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.376 mW/g

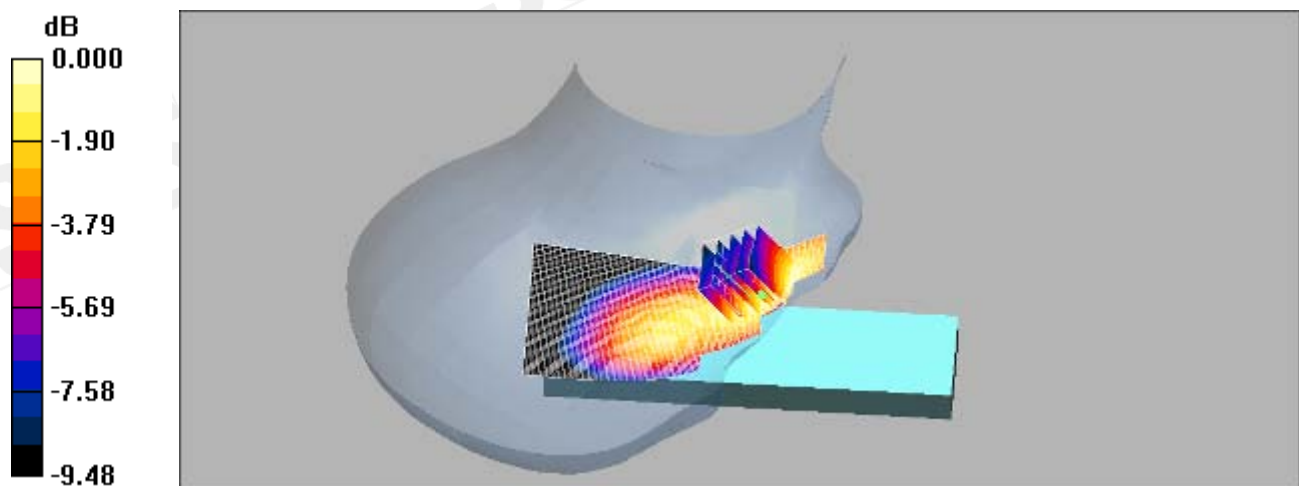
**RE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 6.28 V/m; Power Drift = -0.150 dB

Peak SAR (extrapolated) = 0.520 W/kg

**SAR(1 g) = 0.358 mW/g; SAR(10 g) = 0.249 mW/g**

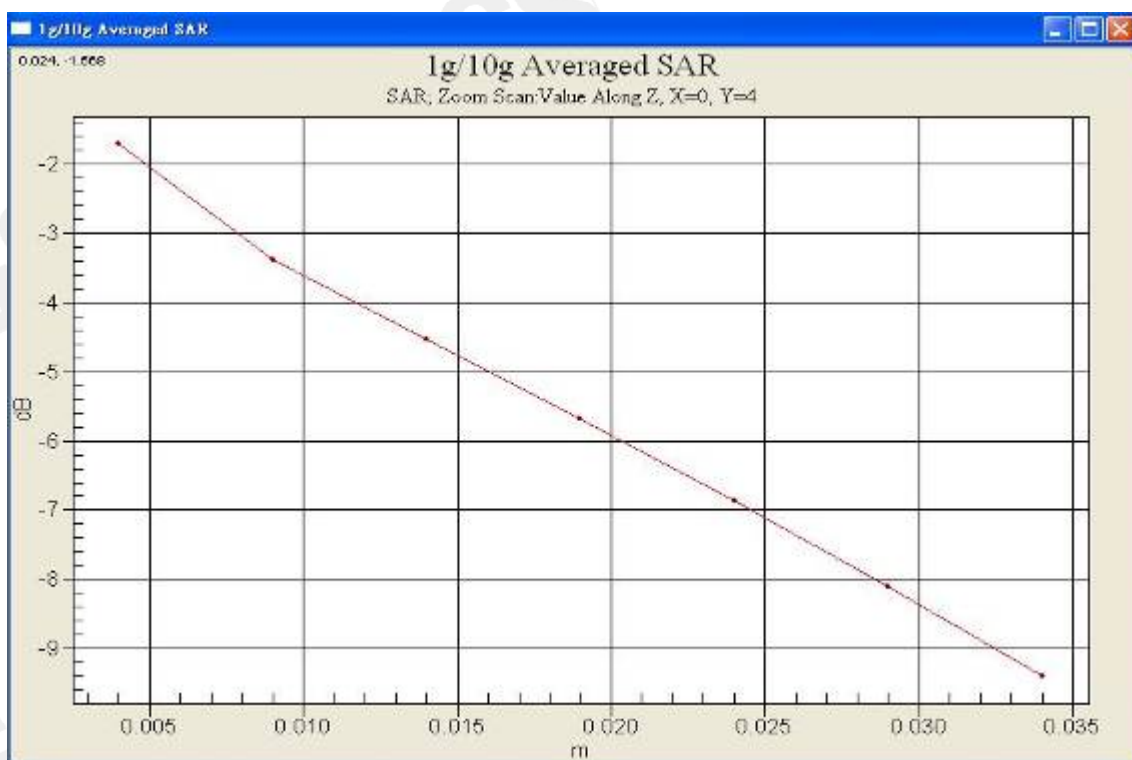
Maximum value of SAR (measured) = 0.383 mW/g



0 dB = 0.383mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Body\_CH384

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1  
Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 836.52 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.950 \text{ mW/g}$

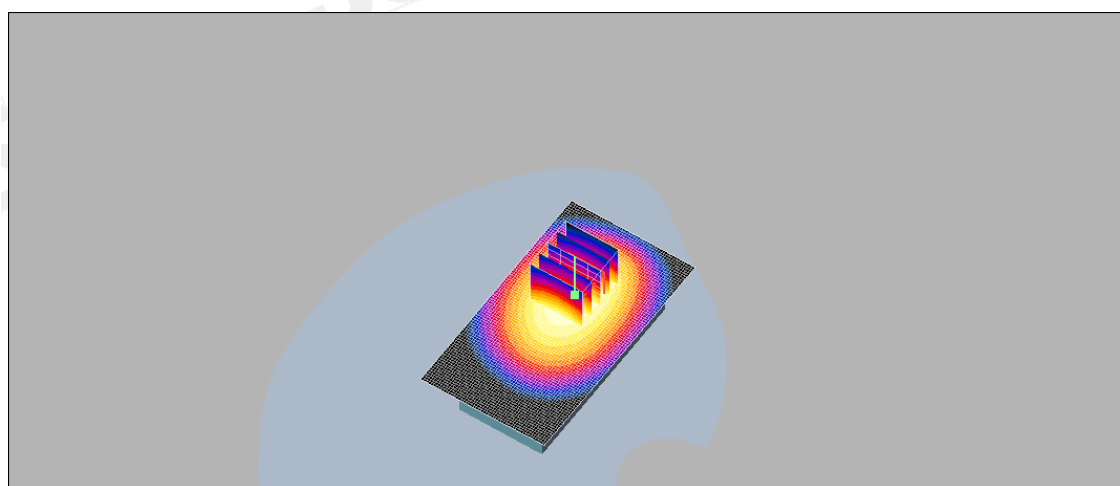
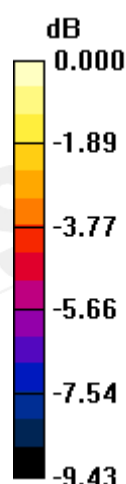
**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $11.4 \text{ V/m}$ ; Power Drift =  $-0.100 \text{ dB}$

Peak SAR (extrapolated) =  $1.16 \text{ W/kg}$

**SAR(1 g) =  $0.879 \text{ mW/g}$ ; SAR(10 g) =  $0.641 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.925 \text{ mW/g}$



0 dB =  $0.925 \text{ mW/g}$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Re Cheek\_CH384\_repeated with Memory card

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE\_Cheek/Area Scan (51x151x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.382 mW/g

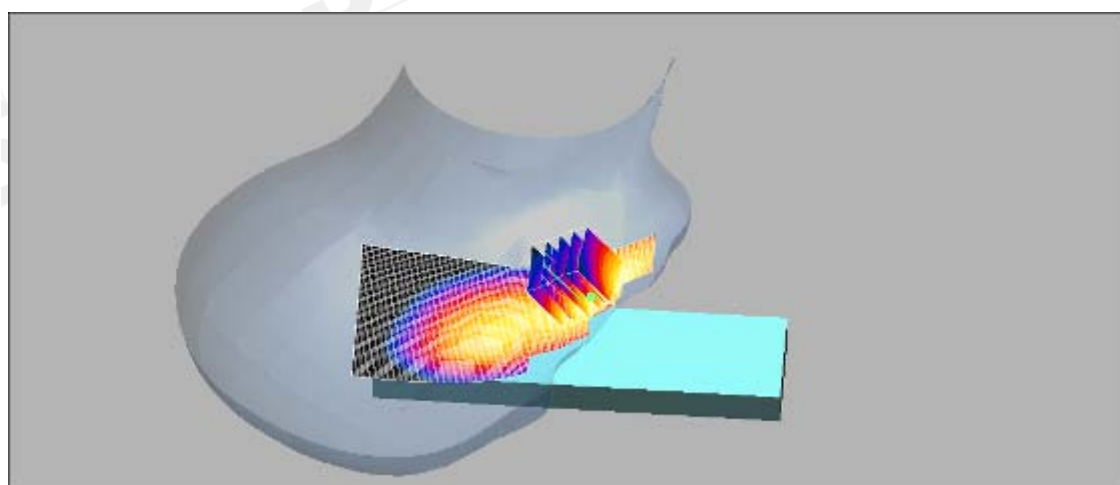
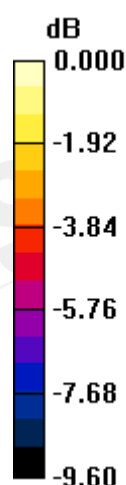
**RE\_Cheek/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 6.72 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 0.536 W/kg

**SAR(1 g) = 0.364 mW/g; SAR(10 g) = 0.252 mW/g**

Maximum value of SAR (measured) = 0.390 mW/g



0 dB = 0.390mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## Body\_CH384

DUT: CDMA TS001;

Communication System: CDMA\_850; Frequency: 836.52 MHz; Duty Cycle: 1:1  
Medium: Muscle 900 MHz Medium parameters used (interpolated):  $f = 836.52 \text{ MHz}$ ;  $\sigma = 0.952 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**body/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.949 \text{ mW/g}$

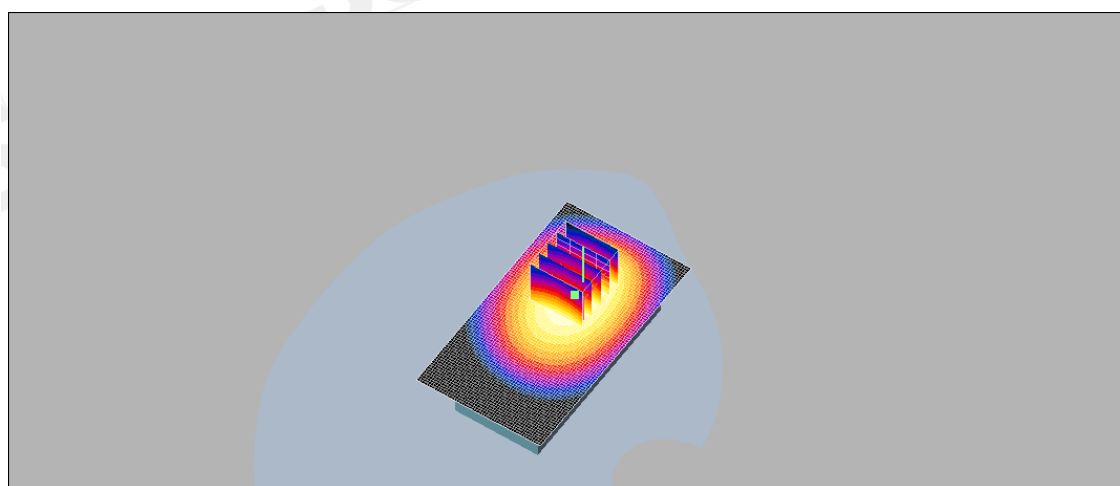
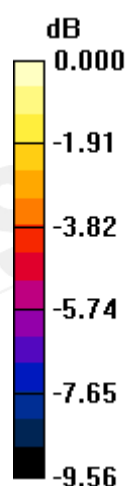
**body/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $10.2 \text{ V/m}$ ; Power Drift =  $-0.183 \text{ dB}$

Peak SAR (extrapolated) =  $1.14 \text{ W/kg}$

**SAR(1 g) =  $0.872 \text{ mW/g}$ ; SAR(10 g) =  $0.637 \text{ mW/g}$**

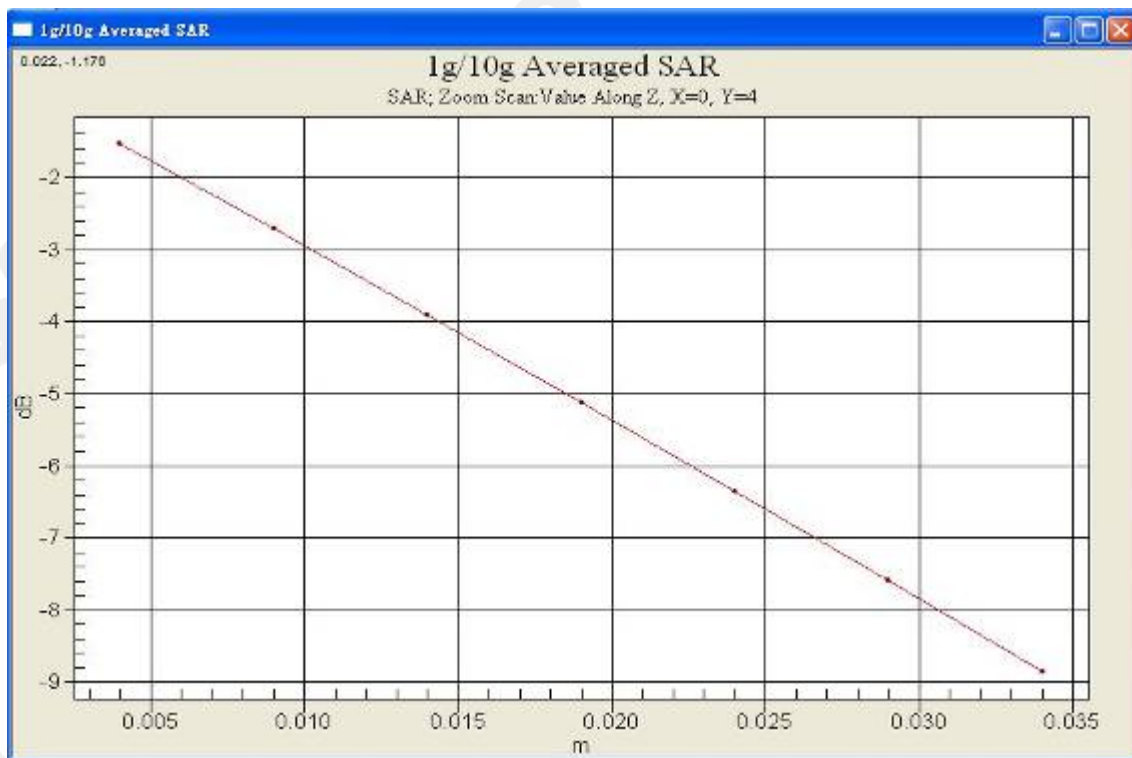
Maximum value of SAR (measured) =  $0.913 \text{ mW/g}$



0 dB =  $0.913 \text{ mW/g}$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## 5. System Verification

Date/Time: 2008/12/12 01:35:59

**DUT: Dipole 835 MHz;**

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

Medium: Head 900 MHz Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.897 \text{ mho/m}$ ;  $\epsilon_r = 43$ ;  
 $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (61x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$ 

Maximum value of SAR (interpolated) = 2.54 mW/g

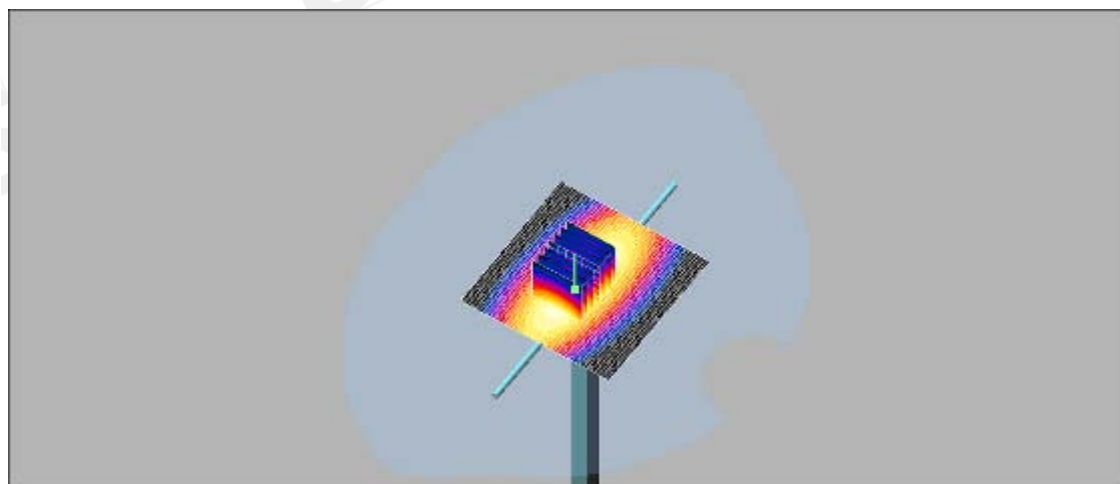
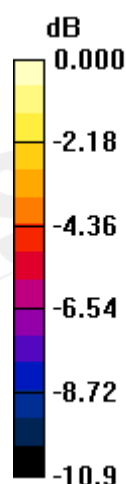
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  
 $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 53.1 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 3.58 W/kg

**SAR(1 g) = 2.35 mW/g; SAR(10 g) = 1.52 mW/g**

Maximum value of SAR (measured) = 2.53 mW/g



0 dB = 2.53mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## DUT: Dipole 835 MHz;

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

Medium: Muscle 900 MHz Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.954 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

## DASY4 Configuration:

- Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (61x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.67 mW/g

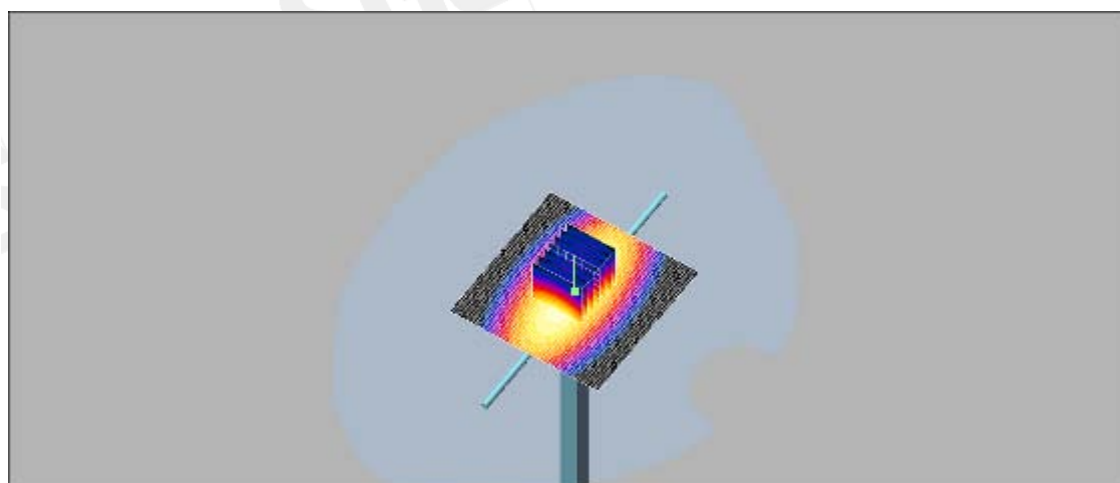
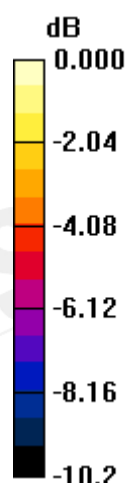
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  
 $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 54.4 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 3.67 W/kg

**SAR(1 g) = 2.47 mW/g; SAR(10 g) = 1.62 mW/g**

Maximum value of SAR (measured) = 2.66 mW/g



0 dB = 2.66mW/g

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## 6. DAE & Probe Calibration certificate

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



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

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

Accreditation No.: SCS 108

Client **SGS (Auden)**

Certificate No: DAE4-547\_Jan08

### CALIBRATION CERTIFICATE

Object **DAE4 - SD 000 D04 BA - SN: 547**

Calibration procedure(s) **QA CAL-06.v12  
Calibration procedure for the data acquisition electronics (DAE)**

Calibration date: **January 24, 2008**

Condition of the calibrated item **In Tolerance**

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 (Calibrated by, Certificate No.)	Scheduled Calibration
Fuke Process Calibrator Type 702	SN: 6295803	04-Oct-07 (Elcal AG, No: 6467)	Oct-08
Kelthley Multimeter Type 2001	SN: 0810275	03-Oct-07 (Elcal AG, No: 6465)	Oct-08
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Calibrator Box V1.1	SE UMS 006 AB 1004	25-Jun-07 (SPEAG, in house check)	In house check Jun-08

Calibrated by:	Name Daniel Hess	Function Technician	Signature 
Approved by:	Fin Bornholt	R&D Director	

Issued: January 24, 2008

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: DAE4-547\_Jan08

Page 1 of 5

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

**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 **SGS (Auden)**

Certificate No: EX3-3526\_Aug08

## CALIBRATION CERTIFICATE

Object **EX3DV3 - SN:3526**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-14.v3 and QA CAL-23.v3  
Calibration procedure for dosimetric E-field probes**

Calibration date: **August 26, 2008**

Condition of the calibrated item **In Tolerance**

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	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498087	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	1-Jul-08 (No. 217-00865)	Jul-09
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	1-Jul-08 (No. 217-00866)	Jul-09
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (No. ES3-3013_Jan08)	Jan-09
DAE4	SN: 660	3-Sep-07 (No. DAE4-660_Sep07)	Sep-08
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: August 26, 2008

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: EX3-3526\_Aug08

Page 1 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



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



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

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

Accreditation No.: SCS 108

## Glossary:

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
Polarization $\phi$	$\phi$ rotation around probe axis
Polarization $\vartheta$	$\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

## Calibration is Performed According to the Following Standards:

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

## Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* frequency\_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCPx,y,z**: DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Certificate No: EX3-3526\_Aug08

Page 2 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



EX3DV3 SN:3526

August 26, 2008

## Probe EX3DV3

SN:3526

Manufactured:	March 19, 2004
Last calibrated:	August 29, 2007
Recalibrated:	August 26, 2008

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

Certificate No: EX3-3526\_Aug08

Page 3 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

EX3DV3 SN:3526

August 26, 2008

**DASY - Parameters of Probe: EX3DV3 SN:3526****Sensitivity in Free Space<sup>A</sup>****Diode Compression<sup>B</sup>**

NormX	0.99 ± 10.1%	$\mu V/(V/m)^2$	DCP X	93 mV
NormY	0.81 ± 10.1%	$\mu V/(V/m)^2$	DCP Y	94 mV
NormZ	0.89 ± 10.1%	$\mu V/(V/m)^2$	DCP Z	94 mV

**Sensitivity in Tissue Simulating Liquid (Conversion Factors)**

Please see Page 8.

**Boundary Effect**

TSL	900 MHz	Typical SAR gradient: 5 % per mm	
	Sensor Center to Phantom Surface Distance	2.0 mm	3.0 mm
	SAR <sub>be</sub> [%] Without Correction Algorithm	8.9	5.3
	SAR <sub>be</sub> [%] With Correction Algorithm	0.8	0.4
TSL	1810 MHz	Typical SAR gradient: 10 % per mm	
	Sensor Center to Phantom Surface Distance	2.0 mm	3.0 mm
	SAR <sub>be</sub> [%] Without Correction Algorithm	6.8	3.6
	SAR <sub>be</sub> [%] With Correction Algorithm	0.5	0.2

**Sensor Offset**

Probe Tip to Sensor Center	1.0 mm
----------------------------	--------

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

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 8).<sup>B</sup> Numerical linearization parameter: uncertainty not required.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

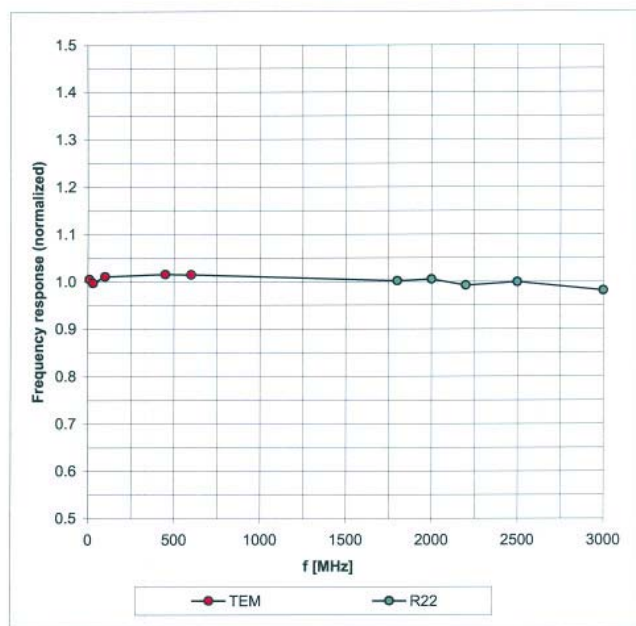
This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

EX3DV3 SN:3526

August 26, 2008

## Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

Certificate No: EX3-3526\_Aug08

Page 5 of 9

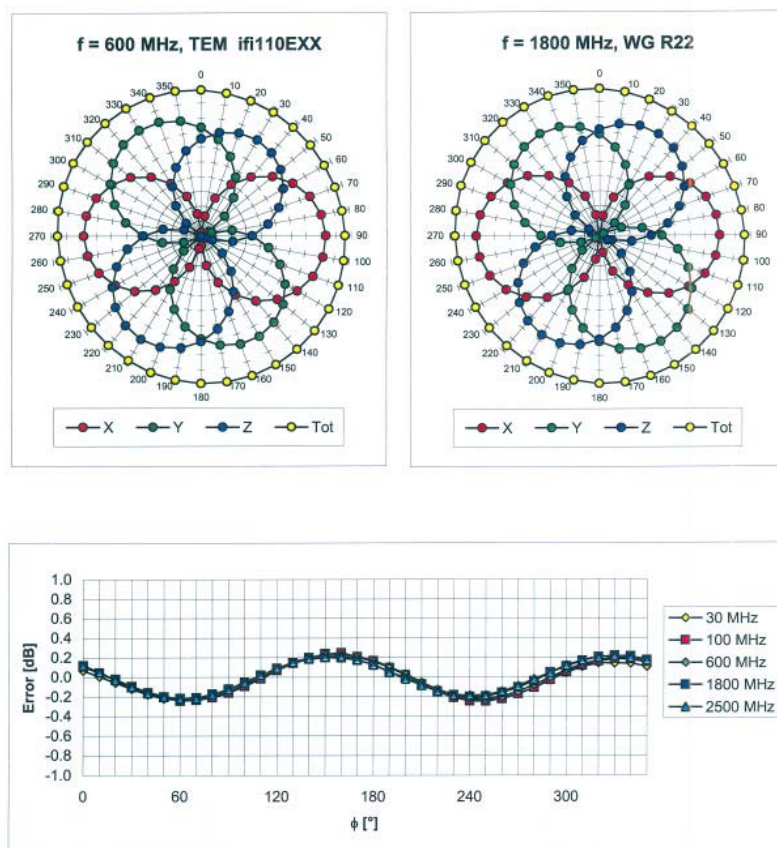
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

EX3DV3 SN:3526

August 26, 2008

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$



Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

Certificate No: EX3-3526\_Aug08

Page 6 of 9

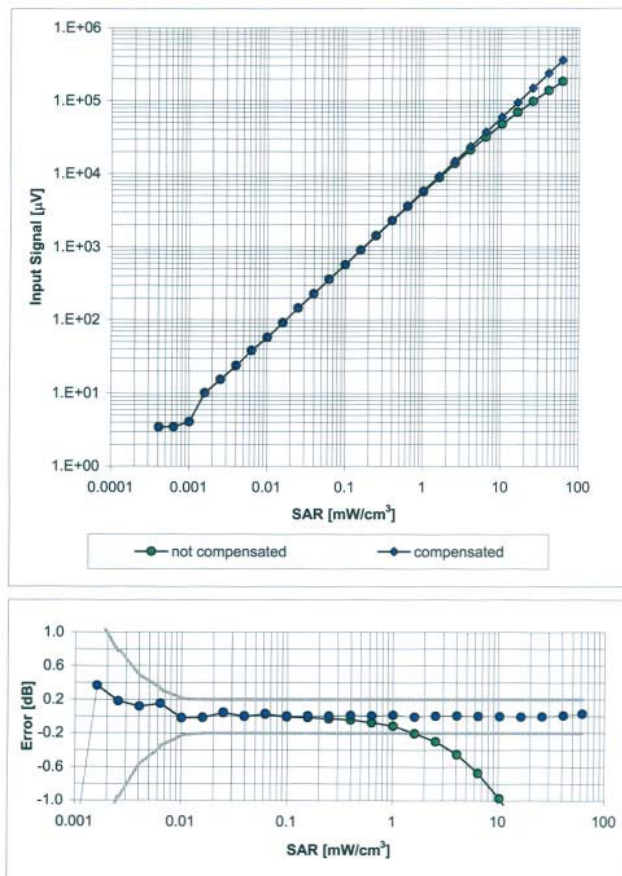
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

EX3DV3 SN:3526

August 26, 2008

## Dynamic Range $f(\text{SAR}_{\text{head}})$ (Waveguide R22, $f = 1800 \text{ MHz}$ )



Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

Certificate No: EX3-3526\_Aug08

Page 7 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



EX3DV3 SN:3526

August 26, 2008

## Conversion Factor Assessment

f [MHz]	Validity [MHz] <sup>c</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.54	0.76	10.93 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.52	0.68	9.46 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.58	0.61	9.15 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.42	0.74	8.49 ± 11.0% (k=2)
2600	± 50 / ± 100	Head	39.0 ± 5%	1.96 ± 5%	0.42	0.75	8.53 ± 11.0% (k=2)
3500	± 50 / ± 100	Head	37.9 ± 5%	2.91 ± 5%	0.30	1.20	8.15 ± 13.1% (k=2)
5200	± 50 / ± 100	Head	36.0 ± 5%	4.66 ± 5%	0.40	1.65	5.68 ± 13.1% (k=2)
5500	± 50 / ± 100	Head	35.6 ± 5%	4.96 ± 5%	0.40	1.65	5.01 ± 13.1% (k=2)
5800	± 50 / ± 100	Head	35.3 ± 5%	5.27 ± 5%	0.40	1.65	4.90 ± 13.1% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.66	0.68	10.87 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.50	0.74	9.28 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.45	0.78	9.17 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.44	0.80	8.18 ± 11.0% (k=2)
2600	± 50 / ± 100	Body	52.5 ± 5%	2.16 ± 5%	0.47	0.76	8.14 ± 11.0% (k=2)
3500	± 50 / ± 100	Body	51.3 ± 5%	3.31 ± 5%	0.30	1.20	7.36 ± 13.1% (k=2)
5200	± 50 / ± 100	Body	49.0 ± 5%	5.30 ± 5%	0.40	1.70	4.89 ± 13.1% (k=2)
5500	± 50 / ± 100	Body	48.6 ± 5%	5.65 ± 5%	0.40	1.70	4.39 ± 13.1% (k=2)
5800	± 50 / ± 100	Body	48.2 ± 5%	6.00 ± 5%	0.40	1.70	4.44 ± 13.1% (k=2)

<sup>c</sup> The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Certificate No: EX3-3526\_Aug08

Page 8 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

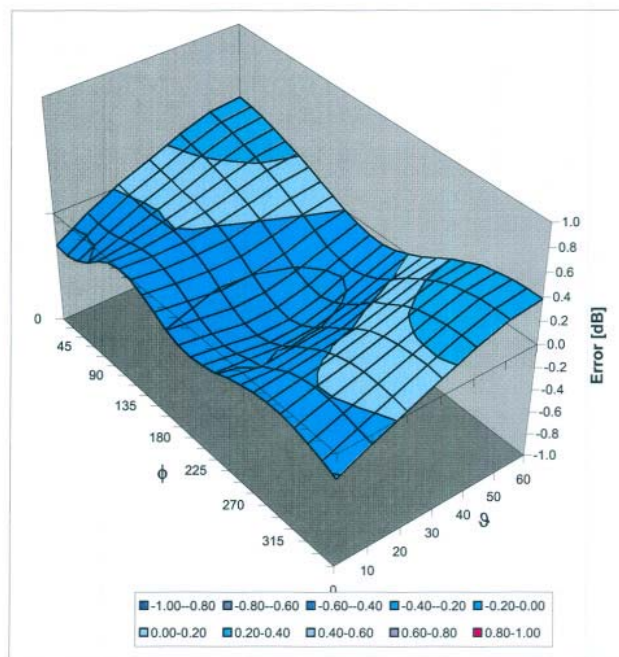
This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

EX3DV3 SN:3526

August 26, 2008

## Deviation from Isotropy in HSL

Error ( $\phi$ ,  $\theta$ ),  $f = 900$  MHz



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )

Certificate No: EX3-3526\_Aug08

Page 9 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## 7. Uncertainty Analysis

### DASY4 Uncertainty Budget According to IEEE P1528 [1]

Error Description	Uncertainty value	Prob. Dist.	Div.	$(c_i)$ 1g	$(c_i)$ 10g	Std. Unc. (1g)	Std. Unc. (10g)	$(v_i)$ $v_{eff}$
<b>Measurement System</b>								
Probe Calibration	$\pm 4.8\%$	N	1	1	1	$\pm 4.8\%$	$\pm 4.8\%$	$\infty$
Axial Isotropy	$\pm 4.7\%$	R	$\sqrt{3}$	0.7	0.7	$\pm 1.9\%$	$\pm 1.9\%$	$\infty$
Hemispherical Isotropy	$\pm 9.6\%$	R	$\sqrt{3}$	0.7	0.7	$\pm 3.9\%$	$\pm 3.9\%$	$\infty$
Boundary Effects	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	$\infty$
Linearity	$\pm 4.7\%$	R	$\sqrt{3}$	1	1	$\pm 2.7\%$	$\pm 2.7\%$	$\infty$
System Detection Limits	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	$\infty$
Readout Electronics	$\pm 1.0\%$	N	1	1	1	$\pm 1.0\%$	$\pm 1.0\%$	$\infty$
Response Time	$\pm 0.8\%$	R	$\sqrt{3}$	1	1	$\pm 0.5\%$	$\pm 0.5\%$	$\infty$
Integration Time	$\pm 2.6\%$	R	$\sqrt{3}$	1	1	$\pm 1.5\%$	$\pm 1.5\%$	$\infty$
RF Ambient Conditions	$\pm 3.0\%$	R	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	$\infty$
Probe Positioner	$\pm 0.4\%$	R	$\sqrt{3}$	1	1	$\pm 0.2\%$	$\pm 0.2\%$	$\infty$
Probe Positioning	$\pm 2.9\%$	R	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	$\infty$
Max. SAR Eval.	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	$\infty$
<b>Test Sample Related</b>								
Device Positioning	$\pm 2.9\%$	N	1	1	1	$\pm 2.9\%$	$\pm 2.9\%$	875
Device Holder	$\pm 3.6\%$	N	1	1	1	$\pm 3.6\%$	$\pm 3.6\%$	5
Power Drift	$\pm 5.0\%$	R	$\sqrt{3}$	1	1	$\pm 2.9\%$	$\pm 2.9\%$	$\infty$
<b>Phantom and Setup</b>								
Phantom Uncertainty	$\pm 4.0\%$	R	$\sqrt{3}$	1	1	$\pm 2.3\%$	$\pm 2.3\%$	$\infty$
Liquid Conductivity (target)	$\pm 5.0\%$	R	$\sqrt{3}$	0.64	0.43	$\pm 1.8\%$	$\pm 1.2\%$	$\infty$
Liquid Conductivity (meas.)	$\pm 2.5\%$	N	1	0.64	0.43	$\pm 1.6\%$	$\pm 1.1\%$	$\infty$
Liquid Permittivity (target)	$\pm 5.0\%$	R	$\sqrt{3}$	0.6	0.49	$\pm 1.7\%$	$\pm 1.4\%$	$\infty$
Liquid Permittivity (meas.)	$\pm 2.5\%$	N	1	0.6	0.49	$\pm 1.5\%$	$\pm 1.2\%$	$\infty$
Combined Std. Uncertainty						$\pm 10.3\%$	$\pm 10.0\%$	331
<b>Expanded STD Uncertainty</b>						$\pm 20.6\%$	$\pm 20.1\%$	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## 8. Phantom description

Schmid &amp; Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland  
Phone +41 1 245 9700, Fax +41 1 245 9779  
info@speag.com, <http://www.speag.com>

## Certificate of Conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 C
Series No	TP-1150 and higher
Manufacturer	SPEAG Zeughausstrasse 43 CH-8004 Zurich Switzerland

## Tests

The series production process used allows the limitation to test of first articles.

Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series items (called samples) or are tested at each item.

Test	Requirement	Details	Units tested
Dimensions	Compliant with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness of shell	Compliant with the requirements according to the standards	2mm +/- 0.2mm in flat and specific areas of head section	First article, Samples, TP-1314 ff.
Material thickness at ERP	Compliant with the requirements according to the standards	6mm +/- 0.2mm at ERP	First article, All items
Material parameters	Dielectric parameters for required frequencies	300 MHz – 6 GHz: Relative permittivity < 5, Loss tangent < 0.05	Material samples
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards if handled and cleaned according to the instructions. Observe technical Note for material compatibility.	DEGMBE based simulating liquids	Pre-series, First article, Material samples
Sagging	Compliant with the requirements according to the standards. Sagging of the flat section when filled with tissue simulating liquid.	< 1% typical < 0.8% if filled with 155mm of HSL900 and without DUT below	Prototypes, Sample testing

## Standards

- [1] CENELEC EN 50361
- [2] IEEE Std 1528-2003
- [3] IEC 62209 Part I
- [4] FCC OET Bulletin 65, Supplement C, Edition 01-01

(\*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of the other documents.

## Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standards [1] to [4].

Date

07.07.2005

s p e a g

Signature / Stamp

Schmid & Partner Engineering AG  
Zeughausstrasse 43, 8004 Zurich, Switzerland  
Phone +41 1 245 9700, Fax +41 1 245 9779  
info@speag.com, <http://www.speag.com>

Doc No 881 – QD 000 P40 C – F

Page 1 (1)

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

## 9. System Validation from Original equipment supplier

**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 **SGS (Auden)**

Certificate No: **D835V2-4d063\_Jun08**

### CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d063**

Calibration procedure(s) **QA CAL-05.v7  
Calibration procedure for dipole validation kits**

Calibration date: **June 06, 2008**

Condition of the calibrated item **In Tolerance**

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 ( $22 \pm 3^\circ\text{C}$ ) and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	07-Aug-07 (METAS, No. 217-00716)	Aug-08
Type-N mismatch combination	SN: 5047.2 / 06327	08-Aug-07 (No. 217-00721)	Aug-08
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	04-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08

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

Issued: June 13, 2008

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D835V2-4d063\_Jun08

Page 1 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## DASY4 Validation Report for Head TSL

Date/Time: 05.06.2008 14:11:53

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063**

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

Medium: HSL 900 MHz;

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.879$  mho/m;  $\epsilon_r = 40.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

### DASY4 Configuration:

- Probe: ES3DV2 - SN3023; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

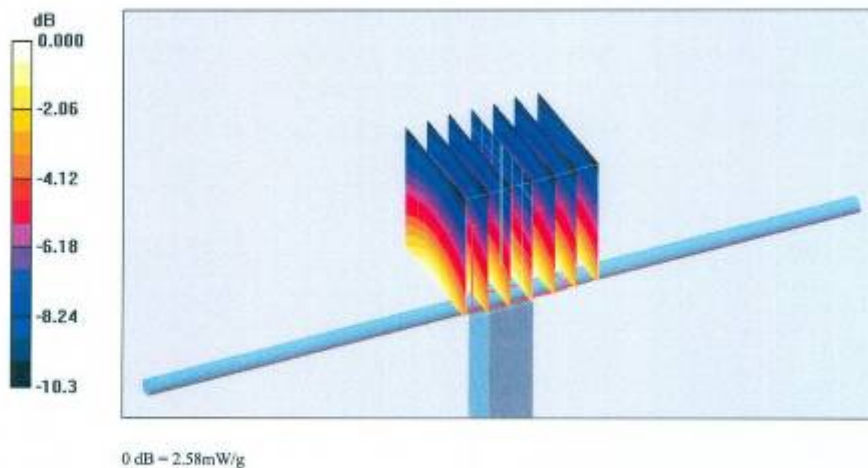
**Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.3 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 3.36 W/kg

**SAR(1 g) = 2.29 mW/g; SAR(10 g) = 1.52 mW/g**

Maximum value of SAR (measured) = 2.58 mW/g



Certificate No: D835V2-4d063\_Jun08

Page 6 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

**DASY4 Validation Report for Body TSL**

Date/Time: 06.06.2008 14:01:1

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063**

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

Medium: MSL900;

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.99 \text{ mho/m}$ ;  $\epsilon_r = 53.4$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

**DASY4 Configuration:**

- Probe: ES3DV2 - SN3025; ConvF(5.9, 5.9, 5.9); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

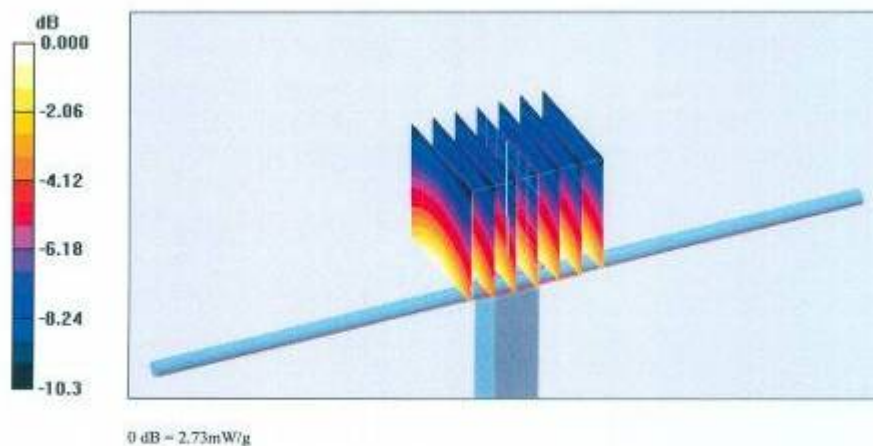
**Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 53.6 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 3.53 W/kg

**SAR(1 g) = 2.44 mW/g; SAR(10 g) = 1.61 mW/g**

Maximum value of SAR (measured) = 2.73 mW/g



Certificate No: D835V2-4d063\_Jun08

Page 8 of 9

End of 1<sup>st</sup> part of report

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.  
除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.