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SAR TEST REPORT

Equipment Under Test	Pocket PC Phone		
Model Name	HERO200		
Company Name	HTC Corporation		
Company Address	No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan, R.O.C.		
Date of Receipt	2009.05.22		
Date of Test(s)	2009.06.06-2009.06.07		
Date of Issue	2009.06.18		

Standards:

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

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

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

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Tested by : Ricky Huang

Asst. Supervisor

Approved by : Robert Chang

Tech Manager

Date: 2009.06.18

Date : 2009.06.18

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1. General Information

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1.1 Testing Laboratory

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1.2 Details of Applicant

Company Name	HTC Corporation		
Company Address	No.23, Xinghua Rd., Taoyuan City, Taoyuan County		
Company Address	330, Taiwan, R.O.C.		
Contact Person	Lois Wu		
TEL	+886-2-89124138		
Fax	+886-2-89126307		
E-mail	lois_wu@htc.com		

1.3 Description of EUT

EUT Name	Pocket PC Phone				
FCC ID	NM8HE	NM8HERO200			
Model Name	HERO	HERO200			
Brand Name	нтс				
Mode of Operation	cdma2000/EVDO on Cellular and PCS band				
Definition	Production unit				
Duty Cycle	Cellular	US PCS			
	1				

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Maximum RF	Cellular PCS		
Conducted Power (Average)	24.91dbm	24.93dbm	
TX Frequency Range	Cellular	PCS	
(MHz)	824.7-848.31	1851.25 -1908.75	
Channel Number	Cellular	PCS	
(ARFCN)	1013-777	25-1175	
Battery Type	3.7 V Lithium-Ion		
Antenna Type	Internal Antenna		
	Head	Body	
Max. SAR Measured (1 g)	1.13 mW/g (At US PCS_Right Head (15° Tilt Position)_ 600 Channel)	O.711 mW/g (At Cellular_ 777 Channel_ repeated with Formosa Battery)	

1.4 Test Environment

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

1.5 Operation description

General:

- 1. The EUT is controlled by using a Radio Communication Tester (R&S CMU200), and the communication between the EUT and the tester is established by air link.
- 2. WLAN part is controlled by chip-sepcific software to make it transmit at max power.
- 3. 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 batt ery is fully charged.
- 4. During the SAR testing, the DASY4 system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.
- 5. Testing Head SAR at lowest, middle and highest channel for all bands with LFT/LFC/RFT/RFC conditions.

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6. Testing body-worn SAR by separating **1.5cm** between the back of the EUT and the flat phantom in GPRS mode.

SAR evaluation considerations for handsets with multiple transmitters:

- 7. Since the WLAN function of this device does NOT support VoIP function. Users will not use it close to head. SAR evaluation of head adjacent is unnecessary, only Body condition will be considered for WLAN stand-alone situation.
- 8. The maximum SAR value for licensed transmitter happens on US PCS Right Head (15° Tilt Position)_ 600 Channel. The value is 1.13W/kg(1g). And the max SAR value for un-licensed transmitter WLAN 802.11b happens on Body worn, channel 6. The SAR value is 0.179W/kg (1g). The summation of the 1g SAR is 1.13+0.179 =1.309 W/kg, which is lower than the limit 1.6W/kg. According to KDB648474, simultanemous transmission is not necessary.

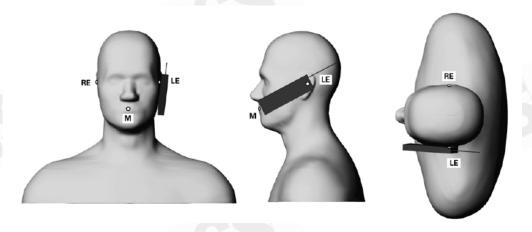
Additional configuration(Head):

- 9. For highest SAR configuration in this band repeated with external Memory card inside.
- 10. For highest SAR configuration in this band repeated with Formosa Battery.

Additional configuration(Body):

- 11. For highest SAR configuration in this band repeated with external Memory card inside.
- 12. For highest SAR configuration in this band repeated with Formosa Battery.

1.6 Positioning Procedure



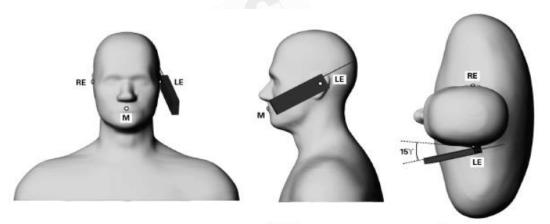
Phone position 1, "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning

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

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

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

1.7 EVALUATION PROCEDURES

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

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

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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

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

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1.8 The SAR Measurement System

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

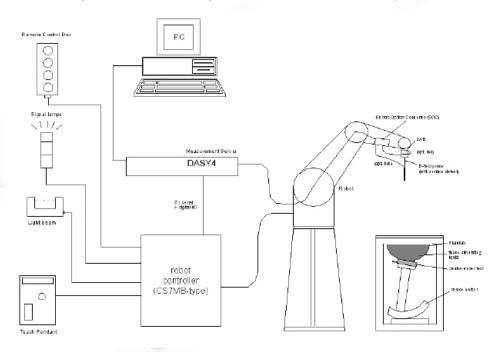


Fig.a The block diagram of SAR system

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

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

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collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

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

1.9 System Components

EX3DV3 E-Field Probe

Construction:	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)		
Calibration:	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL850/1900/2450 Additional CF for other liquids and frequencies upon request		
		EX3DV3 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:	μW/g to > 100 mW/g; nearity: ± 0.2 dB (noise: typically < 1 μW/g)		

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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%.			

CARA DUARITORA VA OC

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	(TUE	
Dimensions:	Height: 251 mm; Length: 1000 mm; Width: 500 mm		

DEVICE HOLDER

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

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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 850/1900/2450 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 22.1°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.

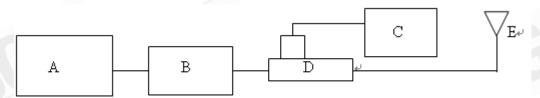
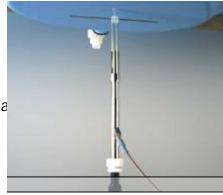


Fig.b The bloack diagram of system verification

- A. Agilent Model 8648D Signal Generator
- B. Mini circuits Model ZHL-42 Amplifier
- C. Agilent Model U2001B Power Sensor
- D. Agilent Model 778D & 777D Dual directiona coupling
- E. Reference dipole antenna



Photograph of the dipole Antenna

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			4		1 480 1 12
Validatio	n Kit	Frequency (MHz)	Target SAR (1g) (Pin=250mW)	Measured SAR (1g)	Measured Date
D835\ S/N: 4d		835 MHz (Head)	2.38 mW/g	2.28mW/g	2009-06-06
D835\ S/N: 4d		835 MHz (Body)	2.55 mW/g	2.33mW/g	2009-06-07
D1900 S/N: 5d		1900 MHz (Head)	10.5 mW/g	10.5mW/g	2009-06-06
D1900 S/N: 5d		1900 MHz (Body)	10.6 mW/g	10.7mW/g	2009-06-07
D2450 S/N: 7		2450 MHz (Body)	13.2 mW/g	13.2mW/g	2009-06-07

Table 1. System validation (follow manufacture target value)

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)

Fraguaday			Measurement date/	Dielectric Parameters		
Г	equency (MHz)	Tissue type	Limits	ρ	σ (S/m)	Simulated Tissue Temperature(° C)
	OFO Hood		Measured, 2009-06-06	41.2	0.92	21.7
850		Head	Recommended Limits	38.76-42.84	0.85-0.93	20-24
850		Body	Measured, 2009-06-07	53.4	0.974	21.7
			Recommended Limits	51.11-56.49	0.96-1.06	20-24

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1900	1	Measured, 2009-06-06	39.7	1.45	21.7
1900	Head	Recommended Limits	36.67-40.53	1.40-1.54	20-24
1900		Measured, 2009-06-07	52.7	1.56	21.7
1900	Body	Recommended Limits	52.16-57.65	1.48-1.64	20-24
2450		Measured, 2009-06-07	53	2.05	21.7
2450	Body	Recommended Limits	51.68-57.12	1.88-2.08	20-24

Table 2. Dielectric Parameters of Tissue Simulant Fluid

The composition of the brain tissue simulating liquid for 850&1900&2450 band:

•				•	
Ingredie nt	850MHz (Head)	850MHz (Body)	1900MHz (Head)	1900MHz (Body)	2450Mhz (Body)
DGMBE	Χ	X	444.52 g	300.67g	301.7 ml
Water	532.98 g	631.68 g	552.42 g	716.56 g	698.3 ml
Salt	18.3 g	11.72 g	3.06 g	4.0 g	Х
Prevento I D-7	2.4 g	1.2 g	Х	X	X
Cellulose	3.2 g	Х	X	Χ	Χ
Sugar	766.0 g	600 g	X	Χ	X
Total	1 L	1L	1 L	1 L	1 L
amount	(1.0kg)	(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.

These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and

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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)

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			2
Hur	man Exposure	Uncontrolled Environment	Controlled Environment
		General Population	Occupational
Spa	atial Peak SAR (Brain)	1.60 m W/g	8.00 m W/g
	al Average SAR Whole Body)	0.08 m W/g	0.40 m W/g
	atial Peak SAR /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.

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2. Summary of Results

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Cellular Band

Cellula		<u> </u>				
Right Head	(Cheek Po	osition)				
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
	1013	824.7	24.63dbm	0.626	22.1	21.7
850 MHz	384	836.52	24.91dbm	0.611	22.1	21.7
	777	848.31	24.72dbm	0.970	22.1	21.7
Left Head (0	Cheek Pos	sition)				
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
	1013	824.7	24.63dbm	0.686	22.1	21.7
850 MHz	384	836.52	24.91dbm	0.700	22.1	21.7
	777	848.31	24.72dbm	1.11	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]
	1013	824.7	24.63dbm	0.413	22.1	21.7
850 MHz	384	836.52	24.91dbm	0.411	22.1	21.7
	777	848.31	24.72dbm	0.739	22.1	21.7
Left Head (15° Tilt Po	sition)				
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
	1013	824.7	24.63dbm	0.431	22.1	21.7
850 MHz	384	836.52	24.91dbm	0.472	22.1	21.7
	777	848.31	24.72dbm	0.763	22.1	21.7

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					rage. 17	01 109
Body worn						
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid
			Power (Average)	1g	Temp[°C]	Temp[°C]
	1013	824.7	24.63dbm	0.423	22.1	21.7
850 MHz	384	836.52	24.91dbm	0.404	22.1	21.7
	777	848.31	24.72dbm	0.674	22.1	21.7
Body worn_	repeated	for EU	front to phantom	1		
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid
			Power (Average)	1g	Temp[°C]	Temp[°C]
850 MHz	777	848.31	24.72dbm	0.328	22.1	21.7
Body worn_	repeated	with M	emory card			
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid
			Power (Average)	1g	Temp[°C]	Temp[°C]
850 MHz	777	848.31	24.72dbm	0.559	22.1	21.7
Body worn_	repeated	with Fo	ormosa Battery			
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid
			Power (Average)	1g	Temp[°C]	Temp[°C]
850 MHz	777	848.31	24.72dbm	0.711	22.1	21.7
Body worn_	EVDO mo	de (Rel	eas A, RETAP=40	96)		
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid
			Power (Average)	1g	Temp[°C]	Temp[°C]
	1013	824.7	24.42dbm	0.339	22.1	21.7
850 MHz	384	836.52	24.82dbm	0.377	22.1	21.7
	777	848.31	24.61dbm	0.656	22.1	21.7

US PCS Band

Right Head	(Cheek P	osition)				
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]
	25	1851.25	24.42dbm	0.825	22.1	21.7
1900 MHz	600	1880	24.81dbm	0.935	22.1	21.7
	1175	1908.75	24.93dbm	0.913	22.1	21.7
Left Head (Cheek Pos	sition)	C E P			
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]

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	25	1851.25	24.42dbm	1.03	22.1	21.7		
1900 MHz	600	1880	24.81dbm	1.1	22.1	21.7		
	1175	1908.75	24.93dbm	1.05	22.1	21.7		
Right Head	(15° Tilt F	Position)						
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
	25	1851.25	24.42dbm	0.934	22.1	21.7		
1900 MHz	600	1880	24.81dbm	1.13	22.1	21.7		
	1175	1908.75	24.93dbm	0.918	22.1	21.7		
Left Head (15° Tilt Po	osition)						
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
	25	1851.25	24.42dbm	0.967	22.1	21.7		
1900 MHz	600	1880	24.81dbm	1.07	22.1	21.7		
	1175	1908.75	24.93dbm	1.05	22.1	21.7		
Right Head	(15° Tilt F	Position)	_repeated with N	lemory card				
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
1900 MHz	600	1880	24.81dbm	0.928	22.1	21.7		
Right Head	(15° Tilt F	Position)	_repeated with Fe	ormosa Battery				
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
1900 MHz	600	1880	24.81dbm	0.902	22.1	21.7		
Body worn								
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid		
			Power (Average)	1g	Temp[°C]	Temp[°C]		
700	25	1851.25	24.42dbm	0.419	22.1	21.7		

24.81dbm

24.93dbm

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600

1175

1880

1908.75

1900 MHz

22.1

22.1

21.7

21.7

0.415

0.319



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Body worn_	Body worn_EVDO mode (Releas A, RETAP=4096)									
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid				
			Power (Average)	1g	Temp[°C]	Temp[°C]				
	25	1851.25	24.21dbm	0.361	22.1	21.7				
1900 MHz	600	1880	24.65dbm	0.345	22.1	21.7				
	1175	1908.75	24.19dbm	0.3	22.1	21.7				

WLAN802.11 b

102/1100211110							
Body worn							
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid	
			Power (Average)	1g	Temp[°C]	Temp[°C]	
	1	2412	19.23dbm	0.176	22.1	21.7	
WLAN 802.11 b	6	2437	19.20dbm	0.179	22.1	21.7	
002.11 0	11	2462	19.23dbm	0.143	22.1	21.7	
Body worn-	repeated	for EU	T front to phanton	า			
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid	
			Power (Average)	1g	Temp[°C]	Temp[°C]	
WLAN 802.11 b	6	2437	19.20dbm	0.068	22.1	21.7	
Body worn-repeated with Memory card							
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]	
WLAN 802.11 b	6	2437	19.20dbm	0.138	22.1	21.7	
Body worn-	repeated	with Bl	uetooth active				
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[°C]	Liquid Temp[°C]	
WLAN 802.11 b	6	2437	19.20dbm	0.163	22.1	21.7	
Body worn-	repeated	with F	ormosa Battery				
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid	
			Power (Average)	1g	Temp[°C]	Temp[°C]	
WLAN 802.11 b	6	2437	19.20dbm	0.169	22.1	21.7	

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WLAN 802.11 a

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		. Э				
Body worn			THO !	\		
Frequency	Channel	MHz	Conducted Output	Measured(W/kg)	Amb.	Liquid
			Power (Average)	1g	Temp[°C]	Temp[°C]
\A/I ANI	1	2412	14.22dbm	0.043	22.1	21.7
WLAN 802.11 g	6	2437	14.16dbm	0.040	22.1	21.7
002.11 g	11	2462	14.19dbm	0.034	22.1	21.7

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3. Instruments List

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Device	Туре	Serial number	Date of last calibration
Dosimetric E-FieldProbe	EX3DV3	3526	Aug.26.2008
850/1900/2450MHz System Validation Dipole	D835V2 D1900V2 D2450V2	4d063 5d027 727	May.25.2009 Apr.27.2009 Apr.27.2009
Data acquisition Electronics	DAE4	547	Jan.20.2009
Software	DASY 4 V4.7 Build80	N/A	Calibration not required
Phantom	SAM	N/A	Calibration not required
Network Analyzer	8753D	3410A05547	Mar.31.2009
Dielectric Probe Kit	85070D	US01440168	Calibration not required
Dual-directional coupler	778D 777D	50313 50014	Aug.26.2008 Aug.26.2008
RF Signal Generator	8648D	MY45093613	May.25.2009
Power Sensor	U2001B	MY48100169	Apr.23.2009
Radio Communication Test	CMU200	113505	Sep.03.2008
	Dosimetric E-FieldProbe 850/1900/2450MHz System Validation Dipole Data acquisition Electronics Software Phantom Network Analyzer Dielectric Probe Kit Dual-directional coupler RF Signal Generator Power Sensor Radio Communication	Dosimetric E-FieldProbe 850/1900/2450MHz System Validation Dipole Data acquisition Electronics DASY 4 V4.7 Build80 Phantom SAM Network Analyzer Dielectric Probe Kit Dual-directional coupler RF Signal Generator Power Sensor Radio Communication EX3DV3 FAST DAE4 V4.7 Build80 FAST FAST FA	Dosimetric EX3DV3 3526

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4. Measurements

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Date/Time: 2009/6/6 01:05:24

RE Cheek_Cellular_CH1013

DUT: HERO200;

Communication System: CDMA_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 825 MHz; $\sigma = 0.91$ mho/m; $\varepsilon_r = 41.4$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

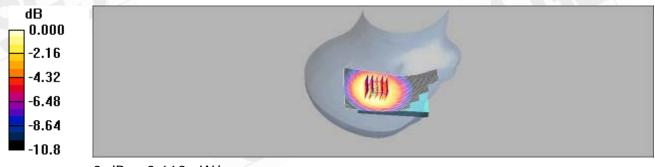
RE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.674 mW/g

RE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.3 V/m; Power Drift = -0.086 dB Peak SAR (extrapolated) = 0.813 W/kg

SAR(1 g) = 0.626 mW/g; SAR(10 g) = 0.464 mW/g

Maximum value of SAR (measured) = 0.662 mW/g



0 dB = 0.662 mW/g

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Date/Time: 2009/6/6 01:29:49

RE Cheek_Cellular_CH384

DUT: HERO200;

Communication System: CDMA_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 837 MHz; $\sigma = 0.922$ mho/m; $\varepsilon_r = 41$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.670 mW/g

RE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

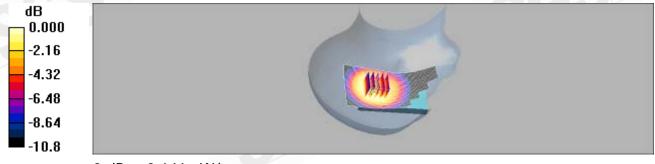
dz=5mm

Reference Value = 25.2 V/m; Power Drift = -0.114 dB

Peak SAR (extrapolated) = 0.779 W/kg

SAR(1 g) = 0.611 mW/g; SAR(10 g) = 0.455 mW/g

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



0 dB = 0.646 mW/q

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Date/Time: 2009/6/6 01:56:12

RE Cheek_Cellular_CH777

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma = 0.929$

mho/m; $\varepsilon_r = 40.7$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.01 mW/g

RE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

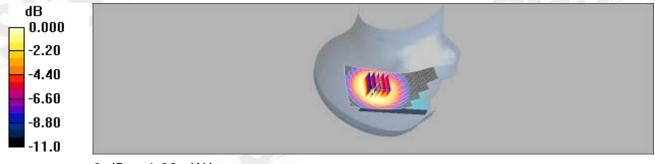
dz=5mm

Reference Value = 30.7 V/m; Power Drift = 0.141 dB

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.970 mW/g; SAR(10 g) = 0.721 mW/g

Maximum value of SAR (measured) = 1.02 mW/g



0 dB = 1.02 mW/q

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Date/Time: 2009/6/6 03:48:04

LE Cheek_Cellular_CH1013

DUT: HERO200;

Communication System: CDMA_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 825 MHz; $\sigma = 0.91$ mho/m; $\varepsilon_r = 41.4$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.753 mW/g

LE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

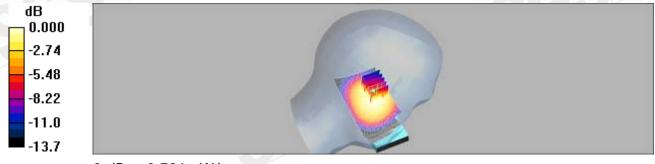
dz=5mm

Reference Value = 24.0 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.686 mW/g; SAR(10 g) = 0.483 mW/g

Maximum value of SAR (measured) = 0.726 mW/g



0 dB = 0.726 mW/g

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Date/Time: 2009/6/6 04:22:20

LE Cheek_Cellular_CH384

DUT: HERO200;

Communication System: CDMA_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 837 MHz; $\sigma = 0.922$ mho/m; $\varepsilon_r = 41$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.746 mW/g

LE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

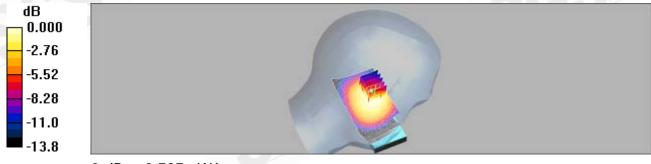
dz=5mm

Reference Value = 23.9 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.700 mW/g; SAR(10 g) = 0.488 mW/g

Maximum value of SAR (measured) = 0.737 mW/g



0 dB = 0.737 mW/g

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Date/Time: 2009/6/6 04:53:24

LE Cheek_Cellular_CH777

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma = 0.929$

mho/m; $\varepsilon_r = 40.7$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.20 mW/g

LE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

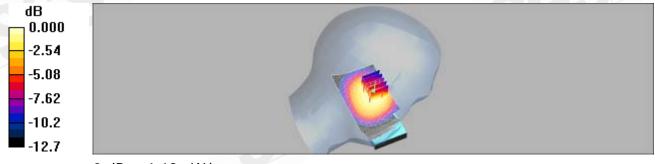
dz=5mm

Reference Value = 28.9 V/m; Power Drift = 0.181 dB

Peak SAR (extrapolated) = 1.61 W/kg

SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.799 mW/g

Maximum value of SAR (measured) = 1.18 mW/g



0 dB = 1.18 mW/q

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Date/Time: 2009/6/6 02:28:32

RE Tilt_Cellular_CH1013

DUT: HERO200;

Communication System: CDMA_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 825 MHz; $\sigma = 0.91$ mho/m; $\varepsilon_r = 41.4$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.453 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

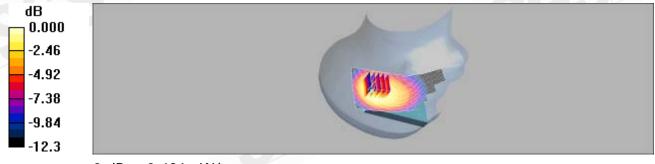
dz=5mm

Reference Value = 21.9 V/m; Power Drift = 0.133 dB

Peak SAR (extrapolated) = 0.629 W/kg

SAR(1 g) = 0.413 mW/g; SAR(10 g) = 0.289 mW/g

Maximum value of SAR (measured) = 0.431 mW/g



0 dB = 0.431 mW/q

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Date/Time: 2009/6/6 03:21:52

RE Tilt_Cellular_CH384

DUT: HERO200;

Communication System: CDMA_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 837 MHz; $\sigma = 0.922$ mho/m; $\varepsilon_r = 41$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.467 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

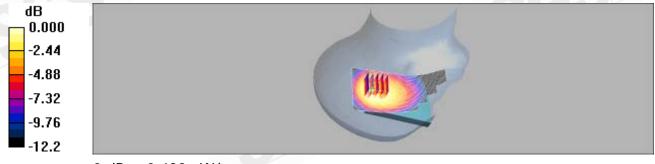
dz=5mm

Reference Value = 22.1 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.616 W/kg

SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.282 mW/g

Maximum value of SAR (measured) = 0.432 mW/g



0 dB = 0.432 mW/q

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Date/Time: 2009/6/6 03:21:00

RE Tilt_Cellular_CH777

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma = 0.929$

mho/m; $\varepsilon_r = 40.7$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.822 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

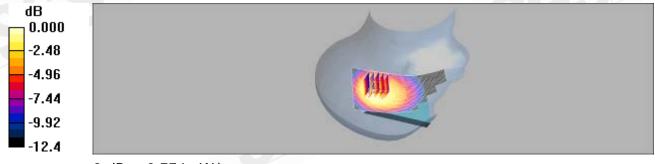
dz=5mm

Reference Value = 28.9 V/m; Power Drift = 0.082 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.739 mW/g; SAR(10 g) = 0.510 mW/g

Maximum value of SAR (measured) = 0.774 mW/g



0 dB = 0.774 mW/q

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Date/Time: 2009/6/6 05:27:58

LE Tilt_Cellular_CH1013

DUT: HERO200;

Communication System: CDMA_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 825 MHz; $\sigma = 0.91$ mho/m; $\varepsilon_r = 41.4$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.496 mW/g

LE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 20.8 V/m; Power Drift = -0.047 dB

Peak SAR (extrapolated) = 0.689 W/kg

SAR(1 g) = 0.431 mW/g; SAR(10 g) = 0.285 mW/g

Maximum value of SAR (measured) = 0.456 mW/g



0 dB = 0.456 mW/q

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Date/Time: 2009/6/6 05:55:47

LE Tilt_Cellular_CH384

DUT: HERO200;

Communication System: CDMA_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used: f = 837 MHz; $\sigma = 0.922$ mho/m; $\varepsilon_r = 41$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.549 mW/g

LE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 22.1 V/m; Power Drift = -0.079 dB

Peak SAR (extrapolated) = 0.786 W/kg

SAR(1 g) = 0.472 mW/g; SAR(10 g) = 0.309 mW/g

Maximum value of SAR (measured) = 0.506 mW/g



0 dB = 0.506 mW/q

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Date/Time: 2009/6/6 06:31:00

LE Tilt_Cellular_CH777

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Head 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma = 0.929$

mho/m; $\varepsilon_r = 40.7$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.888 mW/g

LE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

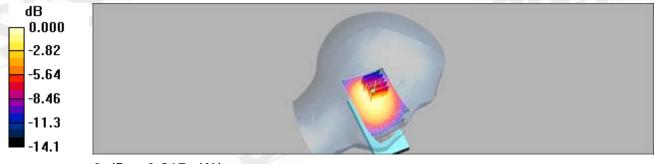
dz=5mm

Reference Value = 27.6 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.763 mW/g; SAR(10 g) = 0.511 mW/g

Maximum value of SAR (measured) = 0.817 mW/g



0 dB = 0.817 mW/g

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Date/Time: 2009/6/7 15:11:01

BODY_ Celluar_CH1013

DUT: HERO200;

Communication System: CDMA_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used: f = 825 MHz; $\sigma = 0.964$ mho/m; $\varepsilon_r =$

53.5; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.435 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

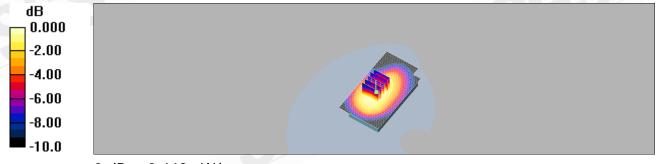
dz=5mm

Reference Value = 14.9 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 0.571 W/kg

SAR(1 g) = 0.423 mW/g; SAR(10 g) = 0.303 mW/g

Maximum value of SAR (measured) = 0.448 mW/g



0 dB = 0.448 mW/q

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Date/Time: 2009/6/7 15:46:05

BODY_ Celluar_CH384

DUT: HERO200;

Communication System: CDMA_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used: f = 837 MHz; $\sigma = 0.974$ mho/m; $\varepsilon_r =$

53.3; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.423 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

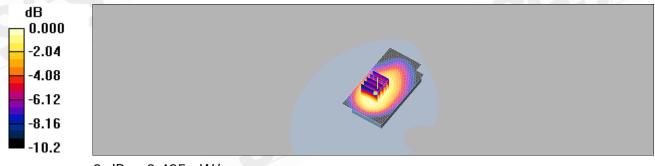
dz=5mm

Reference Value = 16.4 V/m; Power Drift = -0.117 dB

Peak SAR (extrapolated) = 0.576 W/kg

SAR(1 g) = 0.404 mW/g; SAR(10 g) = 0.288 mW/g

Maximum value of SAR (measured) = 0.425 mW/g



0 dB = 0.425 mW/q

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Date/Time: 2009/6/7 26:24:40

BODY_ Celluar_CH777

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma =$

0.975 mho/m; $\varepsilon_r = 53.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.705 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

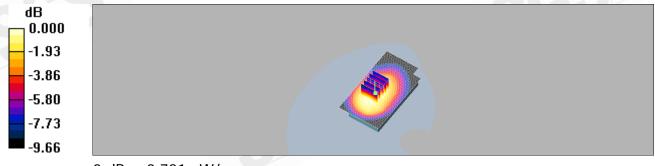
dz=5mm

Reference Value = 20.2 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 0.944 W/kg

SAR(1 g) = 0.674 mW/g; SAR(10 g) = 0.476 mW/g

Maximum value of SAR (measured) = 0.721 mW/g



0 dB = 0.721 mW/g

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Date/Time: 2009/6/7 18:29:01

BODY_CH777_repeated for EUT front to phantom

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma =$

0.975 mho/m; $\varepsilon_r = 53.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.334 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

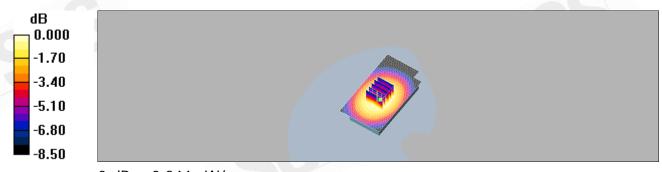
dz=5mm

Reference Value = 14.2 V/m; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 0.422 W/kg

SAR(1 g) = 0.328 mW/g; SAR(10 g) = 0.245 mW/g

Maximum value of SAR (measured) = 0.344 mW/g



0 dB = 0.344 mW/q

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Date/Time: 2009/6/7 19:02:07

BODY_CH777_repeated with Memory card

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma =$

0.975 mho/m; $\varepsilon_r = 53.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.601 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

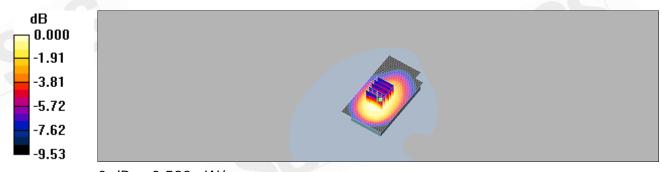
dz=5mm

Reference Value = 19.4 V/m; Power Drift = -0.177 dB

Peak SAR (extrapolated) = 0.762 W/kg

SAR(1 g) = 0.559 mW/g; SAR(10 g) = 0.399 mW/g

Maximum value of SAR (measured) = 0.592 mW/g



0 dB = 0.592 mW/q

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Date/Time: 2009/6/7 19:43:43

BODY_CH777_repeated with Formosa Battery

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma =$

0.975 mho/m; $\varepsilon_r = 53.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.754 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

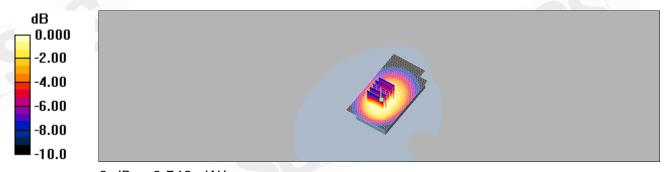
dz=5mm

Reference Value = 21.5 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 0.955 W/kg

SAR(1 g) = 0.711 mW/g; SAR(10 g) = 0.513 mW/g

Maximum value of SAR (measured) = 0.743 mW/g



0 dB = 0.743 mW/q

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Date/Time: 2009/6/7 16:59:47

BODY_ Celluar_CH1013_EVDO mode

DUT: HERO200;

Communication System: CDMA_850; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used: f = 825 MHz; $\sigma = 0.964$ mho/m; $\varepsilon_r =$

53.5; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.368 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

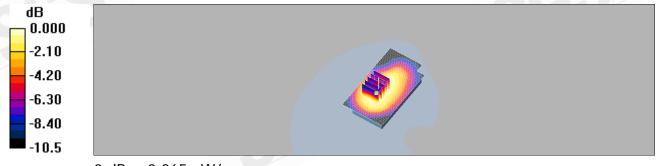
dz=5mm

Reference Value = 14.3 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.484 W/kg

SAR(1 g) = 0.339 mW/g; SAR(10 g) = 0.241 mW/g

Maximum value of SAR (measured) = 0.365 mW/g



0 dB = 0.365 mW/g

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Date/Time: 2009/6/7 17:28:07

BODY_Celluar_CH384_EVDO mode

DUT: HERO200;

Communication System: CDMA_850; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used: f = 837 MHz; $\sigma = 0.974$ mho/m; $\varepsilon_r =$

53.3; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.407 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

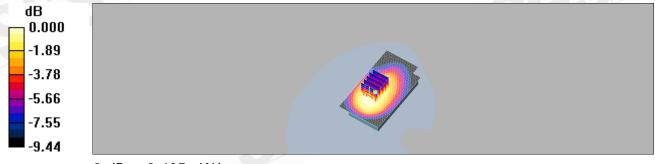
dz=5mm

Reference Value = 15.8 V/m; Power Drift = 0.103 dB

Peak SAR (extrapolated) = 0.543 W/kg

SAR(1 g) = 0.377 mW/g; SAR(10 g) = 0.269 mW/g

Maximum value of SAR (measured) = 0.405 mW/g



0 dB = 0.405 mW/q

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Date/Time: 2009/6/7 17:56:29

BODY_Cellular_CH777_EVDO mode

DUT: HERO200;

Communication System: CDMA_850; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 848.31 MHz; $\sigma =$

0.975 mho/m; $\varepsilon_r = 53.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.687 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

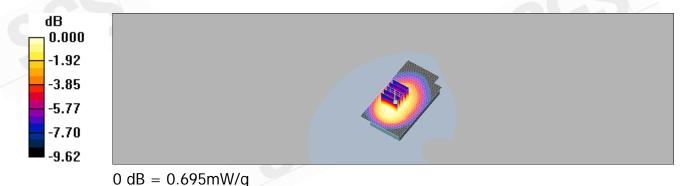
dz=5mm

Reference Value = 19.8 V/m; Power Drift = 0.158 dB

Peak SAR (extrapolated) = 0.917 W/kg

SAR(1 g) = 0.656 mW/g; SAR(10 g) = 0.467 mW/g

Maximum value of SAR (measured) = 0.695 mW/g



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Date/Time: 2009/6/6 09:08:47

RE Cheek_US PCS_CH25

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1851.25 MHz; $\sigma = 1.4$

mho/m; $\varepsilon_r = 40.2$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.931 mW/g

RE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

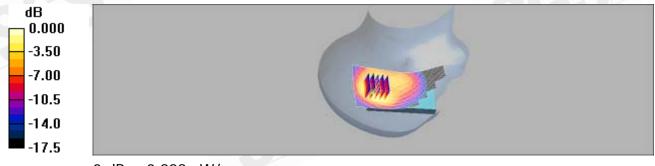
dz=5mm

Reference Value = 23.5 V/m; Power Drift = -0.157 dB

Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 0.825 mW/g; SAR(10 g) = 0.448 mW/g

Maximum value of SAR (measured) = 0.888 mW/g



0 dB = 0.888 mW/q

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Date/Time: 2009/6/6 09:33:19

RE Cheek_US PCS_CH600

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.43$ mho/m; $\varepsilon_r = 40$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.04 mW/g

RE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

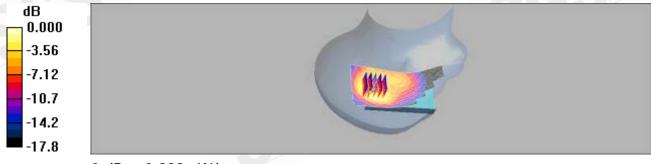
dz=5mm

Reference Value = 24.4 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.505 mW/g

Maximum value of SAR (measured) = 0.999 mW/g



0 dB = 0.999 mW/q

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Date/Time: 2009/6/6 09:56:04

RE Cheek_US PCS_CH1175

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1909 MHz; $\sigma = 1.46$ mho/m; $\varepsilon_r = 1.46$

39.6; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.01 mW/g

RE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

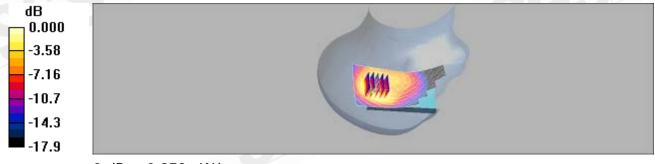
dz=5mm

Reference Value = 23.6 V/m; Power Drift = -0.089 dB

Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 0.913 mW/g; SAR(10 g) = 0.492 mW/g

Maximum value of SAR (measured) = 0.972 mW/g



0 dB = 0.972 mW/q

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Date/Time: 2009/6/6 11:46:49

LE Cheek_US PCS_CH25

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1851.25 MHz; Duty Cycle: 1:1 Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1851.25 MHz; $\sigma = 1.4$ mho/m; $\varepsilon_r = 40.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2009/1/20
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.25 mW/g

LE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.7 V/m; Power Drift = -0.137 dB

Peak SAR (extrapolated) = 1.92 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.559 mW/g

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

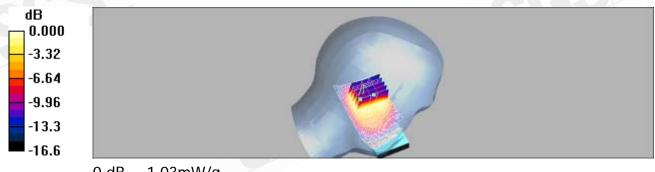
LE_Cheek/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.7 V/m; Power Drift = -0.137 dB

Peak SAR (extrapolated) = 1.77 W/kg

SAR(1 g) = 0.756 mW/g; SAR(10 g) = 0.428 mW/g

Maximum value of SAR (measured) = 1.03 mW/g



0 dB = 1.03 mW/q

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Date/Time: 2009/6/6 12:20:39

LE Cheek_PCS_CH600

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.43$ mho/m; $\varepsilon_r = 40$; $\rho = 1000 \text{ kg/m}^3$

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

• Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.24 mW/g

LE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.2 V/m; Power Drift = -0.183 dB

Peak SAR (extrapolated) = 2.08 W/kg

SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.587 mW/g

Maximum value of SAR (measured) = 1.19 mW/g

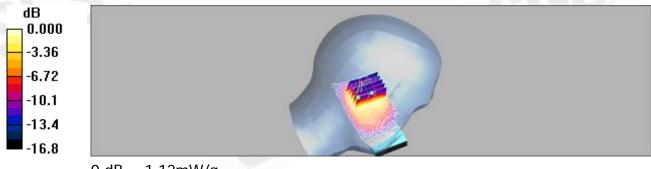
LE_Cheek/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.2 V/m; Power Drift = -0.183 dB

Peak SAR (extrapolated) = 1.93 W/kg

SAR(1 g) = 0.824 mW/g; SAR(10 g) = 0.459 mW/g

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



0 dB = 1.12 mW/q

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Date/Time: 2009/6/6 12:47:37

LE Cheek_US PCS_CH1175

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1908.75 MHz; Duty Cycle: 1:1 Medium: Head 1900 MHz Medium parameters used: f = 1909 MHz; $\sigma = 1.46$ mho/m; $\varepsilon_r = 1.46$ 39.6; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2009/1/20
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE Cheek/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.19 mW/g

LE_Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.0 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 2.00 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.562 mW/g

Maximum value of SAR (measured) = 1.13 mW/g

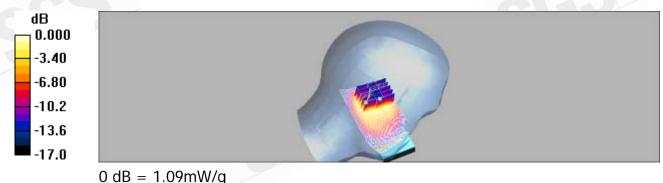
LE_Cheek/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.0 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 0.815 mW/g; SAR(10 g) = 0.446 mW/g

Maximum value of SAR (measured) = 1.09 mW/g



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Date/Time: 2009/6/6 10:26:53

RE Tilt_US PCS_CH25

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1851.25 MHz; $\sigma = 1.4$

mho/m; $\varepsilon_r = 40.2$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.06 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

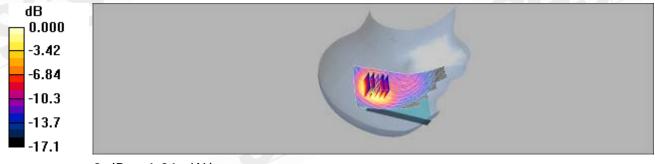
dz=5mm

Reference Value = 26.1 V/m; Power Drift = -0.115 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.934 mW/g; SAR(10 g) = 0.508 mW/g

Maximum value of SAR (measured) = 1.01 mW/g



0 dB = 1.01 mW/q

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Date/Time: 2009/6/6 10:49:32

RE Tilt_US PCS_CH600

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.43$ mho/m; $\varepsilon_r = 40$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.29 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

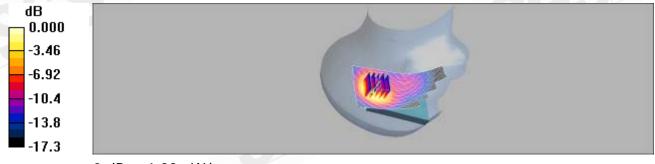
dz=5mm

Reference Value = 28.6 V/m; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 1.96 W/kg

SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.614 mW/g

Maximum value of SAR (measured) = 1.22 mW/g



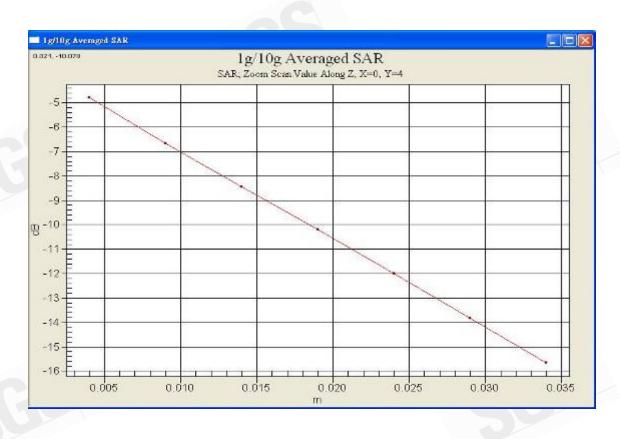
0 dB = 1.22 mW/q

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Date/Time: 2009/6/6 11:18:02

RE Tilt_US PCS_CH1175

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1909 MHz; $\sigma = 1.46$ mho/m; $\varepsilon_r = 1.46$

39.6; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.01 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

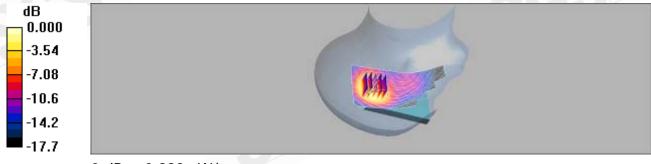
dz=5mm

Reference Value = 24.0 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 1.61 W/kg

SAR(1 g) = 0.918 mW/g; SAR(10 g) = 0.494 mW/g

Maximum value of SAR (measured) = 0.982 mW/g



0 dB = 0.982 mW/q

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Date/Time: 2009/6/6 13:21:47

LE Tilt_US PCS_CH25

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1851.25 MHz; $\sigma = 1.4$

mho/m; $\varepsilon_r = 40.2$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.09 mW/g

LE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

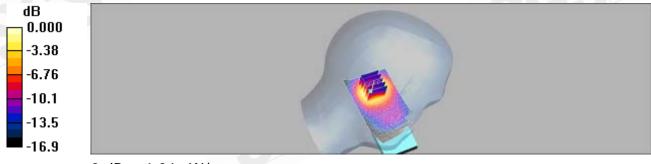
dz=5mm

Reference Value = 26.3 V/m; Power Drift = -0.092 dB

Peak SAR (extrapolated) = 1.71 W/kg

SAR(1 g) = 0.967 mW/g; SAR(10 g) = 0.522 mW/g

Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04 mW/q

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Date/Time: 2009/6/6 13:55:42

LE Tilt_US PCS_CH600

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.43$ mho/m; $\varepsilon_r = 40$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.19 mW/g

LE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

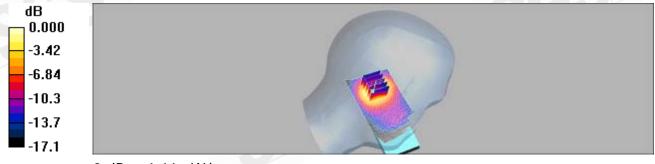
dz=5mm

Reference Value = 27.2 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 1.91 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.576 mW/g

Maximum value of SAR (measured) = 1.16 mW/g



0 dB = 1.16 mW/q

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Date/Time: 2009/6/6 14:26:22

LE Tilt_US PCS_CH1175

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1909 MHz; $\sigma = 1.46$ mho/m; $\varepsilon_r = 1.46$

39.6; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

LE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.16 mW/g

LE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

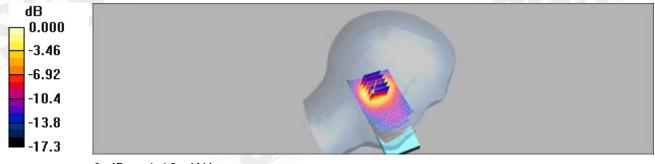
dz=5mm

Reference Value = 26.4 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 1.90 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.560 mW/g

Maximum value of SAR (measured) = 1.13 mW/g



0 dB = 1.13 mW/q

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Date/Time: 2009/6/6 15:01:16

RE Tilt_US PCS_CH600_repeated with Memory card

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.43$ mho/m; $\varepsilon_r = 40$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.10 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 24.8 V/m; Power Drift = -0.126 dB

Peak SAR (extrapolated) = 1.68 W/kg

SAR(1 g) = 0.928 mW/g; SAR(10 g) = 0.504 mW/g

Maximum value of SAR (measured) = 0.994 mW/g



0 dB = 0.994 mW/q

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Date/Time: 2009/6/6 15:38:10

RE Tilt_ US PCS_CH600_repeated with Formosa Battery

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz; $\sigma = 1.43$ mho/m; $\varepsilon_r = 40$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

RE_Tilt/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.04 mW/g

RE_Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 24.5 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 1.63 W/kg

SAR(1 g) = 0.902 mW/g; SAR(10 g) = 0.491 mW/g

Maximum value of SAR (measured) = 0.965 mW/g



0 dB = 0.965 mW/q

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Date/Time: 2009/6/7 09:22:34

BODY_US PCS_CH25

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1851.25 MHz; $\sigma = 1.49$

mho/m; $\varepsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.485 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

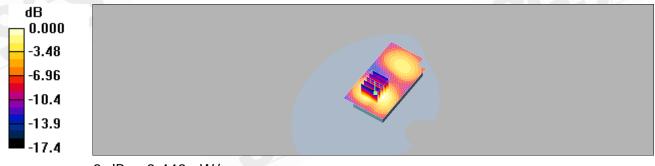
dz=5mm

Reference Value = 10.7 V/m; Power Drift = -0.080 dB

Peak SAR (extrapolated) = 0.709 W/kg

SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.242 mW/g

Maximum value of SAR (measured) = 0.440 mW/g



0 dB = 0.440 mW/q

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Date/Time: 2009/6/7 10:16:37

BODY_US PCS_CH600

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: M1800 & 1900 Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\varepsilon_r = 52.6$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.455 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

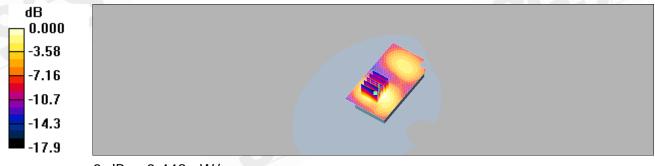
dz=5mm

Reference Value = 10.3 V/m; Power Drift = -0.136 dB

Peak SAR (extrapolated) = 0.710 W/kg

SAR(1 g) = 0.415 mW/g; SAR(10 g) = 0.243 mW/g

Maximum value of SAR (measured) = 0.448 mW/g



0 dB = 0.448 mW/q

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Date/Time: 2009/6/7 10:57:55

BODY_US PCS_CH1175

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: M1800 & 1900 Medium parameters used: f = 1909 MHz; $\sigma = 1.58$ mho/m; $\varepsilon_r = 52.7$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.351 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

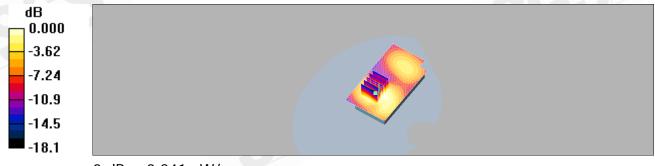
dz=5mm

Reference Value = 9.29 V/m; Power Drift = -0.103 dB

Peak SAR (extrapolated) = 0.535 W/kg

SAR(1 g) = 0.319 mW/g; SAR(10 g) = 0.189 mW/g

Maximum value of SAR (measured) = 0.341 mW/g



0 dB = 0.341 mW/q

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Date/Time: 2009/6/7 11:38:18

BODY_US PCS_CH25_EVDO mode

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1851.25 MHz; $\sigma = 1.49$

mho/m; $\varepsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.408 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

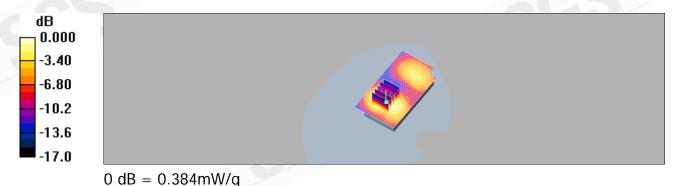
dz=5mm

Reference Value = 9.85 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.610 W/kg

SAR(1 g) = 0.361 mW/g; SAR(10 g) = 0.211 mW/g

Maximum value of SAR (measured) = 0.384 mW/g



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Date/Time: 2009/6/7 12:01:02

BODY_US PCS_CH600_EVDO mode

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: M1800 & 1900 Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\varepsilon_r = 52.6$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.383 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

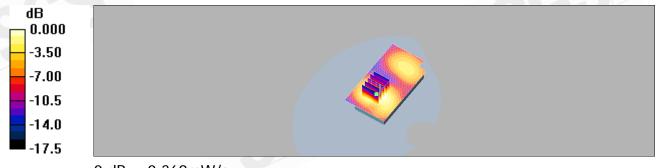
dz=5mm

Reference Value = 9.54 V/m; Power Drift = -0.074 dB

Peak SAR (extrapolated) = 0.604 W/kg

SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.205 mW/g

Maximum value of SAR (measured) = 0.369 mW/g



0 dB = 0.369 mW/q

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Date/Time: 2009/6/7 12:32:38

BODY_US PCS_CH1175_EVDO mode

DUT: HERO200;

Communication System: CDMA2000; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: M1800 & 1900 Medium parameters used: f = 1909 MHz; $\sigma = 1.58$ mho/m; $\varepsilon_r = 52.7$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.337 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

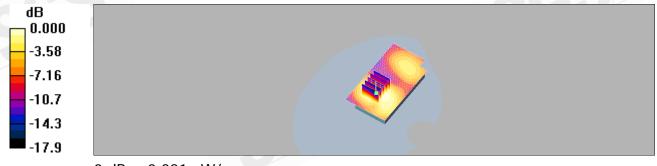
dz=5mm

Reference Value = 9.14 V/m; Power Drift = -0.201 dB

Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.300 mW/g; SAR(10 g) = 0.179 mW/g

Maximum value of SAR (measured) = 0.321 mW/g



0 dB = 0.321 mW/q

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Date/Time: 2009/6/7 02:05:58

BODY_WLAN802.11 b_CH1

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2412 MHz; $\sigma = 2.02$ mho/m; $\varepsilon_r = 54$; ρ

 $= 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.202 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

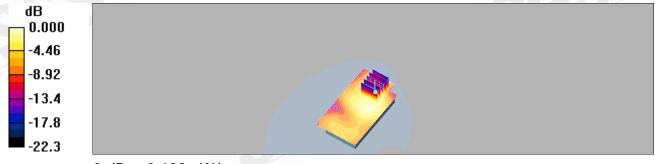
dz=5mm

Reference Value = 5.56 V/m; Power Drift = 0.135 dB

Peak SAR (extrapolated) = 0.341 W/kg

SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.090 mW/g

Maximum value of SAR (measured) = 0.193 mW/g



0 dB = 0.193 mW/g

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Date/Time: 2009/6/7 02:37:34

BODY_WLAN802.11 b_CH6

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2437 MHz; $\sigma = 2.03$ mho/m; $\varepsilon_r = 53.3$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.205 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

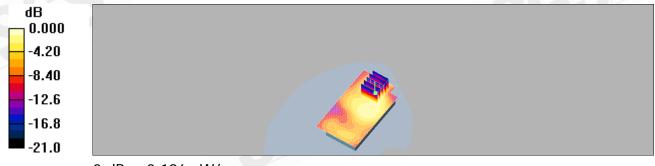
dz=5mm

Reference Value = 5.19 V/m; Power Drift = 0.087 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.091 mW/g

Maximum value of SAR (measured) = 0.196 mW/g



0 dB = 0.196 mW/g

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Date/Time: 2009/6/7 03:02:45

BODY_WLAN802.11 b_CH11

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2462 MHz; $\sigma = 2.07$ mho/m; $\epsilon_r = 53$; ρ

 $= 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.164 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

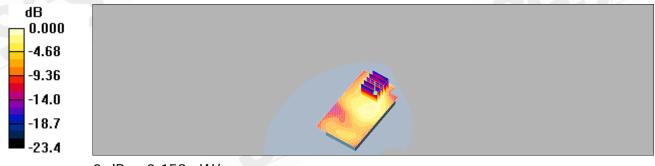
dz=5mm

Reference Value = 4.34 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 0.281 W/kg

SAR(1 g) = 0.143 mW/g; SAR(10 g) = 0.071 mW/g

Maximum value of SAR (measured) = 0.158 mW/g



0 dB = 0.158 mW/g

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Date/Time: 2009/6/7 05:06:19

BODY_WLAN802.11 b_CH6_ repeated for EUT front to phantom

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2437 MHz; $\sigma = 2.03$ mho/m; $\varepsilon_r = 53.3$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.076 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

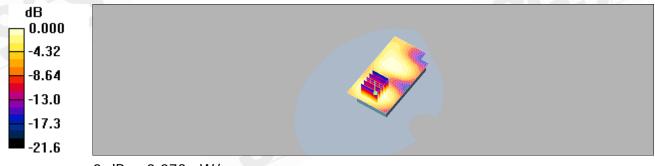
dz=5mm

Reference Value = 5.50 V/m; Power Drift = -0.059 dB

Peak SAR (extrapolated) = 0.116 W/kg

SAR(1 g) = 0.068 mW/g; SAR(10 g) = 0.039 mW/g

Maximum value of SAR (measured) = 0.073 mW/g



0 dB = 0.073 mW/g

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Date/Time: 2009/6/7 05:47:56

BODY_WLAN802.11 b_CH6_repeated with Memory card

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2437 MHz; $\sigma = 2.03$ mho/m; $\varepsilon_r = 53.3$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.158 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

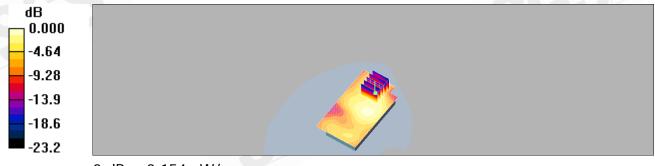
dz=5mm

Reference Value = 4.97 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 0.269 W/kg

SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.071 mW/g

Maximum value of SAR (measured) = 0.154 mW/g



0 dB = 0.154 mW/g

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Date/Time: 2009/6/7 06:22:21

BODY_WLAN802.11 b_CH6_repeated with Bluetooth active

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2437 MHz; $\sigma = 2.03$ mho/m; $\varepsilon_r = 53.3$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.187 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

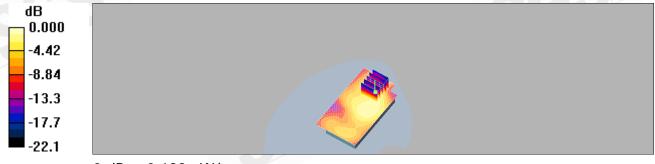
dz=5mm

Reference Value = 5.10 V/m; Power Drift = 0.142 dB

Peak SAR (extrapolated) = 0.319 W/kg

SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.082 mW/g

Maximum value of SAR (measured) = 0.183 mW/g



0 dB = 0.183 mW/g

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Date/Time: 2009/6/7 06:59:49

BODY_WLAN802.11 b_CH6_repeated with Formosa Battery

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2437 MHz; $\sigma = 2.03$ mho/m; $\varepsilon_r = 53.3$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.192 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

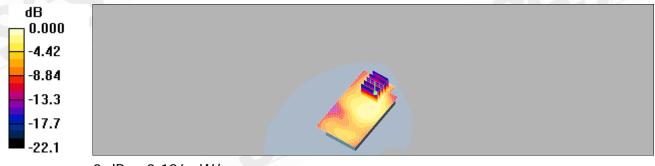
dz=5mm

Reference Value = 5.07 V/m; Power Drift = 0.093 dB

Peak SAR (extrapolated) = 0.328 W/kg

SAR(1 g) = 0.169 mW/g; SAR(10 g) = 0.086 mW/g

Maximum value of SAR (measured) = 0.186 mW/g



0 dB = 0.186 mW/g

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Date/Time: 2009/6/7 03:41:09

BODY_WLAN802.11 g_CH1

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2412 MHz; $\sigma = 2.02$ mho/m; $\varepsilon_r = 54$; ρ

 $= 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.047 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 2.61 V/m; Power Drift = 0.113 dB

Peak SAR (extrapolated) = 0.084 W/kg

SAR(1 g) = 0.043 mW/g; SAR(10 g) = 0.022 mW/g

Maximum value of SAR (measured) = 0.047 mW/g



0 dB = 0.047 mW/g

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Date/Time: 2009/6/7 04:09:58

BODY_WLAN802.11 g_CH6

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2437 MHz; $\sigma = 2.03$ mho/m; $\varepsilon_r = 53.3$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.046 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 2.43 V/m; Power Drift = -0.166 dB

Peak SAR (extrapolated) = 0.077 W/kg

SAR(1 g) = 0.040 mW/g; SAR(10 g) = 0.020 mW/g

Maximum value of SAR (measured) = 0.044 mW/g



0 dB = 0.044 mW/q

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Date/Time: 2009/6/7 04:33:25

BODY_WLAN802.11 g_CH11

DUT: HERO200;

Communication System: Wireless LAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used: f = 2462 MHz; $\sigma = 2.07$ mho/m; $\epsilon_r = 53$; ρ

 $= 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.038 mW/g

BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 2.07 V/m; Power Drift = 0.190 dB

Peak SAR (extrapolated) = 0.065 W/kg

SAR(1 g) = 0.034 mW/g; SAR(10 g) = 0.017 mW/g

Maximum value of SAR (measured) = 0.037 mW/g



0 dB = 0.037 mW/g

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t (886-2) 2299-3279



5. System Verification

Report No.: ES/2009/50019

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Date/Time: 2009/6/6 00:13:50

DUT: Dipole 835 MHz;

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

Medium: Head 900 MHz Medium parameters used: f = 835 MHz; $\sigma = 0.92$ mho/m; $\varepsilon_r = 41.2$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.46 mW/g

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

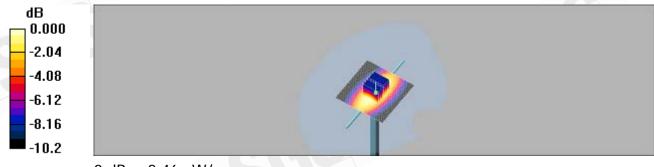
dy=5mm, dz=5mm

Reference Value = 51.2 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 3.40 W/kg

SAR(1 g) = 2.28 mW/g; SAR(10 g) = 1.5 mW/g

Maximum value of SAR (measured) = 2.46 mW/g



0 dB = 2.46 mW/g

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Date/Time: 2009/6/7 14:05:47

DUT: Dipole 835 MHz;

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

Medium: Muscle 900 MHz Medium parameters used: f = 835 MHz; $\sigma = 0.974$ mho/m; $\varepsilon_r =$

53.4; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.51 mW/g

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

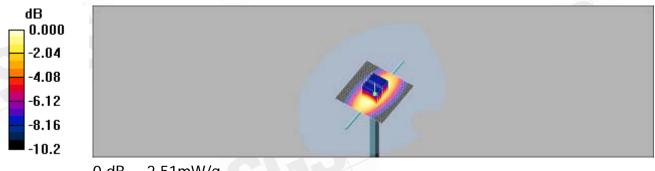
dy=5mm, dz=5mm

Reference Value = 51.4 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 3.46 W/kg

SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.54 mW/g

Maximum value of SAR (measured) = 2.51 mW/g



0 dB = 2.51 mW/q

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Date/Time: 2009/6/6 08:12:48

DUT: Dipole 1900 MHz;

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

Medium: Head 1900MHz Medium parameters used: f = 1900 MHz; $\sigma = 1.45$ mho/m; $\epsilon_r =$

39.7; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Pin=250mw/Area Scan (51x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 12.6 mW/g

Pin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm,

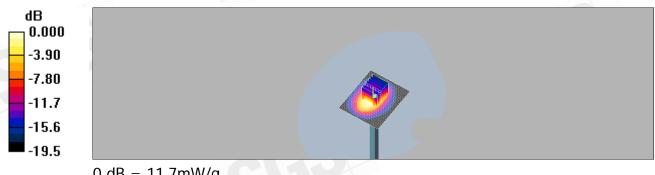
dy=5mm, dz=5mm

Reference Value = 86.2 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 20.2 W/kg

SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.37 mW/g

Maximum value of SAR (measured) = 11.7 mW/g



0 dB = 11.7 mW/q

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Date/Time: 2009/6/7 08:16:44

DUT: Dipole 1900 MHz;

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

Medium: M1800 & 1900 Medium parameters used: f = 1900 MHz; $\sigma = 1.56$ mho/m; $\varepsilon_r = 52.7$;

 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Pin=250mW/Area Scan (51x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 14.8 mW/g

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

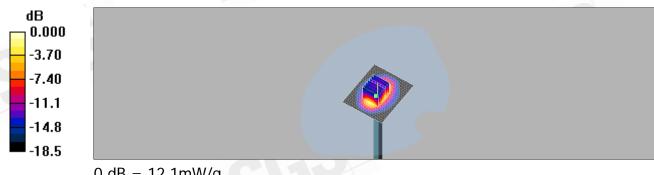
dy=5mm, dz=5mm

Reference Value = 88.2 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 20.2 W/kg

SAR(1 g) = 10.7 mW/g; SAR(10 g) = 5.51 mW/g

Maximum value of SAR (measured) = 12.1 mW/g



0 dB = 12.1 mW/q

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Date/Time: 2009/6/7 01:11:13

DUT: Dipole 2450 MHz;

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: M 2450 Medium parameters used: f = 2450 MHz; $\sigma = 2.05$ mho/m; $\varepsilon_r = 53$; $\rho =$

1000 kg/m³

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV3 - SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2009/1/20

Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Pin=250mW/Area Scan (51x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 18.2 mW/g

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

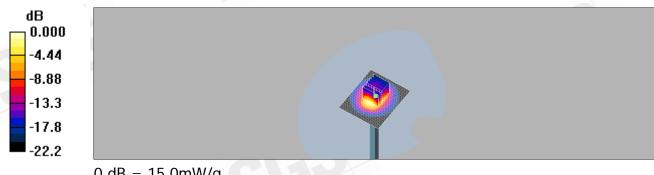
dy=5mm, dz=5mm

Reference Value = 84.4 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 26.5 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.27 mW/g

Maximum value of SAR (measured) = 15.0 mW/g



0 dB = 15.0 mW/q

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6. DAE & Probe Calibration certificate

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





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

Accredited by the Swiss Accreditation Service (SAS)

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

SGS (Auden)

Accreditation No.: SCS 108

S

C

Certificate No: DAE4-547_Jan09 **CALIBRATION CERTIFICATE** DAE4 - SD 000 D04 BJ - SN: 547 Object QA CAL-06.v12 Calibration procedure(s) Calibration procedure for the data acquisition electronics (DAE) January 19, 2009 Calibration date: Condition of the calibrated item In Tolerance This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%. Calibration Equipment used (M&TE critical for calibration) Scheduled Calibration Cal Date (Certificate No.) Sep-09 Fluke Process Calibrator Type 702 SN: 6295803 30-Sep-08 (No: 7673) 30-Sep-08 (No: 7670) Sep-09 SN: 0810278 Keithley Multimeter Type 2001 Check Date (in house) Scheduled Check Secondary Standards ID# SE UMS 006 AB 1004 06-Jun-08 (in house check) In house check: Jun-09 Calibrator Box V1.1 Function Calibrated by: Technician R&D Director Approved by: Issued: January 20, 2009 This calibration certificate shall not be reproduced except in full without written approval of the laboratory

Certificate No: DAE4-547 Jan09

Page 1 of 5

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





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

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates Accreditation No.: SCS 108

Certificate No: EX3-3526 Aug08

		Certificate	
CALIBRATION (CERTIFICAT	E	
Object	EX3DV3 - SN:3	526	
Calibration procedure(s)		QA CAL-14.v3 and QA CAL-23. edure for dosimetric E-field prob	
Calibration date:	August 26, 2008	3	
Condition of the calibrated item	In Tolerance		
All calibrations have been condu	cted in the closed laborate	ory facility: environment temperature (22 ± 3)°C and humidity < 70%.
Calibration Equipment used (M&	TE critical for calibration)		
	TE critical for calibration)	Cal Date (Certificate No.)	Scheduled Calibration
Primary Standards	T.	Cal Date (Certificate No.) 1-Apr-08 (No. 217-00788)	Apr-09
Primary Standards Power meter E4419B Power sensor E4412A	ID# GB41293874 MY41495277	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788)	Apr-09 Apr-09
Primary Standards Power meter E4419B Power sensor E4412A	ID# GB41293874	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788)	Apr-09 Apr-09 Apr-09
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator	ID # GB41293874 MY41495277 MY41498087 SN: S5054 (3c)	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00865)	Apr-09 Apr-09 Apr-09 Jul-09
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator	ID # GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5086 (20b)	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00865) 31-Mar-08 (No. 217-00787)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator	ID# GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b)	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00865) 31-Mar-08 (No. 217-00787) 1-Jul-08 (No. 217-00866)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09 Jul-09
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2	ID # GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5086 (20b)	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00865) 31-Mar-08 (No. 217-00787)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 DAE4	ID# GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5056 (20b) SN: S5129 (30b) SN: 3013 SN: 660	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00866) 2-Jan-08 (No. ES3-3013_Jan08) 3-Sep-07 (No. DAE4-660_Sep07) Check Date (in house)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09 Jul-09 Jan-09 Sep-08 Scheduled Check
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards	ID# GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5066 (20b) SN: S5129 (30b) SN: 3013 SN: 660 ID# US3642U01700	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00786) 2-Jan-08 (No. ES3-3013_Jan08) 3-Sep-07 (No. DAE4-660_Sep07) Check Date (in house)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09 Jul-09 Jan-09 Sep-08 Scheduled Check In house check: Oct-09
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards RF generator HP 8648C	ID# GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5056 (20b) SN: S5129 (30b) SN: 3013 SN: 660	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00866) 2-Jan-08 (No. ES3-3013_Jan08) 3-Sep-07 (No. DAE4-660_Sep07) Check Date (in house)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09 Jul-09 Jan-09 Sep-08 Scheduled Check
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards RF generator HP 8648C Network Analyzer HP 8753E	ID# GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b) SN: 3013 SN: 660 ID# US3642U01700 US37390585 Name	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00865) 31-Mar-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00866) 2-Jan-08 (No. ES3-3013_Jan08) 3-Sep-07 (No. DAE4-660_Sep07) Check Date (in house) 4-Aug-99 (in house check Oct-07) 18-Oct-01 (in house check Oct-07)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09 Jul-09 Jan-09 Sep-08 Scheduled Check In house check: Oct-09
Calibration Equipment used (M& Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards RF generator HP 8648C Network Analyzer HP 8753E Calibrated by:	ID# GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b) SN: 3013 SN: 660 ID# US3642U01700 US37390585	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Jul-08 (No. 217-00865) 31-Mar-08 (No. 217-00865) 31-Mar-08 (No. 217-00866) 2-Jan-08 (No. ES3-3013_Jan08) 3-Sep-07 (No. DAE4-660_Sep07) Check Date (in house) 4-Aug-99 (in house check Oct-07) 18-Oct-01 (in house check Oct-07)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09 Jul-09 Jan-09 Sep-08 Scheduled Check In house check: Oct-09 In house check: Oct-08
Primary Standards Power meter E4419B Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference Probe ES3DV2 DAE4 Secondary Standards RF generator HP 8648C Network Analyzer HP 8753E	ID# GB41293874 MY41495277 MY41498087 SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b) SN: 3013 SN: 660 ID# US3642U01700 US37390585 Name	1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00788) 1-Apr-08 (No. 217-00865) 31-Mar-08 (No. 217-00787) 1-Jul-08 (No. 217-00787) 1-Jul-08 (No. 217-00866) 2-Jan-08 (No. ES3-3013_Jan08) 3-Sep-07 (No. DAE4-660_Sep07) Check Date (in house) 4-Aug-99 (in house check Oct-07) 18-Oct-01 (in house check Oct-07)	Apr-09 Apr-09 Apr-09 Jul-09 Apr-09 Jul-09 Jan-09 Sep-08 Scheduled Check In house check: Oct-09 In house check: Oct-08

Certificate No: EX3-3526_Aug08

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Calibration Laboratory of Schmid & Partner

Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst Service suisse d'étalonnage C

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:

tissue simulating liquid TSL NORMx,y,z sensitivity in free space sensitivity in TSL / NORMx,y,z ConvF DCP diode compression point φ rotation around probe axis Polarization o

9 rotation around an axis that is in the plane normal to probe axis (at Polarization 9

measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

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

 b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORMx, y, z: Assessed for E-field polarization $\vartheta = 0$ (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 (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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EX3DV3 SN:3526

August 26, 2008



Probe EX3DV3

SN:3526

Manufactured:

March 19, 2004

Last calibrated: Recalibrated:

August 29, 2007 August 26, 2008

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

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EX3DV3 SN:3526

August 26, 2008

DASY - Parameters of Probe: EX3DV3 SN:3526

Sensitivity	in	Free	Space ^A
-------------	----	------	--------------------

Diode Compression^B

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

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL

Typical SAR gradient: 5 % per mm 900 MHz

Sensor Cente	er to Phantom Surface Distance	2.0 mm	3.0 mm
SAR _{be} [%]	Without Correction Algorithm	8.9	5.3
SAR _{be} [%]	With Correction Algorithm	0.8	0.4

1810 MHz Typical SAR gradient: 10 % per mm

Sensor Cente	er to Phantom Surface Distance	2.0 mm	3.0 mm
SAR _{be} [%]	Without Correction Algorithm	6.8	3.6
SAR _{be} [%]	With Correction Algorithm	0.5	0.2

Sensor Offset

Probe Tip to Sensor Center

1.0 mm

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

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A The uncertainties of NormX,Y,Z do not affect the E2-field uncertainty inside TSL (see Page 8).

^B Numerical linearization parameter: uncertainty not required.



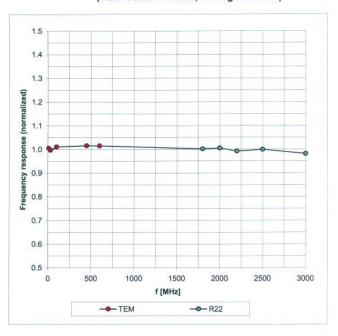
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EX3DV3 SN:3526

August 26, 2008

Frequency Response of E-Field

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



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

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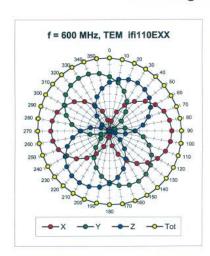


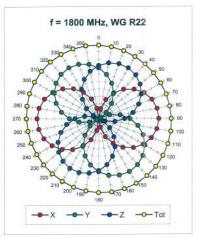
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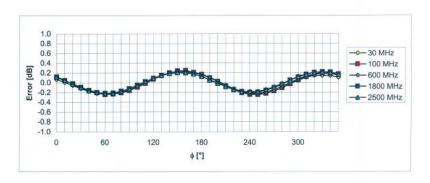
EX3DV3 SN:3526

August 26, 2008

Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$







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

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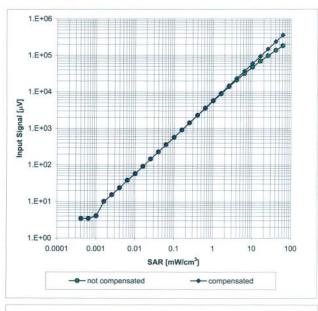
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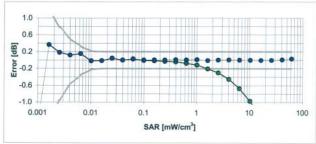
EX3DV3 SN:3526

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Dynamic Range f(SAR_{head})

(Waveguide R22, f = 1800 MHz)





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

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Conversion Factor Assessment

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

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 $^{^{\}mathrm{C}}$ The validity of \pm 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.



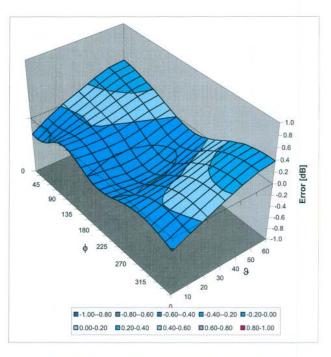
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EX3DV3 SN:3526

August 26, 2008

Deviation from Isotropy in HSL

Error (φ, θ), f = 900 MHz



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

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7. Uncertainty Analysis

DASY4 Uncertainty Budget According to IEEE P1528 [1] Std. Unc. Std. Unc. Uncertainty Prob. Div. (c_i) (c_i) (v_i) Error Description value Dist. (10g)1g 10g(1g) v_{eff} Measurement System Probe Calibration $\pm 4.8 \%$ N ±4.8% ±4.8% 1 1 1 00 Axial Isotropy ±4.7% R $\sqrt{3}$ 0.7 0.7 $\pm 1.9 \%$ ±1.9% 00 $\pm 9.6\%$ $\pm 3.9 \%$ Hemispherical Isotropy R $\sqrt{3}$ 0.7 0.7 $\pm 3.9\%$ 00 Boundary Effects ±1.0% R $\sqrt{3}$ ±0.6% 1 $\pm 0.6\%$ Linearity ±4.7% R $\pm 2.7\%$ $\sqrt{3}$ $\pm 2.7\%$ 1 1 00 System Detection Limits ±1.0% R $\sqrt{3}$ 1 $\pm 0.6\%$ $\pm 0.6\%$ 00 Readout Electronics $\pm 1.0 \%$ N 1 1 $\pm 1.0\%$ ±1.0% 00 $\pm 0.8\%$ $\pm 0.5\%$ Response Time R $\sqrt{3}$ 1 $\pm 0.5\%$ ∞ $\pm 1.5\%$ Integration Time $\pm 2.6\%$ R $\sqrt{3}$ 1 $\pm 1.5\%$ 1 ∞ RF Ambient Conditions $\pm 3.0 \%$ R $\pm 1.7\%$ $\sqrt{3}$ 1 $\pm 1.7\%$ 00 Probe Positioner $\pm 0.4\%$ R $\sqrt{3}$ $\pm 0.2\%$ $\pm 0.2 \%$ 1 00 Probe Positioning $\pm 2.9 \%$ R $\sqrt{3}$ ±1.7% 1 $\pm 1.7\%$ 00 Max. SAR Eval. ±1.0% R $\sqrt{3}$ $\pm 0.6\%$ $\pm 0.6\%$ 00 Test Sample Related Device Positioning $\pm 2.9 \%$ N $\pm 2.9 \%$ $\pm 2.9 \%$ 875 Device Holder ±3.6% $\pm 3.6\%$ $\pm 3.6 \%$ 5 1 1 Power Drift $\pm 5.0 \%$ R $\sqrt{3}$ 1 $\pm 2.9\%$ $\pm 2.9 \%$ 00 Phantom and Setup $\pm 2.3\%$ Phantom Uncertainty $\pm 4.0 \%$ R $\sqrt{3}$ $\pm 2.3\%$ 1 1 00 Liquid Conductivity (target) ±5.0% R $\sqrt{3}$ $\pm 1.8\%$ $\pm 1.2\%$ 0.64 0.4300 ±2.5 % N 0.64 0.43 ±1.1% Liquid Conductivity (meas.) 1 $\pm 1.6\%$ 00 Liquid Permittivity (target) ±5.0% R $\sqrt{3}$ 0.6 ±1.7% ±1.4% 0.49Liquid Permittivity (meas.) $\pm 2.5\%$ 0.6 0.49 ±1.5% $\pm 1.2 \%$ 00 Combined Std. Uncertainty $\pm 10.3 \%$ ±10.0% 331

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Expanded STD Uncertainty

 $\pm 20.6 \%$

 $\pm 20.1 \%$



8. Phantom description

Report No.: ES/2009/50019

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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 Zürich Switzerland	

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
- 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.

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

Signature / Stamp

td & Person Engineering AG hausstesse 43, 8004 Zurldf, Switzerland e 441 245 8700 Few 441 245 9779

Doc No 881 - QD 000 P40 C - F

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9. System Validation from Original equipment supplier

Calibration Laboratory of Schmid & Partner Engineering AG





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

SGS (Auden)

Accreditation No.: SCS 108

Certificate No: D835V2-4d063_May09

CALIBRATION CERTIFICATE

D835V2 - SN: 4d063

Calibration procedure(s)

QA CAL-05.v7

Calibration date:

Condition of the calibrated item

In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-06 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV2	SN: 3025	30-Apr-09 (No. ES3-3025 Apr09)	Apr-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mer09)	Mar-10
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check; Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09
	Name	Function	Signature
Calibrated by:	Jelon Kastrati	Laboratory Technician	In le
Approved by:	Katja Pokovic	Technical Manager	De Kof
This calleggion coefficies chall as	the reserved and according	full without written approval of the laboratory	Issued: May 25, 2009

Certificate No: DB35V2-4d063 May09

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DASY5 Validation Report for Head TSL

Date/Time: 25.05.2009 10:53:04

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: HSL 900 MHz

Medium parameters used: f = 835 MHz; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 40.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

Probe; ES3DV2 - SN3025; ConvF(5.86, 5.86, 5.86); Calibrated: 30.04.2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 07.03.2009

Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

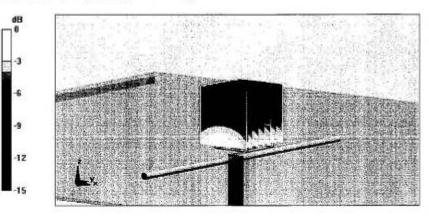
Pin=250mW; dip=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

Reference Value = 57 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 3.54 W/kg

SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.56 mW/g

Maximum value of SAR (measured) = 2.77 mW/g



0 dB = 2.77 mW/g

Certificate No: D835V2-4d063_May09

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DASY5 Validation Report for Body TSL

Date/Time: 25.05.2009 14:01:33

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: MSL900

Medium parameters used: f = 835 MHz; $\sigma = 1.01$ mho/m; $\varepsilon_r = 53.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

Probe: ES3DV2 - SN3025; ConvF(5.79, 5.79, 5.79); Calibrated: 30.04.2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 07.03.2009

Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

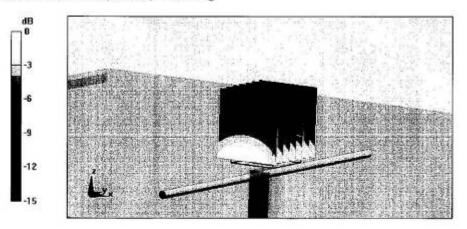
Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm.

dz=5mm

Reference Value = 55.6 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 3.74 W/kg

SAR(1 g) = 2.55 mW/g; SAR(10 g) = 1.68 mW/gMaximum value of SAR (measured) = 2.94 mW/g



0 dB = 2.94mW/g

Certificate No: D835V2-4d063_May09

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





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

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SGS (Auden)

Certificate No: D1900V2-5d027-Apr09

Accreditation No.: SCS 108

S

C

CALIBRATION CERTIFICATE

Object

D1900V2 - SN: 5d027

Calibration procedure(s)

QA CAL-05.v7

Calibration procedure for dipole validation kits

Calibration date:

April 27, 2009

Condition of the calibrated item

In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09
	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	Telle

Katja Pokovic Technical Manager

Issued: April 28, 2009

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Certificate No: D1900V2-5d027_Apr09

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DASY5 Validation Report for Head TSL

Date/Time: 27.04.2009 11:54:57

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: HSL U10 BB

Medium parameters used: f = 1900 MHz; $\sigma = 1.47 \text{ mho/m}$; $\varepsilon_r = 38.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

Probe: ES3DV2 - SN3025; ConvF(4.9, 4.9, 4.9); Calibrated: 28.04.2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 07.03.2009

Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001

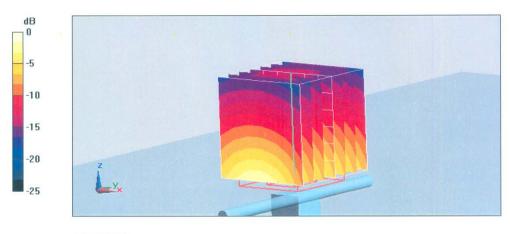
Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

Reference Value = 97.1 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 19.7 W/kg

SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.38 mW/gMaximum value of SAR (measured) = 13 mW/g



0 dB = 13 mW/g

Certificate No: D1900V2-5d027_Apr09

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DASY5 Validation Report for Body TSL

Date/Time: 21.04.2009 14:59:34

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: MSL U10 BB

Medium parameters used: f = 1900 MHz; $\sigma = 1.56$ mho/m; $\varepsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

Probe: ES3DV2 - SN3025; ConvF(4.5, 4.5, 4.5); Calibrated: 28.04.2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 07.03.2009

Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

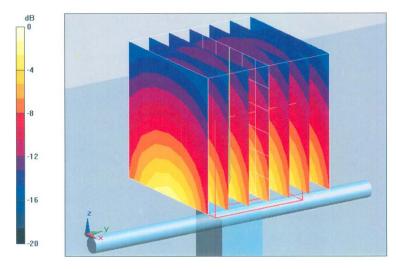
dz=5mm

Reference Value = 96 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 5.58 mW/g

Maximum value of SAR (measured) = 13.4 mW/g



0 dB = 13.4 mW/g

Certificate No: D1900V2-5d027_Apr09

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





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SGS (Auden)

Accreditation No.: SCS 108

Certificate No: D2450V2-727 Apr09

CALIBRATION CERTIFICATE

D2450V2 - SN: 727

QA CAL-05.v7 Calibration procedure(s)

Calibration procedure for dipole validation kits

April 27, 2009 Calibration date:

In Tolerance Condition of the calibrated item

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID#	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09
	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	folle
Approved by:	Katja Pokovic	Technical Manager	80-11e

Issued: April 28, 2009 This calibration certificate shall not be reproduced except in full without written approval of the laboratory

Certificate No: D2450V2-727_Apr09

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DASY5 Validation Report for Body TSL

Date/Time: 22.04.2009 13:12:14

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:727

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: MSL U10 BB

Medium parameters used: f = 2450 MHz; $\sigma = 1.98 \text{ mho/m}$; $\varepsilon_r = 54.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

Probe: ES3DV2 - SN3025; ConvF(4.07, 4.07, 4.07); Calibrated: 28.04.2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 07.03.2009

Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002

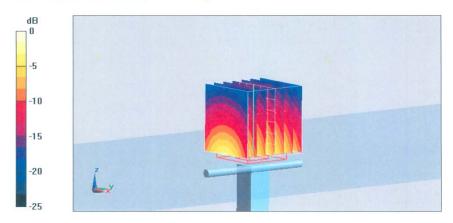
Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

Reference Value = 96.9 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 26.5 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.18 mW/gMaximum value of SAR (measured) = 17.3 mW/g



0 dB = 17.3 mW/g

Certificate No: D2450V2-727_Apr09

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End of 1st part of report

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