

SAR TEST REPORT

Equipment Under Test	Mobile phone	
Product Name	GSM 850/1900 Terminal Device	
Model Name	BM58YB3	
Company Name	CHENG UEI PRECISION INDUSTRY CO., LTD	
Company Address	No.49,Sec.4,jhongyang Rd., Tucheng City,Taipei County	
	23675,Taiwan	
Date of Receipt	2010.04.30	
Date of Test(s)	2010.07.22~23	
Date of Issue	2010.11.22	

Standards:

FCC OET 65 supplement C, IEEE/ANSI 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.

Anto	ny Win		
tony Wu	*	Date :	2010.11.22
gineer			
Robert	Chang		
bert Chang	0	Date :	2010.11.22
ch Manager			
Sus			
	tony Wu gineer Qobert bert Chang	tony Wu gineer Qobert Chang bert Chang	tony Wu Date : Date : gineer Qobert Chang Date : bert Chang Date :

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

 SGS Taiwan Ltd.
 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號

 台灣檢驗科技股份有限公司
 t (886-2) 2299-3279
 f (886-2) 2298-0488
 www.tw.sgs.com



Version

Version No.	Date	Description	
1.0	Aug. 10, 2010	Initial issue of report	
1.1	Aug. 27, 2010	1 st modification	
1.2	Oct. 28, 2010	2 nd modification	
1.3	Nov. 11, 2010	3 rd modification	
1.4	Nov. 15, 2010	4 th modification	
1.5	Nov. 22, 2010	5 th modification	





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488

www.tw.sgs.com



Contents

1. General Information	4
1.1 Testing Laboratory	4
1.2 Details of Applicant	4
1.3 Description of EUT	4
1.4 Test Environment	
1.5 Operation description	6
1.6 Positioning Procedure	
1.7 Evaluation Procedures	
1.8 The SAR Measurement System	9
1.9 System Components	11
1.10 SAR System Verification	13
1.11 Tissue Simulant Fluid for the Frequency Band	14
1.12 Test Standards and Limits	15
2. Summary of Results	
3. Instruments List	
4. Measurements	
5. System Verification	58
6. DAE & Probe Calibration certificate	
7. Uncertainty Analysis	
8. Phantom description	75
9. System Validation from Original equipment supplier	76

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



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	http://www.tw.sgs.com/		

1.2 Details of Applicant

Company Name	CHENG UEI PRECISION INDUSTRY CO., LTD
Company Address	No.49,Sec.4,jhongyang Rd., Tucheng City,Taipei County 23675,Taiwan
Contact Person	Linda Lin
TEL	+886-02-2269-9888
Fax	+886-02-2269-9816
E-mail	Linda Lin1003@foxlink.com
Website	http://www.foxlink.com.tw

1.3 Description of EUT

EUT Name	Mobile phone	
Product Name	GSM 850/1900 Terminal Device	
FCC ID	QVZ-BM58YB3	
Brand Name	Foxlink	
Model No	BM58YB3	
IMEI Code	353907039999440	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009

Page : 5 of 101

Hardware Version	BM58S1-0C		
Software Version	BM58S1.B0.00.M01.01.01		
Mode of Operation	GSM/GPRS		
Definition	Production unit		
Duty Cycle	GSM	GPRS	
Duty Cycle	1/8	1/2	
Maximum RF	GSM 850	PCS 1900	
Conducted Power (Average)	32.8dBm	29.7dBm	
TX Frequency Range	GSM 850	PCS 1900	
(MHz)	824.2 -848.8	1850.2 - 1909.8	
Channel Number	GSM 850	PCS 1900	
(ARFCN)	128-251	512 - 810	
Battery Type	3.7 V Lithium-Ion		
Antenna Type	Internal Antenna		
	GSM 850		
	Head	Body	
Max. SAR Measured	0.595 mW/g (At GSM 850 Band_Right head Cheek Position 251 Channel)	1.1 mW/g (At GSM 850 Band_Body 128 Channel repeated with Memory card)	
(1 g)	GSM 1900		
	Head	Body	
	0.39 mW/g (At GSM 1900 Band_Right head Cheek Position 512 Channel)	0.597 mW/g (At GSM 1900 Band_Body 51 Channel)	

1.4 Test Environment

Ambient Temperature: 22±2° C Tissue Simulating Liquid: 22±2° C

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488 www.tw.sgs.com



1.5 Operation description

General:

- The EUT is controlled by using a Radio Communication Tester (Agilent 8960), 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 DASY5 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 flat LET/LEC/RET/REC conditions.
- 4. Testing body-worn SAR by separating **1.5cm** between back side of EUT to flat phantom.
- Additional configuration (Head) :
- 5. For highest SAR configuration in this band repeated with external Memory card inside.

Additional configuration (Body) :

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

SAR evaluation considerations for handsets with multiple transmitters:

- 9. According KDB 648474, the simultaneous transmission SAR for WWAN and BT was not required, because the closest separation distance of these antennas is larger than 5 cm and the output power of Bluetooth (4.31 dBm) is less than 2PRef (13.8 dBm).
- 10. BT RF power is less than 24.48mW, so individual SAR is not needed.
- 11. WWAN to Bluetooth antenna distance is 5.3 cm.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

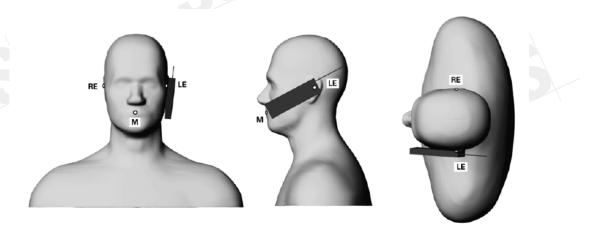
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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 concerned excert in full, without prior written approval of the Company. 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.

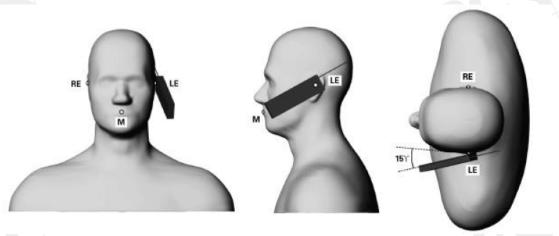


Report No. : ES/2010/40009 Page : 7 of 101

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



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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



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
- 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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com

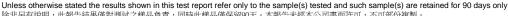


Report No. : ES/2010/40009 Page : 9 of 101

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. This cube is the 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 5 professional system). A Model ES3DV3 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ ($|Ei|^2$)/ ρ where σ and ρ 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



除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488 t (886-2) 2299-3279 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 10 of 101

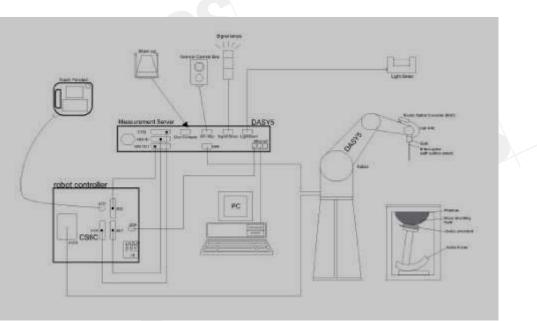


Fig.a The block diagram of SAR system

The DASY5 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.

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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



- A computer operating Windows 2000 or Windows XP.
- DASY5 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.

1.9 System Components

ES3DV3 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 & HSL1900 Additional CF for other liquids and frequencies upon request ES3DV3 E-Field Probe		
Frequency:	10 MHz to > 6 GHz; Linearity: \pm 0.2 dB (30 MHz to 6 GHz)		
Directivity:	 ± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis) 		
Dynamic Range:	: 10 μ W/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 μ 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 be 30%.			

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



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.		
Shell Thickness:	2 ± 0.2 mm		
Filling Volume:	Approx. 25 liters	(The second sec	
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	11
	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,	Contraction of the local division of the loc
	CENELEC, FCC or other specifications. The	And
	device holder can be locked at different	
	phantom locations (left head, right head, flat	-
	phantom).	Device Holder
		7

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be preceded to the bulker. prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 13 of 101

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 +/- 5% from the target SAR values. These tests were done at 850 & 1900 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.

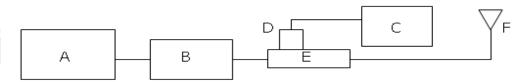


Fig.b The block diagram for SAR system verification

- A. Agilent Model 8648D Signal Generator
- B. Mini circuits Model ZHL-42 Amplifier
- C. Agilent Model E4416A Power Meter
- D. Agilent Model U2001B Power Sensor
- E. Agilent Model 778D Dual directional coupling
- F. Reference dipole antenna



Photograph of the dipole Antenna

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 14 of 101

Validation Kit	Frequency (MHz)	Target SAR (1g) (Pin=250mW)	Measured SAR (1g)	Variation	Measured Date
D835V2 S/N: 4d063	835 MHz (Head)	2.42 mW/g	2.45 mW/g	1.2 %	2010/07/22
D835V2 S/N: 4d063	835 MHz (Body)	2.53 mW/g	2.52 mW/g	0.4%	2010/07/22
D1900V2 S/N: 5d027	1900MHZ (Head)	9.91 mW/g	10.1 mW/g	1.9%	2010/07/23
D1900V2 S/N: 5d018	1900MHZ (Body)	10.1 mW/g	10.4 mW/g	3%	2010/07/23

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 conjuncation 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)

			Dielectric Parameters				
Frequency . (MHz)	Tissue type	Measurement date/ Limits	ρ	σ (S/m)	Simulated Tissue		
				0 (3/11)	Temperature(° C)		
950	850 Head	Measured, 2010.07.22	42.5	0.897	21.7		
850		Recommended Limits	39.62-43.78	0.87-0.95	20-24		
850	Body	Measured, 2010.07.22	53.7	1.01	21.7		
020	DOUY	Recommended Limits	51.49-56.91	0.93-1.03	20-24		
1900	Head	Measured, 2010.07.23	39.6	1.42	21.7		
		Recommended Limits	38.47-42.52	1.34-1.48	20-24		

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 15 of 101

1900 Bod	Body	Measured, 2010.07.23	52.9	1.55	21.7	
	DOUY	Recommended Limits	52.06-57.54	1.45-1.61	20-24	

Table 2. Dielectric Parameters of Tissue Simulant Fluid

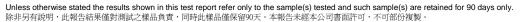
The composition of the brain tissue simulating liquid for 850 & 1900 band:

Ingredient	850MHz (Head)	850MHz (Body)	1900MHz (Head)	1900MHz (Body)
DGMBE	Х	Х	444.52 g	300.67g
Water	532.98 g	631.68 g	552.42 g	716.56 g
Salt	18.3 g	11.72 g	3.06 g	4.0 g
Preventol D-7	2.4 g	1.2 g	х	х
Cellulose	3.2 g	Х	Х	Х
Sugar	766.0 g	600 g	Х	Х
Total	1 L	1 L	1 L	1 L
amount	(1.0kg)	(1.0kg)	(1.0kg)	(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.



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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 concerned excert in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 16 of 101

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 and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 公司 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Human Exposure	Uncontrolled Environment	Controlled Environment
	General Population	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 and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



2. Summary of Results

GSM 850 MHZ

Right Head	(Cheek Po	osition)						
Frequency	Channel	MHz	Conducted Output		Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
	128	824.2	32.5dBm	0.547	22.1	21.7		
850 MHz	190	836.6	32.7dBm	0.571	22.1	21.7		
	251	848.8	32.8dBm	0.595	22.1	21.7		
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	251	848.8	32.8dBm	0.564	22.1	21.7		
Left Head ((Cheek Pos	sition)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]		
	128	824.2	32.5dBm	0.532	22.1	21.7		
850 MHz	190	836.6	32.7dBm	0.574	22.1	21.7		
	251	848.8	32.8dBm	0.593	22.1	21.7		
Right Head	(15° Tilt I	Position	1)					
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]		
	128	824.2	32.5dBm	0.382	22.1	21.7		
850 MHz	190	836.6	32.7dBm	0.435	22.1	21.7		
	251	848.8	32.8dBm	0.46	22.1	21.7		
Left Head (*	15° Tilt Po	osition)						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]		
	128	824.2	32.5dBm	0.351	22.1	21.7		
850 MHz	190	836.6	32.7dBm	0.419	22.1	21.7		
	251	848.8	32.8dBm	0.505	22.1	21.7		

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 台灣檢驗科技股份有限公司 t (886-2) 2299-3279 f (886-2) 2298-0488

Member of SGS Group



Body worn	(testing ir	ו GPRS	mode)					
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
	128	824.2	29.4dBm	1.02	22.1	21.7		
850 MHz	190	836.6	29.4dBm	0.989	22.1	21.7		
	251	848.8	29.5dBm	0.926	22.1	21.7		
Body worn	(testing ir	GPRS	mode)_repeated f	for EUT front to p	hantom			
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
850 MHz	128	824.2	29.4dBm	0.745	22.1	21.7		
Body worn	(testing ir	n GPRS	mode)_repeated v	with Memory car	d			
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
850 MHz	128	824.2	29.4dBm	1.1	22.1	21.7		
Body worn	Body worn (testing in GPRS mode)_repeated with headset							
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
850 MHz	128	824.2	29.4dBm	0.633	22.1	21.7		

PCS 1900

Right Head	(Cheek Po	osition)				
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
1900 MHz	512	1850.2	29.6dBm	0.39	22.1	21.7
	661	1880	29.7dBm	0.312	22.1	21.7
	810	1909.8	29.7dBm	0.264	22.1	21.7
Left Head ((Cheek Pos	sition)				
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
1900 MHz	512	1850.2	29.6dBm	0.33	22.1	21.7
	661	1880	29.7dBm	0.261	22.1	21.7
	810	1909.8	29.7dBm	0.224	22.1	21.7
			0			

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488 www.tw.sgs.com



(15° Tilt I	Position				
Channel	MHz(Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
512	1850.2	29.6dBm	0.154	22.1	21.7
661	1880	29.7dBm	0.13 22.1		21.7
810	1909.8	29.7dBm	0.124	22.1	21.7
15° Tilt Po	osition)				
Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
512	1850.2	29.6dBm	0.132	22.1	21.7
661	1880	29.7dBm	0.103	22.1	21.7
810	1909.8	29.7dBm	0.099	22.1	21.7
with GPR	S mode				
Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
512	1850.2	26.5dBm	0.597	22.1	21.7
661	1880	26.6dBm	0.583	22.1	21.7
810	1909.8	26.6dBm	0.542	22.1	21.7
	Channel 512 661 810 15° Tilt Po Channel 512 661 810 with GPR Channel 512 661	Channel MHz 512 1850.2 661 1880 810 1909.8 I5° Tilt Position) Channel MHz 512 1850.2 661 1880 512 1850.2 661 1880 810 1909.8 with GPRS mode MHz 512 1850.2 661 1880 S10 1909.8	Power (Average) 512 1850.2 29.6dBm 661 1880 29.7dBm 810 1909.8 29.7dBm 15° Tilt Position 29.7dBm Channel MHz Conducted Output Power (Average) 512 1850.2 29.6dBm 661 1880 29.7dBm 512 1850.2 29.6dBm 661 1880 29.7dBm 810 1909.8 29.7dBm 810 1909.8 29.7dBm 810 1909.8 29.7dBm 810 1909.8 29.7dBm 611 1880 29.7dBm 512 1850.2 29.6dBm 61 1880 29.7dBm 512 1850.2 26.5dBm 512 1850.2 26.5dBm 661 1880 26.6dBm	Channel MHz Conducted Output Power (Average) Measured(W/kg) 1g 512 1850.2 29.6dBm 0.154 661 1880 29.7dBm 0.13 810 1909.8 29.7dBm 0.124 Is* Tilt Position 0.124 0.124 0.13 Channel MHz Conducted Output Power (Average) Measured(W/kg) 1g 1g 512 1850.2 29.6dBm 0.132 661 1880 29.7dBm 0.132 512 1850.2 29.6dBm 0.132 661 1880 29.7dBm 0.103 810 1909.8 29.7dBm 0.103 810 1909.8 29.7dBm 0.103 810 1909.8 29.7dBm 0.099 with GPRS mode Conducted Output Power (Average) Measured(W/kg) 1g 512 1850.2 26.5dBm 0.597 661 1880 26.6dBm 0.583	Channel MHz Conducted Output Power (Average) Measured(W/kg) 1g Amb. Temp[°C] 512 1850.2 29.6dBm 0.154 22.1 661 1880 29.7dBm 0.13 22.1 810 1909.8 29.7dBm 0.124 22.1 15° Tilt Position) 29.7dBm 0.124 22.1 15° Tilt Position) Conducted Output Power (Average) Measured(W/kg) 1g Amb. Temp[°C] 512 1850.2 29.6dBm 0.132 22.1 661 1880 29.7dBm 0.103 22.1 512 1850.2 29.6dBm 0.132 22.1 661 1880 29.7dBm 0.103 22.1 810 1909.8 29.7dBm 0.103 22.1 with GPRS mode 0.103 22.1 10 Channel MHz Conducted Output Power (Average) Measured(W/kg) 1g Amb. Temp[°C] 512 1850.2 26.5dBm 0.5977 22.1 661 1880 26.6dB

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 and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



3. Instruments List

Manufacturer	Device	Туре	Serial number	Date of last calibration
Schmid & Partner Engineering AG	Dosimetric E-FieldProbe	ES3DV3	3172	May.21.2010
Schmid & Partner Engineering	835/1900MHz	D835V2	4d063	May.21.2010
AG	System Validation Dipole	D1900V2	5d018	Apr.28.2010
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	856	May.20.2010
Schmid & Partner Engineering AG	Software	DASY 5 V5.0 Build125	N/A	Calibration not required
Schmid & Partner Engineering AG	Phantom	SAM	N/A	Calibration not required
Agilent	Network Analyzer	8753D	3410A05662	Mar.30.2010
Agilent	Dielectric Probe Kit	85070D	US01440168	Calibration not required
Agilent	Dual-directional coupler	778D	50313	Aug.26.2009
Agilent	RF Signal Generator	8648D	3847M00432	Jun.04.2010
Agilent	Power Sensor	U2001B	MY48100169	Apr.30.2010
Agilent	Radio Communication Test	E5515c	GB44051912	Nov.05.2008

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488 t (886-2) 2299-3279



Report No. : ES/2010/40009 Page : 22 of 101

4. Measurements

Date: 2010/7/22

RE Cheek_CH128

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.885 mho/m; ϵ_r = 42.6; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

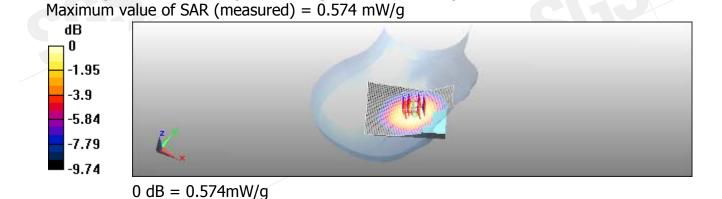
Configuration/RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.575 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 10.1 V/m; Power Drift = -0.114 dB Peak SAR (extrapolated) = 0.685 W/kg

SAR(1 q) = 0.547 mW/q; SAR(10 q) = 0.410 mW/q



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 23 of 101

CGS

Date: 2010/7/22

RE Cheek_CH190

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 836.6 MHz; Medium parameters used: f = 837 MHz; σ = 0.898 mho/m; ϵ_r = 42.5; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

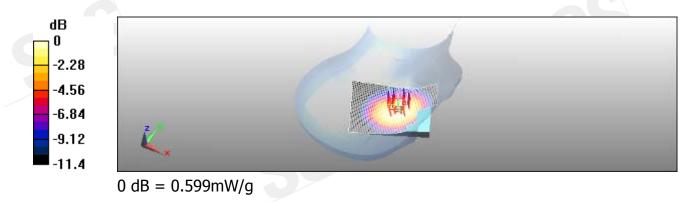
Configuration/RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.613 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 9.86 V/m; Power Drift = -0.059 dB Peak SAR (extrapolated) = 0.715 W/kg

SAR(1 g) = 0.571 mW/g; SAR(10 g) = 0.422 mW/g





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 24 of 101

cGS

Date: 2010/7/22

RE Cheek_CH251

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 848.6 MHz; Medium parameters used: f = 849 MHz; σ = 0.909 mho/m; ϵ_r = 42.3; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

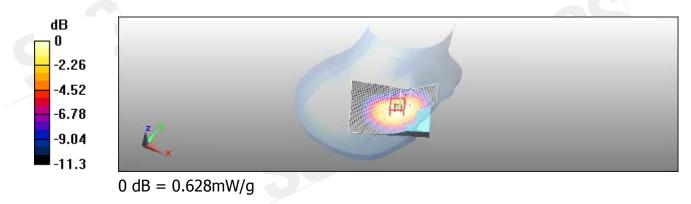
Configuration/RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.654 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 9.39 V/m; Power Drift = -0.027 dB Peak SAR (extrapolated) = 0.769 W/kg

SAR(1 g) = 0.595 mW/g; SAR(10 g) = 0.436 mW/g

Maximum value of SAR (measured) = 0.628 mW/g

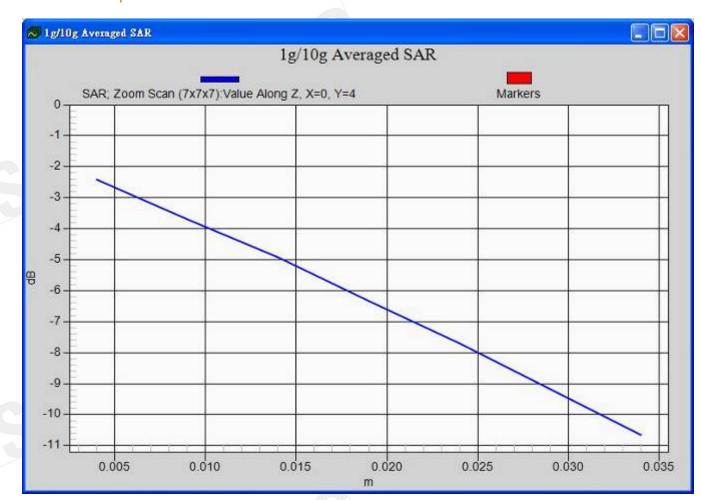


Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 25 of 101



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 SGS Taiwan Ltd. f (886-2) 2298-0488 台灣檢驗科技股份有限公司 t (886-2) 2299-3279 www.tw.sgs.com



Date: 2010/7/22

RE Cheek_CH251_repeated with Memory card

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 848.6 MHz; Medium parameters used: f = 849 MHz; σ = 0.909 mho/m; ϵ_r = 42.3; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

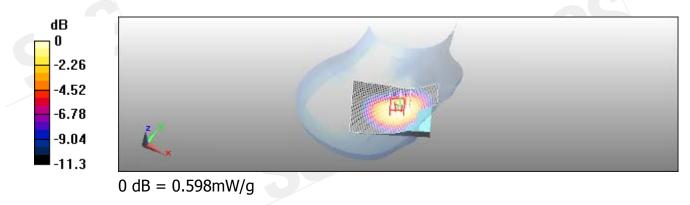
Configuration/RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.633 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 9.65 V/m; Power Drift = 0.044 dB Peak SAR (extrapolated) = 0.712 W/kg

SAR(1 g) = 0.564 mW/g; SAR(10 g) = 0.417 mW/g

Maximum value of SAR (measured) = 0.598 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 27 of 101

CS-

Date: 2010/7/22

LE Cheek_CH128

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.885 mho/m; ϵ_r = 42.6; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

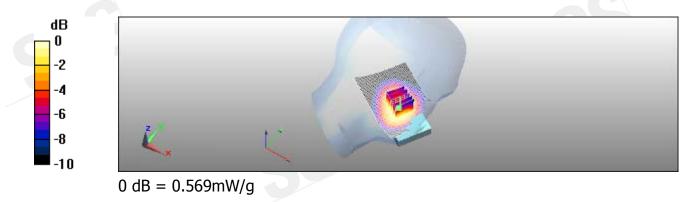
Configuration/LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.573 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 10.4 V/m; Power Drift = -0.209 dB Peak SAR (extrapolated) = 0.638 W/kg

SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.403 mW/g

Maximum value of SAR (measured) = 0.569 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 28 of 101

cGS

Date: 2010/7/22

LE Cheek_CH190

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 836.6 MHz; Medium parameters used: f = 837 MHz; σ = 0.898 mho/m; ϵ_r = 42.5; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

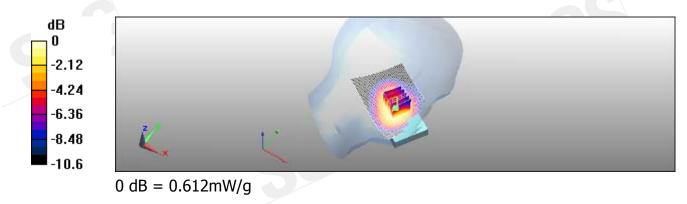
Configuration/LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.607 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 10.7 V/m; Power Drift = -0.047 dB Peak SAR (extrapolated) = 0.722 W/kg

SAR(1 g) = 0.574 mW/g; SAR(10 g) = 0.429 mW/g

Maximum value of SAR (measured) = 0.612 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 29 of 101

cGS-

Date: 2010/7/22

LE Cheek_CH251

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 848.6 MHz; Medium parameters used: f = 849 MHz; σ = 0.909 mho/m; ϵ_r = 42.3; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

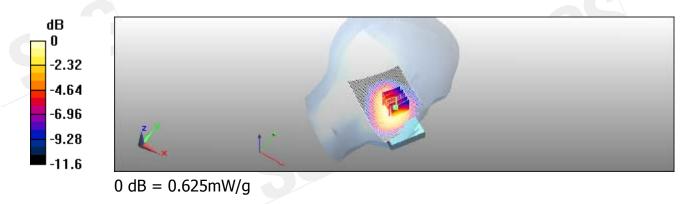
Configuration/LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.630 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 11.2 V/m; Power Drift = 0.187 dB Peak SAR (extrapolated) = 0.757 W/kg

SAR(1 g) = 0.593 mW/g; SAR(10 g) = 0.440 mW/g

Maximum value of SAR (measured) = 0.625 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 30 of 101

CGS

Date: 2010/7/22

RE Tilt_CH128

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.885 mho/m; ϵ_r = 42.6; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

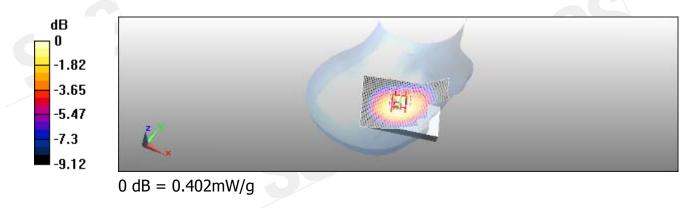
Maximum value of SAR (interpolated) = 0.397 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 13.9 V/m; Power Drift = -0.015 dB Peak SAR (extrapolated) = 0.485 W/kg

SAR(1 g) = 0.382 mW/g; SAR(10 g) = 0.282 mW/g

Maximum value of SAR (measured) = 0.402 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 31 of 101

CGS

Date: 2010/7/22

RE Tilt_CH190

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 836.6 MHz; Medium parameters used: f = 837 MHz; σ = 0.898 mho/m; ϵ_r = 42.5; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

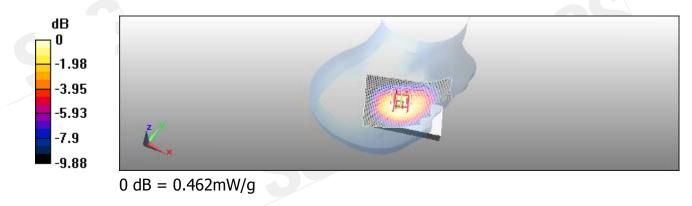
Maximum value of SAR (interpolated) = 0.461 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 14.6 V/m; Power Drift = 0.012 dB Peak SAR (extrapolated) = 0.557 W/kg

SAR(1 g) = 0.435 mW/g; SAR(10 g) = 0.318 mW/g

Maximum value of SAR (measured) = 0.462 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 32 of 101

CGS

Date: 2010/7/22

RE Tilt_CH251

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 848.6 MHz; Medium parameters used: f = 849 MHz; σ = 0.909 mho/m; ϵ_r = 42.3; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

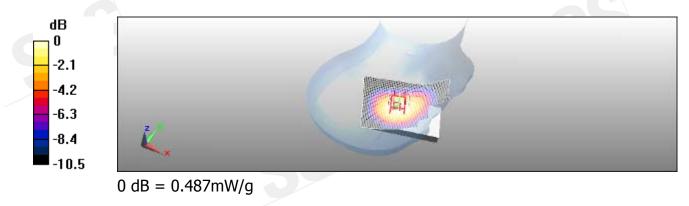
Maximum value of SAR (interpolated) = 0.480 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 14.4 V/m; Power Drift = 0.146 dB Peak SAR (extrapolated) = 0.579 W/kg

SAR(1 g) = 0.460 mW/g; SAR(10 g) = 0.335 mW/g

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



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 33 of 101

CES

Date: 2010/7/22

LE Tilt_CH128

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.885 mho/m; ϵ_r = 42.6; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

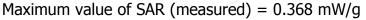
Configuration/LE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

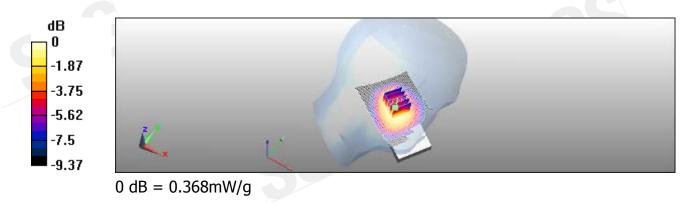
Maximum value of SAR (interpolated) = 0.373 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 13.7 V/m; Power Drift = 0.012 dB Peak SAR (extrapolated) = 0.443 W/kg

SAR(1 g) = 0.351 mW/g; SAR(10 g) = 0.260 mW/g





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 34 of 101

CES

Date: 2010/7/22

LE Tilt_CH190

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 836.6 MHz; Medium parameters used: f = 837 MHz; σ = 0.898 mho/m; ϵ_r = 42.5; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

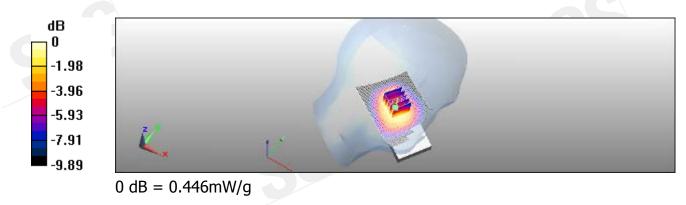
Maximum value of SAR (interpolated) = 0.453 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 14.9 V/m; Power Drift = -0.116 dB Peak SAR (extrapolated) = 0.544 W/kg

SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.302 mW/g

Maximum value of SAR (measured) = 0.446 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 35 of 101

CES

Date: 2010/7/22

LE Tilt_CH251

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 848.6 MHz; Medium parameters used: f = 849 MHz; σ = 0.909 mho/m; ϵ_r = 42.3; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

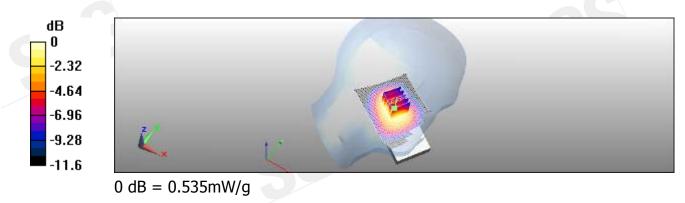
Maximum value of SAR (interpolated) = 0.531 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 16.6 V/m; Power Drift = 0.021 dB Peak SAR (extrapolated) = 0.670 W/kg

SAR(1 g) = 0.505 mW/g; SAR(10 g) = 0.362 mW/g

Maximum value of SAR (measured) = 0.535 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 36 of 101



Date: 2010/7/22

Body_CH128

DUT: BM58YB3

Communication System: GPRS(Class 12); Frequency: 824.2 MHz; Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.995 mho/m; ϵ_r = 53.8; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

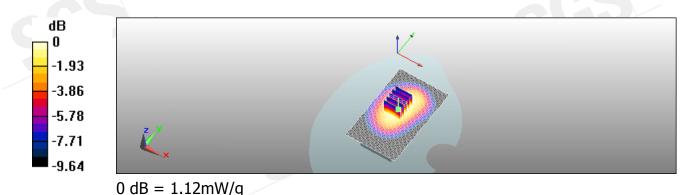
Maximum value of SAR (interpolated) = 1.08mW/g

Configuration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 24.6 V/m; Power Drift = 0.126 dB Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.714 mW/g

Maximum value of SAR (measured) = 1.12 mW/g



0 db 11121111/9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. No 台灣檢驗科技股份有限公司 t (8

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 37 of 101

Date: 2010/7/22

Body_CH190

DUT: BM58YB3

Communication System: GPRS(Class 12); Frequency: 836.6 MHz; Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 53.7; ρ = 1000 kg/m³ Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: ES3DV3 SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.04 mW/gConfiguration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 23.6 V/m; Power Drift = -0.095 dB Peak SAR (extrapolated) = 1.29 W/kgSAR(1 g) = 0.989 mW/g; SAR(10 g) = 0.715 mW/gMaximum value of SAR (measured) = 1.05 mW/gConfiguration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 23.6 V/m; Power Drift = -0.095 dB Peak SAR (extrapolated) = 1.21 W/kgSAR(1 q) = 0.803 mW/q; SAR(10 q) = 0.500 mW/qMaximum value of SAR (measured) = 0.953 mW/gdB 0 -2.76-5.52-8.28-11 -13.8

 $0 \, dB = 0.953 \, mW/g$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 38 of 101

CGS

Date: 2010/7/22

Body_CH251

DUT: BM58YB3

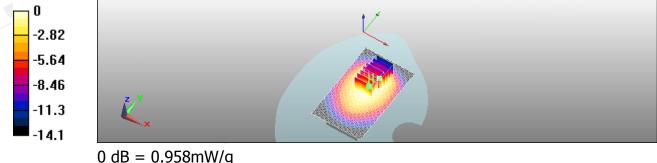
Communication System: GPRS(Class 12); Frequency: 848.8 MHz; Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ϵ_r = 53.6; ρ = 1000 kg/m³ Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: ES3DV3 SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.976 mW/gConfiguration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 22.4 V/m; Power Drift = -0.092 dBPeak SAR (extrapolated) = 1.21 W/kgSAR(1 g) = 0.926 mW/g; SAR(10 g) = 0.669 mW/gMaximum value of SAR (measured) = 0.979 mW/gConfiguration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 22.4 V/m; Power Drift = -0.092 dBPeak SAR (extrapolated) = 1.21 W/kgSAR(1 g) = 0.870 mW/g; SAR(10 g) = 0.586 mW/gMaximum value of SAR (measured) = 0.958 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

.td. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 する t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Date: 2010/7/22

Body_CH128_repeated for EUT front to phantom

DUT: BM58YB3

Communication System: GPRS(Class 12); Frequency: 824.2 MHz; Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.995 mho/m; ϵ_r = 53.8; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

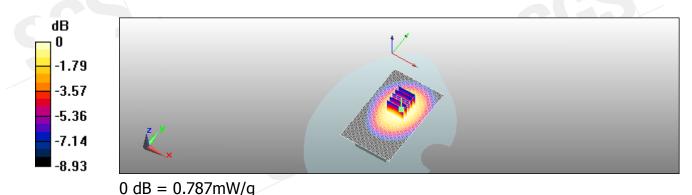
Maximum value of SAR (interpolated) = 0.779 mW/g

Configuration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 20.5 V/m; Power Drift = 0.073 dB Peak SAR (extrapolated) = 0.944 W/kg

SAR(1 g) = 0.745 mW/g; SAR(10 g) = 0.554 mW/g

Maximum value of SAR (measured) = 0.787 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Date: 2010/7/22

Body_CH128_repeated with Memory card

DUT: BM58YB3

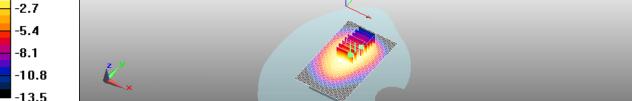
Communication System: GPRS(Class 12); Frequency: 824.2 MHz; Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.995 mho/m; ϵ_r = 53.8; ρ = 1000 kg/m³ Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

- Probe: ES3DV3 SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.16 mW/gConfiguration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 25.2 V/m; Power Drift = -0.123 dBPeak SAR (extrapolated) = 1.43 W/kgSAR(1 q) = 1.1 mW/q; SAR(10 q) = 0.790 mW/qMaximum value of SAR (measured) = 1.16 mW/gConfiguration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 25.2 V/m; Power Drift = -0.123 dB Peak SAR (extrapolated) = 1.4 W/kgSAR(1 q) = 1.01 mW/q; SAR(10 q) = 0.685 mW/qMaximum value of SAR (measured) = 1.11 mW/gdB 0 -2.7



$0 \, dB = 1.11 mW/g$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

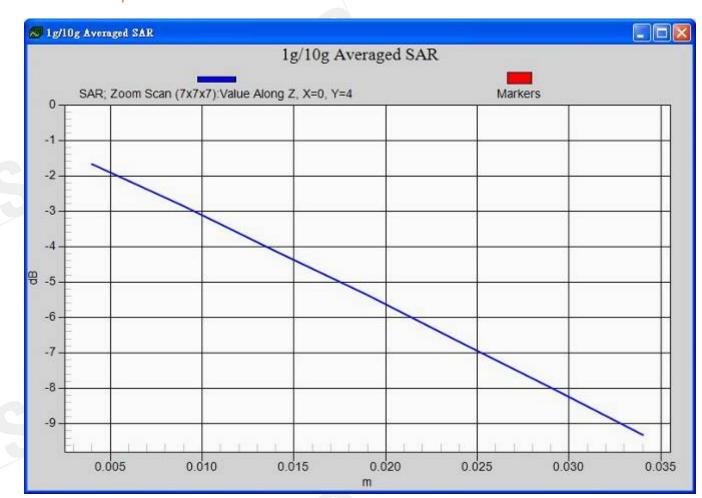
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 41 of 101



SGS

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

 SGS Taiwan Ltd.
 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號

 台灣檢驗科技股份有限公司
 t (886-2) 2299-3279
 f (886-2) 2298-0488
 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 42 of 101

Date: 2010/7/22

Body_CH128_repeated with headset

DUT: BM58YB3

Communication System: GPRS(Class 12); Frequency: 824.2 MHz; Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.995 mho/m; ϵ_r = 53.8; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

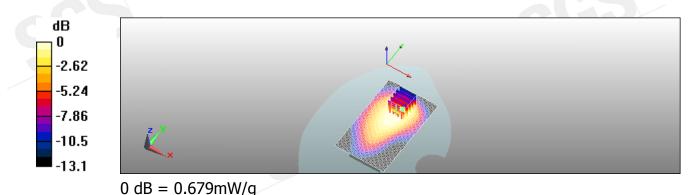
Maximum value of SAR (interpolated) = 0.719 mW/g

Configuration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 18 V/m; Power Drift = -0.018 dB Peak SAR (extrapolated) = 0.921 W/kg

SAR(1 g) = 0.633 mW/g; SAR(10 g) = 0.443 mW/g

Maximum value of SAR (measured) = 0.679 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

 SGS Taiwan Ltd.
 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號

 台灣檢驗科技股份有限公司
 t (886-2) 2299-3279
 f (886-2) 2298-0488
 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 43 of 101

cGS-

Date: 2010/7/23

RE Cheek_CH512

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ϵ_r = 39.9; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

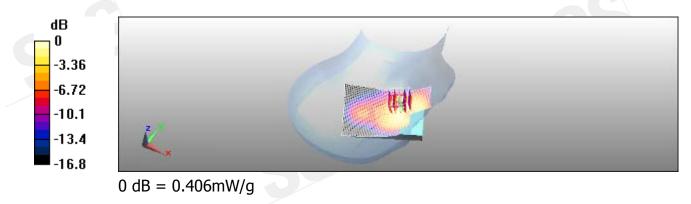
Configuration/RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.430 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 8.4 V/m; Power Drift = -0.00732 dB Peak SAR (extrapolated) = 0.611 W/kg

SAR(1 g) = 0.390 mW/g; SAR(10 g) = 0.220 mW/g

Maximum value of SAR (measured) = 0.406 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 44 of 101

cGS

Date: 2010/7/23

RE Cheek_CH661

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ϵ_r = 39.7; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

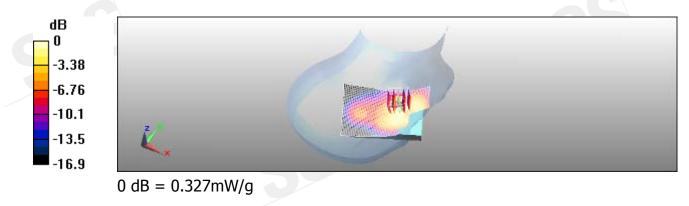
Maximum value of SAR (interpolated) = 0.339 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 7.6 V/m; Power Drift = 0.010 dB Peak SAR (extrapolated) = 0.498 W/kg

SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.174 mW/g

Maximum value of SAR (measured) = 0.327 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 45 of 101

cGS

Date: 2010/7/23

RE Cheek_CH810

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1909.8 MHz; Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

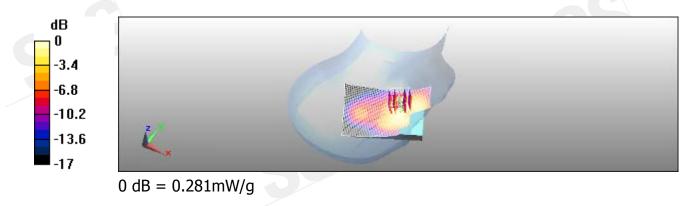
Configuration/RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.292 mW/g

Configuration/RE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 7.05 V/m; Power Drift = 0.085 dB Peak SAR (extrapolated) = 0.424 W/kg

SAR(1 g) = 0.264 mW/g; SAR(10 g) = 0.147 mW/g

Maximum value of SAR (measured) = 0.281 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 46 of 101

CGS

Date: 2010/7/23

LE Cheek_CH512

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ϵ_r = 39.9; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

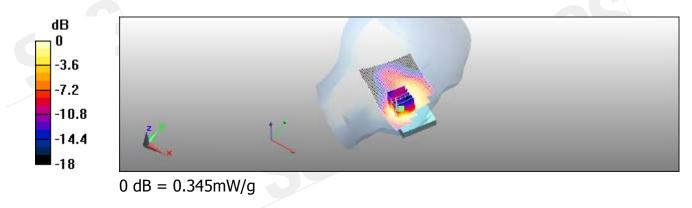
Configuration/LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.338 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 6.17 V/m; Power Drift = 0.055 dB Peak SAR (extrapolated) = 0.578 W/kg

SAR(1 g) = 0.330 mW/g; SAR(10 g) = 0.184 mW/g

Maximum value of SAR (measured) = 0.345 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 47 of 101

cGS

Date: 2010/7/23

LE Cheek_CH661

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ϵ_r = 39.7; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

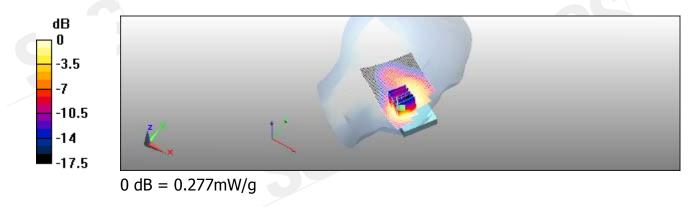
Configuration/LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.268 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 5.81 V/m; Power Drift = 0.028 dB Peak SAR (extrapolated) = 0.449 W/kg

SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.146 mW/g

Maximum value of SAR (measured) = 0.277 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 48 of 101

cGS

Date: 2010/7/23

LE Cheek_CH810

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1909.8 MHz; Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

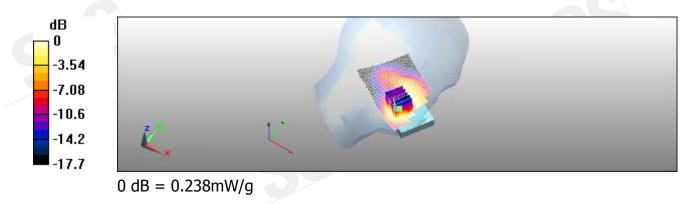
Configuration/LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.229 mW/g

Configuration/LE Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 5.93 V/m; Power Drift = -0.101 dB Peak SAR (extrapolated) = 0.387 W/kg

SAR(1 g) = 0.224 mW/g; SAR(10 g) = 0.127 mW/g





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 49 of 101

CGS

Date: 2010/7/23

RE Tilt_CH512

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ϵ_r = 39.9; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

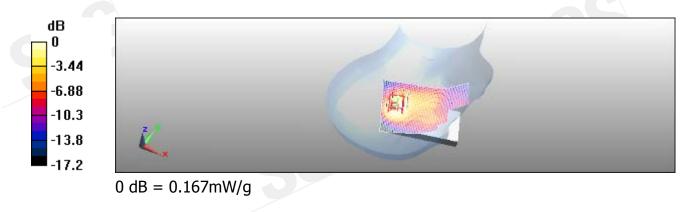
Maximum value of SAR (interpolated) = 0.181 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 11.2 V/m; Power Drift = 0.035 dB Peak SAR (extrapolated) = 0.246 W/kg

SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.089 mW/g

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



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



Report No. : ES/2010/40009 Page : 50 of 101



Date: 2010/7/23

RE Tilt_CH661

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ϵ_r = 39.7; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

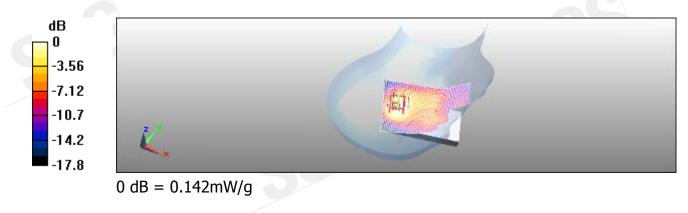
Maximum value of SAR (interpolated) = 0.156 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 10.3 V/m; Power Drift = 0.019 dB Peak SAR (extrapolated) = 0.209 W/kg

SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.074 mW/g

Maximum value of SAR (measured) = 0.142 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

 SGS Taiwan Ltd.
 No.134, Wu Kung Road, '

 台灣檢驗科技股份有限公司
 t (886-2) 2299-3279

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 51 of 101

cGS

Date: 2010/7/23

RE Tilt_CH810

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1909.8 MHz; Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³ Phantom section: Right Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/RE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

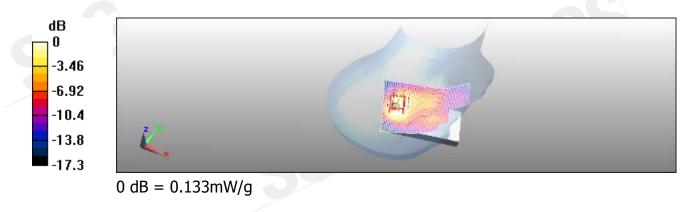
Maximum value of SAR (interpolated) = 0.148 mW/g

Configuration/RE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 9.94 V/m; Power Drift = -0.024 dB Peak SAR (extrapolated) = 0.204 W/kg

SAR(1 g) = 0.124 mW/g; SAR(10 g) = 0.070 mW/g

Maximum value of SAR (measured) = 0.133 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 52 of 101

CGS

Date: 2010/7/23

LE Tilt_CH512

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ϵ_r = 39.9; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

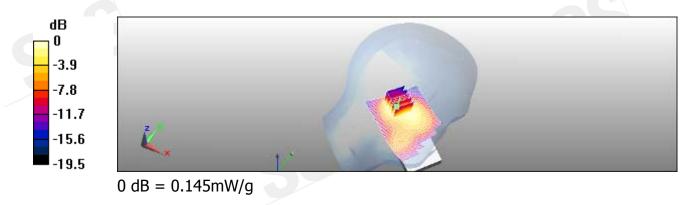
Maximum value of SAR (interpolated) = 0.148 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 10.5 V/m; Power Drift = -0.209 dB Peak SAR (extrapolated) = 0.209 W/kg

SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.079 mW/g

Maximum value of SAR (measured) = 0.145 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 53 of 101

CGS

Date: 2010/7/23

LE Tilt_CH661

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ϵ_r = 39.7; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

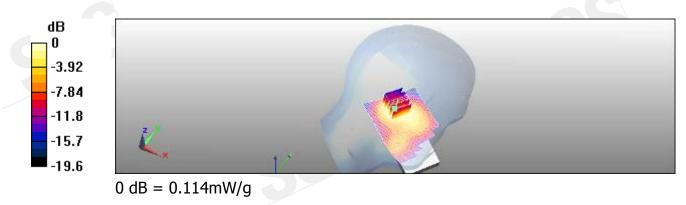
Maximum value of SAR (interpolated) = 0.116 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 8.92 V/m; Power Drift = 0.018 dB Peak SAR (extrapolated) = 0.165 W/kg

SAR(1 g) = 0.103 mW/g; SAR(10 g) = 0.061 mW/g

Maximum value of SAR (measured) = 0.114 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 54 of 101

CGS

Date: 2010/7/23

LE Tilt_CH810

DUT: BM58YB3

Communication System: Generic GSM; Frequency: 1909.8 MHz; Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³ Phantom section: Left Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/LE Tilt/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

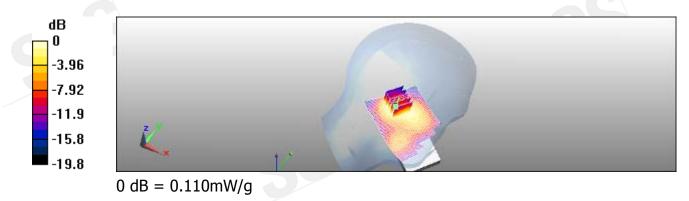
Maximum value of SAR (interpolated) = 0.110 mW/g

Configuration/LE Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 8.69 V/m; Power Drift = -0.019 dB Peak SAR (extrapolated) = 0.160 W/kg

SAR(1 g) = 0.099 mW/g; SAR(10 g) = 0.058 mW/g

Maximum value of SAR (measured) = 0.110 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 55 of 101



Date: 2010/7/23

Body_CH512

DUT: BM58YB3

Communication System: GPRS(Class 12); Frequency: 1850.2 MHz; Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.5 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

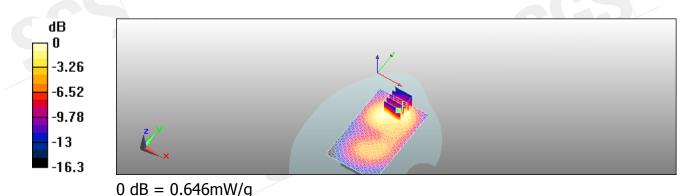
Maximum value of SAR (interpolated) = 0.623 mW/g

Configuration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 12 V/m; Power Drift = -0.018 dB Peak SAR (extrapolated) = 0.910 W/kg

SAR(1 g) = 0.597 mW/g; SAR(10 g) = 0.349 mW/g

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



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 56 of 101

CGS

Date: 2010/7/23

Body_CH661

DUT: BM58YB3

Communication System: GPRS(Class 12); Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ϵ_r = 52.8; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

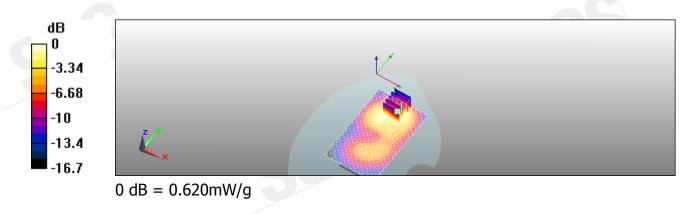
Maximum value of SAR (interpolated) = 0.600 mW/g

Configuration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 11.1 V/m; Power Drift = 0.061 dB Peak SAR (extrapolated) = 0.897 W/kg

SAR(1 g) = 0.583 mW/g; SAR(10 g) = 0.340 mW/g

Maximum value of SAR (measured) = 0.620 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 57 of 101

CGS

Date: 2010/7/23

Body_CH810

DUT: BM58YB3

Communication System: GPRS(Class 12); Frequency: 1909.8 MHz; Medium parameters used: f = 1910 MHz; σ = 1.55 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/Body/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

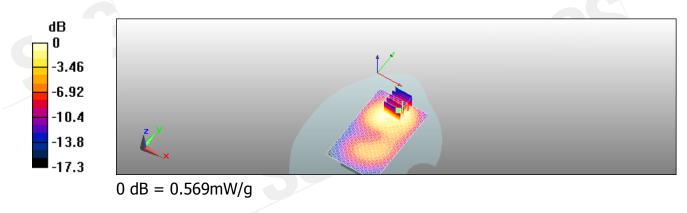
Maximum value of SAR (interpolated) = 0.556 mW/g

Configuration/Body/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 10.4 V/m; Power Drift = 0.014 dB Peak SAR (extrapolated) = 0.830 W/kg

SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.316 mW/g

Maximum value of SAR (measured) = 0.569 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



5. System Verification

Date: 2010/7/22

DUT: Dipole 835 MHz

Communication System: CW; Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ = 0.897 mho/m; ϵ_r = 42.5; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

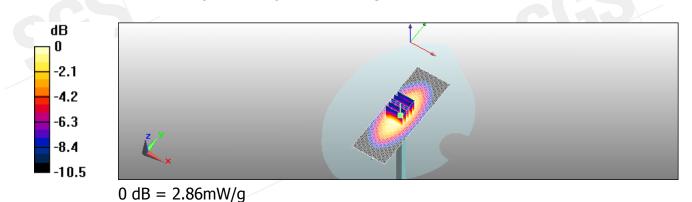
DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.85, 5.85, 5.85); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/d=15mm, **Pin=250mW**, **dist=4mm**: Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.86 mW/g

Configuration/d=15mm, **Pin=250mW**, **dist=4mm**: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 58.2 V/m; Power Drift = -0.021 dB Peak SAR (extrapolated) = 3.6 W/kg

SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/gMaximum value of SAR (measured) = 2.86 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

 SGS Taiwan Ltd.
 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號

 台灣檢驗科技股份有限公司
 t (886-2) 2299-3279
 f (886-2) 2298-0488
 www.tw.sgs.com



Report No. : ES/2010/40009 Page : 59 of 101

Date: 2010/7/22

DUT: Dipole 835 MHz

Communication System: CW; Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ϵ_r = 53.7; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(5.84, 5.84, 5.84); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/d=15mm, Pin=250mW, dist=4mm: Measurement grid:

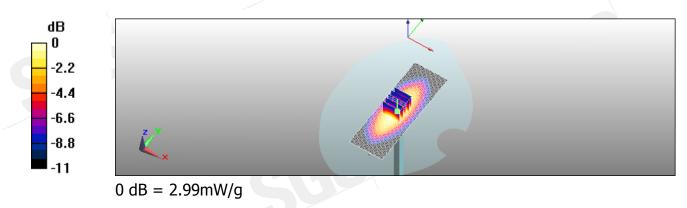
dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.98 mW/g

Configuration/d=15mm, **Pin=250mW**, **dist=4mm**: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 56.1 V/m; Power Drift = 0.00592 dB Peak SAR (extrapolated) = 3.88 W/kg

SAR(1 g) = 2.52 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.99 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Report No. : ES/2010/40009 Page : 60 of 101

Date: 2010/7/23

DUT: Dipole 1900 MHz

Communication System: CW; Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ = 1.42 mho/m; ϵ_r = 39.6; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.89, 4.89, 4.89); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:

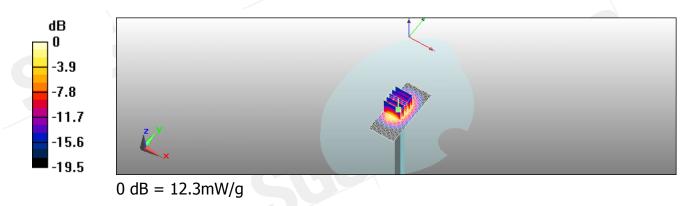
dx=15mm, dy=15mmMaximum value of SAR (interpolated) = 12 mW/g

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 95.1 V/m; Power Drift = 0.034 dBPeak SAR (extrapolated) = 19.6 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 4.96 mW/g

Maximum value of SAR (measured) = 12.3 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 61 of 101

Date: 2010/7/23

DUT: Dipole 1900 MHz

Communication System: CW; Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ = 1.55 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ES3DV3 SN3172; ConvF(4.45, 4.45, 4.45); Calibrated: 2010/5/21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2010/5/20
- Phantom: SAM2; Type: SAM;
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

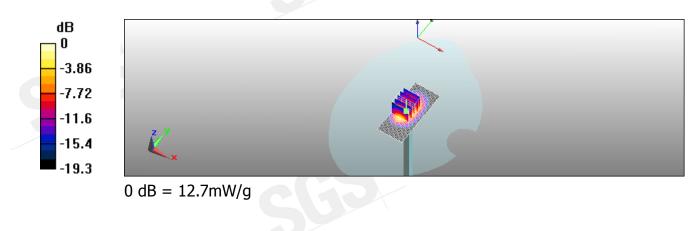
Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:

dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 13.2 mW/g

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:

dx=8mm, dy=8mm, dz=5mm Reference Value = 95 V/m; Power Drift = 0.022 dB Peak SAR (extrapolated) = 20.1 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 4.9 mW/gMaximum value of SAR (measured) = 12.7 mW/g



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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 concerned except in full, without prior written approval of the Company. 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

Accredited by the Swiss Accreditation Servic			S Servizio svizzero di taratura S Swiss Calibration Service
Multilateral Agreement for the r	ecognition of calibration	certificates	
Client SGS-TW (Aude		Action of the second seco	cate No: DAE4-856_May10
CALIBRATION C	CERTIFICATE		
Object	DAE4 - SD 000 D	004 BJ - SN: 856	
Calibration procedure(s)	QA CAL-06.v21 Calibration proces	dure for the data acquisition	n electronics (DAE)
Calibration date:	May 20, 2010		
The measurements and the unce	artainties with confidence pr	onal standards, which realize the phy obability are given on the following p v facility: environment temperature (2	ages and are part of the certificate.
The measurements and the unce	artainties with confidence pr		ages and are part of the certificate.
The measurements and the unce All calibrations have been conduc Calibration Equipment used (M&	ertainties with confidence pro- cted in the closed laborator TE critical for calibration)	obability are given on the following p	ages and are part of the certificate. 2 ± 3)°C and humidity < 70%.
The measurements and the unce All calibrations have been conduc Calibration Equipment used (M& Primary Standards	etainties with confidence pr cted in the closed laborator TE critical for calibration) ID # SN: 0810278 ID #	obability are given on the following p y facility: environment temperature (2 Cal Date (Certificate No.)	ages and are part of the certificate. 2 ± 3)°C and humidity < 70%. Scheduled Calibration
The measurements and the unce All calibrations have been conduc Calibration Equipment used (M& Primary Standards Keithlay Multimeter Type 2001 Secondary Standards Calibrator Box V1.1	In the closed laborator TE critical for calibration) ID # SN: 0810278 ID # SE UMS 006 AB 1004 Name	obability are given on the following p y facility: environment temperature (2 Gal Date (Certificate No.) 1-Oct-09 (No: 9055) Check Date (in house) 05-Jun-09 (in house check) Function	ages and are part of the certificate. 2 ± 3)°C and humidity < 70%. Scheduled Calibration Oct-10 Scheduled Check
The measurements and the unce All calibrations have been conduc Calibration Equipment used (M& Primary Standards Keithley Multimeter Type 2001 Secondary Standards	In the closed laborator TE critical for calibration) Control of the closed laborator TE critical for calibration) Control of the calibration SN: 0810278 ID # SE UMS 006 AB 1004	obability are given on the following p y facility: environment temperature (2 Cal Date (Certificate No.) 1-Oct-08 (No: 9055) Check Date (in house) 05-Jun-09 (in house check)	ages and are part of the certificate. 2 # 3)°C and humidity < 70%. Scheduled Calibration Oct-10 Scheduled Check In house check: Jun-10
The measurements and the unce All calibrations have been conduc Calibration Equipment used (M& Primary Standards Keithlay Multimeter Type 2001 Secondary Standards Calibrator Box V1.1	In the closed laborator TE critical for calibration) ID # SN: 0810278 ID # SE UMS 006 AB 1004 Name	obability are given on the following p y facility: environment temperature (2 Gal Date (Certificate No.) 1-Oct-09 (No: 9055) Check Date (in house) 05-Jun-09 (in house check) Function	ages and are part of the certificate. 2 # 3)°C and humidity < 70%. Scheduled Calibration Oct-10 Scheduled Check In house check: Jun-10

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 63 of 101

Schmid & Partner Engineering AG Jeughausstrasse 43, 8004 Zurio	ry of	Hac-MRA (PUB)	Service suisse d'étalonnage Servizio svizzero di taratura
Accredited by the Swiss Accredit The Swiss Accreditation Servic Multilateral Agreement for the r	e is one of the signatori	ies to the EA	n No.: SCS 108
Client SGS-TW (Aud	10		a: ES3-3172_May10
CALIBRATION	CERTIFICAT	TE .	
Object	ES3DV3 - SN:3	172	
Calibration procedure(s)	OA CAL-01 VB	QA CAL-14.v3, QA CAL-23.v3 an	d OA CAL-25 v2
		edure for dosimetric E-field probe	
Calibration date:	May 21, 2010		
The measurements and the unco	ertainties with confidence	itional standards, which realize the physical un probability are given on the following pages ar lory facility: environment temperature (22 ± 3)*	nd are part of the certificate.
The measurements and the unor All calibrations have been condu Calibration Equipment used (M&	ertainties with confidence ucted in the closed laborat .TE critical for calibration)	probability are given on the following pages ar tory facility: environment temperature (22 ± 3)"	nd are part of the certificate. C and humidity < 70%.
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards	ertainties with confidence incled in the closed laborat TE critical for calibration)	probability are given on the following pages ar lory facility: environment temperature (22 ± 3)" Cal Date (Certificate No.)	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E4419B	entainties with confidence includ in the closed laborat TE critical for calibration) ID # G841293874	probability are given on the following pages an lory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01136)	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A	ID # G841293874 MY41485277	probability are given on the following pages an tory facility: environment temperature (22 ± 3) rd Cal Date (Certificate No.) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01138)	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E4419B	ID # G841293874 MY41495087	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1Apr-10 (No. 217-01138) 1Apr-10 (No. 217-01138) 1Apr-10 (No. 217-01136)	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A	ID # G841293874 MY41485277	probability are given on the following pages an tory facility: environment temperature (22 ± 3) rd Cal Date (Certificate No.) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01138)	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Apr-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 30 dB Attenuator	ID # GB41293874 MY41495277 MY41495087 SN: S5054 (3c)	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01136) 1-Apr-10 (No. 217-01136) 30-Mar-10 (No. 217-01136)	Ind are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Apr-11 Mar-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A Power sensor E4412A Reference 30 dB Attenuator Reference 30 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2	ID # G841293874 MY41495277 MY41495077 MY4149507 SN: S5054 (3c) SN: S5054 (3c) SN: S5129 (30b) SN: 3013	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01136) 1-Apr-10 (No. 217-01136) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01161) 30-Dec-09 (No. ES3-3013_Dec09)	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Mar-11 Dec-10
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power sensor E44198 Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 30 dB Attenuator	ID # G841293874 MY41495277 MY41495277 MY41495087 SN: S5054 (3c) SN: S5058 (2cb) SN: S5129 (30b)	probability are given on the following pages an lory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01136) 1-Apr-10 (No. 217-01136) 30-Mar-10 (No. 217-01156) 30-Mar-10 (No. 217-01156) 30-Mar-10 (No. 217-01150)	d are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Mar-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A Power sensor E4412A Reference 30 dB Attenuator Reference 30 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2	ID # G841293874 MY41495277 MY41495077 MY4149507 SN: S5054 (3c) SN: S5054 (3c) SN: S5129 (30b) SN: 3013	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01136) 1-Apr-10 (No. 217-01136) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01161) 30-Dec-09 (No. ES3-3013_Dec09)	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Mar-11 Dec-10
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 30 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 DAE4	ID # G841293874 MY41495277 MY41495087 SN: S5054 (3c) SN: S5058 (20b) SN: S5129 (30b) SN: 660	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01138) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01150) 30-Dec-09 (No. E33-3013, Dec09) 20-Apr-10 (No. DAE4-680_Apr10)	d are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Apr-11 Mar-11 Mar-11 Dec-10 Apr-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards	ettainties with confidence incled in the closed laborat ID # G841293874 MY41495277 MY41495087 SN: \$5054 (3c) SN: \$5054 (3c) SN: \$5058 (20b) SN: \$5129 (30b) SN: \$1013 SN: 660 ID #	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01136) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01169) 30-Mar-10 (No. 217-01169) 30-Mar-10 (No. 217-01169) 30-Mar-10 (No. 217-01169) 30-Dec-09 (No. ES3-3013_Dec09) 20-Apr-10 (No. DAE4-660_Apr10) Check Date (in house)	d are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Dec-10 Apr-11 Scheduled Check
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Reference 3 dB Attenuator Reference 30 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards RF generator HP 8848C	ettainties with confidence inceed in the closed laborat ID # G841293874 MY41495277 MY41495087 SN: 55054 (3c) SN: 55054 (3c) SN: 55054 (3c) SN: 55054 (3c) SN: 55129 (30b) SN: 3013 SN: 660 ID # US3642U01700	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01138) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01160) 30-Dec-08 (No. ES3-3013_Dec09) 20-Apr-10 (No. DAE4-680_Apr10) Check Date (in house) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) Function	nd are part of the certificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Dec-10 Apr-11 Scheduled Check In house check: Oct-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Reference 3 dB Attenuator Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards RF generator HP 8648C	ettainties with confidence includ in the closed laborat TE critical for calibration) ID # G841293874 MY41495277 MY41495087 SN: S5054 (3c) SN: S5054 (3c) SN: S5054 (3c) SN: S5129 (30b) SN: S5129 (30b) SN: 3013 SN: 660 ID # US3642U01700 US37390585	probability are given on the following pages an lory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01136) 1-Apr-10 (No. 217-01136) 1-Apr-10 (No. 217-01159) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01161) 30-Dec-09 (No. ES3-3013_Dec09) 20-Apr-10 (No. DAE4-660_Apr10) Check Date (in house) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09)	nd are part of the cartificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Dec-10 Apr-11 Scheduled Check In house check: Oct-11 In house check: Oct-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 3 dB Attenuator Reference 30 dB Attenuator Reference 9 nob ES3DV2 DAE4 Secondary Standards RF generator HP 8848C Network Analyzer HP 8753E	ettainties with confidence includ in the closed laborat TE critical for calibration) ID # GB41293874 MY414950277 MY41495087 SN: S5054 (3c) SN: S5054 (3c) SN: S5058 (20b) SN: S5129 (30b) SN: 3013 SN: 660 ID # US3842U01700 US37390585 Name	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01138) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01160) 30-Dec-08 (No. ES3-3013_Dec09) 20-Apr-10 (No. DAE4-680_Apr10) Check Date (in house) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) Function	nd are part of the cartificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Dec-10 Apr-11 Scheduled Check In house check: Oct-11 In house check: Oct-11
The measurements and the unor All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter E44198 Power sensor E4412A Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 3 dB Attenuator Reference 30 dB Attenuator Reference 9 nob ES3DV2 DAE4 Secondary Standards RF generator HP 8848C Network Analyzer HP 8753E	ettainties with confidence includ in the closed laborat TE critical for calibration) ID # GB41293874 MY414950277 MY41495087 SN: S5054 (3c) SN: S5054 (3c) SN: S5058 (20b) SN: S5058 (20b) SN: S5129 (30b) SN: 3013 SN: 660 ID # US3842U01700 US37390585 Name	probability are given on the following pages an tory facility: environment temperature (22 ± 3)*1 Cal Date (Certificate No.) 1-Apr-10 (No. 217-01138) 1-Apr-10 (No. 217-01138) 30-Mar-10 (No. 217-01159) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01161) 30-Mar-10 (No. 217-01160) 30-Dec-08 (No. ES3-3013_Dec09) 20-Apr-10 (No. DAE4-680_Apr10) Check Date (in house) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) Function	nd are part of the cartificate. C and humidity < 70%. Scheduled Calibration Apr-11 Apr-11 Mar-11 Mar-11 Mar-11 Dec-10 Apr-11 Scheduled Check In house check: Oct-11 In house check: Oct-11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 64 of 101

Schweizerischer Kalibrierdienst

Service suisse d'étalonnage

Swiss Calibration Service Accreditation No.: SCS 108

ervizio avizzero di taratura

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



SNISS

0

S

C

s

RUBRAT

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

Glossary:

TSL NORMx,y,z ConvE DCP CF A, B, C Polarization e Polarization 3

tissue simulating liquid sensitivity in free space sensitivity in TSL / NORMx,y,z diode compression point crest factor (1/duty_cycle) of the RF signal modulation dependent linearization parameters o rotation around probe axis 9 rotation around an axis that is in the plane normal to probe axis (at measurement center). i.e., 8 = 0 is normal to probe axis

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

Methods Applied and Interpretation of Parameters:

- NORMs, y, z: Assessed for E-field polarization 3 = 0 (f < 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E2-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included In the stated uncertainty of ConvF.
- DCPx, y, z: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z; A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on powe measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx.y.z.* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from \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: ES3-3172 May10

Page 2 of 11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 SGS Taiwan Ltd. t (886-2) 2299-3279 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 65 of 101

ES3DV3 SN:3172

May 21, 2010

Probe ES3DV3

SN:3172

Manufactured: Last calibrated: Recalibrated:

January 23, 2008 May 27, 2009 May 21, 2010

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

Certificate No: ES3-3172 May10

Page 3 of 11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



ES3DV3 SN:3172

May 21, 2010

DASY/EASY - Parameters of Probe: ES3DV3 SN:3172

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (µV/(V/m) ²) ^A	1.37	1:19	0.97	± 10.1%
DCP (mV) ⁸	93.9	92.5	93.2	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	С	VR mV	Unc ^E (k=2)
10000	cw	0.00	х	0.00	0.00	1.00	300.0	± 1.5%
			Y	0.00	0.00	1.00	300.0	
			z	0.00	0.00	1.00	300.0	

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

* The uncertainties of NormX Y Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

Numerical linearization parameter: uncertainty not required.

E Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

Certificate No: ES3-3172_May10

Page 4 of 11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488

www.tw.sgs.com



Report No. : ES/2010/40009 Page : 67 of 101

ES3DV3 SN:3172

May 21, 2010

DASY/EASY - Parameters of Probe: ES3DV3 SN:3172

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz] ^C	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	5,85	5.85	5.85	0.76	1.14 ± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	5.75	5.75	5.75	0.87	1.08 ± 11.0%
1750	± 50 / ± 100	40.1±5%	1.37 ± 5%	5.04	5.04	5.04	0.31	1.82 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.89	4.89	4.89	0.50	1.46 ± 11.0%
2000	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.73	4.73	4.73	0.49	1.44 ± 11.0%
2450	±50/±100	39.2 ± 5%	1.80 ± 5%	4.32	4.32	4.32	0.42	1.70 ± 11.0%

² 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: ES3-3172_May10

Page 5 of 11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 68 of 101

ES3DV3 SN:3172

May 21, 2010

DASY/EASY - Parameters of Probe: ES3DV3 SN:3172

Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz] ^C	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	5.84	5.84	5.84	0.81	1.19 ± 11.0%
900	± 50 / ± 100	$55.0\pm5\%$	1.05 ± 5%	5.75	5.75	5.75	0.73	1.24 ± 11.0%
1750	± 50 / ± 100	$53.4\pm5\%$	$1.49 \pm 5\%$	4.63	4.63	4.63	0.39	1.75 ± 11.0%
1900	± 50 / ± 100	$53.3\pm5\%$	$1.52 \pm 5\%$	4,45	4.45	4.45	0.32	2.36 ± 11.0%
2000	$\pm 50 / \pm 100$	53.3 ± 5%	1.52 ± 5%	4,47	4.47	4.47	0.32	2.44 ±11.0%
2450	$\pm 50 / \pm 100$	52.7 ± 5%	1.95 ± 5%	4.11	4.11	4.11	0.82	1.17 ± 11.0%
2600	$\pm 50 / \pm 100$	52.5 ± 5%	2.16 ± 5%	3,99	3.99	3.99	0.95	1.09 ± 11.0%
3500	$\pm 50 / \pm 100$	$51.3 \pm 5\%$	3.31 ± 5%	3.28	3.28	3.28	1.00	1.28 ± 13.1%

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 of the uncertainty for the indicated frequency band.

Certificate No: ES3-3172_May10

Page 6 of 11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be

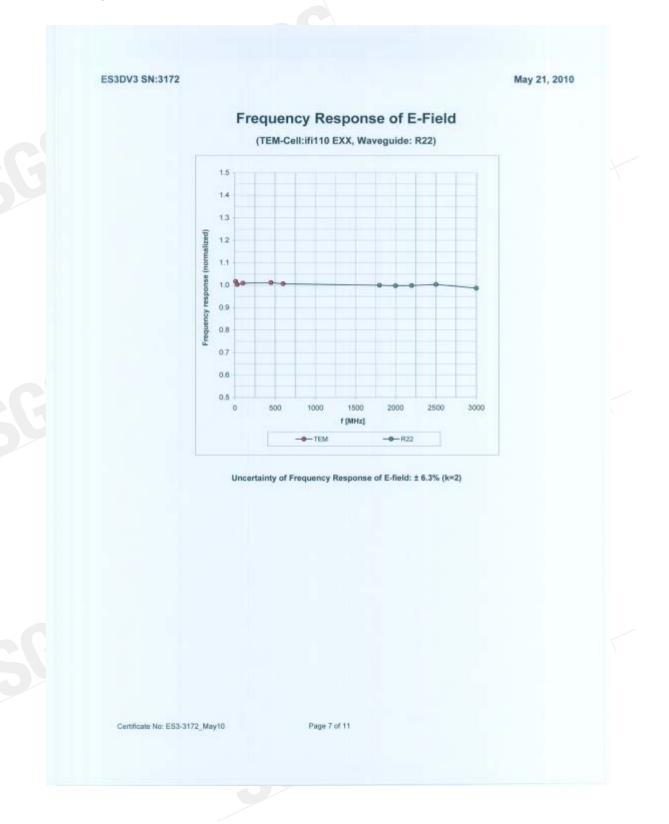
台灣檢驗科技股份有限公司

prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 69 of 101



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

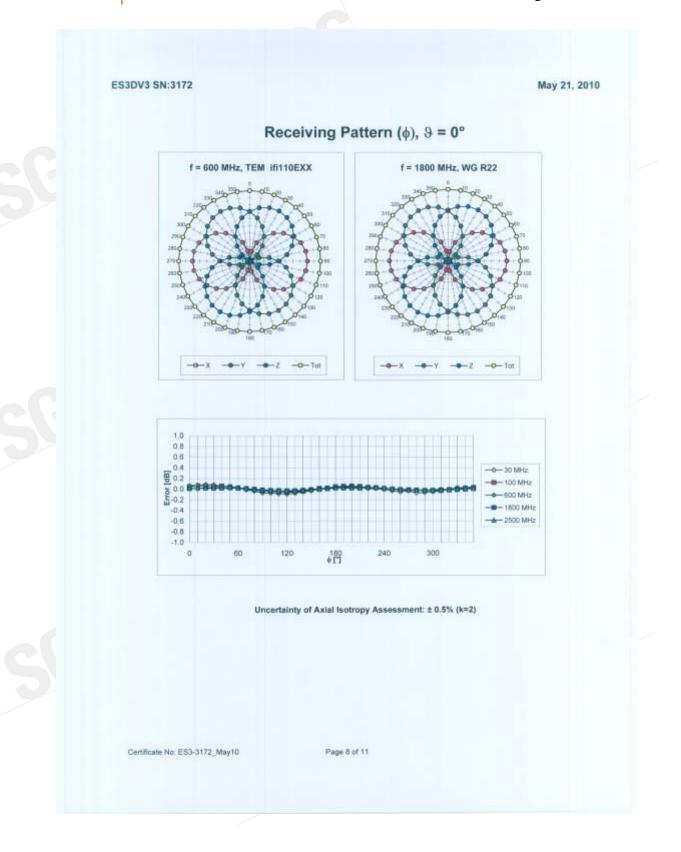
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488

SGS

Report No. : ES/2010/40009 Page : 70 of 101



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

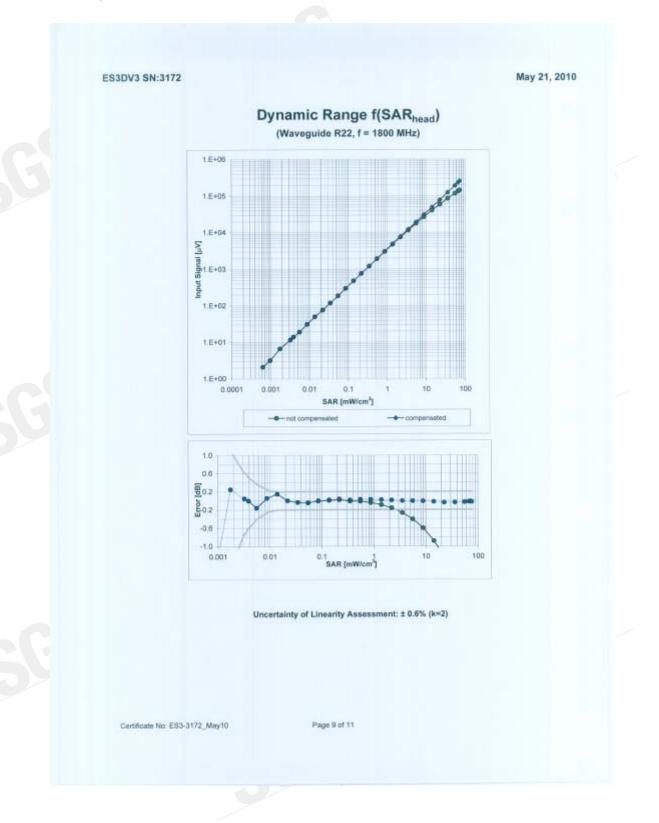
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 SGS Taiwan Ltd. t (886-2) 2299-3279 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 71 of 101



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

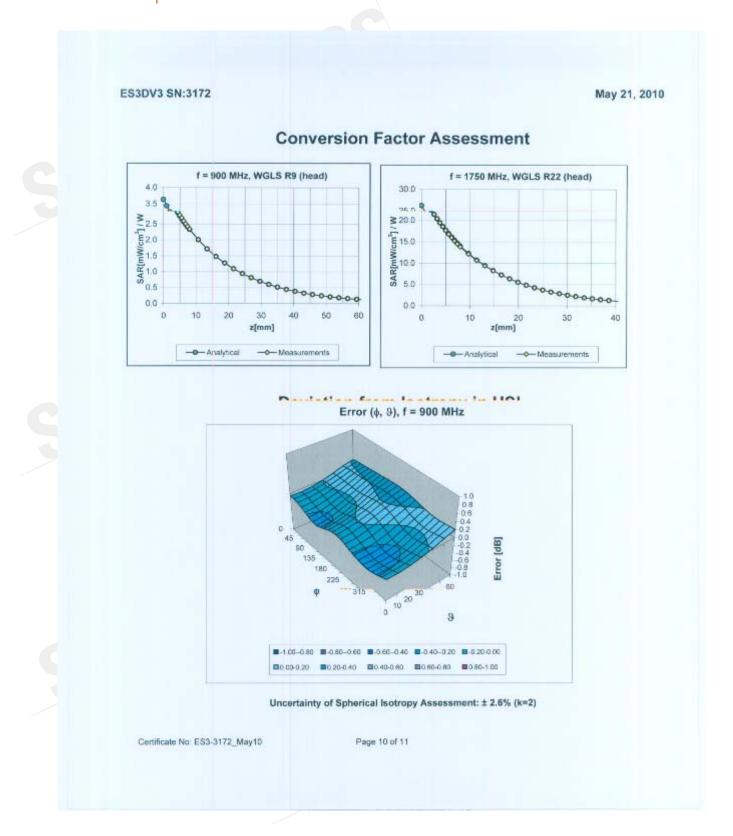
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

GS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488

Report No. : ES/2010/40009 Page : 72 of 101



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

SGS

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



ES3DV3 SN:3172

May 21, 2010

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4.0 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Certificate No: ES3-3172_May10

Page 11 of 11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488



7. Uncertainty Analysis

Error Description	Uncertainty value	Prob. Dist.	Div.	$\begin{pmatrix} c_i \end{pmatrix} \\ 1 \mathbf{g}$	$\begin{pmatrix} c_i \\ 10g \end{pmatrix}$	Std. Unc. (1g)	Std. Unc. (10g)	(v_t) v_{eff}
Measurement System	()							
Probe Calibration	$\pm 5.9\%$	N	1	1	1	$\pm 5.9\%$	$\pm 5.9\%$	00
Axial Isotropy	$\pm 4.7 \%$	R	$\sqrt{3}$	0.7	0.7	$\pm 1.9\%$	$\pm 1.9\%$	00
Hemispherical Isotropy	$\pm 9.6 \%$	R	$\sqrt{3}$	0.7	0.7	$\pm 3.9\%$	$\pm 3.9\%$	00
Boundary Effects	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	00
Linearity	$\pm 4.7 \%$	R	$\sqrt{3}$	1	1	$\pm 2.7\%$	$\pm 2.7\%$	00
System Detection Limits	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	±0.6%	00
Readout Electronics	$\pm 0.3 \%$	N	1	1	1	±0.3%	$\pm 0.3\%$	00
Response Time	$\pm 0.8 \%$	R	$\sqrt{3}$	1	1	$\pm 0.5 \%$	$\pm 0.5\%$	00
Integration Time	$\pm 2.6 \%$	R	$\sqrt{3}$	1	1	$\pm 1.5 \%$	$\pm 1.5\%$	00
RF Ambient Noise	±3.0 %	R	$\sqrt{3}$	1	1	±1.7%	$\pm 1.7\%$	00
RF Ambient Reflections	±3.0 %	R	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	00
Probe Positioner	$\pm 0.4\%$	R	$\sqrt{3}$	1	1	$\pm 0.2\%$	$\pm 0.2\%$	00
Probe Positioning	$\pm 2.9\%$	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	00
Max. SAR Eval.	$\pm 1.0 \%$	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Test Sample Related	-			s	8		5	1
Device Positioning	$\pm 2.9\%$	N	1	1	1	$\pm 2.9\%$	$\pm 2.9\%$	145
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	$\pm 2.9\%$	$\pm 2.9\%$	00
Phantom and Setup			- 039				5	
Phantom Uncertainty	$\pm 4.0 \%$	R	$\sqrt{3}$	1	1	$\pm 2.3\%$	$\pm 2.3\%$	∞
Liquid Conductivity (target)	$\pm 5.0\%$	R	$\sqrt{3}$	0.64	0.43	$\pm 1.8\%$	$\pm 1.2\%$	00
Liquid Conductivity (meas.)	$\pm 2.5 \%$	Ν	1	0.64	0.43	$\pm 1.6\%$	$\pm 1.1\%$	00
Liquid Permittivity (target)	$\pm 5.0 \%$	R	$\sqrt{3}$	0.6	0.49	$\pm 1.7\%$	$\pm 1.4\%$	00
Liquid Permittivity (meas.)	$\pm 2.5 \%$	N	1	0.6	0.49	$\pm 1.5 \%$	$\pm 1.2\%$	∞
Combined Std. Uncertainty						$\pm 10.9\%$	$\pm 10.7\%$	387
Expanded STD Uncertain	ty				1	$\pm 21.9~\%$	$\pm 21.4\%$	÷

DASY5 Uncertainty Budget

Table 19.6: Worst-Case uncertainty budget for DASY5 assessed according to IEEE 1528 [1]. The

budget is valid for the frequency range 300 MHz - 3 GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerable smaller.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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 & Partner Engineering AG

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

CENELEC EN 50361

IEEE Std 1528-2003 IEC 62209 Part I [2]

[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].

07.07.2005

Date

Signature / Stamp

8	P	0	8	g	_
Sch	mid &	Parine	Engin	neering AG	witter
Pho	ne +41	3.345	\$7000	Fax 4411	245 9779

Doc No 881 - QD 000 P40 C - F

1 (1)

Page

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司



9. System Validation from Original equipment supplier

	h, Switzerland	Karps S	Servizio svizzero di taratura Swiss Calibration Service No.: SCS 108
Accredited by the Swiss Accredita The Swiss Accreditation Service		Concerning and the second s	No. 303 100
Multilateral Agreement for the re	ecognition of calibration	certificates	
Client SGS-TW (Aude	n)	Certificate No	: D835V2-4d063_May10
CALIBRATION C	EDTICICATE		
CALIBRATION	ERTIFICATE		
Object	D835V2 - SN: 4d	063	
1000			
Calibration procedure(s)	QA CAL-05.v7		
Community in community		dure for dipole validation kits	
Calibration date:	May 21, 2010		
This calibration certificate docum			
The measurements and the unce	rtainties with confidence p	robability are given on the following pages ar	
The measurements and the unce	rtainties with confidence p	obability are given on the following pages ar y facility: environment temperature $(22 \pm 3)^4$	
The measurements and the unce	rtainties with confidence pr		
The measurements and the unce All calibrations have been conduc	rtainties with confidence pr		
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A	Itainties with confidence provide the closed laborator calibration) ID # GB37480704	y facility: environment temperature (22 ± 3)* Cel Dete (Certificate No.) 06-Oct-09 (No. 217-01086)	C and humidity < 70%. Scheduled Calibration Oct-10
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A	rtainties with confidence pr cled in the closed laborator TE critical for calibration) ID # GB37480704 US37292783	y facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator	Itainties with confidence provide the closed laborator (Contical for calibration)	y facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination	Itainties with confidence provide the closed laborator (Centical for calibration) ID # (Centical for calibration) (Centical for c	y facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01162)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator	Itainties with confidence provide the closed laborator (Contical for calibration)	y facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4	rtainties with confidence pr cled in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5087.2708327 SN: 5047.2708327 SN: 3205 SN: 601	v facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. ES3-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Apr-11 Mar-11
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards	rtainties with confidence pr cled in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5087.2706327 SN: 3205 SN: 601 ID #	v facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01162) 30-Apr-10 (No. ES3-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Apr-11
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondarty Standards Power sensor HP 8481A	rtainties with confidence pr cled in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5087.2708327 SN: 5047.2708327 SN: 3205 SN: 601	y facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01152) 30-Apr-10 (No. ES3-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-02 (in house check Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Apr-11 Mar-11 Scheduled Check
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards	rtainties with confidence pr cted in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5086 (20g) SN: 5087,2 / 06327 SN: 3205 SN: 601 ID # MY41092317	v facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01162) 30-Apr-10 (No. ES3-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Mar-11 Mar-11 Scheduled Check In house check: Oct-11
The measurements and the unce All calibrations have been conduin Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06	rtainties with confidence pr cled in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005	y facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01162) 30-Mar-10 (No. 217-01162) 30-Apr-10 (No. ES3-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-02 (in house check Oct-09) 4-Aug-99 (in house check Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Oct-10 Mar-11 Mar-11 Mar-11 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-11
The measurements and the unce All calibrations have been conduin Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06	rtainties with confidence pr cled in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005	y facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01162) 30-Mar-10 (No. 217-01162) 30-Apr-10 (No. ES3-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-02 (in house check Oct-09) 4-Aug-99 (in house check Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Oct-10 Mar-11 Mar-11 Mar-11 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-11
The measurements and the unce All calibrations have been conduin Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06	rtainties with confidence pr cled in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005 US37390585 54206	v facility: environment temperature (22 ± 3)* Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01162) 30-Apr-10 (No. 217-01162) 30-Apr-10 (No. ES3-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-02 (in house check Oct-09) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Mar-11 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-11 In house check: Oct-10
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer HP 8753E	rtainties with confidence pr cted in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5066 (20g) SN: 5067.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005 US37390585 54206 Name	Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01162) 30-Apr-10 (No. E53-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-09 (in house check Oct-09) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) Function	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Mar-11 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-11 In house check: Oct-10
The measurements and the unce All calibrations have been condui Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer HP 8753E	rtainties with confidence pr cted in the closed laborator TE critical for calibration) ID # GB37480704 US37292783 SN: 5066 (20g) SN: 5067.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005 US37390585 54206 Name	Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01162) 30-Apr-10 (No. E53-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-09 (in house check Oct-09) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) Function	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Mar-11 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-11 In house check: Oct-10
The measurements and the unce All calibrations have been condu- Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A Ref generator R&S SMT-06 Network Analyzer HP 8753E Calibrated by:	International State of the second state of the closed laboration of the closed laboration of the state of the	y facility: environment temperature (22 ± 3)* Cel Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. E53-3205_Apr10) 02-Mar-10 (No. E53-3205_Apr10) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house check Oct-09) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) Function Laboratory Technician	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Mar-11 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-11 In house check: Oct-10

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

SG

Report No. : ES/2010/40009 Page : 77 of 101

Calibration Laboratory of Schmid & Partner

Engineering AG usstrasse 43, 8004 Zurich, Switzerland Zeoght



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

Accreditation No.: SCS 108

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

Glossary:

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

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques*, December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

Certificate No: D835V2-4d063_May10

Page 2 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



Measurement Conditions

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

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.7 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature during test	(22.5 ± 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.42 mW / g
SAR normalized	normalized to 1W	9.68 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.62 mW /g ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.58 mW / g
SAR normalized	normalized to 1W	6.32 mW / g
	normalized to 1W	6.29 mW/g ± 16.5 % (k=2)

Certificate No: D835V2-4d063_May10

Page 3 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	0.98 mha/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) "C		

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.53 mW / g
SAR normalized	normalized to 1W	10.1 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	10.0 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.66 mW / g
SAR normalized	normalized to 1W	6.64 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.59 mW / g ± 16.5 % (k=2)



Certificate No: D835V2-4d063_May10

Page 4 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com

Member of SGS Group



Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.6 Ω - 0.6 jΩ	
Return Loss	- 31.7 dB	

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.9 Ω - 2.8 jΩ	
Return Loss	- 28.9 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.392 ns
----------------------------------	----------

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

Certificate No: D835V2-4d063_May10

Page 5 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 SGS Taiwan Ltd. t (886-2) 2299-3279 f (886-2) 2298-0488

www.tw.sgs.com



DASY5 Validation Report for Head TSL

Date/Time: 21.05.2010 11:22:13

Test Laboratory: SPEAG, Zurich, Switzerland

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

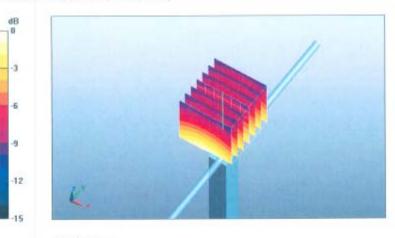
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1 Medium: HSL900 Medium parameters used: f = 835 MHz; $\sigma = 0.91$ mho/m; $\varepsilon_r = 41.9$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3205; ConvF(6.03, 6.03, 6.03); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.5 V/m; Power Drift = 0.00219 dB Peak SAR (extrapolated) = 3.61 W/kg SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.58 mW/g Maximum value of SAR (measured) = 2.83 mW/g



0 dB = 2.83mW/g

Certificate No: D835V2-4d063_May10

Page 6 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

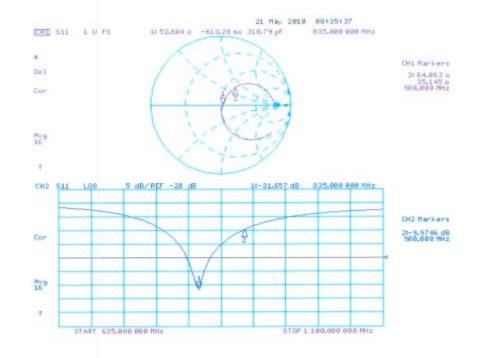
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司



Impedance Measurement Plot for Head TSL



Certificate No: D835V2-4d063_May10

Page 7 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

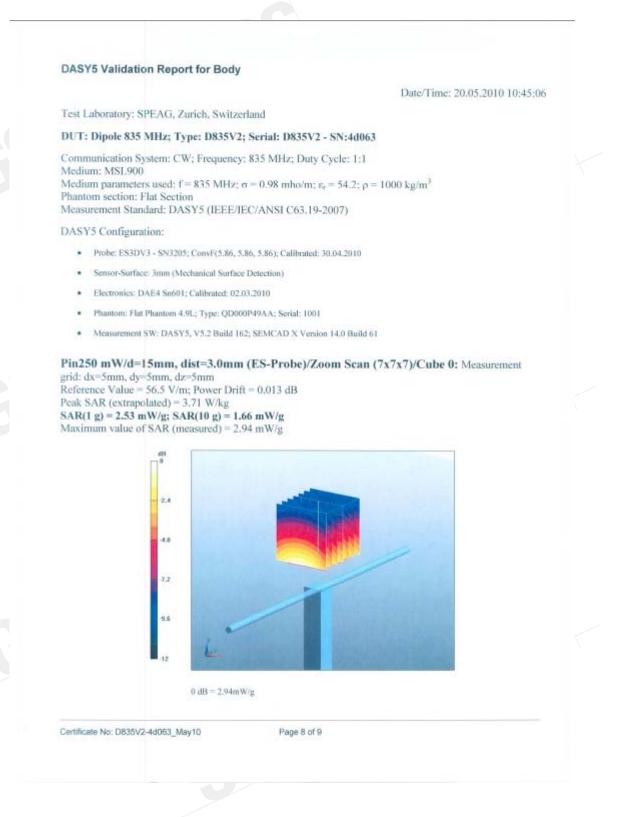
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com

Member of SGS Group

SG



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

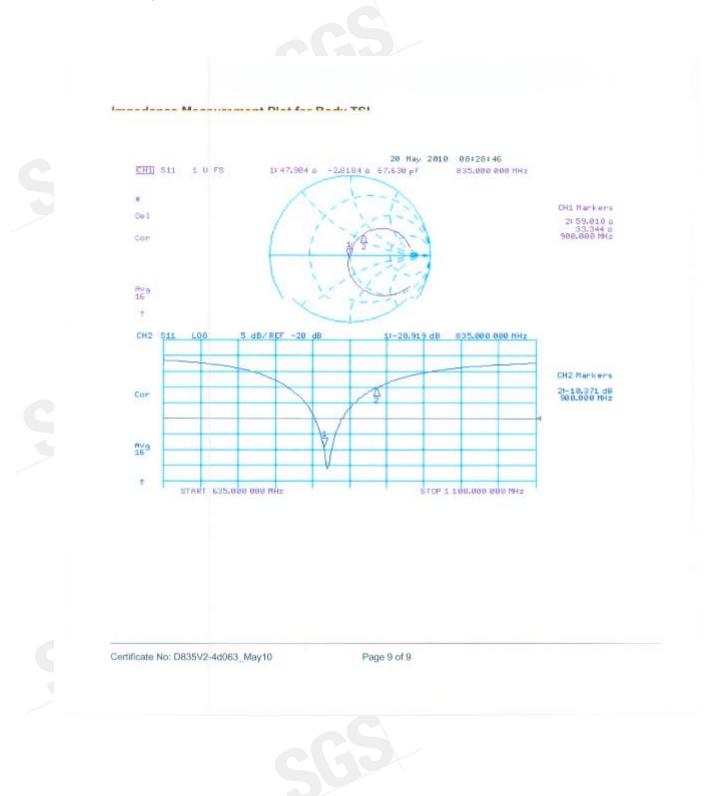
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sqs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



Report No. : ES/2010/40009 Page : 84 of 101



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



Report No. : ES/2010/40009 Page : 85 of 101

Schmid & Partner Engineering AG Leughausstrasse 43, 8004 Zuric	h, Switzerland	Hac MRA	Service Swiss Calibration Service
Accredited by the Swiss Accredits The Swiss Accreditation Servic Multilateral Agreement for the r	e is one of the signatorie	s to the EA	an No.: SCS 108
Client SGS-TW (Aude			No: D1900V2-5d027_Apr10
CALIBRATION O	CERTIFICATE		
Object	D1900V2 - SN: 5	d027	
Calibration procedure(s)	QA CAL-05.v7 Calibration proce	dure for dipole validation kits	
Calibration date:	April 28, 2010		
The measurements and the unce	ertainties with confidence p	onal standards, which realize the physical i robability are given on the following pages i ry facility: environment temperature (22 \pm 3)	and are part of the certificate.
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A	etainties with confidence p cted in the closed laboration TE critical for calibration) ID # GB37480704	robability are given on the following pages in ny faolitity: environment temperature (22 ± 3) Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086)	and are part of the certificate.)°G and humidity < 70%. Scheduled Calibration Oct-10
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3	etainties with confidence p cted in the closed laboration TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5047.2 / 06327 SN: 3205	robability are given on the following pages a print facility: environment temperature (22 ± 3) Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01152) 26-Jun-09 (No. ES3-3205_Jun09)	Ind are part of the certificate. In G and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Jun-10
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Raference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4	etainties with confidence p cted in the closed laboration TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5087.2 / 06327 SN: 5080 SN: 5047.2 / 06327 SN: 3205	robability are given on the following pages in traditity: environment temperature (22 ± 3) Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01188) 30-Mar-10 (No. 217-01182) 26-Jun-09 (No. ES3-3205_Jun09) 02-Mar-10 (No. DAE4-601_Mar10)	Ind are part of the certificate. If G and humidity < 70%s. Scheduled Calibration Oct-10 Mar-11 Mar-11 Jun-10 Mar-11
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06	etainties with confidence p cted in the closed laboration TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5047.2 / 06327 SN: 3205	robability are given on the following pages a print facility: environment temperature (22 ± 3) Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01152) 26-Jun-09 (No. ES3-3205_Jun09)	Ind are part of the certificate. In G and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-11 Mar-11 Jun-10
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3	etainties with confidence p cted in the closed laboration TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005	robability are given on the following pages a print facility: environment temperature (22 ± 3) Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. ES3-3205_Jun09) 02-Mar-10 (No. ES3-3205_Jun09) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-02 (in house check Oct-09) 4-Aug-99 (in house check Oct-09)	and are part of the certificate. (*G and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Oct-10 Mar-11 Mar-11 Jun-10 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-11
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06	etainties with confidence p cted in the closed laboration) TE critical for calibration) ID # GB37480704 US37292783 SN: 5086 (20g) SN: 5087.2 / 06327 SN: 5086 (20g) SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # MY41082317 100005 US37390585 S4206	robability are given on the following pages a ry facility: environment temperature (22 ± 3) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01188) 30-Mar-10 (No. 217-01158) 30-Mar-10 (No. 217-01152) 26-Jun-09 (No. ES3-3205, Jun09) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-02 (in house check Oct-09) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09)	and are part of the certificate. (*G and humidity < 70%. Scheduled Calibration Oct+10 Mar-11 Mar-11 Jun-10 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-10
The measurements and the unce All calibrations have been condu Calibration Equipment used (M& Primary Standards Power sensor HP 8481A Reference 20 d5 Attenuator Type-N mismatch combination Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer HP 8753E	etainties with confidence p cted in the closed laboration TE critical for calibration) ID # GB37480704 US37292783 SN: 5047.2 / 06327 SN: 5047.2 / 06327 SN: 5047.2 / 06327 SN: 601 ID # MY41082317 100005 US37390585 54206 Name	robability are given on the following pages a print facility: environment temperature (22 ± 3) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01188) 30-Mar-10 (No. 217-01182) 26-Jun-09 (No. ES3-3205_Jun09) 02-Mar-10 (No. ES3-3205_Jun09) 02-Mar-10 (No. ES3-3205_Jun09) 02-Mar-10 (No. DAE4-601_Mar10) Check Date (in house) 18-Oct-02 (in house check Oct-09) 4-Aug-99 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) 18-Oct-01 (in house check Oct-09)	and are part of the certificate. (*G and humidity < 70%s. Scheduled Calibration Oct+10 Mar-11 Mar-11 Jun-10 Mar-11 Scheduled Check In house check: Oct-11 In house check: Oct-10 Signature

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

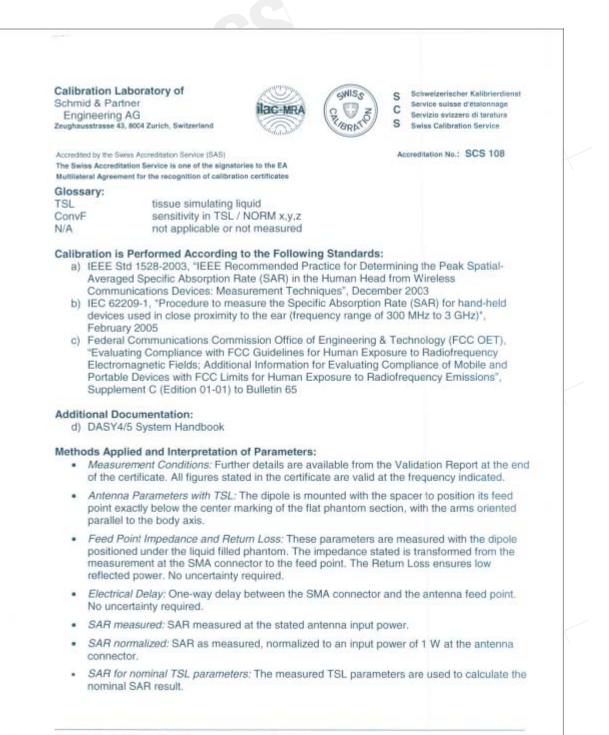
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

be reproduced except in run, million many million many prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488



Report No. : ES/2010/40009 Page : 86 of 101



Certificate No: D1900V2-5d027_Apr10

Page 2 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488

www.tw.sgs.com



Report No. : ES/2010/40009 Page : 87 of 101

Measurement Conditions

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mha/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.5 ± 6 %	1.41 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C		

bailene anni anninde anni

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.91 mW / g
SAR normalized	normalized to 1W	39.6 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	39.6 mW /g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.17 mW / g
SAR normalized	normalized to 1W	20.7 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	20.7 mW /g ± 16.5 % (k=2)

Certificate No: D1900V2-5d027_Apr10

Page 3 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488 www.tw.sgs.com



Body TSL parameters

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) "C	54.8 ± 6 %	1.53 mho/m ± 6 %
Body TSL temperature during test	(21.5 ± 0.2) °C		

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.1 mW / g
SAR normalized	normalized to 1W	40.4 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	40.5 mW / g ± 17.0 % (k=2)
SAR averaged over 10 cm3 (10 g) of Body TSL	condition	
	condition 250 mW input power	5.36 mW / g
SAR averaged over 10 cm ³ (10 g) of Body TSL SAR measured SAR normalized		5.36 mW / g 21.4 mW / g



Certificate No: D1900V2-5d027_Apr10

Page 4 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 台灣檢驗科技股份有限公司

Member of SGS Group





Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.5 Ω + 5.0 jΩ	
Return Loss	- 26.0 dB	

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.8 Ω + 6.7 jΩ	
Return Loss	- 22.3 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns
----------------------------------	----------

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the

feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 17, 2002

Certificate No: D1900V2-5d027_Apr10

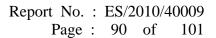
Page 5 of 9

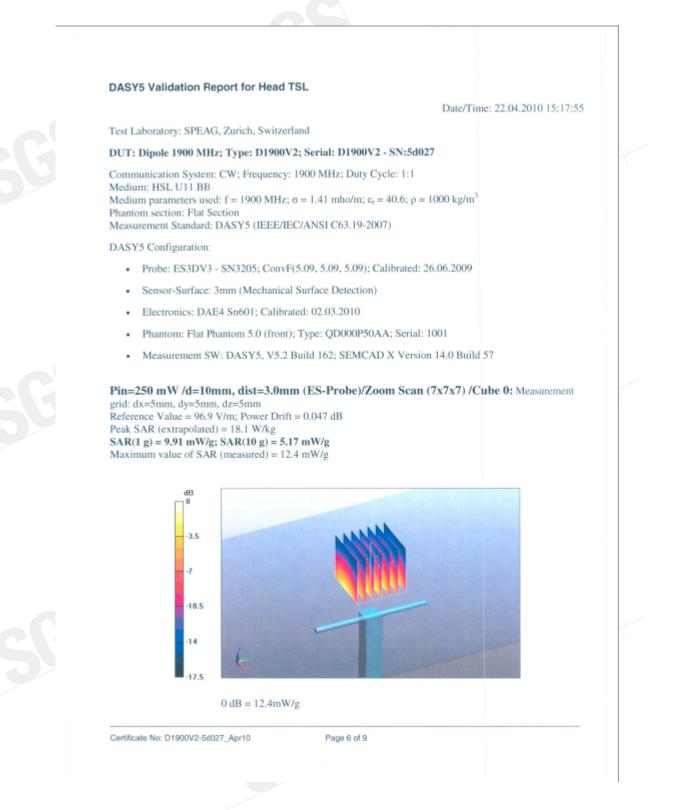
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 台灣檢驗科技股份有限公司 t (886-2) 2299-3279 f (886-2) 2298-0488





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sqs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

SG:



Report No. : ES/2010/40009 Page : 91 of 101

Impedance Measurement Plot for Head TSL 22 Apr 2010 12:00:49 1 900.000 000 MHz CHI S11 1 U FS 21 50.531 a 4.9922 n 418.17 pH ٠ CH1 Markers De 1 1:45.217 o -15.613 o 1.88888 GHz PV 9 1 CH2 1 908.000 000 MHz dB/ REF 25.834 dB CH2 Markers 11-15.432 dB 1.80000 GHz Cor Av9 t START 1 688,888 888 MHz STOP 2 188,888 888 MHz Certificate No: D1900V2-5d027_Apr10 Page 7 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488

www.tw.sgs.com

Report No. : ES/2010/40009 Page : 92 of 101

Date/Time: 28.04.2010 15:11:22

SG:

Test Laboratory: SPEAG, Zurich, Switzerland

DASY5 Validation Report for Body

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1 Medium: MSL U11 BB Medium parameters used: f = 1900 MHz; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 54.9$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 96.2 V/m; Power Drift = -0.014 dB Peak SAR (extrapolated) = 17.1 W/kg SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.36 mW/g Maximum value of SAR (measured) = 12.7 mW/g



Certificate No: D1900V2-5d027_Apr10

Page 8 of 9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

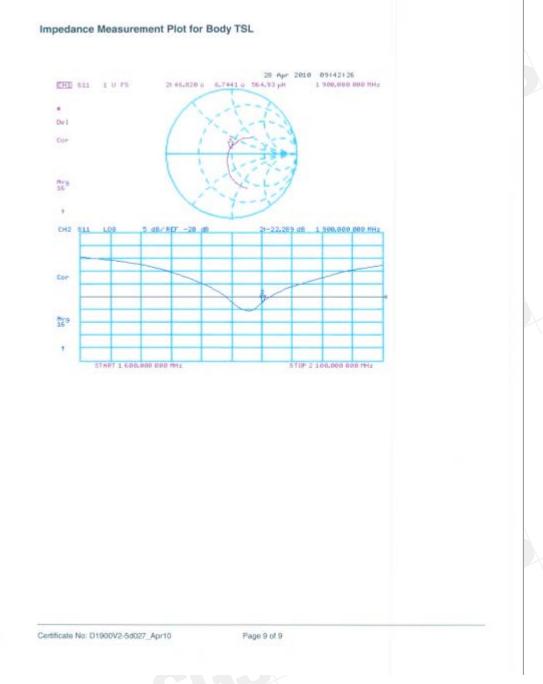
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



Report No. : ES/2010/40009 Page : 93 of 101





End of 1st part of report

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document 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. This document cannot be reproduced except in full, without prior written approval of the Company. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司