# SAR Test Report

Product Name : Tablet

Model No. : QS9719D

FCC ID : PE4YEKA97TABN

Applicant : New Telecom Holdings Limited

Address : 2/F, Eton Tower, 8 Hysan Avenue, Causeway, Hong Kong.

Date of Receipt : 13/09/2012

Date of Test : 19/09/2012~28/01/2013

Issued Date : 31/01/2013

Report No. : 129S037R-HP-US-P03V01

Report Version : V2.1

# Test Report Certification

Issued Date: 31/01/2013
Report No.: 129S037R-HP-US-P03V01

QuieTek

| | | |
|---|---|---|
| Product Name | : | Tablet |
| Applicant | : | New Telecom Holdings Limited |
| Address | : | 2/F, Eton Tower, 8 Hysan Avenue, Causeway, Hong Kong. |
| Manufacturer | : | New Telecom Holdings Limited |
| Address | : | 2/F, Eton Tower, 8 Hysan Avenue, Causeway, Hong Kong. |
| Model No. | : | QS9719D |
| FCC ID | : | PE4YEKA97TABN |
| Brand Name | : | 3Q |
| EUT Voltage | : | DC 5.0V |
| Applicable Standard | : | FCC Oet65 Supplement C June 2001<br>IEEE Std. 1528-2003,47CFR § 2.1093 |
| Test Result | : | Max. Body SAR Measurement (1g)<br>1.275W/kg |
| Performed Location | : | Suzhou EMC Laboratory<br>No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou, China<br>TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098<br>FCC Registration Number: 800392 |
| Documented By | : | Alice Ni<br>(Engineering ADM: Alice Ni) |
| Reviewed By | : | Robin Wu<br>(Engineering Supervisor: Robin Wu) |
| Approved By | : | Marlin Chen<br>(Manager: Marlin Chen) |

## Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

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|---|---|---|
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| **Germany** | **:** | **TUV Rheinland** |
| **Norway** | **:** | **Nemko, DNV** |
| **USA** | **:** | **FCC, NVLAP** |
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**HsinChu Testing Laboratory :**
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

**LinKou Testing Laboratory :**
No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

**Suzhou Testing Laboratory :**
No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China
TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

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# 1. General Information

## 1.1. EUT Description

| | |
|---|---|
| Product Name | Tablet |
| Model No. | QS9719D |
| Hardware Version | V2 |
| Software Version | V2.0 |
| Device Category | Portable |
| **2G** | |
| Support Band | GSM850/PCS1900 |
| GPRS Type | Class B |
| GPRS Class | Class 12 |
| Uplink | GSM 850: 824~849MHz<br>PCS 1900: 1850~1910MHz |
| Downlink | GSM 850: 869~894MHz<br>PCS 1900: 1930~1990MHz |
| Release Version | R99 |
| Type of modulation | GMSK for GSM/GPRS, 8PSK for EDGE |
| Antenna Gain | -1.5dBi for GSM850<br>0dBi for PCS1900 |
| Max. Output Power (Conducted) | GSM850: 30.50dBm<br>PCS1900: 27.20dBm |
| Max. Output Power (Radiated) | GSM850: 28.95dBm- ERP<br>PCS1900: 27.05dBm- EIRP |
| **3G** | |
| Support Band | WCDMA Band V |
| Uplink | WCDMA Band V: 824~849MHz |
| Downlink | WCDMA Band V: 869~894MHz |
| Release Version | Rel-5 |
| Type of modulation | QPSK |
| Antenna Gain | -1.5dBi |
| Max. Output Power (Conducted) | 22.42dBm |
| Max. Output Power (Radiated) | 18.65dBm - ERP |
| **Wi-Fi** | |
| Frequency Range | 2412 - 2462 MHz |
| Type of Modulation | 802.11b: DSSS; 802.11g/n: OFDM |

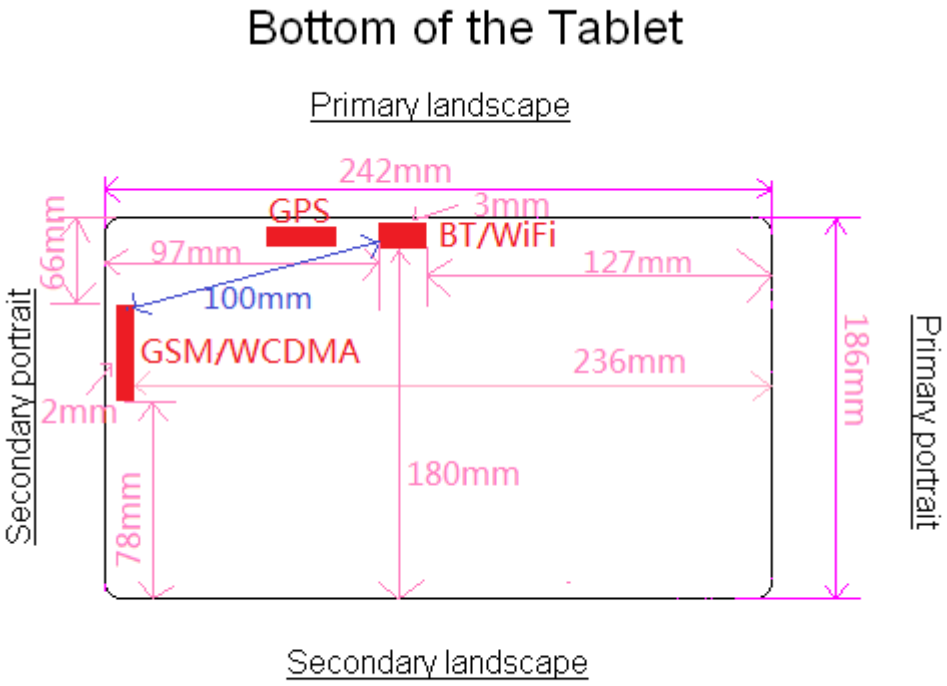
| | |
|---|---|
| Data Rate | 802.11b: 1/2/5.5/11 Mbps |
| | 802.11g: 6/9/12/18/24/36/48/54 Mbps |
| | 802.11n: up to 150Mbps |
| Antenna Type | Internal |
| Peak Antenna Gain | -2dBi |
| Max. Output Power (Conducted) | 802.11b: 13.09dBm<br>802.11g: 11.73dBm<br>802.11n(20MHz): 11.45dBm<br>802.11n(40MHz): 9.61dBm |
| **Bluetooth** | |
| Bluetooth Frequency | 2402~2480MHz |
| Bluetooth Version | V3.0 |
| Type of modulation | FHSS |
| Data Rate | 1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK) |
| Peak Antenna Gain | -2dBi |
| **Components** | |
| Battery | Model Name: BP21205<br>Rated Voltage and Capacitance: 3.7V, 5250mAh |
| Adapter | Model Name: S004861-XE<br>Input: AC 100-240V 50/60Hz<br>Output: 5.0V, 2A |

## 1.2. Test Environment

Ambient conditions in the laboratory:

| Items | Required | Actual |
|---|---|---|
| Temperature (°C) | 18-25 | 21.5± 2 |
| Humidity (%RH) | 30-70 | 52 |

## 1.3. EUT Antenna Locations




| | |
|---|---|
| Antenna-to-user separation distances: | **GSM/WCDMA Antenna**<br>Tablet-Bottom face: 3mm from GSM/WCDMA Antenna-to-user<br>Tablet-Edges with the following configurations<br>● Primary landscape: 66mm from GSM/WCDMA Antenna-to-user<br>● Secondary landscape: 78mm from GSM/WCDMA Antenna-to-user<br>● Primary portrait: 236mm from GSM/WCDMA Antenna-to-user<br>● Secondary portrait: 2mm from GSM/WCDMA Antenna-to-user<br>**WiFi/BT Antenna**<br>Tablet-Bottom face: 3mm from WiFi/BT Antenna-to-user<br>Tablet-Edges with the following configurations<br>● Primary landscape: 3mm from WiFi/BT Antenna-to-user |

| | |
|---|---|
| | ● Secondary landscape: 180mm from WiFi/BT Antenna-to-user<br>● Primary portrait: 127mm from WiFi/BT Antenna-to-user<br>● Secondary portrait: 97mm from WiFi/BT Antenna-to-user |
| Antenna-to-antenna separation distances: | 100mm from GSM/WCDMA Antenna-to-WiFi/BT Antenna |

## 1.4. Simultaneous Transmission Configurations

According to FCC KDB Publication 447498 D01v05, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneously transmission analysis according to FCC KDB Publication 447498 D01v05 procedures.

Table 1-1
Simultaneous Transmission Scenarios

| No. | Simultaneous Transmit Configurations | Body | Note |
|---|---|---|---|
| | | FCC KDB 616217 | |
| 1 | GSM850 Voice + 2.4GHz Bluetooth | Yes | |
| 2 | GSM1900 Voice + 2.4GHz Bluetooth | Yes | |
| 3 | UMTS850 Voice + 2.4GHz Bluetooth | Yes | |
| 4 | GSM850 Voice + 2.4GHz WIFI | Yes | WIFI Direct |
| 5 | GSM1900 Voice + 2.4GHz WIFI | Yes | WIFI Direct |
| 6 | UMTS850 Voice + 2.4GHz WIFI | Yes | WIFI Direct |
| 7 | GPRS850 Data + 2.4GHz Bluetooth | Yes | |
| 8 | GPRS1900 Data + 2.4GHz Bluetooth | Yes | |
| 9 | UMTS850 Data + 2.4GHz Bluetooth | Yes | |
| 10 | GPRS850 Data + 2.4GHz WIFI | Yes* | Hotspot or WIFI Direct |
| 11 | GPRS1900 Data + 2.4GHz WIFI | Yes* | Hotspot or WIFI Direct |
| 12 | UMTS850 Data + 2.4GHz WIFI | Yes* | Hotspot or WIFI Direct |

Note: (*) = for VoIP 3rd party applications possibly installed and used by the end-user.

## 1.5. SAR Test Exclusions Applied

### (A) WIFI/Bluetooth

2.4GHz WLAN and Bluetooth share the same antenna path and cannot transmit simultaneously.

The device supports 20MHz and 40MHz Bandwidths for IEEE 802.11n. 802.11g/n was not evaluated for SAR since the average output power was not more than 0.25dB higher than the average output power

of 802.11b.

Per FCC KDB 447498 D01v05,the SAR exclusion threshold for distances<50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)} * \sqrt{Frequency(GHz)} \leq 3.0$$

Based on the maximum conducted power of Bluetooth and the antenna to use separation distance, Bluetooth SAR was not required; [(2.512mW/3)* √2.441]=1.31<3.0.

(B) Licensed Transmitter(s)

GSM/GPRS DTM is not supported for US bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS Data.

## 1.6. Power Reduction for SAR

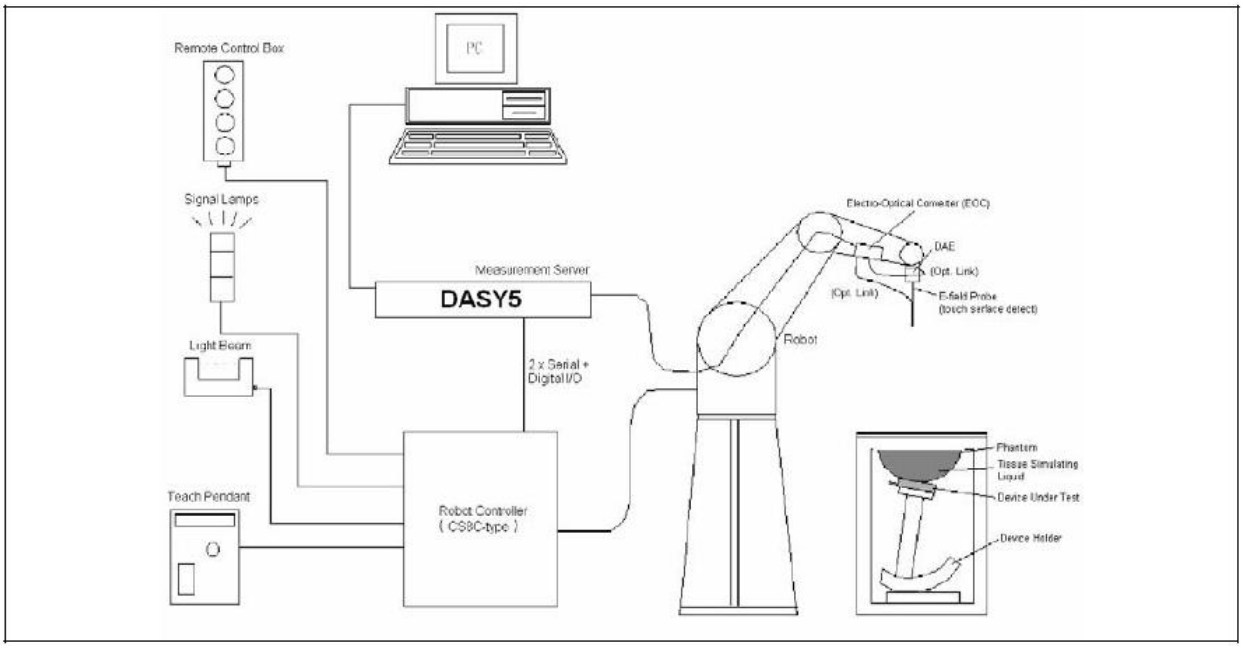
There is no power reduction used for any band/mode implemented in this device for SAR purposes.

## 1.7. Guidance Documents

1) FCC KDB Publication 941225 D01-D06 (2G/3G and Hotspot)
2) FCC KDB Publication 248227 D01v01r02 (SAR Considerations for 802.11 Devices)
3) FCC KDB Publication 447498 D01v05(General SAR Guidance)
4) FCC KDB Publication 865664 D01v01(SAR measurement 100 MHz to 6 GHz)
5) FCC KDB Publication 616217 D04v01 (SAR for Laptop and Tablets)

# 2. SAR Measurement System

## 2.1. DASY5 System Description




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

- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

### 2.1.1. Applications

Predefined procedures and evaluations for automated compliance testing with all worldwide standards, e.g., IEEE 1528, OET 65, IEC 62209-1, IEC 62209-2, EN 50360, EN 50383 and others.

### 2.1.2. Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a $10mm^2$ step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2003, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan).

### 2.1.3. Zoom Scan (Cube Scan Averaging)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 $kg/m^3$ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 7x7x7 (5mmx5mmx5mm) providing a volume of 30mm in the X & Y axis, and 30mm in the Z axis.

### 2.1.4. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Postprocessor, DASY5 allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEEE 1528.The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x,y,z) = Ae^{-\frac{z}{2a}}\cos^2\left(\frac{\pi}{2}\frac{\sqrt{x'^2+y'^2}}{5a}\right)$$

$$f_2(x,y,z) = Ae^{-\frac{z}{a}}\frac{a^2}{a^2+x'^2}\left(3-e^{-\frac{2z}{a}}\right)\cos^2\left(\frac{\pi}{2}\frac{y'}{3a}\right)$$

$$f_3(x,y,z) = A\frac{a^2}{\frac{a^2}{4}+x'^2+y'^2}\left(e^{-\frac{2z}{a}}+\frac{a^2}{2(a+2z)^2}\right)$$

## 2.2. DASY5 E-Field Probe

The SAR measurement is conducted with the dosimetric probe 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.

SPEAG conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN 62209-1, IEC 62209, etc.) under ISO 17025. The calibration data are in Appendix D.

### 2.2.1. Isotropic E-Field Probe Specification

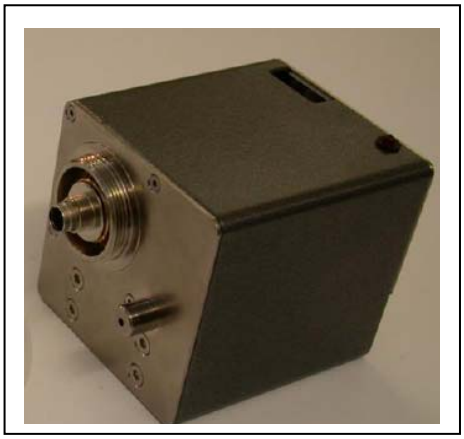
| Model | EX3DV4 | |
|---|---|---|
| **Construction** | Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE) | |
| **Frequency** | 10 MHz to 6 GHz<br>Linearity: ± 0.2 dB (30 MHz to 6 GHz) |  |
| **Directivity** | ± 0.3 dB in HSL (rotation around probe axis)<br>± 0.5 dB in tissue material (rotation normal to probe axis) | |
| **Dynamic Range** | 10 µW/g to 100 mW/g<br>Linearity: ± 0.2 dB (noise: typically < 1 µW/g) | |
| **Dimensions** | Overall length: 330 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm | |
| **Application** | High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%. | |

## 2.3. Boundary Detection Unit and Probe Mounting Device

The DASY probes use a precise connector and an additional holder for the probe, consisting of a plastic tube and a flexible silicon ring to center the probe. The connector at the DAE is flexibly mounted and held in the default position with magnets and springs. Two switching systems in the connector mount detect frontal and lateral probe collisions and trigger the necessary software response.

## 2.4. DATA Acquisition Electronics (DAE) and Measurement Server

The data acquisition electronics (DAE) 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 input impedance of the DAE4 is 200M Ohm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.



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

## 2.5. Robot

The DASY5 system uses the high precision robots TX90 XL type out of the newer series from Stäubli SA (France). For the 6-axis controller DASY5 system, the CS8C robot controller version from Stäubli is used.
The XL 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

## 2.6. Light Beam Unit

The light beam switch allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.
The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

## 2.7. Device Holder

The DASY5 device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR).
Thus the device needs no repositioning when changing the angles.
The DASY5 device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity εr =3 and loss tangent $\delta$ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

## 2.8. 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.

# 3. Tissue Simulating Liquid

## 3.1. The composition of the tissue simulating liquid

| INGREDIENT (% Weight) | 835MHz Body | 1900MHz Body | 2450MHz Body |
|---|---|---|---|
| Water | 52.4 | 40.5 | 73.2 |
| Salt | 1.40 | 0.50 | 0.04 |
| Sugar | 45.0 | 58.0 | 0.00 |
| HEC | 1.00 | 0.50 | 0.00 |
| Preventol | 0.20 | 0.50 | 0.00 |
| DGBE | 0.00 | 0.00 | 26.7 |

### 3.2. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using DASY5 Dielectric Probe Kit and Agilent Vector Network Analyzer E5071C

| Body Tissue Simulant Measurement | | | | |
|---|---|---|---|---|
| Frequency [MHz] | Description | Dielectric Parameters | | Tissue Temp. [°C] |
| | | $\varepsilon_r$ | $\sigma$ [s/m] | |
| 835 MHz | Reference result ± 5% window | 55.2<br>52.44 to 57.96 | 0.97<br>0.92 to 1.02 | N/A |
| | 19-09-2012 | 53.27 | 0.99 | 21.0 |
| | 28-01-2013 | 53.93 | 0.96 | 21.0 |
| | | | | |

| Body Tissue Simulant Measurement | | | | |
|---|---|---|---|---|
| Frequency [MHz] | Description | Dielectric Parameters | | Tissue Temp. [°C] |
| | | $\varepsilon_r$ | $\sigma$ [s/m] | |
| 1900 MHz | Reference result ± 5% window | 53.3<br>50.64 to 55.97 | 1.52<br>1.44 to 1.60 | N/A |
| | 19-09-2012 | 51.82 | 1.56 | 21.0 |
| | 28-01-2013 | 54.27 | 1.53 | 21.0 |
| | | | | |

| Body Tissue Simulant Measurement | | | | |
|---|---|---|---|---|
| Frequency [MHz] | Description | Dielectric Parameters | | Tissue Temp. [°C] |
| | | $\varepsilon_r$ | $\sigma$ [s/m] | |
| 2450MHz | Reference result ± 5% window | 52.7<br>50.07 to 55.34 | 1.95<br>1.85 to 2.05 | N/A |
| | 19-09-2012 | 52.20 | 1.98 | 21.0 |
| | | | | |

### 3.3. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

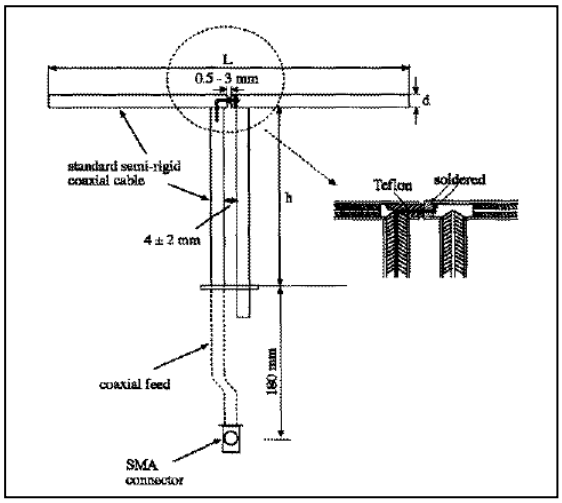
| Target Frequency | Head | | Body | |
|---|---|---|---|---|
| (MHz) | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) |
| 150 | 52.3 | 0.76 | 61.9 | 0.80 |
| 300 | 45.3 | 0.87 | 58.2 | 0.92 |
| 450 | 43.5 | 0.87 | 56.7 | 0.94 |
| **835** | 41.5 | 0.90 | **55.2** | **0.97** |
| 900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

($\varepsilon_r$ = relative permittivity, $\sigma$ = conductivity and $\rho$ = 1000 kg/m$^3$)

# 4. SAR Measurement Procedure

## 4.1. SAR System Validation

### 4.1.1. Validation Dipoles




The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical specifications for the dipoles.

| Frequency | L (mm) | h (mm) | d (mm) |
|---|---|---|---|
| 835MHz | 161.0 | 89.8 | 3.6 |
| 1900MHz | 68.0 | 39.5 | 3.6 |
| 2450MHz | 51.5 | 30.4 | 3.6 |

### 4.1.2. Validation Result

**System Performance Check at 835MHz &1900MHz & 2450MHz for Body**

**Validation Kit: D835V2-SN 4d094**

| Frequency [MHz] | Description | SAR [w/kg] 1g | SAR [w/kg] 10g | Tissue Temp. [°C] |
|---|---|---|---|---|
| 835 MHz | Reference result ± 10% window | 9.57 8.61 to 10.53 | 6.33 5.70 to 6.96 | N/A |
| | 19-09-2012 | 10.20 | 6.64 | 21.0 |
| | 28-01-2013 | 9.88 | 6.44 | 21.0 |

**Validation Kit: D1900V2-SN 5d121**

| Frequency [MHz] | Description | SAR [w/kg] 1g | SAR [w/kg] 10g | Tissue Temp. [°C] |
|---|---|---|---|---|
| 1900 MHz | Reference result ± 10% window | 38.7 34.83 to 42.57 | 20.4 18.36 to 22.44 | N/A |
| | 19-09-2012 | 42.00 | 21.72 | 21.0 |
| | 28-01-2013 | 41.20 | 21.32 | 21.0 |

**Validation Dipole: D2450V2, SN: 839**

| Frequency [MHz] | Description | SAR [w/kg] 1g | SAR [w/kg] 10g | Tissue Temp. [°C] |
|---|---|---|---|---|
| 2450 MHz | Reference result ± 10% window | 48.7 43.83 to 53.57 | 22.8 20.52 to 25.08 | N/A |
| | 19-09-2012 | 48.80 | 22.16 | 21.0 |

Note: All SAR values are normalized to 1W forward power.

## 4.2. SAR Measurement Procedure

The DASY5 calculates SAR using the following equation,

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

σ: represents the simulated tissue conductivity

ρ: represents the tissue density

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at $1mm^2$ ) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at $1mm^3$ ).

## 4.3. SAR Measurement Conditions for UMTS

### 4.3.1. Output Power Verification

Maximum output power is measured on the High, Middle and Low channels for each applicable transmission band according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all "1s".

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121 (release 5), using the appropriate RMC with TPC (transmit power control) set to all "1s" or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

### 4.3.2. Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all "1s".

### 4.3.3. SAR Measurements for Handsets with Rel 5 HSDPA

Body SAR for HSDPA is not required for handsets with HSDPA capabilities when the maximum average output power of each RF channel with HSDPA active is less than 0.25 dB higher than that measured without HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is ≤ 75% of the SAR limit. Otherwise, SAR is measured for HSDPA, using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration measured in 12.2 kbps RMC without HSDPA, on the maximum output channel with the body exposure configuration that resulted in the highest SAR in 12.2 kbps RMC mode for that RF channel.
The H-set used in FRC for HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HSPDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the applicable H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the FRC for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 2 ms to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors of βc=9 and βd=15, and power offset parameters of ΔACK= ΔNACK =5 and ΔCQI=2 is used. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the FRC.

### 4.3.4. SAR Testing for Tablet per KDB Publication 616217 D04v01

Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in KDB 447498 D01v05 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

Based on the location and output power of the GSM/WCDMA antenna, bottom and secondary portrait were required to be evaluated for SAR. Bottom and primary landscape were required to be evaluated for the BT/WLAN Antenna. Front side was not required to be evaluated.

## 5. SAR Exposure Limits

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 “Uncontrolled Environments” limits. These limits apply to a location which is deemed as “Uncontrolled Environment” which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

**Limits for General Population/Uncontrolled Exposure (W/kg)**

| Type Exposure | Uncontrolled Environment Limit |
|---|---|
| Spatial Peak SAR (1g cube tissue for brain or body) | 1.60 W/kg |
| Spatial Average SAR (whole body) | 0.08 W/kg |
| Spatial Peak SAR (10g for hands, feet, ankles and wrist) | 4.00 W/kg |

## 6. Test Equipment List

| Instrument | Manufacturer | Model No. | Serial No. | Cali. Due Date |
|---|---|---|---|---|
| Stäubli Robot TX60L | Stäubli | TX60L | F10/5C90A1/A/01 | only once |
| Controller | Stäubli | SP1 | S-0034 | only once |
| Dipole Validation Kits | Speag | D835V2 | 4d094 | 2013.02.17 |
| Dipole Validation Kits | Speag | D1900V2 | 5d121 | 2013.02.22 |
| Dipole Validation Kits | Speag | D2450V2 | 839 | 2013.02.23 |
| SAM Twin Phantom | Speag | SAM | TP-1561/1562 | N/A |
| Device Holder | Speag | SD 000 H01 HA | N/A | N/A |
| Data Acquisition Electronic | Speag | DAE4 | 1220 | 2013.01.23 |
| Data Acquisition Electronic | Speag | DAE4 | Sn915 | 2013.06.21 |
| E-Field Probe | Speag | EX3DV4 | 3710 | 2013.03.12 |
| SAR Software | Speag | DASY5 | V5.2 Build 162 | N/A |
| Power Amplifier | Mini-Circuit | ZVA-183-S+ | N657400950 | N/A |
| Directional Coupler | Agilent | 778D | 20160 | N/A |
| Universal Radio Communication Tester | R&S | CMU 200 | 117088 | 2013.04.18 |
| Vector Network | Agilent | E5071C | MY48367267 | 2013.04.10 |
| Signal Generator | Agilent | E4438C | MY49070163 | 2013.04.18 |
| Power Meter | Anritsu | ML2495A | 0905006 | 2013.11.10 |
| Wide Bandwidth Sensor | Anritsu | MA2411B | 0846014 | 2013.11.10 |

# 7. Measurement Uncertainty

| DASY5 Uncertainty<br>Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram / 10 gram. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Error Description | Uncert. value | Prob. Dist. | Div. | ($c_i$) 1g | ($c_i$) 10g | Std. Unc. (1g) | Std. Unc. (10g) | ($v_i$) $v_{eff}$ |
| **Measurement System** | | | | | | | | |
| Probe Calibration | ±6.0% | N | 1 | 1 | 1 | ±6.0% | ±6.0% | ∞ |
| Axial Isotropy | ±4.7% | R | $\sqrt{3}$ | 0.7 | 0.7 | ±1.9% | ±1.9% | ∞ |
| Hemispherical Isotropy | ±9.6% | R | $\sqrt{3}$ | 0.7 | 0.7 | ±3.9% | ±3.9% | ∞ |
| Boundary Effects | ±1.0% | R | $\sqrt{3}$ | 1 | 1 | ±0.6% | ±0.6% | ∞ |
| Linearity | ±4.7% | R | $\sqrt{3}$ | 1 | 1 | ±2.7% | ±2.7% | ∞ |
| System Detection Limits | ±1.0% | R | $\sqrt{3}$ | 1 | 1 | ±0.6% | ±0.6% | ∞ |
| Readout Electronics | ±0.3% | N | 1 | 1 | 1 | ±0.3% | ±0.3% | ∞ |
| Response Time | ±0.8% | R | $\sqrt{3}$ | 1 | 1 | ±0.5% | ±0.5% | ∞ |
| Integration Time | ±2.6% | R | $\sqrt{3}$ | 1 | 1 | ±1.5% | ±1.5% | ∞ |
| RF Ambient Noise | ±3.0% | R | $\sqrt{3}$ | 1 | 1 | ±1.7% | ±1.7% | ∞ |
| RF Ambient Reflections | ±3.0% | R | $\sqrt{3}$ | 1 | 1 | ±1.7% | ±1.7% | ∞ |
| Probe Positioner | ±0.4% | R | $\sqrt{3}$ | 1 | 1 | ±0.2% | ±0.2% | ∞ |
| Probe Positioning | ±2.9% | R | $\sqrt{3}$ | 1 | 1 | ±1.7% | ±1.7% | ∞ |
| Max. SAR Eval. | ±1.0% | R | $\sqrt{3}$ | 1 | 1 | ±0.6% | ±0.6% | ∞ |
| **Test Sample Related** | | | | | | | | |
| Device Positioning | ±2.9% | N | 1 | 1 | 1 | ±2.9% | ±2.9% | 145 |
| Device Holder | ±3.6% | N | 1 | 1 | 1 | ±3.6% | ±3.6% | 5 |
| Power Drift | ±5.0% | R | $\sqrt{3}$ | 1 | 1 | ±2.9% | ±2.9% | ∞ |
| **Phantom and Setup** | | | | | | | | |
| Phantom Uncertainty | ±4.0% | R | $\sqrt{3}$ | 1 | 1 | ±2.3% | ±2.3% | ∞ |
| Liquid Conductivity (target) | ±5.0% | R | $\sqrt{3}$ | 0.64 | 0.43 | ±1.8% | ±1.2% | ∞ |
| Liquid Conductivity (meas.) | ±2.5% | N | 1 | 0.64 | 0.43 | ±1.6% | ±1.1% | ∞ |
| Liquid Permittivity (target) | ±5.0% | R | $\sqrt{3}$ | 0.6 | 0.49 | ±1.7% | ±1.4% | ∞ |
| Liquid Permittivity (meas.) | ±2.5% | N | 1 | 0.6 | 0.49 | ±1.5% | ±1.2% | ∞ |
| **Combined Std. Uncertainty** | | | | | | ±11.0% | ±10.8% | 387 |
| **Expanded STD Uncertainty** | | | | | | ±22.0% | ±21.5% | |

# 8. Conducted Power Measurement

| Mode | Frequency (MHz) | Avg. Burst Power (dBm) | Duty Cycle Factor (dB) | Frame Power (dBm) | Max. Power (dBm) | Scaling Factor |
|---|---|---|---|---|---|---|
| GSM850 | 824.2 | 30.09 | -9 | 21.09 | 30.5 | 1.10 |
| | 836.4 | 30.40 | -9 | 21.40 | 30.5 | 1.02 |
| | 848.8 | 30.50 | -9 | 21.50 | 30.5 | 1.00 |
| GPRS850(1 Slot) | 824.2 | 30.07 | -9 | 21.07 | 30.5 | 1.10 |
| | 836.4 | 30.37 | -9 | 21.37 | 30.5 | 1.03 |
| | 848.8 | 30.12 | -9 | 21.12 | 30.5 | 1.09 |
| GPRS850(2 Slot) | 824.2 | 27.07 | -6 | 21.07 | 27.4 | 1.08 |
| | 836.4 | 27.11 | -6 | 21.11 | 27.4 | 1.07 |
| | 848.8 | 27.40 | -6 | 21.40 | 27.4 | 1.00 |
| GPRS850(3 Slot) | 824.2 | 25.60 | -4.25 | 21.35 | 25.6 | 1.00 |
| | 836.4 | 25.39 | -4.25 | 21.14 | 25.6 | 1.05 |
| | 848.8 | 25.45 | -4.25 | 21.20 | 25.6 | 1.04 |
| GPRS850(4 Slot) | 824.2 | 24.30 | -3 | 21.30 | 24.3 | 1.00 |
| | 836.4 | 24.12 | -3 | 21.12 | 24.3 | 1.04 |
| | 848.8 | 24.07 | -3 | 21.07 | 24.3 | 1.05 |
| EDGE850(1 Slot) | 824.2 | 26.69 | -9 | 17.69 | 26.7 | 1.00 |
| | 836.4 | 26.48 | -9 | 17.48 | 26.7 | 1.05 |
| | 848.8 | 26.32 | -9 | 17.32 | 26.7 | 1.09 |
| EDGE850(2 Slot) | 824.2 | 25.39 | -6 | 19.39 | 25.4 | 1.00 |
| | 836.4 | 25.21 | -6 | 19.21 | 25.4 | 1.04 |
| | 848.8 | 25.06 | -6 | 19.06 | 25.4 | 1.08 |
| EDGE 850(3 Slot) | 824.2 | 23.10 | -4.25 | 18.85 | 23.1 | 1.00 |
| | 836.4 | 22.88 | -4.25 | 18.63 | 23.1 | 1.05 |
| | 848.8 | 22.71 | -4.25 | 18.46 | 23.1 | 1.09 |
| EDGE 850(4 Slot) | 824.2 | 21.97 | -3 | 18.97 | 22.0 | 1.01 |
| | 836.4 | 21.69 | -3 | 18.69 | 22.0 | 1.07 |
| | 848.8 | 21.56 | -3 | 18.56 | 22.0 | 1.11 |
| PCS1900 | 1850.2 | 27.09 | -9 | 18.09 | 27.2 | 1.03 |
| | 1880.0 | 27.20 | -9 | 18.20 | 27.2 | 1.00 |
| | 1909.8 | 27.14 | -9 | 18.14 | 27.2 | 1.01 |
| GPRS1900(1 Slot) | 1850.2 | 27.07 | -9 | 18.07 | 27.2 | 1.03 |
| | 1880.0 | 27.17 | -9 | 18.17 | 27.2 | 1.01 |
| | 1909.8 | 27.12 | -9 | 18.12 | 27.2 | 1.02 |

| | | | | | | |
|---|---|---|---|---|---|---|
| GPRS1900(2 Slot) | 1850.2 | 24.07 | -6 | 18.07 | 24.4 | 1.08 |
| | 1880.0 | 24.11 | -6 | 18.11 | 24.4 | 1.07 |
| | 1909.8 | 24.40 | -6 | 18.40 | 24.4 | 1.00 |
| GPRS1900(3 Slot) | 1850.2 | 22.60 | -4.25 | 18.35 | 22.6 | 1.00 |
| | 1880.0 | 22.39 | -4.25 | 18.14 | 22.6 | 1.05 |
| | 1909.8 | 22.45 | -4.25 | 18.20 | 22.6 | 1.04 |
| GPRS1900(4 Slot) | 1850.2 | 21.40 | -3 | 18.40 | 21.4 | 1.00 |
| | 1880.0 | 21.30 | -3 | 18.30 | 21.4 | 1.02 |
| | 1909.8 | 21.22 | -3 | 18.22 | 21.4 | 1.04 |
| EDGE 1900(1 Slot) | 1850.2 | 26.46 | -9 | 17.46 | 26.5 | 1.01 |
| | 1880.0 | 25.51 | -9 | 16.51 | 26.5 | 1.26 |
| | 1909.8 | 25.40 | -9 | 16.40 | 26.5 | 1.29 |
| EDGE 1900(2 Slot) | 1850.2 | 23.90 | -6 | 17.93 | 23.9 | 1.00 |
| | 1880.0 | 23.86 | -6 | 17.86 | 23.9 | 1.01 |
| | 1909.8 | 23.72 | -6 | 17.72 | 23.9 | 1.04 |
| EDGE 1900(3 Slot) | 1850.2 | 21.80 | -4.25 | 17.55 | 21.8 | 1.00 |
| | 1880.0 | 21.67 | -4.25 | 17.42 | 21.8 | 1.03 |
| | 1909.8 | 21.56 | -4.25 | 17.31 | 21.8 | 1.06 |
| EDGE 1900(4 Slot) | 1850.2 | 20.70 | -3 | 17.70 | 20.7 | 1.00 |
| | 1880.0 | 20.61 | -3 | 17.61 | 20.7 | 1.02 |
| | 1909.8 | 20.41 | -3 | 17.41 | 20.7 | 1.07 |

Note 1: Scaling Factor = Max. Power(mW) / Avg. Burst Power(mW)

2: This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v05.

3: Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged powers were calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.

4: GPRS/EDGE(GMSK) output powers were measured with coding scheme setting of 1 (CS1) on the base station simulator. CS1 was configured to measure GPRS output power measurements and SAR to ensure GMSK modulation in the signal. Our Investigation has shown that CS1 - CS4 settings do not have any impact on the output levels or modulation in the GPRS modes.

5: EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8PSK modulation do not have an impact on output power.

**WCDMA/HSDPA**

| Mode | 3GPP Subtest | Band V (850MHz) Channel | | | MPR |
|---|---|---|---|---|---|
| | | Conducted Power (dBm) | | | |
| | | 4132 | 4182 | 4233 | |
| **WCDMA R99** | **1** | **22.31** | **22.30** | **22.40** | **N/A** |
| **Rel5 HSDPA** | **1** | 22.04 | 22.01 | 22.10 | **0** |
| | **2** | **22.06** | **22.09** | **22.10** | **0** |
| | **3** | 21.48 | 21.49 | 21.52 | **0.5** |
| | **4** | 21.45 | 21.47 | 21.50 | **0.5** |

Note: UMTS SAR was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v02. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.

| Mode | Band V (850MHz) Channel | Normal Power (dBm) | Max. Power (dBm) | Scaling Factor |
|---|---|---|---|---|
| WCDMA R99 | 4132 | 22.31 | 22.4 | 1.02 |
| | 4182 | 22.30 | 22.4 | 1.02 |
| | 4233 | 22.40 | 22.4 | 1.00 |
| Rel5 HSDPA | 4132 | 22.06 | 22.4 | 1.08 |
| | 4182 | 22.09 | 22.4 | 1.07 |
| | 4233 | 22.10 | 22.4 | 1.07 |

**Wi-Fi output power**

| Test Mode | Channel No. | Frequency (MHz) | Average Power (dBm) | Max. Power (dBm) | Scaling Factor |
|---|---|---|---|---|---|
| 802.11b | 01 | 2412 | 12.88 | 13.1 | 1.05 |
| | 06 | 2437 | 13.09 | 13.1 | 1.00 |
| | 11 | 2462 | 13.05 | 13.1 | 1.01 |
| 802.11g | 01 | 2412 | 11.60 | 11.8 | 1.05 |
| | 06 | 2437 | 11.73 | 11.8 | 1.02 |
| | 11 | 2462 | 11.39 | 11.8 | 1.10 |
| 802.11n (20MHz) | 01 | 2412 | 11.36 | 11.5 | 1.03 |
| | 06 | 2437 | 11.45 | 11.5 | 1.01 |
| | 11 | 2462 | 11.24 | 11.5 | 1.06 |
| 802.11n (40MHz) | 03 | 2422 | 9.45 | 9.7 | 1.06 |
| | 06 | 2437 | 9.61 | 9.7 | 1.02 |
| | 09 | 2452 | 9.37 | 9.7 | 1.08 |

# 9. Test Results

## 9.1. SAR Test Results Summary

| SAR MEASUREMENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ambient Temperature (°C) : 21.5 ±2 | | | | Relative Humidity (%): 52 | | | | | |
| Liquid Temperature (°C) : 21.0 ±2 | | | | Depth of Liquid (cm):>15 | | | | | |
| Product: Tablet | | | | | | | | | |
| Test Mode: GSM850 | | | | | | | | | |
| Test Position Body at 0mm | Antenna Position | Frequency | | Frame Power (dBm) | Power Drift (<±0.2) | SAR 1g (W/kg) | Scaling Factor | Scaled SAR 1g (W/kg) | Limit (W/kg) |
| | | Channel | MHz | | | | | | |
| Bottom | Fixed | 128 | 824.2 | 21.09 | -0.04 | 0.936 | 1.10 | 1.030 | 1.6 |
| Bottom | Fixed | 189 | 836.4 | 21.40 | -0.05 | 1.07 | 1.02 | 1.091 | 1.6 |
| Bottom | Fixed | 251 | 848.6 | 21.50 | -0.05 | 1.22 | 1.00 | **1.220** | 1.6 |
| Bottom* | Fixed | 251 | 848.6 | 21.50 | -0.02 | 1.06 | 1.00 | 1.060 | 1.6 |
| Secondary portrait | Fixed | 189 | 836.4 | 21.40 | 0.14 | 0.867 | 1.02 | 0.884 | 1.6 |
| Test Mode: GPRS850-2Slot | | | | | | | | | |
| Bottom | Fixed | 189 | 836.4 | 21.11 | 0.08 | 0.681 | 1.07 | 0.729 | 1.6 |
| Test Mode: GPRS850-3Slot | | | | | | | | | |
| Bottom | Fixed | 189 | 836.4 | 21.14 | -0.02 | 1.07 | 1.05 | 1.124 | 1.6 |
| Test Mode: GPRS850-4Slot | | | | | | | | | |
| Bottom | Fixed | 189 | 836.4 | 21.12 | 0.01 | 0.999 | 1.04 | 1.039 | 1.6 |
| Note 1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 941225.<br>2: * - repeated at the highest SAR measurement according to the FCC KDB 865664. | | | | | | | | | |

| SAR MEASUREMENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ambient Temperature (°C) : 21.5 ±2 | | | | Relative Humidity (%): 52 | | | | | |
| Liquid Temperature (°C) : 21.0 ±2 | | | | Depth of Liquid (cm):>15 | | | | | |
| Product: Tablet | | | | | | | | | |
| Test Mode: PCS 1900 | | | | | | | | | |
| Test Position Body at 0mm | Antenna Position | Frequency | | Frame Power (dBm) | Power Drift (<±0.2) | SAR 1g (W/kg) | Scaling Factor | Scaled SAR 1g (W/kg) | Limit (W/kg) |
| | | Channel | MHz | | | | | | |
| Bottom | Fixed | 512 | 1850.2 | 18.09 | -- | -- | 1.03 | | 1.6 |
| Bottom | Fixed | 661 | 1880.0 | 18.20 | -0.11 | 1.14 | 1.00 | 1.140 | 1.6 |
| Bottom | Fixed | 810 | 1909.8 | 18.14 | -- | -- | 1.01 | | 1.6 |
| Secondary portrait | Fixed | 661 | 1880.0 | 18.20 | 0.09 | 0.655 | 1.00 | 0.655 | 1.6 |
| Test Mode: GPRS1900-2Slot | | | | | | | | | |
| Bottom | Fixed | 661 | 1880.0 | 18.11 | -0.10 | 0.529 | 1.07 | 0.567 | 1.6 |
| Test Mode: GPRS1900-3Slot | | | | | | | | | |
| Bottom | Fixed | 661 | 1880.0 | 18.14 | -0.13 | 0.741 | 1.05 | 0.778 | 1.6 |
| Test Mode: GPRS1900-4Slot | | | | | | | | | |
| Bottom | Fixed | 512 | 1850.2 | 18.40 | -0.10 | 1.11 | 1.00 | 1.110 | 1.6 |
| Bottom | Fixed | 661 | 1880.0 | 18.30 | -0.09 | 1.19 | 1.02 | **1.214** | 1.6 |
| Bottom* | Fixed | 661 | 1880.0 | 18.30 | -0.12 | 1.17 | 1.02 | 1.193 | 1.6 |
| Bottom | Fixed | 810 | 1909.8 | 18.22 | -0.11 | 1.14 | 1.04 | 1.186 | 1.6 |
| Note 1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 941225.<br>2: * - repeated at the highest SAR measurement according to the FCC KDB 865664. | | | | | | | | | |

| SAR MEASUREMENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ambient Temperature (°C) : 21.5 ±2 | | | | Relative Humidity (%): 52 | | | | | |
| Liquid Temperature (°C) : 21.0 ±2 | | | | Depth of Liquid (cm):>15 | | | | | |
| Product: Tablet | | | | | | | | | |
| Test Mode: WCDMA Band V | | | | | | | | | |
| Test Position Body at 0mm | Antenna Position | Frequency | | Frame Power (dBm) | Power Drift (<±0.2) | SAR 1g (W/kg) | Scaling Factor | Scaled SAR 1g (W/kg) | Limit (W/kg) |
| | | Channel | MHz | | | | | | |
| Bottom | Fixed | 4132 | 826.4 | 22.31 | 0.05 | 0.819 | 1.02 | 0.835 | 1.6 |
| Bottom | Fixed | 4182 | 836.4 | 22.30 | 0.06 | 1.25 | 1.02 | **1.275** | 1.6 |
| Bottom* | Fixed | 4182 | 836.4 | 22.30 | -0.12 | 1.18 | 1.02 | 1.204 | 1.6 |
| Bottom | Fixed | 4233 | 846.6 | 22.40 | 0.10 | 1.00 | 1.00 | 1.000 | 1.6 |
| Secondary portrait | Fixed | 4182 | 836.4 | 22.30 | 0.06 | 1.09 | 1.02 | 1.112 | 1.6 |
| Test Mode: HSDPA Band V | | | | | | | | | |
| Bottom | Fixed | 4182 | 836.4 | 22.09 | -0.15 | 1.05 | 1.07 | 1.124 | 1.6 |
| Note 1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 941225.<br>2: * - repeated at the highest SAR measurement according to the FCC KDB 865664.<br>3: HSDPA mode was evaluated since the UMTS SAR was higher than 1.2W/kg. | | | | | | | | | |

| SAR MEASUREMENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ambient Temperature (°C) : 21.5 ±2 | | | | Relative Humidity (%): 52 | | | | | |
| Liquid Temperature (°C) : 21.0 ±2 | | | | Depth of Liquid (cm):>15 | | | | | |
| Product: Tablet | | | | | | | | | |
| Test Mode: 802.11b | | | | | | | | | |
| Test Position Body at 0mm | Antenna Position | Frequency | | Frame Power (dBm) | Power Drift (<±0.2) | SAR 1g (W/kg) | Scaling Factor | Scaled SAR 1g (W/kg) | Limit (W/kg) |
| | | Channel | MHz | | | | | | |
| Bottom | Fixed | 1 | 2412 | 12.88 | -- | -- | 1.05 | -- | 1.6 |
| Bottom | Fixed | 6 | 2437 | 13.09 | 0.05 | 0.218 | 1.00 | **0.218** | 1.6 |
| Bottom | Fixed | 11 | 2462 | 13.05 | -- | -- | 1.01 | -- | 1.6 |
| Primary landscape | Fixed | 6 | 2437 | 13.09 | 0.07 | 0.122 | 1.00 | 0.122 | 1.6 |
| Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 941225. | | | | | | | | | |

## 9.2. SAR Test Notes

### General Notes:

1. Batteries are fully charged at the beginning of the SAR measurements.
2. Liquid tissue depth was at least 15.0 cm for all frequencies.
3. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units
4. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05.
5. Per FCC KDB 616217 D04 Section 4.3, SAR tests are required for the back surface and edges of the tablet with the tablet touching the phantom. The SAR Exclusion Threshold in FCC KDB 447498 D01v05 was applied to determine SAR test exclusion for adjacent edge configurations. SAR tests were required for bottom and secondary portrait for the GSM/WCDMA antenna and bottom and primary landscape for the BT/WLAN Antenna.

### GSM Test Notes:

1. Justification for reduced test configurations per KDB Publication 941225 D03v01: The source based time-averaged output power was evaluated for all multi-slot operations. The multi-slot configuration with the highest frame averaged output power was evaluated for SAR.
2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

### UMTS Notes:

1. UMTS mode in Body SAR was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v02. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.
2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

### WLAN/BT Notes:

1. Justification for reduced test configurations for WIFI channels per KDB Publication 248227 D01v01r02 and April 2010 FCC/TCB Meeting Notes for 2.4 GHz WIFI: Highest average RF output power channel for the lowest data rate was selected for SAR evaluation in 802.11b. Other IEEE 802.11 modes (including 802.11g/n) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11b mode.

2. WIFI transmission was verified using an uncalibrated spectrum analyzer.
3. When the maximum extrapolated peak SAR of the zoom scan for the maximum output channel is <1.6 W/kg and the reported 1g averaged SAR is <0.8 W/kg, SAR testing on other default channels is not required.

## 9.3. Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously; therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D01v05, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6 W/kg. When standalone SAR is not required to be measured per FCC KDB 447498 D01v05, the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter when the test separation distance is less than 50mm; otherwise 0.4 W/kg should be used for 1g SAR.

$$\text{Estimated SAR} = \frac{\sqrt{f(GHz)}}{7.5} * \frac{(\text{Max Power of channel, mW})}{\text{Min. Separation Distance, mm}}$$

**Estimated SAR for Bluetooth**

| Mode | Frequency | Maximum Allowed Power | Separation Distance (Body) | Estimated SAR (Body) |
|---|---|---|---|---|
| | [MHz] | [dBm] | [mm] | [W/kg] |
| Bluetooth | 2441 | 4.0 | 3 | 0.174 |

### 9.3.1. Simultaneous Transmission Analysis

Simultaneous Transmission Scenario with WIFI (Body at 0mm)

| Simult Tx | Configuration | GSM850 SAR (W/kg) | WIFI SAR (W/kg) | ∑ SAR (W/kg) |
|---|---|---|---|---|
| Body | Bottom | 1.22 | 0.218 | 1.438 |
| | Primary landscape | 0.4 | 0.122 | 0.522 |
| | Secondary landscape | 0.4 | 0.4 | 0.8 |
| | Primary portrait | 0.4 | 0.4 | 0.8 |
| | Secondary portrait | 0.884 | 0.4 | 1.284 |
| Simult Tx | Configuration | PCS1900 SAR (W/kg) | WIFI SAR (W/kg) | ∑ SAR (W/kg) |
| Body | Bottom | 1.214 | 0.218 | 1.432 |
| | Primary landscape | 0.4 | 0.122 | 0.522 |

| | | | | |
|---|---|---|---|---|
| | Secondary landscape | 0.4 | 0.4 | 0.8 |
| | Primary portrait | 0.4 | 0.4 | 0.8 |
| | Secondary portrait | 0.655 | 0.4 | 1.055 |
| Simult Tx | Configuration | UMTS850 SAR (W/kg) | WIFI SAR (W/kg) | ∑ SAR (W/kg) |
| Body | Bottom | 1.275 | 0.218 | 1.493 |
| | Primary landscape | 0.4 | 0.122 | 0.522 |
| | Secondary landscape | 0.4 | 0.4 | 0.8 |
| | Primary portrait | 0.4 | 0.4 | 0.8 |
| | Secondary portrait | 1.112 | 0.4 | 1.512 |

Note: For configurations excluded per 447498 D01v05, an estimated SAR of 0.4 W/kg was used to determine simultaneous transmission SAR exclusion since the test separation distance was >50 mm.

Simultaneous Transmission Scenario with Bluetooth (Body at 0mm)

| Simult Tx | Configuration | GSM850 SAR (W/kg) | Bluetooth SAR (W/kg) | ∑ SAR (W/kg) |
|---|---|---|---|---|
| Body | Bottom | 1.22 | 0.174 | 1.394 |
| | Primary landscape | 0.4 | 0.174 | 0.574 |
| | Secondary landscape | 0.4 | 0.4 | 0.8 |
| | Primary portrait | 0.4 | 0.4 | 0.8 |
| | Secondary portrait | 0.884 | 0.4 | 1.284 |
| Simult Tx | Configuration | PCS1900 SAR (W/kg) | Bluetooth SAR (W/kg) | ∑ SAR (W/kg) |
| Body | Bottom | 1.214 | 0.174 | 1.388 |
| | Primary landscape | 0.4 | 0.174 | 0.574 |
| | Secondary landscape | 0.4 | 0.4 | 0.8 |
| | Primary portrait | 0.4 | 0.4 | 0.8 |
| | Secondary portrait | 0.655 | 0.4 | 1.055 |
| Simult Tx | Configuration | UMTS850 SAR (W/kg) | Bluetooth SAR (W/kg) | ∑ SAR (W/kg) |
| Body | Bottom | 1.275 | 0.174 | 1.449 |
| | Primary landscape | 0.4 | 0.174 | 0.574 |
| | Secondary landscape | 0.4 | 0.4 | 0.8 |
| | Primary portrait | 0.4 | 0.4 | 0.8 |
| | Secondary portrait | 1.112 | 0.4 | 1.512 |

Note 1: For configurations excluded per 447498 D01v05, an estimated SAR of 0.4 W/kg was used to determine simultaneous transmission SAR exclusion since the test separation distance was >50 mm.

Note 2: Bluetooth SAR was not required to be measured per FCC KDB 447498. Estimated SAR results

were used in the above table to determine simultaneous transmission SAR test exclusion.

### 9.3.2. Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v05.

# Appendix A. SAR System Validation Data

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

System Check Body 835MHz

**DUT: Dipole 835 MHz D835V2; Type: D835V2**

Communication System: CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1;

Frequency: 835 MHz; Medium parameters used: f = 835 MHz; $\sigma$ = 0.99 mho/m; $\varepsilon r$ = 53.27; $\rho$ = 1000 kg/m$^3$ ;

Phantom section: Flat Section ; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

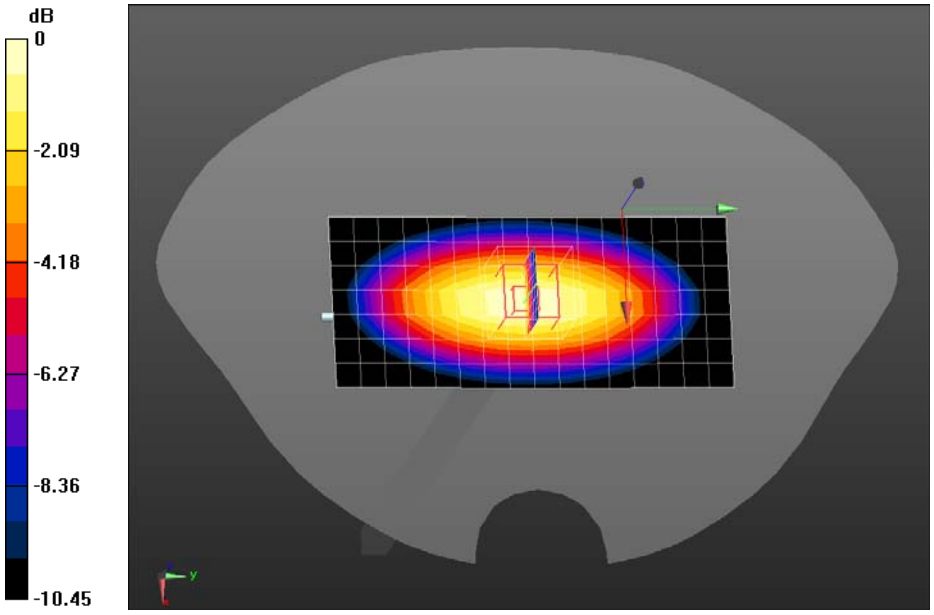
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

**Configuration/System Check Body 835MHz/Area Scan (8x17x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.56 mW/g

**Configuration/System Check Body 835MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 52.573 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.855 mW/g

**SAR(1 g) = 2.55 mW/g; SAR(10 g) = 1.66 mW/g** Maximum value of SAR (measured) = 2.76 mW/g




0 dB = 2.76 mW/g = 8.82 dB mW/g

**Date/Time: 28-01-2013**

Test Laboratory: QuieTek Lab

System Check Body 835MHz

**DUT: Dipole 835 MHz D835V2; Type: D835V2**

Communication System: CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1;

Frequency: 835 MHz; Medium parameters used: f = 835 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 53.93; $\rho$ = 1000 kg/m³ ;

Phantom section: Flat Section ; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

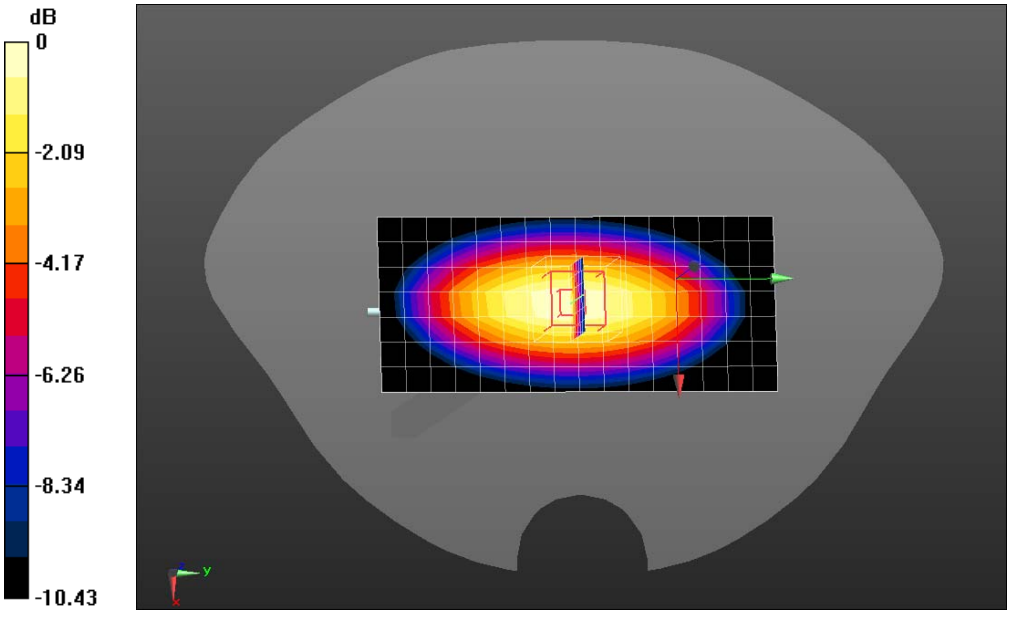
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 21/06/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

**Configuration/System Check Body 835MHz/Area Scan (8x17x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.48 mW/g

**Configuration/System Check Body 835MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 52.556 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.736 mW/g

**SAR(1 g) = 2.47 mW/g; SAR(10 g) = 1.61 mW/g** Maximum value of SAR (measured) = 2.67 mW/g




0 dB = 2.67 mW/g = 8.53 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

System Check Body 1900MHz

**DUT: Dipole 1900 MHz D1900V2; Type: D1900V2**

Communication System: CW; Communication System Band: D1900(1900MHz); Duty Cycle: 1:1; Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; $\sigma$ = 1.56 mho/m; $\varepsilon r$ = 51.82; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section ; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

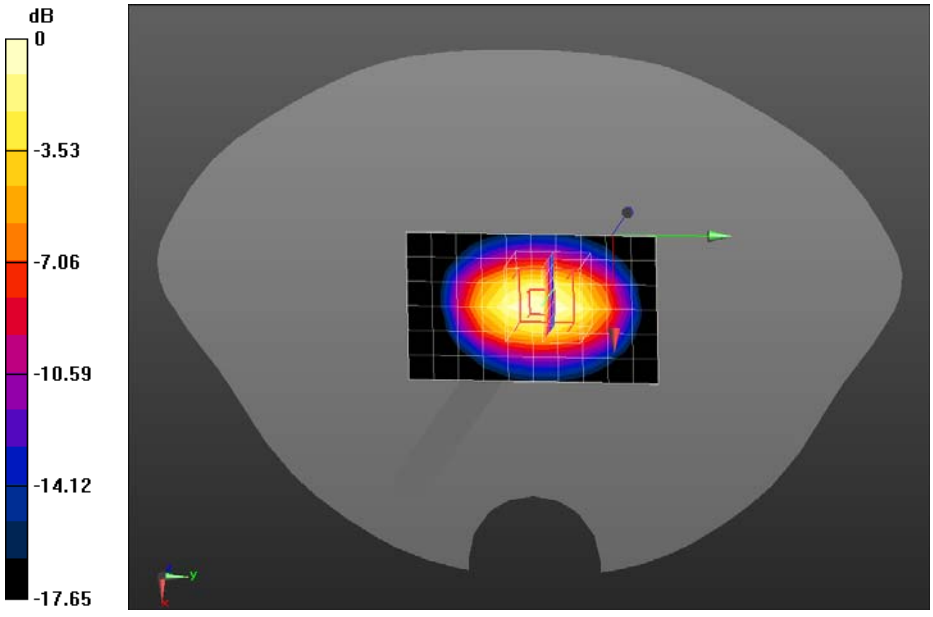
- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

**Configuration/System Check Body 1900MHz/Area Scan (7x11x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 11.7 mW/g

**Configuration/System Check Body 1900MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 86.595 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 19.435 mW/g

**SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.43 mW/g** Maximum value of SAR (measured) = 11.9 mW/g




0 dB = 11.9 mW/g = 21.51 dB mW/g

**Date/Time: 28-01-2013**

Test Laboratory: QuieTek Lab

System Check Body 1900MHz

**DUT: Dipole 1900 MHz D1900V2; Type: D1900V2**

Communication System: CW; Communication System Band: D1900(1900MHz); Duty Cycle: 1:1; Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 54.21; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section ; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

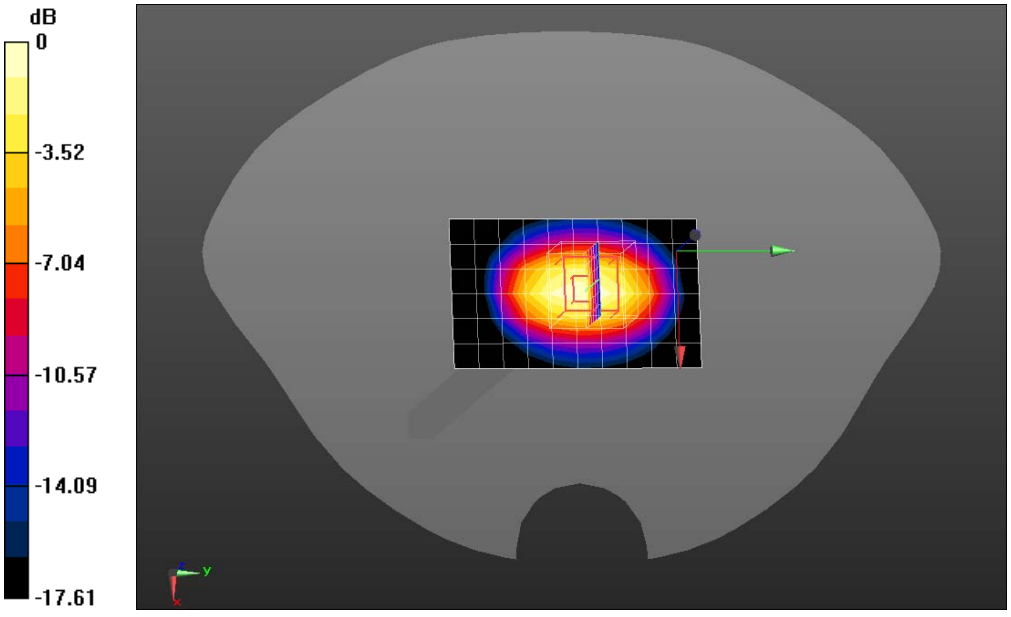
- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 21/06/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

**Configuration/System Check Body 1900MHz/Area Scan (7x11x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 11.4 mW/g

**Configuration/System Check Body 1900MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 86.570 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 19.049 mW/g

**SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.33 mW/g** Maximum value of SAR (measured) = 11.6 mW/g




0 dB = 11.6 mW/g = 21.29 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

System Check Body 2450MHz

**DUT: Dipole 2450 MHz D2450V2; Type: D2450V2**

Communication System: CW; Communication System Band: D2450(2450MHz); Duty Cycle: 1:1; Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; $\sigma$ = 1.98 mho/m; $\varepsilon r$ = 52.2; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section ; Input Power=250mW

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

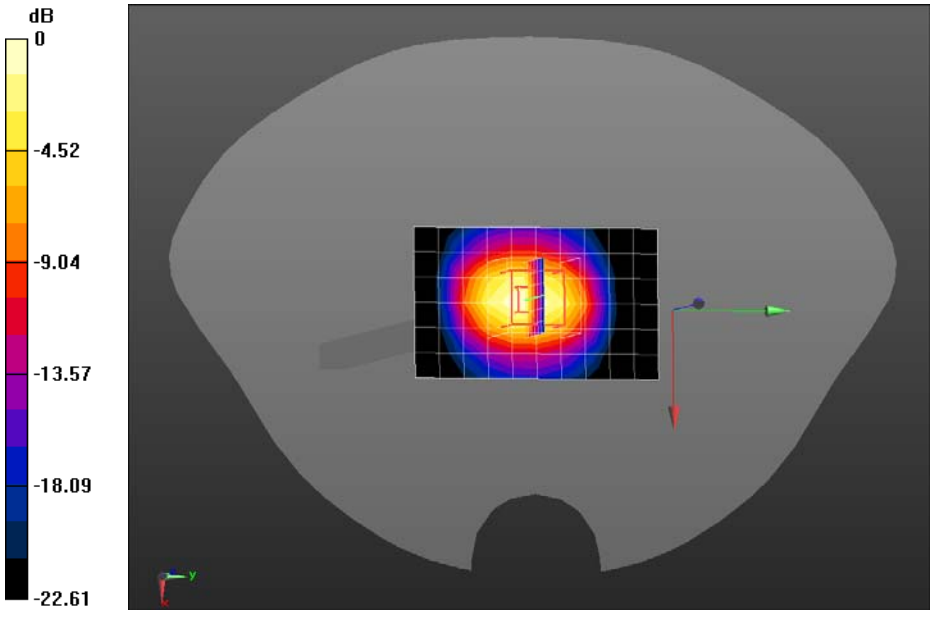
- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

**Configuration/System Check Body 2450MHz/Area Scan (7x11x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 13.2 mW/g

**Configuration/System Check Body 2450MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 81.523 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 25.756 mW/g

**SAR(1 g) = 12.2 mW/g; SAR(10 g) = 5.54 mW/g** Maximum value of SAR (measured) = 14.0 mW/g




0 dB = 14.0 mW/g = 22.92 dB mW/g

# Appendix B. SAR measurement Data

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GSM850 Low Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3; Frequency: 824.2 MHz; Medium parameters used: f = 824.2 MHz; σ = 0.97 mho/m; εr = 53.47; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

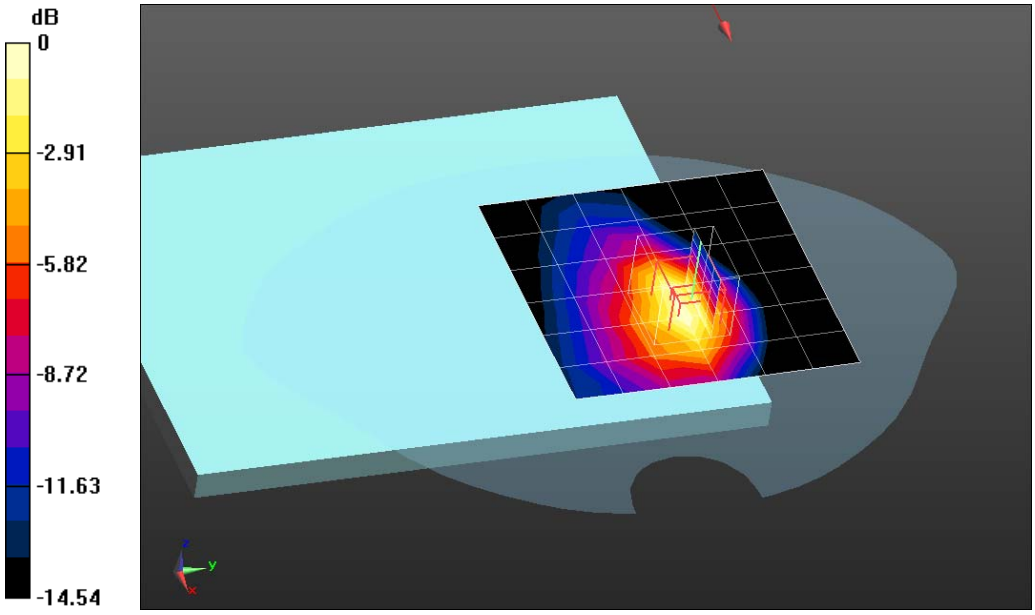
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GSM850 Low Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 0.994 mW/g

**Configuration/GSM850 Low Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 15.359 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.8810

**SAR(1 g) = 0.936 mW/g; SAR(10 g) = 0.495 mW/g** Maximum value of SAR (measured) = 0.983 mW/g




0 dB = 0.980mW/g = -0.18 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GSM850 Mid Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.99 mho/m; εr = 53.24; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

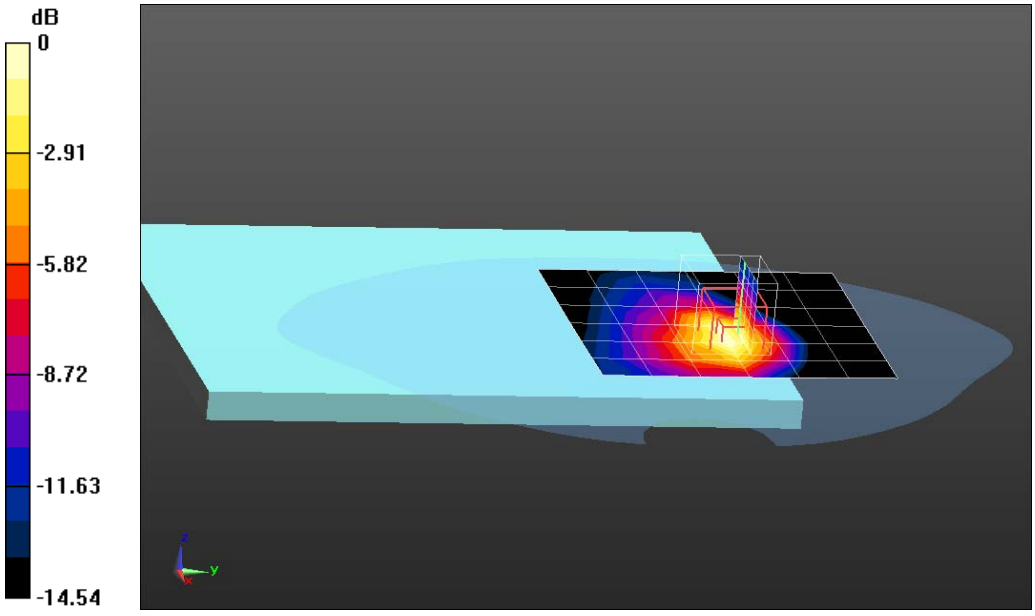
**Configuration/GSM850 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 1.144 mW/g

**Configuration/GSM850 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.090 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 2.1590

**SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.565 mW/g** Maximum value of SAR (measured) = 1.111 mW/g




0 dB = 1.110mW/g = 0.91 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GSM850 High Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3;

Frequency: 848.8 MHz; Medium parameters used: f = 848.8 MHz; $\sigma$ = 1 mho/m; $\varepsilon r$ = 53.08; $\rho$ = 1000 kg/m³ ;

Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GSM850 High Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm

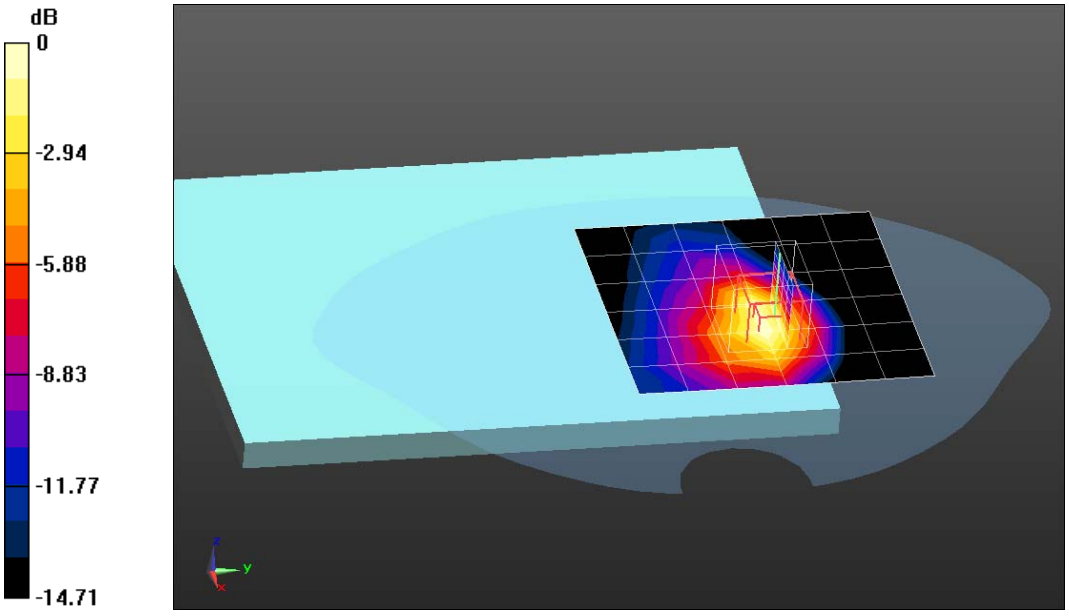
Maximum value of SAR (measured) = 1.332 mW/g

**Configuration/GSM850 High Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.048 V/m; Power Drift = -0.05 dB

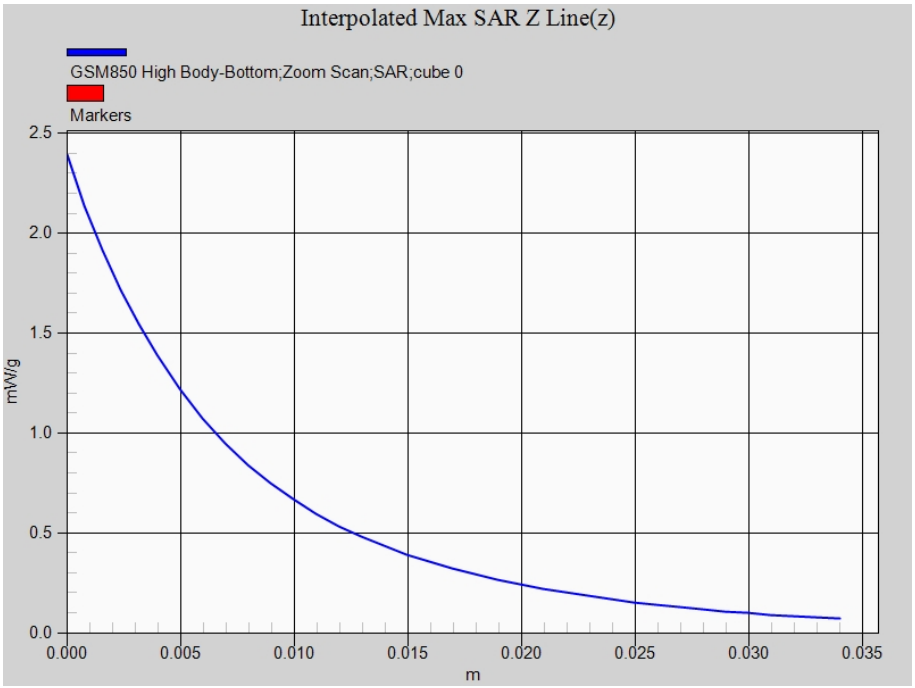
Peak SAR (extrapolated) = 2.3960

**SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.654 mW/g** Maximum value of SAR (measured) = 1.297 mW/g




0 dB = 1.300mW/g = 2.28 dB mW/g

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
GSM850 High Body-Bottom;Zoom Scan;SAR;cube 0
Markers
mW/g
2.5
2.0
1.5
1.0
0.5
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

**Date/Time: 28-01-2013**

Test Laboratory: QuieTek Lab

GSM850 High Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Duty Cycle: 1:8.3; Frequency: 848.8 MHz; Medium parameters used: f = 848.8 MHz; $\sigma$ = 0.97 mho/m; $\varepsilon r$ = 53.79; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

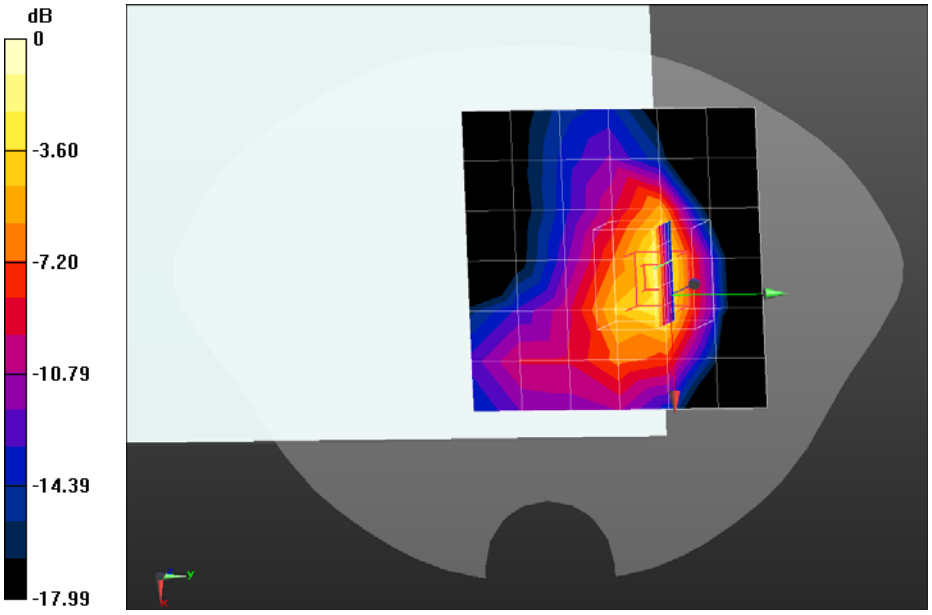
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 21/06/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.5 (6469)

**Configuration/GSM850 High Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 0.900 mW/g

**Configuration/GSM850 High Body-Bottom/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.575 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 2.466 mW/g

**SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.510 mW/g** Maximum value of SAR (measured) = 1.26 mW/g




0 dB = 1.26 mW/g = 2.01 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GSM850 Mid Body-Secondary Portrait

**DUT: Tablet; Type: QS9719D**

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.99 mho/m; $\varepsilon r$ = 53.24; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

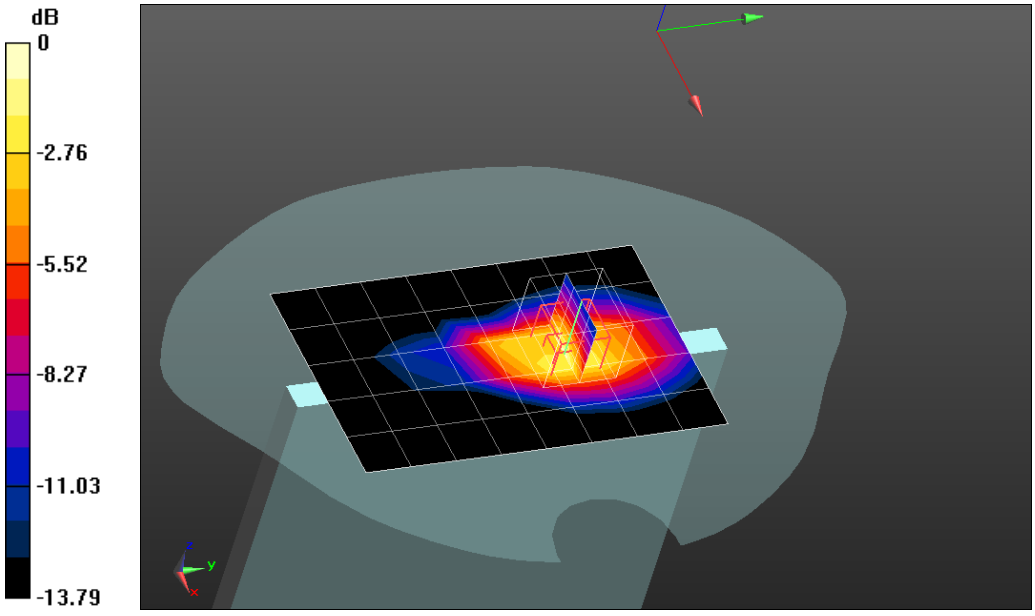
**Configuration/GSM850 Mid Body-Secondary Portrait/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.564 mW/g

**Configuration/GSM850 Mid Body-Secondary Portrait/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 30.891 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.6010

**SAR(1 g) = 0.867 mW/g; SAR(10 g) = 0.496 mW/g** Maximum value of SAR (measured) = 0.958 mW/g




0 dB = 0.960mW/g = -0.35 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Bottom(2up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-2 Slot; Communication System Band: GSM850; Duty Cycle: 1:4.2 ; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.99 mho/m; εr = 53.24; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

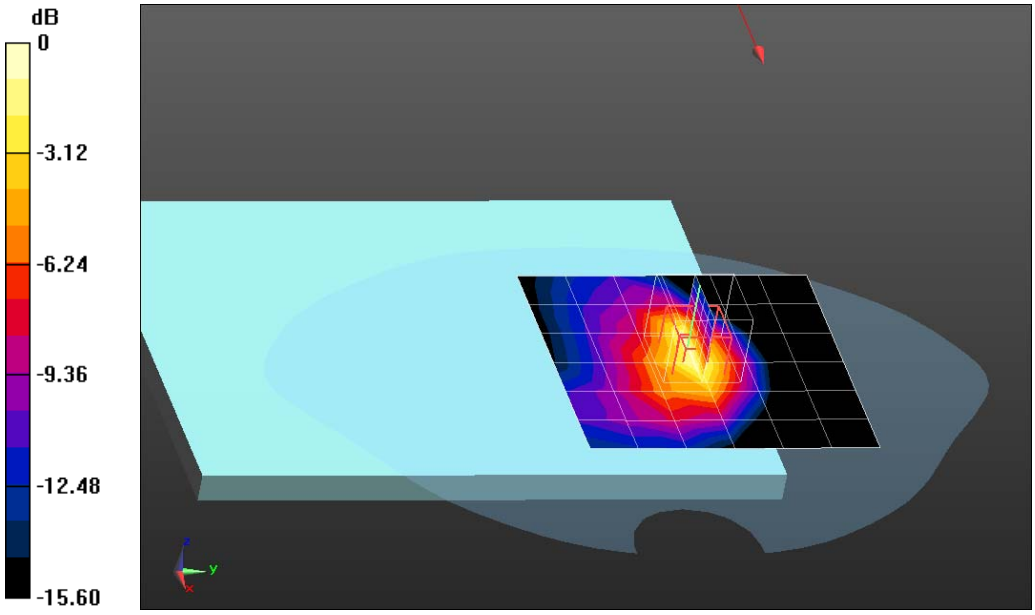
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GPRS850 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 0.722 mW/g

**Configuration/GPRS850 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 13.767 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.4050

**SAR(1 g) = 0.681 mW/g; SAR(10 g) = 0.351 mW/g** Maximum value of SAR (measured) = 0.786 mW/g




0 dB = 0.790mW/g = -2.05 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Bottom(3up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-3 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.8 ; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.99 mho/m; $\varepsilon r$ = 53.24; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

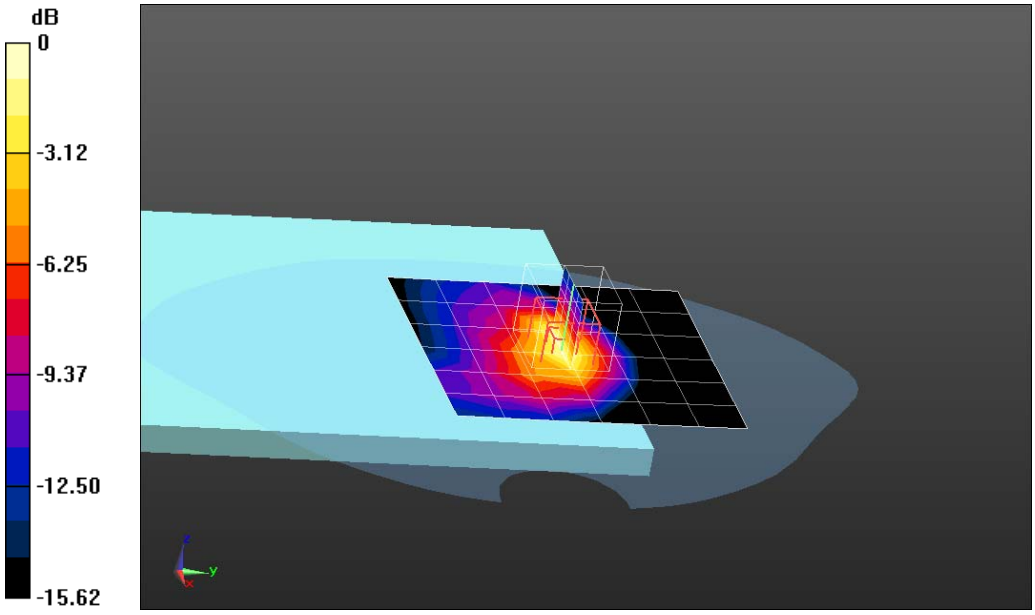
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GPRS850 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 1.142 mW/g

**Configuration/GPRS850 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 16.615 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 2.1680

**SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.551 mW/g** Maximum value of SAR (measured) = 1.235 mW/g




0 dB = 1.240mW/g = 1.87 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS850 Mid Body-Bottom(4up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1 ; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.99 mho/m; $\varepsilon r$ = 53.24; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

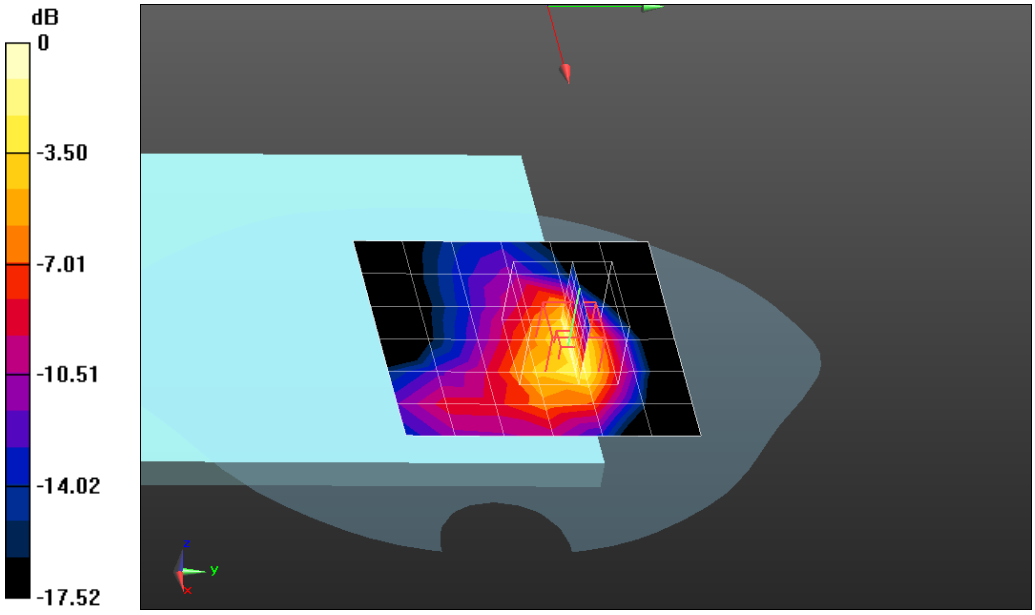
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/GPRS850 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 0.882 mW/g

**Configuration/GPRS850 Mid Body-Bottom/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 11.303 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 2.2180

**SAR(1 g) = 0.999 mW/g; SAR(10 g) = 0.494 mW/g** Maximum value of SAR (measured) = 1.186 mW/g




0 dB = 1.190mW/g = 1.51 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

PCS1900 Mid Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: Generic GSM; Communication System Band: PCS1900; Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; εr = 51.87; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

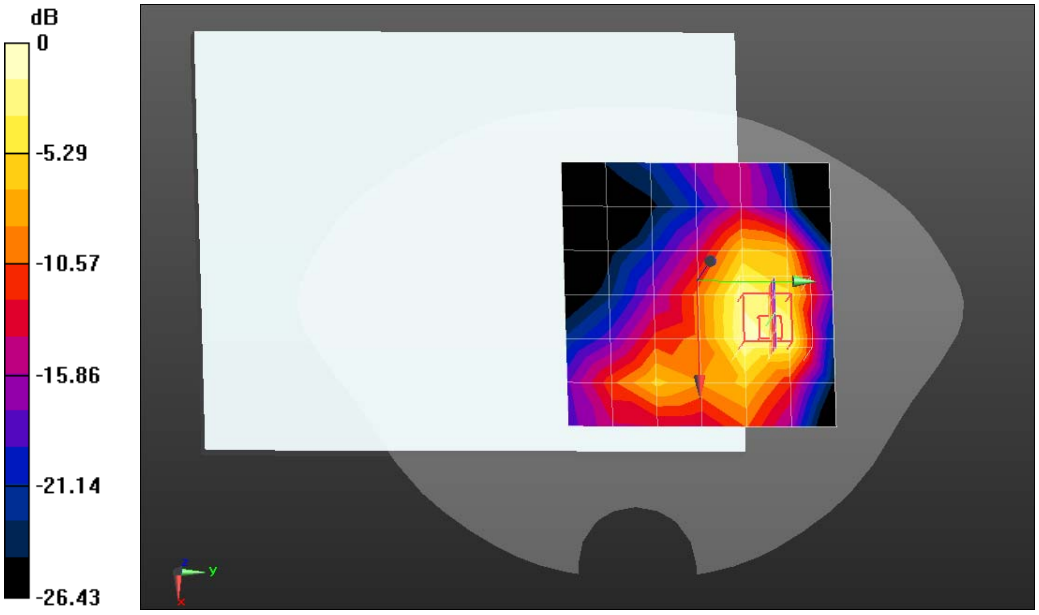
- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

**Configuration/PCS1900 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 0.875 mW/g

**Configuration/PCS1900 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.142 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 2.809 mW/g

**SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.526 mW/g** Maximum value of SAR (measured) = 1.19 mW/g




0 dB = 1.19 mW/g = 1.51 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

PCS1900 Mid Body-Secondary Portrait

**DUT: Tablet; Type: QS9719D**

Communication System: Generic GSM; Communication System Band: PCS1900; Duty Cycle: 1:8.3; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 51.87; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

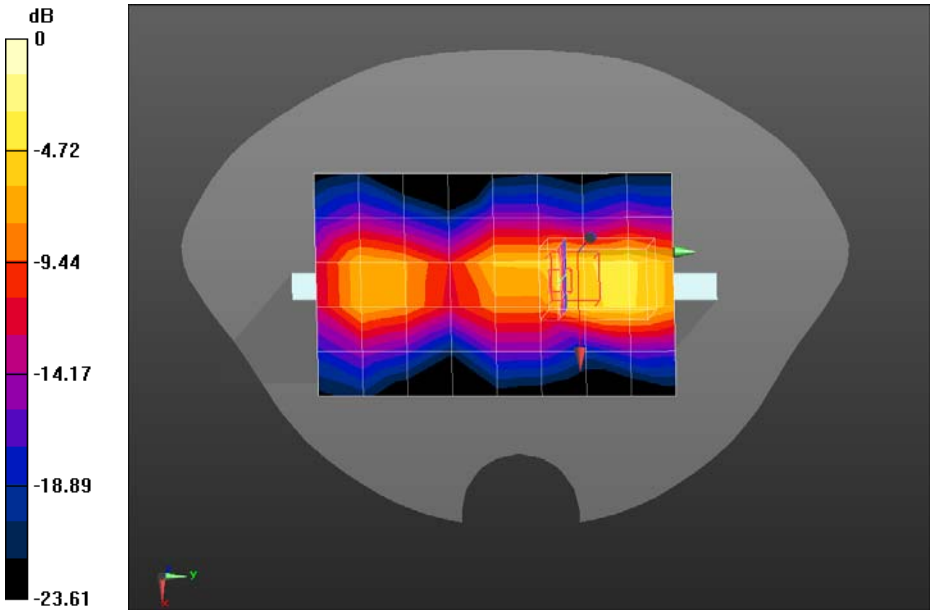
**Configuration/PCS1900 Mid Body-Secondary Portrait/Area Scan (6x9x1):** Measurement grid: dx=20mm, dy=20mm

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

**Configuration/PCS1900 Mid Body-Secondary Portrait/Zoom Scan (5x7x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 15.210 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.504 mW/g

**SAR(1 g) = 0.655 mW/g; SAR(10 g) = 0.285 mW/g** Maximum value of SAR (measured) = 0.837 mW/g




0 dB = 0.837 mW/g = -1.55 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Bottom(2up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-2 Slot; Communication System Band: PCS1900; Duty Cycle: 1:4.2 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; εr = 51.87; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

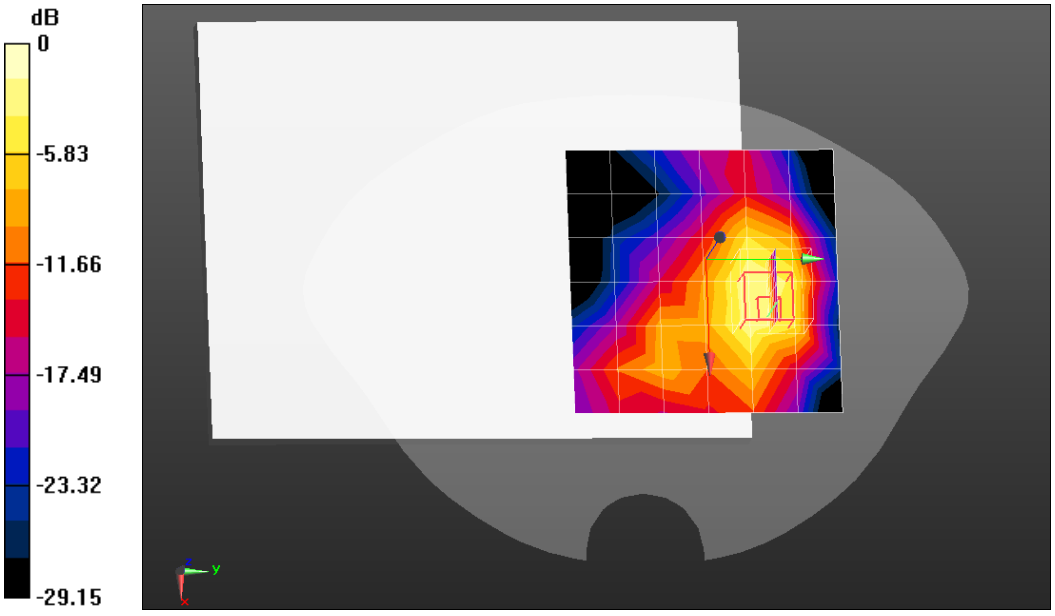
**Configuration/GPRS1900 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.396 mW/g

**Configuration/GPRS1900 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.503 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.294 mW/g

**SAR(1 g) = 0.529 mW/g; SAR(10 g) = 0.246 mW/g** Maximum value of SAR (measured) = 0.612 mW/g




0 dB = 0.612 mW/g = -4.26 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Bottom(3up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-3 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.8 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; εr = 51.87; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

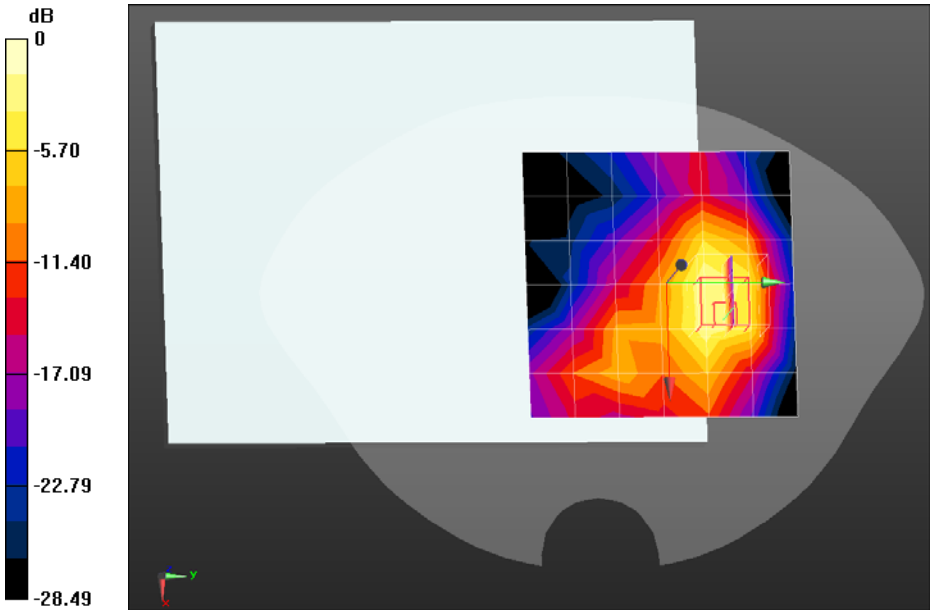
**Configuration/GPRS1900 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.557 mW/g

**Configuration/GPRS1900 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.367 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.789 mW/g

**SAR(1 g) = 0.741 mW/g; SAR(10 g) = 0.346 mW/g** Maximum value of SAR (measured) = 0.856 mW/g




0 dB = 0.856 mW/g = -1.35 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS1900 Low Body-Bottom(4up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1 ; Frequency: 1850.2 MHz; Medium parameters used: f = 1850.2 MHz; $\sigma$ = 1.51 mho/m; $\varepsilon r$ = 52; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

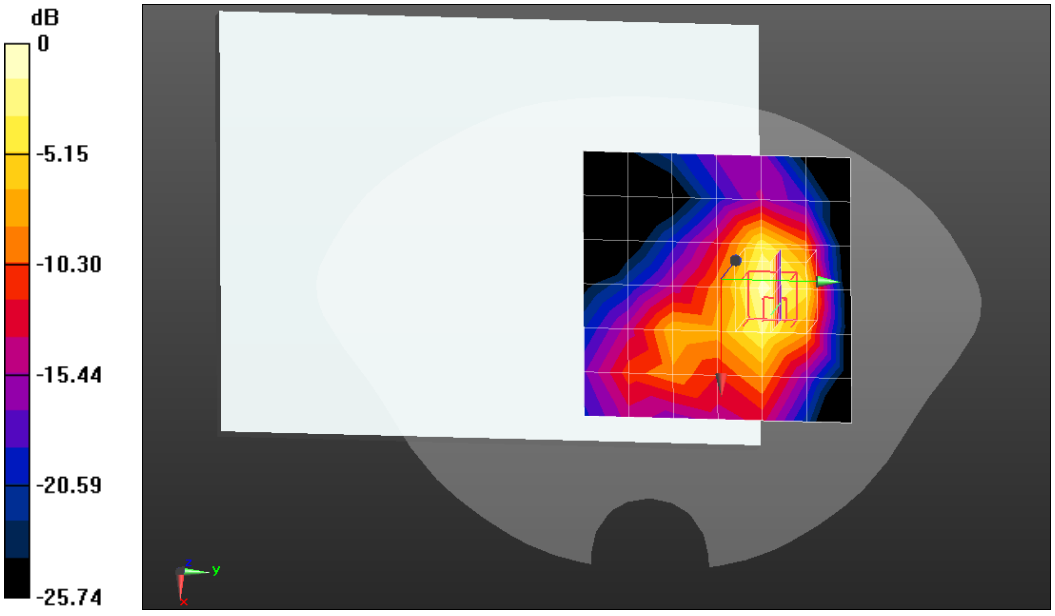
**Configuration/GPRS1900 Low Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm

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

**Configuration/GPRS1900 Low Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.245 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 2.763 mW/g

**SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.513 mW/g** Maximum value of SAR (measured) = 1.26 mW/g




0 dB = 1.26 mW/g = 2.01 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Bottom(4up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1 ; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; εr = 51.87; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

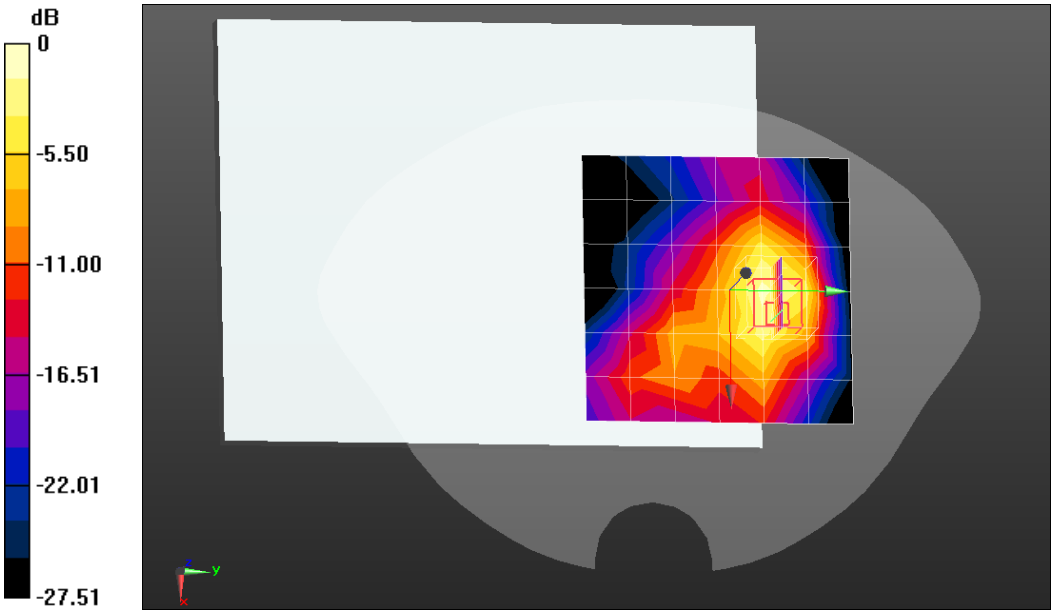
**Configuration/GPRS1900 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm

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

**Configuration/GPRS1900 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.507 V/m; Power Drift = -0.09 dB

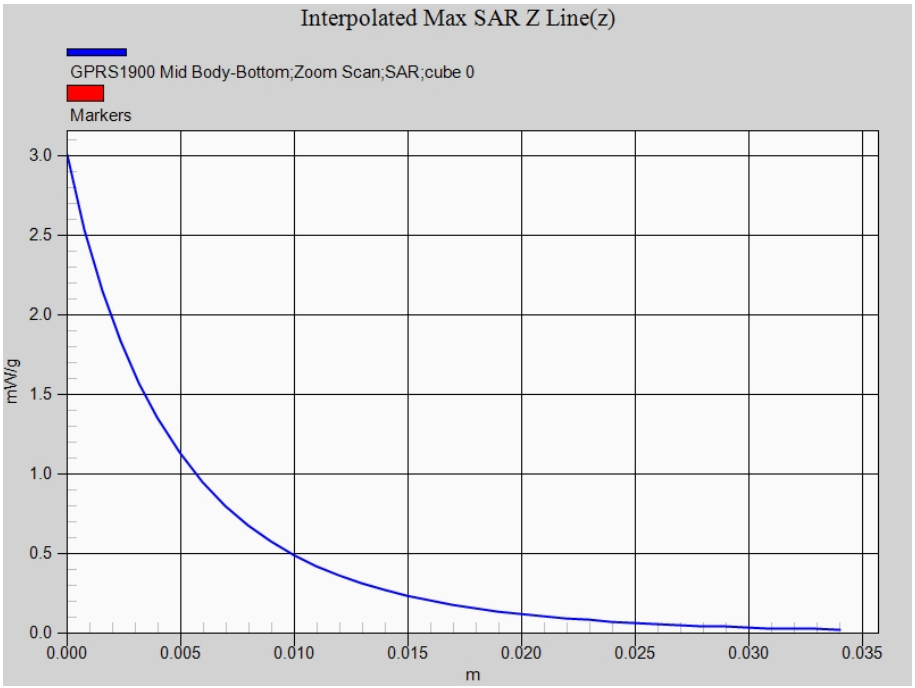
Peak SAR (extrapolated) = 3.008 mW/g

**SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.548 mW/g** Maximum value of SAR (measured) = 1.33 mW/g




0 dB = 1.33 mW/g = 2.48 dB mW/g

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
GPRS1900 Mid Body-Bottom;Zoom Scan;SAR;cube 0
Markers
mW/g
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

**Date/Time: 28-01-2013**

Test Laboratory: QuieTek Lab

GPRS1900 Mid Body-Bottom(4up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1; Frequency: 1880 MHz; Medium parameters used: f = 1880 MHz; $\sigma$ = 1.51 mho/m; $\varepsilon r$ = 54.3; $\rho$ = 1000 kg/m$^3$ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

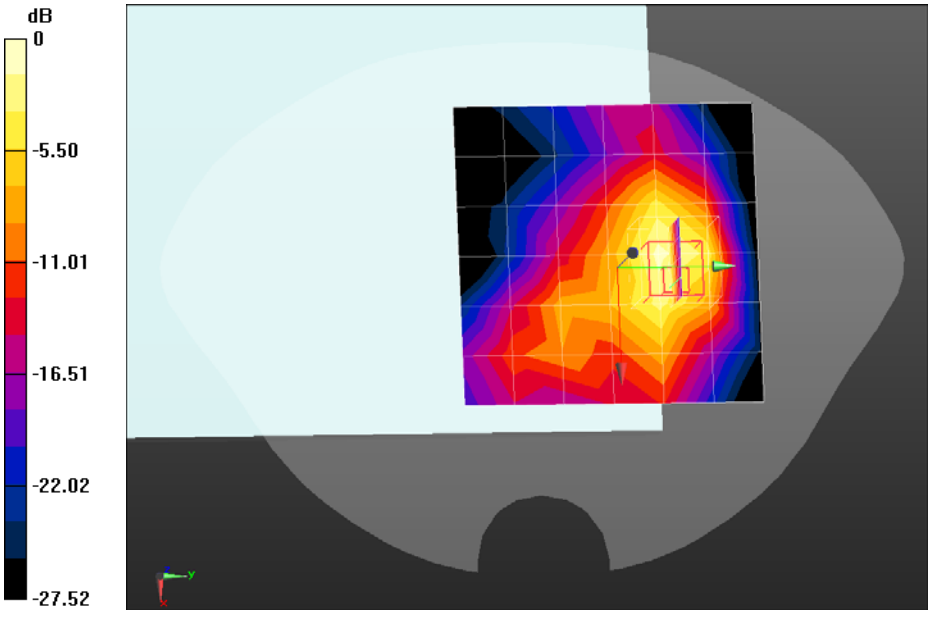
- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 21/06/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.5 (6469)

**Configuration/GPRS1900 Mid Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm, Maximum value of SAR (measured) = 1.01 mW/g

**Configuration/GPRS1900 Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 9.415 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 2.954 mW/g

**SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.538 mW/g** Maximum value of SAR (measured) = 1.31 mW/g




0 dB = 1.31 mW/g = 2.35 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

GPRS1900 High Body-Bottom(4up)

**DUT: Tablet; Type: QS9719D**

Communication System: GPRS/EGPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1 ; Frequency: 1909.8 MHz; Medium parameters used: f = 1909.8 MHz; $\sigma$ = 1.57 mho/m; $\varepsilon r$ = 51.8; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(7.43, 7.43, 7.43); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

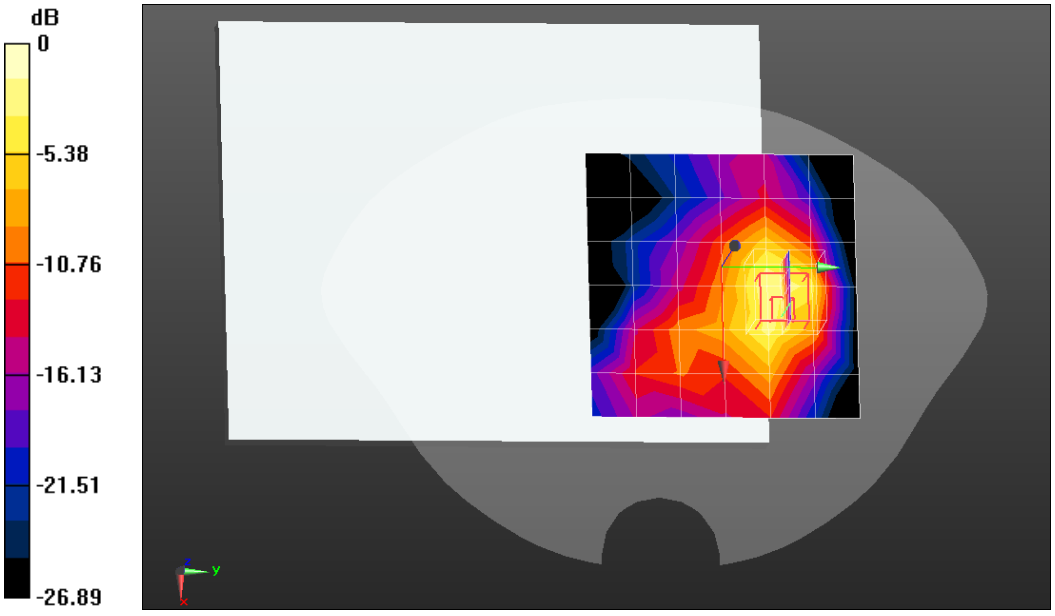
**Configuration/GPRS1900 High Body-Bottom/Area Scan (7x7x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.899 mW/g

**Configuration/GPRS1900 High Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 8.786 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 2.824 mW/g

**SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.519 mW/g** Maximum value of SAR (measured) = 1.33 mW/g




0 dB = 1.33 mW/g = 2.48 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

WCDMA Band V Low Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1; Frequency: 826.4 MHz; Medium parameters used: f = 826.4 MHz; $\sigma$ = 0.97 mho/m; $\varepsilon r$ = 53.38; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

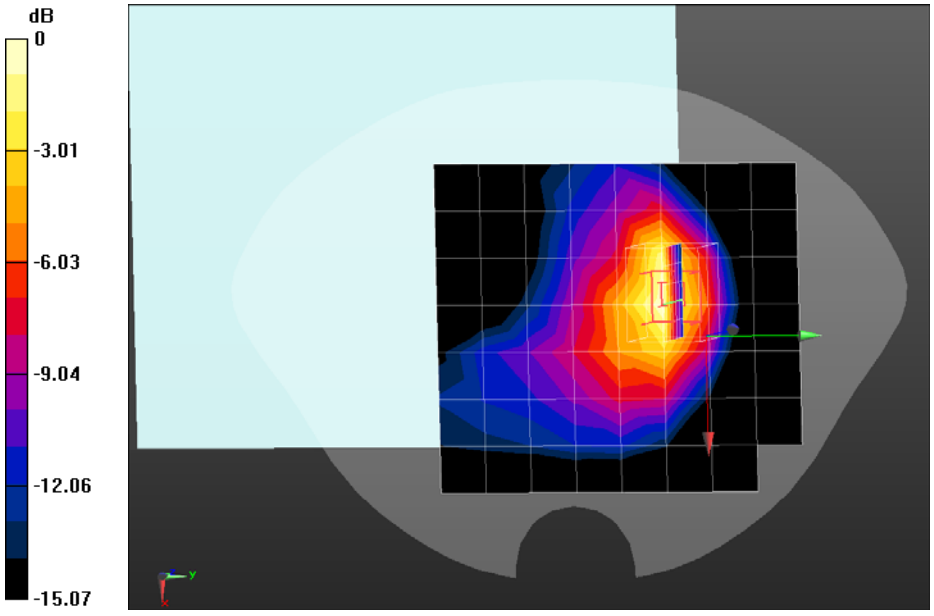
**Configuration/WCDMA Band V Low Body-Bottom/Area Scan (8x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.877 mW/g

**Configuration/WCDMA Band V Low Body-Bottom/Zoom Scan (6x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 11.255 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.549 mW/g

**SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.450 mW/g** Maximum value of SAR (measured) = 0.884 mW/g




0 dB = 0.884 mW/g = -1.07 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.99 mho/m; $\varepsilon r$ = 53.24; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

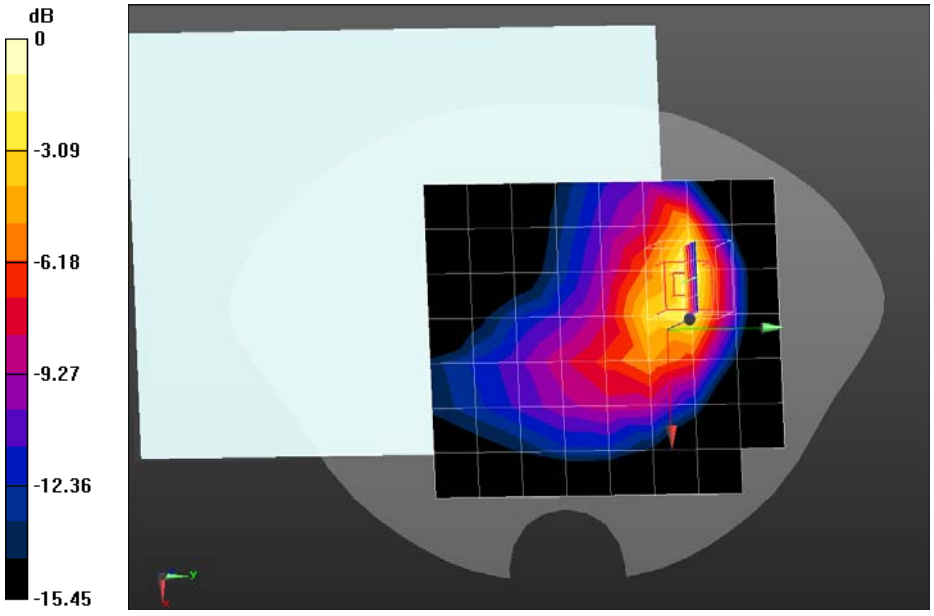
**Configuration/WCDMA Band V Mid Body-Bottom/Area Scan (8x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 1.21 mW/g

**Configuration/WCDMA Band V Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 13.196 V/m; Power Drift = 0.06 dB

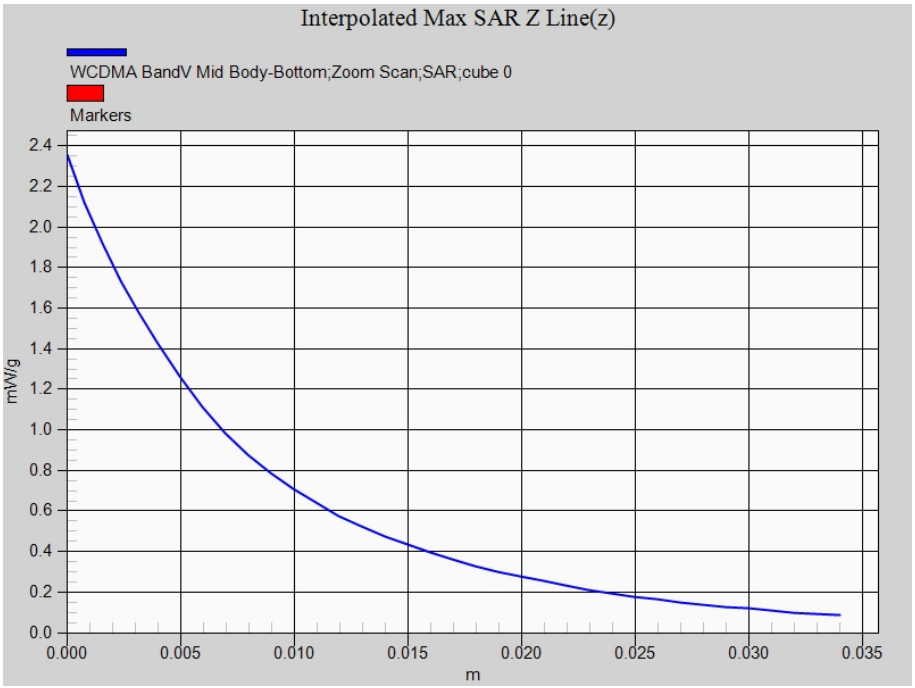
Peak SAR (extrapolated) = 2.359 mW/g

**SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.683 mW/g** Maximum value of SAR (measured) = 1.43 mW/g




0 dB = 1.43 mW/g = 3.11 dB mW/g

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
WCDMA BandV Mid Body-Bottom;Zoom Scan;SAR;cube 0
Markers
mW/g
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

**Date/Time: 28-01-2013**

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.98 mho/m; $\varepsilon r$ = 53.64; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

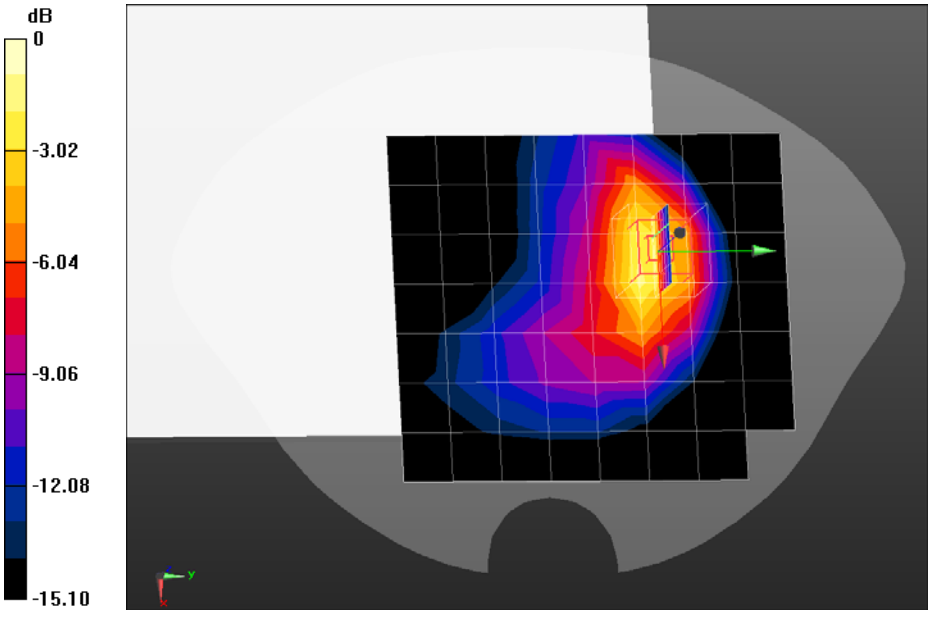
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 21/06/2012
- Phantom: SAM1; Type: SAM; Serial: TP1561
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.5 (6469)

**Configuration/WCDMA Band V Mid Body-Bottom/Area Scan (8x9x1):** Measurement grid: dx=20mm, dy=20mm, Maximum value of SAR (measured) = 0.917 mW/g

**Configuration/WCDMA Band V Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.537 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 2.347 mW/g

**SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.618 mW/g** Maximum value of SAR (measured) = 1.33 mW/g




0 dB = 1.33 mW/g = 2.48 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

WCDMA Band V High Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1;

Frequency: 846.6 MHz; Medium parameters used: f = 846.6 MHz; $\sigma$ = 1 mho/m; $\varepsilon r$ = 53.1; $\rho$ = 1000 kg/m$^3$ ;

Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 23/01/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (1); SEMCAD X Version 14.6.5 (6469)

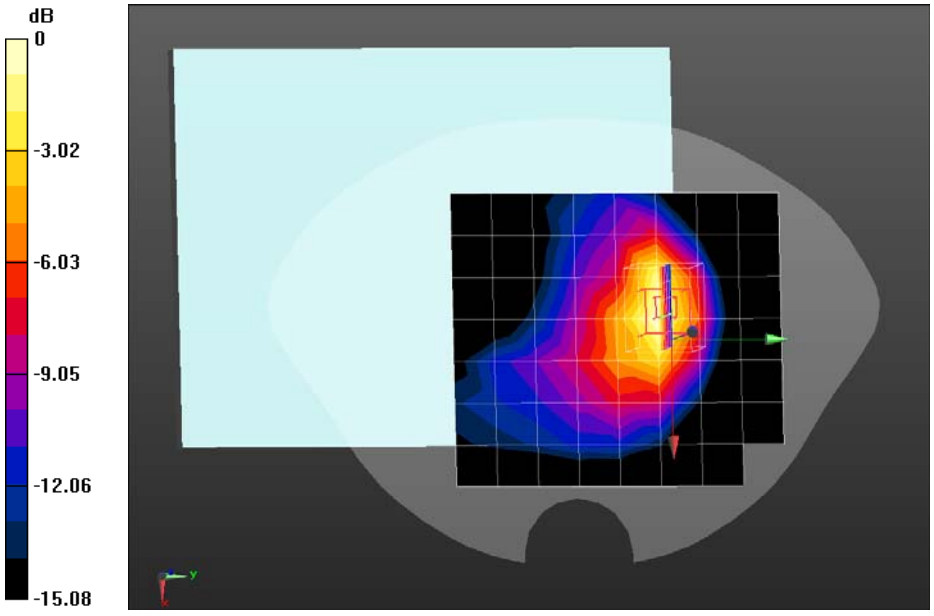
**Configuration/WCDMA Band V High Body-Bottom/Area Scan (8x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 1.07 mW/g

**Configuration/WCDMA Band V High Body-Bottom/Zoom Scan (6x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 12.445 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.907 mW/g

**SAR(1 g) = 1 mW/g; SAR(10 g) = 0.546 mW/g** Maximum value of SAR (measured) = 1.08 mW/g




0 dB = 1.08 mW/g = 0.67 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

WCDMA Band V Mid Body-Secondary Portrait

**DUT: Tablet; Type: QS9719D**

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; σ = 0.99 mho/m; εr = 53.24; ρ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/WCDMA Band V Mid Body-Secondary Portrait/Area Scan (6x7x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.864 mW/g

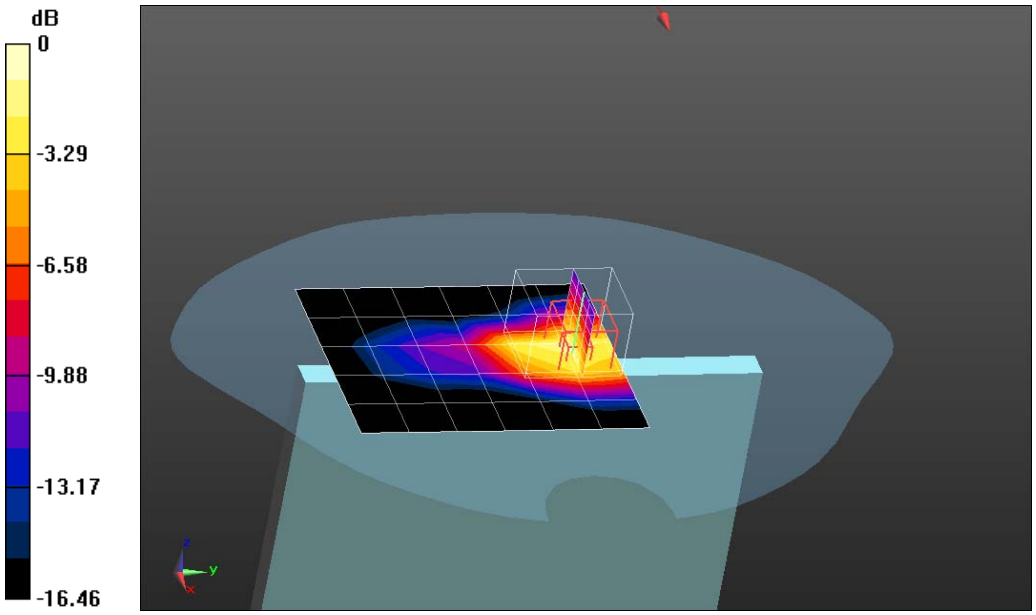
**Configuration/WCDMA Band V Mid Body-Secondary Portrait/Zoom Scan (5x6x7)/Cube 0:**

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 38.261 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.4310

**SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.624 mW/g** Maximum value of SAR (measured) = 1.229 mW/g




0 dB = 1.230mW/g = 1.80 dB mW/g

**Date/Time: 28-01-2013**

Test Laboratory: QuieTek Lab

HSDPA Band V Mid Body-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: UMTS; Communication System Band: Band V UTRA/FDD; Duty Cycle: 1:1; Frequency: 836.4 MHz; Medium parameters used: f = 836.4 MHz; $\sigma$ = 0.98 mho/m; $\varepsilon r$ = 53.64; $\rho$ = 1000 kg/m³ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

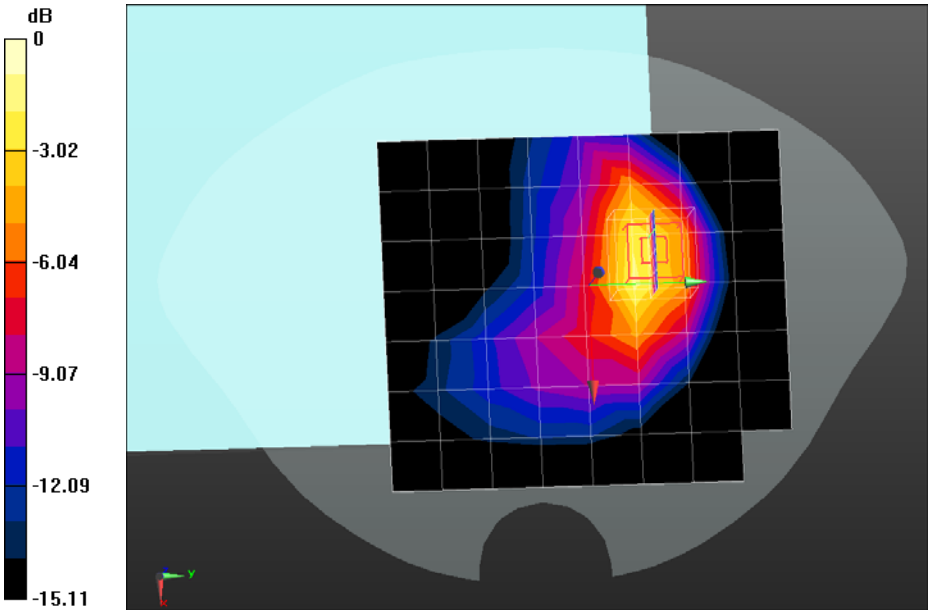
- Probe: EX3DV4 - SN3710; ConvF(9.13, 9.13, 9.13); Calibrated: 12/03/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 21/06/2012
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.5 (6469)

**Configuration/HSDPA Band V Mid Body-Bottom/Area Scan (8x9x1):** Measurement grid: dx=20mm, dy=20mm, Maximum value of SAR (measured) = 0.819 mW/g

**Configuration/HSDPA Band V Mid Body-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 11.847 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 2.096 mW/g

**SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.551 mW/g** Maximum value of SAR (measured) = 1.19 mW/g




0 dB = 1.19 mW/g = 1.51 dB mW/g

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

802.11b 2437MHz-Bottom

**DUT: Tablet; Type: QS9719D**

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2437 MHz; Medium parameters used: f = 2437 MHz; $\sigma$ = 1.96 mho/m; $\varepsilon r$ = 52.24; $\rho$ = 1000 kg/m$^3$ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

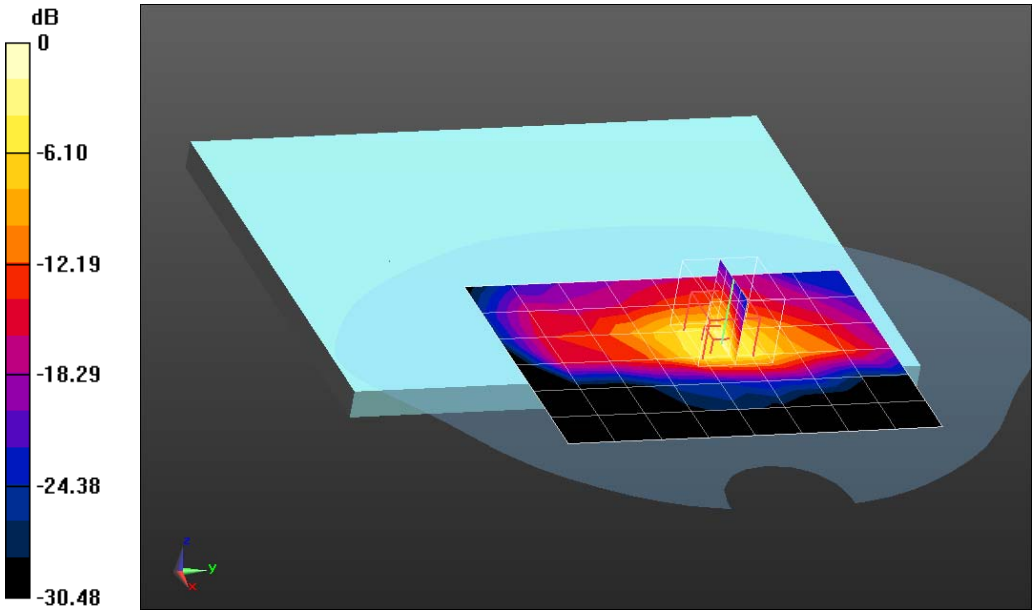
**Configuration/802.11b 2437MHz-Bottom/Area Scan (7x9x1):** Measurement grid: dx=20mm, dy=20mm Maximum value of SAR (measured) = 0.096 mW/g

**Configuration/802.11b 2437MHz-Bottom/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.722 V/m; Power Drift = 0.05 dB

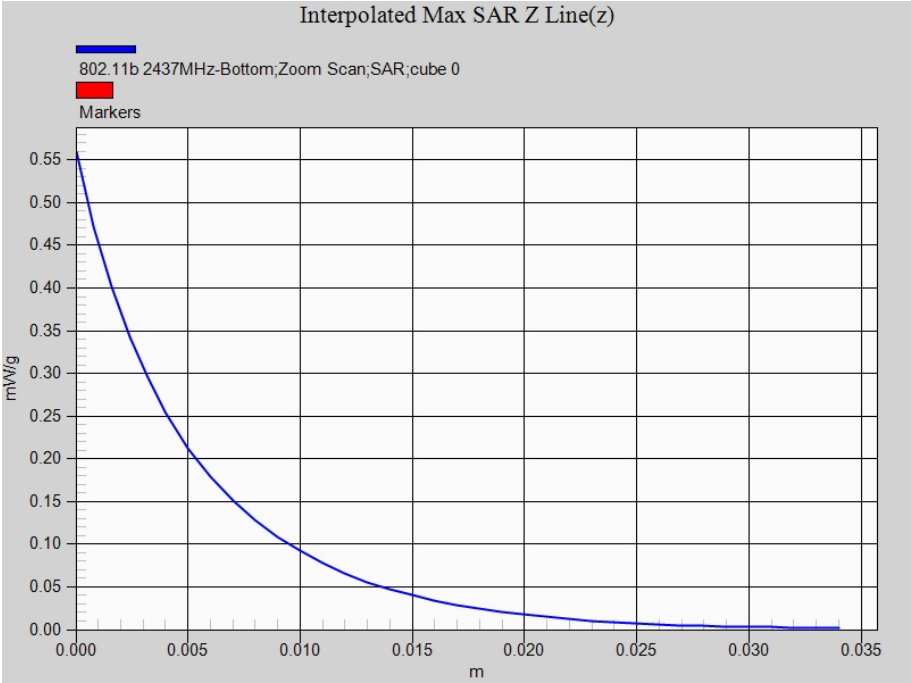
Peak SAR (extrapolated) = 0.5600

**SAR(1 g) = 0.218 mW/g; SAR(10 g) = 0.087 mW/g** Maximum value of SAR (measured) = 0.265 mW/g




0 dB = 0.270mW/g = -11.37 dB mW/g

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
802.11b 2437MHz-Bottom;Zoom Scan;SAR;cube 0
Markers
mW/g
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

**Date/Time: 19-09-2012**

Test Laboratory: QuieTek Lab

802.11b 2437MHz-Primary landscape

**DUT: Tablet; Type: QS9719D**

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Frequency: 2437 MHz; Medium parameters used: f = 2437 MHz; $\sigma$ = 1.96 mho/m; $\varepsilon r$ = 52.24; $\rho$ = 1000 kg/m$^3$ ; Phantom section: Flat Section

Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.0

DASY5 Configuration:

- Probe: EX3DV4 - SN3710; ConvF(6.98, 6.98, 6.98); Calibrated: 2012/3/12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 2012/1/23
- Phantom: SAM2; Type: SAM; Serial: TP1562
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

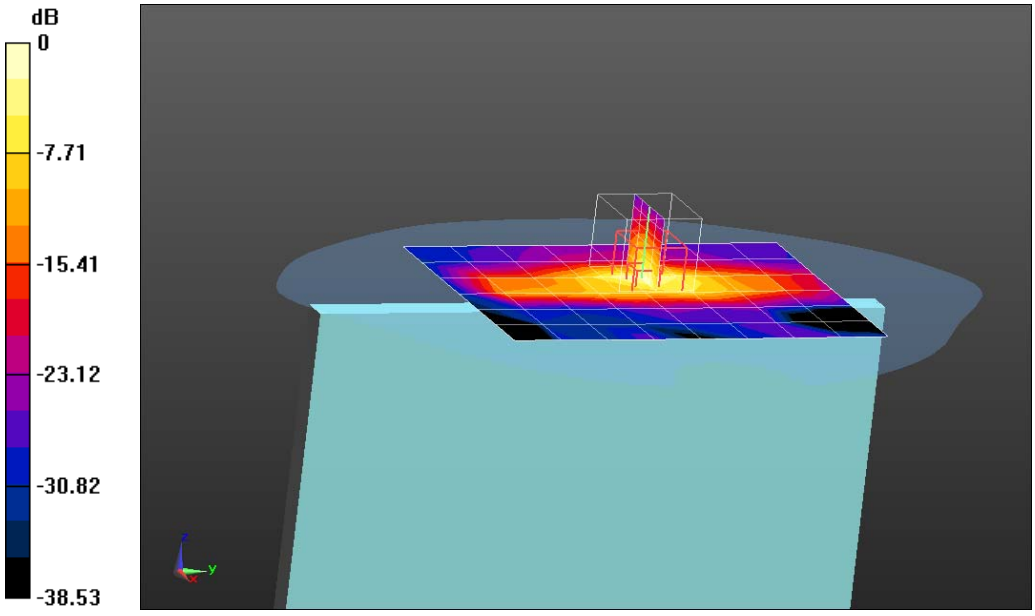
**Configuration/802.11b 2437MHz-Primary landscape/Area Scan (7x9x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 0.072 mW/g

**Configuration/802.11b 2437MHz-Primary landscape/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 6.724 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.4140

**SAR(1 g) = 0.122 mW/g; SAR(10 g) = 0.044 mW/g** Maximum value of SAR (measured) = 0.118 mW/g

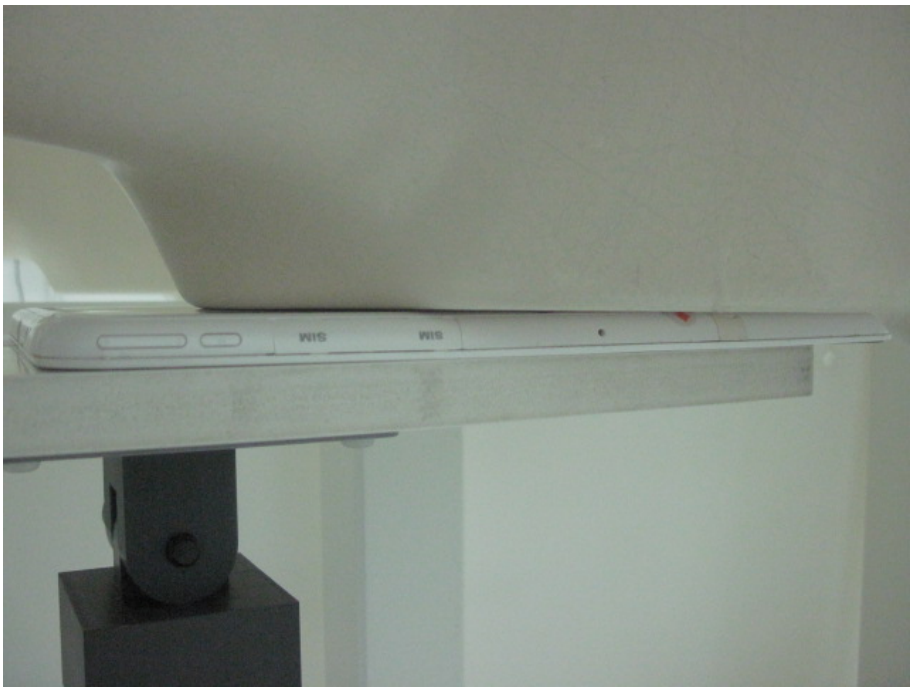



0 dB = 0.120mW/g = -18.42 dB mW/g

# Appendix C. Test Setup Photographs & EUT Photographs

## Test Setup Photographs

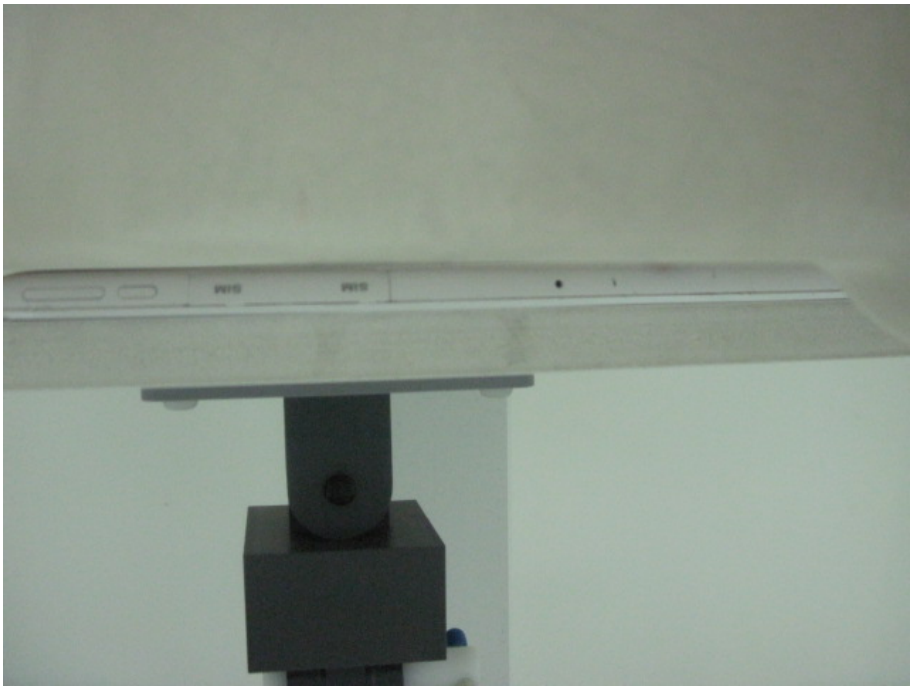
Bottom Touch for WWAN



Primary landscape Touch for WWAN

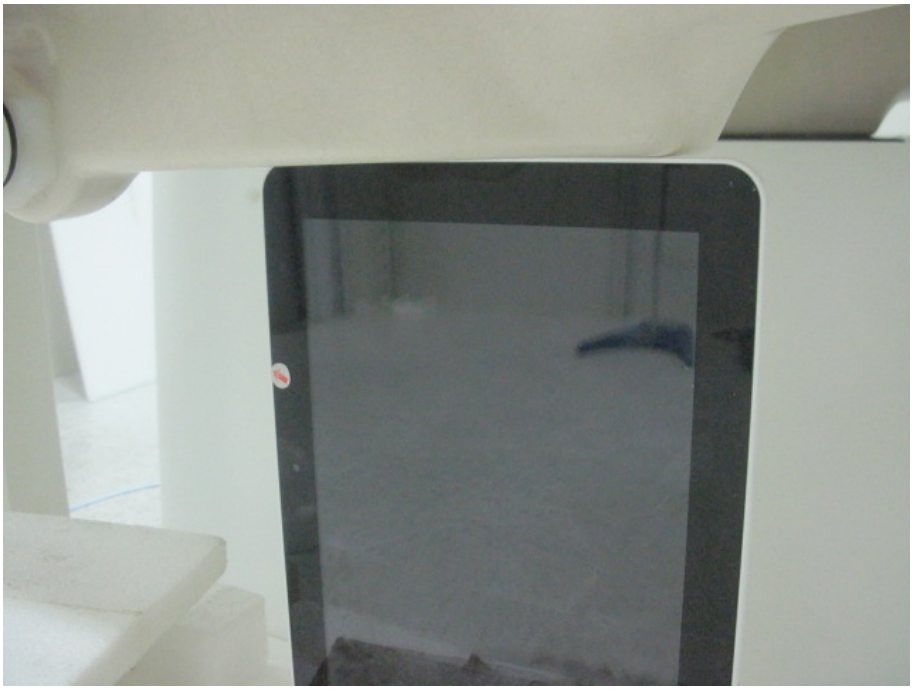
Secondary portrait Touch for WWAN

Bottom Touch for WLAN



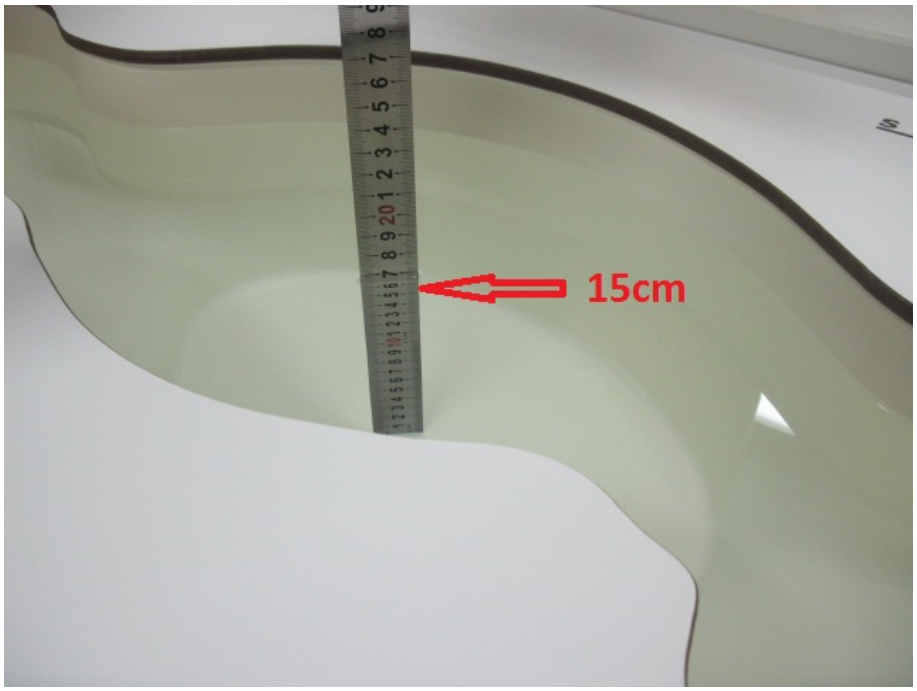
Primary landscape Touch for WLAN

Secondary portrait Touch for WLAN



**Depth of the liquid in the phantom – Zoom in**

Note: The position used in the measurements were according to IEEE 1528 - 2003



## EUT Photographs

(1) EUT Photo

(2) EUT Photo


(3) EUT Photo