



Research In Motion Limited
295 Phillip Street
Waterloo, Ontario
Canada N2L 3W8
+1 519 888 7465, fax +1 519 888 6906
E-mail: info@rim.net

February 6, 2004

Diane Poole
Federal Communications Commission,
Equipment Authorization Division
Application Processing Branch
7435 Oakland Mills Road
Columbia, MD 21045

Subject: Response to the FCC Correspondence Reference Number **26315** for additional information on RIM BlackBerry Wireless Handheld FCC ID L6ARAN21CN, 731 Confirmation Number **EA804176**

Dear Diane:

The following addresses your inquiries **Correspondence Reference Number 26315**, dated February 04, 2004:

ITEM 1:

As per the calibration certificate in APPENDIX A below, the probe calibration is valid for $f = 1710 - 1910$ MHz and 800-1000 MHz for head and muscle tissue according to P1528-200x and OET 65 Supplement C. The frequency response plot on page 5 shows that the response deviates from 1.0 by no more than 1% across these bands. Our probes have always been calibrated for these frequency ranges by the manufacturer SPEAG.

ITEM 2:

The plots in APPENDIX B at the bottom of this reply has higher quality SAR plots.

Please do not hesitate to contact the undersigned should you require additional information or have any questions.

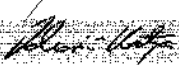
Yours truly,

A handwritten signature in black ink, appearing to read 'M. Attayi'.

Masud S. Attayi, P.Eng.
Senior Compliance & Certification Engineer
Research In Motion Limited
Tel: +1 519 888-7465 x2442
Fax: +1 519 888-6906
Email: mattayi@rim.net

APPENDIX A
CALIBRATION CERTIFICATE

Client RIM

CALIBRATION CERTIFICATE			
Object(s)	ET3DV6 - SN:1642		
Calibration procedure(s)	QA-CAL-01.v2 Calibration procedure for dosimetric E-field probes		
Calibration date:	August 28, 2003		
Condition of the calibrated item	In Tolerance (according to the specific calibration document)		
This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.			
All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.			
Calibration Equipment used (M&TE critical for calibration)			
Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
RF generator HP 8684C	US3642U01700	4-Aug-99 (SPEAG, in house check Aug-02)	In house check: Aug-05
Power sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor HP 8481A	MY41092180	18-Sep-02 (Agilent, No. 20020918)	Sep-03
Power meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
Network Analyzer HP 8753E	US37390585	18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Oct 03
Fluke Process Calibrator Type 702	SN: 6295803	3-Sep-01 (ELCAL, No.2360)	Sep-03
Calibrated by:	Name Nico Vetter	Function Technician	Signature 
Approved by:	Name Katja Pokovic	Function Laboratory Director	Signature 
Date issued: August 28, 2003			
This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.			

Probe ET3DV6

SN:1642

Manufactured:	November 7, 2001
Last calibration:	July 26, 2002
Recalibrated:	August 28, 2003

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1642**Sensitivity in Free Space****Diode Compression**

NormX	1.84 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	96	mV
NormY	1.86 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	96	mV
NormZ	1.61 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	96	mV

Sensitivity in Tissue Simulating Liquid

Head 900 MHz $\epsilon_r = 41.5 \pm 5\%$ $\sigma = 0.97 \pm 5\% \text{ mho}/\text{m}$

Valid for f=900-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	6.6 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	6.6 $\pm 9.5\%$ (k=2)	Alpha	0.27
ConvF Z	6.6 $\pm 9.5\%$ (k=2)	Depth	3.41

Head 1800 MHz $\epsilon_r = 40.0 \pm 5\%$ $\sigma = 1.40 \pm 5\% \text{ mho}/\text{m}$

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	5.4 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	5.4 $\pm 9.5\%$ (k=2)	Alpha	0.48
ConvF Z	5.4 $\pm 9.5\%$ (k=2)	Depth	2.57

Boundary Effect

Head 900 MHz Typical SAR gradient: 5 % per mm

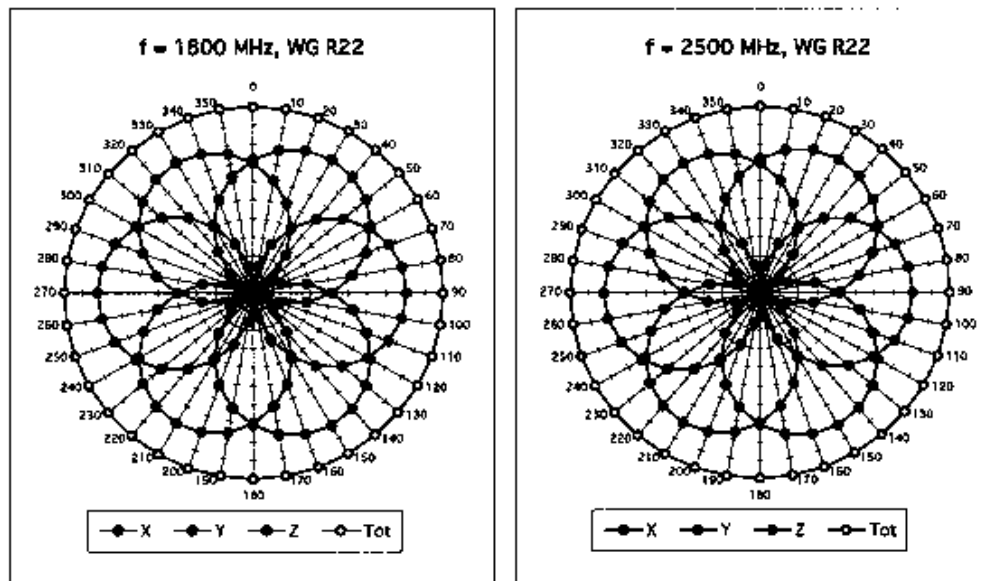
Probe Tip to Boundary		1 mm	2 mm
SAR _{iso} [%]	Without Correction Algorithm	10.8	6.6
SAR _{iso} [%]	With Correction Algorithm	0.6	0.6

Head 1800 MHz Typical SAR gradient: 10 % per mm

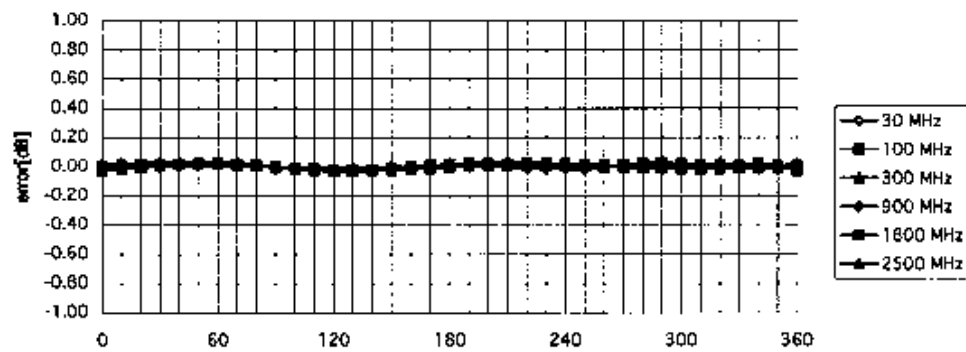
Probe Tip to Boundary		1 mm	2 mm
SAR _{iso} [%]	Without Correction Algorithm	12.7	8.5
SAR _{iso} [%]	With Correction Algorithm	0.2	0.1

Sensor Offset

Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.0 ± 0.2	mm

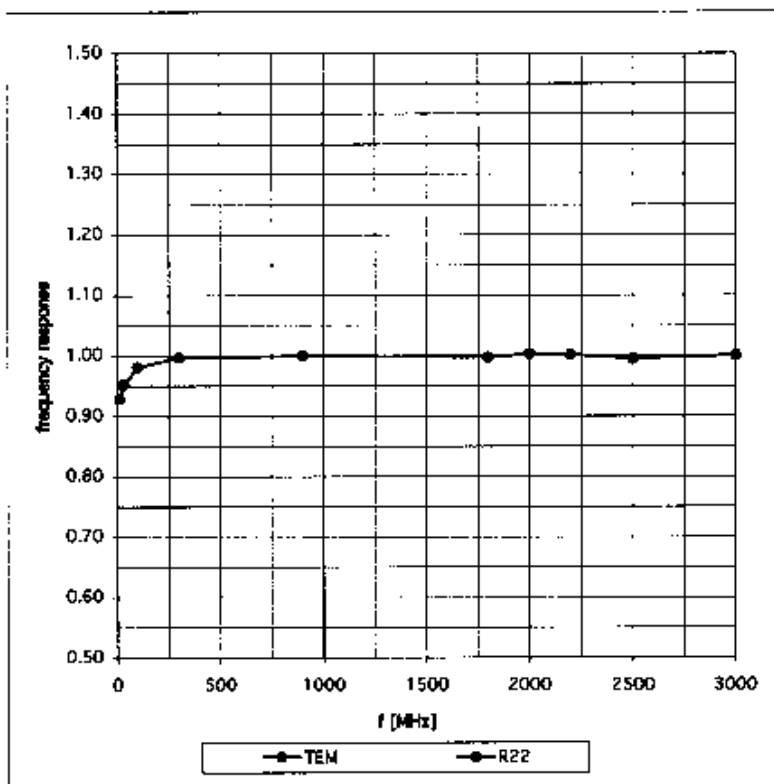


Isotropy Error (ϕ), $\theta = 0^\circ$



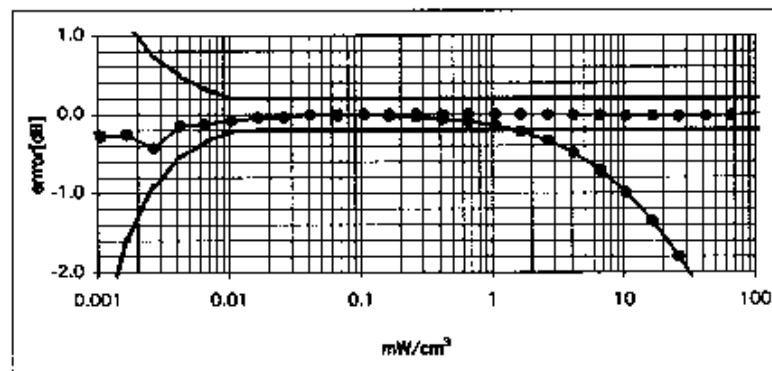
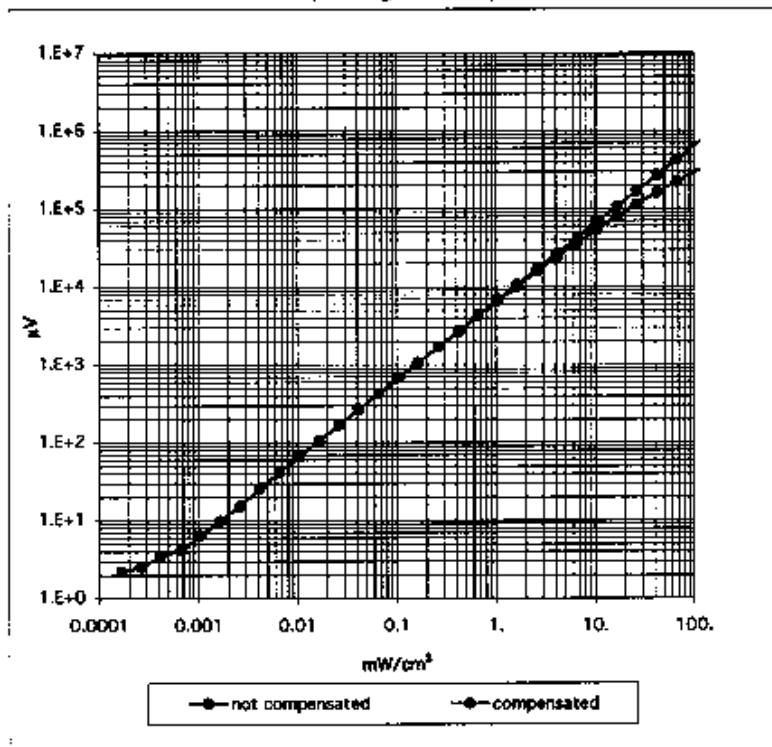
Frequency Response of E-Field

(TEM-Cell:#1110, Waveguide R22)

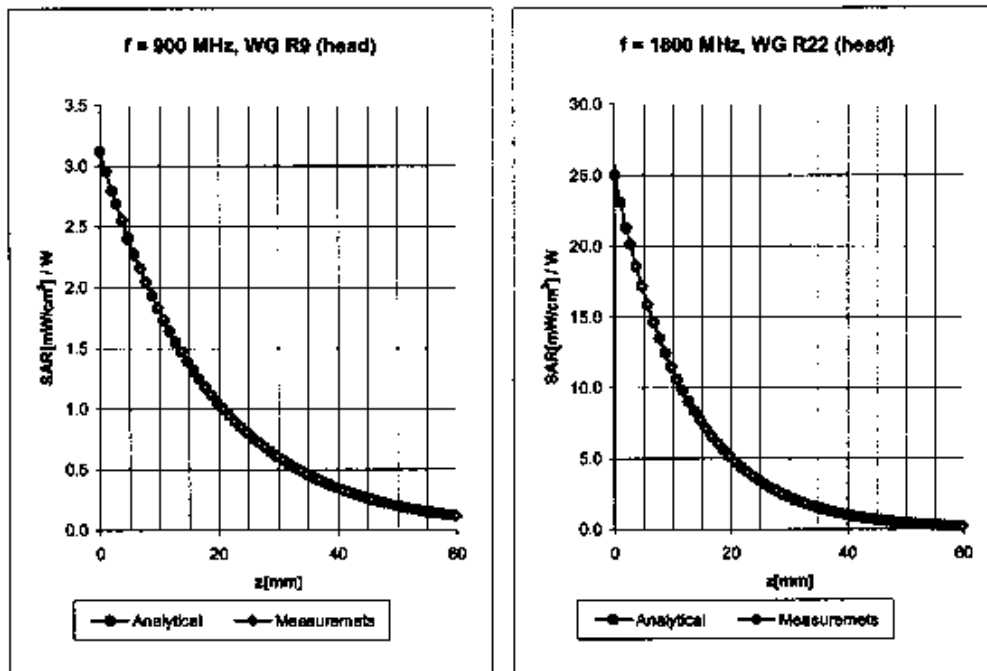


Dynamic Range f(SARhead)

(Waveguide R22)



Conversion Factor Assessment



Head 900 MHz $\epsilon_r = 41.5 \pm 5\%$ $\sigma = 0.97 \pm 5\%$ mho/m

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

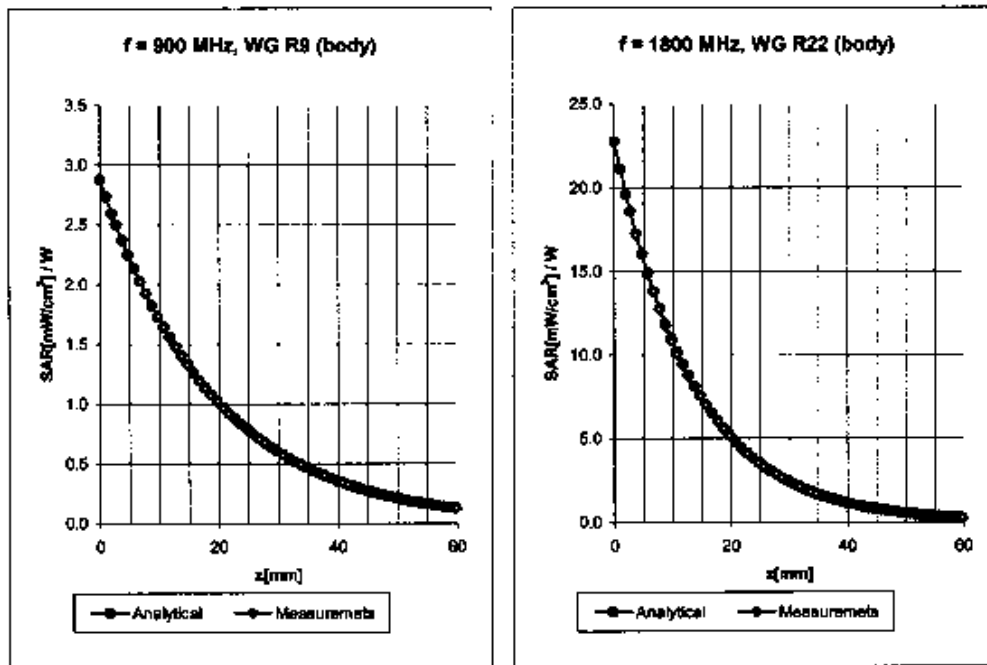
ConvF X	$6.6 \pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	$6.6 \pm 9.5\%$ (k=2)	Alpha	0.27
ConvF Z	$6.6 \pm 9.5\%$ (k=2)	Depth	3.41

Head 1800 MHz $\epsilon_r = 40.0 \pm 5\%$ $\sigma = 1.40 \pm 5\%$ mho/m

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	$5.4 \pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	$5.4 \pm 9.5\%$ (k=2)	Alpha	0.48
ConvF Z	$5.4 \pm 9.5\%$ (k=2)	Depth	2.57

Conversion Factor Assessment



Body 900 MHz $\epsilon_r = 55.0 \pm 5\%$ $\sigma = 1.05 \pm 5\%$ mho/m

Valid for f=800-1000 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	$6.4 \pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	$6.4 \pm 9.5\%$ (k=2)	Alpha	0.38
ConvF Z	$6.4 \pm 9.5\%$ (k=2)	Depth	2.58

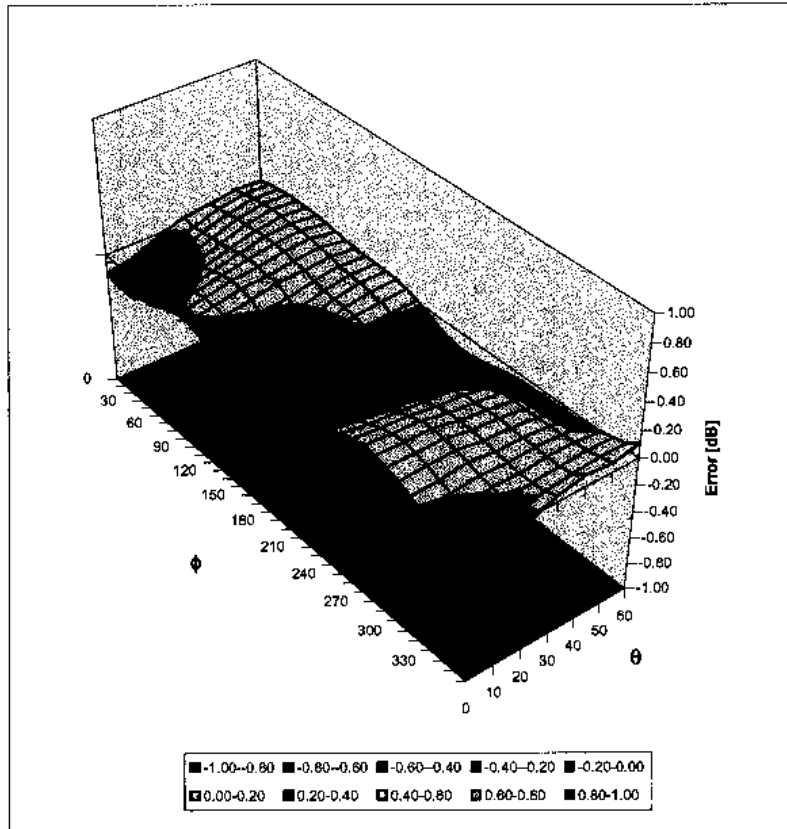
Body 1800 MHz $\epsilon_r = 53.3 \pm 5\%$ $\sigma = 1.52 \pm 5\%$ mho/m

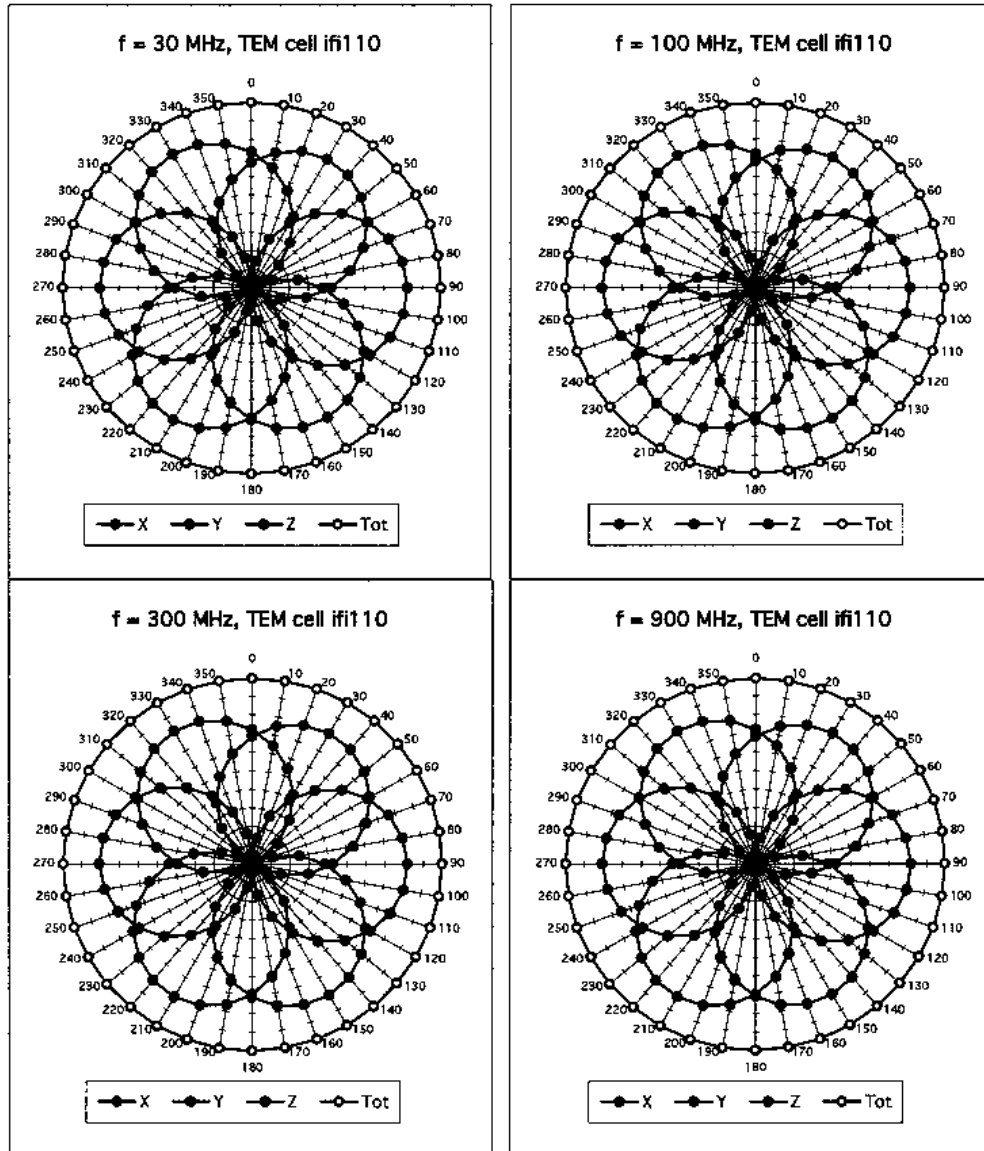
Valid for f=1710-1910 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	$4.9 \pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	$4.9 \pm 9.5\%$ (k=2)	Alpha	0.58
ConvF Z	$4.9 \pm 9.5\%$ (k=2)	Depth	2.60

Deviation from Isotropy in HSL

Error (θ, ϕ) , $f = 900$ MHz



Receiving Pattern (ϕ), $\theta = 0^\circ$ 

APPENDIX B SAR PLOTS

Date/Time: 11/06/03 14:07:11

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.8 °C Liquid Temperature : 22.7 °C

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

Medium: 835 MHz Head ($\sigma = 0.89$ mho/m, $\epsilon_r = 40.67$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(6.6, 6.6, 6.6); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (81x151x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 113.8 V/m

Power Drift = -0.06 dB

Maximum value of SAR = 10.5 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

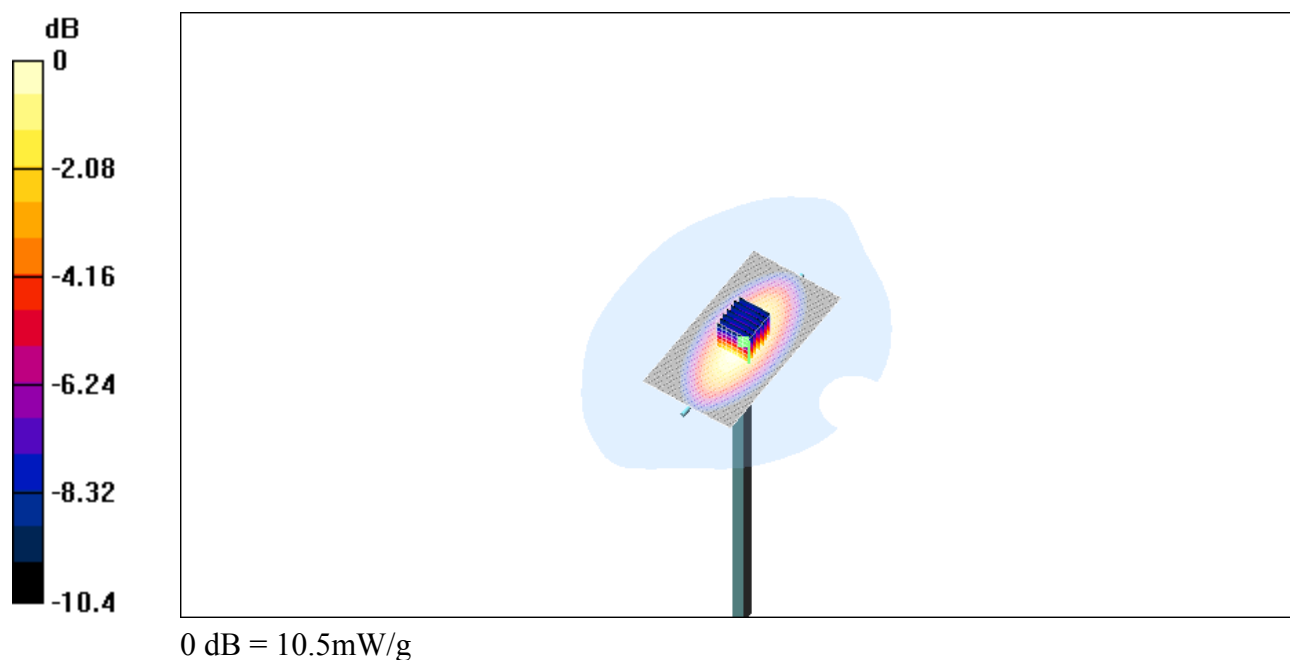
Peak SAR (extrapolated) = 14.1 W/kg

SAR(1 g) = 9.82 mW/g; SAR(10 g) = 6.4 mW/g

Reference Value = 113.8 V/m

Power Drift = -0.06 dB

Maximum value of SAR = 10.5 mW/g



Date/Time: 11/11/03 13:32:52

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.8 °C Liquid Temperature : 22.9 °C

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:545

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

Medium: HSL1900 ($\sigma = 1.43$ mho/m, $\epsilon_r = 40.15$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(5.4, 5.4, 5.4); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (81x101x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 189.8 V/m

Power Drift = -0.004 dB

Maximum value of SAR = 47.1 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

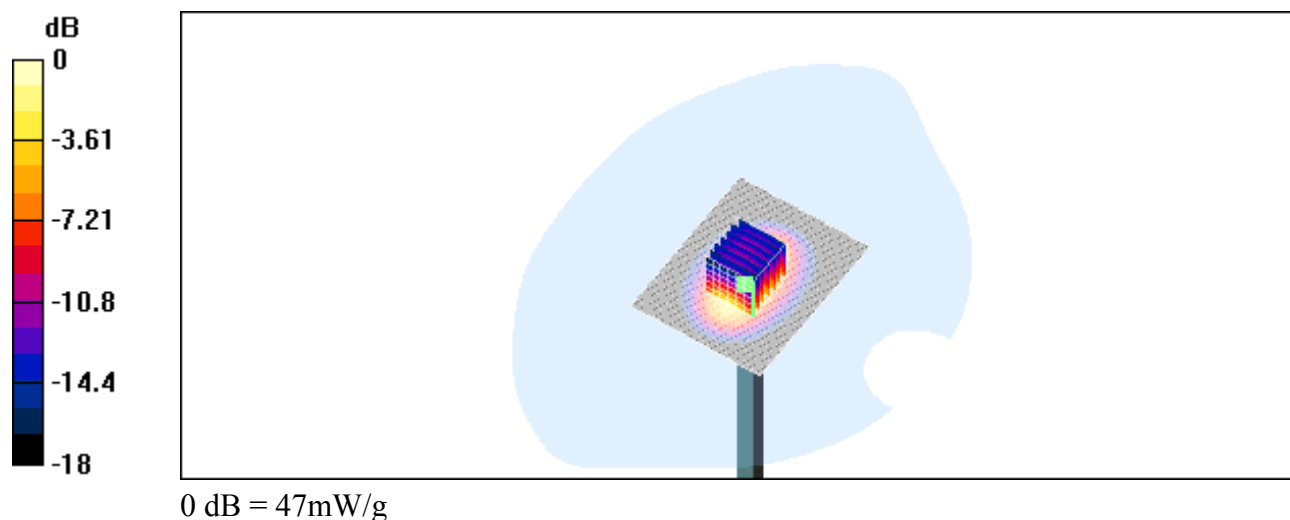
Peak SAR (extrapolated) = 75.5 W/kg

SAR(1 g) = 42 mW/g; SAR(10 g) = 21.5 mW/g

Reference Value = 189.8 V/m

Power Drift = -0.004 dB

Maximum value of SAR = 47 mW/g



Date/Time: 11/07/03 11:31:47

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.5 °C Liquid Temperature : 22.4 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Touch left side; High Chan; Cellular Band

Communication System: Cellular CDMA ; Frequency: 848.31 MHz;Duty Cycle: 1:1

Medium: 835 MHz Head ($\sigma = 0.89$ mho/m, $\epsilon_r = 40.67$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(6.6, 6.6, 6.6); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 11.3 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.4 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

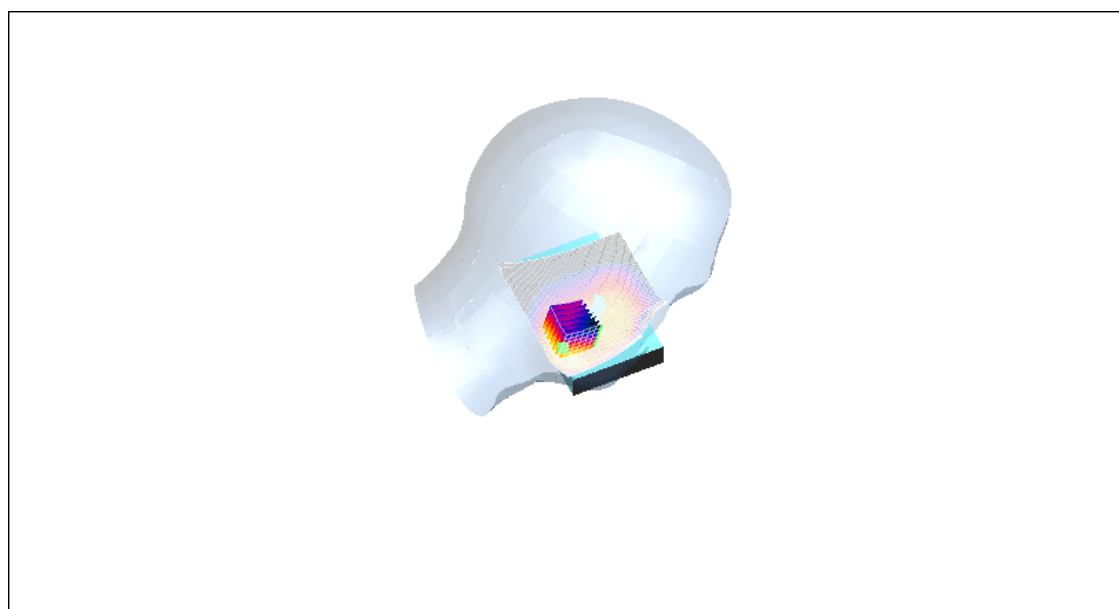
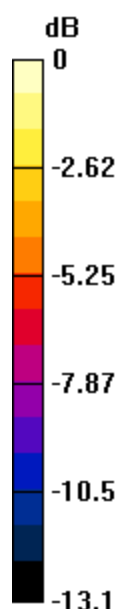
Peak SAR (extrapolated) = 2.05 W/kg

SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.749 mW/g

Reference Value = 11.3 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.4 mW/g



Date/Time: 11/07/03 12:16:47

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.5 °C Liquid Temperature : 22.7 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Tilted left side; Mid. Chan; Cellular Band

Communication System: Cellular CDMA ; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium: 835 MHz Head ($\sigma = 0.89$ mho/m, $\epsilon_r = 40.67$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(6.6, 6.6, 6.6); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 12 V/m

Power Drift = -0.3 dB

Maximum value of SAR = 0.498 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

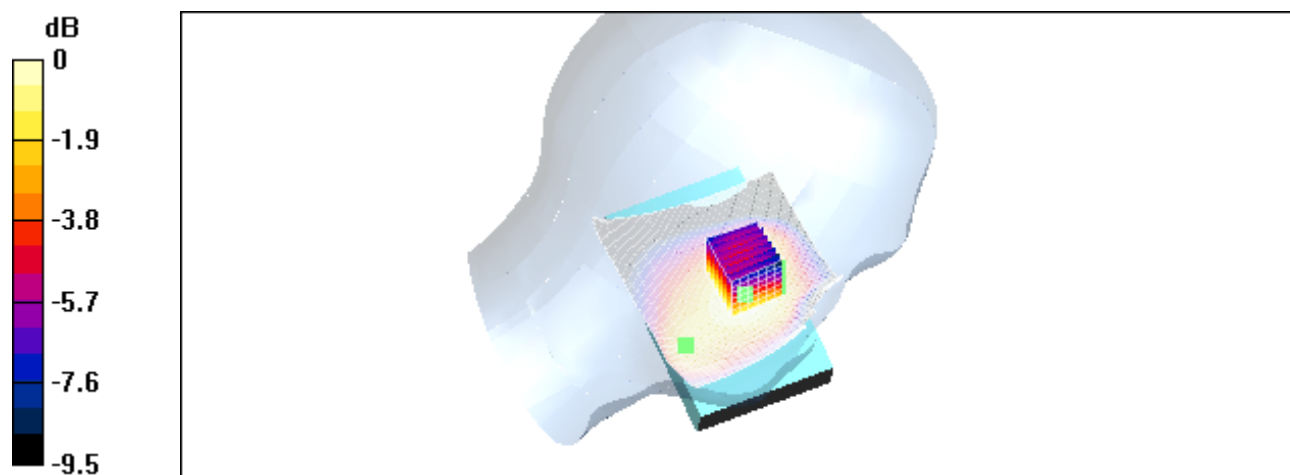
Peak SAR (extrapolated) = 0.614 W/kg

SAR(1 g) = 0.48 mW/g; SAR(10 g) = 0.356 mW/g

Reference Value = 12 V/m

Power Drift = -0.3 dB

Maximum value of SAR = 0.498 mW/g



0 dB = 0.498mW/g

Date/Time: 11/07/03 15:05:18

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.5 °C Liquid Temperature : 22.4 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Touch right; Mid. Chan; Cellular Band

Communication System: Cellular CDMA ; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium: 835 MHz Head ($\sigma = 0.89 \text{ mho/m}$, $\epsilon_r = 40.67$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(6.6, 6.6, 6.6); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (91x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 11.9 V/m

Power Drift = -0.5 dB

Maximum value of SAR = 0.703 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

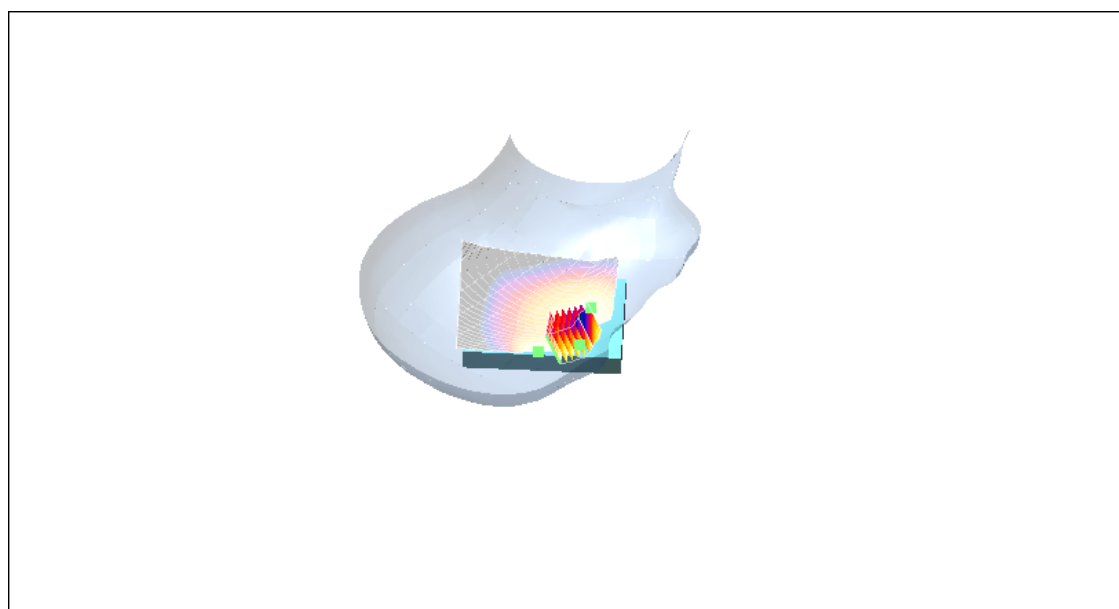
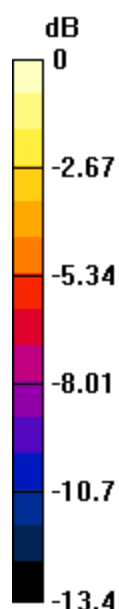
Peak SAR (extrapolated) = 0.894 W/kg

SAR(1 g) = 0.629 mW/g; SAR(10 g) = 0.432 mW/g

Reference Value = 11.9 V/m

Power Drift = -0.5 dB

Maximum value of SAR = 0.675 mW/g



Date/Time: 11/10/03 12:16:46

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.5 °C Liquid Temperature : 22.4 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Tilted right side; Mid. Chan; Cellular Band

Communication System: Cellular CDMA ; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium: 835 MHz Head ($\sigma = 0.89$ mho/m, $\epsilon_r = 40.67$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(6.6, 6.6, 6.6); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 14.6 V/m

Power Drift = 0.08 dB

Maximum value of SAR = 0.386 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

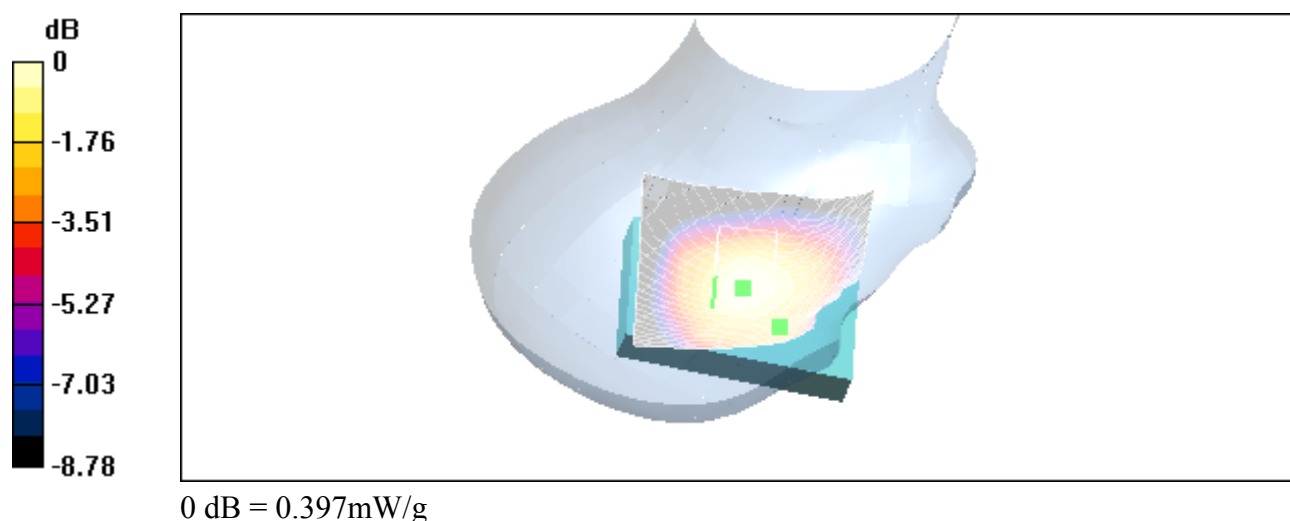
Peak SAR (extrapolated) = 0.499 W/kg

SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.287 mW/g

Reference Value = 14.6 V/m

Power Drift = 0.08 dB

Maximum value of SAR = 0.397 mW/g



Date/Time: 11/11/03 15:59:31

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.7 °C Liquid Temperature : 22.6 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Touch left side; High Chan; PCS Band

Communication System: PCS CDMA 1900; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: HSL1900 ($\sigma = 1.43 \text{ mho/m}$, $\epsilon_r = 40.15$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(5.4, 5.4, 5.4); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 16.1 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.44 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

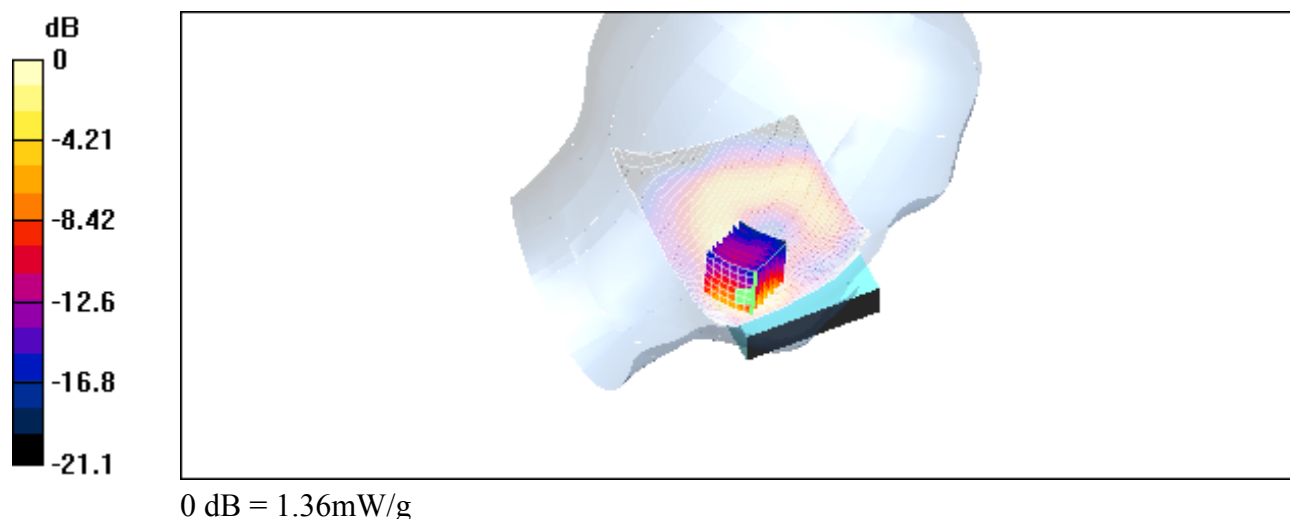
Peak SAR (extrapolated) = 2.37 W/kg

SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.589 mW/g

Reference Value = 16.1 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.36 mW/g



Date/Time: 11/11/03 17:15:24

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.7 °C Liquid Temperature : 22.8 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Tilted left side; Mid. Chan; PCS Band

Communication System: PCS CDMA 1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900 ($\sigma = 1.43 \text{ mho/m}$, $\epsilon_r = 40.15$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(5.4, 5.4, 5.4); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 15.6 V/m

Power Drift = -0.4 dB

Maximum value of SAR = 0.419 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

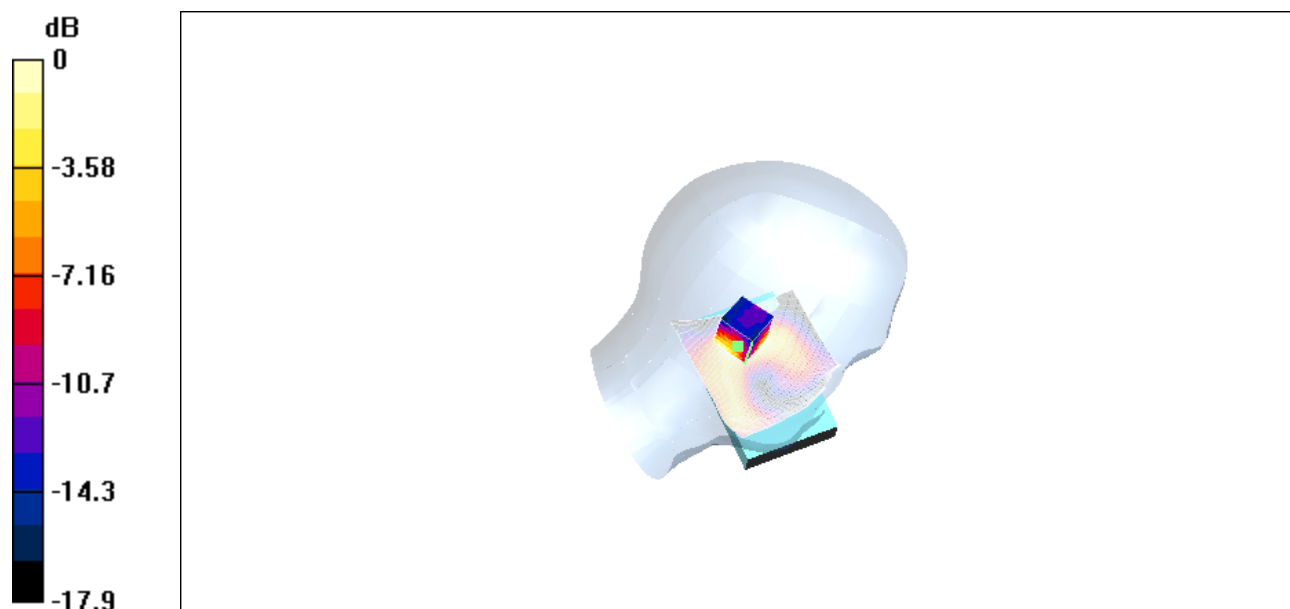
Peak SAR (extrapolated) = 0.729 W/kg

SAR(1 g) = 0.373 mW/g; SAR(10 g) = 0.197 mW/g

Reference Value = 15.6 V/m

Power Drift = -0.4 dB

Maximum value of SAR = 0.404 mW/g



Date/Time: 11/12/03 11:36:04

Ambient Temperature : 24.4 °C Liquid Temperature : 22.5 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Touch right side; Mid. Chan; PCS Band

Communication System: PCS CDMA 1900; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium: HSL1900 ($\sigma = 1.43$ mho/m, $\epsilon_r = 40.15$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(5.4, 5.4, 5.4); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 11.5 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

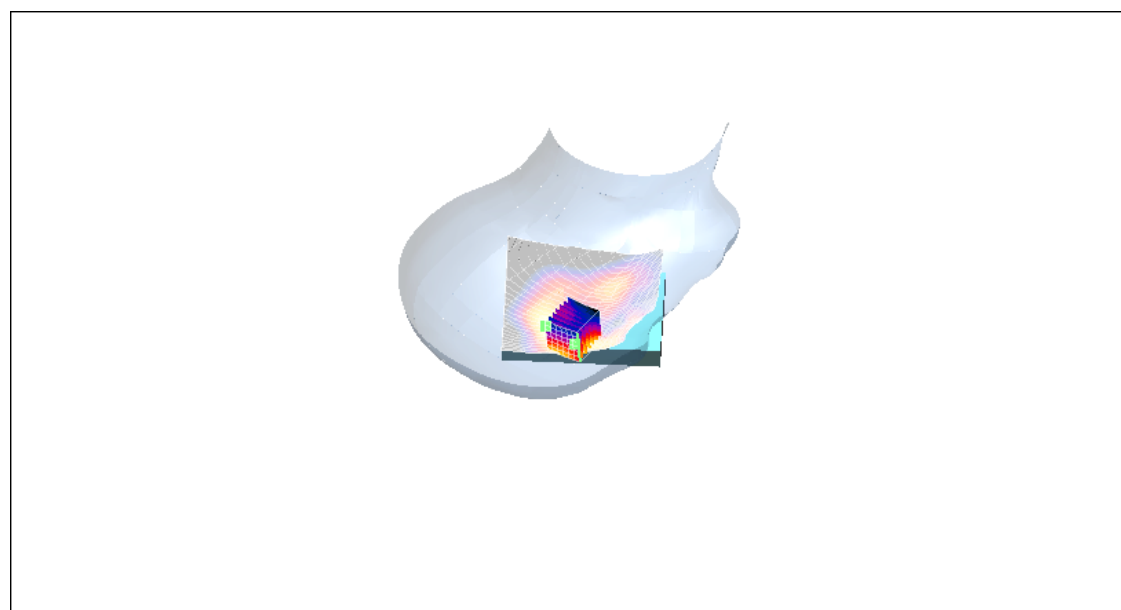
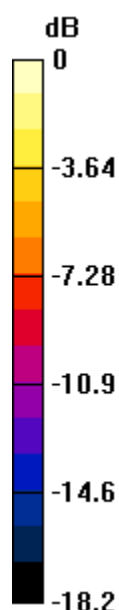
Peak SAR (extrapolated) = 1.8 W/kg

SAR(1 g) = 0.866 mW/g; SAR(10 g) = 0.428 mW/g

Reference Value = 11.5 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.991 mW/g



0 dB = 0.991mW/g

Date/Time: 11/12/03 12:12:43

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.4 °C Liquid Temperature : 22.5 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Tilted right side; Mid. Chan; PCS Band

Communication System: PCS CDMA 1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900 ($\sigma = 1.43 \text{ mho/m}$, $\epsilon_r = 40.15$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(5.4, 5.4, 5.4); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 13.6 V/m

Power Drift = 0.009 dB

Maximum value of SAR = 0.632 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

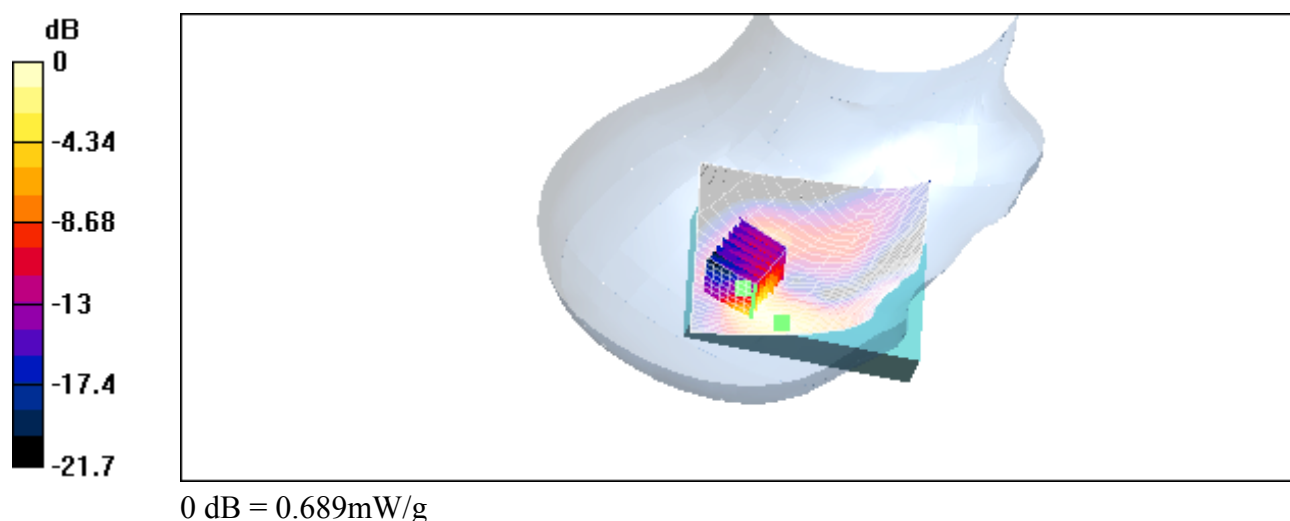
Peak SAR (extrapolated) = 1.55 W/kg

SAR(1 g) = 0.606 mW/g; SAR(10 g) = 0.276 mW/g

Reference Value = 13.6 V/m

Power Drift = 0.009 dB

Maximum value of SAR = 0.689 mW/g



Date/Time: 11/10/03 14:52:21

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.3 °C Liquid Temperature : 23.0 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Body-worn with holster; Mid. Chan; Cellular Band

Cycle: 1:1

Medium: M 835 ($\sigma = 0.96$ mho/m, $\epsilon_r = 53.3$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(6.4, 6.4, 6.4); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 23.5 V/m

Power Drift = 0.1 dB

Maximum value of SAR = 0.601 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

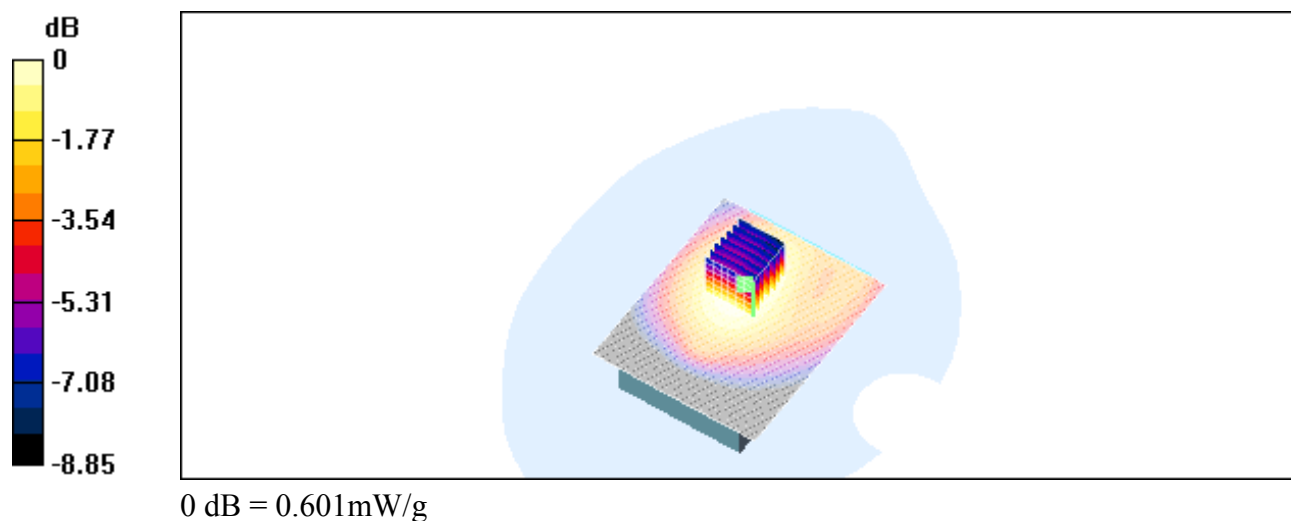
Peak SAR (extrapolated) = 0.711 W/kg

SAR(1 g) = 0.572 mW/g; SAR(10 g) = 0.428 mW/g

Reference Value = 23.5 V/m

Power Drift = 0.1 dB

Maximum value of SAR = 0.601 mW/g



Date/Time: 11/10/03 16:03:39

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.3 °C Liquid Temperature : 23.0 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Body-worn with holster and headset; Mid. Chan; Cellular Band

Communication System: Cellular CDMA ; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium: M 835 ($\sigma = 0.96$ mho/m, $\epsilon_r = 53.3$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(6.4, 6.4, 6.4); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 20.6 V/m

Power Drift = 0.05 dB

Maximum value of SAR = 0.43 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

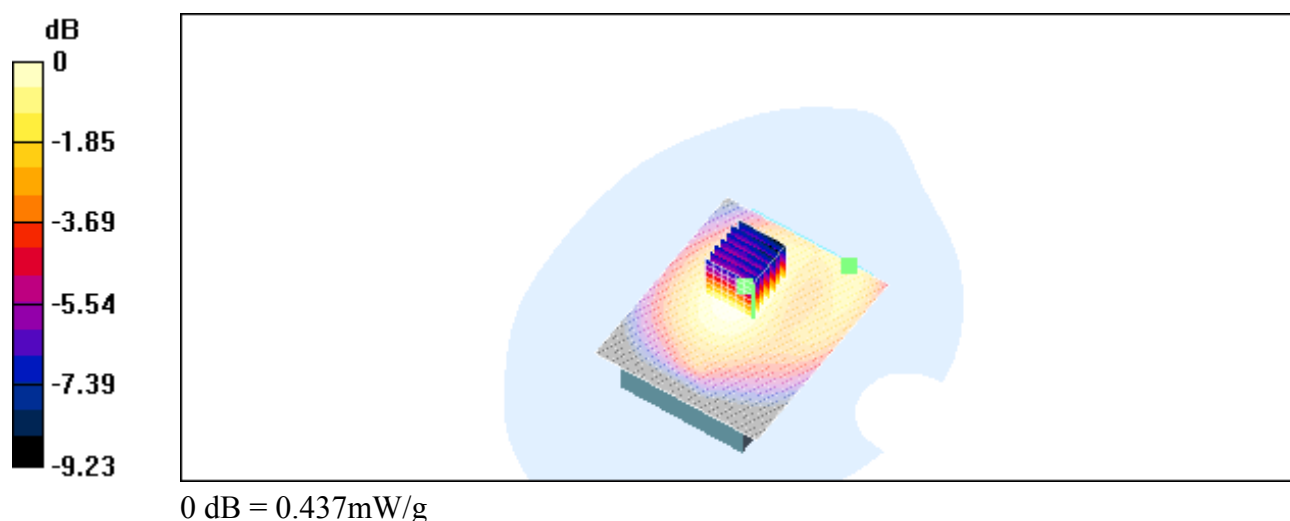
Peak SAR (extrapolated) = 0.521 W/kg

SAR(1 g) = 0.416 mW/g; SAR(10 g) = 0.307 mW/g

Reference Value = 20.6 V/m

Power Drift = 0.05 dB

Maximum value of SAR = 0.437 mW/g



Date/Time: 11/12/03 14:34:40

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.7 °C Liquid Temperature : 22.8 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Body-worn with holster; Mid. Chan; PCS Band

Communication System: PCS CDMA 1900; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium: M1900 ($\sigma = 1.55 \text{ mho/m}$, $\epsilon_r = 51.01$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(4.9, 4.9, 4.9); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 3.87 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.209 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

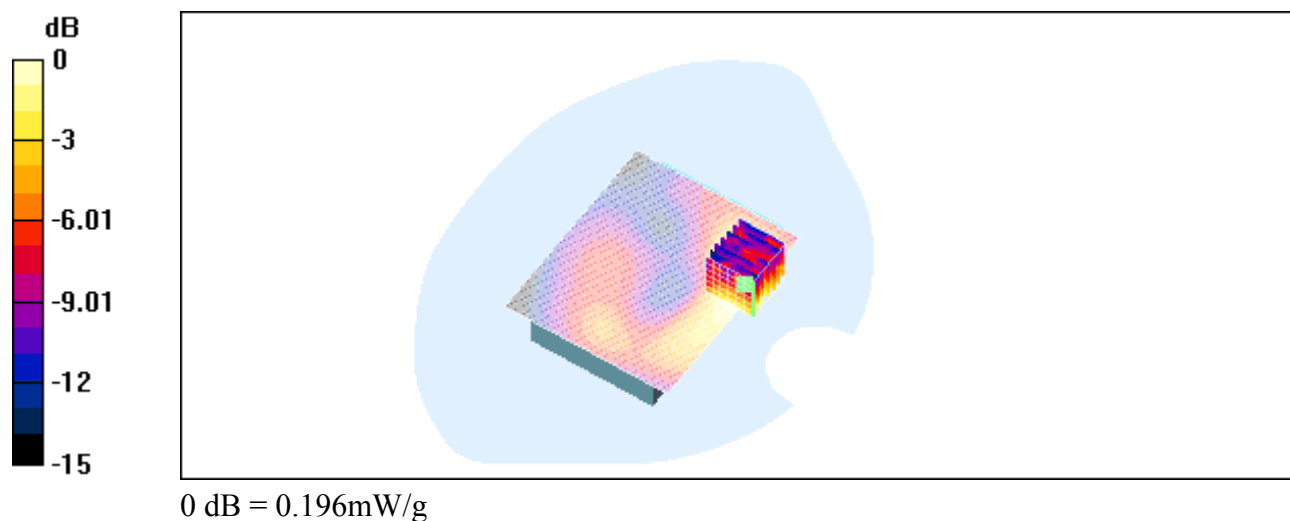
Peak SAR (extrapolated) = 0.288 W/kg

SAR(1 g) = 0.183 mW/g; SAR(10 g) = 0.112 mW/g

Reference Value = 3.87 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.196 mW/g



Date/Time: 11/12/03 17:06:28

Test Laboratory: Research In Motion Limited

Ambient Temperature : 24.6 °C Liquid Temperature : 22.7 °C

DUT: BlackBerry Wireless Handheld; Type: Sample ; Serial: E2PRF08; Body-worn with leather holster and headset; Mid. Chan; PCS Band

Communication System: PCS CDMA 1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: M1900 ($\sigma = 1.55 \text{ mho/m}$, $\epsilon_r = 51.01$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1642; ConvF(4.9, 4.9, 4.9); Calibrated: 28/08/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 19/08/2003
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Unnamed procedure/Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Reference Value = 3.25 V/m

Power Drift = -0.09 dB

Maximum value of SAR = 0.217 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Peak SAR (extrapolated) = 0.306 W/kg

SAR(1 g) = 0.195 mW/g; SAR(10 g) = 0.12 mW/g

Reference Value = 3.25 V/m

Power Drift = -0.09 dB

Maximum value of SAR = 0.209 mW/g

