



**Specific Absorption Rate (SAR) Test Report**  
for  
**Psion Teklogix Inc.**  
on the  
**802.11b/g Wireless LAN CF Card**

Report No. : FA710210-01-2-2-03  
Trade Name : WORKABOUT PRO  
Model Name : RA2041  
FCC ID : GM37527RA2041  
IC ID : 2739D-BGRADA  
Date of Testing : Feb. 12, and May 07, 2007  
Date of Report : May 11, 2007  
Date of Review : May 11, 2007

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- Report Version: Rev. 04

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**Appendix A – System Performance Check Data**



**Appendix B – SAR Measurement Data**  
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**Appendix D – GSM SAR Data**



**1. Statement of Compliance**

The Specific Absorption Rate (SAR) maximum result found during testing for the **Psion Teklogix Inc. 802.11b/g Wireless LAN CF Card WORKABOUT PRO RA2041** on the PDA hosts **7527C / 7527S** Series are as follows (with expanded uncertainty 20.6%) :

|                     | WLAN head (W/Kg) | WLAN body (W/Kg) |
|---------------------|------------------|------------------|
| <b>7527C Series</b> | <b>0.141</b>     | <b>0.23</b>      |
| <b>7527S Series</b> | <b>0.174</b>     | <b>0.234</b>     |

The co-location of GSM/GPRS, WLAN and Bluetooth on the hosts **7527C / 7527S** Series were also checked. It is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1999 and RSS-102 Issued 2 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C (Edition 01-01) and IEEE 1528-2003.

Approved by

Roy Wu  
Deputy Manager



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## **2. Administration Data**

### **2.1 Testing Laboratory**

**Company Name :** Sporton International Inc.  
**Department :** Antenna Design/SAR  
**Address :** No.52, Hwa-Ya 1<sup>st</sup> RD., Hwa Ya Technology Park, Kwei-Shan Hsiang, TaoYuan  
Hsien, Taiwan, R.O.C.  
**Telephone Number :** 886-3-327-3456  
**Fax Number :** 886-3-327-0973

### **2.2 Detail of Applicant**

**Company Name :** Psion Teklogix Inc.  
**Address :** 2100 Meadowvale Blvd., Mississauga, Ontario, L5N 7J9, Canada

### **2.3 Detail of Manufacturer**

**Company Name :** ASKEY COMPUTER CORP.  
**Address :** 10F, No. 119, Chienkang Rd., Chung-Ho, Taipei, Taiwan, R.O.C.

### **2.4 Application Detail**

**Date of reception of application:** Jan. 02, 2007  
**Start of test :** Feb. 12, 2007  
**End of test :** May 07, 2007



### 3. Scope

#### 3.1 Description of Device Under Test (DUT)

|                                     |  |
|-------------------------------------|--|
| DUT Type :                          | 802.11b/g Wireless LAN CF Card         |
| Trade Name :                        | WORKABOUT PRO                          |
| Model Name :                        | RA2041                                 |
| FCC ID :                            | GM37527RA2041                          |
| IC ID :                             | 2739D-BGRADA                           |
| Tx Frequency :                      | 2400 ~ 2483.5 MHz                      |
| Rx Frequency :                      | 2400 ~ 2483.5 MHz                      |
| Number of Channels :                | 11                                     |
| Carrier Frequency of Each Channel : | 2412+(n-1)*5 MHz; n=1~11               |
| Antenna Type :                      | PCB Antenna                            |
| Antenna Connector :                 | N/A                                    |
| Antenna Gain :                      | -2.66 dBi (7527C)<br>-2.48 dBi (7527S) |
| Maximum Output Power to Antenna :   | See the table below for the details    |
| Type of Modulation :                | DSSS / OFDM                            |
| Application Type :                  | Certification                          |

#### *Test Hosts and the Embedded modules:*

| Maximum Output Power to Antenna |  |  |           |
|---------------------------------|--|--|-----------|
| Host                            | GSM850   | PCS1900  | Bluetooth |
| <b>7527C Series</b>             | GSM: 31.54 dBm<br>GPRS8: 31.50 dBm<br>GPRS10: 29.95 dBm<br>GPRS12: 27.60 dBm<br>EDGE8: 29.60 dBm<br>EDGE10: 27.40 dBm<br>EDGE12: 23.10 dBm | GSM: 29.03 dBm<br>GPRS8: 29.06 dBm<br>GPRS10: 27.28 dBm<br>GPRS12: 28.00 dBm<br>EDGE8: 28.20 dBm<br>EDGE10: 26.00 dBm<br>EDGE12: 22.00 dBm | 0.59 dBm  |
| <b>7527S Series</b>             | GSM: 31.53 dBm<br>GPRS8: 31.57 dBm<br>GPRS10: 29.98 dBm<br>GPRS12: 27.60 dBm<br>EDGE8: 29.50 dBm<br>EDGE10: 27.40 dBm<br>EDGE12: 23.30 dBm | GSM: 28.94 dBm<br>GPRS8: 28.97 dBm<br>GPRS10: 27.16 dBm<br>GPRS12: 24.00 dBm<br>EDGE8: 28.30 dBm<br>EDGE10: 26.10 dBm<br>EDGE12: 22.10 dBm | 0.59 dBm  |



3.2 Details of the modules

| Maximum Output Power to Antenna |            |               |                |
|---------------------------------|------------|---------------|----------------|
|                                 | Model Name | FCC ID        | IC ID          |
| GSM Radio                       | RA3030-G2  | GM375273RADA  | 2739D-7527RADA |
| WLAN Radio                      | RA2041     | GM37527RA2041 | 2739D-BGRADA   |
| Bluetooth Radio                 | BTL040     | GM37525BTB    | 2739D-7525BTB  |

3.3 Details of the Hosts

| Product Feature & Specification |                            |
|---------------------------------|----------------------------|
| DUT Type                        | Hand-held Micro-computer   |
| Trade Name                      | WORKABOUT PRO              |
| Model Name                      | 7527C / 7527S Series       |
| HW Version                      | 7527C : ES3<br>7527S : ES2 |
| SW Version                      | A                          |
| DUT Stage                       | Identical Prototype        |
| Battery                         | WA3006                     |

Remark: 7527S is the shorter version of model 7527C. They have the same RF modules and antenna. The only difference between the two models is the keypad.



**3.4 Details of the Accessory**

**Terminal Options**

|                 |  | Model Number | Part Number | Remark   |
|-----------------|--|--------------|-------------|----------|
| GSM             | Quad-band MC75 GSM Radio with Stubby antenna     | RA3030-G2    | N/A         |          |
| Kit             | Blackroc Endcap Kit 3-Port (RS232,TTL,IRDA); kit | BR1000-G1    | 1050812     | Endcap 7 |
| 802.11g         | 802.11g CF Radio                                 | RA2041       | N/A         |          |
| Endcap with GSM | Imager, 2D HHP 5180 Endcap with GSM antenna      | WA8110-G1    | 1050830     | Endcap 5 |
|                 | Imager, 1D EV15 Endcap, with GSM antenna         | WA9113-G1    | 1050778     | Endcap 1 |
|                 | Scanner, 1D SE955 Endcap, with GSM antenna       | WA9112-G1    | 1050491     | Endcap 2 |
| Endcap          | Imager, 2D HHP 5180 Endcap                       | WA8010-G1    | 1050890     | Endcap 6 |
|                 | Imager, 1D Intermec EV15 Endcap                  | WA9103-G1    | 1050777     | Endcap 3 |
|                 | Scanner, 1D SE955 Endcap                         | WA9102-G1    | 1050492     | Endcap 4 |
| POD             | Imager, 1D Intermec EV15 Pod                     | WA9003-G1    | 1050462     | POD 1    |
|                 | Scanner, 1D SE955 Pod                            | WA9002-G1    | 1050230     | POD 2    |
|                 | Scanner, 1D SE1223HP Pod                         | WA9000-G1    | 1050229     | POD 3    |
|                 | Imager, SX5393 Slim Pod                          | WA9007-G1    | 1050773     | POD 5    |
|                 | Scanner, 1D SE1223LR Pod                         | WA9005-G1    | 1051025     | POD 4    |
|                 | Imager, 2D HHP 5180 Pod                          | WA9012-G1    | 1050865     | POD 6    |

**Docks and Connectivity Options**

|         |   |                             |                           |           |
|---------|---|-----------------------------|---------------------------|-----------|
| Docking | Desktop Docking Station                           | WA4003-G2                   | 1050955                   | Docking 1 |
|         | USB Cable   | N/A                         | N/A                       | USB 1     |
|         | Vehicle Cradle - Powered 12V with Port Replicator | WA4005-G1 (port replicator) | 1080224 (port replicator) |           |
|         | Cigarette light adaptor                           | WA3113-G2                   | 1050463-001               |           |
|         | Standalone Power Supply                           | PS1050-G1                   | 1050465                   |           |
| USB     | USB to Ethernet adaptor module                    | WA4010-G1                   | 1050236                   | USB 2     |
|         | USB to RS232 adaptor module                       | WA4015-G1                   | 1050067-300               | USB 3     |
| Tether  | Tether to Ethernet adaptor module                 | WA4025                      | 1050255                   | USB 5     |
|         | Tether adaptor cable (for connecting keyboards)   | WA1001                      | 1050551                   | USB 4     |

**Others**

|              |                                   |           |         |    |
|--------------|-----------------------------------|-----------|---------|----|
| Battery      | 3000mAh                           | WA3006    |         | B2 |
|              | 4000mAh                           | WA3010    | 1050192 | B3 |
| Holster      | Soft Shell Holster                | WA6050    | 1030227 | C1 |
| Pistol Grips | Pistol Grip Symbol SE1223 Scanner | WA6001-G1 | 1050460 | C2 |

Remark: USB Cable comes in the box as part of the Docking Station WA4003-G2.





3.5 Product Photo  
7527C



7527S





**Holster**





**3.6 Applied Standards:**

The Specific Absorption Rate (SAR) testing specification, method and procedure for this 802.11b/g Wireless LAN CF Card is in accordance with the following standards:

RSS-102 Issued 2 (2005),  
47 CFR Part 2 (2.1093),  
IEEE C95.1-1999,  
IEEE C95.3-2002,  
IEEE P1528 -2003, and  
OET Bulletin 65 Supplement C (Edition 01-01)



3.7 Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user.

Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

3.8 Test Conditions

3.8.1 Ambient Condition:

| Item                                     | HSL_2450<br>2/12 | HSL_2450<br>5/7 | MSL_2450<br>2/12 | MSL_2450<br>5/7 |
|--|------------------|-----------------|------------------|-----------------|
| Ambient Temperature ( )                  | 20-24            |                 |                  |                 |
| Tissue simulating liquid temperature ( ) | 20.8             | 21.7            | 21               | 21.0            |
| Humidity (%)                             | <60              |                 |                  |                 |

3.8.2 Test Configuration:

The data rates for SAR testing are 11Mbps for 802.11b and 6Mbps for 802.11g. Engineering testing software installed on the EUT can provide continuous transmitting RF signal. This RF signal utilized in SAR measurement has almost 100% duty cycle and its crest factor is 1. The measurements were performed on the lowest, middle, and highest channel, i.e. channel 1, channel 6, and channel 11 for each testing position. However, measurements were performed only on the middle channel if the SAR is below 3 dB of limit.



#### 4. Specific Absorption Rate (SAR)

##### 4.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The FCC recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person’s awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

##### 4.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density.

). The equation description is as below:

$$\mathbf{SAR} = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dv} \right)$$

*SAR is expressed in units of Watts per kilogram (W/kg)*

SAR measurement can be either related to the temperature elevation in tissue by

$$\mathbf{SAR} = C \frac{\delta T}{\delta t}$$

, where C is the specific head capacity,  $\delta T$  is the temperature rise and  $\delta t$  the exposure duration,

or related to the electrical field in the tissue by

$$\mathbf{SAR} = \frac{\sigma |E|^2}{\rho}$$

, where  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of the tissue and  $E$  is the rms electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

## 5. SAR Measurement Setup

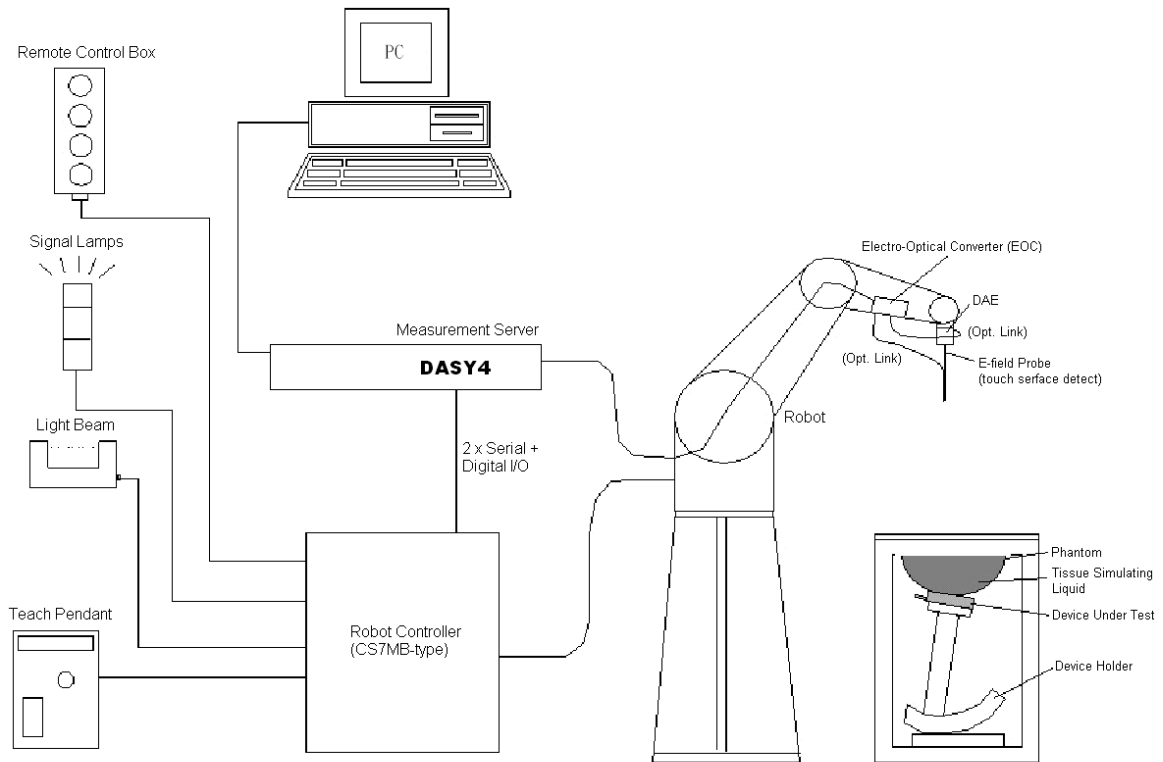


Fig. 5.1 DASY4 system



The DASY4 system for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic (DAE) attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter (ECO) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows XP
- DASY4 software
- Remove control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom
- A device holder
- Tissue simulating liquid
- Dipole for evaluating the proper functioning of the system

Some of the components are described in details in the following sub-sections.

### **5.1 DASY4 E-Field Probe System**

The SAR measurement is conducted with the dosimetric probe ET3DV6 (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

**5.1.1 ET3DV6 E-Field Probe Specification**

|                          |  |
|--------------------------|--|
| <b>Construction</b>      | Symmetrical design with triangular core<br>Built-in optical fiber for surface detection system<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents) |
| <b>Calibration</b>       | Simulating tissue at frequencies of 900MHz, 1.8GHz and 2.45GHz for brain and muscle (accuracy $\pm 8\%$ )  |
| <b>Frequency</b>         | 10 MHz to > 3 GHz  |
| <b>Directivity</b>       | $\pm 0.2$ dB in brain tissue (rotation around probe axis)<br>$\pm 0.4$ dB in brain tissue (rotation perpendicular to probe axis)   |
| <b>Dynamic Range</b>     | $5 \mu$ W/g to > 100mW/g; Linearity: $\pm 0.2$ dB  |
| <b>Surface Detection</b> | $\pm 0.2$ mm repeatability in air and clear liquids on reflecting surface  |
| <b>Dimensions</b>        | Overall length: 330mm<br>Tip length: 16mm<br>Body diameter: 12mm<br><br>Tip diameter: 6.8mm<br>Distance from probe tip to dipole centers: 2.7mm  |
| <b>Application</b>       | General dosimetry up to 3GHz<br>Compliance tests for mobile phones and Wireless LAN<br>Fast automatic scanning in arbitrary phantoms   |



**Fig. 5.2 Probe setup on robot**

**5.1.2 ET3DV6 E-Field Probe Calibration**

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than  $\pm 10\%$ . The spherical isotropy shall be evaluated and within  $\pm 0.25$ dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data are as below:





**ET3DV6 sn1787**

|                                 |                        |                       |                       |               |
|---------------------------------|------------------------|-----------------------|-----------------------|---------------|
| <b>Sensitivity</b>              | X axis : 1.57 $\mu$ V  | Y axis : 1.71 $\mu$ V | Z axis : 2.09 $\mu$ V |               |
| <b>Diode compression point</b>  | X axis : 94 mV         | Y axis : 94 mV        | Z axis : 94 mV        |               |
| <b>Conversion factor (Body)</b> | <b>Frequency (MHz)</b> | <b>X axis</b>         | <b>Y axis</b>         | <b>Z axis</b> |
|                                 | 2350~2550              | 4.13                  | 4.13                  | 4.13          |
| <b>Boundary effect (Body)</b>   | <b>Frequency (MHz)</b> | <b>Alpha</b>          | <b>Depth</b>          |               |
|                                 | 2350~2550              | 0.62                  | 2.13                  |               |

**ET3DV6 sn1788**

|  |                        |                       |                       |               |
|--|------------------------|-----------------------|-----------------------|---------------|
| <b>Sensitivity</b>                     | X axis : 1.73 $\mu$ V  | Y axis : 1.67 $\mu$ V | Z axis : 1.70 $\mu$ V |               |
| <b>Diode compression point</b>         | X axis : 95 mV         | Y axis : 101 mV       | Z axis : 93 mV        |               |
| <b>Conversion factor (Head / Body)</b> | <b>Frequency (MHz)</b> | <b>X axis</b>         | <b>Y axis</b>         | <b>Z axis</b> |
|  | 2350~2550              | 4.66 / 4.11           | 4.66 / 4.11           | 4.66 / 4.11   |
| <b>Boundary effect (Head / Body)</b>   | <b>Frequency (MHz)</b> | <b>Alpha</b>          | <b>Depth</b>          |               |
|  | 2350~2550              | 0.68 / 0.60           | 1.96 / 1.70           |               |

NOTE: The probe parameters have been calibrated by the SPEAG.

**5.2 DATA Acquisition Electronics (DAE)**

The data acquisition electronics (DAE4) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of the DAE4 is 200M Ohm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.



### **5.3 Robot**

The DASY4 system uses the high precision robots RX90BL type out of the newer series from Stäubli SA (France). For the 6-axis controller DASY4 system, the CS7MB robot controller version from Stäubli is used. The RX robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller

### **5.4 Measurement Server**

The DASY4 measurement server is based on a PC/104 CPU board with  
166 MHz CPU  
32 MB chipset and  
64 MB RAM.

Communication with  
the DAE4 electronic box  
the 16-bit AD-converter system for optical detection and digital I/O interface.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

### **5.5 SAM Twin Phantom**

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

- Left head
- Right head
- Flat phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.

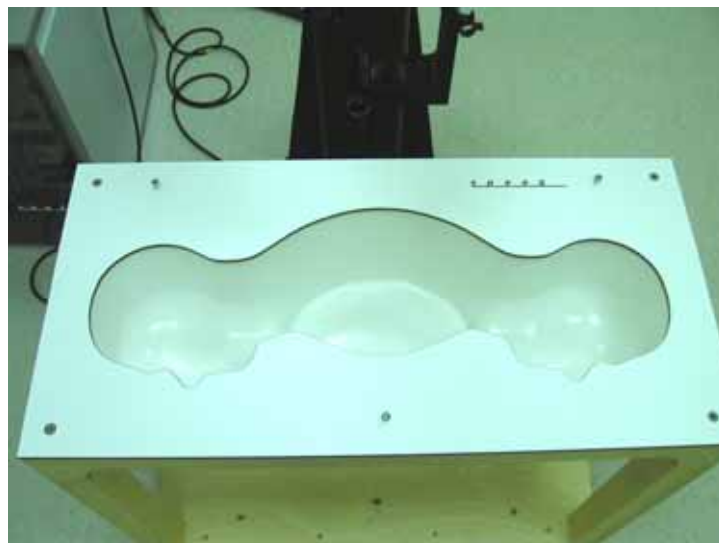


A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters.

On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

The phantom can be used with the following tissue simulating liquids:

- \*Water-sugar based liquid
- \*Glycol based liquids



**Fig. 5.3 Top view of twin phantom**



**Fig. 5.4 Bottom view of twin phantom**



## 5.6 Data Storage and Evaluation

### 5.6.1 Data Storage

The DASY4 software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension .DA4. The postprocessing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [A/m], [mW/g]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a loseless media, will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

### 5.6.2 Data Evaluation

The DASY4 postprocessing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software :

|                            |                           |   |
|----------------------------|---------------------------|---|
| <b>Probe parameters :</b>  | - Sensitivity             | Norm <sub>i</sub> , a <sub>i0</sub> , a <sub>i1</sub> , a <sub>i2</sub> |
|                            | - Conversion factor       | ConvF <sub>i</sub>  |
|                            | - Diode compression point | dcp <sub>i</sub>  |
| <b>Device parameters :</b> | - Frequency               | f   |
|                            | - Crest factor            | cf  |
| <b>Media parameters :</b>  | - Conductivity            |   |
|                            | - Density                 |   |

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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



can be given as :

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

with  $V_i =$  compensated signal of channel  $i$  ( $i = x, y, z$ )  
 $U_i =$  input signal of channel  $i$  ( $i = x, y, z$ )  
 $cf =$  crest factor of exciting field (DASY parameter)  
 $dcp_i =$  diode compression point (DASY parameter)

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

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

**H-field probes :**  $H_i = \sqrt{V_i \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}}$

with  $V_i =$  compensated signal of channel  $i$  ( $i = x, y, z$ )  
 $Norm_i =$  sensor sensitivity of channel  $i$  ( $i = x, y, z$ )  
 $\mu V/(V/m)^2$  for E-field Probes  
 $ConvF =$  sensitivity enhancement in solution  
 $a_{ij} =$  sensor sensitivity factors for H-field probes  
 $f =$  carrier frequency [GHz]  
 $E_i =$  electric field strength of channel  $i$  in V/m  
 $H_i =$  magnetic field strength of channel  $i$  in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude) :

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

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

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

with  $SAR =$  local specific absorption rate in mW/g  
 $E_{tot} =$  total field strength in V/m  
 $\sigma =$  conductivity in [mho/m] or [Siemens/m]  
 $\rho =$  equivalent tissue density in g/cm<sup>3</sup>



\* Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

The power flow density is calculated assuming the excitation field to be a free space field.

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

with  $P_{pwe}$  = equivalent power density of a plane wave in mW/cm<sup>2</sup>  
 $E_{tot}$  = total electric field strength in V/m  
 $H_{tot}$  = total magnetic field strength in A/m



**5.7 Test Equipment List**

| Manufacture | Name of Equipment             | Type/Model            | Serial Number   | Calibration   |               |
|-------------|-------------------------------|-----------------------|-----------------|---------------|---------------|
|             |                               |                       |                 | Last Cal.     | Due Date      |
| SPEAG       | Dosimetric E-Filed Probe      | ET3DV6                | 1788            | Sep 19, 2006  | Sep. 19, 2007 |
| SPEAG       | 2450MHz System Validation Kit | D2450V2               | 736             | Jul. 12, 2005 | Jul. 12, 2007 |
| SPEAG       | Data Acquisition Electronics  | DAE3                  | 577             | Nov. 21, 2006 | Nov. 21, 2007 |
| SPEAG       | Device Holder                 | N/A                   | N/A             | NCR           | NCR           |
| SPEAG       | Phantom                       | QD 000 P40 C          | TP-1150         | NCR           | NCR           |
| SPEAG       | Robot                         | Staubli RX90BL        | F03/5W15A1/A/01 | NCR           | NCR           |
| SPEAG       | Software                      | DASY4 V4.7 Build 53   | N/A             | NCR           | NCR           |
| SPEAG       | Software                      | SEMCAD V1.8 Build 172 | N/A             | NCR           | NCR           |
| SPEAG       | Measurement Server            | SE UMS 001 BA         | 1021            | NCR           | NCR           |
| Agilent     | ENA series Network Analyzer   | E5071C                | MY42403579      | Feb. 21, 2007 | Feb. 21, 2008 |
| Agilent     | Dielectric Probe Kit          | 85070D                | US01440205      | NCR           | NCR           |
| Agilent     | Dual Directional Coupler      | 778D                  | 50422           | NCR           | NCR           |
| Agilent     | Power Amplifier               | 8449B                 | 3008A01917      | NCR           | NCR           |
| R&S         | Radio Communication Tester    | CMU200                | 105513          | Jul. 25, 2006 | Jul. 25, 2007 |
| Agilent     | Power Meter                   | E4416A                | GB41292344      | Feb. 08, 2007 | Feb. 08, 2008 |
| Agilent     | Power Sensor                  | E9327A                | US40441548      | Feb. 08, 2007 | Feb. 08, 2008 |
| Agilent     | Signal Generator              | E8247C                | MY43320596      | Mar. 01, 2006 | Mar. 01, 2008 |

**Table 5.1 Test Equipment List**



### 6. Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY4, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. The liquid height from the bottom of the phantom body is 15.2 centimeters, which is shown in Fig. 6.1.

The following ingredients for tissue simulating liquid are used:

- **Water:** deionized water (pure H<sub>2</sub>O), resistivity 16M - as basis for the liquid
- **Sugar:** refined sugar in crystals, as available in food shops – to reduce relative permittivity
- **Salt:** pure NaCl – to increase conductivity
- **Cellulose:** Hydroxyethyl-cellulose, medium viscosity (75-125 mPa.s, 2% in water, 20°C), CAS#54290-to increase viscosity and to keep sugar in solution.
- **Preservative:** Preventol D-7 Bayer AG, D-51368 Leverkusen, CAS#55965-84-9- to prevent the spread of bacteria and molds.
- **DGMBE:** Deithlenglycol-monobuthyl ether (DGMBE), Fluka Chemie GmbH, CAS#112-34-5 – to reduce relative permittivity.

Table 6.1 gives the recipes for one liter of tissue simulating liquid for frequency band 2450 MHz.

| Ingredient                   | HSL-2450  | MSL-2450   |
|------------------------------|---|--|
| Water                        | 450.0 ml  | 698.3 ml   |
| DGMBE                        | 550.0 ml  | 301.7 ml   |
| Total amount                 | 1 liter (1.0 kg)  | 1 liter (1.0 kg)   |
| Dielectric Parameters at 22° | f = 2450MHz<br>ε <sub>r</sub> = 39.2±5%, σ = 1.8±5% S/m | f = 2450MHz<br>ε <sub>r</sub> = 52.7±5%, σ = 1.95±5% S/m |

**Table 6.1**

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an Agilent 85070D Dielectric Probe Kit and an Agilent Network Analyzer.



Table 6.2 shows the measuring results for muscle simulating liquid.

|      | <b>Bands</b> | <b>Frequency(MHz)</b> | <b>Permittivity ( <math>\epsilon_r</math> )</b> | <b>Conductivity ( <math>\sigma</math> )</b> | <b>Measurement Date</b> |
|------|--------------|-----------------------|---|---|-------------------------|
| Head | 2450 MHz     | 2412                  | 38.6  | 1.73  | May 07, 2007            |
|      |              | 2437                  | 38.2  | 1.74  |                         |
|      |              | 2462                  | 38.0  | 1.78  |                         |
| Body | 2450 MHz     | 2412                  | 52.7  | 1.90  | Feb. 12, 2007           |
|      |              | 2437                  | 52.7  | 1.94  |                         |
|      |              | 2462                  | 52.6  | 1.97  |                         |
| Head | 2450 MHz     | 2412                  | 40.1  | 1.76  | May 07, 2007            |
|      |              | 2437                  | 39.8  | 1.81  |                         |
|      |              | 2462                  | 39.5  | 1.87  |                         |
| Body | 2450 MHz     | 2412                  | 53.0  | 1.91  | May 07, 2007            |
|      |              | 2437                  | 53.0  | 1.95  |                         |
|      |              | 2462                  | 52.9  | 1.97  |                         |

**Table 6.2**

The measuring data are consistent with  $\epsilon_r = 39.2 \pm 5\%$  and  $\sigma = 1.80 \pm 5\%$  for head 2450 band and  $\epsilon_r = 52.7 \pm 5\%$  and  $\sigma = 1.95 \pm 5\%$  for body 2450 band.



**Fig. 6.1**



### 7. Uncertainty Assessment

The component of uncertainty may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainty by the statistical analysis of a series of observations is termed a Type A evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience and knowledge of the behavior and properties of relevant materials and instruments, manufacture’s specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in Table 7.1

| Uncertainty Distributions         | Normal             | Rectangular | Triangular | U-shape |
|-----------------------------------|--------------------|-------------|------------|---------|
| Multiplying factor <sup>(a)</sup> | 1/k <sup>(b)</sup> | 1/ 3        | 1/ 6       | 1/ 2    |

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) is the coverage factor

**Table 7.1**

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual “root-sum-squares” (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY4 uncertainty Budget is showed in Table 7.2.



| Error Description  | Uncertainty Value $\pm$ % | Probability Distribution | Divisor                | $C_i$<br>$I_g$ | Standard Unc. (1-g)          | $v_i$ or $V_{eff}$ |
|--|---------------------------|--------------------------|------------------------|----------------|------------------------------|--------------------|
| <b>Measurement System</b>  |                           |                          |                        |                |                              |                    |
| Probe Calibration  | $\pm 4.8$                 | Normal                   | 1                      | 1              | $\pm 4.8$                    |                    |
| Axial Isotropy   | $\pm 4.7$                 | Rectangular              | $\sqrt{3}$             | 0.7            | $\pm 1.9$                    |                    |
| Hemispherical Isotropy   | $\pm 9.6$                 | Rectangular              | $\sqrt{3}$             | 0.7            | $\pm 3.9$                    |                    |
| Boundary Effect  | $\pm 1.0$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 0.6$                    |                    |
| Linearity  | $\pm 4.7$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 2.7$                    |                    |
| System Detection Limit   | $\pm 1.0$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 0.6$                    |                    |
| Readout Electronics  | $\pm 1.0$                 | Normal                   | 1                      | 1              | $\pm 1.0$                    |                    |
| Response Time  | $\pm 0.8$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 0.5$                    |                    |
| Integration time   | $\pm 2.6$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 1.5$                    |                    |
| RF Ambient Conditions  | $\pm 3.0$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 1.7$                    |                    |
| Probe Positioner Mech. Tolerance                                   | $\pm 0.4$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 0.2$                    |                    |
| Probe Positioning with respect to Phantom Shell                    | $\pm 2.9$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 1.7$                    |                    |
| Extrapolation and Interpolation Algorithms for Max. SAR Evaluation | $\pm 1.0$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 0.6$                    |                    |
| <b>Test sample Related</b>   |                           |                          |                        |                |                              |                    |
| Test sample Positioning  | $\pm 2.9$                 | Normal                   | 1                      | 1              | $\pm 2.9$                    | 145                |
| Device Holder Uncertainty  | $\pm 3.6$                 | Normal                   | 1                      | 1              | $\pm 3.6$                    | 5                  |
| Output Power Variation-SAR drift measurement                       | $\pm 5.0$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 2.9$                    |                    |
| <b>Phantom and Setup</b>   |                           |                          |                        |                |                              |                    |
| Phantom uncertainty(Including shape and thickness tolerances)      | $\pm 4.0$                 | Rectangular              | $\sqrt{3}$             | 1              | $\pm 2.3$                    |                    |
| Liquid Conductivity Target tolerance                               | $\pm 5.0$                 | Rectangular              | $\sqrt{3}$             | 0.64           | $\pm 1.8$                    |                    |
| Liquid Conductivity measurement uncertainty                        | $\pm 2.5$                 | Normal                   | 1                      | 0.64           | $\pm 1.6$                    |                    |
| Liquid Permittivity Target tolerance                               | $\pm 5.0$                 | Rectangular              | $\sqrt{3}$             | 0.6            | $\pm 1.7$                    |                    |
| Liquid Permittivity measurement uncertainty                        | $\pm 2.5$                 | Normal                   | 1                      | 0.6            | $\pm 1.5$                    |                    |
| Combined standard uncertainty                                      |                           |                          |                        |                | $\pm 10.3$                   | 330                |
| <b>Coverage Factor for 95 %</b>                                    |                           | <b><math>K=2</math></b>  |                        |                |                              |                    |
| <b>Expanded uncertainty (Coverage factor = 2)</b>                  |                           |                          | <b>Normal (k=2) 27</b> |                | <b><math>\pm 20.6</math></b> |                    |

Table 7.2 Uncertainty Budget of DASY

## 8. SAR Measurement Evaluation

Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

### 8.1 Purpose of System Performance check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

### 8.2 System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 2450 MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:

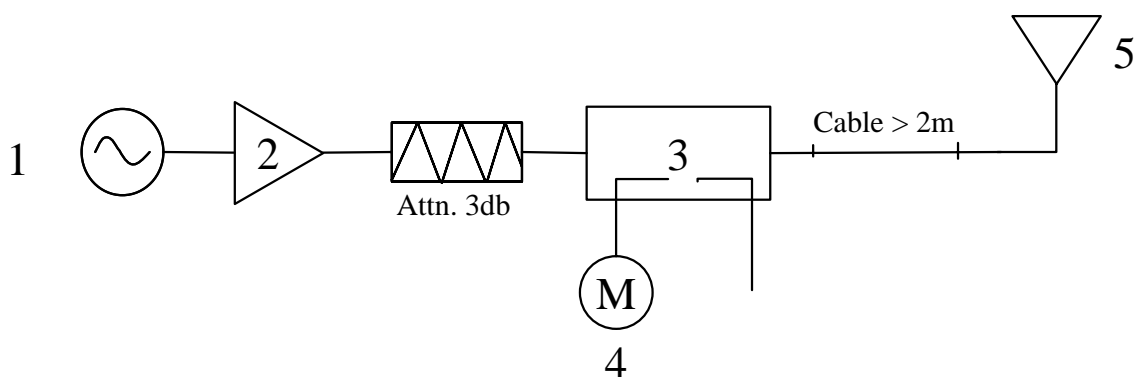


Fig. 8.1



1. Signal Generator
2. Amplifier
3. Directional Coupler
4. Power Meter
5. 2450 MHz Dipole

The output power on dipole port must be calibrated to 100 mW (20 dBm) before dipole is connected.



**Fig 8.2 Dipole Setup**



8.3 Validation Results

Comparing to the original SAR value provided by Speag, the validation data should within its specification of 10 %. Table 8.1 shows the target SAR and measured SAR after normalized to 1W input power.

|      |                     |           | Target (W/kg) | Measurement data (W/kg) | Variation | Measurement date |
|------|---------------------|-----------|---------------|-------------------------|-----------|------------------|
| Head | ISM band (2450 MHz) | SAR (1g)  | 52.8          | 54                      | 2.3 %     | May 07, 2007     |
|      |                     | SAR (10g) | 24.7          | 25.5                    | 3.2 %     |                  |
| Body | ISM band (2450 MHz) | SAR (1g)  | 52.8          | 50.1                    | -5.1 %    | Feb. 12, 2007    |
|      |                     | SAR (10g) | 24.5          | 23.4                    | -4.5 %    |                  |
| Head | ISM band (2450 MHz) | SAR (1g)  | 52.8          | 56.6                    | 7.2 %     | May 07, 2007     |
|      |                     | SAR (10g) | 24.7          | 26.7                    | 8.1 %     |                  |
| Body | ISM band (2450 MHz) | SAR (1g)  | 52.8          | 52.9                    | 0.2 %     | May 07, 2007     |
|      |                     | SAR (10g) | 24.5          | 25                      | 2.0 %     |                  |

Table 8.1

The table above indicates the system performance check can meet the variation criterion.

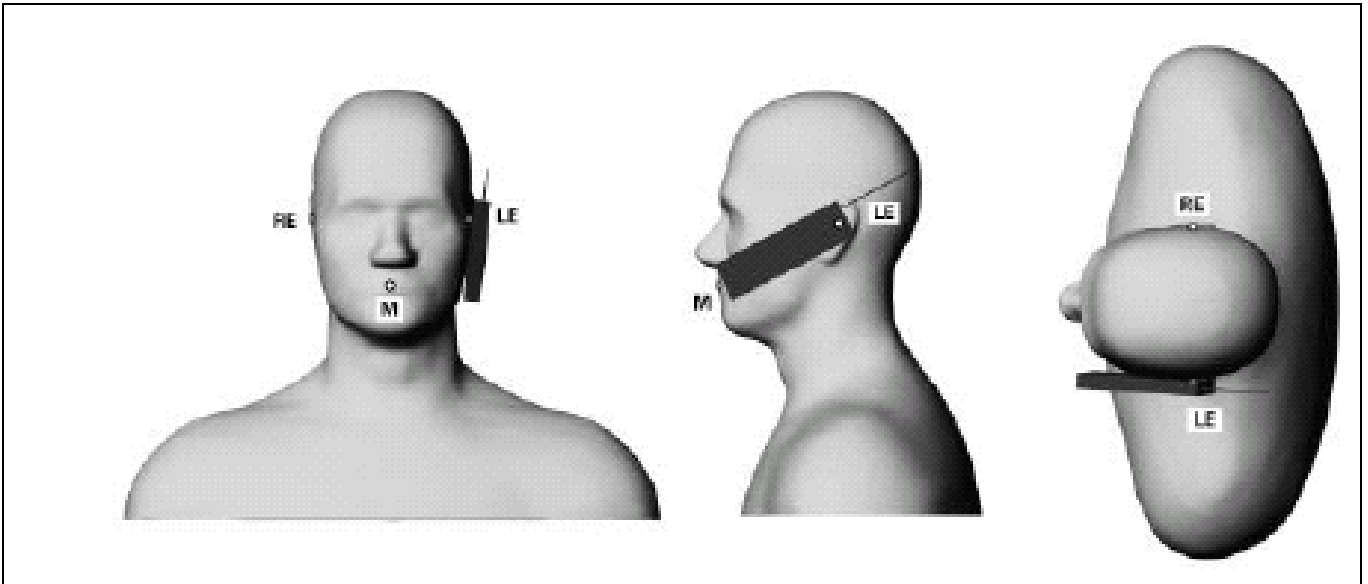


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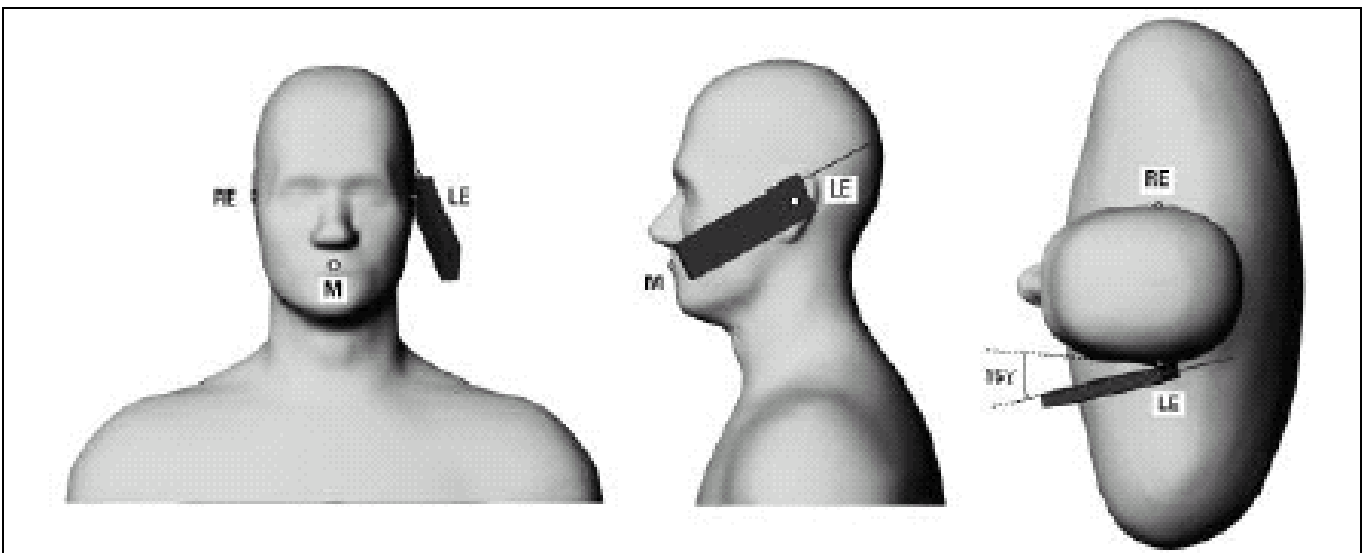
## **9. Description for DUT Testing Position**

This DUT was tested in 6 different positions. They are left cheek, left tilted, right cheek, right tilted, body worn with keypad up and body worn with keypad down as illustrated below:

- 1) “Cheek Position”
  - i) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M, RE and LE) and align the center of the ear piece with the line RE-LE.
  - ii) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see Fig. 9.1).
- 2) “Tilted Position”
  - i) To position the device in the “cheek” position described above.
  - ii) While maintaining the device the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see Fig. 9.2).
- 3) “Body Worn”
  - i) To position the device parallel to the phantom surface.
  - ii) To adjust the phone parallel to the flat phantom.
  - iii) To adjust the distance between the EUT surface and the flat phantom to 1.5 cm or the Holster surface and the flat phantom to 0 cm.



**Fig. 9.1** Phone Position 1, “Cheek” or “Touch” Position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the plane for phone positioning, are indicated.



**Fig. 9.2** Phone Position 2, “Tilted Position”. The reference point for the right ear (RE), left ear (LE) and mouth (M), which define the plane for phone positioning, are indicated.





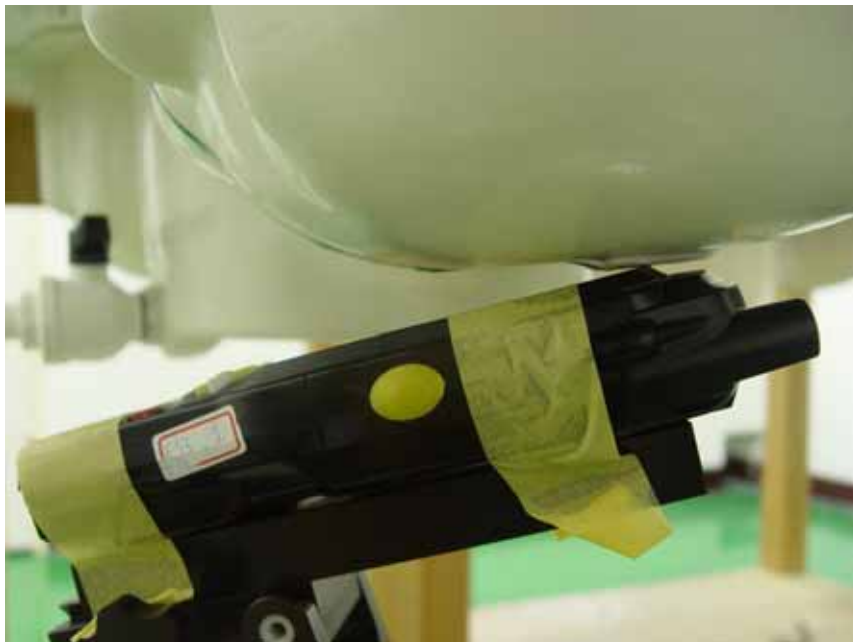
**Fig. 9.3 Right Cheek for 7527C**



**Fig. 9.4 Right Tilted for 7527C**



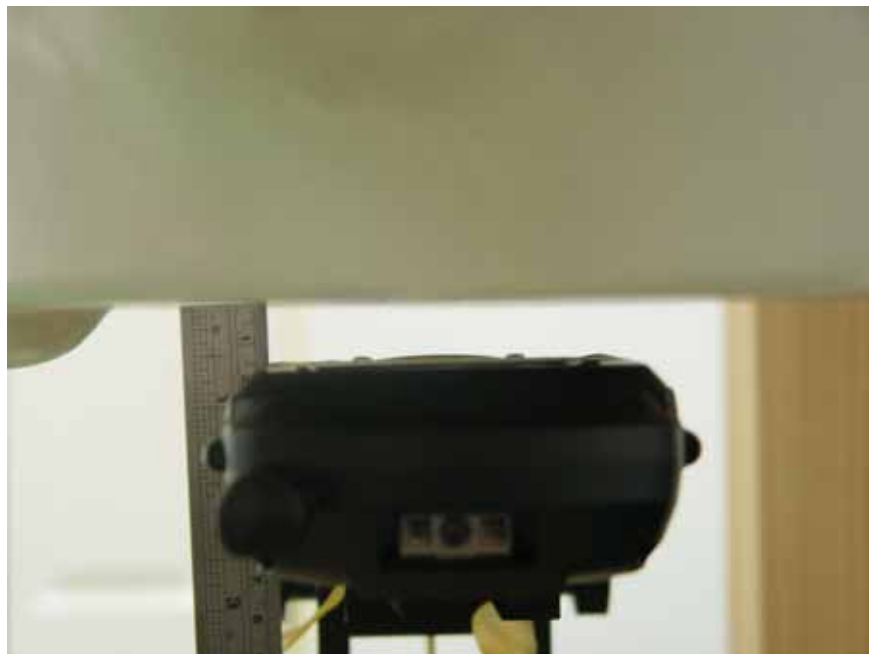
**Fig. 9.5 Left Cheek for 7527C**



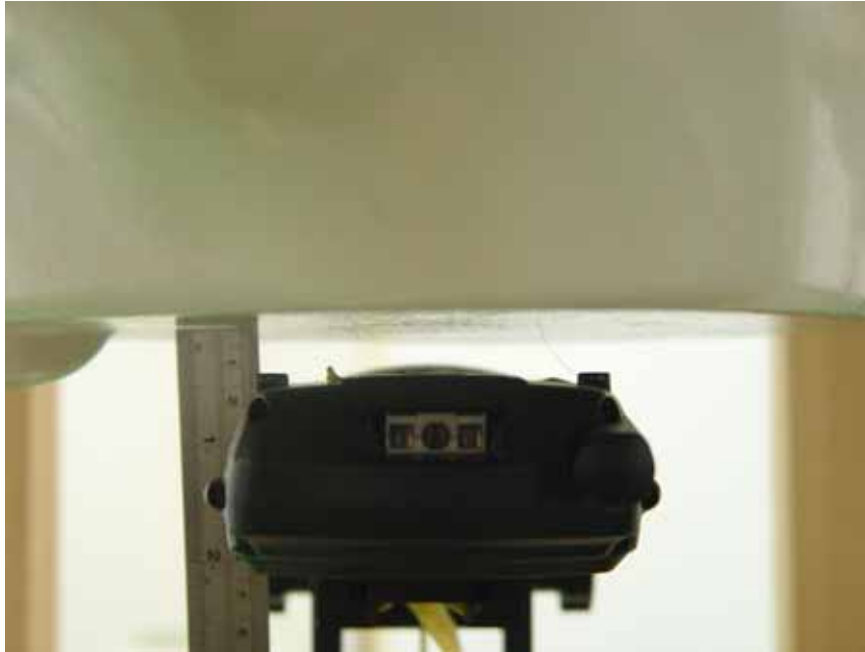
**Fig. 9.6 Left Tilted for 7527C**



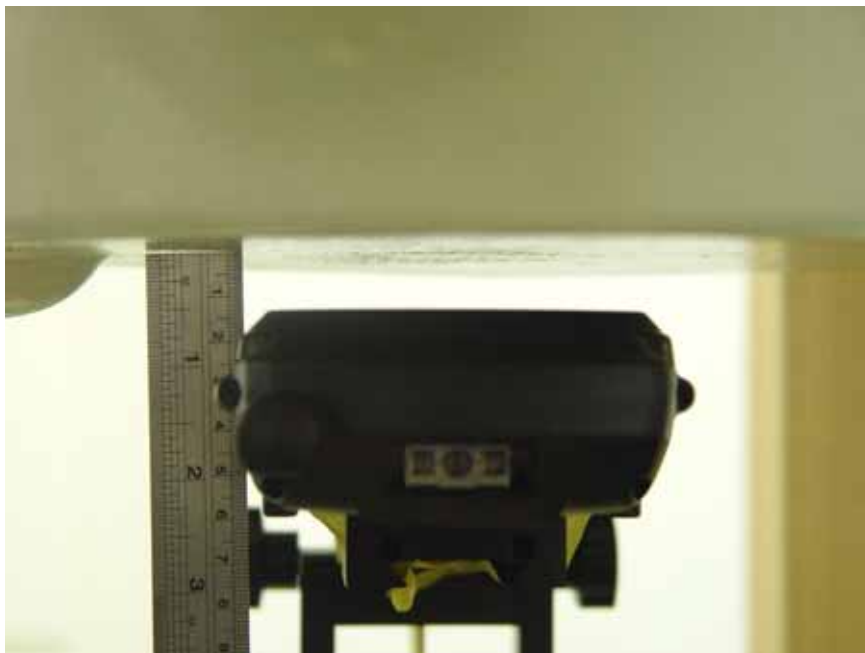
**Fig. 9.7 Right Cheek for 7527S**



**Fig. 9.8 Keypad Up with 1.5cm Gap for 7527C**



**Fig. 9.9 Keypad Down with 1.5cm Gap for 7527C**



**Fig. 9.10 Keypad Up with 1.5cm Gap for 7527S**



**Fig. 9.11 Holster Left Side Touch for 7527C**



**Fig. 9.12 Holster Right Side Touch for 7527C**



**Fig. 9.13 Holster Left Side Touch for 7527S**



**Fig. 9.14 Holster Right Side Touch for 7527S**



## **10. Measurement Procedures**

The measurement procedures are as follows:

- Using engineering software to transmit RF power continuously (continuous Tx) in the middle channel
- Placing the DUT in the positions described in the last section
- Setting scan area, grid size and other setting on the DASY4 software
- Taking data for the low channel
- Repeat the previous steps for the low and high channels.

According to the IEEE P1528 draft standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- Power reference measurement
- Area scan
- Zoom scan
- Power reference measurement

### **10.1 Spatial Peak SAR Evaluation**

The procedure for spatial peak SAR evaluation has been implemented according to the IEEE1528-2003 standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY4 software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

Base on the Draft: SCC-34, SC-2, WG-2-Computational Dosimetry, P1528/D1.2 (Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques), a new algorithm has been implemented. The spatial-peak SAR can be computed over any required mass.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose , the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.



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

- extraction of the measured data (grid and values) from the Zoom Scan
- calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- generation of a high-resolution mesh within the measured volume
- interpolation of all measured values from the measurement grid to the high-resolution grid
- extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- calculation of the averaged SAR within masses of 1g and 10g

### 10.2 Scan Procedures

First **Area Scan** is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an **Area Scan** is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, **Zoom Scan** is required. The **Zoom Scan** measures 5x5x7 points with step size 8, 8 and 5 mm. The **Zoom Scan** is performed around the highest E-field value to determine the averaged SAR-distribution over 1 g.

### 10.3 SAR Averaged Methods

In DAS4, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. 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 5 mm.





**11. SAR Test Results**

**11.1 Right Cheek**

| Model   | Mode               | Accessory   | Chan.      | Freq (MHz) | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results |      |
|---------|--------------------|-------------|------------|------------|-----------------|-----------------------|------------------|------------------------|--------------|---------|------|
| 75257C  | 802.11b            | Endcap 1+B2 | 1          | 2412(Low)  | CCK             | 20.65                 | 0.063            | 0.05                   | 1.6          | Pass    |      |
|         |                    |             | 6          | 2437(Mid)  | CCK             | 20.32                 | -0.115           | 0.041                  | 1.6          | Pass    |      |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | 0.016            | 0.075                  | 1.6          | Pass    |      |
|         | 802.11b with BT On | Endcap 1+B2 | 11         | 2462(High) | CCK             | 20.40                 | 0.079            | 0.079                  | 1.6          | Pass    |      |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | -0.063           | 0.098                  | 1.6          | Pass    |      |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | -0.006           | 0.085                  | 1.6          | Pass    |      |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | -0.05            | 0.106                  | 1.6          | Pass    |      |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | -0.135           | 0.109                  | 1.6          | Pass    |      |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | -0.056           | 0.095                  | 1.6          | Pass    |      |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | -0.113           | 0.104                  | 1.6          | Pass    |      |
|         |                    |             | POD 4+B2   | 1          | 2412(Low)       | CCK                   | 20.65            | 0.11                   | 0.14         | 1.6     | Pass |
|         |                    |             |            | 6          | 2437(Mid)       | CCK                   | 20.32            | -0.043                 | 0.141        | 1.6     | Pass |
|         |                    |             | 11         | 2462(High) | CCK             | 20.40                 | -0.056           | 0.113                  | 1.6          | Pass    |      |
|         | POD 4+B3           | 11          | 2462(High) | CCK        | 20.40           | -0.102                | 0.098            | 1.6                    | Pass         |         |      |
|         | POD 6+B2           | 11          | 2462(High) | CCK        | 20.40           | -0.141                | 0.1              | 1.6                    | Pass         |         |      |
| 802.11g | Endcap 1+B2        | 1           | 2412(Low)  | OFDM       | 22.98           | -                     | -                | -                      | -            |         |      |
|         |                    | 6           | 2437(Mid)  | OFDM       | 22.07           | 0.01                  | 0.026            | 1.6                    | Pass         |         |      |
|         |                    | 11          | 2462(High) | OFDM       | 22.11           | -                     | -                | -                      | -            |         |      |
| 7527S   | 802.11b with BT On | POD 4+B2    | 6          | 2437(Mid)  | CCK             | 20.32                 | -0.173           | 0.174                  | 1.6          | Pass    |      |

**11.2 Right Tilted**

| Model  | Mode       | Accessory   | Chan. | Freq (MHz) | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results |
|--------|------------|-------------|-------|------------|-----------------|-----------------------|------------------|------------------------|--------------|---------|
| 75257C | 802.11b    | Endcap 1+B2 | 1     | 2412(Low)  | CCK             | 20.65                 | -                | -                      | -            | -       |
|        |            |             | 6     | 2437(Mid)  | CCK             | 20.32                 | -0.037           | 0.04                   | 1.6          | Pass    |
|        |            |             | 11    | 2462(High) | CCK             | 20.40                 | -                | -                      | -            | -       |
|        | 802.11g    | Endcap 1+B2 | 1     | 2412(Low)  | OFDM            | 22.98                 | -                | -                      | -            | -       |
|        |            |             | 6     | 2437(Mid)  | OFDM            | 22.07                 | -                | -                      | -            | -       |
| 11     | 2462(High) | OFDM        | 22.11 | -          | -               | -                     | -                |                        |              |         |

**11.3 Left Cheek**

| Model  | Mode    | Accessory   | Chan. | Freq (MHz) | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results |
|--------|---------|-------------|-------|------------|-----------------|-----------------------|------------------|------------------------|--------------|---------|
| 75257C | 802.11b | Endcap 1+B2 | 1     | 2412(Low)  | CCK             | 20.65                 | -                | -                      | -            | -       |
|        |         |             | 6     | 2437(Mid)  | CCK             | 20.32                 | -0.124           | 0.031                  | 1.6          | Pass    |
|        |         |             | 11    | 2462(High) | CCK             | 20.40                 | -                | -                      | -            | -       |
|        | 802.11g | Endcap 1+B2 | 1     | 2412(Low)  | OFDM            | 22.98                 | -                | -                      | -            | -       |
|        |         |             | 6     | 2437(Mid)  | OFDM            | 22.07                 | -                | -                      | -            | -       |
|        |         |             | 11    | 2462(High) | OFDM            | 22.11                 | -                | -                      | -            | -       |



**11.4 Left Tilted**

| Model  | Mode       | Accessory   | Chan. | Freq (MHz) | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results |
|--------|------------|-------------|-------|------------|-----------------|-----------------------|------------------|------------------------|--------------|---------|
| 75257C | 802.11b    | Endcap 1+B2 | 1     | 2412(Low)  | CCK             | 20.65                 | -                | -                      | -            | -       |
|        |            |             | 6     | 2437(Mid)  | CCK             | 20.32                 | 0.074            | 0.029                  | 1.6          | Pass    |
|        |            |             | 11    | 2462(High) | CCK             | 20.40                 | -                | -                      | -            | -       |
|        | 802.11g    | Endcap 1+B2 | 6     | 2437(Mid)  | CCK             | 20.32                 | 0.1              | 0.062                  | 1.6          | Pass    |
|        |            |             | 1     | 2412(Low)  | OFDM            | 22.98                 | -                | -                      | -            | -       |
|        |            |             | 6     | 2437(Mid)  | OFDM            | 22.07                 | -                | -                      | -            | -       |
| 11     | 2462(High) | OFDM        | 22.11 | -          | -               | -                     | -                | -                      |              |         |
| 7527S  | 802.11b    | POD 3+B2    | 6     | 2437(Mid)  | OFDM            | 22.07                 | -0.013           | 0.0535                 | 1.6          | Pass    |

**11.5 Keypad Up with 1.5cm Gap**

| Model | Mode               | Accessory   | Chan. | Freq (MHz) | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results |
|-------|--------------------|-------------|-------|------------|-----------------|-----------------------|------------------|------------------------|--------------|---------|
| 7527C | 802.11b            | Endcap 1+B2 | 1     | 2412(Low)  | CCK             | 20.65                 | 0.177            | 0.011                  | 1.6          | Pass    |
|       |                    |             | 6     | 2437(Mid)  | CCK             | 20.32                 | 0.171            | 0.011                  | 1.6          | Pass    |
|       |                    |             | 11    | 2462(High) | CCK             | 20.40                 | -0.175           | 0.00986                | 1.6          | Pass    |
|       | 802.11g            | Endcap 1+B2 | 6     | 2437(Mid)  | CCK             | 20.32                 | -0.171           | 0.012                  | 1.6          | Pass    |
|       |                    |             | 1     | 2412(Low)  | OFDM            | 22.98                 | -                | -                      | -            | -       |
|       |                    |             | 6     | 2437(Mid)  | OFDM            | 22.07                 | 0.174            | 0.0067                 | 1.6          | Pass    |
| 11    | 2462(High)         | OFDM        | 22.11 | -          | -               | -                     | -                |                        |              |         |
| 7527S | 802.11b            | Endcap 1+B2 | 6     | 2437(Mid)  | CCK             | 20.32                 | 0.148            | 0.014                  | 1.6          | Pass    |
|       | 802.11b With BT On | Endcap 1+B2 | 6     | 2437(Mid)  | CCK             | 20.32                 | 0.106            | 0.014                  | 1.6          | Pass    |

**11.6 Keypad Down with 1.5cm Gap**

| Model | Mode    | Accessory   | Chan. | Freq (MHz) | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results |
|-------|---------|-------------|-------|------------|-----------------|-----------------------|------------------|------------------------|--------------|---------|
| 7527C | 802.11b | Endcap 1+B2 | 1     | 2412(Low)  | CCK             | 20.65                 | -                | -                      | -            | -       |
|       |         |             | 6     | 2437(Mid)  | CCK             | 20.32                 | -0.116           | 0.011                  | 1.6          | Pass    |
|       |         |             | 11    | 2462(High) | CCK             | 20.40                 | -                | -                      | -            | -       |
|       | 802.11g | Endcap 1+B2 | 1     | 2412(Low)  | OFDM            | 22.98                 | -                | -                      | -            | -       |
|       |         |             | 6     | 2437(Mid)  | OFDM            | 22.07                 | -                | -                      | -            | -       |
|       |         |             | 11    | 2462(High) | OFDM            | 22.11                 | -                | -                      | -            | -       |



**11.7 Holster Left Side Touch**

| Model              | Mode        | Accessory   | Chan.     | Freq (MHz)       | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results     |
|--------------------|-------------|-------------|-----------|------------------|-----------------|-----------------------|------------------|------------------------|--------------|-------------|
| 7527C              | 802.11b     | Endcap 1+B2 | 1         | 2412(Low)        | CCK             | 20.65                 | -0.004           | 0.15                   | 1.6          | Pass        |
|                    |             |             | 6         | 2437(Mid)        | CCK             | 20.32                 | -0.168           | 0.154                  | 1.6          | Pass        |
|                    |             |             | 11        | 2462(High)       | CCK             | 20.40                 | -0.089           | 0.154                  | 1.6          | Pass        |
|                    |             | Endcap 3+B2 | 6         | 2437(Mid)        | CCK             | 20.32                 | -0.165           | 0.198                  | 1.6          | Pass        |
|                    |             |             | 6         | 2437(Mid)        | CCK             | 20.32                 | 0.127            | 0.162                  | 1.6          | Pass        |
|                    |             | Endcap 6+B2 | <b>1</b>  | <b>2412(Low)</b> | <b>CCK</b>      | <b>20.65</b>          | <b>-0.192</b>    | <b>0.23</b>            | <b>1.6</b>   | <b>Pass</b> |
|                    |             |             | 6         | 2437(Mid)        | CCK             | 20.32                 | -0.12            | 0.216                  | 1.6          | Pass        |
|                    |             |             | 11        | 2462(High)       | CCK             | 20.40                 | -0.062           | 0.157                  | 1.6          | Pass        |
|                    |             | Endcap 6+B3 | 6         | 2437(Mid)        | CCK             | 20.32                 | 0.114            | 0.197                  | 1.6          | Pass        |
|                    |             | POD 1+B2    | 6         | 2437(Mid)        | CCK             | 20.32                 | -0.106           | 0.132                  | 1.6          | Pass        |
|                    |             | POD 2+B2    | 6         | 2437(Mid)        | CCK             | 20.32                 | -0.014           | 0.159                  | 1.6          | Pass        |
|                    |             | POD 3+B2    | 6         | 2437(Mid)        | CCK             | 20.32                 | -0.149           | 0.152                  | 1.6          | Pass        |
|                    |             | POD 4+B2    | 6         | 2437(Mid)        | CCK             | 20.32                 | 0.116            | 0.138                  | 1.6          | Pass        |
|                    |             | POD 6+B2    | 6         | 2437(Mid)        | CCK             | 20.32                 | 0.022            | 0.172                  | 1.6          | Pass        |
| 802.11b With BT On | Endcap 1+B2 | 6           | 2437(Mid) | CCK              | 20.32           | -0.087                | 0.161            | 1.6                    | Pass         |             |
| 802.11g            | Endcap 1+B2 | 6           | 2437(Mid) | OFDM             | 22.07           | -0.125                | 0.024            | 1.6                    | Pass         |             |
| 7527S              | 802.11b     | Endcap 6+B2 | <b>1</b>  | <b>2412(Low)</b> | <b>CCK</b>      | <b>20.65</b>          | <b>-0.147</b>    | <b>0.234</b>           | <b>1.6</b>   | <b>Pass</b> |

**11.8 Holster Right Side Touch**

| Model | Mode    | Accessory   | Chan. | Freq (MHz) | Modulation Type | Conducted Power (dBm) | Power Drift (dB) | Measured 1g SAR (W/kg) | Limit (W/kg) | Results |
|-------|---------|-------------|-------|------------|-----------------|-----------------------|------------------|------------------------|--------------|---------|
| 7527C | 802.11b | Endcap 1+B2 | 1     | 2412(Low)  | CCK             | 20.65                 | -0.103           | 0.01                   | 1.6          | Pass    |
|       |         |             | 6     | 2437(Mid)  | CCK             | 20.32                 | 0.107            | 0.012                  | 1.6          | Pass    |

Remark:

1. The largest summation of GSM and WLAN for head SAR on 7527C is 1.362 W/Kg and on 7527S is 1.0635 W/Kg, and its position is left tilted.
2. The largest summation of GSM/GPRS and WLAN for body SAR on 7527C is 0.466 W/Kg and its position is holster right side touch, and on 7527S is 0.503 W/Kg, and its position is keypad up with 1.5cm Gap.
3. The test data for GSM can be referred to Appendix D.

Test Engineer : John Tsai and Neil Chen



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## **12. References**

- [1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”
- [2] IEEE Std. P1528-2003, “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, April 21,2003.
- [3] Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01), “Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to RF Emissions”, June 2001
- [4] IEEE Std. C95.3-2002, “IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields-RF and Microwave”, 2002
- [5] IEEE Std. C95.1-1999, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, 1999
- [6] Robert J. Renka, “Multivariate Interpolation Of Large Sets Of Scattered Data”, University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148
- [7] DAYS4 System Handbook
- [8] RSS-102 Issued 2, “Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)”, November 2005



### Appendix A - System Performance Check Data

Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/12/2007 7:52:26 PM

#### System Check\_Head\_2450MHz\_20070212

#### DUT: Dipole 2450 MHz

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

Medium: HSL\_2450 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.76$  mho/m;  $\epsilon_r = 38.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.9 °C; Liquid Temperature : 20.8 °C

#### DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**2450MHz/Area Scan (41x41x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 5.83 mW/g

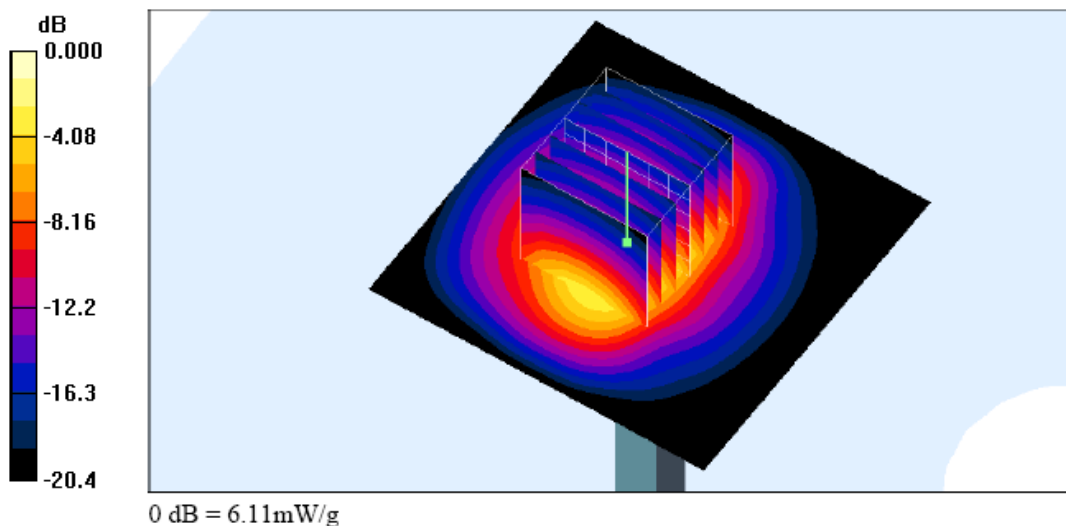
**2450MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.8 V/m; Power Drift = -0.036 dB

Peak SAR (extrapolated) = 11.4 W/kg

SAR(1 g) = 5.4 mW/g; SAR(10 g) = 2.55 mW/g

Maximum value of SAR (measured) = 6.11 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/12/2007 8:08:44 AM

**System Check\_Body\_2450MHz\_20070212**

**DUT: Dipole 2450 MHz**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.5 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.11, 4.11, 4.11); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection) Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Pin=100mW/Area Scan (91x91x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 5.84 mW/g

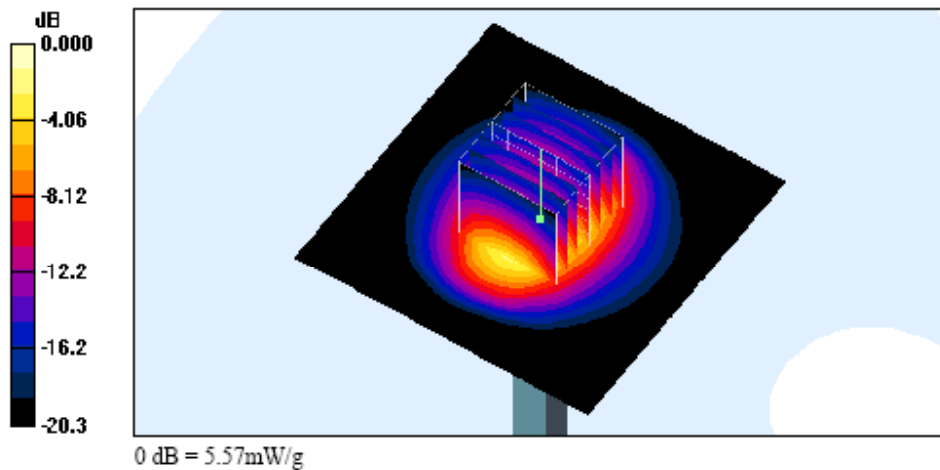
**Pin=100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.3 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 11.6 W/kg

SAR(1 g) = 5.01 mW/g; SAR(10 g) = 2.34 mW/g

Maximum value of SAR (measured) = 5.57 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 5/7/2007

**System Check\_Head\_2450MHz\_20070507**

**DUT: Dipole 2450 MHz**

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

Medium: HSL\_2450 Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.84 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 22.3 °C; Liquid Temperature : 21.7 °C

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**2450MHz/Area Scan (41x41x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 6.10 mW/g

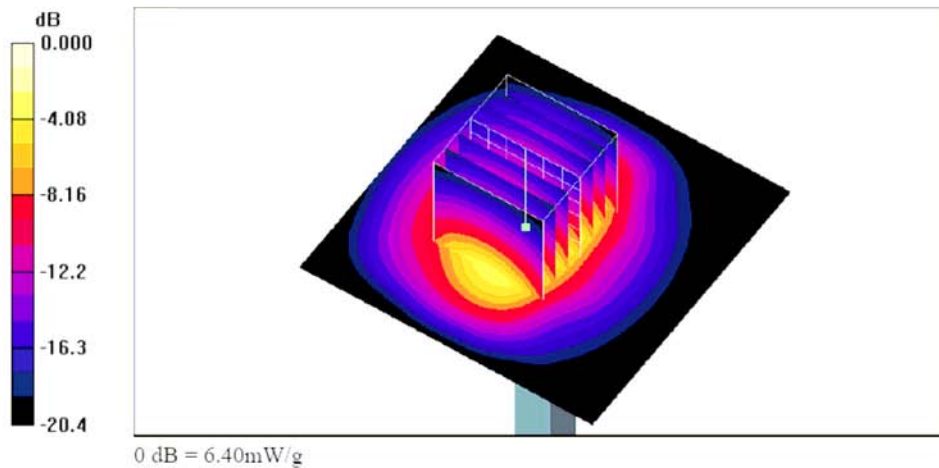
**2450MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.8 V/m; Power Drift = -0.036 dB

Peak SAR (extrapolated) = 12.0 W/kg

SAR(1 g) = 5.66 mW/g; SAR(10 g) = 2.67 mW/g

Maximum value of SAR (measured) = 6.40 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**System Check\_Body\_2450MHz\_20070507**

**DUT: Dipole 2450 MHz**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.0 °C

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection) Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Pin=100mW/Area Scan (91x91x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 6.19 mW/g

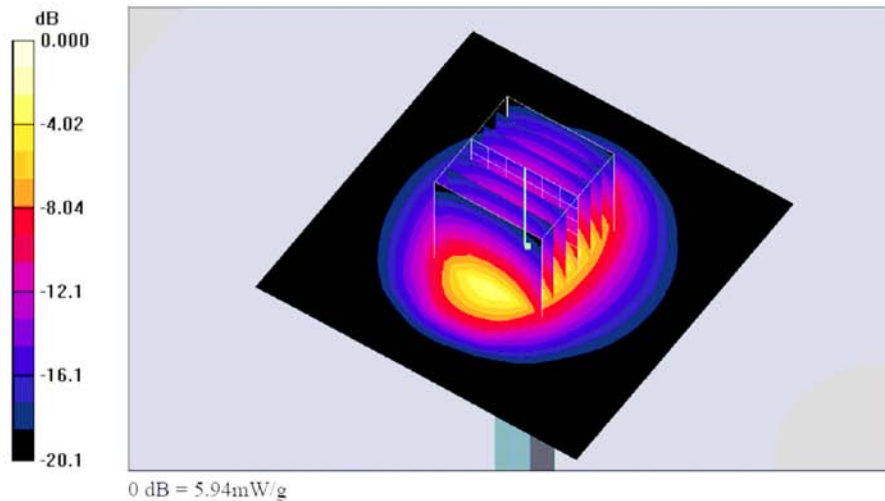
**Pin=100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.2 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 11.4 W/kg

SAR(1 g) = 5.29 mW/g; SAR(10 g) = 2.5 mW/g

Maximum value of SAR (measured) = 5.94 mW/g







### Appendix B - SAR Measurement Data

Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 10:48:07 AM

Right Cheek\_802.11b Ch11\_20070212\_PC528

DUT: 710211-01

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used: f = 2462 MHz;  $\sigma = 1.78 \text{ mho/m}$ ;  $\epsilon_r = 38$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 21.5 °C ; Liquid Temperature : 20.8 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Ch11/Area Scan (71x181x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.082 mW/g

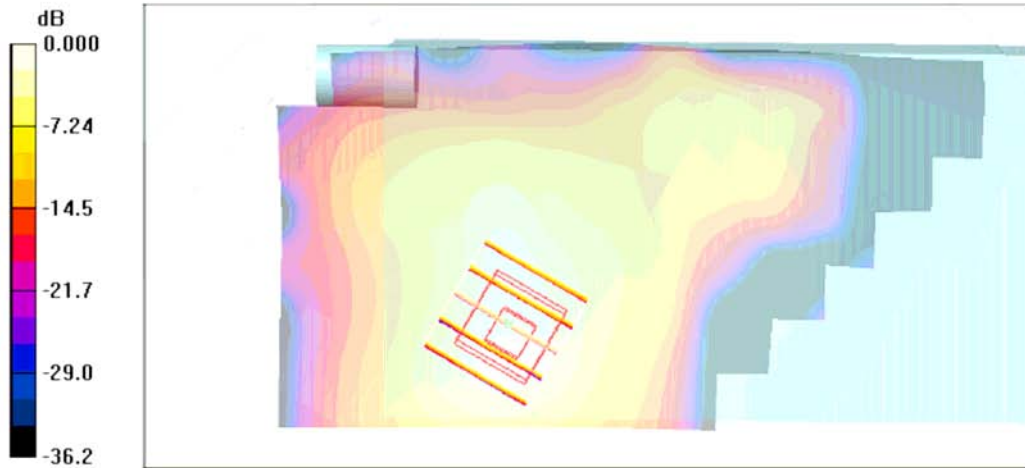
Ch11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.31 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 0.161 W/kg

SAR(1 g) = 0.075 mW/g; SAR(10 g) = 0.038 mW/g

Maximum value of SAR (measured) = 0.080 mW/g



0 dB = 0.080mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 7:48:50 AM

**Right Tilted\_802.11b Ch6\_20070212\_PC528**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.74$  mho/m;  $\epsilon_r = 38.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.7 °C ; Liquid Temperature : 20.8 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.041 mW/g

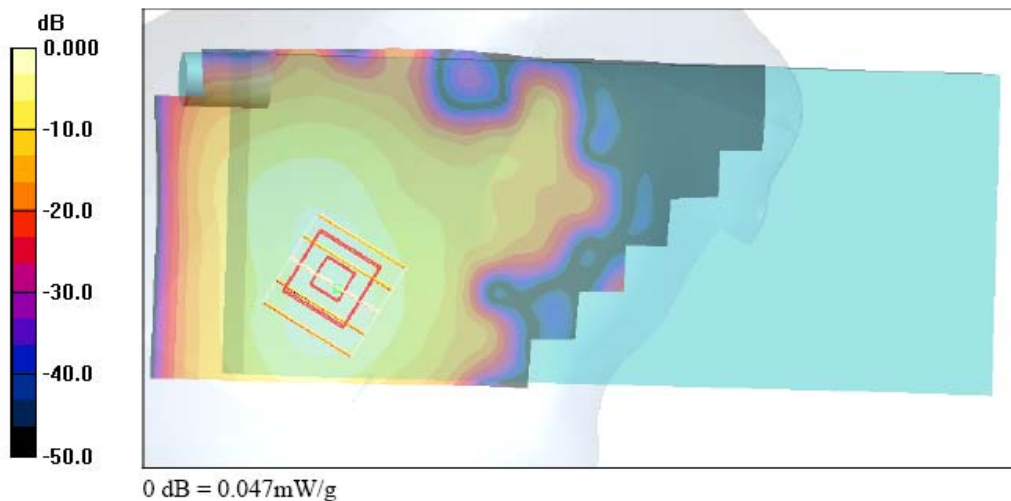
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.08 V/m; Power Drift = -0.037 dB

Peak SAR (extrapolated) = 0.082 W/kg

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

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





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 9:12:15 AM

**Left Cheek\_802.11b Ch6\_20070212\_PC528**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.74$  mho/m;  $\epsilon_r = 38.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.8 °C; Liquid Temperature : 20.8 °C

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.033 mW/g

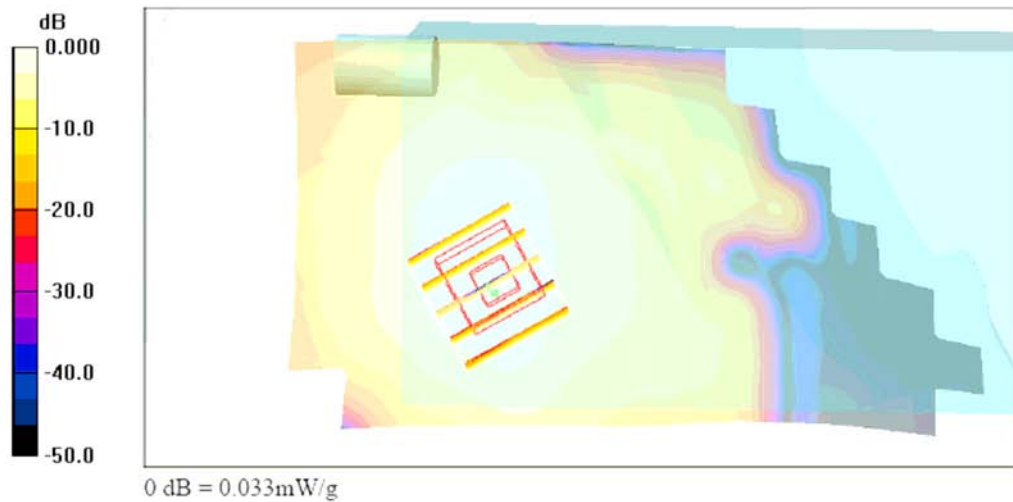
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.36 V/m; Power Drift = -0.124 dB

Peak SAR (extrapolated) = 0.062 W/kg

SAR(1 g) = 0.031 mW/g; SAR(10 g) = 0.017 mW/g

Maximum value of SAR (measured) = 0.033 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 9:42:50 AM

**Left Tilted\_802.11b Ch6\_20070212\_PC528**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.74$  mho/m;  $\epsilon_r = 38.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.6 °C ; Liquid Temperature : 20.8 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.031 mW/g

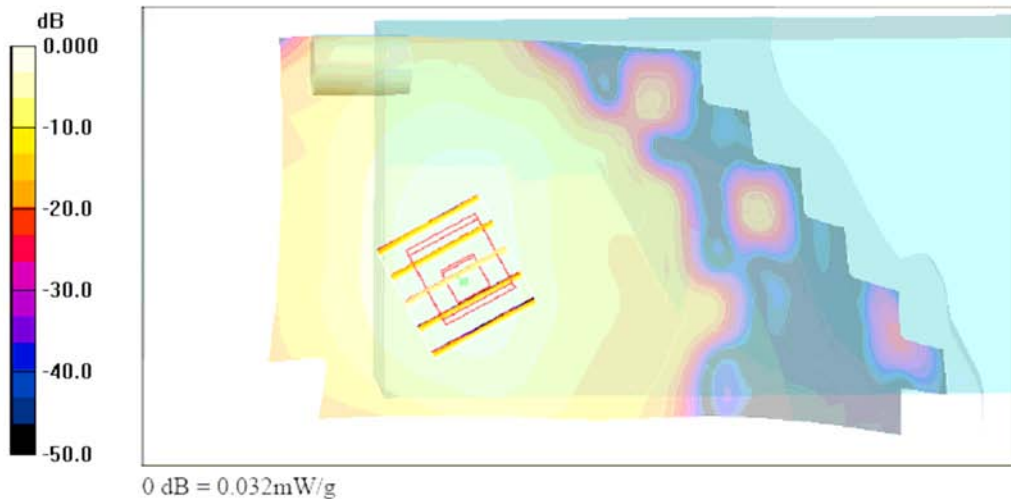
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.98 V/m; Power Drift = 0.074 dB

Peak SAR (extrapolated) = 0.058 W/kg

SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.015 mW/g

Maximum value of SAR (measured) = 0.032 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 11:09:12 AM

**Right Cheek\_802.11b Ch11\_20070212\_PC528\_Bluetooth On**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.78$  mho/m;  $\epsilon_r = 38$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.4 °C; Liquid Temperature : 20.8 °C

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006

- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)

- Electronics: DAE3 Sn577; Calibrated: 11/21/2006

- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383

- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch11/Area Scan (71x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.088 mW/g

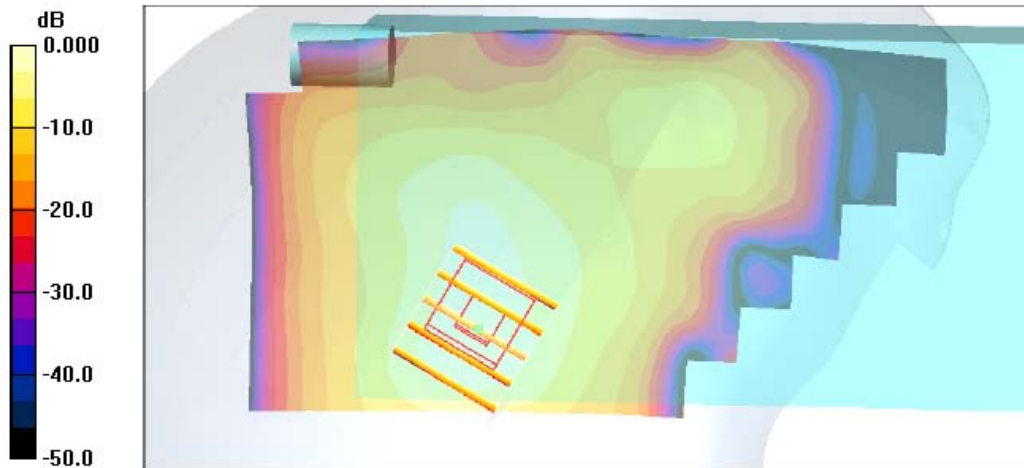
**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.31 V/m; Power Drift = 0.079 dB

Peak SAR (extrapolated) = 0.174 W/kg

SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.040 mW/g

Maximum value of SAR (measured) = 0.084 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 8:12:12 AM

**Right Cheek\_802.11g Ch6\_20070212\_PC528**

**DUT: 710211-01**

Communication System: 802.11g; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.74$  mho/m;  $\epsilon_r = 38.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.7 °C; Liquid Temperature : 20.8 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.029 mW/g

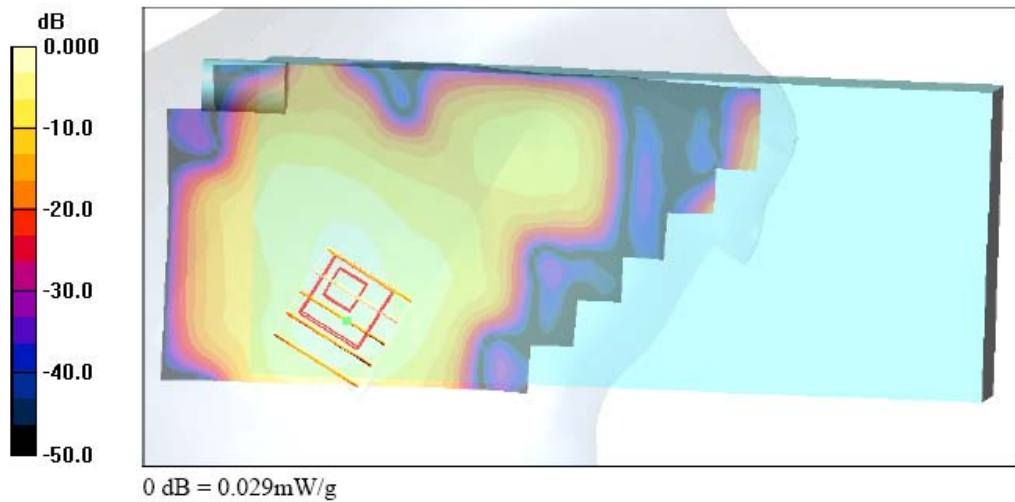
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.07 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.057 W/kg

SAR(1 g) = 0.026 mW/g; SAR(10 g) = 0.014 mW/g

Maximum value of SAR (measured) = 0.029 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

Right cheek\_802.11b Ch11\_7527C\_Endcap 3\_B2

Communication System: 802.11b : Frequency: 2462 MHz:Duty Cycle: 1:1
Medium: HSL\_2450 Medium parameters used: f = 2462 MHz: sigma = 1.87 mho/m: epsilon\_r = 39.5: rho = 1000 kg/m^3
Ambient Temperature : 22.4 C; Liquid Temperature : 21.7 C

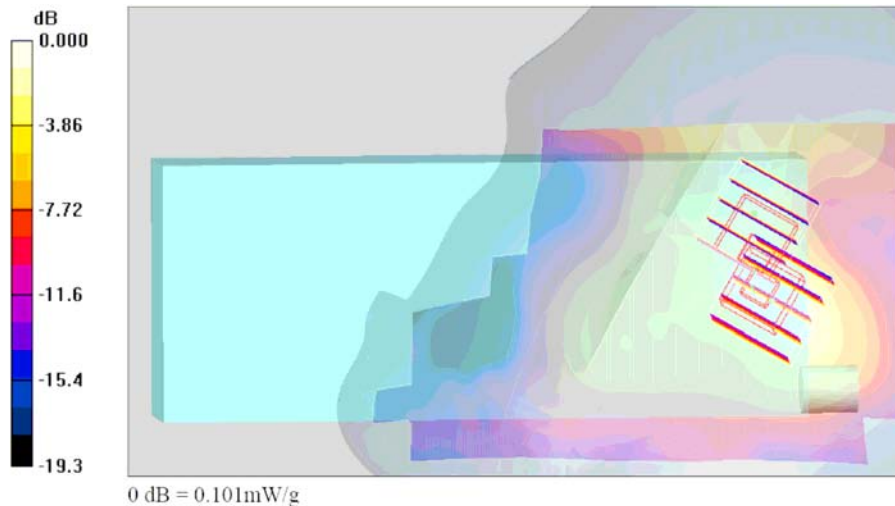
- DASY4 Configuration:
- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Ch11/Area Scan (81x181x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.099 mW/g

Ch11/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.48 V/m; Power Drift = -0.063 dB
Peak SAR (extrapolated) = 0.192 W/kg
SAR(1 g) = 0.098 mW/g; SAR(10 g) = 0.054 mW/g
Maximum value of SAR (measured) = 0.106 mW/g

Ch11/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.48 V/m; Power Drift = -0.063 dB
Peak SAR (extrapolated) = 0.185 W/kg
SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.037 mW/g

Maximum value of SAR (measured) = 0.101 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Right cheek\_802.11b Ch11\_7527C\_Endcap 4\_B2**

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 39.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C ; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19

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

- Electronics: DAE3 Sn577; Calibrated: 2006/11/21

- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch11/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.080 mW/g

**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.08 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 0.186 W/kg

**SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.043 mW/g**

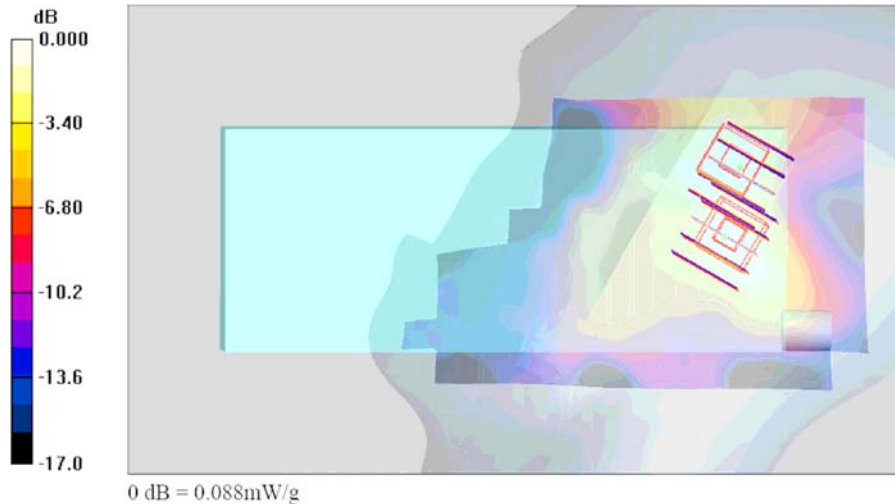
Maximum value of SAR (measured) = 0.088 mW/g

**Ch11/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.08 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 0.161 W/kg

**SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.042 mW/g**







Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Right cheek\_802.11b Ch11\_7527C\_Endcap 6\_B2**

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 39.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.4 °C; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch11/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.115 mW/g

**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.04 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.222 W/kg

**SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.053 mW/g**

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

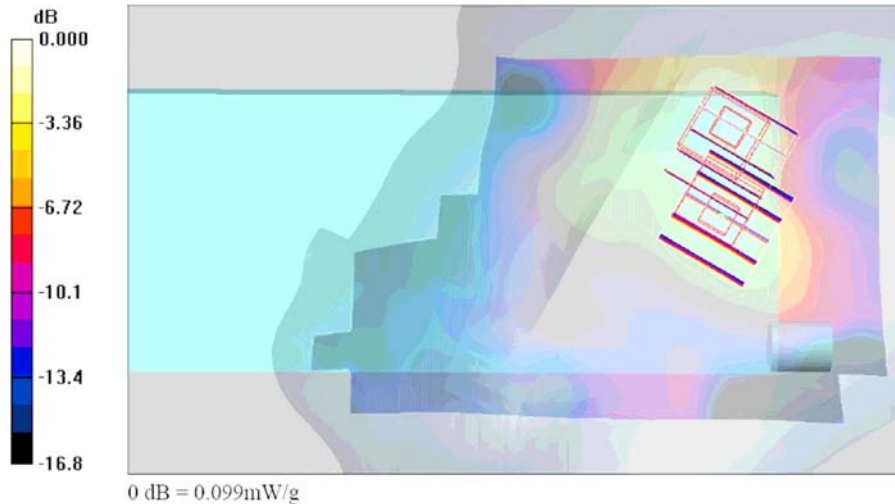
**Ch11/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.04 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.173 W/kg

**SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.047 mW/g**

Maximum value of SAR (measured) = 0.099 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Right cheek\_802.11b Ch11\_7527C\_POD 1\_B2**

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 39.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.4 °C ; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19

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

- Electronics: DAE3 Sn577; Calibrated: 2006/11/21

- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch11/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.129 mW/g

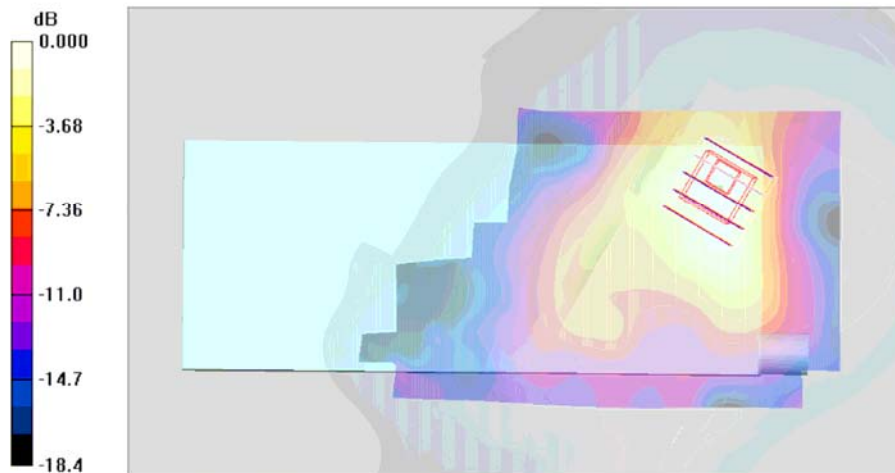
**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.06 V/m; Power Drift = -0.135 dB

Peak SAR (extrapolated) = 0.250 W/kg

**SAR(1 g) = 0.109 mW/g; SAR(10 g) = 0.057 mW/g**

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



0 dB = 0.114mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7 LWLQ

**Right cheek\_802.11b Ch11\_7527C\_POD 2\_B2**

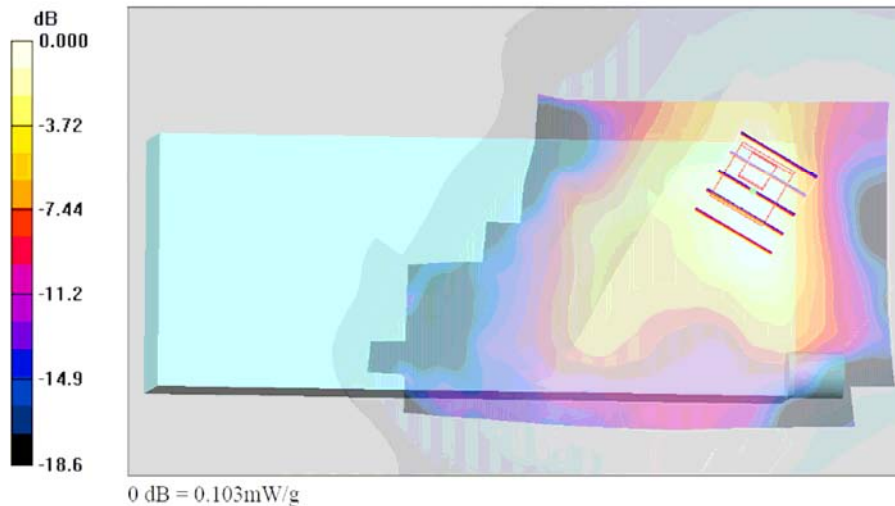
Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1  
Medium: HSL\_2450 Medium parameters used: f = 2462 MHz;  $\sigma = 1.87 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Ambient Temperature : 22.5 °C; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch11/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.113 mW/g

**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 6.72 V/m; Power Drift = -0.056 dB  
Peak SAR (extrapolated) = 0.197 W/kg  
**SAR(1 g) = 0.095 mW/g; SAR(10 g) = 0.049 mW/g**  
Maximum value of SAR (measured) = 0.103 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Right cheek\_802.11b Ch11\_7527C\_POD 3\_B2**

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 39.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch11/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.121 mW/g

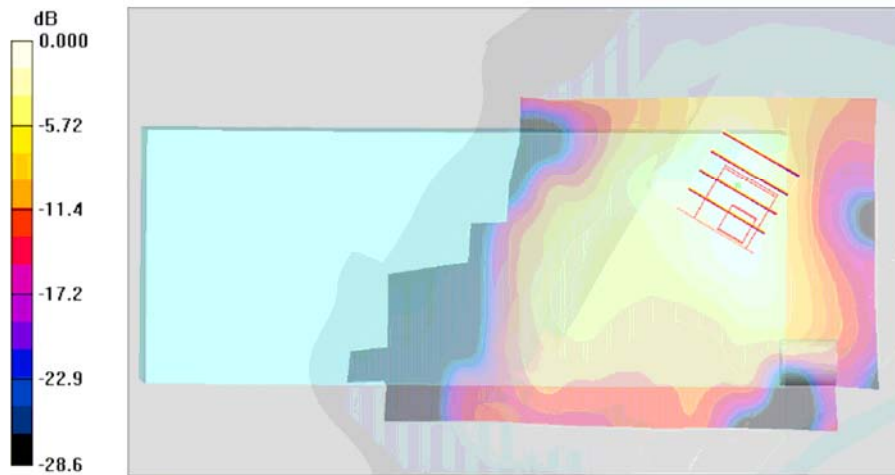
**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.50 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 0.220 W/kg

**SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.054 mW/g**

Maximum value of SAR (measured) = 0.119 mW/g



0 dB = 0.119mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Right cheek\_802.11b Ch6\_7527C\_POD 4\_B2**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.81$  mho/m;  $\epsilon_r = 39.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.164 mW/g

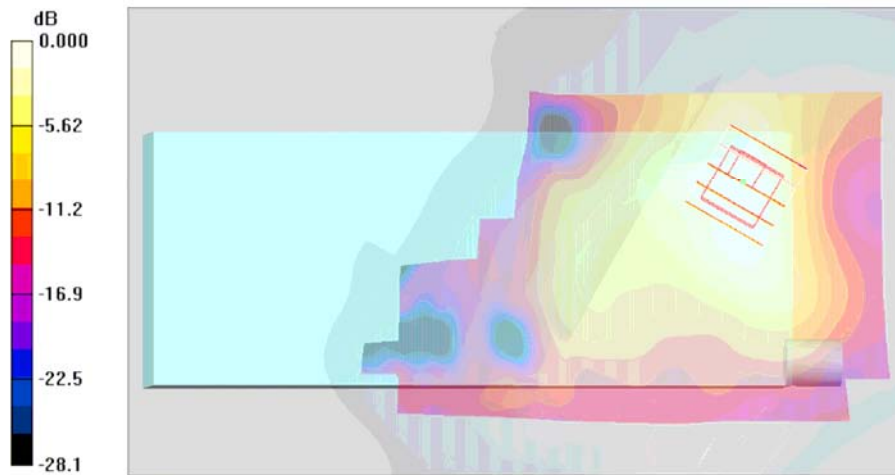
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.12 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.315 W/kg

**SAR(1 g) = 0.141 mW/g; SAR(10 g) = 0.074 mW/g**

Maximum value of SAR (measured) = 0.151 mW/g



0 dB = 0.151mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Right cheek\_802.11b Ch11\_7527C\_POD 4\_B3**

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 39.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.6 °C; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch11/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.111 mW/g

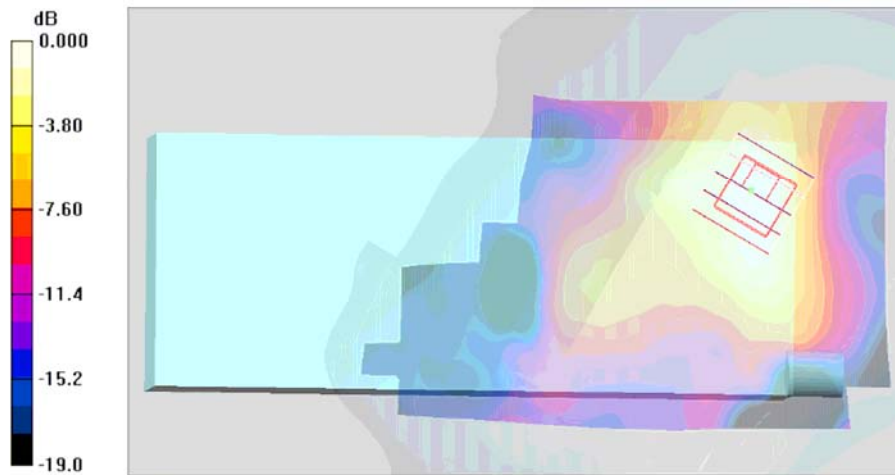
**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.76 V/m; Power Drift = -0.102 dB

Peak SAR (extrapolated) = 0.205 W/kg

**SAR(1 g) = 0.098 mW/g; SAR(10 g) = 0.051 mW/g**

Maximum value of SAR (measured) = 0.108 mW/g



0 dB = 0.108mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Right cheek\_802.11b Ch11\_7527C\_POD 6\_B2**

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.87$  mho/m;  $\epsilon_r = 39.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.7 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch11/Area Scan (81x181x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.118 mW/g

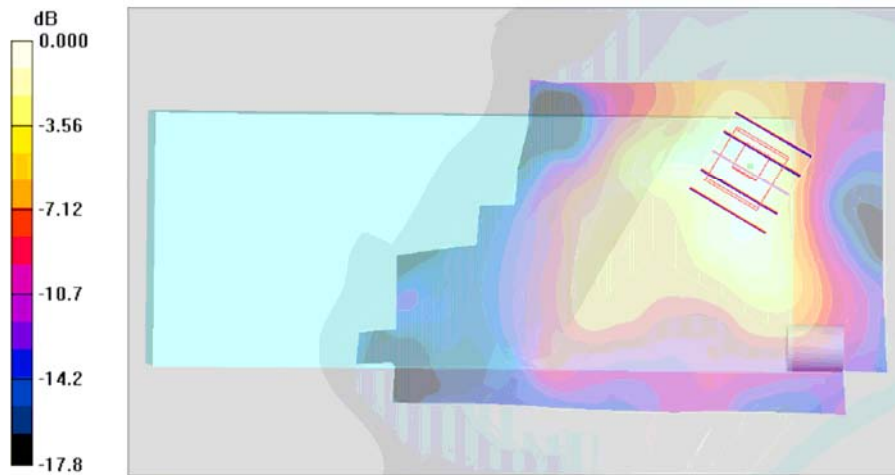
**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.23 V/m; Power Drift = -0.141 dB

Peak SAR (extrapolated) = 0.230 W/kg

**SAR(1 g) = 0.100 mW/g; SAR(10 g) = 0.050 mW/g**

Maximum value of SAR (measured) = 0.106 mW/g



0 dB = 0.106mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/12/2007 10:20:47 PM

**Body\_802.11b Ch6\_Keypad Up with 1.5cm Gap\_20070212\_PC528**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.94$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.8 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.11, 4.11, 4.11); Calibrated: 9/19/2006

- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)

- Electronics: DAE3 Sn577; Calibrated: 11/21/2006

- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303

- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x191x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.014 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.04 V/m; Power Drift = 0.171 dB

Peak SAR (extrapolated) = 0.016 W/kg

SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00593 mW/g

Maximum value of SAR (measured) = 0.014 mW/g

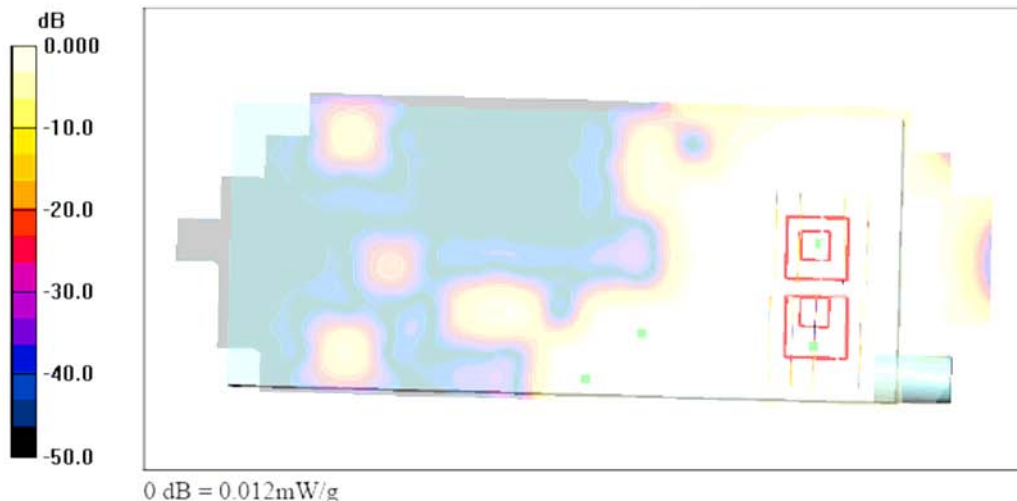
**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.04 V/m; Power Drift = 0.171 dB

Peak SAR (extrapolated) = 0.032 W/kg

SAR(1 g) = 0.010 mW/g; SAR(10 g) = 0.00519 mW/g

Maximum value of SAR (measured) = 0.012 mW/g







Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 3:09:43 AM

**Body\_802.11b Ch6\_Keypad Up with 1.5cm Gap\_20070212\_PC528\_Bluetooth On**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.94$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.6 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.11, 4.11, 4.11); Calibrated: 9/19/2006

- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)

- Electronics: DAE3 Sn577; Calibrated: 11/21/2006

- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303

- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x191x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.011 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.14 V/m; Power Drift = -0.171 dB

Peak SAR (extrapolated) = 0.034 W/kg

SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.004 mW/g

Maximum value of SAR (measured) = 0.011 mW/g

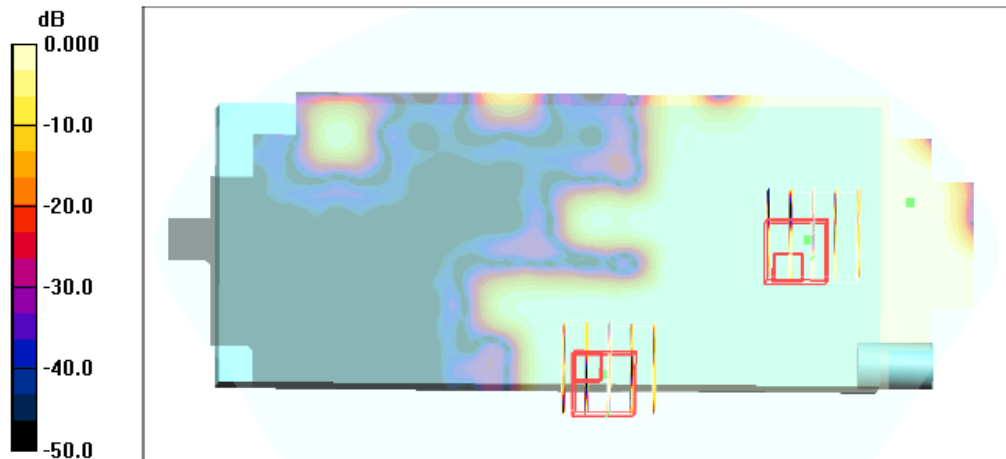
**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.14 V/m; Power Drift = -0.171 dB

Peak SAR (extrapolated) = 0.003 W/kg

SAR(1 g) = 4.96e-005 mW/g; SAR(10 g) = 1.01e-005 mW/g

Maximum value of SAR (measured) = 0.003 mW/g



0 dB = 0.003mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/12/2007 10:55:51 PM

**Body\_802.11b Ch6\_Keypad Down with 1.5cm Gap\_20070212\_PC528**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.94$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.9 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.11, 4.11, 4.11); Calibrated: 9/19/2006

- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)

- Electronics: DAE3 Sn577; Calibrated: 11/21/2006

- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303

- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x191x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.013 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.69 V/m; Power Drift = -0.116 dB

Peak SAR (extrapolated) = 0.016 W/kg

SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00582 mW/g

Maximum value of SAR (measured) = 0.013 mW/g

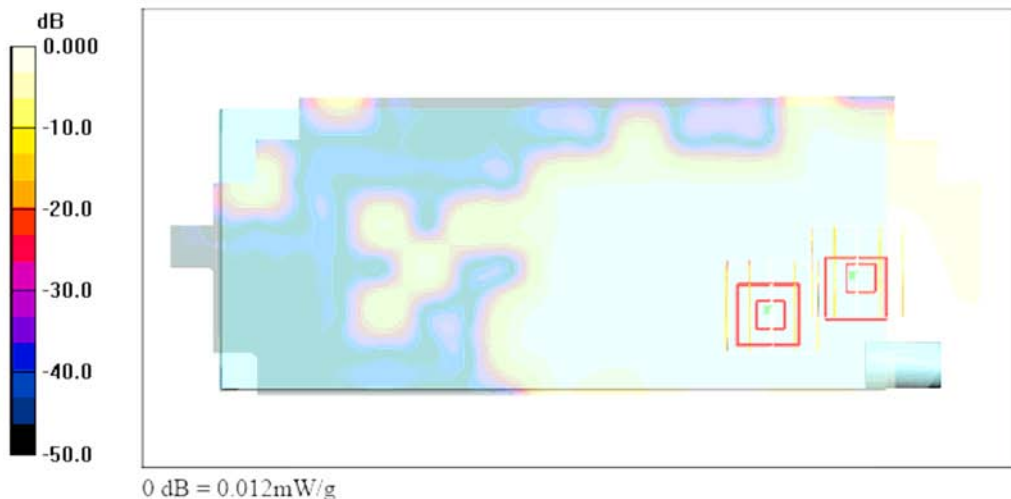
**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.69 V/m; Power Drift = -0.116 dB

Peak SAR (extrapolated) = 0.029 W/kg

SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00511 mW/g

Maximum value of SAR (measured) = 0.012 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/12/2007 11:42:34 PM

**Body\_802.11g Ch6\_Keypad Up with 1.5cm Gap\_20070212\_PC528**

**DUT: 710211-01**

Communication System: 802.11g; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.94$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.8 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.11, 4.11, 4.11); Calibrated: 9/19/2006

- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)

- Electronics: DAE3 Sn577; Calibrated: 11/21/2006

- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303

- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x191x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.009 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.785 V/m; Power Drift = 0.174 dB

Peak SAR (extrapolated) = 0.031 W/kg

SAR(1 g) = 0.0067 mW/g; SAR(10 g) = 0.00274 mW/g

Maximum value of SAR (measured) = 0.005 mW/g

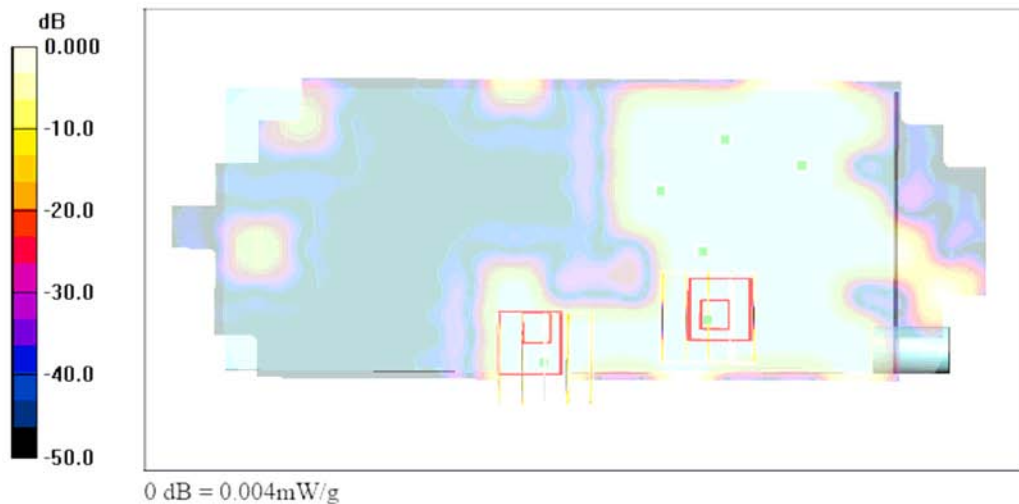
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.785 V/m; Power Drift = 0.174 dB

Peak SAR (extrapolated) = 0.015 W/kg

SAR(1 g) = 0.00385 mW/g; SAR(10 g) = 0.00119 mW/g

Maximum value of SAR (measured) = 0.004 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 12:10:44 PM

**Right Cheek\_802.11b Ch11\_20070212\_PC529\_Bluetooth On**

DUT: 710211-01

Communication System: 802.11b ; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.78$  mho/m;  $\epsilon_r = 38$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.7 °C; Liquid Temperature : 20.8 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.66, 4.66, 4.66); Calibrated: 9/19/2006
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2006
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch11/Area Scan (71x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.099 mW/g

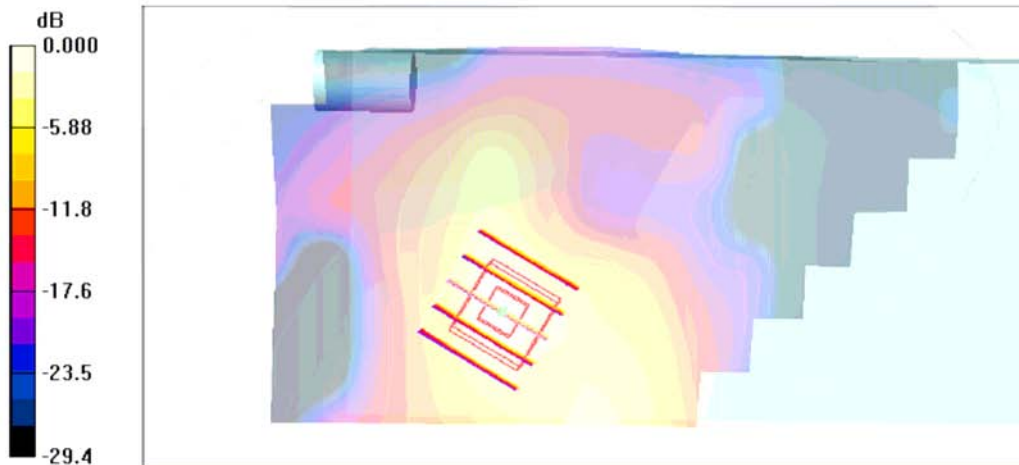
**Ch11/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.63 V/m; Power Drift = -0.068 dB

Peak SAR (extrapolated) = 0.178 W/kg

SAR(1 g) = 0.084 mW/g; SAR(10 g) = 0.040 mW/g

Maximum value of SAR (measured) = 0.095 mW/g



0 dB = 0.095mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 2/13/2007 5:07:53 AM

**Body\_802.11b Ch6\_Keypad Up with 1.5cm Gap\_20070212\_PC529\_Bluetooth On**

**DUT: 710211-01**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.94$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 21.8 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.11, 4.11, 4.11); Calibrated: 9/19/2006

- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)

- Electronics: DAE3 Sn577; Calibrated: 11/21/2006

- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303

- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Ch6/Area Scan (71x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.017 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.000 V/m; Power Drift = 0.106 dB

Peak SAR (extrapolated) = 0.018 W/kg

SAR(1 g) = 0.014 mW/g; SAR(10 g) = 0.0069 mW/g

Maximum value of SAR (measured) = 0.017 mW/g

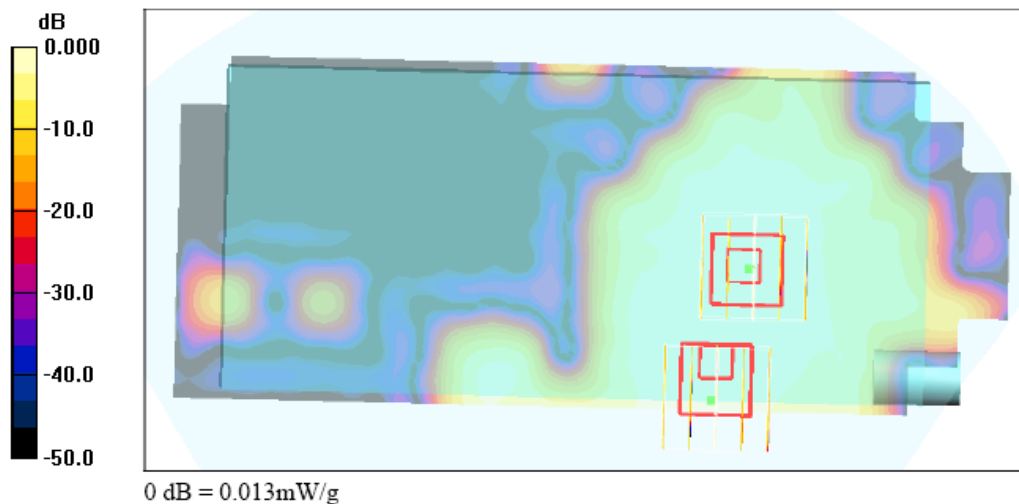
**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.000 V/m; Power Drift = 0.106 dB

Peak SAR (extrapolated) = 0.036 W/kg

SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00509 mW/g

Maximum value of SAR (measured) = 0.013 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Left Side Touch\_7527C\_Endcap 1\_B2**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.162 mW/g

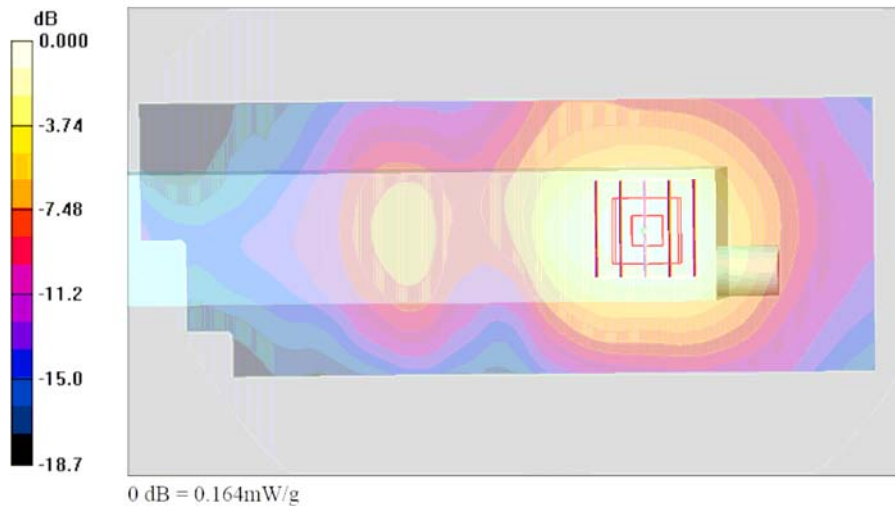
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.86 V/m; Power Drift = -0.168 dB

Peak SAR (extrapolated) = 0.309 W/kg

**SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.087 mW/g**

Maximum value of SAR (measured) = 0.164 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11g\_Ch6\_Holster Left Side Touch\_7527C\_Endcap 1\_B2**

Communication System: 802.11g; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.027 mW/g

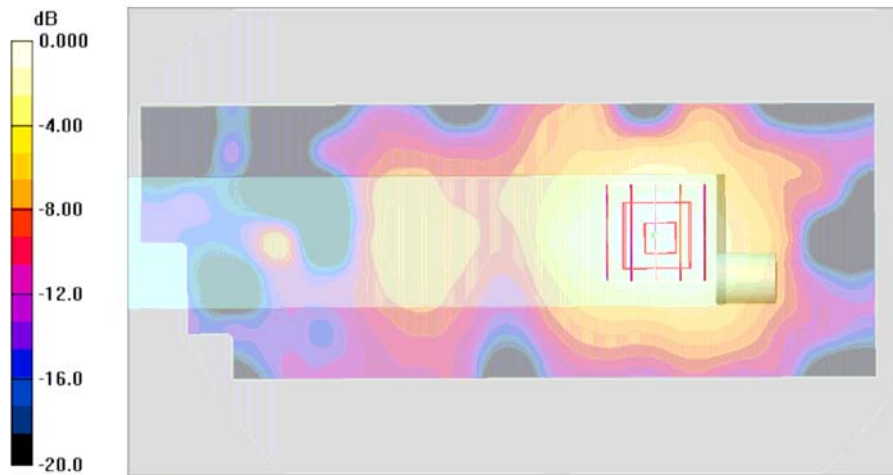
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.48 V/m; Power Drift = -0.125 dB

Peak SAR (extrapolated) = 0.046 W/kg

**SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.013 mW/g**

Maximum value of SAR (measured) = 0.026 mW/g



0 dB = 0.026mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Right Side Touch\_7527C\_Endcap 1\_B2**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.014 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.08 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 0.020 W/kg

**SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.00646 mW/g**

Maximum value of SAR (measured) = 0.013 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.08 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 0.019 W/kg

**SAR(1 g) = 0.00959 mW/g; SAR(10 g) = 0.00574 mW/g**

Maximum value of SAR (measured) = 0.012 mW/g







Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Left Side Touch\_7527C\_POD 4\_B2\_BT On**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.3 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.151 mW/g

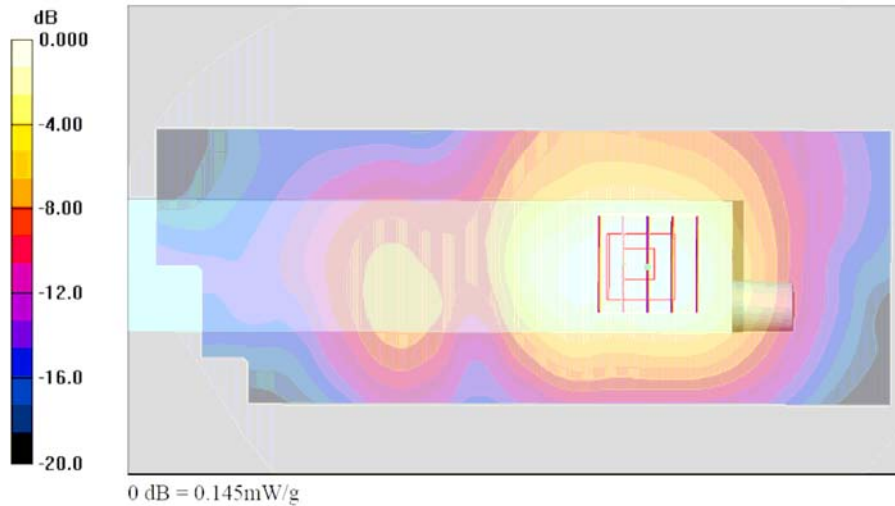
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.92 V/m; Power Drift = 0.116 dB

Peak SAR (extrapolated) = 0.278 W/kg

**SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.079 mW/g**

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





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch1\_Holster Left Side Touch\_7527C\_Endcap 6\_B2\_BT On**

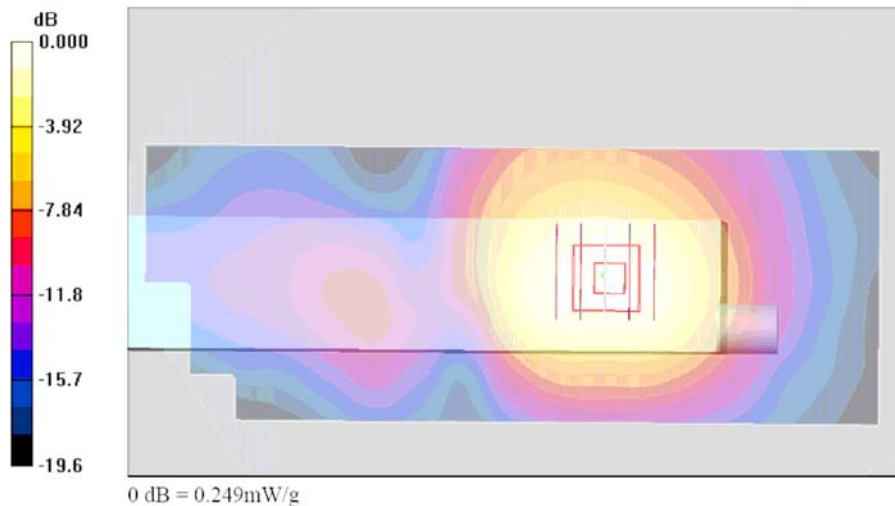
Communication System: 802.11b ; Frequency: 2412 MHz;Duty Cycle: 1:1  
Medium: MSL\_2450 Medium parameters used: f = 2412 MHz:  $\sigma = 1.91$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 22.2 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch1/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.255 mW/g

**Ch1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 10.5 V/m; Power Drift = -0.192 dB  
Peak SAR (extrapolated) = 0.439 W/kg  
**SAR(1 g) = 0.230 mW/g; SAR(10 g) = 0.128 mW/g**  
Maximum value of SAR (measured) = 0.249 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch1\_Holster Left Side Touch\_7527S\_Endcap 6\_B2\_BT On**

Communication System: 802.11b ; Frequency: 2412 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used: f = 2412 MHz:  $\sigma = 1.91$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.4 °C; Liquid Temperature : 21.5 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch1/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.257 mW/g

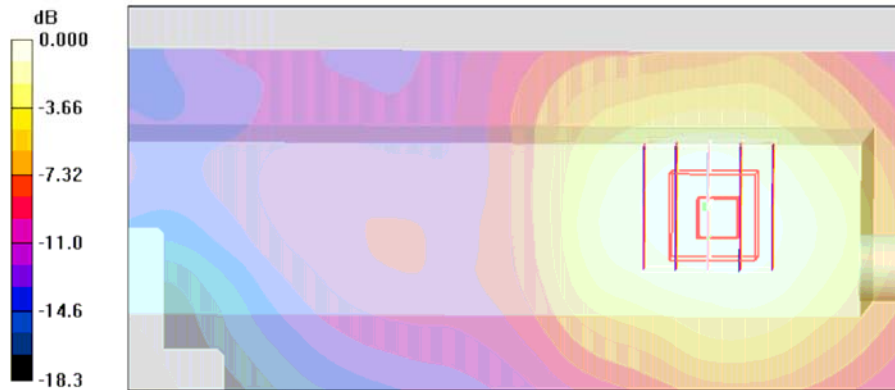
**Ch1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.5 V/m; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 0.463 W/kg

**SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.134 mW/g**

Maximum value of SAR (measured) = 0.244 mW/g



0 dB = 0.244mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Left Side Touch\_7527C\_POD 6\_B2\_BT On**

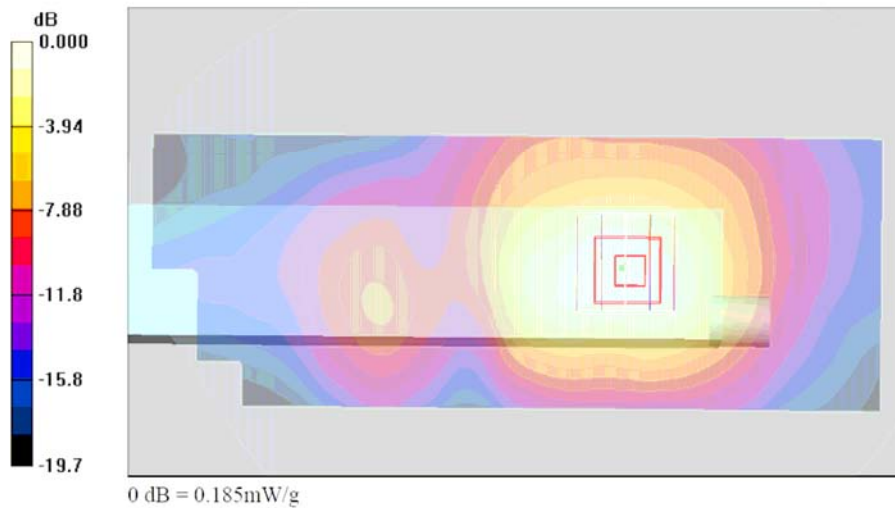
Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1  
Medium: MSL\_2450 Medium parameters used: f = 2437 MHz:  $\sigma = 1.95 \text{ mho/m}$ ;  $\epsilon_r = 53$ ;  $\rho = 1000 \text{ kg/m}^3$   
Ambient Temperature : 22.1 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.183 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 8.71 V/m; Power Drift = 0.022 dB  
Peak SAR (extrapolated) = 0.324 W/kg  
**SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.097 mW/g**  
Maximum value of SAR (measured) = 0.185 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Left Side Touch\_7527C\_POD 6\_B2\_BT On**

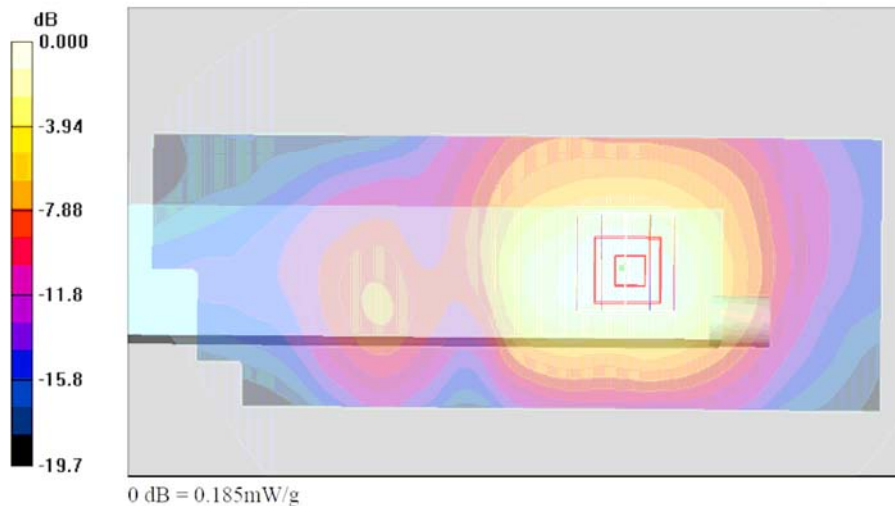
Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1  
Medium: MSL\_2450 Medium parameters used: f = 2437 MHz:  $\sigma = 1.95$  mho/m:  $\epsilon_r = 53$ :  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 22.1 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.183 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 8.71 V/m; Power Drift = 0.022 dB  
Peak SAR (extrapolated) = 0.324 W/kg  
**SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.097 mW/g**  
Maximum value of SAR (measured) = 0.185 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Left Side Touch\_7527C\_Endcap 6\_B2\_BT On**

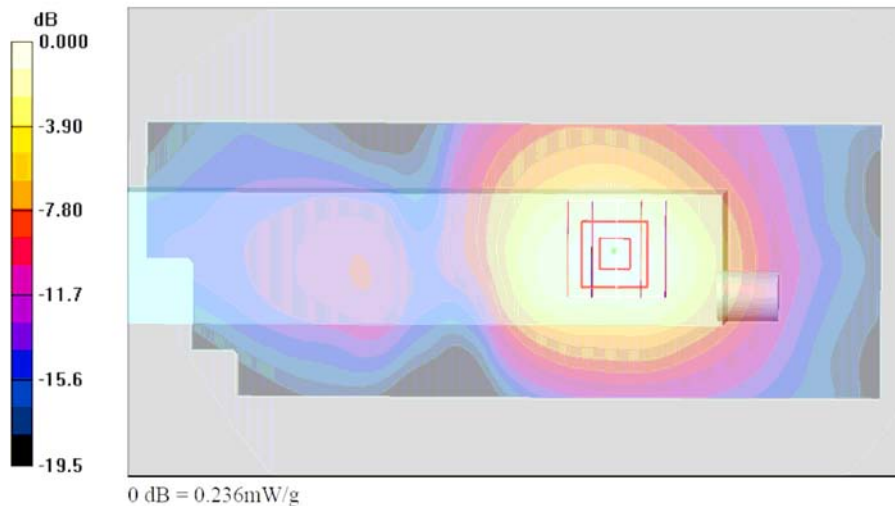
Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1  
Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz:  $\sigma = 1.95$  mho/m:  $\epsilon_r = 53$ :  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 22.1 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.210 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 9.57 V/m: Power Drift = -0.120 dB  
Peak SAR (extrapolated) = 0.453 W/kg  
**SAR(1 g) = 0.216 mW/g; SAR(10 g) = 0.117 mW/g**  
Maximum value of SAR (measured) = 0.236 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Left Side Touch\_7527C\_Endcap 3\_B2\_BT On**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used: f = 2437 MHz:  $\sigma = 1.95$  mho/m:  $\epsilon_r = 53$ :  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.0 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31

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

- Electronics: DAE3 Sn577; Calibrated: 2006/11/21

- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.213 mW/g

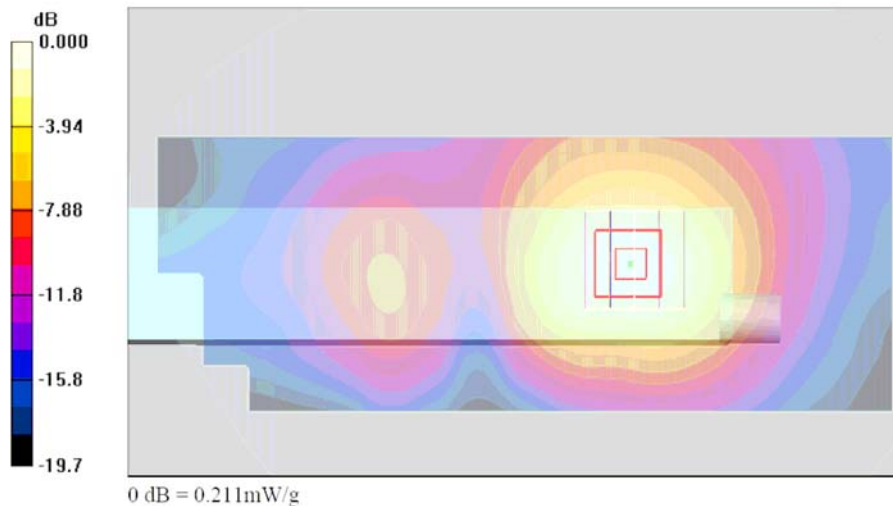
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.79 V/m; Power Drift = -0.165 dB

Peak SAR (extrapolated) = 0.418 W/kg

**SAR(1 g) = 0.198 mW/g; SAR(10 g) = 0.108 mW/g**

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





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/5/7

**Body\_802.11b Ch6\_Holster Left Side Touch\_7527C\_Endcap 2\_B2\_BT On**

Communication System: 802.11b ; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium: MSL\_2450 Medium parameters used: f = 2437 MHz:  $\sigma = 1.95$  mho/m:  $\epsilon_r = 53$ :  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.5 °C; Liquid Temperature : 21.0 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.13, 4.13, 4.13); Calibrated: 2006/5/31
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.177 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.04 V/m; Power Drift = -0.079 dB

Peak SAR (extrapolated) = 0.347 W/kg

**SAR(1 g) = 0.169 mW/g; SAR(10 g) = 0.094 mW/g**

Maximum value of SAR (measured) = 0.178 mW/g

