# SAR TEST REPORT

## Test Report No. : 4786001719H-D-R3

| | | |
|---|---|---|
| **Applicant** | : | **NEC Corporation of America** |
| **Type of Equipment** | : | **Digital Portable Cellular Telephone** |
| **Model No.** | : | **KMP7R4H1-6A** |
| **FCC ID** | : | **A98-FQM6833** |
| **Test regulation** | : | **FCC47CFR 2.1093**<br>**FCC OET Bulletin 65, Supplement C (Edition 01-01)** |
| **Test Result** | : | **Complied** |

**Reported SAR(1g) Value**

| | | |
|---|---|---|
| **FCC Part 22H** | Head | : 0.532W/kg |
| | Body | : 0.697W/kg |
| | Product specific (Hotspot) | : 0.697W/kg |
| **FCC Part 24E** | Head | : 0.793W/kg |
| | Body | : 0.754W/kg |
| | Product specific (Hotspot) | : 0.754W/kg |
| **FCC Part15.247** | Head | : 0.671W/kg |
| | Body | : 0.157W/kg |
| | Product specific (Hotspot) | : 0.191W/kg |

**The highest reported SAR(1g) Value for the device is 0.793 W/kg.**
**Simultaneous transmission test was excluded.**
**The highest sum of SAR(1g) for the simultaneous transmitting antennas Value for the device is 0.880 W/kg.**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
6. This report is a revised version of 4786001719H-D-R2. 4786001719H-D-R2 is replaced with this report.

**Date of test:** December 12 to 19, 2012

**Representative test engineer:**
Hisayoshi Sato
Engineer of WiSE Japan,
UL Verification Service

**Approved by :**
Takahiro Hatakeda
Leader of WiSE Japan
UL Verification Service

NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address,
http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap

# REVISION HISTORY

## Original Test Report No.: 4786001719H-D

| Revision | Test report No. | Date | Page revised | Contents |
|---|---|---|---|---|
| -<br>(Original) | 4786001719H-D | January 23, 2013 | - | - |
| 1 | 4786001719H-D-R1 | January 28, 2013 | Page 10 | WWAN + WLAN Step 6<br>Add Head and Body data of sum of SAR.<br><br>WWAN+Bluetooth Step 6<br>Add Head and Body data of sum of SAR. |
| 1 | 4786001719H-D-R1 | January 28, 2013 | Page 43 | Estimated SAR of Bluetooth was indicated in detail. |
| 1 | 4786001719H-D-R1 | January 28, 2013 | Page 1 | It emphasized that an SAR value was a report value. The Sum of SAR value was also added. |
| 1 | 4786001719H-D-R1 | January 28, 2013 | Page 24 | Scaled power of the table was changed into Upper power of spec.<br>The notes 1 were corrected in connection with it. |
| 2 | 4786001719H-D-R2 | February 5, 2013 | Page 24 | Showed the calculation and the value less than 3.0. |
| 2 | 4786001719H-D-R2 | February 5, 2013 | Page 43 | The sum of the SAR result in each position of head was calculated. It was summarized in the table. |
| 2 | 4786001719H-D-R2 | February 5, 2013 | Page 44 | The sum of the SAR result in each position of body was calculated. It was summarized in the table. |
| 2 | 4786001719H-D-R2 | February 5, 2013 | Page 43 and 44 | It changed into the same table as 6.1 clause of Estimated SAR of Bluetooth. |
| 2 | 4786001719H-D-R2 | February 5, 2013 | Page 1 | Changed the highest sum of SAR(1g).<br>1.46 W/kg⇒0.880 W/kg |
| 2 | 4786001719H-D-R2 | February 5, 2013 | Page 10 | 4.2 Simultaneous transmission SAR result<br><WWAN + WLAN ><br>Step 5<br>Changed sum of SAR.<br>Head: 1.464 W/kg⇒0.880 W/kg<br>Body: 0.945 W/kg⇒0.874 W/kg |
| 3 | 4786001719H-D-R3 | February 18, 2013 | Page 1 | Report SAR of each frequency band was corrected as follows.<br>Error) Body-hotspot : ** W/kg (10mm distance)<br>Correct) Product specific (Hotspot) : **W/kg<br>The following was added.<br>Body : **W/kg |
| 3 | 4786001719H-D-R3 | February 18, 2013 | Page 25 | SAM Phantom Limitations was added to the table of Additional position of Page 25.<br>Moreover, the notes *2 were added. |
| 3 | 4786001719H-D-R3 | February 18, 2013 | Page 9 | The SAR value was added to 1 g Body-worn SAR.<br>Moreover, the notes *4 were added. |

## CONTENTS PAGE

**SECTION 1: Customer information** ..... **4**
**SECTION 2: Equipment under test (E.U.T.)** ..... **4**
2.1 Identification of E.U.T. ..... 4
**SECTION 3 : Test standard information** ..... **7**
3.1 Test Specification ..... 7
3.2 Procedure ..... 7
3.3 Exposure limit ..... 8
3.4 Test Location ..... 8
**SECTION 4 : Test result** ..... **9**
4.1 Stand-alone SAR result ..... 9
4.2 Simultaneous transmission SAR result ..... 10
**SECTION 5 : Description of the operating mode** ..... **11**
5.1 Output power operating modes ..... 11
5.2 Output power measurement results ..... 12
5.3 SAR testing operating modes ..... 20
5.4 Confirmation before SAR testing ..... 22
5.5 Confirmation after SAR testing ..... 23
**SECTION 6 SAR test exclusion considerations** ..... **24**
6.1 Standalone SAR test exclusion considerations ..... 24
**SECTION 7 : Description of the Head/ Body / Body-Worn setup** ..... **25**
7.1 Test position for Head setup ..... 25
7.2 Description of the Body setup ..... 28
7.3 Description of the Body-worn setup ..... 28
**SECTION 8 : Test surrounding** ..... **29**
8.1 Measurement uncertainty ..... 29
**SECTION 9 : Measurement results** ..... **30**
9.1 GSM 850MHz Head SAR ..... 30
9.2 GSM 850MHz Body SAR ..... 32
9.3 PCS1900 MHz HEAD SAR ..... 33
9.4 PCS1900MHz Body SAR ..... 35
9.5 WCDMA Band V HEAD SAR ..... 36
9.6 WCDMA Band V Body SAR ..... 38
9.7 WLAN HEAD SAR ..... 40
9.8 WLAN Body SAR ..... 42
9.9 Simultaneous transmission SAR test exclusion considerations for Head ..... 43
9.10 Simultaneous transmission SAR test exclusion considerations for Body ..... 44
**SECTION 10 Test instruments** ..... **45**
**APPENDIX 1 : SAR Measurement data** ..... **47**
1. Evaluation procedure ..... 47
2. Measurement data ..... 48
**APPENDIX 2 : System Validation** ..... **118**
1. System validation result for 900MHz ..... 118
2. System Validation Dipole (D900V2,S/N: 155) ..... 122
3. System validation result for 1800MHz ..... 133
4. System validation result for Body1800MHz ..... 135
5. System Validation Dipole (D1800V2,S/N: 2d04) ..... 137
6 System validation result for 2450MHz ..... 148
7. System Validation Dipole (D2450V2,S/N:713) ..... 152
8. Validation uncertainty ..... 163
**APPENDIX 3 : System specifications** ..... **164**
1. Configuration and peripherals ..... 164
2. Specifications ..... 165
3. Dosimetric E-Field Probe Calibration (EX3DV4, S/N: 3540) ..... 169
**APPENDIX 4: Photographs of test setup** ..... **180**
1. Photographs of EUT ..... 180
2. Antenna position ..... 182
3. Photographs of setup ..... 183

# SECTION 1: Customer information

| | | |
|---|---|---|
| Company Name | : | NEC Corporation of America |
| Address | : | Radio Communications Systems Division<br>6535N. State Highway 161, Irving, TX 75039-2402 USA |
| Telephone Number | : | +1 214 262 4241 |
| Facsimile Number | : | +1 214 262 4225 |
| Contact Person | : | Sanjay Wadhwa |

# SECTION 2: Equipment under test (E.U.T.)

## 2.1 Identification of E.U.T.

| | | |
|---|---|---|
| Type of Equipment | : | Digital Portable Cellular Telephone |
| Model No. | : | KMP7R4H1-6A |
| Serial No. | : | 004401201130115, 004401201130123, 004401201130172 |
| Rating | : | Li-ion Battery (M/N;N**)<br>DC3.8V 2100m Ah 8.0Wh |
| Option Battery | : | N/A |
| Body-worn accessory | : | Ear phone (typical) |
| Device category | : | Portable |
| Antenna to antenna separation distance | : | 10.89cm from WWAN antenna to WLAN/BT antenna<br>0cm from WLAN antenna to Bluetooth antenna (shared with BT) |
| Simultaneous transmission | : | WWAN can transmit simultaneously with WLAN<br>WWAN can transmit simultaneously with Bluetooth<br>WLAN cannot transmit simultaneously with Bluetooth |
| Size of EUT | : | H:136 mm * W:64 mm * D:12.2 mm |
| Receipt Date of Sample | : | December 10, 2012 |
| Country of Mass-production | : | Japan |
| Condition of EUT | : | Production prototype |
| Modification of EUT | : | No Modification by the test lab |

**Radio Specification [1/2]**

**Bluetooth (Ver.2.1 + EDR)**

| | |
|---|---|
| Equipment Type | Transceiver |
| Frequency of Operation | 2402-2480MHz |
| Type of Modulation | FHSS |
| Bandwidth & Channel spacing | 1MHz & 1MHz |
| Antenna Connector Type | Integrated antenna |
| Antenna Type | Pattern Antenna |
| Antenna Gain | -3.0 dBi |

**Low Energy (Ver.4.0)**

| | |
|---|---|
| Equipment Type | Transceiver |
| Frequency of Operation | 2402-2480MHz |
| Bandwidth & Channel spacing | 1MHz & 2MHz |
| Antenna Connector Type | Integrated antenna |
| Antenna Type | Pattern antenna |
| Antenna Gain | -3.0 dBi |

**WLAN (IEEE802.11b/g/n (SISO/HT20))**

| | |
|---|---|
| Equipment Type | Transceiver |
| Frequency of Operation | 2412-2462MHz |
| Type of Modulation | DSSS, OFDM |
| Antenna Connector Type | Integrated antenna |
| Antenna Type | Pattern antenna |
| Antenna Gain | -3.0 dBi |

**GSM**

| | |
|---|---|
| Equipment Type | Transceiver |
| Frequency of Operation | [Up Link]<br>GSM850: 824 – 849MHz<br>PCS: 1850 – 1910MHz<br>[Down Link]<br>GSM850: 869 – 894MHz<br>PCS: 1930 – 1990MHz |
| Type of Modulation | GMSK |
| Emission Designator | GSM850: 254KGXW,<br>PCS: 259KGXW |
| Channel spacing | 200kHz |
| Antenna Connector Type | Integrated antenna |
| Antenna Type | Pattern antenna |
| Antenna Gain | +2.5dBi (PCS), 0.0dBi (GSM850) |

**Radio Specification [2/2]**

**WCDMA**

| | |
|---|---|
| Equipment Type | Transceiver |
| Frequency of Operation | [Up Link]<br>Band V: 824 – 849MHz<br>[Down Link]<br>Band V: 869 – 894MHz |
| Type of Modulation | HPSK |
| Emission Designator | 4M16F9W |
| Channel spacing | 5MHz |
| Antenna Connector Type | Integrated antenna |
| Antenna Type | Pattern antenna |
| Antenna Gain | 0 dBi |

**GPS**

| | |
|---|---|
| Equipment Type | Receiver |
| Receiver Type | Direct Downconversion |
| Frequency of Operation | 1575.42MHz |
| Antenna Connector Type | Integrated antenna |
| Antenna Type | Pattern antenna |
| Antenna Gain | -3.0dBi |

# SECTION 3 : Test standard information

## 3.1 Test Specification

Title : **Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01):**
Supplement C (Edition 01-01) - Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions
OET Bulletin 65 (Edition 97-01) - Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

: **IEEE Std 1528-2003:**
IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques Supplement C

In additions;

| | | |
|---|---|---|
| ☑ | **KDB450824D01(v01r01)** | SAR Prob Cal and Ver Meas |
| ☑ | **KDB450824D02(v01r01)** | Dipole SAR Validation Verification |
| ☑ | **KDB447498D01(v05)** | Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies |
| ☐ | **KDB447498D02(v02)** | SAR Measurement Procedures for USB Dongle Transmitters |
| ☑ | **KDB648474D04(v01)** | SAR Evaluation Considerations for Wireless Handsets |
| ☑ | **KDB941225D01(v02)** | SAR Measurement Procedures for 3G Devices |
| ☑ | **KDB941225D02(v02v01)** | 3GPP R6 HSPA and R7 HSPA+ SAR Guidance |
| ☑ | **KDB941225D03(v01)** | Recommended SAR Test Reduction Procedures for GSM/GPRS/EDGE |
| ☐ | **KDB941225D04(v01)** | Evaluating SAR for GSM/(E)GPRS Dual Transfer Mode |
| ☐ | **KDB941225D05(v02)** | SAR for LTE Devices |
| ☑ | **KDB941225D06(v01)** | SAR test procedures for devices incorporating SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities (Hot Spot SAR) |
| ☐ | **KDB941225D07(v01)** | SAR Evaluation Procedures for UMPC Mini-Tablet Devices |
| ☐ | **KDB 616217D04(v01)** | SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers |
| ☑ | **KDB865664D01(v01)** | SAR Measurement Requirements for 100MHz to 6 GHz |
| ☑ | **KDB248227D01(v01r02)** | SAR Measurement Procedures for 802.11a//b/g Transmitters |

**Reference**

[1]ANSI, ANSI/IEEE C95.1-1992: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz, The Institute of Electrical and Electronics Engineers, Inc., New York, NY 10017, 1992.
[2]SPEAG uncertainty document (AN 15-7/AN19-17) for DASY 5 System from SPEAG (Shimid & Partner Engineering AG).

## 3.2 Procedure

| Transmitter | WWAN | WLAN | Bluetooth |
|---|---|---|---|
| Test Procedure | FCC OET BULLETIN 65, SUPPLEMENT C | FCC OET BULLETIN 65, SUPPLEMENT C | Exemption* |
| | SAR | SAR | |
| Category | FCC47CFR 2.1093 | FCC47CFR 2.1093 | FCC47CFR 2.1093 |
| Note: UL Japan, Inc. 's SAR Work Procedures 13-EM-W0429 and 13-EM-W0430 | | | |

* Since SAR exclusion threshold conditions are corresponded by KDB 447498 D01, an SAR test is not required.

## 3.3 Exposure limit

(A) Limits for Occupational/Controlled Exposure (W/kg)

| Spatial Average (averaged over the whole body) | Spatial Peak (averaged over any 1g of tissue) | Spatial Peak (hands/wrists/feet/ankles averaged over 10g) |
|---|---|---|
| 0.4 | 8.0 | 20.0 |

(B) Limits for General population/Uncontrolled Exposure (W/kg)

| Spatial Average (averaged over the whole body | Spatial Peak (averaged over any 1g of tissue) | Spatial Peak (hands/wrists/feet/ankles averaged over 10g) |
|---|---|---|
| 0.08 | 1.6 | 4.0 |

**Occupational/Controlled Environments:** are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

**General Population/Uncontrolled Environments:** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

**NOTE:GENERAL POPULATION/UNCONTROLLED EXPOSURE**
**SPATIAL PEAK(averaged over any 1g of tissue) LIMIT**
**1.6 W/kg**

## 3.4 Test Location

*Shielded room for SAR testings
UL Japan, Inc. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116 Facsimile : +81 596 24 8124

# SECTION 4 : Test result

## 4.1 Stand-alone SAR result

| No. | Capable Tx configurations | | Head SAR | Body-worn SAR | Body SAR (Hotspot) | Note |
|---|---|---|---|---|---|---|
| 1 | WWAN | GSM/GPRS 850 MHz | Yes | Exemption*1 | Yes | - |
| 2 | | GSM/GPRS 1900 MHz | Yes | Exemption*1 | Yes | - |
| 3 | | 12.2kRMC band V | Yes | Exemption*1 | Yes | - |
| 4 | WLAN | WLAN 2.4G | Yes | Exemption*1 | Yes | With VOIP |
| 5 | Bluetooth | Bluetooth BDR/EDR/Low Energy | Exemption*2 | | | - |

*1 It is not necessary to test Body-worn SAR if the test separation distance(10mm) for hotspot mode is more conservative than Body-worn test(15mm),according to KDB 941225 D06 Hotspot SAR procedure.
*2 Since SAR exclusion threshold conditions are corresponded by KDB 447498 D01, an SAR test is not required.

**Measured SAR**

| Mode | 1g Head SAR [W/kg] | 1g Body-worn SAR [W/kg]*4 | 1g Body SAR [W/kg] (Hotspot) |
|---|---|---|---|
| GSM850 | 0.528 | 0.363 | 0.363 |
| PCS1900 | 0.793 | 0.754 | 0.754 |
| WCDMA band V | 0.532 | 0.697 | 0.697 |
| WLAN 11b/g/n(2.4G) | 0.671 | 0.157 | 0.191 |
| Bluetooth | Exemption | | |

**Scaled SAR***3

| Mode | 1g Head SAR [W/kg] | 1g Body-worn SAR [W/kg]*4 | 1g Body SAR [W/kg] (Hotspot) |
|---|---|---|---|
| GSM850 | 0.528 | 0.363 | 0.363 |
| PCS1900 | 0.793 | 0.754 | 0.754 |
| WCDMA band V | 0.532 | 0.697 | 0.697 |
| WLAN 11b/g/n(2.4G) | 0.671 | 0.157 | 0.191 |
| Bluetooth | Exemption | | |

*3 Measured maximum output power is a maximum of specification. Therefore, compensation calculation was not done.
*4 SAR result of the Front or Rear position of Hot spot mode is substituted for Body-worn SAR from the reason of *1.

## 4.2 Simultaneous transmission SAR result

**<Simultaneous Procedure>**
This EUT has the unlicensed transmitter such as WLAN (802.11b/g/n) & Bluetooth devices besides licensed transmitter WWAN (GSM/WCDMA), and the following simultaneous transmission is possible.

| No. | Capable Tx configrations | | Head SAR | Body SAR (HotSpot) | Note |
|---|---|---|---|---|---|
| 6 | WWAN+WLAN | GSM/GPRS + WLAN2.4G | Yes | Yes | - |
| 7 | | WCDMA + WLAN2.4G | Yes | Yes | - |
| 8 | WWAN+Bluetooth | | Yes (Exemption) | | |
| 9 | WLAN+Bluetooth | | No operating | | |

<WWAN + WLAN >
Simultaneous transmitter evaluation based on the KDB447498D01 Refer to the clause 4.3.2..

| | |
|---|---|
| Step1. | Standalone SAR test exclusion considerations. Refer to Section 6. |
| Step2 | Measured Stand-alone SAR for WWAN. |
| Step3. | Measured Stand-alone SAR for WLAN. |
| Step4. | Simultaneous transmission is possible (WWAN+ WLAN)<br>Simultaneous transmission SAR test exclusion considerations |
| Step5. | 1.6W/kg > ∑1g SAR (WWAN + WLAN)<br>Head: 0.880 W/kg<br>Body: 0.874 W/kg<br>Refer to Section 9. |
| Step6. | SAR test for simultaneous transmission is not measured.. |

<WWAN + Bluetooth >
Simultaneous transmitter evaluation based on the KDB447498D01 Refer to the clause 4.3.2..

| | |
|---|---|
| Step1. | Standalone SAR test exclusion considerations. Refer to Section 6. |
| Step2 | Measured Stand-alone SAR for WWAN. |
| Step3. | No measured Stand-alone SAR for Bluetooth. |
| Step4. | Simultaneous transmission is possible (WWAN+ Bluetooth)<br>Simultaneous transmission SAR test exclusion considerations. |
| Step5 | Estimated SAR for Bluetooth is calculated. |
| Step6. | 1.6W/kg > ∑1g SAR (WWAN + Bluetooth)<br>Head: 0.864 W/kg<br>Body: 0.825 W/kg<br>Refer to Section 9 |
| Step6. | No simultaneous transmission. |

# SECTION 5 : Description of the operating mode

## 5.1 Output power operating modes

| Band | Duty cycle or Multi class(GSM) | Test Frequency | Mode |
|---|---|---|---|
| GSM850 | Multi class 8 | 824.2MHz (128ch)<br>836.6MHz(190ch)<br>848.8MHz(251ch) | GSM<br>GPRS (CS-1) |
| PCS1900 | Multi class 8 | 1850.2MHz(512ch)<br>1880.0MHz(661ch)<br>1909.8MHz(810ch) | |
| WCDMA V | 100% | 826.4MHz (4132ch)<br>836.6MHz(4183ch)<br>846.6MHz(4233ch) | AMR<br>12.2k RMC<br>HSDPA<br>HSUPA |
| **WWAN** | | | |
| The communication link was set up with the Wireless Communications Test Set(Agilent M/N: E5515C).<br>The EUT was command to operate at maximum transmit power.<br>GSM850 :PCL 5<br>PCS1900 :PCL 0<br>W-CDMA :All up bits | | | |

| Mode | Duty cycle | Frequency Band | Test Frequency | Modulation |
|---|---|---|---|---|
| IEEE802.11b | 100% | 2412-2462MHz | 2412MHz (1ch)<br>2437MHz(6ch)<br>2462MHz(11ch) | DSSS<br>(DBPSK.DQPSK.CCK) |
| IEEE802.11g | 100% | 2412-2462MHz | 2412MHz (1ch)<br>2437MHz(6ch)<br>2462MHz(11ch) | OFDM<br>(BPSK.QPSK.16QAM,64QAM)<br>Long GI, Short GI |
| IEEE802.11n20 (2.4G) | 100% | 2412-2462MHz | 2412MHz (1ch)<br>2437MHz(6ch)<br>2462MHz(11ch) | |
| Bluetooth | 78%(DH5, DH5) | 2402-2480MHz | 2402MHz(1ch)<br>2440MHz(38ch)<br>2441MHz(39ch)<br>2480MHz(79ch) | FHSS<br>(GFSK,π/4DQPSK,8DPSK, LE) |
| **WLAN, Bluetooth** | | | | |
| Power of the EUT was set by the software as follows:<br><br>-Hardware Version: BA1<br>-Software Version: ESP_A0000420_N0000400<br><br>*The above setting of the software is the worst case.<br>Any conditions under the normal use do not exceed the condition of setting.<br>In addition, end users cannot change the settings of the output power of the product. | | | | |

## 5.2 Output power measurement results

**Output power measurement for GSM**

[GSM]
*Connection Type :AUTO
*Power control level :5(GSM850), 0(PCS1900)

[GPRS]
*Connection Type : Type B
*Power control level : 5(GSM850), 0(PCS1900)
*Coding Scheme : CS-1

1) GSM850

| GSM850 SAR Power | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mode | | Crest Factor (typical) | Ch | Frequency [MHz] | Time-based Average power | | | | Reading Average frame power | | |
| | | | | | Reading [dBm] Time-AVG | Atten. [dB] | Cable Loss [dB] | Result [dBm] Time-AVG | Reading [dBm] slotted AVG | Cable Loss [dB] | Result [dBm] Slotted AVG |
| GSM | 1slot | 8.3 | 128 | 824.2 | 0.34 | 19.93 | 3.91 | 24.18 | 33.35 | 0.54 | 33.89 |
| | | | 190 | 836.6 | 0.50 | 19.93 | 3.91 | 24.34 | 33.48 | 0.54 | 34.02 |
| | | | 251 | 848.8 | 0.70 | 19.93 | 3.91 | 24.54 | 33.59 | 0.54 | 34.13 |
| GPRS (CS1) | 1slot | 8.3 | 128 | 824.2 | 0.24 | 19.93 | 3.91 | 24.08 | 33.32 | 0.54 | 33.86 |
| | | | 190 | 836.6 | 0.38 | 19.93 | 3.91 | 24.22 | 33.46 | 0.54 | 34.00 |
| | | | 251 | 848.8 | 0.54 | 19.93 | 3.91 | 24.38 | 33.55 | 0.54 | 34.09 |

Time based AVG Results = P/M Reading + Atten.Loss + Cable Loss
Slotted AVG Results = Agilent Reading + Cable Loss
:Maximum time based AVG power mode

2) PCS1900

| PCS1900 SAR Power | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mode | | Crest Factor (typical) | Ch | Frequency [MHz] | Time-based Average power | | | | Reading Average frame power | | |
| | | | | | Reading [dBm] Time-AVG | Atten. [dB] | Cable Loss [dB] | Result [dBm] Time-AVG | Reading [dBm] slotted AVG | Cable Loss [dB] | Result [dBm] Slotted AVG |
| GSM | 1slot | 8.3 | 512 | 1850.2 | -2.44 | 19.99 | 4.21 | 21.76 | 30.46 | 0.87 | 31.33 |
| | | | 661 | 1880.0 | -2.56 | 19.99 | 4.22 | 21.65 | 30.28 | 0.88 | 31.16 |
| | | | 810 | 1909.8 | -2.81 | 20.01 | 4.23 | 21.43 | 29.98 | 0.88 | 30.86 |
| GPRS (CS1) | 1slot | 8.3 | 512 | 1850.2 | -2.61 | 19.99 | 4.21 | 21.59 | 30.45 | 0.87 | 31.32 |
| | | | 661 | 1880.0 | -2.85 | 19.99 | 4.22 | 21.36 | 30.27 | 0.88 | 31.15 |
| | | | 810 | 1909.8 | -2.93 | 20.01 | 4.23 | 21.31 | 29.97 | 0.88 | 30.85 |

Time based AVG Results = P/M Reading + Atten.Loss + Cable Loss
Slotted AVG Results = Agilent Reading + Cable Loss
:Maximum time based AVG power mode

## Output power measurement for W-CDMA

Maximum output power for W-CDMA and HSPA was verified on the high, middle and low channels according to the procedures described in section 5.2 of 3GPP TS 34.121 and "KDB 941225 document".
The WCDMA and HSPA modes of EUT were verified each channel and "sub-tests" according to Release-6 procedures in section5.2 of 3GPP TS 34.121.
[Rel.99]
The communication test set was using a 12.2k RMC (reference measurement channel) with TPC (transmit power control) set to all "1's" configured in Test Loop Mode 1.
[HSDPA]
The communication test set was using an FRC (Fixed reference channel) with H-set 1 and 12.2kbps RMC with TPC (transmit power control) set to all "1's". Output power was measured according requirements for HS-DPCCH Sub-test 1-4.

**Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH**

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c/\beta_d$ | $\beta_{HS}$ (Note1, Note 2) | CM (dB) (Note 3) | MPR (dB) (Note 3) |
|---|---|---|---|---|---|---|---|
| 1 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 0.0 | 0.0 |
| 2 | 12/15 (Note 4) | 15/15 (Note 4) | 64 | 12/15 (Note 4) | 24/15 | 1.0 | 0.0 |
| 3 | 15/15 | 8/15 | 64 | 15/8 | 30/15 | 1.5 | 0.5 |
| 4 | 15/15 | 4/15 | 64 | 15/4 | 30/15 | 1.5 | 0.5 |

Note 1: $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, $\Delta_{ACK}$ and $\Delta_{NACK}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$, and $\Delta_{CQI}$ = 24/15 with $\beta_{hs}$ = 24/15 * $\beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d$ =12/15, $\beta_{hs}/\beta_c$=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the $\beta_c/\beta_d$ ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c$ = 11/15 and $\beta_d$ = 15/15.

### Test Equipment Setting Summary Table

The following table is the key parameters that was configured in test equipment.

| Subtest | Mode | Loopback Mode | Rel99 RMC | HSDPA FRC | HSUPA Test | Common Setting | | βc/βd | MPR | Power Class 3 limit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | βc | βd | | | |
| | Rel99 | Test Mode 1 | 12.2kbps RMC | - | - | | | 8/15 | | 24(+1.7/-3.7dB) |
| 1 | Rel6 HSDPA | Test Mode 1 | 12.2kbps RMC | H-Set 1 (HPSK) | - | 2/15 | 15/15 | 2/15 | 0 | 24(+1.7/-3.7dB) |
| 2 | Rel6 HSDPA | Test Mode 1 | 12.2kbps RMC | H-Set 1 (HPSK) | - | 12/15 | 15/15 | 12/15 | 0 | 24(+1.7/-3.7dB) |
| 3 | Rel6 HSDPA | Test Mode 1 | 12.2kbps RMC | H-Set 1 (HPSK) | - | 15/15 | 8/15 | 15/8 | 0.5 | 23.5(+2.2/-3.7dB) |
| 4 | Rel6 HSDPA | Test Mode 1 | 12.2kbps RMC | H-Set 1 (HPSK) | - | 15/15 | 4/15 | 15/4 | 0.5 | 23.5(+2.2/-3.7dB) |

| Subtest | HSDPA Specific Settings | | | | | | |
|---|---|---|---|---|---|---|---|
| | ΔACK | ΔNACK | ΔCQI | Ack-Nack repetition factor | CQI Feedback | CQI Repetition Factor | Ahs=βhs/βc |
| Rel 6 HSDPA | | | | | | | |
| 1 | 8 | 8 | 8 | 3 | 4ms | 2 | 30/15 |
| 2 | 8 | 8 | 8 | 3 | 4ms | 2 | 30/15 |
| 3 | 8 | 8 | 8 | 3 | 4ms | 2 | 30/15 |
| 4 | 8 | 8 | 8 | 3 | 4ms | 2 | 30/15 |

3) WCDMA V

1.The 12.2k RMC mode was maximum average power. The AMR/HSDPA SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured 12.2k RMC mode.

| WCDMA V band | | | | | |
|---|---|---|---|---|---|
| Mode | Ch | Frequency [MHz] | Reading AVG [dBm] | Cable loss [dB] | Result [dBm] |
| AMR | 4132 | 826.4 | 23.74 | 0.73 | 24.47 |
| | 4183 | 836.6 | 23.65 | 0.73 | 24.38 |
| | 4233 | 846.6 | 23.68 | 0.73 | 24.41 |
| RMC 12.2kbps | 4132 | 826.4 | 23.76 | 0.73 | 24.49 |
| | 4183 | 836.6 | 23.66 | 0.73 | 24.39 |
| | 4233 | 846.6 | 23.70 | 0.73 | 24.43 |
| HSDPA Subtest1 | 4132 | 826.4 | 23.47 | 0.73 | 24.20 |
| | 4183 | 836.6 | 23.44 | 0.73 | 24.17 |
| | 4233 | 846.6 | 23.43 | 0.73 | 24.16 |
| HSDPA Subtest2 | 4132 | 826.4 | 23.73 | 0.73 | 24.46 |
| | 4183 | 836.6 | 23.41 | 0.73 | 24.14 |
| | 4233 | 846.6 | 23.47 | 0.73 | 24.20 |
| HSDPA Subtest3 | 4132 | 826.4 | 23.33 | 0.73 | 24.06 |
| | 4183 | 836.6 | 22.99 | 0.73 | 23.72 |
| | 4233 | 846.6 | 23.31 | 0.73 | 24.04 |
| HSDPA Subtest4 | 4132 | 826.4 | 23.36 | 0.73 | 24.09 |
| | 4183 | 836.6 | 23.04 | 0.73 | 23.77 |
| | 4233 | 846.6 | 23.28 | 0.73 | 24.01 |
| HSUPA Subtest1 | 4132 | 826.4 | 22.63 | 0.73 | 23.36 |
| | 4183 | 836.6 | 23.26 | 0.73 | 23.99 |
| | 4233 | 846.6 | 22.59 | 0.73 | 23.32 |
| HSUPA Subtest2 | 4132 | 826.4 | 21.38 | 0.73 | 22.11 |
| | 4183 | 836.6 | 21.52 | 0.73 | 22.25 |
| | 4233 | 846.6 | 21.37 | 0.73 | 22.10 |
| HSUPA Subtest3 | 4132 | 826.4 | 21.71 | 0.73 | 22.44 |
| | 4183 | 836.6 | 21.58 | 0.73 | 22.31 |
| | 4233 | 846.6 | 21.65 | 0.73 | 22.38 |
| HSUPA Subtest4 | 4132 | 826.4 | 21.40 | 0.73 | 22.13 |
| | 4183 | 836.6 | 21.58 | 0.73 | 22.31 |
| | 4233 | 846.6 | 20.94 | 0.73 | 21.67 |
| HSUPA Subtest5 | 4132 | 826.4 | 23.39 | 0.73 | 24.12 |
| | 4183 | 836.6 | 22.63 | 0.73 | 23.36 |
| | 4233 | 846.6 | 23.11 | 0.73 | 23.84 |

Results = Reading + Loss
: Maximum power mode

MPR Explanation

The product implements an Enhanced MPR (E-MPR) software algorithm that also considers power compression (Scaling), a requirement per 3GPP 25.214 section 5.1.2.6, to generate a more accurate Cubic Metric (CM) value that is used to determine the magnitude of power reduction for HSPA signals. The Enhanced MPR solution can introduce a deviation of the actual observed power reduction from the MPR target values configured for a device.

In the power scaling process defined by 3GPP TS 25.214, the channel beta values are modified as the transmitted signal approaches maximum power to ensure that the transmit power does not exceed the maximum rated transmit power and is also compliant with emissions requirements. The power scaling process considers the software-defined MPR target values based on the CM for the signal to be transmitted to determine the required power reduction for a given signal. The actual CM value of the signal transmitted after power scaling, however, is often different from the estimated CM value used in the power reduction algorithm.

An accurate CM value is desirable as the goal of power reduction is to maintain compliance with emissions limits. By using a more accurate CM value, the E-MPR process minimizes the magnitudes of power reduction required to maintain emissions compliance whereas the legacy MPR software may incorporate a magnitude of power reduction that is higher than is required for emissions compliance.

The enhanced power reduction may result in around 1dB of variance from the MPR target values depending on HSPA channel configuration (e.g. 34.121 subtest) and characteristics of hardware RF design.

## Output power measurement for WLAN

4) WLAN (11b/g/n(2.4G))

Note:
1.The 11b mode was maximum average power. The 11g/n SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured 11b mode.
2.The other channels are measured if the SAR result at max. AVG power channel will be above 0.8W/kg

**[IEEE802.11b] Rate Check**

| Rate | Freq. | P/M Reading [dBm] | | Cable Loss | Atten. | Result [dBm] | | Result [mW] | |
|---|---|---|---|---|---|---|---|---|---|
| [Mbps] | [MHz] | PK | AVG | [dB] | [dB] | PK | AVG | PK | AVG |
| 1.0 | 2412 | 9.41 | 5.64 | 0.65 | 10.03 | 20.09 | 16.32 | 102.09 | 42.85 |
| 2.0 | 2412 | 9.17 | 5.57 | 0.65 | 10.03 | 19.85 | 16.25 | 96.61 | 42.17 |
| 5.5 | 2412 | 9.14 | 5.63 | 0.65 | 10.03 | 19.82 | 16.31 | 95.94 | 42.76 |
| 11.0 | 2412 | 9.23 | 5.57 | 0.65 | 10.03 | 19.91 | 16.25 | 97.95 | 42.17 |
| 1.0 | 2437 | 9.25 | 5.78 | 0.65 | 10.03 | 19.93 | 16.46 | 98.40 | 44.26 |
| 2.0 | 2437 | 9.15 | 5.73 | 0.65 | 10.03 | 19.83 | 16.41 | 96.16 | 43.75 |
| 5.5 | 2437 | 9.15 | 5.75 | 0.65 | 10.03 | 19.83 | 16.43 | 96.16 | 43.95 |
| 11.0 | 2437 | 9.24 | 5.76 | 0.65 | 10.03 | 19.92 | 16.44 | 98.17 | 44.06 |
| 1.0 | 2462 | 9.47 | 5.93 | 0.65 | 10.03 | 20.15 | 16.61 | 103.51 | 45.81 |
| 2.0 | 2462 | 9.24 | 5.92 | 0.65 | 10.03 | 19.92 | 16.60 | 98.17 | 45.71 |
| 5.5 | 2462 | 9.22 | 5.92 | 0.65 | 10.03 | 19.90 | 16.60 | 97.72 | 45.71 |
| 11.0 | 2462 | 9.25 | 5.89 | 0.65 | 10.03 | 19.93 | 16.57 | 98.40 | 45.39 |

:Maximum power mode

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

**[IEEE802.11g] Rate Check**

| Rate | Frequency | P/M Reading [dBm] | | Cable Loss | Atten. | Result [dBm] | | Result [mW] | |
|---|---|---|---|---|---|---|---|---|---|
| [Mbps] | [MHz] | PK | AVG | [dB] | [dB] | PK | AVG | PK | AVG |
| 6.0 | 2412 | 11.93 | 3.43 | 0.65 | 10.03 | 22.61 | 14.11 | 182.39 | 25.76 |
| 9.0 | 2412 | 11.92 | 3.43 | 0.65 | 10.03 | 22.60 | 14.11 | 181.97 | 25.76 |
| 12.0 | 2412 | 11.93 | 3.44 | 0.65 | 10.03 | 22.61 | 14.12 | 182.39 | 25.82 |
| 18.0 | 2412 | 11.97 | 3.40 | 0.65 | 10.03 | 22.65 | 14.08 | 184.08 | 25.59 |
| 24.0 | 2412 | 11.95 | 3.35 | 0.65 | 10.03 | 22.63 | 14.03 | 183.23 | 25.29 |
| 36.0 | 2412 | 11.96 | 3.29 | 0.65 | 10.03 | 22.64 | 13.97 | 183.65 | 24.95 |
| 48.0 | 2412 | 10.76 | 0.29 | 0.65 | 10.03 | 21.44 | 10.97 | 139.32 | 12.50 |
| 54.0 | 2412 | 10.34 | -0.38 | 0.65 | 10.03 | 21.02 | 10.30 | 126.47 | 10.72 |
| 6.0 | 2437 | 11.96 | 3.42 | 0.65 | 10.03 | 22.64 | 14.10 | 183.65 | 25.70 |
| 9.0 | 2437 | 11.98 | 3.44 | 0.65 | 10.03 | 22.66 | 14.12 | 184.50 | 25.82 |
| 12.0 | 2437 | 11.97 | 3.39 | 0.65 | 10.03 | 22.65 | 14.07 | 184.08 | 25.53 |
| 18.0 | 2437 | 12.03 | 3.77 | 0.65 | 10.03 | 22.71 | 14.45 | 186.64 | 27.86 |
| 24.0 | 2437 | 11.99 | 3.32 | 0.65 | 10.03 | 22.67 | 14.00 | 184.93 | 25.12 |
| 36.0 | 2437 | 11.83 | 3.30 | 0.65 | 10.03 | 22.51 | 13.98 | 178.24 | 25.00 |
| 48.0 | 2437 | 10.27 | -0.43 | 0.65 | 10.03 | 20.95 | 10.25 | 124.45 | 10.59 |
| 54.0 | 2437 | 10.35 | -0.43 | 0.65 | 10.03 | 21.03 | 10.25 | 126.77 | 10.59 |
| 6.0 | 2462 | 12.01 | 3.76 | 0.65 | 10.03 | 22.69 | 14.44 | 185.78 | 27.80 |
| 9.0 | 2462 | 12.02 | 3.76 | 0.65 | 10.03 | 22.70 | 14.44 | 186.21 | 27.80 |
| 12.0 | 2462 | 12.03 | 3.73 | 0.65 | 10.03 | 22.71 | 14.41 | 186.64 | 27.61 |
| 18.0 | 2462 | 12.08 | 3.72 | 0.65 | 10.03 | 22.76 | 14.40 | 188.80 | 27.54 |
| 24.0 | 2462 | 12.04 | 3.65 | 0.65 | 10.03 | 22.72 | 14.33 | 187.07 | 27.10 |
| 36.0 | 2462 | 12.03 | 3.61 | 0.65 | 10.03 | 22.71 | 14.29 | 186.64 | 26.85 |
| 48.0 | 2462 | 10.64 | 0.19 | 0.65 | 10.03 | 21.32 | 10.87 | 135.52 | 12.22 |
| 54.0 | 2462 | 10.57 | 0.15 | 0.65 | 10.03 | 21.25 | 10.83 | 133.35 | 12.11 |

:Maximum power mode

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

**[IEEE802.11n-20] Rate Check Long GI**

| Rate | Frequency [MHz] | P/M Reading [dBm] PK | P/M Reading [dBm] AVG | Cable Loss [dB] | Atten. [dB] | Result [dBm] PK | Result [dBm] AVG | Result [mW] PK | Result [mW] AVG |
|---|---|---|---|---|---|---|---|---|---|
| MCS0 | 2412 | 11.17 | 1.15 | 0.65 | 10.03 | 21.85 | 11.83 | 153.11 | 15.24 |
| MCS1 | 2412 | 11.37 | 1.15 | 0.65 | 10.03 | 22.05 | 11.83 | 160.32 | 15.24 |
| MCS2 | 2412 | 11.31 | 1.15 | 0.65 | 10.03 | 21.99 | 11.83 | 158.12 | 15.24 |
| MCS3 | 2412 | 11.39 | 1.04 | 0.65 | 10.03 | 22.07 | 11.72 | 161.06 | 14.86 |
| MCS4 | 2412 | 11.25 | 1.02 | 0.65 | 10.03 | 21.93 | 11.70 | 155.96 | 14.79 |
| MCS5 | 2412 | 9.99 | -1.07 | 0.65 | 10.03 | 20.67 | 9.61 | 116.68 | 9.14 |
| MCS6 | 2412 | 9.98 | -1.08 | 0.65 | 10.03 | 20.66 | 9.60 | 116.41 | 9.12 |
| MCS7 | 2412 | 9.94 | -1.09 | 0.65 | 10.03 | 20.62 | 9.59 | 115.35 | 9.10 |
| MCS0 | 2437 | 11.18 | 1.05 | 0.65 | 10.03 | 21.86 | 11.73 | 153.46 | 14.89 |
| MCS1 | 2437 | 11.30 | 1.05 | 0.65 | 10.03 | 21.98 | 11.73 | 157.76 | 14.89 |
| MCS2 | 2437 | 11.32 | 1.09 | 0.65 | 10.03 | 22.00 | 11.77 | 158.49 | 15.03 |
| MCS3 | 2437 | 11.53 | 1.56 | 0.65 | 10.03 | 22.21 | 12.24 | 166.34 | 16.75 |
| MCS4 | 2437 | 11.30 | 0.95 | 0.65 | 10.03 | 21.98 | 11.63 | 157.76 | 14.55 |
| MCS5 | 2437 | 11.29 | 0.93 | 0.65 | 10.03 | 21.97 | 11.61 | 157.40 | 14.49 |
| MCS6 | 2437 | 10.05 | -1.17 | 0.65 | 10.03 | 20.73 | 9.51 | 118.30 | 8.93 |
| MCS7 | 2437 | 10.57 | -0.44 | 0.65 | 10.03 | 21.25 | 10.24 | 133.35 | 10.57 |
| MCS0 | 2462 | 11.40 | 1.56 | 0.65 | 10.03 | 22.08 | 12.24 | 161.44 | 16.75 |
| MCS1 | 2462 | 11.42 | 1.59 | 0.65 | 10.03 | 22.10 | 12.27 | 162.18 | 16.87 |
| MCS2 | 2462 | 11.43 | 1.58 | 0.65 | 10.03 | 22.11 | 12.26 | 162.55 | 16.83 |
| MCS3 | 2462 | 11.45 | 1.50 | 0.65 | 10.03 | 22.13 | 12.18 | 163.31 | 16.52 |
| MCS4 | 2462 | 11.43 | 1.43 | 0.65 | 10.03 | 22.11 | 12.11 | 162.55 | 16.26 |
| MCS5 | 2462 | 10.20 | -0.82 | 0.65 | 10.03 | 20.88 | 9.86 | 122.46 | 9.68 |
| MCS6 | 2462 | 10.63 | -0.16 | 0.65 | 10.03 | 21.31 | 10.52 | 135.21 | 11.27 |
| MCS7 | 2462 | 10.11 | -0.87 | 0.65 | 10.03 | 20.79 | 9.81 | 119.95 | 9.57 |

:Maximum power mode

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

**[IEEE802.11n-20] Rate Check Short GI**

| Rate | Frequency [MHz] | P/M Reading [dBm] PK | P/M Reading [dBm] AVG | Cable Loss [dB] | Atten. [dB] | Result [dBm] PK | Result [dBm] AVG | Result [mW] PK | Result [mW] AVG |
|---|---|---|---|---|---|---|---|---|---|
| MCS0 | 2412 | 11.19 | 1.05 | 0.65 | 10.03 | 21.87 | 11.73 | 153.82 | 14.89 |
| MCS1 | 2412 | 11.23 | 1.06 | 0.65 | 10.03 | 21.91 | 11.74 | 155.24 | 14.93 |
| MCS2 | 2412 | 11.29 | 1.08 | 0.65 | 10.03 | 21.97 | 11.76 | 157.40 | 15.00 |
| MCS3 | 2412 | 11.38 | 1.10 | 0.65 | 10.03 | 22.06 | 11.78 | 160.69 | 15.07 |
| MCS4 | 2412 | 11.15 | 0.87 | 0.65 | 10.03 | 21.83 | 11.55 | 152.41 | 14.29 |
| MCS5 | 2412 | 10.04 | -1.08 | 0.65 | 10.03 | 20.72 | 9.60 | 118.03 | 9.12 |
| MCS6 | 2412 | 9.89 | -1.17 | 0.65 | 10.03 | 20.57 | 9.51 | 114.02 | 8.93 |
| MCS7 | 2412 | 10.43 | -0.47 | 0.65 | 10.03 | 21.11 | 10.21 | 129.12 | 10.50 |
| MCS0 | 2437 | 11.19 | 1.09 | 0.65 | 10.03 | 21.87 | 11.77 | 153.82 | 15.03 |
| MCS1 | 2437 | 11.26 | 1.02 | 0.65 | 10.03 | 21.94 | 11.70 | 156.31 | 14.79 |
| MCS2 | 2437 | 11.25 | 1.03 | 0.65 | 10.03 | 21.93 | 11.71 | 155.96 | 14.83 |
| MCS3 | 2437 | 11.23 | 0.93 | 0.65 | 10.03 | 21.91 | 11.61 | 155.24 | 14.49 |
| MCS4 | 2437 | 11.24 | 0.88 | 0.65 | 10.03 | 21.92 | 11.56 | 155.60 | 14.32 |
| MCS5 | 2437 | 10.09 | -1.21 | 0.65 | 10.03 | 20.77 | 9.47 | 119.40 | 8.85 |
| MCS6 | 2437 | 10.52 | -0.51 | 0.65 | 10.03 | 21.20 | 10.17 | 131.83 | 10.40 |
| MCS7 | 2437 | 9.94 | -1.33 | 0.65 | 10.03 | 20.62 | 9.35 | 115.35 | 8.61 |
| MCS0 | 2462 | 11.36 | 1.56 | 0.65 | 10.03 | 22.04 | 12.24 | 159.96 | 16.75 |
| MCS1 | 2462 | 11.36 | 1.56 | 0.65 | 10.03 | 22.04 | 12.24 | 159.96 | 16.75 |
| MCS2 | 2462 | 11.42 | 1.57 | 0.65 | 10.03 | 22.10 | 12.25 | 162.18 | 16.79 |
| MCS3 | 2462 | 11.38 | 1.44 | 0.65 | 10.03 | 22.06 | 12.12 | 160.69 | 16.29 |
| MCS4 | 2462 | 11.40 | 1.39 | 0.65 | 10.03 | 22.08 | 12.07 | 161.44 | 16.11 |
| MCS5 | 2462 | 10.14 | -0.80 | 0.65 | 10.03 | 20.82 | 9.88 | 120.78 | 9.73 |
| MCS6 | 2462 | 10.06 | -0.84 | 0.65 | 10.03 | 20.74 | 9.84 | 118.58 | 9.64 |
| MCS7 | 2462 | 10.17 | -0.80 | 0.65 | 10.03 | 20.85 | 9.88 | 121.62 | 9.73 |

:Maximum power mode

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

5) Bluetooth

| Mode | Frequency [MHz] | P/M Reading [dBm] PK | Cable Loss [dB] | Atten. [dB] | Result [dBm] PK | Result [mW] PK |
|---|---|---|---|---|---|---|
| DH5 | 2402.0 | -9.36 | 0.64 | 10.03 | 1.31 | 1.35 |
| | 2441.0 | -9.84 | 0.65 | 10.03 | 0.84 | 1.21 |
| | 2480.0 | -9.65 | 0.65 | 10.03 | 1.03 | 1.27 |
| 3DH5 | 2402.0 | -8.38 | 0.64 | 10.03 | 2.29 | 1.69 |
| | 2441.0 | -8.89 | 0.65 | 10.03 | 1.79 | 1.51 |
| | 2480.0 | -8.61 | 0.65 | 10.03 | 2.07 | 1.61 |
| LE | 2402.0 | -9.44 | 0.64 | 10.03 | 1.23 | 1.33 |
| | 2440.0 | -9.96 | 0.65 | 10.03 | 0.72 | 1.18 |
| | 2480.0 | -9.85 | 0.65 | 10.03 | 0.83 | 1.21 |

Sample Calculation: Result = Reading + Cable Loss + Attenuator

## 5.3 SAR testing operating modes

The operating mode for SAR testing was decided by the output power

**SAR measurement for GSM and W-CDMA**

| Band | Crest factor | Mode | Test Frequency | Note |
|---|---|---|---|---|
| GSM850 | 8.3 | GSM<br>GPRS (CS-1) 1 slots | 836.6MHz(190ch) | *4<br>*5 1) |
| PCS1900 | 8.3 | GSM<br>GPRS (CS-1) 1 slots | 1880.0MHz(661ch) | *4<br>*5 |
| WCDMA V | 1 | 12.2k RMC | 836.6MHz(4183ch) | *1<br>*4<br>*5 1) |
| **WWAN** | | | | |
| The communication link was set up with the Wireless Communications Test Set(Agilent M/N: E5515C).<br>The EUT was command to operate at maximum transmit power.<br>GSM850 :PCL 5<br>PCS1900 :PCL 0<br>W-CDMA :All up bits | | | | |

**SAR measurement for WLAN**

| Mode | Crest factor | Modulation | Test Frequency | Note |
|---|---|---|---|---|
| IEEE802.11b | 1 | DBPSK(1Mbps) | 2462MHz(11ch) | *4<br>*5 1) |
| IEEE802.11g | Not required | | | *2 |
| IEEE802.11n20 (2.4G) | Not required | | | *2 |
| Bluetooth | Exemption | | | *3 |
| **WLAN, Bluetooth** | | | | |
| Power of the EUT was set by the software as follows:<br><br>-Hardware Version: BA1<br>-Software Version: ESP_A0000420_N0000400<br><br>*The above setting of the software is the worst case.<br>Any conditions under the normal use do not exceed the condition of setting.<br>In addition, end users cannot change the settings of the output power of the product. | | | | |

**Decision of SAR test channel**
The operating mode for SAR testing was decided by the output power

| Mode | GHz | Channel | Turbo Channel | "Default Test Channel" | |
|---|---|---|---|---|---|
| | | | | FCC 15.247 | |
| | | | | 802.11b | 802.11g |
| 802.11 b/g | 2.412 | 1 | | √ | Δ |
| | 2.437 | 6 | 6 | √ | Δ |
| | 2.462 | 11 | | √ | Δ |

√ = "default test channels"
Δ = Possible 802.11g channels with maximum average output ¼ dB ≥ the "default test channels"

*1 The 12.2k RMC mode was maximum average power. The AMR/HSDPA/HSUPA SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured 12.2k RMC mode.

*2 The 11b mode was maximum average power. The 11g/n SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured 11b mode.

*3 Since SAR exclusion threshold conditions are corresponded by KDB 447498 D01, an SAR test is not required.

*4 The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

*5
1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg

## 5.4 Confirmation before SAR testing

**Correlation of Output Power between EMC and SAR tests**

It was checked that the antenna port power was correlated within 0~+5% (FCC requirements)
SAR power is equal to DATA of EMC test based on the following reason.

- EMC and SAR tests are performed with the same test sample under the same condition.
- EMC and SAR tests are performed at the same laboratory.

<Peak power result for maximum data rate in FCC 15.247 test>

**IEEE802.11b 1Mbps**

| Ch | Frequency | P/M Reading [dBm] | | Cable Loss | Atten. | Result [dBm] | | Result [mW] | |
|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | PK | AVG | [dB] | [dB] | PK | AVG | PK | AVG |
| 1 | 2412 | 9.41 | 5.64 | 0.65 | 10.03 | 20.09 | 16.32 | 102.09 | 42.85 |
| 6 | 2437 | 9.25 | 5.78 | 0.65 | 10.03 | 19.93 | 16.46 | 98.40 | 44.26 |
| 11 | 2462 | 9.47 | 5.93 | 0.65 | 10.03 | 20.15 | 16.61 | 103.51 | 45.81 |

**IEEE802.11g 18Mbps**

| Ch | Frequency | P/M Reading [dBm] | | Cable Loss | Atten. | Result [dBm] | | Result [mW] | |
|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | PK | AVG | [dB] | [dB] | PK | AVG | PK | AVG |
| 1 | 2412 | 11.97 | 3.40 | 0.65 | 10.03 | 22.65 | 14.08 | 184.08 | 25.59 |
| 6 | 2437 | 12.03 | 3.77 | 0.65 | 10.03 | 22.71 | 14.45 | 186.64 | 27.86 |
| 11 | 2462 | 12.08 | 3.72 | 0.65 | 10.03 | 22.76 | 14.40 | 188.80 | 27.54 |

**IEEE802.11n20 Long GI MCS3**

| Ch | Frequency | P/M Reading [dBm] | | Cable Loss | Atten. | Result [dBm] | | Result [mW] | |
|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | PK | AVG | [dB] | [dB] | PK | AVG | PK | AVG |
| 1 | 2412 | 11.39 | 1.04 | 0.65 | 10.03 | 22.07 | 11.72 | 161.06 | 14.86 |
| 6 | 2437 | 11.53 | 1.56 | 0.65 | 10.03 | 22.21 | 12.24 | 166.34 | 16.75 |
| 11 | 2462 | 11.45 | 1.50 | 0.65 | 10.03 | 22.13 | 12.18 | 163.31 | 16.52 |

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

## 5.5 Confirmation after SAR testing

It was checked that the power drift [W] is within +/-5%.The verification of power drift during the SAR test is that DASY5 system calculates the power drift by measureing the e-filed at the same location at beginning and the end of the scan measurement for each test position.

DASY5 system calucation Power drift value[dB] =20log(Ea)/(Eb)
Before SAR testing : Eb[V/m]
After SAR testing : Ea[V/m]

Limit of power drift[W] =+/-5%
X[dB]=10log[P]=10log(1.05/1)=10log(1.05)-10log(1)=0.212dB

from E-filed relations with power.
p=E^2/η=E^2/
Therefore, The correlation of power and the E-filed
XdB=10log(P)=10log(E)^2=20log(E)

Therefore,
The calculated power drift of DASY5 System must be the less than +/-0.212dB.

# SECTION 6 SAR test exclusion considerations

## 6.1 Standalone SAR test exclusion considerations

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
*[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]* ·
[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
 f(GHz) is the RF channel transmit frequency in GHz
 Power and distance are rounded to the nearest mW and mm before calculation17
 The result is rounded to one decimal place for comparison
The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

| Band | Standalone SAR tested | Mode | Upper frequency of band *1 | Max power(Meas) | Upper power of spec | Min distance *3 | Calculation of exclusion *4 |
|---|---|---|---|---|---|---|---|
| GSM850 | ☑ | GSM | 848.8 [MHz] (251 ch) | 24.54 [dBm] 284.45 [mW] (836.6MHz(190ch)) | *2 | 5 [mm] | 52.41 |
| PCS1900 | ☑ | GSM | 1909.8 [MHz] (810ch) | 21.76 [dBm] 149.97 [mW] 1880MHz(661ch)) | *2 | 5 [mm] | 41.45 |
| WCDMA V | ☑ | 12.2k RMC | 846.6 [MHz] (4233ch) | 24.49 [dBm] 281.19 [mW] 836.6MHz(4183ch)) | *2 | 5 [mm] | 51.75 |
| WLAN(2.4 GHz band) | ☑ | 11b DBPSK(1Mbps) | 2462 [MHz] (11ch) | 16.61 [dBm] 45.81 [mW] 2462MHz(11ch)) | *2 | 5 [mm] | 14.38 |
| Bluetooth | ☐ | EDR(3DH5) | 2480 [MHz] (79ch) | 2.29 [dBm] 1.69 [mW] 2402MHz(1ch)) | *2 | 5 [mm] | 0.53 |

*1 The upper frequency of the frequency band was used in order to calculate standalone SAR test exclusion considerations.
*2 The measured output power is the upper power on specification.
*3 Refer to Appendix 4
*4 *[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]* ·
[√f(GHz)] ≤ 3.0

# SECTION 7 : Description of the Head/ Body / Body-Worn setup

## 7.1 Test position for Head setup

**i)Procedure for SAR testing**

The EUT was tested in accordance with FCC OET Bulletin 65 Supplement C: 2001-01 and IEEE 1528: 2003 for both the "Cheek/Touch" and "Ear/Tilt" positions at the left and right sides of the SAM phantom head region. The FCC KDB 648474 D04 was also incorporated.

**ii)Test mode**

| | |
|---|---|
| **GSM850/PCS1900** | **Voice mode (GSM)/ Voip mode (GPRS)** |
| **WCDMA V** | **12.2k RMC** |
| **WLAN** | **VOIP mode (11b)** |

**iii)Test position**

| No. | Phantom | Position *1 | WWAN | | WLAN | |
|---|---|---|---|---|---|---|
| | | | Tested | Antenna | Tested | Antenna |
| 1 | Left | Cheek | ☑ | Fixed | ☑ | Fixed |
| 2 | Left | Tilt | ☑ | Fixed | ☑ | Fixed |
| 3 | Right | Cheek | ☑ | Fixed | ☑ | Fixed |
| 4 | Right | Tilt | ☑ | Fixed | ☑ | Fixed |

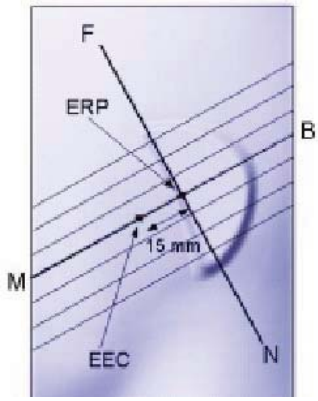
**Additional position**

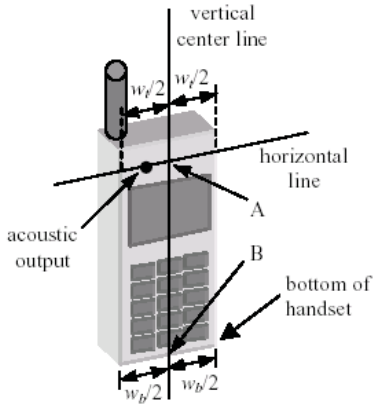
| No. | Phantom | Position *1 | WWAN | | | WLAN*2 | | |
|---|---|---|---|---|---|---|---|---|
| | | | Tested | Antenna | SAM Phantom Limitations | Tested | Antenna | SAM Phantom Limitations |
| 1 | Flat | Front | ☑ | Fixed | Out side | ☐ | Fixed | Within |

*1) Both the form which closed the display, and the form which opened the display measured.
*2) Since the antenna of WLAN is located near the upper or higher side edges and peak SAR was measured in the scanning area of SAR, additional position (Front) measurement was excepted.

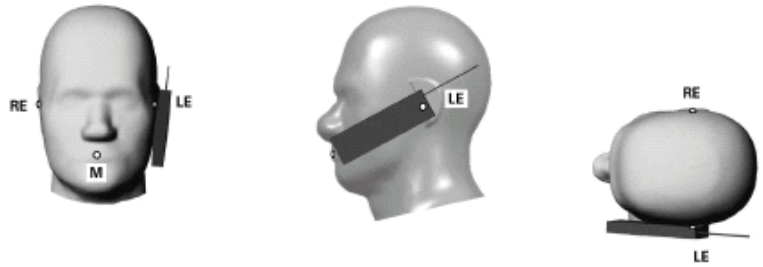
**Initial ear position**
A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom.

The device should be positioned parallel to the "N-F" line defined along the base of the ear spacer that contains the "ear reference point". The "test device reference point" is aligned to the "ear reference point" on the head phantom and the "vertical centerline" is aligned to the "phantom reference plane".

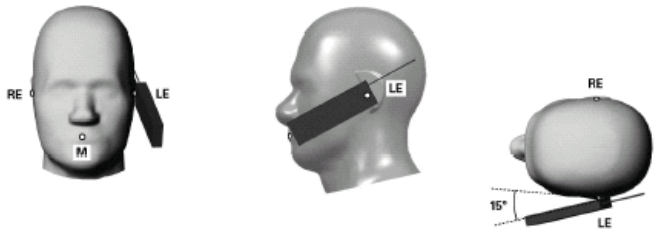


**Cheek position**
The device is brought toward the mouth of the head phantom by pivoting against the "ear reference point" or along the "N-F" line.
This test position is established:
i) When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.
ii) (or) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.




**Tilt position**
If the earpiece of the handset is not in full contact with the phantom's ear spacer and the peak SAR location for the "Cheek/Touch" position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the "initial ear position" by rotating it away from the mouth until the earpiece is in full contact with the ear spacer. Otherwise the handset should be moved away from the cheek perpendicular to the line passes through both "ear reference points" for approximate 2-3 cm. While it is in this position, the handset is tilted away from the mouth with respect to the "test device reference point" by 15°. After the tilt, it is then moved back toward the head perpendicular to the line passes through both "ear reference points" until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously.




***SAR test in Mouse and Jaw Regions of the SAM Phantom***
**The measurement procedure using a flat phantom according to the KDB648474 D04.**

The SAR required in these regions of SAM should be measured using a flat phantom. The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone is lowered from the phantom to establish the same separation
distance between the peak SAR location identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone should be determined by the straight line passing perpendicularly through the phantom surface.

**<Antenna position>**
The antennas use for WWAN and WLAN are both separate in a single fixed position. The antennas are integral part of the device.

## 7.2 Description of the Body setup

**i)Procedure for SAR testing**

-The tested distance were performed according to the KDB941225 D06 v01 (SAR Evaluation Procedures for portable Devices with Wireless Router Capabilities).

**ii)Test mode**

| | |
|---|---|
| **GSM850/PCS1900** | **Data transmission mode (GPRS)** |
| **WCDMA V** | **Data transmission mode (12.2kRMC)** |
| **WLAN** | **Data transmission mode (11b)** |

| No. | Position* | Test distance | WWAN | | | WLAN | | |
|---|---|---|---|---|---|---|---|---|
| | | | Tested | Antenna | Separation from user | Tested | Antenna | Separation from user |
| 1 | Front | 10mm | ☑ | Fixed | <25mm | ☑ | Fixed | < 25mm |
| 2 | Rear | 10mm | ☑ | Fixed | <25mm | ☑ | Fixed | < 25mm |
| 3 | Left edge | 10mm | ☑ | Fixed | <25mm | ☑ | Fixed | <25mm |
| 4 | Right edge | 10mm | ☐ | Fixed | >25mm | ☐ | Fixed | >25mm |
| 5 | Top edge | 10mm | ☐ | Fixed | >25mm | ☑ | Fixed | <25mm |
| 6 | Bottom edge | 10mm | ☑ | Fixed | <25mm | ☐ | Fixed | >25mm |

* The EUT was measured with the form open display.
It is the same distance to a human body as the form open display, or the form close display is more than it.
Therefore, it measured in the EUT of the form which opened the display and the form which closed the display only in the position of Maximum SAR value.

**<Test position>**

Test position is required to the edge within 2.5cm from antenna, according to the KDB 941225 D06.
Device dimensions (HxWxD):136x64(128)x12.2

**<Antenna position>**

The antennas use for WWAN and WLAN are both separate in a single fixed position.
The antennas are integral part of the device

## 7.3 Description of the Body-worn setup

**i)Procedure for SAR testing**

According to KDB 941225 D06 Hotspot SAR procedure, test Body-worn for WWAN & WLAN2.4GHz not necessary since the test separation distance (10mm) for hotspot mode is more conservative than Body-worn test(15mm).

# SECTION 8 : Test surrounding

## 8.1 Measurement uncertainty

The uncertainty budget has been determined for the DASY5 measurement system according to the SPEAG documents[2] and is given in the following Table.

<0.3 – 3GHz range>

| Error Description | Uncertai value ± | Probability distribution | divisor | (ci) 1g | Standard (1g) | vi or veff |
|---|---|---|---|---|---|---|
| **Measurement System** | | | | | | |
| Probe calibration | ± 6.00 | Normal | 1 | 1 | ± 6.00 | ∞ |
| Axial isotropy of the probe | ± 4.7 | Rectangular | √3 | 0.7 | ± 1.9 | ∞ |
| Spherical isotropy of the probe | ± 9.6 | Rectangular | √3 | 0.7 | ± 3.9 | ∞ |
| Boundary effects | ± 1.0 | Rectangular | √3 | 1 | ± 0.6 | ∞ |
| Probe linearity | ± 4.7 | Rectangular | √3 | 1 | ± 2.7 | ∞ |
| Detection limit | ± 1.0 | Rectangular | √3 | 1 | ± 0.6 | ∞ |
| Modulation response | ± 2.4 | Rectangular | √3 | 1 | ± 1.4 | ∞ |
| Readout electronics | ± 0.3 | Normal | 1 | 1 | ± 0.3 | ∞ |
| Response time | ± 0.8 | Rectangular | √3 | 1 | ± 0.5 | ∞ |
| Integration time | ± 2.6 | Rectangular | √3 | 1 | ± 1.5 | ∞ |
| RF ambient Noise | ± 3.0 | Rectangular | √3 | 1 | ± 1.7 | ∞ |
| RF ambient Reflections | ± 3.0 | Rectangular | √3 | 1 | ± 1.7 | ∞ |
| Probe Positioner | ± 0.4 | Rectangular | √3 | 1 | ± 0.2 | ∞ |
| Probe positioning | ± 2.9 | Rectangular | √3 | 1 | ± 1.7 | ∞ |
| Max.SAR Eval. | ± 1.0 | Rectangular | √3 | 1 | ± 0.6 | ∞ |
| **Test Sample Related** | | | | | | |
| Device positioning | ± 2.9 | Normal | 1 | 1 | ± 2.9 | 61 |
| Device holder uncertainty | ± 3.6 | Normal | 1 | 1 | ± 3.6 | 15 |
| Power drift | ± 5.0 | Rectangular | √3 | 1 | ± 2.9 | ∞ |
| Power Scaling | + 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| **Phantom and Setup** | | | | | | |
| Phantom uncertainty | ± 4.0 | Rectangular | √3 | 1 | ± 2.3 | ∞ |
| Liquid conductivity (target) | ± 5.0 | Rectangular | √3 | 0.64 | ± 1.8 | ∞ |
| Liquid conductivity (meas.) | + 4.7 | Rectangular | 1 | 0.64 | + 3.0 | ∞ |
| Liquid permittivity (target) | ± 5.0 | Rectangular | √3 | 0.6 | ± 1.7 | ∞ |
| Liquid permittivity (meas.) | - 4.4 | Rectangular | 1 | 0.6 | - 2.6 | ∞ |
| Liquid conductivity - temp.unc (below 2deg.C.) | ± 1.7 | Rectangular | √3 | 0.78 | ± 0.8 | ∞ |
| Liquid permittivity - temp.unc (below 2deg.C.) | ± 0.3 | Rectangular | √3 | 0.23 | ± 0.0 | ∞ |
| | | | | | | |
| **Combined Standard Uncertainty** | | | | | ± **11.517** | |
| **Expanded Uncertainty (k=2)** | | | | | ± **23.0** | |

# SECTION 9 : Measurement results

## 9.1 GSM 850MHz Head SAR

**(1)Method of measurement**

Step1. The searching for the worst position
The test was performed in middle channel.

***SAR test in Mouse and Jaw Regions of the SAM Phantom***

**WWAN antenna is located near the lower edge of EUT. Therefor Head SAR for WWAN applied the measurement procedure using a flat phantom according to the KDB648474 D04.**

Step2. The measurement at Flat phantom
The test was positioned 10mm against the lower edge from flat phantom.

Step3. The changing to the DATA transmitter for VOIP mode (GPRS)
The test was performed at the worst position of Step1 and Step 2.

Note:
1) The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 17-Dec | 24.0 | 42 | HSL900 | 23.5 | 836.6 | εr | 41.5 | 41.0 | -1.2 | +/-5 |
| | | | | | | σ [mho/m] | 0.90 | 0.87 | -3.2 | +/-5 |

εr: Relative Permittivity / σ : Coductivity
*1 The Target value is a parameter defined in FCC OET65.

**(3)Result of HEAD SAR**

| HEAD SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 190 | 836.6 | GSM | Left | Fixed | Cheek/ Close display | 0 | **0.107** |
| 190 | 836.6 | GSM | Left | Fixed | Cheek/ Open display | 0 | **0.162** |
| 190 | 836.6 | GSM | Left | Fixed | Tilt/ Close display | 0 | **0.089** |
| 190 | 836.6 | GSM | Left | Fixed | Tilt/ Open display | 0 | **0.138** |
| 190 | 836.6 | GSM | Right | Fixed | Cheek/ Close display | 0 | **0.104** |
| 190 | 836.6 | GSM | Right | Fixed | Cheek/ Open display | 0 | **n.a** |
| 190 | 836.6 | GSM | Right | Fixed | Tilt/ Close display | 0 | **0.089** |
| 190 | 836.6 | GSM | Right | Fixed | Tilt/ Open display | 0 | **0.107** |
| **Step.2 Measurement at flat phantom** | | | | | | | |
| 190 | 836.6 | GSM | Flat | Fixed | Front/ Close display | 10 | **0.274** |
| 190 | 836.6 | GSM | Flat | Fixed | Front/ Open display | 10 | **0.528** |
| **Step.3 VOIP mode (GPRS)** | | | | | | | |
| 190 | 836.6 | GPRS 1slot | Flat | Fixed | Front/ Open display | 10 | **0.450** |

## 9.2 GSM 850MHz Body SAR

**(1)Method of measurement**
**<Body (Hotspot mode)>**

Step1. The searching for the worst position
The test was performed in middle channel.

Note:
1) The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**
The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 12-Dec | 24.0 | 50 | MSL 900 | 23.5 | 836.6 | εr | 55.2 | 55.5 | 0.6 | +/-5 |
| | | | | | | σ [mho/m] | 0.97 | 0.98 | 0.5 | +/-5 |

εr: Relative Permittivity / σ : Coductivity
*1 The Target value is a parameter defined in FCC OET65.

**(3)Result of Body SAR**

| BODY SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 190 | 836.6 | GPRS 1slots | Flat | Fixed | Front/ Open display | 10 | **0.320** |
| 190 | 836.6 | GPRS 1slots | Flat | Fixed | Rear/ Close display | 10 | **0.363** |
| 190 | 836.6 | GPRS 1slots | Flat | Fixed | Rear/ Open display | 10 | **0.254** |
| 190 | 836.6 | GPRS 1slots | Flat | Fixed | Left/ Open display | 10 | **0.179** |
| 190 | 836.6 | GPRS 1slots | Flat | Fixed | Bottom/ Open display | 10 | **0.093** |
| **Step.2 Voice mode (GSM)/ Reference** | | | | | | | |
| 190 | 836.6 | GSM | Flat | Fixed | Rear/ Close display | 10 | **0.353** |

## 9.3 PCS1900 MHz HEAD SAR

**(1)Method of measurement**

Step1. The searching for the worst position
The test was performed in middle channel.

***SAR test in Mouse and Jaw Regions of the SAM Phantom***

**WWAN antenna is located near the lower edge of EUT. Therefor Head SAR for WWAN applied the measurement procedure using a flat phantom according to the KDB648474 D04.**

Step2. The measurement at Flat phantom
The test was positioned 10mm against the lower edge from flat phantom.

Step3. The changing to the DATA transmitter for VOIP mode (GPRS)
The test was performed at the worst position of Step1 and Step 2.

Note:
1) The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 18-Dec | 24.0 | 45 | HSL 1800 | 23.5 | 1880 | εr | 40.0 | 38.6 | -3.6 | +/-5 |
| | | | | | | σ [mho/m] | 1.40 | 1.46 | 4.3 | +/-5 |

εr: Relative Permittivity / σ : Coductivity
*1 The Target value is a parameter defined in FCC OET65.

**(3)Result of HEAD SAR**

| HEAD SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 661 | 1880.0 | GSM | Left | Fixed | Cheek/ Close display | 0 | **0.266** |
| 661 | 1880.0 | GSM | Left | Fixed | Cheek/ Open display | 0 | **0.152** |
| 661 | 1880.0 | GSM | Left | Fixed | Tilt/ Close display | 0 | **0.209** |
| 661 | 1880.0 | GSM | Left | Fixed | Tilt/ Open display | 0 | **0.086** |
| 661 | 1880.0 | GSM | Right | Fixed | Cheek/ Close display | 0 | **0.265** |
| 661 | 1880.0 | GSM | Right | Fixed | Cheek/ Open display | 0 | **0.448** |
| 661 | 1880.0 | GSM | Right | Fixed | Tilt/ Close display | 0 | **0.182** |
| 661 | 1880.0 | GSM | Right | Fixed | Tilt/ Open display | 0 | **0.072** |
| **Step.2 Measurement at flat phantom** | | | | | | | |
| 661 | 1880 | GSM | Flat | Fixed | Front/ Close display | 10 | **0.313** |
| 661 | 1880 | GSM | Flat | Fixed | Front/ Open display | 10 | **0.748** |
| **Step.3 VOIP mode (GPRS)** | | | | | | | |
| 661 | 1880.0 | GPRS 1 slot | Flat | Fixed | Front/ Open display | 10 | **0.793** |

## 9.4 PCS1900MHz Body SAR

**<Body (Hotspot mode)>**

Step1. The searching for the worst position
The test was performed in middle channel.

Note:
1) The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 13-Dec | 24.0 | 48 | MSL 1800 | 23.5 | 1880 | εr | 53.3 | 51.3 | -3.7 | +/-5 |
| | | | | | | σ [mho/m] | 1.52 | 1.59 | 4.7 | +/-5 |

εr: Relative Permittivity / σ : Coductivity
*1 The Target value is a parameter defined in FCC OET65.

**(3)Result of Body SAR**

| BODY SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 661 | 1880 | GPRS 1slots | Flat | Fixed | Front/ Open display | 10 | **0.754** |
| 661 | 1880 | GPRS 1slots | Flat | Fixed | Rear/ Close display | 10 | **0.362** |
| 661 | 1880 | GPRS 1slots | Flat | Fixed | Rear/ Open display | 10 | **0.654** |
| 661 | 1880 | GPRS 1slots | Flat | Fixed | Left/ Open display | 10 | **0.361** |
| 661 | 1880 | GPRS 1slots | Flat | Fixed | Bottom/ Open | 10 | **0.234** |
| **Step.2 Voice mode (GSM)/ Reference** | | | | | | | |
| 661 | 1880 | GSM | Flat | Fixed | Front/ Open display | 10 | **0.660** |

## 9.5 WCDMA Band V HEAD SAR

**(1)Method of measurement**

Step1. The searching for the worst position
The test was performed in middle channel.

***SAR test in Mouse and Jaw Regions of the SAM Phantom***

**WWAN antenna is located near the lower edge of EUT. Therefor Head SAR for WWAN applied the measurement procedure using a flat phantom according to the KDB648474 D04.**

Step2. The measurement at Flat phantom
The test was positioned 10mm against the lower edge from flat phantom.

Note:
1) The SAR is not required for handset with AMR mode because the maximum average output power with AMR is less than 1/4dB higher than that measured using 12.2kbps RMC.
2)The other channel was not required since middle channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 17-Dec | 24.0 | 42 | HSL900 | 23.5 | 836.6 | εr | 41.5 | 41.0 | -1.2 | +/-5 |
| | | | | | | σ [mho/m] | 0.90 | 0.87 | -3.0 | +/-5 |

εr: Relative Permittivity / σ : Coductivity
*1 The Target value is a parameter defined in FCC OET65.

**(3)Result of HEAD SAR**

| HEAD SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 4183 | 836.6 | 12.2k RMC | Left | Fixed | Cheek/ Close display | 0 | **0.184** |
| 4183 | 836.6 | 12.2k RMC | Left | Fixed | Cheek/ Open display | 0 | **0.172** |
| 4183 | 836.6 | 12.2k RMC | Left | Fixed | Tilt/ Close display | 0 | **0.144** |
| 4183 | 836.6 | 12.2k RMC | Left | Fixed | Tilt/ Open display | 0 | **0.213** |
| 4183 | 836.6 | 12.2k RMC | Right | Fixed | Cheek/ Close display | 0 | **0.176** |
| 4183 | 836.6 | 12.2k RMC | Right | Fixed | Cheek/ Open display | 0 | **n.a** |
| 4183 | 836.6 | 12.2k RMC | Right | Fixed | Tilt/ Close display | 0 | **0.153** |
| 4183 | 836.6 | 12.2k RMC | Right | Fixed | Tilt/ Open display | 0 | **0.127** |
| **Step.2 Measurement at flat phantom** | | | | | | | |
| 4183 | 836.6 | 12.2k RMC | Flat | Fixed | Front/ Close display | 10 | **0.281** |
| 4183 | 836.6 | 12.2k RMC | Flat | Fixed | Front/ Open display | 10 | **0.532** |

## 9.6 WCDMA Band V Body SAR

**(1)Method of measurement**
**<Body (Hotspot mode)>**
Step1. The searching for the worst position
The test was performed in middle channel.

Note:
1) The SAR is not required for handset with AMR mode because the maximum average output power with AMR is less than 1/4dB higher than that measured using 12.2kbps RMC.
2)The other channel was not required since middle channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**
The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 12-Dec | 24.0 | 50 | MSL 900 | 23.5 | 836.6 | εr | 55.2 | 55.5 | 0.6 | +/-5 |
| | | | | | | σ [mho/m] | 0.97 | 0.98 | 0.5 | +/-5 |

εr: Relative Permittivity / σ : Coductivity
*1 The Target value is a parameter defined in FCC OET65.

## (3)Result of Body SAR

| BODY SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 4183 | 836.6 | 12.2k RMC | Flat | Fixed | Front/ Open display | 10 | **0.697** |
| 4183 | 836.6 | 12.2k RMC | Flat | Fixed | Rear/ Close display | 10 | **0.437** |
| 4183 | 836.6 | 12.2k RMC | Flat | Fixed | Rear/ Open display | 10 | **0.558** |
| 4183 | 836.6 | 12.2k RMC | Flat | Fixed | Left/ Open display | 10 | **0.268** |
| 4183 | 836.6 | 12.2k RMC | Flat | Fixed | Bottom/ Open display | 10 | **0.113** |

## 9.7 WLAN HEAD SAR

**(1)Method of measurement**

Step1. The searching for the worst position
The test was performed in maximum average output power channel.

Note:
1) The SAR is not required for 11g/n mode because the maximum average output power for 11g/n mode is less than 1/4dB higher than that measured 11b mode.
2) The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 19-Dec | 24.0 | 47 | HSL 2450 | 23.5 | 2462 | εr | 39.2 | 37.8 | -3.5 | +/-5 |
| | | | | | | σ [mho/m] | 1.79 | 1.77 | -1.2 | +/-5 |

εr: Relative Permittivity / σ : Coductivity
*1 The Target value is a parameter defined in FCC OET65.

**(3)Result of HEAD SAR**

| HEAD SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 11 | 2462 | 11b 1Mbps | Left | Fixed | Cheek/ Close | 0 | **0.471** |
| 11 | 2462 | 11b 1Mbps | Left | Fixed | Cheek/ Open | 0 | **0.421** |
| 11 | 2462 | 11b 1Mbps | Left | Fixed | Tilt/ Close display | 0 | **0.671** |
| 11 | 2462 | 11b 1Mbps | Left | Fixed | Tilt/ Open display | 0 | **0.336** |
| 11 | 2462 | 11b 1Mbps | Right | Fixed | Cheek/ Close | 0 | **0.535** |
| 11 | 2462 | 11b 1Mbps | Right | Fixed | Cheek/ Open | 0 | **0.123** |
| 11 | 2462 | 11b 1Mbps | Right | Fixed | Tilt/ Close display | 0 | **0.585** |
| 11 | 2462 | 11b 1Mbps | Right | Fixed | Tilt/ Open display | 0 | **0.135** |

## 9.8 WLAN Body SAR

**(1)Method of measurement**

Step1. The searching for the worst position

The test was performed in maximum average output power channel.

Note:

1) The BODY SAR is not required for 11g/n mode because the maximum average output power for 11g/n mode is less than 1/4dB higher than that measured 11b mode.

2) The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

**(2)Simulated Tissue Liquid Parameter confirmation**

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.

The dielectric parameters measurement is reported in each correspondent section.

| DIELECTRIC PARAMETERS MEASUREMENT RESULTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Ambient Temp. [deg.c] | Relative Humidity [%] | Liquid type | Liquid Temp. [deg.c] | Measured Frequency [MHz] | Parameters | Target Value*1 | Measured | Deviation [%] | Limit [%] |
| 17-Dec | 24.0 | 42 | MSL 2450 | 23.5 | 2462 | εr | 52.7 | 50.4 | -4.4 | +/-5 |
| | | | | | | σ [mho/m] | 1.94 | 1.98 | 2.1 | +/-5 |

εr: Relative Permittivity / σ : Coductivity

*1 The Target value is a parameter defined in FCC OET65.

**(3)Result of Body SAR**

| BODY SAR MEASUREMENT RESULTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency | | Modulation | Phantom Section | EUT Set-up Conditions | | | SAR(1g) [W/kg] |
| Channel | [MHz] | | | Antenna | Position | Separation [mm] | Maximum value of multi-peak |
| **Step.1 Position searching** | | | | | | | |
| 11 | 2462 | 11b 1Mbps | Flat | Fixed | Front/ Open | 10 | **0.120** |
| 11 | 2462 | 11b 1Mbps | Flat | Fixed | Rear/ Open display | 10 | **0.157** |
| 11 | 2462 | 11b 1Mbps | Flat | Fixed | Left/ Open display | 10 | **0.024** |
| 11 | 2462 | 11b 1Mbps | Flat | Fixed | Top/ Open display | 10 | **0.191** |
| 11 | 2462 | 11b 1Mbps | Flat | Fixed | Top/ Close display | 10 | **0.164** |

## 9.9 Simultaneous transmission SAR test exclusion considerations for Head

**Estimated SAR is calculated about Bluetooth**.

*When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:*

*(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;*

*where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.*

| Band | Mode | Upper frequency of band *1 | Max power(Meas) | Upper power of spec | Min distance *3 | Calculation of Estimated SAR*4 |
|---|---|---|---|---|---|---|
| Bluetooth | EDR(3DH5) | 2480 [MHz] (79 ch) | 2.29 [dBm] 1.69 [W/kg] (2402MHz(1ch)) | *2 | 5 [mm] | 0.071 [W/kg] |

*1 The upper frequency of the frequency band of Bluetooth was used in order to calculate the maximum estimated SAR.
*2 The measured output power is the upper power on specification.
*3 Refer to Appendix 4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied.
*4 *(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg*

### Result of SUM ΣSAR1g

| SUM ΣSAR1g (GSM850 +WLAN(2.4G) or Bluetooth) | | | | | | |
|---|---|---|---|---|---|---|
| Position | Separation [mm] | Stand alone SAR(1g) [W/kg] | | | SUM SAR(1g)[W/kg] | SUM SAR(1g)[W/kg] |
| | | GSM850 *1 | WLAN 2.4G *1 | Bluetoooth *2 | WWAN + WLAN(2.4G) | WWAN + Bluetooth |
| Left cheek/ Close display | 0 | 0.107 | 0.471 | 0.071 | 0.578 | 0.178 |
| Left cheek/ Open display | 0 | 0.162 | 0.421 | 0.071 | 0.583 | 0.233 |
| Left tilt/ Close display | 0 | 0.089 | 0.671 | 0.071 | 0.760 | 0.160 |
| Left tilt/ Open display | 0 | 0.138 | 0.336 | 0.071 | 0.474 | 0.209 |
| Right cheek/ Close display | 0 | 0.104 | 0.535 | 0.071 | 0.639 | 0.175 |
| Right cheek/ Open display | 0 | n.a | 0.123 | 0.071 | - | - |
| Right tilt/ Close display | 0 | 0.089 | 0.585 | 0.071 | 0.674 | 0.160 |
| Right tilt/ Open display | 0 | 0.107 | 0.135 | 0.071 | 0.242 | 0.178 |
| Front/ Close display | 10 | 0.274 | - | 0.071 | - | 0.345 |
| Front/ Close display | 10 | 0.528 | - | 0.071 | - | 0.599 |

| SUM ΣSAR1g (PCS1900 +WLAN(2.4G) or Bluetooth) | | | | | | |
|---|---|---|---|---|---|---|
| Position | Separation [mm] | Stand alone SAR(1g) [W/kg] | | | SUM SAR(1g)[W/kg] | SUM SAR(1g)[W/kg] |
| | | PCS1900 *1 | WLAN 2.4G *1 | Bluetooth *2 | WWAN + WLAN(2.4G) | WWAN + Bluetooth |
| Left cheek/ Close display | 0 | 0.266 | 0.471 | 0.071 | 0.737 | 0.337 |
| Left cheek/ Open display | 0 | 0.152 | 0.421 | 0.071 | 0.573 | 0.223 |
| Left tilt/ Close display | 0 | 0.209 | 0.671 | 0.071 | 0.880 | 0.280 |
| Left tilt/ Open display | 0 | 0.086 | 0.336 | 0.071 | 0.422 | 0.157 |
| Right cheek/ Close display | 0 | 0.265 | 0.535 | 0.071 | 0.800 | 0.336 |
| Right cheek/ Open display | 0 | 0.448 | 0.123 | 0.071 | 0.571 | 0.519 |
| Right tilt/ Close display | 0 | 0.182 | 0.585 | 0.071 | 0.767 | 0.253 |
| Right tilt/ Open display | 0 | 0.072 | 0.135 | 0.071 | 0.207 | 0.143 |
| Front/ Close display | 10 | 0.313 | - | 0.071 | - | 0.384 |
| Front/ Close display | 10 | 0.793 | - | 0.071 | - | 0.864 |

: Highest SUM ΣSAR1g Head simultaneous transmission

| SUM ΣSAR1g (WCDMA V +WLAN(2.4G) or Bluetooth) | | | | | | |
|---|---|---|---|---|---|---|
| Position | Separation [mm] | Stand alone SAR(1g) [W/kg] | | | SUM SAR(1g)[W/kg] | SUM SAR(1g)[W/kg] |
| | | WCDMA V *1 | WLAN 2.4G *1 | Bluetooth *2 | WWAN + WLAN(2.4G) | WWAN + Bluetooth |
| Left cheek/ Close display | 0 | 0.184 | 0.471 | 0.071 | 0.655 | 0.255 |
| Left cheek/ Open display | 0 | 0.172 | 0.421 | 0.071 | 0.593 | 0.243 |
| Left tilt/ Close display | 0 | 0.144 | 0.671 | 0.071 | 0.815 | 0.215 |
| Left tilt/ Open display | 0 | 0.213 | 0.336 | 0.071 | 0.549 | 0.284 |
| Right cheek/ Close display | 0 | 0.176 | 0.535 | 0.071 | 0.711 | 0.247 |
| Right cheek/ Open display | 0 | n.a | 0.123 | 0.071 | - | - |
| Right tilt/ Close display | 0 | 0.153 | 0.585 | 0.071 | 0.738 | 0.224 |
| Right tilt/ Open display | 0 | 0.127 | 0.135 | 0.071 | 0.262 | 0.198 |
| Front/ Close display | 10 | 0.281 | - | 0.071 | - | 0.352 |
| Front/ Close display | 10 | 0.532 | - | 0.071 | - | 0.603 |

*1 Use the measured SAR to determine simultaneous transmission SAR test exclusion.
*2 Use the estimated SAR to determine simultaneous transmission SAR test exclusion.

## 9.10 Simultaneous transmission SAR test exclusion considerations for Body

**Estimated SAR is calculated about Bluetooth**.

*When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:*

*(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;*

*where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.*

| Band | Mode | Upper frequency of band *1 | Max power(Meas) | Upper power of spec | Min distance *3 | Calculation of Estimated SAR*4 |
|---|---|---|---|---|---|---|
| Bluetooth | EDR(3DH5) | 2480 [MHz] (79 ch) | 2.29 [dBm] 1.69 [W/kg] (2402MHz(1ch)) | *2 | 5 [mm] | 0.071 [W/kg] |

*1 The upper frequency of the frequency band of Bluetooth was used in order to calculate the maximum estimated SAR.
*2 The measured output power is the upper power on specification.
*3 Refer to Appendix 4
*4 *(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg*

**Result of SUM ΣSAR1g**

| SUM ΣSAR1g (GSM850 +WLAN(2.4G) or Bluetooth) | | | | | | |
|---|---|---|---|---|---|---|
| Position | Separation [mm] | Stand alone SAR(1g) [W/kg] | | | SUM SAR(1g)[W/kg] | SUM SAR(1g)[W/kg] |
| | | GSM850 *1 | WLAN 2.4G *1 | Bluetooth *2 | WWAN + | WWAN + Bluetooth |
| Front/ Open display | 10 | 0.320 | 0.120 | 0.071 | 0.440 | 0.391 |
| Rear/ Close display | 10 | 0.363 | - | 0.071 | - | 0.434 |
| Rear/ Open display | 10 | 0.254 | 0.157 | 0.071 | 0.411 | 0.325 |
| Left/ Open display | 10 | 0.179 | 0.024 | 0.071 | 0.203 | 0.250 |
| Top/ Open display | 10 | - | 0.191 | 0.071 | - | - |
| Top/ Close display | 10 | - | 0.164 | 0.071 | - | - |
| Bottom/ Open display | 10 | 0.093 | - | 0.071 | - | 0.164 |

| SUM ΣSAR1g (PCS1900 +WLAN(2.4G) or Bluetooth) | | | | | | |
|---|---|---|---|---|---|---|
| Position | Separation [mm] | Stand alone SAR(1g) [W/kg] | | | SUM SAR(1g)[W/kg] | SUM SAR(1g)[W/kg] |
| | | PCS1900 *1 | WLAN 2.4G *1 | Bluetooth *2 | WWAN + | WWAN + Bluetooth |
| Front/ Open display | 10 | 0.754 | 0.120 | 0.071 | 0.874 | 0.825 |
| Rear/ Close display | 10 | 0.362 | - | 0.071 | - | 0.433 |
| Rear/ Open display | 10 | 0.654 | 0.157 | 0.071 | 0.811 | 0.725 |
| Left/ Open display | 10 | 0.361 | 0.024 | 0.071 | 0.385 | 0.432 |
| Top/ Open display | 10 | - | 0.191 | 0.071 | - | - |
| Top/ Close display | 10 | - | 0.164 | 0.071 | - | - |
| Bottom/ Open display | 10 | 0.234 | - | 0.071 | - | 0.305 |

: Highest SUM ΣSAR1g Body simultaneous transmission

| SUM ΣSAR1g (WCDMA V +WLAN(2.4G) or Bluetooth) | | | | | | |
|---|---|---|---|---|---|---|
| Position | Separation [mm] | Stand alone SAR(1g) [W/kg] | | | SUM SAR(1g)[W/kg] | SUM SAR(1g)[W/kg] |
| | | WCDMA V *1 | WLAN 2.4G *1 | Bluetooth *2 | WWAN + | WWAN + Bluetooth |
| Front/ Open display | 10 | 0.697 | 0.120 | 0.071 | 0.817 | 0.768 |
| Rear/ Close display | 10 | 0.437 | - | 0.071 | - | 0.508 |
| Rear/ Open display | 10 | 0.558 | 0.157 | 0.071 | 0.715 | 0.629 |
| Left/ Open display | 10 | 0.268 | 0.024 | 0.071 | 0.292 | 0.339 |
| Top/ Open display | 10 | - | 0.191 | 0.071 | - | - |
| Top/ Close display | 10 | - | 0.164 | 0.071 | - | - |
| Bottom/ Open display | 10 | 0.113 | - | 0.071 | - | 0.184 |

*1 Use the measured SAR to determine simultaneous transmission SAR test exclusion.
*2 Use the estimated SAR to determine simultaneous transmission SAR test exclusion.

# SECTION 10 Test instruments

| Control No. | Instrument | Manufacturer | Model No | Serial No | Test Item | Calibration Date | Expiration date of the calibration |
|---|---|---|---|---|---|---|---|
| MOS-14 | Thermo-Hygrometer | Custom | CTH-201 | - | Power | 2012/02/06 | 2013/02/28 |
| MPM-12 | Power Meter | Anritsu | ML2495A | 0825002 | Power | 2012/06/01 | 2013/06/30 |
| MPSE-17 | Power sensor | Anritsu | MA2411B | 0738285 | Power | 2012/06/01 | 2013/06/30 |
| MCC-35 | Microwave Cable | Hirose Electric | U.FL-2LP-066-A-(200) | - | Power | 2012/09/05 | 2013/09/30 |
| MAT-17 | Attenuator(20dB)_DC-1GHz_N | Weinschel Corp | MODEL 1 | BG0143 | Power | 2012/01/10 | 2013/01/31 |
| MPSC-01 | Power splitters/Combiners | Mini-Circuit | ZFSC-2-2500 | 0124 | Power | 2012/09/12 | 2013/09/30 |
| MAT-25 | Attenuator(10dB)(above1GHz) | Agilent | 8493C | 71642 | Power | 2012/06/27 | 2013/06/30 |
| MCC-98 | Microwave Cable 1G-40GHz | Schner | SUCOFLEX102 | 30819/2 | Power | 2012/05/09 | 2013/05/31 |

| Control No. | Instrument | Manufacturer | Model No | Serial No | Test Item | Calibration Date | Expiration date of the calibration |
|---|---|---|---|---|---|---|---|
| MPM-01 | Power Meter | Agilent | E4417A | GB41290639 | SAR | 2012/03/05 | 2013/03/31 |
| MPSE-01 | Power Sensor | Agilent | E9300B | US40010300 | SAR | 2012/02/29 | 2013/02/28 |
| MPSE-03 | Power sensor | Agilent | E9327A | US40440576 | SAR | 2012/03/07 | 2013/03/31 |
| MAT-15 | Attenuator(30dB) | Agilent | 8498A | US40010300 | SAR | 2012/03/15 | 2013/03/31 |
| MSG-10 | Signal Generator | Agilent | N5181A | MY47421098 | SAR | 2012/10/08 | 2013/10/31 |
| MPA-12 | MicroWave System Amplifier | Agilent | 83017A | MY39500780 | SAR | 2012/03/28 | 2013/03/31 |
| MRFA-08 | Pre Amplifier | TSJ | TCBP0206 | - | SAR | 2012/03/22 | 2013/03/31 |
| MHDC-11 | Dual Directional Coupler | Hewlett Packard | 778D | 16605 | SAR | Pre Check | 2013/08/31 |
| MHDC-12 | Dual Directional Coupler | Hewlett Packard | 772D | 2839A0016 | SAR | Pre Check | - |
| MNA-01 | Network Analyzer | Agilent/HP | E8358A | US41080381 | SAR | 2012/09/14 | 2013/09/30 |
| MDPK-01 | Dielectric probe kit | Agilent | 85070D | 702 | SAR | 2012/08/14 | 2013/08/31 |
| MNCK-01 | Type N Calibration Kit | Agilent | 85032F | MY41495257 | SAR | 2012/09/18 | 2013/09/30 |
| MRENT-82 | Dosimetric E-Field Probe | Schmid&Partner Engineering AG | EX3DV3 | 3540 | SAR | 2012/07/19 | 2013/07/31 |
| MDAE-01 | Data Acquisition Electronics | Schmid&Partner Engineering AG | DAE4 | 509 | SAR | 2012/07/13 | 2013/07/31 |
| COTS-MSAR-03 | Dasy5 | Schmid&Partner Engineering AG | DASY52.6.1.408 | - | SAR | - | - |
| COTS-MSAR-02 | S-Parameter Network Analyzer | Agilent | ー | ー | SAR | - | - |
| MDA-05 | Dipole Antenna | Schmid&Partner Engineering AG | D900V2 | 155 | SAR | 2011/12/20 | 2012/12/31 |
| MDA-06 | Dipole Antenna | Schmid&Partner Engineering AG | D1800V2 | 2d040 | SAR | 2012/11/30 | 2013/11/30 |
| MDA-07 | Dipole Antenna | Schmid&Partner Engineering AG | D2450V2 | 713 | SAR | 2012/09/21 | 2013/09/30 |
| MRENT-68 | Dipole Antenna | Schmid&Partner Engineering AG | D5GHzV2 | 1039 | SAR | 2012/04/17 | 2013/04/30 |
| MPSAM-02 | SAM Phantom | Schmid&Partner Engineering AG | SAM Twin Phantom V4.0 | 1333 | SAR | 2012/05/07 | 2013/05/31 |
| MPF-02 | 2mmOval Flat Phantom ERI 4.0 | Schmid&Partner Engineering AG | QD VA 001B (ERI4.0) | 1045 | SAR | 2012/05/08 | 2013/05/31 |
| MDH-01 | Device holder | Schmid&Partner Engineering AG | Mounting device for transmitter | - | SAR | Pre Check | - |
| MOS-26 | Thermo-Hygrometer | CUSTOM | CTH-201 | A08Q29 | SAR | 2012/05/14 | 2013/05/31 |
| MOS-10 | Digtal thermometer | HANNA | Checktemp-2 | MOS-10 | SAR | 2012/08/06 | 2013/08/31 |
| MBM-13 | Barometer | Sunoh | SBR121 | 837 | SAR | 2011/03/14 | 2013/03/31 |
| HSL/MSL900 | | | | Daily check Target value ± 5% | | | |
| HSL/MSL1800 | | | | Daily check Target value ± 5% | | | |
| HSL/MSL2450 | | | | Daily check Target value ± 5% | | | |
| SAR room | | | | Daily check Ambient Noise<0.012W/kg | | | |

**The expiration date of the calibration is the end of the expired month.**
**All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.**
**As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.**

## APPENDIX 1 : SAR Measurement data

### 1. Evaluation procedure

**The evaluation was performed with the following procedure:**

**Step 1:** Measurement of the E-field at a fixed location above the ear point or central position of flat phantom was used as a reference value for assessing the power drop.

**Step 2:** The SAR distribution at the exposed side of head or body position was measured at a distance of each device from the inner surface of the shell. The area covered the entire dimension of the antenna of EUT and the horizontal grid spacing was 15 mm x 15 mm, 12 mm x 12 mm or 10mm x 10mm. Based on these data, the area of the maximum absorption was determined by spline interpolation.

**Step 3:** Around this point found in the Step 2 (area scan) , a volume of 30mm x 30mm x 30mm or more was assessed by measuring 7 x 7 x 7 points at least. And for any secondary peaks found in the Step2 which are within 2dB of maximum peak and not with this Step3 (Zoom scan) is repeated. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

(1). The data at the surface were extrapolated, since the center of the dipoles is 1mm(EX3DV3) away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm [4]. A polynomial of the fourth order was calculated through the points in z-axes.
This polynomial was then used to evaluate the points between the surface and the probe tip.

(2). The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one-dimensional splines with the “Not a knot"-condition (in x, y and z-directions) [4], [5]. The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

(3). All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

**Step 4**: Re-measurement of the E-field at the same location as in Step 1.

## 2. Measurement data

**【GSM850 Head】**

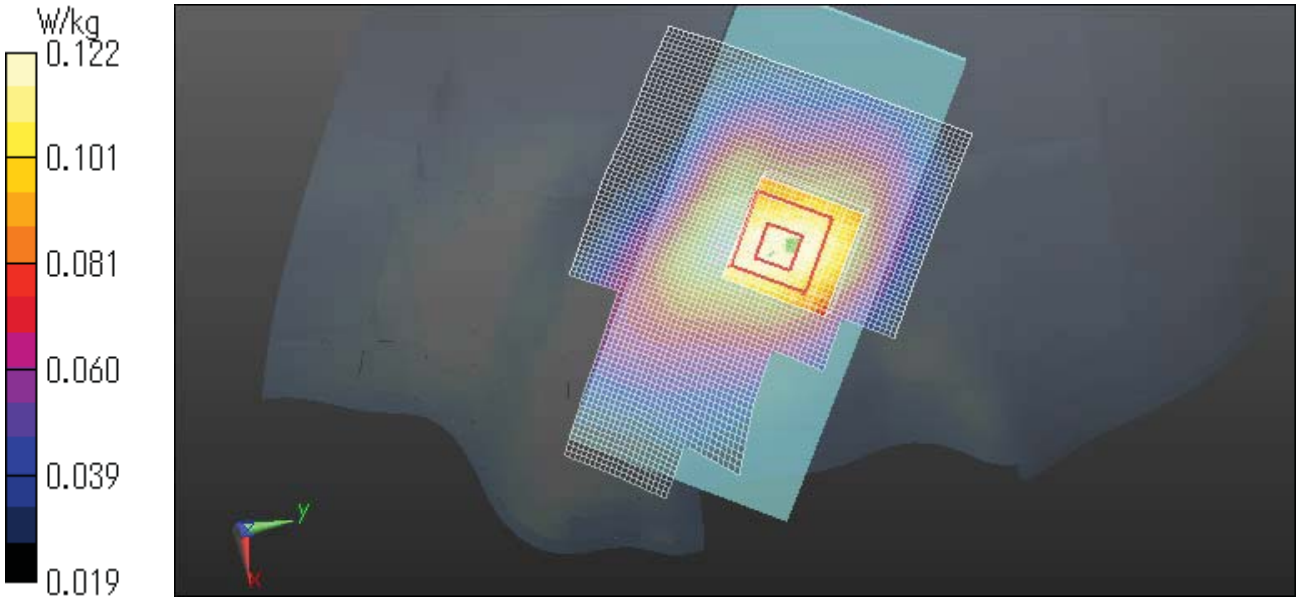
**KMP7R4H1-6A GSM850 GSM Left cheek Close display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.124 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.292 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.135 W/kg
**SAR(1 g) = 0.107 W/kg; SAR(10 g) = 0.084 W/kg**
Maximum value of SAR (measured) = 0.122 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A GSM850 GSM Left cheek Open display 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

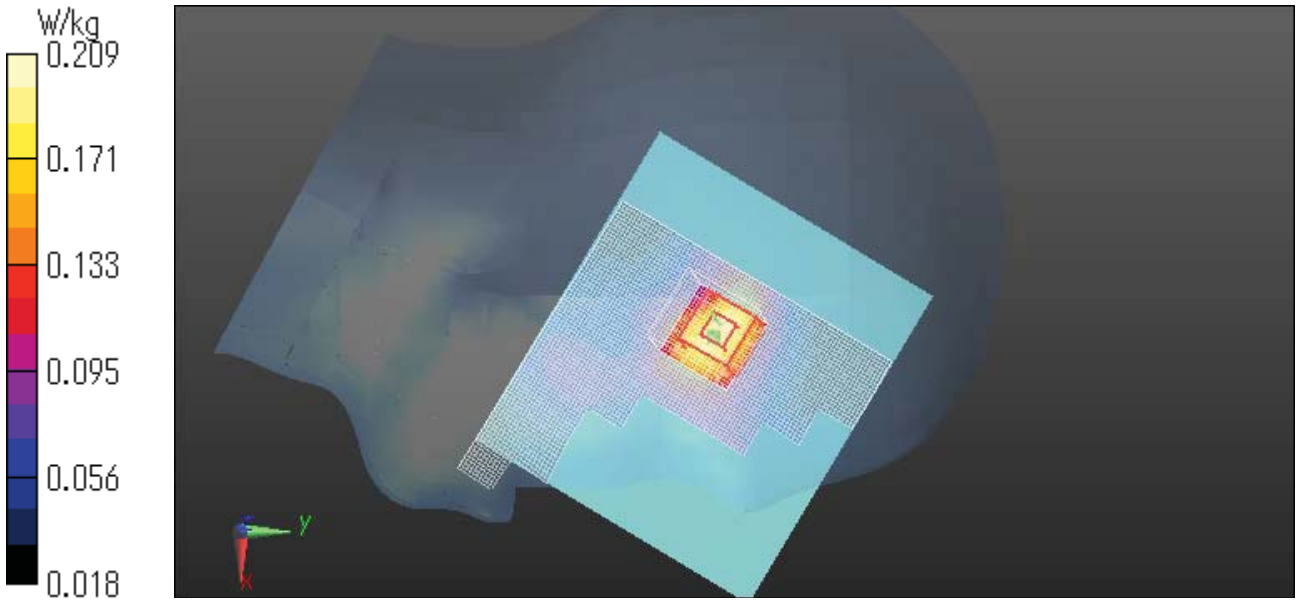
**Area Scan (81x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.194 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.445 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.266 W/kg
**SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.109 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.209 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



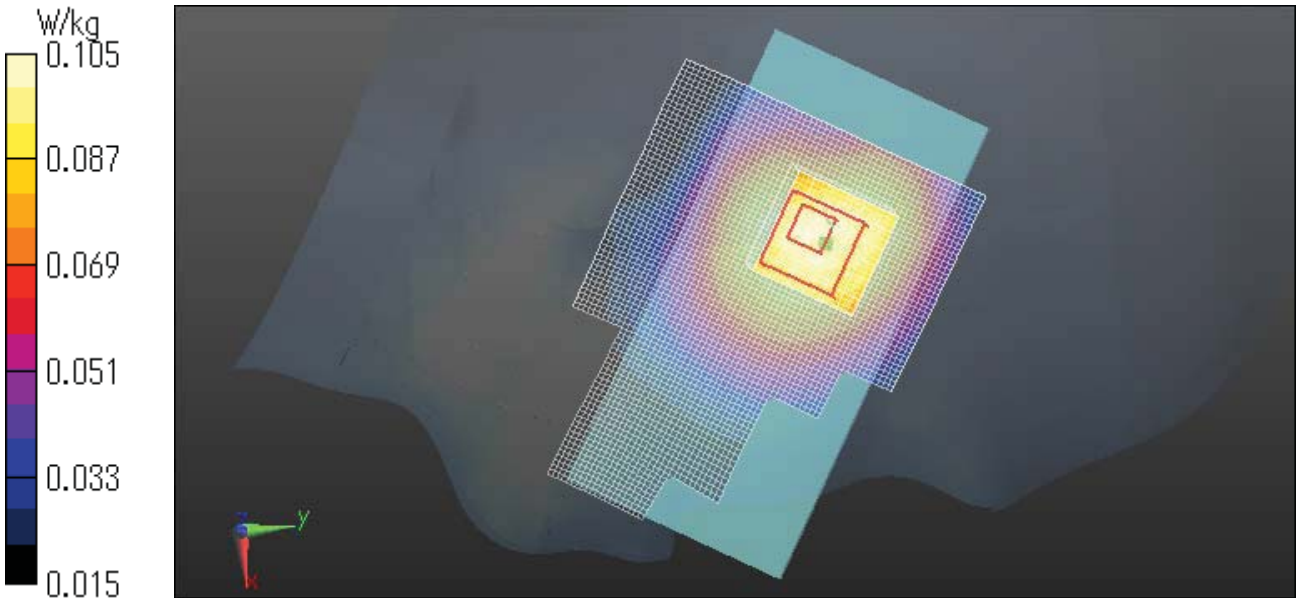
**KMP7R4H1-6A GSM850 GSM Left tilt Close display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.102 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.839 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.116 W/kg
**SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.069 W/kg**
Maximum value of SAR (measured) = 0.105 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A GSM850 GSM Left tilt Open display 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);
**Area Scan (81x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.175 W/kg

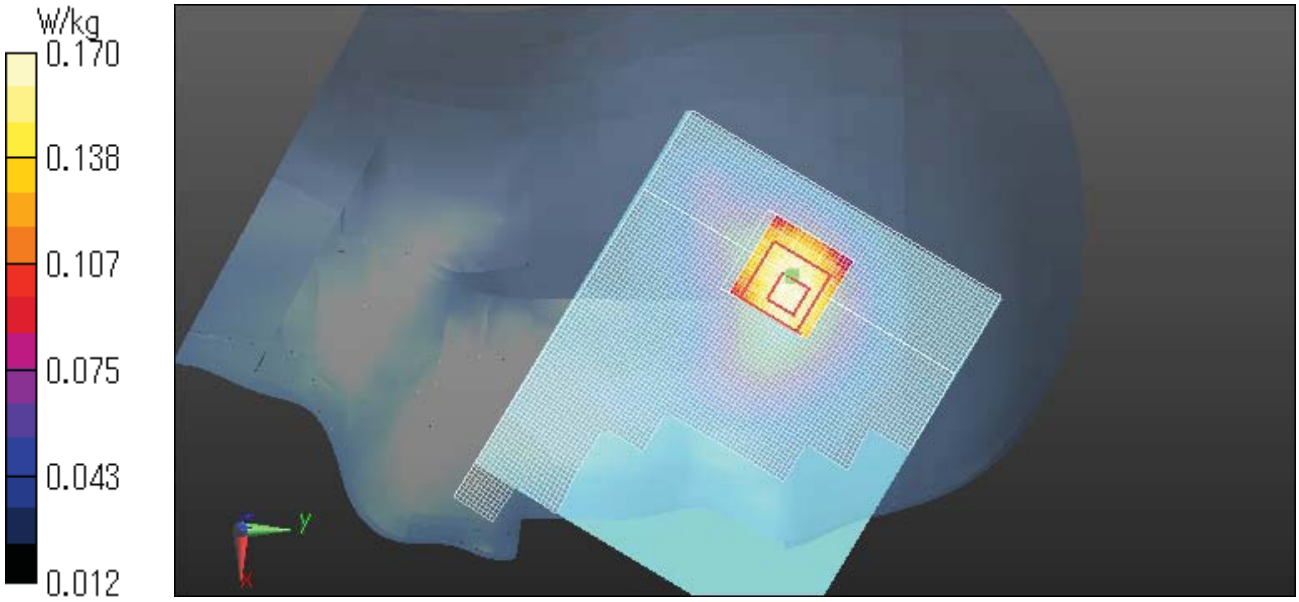
**Area Scan 2 (81x21x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.173 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.246 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.202 W/kg
**SAR(1 g) = 0.138 W/kg; SAR(10 g) = 0.094 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.170 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



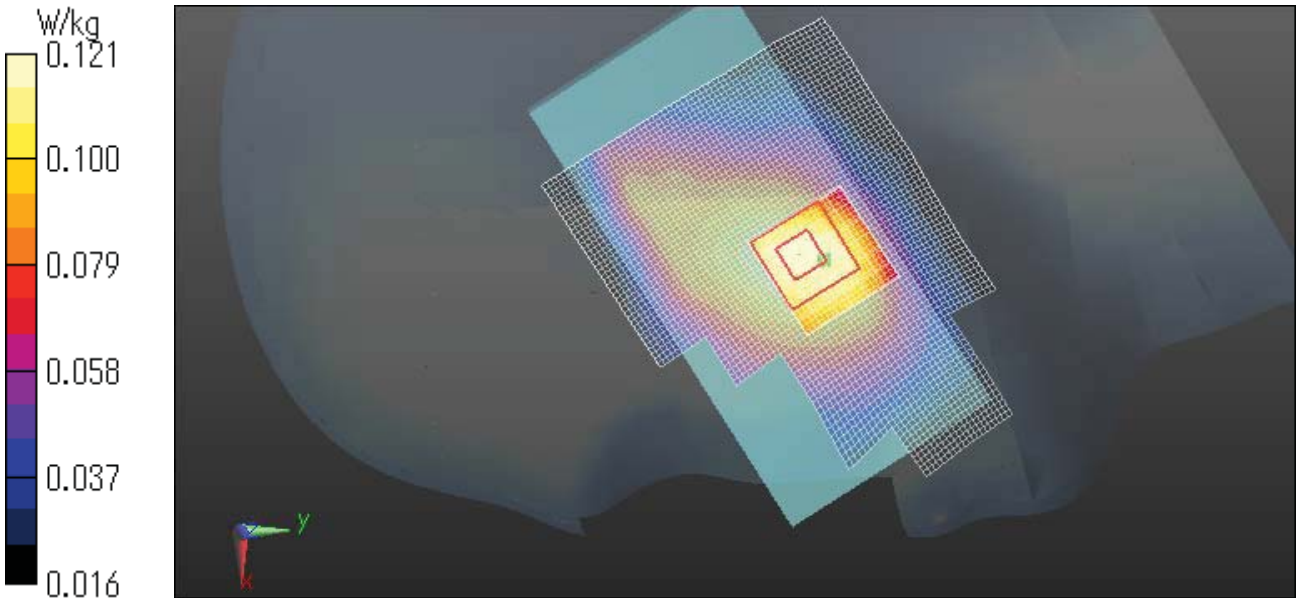
**KMP7R4H1-6A GSM850 GSM Right cheek Close display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.130 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.343 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.133 W/kg
**SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.079 W/kg**
Maximum value of SAR (measured) = 0.121 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A GSM850 GSM Right cheek Open display 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

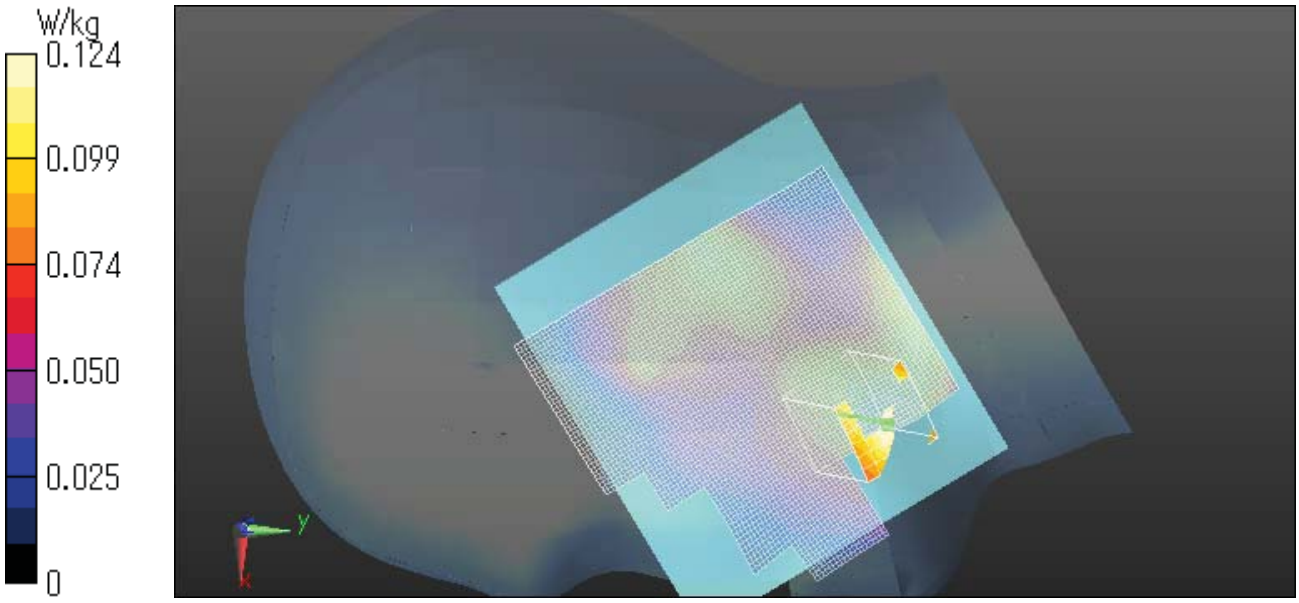
**Area Scan (81x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.131 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.744 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.148 W/kg
**SAR(1 g) = n.a. ; SAR(10 g) = n.a.**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.124 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



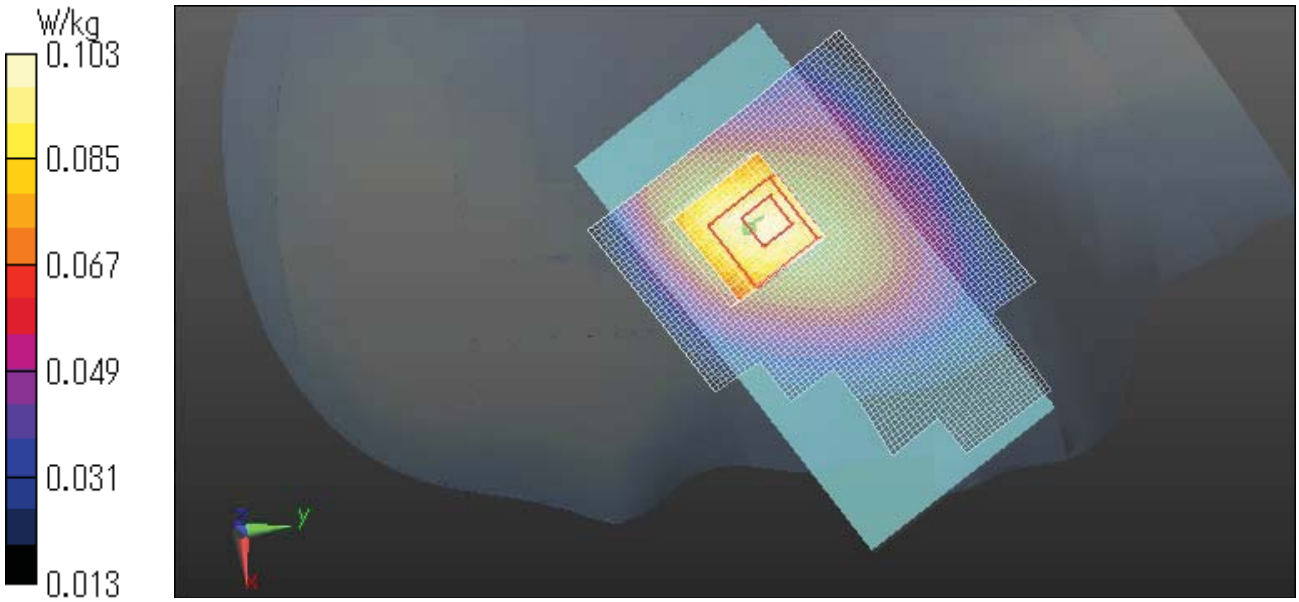
**KMP7R4H1-6A GSM850 GSM Right tilt Close display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0990 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.590 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.113 W/kg
**SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.069 W/kg**
Maximum value of SAR (measured) = 0.103 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

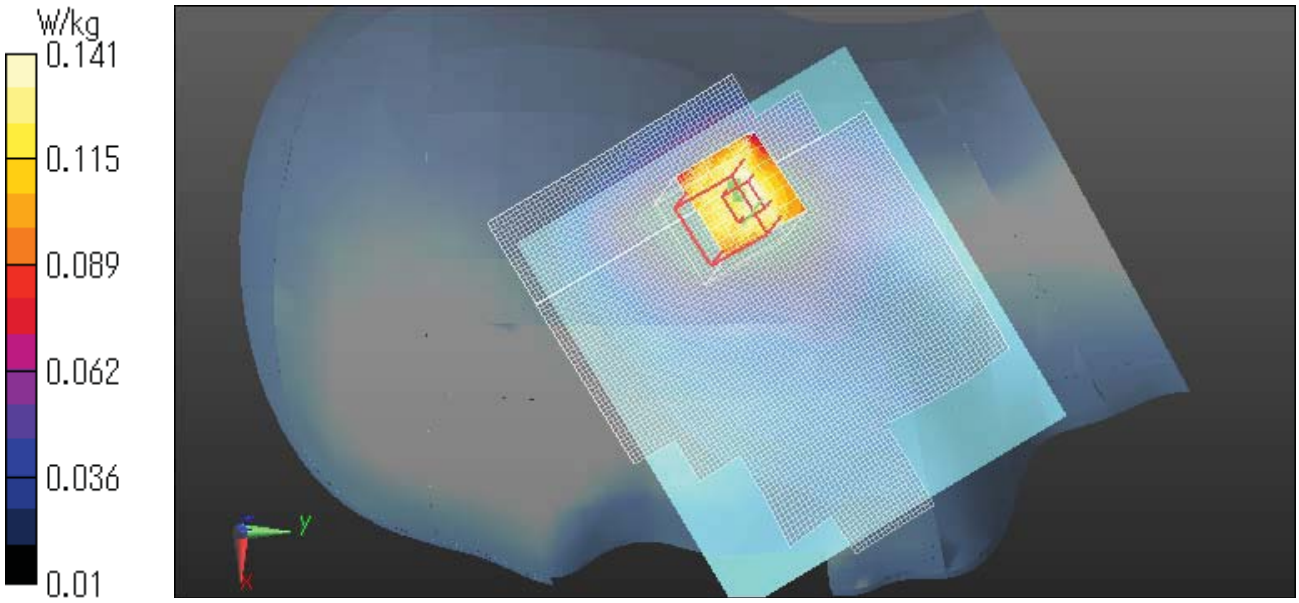


**KMP7R4H1-6A GSM850 GSM Right tilt Open display 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (81x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.140 W/kg
**Area Scan 2 (81x21x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.138 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.791 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.177 W/kg
**SAR(1 g) = 0.107 W/kg; SAR(10 g) = 0.074 W/kg**
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.141 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



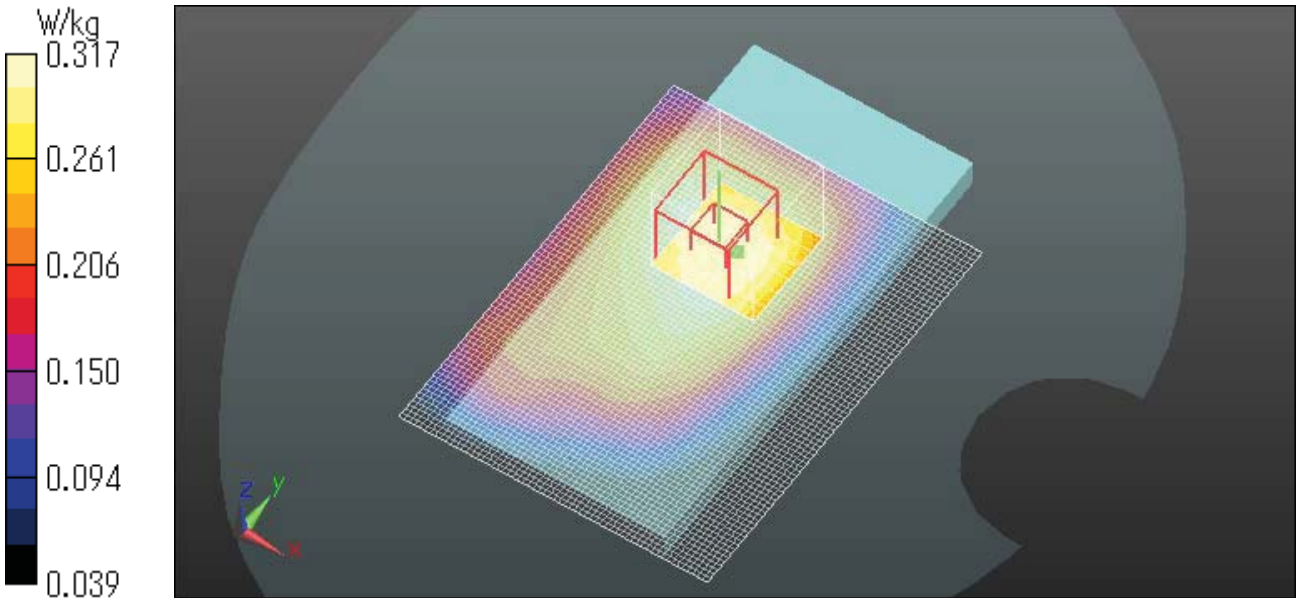
**KMP7R4H1-6A GSM850 GSM Front (Top 4mm, Bottom 10mm) Close display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.327 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.969 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.355 W/kg
**SAR(1 g) = 0.274 W/kg; SAR(10 g) = 0.210 W/kg**
Maximum value of SAR (measured) = 0.317 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



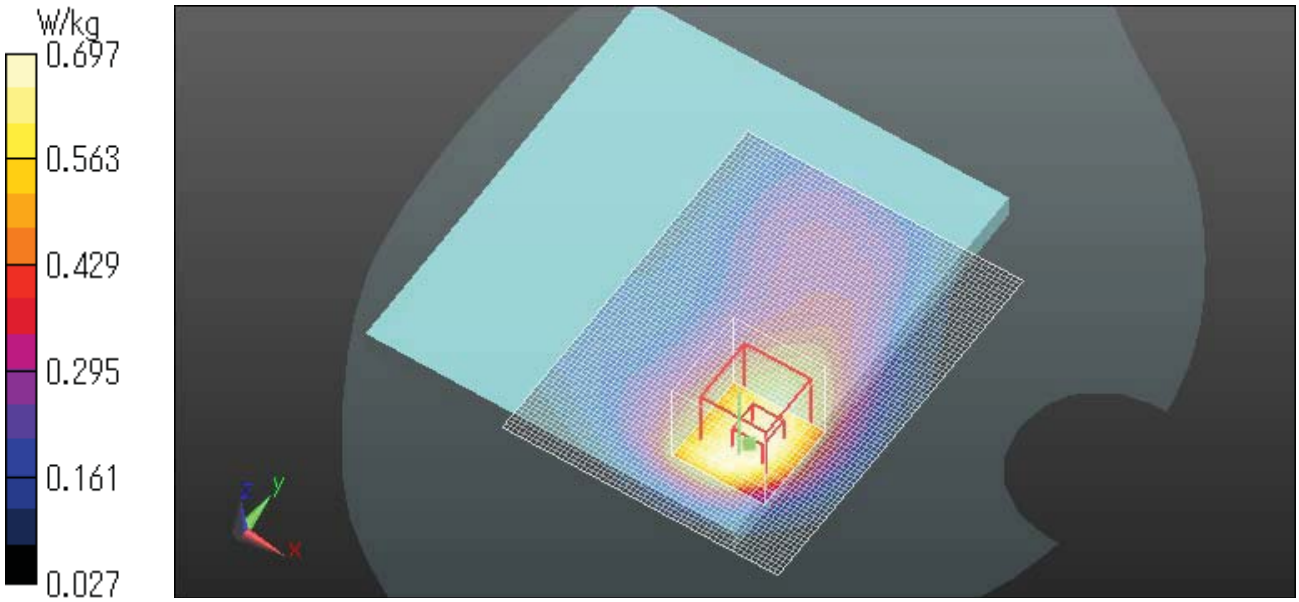
**KMP7R4H1-6A GSM850 GSM Front (Top 4mm, Bottom 10mm) Open display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.793 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.696 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.898 W/kg
**SAR(1 g) = 0.528 W/kg; SAR(10 g) = 0.339 W/kg**
Maximum value of SAR (measured) = 0.697 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



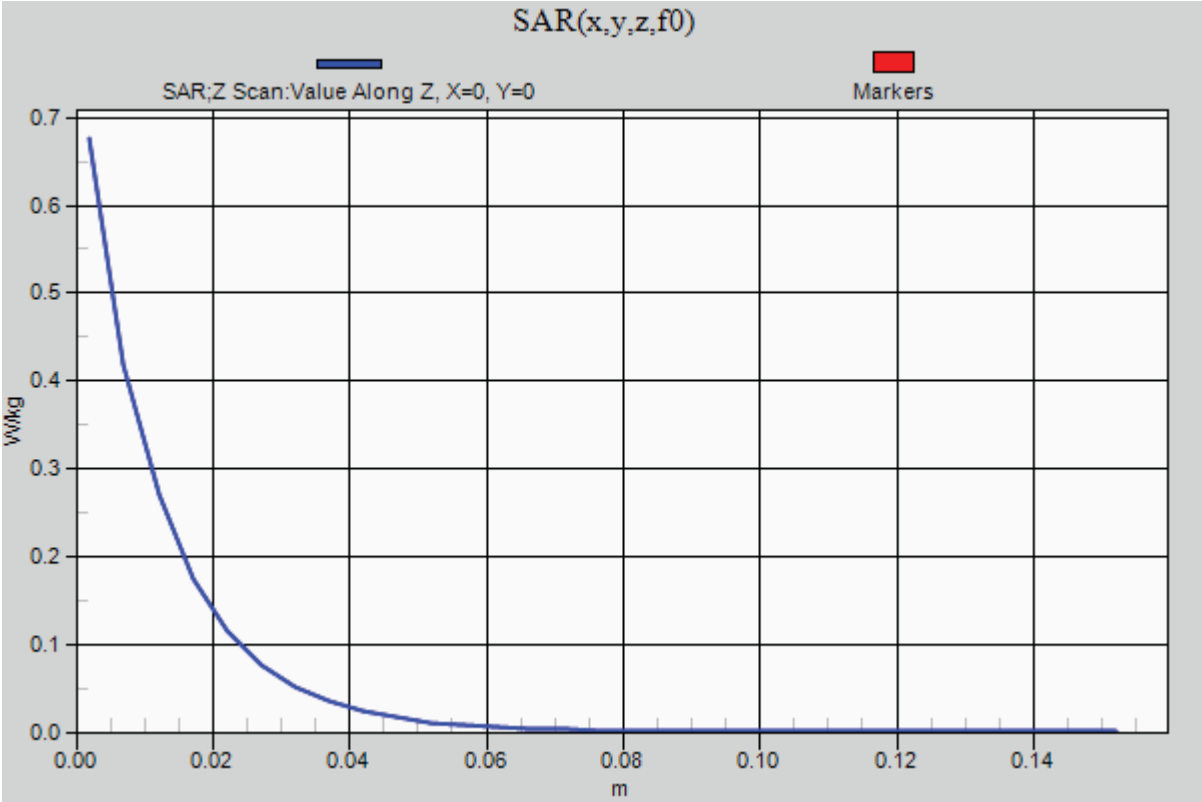
**Z scan at maximum SAR location GSM850(Head)**

**KMP7R4H1-6A GSM850 GSM Front (Top 4mm, Bottom 10mm) Open display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.676 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



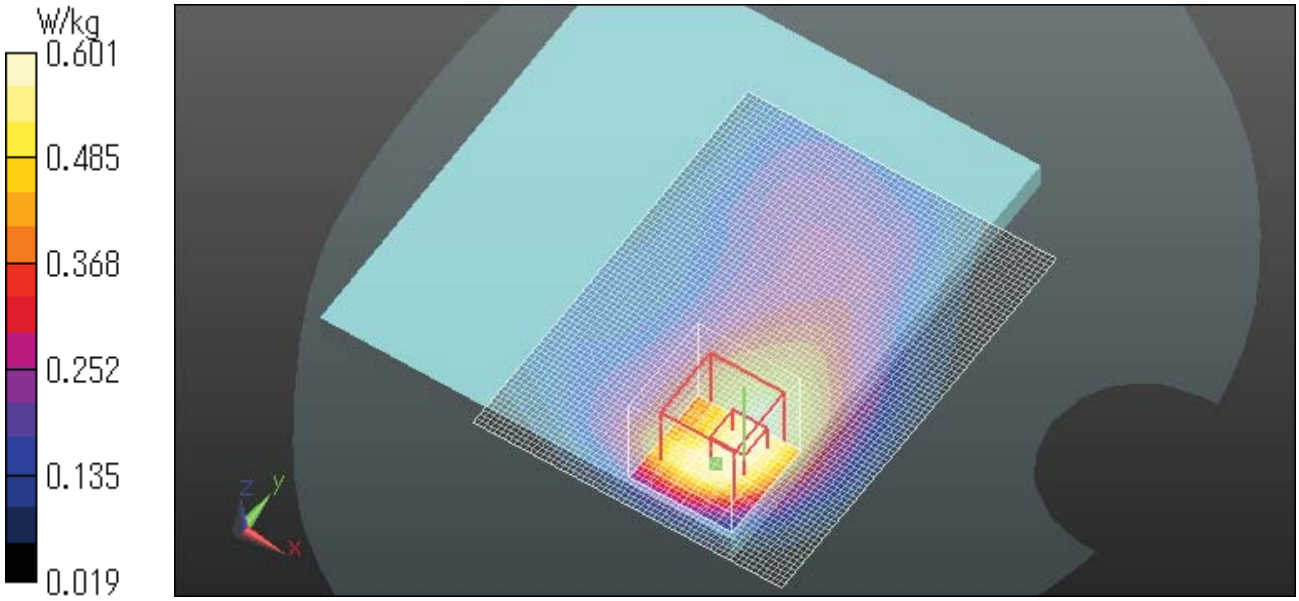
**KMP7R4H1-6A GSM850 GPRS 1slot Front (Top 4mm, Bottom 10mm) Open display 836.6MHz**

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.871 mho/m; εr = 41.001; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.631 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.980 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.766 W/kg
**SAR(1 g) = 0.450 W/kg; SAR(10 g) = 0.282 W/kg**
Maximum value of SAR (measured) = 0.601 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

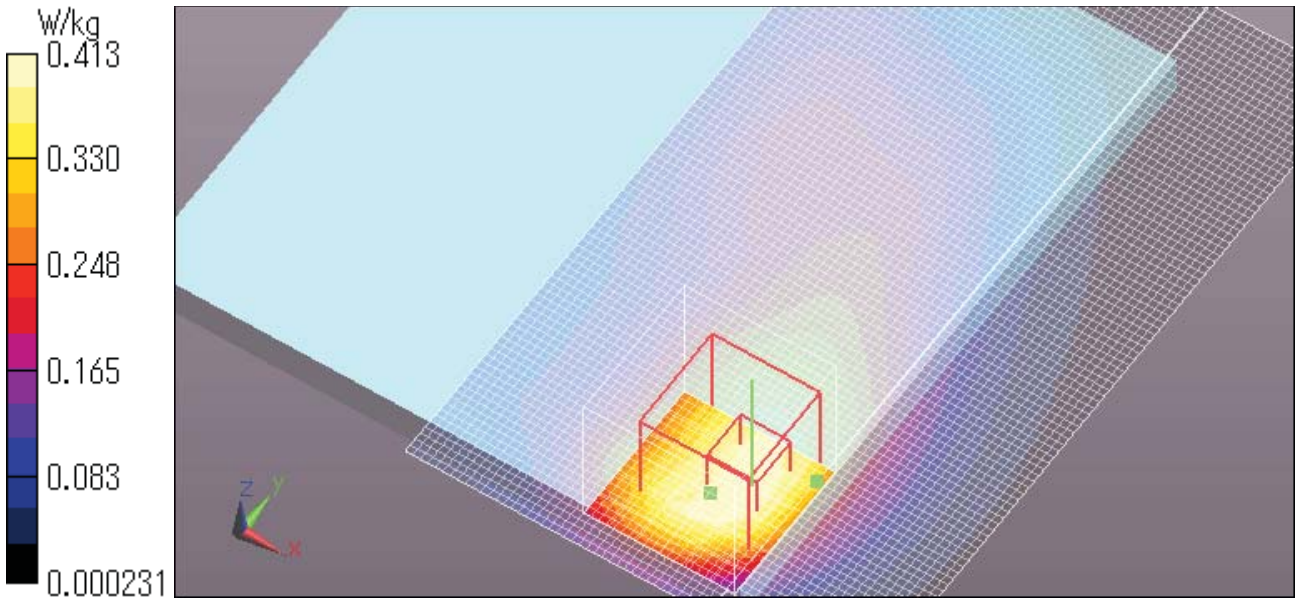


【GSM850 Body】

**KMP7R4H1-6A GSM850 GPRS 1slot Front Open display 10mm 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);
**Area Scan 2 2 (41x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.444 W/kg
**Area Scan 2 2 2 (21x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.323 W/kg
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.465 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.508 W/kg
**SAR(1 g) = 0.320 W/kg; SAR(10 g) = 0.208 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.413 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

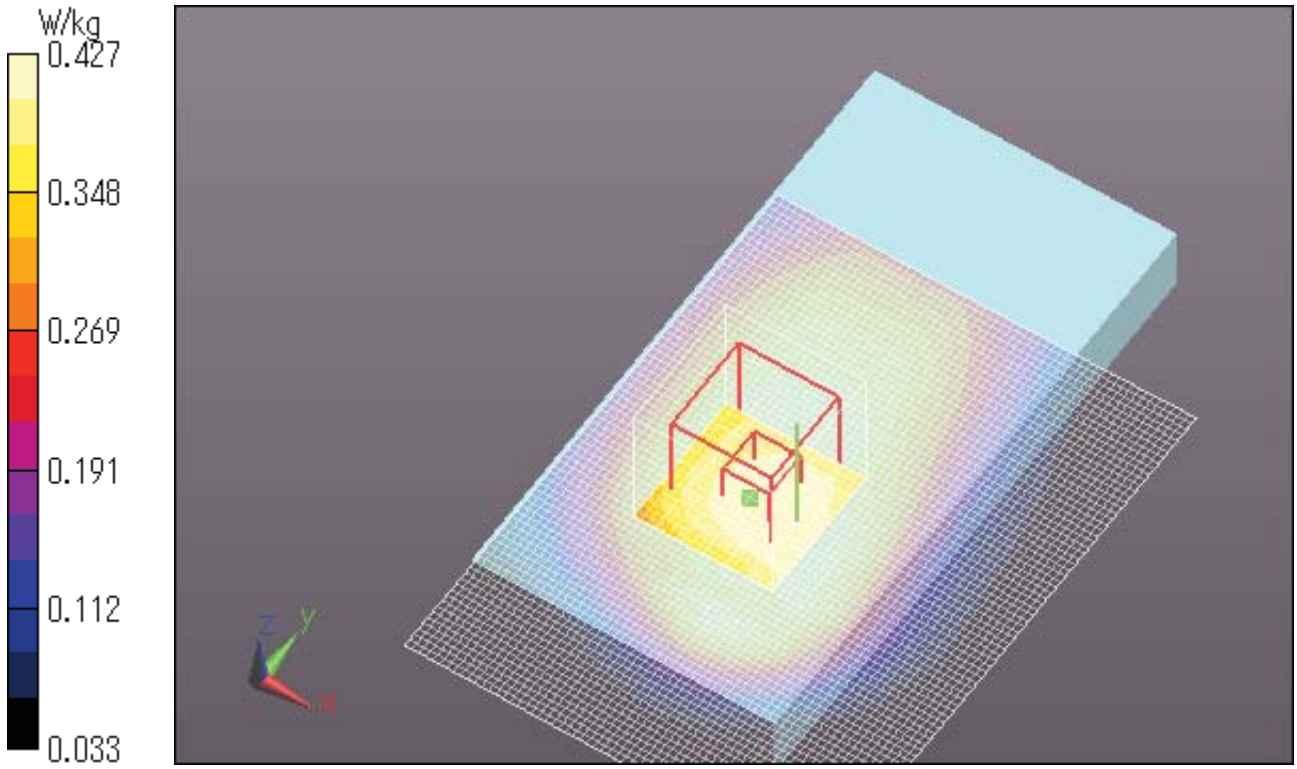


**KMP7R4H1-6A GSM850 GPRS 1slot Rear Close display 10mm 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);
**Area Scan 2 3 (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.431 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.101 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.496 W/kg
**SAR(1 g) = 0.363 W/kg; SAR(10 g) = 0.274 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

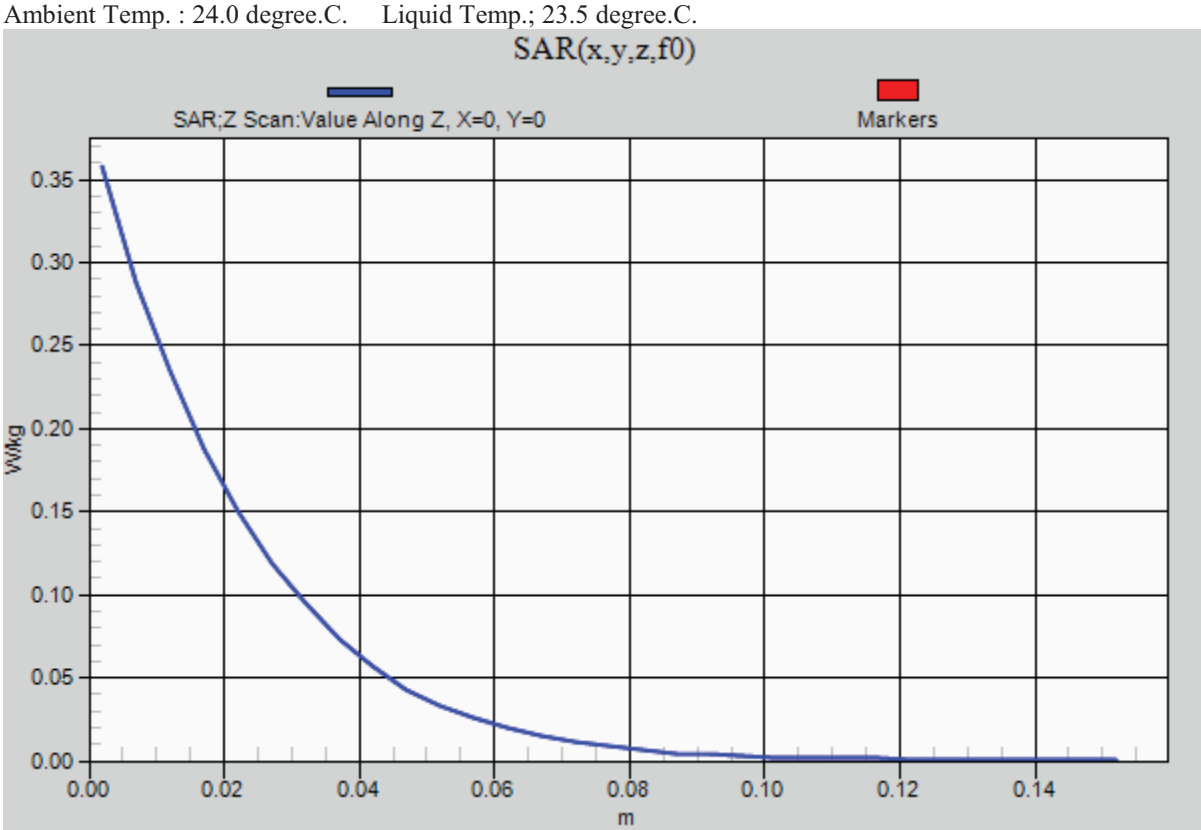
Maximum value of SAR (measured) = 0.427 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**Z scan at maximum SAR location GSM850(Body)**
**KMP7R4H1-6A GSM850 GPRS 1slot Rear Close display 10mm 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.358 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A GSM850 GPRS 1slot Rear Open display 10mm 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

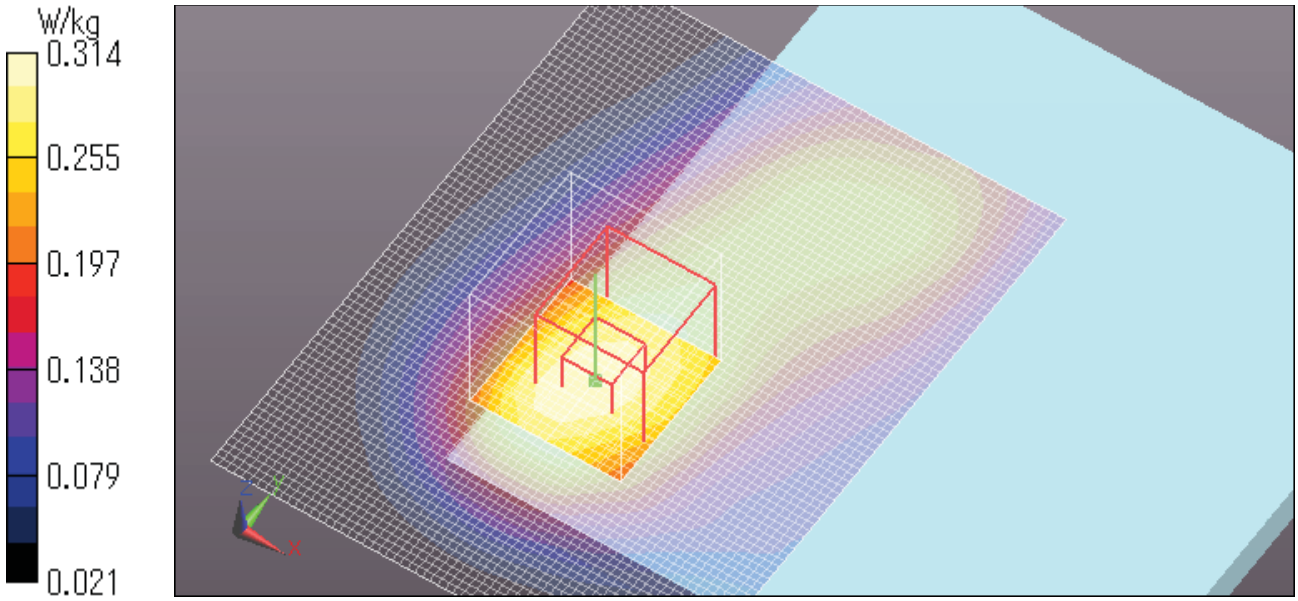
**Area Scan 2 3 (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.316 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.842 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.376 W/kg
**SAR(1 g) = 0.254 W/kg; SAR(10 g) = 0.174 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.314 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



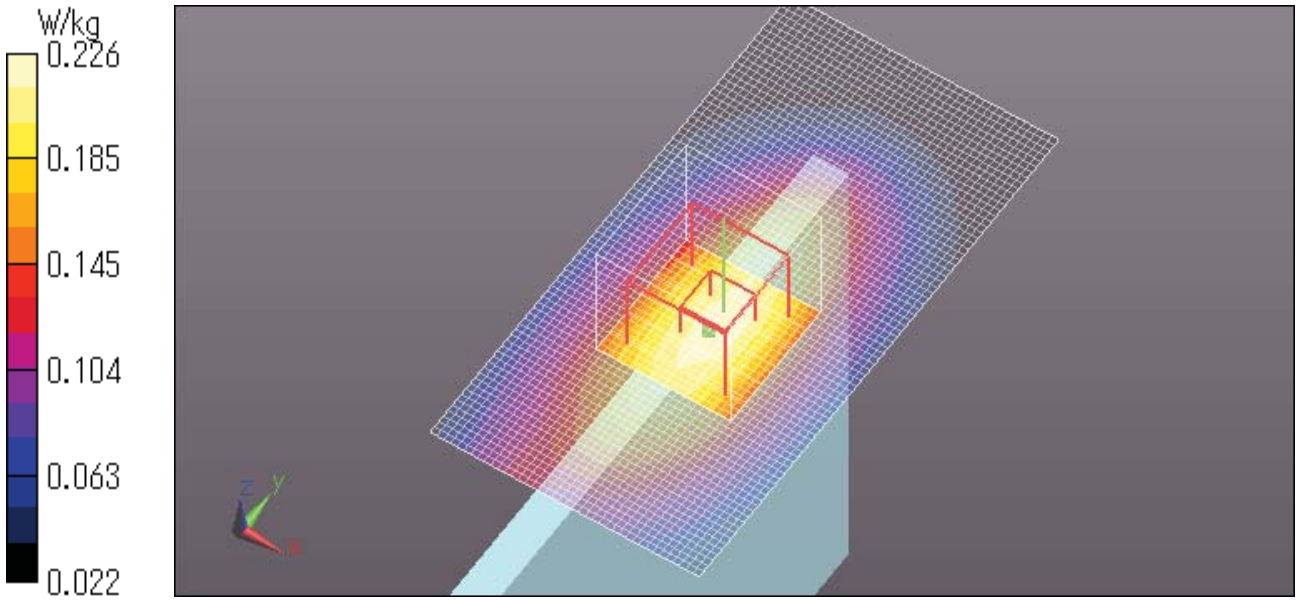
**KMP7R4H1-6A GSM850 GPRS 1slot Left edge Open display 10mm 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.223 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.484 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.266 W/kg
**SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.121 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.226 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A GSM850 GPRS 1slot Bottom edge Open display 10mm 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

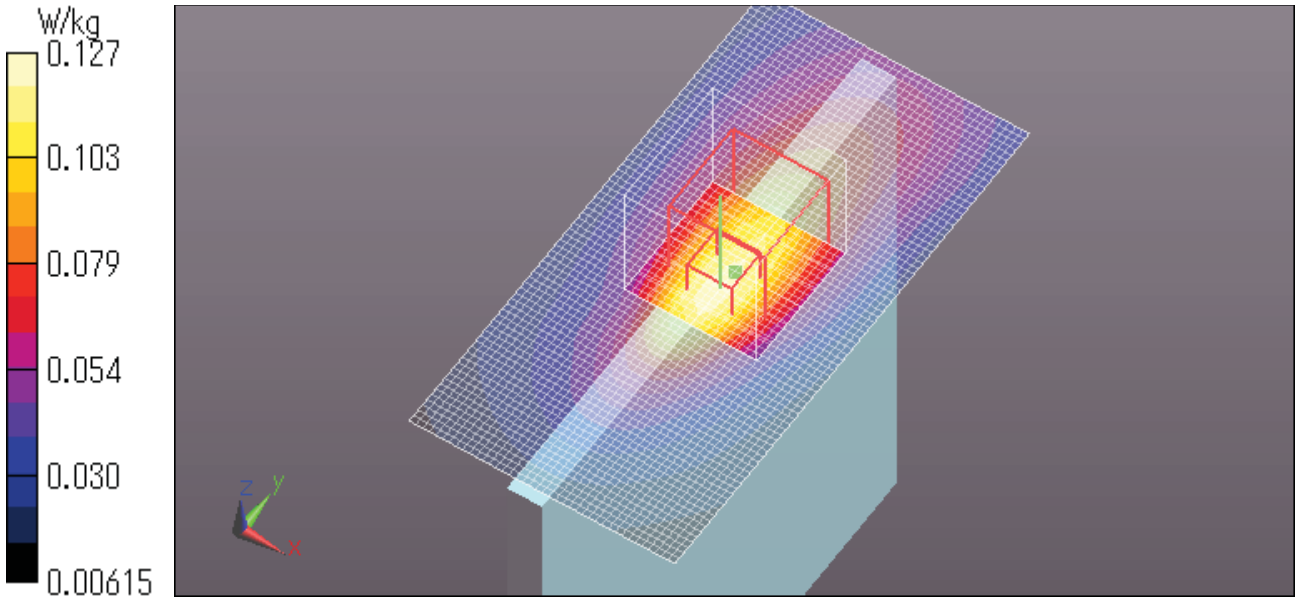
**Area Scan 2 2 (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.128 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.491 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.164 W/kg
**SAR(1 g) = 0.093 W/kg; SAR(10 g) = 0.058 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.127 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A GSM850 GSM Rear Close display 10mm 836.6MHz**

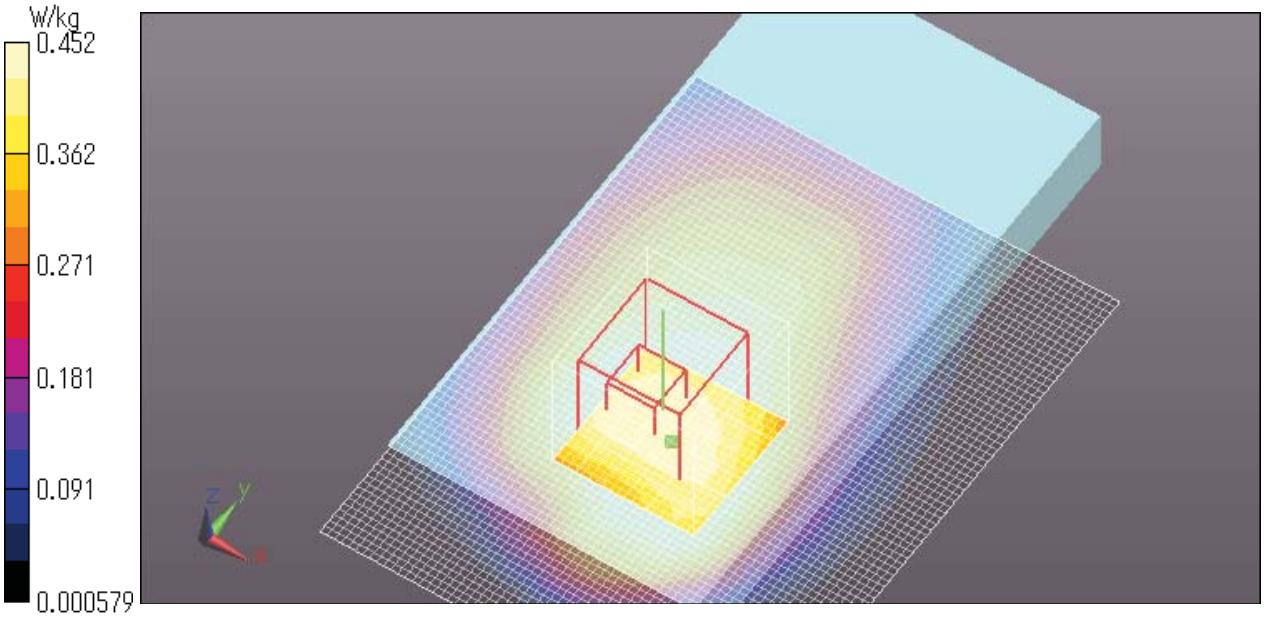
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.102 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.519 W/kg
**SAR(1 g) = 0.353 W/kg; SAR(10 g) = 0.224 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.428 W/kg

**Area Scan 2 3 (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.452 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**【PCS1900 Head】**

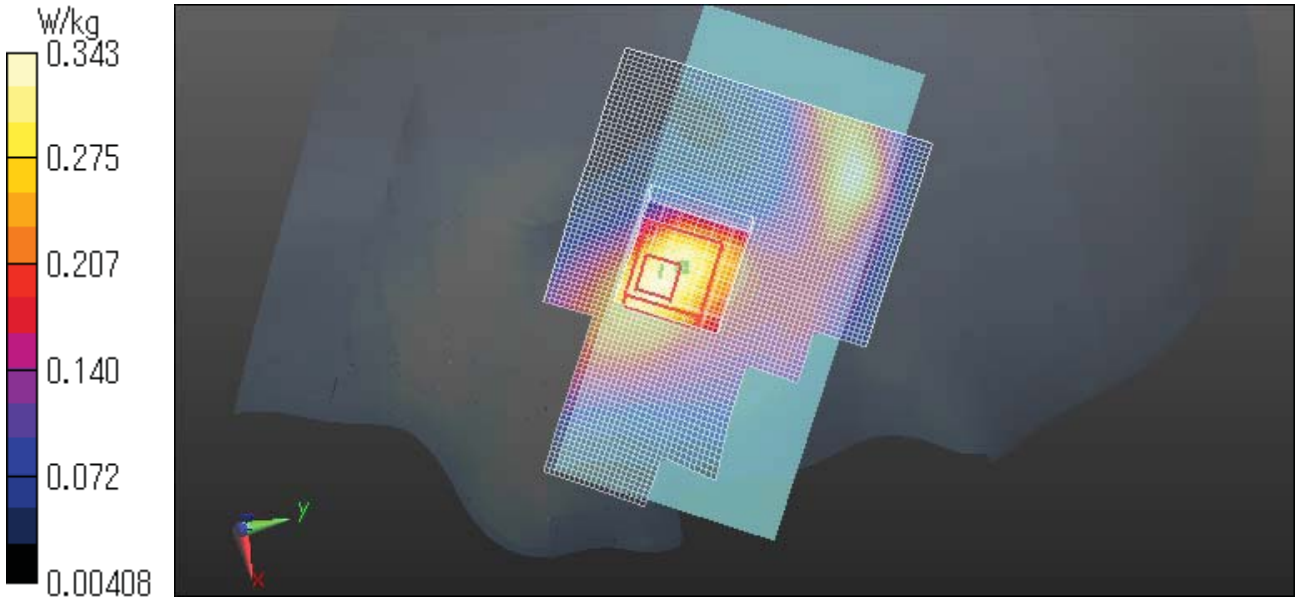
**KMP7R4H1-6A PCS1900 GSM Left cheek Close display 1880.0MHz**

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.351 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.111 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.424 W/kg
**SAR(1 g) = 0.266 W/kg; SAR(10 g) = 0.160 W/kg**
Maximum value of SAR (measured) = 0.343 W/kg

Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

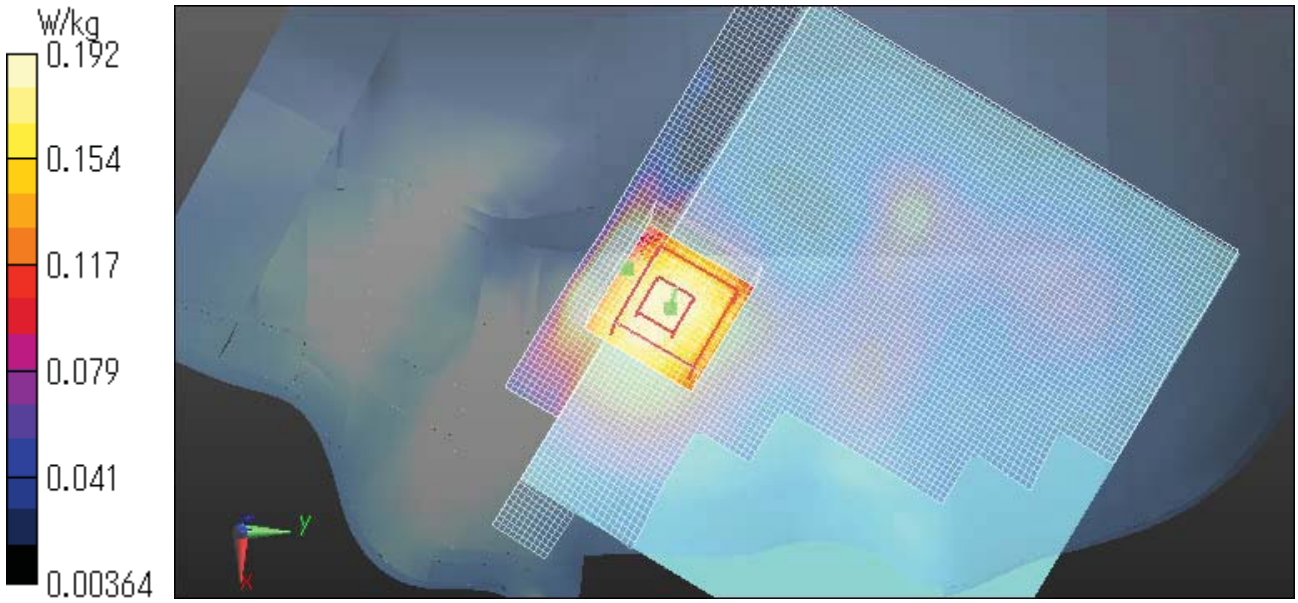


**KMP7R4H1-6A PCS1900 GSM Left cheek Open display 1880.0MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (11x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.297 W/kg

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.193 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.341 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.228 W/kg
**SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.097 W/kg**
Maximum value of SAR (measured) = 0.192 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



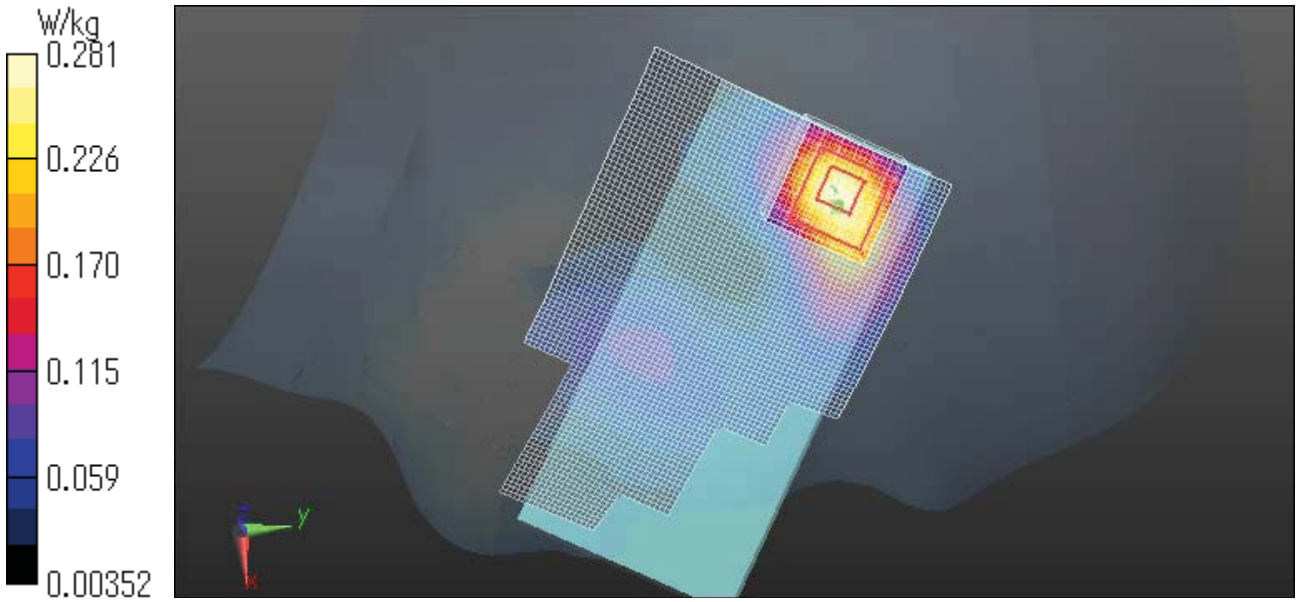
**KMP7R4H1-6A PCS1900 GSM Left tilt Close display 1880.0MHz**

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 3 (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.290 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.595 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.348 W/kg
**SAR(1 g) = 0.209 W/kg; SAR(10 g) = 0.121 W/kg**
Maximum value of SAR (measured) = 0.281 W/kg

Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

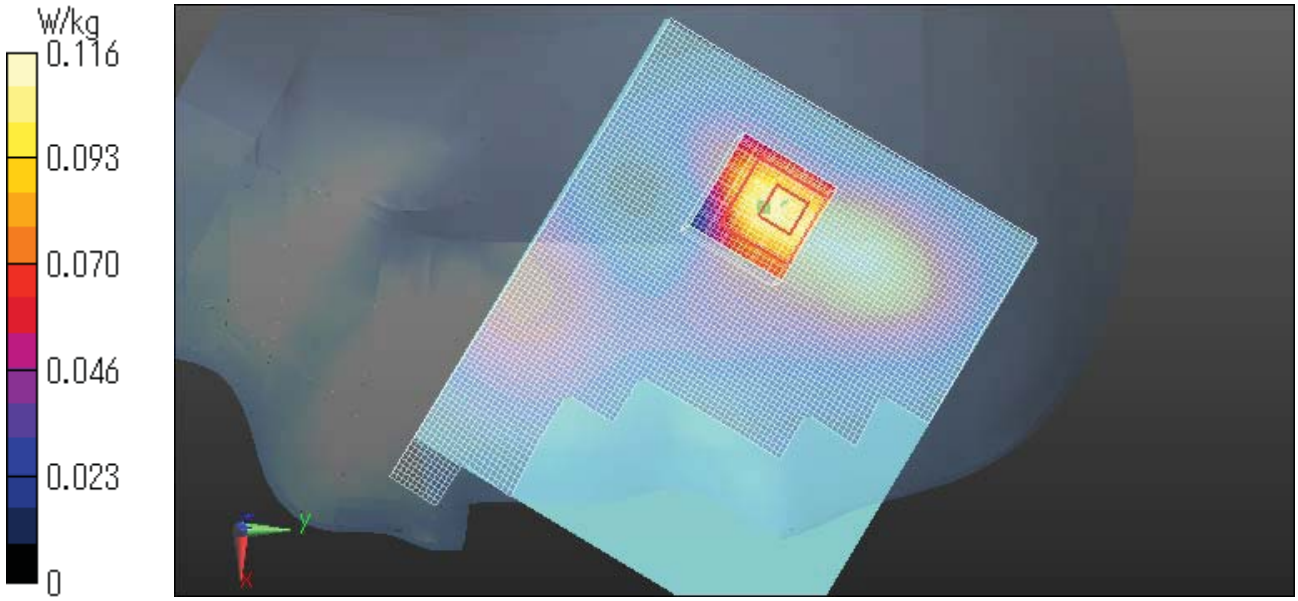


**KMP7R4H1-6A PCS1900 GSM Left tilt Open display 1880.0MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.116 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.804 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.133 W/kg
**SAR(1 g) = 0.086 W/kg; SAR(10 g) = 0.051 W/kg**

Maximum value of SAR (measured) = 0.111 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



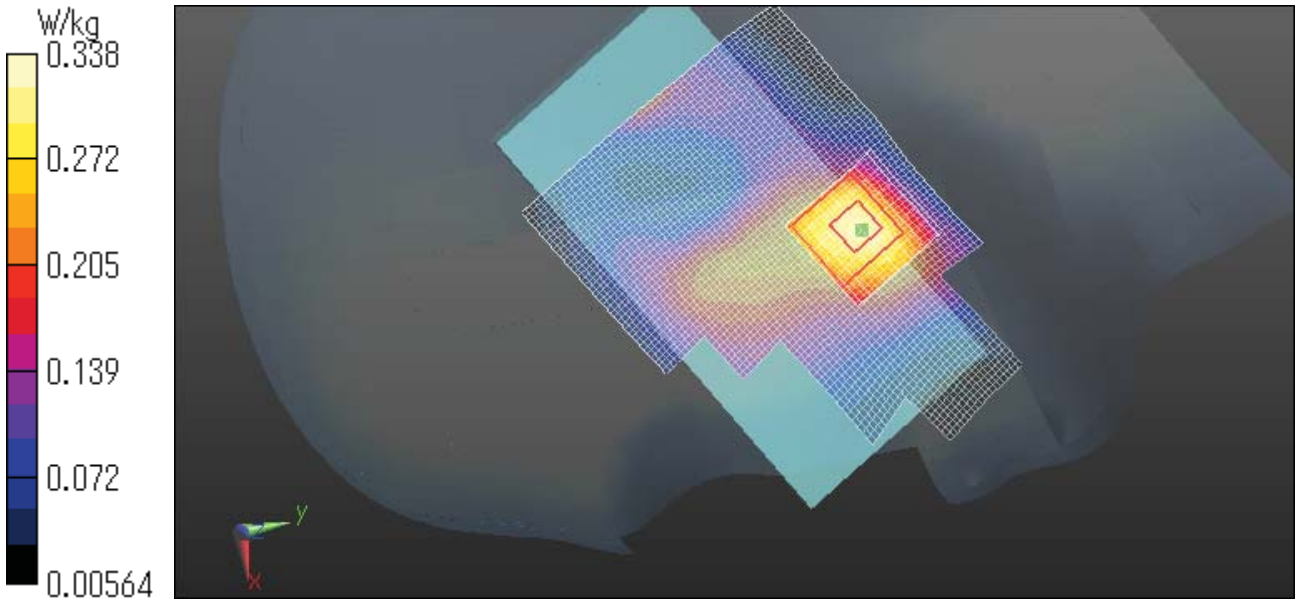
**KMP7R4H1-6A PCS1900 GSM Right cheek Close display 1880.0MHz**

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.322 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.239 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.406 W/kg
**SAR(1 g) = 0.265 W/kg; SAR(10 g) = 0.164 W/kg**
Maximum value of SAR (measured) = 0.338 W/kg

Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

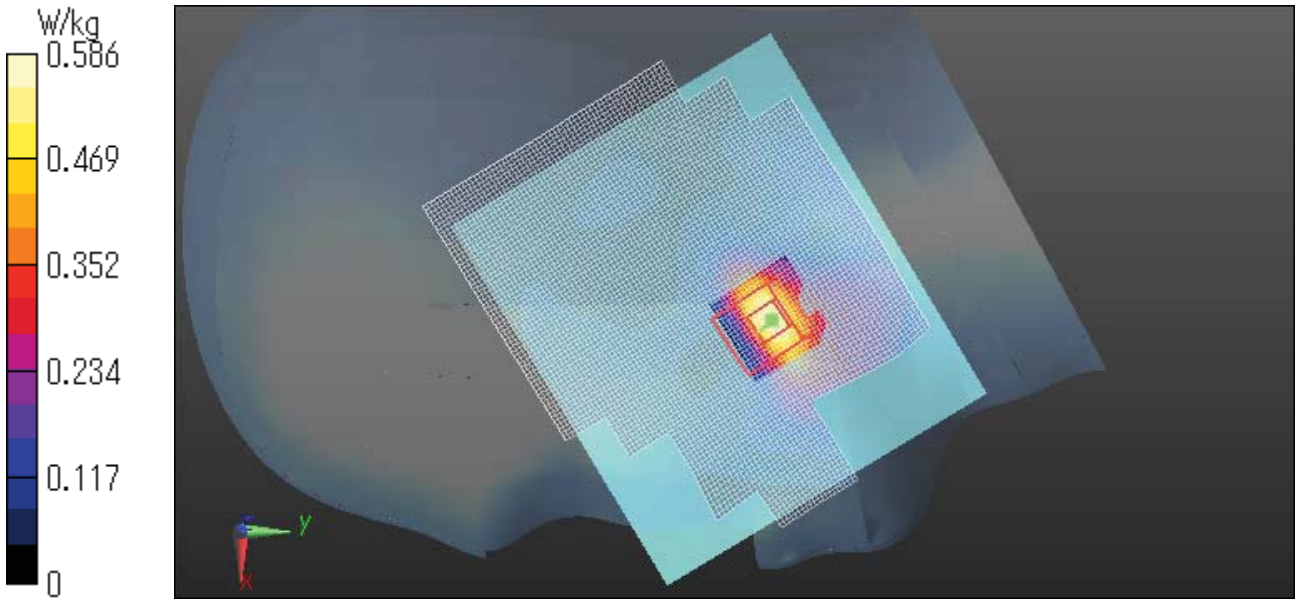


**KMP7R4H1-6A PCS1900 GSM Right cheek Open display 1880.0MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.679 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.257 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.764 W/kg
**SAR(1 g) = 0.448 W/kg; SAR(10 g) = 0.229 W/kg**

Maximum value of SAR (measured) = 0.586 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



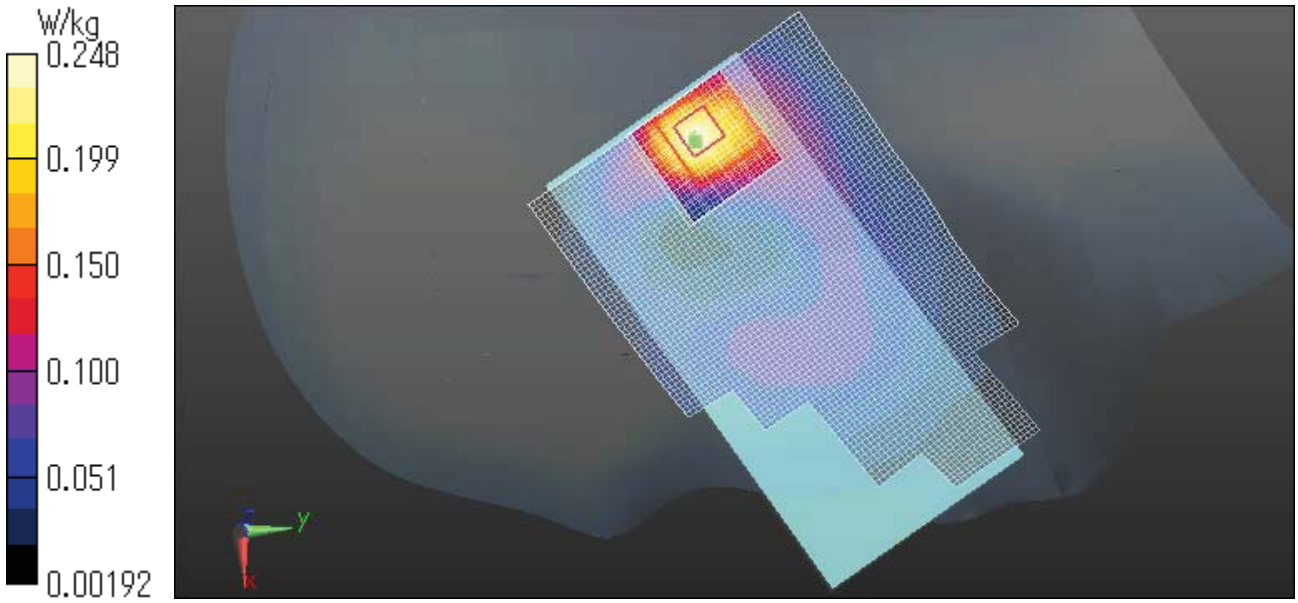
**KMP7R4H1-6A PCS1900 GSM Right tilt Close display 1880.0MHz**

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.251 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.528 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.304 W/kg
**SAR(1 g) = 0.182 W/kg; SAR(10 g) = 0.101 W/kg**
Maximum value of SAR (measured) = 0.248 W/kg

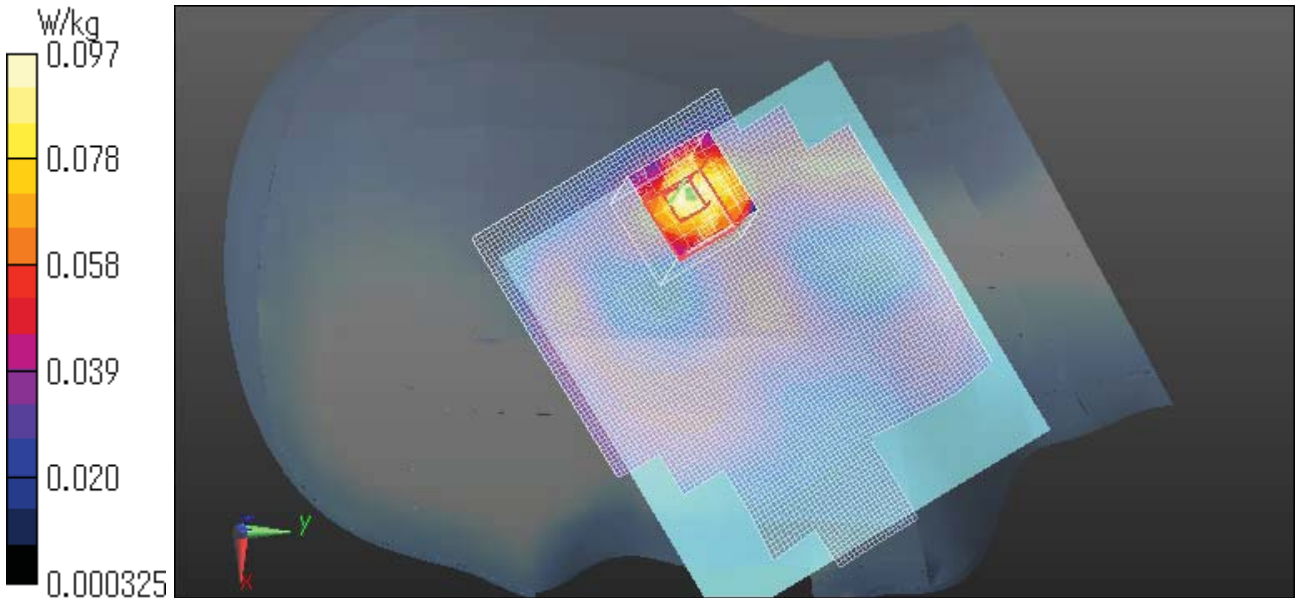
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A PCS1900 GSM Right tilt Open display 1880.0MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0916 W/kg

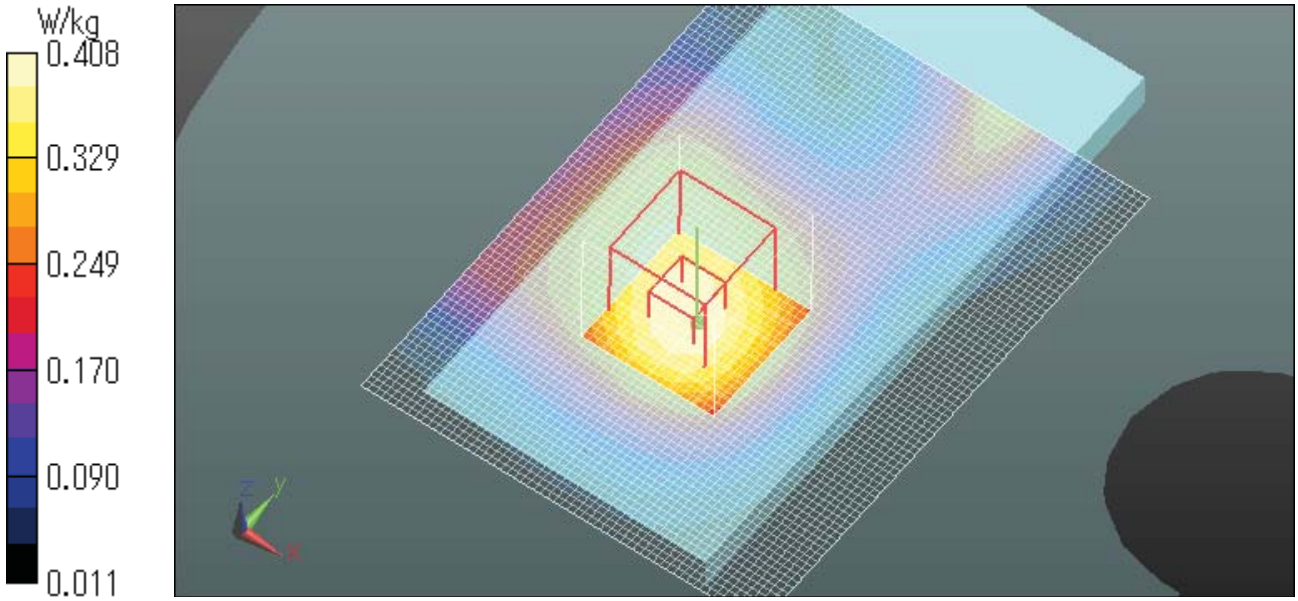
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.806 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.129 W/kg
**SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.040 W/kg**
Maximum value of SAR (measured) = 0.0968 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A PCS1900 GSM Front (Top 4mm, Bottom 10mm) Close display 1880.0MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.418 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.265 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.496 W/kg
**SAR(1 g) = 0.313 W/kg; SAR(10 g) = 0.197 W/kg**
Maximum value of SAR (measured) = 0.408 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

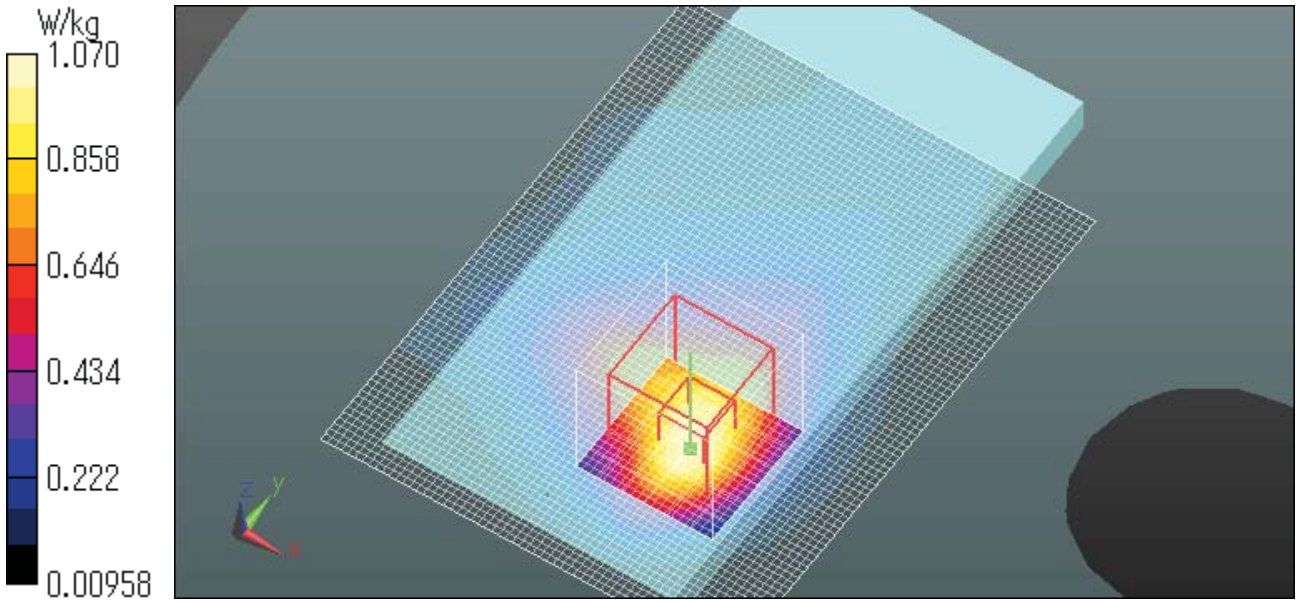


**KMP7R4H1-6A PCS1900 GSM Front (Top 4mm, Bottom 10mm) Open display 1880.0MHz 2**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.404 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.42 W/kg
**SAR(1 g) = 0.748 W/kg; SAR(10 g) = 0.407 W/kg**

Maximum value of SAR (measured) = 1.07 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

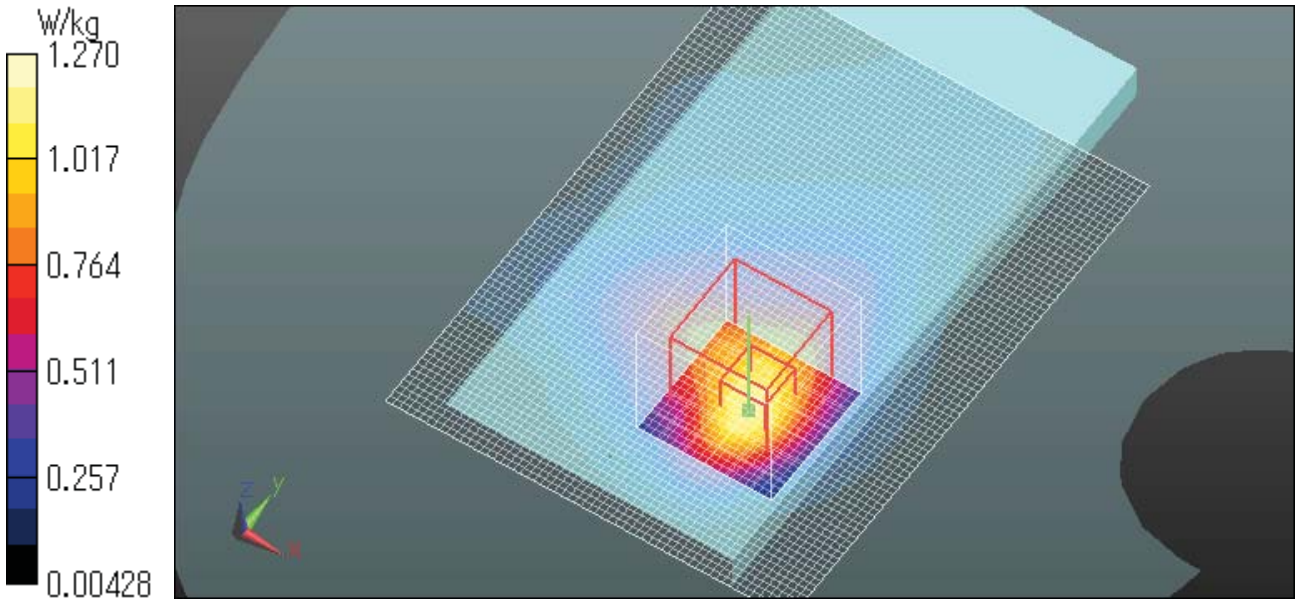


**KMP7R4H1-6A PCS1900 GPRS 1slot Front (Top 4mm, Bottom 10mm) Open display 1880.0MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.556 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.53 W/kg
**SAR(1 g) = 0.793 W/kg; SAR(10 g) = 0.431 W/kg**

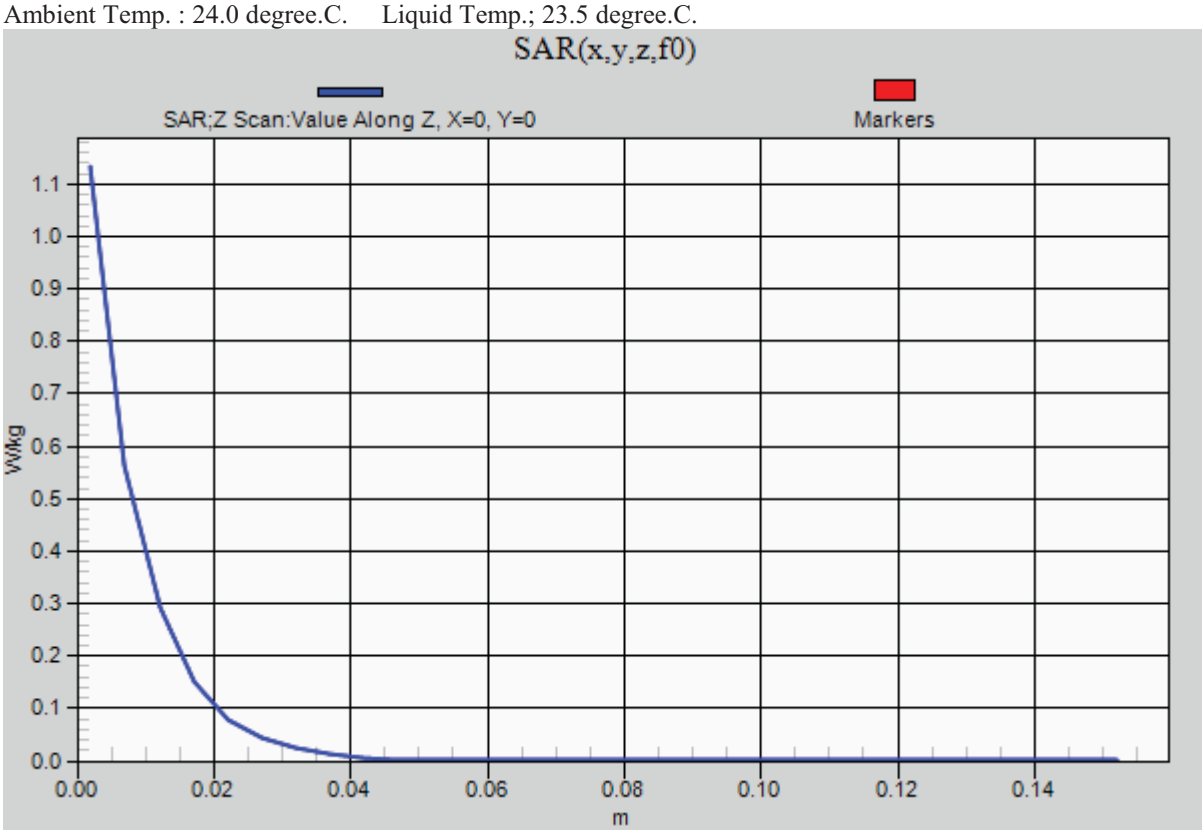
Maximum value of SAR (measured) = 1.15 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**Z scan at maximum SAR location PCS1900(Head)**

**KMP7R4H1-6A PCS1900 GPRS 1slot Front (Top 4mm, Bottom 10mm) Open display 1880.0MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.46 mho/m; $\varepsilon_r$ = 38.58; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.13 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



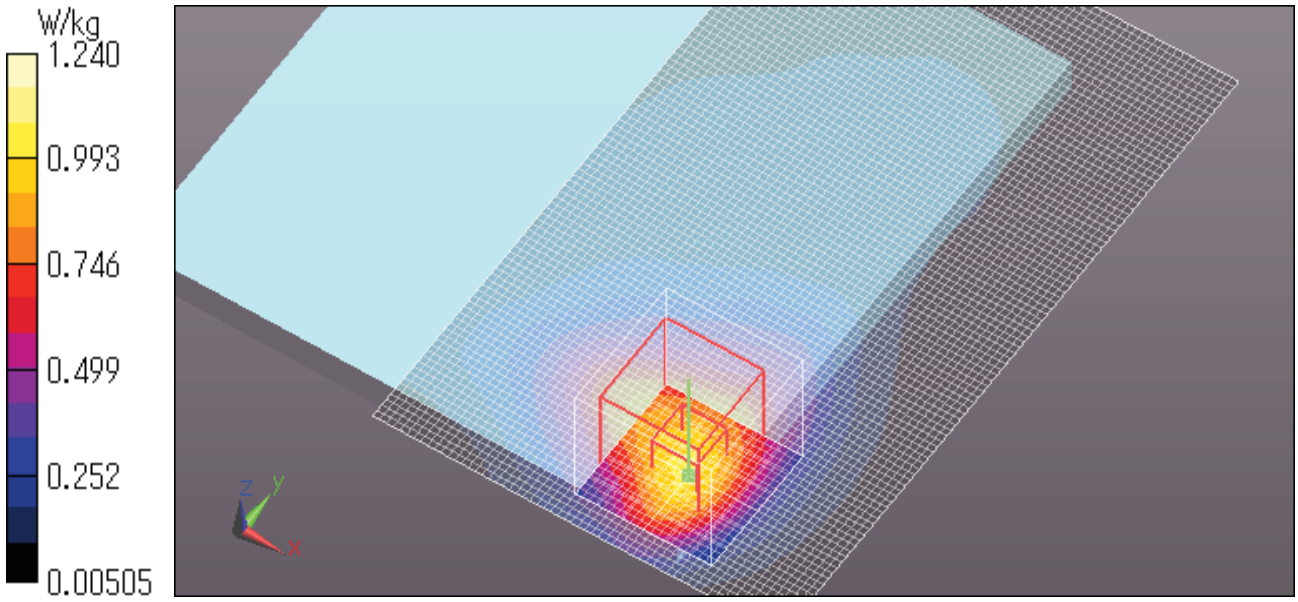
**【PCS1900 Body】**

**KMP7R4H1-6A PCS1900 GPRS 1slot Front Open display 10mm 1880MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.592 mho/m; εr = 51.346; ρ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.24 W/kg

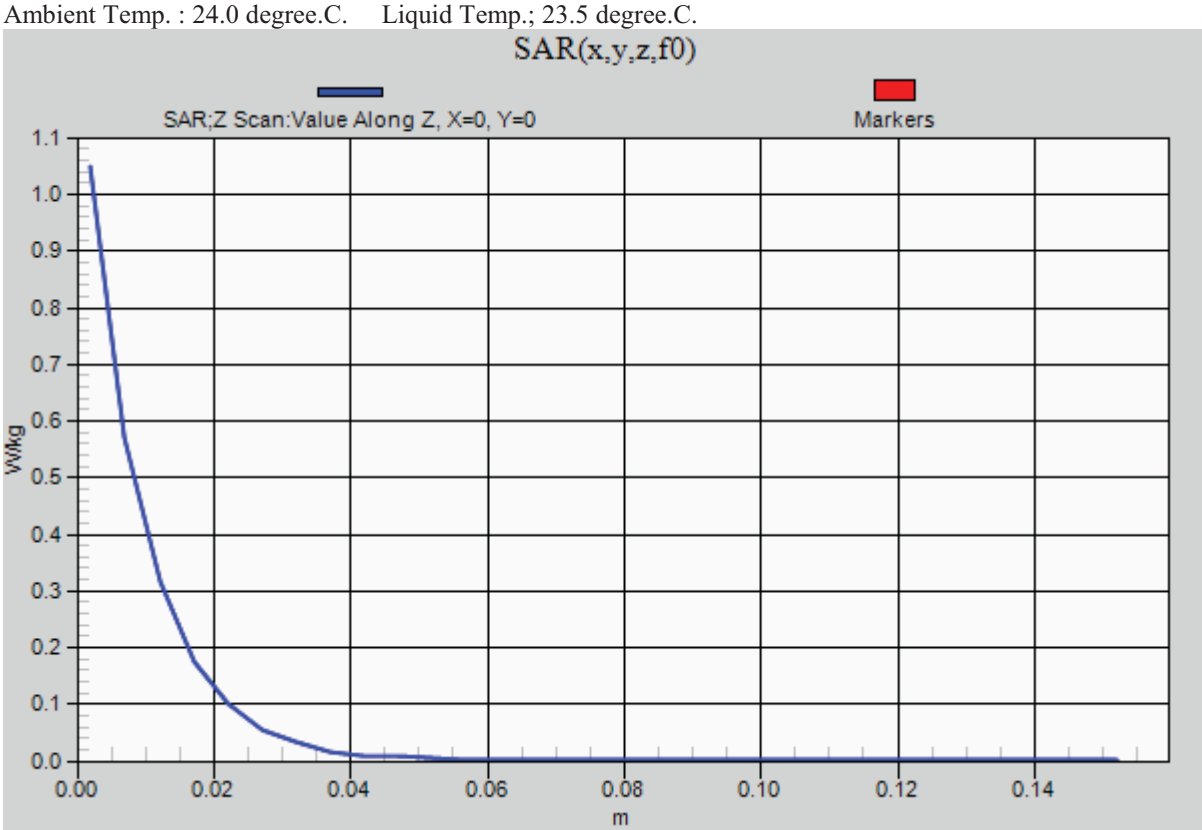
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.033 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.36 W/kg
**SAR(1 g) = 0.754 W/kg; SAR(10 g) = 0.428 W/kg**

Maximum value of SAR (measured) = 1.05 W/kg
Date: 2012/12/13
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**Z scan at maximum SAR location PCS1900(Body)**
**KMP7R4H1-6A PCS1900 GPRS 1slot Front Open display 10mm 1880MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.592 mho/m; εr = 51.346; ρ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.05 W/kg
Date: 2012/12/13
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



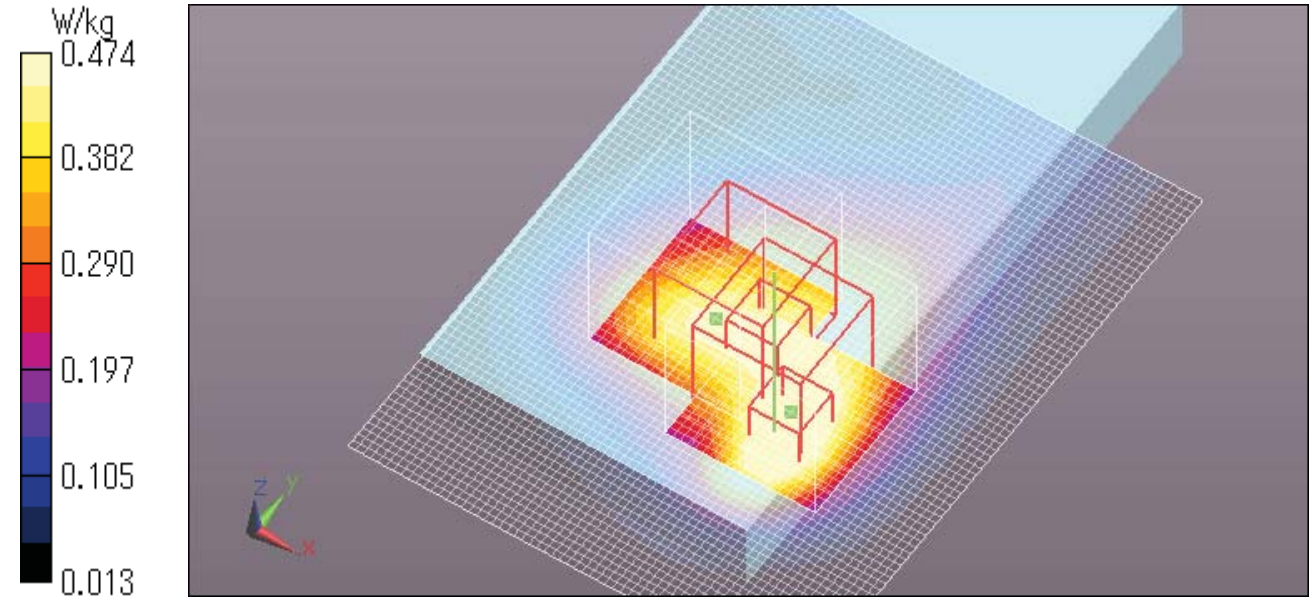
**KMP7R4H1-6A PCS1900 GPRS 1slot Rear Close display 10mm 1880MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.592 mho/m; εr = 51.346; ρ = 1000 kg/$m^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 3 (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.712 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.230 V/m; Power Drift = -4.18 dB
Peak SAR (extrapolated) = 0.776 W/kg
**SAR(1 g) = 0.398 W/kg; SAR(10 g) = 0.230 W/kg**
Maximum value of SAR (measured) = 0.561 W/kg

**Zoom Scan 2 (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.230 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.587 W/kg
**SAR(1 g) = 0.362 W/kg; SAR(10 g) = 0.226 W/kg**

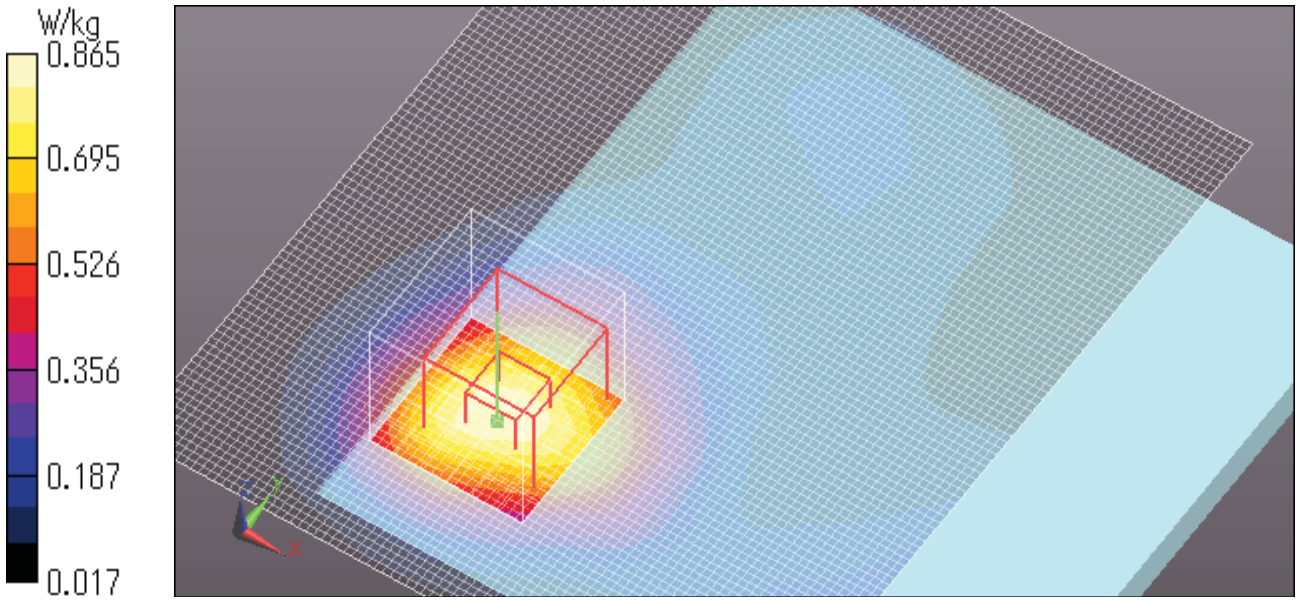
Maximum value of SAR (measured) = 0.474 W/kg
Date: 2012/12/13
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A PCS1900 GPRS 1slot Rear Open display 10mm 1880MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.592 mho/m; εr = 51.346; ρ = 1000 kg/$m^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (81x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.912 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.790 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.07 W/kg
**SAR(1 g) = 0.654 W/kg; SAR(10 g) = 0.392 W/kg**
Maximum value of SAR (measured) = 0.865 W/kg
Date: 2012/12/13
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

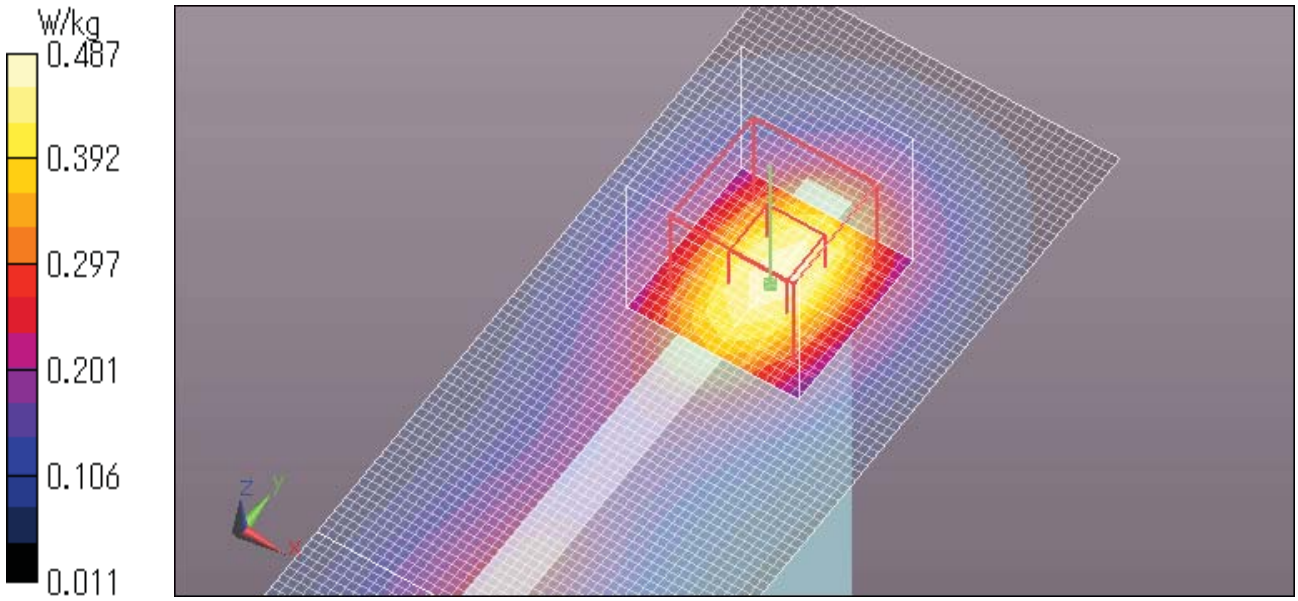


**KMP7R4H1-6A PCS1900 GPRS 1slot Left edge Open display 10mm 1880MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.592 mho/m; εr = 51.346; ρ = 1000 kg/$m^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.534 W/kg

**Area Scan 2 2 2 (41x21x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.254 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.830 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.603 W/kg
**SAR(1 g) = 0.361 W/kg; SAR(10 g) = 0.206 W/kg**
Maximum value of SAR (measured) = 0.487 W/kg
Date: 2012/12/13
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



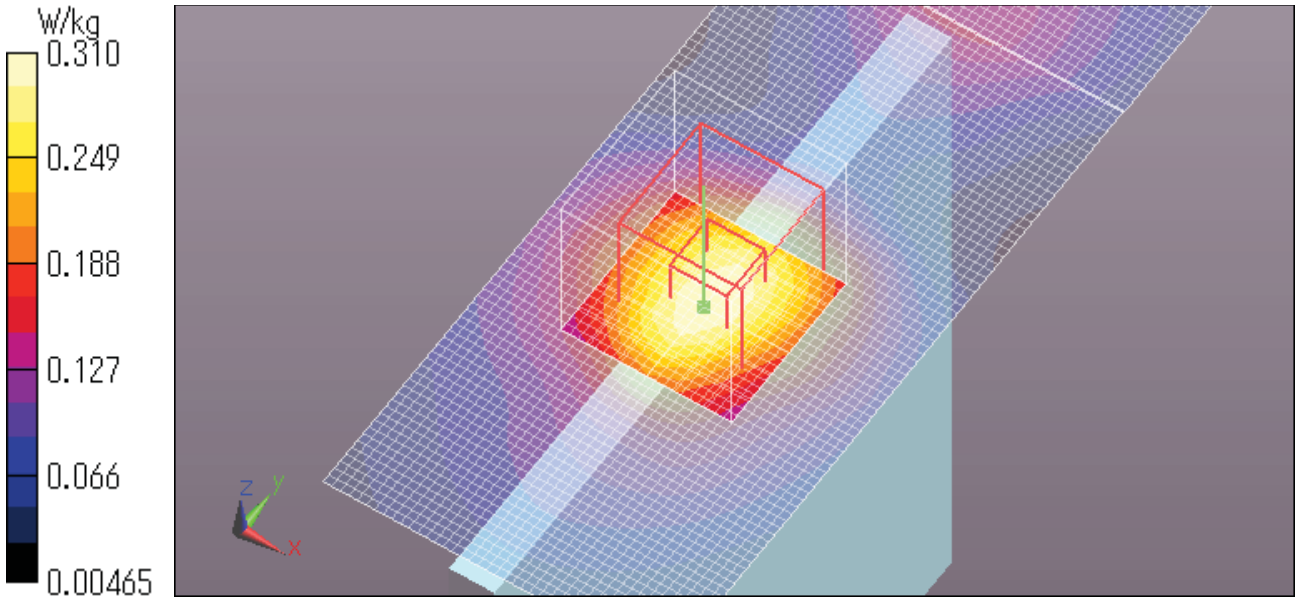
**KMP7R4H1-6A PCS1900 GPRS 1slot Bottom edge Open display 10mm 1880MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.592 mho/m; εr = 51.346; ρ = 1000 kg/$m^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.356 W/kg

**Area Scan 2 2 2 (41x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.145 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.312 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.385 W/kg
**SAR(1 g) = 0.234 W/kg; SAR(10 g) = 0.137 W/kg**

Maximum value of SAR (measured) = 0.310 W/kg
Date: 2012/12/13
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

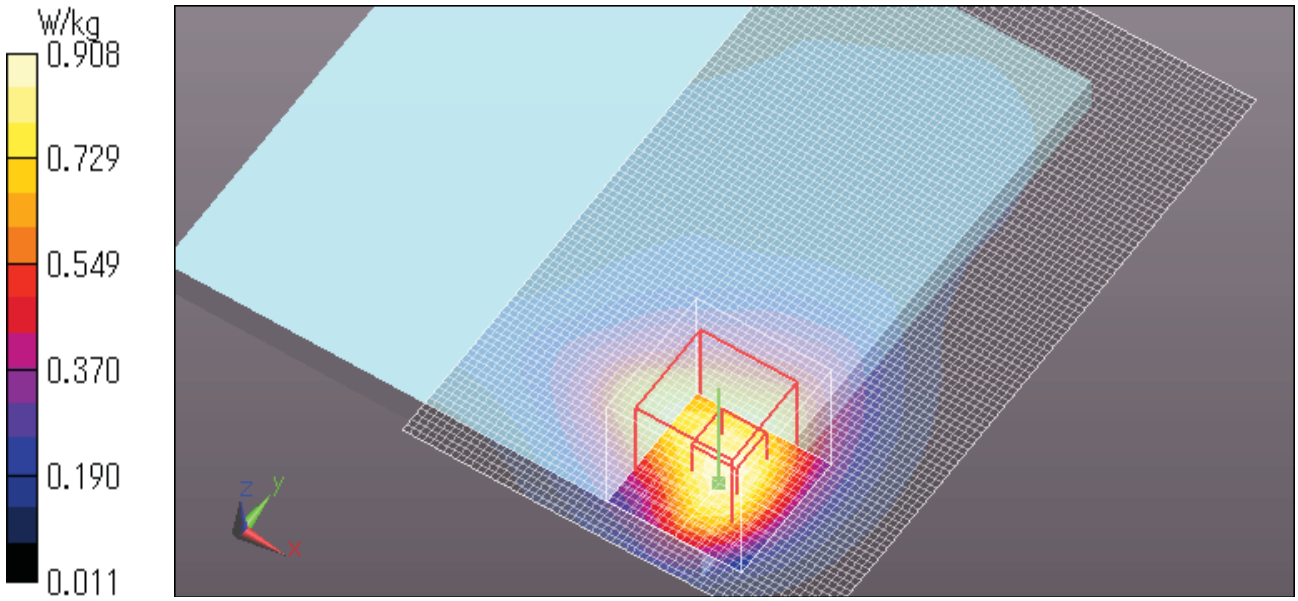


**KMP7R4H1-6A PCS1900 GSM Front Open display 10mm 1880MHz**
Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.592 mho/m; εr = 51.346; ρ = 1000 kg/$m^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.10 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.975 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 1.17 W/kg
**SAR(1 g) = 0.660 W/kg; SAR(10 g) = 0.374 W/kg**

Maximum value of SAR (measured) = 0.908 W/kg
Date: 2012/12/13
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



【WCDMA band V Head】

**KMP7R4H1-6A WCDMA V 12.2k RMC Left cheek Close display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

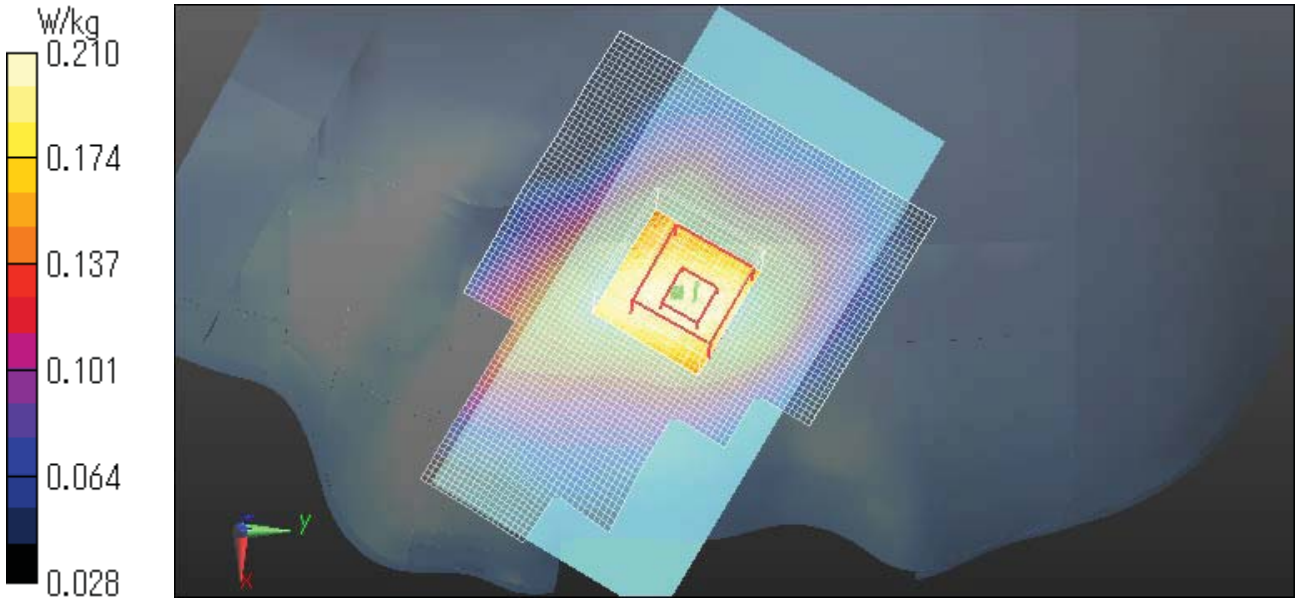
**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.219 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.884 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.232 W/kg
**SAR(1 g) = 0.184 W/kg; SAR(10 g) = 0.143 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.210 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Left cheek Open display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

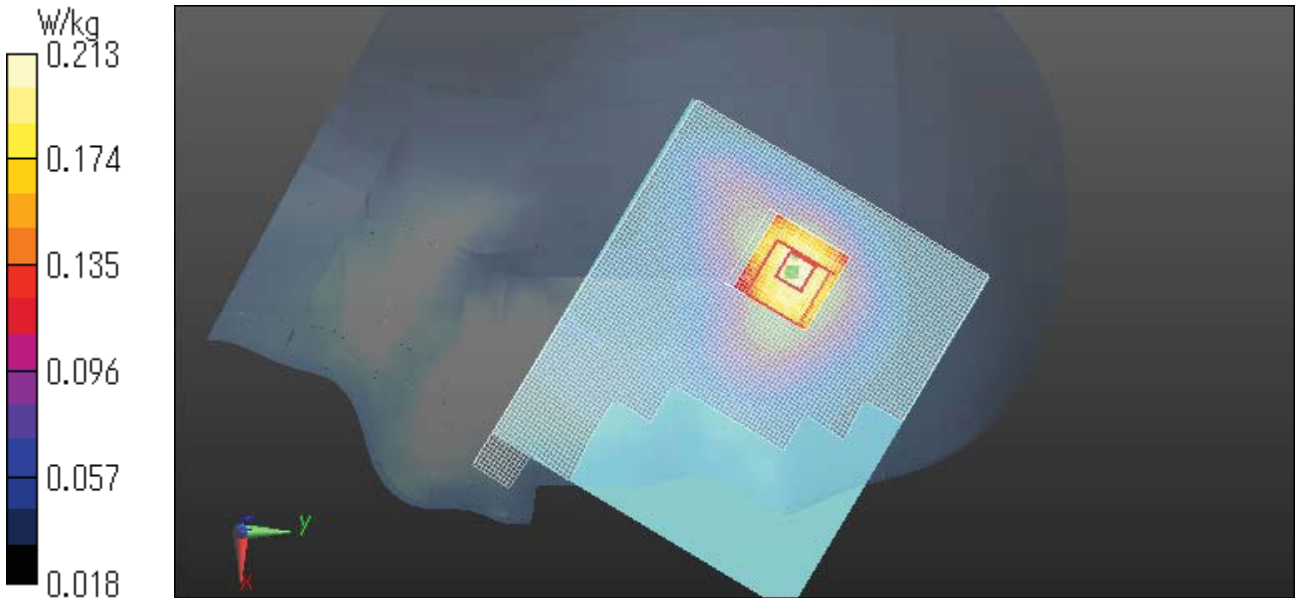
**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.210 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.085 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.250 W/kg
**SAR(1 g) = 0.172 W/kg; SAR(10 g) = 0.119 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.213 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



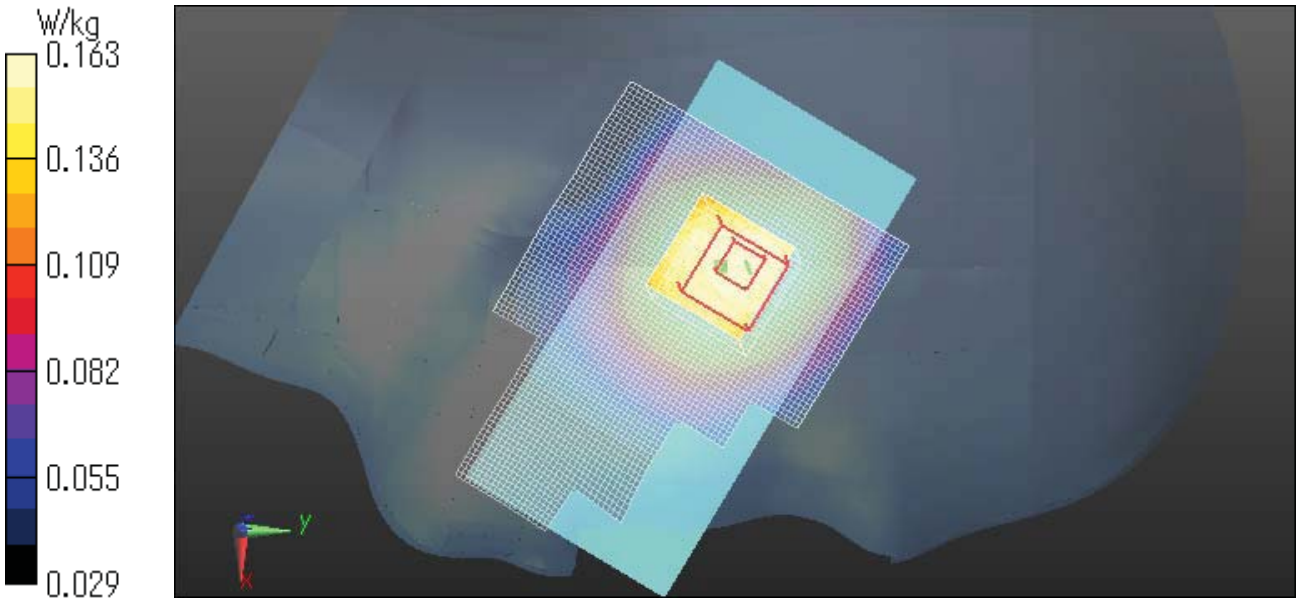
**KMP7R4H1-6A WCDMA V 12.2k RMC Left tilt Close display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.172 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.117 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.180 W/kg
**SAR(1 g) = 0.144 W/kg; SAR(10 g) = 0.113 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.163 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Left tilt Open display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

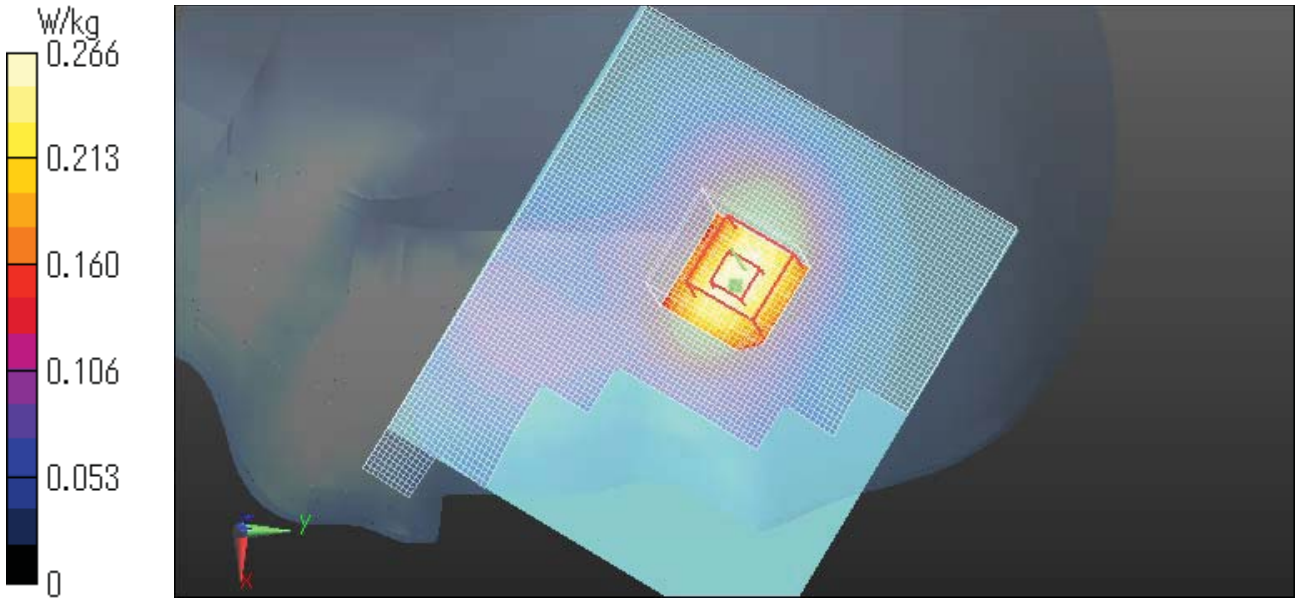
**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.269 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.035 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.335 W/kg
**SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.146 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.266 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Right cheek Close display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

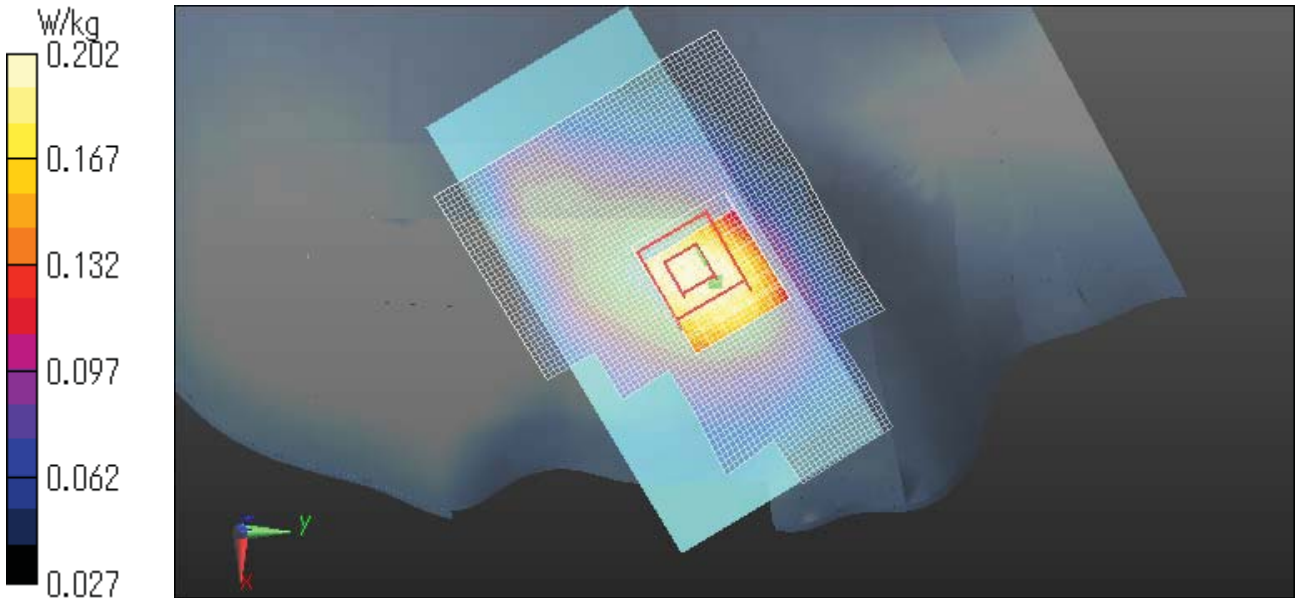
**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.215 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.448 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.224 W/kg
**SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.135 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.202 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Right cheek Open display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

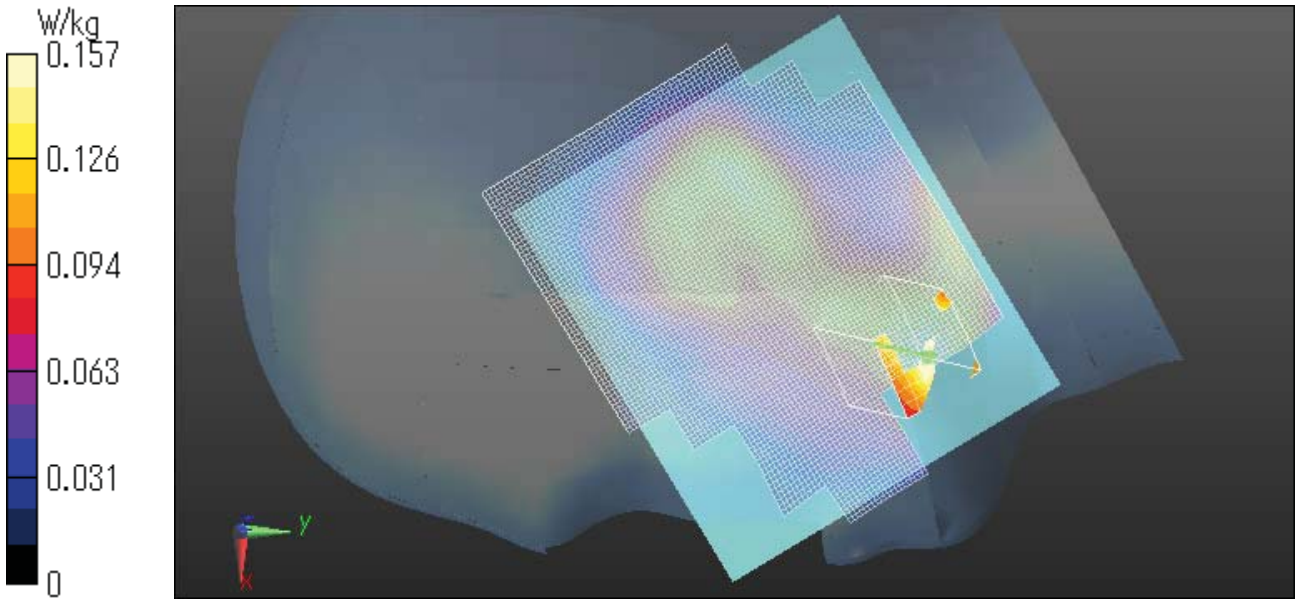
**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.161 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.912 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.187 W/kg
**SAR(1 g) = n.a. ; SAR(10 g) = n.a.**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.157 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



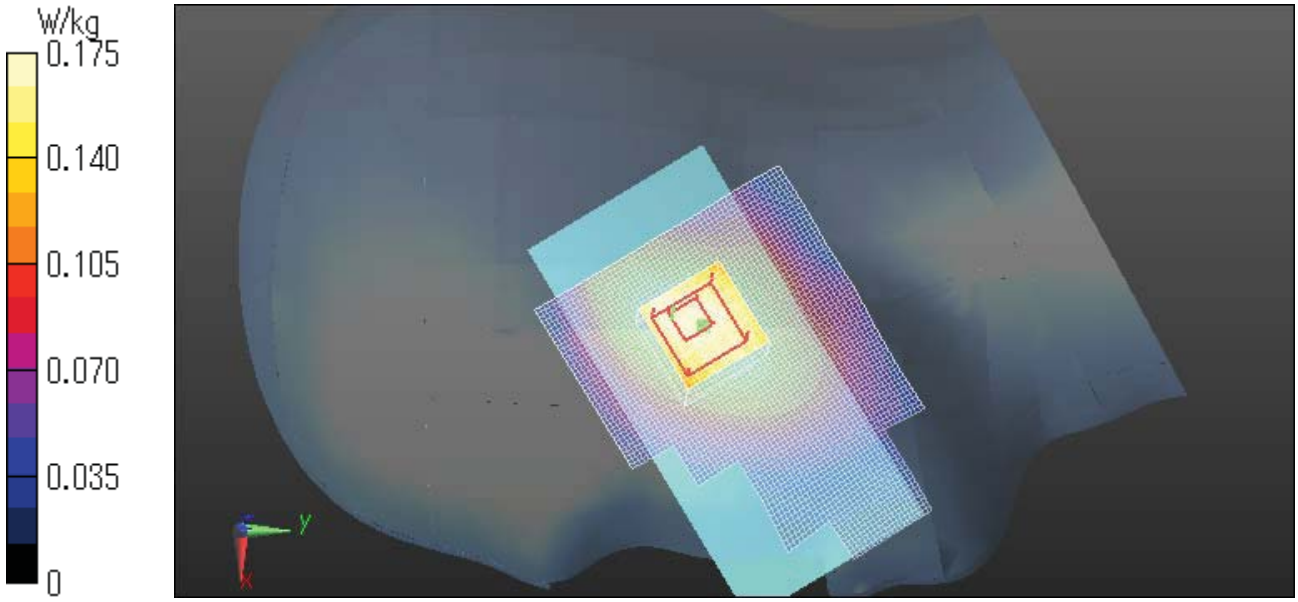
**KMP7R4H1-6A WCDMA V 12.2k RMC Right tilt Close display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.175 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.980 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.193 W/kg
**SAR(1 g) = 0.153 W/kg; SAR(10 g) = 0.119 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.174 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Right tilt Open display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

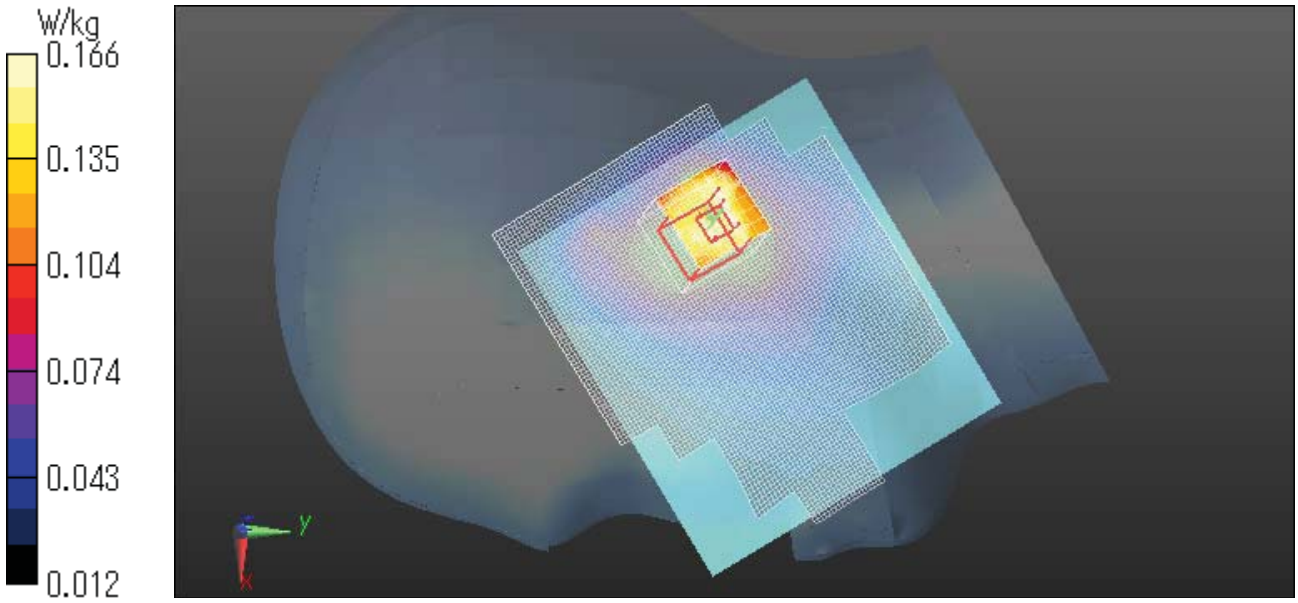
**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.168 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.055 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 0.210 W/kg
**SAR(1 g) = 0.127 W/kg; SAR(10 g) = 0.090 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.166 W/kg
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Front (Top 4mm, Bottom 10mm) Close display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

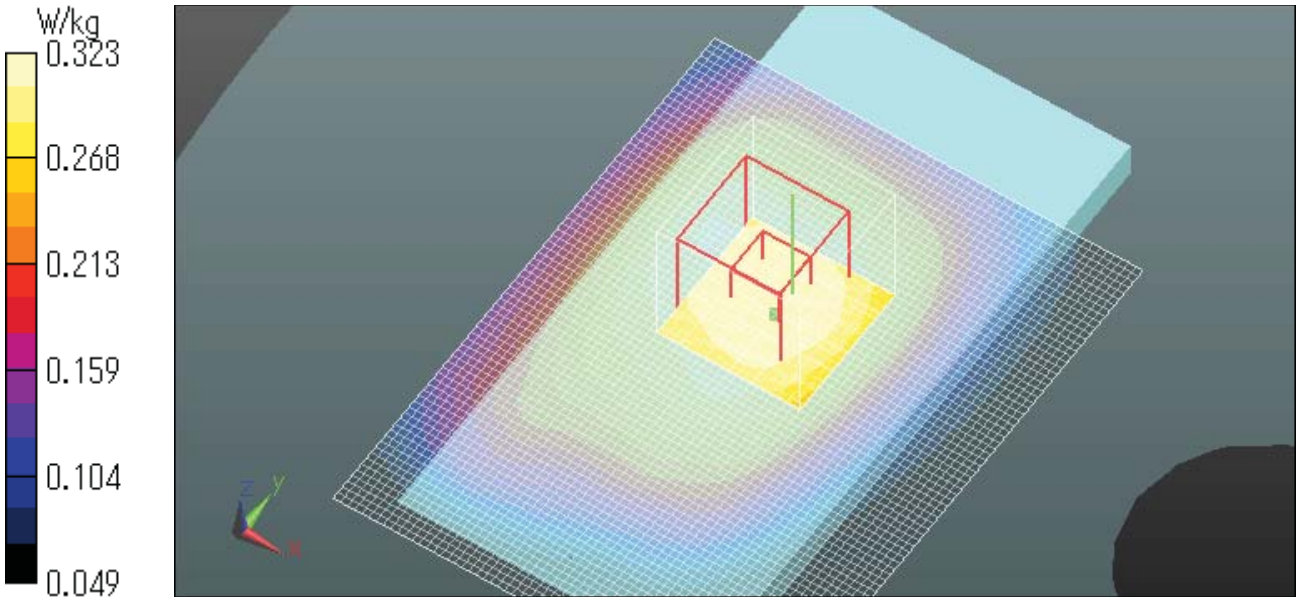
**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.322 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.486 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.358 W/kg
**SAR(1 g) = 0.281 W/kg; SAR(10 g) = 0.218 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.323 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



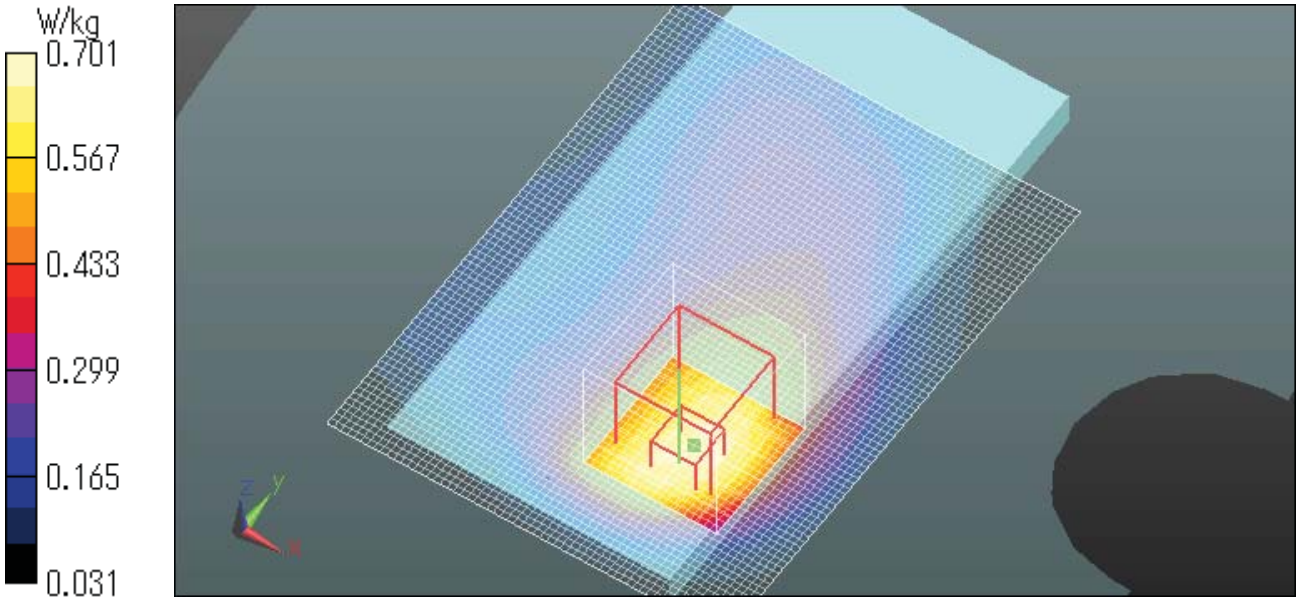
**KMP7R4H1-6A WCDMA V 12.2k RMC Front (Top 4mm, Bottom 10mm) Open display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.705 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.662 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.899 W/kg
**SAR(1 g) = 0.532 W/kg; SAR(10 g) = 0.343 W/kg**

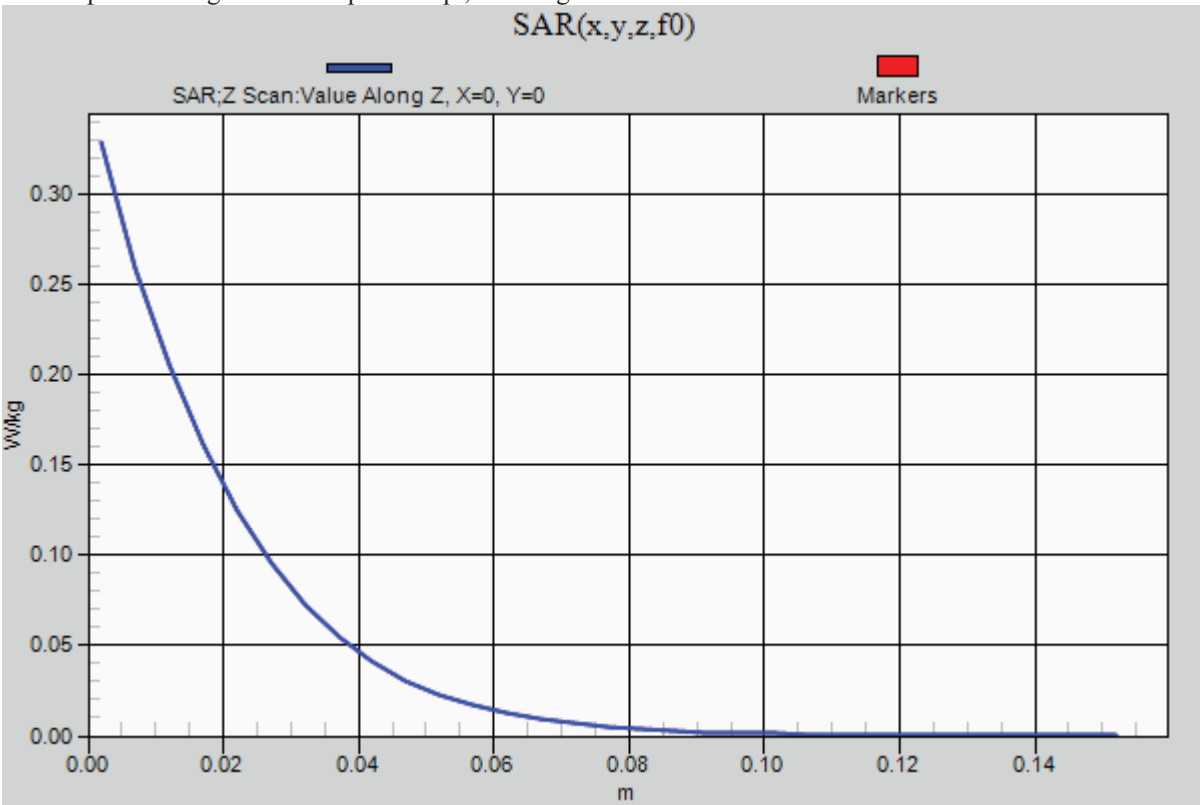
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.701 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**Z scan at maximum SAR location WCDMA V(Head)**
**KMP7R4H1-6A WCDMA V 12.2k RMC Front (Top 4mm, Bottom 10mm) Open display 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.873 mho/m; $\varepsilon_r$ = 40.993; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.1, 10.1, 10.1); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.329 W/kg
Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**【WCDMA band V Body】**

**KMP7R4H1-6A WCDMA V 12.2k RMC Front Open display 10mm 836.6MHz**

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

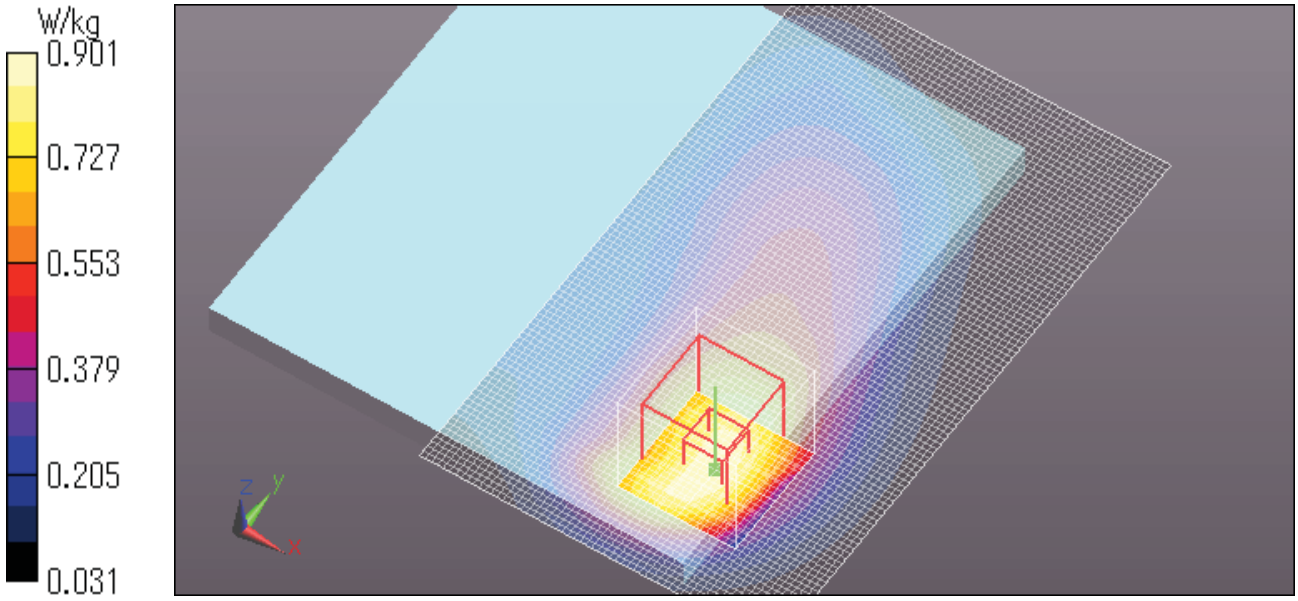
**Area Scan 2 2 (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.902 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.801 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.10 W/kg
**SAR(1 g) = 0.697 W/kg; SAR(10 g) = 0.461 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.901 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

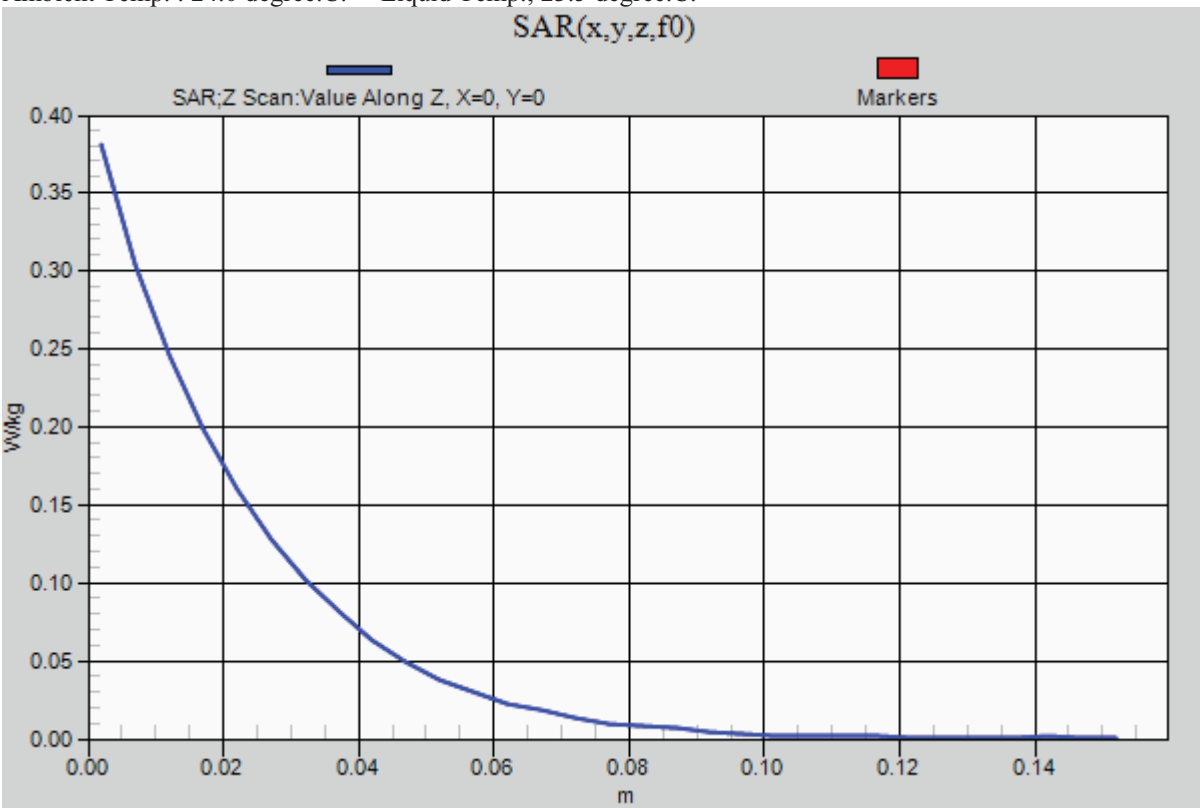


**Z scan at maximum SAR location WCDMA V(Body)**

**KMP7R4H1-6A WCDMA V 12.2k RMC Front Open display 10mm 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.380 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Rear Close display 10mm 836.6MHz**
Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

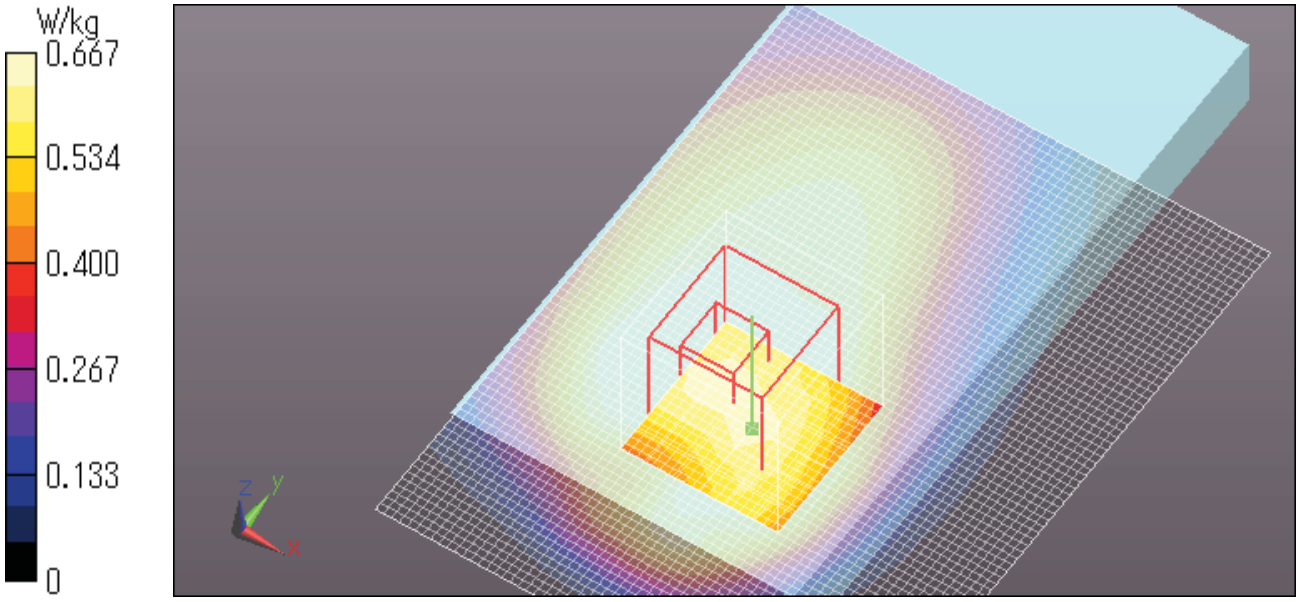
**Area Scan 2 3 (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.657 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.526 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.946 W/kg
**SAR(1 g) = 0.437 W/kg; SAR(10 g) = 0.254 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.667 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

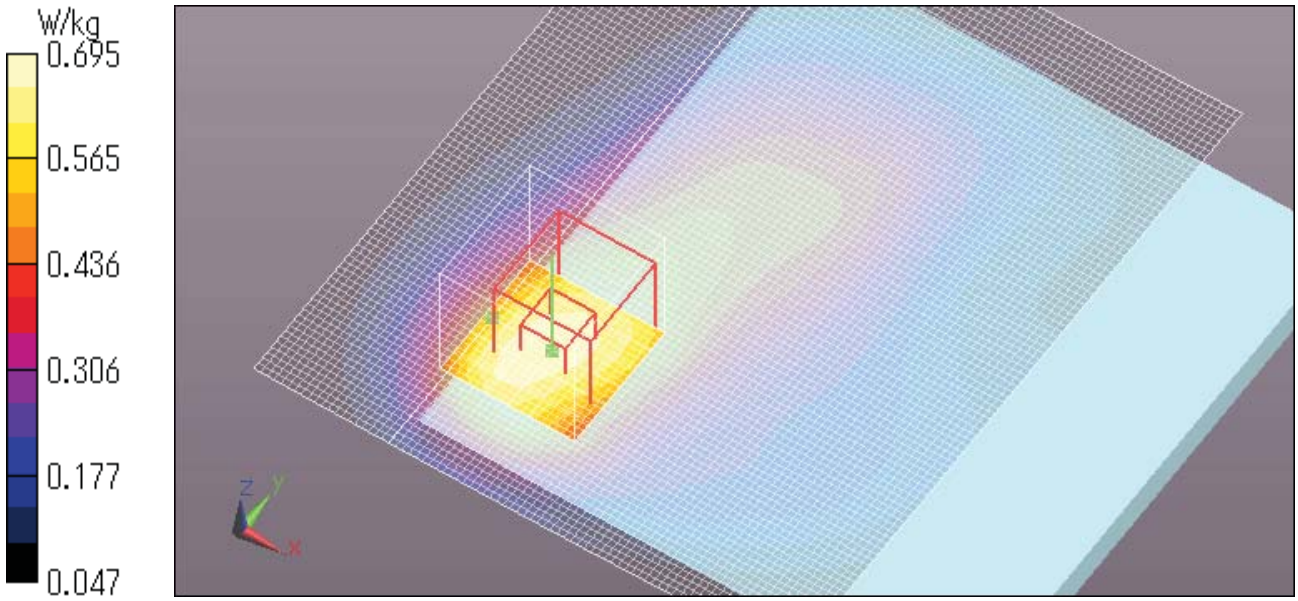


**KMP7R4H1-6A WCDMA V 12.2k RMC Rear Open display 10mm 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);
**Area Scan 2 2 (61x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.699 W/kg
**Area Scan 2 2 2 (21x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.562 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.418 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.828 W/kg
**SAR(1 g) = 0.558 W/kg; SAR(10 g) = 0.383 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.695 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Left edge display 10mm 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

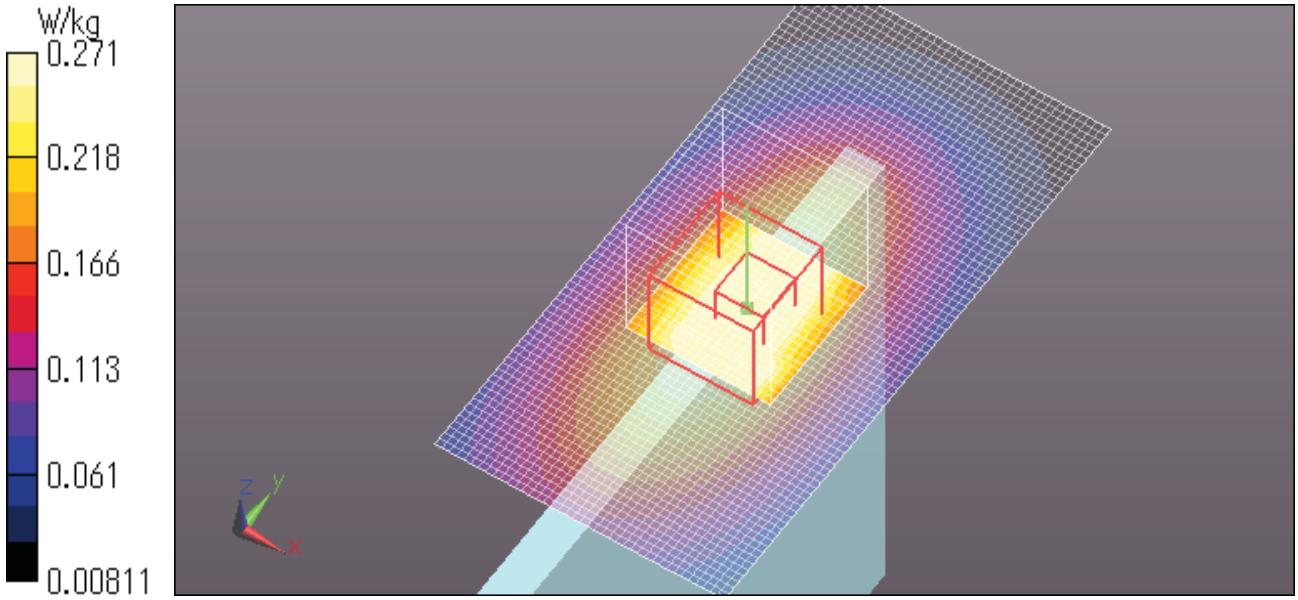
**Area Scan 2 2 (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.271 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.402 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.420 W/kg
**SAR(1 g) = 0.268 W/kg; SAR(10 g) = 0.171 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.344 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WCDMA V 12.2k RMC Bottom edge Open display 10mm 836.6MHz**
Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.975 mho/m; $\varepsilon_r$ = 55.519; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(10.24, 10.24, 10.24); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

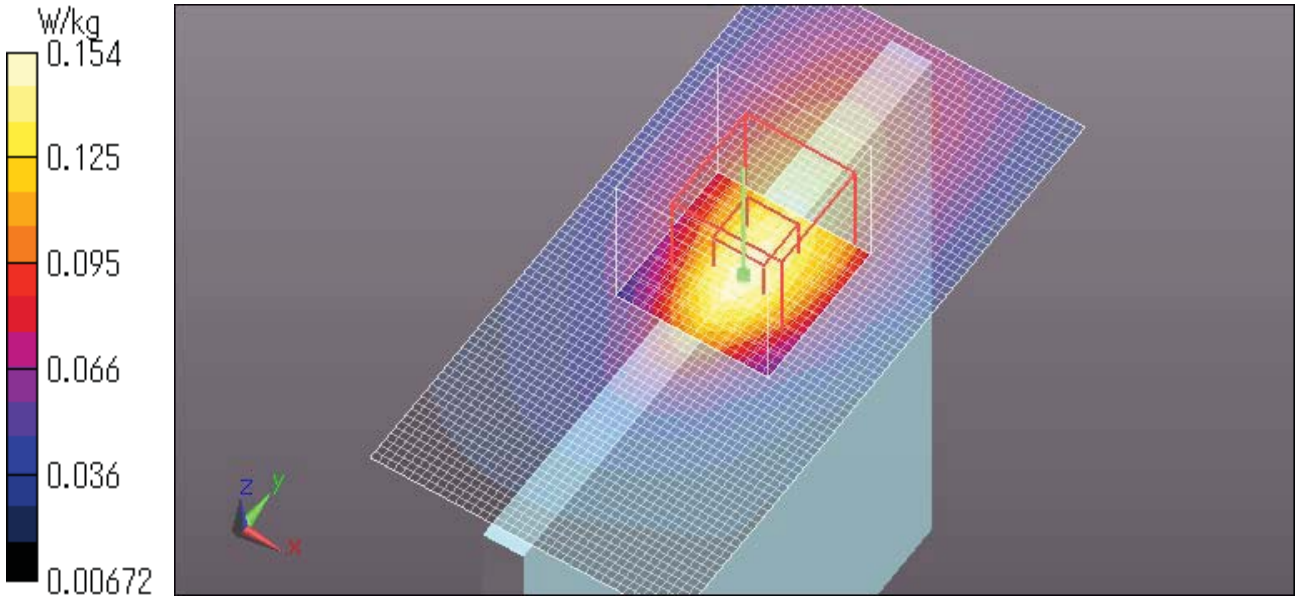
**Area Scan 2 2 (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.164 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.056 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.196 W/kg
**SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.071 W/kg**

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.154 W/kg
Date: 2012/12/12
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



【WLAN Head】

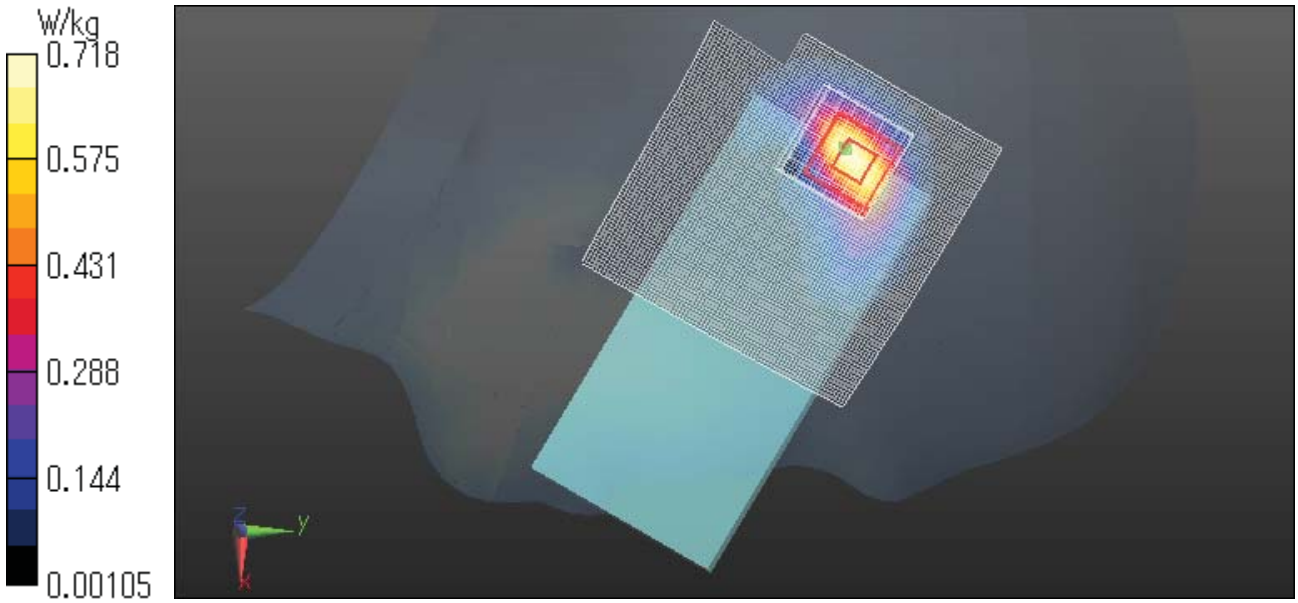
**KMP7R4H1-6A WLAN 11b 1Mbps Left cheek Close display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.752 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.065 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.994 W/kg
**SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.214 W/kg**
Maximum value of SAR (measured) = 0.718 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



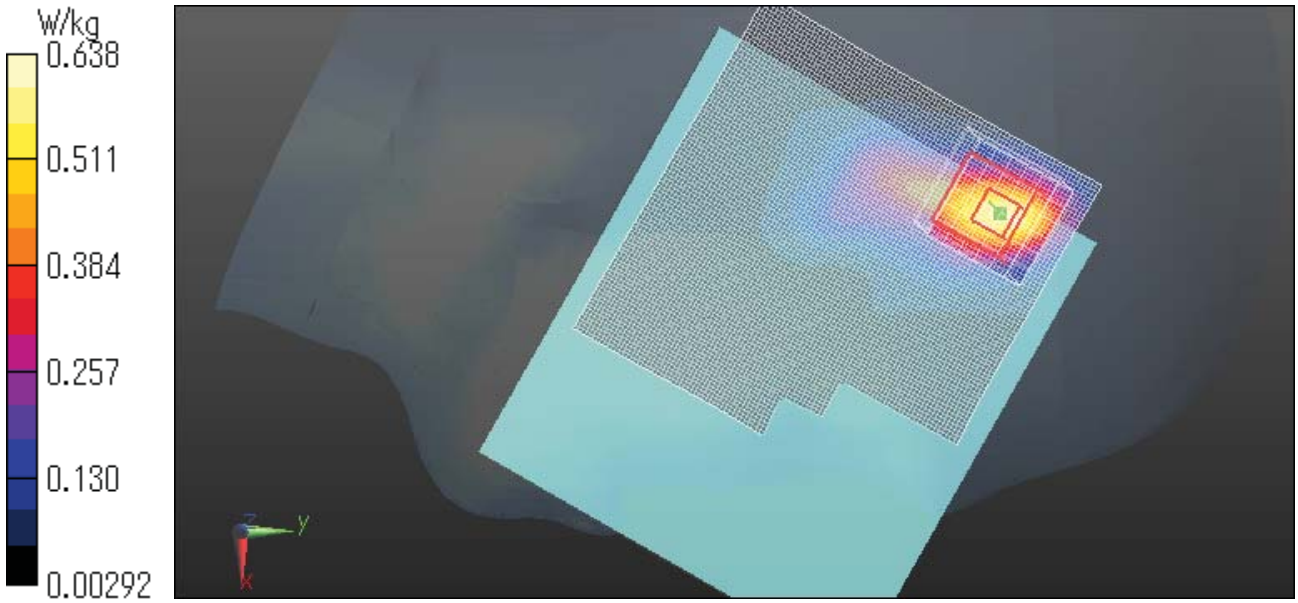
**KMP7R4H1-6A WLAN 11b 1Mbps Left cheek Open display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (91x91x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.607 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.513 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.854 W/kg
**SAR(1 g) = 0.421 W/kg; SAR(10 g) = 0.201 W/kg**
Maximum value of SAR (measured) = 0.638 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



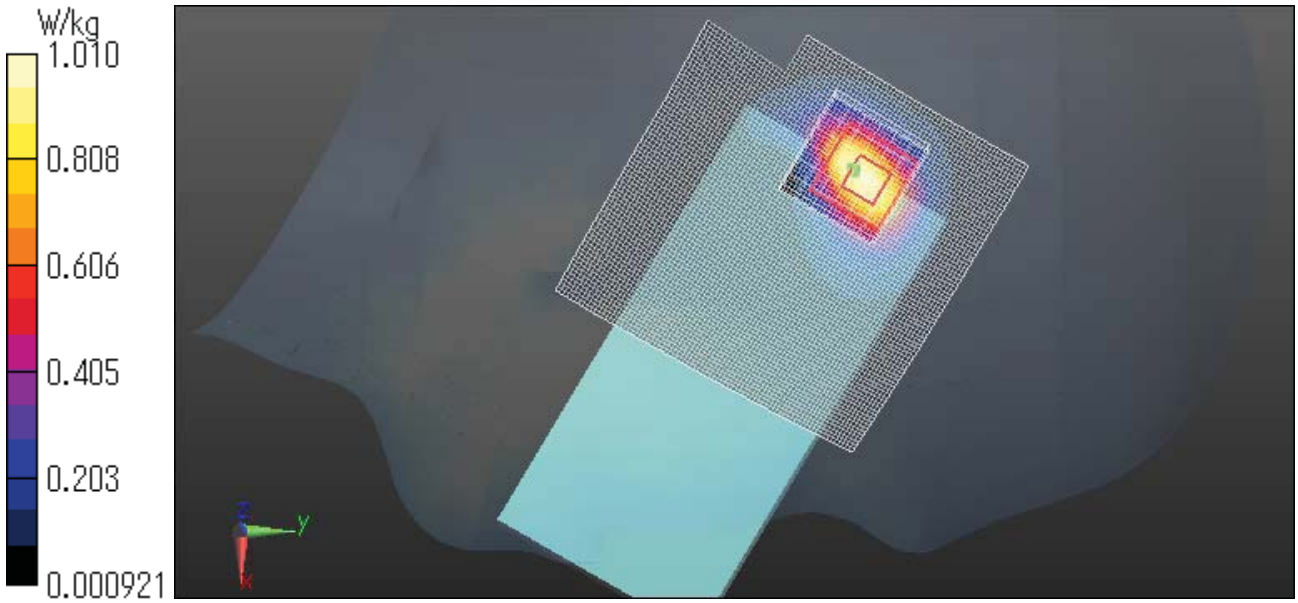
**KMP7R4H1-6A WLAN 11b 1Mbps Left tilt Close display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.09 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.920 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.38 W/kg
**SAR(1 g) = 0.671 W/kg; SAR(10 g) = 0.305 W/kg**
Maximum value of SAR (measured) = 1.01 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



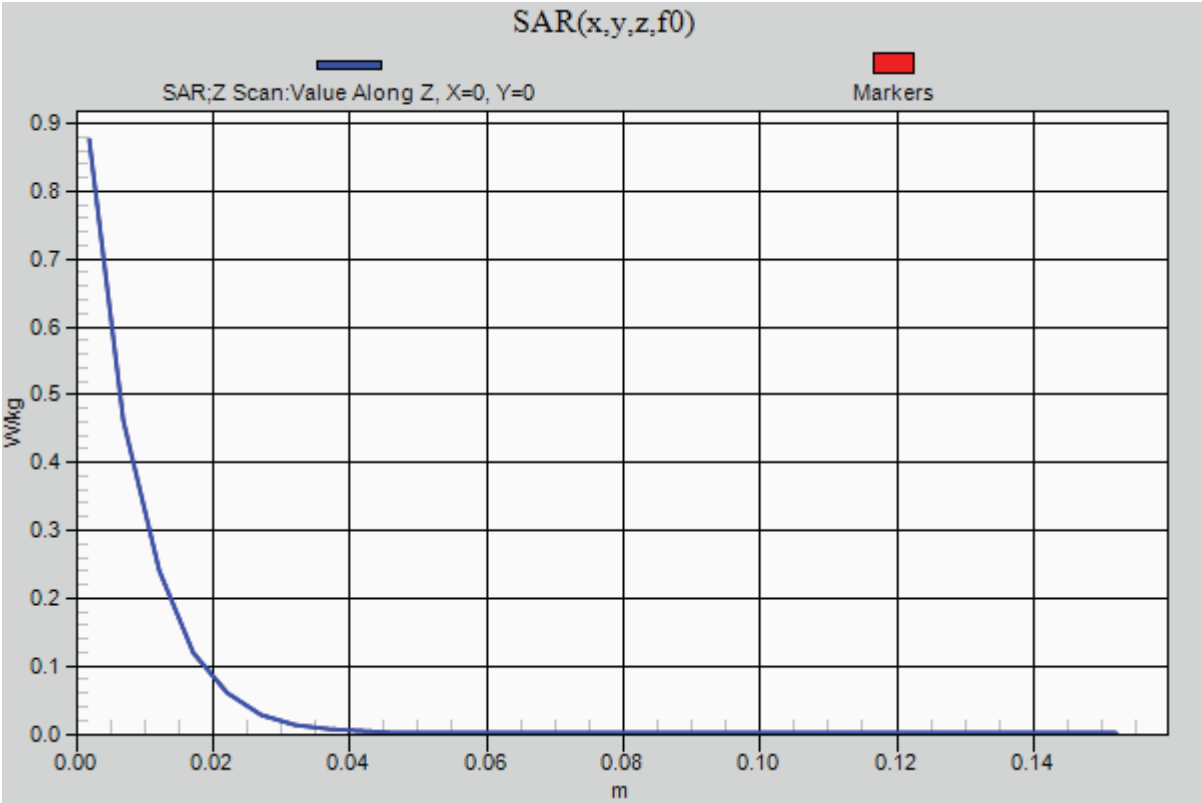
**Z scan at maximum SAR location WLAN(Head)**

**KMP7R4H1-6A WLAN 11b 1Mbps Left tilt Close display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.876 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



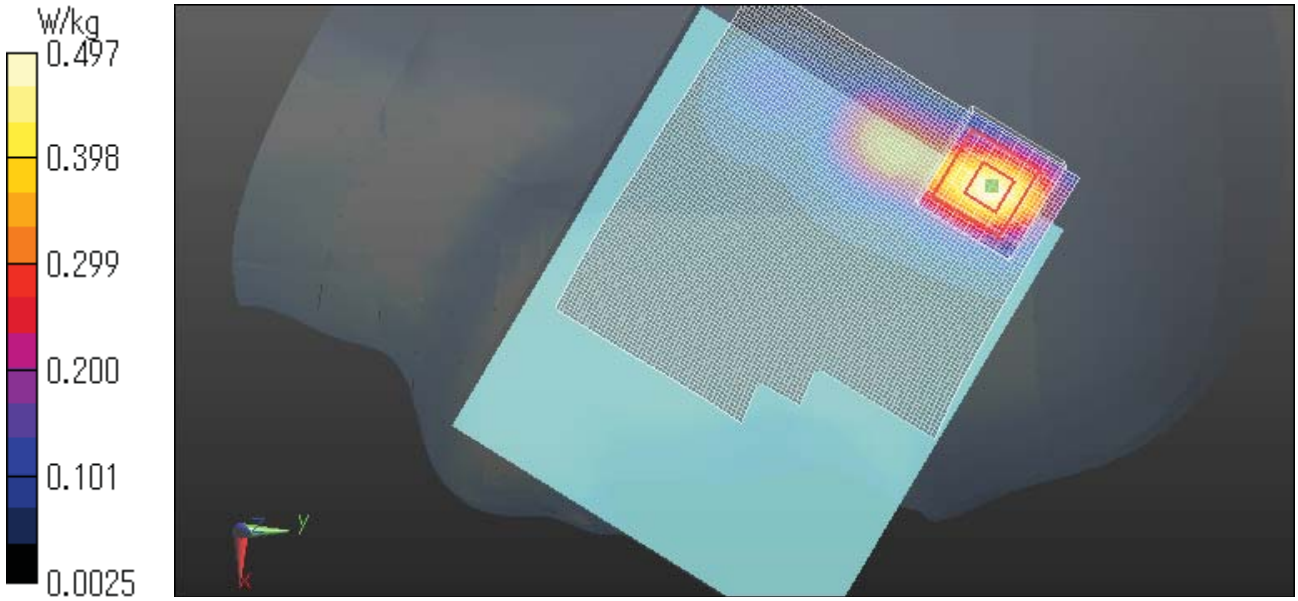
**KMP7R4H1-6A WLAN 11b 1Mbps Left tilt Open display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (91x91x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.493 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.469 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.671 W/kg
**SAR(1 g) = 0.336 W/kg; SAR(10 g) = 0.162 W/kg**
Maximum value of SAR (measured) = 0.497 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



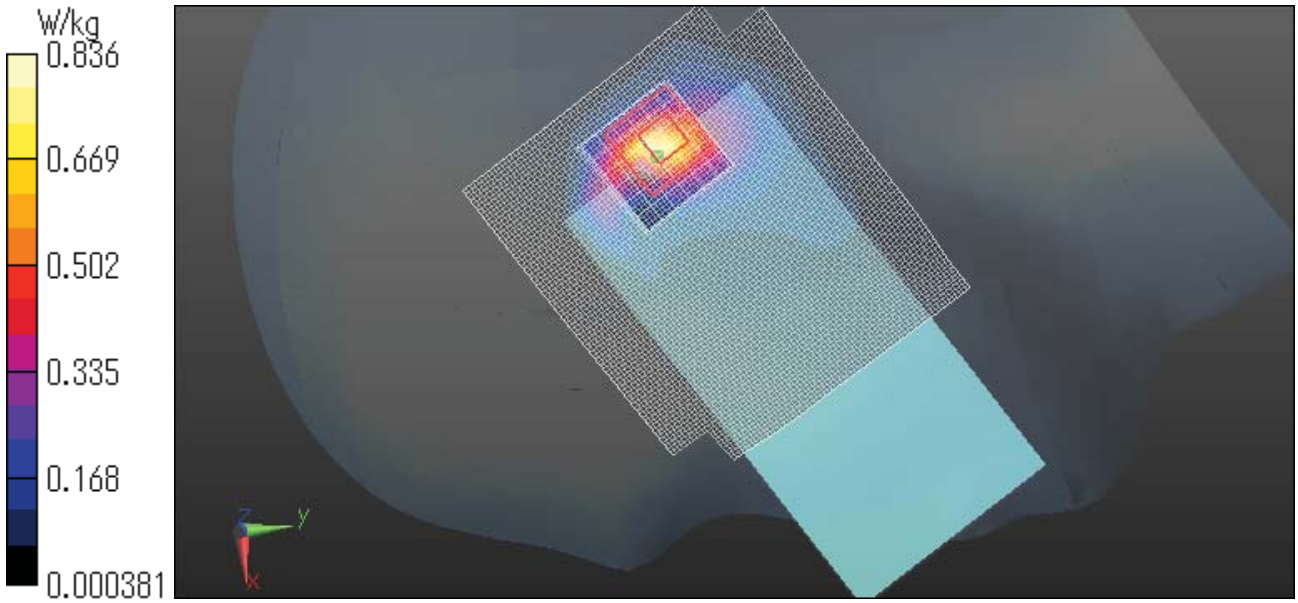
**KMP7R4H1-6A WLAN 11b 1Mbps Right cheek Close display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (81x91x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.908 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.627 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 1.34 W/kg
**SAR(1 g) = 0.535 W/kg; SAR(10 g) = 0.212 W/kg**
Maximum value of SAR (measured) = 0.836 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



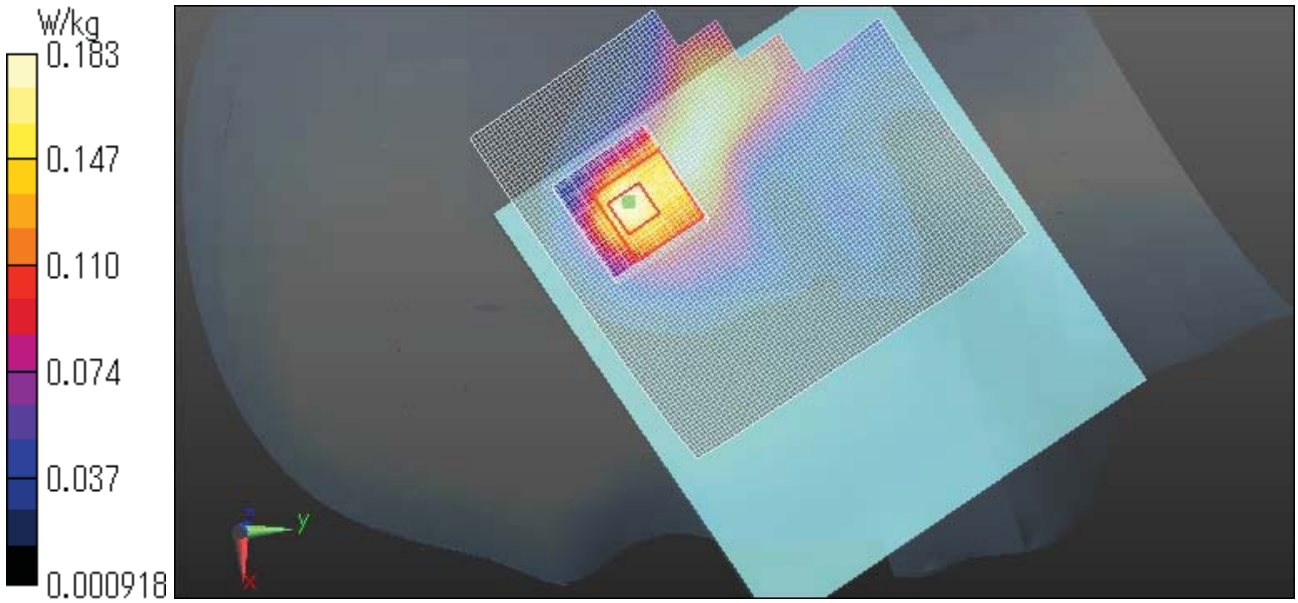
**KMP7R4H1-6A WLAN 11b 1Mbps Right cheek Open display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (91x91x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.197 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.865 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.254 W/kg
**SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.066 W/kg**
Maximum value of SAR (measured) = 0.183 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



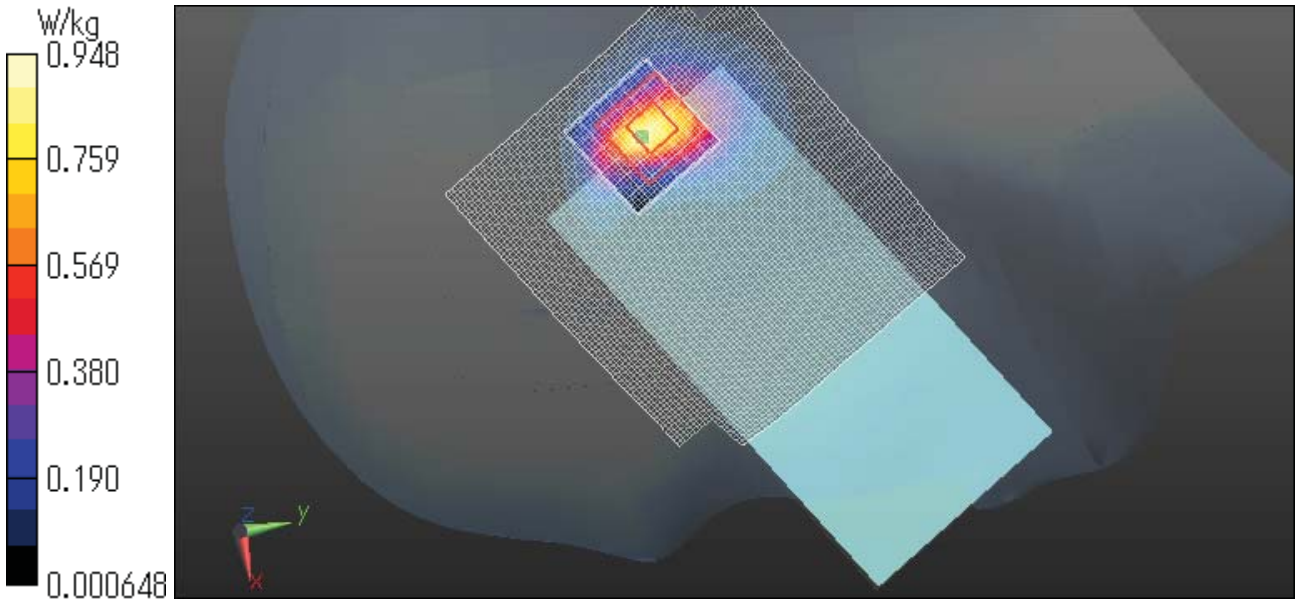
**KMP7R4H1-6A WLAN 11b 1Mbps Right tilt Close display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (81x91x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.951 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.902 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.40 W/kg
**SAR(1 g) = 0.585 W/kg; SAR(10 g) = 0.245 W/kg**
Maximum value of SAR (measured) = 0.948 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



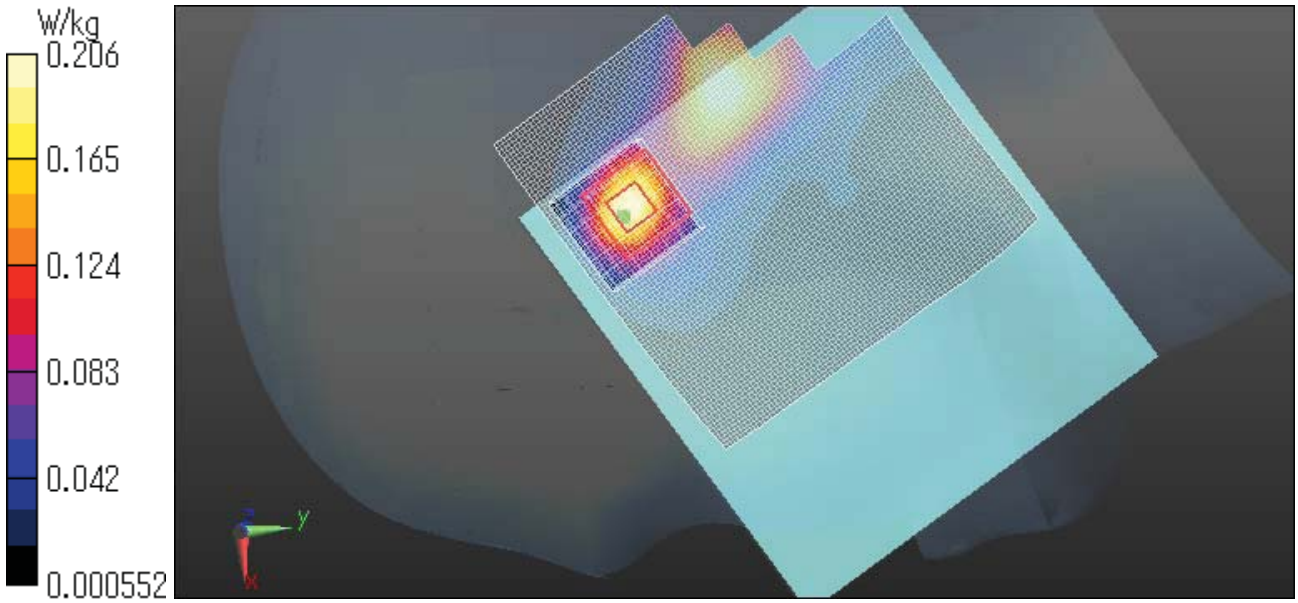
**KMP7R4H1-6A WLAN 11b 1Mbps Right tilt Open display 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.768 mho/m; $\varepsilon_r$ = 37.848; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.62, 7.62, 7.62); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: SAM with CRP; Type: SAM;
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan (91x91x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.212 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.276 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.291 W/kg
**SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.062 W/kg**
Maximum value of SAR (measured) = 0.206 W/kg

Date: 2012/12/19
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**【WLAN Body】**

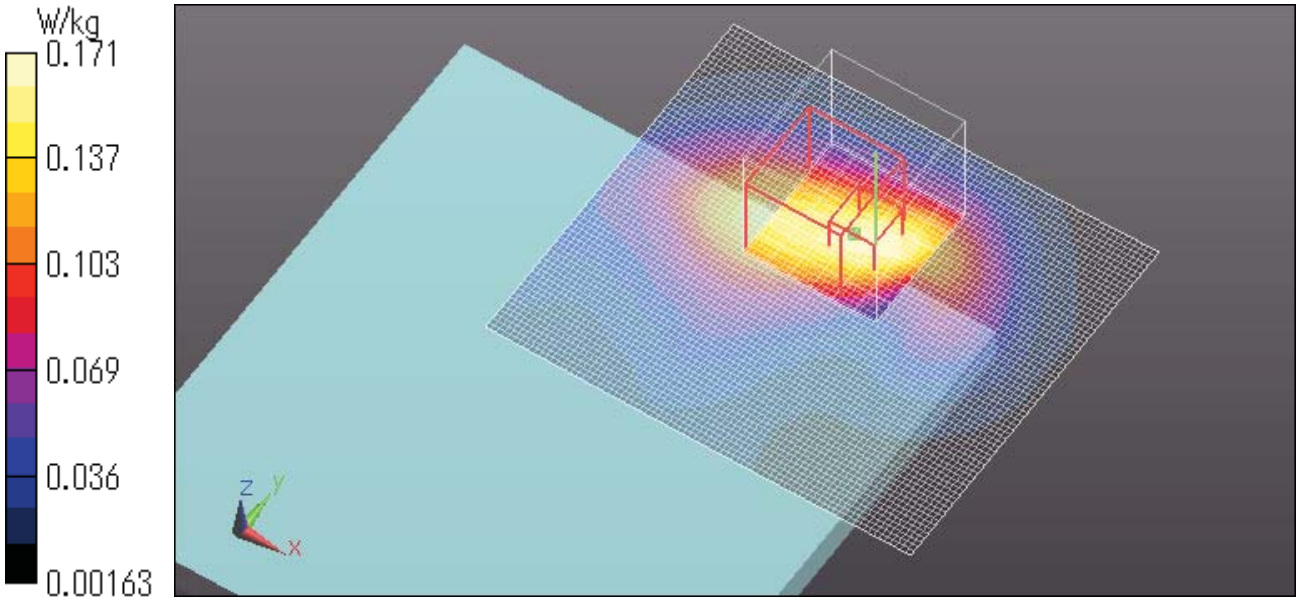
**KMP7R4H1-6A WLAN 11b 1Mbps Front Open display 10mm 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.979 mho/m; $\varepsilon_r$ = 50.423; ρ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.72, 7.72, 7.72); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (81x71x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.173 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.676 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.226 W/kg
**SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.066 W/kg**
Maximum value of SAR (measured) = 0.171 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



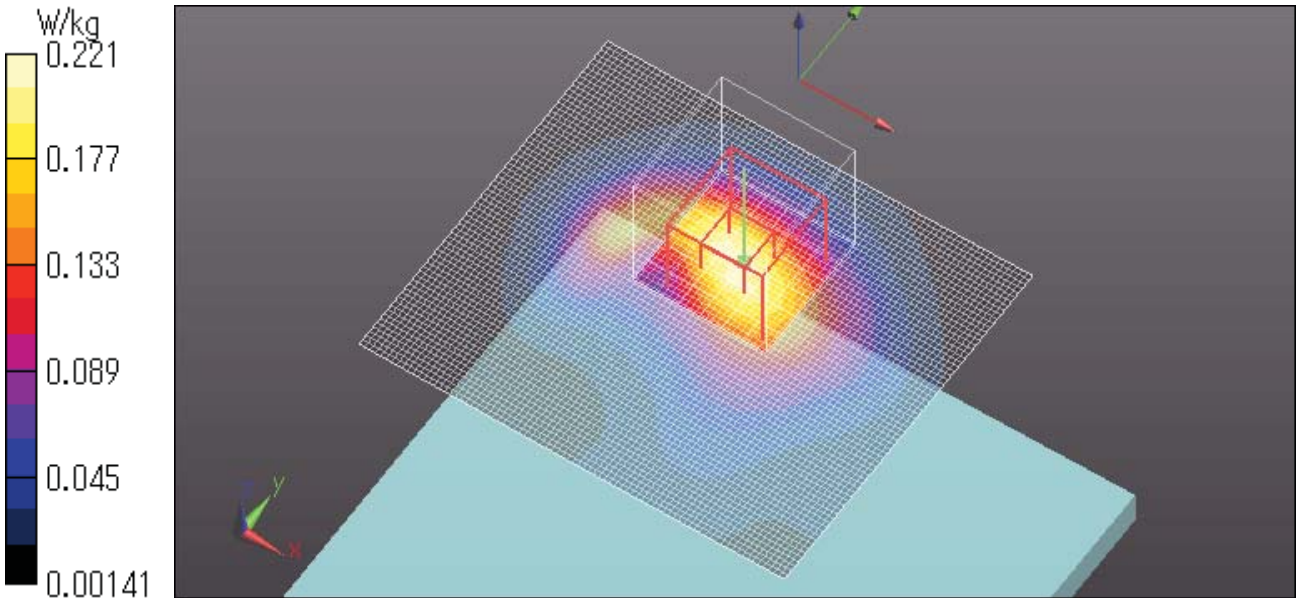
**KMP7R4H1-6A WLAN 11b 1Mbps Rear Open display 10mm 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.979 mho/m; $\varepsilon_r$ = 50.423; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.72, 7.72, 7.72); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (81x71x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.220 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.402 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.295 W/kg
**SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.082 W/kg**
Maximum value of SAR (measured) = 0.221 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



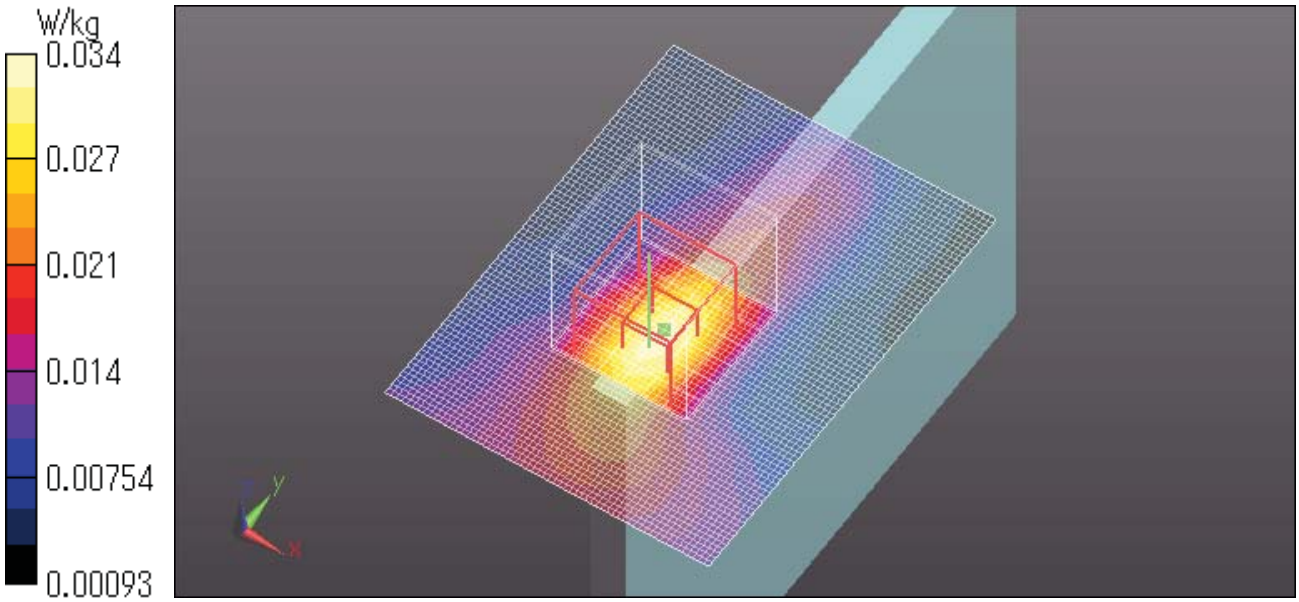
**KMP7R4H1-6A WLAN 11b 1Mbps Left Open display 10mm 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.979 mho/m; $\varepsilon_r$ = 50.423; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.72, 7.72, 7.72); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (61x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0340 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.572 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.0450 W/kg
**SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.012 W/kg**
Maximum value of SAR (measured) = 0.0340 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



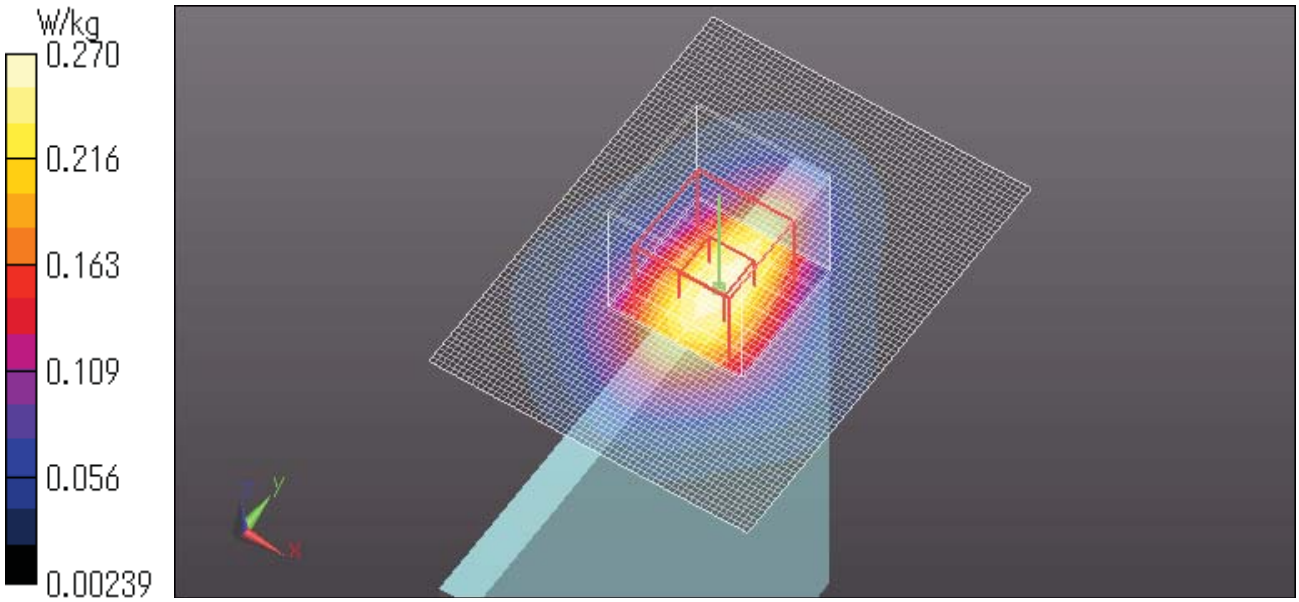
**KMP7R4H1-6A WLAN 11b 1Mbps Top Open display 10mm 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.979 mho/m; $\varepsilon_r$ = 50.423; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.72, 7.72, 7.72); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (61x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.278 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.763 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.351 W/kg
**SAR(1 g) = 0.191 W/kg; SAR(10 g) = 0.103 W/kg**
Maximum value of SAR (measured) = 0.270 W/kg

Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



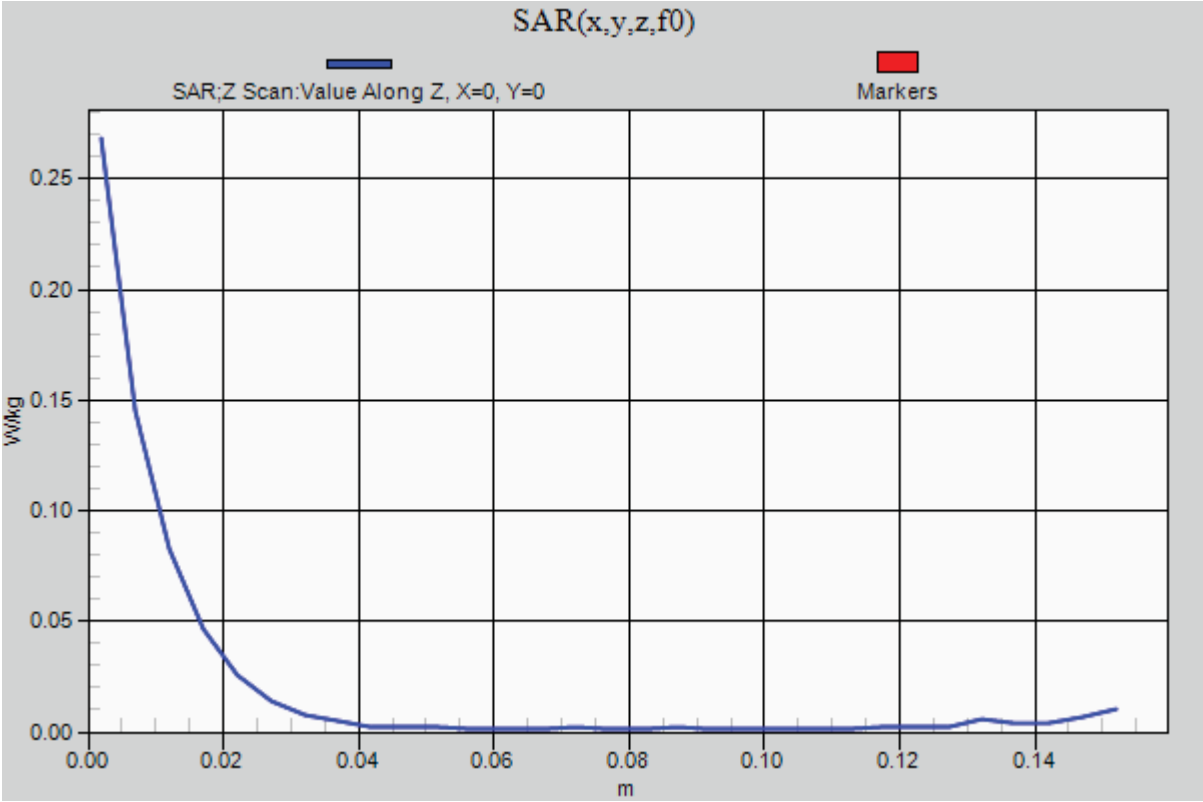
**Z scan at maximum SAR location WLAN(Body)**

**KMP7R4H1-6A WLAN 11b 1Mbps Top Open display 10mm 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.979 mho/m; $\varepsilon_r$ = 50.423; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.72, 7.72, 7.72); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Z Scan (1x1x31):** Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.268 W/kg

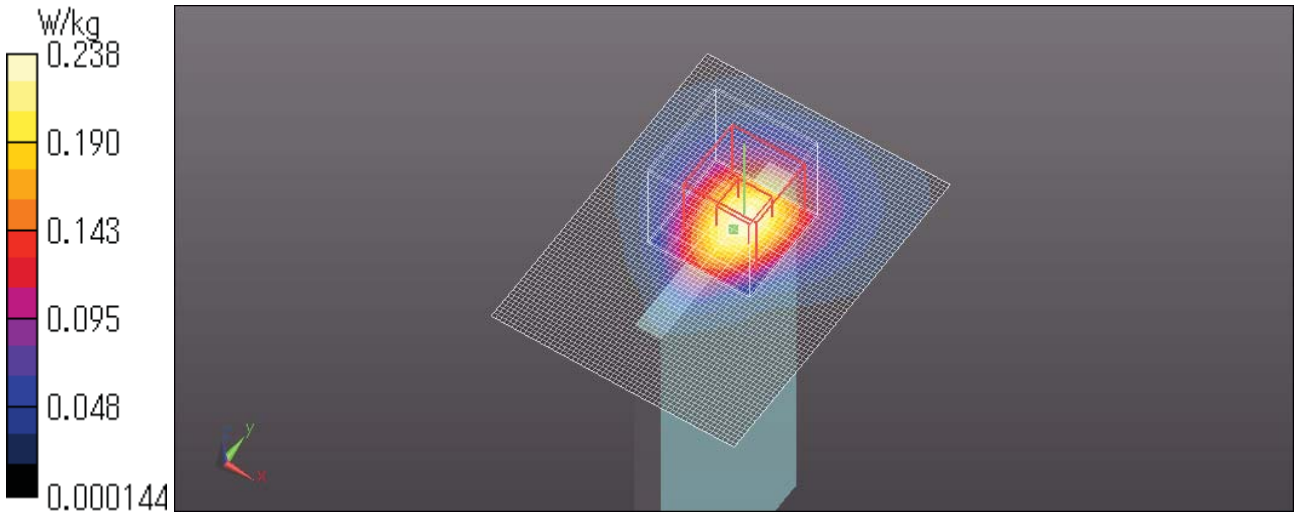
Date: 2012/12/17
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



**KMP7R4H1-6A WLAN 11b 1Mbps Top Close display 10mm 2462MHz**

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; $\sigma$ = 1.979 mho/m; $\varepsilon_r$ = 50.423; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3540; ConvF(7.72, 7.72, 7.72); Calibrated: 2012/07/19; ${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

**Area Scan 2 2 (61x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.251 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.522 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.323 W/kg
**SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.083 W/kg**
Maximum value of SAR (measured) = 0.238 W/kg

Date: 2012/12/18
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.